

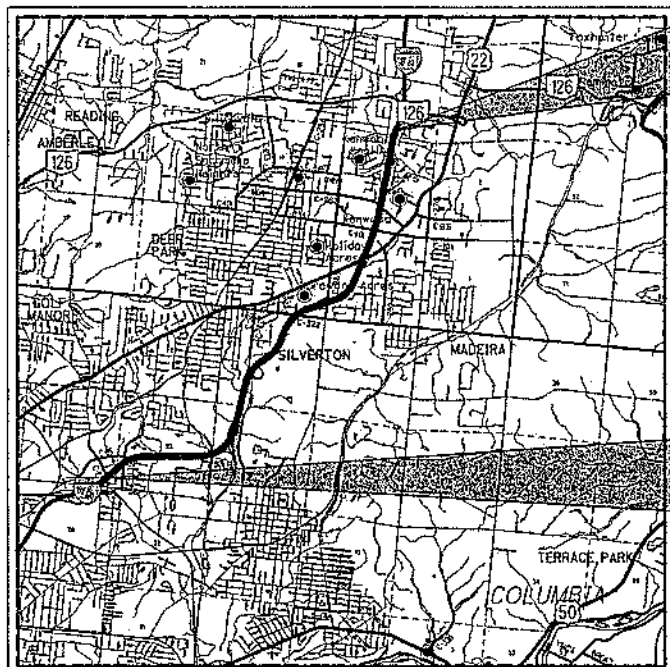
STATE OF OHIO

DEPARTMENT OF TRANSPORTATION

HAM-IR71-8.42 PART 1

CITY OF CINCINNATI
COLUMBIA AND SYCAMORE TOWNSHIPS
HAMILTON COUNTY

FOR PART 2, SEE HAM-71-6.86



LOCATION MAP

LATITUDE: 39°11'16" LONGITUDE: 84°23'25"

SCALE IN MILES

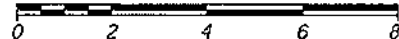


Table with 2 columns: Road Type and Improvement Status. Includes categories like INTERSTATE HIGHWAY, FEDERAL ROUTES, STATE ROUTES, COUNTY & TOWNSHIP ROADS, OTHER ROADS.

DESIGN DESIGNATION

Table with 5 columns: Designation (IR-71), 8.75, 9.70, 10.68, 11.41. Rows include CURRENT ADT (2018), DESIGN YEAR ADT (2038), DESIGN HOURLY VOLUME (2038), DIRECTIONAL DISTRIBUTION, TRUCKS (24 HOUR B&C), DESIGN SPEED, LEGAL SPEED.

DESIGN FUNCTIONAL CLASSIFICATION: URBAN INTERSTATE (0) NHS PROJECT YES

DESIGN EXCEPTIONS

Table with 3 columns: DESIGN FEATURE, APPROVAL DATES, SHEET NUMBER. Row: SHOULDER WIDTH, 7-11-16, 8 - 18.

UNDERGROUND UTILITIES section with Ohio Utilities Protection Service logo and contact information.

PLAN PREPARED BY: BURGESS AND NIPLÉ 312 PLUM STREET, 12TH FLOOR CINCINNATI, OHIO 45202

END PROJECT STA 687+00.00 SLM 13.85

BEGIN PROJECT STA 398+42.20 NB IR-71 SLM 8.42

ENGINEERS SEAL: MAINTENANCE OF TRAFFIC



SIGNED: Shawn A. Mason DATE: 10/22/17

ENGINEERS SEAL: TRAFFIC CONTROL



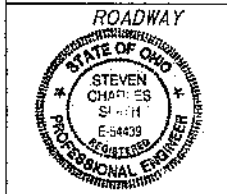
SIGNED: Shawn A. Mason DATE: 10/22/17

ENGINEERS SEAL: STRUCTURES OVER 20'



SIGNED: Steven Joseph Anslinger DATE: 12/14/17

ENGINEERS SEAL: ROADWAY



SIGNED: Steven Joseph Anslinger DATE: 10/31/17

INDEX OF SHEETS: TITLE SHEET, SCHEMATIC PLAN, TYPICAL SECTIONS, IR-71, KENNEDY AVE, GENERAL NOTES, MAINTENANCE OF TRAFFIC, GENERAL SUMMARY, SUBSUMMARIES, PAVEMENT CALCULATIONS, PROJECT SITE PLANS, IR-71 PLANS, RAMP, PLAN - PLANE & RESURFACE, PLAN & PROFILE - LOWERED PROFILE, PLAN - PLANE & RESURFACE.

STANDARD CONSTRUCTION DRAWINGS FOR PARTS 1 AND 2 table listing drawing codes, dates, and sheet numbers.

PROJECT DESCRIPTION

- WORK INCLUDES: PLANE AND RESURFACE IR-71 FROM RR BRIDGE NORTH OF SR 562 TO SR 126. FULL DEPTH PAVEMENT REPLACEMENT FOR SECTION OF IR-71 TO BE LOWERED TO ATTAIN BRIDGE CLEARANCE AT RED BANK EXPWY RAMP A. IMPROVEMENTS IN THE LOWERED SECTION INCLUDE CORRECTING THE SUPERELEVATION CROSS SLOPE TO MEET CURRENT STANDARDS. DECK AND APPROACH SLAB REPLACEMENT OF BRIDGES HAM-71-1068L/R (STEWART RD). MINOR REHABILITATION OF THE OTHER BRIDGES WITHIN THE PROJECT LIMITS - HAM-71-0875 (KENNEDY AVE), HAM-71-0970L/R (RED BANK RD), HAM-71-0991 (RED BANK EXPWY RAMP C), HAM-71-0092 (RED BANK EXPWY RAMP A), HAM-71-1149 (EUCLID RD), HAM-71-1181L/R (KENWOOD RD), AND HAM-71-1277L/R (GALBRAITH RD). NO WORK FOR BRIDGES HAM-71-0842 (RR BRIDGE), HAM-71-0851 (RIDGE AVE), HAM-22-1141 (MONTGOMERY RD), AND HAM-71-1303 (KUGLER MILL RD). REPLACEMENT OF HIGHWAY SIGNS AND SUPPORTS. BRIDGE LIGHTING WORK FOR BRIDGES HAM-71-1181L/R (KENWOOD RD) AND HAM-71-1277L/R (GALBRAITH RD).

PROJECT EARTH DISTURBED AREA: 4.3 ACRES ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 1.0 ACRES NOTICE OF INTENT EARTH DISTURBED AREA: 5.3 ACRES

LIMITED ACCESS

THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02 OF THE OHIO REVISED CODE.

2016 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY EXCEPT AS NOTED ON SHEET 109-114, AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

APPROVED: Taryn K. Capbell DATE: 11/1/17 DISTRICT DEPUTY DIRECTOR

APPROVED: DATE: DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO. E140985

PID NO. 91826

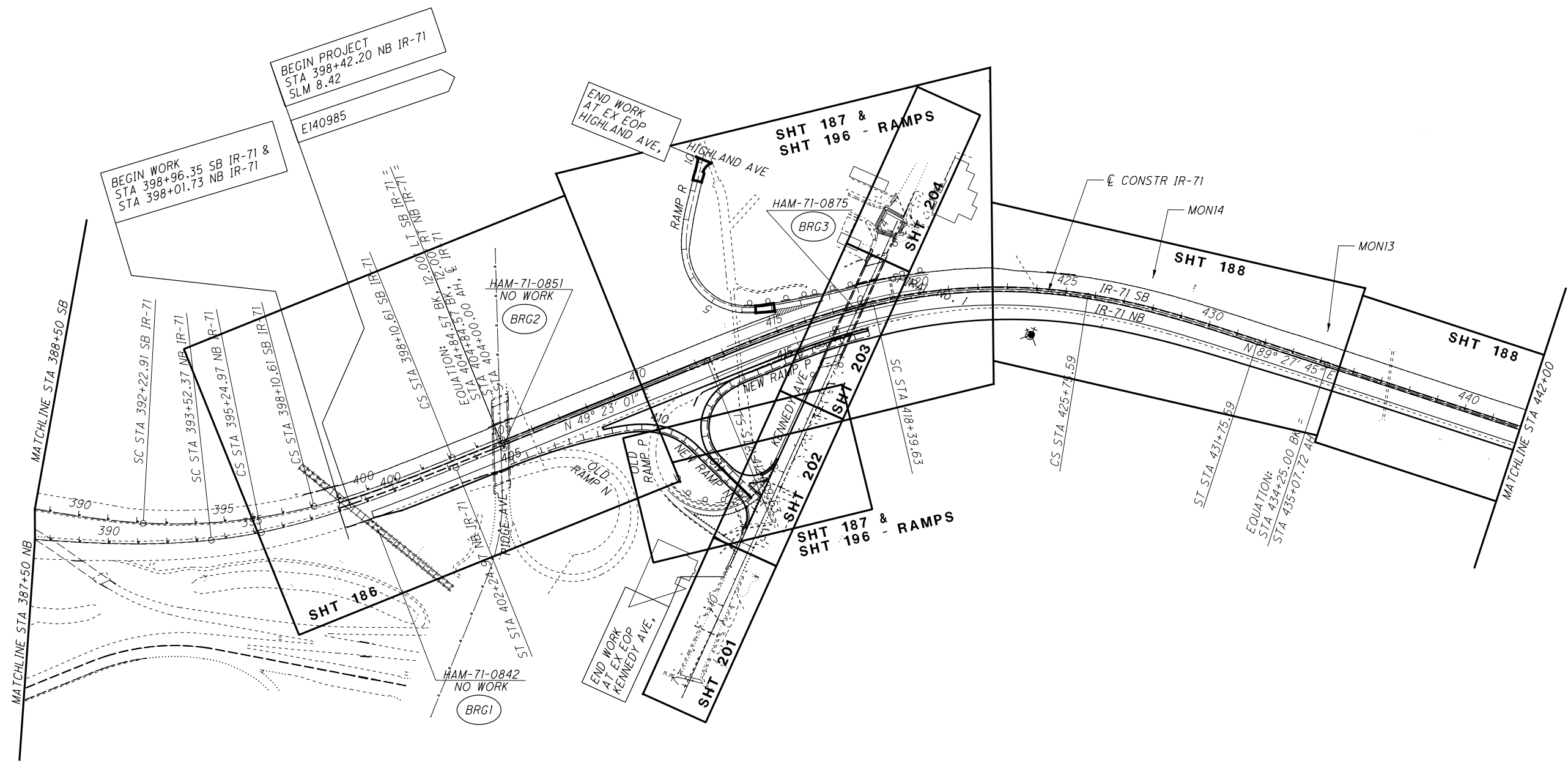
CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT NONE

HAM-IR71-8.42

Vertical text on the left edge: P:\PR54704\HAM-91826\Design\Roadway\Sheets\91826-GT10.dgn Sheet 10/22/2017 12:27:59 PM compton

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_GB102.dgn Sheet 10/26/2017 8:31:58 AM comp ton



BEGIN WORK
STA 398+96.35 SB IR-71 &
STA 398+01.73 NB IR-71

BEGIN PROJECT
STA 398+42.20 NB IR-71
SLM 8.42

E140985

END WORK
AT EX EOP
HIGHLAND AVE.

END WORK
AT EX EOP
KENNEDY AVE.

CROSS REFERENCES	
SHT NO	DESCRIPTION
2	CURVE/SPIRAL DATA
7	BENCHMARKS AND SURVEY CONTROL POINTS

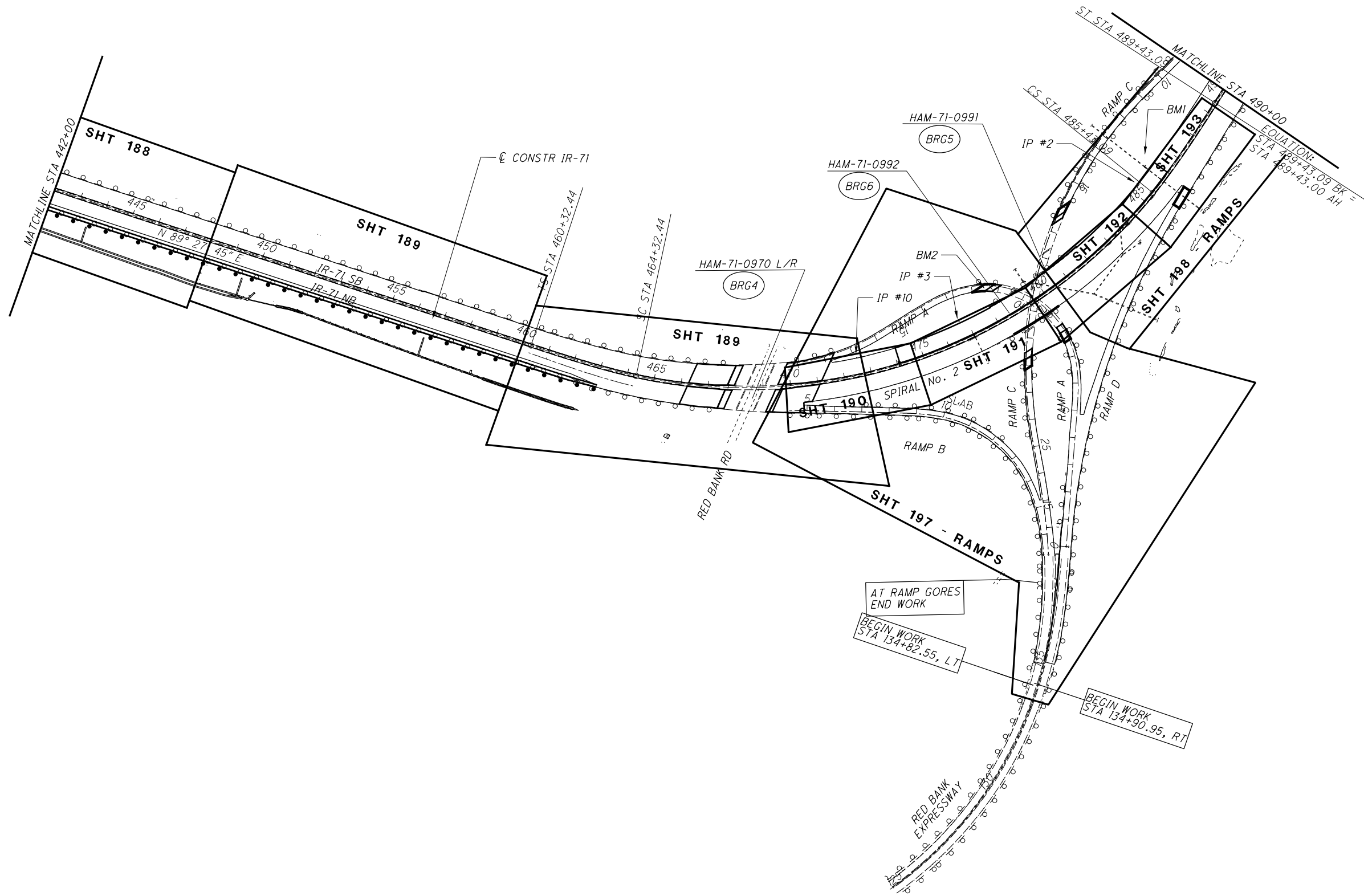
0 200 400
HORIZONTAL SCALE IN FEET

0 100 200 300 400
HORIZONTAL SCALE IN FEET

CALCULATED JLG
CHECKED KSC

SCHEMATIC PLAN & SHT LAYOUT
STA 387+50 NB IR-71 TO STA 442+00 IR-71

HAM-IR71-8.42



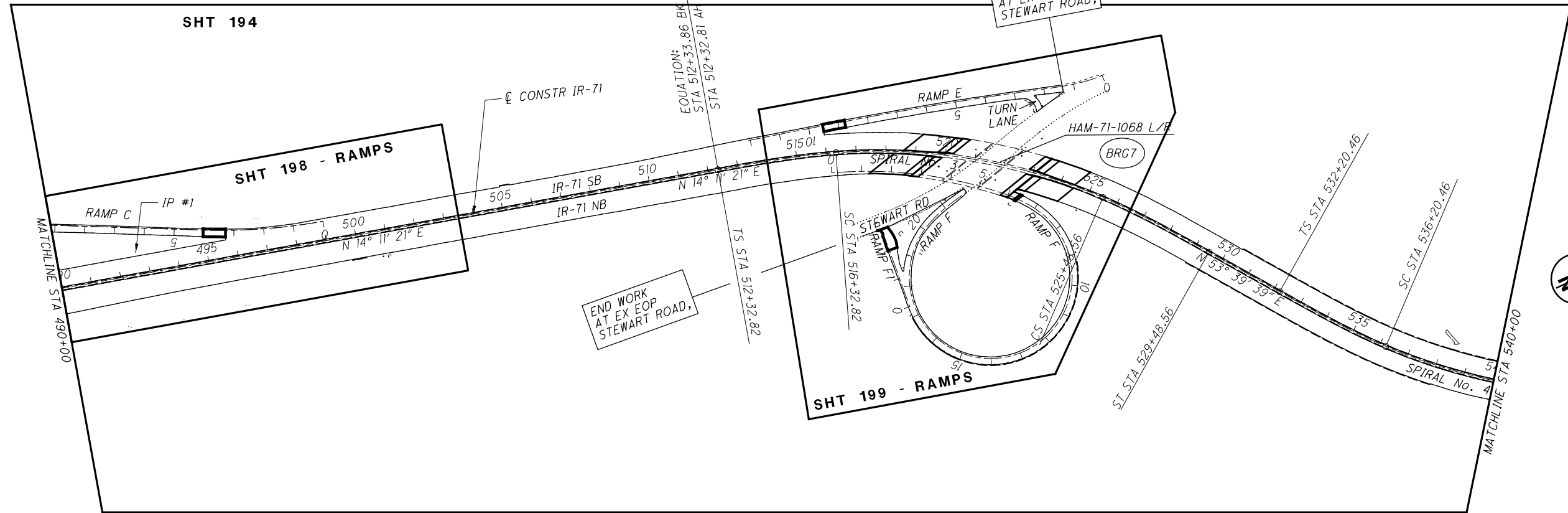
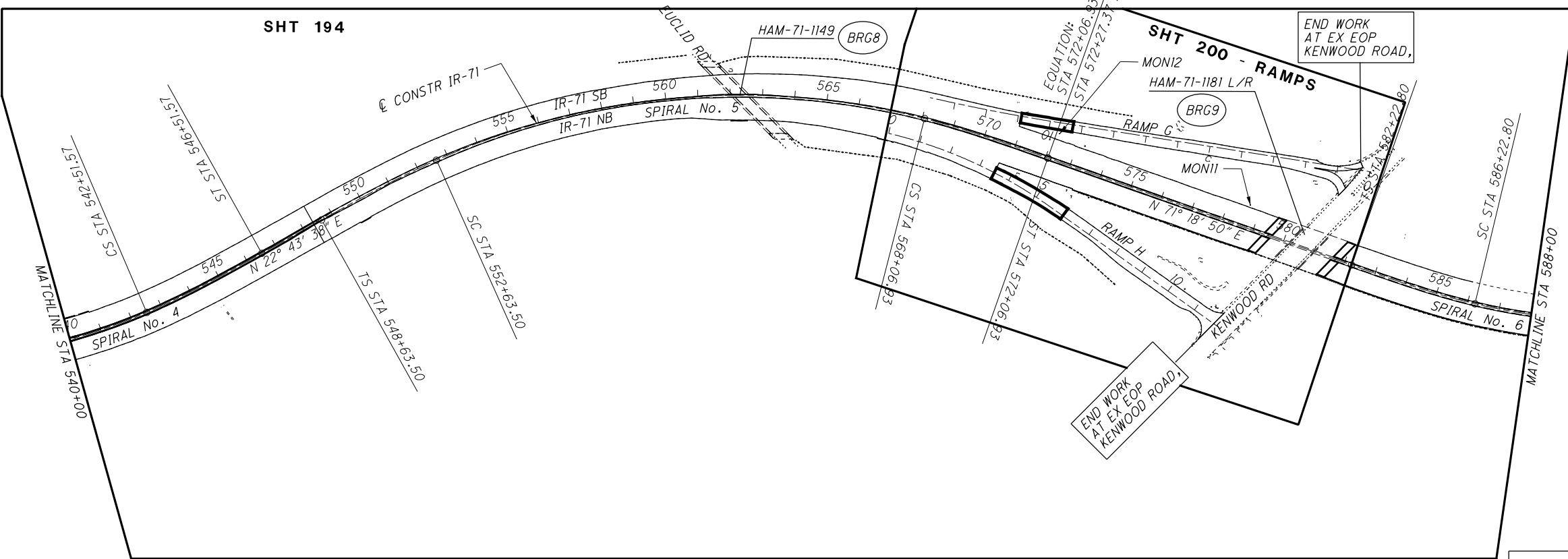
CALCULATED
JLG
CHECKED
KSC

SCHEMATIC PLAN & SHT LAYOUT
STA 442+00 IR-71 TO STA 490+00 IR-71

HAM-IR71-8.42

CROSS REFERENCES	
SHT NO	DESCRIPTION
2	CURVE/SPIRAL DATA
7	BENCHMARKS AND SURVEY CONTROL POINTS

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_GB103.dgn Sheet 10/26/2017 8:32:02 AM comp ton



CROSS REFERENCES	
SHT NO	DESCRIPTION
2	CURVE/SPIRAL DATA
7	BENCHMARKS AND SURVEY CONTROL POINTS

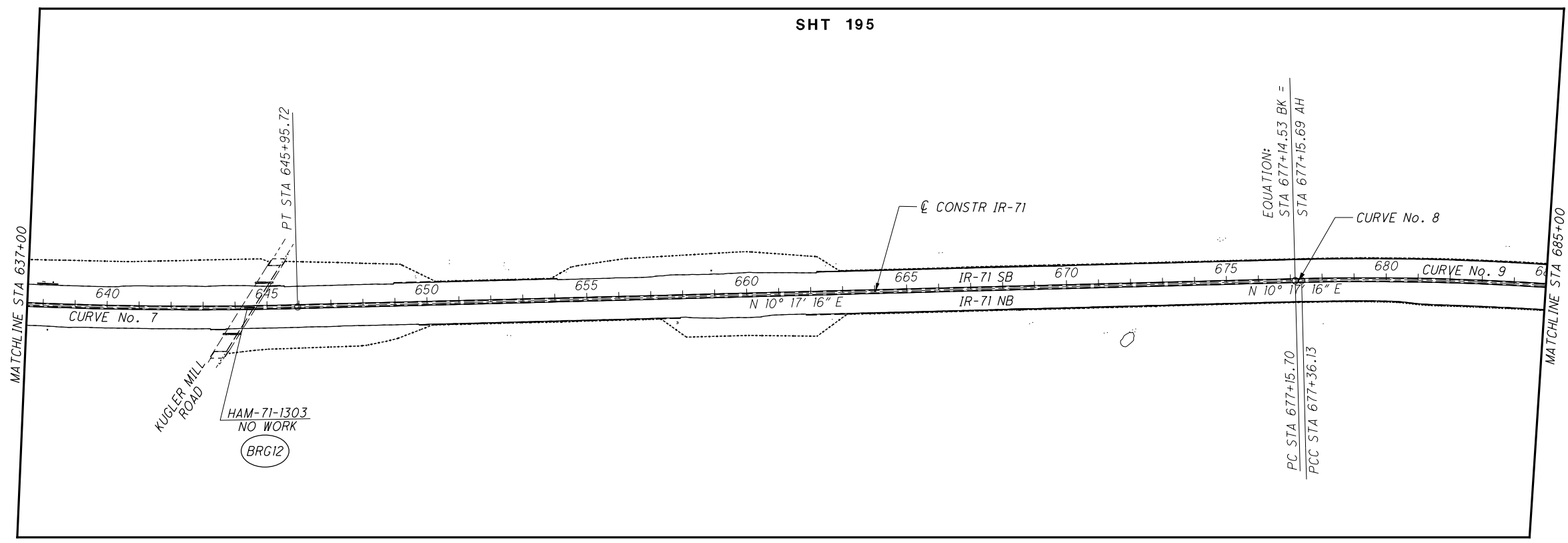
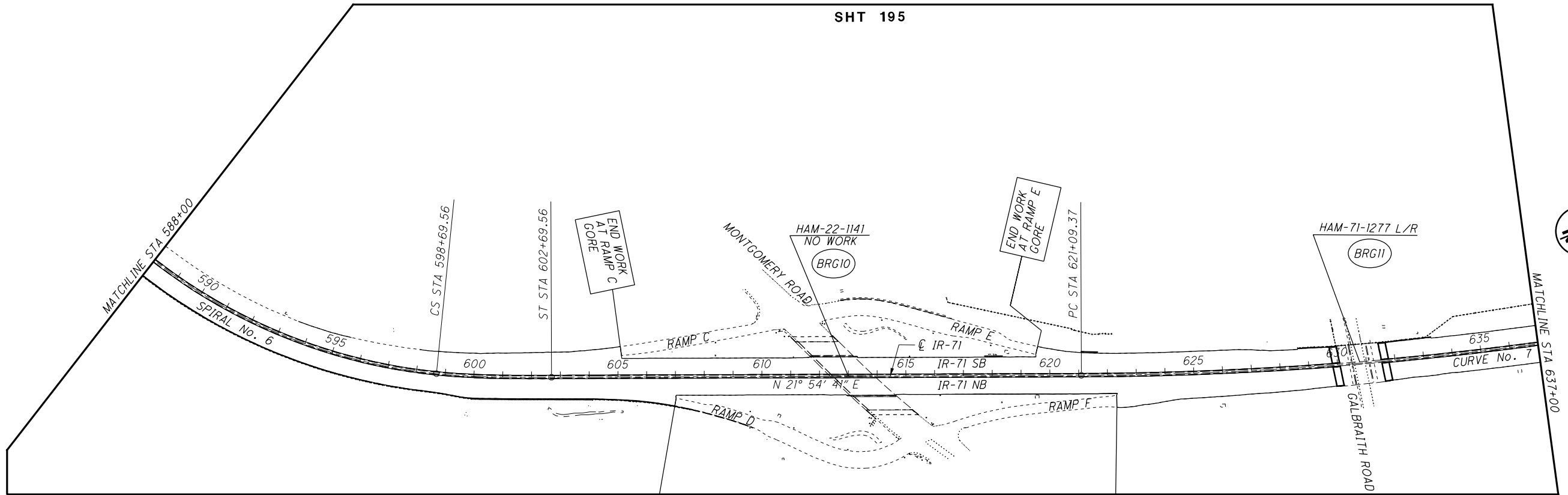
CALCULATED
JL G
CHECKED
KSC

0 200 400
HORIZONTAL
SCALE IN FEET

**SCHEMATIC PLAN AND SHT LAYOUT
STA 490+00 IR-71 TO STA 588+00 IR-71**

HAM-IR71-8.42

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_6B104.dgn Sheet 10/26/2017 8:32:03 AM compton



CROSS REFERENCES	
SHT NO	DESCRIPTION
2	CURVE/SPIRAL DATA
7	BENCHMARKS AND SURVEY CONTROL POINTS

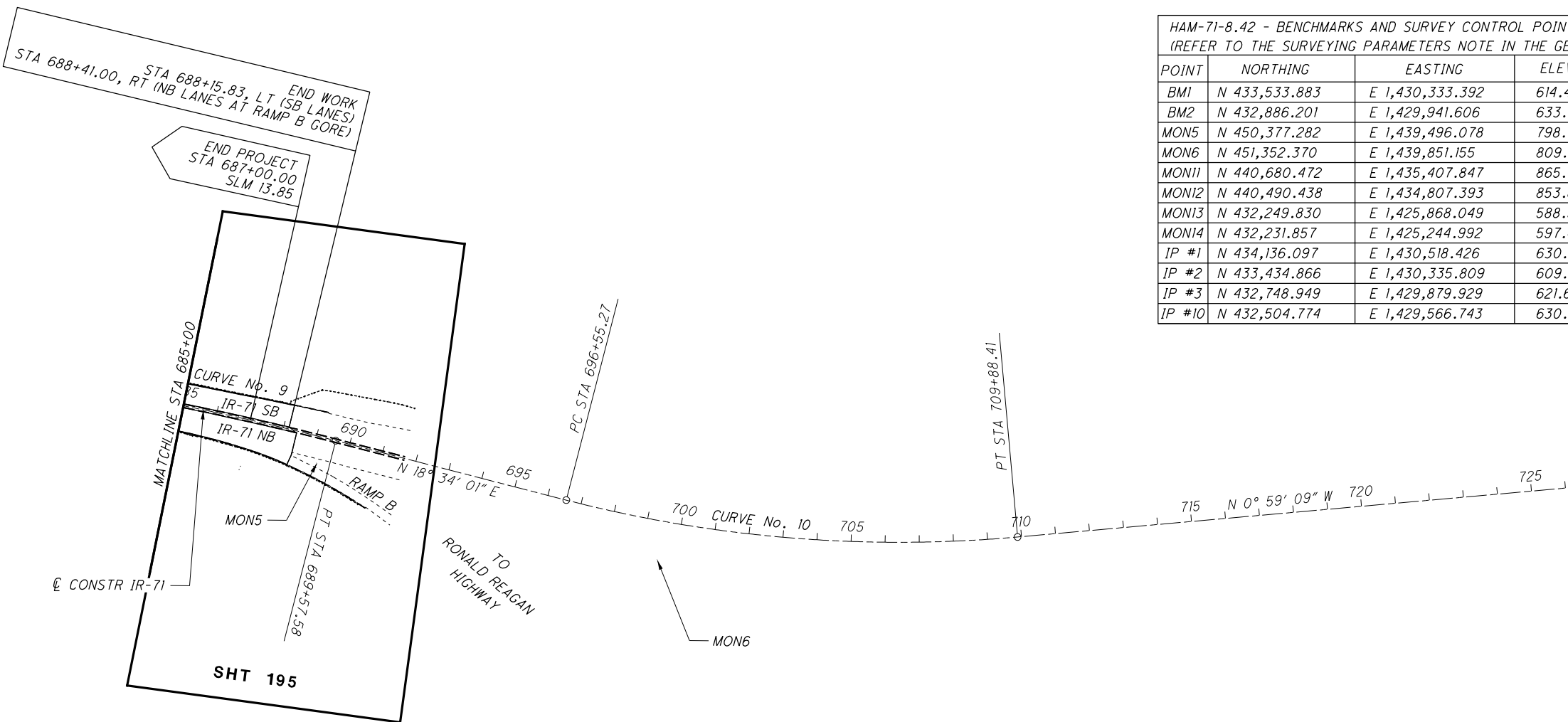
CALCULATED
JL G
CHECKED
KSC

0 100 200 400
HORIZONTAL
SCALE IN FEET

**SCHEMATIC PLAN AND SHT LAYOUT
STA 588+00 IR-71 TO STA 685+00 IR-71**

HAM-IR71-8.42

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_GBI05.dgn Sheet 10/26/2017 8:32:05 AM compTon



HAM-71-8.42 - BENCHMARKS AND SURVEY CONTROL POINTS
(REFER TO THE SURVEYING PARAMETERS NOTE IN THE GENERAL NOTES FOR PROJECT CONTROL INFORMATION.)

POINT	NORTHING	EASTING	ELEV.	SHT.	DESCRIPTION
BM1	N 433,533.883	E 1,430,333.392	614.473	4	"⊕" CUT SQUARE IN BASE OF LIGHT TOWER
BM2	N 432,886.201	E 1,429,941.606	633.425	4	"⊕" CUT SQUARE IN CORNER OF WING WALL
MON5	N 450,377.282	E 1,439,496.078	798.170	7	"⊙" CONCRETE MONUMENT (SAM, LLC)
MON6	N 451,352.370	E 1,439,851.155	809.030	7	"⊙" CONCRETE MONUMENT (SAM, LLC)
MON11	N 440,680.472	E 1,435,407.847	865.440	5	"⊙" CONCRETE MONUMENT (SAM, LLC)
MON12	N 440,490.438	E 1,434,807.393	853.820	5	"⊙" CONCRETE MONUMENT (SAM, LLC)
MON13	N 432,249.830	E 1,425,868.049	588.990	3	"⊙" CONCRETE MONUMENT (SAM, LLC)
MON14	N 432,231.857	E 1,425,244.992	597.000	3	"⊙" CONCRETE MONUMENT (SAM, LLC)
IP #1	N 434,136.097	E 1,430,518.426	630.067	5	"●I.P.S." IRON PIN SET
IP #2	N 433,434.866	E 1,430,335.809	609.883	4	"●I.P.S." IRON PIN SET
IP #3	N 432,748.949	E 1,429,879.929	621.675	4	"●I.P.S." IRON PIN SET
IP #10	N 432,504.774	E 1,429,566.743	630.711	4	"●I.P.S." IRON PIN SET

CALCULATED
JL G
CHECKED
KSC

0 200 400
HORIZONTAL
SCALE IN FEET

**SCHEMATIC PLAN AND SHT LAYOUT
STA 685+00 IR-71 TO END**

HAM-IR71-8.42

CROSS REFERENCES	
SHT NO	DESCRIPTION
2	CURVE/SPIRAL DATA

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_G102.dgn Sheet 10/26/2017 8:32:06 AM compton

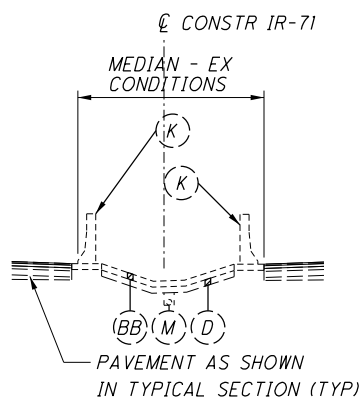
ITEM LEGEND

- | | | |
|--|---|--|
| <ul style="list-style-type: none"> ① ITEM 806 1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5mm, TYPE A ② ITEM 442 2 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, 19mm, TYPE A (446) ③ ITEM 442 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, 19mm, TYPE A (446) ④ ITEM 442 2 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, 19mm, TYPE A (446) ⑤ ITEM 442 1 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, 9.5mm, TYPE A (448) ⑥ ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE, 4 1/4" ⑦ ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE, 3 1/4" ⑧ ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE, 4" ⑨ ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE, 3" ⑩ ITEM 407 NON-TRACKING TACK COAT ⑪ ITEM 407 TACK COAT ⑫ ITEM 302 10" ASPHALT CONCRETE BASE (%-%) ⑬ ITEM 304 6" AGGREGATE BASE ⑭ ITEM 202 APPROACH SLAB REMOVED ⑮ ITEM 202 PAVEMENT REMOVED ⑯ ITEM 202 PAVEMENT REMOVED, ASPHALT ⑰ ITEM 202 CONCRETE BARRIER REMOVED ⑱ ITEM 202 GUARDRAIL REMOVED ⑲ ITEM 202 ANCHOR ASSEMBLY REMOVED ⑳ ITEM 202 GUTTER REMOVED ㉑ ITEM 601 PAVED GUTTER, TYPE 1-2, AS PER PLAN
PAVED GUTTER, TYPE 1-4, AS PER PLAN ㉒ ITEM 606 GUARDRAIL, TYPE MGS | <ul style="list-style-type: none"> ㉓ ITEM 622 CONCRETE BARRIER, SINGLE SLOPE, TYPE D ㉔ ITEM 622 BARRIER MISC.: NEW JERSEY SHAPE, TYPE D, 50" HEIGHT ㉕ ITEM 526 REINFORCED CONCRETE APPROACH SLABS (T = 15 INCHES) ㉖ ITEM 202 WEARING COURSE REMOVED ㉗ ITEM 848 SUPERPLASTICIZED DENSE CONCRETE OVERLAY, 1 3/4" ㉘ ITEM 512 SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN, AS PER PLAN ㉙ ITEM 204 SUBGRADE COMPACTION ㉚ ITEM 204 EXCAVATION OF SUBGRADE, 12" DEEP ㉛ ITEM 605 6" SHALLOW PIPE UNDERDRAIN ㉜ ITEM 605 6" BASE PIPE UNDERDRAIN ㉝ ITEM 407 TACK COAT, 702.13 (0.075 GAL / SQ YD)
[TO BE USED ON PLANED CONCRETE SURFACES] ㉞ ITEM 442 3 1/4" ASPHALT CONCRETE INTERMEDIATE COURSE, 19mm, TYPE A (446) ㉟ ITEM 254 PAVEMENT PLANING, ASPHALT CONCRETE, 4 3/4" ㊱ ITEM 204 12" GRANULAR MATERIAL, TYPE C ㊲ ITEM 204 GEOTEXTILE FABRIC, TYPE D ㊳ ITEM 622 CONCRETE BARRIER, SINGLE SLOPE, TYPE B1 ㊴ ITEM 622 BARRIER MISC.: NEW JERSEY SHAPE, TYPE D, 32" HEIGHT ㊵ ITEM 304 AVG. 2.36' THICK AGGREGATE BASE ㊶ ITEM 608 4" CONCRETE WALK ㊷ ITEM 203 EXCAVATION ㊸ ITEM 203 EMBANKMENT ㊹ ITEM 659 SEEDING AND MULCHING ㊺ ITEM 659 TOPSOIL, 4" ㊻ ITEM 670 DITCH EROSION PROTECTION | <ul style="list-style-type: none"> (A) EXISTING 4 1/4" ASPHALT OVERLAY WITH RIGID JOINT REPAIRS (B) EXISTING 10" JOINTED, REINFORCED CONCRETE PAVEMENT (C) EXISTING 9" JOINTED, REINFORCED CONCRETE PAVEMENT (D) EXISTING 6" TO 7 1/2" GRANULAR SUBBASE (E) EXISTING 8" ASPHALT OVERLAY [7 1/2" IN 1987, REMOVE 3" AND ADD 3 1/2" IN 2001] (F) EXISTING JOINTED REINFORCED CONCRETE PAVEMENT [CRACK AND SEAT IN 1987] (G) EXISTING GRANULAR SUBBASE (H) EXISTING 3 1/2" ASPHALT SURFACE AND INTERMEDIATE COURSE [3" IN 1987,
REMOVE 3" AND ADD 3 1/2" IN 2001] (I) EXISTING 10" BITUMINOUS AGGREGATE BASE (J) EXISTING 9 1/2" AGGREGATE BASE (K) EXISTING CONCRETE BARRIER, TYPE D50 (50" HEIGHT BARRIER, NJ BARRIER SHAPE) (L) EXISTING GUARDRAIL (M) EXISTING 6" PIPE UNDERDRAIN (DEEP, SHALLOW, OR ROCK CUT) (N) EXISTING 4" ASPHALT SURFACE AND INTERMEDIATE COURSE [1 1/2" SRF, 2 1/2" INT ** **] (O) EXISTING 9" BITUMINOUS AGGREGATE BASE [**] (P) EXISTING 9" AGGREGATE BASE [**] (Q) EXISTING APPROACH SLAB - NO WORK (R) EXISTING APPROACH SLAB (T = 17 INCHES) (S) EXISTING 14" BITUMINOUS AGGREGATE BASE [**] (T) EXISTING 6" AGGREGATE BASE [**] (U) EXISTING APPROACH SLAB (T = 13 INCHES) WITH 1 1/2" ASPHALT CONCRETE OVERLAY [1996] (V) EXISTING APPROACH SLAB (T = 15 INCHES) WITH 8" ASPHALT OVERLAY, SEE (E) ABOVE (W) EXISTING 3" ASPHALT SURFACE AND INTERMEDIATE COURSE (X) EXISTING 6" SUBBASE (Y) EXISTING 4 3/4" ASPHALT SURFACE AND INTERMEDIATE COURSE [4 1/4" IN 1987,
REMOVE 3" AND ADD 3 1/2" IN 2001] (Z) EXISTING APPROACH SLAB (T = 15 INCHES) [IN 2001 CONSTRUCT ON TOP EX APPR SLAB (T=15")] (AA) EXISTING ASPHALT SHOULDER (BB) EXISTING PAVED GUTTER (CC) EXISTING CONCRETE BARRIER, TYPE D (32" HEIGHT BARRIER, NJ BARRIER SHAPE) (DD) EXISTING 4" CONCRETE CAP (EE) EXISTING CURB (FF) EXISTING CONCRETE BARRIER, TYPE C (XX) SEE SAFETY PROJECT, HAM-71-6.86 (PID 94741) FOR TYPICAL SECTION
AND PAVEMENT COMPOSITION DETAILS, SHEET 757-782 |
|--|---|--|

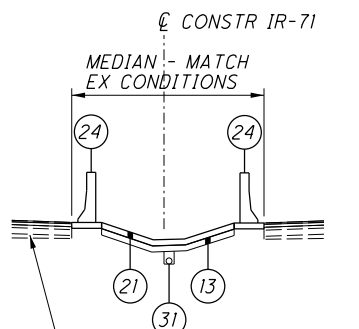
- ◇ (NDC = 12')
- △ EXISTING LONGITUDINAL JOINT (APPROX. LOCATIONS SHOWN)

NOTES:
 ** FULL DEPTH ASPHALT PAVEMENT WAS CONSTRUCTED IN 1995
 ** FULL DEPTH ASPHALT PAVEMENT WAS CONSTRUCTED IN 1992 (SLIDE CORRECTION)
 && OVERLAY IN 1986 AS PART OF CRACK AND SEAT WORK
 %-% THICKNESS VARIES, 10" TO 11 1/2", FOR APPROACH SLAB INSTALLATION TYPE A
 AT BRIDGE HAM-71-1068L/R (STEWART RD). SEE SHEET 378 FOR DETAILS.

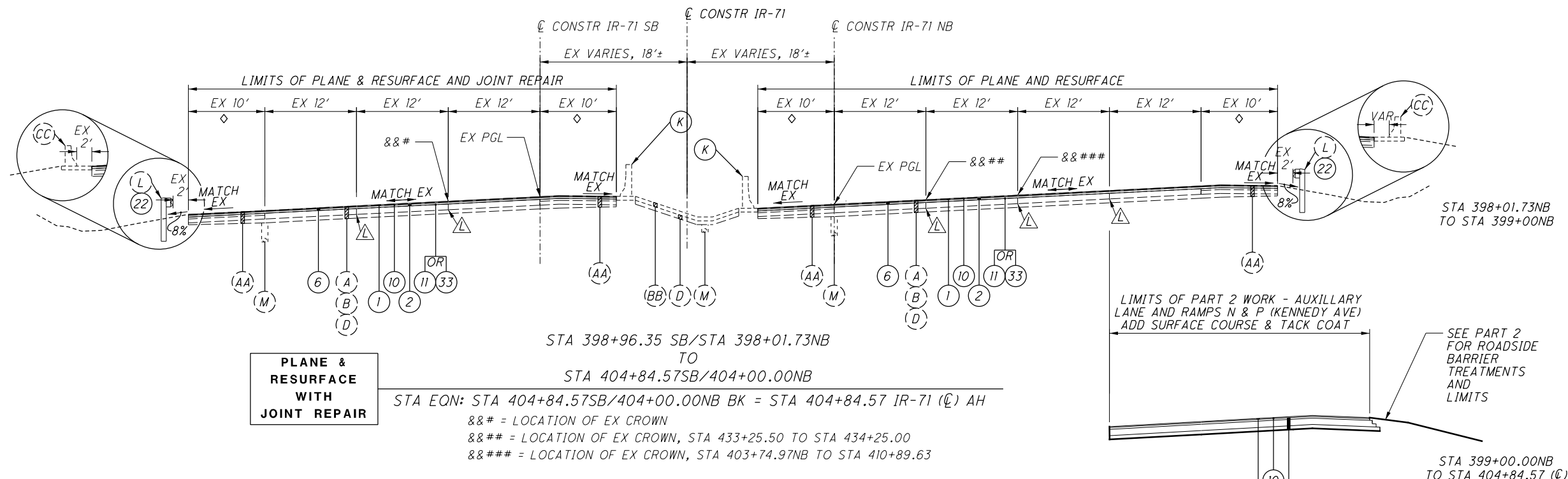
MOT CROSSOVER
 MEDIAN RESTORATION
 STA 406+00, LT &
 STA 407+60.00, RT
 TO STA 411+65.00, RT
 & STA 412+39.63, LT



EXISTING CONDITIONS



FINAL CONDITIONS



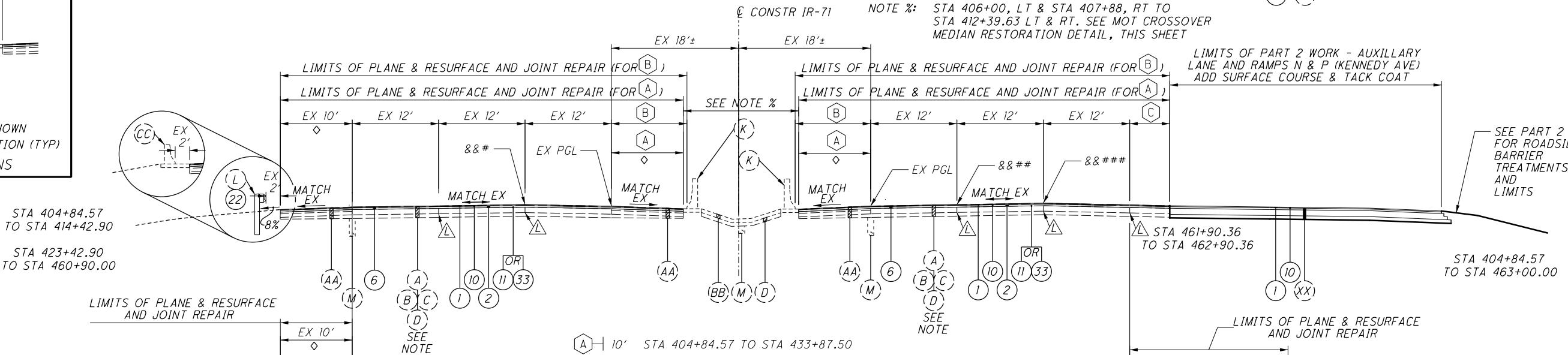
PLANE & RESURFACE WITH JOINT REPAIR

STA 398+96.35 SB/STA 398+01.73NB
 TO
 STA 404+84.57SB/404+00.00NB
 STA EQN: STA 404+84.57SB/404+00.00NB BK = STA 404+84.57 IR-71 (C) AH
 &&# = LOCATION OF EX CROWN
 &&## = LOCATION OF EX CROWN, STA 433+25.50 TO STA 434+25.00
 &&### = LOCATION OF EX CROWN, STA 403+74.97NB TO STA 410+89.63

LIMITS OF PART 2 WORK - AUXILLARY LANE AND RAMPS N & P (KENNEDY AVE)
 ADD SURFACE COURSE & TACK COAT

SEE PART 2 FOR ROADSIDE BARRIER TREATMENTS AND LIMITS

STA 399+00.00NB TO STA 404+84.57 (C)



PLANE & RESURFACE WITH JOINT REPAIR

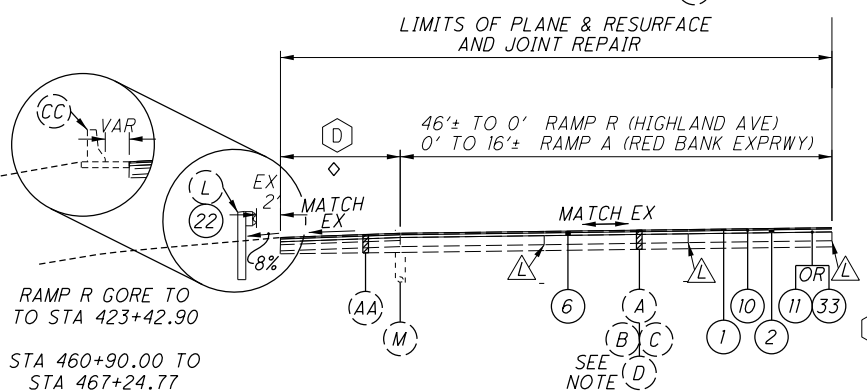
STA 404+84.57 TO STA 467+24.77
 STA 471+12.73 TO STA 474+10.00
 STA EQN: STA 434+25.00BK = STA 435+07.72AH
 &&# = LOCATION OF EX CROWN
 &&## = LOCATION OF EX CROWN, STA 433+25.50 TO STA 434+25.00
 &&### = LOCATION OF EX CROWN, STA 403+74.97NB TO STA 410+89.63

DISTANCE TO TOE OF BARRIER:
 (A) 10' STA 404+84.57 TO STA 433+87.50
 (B) 10' TO 12' STA 433+87.50 TO STA 436+82.72
 12' STA 436+82.72 TO 467+24.77
 12" STA 471+12.73 TO STA 474+10.00
 (C) 0' STA 404+00.00 TO STA 461+90.36
 0' TO 12' STA 461+90.36 TO STA 462+90.36 (RAMP B - RED BANK EXPRWY)

LIMITS OF PART 2 WORK - AUXILLARY LANE AND RAMPS N & P (KENNEDY AVE)
 ADD SURFACE COURSE & TACK COAT

SEE PART 2 FOR ROADSIDE BARRIER TREATMENTS AND LIMITS

STA 463+00.00 TO STA 467+24.77



RAMP R GORE TO STA 423+42.90
 STA 460+90.00 TO STA 467+24.77

NOTE:
 LIMITS OF EXISTING JOINTED, REINFORCED CONCRETE PAVEMENT:
 10" THICKNESS = STA 404+00.00 TO STA 434+25.00BK/435+07.72AH
 9" THICKNESS = STA 435+07.72 TO STA 467+24.77

LIMITS OF PLANE & RESURFACE AND JOINT REPAIR

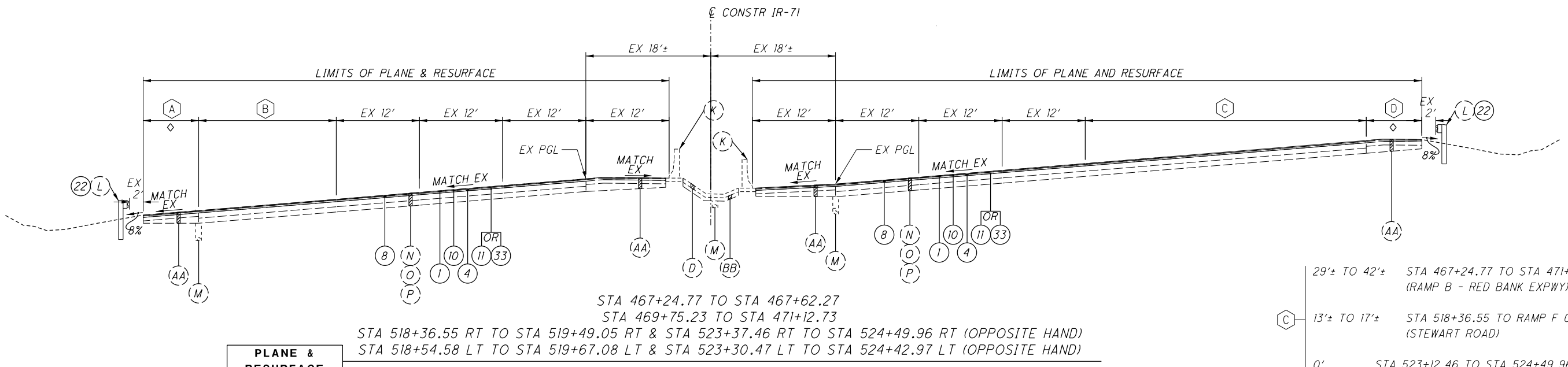
STA 471+12.73 TO STA 474+10.00

NOTE:
 1. FOR LEGEND, SEE SHEET 8

P:\PR54704\HAM-IR71-8.42\Design\Roadway\Sheets\91826-GY01.dgn Sheet 10/26/2017 8:32:07 AM comp ton

TYPICAL SECTIONS - ITEM LEGEND

HAM-IR71-8.42



PLANE & RESURFACE

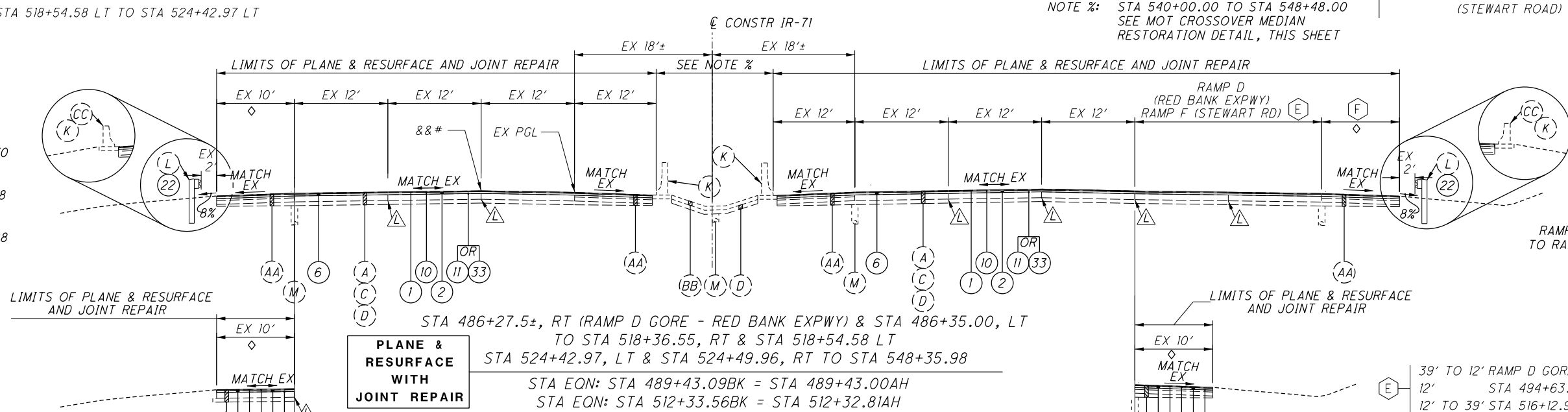
STA 467+24.77 TO STA 467+62.27
 STA 469+75.23 TO STA 471+12.73
 STA 518+36.55 RT TO STA 519+49.05 RT & STA 523+37.46 RT TO STA 524+49.96 RT (OPPOSITE HAND)
 STA 518+54.58 LT TO STA 519+67.08 LT & STA 523+30.47 LT TO STA 524+42.97 LT (OPPOSITE HAND)

29'± TO 42'± STA 467+24.77 TO STA 471+12.73 (RAMP B - RED BANK EXPWY)
 13'± TO 17'± STA 518+36.55 TO RAMP F GORE (STEWART ROAD)
 0' STA 523+12.46 TO STA 524+49.96
 10' TO 8' STA 461+90.36 TO STA 462+90.36
 8' STA 462+90.36 TO RAMP B GORE (RED BANK EXPWY)
 10' TO 8' STA 516+12.97 TO STA 517+12.97
 8' STA 517+12.97 TO RAMP F GORE (STEWART ROAD)

10' TO 8' STA 459+90.00 TO STA 460+70.00
 8' STA 460+70.00 TO RAMP A GORE (RED BANK EXPWY)
 10' STA 518+54.58 LT TO STA 524+42.97 LT
 17'± TO 25'± STA 467+24.77 TO STA 471+12.73
 0' STA 518+54.58 LT TO STA 524+42.97 LT

BRIDGE AND APPROACH SLAB LIMITS:
 (BRG4) HAM-71-0970 L/R (IR-71 OVER RED BANK ROAD) STA 467+62.27 TO STA 469+75.23
 FOR TYPICAL SECTIONS, SEE SHEETS 17 - 18

NOTE %: STA 540+00.00 TO STA 548+48.00
 SEE MOT CROSSOVER MEDIAN RESTORATION DETAIL, THIS SHEET



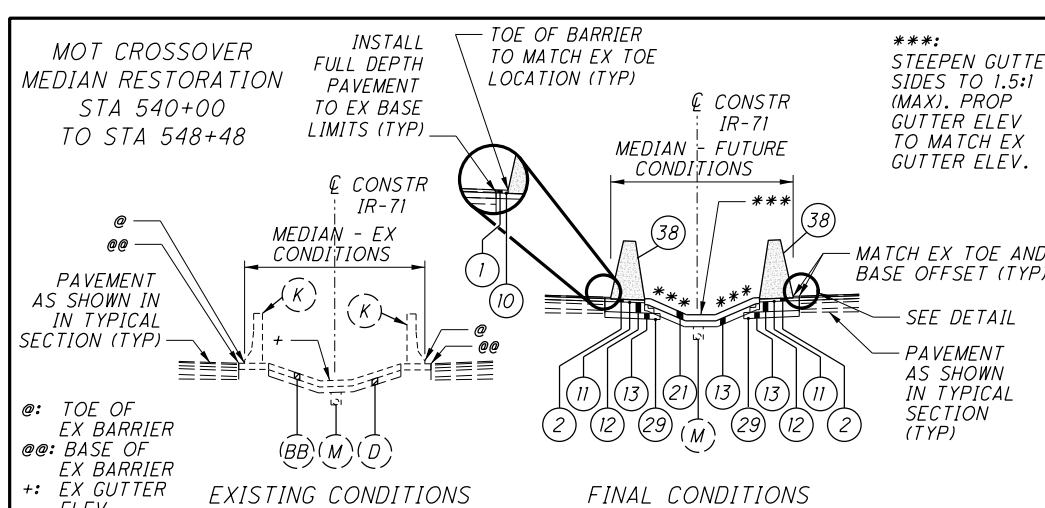
PLANE & RESURFACE WITH JOINT REPAIR

STA 486+27.5±, RT (RAMP D GORE - RED BANK EXPWY) & STA 486+35.00, LT
 TO STA 518+36.55, RT & STA 518+54.58 LT
 STA 524+42.97, LT & STA 524+49.96, RT TO STA 548+35.98
 STA EQN: STA 489+43.09BK = STA 489+43.00AH
 STA EQN: STA 512+33.56BK = STA 512+32.81AH

39' TO 12' RAMP D GORE TO STA 494+63.00
 12' STA 494+63.00 TO STA 516+12.97
 12' TO 39' STA 516+12.97 TO RAMP F GORE
 8' RAMP D GORE TO STA 493+03.00
 8' TO 10' STA 493+03.00 TO STA 494+63.00
 10' STA 494+63.00 TO STA 516+12.97
 10' TO 8' STA 516+12.97 TO STA 517+12.97
 8' STA 517+12.97 TO RAMP F GORE
 8' TO 10' RAMP C GORE TO STA 499+00.00
 10' STA 499+00.00 TO STA 508+10.00
 10' TO 8' STA 508+10.00 TO STA 509+10.00
 8' STA 509+10.00 TO RAMP E GORE
 31' TO 12' RAMP C GORE TO STA 499+00.00
 12' STA 499+00.00 TO STA 508+10.00
 12' TO 39' STA 508+10.00 TO RAMP E GORE

STA 486+35.00 TO STA 495+02.70
 RAMP E GORE TO STA 518+54.58
 STA 524+42.97 TO STA 548+35.98

STA 495+02.70 TO RAMP C GORE



MOT CROSSOVER MEDIAN RESTORATION
 STA 540+00 TO STA 548+48

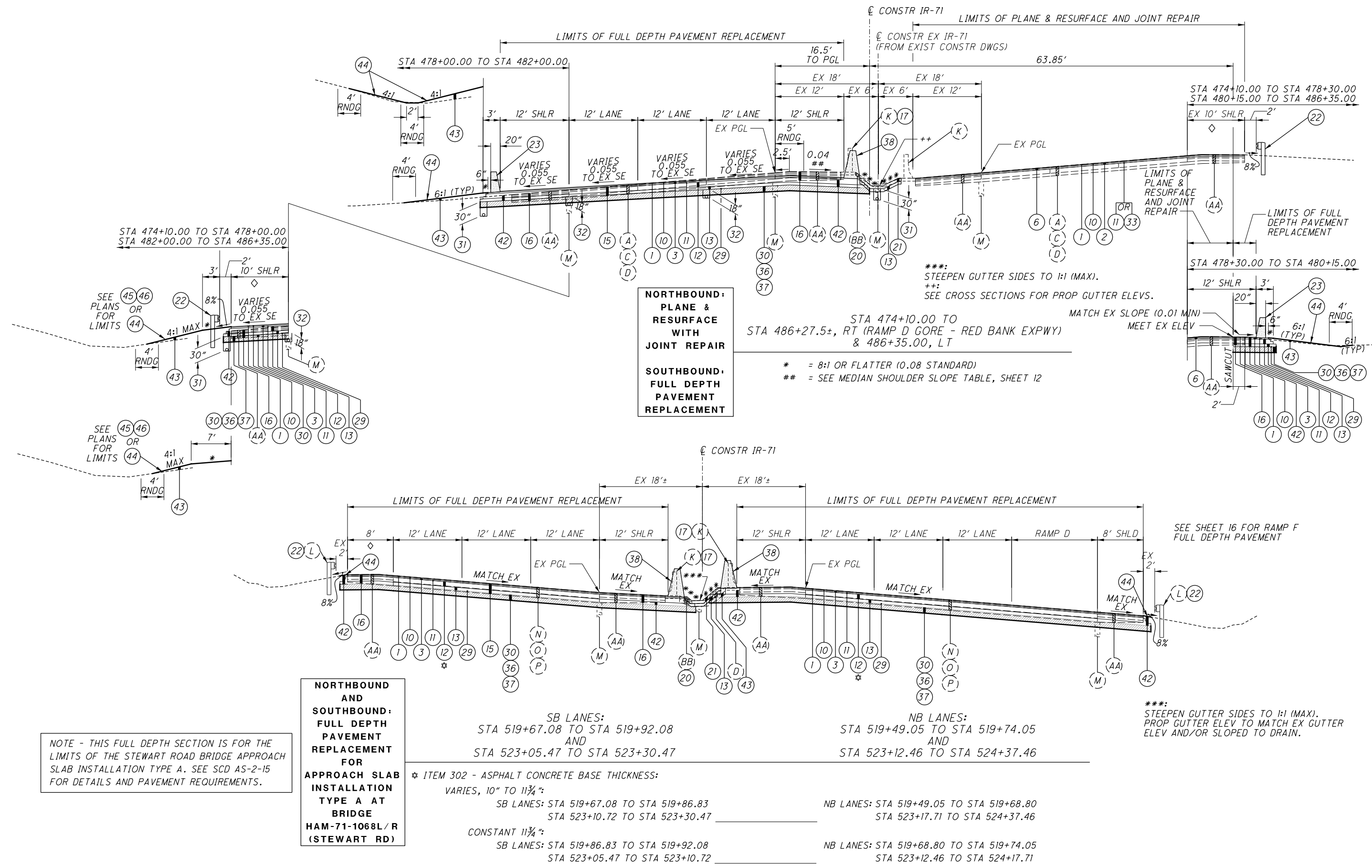
INSTALL FULL DEPTH PAVEMENT TO EX BASE LIMITS (TYP)
 TOE OF BARRIER TO MATCH EX TOE LOCATION (TYP)
 MEDIAN - EX CONDITIONS
 MEDIAN - FUTURE CONDITIONS

***: STEEPEN GUTTER SIDES TO 1.5:1 (MAX). PROP GUTTER ELEV TO MATCH EX GUTTER ELEV.

TOE OF EX BARRIER
 BASE OF EX BARRIER
 EX GUTTER ELEV
 MATCH EX TOE AND BASE OFFSET (TYP)
 SEE DETAIL
 PAVEMENT AS SHOWN IN TYPICAL SECTION (TYP)

NOTE:
 1. FOR LEGEND, SEE SHEET 8

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_G103.dgn Sheet 10/26/2017 8:32:09 AM compton



P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_G104.dgn Sheet 10/26/2017 8:32:41 AM compfon

IR-71 LOWERED PROFILE LIMITS - SOUTHBOUND MEDIAN SHOULDER ROUNDING, CROSS SLOPE TRANSITION AND ELEVATIONS:

REMARKS	STATION	SB LANES INSIDE EDGE (PROFILE GRADE)		2.5' RIGHT OF PROFILE GRADE LINE PVI ELEV FOR 5' ROUNDING - SB LANES			12' RIGHT OF PROFILE GRADE LINE FACE OF BARRIER (TOE) - SB LANES				
		PGL ELEVATION	OFFSET (LEFT)	CROSS SLOPE	ELEVATION CORRECTION	ELEVATION	OFFSET (LEFT)	CROSS SLOPE	ELEVATION CORRECTION	ELEVATION AT FACE OF BARRIER	OFFSET (LEFT)
STA 474+10, BEGIN SUPERELEVATION MODIFICATIONS - SB LANES IR-71. TIE IN EXISTING CONDITIONS (BACK)											
SEE NOTE 1	474+10.00	EX 632.22	EX 17.2	0.083 (EX±)				-0.0104 (EX±)		EX 632.46	EX 4.65
	474+50.00	631.50	16.5	0.0778	0.19	631.69	14	-0.0159	-0.15	631.54	4.5
	475+00.00	630.49	16.5	0.0713	0.18	630.67	14	-0.0228	-0.22	630.45	4.5
	475+50.00	629.38	16.5	0.0648	0.16	629.54	14	-0.0297	-0.28	629.26	4.5
	476+00.00	628.28	16.5	0.0583	0.15	628.43	14	-0.0366	-0.35	628.08	4.5
SEE NOTE 2	476+25.00	627.65	16.5	0.0550	0.14	627.79	14	-0.0400	-0.38	627.41	4.5
	476+50.00	627.01	16.5	0.0550	0.14	627.15	14	-0.0400	-0.38	626.77	4.5
	477+00.00	625.66	16.5	0.0550	0.14	625.80	14	-0.0400	-0.38	625.42	4.5
	477+50.00	624.25	16.5	0.0550	0.14	624.39	14	-0.0400	-0.38	624.01	4.5
	478+00.00	622.76	16.5	0.0550	0.14	622.90	14	-0.0400	-0.38	622.52	4.5
	478+50.00	621.21	16.5	0.0550	0.14	621.35	14	-0.0400	-0.38	620.97	4.5
	479+00.00	619.65	16.5	0.0550	0.14	619.79	14	-0.0400	-0.38	619.41	4.5
	479+50.00	618.24	16.5	0.0550	0.14	618.38	14	-0.0400	-0.38	618.00	4.5
	480+00.00	617.01	16.5	0.0550	0.14	617.15	14	-0.0400	-0.38	616.77	4.5
	480+50.00	615.95	16.5	0.0550	0.14	616.09	14	-0.0400	-0.38	615.71	4.5
	481+00.00	615.08	16.5	0.0550	0.14	615.22	14	-0.0400	-0.38	614.84	4.5
	481+50.00	614.40	16.5	0.0550	0.14	614.54	14	-0.0400	-0.38	614.16	4.5
	482+00.00	613.89	16.5	0.0550	0.14	614.03	14	-0.0400	-0.38	613.65	4.5
SEE NOTE 3	482+50.00	613.49	16.5	0.0550	0.14	613.63	14	-0.0400	-0.38	613.25	4.5
	483+00.00	613.13	16.5	0.0550	0.14	613.27	14	-0.0400	-0.38	612.89	4.5
	483+50.00	612.92	16.5	0.0550	0.14	613.06	14	-0.0400	-0.38	612.68	4.5
	484+00.00	612.84	16.5	0.0550	0.14	612.98	14	-0.0400	-0.38	612.60	4.5
SEE NOTE 4	484+20.00	612.87	16.5	0.0550	0.14	613.01	14	-0.0400	-0.38	612.63	4.5
	484+50.00	613.00	16.5	0.0550	0.14	613.14	14	-0.0359	-0.34	612.80	4.5
	485+00.00	613.31	16.5	0.0550	0.14	613.45	14	-0.0290	-0.28	613.17	4.5
	485+50.00	613.86	16.5	0.0550	0.14	614.00	14	-0.0221	-0.21	613.79	4.5
	486+00.00	614.40	16.5	0.0550	0.14	614.54	14	-0.0152	-0.14	614.40	4.5
SEE NOTE 5	486+35.00	EX 614.92	EX 17.0	0.055 (EX±)				-0.0104 (EX±)		EX 615.12	EX 4.71
STA 486+35, END SUPERELEVATION MODIFICATIONS - SB LANE IR-71. TIE IN EXISTING CONDITIONS (AHEAD)											

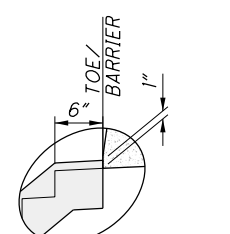
NOTE 1:
MEET EXISTING.
TIE INTO EX LANE AND OUTSIDE SHOULDER CROSS SLOPE (EX SE @ 0.083).
TIE INTO EX MEDIAN SHOULDER CROSS SLOPE (EX SE @ 0.0104).
BEGIN CROSS SLOPE TRANSITION (LANES AND OUTSIDE SHOULDER, EX @ 0.083 TO 0.055) AND (MEDIAN SHOULDER, 0.04 TO EX @ 0.0104).

NOTE 2:
END SE TRANSITION.
BEGIN LANE AND OUTSIDE SHOULDER CROSS SLOPE @ FS = 0.055.
BEGIN MEDIAN SHOULDER CROSS SLOPE @ 0.04.

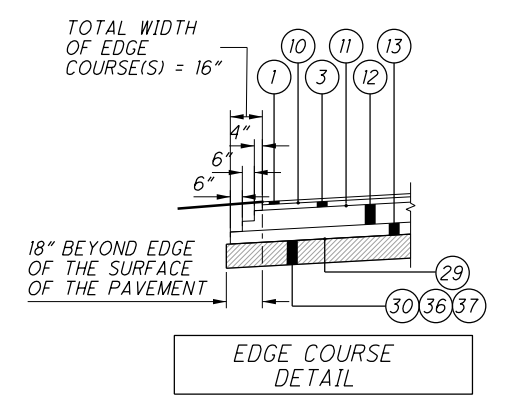
NOTE 3:
END LOWERED PROFILE.
CONTINUE LANES AND SHOULDERS CROSS SLOPES. (FULL SE = 0.055).

NOTE 4:
CONTINUE LANES AND OUTSIDE SHOULDER CROSS SLOPES. (FULL SE = 0.055).
BEGIN CROSS SLOPE TRANSITION MEDIAN SHOULDER 0.04 TO EX @ 0.0104.

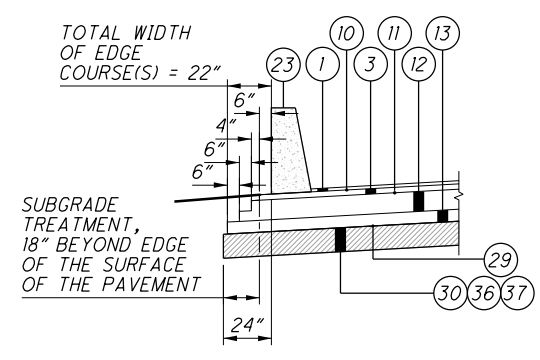
NOTE 5:
MEET EXISTING.
END CROSS TRANSITION (LANES AND OUTSIDE SHOULDER, EX @ 0.055) AND (MEDIAN SHOULDER, EX @ 0.0104).



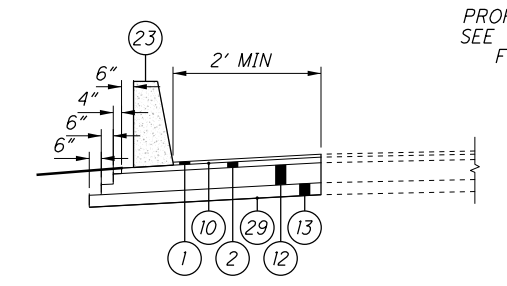
PAVED GUTTER DETAIL AT SINGLE SLOPE BARRIER, TYPE B1 (SS B1)



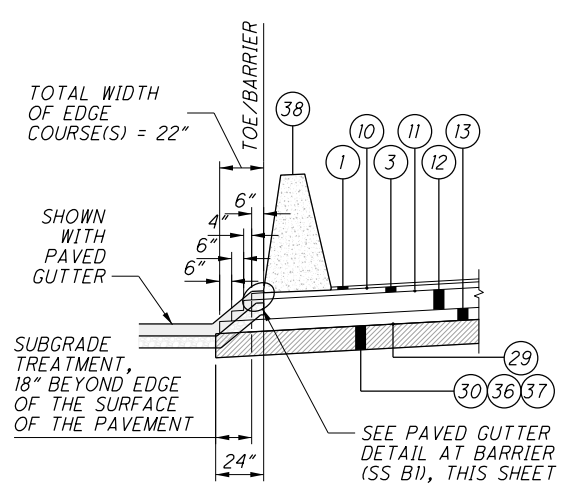
EDGE COURSE DETAIL



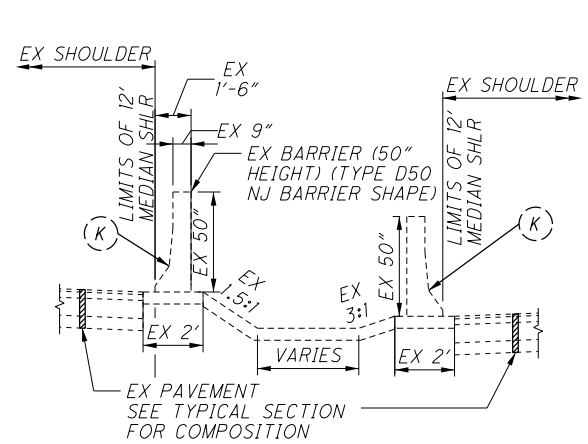
EDGE COURSE DETAIL AT SINGLE SLOPE BARRIER, TYPE D (SS D)



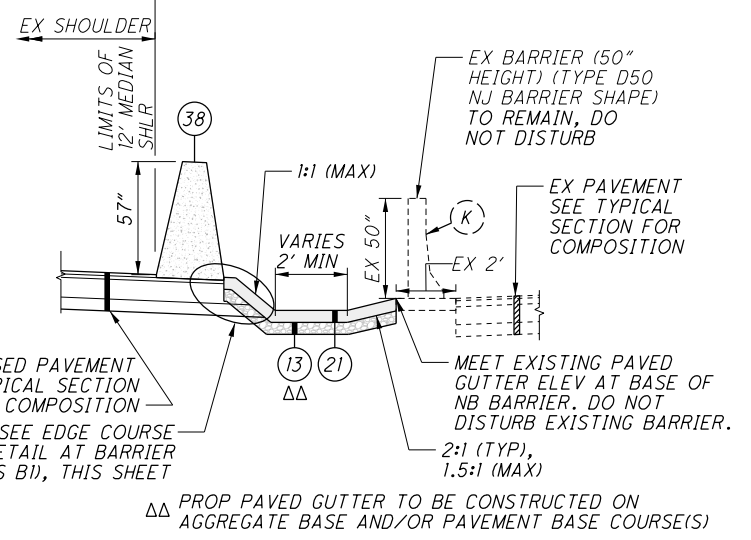
EDGE COURSE DETAIL AT SINGLE SLOPE BARRIER, TYPE D (SS D) FOR FIXED OBJECT PROTECTION SEE (B13) (B14) (B15) SHEET 195



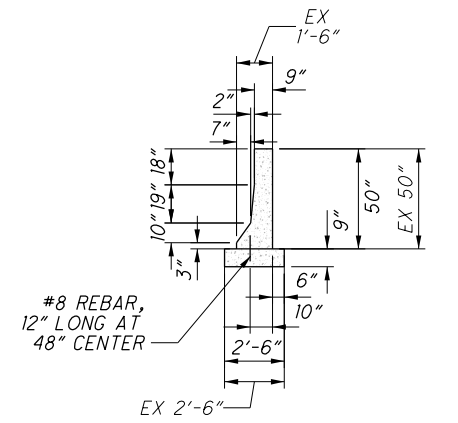
EDGE COURSE DETAIL AT SINGLE SLOPE BARRIER, TYPE B1 (SS B1)



EXISTING CONDITIONS MEDIAN BARRIER AND PAVED GUTTER DETAIL



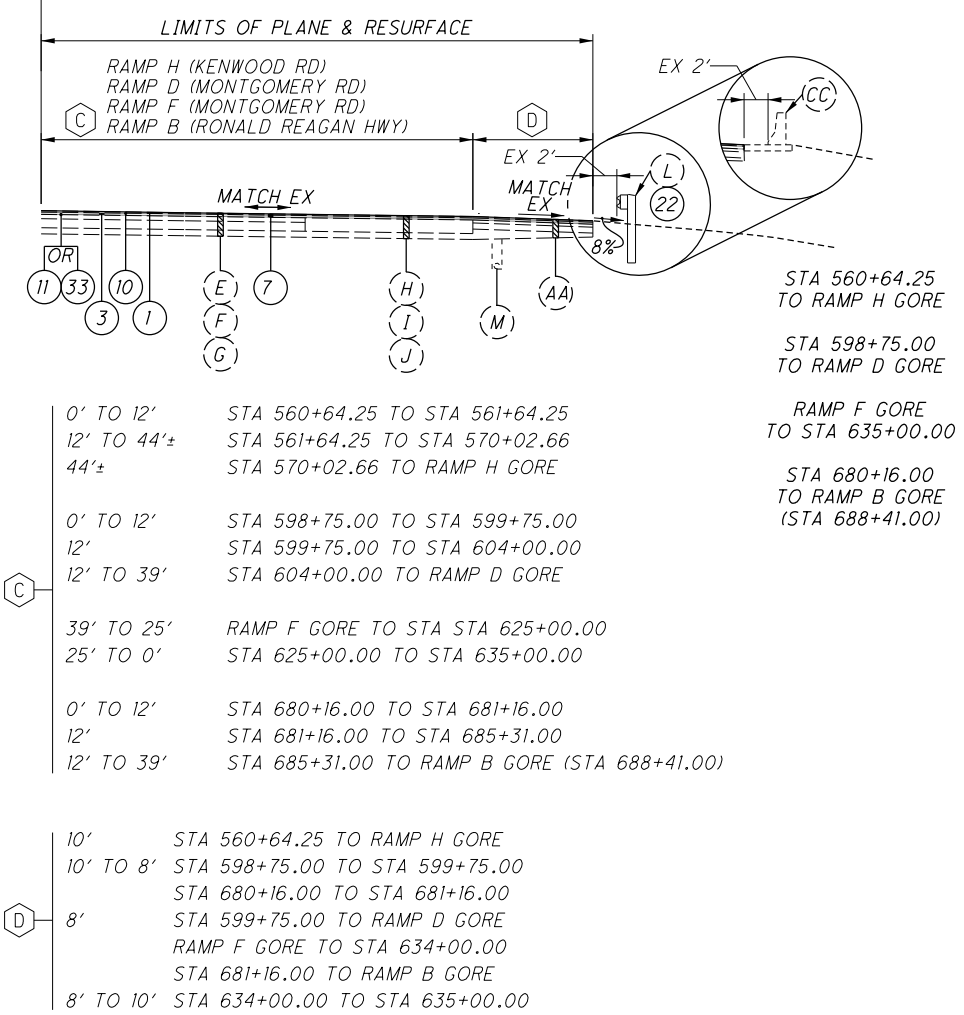
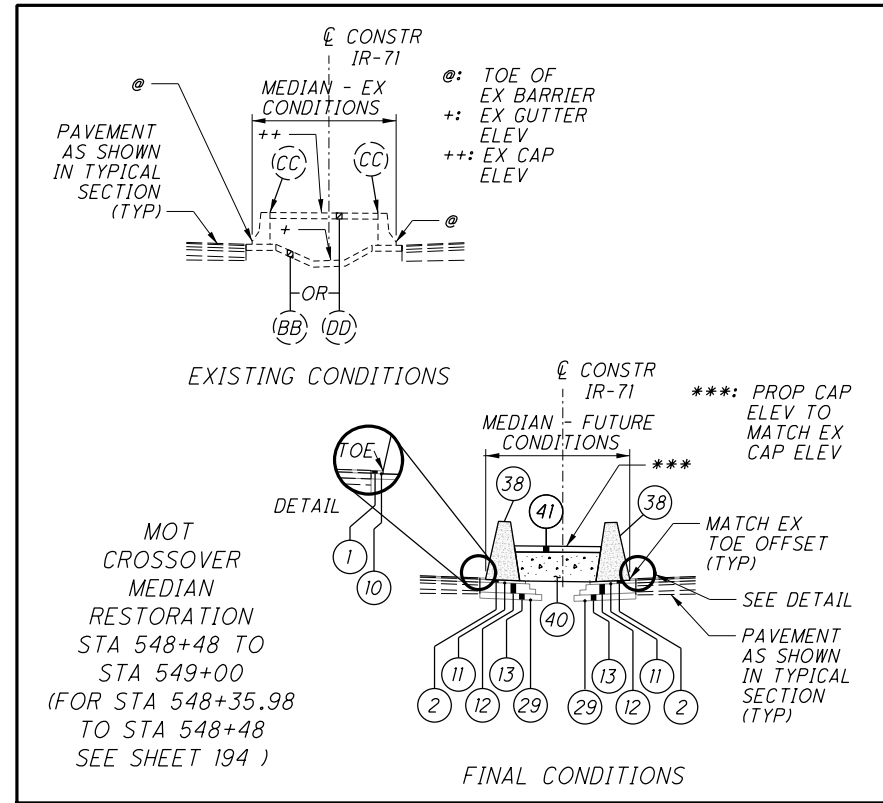
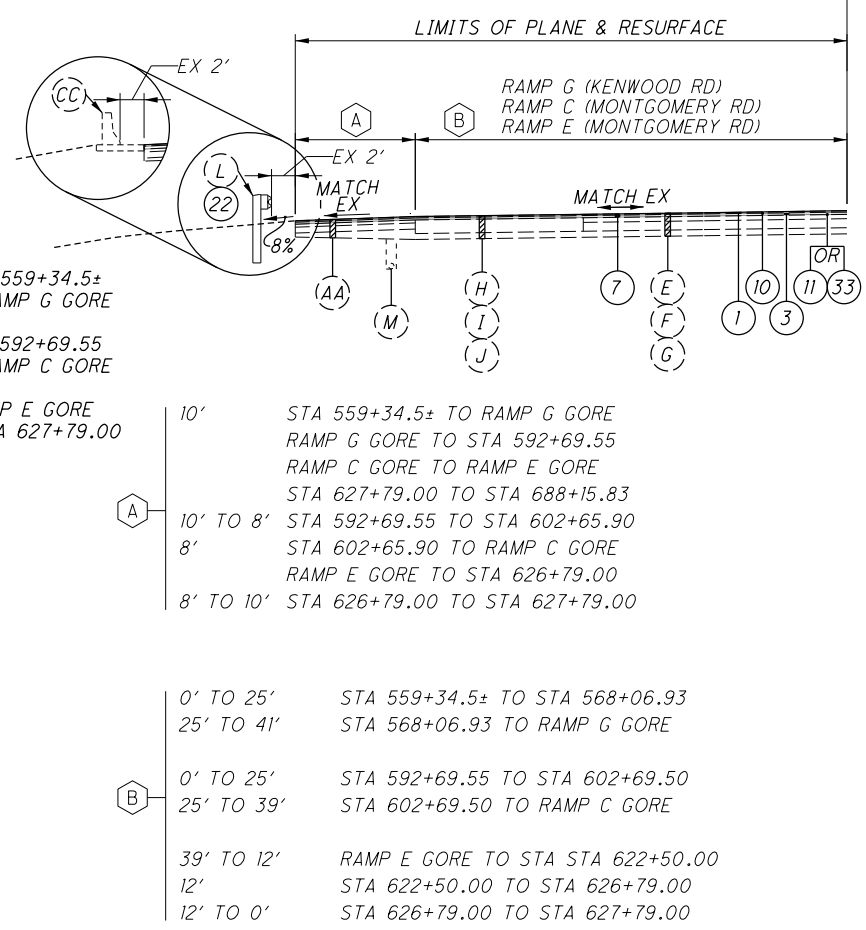
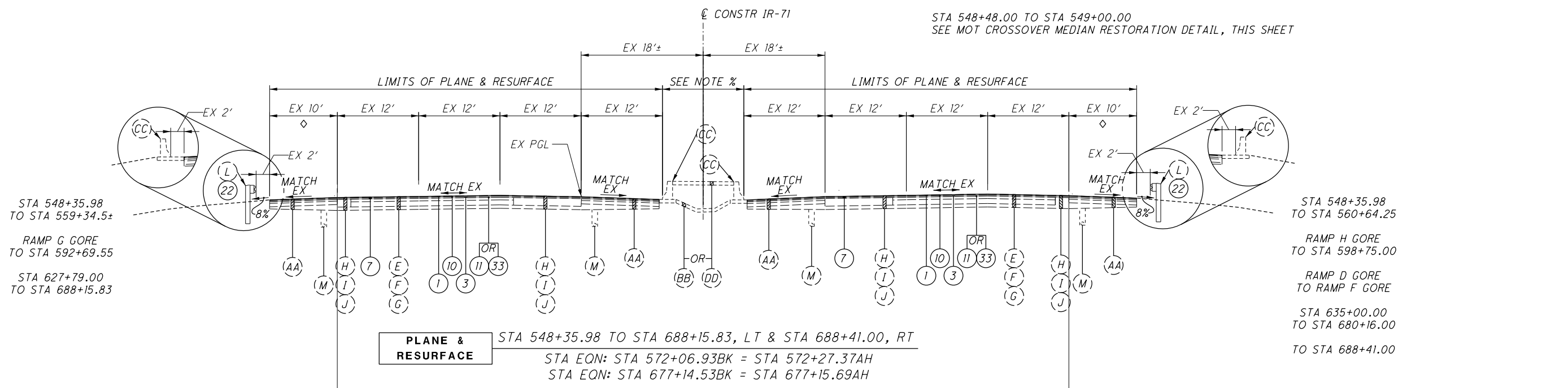
PROPOSED CONDITIONS MEDIAN BARRIER AND PAVED GUTTER DETAIL



DETAIL FOR ITEM 622 - BARRIER MISC.: NEW JERSEY SHAPE, TYPE D, 50" HEIGHT FOR ADDITIONAL DETAILS SEE PLAN INSERT SHEET 232

NOTE:
1. FOR LEGEND, SEE SHEET 8

NOTE %: STA 540+00.00 TO STA 548+48.00
SEE MOT CROSSOVER MEDIAN RESTORATION DETAIL, SHEET 10
STA 548+48.00 TO STA 549+00.00
SEE MOT CROSSOVER MEDIAN RESTORATION DETAIL, THIS SHEET



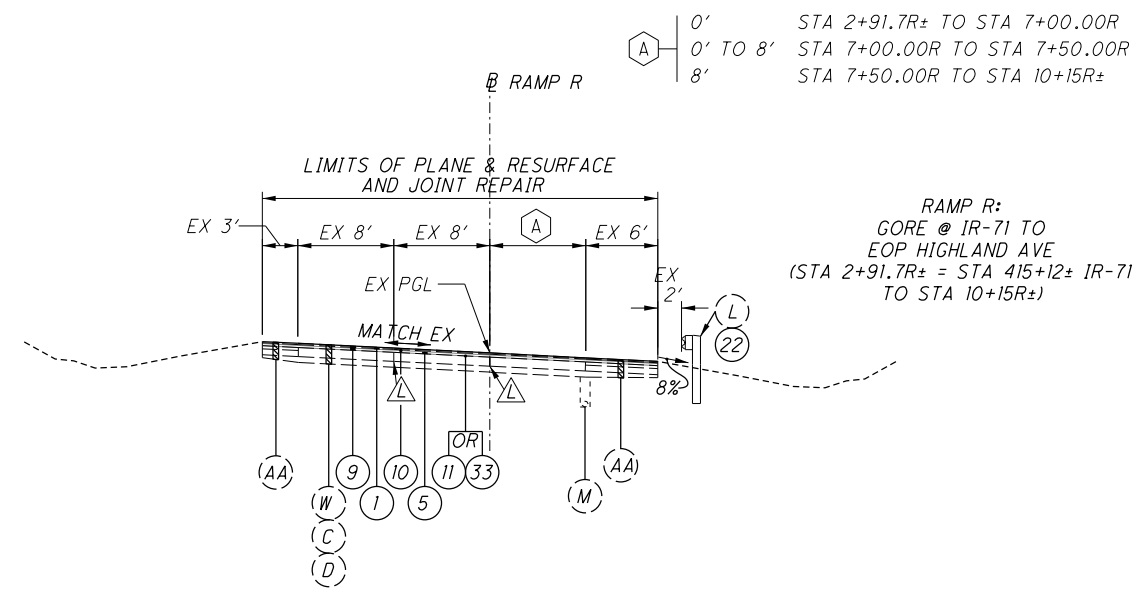
BRIDGE AND APPROACH SLAB LIMITS:
 (BRG9) HAM-71-1181 L/R (IR-71 OVER KENWOOD ROAD) STA 579+22.58 TO STA 581+86.54
 (BRG11) HAM-71-1277 L/R (IR-71 OVER GALBRAITH ROAD) STA 629+82.43 TO STA 631+80.97

FOR TYPICAL SECTIONS, SEE SHEETS 17 - 18

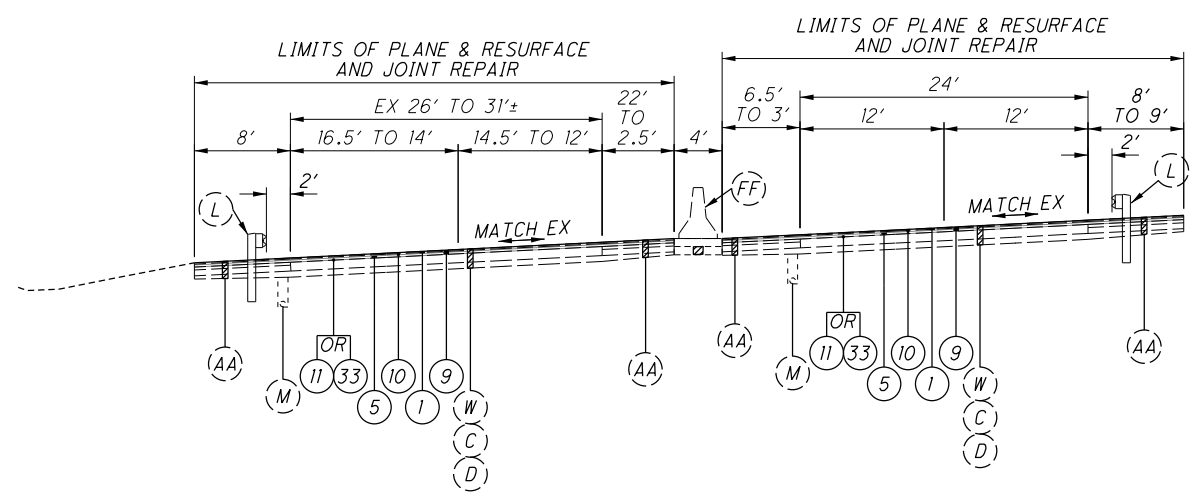
NOTE:
1. FOR LEGEND, SEE SHEET 8

TYPICAL SECTIONS - MAINLINE IR-71
HAM-IR71-8.42

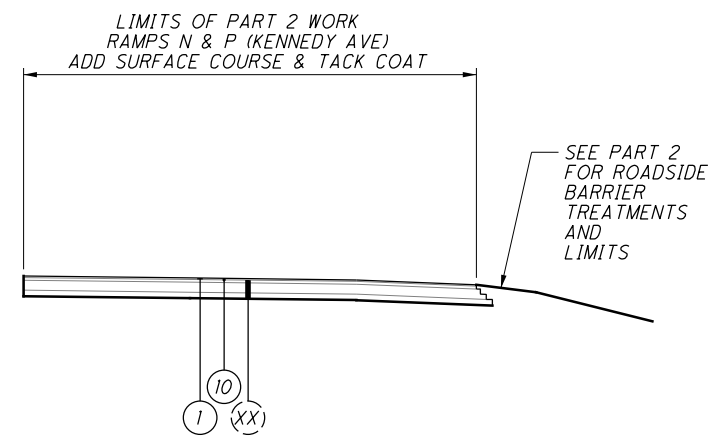
P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_G\106.dgn Sheet 10/26/2017 8:32:15 AM compton



RAMPS: PLANE & RESURFACE AND JOINT REPAIR (##)
 RAMP R (HIGHLAND AVE) RAMP R GORE TO EOP HIGHLAND AVE
 ## STATIONING BASED ON ORIGINAL CONSTRUCTION DRAWINGS



RED BANK EXPRESSWAY: PLANE & RESURFACE AND JOINT REPAIR

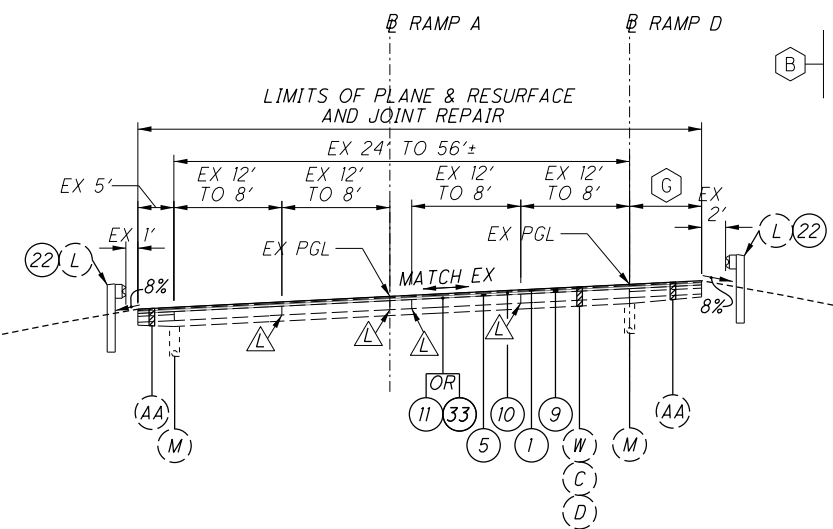


RAMPS: ADD SURFACE COURSE
 RAMP N (KENNEDY AVE) RAMP N GORE TO EOP KENNEDY AVE
 RAMP P (KENNEDY AVE) RAMP P GORE TO EOP KENNEDY AVE

NOTE:
 1. FOR LEGEND, SEE SHEET 8

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_G107.dgn Sheet 10/26/2017 8:32:17 AM comp ton

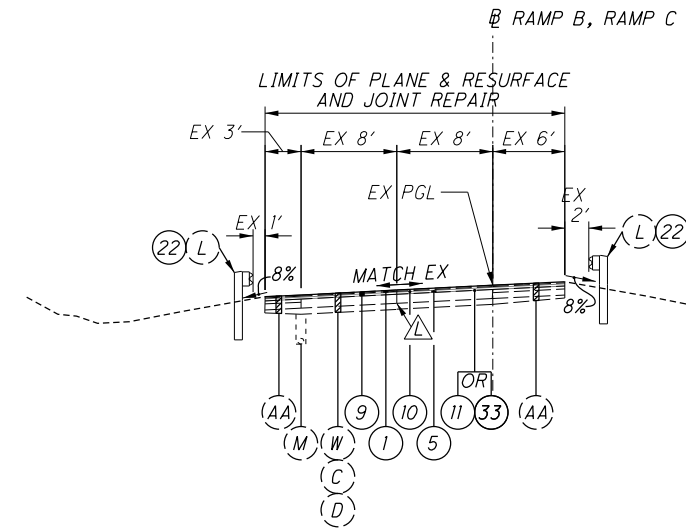
P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_GY108.dgn Sheet 10/26/2017 8:32:18 AM comp ton



8' TO 6' RAMP D (STA 0+00.00± TO STA 1+70.6D±)
 6' RAMP D (STA 1+70.6D± TO STA 4+55D±)

RAMP A:
 RED BANK EXPWY GORE
 TO RAMP A/RAMP D GORE
 (STA 0+00.00± TO STA 4+67.93A±)

RAMP D:
 RED BANK EXPWY GORE
 TO RAMP A/RAMP D GORE
 (STA 0+00.00± TO STA 4+55D±)



RAMP B:
 GORE @ IR-71 TO
 RAMP B/RAMP C GORE
 (STA 4+75B± = STA 470+20± IR-71
 TO STA 14+74.12B±)

RAMP C:
 GORE @ IR-71 TO
 RAMP B/RAMP C GORE
 (STA 3+30C± = STA 495+75± IR-71
 TO STA 26+81C±)

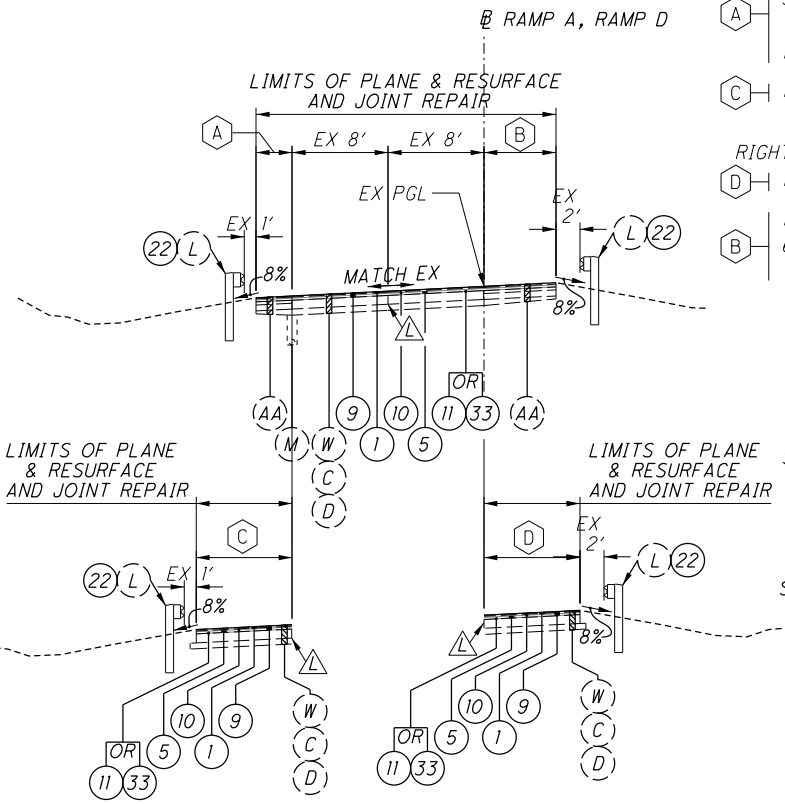
6' RAMP B (STA 14+74.12B± TO STA 15+72B±)
 6' TO 8' RAMP B (STA 15+72B± TO STA 16+74.12B±)

13' @ RAMP B/RAMP C GORE (W=3'+4' NOSE+6'=13')
 13' TO 2' RAMP B/RAMP C GORE TO RED BANK EXPWY GORE
 (STA 14+74.12B TO STA 16+74.12B±)
 (STA 26+81C TO STA 28+99.17C±)

3' RAMP C (STA 26+81C± TO STA 26+99C±)
 3' TO 8' RAMP C (STA 26+99C± TO STA 28+99.17C±)

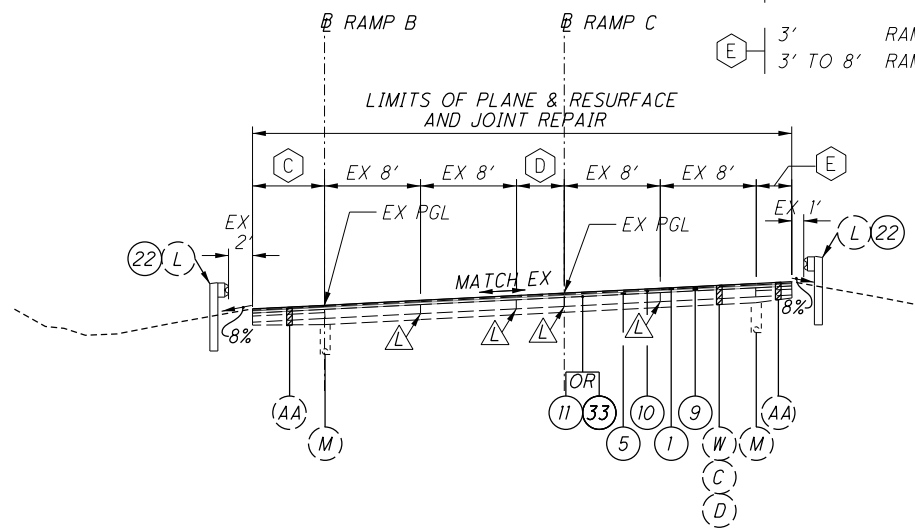
LEFT SHOULDER:
 5' TO 3' RAMP A (STA 4+67.93A± TO STA 5+29.08A±)
 3' RAMP A (STA 5+29.08A± TO STA STA 17+80A±)
 RAMP D (STA 7+26.5D± TO STA STA 13+90D±)
 10' TO 3' RAMP D (STA 5+26.5D± TO STA 7+26.5D±)

RIGHT SHOULDER:
 10' RAMP A (STA 4+67.93A± TO STA 5+29.08A±)
 10' TO 6' RAMP A (STA 5+29.08A± TO STA 6+43.4A±)
 RAMP A (STA 6+43.4A± TO STA STA 17+80A±)
 RAMP D (STA 4+55D± TO STA 13+90D±)



RAMP A:
 RAMP A/RAMP D GORE
 TO GORE @ IR-71
 (STA 4+67.93A± TO
 STA 17+80A± = STA 471+70± IR-71)

RAMP D:
 RAMP A/RAMP D GORE
 TO GORE @ IR-71
 (STA 4+55D± TO
 STA 13+90D± = STA 486+30± IR-71)



RAMP B:
 RAMP B/RAMP C GORE TO
 RED BANK EXPWY GORE
 (STA 14+74.12B± TO STA 16+74.12BB±)

RAMP C:
 RAMP B/RAMP C GORE TO
 RED BANK EXPWY GORE
 (STA 26+81C TO STA 28+99.17C±)

RAMPS: PLANE & RESURFACE AND JOINT REPAIR (##)

RAMP A (RED BANK EXPRESSWAY)	RED BANK EXPWY GORE (STA 0+00.00A)	TO	RAMP A GORE @ IR-71 (STA 17+80A± = STA 471+70± IR-71)
RAMP B (RED BANK EXPRESSWAY)	RAMP B GORE @ IR-71 (STA 4+75B± = STA 470+20± IR-71)	TO	RED BANK EXPWY GORE (STA 16+74.12B)
RAMP C (RED BANK EXPRESSWAY)	RAMP C GORE @ IR-71 (STA 3+30C± = STA 495+75± IR-71)	TO	RED BANK EXPWY GORE (STA 28+99.17C)
RAMP D (RED BANK EXPRESSWAY)	RED BANK EXPWY GORE (STA 0+00.00D)	TO	RAMP D GORE @ IR-71 (STA 13+90D± = STA 486+30± IR-71)

STATIONING BASED ON ORIGINAL CONSTRUCTION DRAWINGS

RAMP BRIDGE AND APPROACH SLAB LIMITS: (##)

BRG5 RAMP C (RED BANK EXPRESSWAY)	HAM-71-0991 (RAMP C OVER IR-71)	STA 16+38.36 TO STA 21+77.31
BRG6 RAMP A (RED BANK EXPRESSWAY)	HAM-71-0992 (RAMP A OVER IR-71)	STA 8+01.13 TO STA 11+27.76

FOR TYPICAL SECTIONS, SEE SHEETS 17 - 18

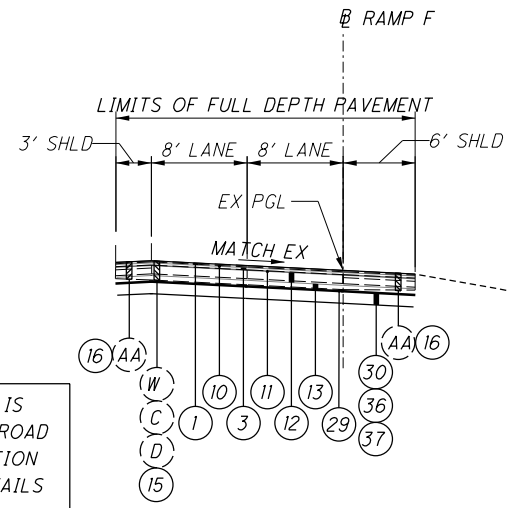
STATIONING BASED ON ORIGINAL CONSTRUCTION DRAWINGS

NOTE:
 1. FOR LEGEND, SEE SHEET 8

TYPICAL SECTIONS - RAMPS AT RED BANK EXPWY

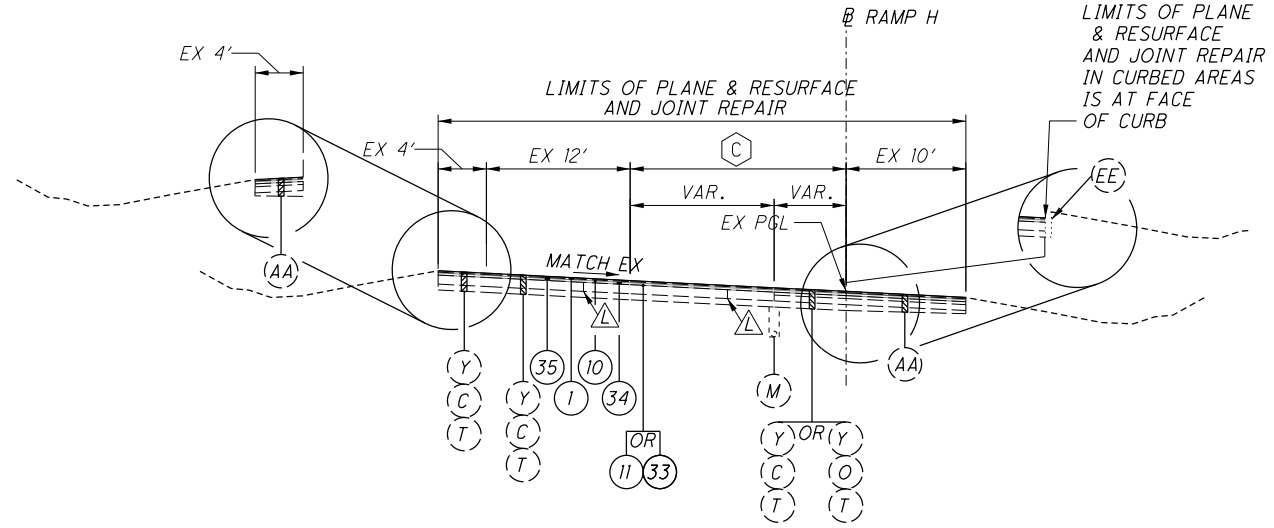
HAM-IR71-8.42

RAMP H:
 12' STA 8+73H± TO STA 7+25H±
 0' TO 12' STA 7+25H± TO STA 8+25H±
 12' STA 8+25H± TO STA 11+75H±

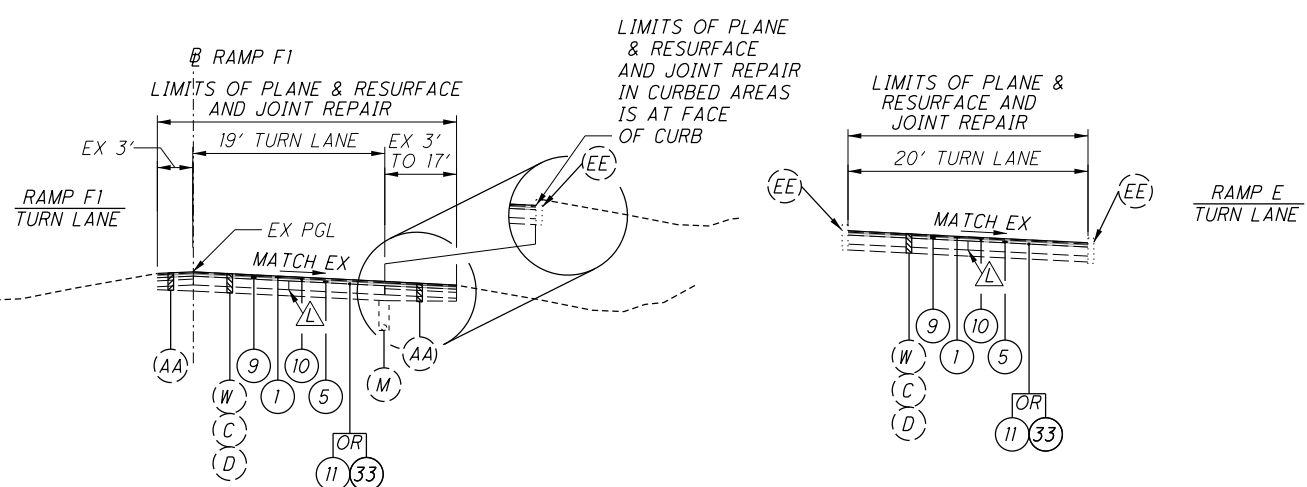
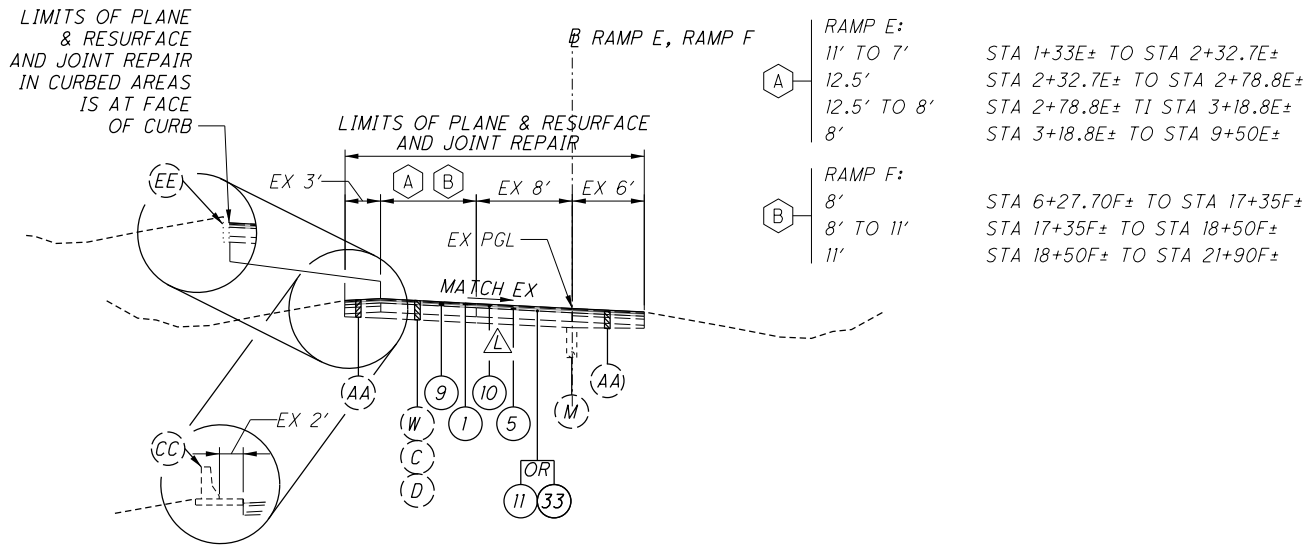


NOTE - THIS FULL DEPTH SECTION IS FOR THE LIMITS OF THE STEWART ROAD BRIDGE APPROACH SLAB INSTALLATION TYPE A. SEE SCD AS-2-15 FOR DETAILS AND PAVEMENT REQUIREMENTS.

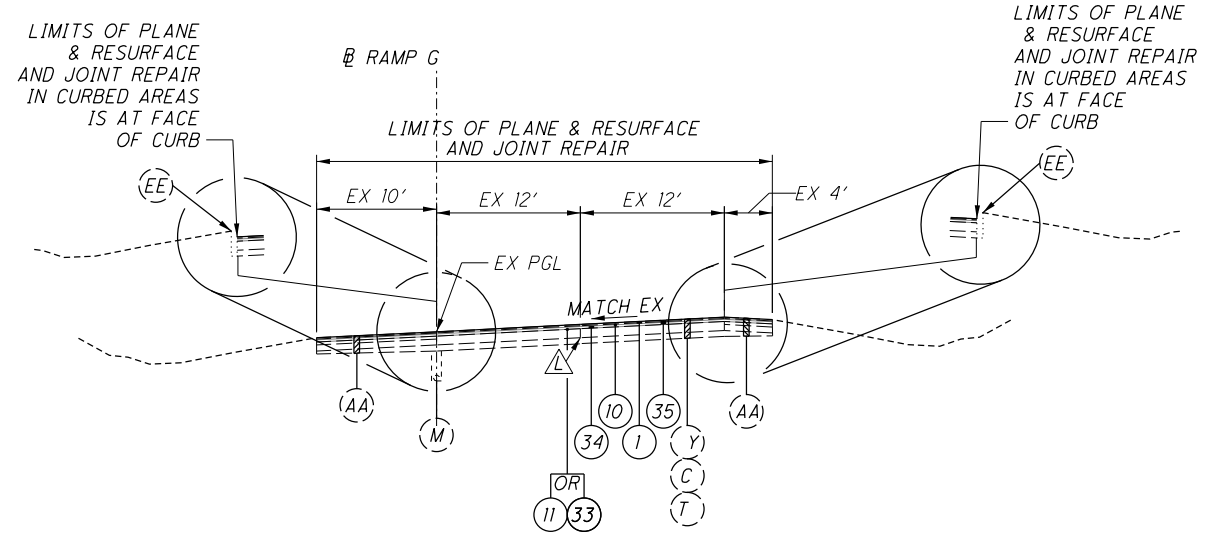
RAMPS: FULL DEPTH PAVEMENT
 RAMP F (STEWART ROAD) STA 6+04.16± TO STA 6+27.70F±



RAMPS: PLANE & RESURFACE AND JOINT REPAIR (##)
 RAMP H (KENWOOD ROAD) RAMP H GORE @ IR-71 TO EOP KENWOOD RD (* STA 11+75H±)
 (* STA 8+73H± = STA 570+63± IR-71)
 (* STA EQN: STA 11+75.41H BK = STA 6+53.37 AH)
 ## STATIONING BASED ON ORIGINAL CONSTRUCTION DRAWINGS



RAMPS: PLANE & RESURFACE AND JOINT REPAIR (##)
 RAMP E (STEWART ROAD) RAMP E GORE @ IR-71 TO EOP STEWART RD (STA 1+33E±)
 (STA 9+50E± = STA 516+00± IR-71)
 RAMP F (STEWART ROAD) RAMP F GORE @ IR-71 TO EOP STEWART RD (STA 21+90F± & STA 2+75F1±)
 (STA 6+27.70F± & STA 520+40± IR-71)
 ## STATIONING BASED ON ORIGINAL CONSTRUCTION DRAWINGS

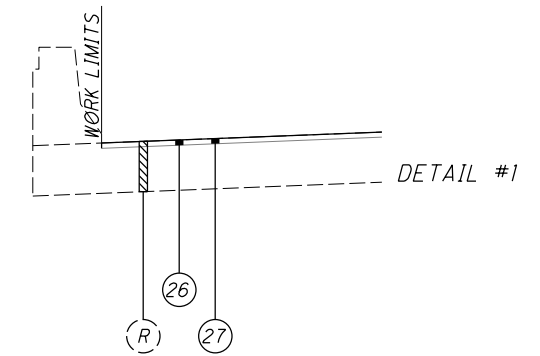
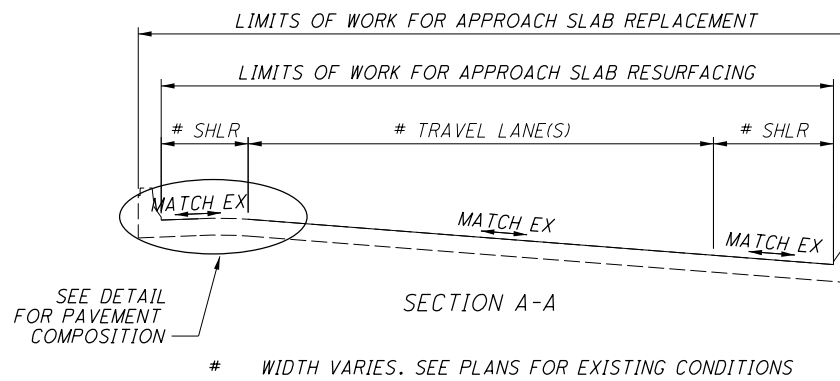
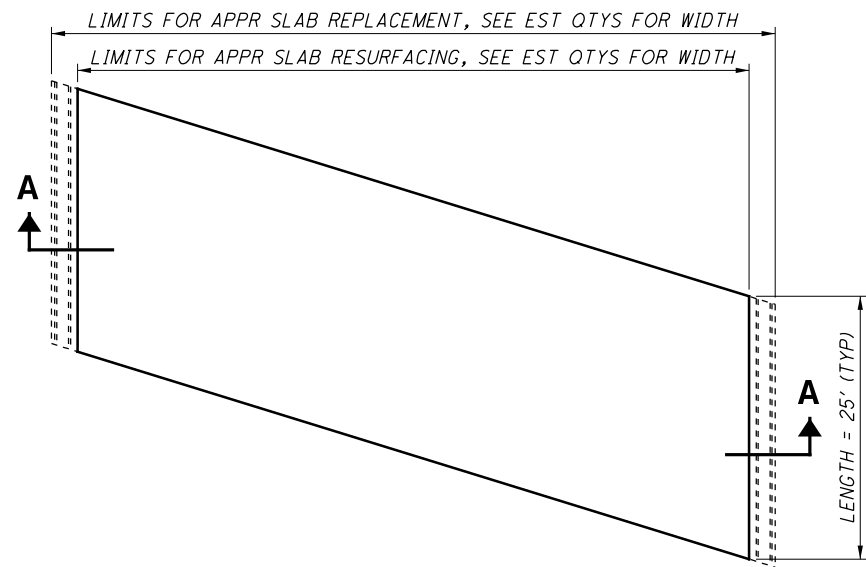


RAMPS: PLANE & RESURFACE AND JOINT REPAIR (##)
 RAMP G (KENWOOD ROAD) RAMP G GORE @ IR-71 TO EOP KENWOOD RD (STA 0+22G±)
 (STA 10+87G± = STA 570+87± IR-71)
 ## STATIONING BASED ON ORIGINAL CONSTRUCTION DRAWINGS

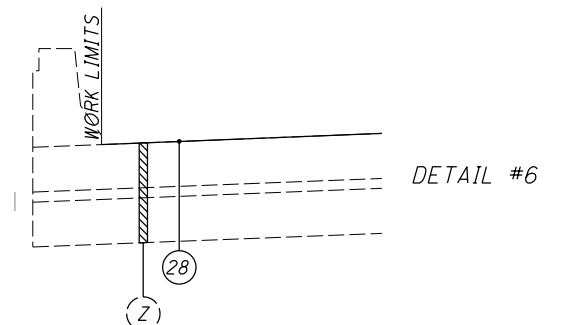
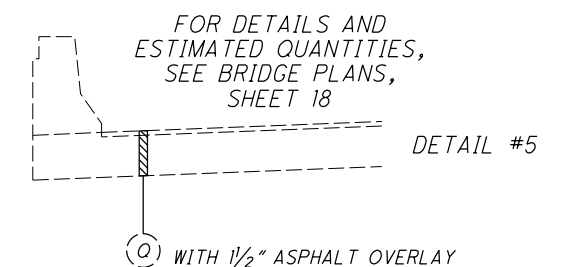
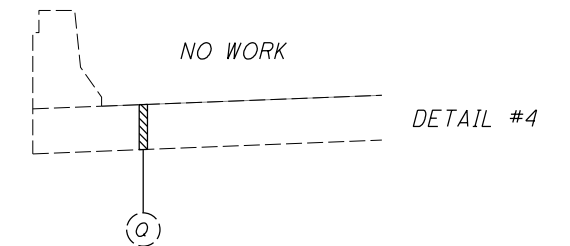
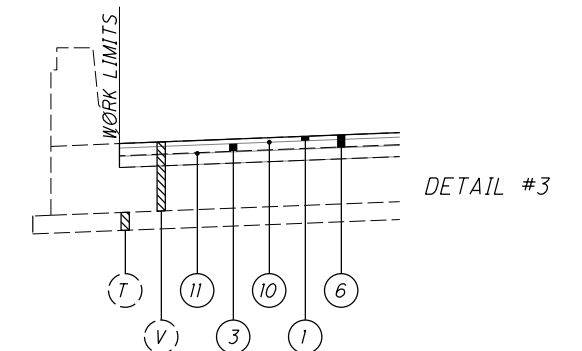
RAMPS: NO WORK
 RAMP C (MONTGOMERY ROAD)
 RAMP D (MONTGOMERY ROAD)
 RAMP E (MONTGOMERY ROAD)
 RAMP F (MONTGOMERY ROAD)
 RAMP B (RONALD REAGAN HIGHWAY)

NOTE:
 1. FOR LEGEND, SEE SHEET 8

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_GY09.dgn Sheet 10/26/2017 8:32:20 AM compton



BRG7 SEE SHEET 18 DETAIL #2



NOTE:
1. FOR LEGEND, SEE SHEET 8

MAINLINE BRIDGES:

BRG4	HAM-71-0970 L/R (IR-71 OVER RED BANK ROAD): STA 467+62.27 TO STA 467+87.27 APPROACH SLAB (NB & SB LANES IR-71) STA 469+50.23 TO STA 469+75.23 APPROACH SLAB (NB & SB LANES IR-71)	WORK:	REMOVE 1 3/4" OF ORIGINAL CONCRETE AND REPLACE WITH 1 3/4" OF SCD OVERLAY	SEE DETAIL #1
BRG7	HAM-71-1068 L/R (IR-71 OVER STEWART ROAD): STA 519+74.05 RT TO STA 519+99.05 RT APPROACH SLAB (NB LANES IR-71) STA 519+92.08 LT TO STA 520+17.08 LT APPROACH SLAB (SB LANES IR-71) STA 522+80.47 LT TO STA 523+05.47 LT APPROACH SLAB (SB LANES IR-71) STA 522+87.46 RT TO STA 523+12.46 RT APPROACH SLAB (NB LANES IR-71)	WORK:	REMOVE EXISTING APPROACH SLAB AND REPLACE	SEE DETAIL #2
BRG9	HAM-71-1181 L/R (IR-71 OVER KENWOOD ROAD): STA 579+22.58 TO STA 581+61.58 APPROACH SLAB (NB & SB LANES IR-71) STA 581+61.54 TO STA 581+86.54 APPROACH SLAB (NB & SB LANES IR-71)	WORK:	REMOVE 3 1/4" OF ORIGINAL ASPHALT OVERLAY AND REPLACE WITH NEW OVERLAY	SEE DETAIL #3
BRG11	HAM-71-1277 L/R (IR-71 OVER GALBRAITH ROAD): STA 629+82.43 TO STA 630+07.43 APPROACH SLAB (NB & SB LANES IR-71) STA 631+55.97 TO STA 631+80.97 APPROACH SLAB (NB & SB LANES IR-71)	WORK:	REMOVE 3 1/4" OF ORIGINAL ASPHALT OVERLAY AND REPLACE WITH NEW OVERLAY	SEE DETAIL #3

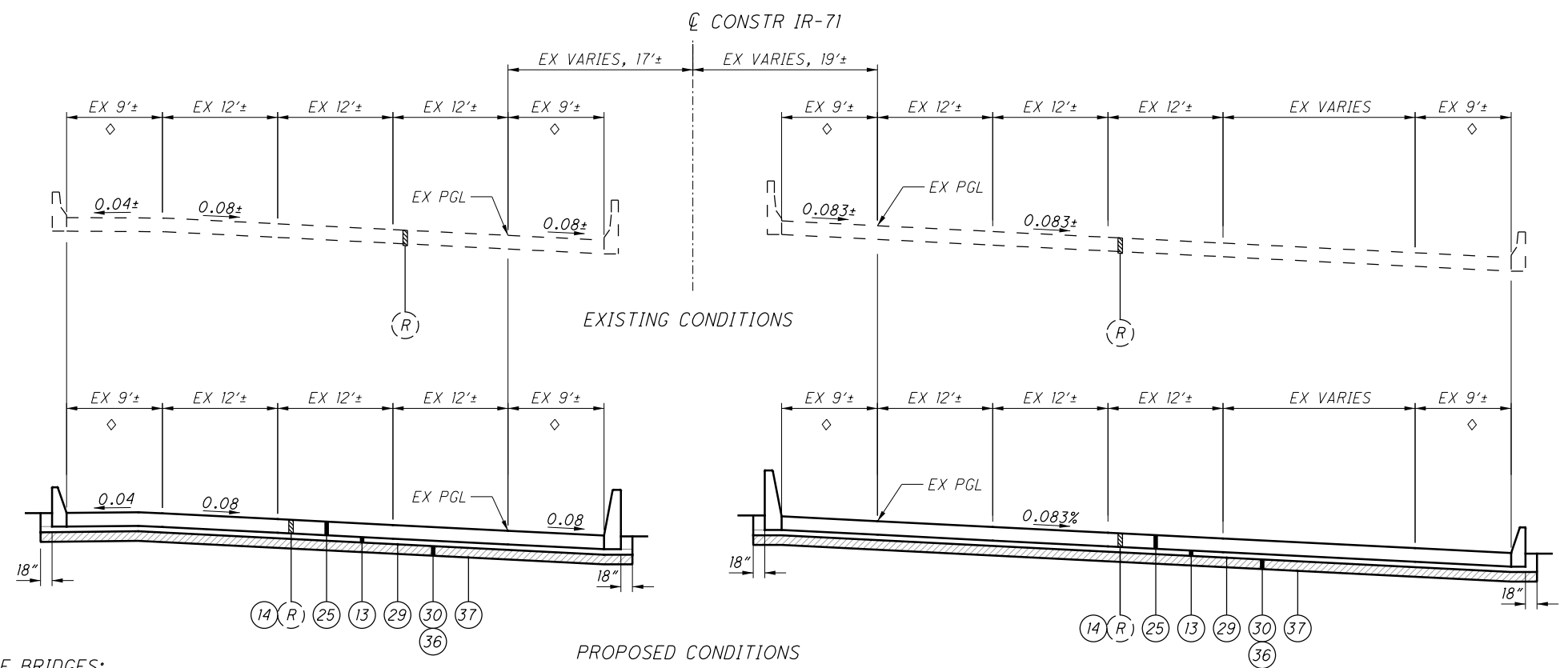
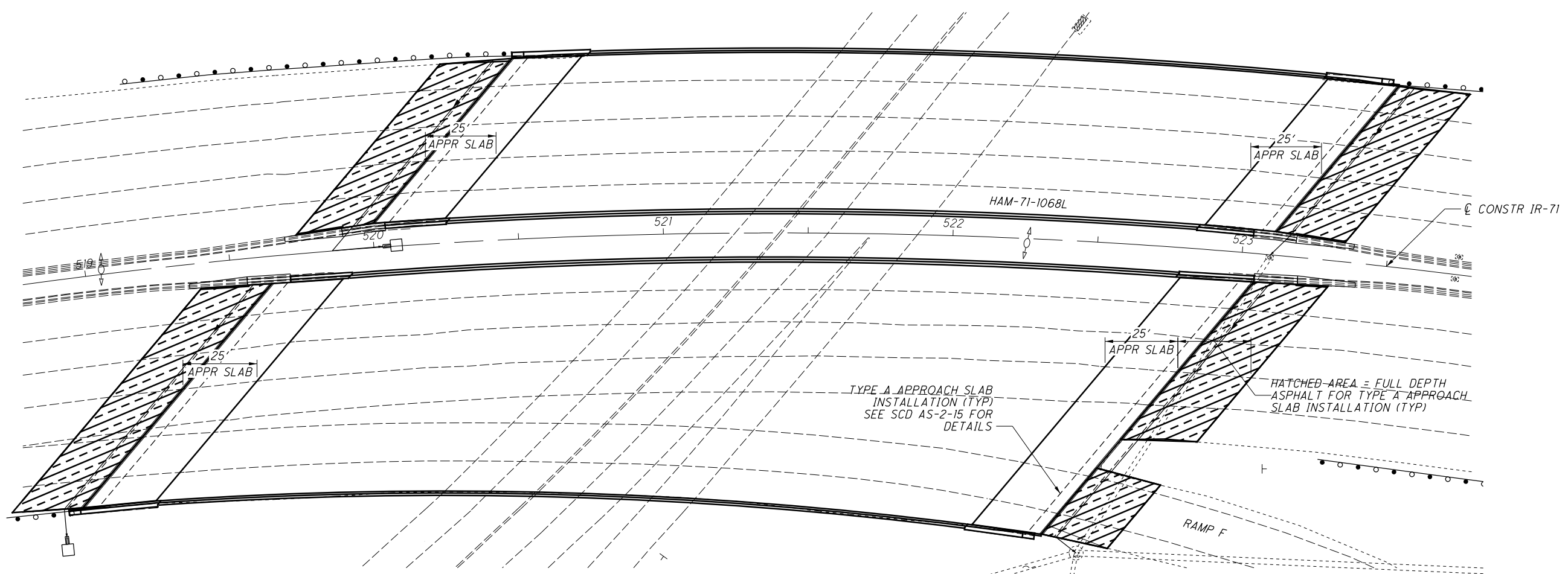
RAMP BRIDGES (OVERHEAD):

BRG5	HAM-71-0991 (RAMP C - RED BANK EXPRESSWAY OVER IR-71): STA 16+38.36C TO STA 16+63.36C APPROACH SLAB STA 21+52.31C TO STA 21+77.31C APPROACH SLAB	WORK:	REMOVE 1 3/4" OF ORIGINAL CONCRETE AND REPLACE WITH 1 3/4" OF SCD OVERLAY	SEE DETAIL #1
BRG6	HAM-71-0992 (RAMP A - RED BANK EXPRESSWAY OVER IR-71): STA 8+01.13A TO STA 8+16.13A APPROACH SLAB STA 11+02.76A TO STA 11+27.76A APPROACH SLAB	WORK:	REMOVE 1 3/4" OF ORIGINAL CONCRETE AND REPLACE WITH 1 3/4" OF SCD OVERLAY	SEE DETAIL #1

CROSSROAD BRIDGES (OVERHEAD):

BRG1	HAM-71-0842 (RAILROAD OVER IR-71):	WORK:	NO APPROACH SLAB WORK	SEE DETAIL #4
BRG2	HAM-71-0851 (RIDGE ROAD OVER IR-71):	WORK:	NO APPROACH SLAB WORK	SEE DETAIL #4
BRG3	HAM-71-0875 (KENNEDY AVENUE OVER IR-71): STA 19+11.09 TO STA 19+36.09 APPROACH SLAB STA 22+85.89 TO STA 23+10.89 APPROACH SLAB	WORK:	REPAIR EXISTING APPROACH SLAB	SEE DETAIL #5
BRG8	HAM-71-1149 (EUCLID ROAD OVER IR-71): STA 48+50.71 TO STA 48+75.71 APPROACH SLAB STA 51+68.64 TO STA 51+93.64 APPROACH SLAB	WORK:	SEAL WEARING SURFACE WITH HMWM RESIN	SEE DETAIL #6
BRG10	HAM-22-1141 (MONTGOMERY ROAD OVER IR-71):	WORK:	NO APPROACH SLAB WORK	SEE DETAIL #4
BRG12	HAM-71-1303 (KUGLER MILL ROAD OVER IR-71):	WORK:	NO APPROACH SLAB WORK	SEE DETAIL #4

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_G\Ill.dgn Sheet 10/26/2017 8:32:25 AM compton



NOTE - THIS APPROACH SLAB SECTION IS FOR THE LIMITS OF THE STEWART ROAD BRIDGE APPROACH SLAB INSTALLATION TYPE A. SEE SCD AS-2-15 FOR DETAILS AND PAVEMENT REQUIREMENTS.

MAINLINE BRIDGES:

BRG7

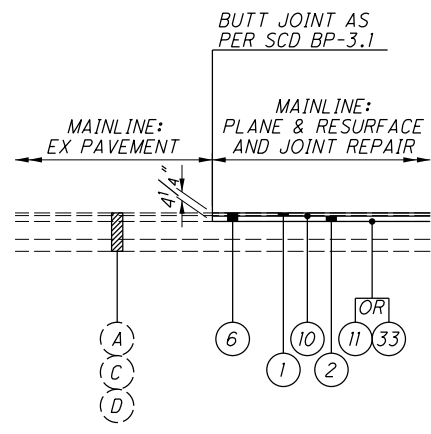
HAM-71-1068 L/R (IR-71 OVER STEWART ROAD):

- STA 519+74.05 RT TO STA 519+99.05 RT APPROACH SLAB (NB LANES IR-71)
- STA 519+92.08 LT TO STA 520+17.08 LT APPROACH SLAB (SB LANES IR-71)
- STA 522+80.47 LT TO STA 523+05.47 LT APPROACH SLAB (SB LANES IR-71)
- STA 522+87.46 RT TO STA 523+12.46 RT APPROACH SLAB (NB LANES IR-71)

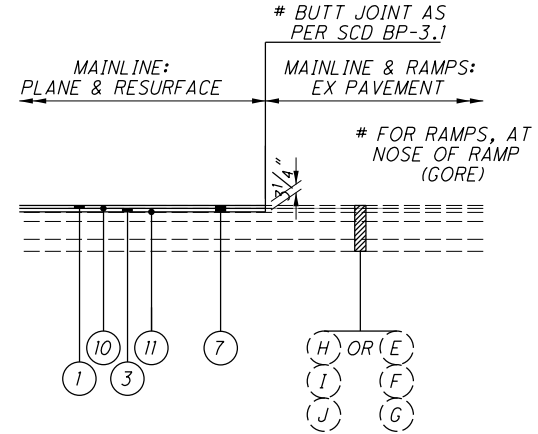
WORK: REMOVE EXISITNG APPROACH SLAB AND REPLACE

NOTES:

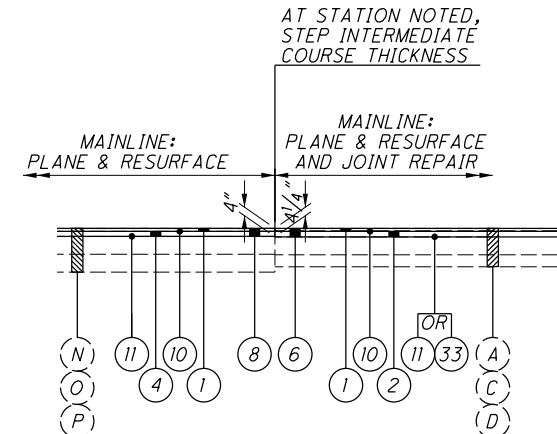
1. FOR LEGEND, SEE SHEET 8
2. FOR ADDITIONAL DETAILS, SEE SHEETS 417 - 420.



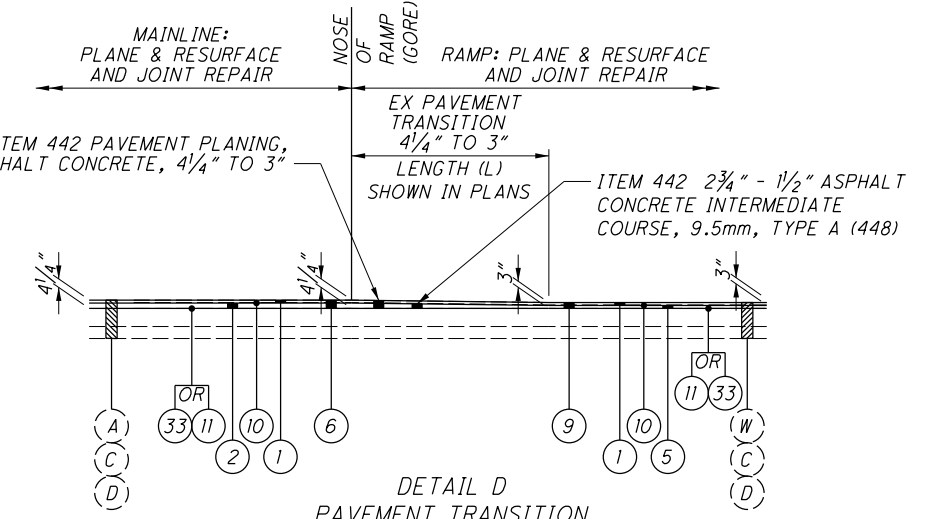
DETAIL A
PAVEMENT TRANSITION
AT BEGIN WORK - MAINLINE
STA 398+96.35 SB
STA 391+01.73 NB



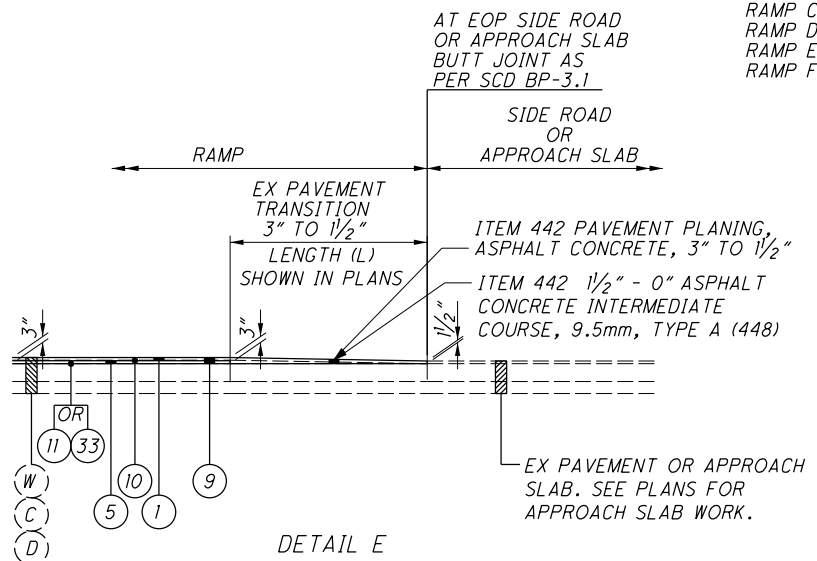
DETAIL B
PAVEMENT TRANSITION
AT END WORK - MAINLINE
& AT NOSE OF RAMP (MONTGOMERY RD)
STA 688+15.83, LT
STA 688+41.00, RT
RAMP C (MONTGOMERY ROAD)
RAMP D (MONTGOMERY ROAD)
RAMP E (MONTGOMERY ROAD)
RAMP F (MONTGOMERY ROAD)



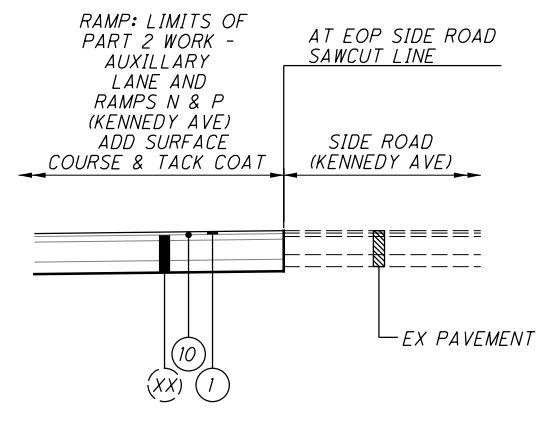
DETAIL C
PAVEMENT TRANSITION
AT FULL DEPTH ASPHALT SECTIONS
AT MAINLINE BRIDGE APPROACH SLABS
STA 466+24.77, LT & RT
STA 518+36.55, RT
STA 524+42.97, LT
STA 471+12.73, LT & RT
STA 518+54.58, LT
STA 524+49.96, RT



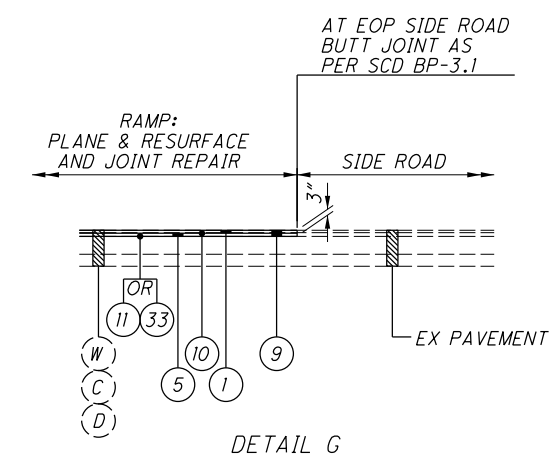
DETAIL D
PAVEMENT TRANSITION
AT NOSE OF RAMP
RAMP R (HIGHLAND AVE)
RAMP C (RED BANK EXPRESSWAY)
RAMP D (RED BANK EXPRESSWAY)



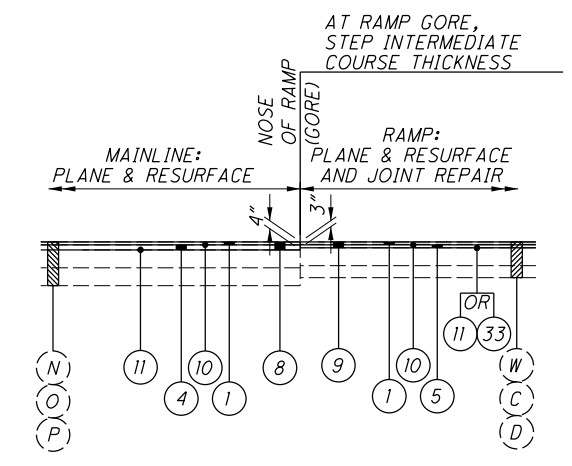
DETAIL E
PAVEMENT TRANSITION
AT RAMP CONNECTION TO SIDE ROADS
AND APPROACH SLABS
RAMP R (HIGHLAND AVE)
RAMP A APPROACH SLAB (RED BANK EXPRESSWAY)
RAMP C APPROACH SLAB (RED BANK EXPRESSWAY)
RAMP F (STEWART RD)



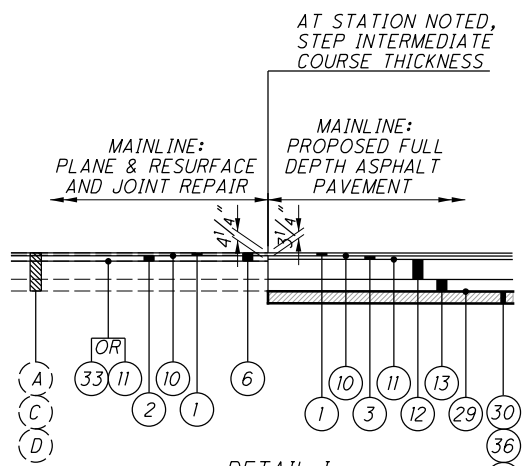
DETAIL F
PAVEMENT TRANSITION
AT RAMP CONNECTION TO KENNEDY AVE
RAMP N (PART 2)
RAMP P (PART 2)



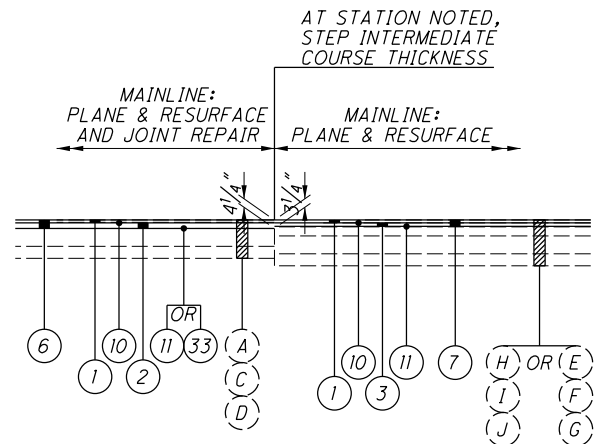
DETAIL G
PAVEMENT TRANSITION
AT RAMP CONNECTION TO SIDE ROADS
RAMP A (RED BANK EXPRESSWAY)
RAMP C (RED BANK EXPRESSWAY)
RAMP E (STEWART RD)
RAMP B (RED BANK EXPRESSWAY)
RAMP D (RED BANK EXPRESSWAY)
RAMP F (STEWART RD)



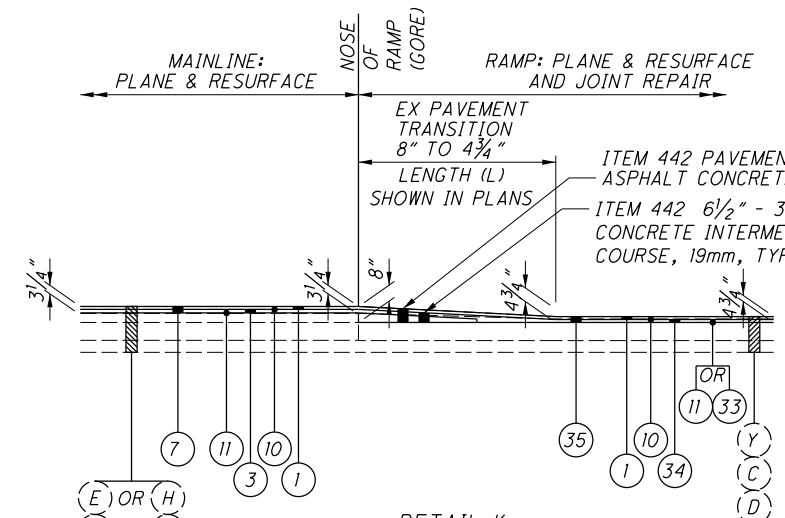
DETAIL H
PAVEMENT TRANSITION
AT FULL DEPTH ASPHALT SECTIONS
AT MAINLINE BRIDGE APPROACH SLABS
RAMP A GORE (RED BANK EXPRESSWAY)
RAMP B GORE (RED BANK EXPRESSWAY)
AT EOP SIDE ROAD BUTT JOINT AS PER SCD BP-3.1



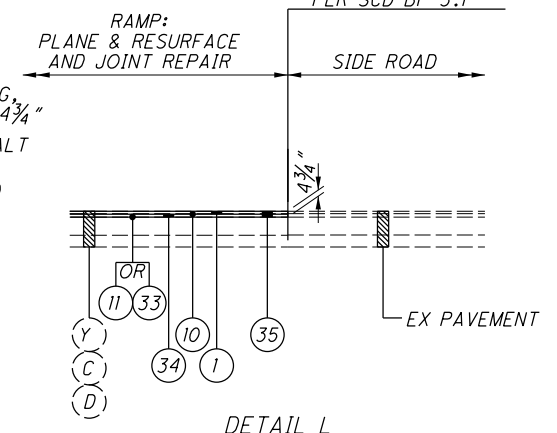
DETAIL I
PAVEMENT TRANSITION
AT LOWERED PROFILE LIMITS - MAINLINE
STA 474+10.00, LT (SB IR-71 LANES)
STA 486+35.00, LT (SB IR-71 LANES)



DETAIL J
PAVEMENT TRANSITION
AT END JOINT REPAIR LIMITS - MAINLINE
STA 548+35.98



DETAIL K
PAVEMENT TRANSITION
AT NOSE OF RAMP
RAMP G (KENWOOD RD)
RAMP H (KENWOOD RD)

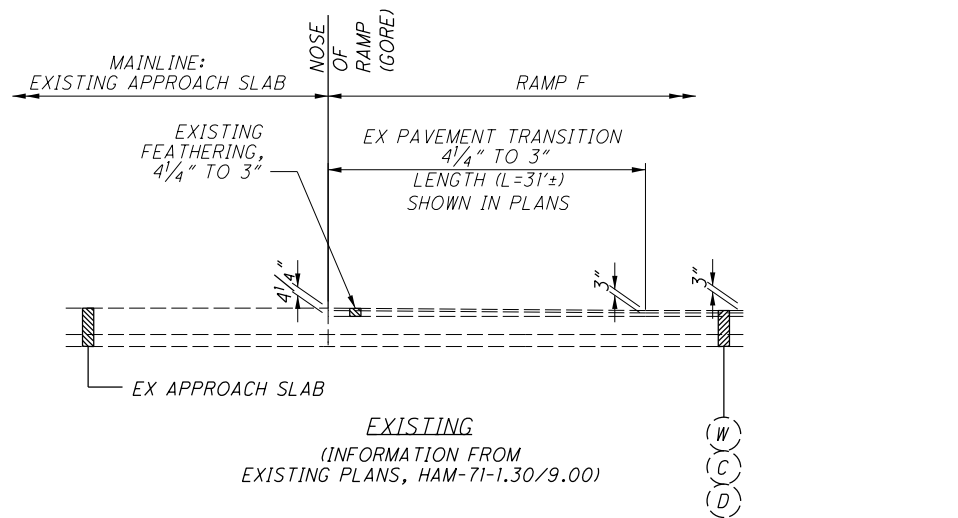


DETAIL L
PAVEMENT TRANSITION
AT RAMP CONNECTION TO SIDE ROADS
RAMP G (KENWOOD RD)
RAMP H (KENWOOD RD)

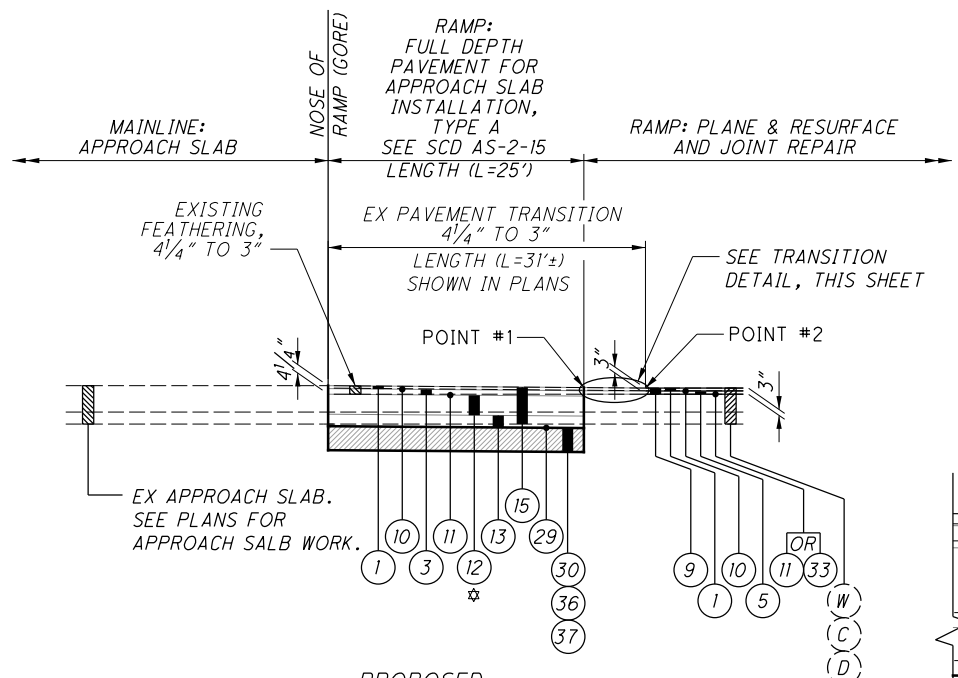
NOTE:
1. FOR LEGEND, SEE SHEET 8

P:\PR54704\HAM\91826_Design\Roadway\Sheets\91826_G\112.dgn_Sheet 10/26/2017 8:32:27 AM compton

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_GY13.dgn Sheet 10/26/2017 8:32:29 AM comp ton

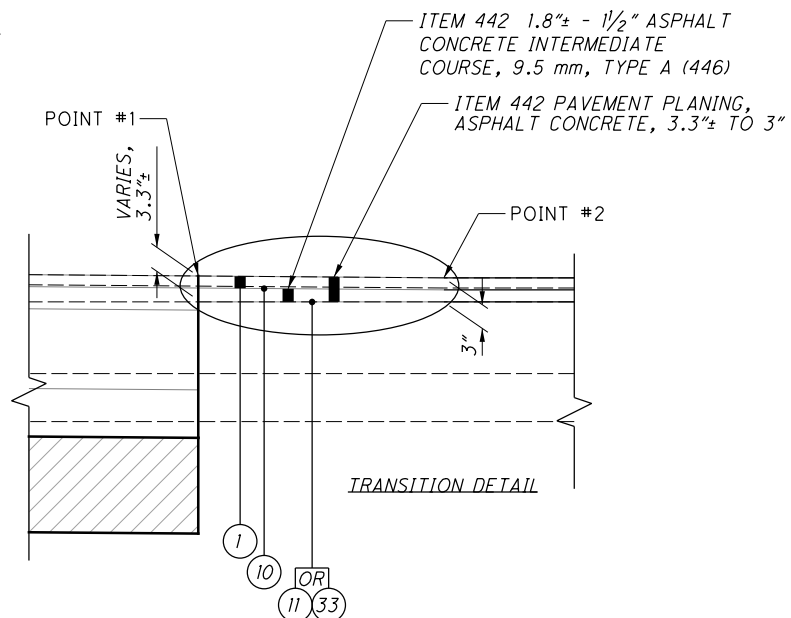


EXISTING
(INFORMATION FROM
EXISTING PLANS, HAM-71-1.30/9.00)



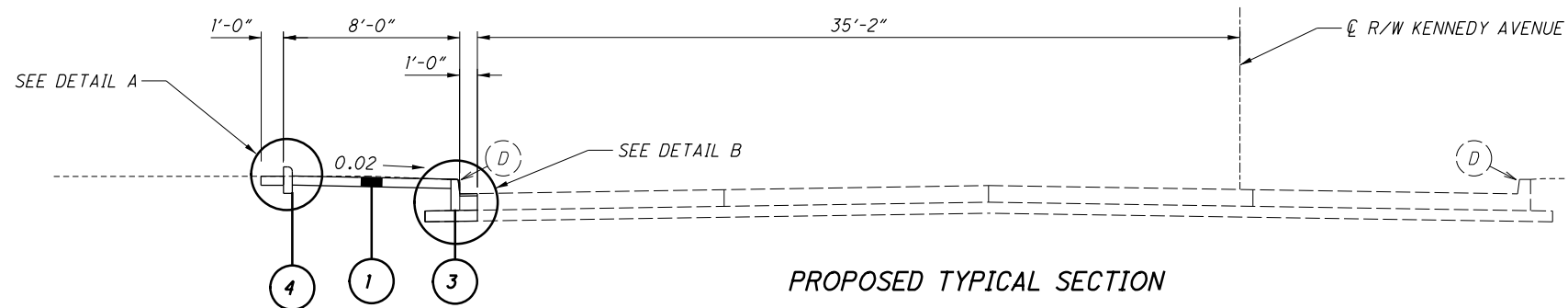
PROPOSED
DETAIL M
PAVEMENT TRANSITION
AT NOSE OF RAMP F (STEWART RD)
RAMP F (STEWART RD)

* ITEM 302 THICKNESS VARIES FOR BRIDGE
 APPROACH SLAB INSTALLATION, TYPE A.
 SEE SCD AS-2-15 FOR DETAILS AND
 PAVEMENT REQUIREMENTS. FOR MAINLINE
 IR-71 TYPICAL, SEE SHEET 8



TRANSITION DETAIL

NOTE:
 1. FOR LEGEND, SEE SHEET 8



PROPOSED TYPICAL SECTION

STATION 23+16.37 TO STATION 23+17.00±

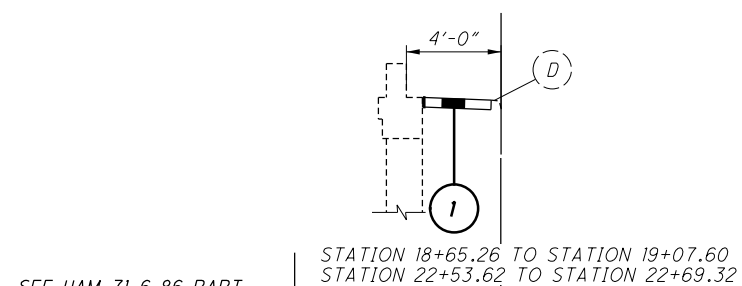
APPROACH SLAB: STATION 19+05.80 TO STATION 19+30.80
 BRIDGE: STATION 19+30.80 TO STATION 22+91.37
 APPROACH SLAB: STATION 22+91.37 TO STATION 23+16.37

EXISTING ITEM LEGEND

- (A) 9" REINFORCED CEMENT CONCRETE PAVEMENT
- (B) 6" SUBBASE
- (C) STANDARD LONGITUDINAL JOINT
- (D) CONCRETE CURB
- (E) GUARDRAIL
- (F) ASPHALT OVERLAY, DEPTH UNKNOWN

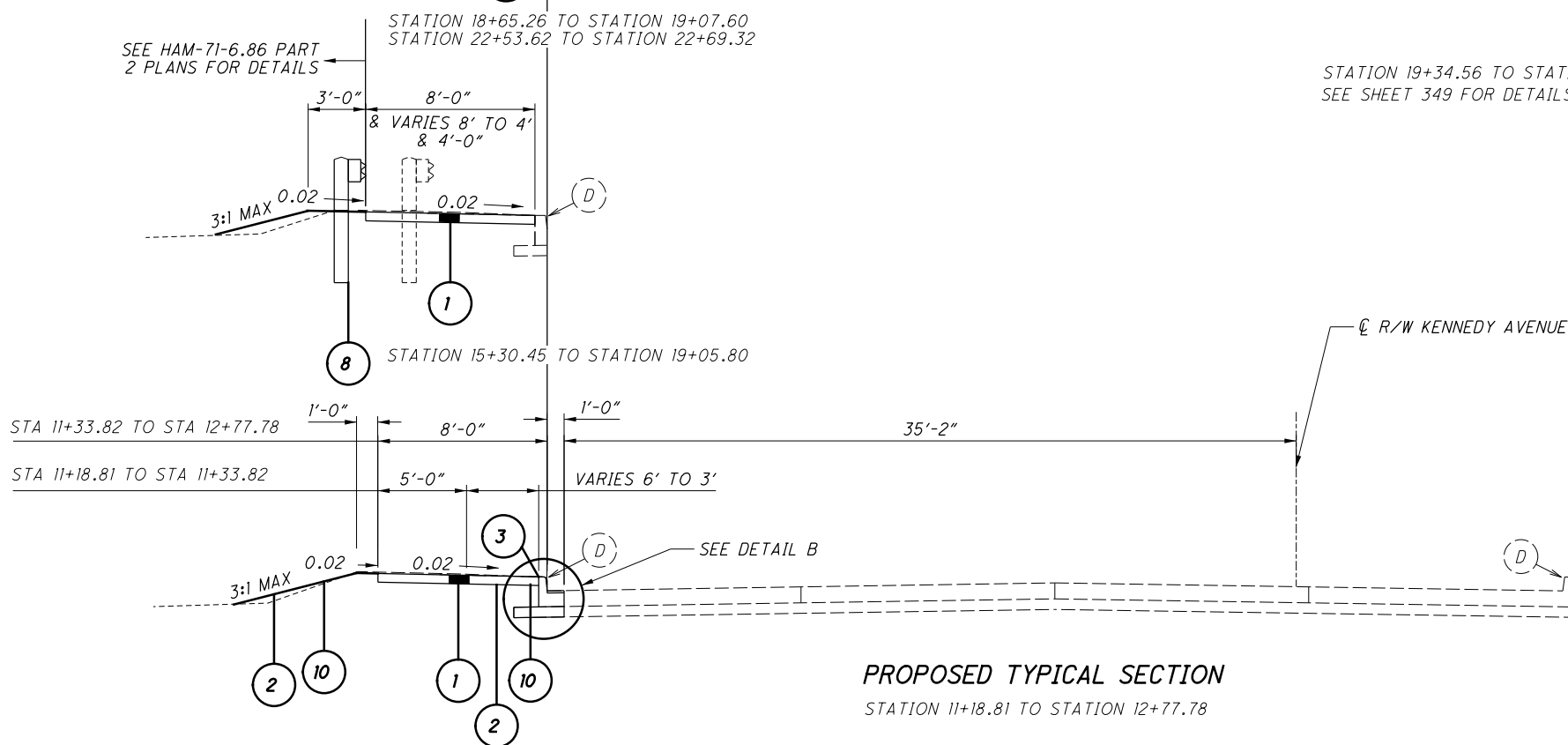
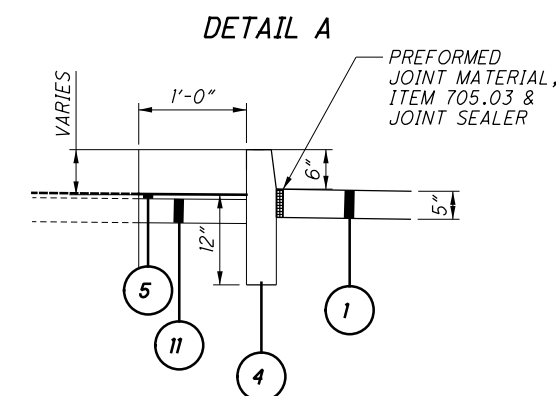
PROPOSED ITEM LEGEND KENNEDY AVE.

- (1) ITEM 608 - 5" CONCRETE SIDEWALK
- (2) ITEM 659 - SEEDING AND MULCHING
- (3) ITEM 609 - CURB, TYPE 2-B
- (4) ITEM 609 - CURB, TYPE 6 AS PER PLAN
- (5) ITEM 441 - 1-1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22
- (6) ITEM 452 - 9" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC1
- (7) ITEM 304 - 6" AGGREGATE BASE
- (8) ITEM 606 - GUARDRAIL, MGS
- (9) ITEM 204 - SUBGRADE COMPACTION
- (10) ITEM 659 - TOPSOIL, 4"
- (11) ITEM 301 - 5" ASPHALT CONCRETE BASE, PG64-22



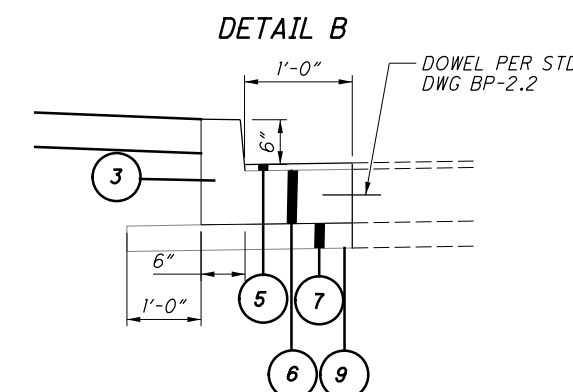
PROPOSED TYPICAL SECTION

STATION 11+18.81 TO STATION 12+77.78



EXISTING TYPICAL SECTION

STATION 11+18.80± TO STATION 19+05.80
 STRUCTURE NO. HAM-71-0853 STATION 19+05.80 TO STATION 23+16.37 (BRIDGE AND APPROACHES)
 STATION 23+16.37 TO STATION 23+17.00



UTILITIES

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

CINCINNATI BELL
221 EAST 4TH STREET, BLDG. 121-900
CINCINNATI, OH 45201
513-565-7043 (MARK CONNER)
MARK.CONNER@CINBELL.COM

DUKE ENERGY - ELECTRIC
139 EAST 4TH STREET, ROOM 467A
CINCINNATI, OH 45202
513-287-3852 (CRAIG HUTCHISON)
CRAIG.HUTCHISON@DUKE-ENERGY.COM

DUKE ENERGY - GAS
139 EAST 4TH STREET, ROOM 460A
CINCINNATI, OH 45202
513-287-1205 (KELSEY PACE)
KELSEY.PACE@DUKE-ENERGY.COM

ODOT DISTRICT 8 - LIGHTING
505 SOUTH SR741
LEBANON, OH 45036
513-933-6692 (JIM T. JUDD)
JIM.JUDD@DOT.OHIO.GOV

CINCINNATI TRAFFIC
801 PLUM STREET, ROOM 320
CINCINNATI, OH 45202
513-352-3730 (LINDA KISER)
LINDA.KISER@CINCINNATI-OH.GOV

TIME WARNER CABLE
11252 CORNELL PARK DRIVE
CINCINNATI, OH 45242
513-386-5499 (KENT RIEGER)
KENT.RIEGER@CHARTER.COM

CINCINNATI METROPOLITAN SEWER DISTRICT
1600 GEST STREET
CINCINNATI, OH 45204
513-557-7188 (ROB FRANKLIN)
ROB.FRANKLIN@CINCINNATI-OH.GOV

GREATER CINCINNATI WATER WORKS
4747 SPRING GROVE AVENUE
CINCINNATI, OH 45232
513-591-5056 (JON HUNSEDER)
JON.HUNSEDER@GCWW.CINCINNATI-OH.GOV

TRAFFIC SURVEILLANCE:
ODOT OFFICE OF TRAFFIC OPERATIONS
1980 WEST BROAD STREET
MAIL STOP 5160
COLUMBUS, OH 43223
614-466-2168 (JASON YERAY)

HAMILTON COUNTY ENGINEER'S OFFICE
TRAFFIC ENGINEERING
223 W. GALBRAITH ROAD
CINCINNATI, OHIO 45215
513-946-8421 (JEFF NEWBY)
JEFF.NEWBY@HAMILTON-CO.ORG

UTILITIES

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.

EXISTING PLANS

EXISTING PLANS ENTITLED BELOW, MAY BE INSPECTED IN THE ODOT DISTRICT 8 OFFICE IN LEBANON OR AT THE FOLLOWING LINK:

<ftp://ftp.dot.state.oh.us/pub/Contracts/Attach/>

- | | |
|------------------------------|------------------------------|
| HAM-71-13.05 (1964) | HAM-71-11.44 (1993) |
| HAM-71-11.51 (1965) | HAM-71-2.92 (1995) |
| HAM-71-8.86 (1966) | HAM-22/71-11.41/12.39 (1995) |
| HAM-71-7.45 (1969) | HAM-71-1.30/9.00 (1995) |
| HAM-71-9.52 (1971) | HAM-71-1.30/9.00 (1995) |
| HAM-71+11.76 (1977) | HAM-71-3.556 (1998) |
| HAM-71-(12.72)(15.25) (1977) | HAM-71-020.889 (1999) |
| HAM-71-10.49 (1980) | HAM-71-11.08 (2001) |
| HAM-71-10.63 (1983) | HAM-71-11.44 (2004) |
| HAM/WAR-71-11.01/0.00 (1987) | HAM-71-1.51 (2008) |
| HAM-71-6.70 (1989) | GRE/HAM-PPS-FY2011 (2011) |
| HAM-71-14.08 (1990) | HAM-71-0.19 (2012) |
| HAM-71-11.51 (1991) | HAM-71-12.44 (2015) |
| HAM-71-0.69 (1991) | |

SURVEYING PARAMETERS

PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITIONING ON ODOT PROJECTS. SEE SHEET 7 OF THE PLANS FOR A TABLE CONTAINING PROJECT CONTROL INFORMATION.

USE THE FOLLOWING PROJECT CONTROL, VERTICAL POSITIONING, AND HORIZONTAL POSITIONING PARAMETERS FOR ALL SURVEYING:

PROJECT CONTROL

POSITIONING METHOD: ODOT VRS
MONUMENT TYPE: TYPE B

VERTICAL POSITIONING

ORTHOMETRIC HEIGHT DATUM: NAVD 88
GEOID: GEOID 12A

HORIZONTAL POSITIONING

THE HORIZONTAL COORDINATES EXPRESSED HEREIN ARE BASED ON THE OHIO STATE PLANE COORDINATES SYSTEM SOUTH ZONE ON NAD 83 (2011) DATUM. THE PROJECT COORDINATES (US SURVEY FEET) ARE RELATIVE TO STATE PLANE GRID COORDINATES (METERS OR US SURVEY FEET) BY A PROJECT ADJUSTMENT FACTOR OF 1.00008994142207.
SYSTEM: 0,0,0

USE THE POSITIONING METHODS AND MONUMENT TYPE USED IN THE ORIGINAL SURVEY TO RESTORE ALL MONUMENTS RELATED TO PRIMARY PROJECT CONTROL THAT ARE DAMAGED OR DESTROYED BY CONSTRUCTION ACTIVITIES. RESTORE THE DAMAGED OR DESTROYED MONUMENTS IN ACCORDANCE WITH CMS 623.

UNITS ARE IN U.S. SURVEY FEET. USE THE FOLLOWING CONVERSION FACTOR: 1 METER = 3.280833333 U.S. SURVEY FEET.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

HORIZONTAL ALIGNMENT - PART 1 VS PART 2

THE HORIZONTAL ALIGNMENT IN THE PART 1 PLANS DO NOT MATCH THE HORIZONTAL ALIGNMENT IN THE PART 2 PLANS.

THE CONTRACTOR SHALL USE THE PART 1 ALIGNMENT FOR ALL PART 1 WORK AND USE THE PART 2 ALIGNMENT FOR ALL PART 2 WORK. IF THERE IS A CONFLICT OR UNCERTAINTY BETWEEN THE ALIGNMENTS, THE ENGINEER SHALL BE NOTIFIED FOR RESOLUTION AND APPROVAL.

INTERIM COMPLETION DATE

THE CONTRACTOR SHALL COMPLETE ALL WORK ASSOCIATED WITH THE REPLACEMENT OF THE EXISTING VANDAL FENCE ON STRUCTURE HAM-71-1149 BY OCTOBER 1, 2018. NO ADDITIONAL COMPENSATION SHALL BE PROVIDED FOR COMPLETION OF THE TASK DESCRIBED ABOVE.

ROUNDING

THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLY TO ALL CROSS-SECTIONS EVEN THOUGH OTHERWISE SHOWN.

ITS (TRAFFIC SURVEILLANCE)

ITS FACILITIES ARE NOT LISTED WITH OUPS, SO THE CONTRACTOR IS REQUIRED TO CONTACT ODOT CENTRAL OFFICE ITS LAB DIRECTLY SO THAT THE ODOT UTILITIES LOCATED WITHIN THIS PROJECT ARE MARKED. THE CONTRACTOR SHALL NOTIFY ODOT CENTRAL OFFICE ITS LAB AT THE CONTACT INFORMATION LISTED BELOW AND THE PROJECT ENGINEER, FOURTEEN (14) CALENDAR DAYS IN ADVANCE OF ANY WORK FOR THE NEED TO MARK ODOT OWNED UTILITIES.

CENTRAL OFFICE ITS LAB
614-387-4113 - PHONE
614-887-4134 - FAX
CEN.ITS.LAB@DOT.STATE.OH.US - EMAIL

THE ABOVE REQUIREMENTS ARE IN ADDITION TO SECTION 105.07 & 107.16 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS AND THE UTILITY PROPOSAL NOTE.

THE CONTRACTOR SHALL NOTIFY OTHER UTILITIES THROUGH OUPS OR DIRECTLY A MINIMUM OF FORTY-EIGHT (48) HOURS IN ADVANCE OF ANY WORK.

THE COST FOR THE ABOVE DESCRIBED WORK IS INCIDENTAL TO THE OVERALL BID PRICE OF THE PROJECT.

CLASS I PLANIMETRIC SURVEY OF EXISTING IR-71 MEDIAN AT LOCATIONS WHERE MEDIAN BARRIER, PAVED GUTTER, CONCRETE CAP ARE REMOVED AND REPLACED OR RESTORED

BEFORE ANY WORK IS STARTED ON THE PROJECT, THE CONTRACTOR SHALL PERFORM A COMPLETE CLASS I PLANIMETRIC SURVEY OF THE IR-71 MEDIAN - EDGELINE TO EDGELINE, FOR:

- 1) THE LIMITS OF THE SOUTH MOT CROSSOVER,
- 2) THE LIMITS OF THE LOWERED PROFILE/SUPER-ELEVATION CORRECTION,
- 3) FOR THE LIMITS OF THE NEW APPROACH SLAB AND BRIDGE REHABILITATION AT HAM-77-1068L/R (KENWOOD ROAD),
- 4) THE LIMITS OF THE NORTH MOT CROSSOVER

THE AREAS LISTED ARE LOCATIONS WHERE THE MEDIAN IS IMPACTED BY MOT OPERATIONS OR MODIFIED BY THE PROPOSED CONSTRUCTION. THE SURVEY IS REQUIRED SO THAT IMPACTED ELEMENTS CAN BE RESTORED TO MATCH EXISTING CONDITIONS AND/OR NEW CONDITIONS AS SHOWN IN THE PLANS.

CLASS I PLANIMETRIC SURVEY OF EXISTING IR-71 MEDIAN AT LOCATIONS WHERE MEDIAN BARRIER, PAVED GUTTER, CONCRETE CAP ARE REMOVED AND REPLACED OR RESTORED (CONT'D)

THE SURVEY SHALL INCLUDE ALL PLANIMETRIC FEATURES WITHIN THE EXISTING IR-71 MEDIAN, EDGELINE TO EDGLINE, INCLUDING BARRIERS, PAVED GUTTER, CONCRETE CAP, LIGHTING, DRAINAGE, AND UTILITIES.

THE COST FOR THE SURVEY WORK DESCRIBED ABOVE SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE BARRIER, PAVED GUTTER, CONCRETE CAP, AND UTILITIY (DRAINAGE, LIGHTING, ETC) ITEMS.

NOTIFICATION OF TRAFFIC RESTRICTIONS

THROUGHOUT THE DURATION OF THE PROJECT, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IN WRITING OF ALL TRAFFIC RESTRICTIONS AND UPCOMING MAINTENANCE OF TRAFFIC CHANGES. THE CONTRACTOR SHALL ENSURE THE WRITTEN NOTIFICATION IS SUBMITTED IN A TIMELY MANNER TO ALLOW THE PROJECT ENGINEER TO MEET THE REQUIRED TIME FRAMES SET FORTH IN THE TABLE BELOW TO INFORM SPECIAL HAULING PERMITS SECTION (HAULING.PERMITS@DOT.OHIO.GOV) AND THE DISTRICT PUBLIC INFORMATION OFFICE (PIO). THIS NOTIFICATION SHALL BE RECEIVED BY THE PROJECT ENGINEER PRIOR TO THE PHYSICAL SETUP OF ANY APPLICABLE SIGNS OR MESSAGE BOARDS.

INFORMATION SHOULD INCLUDE, BUT IS NOT LIMITED TO, ALL CONSTRUCTION ACTIVITIES THAT IMPACT OR INTERFERE WITH TRAFFIC AND SHALL LIST THE SPECIFIC LOCATION, TYPE OF WORK, ROAD STATUS, DATE AND TIME OF RESTRICTION, DURATION OF RESTRICTION, NUMBER OF LANES MAINTAINED, NUMBER OF LANES CLOSED, MINIMUM VERTICAL CLEARANCE, MINIMUM WIDTH OF DRIVABLE PAVEMENT, DETOUR ROUTES, IF APPLICABLE, AND ANY OTHER INFORMATION REQUESTED BY THE PROJECT ENGINEER.

ITEM	DURATION OF CLOSURE	NOTICE DUE TO PERMITS & PIO
RAMP & ROAD CLOSURES	>= 2 WEEKS < 12 HOURS & < 2 WEEKS <= 12 HOURS	21 CALENDAR DAYS PRIOR TO CLOSURE 14 CALENDAR DAYS PRIOR TO CLOSURE 4 BUSINESS DAYS PRIOR TO CLOSURE

LANE RESTRICTIONS	>= 2 WEEKS < 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE 5 BUSINESS DAYS PRIOR TO CLOSURE
-------------------	----------------------	---

START OF CONSTRUCTION & TRAFFIC PATTERN CHANGES	14 CALENDAR DAYS PRIOR TO IMPLEMENTATION
---	--

ANY UNFORESEEN CONDITIONS NOT SPECIFIED IN THE PLANS REQUIRING TRAFFIC RESTRICTIONS SHALL ALSO BE REPORTED TO THE PROJECT ENGINEER USING THE NOTIFICATION TIME TABLE.

CALCULATED
JLG
CHECKED
KSC

GENERAL NOTES 1 OF 5

HAM-IR71-8.42

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_GN101.dgn_Sheet 1/24/2018 9:35:18 AM compton

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "AS DIRECTED BY THE ENGINEER" AND "AS DETERMINED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED FOR SUCH ITEMS SHALL BE INCORPORATED CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

ITEM 623 - CONSTRUCTION LAYOUT STAKES AND SURVEYING, AS PER PLAN

PRIOR TO THE START OF ROADWAY OPERATIONS, THE CONTRACTOR SHALL REFERENCE THE LENGTH OF THE PROJECT ON BOTH SIDES OF THE ROADWAY, IN A MANNER SATISFACTORY TO THE ENGINEER. THE PAVEMENT SHALL BE REFERENCED IN 100 FEET INCREMENTS, OR IN INCREMENTS ACCEPTABLE TO THE ENGINEER, IN A SEMIPERMANENT CONDITION.

CLEARING AND GRUBBING

ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, A LUMP SUM QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM ARE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

AIRWAY/HIGHWAY CLEARANCE FOR AIRPORTS AND HELIPORTS

THIS PROJECT HAS BEEN IDENTIFIED AS BEING WITHIN THE INFLUENCE AREA OF A PUBLIC USE AIRPORT OR HELIPORT. NO TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT AT MAXIMUM OPERATING HEIGHT SHALL EXCEED A HEIGHT OF 75 FEET. IF ANY TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT WILL EXCEED THIS HEIGHT, FURTHER COORDINATION WITH THE FEDERAL AVIATION ADMINISTRATION (FAA), AND ODOT OFFICE OF AVIATION, WILL BE NECESSARY PRIOR TO ERECTING SUCH TEMPORARY STRUCTURES OR OPERATING SUCH EQUIPMENT ON THE PROJECT. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT FORM 7460-1 TO THE FAA. NOTIFY THE ODOT OFFICE OF AVIATION WHEN SUBMITTING AN FAA FORM 7460-1.

NO TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT SHALL EXCEED THE PERMISSIBLE HEIGHT, UNTIL A COPY OF THE FAA APPROVAL AND ODOT OFFICE OF AVIATION PERMIT HAS BEEN FURNISHED TO THE PROJECT ENGINEER.

EXPRESS PROCESSING CENTER
THE FEDERAL AVIATION ADMINISTRATION
SOUTHWEST REGIONAL OFFICE
AIR TRAFFIC AIRSPACE BRANCH ASW-520
2601 MEACHAN BLVD.
FORT WORTH, TX 76137-4298

OHIO DEPARTMENT OF TRANSPORTATION
OFFICE OF AVIATION
2829 WEST DUBLIN-GRANVILLE ROAD
COLUMBUS, OHIO 43235
614-387-2346

IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE TO BE CONNECTED, DIFFERS FROM THE PLAN ELEVATION OR RESULTS IN A CHANGE IN THE PLAN CONDUIT SLOPE, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY.

PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEM.

PIPE CONNECTIONS TO CORRUGATED METAL STRUCTURES

CONNECTIONS OF PROPOSED LONGITUDINAL DRAINAGE TO CORRUGATED METAL STRUCTURES SHALL BE MADE BY MEANS OF A SHOP FABRICATED OR FIELD WELDED STUB ON THE STRUCTURE. THE STUB SHALL MEET THE REQUIREMENTS OF 707 AND HAVE A MINIMUM LENGTH OF 2 FEET AND A MINIMUM WALL THICKNESS OF 0.064 INCHES.

THE LOCATION AND ELEVATION OF THE STUB ARE TO BE CONSIDERED APPROXIMATE AND MAY BE ADJUSTED BY THE ENGINEER TO AVOID CUTTING THROUGH JOINTS IN THE STRUCTURE.

THE FIELD WELDED JOINT, IF USED, SHALL BE THOROUGHLY CLEANED AND RE-GALVANIZED OR OTHERWISE SUITABLY REPAIRED. WELDING SHALL MEET THE REQUIREMENTS OF 513.21.

A MASONRY COLLAR, AS PER STANDARD DRAWING DM-1.1, WILL BE REQUIRED TO CONNECT THE LONGITUDINAL DRAINAGE TO THE STUB, WHEN PIPE OTHER THAN CORRUGATED METAL IS PROVIDED FOR THE LONGITUDINAL DRAINAGE.

PAYMENT FOR CUTTING INTO THE STRUCTURE AND PROVIDING THE CONNECTION DESCRIBED, SHALL BE INCLUDED IN THE CONTRACT PRICE FOR ITEM 611 OR 522.

PROTECTION OF RIGHT-OF-WAY LANDSCAPING

PRIOR TO BEGINNING WORK, THE CONTRACTOR, THE PROJECT ENGINEER, AND A REPRESENTATIVE OF THE MAINTAINING AGENCY WILL REVIEW AND RECORD ALL LANDSCAPING ITEMS WITHIN THE RIGHT OF WAY (BOTH WITHIN AND OUTSIDE THE CONSTRUCTION LIMITS) A RECORD OF THIS REVIEW WILL BE KEPT IN THE PROJECT ENGINEERS FILES. PRIOR TO FINAL ACCEPTANCE, A FINAL REVIEW OF LANDSCAPING ITEMS WILL BE MADE.

CONSTRUCT ALL ACTIVITIES, EQUIPMENT STORAGE, AND STAGING TO WITHIN THE CONSTRUCTION LIMITS. UNLESS OTHERWISE IDENTIFIED IN THE PLANS OR PROPOSAL, THE CONSTRUCTION LIMITS ARE IDENTIFIED AS 30 FEET FROM THE EDGE OF PAVEMENT.

SUBMIT A WRITTEN REQUEST TO THE PROJECT ENGINEER TO USE ANY AREA OUTSIDE THESE LIMITS. THE DOCUMENT SUBMITTED MUST CLEARLY IDENTIFY THE AREA AND EXPLAIN THE PROPOSED USE AND RESTORATION OF THE AREA. USE OF THESE AREAS FOR DISPOSAL OF WASTE MATERIAL AND CONSTRUCTION DEBRIS, EXCAVATION OF BORROW MATERIAL AND PLACEMENT OF AND PLACEMENT OF PORTABLE PLANTS IS PROHIBITED. THE REQUEST MUST BE APPROVED, IN WRITING, BEFORE THE CONTRACTOR HAS PERMISSION TO USE THE AREA.

ANY ITEMS DAMAGED BEYOND THE CONSTRUCTION LIMITS AS DEFINED ABOVE WILL BE REPLACED IN KIND OR AS APPROVED BY THE PROJECT ENGINEER.

EXISTING UNDERDRAINS

PROVIDE UNOBSTRUCTED OUTLETS FOR ALL EXISTING UNDERDRAINS ENCOUNTERED DURING CONSTRUCTION.

PROVIDE AN OUTLET PER STANDARD CONSTRUCTION DRAWING DM-1.1 FOR ALL UNDERDRAINS THAT OUTLET TO A SLOPE.

UNDERDRAINS THAT CAN BE CONNECTED TO THE NEW OR EXISTING UNDERDRAINS AT THE END OF THE PROJECT LIMITS AS WELL AS ALL NECESSARY BENDS OR BRANCHES REQUIRED FOR CONNECTION ARE INCLUDED IN THE BASIS OF PAYMENT FOR UNCLASSIFIED PIPE UNDERDRAINS.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE:

- 611 6" CONDUIT, TYPE F 10 FT.
- 605 6" UNCLASSIFIED PIPE UNDERDRAINS 100 FT.

REVIEW OF DRAINAGE FACILITIES

BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE STATE, REPRESENTATIVES OF THE STATE AND THE CONTRACTOR, ALONG WITH LOCAL REPRESENTATIVES, SHALL MAKE AN INSPECTION OF ALL EXISTING SEWERS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCE SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE KEPT IN WRITING BY THE STATE.

ALL NEW CONDUITS, INLETS, CATCH BASINS, AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE STATE.

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEMS.

CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES

WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT.

DRAINAGE FACILITY REPAIR

THIS WORK SHALL CONSIST OF THE FOLLOWING:

FOR REPAIR - THE CONTRACTOR SHALL CAREFULLY REMOVE THE DAMAGED AREA(S) AND REPAIR SO THAT STRUCTURE IS AT OR NEAR ORIGINAL CONDITION AND FUNCTIONS PROPERLY. REPAIR CONCRETE PER CMS 519 - PATCHING CONCRETE STRUCTURE.

FOR REPLACEMENT - THE CONTRACTOR SHALL CAREFULLY REMOVE THE EXISTING STRUCTURE AND REPLACE WITH A NEW STRUCTURE. PAYMENT SHALL INCLUDE REMOVAL OF THE EXISTING STRUCTURE, FURNISHING AND INSTALLING A NEW STRUCTURE, AND FURNISHING AND INSTALLING NEW CONDUIT TO RECONNECT PIPES TO STRUCTURE.

A MASONRY COLLAR, AS PER STANDARD DRAWING DM-1.1, WILL BE REQUIRED TO CONNECT THE LONGITUDINAL DRAINAGE TO THE REINFORCE CONCRETE PIPE (RCP) OR CORRUGATED METAL PIPE (CMP) . ALL CONNECTIONS TO CMP SHALL FOLLOW THE REQUIREMENTS DETAILED IN GENERAL NOTE - PIPE CONNECTIONS TO CORRUGATED METAL STRUCTURES.

ALL MATERIAL REMOVED SHALL BE DISPOSED OF AS PER CMS 105 ITEM.

THE EXISTING STORM SYSTEM MUST BE MAINTAINED AT ALL TIMES, UNLESS APPROVED OTHERWISE BY THE ENGINEER.

PAYMENT INCLUDES FURNISHING ALL MATERIALS, EQUIPMENT, LABOR, AND ALL INCIDENTALS REQUIRED TO COMPLETE THE DRAINAGE FACILITY REPAIRS, COMPLETE AND APPROVED BY THE ENGINEER.

LOCATION OF STRUCTURES FOR THE ABOVE NOTED WORK:

STATION	SLM	DESCRIPTION
419+55	9.1605	MEDIAN INLET - SB
424+00	9.2576	MEDIAN INLET - SB
618+51	13.5046	RIGHT SHOULDER - SB
619+55	13.5273	RIGHT SHOULDER - NB
626+00	13.6681	RIGHT CLEAR ZONE - NB
627+60	13.7031	MEDIAN PAVED GUTTER
636+25	13.8919	RIGHT SHOULDER - NB

THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE ABOVE NOTED WORK:

ITEM 611, INLET MISC.: REPAIR STRUCTURE	2 EACH
ITEM 611, CATCH BASIN MISC.: REPAIR STRUCTURE	5 EACH

SEEDING AND MULCHING

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS:

659, SEEDING AND MULCHING	1789 SY
659, REPAIR SEEDING AND MULCHING	89 SY
659, COMMERCIAL FERTILIZER	0.24 TON
659, LIME	0.37 ACRE
659, WATER	10 M GAL

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES, AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS.

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_GN102.dgn Sheet 11/2/2017 3:37:48 PM spotel

CALCULATED
JLG
CHECKED
KSC

GENERAL NOTES 2 OF 5

HAM-IR71-8.42

ITEM SPECIAL - PIPE CLEANOUT

THIS WORK SHALL CONSIST OF REMOVING SEDIMENT AND DEBRIS FROM THE STRUCTURE AND FROM THE DOWNSTREAM CONDUIT, TO THE NEXT DRAINAGE STRUCTURE. ALL MATERIAL REMOVED SHALL BE DISPOSED OF AS PER 105.16 AND 105.17. ALL SEWERS SHALL BE CLEANED OUT TO THE SATISFACTION OF THE ENGINEER.

CLEANOUT OF THE PIPE SHALL BE PAID FOR AT THE UNIT PRICE BID FOR ITEM SPECIAL - PIPE CLEANOUT. THIS PRICE SHALL INCLUDE THE COST FOR MATERIAL, EQUIPMENT, LABOR, AND ALL INCIDENTALS REQUIRED TO COMPLETE THE CLEANOUT.

LOCATION OF STRUCTURES FOR THE ABOVE NOTED WORK:

STATION	SLM	DESCRIPTION
419+55	9.1605	MEDIAN INLET - SB
483+73	10.5618	MEDIAN SHOULDER - SB
551+00	12.0306	MEDIAN SHOULDER - NB
555+00	12.1179	MEDIAN SHOULDER - NB
559+00	12.2052	MEDIAN SHOULDER - NB
562+50	12.2817	RIGHT SHOULDER - SB
573+63	12.5247	RIGHT SHOULDER - NB
636+25	13.8919	RIGHT SHOULDER - SB
649+95	14.1910	RIGHT SHOULDER - SB
672+31	14.6793	RIGHT SHOULDER - NB
672+81	14.6902	RIGHT SHOULDER - NB
679+28	14.8314	RIGHT SHOULDER - NB
479+50	10.4694	RIGHT SHOULDER - SB
626+00	13.6681	RIGHT CLEAR ZONE - NB
436+50	9.5306	MEDIAN PAVED GUTTER
484+00	10.5677	RIGHT SHOULDER - SB
492+15	10.7456	MEDIAN PAVED GUTTER
492+35	10.7500	MEDIAN SHOULDER - SB
641+75	14.0120	MEDIAN PAVED GUTTER
645+75	14.0993	MEDIAN PAVED GUTTER
667+00	14.5633	MEDIAN PAVED GUTTER
672+00	14.6725	MEDIAN PAVED GUTTER
679+00	14.8253	MEDIAN PAVED GUTTER

THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE ABOVE NOTED WORK:
 ITEM 202 SPECIAL, PIPE CLEANOUT, 24" AND UNDER 3,500 FT.
 ITEM 202 SPECIAL, PIPE CLEANOUT, 27 TO 48" 600 FT.
 ITEM 202 REMOVAL, MISC.:
 DRAINAGE STRUCTURE CLEANOUT 21 EACH

ITEM 252 - FULL DEPTH RIGID PAVEMENT REMOVAL AND FLEXIBLE REPLACEMENT

A QUANTITY OF THIS ITEM IS PROVIDED FOR USE AS DIRECTED BY THE ENGINEER. THIS ITEM SHALL CONSIST OF CUTTING AND REMOVING DETERIORATED CONCRETE PAVEMENT AND PLACING PAVEMENT REPAIR AS DETAILED ON THIS SHEET. THIS ITEM SHALL COMMENCE PRIOR TO MAINLINE PAVEMENT PLANING. REPAIRED AREAS SHALL BE PLANED AND RESURFACED NO LATER THAN 2 WEEKS AFTER REPAIR IS COMPLETED.

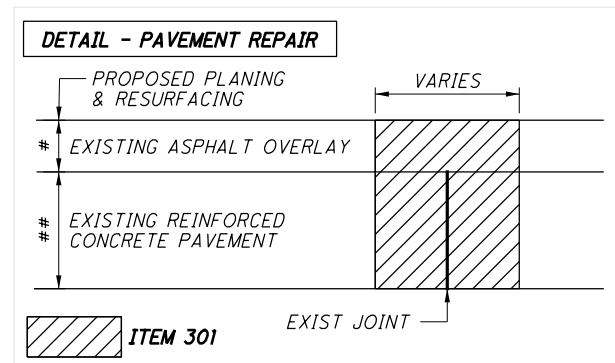
IT IS NOT THE INTENT TO REPAIR EVERY DETERIORATED AREA WITHIN THE PROJECT. THE ENGINEER SHALL DETERMINE WHICH AREAS ARE TO BE REPAIRED.

PAYMENT SHALL BE BASED ON THE ACTUAL NUMBER OF SQUARE YARDS OF PAVEMENT REMOVED AND REPLACED TO THE LIMITS DESIGNATED BY THE ENGINEER. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

- 252, FULL DEPTH RIGID PAVEMENT REMOVAL AND FLEXIBLE REPLACEMENT, 6,177 SY
- 252, FULL DEPTH PAVEMENT SAWING, 27,796 FT

QUANTITY TO BE DISTRIBUTED PER THE FOLLOWING TABLE:

AREA	FROM STATION	TO STATION	SY	FT
1	398+01.73 NB 398+96.35 SB	466+24.77 NB & SB	3011	13551
2	471+12.73 NB & SB	518+36.55 NB 518+54.58 SB	2104	9466
3	524+42.97 NB 524+49.96 SB	KENWOOD ROAD	1062	4779



EXISTING DETERIORATED CONCRETE PAVEMENT SHALL BE REMOVED AND REPLACED WITH ITEM 301. THE 301 SHALL BE COMPACTED AS PER ODOT CMS 401.16 AND THE MAXIMUM COMPACTED DEPTH SHALL BE AS PER ODOT CMS 401.15. THE LOCATION AND SIZE OF THE REPAIRS SHALL BE AT THE DIRECTION OF THE ENGINEER.

MAINLINE:
 # DEPTH, 4 1/4"
 ## DEPTH VARIES, 9" TO 10"

RAMP R, RAMP A, RAMP B, RAMP C, RAMP D, RAMP E, RAMP F AND RED BANK EXPRESSWAY:
 # DEPTH, AVG 3", VARIES IN TRANSITION AREAS, 1 1/2" TO 3"
 ## DEPTH, 9"

RAMP G AND RAMP H:
 # DEPTH, AVG 4 3/4", VARIES IN TRANSITION AREAS, 4 3/4" TO 8"
 ## DEPTH, 9"

SEE PLANS FOR DETAILS AND LOCATIONS.

ITEM SPECIAL MISC.: CONSULTANT FOR CONCRETE QUALITY CONTROL INCLUDING TESTING AND INSPECTION

ALL CONCRETE SHALL BE TESTED. ALL TESTING, INSPECTION AND QUALITY CONTROL FOR CONCRETE, NOT INCLUDED UNDER QC/QAPAY ITEMS, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL PROVIDE A CONCRETE TESTING CONSULTANT WITH PREVIOUS EXPERIENCE AND FAMILIARITY IN ODOT PROCEDURES, CONCRETE TESTING REQUIREMENTS AND CONCRETE TESTING DOCUMENTATION. AT LEAST 30 DAYS PRIOR TO CONCRETE PLACEMENT, SUBMIT TO THE ENGINEER FOR APPROVAL, THE PROPOSED CONCRETE TESTING CONSULTANT ALONG WITH THE RESUMES OF THE PROPOSED TESTING PERSONNEL.

TESTING CONCRETE FOR STRUCTURES AND PORTLAND CEMENT CONCRETE PAVEMENT SHALL BE PERFORMED AS OUTLINED IN CMS SPECIFICATIONS 455 RESPECTIVELY.

THROUGH THE CONTRACTOR, THE CONSULTANT SHALL BE RESPONSIBLE FOR ENSURING THAT ALL CONCRETE PLACED IS IN ACCORDANCE WITH THE SPECIFICATIONS. SUCH WORK SHALL BE IN ACCORDANCE WITH THE APPLICABLE CONSTRUCTION AND MATERIAL SPECIFICATIONS AND THE ODOT CONSTRUCTION INSPECTION MANUAL OF PROCEDURES FOR CONCRETE. THE CONCRETE CONSULTANT SHALL PROVIDE THE NECESSARY TRAINED TECHNICIAN(S), ALL EQUIPMENT, AND SHALL FURNISH

THE PROJECT ENGINEER WITH TWO (2) COPIES OF ALL TEST RESULTS WITHIN 24 HOURS AFTER COMPLETION OF CONCRETE PLACEMENT.

THE TECHNICIAN SHALL BE ACI LEVEL I CERTIFIED AND WILL BE REQUIRED TO DEMONSTRATE HIS/HER COMPETENCE AND EXPERIENCE LEVELS TO THE ENGINEER PRIOR TO BEGINNING WORK. THE ENGINEER WILL ORDER THE CONTRACTOR TO REPLACE ANY TECHNICIAN THAT IS NOT VERSED IN THE REQUIRED TESTING PROCEDURE.

THE TECHNICIAN SHALL VERBALLY NOTIFY THE ODOT PROJECT ENGINEER OF ANY FAILING TEST AND SHALL SUBMIT FOLLOW-UP WRITTEN NOTIFICATION TO THE PROJECT ENGINEER OF REMEDIAL ACTION(S) TAKEN. TESTS SHALL BE TAKEN AS SPECIFIED WITHIN THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, CONCRETE MANUAL OR APPROPRIATE SUPPLEMENTAL SPECIFICATION AS LISTED IN THE PROPOSAL GOVERNING THE PROJECT. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO MAKE IMMEDIATE CORRECTIONS OR ADJUSTMENTS TO THE CONCRETE MIX VIA DIRECT COMMUNICATION WITH THE CONCRETE SUPPLIER'S PLANT PERSONNEL TO MAINTAIN UNINTERRUPTED COMPLIANCE WITH THE SPECIFICATIONS UPON NOTIFICATION OF CONCRETE MIX NON-COMPLIANCE BY THE CONSULTANT TECHNICIAN. THE PROJECT ENGINEER MAY REQUIRE MORE FREQUENT TESTING AS CONDITIONS WARRANT.

UPON COMPLETION OF DAILY CONCRETE PLACEMENT(S), THE CONCRETE CONSULTANT SHALL PROVIDE THE PROJECT ENGINEER WITH DAILY TEST REPORTS, TE-45'S, INSPECTORS DAILY REPORT AND SUPPORTING DOCUMENTATION FOR EACH ITEM OF CONCRETE WORK PERFORMED SEPARATED BY MIX DESIGN. SUBSEQUENTLY, UPON COMPLETION OF AN ENTIRE CONCRETE SPECIFICATION ITEM, THE CONCRETE CONSULTANT SHALL ALSO PROVIDE THE PROJECT ENGINEER WITH TWO (2) COPIES OF AN ADDITIONAL INSPECTION REPORT BY A REGISTERED PROFESSIONAL ENGINEER, STATE OF OHIO, WHICH CONTAINS THE TESTING-RESULTS SUMMARY FOR EACH ITEM BY CONTRACT REFERENCE NUMBER AND THE CONSULTANT'S CONCLUSIONS RELATIVE TO SPECIFICATION COMPLIANCE FOR ALL CONCRETE-TESTING WORK.

THE ODOT PROJECT ENGINEER RESERVES THE RIGHT TO MAKE UNANNOUNCED QUALITY-CONTROL TESTS TO VERIFY PROCEDURES USED AND RESULTS BEING OBTAINED BY THE CONTRACTOR.

THE CONCRETE TECHNICIAN SHALL WORK UNDER THE DIRECTION OF A REGISTERED PROFESSIONAL ENGINEER, STATE OF OHIO, WHO WILL MONITOR THE CONCRETE TEST RESULTS. THE FINAL INSPECTION REPORTS FOR EACH COMPLETED ITEM SHALL BE SIGNED BY A REGISTERED PROFESSIONAL ENGINEER, STATE OF OHIO, CERTIFYING THAT ALL CONCRETE TESTS PROVIDED BY THE CONTRACTOR MET APPLICABLE CONTRACT REQUIREMENTS. A FINAL REPORT ISSUED BY THE CONSULTING FIRM SHALL CONTAIN A CERTIFIED STATEMENT OF COMPLIANCE WITH ODOT SPECIFICATIONS AND ANY OTHER CONCLUSIONS REGARDING THE CONCRETE MATERIALS INCORPORATED INTO THE PROJECT. SUCH STATEMENT SHALL BE SIGNED BY A REGISTERED PROFESSIONAL ENGINEER, STATE OF OHIO. AND, THE CONCRETE CONSULTANT SHALL BE REQUIRED TO ATTEND MONTHLY PROGRESS MEETINGS AS REQUIRED BY THE PROJECT ENGINEER.

ADDITIONALLY, THE CONTRACTOR SHALL BE REQUIRED TO KEEP A POSTED LIST OF BEAM AND CYLINDER IDENTIFICATION NUMBERS FOR THE PURPOSE OF IDENTIFYING THE CORRESPONDING PLACEMENT LOCATION AND CONCRETE SPECIFICATION ITEM.

PAYMENT SHALL BE BID AS LUMP SUM FOR ITEM SPECIAL MISC.: CONSULTANT FOR CONCRETE QUALITY CONTROL INCLUDING TESTING AND INSPECTION. THE ITEM WILL BE PAID FOR AS FOLLOWS:

- UPON APPROVAL OF CONSULTANT 20%
- PROGRESSIVE EQUIVALENT PAYMENTS 50%
- UPON SUBMISSION OF FINAL REPORT 30%.

PAYMENT FOR TESTING, INSPECTION AND QUALITY CONTROL WILL BE INCLUDED WITH THE APPROPRIATE LUMP-SUM CONCRETE ITEM.

THE TECHNICIAN SHALL HAVE THE FULL EFFECT AND AUTHORITY OF AN ODOT PROJECT INSPECTOR IN DETERMINING ACCEPTABILITY OF MATERIAL AND CONCRETE PLACEMENT PRACTICES.

ITEM 618 - RUMBLE STRIPS, (ASPHALT CONCRETE), AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF 618 AND SCD BP-9.1, RUMBLE STRIPS SHALL BE PLACED WITH A 5' OFFSET FROM THE EDGE OF PAVEMENT FOR BOTH THE MEDIAN AND OUTSIDE SHOULDERS IN PREPARATION FOR THE POTENTIAL USE OF THE SHOULDERS FOR TRANSIT.

ITEM 618, RUMBLE STRIPS, (ASPHALT CONCRETE), AS PER PLAN SHALL BE PAID FOR PER MILE INSTALLED.

ITEM 204 - PROOF ROLLING

THE FOLLOWING QUANTITY IS PROVIDED IN THE GENERAL SUMMARY TO ADDRESS LOCATIONS REQUIRING PROOF ROLLING. SEE PLAN SHEET NO. 11 FOR ADDITIONAL INFORMATION.

ITEM 204 - PROOF ROLLING 6 HOUR.

ITEM 254 - PAVEMENT PLANING

NO TRAFFIC IS ALLOWED ON A PLANED SURFACE. PLACE INTERMEDIATE COURSE OVER PAVEMENT PLANING PRIOR TO OPENING TO TRAFFIC.

HOT JOINTS

HOT LONGITUDINAL JOINTS ARE REQUIRED BETWEEN THE SURFACE COURSE MAINLINE PAVEMENT LANES. ON SECTIONS OF FOUR OR MORE LANES ONE COLD JOINT (ON A LANE LINE) IS PERMITTED.

One cold joint on a lane line and one on the edge line is also acceptable for the three lane section.

PROFILE MILLING OF THE PROPOSED INTERMEDIATE COURSE.

THE CONTRACTOR SHALL PROFILE MILL THE PROPOSED INTERMEDIATE ASPHALT CONCRETE COURSE, AS DIRECTED BY THE ENGINEER, PRIOR TO PLACING THE SURFACE ASPHALT COURSES. THE MILLING OPERATION IS TO REMOVE ANY SURFACE DEFORMATION OCCURRING AFTER THE INTERMEDIATE COURSE WAS PLACED THAT WILL AFFECT THE FINAL SURFACE SMOOTHNESS.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 254 PAVEMENT PLANNING, ASPHALT CONCRETE, AS PER PLAN. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 254 PAVEMENT PLANNING, ASPHALT CONCRETE, AS PER PLAN 200,000 SY

ITEM 442 ANTI-SEGREGATION EQUIPMENT

PROVIDE ANTI-SEGREGATION EQUIPMENT FOR ALL ASPHALT CONCRETE COURSES OF UNIFORM THICKNESS IN ACCORDANCE WITH 401.12. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 442 ANTI-SEGREGATION EQUIPMENT 25180 CU YD

ITEM 202 - CONCRETE BARRIER REMOVED, AS PER PLAN (NJ-SHAPED, TYPE D50, 50" H)

THE EXISTING CONCRETE MEDIAN BARRIER, TYPE D50 WITH NEW JERSEY SHAPE (50" HEIGHT) AND CONCRETE BASE SHALL BE REMOVED AT LOCATIONS NOTED IN PLANS.

PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTALS, AND EQUIPMENT NECESSARY FOR THE REMOVAL AND DISPOSAL OF BARRIER, BASE, AND REINFORCING.

ITEM 202 - CONCRETE BARRIER REMOVED, AS PER PLAN (NJ-SHAPED, TYPE D, 32" H)

THE EXISTING CONCRETE BARRIER, TYPE D WITH NEW JERSEY SHAPE (32" HEIGHT) AND CONCRETE BASE SHALL BE REMOVED AT LOCATIONS NOTED IN PLANS.

PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTALS, AND EQUIPMENT NECESSARY FOR THE REMOVAL AND DISPOSAL OF BARRIER, BASE, AND REINFORCING.

**ITEM 622 - BARRIER TRANSITION, AS PER PLAN "A"
ITEM 622 - BARRIER TRANSITION, AS PER PLAN "B"**

THE ODOT PLAN INSERT SHEET FOR "NJ SHAPE TO SINGLE SLOPE BARRIER TRANSITION" INCLUDED IN THE PLANS HAS BEEN MODIFIED TO INCLUDE THE BARRIERS USED IN THIS PROJECT.

PLAN A - THIS SHOWS THE TRANSITION FROM A NEW JERSEY SHAPE, TYPE D50 BARRIER (50" HEIGHT) TO A SINGLE SLOPE BARRIER, TYPE B1 (57" HEIGHT). SEE SHEET 230 FOR DETAILS.

PLAN B - THIS SHOWS THE TRANSITION FROM A NEW JERSEY SHAPE, TYPE D BARRIER (32" HEIGHT) TO A SINGLE SLOPE BARRIER, TYPE B1 (57" HEIGHT). SEE SHEET 231 FOR DETAILS.

ITEM 622 - BARRIER, MISC.: NEW JERSEY SHAPE, TYPE D, 50" HEIGHT

THIS BARRIER MATCHES THE EXISTING CONCRETE MEDIAN BARRIER. THIS ITEM CONSISTS OF CONSTRUCTING A TYPE D CONCRETE BARRIER IN ACCORDANCE WITH ITEM 622. THE BARRIER HAS A NEW JERSEY SHAPE AND IS 50-INCHES IN HEIGHT. A DETAIL OF THE BARRIER IS SHOWN ON SHEET 12.

FOR INFORMATION NOT SHOWN IN THE DETAIL, REFER TO ARCHIVED SCD MC-9.3 (10-30-1992) ON SHEET 232.

PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTAL, AND EQUIPMENT FOR CONSTRUCTING THE ABOVE ITEM, COMPLETED AND ACCEPTED IN PLACE.

ITEM 622 - CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE B1, AS PER PLAN

THIS END ANCHORAGE MATCHES THE STANDARD END ANCHORAGE CONFIGURATION EXCEPT THAT THE BASE WIDTH IS NARROWED AT LOCATIONS ADJACENT TO THE EXISTING TOWER LIGHT POLE FOUNDATIONS IN THE LOWERED PROFILE SECTION OF IR-71.

THIS ITEM CONSISTS OF CONSTRUCTING A SINGLE SLOPE END ANCHORAGE, TYPE B1 IN ACCORDANCE WITH ITEM 622 AND DETAIL SHOWN ON SHEET 337.

PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTAL, AND EQUIPMENT FOR CONSTRUCTING THE ABOVE ITEM, COMPLETED AND ACCEPTED IN PLACE.

ITEM 607 - TEMPORARY VANDAL FENCE:

PROVIDE VANDAL FENCE ALONG EVERY EDGE OF DECK THAT MAINTAINS TRAFFIC PRIOR TO ANY REMOVAL OPERATIONS FOR THE DURATION OF EACH CONSTRUCTION PHASE. AT NO TIME DURING PHASED CONSTRUCTION SHALL A DECK EDGE BE LEFT WITHOUT EITHER TEMPORARY, EXISTING OR PROPOSED VANDAL FENCE IN PLACE. THE TEMPORARY FENCE SHALL BE A MINIMUM HEIGHT OF 8-FT ABOVE THE DECK SURFACE AND SHALL EXTEND BETWEEN THE SUPERSTRUCTURE ENDS OF THE APPROACH SLABS FOR THE PHASE OF CONSTRUCTION MAINTAINING TRAFFIC. ADEQUATELY ANCHOR AND SUPPORT THE FENCE SO AS NOT TO CREATE A HAZARD WITHIN THE WORK ZONE OR TO THE TRAVELLING PUBLIC. THE TEMPORARY FENCE MAY BE ATTACHED TO THE PORTABLE TRAFFIC BARRIER BUT DO NOT LOCATE POSTS OR MESH ANY CLOSER TO TRAFFIC THAN THE TRAFFIC FACE OF THE PORTABLE TRAFFIC BARRIER. THE INTENT OF THE TEMPORARY FENCE IS TO DISCOURAGE THE DROPPING OR THROWING OF HEAVY OBJECTS OFF THE SIDE OF THE BRIDGE ONTO TRAFFIC BELOW DURING CONSTRUCTION.

PROVIDE WORKING DRAWINGS FOR EVERY TEMPORARY FENCE TO THE ENGINEER ACCORDING TO C&MS 105.02. DO NOT BEGIN WORK TO INSTALL THE TEMPORARY FENCE UNTIL RECEIVING THE ENGINEER'S ACCEPTANCE.

THE DEPARTMENT WILL MEASURE TEMPORARY FENCE BY THE FOOT ALONG THE DECK EDGE BETWEEN THE SUPERSTRUCTURE ENDS OF THE APPROACH SLAB ROUNDED TO THE NEAREST 1-FT FOR EACH APPLICATION PLACED. THE DEPARTMENT WILL PAY FOR COMPLETED AND ACCEPTED QUANTITIES OF TEMPORARY FENCE AS FOLLOWS:

ITEM	UNIT	DESCRIPTION
607	FOOT	TEMPORARY FENCE

ITEM 202 - REMOVAL, MISC.: PAVED GUTTER, AS PER PLAN

THE EXISTING CONCRETE PAVED GUTTER, INCLUDING GRANULAR BASE SHALL BE REMOVED AT LOCATIONS NOTED IN PLANS.

BACKFILL THE CAVITY CREATED BY THE REMOVAL ACCORDING TO ITEM 202.02, EXCEPT WHEN THE CAVITY LIES WITHIN THE LIMITS OF SUBSEQUENT EXCAVATION OR OTHER WORK.

PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTALS, AND EQUIPMENT NECESSARY FOR THE REMOVAL AND DISPOSAL OF GUTTER AND BASE, INCLUDING EXCAVATION AND BACKFILL.

ITEM 202 - REMOVAL, MISC.: 4" CONCRETE CAP

THE EXISTING CONCRETE CAP, LOCATED BETWEEN THE MEDIAN BARRIERS, SHALL BE REMOVED AT LOCATIONS NOTED IN PLANS. REMOVAL SHALL INCLUDE GRANULAR BASE AND POROUS BACKFILL.

BACKFILL THE CAVITY CREATED BY THE REMOVAL ACCORDING TO ITEM 202.02, EXCEPT WHEN THE CAVITY LIES WITHIN THE LIMITS OF SUBSEQUENT EXCAVATION OR OTHER WORK.

PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTALS, AND EQUIPMENT NECESSARY FOR THE REMOVAL AND DISPOSAL OF CONCRETE CAP, INCLUDING EXCAVATION AND BACKFILL.

**ITEM 601 - PAVED GUTTER, TYPE 1-2, AS PER PLAN
PAVED GUTTER, TYPE 1-4, AS PER PLAN**

THIS WORK CONSISTS OF THE CONSTRUCTION OF A CONCRETE PAVED GUTTER BETWEEN THE CONCRETE MEDIAN BARRIER WALLS IN ACCORDANCE WITH CMS ITEM 601 AND AS DETAILED IN THE PLANS. FOR INFORMATION NOT SHOWN IN THE PLAN DETAILS, REFER TO SCD DM-2-1. THIS WORK SHALL INCLUDE A COMPLETE PLANIMETRIC SURVEY OF IR-71 MEDIAN, INCLUDING SO THAT IMPACTED LOCATIONS CAN BE RESTORED TO EXISTING OR NEW CONDITIONS AS SHOWN IN THE PLANS.

THE GUTTER SHALL HAVE A MINIMUM 2-FT WIDE BOTTOM AND SIDESLOPES OF 1:1 MINIMUM AND 2:1 MAXIMUM, UNLESS DIRECTED OTHERWISE BY THE ENGINEER.

A. FOR THE SOUTH MOT CROSSOVER LIMITS:

THE EXISTING MEDIAN BARRIERS AND THE PAVED GUTTER BETWEEN THEM SHALL BE REMOVED FOR MOT CROSSOVER OPERATIONS.

AFTER COMPLETION OF THE CROSSOVER OPERATION, THE BARRIER AND PAVED GUTTER SHALL BE RESTORED TO EXISTING CONDITIONS, MATCHING THE EXISTING BARRIER SHAPE, HEIGHT, AND OFFSET (TOE), AND MATCHING THE EXISTING PAVED GUTTER SHAPE (SIDESLOPE AND BOTTOM WIDTH) AND GUTTER ELEVATION.

B. FOR THE LOWERED PROFILE AND SUPERELEVATION CORRECTION LIMITS:

THE EXISTING MEDIAN BARRIER ON SB IR-71 AND THE PAVED GUTTER BETWEEN THE MEDIAN BARRIERS SHALL BE REMOVED. THE EXISTING MEDIAN BARRIER ON NB IR-71 SHALL REMAIN AND NOT BE DISTURBED.

THE REPLACEMENT BARRIER FOR SB IR-71 WILL BE A SINGLE SLOPE BARRIER, TYPE B1. THE TOE OF THE BARRIER SHALL MATCH THE EXISTING BARRIER OFFSET.

THE PAVED GUTTER SHALL BE RECONSTRUCTED TO THE GUTTER ELEVATIONS SHOWN IN THE PLANS:

A)	STA 474+10 TO STA 476+25	==>	MATCH EXISTING GUTTER ELEVATION
B)	STA 476+25 TO STA 482+50	==>	NEW GUTTER ELEVATION
C)	STA 482+50 TO STA 486+35	==>	MATCH EXISTING GUTTER ELEVATION

C. FOR THE HAM-71-1068L/R (STEWART RD) BRIDGE REHABILITATION LIMITS:

THE EXISTING MEDIAN BARRIERS AND THE PAVED GUTTER BETWEEN THEM SHALL BE REMOVED.

THE REPLACEMENT BARRIERS WILL BE A SINGLE SLOPE BARRIER, TYPE B1 (ROADWAY) AND BRIDGE RAILING (SCD SBR-1-13). THE TOE OF THE BARRIER/RAILING SHALL MATCH THE EXISTING BARRIER OFFSET.

THE PAVED GUTTER SHALL BE RECONSTRUCTED WITH THE GUTTER ELEVATION MATCHING THE EXISTING GUTTER ELEVATION.

**ITEM 601 - PAVED GUTTER, TYPE 1-2, AS PER PLAN
PAVED GUTTER, TYPE 1-4, AS PER PLAN (CONT'D)**

D. FOR THE NORTH MOT CROSSOVER LIMITS:

THE EXISTING MEDIAN BARRIERS AND THE PAVED GUTTER BETWEEN THEM SHALL BE REMOVED FOR MOT CROSSOVER OPERATIONS.

AFTER COMPLETION OF THE CROSSOVER OPERATION, THE BARRIER AND PAVED GUTTER SHALL BE RECONSTRUCTED.

THE REPLACEMENT BARRIERS FOR WILL BE A SINGLE SLOPE BARRIER, TYPE B1. THE TOE OF THE BARRIER SHALL MATCH THE EXISTING BARRIER OFFSET.

THE PAVED GUTTER SHALL BE RECONSTRUCTED WITH THE GUTTER ELEVATION MATCHING THE EXISTING GUTTER ELEVATION.

PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTALS, FIELD SURVEY, AND EQUIPMENT NECESSARY FOR CONSTRUCTING THE ABOVE ITEM, COMPLETED AND ACCEPTED IN PLACE.

ITEM 606 - ANCHOR ASSEMBLY, MGS TYPE E

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY OF THE GUARDRAIL END TERMINALS FOR TYPE MGS GUARDRAIL AS LISTED ON ROADWAY ENGINEERING'S WEB PAGE UNDER ROADSIDE SAFETY DEVICES FOR APPROVED GUARDRAIL END TREATMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE FACE OF THE TYPE E IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19.

REFER TO THE MANUFACTURER'S INSTRUCTIONS REGARDING THE INSTALLATION OF, AND THE GRADING AROUND THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4 INCHES ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 31 INCHES FROM THE EDGE OF THE SHOULDER.

ON-SITE GRADING IS REQUIRED IF THE TOP OF THE FOUNDATION TUBES OR TOP OF THE GROUND STRUT DOES PROJECT MORE THAN 4 INCHES ABOVE THE GROUND LINE.

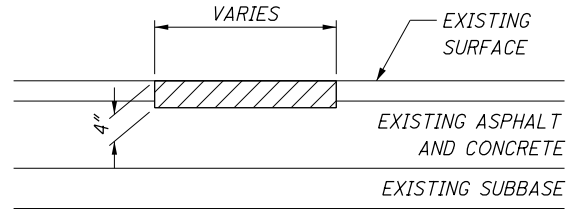
PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, MGS TYPE E, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED TRANSITIONS, REFLECTIVE SHEETING, HARDWARE, GRADING, EMBANKMENT AND EXCAVATION NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL

WHEN IT IS NECESSARY TO SPLICE PROPOSED GUARDRAIL TO EXISTING GUARDRAIL, ONLY THE EXISTING GUARDRAIL SHALL BE CUT, DRILLED, OR PUNCHED. THE CONNECTION SHALL BE MADE USING A W-BEAM, BEAM SPLICE AS SHOWN IN AASHTO M 180-12, EXCEPT THE BEAM WASHERS ARE NOT TO BE USED. PAYMENT SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE GUARDRAIL ITEMS.

ITEM 253 - PARTIAL DEPTH PAVEMENT REPAIR

THE FOLLOWING ESTIMATED QUANTITIES OF ITEM 253 - PARTIAL DEPTH PAVEMENT REPAIR HAVE BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED IN EACH YEAR OF MOT AS DIRECTED BY THE ENGINEER FOR MAINTAINING TRAFFIC.



EXISTING DETERIORATED ASPHALT SHALL BE REMOVED TO A MINIMUM DEPTH OF 4 INCHES OR TOP OF CONCRETE OR AS DIRECTED BY THE ENGINEER AND REPLACED WITH ITEM 301, ASPHALT CONCRETE BASE. THE 301 SHALL BE COMPACTED AS PER 401.15 AND IN APPROXIMATELY EQUAL LAYERS - IF REQUIRED DUE TO THE DEPTH OF REPAIR. THE LOCATIONS AND SIZE OF THE REPAIRS SHALL BE DETERMINED BY THE ENGINEER.

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 253 PAVEMENT REPAIR, PERFORMED IN 2018 - 250 CY
 ITEM 253 PAVEMENT REPAIR, PERFORMED IN 2019 - 250 CY
 ITEM 253 PAVEMENT REPAIR, PERFORMED IN 2020 - 100 CY

TOTAL = 600 CY

ENDANGERED BAT HABITAT REMOVAL

THE PROJECT IS LOCATED WITHIN THE KNOWN HABITAT RANGES OF THE FEDERALLY LISTED AND PROTECTED INDIANA BAT AND NORTHERN LONG-EARED BAT. NO TREES SHALL BE REMOVED UNDER THIS PROJECT FROM APRIL 1 THROUGH SEPTEMBER 30. ALL NECESSARY TREE REMOVAL SHALL OCCUR FROM OCTOBER 1 THROUGH MARCH 31. THIS REQUIREMENT IS NECESSARY TO AVOID AND MINIMIZE IMPACTS TO THESE SPECIES AS REQUIRED BY THE ENDANGERED SPECIES ACT. FOR THE PURPOSES OF THIS NOTE, A TREE IS DEFINED AS A LIVE, DYING, OR DEAD WOODY PLANT WITH A TRUNK THREE INCHES OR GREATER IN DIAMETER AT A HEIGHT OF 4.5 FEET ABOVE THE GROUND SURFACE, AND WITH A MINIMUM HEIGHT OF 13 FEET.

PROJECTS LOCATED OVER A SOLE SOURCE AQUIFER

THE PROJECT AREA IS LOCATED OVER THE BURIED VALLEY AQUIFER SYSTEM, A DESIGNATED SOLE SOURCE AQUIFER. IN ORDER TO MINIMIZE THE POTENTIAL FOR A RELEASE IN THIS SENSITIVE AREA, ALL PROJECT RELATED REFUELING AND MAINTENANCE ACTIVITIES SHALL BE PERFORMED IN AN ENVIRONMENTALLY RESPONSIBLE MANNER FROM STA 403+00 TO STA 472+00. SPILLS OF FUELS, OILS, CHEMICALS OR OTHER MATERIALS WHICH COULD POSE A THREAT TO GROUNDWATER SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR. IF THE SPILL IS A REPORTABLE AMOUNT, THE CONTRACTOR SHOULD CONTACT CHIEF RICHARD A. BRAUN OF THE CINCINNATI FIRE DEPARTMENT AT (513) 352-6220 FOR CLEAN-UP OF THE SPILL.

EXISTING SEWERS TO REMAIN

ALL EXISTING SEWERS TO REMAIN IN SERVICE MUST BE VIDEOTAPED PRE AND POST CONSTRUCTION. ANY DAMAGE CAUSED TO THE SEWERS DURING CONSTRUCTION MUST BE REPAIRED TO THE SATISFACTION OF MSD. VIDEO MUST CONFORM WITH THE NATIONAL ASSOCIATION OF SEWER SERVICE COMPANIES' (NASSCO) PIPELINE ASSESSMENT CERTIFICATION PROGRAM (PACP) AND LATERAL ASSESSMENT CERTIFICATION PROGRAM (LACP). NO ADDITIONAL LOADING MAY BE ADDED TO THE EXISTING SEWER.

ENVIRONMENTAL WORK

ENVIRONMENTAL STUDIES HAVE SHOWN THAT THERE IS A POTENTIAL OF ENCOUNTERING PETROLEUM-CONTAMINATED MATERIALS DURING EXCAVATIONS FOR THE PROPOSED SIGNAL SUPPORT POLES NEAR THE BEGINNING OF RAMP E AND END OF RAMP R, AT STA 621+33, 80' LT AND STA 9+95, 180' RT (RAMP R).

IN THE EVENT PETROLEUM-CONTAMINATED MATERIALS ARE ENCOUNTERED, THE CONTRACTOR SHALL MANAGE THIS MATERIAL ACCORDING TO THE FOLLOWING NOTES. THE ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THIS WORK. ALL EXCAVATIONS WITHIN THE AFOREMENTIONED LIMITS SHALL BE PAID FOR UNDER THE ORIGINAL PLAN BID ITEMS. ALL MATERIAL EXCAVATED BY THE CONTRACTOR BETWEEN THESE LIMITS MAY BE STOCKPILED IN AN AREA PROVIDED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. THE ENGINEER MAY PERMIT TEMPORARY STORAGE OF THE EXCAVATED MATERIAL IN A LINED AND COVERED ROLL-OFF BOX.

THE ENGINEER MAY PERMIT TEMPORARY STORAGE OF THE EXCAVATED MATERIAL ON AN IMPERMEABLE MEMBRANE. THE MEMBRANE SHALL BE SURROUNDED BY BALES OF STRAW TO PREVENT THE SUSPECTED SOILS FROM COMING IN CONTACT WITH THE ORIGINAL SOILS. AN IMPERMEABLE MEMBRANE SHALL BE PLACED OVER THE STOCKPILE TO PREVENT CONTACT WITH PRECIPITATION AND/OR SURFACE RUN-OFF. THE ENGINEER MAY PERMIT THE CONTRACTOR TO DIRECT LOAD THE EXCAVATED CONTAMINATED MATERIAL INTO TRUCKS. THIS MATERIAL SHALL BE PROPERLY TESTED, TRANSPORTED, AND DISPOSED OF IN A LICENSED (BY THE LOCAL HEALTH DEPARTMENT) AND PERMITTED (BY THE OHIO ENVIRONMENTAL PROTECTION AGENCY) SOLID WASTE FACILITY.

THE CONTRACTOR SHALL COMPLETE ALL MANIFEST FOR MATERIAL TO BE TRANSPORTED AND PROVIDE TO THE ENGINEER FOR SIGNATURE. THE CONTRACTOR IS TO OBTAIN ALL NECESSARY PERMITS AND APPROVALS TO TRANSPORT THE MATERIAL TO A LICENSED AND PERMITTED DISPOSAL FACILITY. THE CONTRACTOR IS TO CONTACT THE DISPOSAL FACILITY TO DETERMINE IF ANY ADDITIONAL TESTING IS REQUIRED FOR DISPOSAL. THE CONTRACTOR IS TO PROVIDE ANY ADDITIONAL SAMPLING AND ANALYSIS OF THE MATERIAL AS REQUIRED BY THE DISPOSAL FACILITY. THE CONTRACTOR SHALL OBTAIN ALL SIGNATURES ON THE MANIFEST AFTER TRANSPORTING AND DISPOSAL OF THE MATERIAL AND PROVIDE A FINAL COPY TO THE ENGINEER.

THE CONTRACTOR SHALL FURNISH ALL THE LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO PROPERLY HANDLE, STORE (IF NECESSARY), TEST FOR DISPOSAL, TRANSPORT, AND DISPOSE OF REGULATED MATERIALS, INCLUDING ANY REQUIRED PERMITS, APPROVALS, OR FEES WITHIN THE LIMITS IDENTIFIED ABOVE. PAYMENT FOR THIS WORK SHALL BE MADE AT THE CONTRACT PRICE BID PER TON. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE:

690E65016 ITEM SPECIAL - WORK INVOLVING PETROLEUM CONTAMINATED SOILS 20 TON

ASBESTOS NOTIFICATION

AN ASBESTOS SURVEY OF THE BRIDGE STRUCTURES SCHEDULED FOR REHABILITATION WAS CONDUCTED BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST. THE ASBESTOS REPORT WILL BE PROVIDED AT THE PRE-CONSTRUCTION MEETING. FOR BIDDING PURPOSES ASSUME KENNEDY AVENUE BRIDGE HAS ONE TRANSITE PIPE THE LENGTH OF THE STRUCTURE THAT WILL BE REQUIRED TO BE REMOVED. A COPY OF THE OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA) NOTIFICATION OF DEMOLITION AND RENOVATION FORMS, PARTIALLY COMPLETED AND SIGNED BY THE BRIDGE OWNER, WILL BE PROVIDED TO THE SUCCESSFUL BIDDER. THE CONTRACTOR SHALL COMPLETE THE FORM AND SUBMIT IT TO THE ADDRESS BELOW AT LEAST TEN (10) WORKING DAYS PRIOR TO THE START OF ANY DEMOLITION AND/OR RENOVATION.

Ken Wilkens
 (513) 946-7743
 Southwest Ohio Air Quality Agency
 Air Quality Programs
 250 William Howard Taft Road
 Cincinnati, Ohio 45219

THE CONTRACTOR SHALL PROVIDE A COPY OF THE COMPLETED FORM TO THE ENGINEER. INFORMATION REQUIRED ON THE FORM WILL INCLUDE: 1) THE CONTRACTORS NAME AND ADDRESS, 2) THE SCHEDULED DATES FOR THE START AND COMPLETION OF THE BRIDGE REMOVAL AND 3) A DESCRIPTION OF THE PLANNED DEMOLITION WORK AND THE METHOD(S) TO BE USED. COPIES OF THE OEPA FORM AND BRIDGE INSPECTION REPORT ARE AVAILABLE FOR REVIEW AT THE ODOT DISTRICT 11 OFFICE, 2201 REISER AVENUE, NEW PHILADELPHIA, OHIO 44663.

BASIS FOR PAYMENT - THE CONTRACTOR SHALL FURNISH ALL FEES, LABOR, AND MATERIAL NECESSARY TO COMPLETE AND SUBMIT THE OEPA NOTIFICATION FORM. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN ITEM 202 - PORTIONS OF STRUCTURE REMOVED, AS PER PLAN.

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_GN105.dgn Sheet 3/15/2018 11:04:36 AM complon

CALCULATED
 JLG
 CHECKED
 KSC

GENERAL NOTES 5 OF 5

HAM-IR71-8.42

ITEM 614, MAINTAINING TRAFFIC (I-71)

ALL WORK ALONG I-71, RED BANK EXPRESSWAY AND RAMPS NOT DETAILED TO BE DONE IN THE PHASING DESCRIBED BELOW SHALL ADHERE TO THE PERMITTED LANE CLOSURE TIMES AND UNAUTHORIZED LANE USE AND LANE VALUE CONTRACT TABLES ON SHEET 28 .

SEE SHEETS 127 - 133 FOR DETOURS FOR NOTED RAMP CLOSURES. SEE PART 2 FOR MAINTENANCE OF TRAFFIC PLANS FOR THE AUXILIARY LANE ADDITION AND RAMP CONSTRUCTION BETWEEN KENNEDY AVE AND RED BANK ROAD.

PHASE 1A

UTILIZING S.C.D. MT-95.45, CONSTRUCT THE MEDIAN CROSSOVERS FOR USE IN PHASE 1 THRU 4 BY REMOVING THE CONCRETE BARRIER AND DITCH, REMOVING, ADDING AND ADJUSTING DRAINAGE, REMOVAL OF LIGHTING ETC. PLACE PAVEMENT FOR M.O.T. IN BOTH CROSSOVER LOCATIONS. PORTABLE BARRIER PER S.C.D. MT-95.45. SHALL REMAIN IN PLACE UNTIL SUCH TIME THAT THE CROSSOVERS ARE UTILIZED.

CONSTRUCT FULL DEPTH MEDIAN SHOULDER REPLACEMENT AND OUTSIDE SHOULDER REPLACEMENT ON THE NORTH BOUND LANES FOR USE IN PHASES 1&2. LANE AND RAMP CLOSURES ON I-71 SHALL BE PER THE PERMITTED LANE CLOSURE TIMES NOTE. CLOSE LEFT AND RIGHT LANES AS PER S.C.D. 95.30. USE SCD'S MT-98.10, MT-98.11, MT- 98.20 AND MT-98.22 AS APPROPRIATE FOR WORK NEAR RAMPS.

PHASE 1

SEE SHEETS 39 - 40 , 43 & 49 - 59 FOR PHASE DETAILS. SHIFT ONE LANE OF SOUTHBOUND I-71 IN A CONTRAFLOW ARRANGEMENT ON THE NORTHBOUND PAVEMENT. SHIFT THE REMAINING 2 LANES OF SOUTHBOUND I-71 TO THE INSIDE OF BRIDGE HAM-71-0970L AND BRIDGE HAM-71-1068L. ON BRIDGE HAM-71-0970L PERFORM HYDRO-DEMOLITION AND DECK OVERLAY ON THE OUTSIDE OF THE DECK. CLOSE RAMP A (RED BANK ROAD TO SB I-71) TO COMPLETE THE WORK ON THE OUTSIDE. ON BRIDGE HAM-71-1068L REMOVE AND REPLACE THE DECK ON THE OUTSIDE. PERFORM SUBSTRUCTURE REHABILITATION ON THE OUTSIDE. SHIFT THE REMAINING 2 LANES OF SOUTHBOUND I-71 TO THE MEDIAN IN THE PAVEMENT LOWERING AREA IN THE RED BANK ROAD INTERCHANGE AND CONSTRUCT THE OUTSIDE PORTION OF THE FULL DEPTH PAVEMENT REPLACEMENT. PERFORM FULL DEPTH JOINT REPAIRS ON THE SOUTHBOUND LANES ON THE CLOSED MEDIAN LANE, AND IN THE CENTER LANE USING LANE CLOSURES OR LANE SHIFTS.

PHASE 2

SEE SHEETS 41 - 43 & 60 - 68 FOR PHASE DETAILS. SEE SHEETS 58 - 59 FOR LEAD IN SIGNAGE DETAILS. MAINTAINING THE CONTRAFLOW ARRANGEMENT FROM PHASE 1. SHIFT THE REMAINING 2 LANES OF SOUTHBOUND I-71 TO THE PORTIONS OF BRIDGE HAM-71-0970L AND BRIDGE HAM-71-1068L CONSTRUCTED IN PHASE 1. ON BRIDGE HAM-71-0970L PERFORM HYDRO-DEMOLITION AND DECK OVERLAY ON THE INSIDE (MEDIAN) OF THE DECK. ON BRIDGE HAM-71-1068L REMOVE AND REPLACE THE DECK ON THE INSIDE (MEDIAN). PERFORM SUBSTRUCTURE REHABILITATION ON THE INSIDE.

IN THE LOWERING AREA IN THE RED BANK ROAD INTERCHANGE SHIFT 2 LANES OF SOUTHBOUND I-71 TO THE FULL DEPTH PAVEMENT CONSTRUCTED IN PHASE 1 AND CONSTRUCT INSIDE (MEDIAN) PORTION OF THE FULL DEPTH PAVEMENT REPLACEMENT.

CONTINUE FULL DEPTH JOINT REPAIRS ON THE SOUTHBOUND LANES ON THE OUTSIDE LANES, AND IN THE CENTER LANE USING LANE CLOSURES OR SHIFTS. CONSTRUCT FULL DEPTH MEDIAN SHOULDER REPLACEMENT AND OUTSIDE SHOULDER REPLACEMENT ON THE SOUTHBOUND LANES FOR USE IN PHASES 3&4.

PHASE 3

SEE SHEETS 44 - 45 , 48 & 69 - 79 FOR PHASE DETAILS. SHIFT THE ADD LEFT LANE FROM SR 562 TO NORTH BOUND I-71 IN A CONTRAFLOW ARRANGEMENT ON THE SOUTHBOUND PAVEMENT. TRAFFIC ON THE NORTHBOUND THRU LANES SOUTH OF THE INTERCHANGE WILL NOT BE ALLOWED ACCESS TO THE CONTRAFLOW LANE. SHIFT THE REMAINING 2 LANES OF NORTHBOUND I-71 TO THE INSIDE OF BRIDGE HAM-71-0970R AND THE OUTSIDE OF BRIDGE HAM-71-1068R. CLOSE RAMP B (NB I-71 TO RED BANK ROAD). ON BRIDGE HAM-71-0970R PERFORM HYDRO-DEMOLITION AND DECK OVERLAY ON THE OUTSIDE OF THE DECK. ON BRIDGE HAM-71-1068L REMOVE AND REPLACE THE DECK ON THE INSIDE (MEDIAN). PERFORM SUBSTRUCTURE REHABILITATION ON THE INSIDE. PERFORM FULL DEPTH JOINT REPAIRS ON THE NORTHBOUND LANES ON THE CLOSED MEDIAN LANE, AND IN THE CENTER LANE USING LANE CLOSURES OR LANE SHIFTS.

PHASE 4

SEE SHEETS 46 - 48 , & 80 - 88 FOR PHASE DETAILS, SEE SHEETS 78 - 79 FOR LEAD IN SIGNAGE DETAILS. MAINTAINING THE CONTRAFLOW ARRANGEMENT FROM PHASE 3. SHIFT THE REMAINING 2 LANES OF SOUTHBOUND I-71 TO THE PORTIONS OF BRIDGE HAM-71-0970R AND BRIDGE HAM-71-1068R CONSTRUCTED DURING PHASE 3. CLOSE RAMP F (NB I-71 TO STEWART ROAD). ON BRIDGE HAM-71-0970R PERFORM HYDRO-DEMOLITION AND DECK OVERLAY ON THE INSIDE (MEDIAN) OF THE DECK. ON BRIDGE HAM-71-1068R REMOVE AND REPLACE THE DECK ON THE OUTSIDE. PERFORM SUBSTRUCTURE REHABILITATION ON THE OUTSIDE. CONTINUE FULL DEPTH JOINT REPAIRS ON THE NORTHBOUND LANES ON THE OUTSIDE LANES, AND IN THE CENTER LANE USING LANE CLOSURES OR SHIFTS.

PHASE 5

RE-CONSTRUCT WHAT WAS REMOVED FOR THE MEDIAN CROSSOVERS; (MEDIAN CONCRETE BARRIER, DRAINAGE INLETS, ETC.) RECONSTRUCT SHOULDER WHERE MODIFIED CROSS SLOPE WAS UTILIZED. PLACE PORTABLE BARRIER ALONG THE MEDIAN EDGE LINE PER S.C.D. MT-95.45 THAT SHALL REMAIN IN PLACE UNTIL SUCH TIME MEDIAN BARRIER IS REBUILT. LANE CLOSURES ON I-71 SHALL BE PER THE PERMITTED LANE CLOSURE NOTE AND PERTINENT S.C.D.'S

SINGLE AND DOUBLE LANE CLOSURES AT THE SR 562 AND SR 126 INTERCHANGES.

WHEN WORK REQUIRES SHORT TERM SINGLE AND DOUBLE LANE CLOSURES PER THE LVCT THAT IMPACT THE SR 562 AND SR 126 INTERCHANGES AT THE PROJECT LIMITS, THE CONTRACTOR SHALL USE THE LANE CLOSURE DETAILS ON SHEETS 89 - 110 . LANE CLOSURE SETUPS NOT DETAILED ON THESE SHEETS SHALL FOLLOW THE PERTINENT SCDs.

HAM-71-0991; RAMP C (S.B. I-71 TO S.B. RED BANK ROAD)

CLOSE RAMP C PER LVCT FOR 2 SEPARATE WEEKENDS TO PERFORM THE BRIDGE DECK OVERLAY ON HAM-71-0991, JOINT REPAIRS AND PAVEMENT OVERLAY ON THE RAMP. SEE SHEETS 129 - 130 FOR DETOUR. SEE SHEET 131 FOR AUXILIARY LANE CLOSURE DETAILS.

HAM-71-0992; RAMP A (N.B. RED BANK ROAD TO I-71 S.B.)

CLOSE RAMP A PER LVCT TO PERFORM THE BRIDGE DECK OVERLAY ON HAM-71-0992, JOINT REPAIRS AND PAVEMENT OVERLAY ON THE RAMP AND COMPLETE THE OUTSIDE OF HAM-71-0970L WITHIN THE SAME CLOSURE PERIOD. SEE SHEET 127 FOR DETOUR. SEE SHEET 114 FOR MODIFICATIONS AND PHASE DETAILS ON STEWART ROAD TO BE UTILIZED DURING THE DETOUR PERIOD.

RAMP B (N.B. I-71 TO S.B. RED BANK ROAD)

CLOSE RAMP B PER LVCT TO COMPLETE THE OUTSIDE OF HAM-71-0970R AND TO PERFORM JOINT REPAIRS AND PAVEMENT OVERLAY ON THE RAMP WITHIN THE SAME CLOSURE PERIOD. SEE SHEET 128 FOR DETOUR. SEE SHEET 114 FOR MODIFICATIONS AND PHASE DETAILS ON STEWART ROAD TO BE UTILIZED DURING THE DETOUR PERIOD.

RAMP F (N.B. I-71 TO STEWART ROAD)

CLOSE RAMP F PER LVCT TO COMPLETE THE OUTSIDE OF BRIDGE HAM-71-1068R AND TO PERFORM PAVEMENT OVERLAY ON THE RAMP WITHIN THE SAME CLOSURE PERIOD. SEE SHEETS 132 - 133 FOR DETOUR.

BRIDGE HAM-71-0875 (KENNEDY AVENUE)

MAINTAIN 1 LANE IN EACH DIRECTION PER THE LVCT, EXCEPT THE RIGHT LANE CAN BE CLOSED WITH PORTABLE BARRIER TO REPAIR BACK WALL AS SHOWN ON SHEET 111

HAM-71-0970 L/R (OVER RED BANK ROAD)

BRIDGE PAINTING IN PHASES 2 & 3 WILL REQUIRE MAINTAINING TWO-WAY TRAFFIC IN A SINGLE LANE USING A TEMPORARY SIGNAL (SEE PHASE DETAILS ON SHEETS 112 - 113). THE DURATION OF PHASES 2 & 3 SHALL BE 45 CALENDAR DAYS TOTAL. FLAGGING IS PERMITTED FROM 9AM TO 3PM FOR PHASES 1 & 4 .

HAM-71-1068 L/R (OVER STEWART ROAD)

MAINTAIN 1 LANE IN EACH DIRECTION FOR BRIDGE PAINTING AND OVERHEAD WORK PER PHASE DETAILS ON SHEETS 115 - 116 . 15 MINUTE SHORT DURATION COMPLETE CLOSURES ON STEWART ROAD ARE PERMITTED FROM 10PM TO 5AM DURING DECK REMOVAL.

HAM-71-1149 (EUCLID ROAD)

MAINTAIN TRAFFIC USING FLAGGERS BETWEEN 9AM-3PM.

HAM-71-1181 (KENWOOD ROAD)

PER THE TIMES PERMITTED IN THE LVCT, SETUP LANE CLOSURES PER SHEETS 117 - 126 FOR PHASE DETAILS. MAINTAIN A MINIMUM OF ONE OPEN SIDEWALK AT ALL TIMES, AND DETOUR PEDESTRIANS FROM THE CLOSED SIDEWALK AS SHOWN ON THE PHASE DETAILS.

HAM-71-1277 (GALBRAITH ROAD)

MAINTAIN PEDESTRIAN TRAFFIC AT ALL TIMES AND MAINTAIN 1 LANE OF VEHICULAR TRAFFIC IN EACH DIRECTION DURING NON WORKING TIMES. MAINTAIN 2-WAY TRAFFIC IN ONE LANE USING FLAGGERS AS PER THE LVCT.

ITEM 614, MAINTAINING TRAFFIC (NOTICE OF CLOSURE SIGN)

NOTICE OF CLOSURE SIGNS (W20-H13),SHALL BE ERECTED BY THE CONTRACTOR PRIOR TO THE SCHEDULED ROAD OR RAMP CLOSURE IN ACCORDANCE WITH THE NOTICE OF CLOSURE TIME TABLE BELOW. [AT THE APPROVAL OF THE ENGINEER, PORTABLE CHANGABLE MESSAGE SIGNS MAY BE USED IN LIEU OF THE STANDARD FLATSHEET SIGN FOR CLOSURE DURATIONS OF LESS THAN 1 WEEK.

THE SIGNS SHALL BE ERECTED ON THE RIGHT-HAND SIDE OF THE ROAD/RAMP FACING TRAFFIC. THEY SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS. ON ROADWAYS, THEY SHOULD BE ERECTED AT OR NEAR THE POINT OF CLOSURE. THE SIGNS MAY BE ERECTED ANYWHERE ON RAMPS AS LONG AS THEY ARE VISIBLE TO THE MOTORISTS USING THE RAMP. ON ENTRANCE RAMPS, THE SIGN SHALL BE ERECTED WELL IN ADVANCE OF THE MERGE AREA TO AVOID DISTRACTING MOTORISTS.

NOTICE OF CLOSURE SIGN TIME TABLE

ITEM	DURATION OF CLOSURE	SIGN DISPLAYED TO PUBLIC
RAMP & ROAD	>=2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	> 12 HOURS & < 2 WEEKS	7 CALENDAR DAYS PRIOR TO CLOSURE
	CLOSURES < 12 HOURS	2 BUSINESS DAYS PRIOR TO CLOSURE

THE SIGN SHALL DISPLAY THE DATE OF THE CLOSURE IN MMM-DD FORMAT AND THE NUMBER OF DAYS OF THE CLOSURE. THE LAST LINE OF THE W20-H13 SIGN LISTS A PHONE NUMBER WHICH A MOTORIST MAY CALL FOR ADDITIONAL INFORMATION. THIS IS TO BE A SPECIFIC OFFICE WITHIN THE DISTRICT RATHER THAN THE GENERAL SWITCHBOARD NUMBER.

LANES OPEN DURING HOLIDAYS OR SPECIAL EVENTS (I-71 & RAMPS)

NO WORK SHALL BE PERFORMED AND ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS OR EVENTS:

CHRISTMAS	FOURTH OF JULY
NEW YEARS	LABOR DAY
MEMORIAL DAY	THANKSGIVING
EASTER	

THE PERIOD OF TIME THAT THE LANES ARE TO BE OPEN DEPENDS ON THE DAY OF THE WEEK ON WHICH THE HOLIDAY OR EVENT FALLS. THE FOLLOWING SCHEDULE SHALL BE USED TO DETERMINE THIS PERIOD:

DAY OF HOLIDAY OR EVENT	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00N FRIDAY THROUGH 6:00 AM MONDAY
MONDAY	12:00N FRIDAY THROUGH 6:00 AM TUESDAY
TUESDAY	12:00N MONDAY THROUGH 6:00 AM WEDNESDAY
WEDNESDAY	12:00N TUESDAY THROUGH 6:00 AM THURSDAY
THURSDAY	12:00N WEDNESDAY THROUGH 6:00 AM FRIDAY
THURSDAY (THANKSGIVING ONLY)	6:00 AM WEDNESDAY THROUGH 6:00 AM MONDAY
FRIDAY	12:00N THURSDAY THROUGH 6:00 AM MONDAY
SATURDAY	12:00N FRIDAY THROUGH 6:00 AM MONDAY

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED A DISINCENTIVE IN THE AMOUNT OF \$125 FOR EACH MINUTE THE ABOVE DESCRIBED LANE CLOSURE RESTRICTIONS ARE VIOLATED.

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_MN400.dgn Sheet 3/2/2018 11:53 AM dan-f

PERMITTED LANE CLOSURE TIMES AND UNAUTHORIZED LANE USE TABLE

LOCATION	NO. OF EXISTING THRU LANES PER DIRECTION	1 LANE CLOSED		2 LANES CLOSED		15 MINUTE SHORT DURATION COMPLETE CLOSURES	COMPLETE CLOSURE	TIME UNIT	DISINCENTIVE PER LANE PER TIME UNIT
		WEEKDAY	WEEKEND	WEEKDAY	WEEKEND	ANY DAY	ANY DAY		
I-71	3	8 PM - 6 AM	7 PM - 7 AM	11 PM - 5 AM	10 PM - 6 AM	12 M - 4 AM	NONE	15 MINUTES	\$1,875
ALL RAMPS	VAR.	9 PM - 6 AM	7 PM - 6 AM	NONE	NONE	12 M - 4 AM	10 PM - 5 AM	15 MINUTES	\$1,200
KENNEDY AVE	2	9 AM - 3 PM & 8 PM - 6 AM	7 AM - 4 PM	NONE	NONE	NONE	NONE	15 MINUTES	\$750
OLD RED BANK RD	1	9 AM - 3 PM	7 AM - 7 PM	NONE	NONE	NONE	NONE	15 MINUTES	\$750
EUCLID RD	1	7 AM - 7 PM	7 AM - 7 PM	NONE	NONE	NONE	NONE	15 MINUTES	\$750
KENWOOD AVE	2	9 AM - 3 PM AND 7 PM - 6 AM	9 AM - 3 PM AND 7 PM - 6 AM	NONE	NONE	NONE	NONE	15 MINUTES	\$750
GALBRAITH RD	1	9 AM - 3 PM AND 7 PM - 7 AM (1 LANE IN EACH DIR.)	9 AM - 3 PM AND 7 PM - 7 AM (1 LANE IN EACH DIR.)	8PM - 6 AM (1-LANE, 2-WAY TRAFFIC)	8PM - 7 AM (1-LANE, 2-WAY TRAFFIC)	NONE	NONE	15 MINUTES	\$750
STEWART RD	2	AT ALL TIMES	AT ALL TIMES	NONE	NONE	10 PM - 5 AM	NONE	15 MINUTES	\$750

NOTES

- 1) NO SHORT-TERM INTERSTATE SHOULDER CLOSURES BETWEEN THE HOURS OF 6 AM TO 9 AM AND 3 PM TO 7 PM, MONDAY THROUGH FRIDAY.
- 2) NO CLOSURES 2 HOURS BEFORE TO 2 HOURS AFTER EVENTS AT GREAT AMERICAN BALL PARK, PAUL BROWN STADIUM, OR US BANK ARENA. THIS RESTRICTION ALSO APPLIES TO ANY OTHER LOCAL VENUE GENERATING AN EVENT ATTENDANCE OF 20,000+.
- 3) RAMP J/I-71 LANE CLOSURES: SHORT TERM LANE CLOSURES WITH RAMP J AS AN ADD LANE, SHEETS 99-96, IS CONSIDERED 1 LANE CLOSED. SHORT TERM LANE CLOSURES WITH RAMP J AS A MERGE, SHEETS 100-101, IS CONSIDERED 2 LANES CLOSED.
- 4) SHORT TERM PARTIAL-WIDTH RAMP CLOSURE, MAINTAINING 1-11' LANE, IS PERMITTED DURING THE TIMES FOR 1 LANE CLOSED. MAINTAIN THE EXISTING DECISION SIGHT DISTANCE ON MERGE RAMPS.
- 5) A MAXIMUM OF 1 RAMP MAY BE CLOSED AT ANY TIME.

LANE VALUE CONTRACT TABLE

DESCRIPTION OF CRITICAL LANE/RAMP TO BE MAINTAINED	RESTRICTED TIME PERIOD	TIME UNIT	DISINCENTIVE PER TIME UNIT
RAMP A - RED BANK TO I-71 SB	30 DAYS	1 DAY	\$2,500
RAMP B - I-71 NB TO RED BANK	30 DAYS	1 DAY	\$2,500
RAMP C - I-71 SB TO RED BANK	MONDAY 6 AM TO FRIDAY 9 PM	15 MINUTES	\$1,200
RAMP F - I-71 NB TO STEWART	75 DAYS	1 DAY	\$2,500

NOTES

- 1) RAMP C IS PERMITTED TO BE CLOSED A MAXIMUM OF 2 WEEKENDS. A WEEKEND CLOSURE IS DEFINED AS BEGINNING AT 9 PM ON FRIDAY AND ENDING AT 6 AM ON MONDAY.

WORK ZONE MARKINGS

THE CONTRACTOR SHALL PLACE THE ASPHALT INTERMEDIATE COURSE AND ALL WORK ZONE PAVEMENT MARKINGS, INCLUDING WORK ZONE EDGE LINE, UPON COMPLETION OF THE PAVEMENT PLANING PRIOR TO OPENING THE ROADWAY TO TRAFFIC. THE CONTRACTOR SHALL PLACE ALL WORK ZONE PAVEMENT MARKINGS OR PERMANENT MARKINGS UPON COMPLETION OF THE ASPHALT SURFACE COURSE PRIOR TO OPENING THE ROADWAY TO TRAFFIC.

PERMITTED LANE CLOSURE TIMES

SHORT TERM LANE CLOSURES ARE THOSE WHICH ARE PERMITTED BY THE PERMITTED LANE CLOSURE NOTE. THESE TIMES SHALL NOT BE REVISED WITHOUT PRIOR APPROVAL FROM THE DISTRICT 8 WORK ZONE TRAFFIC CONTROL MANAGER. SHORT TERM LANE CLOSURES SHALL ONLY BE IMPLEMENTED WHEN WORK IS BEING CONTINUOUSLY PERFORMED IN THE LANE. THE CLOSURE SHALL BE REMOVED AS SOON AS POSSIBLE AFTER WORK HAS STOPPED. PERMITTED LANE CLOSURES SHALL ONLY BE ALLOWED DURING THE TIMES SPECIFIED IN THE LANE VALUE CONTRACT TABLE AND THE MAINTAINING TRAFFIC (CITY STREETS) NOTE INCLUDED IN THESE PLANS. NO LANE OR SHOULDER CLOSURE SHALL BE IN PLACE WHEN NO WORK IS BEING PERFORMED.

LANE CLOSURE/REDUCTION REQUIRED

LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTIONS SHALL BE AT THE APPROVAL OF THE ENGINEER. IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.

ITEM 614, REPLACEMENT DRUM

DRUMS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS AND PROPOSAL WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND WHEN ORDERED BY THE ENGINEER. REPLACEMENT DRUMS SHALL BE NEW.

PAYMENT FOR THE NEW DRUMS SHALL BE MADE AT THE CONTRACT PRICE PER EACH FOR ITEM 614, REPLACEMENT DRUM, AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF THE DAMAGED DRUM, AND PROVIDING AND MAINTAINING THE REPLACEMENT DRUM IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS FOR THE ORIGINAL DRUM.

AN ESTIMATED QUANTITY OF 100 EACH HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

DRUM REQUIREMENTS

IN ADDITION TO THE REQUIREMENTS OF THE PLANS, SPECIFICATION AND PROPOSAL, DRUMS FURNISHED BY THE CONTRACTOR SHALL BE NEW AND UNUSED AT THE TIME OF ARRIVAL ON THE PROJECT. ANY DRUMS BROUGHT ON THE PROJECT, WHICH HAVE PREVIOUSLY BEEN USED ELSEWHERE, WILL NOT BE ACCEPTED.

PAYMENT FOR DRUMS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR MAINTAINING TRAFFIC UNLESS SEPARATELY ITEMIZED.

ADVANCE WARNING SIGNS

THE ROAD WORK NEXT XX MILES (G20-1) SIGN AND END ROAD WORK (G20-2) SIGN SHALL BE INSTALLED AT THE PROJECT LIMITS IN ADVANCE OF THE TTC ZONE. THE DISTANCE DISPLAYED ON THE ROAD WORK NEXT XX MILES SIGN SHALL BE STATED TO THE NEAREST WHOLE MILE.

ITEM 614, REPLACEMENT SIGN

FLATSHEET SIGNS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS AND PROPOSAL WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND WHEN ORDERED BY THE ENGINEER. REPLACEMENT SIGNS SHALL BE NEW. OTHER MATERIALS MAY BE IN USED, BUT GOOD, CONDITION SUBJECT TO APPROVAL BY THE ENGINEER.

PAYMENT FOR THE NEW SIGNS SHALL BE MADE AT THE CONTRACT PRICE PER EACH FOR ITEM 614, REPLACEMENT SIGN, AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF DAMAGED SIGNS, HARDWARE AND SUPPORTS, AND PROVIDING THE NECESSARY REPLACEMENT HARDWARE, SUPPORTS, ETC.

AN ESTIMATED QUANTITY OF 10 EACH HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

ROAD CLOSED SIGN

THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN STANDARD 48 X 30 INCH ROAD CLOSED SIGNS, SIGN SUPPORTS, BARRICADES AND LIGHTS, AS DETAILED IN SCD MT-101.60 AT THE FOLLOWING LOCATIONS DURING PERIODS IN WHICH THE AFFECTED ROADS ARE CLOSED TO TRAFFIC.

- RAMP A: @ RAMP GORE AT SPLIT WITH RAMP D TO NB I-71
- RAMP B: ON RAMP DECELERATION LANE PRIOR TO BRIDGE
- RAMP C: @ RAMP GORE AT I-71 SB
- RAMP F: ON RAMP DECELERATION LANE PRIOR TO BRIDGE

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH C&MS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

TEMPORARY PAVEMENT WEDGE

TEMPORARY PAVEMENT WEDGES SHALL BE PROVIDED AT ALL TIMES WHERE TRAFFIC IS REQUIRED TO TRAVEL FROM OR ONTO A PAVEMENT SURFACE OF A DIFFERENT ELEVATION. THE MINIMUM SLOPE OF THE TEMPORARY PAVEMENT WEDGE SHALL BE 3:1 ALONG LONGITUDINAL JOINTS AND 120:1 AT TRANSVERSE JOINTS. THESE WEDGES SHALL BE REMOVED PRIOR TO PLACING THE SPECIFIED PAVEMENT COURSE. PAYMENT FOR ALL WORK, MATERIALS, ETC. ASSOCIATED WITH THIS ITEM SHALL BE PAID FOR UNDER ITEM 614 MAINTAINING TRAFFIC LUMP SUM.

SHORT DURATION CLOSING OF THE HIGHWAY

THE FOLLOWING NOTES SHALL APPLY TO ALL WORK ON I-71 AND STEWART ROAD.

1. FIVE CALENDAR DAYS PRIOR TO IMPLEMENTING THE SHORT DURATION CLOSING OF THE HIGHWAY THE CONTRACTOR SHALL PLACE A PORTABLE CHANGEABLE MESSAGE SIGN AT THE STRUCTURE IN THE DIRECTION THE ROAD IS TO BE CLOSED WITH THE MESSAGE:

(I-71 or STEWART) 12 AM
 CLOSES TO
 DATE 4 AM

2. CLOSURES WILL ONLY BE PERMITTED FOR REMOVAL AND ERECTION OF THE STRUCTURAL BEAMS AND SIGN TRUSSES, TO PROTECT TRAFFIC DURING DEMOLITION OPERATIONS AS CALLED FOR IN C&MS 501.05, FOR OVERHEAD UTILITY WIRE CROSSING, AND FOR TRAFFIC SWITCHES. CLOSURES WILL BE PERMITTED DURING THE HOURS SPECIFIED IN THE PERMITTED LANE CLOSURE AND UNAUTHORIZED LANE USE TABLE, ON SHEET __. THE MAXIMUM DURATION OF THE CLOSURE SHALL NOT EXCEED 15 MINUTES SUBJECT TO A DISINCENTIVE IN THE AMOUNT SPECIFIED IN THE PERMITTED LANE CLOSURE AND UNAUTHORIZED LANE USE TABLE, ON SHEET __. UNLESS OTHERWISE DIRECTED BY THE ENGINEER, ONLY ONE (1) BEAM SHALL BE REMOVED OR SET PER CLOSING. TRAFFIC SHALL BE COMPLETELY CLEARED BEFORE THE NEXT CLOSING.

3. THE CONTRACTOR SHALL IMPLEMENT THE TRAFFIC CONTROL CONTAINED IN STANDARD CONSTRUCTION DRAWING MT-99.60. IN THE EVENT THE CLOSURE OCCURS IN CLOSE PROXIMITY TO SYSTEM-SYSTEM INTERCHANGE, TRAFFIC CONTROL SHALL EXTEND ONTO ANY ENTERING DIVIDED HIGHWAY ACCORDING TO THE LIMITS PROVIDED IN MT-99.60.

4. THE CONTRACTOR SHALL FURNISH AND INSTALL TWO (2) WATCH FOR STOPPED TRAFFIC SIGNS (W3-H7-48) 1500 FEET UPSTREAM FROM THE ANTICIPATED BACKUP ON I-71. THE CONTRACTOR SHALL INSTALL ADDITIONAL WATCH FOR STOPPED TRAFFIC SIGNS EVERY 2000 FEET UPSTREAM FROM THE WATCH FOR STOPPED TRAFFIC SIGNS ON I-71 IF TRAFFIC BACKUPS REACH THE FIRST SET OF SIGNS. THE NEED FOR THESE SIGNS SHALL BE CONSTANTLY MONITORED BY THE CONTRACTOR. ALL WATCH FOR STOPPED TRAFFIC AND PREPARE TO STOP SIGNS SHALL BE EQUIPPED WITH TYPE B WARNING LIGHTS.

5. IN THE EVENT OF AN INCLEMENT WEATHER FORECAST (RAIN OR SNOW FORECAST AT 50% OR GREATER THE DAY THE EVENT WILL OCCUR IS DEFINED AS AN INCLEMENT FORECAST) THE CLOSURE SHALL NOT TAKE PLACE. THE CONTRACTOR WILL MAKE THE DETERMINATION BASED UPON THE WEATHER FORECAST PREDICTED BY THE NATIONAL WEATHER SERVICE.

6. ALTHOUGH THE PLANS CONTAIN BID ITEMS FOR LEOS AND PCMS, THEIR USE FOR THE SHORT DURATION CLOSING OF THE HIGHWAY, INCLUDING LEOS DESCRIBED IN MT-99.60 NOTE 5, IS CONSIDERED INCIDENTAL TO ITEM 614 MAINTAINING TRAFFIC IN ORDER TO LIMIT THE FREQUENCY OF CLOSURES TO THE MINIMUM NEEDED TO PERFORM THE WORK.

ITEM 614, WORK ZONE SPEED ZONES (WZSZS)

THE FOLLOWING WORK ZONE SPEED ZONE (WZSZ) SPEED LIMIT REVISION(S) HAVE BEEN APPROVED FOR USE ON THIS PROJECT WHEN WORK ZONE CONDITIONS AND FACTORS ARE MET AS DESCRIBED BELOW:

WZSZ	REVISION NUMBER	COUNTY & ROUTE	DIRECTION
WZ-	45064	HAM-71	NB/SB

POTENTIAL WZSZ LOCATIONS SHALL HAVE AN ORIGINAL (PRE-CONSTRUCTION) POSTED SPEED LIMIT OF =55 MPH, A QUALIFYING WORK ZONE CONDITION OF AT LEAST 0.5 MILE IN LENGTH, AN EXPECTED WORK DURATION OF AT LEAST THREE HOURS, AND A WORK ZONE CONDITION IN PLACE THAT REDUCES THE EXISTING FUNCTIONALITY OF THE TRAVEL LANES OR SHOULDERS (I.E., LANE CLOSURE, LANE SHIFT, CROSSOVER, CONTRAFLOW AND/OR SHOULDER CLOSURE). THE LENGTH OF THE WORK ZONE CONDITION IS MEASURED FROM THE BEGINNING OF THE TAPER FOR THE SUBJECT WORK ZONE CONDITION IMPACTING THE TRAVEL LANES AND/OR SHOULDER TO THE END OF THE DOWNSTREAM TAPER, WHERE DRIVERS ARE RETURNED TO TYPICAL ALIGNMENT. AN EXPECTED WORK DURATION OF AT LEAST THREE HOURS IS REQUIRED TO BALANCE THE ADDITIONAL EXPOSURE CREATED BY INSTALLING AND REMOVING WZSZ SIGNING WITH THE TIME NEEDED TO COMPLETE THE WORK.

IF THE WORK ZONE MEETS THESE MINIMUM CRITERIA, IT SHALL BE ANALYZED FURTHER USING TABLE 1 BELOW TO DETERMINE IF AND WHEN IT QUALIFIES FOR A SPEED LIMIT REDUCTION. DEPENDING ON THE ORIGINAL POSTED SPEED LIMIT, THE TYPE OF TEMPORARY TRAFFIC CONTROL USED, AND WHETHER OR NOT WORKERS ARE PRESENT, A WARRANTED WZSZ WILL VARY IN THE APPROVED SPEED LIMIT TO BE POSTED OVER TIME.

C&MS ITEM 614, PARAGRAPH 614.02(B), INDICATES THAT TWO DIRECTIONS OF A DIVIDED HIGHWAY ARE CONSIDERED SEPARATE HIGHWAY SECTIONS. THEREFORE, IF THE WORK ON A MULTI-LANE DIVIDED HIGHWAY IS LIMITED TO ONLY ONE DIRECTION, A SPEED LIMIT REDUCTION IN THE DIRECTION OF THE WORK DOES NOT AUTOMATICALLY CONSTITUTE A SPEED LIMIT REDUCTION IN THE OPPOSITE DIRECTION. EACH DIRECTION SHALL BE ANALYZED INDEPENDENTLY FROM EACH OTHER.

ALL WZSZS FLUCTUATE BETWEEN TWO APPROVED REDUCED SPEED LIMITS OR BETWEEN AN APPROVED REDUCED SPEED LIMIT AND THE ORIGINAL POSTED SPEED LIMIT. ONLY ONE OF TWO SIGNING STRATEGIES SHALL BE USED TO IMPLEMENT A WZSZ. THE PRIMARY SIGNING STRATEGY USES DIGITAL SPEED LIMIT (DSL) SIGN ASSEMBLIES. THE SECONDARY STRATEGY USES TEMPORARY FLATSHEET SPEED LIMIT SIGNS (R2-1) FOR WHEN THERE ARE NO DSL SIGN ASSEMBLIES ON THE APPROVED LIST, OR DSL SIGN ASSEMBLIES ARE NOT AVAILABLE.

WZSZS USING DSL SIGN ASSEMBLIES SHALL BE IN ACCORDANCE WITH THIS NOTE, SUPPLEMENTAL SPECIFICATION (SS) 808, AND TRAFFIC SCD MT-104.10.

ONLY ONE WARRANTED SPEED LIMIT APPLIES AT ANY ONE TIME; SPEED LIMIT REDUCTIONS ARE NOT CUMULATIVE. WZSZS SHALL NOT BE USED FOR MOVING/MOBILE ACTIVITIES, AS DEFINED IN OMTCD PART 6.

WHEN LOOKING UP THE WARRANTED WORK ZONE SPEED LIMITS, ALWAYS USE THE ORIGINAL, PRE-CONSTRUCTION, POSTED SPEED LIMIT. DO NOT USE A PRIOR OR CURRENT WORK ZONE SPEED LIMIT AS A LOOK UP VALUE IN THE TABLE. POSITIVE PROTECTION IS GENERALLY REGARDED AS PORTABLE BARRIER OR OTHER RIGID BARRIER IN USE ALONG THE WORK AREA WITHIN THE SUBJECT WARRANTED WORK ZONE CONDITION. WITHOUT POSITIVE PROTECTION IS GENERALLY REGARDED AS USING DRUMS, CONES, SHADOW VEHICLE, ETC., ALONG THE WORK AREA WITHIN THE SUBJECT WARRANTED WORK ZONE CONDITION. WORKERS ARE CONSIDERED AS BEING PRESENT WHEN ON-SITE, WORKING WITHIN THE SUBJECT WARRANTED WORK ZONE CONDITION. WHEN THE WORK ZONE CONDITION REDUCING THE EXISTING FUNCTIONALITY OF THE TRAVEL LANES OR SHOULDERS IS REMOVED, THE SPEED LIMIT DISPLAYED SHALL RETURN TO THE ORIGINAL POSTED SPEED LIMIT.

TABLE 1: WARRANTED WORK ZONE SPEED LIMITS (MPH) FOR WORK ZONES ON HIGH-SPEED (=55 MPH) MULTI-LANE HIGHWAYS

ORIGINAL POSTED SPEED LIMIT	WITH POSITIVE PROTECTION		WITHOUT POSITIVE PROTECTION	
	WORKERS PRESENT	WORKERS NOT PRESENT	WORKERS PRESENT	WORKERS NOT PRESENT
70	60	65	55	65
65	55	60	50	60
60	55	60	50	60
55	50	55	45	55

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614, DIGITAL SPEED LIMIT (DSL) SIGN ASSEMBLY 78 SIGN MNTH

ASSUMES 26 DSL SIGN ASSEMBLIES PER PHASE FOR 3 MONTHS

WORK ZONE INCREASED PENALTIES SIGN (R11-H5A)

R11-H5A-48 SIGNS SHALL BE FURNISHED, ERECTED, AND MAINTAINED IN GOOD CONDITION AND/OR REPLACED AS NECESSARY AND SUBSEQUENTLY REMOVED BY THE CONTRACTOR. SIGNS SHALL BE MOUNTED AT THE APPROPRIATE OFFSETS AND ELEVATIONS AS PRESCRIBED BY THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. THEY SHALL BE MAINTAINED ON SUPPORTS MEETING CURRENT SAFETY CRITERIA.

THE SIGNS MAY BE ERECTED OR UNCOVERED NO MORE THAN FOUR HOURS BEFORE THE ACTUAL START OF WORK. THE SIGNS SHALL BE REMOVED OR COVERED NO LATER THAN FOUR HOURS FOLLOWING RESTORATION OF ALL LANES TO TRAFFIC WITH NO RESTRICTIONS, OR SOONER AS DIRECTED BY THE ENGINEER. TEMPORARY SIGN COVERING AND UNCOVERING DUE TO TEMPORARY LANE RESTORATIONS SHALL BE GUIDED BY THE FOUR-HOUR LIMITATIONS STATED ABOVE. SUCH LANE RESTORATIONS SHOULD BE EXPECTED TO REMAIN IN EFFECT FOR 30 OR MORE CONSECUTIVE CALENDAR DAYS, SUCH AS DURING WINTER SHUTDOWNS.

(THE SIGNS ON THE MAINLINE SHALL BE DUAL MOUNTED UNLESS NOT PHYSICALLY POSSIBLE. THE FIRST SIGN SHALL BE PLACED BETWEEN THE ROAD WORK AHEAD (W20-1) SIGN AND THE NEXT SIGN IN THE SEQUENCE. SIGNS SHALL BE ERECTED ON EACH ENTRANCE RAMP AND EVERY 2 MILES THROUGH THE CONSTRUCTION WORK LIMITS. SIGNS ON THE MAINLINE SHALL BE R11-H5A-48. SIGNS USED ON THE RAMPS SHALL BE R11-H5A-24. R11-H5A-24 SIGNS MAY BE USED IN THE MEDIAN IN LIEU OF R11-H5A-48 SIGNS IF IT IS NOT PHYSICALLY POSSIBLE TO PROVIDE R11-H5A-48 SIGNS IN THE MEDIAN.)

THE CONTRACTOR MAY USE SIGNS AND SUPPORTS IN USED, BUT GOOD, CONDITION PROVIDED THE SIGNS MEET CURRENT ODOT SPECIFICATIONS. SIGN FACES SHALL BE RETROREFLECTORIZED WITH TYPE G SHEETING COMPLYING WITH THE REQUIREMENTS OF C&MS 730.19.

WORK ZONE INCREASED PENALTIES SIGNS AND SUPPORTS WILL BE MEASURED AS THE NUMBER OF SIGN INSTALLATIONS, INCLUDING THE SIGN AND NECESSARY SUPPORTS. IF A SIGN AND SUPPORT COMBINATION IS REMOVED AND REERECTED AT ANOTHER LOCATION AS DIRECTED BY THE ENGINEER, IT SHALL BE CONSIDERED ANOTHER UNIT.

PAYMENT FOR ACCEPTED QUANTITIES, COMPLETE, IN PLACE WILL BE MADE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTALS AND EQUIPMENT FOR FURNISHING, ERECTING, MAINTAINING, COVERING DURING SUSPENSION OF WORK, AND REMOVAL OF THE SIGN AND SUPPORT.

ITEM 614, WORK ZONE INCREASED PENALTIES SIGN 12 EACH

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, A CHANGEABLE MESSAGE SIGN. THE SIGN SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS AVAILABLE ON THE (OFFICE OF MATERIALS MANAGEMENT WEB PAGE). THE LIST CONTAINS CLASS A AND B UNITS WITH MINIMUM LEGIBILITY DISTANCES OF 800 FEET AND 650 FEET, RESPECTIVELY.

EACH SIGN SHALL BE TRAILER-MOUNTED AND EQUIPPED WITH A FUNCTIONAL DIMMING MECHANISM, TO DIM THE SIGN DURING DARKNESS, AND A TAMPER AND VANDAL PROOF ENCLOSURE. EACH SIGN SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ON-SITE PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT. THE SIGN SHALL ALSO BE CAPABLE OF BEING POWERED BY AN ELECTRICAL SERVICE DROP FROM A LOCAL UTILITY COMPANY. THE PCMS SHALL BE DELINEATED IN ACCORDANCE WITH C&MS 614.03.

THE PROBABLE PCMS LOCATIONS AND WORK LIMITS FOR THOSE LOCATIONS ARE SHOWN ON SHEET(S) OF THE PLAN. PLACEMENT, OPERATION, MAINTENANCE AND ALL ACTIVATION OF THE SIGNS BY THE CONTRACTOR SHALL BE AS DIRECTED BY THE ENGINEER. THE PCMS SHALL BE LOCATED IN A HIGHLY VISIBLE POSITION YET PROTECTED FROM TRAFFIC. THE CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE VISIBILITY OR ACCOMMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS SHALL BE TURNED OFF. ADDITIONALLY, WHEN NOT IN USE FOR EXTENDED PERIODS OF TIME, THE PCMS SHALL BE TURNED AWAY FROM ALL TRAFFIC.

THE ENGINEER SHALL BE PROVIDED ACCESS TO EACH SIGN UNIT AND SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ODOT PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT, AND TO REVISE SIGN MESSAGES, IF NECESSARY.

ALL MESSAGES TO BE DISPLAYED ON THE SIGN WILL BE PROVIDED BY THE ENGINEER. A LIST OF ALL REQUIRED PRE-PROGRAMMED MESSAGES WILL BE GIVEN TO THE CONTRACTOR AT THE PROJECT PRECONSTRUCTION CONFERENCE. THE SIGN SHALL HAVE THE CAPABILITY TO STORE UP TO 99 MESSAGES. MESSAGE MEMORY OR PRE-PROGRAMMED DISPLAYS SHALL NOT BE LOST AS A RESULT OF POWER FAILURES TO THE ON-BOARD COMPUTER. THE SIGN LEGEND SHALL BE CAPABLE OF BEING CHANGED IN THE FIELD. THREE-LINE PRESENTATION FORMATS WITH UP TO SIX MESSAGE PHASES SHALL BE SUPPORTED. PCMS FORMAT SHALL PERMIT THE

COMPLETE MESSAGE FOR EACH PHASE TO BE READ AT LEAST TWICE. THE PCMS SHALL CONTAIN AN ACCURATE CLOCK AND PROGRAMMING LOGIC WHICH WILL ALLOW THE SIGN TO BE ACTIVATED, DEACTIVATED OR MESSAGES CHANGED AUTOMATICALLY AT DIFFERENT TIMES OF THE DAY FOR DIFFERENT DAYS OF THE WEEK.

THE PCMS UNIT SHALL BE MAINTAINED IN GOOD WORKING ORDER BY THE CONTRACTOR IN ACCORDANCE WITH THE PROVISIONS OF C&MS 614.07. THE CONTRACTOR SHALL, PRIOR TO ACTIVATING THE UNIT, MAKE ARRANGEMENTS, WITH AN AUTHORIZED SERVICE AGENT FOR THE PCMS, TO ASSURE PROMPT SERVICE IN THE EVENT OF FAILURE. ANY FAILURE SHALL NOT RESULT IN THE SIGN BEING OUT OF SERVICE FOR MORE THAN 12 HOURS, INCLUDING WEEKENDS. FAILURE TO COMPLY MAY RESULT IN AN ORDER TO STOP WORK AND OPEN ALL TRAFFIC LANES AND/OR IN THE DEPARTMENT TAKING APPROPRIATE ACTION TO SAFELY CONTROL TRAFFIC. THE ENTIRE COST TO CONTROL TRAFFIC, ACCRUED BY THE DEPARTMENT DUE TO THE CONTRACTOR'S NONCOMPLIANCE, WILL BE DEDUCTED FROM MONEYS DUE, OR TO BECOME DUE THE CONTRACTOR ON HIS CONTRACT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR 24-HOUR-PER-DAY OPERATION AND MAINTENANCE OF THESE SIGNS ON THE PROJECT FOR THE DURATION OF THE PHASES WHEN THE PLAN REQUIRES THEIR USE.

PAYMENT FOR THE ABOVE DESCRIBED ITEM SHALL BE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FUELS, LUBRICATING OILS, SOFTWARE, HARDWARE AND INCIDENTALS TO PERFORM THE ABOVE DESCRIBED WORK.

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN - 72 SIGN MONTH

ASSUMING 6 PCMS SIGN(S) FOR 12 MONTH(S)

ITEM 614, WORK ZONE IMPACT ATTENUATOR FOR 24' WIDE HAZARDS (UNIDIRECTIONAL)

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A NON-GATING IMPACT ATTENUATOR. FURNISH AN IMPACT ATTENUATOR FROM THE OFFICE OF ROADWAY ENGINEERING'S APPROVED LIST FOR WORK ZONE IMPACT ATTENUATORS, FROM THE ROADWAY STANDARDS WEB PAGE FOR ROADWAY STANDARDS WEB PAGE.

INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE CONTRACTOR SHALL REPAIR OR REPLACE A DAMAGED UNIT WITHIN 24 HOURS OF A DAMAGING IMPACT.

WHEN BIDIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS.

WHEN GATING IMPACT ATTENUATORS ARE DESIRED, THE CONTRACTOR SHALL SUBMIT DOCUMENTATION TO THE ENGINEER FOR ACCEPTANCE.

THE COST FOR THE ADDITIONAL BARRIER REQUIRED FOR A GATING IMPACT ATTENUATOR SHALL BE INCLUDED IN THE COST OF THE GATING IMPACT ATTENUATOR.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT AND MAINTAIN A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS, TRANSITIONS, LEVELING PADS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_MN402.dgn Sheet 9/21/2017 9:04:22 AM dan-f

CALCULATED
DPF
CHECKED
BJF

MAINTENANCE OF TRAFFIC GENERAL NOTES

HAM-IR71-8.42

ITEM 622, PORTABLE BARRIER, 50", AS PER PLAN
ITEM 622, PORTABLE BARRIER, 50", BRIDGE MOUNTED, AS PER PLAN

THIS WORK SHALL CONSIST OF FURNISHING, MAINTAINING, AND SUBSEQUENTLY REMOVING A 50-INCH PORTABLE BARRIER AT THE LOCATIONS SHOWN ON THE PLANS. FOR DETAILS, SEE SCD RM-4.1.

PORTABLE STEEL BARRIER IS AN APPROVED ALTERNATIVE TO PORTABLE CONCRETE BARRIER. FOR INFORMATION ON APPROVED VENDORS, SEE THE APPROVED PRODUCTS LIST MAINTAINED BY ROADWAY ENGINEERING.

PORTABLE BARRIER, 32 INCHES HIGH WITH AN 18-INCH MINIMUM HEIGHT GLARE SCREEN MAY BE USED AT THE OPTION OF THE CONTRACTOR. THE GLARE SCREEN SHALL BE CONSTRUCTED USING ONE OF THE SCREENS PROVIDED ON THE APPROVED LIST, AVAILABLE ON THE OFFICE OF ROADWAY ENGINEERING WEBSITE.

PADDLE OR INTERMITTENT TYPE GLARE SCREENS SHALL BE DESIGNED USING A 20 DEGREE CUT-OFF ANGLE BASED ON TANGENT ALIGNMENT. THAT SPACING SHALL BE USED THROUGHOUT THE BARRIER LENGTH WITHOUT REGARD TO BARRIER CURVATURE.

THE GLARE SCREEN SYSTEM SHALL BE SECURELY FASTENED TO THE 32-INCH PORTABLE BARRIER USING THE HARDWARE AND PROCEDURES SPECIFIED BY THE MANUFACTURER.

FOR DIRECTIONS ON HOW TO INSTALL THE GLARE SCREEN AND THE BARRIER, SEE THE MANUFACTURER'S INSTRUCTIONS.

PAYMENT SHALL INCLUDE ALL LABOR, MATERIAL, AND EQUIPMENT NECESSARY TO PERFORM THE WORK AND SHALL BE PAID FOR AT THE CONTRACT PRICE PER FOOT FOR ITEM 622, PORTABLE BARRIER, 50". AS PER PLAN

EMERGENCY ACCESS GATES

FOR THE PURPOSE OF PROVIDING EMERGENCY ASSISTANCE AND MAINTAINING TRAFFIC FLOW IN THE CONTRAFLOW LANE, CRASHWORTHY ACCESS POINTS TO THE CONTRAFLOW LANE SHALL BE PROVIDED THROUGH THE USE OF EMERGENCY ACCESS GATE SYSTEMS LOCATED AT APPROXIMATELY ONE MILE INTERVALS.

THE EMERGENCY ACCESS GATE SYSTEM SHALL CONFORM TO NCHRP REPORT 350, TEST LEVEL 3. IT SHALL BE ATTACHED ON BOTH ENDS TO UNANCHORED TEMPORARY CONCRETE BARRIER RUNS AND BE MOVABLE IN THE EVENT OF AN INCIDENT.

THE EMERGENCY ACCESS GATE SYSTEM SHALL BE EITHER THE "VULCAN BARRIER GATE" BY ENERGY ABSORPTION INC, AS MARKETED IN OHIO BY BALDWIN AND SOURS, INC, OR THE "SAFEGUARD LINK" SYSTEM BY BARRIER SYSTEMS, INC, AND MARKETED BY ROAD SYSTEMS, INC. EACH OPENING SHALL BE A MINIMUM OF 72 FEET IN LENGTH AT LOCATIONS SPECIFIED BY THE ENGINEER. EACH GATE SHALL BE MADE VANDAL PROOF BY THE MANUFACTURER BY RESTRICTING ACCESS TO THE CRANKING MECHANISM TO AUTHORIZED RESPONDERS.

TEST THE EMERGENCY ACCESS GATE SYSTEM FOR PROPER OPERATION ON A MONTHLY BASIS. REMEDY ANY ISSUES WITH OPERATION SUCH AS CLEANING ROADWAY DEBRIS OR REPLACING PARTS, AS SOON AS POSSIBLE AFTER THE MONTHLY TEST.

PAYMENT FOR THE ACCESS GATE, INSTALLATION, TRANSITIONS, HARDWARE, LABOR AND TESTING SHALL BE PAID FOR UNDER:

ITEM 614 - MAINTAINING TRAFFIC, MISC.:
EMERGENCY ACCESS GATE SYSTEMS, 4 EACH.

DELINEATION OF TEMPORARY AND PERMANENT GUARDRAIL

BARRIER REFLECTORS SHALL BE INSTALLED ON ALL TEMPORARY GUARDRAIL USED FOR TRAFFIC CONTROL AND ON ALL PERMANENT GUARDRAIL LOCATED WITHIN 5 FEET OF THE EDGE OF THE ADJACENT TRAVEL LANE. BARRIER REFLECTORS SHALL CONFORM TO C&MS 626.

OBJECT MARKERS SHALL BE INSTALLED ON ALL TEMPORARY AND PERMANENT GUARDRAIL LOCATED WITHIN 5 FEET OF THE EDGE OF THE ADJACENT TRAVEL LANE. GUARDRAIL-MOUNTING OF OBJECT MARKERS SHALL BE MADE BY INSTALLING THE OBJECT MARKERS ON THE EXTENSION BLOCKS RATHER THAN DIRECTLY ONTO THE GUARDRAIL ITSELF. OBJECT MARKERS SHALL CONFORM TO C&MS 614.03 AND THE SPACING SHALL BE APPROXIMATELY 50 FEET.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE PLANS AND CARRIED TO THE GENERAL SUMMARY:

ITEM 614, BARRIER REFLECTOR, TYPE 3 (I-WAY) - 31 EACH
ITEM 614, OBJECT MARKER, ONE WAY - 31 EACH

PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIAL, LABOR, INCIDENTALS AND EQUIPMENT NECESSARY FOR FURNISHING, INSTALLING, MAINTAINING AND REMOVING THE ABOVE ITEMS).

DELINEATION OF PORTABLE AND PERMANENT BARRIER

BARRIER REFLECTORS AND OBJECT MARKERS SHALL BE INSTALLED ON ALL PORTABLE BARRIER (PB) USED FOR TRAFFIC CONTROL AND ON PERMANENT CONCRETE BARRIER (INCLUDING BRIDGE PARAPETS) LOCATED WITHIN 5 FEET OF THE EDGE OF THE ADJACENT TRAVEL LANE.

BARRIER REFLECTORS SHALL CONFORM TO C&MS 626, EXCEPT THAT THE SPACING SHALL BE AS PER TRAFFIC SCD MT-101.70. OBJECT MARKERS AND THEIR INSTALLATION SHALL CONFORM TO C&MS 614.03 AND SCD MT-101.70. WHEN THE PB CONTAINS GLARE SCREEN, ONE SET OF THREE VERTICAL STRIPES OF SHEETING SHALL BE CONSIDERED EQUIVALENT TO AN OBJECT MARKER, ONE-WAY.

INCREASED BARRIER DELINEATION, AS SPECIFIED HEREIN, SHALL BE INSTALLED ON ALL PB AND CONCRETE PERMANENT BARRIER LOCATED WITHIN 5 FEET OF THE EDGE OF THE TRAVELED LANE UNDER EITHER OF THE FOLLOWING CONDITIONS: ALONG TAPERS AND TRANSITION AREAS AND ALONG CURVES (OUTSIDE ONLY) WITH DEGREE OF CURVATURE GREATER THAN OR EQUAL TO 3 DEGREES

THE INCREASED BARRIER DELINEATION SHALL CONSIST OF EITHER DELINEATION PANELS OR THE TRIPLE STACKING OF WORK ZONE BARRIER REFLECTORS.

DELINEATION PANELS SHALL CONSIST OF PANELS OF DELINEATION, APPROXIMATELY 34 INCHES LONG AND 6 INCHES WIDE AND SHALL BE "CRIMPED." PANELS SHALL BE INSTALLED AND SPACED PER TRAFFIC SCD MT-101.70.

TRIPLE-STACKED BARRIER REFLECTORS SHALL CONSIST OF ALIGNING THREE BARRIER REFLECTORS VERTICALLY, AT LOCATIONS WHERE A SINGLE BARRIER REFLECTOR WOULD BE OTHERWISE ATTACHED. THERE SHALL BE NO OPEN SPACE BETWEEN THE ADJACENT BARRIER REFLECTORS. THE TRIPLE-STACKED BARRIER REFLECTORS SHALL CONFORM TO C&MS 626, EXCEPT THAT THEY SHALL BE SPACED AND ALIGNED PER TRAFFIC SCD MT-101.70.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE PLANS AND CARRIED TO THE GENERAL SUMMARY:

ITEM 614, BARRIER REFLECTOR, TYPE 1 (I-WAY) - 560 EACH (ON EXISTING BARRIERS)
ITEM 614, OBJECT MARKER, ONE-WAY - 560 EACH (ON EXISTING BARRIERS)
ITEM 614, INCREASED BARRIER DELINEATION - SEE ESTIMATED QUANTITIES

PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIAL, LABOR, INCIDENTALS AND EQUIPMENT NECESSARY FOR FURNISHING, INSTALLING, MAINTAINING AND REMOVING EACH OF THE ABOVE ITEMS.

ALONG RUNS OF INCREASED BARRIER DELINEATION WHERE THIS ITEM IS PROVIDED, THE QUANTITY SHALL BE MEASURED AS THE ENTIRE LENGTH OF THE RUN OF INCREASED BARRIER DELINEATION, INCLUDING THE SPACES BETWEEN THE INDIVIDUAL DELINEATION PANELS OR STACKS OF BARRIER REFLECTORS.

ITEM 614 - WORK ZONE RAISED PAVEMENT MARKER, AS PER PLAN

WORK ZONE RAISED PAVEMENT MARKERS, AS PER PLAN, AND THEIR INSTALLATION SHALL CONFORM TO C&MS 614 OR C&MS 621 AS SPECIFIED HEREIN.

RAISED PAVEMENT MARKERS IN USE DURING THE SNOW-PLOWING SEASON SHALL CONFORM TO 621.

RAISED PAVEMENT MARKERS IN USE DURING THE NON-SNOW-PLOW SEASON SHALL CONFORM TO EITHER 614 OR TO 621.

THE SNOW-PLOWING SEASON SHALL RUN FROM OCTOBER 15TH THROUGH APRIL 1ST

IF PROJECT DELAYS, NOT THE FAULT OF ODOT, CAUSE THE WORK TO EXTEND INTO THE SNOW-PLOWING SEASON, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING WORK ZONE RAISED PAVEMENT MARKERS (WZRPMS) CONFORMING TO C&MS 614, WITH RAISED PAVEMENT MARKERS CONFORMING TO 621, AS DETERMINED BY THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.

THIS ITEM SHALL INCLUDE PURCHASE, INSTALLATION AND REMOVAL OF ITEM 614 WORK ZONE RAISED PAVEMENT MARKER, AS PER PLAN, INCLUDING FILLING OF ANY DEPRESSIONS CREATED IN THE PAVEMENT AS PER C&MS 621.08.

THE FOLLOWING BID ITEMS SHOULD BE INCLUDED IN THE PLANS:

ITEM 614 WORK ZONE RAISED PAVEMENT MARKER, AS PER PLAN EACH, AS SHOWN ON THE ESTIMATED QUANTITIES

PAYMENT FOR RESURFACING WITHIN THE TRANSITION AREA SHALL BE PAID FOR UNDER THE APPROPRIATE BID ITEMS FOR THE WORK REQUIRED, AS PROVIDED FOR IN THE PLANS.

ITEM 614 - WORK ZONE RAISED PAVEMENT MARKERS ON PERMANENT CONCRETE SURFACES

RAISED PAVEMENT MARKERS IN WORK ZONES, INSTALLED ON PERMANENT CONCRETE SURFACES, SHALL BE ITEM 614 WORK ZONE RAISED PAVEMENT MARKERS. WZRPMS ARE INTENDED FOR USE ONLY DURING THE NON-SNOW-PLOWING SEASON. WZRPMS SHALL NOT BE PROVIDED DURING THE SNOW-PLOWING SEASON.

THE SNOW-PLOWING SEASON SHALL RUN FROM OCTOBER 15TH THROUGH APRIL 1ST

WHERE A TEMPORARY ALIGNMENT WILL REMAIN IN USE THROUGH THE WINTER, THE WZRPMS SHALL BE REMOVED PRIOR TO THE BEGINNING OF THE SNOW-PLOWING SEASON AND REPLACED APPROXIMATELY APRIL 1, OR AS OTHERWISE DETERMINED BY THE ENGINEER.

THIS ITEM SHALL INCLUDE PURCHASE, INSTALLATION AND REMOVAL OF ITEM 614 WORK ZONE RAISED PAVEMENT MARKERS.

ITEM 614 LONGITUDINAL CHANNELIZER

LONGITUDINAL CHANNELIZERS SHALL BE PROVIDED AS CALLED FOR IN THE PLANS. A LONGITUDINAL CHANNELIZER CONSISTS OF A COMBINATION OF VERTICAL COMPONENTS AND LONGITUDINAL BASE COMPONENTS, FIT TOGETHER TO CREATE A CONTINUOUS CHANNELIZING DEVICE, AS DETAILED IN TRAFFIC PIS 2010180. USE OF TUBULAR MARKERS, AS IDENTIFIED IN THE OMUTCD, FIGURE 6F-7, SHALL NOT QUALIFY FOR USE AS A LONGITUDINAL CHANNELIZER.

THE VERTICAL COMPONENT SHALL BE EQUIPPED WITH TWO 3-INCH WIDE RETRO-REFLECTIVE BANDS, PLACED A MAXIMUM OF 2 INCHES FROM THE TOP, WITH A MAXIMUM OF 6 INCHES BETWEEN THE BANDS. THE LONGITUDINAL BASE COMPONENTS SHALL BE EQUIPPED WITH REFLECTORS.

LONGITUDINAL CHANNELIZERS SHALL COMPLY WITH THE REQUIREMENTS CONTAINED WITHIN TRAFFIC PIS 2010180.

FURNISH LONGITUDINAL CHANNELIZERS FROM THE APPROVED LIST FOUND ON THE OFFICE OF MATERIALS MANAGEMENT WEBSITE. FOR INSTALLATION PROCEDURES, FOLLOW THE MANUFACTURER'S INSTRUCTIONS.

LONGITUDINAL CHANNELIZERS SHALL BE MONITORED TO DETERMINE WHETHER THERE IS SIGNIFICANT DAMAGE FROM ERRANT VEHICLES.

PAYMENT FOR PROVIDING, INSTALLING, MAINTAINING AND REMOVING LONGITUDINAL CHANNELIZERS WILL BE MADE AT THE UNIT PRICE PER FOOT FOR:

ITEM 614, LONGITUDINAL CHANNELIZER, FOOT, AS SHOWN ON THE ESTIMATED QUANTITIES

ITEM 614 - MAINTAINING TRAFFIC, MISC.: MAINTENANCE OF MAJOR GUIDE SIGNS

THE CONTRACTOR SHALL MAINTAIN THE SAME NUMBER OF GUIDE SIGNS AS CURRENTLY EXIST FOR EACH FREEWAY EXIT/ENTRANCE WHICH IS TO REMAIN OPEN DURING EACH PHASE OF CONSTRUCTION IN ORDER TO ALLOW MOTORISTS TO FIND THEIR DESTINATIONS SAFELY. ERECTION/DISMANTLING OF THE OVERHEAD SIGN SUPPORTS WHICH WILL BE AFFECTED BY THE PROPOSED CONSTRUCTION SHALL BE COMPLETED PRIOR TO THAT PHASE OF CONSTRUCTION. NO MORE THAN ONE SIGN FOR ANY EXIT OR ENTRANCE RAMP MAY BE REMOVED AT ANY TIME. IN INSTANCES WHERE THE COPY ON THE REPLACEMENT SIGN IS SUBSTANTIALLY DIFFERENT FROM THE COPY ON THE EXISTING SIGNS FOR A PARTICULAR EXIT OR ENTRANCE RAMP, ALL OF THE SIGNS IN THE SEQUENCE FOR THAT RAMP SHALL BE CHANGED WITHIN ONE CALENDAR DAY. SPECIFIC TREATMENT/RELOCATION OF SIGNS ARE NOTED AND DETAILED ON THE MAINTENANCE OF TRAFFIC PLANS; HOWEVER THIS DOES NOT RELIEVE THE CONTRACTOR OF THE REQUIREMENT TO MAINTAIN THE OTHER SIGNAGE AS COVERED BY THIS ITEM. IN SOME CASES IT SHALL BE NECESSARY TO SUPPLY AND INSTALL TEMPORARY SUPPORTS TO MEET THE REQUIREMENTS OF THIS ITEM.

PAYMENT FOR ALL THE MATERIALS, INSTALLATION AND WORK DESCRIBED ABOVE SHALL BE INCLUDED IN THE LUMP SUM UNIT BID PRICE FOR ITEM 614, MAINTAINING TRAFFIC, MISC.: MAINTENANCE OF MAJOR GUIDE SIGNS.

CALCULATED
DPF
CHECKED
BJF

MAINTENANCE OF TRAFFIC GENERAL NOTES

HAM-IR71-8.42

30
441

O:\ODOT\HAM\9826_HAM-71-8.42_Design\MOT\Sheets\9826_MN403.dgn Sheet 9/21/2017 9:04:23 AM dan-f

EARTHWORK FOR MAINTAINING TRAFFIC

THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED IN THE PLAN FOR INFORMATION ONLY:

EXCAVATION FOR MAINTAINING TRAFFIC 2360 CU. YD.
EMBANKMENT FOR MAINTAINING TRAFFIC 26 CU. YD.

~~WHEN UNDERCUTS ARE NECESSARY FOR MAINLINE PAVEMENT OR EMBANKMENT CONSTRUCTION, EVALUATE THE NEED FOR TEMPORARY ROAD UNDERCUTS IF WITHIN A CLOSE PROXIMITY TO THE MAINLINE UNDERCUTS. A GEOTECHNICAL EVALUATION SHOULD BE CONSIDERED TO DETERMINE IF THE EXISTING SOIL CONDITIONS ARE ADEQUATE TO SUPPORT THE TEMPORARY ROAD. ADDITIONAL SOIL BORING'S ALONG THE TEMPORARY ROAD ARE NOT NORMALLY REQUIRED.~~

MANHOLE ADJUSTED TO GRADE, AS PER PLAN

THIS ITEM SHALL INCLUDE THE ADJUSTMENT OF A STORM MANHOLE TO GRADE OF THE WORK ZONE CROSSOVER, USING A TRAFFIC RATED, GRATED LID COMPATIBLE WITH THE FRAME ON THE EXISTING MANHOLE. THIS ITEM WILL INCLUDE SUBSEQUENT RE-ADJUSTMENT BACK TO THE ORIGINAL RIM ELEVATION AFTER THE CROSSOVER IS REMOVED.

ITEM 614, WORK ZONE CROSSOVER LIGHTING SYSTEM

THIS WORK SHALL CONSIST OF FURNISHING, ERECTING, OPERATING, MAINTAINING AND REMOVING A WORK ZONE LIGHTING SYSTEM FOR A SINGLE CROSSOVER, OR OVERLAPPING A PAIR OF CROSSOVERS. THE SYSTEM SHALL BE AS SHOWN ON TRAFFIC SCD MT-100.00. THE CONTRACTOR SHALL ARRANGE FOR AND PAY FOR POWER.

THIS WORK SHALL INCLUDE MODIFYING AND MAINTAINING THE EXISTING LIGHTING SYSTEM ALONG I-71 THAT WILL REMAIN IN SERVICE.

ALL MATERIALS AND CONSTRUCTION SHALL COMPLY WITH APPLICABLE PORTIONS OF 625 AND 725 EXCEPT: THE PERFORMANCE TEST OF 625.19F, AND CERTIFIED DRAWING REQUIREMENT OF 625.04, ARE WAIVED AND USED MATERIALS IN GOOD CONDITION ARE ACCEPTABLE.

POLES WHICH ARE NOT PROTECTED BY GUARDRAIL OR PORTABLE BARRIER SHALL BE LOCATED OUTSIDE THE CLEAR ZONE, AND SHOULD BE LOCATED AT LEAST 30 FT (PREFERABLY 40 FEET) FROM THE EDGE OF PAVEMENT WHEN POSSIBLE. ADDITIONAL POLE LINES, CABLES AND APPURTENANCES NECESSARY TO FURNISH POWER TO THE LIGHTING SYSTEM SHALL BE INCLUDED IN THIS ITEM. SERVICE POLES SHALL BE POSITIONED WITH THE SAME CONSTRAINTS AS THE LIGHTING POLES AS A MINIMUM.

PAYMENT WILL BE MADE AT THE UNIT PRICE PER EACH FOR ITEM 614, WORK ZONE CROSSOVER LIGHTING SYSTEM THROUGHOUT ALL PHASES OF WORK WHEN THE CROSSOVER ROADWAYS ARE USED.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE PLANS AND CARRIED TO THE GENERAL SUMMARY:

ITEM 614, WORK ZONE CROSSOVER LIGHTING SYSTEM 2 EACH

ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN (SHOULDER REBUILDING)

THE PAVEMENT COMPOSITION FOR THIS ITEM SHALL BE:

- ITEM 442 - 1 1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A
- ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE
- ITEM 442 - 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A
- ITEM 407 - TACK COAT
- ITEM 302 - 10" ASPHALT CONCRETE BASE, PG 64-22
- ITEM 304 - 6" AGGREGATE BASE
- ITEM 204 - SUBGRADE COMPACTION

WHERE SHOULDER RECONSTRUCTION IS PROPOSED, DO NOT DISTURB THE EXISTING UNDERDRAINS AND DRAINAGE AGGREGATE. CROSS SLOPE OF THE SHOULDER RECONSTRUCTION SHALL MATCH THE EXISTING SLOPE EXCEPT AS INDICATED BELOW.

THE PAVEMENT FOR M.O.T. SHALL BE LEFT IN PLACE

WHERE INDICATED ON SHEETS 135 & 136, VARY THE CROSS SLOPE OF THE SHOULDER TO ACCOMMODATE THE TRANSITION TO THE CROSSOVER (THE BUILDUP IN THESE AREAS SHALL FOLLOW CMS 615, CLASS A FLEXIBLE BUILDUP). WHEN THE CROSSOVER IS REMOVED, REPLACE THE PAVEMENT FOR M.O.T. WHERE THE SLOPE WAS VARIED WITH A FULL DEPTH BUILDUP EQUAL TO THE ABOVE AND CROSS SLOPE MATCHING THE EXISTING SLOPE OF THE SHOULDER PRIOR TO REMOVAL. THIS WORK SHALL BE INCLUDED IN THE UNIT BID PRICE PER SY FOR PAVEMENT FOR M.O.T., AS PER PLAN.

ALL OTHER REQUIREMENTS OF CMS 615 SHALL APPLY. ALTHOUGH ESTIMATES FOR TEMPORARY EXCAVATION, EMBANKMENT, SEEDING AND OTHER WORK ARE SHOWN, THESE ITEMS SHALL BE CONSIDERED INCIDENTAL TO, AND INCLUDED WITH PAYMENT FOR ITEM 615 ROADS FOR MAINTAINING TRAFFIC.

TEMPORARY DRAINAGE FACILITIES SHOWN ON THE PLANS ARE PAID UNDER ITEM 611.

ITEM 614 WORK ZONE PAVEMENT MARKINGS, SPRAY THERMOPLASTIC, AS PER PLAN

THE CONTRACTOR SHALL PLACE THE WORK ZONE PAVEMENT MARKINGS, SPRAY THERMOPLASTIC, AS PER PLAN PER ODOT SPECIFICATION 614.11 AND ODOT SPECIFICATION 648 WITH THE EXCEPTION ODOT SPECIFICATION 648.05 SHALL BE MODIFIED TO ALLOW PLACEMENT OF THE MATERIAL AT A TEMPERATURE OF NOT LESS THAN 35 DEGREES FAHRENHEIT.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AT LOCATIONS AND AT TIMES AS DIRECTED BY THE ENGINEER FOR WORK ZONE PAVEMENT MARKINGS PER THE REQUIREMENTS OF C&MS 614.11.

ITEM 614 WORK ZONE LANE LINE, CLASS I SPRAY THERMOPLASTIC, AS PER PLAN - 5 MILES

ITEM 614 WORK ZONE EDGE LINE, CLASS I SPRAY THERMOPLASTIC, AS PER PLAN - 7 MILES

ITEM 614 WORK ZONE CHANNELIZING LINE, CLASS I, SPRAY THERMOPLASTIC, AS PER PLAN - 3800 FT

ITEM 614 WORK ZONE DOTTED LINE, CLASS I, SPRAY THERMOPLASTIC, AS PER PLAN - 3400 FT

ITEM 614 - LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS

USE OF LAW ENFORCEMENT OFFICERS (LEOS) BY CONTRACTORS OTHER THAN THE USES SPECIFIED BELOW WILL NOT BE PERMITTED AT PROJECT COST. LEOS SHOULD NOT BE USED WHERE THE ODOT INTENDS THAT FLAGGERS BE USED. USE OF LEOS SHALL BE RESTRICTED TO I-71 MAINLINE AND I-71 RAMPS, AND AS DIRECTED BY THE ENGINEER.

IN ADDITION TO THE REQUIREMENTS OF C&MS 614 AND THE ODOT, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHALL BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS:

DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.

IN ADDITION TO THE REQUIREMENT OF C&MS 614 AND THE ODOT, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHOULD BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS AS APPROVED BY THE ENGINEER:

FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED FOR LONG-TERM LANE CLOSURES/SHIFTS (FOR THE FIRST AND LAST DAY OF MAJOR CHANGES IN TRAFFIC CONTROL SETUP).

1 LEO IS NEEDED WHEN INSTALLING A SINGLE OR DOUBLE LANE CLOSURE. WHEN LANE CLOSURES ARE BEING INSTALLED IN MULTIPLE DIRECTIONS OR MULTIPLE LOCATIONS, 1 LEO IS NEEDED PER MOT WORK CREW. IN OTHER WORDS, IF THE SAME WORK CREW INSTALLS BOTH LANE CLOSURES, THEN ONLY 1 LEO IS NEEDED; IF 2 SEPARATE WORK CREWS INSTALL A LANE CLOSURE IN EACH DIRECTION, THEN 2 LEOS WILL BE NEEDED. THE LEO SHOULD BE POSITIONED IN ADVANCE OF AND ON THE SAME SIDE AS THE LANE RESTRICTION.

LEOS SHOULD NOT FORGO THEIR TRAFFIC CONTROL RESPONSIBILITIES TO APPREHEND MOTORISTS FOR ROUTINE TRAFFIC VIOLATIONS. HOWEVER, IF A MOTORIST'S ACTIONS ARE CONSIDERED TO BE RECKLESS, THEN PURSUIT OF THE MOTORIST IS APPROPRIATE.

THE LEOS WORK AT THE DIRECTION OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE SERVICES OF THE LEOS WITH THE APPROPRIATE AGENCIES AND COMMUNICATING THE INTENTIONS OF THE PLANS WITH RESPECT TO DUTIES OF THE LEOS. THE ENGINEER SHALL HAVE FINAL CONTROL OVER THE LEOS' DUTIES AND PLACEMENT, AND WILL RESOLVE ANY ISSUES THAT MAY ARISE BETWEEN THE TWO PARTIES.

THE LEO SHALL REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT, IN ORDER TO RECEIVE INSTRUCTIONS REGARDING SPECIFIC WORK ASSIGNMENTS DURING HIS/HER SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF HIS/HER SHIFT. THE LEO SHALL REPORT TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT. ONCE THE LEO HAS COMPLETED THE DUTIES DESCRIBED ABOVE AND STILL HAS TIME REMAINING ON HIS/HER SHIFT, THE LEO MAY BE ASKED TO PATROL THROUGH THE WORK ZONE (WITH FLASHING LIGHTS OFF) OR BE PLACED AT A LOCATION TO DETER MOTORISTS FROM SPEEDING. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE LEO WITH A TWO-WAY COMMUNICATION DEVICE WHICH SHALL BE RETURNED TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT.

LEOS (WITH PATROL CAR) REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614, LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE 4000 HOURS

THE HOURS PAID SHALL INCLUDE ANY MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED. THE HOURS PAID SHALL INCLUDE UP TO * HOUR PRIOR TO THE START OF THE SHIFT TO RECEIVE INSTRUCTIONS FOR THE WORK ASSIGNMENTS; SPECIAL WORK ASSIGNMENTS REQUIRING ADDITIONAL TIME SHALL BE APPROVED BY THE ENGINEER PRIOR TO SCHEDULING THE LEO. THE HOURS PAID PER LEO FOR LANE CLOSURES SHALL INCLUDE THE MINIMUM SHOW-UP TIME FOR THE INITIAL SET-UP PERIOD AND THE MINIMUM SHOW-UP TIME FOR THE TEAR DOWN PERIOD; BUT NO MORE THAN THE ACTUAL INVOICED HOURS.

ANY ADDITIONAL COSTS (ADMINISTRATIVE OR OTHERWISE) INCURRED BY THE CONTRACTOR TO OBTAIN THE SERVICES OF AN LEO ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE.

NOTIFICATION OF TRAFFIC RESTRICTIONS

THROUGHOUT THE DURATION OF THE PROJECT, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IN WRITING OF ALL TRAFFIC RESTRICTIONS AND UPCOMING MAINTENANCE OF TRAFFIC CHANGES. THE CONTRACTOR SHALL ENSURE THE WRITTEN NOTIFICATION IS SUBMITTED IN A TIMELY MANNER TO ALLOW THE PROJECT ENGINEER TO MEET THE REQUIRED TIME FRAMES SET FORTH IN THE TABLE BELOW TO INFORM SPECIAL HAULING PERMITS SECTION (HAULING.PERMITS@DOT.OHIO.GOV) AND THE DISTRICT PUBLIC INFORMATION OFFICE (PIO). THIS NOTIFICATION SHALL BE RECEIVED BY THE PROJECT ENGINEER PRIOR TO THE PHYSICAL SETUP OF ANY APPLICABLE SIGNS OR MESSAGE BOARDS.

INFORMATION SHOULD INCLUDE, BUT IS NOT LIMITED TO, ALL AND SHALL LIST THE SPECIFIC LOCATION, TYPE OF WORK, ROAD STATUS, DATE AND TIME OF RESTRICTION, DURATION OF RESTRICTION, NUMBER OF LANES MAINTAINED, NUMBER OF LANES CLOSED, MINIMUM VERTICAL CLEARANCE, MINIMUM WIDTH OF DRIVEABLE PAVEMENT DETOUR ROUTES, IF APPLICABLE, AND ANY OTHER INFORMATION REQUESTED BY THE PROJECT ENGINEER.

ITEM	DURATION OF CLOSURE	NOTICE DUE TO PERMITS & PIO
RAMP & ROAD	>= 2 WEEKS & < 2 WEEKS	21 CALENDAR DAYS PRIOR TO CLOSURE & 14 CALENDAR DAYS PRIOR TO CLOSURE
CLOSURES	< 12 HOURS	4 BUSINESS DAYS PRIOR TO CLOSURE

LANE CLOSURES & RESTRICTIONS	>= 2 WEEKS & < 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE & 5 BUSINESS DAYS PRIOR TO CLOSURE
LANE CLOSURES & RESTRICTIONS	>= 2 WEEKS & < 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE & 5 BUSINESS DAYS PRIOR TO CLOSURE

START OF CONSTRUCTION & TRAFFIC PATTERN CHANGES	14 CALENDAR DAYS PRIOR TO IMPLEMENTATION
START OF CONSTRUCTION & TRAFFIC PATTERN CHANGES	14 CALENDAR DAYS PRIOR TO IMPLEMENTATION

ANY UNFORESEEN CONDITIONS NOT SPECIFIED IN THE PLANS REQUIRING TRAFFIC RESTRICTIONS SHALL ALSO BE REPORTED TO THE PROJECT ENGINEER USING THE NOTIFICATION TIME TABLE.

O:\ODOT\HAM\91826_HAM-71-8-42_Design\MOT\Sheets\91826_MN404.dgn Sheet 9/21/2017 9:04:24 AM dan-f

CALCULATED
DPF
CHECKED
BJF

MAINTENANCE OF TRAFFIC GENERAL NOTES

HAM-IR71-8.42

WORKSITE TRAFFIC SUPERVISOR

SUBJECT TO APPROVAL OF THE ENGINEER, THE CONTRACTOR SHALL EMPLOY AND IDENTIFY (SOMEONE OTHER THAN THE SUPERINTENDENT) A CERTIFIED WORKSITE TRAFFIC SUPERVISOR (WTS) BEFORE STARTING WORK IN THE FIELD. THE WTS SHALL BE CERTIFIED FROM ONE OF THE FOLLOWING ORGANIZATIONS:

- 1. AMERICAN TRAFFIC SAFETY SERVICE ASSOCIATION (ATSSA), PHONE NUMBER 1-800-272-8772, CERTIFIED TRAFFIC CONTROL SUPERVISOR (TCS).
- 2. THE OHIO CONTRACTORS ASSOCIATION, TRAFFIC CONTROL SUPERVISOR (OCA/TCS) WORK ZONE CLASS, ONLY IF TAKEN AFTER MAY 5, 2004, PHONE NUMBER 1-800-229-1388.
- 3. OHIO LABORERS TRAINING, TRAFFIC CONTROL SUPERVISORS CLASS, PHONE NUMBER 1-740-599-7915.

A COPY OF EACH WTSS CERTIFICATION AND 24-HOUR CONTACT INFORMATION SHALL BE PROVIDED TO THE ENGINEER AT THE PRECONSTRUCTION CONFERENCE. IF THE DESIGNATED WTS WILL NOT BE AVAILABLE FULL TIME (24/7), THE CONTRACTOR MAY DESIGNATE AN ALTERNATE WTS TO BE AVAILABLE WHEN THE PRIMARY IS OFF DUTY. EACH WTS SHALL HAVE A WTS CERTIFICATION CONTAINING THE DATE OF ISSUE AND SHALL BE FROM ANY OF THE APPROVED ORGANIZATIONS. AT THE TIME OF THE PRECONSTRUCTION, THE WTS CERTIFICATION DATE OF ISSUE SHALL BE WITHIN 5 YEARS PRIOR TO THE ORIGINAL COMPLETION DATE OF THE PROJECT.

THE WTS POSITION HAS THE RESPONSIBILITY OF MONITORING TRAFFIC CONTROL DEFICIENCIES FOR THE ENTIRE WORK ZONE AND ASSURING THAT ALL DEFICIENCIES ARE CORRECTED IN A TIMELY FASHION. THE DUTIES OF THE WTS ARE AS FOLLOWS:

- 1. BE AVAILABLE ON A 24-HOUR PER DAY BASIS, AND BE ABLE TO BE ON SITE FOR ALL EMERGENCY TRAFFIC CONTROL NEEDS WITHIN ONE HOUR OF NOTIFICATION BY POLICE OR PROJECT STAFF AND BE PREPARED TO EFFECT CORRECTIVE MEASURES IMMEDIATELY ON EXISTING WORK ZONE TRAFFIC CONTROL DEVICES.
- 2. ATTEND PRECONSTRUCTION MEETING AND ALL PROJECT MEETINGS WHERE TRAFFIC CONTROL MANAGEMENT IS DISCUSSED. BEFORE ANY WORK OR PLACEMENT OF TRAFFIC CONTROL DEVICES BEGINS, COORDINATE A TRAFFIC CONTROL MEETING TO REVIEW ALL REQUIREMENTS AND DEPARTMENT EXPECTATIONS. THIS MEETING SHALL INCLUDE THE CONTRACTOR'S SUPERINTENDENT, WTS, ANY TRAFFIC CONTROL SUB-CONTRACTORS, ODOT PROJECT ENGINEER, ODOT PROJECT INSPECTORS AND THE DISTRICT WORK ZONE TRAFFIC MANAGER.
- 3. BE AVAILABLE FOR MEETINGS OR DISCUSSIONS WITH THE ENGINEER UPON REQUEST OR WITHIN 36 HOURS.
- 4. COORDINATE A TRAFFIC INCIDENT MANAGEMENT MEETING EACH YEAR BEFORE CONSTRUCTION WORK BEGINS WITH ODOT AND THE SAFETY FORCES THAT WILL RESPOND TO INCIDENTS ON THE PROJECT. ITEMS TO BE DISCUSSED WILL BE THE:
 - A. TRAFFIC INCIDENT MANAGEMENT PLAN (TIMP);
 - B. EMERGENCY RESPONSE AND NOTIFICATION;
 - C. PROJECT WORK/PHASING CONCERNS (E.G., RAMP CLOSURES); AND
 - D. RESPONDERS CONCERNS.
- 5. BE AWARE OF, AND COORDINATE IF NECESSARY, ALL TRAFFIC CONTROL OPERATIONS, INCLUDING THOSE OF SUBCONTRACTORS AND SUPPLIERS.

- 6. COORDINATE PROJECT ACTIVITIES WITH ALL LAW ENFORCEMENT OFFICERS (LEOS). A WTS SHALL ALSO BE THE MAIN CONTACT PERSON WITH THE LEOS WHILE THEY ARE ON THE PROJECT.
- 7. COORDINATE MEETINGS WITH ODOT PERSONNEL, LEOS AND OTHER APPLICABLE ENTITIES BEFORE EACH PLAN PHASE SWITCH TO DISCUSS WORK ZONE TRAFFIC CONTROL.
- 8. ENSURE COMPLIANCE WITH C&MS ITEM 614 AND ENSURE COMPLIANCE WITH THE CONTRACT DOCUMENTS FOR SIGNS, BARRICADES, TEMPORARY CONCRETE BARRIER, PAVEMENT MARKINGS, PORTABLE MESSAGE SIGNS, AND OTHER TRAFFIC CONTROL DEVICES ON A DAILY BASIS; AND FACILITATE ANY CORRECTIVE ACTION NECESSARY.
- 9. NOTIFY THE CONTRACTOR OF THE NEED FOR CLEANING AND MAINTENANCE OF ALL TRAFFIC CONTROL DEVICES, INCLUDING THE COVERING AND REMOVAL OF INAPPLICABLE SIGNS, AND ALL ROADWAY SURFACES.
- 10. INSPECT, EVALUATE, PROPOSE NECESSARY MODIFICATIONS TO, AND DOCUMENT THE EFFECTIVENESS OF, THE TRAFFIC CONTROL DEVICES AND/OR TRAFFIC OPERATIONS ON A DAILY BASIS (7 DAYS A WEEK). IN ADDITION, A WEEKLY NIGHT INSPECTION OF THE WORK ZONE SETUP FOR DAYTIME WORK OPERATIONS; AND ONE DAYTIME INSPECTION PER WEEK FOR NIGHTTIME PROJECTS. THIS SHALL INCLUDE (BUT NOT BE LIMITED TO) DOCUMENTATION ON THE FOLLOWING PROJECT EVENTS:
 - A. INITIAL TRAFFIC CONTROL SETUP (DAY AND NIGHT REVIEW).
 - B. DAILY TRAFFIC CONTROL SETUP AND REMOVAL.
 - C. WHEN CONSTRUCTION STAGING CAUSES A CHANGE IN THE TRAFFIC CONTROL SETUP.
 - D. CRASH OCCURRENCES WITHIN THE CONSTRUCTION AREA.
 - E. REMOVAL OF TRAFFIC CONTROL DEVICES AT THE END OF A PHASE OR PROJECT.
 - F. ALL OTHER EMERGENCY TRAFFIC CONTROL NEEDS.
- 11. COMPLETE THE DEPARTMENT APPROVED LONG TERM INSPECTION FORM (CA-D-8) AFTER EACH INSPECTION AS REQUIRED IN # 10 AND SUBMIT IT TO THE ENGINEER THE FOLLOWING WORK DAY. THESE REPORTS SHALL INCLUDE A CHECKLIST OF ALL TRAFFIC CONTROL MAINTENANCE ITEMS TO BE REVIEWED. A COPY OF THE FORM WILL BE PROVIDED AT THE PRE-CONSTRUCTION MEETING. ANY DEFICIENCIES OBSERVED SHALL BE NOTED, ALONG WITH RECOMMENDED CORRECTIVE ACTIONS AND THE DATES BY WHICH SUCH CORRECTIONS WERE, OR WILL BE, COMPLETED. A COPY OF THIS DOCUMENT CAN BE FOUND IN THE CURRENT REVISION OF THE DEPARTMENT OF TRANSPORTATION CONSTRUCTION INSPECTION FORMS MANUAL.
- 12. VERIFY THAT ALL FLAGGING OPERATIONS ARE BEING CONDUCTED PER THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
- 13. HAVE COPIES OF THE ODOT TEMPORARY TRAFFIC CONTROL MANUAL AND APPLICABLE STANDARDS AND SPECIFICATIONS INCLUDED IN THE CONTRACT DOCUMENTS AVAILABLE AT ALL TIMES ON THE PROJECT.
- 14. IDENTIFY AND CONTACT ALL POSSIBLE RESPONSE PERSONNEL; PREPLAN AND KEEP AN UPDATED ROSTER WITH PHONE NUMBERS:

- A. FEDERAL, STATE, AND LOCAL TRANSPORTATION AGENCIES (TRAFFIC MANAGEMENT CENTER);
- B. REGIONAL, COUNTY OR LOCAL 911 DISPATCH; AND
- C. TOWING AND RECOVERY PROVIDERS.
- 15. COMPLY WITH THE PROVISIONS OF OMUTCD CHAPTER 6I, CONTROL OF TRAFFIC THROUGH TRAFFIC INCIDENT MANAGEMENT AREAS.
- 16. PROPOSE A RESPONSE/ACTION PLAN TO:
 - A. ESTABLISH ALTERNATE ROUTE PLANS PER THE PROVIDED ODOT PLAYBOOK;
 - B. REMOVE TRAFFIC DEMAND FROM IMPACTED ROADWAY(S);
 - C. DIVERT TRAFFIC TO ROUTES THAT CAN ACCOMMODATE DEMANDS;
 - D. DETOUR TRAFFIC AWAY FROM SENSITIVE AREAS (SUCH AS SCHOOLS, HOSPITALS, ETC.);
 - E. DISCUSS METHODS OF DETERMINING A STAGING AREA FOR RESPONDERS WITHIN OR NEAR THE CONSTRUCTION ZONE; AND
 - F. DISCUSS METHODS OF DEVELOPING INGRESS AND EGRESS SITES WITHIN THE CONSTRUCTION ZONE.

THE RESPONSE/ACTION PLAN SHALL BE SUBMITTED TO ODOT FOR ACCEPTANCE BEFORE THE CONTRACTOR'S FIRST DAY OF WORK.
- 17. PERFORM, AT A MINIMUM, THE FOLLOWING FUNCTIONS IN INCIDENT DETECTION AND VERIFICATION:
 - A. CALL 911/ NOTIFY TRAFFIC MANAGEMENT CENTER AND PROVIDE THE FOLLOWING:
 - I. LOCATION INCLUDING MILEPOST NUMBER AND DIRECTION OF TRAVEL.
 - II. NUMBER AND TYPE OF VEHICLES INVOLVED.
 - III. ESTIMATED EXTENT OF DAMAGE OR INJURY.
 - IV. ESTIMATED NUMBER OF PATIENTS INVOLVED.
 - V. ANY POTENTIAL HAZARDOUS CONDITIONS.
 - VI. THE PLACARD NUMBER ON ANY HAZARDOUS MATERIALS PLACARD FROM A SAFE DISTANCE.
 - B. INITIATE TRAFFIC MANAGEMENT / PROVIDE TRAFFIC CONTROL.
 - C. ASSIST MOTORIST WITH DISABLED VEHICLES.
 - D. RECOMMEND ROADWAY REPAIR NEEDS.
 - E. PROVIDE REPAIR RESOURCES.
- 18. ATTEND POST-INCIDENT DEBRIEFINGS IF REQUIRED.

THE DEPARTMENT WILL DEDUCT THE PRORATED DAILY AMOUNT OF THE UNIT PRICE BID FOR THE WTS FOR ANY DAY ON WHICH THE CONTRACTOR FAILS TO PERFORM THE DUTIES SET FORTH ABOVE. SHOULD THE CONTRACTOR'S FAILURE TO PERFORM ANY OF THE DUTIES DESCRIBED ABOVE RESULT IN A MAINTENANCE OF TRAFFIC SAFETY ISSUE, THE DEPARTMENT WILL DEDUCT THE PRORATED DAILY AMOUNT FOR ITEM 614 MAINTENANCE OF TRAFFIC FROM THE CONTRACTOR'S NEXT SCHEDULED ESTIMATE.

IF THREE OR MORE FAILURES TO PERFORM THE DUTIES SET FORTH ABOVE OCCUR, THE WTS SHALL BE IMMEDIATELY REMOVED FROM THE WORK IN ACCORDANCE WITH C&MS 108.05.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED FOR THE WORKSITE TRAFFIC SUPERVISOR:

ITEM 614 WORKSITE TRAFFIC SUPERVISOR 12 MONTHS

OVERNIGHT RAMP CLOSING

THE CONTRACTOR MAY CLOSE ONE RAMP AT A TIME FOR ANY PROPOSED WORK. RESTRICT CLOSURES TO THE HOURS SHOWN IN THE PERMITTED LANE CLOSURE AND UNAUTHORIZED LANE USE TABLE. PROVIDE NOTICE TO THE RAMP TRAFFIC AT LEAST 72 HOURS IN ADVANCE THROUGH THE USE OF EITHER A GROUND MOUNTED FLAT SHEET SIGN OR A PORTABLE CHANGEABLE MESSAGE SIGN (PCMS). PROVIDE A LEO WITH PATROL CAR FOR EACH RAMP CLOSURE TO REMAIN PRESENT FOR THE DURATION OF THE CLOSURE.

CLOSE RAMPS USING A PCMS ROUTING TRAFFIC TO THE NEXT LOGICAL ENTRANCE OR EXIT. PROVIDE A SECOND PCMS AT THAT LOCATION TO CONFIRM THE DETOUR AND TO PROVIDE THE INFORMATION NECESSARY TO RETURN MOTORISTS TO THEIR ORIGINAL DIRECTION OF TRAVEL.

DO NOT CLOSE MORE THAN ONE RAMP AT A TIME WITHIN THE PROJECT LIMITS.

ALTHOUGH THE PLANS CONTAIN BID ITEMS FOR LEOS AND PCMS, THEIR USE FOR THE OVERNIGHT CLOSURE OF RAMPS IS CONSIDERED INCIDENTAL TO ITEM 614 MAINTAINING TRAFFIC IN ORDER TO LIMIT THE FREQUENCY OF CLOSURES TO THE MINIMUM NEEDED TO PERFORM THE WORK.

AS AN ACCEPTABLE ALTERNATE, THE CONTRACTOR MAY PERFORM THE PROPOSED WORK AT THESE LOCATIONS WITHOUT TOTAL CLOSURES, SUBJECT TO THE PROVISIONS OF THE PERMITTED LANE CLOSURE AND UNAUTHORIZED LANE USE TABLE AND PROVIDED ONE 11' LANE IS MAINTAINED.

TRUCK MOUNTED ATTENUATOR (I-71 ONLY)

WHEN THE CONTRACTOR IS SETTING/REMOVING SHORT TERM WORK ZONES, A TRUCK MOUNTED ATTENUATOR (TMA) MUST TRAIL THE OPERATION, INCLUDING SETTING THE ADVANCE WARNING SIGNS UP OR TAKING THEM DOWN. THIS SAME TRUCK MUST HAVE A TYPE B FLASHING ARROW PANEL MOUNTED ON IT FACING THE REAR OF THE TRUCK. THE CONTRACTOR SHALL USE A TMA FOR ANY APPLICATION WHERE THE OMUTCD OR STANDARD CONSTRUCTION DRAWING USES THE PHRASE "OPTIONAL" OR "WHEN SPECIFIED IN THE PLAN".

THE TMA MUST BRING A VEHICLE WEIGHING 1800 TO 4500 LBS. AND TRAVELING AT 60 MPH TO A SAFE CONTROLLED STOP, PER NCHRP 350 CRITERIA. THE MANUFACTURER'S SPECIFICATION SHALL BE FOLLOWED CONCERNING THE SIZE OF THE TRUCK AND THE CONNECTIONS TO THE TMA.

ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO PROVIDE A TMA ARE CONSIDERED INCIDENTAL TO ITEM 614 - MAINTAINING TRAFFIC. FAILURE TO PROVIDE A TMA AS REQUIRED ABOVE SHALL RESULT IN A SUSPENSION OF WORK IN ACCORDANCE WITH C&MS 105.

FLOODLIGHTING

FLOODLIGHTING OF THE WORK SITE FOR OPERATIONS CONDUCTED DURING NIGHTTIME PERIODS SHALL BE ACCOMPLISHED SO THAT THE LIGHTS DO NOT CAUSE GLARE TO THE DRIVERS ON THE ROADWAY. TO ENSURE THE ADEQUACY OF THE FLOODLIGHT PLACEMENT, THE CONTRACTOR AND THE ENGINEER SHALL DRIVE THROUGH THE WORK SITE EACH NIGHT WHEN THE LIGHTING IS IN PLACE AND OPERATIVE PRIOR TO COMMENCING ANY WORK. IF GLARE IS DETECTED, THE LIGHT PLACEMENT AND SHIELDING SHALL BE ADJUSTED TO THE SATISFACTION OF THE ENGINEER BEFORE WORK PROCEEDS.

PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC.

O:\ODOT\HAM\91826_HAM-71-8.42_Design\MOT_Sheets\91826_MN405.dgn_Sheet 3/13/2018 1:10:45 PM don-f

CALCULATED
DPF
CHECKED
BJF

MAINTENANCE OF TRAFFIC GENERAL NOTES

HAM-IR71-8.42

O:\000T_HAM\9826_HAM-71-8.42_Design\MOT\Sheets\9826_MS403.dgn Sheet 9/14/2017 10:23:15 AM dan-f

REF. NO.	SHEET NO.	PHASE NO.	STATION		SIDE	LENGTH											622				REMARKS
			FROM	TO			WORK ZONE EDGE LINE, CLASS 1, 740.06, TYPE 1, 4" (WHITE)	WORK ZONE CENTERLINE, DOUBLE SOLID, 740.06, TYPE 1 (YELLOW)	WORK ZONE CHANNELIZING LINE, CLASS 1, 740.06, TYPE 1, 8" (WHITE)	WORK ZONE DOTTED LINE, CLASS 1, (WHITE), 740.06, TYPE 1	WORK ZONE STOP LINE, 740.06, TYPE 1, (WHITE)	WORK ZONE TRANSVERSE/DIAGONAL LINE, CLASS 1, 740.06, TYPE 1 (YELLOW)	WORK ZONE ARROW, CLASS 1, 740.06, TYPE 1 (WHITE)	OBJECT MARKER, ONE WAY	BARRIER REFLECTOR, TYPE 1 (2-WAY)	WORK ZONE IMPACT ATTENUATOR, UNIDIRECTIONAL	PORTABLE BARRIER, 32"				
							MILE	MILE	FEET	FEET	FEET	FEET	EACH			EACH	EACH	EACH	FEET		
DL1	111	KENNEDY	12+75.00	15+40.00	KENNEDY AVE RT	265				265											
WE1	111	KENNEDY	12+75.00	21+00.00	KENNEDY AVE RT	825	0.16														
PB1	111	KENNEDY	19+00.00	20+10.00	KENNEDY AVE RT	110										3	3	1	110		
SL1	112	RD BNK 2	47+30.00	-	RED BANK RD RT	11															
SL2	112	RD BNK 2	51+82.00	52+00.00	EHRLING RD	18															
SL3	112	RD BNK 2	52+50.00	-	RED BANK RD LT	11															
WE2	112	RD BNK 2	47+80.00	51+80.00	RED BANK RD LT	455	0.09														
DY1	112	RD BNK 2	52+00.00	-	EHRLING RD	65		0.01													
PB2	112	RD BNK 2	47+90.00	51+40.00	RED BANK RD LT	350										7	7	1	350		
WE3	113	RD BNK 3	47+77.00	52+00.00	RED BANK RD RT	435	0.08														
WE4	113	RD BNK 3	49+00.00	51+80.00	RED BANK RD LT	320	0.06														
PB3	113	RD BNK 3	48+30.00	51+90.00	RED BANK RD RT	360										8	8	1	360		
DY2	114	STW RAMP	39+00.00	42+92.00	STEWART RT	392		0.07													
DY3	114	STW RAMP	43+15.00	44+12.00	STEWART RT	97		0.02													
DY4	114	STW RAMP	49+66.00	53+75.00	STEWART RT	409		0.08													
WE5	114	STW RAMP	0+37.00	2+81.00	RAMP RT	280	0.05														
WE6	114	STW RAMP	47+27.00	55+71.00	STEWART RT	844	0.16														
SL4	114	STW RAMP	2+66.00	-	RAMP RT	20						20									
CHI	114	STW RAMP	1+00.00	2+66.00	RAMP RT	166			166												
CH2	114	STW RAMP	44+22.00	49+38.00	STEWART RT	516			516												
TY1	114	STW RAMP	39+00.00	42+88.00	STEWART RT	71							71								
TY2	114	STW RAMP	43+24.00	44+12.00	STEWART RT	64							64								
TY3	114	STW RAMP	49+73.00	53+75.00	STEWART RT	84							84								
AR1	114	STW RAMP	1+35.00	-	RAMP RT	-							1								
AR2	114	STW RAMP	1+35.00	-	RAMP RT	-							1								
AR3	114	STW RAMP	2+50.00	-	RAMP RT	-							1								
AR4	114	STW RAMP	2+50.00	-	RAMP RT	-							1								
AR5	114	STW RAMP	44+30.00	-	STEWART RT	-							1								
AR6	114	STW RAMP	45+50.00	-	STEWART RT	-							1								
AR7	114	STW RAMP	46+57.00	-	STEWART RT	-							1								
AR8	114	STW RAMP	48+17.00	-	STEWART RT	-							1								
AR9	114	STW RAMP	49+27.00	-	STEWART RT	-							1								
PB4	114	STW RAMP	0+75.00	1+95.00	RAMP RT	120										3	3	1	120		
WE7	115	STEWART	38+00.00	42+90.00	STEWART RT	490	0.09														
WE8	115	STEWART	39+00.00	49+54.00	STEWART LT	1054	0.20														
WE9	115	STEWART	43+58.00	49+25.00	STEWART RT	608	0.12														
WE10	115	STEWART	49+65.00	51+65.00	STEWART LT	217	0.04														
WE11	115	STEWART	+28.00	1+40.00	RAMP E RT	112	0.02														
TOTALS CARRIED TO GENERAL SUMMARY							1.07	0.18	682	265	60	219	9			21	21	4	940		

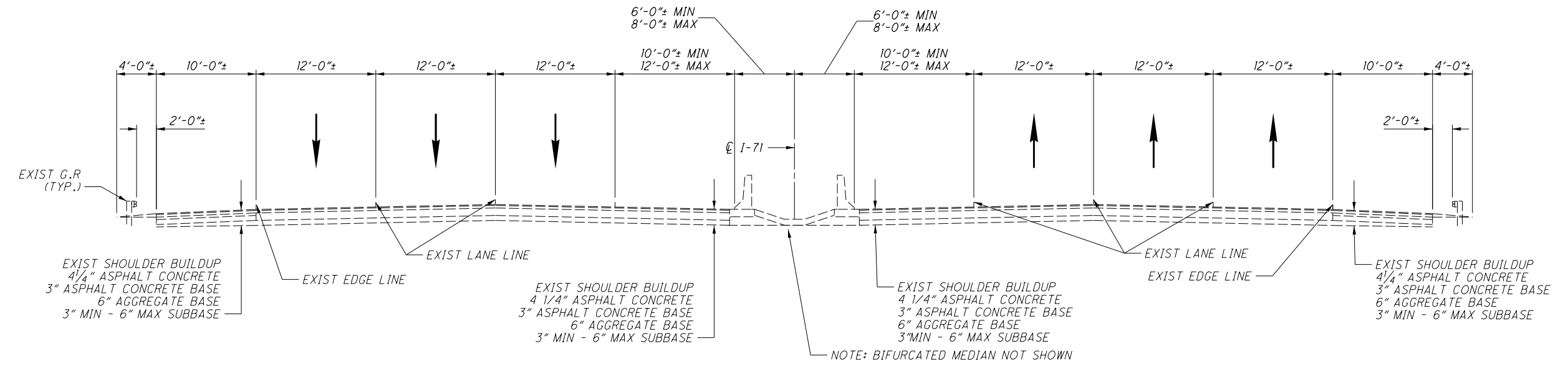
CALCULATED CML CHECKED DPF	MAINTENANCE OF TRAFFIC SUBSUMMARY	HAM - IR71 - 8.42	36 441
-------------------------------------	--	--------------------------	-----------

O:\ODOT\HAM\9826_HAM-71-8.42\Design\MOT\Sheets\9826_MS404.dgn Sheet 9/14/2017 10:23:16 AM dan-f

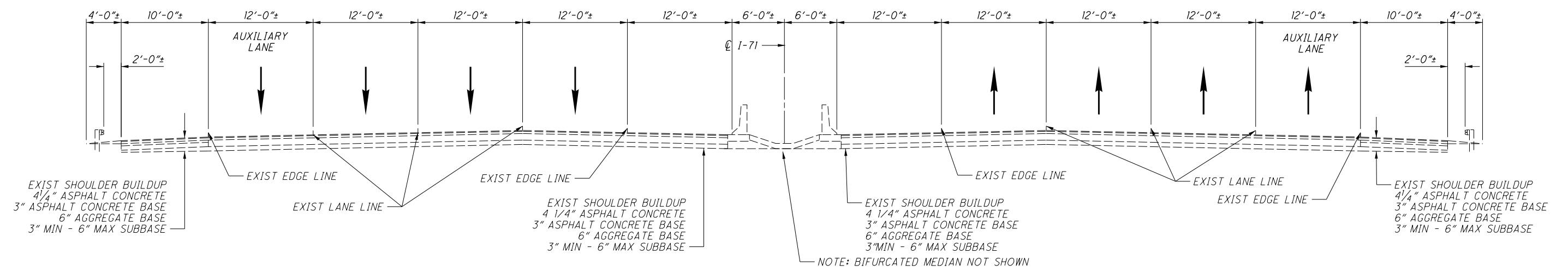
STATION		AVG WIDTH	LENGTH	STATION EQUATION CORRECTION	LOCATION	PHASE	615	
FROM	TO	FT	FT	FT			PAVEMENT FOR M.O.T., CLASS A	PAVEMENT FOR M.O.T., CLASS A, AS PER PLAN
SY	SY							
467+50.00	467+83.70	10.0	33.7		NB MEDIAN	1 & 2		37
BRIDGE HAM-71-0970 R								
469+41.90	470+25.00	10.8	83.1		NB MEDIAN	1 & 2		100
470+25.00	519+22.10	12.0	4897.1	1.1	NB MEDIAN	1 & 2		6531
519+22.10	519+85.70	10.8	63.6		NB MEDIAN	1 & 2		76
BRIDGE HAM-71-1068 R								
522+74.40	523+64.50	10.8	90.1		NB MEDIAN	1 & 2		108
523+64.50	546+45.00	12.0	2280.5		NB MEDIAN	1 & 2		3041
463+00.00	467+60.60	8.0	460.6		NB OUTSIDE	1 & 2		409
BRIDGE HAM-71-0970 R								
469+19.80	470+42.00	18.5	122.2		NB OUTSIDE	1 & 2 & 4		251
470+42.00	476+10.00	10.0	568.0		NB OUTSIDE	1 & 2 & 4		631
476+10.00	491+89.60	3.0	1579.6		NB OUTSIDE	1 & 2		527
BRIDGE HAM-71-1068 R								
522+41.80	531+80.00	9.5	938.2		NB OUTSIDE	1 & 2 & 3		990
531+80.00	550+70.00	3.0	1890.0		NB OUTSIDE	1 & 2		630
544+75.00	548+50.00	12.0	375.0		SB MEDIAN	1 & 2		500
455+00.00	467+20.00	12.0	1220.0		SB MEDIAN	1		1627
467+20.00	467+96.40	11.0	76.4		SB MEDIAN	1		93
BRIDGE HAM-71-0970 L								
469+57.90	470+25.00	10.9	67.1		SB MEDIAN	1		81
470+25.00	499+50.00	12.0	2925.0		SB MEDIAN	1		3900
514+00.00	519+45.00	12.0	545.0	1.1	SB MEDIAN	1		728
519+45.00	520+31.10	10.7	86.1		SB MEDIAN	1		102
BRIDGE HAM-71-1068 L								
522+87.10	523+75.00	10.7	87.9		SB MEDIAN	1		105
523+75.00	528+45.00	12.0	470.0		SB MEDIAN	1		627
454+80.00	460+80.00	10.0	600.0		SB OUTSIDE	2		667
460+80.00	468+24.90	9.0	744.9		SB OUTSIDE	2		745
BRIDGE HAM-71-0970 R								
469+82.40	470+86.60	14.2	104.2		SB OUTSIDE	2		164
470+86.60	474+10.00	10.0	323.4		SB OUTSIDE	2		359
474+10.00	486+35.00	FULL DEPTH SHOULDER CONST IN PHASE 1						
486+35.00	496+84.00	10.0	1049.0		SB OUTSIDE	2		1166
496+84.00	497+47.90	7.5	63.9		SB OUTSIDE	2		53
514+00.00	520+71.50	10.0	671.5	1.1	SB OUTSIDE	2		747
BRIDGE HAM-71-1068 L								
523+18.80	534+90.00	10.0	1171.2		SB OUTSIDE	2		1301
405+62.55	435+10.90	10.0	2948.4	-82.7	SB MEDIAN	3 & 4		3184
435+10.90	436+15.60	11.0	104.7		SB MEDIAN	3 & 4		128
436+15.60	455+00.00	12.0	1884.4		SB MEDIAN	3 & 4		2513
499+50.00	514+00.00	12.0	1450.0		SB MEDIAN	3 & 4		1933
528+45.00	544+75.00	12.0	1630.0		SB MEDIAN	3 & 4		2173
402+70.00	416+50.00	3.0	1380.0		SB OUTSIDE	3 & 4		460
416+50.00	545+80.00	3.0	12930.0		SB OUTSIDE	3 & 4		4310
510+40.00	514+00.00	3.0	360.0		SB OUTSIDE	3 & 4		120
534+90.00	547+37.00	3.0	1247.0		SB OUTSIDE	3 & 4		416
510+00.00	519+23.60		923.6	1.1	NB OUTSIDE	3		0
BRIDGE HAM-71-1068 R								
406+00.00	407+88.60	8.7	188.6		SOUTH X-OVER			182
407+88.60	411+64.70	13.0	376.1		SOUTH X-OVER			543
411+64.70	412+39.69	4.0	75.0		SOUTH X-OVER			33
540+00.00	549+00.00	16.0	900.0		NORTH X-OVER			1600
1+18.10	1+89.70	CADD MSD	481.0		KENNEDY RAMP			53
2+50.00	2+76.80	CADD MSD	432.0		KENNEDY RAMP			48
TOTALS CARRIED TO GENERAL SUMMARY							2459	41533

REF NO.	SHEET NO.	STATION	LOCATION	615			
				15" CONDUIT, TYPE B	INLET, NO. 3 FOR SINGLE SLOP BARRIER, TYPE D	MANHOLE, NO. 3	MANHOLE ADJUSTED TO GRADE, AS PER PLAN
				FT	EACH	EACH	EACH
D1	134	411+76.40	LT		1		
D2	135	541+99.90	RT				1
D3	135	544+50.00	€				1
D4	135	546+97.20	LT				1
D5	135	547+04.60	LT	8	1		
D6	135	547+24.50	LT		1		
D7	135	548+95.00	LT			1	
D8	135	549+10.00	LT	17	1		
TOTALS CARRIED TO GENERAL SUMMARY				25	4	1	3

PHASE NO.	SIDE	LENGTH	614 CLASS III - PAINT				
			WORK ZONE EDGE LINE, CLASS III, 642 PAINT, 6" (WHITE)	WORK ZONE EDGE LINE, CLASS III, 642 PAINT, 6" (YELLOW)	WORK ZONE LANE LINE, CLASS III, 642 PAINT, 6" (WHITE)	WORK ZONE CHANNELIZING LINE, CLASS III, 642 PAINT, 12" (WHITE)	WORK ZONE DOTTED LINE, CLASS III, 642 PAINT (WHITE)
			MILE	MILE	MILE	FEET	FEET
PREMARKING			13.46	13.54	20.44	14908	13259
TOTALS CARRIED TO GENERAL SUMMARY			27.00	20.44	14908	13259	

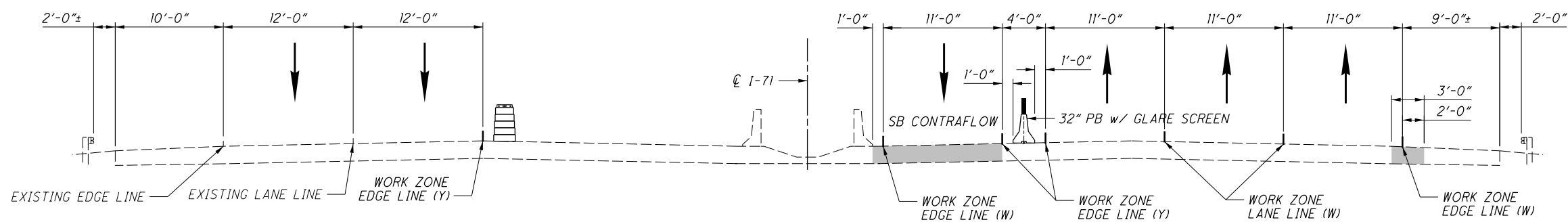


TYPICAL SECTION I-71
WITHOUT AUXILIARY LANE

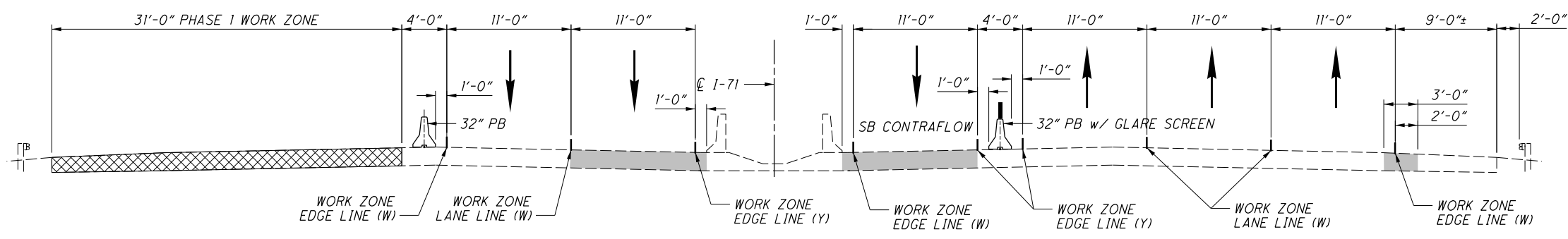


TYPICAL SECTION I-71
WITH AUXILIARY LANE
(BETWEEN RED BANK ROAD AND STEWART ROAD)

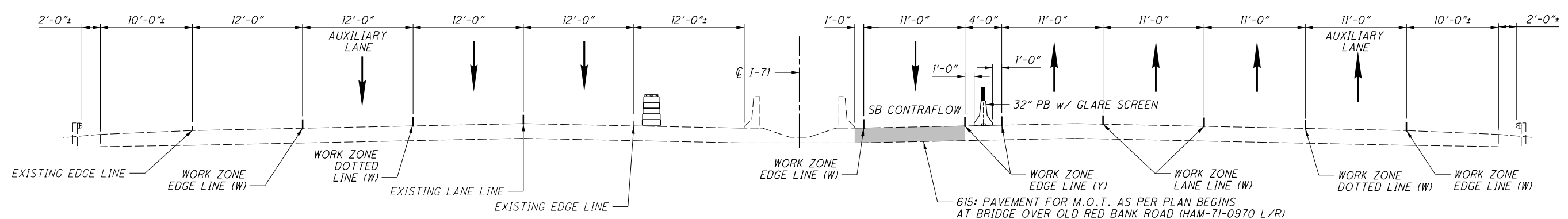
O:\ODOT\HAM\91826_HAM-71-8.42_Design\MOT_Sheets\91826_MY400.dgn_Sheet 9/14/2017 10:23:17 AM don-f



TYPICAL SECTION I-71
WITHOUT AUXILIARY LANES


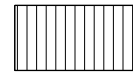
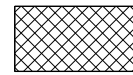


TYPICAL SECTION I-71
LOWERING AT RED BANK RD



TYPICAL SECTION I-71
WITH AUXILIARY LANES
(BETWEEN KENNEDY AND RED BANK ROAD - NB)
(BETWEEN RED BANK ROAD AND STEWART ROAD - NB/SB)

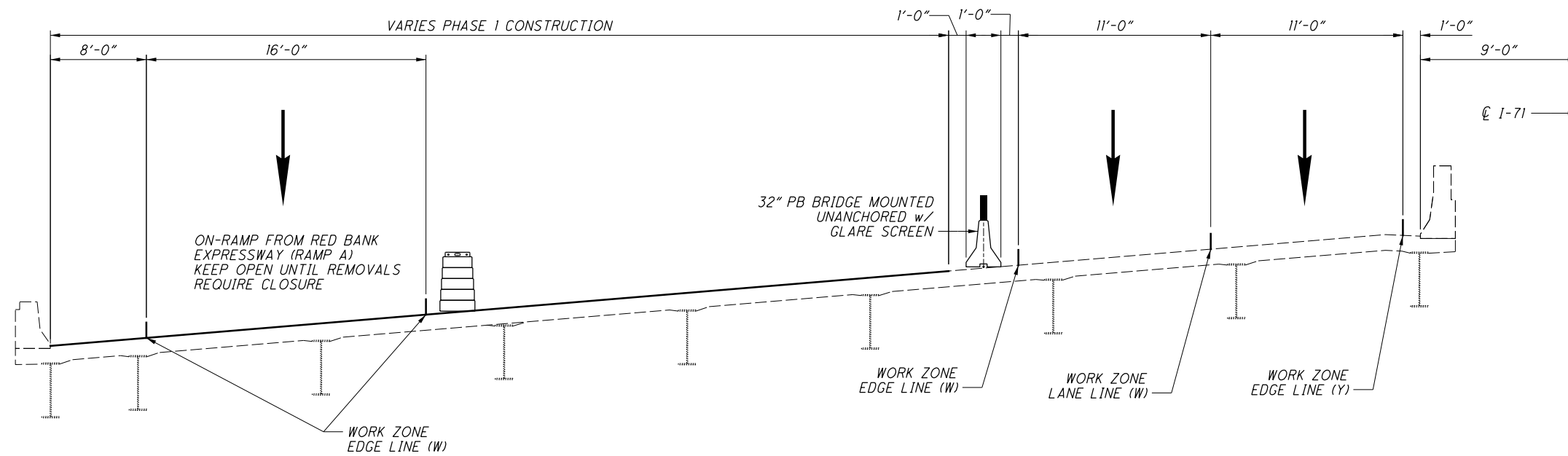
LEGEND

-  ITEM 615: PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN
-  WORK ZONE - BRIDGE DECK REPLACEMENT
-  WORK ZONE - PAVEMENT LOWERING

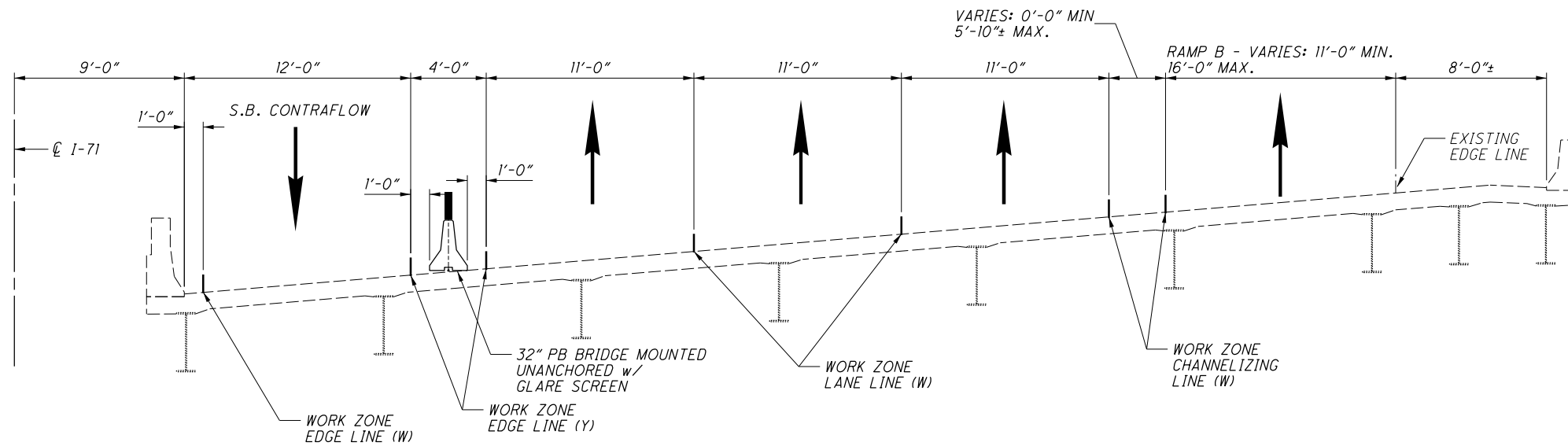
NOTE: PAVEMENT FOR MAINTAINING TRAFFIC FOR TRANSITIONS TO BRIDGE AND PAVEMENT LOWERING WORK ZONES NOT SHOWN SEE SUBSUMMARY SHEET 37 FOR LOCATIONS AND LIMITS OF ITEM 615

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT_Sheets_91826_MY411.dgn Sheet 9/14/2017 10:23:18 AM dan-f

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_MY412.dgn Sheet 9/14/2017 10:23:19 AM dan-f



TYPICAL SECTION I-71 SB
BRIDGE NO. HAM-71-0970L OVER RED BANK RD.



TYPICAL SECTION I-71 NB
BRIDGE NO. HAM-71-0970R OVER RED BANK RD.

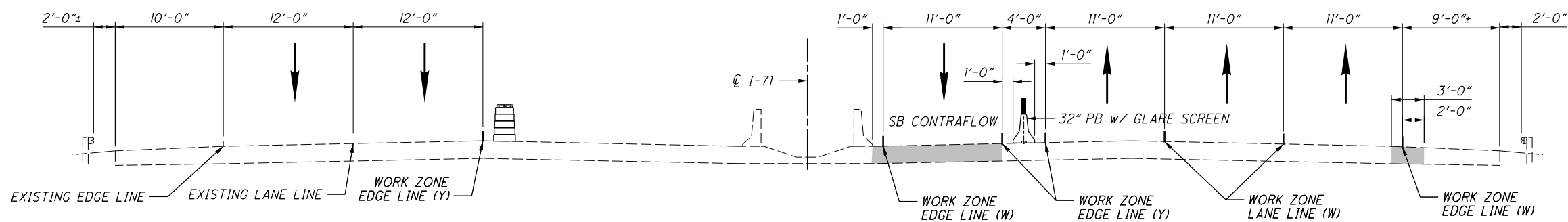
CALCULATED
DPF
CHECKED
BJF

MOT TYPICAL SECTION PHASE 1 - HAM-71-0970

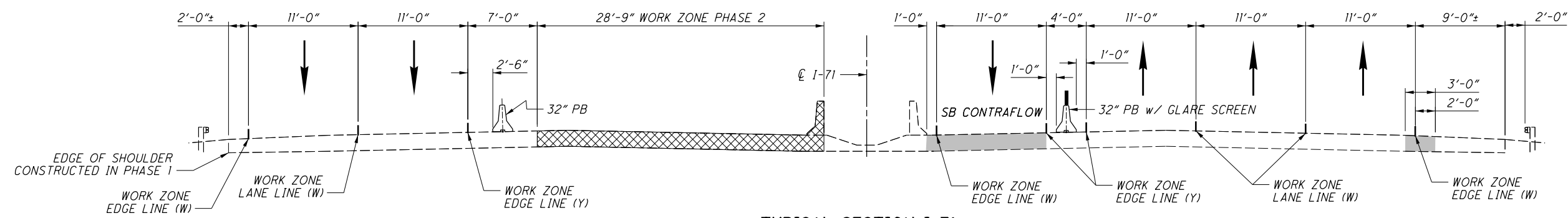
HAM-IR71-8.42

40
441

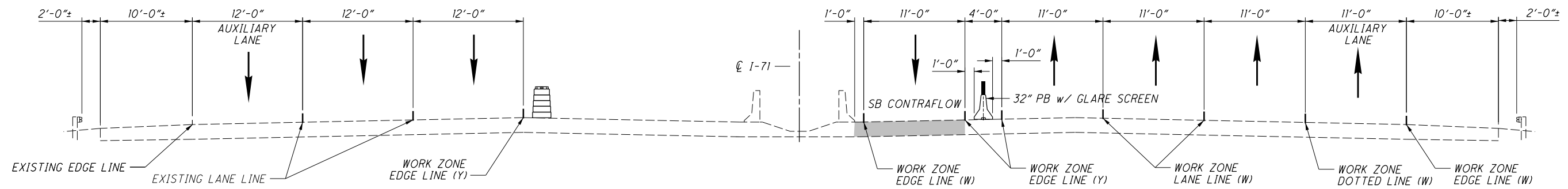
FOR LEGEND SEE SHEET 39



TYPICAL SECTION I-71
WITHOUT AUXILIARY LANES



TYPICAL SECTION I-71
LOWERING AT RED BANK RD

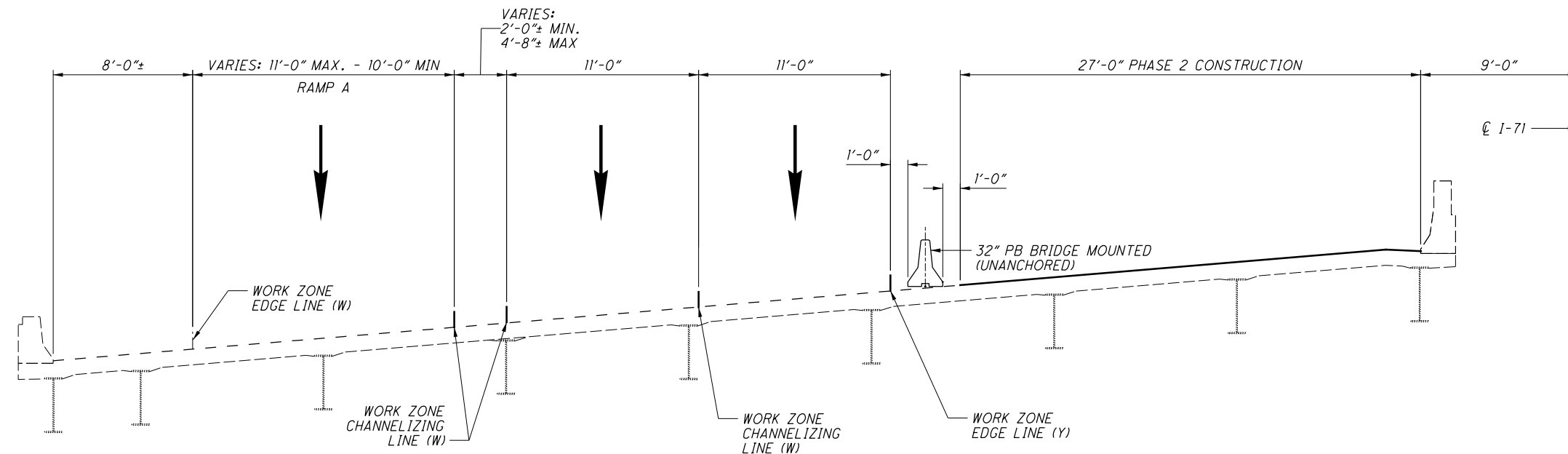


TYPICAL SECTION I-71
WITH AUXILIARY LANES
(BETWEEN KENNEDY AND RED BANK ROAD - NB)
(BETWEEN RED BANK ROAD AND STEWART ROAD - NB/SB)

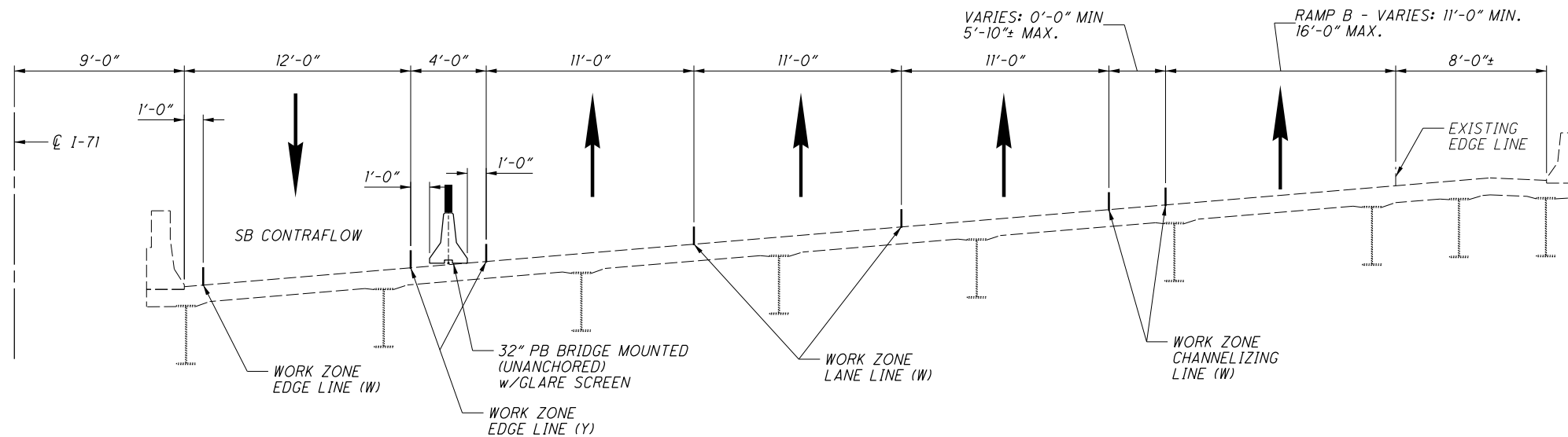
NOTE:
1) PAVEMENT FOR MAINTAINING TRAFFIC FOR TRANSITIONS TO BRIDGE AND PAVEMENT LOWERING WORK ZONES NOT SHOWN SEE SUBSUMMARY SHEET 37 FOR LOCATIONS AND LIMITS OF ITEM 615
2) FOR LEGEND, SEE SHEET 39

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT_Sheets_91826_MY421.dgn Sheet 9/14/2017 10:23:20 AM don-f

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_MY422.dgn_Sheet 9/14/2017 10:23:21 AM dan-f



TYPICAL SECTION I-71 SB
BRIDGE NO. HAM-71-0970L OVER RED BANK RD.



TYPICAL SECTION I-71 NB
BRIDGE NO. HAM-71-0970R OVER RED BANK RD.

CALCULATED	DPF
CHECKED	BJF

MOT TYPICAL SECTION PHASE 2 - HAM-71-0970

HAM-IR71-8.42

42
441

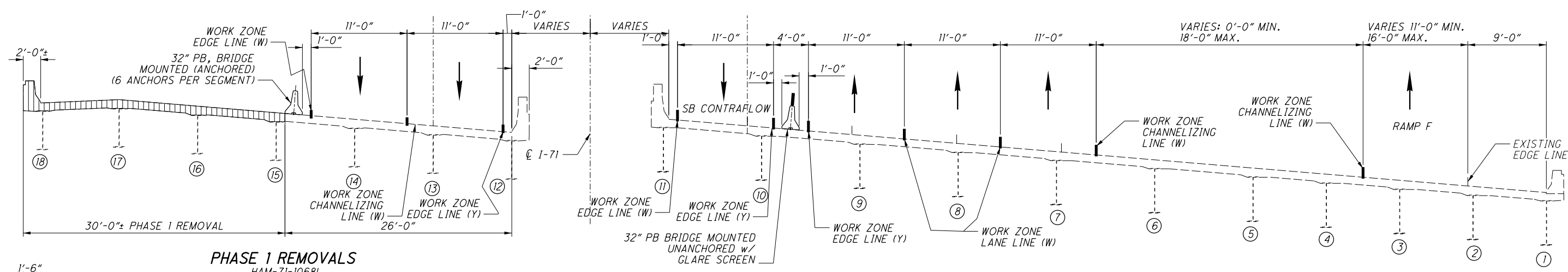
FOR LEGEND SEE SHEET 39

CALCULATED
DPF
CHECKED
BJF

MOT TYPICAL SECTION PHASE 1&2- HAM-71-1068

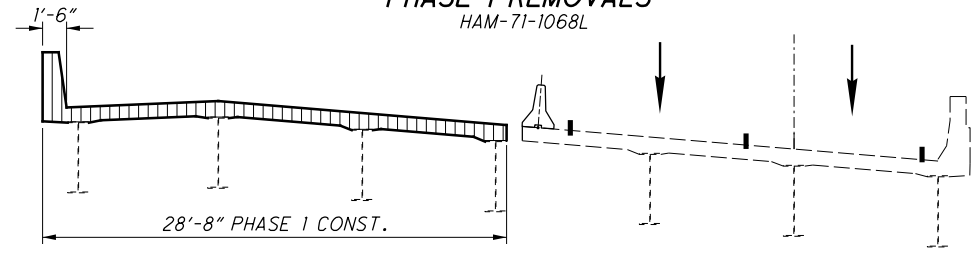
HAM-IR71-8.42

43
441

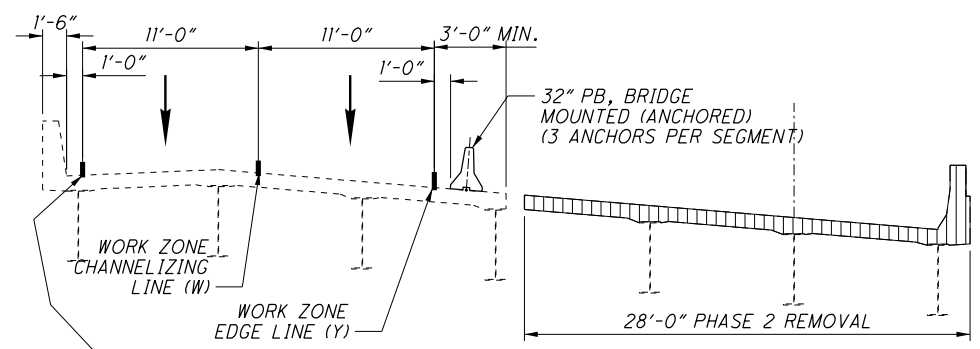


PHASE 1 REMOVALS
HAM-71-1068L

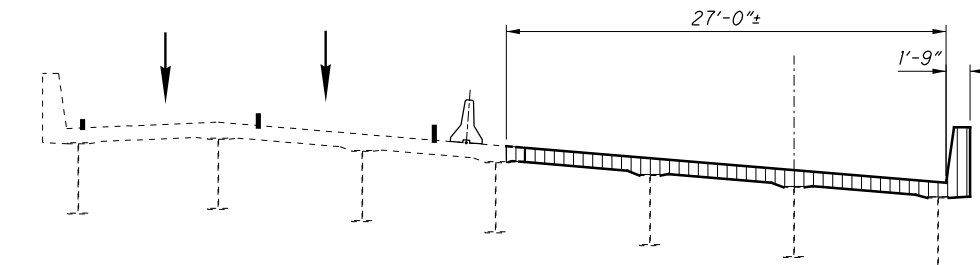
CONTRAFLOW- MOT PHASES 1 & 2
HAM-71-1068R



PHASE 1 CONSTRUCTION
HAM-71-1068L

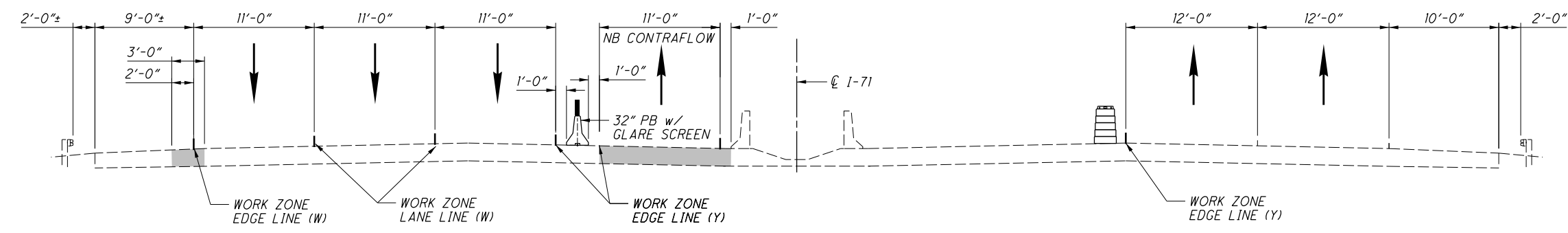


PHASE 2 REMOVALS
HAM-71-1068L

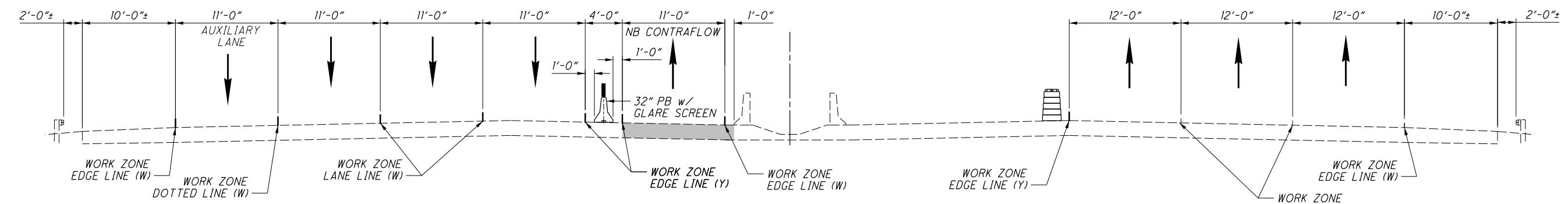


PHASE 2 CONSTRUCTION
HAM-71-1068L

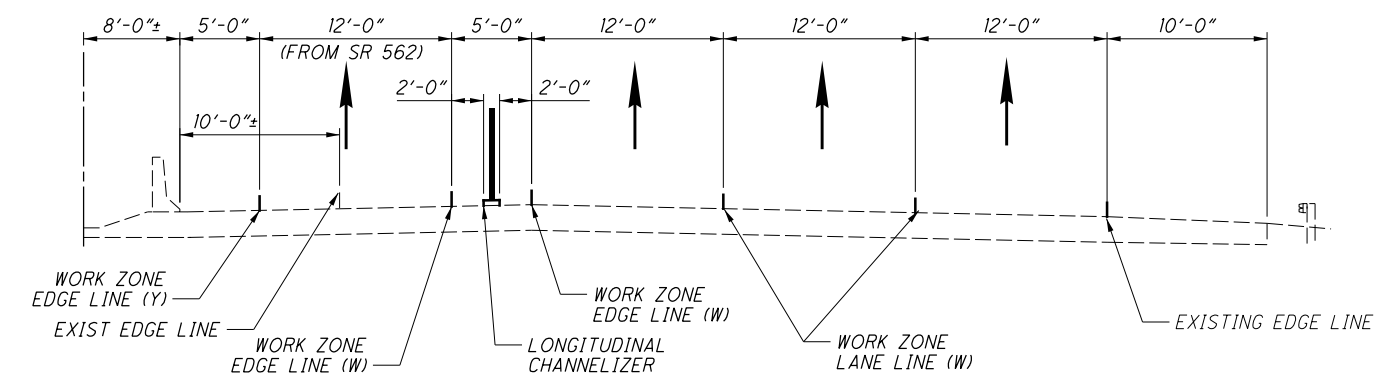
O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_MY423.dgn_Sheet 9/14/2017 10:23:21 AM don-f



TYPICAL SECTION I-71
WITHOUT AUXILIARY LANES



TYPICAL SECTION I-71
WITH AUXILIARY LANES
(BETWEEN KENNEDY AVE. AND RED BANK ROAD - NB)
(BETWEEN RED BANK ROAD AND STEWART ROAD - NB/SB)

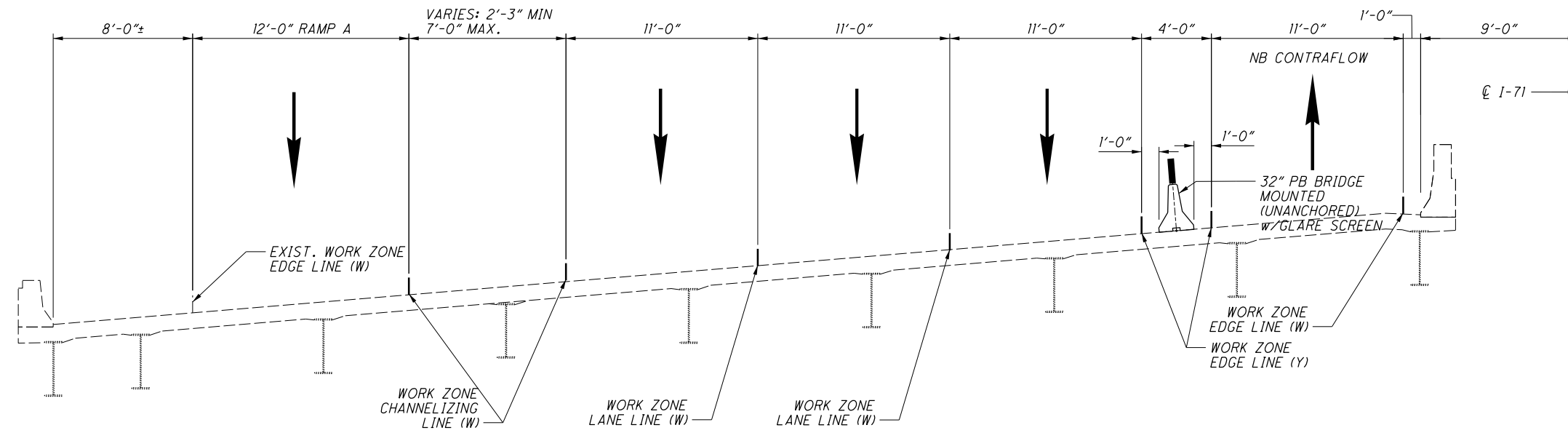


TYPICAL SECTION I-71
CONTRAFLOW ADD-LANE @ SR 562

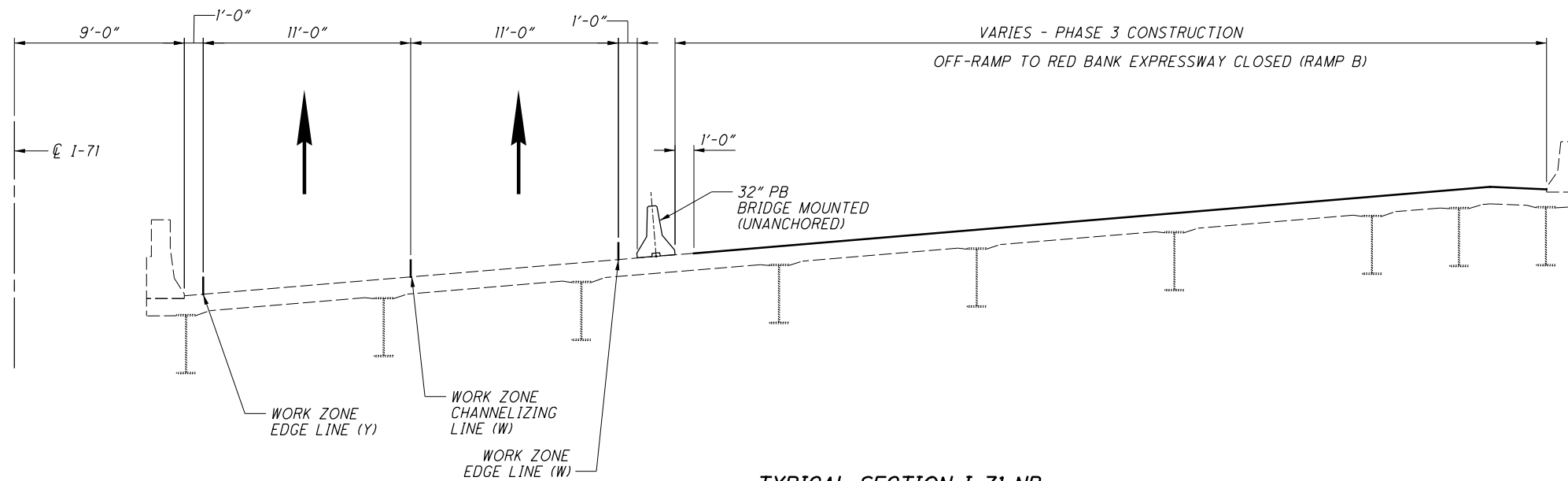
NOTE:
1) PAVEMENT FOR MAINTAINING TRAFFIC FOR TRANSITIONS TO BRIDGE AND PAVEMENT LOWERING WORK ZONES NOT SHOWN SEE SUBSUMMARY SHEET 37 FOR LOCATIONS AND LIMITS OF ITEM 615
2) FOR LEGEND, SEE SHEET 39

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\MY431.dgn Sheet 9/14/2017 10:23:23 AM don-f

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_MY432.dgn_Sheet 9/14/2017 10:23:23 AM dan-f



TYPICAL SECTION I-71 SB
BRIDGE NO. HAM-71-0970L OVER RED BANK RD.



TYPICAL SECTION I-71 NB
BRIDGE NO. HAM-71-0970R OVER RED BANK RD.

CALCULATED	DPF
CHECKED	BJF

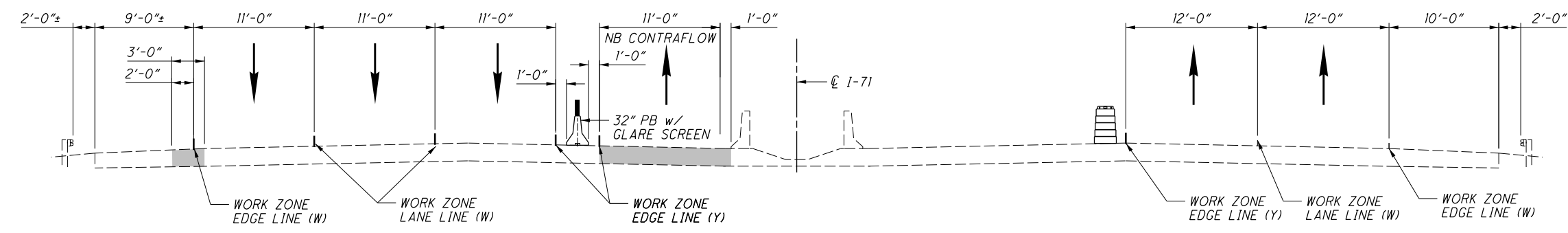
MOT TYPICAL SECTION PHASE 3 - HAM-71-0970

HAM-IR71-8.42

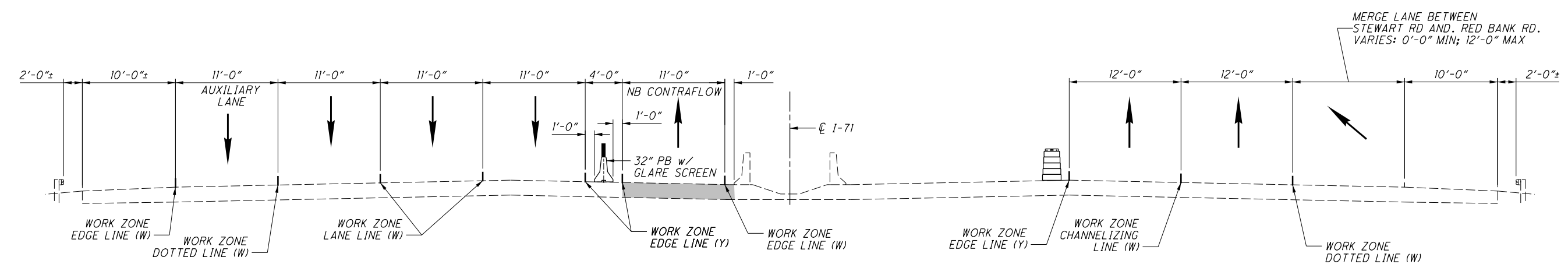
45

441

FOR LEGEND SEE SHEET 39



TYPICAL SECTION I-71
WITHOUT AUXILIARY LANES



TYPICAL SECTION I-71
WITH AUXILIARY LANES
(BETWEEN KENNEDY AND RED BANK ROAD - NB)
(BETWEEN RED BANK ROAD AND STEWART ROAD - NB/SB)

NOTE: PAVEMENT FOR MAINTAINING TRAFFIC FOR TRANSITIONS TO BRIDGE WORK ZONES NOT SHOWN

FOR LEGEND SEE SHEET 39

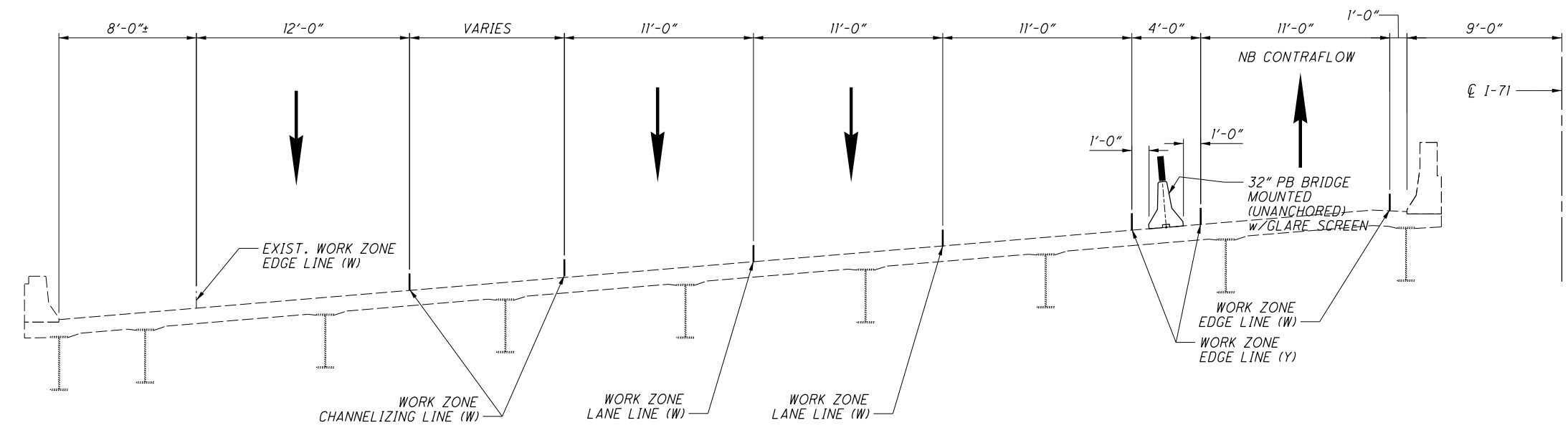
O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT_Sheets_91826_MY441.dgn Sheet 9/14/2017 10:23:24 AM don-f

CALCULATED
DPF
CHECKED
BJF

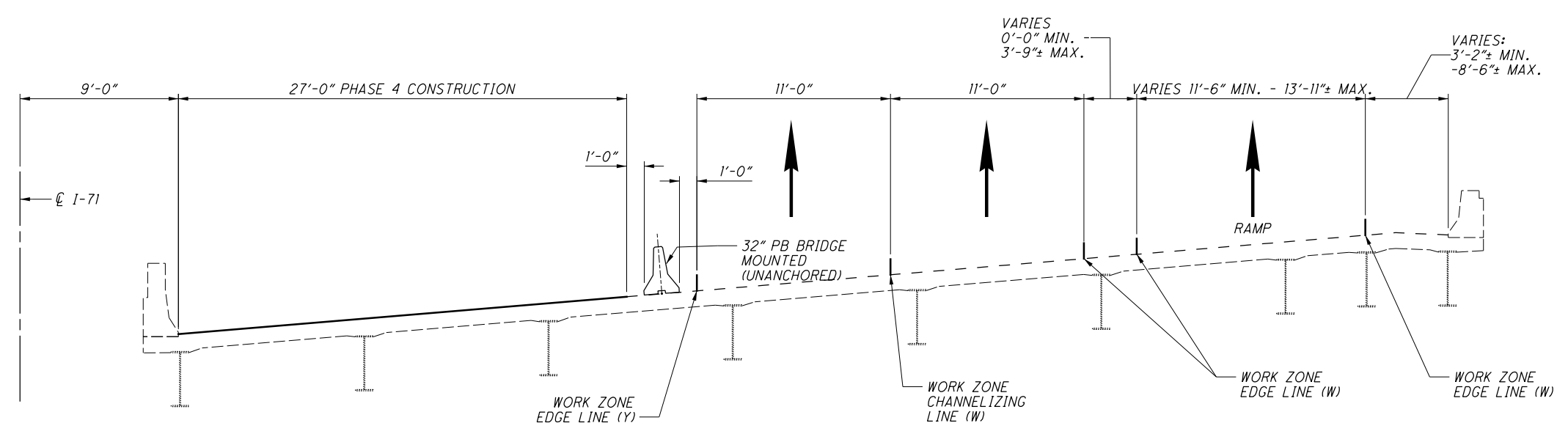
MOT TYPICAL SECTION PHASE 4 - HAM-71-0970

HAM-IR71-8.42

47
441



TYPICAL SECTION I-71 SB
BRIDGE NO. HAM-71-0970L OVER RED BANK RD.

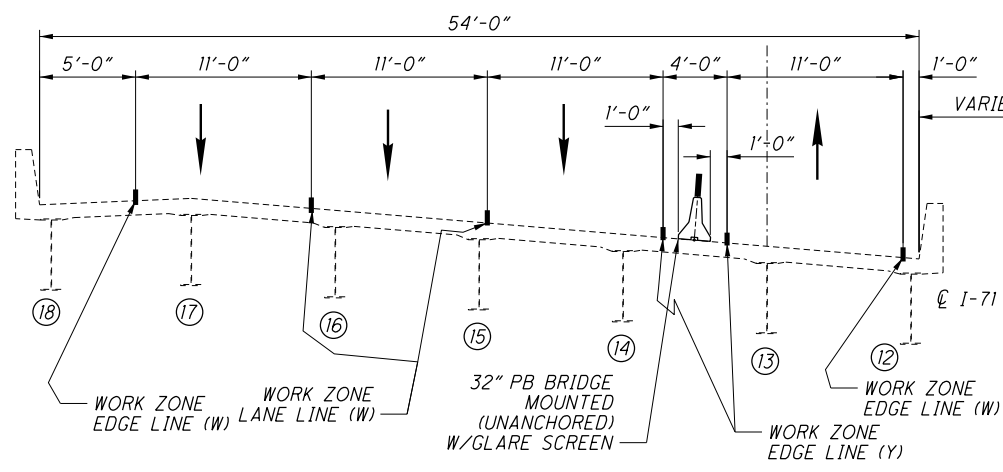


TYPICAL SECTION I-71 NB
BRIDGE NO. HAM-71-0970R OVER RED BANK RD.

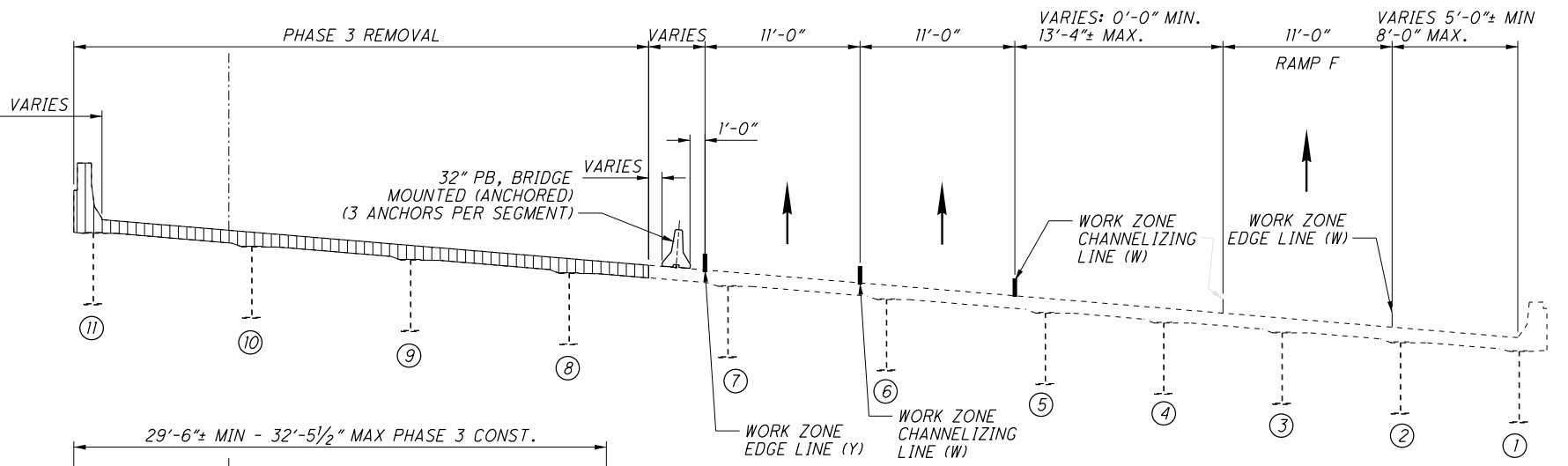
O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_MY442.dgn Sheet 9/14/2017 10:23:25 AM dan-f

FOR LEGEND SEE SHEET 39

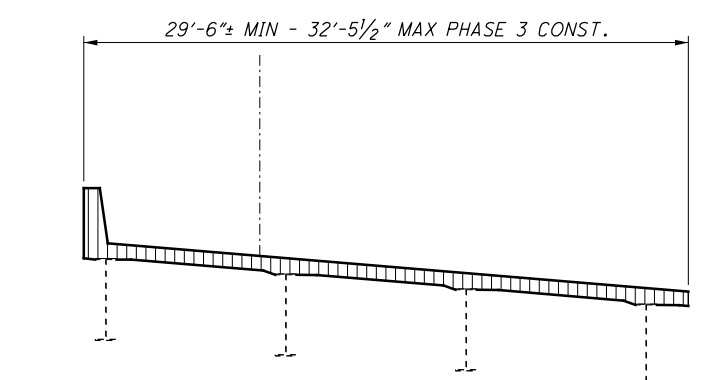
O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_MY443.dgn Sheet 9/14/2017 10:23:26 AM don-f



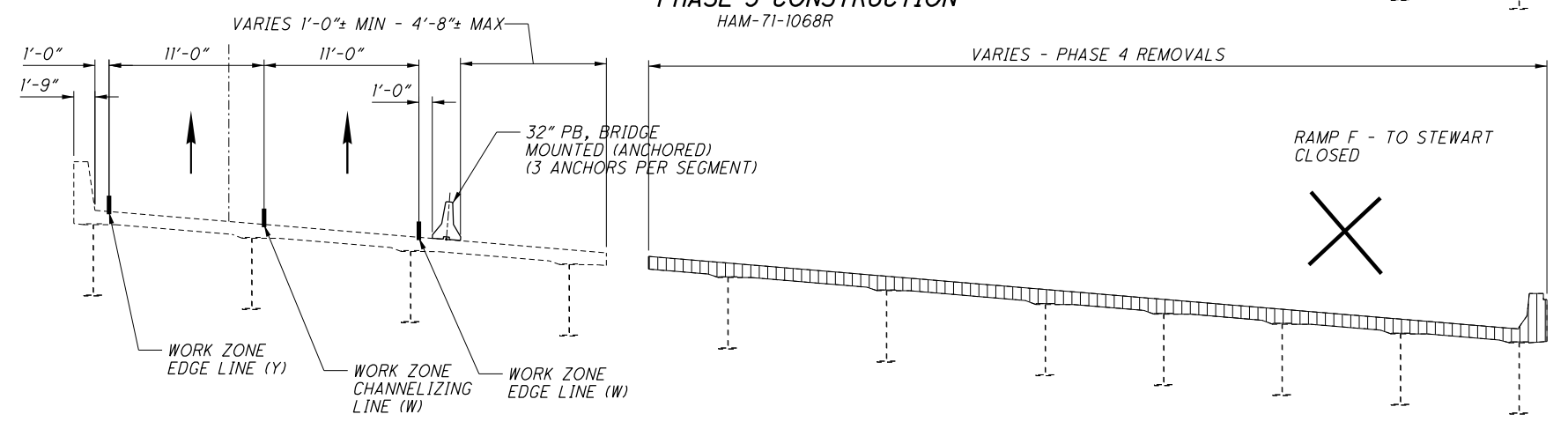
CONTRAFLOW- MOT PHASES 3 & 4
HAM-71-1068L



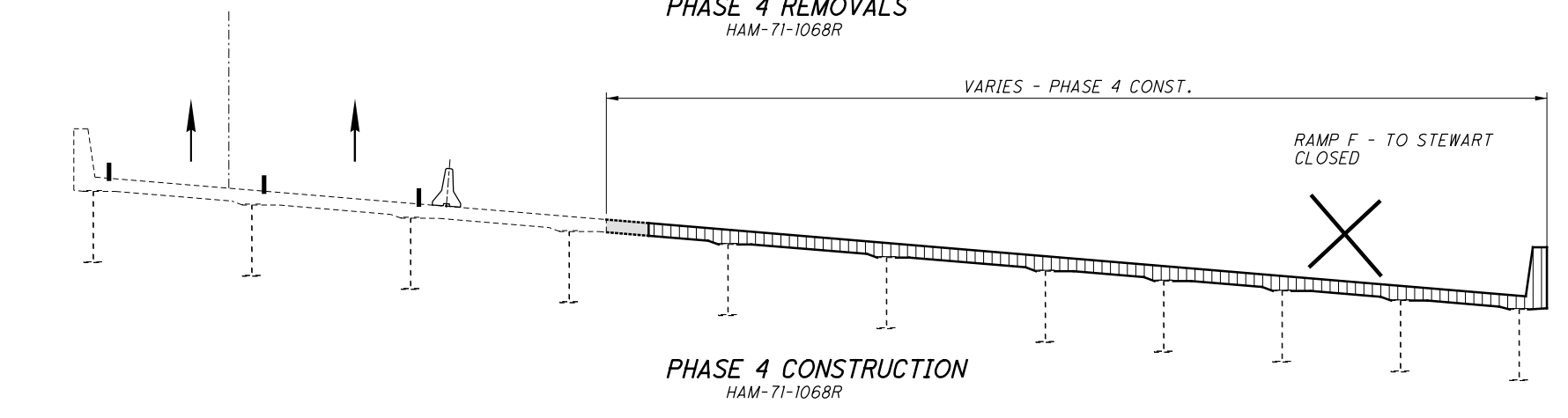
PHASE 3 REMOVALS
HAM-71-1068R



PHASE 3 CONSTRUCTION
HAM-71-1068R



PHASE 4 REMOVALS
HAM-71-1068R



PHASE 4 CONSTRUCTION
HAM-71-1068R




CALCULATED
DPF
CHECKED
BJF

MOT TYPICAL SECTION PHASE 3&4- HAM-71-1068

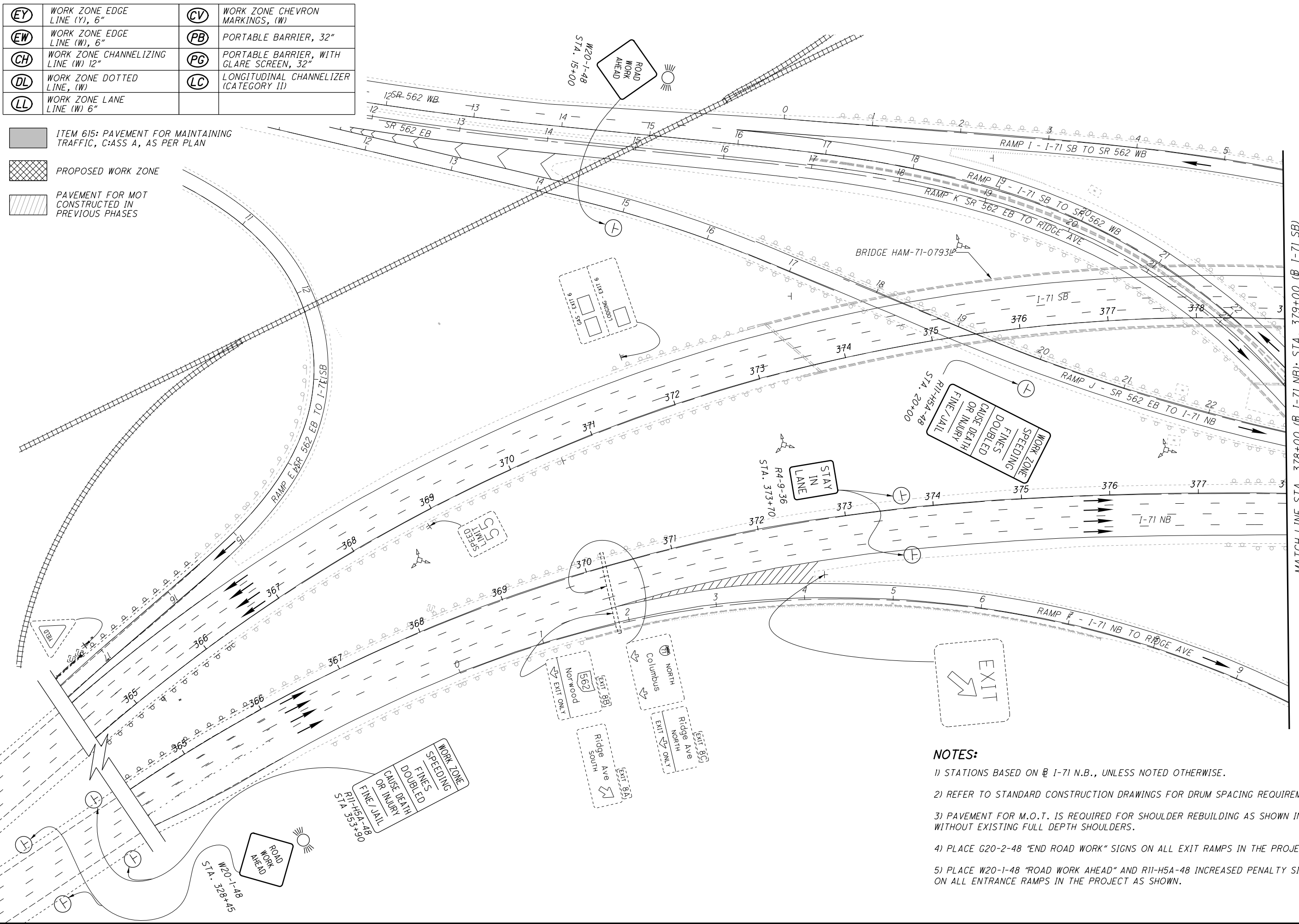
HAM-IR71-8.42

FOR LEGEND SEE SHEET 39


EY	WORK ZONE EDGE LINE (Y), 6"	CV	WORK ZONE CHEVRON MARKINGS, (W)
EW	WORK ZONE EDGE LINE (W), 6"	PB	PORTABLE BARRIER, 32"
CH	WORK ZONE CHANNELIZING LINE (W) 12"	PG	PORTABLE BARRIER, WITH GLARE SCREEN, 32"
DL	WORK ZONE DOTTED LINE, (W)	LC	LONGITUDINAL CHANNELIZER (CATEGORY II)
LL	WORK ZONE LANE LINE (W) 6"		


-  ITEM 615: PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN
-  PROPOSED WORK ZONE
-  PAVEMENT FOR MOT CONSTRUCTED IN PREVIOUS PHASES

O:\ODOT\HAM-71-8.42\Design\MOT_Sheets\91826_MP400.dgn Sheet 9/14/2017 10:23:45 AM don-f



MATCH LINE STA. 378+00 @ I-71 NB; STA. 379+00 @ I-71 SB





 HORIZONTAL SCALE IN FEET

CALCULATED: []
 DPF: []
 CHECKED: []
 BY: []

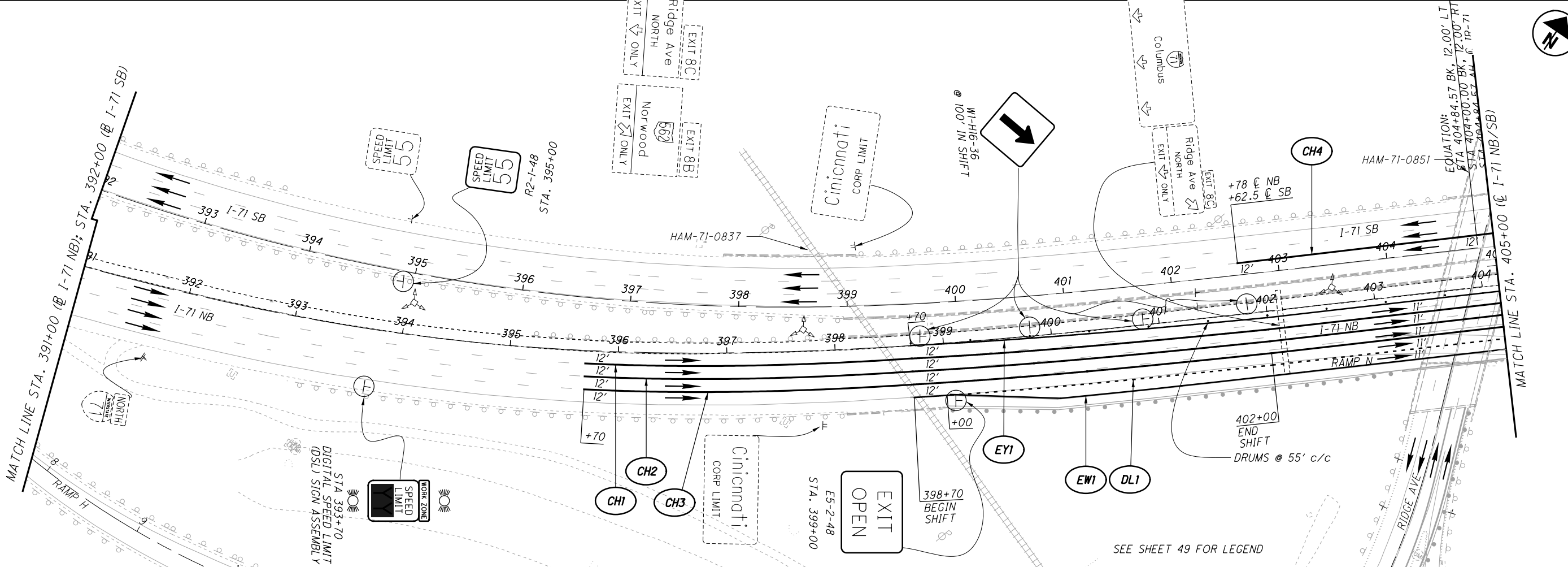
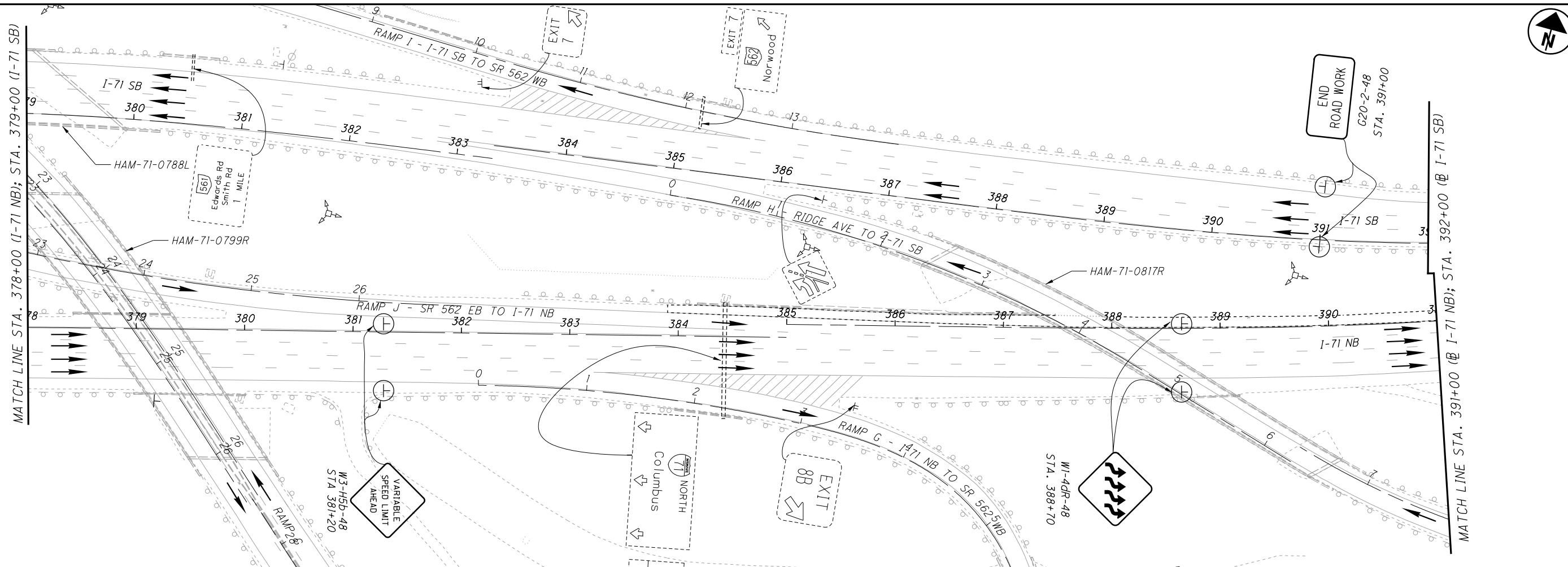
MAINTENANCE OF TRAFFIC PHASE 1

HAM-IR71-8.42

NOTES:

- 1) STATIONS BASED ON I-71 N.B., UNLESS NOTED OTHERWISE.
- 2) REFER TO STANDARD CONSTRUCTION DRAWINGS FOR DRUM SPACING REQUIREMENTS.
- 3) PAVEMENT FOR M.O.T. IS REQUIRED FOR SHOULDER REBUILDING AS SHOWN IN AREAS WITHOUT EXISTING FULL DEPTH SHOULDERS.
- 4) PLACE G20-2-48 "END ROAD WORK" SIGNS ON ALL EXIT RAMP IN THE PROJECT
- 5) PLACE W20-1-48 "ROAD WORK AHEAD" AND R11-H5A-48 INCREASED PENALTY SIGNS ON ALL ENTRANCE RAMP IN THE PROJECT AS SHOWN.

O:\ODOT\HAM-91826_HAM-71-8.42\Design\MOT_Sheets_91826_MP401.dgn Sheet_9/14/2017 10:23:51 AM dan-f



CALCULATED	0
DPF	25
CHECKED	100
BUJ	

**MAINTENANCE OF TRAFFIC
PHASE 1**

HAM-IR71-8.42

50
441

SEE SHEET 49 FOR LEGEND

EQUATION:
STA. 404+84.57 BK. 12.00' LT
STA. 404+00.00 BK. 12.00' RT
STA. 404+84.57 BK. 12.00' LT

402+00
END SHIFT
DRUMS @ 55' c/c

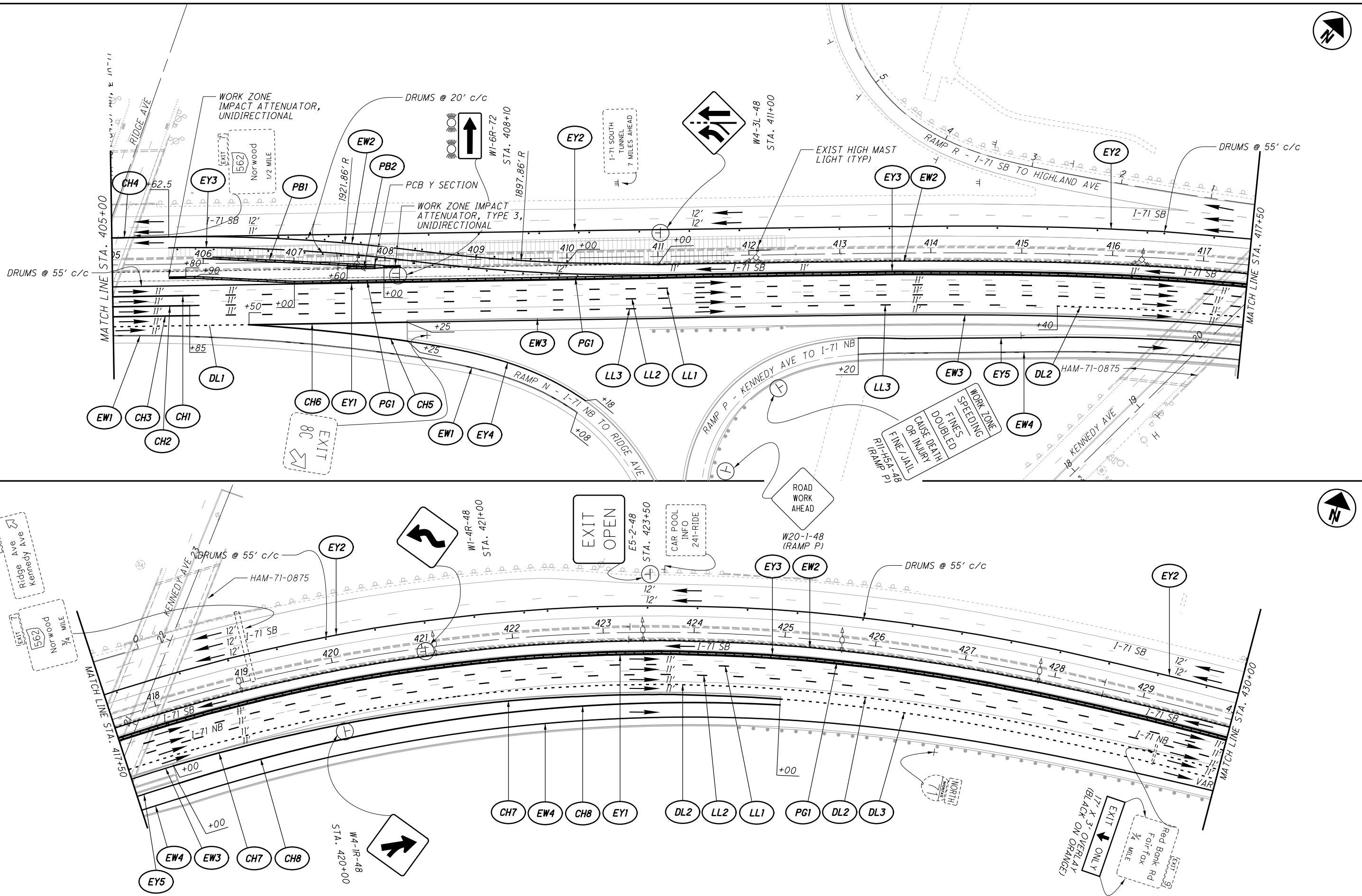
EXIT
OPEN
STA. 399+00

WORK ZONE
SPEED LIMIT
STA. 393+70
DIGITAL SPEED LIMIT
OSLS SIGN ASSEMBLY

SPEED LIMIT 55
R2-1-48
STA. 395+00

SPEED LIMIT 55

O:\ODOT\HAM-91826_HAM-71-8.42_Design\MOT_Sheets\91826_MP402.dgn_Sheet 9/14/2017 10:23:54 AM don-f



CALCULATED	DPF	CHECKED	BJF

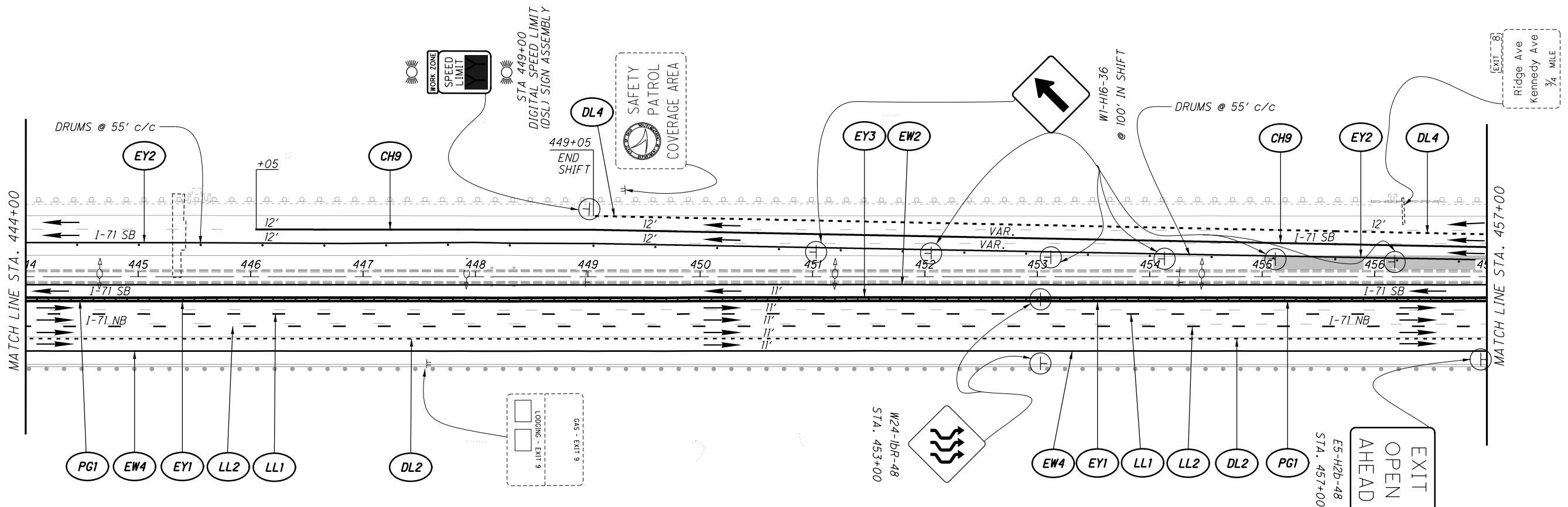
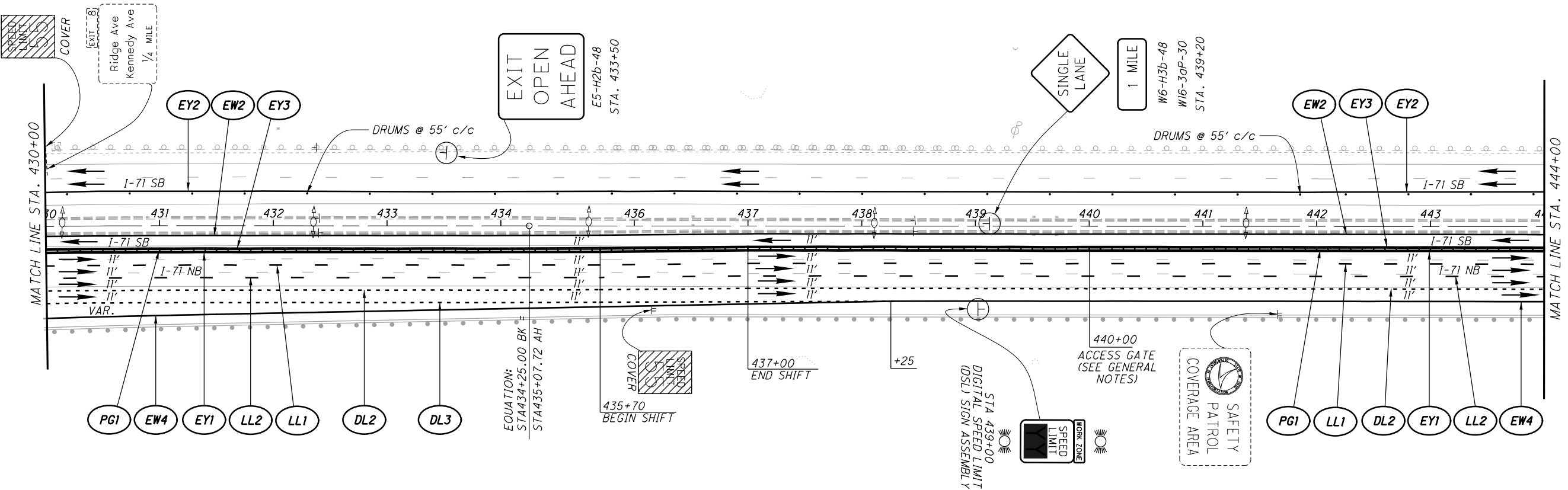
**MAINTENANCE OF TRAFFIC
PHASE 1**



HAM-IR71-8.42

SEE SHEET 49 FOR LEGEND

o:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_MP403.dgn_Sheet 9/14/2017 10:23:56 AM dan-f



MAINTENANCE OF TRAFFIC
PHASE 1

HAM-IR71-8.42

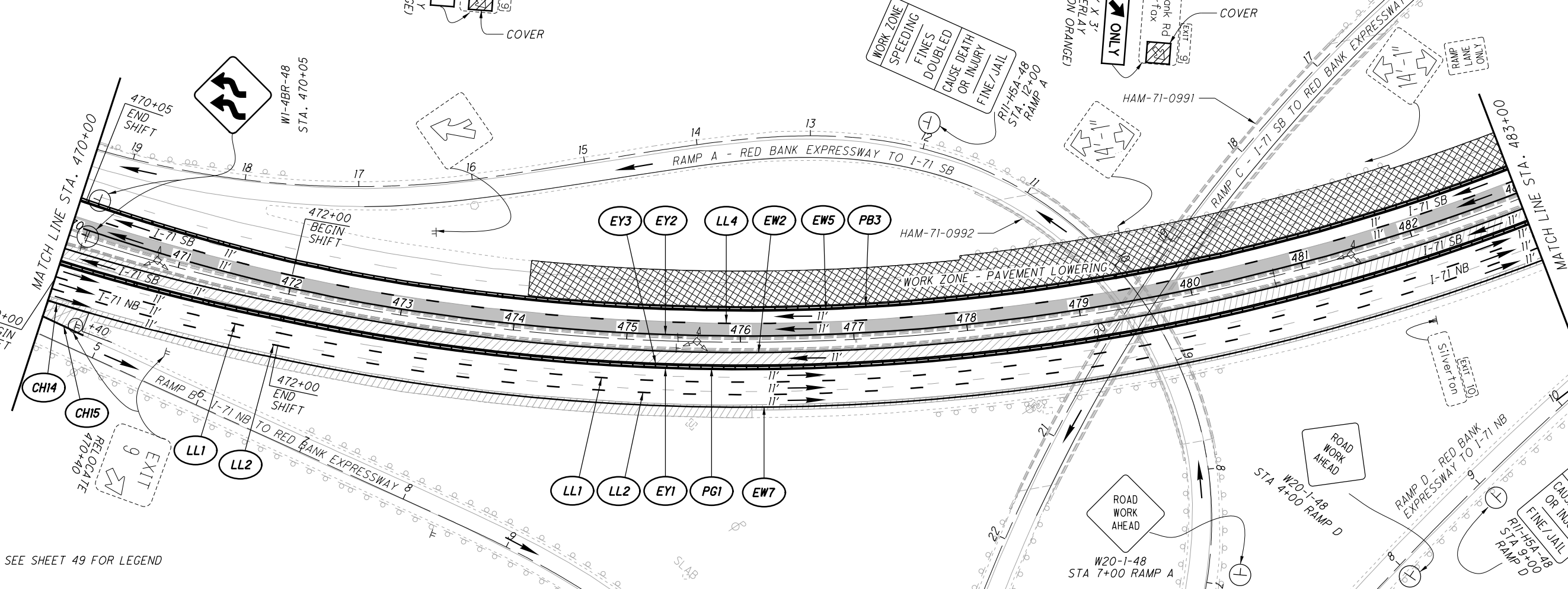
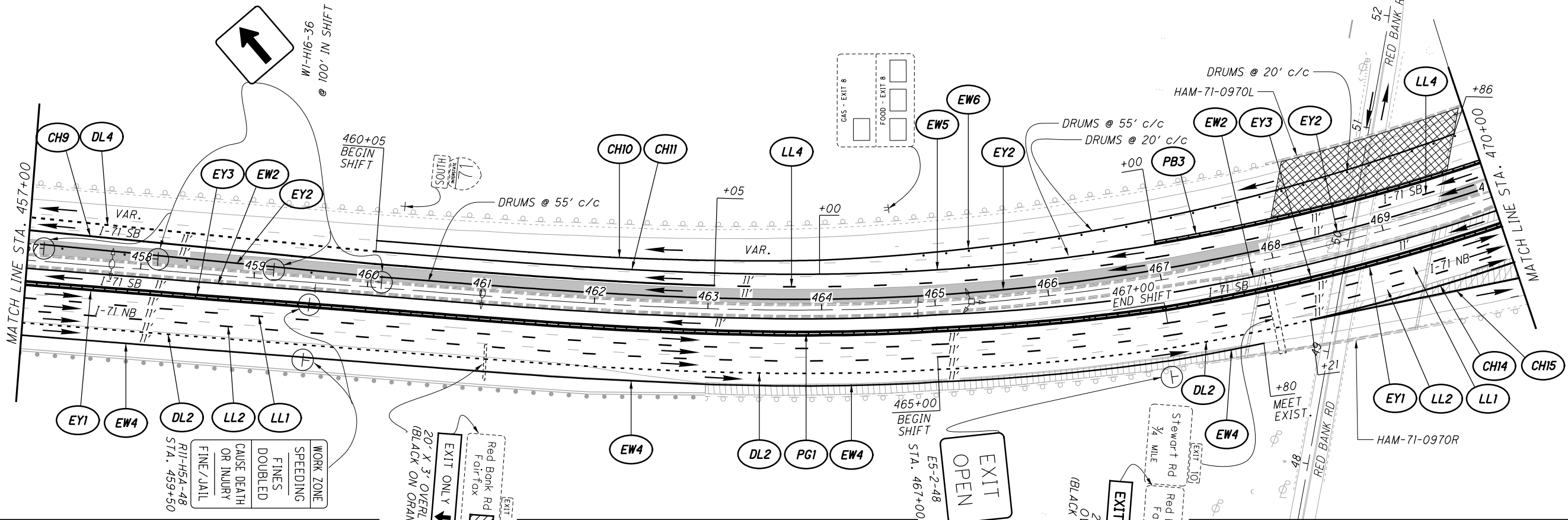
52
441

SEE SHEET 49 FOR LEGEND



CALCULATED
 DPF
 CHECKED
 BJF

MAINTENANCE OF TRAFFIC PHASE 1
HAM-IR71-8.42
 53
 441



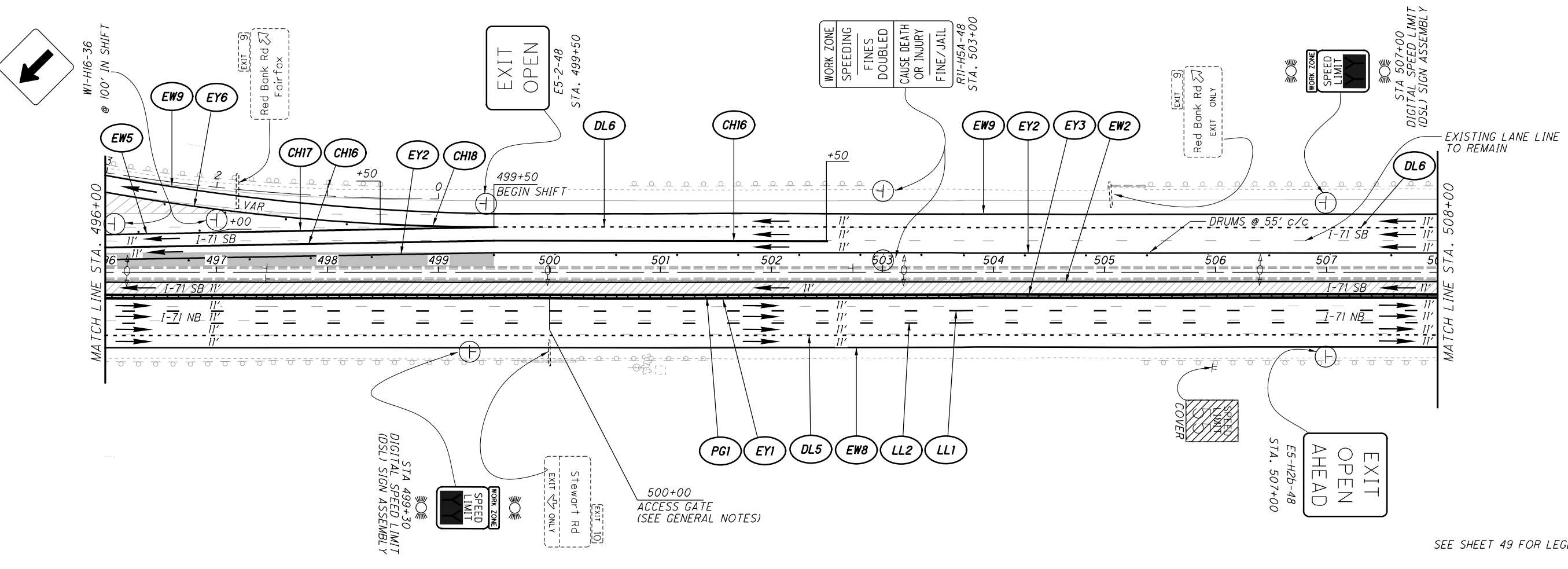
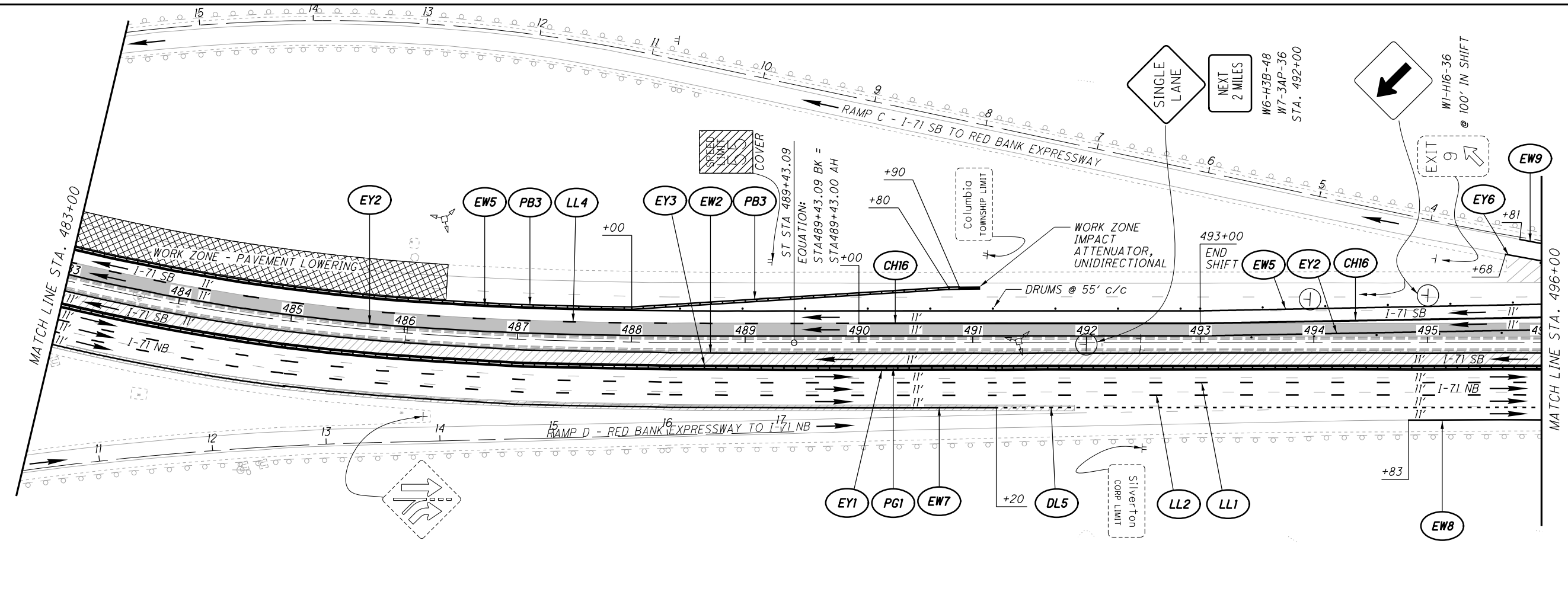
WORK ZONE
SPEEDING
FINES DOUBLED
CAUSE DEATH OR INJURY
FINE/JAIL

WORK ZONE
SPEEDING
FINES DOUBLED
CAUSE DEATH OR INJURY
FINE/JAIL

WORK ZONE
SPEEDING
FINES DOUBLED
CAUSE DEATH OR INJURY
FINE/JAIL

SEE SHEET 49 FOR LEGEND

O:\ODOT\HAM-91826_HAM-71-8.42\Design\MOT_Sheets\91826_MP404.dgn Sheet 9/14/2017 10:23:59 AM dan-f



CALCULATED
DPF
CHECKED
BJF

0 50 100
25
HORIZONTAL
SCALE IN FEET

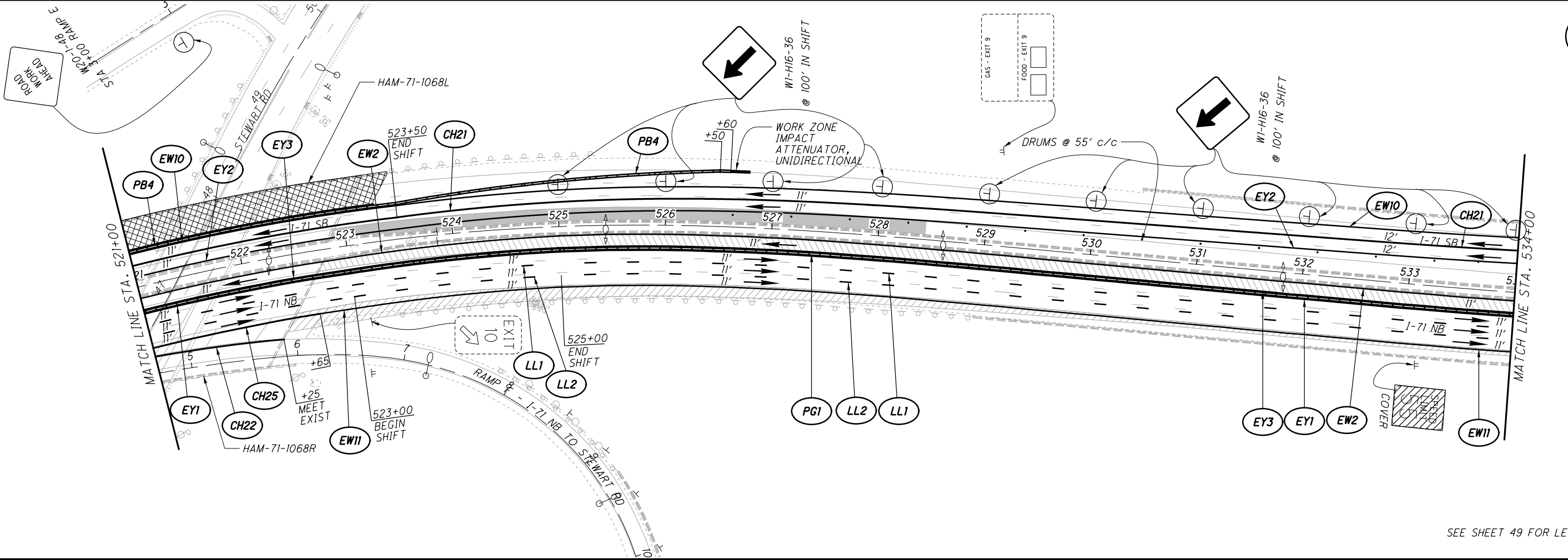
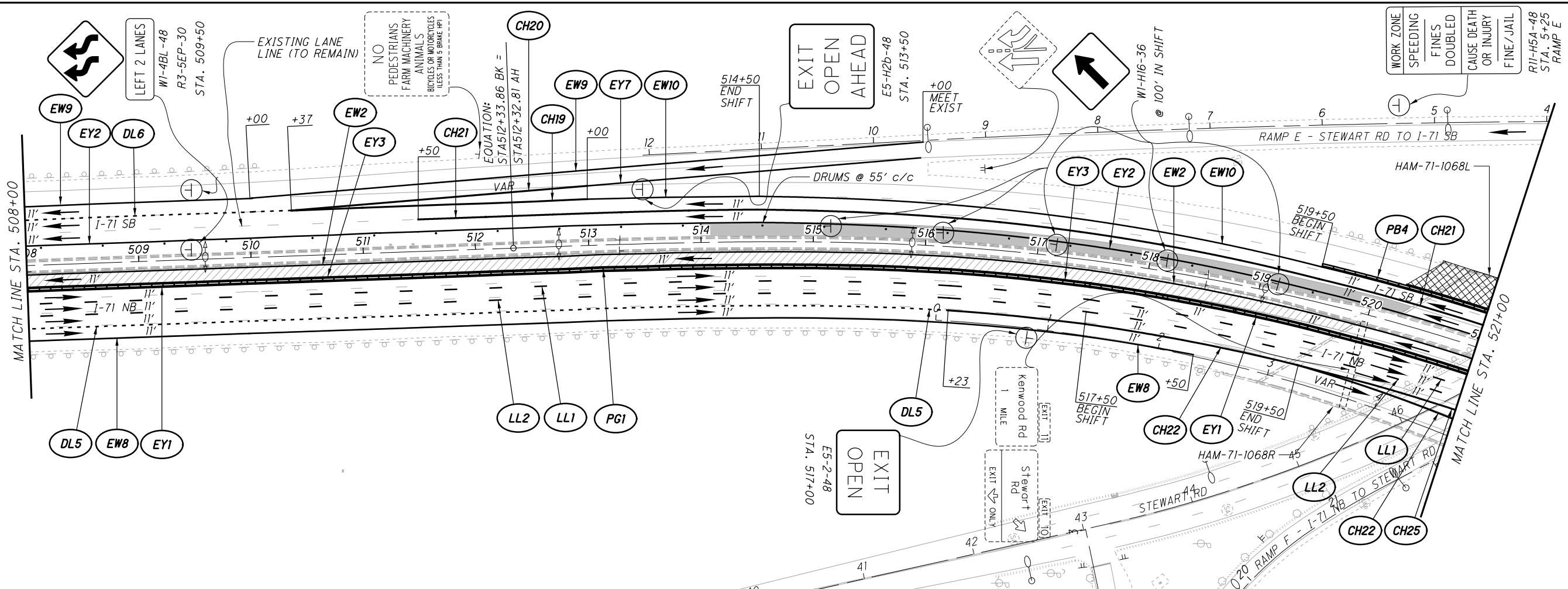
**MAINTENANCE OF TRAFFIC
PHASE 1**

HAM-IR71-8.42

54
441

SEE SHEET 49 FOR LEGEND

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT_Sheets\91826_MP406.dgn Sheet 9/14/2017 10:24:05 AM dan-f



WORK ZONE	SPEEDING	FINES DOUBLED	CAUSE DEATH OR INJURY	FINE / JAIL
RII-H5A-48	STA. 5+25	RAMP E		

CALCULATED	DPF	CHECKED	BJF
------------	-----	---------	-----

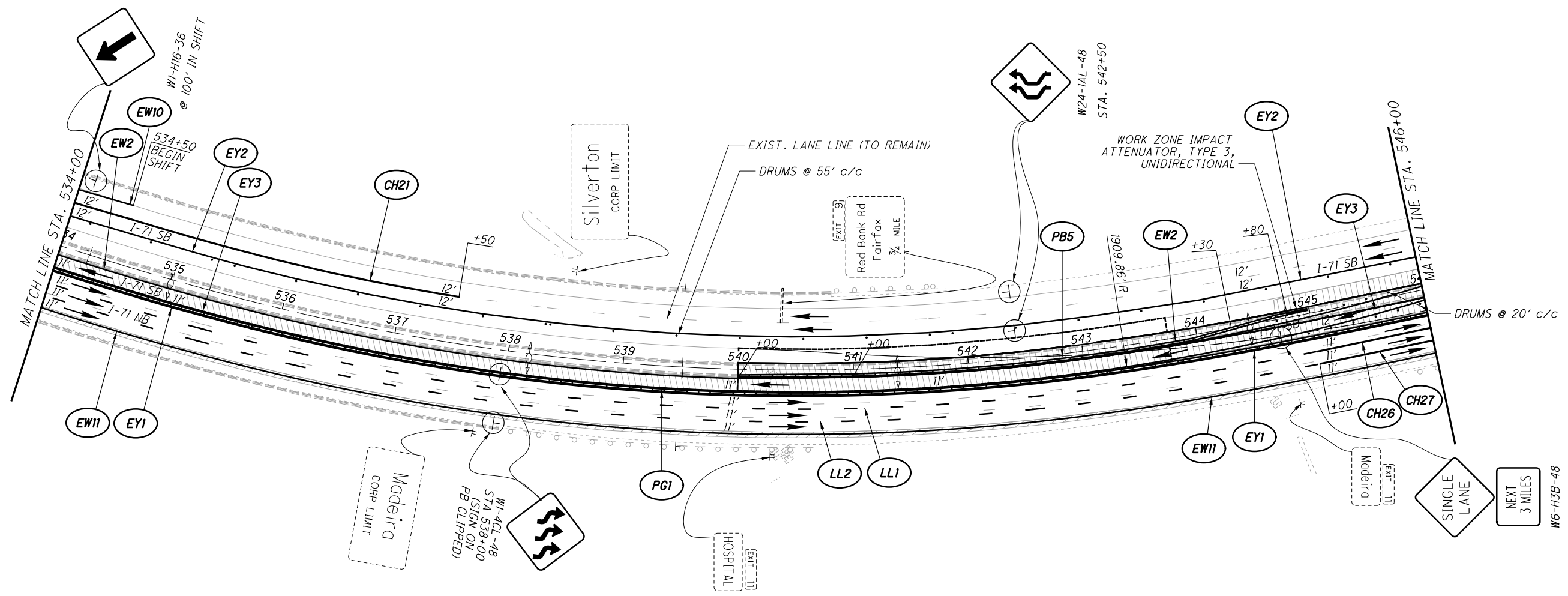
MAINTENANCE OF TRAFFIC
PHASE 1

HAM-IR71-8.42

55
441

SEE SHEET 49 FOR LEGEND

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT_Sheets\91826_MP407.dgn_Sheet 9/14/2017 10:24:07 AM don-f

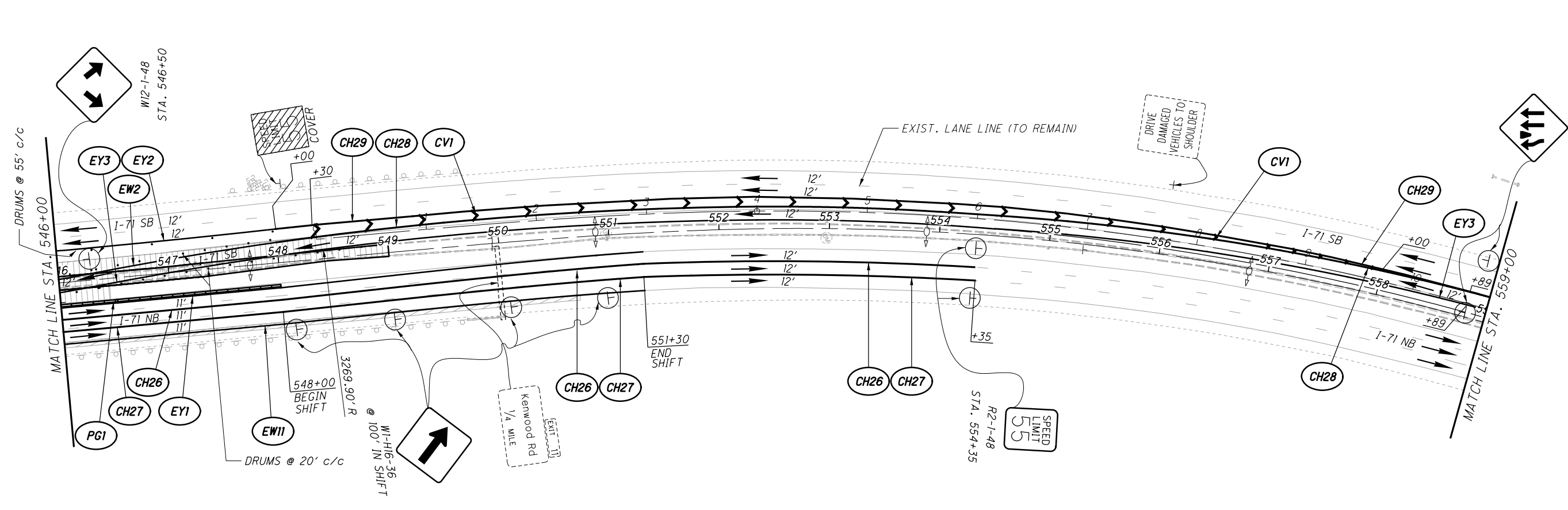


CALCULATED	0
DPF	25
CHECKED	100
BUJ	100

HORIZONTAL SCALE IN FEET

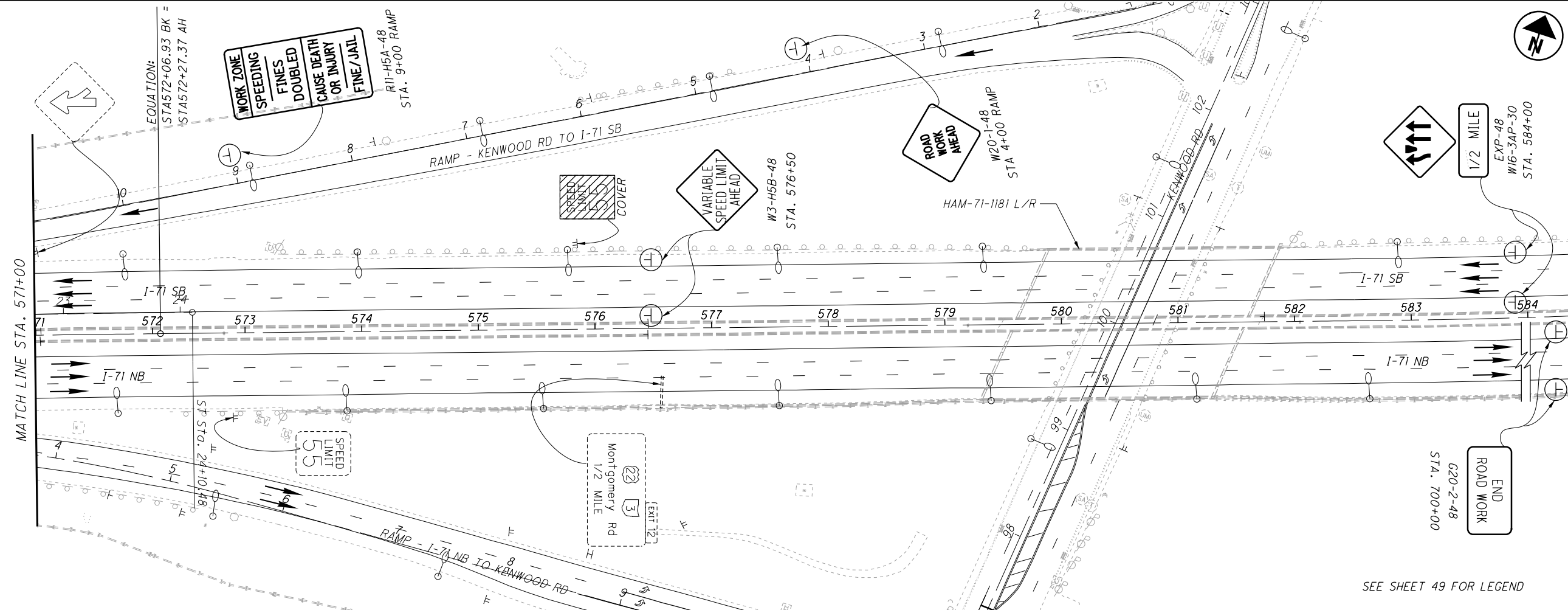
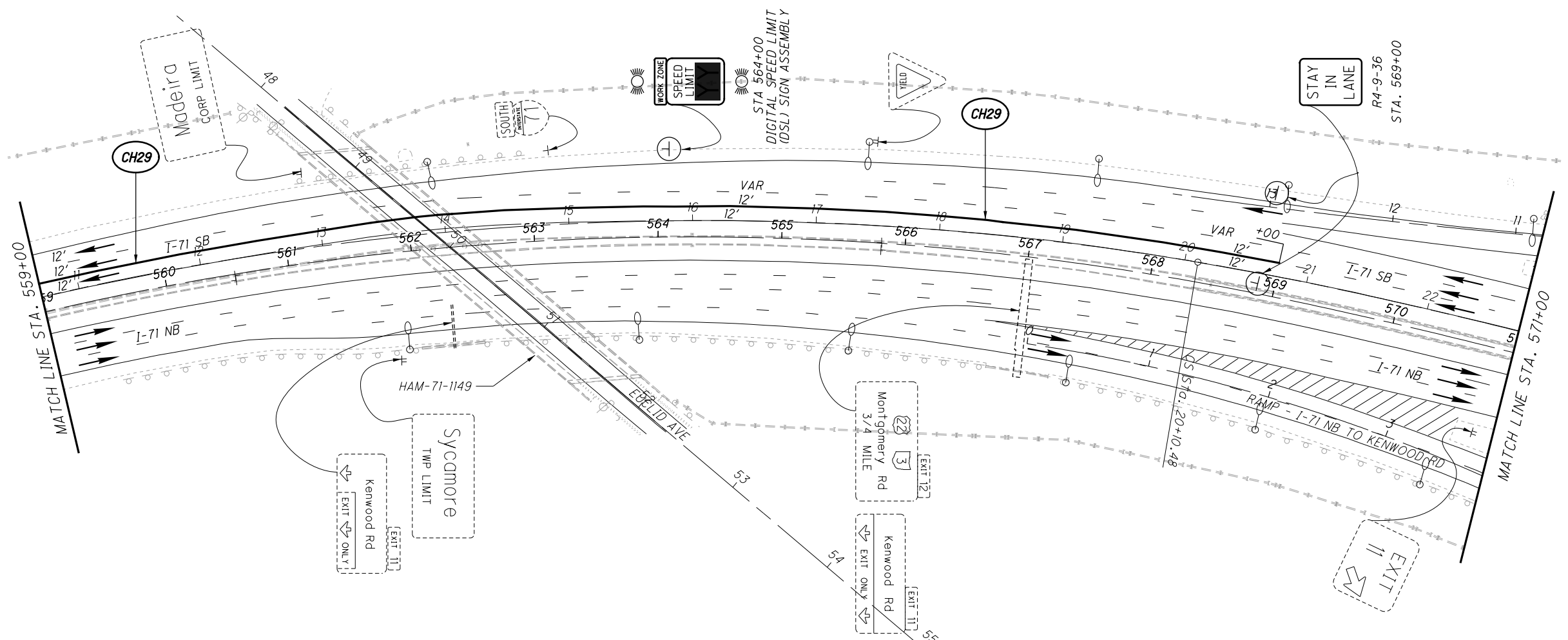
**MAINTENANCE OF TRAFFIC
PHASE 1**

HAM-IR71-8.42



SEE SHEET 49 FOR LEGEND

O:\ODOT\HAM-91826_HAM-71-8.42\Design\MOT_Sheets\91826_MP408.dgn_Sheet 9/14/2017 10:24:10 AM don-f



CALCULATED	DPF	CHECKED	BUF

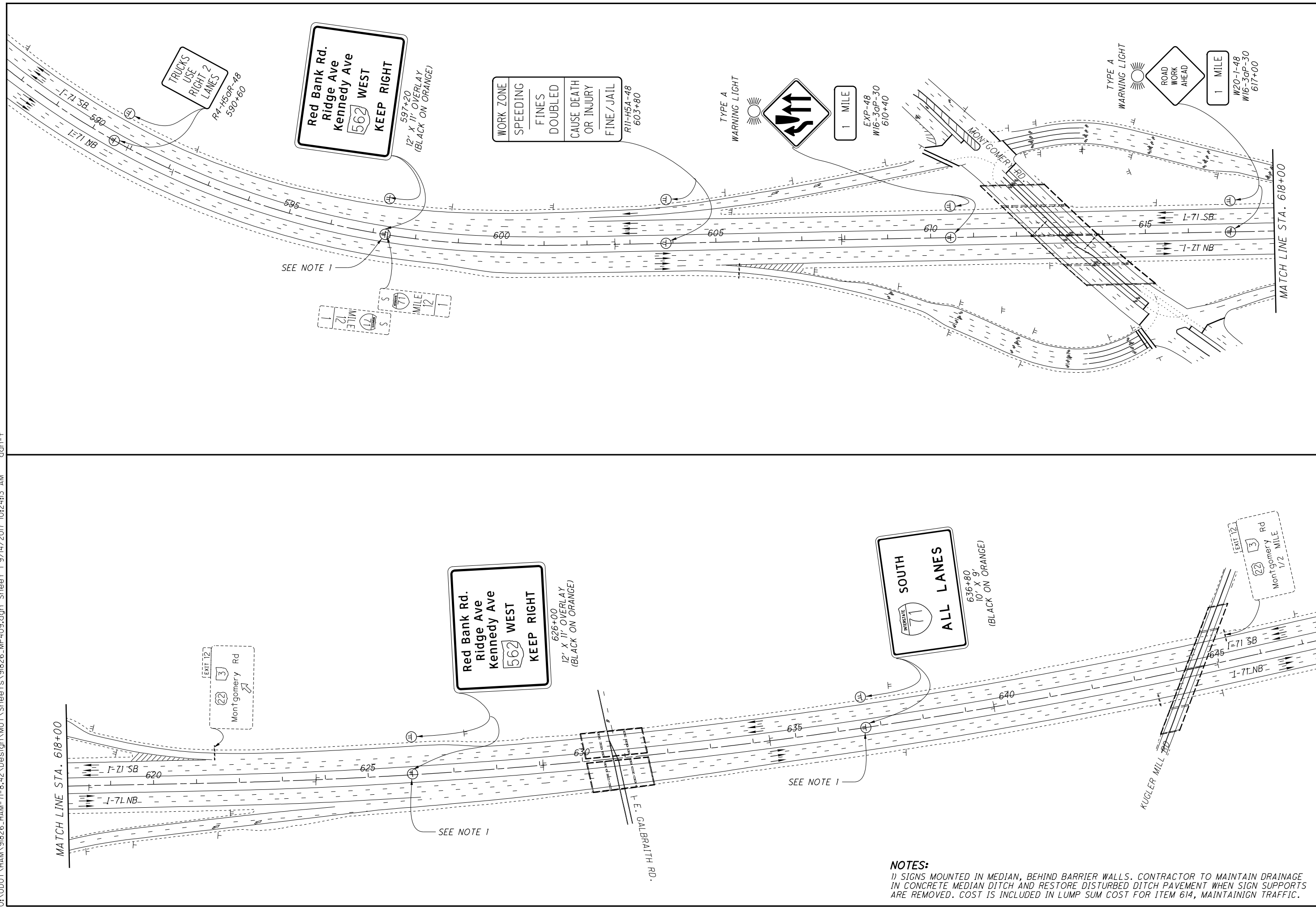


**MAINTENANCE OF TRAFFIC
PHASE 1**

HAM-IR71-8.42

57
441

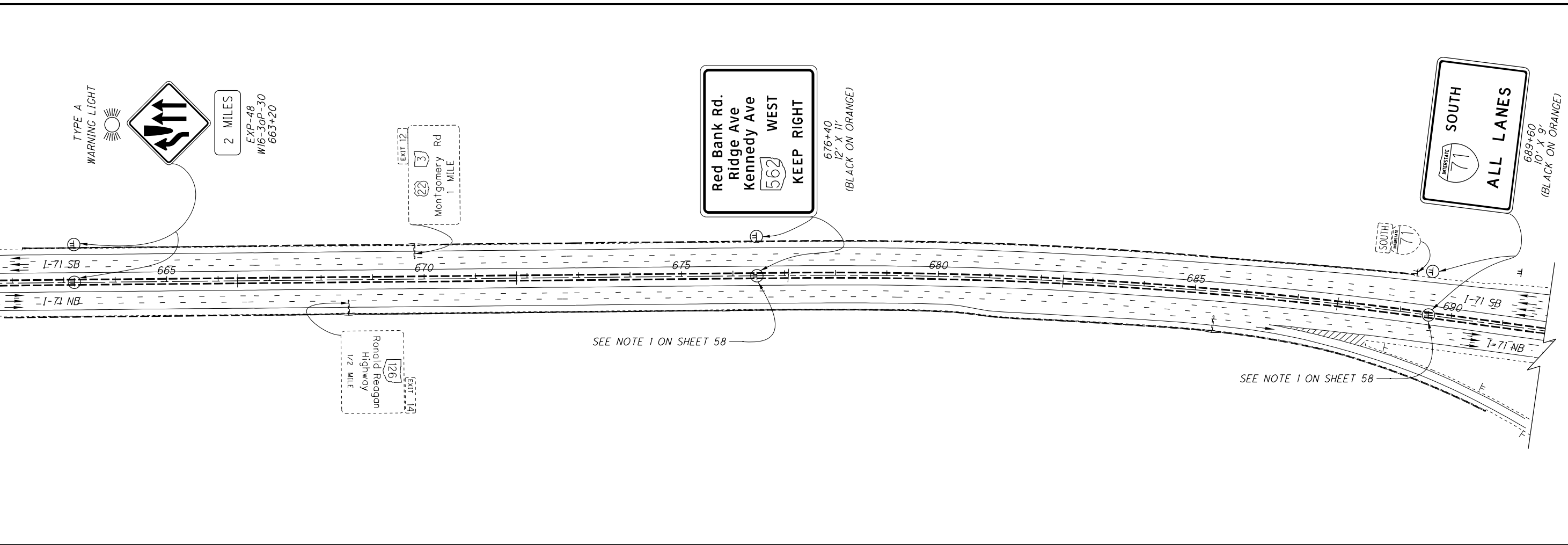
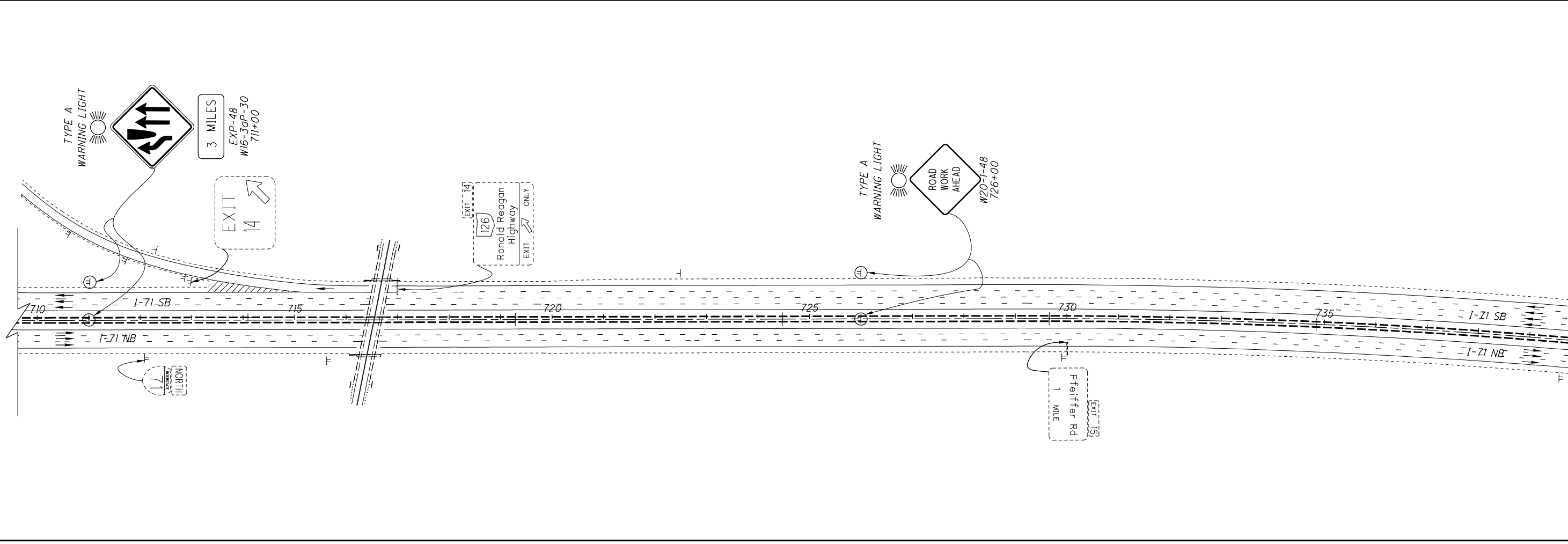
SEE SHEET 49 FOR LEGEND



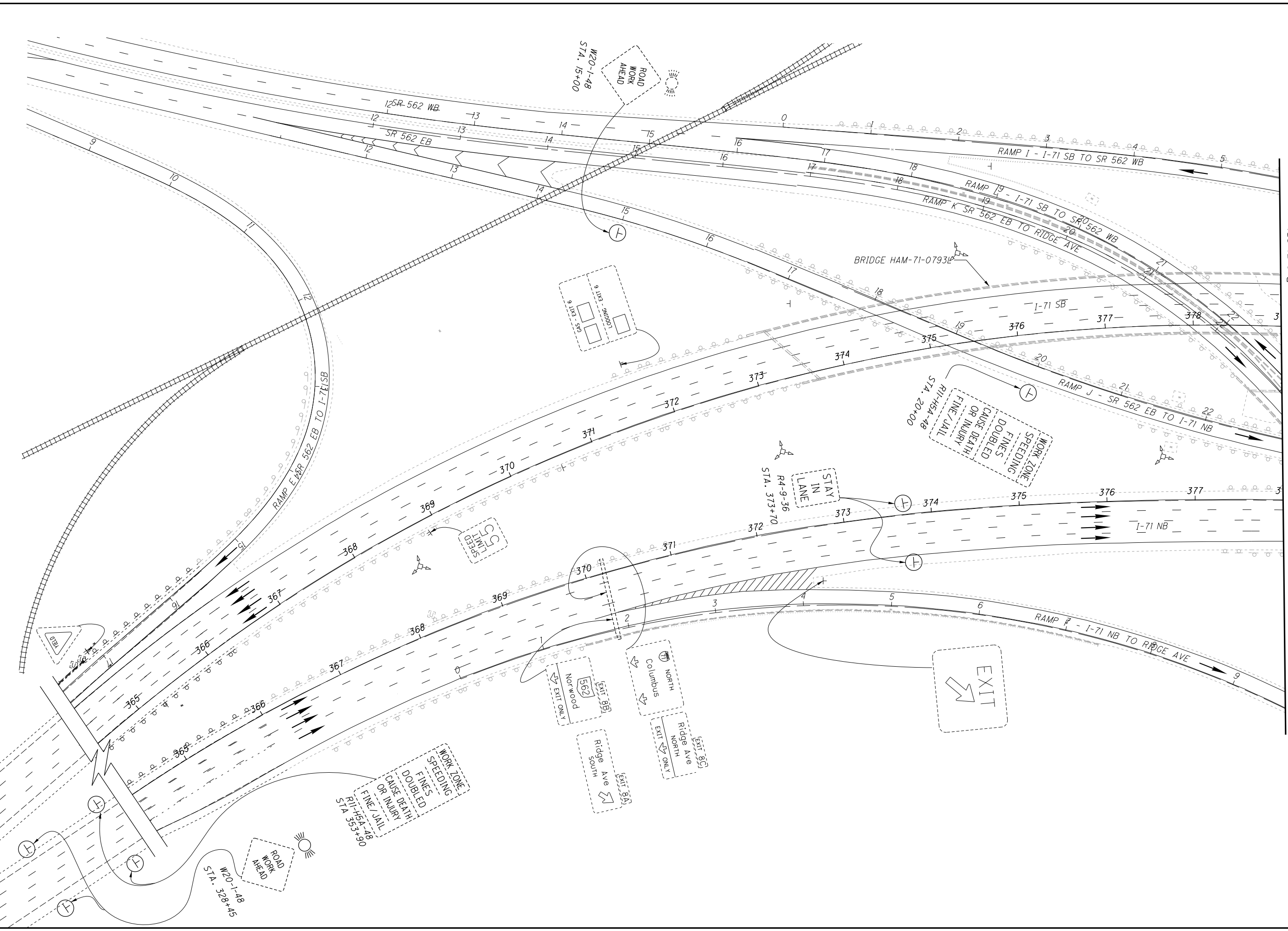
NOTES:
 1) SIGNS MOUNTED IN MEDIAN, BEHIND BARRIER WALLS. CONTRACTOR TO MAINTAIN DRAINAGE IN CONCRETE MEDIAN DITCH AND RESTORE DISTURBED DITCH PAVEMENT WHEN SIGN SUPPORTS ARE REMOVED. COST IS INCLUDED IN LUMP SUM COST FOR ITEM 614, MAINTAINING TRAFFIC.

<p>HAM-71-8.42</p>	<p>MAINTENANCE OF TRAFFIC - PHASE 1 / 2 STA. 593+00 TO STA. 647+00</p>
<p>58 441</p>	<p>0 100 200 HORIZONTAL SCALE IN FEET</p> <p>CALCULATED DPF CHECKED BJF</p>

O:\ODOT\HAM\9826_HAM-71-8.42\Design\MOT\Sheets\9826_MP409a.dgn_Sheet 1 9/14/2017 10:24:15 AM dan-f



O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT_Sheets\91826_MP410.dgn Sheet 9/14/2017 10:24:29 AM don-f



MATCH LINE STA. 378+00 (I-71 NB); STA. 379+00 (I-71 SB)

CALCULATED
DPF
CHECKED
BJF

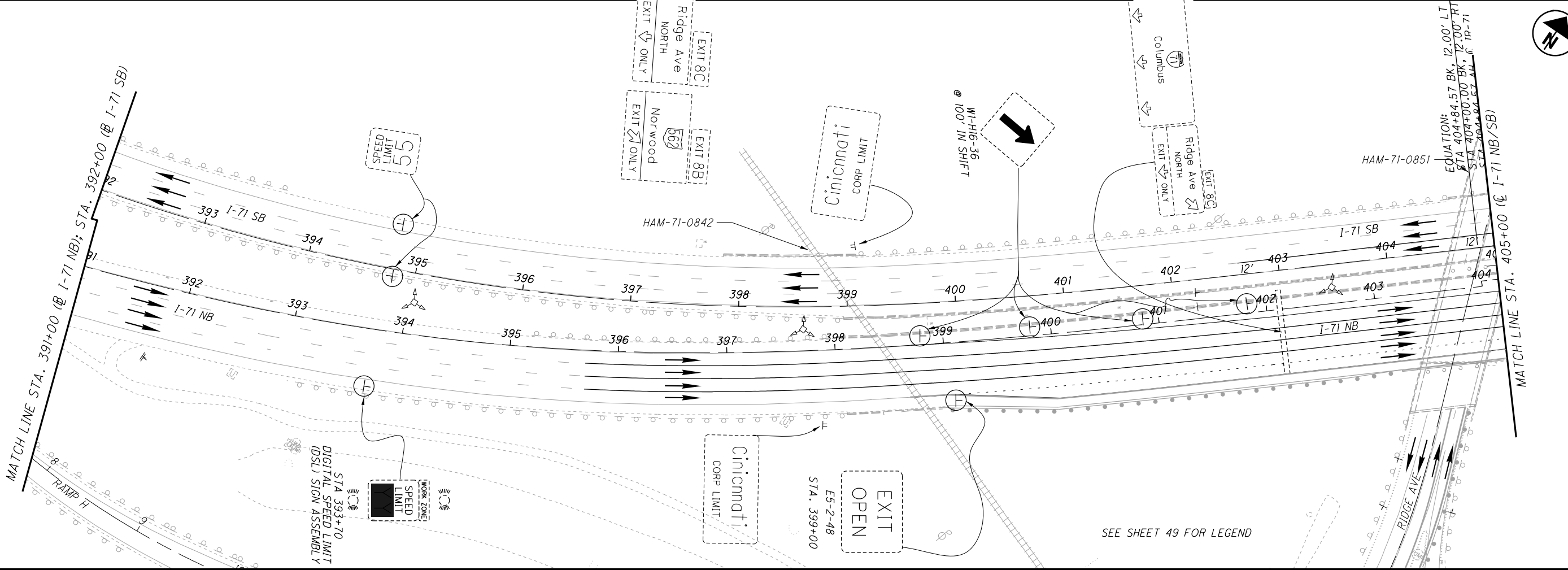
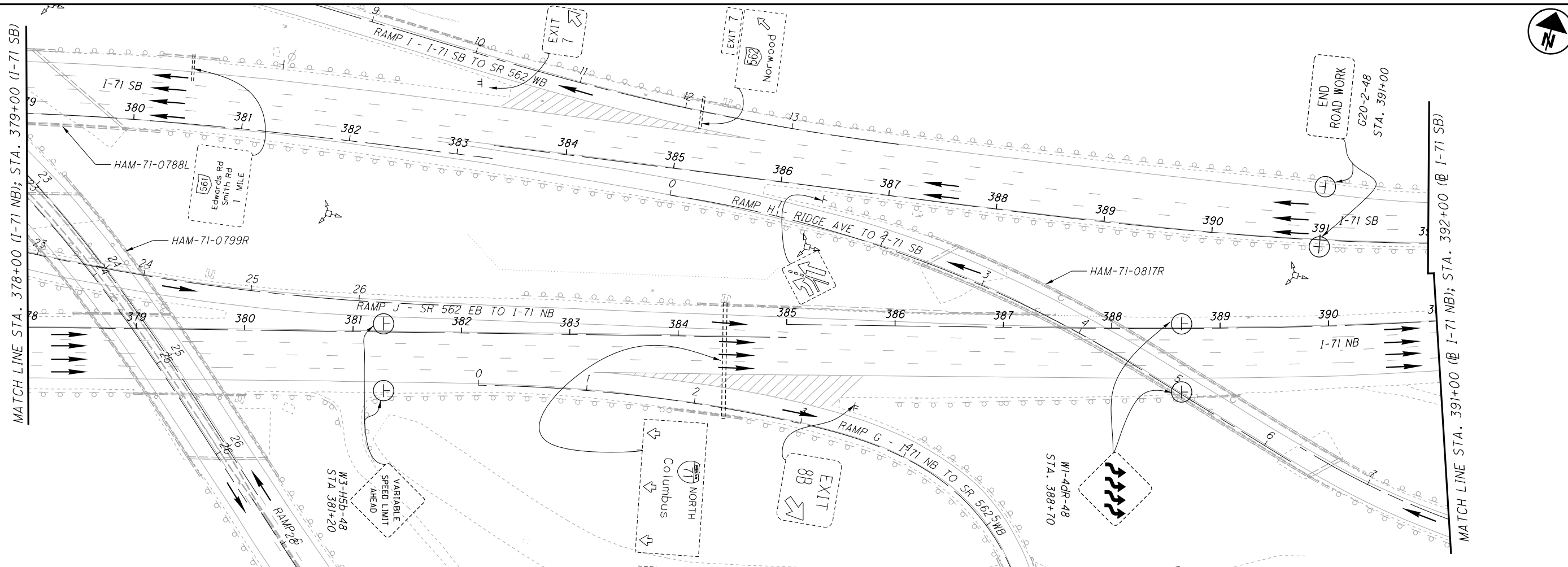
0 50 100
HORIZONTAL
SCALE IN FEET

MAINTENANCE OF TRAFFIC PHASE 2

HAM-IR71-8.42

60
441

O:\ODOT\HAM-91826_HAM-71-8.42\Design\MOT_Sheets_91826_MP411.dgn Sheet 9/14/2017 10:24:32 AM dan-f



SEE SHEET 49 FOR LEGEND



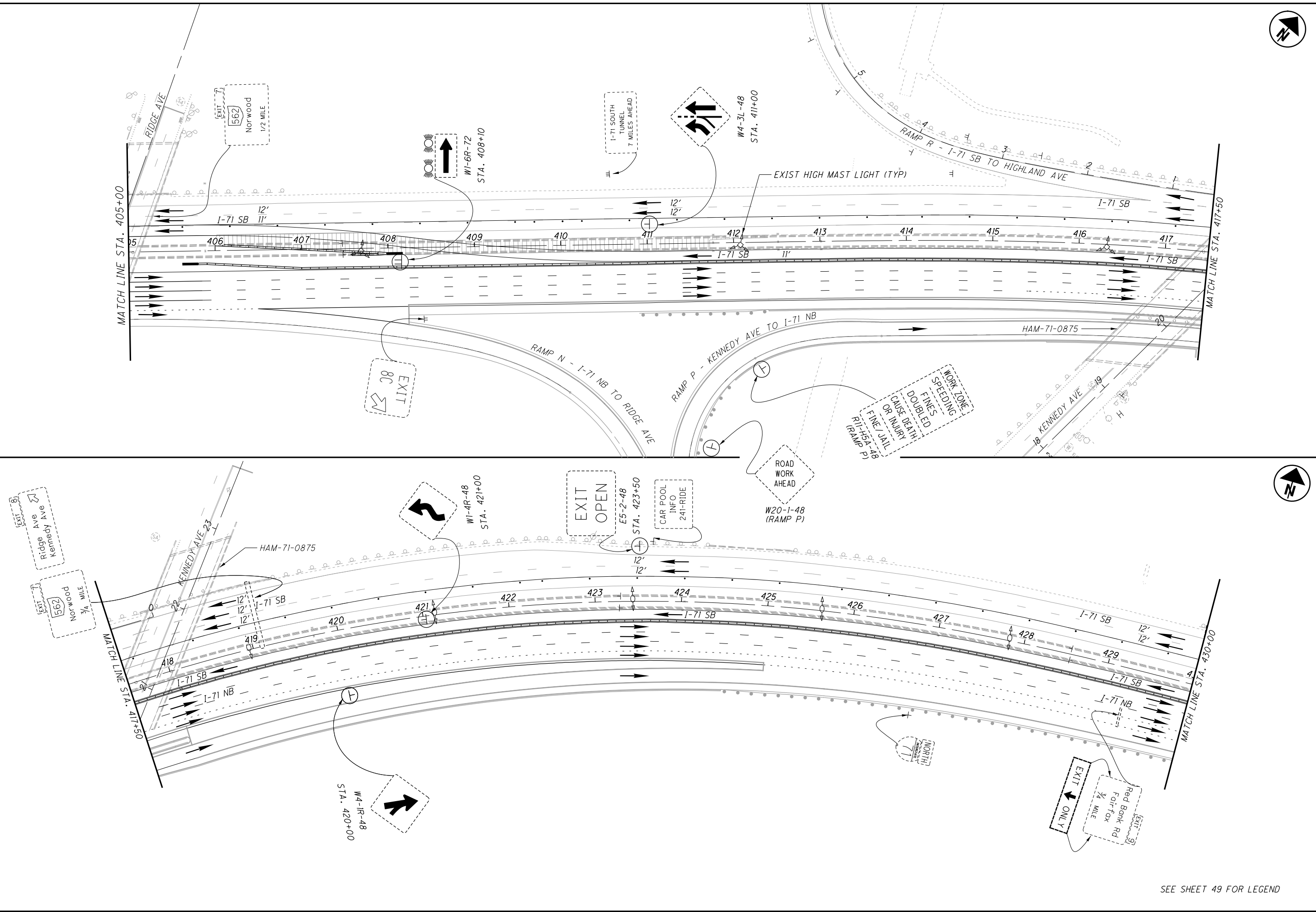
CALCULATED	0
DPF	25
CHECKED	100
BUJ	

MAINTENANCE OF TRAFFIC
PHASE 2

HAM-IR71-8.42

61
441

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT_Sheets\91826_MP412.dgn Sheet 9/14/2017 10:24:35 AM don-f

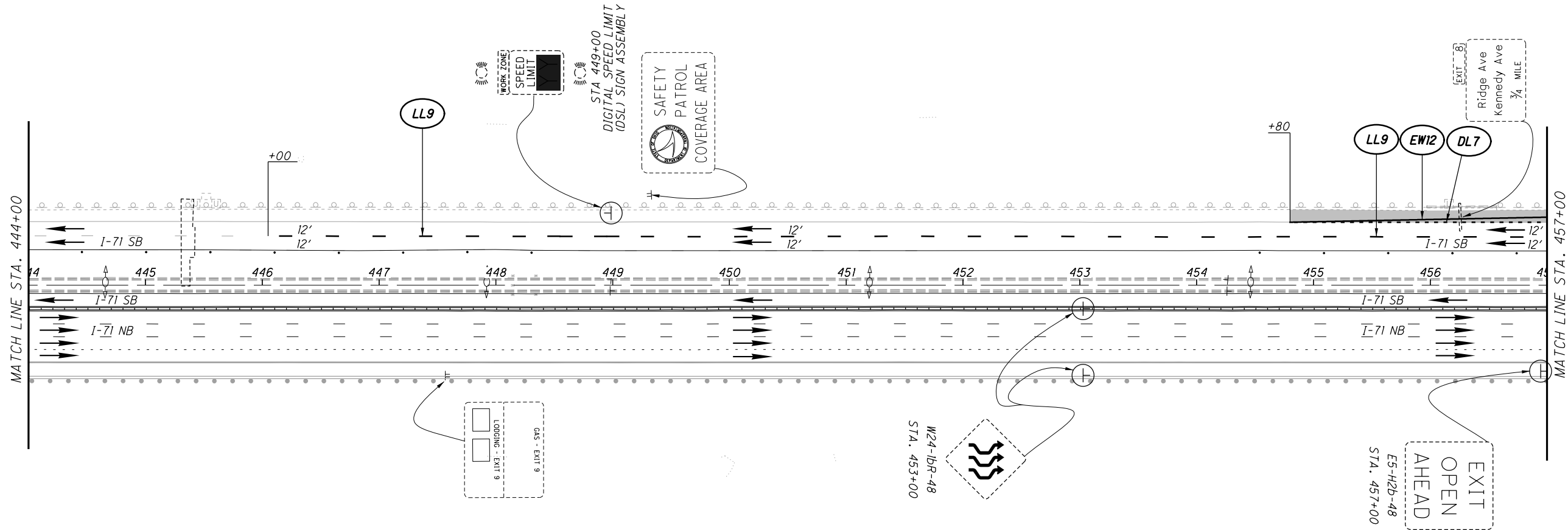
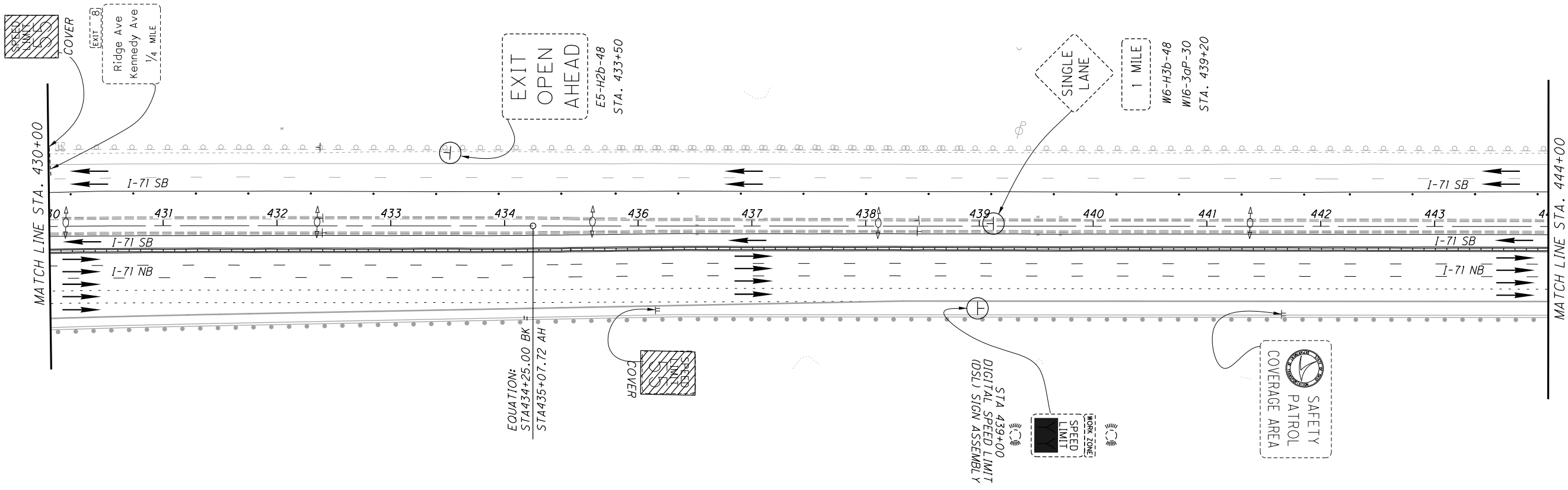


CALCULATED	DPF	CHECKED	BJF

MAINTENANCE OF TRAFFIC
PHASE 2

HAM-IR71-8.42

SEE SHEET 49 FOR LEGEND



SEE SHEET 49 FOR LEGEND

CALCULATED
DPF
CHECKED
BJF

0 50 100
HORIZONTAL
SCALE IN FEET

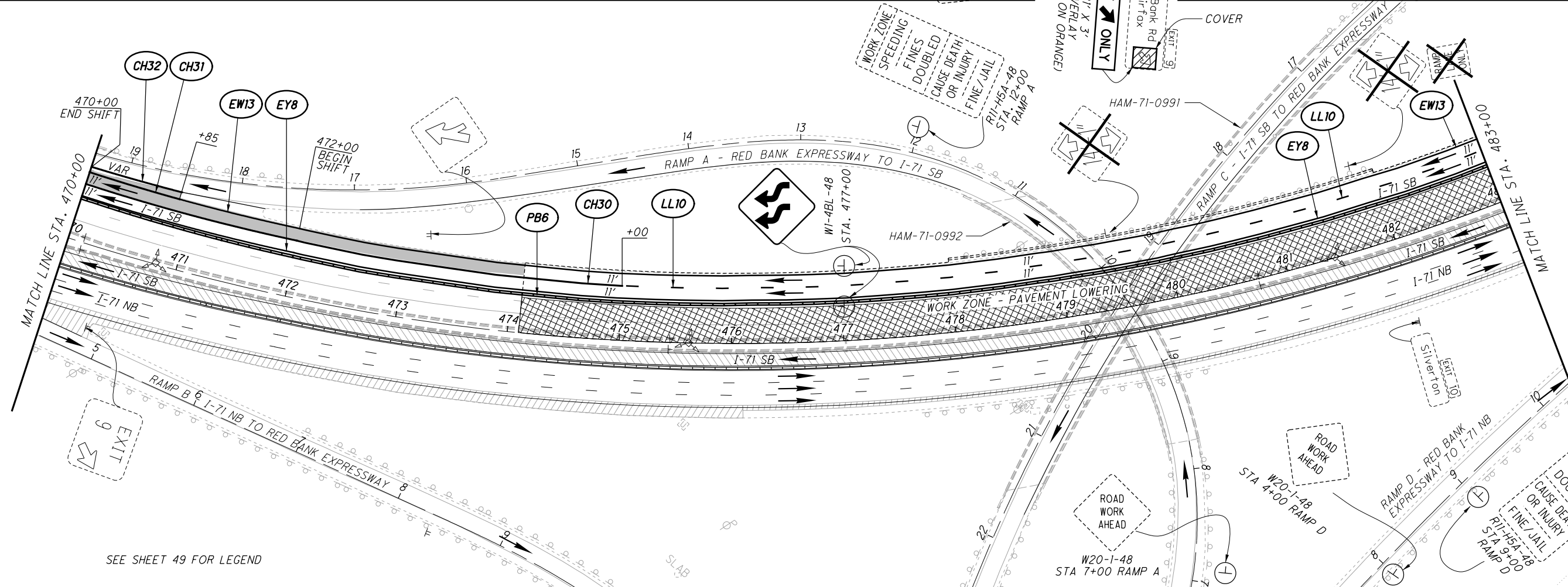
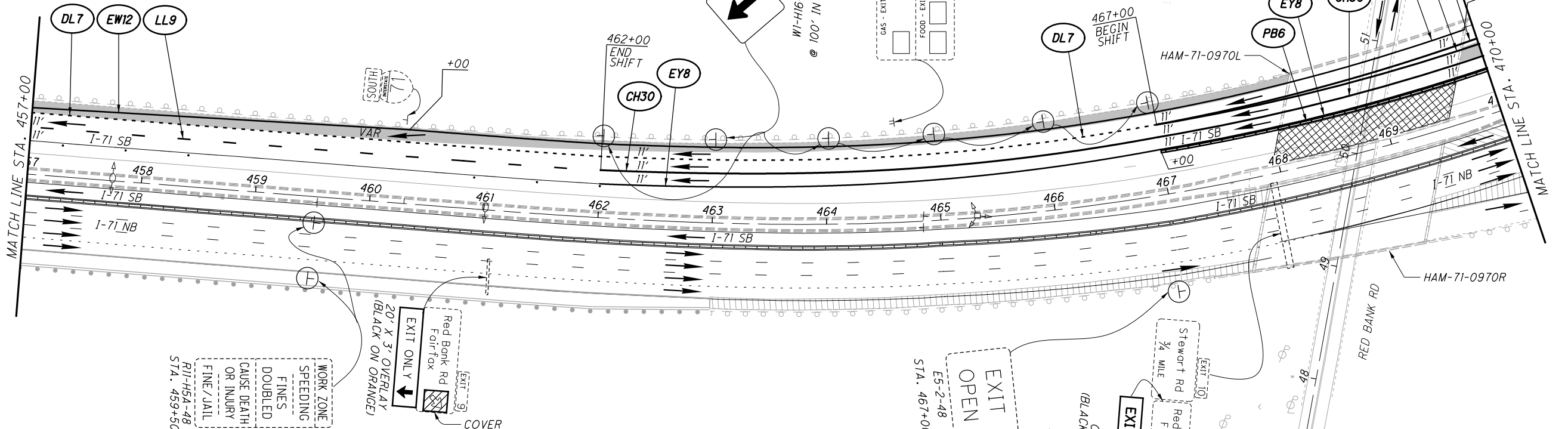
**MAINTENANCE OF TRAFFIC
PHASE 2**

HAM-IR71-8.42



CALCULATED
 DPF
 CHECKED
 BJJ

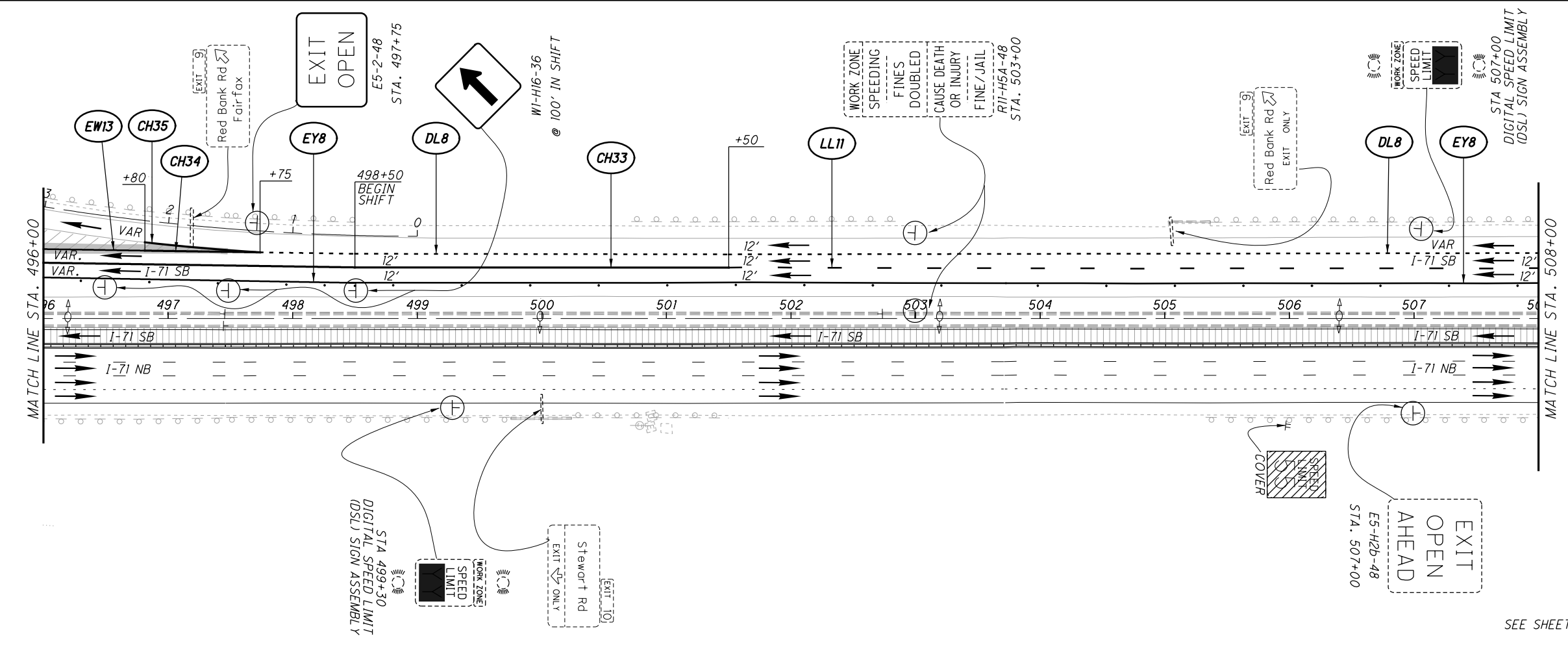
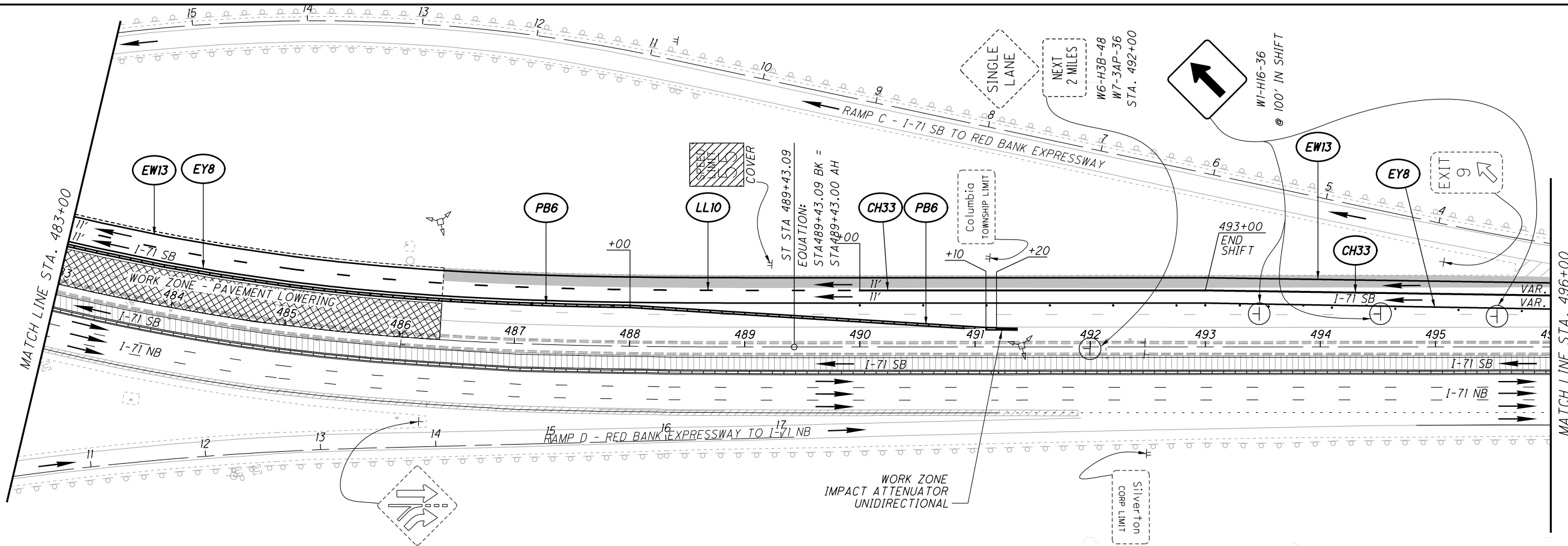
MAINTENANCE OF TRAFFIC
PHASE 2
HAM-IR71-8.42
 64
 441



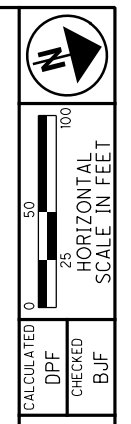
SEE SHEET 49 FOR LEGEND

O:\ODOT\HAM-91826_HAM-71-8.42\Design\MOT_Sheets\MP414.dgn Sheet 9/14/2017 10:24:38 AM don-f

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\MP415.dgn Sheet 9/14/2017 10:24:41 AM dan-f



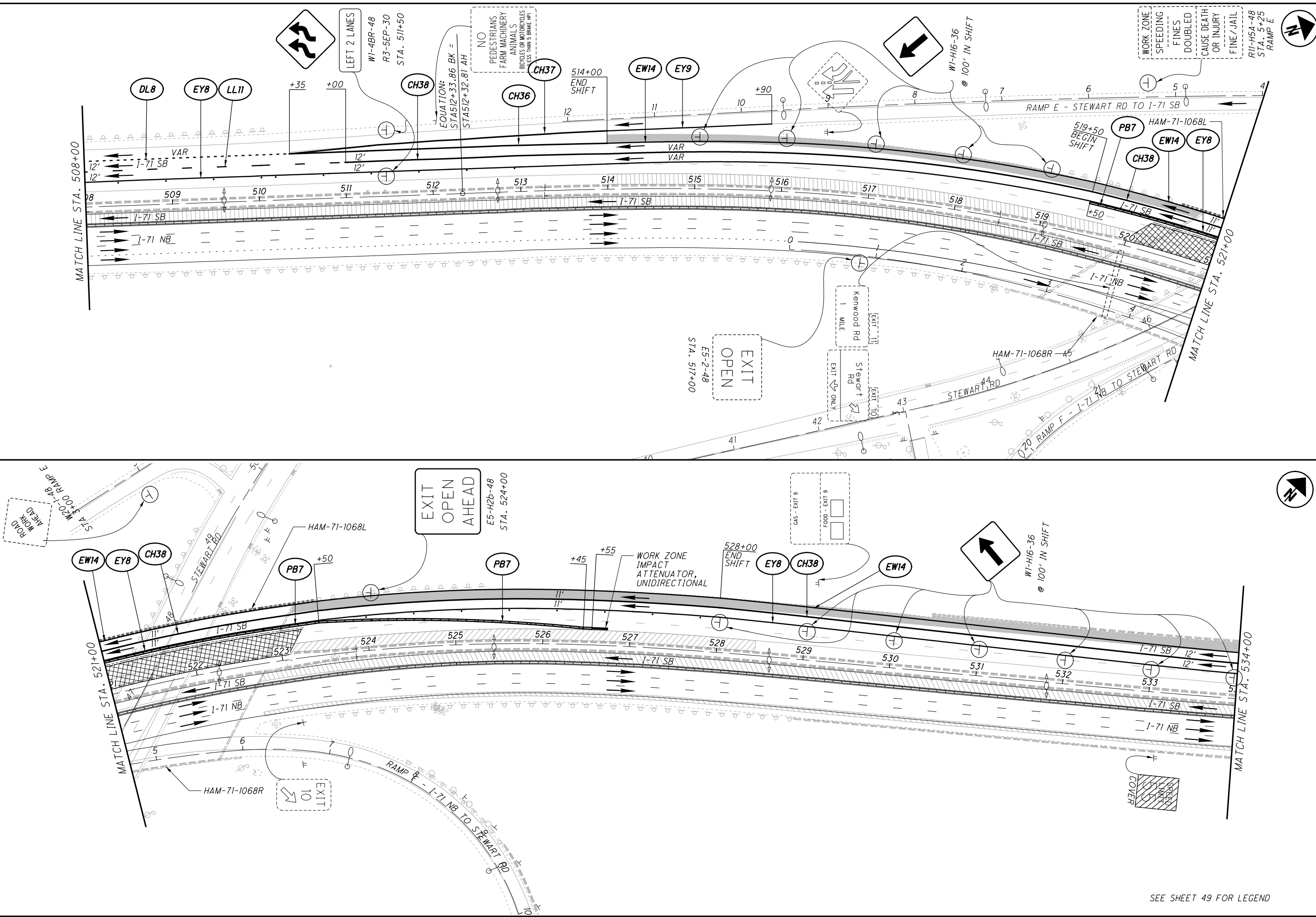
SEE SHEET 49 FOR LEGEND



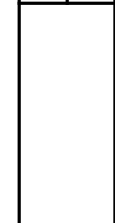
**MAINTENANCE OF TRAFFIC
PHASE 2**

HAM-IR71-8.42

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT_Sheets\91826_MP416.dgn Sheet 9/14/2017 10:24:43 AM don-f



CALCULATED	DPF	CHECKED	BUF

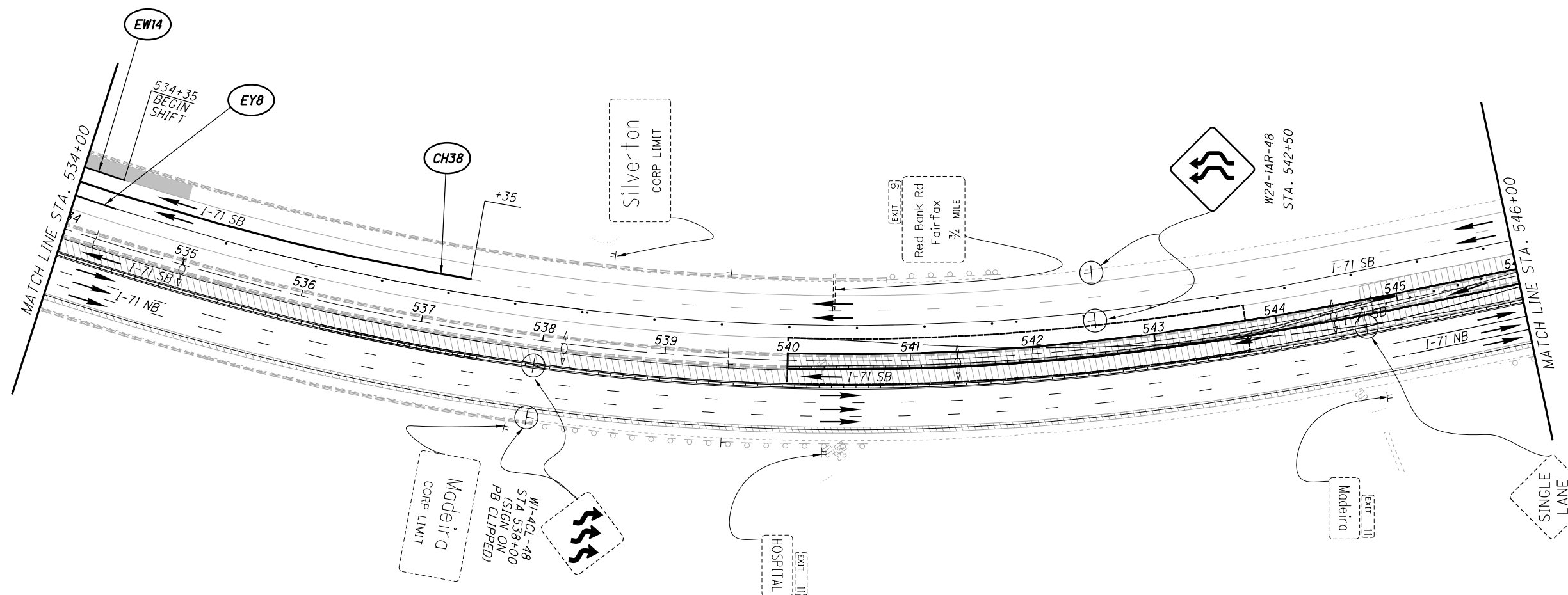
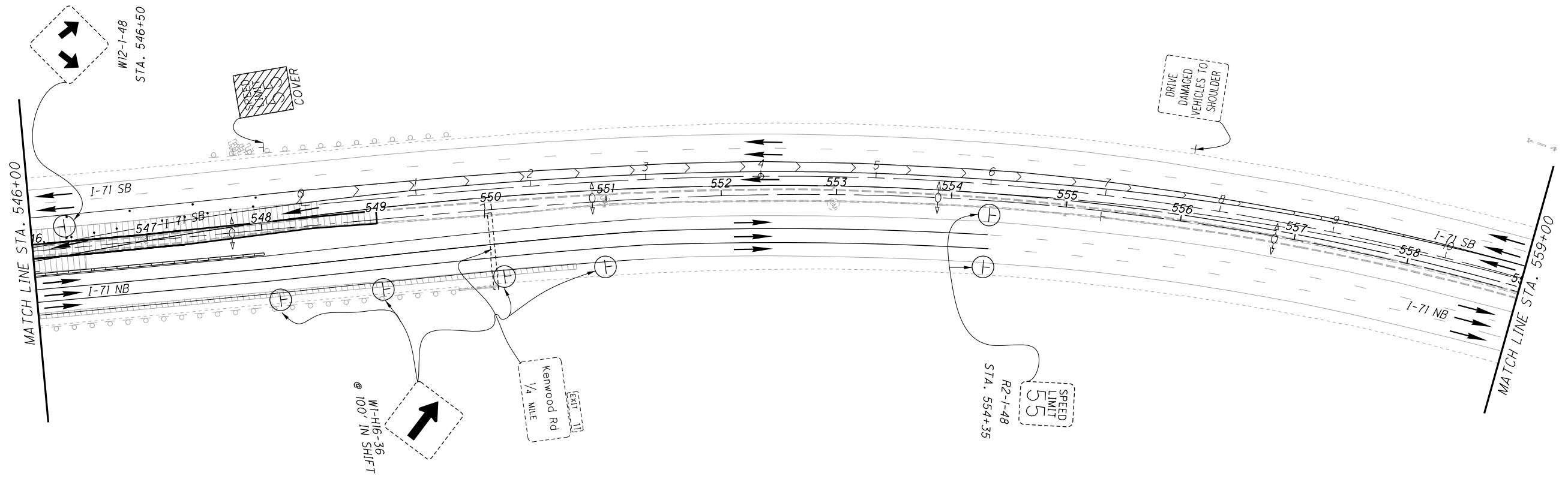


**MAINTENANCE OF TRAFFIC
PHASE 2**

HAM-IR71-8.42

SEE SHEET 49 FOR LEGEND

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_MP417.dgn Sheet_9/14/2017 10:24:45 AM don-f



HAM-IR71-8.42

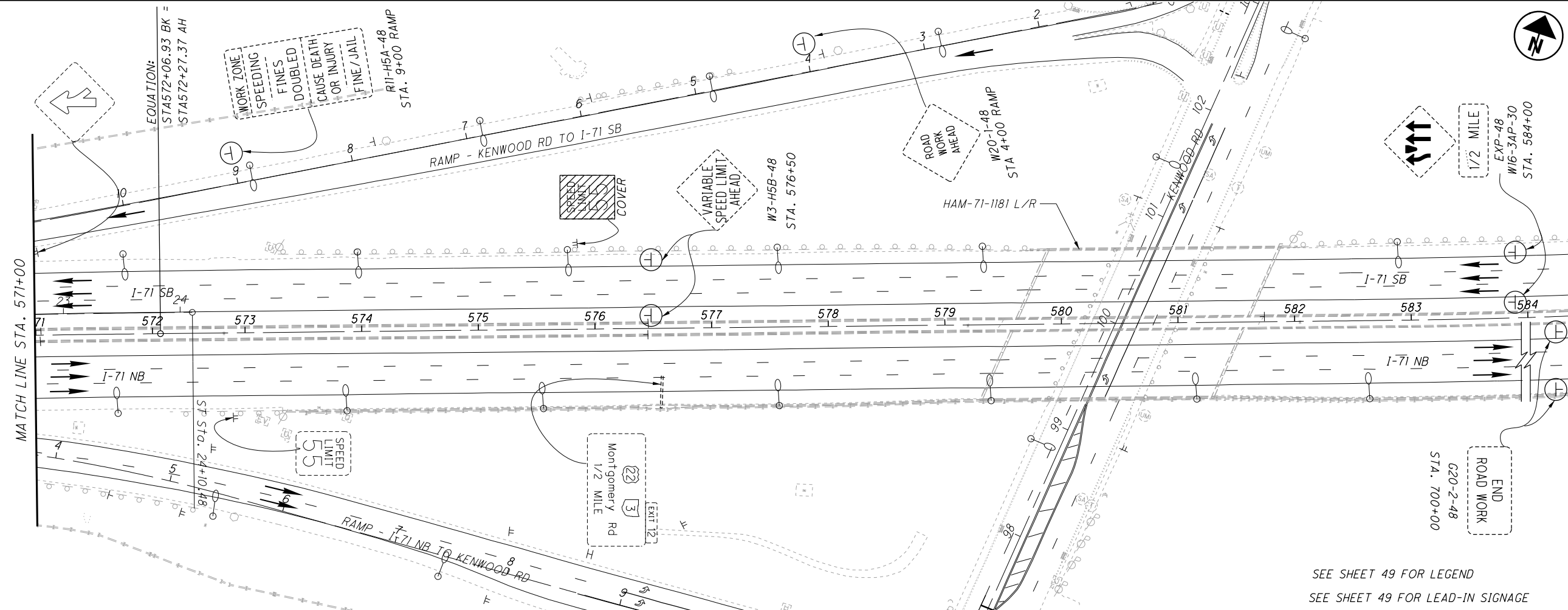
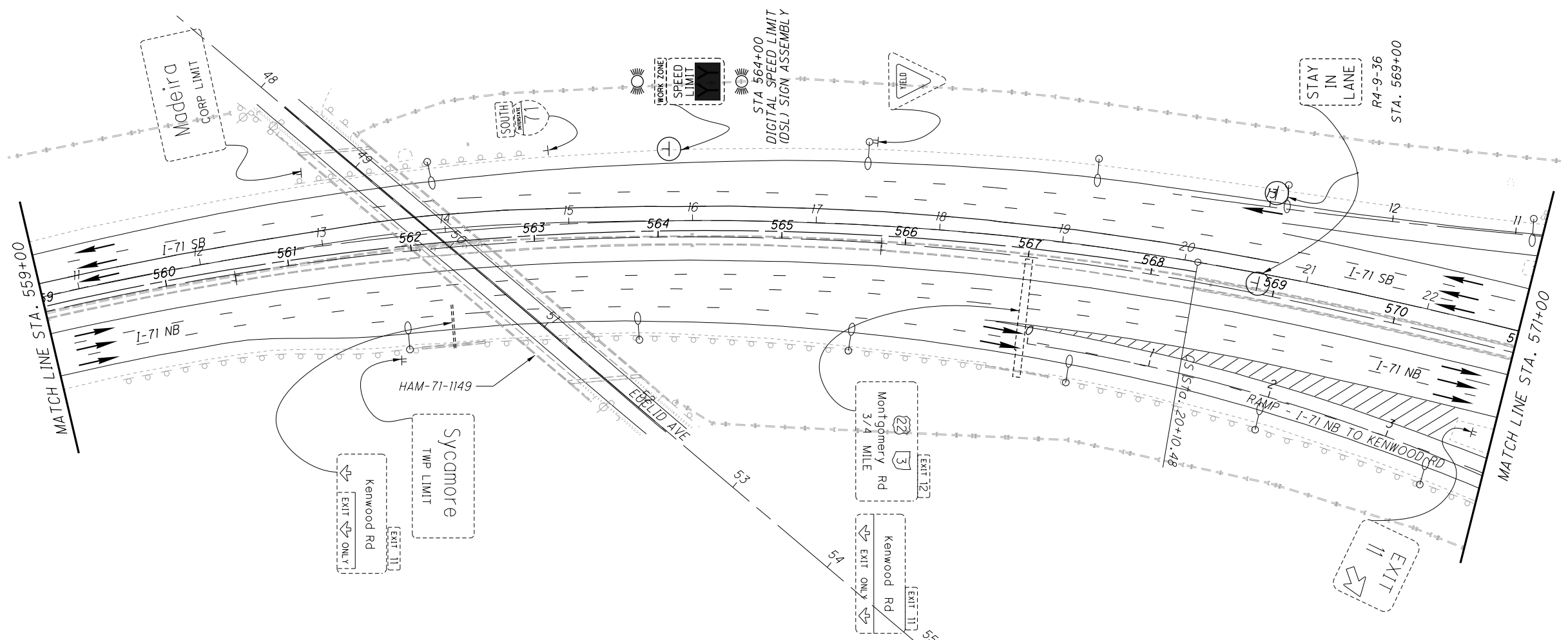
MAINTENANCE OF TRAFFIC
PHASE 2

CALCULATED	DPF	CHECKED	BUF



SEE SHEET 49 FOR LEGEND

O:\ODOT\HAM-91826_HAM-71-8.42\Design\MOT_Sheets_91826_MP418.dgn Sheet 9/14/2017 10:24:47 AM don-f



SEE SHEET 49 FOR LEGEND
SEE SHEET 49 FOR LEAD-IN SIGNAGE



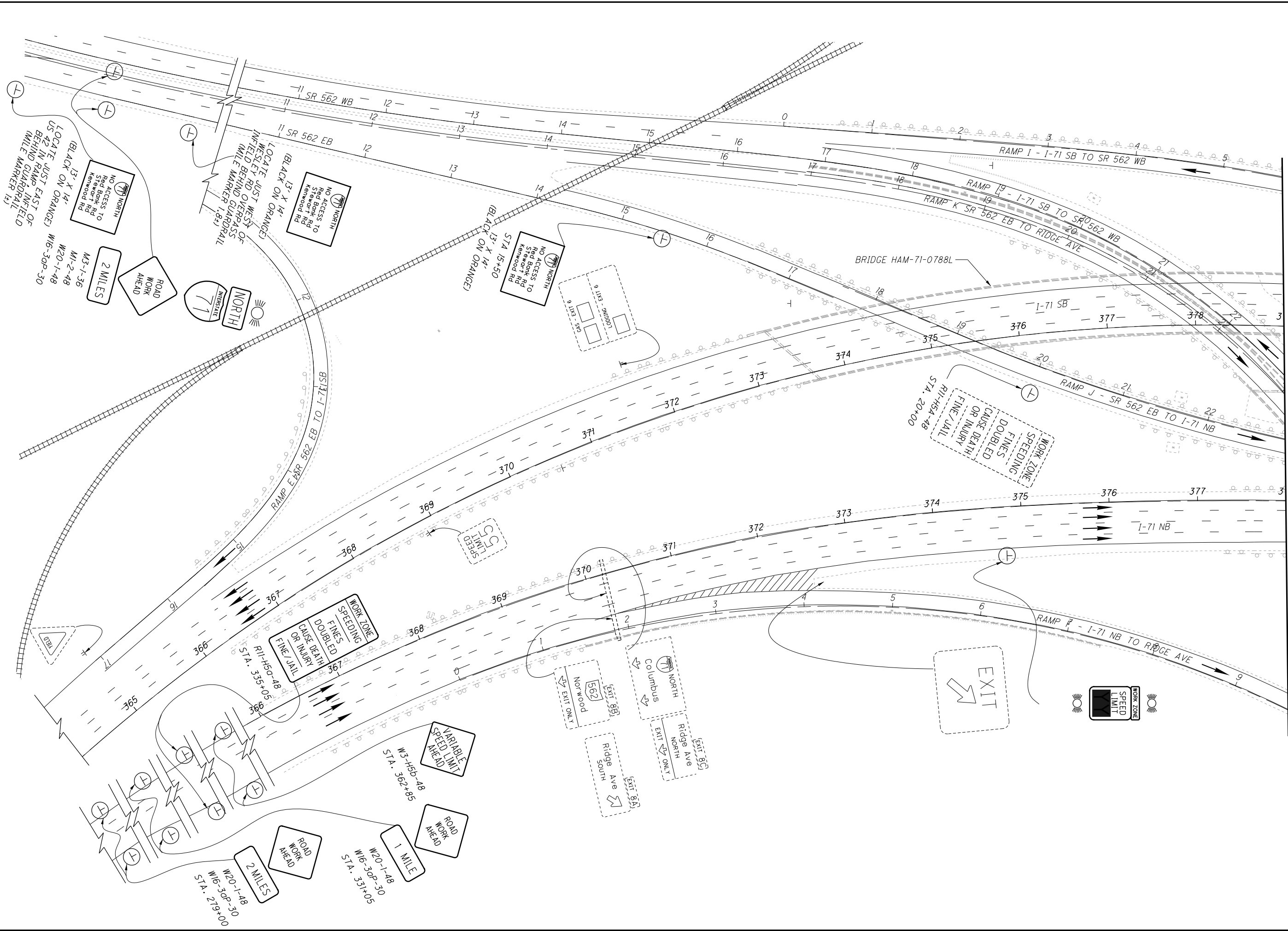
CALCULATED	DPF	CHECKED	BJF



**MAINTENANCE OF TRAFFIC
PHASE 2**

HAM-IR71-8.42

O:\ODOT\HAM-91826_HAM-71-8.42\Design\MOT_Sheets_91826_MP420.dgn_Sheet 9/14/2017 10:24:52 AM don-f



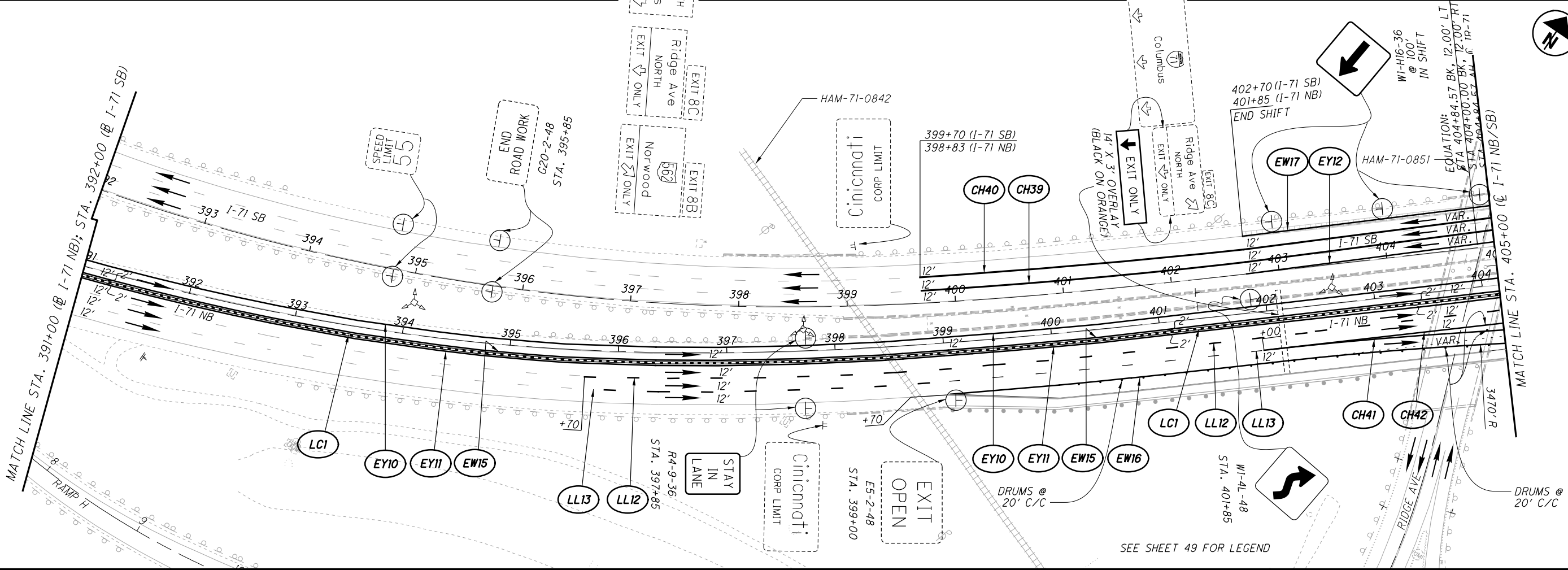
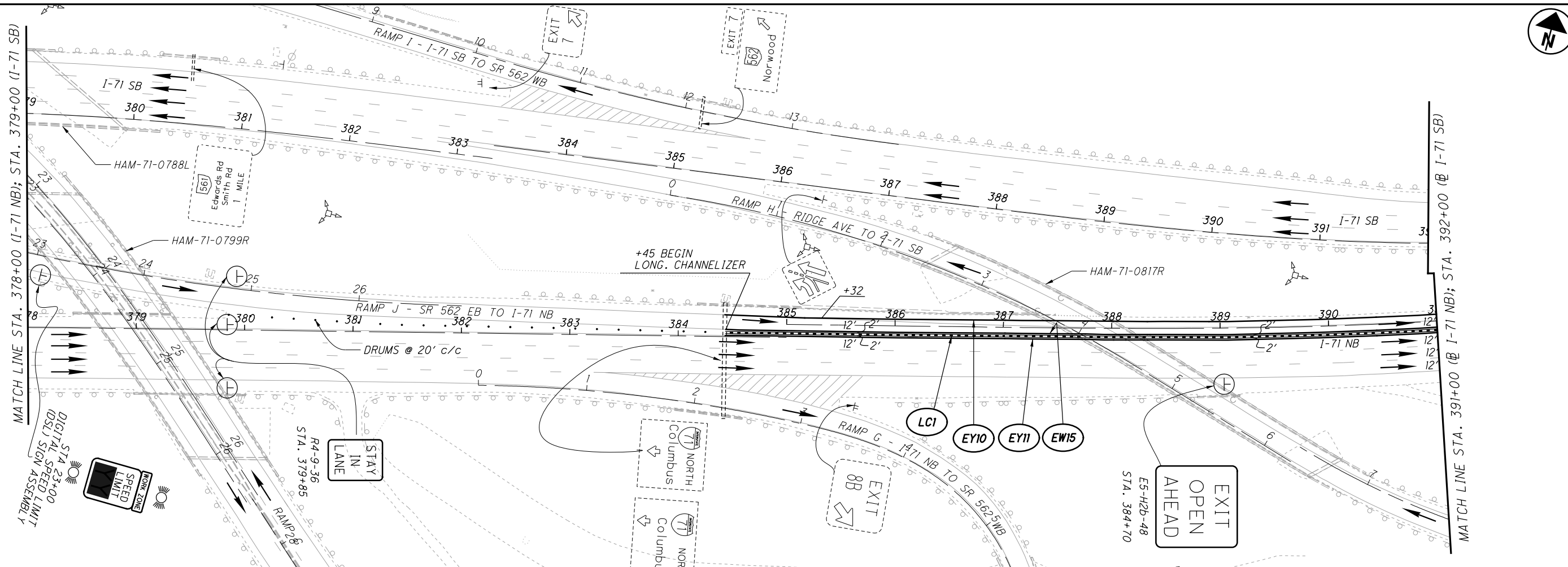
MATCH LINE STA. 378+00 (I-71 NB); STA. 379+00 (I-71 SB)



MAINTENANCE OF TRAFFIC PHASE 3

HAM-IR71-8.42

O:\ODOT\HAM_91826_HAM-71-8.42\Design\MOT_Sheets_91826_MP421.dgn Sheet_9/14/2017 10:24:54 AM don-f

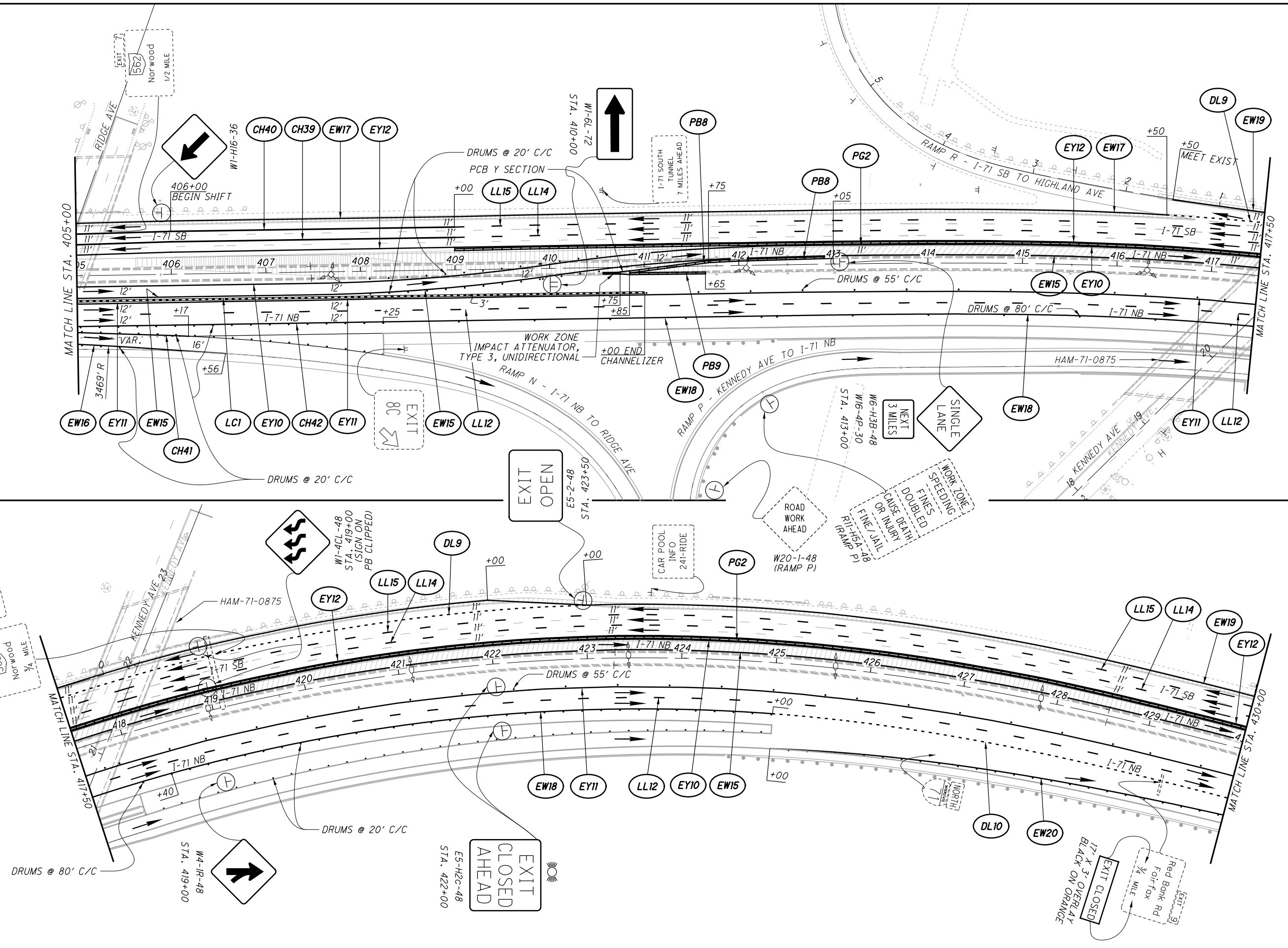


CALCULATED	0
DPF	25
CHECKED	100
BUJ	100

HORIZONTAL SCALE IN FEET

MAINTENANCE OF TRAFFIC
PHASE 3

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT_Sheets\91826_MP422.dgn Sheet 9/14/2017 10:24:55 AM don-f

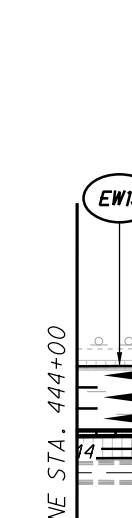
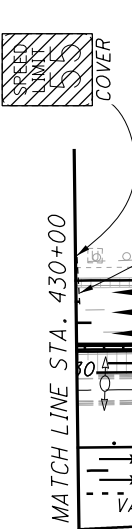
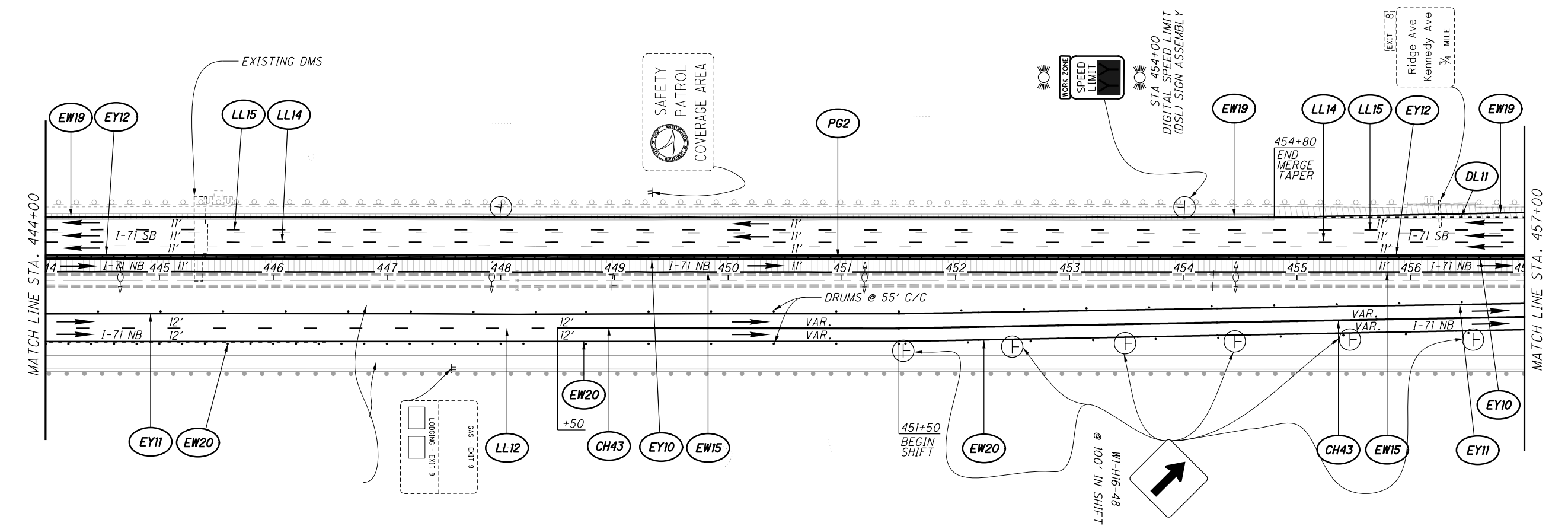
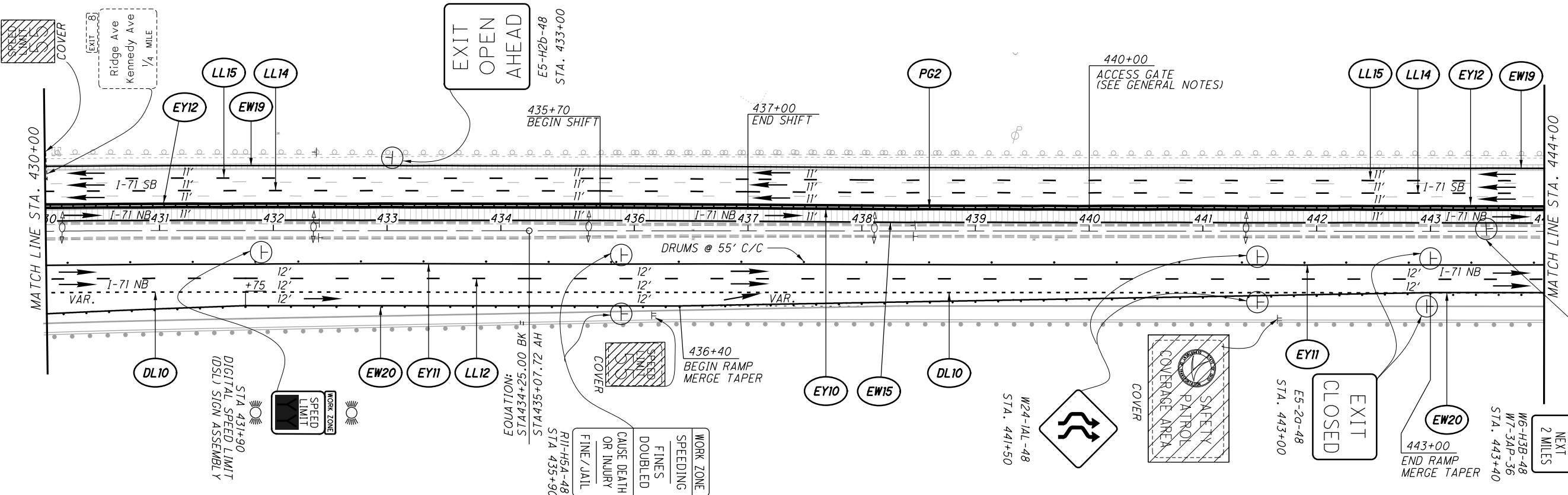


CALCULATED	DPF	CHECKED	BUF

MAINTENANCE OF TRAFFIC
PHASE 3

HAM-IR71-8.42

SEE SHEET 49 FOR LEGEND



WORK ZONE
SPEEDING
FINES DOUBLED
CAUSE DEATH OR INJURY
FINE/JAIL



MAINTENANCE OF TRAFFIC PHASE 3

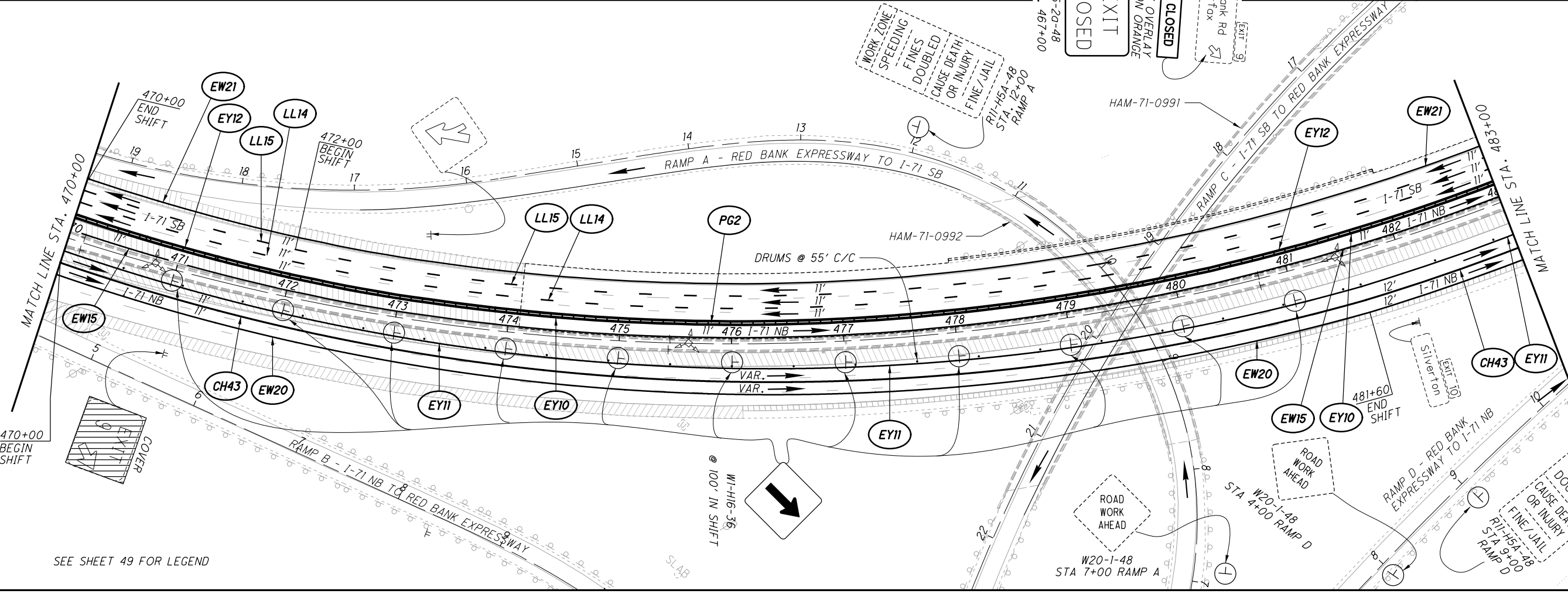
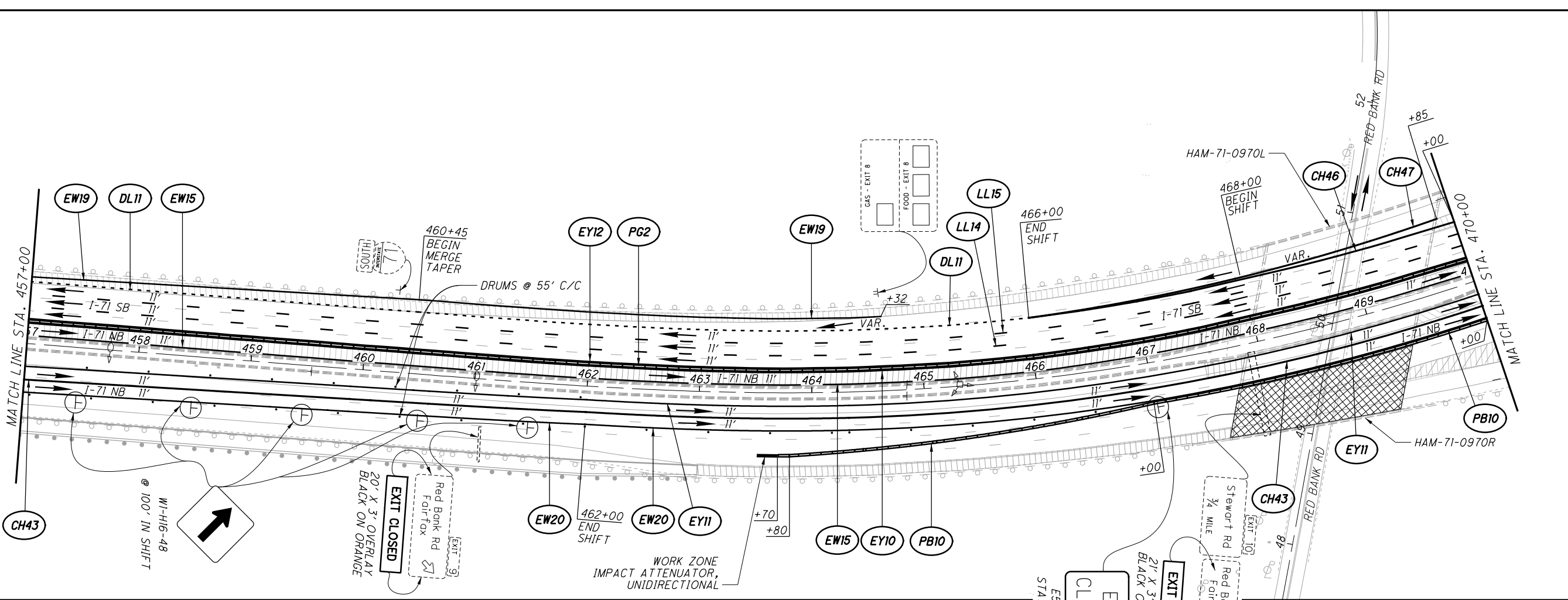
HAM-IR71-8.42

SEE SHEET 49 FOR LEGEND



**MAINTENANCE OF TRAFFIC
PHASE 3**

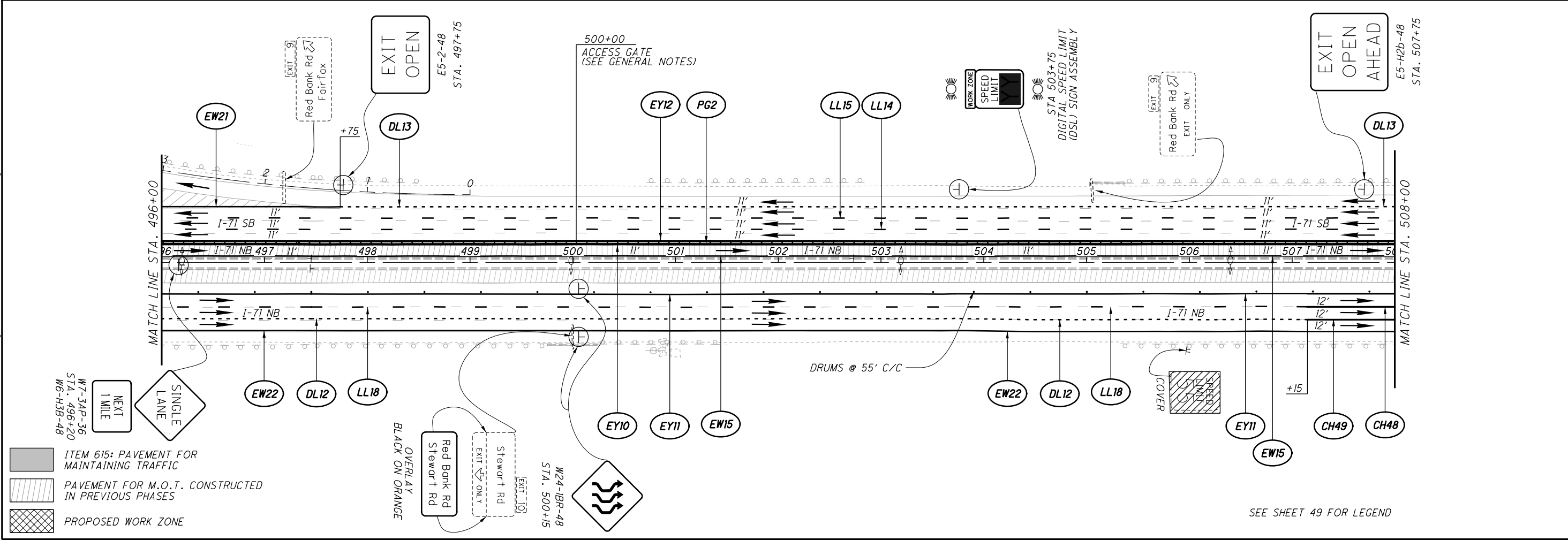
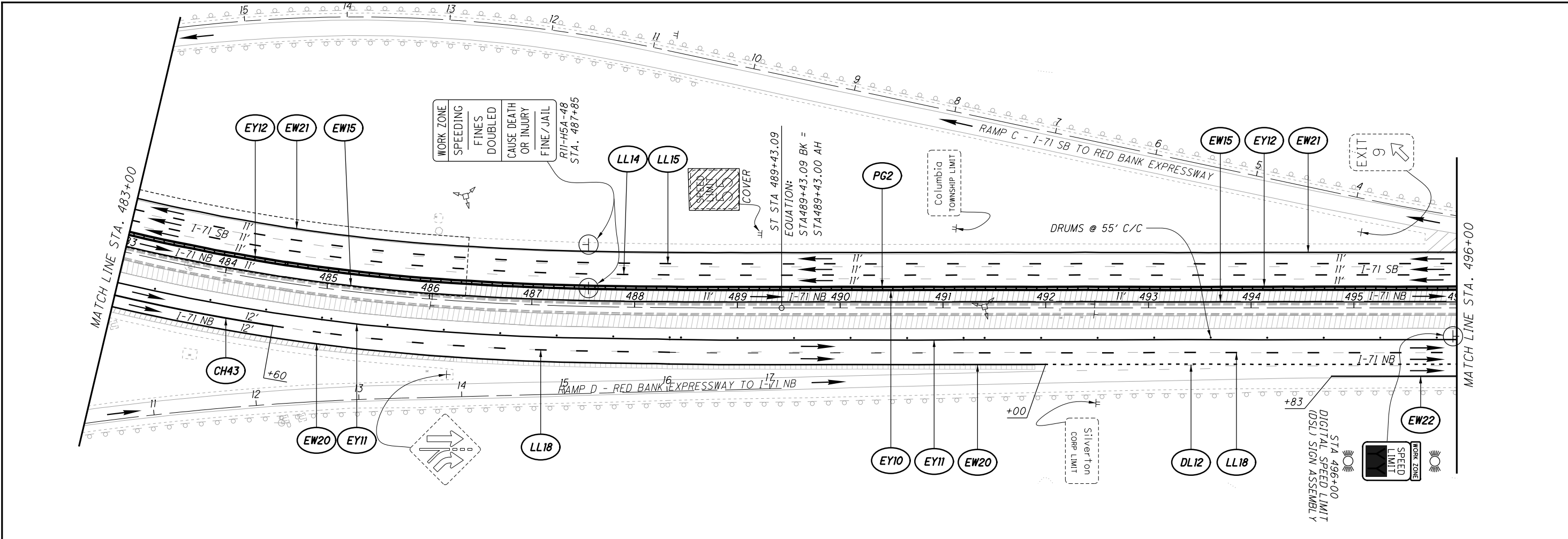
HAM-IR71-8.42



O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT_Sheets\91826_MP424.dgn Sheet 9/14/2017 10:24:59 AM don-f

SEE SHEET 49 FOR LEGEND

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT_Sheets\91826_MP425.dgn_Sheet 9/14/2017 10:25:01 AM don-f



- ITEM 615: PAVEMENT FOR MAINTAINING TRAFFIC
 - PAVEMENT FOR M.O.T. CONSTRUCTED IN PREVIOUS PHASES
 - PROPOSED WORK ZONE
- OVERLAY
BLACK ON ORANGE
- W7-3AP-36
STA. 496+20
W6-H3B-48
- W24-1BR-48
STA. 500+15

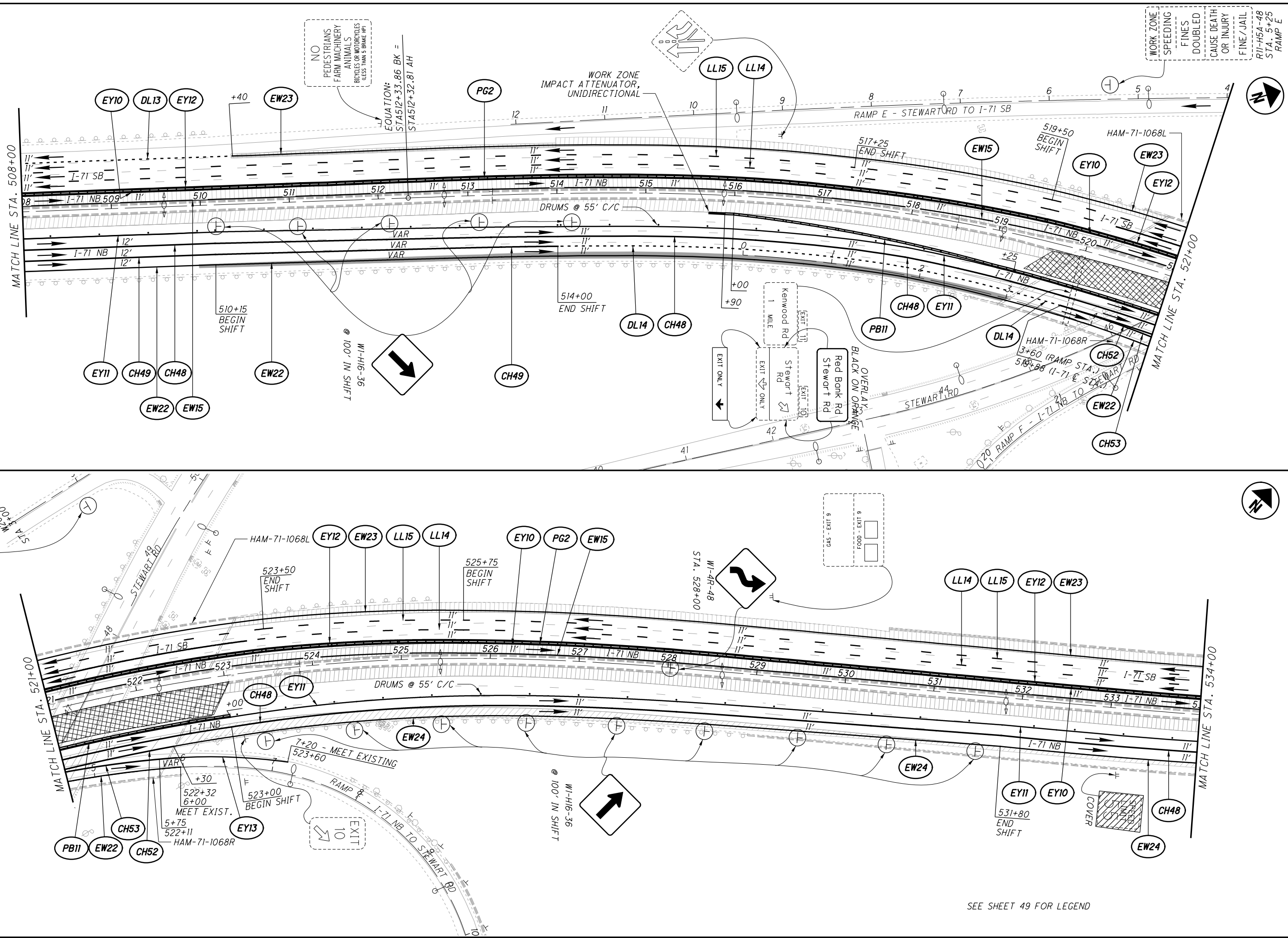
SEE SHEET 49 FOR LEGEND



**MAINTENANCE OF TRAFFIC
PHASE 3**

HAM-IR71-8.42

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT_Sheets\91826_MP426.dgn_Sheet_9/14/2017 10:25:03 AM don-f



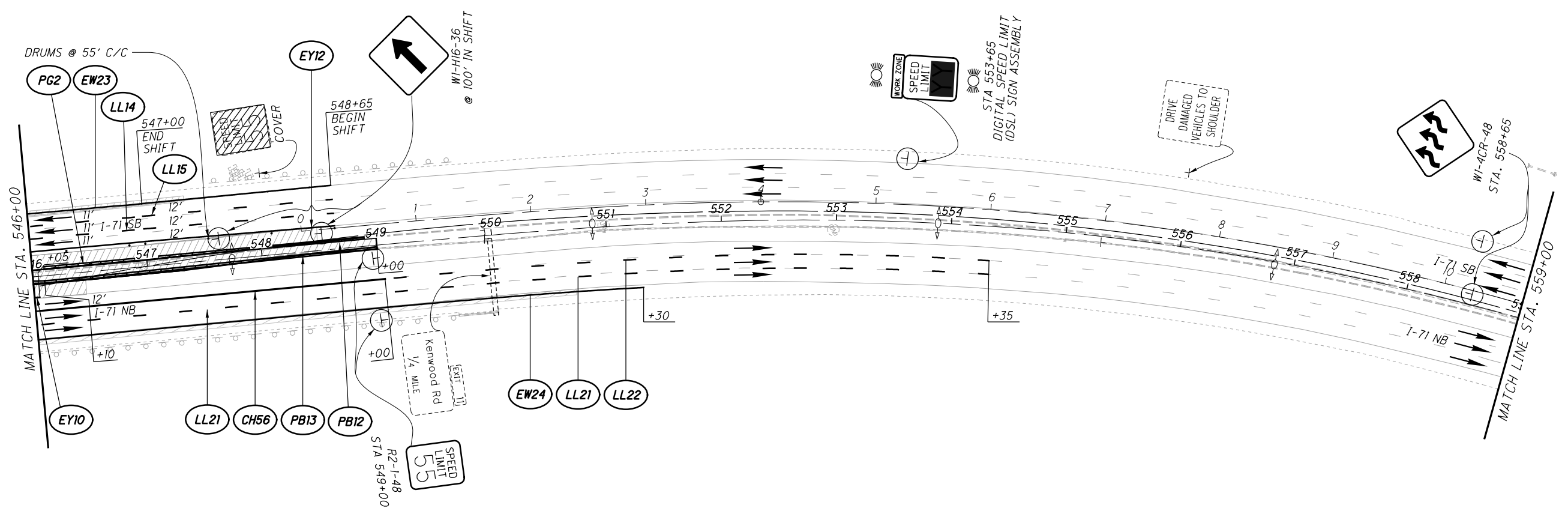
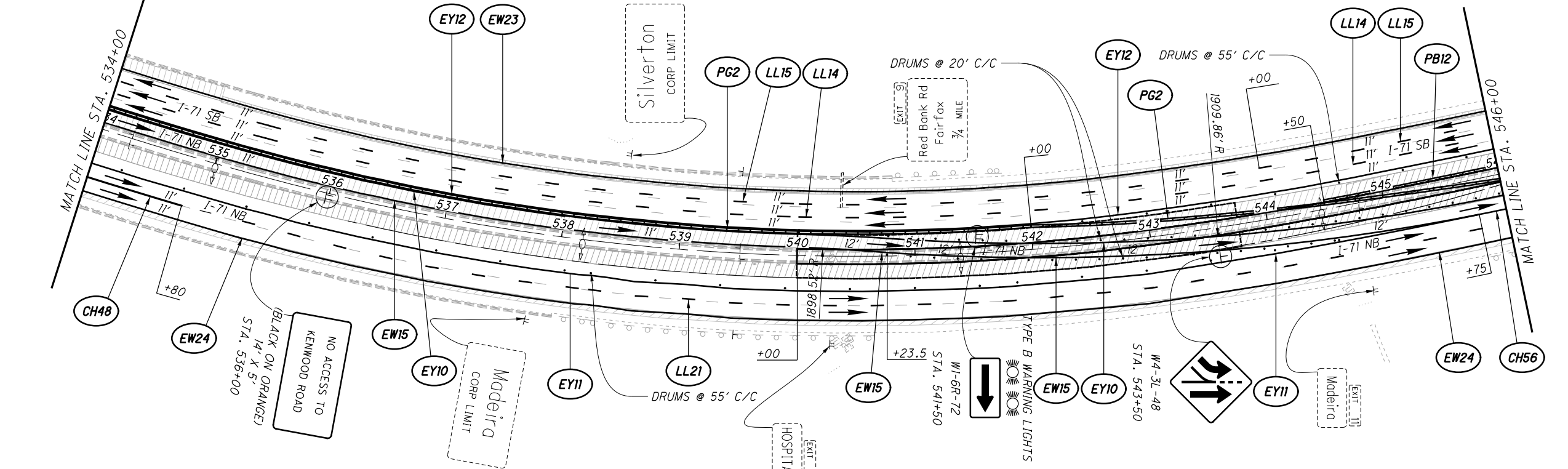
SEE SHEET 49 FOR LEGEND

CALCULATED DPF CHECKED BJF	0 25 50 100 HORIZONTAL SCALE IN FEET	MAINTENANCE OF TRAFFIC PHASE 3	HAM-IR71-8.42
			(75) (441)

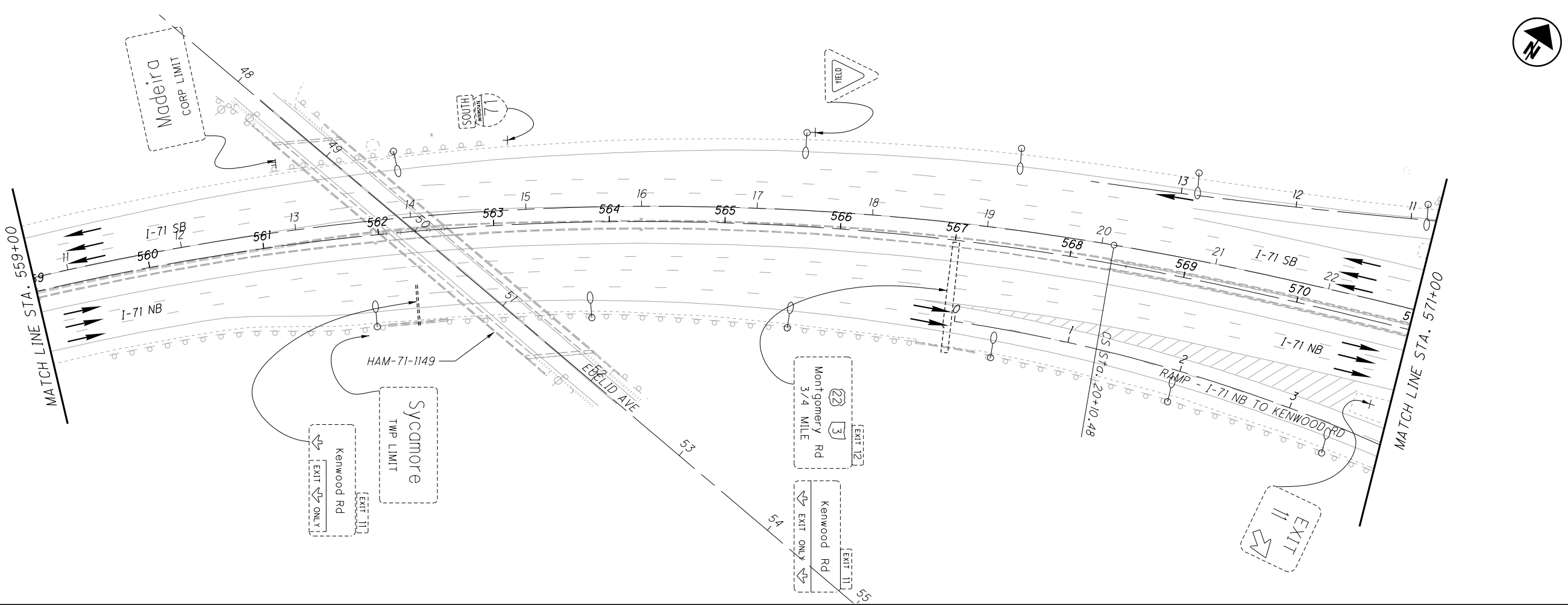
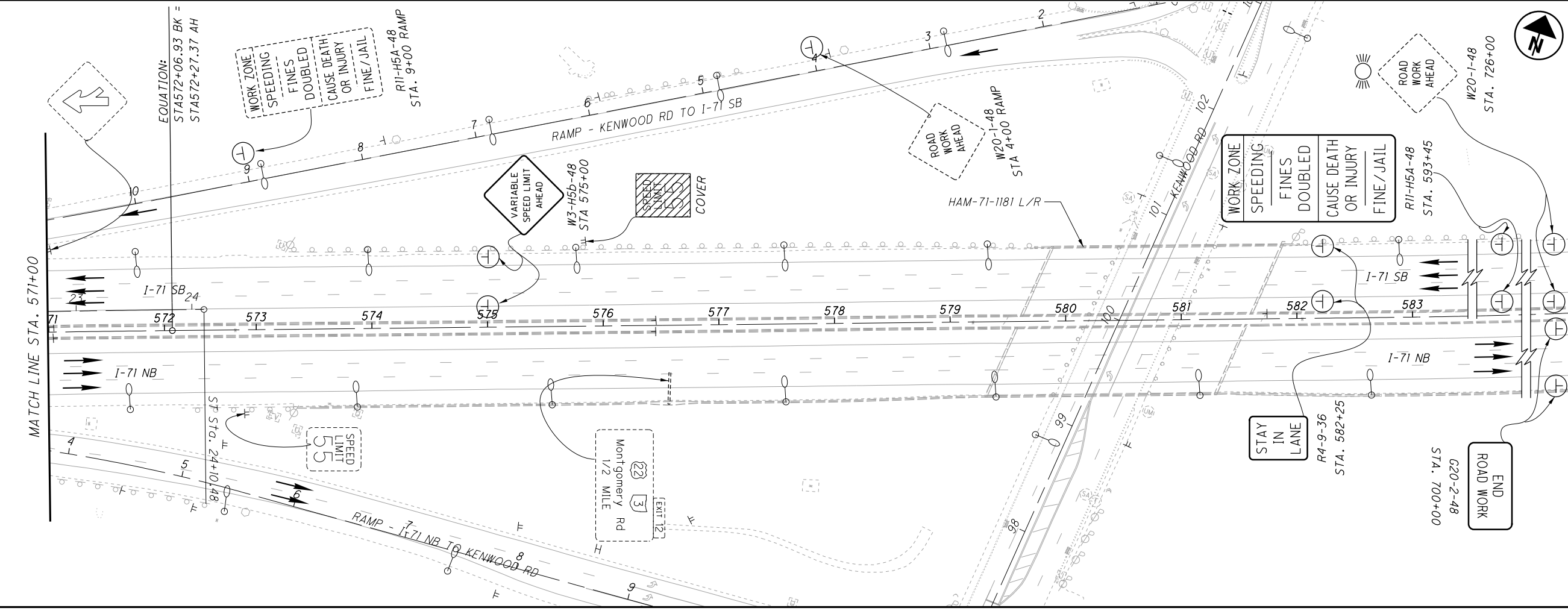


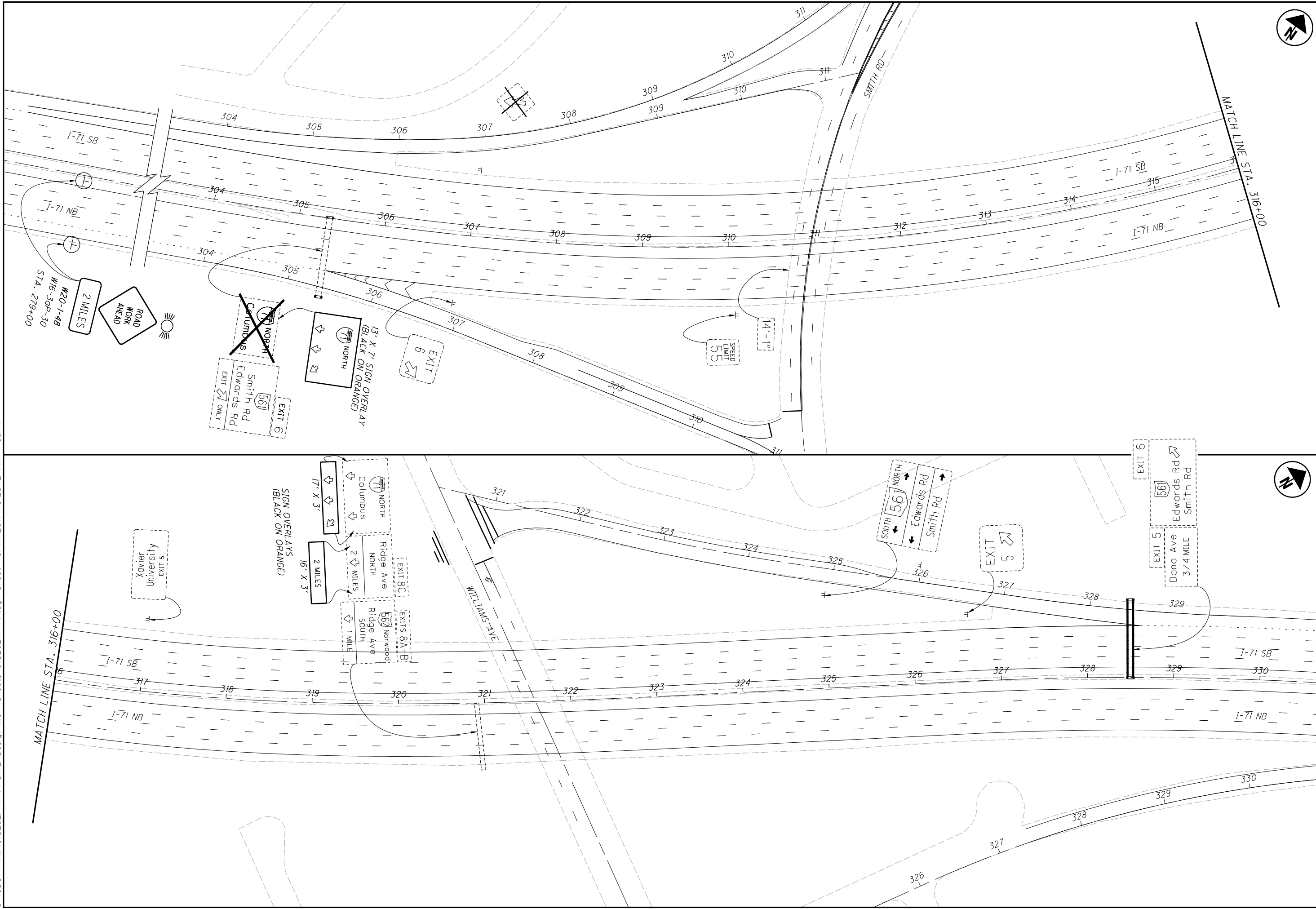
**MAINTENANCE OF TRAFFIC
PHASE 3**

HAM-IR71-8.42

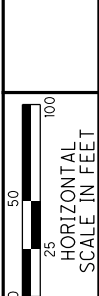


SEE SHEET 49 FOR LEGEND





CALCULATED	DPF	CHECKED	BJF

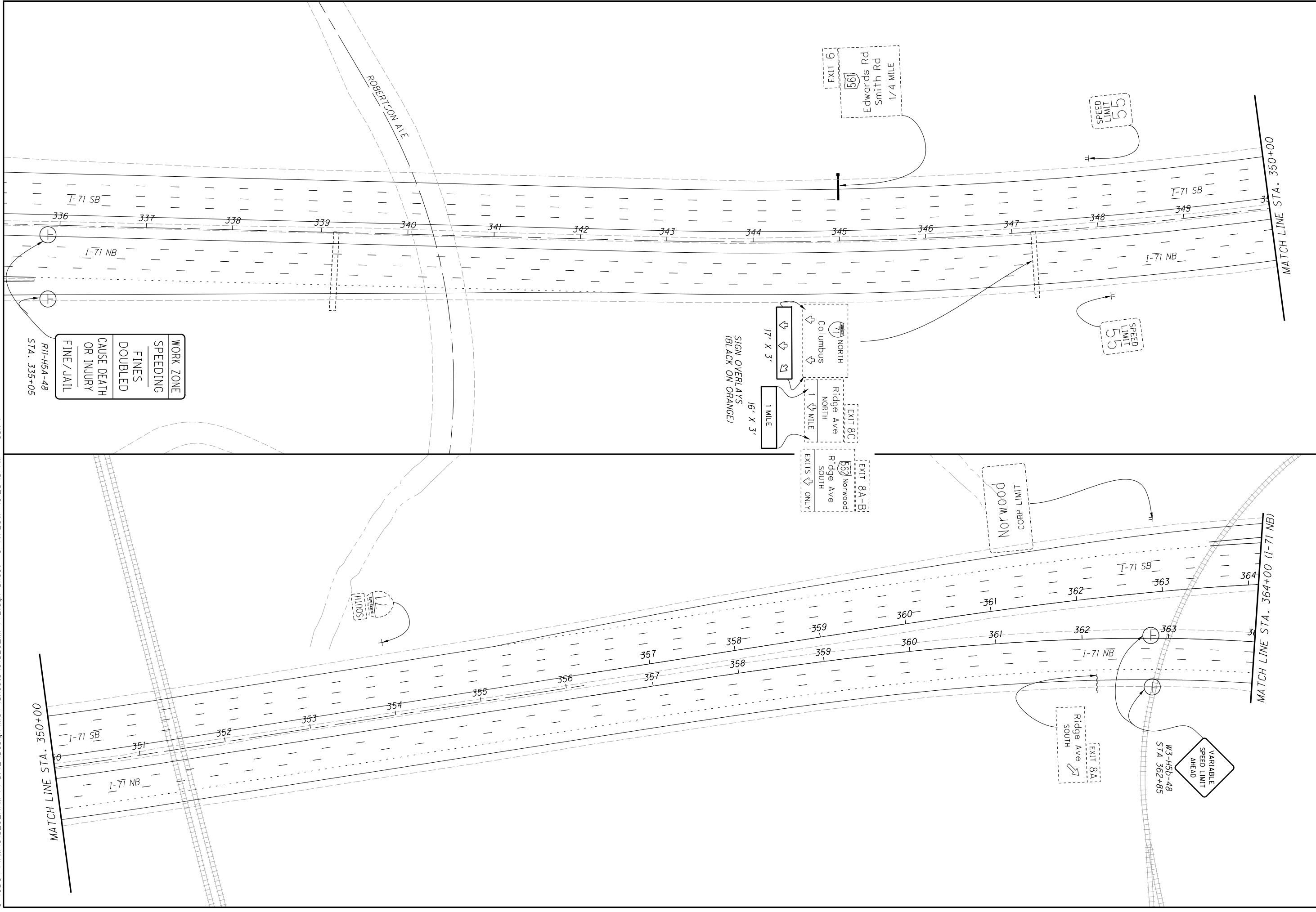


**MAINTENANCE OF TRAFFIC
PHASE 4**



HAM-IR71-8.42

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT_Sheets\91826_MP442.dgn_Sheet 9/14/2017 10:25:15 AM don-f



WORK ZONE
SPEEDING
FINES DOUBLED
CAUSE DEATH OR INJURY
FINE/JAIL

STA. 335+05

CALCULATED
DPF
CHECKED
BUF

0 50 100
HORIZONTAL SCALE IN FEET

MAINTENANCE OF TRAFFIC PHASE 4

HAM-IR71-8.42

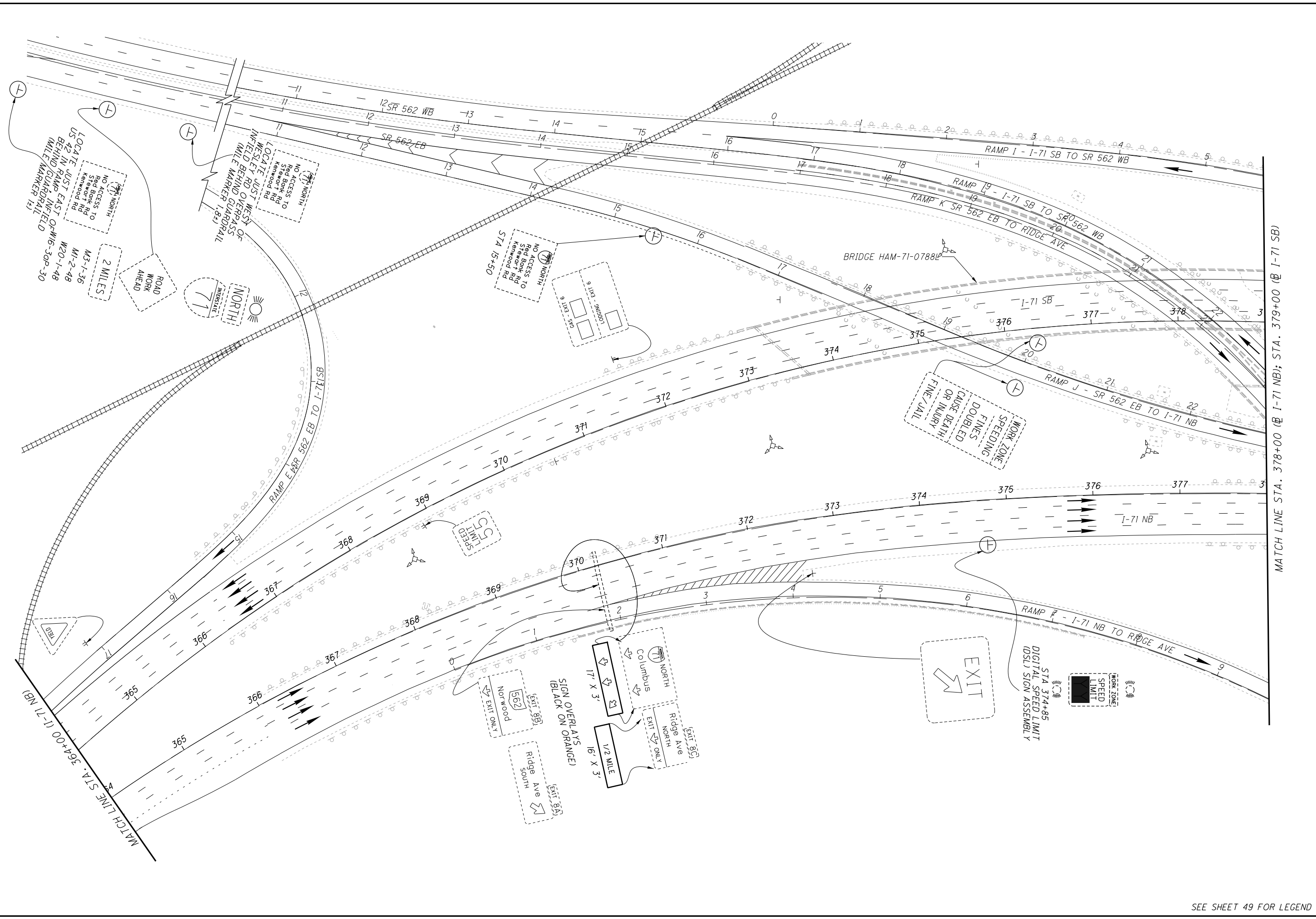


CALCULATED
DPF
CHECKED
BJF

MAINTENANCE OF TRAFFIC
PHASE 4

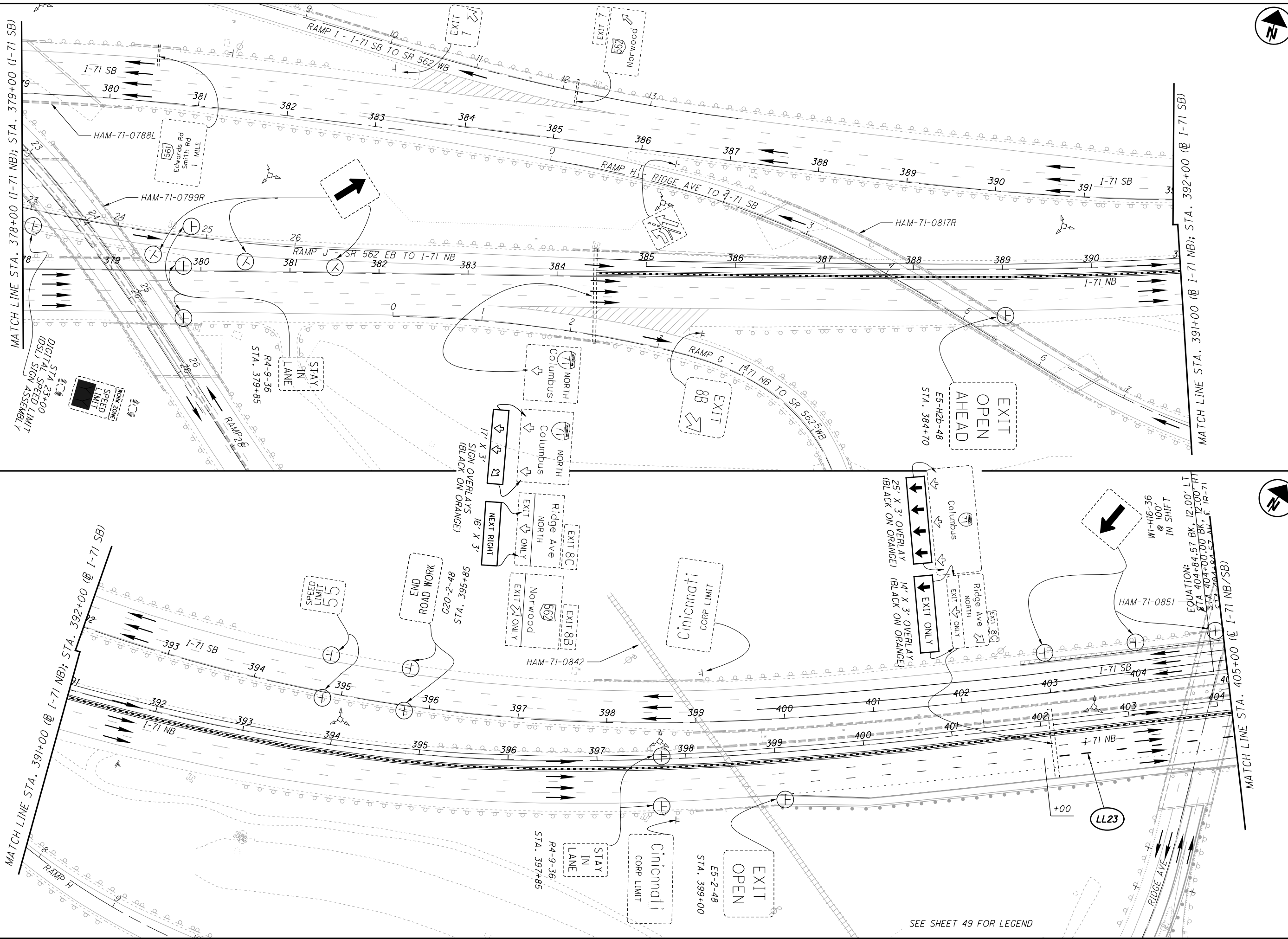
HAM-IR71-8.42

80
441



SEE SHEET 49 FOR LEGEND

O:\ODOT\HAM-91826_HAM-71-8.42\Design\MOT_Sheets_91826_MP431.dgn Sheet_9/14/2017 10:25:27 AM don-f



CALCULATED	0
DPF	25
CHECKED	100
BUJ	

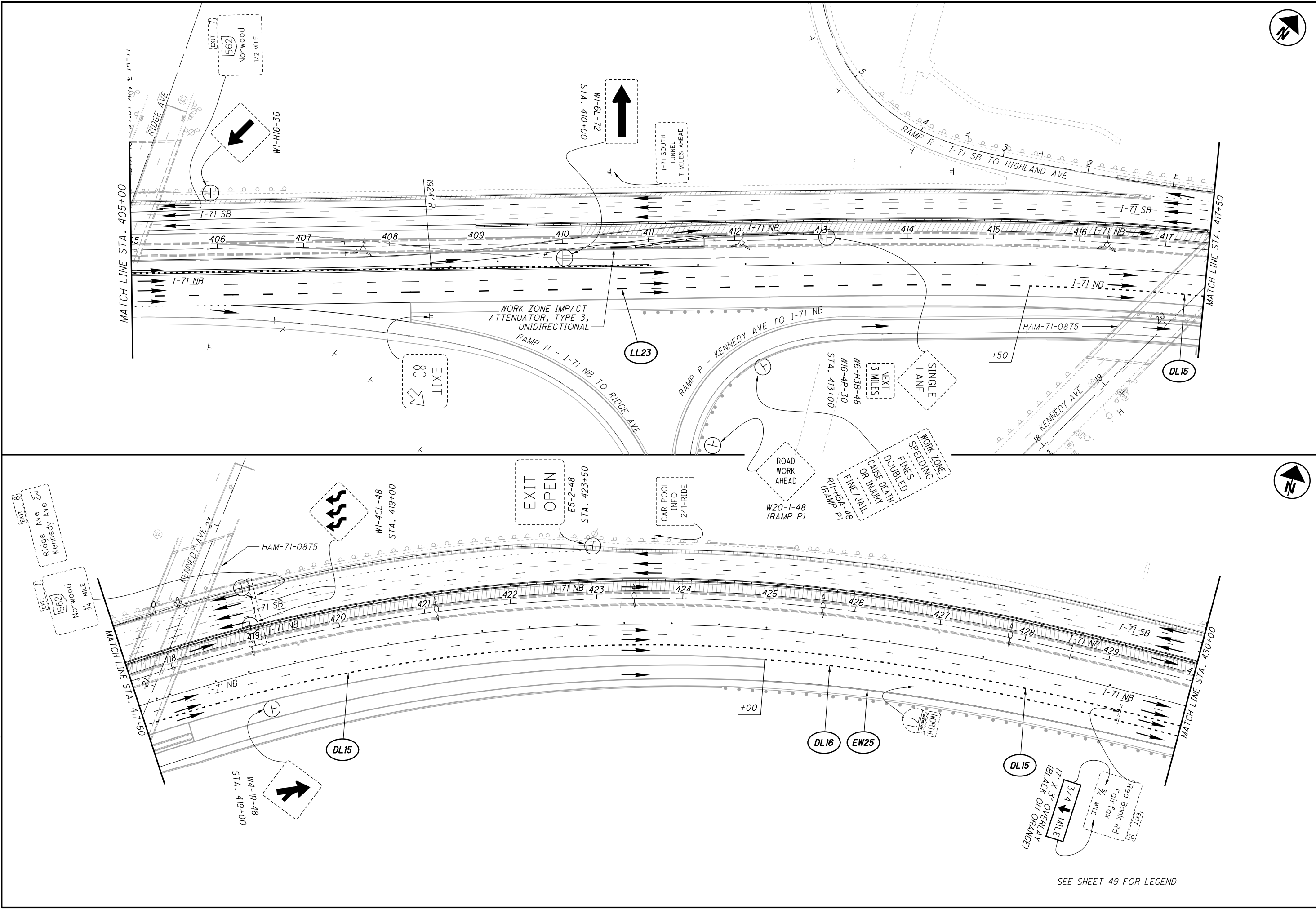
HORIZONTAL SCALE IN FEET

MAINTENANCE OF TRAFFIC PHASE 4

HAM-IR71-8.42

81
441

SEE SHEET 49 FOR LEGEND



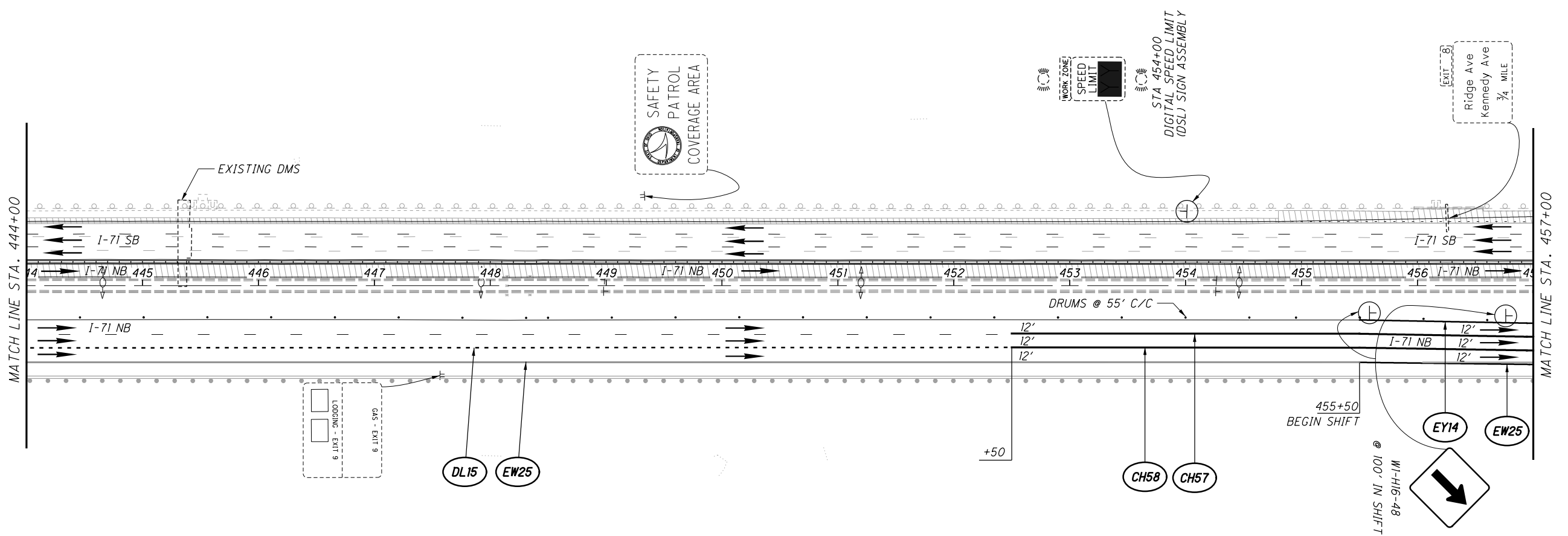
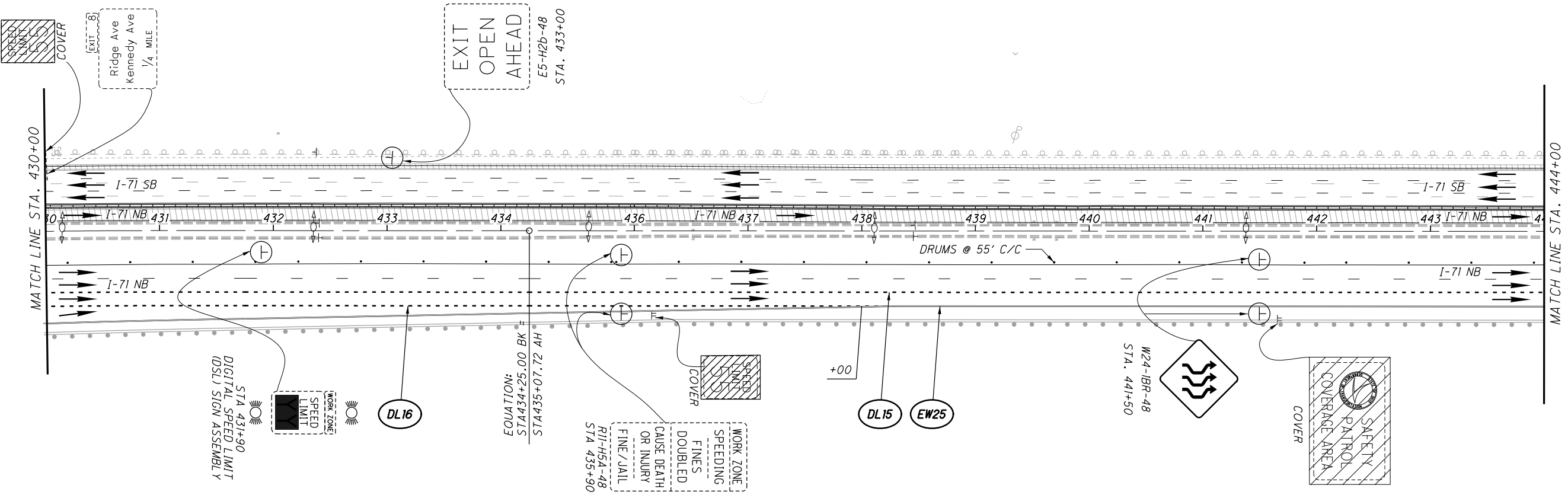
SEE SHEET 49 FOR LEGEND

CALCULATED	DPF	CHECKED	BJF

MAINTENANCE OF TRAFFIC PHASE 4

HAM-IR71-8.42

82
441



SEE SHEET 49 FOR LEGEND

CALCULATED
DPF
CHECKED
BUJ

0 50 100
HORIZONTAL
SCALE IN FEET

↑
N

**MAINTENANCE OF TRAFFIC
PHASE 4**

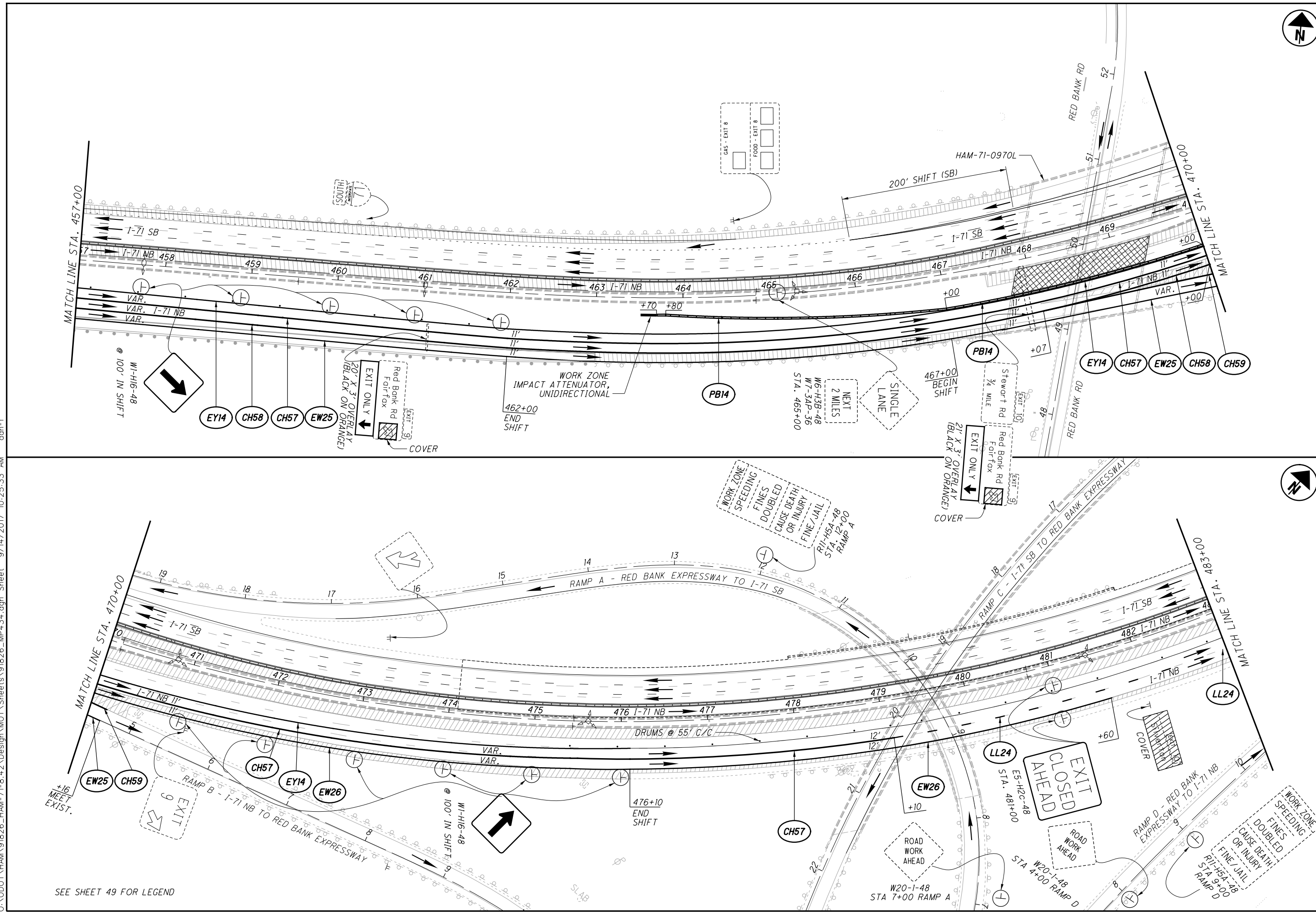
HAM-IR71-8.42

CALCULATED	DPF	CHECKED	BJF



**MAINTENANCE OF TRAFFIC
PHASE 4**

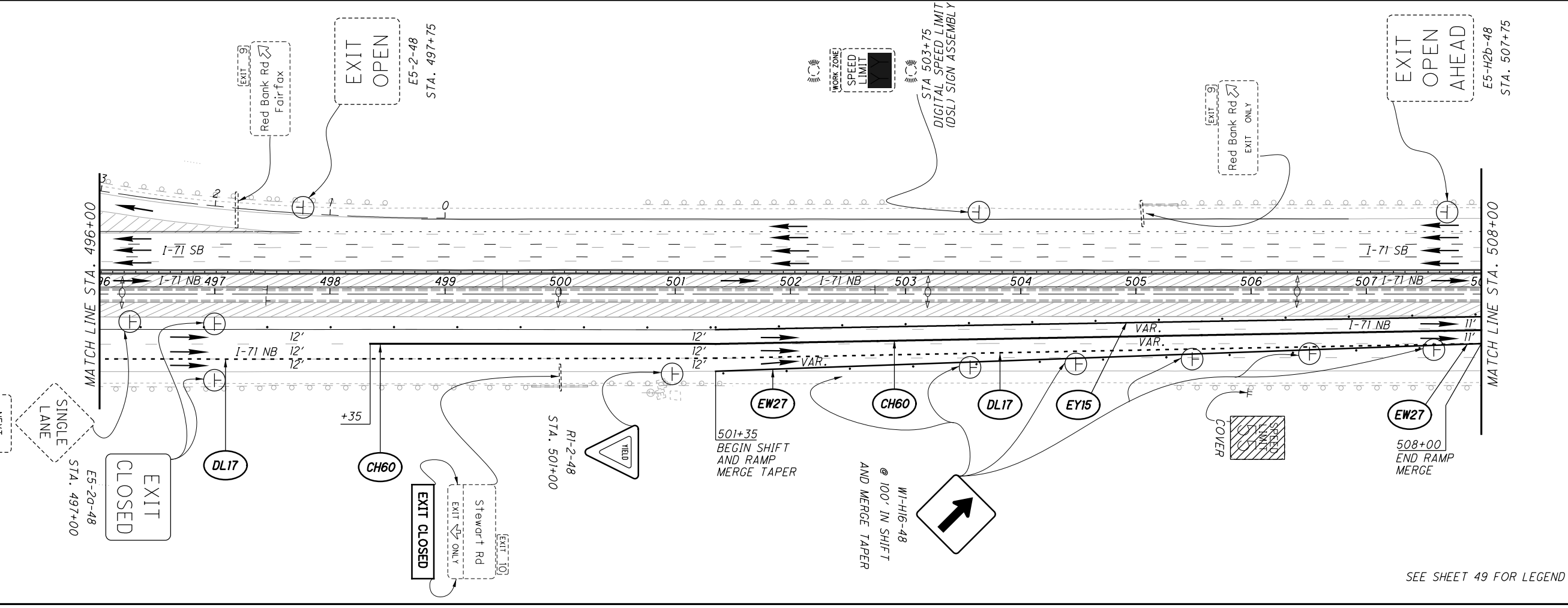
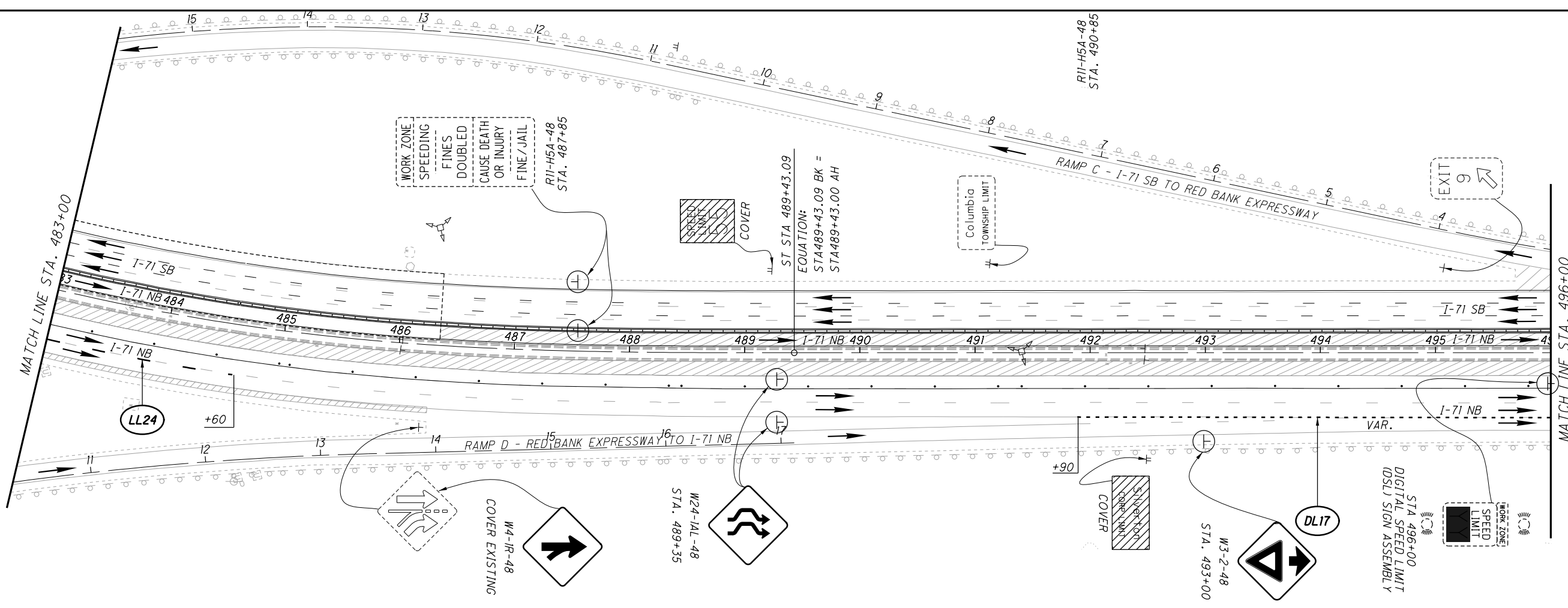
HAM-IR71-8.42



SEE SHEET 49 FOR LEGEND

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT_Sheets\91826_MP434.dgn Sheet 9/14/2017 10:25:33 AM don-f

O:\ODOT\HAM_91826_HAM-71-8.42\Design\MOT_Sheets_91826_MP4.35.dgn_Sheet 9/14/2017 10:25:35 AM don-f

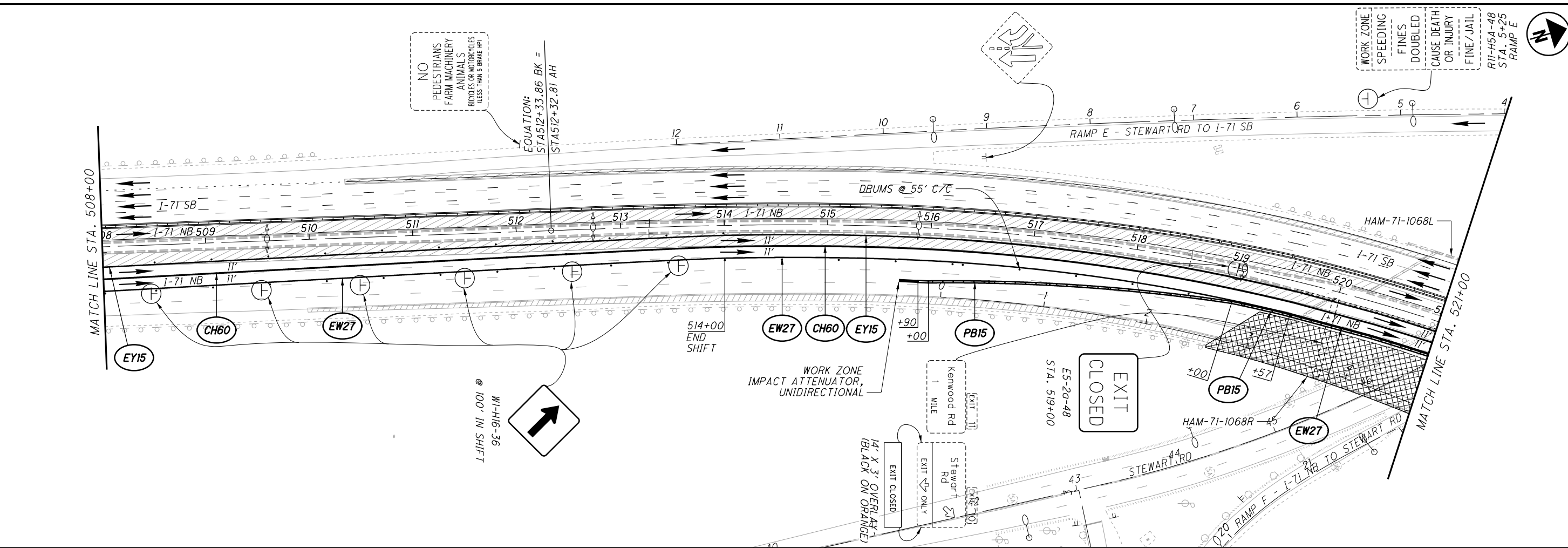
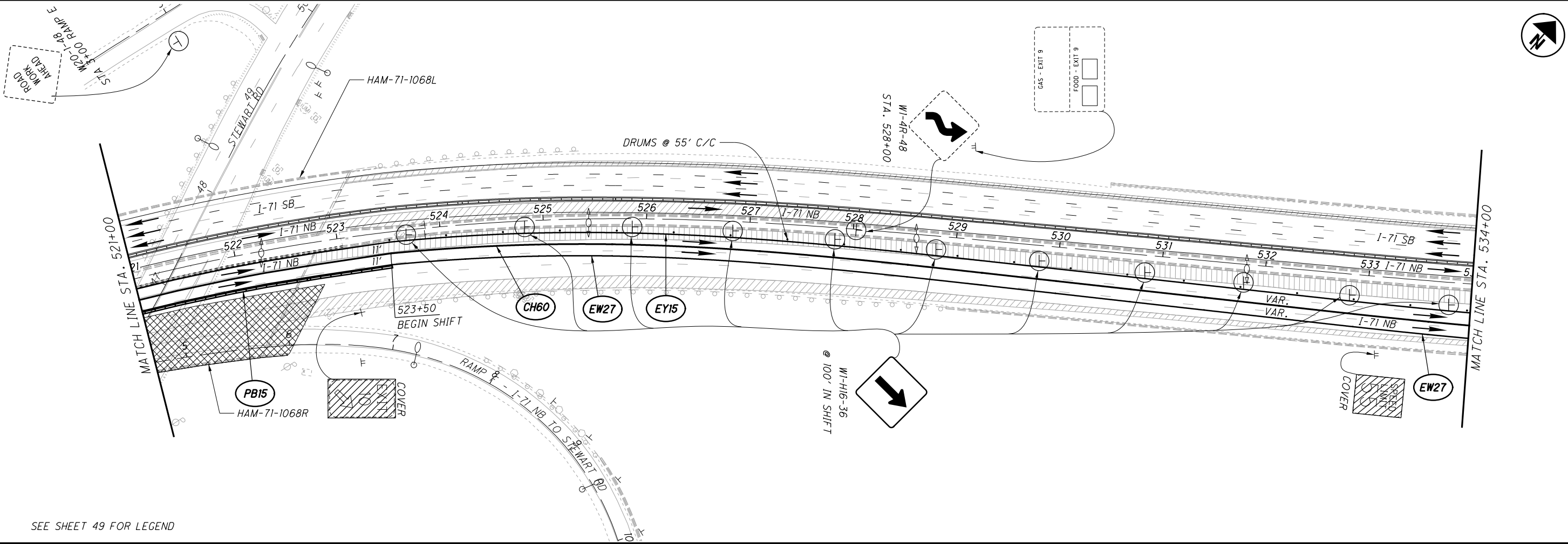


MAINTENANCE OF TRAFFIC PHASE 4

SEE SHEET 49 FOR LEGEND

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT_Sheets\91826_MP4.36.dgn_Sheet 9/14/2017 10:25:36 AM don-f

SEE SHEET 49 FOR LEGEND



WORK ZONE
SPEEDING
FINES DOUBLED
DOUBLED
CAUSE DEATH
OR INJURY
FINE / JAIL
RII-H5A-48
STA. 5+25
RAMP E



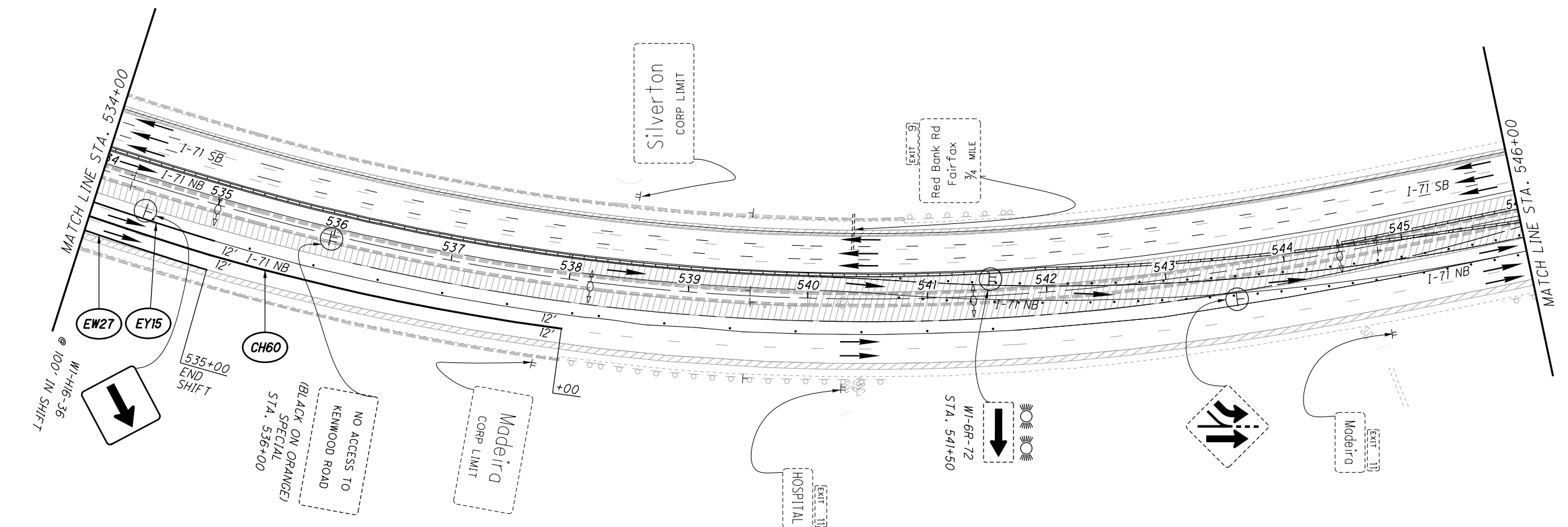
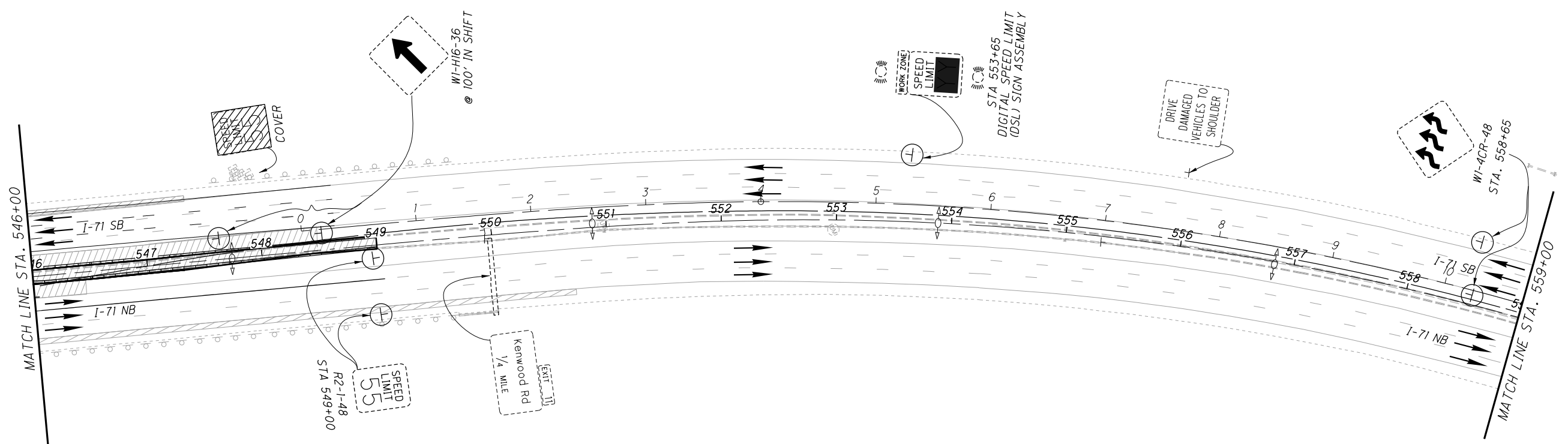
CALCULATED
DPF
CHECKED
BJF

0 50 100
HORIZONTAL
SCALE IN FEET

**MAINTENANCE OF TRAFFIC
PHASE 4**

HAM-IR71-8.42

86
441



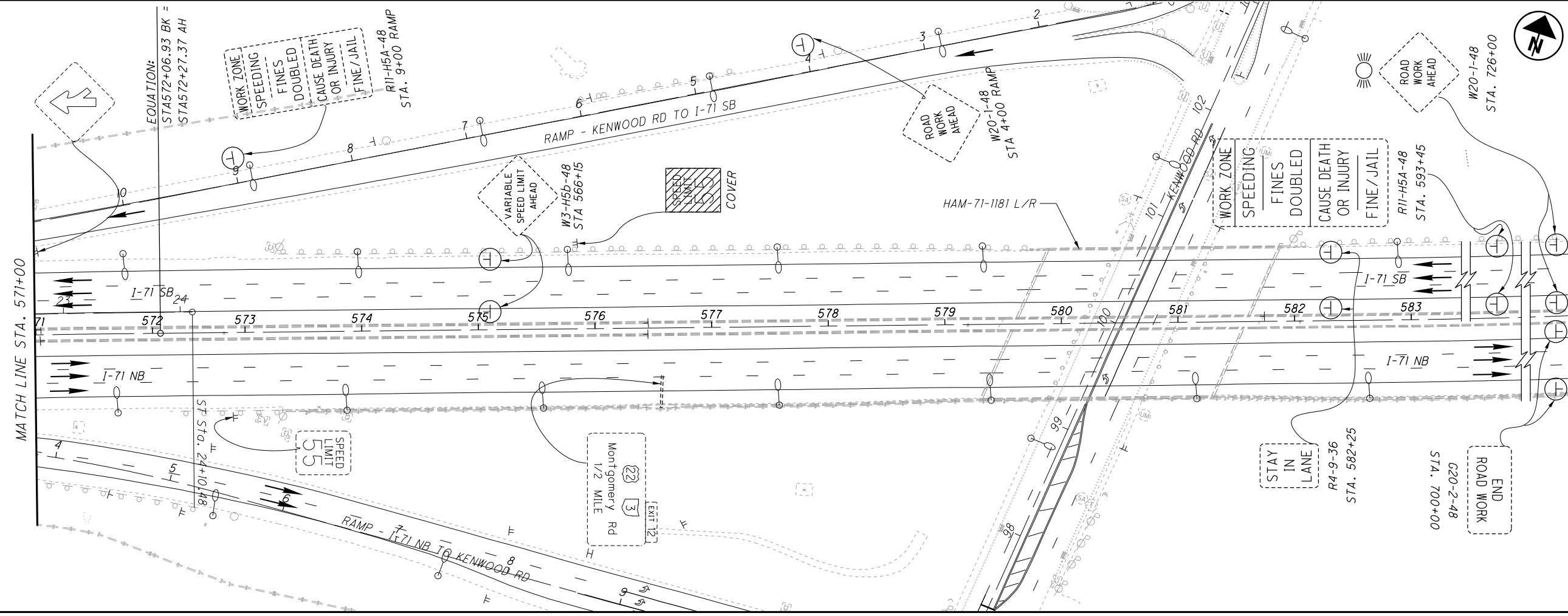
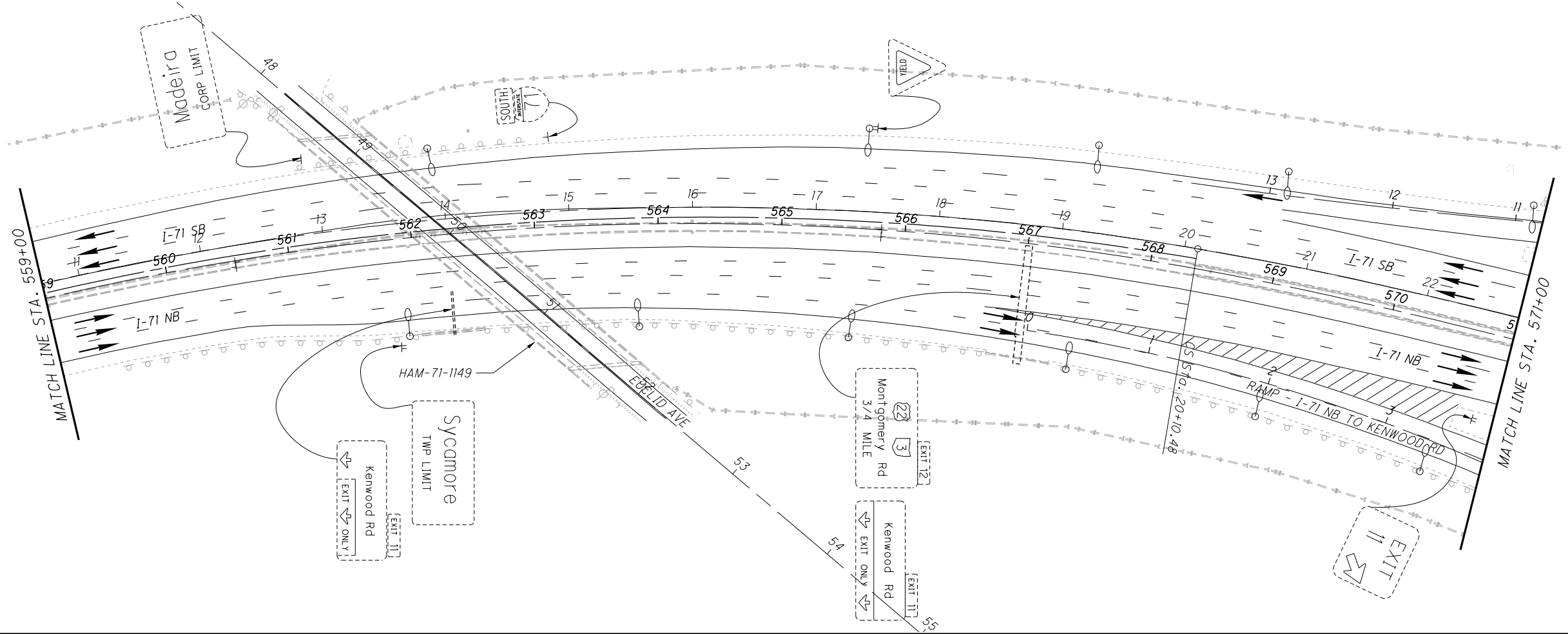
HAM-IR71-8.42

MAINTENANCE OF TRAFFIC
PHASE 4

CALCULATED	0
DPF	25
CHECKED	100
BUF	100

HORIZONTAL SCALE IN FEET

SEE SHEET 49 FOR LEGEND



CALCULATED	DPF	CHECKED	BJF

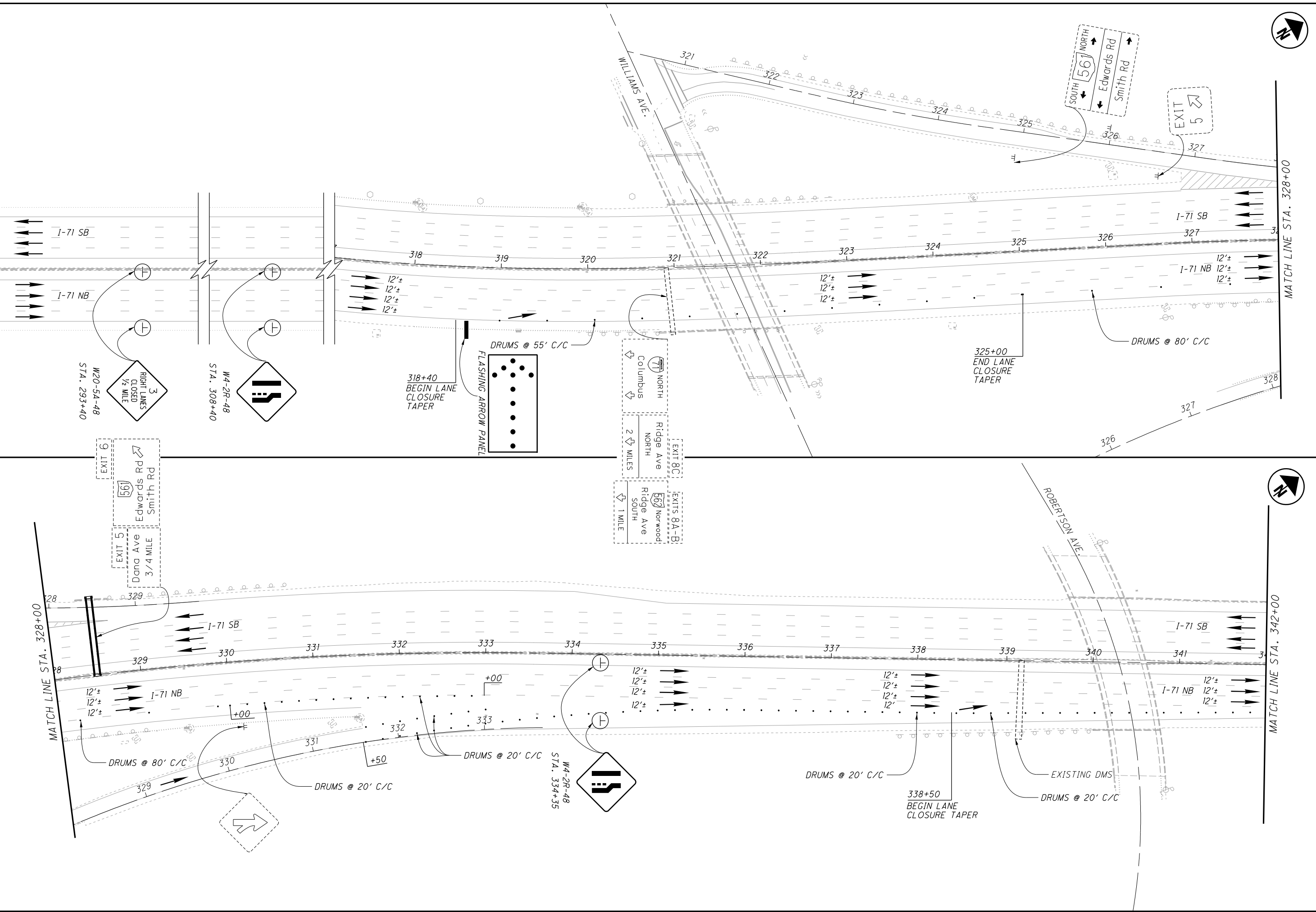


**MAINTENANCE OF TRAFFIC
PHASE 4**



HAM-IR71-8.42

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT_Sheets\91826_MP501.dgn Sheet 9/14/2017 10:25:53 AM don-f

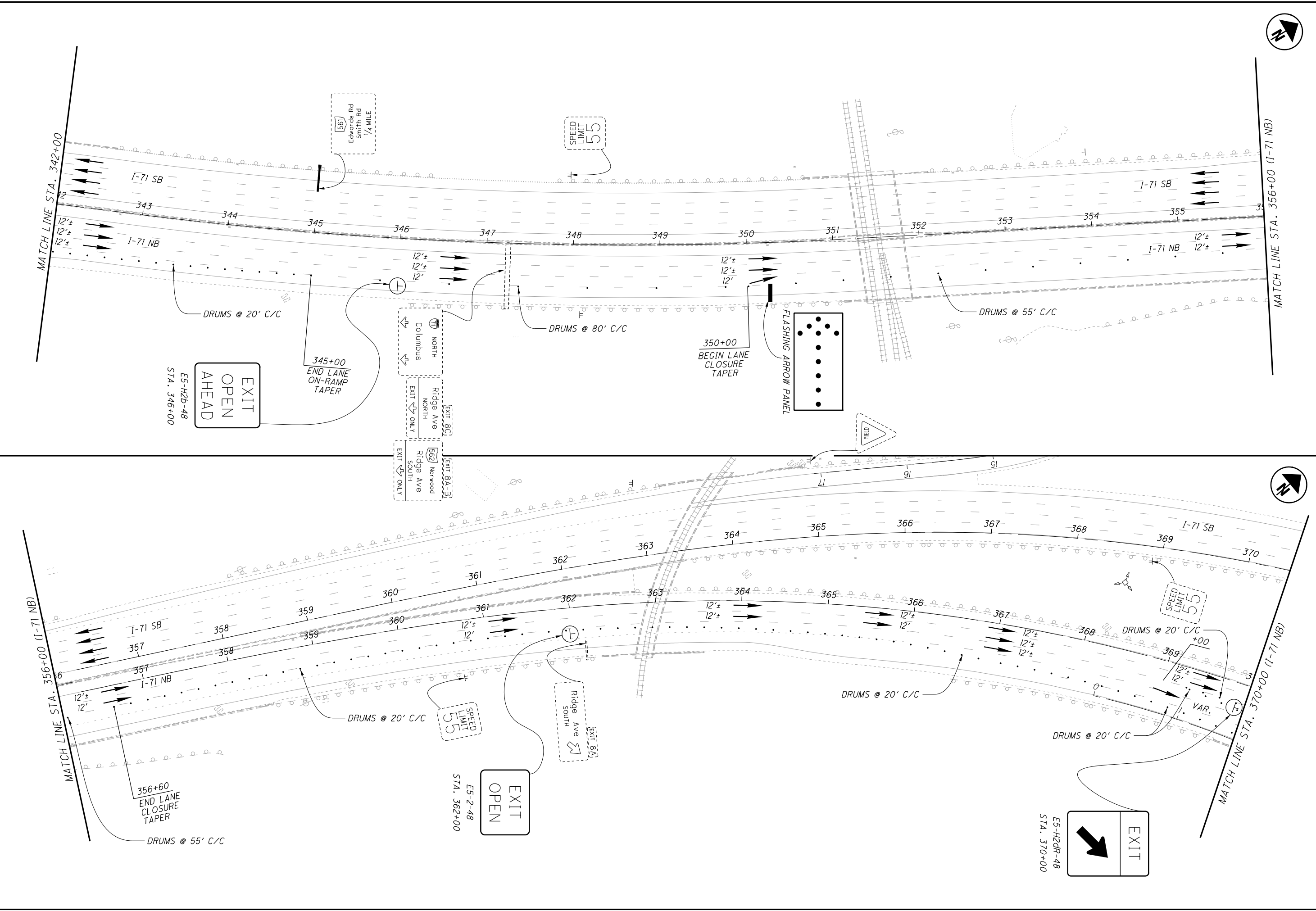


CALCULATED	DPF	CHECKED	BJF

MAINTENANCE OF TRAFFIC - BEGIN PROJECT
SHORT TERM RIGHT LANE CLOSURE

HAM-IR71-8.42

O:\ODOT\HAM-91826_HAM-71-8.42\Design\MOT_Sheets\91826_MP502.dgn Sheet 9/14/2017 10:26:02 AM don-f



CALCULATED		DPF		CHECKED	
BJF		BJF		BJF	

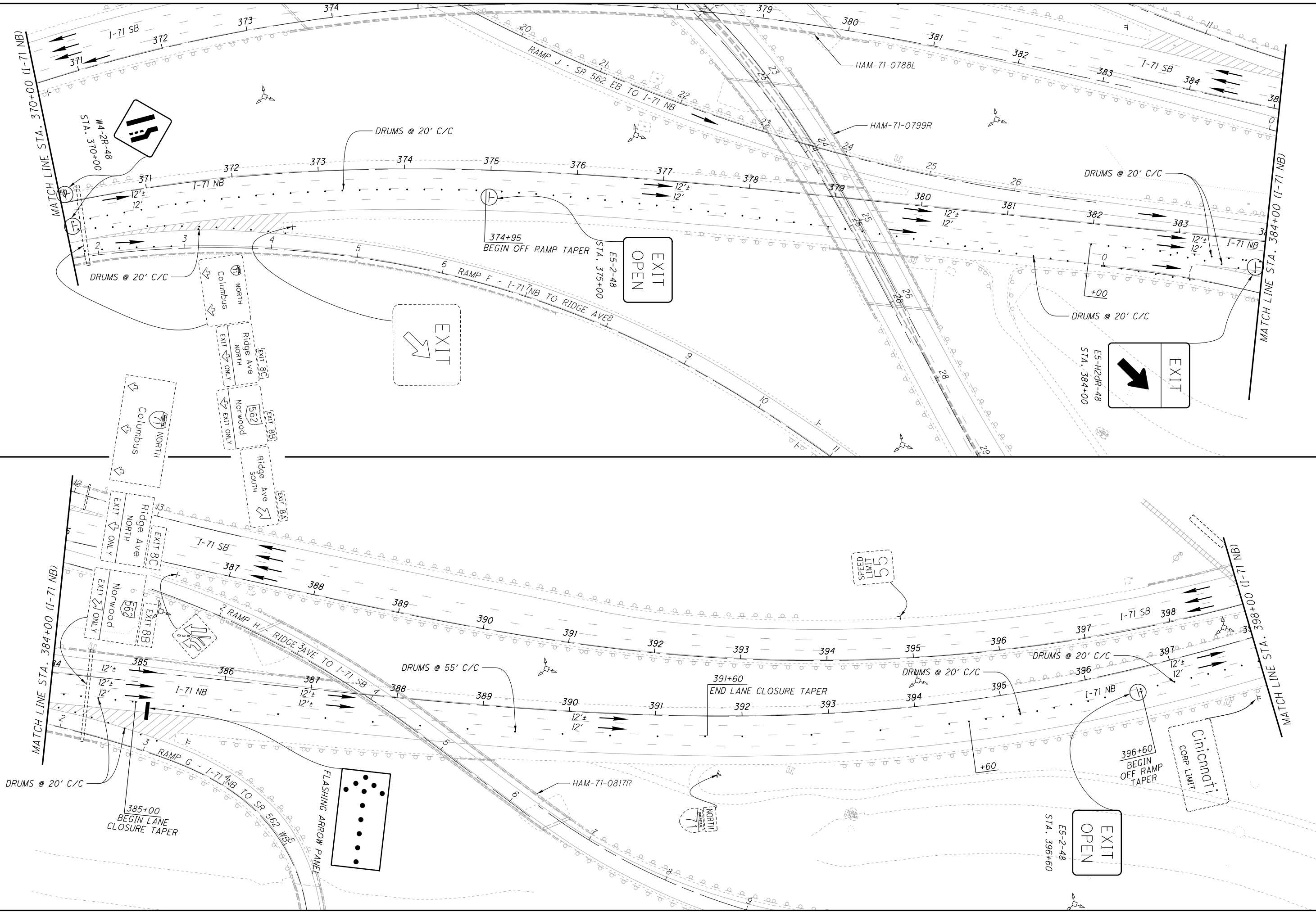
0 50 100
HORIZONTAL SCALE IN FEET

**MAINTENANCE OF TRAFFIC - BEGIN PROJECT
SHORT TERM RIGHT LANE CLOSURE**

HAM-IR71-8.42

90
441

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT_Sheets\91826_MP503.dgn Sheet 9/14/2017 10:26:04 AM don-f



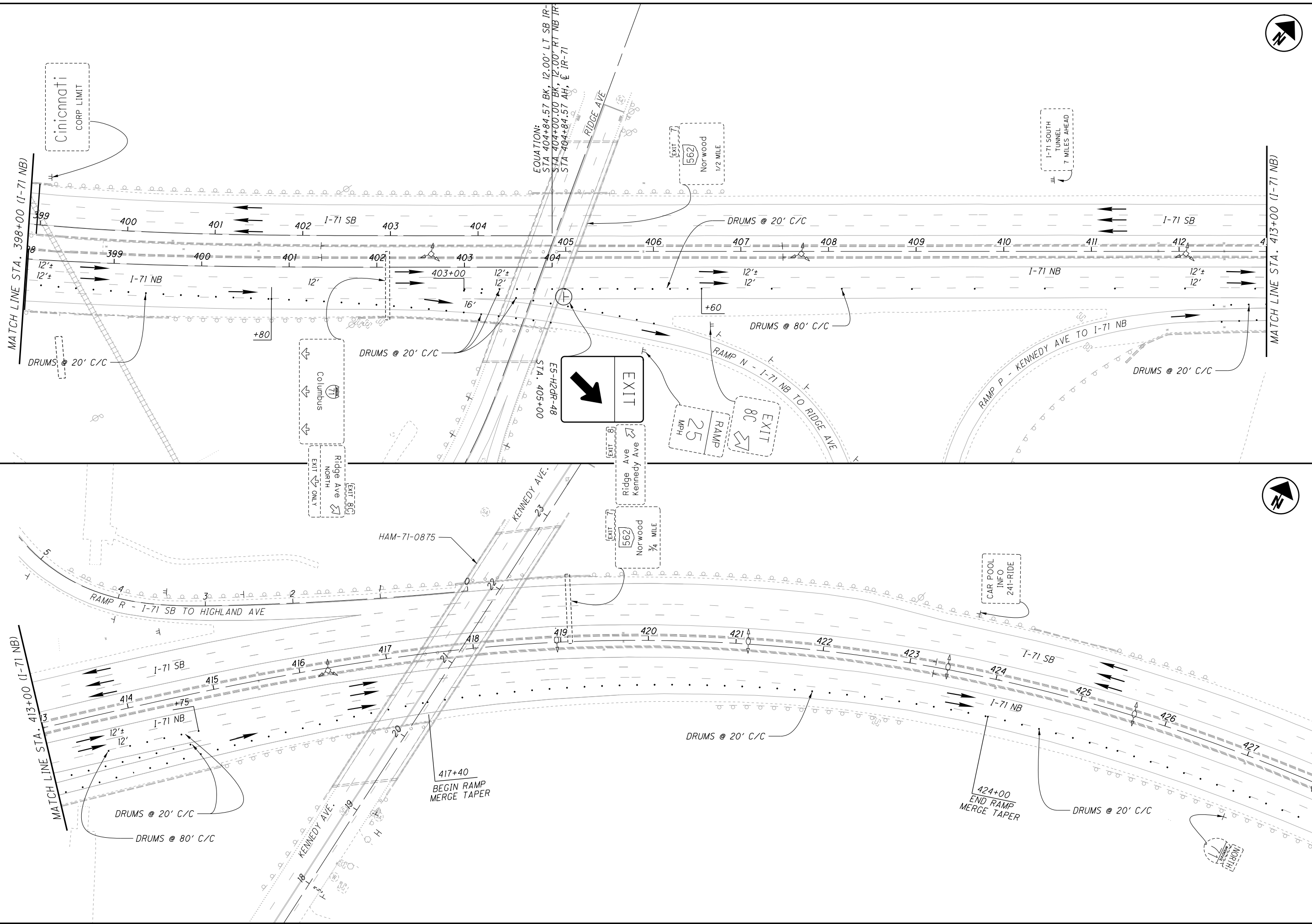
CALCULATED
 DPF
 CHECKED
 BUJ

MAINTENANCE OF TRAFFIC - BEGIN PROJECT
SHORT TERM RIGHT LANE CLOSURE

HAM-IR71-8.42

91
 441

O:\ODOT\HAM-91826_HAM-71-8.42\Design\MOT_Sheets_91826_MP504.dgn Sheet 9/14/2017 10:26:06 AM dan-f

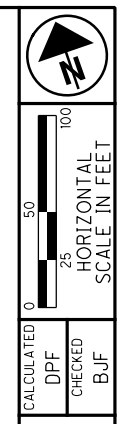
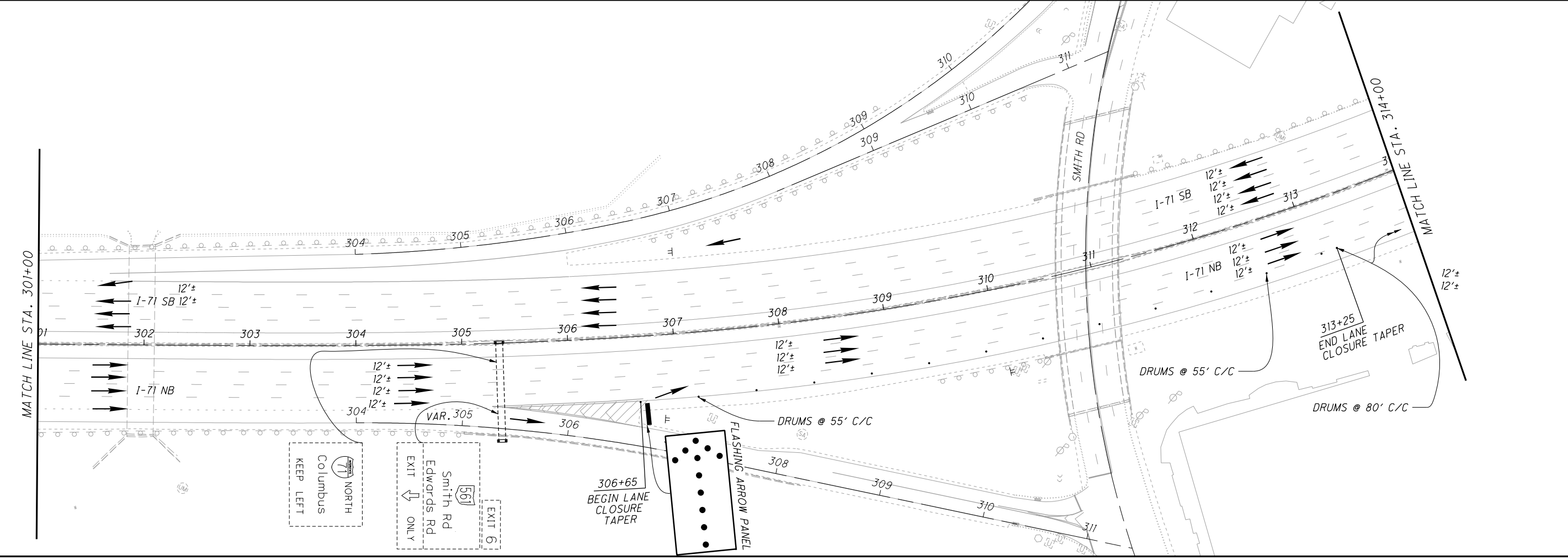
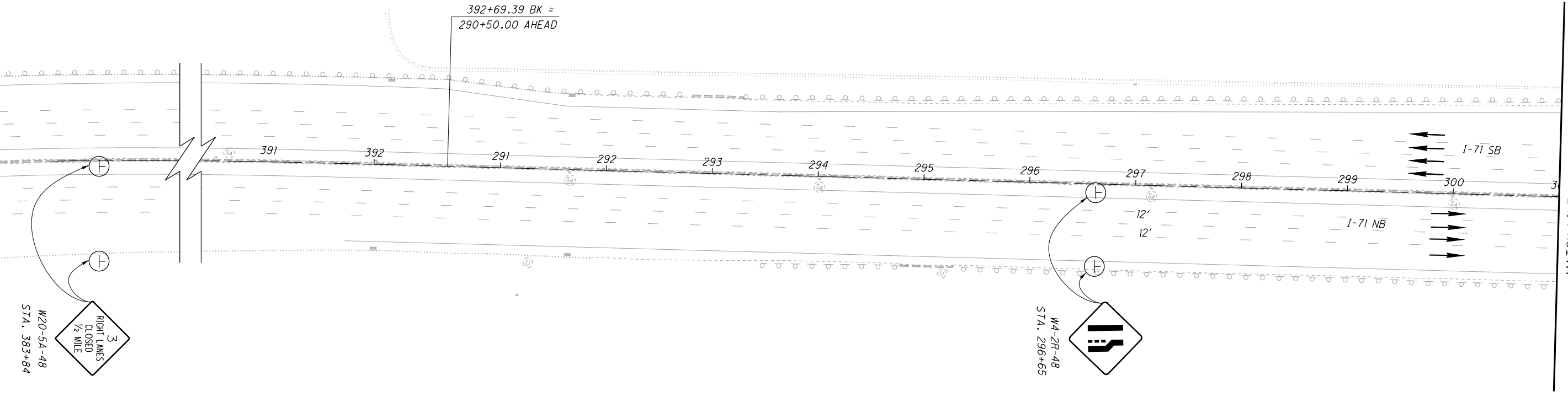


CALCULATED	DPF	CHECKED	BJF

MAINTENANCE OF TRAFFIC - BEGIN PROJECT
SHORT TERM RIGHT LANE CLOSURE

HAM-IR71-8.42

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_MP505.dgn_Sheet_9/14/2017 10:26:13 AM don-f



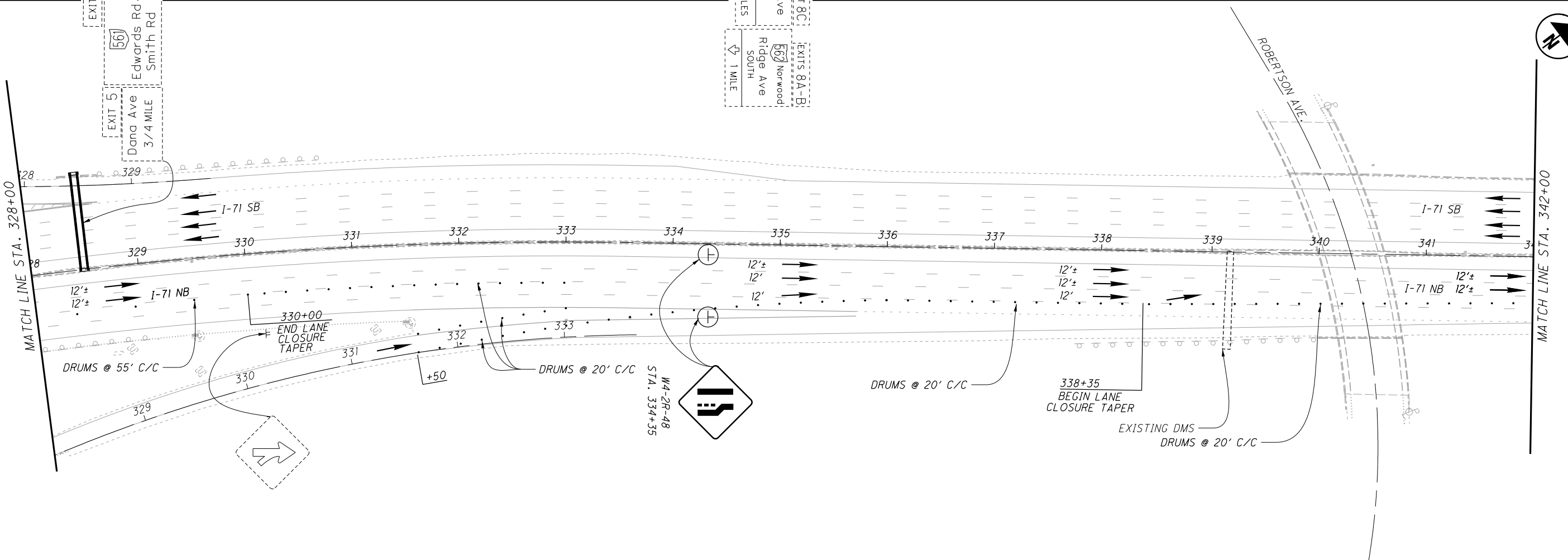
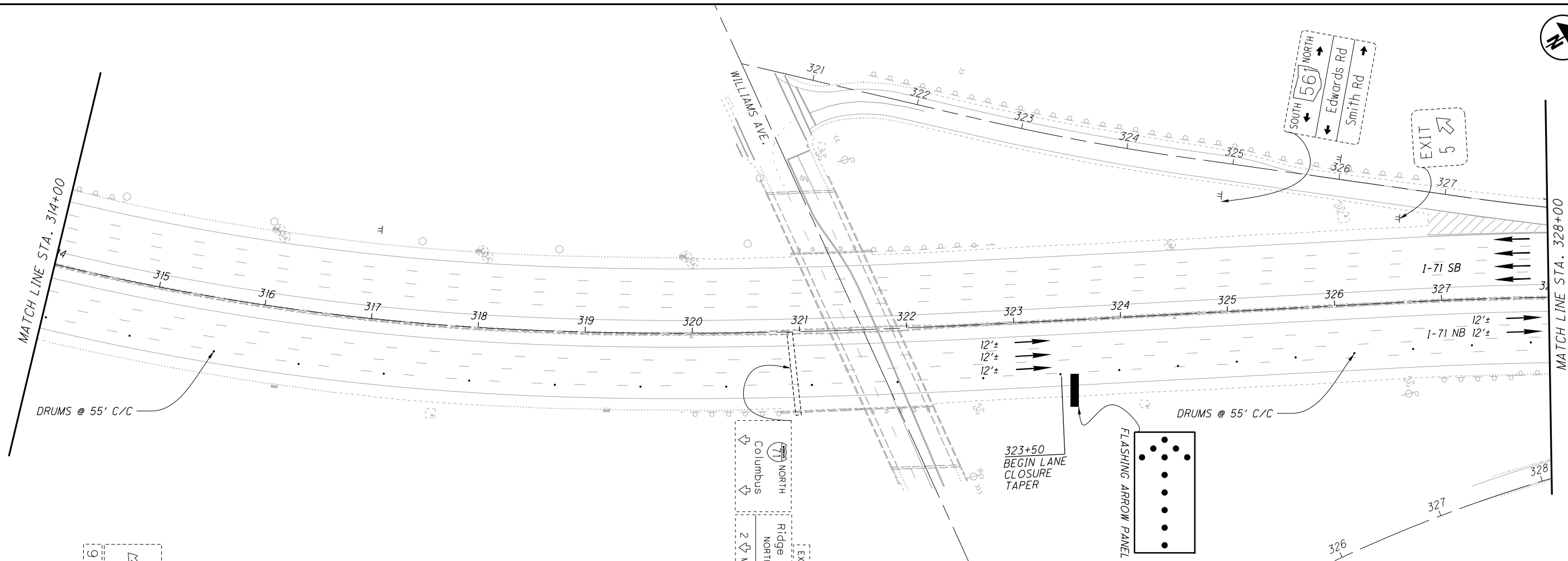
CALCULATED
DPF
CHECKED
BJF

**MAINTENANCE OF TRAFFIC - BEGIN PROJECT
SHORT TERM DOUBLE RIGHT LANE CLOSURE**

HAM-IR71-8.42

93
441

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_MP505a.dgn Sheet 9/14/2017 10:26:21 AM dan-f

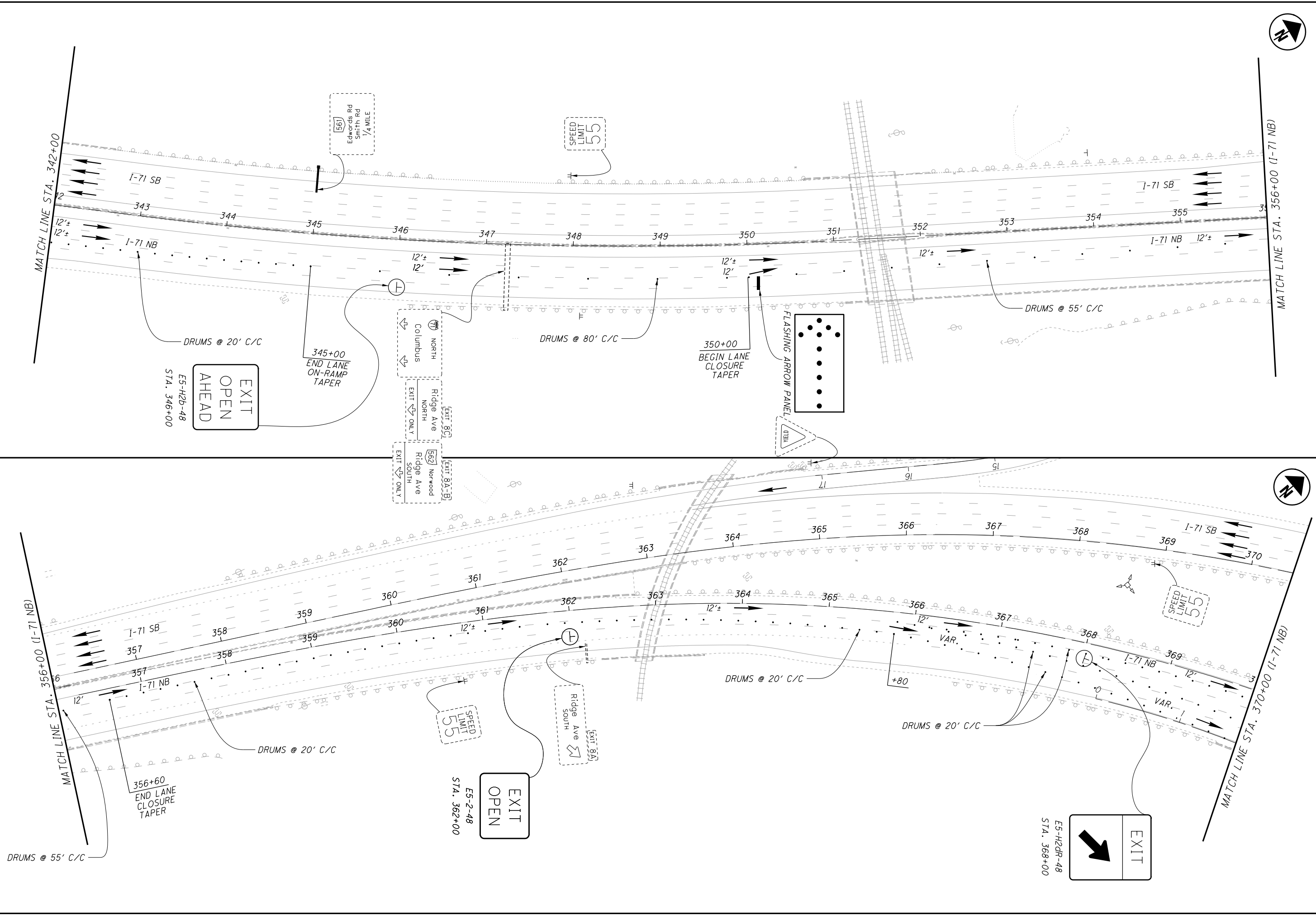


CALCULATED	DPF	CHECKED	BJF

**MAINTENANCE OF TRAFFIC - BEGIN PROJECT
SHORT TERM DOUBLE RIGHT LANE CLOSURE**

HAM-IR71-8.42

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT_Sheets\91826_MP506.dgn_Sheet 9/14/2017 10:26:32 AM don-f



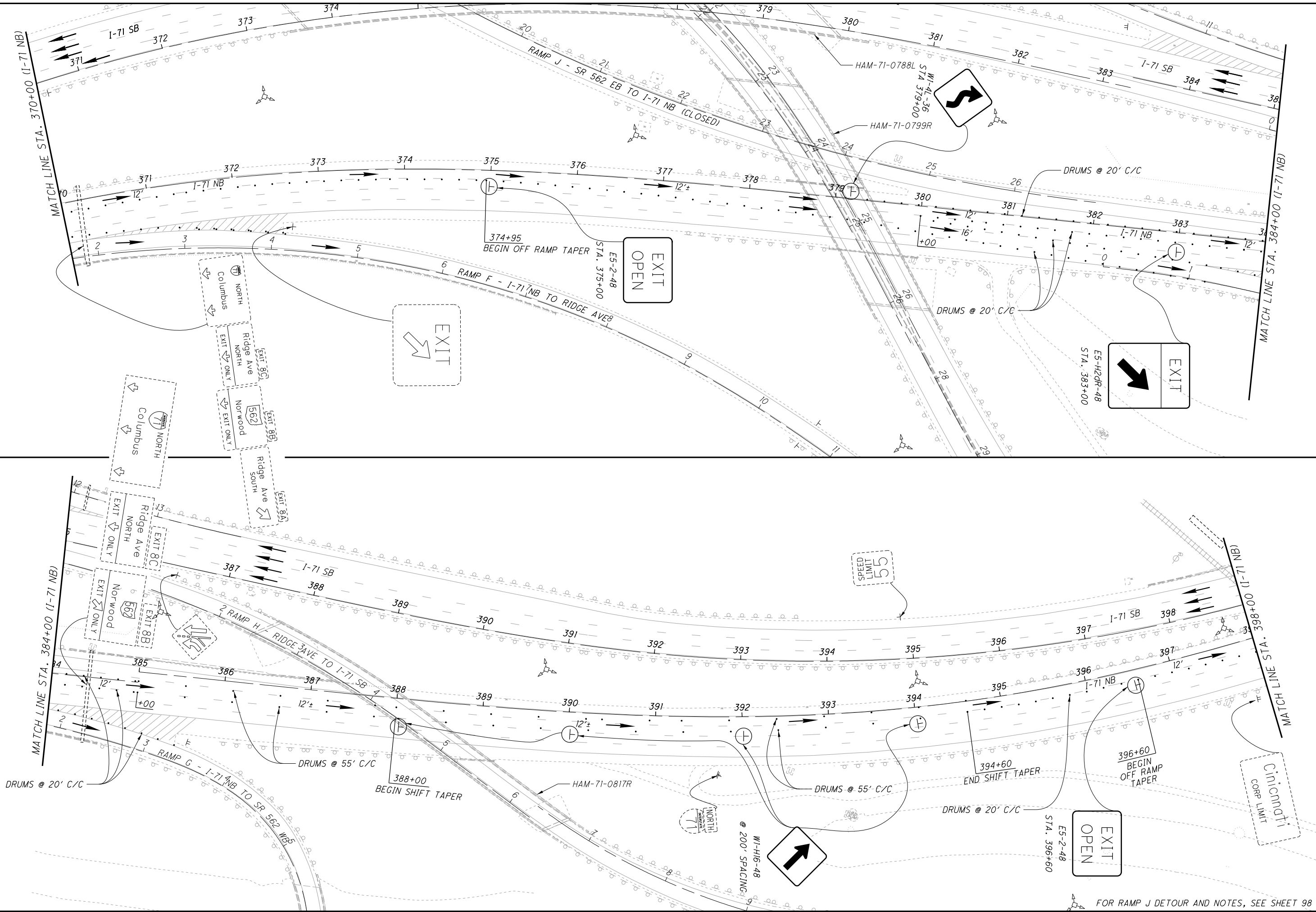
**MAINTENANCE OF TRAFFIC - BEGIN PROJECT
SHORT TERM DOUBLE RIGHT LANE CLOSURE**

HAM-IR71-8.42

CALCULATED	DPF	CHECKED
		BJF



C:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT_Sheets\91826_MP507.dgn_Sheet 9/14/2017 10:26:34 AM dan-f



CALCULATED
DIPF
CHECKED
BUJ

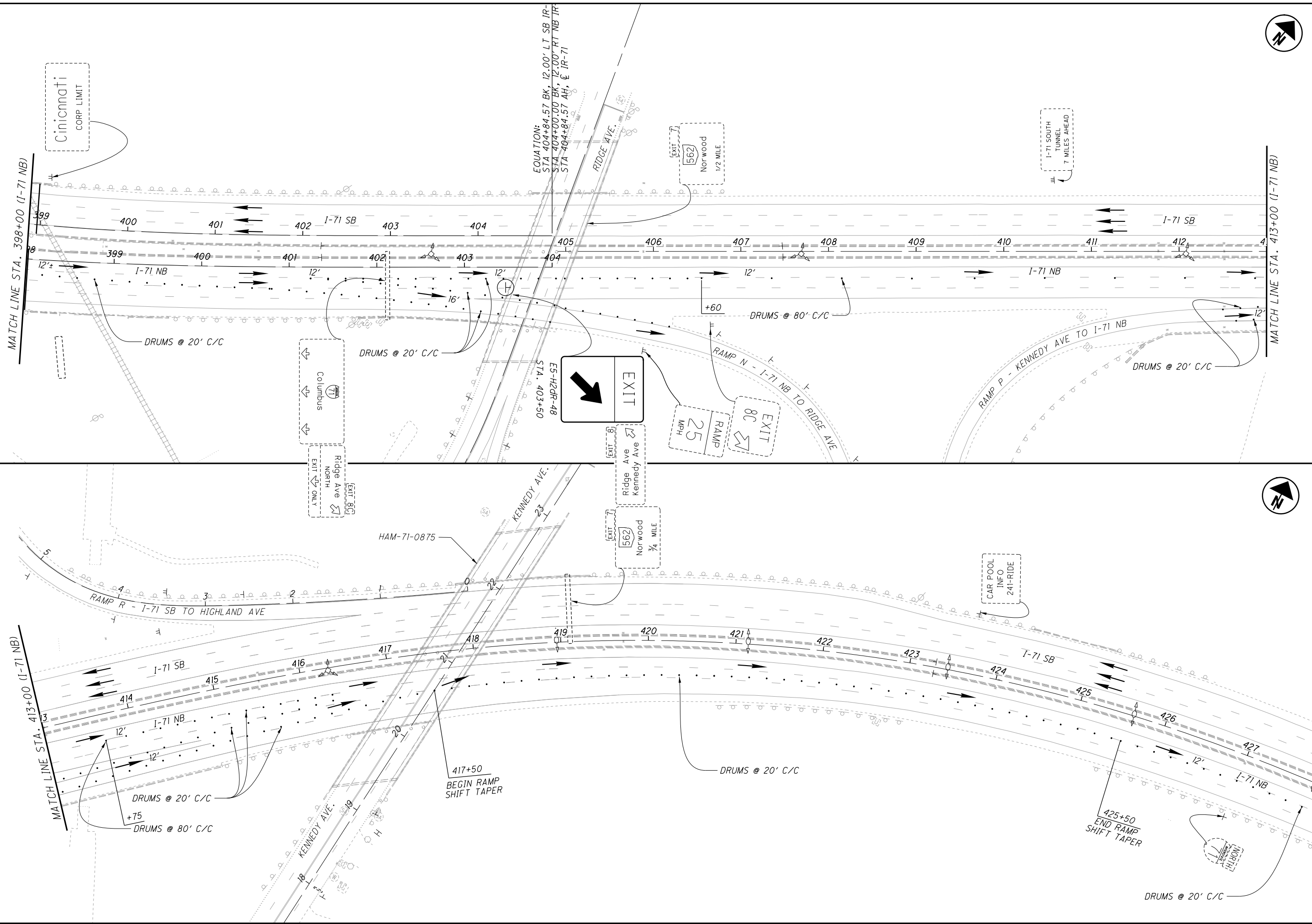
0 50 100
HORIZONTAL
SCALE IN FEET

**MAINTENANCE OF TRAFFIC - BEGIN PROJECT
SHORT TERM DOUBLE RIGHT LANE CLOSURE**

HAM-IR71-8.42

FOR RAMP J DETOUR AND NOTES, SEE SHEET 98

O:\ODOT\HAM-91826_HAM-71-8.42\Design\MOT_Sheets_91826_MP508.dgn Sheet 9/14/2017 10:26:36 AM don-f

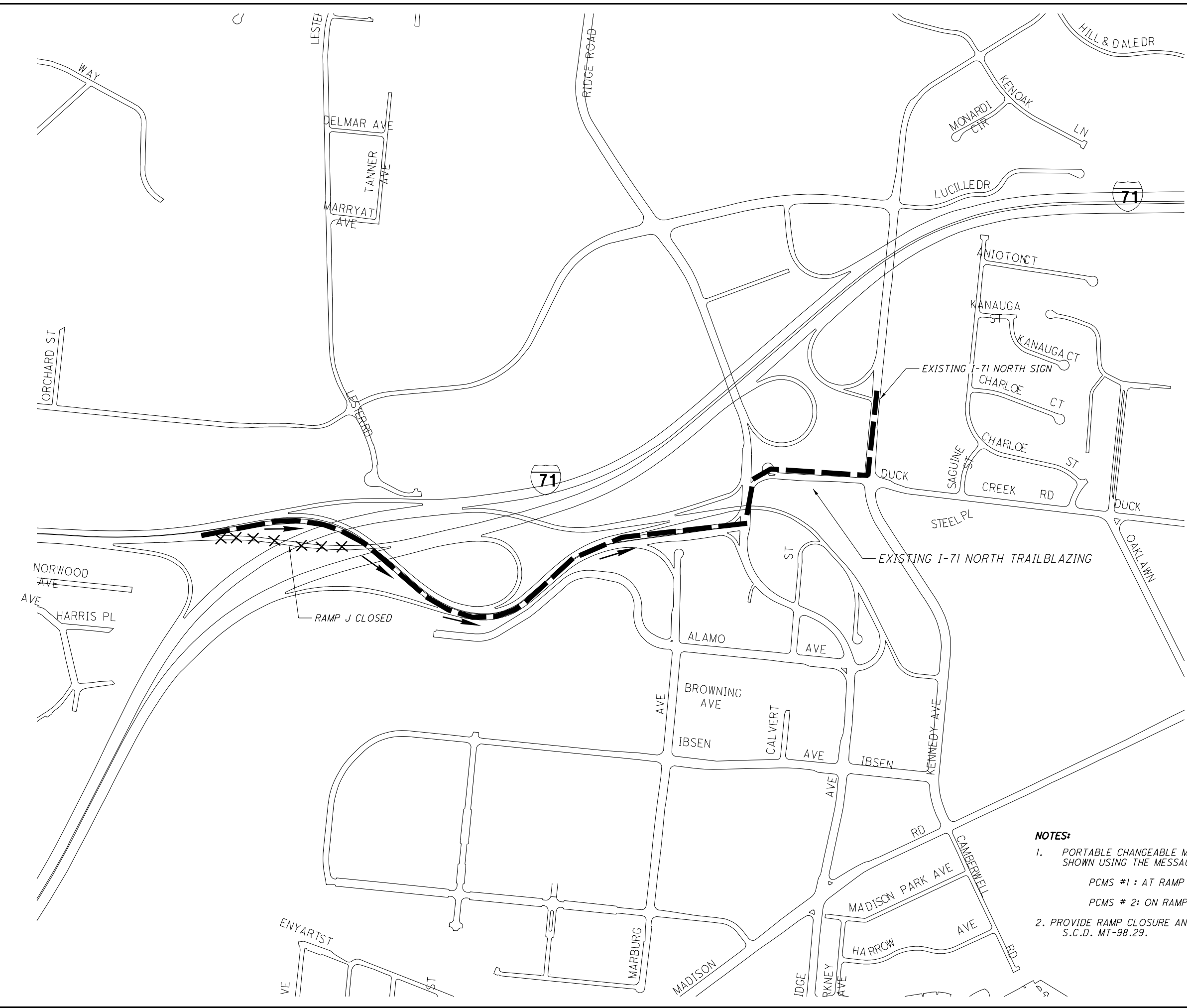


CALCULATED	DPF	CHECKED	BJF

**MAINTENANCE OF TRAFFIC - BEGIN PROJECT
SHORT TERM DOUBLE RIGHT LANE CLOSURE**

HAM-IR71-8.42

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_MD407.dgn_Sheet 9/14/2017 10:26:56 AM don-f



I - 71 N
RAMP
CLOSED ①

USE RIDGE
AVE EXIT ②

PCMS #1

I - 71 N
DETOUR
FOLLOW ①

RIDGE TO
DUCK
CREEK ②

PCMS #2

NOTES:

- PORTABLE CHANGEABLE MESSAGE SIGN (S) WILL BE PLACED AT THE LOCATIONS SHOWN USING THE MESSAGES INDICATED.
 PCMS #1 : AT RAMP GORE - POINT OF CLOSURE
 PCMS # 2: ON RAMP K (TO RIDGE) NEAR RAMP TO MARBURG
- PROVIDE RAMP CLOSURE AND SIGNAGE ALONG SR 562 EASTBOUND AS PER S.C.D. MT-98.29.

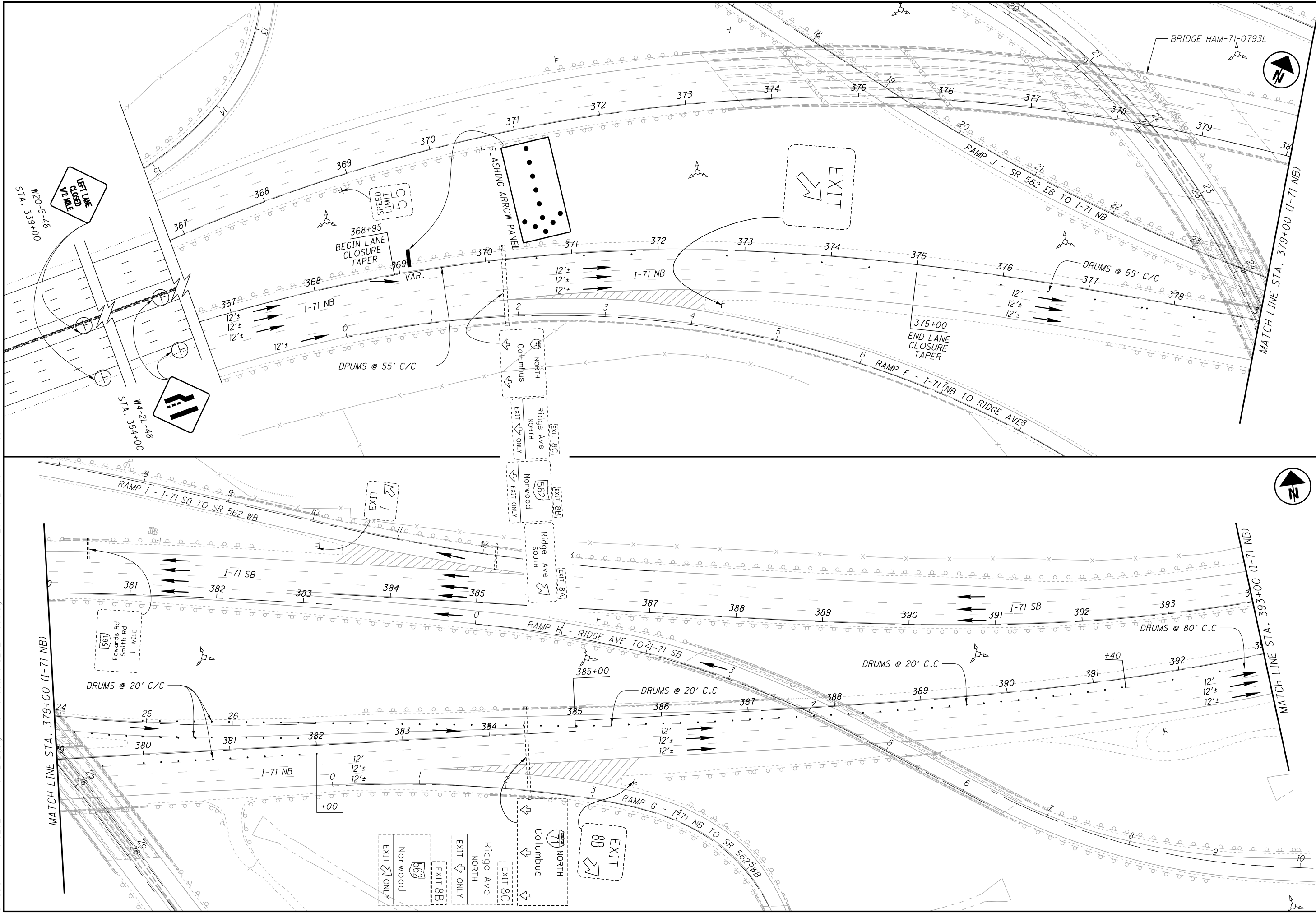
— RAMP J CLOSED, I-71 N

CALCULATED 0 750 1500
 DPF
 CHECKED BJJ
 3/15 HORIZONTAL SCALE IN FEET

**MAINTENANCE OF TRAFFIC - BEGIN PROJECT
DETOUR PLAN - RAMP J**

HAM-IR71-8.42

O:\ODOT\HAM-91826_HAM-71-8.42\Design\MOT_Sheets\91826_MP509.dgn Sheet 9/14/2017 10:27:09 AM don-f

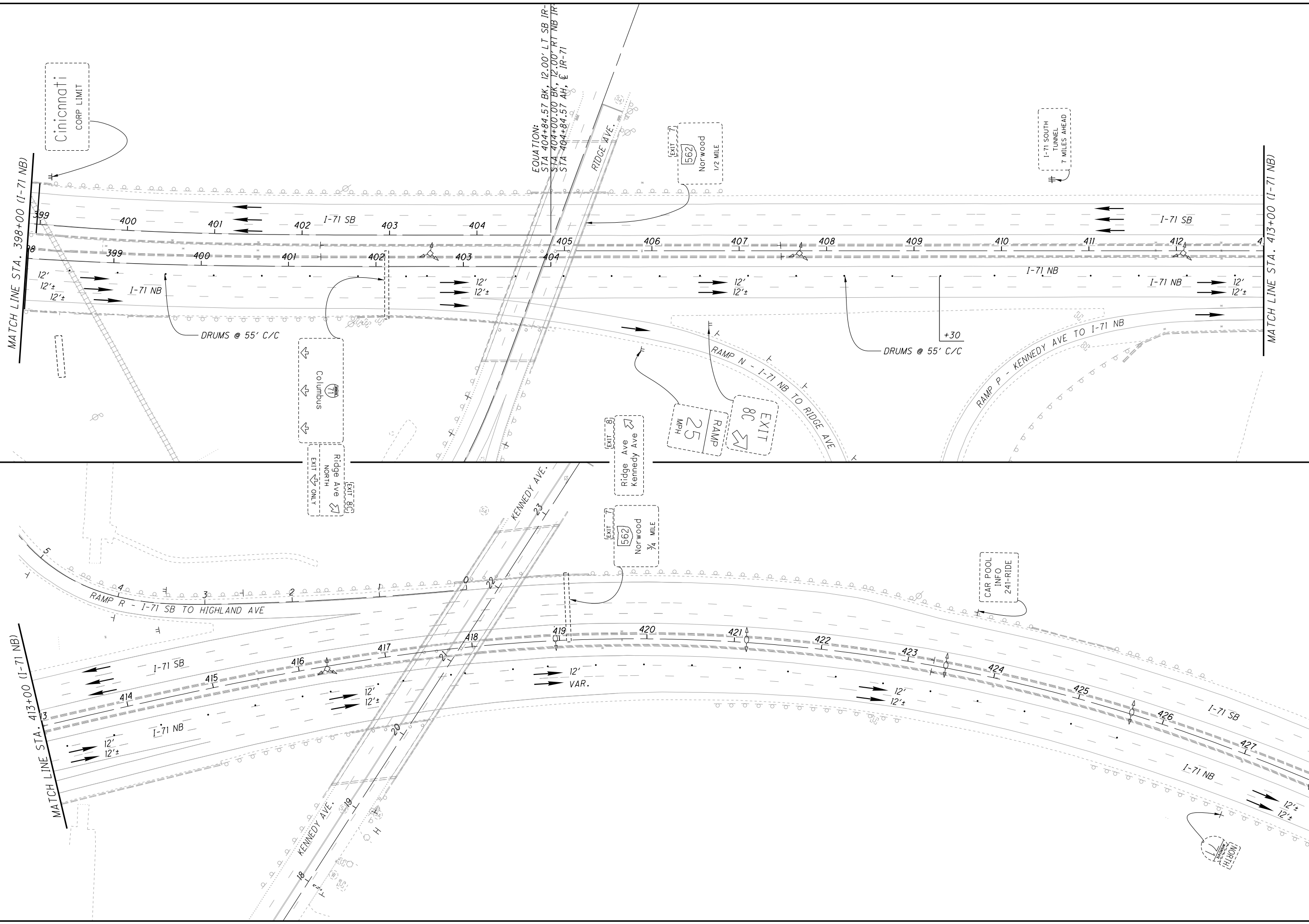


CALCULATED	DPF	CHECKED	BJF

**MAINTENANCE OF TRAFFIC - BEGIN PROJECT
SHORT TERM LEFT LANE CLOSURE**

HAM-IR71-8.42

O:\ODOT\HAM\9826_HAM-71-8.42\Design\MOT\Sheets\9826_MP510.dgn Sheet 9/14/2017 10:27:19 AM dan-f



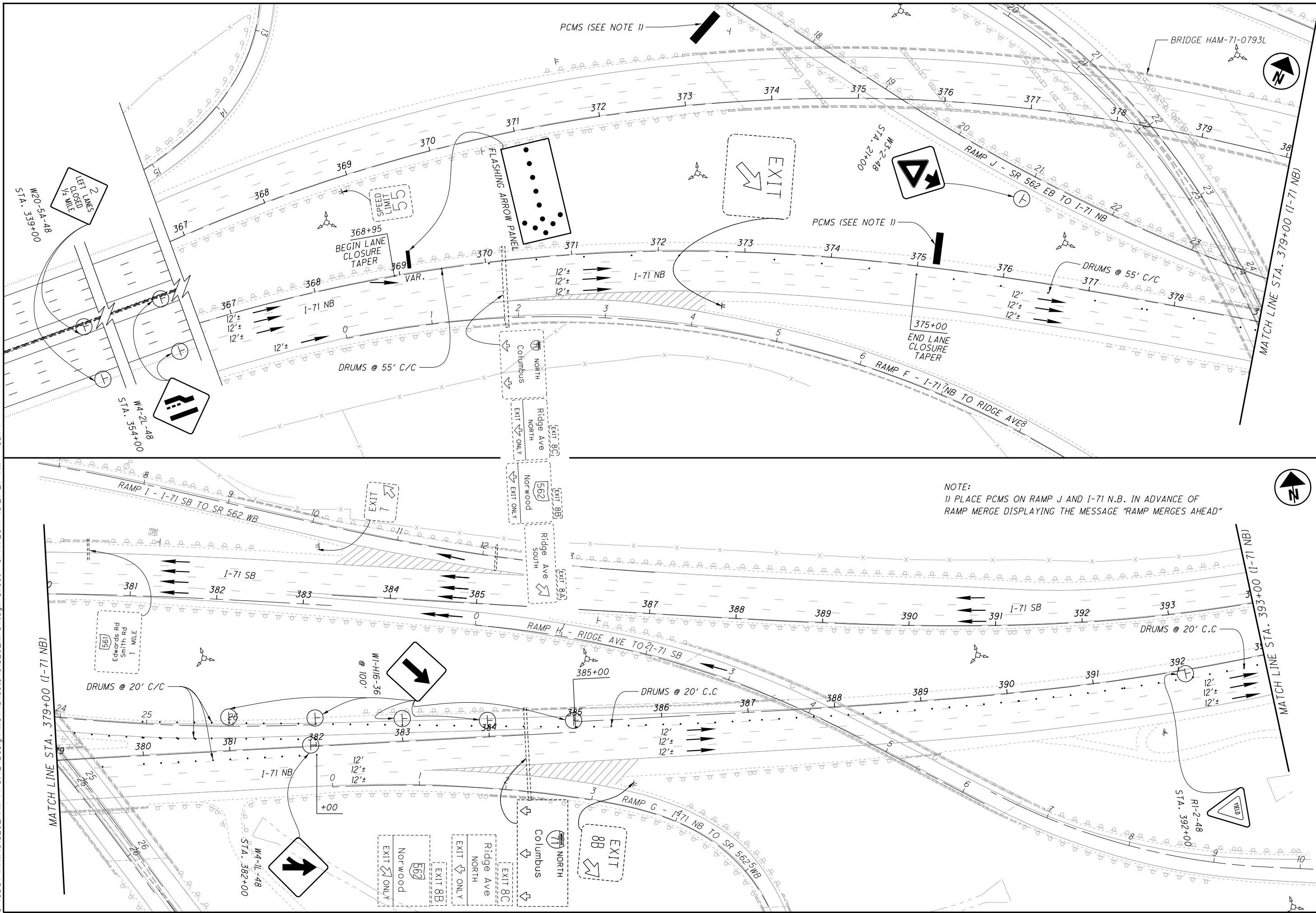
CALCULATED
 DPF
 CHECKED
 BJJ

MAINTENANCE OF TRAFFIC - BEGIN PROJECT
SHORT TERM LEFT LANE CLOSURE

HAM-IR71-8.42

100
 441

O:\ODOT\HAM-91826_HAM-71-8.42\Design\MOT_Sheets\91826_MP511.dgn Sheet 9/14/2017 10:27:27 AM dan-f



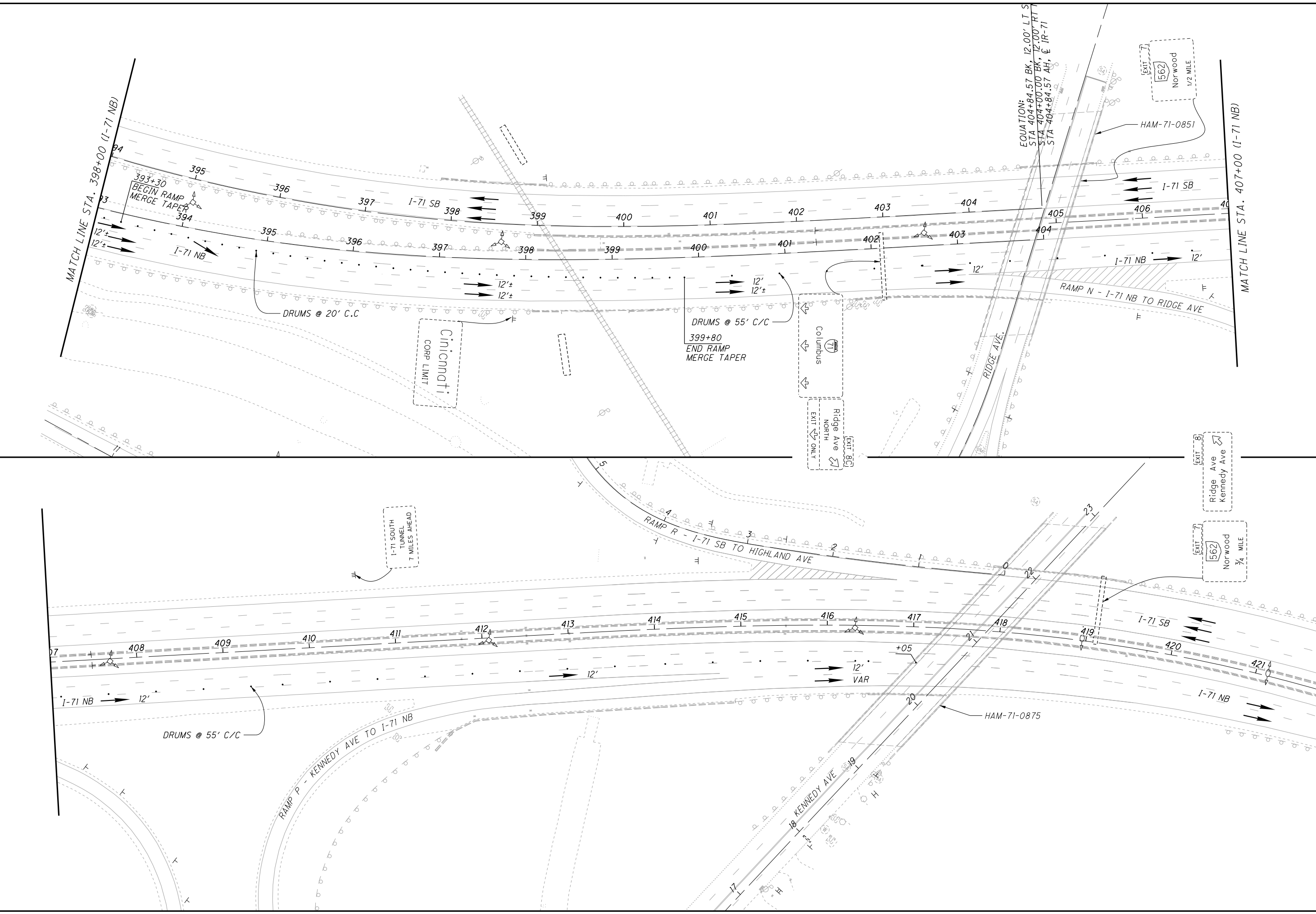
NOTE:
 1) PLACE PCMS ON RAMP J AND I-71 N.B. IN ADVANCE OF RAMP MERGE DISPLAYING THE MESSAGE "RAMP MERGES AHEAD"

CALCULATED	DPF	CHECKED	BUJ

**MAINTENANCE OF TRAFFIC - BEGIN PROJECT
 SHORT TERM DOUBLE LEFT LANE CLOSURE**

HAM-IR71-8.42

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_MP512.dgn Sheet 9/14/2017 10:27:29 AM don-f



CALCULATED
DPF
CHECKED
BUF

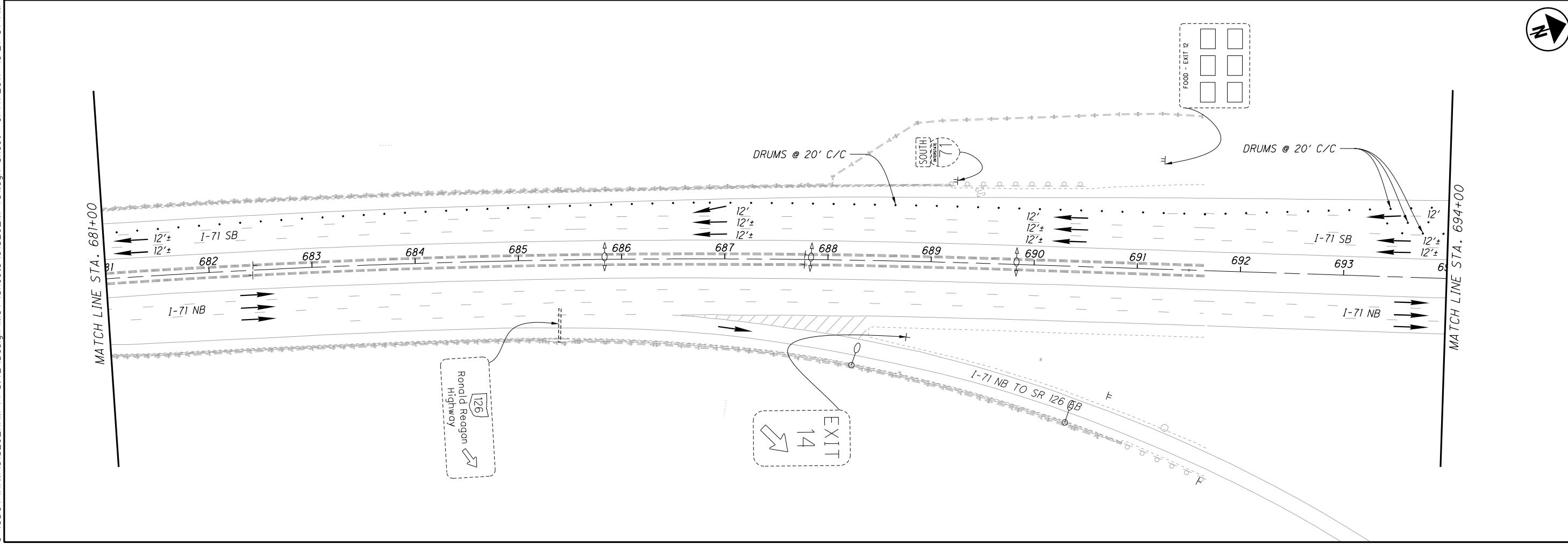
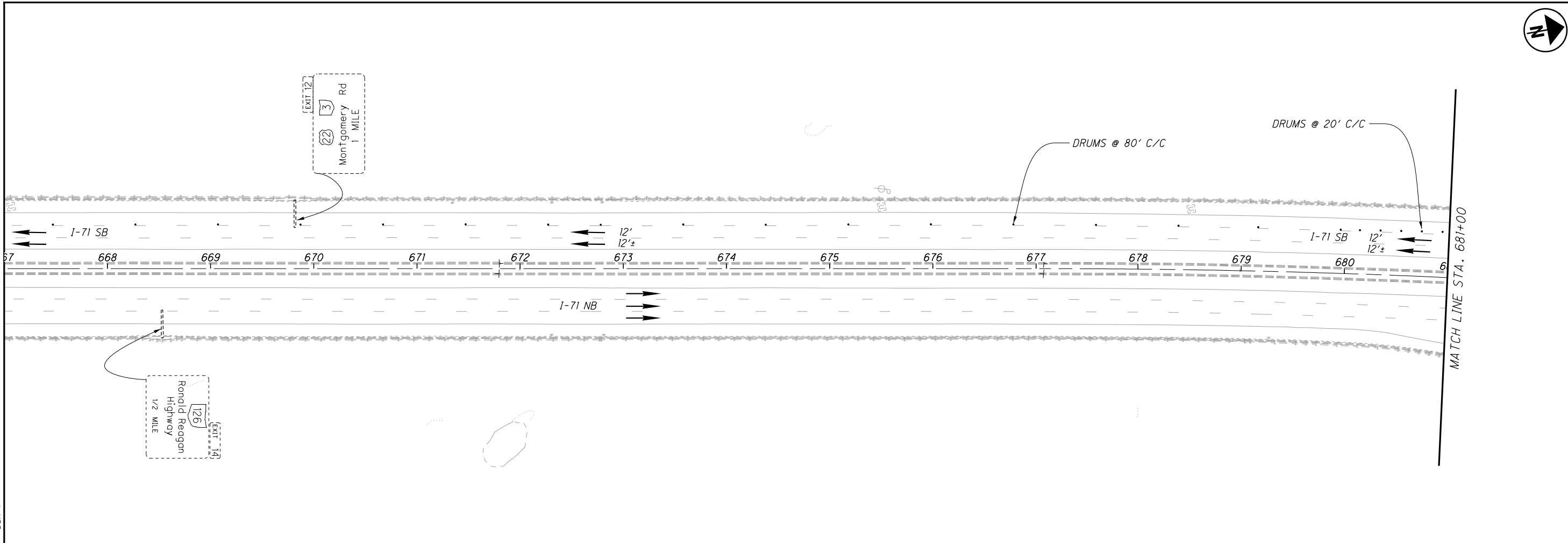
0 50 100
HORIZONTAL
SCALE IN FEET

**MAINTENANCE OF TRAFFIC - BEGIN PROJECT
SHORT TERM DOUBLE LEFT LANE CLOSURE**

HAM-IR71-8.42

102
441

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_MP451.dgn Sheet 9/14/2017 10:27:31 AM dan-f

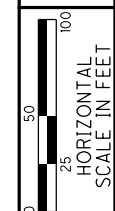


CALCULATED	DPF	CHECKED	BUJ

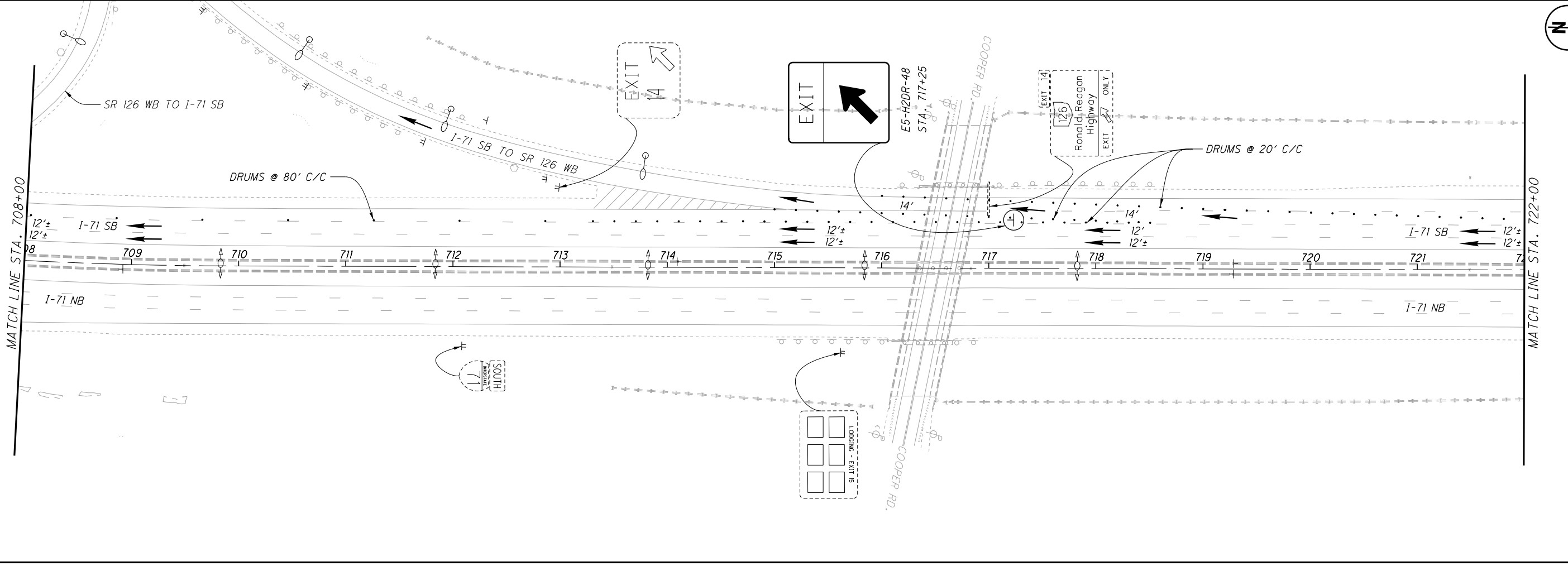
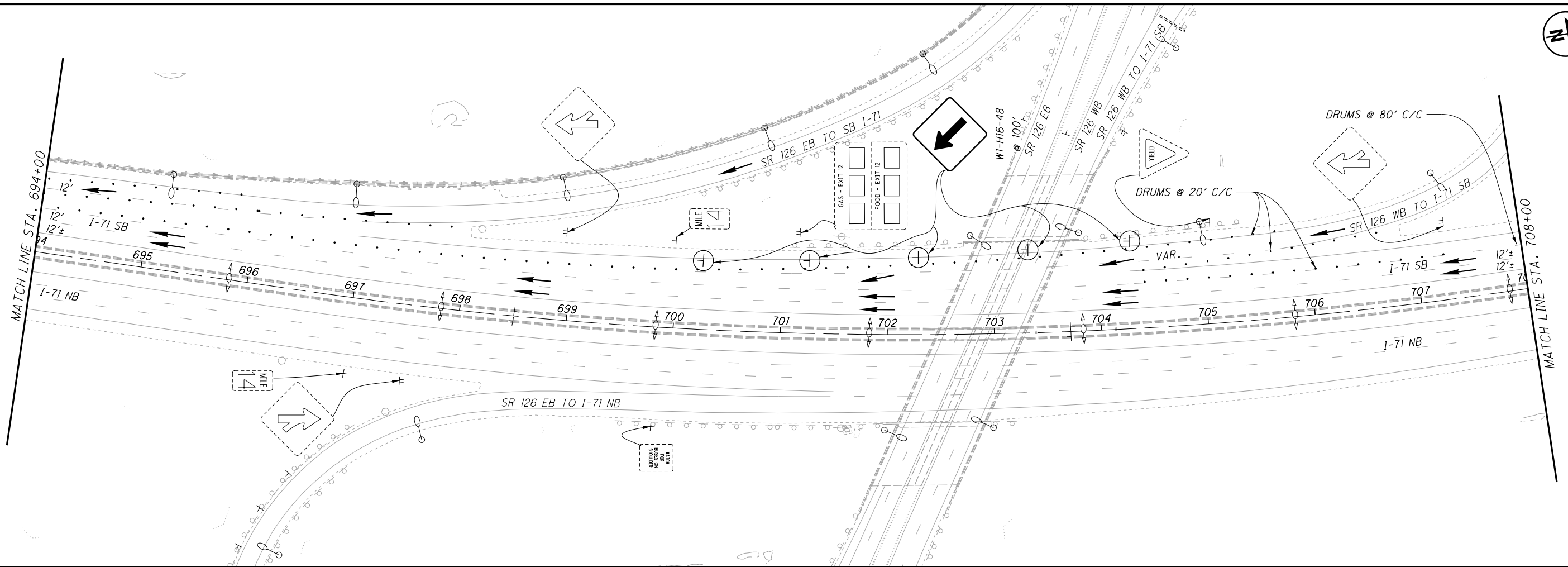
MAINTENANCE OF TRAFFIC - END PROJECT
SHORT TERM RIGHT LANE CLOSURE

HAM-IR71-8.42

103
441



O:\ODOT\HAM-91826_HAM-71-8.42\Design\MOT_Sheets\91826_MP452.dgn_Sheet 9/14/2017 10:27:34 AM don-f

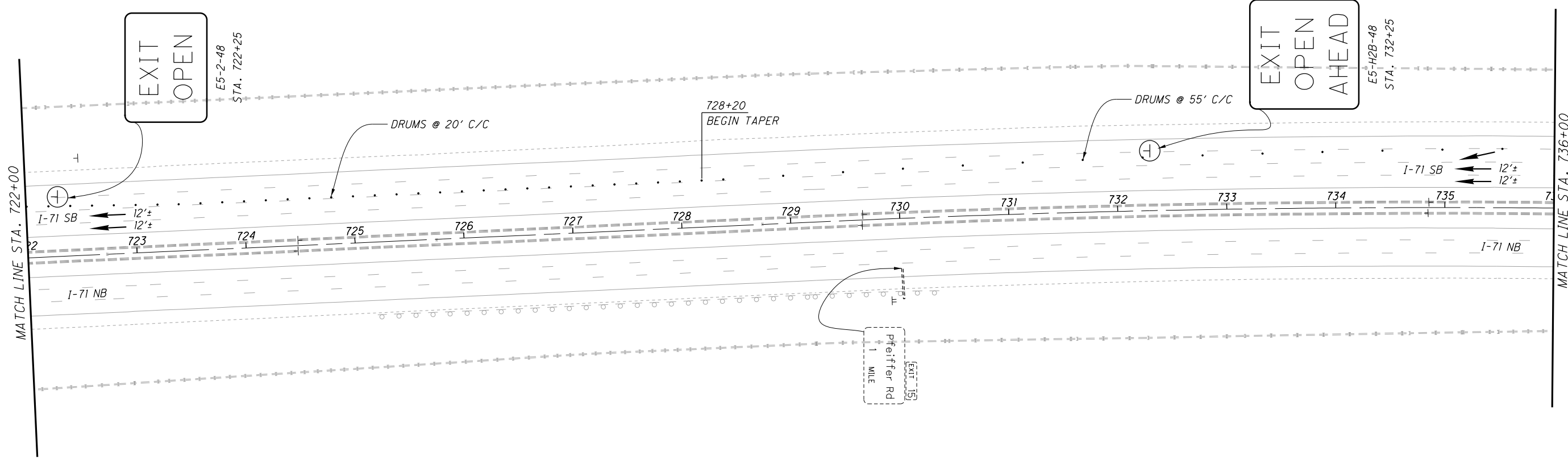
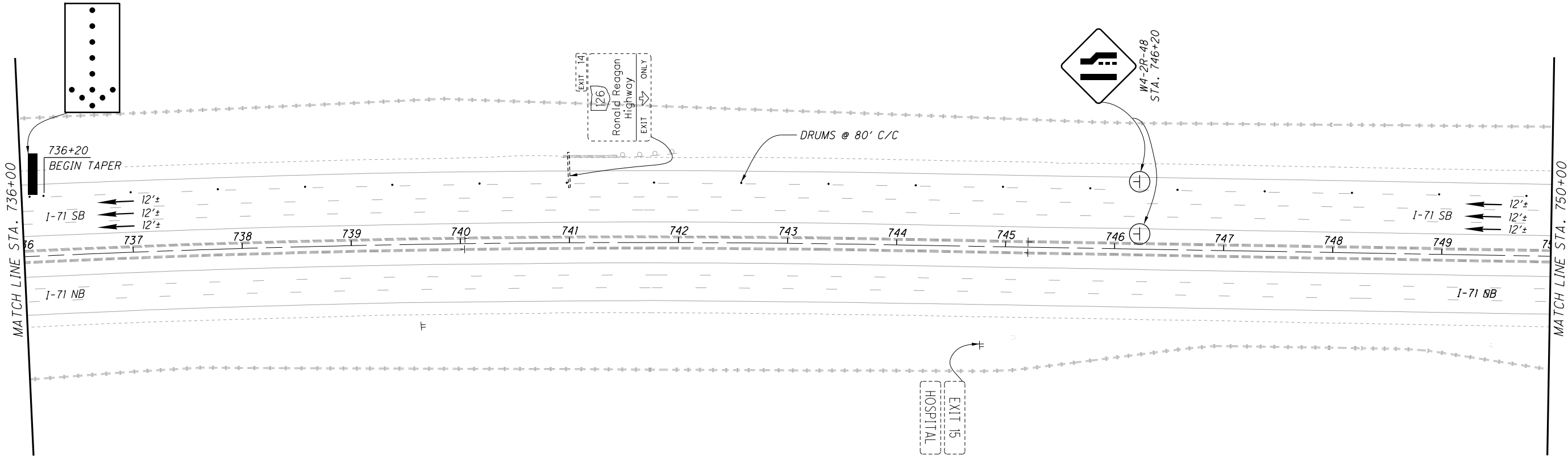


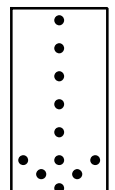
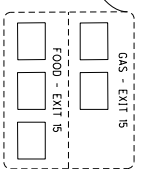
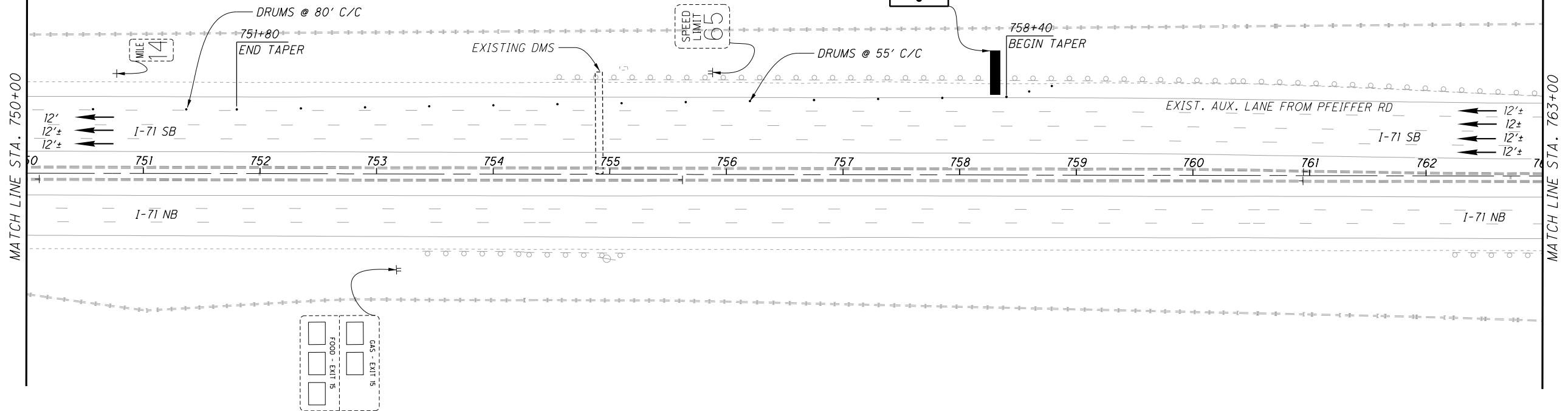
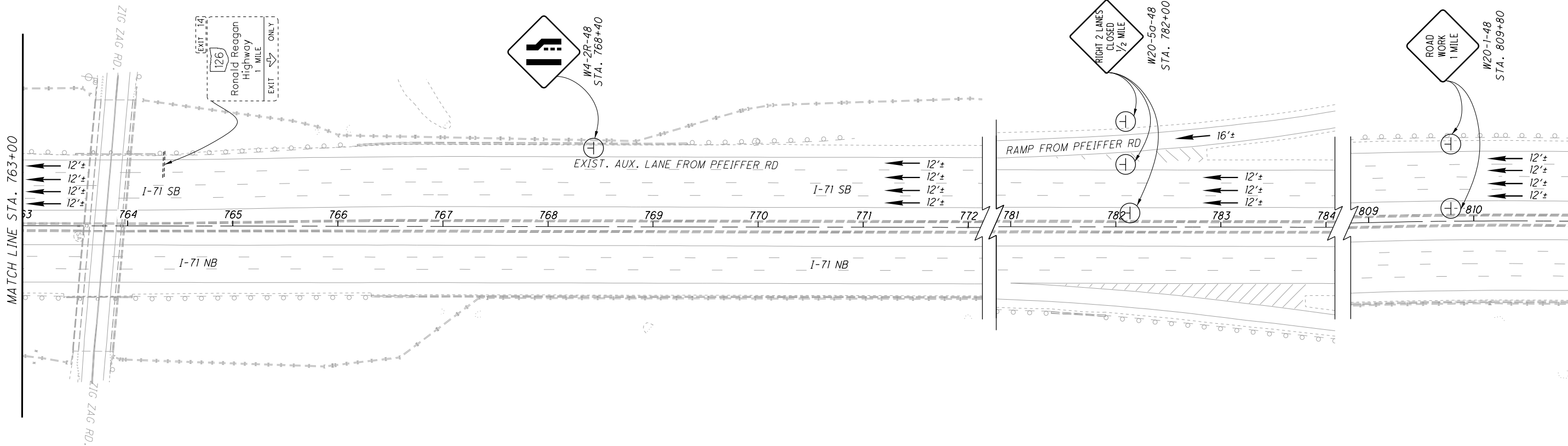
CALCULATED	DPF	CHECKED
0		BJF

MAINTENANCE OF TRAFFIC - END PROJECT
SHORT TERM RIGHT LANE CLOSURE

HAM-IR71-8.42

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_MP453.dgn_Sheet 9/14/2017 10:27:36 AM dan-f





CALCULATED
 DPF
 CHECKED
 BJF

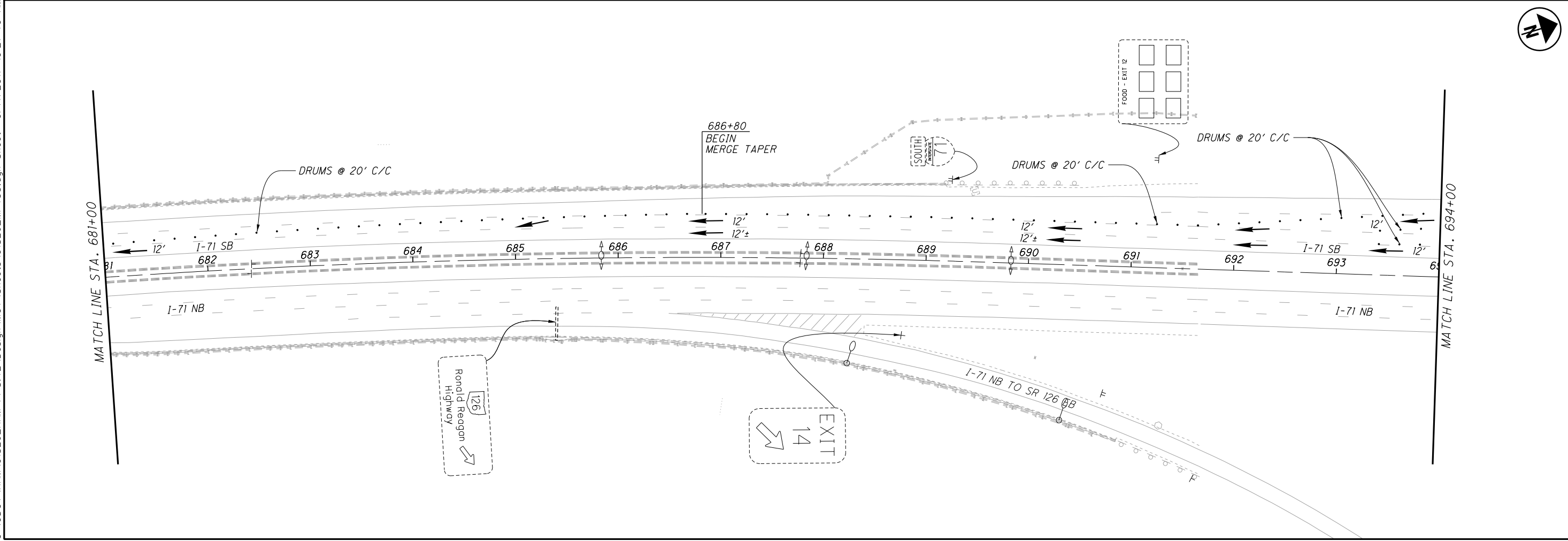
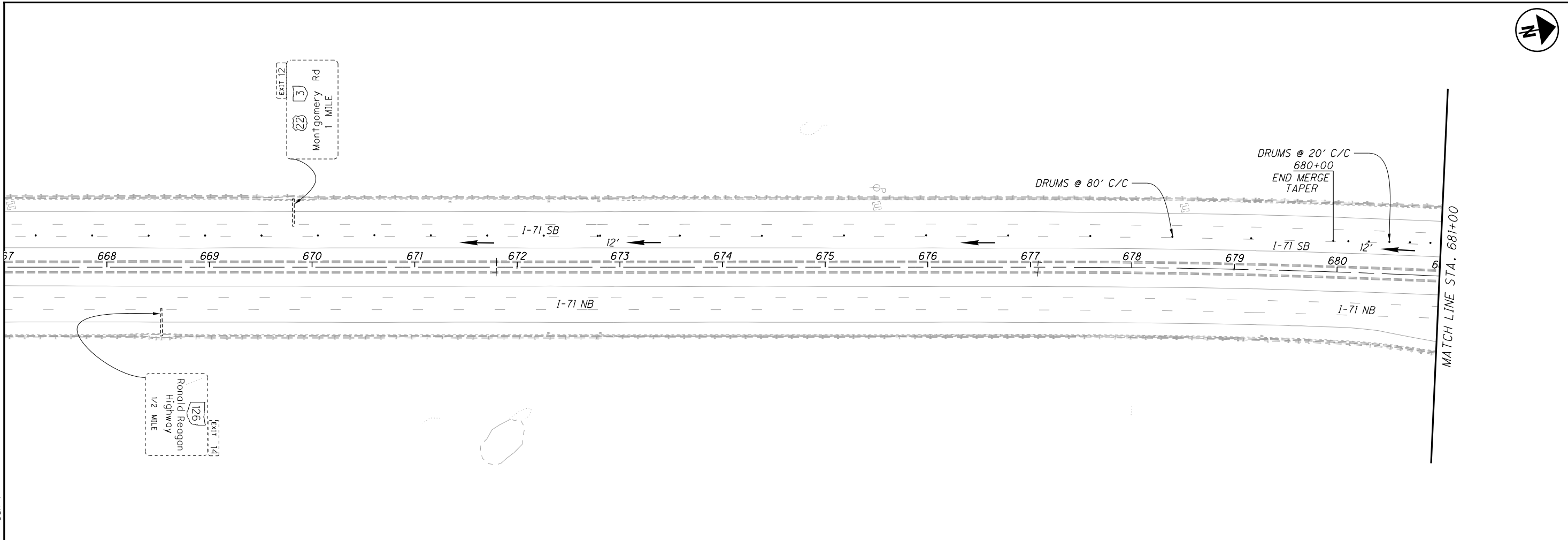
0 50 100
 HORIZONTAL
 SCALE IN FEET

N

MAINTENANCE OF TRAFFIC - END PROJECT
SHORT TERM RIGHT LANE CLOSURE

HAM-IR71-8.42

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_MP455.dgn_Sheet 9/14/2017 10:27:40 AM don-f

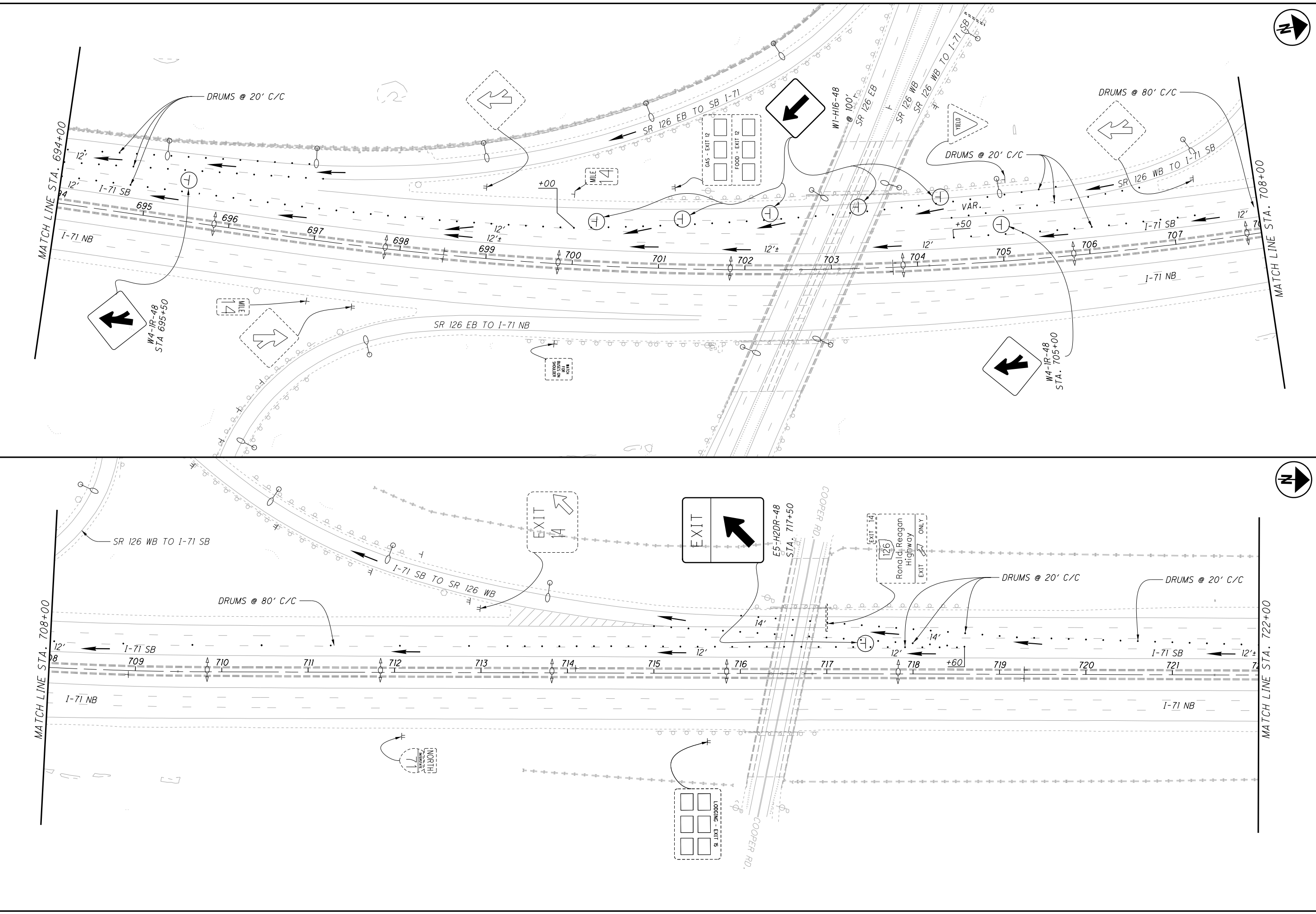


CALCULATED	DPF	CHECKED
		BJF

**MAINTENANCE OF TRAFFIC - END PROJECT
SHORT TERM DOUBLE RIGHT LANE CLOSURE**

HAM-IR71-8.42

O:\ODOT\HAM-91826_HAM-71-8.42\Design\MOT_Sheets\91826_MP456.dgn_Sheet 9/14/2017 10:27:42 AM don-f



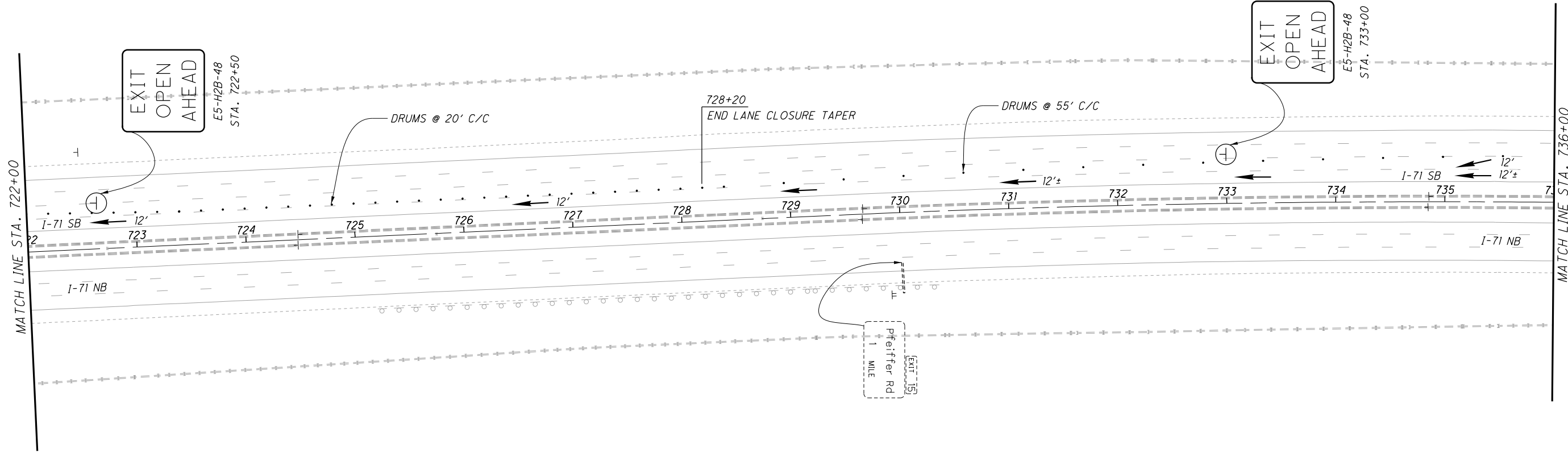
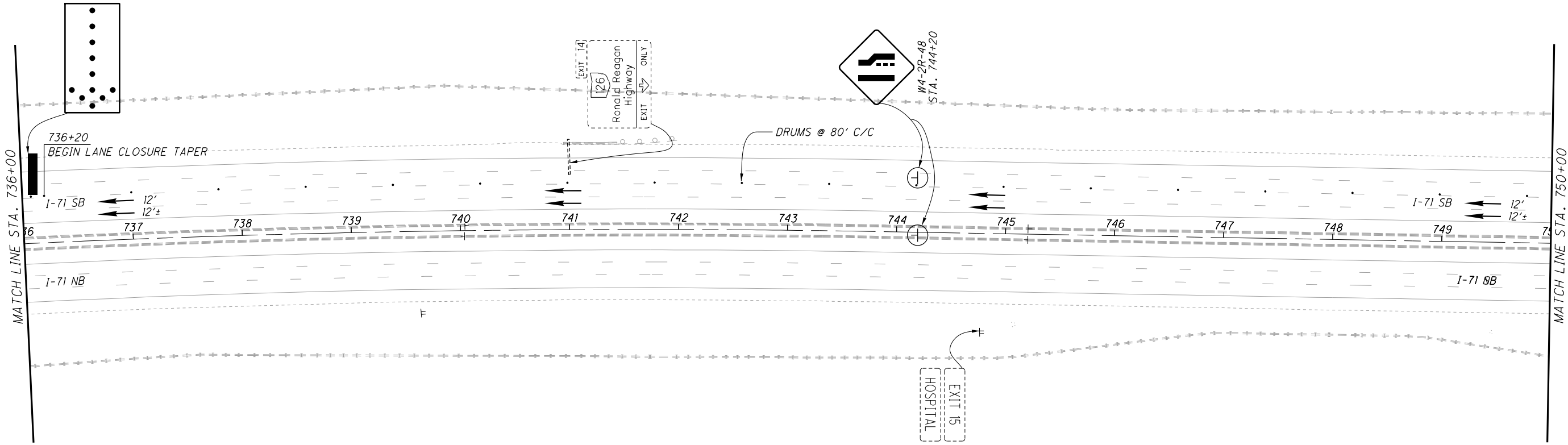
CALCULATED	DPF	CHECKED	BJF

MAINTENANCE OF TRAFFIC - END PROJECT
SHORT TERM DOUBLE RIGHT LANE CLOSURE

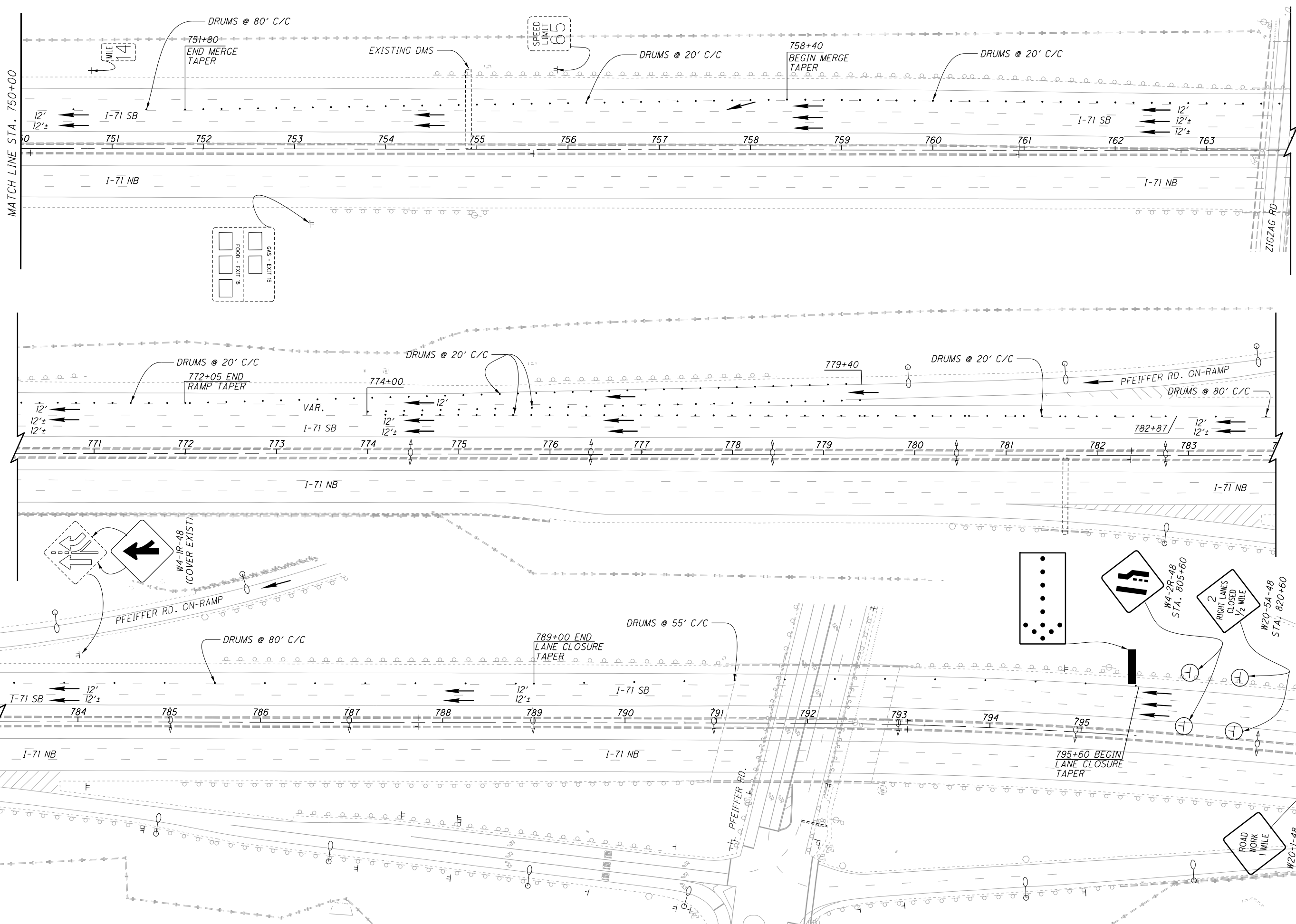
HAM-IR71-8.42



O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_MP457.dgn_Sheet 9/14/2017 10:27:44 AM don-f



O:\ODOT\HAM-91826_HAM-71-8.42_Design\MOT_Sheets_91826_MP458.dgn_Sheet 9/14/2017 10:27:47 AM don-f

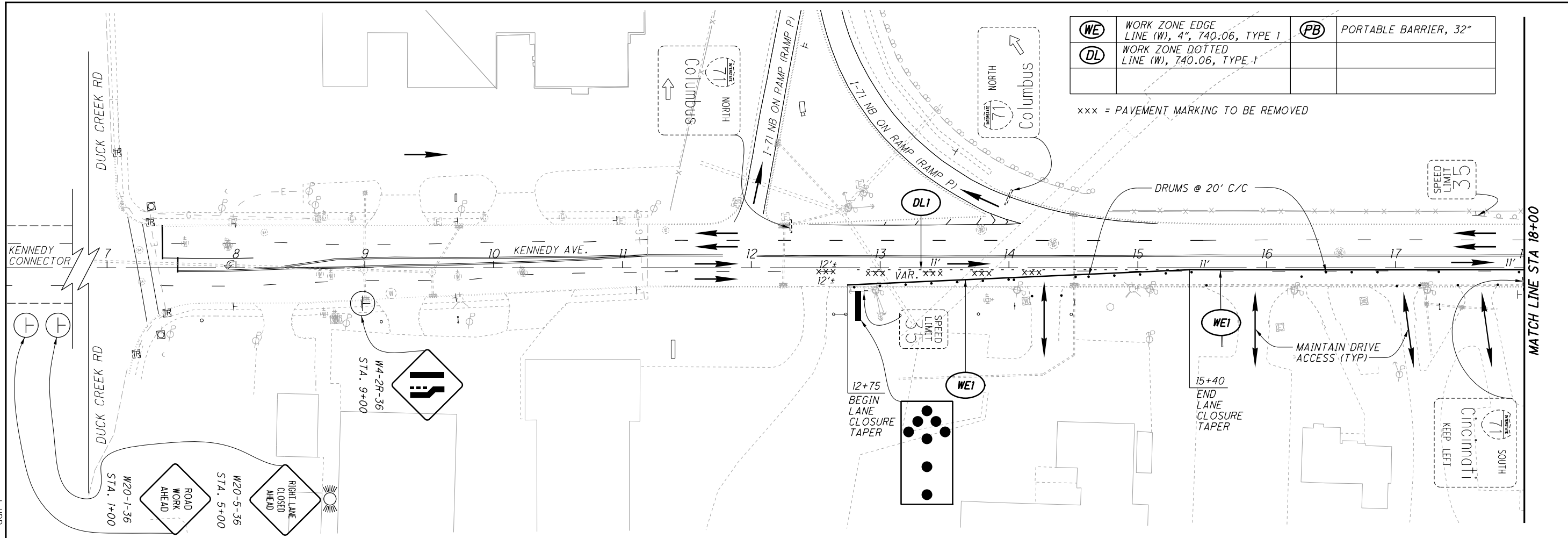


CALCULATED: []
 DPF: []
 CHECKED: []
 BUJ: []

MAINTENANCE OF TRAFFIC - END PROJECT
SHORT TERM DOUBLE RIGHT LANE CLOSURE

HAM-IR71-8.42

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_MP460.dgn_Sheet_9/14/2017 10:28:06 AM don-f



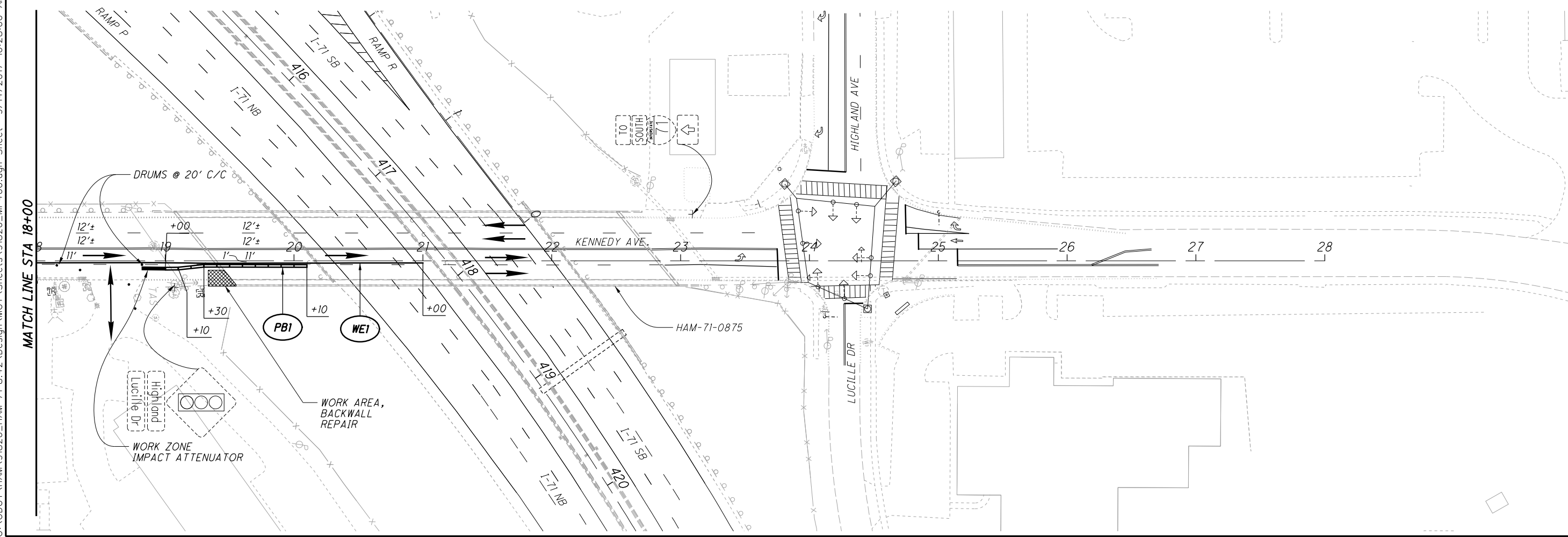
(WE)	WORK ZONE EDGE LINE (W), 4", 740.06, TYPE 1	(PB)	PORTABLE BARRIER, 32"
(DL)	WORK ZONE DOTTED LINE (W), 740.06, TYPE 1		

xxx = PAVEMENT MARKING TO BE REMOVED

CALCULATED
DPF
CHECKED
BJF

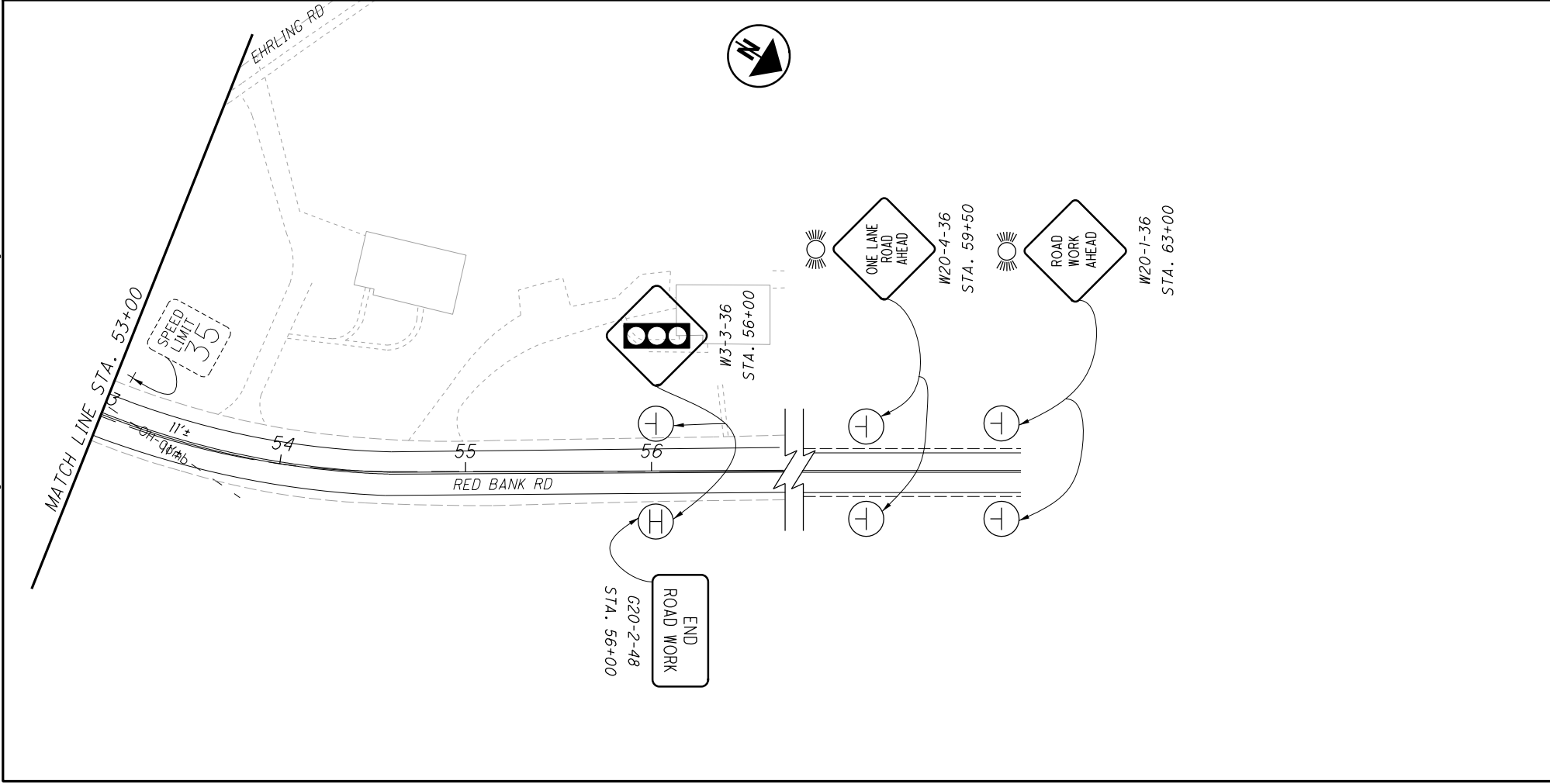
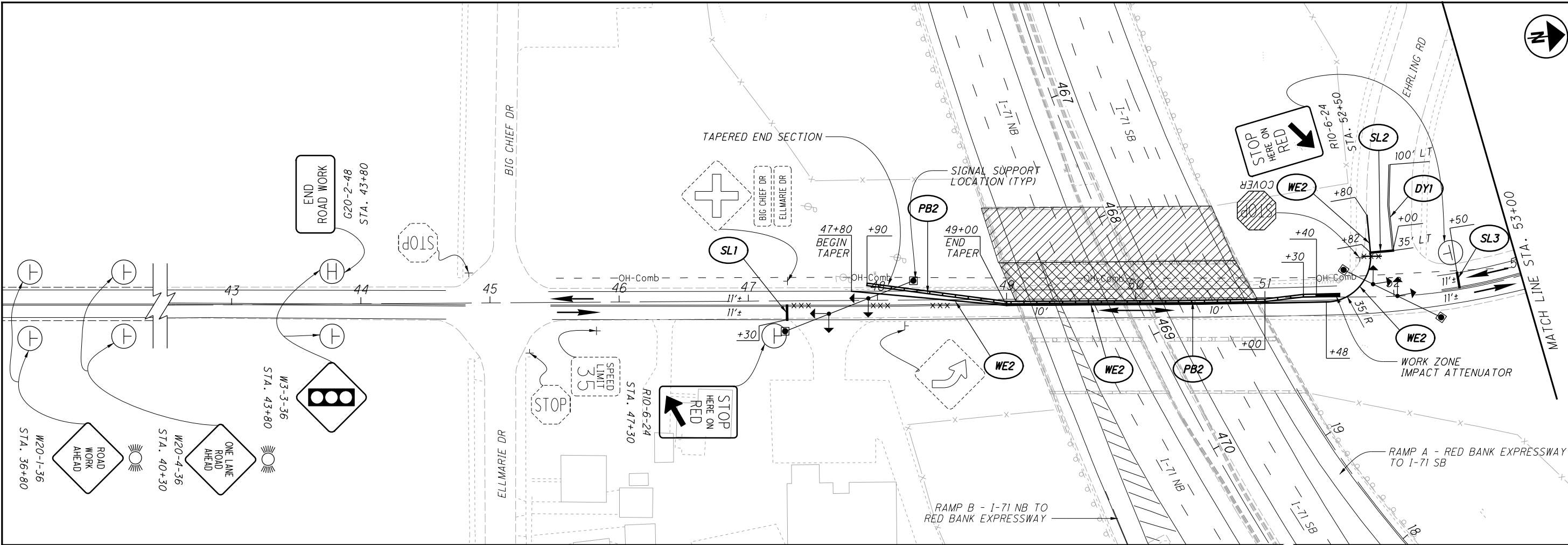
0 20 40 80
HORIZONTAL SCALE IN FEET

N



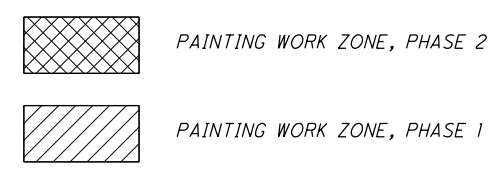
**MAINTENANCE OF TRAFFIC
KENNEDY AVE**

HAM-IR71-8.42



WE	WORK ZONE EDGE LINE (W), 4", 740.06, TYPE 1	PB	PORTABLE BARRIER, 32"
DY	WORK ZONE DOUBLE SOLID LINE (Y), 740.06, TYPE 1	SL	WORK ZONE STOP LINE (W), 740.06, TYPE 1

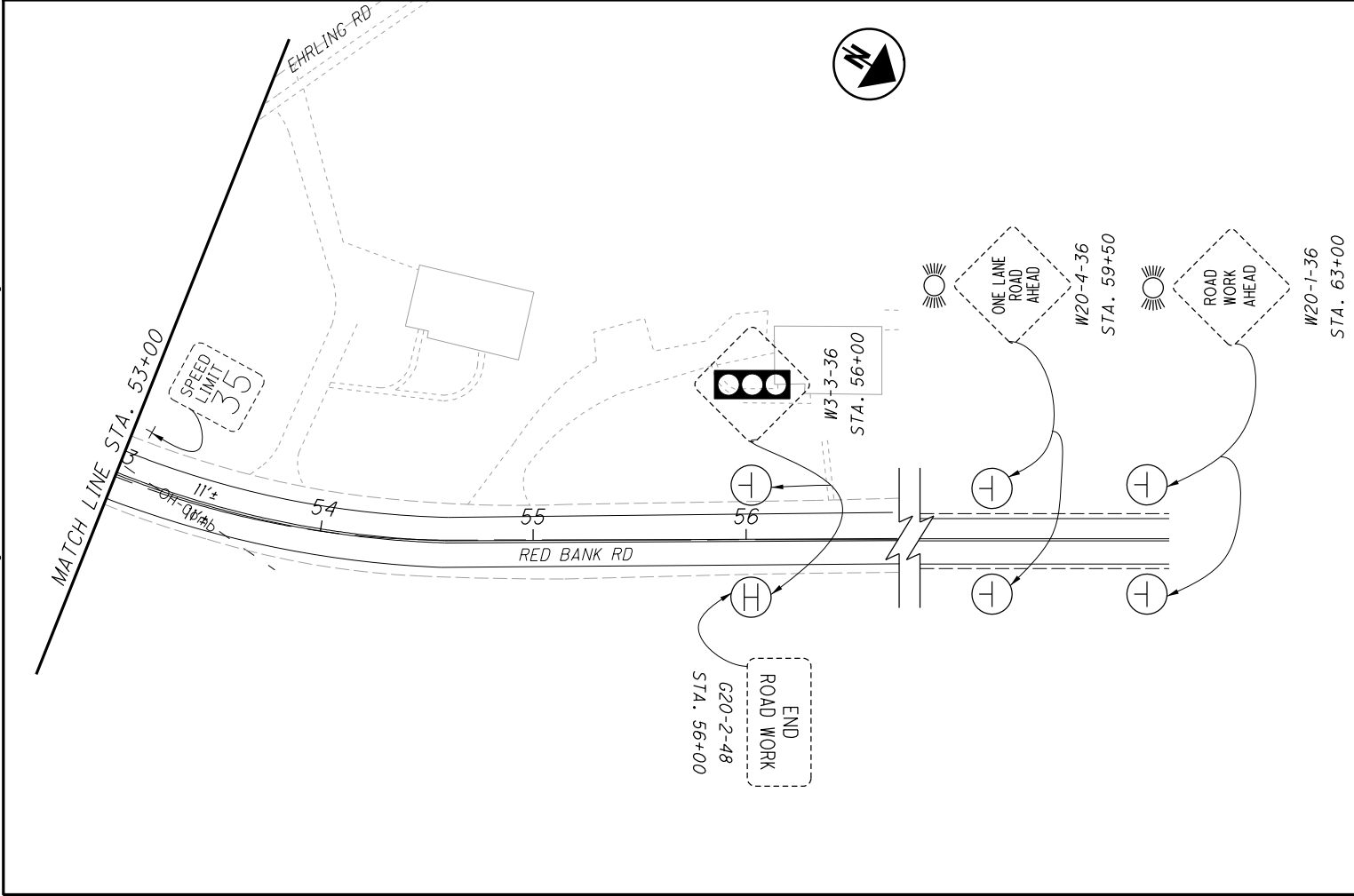
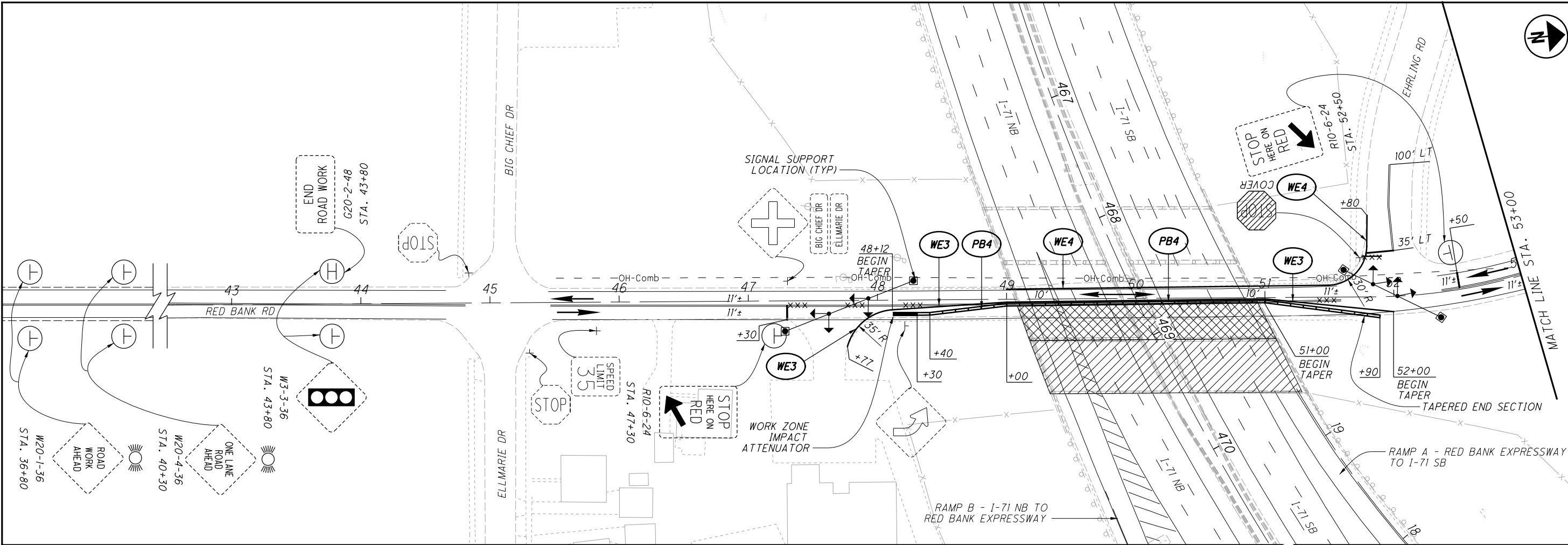
xxx = PAVEMENT MARKING TO BE REMOVED



**MAINTENANCE OF TRAFFIC
RED BANK ROAD - PHASE 2**

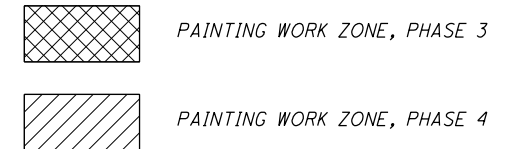
HAM-IR71-8.42

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_MP472.dgn_Sheet 9/14/2017 10:28:30 AM don-f



WE	WORK ZONE EDGE LINE (W), 4", 740.06, TYPE 1	PB	PORTABLE BARRIER, 32"
DY	WORK ZONE DOUBLE SOLID LINE (Y), 740.06, TYPE 1	SL	WORK ZONE STOP LINE (W), 740.06, TYPE 1

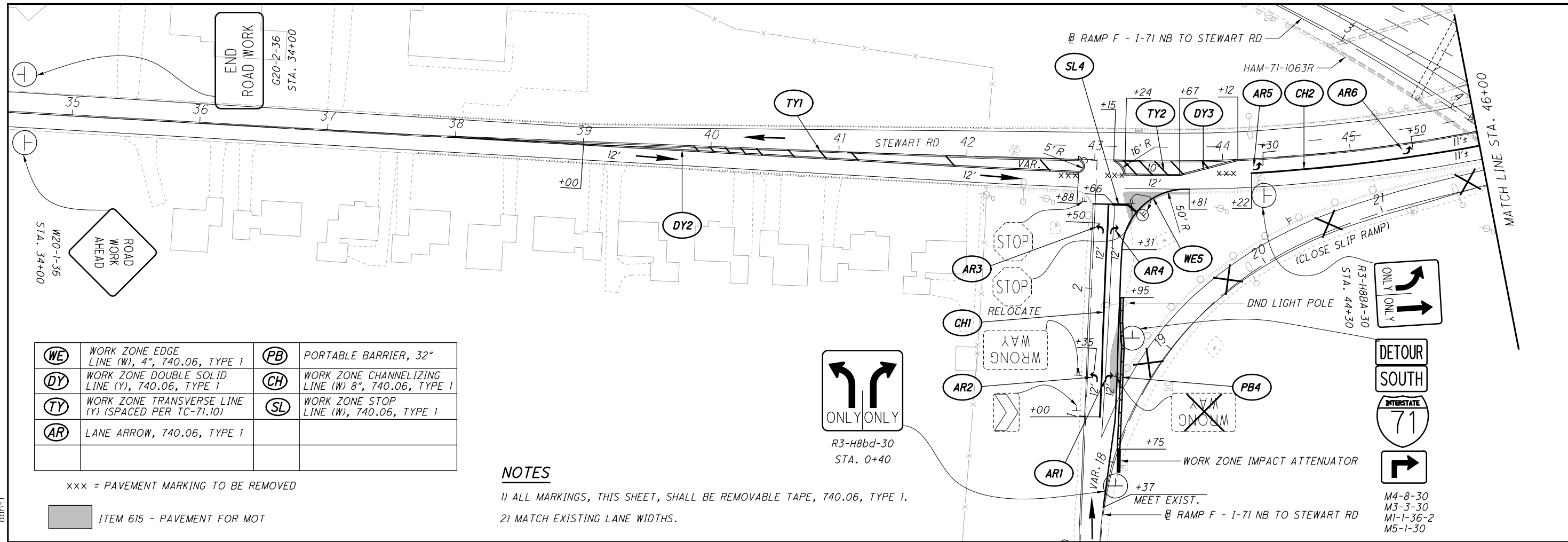
xxx = PAVEMENT MARKING TO BE REMOVED



**MAINTENANCE OF TRAFFIC
RED BANK ROAD - PHASE 3**

HAM-IR71-8.42

O:\ODOT\HAM_91826_HAM-71-8.42_Design\MOT_Sheets_91826_MP480.dgn_Sheet 9/14/2017 10:28:46 AM dan-f



WE	WORK ZONE EDGE LINE (W), 4", 740.06, TYPE 1	PB	PORTABLE BARRIER, 32"
DY	WORK ZONE DOUBLE SOLID LINE (Y), 740.06, TYPE 1	CH	WORK ZONE CHANNELIZING LINE (W) 8", 740.06, TYPE 1
TY	WORK ZONE TRANSVERSE LINE (Y) (SPACED PER TC-71.10)	SL	WORK ZONE STOP LINE (W), 740.06, TYPE 1
AR	LANE ARROW, 740.06, TYPE 1		

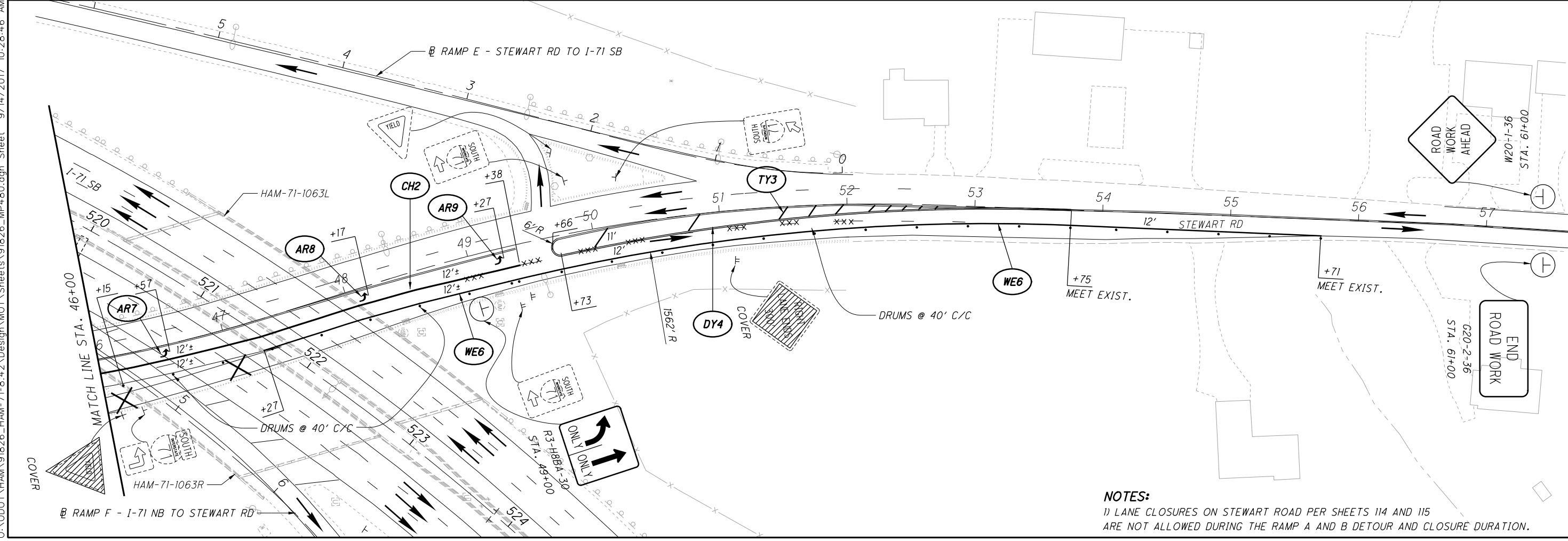
xxx = PAVEMENT MARKING TO BE REMOVED

ITEM 615 - PAVEMENT FOR MOT

NOTES

1) ALL MARKINGS, THIS SHEET, SHALL BE REMOVABLE TAPE, 740.06, TYPE 1.

2) MATCH EXISTING LANE WIDTHS.



NOTES:

1) LANE CLOSURES ON STEWART ROAD PER SHEETS 114 AND 115 ARE NOT ALLOWED DURING THE RAMP A AND B DETOUR AND CLOSURE DURATION.

20
40
60
80
HORIZONTAL SCALE IN FEET

CALCULATED	DPF	CHECKED	BUF
------------	-----	---------	-----

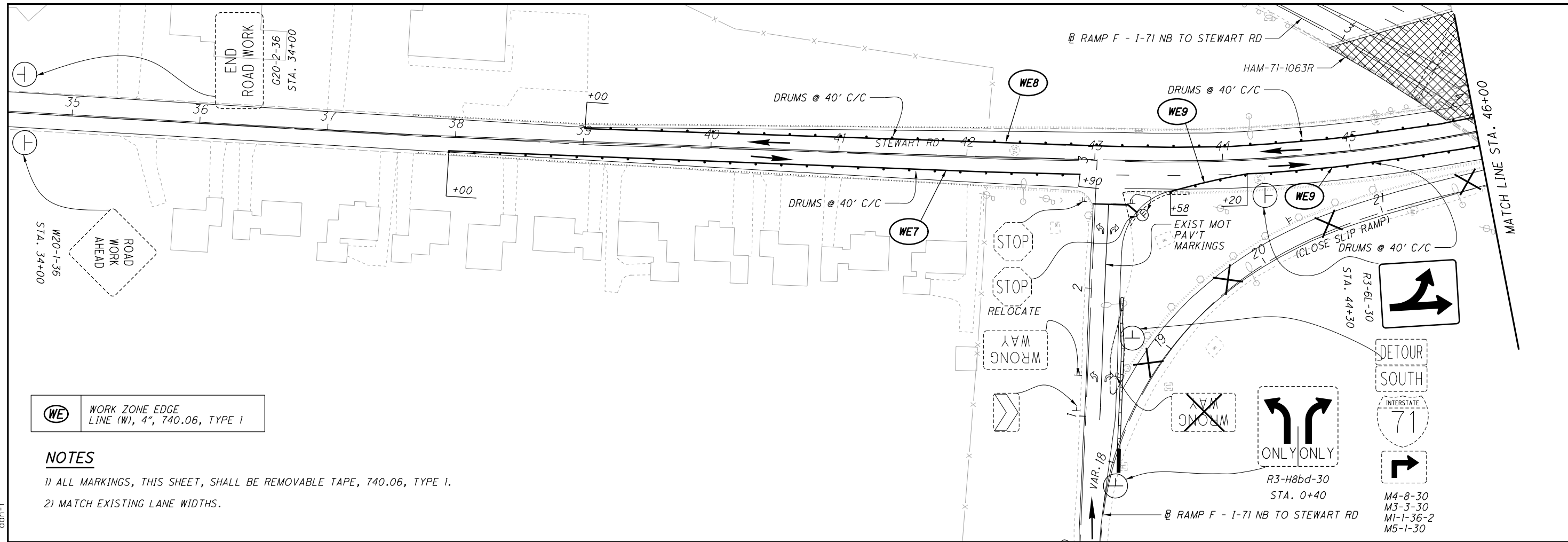
MAINTENANCE OF TRAFFIC - STEWART ROAD

MODIFICATION - RAMP A & RAMP B DETOURS

HAM-IR71-8.42

114
441

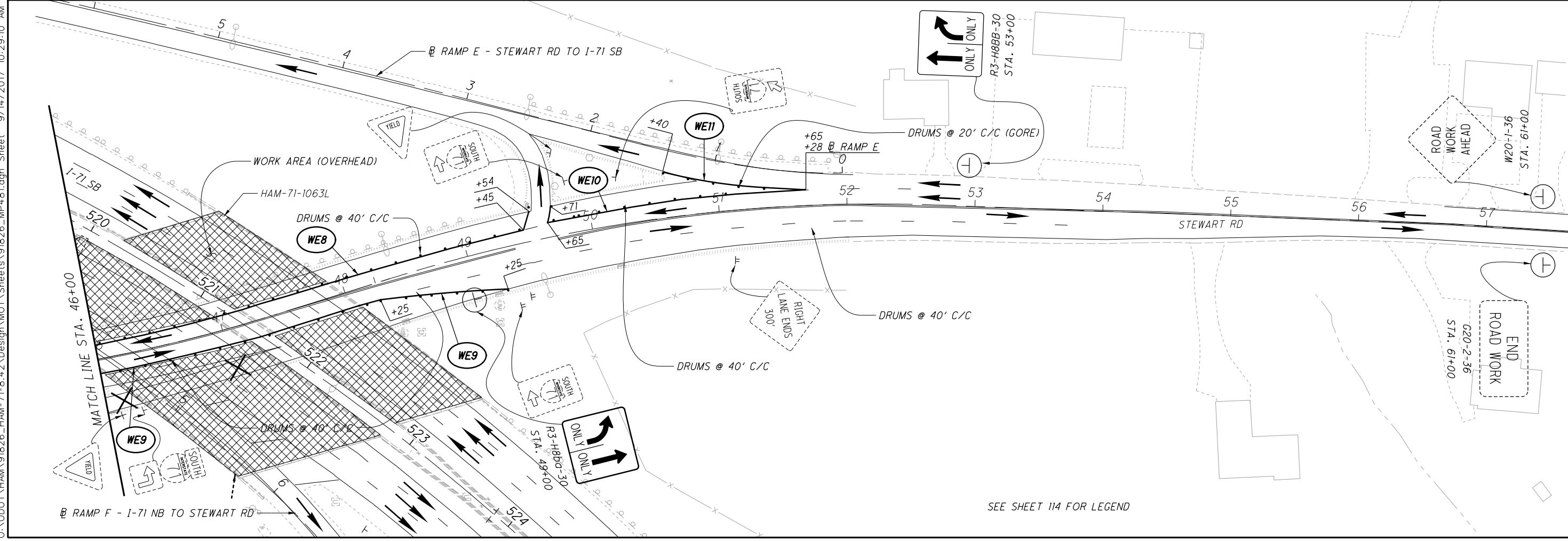
O:\ODOT\HAM_91826_HAM-71-8.42\Design\MOT_Sheets_91826_MP481.dgn Sheet 9/14/2017 10:29:10 AM dan-f



WE WORK ZONE EDGE LINE (W), 4", 740.06, TYPE 1

NOTES

- 1) ALL MARKINGS, THIS SHEET, SHALL BE REMOVABLE TAPE, 740.06, TYPE 1.
- 2) MATCH EXISTING LANE WIDTHS.



SEE SHEET 114 FOR LEGEND

CALCULATED
DPF
CHECKED
BUF

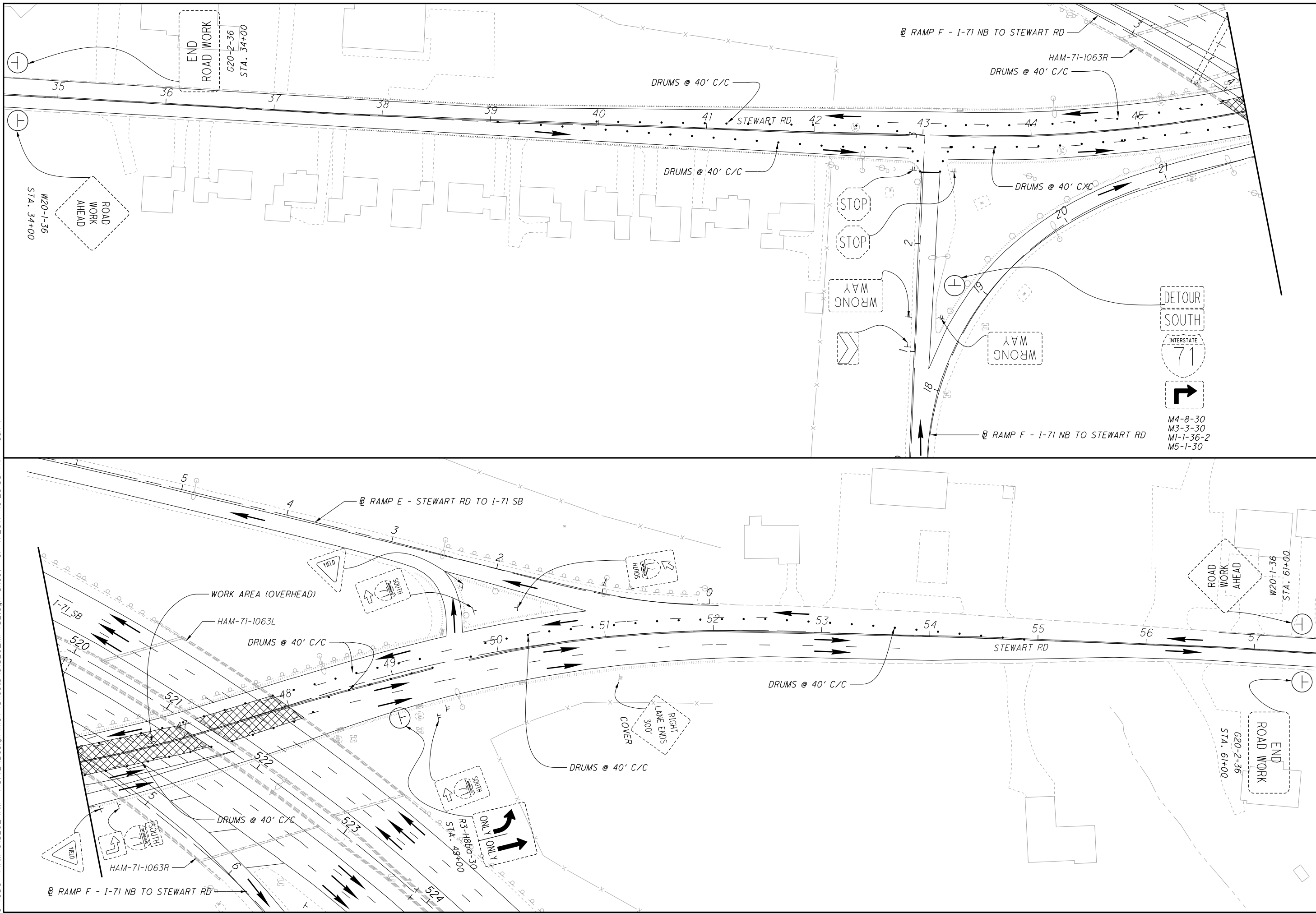
0 20 40 80
HORIZONTAL SCALE IN FEET

N

**MAINTENANCE OF TRAFFIC
STEWART ROAD - OUTSIDE LANES CLOSED**

HAM-IR71-8.42

O:\ODOT\HAM\91826_HAM-71-8.42_Design\MOT_Sheets\91826_MP482.dgn_Sheet 9/14/2017 10:29:35 AM dan-f



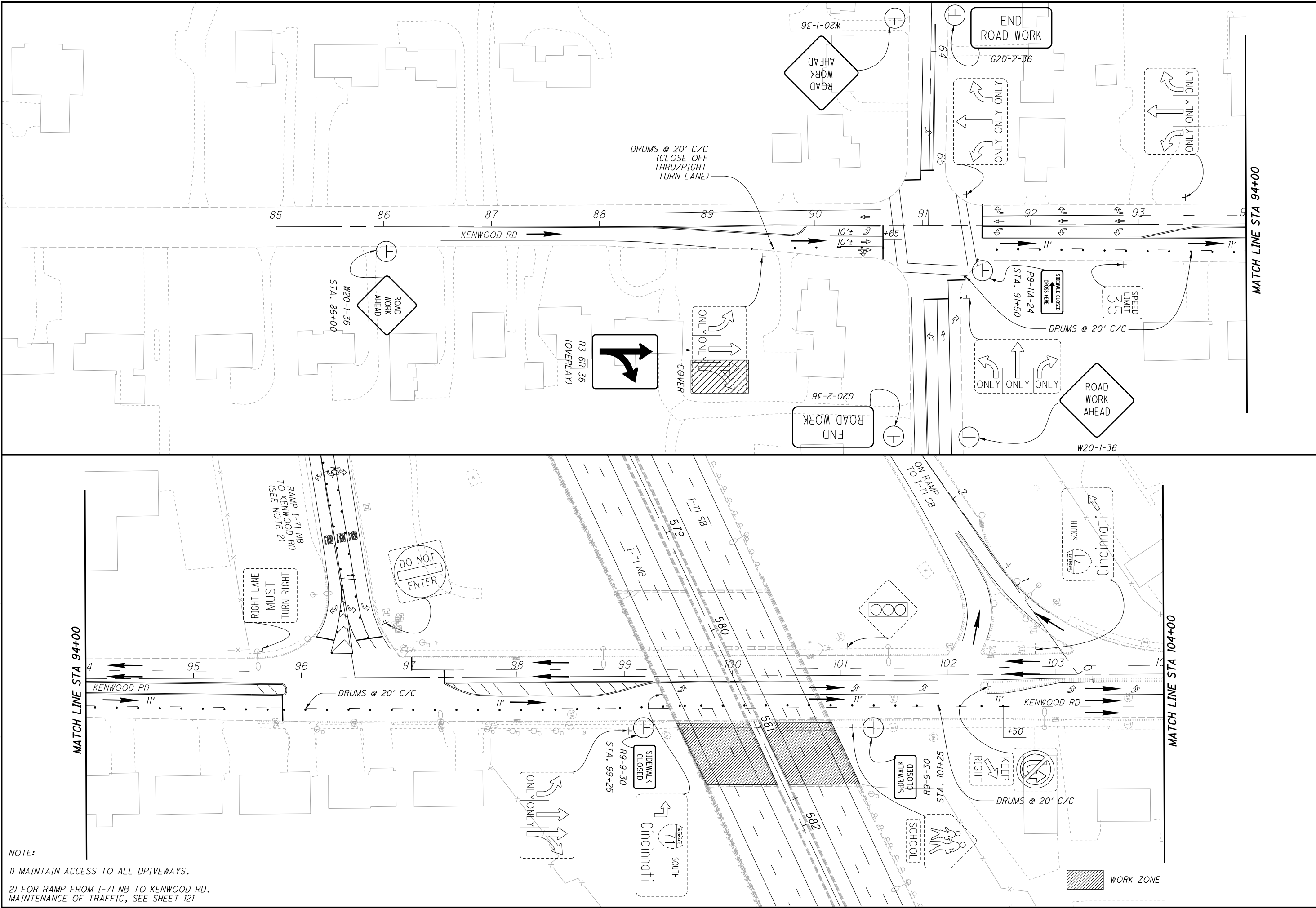
CALCULATED
DPF
CHECKED
BUF

0 20 40 80
HORIZONTAL
SCALE IN FEET

**MAINTENANCE OF TRAFFIC
STEWART ROAD - INSIDE LANES CLOSED**

HAM-IR71-8.42

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_MP491.dgn Sheet 9/14/2017 10:29:58 AM don-f



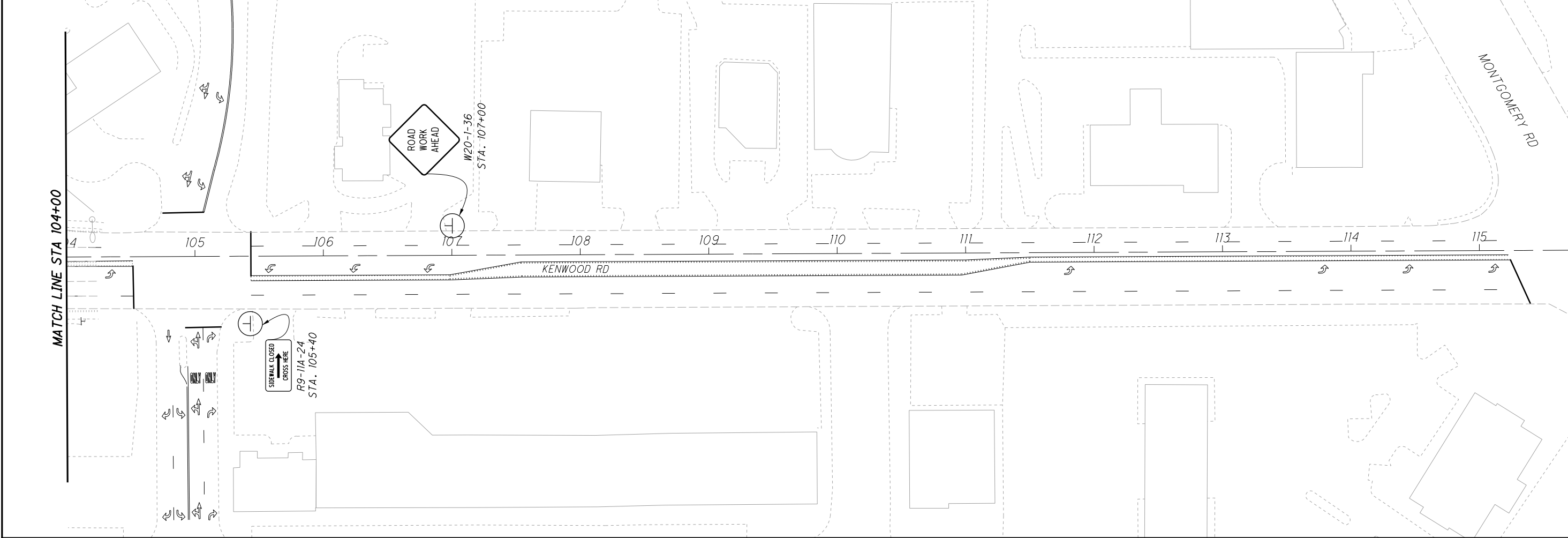
NOTE:
 1) MAINTAIN ACCESS TO ALL DRIVEWAYS.
 2) FOR RAMP FROM I-71 NB TO KENWOOD RD. MAINTENANCE OF TRAFFIC, SEE SHEET 121

CALCULATED
 DPF
 CHECKED
 BJF

**MAINTENANCE OF TRAFFIC
 KENWOOD ROAD - PHASE 1**

HAM-IR71-8.42

117
 441



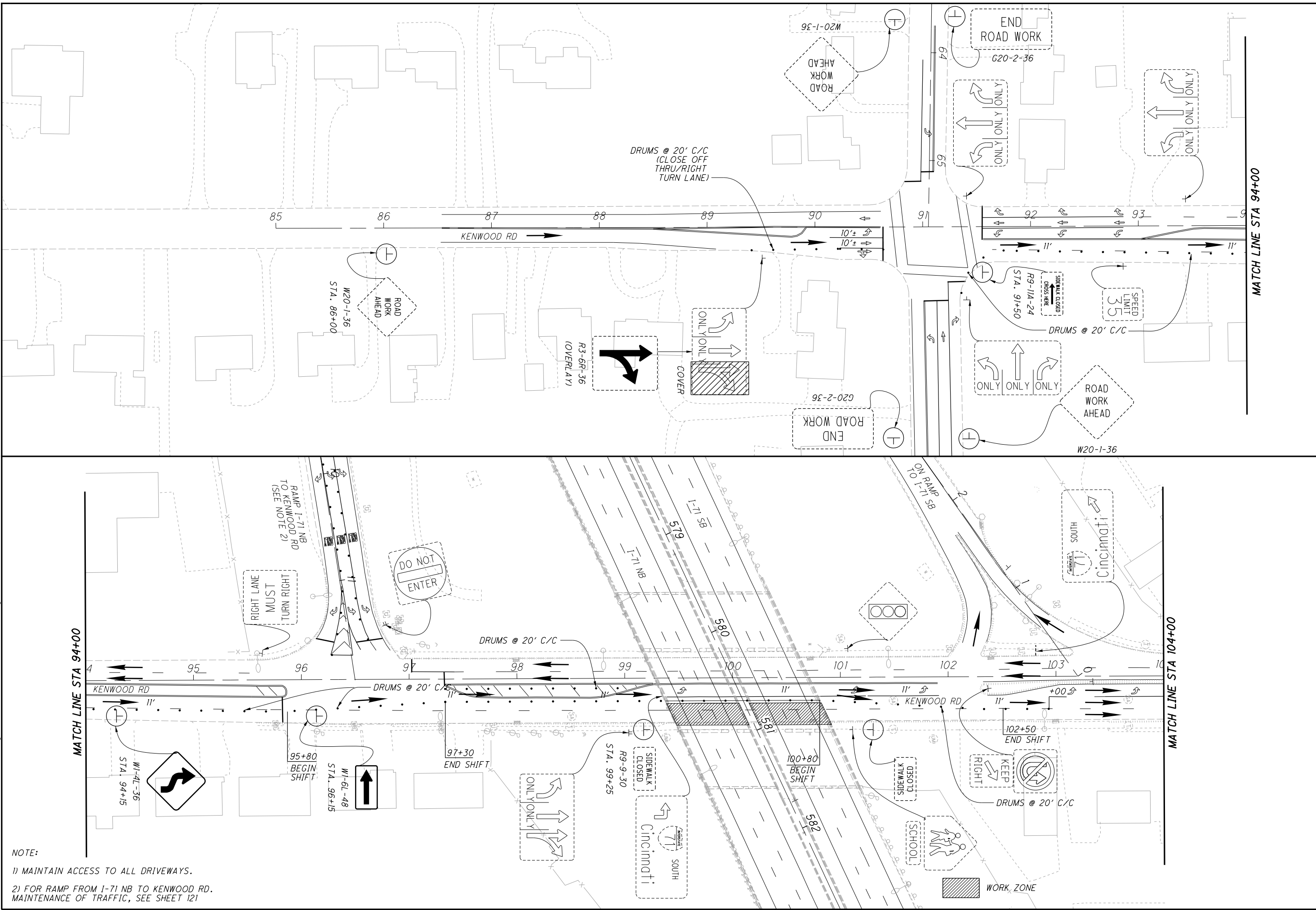
CALCULATED	DPF	CHECKED	BJF

0 40 80
HORIZONTAL SCALE IN FEET

**MAINTENANCE OF TRAFFIC
KENWOOD ROAD - PHASE 1**

HAM-IR71-8.42

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_MP493.dgn Sheet 9/14/2017 10:30:16 AM don-f



NOTE:
 1) MAINTAIN ACCESS TO ALL DRIVEWAYS.
 2) FOR RAMP FROM I-71 NB TO KENWOOD RD. MAINTENANCE OF TRAFFIC, SEE SHEET 121

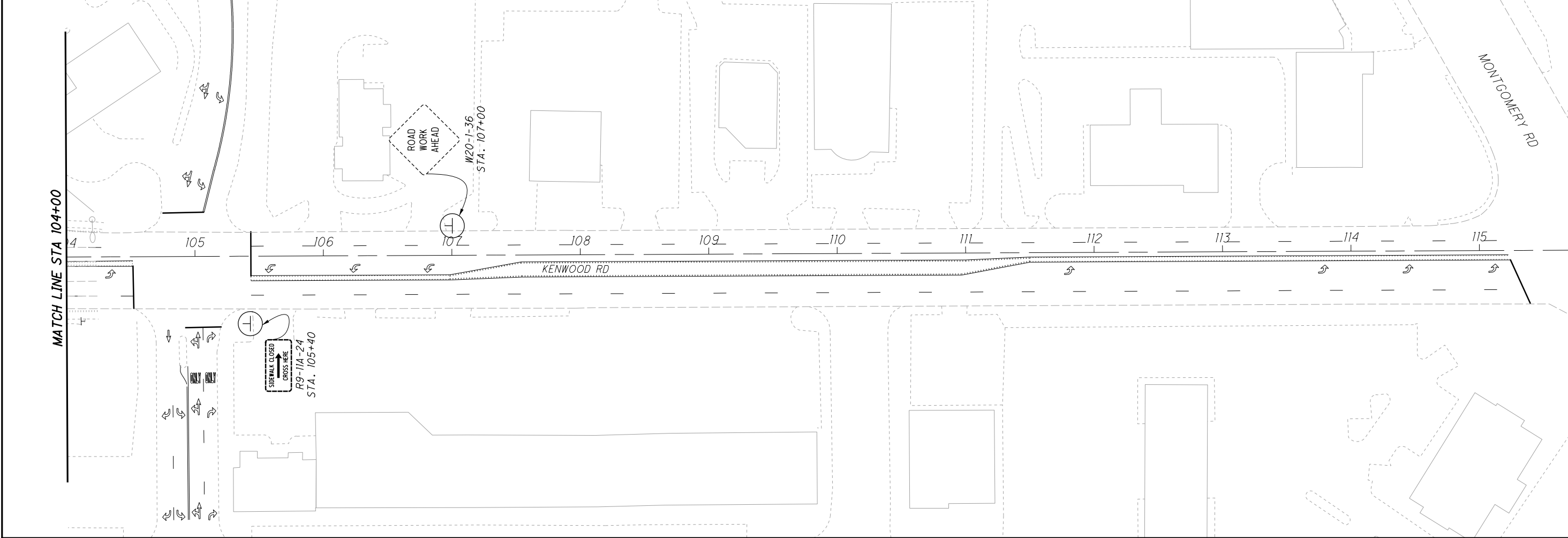
CALCULATED
 DPF
 CHECKED
 BJJ

0 20 40 80
 HORIZONTAL
 SCALE IN FEET

N

**MAINTENANCE OF TRAFFIC
 KENWOOD ROAD - PHASE 2**

HAM-IR71-8.42

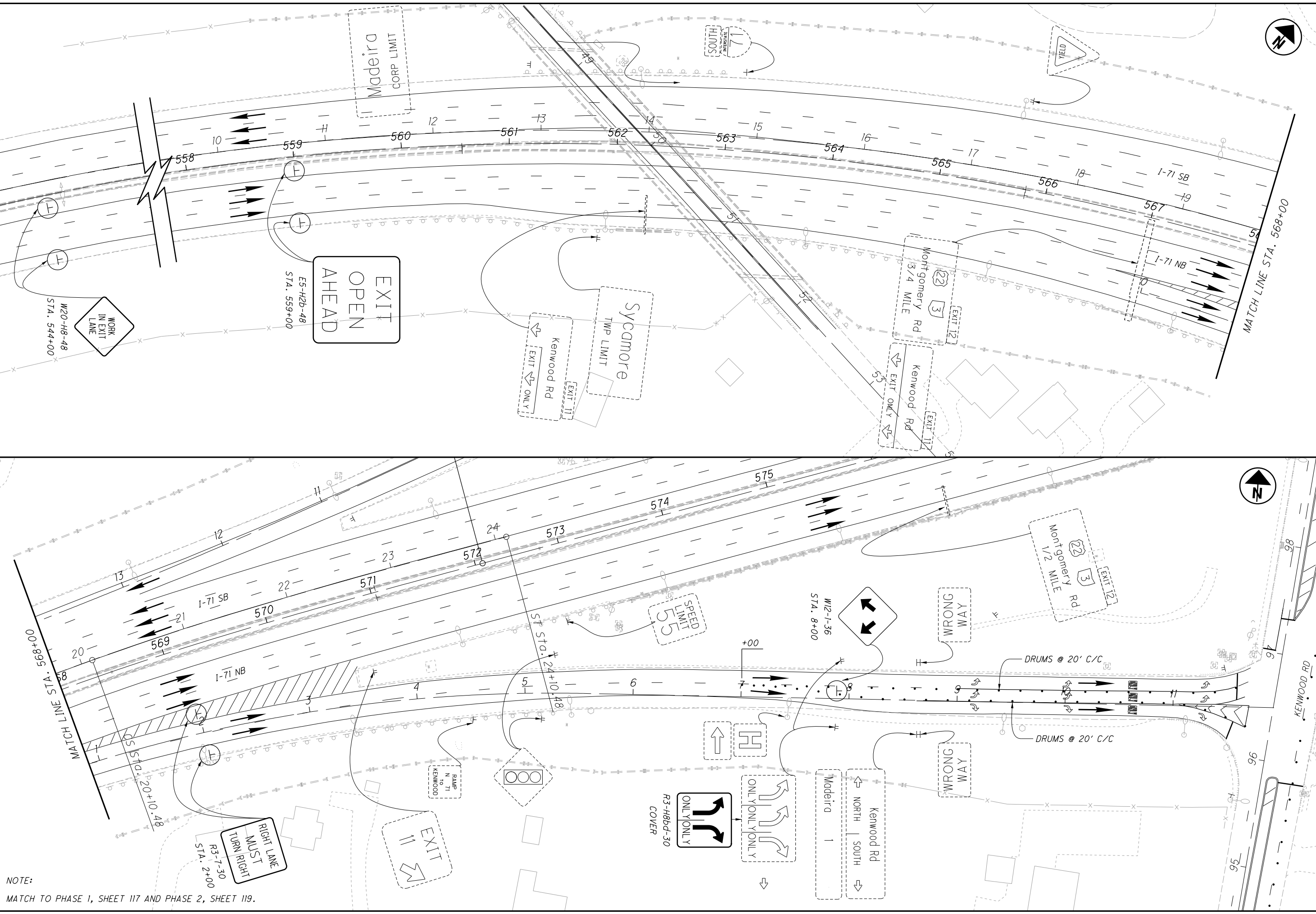


CALCULATED	
DPF	
CHECKED	BJF

**MAINTENANCE OF TRAFFIC
KENWOOD ROAD - PHASE 2**

HAM-IR71-8.42

O:\ODOT\HAM-91826_HAM-71-8.42\Design\MOT_Sheets\91826_MP494.dgn Sheet 9/14/2017 10:30:34 AM don-f



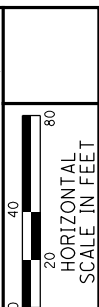
NOTE:
MATCH TO PHASE 1, SHEET 117 AND PHASE 2, SHEET 119.

CALCULATED	DPF	CHECKED	BUJ

**MAINTENANCE OF TRAFFIC
RAMP I-71 NB TO KENWOOD RD - PHASE 1 / 2**

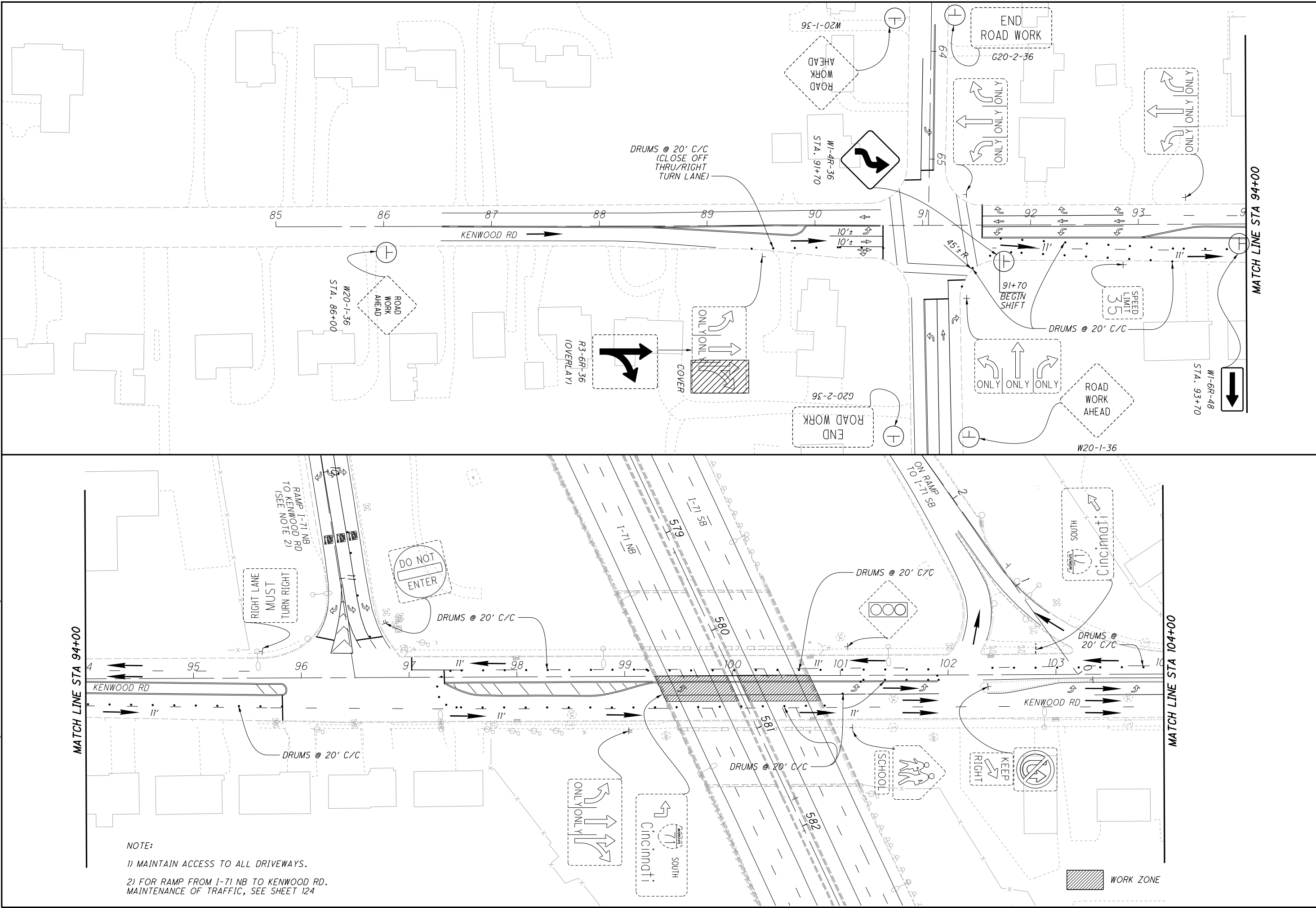
HAM-IR71-8.42

121
441



0 20 40 80
HORIZONTAL
SCALE IN FEET

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT_Sheets\91826_MP495.dgn_Sheet 9/14/2017 10:30:43 AM dan-f



NOTE:
 1) MAINTAIN ACCESS TO ALL DRIVEWAYS.
 2) FOR RAMP FROM I-71 NB TO KENWOOD RD. MAINTENANCE OF TRAFFIC, SEE SHEET 124

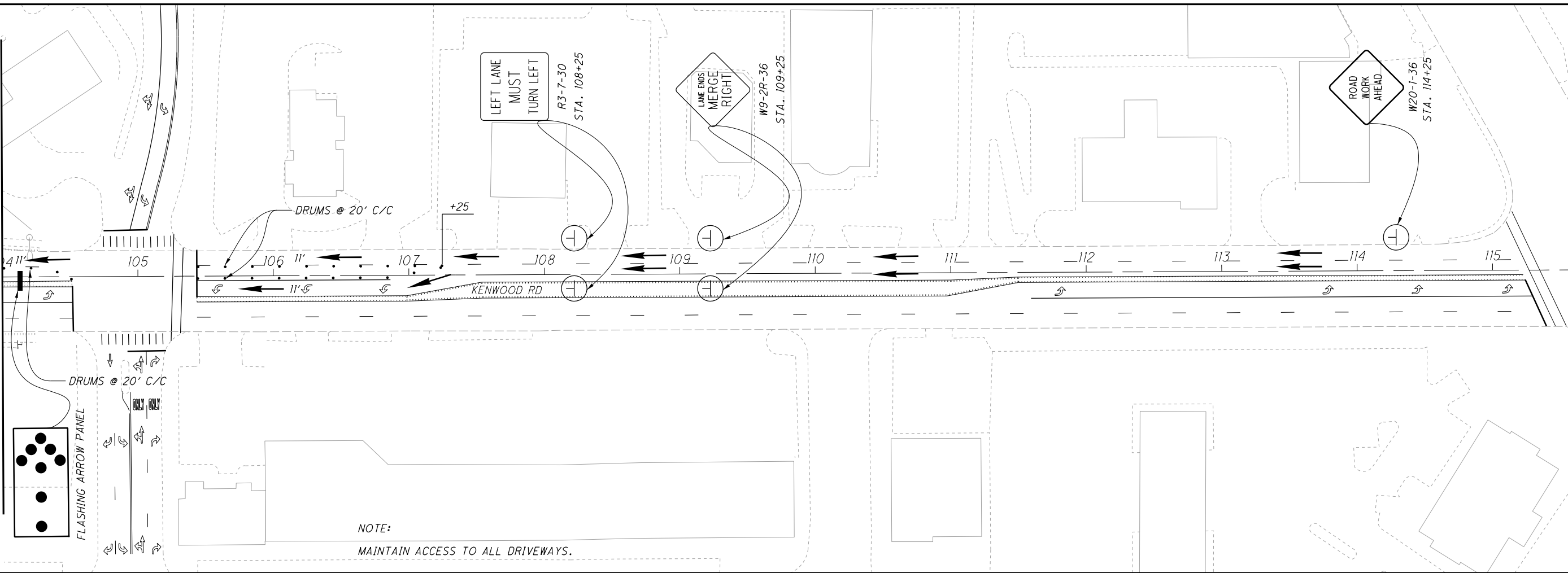
CALCULATED
 DPF
 CHECKED
 BJF

0 20 40 80
 HORIZONTAL
 SCALE IN FEET

**MAINTENANCE OF TRAFFIC
 KENWOOD ROAD - PHASE 3**

HAM-IR71-8.42

MATCH LINE STA 104+00



NOTE:
MAINTAIN ACCESS TO ALL DRIVEWAYS.

CALCULATED
DPF
CHECKED
BJF

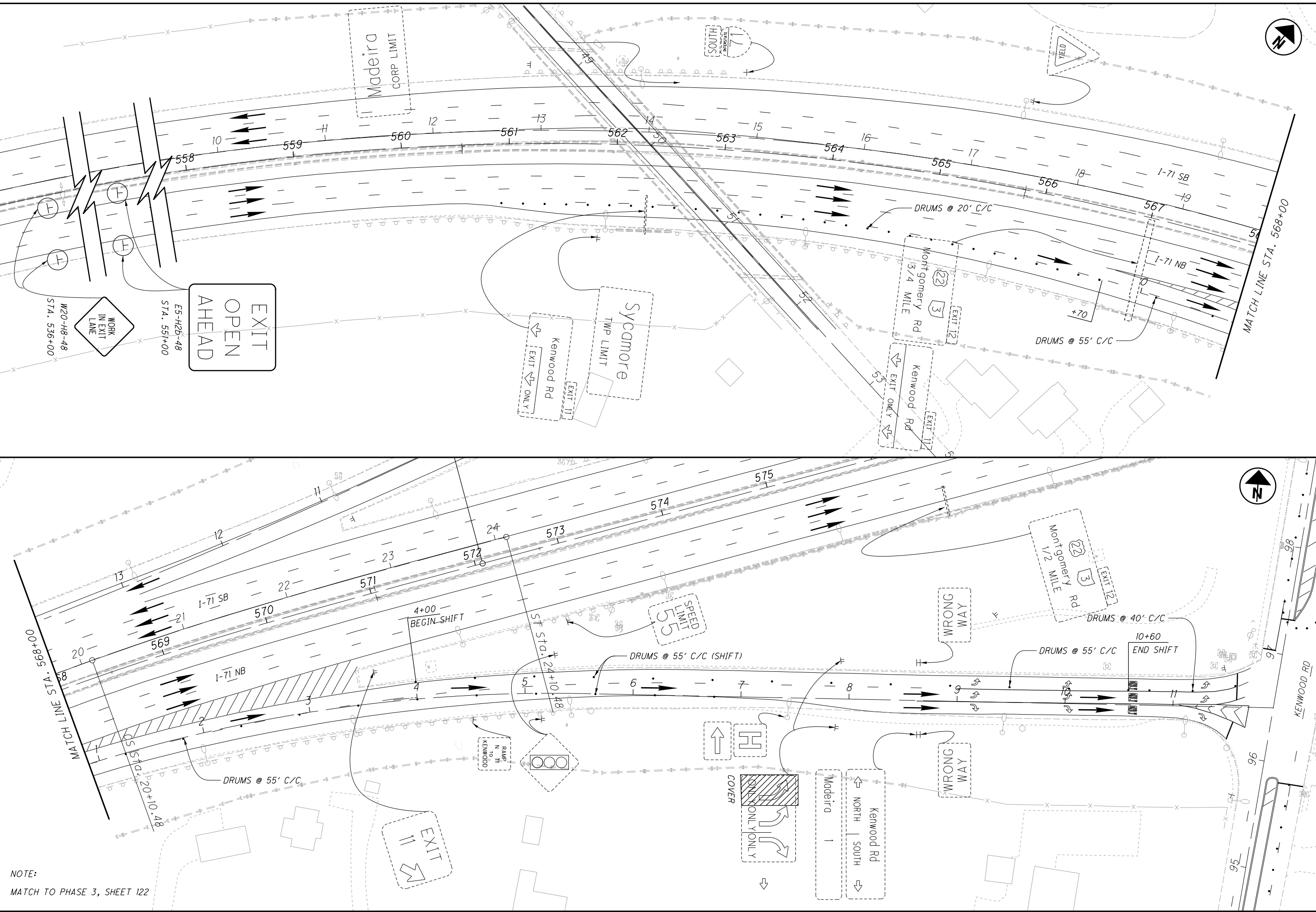
0 20 40 80
HORIZONTAL
SCALE IN FEET

N

**MAINTENANCE OF TRAFFIC
KENWOOD ROAD - PHASE 3**

HAM-IR71-8.42

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_MP496a.dgn Sheet 9/14/2017 10:31:00 AM dan-f



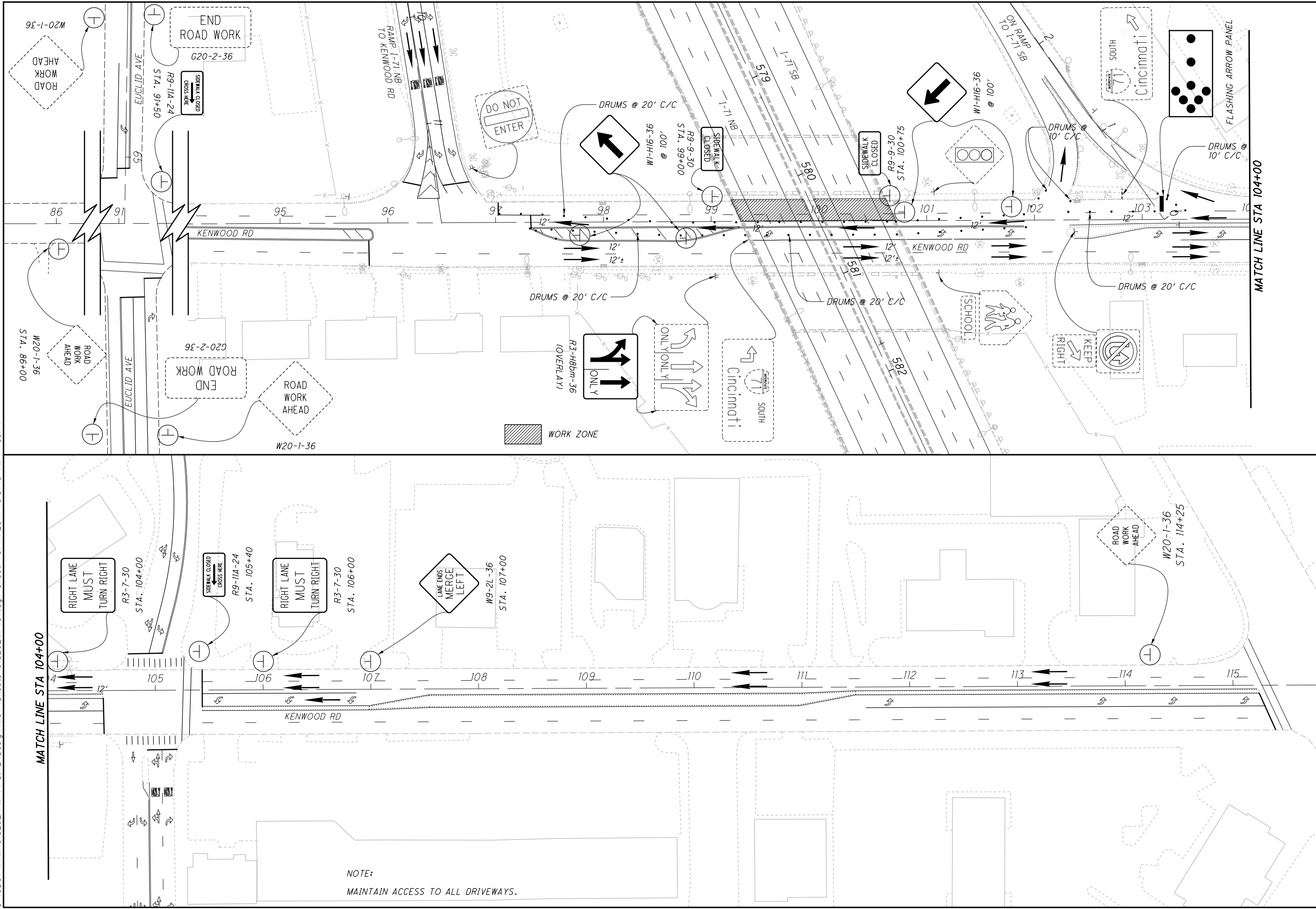
NOTE:
MATCH TO PHASE 3, SHEET 122

CALCULATED	DPF	CHECKED	BUJ

HORIZONTAL SCALE IN FEET
0 20 40 80

HAM-IR71-8.42
MAINTENANCE OF TRAFFIC
RAMP I-71 NB TO KENWOOD RD - PHASE 3

124
441



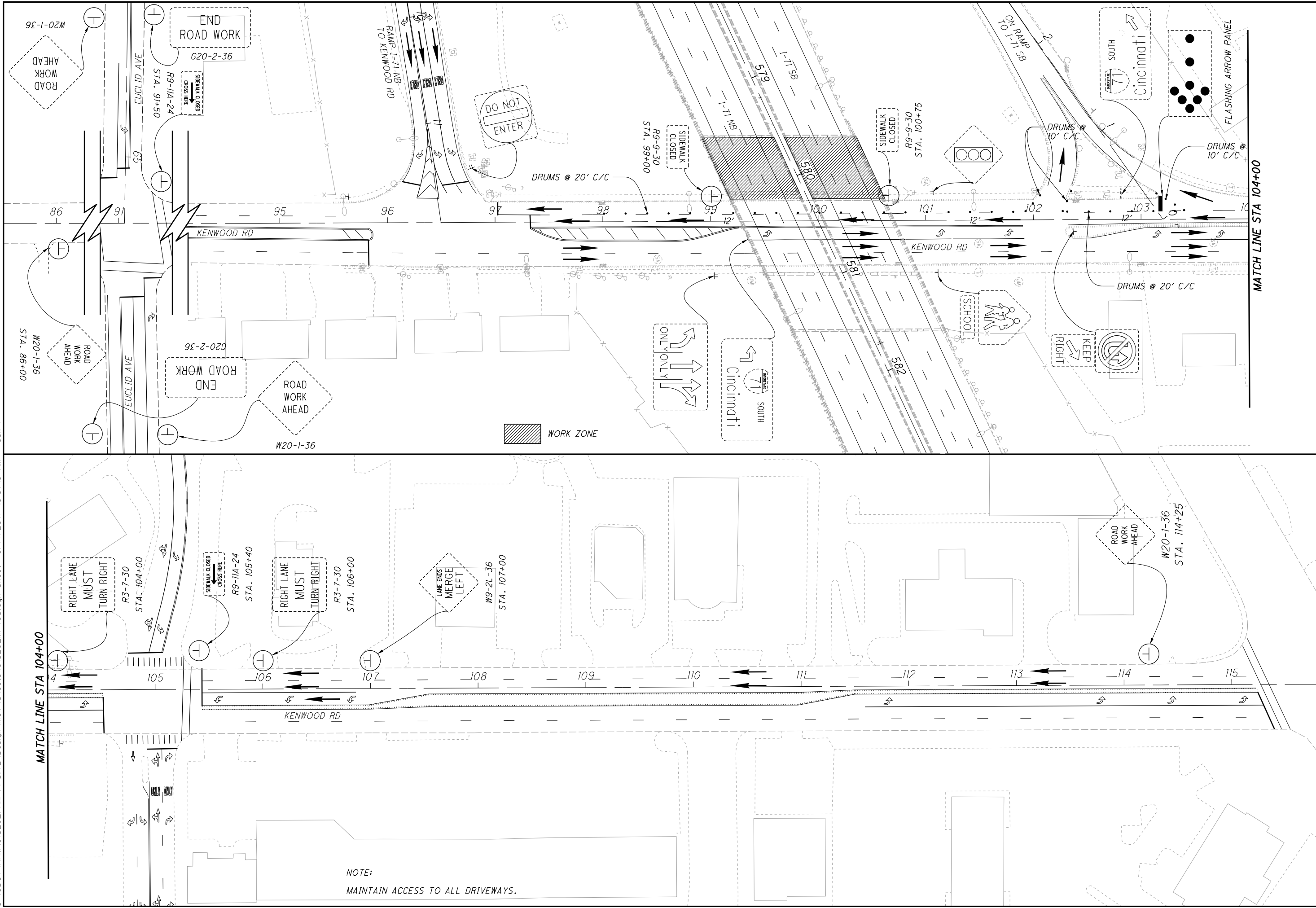
NOTE:
MAINTAIN ACCESS TO ALL DRIVEWAYS.

CALCULATED 0
DPF 20
CHECKED 80
BUJ

HORIZONTAL SCALE IN FEET

**MAINTENANCE OF TRAFFIC
KENWOOD ROAD - PHASE 4**

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_MP498.dgn Sheet 9/14/2017 10:31:19 AM don-f



NOTE:
MAINTAIN ACCESS TO ALL DRIVEWAYS.

CALCULATED
DPF
CHECKED
BJF

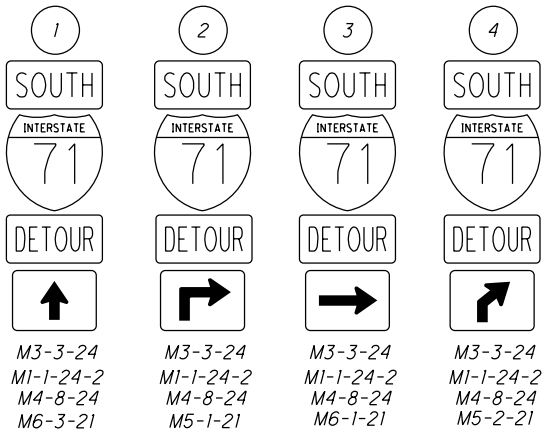
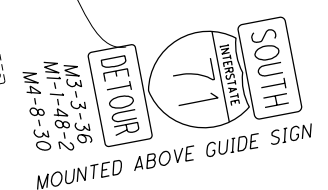
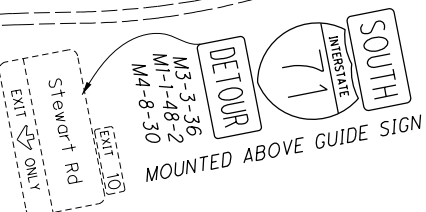
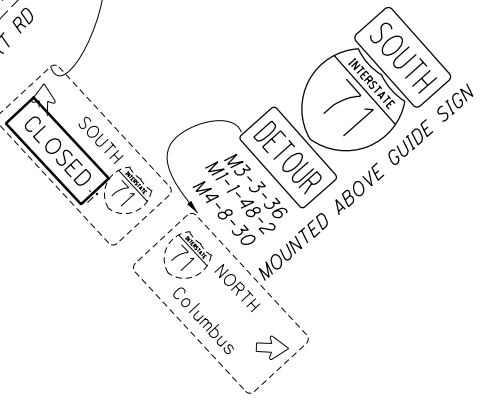
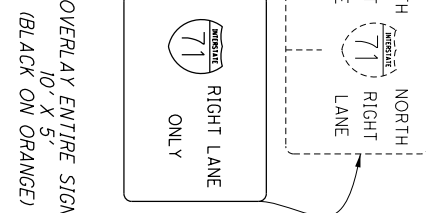
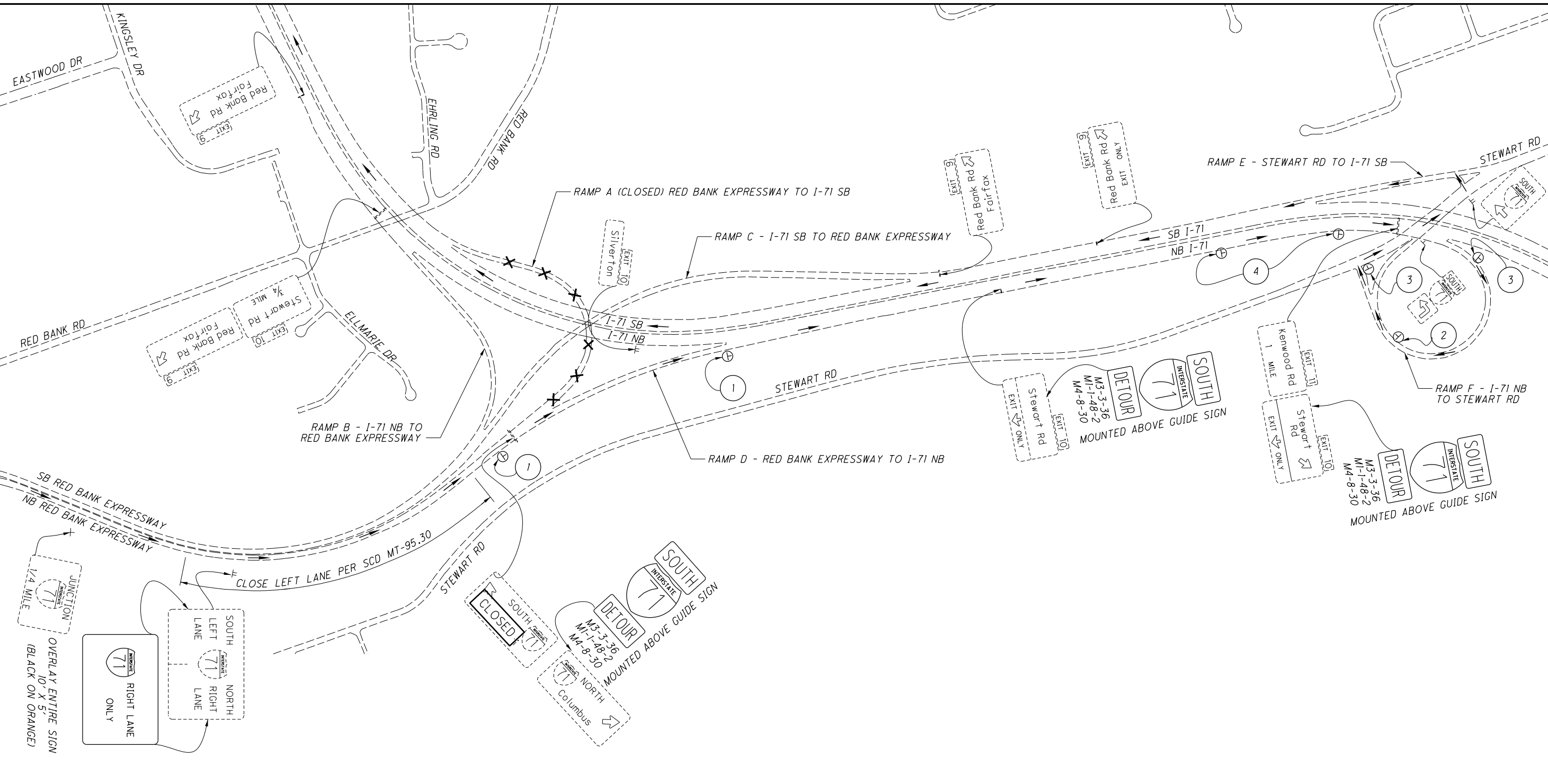
0 20 40 80
HORIZONTAL
SCALE IN FEET

0 40 80
HORIZONTAL
SCALE IN FEET

**MAINTENANCE OF TRAFFIC
KENWOOD ROAD - PHASE 5**

HAM-IR71-8.42

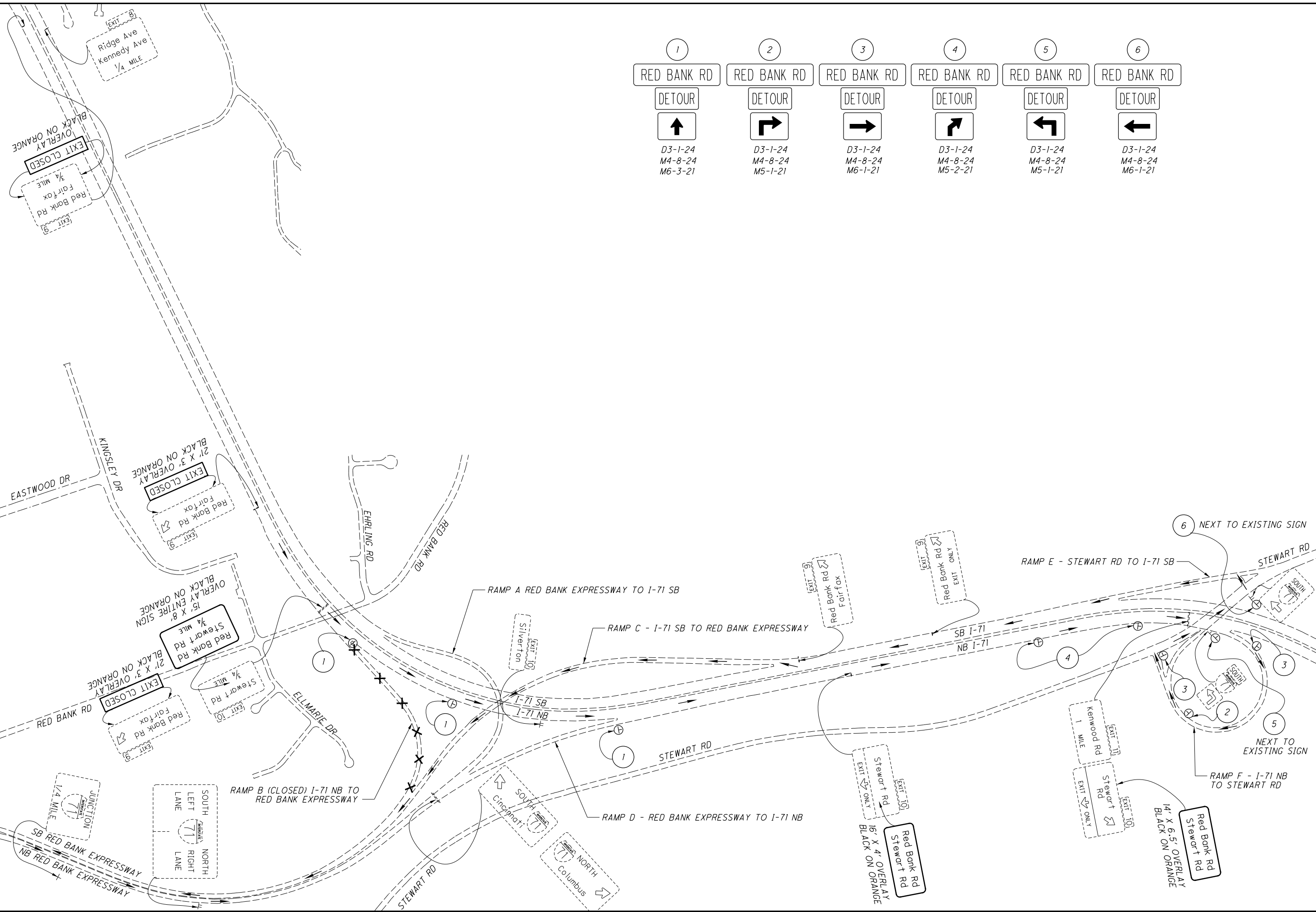
O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_MOT.dgn Sheet 9/14/2017 10:31:31 AM dan-f



DETOUR PLAN - RAMP A
NB RED BANK EXPRESSWAY TO SB I-71

HAM-IR71-8.42

O:\ODOT\HAM-91826_HAM-71-8.42\Design\MOT_Sheets\91826_MD402.dgn_Sheet 9/14/2017 10:31:41 AM dan-f



1	2	3	4	5	6
RED BANK RD	RED BANK RD	RED BANK RD	RED BANK RD	RED BANK RD	RED BANK RD
DETOUR	DETOUR	DETOUR	DETOUR	DETOUR	DETOUR
↑	↗	→	↖	↖	←
D3-1-24 M4-8-24 M6-3-21	D3-1-24 M4-8-24 M5-1-21	D3-1-24 M4-8-24 M6-1-21	D3-1-24 M4-8-24 M5-2-21	D3-1-24 M4-8-24 M5-1-21	D3-1-24 M4-8-24 M6-1-21

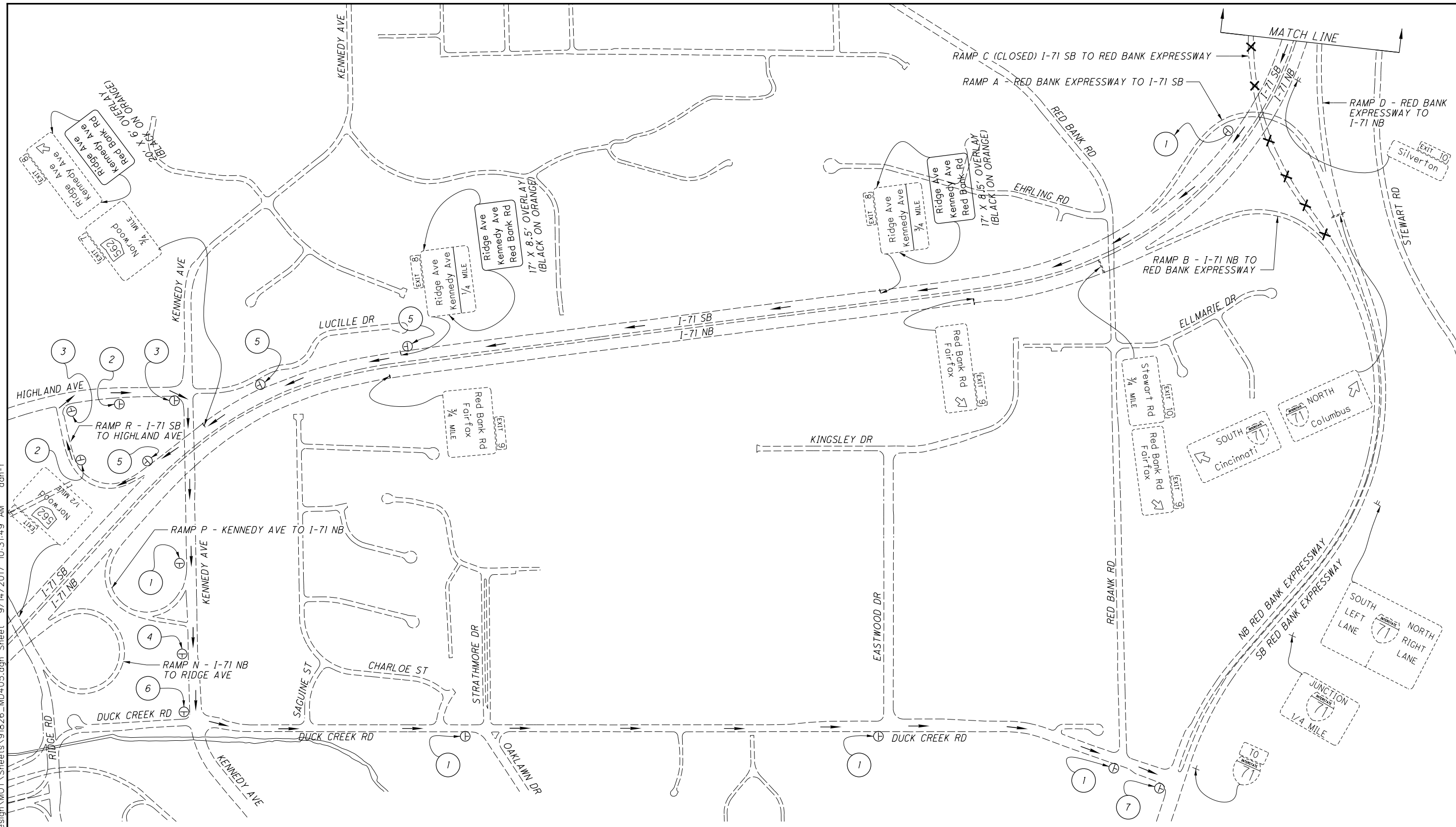
CALCULATED
DPF
CHECKED
BJF

0 250 500
HORIZONTAL
SCALE IN FEET

**DETOUR PLAN - RAMP B
NB I-71 TO SB RED BANK EXPRESSWAY**

HAM-IR71-8.42

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT_Sheets_91826_MD405.dgn Sheet 9/14/2017 10:31:49 AM dan-f












 0 250 500

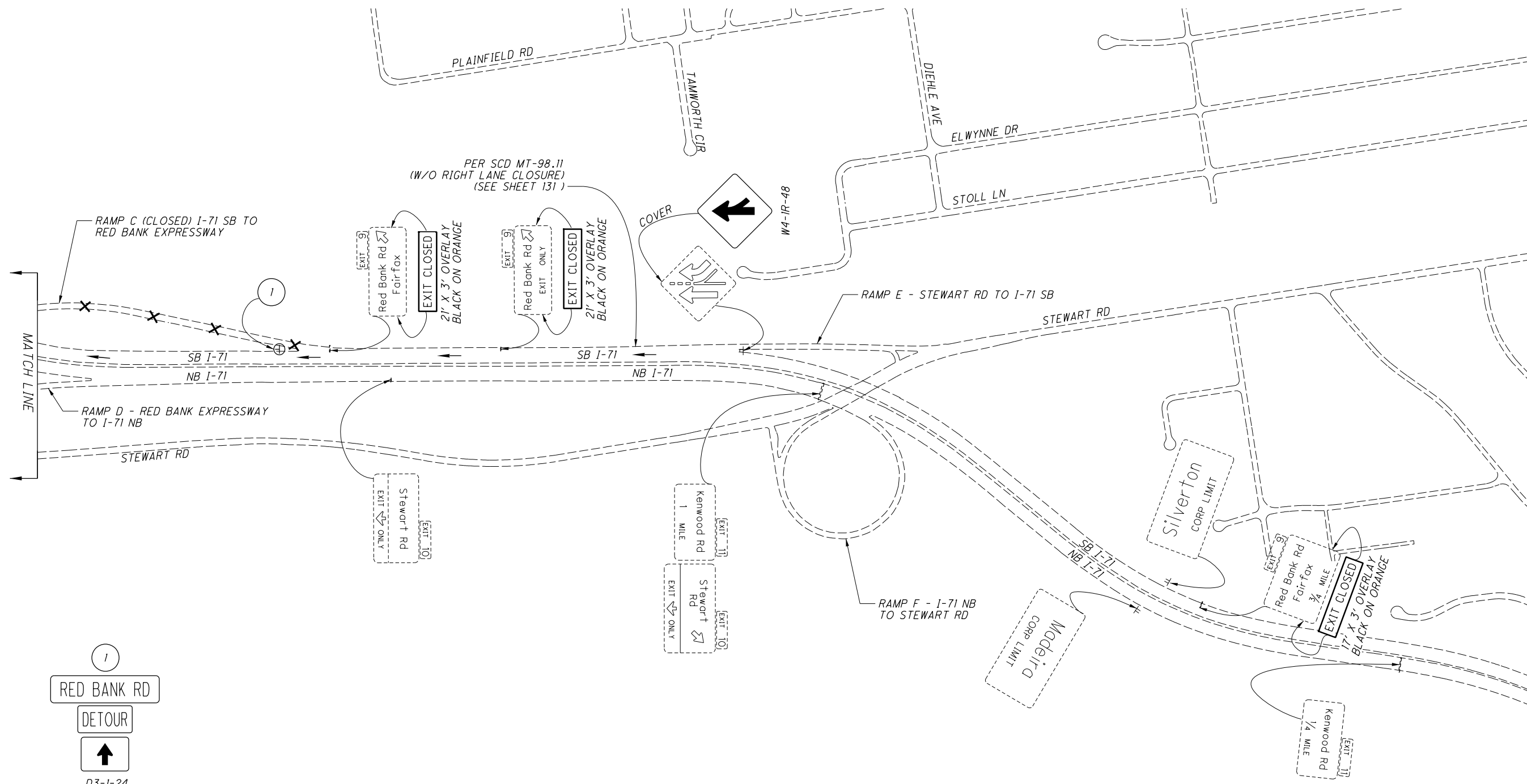
 1/25 HORIZONTAL

 SCALE IN FEET

DETOUR PLAN - RAMP C - 1 OF 2
SB I-71 TO SB RED BANK EXPRESSWAY

HAM-IR71-8.42

1	2	3	4	5	6	7
RED BANK RD	RED BANK RD	RED BANK RD	RED BANK RD	RED BANK RD	RED BANK RD	RED BANK RD
DETOUR	DETOUR	DETOUR	DETOUR	DETOUR	DETOUR	END DETOUR
						
D3-1-24 M4-8-24 M6-3-21	D3-1-24 M4-8-24 M5-1-21	D3-1-24 M4-8-24 M6-1-21	D3-1-24 M4-8-24 M5-1-21	D3-1-24 M4-8-24 M5-2-21	D3-1-24 M4-8-24 M6-1-21	D3-1-24 M4-8A-24



1

RED BANK RD

DETOUR

↑

D3-1-24
M4-8-24
M6-3-21

CALCULATED DPF CHECKED BUF

0 --- NA --- NA

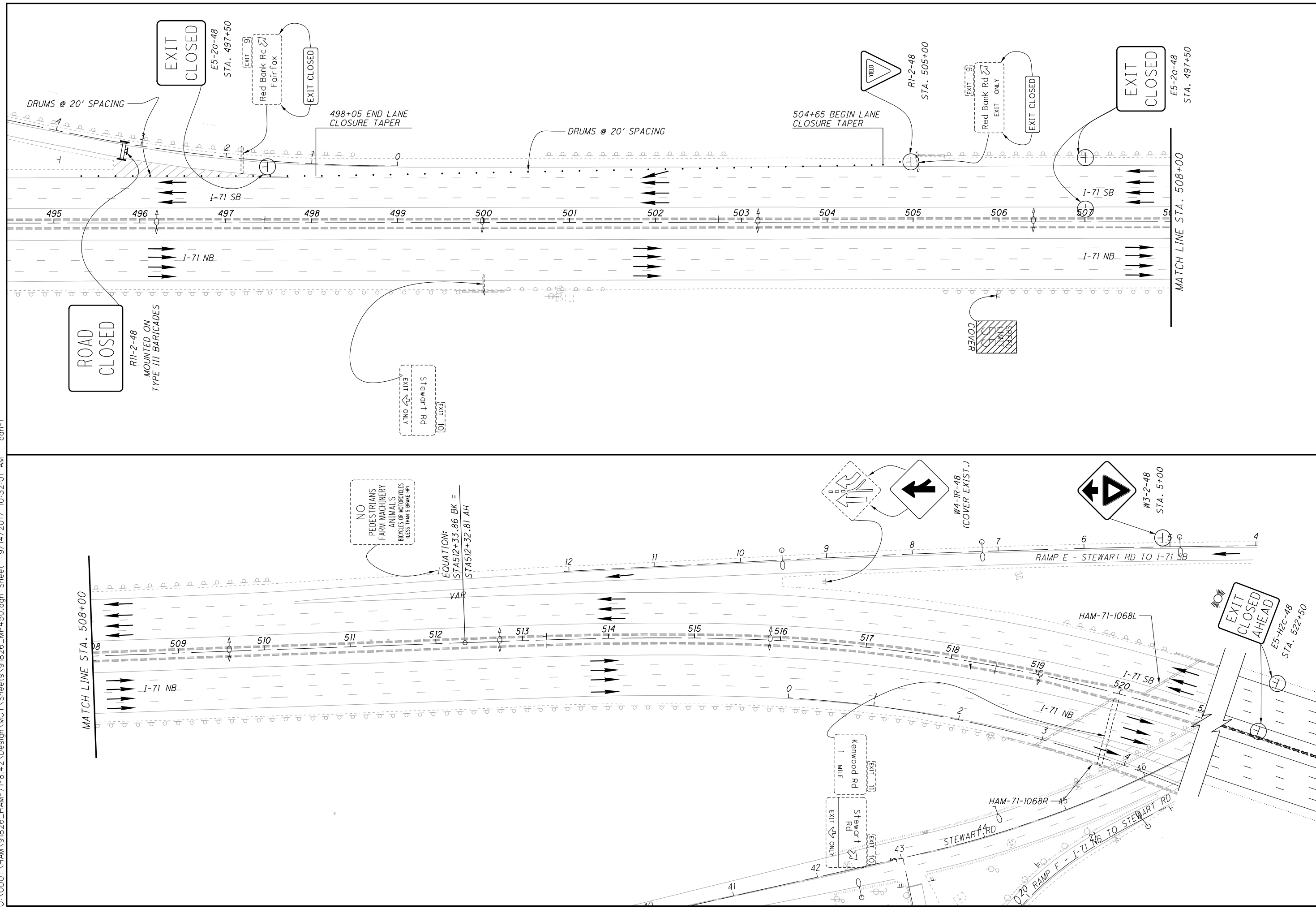
HORIZONTAL SCALE IN FEET

DETOUR PLAN - RAMP C - 2 OF 2

SB I-71 TO SB RED BANK EXPRESSWAY

HAM-IR71-8.42

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT_Sheets\91826_MP450.dgn Sheet 9/14/2017 10:32:01 AM dan-f



CALCULATED
DPF
CHECKED
BJF

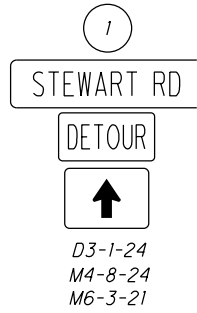
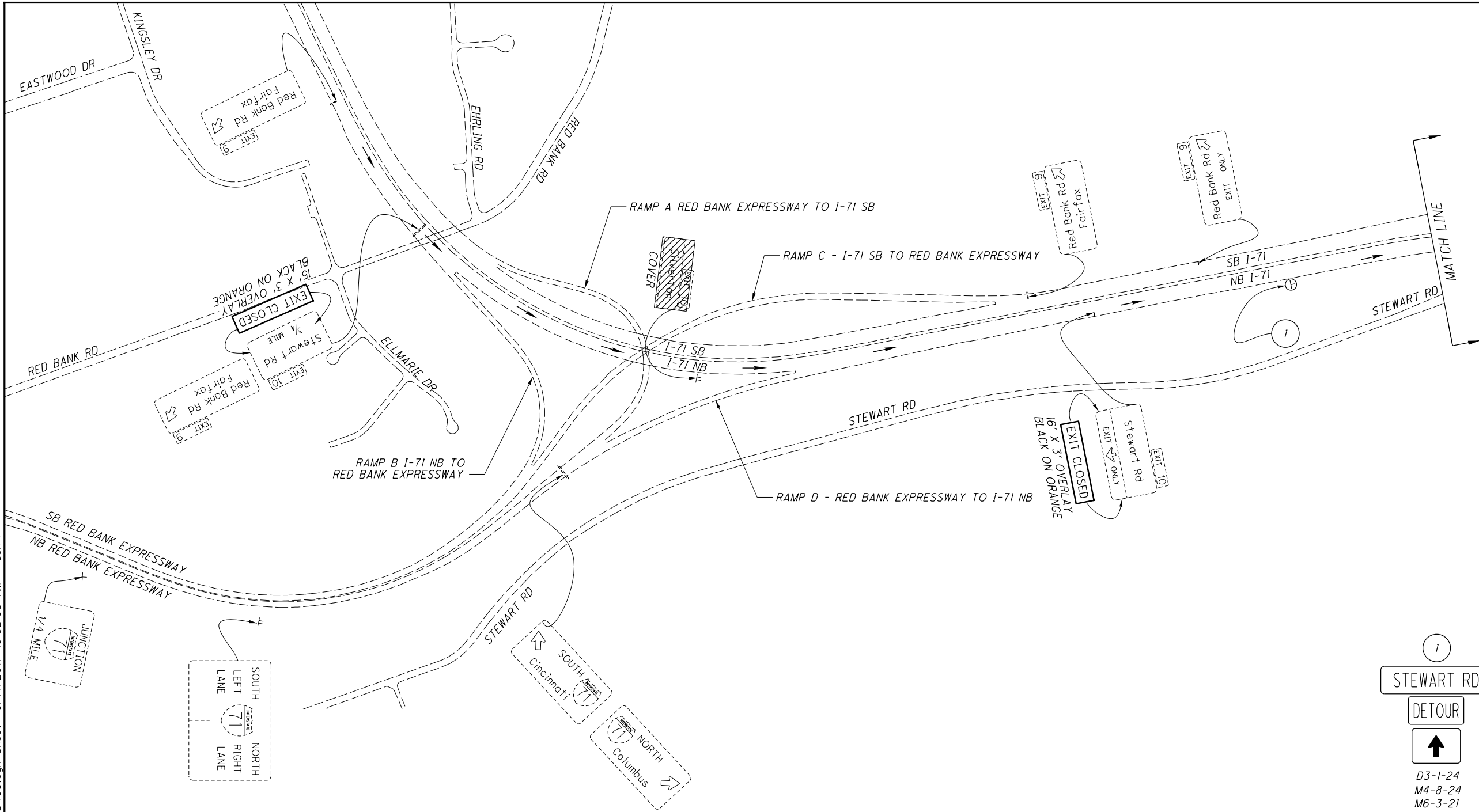
0 50 100
HORIZONTAL
SCALE IN FEET

**MAINTENANCE OF TRAFFIC
RAMP C CLOSURE**

HAM-IR71-8.42

131
441

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_MD403.dgn Sheet 9/14/2017 10:32:08 AM dan-f

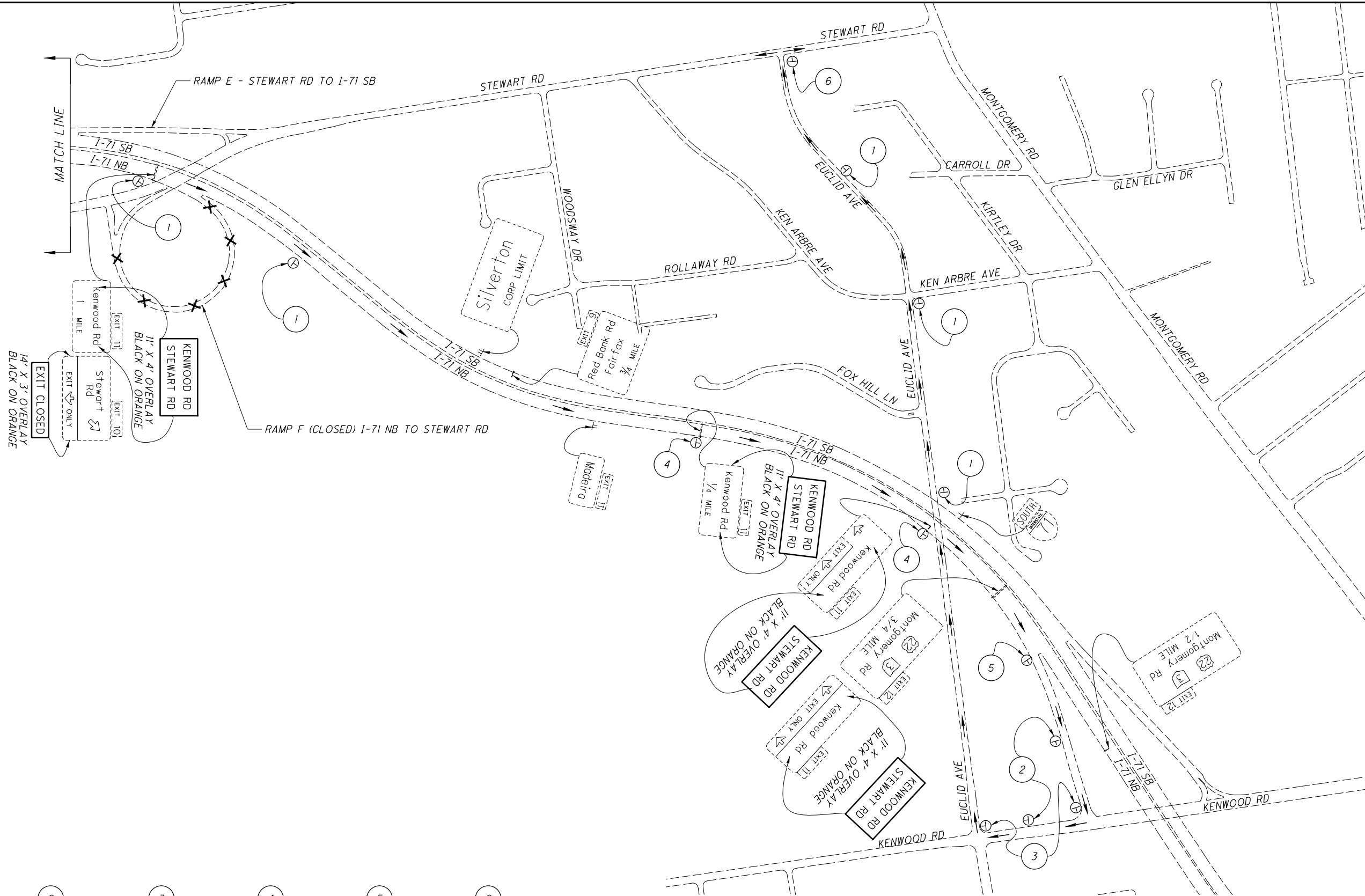
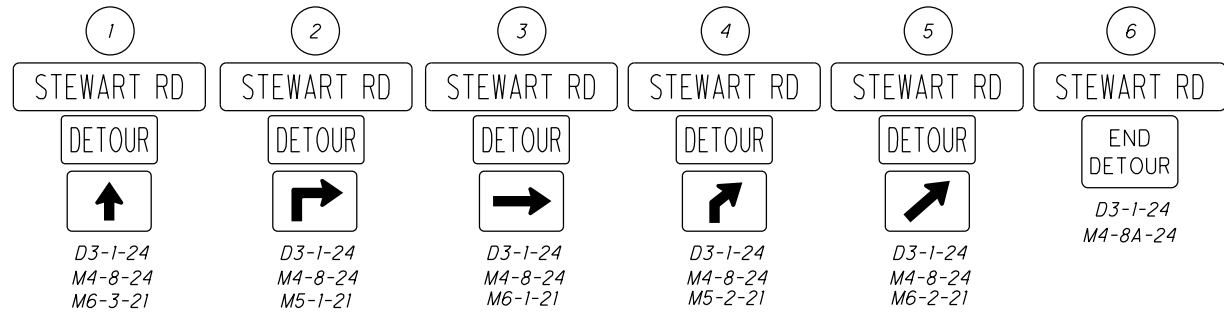


DETOUR PLAN - RAMP F - 1 OF 2
NB I-71 TO STEWART ROAD

HAM-IR71-8.42

CALCULATED
DPF
CHECKED
BJF

0 250 500
HORIZONTAL
SCALE IN FEET



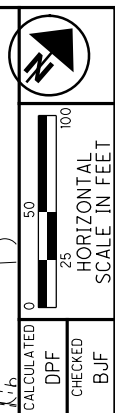
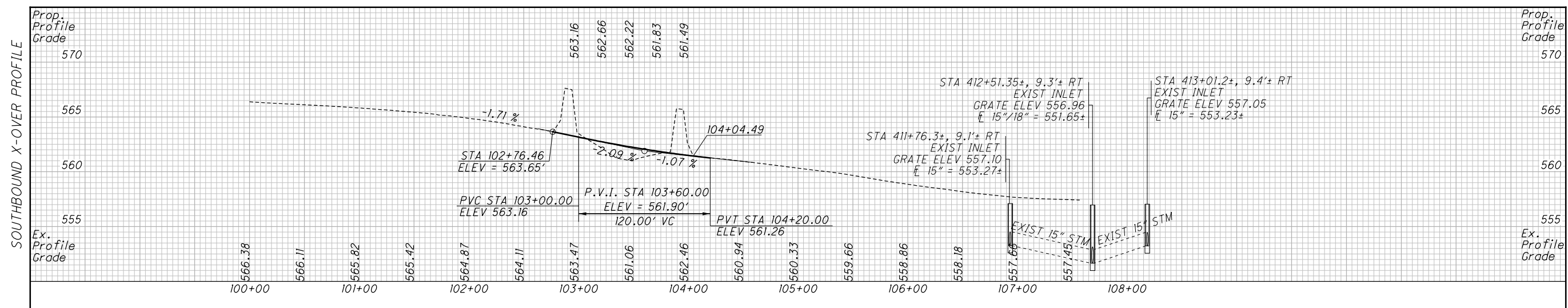
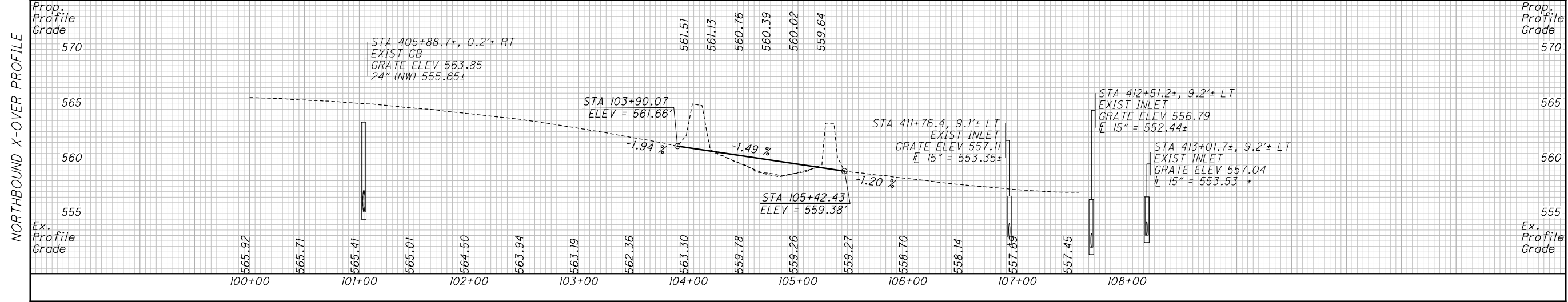
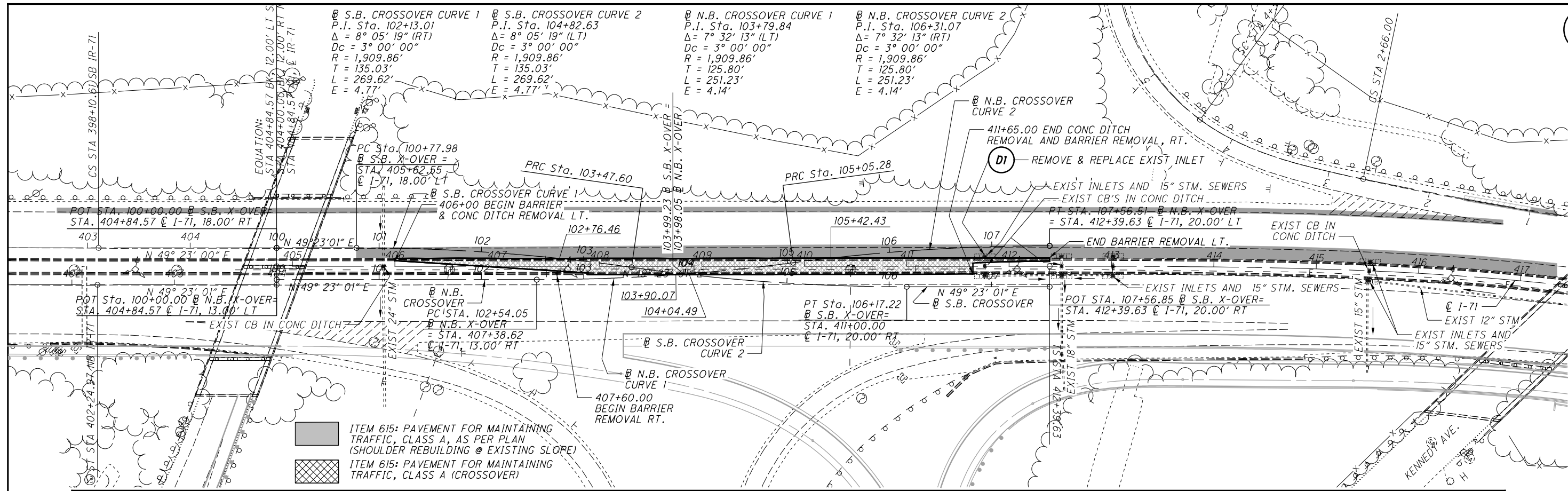
CALCULATED
DPF
CHECKED
BUJ

DETOUR PLAN - RAMP F 2 of 2
NB I-71 TO STEWART RD

HAM-IR71-8.42




133
441

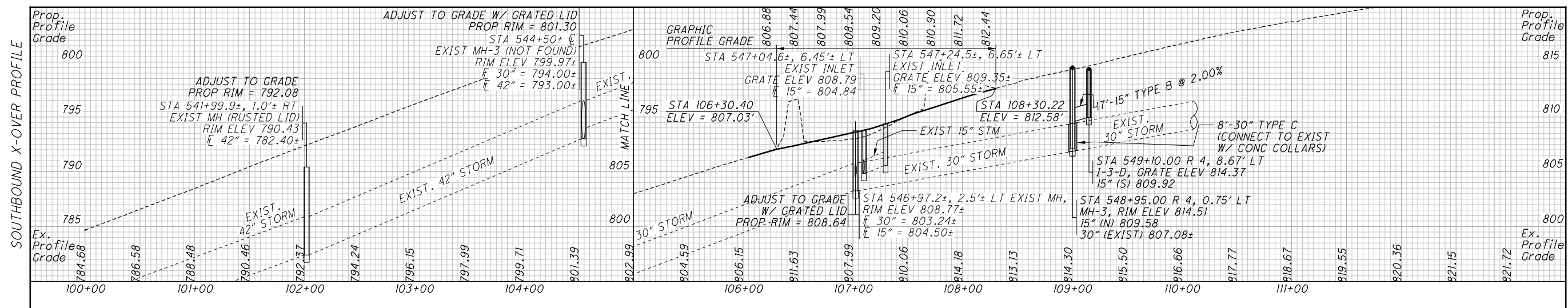
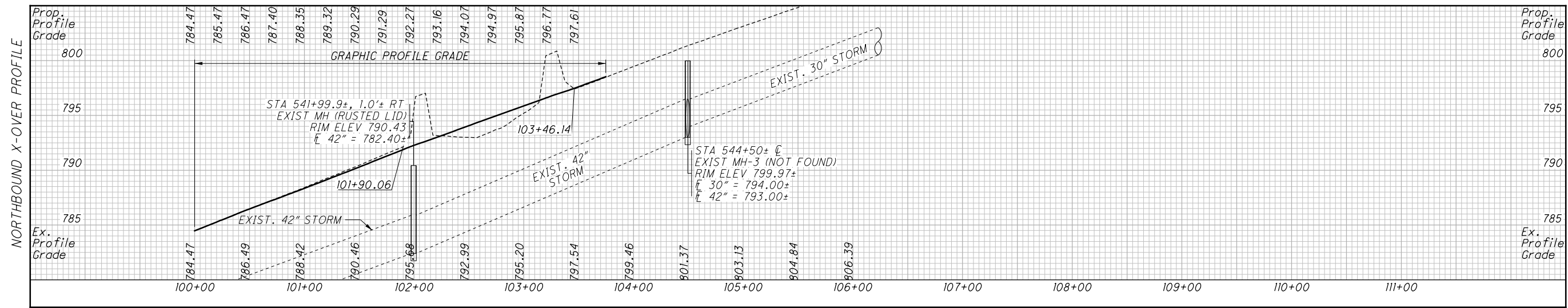
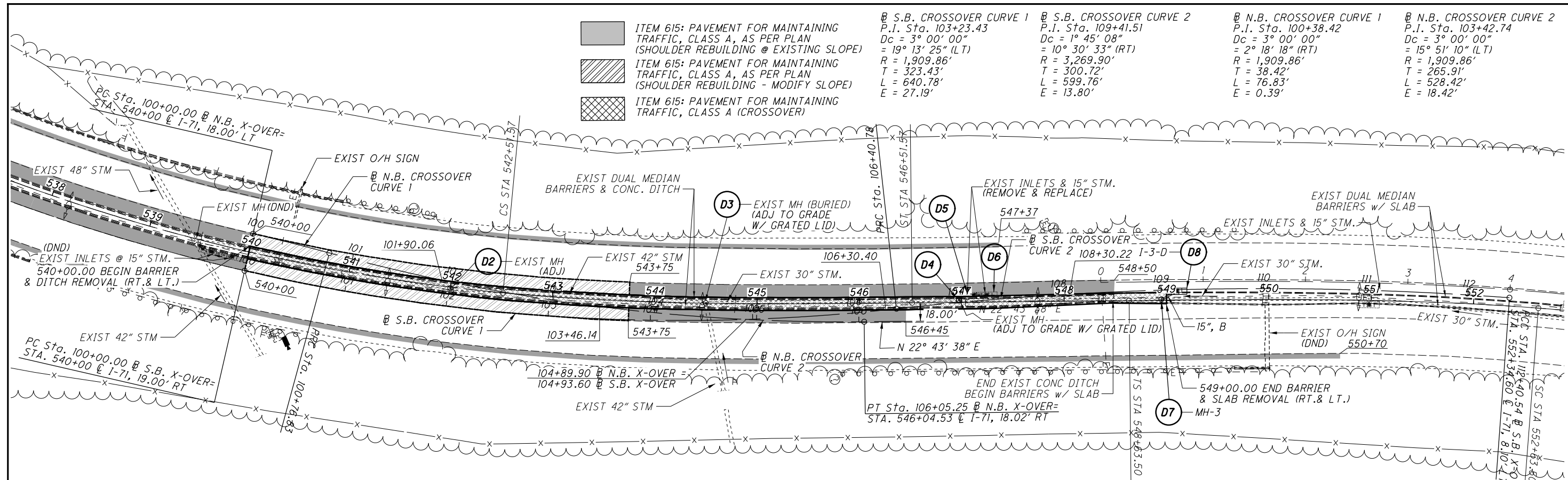
O:\ODOT\HAM_91826_HAM-71-8.42\Design\MOT_Sheets\91826_MB400.dgn Sheet 9/14/2017 10:32:21 AM dan-f



PLAN AND PROFILE SOUTH CROSSOVERS

HAM-IR71-8.42

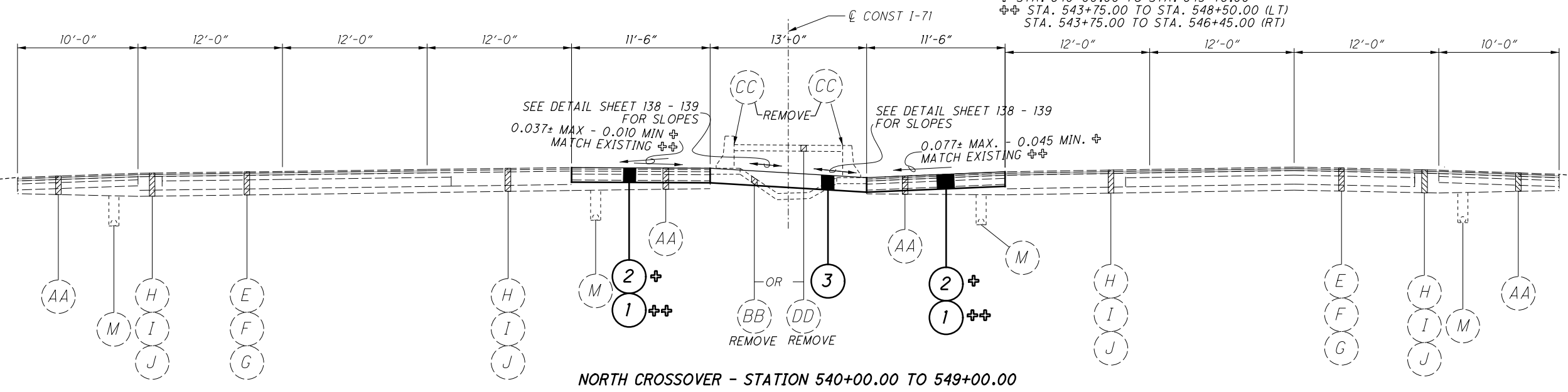
 ITEM 615: PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN (SHOULDER REBUILDING @ EXISTING SLOPE)	 ITEM 615: PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN (SHOULDER REBUILDING - MODIFY SLOPE)	 ITEM 615: PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A (CROSSOVER)	S.B. CROSSOVER CURVE 1 P.I. Sta. 103+23.43 Dc = 3° 00' 00" = 19° 13' 25" (LT) R = 1,909.86' T = 323.43' L = 640.78' E = 27.19'	S.B. CROSSOVER CURVE 2 P.I. Sta. 109+41.51 Dc = 1° 45' 08" = 10° 30' 33" (RT) R = 3,269.90' T = 300.72' L = 599.76' E = 13.80'	N.B. CROSSOVER CURVE 1 P.I. Sta. 100+38.42 Dc = 3° 00' 00" = 15° 30' 18" (RT) R = 1,909.86' T = 38.42' L = 528.42' E = 0.39'	N.B. CROSSOVER CURVE 2 P.I. Sta. 103+42.74 Dc = 3° 00' 00" = 15° 51' 10" (LT) R = 1,909.86' T = 265.91' L = 528.42' E = 18.42'
--	---	---	--	--	--	--



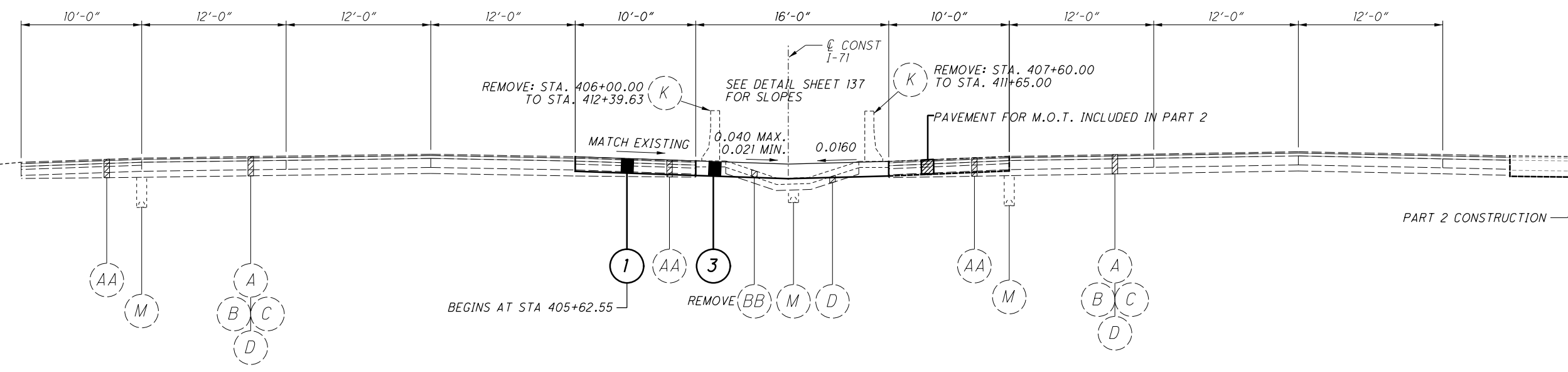
O:\ODOT\HAM_91826_HAM-71-8.42\Design\MOT_Sheets\91826_MB401.dgn Sheet 9/14/2017 10:32:23 AM don-f

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_MM400.dgn_Sheet 9/14/2017 10:32:24 AM don-f

NOTE
 + STA. 540+00.00 TO STA. 543+75.00
 + STA. 543+75.00 TO STA. 548+50.00 (LT)
 + STA. 543+75.00 TO STA. 546+45.00 (RT)



NORTH CROSSOVER - STATION 540+00.00 TO 549+00.00



SOUTH CROSSOVER - STATION 406+00.00 TO 412+39.63

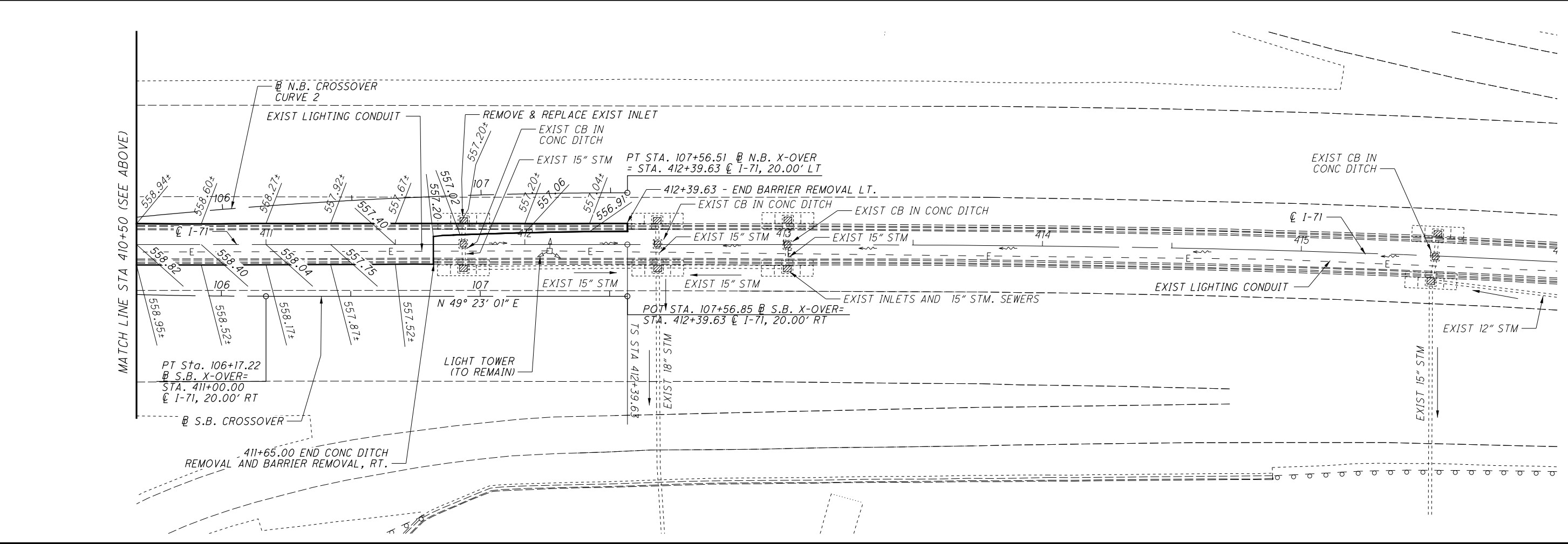
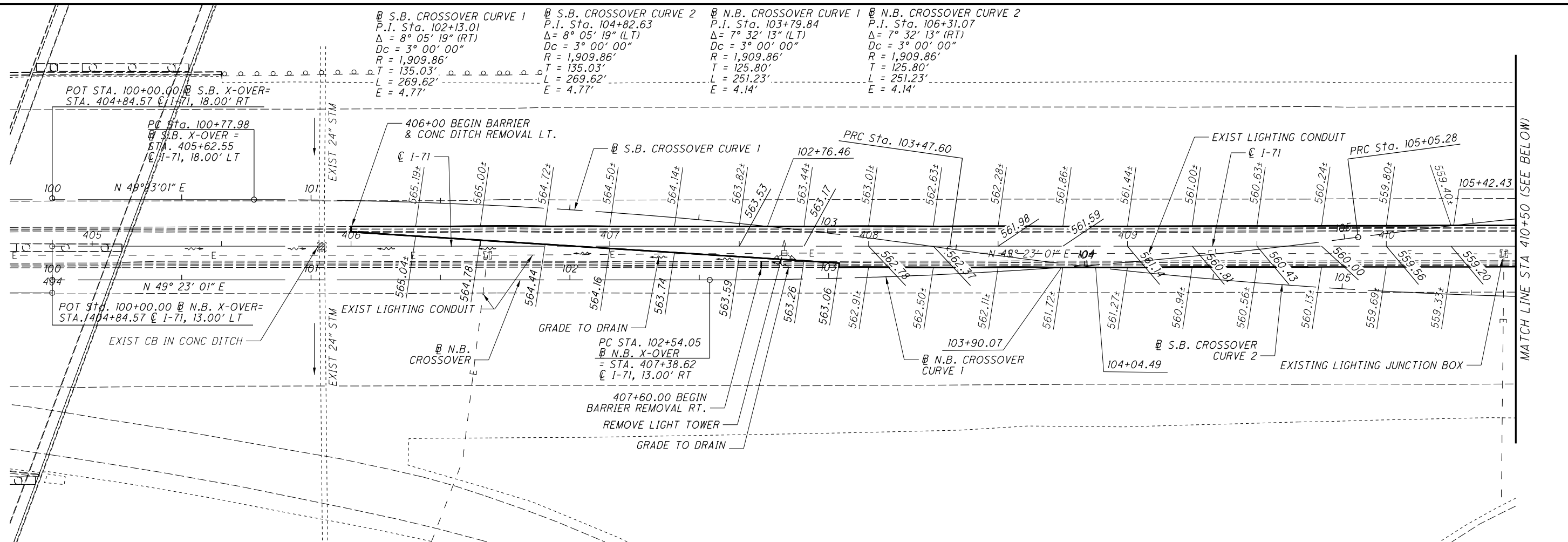
- ① ITEM 615: PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN (SHOULDER REBUILDING @ EXISTING SLOPE)
- ② ITEM 615: PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN (SHOULDER REBUILDING @ MODIFIED SLOPE; SUBSEQUENT REMOVAL AND REPLACEMENT AT EXISTING SLOPE)
- ③ ITEM 615 - PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A
- Ⓢ FOR EXISTING ITEM LEGEND, SEE SHEET 8

PART 2 CONSTRUCTION

BEGINS AT STA 405+62.55

PAVEMENT FOR M.O.T. INCLUDED IN PART 2

O:\000T\HAM\9826_HAM-71-8.42\Design\MOT\Sheets\9826_MH400.dgn Sheet 9/14/2017 10:32:25 AM dan-f



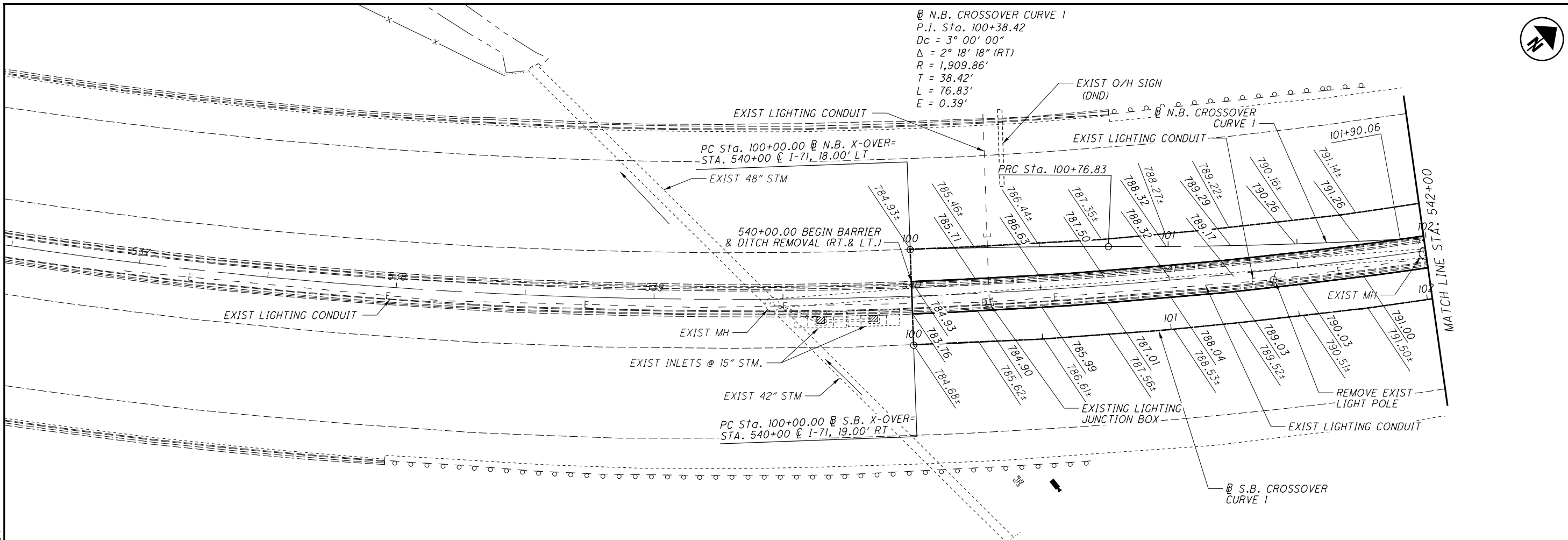
CALCULATED
 DPF
 CHECKED
 BJF

0 20 40
 HORIZONTAL SCALE IN FEET

CROSSOVER DETAILS
SOUTH CROSSOVER

HAM-IR71-8.42

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_MH401.dgn Sheet 9/14/2017 10:32:27 AM dan-f

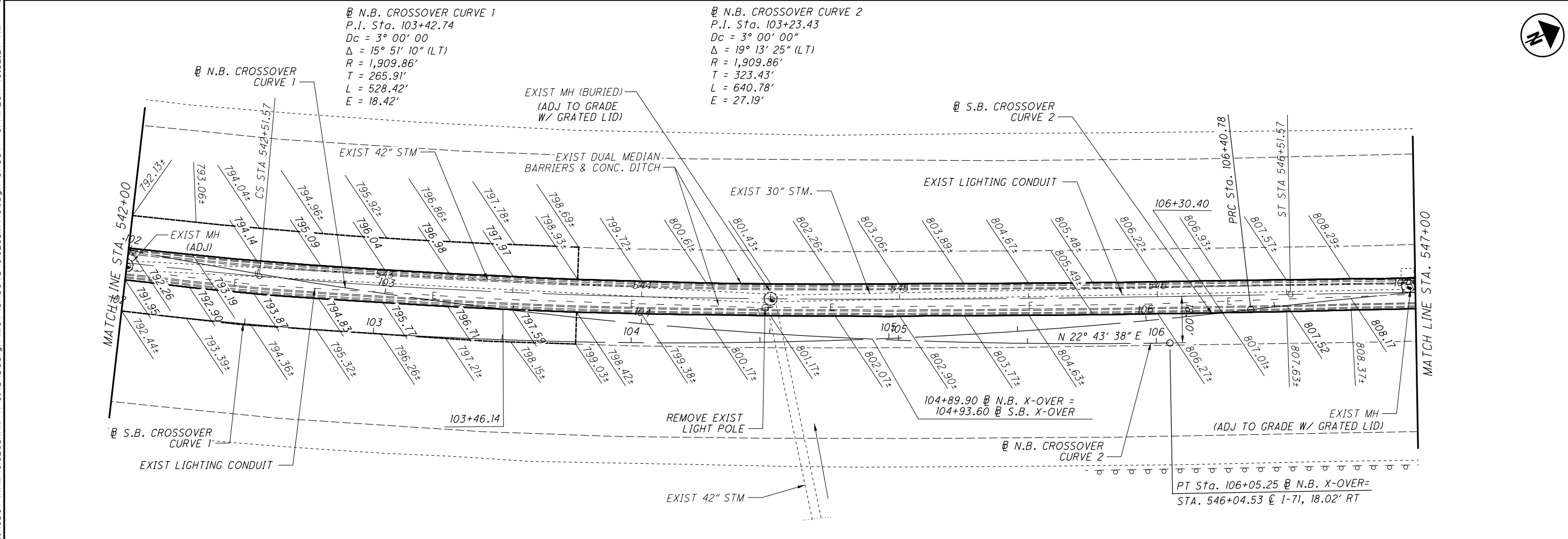


@ N.B. CROSSOVER CURVE 1
 P.I. Sta. 100+38.42
 Dc = 3° 00' 00"
 Δ = 2° 18' 18" (RT)
 R = 1,909.86'
 T = 38.42'
 L = 76.83'
 E = 0.39'



CALCULATED
 DPF
 CHECKED
 BJF

CROSSOVER DETAILS
 NORTH CROSSOVER



@ N.B. CROSSOVER CURVE 1
 P.I. Sta. 103+42.74
 Dc = 3° 00' 00"
 Δ = 15° 51' 10" (LT)
 R = 1,909.86'
 T = 265.91'
 L = 528.42'
 E = 18.42'

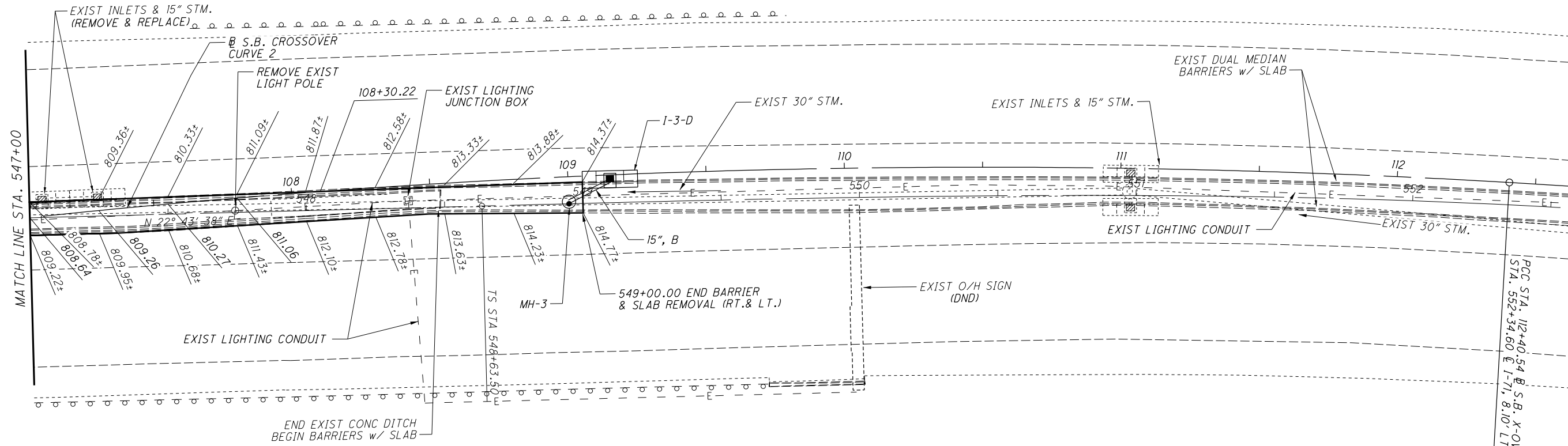
@ N.B. CROSSOVER CURVE 2
 P.I. Sta. 103+23.43
 Dc = 3° 00' 00"
 Δ = 19° 13' 25" (LT)
 R = 1,909.86'
 T = 323.43'
 L = 640.78'
 E = 27.19'



HAM-IR71-8.42

138
 441

N.B. CROSSOVER CURVE 2
 P.I. Sta. 109+41.51
 $\Delta = 10^\circ 30' 33''$ (RT)
 $Dc = 1^\circ 45' 08''$
 $R = 3,269.90'$
 $T = 300.72'$
 $L = 599.76'$
 $E = 13.80'$



CALCULATED
 DPF
 CHECKED
 BUJ

0 20 40
 HORIZONTAL
 SCALE IN FEET

PCC STA. 112+40.54 @ S.B. X-OVER=
 STA. 552+34.60 @ 171, 8.10' LT



CROSSOVER DETAILS
NORTH CROSSOVER

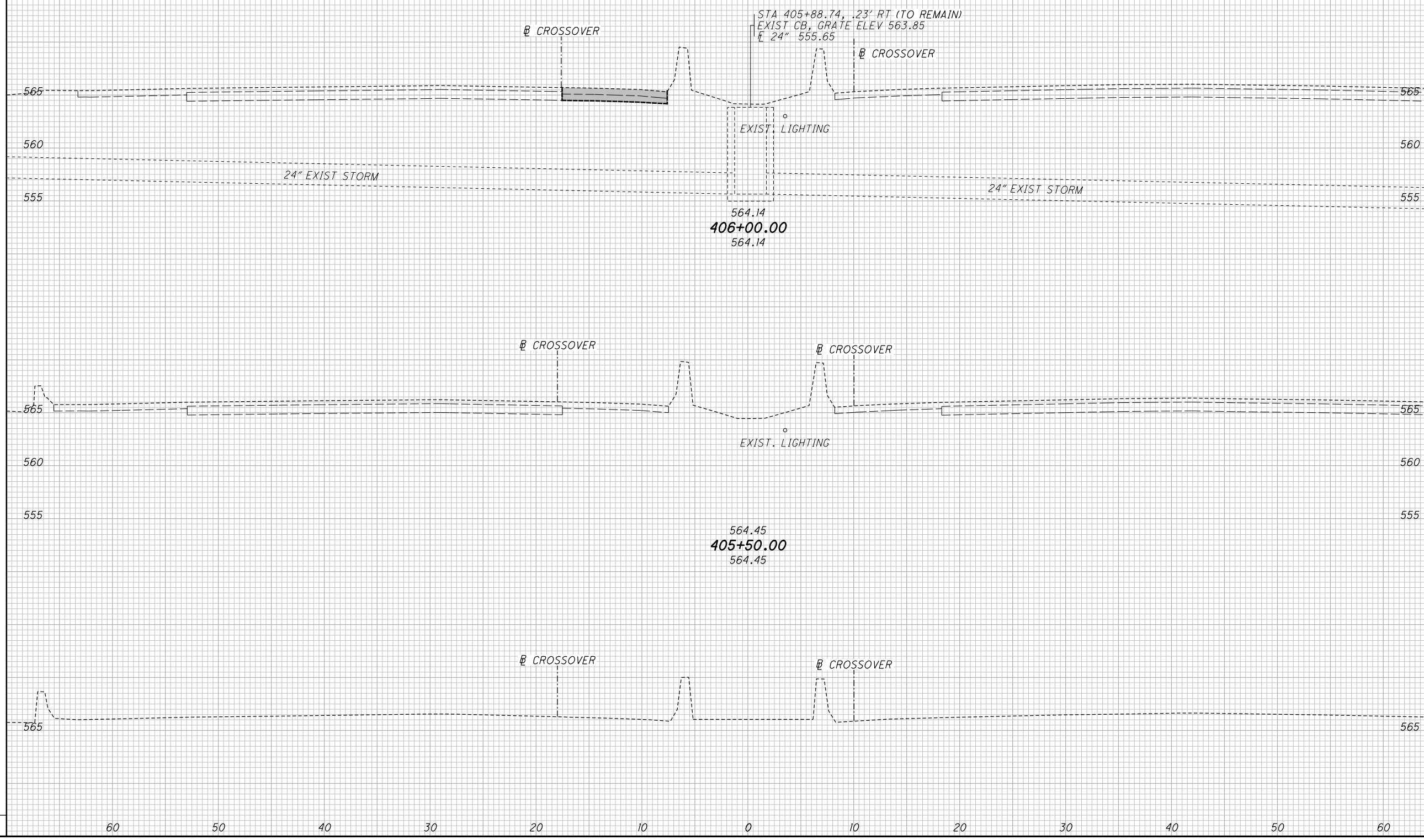
HAM-IR71-8.42

SEEDING
END SO.
WIDTH YDS.

60 50 40 30 20 10 0 10 20 30 40 50 60

END AREA
CUT FILL
VOLUME
CUT FILL
CALCULATED
DPF
CHECKED
BJF

LEGEND
 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN (SHOULDER REBUILDING)
 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A (CROSSOVER)



**CROSS SECTIONS CROSSOVERS
 STA. 405+00.00 TO STA. 406+00.00**

HAM-IR71-8.42

140
441



O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_XM400.dgn Sheet 9/14/2017 10:32:30 AM dan-f

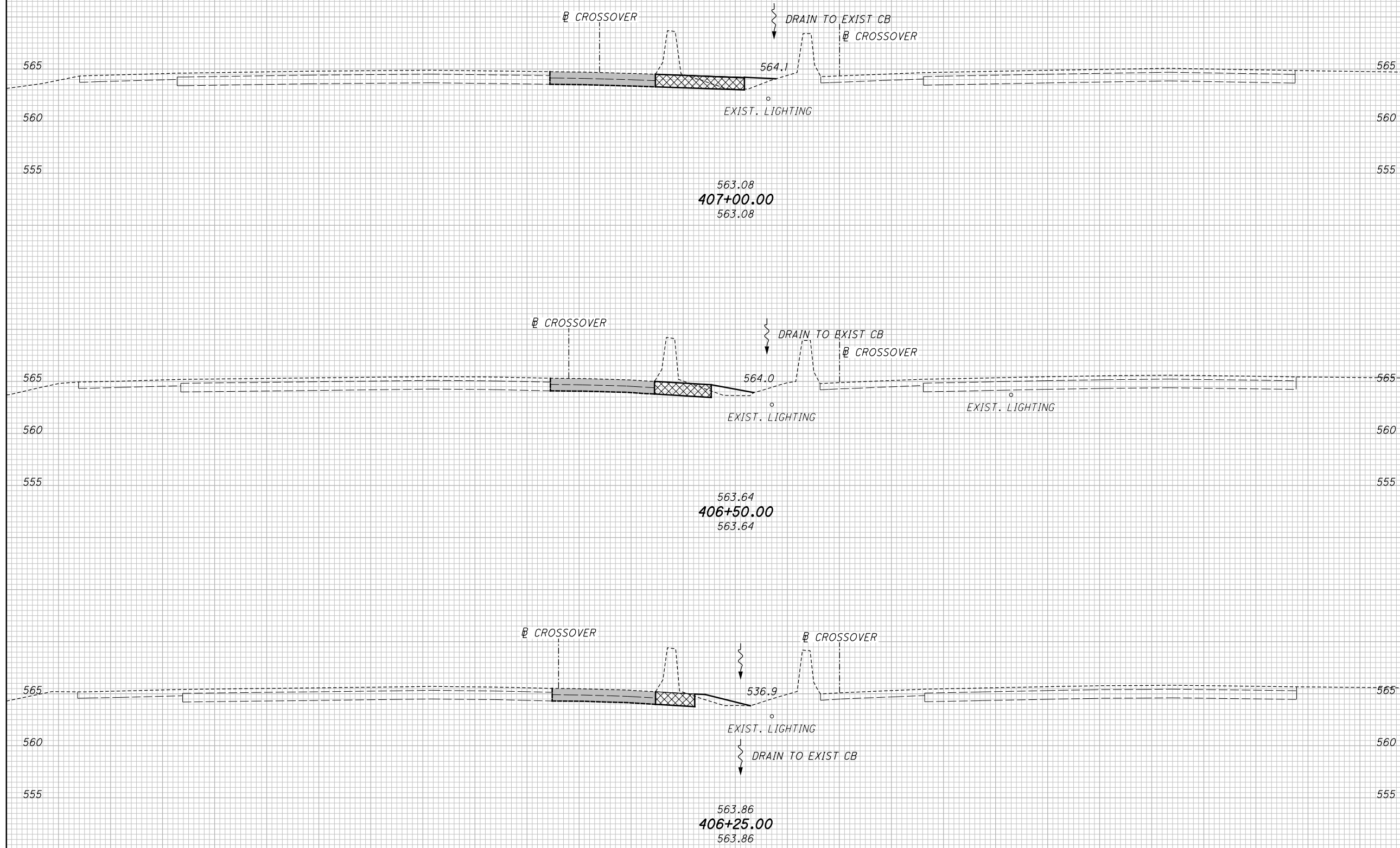
SEEDING
END SO.
WIDTH YDS.

60 50 40 30 20 10 0 10 20 30 40 50 60

END AREA		VOLUME		CALCULATED DPF	CHECKED BJF
CUT	FILL	CUT	FILL		

LEGEND

 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN (SHOULDER REBUILDING)
 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A (CROSSOVER)



60 50 40 30 20 10 0 10 20 30 40 50 60

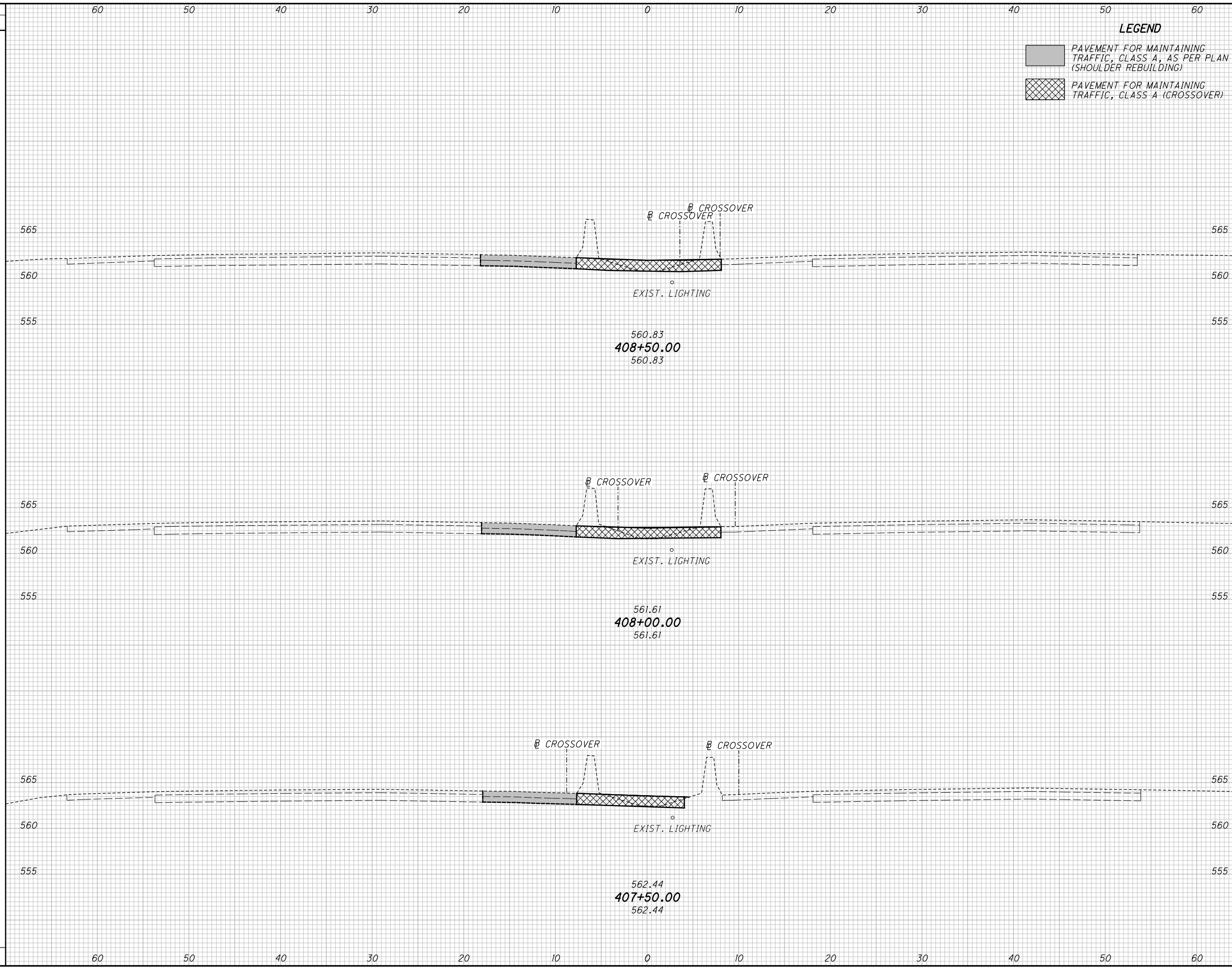
**CROSS SECTIONS CROSSOVERS
STA. 406+25.00 TO STA. 407+00.00**

HAM-IR71-8.42

141
441

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_XM400.dgn Sheet 9/14/2017 10:32:30 AM dan-f

SEEDING
END SO.
WIDTH YDS.
60 50 40 30 20 10 0 10 20 30 40 50 60

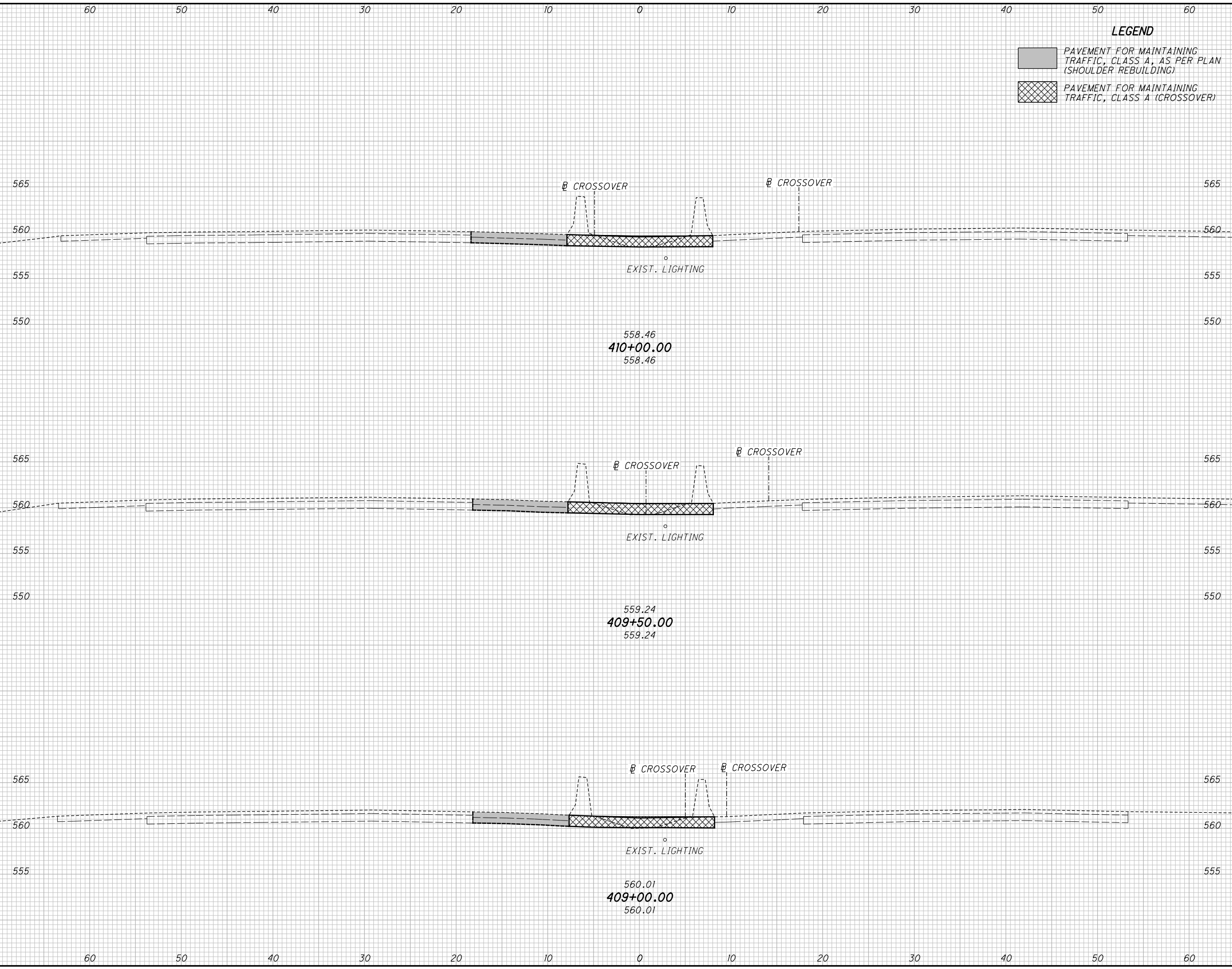


END AREA		VOLUME		CALCULATED	
CUT	FILL	CUT	FILL	DPF	BJF
CROSS SECTIONS CROSSOVERS					
STA. 407+50.00 TO STA. 408+50.00					
HAM-IR71-8.42					
142 441					

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_XM400.dgn Sheet 9/14/2017 10:32:31 AM don-f

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_XM400.dgn Sheet 9/14/2017 10:32:31 AM don-f

SEEDING	
END WIDTH	SO. YDS.



LEGEND

	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN (SHOULDER REBUILDING)
	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A (CROSSOVER)

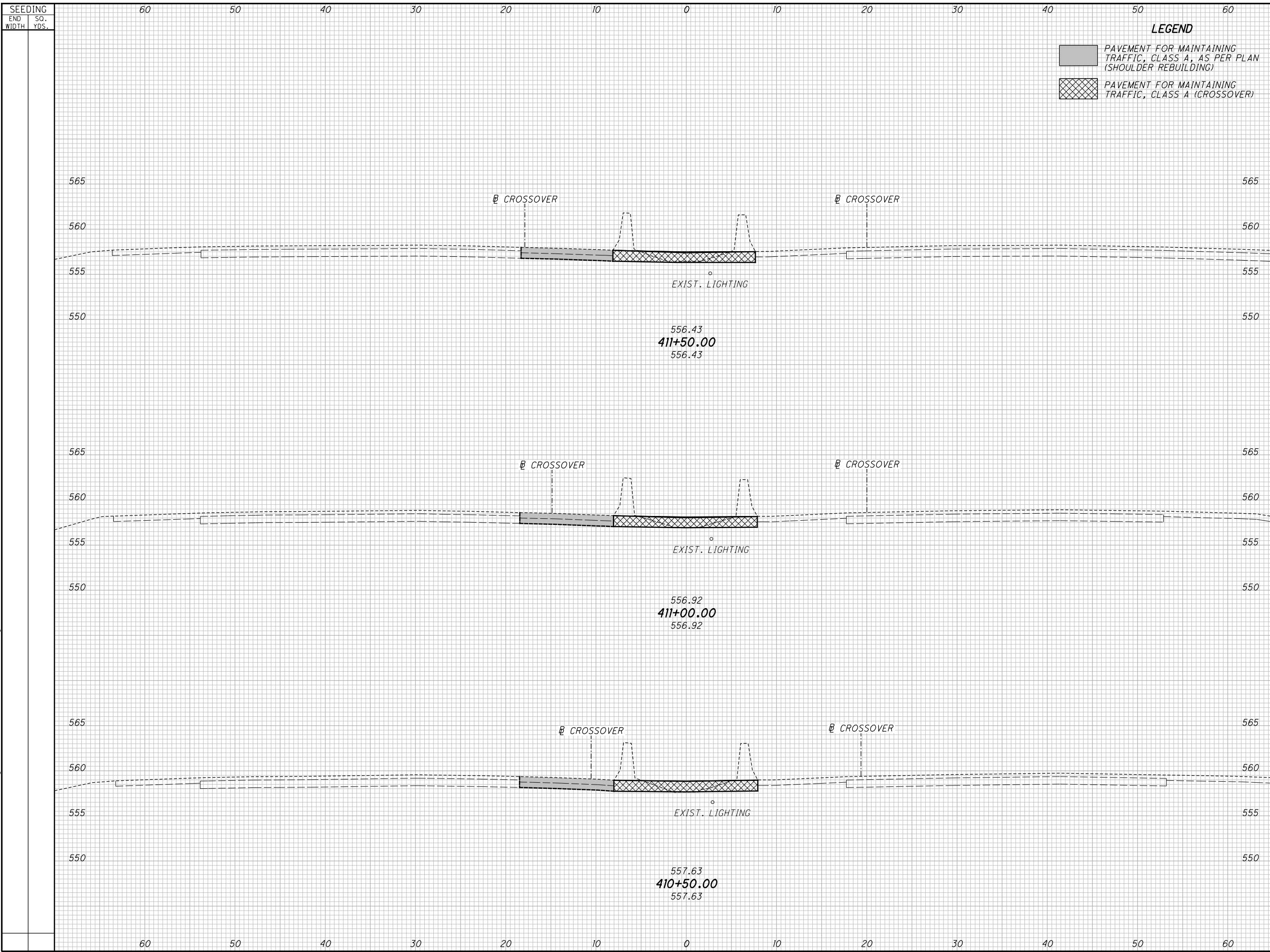
END AREA	VOLUME	CALCULATED	CHECKED				
				CUT	FILL	CUT	FILL

CROSS SECTIONS CROSSOVERS
STA. 409+00.00 TO STA. 410+00.00

HAM-IR71-8.42

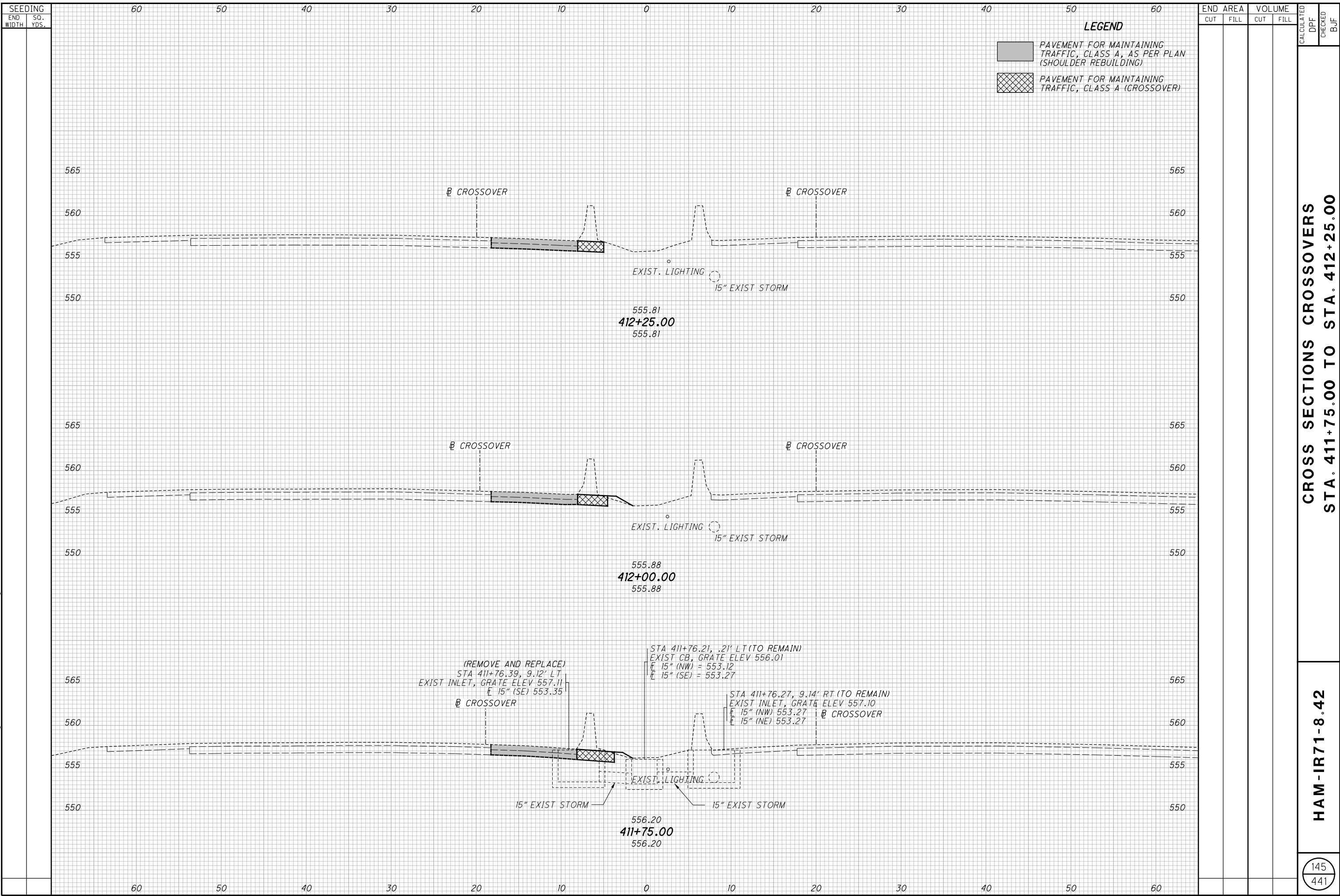
143
441

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_XM400.dgn Sheet 9/14/2017 10:32:32 AM dan-f

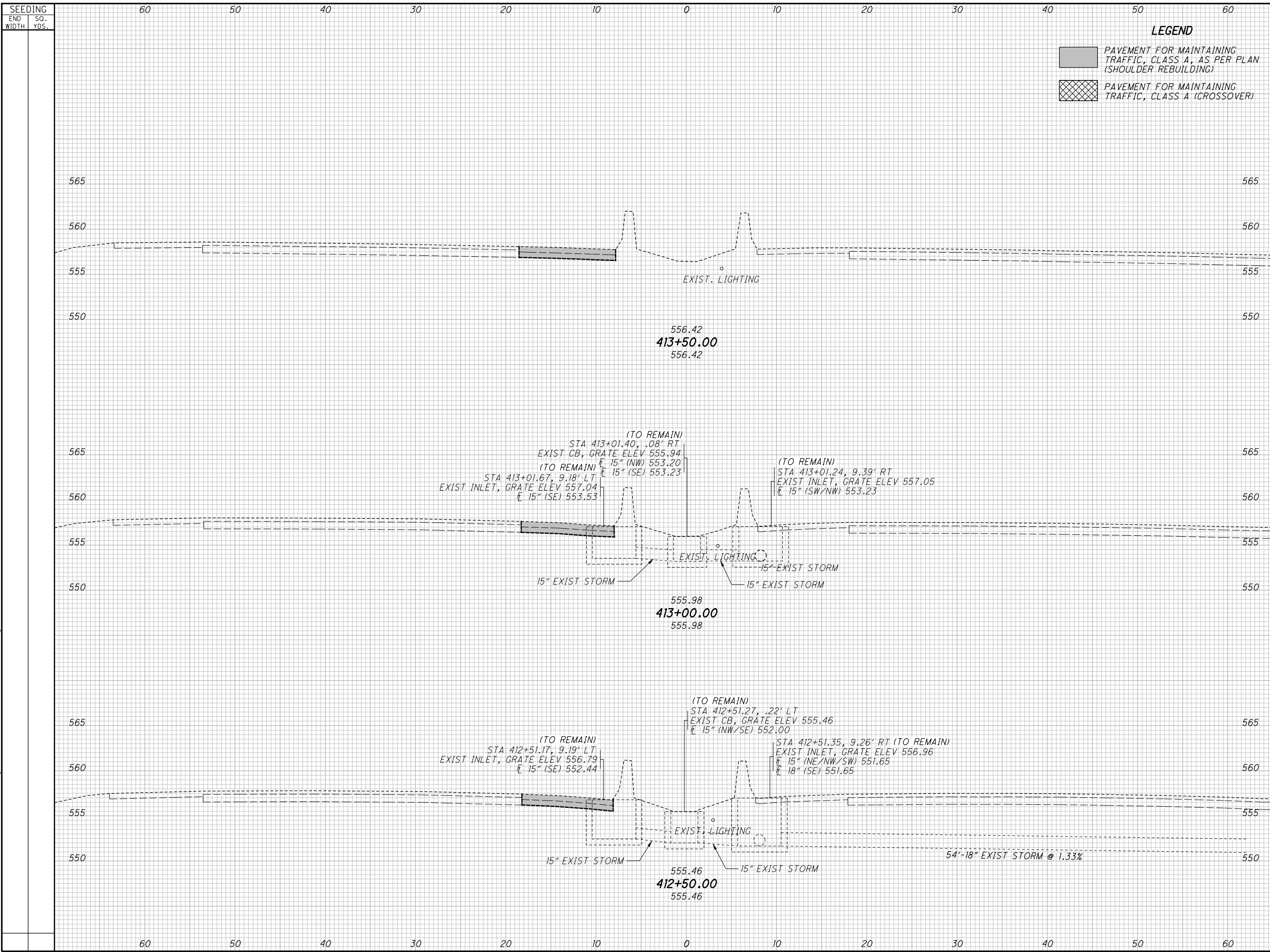


SEEDING		END AREA		VOLUME		CALCULATED	
END WIDTH	SO. YDS.	CUT	FILL	CUT	FILL	DPF	CHECKED
							BJF
<p>CROSS SECTIONS CROSSOVERS STA. 410+50.00 TO STA. 411+50.00</p>							
<p>HAM-IR71-8.42</p>							
<p>144 441</p>							

O:\ODOT\HAM\91826_HAM-71-8.42_Design\MOT_Sheets\91826_XM400.dgn_Sheet 9/14/2017 10:32:33 AM dan-f



O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_XM400.dgn Sheet 9/14/2017 10:32:33 AM dan-f



SEEDING		END AREA		VOLUME		CALCULATED		CHECKED	
END WIDTH	SO. YDS.	CUT	FILL	CUT	FILL	DPF	BJF	DPF	BJF

LEGEND

PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN (SHOULDER REBUILDING)

PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A (CROSSOVER)

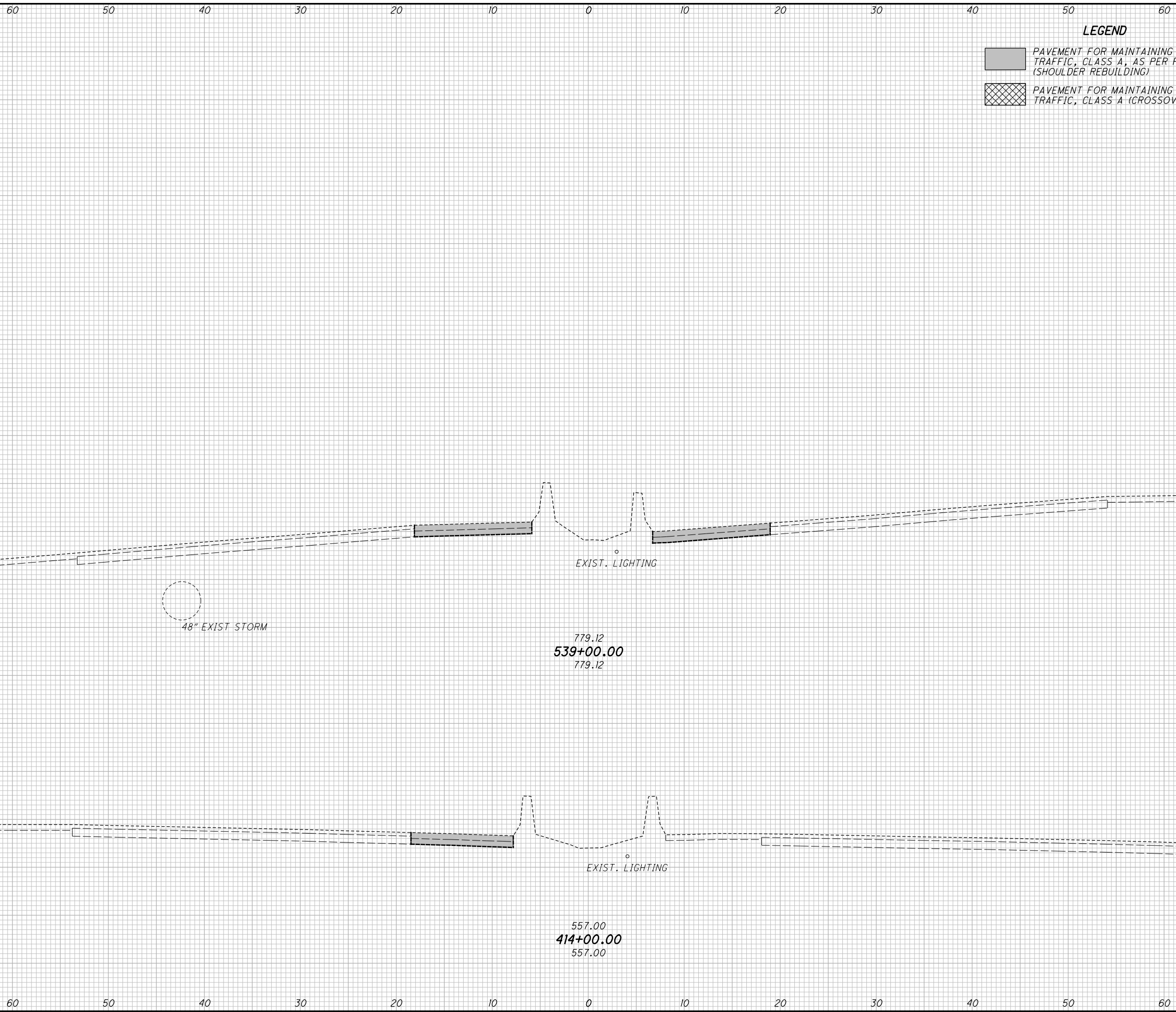
CROSS SECTIONS CROSSOVERS
STA. 412+50.00 TO STA. 413+50.00

HAM-IR71-8.42



146
441

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_XM400.dgn Sheet 9/14/2017 10:32:34 AM don-f

SEEDING	
END WIDTH	SO. YDS.



LEGEND

- 
 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN (SHOULDER REBUILDING)
- 
 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A (CROSSOVER)

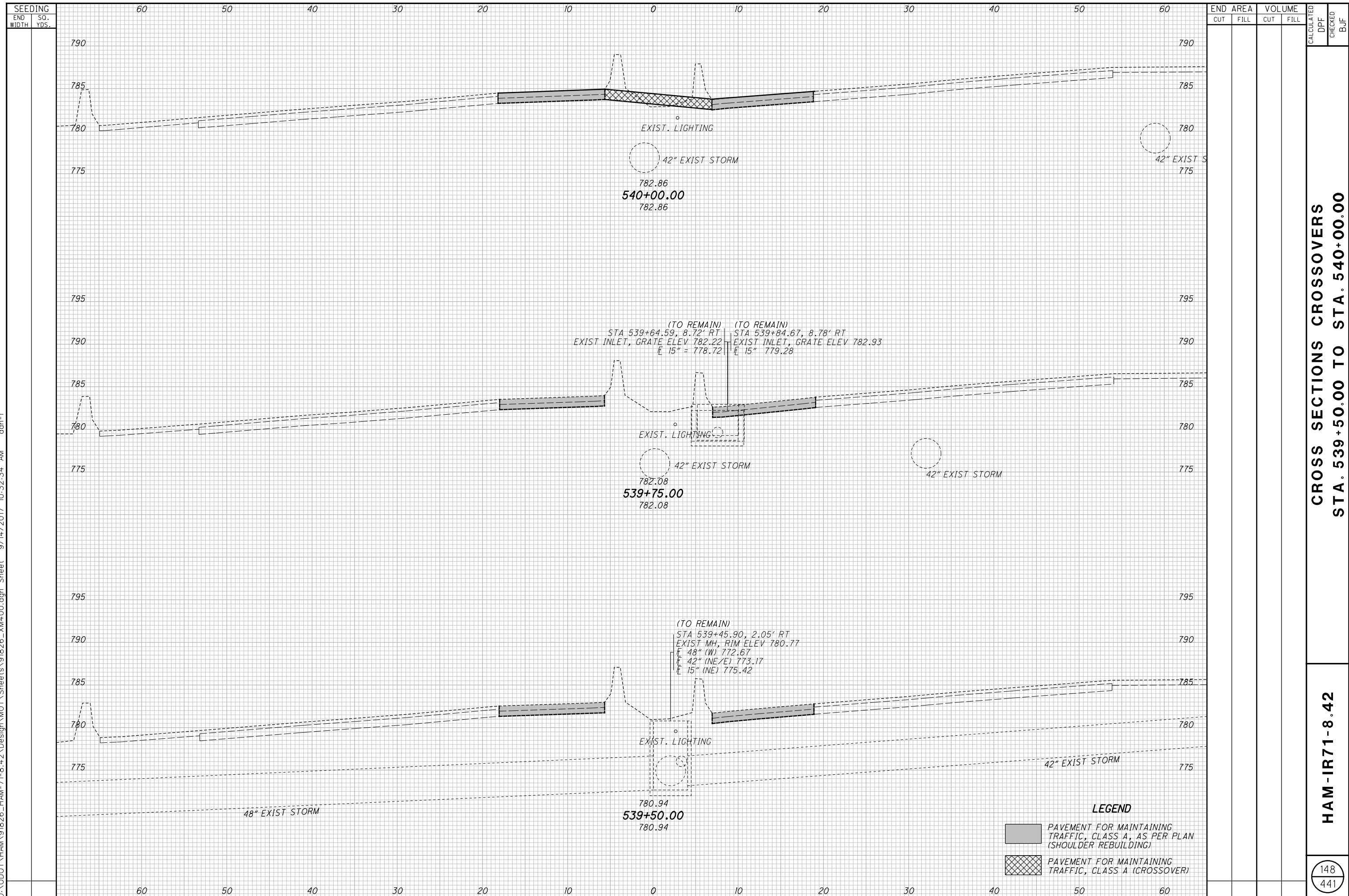
END AREA		VOLUME		CALCULATED	CHECKED
CUT	FILL	CUT	FILL		

CROSS SECTIONS CROSSOVERS
STA. 414+00.00 TO STA. 539+00.00

HAM-IR71-8.42

147
441

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_XM400.dgn Sheet 9/14/2017 10:32:34 AM don-f



SEEDING	
END WIDTH	SO. YDS.

END AREA		VOLUME		CALCULATED	
CUT	FILL	CUT	FILL	DPF	BJF

**CROSS SECTIONS CROSSOVERS
STA. 539+50.00 TO STA. 540+00.00**

HAM-IR71-8.42

LEGEND

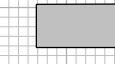

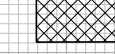
- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN (SHOULDER REBUILDING)
- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A (CROSSOVER)

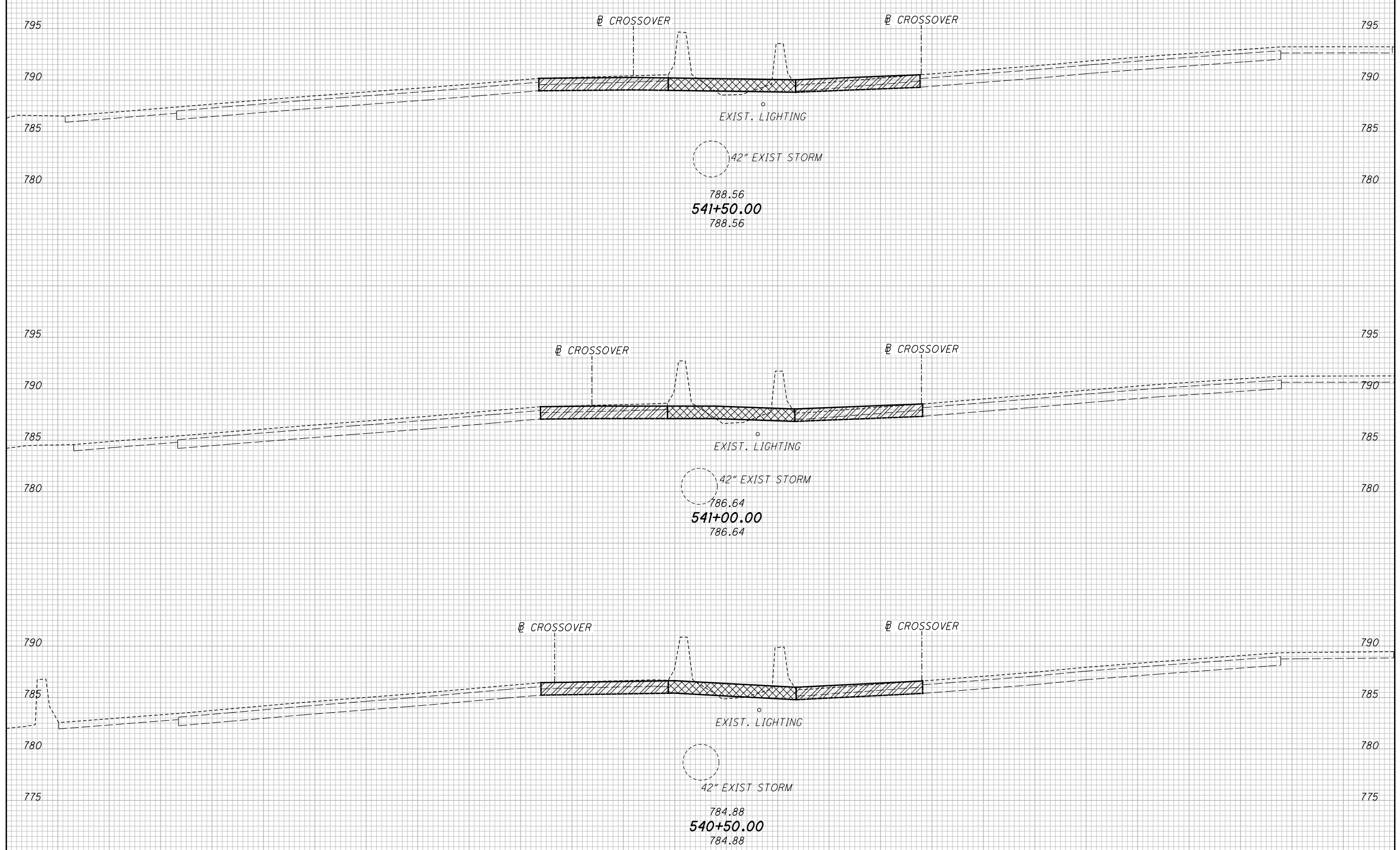
SEEDING
END SO.
WIDTH YDS.

60 50 40 30 20 10 0 10 20 30 40 50 60

END AREA		VOLUME		CALCULATED	DPF	CHECKED	BJF
CUT	FILL	CUT	FILL				

LEGEND

-  PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN (SHOULDER REBUILDING)
-  PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN (SHOULDER REBUILDING - MODIFY SLOPE)
-  PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A (CROSSOVER)

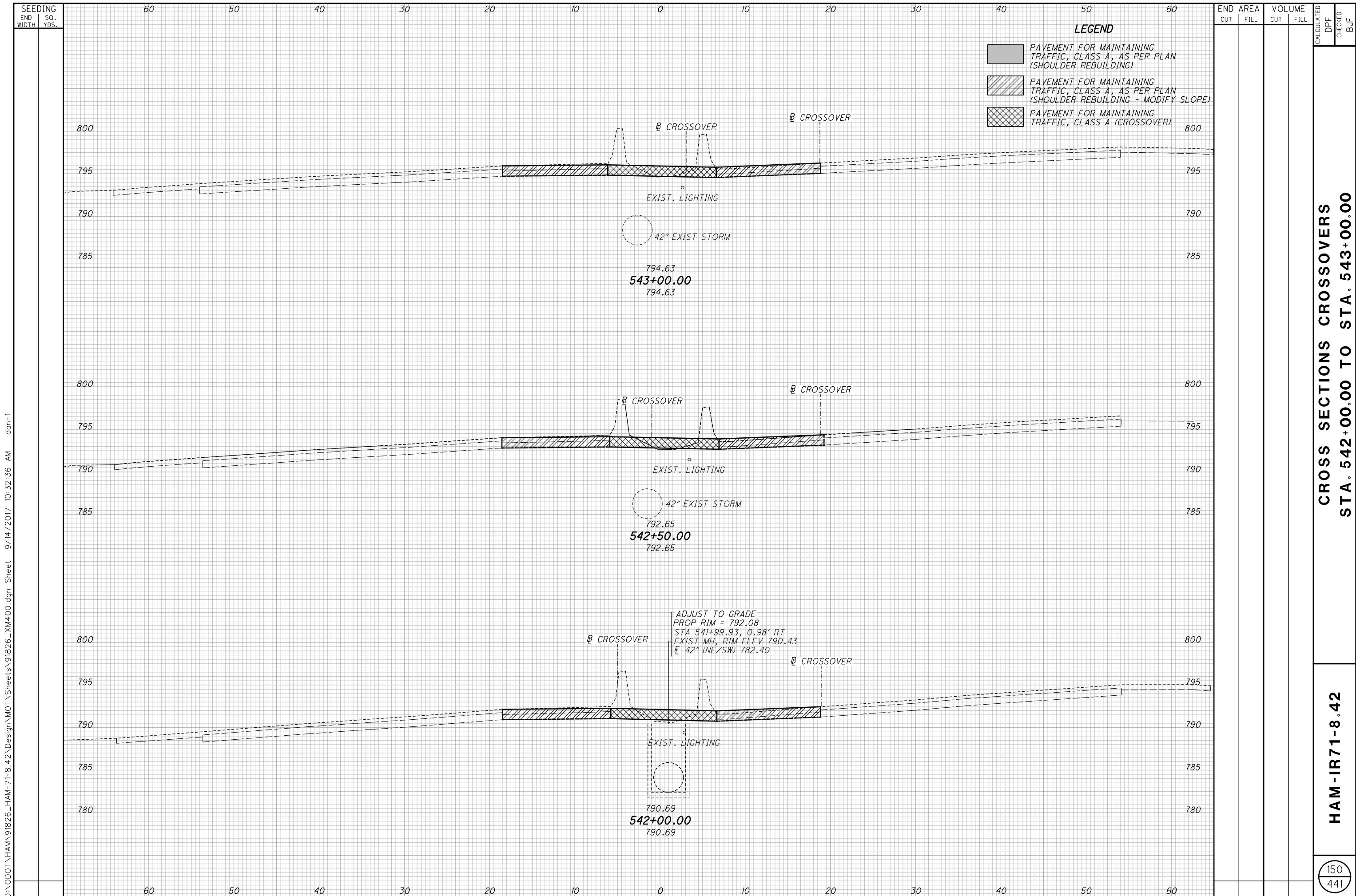


CROSS SECTIONS CROSSOVERS
STA. 540+50.00 TO STA. 541+50.00

HAM-IR71-8.42

149
441

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_XM400.dgn Sheet 9/14/2017 10:32:35 AM dan-f



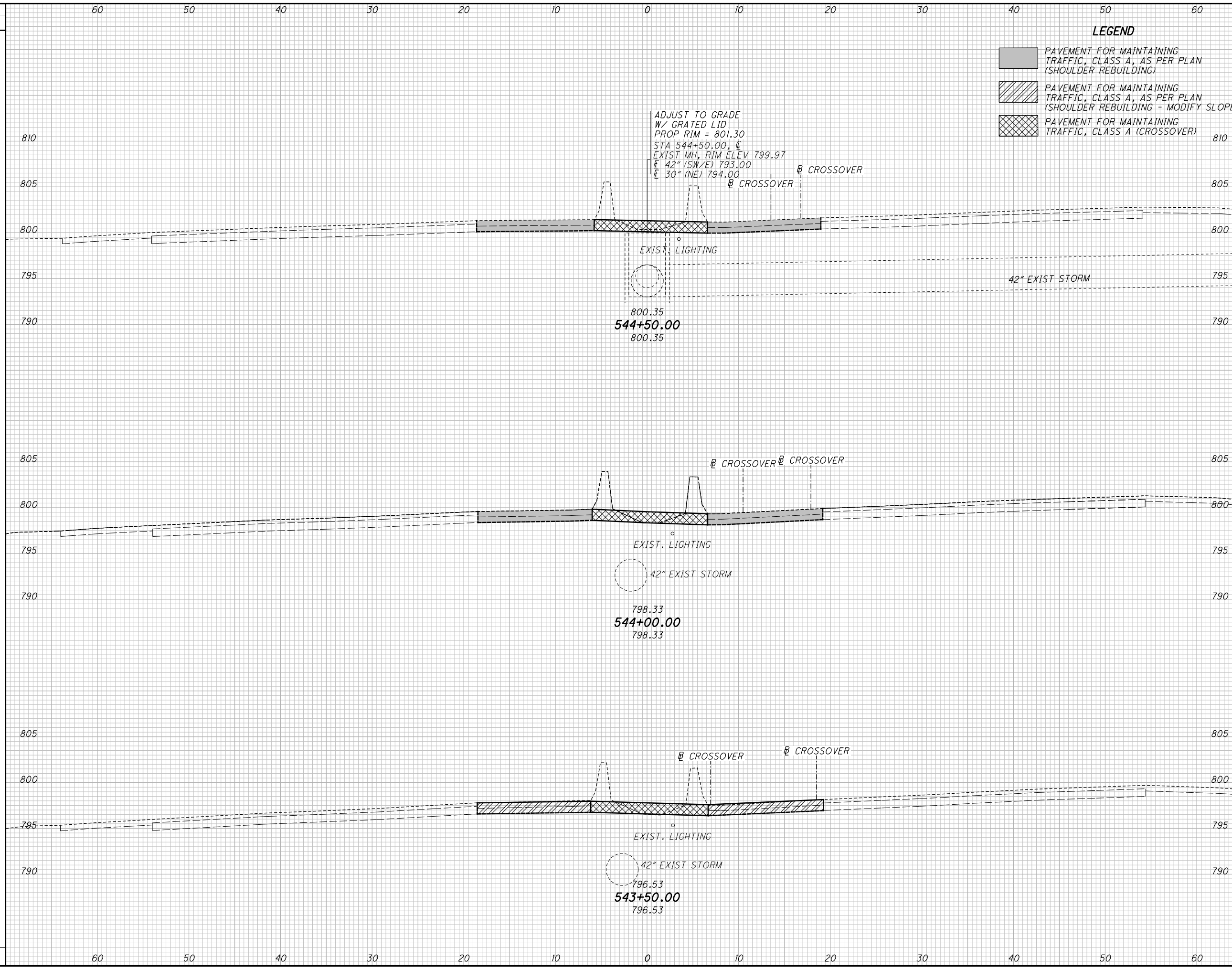
LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN (SHOULDER REBUILDING)
- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN (SHOULDER REBUILDING - MODIFY SLOPE)
- PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A (CROSSOVER)

END AREA	VOLUME	CALCULATED	DPF	CHECKED	BJF		
						CUT	FILL
CROSS SECTIONS CROSSOVERS STA. 542+00.00 TO STA. 543+00.00							
HAM-IR71-8.42							
<table border="1" style="margin: auto;"> <tr> <td style="width: 20px; text-align: center;">150</td> </tr> <tr> <td style="width: 20px; text-align: center;">441</td> </tr> </table>						150	441
150							
441							

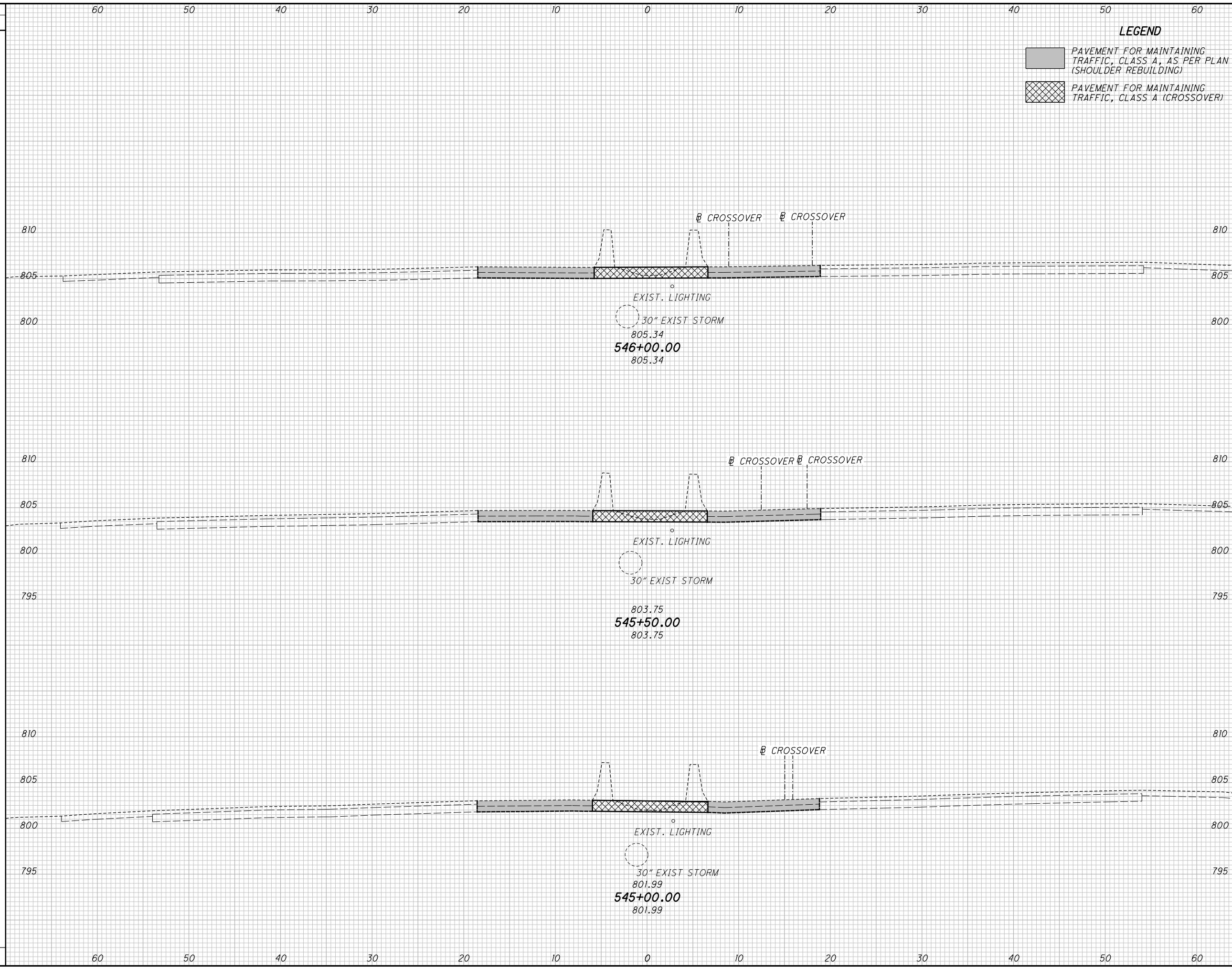
O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_XM400.dgn Sheet 9/14/2017 10:32:36 AM don-f

SEEDING
END WIDTH SO. YDS.
0:\ODOT\HAM\91826_HAM-71-8.42_Design\MOT_Sheets\91826_XM400.dgn Sheet 9/14/2017 10:32:36 AM don-f



END AREA		VOLUME		CALCULATED	DPF	CHECKED	BJF
CUT	FILL	CUT	FILL				
CROSS SECTIONS CROSSOVERS							
STA. 543+50.00 TO STA. 544+50.00							
HAM-IR71-8.42							
				151			
				441			

SEEDING
END SO.
WIDTH YDS.
60 50 40 30 20 10 0 10 20 30 40 50 60



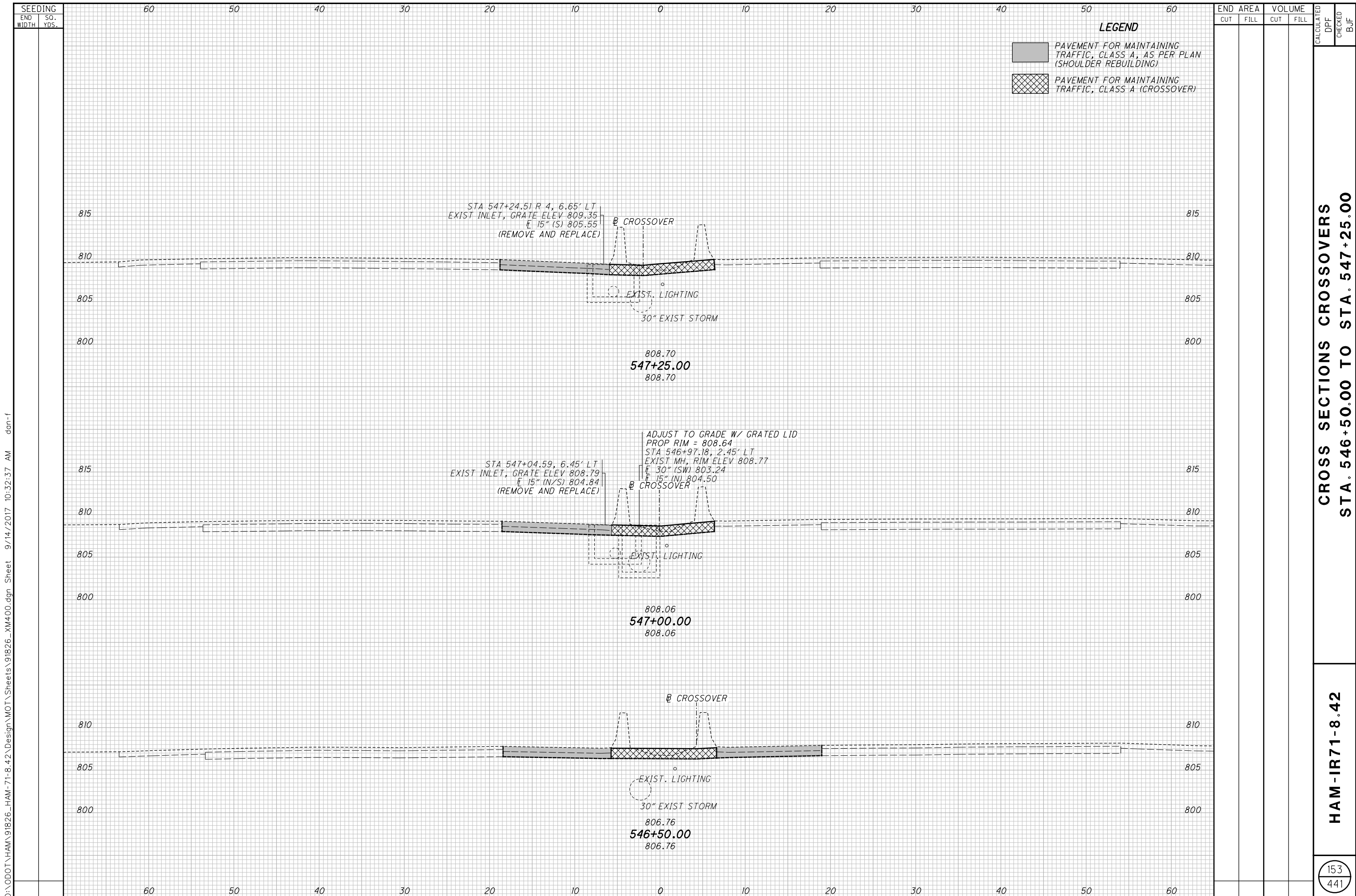
END AREA		VOLUME		CALCULATED	DPF	CHECKED	BJF
CUT	FILL	CUT	FILL				

CROSS SECTIONS CROSSOVERS
STA. 545+00.00 TO STA. 546+00.00

HAM-IR71-8.42

152
441

O:\ODOT\HAM\91826_HAM-71-8.42_Design\MOT\Sheets\91826_XM400.dgn Sheet 9/14/2017 10:32:37 AM dan-f

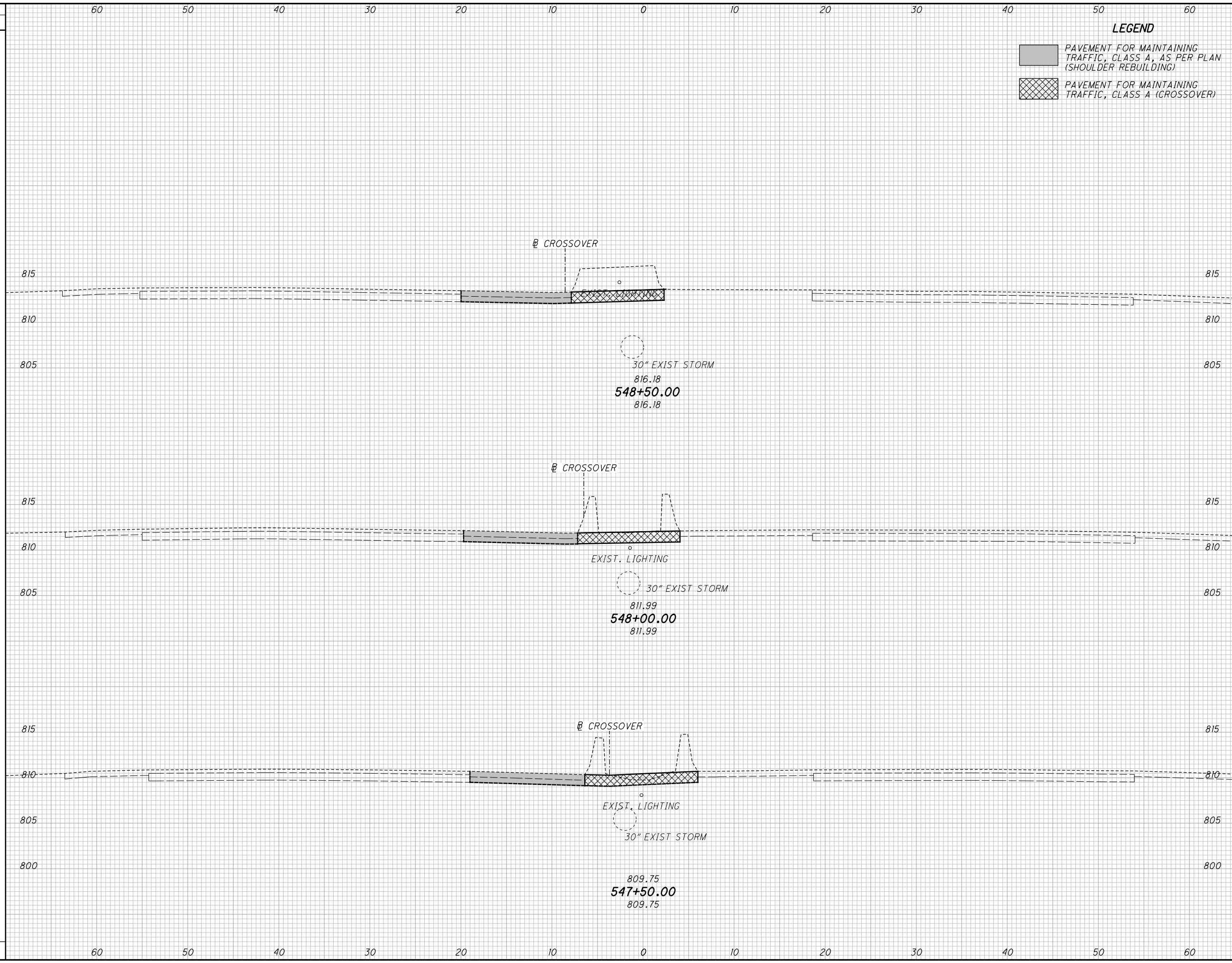


CROSS SECTIONS CROSSOVERS
STA. 546+50.00 TO STA. 547+25.00

HAM-IR71-8.42

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_XM400.dgn Sheet 9/14/2017 10:32:37 AM dan-f

o:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_XM400.dgn Sheet 9/14/2017 10:32:38 AM dan-f



END AREA	VOLUME		CALCULATED	CHECKED
	CUT	FILL		
CROSS SECTIONS CROSSOVERS STA. 547+50.00 TO STA. 548+50.00				
HAM-IR71-8.42				
			154	441

LEGEND



PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN (SHOULDER REBUILDING)
 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A (CROSSOVER)

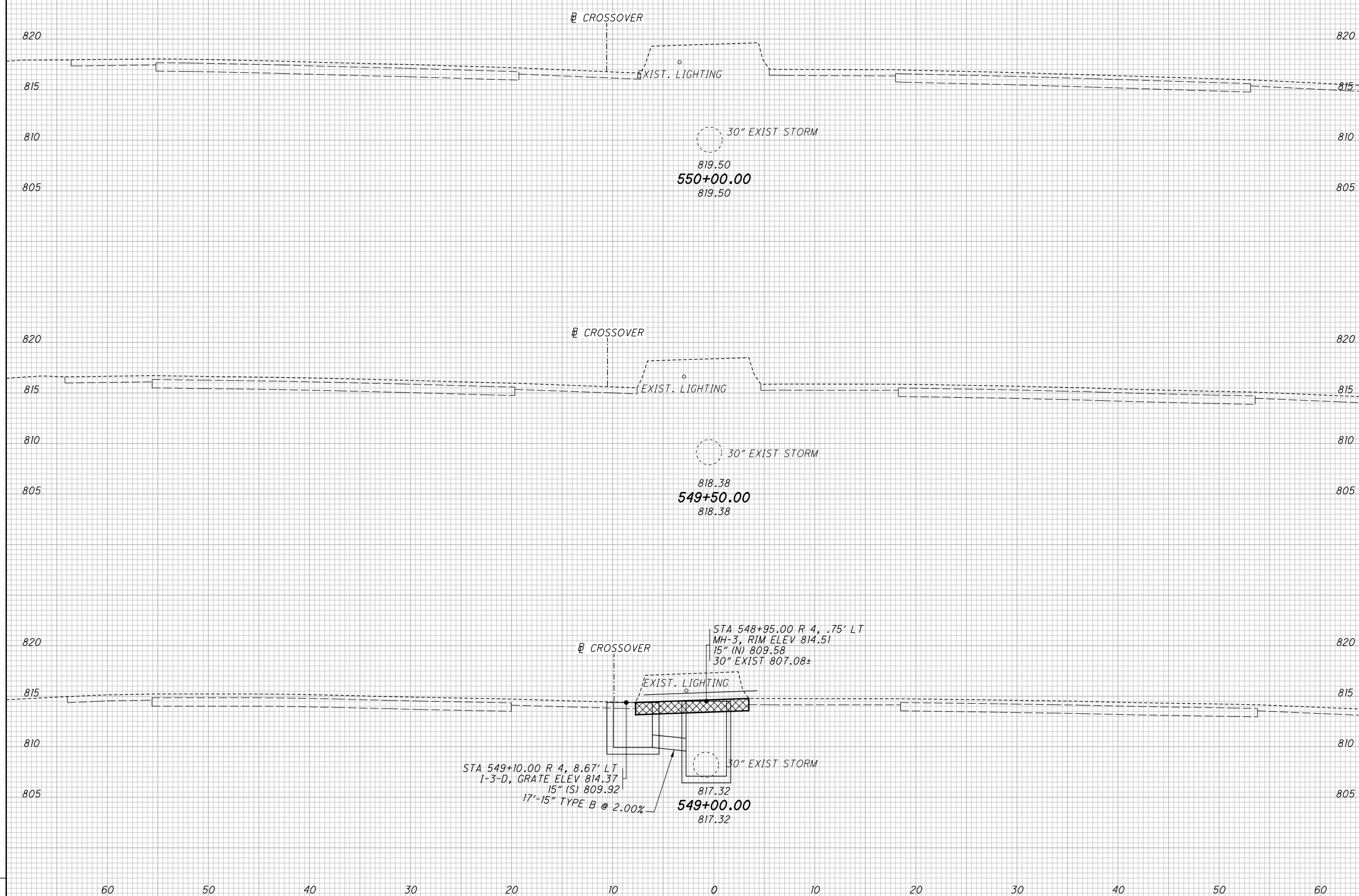
SEEDING
END SO.
WIDTH YDS.

60 50 40 30 20 10 0 10 20 30 40 50 60

END AREA		VOLUME		CALCULATED DPF	CHECKED BJF
CUT	FILL	CUT	FILL		

LEGEND

 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A, AS PER PLAN (SHOULDER REBUILDING)
 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A (CROSSOVER)

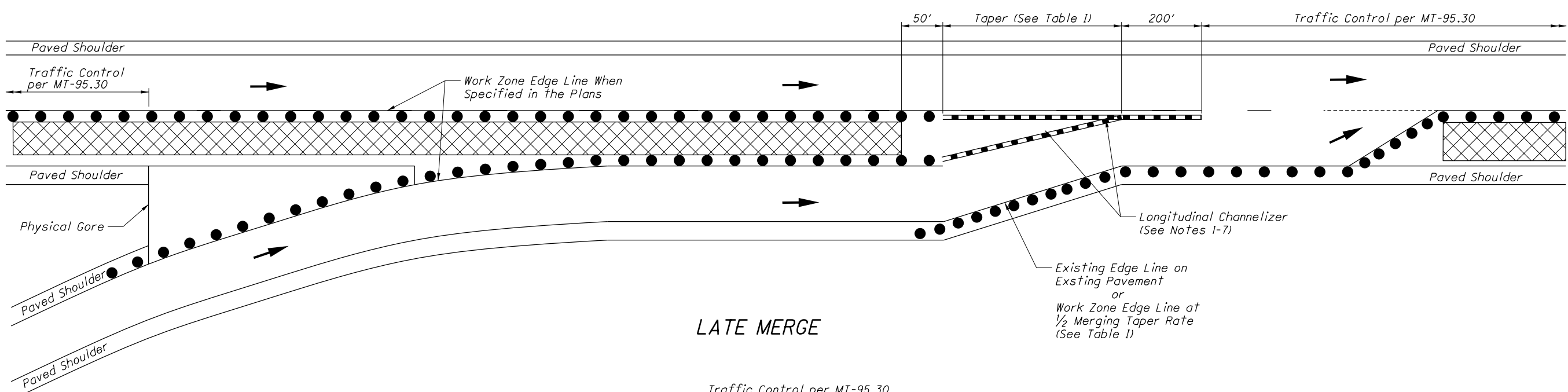


CROSS SECTIONS CROSSOVERS
STA. 549+00.00 TO STA. 550+00.00

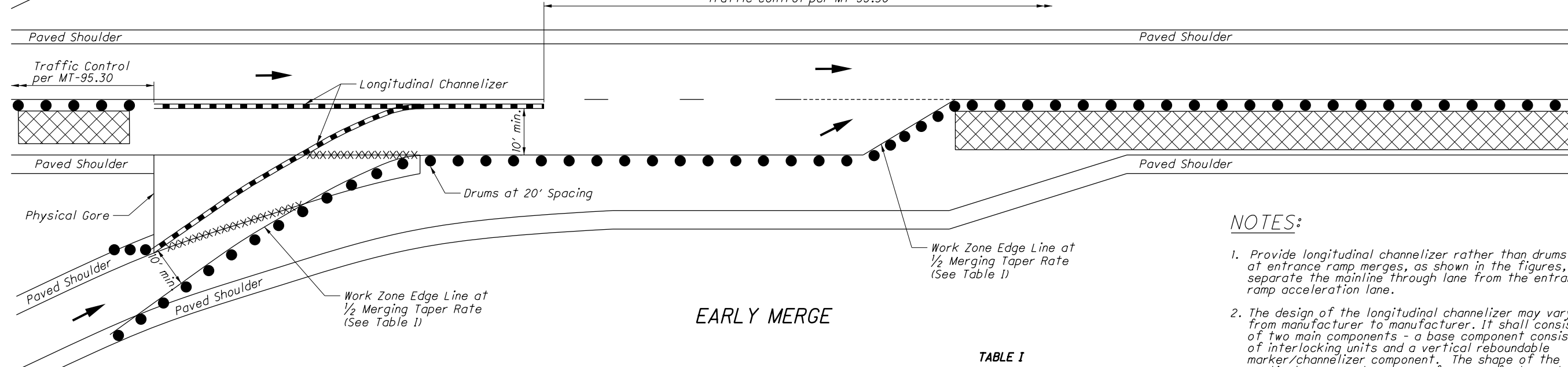
HAM-IR71-8.42

155
441

O:\ODOT\HAM\91826_HAM-71-8.42\Design\MOT\Sheets\91826_XM400.dgn Sheet 9/14/2017 10:32:38 AM dan-f



LATE MERGE



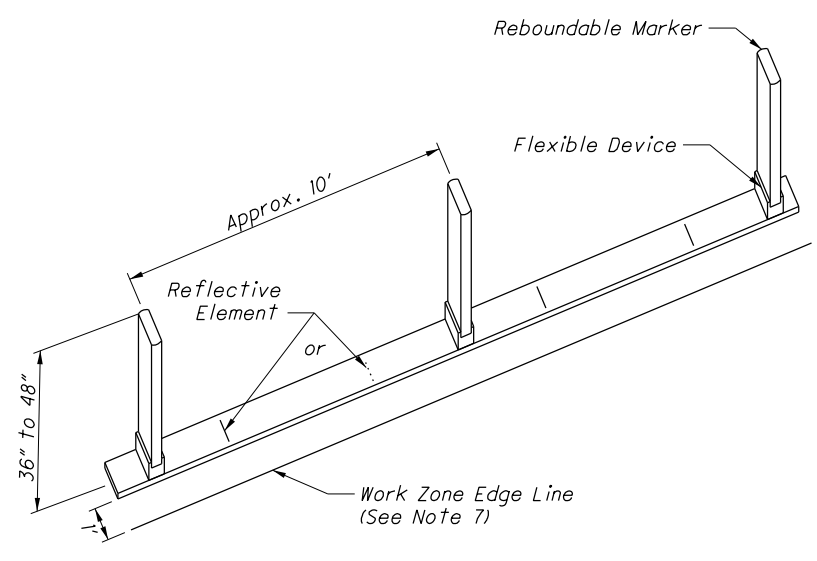
EARLY MERGE

NOTES:

1. Provide longitudinal channelizer rather than drums at entrance ramp merges, as shown in the figures, to separate the mainline through lane from the entrance ramp acceleration lane.
2. The design of the longitudinal channelizer may vary from manufacturer to manufacturer. It shall consist of two main components - a base component consisting of interlocking units and a vertical reboundable marker/channelizer component. The shape of the vertical component may vary from manufacturer to manufacturer. The width shall be approximately 8" to 9" for elliptical designs and 4" to 6" for round (tubular) designs. The height of the vertical component shall be within the range of 36" minimum to 48" maximum.
3. The longitudinal channelizer shall be NCHRP 350 compliant.
4. The vertical component shall be equipped with retroreflective sheeting or with retroreflective stripes. Where stripes are used, the stripes shall consist of two 3" wide bands placed a maximum of 2" from the top with a maximum of 6" between the bands.
5. The base component shall be equipped with reflectors.
6. The color of the base component, including the attached reflectors, and of the retroreflective sheeting or bands for the vertical components shall be in conformance with the pavement marking colors established in the Ohio Manual of Uniform Traffic Control Devices.
7. Where edge line is provided adjacent to the longitudinal channelizer, the edge line should be located 1' from the longitudinal channelizer. The edge line should be provided if the resulting lane width would be 11' or greater.
8. For additional information regarding traffic control at entrance ramps, see Standard Construction Drawings MT-98.10 and MT-98.11.

TABLE I

SPEED LIMIT (MPH)	MERGING TAPER RATE MINIMUM	1/2 MERGING TAPER RATE MINIMUM	SHOULDER TAPER RATE MINIMUM
25	11:1	6:1	4:1
30	15:1	8:1	5:1
35	21:1	11:1	7:1
40	27:1	14:1	9:1
45	45:1	23:1	15:1
50	50:1	25:1	17:1
55	55:1	28:1	19:1
60	60:1	30:1	20:1
65	65:1	33:1	22:1
70	70:1	35:1	24:1



LONGITUDINAL CHANNELIZER

LEGEND

WORK AREA	
DRUMS	
LONGITUDINAL CHANNELIZER	
REMOVE EXISTING MARKINGS	
DIRECTION OF TRAVEL	

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_GG002.dgn Sheet 3/13/2018 2:30:42 PM goodwin

Table with columns: SHEET NUM. (23, 24, 26, 169, 172, 173, 180), PART. (01/IMS/PV, 02/IMS/BR, 03/), ITEM, ITEM EXT, GRAND TOTAL, UNIT, DESCRIPTION, SEE SHEET NO.

EROSION CONTROL

DRAINAGE

PAVEMENT

GENERAL SUMMARY

HAM-IR71-8.42

SHEET NUM.										PART.			ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
		321			323	324				01/IMS/PV	02/IMS/BR	03/						
<i>LIGHTING</i>																		
					32					32			625	00450	32	EACH	CONNECTION, FUSED PULL APART	
					16					16			625	00460	16	EACH	CONNECTION, UNFUSED PULL APART	
					51					51			625	00480	51	EACH	CONNECTION, UNFUSED PERMANENT	
					10					10			625	10490	10	EACH	LIGHT POLE, CONVENTIONAL	
					2					2			625	13400	2	EACH	LIGHT TOWER, BBBBBB100	
					4					4			625	14000	4	EACH	LIGHT POLE FOUNDATION, 24" X 6' DEEP	
					2					2			625	15200	2	EACH	LIGHT TOWER FOUNDATION, 36" X 25' DEEP	
					6					6			625	14200	6	EACH	LIGHT POLE FOUNDATION, 24" X 10' DEEP	
					7					7			625	18100	7	EACH	BRACKET ARM, 12'	
					2					2			625	18200	2	EACH	BRACKET ARM, 15'	
					2					2			625	18300	2	EACH	BRACKET ARM, 18'	
					2					2			625	18400	2	EACH	BRACKET ARM, 20'	
					2,742					2,742			625	23200	2,742	FT	NO. 4 AWG 2400 VOLT DISTRIBUTION CABLE	
					2,640					2,640			625	23300	2,640	FT	NO. 2 AWG 2400 VOLT DISTRIBUTION CABLE	
					1,368					1,368			625	23400	1,368	FT	NO. 10 AWG POLE AND BRACKET CABLE	
					1,094					1,094			625	25402	1,094	FT	CONDUIT, 2", 725.05	
					588					588			625	25910	588	FT	CONDUIT CLEANED AND CABLES REMOVED	
						13							625	26251	13	EACH	LUMINAIRE, CONVENTIONAL, AS PER PLAN	321
						12							625	26260	12	EACH	LUMINAIRE, HIGH MAST	
						1,047							625	29000	1,047	FT	TRENCH	
						9							625	30700	9	EACH	PULL BOX, 725.08, 18"	
						15							625	32000	15	EACH	GROUND ROD	
						1,047							625	36000	1,047	FT	PLASTIC CAUTION TAPE	
		2											SPECIAL	62540010	2	EACH	REPLACEMENT OF EXISTING LIGHTING UNIT	321
						2							625	75350	2	EACH	LIGHT TOWER REMOVED	
						7							625	75400	7	EACH	LIGHT POLE REMOVED	
						4							625	75500	4	EACH	LIGHT POLE FOUNDATION REMOVED	
						22							625	75506	22	EACH	LUMINAIRE REMOVED	
						2							625	75540	2	EACH	LIGHT TOWER FOUNDATION REMOVED	
						857							625	75550	857	FT	DISTRIBUTION CABLE REMOVED	
						19							625	75801	19	EACH	DISCONNECT CIRCUIT, AS PER PLAN	321
TRAFFIC CONTROL SEE SHEETS 234-235																		

GENERAL SUMMARY

HAM-IR71-8.42

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_GG006.dgn Sheet 1/29/2018 3:33:57 PM compton

SHEET NUM.										PART.			ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
										01/IMS/PV	02/IMS/BR	03/						
STRUCTURE OVER 20 FOOT SPAN (HAM-71-0875)																		
												LS	201	11001	LS		CLEARING AND GRUBBING, AS PER PLAN	339
												LS	202	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	339
												11	202	22900	11	SY	APPROACH SLAB REMOVED	
												LS	503	11100	LS		COFFERDAMS AND EXCAVATION BRACING	
												25	503	21100	25	CY	UNCLASSIFIED EXCAVATION	
												508	509	10000	508	LB	EPOXY COATED REINFORCING STEEL	
												36	510	10001	36	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN	339
												4	511	45711	4	CY	CLASS QCI CONCRETE, ABUTMENT, AS PER PLAN	348
												LS	511	81200	LS		CONCRETE, MISC.: PRESSURE WASH BEAMS SEATS AND BACKWALL	339
												1,846	512	10300	1,846	SY	SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN	
												LS	513	95020	LS		STRUCTURAL STEEL, MISC.: PRESSURE WASH STRUCTURAL STEEL	339
												LS	516	14800	LS		STRUCTURAL JOINT OR JOINT SEALER, MISC.: CLEAN AND RE-USE EXISTING EXPANSION JOINT ARMOR AND SEAL	348
												LS	518	21230	LS		POROUS BACKFILL WITH GEOTEXTILE FABRIC	
												LS	518	63300	LS		STRUCTURE DRAINAGE, MISC.: SCUPPER AND DRAINAGE PIPE CLEAN OUT	340
												1,472	519	11101	1,472	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	340
												50	519	12300	50	SY	PATCHING CONCRETE BRIDGE DECK - TYPE B	
												11	526	15001	11	SY	REINFORCED CONCRETE APPROACH SLABS (T=13"), AS PER PLAN	343
												1	SPECIAL	53000400	1	EACH	STRUCTURES PROTECTION OF UTILITIES	340
												684	607	39930	684	FT	VANDAL PROTECTION FENCE, 12' CURVED, COATED FABRIC	
												684	607		684	FT	TEMPORARY FENCE	
												52	608	10000	52	SF	4" CONCRETE WALK	
STRUCTURE OVER 20 FOOT SPAN (HAM-71-0970L)																		
												LS	201	11001	LS		CLEARING AND GRUBBING, AS PER PLAN	339
												LS	202	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	339
												18	510	10001	18	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN	339
												2,856	512	10100	2,856	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
												2,856	512	74000	2,856	SY	REMOVAL OF EXISTING COATINGS FROM CONCRETE SURFACES	
												174	516	11211	174	FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN	359
												9	516	44101	9	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN, 9"x1'-0"x2.17"	340
												9	516	44201	9	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN, 11"x1'-2"x3.41"	340
												LS	516	47000	LS		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE	
												LS	518	63300	LS		STRUCTURE DRAINAGE, MISC.: SCUPPER AND DRAINAGE PIPE CLEAN OUT	340
												63	519	11101	63	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	340
												1,778	848	20000	1,778	SY	SURFACE PREPARATION USING HYDRODEMOLITION	
												1,356	848	10201	1,356	SY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN 2 3/4" THICK	341
												422	848	10201	422	SY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN 1 3/4" THICK	341
												50	848	30200	50	CY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY	
												142	848	50000	142	SY	HAND CHIPPING	
												LS	848	50100	LS		TEST SLAB	
												1,356	848	50320	1,356	SY	EXISTING CONCRETE OVERLAY REMOVED 1 3/4" THICK	
												589	848	50340	589	SY	REMOVAL OF DEBONDED OR DETERIORATED EXISTING VARIABLE THICKNESS CONCRETE OVERLAY	
STRUCTURE OVER 20 FOOT SPAN (HAM-71-0970L) ALT. BID 1																		
												3,101	514	00050	3,101	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL	
												3,101	514	00056	3,101	SF	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT	
												3,101	514	00060	3,101	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT	
												3,101	514	00066	3,101	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT	
												8	514	00504	8	MNHR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL	
												4	514	10000	4	EACH	FINAL INSPECTION REPAIR	

GENERAL SUMMARY

HAM-IR71-8.42

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_GG007.dgn Sheet 10/26/2017 8:32:49 AM compton

SHEET NUM.										PART.			ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.	
										01/IMS/PV	02/IMS/BR	03/							
STRUCTURE OVER 20 FOOT SPAN (HAM-71-0970L) ALT. BID 2																			
													14,950	514	00050	14,950	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL	
													14,950	514	00056	14,950	SF	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT	
													14,950	514	00060	14,950	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT	
													14,950	514	00066	14,950	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT	
													24	514	00504	24	MNHR	GRINDING FINES, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL	
													10	514	10000	10	EACH	FINAL INSPECTION REPAIR	
STRUCTURE OVER 20 FOOT SPAN (HAM-71-0970R)																			
													LS	201	11001	LS		CLEARING AND GRUBBING, AS PER PLAN	339
													LS	202	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	339
													18	510	10001	18	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN	339
													2,990	512	10100	2,990	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
													2,990	512	74000	2,990	SY	REMOVAL OF EXISTING COATINGS FROM CONCRETE SURFACES	
													171	516	11211	171	FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN	359
													9	516	44101	9	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN, 9"x1'-0"x2.17"	340
																			340
													9	516	44201	9	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN, 11"x1'-2"x3.41"	
													LS	516	47000	LS		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE	
													LS	518	63300	LS		STRUCTURE DRAINAGE, MISC.: SCUPPER AND DRAINAGE PIPE CLEAN OUT	340
													26	519	11101	26	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	340
													1,704	848	20000	1,704	SY	SURFACE PREPARATION USING HYDRODEMOLITION	
													1,292	848	10201	1,292	SY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN 2 3/4" THICK	341
													412	848	10201	412	SY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN 1 3/4" THICK	341
													47	848	30200	47	CY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY	
													135	848	50000	135	SY	HAND CHIPPING	
													LS	848	50100	LS		TEST SLAB	
													1,292	848	50320	1,292	SY	EXISTING CONCRETE OVERLAY REMOVED 1 3/4" THICK	
													45	848	50340	45	SY	REMOVAL OF DEBONDED OR DETERIORATED EXISTING VARIABLE THICKNESS CONCRETE OVERLAY	
STRUCTURE OVER 20 FOOT SPAN (HAM-71-0970R) ALT. BID 1																			
													3,243	514	00050	3,243	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL	
													3,243	514	00056	3,243	SF	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT	
													3,243	514	00060	3,243	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT	
													3,243	514	00066	3,243	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT	
													8	514	00504	8	MNHR	GRINDING FINES, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL	
													4	514	10000	4	EACH	FINAL INSPECTION REPAIR	
STRUCTURE OVER 20 FOOT SPAN (HAM-71-0970R) ALT. BID 2																			
													14,997	514	00050	14,997	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL	
													14,997	514	00056	14,997	SF	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT	
													14,997	514	00060	14,997	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT	
													14,997	514	00066	14,997	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT	
													24	514	00504	24	MNHR	GRINDING FINES, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL	
													10	514	10000	10	EACH	FINAL INSPECTION REPAIR	

GENERAL SUMMARY

HAM-IR71-8.42

CALCULATED
JLG
CHECKED
KSC

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_GG008.dgn Sheet 10/26/2017 8:32:51 AM compton

SHEET NUM.										PART.			ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.
										01/IMS/PV	02/IMS/B R	03/						
STRUCTURE OVER 20 FOOT SPAN (HAM-71-0991)																		
												LS	201	11001	LS		CLEARING AND GRUBBING, AS PER PLAN	339
												LS	202	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	339
												8	510	10001	8	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN	339
												648	512	10100	648	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
												648	512	74000	648	SY	REMOVAL OF EXISTING COATINGS FROM CONCRETE SURFACES	
												LS	513	95020	LS		STRUCTURAL STEEL, MISC.: TRIM BEAM ENDS	360
												341	514	20001	341	SF	FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN	340
												4	516	44301	4	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN, 11 1/2"x11 1/2"x4.08"	340
												4	516	44401	4	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN, 1'-0"x1'-3"x6"	340
												LS	516	47000	LS		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE	
												LS	518	63300	LS		STRUCTURE DRAINAGE, MISC.: SCUPPER AND DRAINAGE PIPE CLEAN OUT	340
												152	519	11101	152	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	340
												1,551	848	20000	1,551	SY	SURFACE PREPARATION USING HYDRODEMOLITION	
												1,409	848	10201	1,409	SY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN 2 3/4" THICK	341
												141	848	10201	141	SY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN 1 3/4" THICK	341
												43	848	30200	43	CY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY	
												143	848	50000	143	SY	HAND CHIPPING	
												LS	848	50100	LS		TEST SLAB	
												1,409	848	50320	1,409	SY	EXISTING CONCRETE OVERLAY REMOVED 1 3/4" THICK	
												1,245	848	50340	1,245	SY	REMOVAL OF DEBONDED OR DETERIORATED EXISTING VARIABLE THICKNESS CONCRETE OVERLAY	
STRUCTURE OVER 20 FOOT SPAN (HAM-71-0992)																		
												LS	201	11001	LS		CLEARING AND GRUBBING, AS PER PLAN	339
												LS	202	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	339
												1,253	512	10100	1,253	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
												1,253	512	74000	1,253	SY	REMOVAL OF EXISTING COATINGS FROM CONCRETE SURFACES	
												LS	513	95020	LS		STRUCTURAL STEEL, MISC.: TRIM BEAM ENDS	364
												44	514	20001	44	SF	FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN	340
												4	516	44101	4	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN, 8"x10"x2.94"	340
												4	516	44101	4	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN, 8"x11"x2.94"	340
												LS	516	47000	LS		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE	
												126	519	11101	126	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	340
												937	848	20000	937	SY	SURFACE PREPARATION USING HYDRODEMOLITION	
												798	848	10201	798	SY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN 2 3/4" THICK	341
												139	848	10201	139	SY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN 1 3/4" THICK	341
												26	848	30200	26	CY	SUPERPLASTICIZED DENSE CONCRETE OVERLAY (VARIABLE THICKNESS), MATERIAL ONLY	
												84	848	50000	84	SY	HAND CHIPPING	
												LS	848	50100	LS		TEST SLAB	
												798	848	50320	798	SY	EXISTING CONCRETE OVERLAY REMOVED 1 3/4" THICK	
												692	848	50340	692	SY	REMOVAL OF DEBONDED OR DETERIORATED EXISTING VARIABLE THICKNESS CONCRETE OVERLAY	

GENERAL SUMMARY

HAM-IR71-8.42

CALCULATED	JLG	CHECKED	KSC
------------	-----	---------	-----

162
441

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_GG009.dgn Sheet 3/15/2018 10:48:35 AM chen

SHEET NUM.										PART.			ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.	
										01/IMS/PV	02/IMS/B R	03/							
STRUCTURE OVER 20 FOOT SPAN (HAM-71-1068L)																			
													LS	201	11001	LS	CLEARING AND GRUBBING, AS PER PLAN	339	
													LS	202	11203	LS	PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	339	
													296	202	22900	296	SY	APPROACH SLAB REMOVED	
													12	202	98100	12	EACH	REMOVAL MISC.: SCUPPER AND DOWNSPOUT REMOVAL (EACH)	369
													LS	503	11100	LS	COFFERDAMS AND EXCAVATION BRACING		
													83	503	21100	83	CY	UNCLASSIFIED EXCAVATION	
													154,359	509	10000	154,359	LB	EPOXY COATED REINFORCING STEEL	
													306	510	10001	306	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN	339
													467	511	34447	467	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN	343
													128	511	34449	128	CY	CLASS QC2 CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN	343
													71	511	44110	71	CY	CLASS QC1 CONCRETE, ABUTMENT NOT INCLUDING FOOTING	
													LS	511	81200	LS	CONCRETE, MISC.: SURVEYING EXISTING BRIDGE	410	
													1,553	512	10100	1,553	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
													120	SPECIAL	51271500	120	SY	URETHANE TOP COAT SEALER	341
													1,553	512	74000	1,553	SY	REMOVAL OF EXISTING COATINGS FROM CONCRETE SURFACES	
													4,053	513	20000	4,053	EACH	WELDED STUD SHEAR CONNECTORS	
													250	513	95030	250	EACH	STRUCTURAL STEEL, MISC.: WELDING CROSSFRAME STIFFENERS	392
													80	513	95030	80	EACH	STRUCTURAL STEEL, MISC.: DRILLING STRUCTURAL STEEL, GRINDING, AND NDT	339
													160	513	95030	160	EACH	STRUCTURAL STEEL, MISC.: PENCIL ABRASIVE BLASTING, GRINDING, AND NDT	340
													6	513	95030	6	EACH	STRUCTURAL STEEL, MISC.: INTERMEDIATE CROSSFRAME	392
													3	513	95030	3	EACH	STRUCTURAL STEEL, MISC.: REMOVE EXISTING INTERMEDIATE CROSSFRAME	390
													2	513	95030	2	EACH	STRUCTURAL STEEL, MISC.: FIELD WELD CRACK REPAIR	390A
													1	513	95030	1	EACH	STRUCTURAL STEEL, MISC.: BEARING STIFFENER REPAIR	390A
													413	514	20001	413	SF	FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN	340
													146	516	11210	146	FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL	
													140	516	14020	140	FT	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL	
													7	516	44201	7	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN, 11 1/2"x1'-2"x3.22"	340
													7	516	44401	7	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN, 11 1/2"x1'-1"x5.04"	340
													LS	516	47000	LS	JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE		
													LS	518	21230	LS	POROUS BACKFILL WITH GEOTEXTILE FABRIC		
													1,647	SPECIAL	51900100	1,647	SF	COMPOSITE FIBER WRAP SYSTEM	
													12	519	11101	12	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	340
													296	526	25001	296	SY	REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN	343
													141	526	90010	141	FT	TYPE A INSTALLATION	
													40	SPECIAL	53000500	40	HOUR	STRUCTURES: STRUCTURE INSPECTION AND MECHANIZED ACCESS	340
													502	607	39900	502	FT	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC	
STRUCTURE OVER 20 FOOT SPAN (HAM-71-1068L) ALT. BID 1																			
													482	514	00050	482	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL	
													482	514	00056	482	SF	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT	
													482	514	00060	482	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT	
													482	514	00066	482	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT	
													1	514	00504	1	MNHR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL	
													1	514	10000	1	EACH	FINAL INSPECTION REPAIR	
STRUCTURE OVER 20 FOOT SPAN (HAM-71-1068L) ALT. BID 2																			
													24,625	514	00050	24,625	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL	
													24,625	514	00056	24,625	SF	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT	
													24,625	514	00060	24,625	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT	
													24,625	514	00066	24,625	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT	
													50	514	00504	50	MNHR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL	
													18	514	10000	18	EACH	FINAL INSPECTION REPAIR	

CALCULATED	JLG	CHECKED	KSC
GENERAL SUMMARY			
HAM-IR71-8.42			
163			
441			

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_GG010.dgn Sheet 3/15/2018 10:50:17 AM chen

SHEET NUM.										PART.			ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
										01/IMS/PV	02/IMS/B R	03/						
STRUCTURE OVER 20 FOOT SPAN (HAM-71-1068R)																		
											LS		201	11001	LS		CLEARING AND GRUBBING, AS PER PLAN	339
											LS		202	11203	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	339
											454		202	22900	454	SY	APPROACH SLAB REMOVED	
											LS		202	98000	LS		REMOVAL MISC.: SIGN TRUSS SUPPORT BRACKETS	389
											20		202	98100	20	EACH	REMOVAL MISC.: SCUPPER AND DOWNSPOUT REMOVAL (EACH)	368
											LS		503	11100	LS		COFFERDAMS AND EXCAVATION BRACING	
											126		503	21100	126	CY	UNCLASSIFIED EXCAVATION	
											235,915		509	10000	235,915	LB	EPOXY COATED REINFORCING STEEL	
											294		510	10001	294	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN	339
											763		511	34447	763	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK, AS PER PLAN	343
											140		511	34449	140	CY	CLASS QC2 CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN	343
											105		511	44110	105	CY	CLASS QC1 CONCRETE, ABUTMENT NOT INCLUDING FOOTING	
											LS		511	81200	LS		CONCRETE, MISC.: SURVEYING EXISTING BRIDGE	409
											1,875		512	10100	1,875	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
											105		SPECIAL	51271500	105	SY	URETHANE TOP COAT SEALER	341
											1,875		512	74000	1,875	SY	REMOVAL OF EXISTING COATINGS FROM CONCRETE SURFACES	
											6,867		513	20000	6,867	EACH	WELDED STUD SHEAR CONNECTORS	
											466		513	95030	466	EACH	STRUCTURAL STEEL, MISC.: WELDING CROSSFRAME STIFFENERS	392
											10		513	95030	10	EACH	STRUCTURAL STEEL, MISC.: INTERMEDIATE CROSSFRAME	392
											621		514	20001	621	SF	FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN	340
											219		516	11210	219	FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL	
											213		516	14020	213	FT	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL	
											11		516	44201	11	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN, 1'-0"x1'-2"x3.25"	340
											11		516	44201	11	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN, 11 1/2"x1'-2"x3.22"	340
											LS		516	47000	LS		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE	
											LS		518	21230	LS		POROUS BACKFILL WITH GEOTEXTILE FABRIC	
											1,997		SPECIAL	51900100	1,997	SF	COMPOSITE FIBER WRAP SYSTEM	341
											64		519	11101	64	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN	340
											454		526	25001	454	SY	REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN	343
											215		526	90010	215	FT	TYPE A INSTALLATION	
											556		607	39900	556	FT	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC	
STRUCTURE OVER 20 FOOT SPAN (HAM-71-1068R) ALT. BID 1																		
											450		514	00050	450	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL	
											450		514	00056	450	SF	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT	
											450		514	00060	450	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT	
											450		514	00066	450	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT	
											1		514	00504	1	MNHR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL	
											1		514	10000	1	EACH	FINAL INSPECTION REPAIR	
STRUCTURE OVER 20 FOOT SPAN (HAM-71-1068R) ALT. BID 2																		
											41,195		514	00050	41,195	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL	
											41,195		514	00056	41,195	SF	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT	
											41,195		514	00060	41,195	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT	
											41,195		514	00066	41,195	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT	
											200		514	00504	200	MNHR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL	
											31		514	10000	31	EACH	FINAL INSPECTION REPAIR	

GENERAL SUMMARY

HAM-IR71-8.42

CALCULATED
JLG
CHECKED
KSC

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_GS103.dgn Sheet 10/26/2017 8:33:30 AM compton

REF. NO.	SHEET NO.	SIDE	STATION		CADD GENERATED LENGTH = # AREA = ##	# (FT) ## (SF)	605	605	611	611	611	611	611	611	611	659	670
			FROM	TO			6" SHALLOW PIPE UNDERDRAINS FT	6" BASE PIPE UNDERDRAINS FT	15" CONDUIT, TYPE B FT	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS FT	CATCH BASIN RECONSTRUCTED TO GRADE EACH	INLET RECONSTRUCTED TO GRADE EACH	INLET RECONSTRUCTED TO GRADE AS PER PLAN EACH	INLET, MISC.: REMOVE & REPLACE EACH	MANHOLE RECONSTRUCTED TO GRADE EACH	4" TOPSOIL CY	DITCH EROSION PROTECTION SY
D-1	191 , 227	RT	477+00.84														
D-2	192	RT	482+99.87														
D-3	192 , 227	LT	483+64.07														
D-4	192 , 227	LT	483+73.30														
D-5	192 , 229	RT	483+99.69														
D-6	191 , 210	LT	479+59.26														
D-7	187	LT	411+75 ±														
D-8	194	LT	542+00 ±														
D-9	194	LT	544+50 ±														
D-10	194	LT	547+25 ±						25								
UD1	190 , 191	LT	474+11, 63.50' LT	479+50, 63.50' LT	521 #		521										
		LT	474+11, 52.50' LT	479+50, 52.50' LT	522 #			522									
		LT	474+11, 28.50' LT	479+50, 28.50' LT	529 #			529									
		LT	479+50, 28.50' LT	479+50, 63.50' LT	39 #			39									
		LT	479+50, 63.50' LT	479+59.26, 83.0' LT	18 #		8		10								
UD2	190 , 191	MEDIAN	474+11, RT	477+00.84, 1.66' RT	288 #		278		10								
UD3	191 , 192	MEDIAN	477+04, RT	482+98.87, 7.76' RT	598 #		588		10								
UD4	191 , 192	LT	479+52, 63.50' LT	483+74, 63.50' LT	408 #		408										
		LT	479+52, 52.50' LT	483+74, 52.50' LT	409 #			409									
		LT	479+52, 28.50' LT	483+74, 28.50' LT	415 #			415									
		LT	483+74, 63.50' LT	483+73.3, 4.62' LT	58 #		48		10								
UD5	192	MEDIAN	482+98, RT	483+99.69, 2.74' RT	101 #		91		10								
UD6	192 , 193	MEDIAN	486+34, RT	483+99.69, 2.74' RT	236 #		226		10								
UD7	192 , 193	LT	486+34, 63.50' LT	483+74, 63.50' LT	251 #		251										
		LT	486+34, 52.50' LT	483+74, 52.50' LT	252 #			252									
		LT	486+34, 28.50' LT	483+74, 28.50' LT	255 #			255									
UD08	186 , 187	CL	406+00.00	412+40.00	640 #		640										
UD09	194	CL	540+00.00	548+48.00	848 #		848										
ESI	190	LT	472+50.00	475+00.00	2882 ##										36	320	
TOTALS CARRIED TO GENERAL SUMMARY							3907	2421	25	60		3	1	1	3	3	

<table border="1"> <tr> <td>CALCULATED</td> <td>JLG</td> </tr> <tr> <td>CHECKED</td> <td>KSC</td> </tr> </table>	CALCULATED	JLG	CHECKED	KSC	DRAINAGE SUBSUMMARY	HAM-IR71-8.42
CALCULATED	JLG					
CHECKED	KSC					
	<table border="1"> <tr> <td>172</td> </tr> <tr> <td>441</td> </tr> </table>	172	441			
172						
441						

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_GS106.dgn Sheet 10/26/2017 8:33:31AM compton

REF NO.	SHEET NO.	STATION		SIDE	CADD GENERATED AREA SF	202	202	202	204		301	304		441	452	519	608	608		609	609		659	659	
		FROM	TO			PAVEMENT REMOVED, ASPHALT SY	PAVEMENT REMOVED, CONCRETE SY	CURB REMOVED FT	SUBGRADE COMPACTION SY		5" ASPHALT CONCRETE BASE, PG64-22 CY	6" AGGREGATE BASE CY		1-1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22 CY	9" NON-REINFORCED CONCRETE PAVEMENT, CLASS OCI SY	PATCHING CONCRETE STRUCTURE SF	5" CONCRETE WALK SF	CURB RAMP, TYPE BI SF		CURB, TYPE 6, AS PER PLAN FT	CURB, TYPE 2-B FT		TOPSOIL, 4" CY	SEEDING AND MULCHING SY	
C1	201 - 202	11+18.81	12+77.78		159 318		18	159	36			6		0.8	18									159	
C2	202 - 203	15+30.45	19+09.83		379 757		43	379	85			15		1.8	43									379	
C3	203 - 204	22+55.04	23+14.74		59 118		7	59	14			3		0.3	7									59	
C4	203 - 204	22+69.32	23+18.07		49	6					0.8			0.3						49					
CR1	202	13+42.50			100																				
CR2	202	14+60.80			98																				
IP1	202	12+24 ±		LT																					
IP2	203	22+92 ±		LT																					
SM1	201	11+18.81			54																			0.1	6
SM2	201 - 202	11+18.81	12+77.78		636																			0.7	71
W1	201 - 202	11+18.81	13+35.69		1707																				
W2	202 - 203	14+66.58	19+07.60		3323																				
W3	203 - 204	22+53.62	23+16.29		441																				
TOTALS CARRIED TO GENERAL SUMMARY						6	68	597	135		1	24		3	68	20	5471	198		49	597		1	77	

KENNEDY AVE SUBSUMMARY

HAM-IR71-8.42

CALCULATED
SNG
CHECKED
SCS

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826 GC103.dgn Sheet 10/26/2017 8:33:36 AM compton

REF. NO.	SHEET NO.	STATION	SIDE	CADD GENERATED AREA	204	204	204	204	254 PAVEMENT PLANING, ASPHALT CONCRETE								302	304	407	407	407	442 ASPH CONC INTERMEDIATE COURSE, 19mm, TYPE A, (446)						448 ASPH CONC INTERM COURSE, 9.5mm, TYPE A, (448)			618	806
					EXCAVATION OF SUBGRADE, 12" DEEP	SUBGRADE COMPACTION	GRANULAR MATERIAL, TYPE C	GEO TEXTILE FABRIC, TYPE D	4 3/4" DEPTH	4 1/4" DEPTH	4" DEPTH	3 1/4" DEPTH	3" DEPTH	4 1/4" TO 3" DEPTH, AVG 3.63" # SEE NOTE 3 (AVG 3.15")	3" TO 1 1/2" DEPTH, AVG 2.25"	8" TO 4 3/4" DEPTH, AVG 6.38"	10" ASPHALT CONCRETE BASE, PG64-22 *** SEE NOTE 1 (AVG 11.06")	6" AGGREGATE BASE	TACK COAT (0.075 GAL/SY)	TACK COAT, 702.13 (0.075 GAL/SY)	NON-TRACKING TACK COAT (0.04 GAL/SY)	3 1/4"	2 3/4"	2 1/2"	1 3/4"	6 1/2" TO 3 1/4" (AVG 4.88")	1 1/2"	2 3/4" TO 1 1/2" (AVG 2.15") # SEE NOTE 3 (AVG 1.65")	1 1/2" TO 0" (AVG 0.75")	RUMBLE STRIPS, (ASPHALT CONCRETE), AS PER PLAN	1 1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5mm, TYPE A	
					SY	SY	SY	SY	SY	SY	SY	SY	SY	SY	SY	SY	CY	CY	GAL	GAL	GAL	CY	CY	CY	CY	CY	CY	CY	CY	MILE	CY	
		MAINLINE IR-71 SOUTHBOUND																														
		EX CRACK & SEAT w/ASPH OVERLAY & FULL DEPTH ASPH SHLDRS AND WIDENING:																														
195		631+80.97 688+41.00	NB SHLDR	148727 198109									16526 22013													803.4 1070			688.6 917.2			
186 - 188		EX 10" REINF CONC w/ASPH OVERLAY ML WITH FULL DEPTH ASPH SHLDRS:																											640.1 323.6			
		398+96.35SB 435+07.72	SB SHLDR	138250 69877						15362 7765													1174 593.1									
188 - 189		EX 9" REINF CONC w/ASPH OVERLAY ML WITH FULL DEPTH ASPH SHLDRS:																											537 322.2			
		435+07.72 466+24.77	SB SHLDR	115988 69593						12888 7733														984.5 590.7								
189		EX FULL DEPTH ASPH ML AND SHLDRS:																											48.3			
		466+24.77 467+62.27	FD ASPH	10426							1159																					
BRG4	189, 353	BRIDGE, HAM-71-0970L (RED BANK RD):																														
		467+62.27 467+87.27	APPR SLB	##																												
		467+87.27 469+50.23	BRIDGE	##																												
		469+50.23 469+75.23	APPR SLB	##																												
		EX FULL DEPTH ASPH ML AND SHLDRS:																												54.4		
		469+75.25 471+12.73	FD ASPH	11742							1305																					
		EX 9" REINF CONC w/ASPH OVERLAY ML WITH FULL DEPTH ASPH SHLDRS:																												44.1 29.3		
189 - 190		471+12.73 474+10.00	SB SHLDR	9507 6309							1057 701													80.7 53.6								
		NEW FULL DEPTH ASPH ML & SHLDRS AT LOWERED PROFILE:																												102.9		
		474+10.00 478+00.00	SURFACE INTERM AC BASE AGG BASE SUBGRD	22224 23513 24152 24535 24662											746												127					
191 - 192		478+00.00 482+00.00	SURFACE INTERM AC BASE AGG BASE SUBGRD	23567 25727 26381 26774 26905	914	2741	914	2741																						109.2		
		(THIS SECTION HAS BARRIER AT OUTSIDE SHLDR)																														
192 - 193		482+00.00 486+35.00	SURFACE INTERM AC BASE AGG BASE SUBGRD	24802 26240 26952 27380 27522	997	2990	997	2990																						114.9		
		EX 9" REINF CONC w/ASPH OVERLAY ML WITH FULL DEPTH ASPH SHLDRS:																													681 336.8	
193 - 194		486+35.00 518+54.58	SB SHLDR	147087 72746							16343 8083														1226 617.5							
		EX FULL DEPTH ASPH ML AND SHLDRS:																												29.2		
194		518+54.58 519+67.08	FD ASPH	6294						700																						
		NOTES:																														
		1) ### = DEPTH VARIES (11.06" AVG) FOR APPROACH SLAB INSTALLATION TYPE A																														
		2) ## = FOR SCOPE OF WORK AND ESTIMATED QTY'S, SEE BRIDGE PLANS																														
		3) # = DEPTH VARIES (3.15" AVG & 1.65" AVG), SEE PAVEMENT TRANSITION DETAIL M																														
		TOTALS THIS SHEET #3			2931	8789	2931	8789	0	69932	3164	38539	0	0	0	0	2393	1459	5582	3426	4788	0	5342	219.8	2281	0	0	0	0	0	4978.8	

REF. NO.	SHEET NO.	STATION	SIDE	CADD GENERATED AREA	204	204	204	204	254 PAVEMENT PLANING, ASPHALT CONCRETE								302	304	407	407	407	442 ASPH CONC INTERMEDIATE COURSE, 19mm, TYPE A, (446)					442 ASPH CONC INTERM COURSE, 9.5mm, TYPE A, (448)			618	806
					EXCAVATION OF SUBGRADE, 12" DEEP	SUBGRADE COMPACTION	GRANULAR MATERIAL, TYPE C	GEOTEXTILE FABRIC, TYPE D	4 3/4" DEPTH	4 1/4" DEPTH	4" DEPTH	3 1/4" DEPTH	3" DEPTH	4 1/4" TO 3" DEPTH, AVG 3.63" # SEE NOTE 3 (AVG 3.15")	3" TO 1 1/2" DEPTH, AVG 2.25"	8" TO 4 3/4" DEPTH, AVG 6.38"	10" ASPHALT CONCRETE BASE, PG64-22 ### SEE NOTE 1 (AVG 11.06")	6" AGGREGATE BASE	TACK COAT (0.075 GAL/SY)	TACK COAT, 702.13 (0.075 GAL/SY)	NON-TRACKING TACK COAT (0.04 GAL/SY)	3 1/4"	2 3/4"	2 1/2"	1 3/4"	6 1/2" TO 3 1/4" (AVG 4.88")	1 1/2"	2 3/4" TO 1 1/2" (AVG 2.15") # SEE NOTE 3 (AVG 1.65")	1 1/2" TO 0" (AVG 0.75")	RUMBLE STRIPS, (ASPHALT CONCRETE), AS PER PLAN	1 1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5mm, TYPE A
FROM	TO	SF	CY	SY	CY	SY	SY	SY	SY	SY	SY	SY	SY	CY	CY	GAL	GAL	GAL	CY	CY	CY	CY	CY	CY	CY	CY	CY	MILE	CY		
		MAINLINE IR-71 SOUTHBOUND (CONT'D)																													
BRG11		BRIDGE HAM-71-1277L (GALBRAITH RD)																													
	195 , 434	629+82.43	630+07.43	APPR SLB	1417						158							12									7.7		6.6		
	434	BRIDGE: 630+07.43 631+55.97		BRIDGE	##																										
	195 , 434	631+55.97	631+80.97	APPR SLB	1423						159							12									7.7		6.6		
	195	EX CRACK & SEAT w/ASPH OVERLAY & FULL DEPTH ASPH SHLDRS AND WIDENING: 631+80.97 688+15.83		SB SHLDR	136974 198181						15220 22021							1142 1652									739.9 1071		634.2 917.6		
		RAMPS																													
	196	NEW RAMPS N & P (NB IR-71 TO KENNEDY AVE) -- RAMP N & P (PART 2), SEE HAM-71-6.86 FOR ESTIMATED OTYS, SEE MAINLINE IR-71 NORTHBOUND ON PAVEMENT CALCS, SHEET #1		PART 2 AREA																											
	196	RAMP R (SB IR-71 TO HIGHLAND AVE) -- EX 9" REINF CONC w/3" ASPH OVERLAY & FULL DEPTH ASPH SHLDRS: PAVEMENT TRANSITION DETAIL D (4.25" TO 3") @ RAMP R GORE (APPROX 2+93) APPROX 3+55 TO 9+39		RAMP SHLDR	1026 605								114 68																		
		PAVEMENT TRANSITION DETAIL E (3" TO 1.5") @ SIDE ROAD		RAMP SHLDR	11192 4910 2216 255									1244 546																	
	197 , 364	RAMP A (RED BANK EXPWY) FROM RAMP A GORE (APPROX 17+64) TO BRIDGE HAM-71-0992 -- EX 9" REINF CONC w/3" ASPH OVERLAY & FULL DEPTH ASPH SHLDRS: RAMP A GORE (APPROX 17+64) TO 11+65 (SEE PAVEMENT TRANSITION DETAIL H) PAVEMENT TRANSITION DETAIL E (3" TO 1.5") @ APPR SLAB		RAMP SHLDR	9382 5618 615 393																										
BRG6		BRIDGE - HAM-71-0992 (BRIDGE & APPR SLAB LIMITS): 11+02.76 8+01.13		BRIDGE & APPR SLB	##																										
NOTES:																															
1) ### = DEPTH VARIES (11.06" AVG) FOR APPROACH SLAB INSTALLATION TYPE A																															
2) ## = FOR SCOPE OF WORK AND ESTIMATED OTYS, SEE BRIDGE PLANS																															
3) # = DEPTH VARIES (3.15" AVG & 1.65" AVG), SEE PAVEMENT TRANSITION DETAIL M																															
TOTALS THIS SHEET #5																															
					0	0	0	0	0	0	0	0	0	0	0	0	0	2919	207	1668	0	0	0	1826	0	144.3	10.8	8.3	0	1733.3	

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_GC106.dgn Sheet 10/26/2017 8:33:41 AM compton

REF. NO.	SHEET NO.	STATION		SIDE	CADD GENERATED AREA	204	204	204	204	254							302	304	407	407	407	442					618	806	CALCULATED JLG CHECKED KSC			
						EXCAVATION OF SUBGRADE, 12" DEEP	SUBGRADE COMPACTION	GRANULAR MATERIAL, TYPE C	GEOTEXTILE FABRIC, TYPE D	PAVEMENT PLANING, ASPHALT CONCRETE							10" ASPHALT CONCRETE BASE, PG64-22 ### SEE NOTE 1 (AVG 11.06")	6" AGGREGATE BASE	TACK COAT (0.075 GAL/SY)	TACK COAT, 702.13 (0.075 GAL/SY)	NON-TRACKING TACK COAT (0.04 GAL/SY)	ASPH CONC INTERMEDIATE COURSE, 19mm, TYPE A, (446)			ASPH CONC INTERM COURSE, 9.5mm, TYPE A, (448)		RUMBLE STRIPS, (ASPHALT CONCRETE), AS PER PLAN	1 1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5mm, TYPE A				
FROM	TO	SF	CY	SY	CY	SY	SY	SY	SY	SY	SY	SY	SY	SY	CY	CY	GAL	GAL	GAL	CY	CY	CY	CY	CY	CY	CY	MILE	CY				
RAMPS (CONT'D)																																
197 - 198 AND 364	BRG6	RED BANK EXPWY (RAMPS A & D). FROM 134+90.95 TO BRIDGE HAM-71-0992 AND TO RAMP D GORE (APPROX 13+90) -- EX 9" REINF CONC w/3" ASPH OVERLAY & FULL DEPTH ASPH SHLDRS:																														
		BRIDGE - HAM-71-0992 (BRIDGE & APPR SLAB LIMITS):		BRIDGE & APPR SLAB	##																											
		11+02.76 8+01.13		RAMP	600																											
		PAVEMENT TRANSITION DETAIL E (3" TO 1.5") RAMP A @ APPR SLAB		SHLDR	383											67												1.4	2.8			
		APPROX 8+01 (RAMP A) TO 138+84± (@ GORE RED BANK EXPWY w/RAMPS A/B/C/D) TO 13+15 (RAMP D)		RAMP	36321										43						4		5	3				0.9	1.8			
		APPROX 138+84± (@ GORE RED BANK EXPWY w/RAMPS A/B/C/D) TO 134+90.95 (SEE PAVEMENT TRANSITION DETAIL G)		SHLDR	18987									4036						159		303	162		168.2			168.2	88			
		PAVEMENT TRANSITION DETAIL D (4.25" TO 3") RAMP D GORE (APPROX 13+90)		RAMP	9666									1074									81	43		44.8			44.8	25.9		
				SHLDR	5581									621						47			25		25.9			25.9	7.3			
197		RAMP B (RED BANK EXPWY). FROM RAMP B GORE (APPROX 4+63) TO APPROX 138+84 (GORE OF RED BANK EXPWY w/RAMPS A/B/C/D) -- EX 9" REINF CONC w/3" ASPH OVERLAY & FULL DEPTH ASPH SHLDRS:																														
		APPROX 4+63 (GORE) TO 16+74 (=138+84) (SEE PAVEMENT TRANSITION DETAIL H)		RAMP	18024									2003								151	81		83.5			83.5	61.9			
				SHLDR	13354									1484					112			60		61.9			61.9	5.5	61.9			
197 - 198 AND 360	BRG5	RED BANK EXPWY (RAMPS B & C). FROM 134+90.95 TO 138+84_ (GORE RED BANK EXPWY w/RAMPS A/B/C/D) AND TO BRIDGE HAM-71-0991 -- EX 9" REINF CONC w/3" ASPH OVERLAY & FULL DEPTH ASPH SHLDRS:																														
		APPROX 134+82.55 TO 138+84± (@ GORE RED BANK EXPWY w/RAMPS A/B/C/D) (SEE PAVEMENT TRANSITION DETAIL G)		RAMP	11481									1276								96	52		53.2			53.2	32.1			
		138+84± (@ GORE RED BANK EXPWY w/RAMPS A/B/C/D) TO 22+14±		SHLDR	6916									769					58			31		32.1			32.1	29.9	32.1			
		PAVEMENT TRANSITION DETAIL E (3" TO 1.5") RAMP C @ APPR SLAB		RAMP	10432									1160								87	47		48.3			48.3	29.9			
		BRIDGE: HAM-71-0991 (RAMP C): (BRIDGE & APPR SLAB LIMITS):		SHLDR	6454									718								54	29		29.9			29.9	1.3			
		21+77.31 16+38.36		RAMP	545											61						5	3						2.6			
				SHLDR	425											48						4	2		1			1	2			
		BRIDGE HAM-71-0991 TO RAMP C (RED BANK EXPWY) GORE (APPROX 3+90) -- EX 9" REINF CONC w/3" ASPH OVERLAY & FULL DEPTH ASPH SHLDRS:		BRIDGE & APPR SLAB	##																											
197 - 198 AND 360		PAVEMENT TRANSITION DETAIL E (3" TO 1.5") RAMP C @ APPR SLAB		RAMP	545										61						5	3					1.3	2.6				
		RAMP C		SHLDR	390										44						4	2					1	1.9				
		APPROX 16+01 TO 4+05		RAMP	17698									1967								148	79		82			82	58.5			
		PAVEMENT TRANSITION DETAIL D (4.25" TO 3") RAMP C GORE (APPROX 3+30)		SHLDR	12628									1404								106	57		58.5			58.5	5.3			
				RAMP	1138											127						7	10	6				7.5	5.3			
				SHLDR	828											92							4					5.5	3.9			
TOTALS THIS SHEET #6					0	0	0	0	0	0	0	0	0	18622	434	324	0	0	0	562	901	785	0	0	0	0	0	776.3	25.8	6.9	0	808.2
NOTES:		1) ### = DEPTH VARIES (11.06" AVG) FOR APPROACH SLAB INSTALLATION TYPE A																														
2) ## = FOR SCOPE OF WORK AND ESTIMATED QTYS, SEE BRIDGE PLANS																																
3) # = DEPTH VARIES (3.15" AVG & 1.65" AVG), SEE PAVEMENT TRANSITION DETAIL M																																

PAVEMENT CALCULATIONS

HAM-IR71-8.42

179
441

USGS OHIO MAPS:

COVINGTON
CINCINNATI EAST
NEWPORT
MADEIRA

LATITUDE: 39°11'16"
LONGITUDE: 84°23'25"

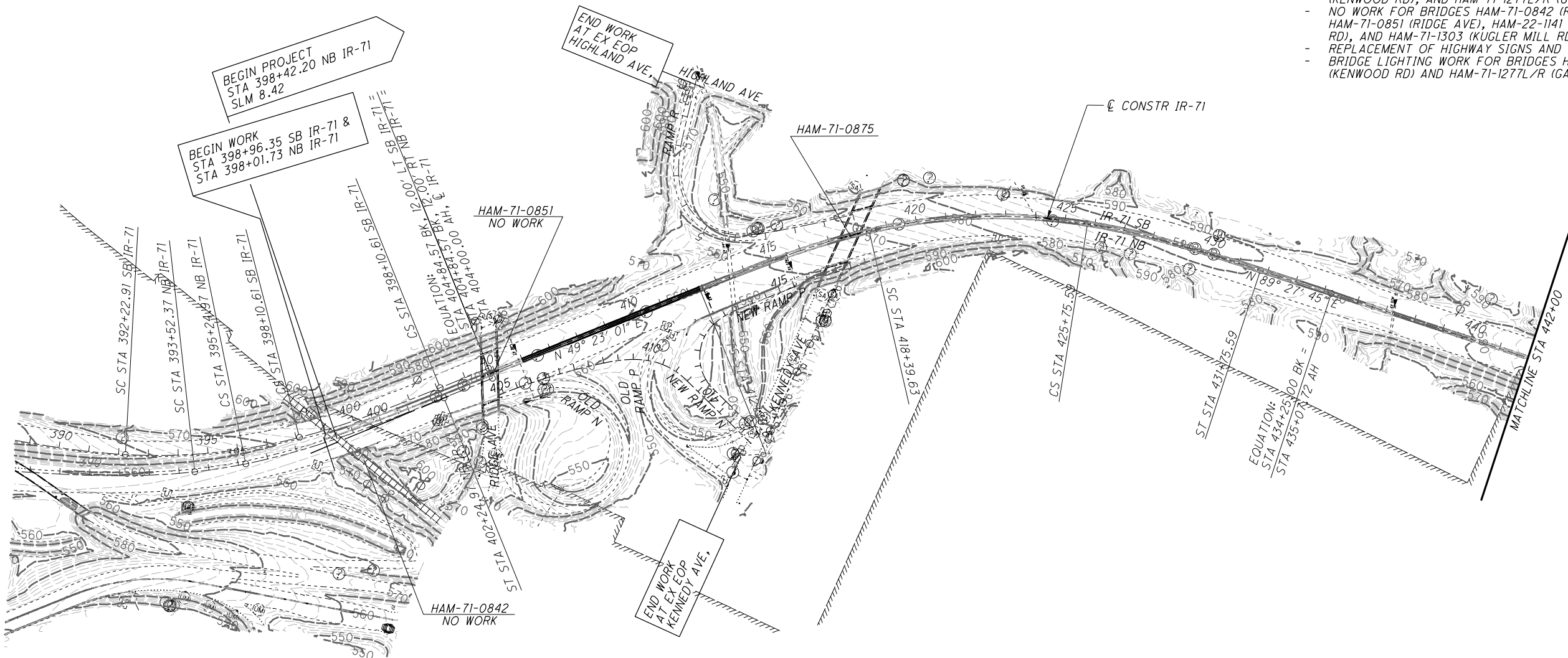
* LONGITUDE AND LATITUDE TO
APPROXIMATE CENTER OF PROJECT

PROJECT DESCRIPTION

- WORK INCLUDES:
- PLANE AND RESURFACE IR-71 FROM RR BRIDGE NORTH OF SR 562 TO SR 126.
 - FULL DEPTH PAVEMENT REPLACEMENT FOR SECTION OF IR-71 TO BE LOWERED TO ATTAIN BRIDGE CLEARANCE AT RED BANK EXPWY RAMP A
 - DECK AND APPROACH SLAB REPLACEMENT OF BRIDGES HAM-71-1068L/R (STEWART RD)
 - MINOR REHABILITATION OF THE OTHER BRIDGES WITHIN THE PROJECT LIMITS - HAM-71-0875 (KENNEDY AVE), HAM-71-0970L/R (RED BANK RD), HAM-71-0991 (RED BANK EXPWY RAMP C), HAM-71-0092 (RED BANK EXPWY RAMP A), HAM-71-1149 (EUCLID RD), HAM-71-1181L/R (KENWOOD RD), AND HAM-71-1277L/R (GALBRAITH RD)
 - NO WORK FOR BRIDGES HAM-71-0842 (RR BRIDGE), HAM-71-0851 (RIDGE AVE), HAM-22-1141 (MONTGOMERY RD), AND HAM-71-1303 (KUGLER MILL RD)
 - REPLACEMENT OF HIGHWAY SIGNS AND SUPPORTS
 - BRIDGE LIGHTING WORK FOR BRIDGES HAM-71-1181L/R (KENWOOD RD) AND HAM-71-1277L/R (GALBRAITH RD)

0 100 200 400
HORIZONTAL SCALE IN FEET

CALCULATED SDC CHECKED KSC



PROJECT SITE PLAN
STA 387+50 NB TO STA 442+00

P:\PR54704\HAM\91826\Design\Drainage\Sheets\91826_DE102.dgn Sheet 10/26/2017 8:34:02 AM compton

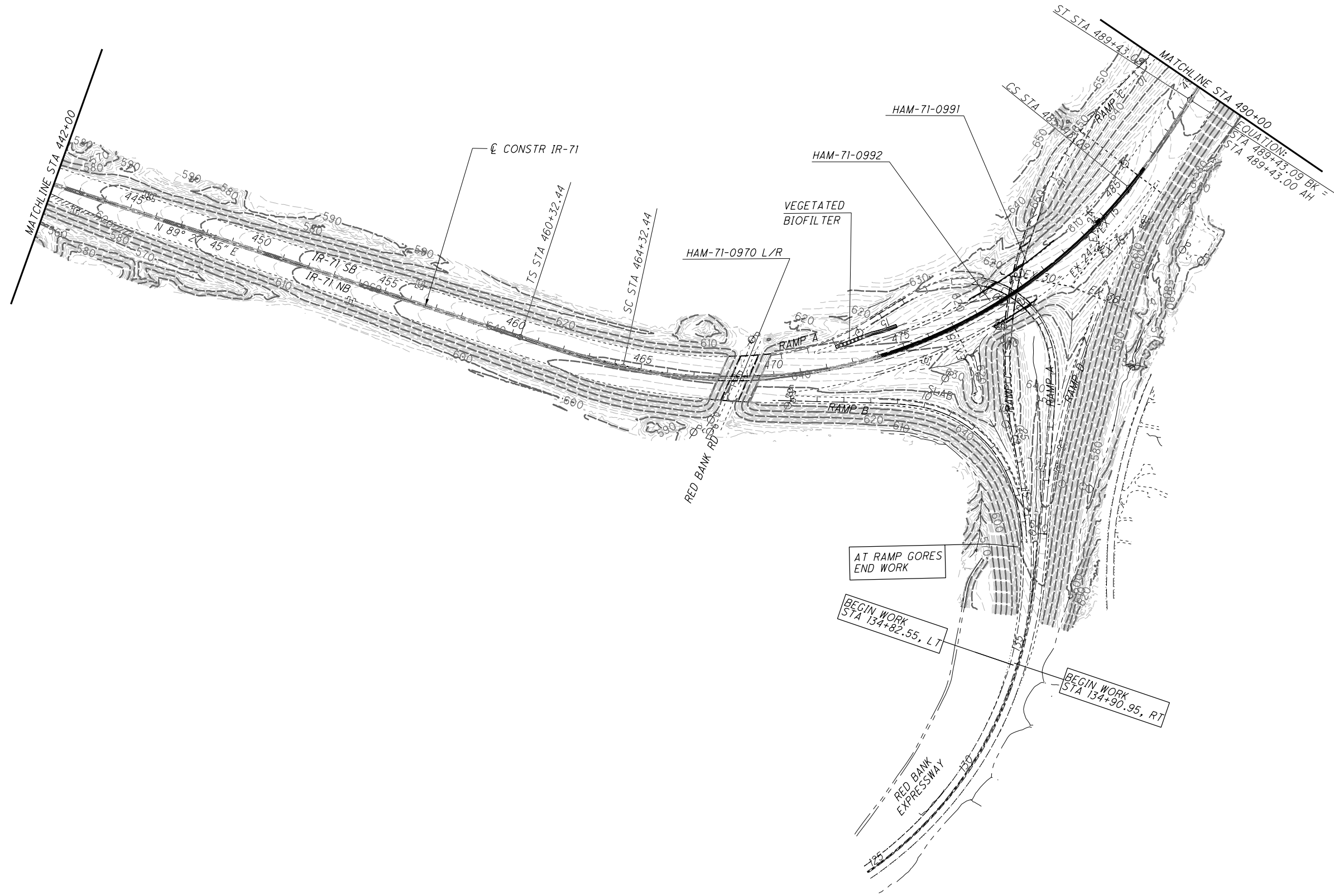
HAM-IR71-8.42

BMP TYPE	LATITUDE / LONGITUDE				SIDE	END TREATMENT CREDIT (ACRES)
	BEGIN		END			
VEGETATED BIOFILTER	39.171925	84.401169	39.172341	084.400513	LT	0.55
TREATMENT PROVIDED						0.55
TREATMENT REQUIRED*						0.50

* CALCULATED PER L&D VOL. 2, SEC. 1115.7

PROJECT DATA	
TOTAL AREA (RIGHT OF WAY)	n/a ACRES
PROJECT EARTH DISTURBED AREA	4.25 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA	1.0 ACRES
RUNOFF COEFFICIENT FOR PRE-CONSTRUCTION SITE	0.85 #
RUNOFF COEFFICIENT FOR POST-CONSTRUCTION SITE	0.85 ##
IMMEDIATE RECEIVING WATERS	MILL CREEK
SUBSEQUENT RECEIVING WATERS	OHIO RIVER
PRE-CONSTRUCTION PAVED AREA	UNKN * ACRES
POST-CONSTRUCTION PAVED AREA	UNKN ## ACRES
NOTICE OF INTENT EARTH DISTURBED AREA	5.25 ACRES

APPROXIMATE ESTIMATED VALUE
NO CHANGE FROM EXISTING, MATCH EXISTING CONDITION



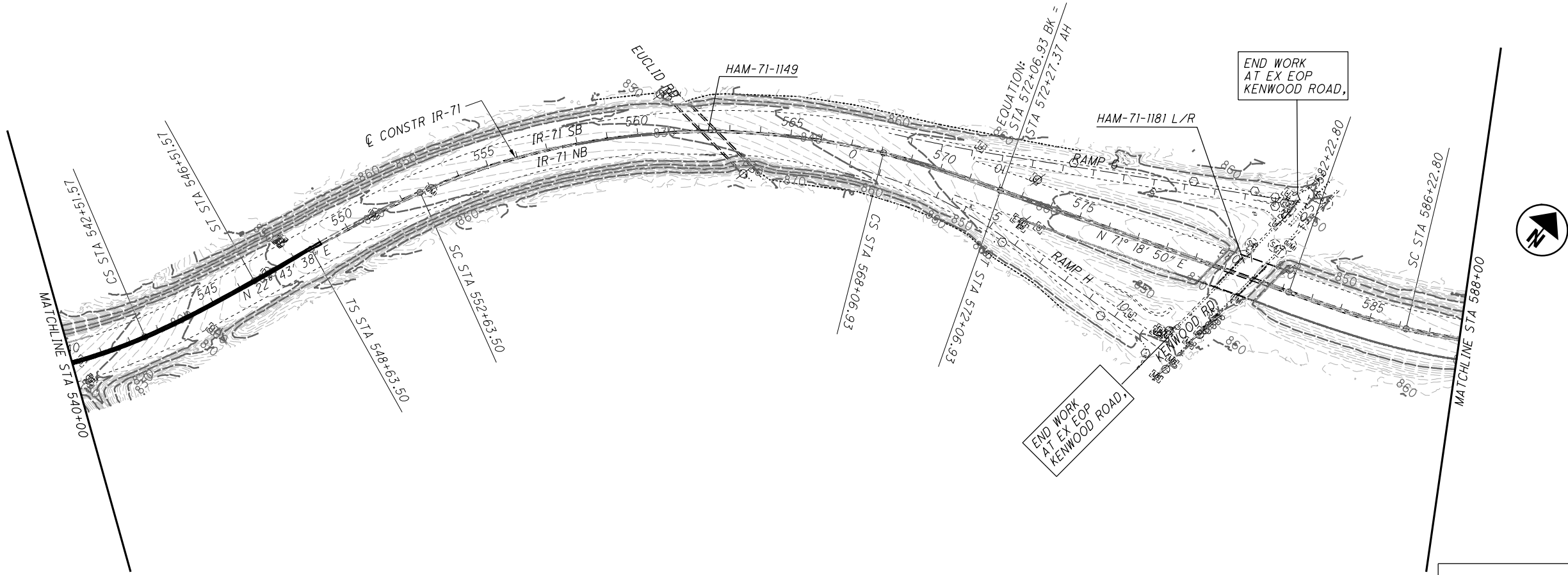
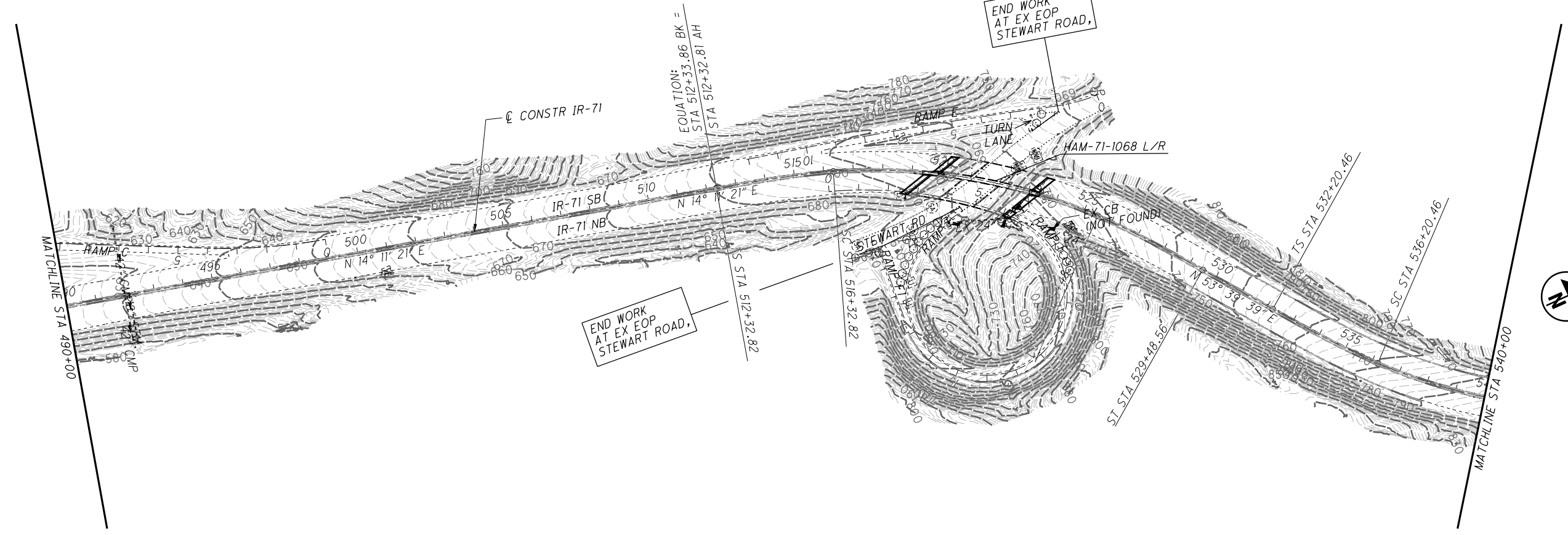
CALCULATED	SDC	CHECKED	KSC
------------	-----	---------	-----

PROJECT SITE PLAN
STA 442+00 TO STA 490+00

HAM-IR71-8.42

CROSS REFERENCES	
SHT NO	DESCRIPTION
151	PROJECT DATA AND DESCRIPTION

P:\PR54704\HAM\91826\Design\Drainage\Sheets\91826_DEI03.dgn Sheet 10/26/2017 8:34:09 AM compton

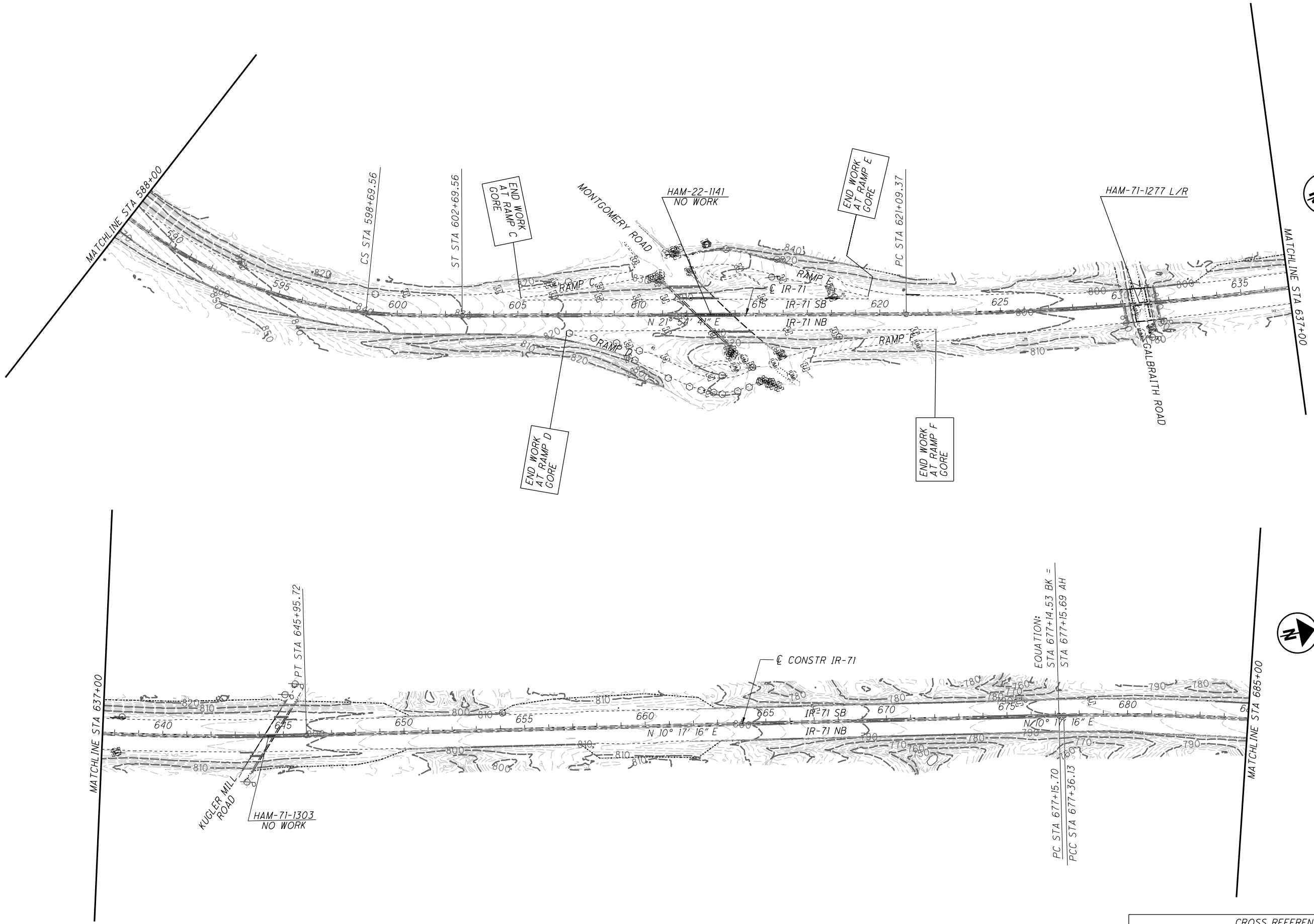


PROJECT SITE PLAN
STA 490+00 TO STA 588+00

HAM-IR71-8.42

CROSS REFERENCES	
SHT NO	DESCRIPTION
151	PROJECT DATA AND DESCRIPTION

183
441



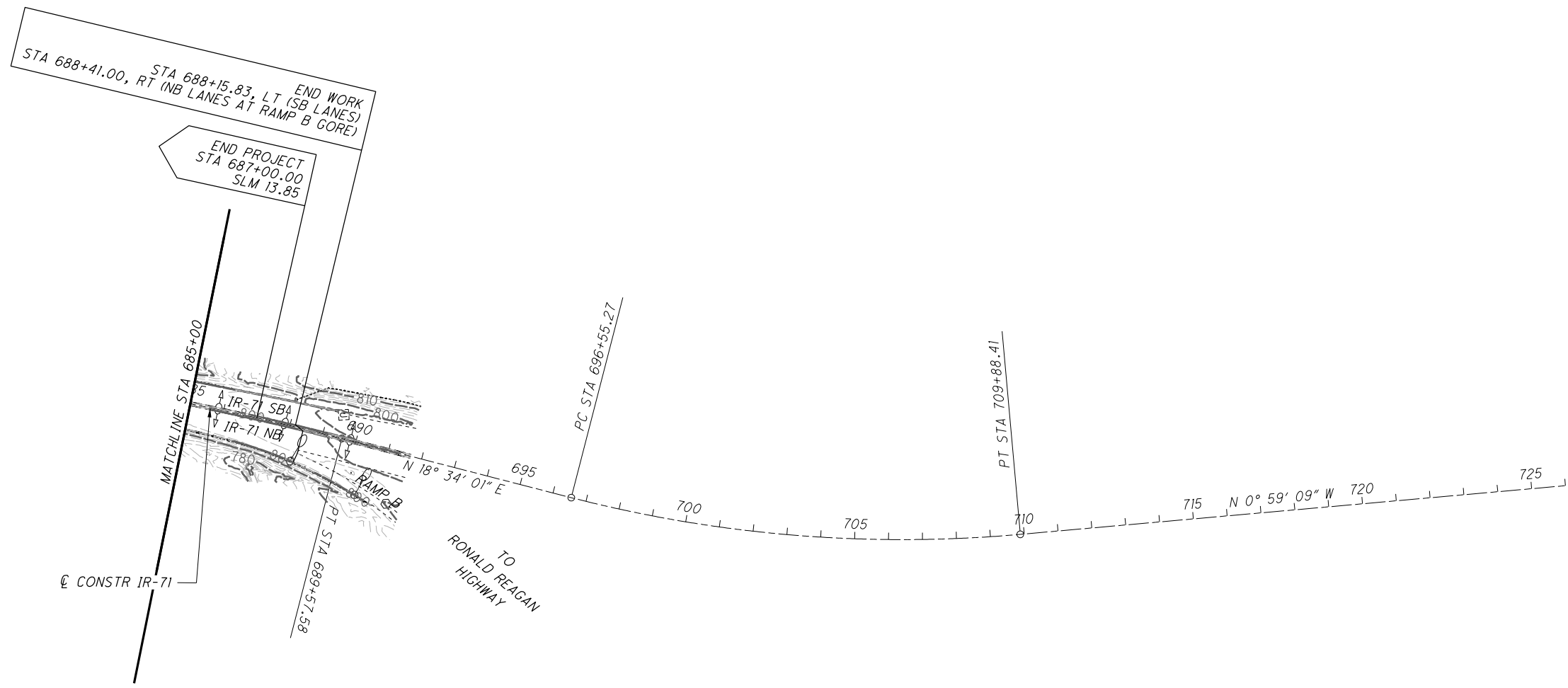
CROSS REFERENCES	
SHT NO	DESCRIPTION
151	PROJECT DATA AND DESCRIPTION

CALCULATED	SDC	CHECKED	KSC

PROJECT SITE PLAN
STA 588+00 TO STA 685+00

HAM-IR71-8.42

P:\PR54704\HAM\91826\Design\Drainage\Sheets\91826_DE\05.dgn Sheet 10/26/2017 8:34:16 AM compton



END WORK
 STA 688+41.00, RT (NB LANES AT RAMP B GORE)
 STA 688+15.83, LT (SB LANES)
 END PROJECT
 STA 687+00.00
 SLM 13.85

MATCHLINE STA 685+00
 IR-71 SBA
 IR-71 NB
 RAMP B
 PT STA 689+57.58
 PC STA 696+55.27
 PT STA 709+88.41
 TO RONALD REAGAN HIGHWAY
 N 18° 34' 01" E
 N 0° 59' 09" W
 695 700 705 710 715 720 725



CALCULATED
 SDC
 CHECKED
 KSC

**PROJECT SITE PLAN
 STA 685+00 TO END**

HAM-IR71-8.42

CROSS REFERENCES	
SHT NO	DESCRIPTION
151	PROJECT DATA AND DESCRIPTION

185
 441

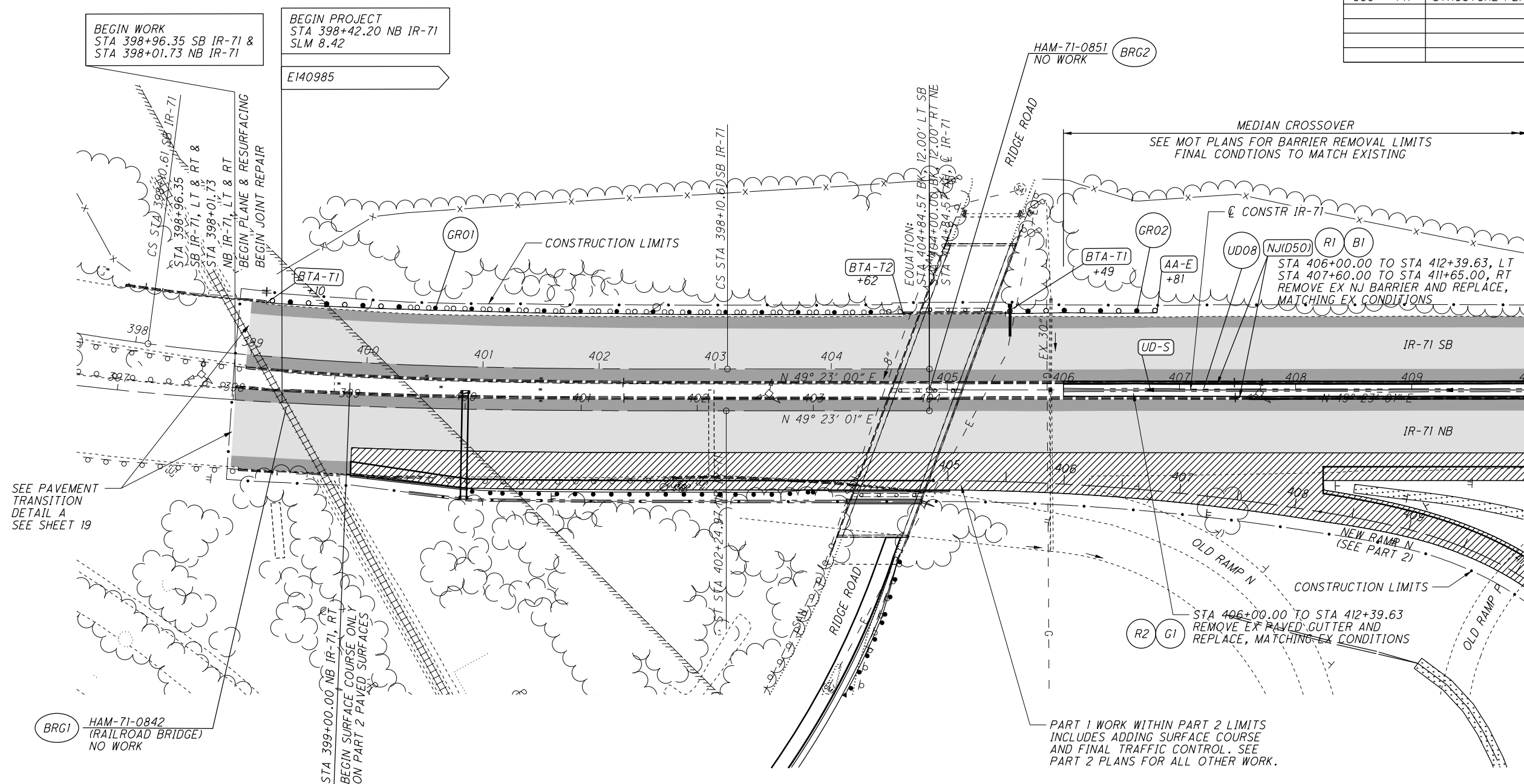
LEGEND

- AA-E ANCHOR ASSEMBLY, TYPE E
- AA-T ANCHOR ASSEMBLY, TYPE T
- BES-D BARRIER END SECTION, TYPE D
- BEA-D BARRIER END ANCHORAGE, TYPE D
- BEA-B1 BARRIER END ANCHORAGE, TYPE B1
- BEA-B1* BARRIER END ANCHORAGE, TYPE B1, AS PER PLAN
- BTA-T1 BRIDGE TERMINAL ASSEMBLY, TYPE 1
- BTA-T2 BRIDGE TERMINAL ASSEMBLY, TYPE 2
- B-TRANA BARRIER TRANSITION, AS PER PLAN "A" SEE DETAIL, SHEET 230
- B-TRANB BARRIER TRANSITION, AS PER PLAN "B" SEE DETAIL, SHEET 231
- NJ(D50) BARRIER, NEW JERSEY SHAPE, TYPE D, 50" HEIGHT
- SS B1 BARRIER, SINGLE SLOPE, TYPE B1, 57" HEIGHT
- SS D BARRIER, SINGLE SLOPE, TYPE D, 42" HEIGHT
- UD-0 PROP 6" UNDERDRAIN OUTLET TYPE F
- UD-B PROP 6" BASE PIPE UNDERDRAIN
- UD-S PROP 6" SHALLOW PIPE UNDERDRAIN

- MAINLINE:
- [Pattern] PLANE AND RESURFACE, 4 1/4" WITH JOINT REPAIR (EX CONCRETE = 10" DEPTH)
 - [Pattern] PLANE AND RESURFACE, 4 1/4" WITH JOINT REPAIR (EX CONCRETE = 9" DEPTH)
 - [Pattern] PLANE AND RESURFACE, 3 1/4" (EX PVMT WAS CRACK & SEATED)
 - [Pattern] PLANE AND RESURFACE, 4" (EX FULL DEPTH ASPHALT)
 - [Pattern] ADD SURFACE COURSE ONLY, 1 1/2"
 - [Pattern] PLANE AND RESURFACE, 4 1/4" (EX FULL DEPTH ASPHALT SHLDRS/MAINLINE WIDENING) (LIMITS: BEGIN WORK TO STA 548+35.98)
 - [Pattern] PLANE AND RESURFACE, 3 1/4" (EX FULL DEPTH ASPHALT SHLDRS/MAINLINE WIDENING) (LIMITS: STA 548+35.98 TO END WORK)
 - [Pattern] FULL DEPTH PAVEMENT (AT LOWERED PROFILE LIMITS - RED BANK RAMPS A & C)
 - [Pattern] FULL DEPTH PAVEMENT (AT STEWART ROAD BRIDGE FOR APPROACH SLAB INSTALLATION TYPE A. SEE SCD AS-2-15 FOR DETAILS)

- RAMPS:
- [Pattern] PLANE AND RESURFACE, 3" WITH JOINT REPAIR (EX CONCRETE = 9" DEPTH) PAVEMENT FEATHERING TRANSITION LIMITS SHOWN BY: [Pattern]
 - [Pattern] PLANE AND RESURFACE, 3" (EX FULL DEPTH ASPHALT SHLDRS/WIDENING) PAVEMENT FEATHERING TRANSITION LIMITS SHOWN BY: [Pattern]
 - [Pattern] ADD SURFACE COURSE, 1 1/2" (ONTO PART 2 PAVEMENT)
 - [Pattern] PLANE AND RESURFACE, 4 3/4" WITH JOINT REPAIR (EX CONCRETE = 9" DEPTH) PAVEMENT FEATHERING TRANSITION LIMITS SHOWN IN PLAN
 - [Pattern] PLANE AND RESURFACE, 4 3/4" (EX FULL DEPTH ASPHALT SHLDRS/WIDENING) PAVEMENT FEATHERING TRANSITION LIMITS SHOWN IN PLAN
- APPROACH SLABS:
- [Pattern] APPROACH SLAB WORK. SEE TYPICAL SECTIONS SHEETS 16 - 17.
- STRUCTURES:
- [Pattern] SEE BRIDGE PLANS

CROSS REFERENCES	
SHEET NO	DESCRIPTION
2 - 7	SCHEMATIC - CURVE/SPIRAL DATA
9 - 21	TYPICAL SECTIONS
339 - 441	STRUCTURE PLANS



P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826.GP101.dgn Sheet 10/26/2017 8:34:18 AM compion

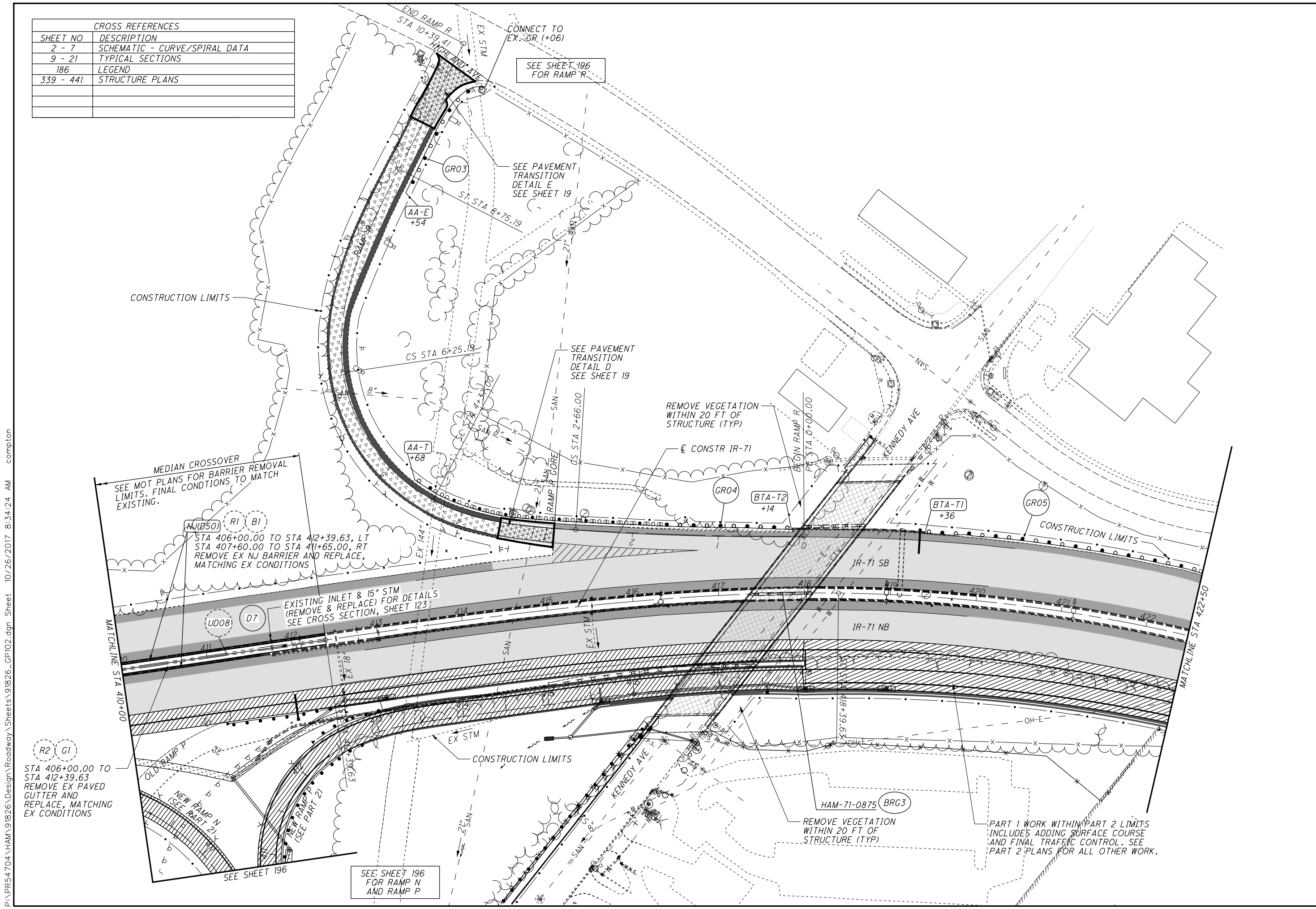
CROSS REFERENCES	
SHEET NO	DESCRIPTION
2 - 7	SCHEMATIC - CURVE/SPIRAL DATA
9 - 21	TYPICAL SECTIONS
186	LEGEND
339 - 441	STRUCTURE PLANS

0 50 100
HORIZONTAL SCALE IN FEET

CALCULATED JLG
CHECKED KSC

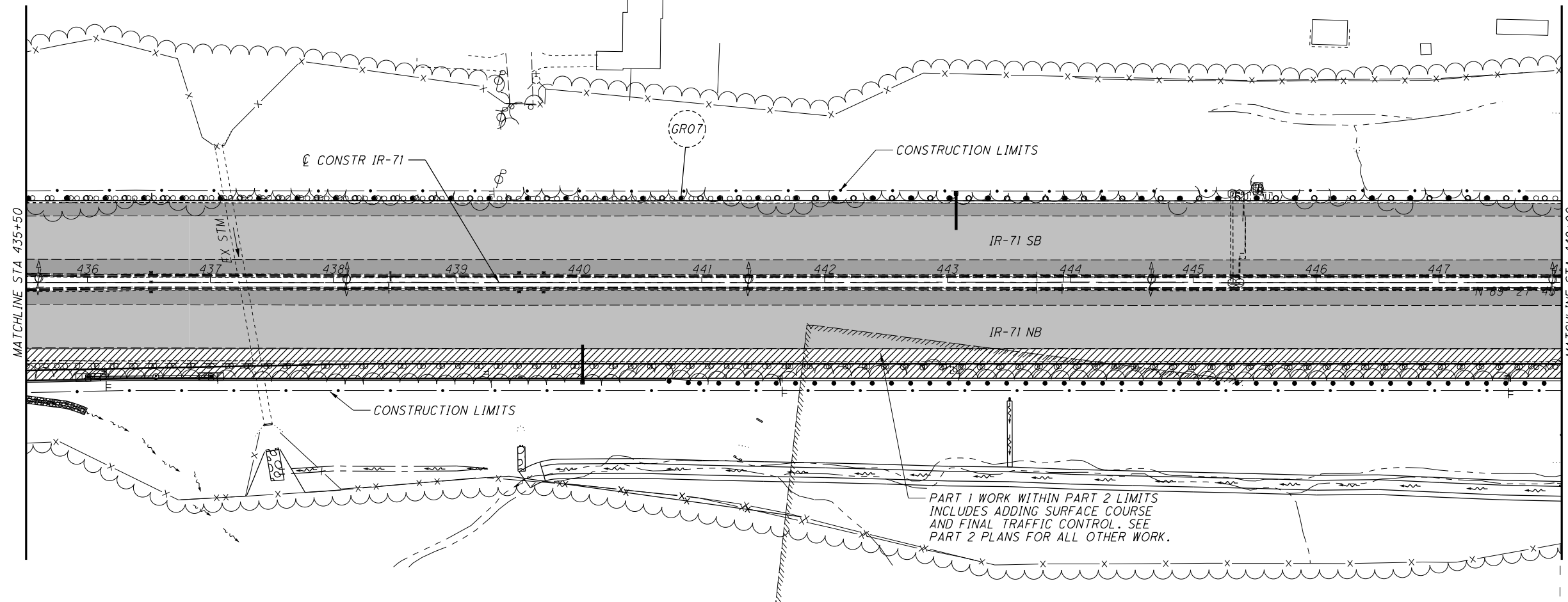
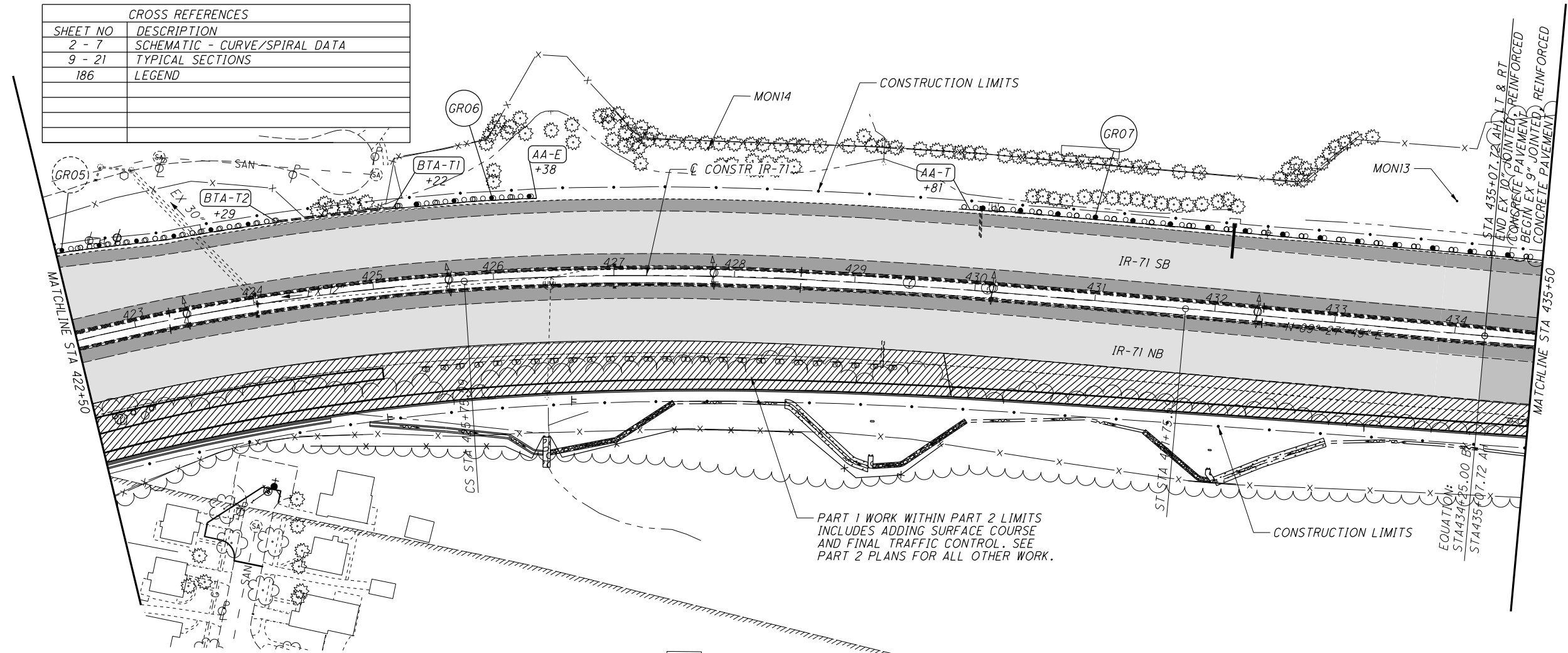
PLAN
STA 410+00 IR-71 TO STA 422+50 IR-71

HAM-IR71-8.42



P:\PR54704\HAM\91826\Roadway\Sheets\91826_GP102.dgn Sheet 10/26/2017 8:34:24 AM compion

CROSS REFERENCES	
SHEET NO	DESCRIPTION
2 - 7	SCHEMATIC - CURVE/SPIRAL DATA
9 - 21	TYPICAL SECTIONS
186	LEGEND



CALCULATED
JL G
CHECKED
KSC

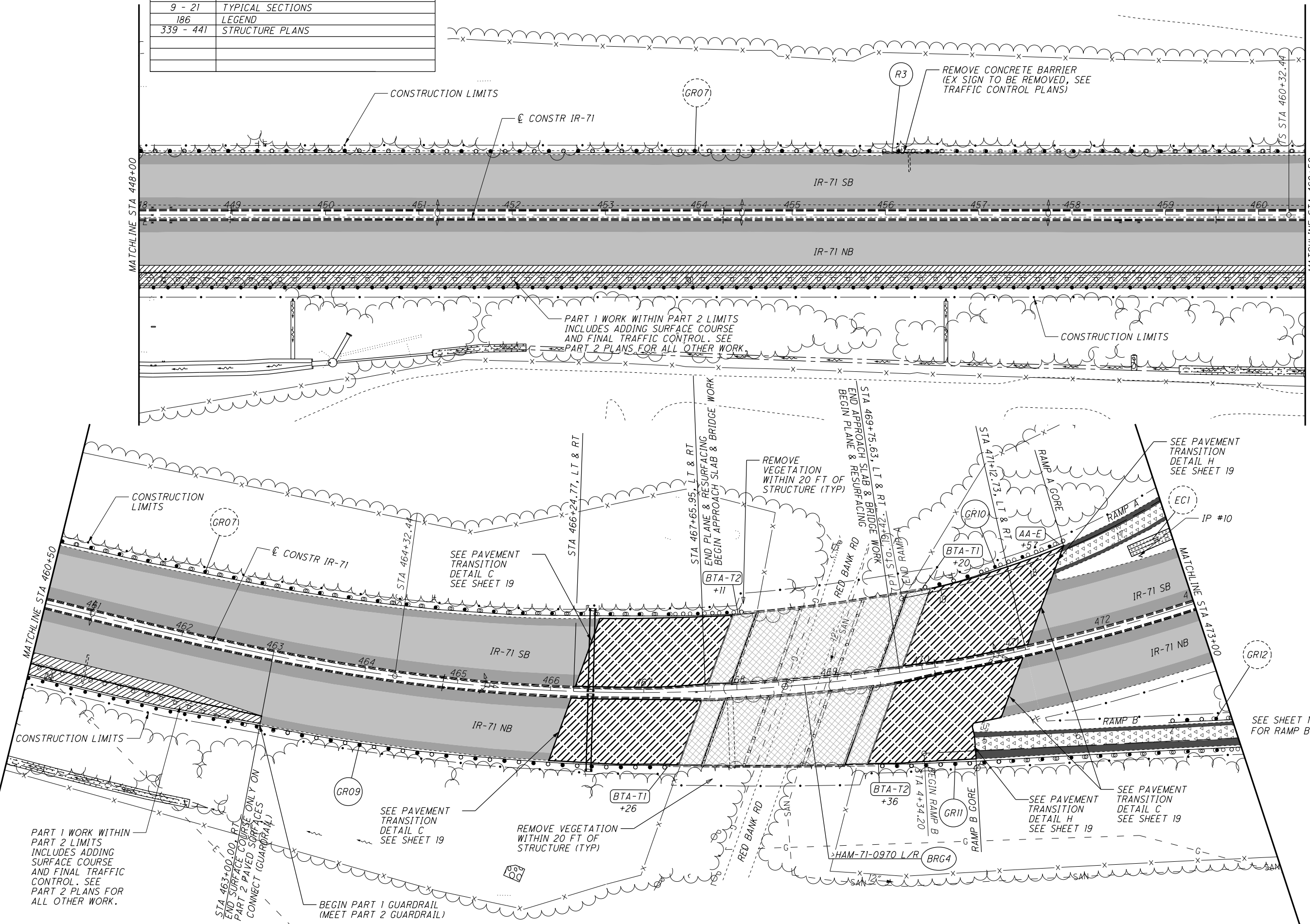
PLAN
STA 422+50 IR-71 TO STA 448+00 IR-71

HAM-IR71-8.42

P:\PR54704\HAM_91826\Design\Roadway\Sheets\91826_GPI03.dgn Sheet 10/26/2017 8:34:27 AM compton

CROSS REFERENCES	
SHEET NO	DESCRIPTION
2 - 7	SCHEMATIC - CURVE/SPIRAL DATA
9 - 21	TYPICAL SECTIONS
186	LEGEND
339 - 441	STRUCTURE PLANS

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826.GP104.dgn Sheet 10/26/2017 8:34:30 AM compton



CALCULATED
JLG
CHECKED
KSC

PLAN
STA 448+00 IR-71 TO STA 474+00 IR-71

HAM-IR71-8.42

189
441



SEE SHEET 197
FOR RAMP A
AND RAMP B

PART 1 WORK WITHIN
PART 2 LIMITS
INCLUDES ADDING
SURFACE COURSE
AND FINAL TRAFFIC
CONTROL. SEE
PART 2 PLANS FOR
ALL OTHER WORK.

STA 463+00.00, RT
END SURFACE COURSE ONLY ON
PART 2 PAVED SURFACES
CONNECT (GUARDRAIL)

SEE PAVEMENT
TRANSITION
DETAIL C
SEE SHEET 19

REMOVE VEGETATION
WITHIN 20 FT OF
STRUCTURE (TYP)

BEGIN PART 1 GUARDRAIL
(MEET PART 2 GUARDRAIL)

SEE PAVEMENT
TRANSITION
DETAIL C
SEE SHEET 19

REMOVE VEGETATION
WITHIN 20 FT OF
STRUCTURE (TYP)

STA 467+65.95, LT & RT
END PLANE & RESURFACING
BEGIN APPROACH SLAB & BRIDGE WORK

STA 469+75.63, LT & RT, LT & RT, RT, RT
END APPROACH SLAB & BRIDGE WORK
BEGIN PLANE & RESURFACING

SEE PAVEMENT
TRANSITION
DETAIL H
SEE SHEET 19

SEE PAVEMENT
TRANSITION
DETAIL C
SEE SHEET 19

SEE PAVEMENT
TRANSITION
DETAIL H
SEE SHEET 19

SEE PAVEMENT
TRANSITION
DETAIL H
SEE SHEET 19

R3
REMOVE CONCRETE BARRIER
(EX SIGN TO BE REMOVED, SEE
TRAFFIC CONTROL PLANS)

GR07

CONSTRUCTION LIMITS

CONSTR IR-71

IR-71 SB

IR-71 NB

PART 1 WORK WITHIN PART 2 LIMITS
INCLUDES ADDING SURFACE COURSE
AND FINAL TRAFFIC CONTROL. SEE
PART 2 PLANS FOR ALL OTHER WORK.

CONSTRUCTION LIMITS

MATCHLINE STA 448+00

MATCHLINE STA 460+50

MATCHLINE STA 460+50

MATCHLINE STA 473+00

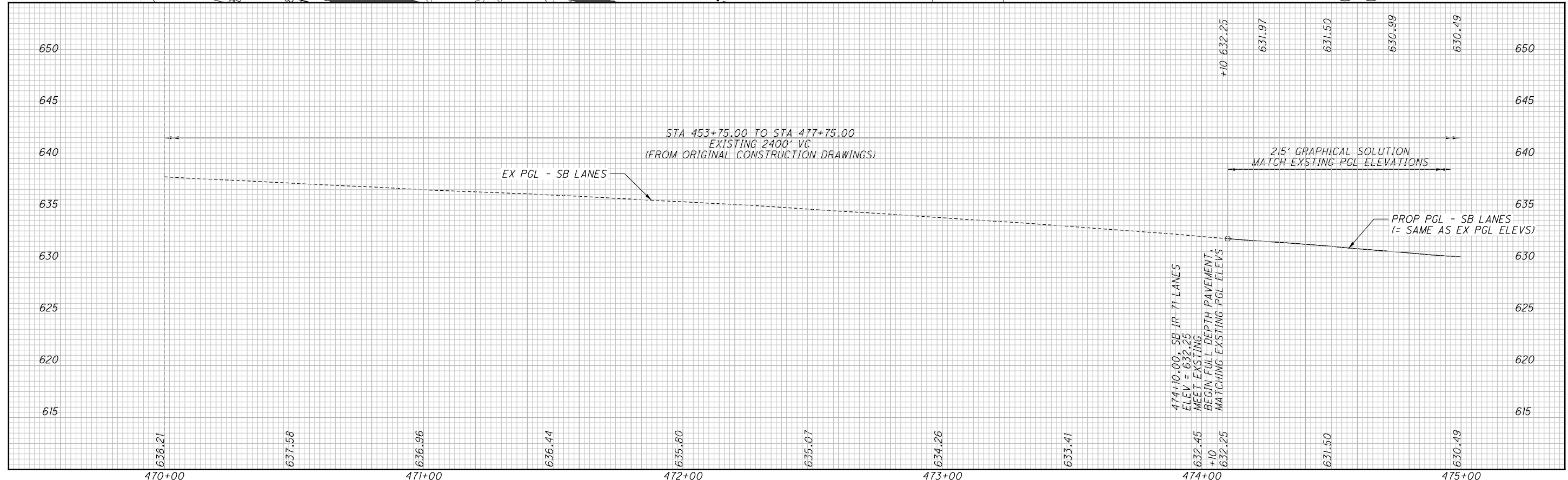
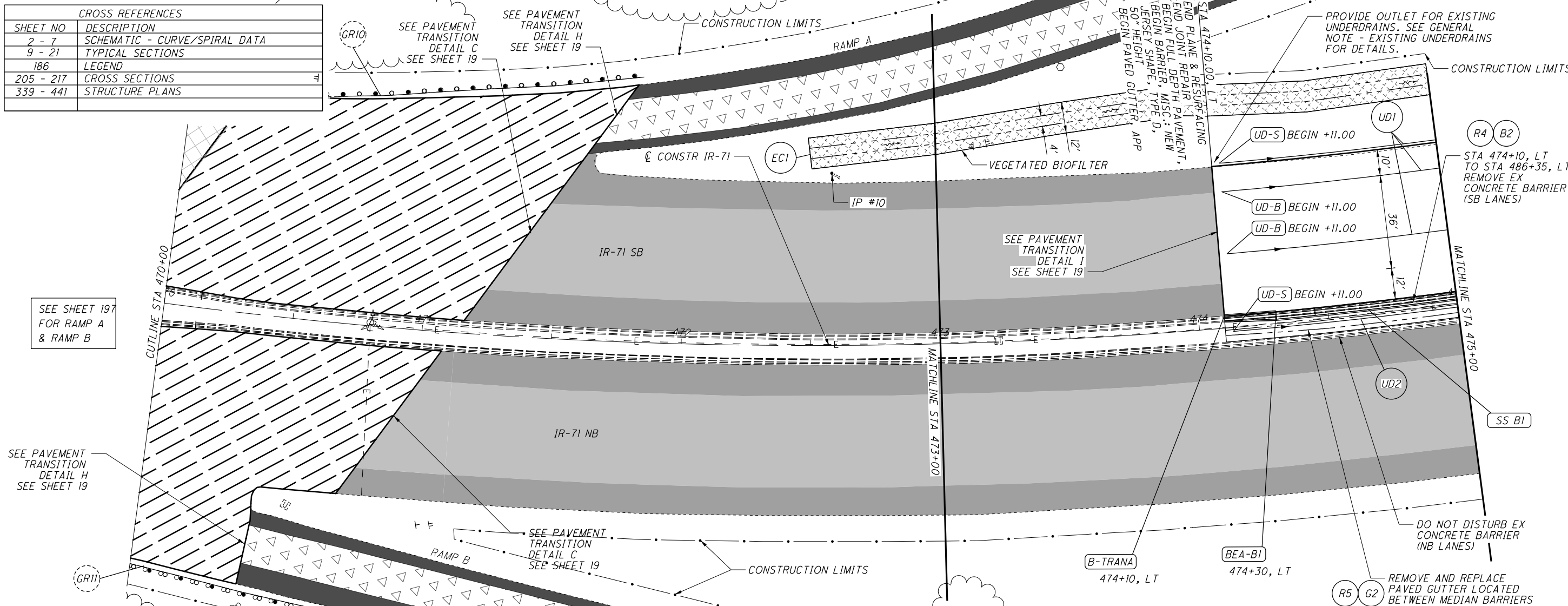
448 449 450 451 452 453 454 455 456 457 458 459 460

461 462 463 464 465 466 467 468 469 470 471 472 473

460 461 462 463 464 465 466 467 468 469 470 471 472 473

474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490

CROSS REFERENCES	
SHEET NO	DESCRIPTION
2 - 7	SCHEMATIC - CURVE/SPIRAL DATA
9 - 21	TYPICAL SECTIONS
186	LEGEND
205 - 217	CROSS SECTIONS
339 - 441	STRUCTURE PLANS



PLAN AND PROFILE - LOWERED PROFILE LIMITS STA 473+00 TO STA 475+00

HAM-IR71-8.42

190
441

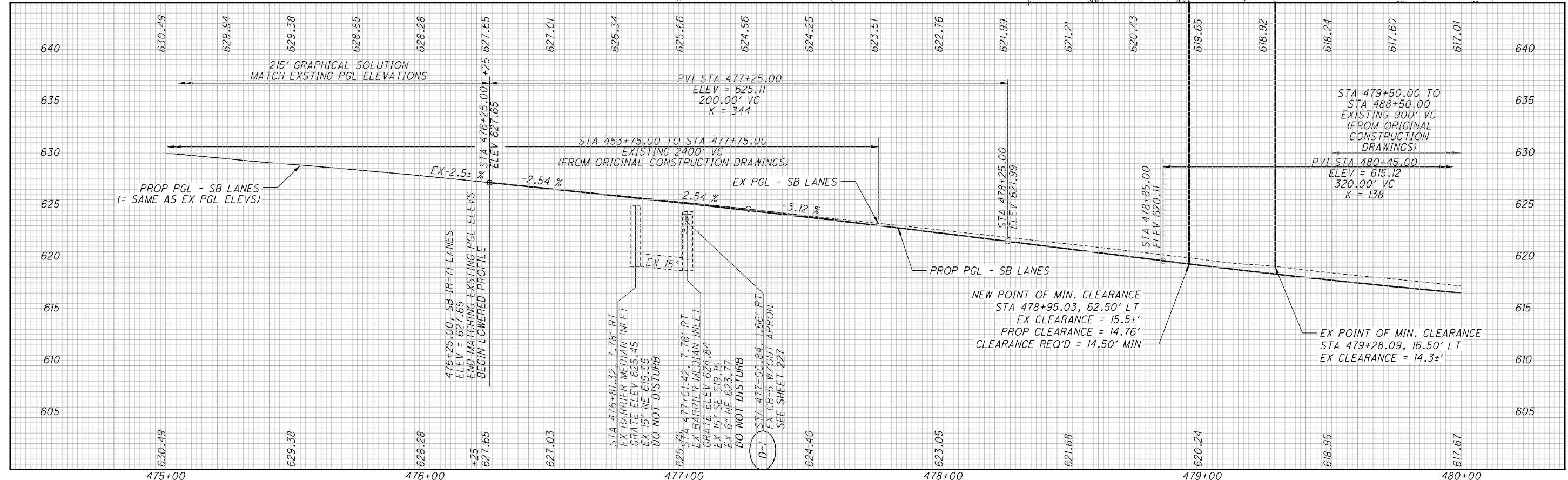
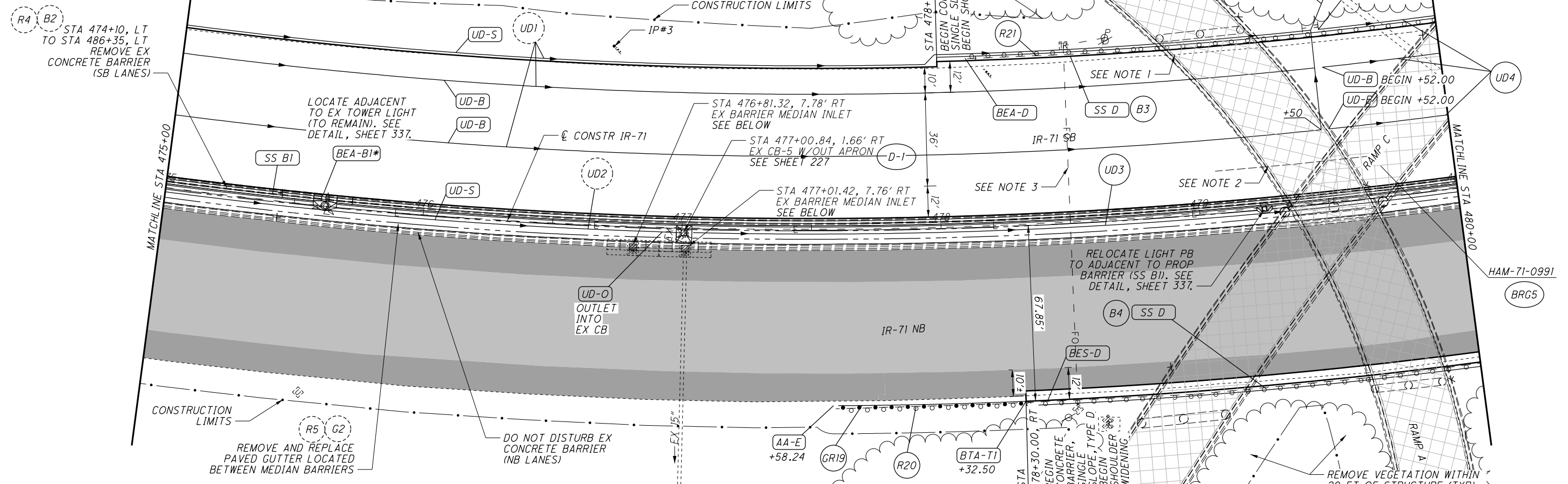
CALCULATED JLG
CHECKED KSC

HORIZONTAL SCALE IN FEET
0 20 40

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_GP11.dgn Sheet 10/26/2017 8:34:32 AM compton

CROSS REFERENCES	
SHEET NO	DESCRIPTION
2 - 7	SCHEMATIC - CURVE/SPIRAL DATA
9 - 21	TYPICAL SECTIONS
186	LEGEND
205 - 217	CROSS SECTIONS
339 - 441	STRUCTURE PLANS

- NOTE:
1. NEW POINT OF MIN. CLEARANCE, STA 478+95.03, 62.50' LT
EX CLEARANCE = 15.5±', PROP CLEARANCE = 14.76',
CLEARANCE REQ'D = 14.50' MIN
 2. EX POINT OF MIN. CLEARANCE, STA 479+28.09, 16.50' LT
EX CLEARANCE = 14.3±'
 3. USE CARE AND DO NOT DISTURB EX TRAFFIC SURVEILLANCE (ARTIMIS) CONDUIT LOCATED AT APPROX. 30 INCHES BELOW EX PAVEMENT.



PLAN AND PROFILE - LOWERED PROFILE LIMITS
STA 475+00 TO STA 480+00

HAM-IR71-8.42
191
441

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_GPII2.dgn_Sheet 10/26/2017 8:34:34 AM comp ton

BRG5 HAM-71-0991

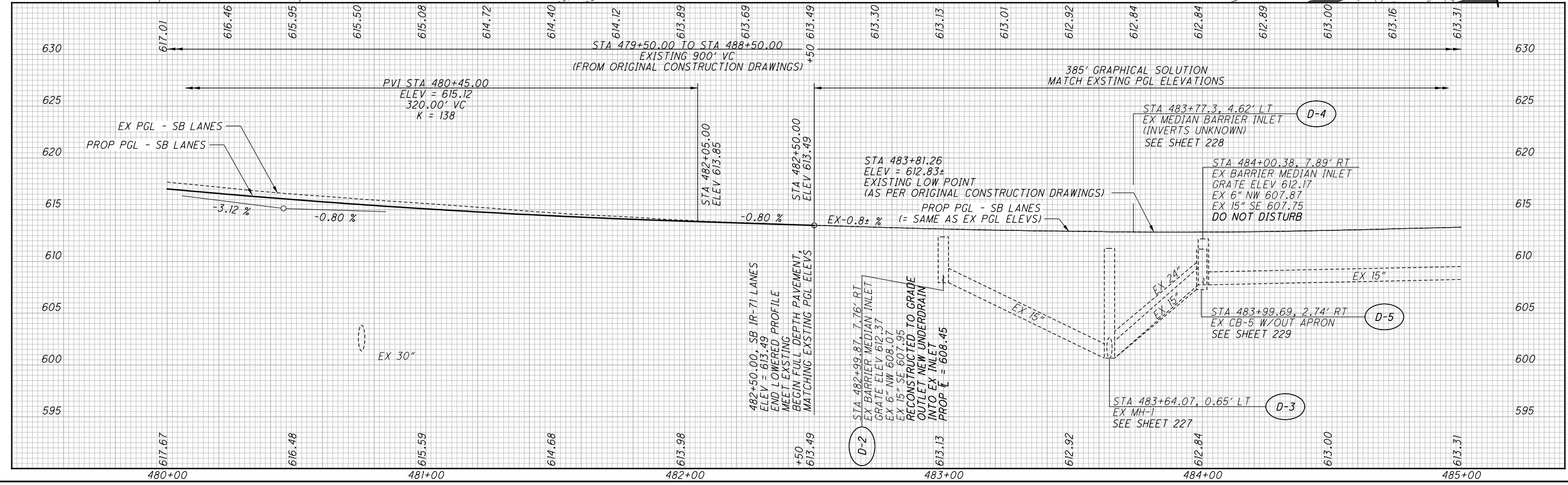
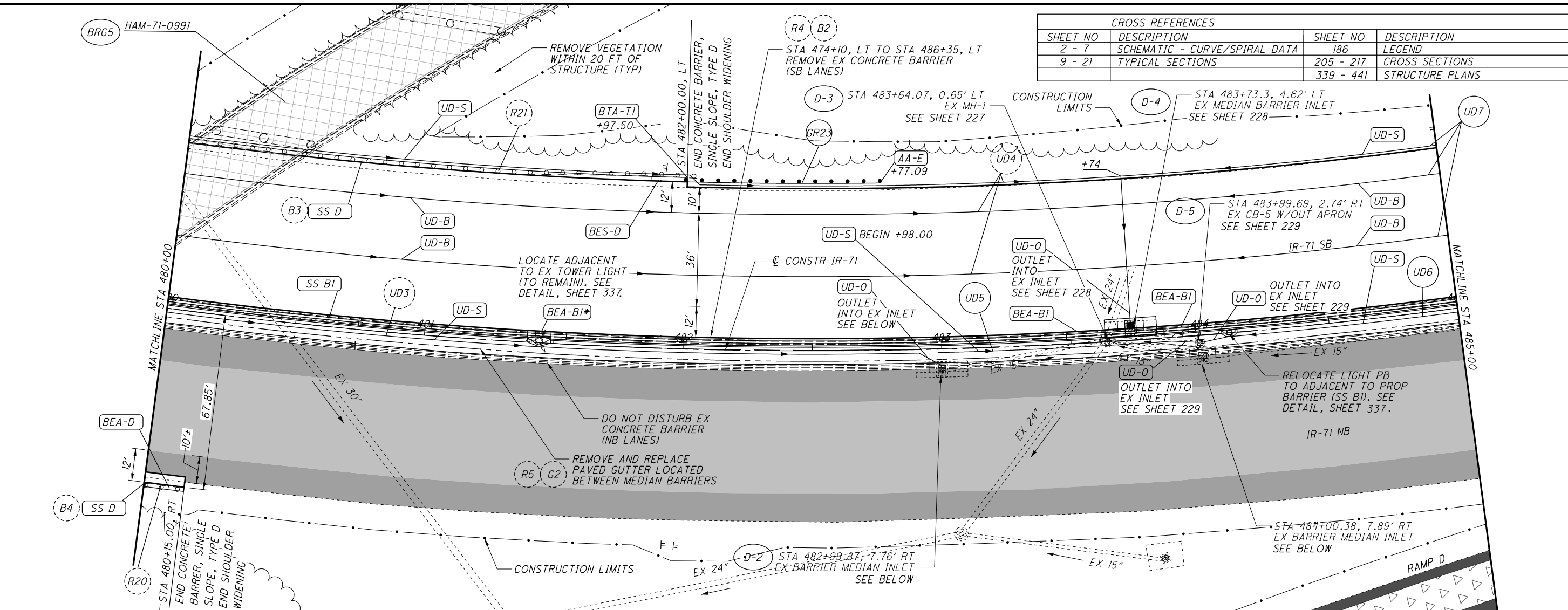
CROSS REFERENCES			
SHEET NO	DESCRIPTION	SHEET NO	DESCRIPTION
2 - 7	SCHEMATIC - CURVE/SPIRAL DATA	186	LEGEND
9 - 21	TYPICAL SECTIONS	205 - 217	CROSS SECTIONS
		339 - 441	STRUCTURE PLANS



CALCULATED
JLG
CHECKED
KSC

**PLAN AND PROFILE - LOWERED PROFILE LIMITS
STA 480+00 TO STA 485+00**

HAM-IR71-8.42



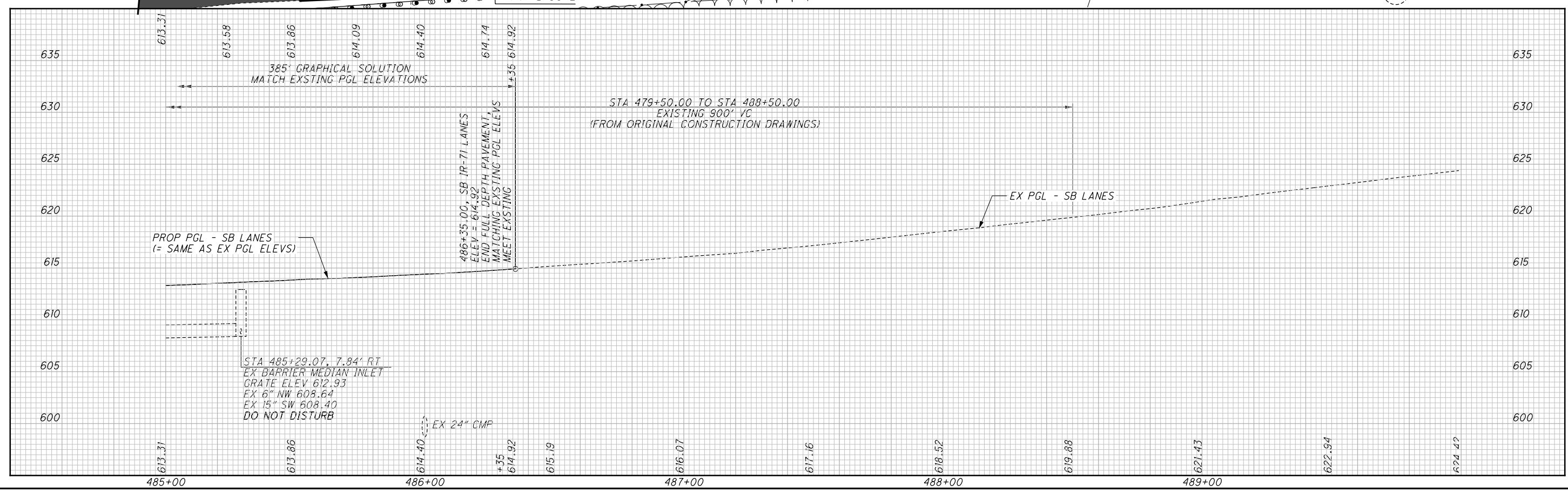
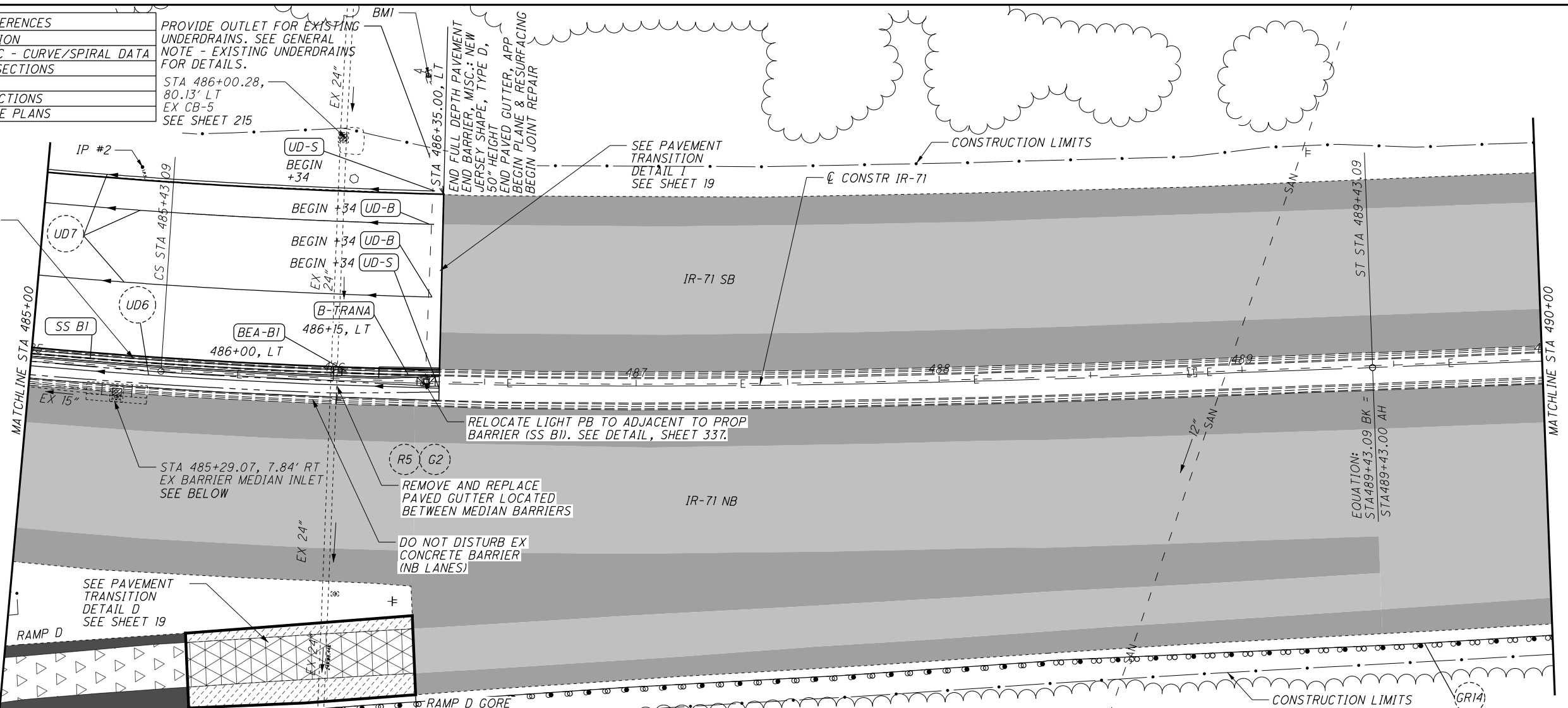
P:\PR54704\HAM_91826\Design\Roadway\Sheets\91826_GPII3.dgn_Sheet 10/26/2017 8:34:36 AM compton

CROSS REFERENCES	
SHEET NO	DESCRIPTION
2 - 7	SCHEMATIC - CURVE/SPIRAL DATA
9 - 21	TYPICAL SECTIONS
186	LEGEND
205 - 217	CROSS SECTIONS
339 - 441	STRUCTURE PLANS

PROVIDE OUTLET FOR EXISTING UNDERDRAINS. SEE GENERAL NOTE - EXISTING UNDERDRAINS FOR DETAILS.
 STA 486+00.28, 80.13' LT
 EX CB-5
 SEE SHEET 215

R4 B2
 STA 474+10, LT TO STA 486+35, LT
 REMOVE EX CONCRETE BARRIER (SB LANES)

SEE SHEET 197 - 198 FOR RAMP C AND RAMP D



HORIZONTAL SCALE IN FEET

CALCULATED JLG
 CHECKED KSC

PLAN AND PROFILE - LOWERED PROFILE LIMITS
STA 485+00 TO STA 490+00

HAM-IR71-8.42

193
 441

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_GPI14.dgn Sheet 10/26/2017 8:34:39 AM comp ton

CROSS REFERENCES	
SHEET NO	DESCRIPTION
2 - 7	SCHEMATIC - CURVE/SPIRAL DATA
9 - 21	TYPICAL SECTIONS
186	LEGEND
339 - 441	STRUCTURE PLANS

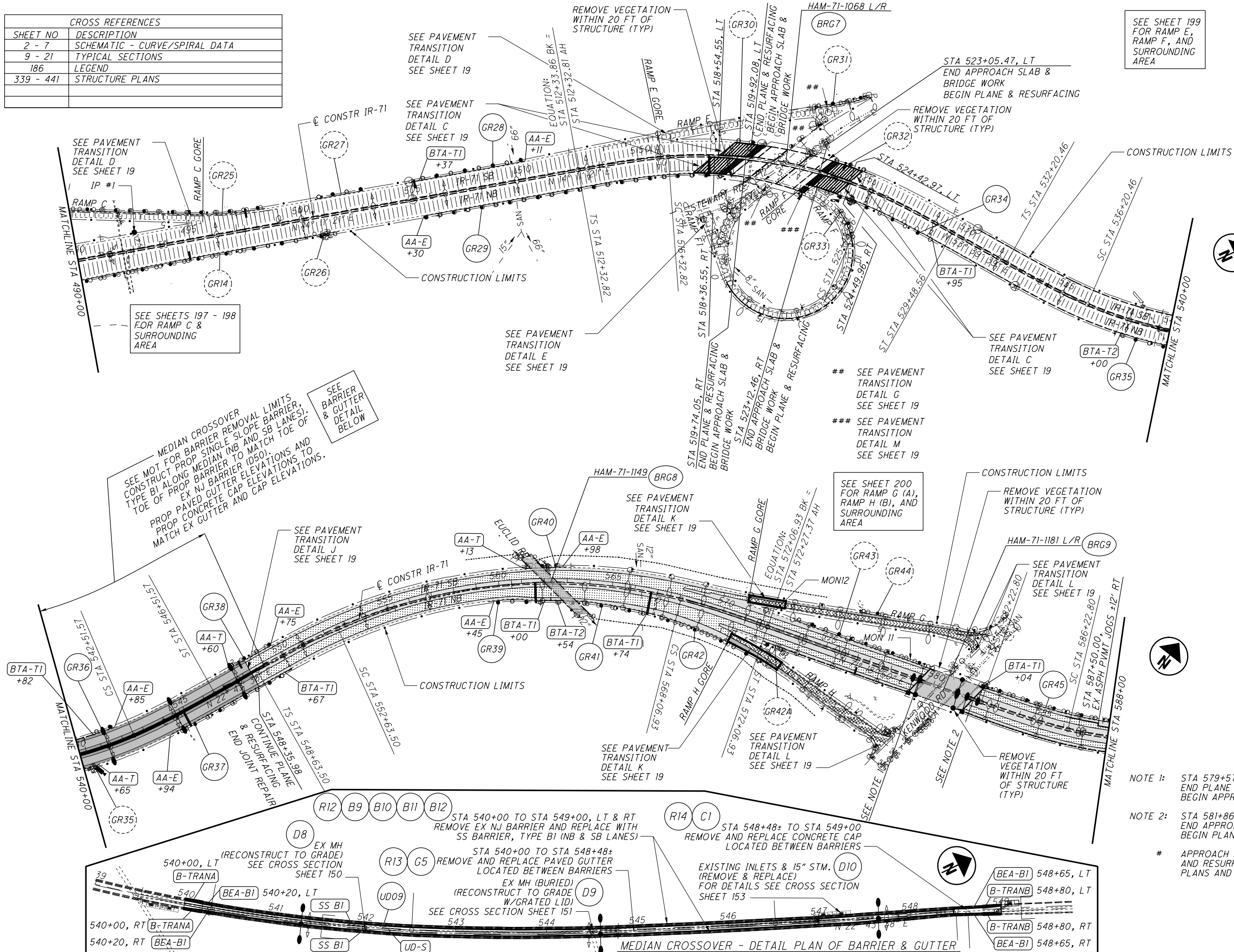
SEE SHEET 199 FOR RAMP E, RAMP F, AND SURROUNDING AREA



PLAN
 STA 490+00 IR-71 TO STA 588+00 IR-71

HAM-IR71-8.42

P:\PR54704\HAM-91826\Design\Roadway\Sheets\91826-GP121.dgn_Sheet 10/26/2017 8:34:42 AM compton



MEDIAN CROSSOVER
 SEE MOT FOR BARRIER REMOVAL LIMITS
 CONSTRUCT PROP SINGLE SLOPE BARRIER,
 TYPE B1 ALONG MEDIAN (NB AND SB LANES).
 EX NJ BARRIER TO MATCH TOE OF
 PROP PAVED GUTTER ELEVATIONS AND
 MATCH EX GUTTER AND CAP ELEVATIONS.

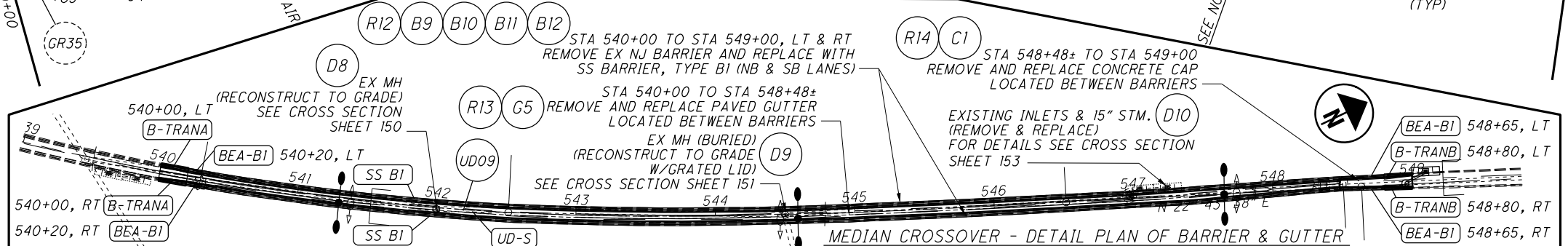
SEE BARRIER & GUTTER DETAIL BELOW

SEE SHEET 200
 FOR RAMP G (A),
 RAMP H (B), AND
 SURROUNDING
 AREA

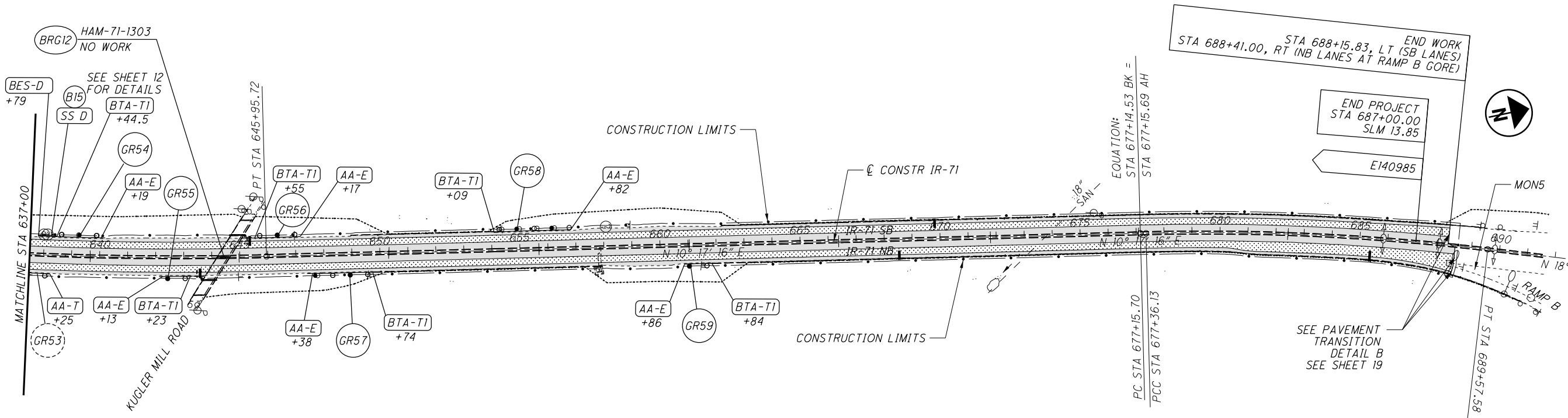
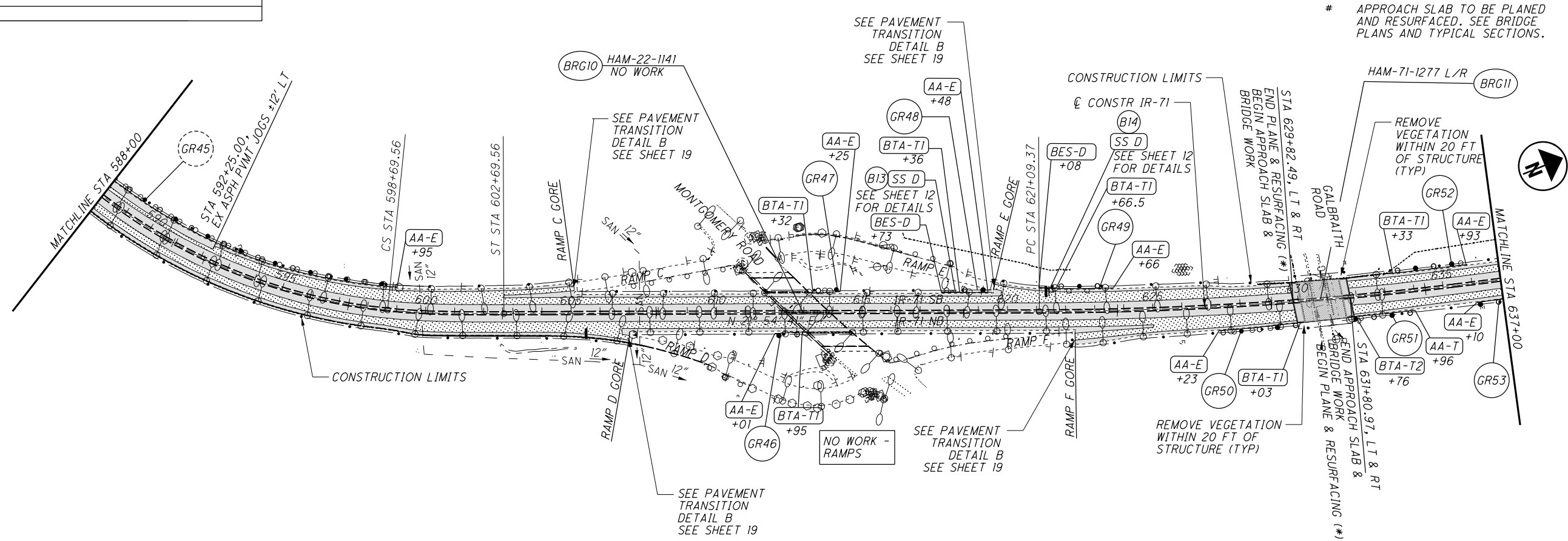
NOTE 1: STA 579+57.58, LT & RT
END PLANE & RESURFACING (#)
BEGIN APPROACH SLAB & BRIDGE WORK

NOTE 2: STA 581+86.54, LT & RT
END APPROACH SLAB & BRIDGE WORK
BEGIN PLANE & RESURFACING (#)

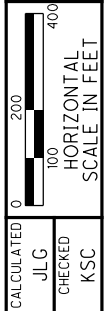
APPROACH SLAB TO BE PLANNED AND RESURFACED. SEE BRIDGE PLANS AND TYPICAL SECTIONS.



CROSS REFERENCES	
SHEET NO	DESCRIPTION
2 - 7	SCHEMATIC - CURVE/SPIRAL DATA
9 - 21	TYPICAL SECTIONS
186	LEGEND
339 - 441	STRUCTURE PLANS

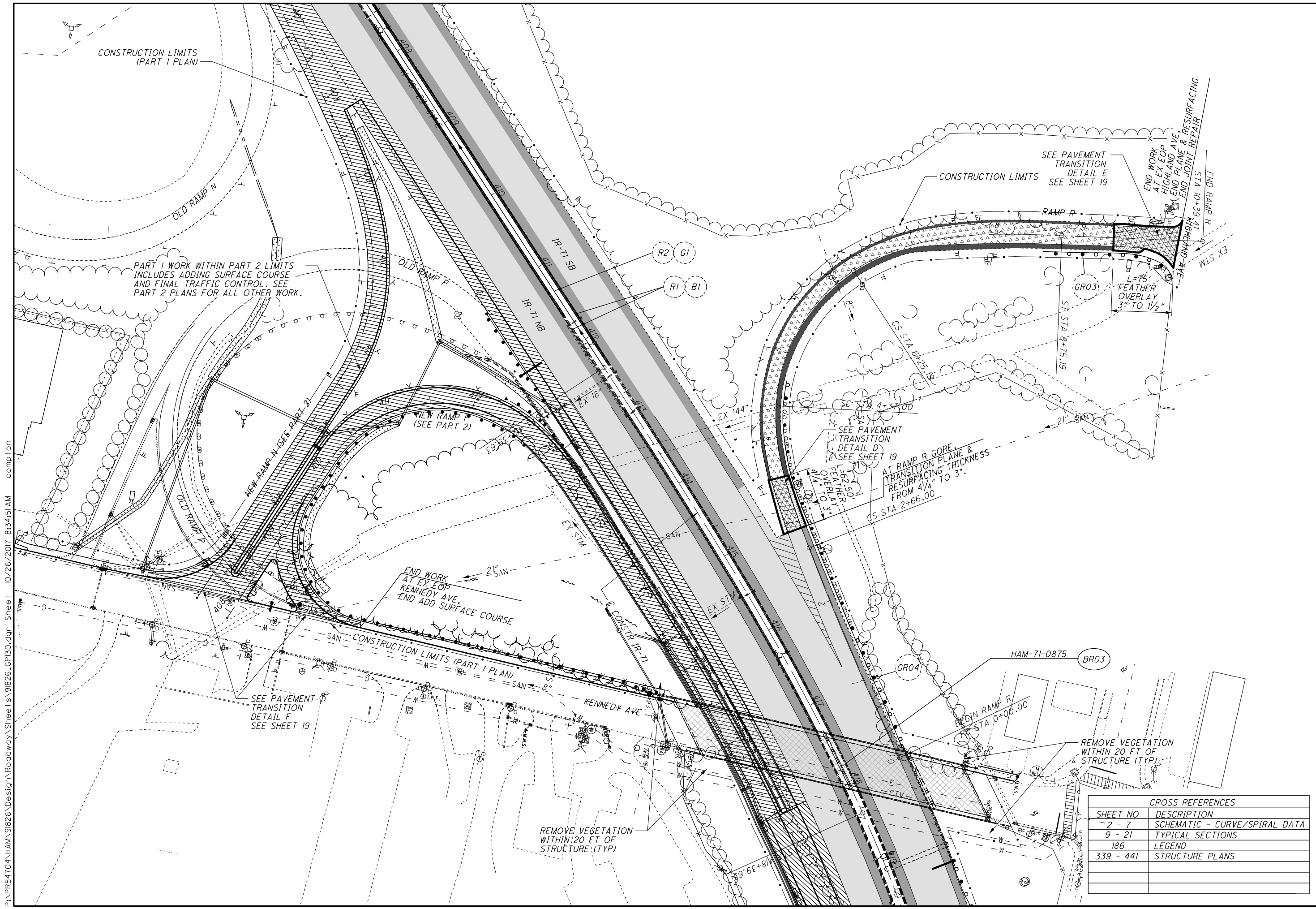


END WORK
 STA 688+41.00, RT (NB LANES AT RAMP B GORE)
 STA 688+15.83, LT (SB LANES)
 END PROJECT
 STA 687+00.00
 SLM 13.85
 E140985



PLAN
 STA 588+00 IR-71 TO END

HAM-IR71-8.42



CONSTRUCTION LIMITS (PART 1 PLAN)

PART 1 WORK WITHIN PART 2 LIMITS INCLUDES ADDING SURFACE COURSE AND FINAL TRAFFIC CONTROL. SEE PART 2 PLANS FOR ALL OTHER WORK.

SEE PAVEMENT TRANSITION DETAIL E SEE SHEET 19

CONSTRUCTION LIMITS

END WORK AT EX EOP HIGHLAND AVE END PLANE & RESURFACING STA 10+39.41 HIGHLAND AVE

RAMP R

L=75' FEATHER OVERLAY 3" TO 1 1/2"

SEE PAVEMENT TRANSITION DETAIL D SEE SHEET 19

AT RAMP R GORE, TRANSITION PLANE & RESURFACING THICKNESS FROM 4 1/4" TO 3"

END WORK AT EX EOP KENNEDY AVE, END ADD SURFACE COURSE

SEE PAVEMENT TRANSITION DETAIL F SEE SHEET 19

REMOVE VEGETATION WITHIN 20 FT OF STRUCTURE (TYP)

REMOVE VEGETATION WITHIN 20 FT OF STRUCTURE (TYP)

CROSS REFERENCES	
SHEET NO	DESCRIPTION
2 - 7	SCHEMATIC - CURVE/SPIRAL DATA
9 - 21	TYPICAL SECTIONS
186	LEGEND
339 - 441	STRUCTURE PLANS

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_GPI30.dgn Sheet 10/26/2017 8:34:51AM comp10n

CROSS REFERENCES	
SHEET NO	DESCRIPTION
2 - 7	SCHEMATIC - CURVE/SPIRAL DATA
9 - 21	TYPICAL SECTIONS
186	LEGEND
339 - 441	STRUCTURE PLANS



 0 50 100

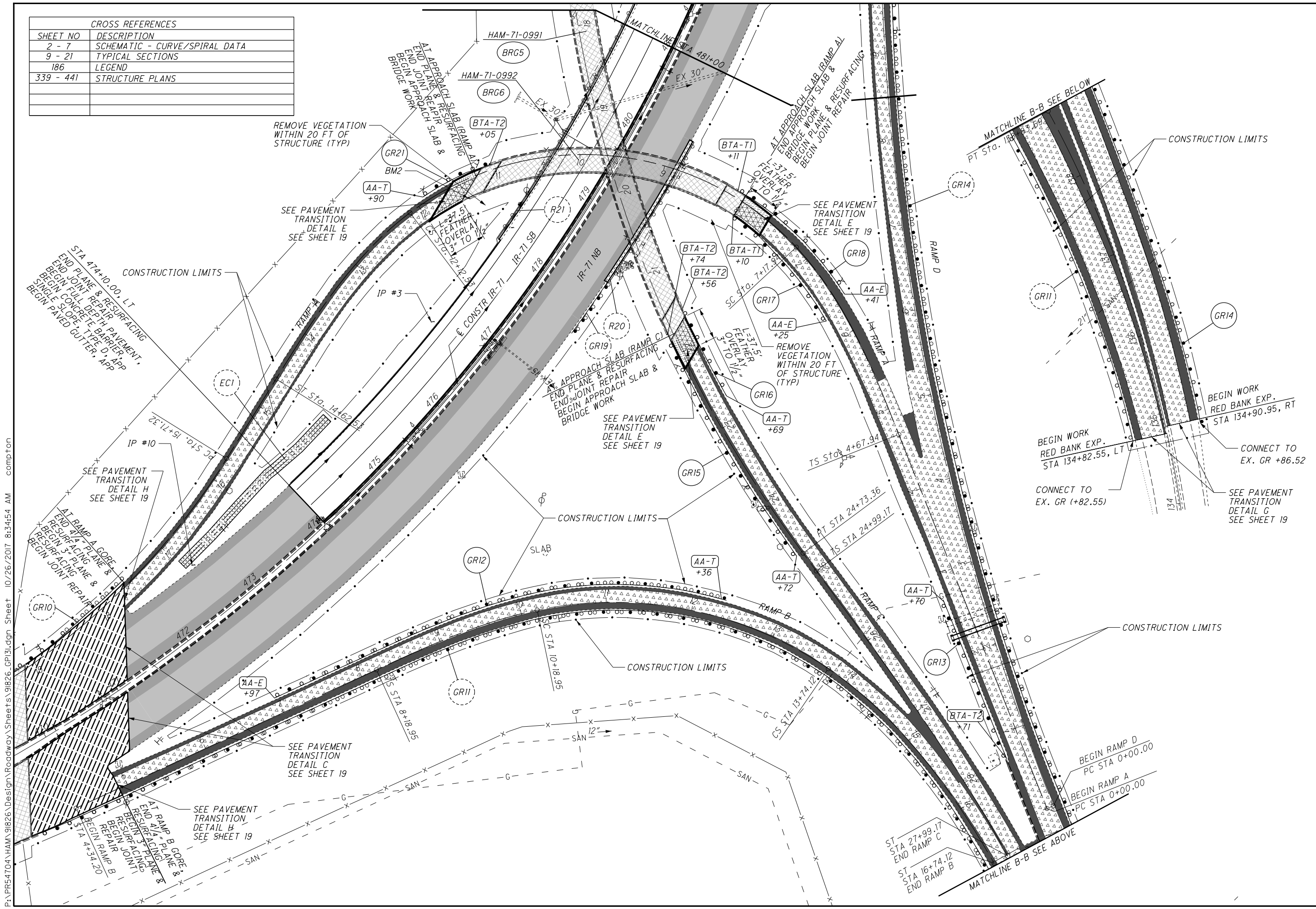
 HORIZONTAL

 SCALE IN FEET

CALCULATED JLG CHECKED KSC

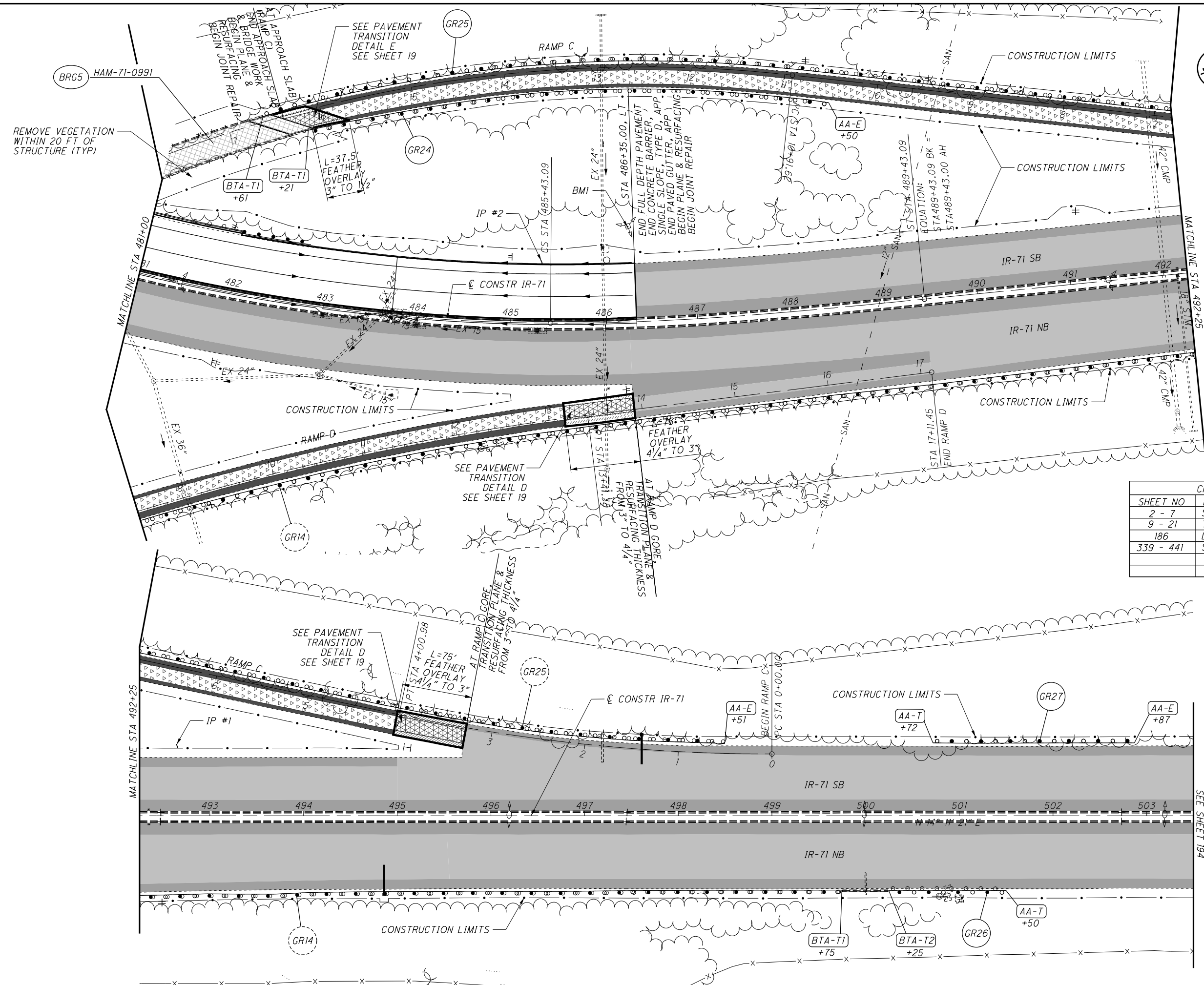
PLAN - RED BANK EXPRESSWAY

RAMP A, RAMP B, RAMP C, AND RAMP D



P:\PR54704\HAM-91826\Design\Roadway\Sheets\91826.GPJ\dgn Sheet 10/26/2017 8:34:54 AM compion

P:\PR54704\HAM_91826\Design\Roadway\Sheets\91826_GPI32.dgn Sheet 10/26/2017 8:34:57 AM compton



CALCULATED	JL G
CHECKED	KSC

**PLAN - RED BANK EXPRESSWAY
PAMP A, RAMP B, RAMP C AND RAMP D**

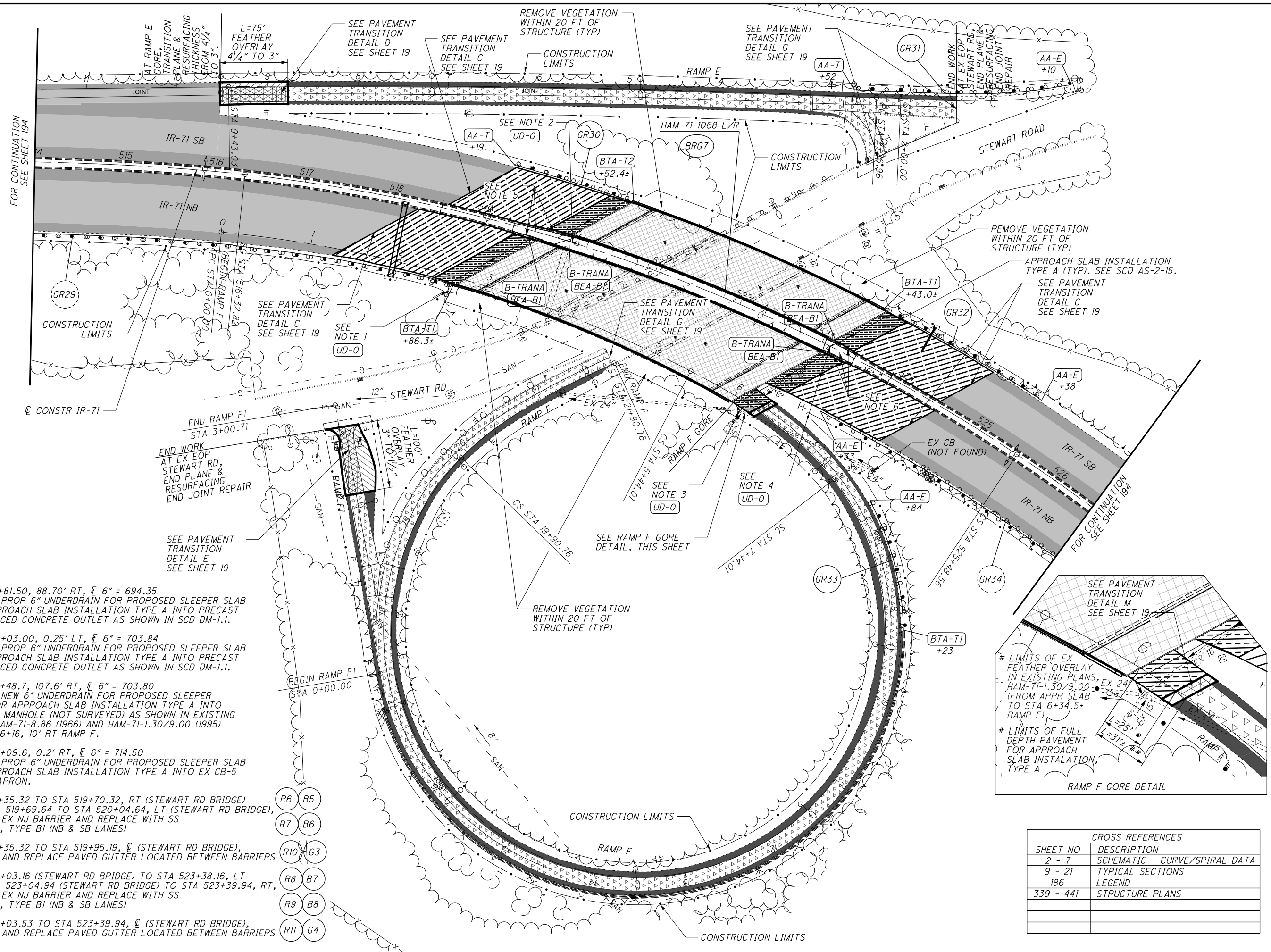
HAM-IR71-8.42

CROSS REFERENCES	
SHEET NO	DESCRIPTION
2 - 7	SCHEMATIC - CURVE/SPIRAL DATA
9 - 21	TYPICAL SECTIONS
186	LEGEND
339 - 441	STRUCTURE PLANS

FOR CONTINUATION
SEE SHEET 194

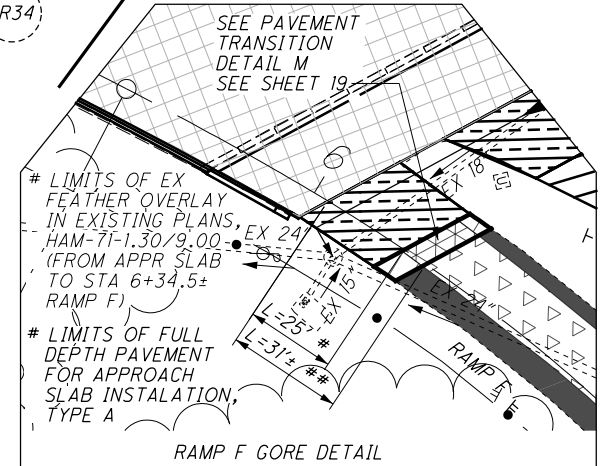
PLAN - STEWART ROAD
 RAMP E AND RAMP F

HAM-IR71-8.42



- NOTE 1: STA 518+81.50, 88.70' RT, E 6" = 694.35
 OUTLET PROP 6" UNDERDRAIN FOR PROPOSED SLEEPER SLAB FOR APPROACH SLAB INSTALLATION TYPE A INTO PRECAST REINFORCED CONCRETE OUTLET AS SHOWN IN SCD DM-1.1.
- NOTE 2: STA 520+03.00, 0.25' LT, E 6" = 703.84
 OUTLET PROP 6" UNDERDRAIN FOR PROPOSED SLEEPER SLAB FOR APPROACH SLAB INSTALLATION TYPE A INTO PRECAST REINFORCED CONCRETE OUTLET AS SHOWN IN SCD DM-1.1.
- NOTE 3: STA 522+48.7, 107.6' RT, E 6" = 703.80
 OUTLET NEW 6" UNDERDRAIN FOR PROPOSED SLEEPER SLAB FOR APPROACH SLAB INSTALLATION TYPE A INTO EX MANHOLE (NOT SURVEYED) AS SHOWN IN EXISTING PLANS HAM-71-8.86 (1966) AND HAM-71-1.30/9.00 (1995) AT STA 6+16, 10' RT RAMP F.
- NOTE 4: STA 523+09.6, 0.2' RT, E 6" = 714.50
 OUTLET PROP 6" UNDERDRAIN FOR PROPOSED SLEEPER SLAB FOR APPROACH SLAB INSTALLATION TYPE A INTO EX CB-5 W/OUT APRON.
- NOTE 5: STA 519+35.32 TO STA 519+70.32, RT (STEWART RD BRIDGE) AND STA 519+69.64 TO STA 520+04.64, LT (STEWART RD BRIDGE), REMOVE EX NJ BARRIER AND REPLACE WITH SS BARRIER, TYPE B1 (NB & SB LANES)
- STA 519+35.32 TO STA 519+95.19, C (STEWART RD BRIDGE), REMOVE AND REPLACE PAVED GUTTER LOCATED BETWEEN BARRIERS
- NOTE 6: STA 523+03.16 (STEWART RD BRIDGE) TO STA 523+38.16, LT AND STA 523+04.94 (STEWART RD BRIDGE) TO STA 523+39.94, RT, REMOVE EX NJ BARRIER AND REPLACE WITH SS BARRIER, TYPE B1 (NB & SB LANES)
- STA 523+03.53 TO STA 523+39.94, C (STEWART RD BRIDGE), REMOVE AND REPLACE PAVED GUTTER LOCATED BETWEEN BARRIERS

- (R6) (B5)
- (R7) (B6)
- (R10) (G3)
- (R8) (B7)
- (R9) (B8)
- (R11) (G4)



CROSS REFERENCES	
SHEET NO	DESCRIPTION
2 - 7	SCHEMATIC - CURVE/SPIRAL DATA
9 - 21	TYPICAL SECTIONS
186	LEGEND
339 - 441	STRUCTURE PLANS

P:\PR54704\HAM-91826\Design\Roadway\Sheets\91826.GPJ33.dgn Sheet 10/26/2017 8:34:59 AM compton

P:\PR54704\HAM_91826\Design\Roadway\Sheets\91826_GPI34.dgn Sheet 10/26/2017 8:35:02 AM comp ton

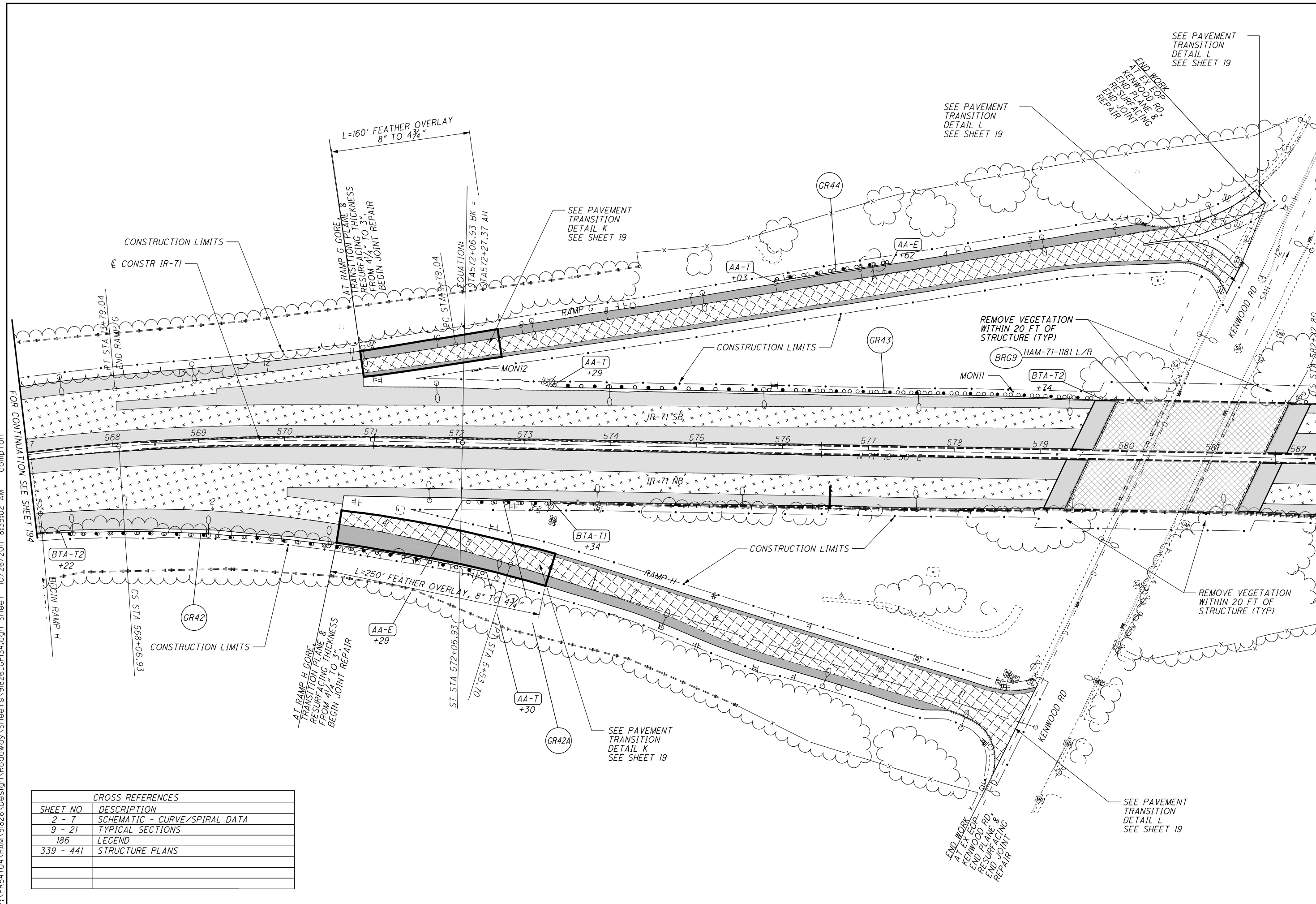


 0 50 100

 HORIZONTAL SCALE IN FEET

 CALCULATED JLG

 CHECKED KSC



CROSS REFERENCES	
SHEET NO	DESCRIPTION
2 - 7	SCHEMATIC - CURVE/SPIRAL DATA
9 - 21	TYPICAL SECTIONS
186	LEGEND
339 - 441	STRUCTURE PLANS

PLAN - KENWOOD ROAD RAMP G (A) AND RAMP H (B)

 HAM-IR71-8.42

 200

 441

CROSS REFERENCES	
SHEET NO	DESCRIPTION
2 - 7	SCHEMATIC - CURVE/SPIRAL DATA
9 - 21	TYPICAL SECTIONS
186	LEGEND
218 - 225	CROSS SECTIONS
339 - 441	STRUCTURE PLANS



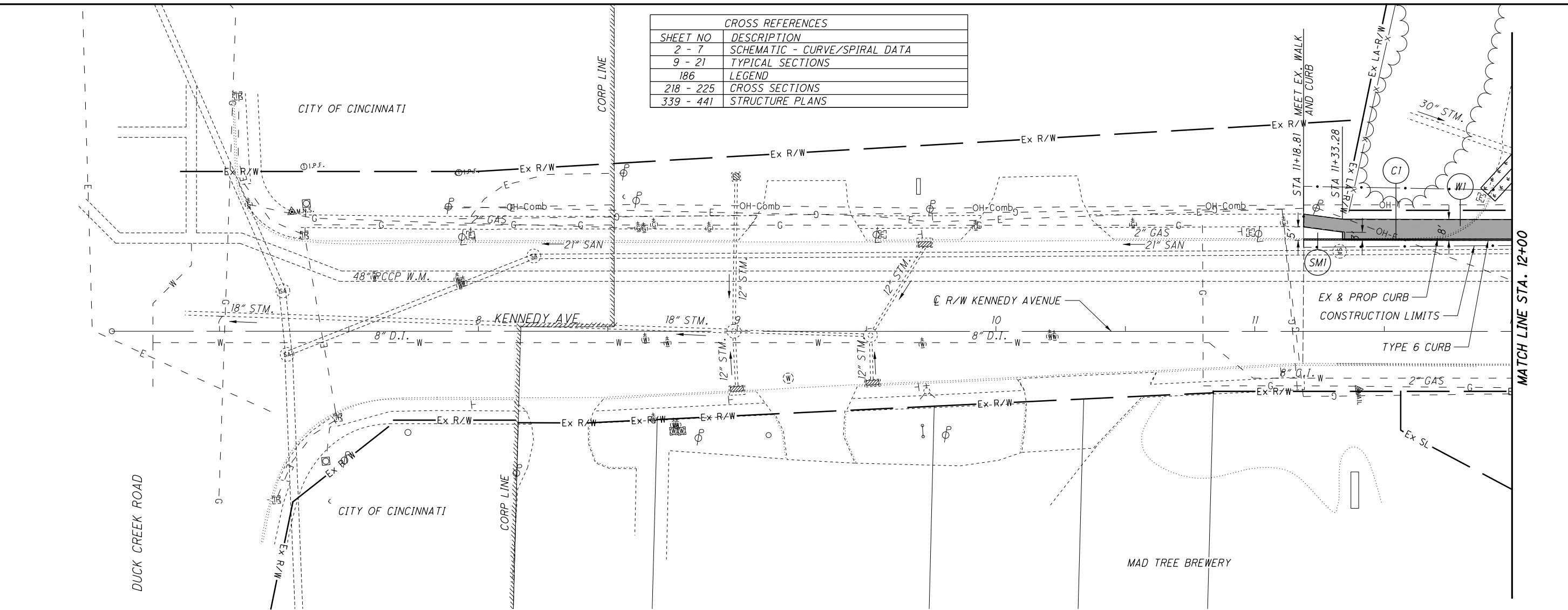
CALCULATED
SNG
CHECKED
SCS

PLAN AND PROFILE - KENNEDY AVE
WEST SIDE WALK - STA 11+19* TO STA 12+00

HAM-IR71-8.42

201
441

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_GP201.dgn Sheet 10/26/2017 8:35:05 AM compton

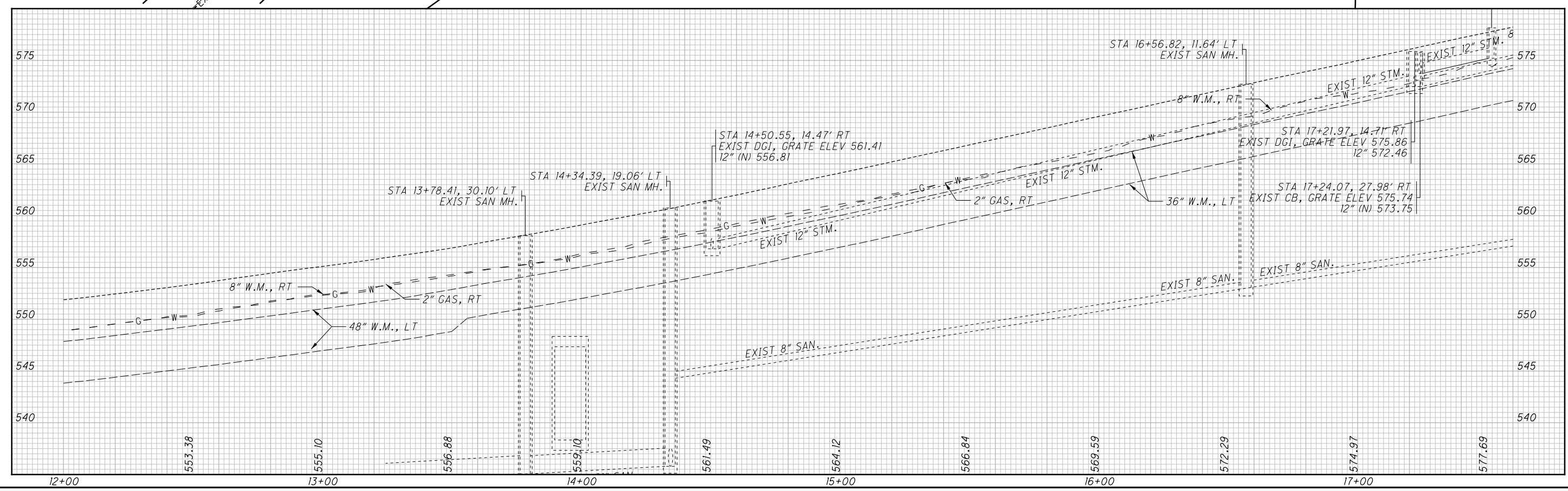
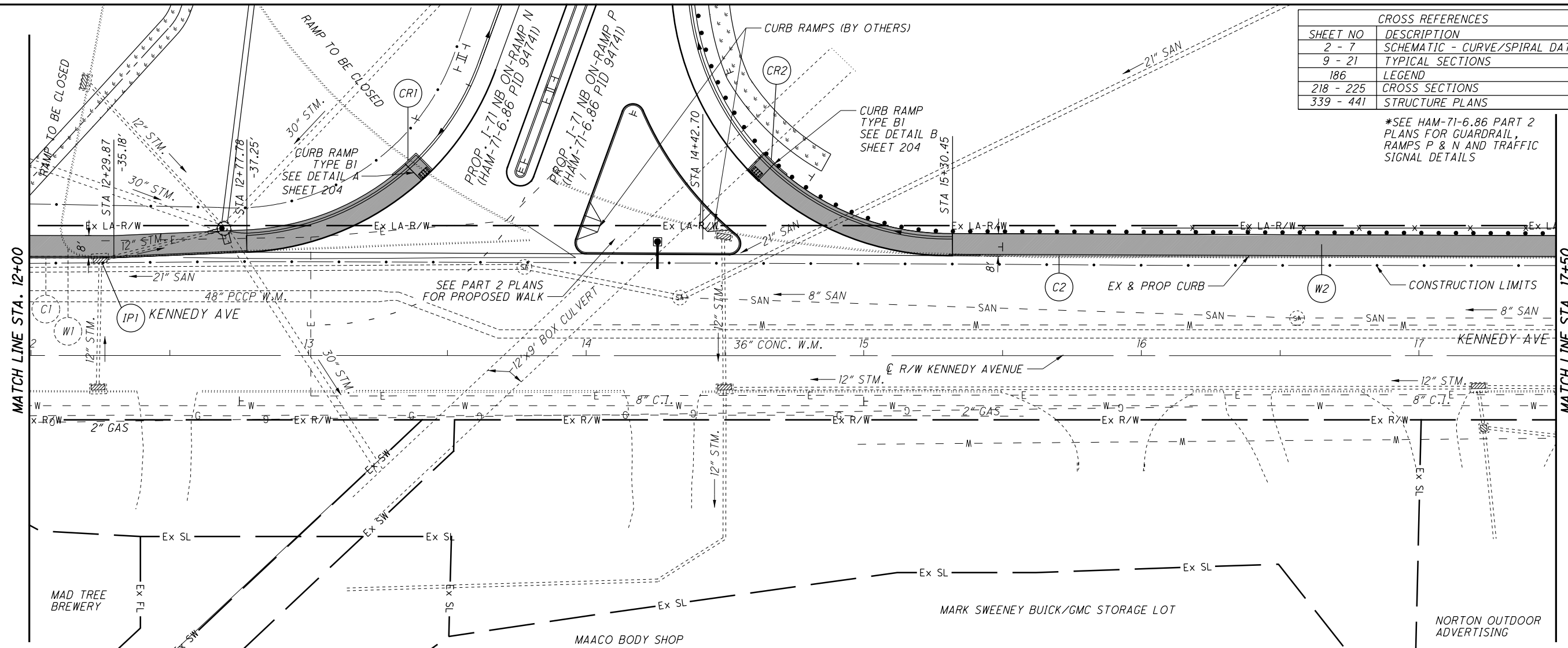


7+00 8+00 9+00 10+00 11+00 12+00

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_GP202.dgn_Sheet 10/26/2017 8:35:07 AM compton

CROSS REFERENCES	
SHEET NO	DESCRIPTION
2 - 7	SCHEMATIC - CURVE/SPIRAL DATA
9 - 21	TYPICAL SECTIONS
186	LEGEND
218 - 225	CROSS SECTIONS
339 - 441	STRUCTURE PLANS

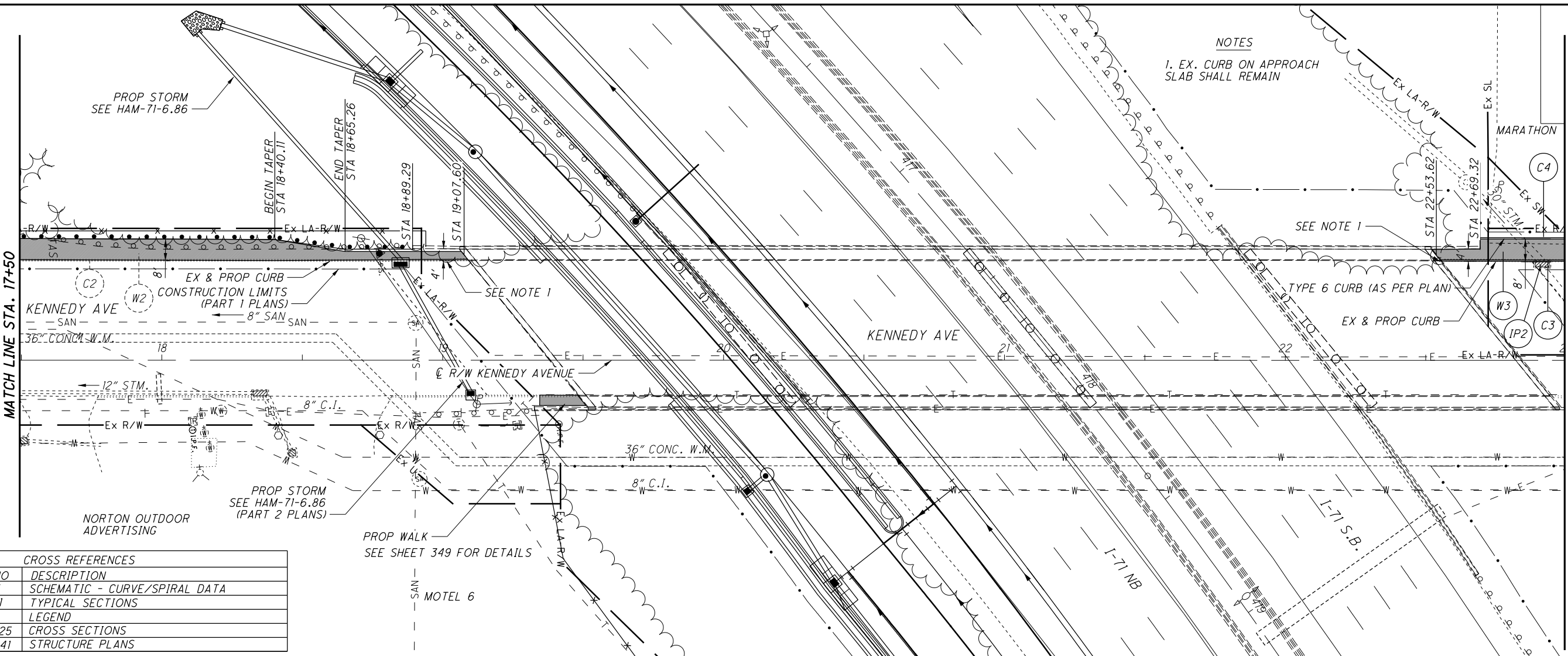
*SEE HAM-71-6.86 PART 2 PLANS FOR GUARDRAIL, RAMPS P & N AND TRAFFIC SIGNAL DETAILS



HORIZONTAL SCALE IN FEET

CALCULATED SNG
 CHECKED SCS
PLAN AND PROFILE - KENNEDY AVE
WEST SIDE WALK - STA 12+00 TO STA 17+50

HAM-IR71-8.42

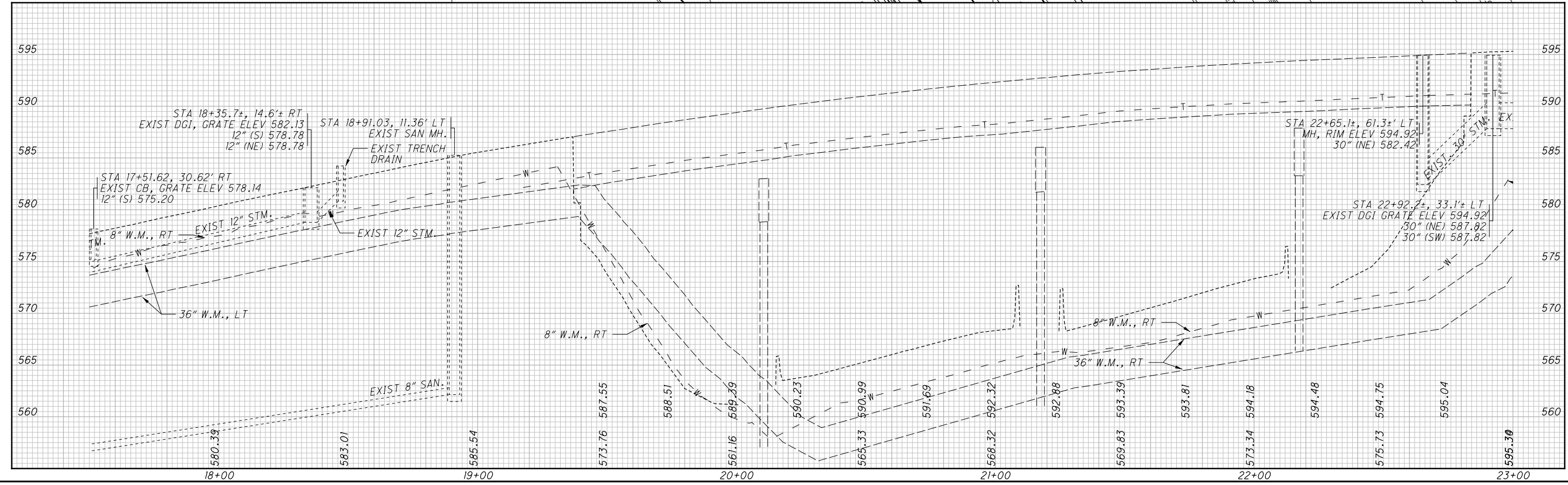


NOTES

 1. EX. CURB ON APPROACH

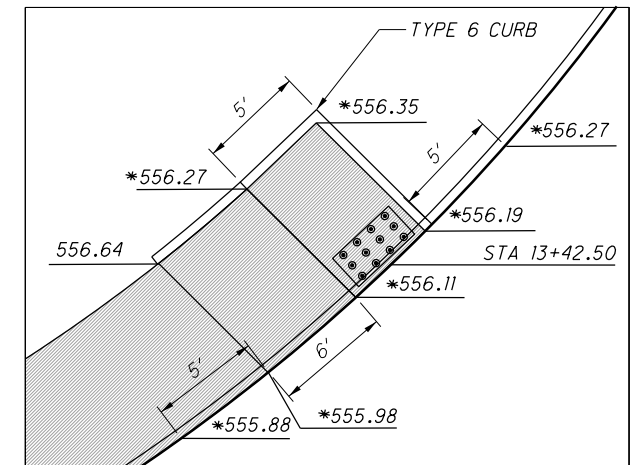
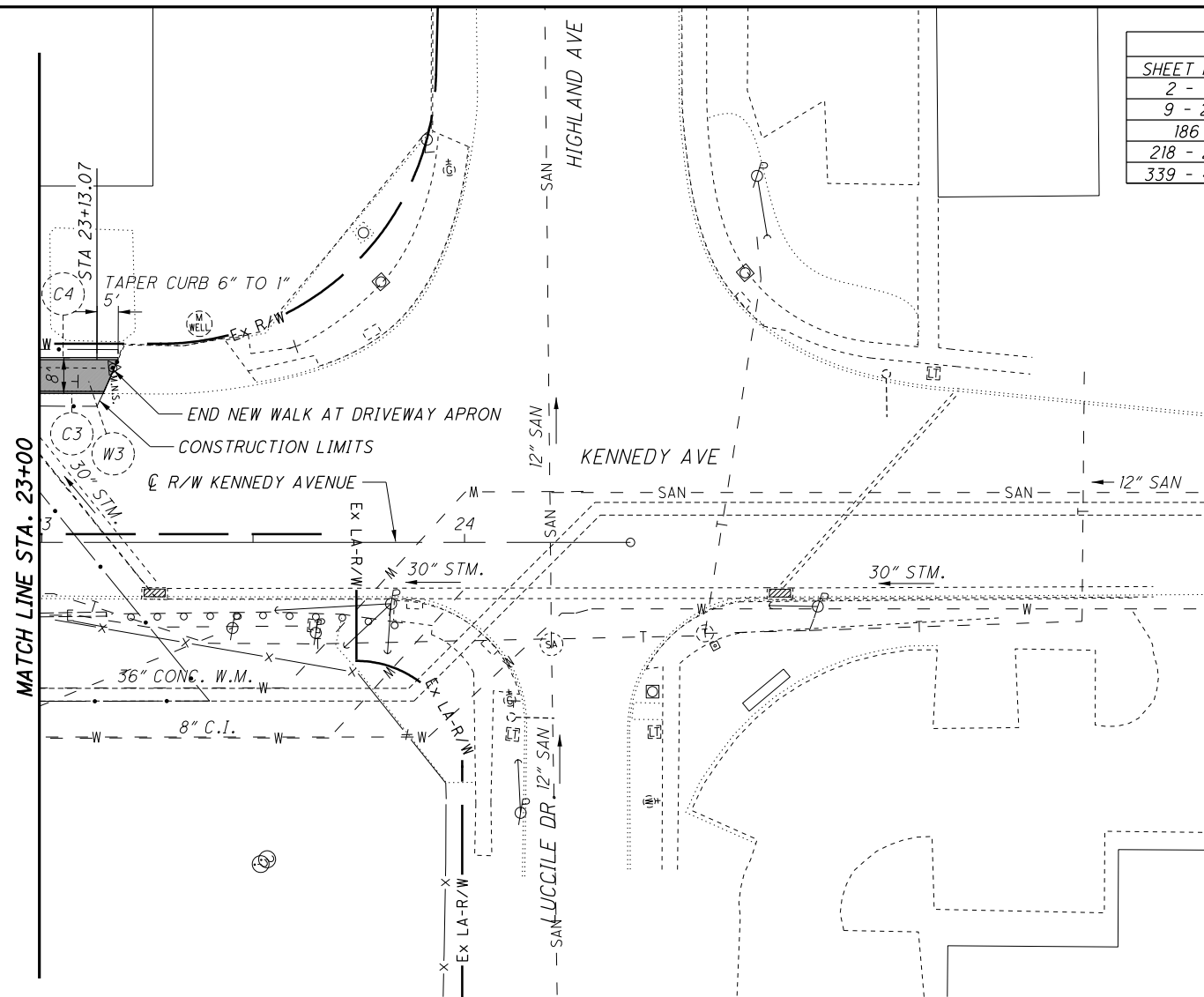
 SLAB SHALL REMAIN

CROSS REFERENCES	
SHEET NO	DESCRIPTION
2 - 7	SCHEMATIC - CURVE/SPIRAL DATA
9 - 21	TYPICAL SECTIONS
186	LEGEND
218 - 225	CROSS SECTIONS
339 - 441	STRUCTURE PLANS

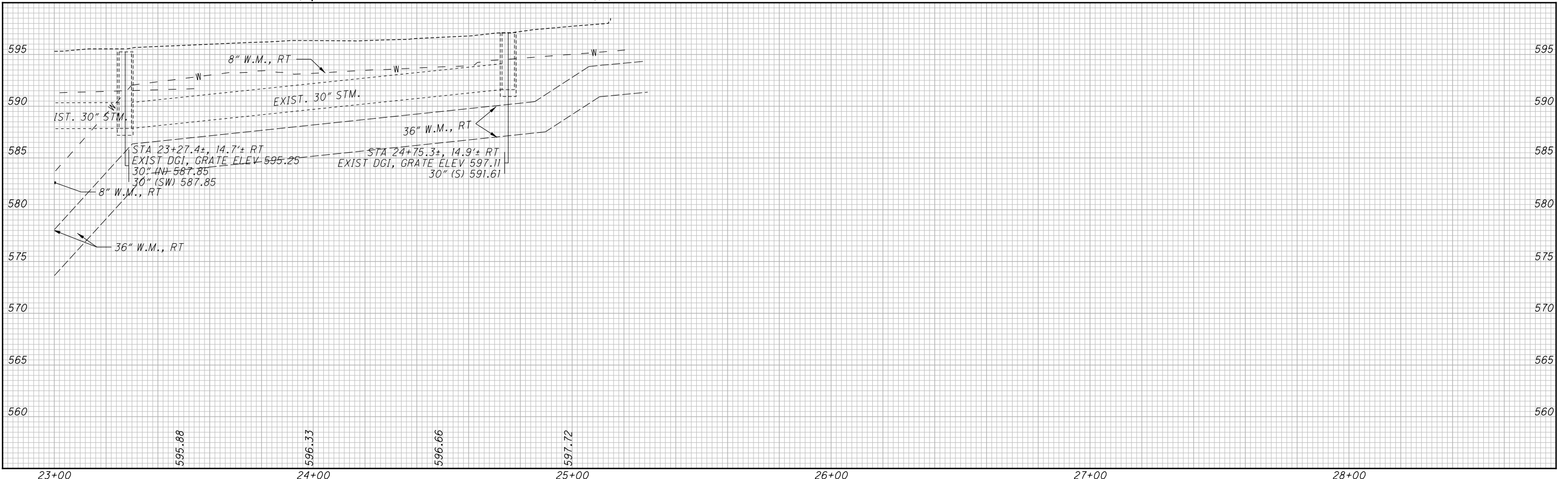
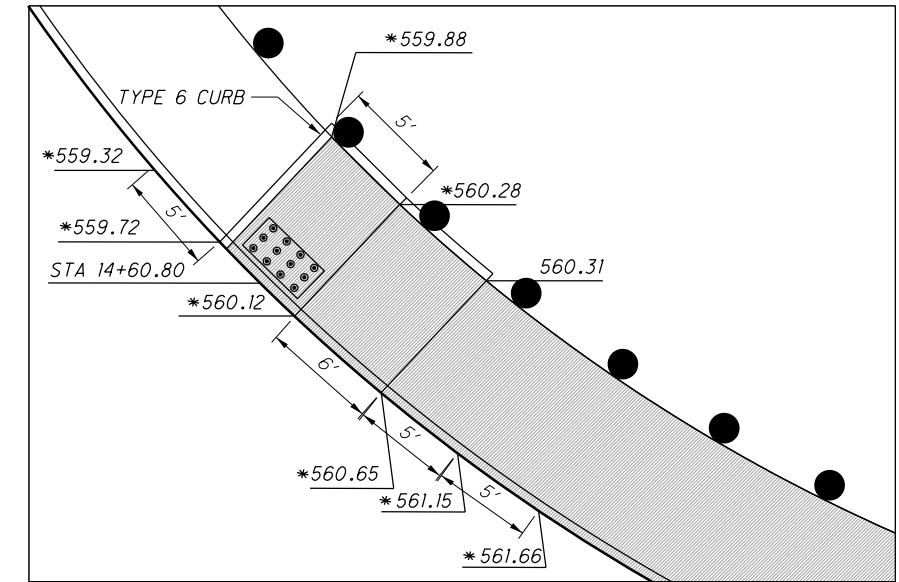


P:\PR54704\HAM_91826\Design\Roadway\Sheets\91826_GP203.dgn_Sheet 10/26/2017 8:35:09 AM compton

CROSS REFERENCES	
SHEET NO	DESCRIPTION
2 - 7	SCHEMATIC - CURVE/SPIRAL DATA
9 - 21	TYPICAL SECTIONS
186	LEGEND
218 - 225	CROSS SECTIONS
339 - 441	STRUCTURE PLANS



* DENOTES GUTTER ELEVATION AT FACE OF CURB



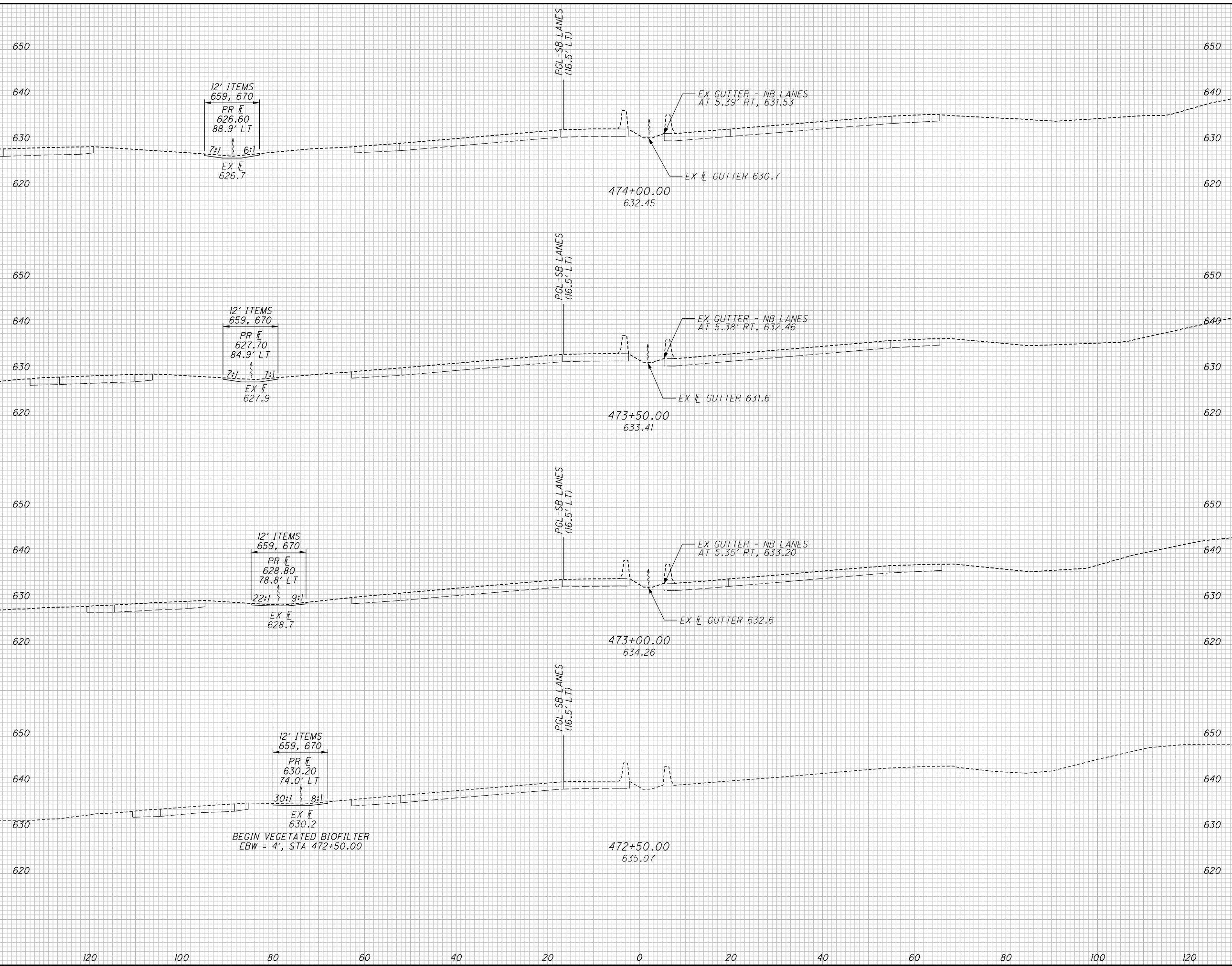
PLAN AND PROFILE - KENNEDY AVE
 WEST SIDE WALK - STA 23+00 TO STA 23+18 *

HAM-IR71-8.42
 204
 441

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_GP204.dgn Sheet 10/26/2017 8:35:11 AM comp ton

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_XS101.dgn Sheet 10/26/2017 8:35:13 AM comp ton

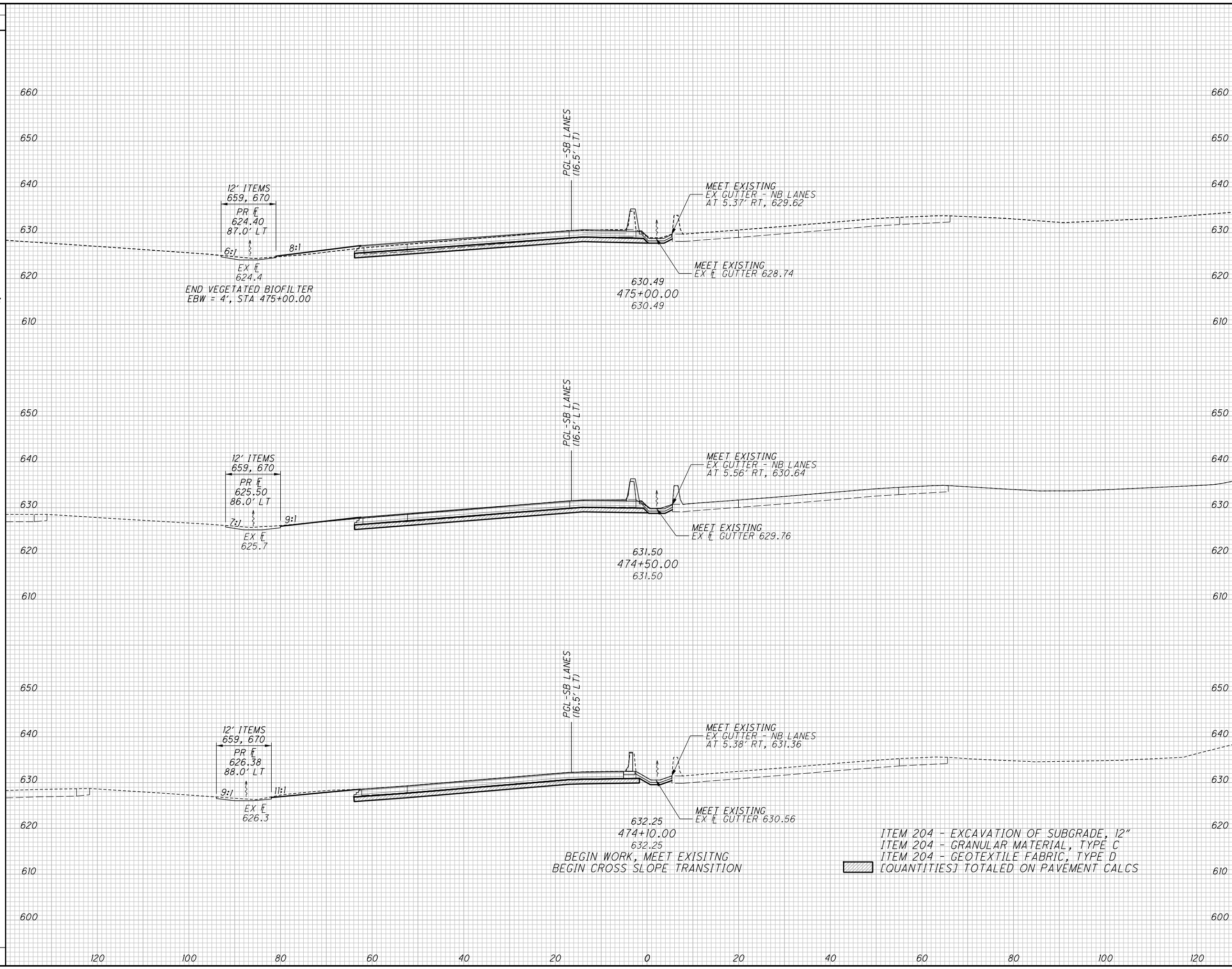
SEEDING	
END WIDTH	SO. YDS.
0	0
120	120
100	100
80	80
60	60
40	40
20	20
0	0
20	20
40	40
60	60
80	80
100	100
120	120
0	0
0	0



END AREA		VOLUME	
CUT	FILL	CUT	FILL
6	0	11	0
6	0	9	0
4	0	8	0
5	0	5	0
21	0	33	0

CALCULATED JLG	CHECKED KSC
CROSS SECTIONS IR-71 STA. 473+00.00 TO STA. 474+00.00	
HAM-IR71-8.42	
205	441

SEEDING
 END WIDTH SO. YDS.
 56 196
 19
 103
 82
 19
 11

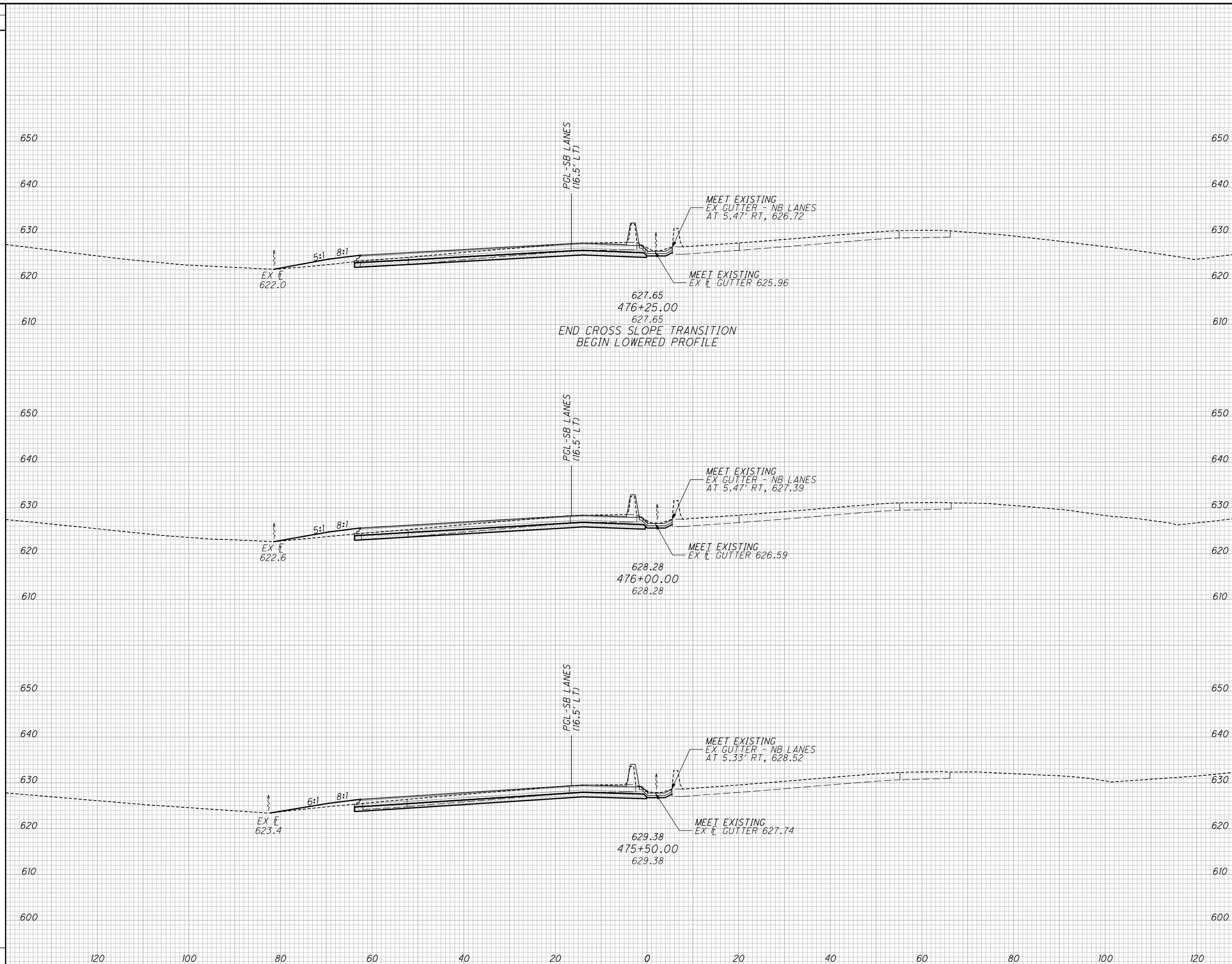


END AREA		VOLUME	
CUT	FILL	CUT	FILL
14	8	29	8
17	1	26	1
18	0	4	0
49	9	59	9

CALCULATED JLG
 CHECKED KSC
CROSS SECTIONS IR-71
STA. 474+10.00 TO STA. 475+00.00
HAM-IR71-8.42
 206
 441

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_XS102.dgn Sheet 10/26/2017 8:35:14 AM comp ton

SEEDING
 END WIDTH SO. YDS.
 58 269
 120 100 80 60 40 20 0 20 40 60 80 100 120

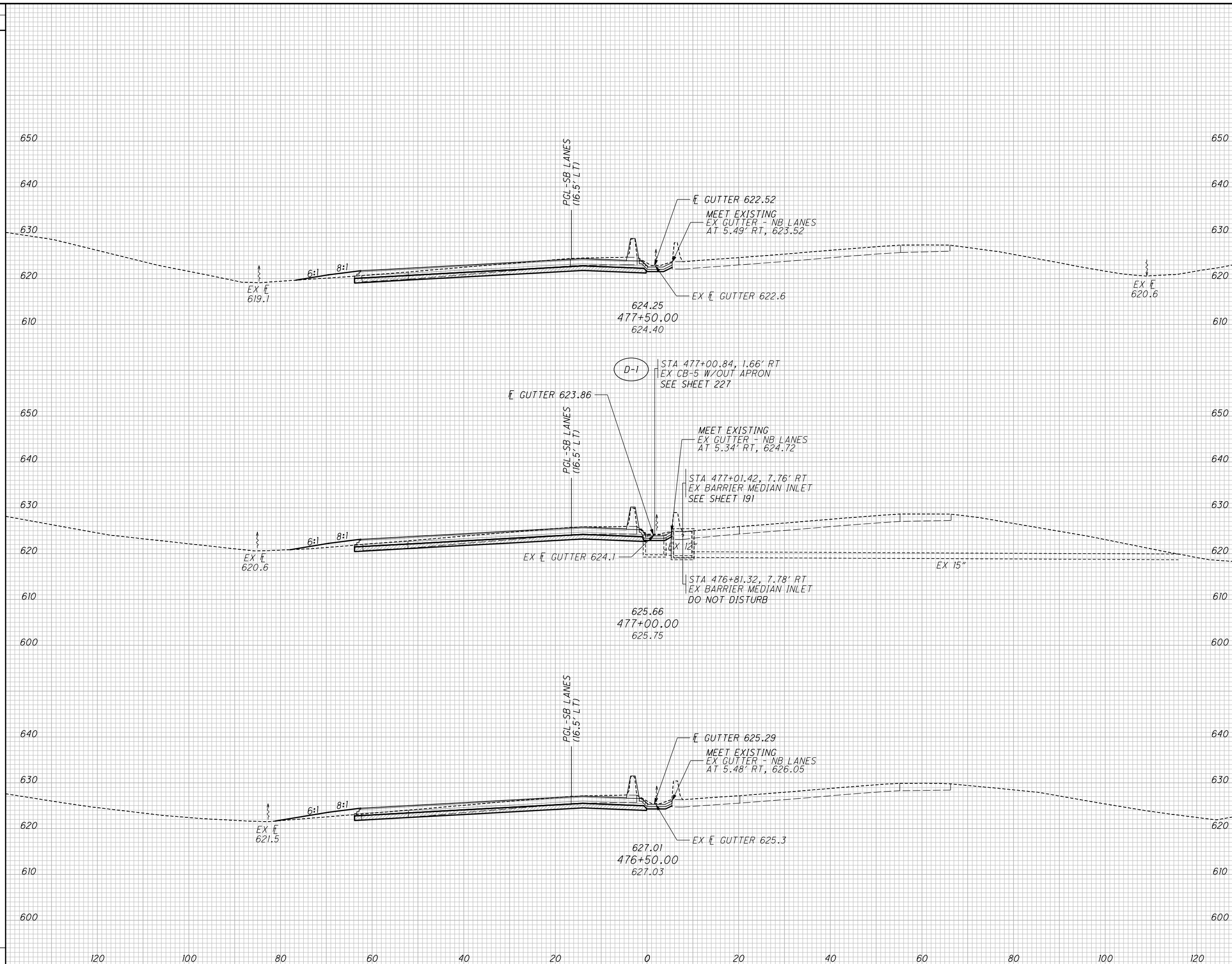


END AREA		VOLUME		CALCULATED JLG	CHECKED KSC
CUT	FILL	CUT	FILL		
11	15	10	13		
10	13	19	21		
10	10	22	17		
31	38	51	51		

CROSS SECTIONS IR-71
STA. 475+50.00 TO STA. 476+25.00
HAM-IR71-8.42
 207
 441

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_XS103.dgn Sheet 10/26/2017 8:35:16 AM comp ton

SEEDING	
END WIDTH	SO. YDS.
49	233
120	
100	
80	
60	
40	
20	
0	
20	
40	
60	
80	
100	
120	



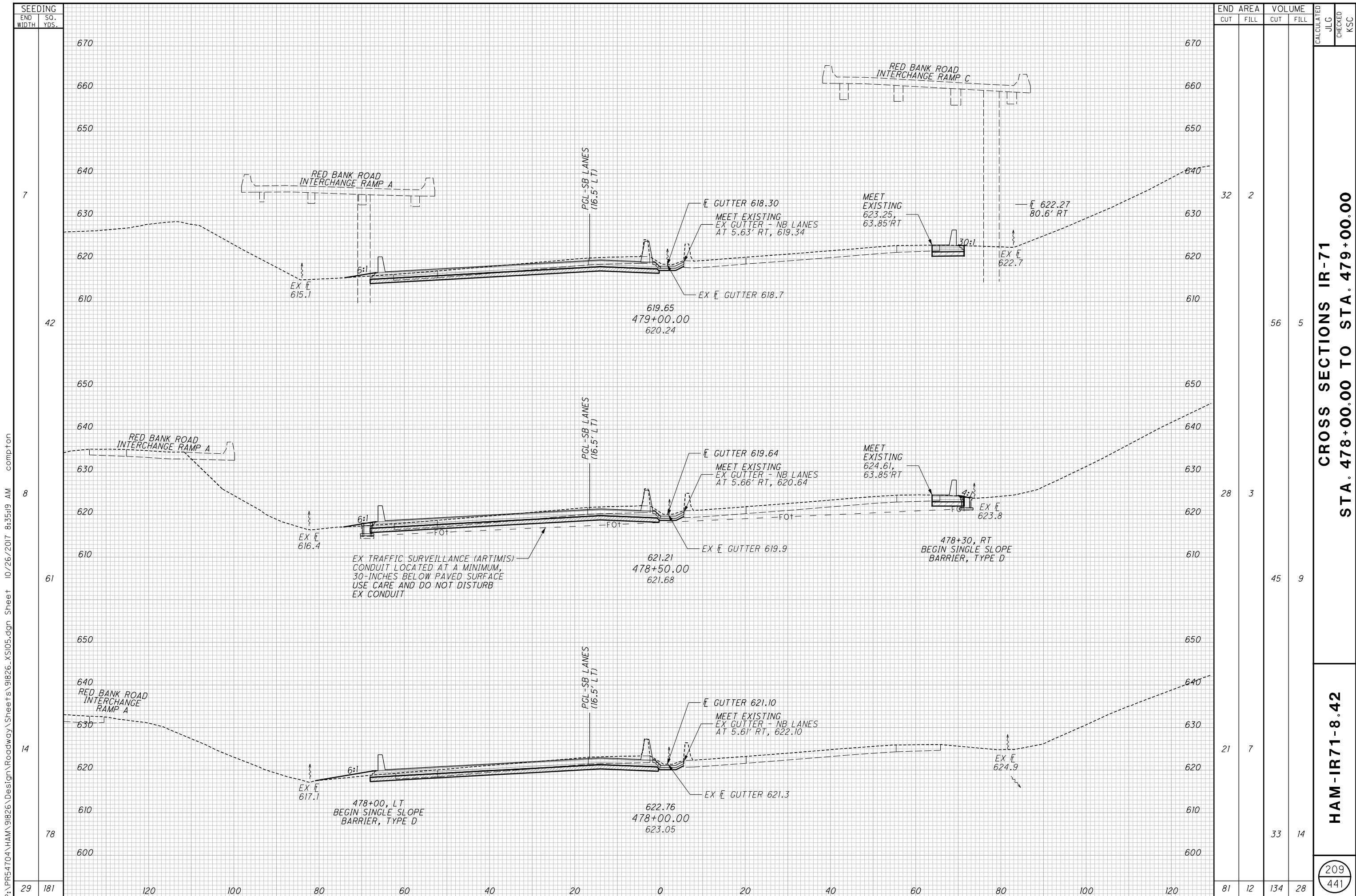
END AREA		VOLUME	
CUT	FILL	CUT	FILL
39	32	58	53
15	8	25	18
12	11	22	22
12	13	11	13

CROSS SECTIONS IR-71
STA. 476+50.00 TO STA. 477+50.00

HAM-IR71-8.42

208
441

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_XS104.dgn Sheet 10/26/2017 8:35:18 AM comp ton



SEEDING	
END WIDTH	SO. YDS.
29	181
7	
42	
8	
61	
14	
78	
120	
100	
80	
60	
40	
20	
0	
20	
40	
60	
80	
100	
120	

END AREA		VOLUME		CALCULATED	
CUT	FILL	CUT	FILL	JLG	KSC
32	2	56	5		
28	3	45	9		
21	7	33	14		
81	12	134	28		

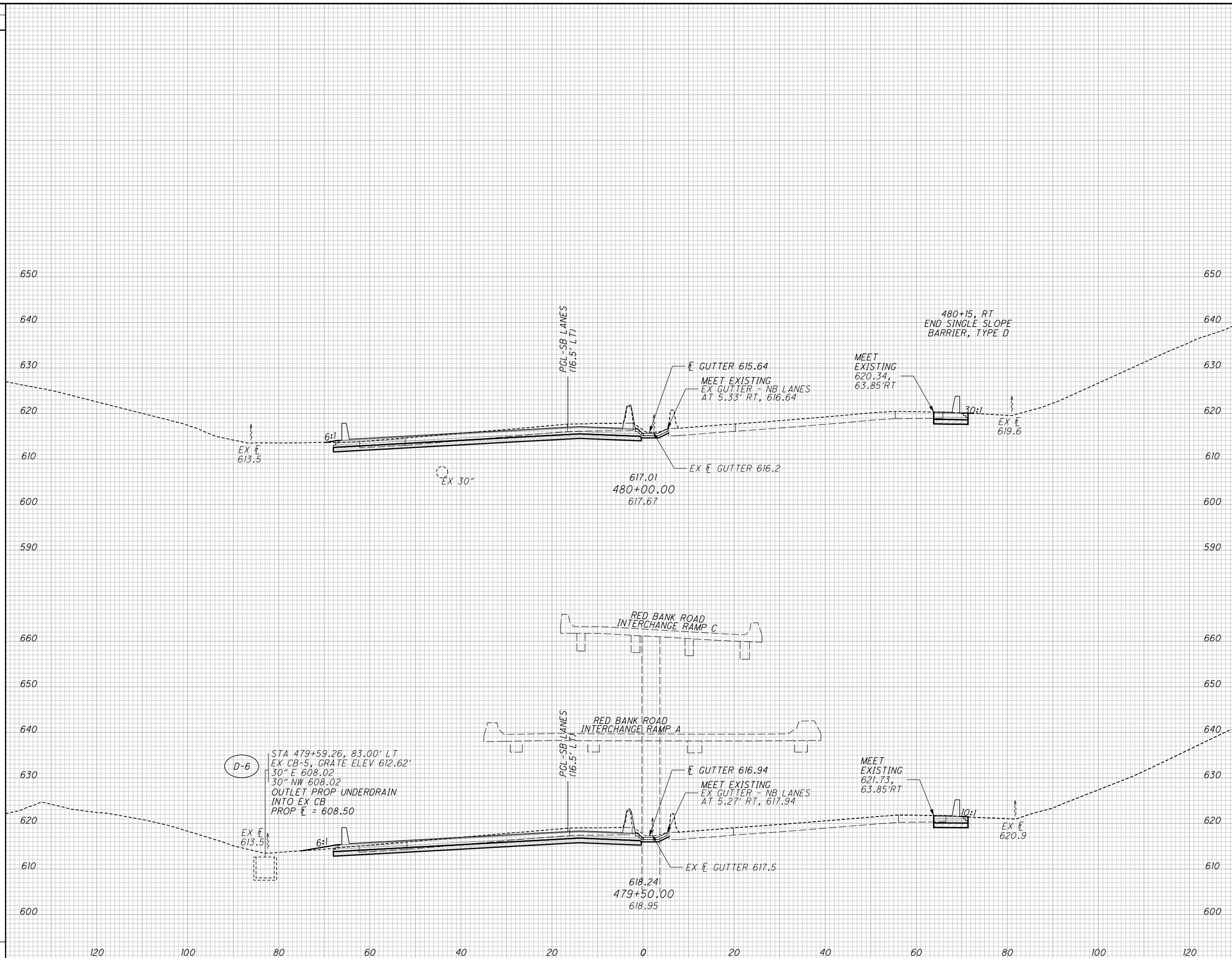
CROSS SECTIONS IR-71
 STA. 478+00.00 TO STA. 479+00.00

HAM-IR71-8.42

209
441

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_XS105.dgn Sheet 10/26/2017 8:35:19 AM comp ton

SEEDING
END WIDTH SO. YDS.
3
33
9
44
12 77



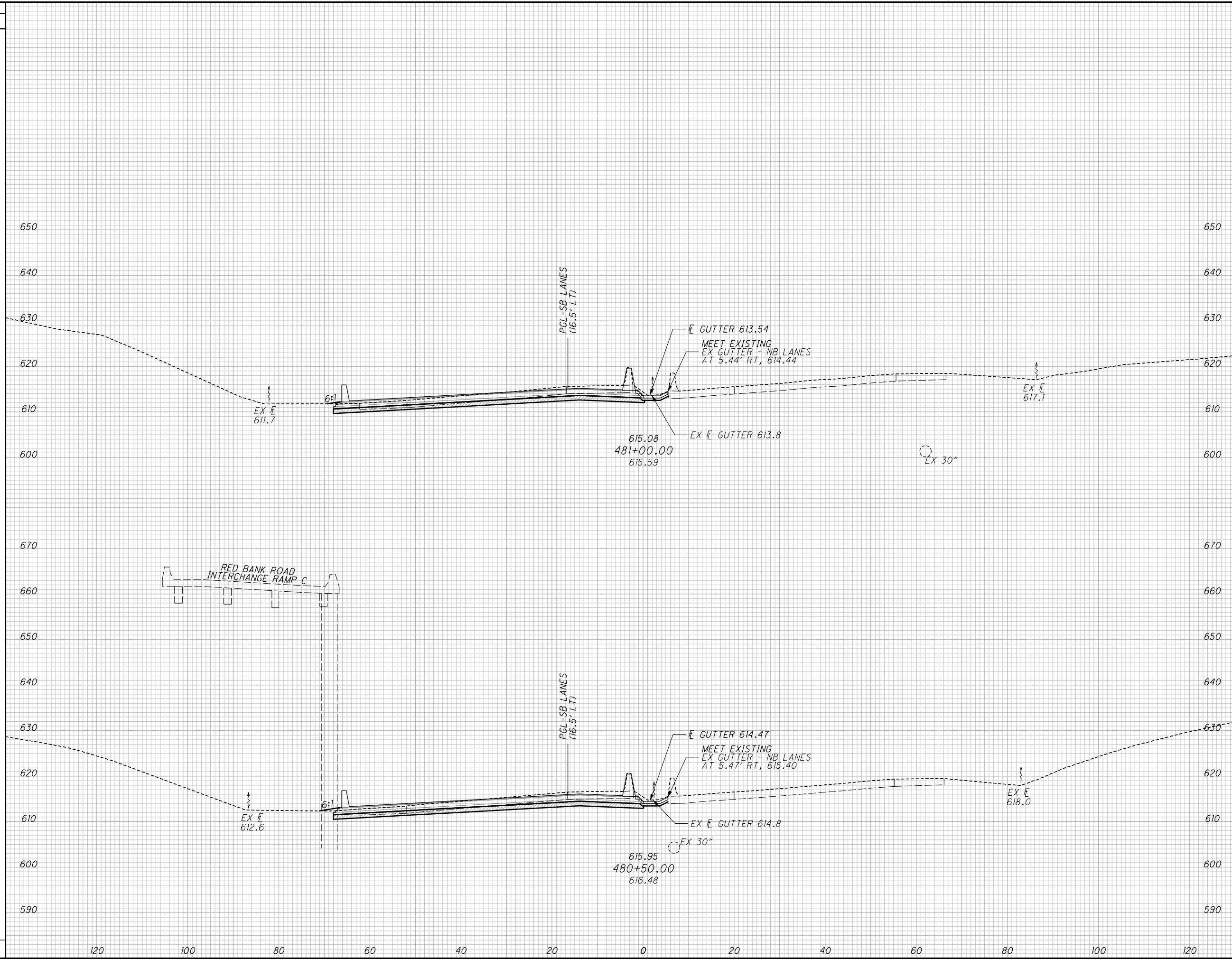
END AREA		VOLUME		CALCULATED JLG	CHECKED KSC
CUT	FILL	CUT	FILL		
32	1	62	4		
35	3	62	5		
67	4	124	9		

CROSS SECTIONS IR-71
STA. 479+50.00 TO STA. 480+00.00
HAM-IR71-8.42
210
441

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_XS106.dgn Sheet 10/26/2017 8:35:21AM compton

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_XS107.dgn Sheet 10/26/2017 8:35:23 AM compton

SEEDING	
END WIDTH	SO. YDS.
7	38
19	19
3	3

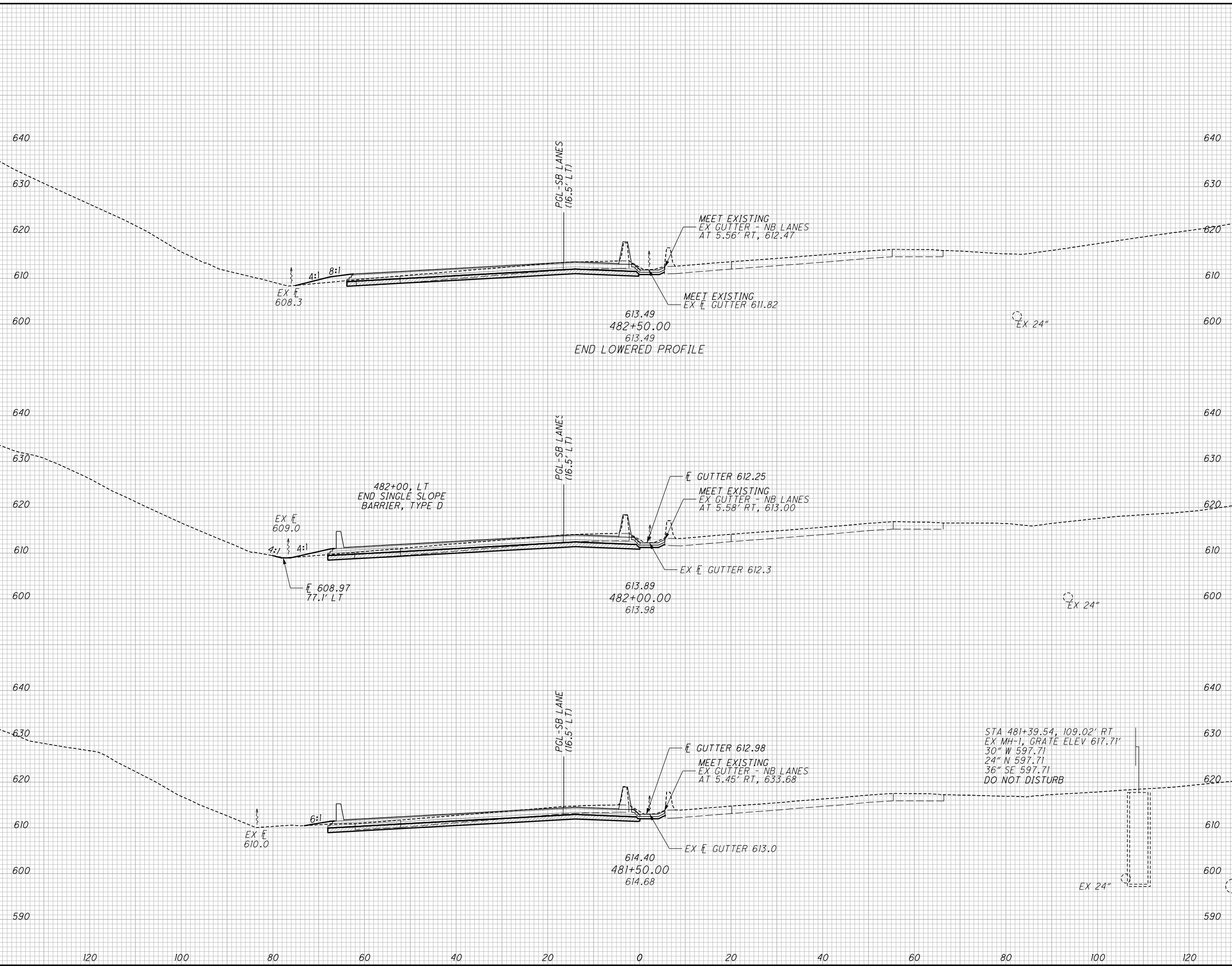


END AREA		VOLUME	
CUT	FILL	CUT	FILL
56	2	108	4
27	1	52	2
29	1	56	2

CALCULATED	CHECKED
JLG	KSC
CROSS SECTIONS IR-71 STA. 480+50.00 TO STA. 481+00.00	
HAM-IR71-8.42	
211 441	

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_XS108.dgn Sheet 10/26/2017 8:35:24 AM compton

SEEDING	
END WIDTH	SO. YDS.
167	161
120	100
80	80
60	60
40	40
20	20
0	0
20	20
40	40
60	60
80	80
100	100
120	120



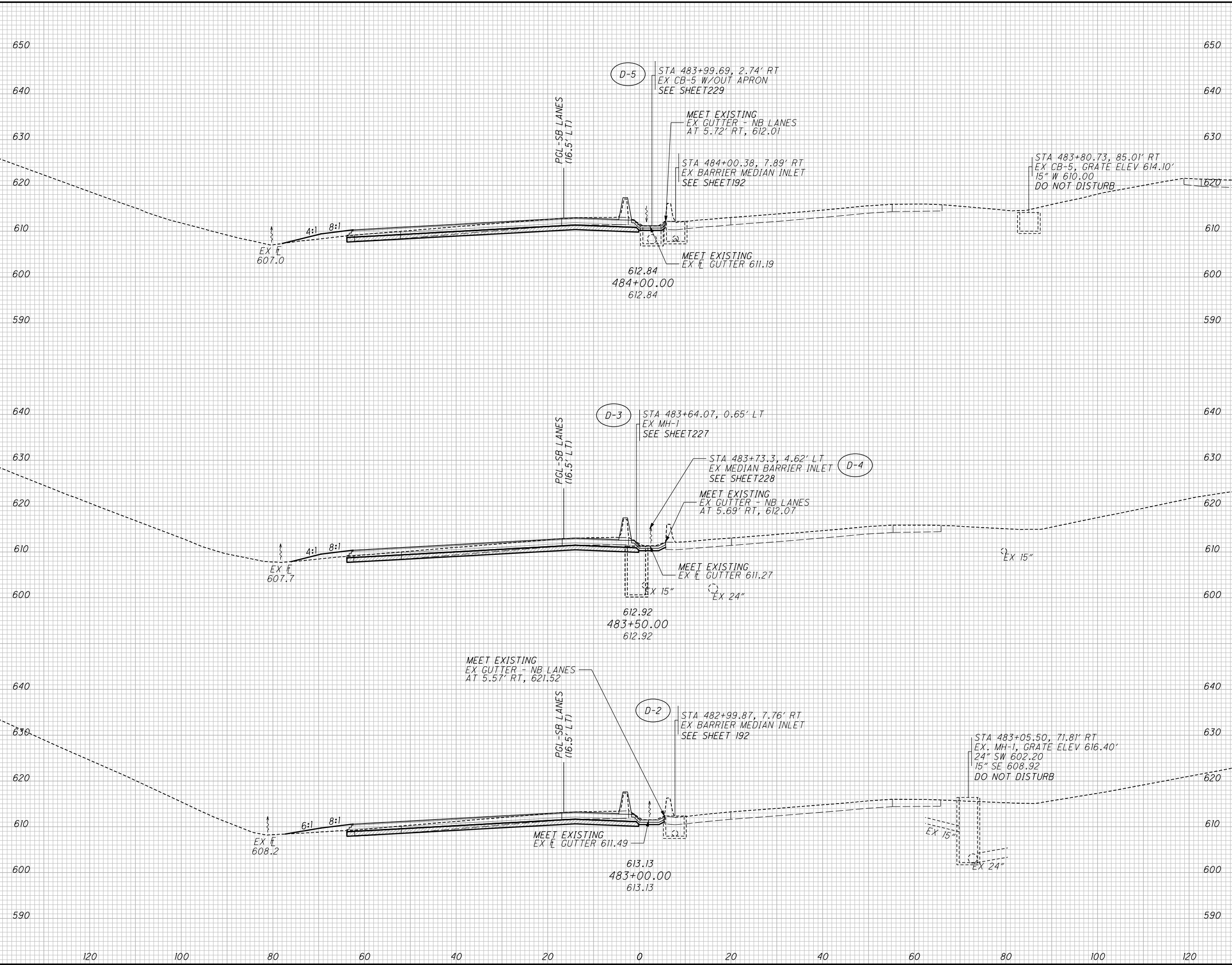
END AREA	VOLUME	CALCULATED	
		JLG	KSC
11	10		
22	14		
13	5		
31	6		
21	2		
45	17	97	23

CROSS SECTIONS IR-71
STA. 481+50.00 TO STA. 482+50.00
HAM-IR71-8.42

212
441

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_XS109.dgn Sheet 10/26/2017 8:35:26 AM compton

SEEDING	
END WIDTH	SO. YDS.
45	242
120	
100	
80	
60	
40	
20	
0	
20	
40	
60	
80	
100	
120	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
10	12		
		19	20
11	10		
		19	19
10	10		
		19	19
31	32	57	58

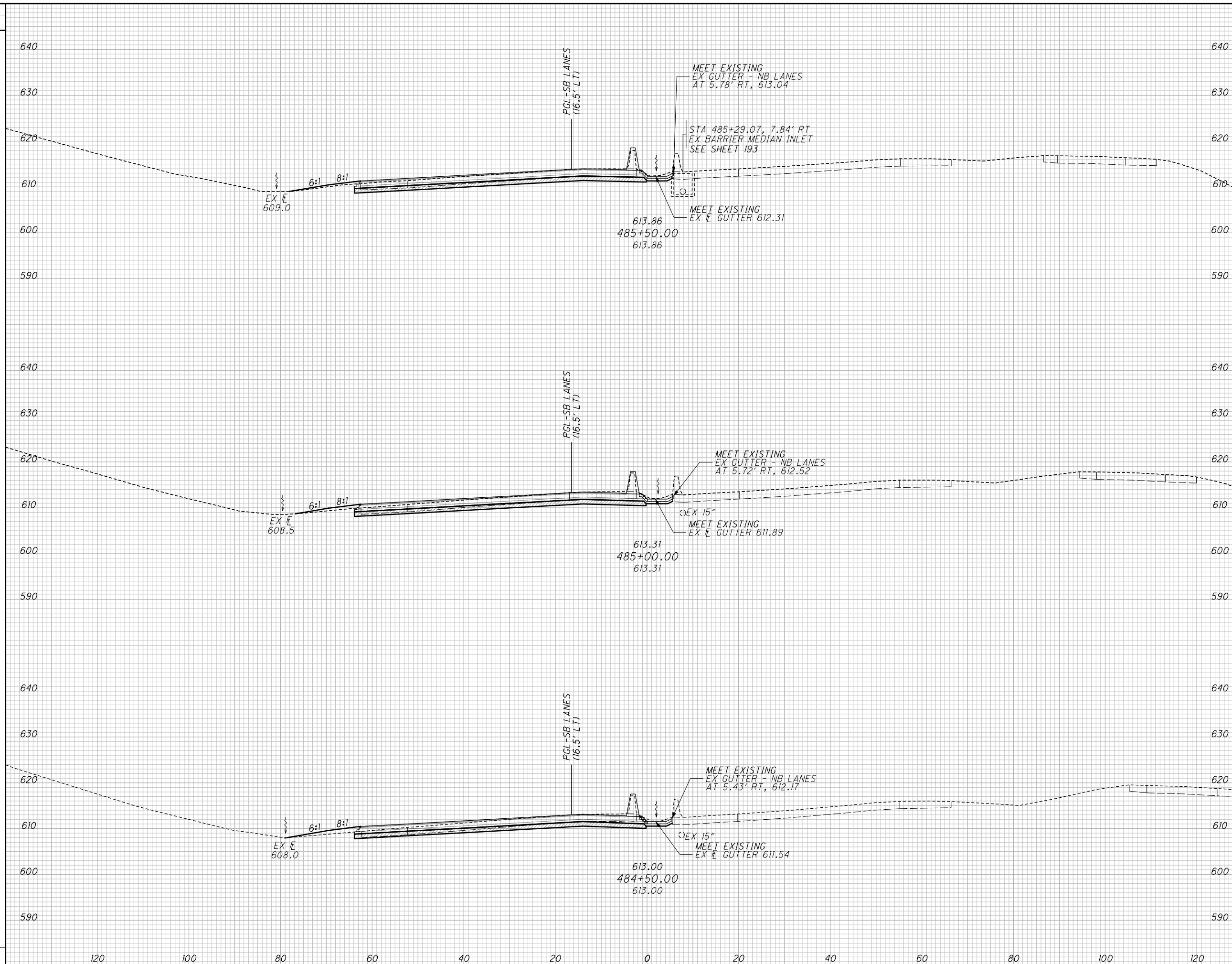
CROSS SECTIONS IR-71

STA. 483+00.00 TO STA. 484+00.00

HAM-IR71-8.42

(213 / 441)

SEEDING
 END SO.
 WIDTH YDS.
 47 261
 120 100 80 60 40 20 0 20 40 60 80 100 120



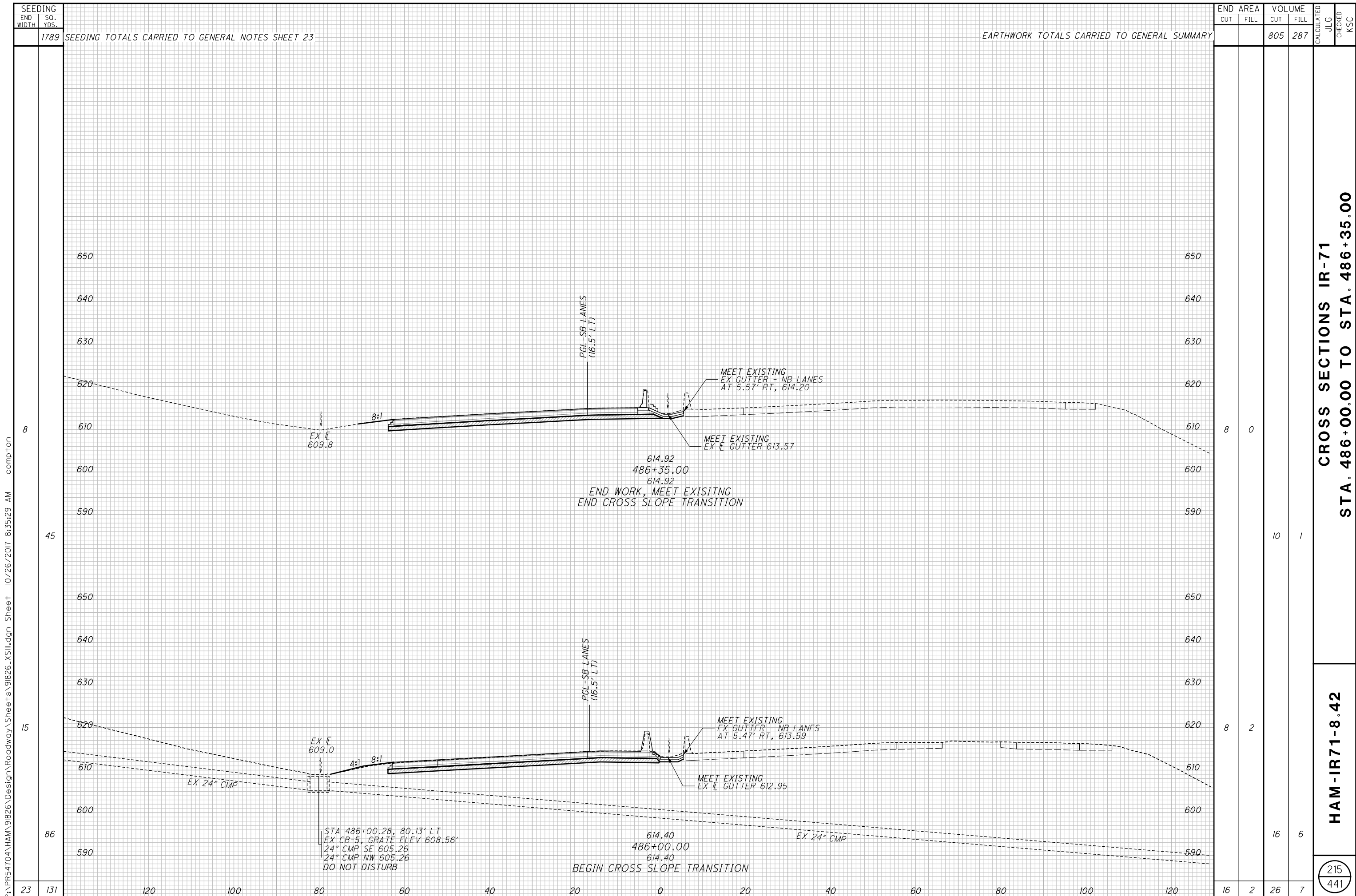
END AREA		VOLUME		CALCULATED JLG	CHECKED KSC
CUT	FILL	CUT	FILL		
9	5	19	10		
11	6	20	15		
11	10	19	20		
31	21	58	45		

**CROSS SECTIONS IR-71
 STA. 484+50.00 TO STA. 485+50.00**

HAM-IR71-8.42

214
 441

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_XS10.dgn Sheet 10/26/2017 8:35:28 AM comp ton



SEEDING	
END WIDTH	SO. YDS.
1789	SEEDING TOTALS CARRIED TO GENERAL NOTES SHEET 23

END AREA		VOLUME		CALCULATED	CHECKED
CUT	FILL	CUT	FILL	JLG	KSC
8	0	805	287		
10	1				
16	2				
16	2	26	7		

EARTHWORK TOTALS CARRIED TO GENERAL SUMMARY

CROSS SECTIONS IR-71
STA. 486+00.00 TO STA. 486+35.00

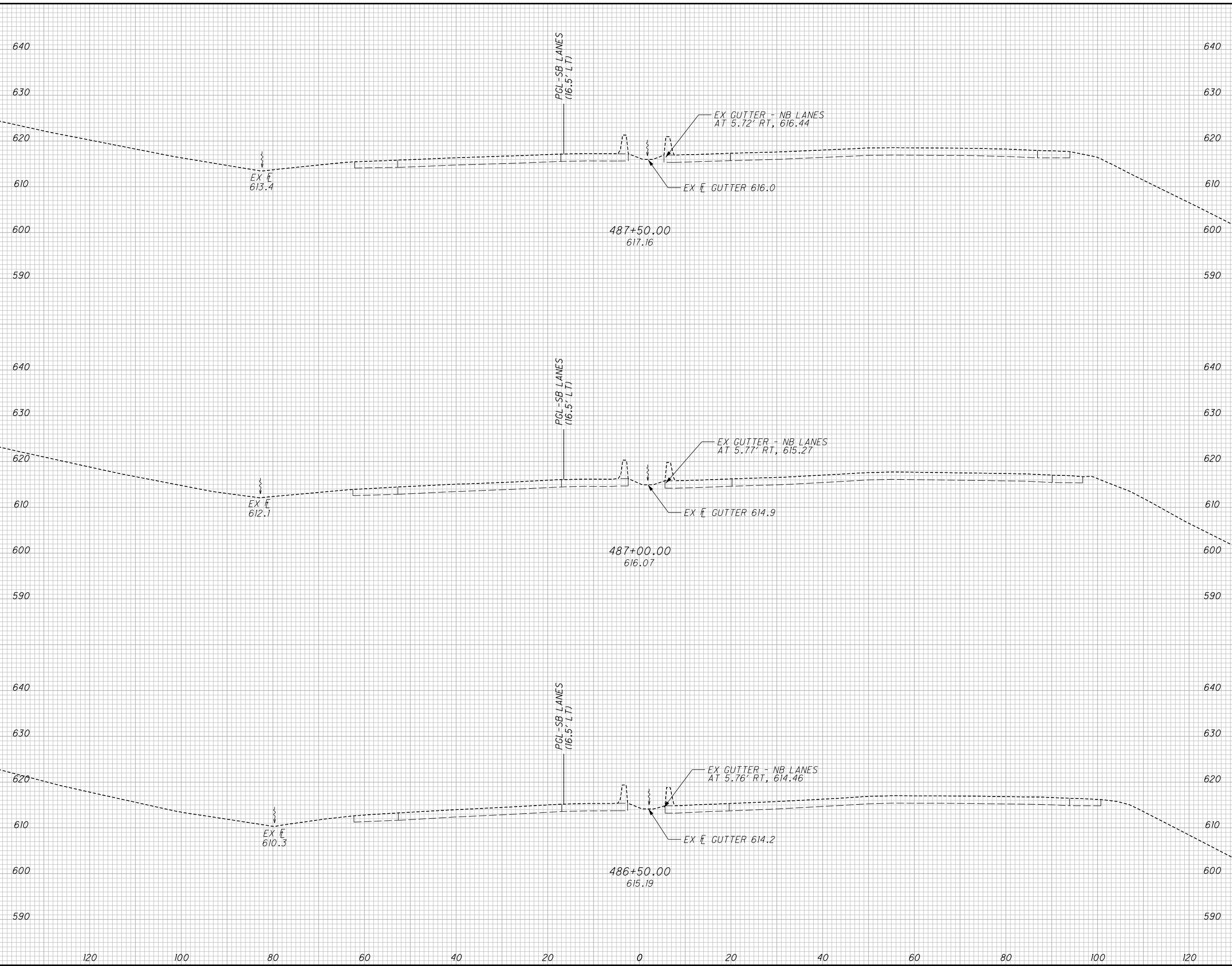
HAM-IR71-8.42

215
441

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_XS11.dgn Sheet 10/26/2017 8:35:29 AM compton

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_XS112.dgn Sheet 10/26/2017 8:35:31AM compton

SEEDING	
END WIDTH	SO. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED	CHECKED
JLG	KSC

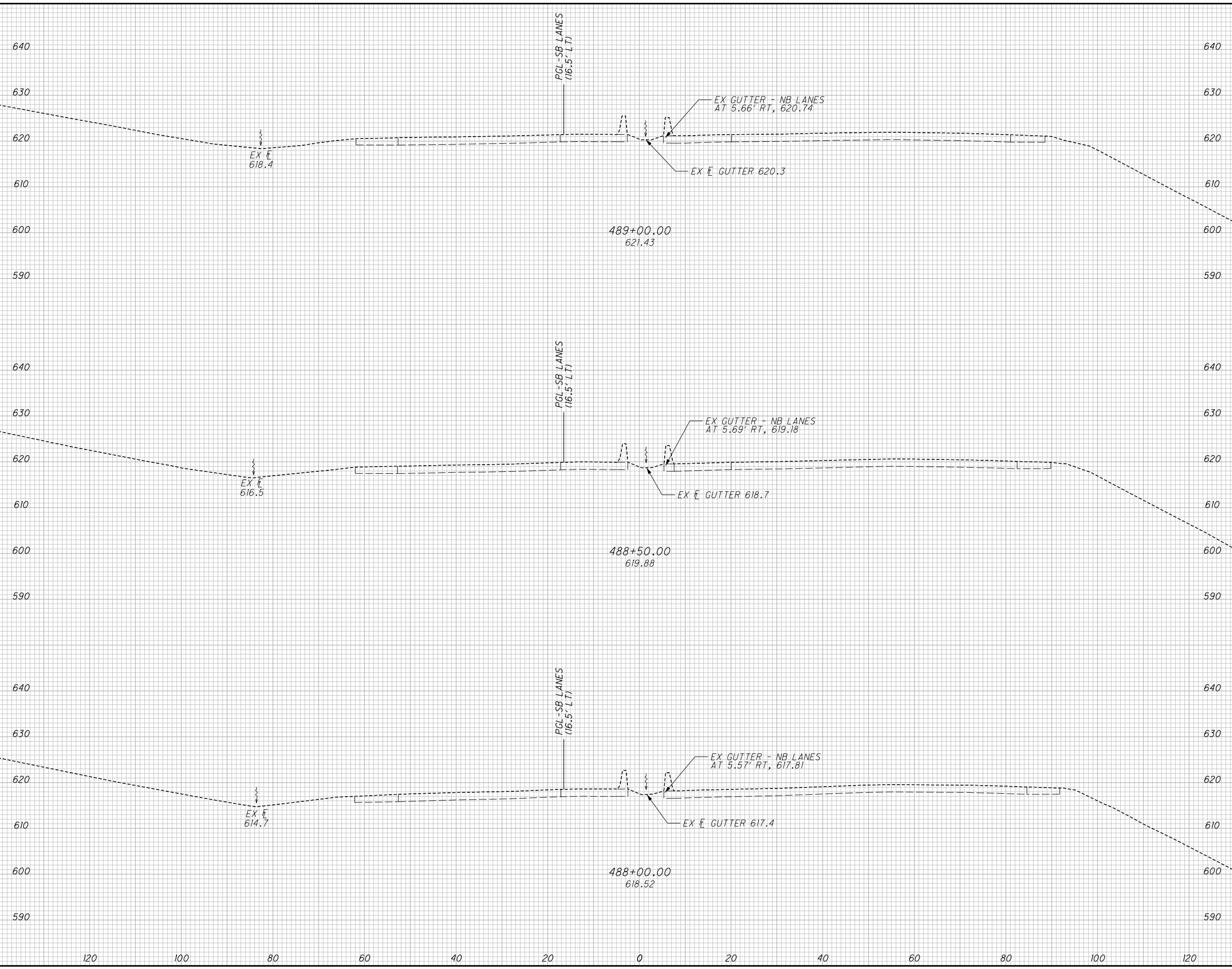
CROSS SECTIONS IR-71
STA. 486+50.00 TO STA. 487+50.00

HAM-IR71-8.42

216
441

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_XS13.dgn Sheet 10/26/2017 8:35:33 AM comp ton

SEEDING	
END WIDTH	SO. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED	CHECKED
JLG	KSC

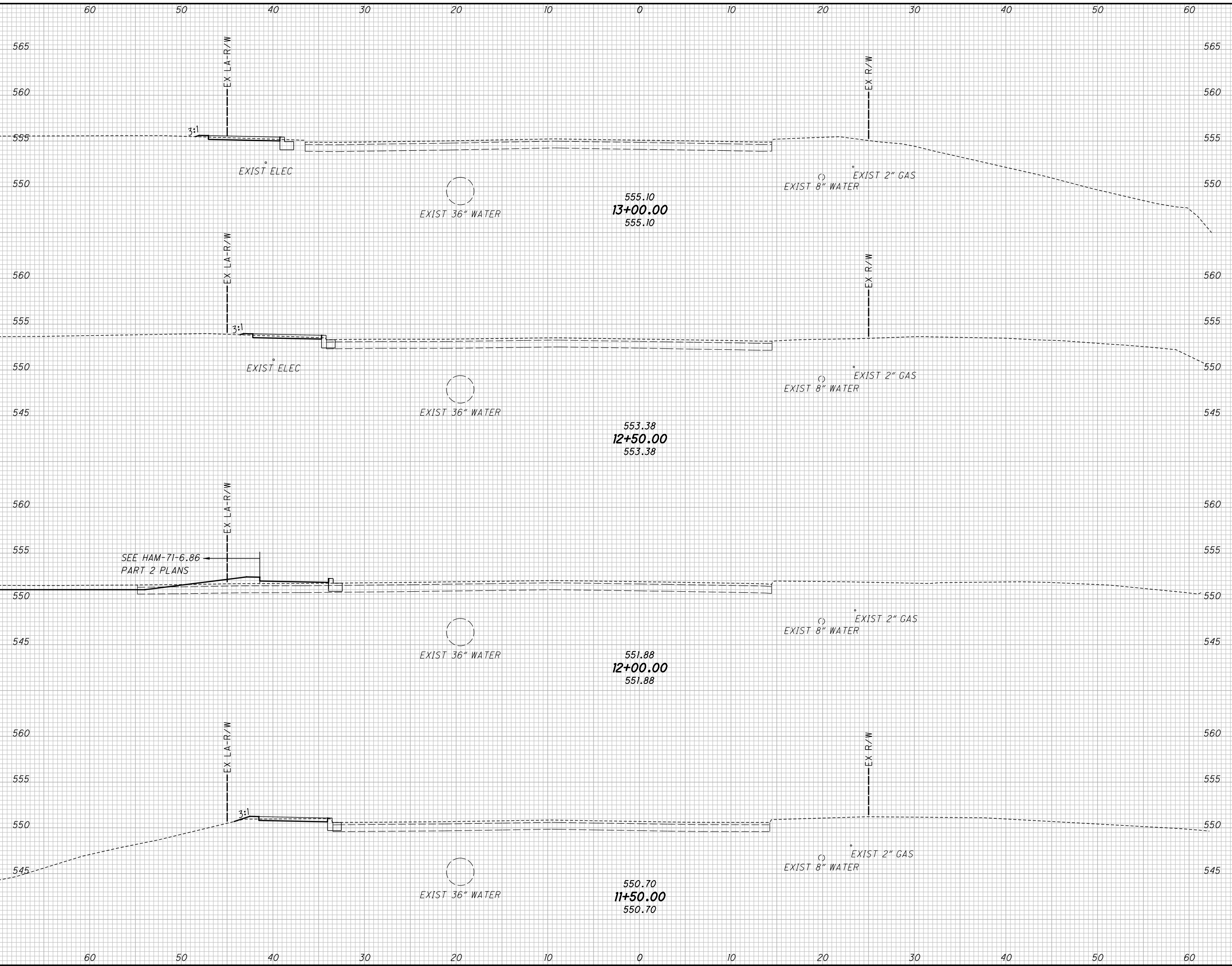
CROSS SECTIONS IR-71
STA. 488+00.00 TO STA. 489+00.00

HAM-IR71-8.42

217
441

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_XS201.dgn Sheet 10/26/2017 8:35:35 AM compton

SEEDING	
END WIDTH	SO. YDS.
60	565
50	560
40	555
30	550
20	545
10	540
0	535
10	530
20	525
30	520
40	515
50	510
60	505



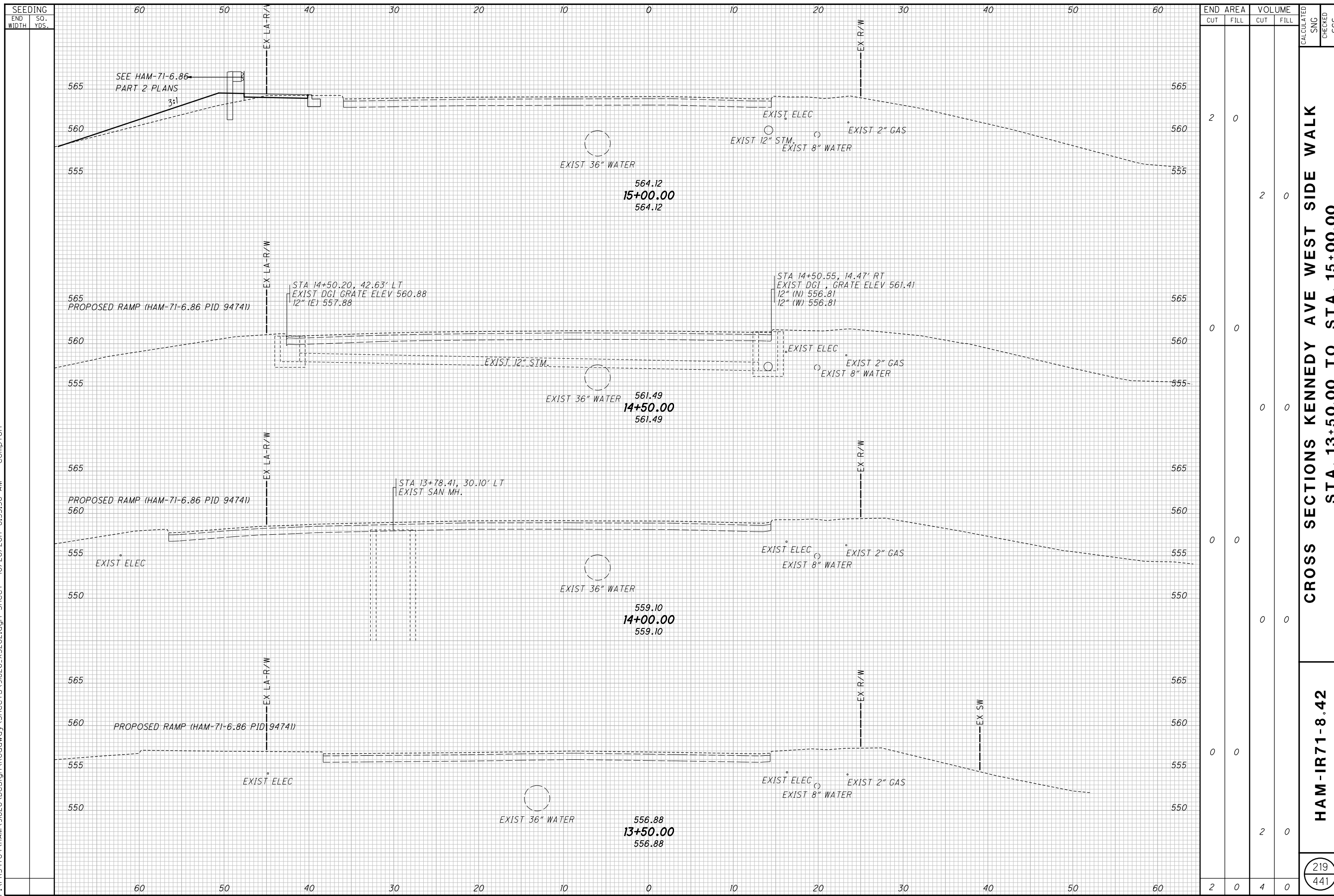
END AREA		VOLUME		CALCULATED	
CUT	FILL	CUT	FILL	SNG	SCS
2	0	6	0		
4	0	4	0		
0	0	4	0		
4	0	4	0		
10	0	14	0	218	441

**CROSS SECTIONS KENNEDY AVE WEST SIDE WALK
STA. 11+50.00 TO STA. 13+00.00**

HAM-IR71-8.42

218
441

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_XS202.dgn Sheet 10/26/2017 8:35:36 AM comp ton



END STA	AREA		VOLUME		CALCULATED SNG	CHECKED SCS
	CUT	FILL	CUT	FILL		
15+00.00	2	0	2	0		
14+50.00	0	0	0	0		
14+00.00	0	0	0	0		
13+50.00	0	0	0	0		
TOTAL	2	0	4	0		

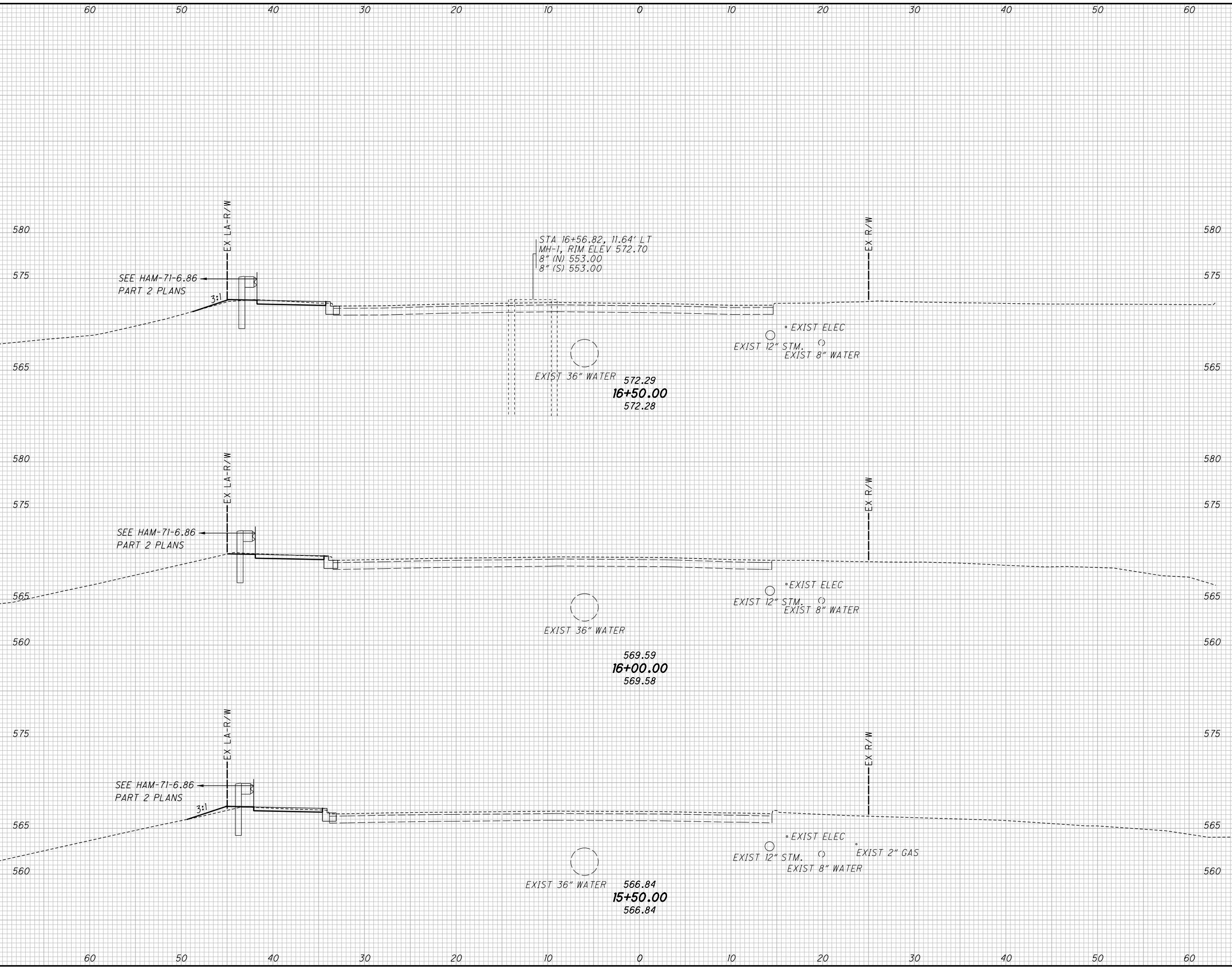
**CROSS SECTIONS KENNEDY AVE WEST SIDE WALK
STA. 13+50.00 TO STA. 15+00.00**

HAM-IR71-8.42

219
441

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_XS203.dgn Sheet 10/26/2017 8:35:38 AM compton

SEEDING	
END WIDTH	SO. YDS.
60	50
50	40
40	30
30	20
20	10
10	0
10	10
20	20
30	30
40	40
50	50
60	60



END AREA		VOLUME	
CUT	FILL	CUT	FILL
5	0	9	0
5	0	8	0
4	0	6	0
14	0	23	0

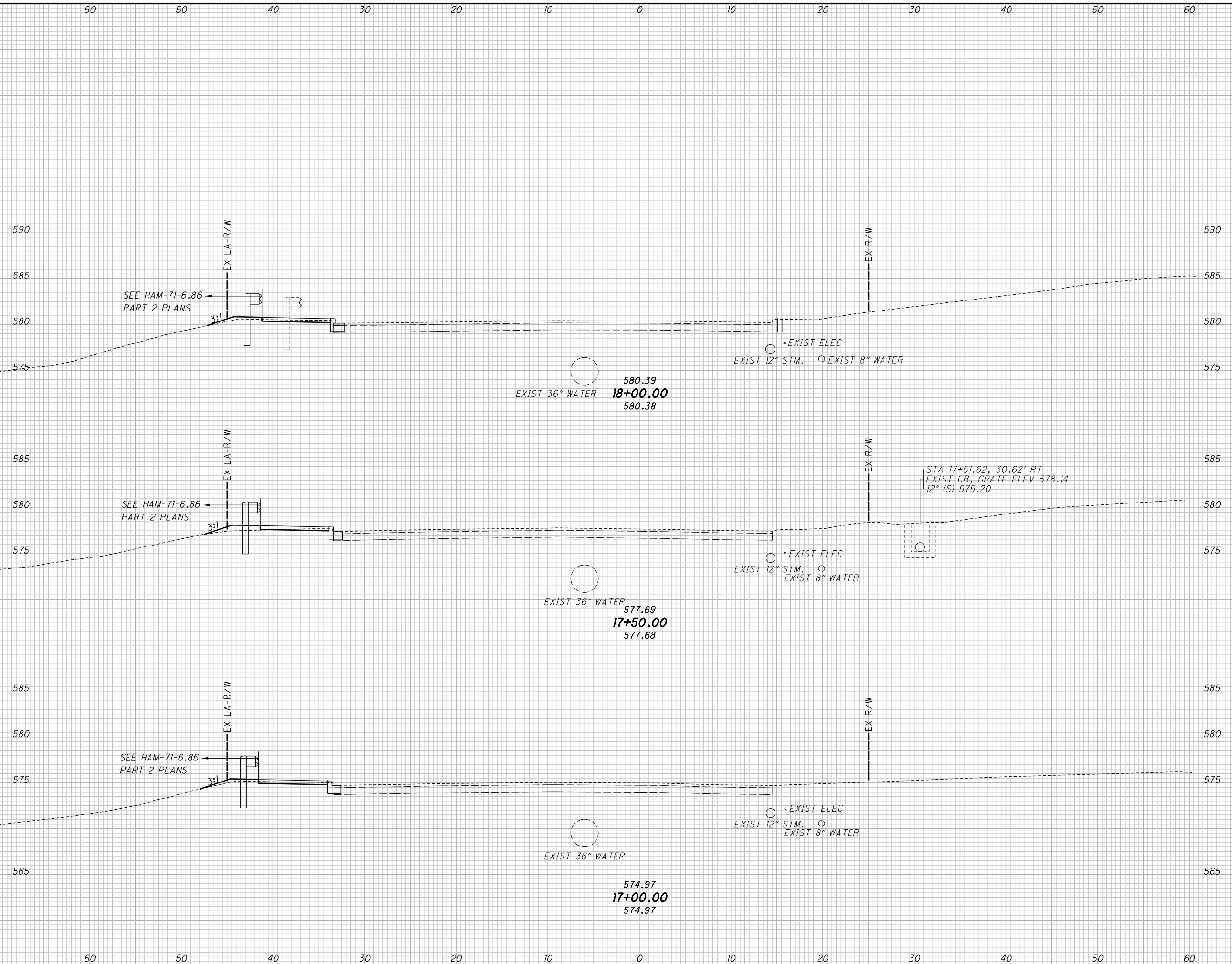
**CROSS SECTIONS KENNEDY AVE WEST SIDE WALK
STA. 15+50.00 TO STA. 16+50.00**

HAM-IR71-8.42

220
441

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_XS204.dgn Sheet 10/26/2017 8:35:40 AM comp ton

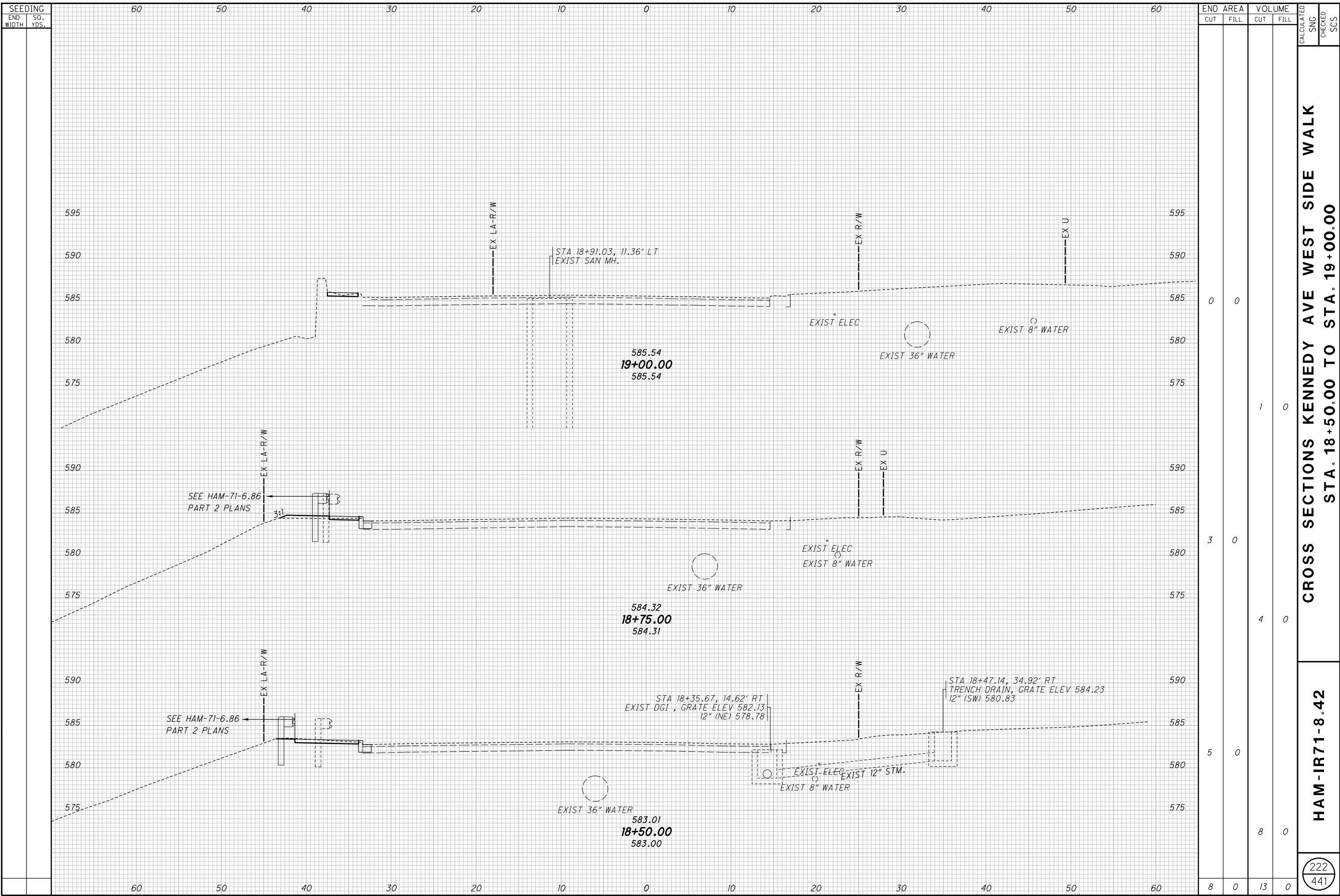
SEEDING	
END WIDTH	SO. YDS.
60	50
50	40
40	30
30	20
20	10
10	0
10	10
20	20
30	30
40	40
50	50
60	60



END AREA		VOLUME	
CUT	FILL	CUT	FILL
4	0	6	0
3	0	6	0
4	0	8	0
11	0	20	0

CROSS SECTIONS KENNEDY AVE WEST SIDE WALK
STA. 17+00.00 TO STA. 18+00.00
HAM-IR71-8.42
 CALCULATED SNG
 CHECKED SCS
 221
 441

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_XS205.dgn Sheet 10/26/2017 8:35:41 AM comp ton

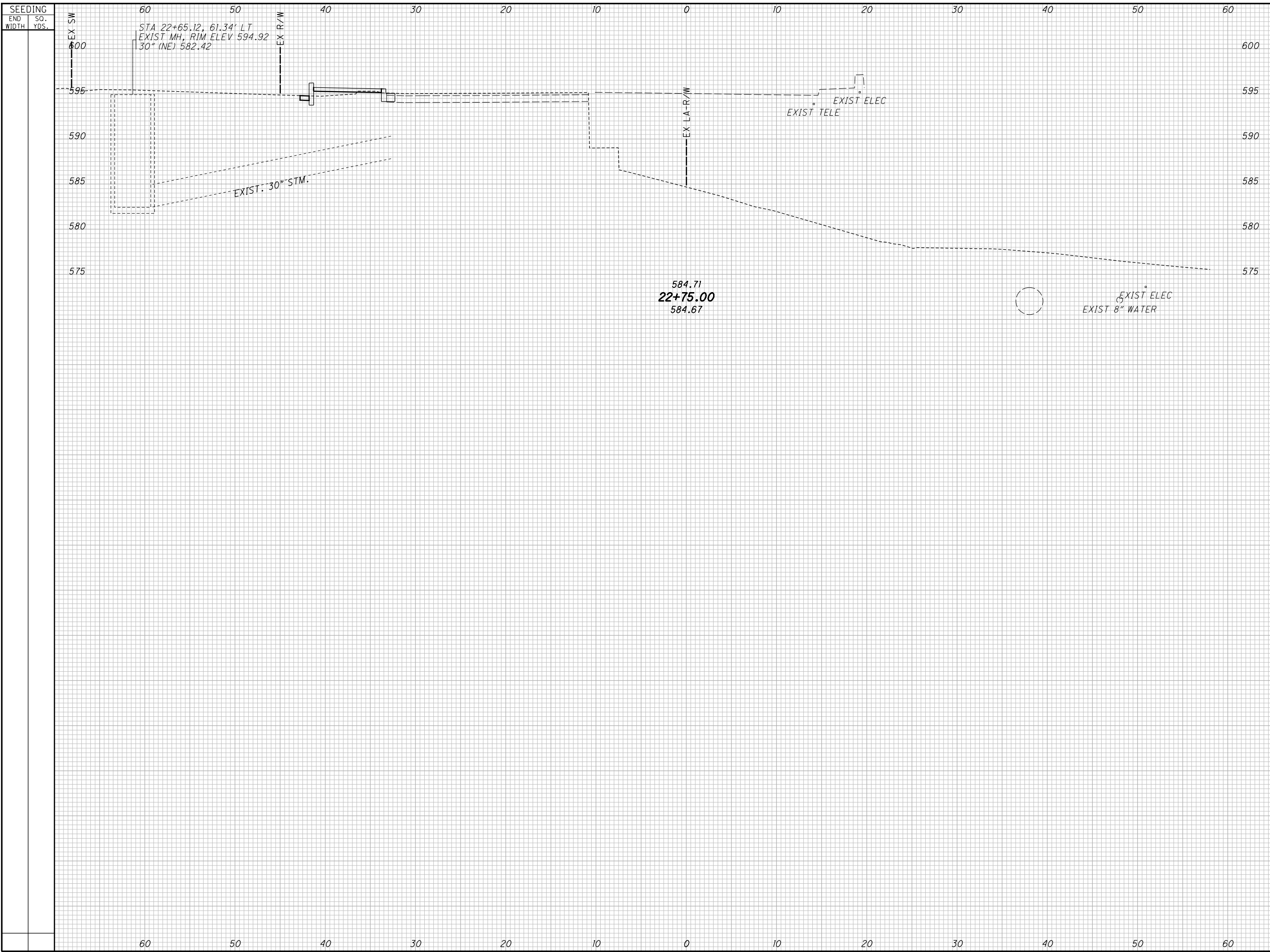


**CROSS SECTIONS KENNEDY AVE WEST SIDE WALK
STA. 18+50.00 TO STA. 19+00.00**

HAM-IR71-8.42

222
441

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_XS206.dgn Sheet 10/26/2017 8:35:43 AM compton



END STA	AREA		VOLUME	
	CUT	FILL	CUT	FILL
19+25.00	2	2		
22+75.00			2	2
TOTAL	2	2	2	2

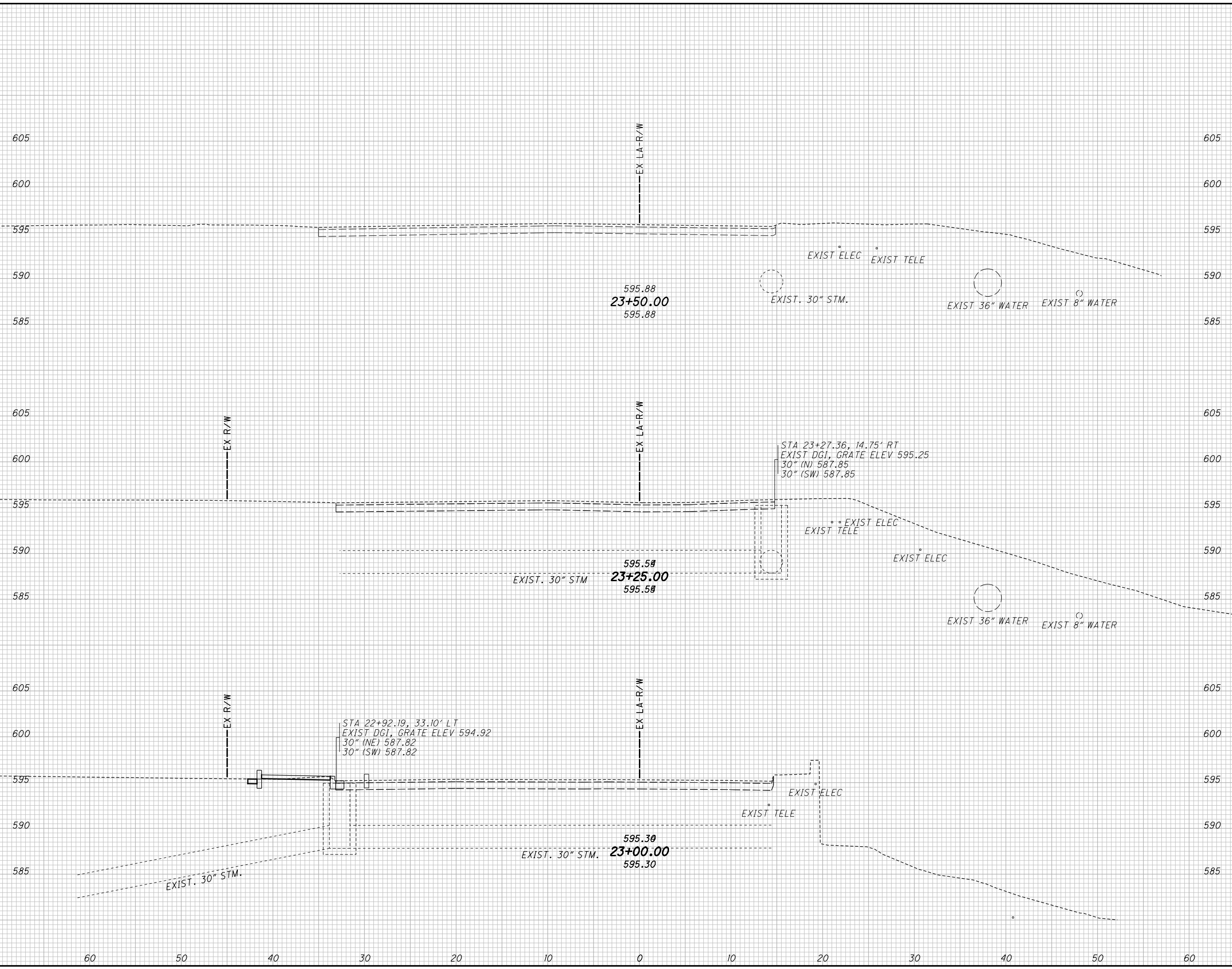
CROSS SECTIONS KENNEDY AVE WEST SIDE WALK
STA. 19+25.00 TO STA. 22+75.00

HAM-IR71-8.42

223
441

P:\PR54704\HAM\91826_Design\Roadway\Sheets\91826_XS207.dgn Sheet 10/26/2017 8:35:45 AM compton

SEEDING	
END WIDTH	SO. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	0	0	0
0	0	1	0
3	0	2	1
3	0	3	1

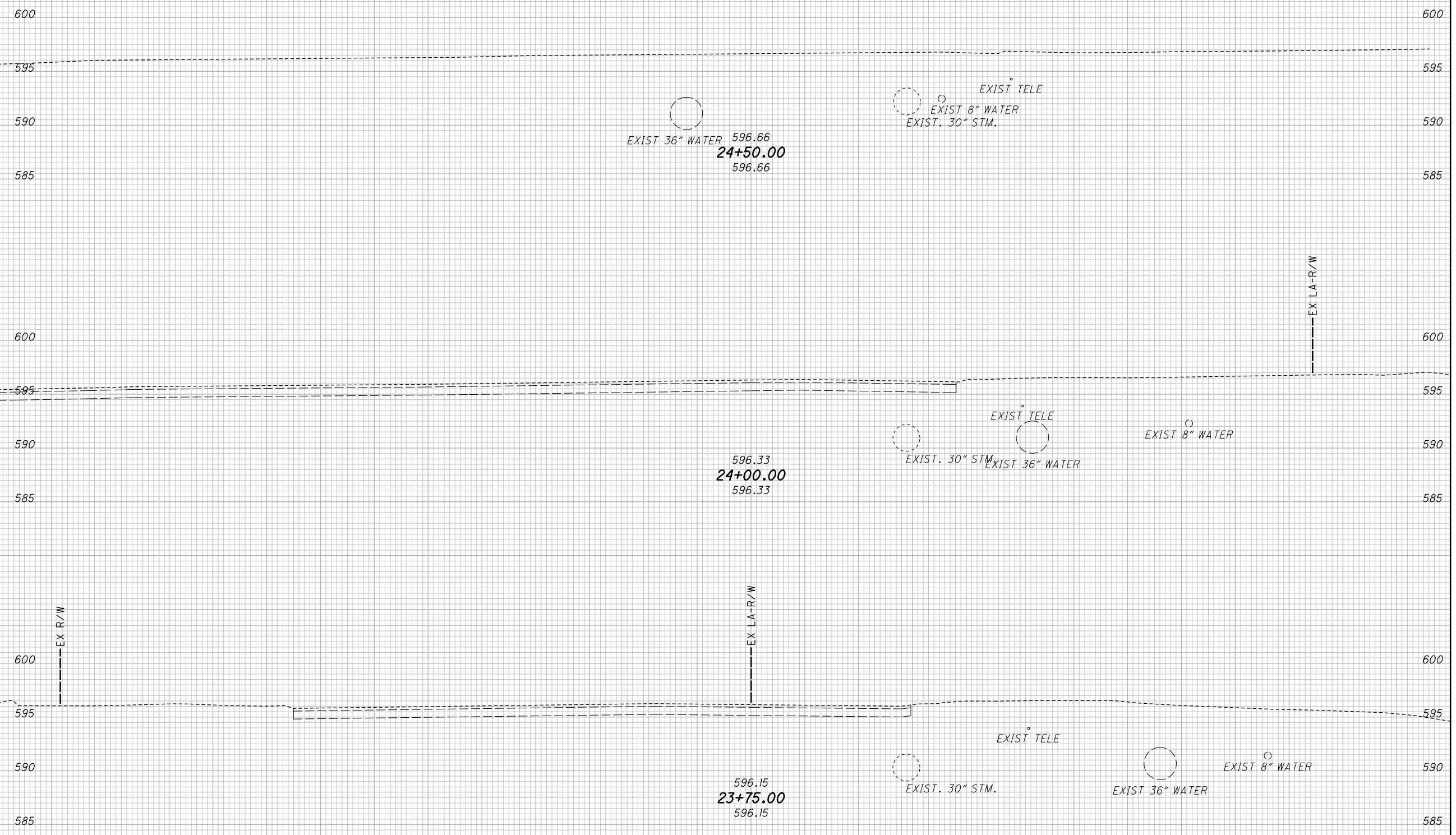
CROSS SECTIONS KENNEDY AVE WEST SIDE WALK
STA. 23+00.00 TO STA. 23+50.00
HAM-IR71-8.42
 CALCULATED SNG
 CHECKED SCS
 224
 441

P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_XS208.dgn Sheet 10/26/2017 8:35:46 AM compton

SEEDING	
END WIDTH	SO. YDS.

EARTHWORK TOTALS CARRIED TO GENERAL SUMMARY

END AREA		VOLUME		CALCULATED SNG	CHECKED SCS
CUT	FILL	CUT	FILL		
0	0	0	0	79	3



CROSS SECTIONS KENNEDY AVE WEST SIDE WALK
STA. 23+75.00 TO STA. 24+50.00

HAM-IR71-8.42

225
441

SUPERELEVATION TABLE

P.I. STA. 477+08.70

Dc = 2*59'53"

CALCULATED
JLG
CHECKED
KSC

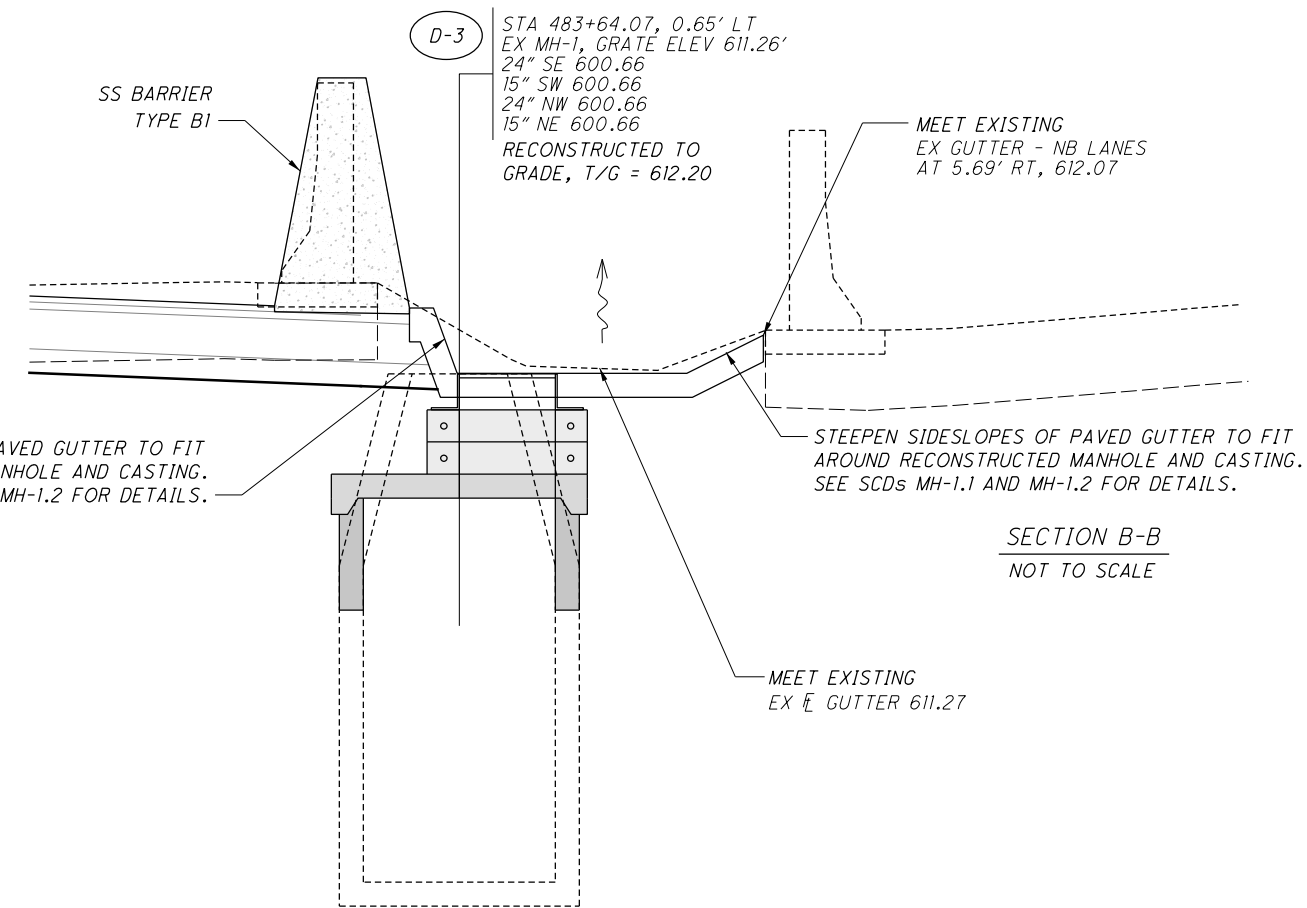
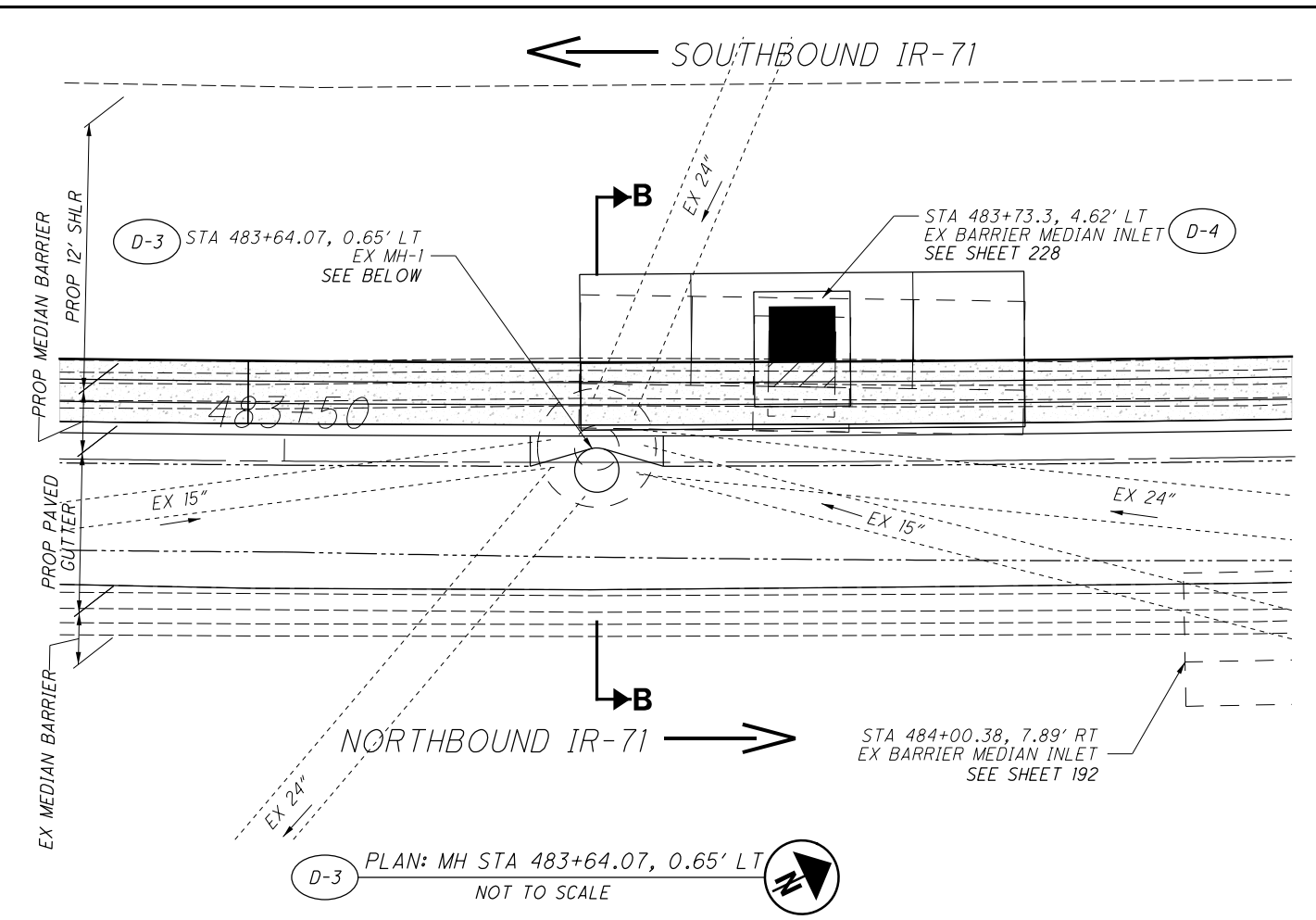
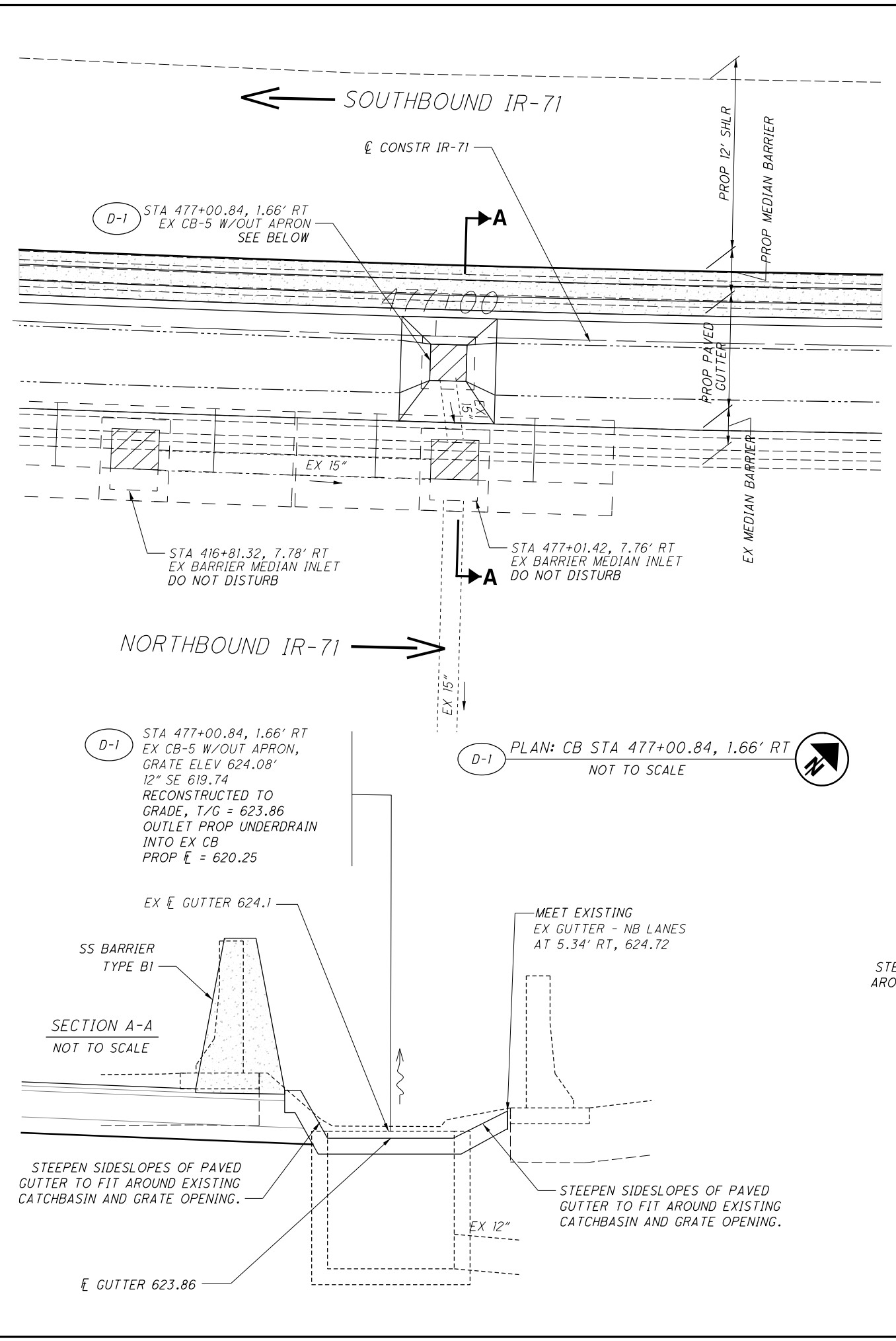
REMARKS	OUTSIDE EDGE - SB LANES					CENTERLINE OF LANES - SB LANES					SB LANES INSIDE EDGE (PROFILE GRADE)		STATION	NB LANES INSIDE EDGE (PROFILE GRADE)		CENTERLINE OF LANES - NB LANES					OUTSIDE EDGE - NB LANES					REMARKS																																																																																																																																																																																																																																																																																																									
	ELEVATION	ELEVATION CORRECTION	CROSS SLOPE	TRANSITION RATE	WIDTH	ELEVATION	ELEVATION CORRECTION	CROSS SLOPE	TRANSITION RATE	WIDTH	ELEVATION	OFFSET		OFFSET	ELEVATION	WIDTH	TRANSITION RATE	CROSS SLOPE	ELEVATION CORRECTION	ELEVATION	WIDTH	TRANSITION RATE	CROSS SLOPE	ELEVATION CORRECTION	ELEVATION																																																																																																																																																																																																																																																																																																										
<p>STA 474+10, BEGIN SUPERELEVATION MODIFICATIONS - SB LANES IR-71. TIE IN EXISTING CONDITIONS (BACK)</p> <p>SEE NOTE 1</p> <table border="1"> <tr><td>629.25</td><td>-2.00</td><td>-0.083</td><td rowspan="20">222:1</td><td>24</td><td>631.25</td><td>-1.00</td><td>-0.083</td><td rowspan="20">222:1</td><td>12</td><td>632.25</td><td>16.50 (##)</td><td>474+10.00</td></tr> <tr><td>628.70</td><td>-1.87</td><td>-0.0778</td><td>24</td><td>630.57</td><td>-0.93</td><td>-0.0778</td><td>12</td><td>631.50</td><td>16.50</td><td>474+50.00</td></tr> <tr><td>627.91</td><td>-1.72</td><td>-0.0713</td><td>24</td><td>629.63</td><td>-0.86</td><td>-0.0713</td><td>12</td><td>630.49</td><td>16.50</td><td>475+00.00</td></tr> <tr><td>627.04</td><td>-1.56</td><td>-0.0648</td><td>24</td><td>628.60</td><td>-0.78</td><td>-0.0648</td><td>12</td><td>629.38</td><td>16.50</td><td>475+50.00</td></tr> <tr><td>626.18</td><td>-1.40</td><td>-0.0583</td><td>24</td><td>627.58</td><td>-0.70</td><td>-0.0583</td><td>12</td><td>628.28</td><td>16.50</td><td>476+00.00</td></tr> <tr><td>625.67</td><td>-1.32</td><td>-0.055</td><td>24</td><td>626.99</td><td>-0.66</td><td>-0.055</td><td>12</td><td>627.65</td><td>16.50</td><td>476+25.00</td></tr> <tr><td>625.03</td><td>-1.32</td><td>-0.055</td><td>24</td><td>626.35</td><td>-0.66</td><td>-0.055</td><td>12</td><td>627.01</td><td>16.50</td><td>476+50.00</td></tr> <tr><td>623.68</td><td>-1.32</td><td>-0.055</td><td>24</td><td>625.00</td><td>-0.66</td><td>-0.055</td><td>12</td><td>625.66</td><td>16.50</td><td>477+00.00</td></tr> <tr><td>622.27</td><td>-1.32</td><td>-0.055</td><td>24</td><td>623.59</td><td>-0.66</td><td>-0.055</td><td>12</td><td>624.25</td><td>16.50</td><td>477+50.00</td></tr> <tr><td>620.78</td><td>-1.32</td><td>-0.055</td><td>24</td><td>622.10</td><td>-0.66</td><td>-0.055</td><td>12</td><td>622.76</td><td>16.50</td><td>478+00.00</td></tr> <tr><td>619.23</td><td>-1.32</td><td>-0.055</td><td>24</td><td>620.55</td><td>-0.66</td><td>-0.055</td><td>12</td><td>621.21</td><td>16.50</td><td>478+50.00</td></tr> <tr><td>617.67</td><td>-1.32</td><td>-0.055</td><td>24</td><td>618.99</td><td>-0.66</td><td>-0.055</td><td>12</td><td>619.65</td><td>16.50</td><td>479+00.00</td></tr> <tr><td>616.26</td><td>-1.32</td><td>-0.055</td><td>24</td><td>617.58</td><td>-0.66</td><td>-0.055</td><td>12</td><td>618.24</td><td>16.50</td><td>479+50.00</td></tr> <tr><td>615.03</td><td>-1.32</td><td>-0.055</td><td>24</td><td>616.35</td><td>-0.66</td><td>-0.055</td><td>12</td><td>617.01</td><td>16.50</td><td>480+00.00</td></tr> <tr><td>613.97</td><td>-1.32</td><td>-0.055</td><td>24</td><td>615.29</td><td>-0.66</td><td>-0.055</td><td>12</td><td>615.95</td><td>16.50</td><td>480+50.00</td></tr> <tr><td>613.10</td><td>-1.32</td><td>-0.055</td><td>24</td><td>614.42</td><td>-0.66</td><td>-0.055</td><td>12</td><td>615.08</td><td>16.50</td><td>481+00.00</td></tr> <tr><td>612.42</td><td>-1.32</td><td>-0.055</td><td>24</td><td>613.74</td><td>-0.66</td><td>-0.055</td><td>12</td><td>614.40</td><td>16.50</td><td>481+50.00</td></tr> <tr><td>611.91</td><td>-1.32</td><td>-0.055</td><td>24</td><td>613.23</td><td>-0.66</td><td>-0.055</td><td>12</td><td>613.89</td><td>16.50</td><td>482+00.00</td></tr> <tr><td>611.51</td><td>-1.32</td><td>-0.055</td><td>24</td><td>612.83</td><td>-0.66</td><td>-0.055</td><td>12</td><td>613.49</td><td>16.50</td><td>482+50.00</td></tr> <tr><td>611.15</td><td>-1.32</td><td>-0.055</td><td>24</td><td>612.47</td><td>-0.66</td><td>-0.055</td><td>12</td><td>613.13</td><td>16.50</td><td>483+00.00</td></tr> <tr><td>610.94</td><td>-1.32</td><td>-0.055</td><td>24</td><td>612.26</td><td>-0.66</td><td>-0.055</td><td>12</td><td>612.92</td><td>16.50</td><td>483+50.00</td></tr> <tr><td>610.86</td><td>-1.32</td><td>-0.055</td><td>24</td><td>612.18</td><td>-0.66</td><td>-0.055</td><td>12</td><td>612.84</td><td>16.50</td><td>484+00.00</td></tr> <tr><td>611.02</td><td>-1.32</td><td>-0.055</td><td>24</td><td>612.34</td><td>-0.66</td><td>-0.055</td><td>12</td><td>613.00</td><td>16.50</td><td>484+50.00</td></tr> <tr><td>611.33</td><td>-1.32</td><td>-0.055</td><td>24</td><td>612.65</td><td>-0.66</td><td>-0.055</td><td>12</td><td>613.31</td><td>16.50</td><td>485+00.00</td></tr> <tr><td>611.88</td><td>-1.32</td><td>-0.055</td><td>24</td><td>613.20</td><td>-0.66</td><td>-0.055</td><td>12</td><td>613.86</td><td>16.50</td><td>485+50.00</td></tr> <tr><td>612.42</td><td>-1.32</td><td>-0.055</td><td>24</td><td>613.74</td><td>-0.66</td><td>-0.055</td><td>12</td><td>614.40</td><td>16.50</td><td>486+00.00</td></tr> <tr><td>612.94</td><td>-1.32</td><td>-0.055</td><td>24</td><td>614.26</td><td>-0.66</td><td>-0.055</td><td>12</td><td>614.92</td><td>16.50 (###)</td><td>486+35.00</td></tr> </table> <p>SEE NOTE 2</p> <p>SEE NOTE 3</p> <p>SEE NOTE 4</p> <p>STA 486+35, END SUPERELEVATION MODIFICATIONS - SB LANE IR-71. TIE IN EXISTING CONDITIONS (AHEAD)</p>																									629.25	-2.00	-0.083	222:1	24	631.25	-1.00	-0.083	222:1	12	632.25	16.50 (##)	474+10.00	628.70	-1.87	-0.0778	24	630.57	-0.93	-0.0778	12	631.50	16.50	474+50.00	627.91	-1.72	-0.0713	24	629.63	-0.86	-0.0713	12	630.49	16.50	475+00.00	627.04	-1.56	-0.0648	24	628.60	-0.78	-0.0648	12	629.38	16.50	475+50.00	626.18	-1.40	-0.0583	24	627.58	-0.70	-0.0583	12	628.28	16.50	476+00.00	625.67	-1.32	-0.055	24	626.99	-0.66	-0.055	12	627.65	16.50	476+25.00	625.03	-1.32	-0.055	24	626.35	-0.66	-0.055	12	627.01	16.50	476+50.00	623.68	-1.32	-0.055	24	625.00	-0.66	-0.055	12	625.66	16.50	477+00.00	622.27	-1.32	-0.055	24	623.59	-0.66	-0.055	12	624.25	16.50	477+50.00	620.78	-1.32	-0.055	24	622.10	-0.66	-0.055	12	622.76	16.50	478+00.00	619.23	-1.32	-0.055	24	620.55	-0.66	-0.055	12	621.21	16.50	478+50.00	617.67	-1.32	-0.055	24	618.99	-0.66	-0.055	12	619.65	16.50	479+00.00	616.26	-1.32	-0.055	24	617.58	-0.66	-0.055	12	618.24	16.50	479+50.00	615.03	-1.32	-0.055	24	616.35	-0.66	-0.055	12	617.01	16.50	480+00.00	613.97	-1.32	-0.055	24	615.29	-0.66	-0.055	12	615.95	16.50	480+50.00	613.10	-1.32	-0.055	24	614.42	-0.66	-0.055	12	615.08	16.50	481+00.00	612.42	-1.32	-0.055	24	613.74	-0.66	-0.055	12	614.40	16.50	481+50.00	611.91	-1.32	-0.055	24	613.23	-0.66	-0.055	12	613.89	16.50	482+00.00	611.51	-1.32	-0.055	24	612.83	-0.66	-0.055	12	613.49	16.50	482+50.00	611.15	-1.32	-0.055	24	612.47	-0.66	-0.055	12	613.13	16.50	483+00.00	610.94	-1.32	-0.055	24	612.26	-0.66	-0.055	12	612.92	16.50	483+50.00	610.86	-1.32	-0.055	24	612.18	-0.66	-0.055	12	612.84	16.50	484+00.00	611.02	-1.32	-0.055	24	612.34	-0.66	-0.055	12	613.00	16.50	484+50.00	611.33	-1.32	-0.055	24	612.65	-0.66	-0.055	12	613.31	16.50	485+00.00	611.88	-1.32	-0.055	24	613.20	-0.66	-0.055	12	613.86	16.50	485+50.00	612.42	-1.32	-0.055	24	613.74	-0.66	-0.055	12	614.40	16.50	486+00.00	612.94	-1.32	-0.055	24	614.26	-0.66	-0.055	12	614.92	16.50 (###)	486+35.00
629.25	-2.00	-0.083	222:1	24	631.25	-1.00	-0.083	222:1	12	632.25	16.50 (##)	474+10.00																																																																																																																																																																																																																																																																																																																							
628.70	-1.87	-0.0778		24	630.57	-0.93	-0.0778		12	631.50	16.50	474+50.00																																																																																																																																																																																																																																																																																																																							
627.91	-1.72	-0.0713		24	629.63	-0.86	-0.0713		12	630.49	16.50	475+00.00																																																																																																																																																																																																																																																																																																																							
627.04	-1.56	-0.0648		24	628.60	-0.78	-0.0648		12	629.38	16.50	475+50.00																																																																																																																																																																																																																																																																																																																							
626.18	-1.40	-0.0583		24	627.58	-0.70	-0.0583		12	628.28	16.50	476+00.00																																																																																																																																																																																																																																																																																																																							
625.67	-1.32	-0.055		24	626.99	-0.66	-0.055		12	627.65	16.50	476+25.00																																																																																																																																																																																																																																																																																																																							
625.03	-1.32	-0.055		24	626.35	-0.66	-0.055		12	627.01	16.50	476+50.00																																																																																																																																																																																																																																																																																																																							
623.68	-1.32	-0.055		24	625.00	-0.66	-0.055		12	625.66	16.50	477+00.00																																																																																																																																																																																																																																																																																																																							
622.27	-1.32	-0.055		24	623.59	-0.66	-0.055		12	624.25	16.50	477+50.00																																																																																																																																																																																																																																																																																																																							
620.78	-1.32	-0.055		24	622.10	-0.66	-0.055		12	622.76	16.50	478+00.00																																																																																																																																																																																																																																																																																																																							
619.23	-1.32	-0.055		24	620.55	-0.66	-0.055		12	621.21	16.50	478+50.00																																																																																																																																																																																																																																																																																																																							
617.67	-1.32	-0.055		24	618.99	-0.66	-0.055		12	619.65	16.50	479+00.00																																																																																																																																																																																																																																																																																																																							
616.26	-1.32	-0.055		24	617.58	-0.66	-0.055		12	618.24	16.50	479+50.00																																																																																																																																																																																																																																																																																																																							
615.03	-1.32	-0.055		24	616.35	-0.66	-0.055		12	617.01	16.50	480+00.00																																																																																																																																																																																																																																																																																																																							
613.97	-1.32	-0.055		24	615.29	-0.66	-0.055		12	615.95	16.50	480+50.00																																																																																																																																																																																																																																																																																																																							
613.10	-1.32	-0.055		24	614.42	-0.66	-0.055		12	615.08	16.50	481+00.00																																																																																																																																																																																																																																																																																																																							
612.42	-1.32	-0.055		24	613.74	-0.66	-0.055		12	614.40	16.50	481+50.00																																																																																																																																																																																																																																																																																																																							
611.91	-1.32	-0.055		24	613.23	-0.66	-0.055		12	613.89	16.50	482+00.00																																																																																																																																																																																																																																																																																																																							
611.51	-1.32	-0.055		24	612.83	-0.66	-0.055		12	613.49	16.50	482+50.00																																																																																																																																																																																																																																																																																																																							
611.15	-1.32	-0.055		24	612.47	-0.66	-0.055		12	613.13	16.50	483+00.00																																																																																																																																																																																																																																																																																																																							
610.94	-1.32	-0.055	24	612.26	-0.66	-0.055	12	612.92	16.50	483+50.00																																																																																																																																																																																																																																																																																																																									
610.86	-1.32	-0.055	24	612.18	-0.66	-0.055	12	612.84	16.50	484+00.00																																																																																																																																																																																																																																																																																																																									
611.02	-1.32	-0.055	24	612.34	-0.66	-0.055	12	613.00	16.50	484+50.00																																																																																																																																																																																																																																																																																																																									
611.33	-1.32	-0.055	24	612.65	-0.66	-0.055	12	613.31	16.50	485+00.00																																																																																																																																																																																																																																																																																																																									
611.88	-1.32	-0.055	24	613.20	-0.66	-0.055	12	613.86	16.50	485+50.00																																																																																																																																																																																																																																																																																																																									
612.42	-1.32	-0.055	24	613.74	-0.66	-0.055	12	614.40	16.50	486+00.00																																																																																																																																																																																																																																																																																																																									
612.94	-1.32	-0.055	24	614.26	-0.66	-0.055	12	614.92	16.50 (###)	486+35.00																																																																																																																																																																																																																																																																																																																									
<p>NOTE 1: BEGIN FULL DEPTH PAVEMENT, TIE INTO EX SE AT APPROX 0.083 (FS MAX = 0.083), BEGIN SE TRANSITION (LANES AND SHOULDER)</p> <p>NOTE 2: END SE TRANSITION, BEGIN LOWERED PROFILE, BEGIN FS = 0.055</p> <p>NOTE 3: END LOWERED PROFILE, CONTINUE FS = 0.055 (LANES), BEGIN SE TRANSITION (SHOULDERS)</p> <p>NOTE 4: END FULL DEPTH PAVEMENT, END FS = 0.055, TIE INTO EX SE AT APPROX 0.055 (FS MAX = 0.083) (LANES), TIE INTO EX SHOULDER SLOPE</p> <p>## MEET EXISTING CONDITIONS, EX SURVEY SHOWS EDGELINE OFFSET AT APPROX. 17.2' LT</p> <p>### MEET EXISTING CONDITIONS, EX SURVEY SHOWS EDGELINE OFFSET AT APPROX. 17.0' LT</p>																																																																																																																																																																																																																																																																																																																																			

SUPERELEVATION - IR-71 LOWERED PROFILE LIMITS

HAM-IR71-8.42

P:\PR54704\HAM_91826\Design\Roadway\Sheets\91826_GE101.dgn Sheet 10/26/2017 8:35:48 AM comp ton

P:\PR54704\HAM\91826\Design\Drainage\Sheets\91826_DMI03.dgn Sheet 10/26/2017 8:35:50 AM compton



D-1 STA 477+00.84, 1.66' RT
EX CB-5 W/OUT APRON,
GRATE ELEV 624.08'
12" SE 619.74
RECONSTRUCTED TO
GRADE, T/G = 623.86
OUTLET PROP UNDERDRAIN
INTO EX CB
PROP E = 620.25

D-1 PLAN: CB STA 477+00.84, 1.66' RT
NOT TO SCALE

D-3 PLAN: MH STA 483+64.07, 0.65' LT
NOT TO SCALE

D-3 STA 483+64.07, 0.65' LT
EX MH-1, GRATE ELEV 611.26'
24" SE 600.66
15" SW 600.66
24" NW 600.66
15" NE 600.66
RECONSTRUCTED TO
GRADE, T/G = 612.20

SECTION A-A
NOT TO SCALE

SECTION B-B
NOT TO SCALE

STEEPEN SIDESLOPES OF PAVED
GUTTER TO FIT AROUND EXISTING
CATCHBASIN AND GRATE OPENING.

STEEPEN SIDESLOPES OF PAVED
GUTTER TO FIT AROUND EXISTING
CATCHBASIN AND GRATE OPENING.

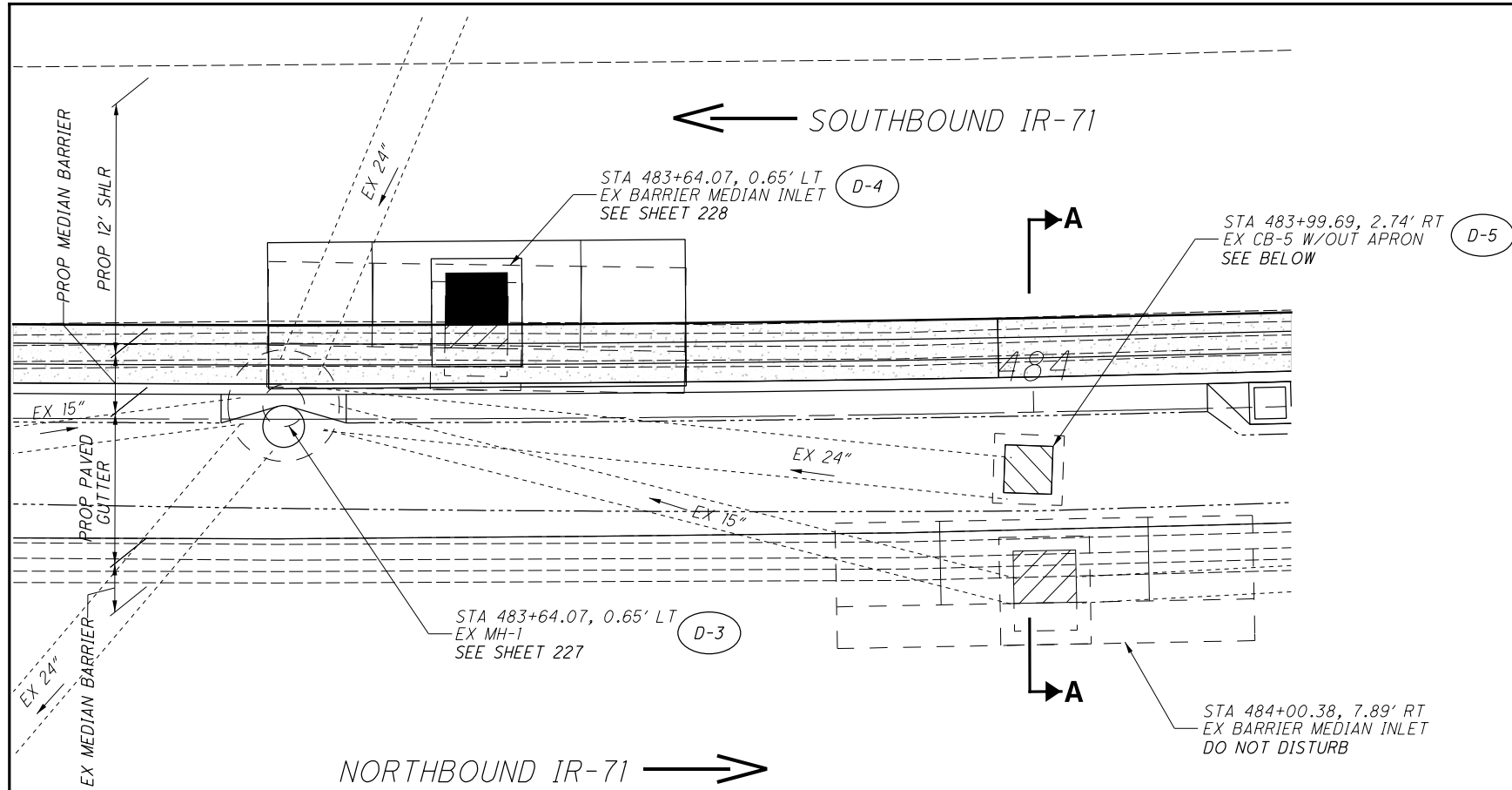
STEEPEN SIDESLOPES OF PAVED GUTTER TO FIT
AROUND RECONSTRUCTED MANHOLE AND CASTING.
SEE SCDs MH-1.1 AND MH-1.2 FOR DETAILS.

STEEPEN SIDESLOPES OF PAVED GUTTER TO FIT
AROUND RECONSTRUCTED MANHOLE AND CASTING.
SEE SCDs MH-1.1 AND MH-1.2 FOR DETAILS.

E GUTTER 623.86

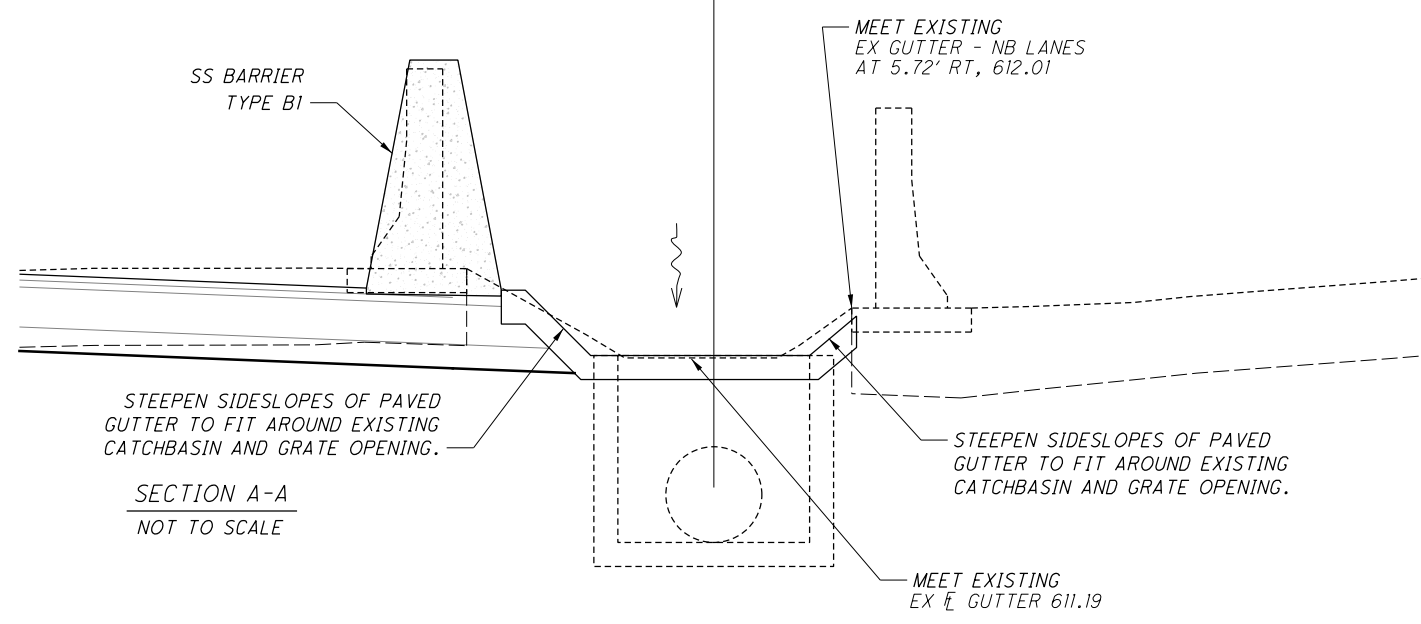
MEET EXISTING
EX E GUTTER 611.27

P:\PR54704\HAM\91826\Design\Drainage\Sheets\91826_DMI04.dgn Sheet 10/26/2017 8:35:55 AM compton



(D-5) PLAN: CB STA 483+99.69, 2.74' RT
NOT TO SCALE

(D-5) STA 483+99.69, 2.74' RT
EX CB-5 W/OUT APRON,
GRATE ELEV 611.19'
15" SE 607.29
24" SW 607.29
RECONSTRUCTED TO GRADE
OUTLET PROP UNDERDRAINS
INTO EX CB
PROP E N = 607.80
PROP E S = 607.80



CALCULATED	JLG
CHECKED	KSC

DRAINAGE DETAILS - LOWERED IR-71 PROFILE LIMITS

HAM-IR71-8.42

NOTES

GENERAL: This insert details the Barrier Transition, to connect existing NJ Concrete Barrier (safety shape) to a new run of Single Slope Concrete Barrier at locations shown on the plans. For NJ barrier shape and other details see the respective plan insert sheets. For Single Slope barrier details, see SCD RM-4.3 (RM-4.5 for Type D).

ADJACENT CONCRETE BARRIER RUNS: Remove any tapered end sections, impact attenuators, or other guardrail hardware from existing barrier end. The barrier to barrier transition is not intended to be used at transition sections (those shown on SCD RM-4.4), Inlets, or on Type C or CI Barrier. If proposed adjacent single slope barrier is Type A or AI, the Barrier Transition should contain horizontal reinforcing steel similar to that required in the respective single slope barrier. Reinforcement is not shown and should be detailed separately. The adjacent single slope end should be terminated with a reinforced End Anchor as detailed on the SCDs.

BARRIER FACE TRANSITION: To prevent vehicle snagging, a smooth transition from the safety shape face to the single slope face is made over a 20' length. The actual shape of the Transition is dependent on both the adjacent NJ barrier and the single slope barrier types, as detailed on the plans. The contractor and Engineer will agree on a construction method to ensure a smooth barrier face.

MATERIALS: Materials are same for those shown on RM-4.3 and RM-4.5, except that cast-in-place is the only acceptable method. Edges may be chamfered or radiused as shown on those drawings.

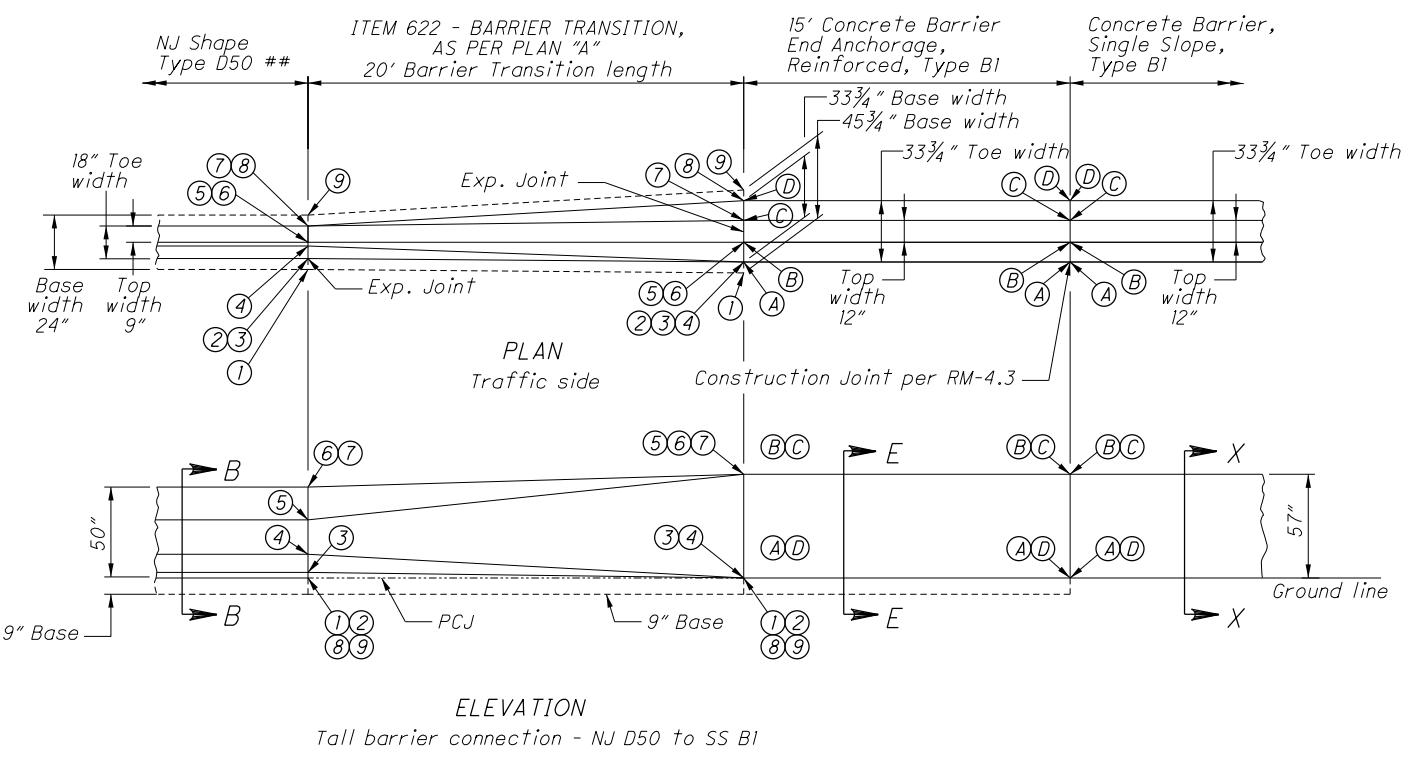
CONCRETE BASE: Construct base as shown on the NJ shape insert sheets, including the methods detailing the footing joint, Permissible Construction Joint (PCJ), and Dowelling requirements. The width of the base matches the existing NJ barrier.

JOINTS: Construct joints as shown on respective barrier drawings.

RACEWAYS: When specified, place raceway(s) to match raceway elevation in adjoining segments. Place to obtain maximum concrete cover.

METRIC UNITS: Refer to respective barrier drawings or inserts for metric dimensions.

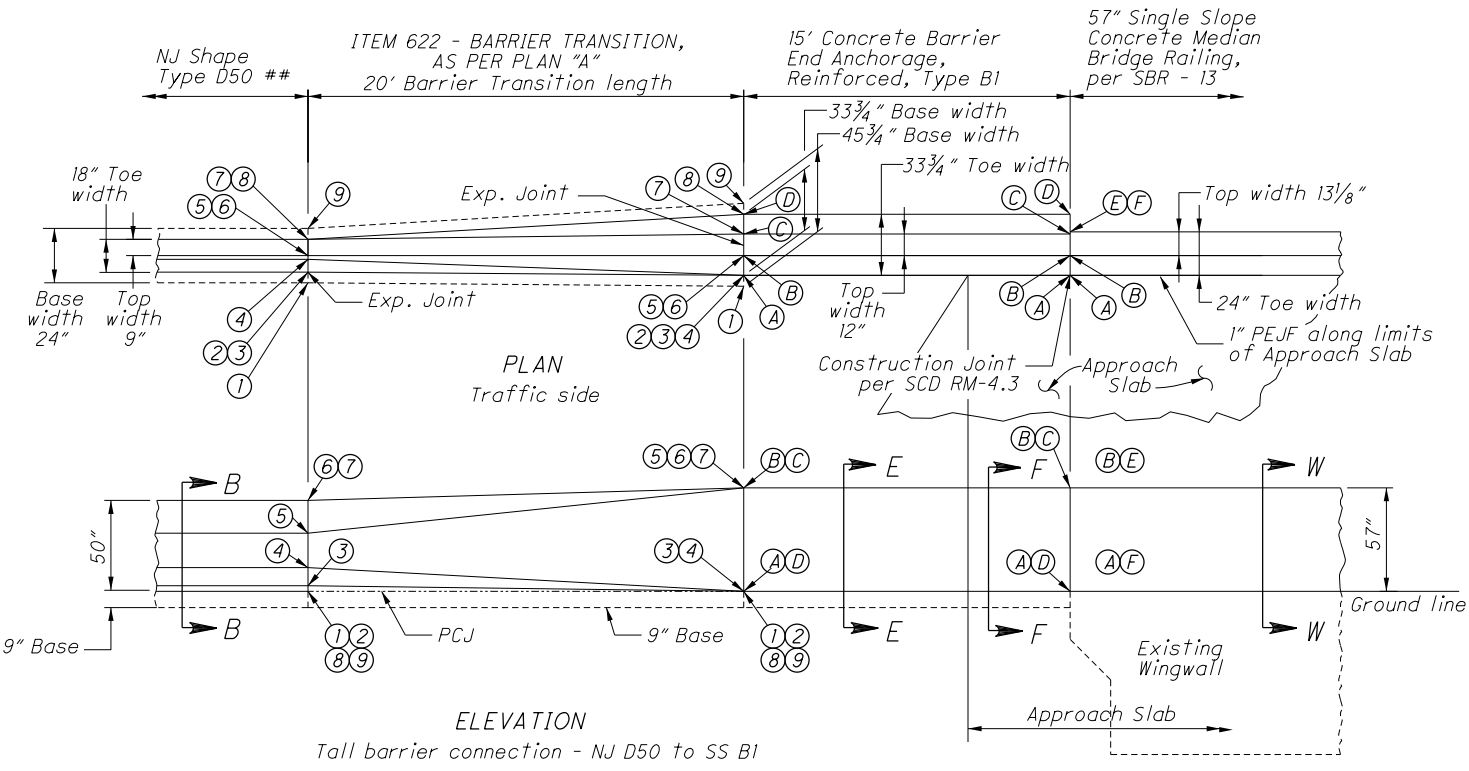
PAYMENT: This Barrier Transition shall include all material and labor needed to construct this 20' section, including any raceways, reinforcing steel, dowels and other necessary incidentals. Payment shall be made at the unit price for Item 622 - Barrier Transition, As Per Plan "A", Each.



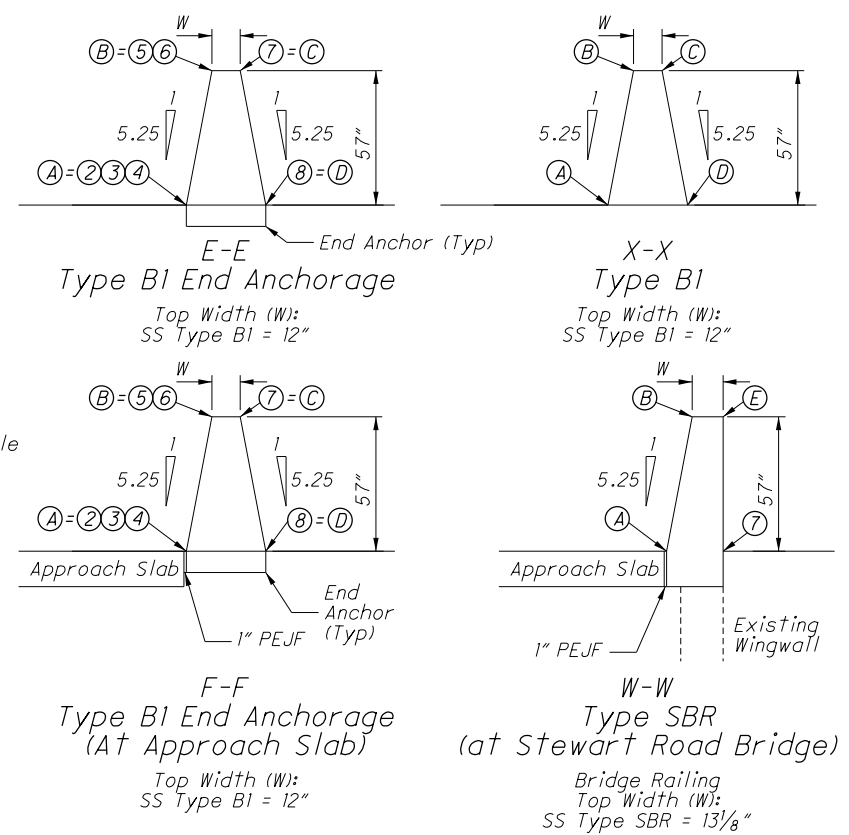
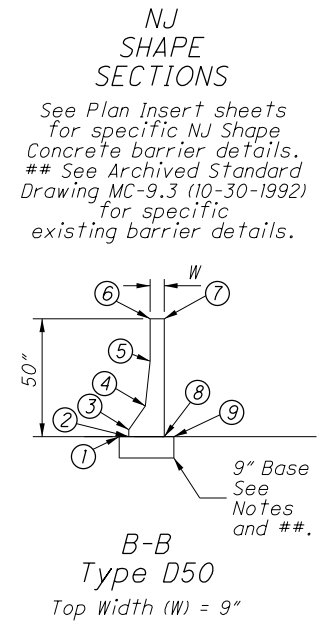
MODIFICATION #1 MADE TO PLAN INSERT SHEET

- 1) Changed transition to a NJ Shape Type D Barrier (D50) to a Single Slope Type B1 Barrier.
- 2) The NJ Shape Type D Barrier (D50) matches the Existing Plans, HAM-71-2.92. D50 barrier height is 50".
- 3) Added a Supplemental Detail to show the Barrier Transition into Single Slope Concrete Median Barrier (Bridge Railing).

DETAIL - BARRIER TRANSITION, AS PER PLAN "A"
NJ SHAPE D50 BARRIER TO SINGLE SLOPE BARRIER, TYPE B1



DETAIL - BARRIER TRANSITION, AS PER PLAN "A"
NJ SHAPE D50 BARRIER TO SINGLE SLOPE BARRIER, TYPE B1
** SHOWN WITH CONCRETE MEDIAN BRIDGE RAILING (SCD SBR-1-13) **



P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_nj-sscb.pis.v8.dgn Sheet 10/26/2017 8:35:57 AM compton

NOTES

GENERAL: This insert details the Barrier Transition, to connect existing NJ Concrete Barrier (safety shape) to a new run of Single Slope Concrete Barrier at locations shown on the plans. For NJ barrier shape and other details see the respective plan insert sheets. For Single Slope barrier details, see SCD RM-4.3 (RM-4.5 for Type D).

ADJACENT CONCRETE BARRIER RUNS: Remove any tapered end sections, impact attenuators, or other guardrail hardware from existing barrier end. The barrier to barrier transition is not intended to be used at transition sections (those shown on SCD RM-4.4), Inlets, or on Type C or CI Barrier. If proposed adjacent single slope barrier is Type A or AI, the Barrier Transition should contain horizontal reinforcing steel similar to that required in the respective single slope barrier. Reinforcement is not shown and should be detailed separately. The adjacent single slope end should be terminated with a reinforced End Anchor as detailed on the SCDs.

BARRIER FACE TRANSITION: To prevent vehicle snagging, a smooth transition from the safety shape face to the single slope face is made over a 20' length. The actual shape of the transition is dependent on both the adjacent NJ barrier and the single slope barrier types, as detailed on the plans. The contractor and Engineer will agree on a construction method to ensure a smooth barrier face.

MATERIALS: Materials are same for those shown on RM-4.3 and RM-4.5, except that cast-in-place is the only acceptable method. Edges may be chamfered or radiused as shown on those drawings.

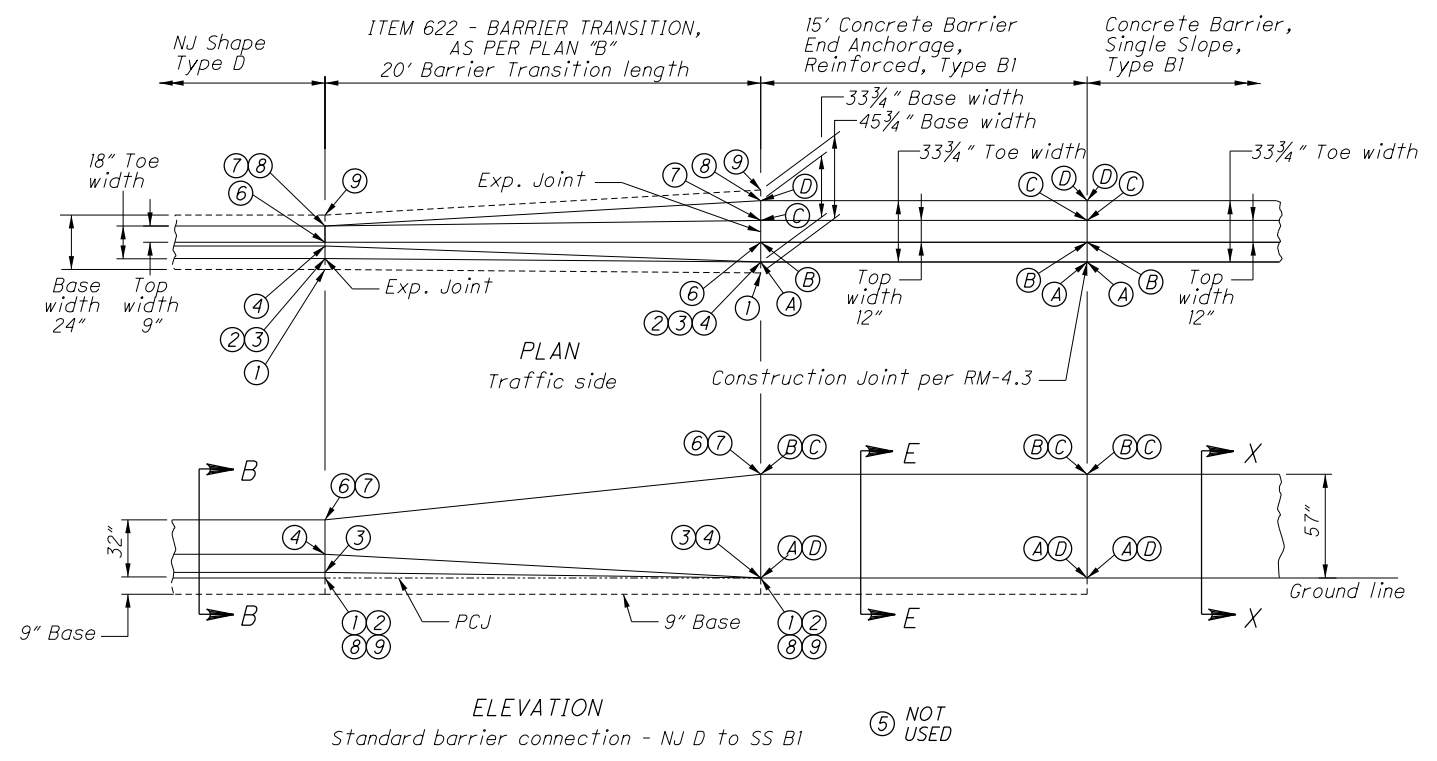
CONCRETE BASE: Construct base as shown on the NJ shape insert sheets, including the methods detailing the footing joint, Permissible Construction Joint (PCJ), and Dowelling requirements. The width of the base matches the existing NJ barrier.

JOINTS: Construct joints as shown on respective barrier drawings.

RACEWAYS: When specified, place raceway(s) to match raceway elevation in adjoining segments. Place to obtain maximum concrete cover.

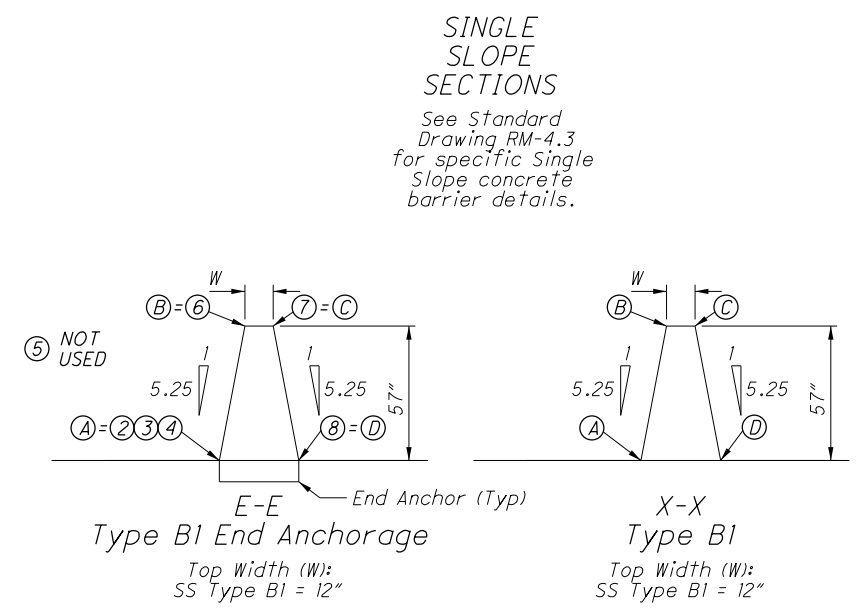
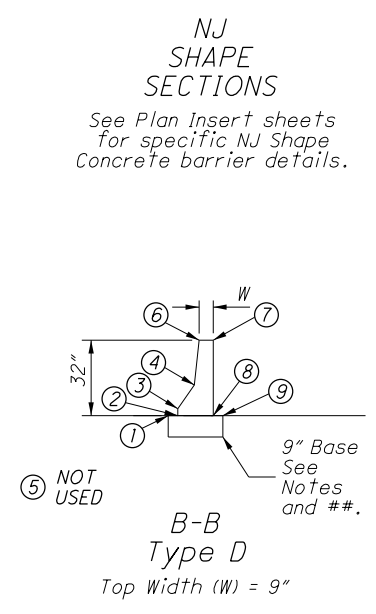
METRIC UNITS: Refer to respective barrier drawings or inserts for metric dimensions.

PAYMENT: This Barrier Transition shall include all material and labor needed to construct this 20' section, including any raceways, reinforcing steel, dowels and other necessary incidentals. Payment shall be made at the unit price for Item 622 - Barrier Transition, As Per Plan "B", Each.



DETAIL - BARRIER TRANSITION, AS PER PLAN "B"
NJ SHAPE D BARRIER TO
SINGLE SLOPE BARRIER, TYPE B1

MODIFICATIONS MADE TO PLAN INSERT SHEET
1) Transition changed to NJ Shape Type D Barrier to Single Slope Type B1 Barrier.



P:\PR54704\HAM\91826\Design\Roadway\Sheets\91826_nj-sscb_pis.v8-2.dgn Sheet 10/26/2017 8:36:08 AM compton

NOTES

JOINTS: Unsealed contraction joints spaced at 20' max. shall be constructed throughout the run of Concrete Barrier except that expansion joints shall be used at the center line of and around each bridge pier column and on either side of overhead sign supports, inlets and light pole foundations. If inlet top is slip formed, the expansion joints adjacent to it may be omitted.

Contraction joints may be constructed with metal inserts inside the forms, preformed full width joint filler, a grooving tool, or by sawing. Inserts, tooled or sawed joints shall have a 3" minimum depth. All joints shall be constructed for the full height of the barrier including the base. Sawing shall be done as soon as curing will allow, to prevent spalling.

BASE JOINTS: The vertical walls between the barrier base and a concrete pavement or concrete base shall be provided with a sealed, grooved joint as shown on Std. Const. Dwg. BP-2.J. Sealing material shall conform with CMS 705.04.

P.C.J. = Permissible Construction Joint

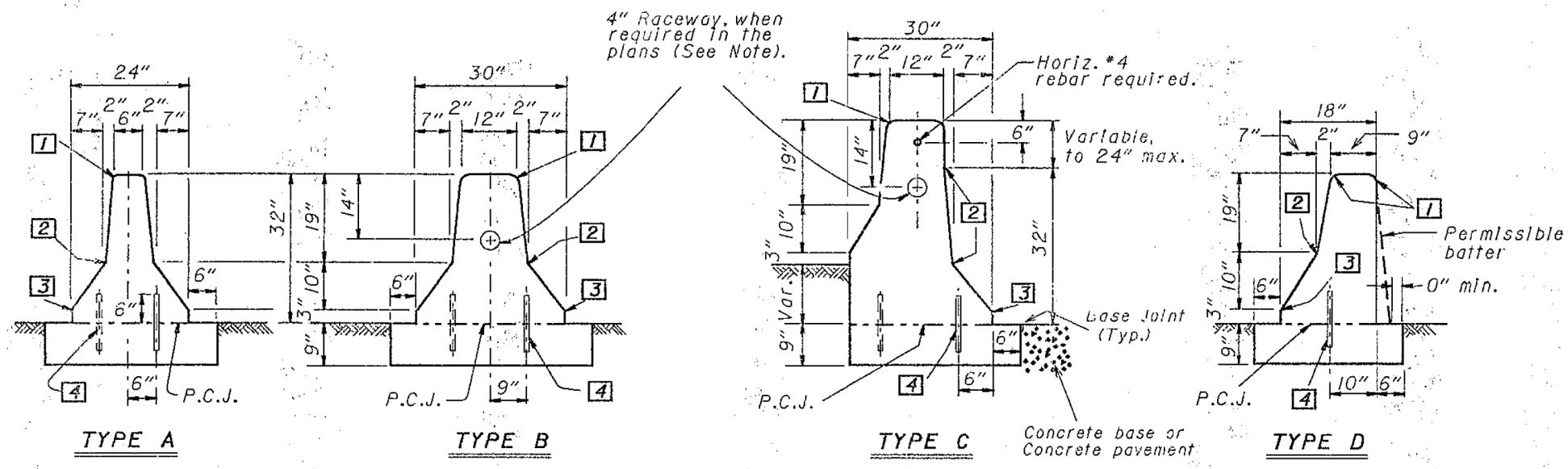
MEASUREMENT: 622 Concrete Barrier, including transitions and pier sections as per Standard Const. Drawing MC-9.4, is paid for in linear feet as one of the four types (A, B, C or D) or as Type A50 and B50; (for 50" high barrier), with appropriate deductions for other items such as:

604 I-3 Median Inlet	20 Lin. Ft.
625 Light pole foundation or pullbox	2.5 Lin. Ft.
630 Overhead sign support foundation	10 Lin. Ft.
630 Barrier wall assembly	10 Lin. Ft.

50 INCH HIGH BARRIER shall be built in locations specified in the plans. Construct the lower 32" of the barrier and the barrier base using the same dimensions as shown in the corresponding Normal Section. The upper 18" may be constructed integral with the bottom, or separately with No. 4 rebar dowels at 4' foot maximum spacing. Start and end dowels 6" from barrier contraction joints.

RACEWAY: The contractor shall insure that the electrical raceway is clear of internal obstructions. Cost of the 4 inch polyvinyl chloride raceway and No. 10 AWG copper-clad or aluminum-clad wire if needed for future installation of circuits shall be included in the unit cost per linear foot for item 622, Concrete Barrier.

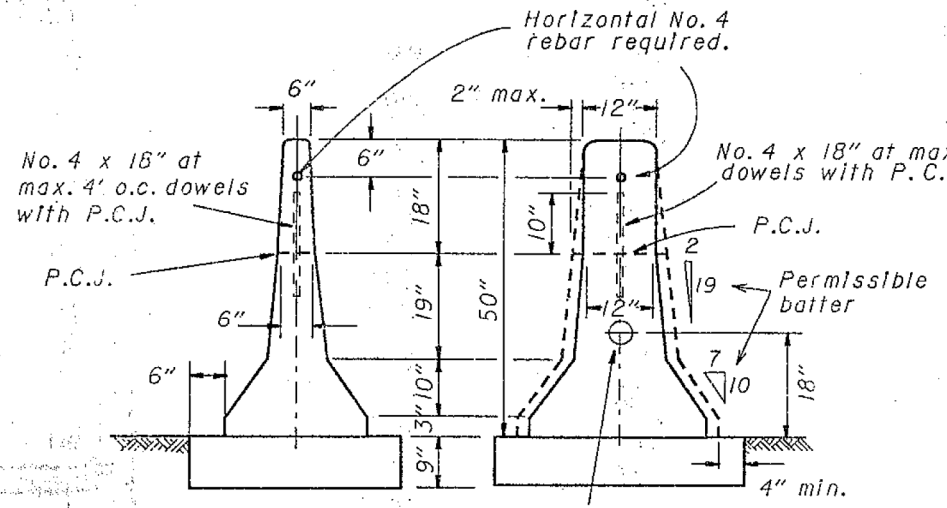
STATION MARKING shall be impressed in the "green" concrete on both sides at the top of the barrier if specified in the plans, which cost shall be incidental to the unit cost per linear foot bid for item 622, Concrete Barrier.



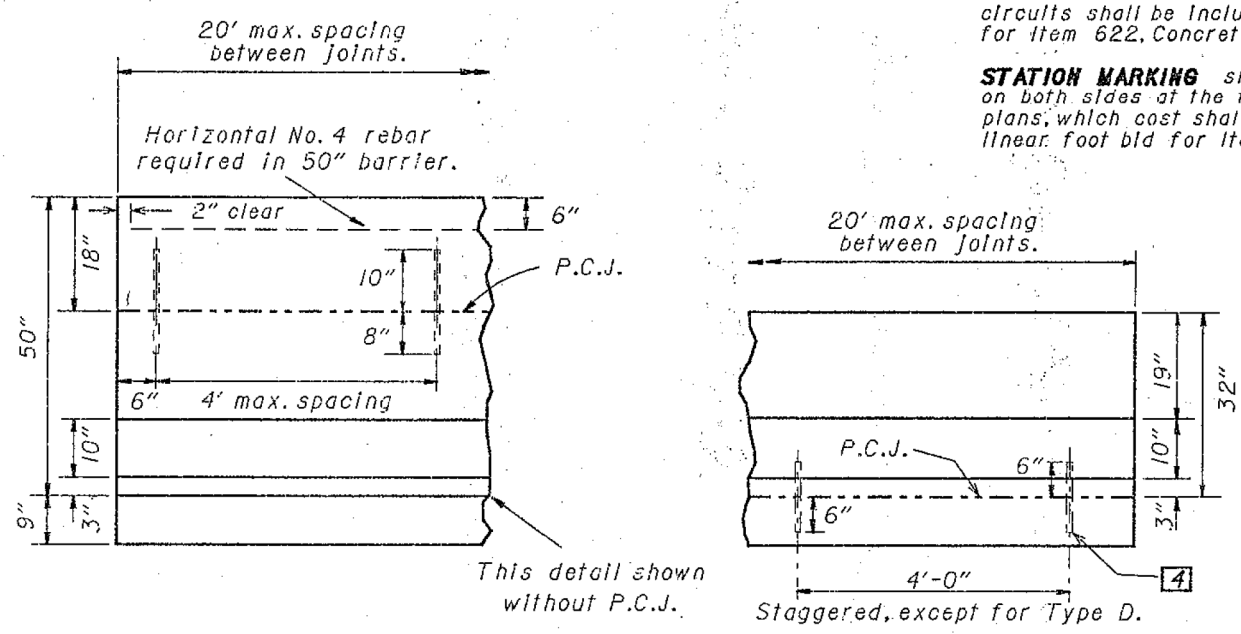
NORMAL SECTIONS

LEGEND

- 1 1" Radius or 3/4" chamfer.
- 2 Permissible 10" radius.
- 3 Permissible 1" radius.
- 4 No. 8 epoxy coated deformed steel bars, 12" long, spaced 4' between successive bars on a staggered (except Type D) pattern. Omit dowels when top is constructed integral with the base.



50" BARRIERS - TYPICAL SECTIONS



BARRIER ELEVATIONS

BUREAU OF LOCATION AND DESIGN
OHIO DEPARTMENT OF TRANSPORTATION

CONCRETE BARRIER

DATE 10-30-92

STANDARD CONSTRUCTION DRAWING **MC-9.3**

APPROVED *E.K. Hillman* ENGR., L & D

P:\PR54704\HAM\91826_Scd\MC_9_L.dgn Sheet 10/26/2017 8:36:40 AM compton

O:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826\traffic\sheet\91826_TN001.dgn 10/9/2017 2:51:30 PM jPerchinske

PERMANENT PAVEMENT MARKINGS

THE CONTRACTOR SHALL RECORD THE LOCATIONS OF ALL PAVEMENT MARKINGS AND RAISED PAVEMENT MARKERS BEFORE THE START OF THE RESURFACING OPERATION. THIS WILL BE NECESSARY TO ASSURE CORRECT REPLACEMENT OF MARKINGS. ALL PAVEMENT MARKINGS SHALL BE RESTRIPE IN THEIR CURRENT LOCATION, EXCEPT OFF-RAMPS FROM IR-71, WHICH SHALL BE RESTRIPE IN CONFORMANCE WITH STANDARD CONSTRUCTION DRAWING TC-72.20, AND AS SHOWN IN THE PLANS. RAISED PAVEMENT MARKERS ON OFF-RAMPS SHALL BE PLACED IN CONFORMANCE WITH STANDARD CONSTRUCTION DRAWING TC-73.20. MINIMUM LANE WIDTH ON MAINLINE PAVEMENT SHALL BE 12 FEET.

PAYMENT FOR THE WORK NECESSARY TO RECORD CURRENT PAVEMENT LOCATIONS TO RESTRIPE IN ACCORDANCE WITH THE PLAN WILL BE CONSIDERED INCIDENTAL TO AND INCLUDED WITH EACH RESPECTIVE PAVEMENT MARKING ITEM.

MILE MARKER SIGNS

MILE MARKER SIGNS (D10-5) SHALL BE WHITE TEXT ON BLUE BACKGROUND.

RAISED PAVEMENT MARKERS

INSTALL RAISED PAVEMENT MARKERS ACCORDING TO STANDARD CONSTRUCTION DRAWINGS: TC-65.10 AND TC-65.11.

ITEM 621 RAISED PAVEMENT MARKER REMOVED

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE TRAFFIC CONTROL GENERAL SUMMARY FOR PURPOSES OF REMOVING RAISED PAVEMENT MARKERS IN THE PROPOSED RESURFACING AREA:

ITEM 621 RAISED PAVEMENT MARKER REMOVED 1507 EACH

ITEM 626 BARRIER REFLECTOR

BARRIER REFLECTORS SHALL BE INSTALLED ON ALL CONCRETE MEDIAN BARRIER AND GUARDRAIL IN CONFORMANCE WITH APPLICABLE STANDARD DRAWINGS AND SPECIFICATIONS.

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE TRAFFIC CONTROL GENERAL SUMMARY FOR THIS PURPOSE:

ITEM 626 BARRIER REFLECTOR (TYPE A) 507 EACH

ITEM 626 BARRIER REFLECTOR (TYPE B) 93 EACH

ITEM 630 SIGNING, MISC.: REMOVAL OF BARRIER MOUNTED POST SUPPORT

THIS ITEM SHALL INCLUDE REMOVAL AND DISPOSAL OF A SIGN SUPPORT MOUNTED ON CONCRETE BARRIER.

PAYMENT FOR ITEM 630 "SIGNING, MISC.: REMOVAL OF BARRIER MOUNTED POST SUPPORT AND DISPOSAL" SHALL BE FOR EACH MEDIAN MOUNTED SUPPORT REMOVED.

ITEM 630 SIGNING, MISC.: REMOVAL OF STRUCTURE MOUNTED POST SUPPORT

THIS ITEM SHALL INCLUDE REMOVAL AND DISPOSAL OF A SIGN SUPPORT MOUNTED ON A STRUCTURE.

PAYMENT FOR ITEM 630 "SIGNING, MISC.: REMOVAL OF STRUCTURE MOUNTED POST SUPPORT AND DISPOSAL" SHALL BE FOR EACH STRUCTURE MOUNTED SUPPORT REMOVED.

ITEM 631 SIGN LIGHTING, MISC.: REMOVE SIGN SERVICE

REMOVAL OF SIGN LIGHTING SHALL INCLUDE REMOVAL OF ALL LUMINAIRES, GLARE SHIELDS, SUPPORT ARMS, AND WIRING, AND PROPERLY DISPOSING OF THIS MATERIAL OFF OF THE PROJECT SITE. REMOVAL OF SIGN WIRING SHALL EXTEND FROM THE LUMINAIRE(S) TO THE DISCONNECT SWITCH, AND SIGN SERVICE FROM THE DISCONNECT SWITCH TO THE NEXT CONNECTION IN THE CIRCUIT. DISCONNECTION OF THE EXISTING CIRCUIT SHALL BE MADE IN CONFORMANCE WITH C&MS 625.21 (E).

ALL PULL BOXES WHICH ARE ABANDONED AS A RESULT OF THIS WORK SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.

AT LOCATIONS WHERE THE SIGN POLE WILL REMAIN IN PLACE, THE CONTRACTOR SHALL REMOVE THE EXISTING DISCONNECT SWITCH AND SEAL THE RESULTANT OPENING ON THE SIGN SUPPORT. THE HOLE SHALL BE CAPPED AND SEALED WITH A BLIND HALF COUPLING OR OTHER METHOD AS APPROVED BY THE ENGINEER. ALL FIXED SUPPORT ARMS AND GLARE SHIELDS FOR LUMINAIRES SHALL BE REMOVED FROM THE SIGN SUPPORT, IN CONFORMANCE WITH 625.21.

MATERIALS REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR, AND SHALL BE PROPERLY DISPOSED OF, OFF OF THE PROJECT SITE.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR ITEM 631 "SIGN LIGHTING, MISC.: REMOVE SIGN SERVICE" FOR EACH SIGN SUPPORT, AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS REQUIRED TO REMOVE SIGN SERVICE FROM ALL THE SIGNS MOUNTED TO THE SIGN SUPPORT, AS DESCRIBED IN THIS NOTE.

REMOVAL OF EXISTING BRIDGE MOUNTED GUIDE SIGNS

EXISTING BRIDGE MOUNTED GUIDE SIGNS SHALL NOT BE REMOVED UNTIL THE NEW SIGN ON A NEW OVERHEAD SIGN SUPPORT HAS BEEN CONSTRUCTED. THE FOLLOWING SIGN LOCATIONS SHALL APPLY:

HAM-71-0851 (RIDGE AVENUE OVER IR-71)

EXISTING SKEWED STRUCTURE MOUNTED SIGN AT STA. 405+31 SB ON THE NORTHERN OUTSIDE BRIDGE PARAPET

HAM-71-0970R (IR-71 OVER RED BANK ROAD)

EXISTING TRUSS MOUNTED SIGN AT STA. 467+92 RT, ON THE OUTSIDE NORTHBOUND BRIDGE PARAPETS

HAM-71-1068R (IR-71 OVER STEWART ROAD)

EXISTING TRUSS MOUNTED SIGN AT STA. 519+98 RT, ON THE OUTSIDE NORTHBOUND BRIDGE PARAPETS

SIGN SHOP DRAWINGS

THE CONTRACTOR SHALL SUBMIT A COMPLETE SET OF SIGN SHOP DRAWINGS TO THE PROJECT ENGINEER FOR APPROVAL BEFORE SIGNS ARE TO BE FABRICATED. THE PROJECT ENGINEER SHOULD FORWARD THE SIGN SHOP DRAWINGS TO THE DISTRICT 8 PRODUCTION DEPARTMENT, FOR REVIEW, A MINIMUM OF 4 WEEKS PRIOR TO THE BEGINNING OF SIGN FABRICATION.

SPECIFIC SERVICE AND TODS SIGNS

THE EXISTING SPECIFIC SERVICE SIGN AND TOURIST-ORIENTED DIRECTIONAL SIGNS (TODS) SHOWN IN THE PLANS SHALL BE RELOCATED ACCORDING TO THE PROCEDURE SHOWN IN CMS 630.09.

0:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826\traffic\sheets\91826_TG001.dgn 10/9/2017 2:51:31 PM JPerchinske

SHEET NUM.											PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.	CALCULATED JEP CHECKED PG
										01/IMS/PV									
238	240										1.01	646	10010	1.01	MILE	EDGE LINE, 6"			
0.66	0.35										0.68	646	10110	0.68	MILE	LANE LINE, 6"			
0.34	0.34										1,134	646	10310	1,134	FT	CHANNELIZING LINE, 12"			
	1,134										133	646	10620	133	FT	CHEVRON MARKING			
	133										319	646	20504	319	FT	DOTTED LINE, 6"			
174	145																		

HAM-IR 71-8.42 **TRAFFIC CONTROL - GENERAL SUMMARY**

o:\Transportation\Projects\ODOT\District 8\HAM-71-8-42\91826\traffic\sheets\91826_TS010.dgn 10/9/2017 2:51:38 PM JPerchinske

SHEET NO.	REFERENCE NO.	LOCATION	STATION	SIDE	630												631	
					REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	REMOVAL OF GROUND MOUNTED STRUCTURAL BEAM SUPPORT AND DISPOSAL	SIGNING, MISC.: REMOVAL OF BARRIER MOUNTED POST SUPPORT AND DISPOSAL	SIGNING, MISC.: REMOVAL OF STRUCTURE MOUNTED POST SUPPORT AND DISPOSAL	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL	REMOVAL OF STRUCTURE MOUNTED SIGN AND DISPOSAL	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TYPE TC-7.65	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TYPE TC-12.30	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TYPE TC-15.115	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TYPE TC-18.26	REMOVAL OF GROUND MOUNTED MAJOR SIGN AND STORAGE	REMOVAL OF OVERHEAD MOUNTED SIGN AND STORAGE	SIGN LIGHTING, MISC.: REMOVE SIGN SERVICE
					EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	
282	SR-237	SB IR-71	666+38	LT			1		1									
	SR-238		669+82	LT								1				2	1	
	SR-239		671+80	LT			1		1									
283	SR-240		677+07	LT			1		1									
	SR-241		682+43	LT			1		1									
284	SR-242		687+78	LT			1		1									
	SR-243	NB IR-71	687+78	RT			1		1									
286	SR-244	RAMP R	VARIES	LT	3				3									
	SR-245		6+55	RT		2									1			
	SR-246		7+95	RT	2				1									
	SR-247		9+98	LT	2				3									
	SR-248		9+98	RT	2				3									
269	SR-249	NB IR-71	540+29	RT	2				2									
279	SR-250	SB IR-71	637+30	LT		2									1			
TOTAL THIS SHEET					11	4	6	0	18	0	0	0	1	0	0	2	2	1
TOTAL SHEET 241					52	13	26	5	73	0	5	2	3	1	0	10	19	10
TOTAL SHEET 242					35	9	27	0	52	3	0	1	5	1	0	10	16	7
TOTAL SHEET 243					33	7	22	0	48	1	0	2	7	0	1	6	20	12
TOTAL SHEET 244					37	8	29	0	57	0	0	0	3	0	0	5	6	2
SUBTOTALS CARRIED TO GENERAL SUMMARY					168	41	110	5	248	4	5	5	19	2	1	33	63	32

CALCULATED	JEP
	CG
SIGN REMOVAL SUBSUMMARY	
HAM-IR 71-8.42	
245	441

O:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826\traffic\sheets\91826_TS016.dgn 10/9/2017 2:51:41 PM JPerchinske

SHEET NO.	REFERENCE NO.	LOCATION	STATION	SIDE	SIZE (INCHES)	625	630											
						GROUND ROD	OVERHEAD SIGN SUPPORT, TYPE TC-12.30, DESIGN 8	OVERHEAD SIGN SUPPORT, TYPE TC-12.30, DESIGN 9	OVERHEAD SIGN SUPPORT, TYPE TC-12.30, DESIGN 10	OVERHEAD SIGN SUPPORT, TYPE TC-7.65, DESIGN 8	OVERHEAD SIGN SUPPORT, TYPE TC-15.115	SIGN, OVERHEAD EXTRUSHEET	RIGID OVERHEAD SIGN SUPPORT FOUNDATION					
						EACH	EACH	EACH	EACH	EACH	EACH	SQ FT	EACH					
256	OH-01 OS-01 OS-02 E1-H5P	NB IR-71	400+00	RT	(13' X 8') (20' X 4') (8' X 2.5')	2						1	104 80 20	2				
257	OH-02 OS-03 E1-H5P		411+95	RT	(17' X 8') (7' X 2.5')	1	1					136 17.5	1					
260	OH-03 OS-04 E1-H5P		440+55	RT	(17' X 11') (7' X 2.5')	1			1			187 17.5	1					
262	OH-04 OS-05 E1-H5P OS-06 E1-H5P		466+43	RT	(15' X 6') (7' X 2.5') (17' X 9') (7' X 2.5')	2				1		90 17.5 153 17.5	2					
265	OH-05 OS-07 E1-H5P		494+86	RT	(15' X 9') (7' X 2.5')	1			1			135 17.5	1					
267	OH-06 OS-08 E1-H5P OS-09 E1-H5P		518+13	RT	(16' X 6') (7' X 2.5') (15' X 7') (7' X 2.5')	2				1		96 17.5 105 17.5	2					
269	OH-07 OS-10 E1-H5P OS-11 E1-H5P		544+93	RT	(20' X 9') (7' X 2.5') (16' X 6') (7' X 2.5')	2				1		180 17.5 96 17.5	2					
271	OH-08 OS-12 E1-H5P		561+60	RT	(17' X 6') (7' X 2.5')	2				1		102 17.5	2					
272	OH-09 OS-13 E1-H5P OS-14 E1-H5P		566+73	RT	(20' X 9') (7' X 2.5') (17' X 7') (7' X 2.5')	2					1	180 17.5 119 17.5	2					
273	OH-10 OS-15 E1-H5P		576+56	RT	(20' X 9') (7' X 2.5')	1			1			180 17.5						
276	OH-11 OS-16 E1-H5P		605+51	RT	(22' X 8') (7' X 2.5')	1			1			176 17.5						
279	OH-12 OS-17 E1-H5P		643+58	RT	(19' X 12') (7' X 2.5')	1			1			228 17.5	1					
TOTALS CARRIED TO GENERAL SUMMARY						18	1	2	3		4	2	2629.5	16				

OVERHEAD MAJOR SIGNS SUBSUMMARY	HAM-IR 71-8.42
CALCULATED JEP	CHECKED RC
251	441

o:\Transportation\Projects\ODOT\District 8\HAM-71-8-42\91826\traffic\sheets\91826_TS017.dgn 10/9/2017 2:51:42 PM JPerchinske

SHEET NO.	REFERENCE NO.	LOCATION	STATION	SIDE	SIZE (INCHES)	625				630		SIGN, OVERHEAD EXTRUSHEET									
						GROUND ROD		OVERHEAD SIGN SUPPORT, TYPE TC-12.30, DESIGN 9	OVERHEAD SIGN SUPPORT, TYPE TC-12.30, DESIGN 10		SQ FT										
282	OH-13 OS-18 E1-H5P	NB IR-71	668+53	RT	(19' X 12') (7' X 2.5')	EACH 1		EACH 1					228 17.5								
284	OH-14 OS-19 E1-H5P		685+38	RT	(21' X 10') (7' X 2.5')	1		1					210 17.5								
255	OH-29 OS-36 E1-H5P		384+43	RT	(17' X 6') (8' X 2.5')								102 20								
TOTALS CARRIED TO GENERAL SUMMARY						2		1	1				595								

HAM-IR 71-8.42	CALCULATED
	JEP CHECKED PG
OVERHEAD MAJOR SIGNS SUBSUMMARY	

O:\Transportation\Projects\ODOT\District 8\HAM-71-8-42\91826\traffic\sheets\91826_TS018.dgn 10/9/2017 2:51:43 PM JPerchinske

SHEET NO.	REFERENCE NO.	LOCATION	STATION	SIDE	SIZE (INCHES)	625					630					SIGN, OVERHEAD EXTRUSHEET	RIGID OVERHEAD SIGN SUPPORT FOUNDATION		
						GROUND ROD	OVERHEAD SIGN SUPPORT, TYPE TC-12.30, DESIGN 3		OVERHEAD SIGN SUPPORT, TYPE TC-12.30, DESIGN 6	OVERHEAD SIGN SUPPORT, TYPE TC-12.30, DESIGN 8	OVERHEAD SIGN SUPPORT, TYPE TC-12.30, DESIGN 9	OVERHEAD SIGN SUPPORT, TYPE TC-12.30, DESIGN 10		OVERHEAD SIGN SUPPORT, TYPE TC-7.65, DESIGN 6	OVERHEAD SIGN SUPPORT, TYPE TC-7.65, DESIGN 8				
						EACH	EACH		EACH	EACH	EACH	EACH		EACH	EACH		SQ FT	EACH	
256	OH-15 OS-20 E1-H5P	SB IR-71	405+54	LT	(12' X 9') (7' X 2.5')	1			1								108 17.5	1	
257	OH-16 OS-21 E1-H5P		419+30	LT	(20' X 6') (7' X 2.5')	1			1								120 17.5	1	
259	OH-17 OS-22 E1-H5P		432+10	LT	(12' X 9') (7' X 2.5')	1			1								108 17.5	1	
260	OH-18 OS-23 E1-H5P		443+07	LT	(16' X 8') (7' X 2.5')	1				1							128 17.5	1	
262	OH-19 OS-24 E1-H5P		466+43	LT	(16' X 8') (7' X 2.5')	2								1			128 17.5	2	
265	OH-20 OS-25 E1-H5P		497+61	LT	(17' X 9') (7' X 2.5')	1						1					153 17.5	1	
266	OH-21 OS-26 E1-H5P		505+15	LT	(17' X 9') (7' X 2.5')	1				1							153 17.5	1	
267	OH-22 OS-27 E1-H5P		524+01	LT	(17' X 8') (7' X 2.5')	1				1							136 17.5	1	
270	OH-23 OS-28 E1-H5P		548+10	LT	(17' X 8') (7' X 2.5')	1				1							136 17.5	1	
277	OH-24 OS-29 E1-H5P		621+33	LT	(22' X 8') (7' X 2.5')	1						1					176 17.5	1	
279	OH-25 OS-30 E1-H5P		645+37	LT	(20' X 9') (7' X 2.5')	1				1							180 17.5	1	
282	OH-26 OS-31 E1-H5P		669+82	LT	(20' X 9') (7' X 2.5')	1				1							180 17.5	1	
285	OH-27 OS-32 OS-33	KENNEDY AVE (RAMP P)	408+37	RT	(8' X 7') (8' X 7')	1	1										56 56	1	
287	OH-28 OS-34 OS-35	RED BANK EXPRESSWAY (RAMP A)	2+24	LT/RT	(11' X 5') (11' X 5')	2							1				55 55	2	
TOTALS CARRIED TO GENERAL SUMMARY						16	1		3	4	2	2		1	1		2138	15	

CALCULATED JEP CHECKED RG	OVERHEAD MAJOR SIGNS SUBSUMMARY	HAM-IR 71-8-42	253 441
------------------------------------	---------------------------------	----------------	------------

O:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826\traffic\sheets\91826_TS019.dgn 10/9/2017 2:51:43 PM JPerchinske

SHEET NO.	REFERENCE NO.	LOCATION	STATION	SIDE	SIZE (INCHES)	630														
						GROUND MOUNTED STRUCTURAL BEAM SUPPORT, 54X7.7 FEET	GROUND MOUNTED STRUCTURAL BEAM SUPPORT, W6X9 FEET	GROUND MOUNTED STRUCTURAL BEAM SUPPORT, W8X18 FEET	GROUND MOUNTED STRUCTURAL BEAM SUPPORT, W10X12 FEET	BREAKAWAY STRUCTURAL BEAM CONNECTION EACH	SIGN, FLAT SHEET SQ FT	SIGN, GROUND MOUNTED EXTRUSHEET SQ FT	SIGN ATTACHMENT ASSEMBLY EACH	GROUND MOUNTED STRUCTURAL BEAM SUPPORT FOUNDATION EACH						
256	GM-01	NB IR-71	408+34	RT	(6' X 5')		17.8/17.8				2	30		2						
260	GM-02		441+65	RT	(10' X 6') (10' X 2')			23.0/27.0			2	60 20		2						
263	GM-03		471+03	RT	(6' X 5')		17.8/17.8				2	30		2						
263	GM-04		481+93	RT	(11' X 5')			17.8/18.3			2	55		2						
264	GM-05		492+49	RT	(8' X 3')	14.8/14.8					2	24		2						
267	GM-06		523+08	RT	(6' X 5')		17.8/17.8				2	30		2						
267	GM-07	RAMP F	13+29	RT	(10' X 3') (6' X 1')		16.8/17.3				2	30 6		2						
269	GM-08	NB IR-71	537+79	RT	(8' X 3')	14.8/14.8					2	24		2						
270	GM-09		549+00	RT RT	(9' X 5') D9-2-30		17.8/18.3				2	45	1	2						
271	GM-10		561+83	RT	(8' X 3')	14.8/14.8					2	24		2						
272	GM-11		570+87	RT	(6' X 5')		17.8/17.8				2	30		2						
273	GM-12	RAMP H	8+59	RT	(10' X 3') (6' X 1')		16.8/17.3				2	30 6		2						
276	GM-13	NB IR-71	607+30	RT	(6' X 5')		17.8/17.8				2	30		2						
280	GM-14		649+56	RT	(13' X 7')				20.6/20.9		2	91		2						
256	GM-15	SB IR-71	399+10	LT	(9' X 3')	14.8/14.8					2	27		2						
257	GM-16		414+63	LT	(6' X 5')		17.8/17.8				2	30		2						
260	GM-17		449+28	LT	(10' X 6') (10' X 2')			23.7/27.6			2	60 20		2						
264	GM-18		491+13	LT	(8' X 3')	14.8/14.8					2	24		2						
265	GM-19		495+14	LT	(6' X 5')		17.8/17.8				2	30		2						
269	GM-20		538+52	LT	(8' X 3')	14.8/14.8					2	24		2						
270	GM-21		555+56	LT	(10' X 4.5')		17.3/17.3				2	45		2						
271	GM-22		561+20	LT	(8' X 3')	14.8/14.8					2	24		2						
277	GM-23		619+11	LT	(6' X 5')		17.8/17.8				2	30		2						
280	GM-24		654+36	LT RT	(11' X 7') D9-2-30				20.4/21.1		2	77	1	2						
286	GM-25	RAMP R	7+85	RT	(10' X 4')		16.8/16.8				2	40		2						
TOTALS CARRIED TO GENERAL SUMMARY						207.2	457.3	137.4	83.0		50	12.5	996	2	50					

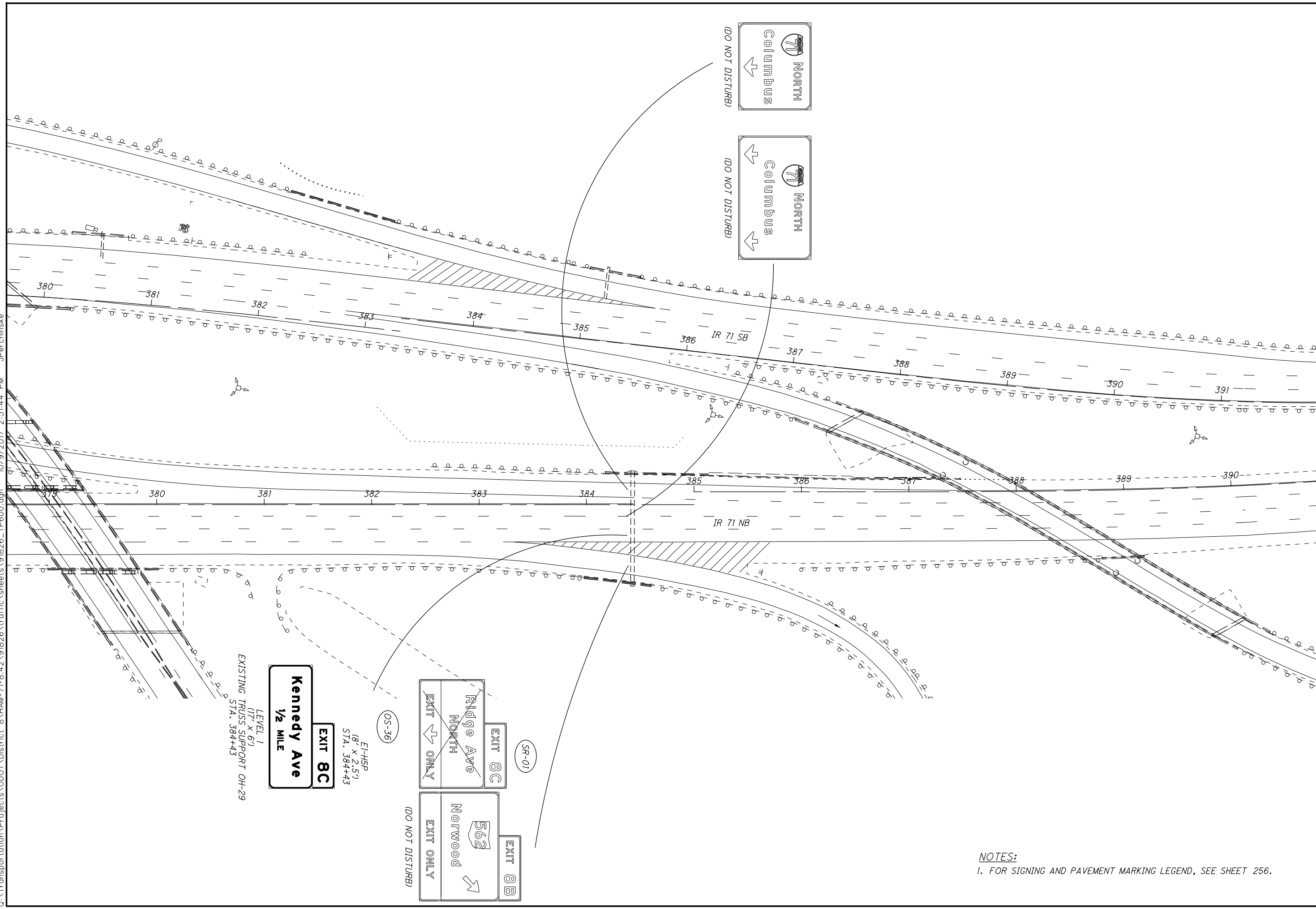
GROUND MOUNTED MAJOR SIGNS SUBSUMMARY

HAM-IR 71-8.42

CALCULATED
 JEP
 CHECKED
 RG

254
 441

O:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826\traffic\sheets\91826_TP600.dgn 10/9/2017 2:51:44 PM JPerchinske



Kennedy Ave
EXIT BC
 1/2 MILE

EHSP
 (8' x 2.5')
 STA. 384+43

Ridge Ave
EXIT 8C
 NORTH
 EXIT ONLY

562
Norwood
EXIT 8B
 EXIT ONLY

71 NORTH
Columbus
 (DO NOT DISTURB)

71 NORTH
Columbus
 (DO NOT DISTURB)

NOTES:
 1. FOR SIGNING AND PAVEMENT MARKING LEGEND, SEE SHEET 256.

CALCULATED	JEP
CHECKED	RG

0 40 80
 HORIZONTAL SCALE IN FEET

PAVEMENT MARKING PLAN
ADDITIONAL SIGN SOUTH OF THE PROJECT

HAM-IR 71-8.42

PAVEMENT MARKING LEGEND

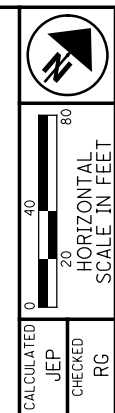
- CH ITEM 644 - CHANNELIZING LINE, 12"
- CV ITEM 644 - CHEVRON TRANSVERSE LINE WHITE, 8" (SPACE PER TC-71.10)
- DL ITEM 644 - DOTTED LINE, WHITE, 6"
- EL ITEM 644 - EDGE LINE, 6"
- LA LANE ARROW, → →
- LL ITEM 644 - LANE LINE, 6"
- SL STOP LINE
- TXT TEXT ON PAVEMENT
- CH ITEM 646 - CHANNELIZING LINE, 12"
- DL ITEM 646 - DOTTED LINE, WHITE, 6"
- EL ITEM 646 - EDGE LINE, 6"
- LL ITEM 646 - LANE LINE, 6"

SIGNING LEGEND

- EXISTING SIGN, TO REMAIN
 - EXISTING SIGN, TO BE REMOVED
 - PROPOSED SIGN
 - GM GROUND MOUNTED MAJOR SIGN
 - OS OVERHEAD SUPPORT MOUNTED SIGN
 - SN SIGN, FLAT SHEET
 - SR SIGN REMOVAL
- 1 POST SIGN 2 POST SIGN 3 POST SIGN

LEGEND:

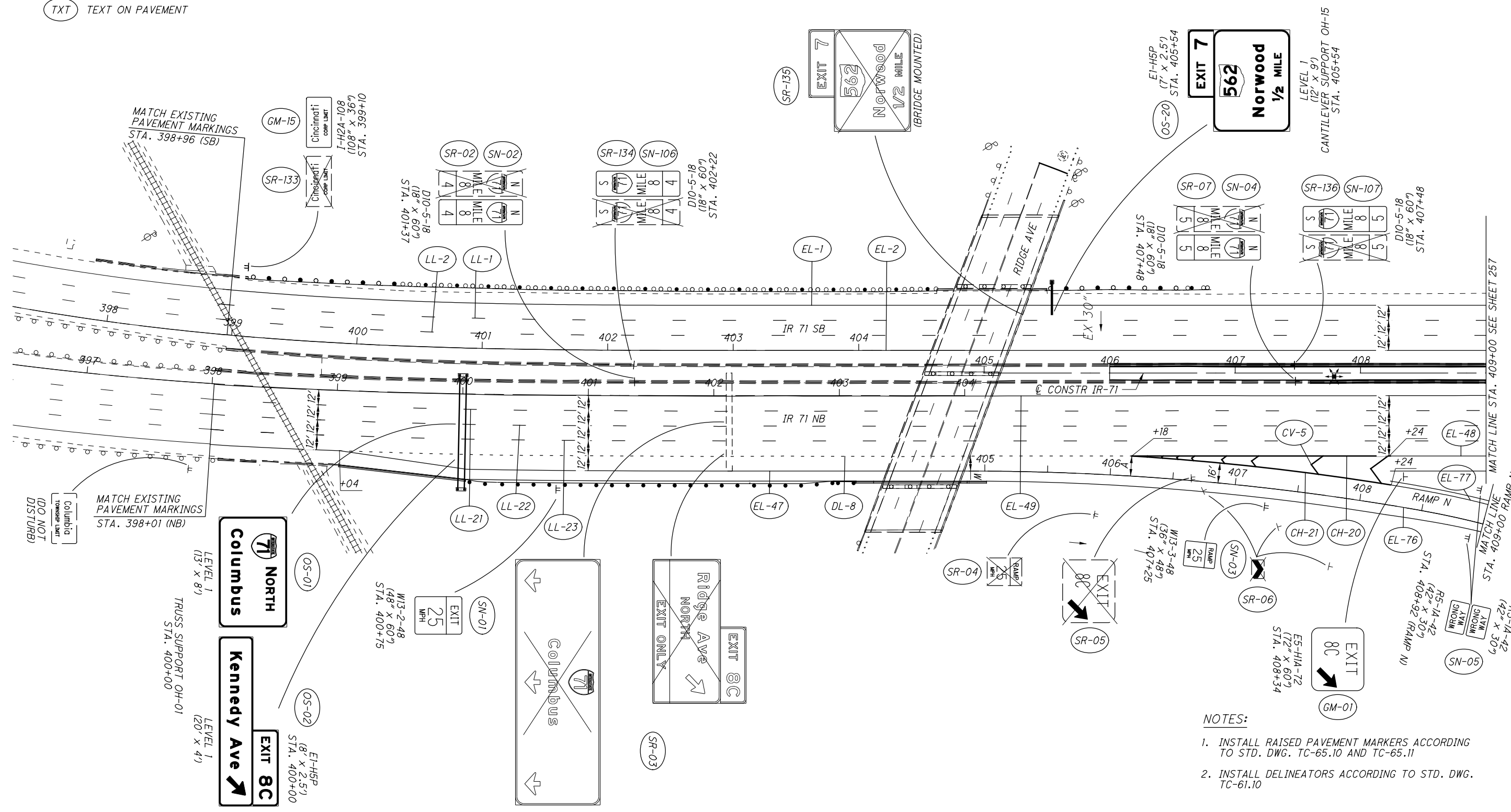
A = UNIFORM RAMP WIDTH
W = LANE WIDTH



PAVEMENT MARKING PLAN
BEGIN TO STA. 409+00

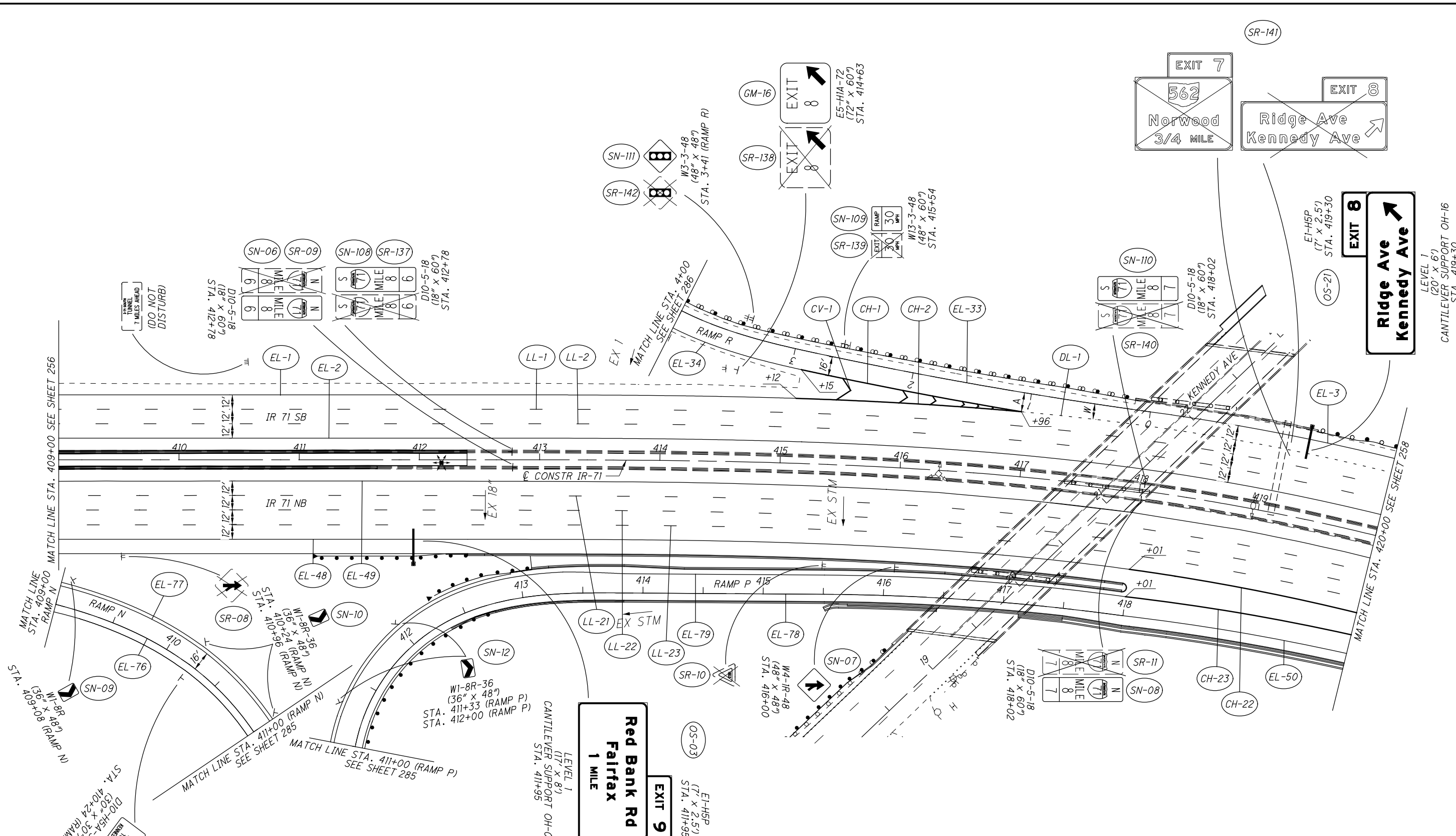
HAM-IR 71-8.42

O:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826\traffic\sheets\91826_TP601.dgn 10/9/2017 2:51:48 PM JPerchinske



- NOTES:
- INSTALL RAISED PAVEMENT MARKERS ACCORDING TO STD. DWG. TC-65.10 AND TC-65.11
 - INSTALL DELINEATORS ACCORDING TO STD. DWG. TC-61.10

O:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826_traffic\sheets\91826_TP602.dgn 10/9/2017 2:51:51 PM JPerchinske



LEGEND:
 A = UNIFORM RAMP WIDTH
 W = LANE WIDTH

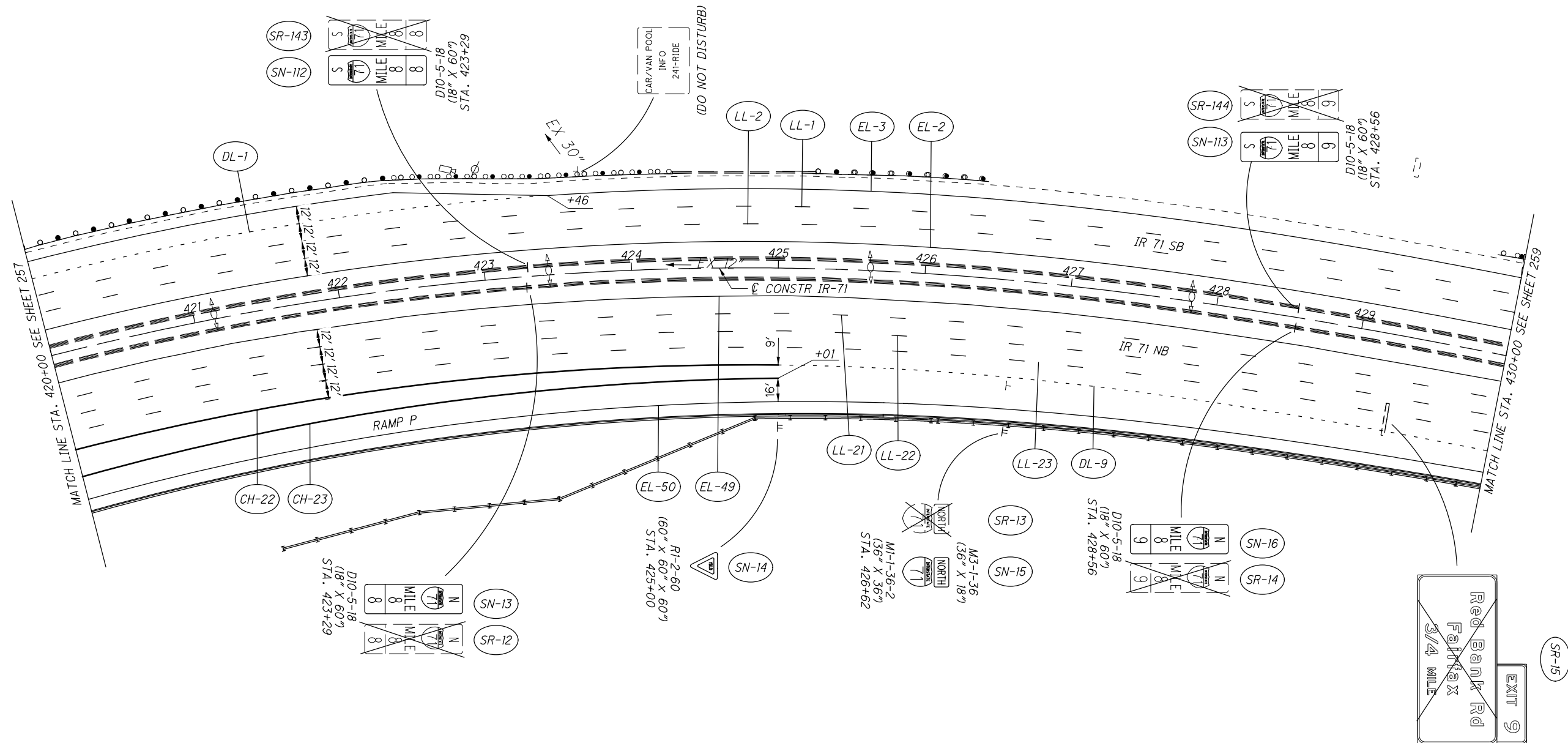
NOTES:
 1. FOR SIGNING AND PAVEMENT MARKING LEGEND, SEE SHEET 256.
 2. INSTALL RAISED PAVEMENT MARKERS ACCORDING TO STD. DWG. TC-65.10 & TC-65.11.
 3. INSTALL DELINEATORS ACCORDING TO STD. DWG. TC-61.10.

CALCULATED JEP CHECKED RG

PAVEMENT MARKING PLAN
STA. 409+00 TO STA. 420+00

HAM-IR 71-8.42

(257)
441



LEGEND:
 A = UNIFORM RAMP WIDTH
 W = LANE WIDTH

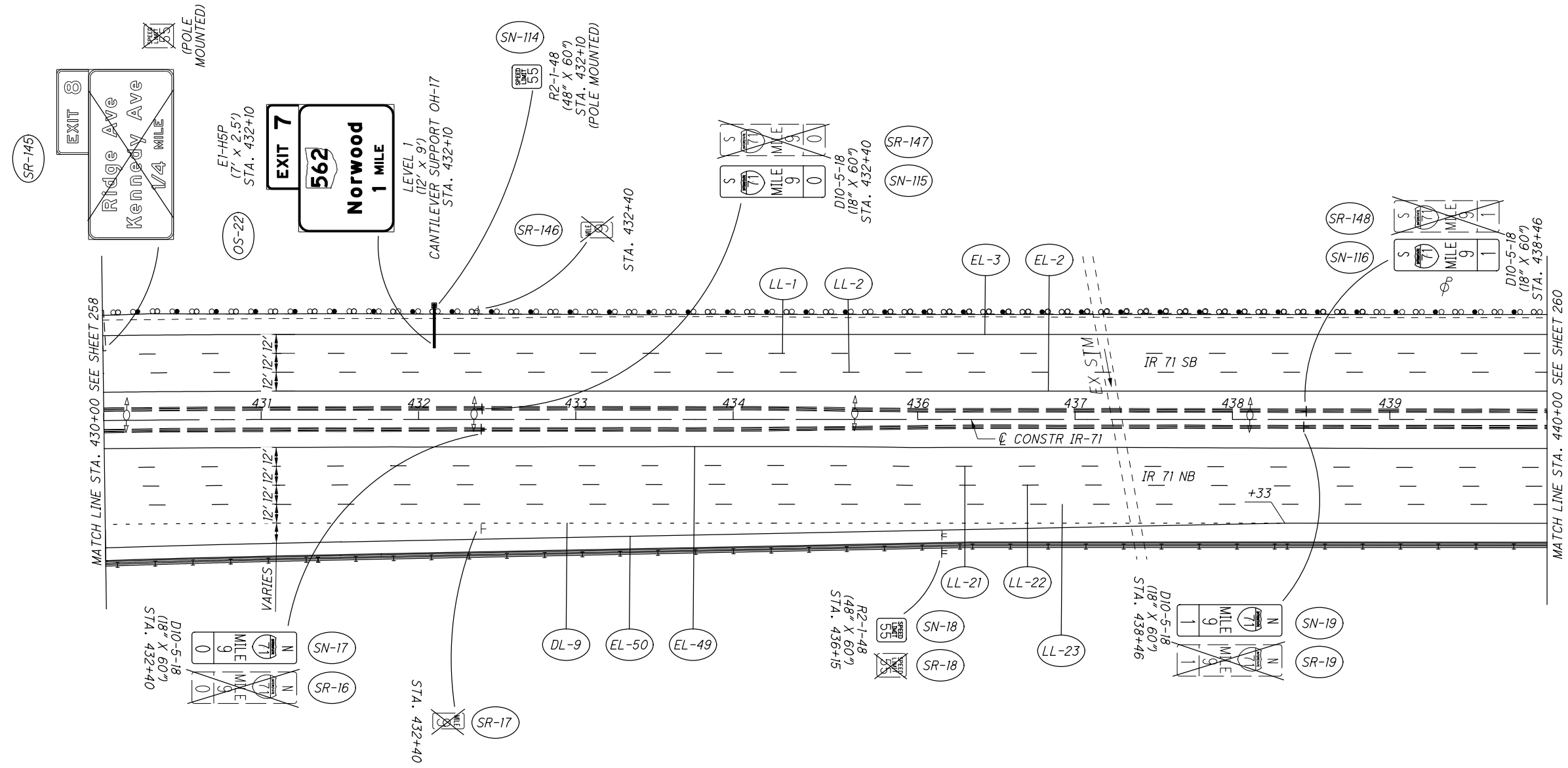
NOTES:
 1. FOR SIGNING AND PAVEMENT MARKING LEGEND, SEE SHEET 256.
 2. INSTALL RAISED PAVEMENT MARKERS ACCORDING TO STD. DWG. TC-65.10 & TC-65.11.
 3. INSTALL DELINEATORS ACCORDING TO STD. DWG. TC-61.10.

CALCULATED JEP
 CHECKED RG

0 20 40 80
 HORIZONTAL SCALE IN FEET

**PAVEMENT MARKING PLAN
 STA. 420+00 TO 430+00**

HAM-IR 71-8.42



LEGEND:

A = UNIFORM RAMP WIDTH
 W = LANE WIDTH

NOTES:

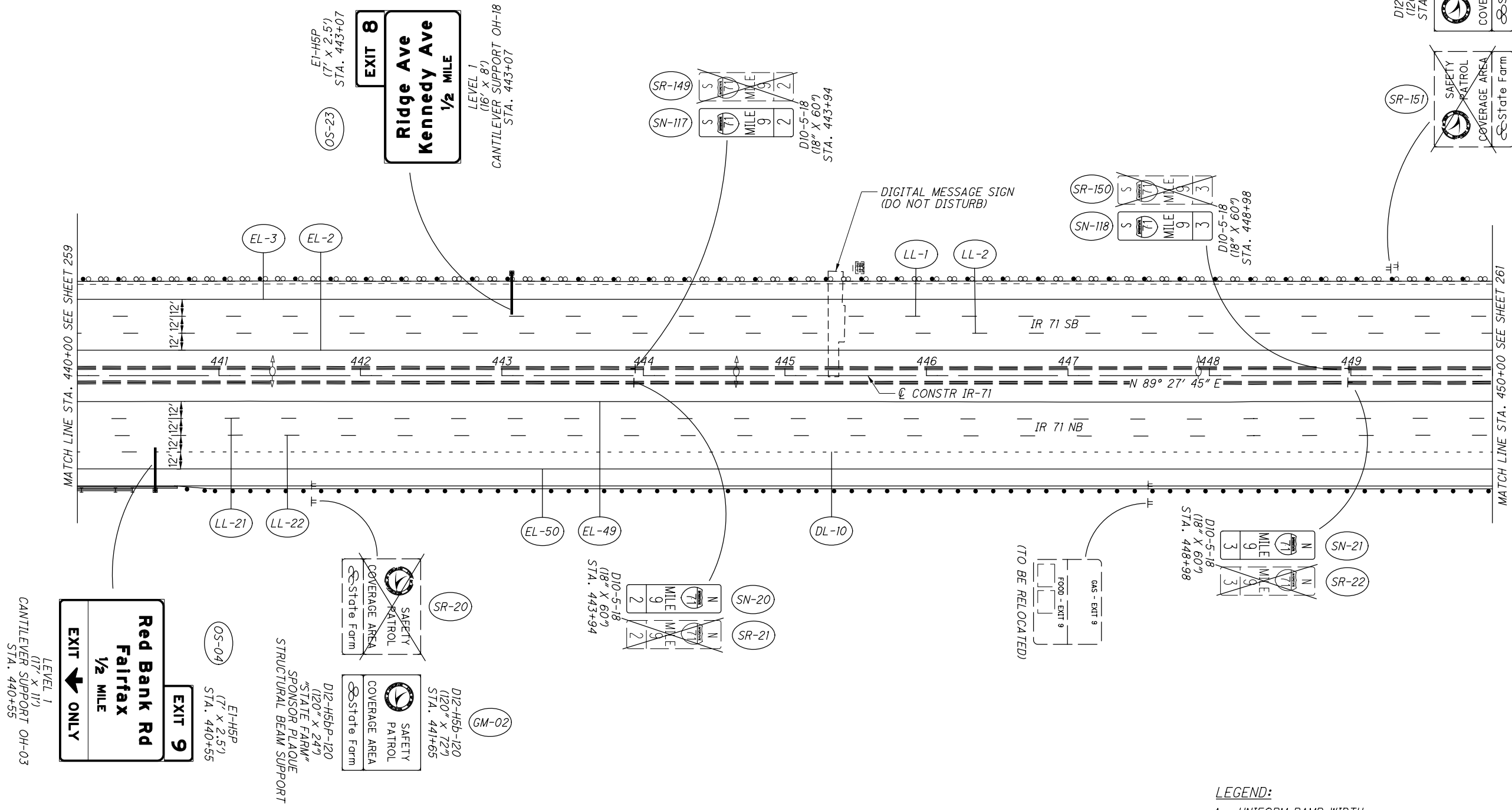
1. FOR SIGNING AND PAVEMENT MARKING LEGEND, SEE SHEET 256.
2. INSTALL RAISED PAVEMENT MARKERS ACCORDING TO STD. DWG. TC-65.10 & TC-65.11.
3. INSTALL DELINEATORS ACCORDING TO STD. DWG. TC-61.10.

CALCULATED
 JEP
 CHECKED
 RG

0 20 40 80
 HORIZONTAL
 SCALE IN FEET

**PAVEMENT MARKING PLAN
 STA. 430+00 TO 440+00**

HAM-IR 71-8.42



LEGEND:

A = UNIFORM RAMP WIDTH
W = LANE WIDTH

NOTES:

- FOR SIGNING AND PAVEMENT MARKING LEGEND, SEE SHEET 256.
- INSTALL RAISED PAVEMENT MARKERS ACCORDING TO STD. DWG. TC-65.10 & TC-65.11.
- INSTALL DELINEATORS ACCORDING TO STD. DWG. TC-61.10.

(TO BE RELOCATED)

STRUCTURAL BEAM SUPPORT

LEVEL 1
(7' x 11')
CANTILEVER SUPPORT OH-03
STA. 440+55

EL-HSP
(7' x 2.5')
STA. 440+55

SPONSOR PLAQUE
STATE FARM
STRUCTURAL BEAM SUPPORT

SAFETY PATROL COVERAGE AREA
State Farm

GM-02
D12-H5bP-120
(120" x 72")
STA. 441+65

DIO-5-18
(18" x 60")
STA. 443+94

SR-20
SR-21

DL-10

DIO-5-18
(18" x 60")
STA. 448+98

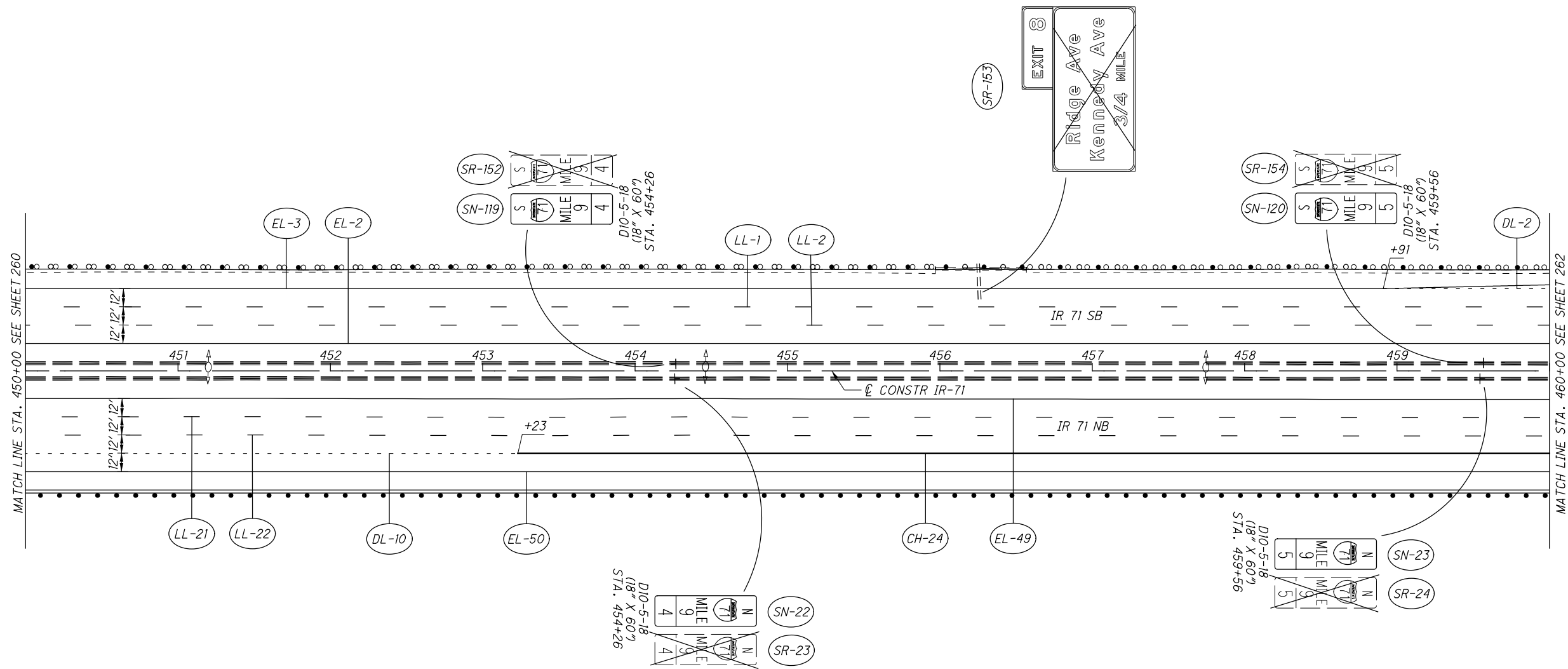
SN-21
SR-22

GM-17
D12-H5bP-120
(120" x 72")
STA. 449+28

SAFETY PATROL COVERAGE AREA
State Farm

D12-H5bP-120
(120" x 72")
STA. 449+28

SPONSOR PLAQUE
STATE FARM
STRUCTURAL BEAM SUPPORT



LEGEND:
 A = UNIFORM RAMP WIDTH
 W = LANE WIDTH

NOTES:
 1. FOR SIGNING AND PAVEMENT MARKING LEGEND, SEE SHEET 256.
 2. INSTALL RAISED PAVEMENT MARKERS ACCORDING TO STD. DWG. TC-65.10 & TC-65.11.
 3. INSTALL DELINEATORS ACCORDING TO STD. DWG. TC-61.10.

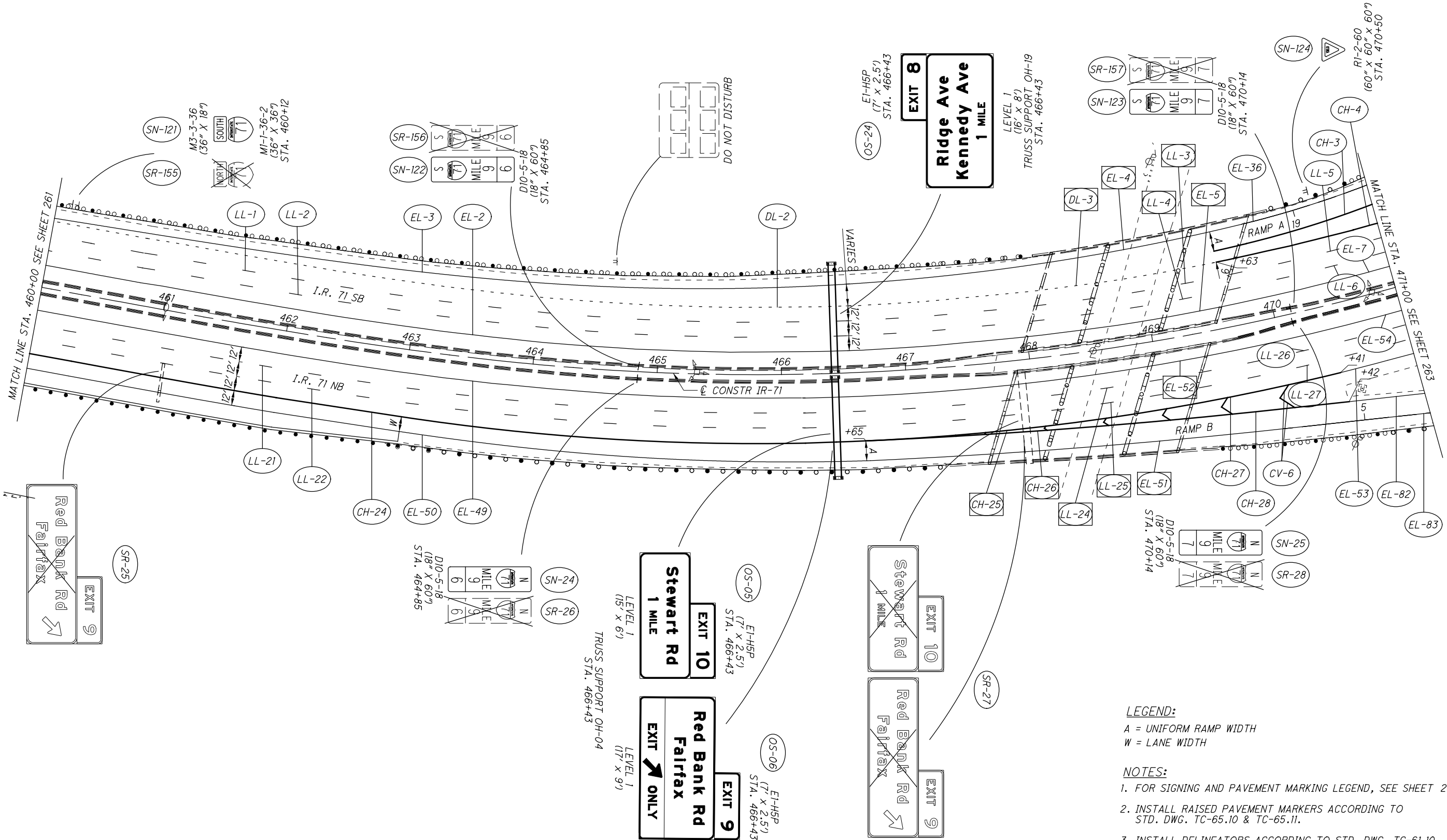
CALCULATED JEP
 CHECKED RG

0 20 40 80
 HORIZONTAL SCALE IN FEET

PAVEMENT MARKING PLAN
STA. 450+00 TO 460+00

HAM-IR 71-8.42

O:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826\traffic\sheets\91826_IP607.dgn 10/9/2017 2:52:00 PM JPerchinske



- LEGEND:**
A = UNIFORM RAMP WIDTH
W = LANE WIDTH
- NOTES:**
1. FOR SIGNING AND PAVEMENT MARKING LEGEND, SEE SHEET 256.
2. INSTALL RAISED PAVEMENT MARKERS ACCORDING TO STD. DWG. TC-65.10 & TC-65.11.
3. INSTALL DELINEATORS ACCORDING TO STD. DWG. TC-61.10.



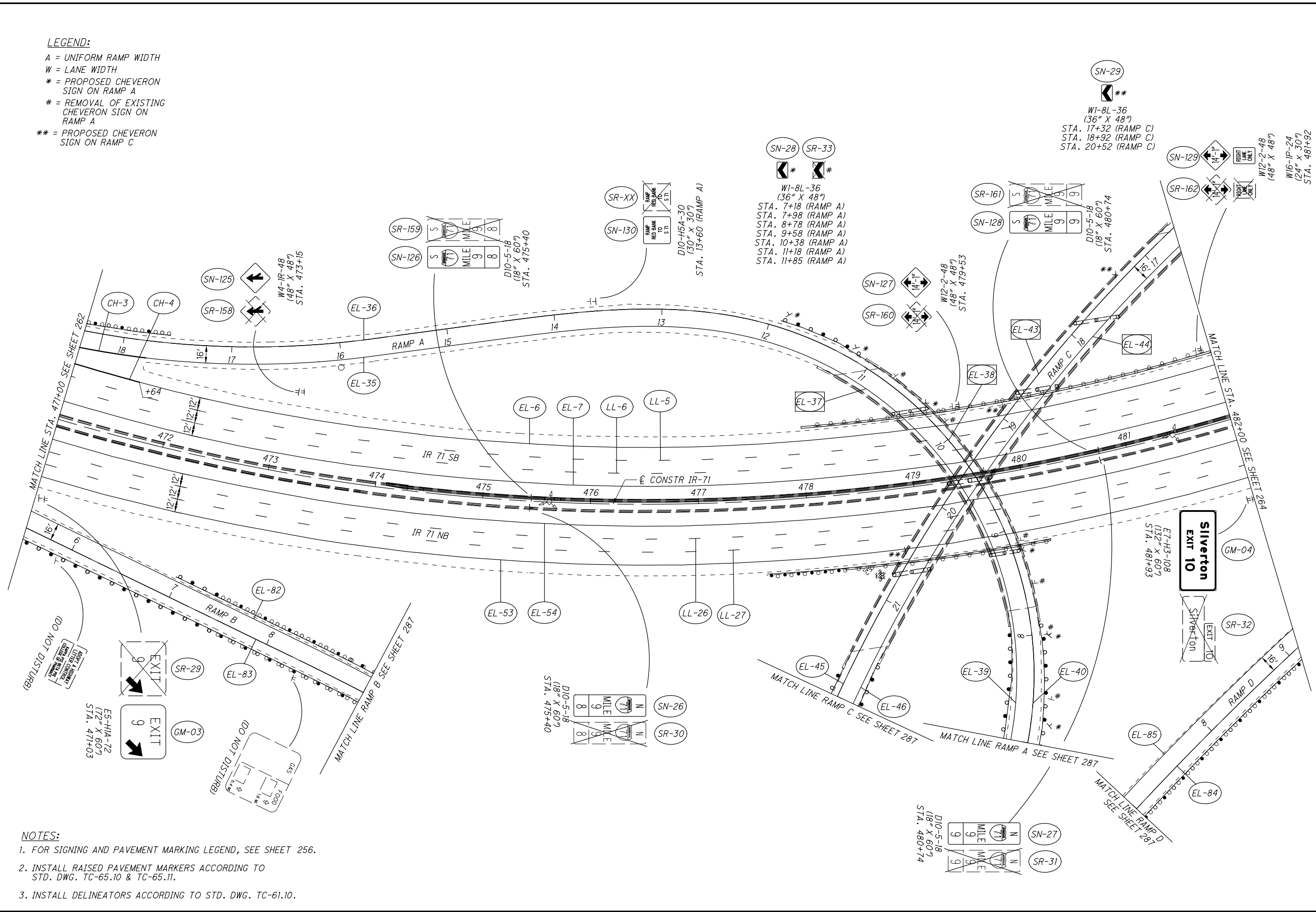
PAVEMENT MARKING PLAN
STA. 460+00 TO 471+00

HAM-IR 71-8.42

LEGEND:

- A = UNIFORM RAMP WIDTH
- W = LANE WIDTH
- * = PROPOSED CHEVERON SIGN ON RAMP A
- # = REMOVAL OF EXISTING CHEVERON SIGN ON RAMP A
- ** = PROPOSED CHEVERON SIGN ON RAMP C

O:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826\traffic\sheets\91826_TP608.dgn 10/9/2017 2:52:03 PM JPerchinske



- NOTES:**
- FOR SIGNING AND PAVEMENT MARKING LEGEND, SEE SHEET 256.
 - INSTALL RAISED PAVEMENT MARKERS ACCORDING TO STD. DWG. TC-65.10 & TC-65.11.
 - INSTALL DELINEATORS ACCORDING TO STD. DWG. TC-61.10.

SN-29
 W1-8L-36 (36" X 48")
 STA. 17+32 (RAMP C)
 STA. 18+92 (RAMP C)
 STA. 20+52 (RAMP C)

SN-28 SR-33
 W1-8L-36 (36" X 48")
 STA. 7+18 (RAMP A)
 STA. 7+98 (RAMP A)
 STA. 8+78 (RAMP A)
 STA. 9+58 (RAMP A)
 STA. 10+38 (RAMP A)
 STA. 11+18 (RAMP A)
 STA. 11+85 (RAMP A)

SR-XX SN-130
 D10-H5A-30 (30" X 30")
 STA. 13+60 (RAMP A)

SR-159 SN-126
 D10-5-18 (18" X 60")
 STA. 475+40

SN-127 SR-160
 W12-2-48 (48" X 48")
 STA. 479+53

SR-161 SN-128
 D10-5-18 (18" X 60")
 STA. 480+74

SN-129 SR-162
 W12-2-48 (48" X 48")
 W16-1P-24 (24" X 30")
 STA. 481+92

SN-26 SR-30
 D10-5-18 (18" X 60")
 STA. 475+40

SN-27 SR-31
 D10-5-18 (18" X 60")
 STA. 480+74

HAM-IR 71-8.42

PAVEMENT MARKING PLAN

STA. 471+00 TO 482+00

CALCULATED	JEP	RG
CHECKED		

263

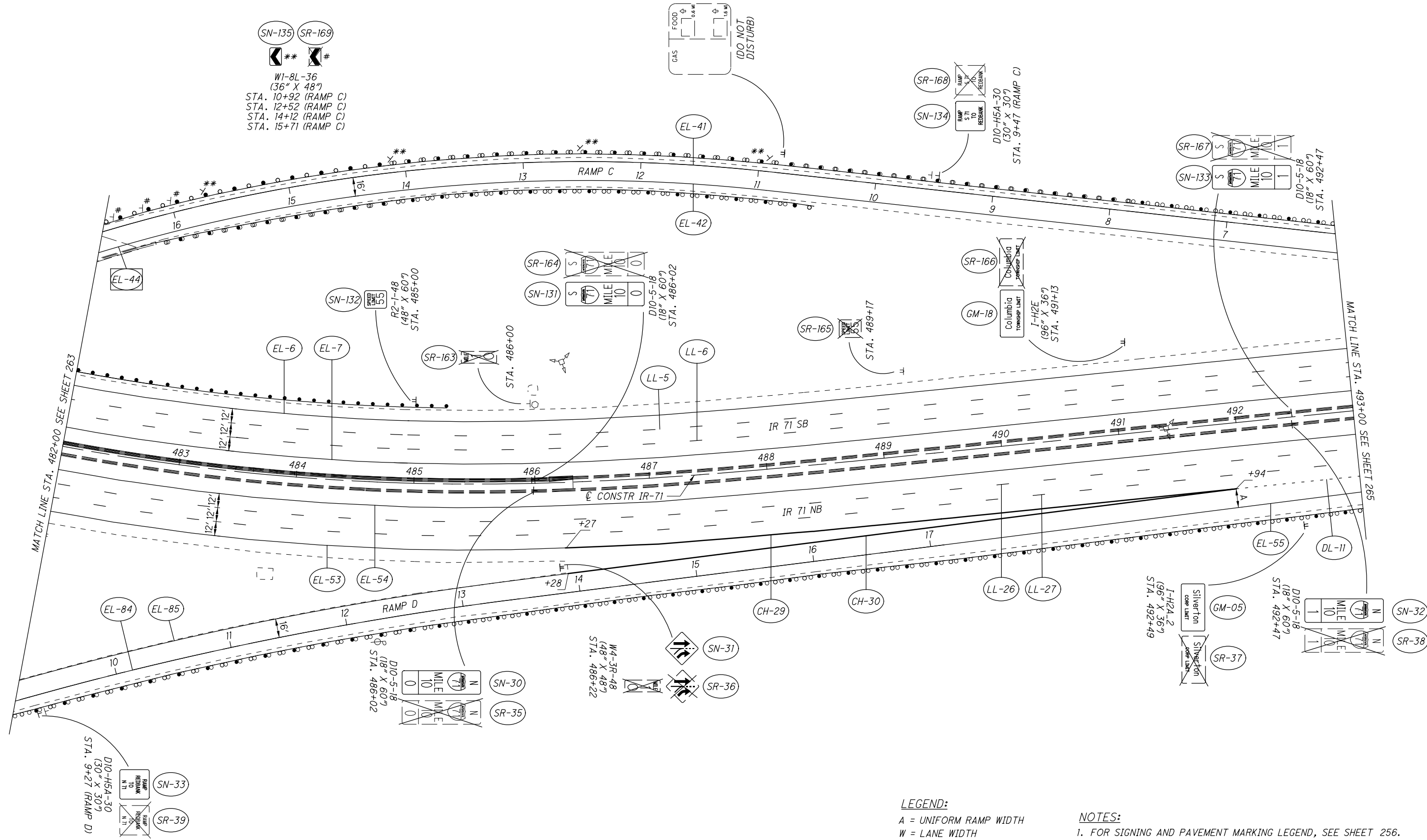
441

O:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826\traffic\sheet\91826_IP609.dgn 10/9/2017 2:52:03 PM JPerchinske



PAVEMENT MARKING PLAN
STA. 482+00 TO 493+00

HAM-IR 71-8.42



LEGEND:
 A = UNIFORM RAMP WIDTH
 W = LANE WIDTH
 ** = PROPOSED CHEVRON SIGN ON RAMP C
 # = REMOVAL OF EXISTING CHEVRON SIGN ON RAMP C

NOTES:
 1. FOR SIGNING AND PAVEMENT MARKING LEGEND, SEE SHEET 256.
 2. INSTALL RAISED PAVEMENT MARKERS ACCORDING TO STD. DWG. TC-65.10 & TC-65.11.
 3. INSTALL DELINEATORS ACCORDING TO STD. DWG. TC-61.10.

SN-135 SR-169
 W1-8L-36
 (36" X 48")
 STA. 10+92 (RAMP C)
 STA. 12+52 (RAMP C)
 STA. 14+12 (RAMP C)
 STA. 15+71 (RAMP C)

GAS FOOD
 (DO NOT DISTURB)

SR-168 SR-134
 RAMP STI TO REDRAMP
 D10-H5A-30
 (30" X 30")
 STA. 9+47 (RAMP C)

SR-167 SR-133
 MILE 10 1
 D10-5-18
 (18" X 60")
 STA. 492+47

SR-164 SR-131
 MILE 10 0
 D10-5-18
 (18" X 60")
 STA. 486+02

SR-166 GM-18
 Columbia Township Unit
 I-H2E
 (96" X 36")
 STA. 491+13

SN-132
 R2-1-48
 (48" X 60")
 STA. 485+00

SR-163
 STA. 486+00

SR-165
 STA. 489+17

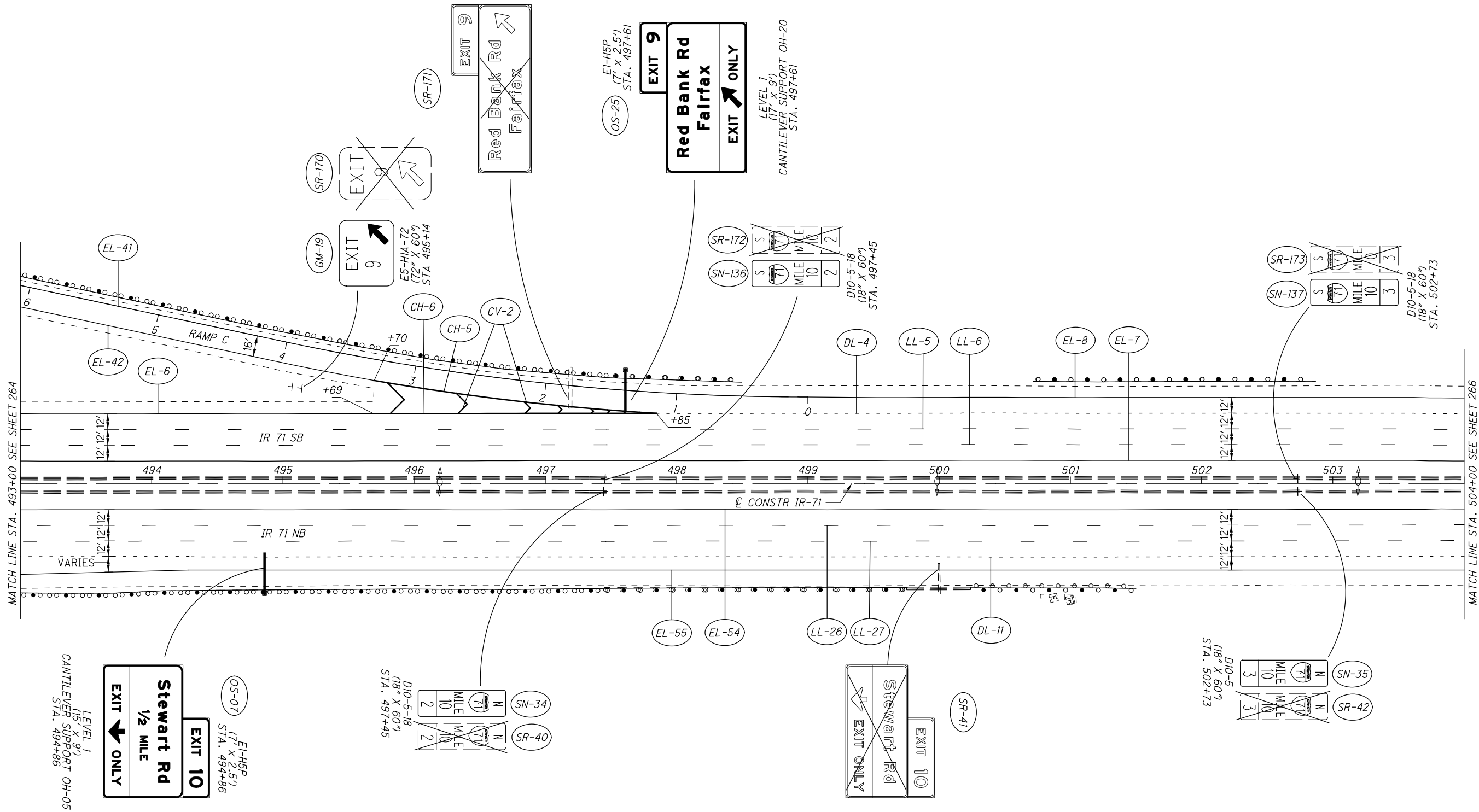
I-H2A-2
 Silverton
 (96" X 36")
 STA. 492+49

SN-32 SR-38
 MILE 10 1
 D10-5-18
 (18" X 60")
 STA. 492+47

SN-30 SR-35
 MILE 10 0
 D10-5-18
 (18" X 60")
 STA. 486+22

SN-31 SR-36
 W4-3R-48
 (48" X 48")
 STA. 486+22

SN-33 SR-39
 RAMP STI TO REDRAMP
 D10-H5A-30
 (30" X 30")
 STA. 9+27 (RAMP D)



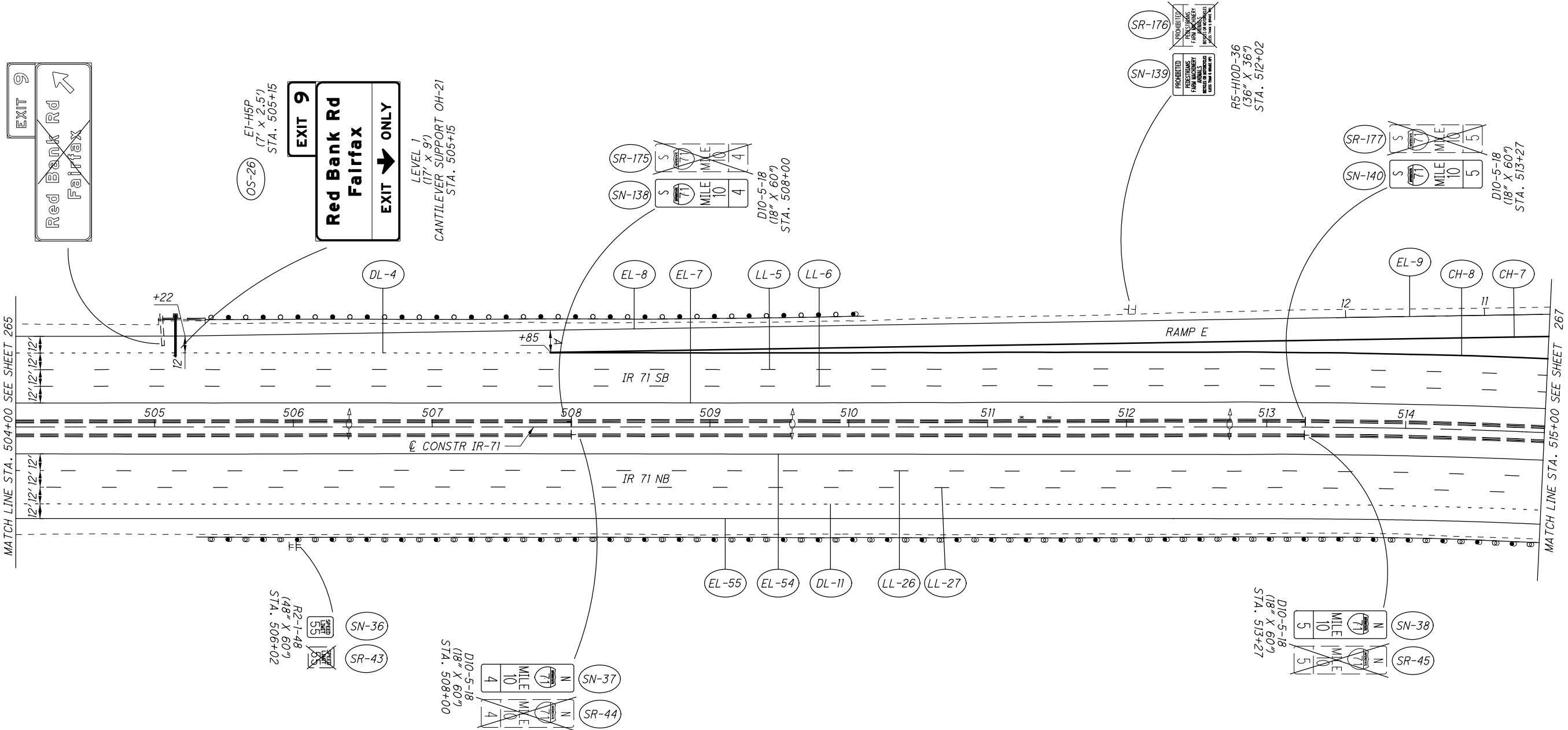
LEGEND:
A = UNIFORM RAMP WIDTH
W = LANE WIDTH

NOTES:
1. FOR SIGNING AND PAVEMENT MARKING LEGEND, SEE SHEET 256.
2. INSTALL RAISED PAVEMENT MARKERS ACCORDING TO STD. DWG. TC-65.10 & TC-65.11.
3. INSTALL DELINEATORS ACCORDING TO STD. DWG. TC-61.10.

CALCULATED
JEP
CHECKED
RG

0 20 40 80
HORIZONTAL
SCALE IN FEET

PAVEMENT MARKING PLAN
STA. 493+00 TO 504+00

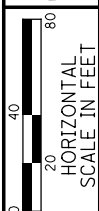


LEGEND:

A = UNIFORM RAMP WIDTH
W = LANE WIDTH

NOTES:

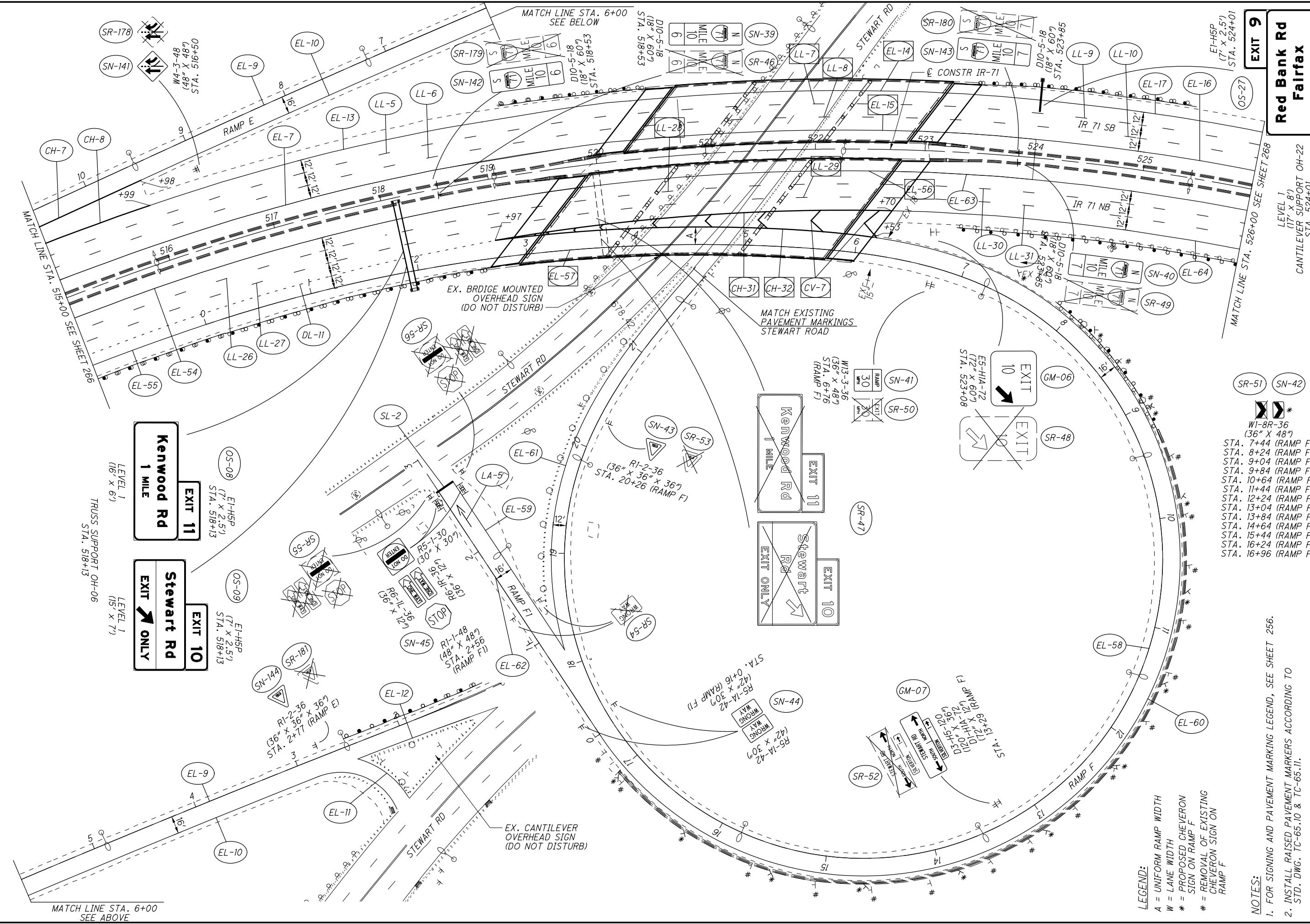
- FOR SIGNING AND PAVEMENT MARKING LEGEND, SEE SHEET 256.
- INSTALL RAISED PAVEMENT MARKERS ACCORDING TO STD. DWG. TC-65.10 & TC-65.11.
- INSTALL DELINEATORS ACCORDING TO STD. DWG. TC-61.10.



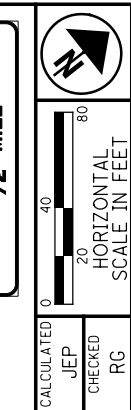
CALCULATED	JEP
CHECKED	RG

**PAVEMENT MARKING PLAN
STA. 504+00 TO 515+00**

HAM-IR 71-8.42



EXIT 9
Red Bank Rd
Fairfax
1/2 MILE



PAVEMENT MARKING PLAN
STA. 515+00 TO 526+00

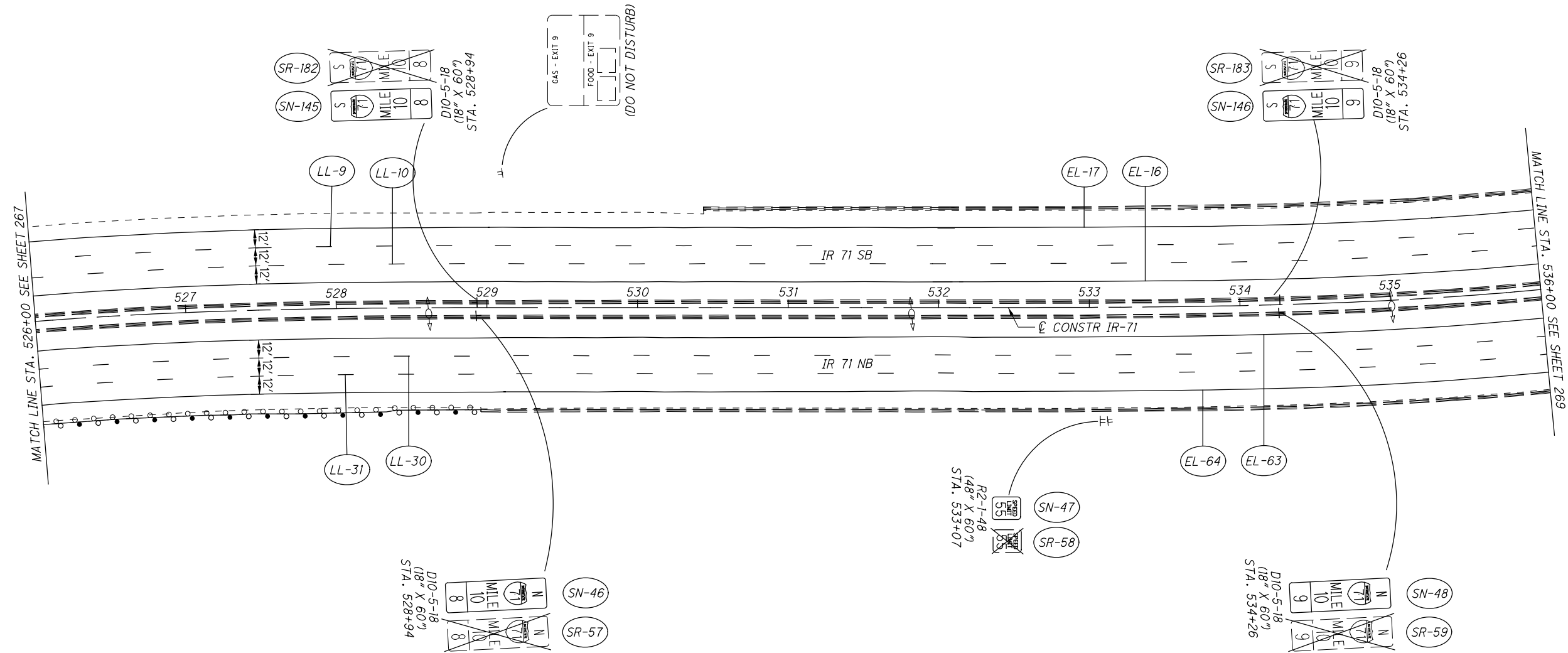
HAM-IR 71-8.42

267
 441

- WI-8R-36 (36" X 48")
 STA. 7+44 (RAMP F)
 STA. 8+24 (RAMP F)
 STA. 9+04 (RAMP F)
 STA. 9+84 (RAMP F)
 STA. 10+64 (RAMP F)
 STA. 11+44 (RAMP F)
 STA. 12+24 (RAMP F)
 STA. 13+04 (RAMP F)
 STA. 13+84 (RAMP F)
 STA. 14+64 (RAMP F)
 STA. 15+44 (RAMP F)
 STA. 16+24 (RAMP F)
 STA. 16+96 (RAMP F)

- LEGEND:**
- A = UNIFORM RAMP WIDTH
 - W = LANE WIDTH
 - * = PROPOSED CHEVRON SIGN ON RAMP F
 - # = REMOVAL OF EXISTING CHEVRON SIGN ON RAMP F

- NOTES:**
- FOR SIGNING AND PAVEMENT MARKING LEGEND, SEE SHEET 256.
 - INSTALL RAISED PAVEMENT MARKERS ACCORDING TO STD. DWG. TC-65.10 & TC-65.11.
 - INSTALL DELINEATORS ACCORDING TO STD. DWG. TC-61.10.



LEGEND:
 A = UNIFORM RAMP WIDTH
 W = LANE WIDTH

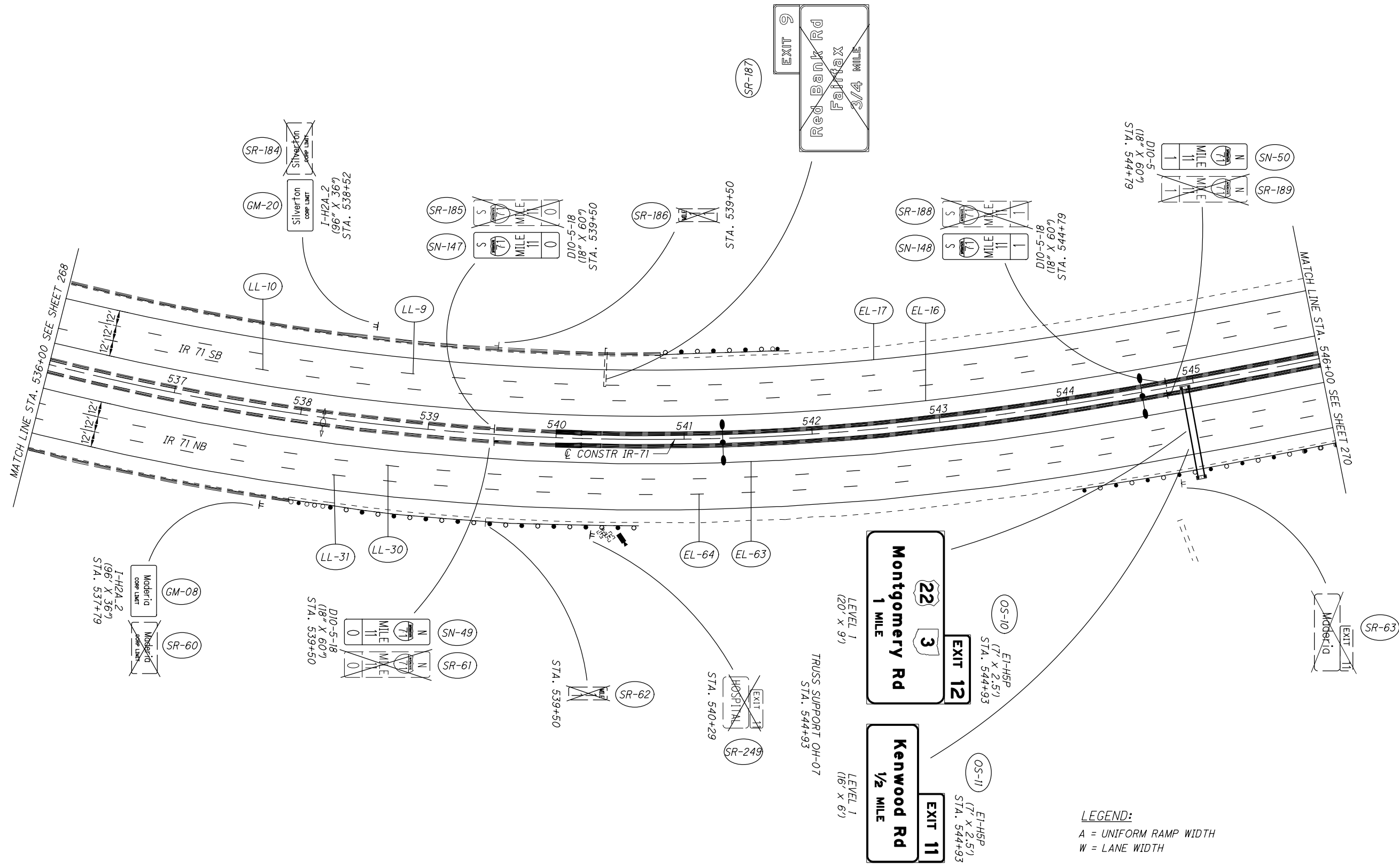
NOTES:
 1. FOR SIGNING AND PAVEMENT MARKING LEGEND, SEE SHEET 256.
 2. INSTALL RAISED PAVEMENT MARKERS ACCORDING TO STD. DWG. TC-65.10 & TC-65.11.
 3. INSTALL DELINEATORS ACCORDING TO STD. DWG. TC-61.10.

CALCULATED
 JEP
 CHECKED
 RG

0 20 40 80
 HORIZONTAL
 SCALE IN FEET

PAVEMENT MARKING PLAN
STA. 526+00 TO 536+00

HAM-IR 71-8.42



LEGEND:

A = UNIFORM RAMP WIDTH
 W = LANE WIDTH

NOTES:

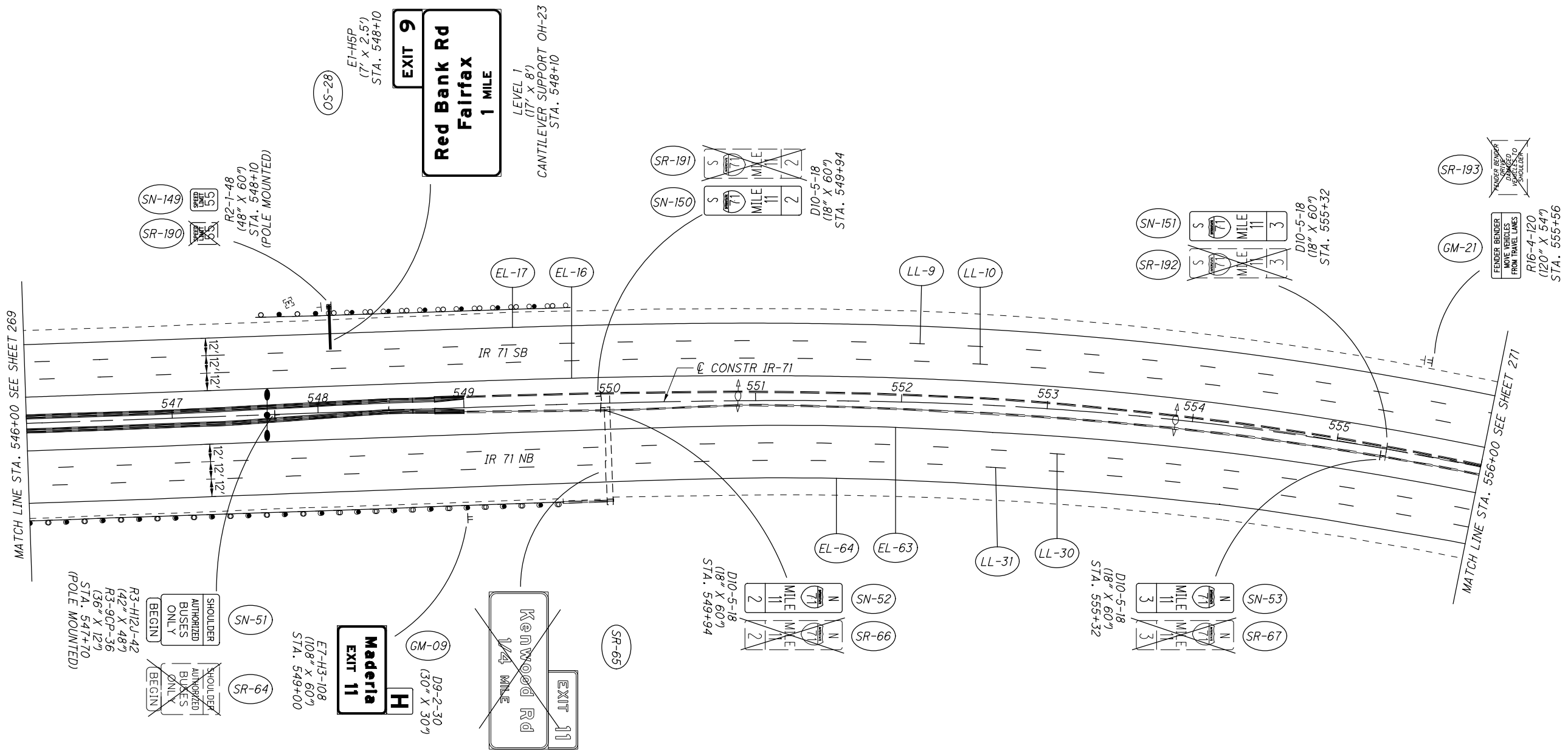
- FOR SIGNING AND PAVEMENT MARKING LEGEND, SEE SHEET 256.
- INSTALL RAISED PAVEMENT MARKERS ACCORDING TO STD. DWG. TC-65.10 & TC-65.11.
- INSTALL DELINEATORS ACCORDING TO STD. DWG. TC-61.10.

CALCULATED
 JEP
 CHECKED
 RG

0 20 40 80
 HORIZONTAL
 SCALE IN FEET

PAVEMENT MARKING PLAN
STA. 536+00 TO 546+00

HAM-IR 71-8.42

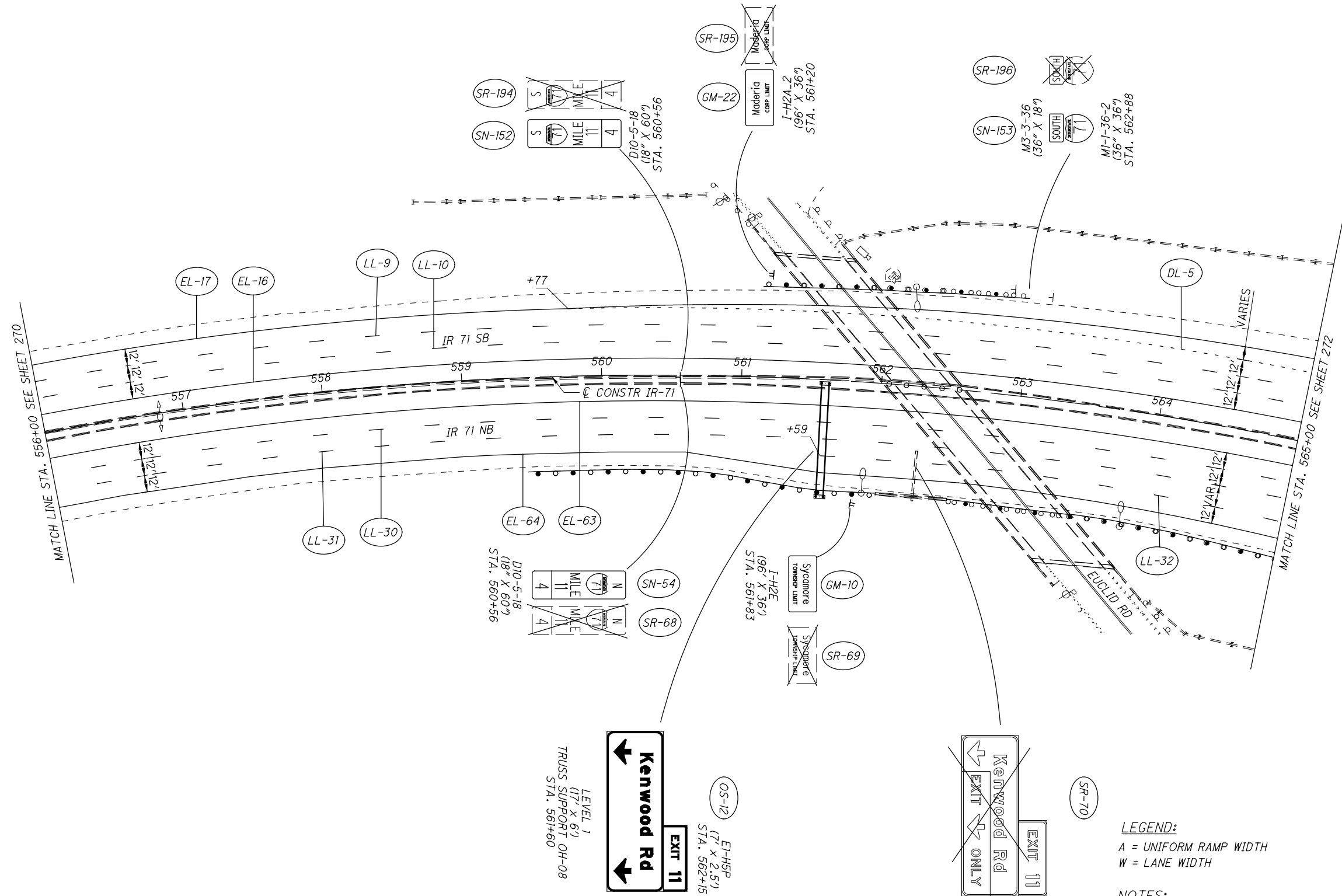


LEGEND:
 A = UNIFORM RAMP WIDTH
 W = LANE WIDTH

- NOTES:**
- FOR SIGNING AND PAVEMENT MARKING LEGEND, SEE SHEET 256.
 - INSTALL RAISED PAVEMENT MARKERS ACCORDING TO STD. DWG. TC-65.10 & TC-65.11.
 - INSTALL DELINEATORS ACCORDING TO STD. DWG. TC-61.10.

CALCULATED JEP CHECKED RG
 0 20 40 80
 HORIZONTAL SCALE IN FEET

PAVEMENT MARKING PLAN
STA. 546+00 TO 556+00



LEGEND:

A = UNIFORM RAMP WIDTH
W = LANE WIDTH

NOTES:

1. FOR SIGNING AND PAVEMENT MARKING LEGEND, SEE SHEET 256.
2. INSTALL RAISED PAVEMENT MARKERS ACCORDING TO STD. DWG. TC-65.10 & TC-65.11.
3. INSTALL DELINEATORS ACCORDING TO STD. DWG. TC-61.10.

CALCULATED JEP
CHECKED RG

0 20 40 80
HORIZONTAL SCALE IN FEET

PAVEMENT MARKING PLAN
STA. 556+00 TO 565+00

HAM-IR 71-8.42



CALCULATED JEP CHECKED RG

PAVEMENT MARKING PLAN
STA. 565+00 TO 575+00

HAM-IR 71-8.42

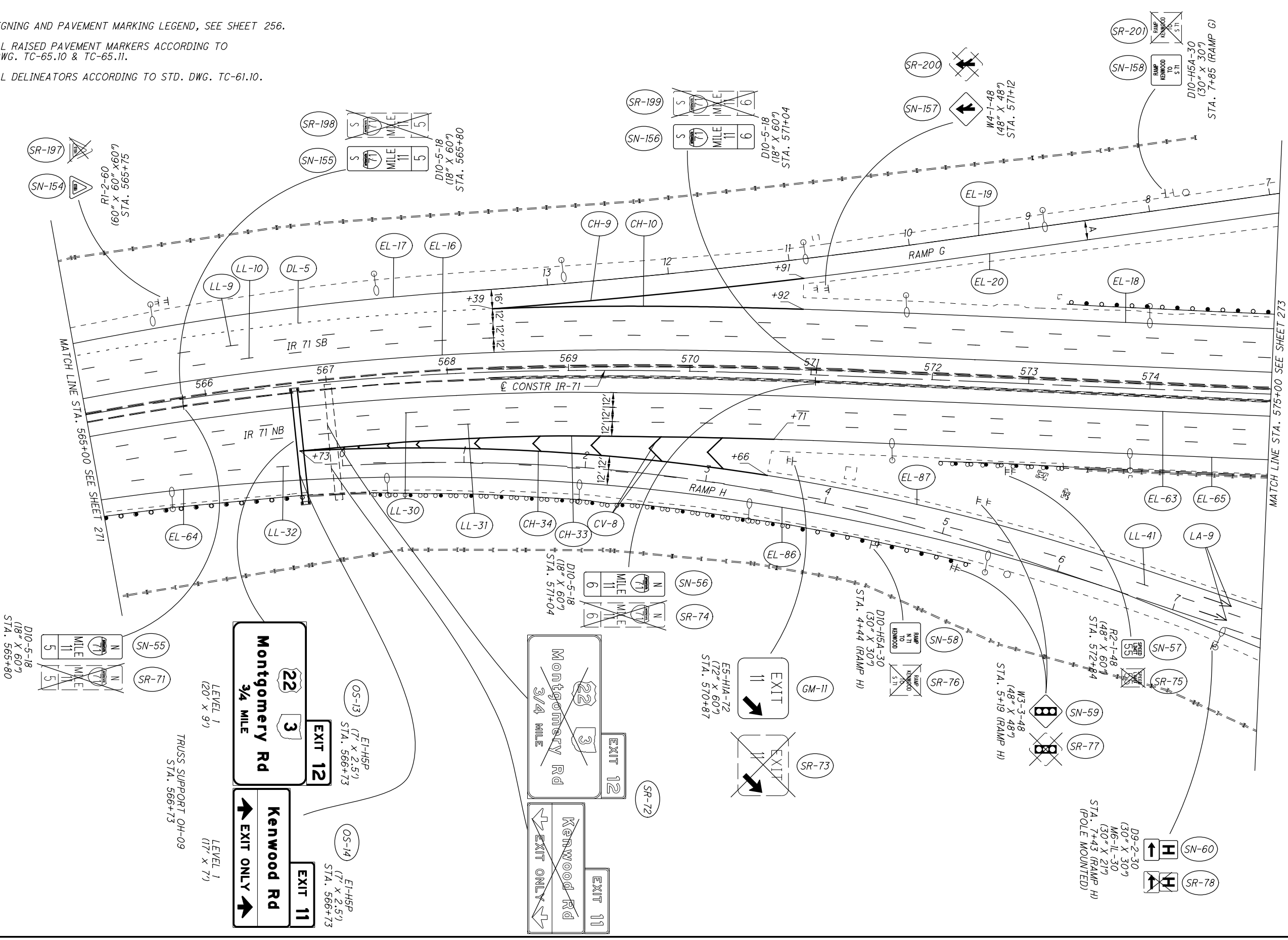
LEGEND:

A = UNIFORM RAMP WIDTH
W = LANE WIDTH

NOTES:

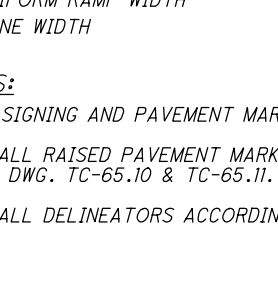
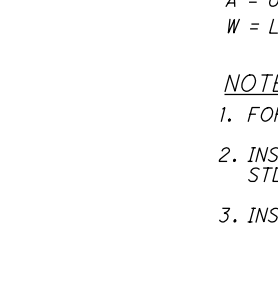
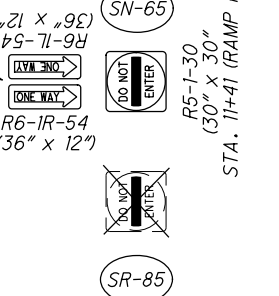
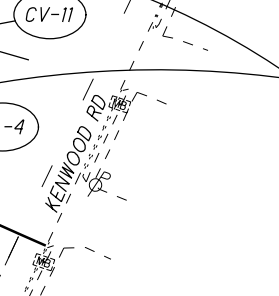
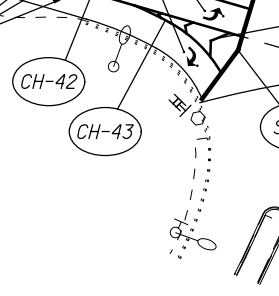
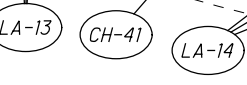
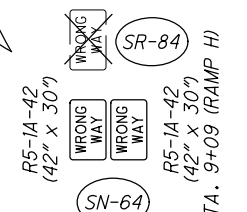
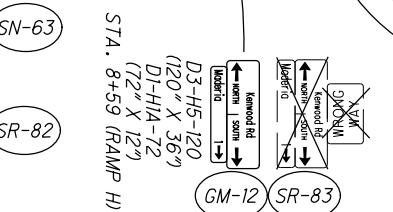
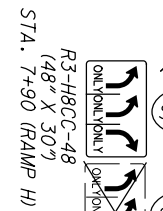
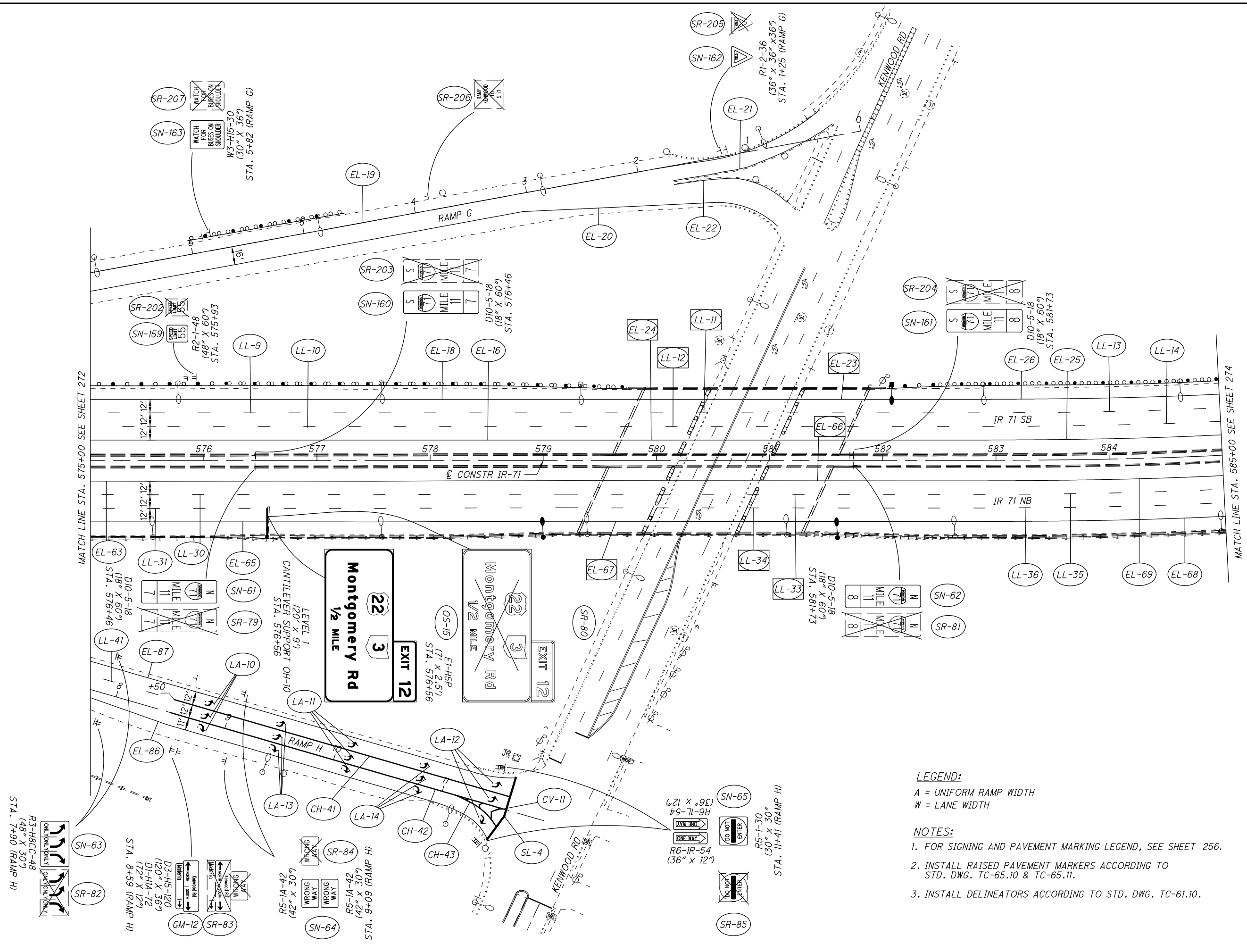
1. FOR SIGNING AND PAVEMENT MARKING LEGEND, SEE SHEET 256.
2. INSTALL RAISED PAVEMENT MARKERS ACCORDING TO STD. DWG. TC-65.10 & TC-65.11.
3. INSTALL DELINEATORS ACCORDING TO STD. DWG. TC-61.10.

O:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826\traffic\sheets\91826_IP617.dgn 10/9/2017 2:52:16 PM jPerchinske



MATCH LINE STA. 565+00 SEE SHEET 271

MATCH LINE STA. 575+00 SEE SHEET 273



LEGEND:
 A = UNIFORM RAMP WIDTH
 W = LANE WIDTH

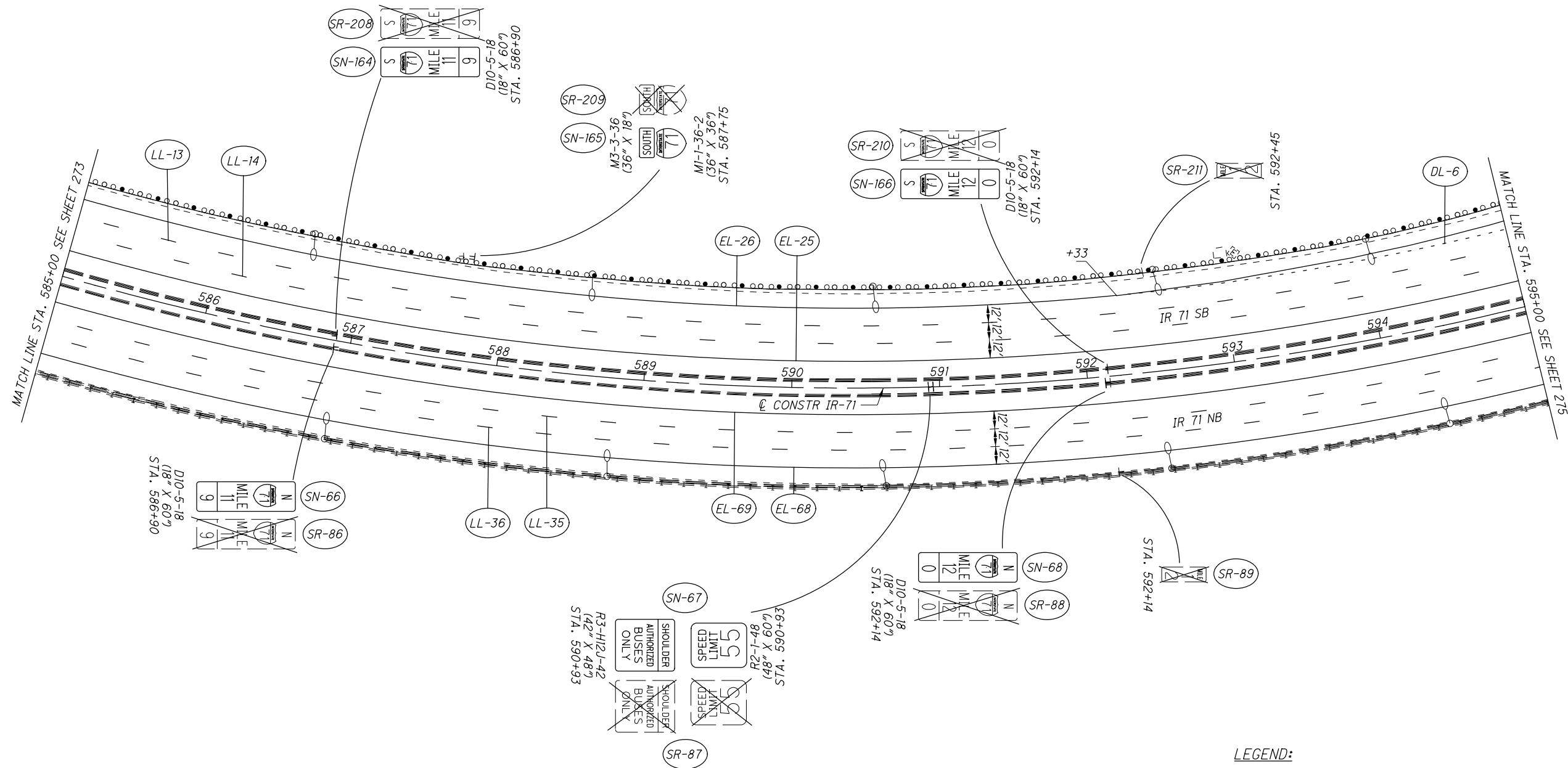
- NOTES:**
- FOR SIGNING AND PAVEMENT MARKING LEGEND, SEE SHEET 256.
 - INSTALL RAISED PAVEMENT MARKERS ACCORDING TO STD. DWG. TC-65.10 & TC-65.11.
 - INSTALL DELINEATORS ACCORDING TO STD. DWG. TC-61.10.

CALCULATED JEP
 CHECKED RG

HORIZONTAL SCALE IN FEET

PAVEMENT MARKING PLAN
STA. 575+00 TO 585+00

HAM-IR 71-8-42



LEGEND:

A = UNIFORM RAMP WIDTH
W = LANE WIDTH

NOTES:

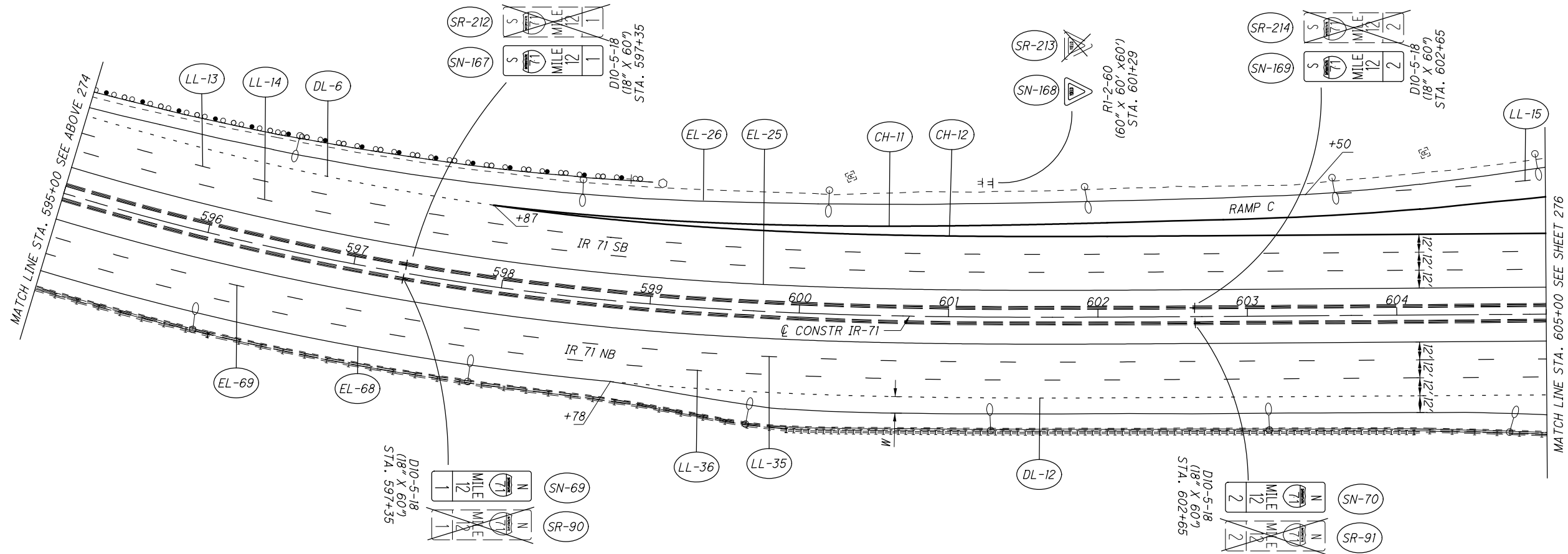
1. FOR SIGNING AND PAVEMENT MARKING LEGEND, SEE SHEET 256.
2. INSTALL RAISED PAVEMENT MARKERS ACCORDING TO STD. DWG. TC-65.10 & TC-65.11.
3. INSTALL DELINEATORS ACCORDING TO STD. DWG. TC-61.10.

CALCULATED JEP
CHECKED RG

0 20 40 80
HORIZONTAL SCALE IN FEET

PAVEMENT MARKING PLAN
STA. 585+00 TO 595+00

HAM-IR 71-8.42



LEGEND:
 A = UNIFORM RAMP WIDTH
 W = LANE WIDTH

NOTES:
 1. FOR SIGNING AND PAVEMENT MARKING LEGEND, SEE SHEET 256.
 2. INSTALL RAISED PAVEMENT MARKERS ACCORDING TO STD. DWG. TC-65.10 & TC-65.11.
 3. INSTALL DELINEATORS ACCORDING TO STD. DWG. TC-61.10.

CALCULATED
 JEP
 CHECKED
 RG

0 20 40 80
 HORIZONTAL
 SCALE IN FEET

PAVEMENT MARKING PLAN
STA. 595+00 TO 605+00

HAM-IR 71-8.42

LEGEND:

A = UNIFORM RAMP WIDTH
W = LANE WIDTH

NOTES:

1. FOR SIGNING AND PAVEMENT MARKING LEGEND, SEE SHEET 256.
2. INSTALL RAISED PAVEMENT MARKERS ACCORDING TO STD. DWG. TC-65.10 & TC-65.11.
3. INSTALL DELINEATORS ACCORDING TO STD. DWG. TC-61.10.

LEVEL 1
(22' x 8')
CANTILEVER SUPPORT OH-11
STA. 605+51

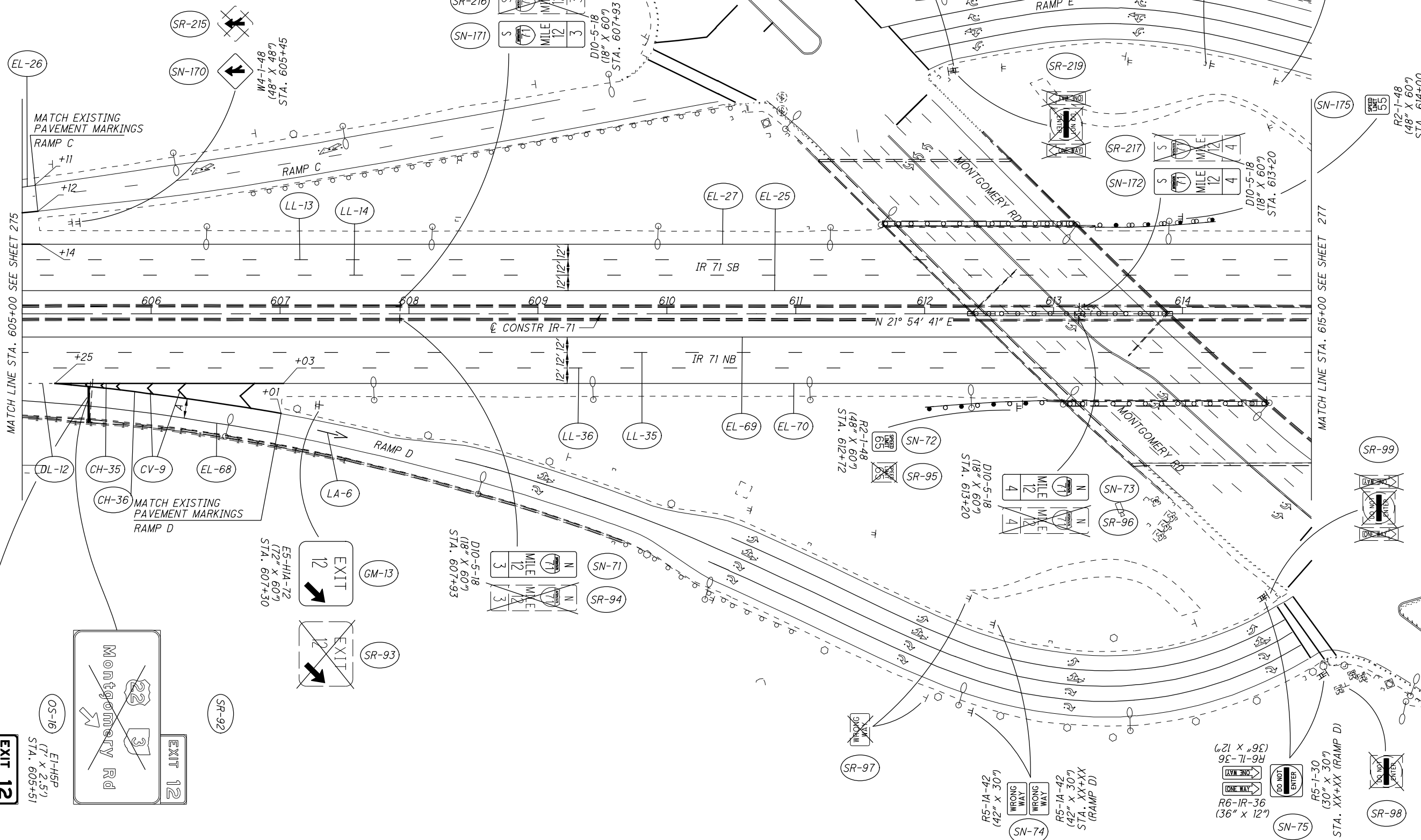
22 **3**
Montgomery Rd

EXIT 12

OS-16
(7' x 2.5')
STA. 605+51

22 **3**
Montgomery Rd

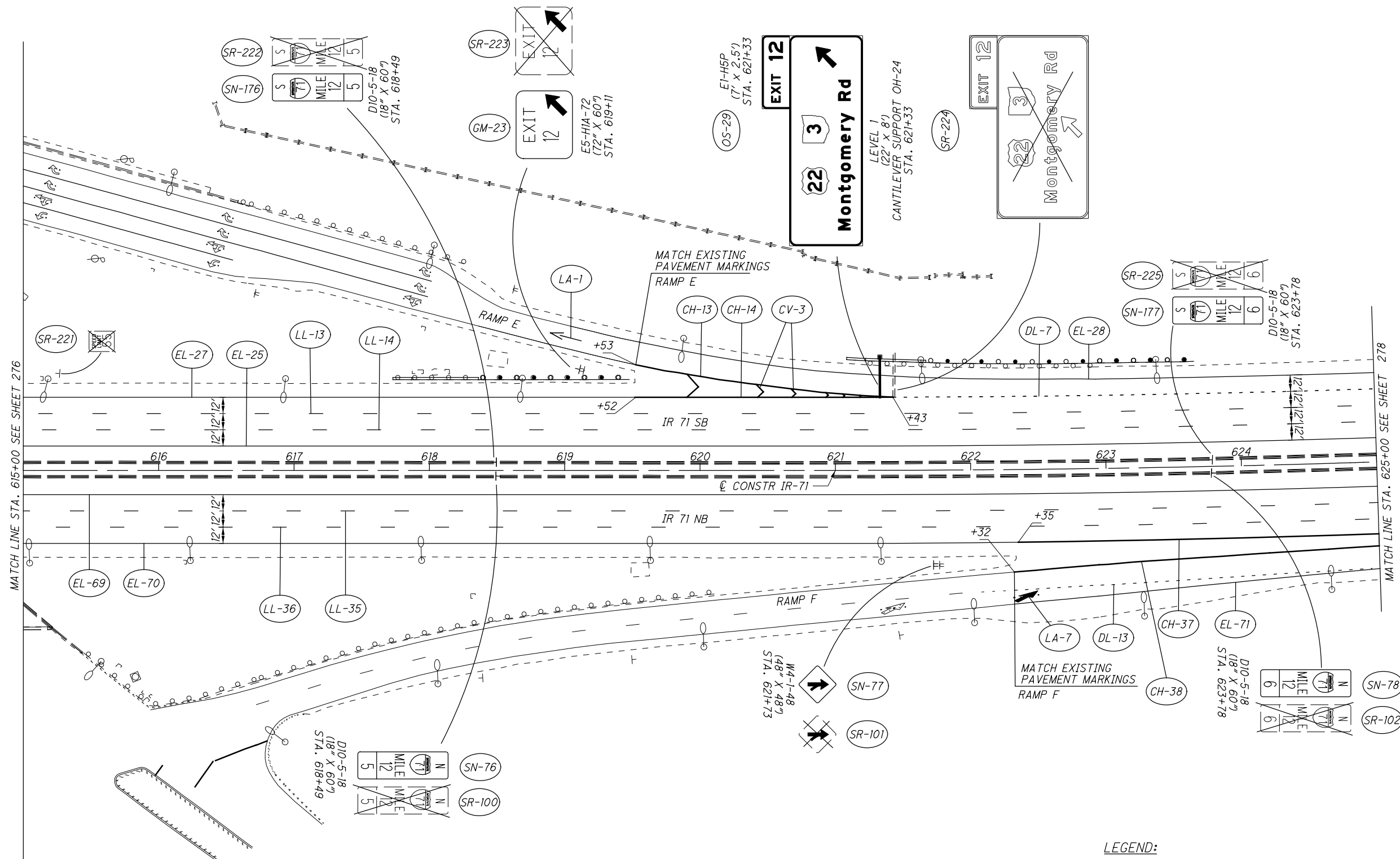
EXIT 12



PAVEMENT MARKING PLAN
STA. 605+00 TO 615+00

HAM-IR 71-8.42

O:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826\traffic\sheets\91826_TP621.dgn 10/9/2017 2:52:22 PM JPerchinske



LEGEND:
 A = UNIFORM RAMP WIDTH
 W = LANE WIDTH

NOTES:
 1. FOR SIGNING AND PAVEMENT MARKING LEGEND, SEE SHEET 256.
 2. INSTALL RAISED PAVEMENT MARKERS ACCORDING TO STD. DWG. TC-65.10 & TC-65.11.
 3. INSTALL DELINEATORS ACCORDING TO STD. DWG. TC-61.10.

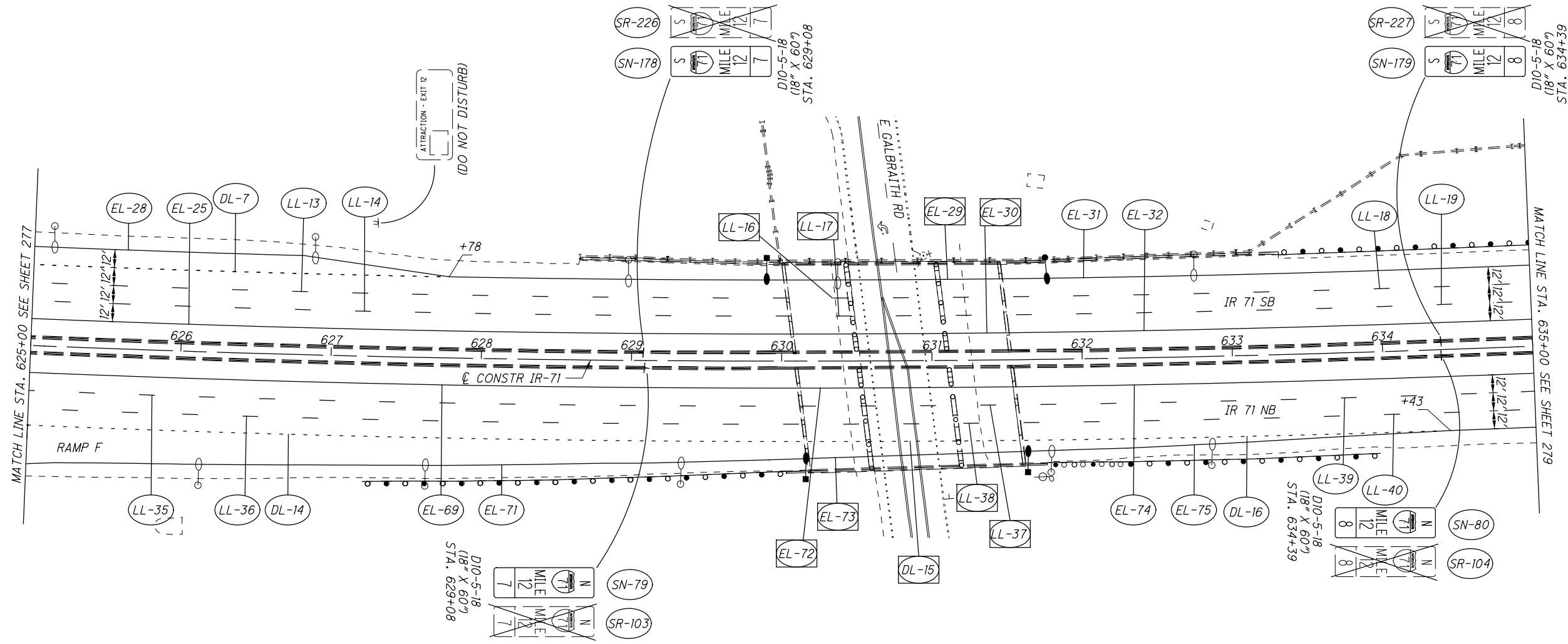
CALCULATED 0
 JEP
 CHECKED
 RG

0 20 40 80
 HORIZONTAL
 SCALE IN FEET

PAVEMENT MARKING PLAN
STA. 615+00 TO 625+00

HAM-IR 71-8.42

277
 441



LEGEND:

A = UNIFORM RAMP WIDTH
W = LANE WIDTH

NOTES:

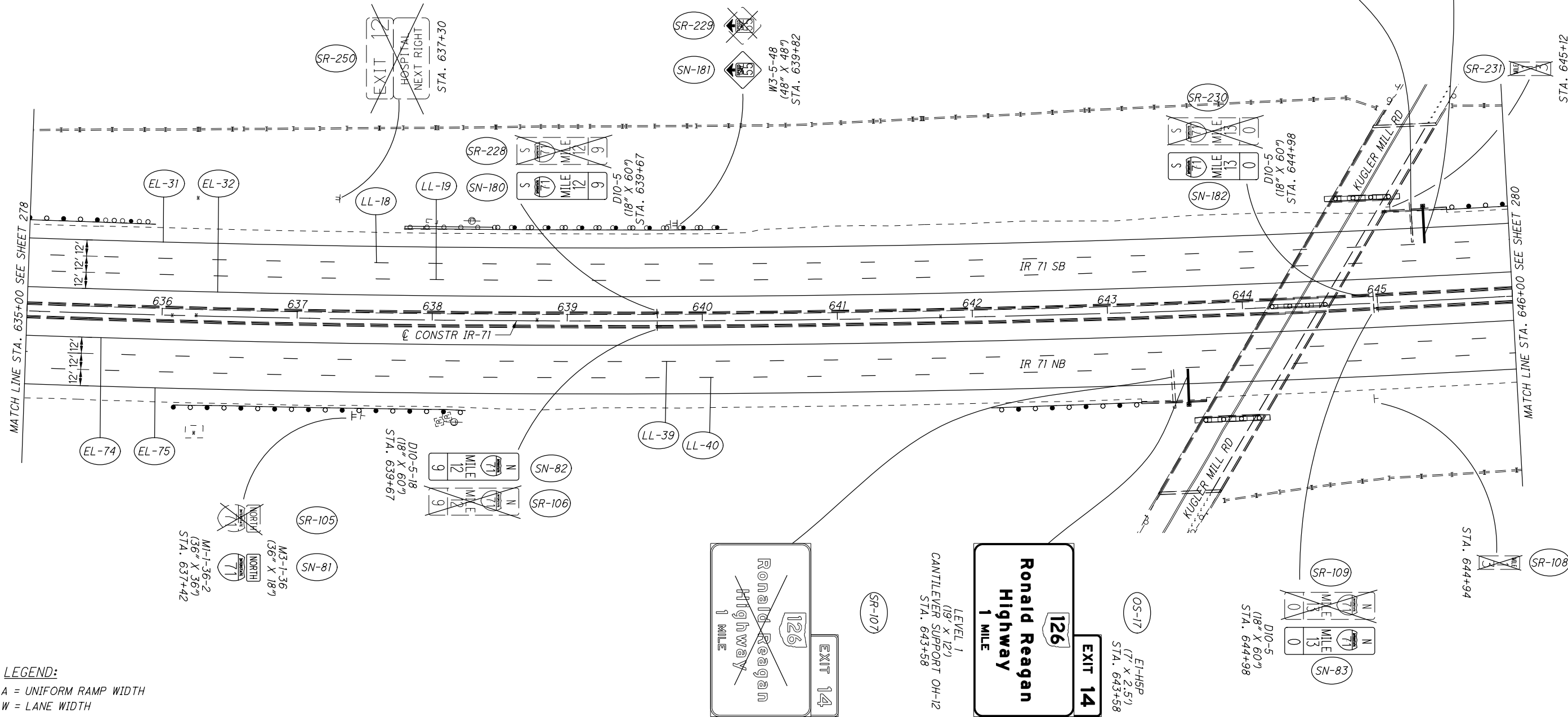
- FOR SIGNING AND PAVEMENT MARKING LEGEND, SEE SHEET 256.
- INSTALL RAISED PAVEMENT MARKERS ACCORDING TO STD. DWG. TC-65.10 & TC-65.11.
- INSTALL DELINEATORS ACCORDING TO STD. DWG. TC-61.10.



CALCULATED JEP
CHECKED RG

**PAVEMENT MARKING PLAN
STA. 625+00 TO 635+00**

HAM-IR 71-8.42



LEGEND:
 A = UNIFORM RAMP WIDTH
 W = LANE WIDTH

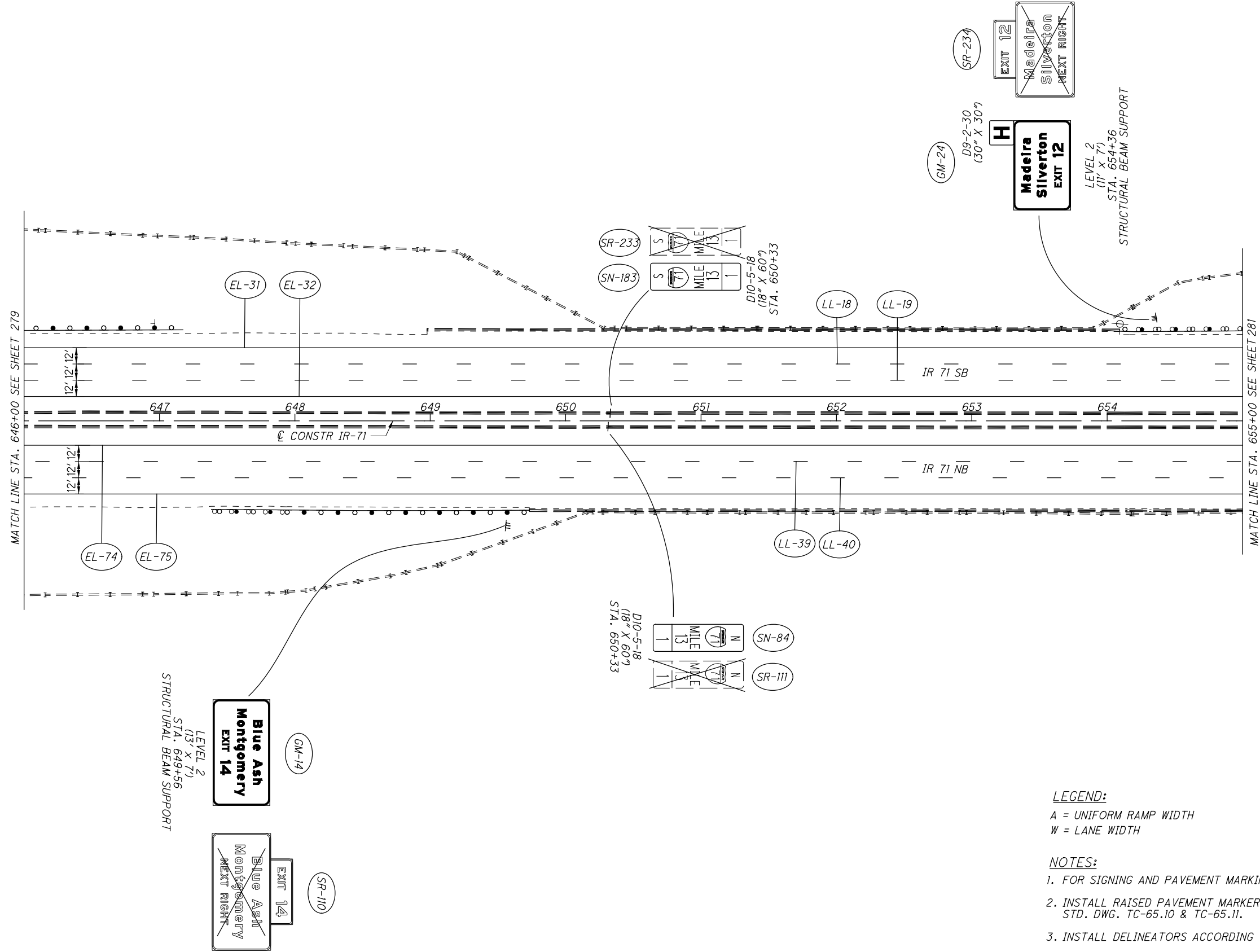
NOTES:
 1. FOR SIGNING AND PAVEMENT MARKING LEGEND, SEE SHEET 256.
 2. INSTALL RAISED PAVEMENT MARKERS ACCORDING TO STD. DWG. TC-65.10 & TC-65.11.
 3. INSTALL DELINEATORS ACCORDING TO STD. DWG. TC-61.10.

CALCULATED	JEP
CHECKED	RG

0 20 40 80
 HORIZONTAL SCALE IN FEET

PAVEMENT MARKING PLAN
STA. 625+00 TO 646+00

HAM-IR 71-8.42



LEGEND:

A = UNIFORM RAMP WIDTH
 W = LANE WIDTH

NOTES:

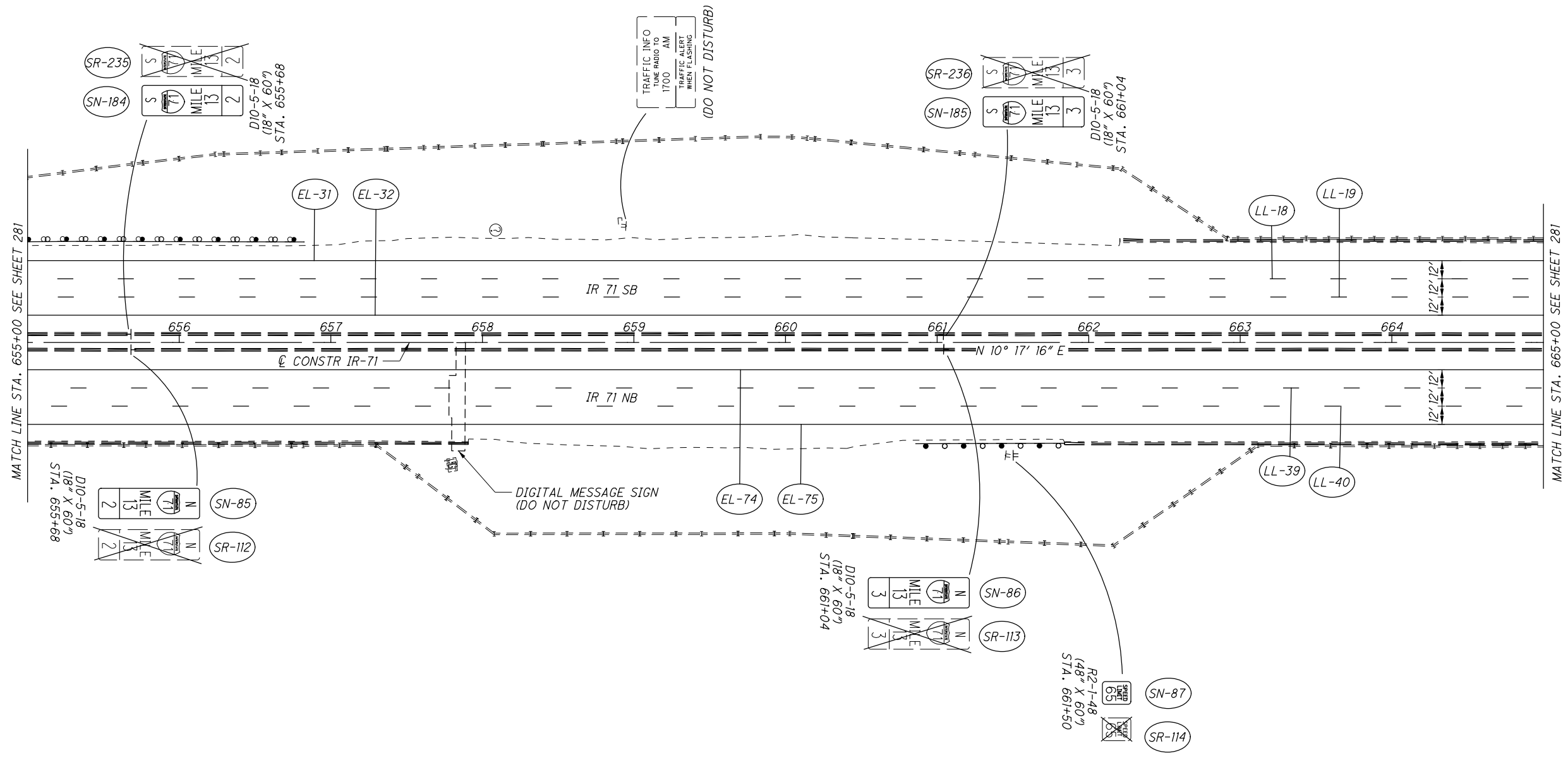
- FOR SIGNING AND PAVEMENT MARKING LEGEND, SEE SHEET 256.
- INSTALL RAISED PAVEMENT MARKERS ACCORDING TO STD. DWG. TC-65.10 & TC-65.11.
- INSTALL DELINEATORS ACCORDING TO STD. DWG. TC-61.10.

CALCULATED JEP
 CHECKED RG

0 20 40 80
 HORIZONTAL SCALE IN FEET

PAVEMENT MARKING PLAN
STA. 646+00 TO 655+00

HAM-IR 71-8.42



TRAFFIC INFO
TIME RADIO TO
1700 AM
TRAFFIC ALERT
WHEN FLASHING
(DO NOT DISTURB)

DIGITAL MESSAGE SIGN
(DO NOT DISTURB)

LEGEND:
A = UNIFORM RAMP WIDTH
W = LANE WIDTH

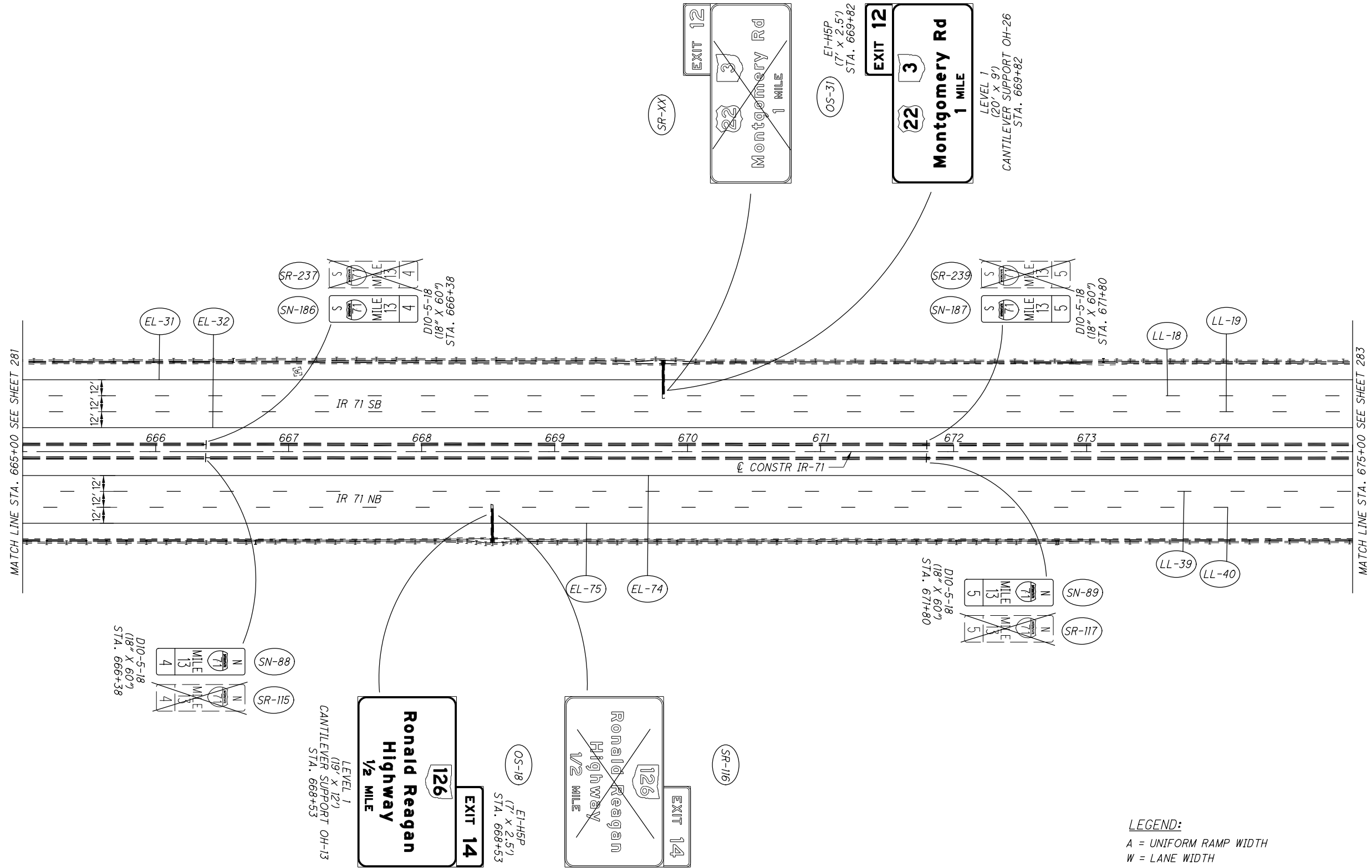
NOTES:
1. FOR SIGNING AND PAVEMENT MARKING LEGEND, SEE SHEET 256.
2. INSTALL RAISED PAVEMENT MARKERS ACCORDING TO STD. DWG. TC-65.10 & TC-65.11.
3. INSTALL DELINEATORS ACCORDING TO STD. DWG. TC-61.10.

CALCULATED JEP CHECKED RG

0 20 40 80
HORIZONTAL SCALE IN FEET

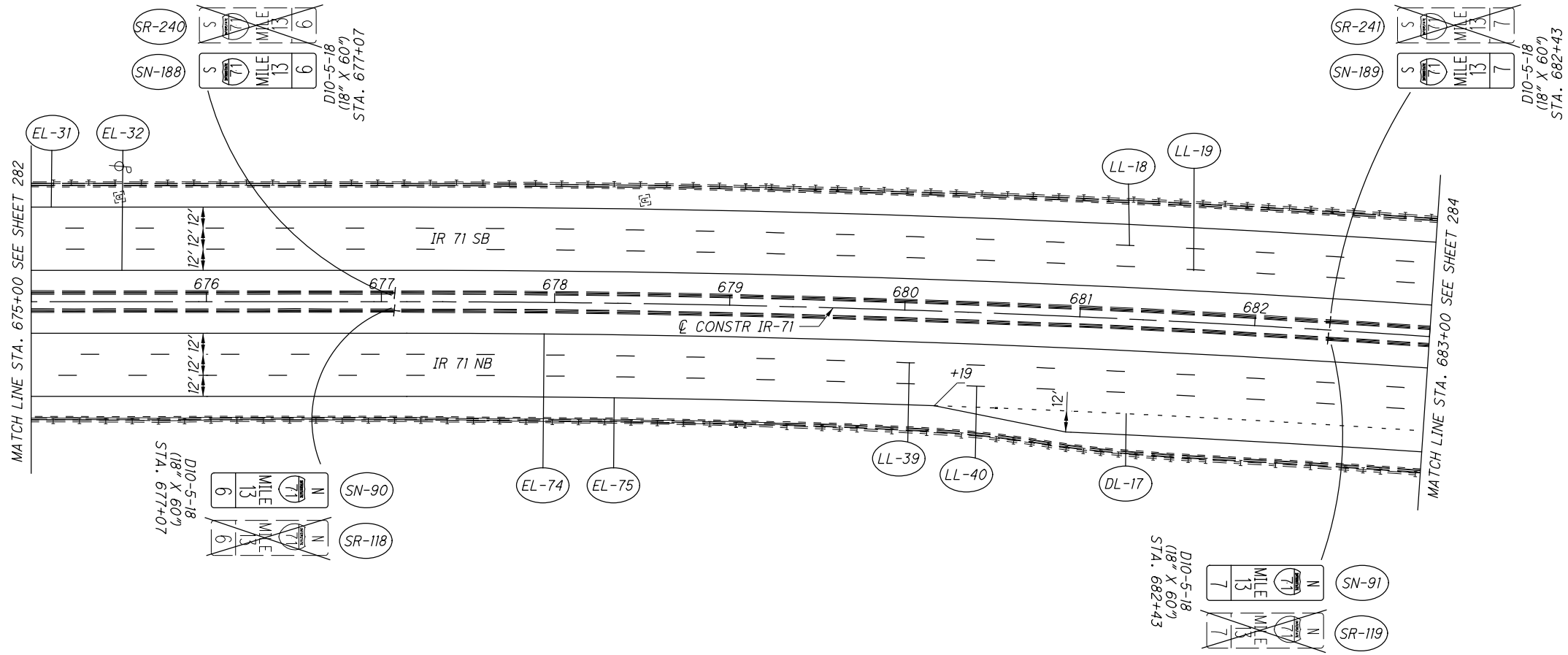
PAVEMENT MARKING PLAN
STA. 655+00 TO 665+00

HAM-IR 71-8.42



LEGEND:
 A = UNIFORM RAMP WIDTH
 W = LANE WIDTH

NOTES:
 1. FOR SIGNING AND PAVEMENT MARKING LEGEND, SEE SHEET 256.
 2. INSTALL RAISED PAVEMENT MARKERS ACCORDING TO STD. DWG. TC-65.10 & TC-65.11.
 3. INSTALL DELINEATORS ACCORDING TO STD. DWG. TC-61.10.



LEGEND:

A = UNIFORM RAMP WIDTH
 W = LANE WIDTH

NOTES:

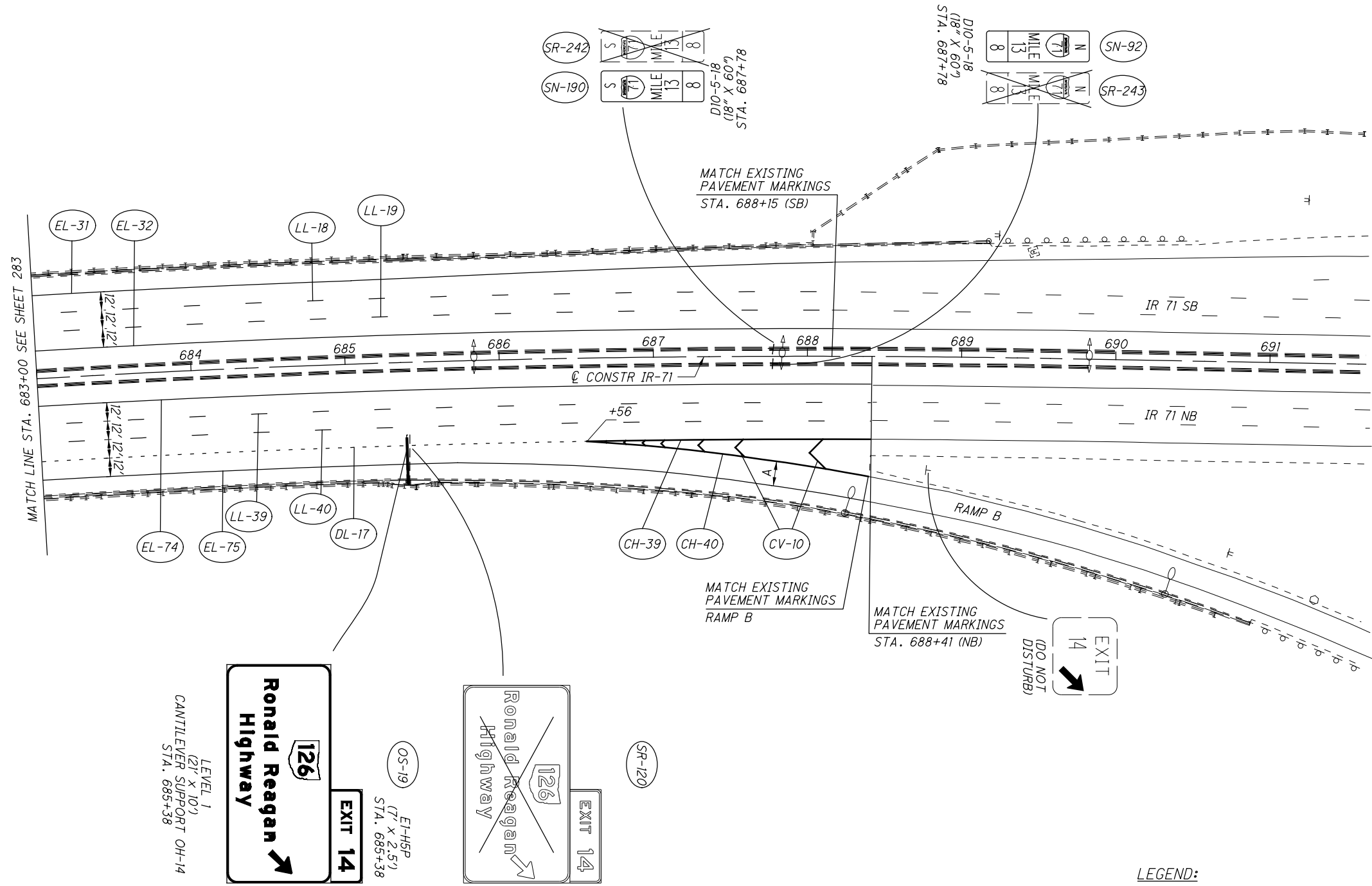
1. FOR SIGNING AND PAVEMENT MARKING LEGEND, SEE SHEET 256.
2. INSTALL RAISED PAVEMENT MARKERS ACCORDING TO STD. DWG. TC-65.10 & TC-65.11.
3. INSTALL DELINEATORS ACCORDING TO STD. DWG. TC-61.10.

CALCULATED	JEP
CHECKED	RG

0 20 40 80
 HORIZONTAL SCALE IN FEET

PAVEMENT MARKING PLAN
STA. 675+00 TO 683+00

HAM-IR 71-8.42



LEVEL 1
 CANTILEVER SUPPORT OH-14
 STA. 685+38

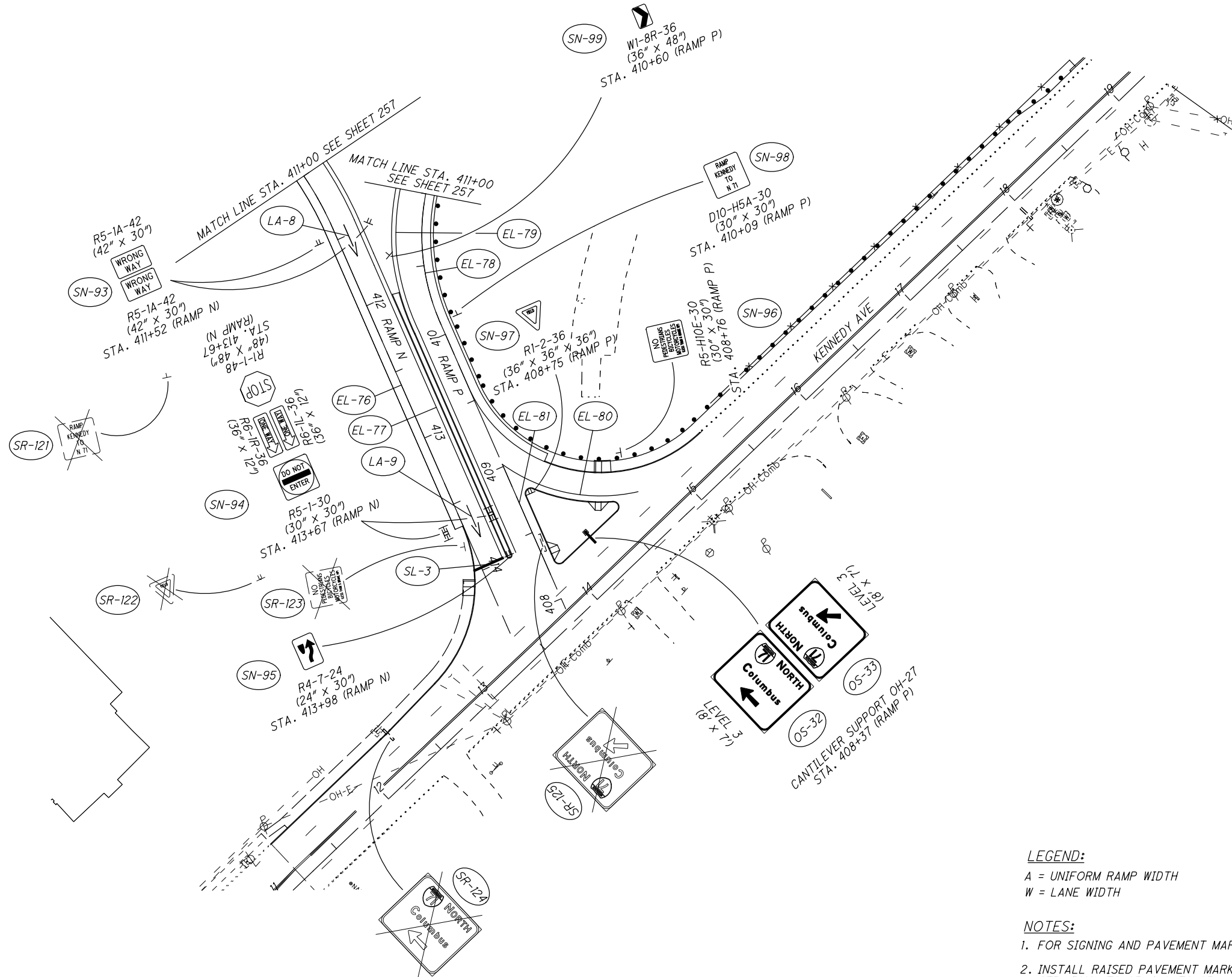
126
Ronald Reagan
Highway

EXIT 14

OS-19
 E-HSP
 (7' x 2.5')
 STA. 685+38

LEGEND:
 A = UNIFORM RAMP WIDTH
 W = LANE WIDTH

NOTES:
 1. FOR SIGNING AND PAVEMENT MARKING LEGEND, SEE SHEET 256.
 2. INSTALL RAISED PAVEMENT MARKERS ACCORDING TO STD. DWG. TC-65.10 & TC-65.11.
 3. INSTALL DELINEATORS ACCORDING TO STD. DWG. TC-61.10.



LEGEND:
 A = UNIFORM RAMP WIDTH
 W = LANE WIDTH

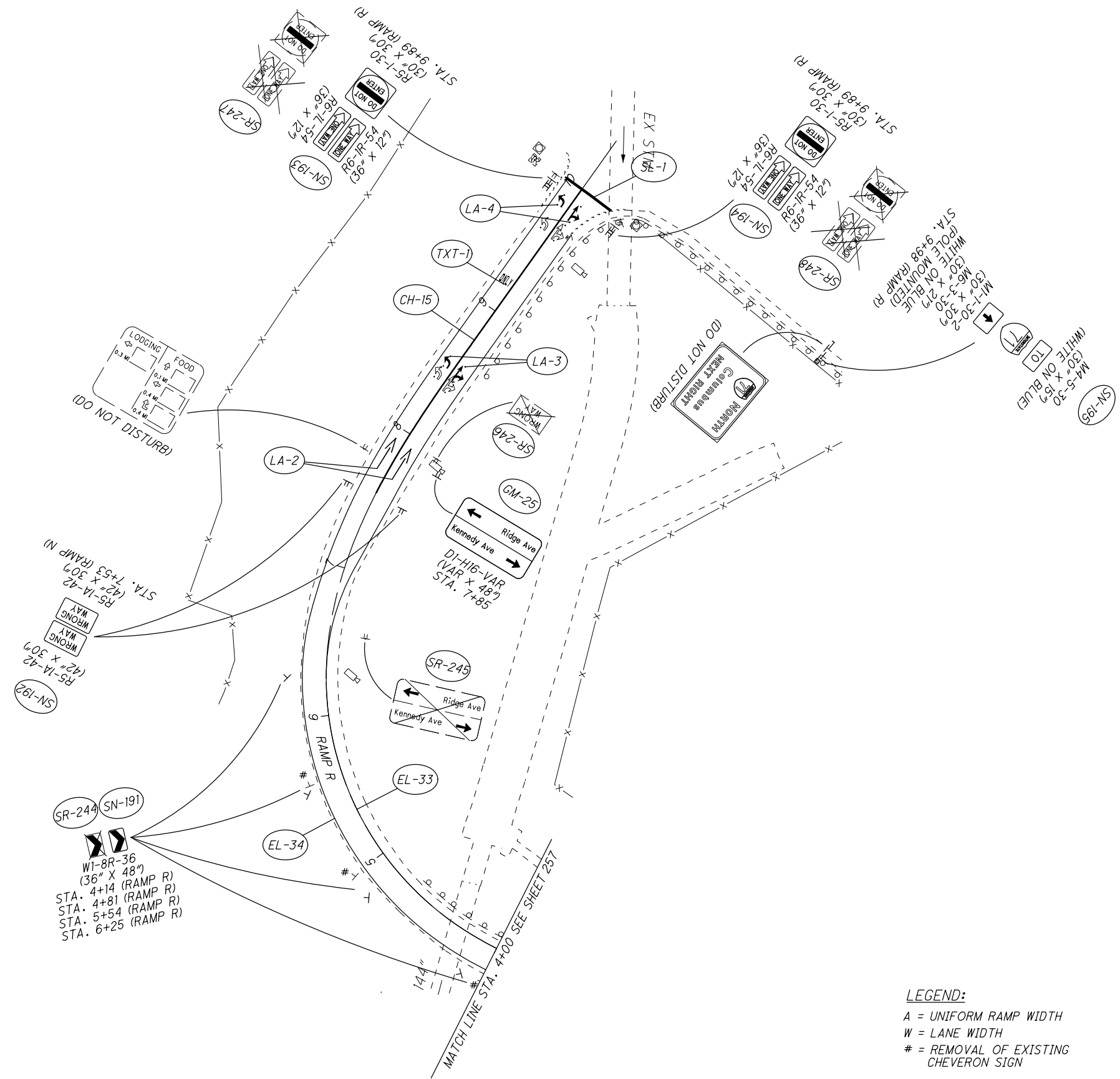
NOTES:
 1. FOR SIGNING AND PAVEMENT MARKING LEGEND, SEE SHEET 256.
 2. INSTALL RAISED PAVEMENT MARKERS ACCORDING TO STD. DWG. TC-65.10 & TC-65.11.
 3. INSTALL DELINEATORS ACCORDING TO STD. DWG. TC-61.10.

CALCULATED JEP CHECKED RG

0 40 80
 HORIZONTAL SCALE IN FEET

**PAVEMENT MARKING PLAN
 KENNEDY AVE - SOUTH LOOP RAMP**

HAM-IR 71-8.42



LEGEND:
 A = UNIFORM RAMP WIDTH
 W = LANE WIDTH
 # = REMOVAL OF EXISTING
 CHEVERON SIGN

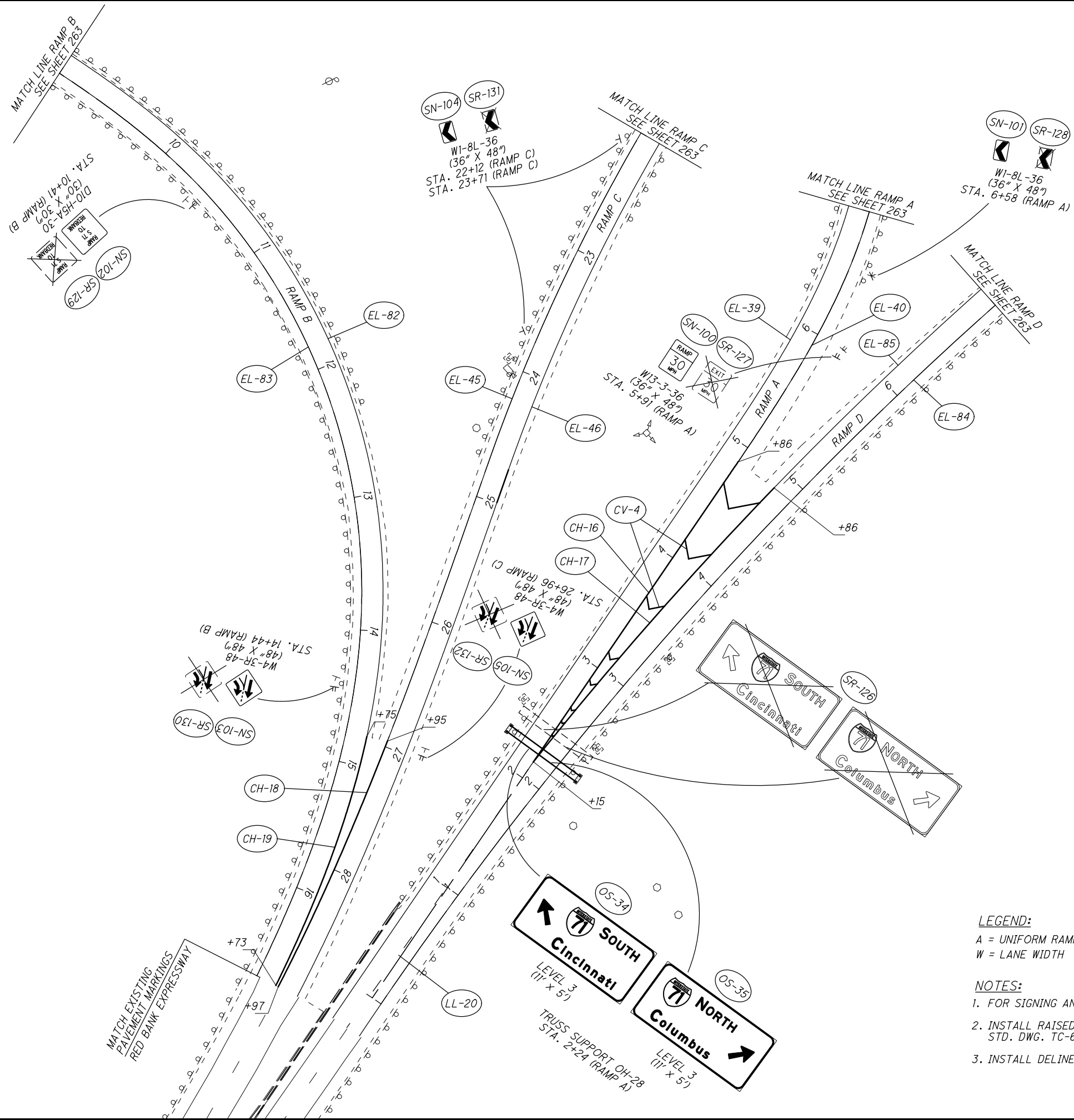
NOTES:
 1. FOR SIGNING AND PAVEMENT MARKING LEGEND, SEE SHEET 256.
 2. INSTALL RAISED PAVEMENT MARKERS ACCORDING TO
 STD. DWG. TC-65.10 & TC-65.11.
 3. INSTALL DELINEATORS ACCORDING TO STD. DWG. TC-61.10.



**PAVEMENT MARKING PLAN
 HIGHLAND AVENUE - NORTH LOOP RAMP**

HAM-IR 71-8.42

O:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826\traffic\sheets\91826_IP633.dgn 10/9/2017 2:52:40 PM JPerchinske



LEGEND:

A = UNIFORM RAMP WIDTH
W = LANE WIDTH

NOTES:

1. FOR SIGNING AND PAVEMENT MARKING LEGEND, SEE SHEET 256.
2. INSTALL RAISED PAVEMENT MARKERS ACCORDING TO STD. DWG. TC-65.10 & TC-65.11.
3. INSTALL DELINEATORS ACCORDING TO STD. DWG. TC-61.10.

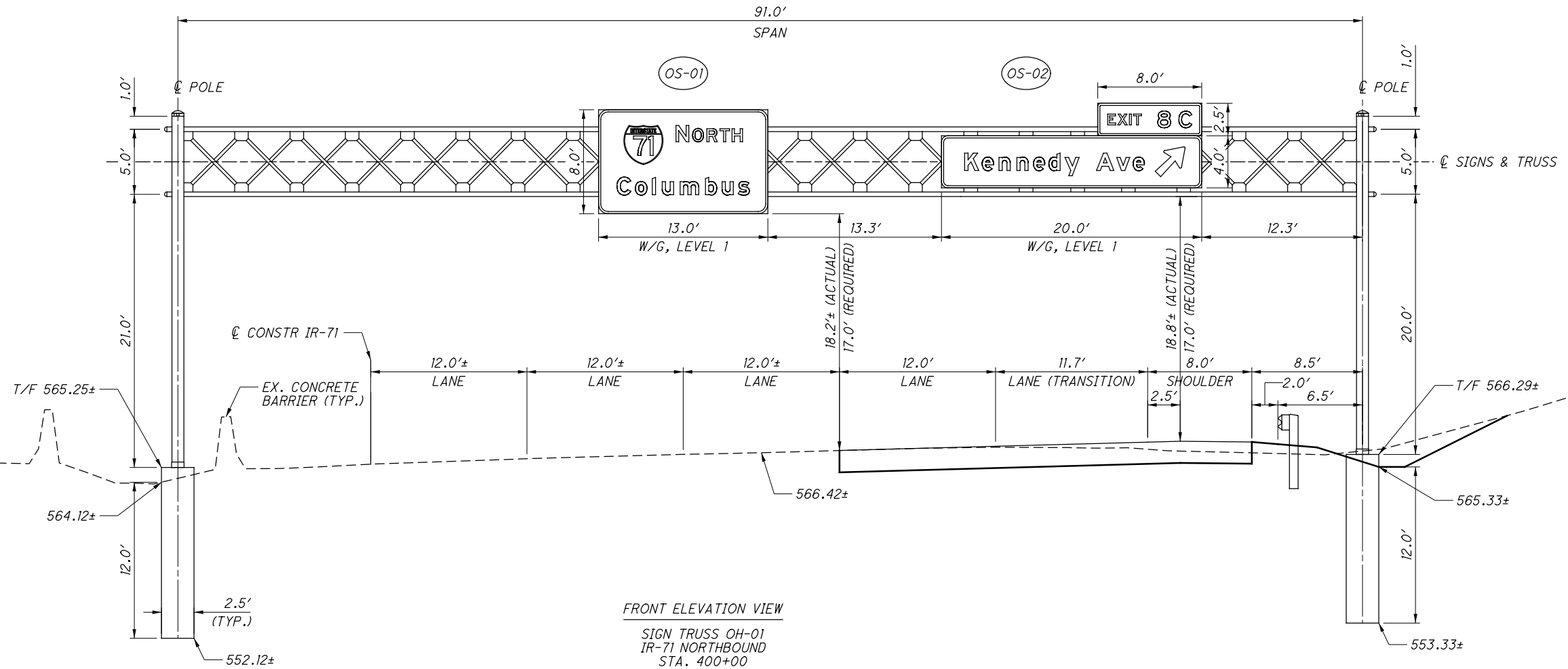
CALCULATED	JEP	CHECKED	RG

0 20 40 60 80
HORIZONTAL SCALE IN FEET

**PAVEMENT MARKING PLAN
RED BANK EXPRESSWAY - FULL INTERCHANGE**

HAM-IR 71-8.42

O:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826\traffic\sheets\91826_IR002_400+00_NB_TRUSS.dgn 10/9/2017 2:52:45 PM JPerchinske



FRONT ELEVATION VIEW
 SIGN TRUSS OH-01
 IR-71 NORTHBOUND
 STA. 400+00
 LOOKING NORTH
 TC-15.115, STEEL TRUSS

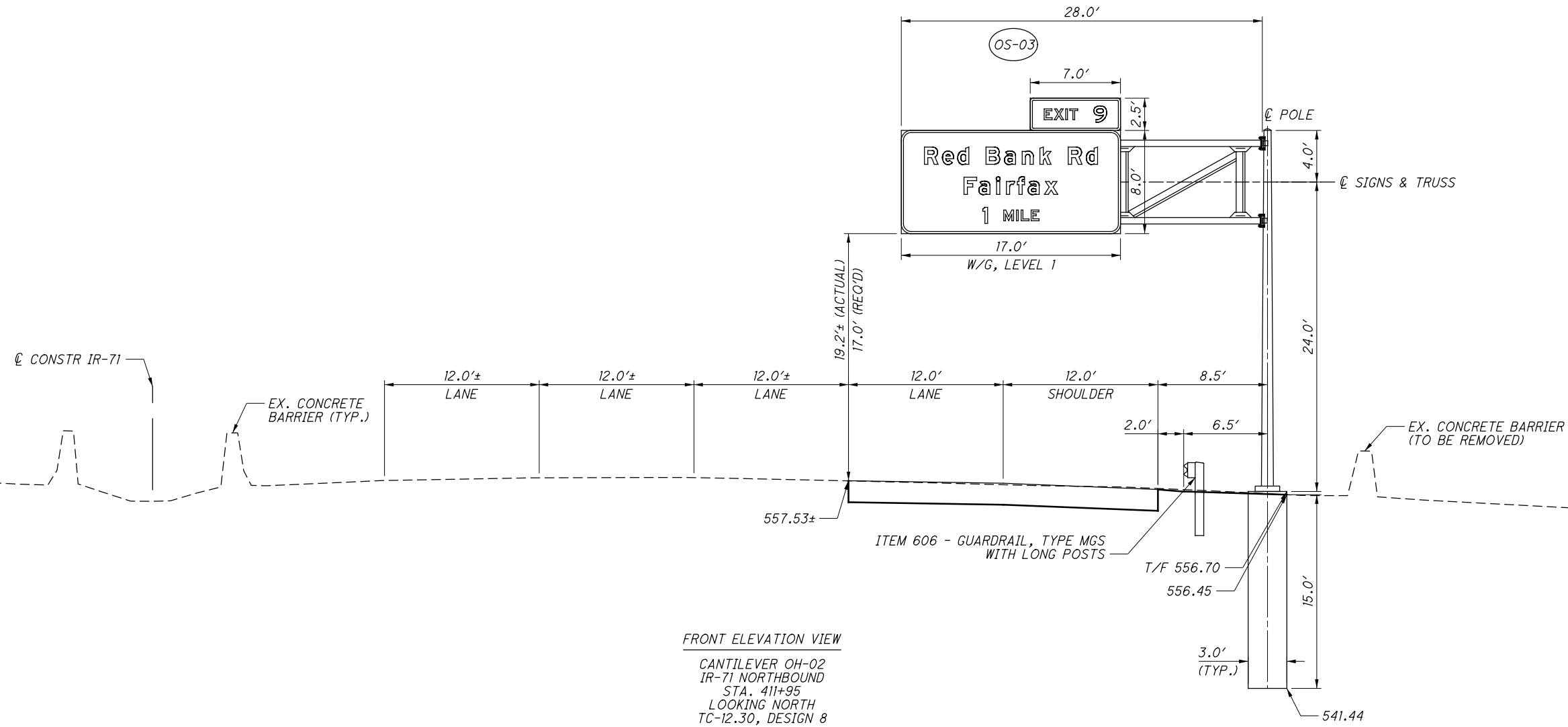
CALCULATED	JEP
CHECKED	RG

0 5 10
 2.5'
 HORIZONTAL
 SCALE IN FEET

OVERHEAD SIGN TRUSS OH-01
STA. 400+00 NORTHBOUND

HAM-IR 71-8.42

0:\Transportation\Projects\ODOT\District 8\HAM-71-8-42\91826\traffic\sheets\91826_TE010_412-10_NB_CANTILEVER.dgn 10/9/2017 2:52:46 PM JPerchinske



FRONT ELEVATION VIEW
 CANTILEVER OH-02
 IR-71 NORTHBOUND
 STA. 411+95
 LOOKING NORTH
 TC-12.30, DESIGN 8

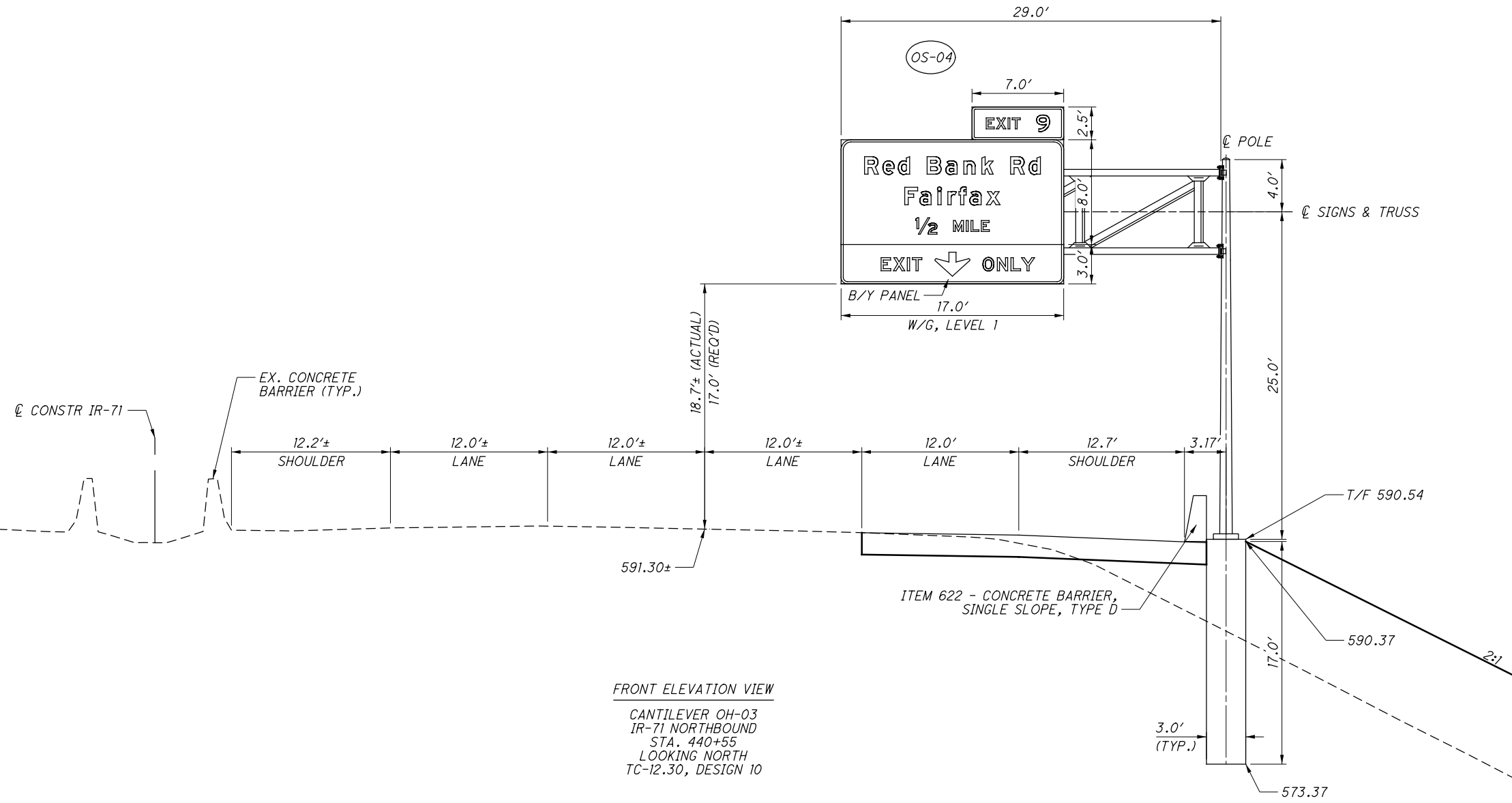
CALCULATED	JEP
CHECKED	RG

0 5 10
 2.5'
 HORIZONTAL
 SCALE IN FEET

CANTILEVER SIGN OH-02
 STA. 411+95 NORTHBOUND

HAM-IR 71-8-42

O:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826\traffic\sheets\91826_TE013_440+03_NB_CANTILEVER.dgn 10/9/2017 2:52:47 PM JPerchinske



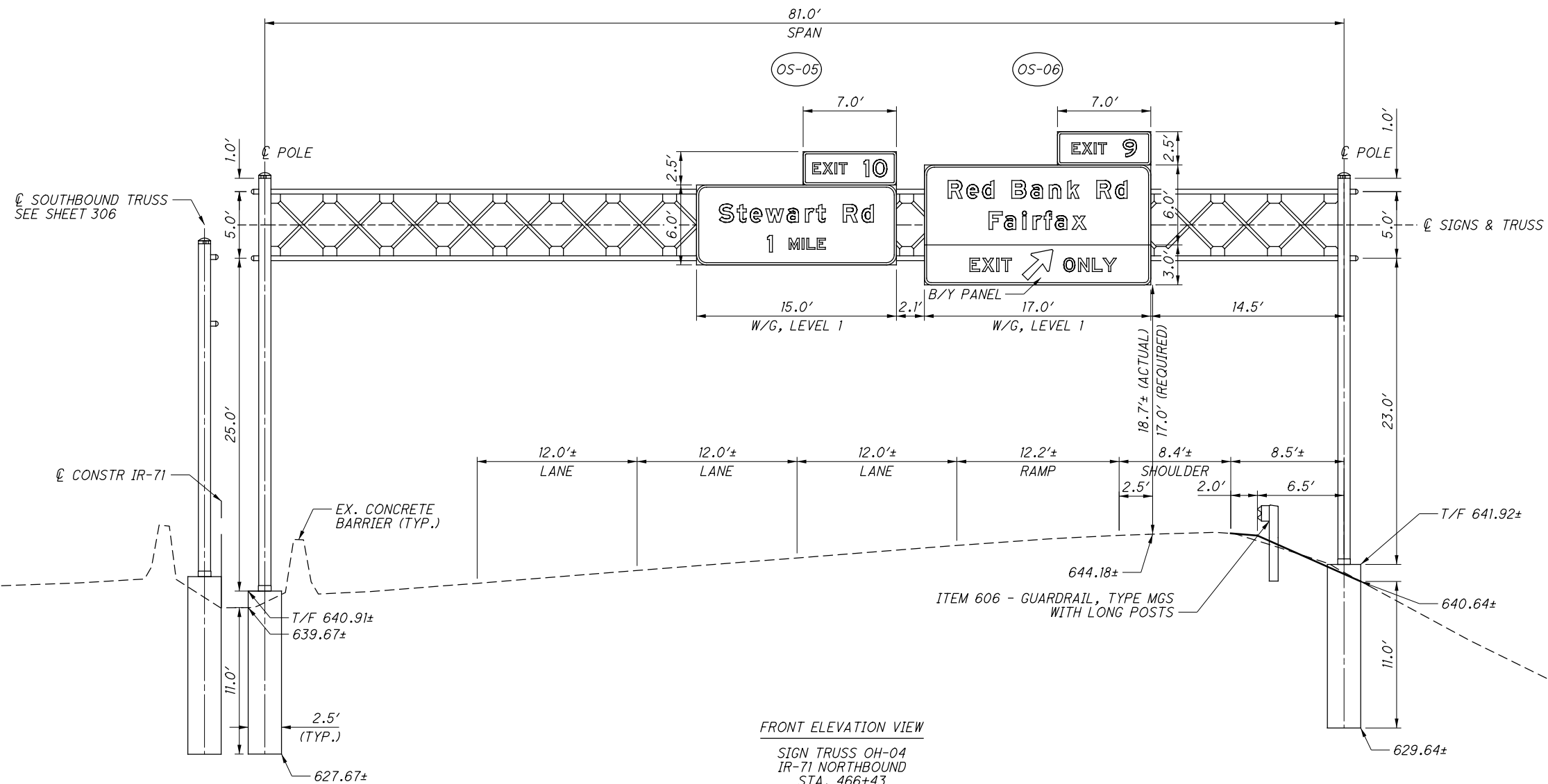
CALCULATED	JEP
CHECKED	RG

CANTILEVER SIGN OH-03
 STA. 440+55 NORTHBOUND

HAM-IR 71-8.42



O:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826\traffic\sheets\91826_TE003_466+43_NB_TRUSS.dgn 10/9/2017 2:52:48 PM JPerchinske



FRONT ELEVATION VIEW
 SIGN TRUSS OH-04
 IR-71 NORTHBOUND
 STA. 466+43
 LOOKING NORTH
 TC-7.65, DESIGN 8, ALUMINUM TRUSS

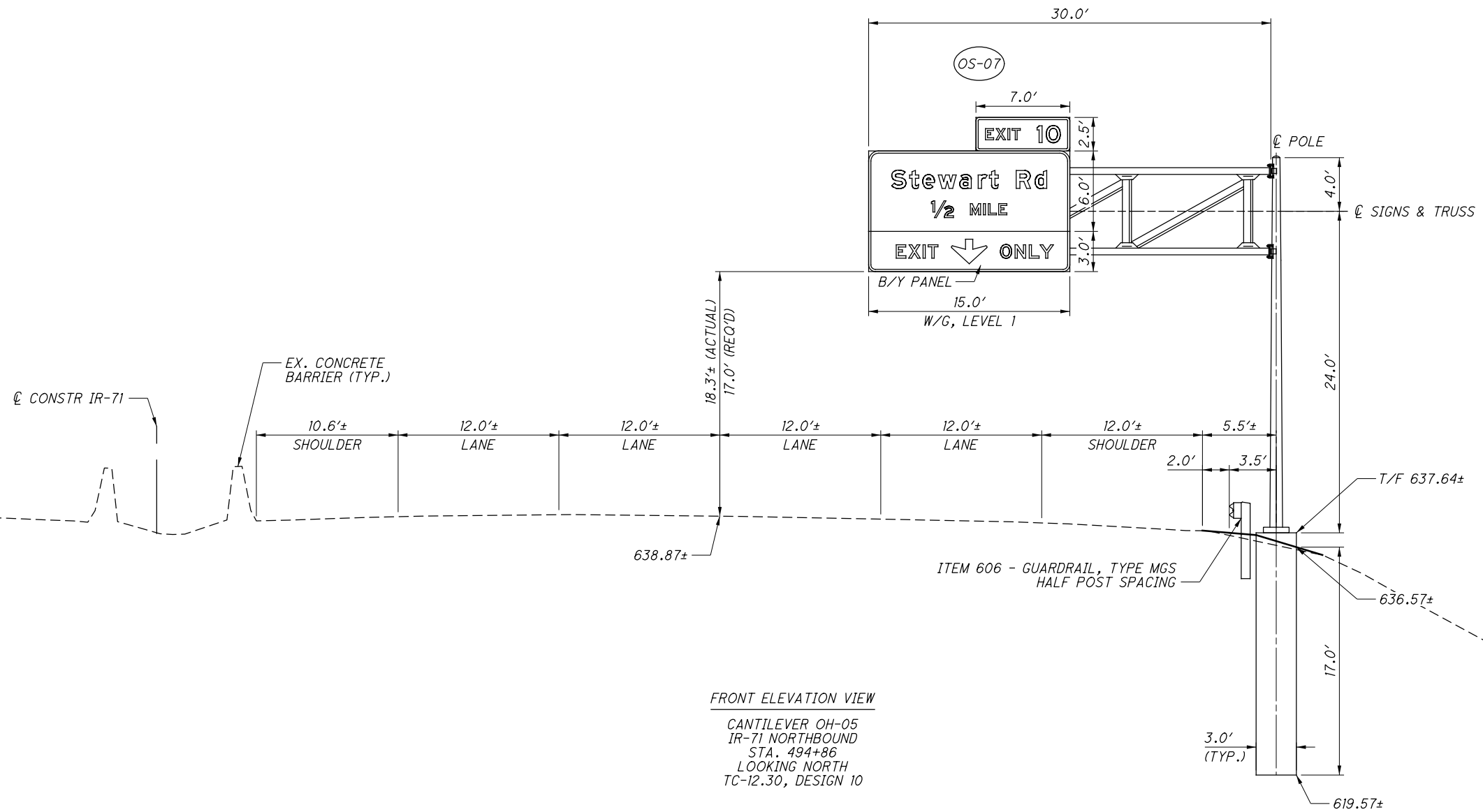
CALCULATED	JEP
CHECKED	RG

0 5 10
 2.5'
 HORIZONTAL
 SCALE IN FEET

OVERHEAD SIGN TRUSS OH-04
 STA. 466+43 NORTHBOUND

HAM-IR 71-8.42

O:\Transportation\Projects\ODOT\District 8\HAM-71-8-42\91826\traffic\sheets\91826_TE015_494+86_NB_CANTILEVER.dgn 10/9/2017 2:52:49 PM JPerchinske



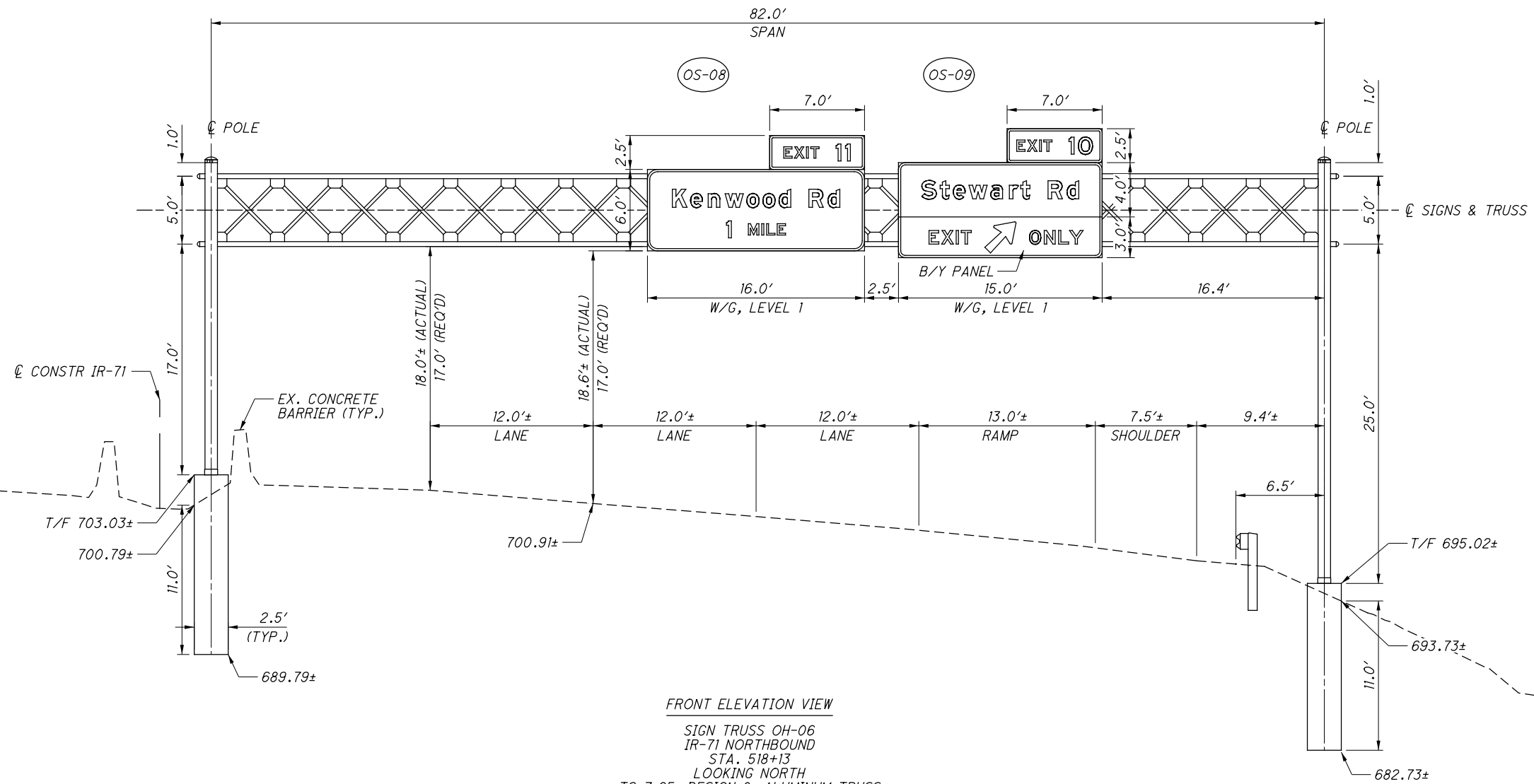
FRONT ELEVATION VIEW
 CANTILEVER OH-05
 IR-71 NORTHBOUND
 STA. 494+86
 LOOKING NORTH
 TC-12.30, DESIGN 10

CALCULATED	JEP
CHECKED	RG

CANTILEVER SIGN OH-05
 STA. 494+86 NORTHBOUND

HAM-IR 71-8-42

O:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826\traffic\sheets\91826_IR004_518+13_NB_TRUSS.dgn 10/9/2017 2:52:50 PM JPerchinske



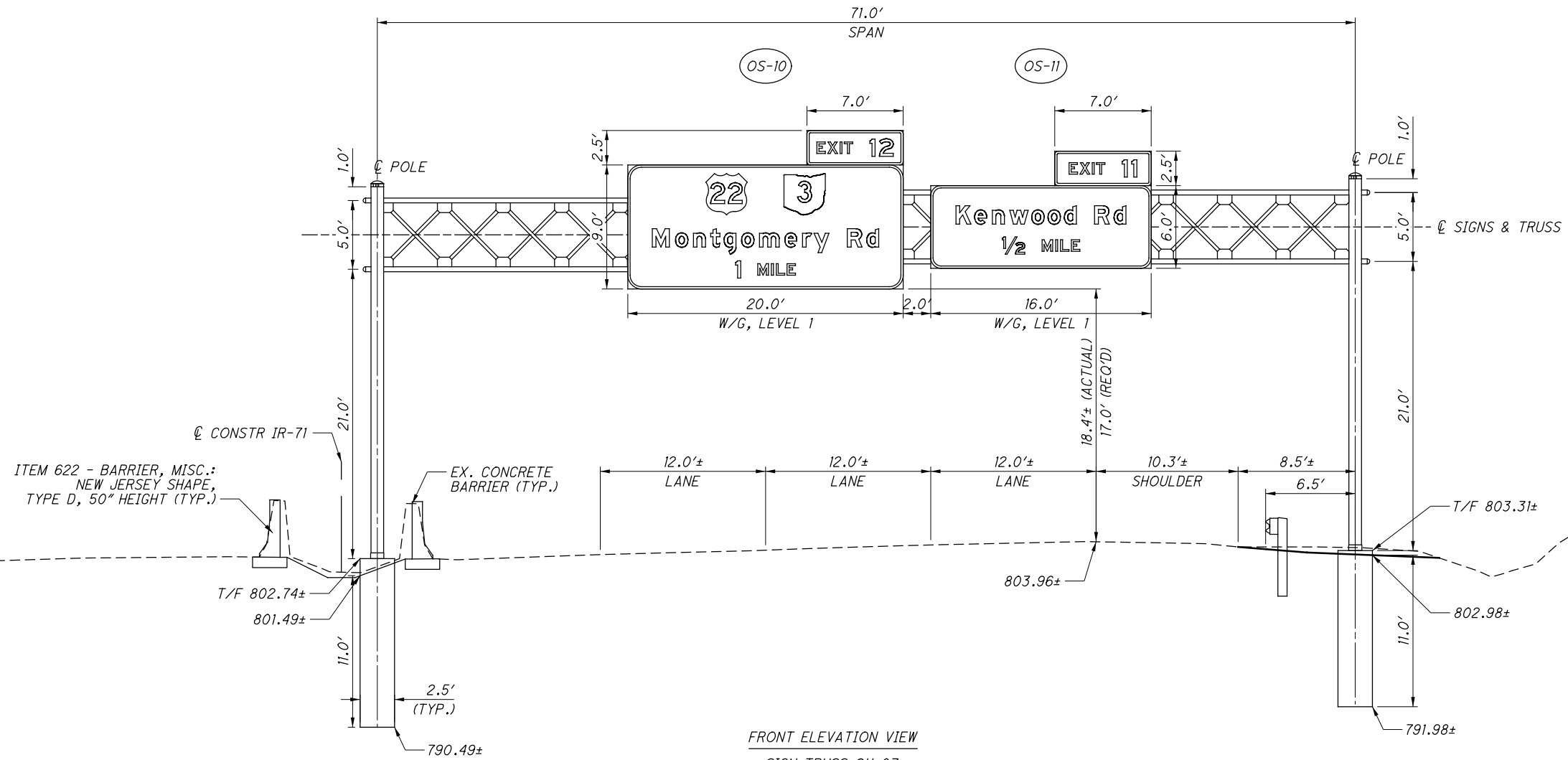
FRONT ELEVATION VIEW
 SIGN TRUSS OH-06
 IR-71 NORTHBOUND
 STA. 518+13
 LOOKING NORTH
 TC-7.65, DESIGN 8, ALUMINUM TRUSS

CALCULATED	JEP
CHECKED	RG

2.5' HORIZONTAL SCALE IN FEET

OVERHEAD SIGN TRUSS OH-06
 STA. 518+13 NORTHBOUND

O:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826\traffic\sheets\91826_TE005_544+93_NB_TRUSS.dgn 10/9/2017 2:52:51 PM JPerchinske



FRONT ELEVATION VIEW
 SIGN TRUSS OH-07
 IR-71 NORTHBOUND
 STA. 544+93
 LOOKING NORTH
 TC-7.65, DESIGN 8, ALUMINUM TRUSS

CALCULATED	JEP
CHECKED	RG

2.5' HORIZONTAL SCALE IN FEET

OVERHEAD SIGN TRUSS OH-07
 STA. 544+93 NORTHBOUND

HAM-IR 71-8.42

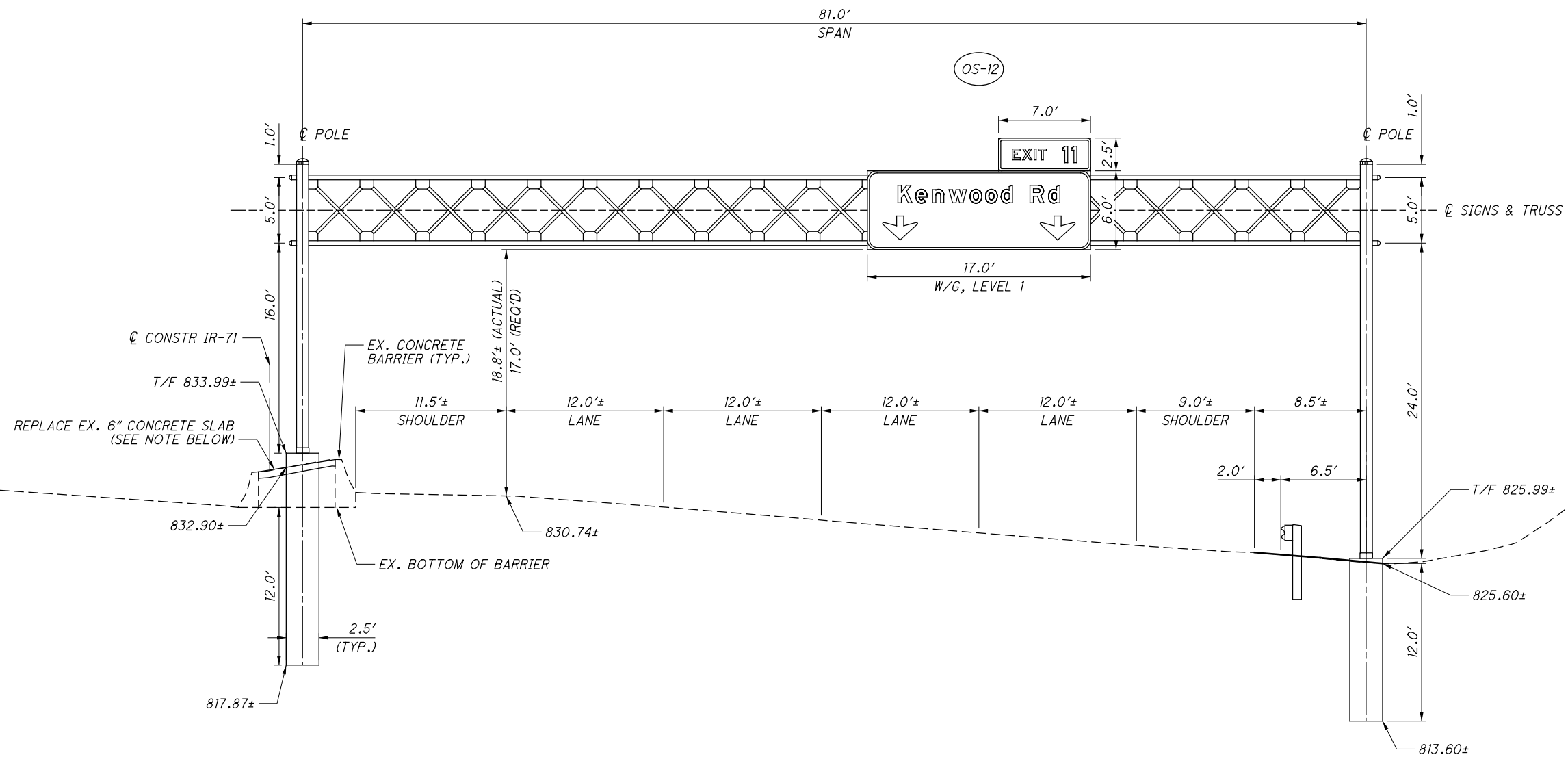
O:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826\traffic\sheets\91826_IR020_561+60_NB_TRUSS.dgn 10/9/2017 2:52:53 PM JPerchinske

0	5	10
2.5' HORIZONTAL SCALE IN FEET		
CALCULATED	JEP	RG
CHECKED		

OVERHEAD SIGN TRUSS OH-08
STA. 561+60 NORTHBOUND

HAM-IR 71-8.42

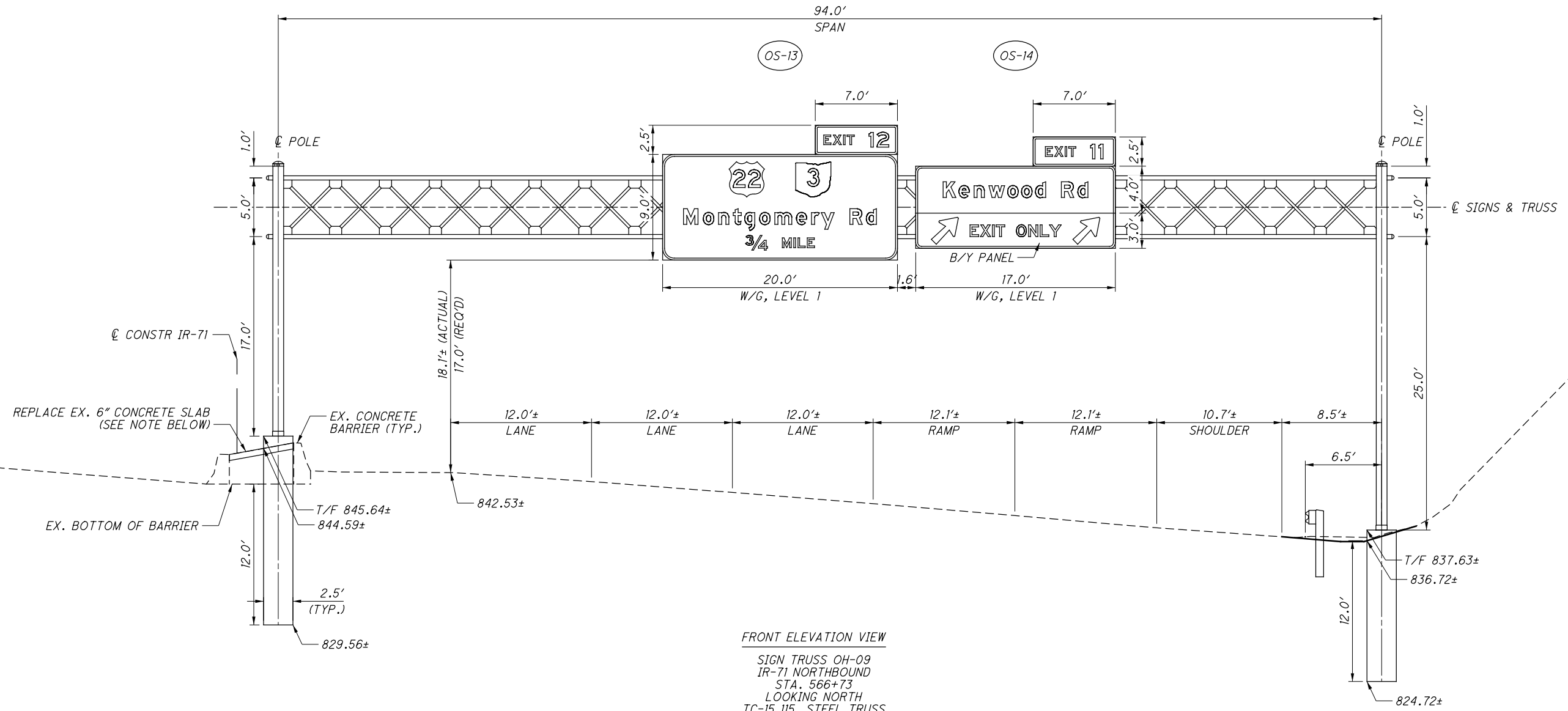
295
441



FRONT ELEVATION VIEW
 SIGN TRUSS OH-08
 IR-71 NORTHBOUND
 STA. 561+60
 LOOKING NORTH
 TC-7.65, DESIGN 8, ALUMINUM TRUSS

NOTE:
 REPLACE EXISTING 6" CONCRETE SLAB WITH 6" CONCRETE SLAB CLASS QC1 PER CMS 511. ALL COST ASSOCIATED WITH THIS WORK SHALL BE INCLUDED IN ITEM 630 - RIGID OVERHEAD SIGN SUPPORT FOUNDATION.

O:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826\traffic\sheets\91826_TE006_566+73 NB TRUSS.dgn 10/9/2017 2:52:53 PM JPerchinske



FRONT ELEVATION VIEW
 SIGN TRUSS OH-09
 IR-71 NORTHBOUND
 STA. 566+73
 LOOKING NORTH
 TC-15.115, STEEL TRUSS

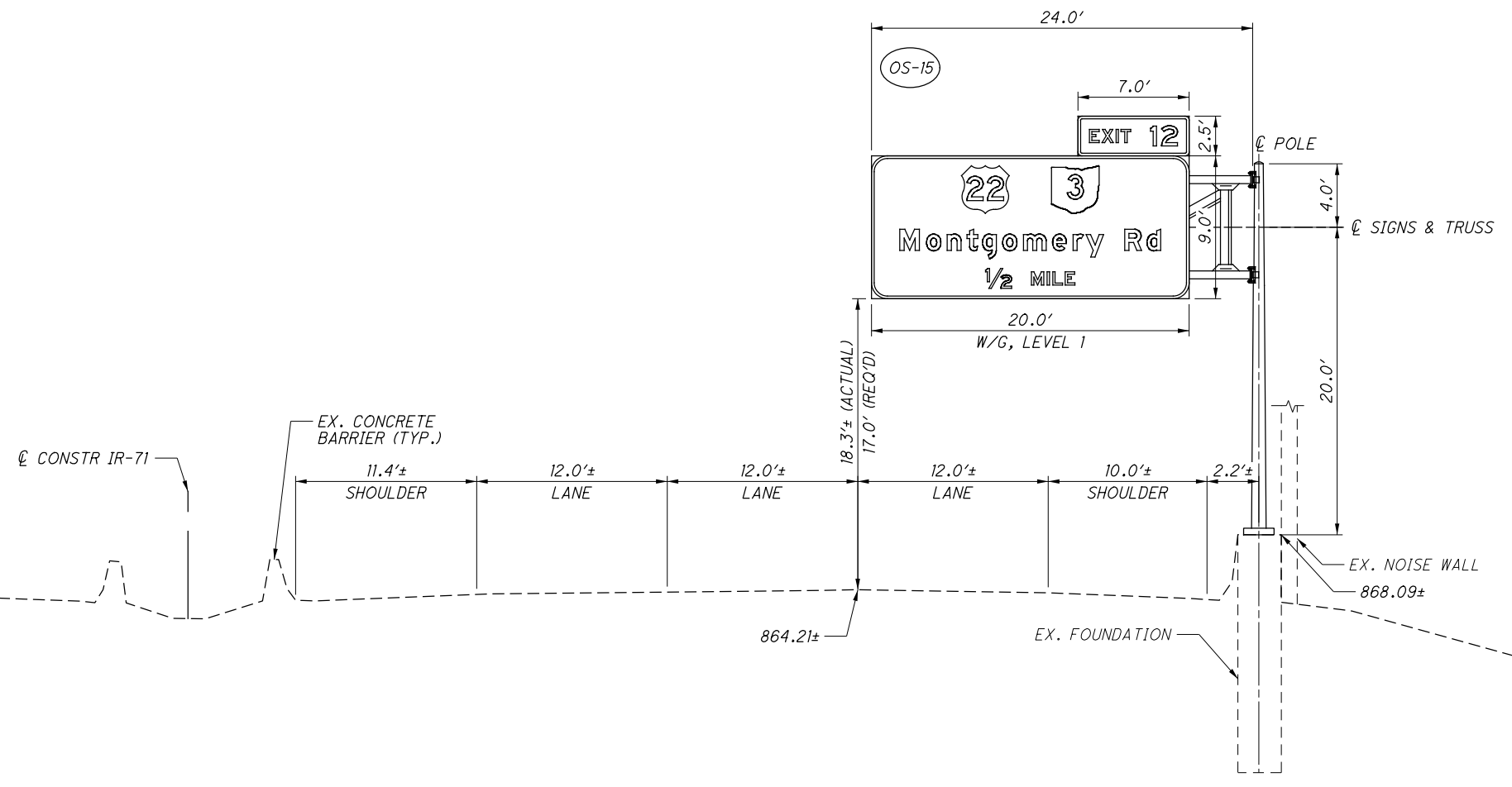
NOTE:
 REPLACE EXISTING 6" CONCRETE SLAB WITH 6" CONCRETE SLAB CLASS QC1 PER CMS 511. ALL COST ASSOCIATED WITH THIS WORK SHALL BE INCLUDED IN ITEM 630 - RIGID OVERHEAD SIGN SUPPORT FOUNDATION.

CALCULATED	
JEP	RG
CHECKED	

OVERHEAD SIGN TRUSS OH-09
STA. 566+73 NORTHBOUND

HAM-IR 71-8.42

O:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826\traffic\sheets\91826_NB_CANTILEVER.dgn 10/9/2017 2:52:54 PM JPerchinske



FRONT ELEVATION VIEW
 CANTILEVER OH-10
 IR-71 NORTHBOUND
 STA. 576+56
 LOOKING NORTH
 TC-12.30, DESIGN 9

CALCULATED	JEP
CHECKED	RG

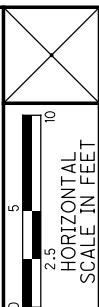
0 5 10
 2.5
 HORIZONTAL
 SCALE IN FEET

CANTILEVER SIGN OH-10
 STA. 576+56 NORTHBOUND

HAM-IR 71-8.42

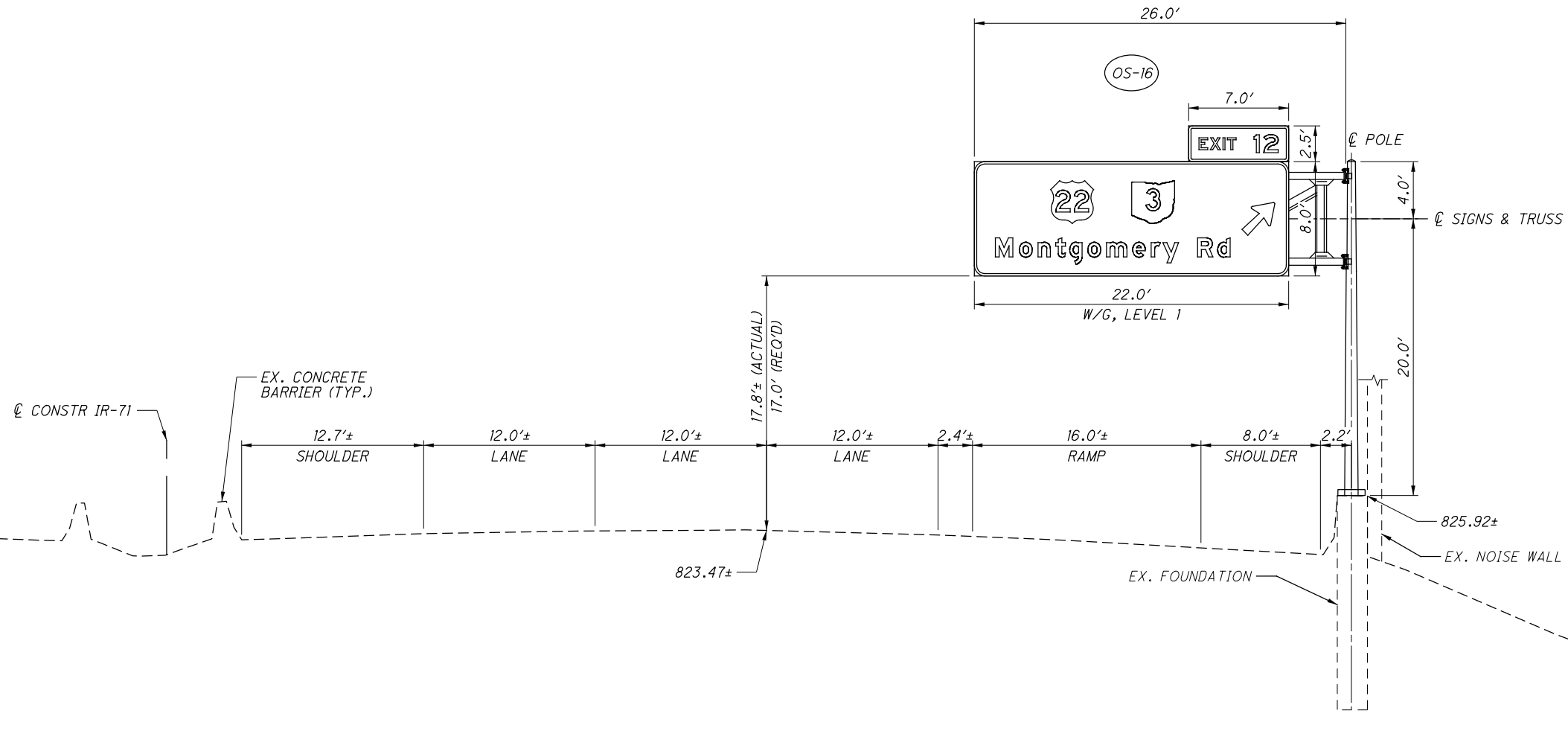
D:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826\traffic\sheet\91826_T1E022_605+51 NB CANTILEVER.dgn 10/9/2017 2:52:55 PM JPerchinske

CALCULATED
JEP
CHECKED
RG

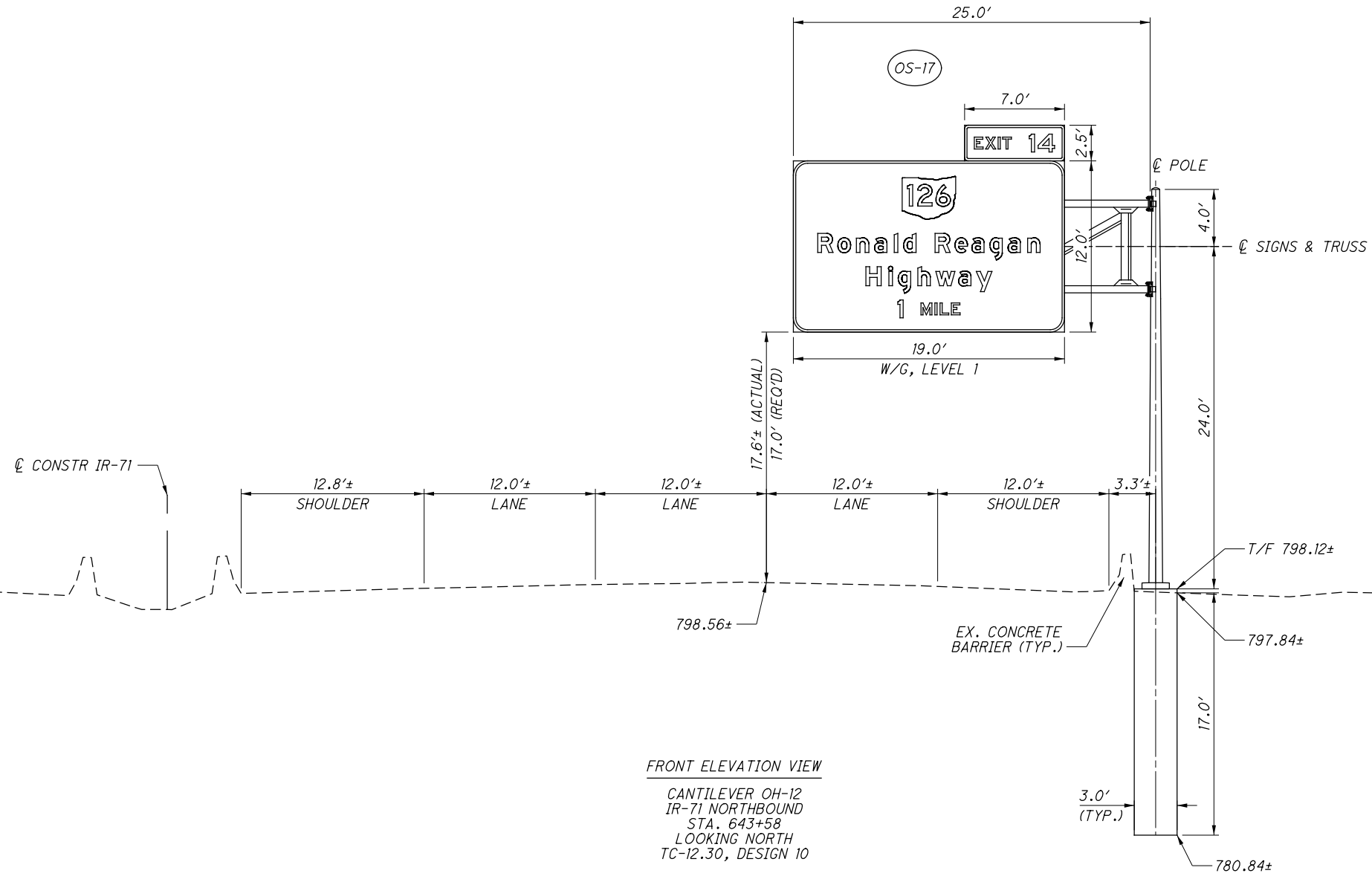


**CANTILEVER SIGN OH-11
STA. 605+51 NORTHBOUND**

HAM-IR 71-8.42



FRONT ELEVATION VIEW
 CANTILEVER OH-11
 IR-71 NORTHBOUND
 STA. 605+51
 LOOKING NORTH
 TC-12.30, DESIGN 9



FRONT ELEVATION VIEW
 CANTILEVER OH-12
 IR-71 NORTHBOUND
 STA. 643+58
 LOOKING NORTH
 TC-12.30, DESIGN 10

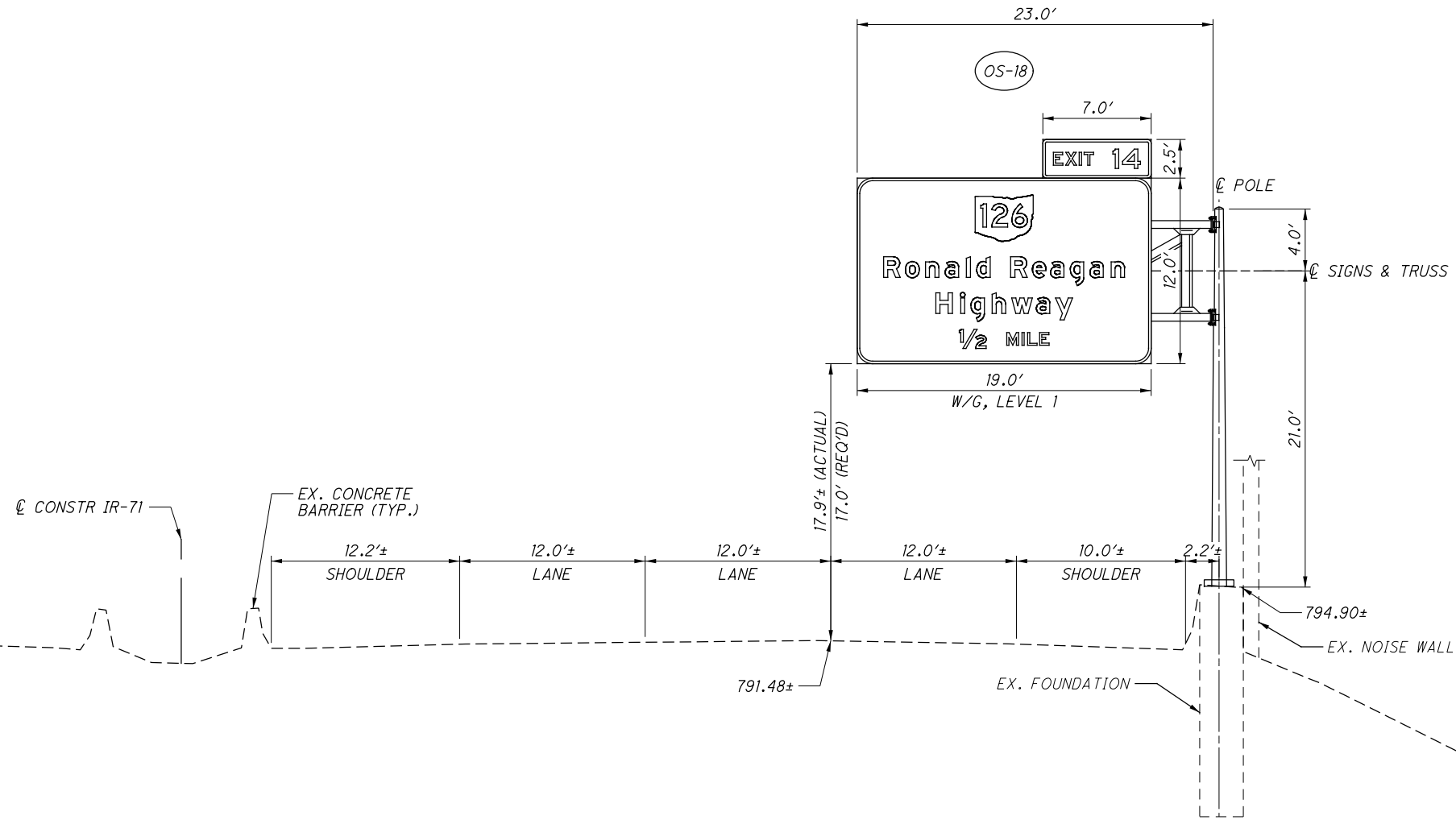
CALCULATED	JEP
CHECKED	RG

CANTILEVER SIGN OH-12
 STA. 643+58 NORTHBOUND

HAM-IR 71-8.42



O:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826\traffic\sheets\91826_TE026_668+53 NB CANTILEVER.dgn 10/9/2017 2:52:57 PM jPerchinske



FRONT ELEVATION VIEW

CANTILEVER OH-13
IR-71 NORTHBOUND
STA. 668+53
LOOKING NORTH
TC-12.30, DESIGN 9

CALCULATED	
JEP	RG
CHECKED	

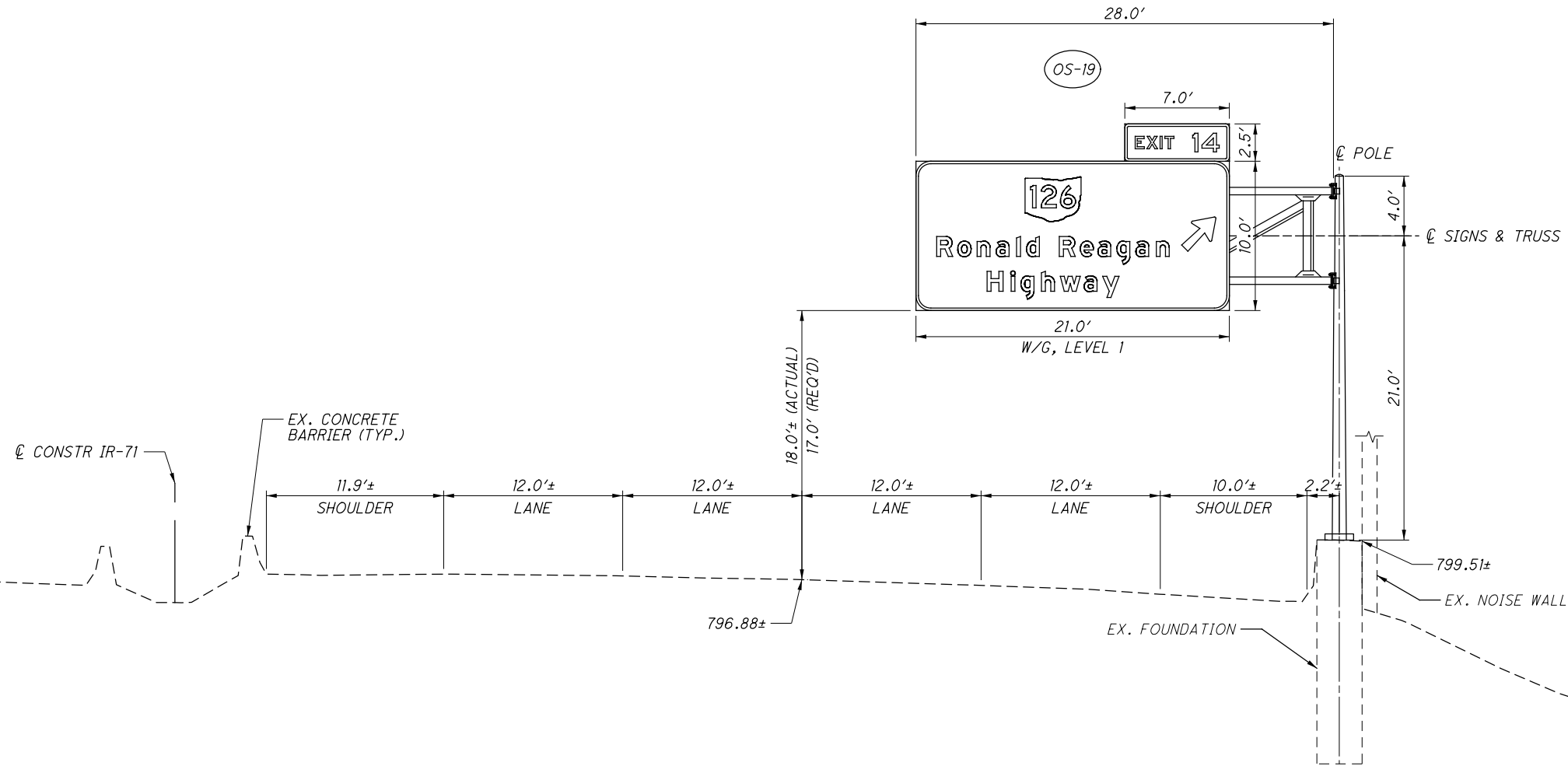
CANTILEVER SIGN OH-13
STA. 668+53 NORTHBOUND

HAM-IR 71-8.42

300
441



O:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826\traffic\sheets\91826_TE028_685+38_NB_CANTILEVER.dgn 10/9/2017 2:52:57 PM JPerchinske



FRONT ELEVATION VIEW

CANTILEVER OH-14
IR-71 NORTHBOUND
STA. 685+38
LOOKING NORTH
TC-12.30, DESIGN 10

CALCULATED	
JEP	RG
CHECKED	

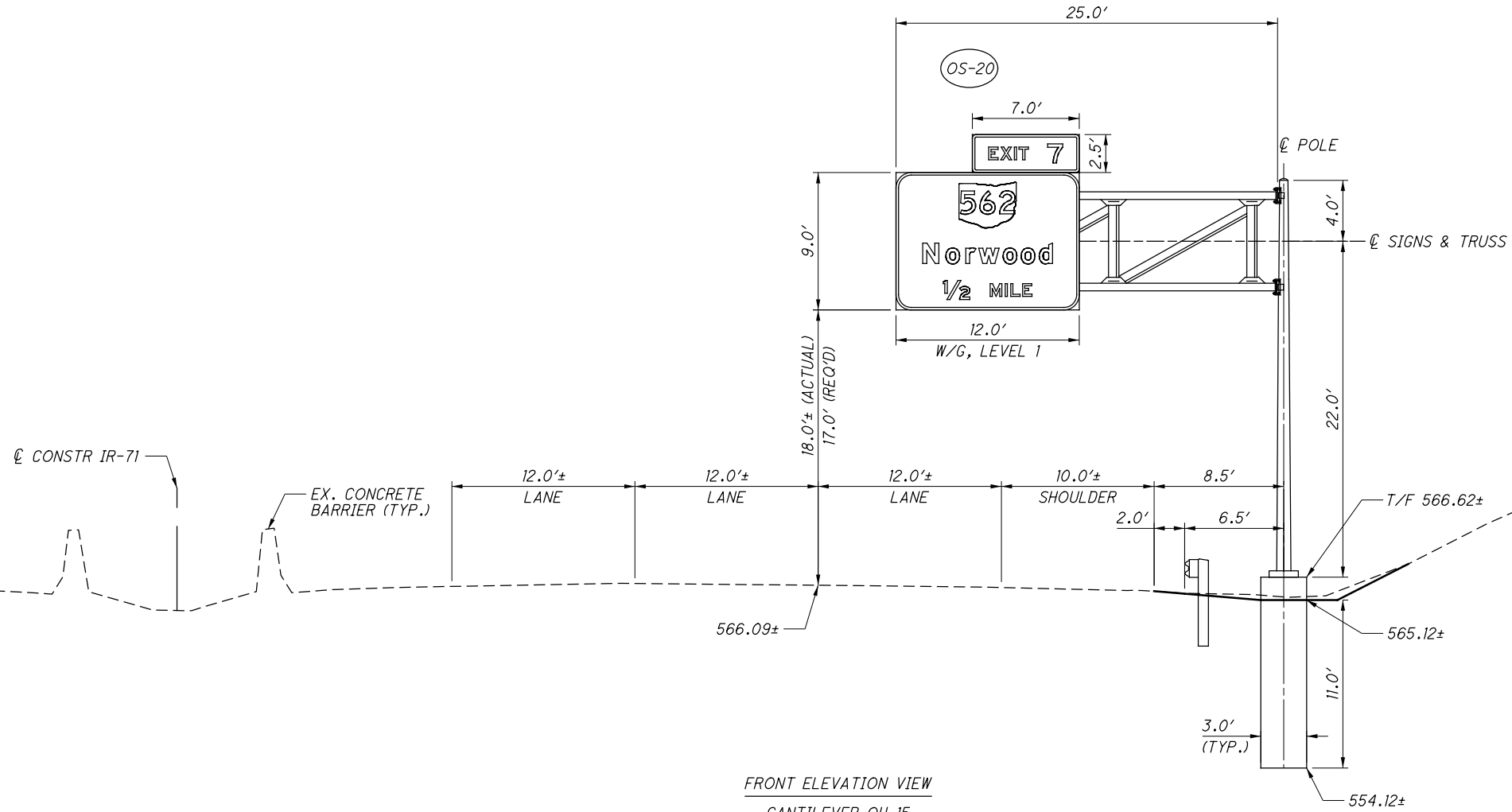
CANTILEVER SIGN OH-14
STA. 685+38 NORTHBOUND

HAM-IR 71-8.42

301
441



O:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826\traffic\sheets\91826_TE009_405+54_SB_CANTILEVER.dgn 10/9/2017 2:52:58 PM JPerchinske



FRONT ELEVATION VIEW
 CANTILEVER OH-15
 IR-71 SOUTHBOUND
 STA. 405+54
 LOOKING SOUTH
 TC-12.30, DESIGN 6

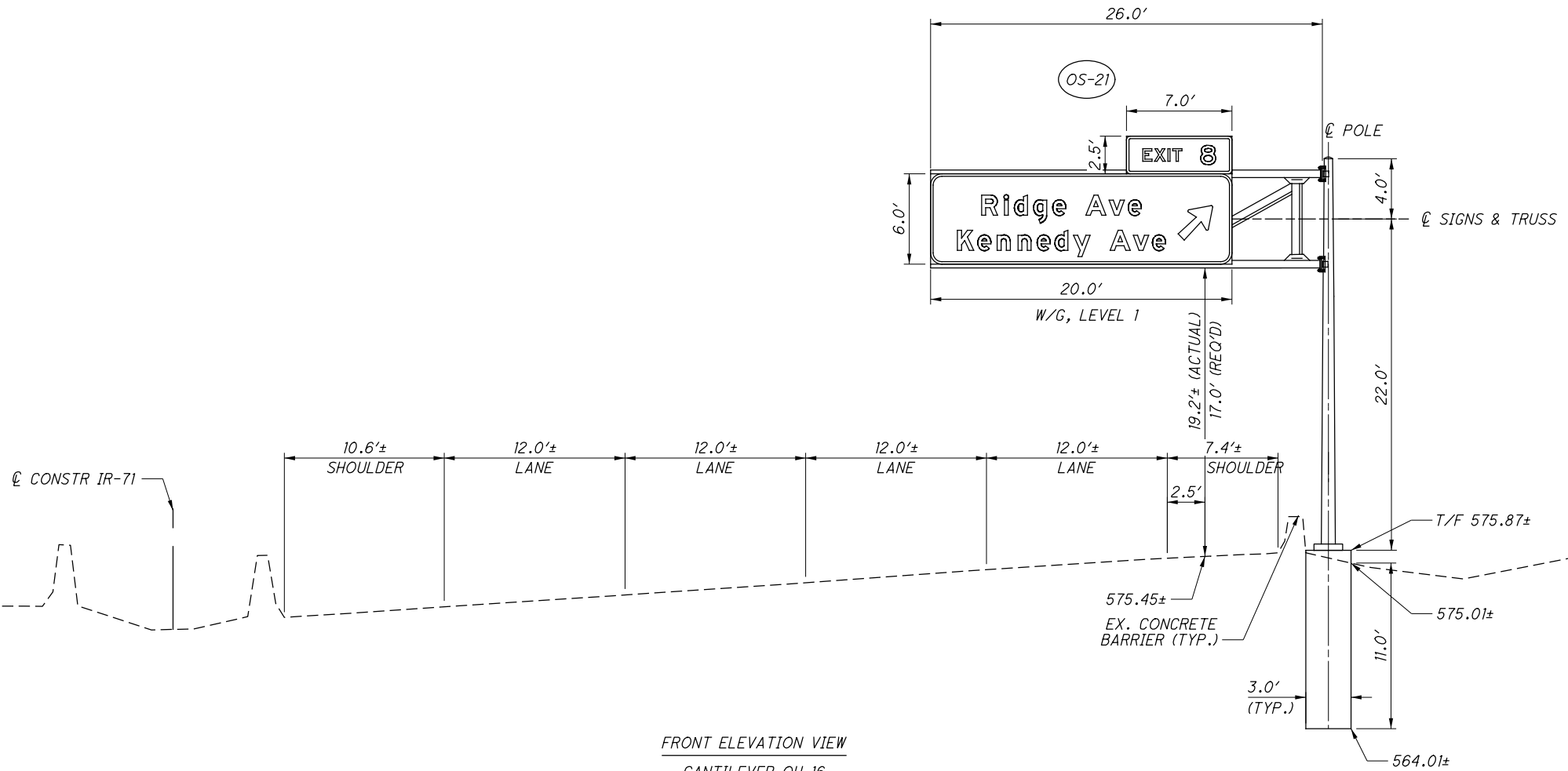
CALCULATED	JEP
CHECKED	RG

0 5 10
 2.5'
 HORIZONTAL
 SCALE IN FEET

CANTILEVER SIGN OH-15
 STA. 405+54 SOUTHBOUND

HAM-IR 71-8.42

O:\Transportation\Projects\ODOT\District 8\HAM-71-8-42\91826\traffic\sheets\91826_TE011_419+30_SB_CANTILEVER.dgn 10/9/2017 2:52:59 PM jPerchinske



FRONT ELEVATION VIEW

CANTILEVER OH-16
IR-71 SOUTHBOUND
STA. 419+30
LOOKING SOUTH
TC-12.30, DESIGN 6

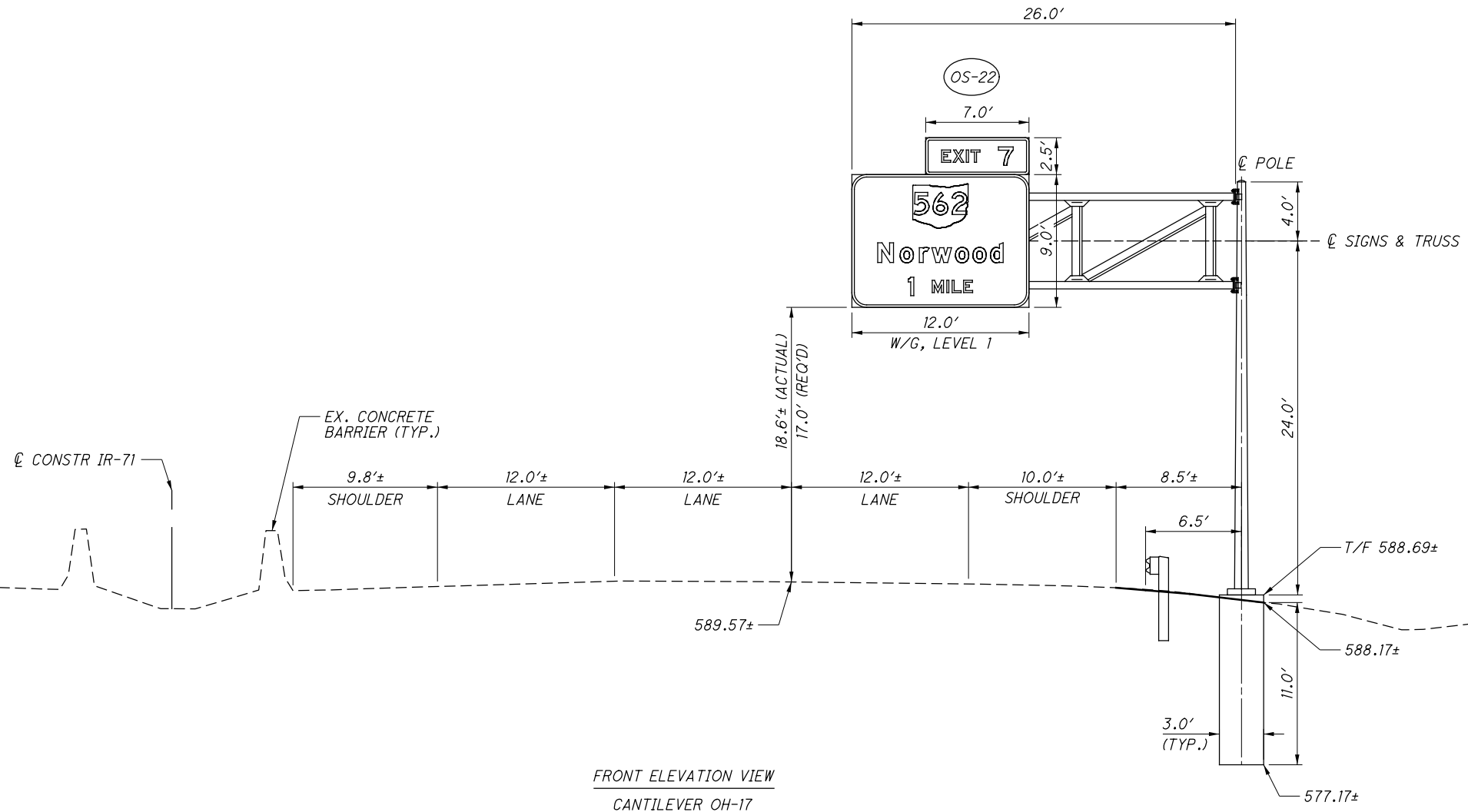
CALCULATED	JEP
CHECKED	RG

CANTILEVER SIGN OH-16
STA. 419+30 SOUTHBOUND

HAM-IR 71-8-42



0:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826\traffic\sheets\91826_TE012_432+10_SB_CANTILEVER.dgn 10/9/2017 2:53:00 PM JPerchinske



FRONT ELEVATION VIEW
 CANTILEVER OH-17
 IR-71 SOUTHBOUND
 STA. 432+10
 LOOKING SOUTH
 TC-12.30, DESIGN 6

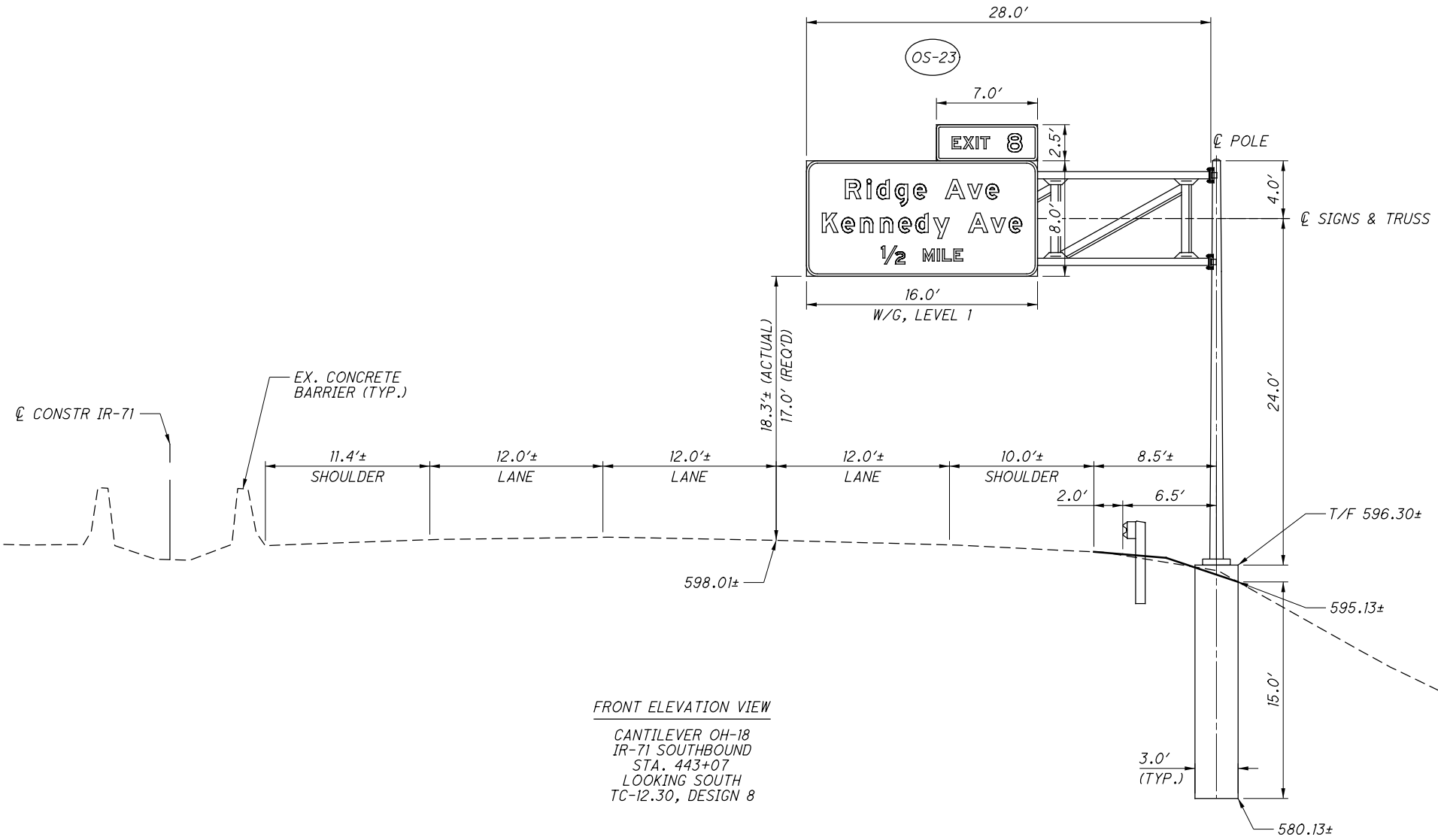
CALCULATED	
JEP	RG
CHECKED	

CANTILEVER SIGN OH-17
 STA. 432+10 SOUTHBOUND

HAM-IR 71-8.42



O:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826\traffic\sheets\91826_TE014_443+07_SB_CANTILEVER.dgn 10/9/2017 2:53:01 PM JPerchinske



FRONT ELEVATION VIEW
CANTILEVER OH-18
IR-71 SOUTHBOUND
STA. 443+07
LOOKING SOUTH
TC-12.30, DESIGN 8

CALCULATED	JEP
CHECKED	RG

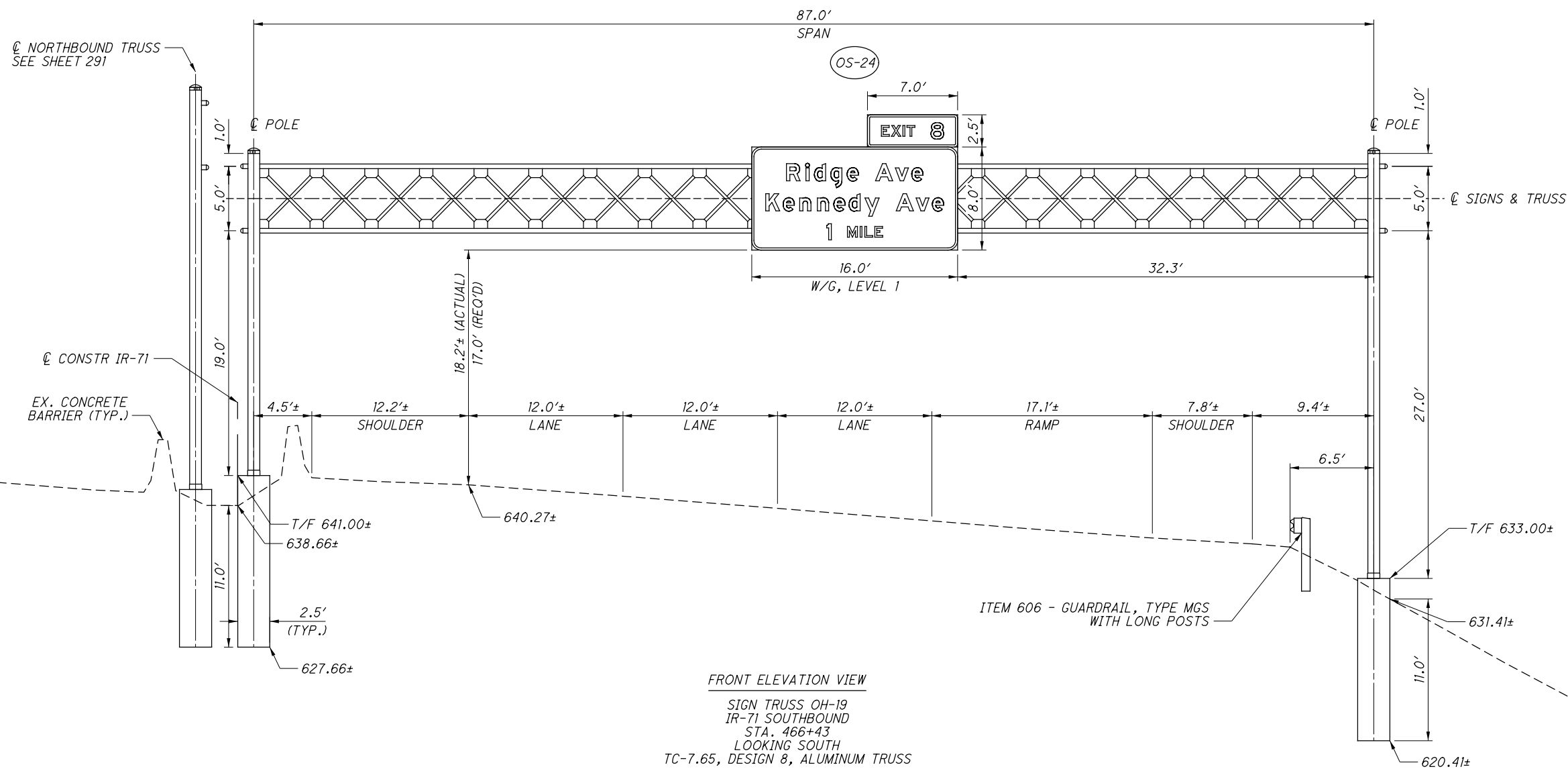
0 5 10
2.5
HORIZONTAL
SCALE IN FEET

CANTILEVER SIGN OH-18
STA. 443+07 SOUTHBOUND

HAM-IR 71-8.42

305
441

O:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826\traffic\sheets\91826_TE007_466+43_SB_TRUSS.dgn 10/9/2017 2:53:01 PM JPerchinske

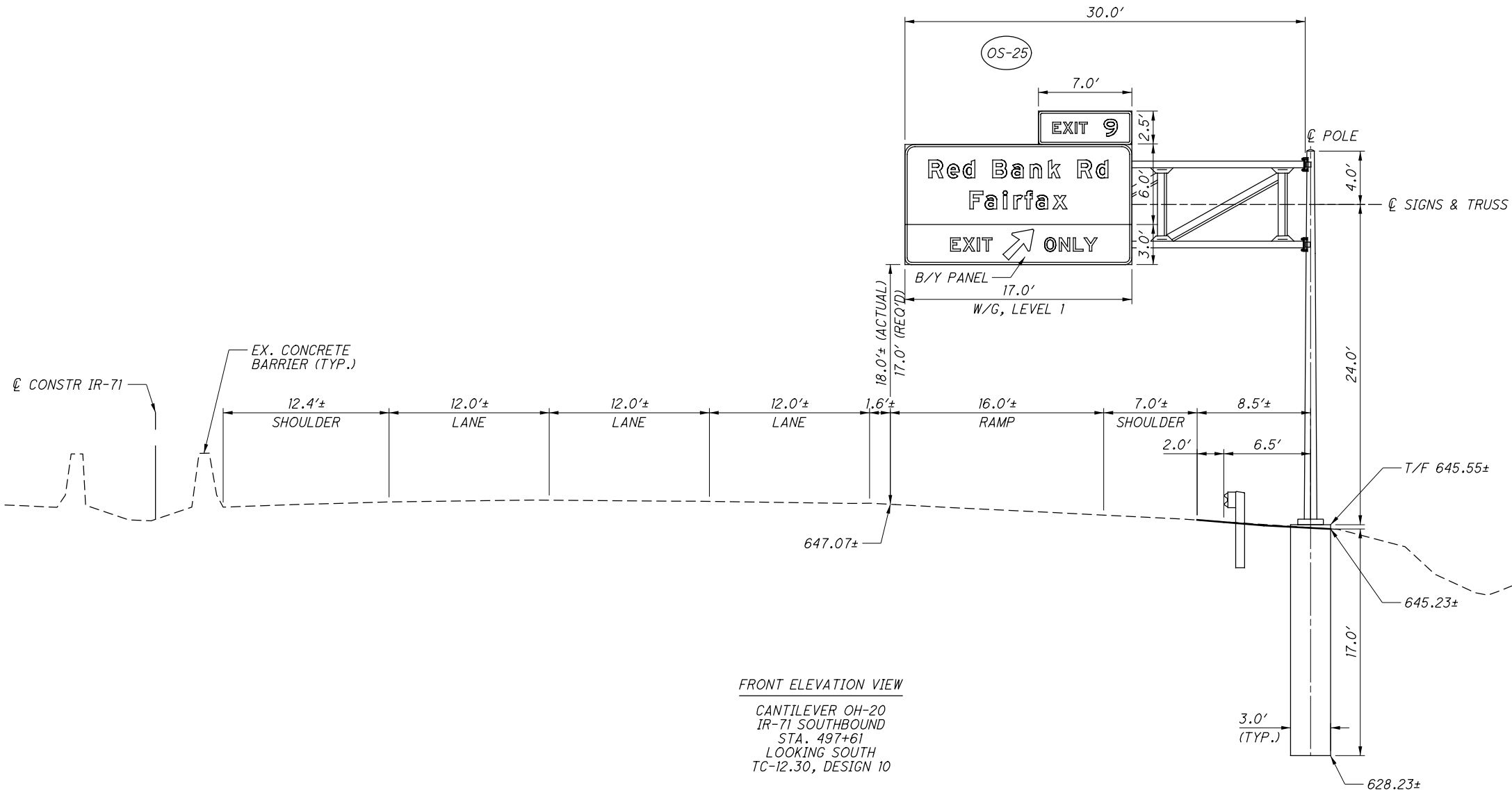


CALCULATED	JEP
CHECKED	RG

**OVERHEAD SIGN TRUSS OH-19
 STA. 466+43 SOUTHBOUND**

HAM-IR 71-8.42

O:\Transportation\Projects\ODOT\District 8\HAM-71-8-42\91826\traffic\sheets\91826_TE016_497+61_SB_CANTILEVER.dgn 10/9/2017 2:53:02 PM JPerchinske



FRONT ELEVATION VIEW
 CANTILEVER OH-20
 IR-71 SOUTHBOUND
 STA. 497+61
 LOOKING SOUTH
 TC-12.30, DESIGN 10

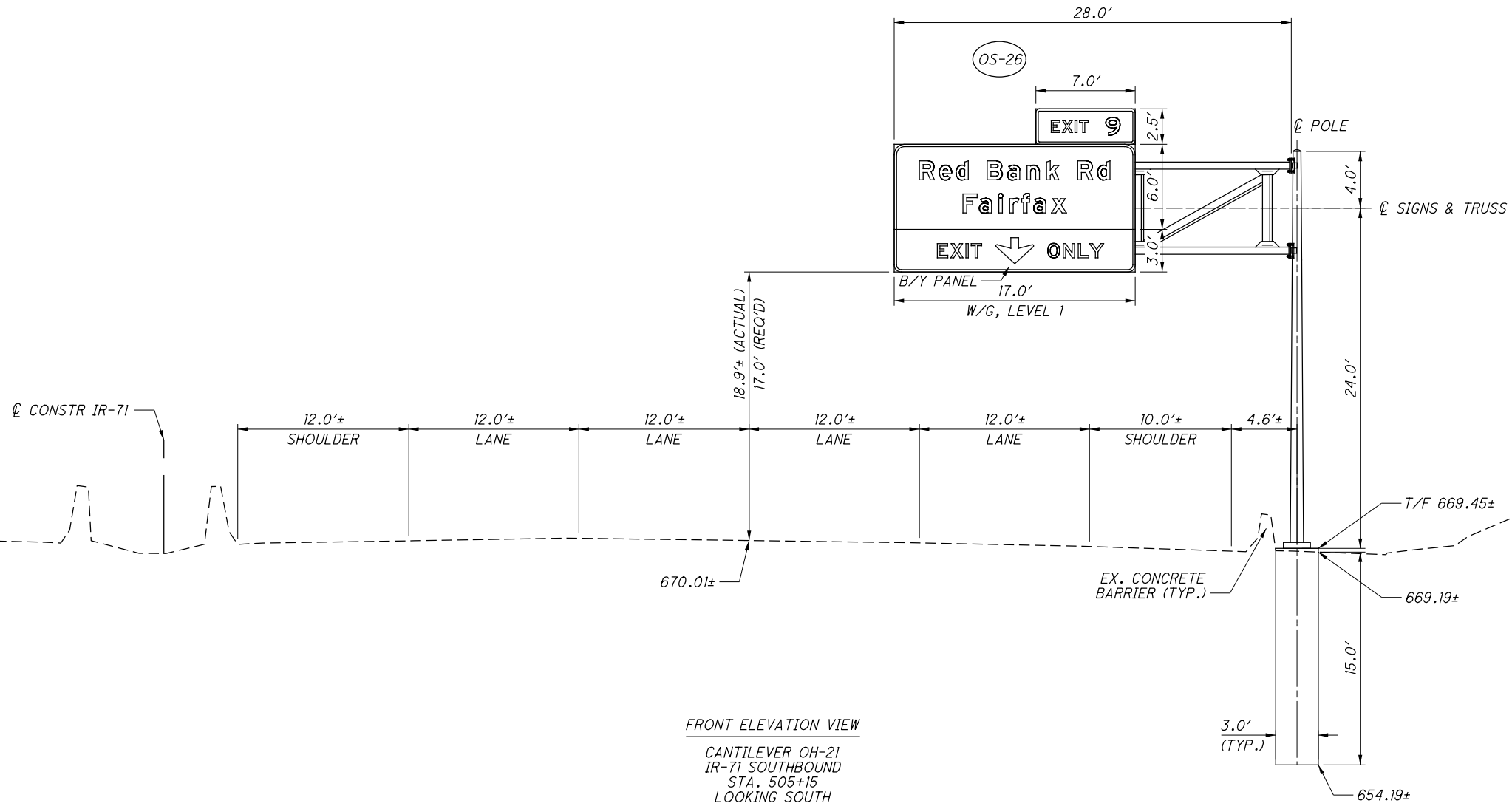
CALCULATED	JEP
CHECKED	RG

2.5' HORIZONTAL SCALE IN FEET

CANTILEVER SIGN OH-20
 STA. 497+61 SOUTHBOUND

HAM-IR 71-8-42

0:\Transportation\Projects\ODOT\District 8\HAM-71-8-42\91826\traffic\sheets\91826_TE017_SB_CANTILEVER.dgn 10/9/2017 2:53:03 PM JPerchinske



FRONT ELEVATION VIEW
 CANTILEVER OH-21
 IR-71 SOUTHBOUND
 STA. 505+15
 LOOKING SOUTH
 TC-12.30, DESIGN 8

CALCULATED	JEP
CHECKED	RG

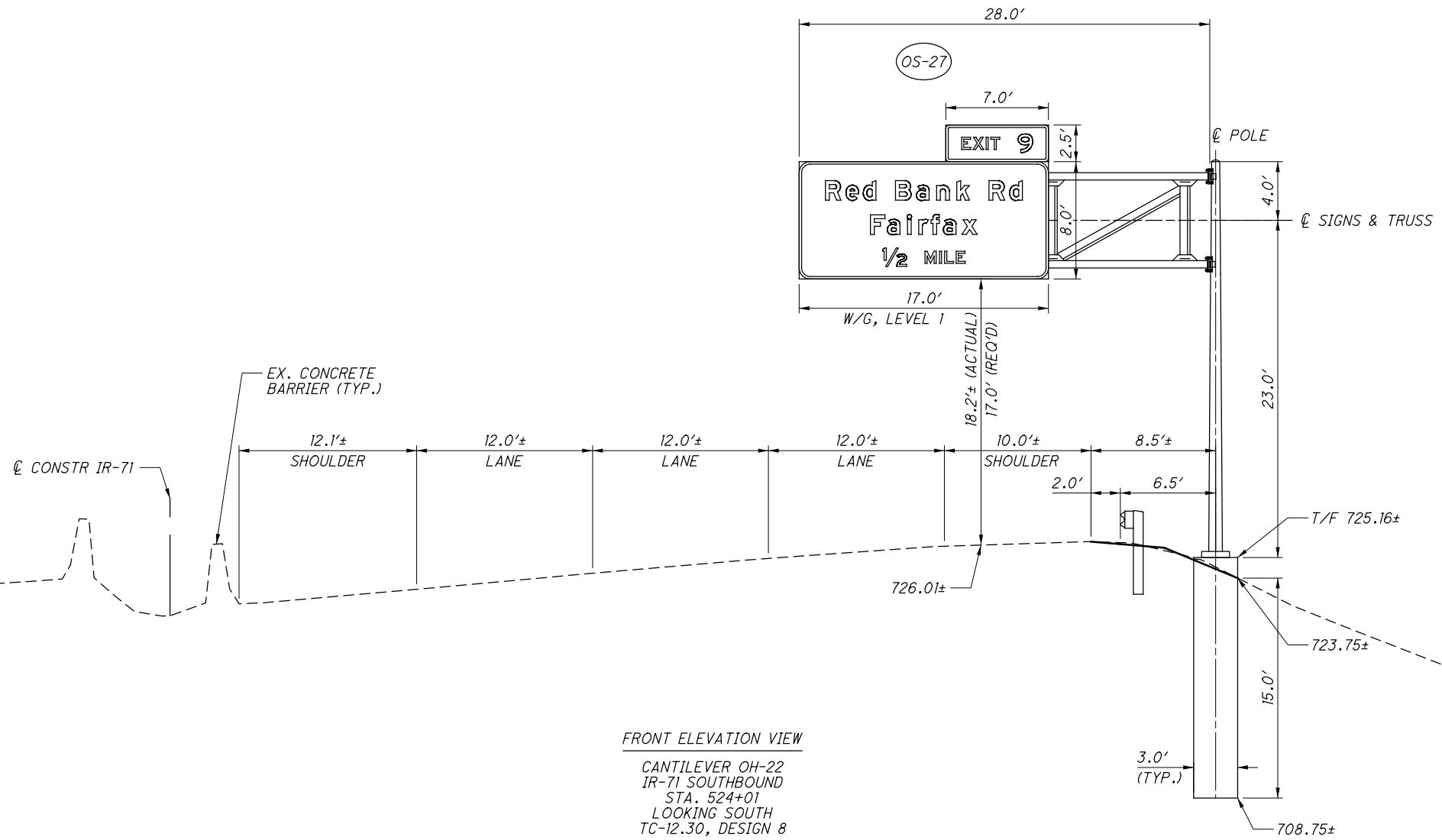
0 5 10
 2.5
 HORIZONTAL
 SCALE IN FEET

CANTILEVER SIGN OH-21
 STA. 505+15 SOUTHBOUND

HAM-IR 71-8-42

308
 441

0:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826\traffic\sheets\91826_TE018_524+01_SB_CANTILEVER.dgn 10/9/2017 2:53:04 PM JPerchinske



FRONT ELEVATION VIEW

CANTILEVER OH-22
IR-71 SOUTHBOUND
STA. 524+01
LOOKING SOUTH
TC-12.30, DESIGN 8

CALCULATED	JEP
CHECKED	RG

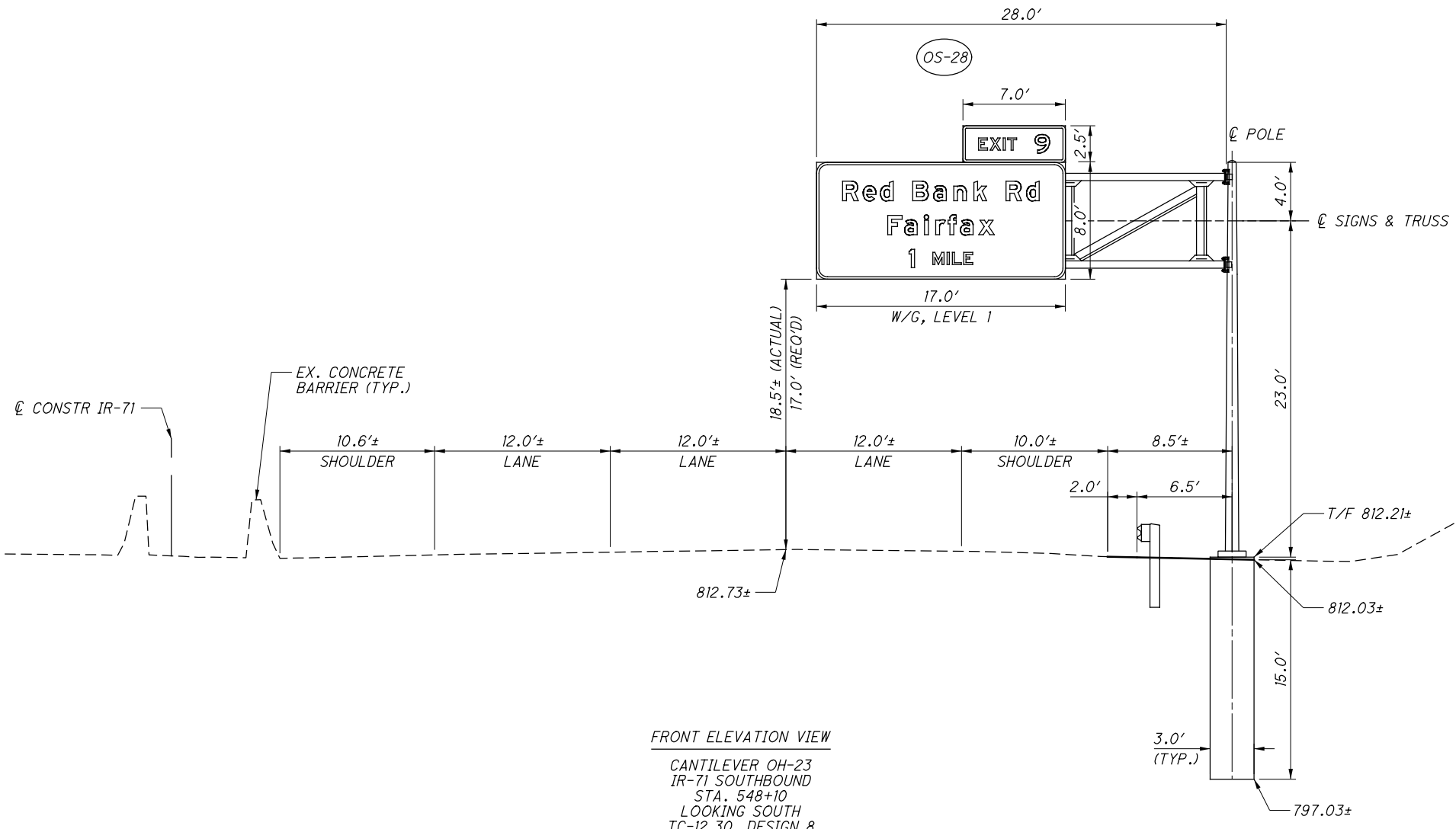
0 5 10
2.5'
HORIZONTAL
SCALE IN FEET

CANTILEVER SIGN OH-22
STA. 524+01 SOUTHBOUND

HAM-IR 71-8.42

309
441

O:\Transportation\Projects\ODOT\District 8\HAM-71-8-42\91826\traffic\sheets\91826_TE019_548+10_SB_CANTILEVER.dgn 10/9/2017 2:53:13 PM JPerchinske



FRONT ELEVATION VIEW
CANTILEVER OH-23
IR-71 SOUTHBOUND
STA. 548+10
LOOKING SOUTH
TC-12.30, DESIGN 8

CALCULATED	JEP
CHECKED	RG

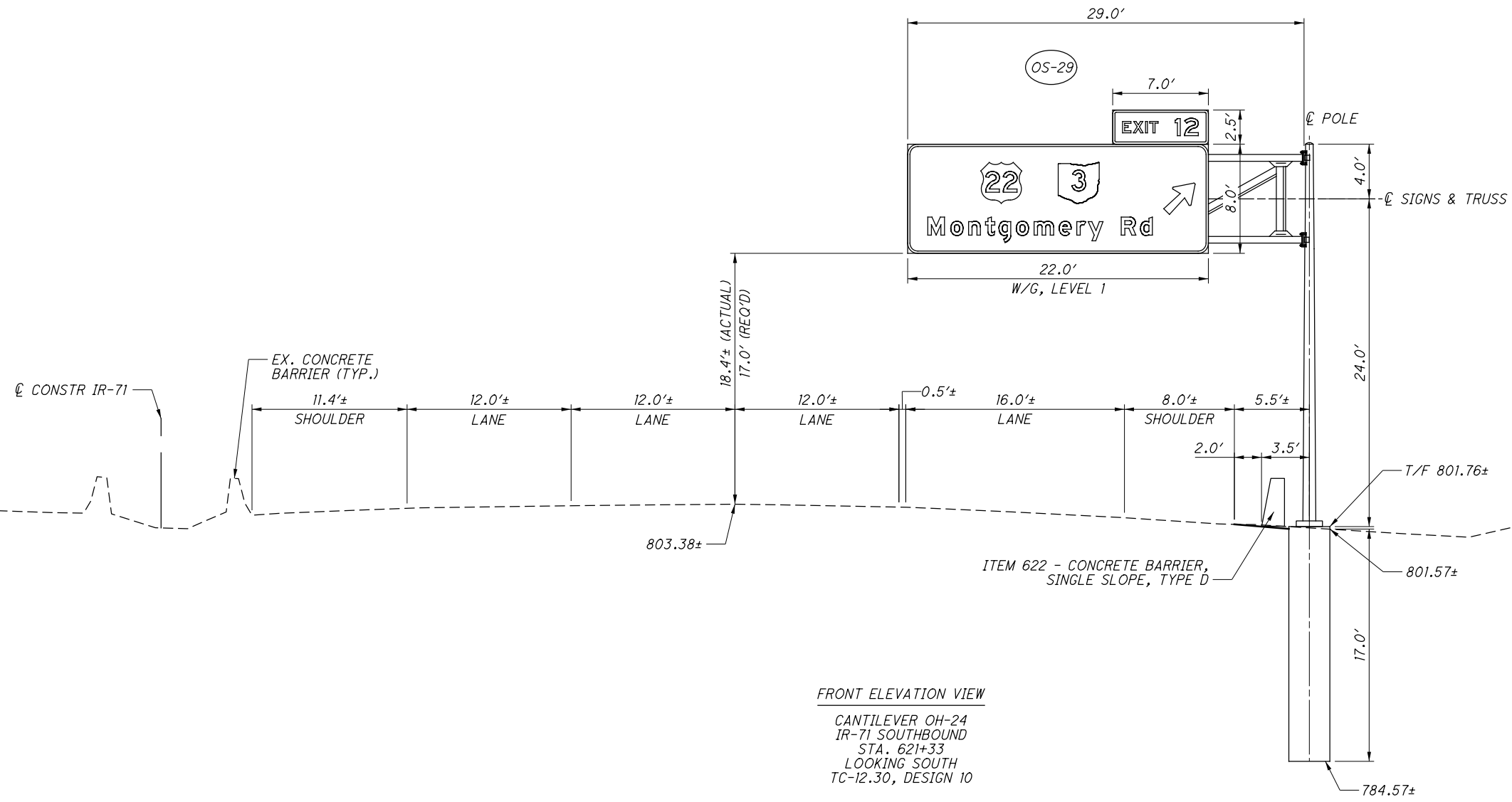
0 5 10
2.5'
HORIZONTAL
SCALE IN FEET

CANTILEVER SIGN OH-23
STA. 548+10 SOUTHBOUND

HAM-IR 71-8-42

310
441

O:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826\traffic\sheets\91826_TE023_621+33_SB_CANTILEVER.dgn 10/9/2017 2:53:14 PM JPerchinske



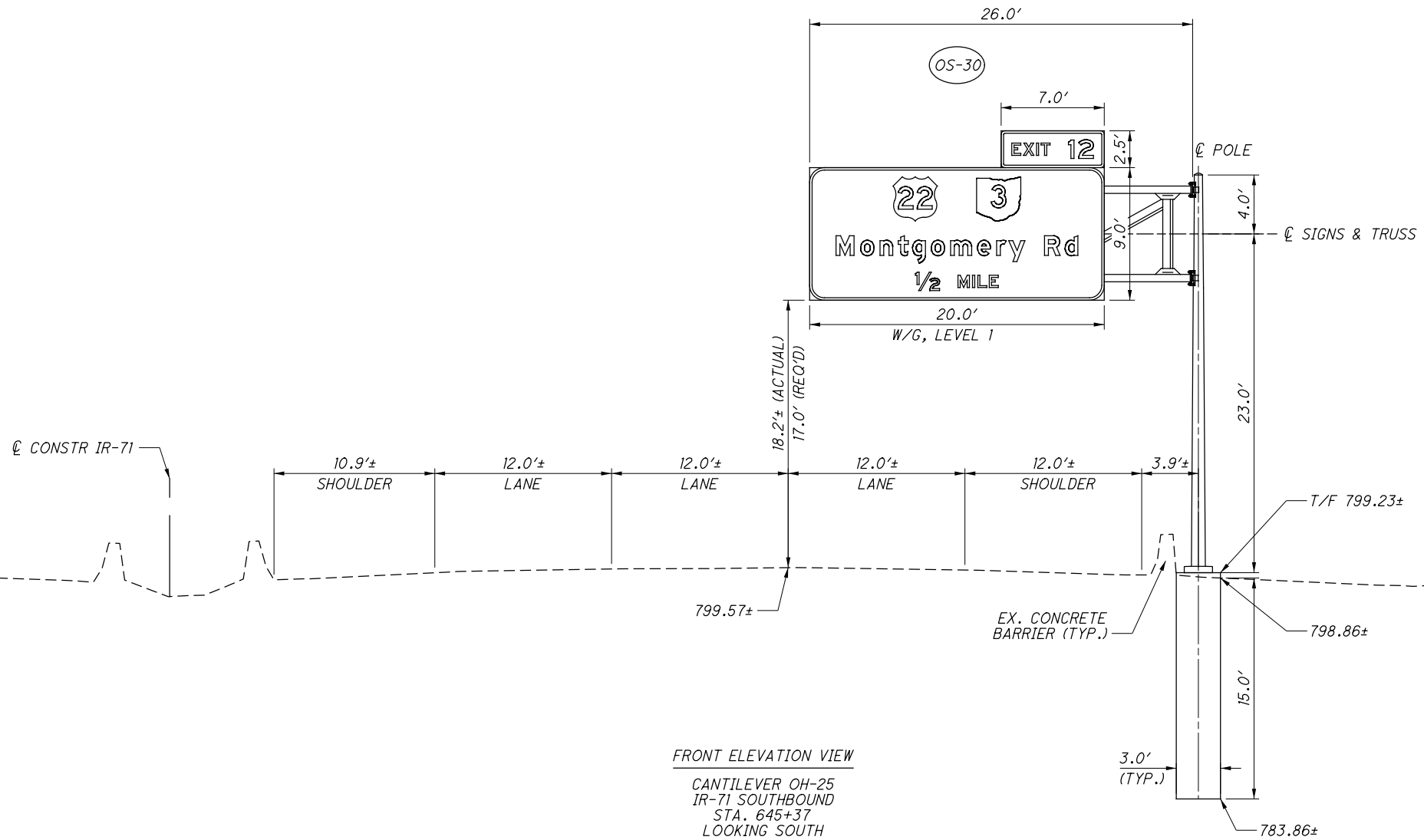
FRONT ELEVATION VIEW
 CANTILEVER OH-24
 IR-71 SOUTHBOUND
 STA. 621+33
 LOOKING SOUTH
 TC-12.30, DESIGN 10

CALCULATED	JEP
CHECKED	RG

2.5' HORIZONTAL SCALE IN FEET

CANTILEVER SIGN OH-24
 STA. 621+33 SOUTHBOUND

HAM-IR 71-8.42



FRONT ELEVATION VIEW
 CANTILEVER OH-25
 IR-71 SOUTHBOUND
 STA. 645+37
 LOOKING SOUTH
 TC-12.30, DESIGN 9

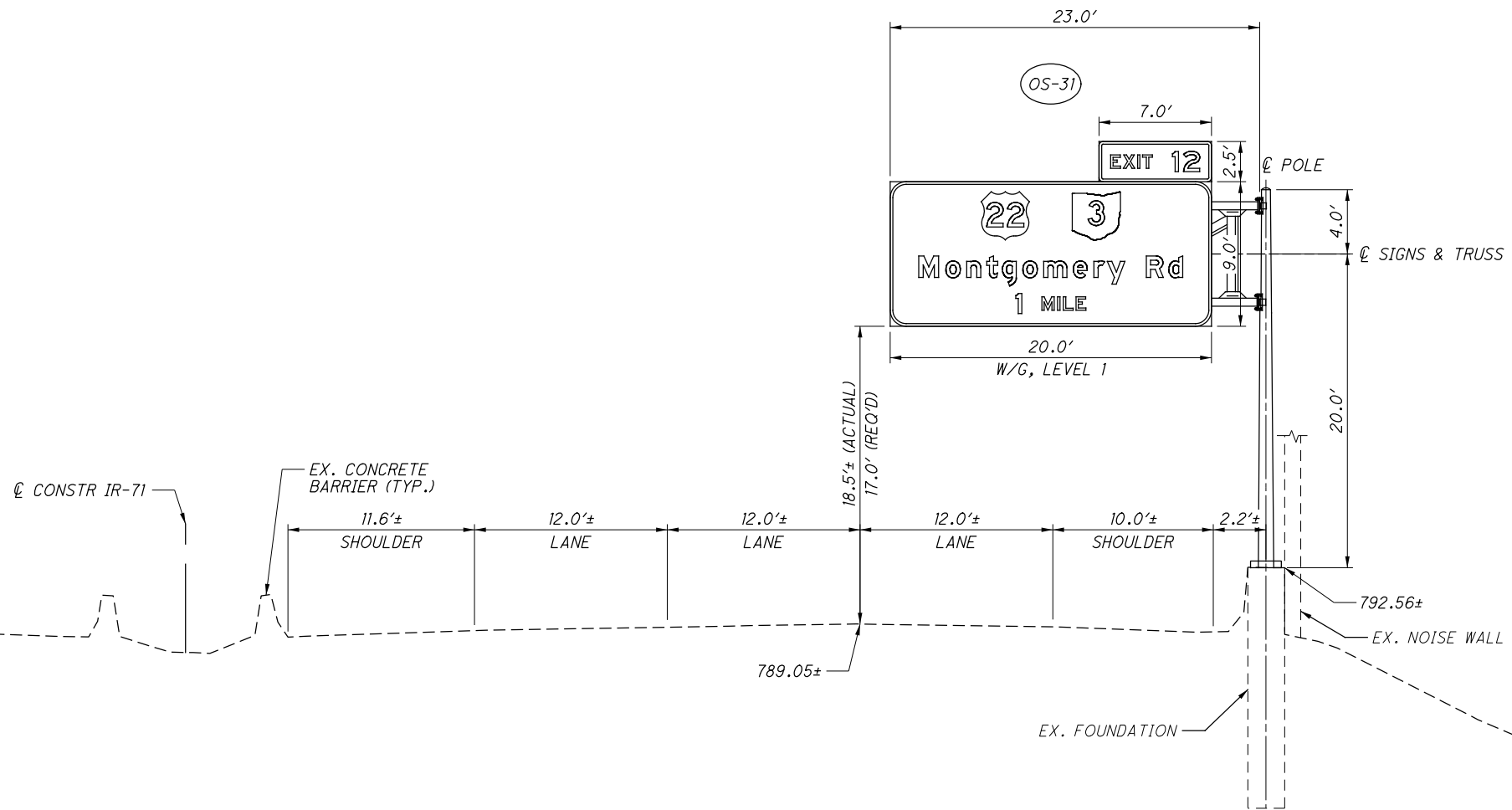
CALCULATED	JEP
CHECKED	RG

CANTILEVER SIGN OH-25
 STA. 645+37 SOUTHBOUND

HAM-IR 71-8-42



O:\Transportation\Projects\ODOT\District 8\HAM-71-8-42\91826\traffic\sheets\91826_TE027_669+82_SB_CANTILEVER.dgn 10/9/2017 2:53:16 PM JPerchinske



FRONT ELEVATION VIEW

CANTILEVER OH-26
IR-71 SOUTHBOUND
STA. 669+82
LOOKING SOUTH
TC-12.30, DESIGN 9

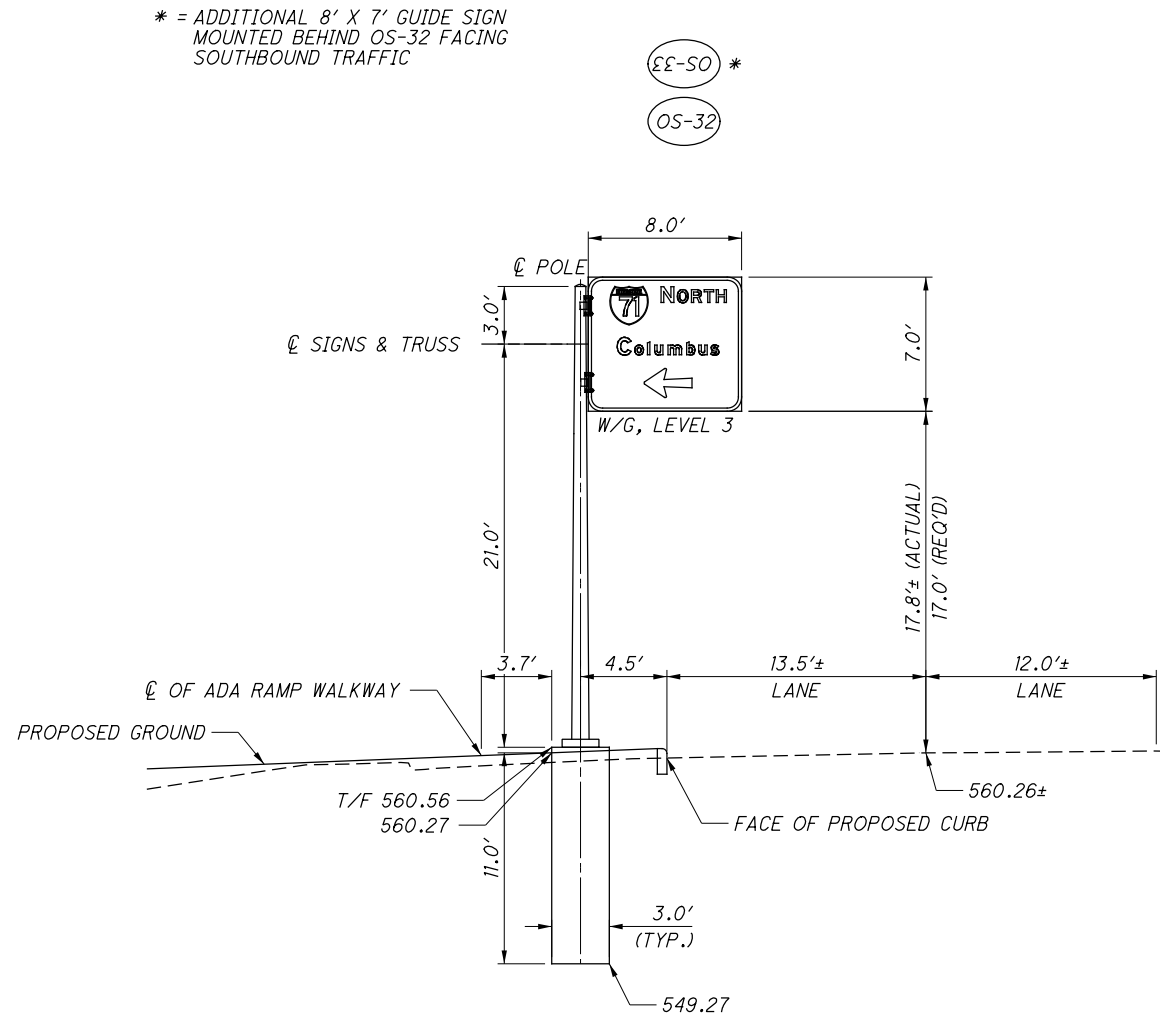
CALCULATED	JEP
CHECKED	RG

0 5 10
2.5'
HORIZONTAL
SCALE IN FEET

CANTILEVER SIGN OH-26
STA. 669+82 SOUTHBOUND

HAM-IR 71-8-42

313
441



FRONT ELEVATION VIEW
CANTILEVER OH-27
KENNEDY AVE/RAMP P
STA. 408+37 (RAMP P)
LOOKING NORTH
TC-12.30, DESIGN 3

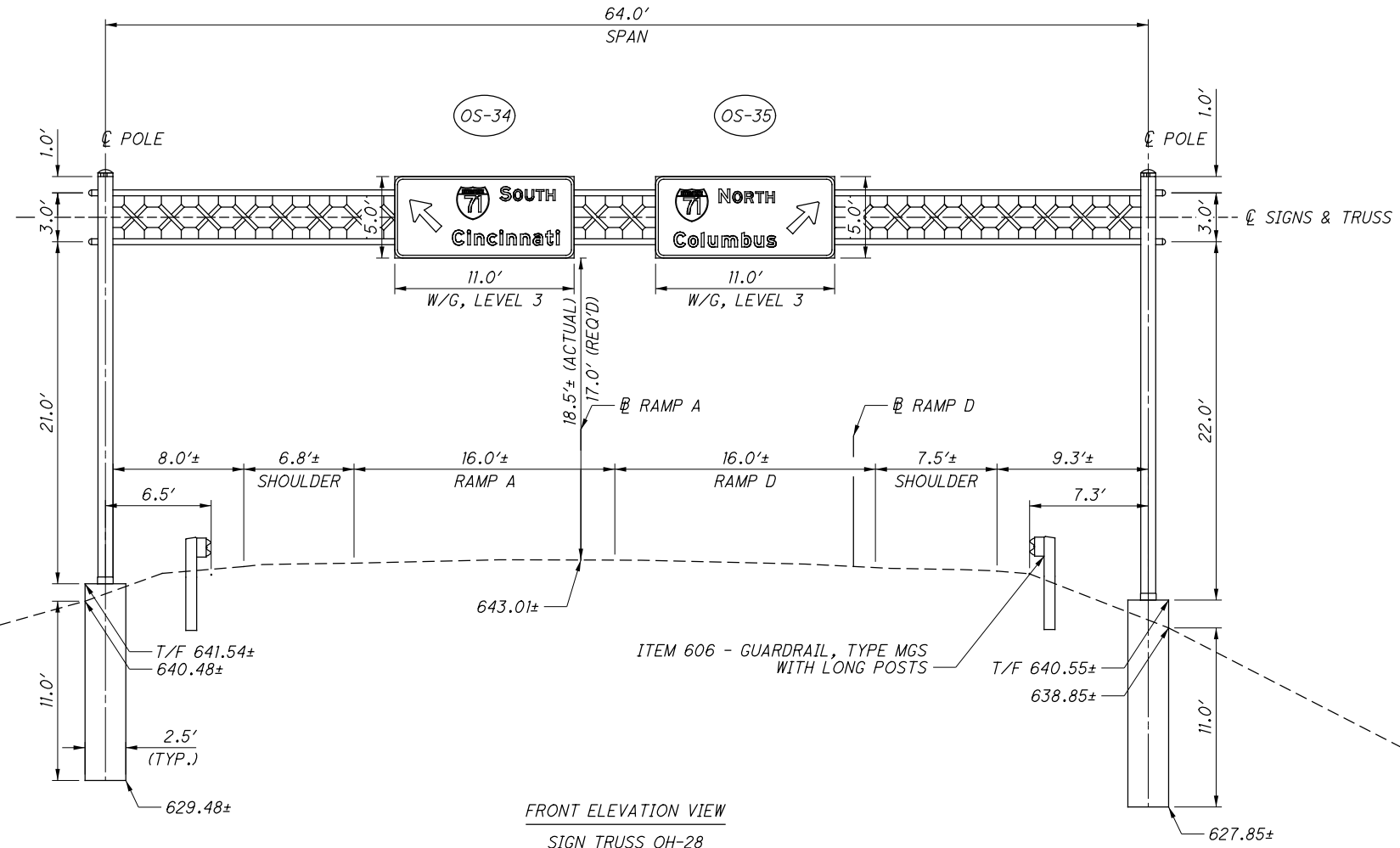
CALCULATED	JEP
CHECKED	RG

0 5 10
2.5
HORIZONTAL SCALE IN FEET

CANTILEVER SIGN OH-27
STA. 408+37 RAMP P

HAM-IR 71-8-42

O:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826\traffic\sheets\91826_TE008_2+24 (RAMP A) TRUSS.dgn 10/9/2017 2:53:17 PM jPerchinske



FRONT ELEVATION VIEW
 SIGN TRUSS OH-28
 RAMP A
 STA. 2+24
 LOOKING WEST
 TC-7.65, DESIGN 6, ALUMINUM TRUSS

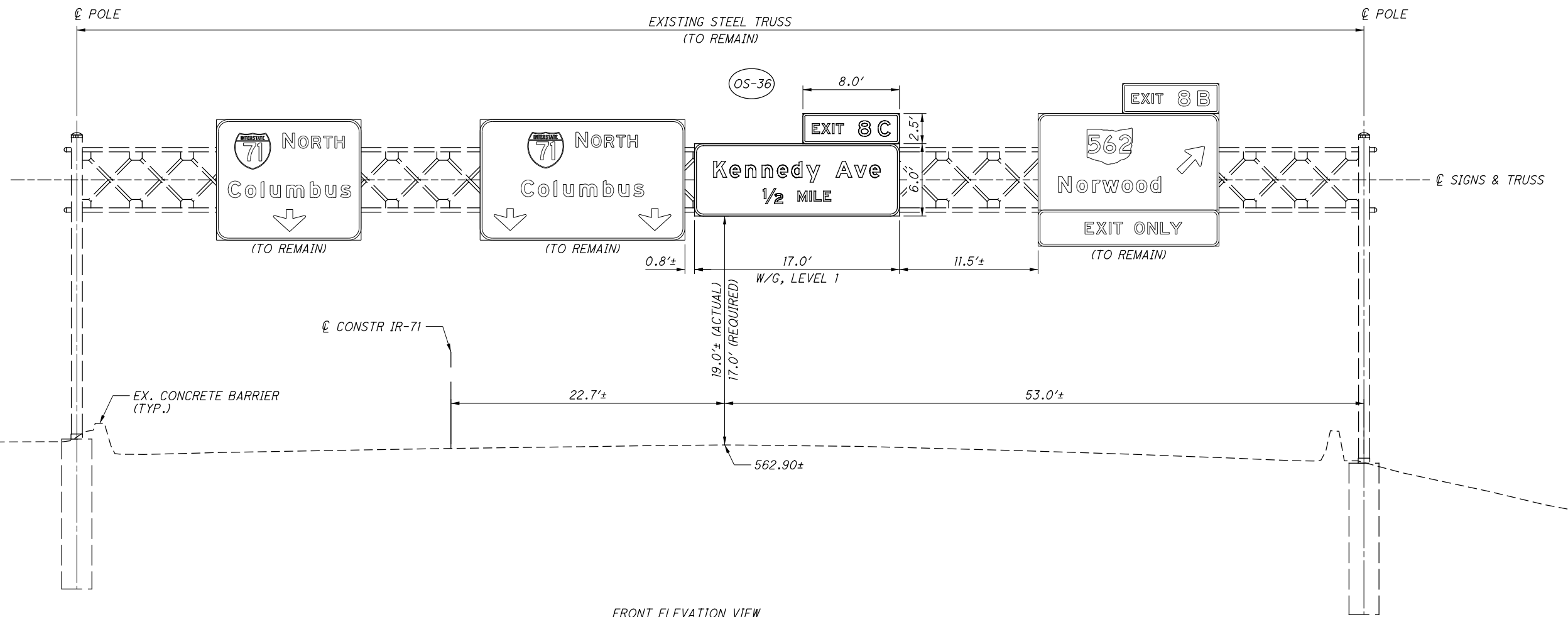
CALCULATED	JEP	CHECKED	RG

OVERHEAD SIGN TRUSS OH-28
 STA. 2+24 RAMP A

HAM-IR 71-8.42



O:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826\traffic\sheets\91826_TE001_384+43_NB TRUSS.dgn 10/9/2017 2:53:18 PM JPerchinske



FRONT ELEVATION VIEW
SIGN TRUSS OH-29
IR-71 NORTHBOUND
STA. 384+43
LOOKING NORTH
EXISTING STEEL TRUSS

CALCULATED	JEP
CHECKED	RG

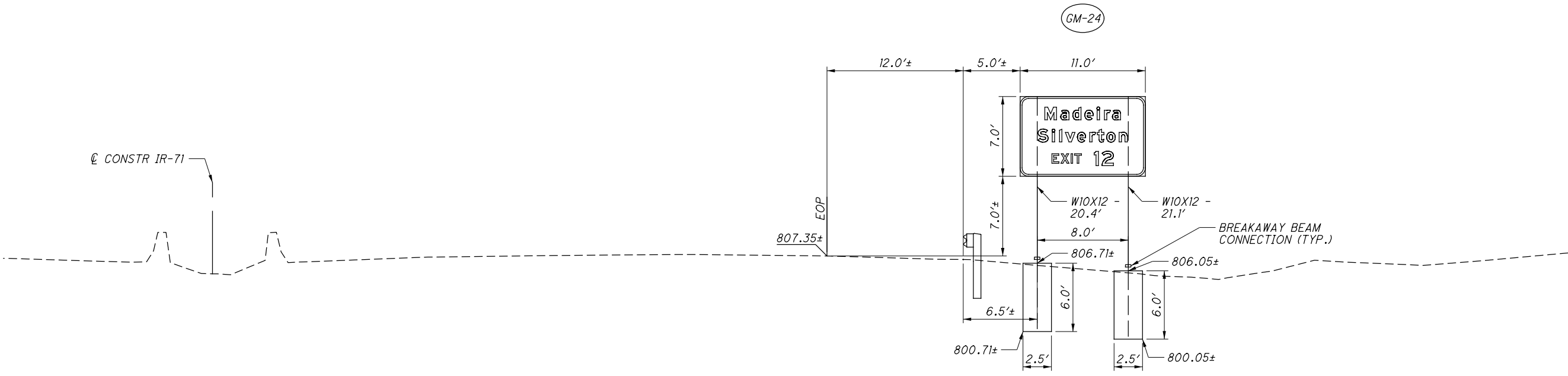
0 5 10
2.5
HORIZONTAL
SCALE IN FEET

OVERHEAD SIGN ON EXISTING TRUSS OH-29
STA. 384+43 NORTHBOUND

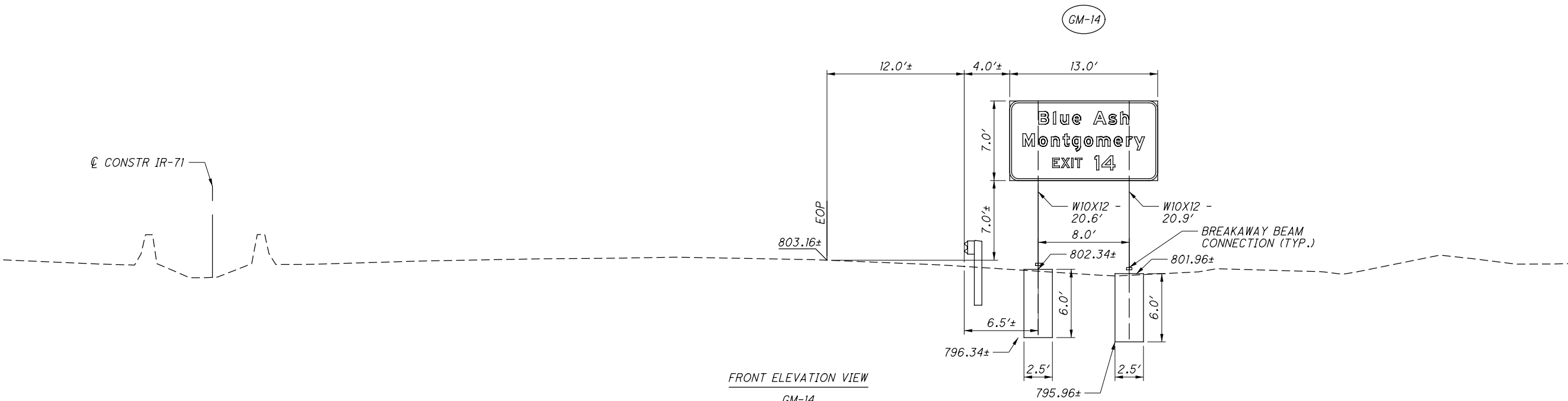
HAM-IR 71-8.42

316
441

O:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826\traffic\sheets\91826_TE031_GROUND MOUNTED SIGNS.dgn 10/9/2017 2:53:19 PM JPerchinske



FRONT ELEVATION VIEW
 GM-24
 IR-71 SOUTHBOUND
 STA. 654+36
 LOOKING SOUTH



FRONT ELEVATION VIEW
 GM-14
 IR-71 NORTHBOUND
 STA. 649+56
 LOOKING NORTH

CALCULATED	
JEP	RG
CHECKED	
RG	

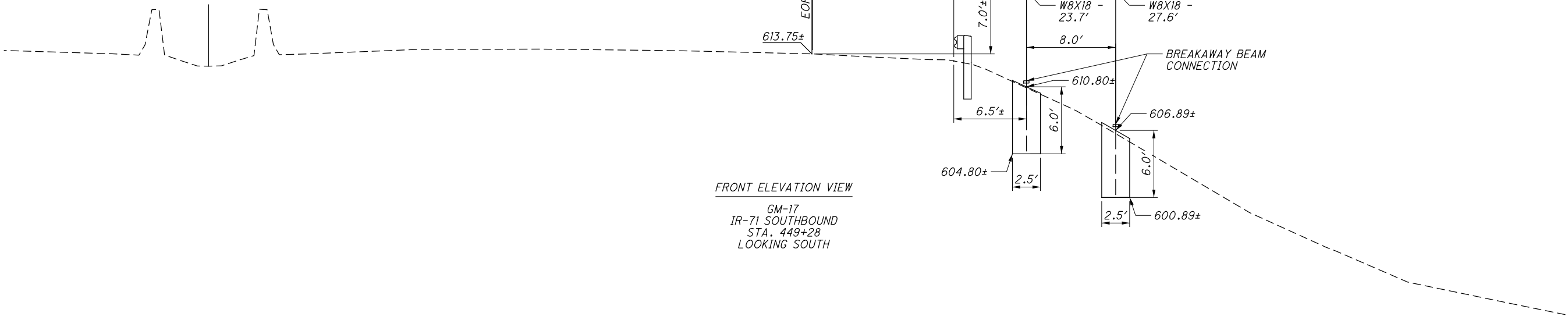
0 5 10
 2.5'
 HORIZONTAL SCALE IN FEET

GROUND MOUNTED SIGN ELEVATIONS
 GM-14 AND GM-24

HAM-IR 71-8.42

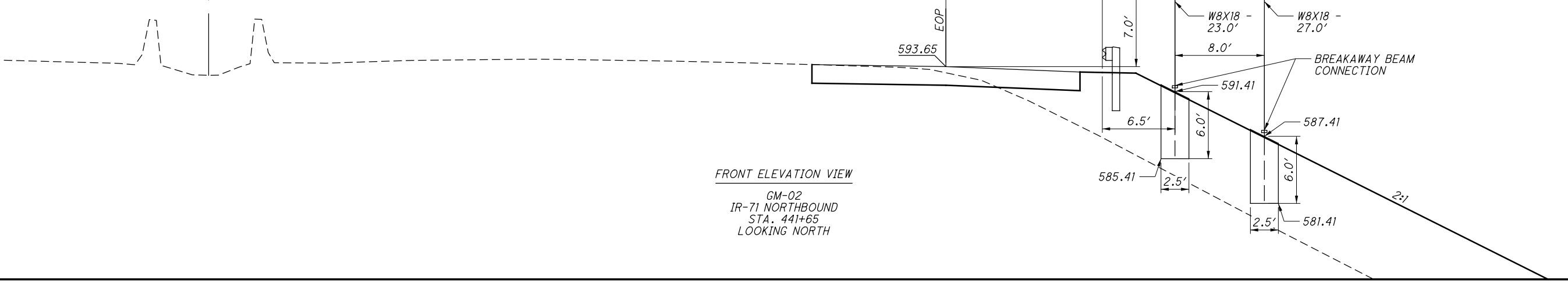
0:\Transportation\Projects\ODOT\District 8\HAM-71-8.42\91826\traffic\sheets\91826_TE032_GROUND_MOUNTED STATE FARM SIGNS.dgn 10/9/2017 2:53:20 PM JPerchinske

CONSTR IR-71



FRONT ELEVATION VIEW
 GM-17
 IR-71 SOUTHBOUND
 STA. 449+28
 LOOKING SOUTH

CONSTR IR-71



FRONT ELEVATION VIEW
 GM-02
 IR-71 NORTHBOUND
 STA. 441+65
 LOOKING NORTH

CALCULATED	
JEP	RG
CHECKED	

0 5 10
 2.5'
 HORIZONTAL
 SCALE IN FEET

GROUND MOUNTED SIGN ELEVATIONS
 GM-02 AND GM-17

HAM-IR 71-8.42

J:\20151750\HAM-71-1.51\0001\HAM-91826\Design\Traffic\Sheets\91826_GG001.dgn 3/1/2018 9:45:59 AM brieder

SHEET NUM.											PART.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.
								318H			01/		EXT	TOTAL			
LIGHTING																	
								3,851			3,851	625	25400	3,851	FT	CONDUIT, 2", 725.04	
								231			231	625	25500	231	FT	CONDUIT, 3", 725.04	
								469			469	625	25902	469	FT	CONDUIT, JACKED OR DRILLED, 725.04, 2"	
								94			94	625	25903	94	FT	CONDUIT, JACKED OR DRILLED, 725.04, AS PER PLAN, 2"	318B
								3,378			3,378	625	29000	3,378	FT	TRENCH	
								493			493	625	29001	493	FT	TRENCH, AS PER PLAN	318B
								19			19	625	30500	19	EACH	PULL BOX, 725.06, SIZE 1.5	
								9			9	625	30520	9	EACH	PULL BOX, 725.06, SIZE 7	
								1			1	625	30530	1	EACH	PULL BOX, 725.06, SIZE 18	
								28			28	625	32000	28	EACH	GROUND ROD	
								3,871			3,871	625	36000	3,871	FT	PLASTIC CAUTION TAPE	
TRAFFIC CONTROL																	
								61			61	621	00100	61	EACH	RPM	
								32			32	621	00300	32	EACH	RPM REFLECTOR	
								22			22	621	54000	22	EACH	RAISED PAVEMENT MARKER REMOVED	
								46			46	630	79500	46	EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED	
								1			1	630	79611	1	EACH	SIGN SUPPORT ASSEMBLY, BARRIER MOUNTED, AS PER PLAN	318C
								6			6	630	97700	6	EACH	SIGNING, MISC.:WRONG WAY DETECTION SYSTEM	318B
								4			4	644	01360	4	EACH	WRONG WAY ARROW	
TRAFFIC SIGNALS																	
								22			22	632	26500	22	EACH	DETECTOR LOOP	
								21			21	632	64020	21	EACH	PEDESTAL FOUNDATION	
								1			1	632	64021	1	EACH	PEDESTAL FOUNDATION, AS PER PLAN	318C
								3,034			3,034	632	65200	3,034	FT	LOOP DETECTOR LEAD-IN CABLE	
								3,584			3,584	632	66000	3,584	FT	POWER CABLE, 3 CONDUCTOR, NO. 14 AWG	
								1,862			1,862	632	67300	1,862	FT	POWER CABLE, 3 CONDUCTOR, NO. 8 AWG	
								153			153	632	69500	153	FT	SERVICE CABLE, 2 CONDUCTOR, NO. 6 AWG	
								6			6	632	70001	6	EACH	POWER SERVICE, AS PER PLAN	318C
								2			2	632	70400	2	EACH	CONDUIT RISER, 2" DIAMETER	
								2			2	632	89300	2	EACH	WOOD POLE, 30'	
								2			2	632	89700	2	EACH	PEDESTAL, 11'	
								20			20	632	90010	20	EACH	PEDESTAL, MISC.: PEDESTAL, 15', TRANSFORMER BASE	318C
LANDSCAPING																	
								440			440	661	99920	440	SF	PLANTING, MISC.: RESTORATION OF DISTURBED LANDSCAPED AREA	318C

GENERAL SUMMARY

HAM-71-8.42

318A
441

CALCULATED
BER
CHECKED
JDS

WRONG WAY DETECTION SYSTEM NOTES

THESE SPECIFICATIONS, TOGETHER WITH THE ACCOMPANYING PLANS ARE INTENDED TO DESCRIBE THE TYPE, SIZE AND LOCATION OF THE PRODUCTS AND MATERIALS TO BE PROVIDED AND INSTALLED UNDER THE VARIOUS BID ITEMS RELATED TO THE WRONG WAY DETECTION SYSTEM. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL DEVICES AND RELATED MATERIALS IN COMPLIANCE WITH THESE PLANS AND SPECIFICATIONS, AS WELL AS:

- OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD)
- 2016 OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS
- STANDARD CONSTRUCTION DRAWINGS ISSUED BY THE OHIO DEPARTMENT OF TRANSPORTATION

THESE SPECIFICATIONS SET FORTH THE MINIMUM REQUIREMENTS OF THE WRONG WAY DETECTION SYSTEM AND THE ITEMS REFERRED HEREIN.

GROUNDING AND BONDING

THE REQUIREMENTS OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (C&MS) AND THE TC SERIES OF STANDARD CONSTRUCTION DRAWINGS ARE MODIFIED AS FOLLOWS:

1. ALL METALLIC PARTS CONTAINING ELECTRICAL CONDUCTORS SHALL BE PERMANENTLY JOINED TO FORM AN EFFECTIVE GROUND FAULT CURRENT PATH BACK TO THE GROUNDED CONDUCTOR IN THE POWER SERVICE DISCONNECT SWITCH.
 - A. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR IN METALLIC CONDUITS (725.04) IN ADDITION TO THE CONDUCTORS SPECIFIED AND BOND THE CONDUIT TO THIS GROUNDING CONDUCTOR.
 - B. WHEN AN EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED IN PLASTIC CONDUIT (725.05), THE INSTALLATION SHALL INCLUDE A SEPARATE EQUIPMENT GROUNDING CONDUCTOR IN ADDITION TO THE CONDUCTORS SPECIFIED.
 - C. IF MULTIPLE CONDUIT RUNS BEGIN AND END AT THE SAME POINTS, ONLY ONE EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED.
2. CONDUITS.
 - A. THE 725.04 CONDUIT SHALL HAVE GROUNDING BUSHINGS INSTALLED AT ALL TERMINATION POINTS. THE BUSHING MATERIAL SHALL BE COMPATIBLE WITH GALVANIZED STEEL CONDUIT AND THE GROUNDING LUG MATERIAL SHALL BE COMPATIBLE FOR USE WITH COPPER WIRE. THREADED OR COMPRESSION TYPE BUSHINGS MAY BE USED.
 - B. THE 725.05 CONDUIT SHALL HAVE THE INSIDE AND OUTSIDE DIAMETERS OF THE CONDUIT DEBURRED AT ALL TERMINATION POINTS.
 - C. BOTH ENDS OF METALLIC CONDUIT SHALL BE BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.
 - D. METALLIC CONDUIT MAY BE BONDED TO METALLIC BOXES THROUGH THE USE OF CONDUIT FITTINGS UL APPROVED FOR THIS TYPE OF CONNECTION, WITH THE BOX BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.
3. WIRE FOR GROUNDING AND BONDING.
 - A. USE INSULATED, COPPER WIRE FOR THE EQUIPMENT GROUNDING CONDUCTOR. BONDING JUMPERS IN BOXES AND ENCLOSURES MAY BE BARE OR INSULATED COPPER WIRE. WIRE SIZE SHALL BE AS FOLLOWS:
 - I. USE 4 AWG BETWEEN THE POWER SERVICE AND SUPPORTS, POLES, PEDESTALS, CONTROLLER OR FLASHER CABINETS.
 - II. THE INSULATION SHALL BE GREEN OR GREEN WITH YELLOW STRIPE(S). FOR 4 AWG OR LARGER, INSULATION MAY ALSO BE BLACK WITH GREEN TAPE/LABELS INSTALLED AT ALL ACCESS POINTS.
4. GROUND ROD.
 - A. A 3/4 INCH SCHEDULE 40 PVC CONDUIT WILL BE USED IN FOUNDATIONS AND CONCRETE WALLS FOR THE GROUNDING CONDUCTOR (GROUND WIRE) RACEWAY TO THE GROUND ROD. SHOULD METALLIC CONDUIT BE USED, BOTH ENDS OF THE CONDUIT SHALL BE BONDED TO THE GROUNDING CONDUCTOR.
 - B. THE TYPICAL GROUNDING CONDUCTOR (GROUND WIRE) SHALL BE 4 AWG INSULATED, COPPER.

5. POWER SERVICE AND DISCONNECT SWITCH.
 - A. AT THE POWER SERVICE LOCATION, THE GROUNDING CONDUCTOR (GROUND WIRE) FROM THE DISCONNECT SWITCH NEUTRAL (AC-) BAR TO THE GROUND ROD SHALL BE A CONTINUOUS, UNSPLICED CONDUCTOR. IF SPLICED, IT SHALL BE AN EXOTHERMIC WELD BUTT SPLICE.
 - B. THE SERVICE NEUTRAL (AC-) SHALL ONLY BE CONNECTED TO GROUND AT THE PRIMARY POWER SERVICE DISCONNECT SWITCH.
 - I. NEMA CONTROLLER CABINETS: IF A POWER SERVICE DISCONNECT SWITCH IS LOCATED BEFORE THE CONTROLLER CABINET, THE NEUTRAL (AC-) AND THE GROUNDING BARS IN THE CONTROLLER CABINET SHALL NOT BE CONNECTED TOGETHER AS SHOWN IN NEMA TS-2, FIGURE 5-4.
 - II. IF SECONDARY DISCONNECT SWITCHES ARE CONNECTED AFTER THE PRIMARY DISCONNECT SWITCH, THE NEUTRAL (AC-) SHALL ONLY BE GROUNDED AT THE PRIMARY SWITCH. EQUIPMENT GROUNDING CONDUCTORS SHALL BE BROUGHT TO THE PRIMARY SWITCH, BUT SHALL BE GROUNDED AT BOTH SECONDARY AND PRIMARY SWITCHES.
6. PAYMENT ALL MATERIALS AND WORK REQUIRED TO COMPLETE THE EFFECTIVE GROUND FAULT CURRENT PATH SYSTEM ARE INCIDENTAL TO THE CONDUCTORS INSTALLED BY CONTRACT.

**ITEM 625 TRENCH, AS PER PLAN
ITEM 625 CONDUIT, JACKED OR DRILLED, 725.04, 2", AS PER PLAN**

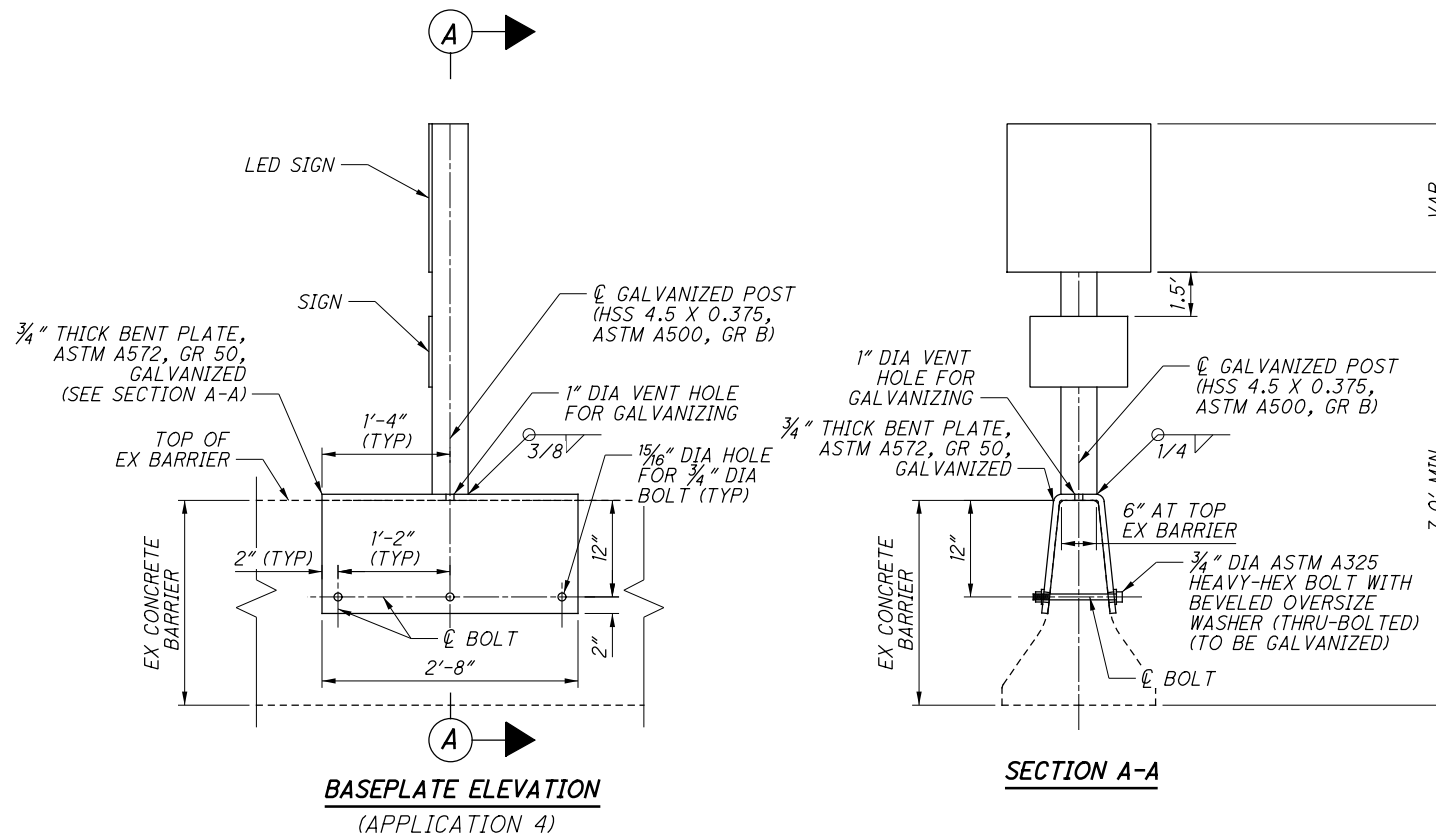
TRENCH, JACKING, DRILLING OR DIRECTIONALLY BORING THROUGH ROCK AS REQUIRED SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM OF WORK.

PAYMENT SHALL BE PER ITEM 632.

ITEM 630 - SIGN SUPPORT ASSEMBLY, BARRIER MOUNTED, AS PER PLAN

EACH SIGN SUPPORT ASSEMBLY SHALL MEET THE REQUIREMENTS OF 630 AND CONFORM TO THE DIMENSIONS OF THE DETAILS WITHIN.

ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS. PAYMENT FOR THIS ITEM SHALL BE MADE AT THE CONTRACT PRICE BID PER EACH.



ITEM 630 SIGNING MISC.: WRONG WAY DETECTION SYSTEM

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING A COMPLETE WRONG WAY DETECTION SYSTEM. THE SYSTEM SHALL DETECT THE PRESENCE OF VEHICLES TRAVELING IN THE WRONG DIRECTION ON AN EXIT RAMP. WHEN A VEHICLE TRAVELING IN THE WRONG DIRECTION IS DETECTED, WHITE LED WARNING LIGHTS IN THE SIGN SYSTEM SHALL BE ACTIVATED, A CAMERA SHALL RECORD THE EVENT AND AFTER A SECOND DETECTOR CONFIRMS THAT THE VEHICLE CONTINUED TO TRAVEL IN THE WRONG DIRECTION, ELECTRONIC NOTIFICATION SHALL BE SENT.

ALL ELEMENTS OF THE WRONG WAY SYSTEM SHALL BE PROVIDED AS A COMPLETE SYSTEM BY A SINGLE VENDOR/MANUFACTURE.

ALL ELEMENTS OF THE WRONG WAY DETECTION SYSTEM SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM OF WORK UNLESS SEPARATELY ITEMIZED. THE FOLLOWING LIST REPRESENTS AN OUTLINE OF COMPONENTS TO BE INCLUDED WITH THE SYSTEM. ITEMS NOT SPECIFICALLY LISTED BELOW, BUT REQUIRED TO PROVIDE FOR A FULLY FUNCTIONING WRONG WAY DETECTION SYSTEM SHALL ALSO BE INCLUDED:

- VEHICLE DUAL DIRECTION DETECTOR UNITS.
 - NUMBER OF UNITS FURNISHED PER SITE SHALL BE AS REQUIRED TO MEET THE FUNCTIONALITY REQUIREMENTS OF THE SYSTEM AND DETECT ALL WRONG WAY VEHICLES.
 - DETECTION HARDWARE SHALL BE POWERED BY 120VAC.
 - ULTRA-LOW POWERED RADAR UNITS WITH PROGRAMMABLE OUTPUTS.
 - SHALL BE CAPABLE OF DETECTING INCOMING OR OUTGOING TARGETS TRAVELING BETWEEN 5 AND 100 MPH.
 - SHALL BE SEALED FROM WATER INTRUSION.
 - SHALL INCLUDE SELF-TESTING, STATUS LED LIGHTS AND SELF-PROTECTION FROM REVERSE POLARITY.
 - SHALL UTILIZE RS232 SERIAL COMMUNICATION FOR PROGRAMMING.
- (1)-CONFORMATION CAMERA.
 - WIDE ANGLE HDTV 1080P OUTDOOR RATED WITH CROSS-LINK ANALYSIS.
 - SHALL HAVE PROGRAMMABLE EVENT BASED LOGIC THAT INTEGRATES WITH THE WRONG WAY LOGIC CONTROLLER.
 - IP66 RATED, NEMA 4X
 - PROVIDE FOR A MINIMUM OF ONE INPUT AND ONE OUTPUT.
 - PROVIDE FOR ADJUSTABLE IMAGE SETTINGS.
 - USE A 1/4" PROGRESSIVE SCAN RGB CMOS
- (1)-AN ILLUMINATOR SHALL BE FURNISHED AND INSTALLED WHERE AMBIENT LIGHTING CONDITIONS DON'T PROVIDE SUFFICIENT LIGHT LEVELS TO OPERATE CAMERAS IN COLOR MODE.
- (1)-CELLULAR MODEM
 - WITH 2 YEARS OF MONITORING SERVICE. THE SYSTEM SHALL INCLUDE SYSTEM MONITORING, NOTIFICATIONS, AND UPDATES VIA A CELLULAR SERVICE, HOSTED/PROVIDED BY THE MANUFACTURE FOR A PERIOD OF 2 YEARS FOLLOWING THE ORIGINAL PROJECT COMPLETION DATE.
 - 4G LTE CELLULAR GATEWAY WITH INTEGRAL FIVE PORT 10/100 ETHERNET SWITCH WITH EXTERNAL OMNI-DIRECTION ANTENNA.
 - INCLUDE INTEGRAL RS232 PORT.
 - SHALL BE CAPABLE OF OVER THE AIR FIRMWARE UPDATED AND REMOTE MANAGEMENT.
 - SHALL BE CAPABLE OF IPSEC VPN
- (4)-WIRELESS RADIO COMMUNICATION UNITS. RADIO CONTROL SHALL OPERATE ON A 900 MHZ FREQUENCY HOPPING SPREAD SPECTRUM NETWORK, WI-FI OR APPROVED EQUAL. RADIOS SHALL INTEGRATE COMMUNICATION OF SIGN CONTROL CIRCUIT TO ACTIVATE SIGNS. THE RADIO SHALL BE SYNCHRONIZED SO ALL OF THE REMOTE INDICATIONS WILL TURN ON WITHIN 120 MSEC OF EACH OTHER AND REMAIN SYNCHRONIZED THROUGH-OUT THE DURATION OF THE FLASHING CYCLE.
- LOOP DETECTOR MONITORING CARD
 - NUMBER OF CARDS FURNISHED SHALL BE SUFFICIENT TO ACCOMMODATE THE PROPOSED LOOP DETECTION NEEDS.
 - SHALL WORK WITH STANDARD NEMA/170/2070 CARD RACKS.
 - SHALL UTILIZE TIA232 SERIAL COMMUNICATION FOR PROGRAMMING.
 - SHALL INCLUDE SELF-TESTING AND LED STATUS LIGHTS.
 - PROVIDE FOR A MINIMUM OF 4 FREQUENCY SETTINGS.
- (1) - WRONG WAY LOGIC CONTROLLER WITH INTEGRATED TEST FUNCTIONS.
 - SHALL ANALYZE INPUTS FROM MULTIPLE SENSORS AND CAMERAS.
 - PROVIDE FOR PROGRAMMABLE OUTPUTS.
 - SHALL CONTAIN DRIVE RELAYS

J:\20151750\HAM-71-1.5\000T\HAM-91826\Design\Traffic\Sheets\1826_TN001.dgn 3/1/2018 9:45:59 AM br-reder

J:\20151750\HAM-71-1.51\ODOT\HAM\91826\Design\Traffic\Sheets\91826_TN002.dgn 3/1/2018 9:46:00 AM brieder

- SHALL INCLUDE LED STATUS LIGHTS AND ON-SITE TESTING.
- PROVIDE FOR MICRO USB INTERFACE
- (1) - PROGRAMMABLE SIGN CONTROLLER
 - PROVIDE FOR A MINIMUM OF TWO INPUTS AND OUTPUTS
 - PROGRAMMABLE INCLUDING FLASH PATTERN, DURATION AND LED INTENSITY.
 - INTEGRATE WITH WIRELESS RADIOS.
 - INCLUDE REAL TIME CLOCK WITH ON-BOARD BATTERY.
 - PROVIDE FOR DATA LOGGING.
 - PROVIDE FOR RS232 SERIAL INTERFACE
- POLE MOUNTED CONTROL CABINET(S), WITH CONTROL EQUIPMENT.
- (2) - WRONG WAY SIGNS R5-1A (48"X36"), 120V AC/SOLAR POWERED, WHITE LED, PERIMETER BLINKING.
- (4) - WRONG WAY SIGNS R5-1A (42"X30"), SIGN FLAT SHEET.
- (2) - DO NOT ENTER SIGNS R5-1 (48"X48"), 120VAC/SOLAR POWERED, WHITE LED, PERIMETER BLINKING.
- SOLAR PANELS MOUNTED TO AN ALUMINUM PLATE AND BRACKET AT AN ANGLE OF 45 DEGREES- 60 DEGREES TO PROVIDE MAXIMUM OUTPUT.
- BATTERIES FOR LED SIGNS WITH WRITTEN TWO YEAR FULL REPLACEMENT WARRANTY.
- THE SYSTEM SHALL OPERATE UNDER THE FOLLOWING CONDITIONS:
 - SHALL COMPLY WITH PART 15 OF FCC.
 - SHALL OPERATE FROM -4 DEGREES F TO 122 DEGREES F.
 - PROGRAMMABLE FROM A WINDOWS BASED PC
- (8)-HOURS OF ONSITE TRAINING.

ALL LED, PERIMETER EDGE LIT BLINKING SIGNS SHALL BE WIRELESSLY CONTROLLED AND SYNCHRONIZED VIA THE USE OF WIRELESS RADIOS. EACH SIGN SHALL BE A COMPLETE ASSEMBLY, CONSISTING OF BUT NOT LIMITED TO, SIGNAGE, SIGN MOUNTING HARDWARE, INDICATIONS AND ELECTRICAL COMPONENTS (WIRING, SOLID-STATE CIRCUIT BOARDS, ETC.). EACH SIGN SHALL BE SUPPLIED WITH ALL REQUIRED HARDWARE TO INSTALL ASSEMBLY. ALL EXPOSED HARDWARE SHALL BE ANTI-VANDAL. ASSURE ALL SIGNS MEETS THE REQUIREMENTS OF C&MS 630. THE CONTROL CIRCUIT SHALL BE SEALED WATERTIGHT TO ELIMINATE DIRT CONTAMINATION AND ALLOW FOR SAFE HANDLING IN ALL WEATHER CONDITIONS.

SEE SOLAR POWERED LED SIGN REQUIREMENTS AND ELECTRICAL REQUIREMENTS FOR SOLAR-POWERED DEVICES FOR ADDITIONAL REQUIREMENTS.

WARRANTY
WARRANTY SHALL BE TWO YEARS FROM THE DATE OF FINAL ACCEPTANCE.

MEASUREMENT
THE DEPARTMENT WILL MEASURE THIS ITEM COMPLETE IN PLACE, INCLUDING ALL MATERIALS, TESTING, LABOR AND SOFTWARE FOR A FULLY FUNCTIONAL SYSTEM.

PAYMENT
PAYMENT WILL BE AT THE CONTRACT UNIT PRICE PER EACH FOR ITEM 630 SIGNING MISC.: WRONG WAY DETECTION SYSTEM AND INCLUDE ALL MATERIALS AND LABOR TO FURNISH AND INSTALL A COMPLETE SYSTEM AT ONE EXIT RAMP. ALL ELEMENTS OF THE SYSTEM SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM OF WORK UNLESS SEPARATELY ITEMIZED.

ITEM 632 POWER SERVICE, AS PER PLAN

POWER FOR THE PROPOSED WRONG WAY DETECTION SYSTEM SHALL BE OBTAINED FROM EITHER AN EXISTING ODOT OWNED CABINET OR DIRECTLY FROM DUKE ENERGY AS SPECIFIED IN THE PLAN.

WHEN POWER IS OBTAINED DIRECTLY FROM DUKE ENERGY, A WOOD POLE, METER AND DISCONNECT SWITCH SHALL BE FURNISHED AND INSTALLED AS PART OF THIS ITEM OF WORK. POWER SUPPLIED SHALL BE 120 VOLTS, SINGLE PHASE. THE CONTRACTOR SHALL COORDINATE WITH DUKE ENERGY TO ESTABLISH POWER SERVICE A MINIMUM OF SIX WEEKS PRIOR TO THE NEED FOR POWER AT (888) 700-3853.

WHEN POWER IS OBTAINED FROM AN EXISTING ODOT OWNED CABINET, A NEW 15 AMP CIRCUIT BREAKER SHALL BE FURNISHED AND INSTALLED AS PART OF THIS ITEM OF WORK. ALL CABINET WIRING MODIFICATIONS AND MISCELLANEOUS HARDWARE NEEDED TO ADD THE CIRCUIT BREAKER SHALL CONSIDERED INCIDENTAL TO THIS ITEM OF WORK. POWER SUPPLIED SHALL BE 120 VOLTS, SINGLE PHASE. A DISCONNECT SWITCH SHALL ALSO BE FURNISHED AND INSTALLED AS INDICATED.

REFERENCE IS MADE TO THE REQUIREMENTS OF ODOT STANDARD DRAWING ITS-15.11.

PAYMENT SHALL BE PER ITEM 632.

ITEM 632 PEDESTAL FOUNDATION, AS PER PLAN

AT APPLICATION 6 THE TOP OF THE PROPOSED FOUNDATION SHALL BE AT THE SAME ELEVATION AS THE EXISTING BARRIER WALL. HOWEVER, THE FOUNDATION DEPTH SHALL BE MEASURED FROM THE LOWER ELEVATION SIDE AS ILLUSTRATED ON THE DETAIL. ALL AFFECTED REINFORCING STEEL SHALL BE LENGTHENED TO CORRESPOND TO THE INCREASED FOUNDATION LENGTH.

ALL ROCK EXCAVATION REQUIRED TO PROVIDE THE REQUIRED FOUNDATION DEPTH AS SPECIFIED IN ODOT STANDARD DRAWING TC-21.20 SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM OF WORK.

ITEM 632 PEDESTAL, MISC.: PEDESTAL, 15', TRANSFORMER BASE

THE PEDESTAL SHALL BE PER ITEM 632 AND THE DETAILS FURNISHED WITHIN.

PAYMENT SHALL BE PER ITEM 632.

ITEM 661 PLANTING, MISC.: RESTORATION OF DISTURBED LANDSCAPED AREA

UNDER THIS ITEM OF WORK THE CONTRACTOR SHALL DOCUMENT THE EXISTING CONDITIONS AND EXISTING VEGETATION PRIOR TO DISTURBING THE EXISTING LANDSCAPED AREA (FLOWER BED) FOR CONDUIT INSTALLATION. AFTER THE INSTALLATION OF POWER CONDUIT, THE AREA SHALL BE FULLY RESTORED TO PRE-CONSTRUCTION CONDITIONS.

PAYMENT SHALL BE PER ITEM 661 AND BE PER SQUARE FEET OF RESTORED AREA.

SOLAR POWERED LED SIGN REQUIREMENTS

THIS SPECIFICATION DESCRIBES THE MINIMUM ACCEPTABLE DESIGN AND PERFORMANCE REQUIREMENTS FOR LED ENHANCED SIGNS. THE SIGN SHALL BE SELF-POWERED BY SOLAR PANELS AND BATTERIES WITH NO EXTERNAL ELECTRICAL POWER INSTALLATION. THE LED ENHANCED SIGN SHALL BE MUTCD COMPLIANT.

THE FOLLOWING CRITERIA SHALL BE MET:

1. THE NEW UNIT SHALL ATTACH SECURELY TO THE PROPOSED SIGN SUPPORT USING A TAMPER RESISTANT FASTENING SYSTEM. SPECIAL TOOLS NEEDED FOR THE TAMPER RESISTANT FASTENING SYSTEM SHALL BE SUPPLIED WITH EACH SIGN.
2. EACH SIGN UNIT SHALL BE IDENTIFIED WITH THE MANUFACTURER'S NAME, DATE OF MANUFACTURE, AND SERIAL NUMBER ON THE BACK SIDE.
3. THE SIGN UNIT SHALL BE VISIBLE AT A MINIMUM OF 1/4 MI. DURING ALL CONDITIONS.
4. THE SIGN UNIT SHALL INCORPORATE CIRCUITRY TO ENSURE THAT IT HAS BRIGHTNESS ADJUSTMENT DURING DAY, DUSK, AND AT NIGHT (DIMMABLE).
5. THE LENS OF THE LED UNIT SHALL BE CAPABLE OF WITHSTANDING ULTRAVIOLET LIGHT (DIRECT SUNLIGHT) EXPOSURE FOR A MINIMUM TIME PERIOD OF FIVE YEARS WITHOUT EXHIBITING EVIDENCE OF DETERIORATION.
6. THE LENSES SHALL WITHSTAND A 3 FOOT DROP TEST ONTO A HARD SURFACE AND SHALL BE A MINIMUM OF 1/4 INCH THICK AND FREE OF BUBBLES AND IMPERFECTIONS. THE LENSES SHALL BE SMOOTH ON THE OUTSIDE, WITH NO EXTERNAL FACETS TO PREVENT DIRT AND DEBRIS BUILD-UP.
7. IF LENSES ARE TINTED, THEY SHALL MATCH THE WAVELENGTH (CHROMATICITY) OF THE LED.
8. THE INDIVIDUAL LED LIGHT SOURCES SHALL BE WIRED SO THAT A CATASTROPHIC FAILURE OF ONE LED LIGHT SOURCE WILL NOT RESULT IN THE LOSS OF MORE THAN ONE LED LIGHT SOURCE IN THE SIGN UNIT.
9. LED UNITS AND ASSOCIATED ON-BOARD CIRCUITRY SHALL CONFORM TO THE REQUIREMENTS IN FEDERAL COMMUNICATIONS COMMISSION (FCC) TITLE 47, SUB PART B, SECTION 15 REGULATIONS CONCERNING THE EMISSION OF ELECTRONIC NOISE.
10. LED'S SHALL BE RATED FOR USE IN THE AMBIENT OPERATING TEMPERATURE RANGE OF -40°F TO +166°F. (-40°C TO +74°C)
11. THE LED'S WIRING SHALL BE SEALED WATERTIGHT TO ELIMINATE DIRT CONTAMINATION AND ALLOW FOR SAFE HANDLING IN ALL WEATHER CONDITIONS. THE LED'S SHALL BE SEALED AGAINST DUST AND MOISTURE INTRUSION AS PER THE REQUIREMENTS OF NEMA STANDARD 250-1991 FOR TYPE 4 ENCLOSURES AND TO PROTECT ALL INTERNAL LED AND ELECTRICAL COMPONENTS.
12. THE SIGN LED'S SHALL DISPLAY A MINIMUM OF 500,000 MCD FOR DAYTIME VISIBILITY.

SOLAR REQUIREMENTS
SEE "GENERAL ELECTRICAL REQUIREMENTS FOR SOLAR-POWERED DEVICES".

REQUIRED DOCUMENTATION
EACH SIGN UNIT SHALL BE PROVIDED WITH THE FOLLOWING DOCUMENTATION EITHER IN HARD COPY OR AS A PDF.

1. ONE SCHEMATIC DIAGRAM SHALL BE PROVIDED FOR THE SIGN UNIT ALONG WITH ANY NECESSARY INSTALLATION INSTRUCTIONS.
2. THE LED MANUFACTURERS NAME, BRAND, AND MODEL NUMBER.

WARRANTY

1. THE LED ENHANCED SIGNAL AHEAD SIGN UNIT SHALL BE REPAIRED OR REPLACED BY THE MANUFACTURER IF IT EXHIBITS A FAILURE DUE TO WORKMANSHIP OR MATERIAL DEFECTS WITHIN 2 YEARS OF FIELD OPERATION.
2. THE MANUFACTURER SHALL PROVIDE A WRITTEN WARRANTY AGAINST DEFECTS IN MATERIALS, WORKMANSHIP, AND LUMINOUS INTENSITY FOR THE LED ENHANCED SIGN UNIT FOR A PERIOD OF 2 YEARS AFTER INSTALLATION. A REPLACEMENT LED ENHANCED SIGN UNIT SHALL BE PROVIDED WITHIN 10 DAYS AFTER RECEIPT OF FAILED UNIT AT NO COST, EXCEPT THE COST OF SHIPPING THE FAILED UNIT.

ELECTRICAL REQUIREMENTS FOR SOLAR-POWERED DEVICES

- RUN REQUIREMENTS OF THIS DEVICE SHALL INCLUDE 4 HOURS PER DAY FOR 14 DAYS UNDER AUTONOMY OPERATION.
- UTILIZE ENVIRONMENTALLY-SEALED, HIGH-EFFICIENCY LED LIGHT SOURCES FOR THIS SOLAR-POWERED APPLICATION.
- HOUSE THE SOLAR POWER SUPPLY CONTROLLER AND BATTERY IN ONE OR TWO STAINLESS STEEL OR ALUMINUM ENCLOSURES WITH A MINIMUM NEMA 3 OR 3X RATING.
- IF THE EXTERIOR SIZE OF THE ENCLOSURE NECESSARY TO MEET THE REQUIREMENTS BELOW IS LESS THAN 1000 CUBIC INCHES, A SINGLE POLYMER ENCLOSURE RATED NEMA 4 AND LISTED AS SUNLIGHT-RESISTANT MAY BE INSTALLED, WITH APPROVAL OF THE ENGINEER.
- SEAL ENCLOSURE CONDUIT ENTRIES TO PREVENT INSECT AND/OR RODENT ENTRY.
- PROVIDE METAL ENCLOSURES WITH AN EXTERIOR OF BARE OR POWDER-COATED ALUMINUM, OR STAINLESS STEEL.
- PROVIDE A LOCKING ENCLOSURE USING 2 LOCKS PER PADLOCK PER C&MS 631.06.
- SEPARATE THE CONTROL ELECTRONICS AND BATTERY, IF CONTAINED WITHIN A SINGLE ENCLOSURE, TO PREVENT DAMAGE TO THE CONTROL ELECTRONICS IF THE BATTERY ENVELOPE IS COMPROMISED. CONTROL EQUIPMENT SHALL BE LOCATED IN A NEMA 4X ENCLOSURE.
- PROVIDE SEALED GEL-CELL OR AGM (ABSORBED GLASS MAT) LEAD-ACID BATTERIES FOR ALL INSTALLATIONS WITH INSTANTANEOUS LOAD REQUIREMENTS OF 4 WATTS OR ABOVE, REGARDLESS OF DUTY CYCLE. FOR INSTALLATIONS WITH INSTANTANEOUS LOAD REQUIREMENTS OF LESS THAN 4 WATTS, RECHARGEABLE NICD, LI-ION, OR NIMH BATTERIES MAY BE USED INSTEAD OF AGM OR GEL-CELL, IF APPROVED BY THE ENGINEER.
- PROVIDE SIGNED COPIES FROM THE SOLAR PANEL AND/OR CONTROLLER MANUFACTURER OF ALL CALCULATIONS USED TO SIZE THE SOLAR PANEL AND BATTERIES.
- INCLUDE IN THESE CALCULATIONS THE INSULATION VALUE USED AND ITS REFERENCE SOURCE, THE SOLAR PANEL EFFICIENCY, CHARGER/CONTROLLER EFFICIENCY, INVERTER EFFICIENCY, PROPOSED LED LAMP AND/OR EQUIPMENT LOAD, AND A FIGURE REPRESENTING ANTICIPATED MISCELLANEOUS LOSSES.
- SHOW CALCULATIONS DOCUMENTING A RESERVE CAPACITY OF TWO WEEKS OPERATION UNDER CONTINUOUS WORST-CASE (MINIMUM) INSOLATION FIGURES (USUALLY DECEMBER) FOR THE PROPOSED GEOGRAPHIC LOCATION, USING A PANEL ELEVATION ANGLE APPROPRIATE TO THE SITE, AT A SUSTAINED TEMPERATURE OF 25 DEGREES FAHRENHEIT (-4 DEGREES CELSIUS).
- DELIVER A COPY OF THE CALCULATIONS TO THE ENGINEER AND ANOTHER COPY TO THE OFFICE OF ROADWAY ENGINEERING FOR APPROVAL.
- PROVIDE DOCUMENTATION SHOWING THAT THE SOLAR PANEL MANUFACTURER TESTED THE PANEL ACCORDING TO IEC61215 OR EQUIVALENT APPROVED STANDARD.
- PROVIDE DOCUMENTATION SHOWING THAT SOLAR PANEL MOUNTING IS RATED FOR 90 MPH DESIGN WIND AND DESIGNED TO RESIST VANDALISM.
- ENSURE NEC GROUNDING AND BONDING REQUIREMENTS ARE MET IF VOLTAGES OVER 50V AC OR DC ARE PRESENT.

ENGINEERS SEAL:

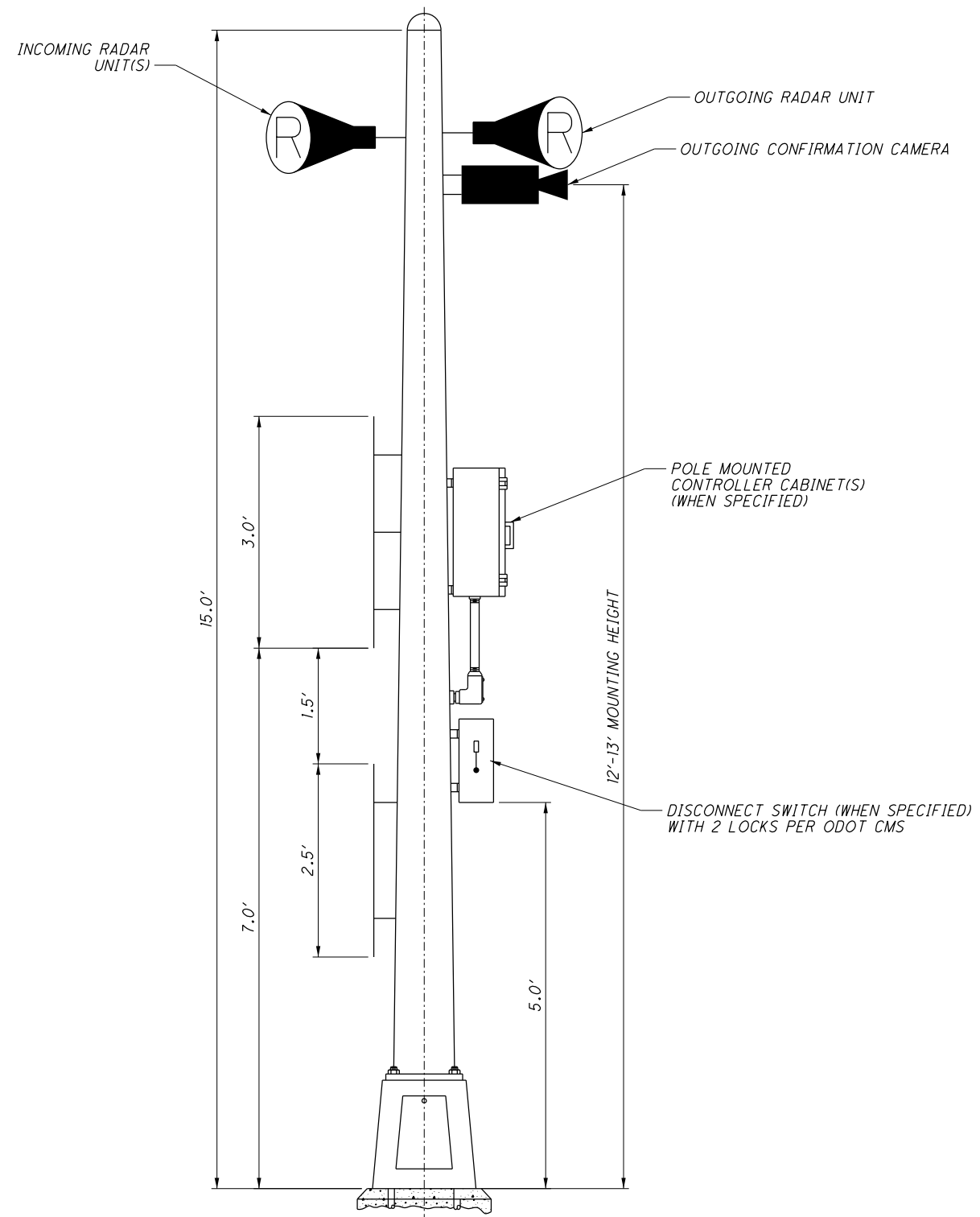
SIGNED:

DATE: 10-30-2017

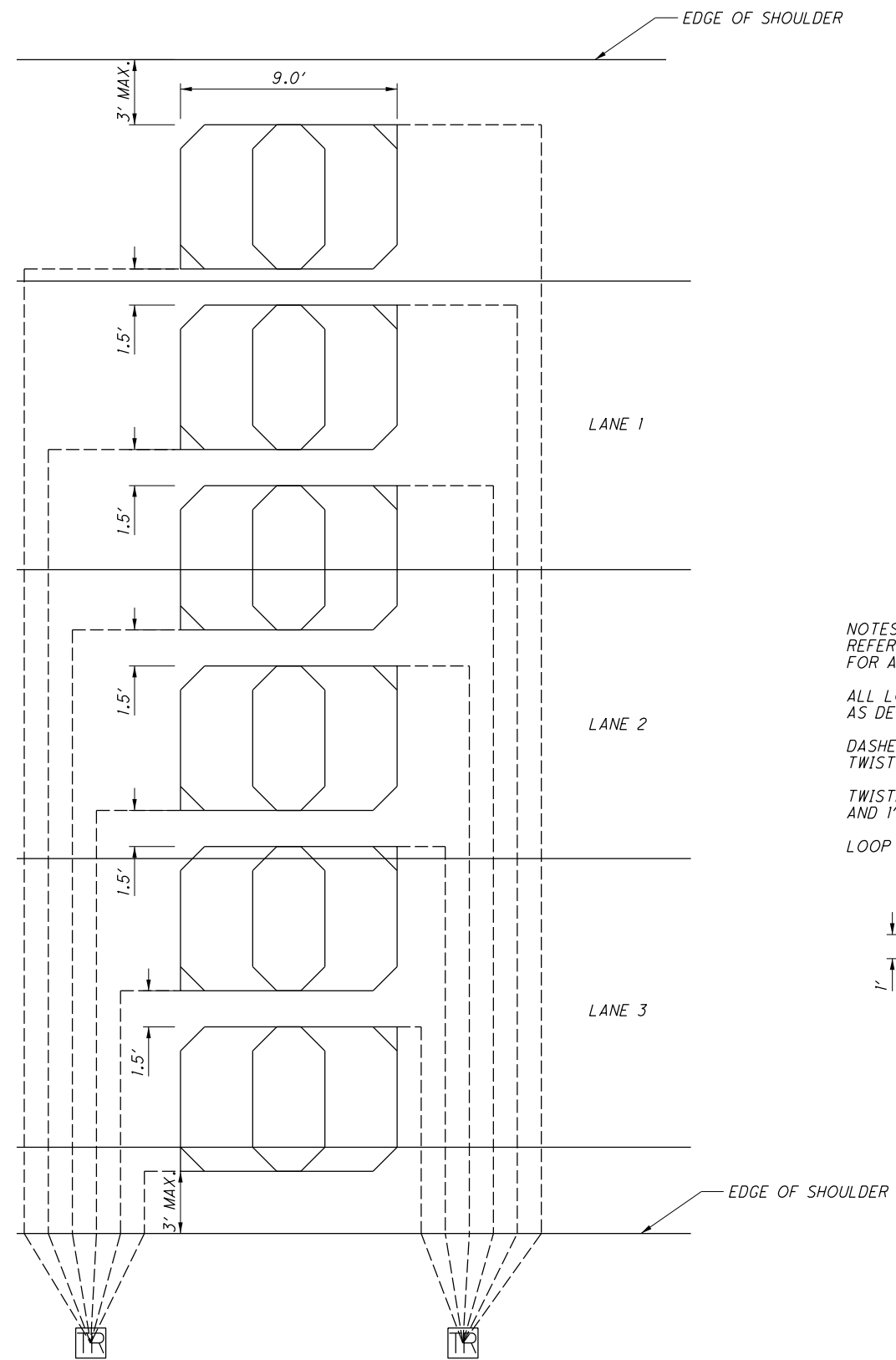
SHEETS: 318A-3180

STANDARD CONSTRUCTION DRAWINGS						SUPPLEMENTAL SPECIFICATIONS	
HL-20.11	4/21/17	TC-41.20	10/18/13	TC-73.20	7/21/17	800-2016	7/21/17
HL-30.11	7/21/17	TC-41.30	10/18/13	TC-82.10	7/17/15	809	7/21/17
HL-30.22	1/17/14	TC-41.40	10/18/13	TC-83.20	7/21/17		
		TC-42.20	10/18/13				
MT-95.45	7/21/17	TC-52.20	7/21/17	ITS-15.11	7/17/15		
MT-98.28	1/20/17	TC-65.10	1/17/14				
		TC-65.11	7/21/17				

J:\20151750\HAM-71-1.5\000T\HAM\91826\Design\Traffic\Sheets\91826_ID001.dgn 10/27/2017 9:05:10 AM brieder

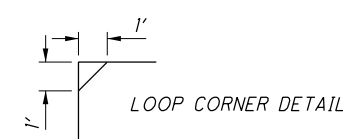


PEDESTAL, MISC.: PEDESTAL, 15', TRANSFORMER BASE
NOT TO SCALE



LOOP DETECTOR DETAIL
NOT TO SCALE

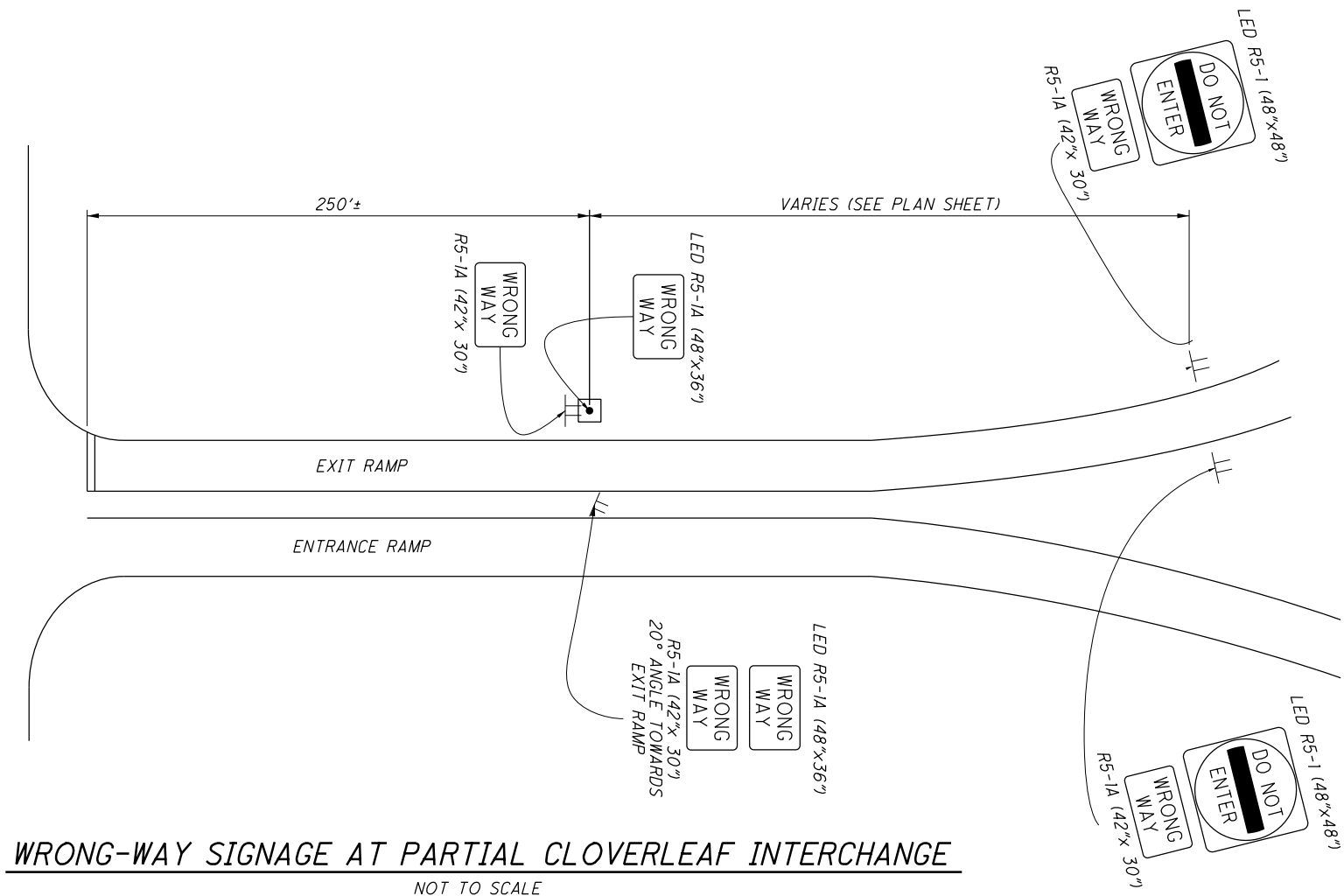
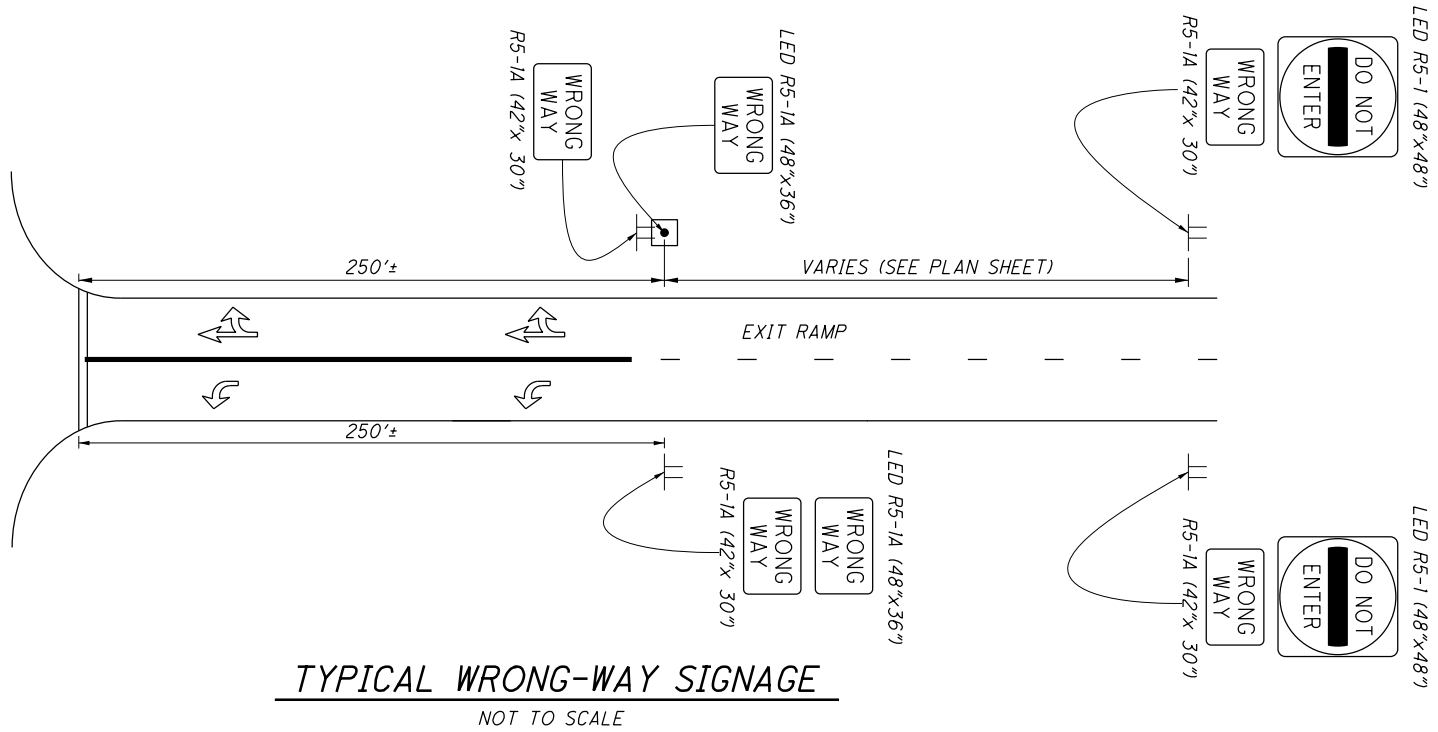
NOTES
REFER TO ODOT STANDARD DRAWING TC-82.10 FOR ADDITIONAL INSTALLATION DETAILS.
ALL LOOPS ARE 6' BY 6', WITH CORNER CUTES AS DETAILED, WITH 4 TURN PER LOOP.
DASHED LINES INDICATE TWISTED WIRE PAIRS. TWIST PITCH IS 6 TURNS PER FOOT.
TWISTED PAIRS ARE SPACED 1' FROM LOOPS AND 1' FROM EACH OTHER.
LOOP WIRE TYPE IS PER ODOT STANDARD.

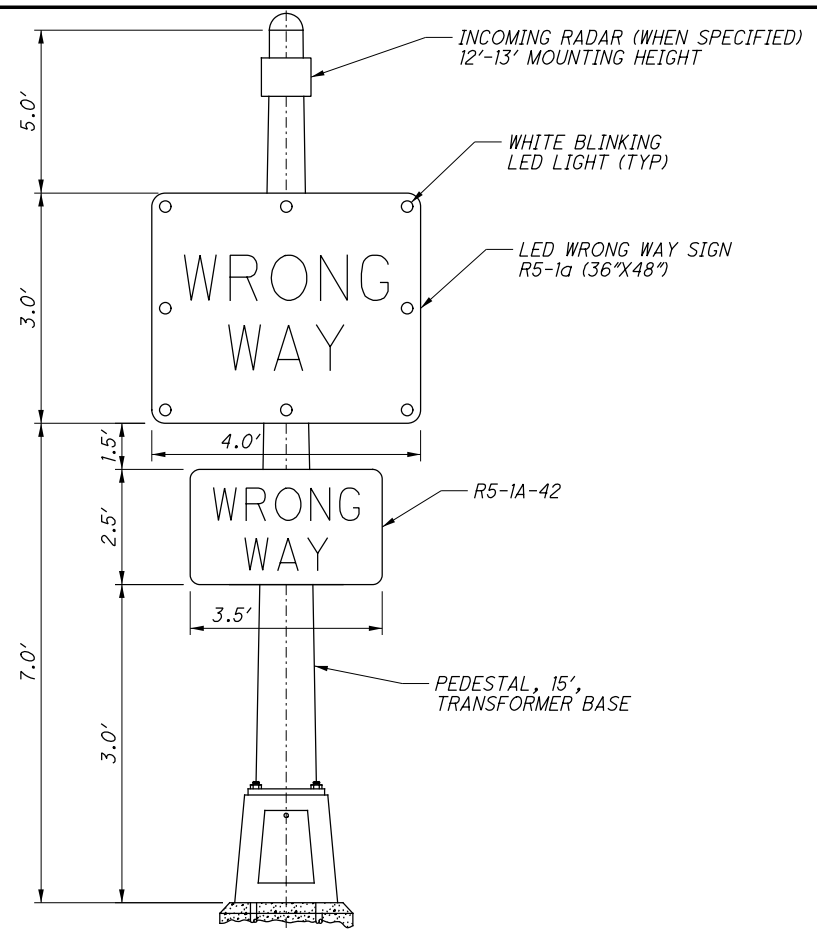


CALCULATED
BER
CHECKED
JDS

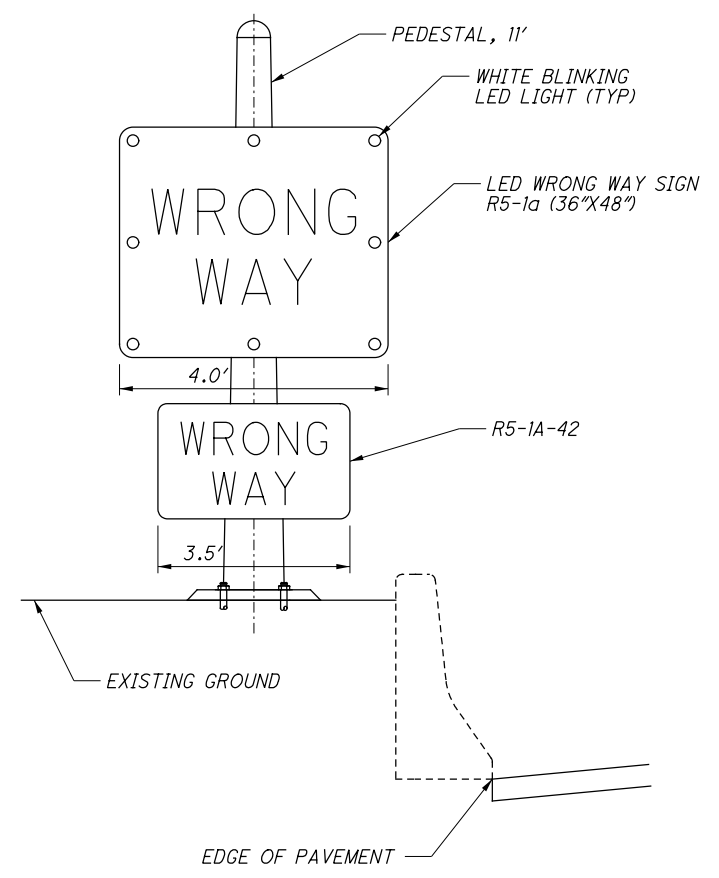
TRAFFIC CONTROL DETAILS

HAM-71-8.42

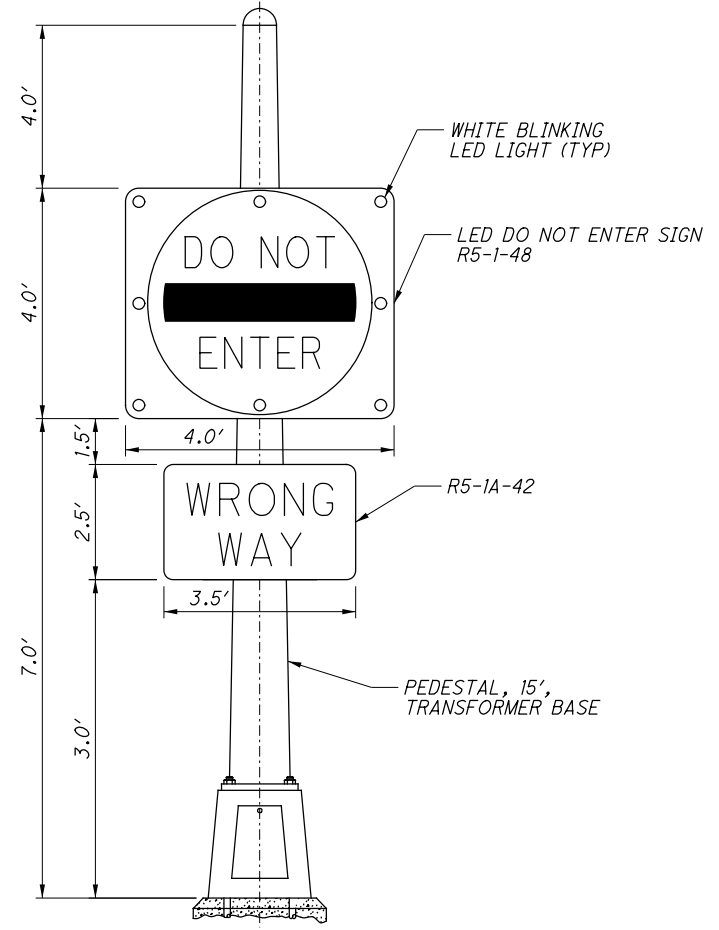




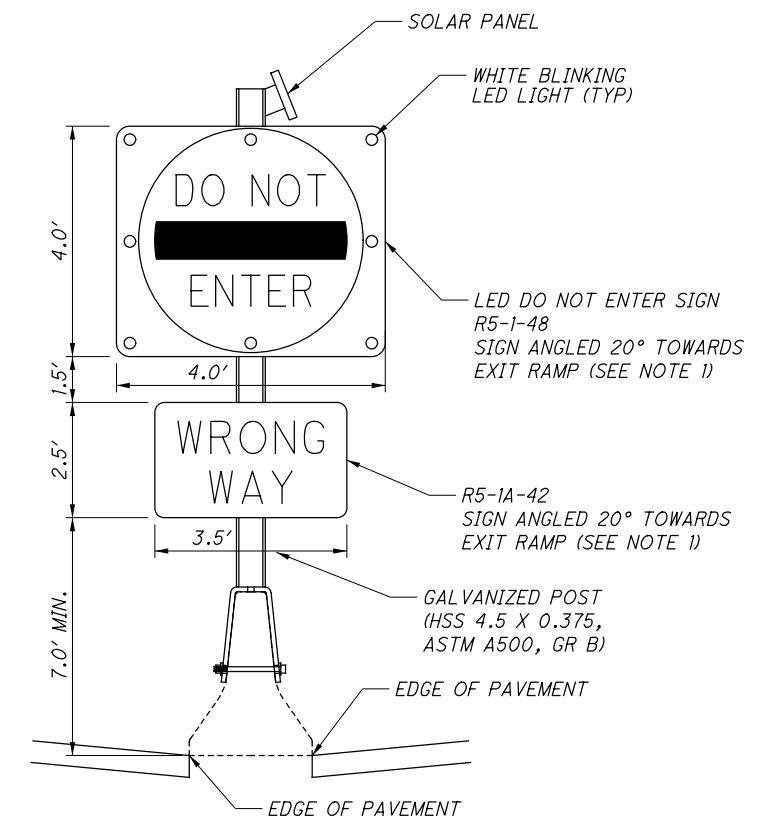
APPLICATION 1
 NOT TO SCALE



APPLICATION 2
 NOT TO SCALE



APPLICATION 3
 NOT TO SCALE

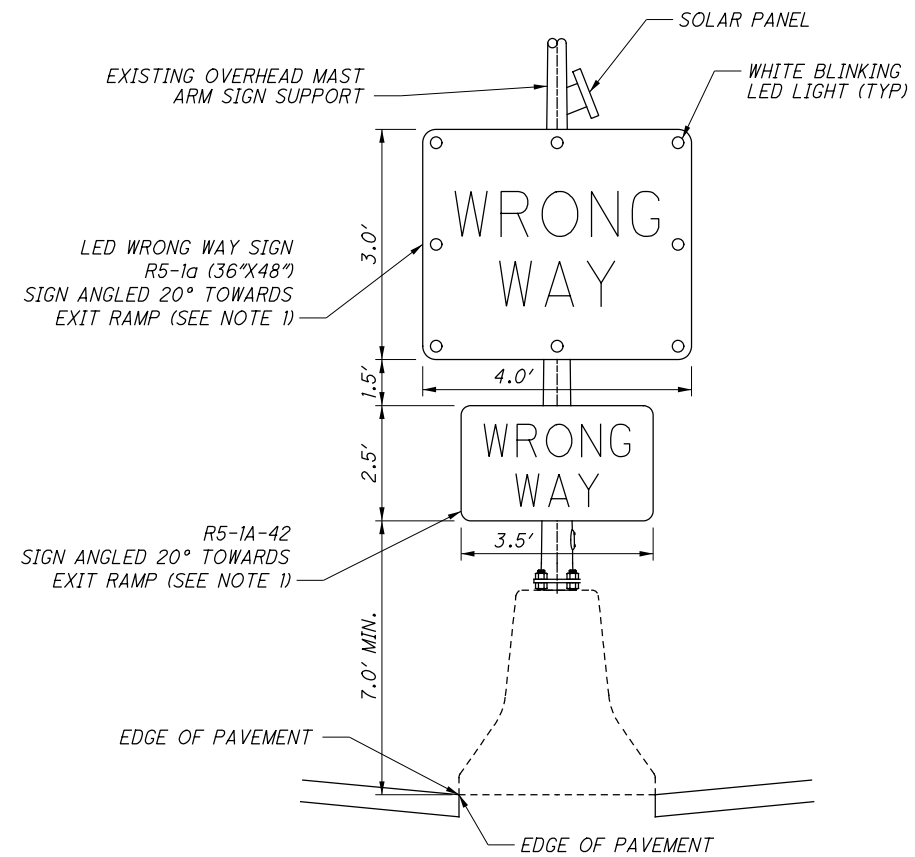


APPLICATION 4
 NOT TO SCALE

NOTE:
 1. ROTATION ANGLE SHALL BE FIELD APPROVED BY THE ENGINEER.

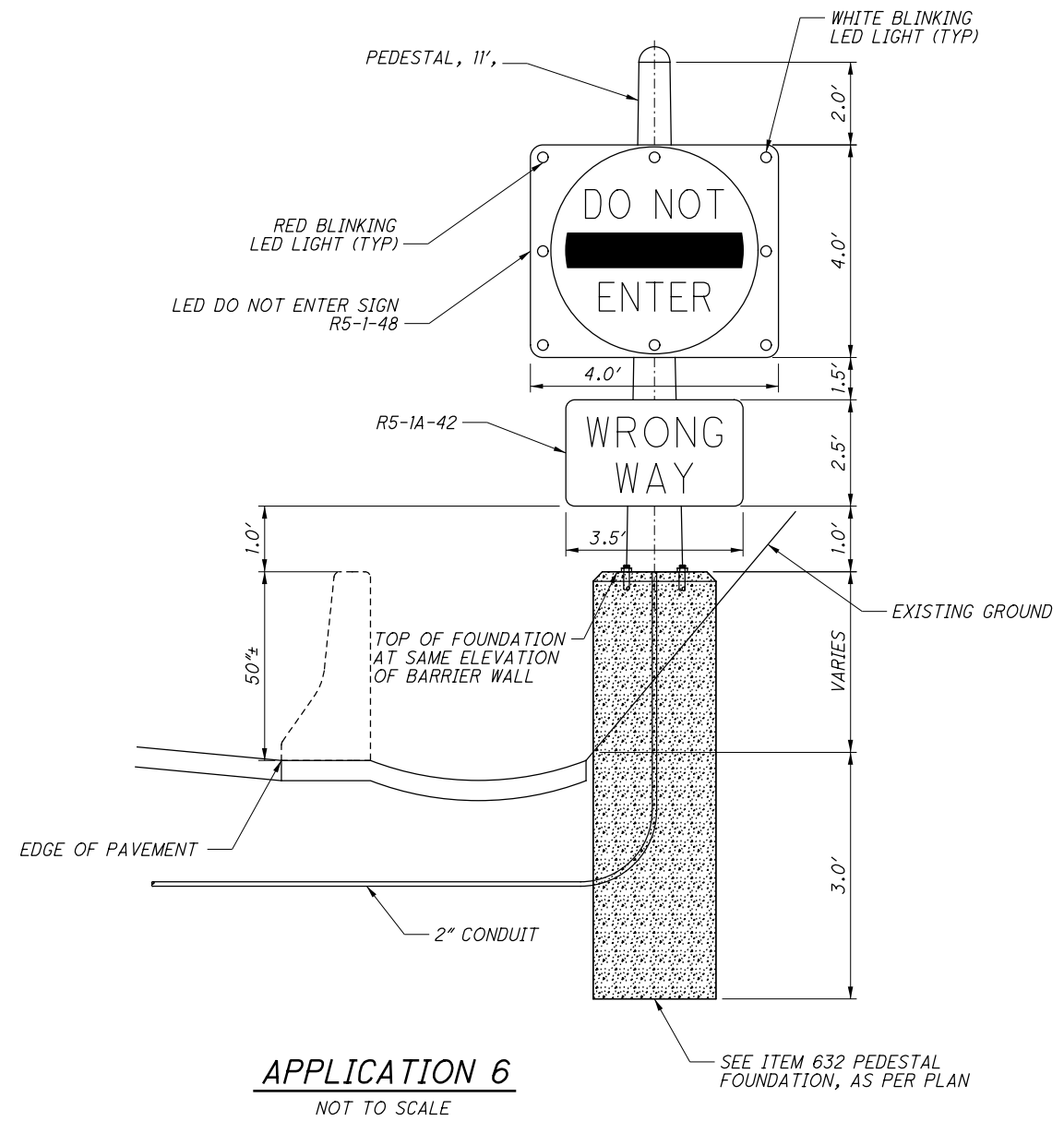
J:\20151750\HAM-71-1.51\000T\HAM\91826\Design\Traffic\Sheets\91826_ID002.dgn 3/1/2018 9:46:02 AM brieder

J:\20151750\HAM-71-1.5\000T\HAM\91826\Design\Traffic\Sheets\91826_ID004.dgn 3/1/2018 9:46:03 AM brieder



APPLICATION 5
NOT TO SCALE

NOTE:
1. ROTATION ANGLE SHALL BE FIELD APPROVED BY THE ENGINEER.



APPLICATION 6
NOT TO SCALE

CALCULATED
BER
CHECKED
JDS

TRAFFIC CONTROL DETAILS

HAM-71-8.42

318G
441

ESTIMATED QUANTITIES

INTERSECTION						ITEM	EXTENSION	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET
LOCATION 1 IR-71 NB AT RIDGE RD	LOCATION 2 IR-71 SB AT HIGHLAND AVE	LOCATION 3 IR-71 NB AT STEWART RD	LOCATION 4 IR-71 NB AT KENWOOD RD	LOCATION 5 IR-71 NB AT MONTGOMERY RD	LOCATION 6 IR-71 SB AT MONTGOMERY RD						
49				6	6	621	00100	61	EACH	RPM	
				16	16	621	00300	32	EACH	RPM REFLECTOR	
22						621	54000	22	EACH	RAISED PAVEMENT MARKER REMOVED	
411	589	507	800	753	791	625	25400	3851	FT	CONDUIT, 2", 725.04	
231						625	25500	231	FT	CONDUIT, 3", 725.04	
	86		70	158	155	625	25902	469	FT	CONDUIT, JACKED OR DRILLED, 725.04, 2"	
		94				625	25903	94	FT	CONDUIT, JACKED OR DRILLED, 725.04, AS PER PLAN, 2"	318B
501	575		786	739	777	625	29000	3378	FT	TRENCH	
		493				625	29001	493	FT	TRENCH, AS PER PLAN	318B
2	4	3	3	2	5	625	30500	19	EACH	PULL BOX, 725.06, SIZE 1.5	
4		1	1	2	1	625	30520	9	EACH	PULL BOX, 725.06, SIZE 7	
1						625	30530	1	EACH	PULL BOX, 725.06, SIZE 18	
3	5	5	5	5	5	625	32000	28	EACH	GROUND ROD	
501	575	493	786	739	777	625	36000	3871	FT	PLASTIC CAUTION TAPE	
						630	03100		FT	GROUND MOUNTED SUPPORT, NO. 3 POST	
						630	08600		EACH	SIGN POST REFLECTOR	
6	8	8	8	8	8	630	79500	46	EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED	
1						630	79611	1	EACH	SIGN SUPPORT ASSEMBLY, BARRIER MOUNTED, AS PER PLAN	318B
1	1	1	1	1	1	630	97700	6	EACH	SIGNING, MISC.:SIGNING, MISC.: WRONG WAY DETECTION SYSTEM	318B
22						632	26500	22	EACH	DETECTOR LOOP	
2	4	3	4	4	4	632	64020	21	EACH	PEDESTAL FOUNDATION	
		1				632	64021	1	EACH	PEDESTAL FOUNDATION, AS PER PLAN	318C
3034						632	65200	3034	FT	LOOP DETECTOR LEAD-IN CABLE	
269	625	509	731	652	798	632	66000	3584	FT	POWER CABLE, 3 CONDUCTOR, NO. 14 AWG	
230	238	290	320	438	346	632	67300	1862	FT	POWER CABLE, 3 CONDUCTOR, NO. 8 AWG	
102		51				632	69500	153	FT	SERVICE CABLE, 2 CONDUCTOR, NO. 6 AWG	
1	1	1	1	1	1	632	70001	6	EACH	POWER SERVICE, AS PER PLAN	
1		1				632	70400	2	EACH	CONDUIT RISER, 2" DIAMETER	
1		1				632	89300	2	EACH	WOOD POLE, 30'	
		1			1	632	89700	2	EACH	PEDESTAL, 11'	
2	4	3	4	4	3	632	90010	20	EACH	PEDESTAL, MISC.:PEDESTAL, 15', TRANSFORMER BASE	318C
2			2			644	01360	4	EACH	WRONG WAY ARROW	
	440					661	99920	440	SF	PLANTING, MISC.: RESTORATION OF DISTURBED LANDSCAPED AREA	318C

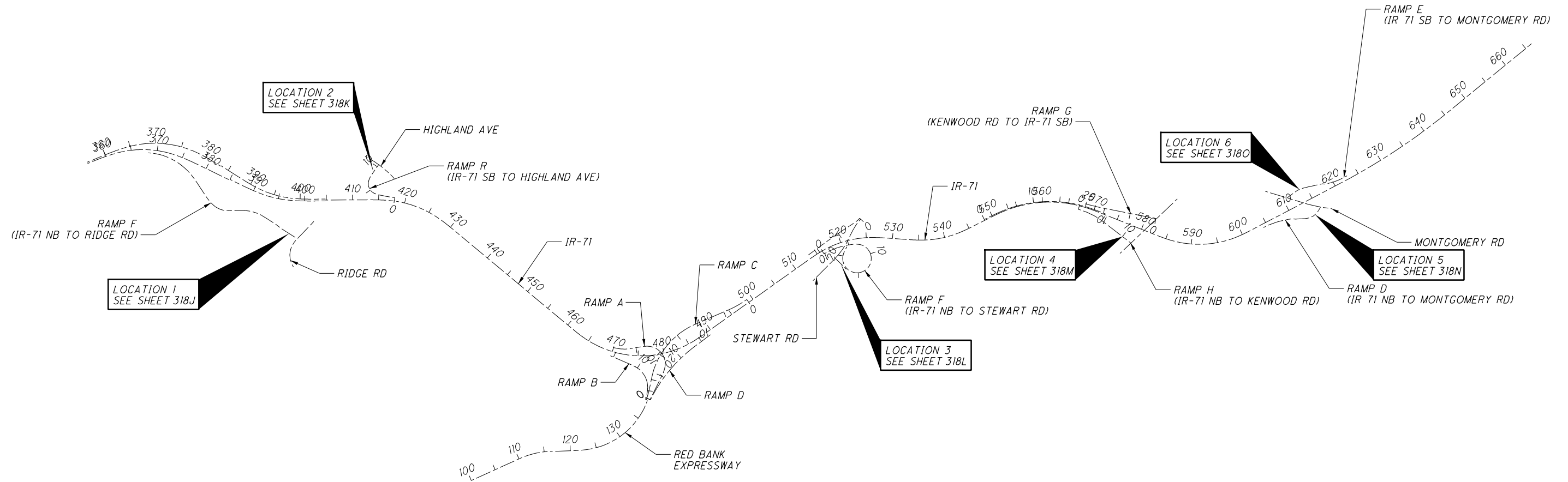
CALCULATED
BER
CHECKED
JDS

SIGNING SUBSUMMARY

HAM-71-8.42

J:\20151750\HAM-71-1.51\000T\HAM\91826\Design\Traffic\Sheets\91826_TS001.dgn 3/1/2018 9:46:03 AM brieder

J:\20151750\HAM-71-1.5\000T\HAM\91826\Design\Traffic\Sheets\91826_TB001.dgn 10/27/2017 9:05:13 AM brteder





 0 1000 2000
 HORIZONTAL SCALE IN FEET
 CALCULATED BY BER CHECKED BY JDS

TRAFFIC CONTROL SCHEMATIC PLAN

HAM-71-8.42

3181
441



CALCULATED BER CHECKED JDS

TRAFFIC CONTROL PLAN - WRONG WAY SIGNAGE DETAIL - IR-71 NB AT RIDGE ROAD

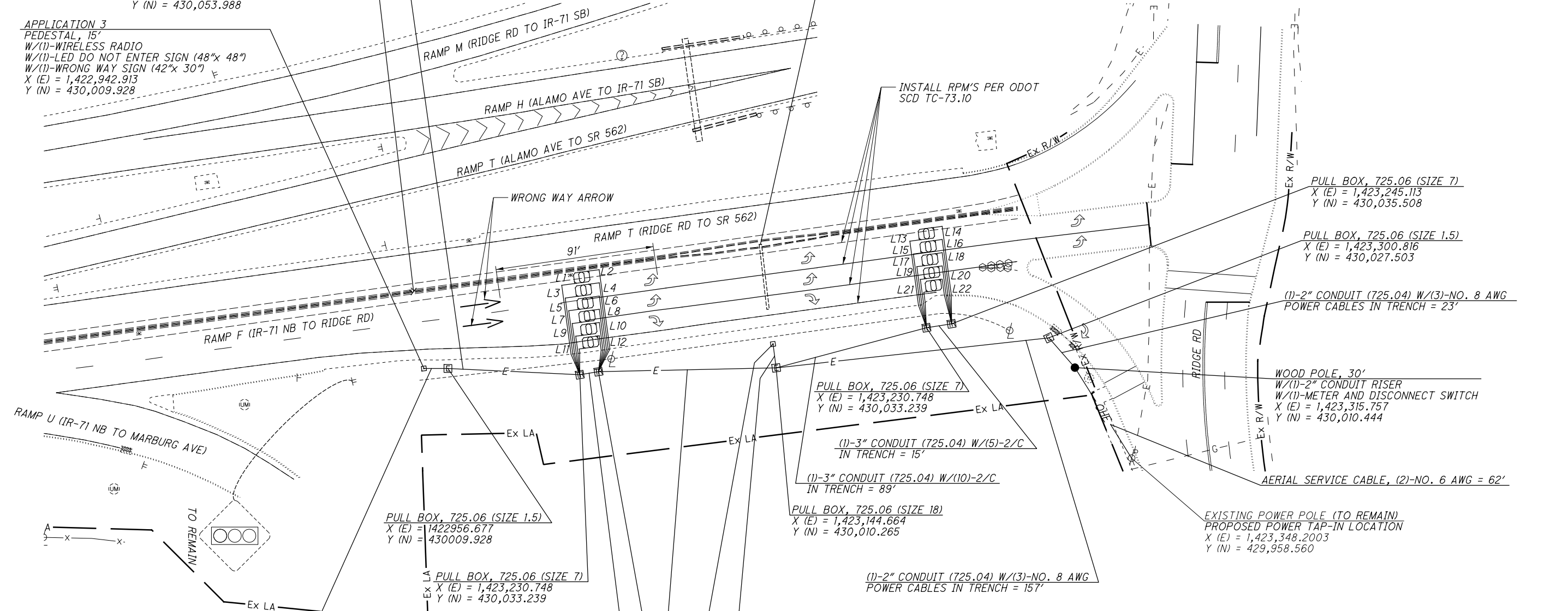
HAM-71-8.42

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES IN TRENCH = 76'

APPLICATION 4
BARRIER MOUNTED POST
W/(1)-WIRELESS RADIO
W/(1)-SOLAR POWERED LED DO NOT ENTER SIGN (48"x 48")
W/(1)-WRONG WAY SIGN (42"x 30")
MOUNT BOTH SIGNS AT 20° ANGLE TOWARDS RAMP F (SEE NOTE 2)
X (E) = 1,422,936.995
Y (N) = 430,053.988

APPLICATION 3
PEDESTAL, 15'
W/(1)-WIRELESS RADIO
W/(1)-LED DO NOT ENTER SIGN (48"x 48")
W/(1)-WRONG WAY SIGN (42"x 30")
X (E) = 1,422,942.913
Y (N) = 430,009.928

APPLICATION 5
EXISTING TRAFFIC CONTROL POLE (TO REMAIN)
W/(1)-WIRELESS RADIO
W/(1)-SOLAR POWERED LED WRONG WAY SIGN (48"x 36") (POLE MT'D)
W/(1)-WRONG WAY SIGN (42"x 30") (POLE MT'D)
MOUNT BOTH SIGNS AT 20° ANGLE TOWARDS RAMP F (SEE NOTE 2)
X (E) = 1,423,135.614
Y (N) = 430,081.043



J:\20151750\HAM-71-1.51\000T\HAM\91826\Design\Traffic\Sheets\91826_IP001.dgn 3/1/2018 9:46:04 AM brieder

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES IN TRENCH = 14'

(1)-3" CONDUIT (725.04) W/(6)-2/C
(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES IN TRENCH = 11'

PULL BOX, 725.06 (SIZE 1.5)
X (E) = 1,422,956.677
Y (N) = 430,009.928

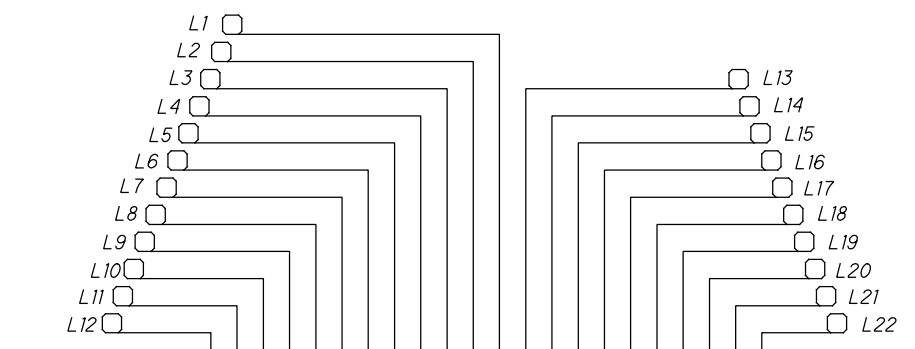
PULL BOX, 725.06 (SIZE 7)
X (E) = 1,423,230.748
Y (N) = 430,033.239

(1)-3" CONDUIT (725.04) W/(12)-2/C
(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES IN TRENCH = 102'

APPLICATION 1
PEDESTAL, 15'
W/(1)-POLE MOUNTED CONTROLLER/CABINET
W/(1)-WIRELESS RADIO
W/(1)-CONFIRMATION CAMERA
W/(1)-LED WRONG WAY SIGN (48"x36")
W/(1)-WRONG WAY SIGN (42"x 30")
X (E) = 1,423,142.832
Y (N) = 430,023.906

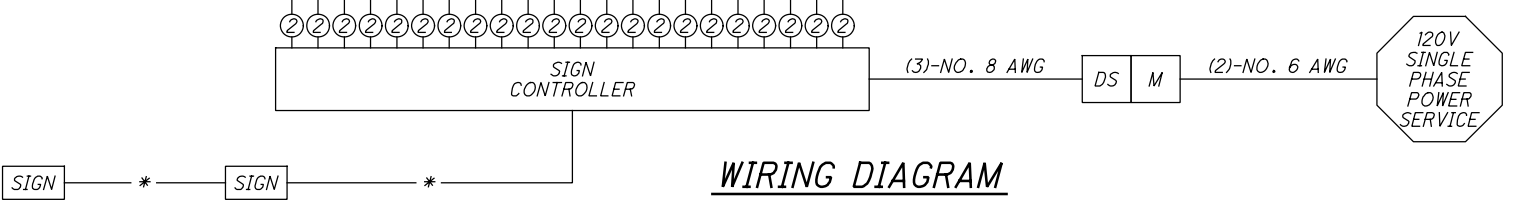
(1)-2" CONDUIT (725.04) W/(3)-NO. 8 AWG POWER CABLES
(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES
(1)-3" CONDUIT (725.04) W/(22)-2/C
IN TRENCH = 14'

NOTES:
1. REFER TO THE SURVEY PARAMETERS NOTE IN THE GENERAL NOTES FOR PROJECT CONTROL INFORMATION.
2. SIGNS SHALL BE MOUNTED AT A ANGLE OF 20° TO RAMP F. THE FINAL MOUNTING ANGLE SHALL BE APPROVED BY THE SITE ENGINEER FOR MAXIMUM VISABILITY.



WIRING DIAGRAM LEGEND

- * - (3)-NO. 14 AWG
- M - METER
- DS - DISCONNECT SWITCH



WIRING DIAGRAM



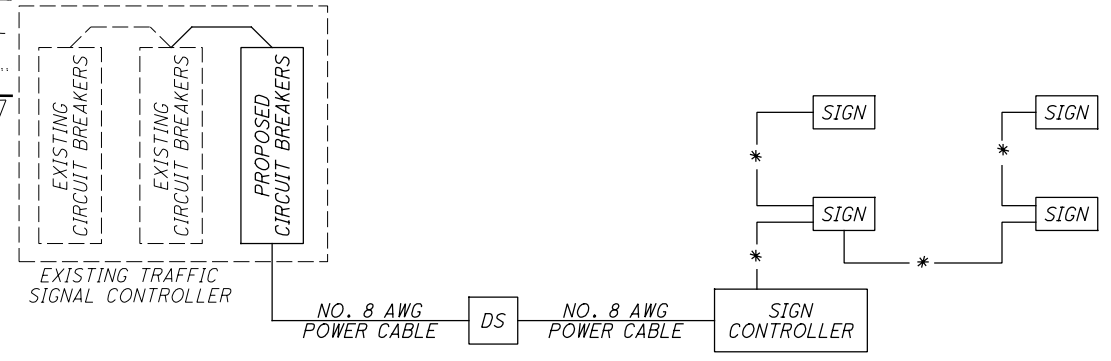
CALCULATED
BER
CHECKED
JDS

TRAFFIC CONTROL PLAN - WRONG WAY
SIGNAGE DETAIL - IR-71 SB AT HIGHLAND AVE

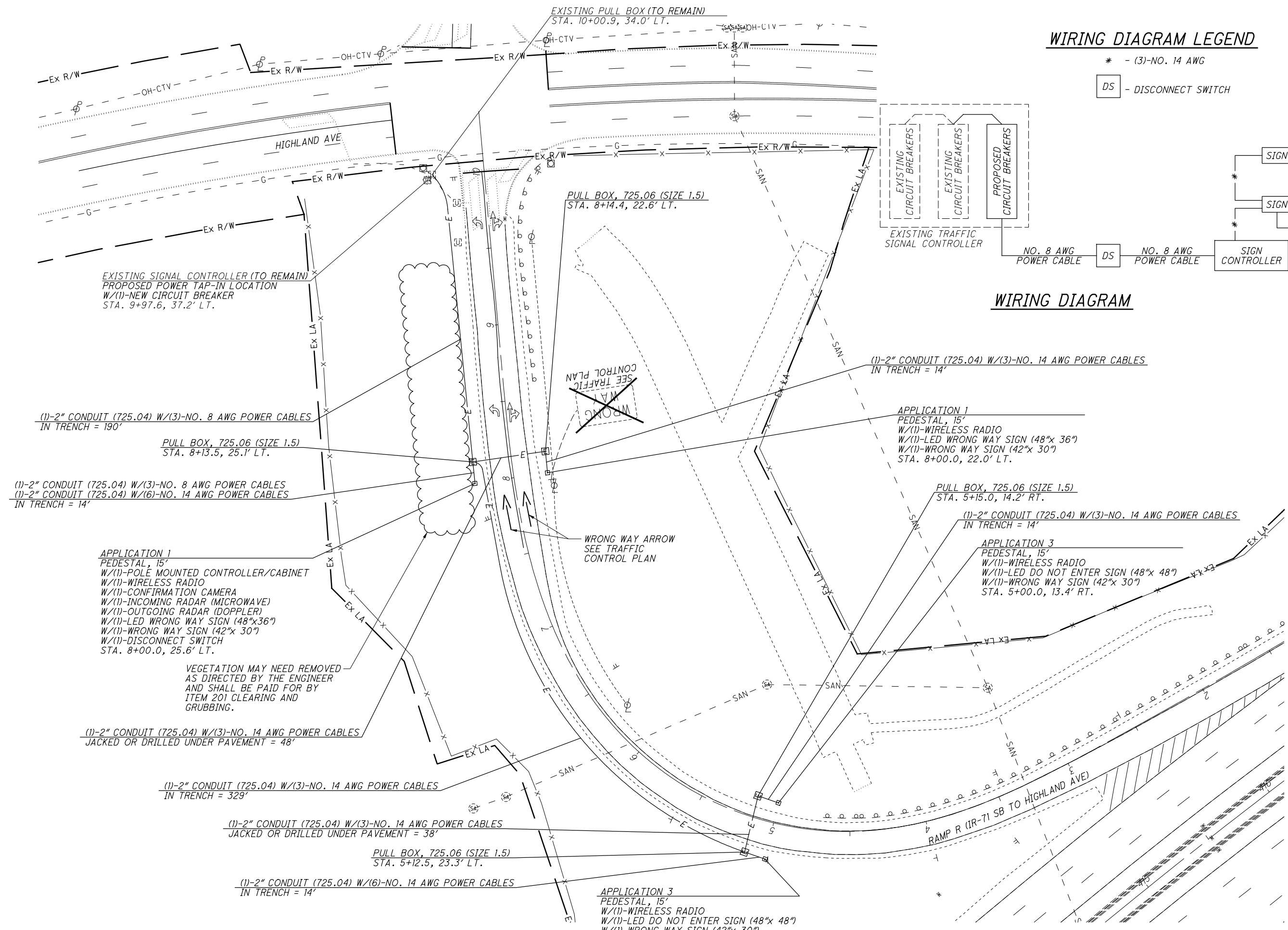
HAM-71-8.42

WIRING DIAGRAM LEGEND

- * - (3)-NO. 14 AWG
- DS - DISCONNECT SWITCH



WIRING DIAGRAM



EXISTING PULL BOX (TO REMAIN)
STA. 10+00.9, 34.0' LT.

HIGHLAND AVE

PULL BOX, 725.06 (SIZE 1.5)
STA. 8+14.4, 22.6' LT.

EXISTING SIGNAL CONTROLLER (TO REMAIN)
PROPOSED POWER TAP-IN LOCATION
W/(1)-NEW CIRCUIT BREAKER
STA. 9+97.6, 37.2' LT.

(1)-2" CONDUIT (725.04) W/(3)-NO. 8 AWG POWER CABLES
IN TRENCH = 190'

PULL BOX, 725.06 (SIZE 1.5)
STA. 8+13.5, 25.1' LT.

(1)-2" CONDUIT (725.04) W/(3)-NO. 8 AWG POWER CABLES
(1)-2" CONDUIT (725.04) W/(6)-NO. 14 AWG POWER CABLES
IN TRENCH = 14'

APPLICATION 1
PEDESTAL, 15'
W/(1)-POLE MOUNTED CONTROLLER/CABINET
W/(1)-WIRELESS RADIO
W/(1)-CONFIRMATION CAMERA
W/(1)-INCOMING RADAR (MICROWAVE)
W/(1)-OUTGOING RADAR (DOPPLER)
W/(1)-LED WRONG WAY SIGN (48"x36")
W/(1)-WRONG WAY SIGN (42"x 30")
W/(1)-DISCONNECT SWITCH
STA. 8+00.0, 25.6' LT.

VEGETATION MAY NEED REMOVED
AS DIRECTED BY THE ENGINEER
AND SHALL BE PAID FOR BY
ITEM 201 CLEARING AND
GRUBBING.

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES
JACKED OR DRILLED UNDER PAVEMENT = 48'

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES
IN TRENCH = 329'

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES
JACKED OR DRILLED UNDER PAVEMENT = 38'

PULL BOX, 725.06 (SIZE 1.5)
STA. 5+12.5, 23.3' LT.

(1)-2" CONDUIT (725.04) W/(6)-NO. 14 AWG POWER CABLES
IN TRENCH = 14'

APPLICATION 3
PEDESTAL, 15'
W/(1)-WIRELESS RADIO
W/(1)-LED DO NOT ENTER SIGN (48"x 48")
W/(1)-WRONG WAY SIGN (42"x 30")
STA. 5+00.0, 24.2' LT.

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES
IN TRENCH = 14'

APPLICATION 1
PEDESTAL, 15'
W/(1)-WIRELESS RADIO
W/(1)-LED WRONG WAY SIGN (48"x 36")
W/(1)-WRONG WAY SIGN (42"x 30")
STA. 8+00.0, 22.0' LT.

PULL BOX, 725.06 (SIZE 1.5)
STA. 5+15.0, 14.2' RT.

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES
IN TRENCH = 14'

APPLICATION 3
PEDESTAL, 15'
W/(1)-WIRELESS RADIO
W/(1)-LED DO NOT ENTER SIGN (48"x 48")
W/(1)-WRONG WAY SIGN (42"x 30")
STA. 5+00.0, 13.4' RT.

WRONG WAY
ARROW
SEE TRAFFIC
CONTROL PLAN

WRONG WAY ARROW
SEE TRAFFIC
CONTROL PLAN

RAMP R (IR-71 SB TO HIGHLAND AVE)

J:\20151750\HAM-71-1.51\0001\HAM-91826\Design\Traffic\Sheets\91826_IP002.dgn 3/1/2018 9:46:06 AM brieder



0 15 30 45 60
HORIZONTAL
SCALE IN FEET

CALCULATED
BER
CHECKED
JDS

A LOCATION OF THE SANITARY SEWER IS BASED ON RECORD PLANS. CONTRACTOR SHALL VERIFY LOCATION AND DEPTH PRIOR TO PLACING THE PEDESTAL. THE PEDESTAL SHALL HAVE A MINIMUM 5 FOOT LATERAL OFFSET FROM THE SANITARY SEWER TO AVOID DISTURBANCE.

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES JACKED OR DRILLED UNDER PAVEMENT = 46'

APPLICATION 3
PEDESTAL, 15'
W/(1)-WIRELESS RADIO
W/(1)-LED DO NOT ENTER SIGN (48"x48")
W/(1)-WRONG WAY SIGN (42"x 30")
STA. 15+10.0, 14.0' RT.

(1)-2" CONDUIT (725.04) W/(6)-NO. 14 AWG POWER CABLES IN TRENCH = 14'

(1)-2" CONDUIT (725.04) W/(6)-NO. 14 AWG POWER CABLES IN TRENCH = 14'

APPLICATION 1
PEDESTAL, 15'
W/(1)-WIRELESS RADIO
W/(1)-LED WRONG WAY SIGN (48"x36")
W/(1)-WRONG WAY SIGN (42"x 30")
STA. 17+50.0, 14.3' RT.

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES IN TRENCH = 226'

PULL BOX, 725.06 (SIZE 1.5)
STA. 15+24.8, 15.1' RT.

APPLICATION 6
PEDESTAL, 11'
W/(1)-WIRELESS RADIO
W/(1)-LED DO NOT ENTER SIGN (48"x48")
W/(1)-WRONG WAY SIGN (42"x 30")
STA. 15+10.0 28.6' LT.

APPLICATION 1
PEDESTAL, 15'
W/(1)-POLE MOUNTED CONTROLLER/CABINET
W/(1)-WIRELESS RADIO
W/(1)-CONFIRMATION CAMERA
W/(1)-INCOMING RADAR (MICROWAVE)
W/(1)-OUTGOING RADAR (DOPPLER)
W/(1)-LED WRONG WAY SIGN (48"x36")
W/(1)-WRONG WAY SIGN (42"x 30")
STA. 17+50.0, 32.6' LT.

VEGETATION MAY NEED REMOVED AS DIRECTED BY THE ENGINEER AND SHALL BE PAID FOR BY ITEM 201 CLEARING AND GRUBBING.

PULL BOX, 725.06 (SIZE 1.5)
STA. 17+64.8, 14.4' RT.

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES JACKED OR DRILLED UNDER PAVEMENT = 48'

WRONG WAY ARROW
SEE TRAFFIC CONTROL PLAN

PULL BOX, 725.06 (SIZE 1.5)
STA. 19+17.2, 121.0' LT.

(1)-2" CONDUIT (725.04) W/(3)-NO. 8 AWG POWER CABLES IN TRENCH = 213'

PULL BOX, 725.06 (SIZE 7)
STA. 17+62.4, 33.8' LT.

(1)-2" CONDUIT (725.04) W/(3)-NO. 8 AWG POWER CABLES IN TRENCH = 12'

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES
(1)-2" CONDUIT (725.04) W/(3)-NO. 8 AWG POWER CABLES
IN TRENCH = 14'

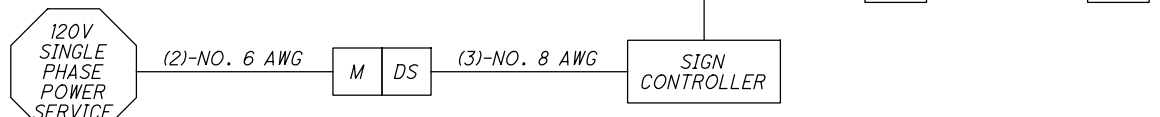
WOOD POLE, 30'
W/(1)-2" CONDUIT RISER
W/(1)-METER AND DISCONNECT SWITCH
STA. 19+22.7, 129.5' LT.

AERIAL SERVICE CABLE, (2)-NO. 6 AWG = 21'

EXISTING POWER POLE (TO REMAIN)
PROPOSED POWER TAP-IN LOCATION
STA. 19+22.3, 150.0' LT.

WIRING DIAGRAM LEGEND

- * - (3)-NO. 14 AWG
- M - METER
- DS - DISCONNECT SWITCH



WIRING DIAGRAM

J:\20151750\HAM-71-1.51\0001\HAM-91826\Design\Traffic\Sheets\91826_IP003.dgn 3/1/2018 9:46:07 AM brieder

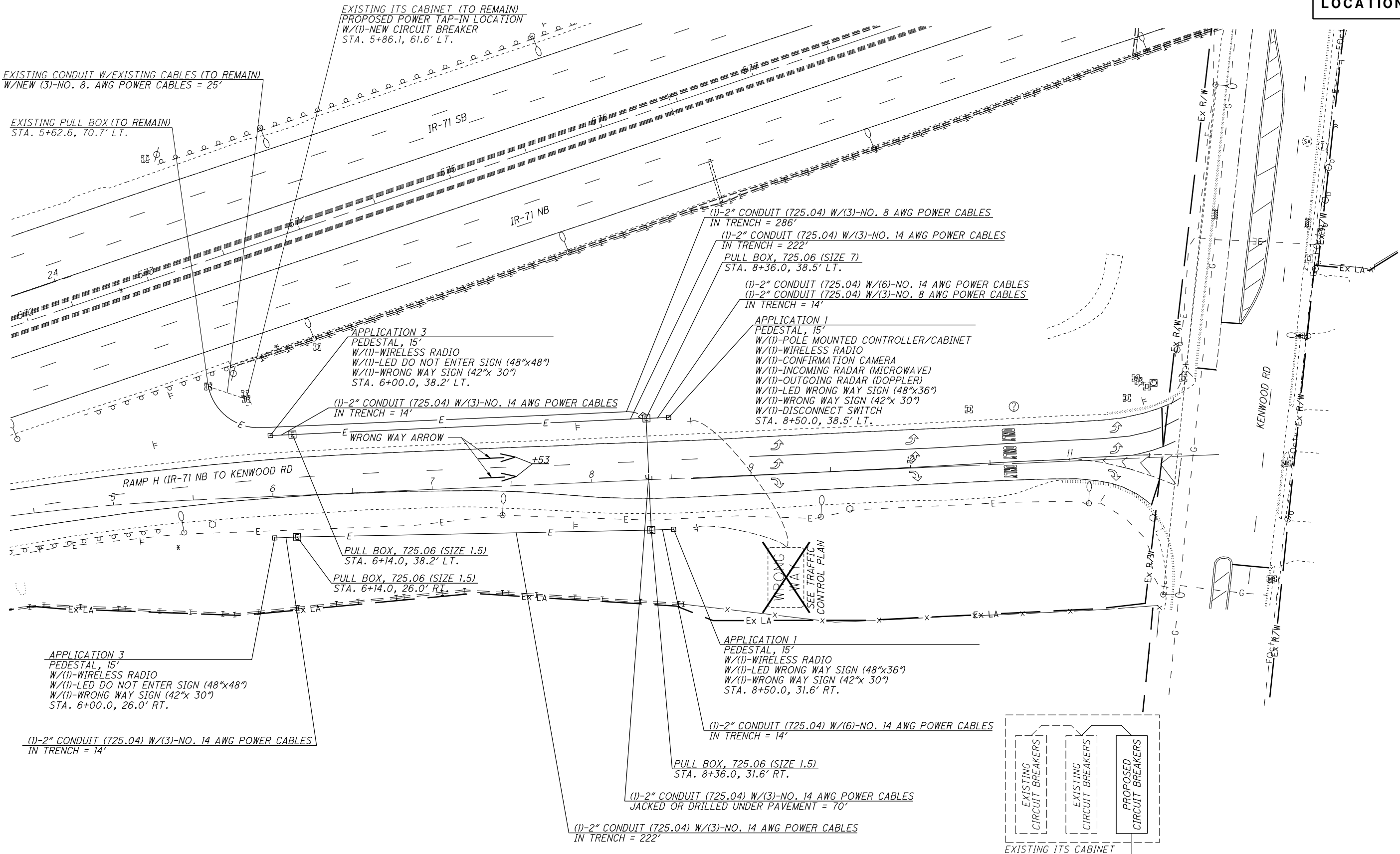


CALCULATED
BER
CHECKED
JDS

TRAFFIC CONTROL PLAN - WRONG WAY
SIGNAGE DETAIL - IR-71 NB AT KENWOOD RD

HAM-71-8.42

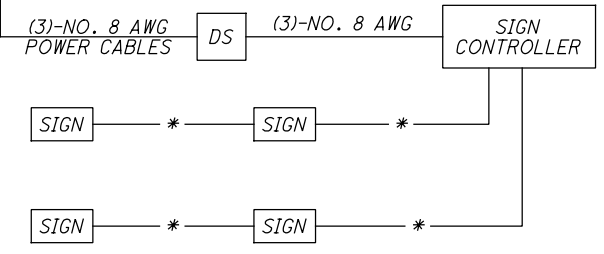
J:\20151750\HAM-71-1.51\000T\HAM\91826\Design\Traffic\Sheets\91826_IP004.dgn 3/1/2018 9:46:08 AM brieder



WIRING DIAGRAM LEGEND

- * - (3)-NO. 14 AWG
- DS - DISCONNECT SWITCH

WIRING DIAGRAM

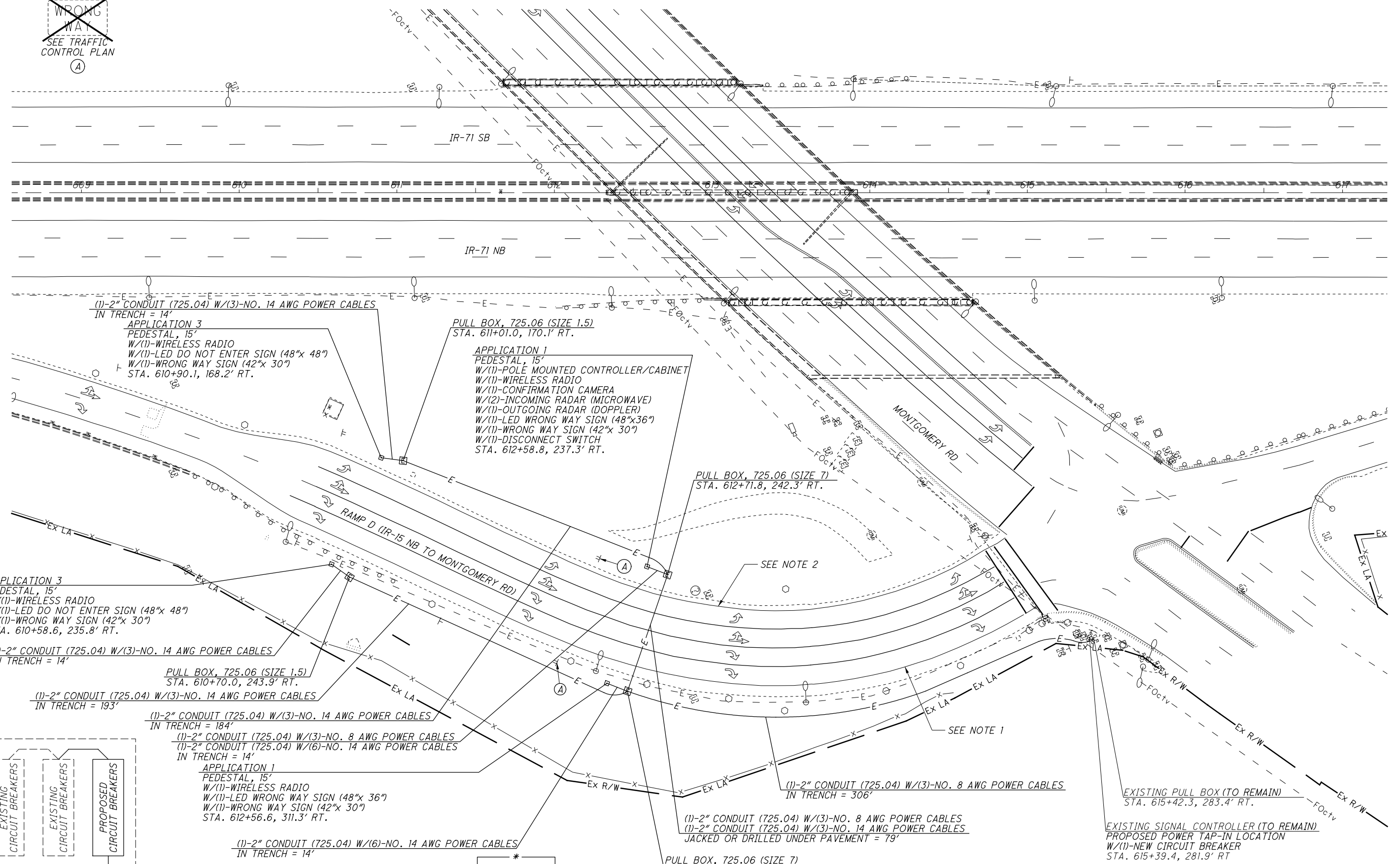




CALCULATED BER CHECKED JDS

TRAFFIC CONTROL PLAN - WRONG WAY SIGNAGE DETAIL-IR-71 NB AT MONTGOMERY RD

HAM-71-8.42



(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES IN TRENCH = 14'

APPLICATION 3 PEDESTAL, 15' W/(1)-WIRELESS RADIO W/(1)-LED DO NOT ENTER SIGN (48"x 48") W/(1)-WRONG WAY SIGN (42"x 30") STA. 610+90.1, 168.2' RT.

PULL BOX, 725.06 (SIZE 1.5) STA. 611+01.0, 170.1' RT.

APPLICATION 1 PEDESTAL, 15' W/(1)-POLE MOUNTED CONTROLLER/CABINET W/(1)-WIRELESS RADIO W/(1)-CONFIRMATION CAMERA W/(2)-INCOMING RADAR (MICROWAVE) W/(1)-OUTGOING RADAR (DOPPLER) W/(1)-LED WRONG WAY SIGN (48"x36") W/(1)-WRONG WAY SIGN (42"x 30") W/(1)-DISCONNECT SWITCH STA. 612+58.8, 237.3' RT.

PULL BOX, 725.06 (SIZE 7) STA. 612+71.8, 242.3' RT.

APPLICATION 3 PEDESTAL, 15' W/(1)-WIRELESS RADIO W/(1)-LED DO NOT ENTER SIGN (48"x 48") W/(1)-WRONG WAY SIGN (42"x 30") STA. 610+58.6, 235.8' RT.

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES IN TRENCH = 14'

PULL BOX, 725.06 (SIZE 1.5) STA. 610+70.0, 243.9' RT.

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES IN TRENCH = 193'

(1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES IN TRENCH = 184'

(1)-2" CONDUIT (725.04) W/(3)-NO. 8 AWG POWER CABLES (1)-2" CONDUIT (725.04) W/(6)-NO. 14 AWG POWER CABLES IN TRENCH = 14'

APPLICATION 1 PEDESTAL, 15' W/(1)-WIRELESS RADIO W/(1)-LED WRONG WAY SIGN (48"x 36") W/(1)-WRONG WAY SIGN (42"x 30") STA. 612+56.6, 311.3' RT.

(1)-2" CONDUIT (725.04) W/(6)-NO. 14 AWG POWER CABLES IN TRENCH = 14'

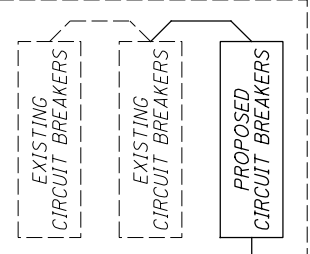
(1)-2" CONDUIT (725.04) W/(3)-NO. 8 AWG POWER CABLES IN TRENCH = 306'

(1)-2" CONDUIT (725.04) W/(3)-NO. 8 AWG POWER CABLES (1)-2" CONDUIT (725.04) W/(3)-NO. 14 AWG POWER CABLES JACKED OR DRILLED UNDER PAVEMENT = 79'

PULL BOX, 725.06 (SIZE 7) STA. 612+46.3, 316.4' RT.

EXISTING PULL BOX (TO REMAIN) STA. 615+42.3, 283.4' RT.

EXISTING SIGNAL CONTROLLER (TO REMAIN) PROPOSED POWER TAP-IN LOCATION W/(1)-NEW CIRCUIT BREAKER STA. 615+39.4, 281.9' RT



WIRING DIAGRAM

WIRING DIAGRAM LEGEND

* - (3)-NO. 14 AWG DS - DISCONNECT SWITCH

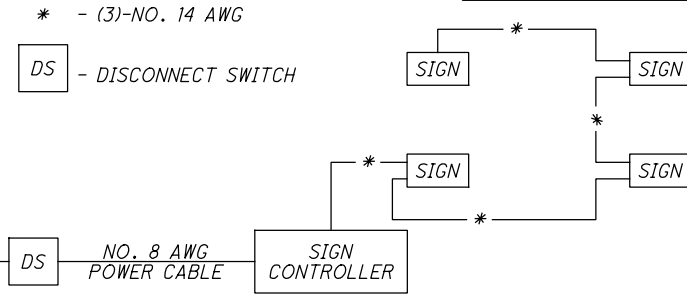
- NOTES: 1. A QUANTITY OF 16 RED RAISED PAVEMENT MARKING (RPM) REFLECTORS HAS BEEN CARRIED TO THE SUBSUMMARY TO BE INSTALLED IN EXISTING RPM CASTINGS PER ODOT SCD TC-73.20. 2. A QUANTITY OF 6 RPM'S HAS BEEN CARRIED TO THE SUBSUMMARY TO BE EVENLY PLACED BETWEEN EXISTING RPM'S PER ODOT SCD TC-73.20.

J:\20151750\HAM-71-1.51\0001\HAM-91826\Design\Traffic\Sheets\91826_TP005.dgn 3/1/2018 9:46:09 AM brieder

NOTES:

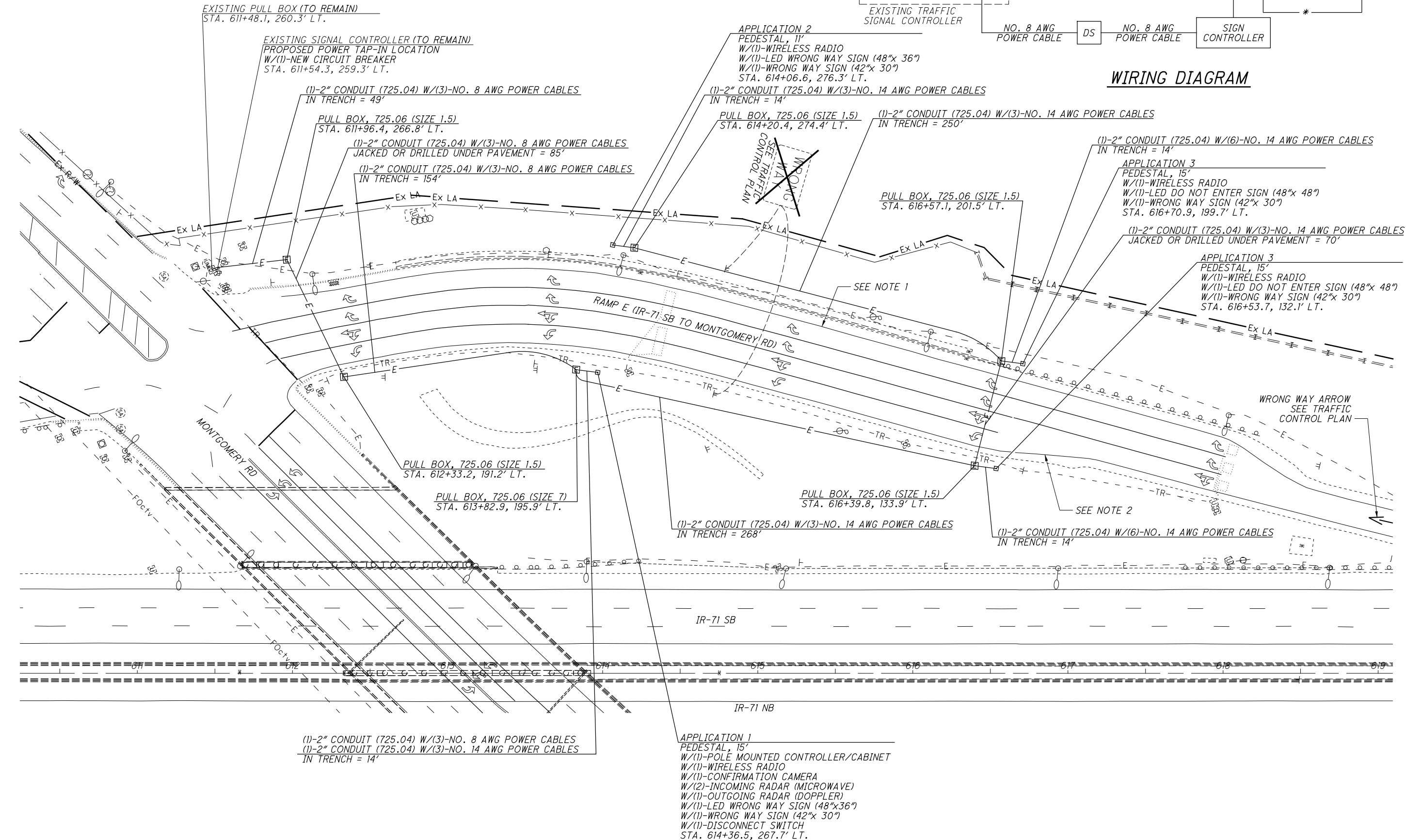
1. A QUANTITY OF 16 RED RAISED PAVMENT MARKING (RPM) REFLECTORS HAS BEEN CARRIED TO THE SUBSUMMARY TO BE INSTALLED IN EXISTING RPM CASTINGS PER ODOT SCD TC-73.20.
2. A QUANTITY OF 6 RPM'S HAS BEEN CARRIED TO THE SUBSUMMARY TO BE EVENLY PLACED BETWEEN EXISTING RPM'S PER ODOT SCD TC-73.20.

WIRING DIAGRAM LEGEND



LOCATION 6

WIRING DIAGRAM

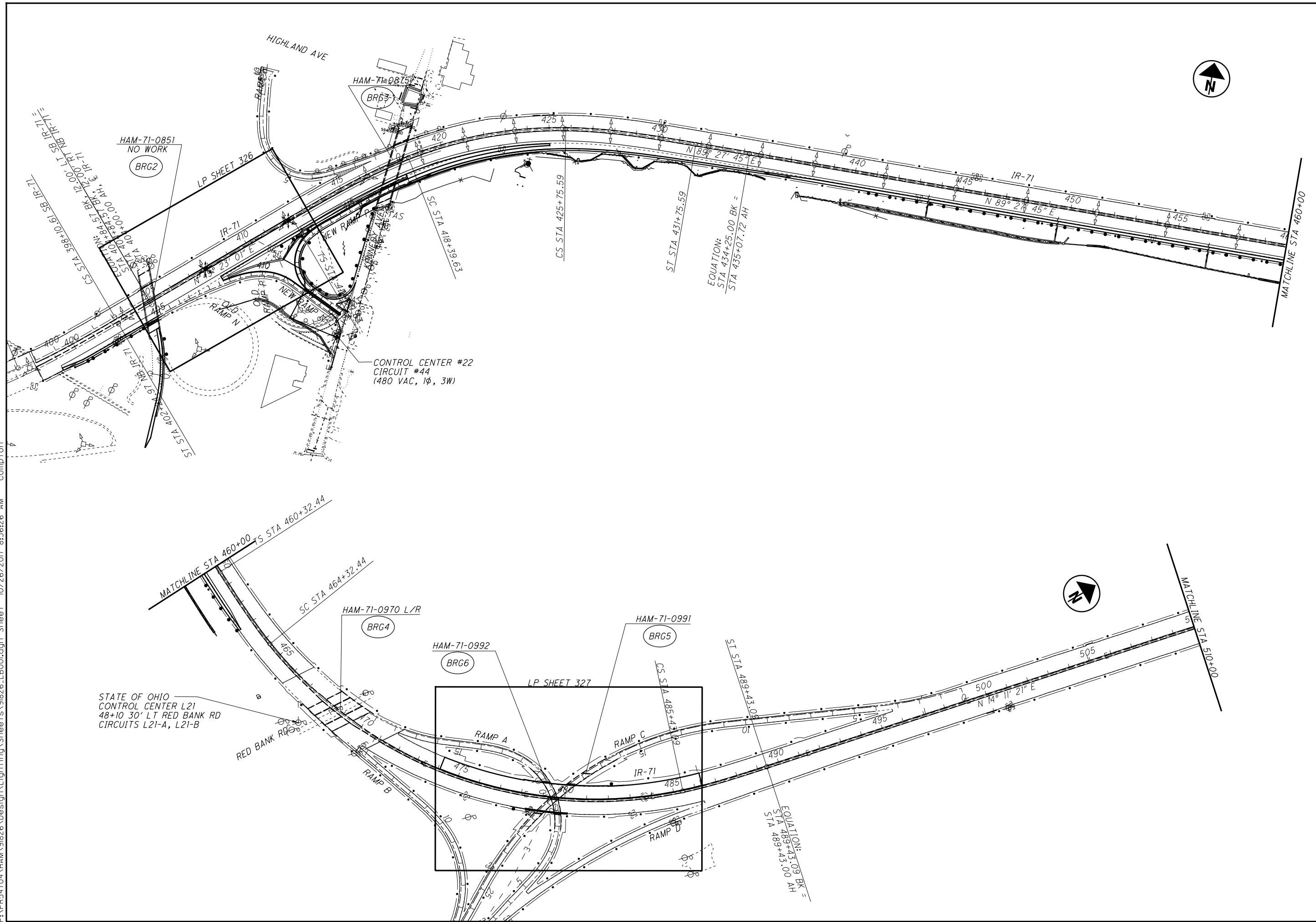


J:\20151750\HAM-71-1.5\000T\HAM\91826\Design\Traffic\Sheets\91826_IP006.dgn 3/1/2018 9:46:10 AM brieder

TRAFFIC CONTROL PLAN - WRONG WAY SIGNAGE DETAIL-IR-71 SB AT MONTGOMERY RD

HAM-71-8.42
 3180
 441

P:\PR54704\HAM_91826\Design\Lighting\Sheets\91826_LB001.dgn Sheet 10/26/2017 8:36:26 AM compton

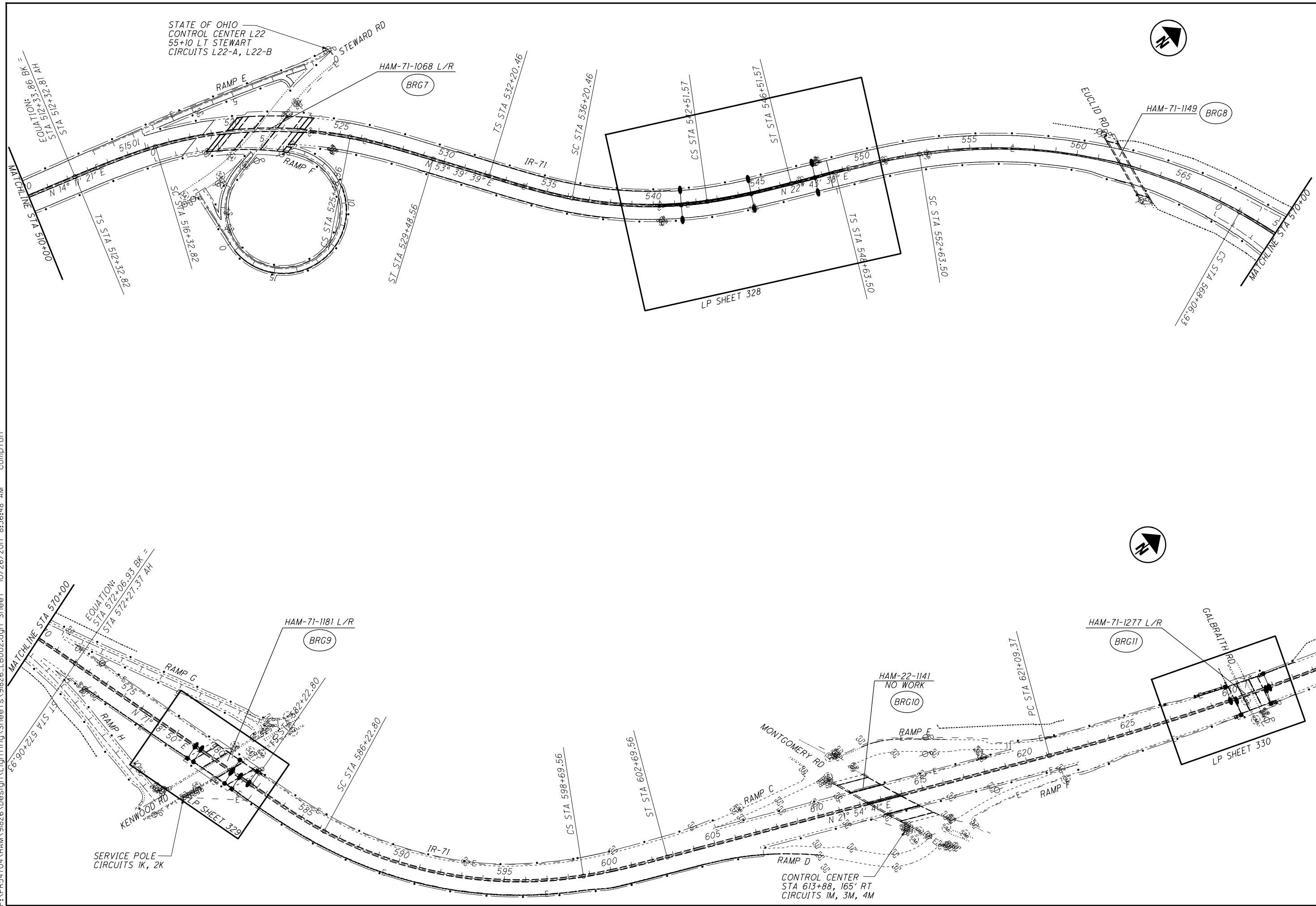


CALCULATED	0
SDC	100
CHECKED	400
SCS	400

LIGHTING SCHEMATIC PLAN
STA 400+00 TO STA 510+00

HAM-IR71-8.42

P:\PR54704\HAM_91826\Design\Lighting\Sheets\91826.LB002.dgn Sheet 10/26/2017 8:36:48 AM compton



CALCULATED	SDC	CHECKED	SCS



LIGHTING SCHEMATIC PLAN
STA 510+00 TO STA 635+00

HAM-IR71-8.42

320
441

625, LUMINAIRE, CONVENTIONAL, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ODOT'S CONSTRUCTION AND MATERIAL SPECIFICATIONS, LUMINAIRES FOR CONVENTIONAL LIGHTING UNITS SHALL BE AS FOLLOWS:

LUMINAIRES FOR CONVENTIONAL LIGHTING UNITS WITH AN IES II-M-SC DISTRIBUTION AND 200 WATT HIGH PRESSURE SODIUM LAMPS SHALL BE AMERICAN ELECTRIC "SERIES 126" WITH PHOTOMETRIC DISTRIBUTION AE3849I (ADJUST LUMEN VALUE FOR 200W HPS), COOPER "OVX" WITH PHOTOMETRIC DISTRIBUTION OVX25SXX2DF (ADJUST LUMEN VALUE FOR 200W HPS), GENERAL ELECTRIC "M-400" WITH PHOTOMETRIC DISTRIBUTION 1014 (ADJUST LUMEN VALUE FOR 200W HPS), OR EQUAL AS APPROVED BY THE ENGINEER.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH C&MS ITEM 625, "LUMINAIRE, CONVENTIONAL, AS PER PLAN (ADD SUPPLEMENTAL DESCRIPTION)" FOR EACH LUMINAIRE WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

LAMPS

HIGH PRESSURE SODIUM LAMPS SHALL BE GENERAL ELECTRIC "LUCALOX," OSRAM SYLVANIA "LUMALUX," PHILIPS "CERAMALUX," OR EQUAL APPROVED BY THE ENGINEER.

LIGHT POLE ANCHOR BOLTS ON STRUCTURES

WHEN A LIGHT POLE IS MOUNTED ON A PILASTER ON A BRIDGE PARAPET OR ON A RETAINING WALL, THE REQUIRED ANCHOR BOLTS MAY DIFFER IN LENGTH AND/OR SHAPE FROM THOSE REQUIRED WHEN THE POLE IS MOUNTED ON A CAST-IN-PLACE DRILLED SHAFT FOUNDATION. THE COST DIFFERENTIAL FOR FURNISHING SUCH BOLTS IS INCLUDED HEREIN.

IN ADDITION, THERE IS NO FOUNDATION CONSTRUCTION ITEM IN WHICH TO INCLUDE THE SETTING OF THE ANCHOR BOLTS. THUS, THE SETTING OF THE ANCHOR BOLTS INTO THE PILASTER IS ALSO PART OF THIS WORK.

PAYMENT WILL BE MADE AT EACH SUCH POLE LOCATION AT THE UNIT PRICE BID FOR EACH C&MS ITEM 625, "LIGHT POLE ANCHOR BOLTS ON STRUCTURE" AND SHALL BE FULL COMPENSATION FOR FURNISHING AND PLACING THE SET OF ANCHOR BOLTS REQUIRED.

HIGH VOLTAGE TEST WAIVED

THE HIGH VOLTAGE TEST SHALL NOT BE PERFORMED ON THE CIRCUITS CONSTRUCTED BY THIS PROJECT, SINCE THE TEST COULD DAMAGE THE PORTION OF THE COMPLETED CIRCUIT WHICH HAS BEEN IN SERVICE PRIOR TO THIS PROJECT.

CONDUIT EXPANSION AND DEFLECTION

EXPANSION FITTINGS SHALL BE OZ TYPE AX, CROUSE HINDS TYPE XJG, APPLETON TYPE AX, OR EQUAL APPROVED BY THE ENGINEER. EACH EXPANSION FITTING SHALL PROVIDE EITHER 4 OR 8 INCHES TOTAL MOVEMENT AS SPECIFIED BY THE PLAN DETAILS AND SHALL HAVE AN EXTERNAL COPPER BONDING JUMPER, UNLESS SPECIFIED OTHERWISE BY THE PLAN DETAILS.

DEFLECTION COUPLINGS SHALL BE OZ TYPE DX, CROUSE HINDS TYPE XD, APPLETON TYPE DF, OR EQUAL APPROVED BY THE ENGINEER. EACH DEFLECTION COUPLING SHALL HAVE AN EXTERNAL COPPER BONDING JUMPER, UNLESS SPECIFIED OTHERWISE BY THE PLAN DETAILS.

LIGHT POLE AND TOWER HANDHOLE LOCATION

LOCATE ALL MEDIAN MOUNTED LIGHT POLE AND LIGHT TOWER HANDHOLES BOXES ON THE SAME SIDE OF THE MEDIAN.

625, CONDUIT CLEANED AND CABLES REMOVED

THIS ITEM SHALL CONSIST OF CLEANING AN EXISTING CONDUIT BY REMOVING EXISTING CABLES, MUD AND DEBRIS SO THAT NEW CABLE CAN BE INSTALLED. INCIDENTAL TO THE CLEANING IS THE INSTALLATION OF BUSHINGS AND/OR COUPLINGS ON THE ENDS OF EXISTING CONDUIT AS REQUIRED. MATERIALS REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR FOR PROPER DISPOSAL OFF OF THE PROJECT SITE. DISTURBED AREAS SHALL BE PROPERLY RESTORED.

PAYMENT WILL BE MADE AT THE UNIT PRICE BID UNDER C&MS ITEM 625, "CONDUIT CLEANED AND CABLES REMOVED" PER FOOT OF CONDUIT CLEANED WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

ITEM 625 - DISCONNECT EXISTING CIRCUIT, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF THE DISCONNECTION OF AN EXISTING LIGHT CIRCUIT AT A PULL BOX OR TRANSFORMER BASE.

DISCONNECTION AT A PULL BOX SHALL INVOLVE CUTTING THE EXISTING CIRCUIT AND REMOVING ALL CONNECTOR KITS. ALL DUCT-CABLE NOT TO BE REUSED SHALL BE REMOVED FROM THE TRANSFORMER BASE AND THE EXISTING CONDUIT IN THE FOUNDATION SHALL BE CLEANED OF ALL CABLE AND DEBRIS SO THAT THE NEW DUCT-CABLE CAN BE INSTALLED. ALL EXISTING CABLE TO REMAIN ACTIVE SHALL BE CUT IN A MANNER SO THAT THERE IS SUFFICIENT CABLE LEFT FOR RECONNECTION.

THOSE WIRES THAT ARE TO REMAIN ON ACTIVE CIRCUITS SHALL HAVE A WATER-RESISTANT SEAL AT THE CUT END. THE WATER-RESISTANT SEAL SHALL BE ACCOMPLISHED BY PLUGGING THE DEACTIVATED PORT OF AN EXISTING CONNECTOR KIT OR BY INSTALLING A CABLE SPLICE KIT ON THE CUT END OF THE CABLE.

PAYMENT WILL BE MADE AT THE UNIT PRICE BID UNDER C&MS ITEM 625 DISCONNECT EXISTING CIRCUIT, AS PER PLAN FOR EACH CIRCUIT DISCONNECTED WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

SPECIAL, MAINTAIN EXISTING LIGHTING

EXISTING ROADWAYS WHICH ARE TO REMAIN OPEN TO TRAFFIC DURING CONSTRUCTION OF THIS PROJECT AND WHICH ARE LIGHTED SHALL HAVE THE LIGHTING MAINTAINED AS DESCRIBED HEREIN.

BEFORE ANY WORK IS STARTED IN THE IMMEDIATE VICINITY OF THE EXISTING LIGHTING CIRCUITS, REPRESENTATIVES OF ODOT, THE MAINTAINING AGENCY AND THE CONTRACTOR SHALL MAKE A VISUAL INSPECTION OF THE EXISTING ROADWAY LIGHTING CIRCUITS TO BE MAINTAINED. DURING THIS INSPECTION, A WRITTEN RECORD OF THE CONDITION OF EXISTING LIGHTING SHALL BE MADE BY ODOT'S REPRESENTATIVE. THIS WRITTEN REPORT SHALL NOTE INDIVIDUAL LUMINAIRES WHICH ARE NOT IN WORKING ORDER, INDIVIDUAL POLES WHICH ARE NOT STANDING, AND INDIVIDUAL CIRCUITS WHICH ARE NOT IN WORKING ORDER. THE COMPLETED REPORT SHALL BE SIGNED BY THE REPRESENTATIVES OF ODOT, THE MAINTAINING AGENCY AND THE CONTRACTOR.

IF, AS A RESULT OF THIS INSPECTION, IT IS DETERMINED THAT THE CONDITION OF THE EXISTING SYSTEM IS BELOW THAT REQUIRED FOR THE SAFETY OF THE TRAVELING PUBLIC, THEN THE MAINTAINING AGENCY SHALL MAKE THE REPAIRS NECESSARY TO RETURN THE SYSTEM TO AN ACCEPTABLE CONDITION. FOLLOWING THESE REPAIRS, THE SYSTEM SHALL AGAIN BE INSPECTED AND A REPORT SHALL BE MADE AND SIGNED AS OUTLINED HEREIN.

WHEN THE EXISTING SYSTEM IS IN AN ACCEPTABLE CONDITION, IT SHALL BE TURNED OVER TO THE CONTRACTOR WHO SHALL THEN BE REQUIRED TO MAINTAIN THE EXISTING LIGHTING TO THE CONDITION OUTLINED IN THIS REPORT WITH THE EXCEPTION OF KNOCKDOWNS DUE TO TRAFFIC ACCIDENTS.

REPLACEMENT OF KNOCKED DOWN UNITS SHALL BE DONE ONLY WHEN THE ENGINEER HAS DETERMINED THAT THE REPLACEMENT OF THE KNOCKED DOWN UNIT IS NECESSARY AND SHALL BE PAID SEPARATELY ON A UNIT BASIS.

BETTERMENTS SHALL BE COVERED IN ITEMS OF WORK PERTAINING TO THE CONSTRUCTION OF PERMANENT IMPROVEMENT.

WHEN THE SEQUENCE OF CONSTRUCTION ACTIVITIES REQUIRES, OR SHOULD THE CONTRACTOR DESIRE, THE REMOVAL OF THE EXISTING LIGHTING BEFORE THE NEW LIGHTING IS OPERATIONAL, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY LIGHTING OF THIS PORTION OF THE ROADWAY.

PRIOR TO INSTALLING SUCH LIGHTING, THE CONTRACTOR SHALL PREPARE AND SUBMIT FOUR SETS OF THE TEMPORARY LIGHTING PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL.

THIS PLAN SHALL SHOW LOCATIONS OF POLES, LENGTHS OF BRACKET ARMS, STYLES OF LUMINAIRES, MOUNTING HEIGHTS, WIRING METHODS AND OTHER PERTINENT INFORMATION. THE TEMPORARY LIGHTING SHALL PROVIDE AN AVERAGE INITIAL INTENSITY OF 1.2 FOOTCANDLES WITH AN AVERAGE TO MINIMUM UNIFORMITY NOT TO EXCEED 3:1. MOUNTING HEIGHT OF TEMPORARY LUMINAIRES SHALL NOT BE LESS THAN 30 FEET, AND THE MINIMUM OVERHEAD CONDUCTOR CLEARANCE SHALL BE 20 FEET. TEMPORARY OVERHEAD CONSTRUCTION SHALL NOT BE LESS THAN GRADE "B" FOR STRENGTH REQUIREMENTS AS DEFINED BY THE NATIONAL ELECTRIC SAFETY CODE. WOOD POLES WITH OVERHEAD WIRING MAY BE USED. HOWEVER, TEMPORARY LIGHTING SHALL MEET FEDERAL AND STATE SAFETY CRITERIA. IF BREAKAWAY POLES ARE USED TO MEET THESE CRITERIA, THEN UNDERGROUND WIRING SHALL BE USED. RECONDITIONED OR USED MATERIALS MAY BE FURNISHED FOR TEMPORARY LIGHTING.

SPECIAL, MAINTAIN EXISTING LIGHTING (CONT'D)

ALL MATERIALS NECESSARY TO COMPLETE THE TEMPORARY LIGHTING SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. WHEN NO LONGER NEEDED, THE TEMPORARY LIGHTING INSTALLATION SHALL BE REMOVED AND PROPERLY DISPOSED OF BY THE CONTRACTOR.

THE MAINTAINING AGENCY WILL PAY FOR ELECTRICAL ENERGY CONSUMED BY EXISTING POWER SERVICES AND BY PROPOSED PERMANENT POWER SERVICES AFTER ACCEPTANCE OF THE LIGHTING WORK. THE CONTRACTOR WILL PAY FOR ELECTRICAL ENERGY, INSTALLATION, REMOVAL AND MAINTENANCE OF ANY TEMPORARY POWER SERVICES.

THE LUMP SUM PRICE BID FOR ITEM SPECIAL "MAINTAIN EXISTING LIGHTING" SHALL INCLUDE PAYMENT FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO MAINTAIN THE EXISTING LIGHTING AS SPECIFIED HEREIN.

THE UNIT PRICE BID FOR ITEM SPECIAL "REPLACEMENT OF EXISTING LIGHTING UNIT" SHALL BE FULL PAYMENT FOR THE REPLACEMENT OF AN EXISTING LIGHTING UNIT WHICH HAS BEEN KNOCKED DOWN AFTER THE AFOREMENTIONED INSPECTION AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND

THE FOLLOWING QUANTITY IS PROVIDED FOR THE REPLACEMENT OF EXISTING LIGHTING UNIT WORK DESCRIBED ABOVE AND CARRIED TO THE GENERAL SUMMARY.

625 SPECIAL-REPLACEMENT OF EXISTING LIGHTING UNIT 2 EACH

P:\PR54704\HAM\91826\Design\Lighting\Sheets\91826_LN001.dgn Sheet 10/26/2017 8:36:50 AM compton

P:\PR54704\HAM\91826\Design\Lighting\Sheets\91826_L5001.dgn Sheet 2/22/2018 3:33:41 PM sbell















REF NO.	SHEET NO.	STATION TO STATION			625	625	625	625		625	625	625	625	625	625	625	625	625	625		625			
					CONNECTION, FUSED PULL APART	CONNECTION, UNFUSED PULL APART	CONNECTION, UNFUSED PERMANENT	LIGHT POLE, CONVENTIONAL		LIGHT TOWER, BBBB100	LIGHT POLE FOUNDATION, 24" X 6' DEEP	LIGHT TOWER FOUNDATION, 36" X 25' DEEP	LIGHT POLE FOUNDATION, 24" X 10' DEEP	BRACKET ARM, 12'	BRACKET ARM, 15'	BRACKET ARM, 18'	BRACKET ARM, 20'		NO. 2 AWG 2400 VOLT DISTRIBUTION CABLE	NO. 4 AWG 2400 VOLT DISTRIBUTION CABLE	NO. 10 AWG POLE AND BRACKET CABLE	CONDUIT CLEANED AND CABLES REMOVED		CONDUIT, 2", 725.05
					EACH	EACH	EACH	EACH		EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	FT	FT	FT	FT		FT
1	326	407+69.00	RT																					
2	326	407+78.90	RT		2	1				1			1											
3	326	407+90.00	RT																					
4	326	410+88.00	RT																					
5	326	412+00.00	RT																					
6	326	412+17.89	RT		2	1				1			1											
7	326	412+08.00	RT																					
8	327	479+24.75	LT																					
9	327	473+23.00	LT																					
10	328	541+30.00	RT		2	1							1		1							162		
11	328	541+38.00	RT																					
12	328	544+59.00	RT		2	1							1		1								162	
13	328	544+46.00	RT																					
14	328	547+65.00	RT		2	1							1		2								162	
15	328	547+74.00	RT																					
16	328	548+50.00	RT																					
17	329	579+00.00	RT		2	1							1		1								126	
18	329	579+39.00	RT																					
19																								
20	329	581+15.00	RT																					
21	329	581+60.00	RT																					
22	330	629+90.00	LT		2	1								1									126	
23	330	629+90.00	RT		2	1								1									126	
24	330	630+37.00	LT																					
25	330	631+60.00	LT		2	1								1									126	
26	330	631+63.00	RT																					
27	330	631+78.00	RT		2	1								1									126	
28	326	410+45.00	RT																					
29	326	412+24.00	RT																					
30	328	540+30.00	RT																					
31	329	582+08.00	LT		2	1								1									126	
32																								
33	330	628+40.00	LT																					
34	326	407+78.9	RT	TO			407+90	RT														63		11
35	326	412+00	RT	TO			412+17.89	RT														54		8
36	328	540+30.00	RT	TO			541+30.00															327		105
37	328	541+30.00	RT	TO			544+46.00	RT														1002		330
38	328	544+46.00	RT	TO			547+65.00	RT														927		305
39	328	547+65.00	RT	TO			548+50.00	RT														267		85
40	329	582+08.00	LT	TO			582+51.00	LT															150	46
41	329	577+58	RT	TO			579+00	RT	2		1											450		140
42	329	579+00	RT	TO			579+19	RT														57		19
43	329	581+42	RT	TO			581+60	RT														81		18
44	329	581+60	RT	TO			582+63	RT	2		1											327		100
45	330	626+88	LT	TO			628+40	LT														465		146
46	330	628+40	LT	TO			628+97	LT	2		1											189		55
47	330	628+40	LT	TO			629+90	LT														462		
48	330	631+60	LT	TO			631+76	LT														57		149
49	330	631+76	LT	TO			632+75	LT	2		1											315		95
50	330	629+90	RT	TO			630+16	RT														102		30
51	330	631+63	RT	TO			631+84	RT														87		25
TOTALS CARRIED TO GENERAL SUMMARY					32	16	51	10		2	4	2	6	7	2	2	2	2		2640	2742	1368	588	1094

LIGHTING SUBSUMMARY

HAM - IR71 - 8.42

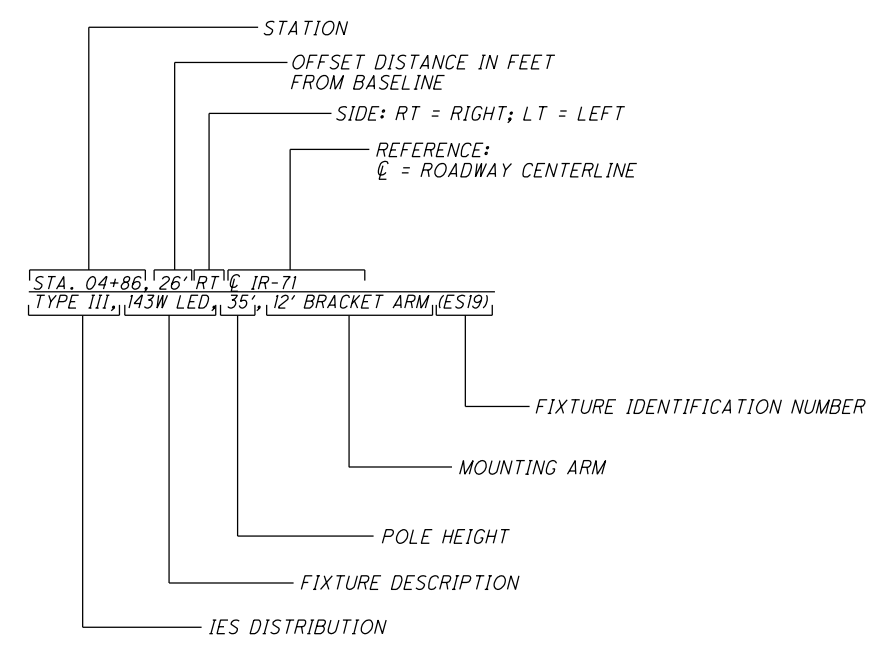
CALCULATED
STB
CHECKED
SCS

SYMBOLS

-  PROPOSED CONVENTIONAL LIGHT, GROUND MTD
-  PROPOSED CONVENTIONAL LIGHT, STRUCTURE MOUNTED
-  PROPOSED PULL BOX OR JUNCTION BOX OF TYPE AND SIZE NOTED ON THE PLANS.
-  EXISTING POWER SERVICE
-  ITEM NUMBER. REFERS TO SUBSUMMARY SHEET ENTRIES.
-  CODED NOTE REFERENCE
-  EX STRUCTURE MTD
-  EX GND MTD
-  PROPOSED GROUND MOUNTED 2-310 WATT HPS, STYLE C
-  EXISTING TOWER LIGHT
-  EXISTING LUMINAIRES, SUPPORT RING, TOWER AND FOUNDATION TO BE REMOVED.
-  EXISTING LUMINAIRE, BRACKET ARM, POLE AND FOUNDATION TO BE REMOVED.
-  PROPOSED GROUND MOUNTED 6-400 WATT HPS SYMMETRIC MEDIUM CUT-OFF HIGH MAST LUMINAIRES ON 100' LIGHT TOWER, ANCHOR BOLTS, AND FOUNDATION, PER HL-10.31, AND HL-20.21, WITH WIRING PER HL-60.21.
-  PROPOSED LIGHTING CONDUIT, OF SIZE AND TYPE AS NOTED ON THE PLANS, CONTAINING DISTRIBUTION CABLE OF SIZE, TYPE AND NUMBER AS NOTED ON THE PLANS; LOCATED UNDERGROUND OR ON STRUCTURE, AS NOTED ON THE PLANS.

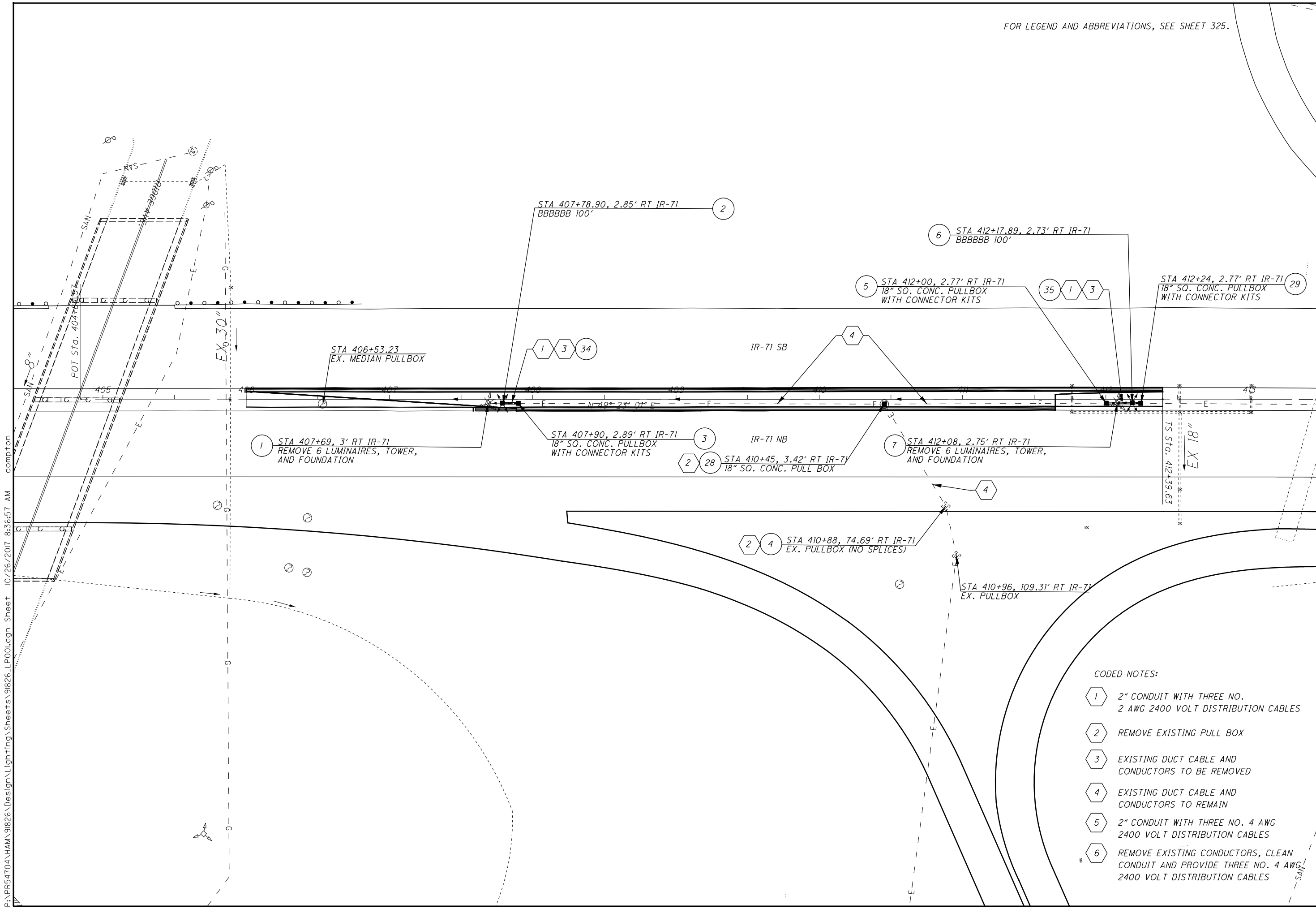
ABBREVIATIONS

#	NUMBER
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
AWG	AMERICAN WIRE GAUGE
BFG	BELOW FINISHED GRADE
C	CONDUIT
CONC	CONCRETE
DIA	DIAMETER
EX	EXISTING
IES	ILLUMINATING ENGINEERING SOCIETY
KV	KILOVOLT
5 KV	5000 VOLT
NEMA	NATIONAL ELECTRIC MANUFACTURERS ASSOCIATION
NO	NUMBER
PVC	POLYVINYL CHLORIDE
RGS	RIGID GALVANIZED STEEL
SQ	SQUARE
STA	STATION
TYP	TYPICAL
V	VOLT



CALCULATED SDC
CHECKED SCS

HORIZONTAL SCALE IN FEET



- CODED NOTES:**
- ① 2" CONDUIT WITH THREE NO. 2 AWG 2400 VOLT DISTRIBUTION CABLES
 - ② REMOVE EXISTING PULL BOX
 - ③ EXISTING DUCT CABLE AND CONDUCTORS TO BE REMOVED
 - ④ EXISTING DUCT CABLE AND CONDUCTORS TO REMAIN
 - ⑤ 2" CONDUIT WITH THREE NO. 4 AWG 2400 VOLT DISTRIBUTION CABLES
 - * ⑥ REMOVE EXISTING CONDUCTORS, CLEAN CONDUIT AND PROVIDE THREE NO. 4 AWG 2400 VOLT DISTRIBUTION CABLES

P:\PR54704\HAM_91826\Design\Lighting\Sheets\91826_LP001.dgn Sheet 10/26/2017 8:36:57 AM compton

**LIGHTING PLAN - IR-71 SOUTH CROSSOVER
FOR MOT, STA 406+00 TO STA 412+39.63**

HAM-IR71-8.42

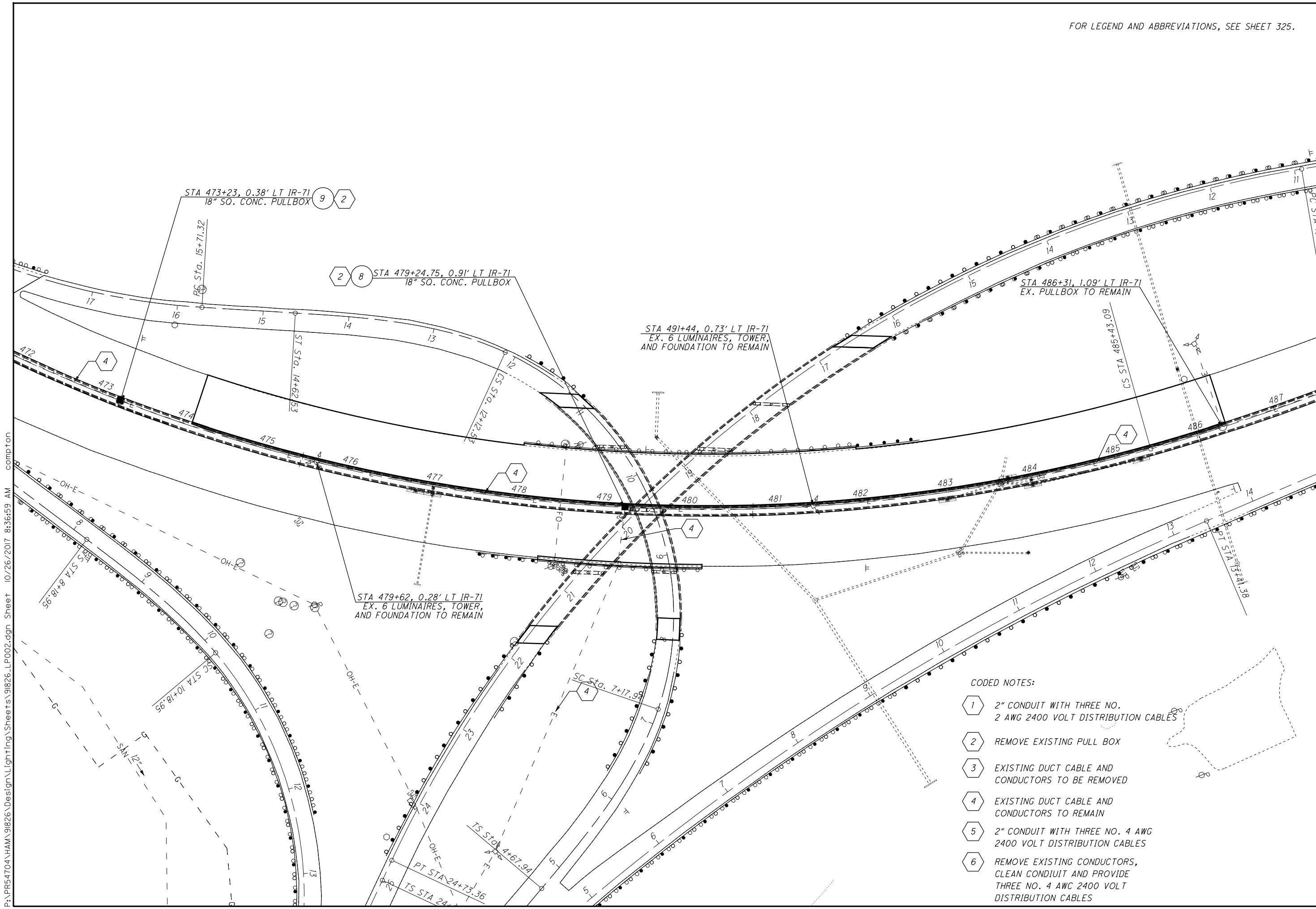


CALCULATED SDC CHECKED SCS

**LIGHTING PLAN - IR-71 LOWERED PROFILE
STA 474+10 TO STA 486+35**

HAM-IR71-8.42

327
441



CODED NOTES:

- 1 2" CONDUIT WITH THREE NO. 2 AWG 2400 VOLT DISTRIBUTION CABLES
- 2 REMOVE EXISTING PULL BOX
- 3 EXISTING DUCT CABLE AND CONDUCTORS TO BE REMOVED
- 4 EXISTING DUCT CABLE AND CONDUCTORS TO REMAIN
- 5 2" CONDUIT WITH THREE NO. 4 AWG 2400 VOLT DISTRIBUTION CABLES
- 6 REMOVE EXISTING CONDUCTORS, CLEAN CONDUIT AND PROVIDE THREE NO. 4 AWG 2400 VOLT DISTRIBUTION CABLES

P:\PR54704\HAM_91826\Design\Lighting\Sheets\91826_LP002.dgn Sheet 10/26/2017 8:36:59 AM compton

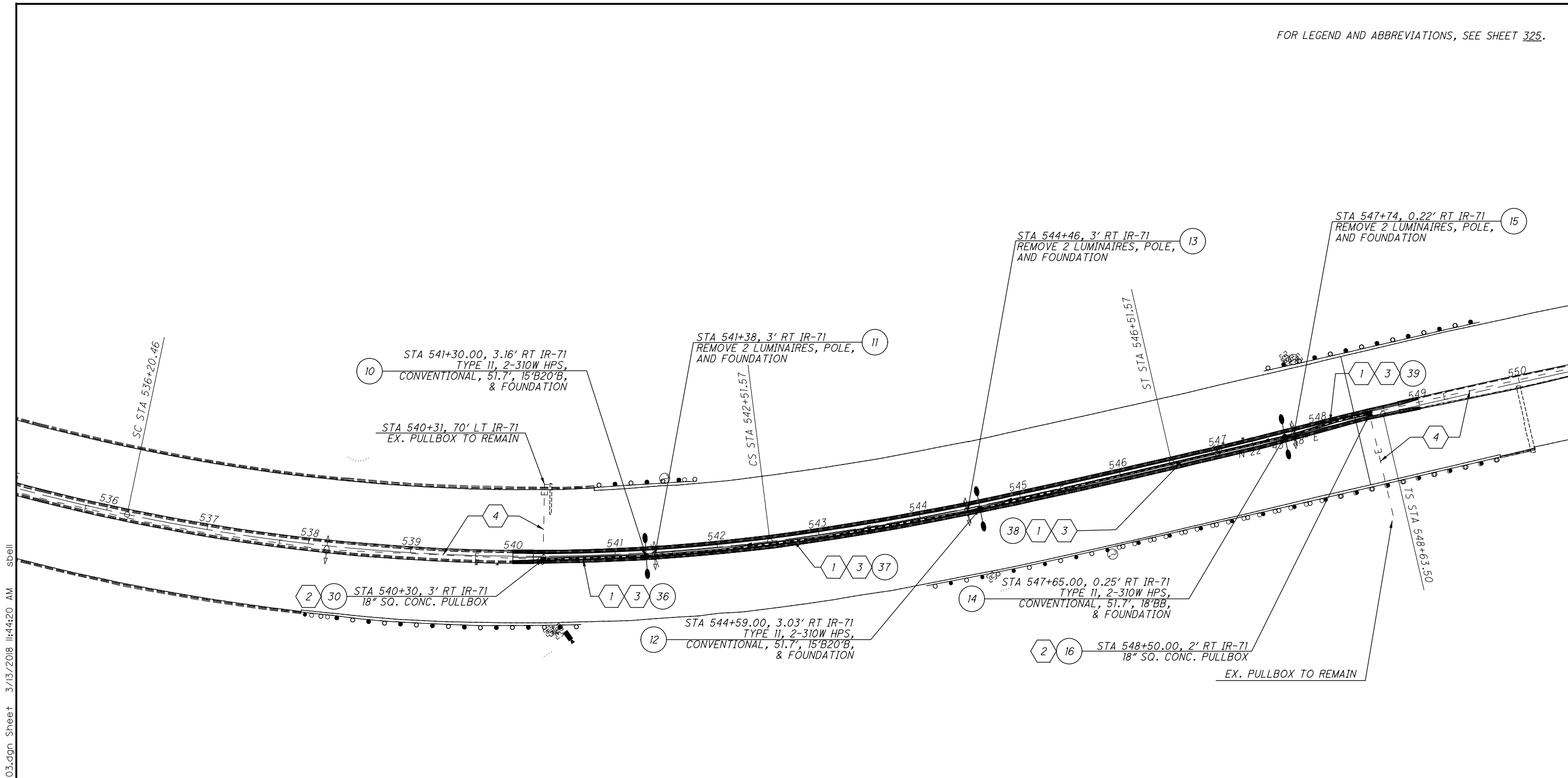


CALCULATED SDC
CHECKED SCS

**LIGHTING PLAN - IR-71 NORTH CROSSOVER
FOR MOT, STA 540+00 TO STA 549+00**

HAM-IR71-8.42

328
441



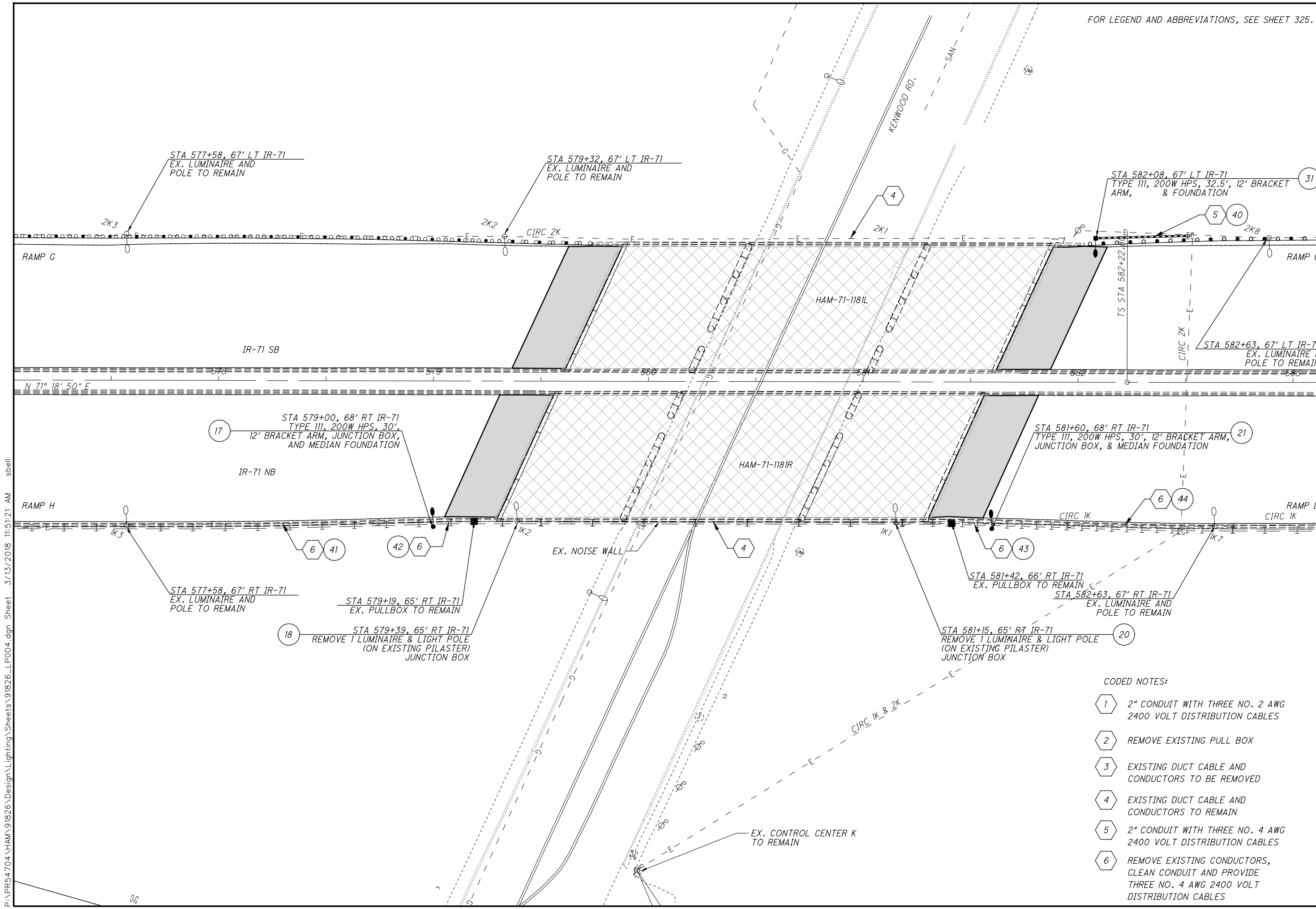
CODED NOTES:

- 1 2" CONDUIT WITH THREE NO. 2 AWG 2400 VOLT DISTRIBUTION CABLES
- 2 REMOVE EXISTING PULL BOX
- 3 EXISTING DUCT CABLE AND CONDUCTORS TO BE REMOVED
- 4 EXISTING DUCT CABLE AND CONDUCTORS TO REMAIN
- 5 2" CONDUIT WITH THREE NO. 4 AWG 2400 VOLT DISTRIBUTION CABLES
- 6 REMOVE EXISTING CONDUCTORS, CLEAN CONDUIT AND PROVIDE THREE NO. 4 AWG 2400 VOLT DISTRIBUTION CABLES

P:\PR54704\HAM_91826\Design\Lighting\Sheets\91826_LP003.dgn Sheet 3/13/2018 11:44:20 AM sbell



CALCULATED SDC CHECKED SCS



LIGHTING PLAN - IR-71
KENWOOD ROAD HAM-71-1181L / R

HAM-IR71-8.42

329
441

P:\PR54704\HAM\91826\Design\Lighting\Sheets\91826_LP004.dgn Sheet 3/13/2018 11:51:21 AM sbell

- CODED NOTES:**
- 1 2" CONDUIT WITH THREE NO. 2 AWG 2400 VOLT DISTRIBUTION CABLES
 - 2 REMOVE EXISTING PULL BOX
 - 3 EXISTING DUCT CABLE AND CONDUCTORS TO BE REMOVED
 - 4 EXISTING DUCT CABLE AND CONDUCTORS TO REMAIN
 - 5 2" CONDUIT WITH THREE NO. 4 AWG 2400 VOLT DISTRIBUTION CABLES
 - 6 REMOVE EXISTING CONDUCTORS, CLEAN CONDUIT AND PROVIDE THREE NO. 4 AWG 2400 VOLT DISTRIBUTION CABLES

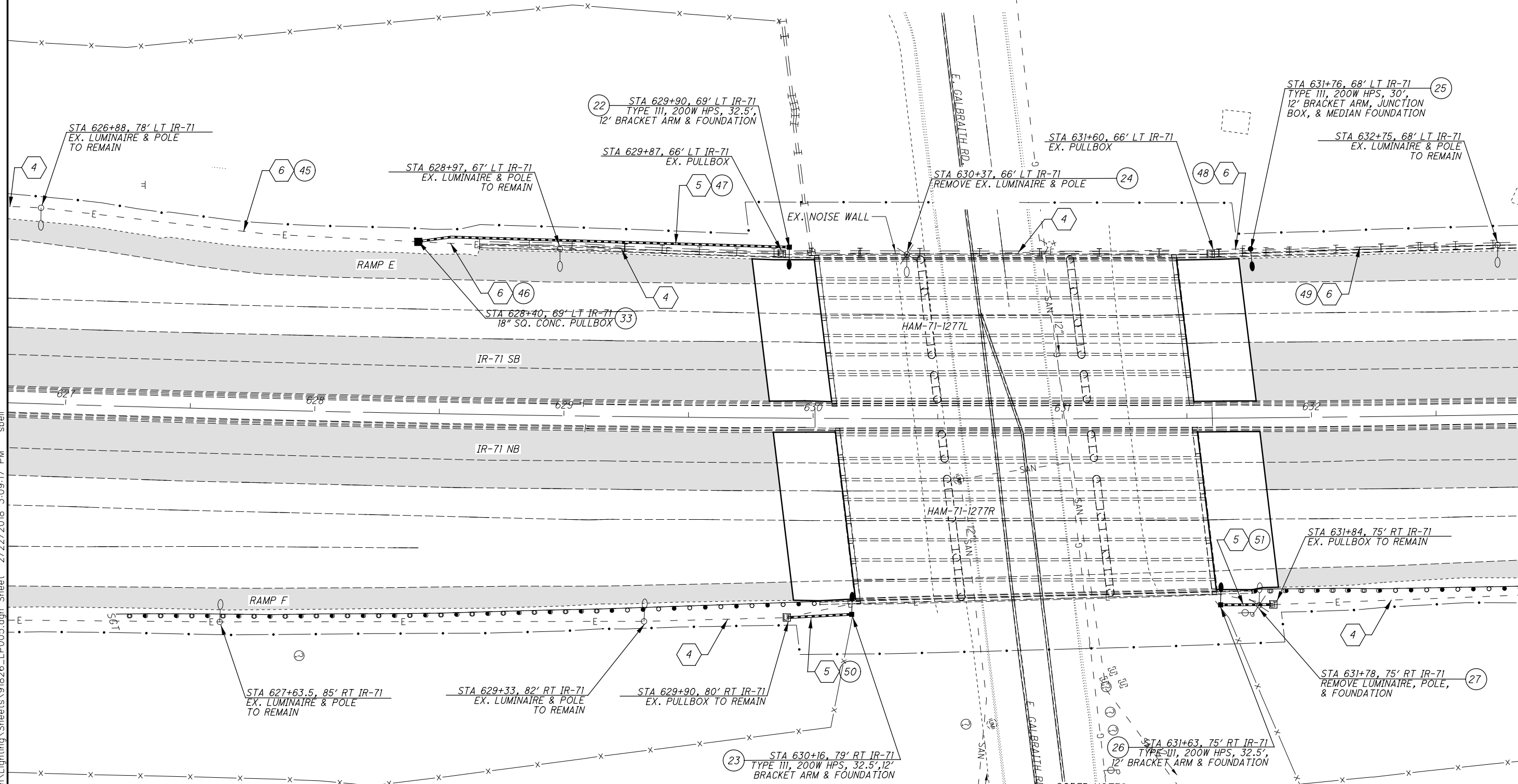


CALCULATED SDC CHECKED SCS

LIGHTING PLAN - IR-71
GALBRAITH ROAD AND HAM-71-1277R/L

HAM-IR71-8.42

330
441



CODED NOTES:

- 1 2" CONDUIT WITH THREE NO. 2 AWG 2400 VOLT DISTRIBUTION CABLES
- 2 REMOVE EXISTING PULL BOX
- 3 EXISTING DUCT CABLE AND CONDUCTORS TO BE REMOVED
- 4 EXISTING DUCT CABLE AND CONDUCTORS TO REMAIN
- 5 2" CONDUIT WITH THREE NO. 4 AWG 2400 VOLT DISTRIBUTION CABLES
- 6 REMOVE EXISTING CONDUCTORS, CLEAN CONDUIT AND PROVIDE THREE NO. 4 AWG 2400 VOLT DISTRIBUTION CABLES.

P:\PR54704\HAM\91826\Design\Lighting\Sheets\91826_LP005.dgn Sheet 2/22/2018 3:09:17 PM sbell

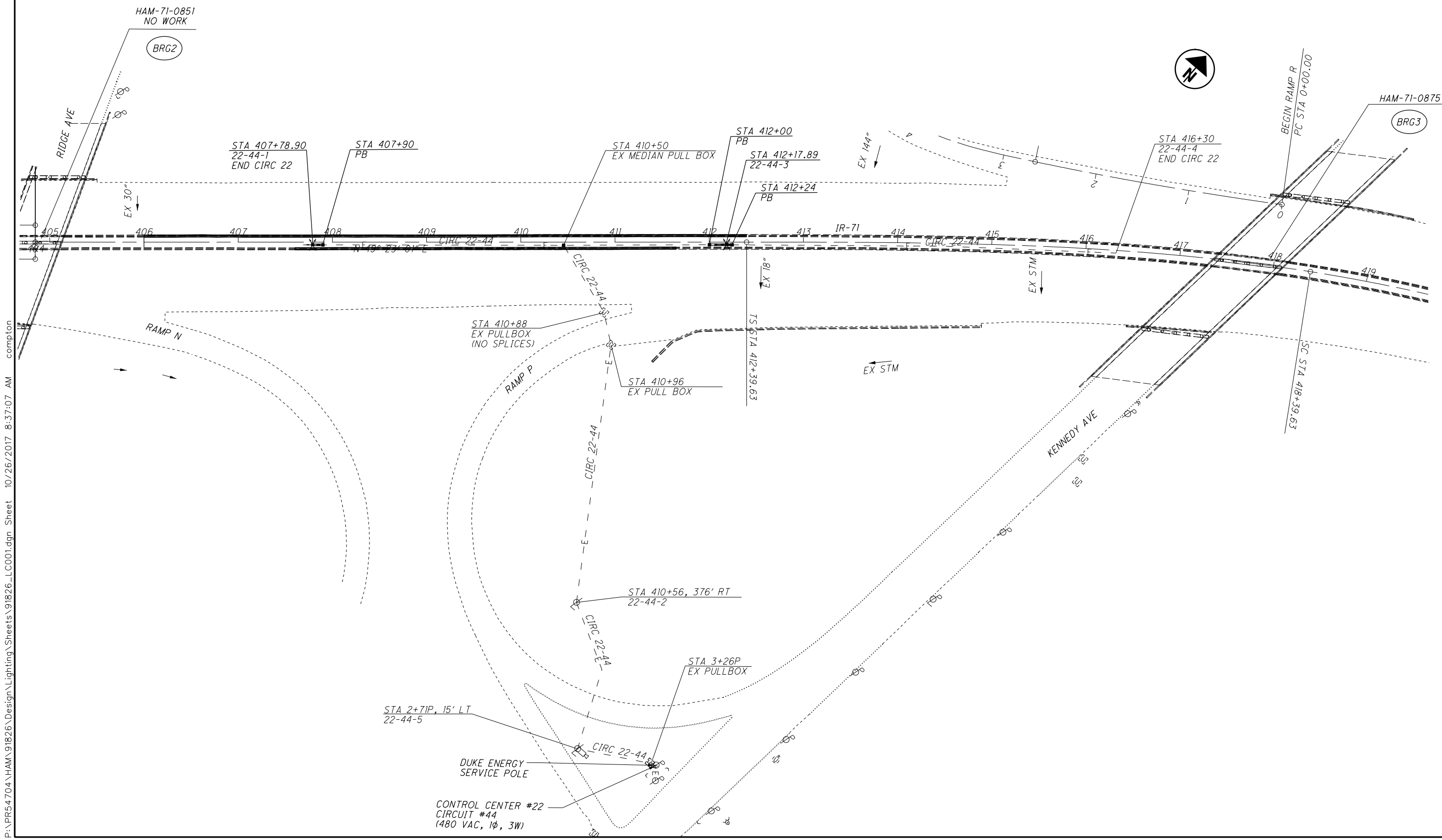
CONTROL CENTER	POWER SERVICE	CONNECTED LOAD - KVA	SERVICE ENTRANCE CONDUCTOR SIZE	ENCLOSURE RATING	CIRCUIT	CIRCUIT AMPS	CIRCUIT FUSE SIZE - AMPS	CIRCUIT CABLE SIZE - AWG	MAINTAINING AGENCY	REMARKS
22	480V 1 PHASE, 3-WIRE, GROUNDED NEUTRAL	10.5	2	60	44	22	30	---	ODOT	

CALCULATED
SDC
CHECKED
SCS

LIGHTING CIRCUIT 22-44 (SOUTH CROSSOVER)

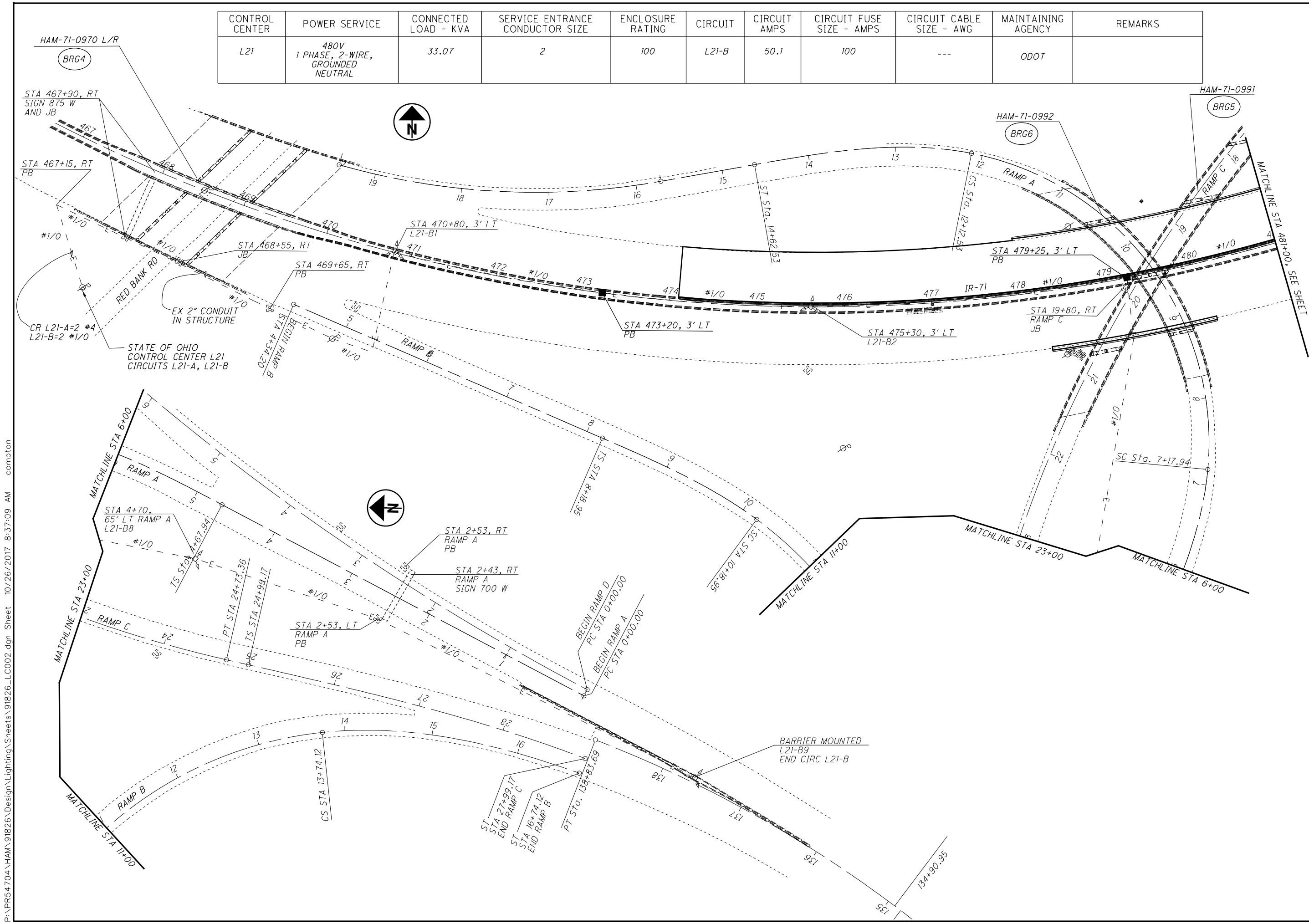
HAM-IR71-8.42

331
441



P:\PR54704\HAM\91826\Design\Lighting\Sheets\91826_LC001.dgn Sheet 10/26/2017 8:37:07 AM compton

CONTROL CENTER	POWER SERVICE	CONNECTED LOAD - KVA	SERVICE ENTRANCE CONDUCTOR SIZE	ENCLOSURE RATING	CIRCUIT	CIRCUIT AMPS	CIRCUIT FUSE SIZE - AMPS	CIRCUIT CABLE SIZE - AWG	MAINTAINING AGENCY	REMARKS
L21	480V 1 PHASE, 2-WIRE, GROUNDED NEUTRAL	33.07	2	100	L21-B	50.1	100	---	ODOT	



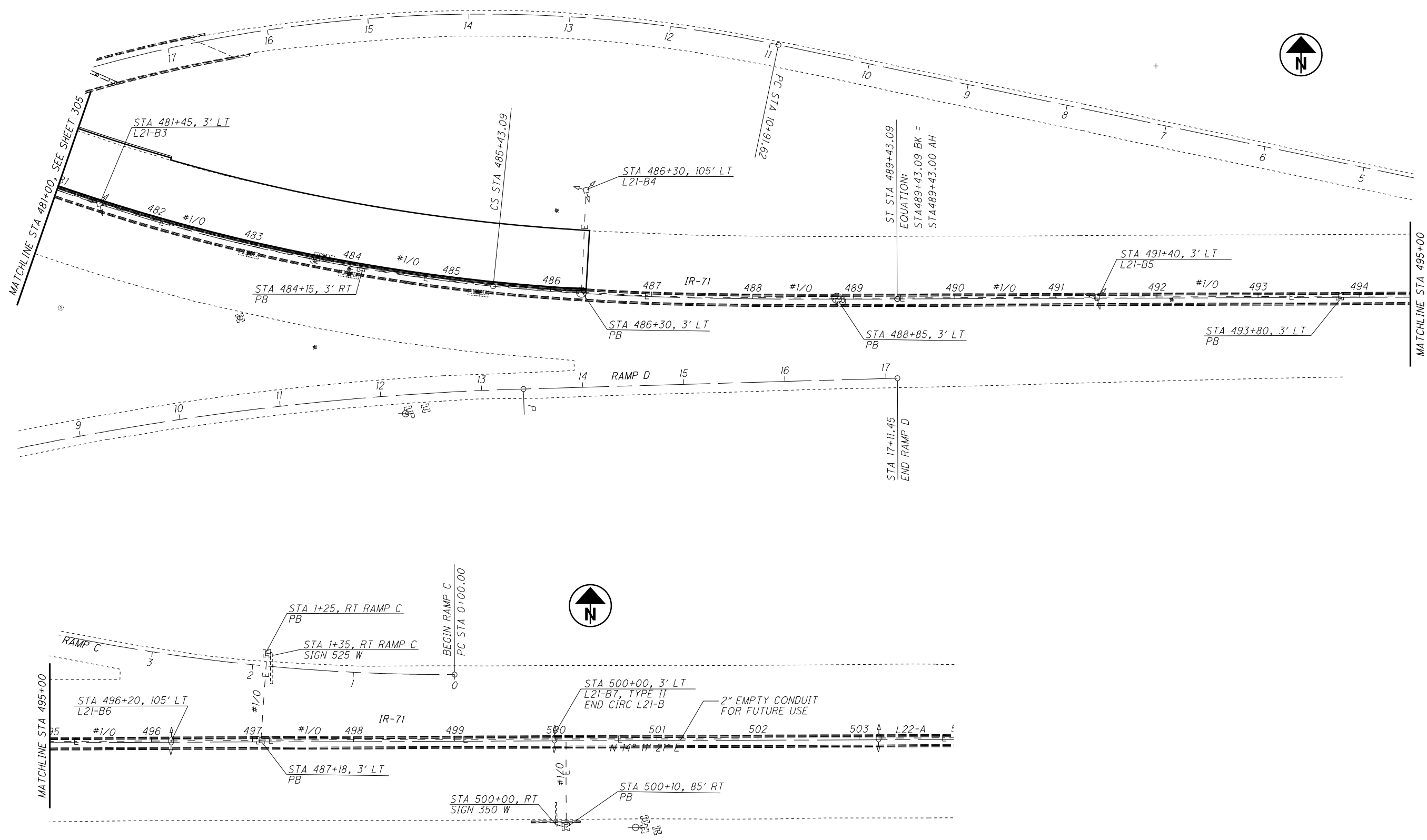
P:\PR54704\HAM\91826\Design\Lighting\Sheets\91826_LC002.dgn Sheet 10/26/2017 8:37:09 AM compton

CALCULATED	SDC	CHECKED	SCS
LIGHTING CIRCUIT 22-44 (SOUTH CROSSOVER)			
HAM-IR71-8.42			
332		441	

LIGHTING CIRCUITS L21-B (LOWERED SECTION)

HAM-IR71-8.42

P:\PR54704\HAM\91826\Design\Lighting\Sheets\91826_LC003.dgn Sheet 10/26/2017 8:37:11 AM compton



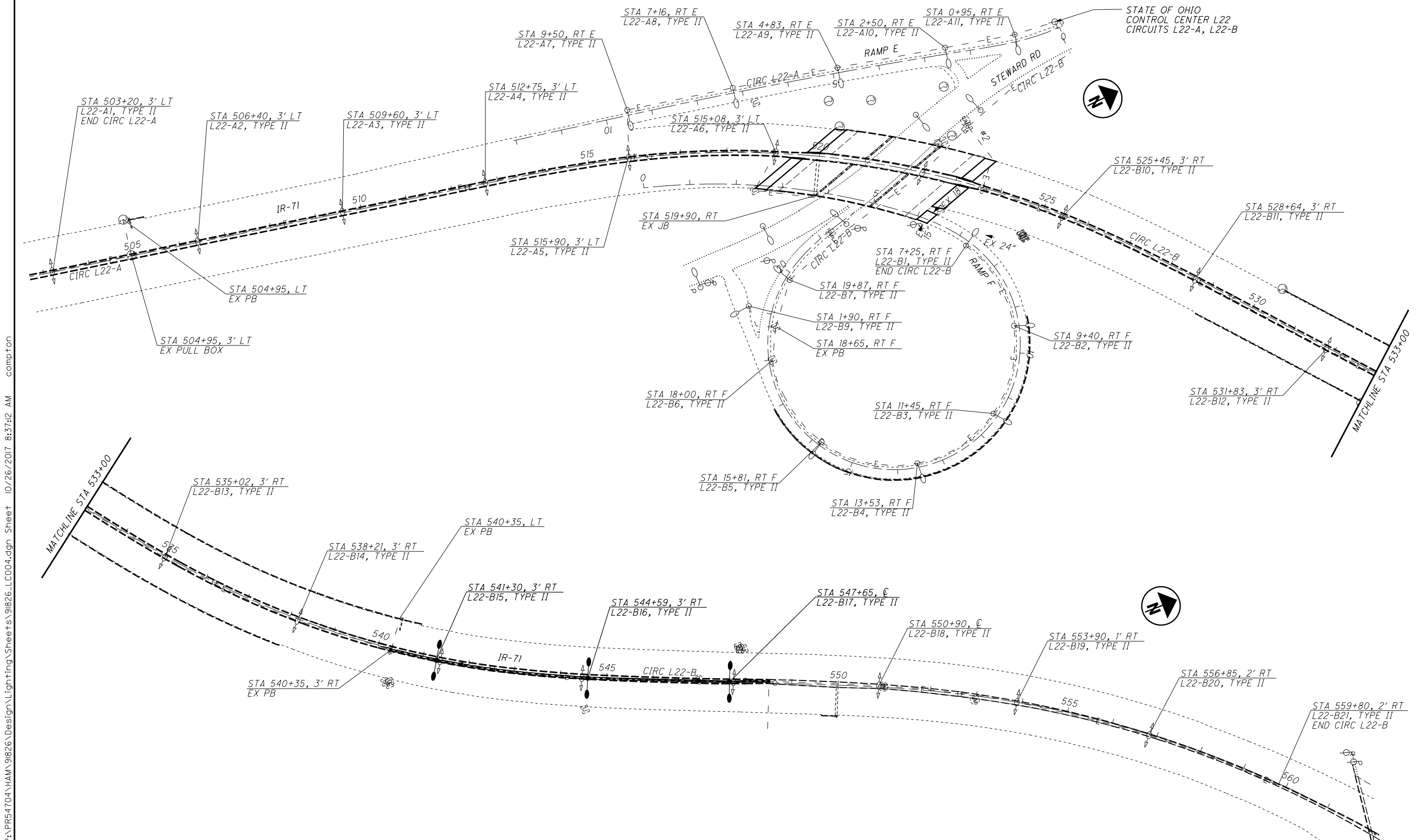
CONTROL CENTER	POWER SERVICE	CONNECTED LOAD - KVA	SERVICE ENTRANCE CONDUCTOR SIZE	ENCLOSURE RATING	CIRCUIT	CIRCUIT AMPS	CIRCUIT FUSE SIZE - AMPS	CIRCUIT CABLE SIZE - AWG	MAINTAINING AGENCY	REMARKS
L22	480V 1 PHASE, 2-WIRE, GROUNDED NEUTRAL	20.54	2	60	A B	16.75 26.04	30 60	--- ---	ODOT	

CALCULATED
SDC
CHECKED
SCS

LIGHTING CIRCUIT 1K & 2K (KENWOOD RD HAM-71-1181L / R)

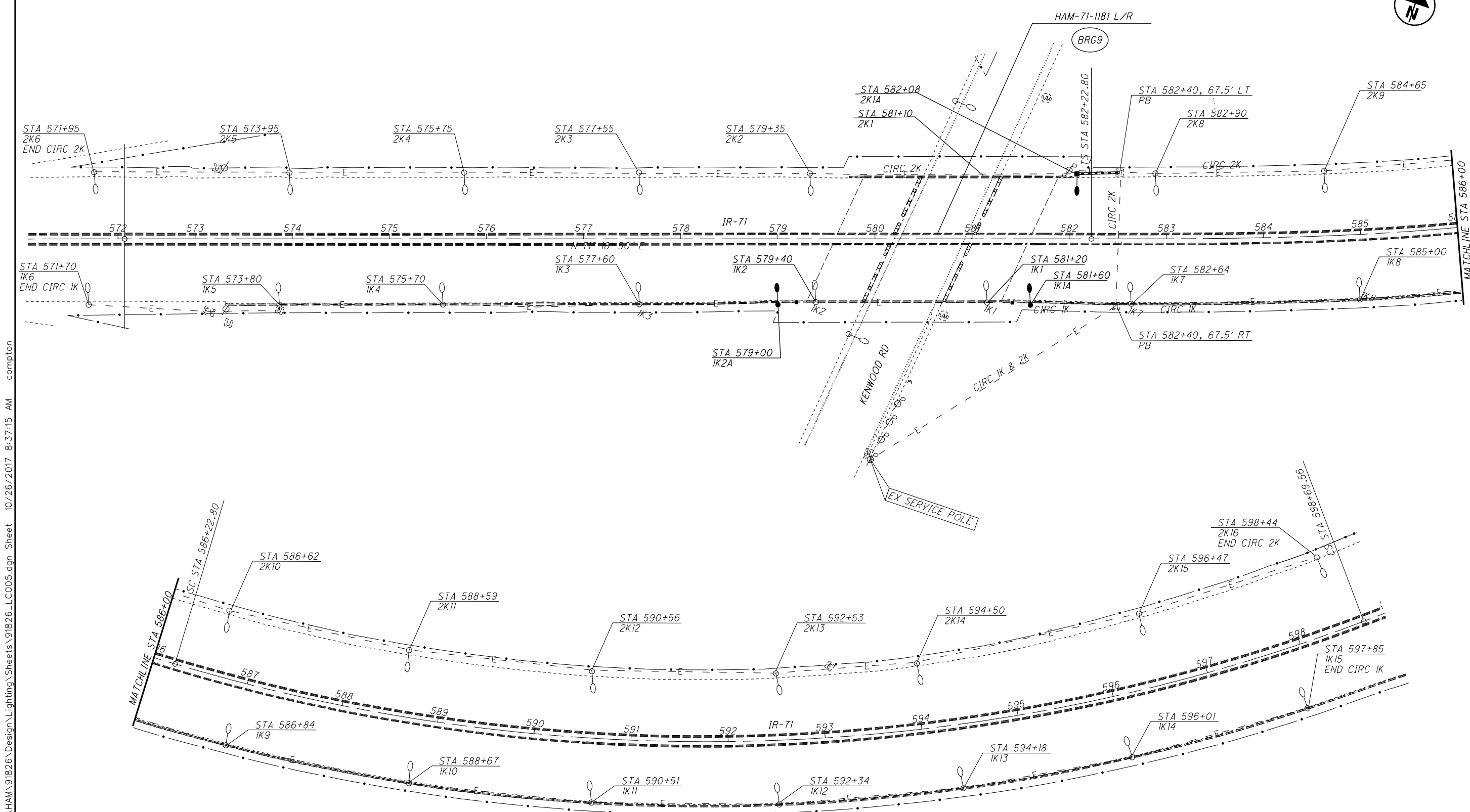
HAM-IR71-8.42

334
441



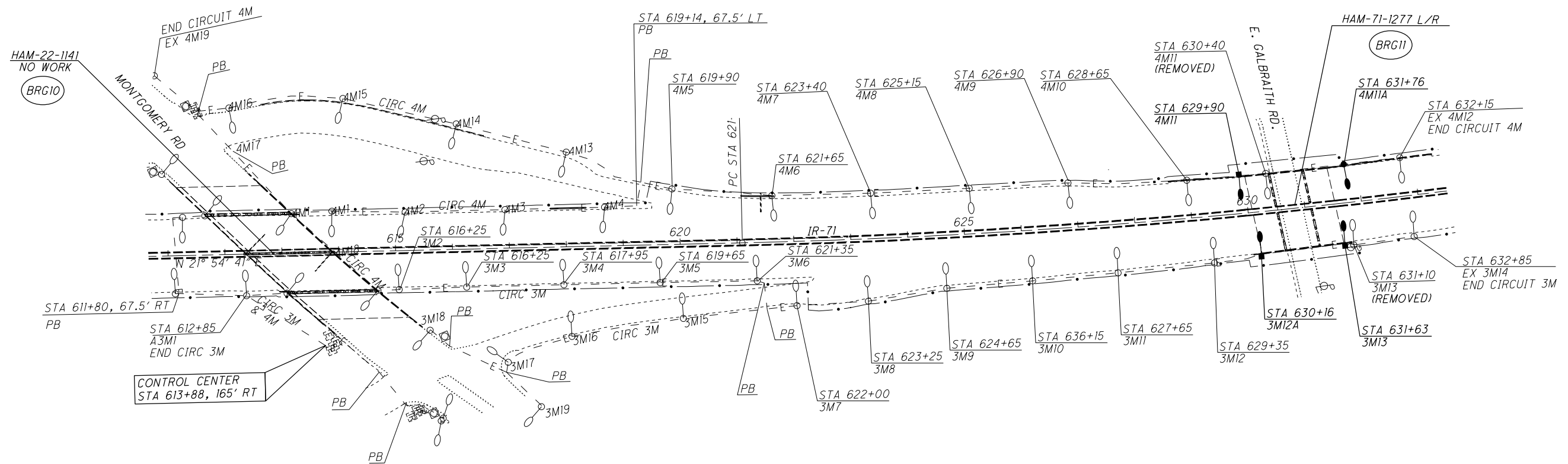
P:\PR54704\HAM_91826\Design\Lighting\Sheets\91826-LC004.dgn Sheet 10/26/2017 8:37:12 AM compton

CONTROL CENTER	POWER SERVICE	CONNECTED LOAD - KVA	SERVICE ENTRANCE CONDUCTOR SIZE	ENCLOSURE RATING	CIRCUIT	CIRCUIT AMPS	CIRCUIT FUSE SIZE - AMPS	CIRCUIT CABLE SIZE - AWG	MAINTAINING AGENCY	REMARKS
K	480V 1 PHASE - 3 WIRE GROUNDED NEUTRAL				1K				ODOT	
K	480V 1 PHASE - 3 WIRE GROUNDED NEUTRAL				2K				ODOT	

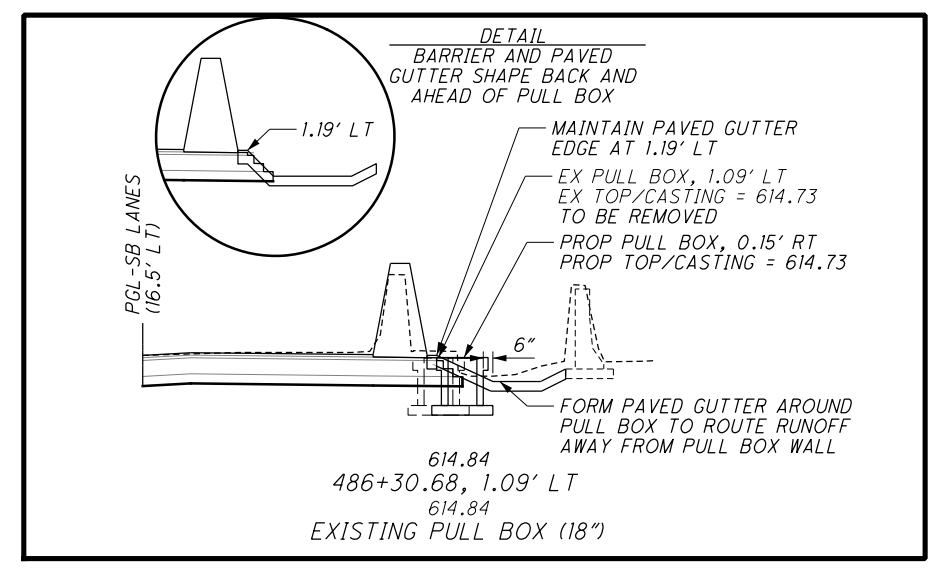
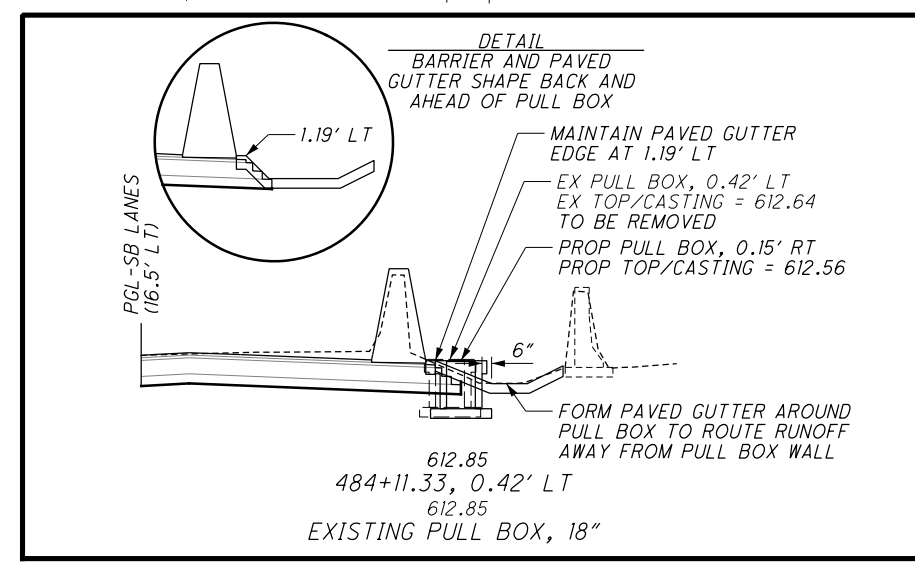
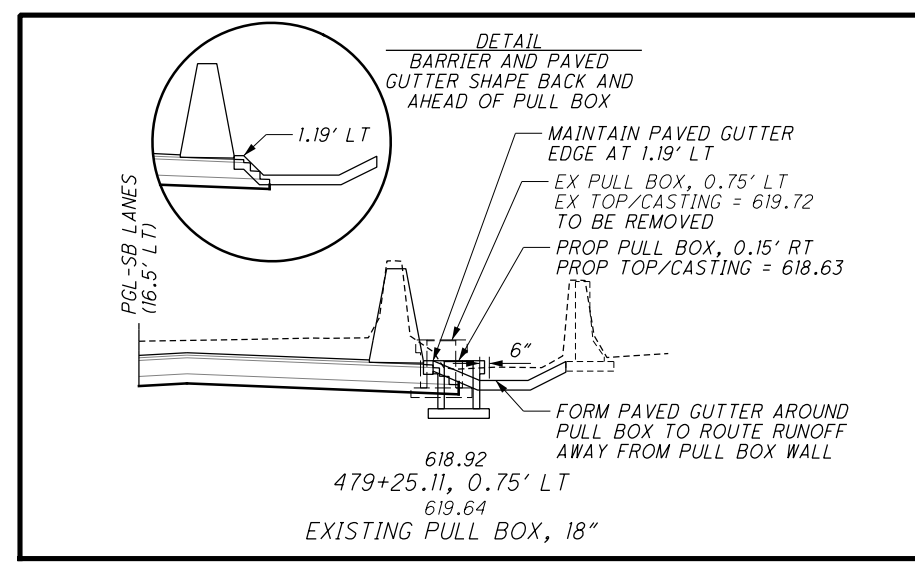
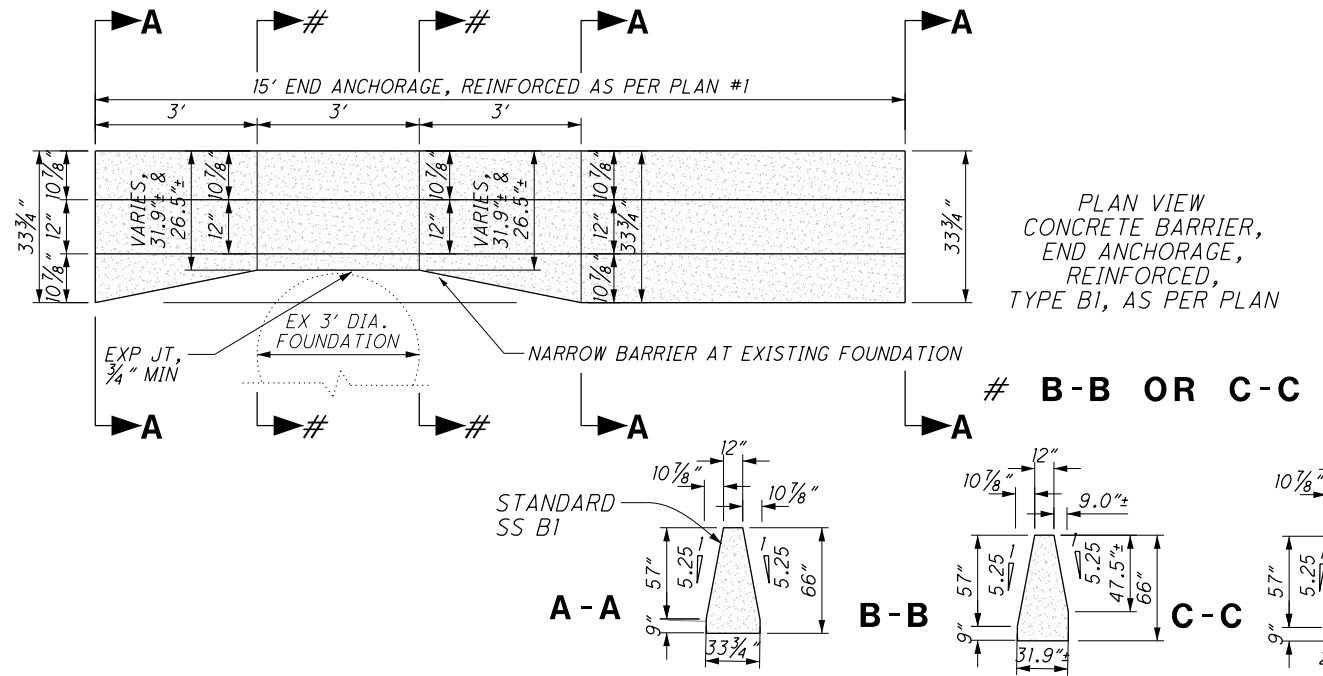
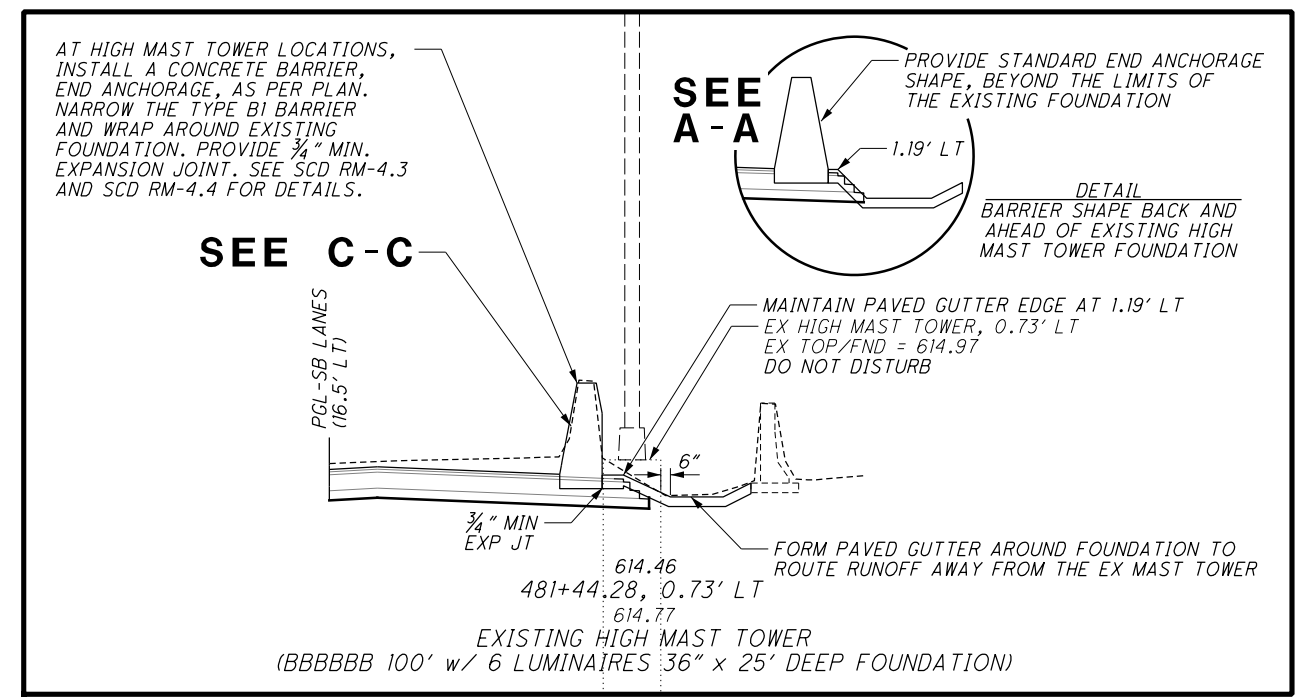
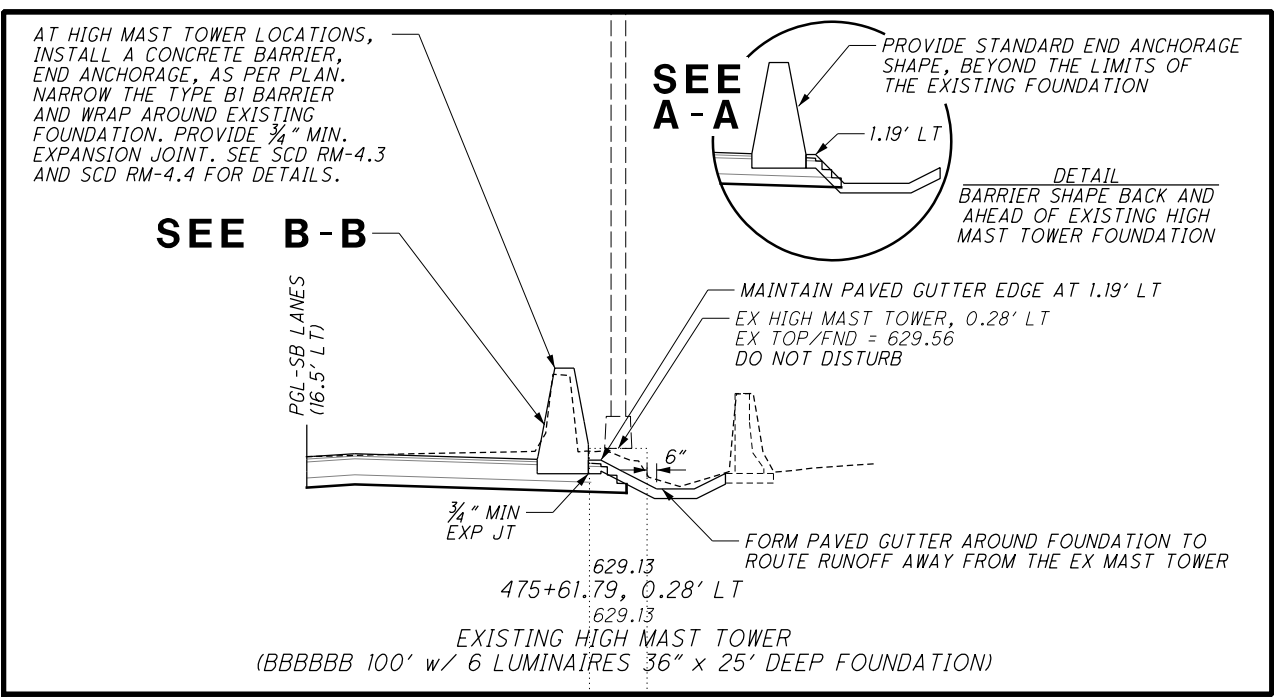


P:\PR54704\HAM\91826\Design\Lighting\Sheets\91826_LC005.dgn Sheet 10/26/2017 8:37:15 AM compton

CONTROL CENTER	POWER SERVICE	CONNECTED LOAD - KVA	SERVICE ENTRANCE CONDUCTOR SIZE	ENCLOSURE RATING	CIRCUIT	CIRCUIT AMPS	CIRCUIT FUSE SIZE - AMPS	CIRCUIT CABLE SIZE - AWG	MAINTAINING AGENCY	REMARKS
M	480V 1 PHASE - 3 WIRE GROUNDED NEUTRAL				3M				ODOT	
M	480V 1 PHASE - 3 WIRE GROUNDED NEUTRAL				4M				ODOT	

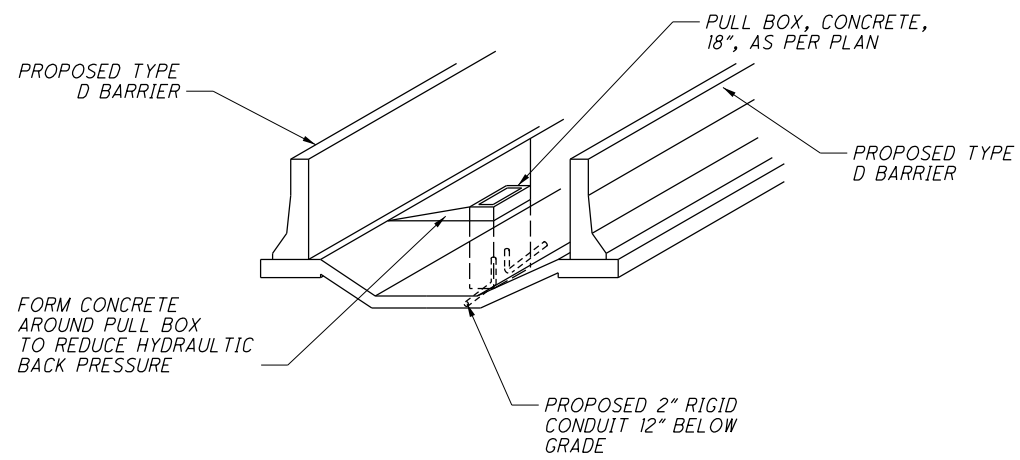


P:\PR54704\HAM\91826\Design\Lighting\Sheets\91826_LC006.dgn Sheet 10/26/2017 8:37:17 AM compton

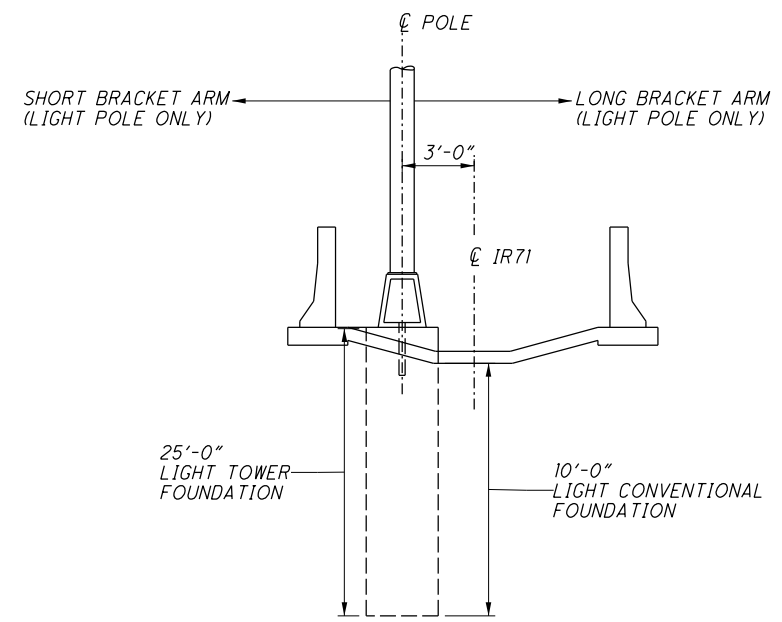


P:\PR54704\HAM\91826\Design\Lighting\Sheets\91826_LM002.dgn Sheet 10/26/2017 8:37:18 AM compton

P:\PR54704\HAM\91826\Design\Lighting\Sheets\91826_LM003.dgn Sheet 10/26/2017 8:37:22 AM compton



PULL BOX, CONCRETE, 18", AS PER PLAN



FRONT VIEW
(OPPOSITE HAND SIMILAR)

STA 399+71 SB TO STA 436+82.72 (MEDIAN)

CALCULATED
SDC
CHECKED
SCS

LIGHTING MISCELLANEOUS DETAILS

HAM-IR71-8.42

GENERAL NOTES:

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWINGS:
AS-1-15 REVISED 7-17-15
AS-2 -15 REVISED 7-17-15
EXJ-4-87 REVISED 7-19-02
PCB-91 REVISED 01-18-13
SBR-1-13 REVISED 1-17-14
SBR-2-13 REVISED 1-17-14
VPF-1-90 REVISED 7-17-15

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATIONS:

848 REVISED 1-20-2017

DESIGN LOADING: HS-20 LIVE LOAD

DESIGN DATA:

CLASS OC1 CONCRETE & OC1 CONCRETE WITH OC/OA (SUBSTRUCTURE)
- COMPRESSIVE STRENGTH 4.0 KSI

CLASS OC2 CONCRETE & OC2 CONCRETE WITH OC/OA (SUPERSTRUCTURE AND PARAPET)
- COMPRESSIVE STRENGTH 4.5 KSI

ONLY BRIDGE HAM-71-1068L/R WILL REQUIRE OC/OA CONCRETE

REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI

DESIGN SPECIFICATIONS:

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2002, AND THE ODOT BRIDGE DESIGN MANUAL

ELASTOMERIC BEARINGS CONFORM TO THE REQUIREMENTS OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 2014, SECTION 14.

DECK PROTECTION METHOD (HAM-71-1068L/R):

EPOXY COATED REINFORCING STEEL
2 1/2" CONCRETE COVER

MONOLITHIC WEARING SURFACE (HAM-71-1068L/R):

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1 INCH THICK.

MAINTENANCE OF TRAFFIC:

TRAFFIC SHALL BE MAINTAINED DURING BRIDGE CONSTRUCTION. BRIDGES MUST BE BUILT IN ACCORDANCE WITH MAINTENANCE OF TRAFFIC PLANS AND GENERAL NOTES.

EXISTING STRUCTURE PLANS:

CONSTRUCTION PLANS FOR THE EXISTING BRIDGES ARE ON FILE AT THE DEPARTMENT OF TRANSPORTATION, DISTRICT 8 OFFICE, 505 SOUTH STATE ROUTE 741, LEBANON, OHIO AND ARE AVAILABLE FOR REFERENCE.

EXISTING STRUCTURE VERIFICATION:

THE DETAILS SHOWN IN THESE PLANS ARE BASED ON DIMENSIONS OBTAINED FROM EXISTING DRAWING OF THE STRUCTURE AND/OR FIELD OBSERVATIONS. CONSEQUENTLY, THE DIMENSIONS AND DETAILS WITHIN THESE PROPOSED DRAWINGS SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR SHALL REFER TO CMS SECTIONS 102.05, 105.02 AND 513.04. DIMENSIONS OF EXISTING STRUCTURES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO FABRICATION OF MATERIALS.

UTILITY LINES:

THE UTILITY(IES) SHALL BEAR ALL EXPENSES INVOLVED IN RELOCATION (INSTALLING) THE AFFECTED UTILITY LINES. THE CONTRACTOR AND UTILITY(IES) ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

SEALER FINISH COLOR:

THE COLOR FOR ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) SHALL BE FEDERAL COLOR NUMBER 17778, LIGHT NEUTRAL.

PAINT FINISH COLOR:

ALL BRIDGE PAINTING FINISH COAT SHALL MATCH EXISTING FINISH COAT COLOR.

ITEM 201. CLEARING AND GRUBBING, AS PER PLAN

DESCRIPTION:
THIS WORK CONSISTS OF THE REMOVAL OF EXISTING DEBRIS AND VEGETATION (EXCEPT GRASS) WITHIN 20 FOOT OF EACH SIDE OF THE EXISTING BRIDGE FOR THE FULL LENGTH OF THE STRUCTURE, INCLUDING THE APPROACH SLAB LIMITS. ITEMS REMOVED SHALL BE HAULED TO A PROPER DISPOSAL SITE. PERFORM ALL WORK IN A MANNER THAT WILL NOT DAMAGE THE EXISTING SLOPE PROTECTION.

AREAS WITH BARE EARTH AFTER CLEARING SHALL BE SEEDED (SEE ROADWAY PLANS).

PAYMENT:

THE DEPARTMENT WILL MEASURE THE QUANTITY OF REMOVALS ON A LUMP SUM BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES OF REMOVALS PER BRIDGE AT THE CONTRACT PRICE FOR ITEM 201 - CLEARING AND GRUBBING, AS PER PLAN.

ITEM 202. PORTIONS OF STRUCTURE REMOVED OVER 20' SPAN, AS PER PLAN

DESCRIPTION: THIS WORK CONSISTS OF THE REMOVAL OF CONCRETE DECKS PARAPETS, RAILINGS, FENCE, POSTS, DECK JOINTS, EXISTING BEARINGS AND OTHER APPURTENANCES FROM STEEL GIRDERS AND OTHER APPURTENANCES FROM CONCRETE AND STEEL SUPPORTING SYSTEMS (BEAMS, GIRDERS, CROSS FRAMES, ETC.). THE PROVISIONS OF ITEM 202 APPLY EXCEPT AS SPECIFIED BY THE FOLLOWING NOTES. CUT OFF ANCHOR RODS FLUSH WITH THE SURROUNDING SURFACE AND GRIND WELD REMNANTS FLUSH WITH SURROUNDING SURFACE AFTER BEARINGS AND OTHER WELDED ATTACHMENTS ARE REMOVED. PERFORM WORK CAREFULLY DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED. SUBMIT CONSTRUCTION PLANS ACCORDING TO CMS 501.05.

THIS ITEM SHALL INCLUDE THE ELEMENTS INDICATED IN THE PLANS AND GENERAL NOTES AND THAT ARE NOT SEPARATELY LISTED FOR PAYMENT, EXCEPT FOR WEARING COURSE REMOVAL. ITEMS TO BE REMOVED INCLUDE ALL EXISTING MATERIALS BEING REPLACED BY NEW CONSTRUCTION AND MISCELLANEOUS ITEMS THAT ARE NOT SHOWN TO BE INCORPORATED INTO THE FINAL CONSTRUCTION AND ARE DIRECTED TO BE REMOVED BY THE ENGINEER.

THE CONTRACTOR MUST REVIEW THE STRUCTURE WHEN PREPARING HIS BID. THE CONTRACTOR WILL REVIEW THE CONDITION OF THE STRUCTURE TO DETERMINE WHAT DEBRIS WILL FALL FROM THE STRUCTURE DURING REMOVAL. THE CONTRACTOR WILL DETERMINE THE CORRESPONDING COST TO CLEAN-UP ANY AND ALL DEBRIS WHICH FALLS FROM THE STRUCTURE DURING ANY REMOVAL OPERATION. THE COST TO CLEAR AND CLEAN-UP ALL DEBRIS DURING REMOVAL SHALL BE INCLUDED WITH THE BID FOR THIS ITEM OF WORK. NO ADDITIONAL COST WILL BE RECOGNIZED TO CLEAN DEBRIS RESULTING FROM THE STRUCTURE REMOVAL OPERATION.

PROTECTION OF STEEL SUPPORT SYSTEMS: BEFORE DECK SLAB CUTTING IS PERMITTED, DRAW THE OUTLINE OF PRIMARY STEEL MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK ON THE SURFACE OF DECK. DRILL SMALL DIAMETER PILOT HOLES 2 INCHES OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF FLANGE EDGES. DECK CUTS OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. PERFORM WORK CAREFULLY DURING CUTTING OF THE DECK SLAB TO AVOID DAMAGING STEEL MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE. REPLACE OR REPAIR STEEL MEMBERS DAMAGED BY THE DECK SLAB CUTTING OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE DIRECTOR. OBTAIN THE DIRECTOR'S APPROVAL BEFORE PERFORMING REPAIR.

REMOVAL METHODS: THE CONTRACTOR MAY REMOVE CONCRETE BY CUTTING AND BY MEANS OF HAND OPERATED PNEUMATIC HAMMERS EMPLOYING POINTED OR BLUNTED CHISEL TYPE TOOLS. FOR REMOVALS OVER STRUCTURAL MEMBERS (STEEL GIRDER), THE CONTRACTOR MAY USE A HAMMER HEAVIER THAN 35 POUNDS BUT NOT TO EXCEED 90 POUNDS UNLESS APPROVED BY THE ENGINEER. REMOVAL METHODS OVER STRUCTURAL MEMBERS SHALL ENSURE ADEQUATE DEPTH CONTROL AND PREVENT NICKING OR GOUGING THE PRIMARY STRUCTURAL MEMBERS.

DUE TO THE POSSIBLE PRESENCE OF ATTACHMENTS (E.G., FINISHING MACHINE, SCUPPER AND FORM SUPPORTS, ETC.) TO EXISTING STRUCTURAL MEMBERS, PERFORM WORK CAREFULLY DURING DECK REMOVAL TO AVOID DAMAGING STRUCTURAL MEMBERS THAT ARE TO REMAIN. REPLACE OR REPAIR STRUCTURAL MEMBERS DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE DIRECTOR. OBTAIN THE DIRECTOR'S APPROVAL BEFORE PERFORMING REPAIR.

EXISTING WELDED ATTACHMENTS: REMOVE EXISTING WELDED ATTACHMENTS (E.G., FINISHING MACHINE AND FORM SUPPORTS; AND SUPPORTS FOR SCUPPERS AND BULB ANGLES WHICH ARE TO BE REMOVED) LOCATED IN THE DESIGNATED TENSION PORTIONS OF THE TOP FLANGES OF EXISTING STEEL MEMBERS AND GRIND THE FLANGE SURFACES SMOOTH. CAREFULLY GRIND PARALLEL TO THE FLANGES.

SUBSTRUCTURE CONCRETE REMOVAL: REMOVE CONCRETE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18 INCH LIMIT, THE CONTRACTOR MAY USE HAMMERS NOT EXCEEDING 90 POUNDS UPON THE APPROVAL OF THE ENGINEER. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR SHORING OF THE HAM-71-1068L BRIDGE DECK SHALL BE INCLUDED WITH REMOVAL FOR PAYMENT. FOR BRIDGE HAM-71-1068L TEMPORARY SHORING DETAILS SEE SHEET 24/57.

ANY CONTRACTOR ELECTED CHANGES TO THE PLAN DETAILED SHORING WILL BE TREATED AS A VALUED ENGINEERING CHANGE PROPOSAL.

MEASUREMENT & PAYMENT: THE DEPARTMENT WILL MEASURE THE QUANTITY OF REMOVALS ON A LUMP SUM BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES OF REMOVALS AT THE CONTRACT PRICE FOR ITEM 202 - PORTIONS OF STRUCTURE REMOVED OVER 20' SPAN, AS PER PLAN.

ITEM 510 - DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT, AS PER PLAN

THIS WORK INCLUDES DRILLING OF THE HOLES INTO THE CONCRETE AND FURNISHING AND PLACING EPOXY GROUT INTO THE HOLES.

PRIOR TO DRILLING DOWEL HOLES, THE CONTRACTOR SHALL LOCATE ALL EXISTING REINFORCING STEEL BARS IN THE AREA OF THE HOLE WITH THE AID OF A REINFORCING STEEL BAR LOCATOR SUCH AS A PACHOMETER. IF AN EXISTING BAR IS ENCOUNTERED AT THE SAME LOCATION AS A PROPOSED DOWEL HOLE, MOVE THE DOWEL HOLE TO

EITHER SIDE OF THE EXISTING BAR. HOLES DRILLED SHOULD BE NO CLOSER THAN 4 INCHES FROM FREE CONCRETE EDGES.

THE CONTRACTOR SHALL DEMONSTRATE HIS ABILITY TO DRILL HOLES WITHOUT DAMAGING THE SURROUNDING CONCRETE. SHOULD SUCH DAMAGE OCCUR, THE CONTRACTOR IS DIRECTED TO REPAIR THE DAMAGE AT HIS EXPENSE AND TO CORE DRILL THE REMAINING DOWEL HOLES. DEPTH OF THE HOLES SHALL BE AT LEAST 16 TIMES THE DOWEL DIAMETER UNLESS OTHERWISE SHOWN IN THE PLANS.

PAYMENT FOR DRILLING HOLES AND FURNISHING AND PLACING MATERIALS SHALL BE INCLUDED IN THE CONTRACT BID PRICE FOR ITEM 510 - DOWEL HOLES WITH NON-SHRINK, NON-METALLIC GROUT, AS PER PLAN.

ITEM 511 - CLASS QC2 CONCRETE WITH QC/OA, BRIDGE DECK, AS PER PLAN
ITEM 511 - CLASS QC2 CONCRETE WITH QC/OA, BRIDGE DECK (PARAPET), AS PER PLAN
ITEM 526 - REINFORCED CONCRETE APPROACH SLAB (T=13'), AS PER PLAN
ITEM 526 - REINFORCED CONCRETE APPROACH SLAB (T=15'), AS PER PLAN

THIS ITEM MODIFIES THE STANDARD 511 CONCRETE FOR STRUCTURES SPECIFICATION TO INCLUDE MACRO-SYNTHETIC INTO THE SUPERSTRUCTURE CONCRETE. THIS ITEM SHALL CONFORM TO CMS 511 WITH THE FOLLOWING CONDITIONS AND REVISIONS:

PROVIDE MATERIALS CONFORMING TO 511.02 EXCEPT AS MODIFIED BELOW:

PORTLAND CEMENT CONCRETE 499.03, CLASS QC 2, WITH MACRO-SYNTHETIC FIBERS WITH MODIFICATION PER 511.02

FIBERS FOR CONCRETE - ASTM C 1116, TYPE III

THE CLASS QC2 CONCRETE FOR THE SUPERSTRUCTURE SHALL MEET THE FOLLOWING CRITERIA:

WATER/CEMENT RATIO = 0.40 MAXIMUM; MINIMUM 4 LBS/CY MACRO-SYNTHETIC FIBERS (1.0 IN. MIN. TO 2.5 IN. MAX.) MEETING ASTM C1116 TYPE III SHALL BE ADDED TO THE MIX.

THE MACRO-SYNTHETIC FIBERS SHALL BE INCORPORATED INTO THE MIX IN SUCH A WAY THAT NO 'BALLING' OCCURS. UPON INSPECTION OF THE MIX AT THE TIME OF PLACEMENT, IF ANY 'BALLING' OCCURS, THE ENGINEER SHALL REJECT THE REMAINDER OF THE LOAD AT ANY TIME DURING THE POUR. IT IS IMPORTANT TO FOLLOW INDUSTRY STANDARDS AND ASTM SPECIFICATIONS ON THE PREMIXING OF THE CEMENT, AGGREGATE, AND MACRO-SYNTHETIC FIBERS PRIOR TO THE ADDITION OF WATER AND ADMIXTURES. PROVIDE MACRO-SYNTHETIC FIBERS THAT ARE MONOFILAMENT FIBERS MADE FROM VIRGIN POLYPROPYLENE, POLYETHYLENE, OR CO-POLYMERS THAT ARE INERT TO ALKALI ATTACK. ENSURE THE MACRO-SYNTHETIC FIBERS HAVE A MINIMUM TENSILE STRENGTH OF 70 KSI, A MINIMUM MODULUS OF ELASTICITY OF 800 KSI, A MINIMUM FILAMENT DIAMETER OF 0.012 INCHES, AND ASPECT RATIO BETWEEN 60 AND 100, AND ARE BETWEEN 1.0 AND 2.5 INCHES IN LENGTH. STORE THE MACRO-SYNTHETIC FIBERS ACCORDING TO THE MANUFACTURE'S RECOMMENDATION AND KEEP THE MATERIAL FREE FROM DUST, DIRT AND MOISTURE.

USE A MINIMUM DOSAGE RATE OF MACRO-SYNTHETIC FIBERS OF 4.0 LBS/CY OF CONCRETE. DETERMINE THE FINAL PROPOSED DOSAGE RATE THROUGH MIX TESTING. ENSURE THE FIBER REINFORCED CONCRETE MEETS OR EXCEEDS A MINIMUM EQUIVALENT FLEXURAL STRENGTH RATIO OF 25% ACCORDING TO ASTM C 1609. ENSURE THE FINAL PROPOSED MIX IS WORKABLE AND ABLE TO BE PRODUCED SUCH THAT BALLING OR CLUMPING OF THE FIBERS IS NOT A PROBLEM AS DETERMINED BY THE ENGINEER. UTILIZE A LABORATORY REGULARLY INSPECTED BY THE CEMENT AND CONCRETE REFERENCE LABORATORY (CCRL) OF THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY, OR OTHER APPROVED REFERENCE LABORATORY, TO PERFORM THE TESTING. BEFORE USE, SUBMIT DOCUMENTATION TO THE PROJECT ENGINEER CERTIFYING BOTH THE MACRO-SYNTHETIC FIBERS AND THE MIX MEET OR EXCEED THE REQUIRED PROPERTIES. SAMPLING WILL BE ALLOWED FOR TESTING PURPOSES. A DEMONSTRATION OF THE MIX PRODUCTION OR TRIAL MIX, MAY BE REQUIRED BY THE ENGINEER PRIOR TO PLACING ANY OF THE MIX ON THE PROJECT.

THE BATCH WEIGHTS SHALL BE CORRECTED TO COMPENSATE FOR THE MOISTURE CONTAINED IN THE AGGREGATE AT THE TIME OF USE. A CHEMICAL ADMIXTURE (705.12, TYPE A OR D) SHALL BE USED. THE TRANSIT MIXER CHARGE SHALL BE LIMITED TO 3/4 OF ITS RATED CAPACITY OR 6 CUBIC YARDS, WHICHEVER IS SMALLER. THE FIRST THREE TRANSIT MIXER LOADS ARE REQUIRED TO BE AT THE MINIMUM YARDAGE LISTED ABOVE TO SHOW PROOF OF THE SUCCESSFUL BATCHING OPERATION. AFTER CONSISTENCY IN THE DELIVERED MATERIAL HAS BEEN ESTABLISHED, THE CONCRETE SUPPLIER MAY INCREASE THE BATCH DELIVERED QUANTITIES AS LONG AS THE QUALITY REMAINS ACCEPTABLE TO THE ENGINEER. THE ENGINEER CAN REDUCE THE BATCH LOAD SIZE AT ANY TIME AS NEEDED TO CORRECT/IMPROVE CONCRETE QUALITY.

CONCRETE SUPPLIERS SHOULD RECOGNIZE THAT ADMIXTURES MAY HAVE AN EFFECT ON STRENGTH, ENTRAINED AIR CONTENT, WORKABILITY, ETC. OF THEIR CONCRETE MIXES. THE CONCRETE SUPPLIER'S CHOICE OF ADMIXTURES DOES NOT ALLEVIATE MEETING DESIGN REQUIREMENTS.

APPROACH SLABS, DIAPHRAGMS, AND BRIDGE RAILING CONCRETE ARE TO USE THE SAME MIX DESIGN AS THE BRIDGE DECK (WHEN APPLICABLE). IF THE CONCRETE IN THE RAILING IS SPECIFIED TO THE SELF-COMPACTING CONCRETE, THIS SPECIFICATION WILL NOT APPLY.

THE CONTRACTOR SHALL PROVIDE TRADITIONAL BRIDGE DECK FORMS CONFORMING TO CMS 508. PERMANENT STAY-IN-PLACE (SIP) FORMS ARE NOT ALLOWED. THE PLACING OF THE DECK AND THE APPROACH SLABS IN THE SAME CONCRETE POUR IS NOT PERMITTED.

P:\PR54704\HAM\91826\Design\Structures\HAM071_0875C\Sheets\071_0875C_S\N001.dgn Sheet 10/26/2017 8:37:23 AM compton

DESIGN AGENCY		BURGESS & NIPLE		312 PLUM ST. CINCINNATI OH	
DESIGNED	SJA	CHECKED	XAC	DATE	2/20/2017
DRAWN	SJA	REVIEWED	DWL	STRUCTURE FILE NUMBER	COMBINED
COMMON STRUCTURE GENERAL NOTES 1					
COMBINED FOR ALL STRUCTURES					
HAM-71-8.42					
HAM - IR71 - 8.42		PID No. 91826			
1 / 5		339 441			

P:\PR54704\HAM-91826\Design\Structures\HAM071_0875C\Sheets\071_0875C_SNO02.dgn Sheet 1/24/2018 11:11:38 AM compton

ITEM 511 - CONCRETE, MISC.: PRESSURE WASH BEAMS SEATS AND BACKWALL
ITEM 513 - STRUCTURAL STEEL, MISC.: PRESSURE WASH STRUCTURAL STEEL

THIS WORK CONSISTS OF PRESSURE WASHING THE ABUTMENT SEATS AND BACKWALLS AND THE STRUCTURAL STEEL WITHIN 10 FEET OF THE ABUTMENT BACKWALL.

THE EQUIPMENT FOR PRESSURE WASHING SHALL BE OPERATED AT PRESSURES BETWEEN 1750 AND 2000 PSI AND WITH A MINIMUM FLOW RATE OF 3.5 GAL/MINUTE PROVIDED THAT THESE PRESSURES DO NOT DAMAGE THE PAINT OR OTHER COATINGS ON THE BRIDGE OR UNDERCUT THE GROUT OR HARM THE MASONRY PLATES BENEATH THE BEARINGS.

THE DEPARTMENT WILL INCLUDED THE COST OF PRESSURE WASHING IN THE LUMP SUM COST

FOR ITEM 511 - CONCRETE, MISC.: PRESSURE WASH BEAM SEATS AND BACKWALL

FOR ITEM 513 - STRUCTURAL STEEL, MISC.: PRESSURE WASH STRUCTURAL STEEL

ITEM 513 - STRUCTURAL STEEL, MISC.: DRILLING STRUCTURAL STEEL, GRINDING, AND NDT (BRIDGE HAM-71-1068L AND HAM-71-1068R)

THIS WORK CONSISTS OF PENCIL ABRASIVE BLAST CLEANING THE SUSPECTED CRACK AREA TO BE WORKED ON, DRILLING CRACKS AND ENDS OF CRACKS, GRINDING EDGES OF DRILLED HOLES, AND NON-DESTRUCTIVE TESTING AS SHOWN IN THE PLANS AND AS DIRECTED BY THE ENGINEER. DISTRICT PRODUCTION DEPARTMENT (BRIDGE SECTION) APPROVAL MUST BE OBTAINED BEFORE DRILLING ANY HOLES IN THE FLANGES UNDER THIS PAY ITEM.

DRILL HOLES TO REMOVE ENTIRE CRACKS OR THE APPARENT ENDS OF THE CRACK REVEALED BY THE INITIAL NDT AND/OR VISUAL INSPECTION. GRIND SMOOTH THE EXPOSED CIRCUMFERENCE OF EACH DRILLED HOLE AND CAREFULLY INSPECT FOR CRACKS USING MAGNETIC PARTICLE EXAMINATION AND/OR DYE PENETRATION. CONTINUE DRILLING, GRINDING, AND TESTING UNTIL ALL CRACK ENDS ARE REMOVED. WHEN NO CRACKS ARE DETECTED AT A LOCATION, NO HOLES SHALL BE DRILLED UNDER THIS ITEM.

SINCE ANY OF THESE CRACKS COULD PROPAGATE INTO A TENSION ZONE, REMOVING THEIR ENDS IS IMPERATIVE. CRACKS LESS THAN 1/2" LONG, AND CRACKED AREAS OR DEFECTS LESS THAN 1/2" IN DIAMETER SHALL BE REMOVED BY A SINGLE HOLE WHEN PRACTICAL. ENDS OF CRACKS LONGER THAN 1/2", AND DEFECTS SMALLER THAN 1/2" SHALL BE DRILLED WITH 1" DIAMETER DRILL BITS. HOLES SHALL BE CAREFULLY EXAMINED FOR CRACKS IN THE PLANE OF THE PLATE. 1/2" OR 2" DIAMETER HOLES MAY BE DRILLED WHERE THE PROXIMITY OF THE CRACK END TO ADJACENT STEEL PRECLUDES DRILLING 1" DIAMETER HOLES.

THE LOCATION OF ALL HOLES SHALL BE DETERMINED BY AND DRILLED UNDER THE DIRECTION OF THE ENGINEER.

THE ACCEPTED NUMBER OF HOLES DRILLED IN THE STRUCTURAL STEEL AS DETAILED ABOVE WILL BE PAID FOR AT THE CONTRACT PRICE PER EACH HOLE. PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY FOR PENCIL ABRASIVE BLAST CLEANING, DRILLING THE HOLES, GRINDING EDGE OF DRILLED HOLES AND NDT. THERE MAY BE MORE THAN ONE NDT REQUIRED AT EACH LOCATION BUT ADDITIONAL TESTING WILL BE INCLUDED IN THE COST PER LOCATION. PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID UNDER: ITEM 513 - STRUCTURAL STEEL, MISC.: DRILLING STRUCTURAL STEEL, GRINDING AND NDT (EACH).

PENCIL ABRASIVE BLASTING:

THE PENCIL ABRASIVE BLASTING REFERRED TO IN THE VARIOUS NOTES AND REPAIR ITEMS IN THESE PLANS SHALL CONFORM TO THE FOLLOWING:

CLEAN THE DESIGNATED NON-DESTRUCTIVE TESTING (NDT) AREAS OF ALL PAINT, RUST AND FOREIGN MATERIAL BY ABRASIVE BLASTING TO A SURFACE QUALITY EQUAL TO SSPC-SP10 PREPARATION GRADE SA 2 ACCORDING TO AND AS SHOWN IN SSPC-VIS 1-89. SINCE THE INTENT OF THE PENCIL ABRASIVE BLASTING IS TO ENHANCE THE VISUAL AND NDT CRACK DETECTION TECHNIQUES, A GENTLE ABRASIVE BLAST SHALL BE USED SUCH THAT THE SURFACE IS NOT PEENED OR OTHERWISE COLD WORKED. PERFORM THE ABRASIVE BLASTING USING A MAXIMUM COMPRESSED AIR PRESSURE OF 100 PSI, A HOSE NOZZLE DIAMETER OF 1/4" (+/-1/16"), AND A GRADE 30/60 COAL SLAG ABRASIVE OR EQUIVALENT. DO NOT USE BLASTING ABRASIVES CONTAINING MORE THAN ONE PERCENT FREE SILICA. BLASTERS USED FOR SURFACE PREPARATION FOR STRUCTURAL STEEL COATING CAN NOT BE USED FOR PENCIL BLASTING. AFTER THE ABRASIVE BLASTING IS COMPLETE, AIR BLOW THE AREA CLEAN.

THE CONTRACTOR SHALL DEMONSTRATE TO THE ENGINEER THAT PENCIL ABRASIVE BLASTING CAN BE SATISFACTORILY PERFORMED ACCORDING TO THESE SPECIFICATIONS PRIOR TO THE START OF THE WORK. THE COST OF THE PENCIL ABRASIVE BLASTING HAS BEEN INCLUDED IN THE COST OF ITEM 513 - STRUCTURAL STEEL, MISC.: DRILLING STRUCTURAL STEEL, GRINDING, AND ITEM 513 - STRUCTURAL STEEL, MISC.: PENCIL ABRASIVE BLASTING, GRINDING, AND NDT.

ITEM SPECIAL - STRUCTURES: STRUCTURE INSPECTION AND MECHANIZED ACCESS (BRIDGE HAM-71-1068L AND HAM-71-1068R)

THIS WORK SHALL CONSIST OF PROVIDING ACCESS NECESSARY FOR INSPECTING THE STRUCTURE TO DETERMINE AND DOCUMENT THE LOCATIONS AND EXTENTS OF CRACK REPAIRS REQUIRED FOR BRIDGE HAM-71-1068L AS SHOWN IN THE PLANS AND OTHERWISE AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR AND ENGINEER SHALL REVIEW THE CONDITION OF THE STRUCTURE PRIOR TO THE START OF THE CONTRACT WORK TO DETERMINE IF CHANGES IN THE LISTED REPAIRS SHOULD BE MADE. REPAIRS AND LOCATIONS IDENTIFIED IN THE PLANS ARE BASED ON FIELD SURVEY AT THE TIME THE PLANS WERE FINALIZED. FINAL DETERMINATION OF LOCATIONS AND EXTENTS OF THE REPAIRS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER. ADDITIONAL REPAIRS, OR REPAIR LOCATIONS, NOT IDENTIFIED IN THE PLANS SHALL BE PERFORMED ONLY AS DIRECTED BY THE ENGINEER AND PAID FOR UNDER THE APPROPRIATE PAY ITEMS.

THE CONTRACTOR SHALL SUPPLY AND MAINTAIN THROUGHOUT THE DURATION OF THE PROJECT ALL THE NECESSARY EQUIPMENT, LABOR AND MATERIALS FOR THE CONTRACTOR'S FORCES AND THE ENGINEER TO REVIEW AND DOCUMENT THE CONDITION OF ALL THE ELEMENTS OF THE STRUCTURE. MECHANIZED EQUIPMENT MAY INCLUDE, BUT IS NOT LIMITED TO PERSONNEL LIFTS, CRANES, FALL PROTECTION, CONFINED SPACE ENTRY EQUIPMENT, AND/OR OTHER ACCESS AND SAFETY EQUIPMENT REQUIRED FOR USE ON MECHANIZED, MOBILE SYSTEMS. MATERIALS MAY INCLUDE, BUT ARE NOT LIMITED TO MARKING PAINT, AS NEEDED BY THE ENGINEER.

THE CONTRACTOR SHALL ASSUME LIABILITY FOR THE SAFETY OF ALL AUTHORIZED PERSONNEL USING THE EQUIPMENT IN ITS INTENDED MANNER.

THE QUANTITY USED TO MEASURE THE WORK DESCRIBED HERE SHALL BE THE NUMBER OF HOURS MECHANIZED EQUIPMENT IS ACTIVELY IN SERVICE.

PAYMENT FOR ALL LABOR, EQUIPMENT, TOOLS, MATERIALS AND SERVICES REQUIRED FOR THIS WORK AS HEREIN DESCRIBED SHALL BE MADE AT THE CONTRACT PRICE BID PER HOUR FOR ITEM SPECIAL - STRUCTURE: STRUCTURE INSPECTION AND MECHANIZED ACCESS

ITEM 513 - STRUCTURAL STEEL, MISC.: PENCIL ABRASIVE BLASTING, GRINDING, AND NDT (BRIDGE HAM-71-1068L AND HAM-71-1068R)

THIS WORK CONSISTS OF THE FOLLOWING SEQUENCE OF OPERATIONS PERFORMED AT THE AREAS AS DESIGNATED IN THE PLANS AND AS DIRECTED BY THE ENGINEER.

1. CLEAN THE DESIGNATED AREA BY PENCIL ABRASIVE BLASTING THE PAINT AND/OR RUST FROM THE STEEL SURFACE. CLEANED AREAS SHALL BE AT LEAST 4 INCHES WIDE ALONG EACH SIDE OF A SUSPECTED CRACK LOCATION UNLESS OTHERWISE SHOWN IN THE PLANS.
2. THE ENGINEER, ACCOMPANIED BY THE CONTRACTOR, SHALL CAREFULLY VISUALLY INSPECT THE CLEANED AREA. GRINDING MAY BE DIRECTED BY THE ENGINEER TO ENHANCE THE INVESTIGATION FOR CRACK PRESENCE. ALL GRINDING MUST BE DONE CAUTIOUSLY, ESPECIALLY IN TENSION ZONES. THE GRINDING MOTION SHALL BE PARALLEL TO THE FLANGE EDGE.
3. NON-DESTRUCTIVELY TEST (NDT) THE AREA USING MAGNETIC PARTICLE EXAMINATION AND/OR DYE PENETRATION SO THAT THE ENGINEER MAY FURTHER INSPECT THE CRACKS.
4. ALL CRACKS AND/OR CRACK TIPS THAT ARE ACCESSIBLE ARE TO BE REMOVED AS SHOWN IN THE PLANS AND PAID FOR AS ITEM 513 - STRUCTURAL STEEL, MISC.: DRILLING STRUCTURAL STEEL, GRINDING, AND NDT. ANY CRACKS INACCESSIBLE TO DRILLING ARE TO BE REMOVED AS SHOWN IN THE PLANS BY CAREFUL GRINDING, OR BY CAREFULLY ENLARGING THE DRILLED HOLES BY GRINDING, AND PAID FOR UNDER ITEM 513 - STRUCTURAL STEEL, MISC.: DRILLING STRUCTURAL STEEL, GRINDING, AND NDT.
5. PERFORM STEPS 1 THROUGH 4 ON THE OTHER SIDE OF THIS LOCATION.

THE ACCEPTED NUMBER OF LOCATIONS OF WORK AS DESCRIBED IN THIS NOTE WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LOCATION. THERE MAY BE MORE THAN ONE NDT REQUIRED AT EACH LOCATION BUT ADDITIONAL TESTING WILL BE INCLUDED IN THE COST PER LOCATION. THIS PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY TO CLEAN, GRIND AND PERFORM NDT ON ALL SURFACES AT EACH LOCATION. PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID UNDER: ITEM 513 - STRUCTURAL STEEL, MISC.: PENCIL ABRASIVE BLASTING, GRINDING AND NDT (EACH)

NON-USE OF ASBESTOS-CONTAINING MATERIALS

THE CONTRACTOR SHALL AT NO TIME INCORPORATE ANY MATERIALS WHICH ARE COMPOSED OF OR CONTAIN ANY AMOUNTS OF ASBESTOS. THE SUBSTITUTION OF MATERIALS WHICH CONTAIN ANY AMOUNT OF ASBESTOS WILL IN NO CIRCUMSTANCES BE ACCEPTABLE. UPON COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL SUBMIT A WRITTEN STATEMENT OF CERTIFICATION ASSERTING THAT NO ASBESTOS CONTAINING MATERIALS WERE USED IN ANY PORTION OF THE CONSTRUCTION.

ITEM 514 - FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN:

THIS ITEM CONSISTS OF FIELD PAINTING DAMAGED STRUCTURAL STEEL BY PERFORMING SURFACE PREPARATION AND APPLYING A TWO-COAT PAINT SYSTEM TO THE UNCOATED STEEL AND FEATHERED REMOVAL AREAS OF EXISTING COATINGS.

CMS 514.06 THROUGH 514.10 APPLY. REMOVE EXISTING PAINT COATING TO CONTRACT LIMITS OR AS DIRECTED BY THE ENGINEER ACCORDING TO SSPC-SP 15, COMMERCIAL GRADE POWER TOOL CLEANING, OR EQUAL AS SHOWN ON THE PICTORIAL SURFACE PREPARATION STANDARDS FOR PAINTING STEEL SURFACES SHOWN IN SSPC-VIS 3. THE ENGINEER WILL USE THE SSPC-VIS 3 TO DETERMINE THE ACCEPTANCE OF THE COMMERCIAL GRADE POWER TOOL CLEANING. FEATHER THE EXISTING PAINT TO EXPOSE A MINIMUM OF 1/2 INCH (13 MM) OF EACH COAT. CONTAIN AND DISPOSE OF WASTE GENERATED BY THE CLEANING ACCORDING TO CMS 514.13.D.

ROUND ALL EXPOSED CORNERS OF MAIN MATERIAL AS NECESSARY TO ACHIEVE A 1/16 INCH RADIUS (1.6 MM) OR EQUIVALENT FLAT SURFACE AT A 45 DEGREE ANGLE.

APPLY THE PRIME AND INTERMEDIATE COATS OF THE SPECIFIED THREE-COAT PAINT SYSTEM, CMS 708.02, ACCORDING TO CMS 514.15, 514.16, 514.17, AND 514.20 TO CONTRACT LIMITS OR AS DIRECTED BY THE ENGINEER. TINT THE INTERMEDIATE COAT TO APPROXIMATELY THE SAME COLOR AS THE EXISTING FINISH COLOR. MATCH THE COLOR TO THE ENGINEERS SATISFACTION. THE ENGINEER WILL DETERMINE THE PRIME COAT THICKNESS; PRIME AND INTERMEDIATE COAT THICKNESS USING A TYPE 2 MAGNETIC GAGE AT SPOT LOCATIONS. EACH COAT OF PAINT SHALL MEET THE MINIMUM DRY FILM THICKNESS REQUIREMENTS OF CMS 514.20. APPLY PAINT AS FOLLOWS:

A. APPLY THE PRIME COAT ONLY TO THE SURFACE OF THE BARE STEEL AND THE EXISTING PRIME COAT EXPOSED BY FEATHERING. DO NOT APPLY THE PRIME COAT TO THE ADJACENT INTERMEDIATE COAT.

B. APPLY THE INTERMEDIATE COAT ONLY TO THE NEW PRIME COAT AND THE EXISTING INTERMEDIATE COAT EXPOSED BY FEATHERING. DO NOT APPLY THE INTERMEDIATE COAT TO THE ADJACENT FINISH COAT.

AT THE PERIMETER OF THE REPAIR AREA, APPLY THE PRIME AND INTERMEDIATE COATS USING A BRUSH. APPLY THE FINISH COAT USING EITHER BRUSH OR SPRAY. IN LIEU OF BRUSHING THE USE OF MASKING AREAS NOT TO BE COATED AND SPRAY TO FEATHERED REMOVAL LINES MAY BE PERFORMED.

BLENDED REPAIR AREAS WITH THE ADJACENT COATING AND PROVIDE A FINISHED SURFACE IN THE PATCHED AREAS THAT IS SMOOTH AND HAS AN EVEN PROFILE WITH THE ADJACENT SURFACE.

THE DEPARTMENT WILL MEASURE FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN BY THE NUMBER OF SQUARE FEET OF STRUCTURAL STEEL PAINTED. ALL REQUIREMENTS OF THIS SPECIFICATION ARE CONSIDERED INCIDENTAL TO THE WORK. THE DEPARTMENT WILL DETERMINE THE SURFACE AREA BY TAKING EXACT FIELD MEASUREMENTS OF ALL PAINTED SURFACES AND CALCULATIONS.

DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR: ITEM 514 - FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN (SQUARE FEET)

ITEM SPECIAL - STRUCTURES: PROTECTION OF UTILITIES

BRIDGE HAM-71-0875:

THIS ITEM SHALL CONSIST OF FURNISHING ALL NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO PROTECT EXISTING UTILITIES AS APPROVED AND DIRECTED BY THE ENGINEER.

THE CONTRACTOR IS REMINDED THAT ALL EXISTING COMPONENTS AND SYSTEMS THAT ARE TO REMAIN IN USE DURING AND AFTER THIS PROJECT AND REQUIRE PROTECTION. THIS WORK INCLUDES, BUT IS NOT LIMITED TO:

1. SLEEVES FOR CONDUITS INCORPORATED IN CONCRETE.
2. TEMPORARY SUPPORTS DURING EXCAVATION AND BACKFILLING
3. HAND DIGGING AROUND UNDERGROUND LINES
4. AVOIDING OVERHEAD LINES.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT THESE SYSTEMS AND COMPONENTS FOR THE DURATION OF THE CONTRACT. THE CONTRACTOR IS DIRECTED TO SECTION 107 AND PARTICULARLY TO SECTION 107.12 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS.

PAYMENT SHALL BE MADE AT THE LUMP SUM PRICE BID FOR ITEM SPECIAL - STRUCTURES: PROTECTION OF UTILITIES. THIS SHALL INCLUDE ALL NECESSARY TOOLS, LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO SUCCESSFULLY PERFORM THIS ITEM OF WORK.

ITEM 516 STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN

INSTALL ELASTOMERIC SEAL IN ONE CONTINUOUS PIECE.

COMMON STRUCTURE GENERAL NOTES 2

COMBINED FOR ALL STRUCTURES
HAM-71-8.42

HAM-IR71-8.42
PID No. 91826

2 / 5

340
441

DESIGN AGENCY
BURGESS & NIPLÉ
312 PLUM ST. CINCINNATI, OH

REVIEWED DATE
DWL 2/20/2017
STRUCTURE FILE NUMBER
COMBINED

DRAWN SJA
SJA
REVISIONS
DESIGNED SJA
SJA
CHECKED XAC

P:\PR54704\HAM\91826\Design\Structures\HAM071_0875C_Sheets\071_0875C_SN004.dgn Sheet 10/26/2017 8:37:27 AM compton

ITEM 516, JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN

THIS WORK CONSISTS OF RAISING OR RE-POSITIONING EXISTING STRUCTURES TO THE DIMENSIONS AND REQUIREMENTS DEFINED IN THE PROJECT PLANS.

SUBMIT CONSTRUCTION PLANS IN ACCORDANCE WITH CMS 501.05.

IF, DURING THE JACKING OPERATIONS, CRACKING OF THE CONCRETE SUPERSTRUCTURE, SEPARATION OF THE CONCRETE DECK FROM THE STEEL STRINGERS, OR OTHER DAMAGE TO THE STRUCTURE IS VISUALLY OBSERVED, IMMEDIATELY CEASE THE JACKING OPERATION AND INSTALL SUPPORTS TO THE SATISFACTION OF THE ENGINEER. ANALYZE THE DAMAGE AND SUBMIT A METHOD OF CORRECTION TO THE ENGINEER FOR APPROVAL. EPOXY INJECT ALL BEAMS THAT SEPARATE FROM THE DECK FOR THE DISTANCE OF THE SEPARATION IN ACCORDANCE WITH CMS 512.07. THE DEPARTMENT WILL NOT PAY FOR THE COST OF THIS EPOXY INJECTION OR OTHER REQUIRED REPAIRS. THE BRIDGE BEARINGS SHALL BE FULLY SEATED AT ALL CONTACT AREAS. IF FULL SEATING IS NOT ATTAINED, SUBMIT A REPAIR PLAN TO THE ENGINEER. THE DEPARTMENT WILL NOT PAY FOR THE REPAIR COSTS TO ENSURE FULL SEATING ON BEARINGS.

THE DEPARTMENT WILL MEASURE THIS WORK ON A LUMP SUM BASIS.

THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516 - JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN.

ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN.

THIS WORK SHALL INCLUDE FABRICATION AND INSTALLATION OF ELASTOMERIC BEARINGS TO REPLACE THE EXISTING ABUTMENT BEARINGS. THE UNIT PRICE BID SHALL INCLUDE ALL MATERIALS, LABOR, TESTING, AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS (EACH). PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE BID FOR EACH ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN.

SEE FOLLOWING BRIDGE DRAWINGS FOR ABUTMENT BEARING DETAILS:

- HAM-71-0970L/R
- HAM-71-0991
- HAM-71-0992
- HAM-71-1068L/R
- HAM-71-1277L/R

ITEM 518 - STRUCTURE DRAINAGE, MISC.: SCUPPER AND DRAINAGE PIPE CLEAN OUT

THIS WORK SHALL CONSIST OF REMOVING SEDIMENT AND DEBRIS FROM THE EXISTING SCUPPERS AND STRUCTURE DRAINAGE PIPES, TO PROVIDE POSITIVE DRAINAGE FLOW THROUGH THE SYSTEM. ALL MATERIAL REMOVED FROM THE SCUPPERS AND PIPES SHALL BE DISPOSED OF BY THE CONTRACTOR. PIPES SHALL BE CLEANED TO THE FIRST MANHOLE FOR SCUPPERS IN A CLOSED STRUCTURE DRAINAGE SYSTEM.

ITEM 519 - PATCHING CONCRETE STRUCTURES, AS PER PLAN

PRIOR TO THE SURFACE CLEANING SPECIFIED IN 519.04 AND WITHIN 24 HOURS OF PLACING PATCHING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED REINFORCING STEEL. ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING. ABRASIVES MUST CONTAIN LESS THAN 1% FREE SILICA.

ITEM SPECIAL - COMPOSITE FIBER WRAP SYSTEM

SEE BRIDGE HAM-71-1181 AND HAM-71-1068L/R FOR DRAWINGS. SEE PROJECT SPECIAL PROVISIONS FOR SPECIFICATIONS.

DESCRIPTION

THIS WORK CONSISTS OF PREPARING EXISTING SOUND CONCRETE SURFACES AND DESIGNING THE SYSTEM TO MEET THE REQUIREMENTS IN THE PLANS, FURNISHING AND INSTALLING FIBER REINFORCED POLYMER (FRP) COMPOSITE WRAP SYSTEMS TO REPAIR OR RETROFIT EXISTING CONCRETE MEMBERS AT THE LOCATIONS SHOWN IN THE PLANS. FIBER MAY BE EITHER CARBON (CFRP) OR E-GLASS (EGFRP).

FOR BRIDGE HAM-71-1181L:
THE COMPOSITE FIBER WRAP SHOULD BE ORIENTED HORIZONTALLY IN THE HOOP DIRECTION APPLIED AT THE DESIGNATED AREA OF THE COLUMN AS SHOWN IN PLAN.

FOR BRIDGE HAM-71-1068L/R:
THE COMPOSITE FIBER WRAP SHOULD BE ORIENTED HORIZONTALLY IN THE HOOP DIRECTION APPLIED AT FULL HEIGHT OF THE COLUMNS OF THE PIER 2.

MEASUREMENT AND PAYMENT

THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES OF THE COMPLETED FRP COMPOSITE WRAP SYSTEM INCLUDING PREPARATION OF THE CONCRETE SUBSTRATE SURFACES AS FOLLOWS:

ITEM	UNIT	DESCRIPTION
SPECIAL	SQUARE FEET	COMPOSITE FIBER WRAP SYSTEM

FRP STRENGTHENING SCHEDULE HAM-71-1181L		
ORIENTATION	LOCATION	CONFINING STRESS
HORIZONTALLY IN THE HOOP DIRECTION	AS SHOWN IN PLAN	0.15 KSI

FRP STRENGTHENING SCHEDULE HAM-71-1068L/R PIER 2		
ORIENTATION	LOCATION	CONFINING STRESS
HORIZONTALLY IN THE HOOP DIRECTION	FULL HEIGHT OF COLUMN, TOP OF FOOTING TO BOTTOM OF PIER CAP	0.15 KSI

ITEM 512 SPECIAL- URETHANE TOP COAT SEALER

THIS ITEM SHALL CONSIST OF THE APPLICATION OF A URETHANE TOP COAT SEALER OVER CONCRETE AREAS PREVIOUSLY COATED WITH FIBER WRAP.

THE AREA SHALL BE DRY AND FREE FROM DUST, DIRT, OIL, WAX, CURING COMPOUNDS, EFFLORESCENCE, LAITANCE AND OTHER FOREIGN MATERIALS WITH THE EXCEPTION OF THE FIBER WRAP.

THE COATING SHALL BE APPLIED BEFORE THE FINAL THICKENED EPOXY LAYER HAS BEEN ALLOWED TO CURE (AS DETERMINED BY THE MANUFACTURER) TO BETTER ADHERE TO THE COMPOSITE FIBER WRAP SYSTEM.

IF THE INSTALLED FRC IS ALLOWED TO COMPLETELY CURE PRIOR TO THE APPLICATION OF THE FINAL COATING, THE SURFACE GLOSS MUST BE BROKEN BY HAND SANDING OR LIGHT ABRASIVE BLASTING FOR PROPER ADHERENCE TO THE FINAL COATING.

THE COATING SYSTEM SHALL CONSIST OF THE APPLICATION OF A URETHANE TOP COAT SEALER OVER THE INSTALLED FRC SYSTEM. THE COLOR SHALL BE FEDERAL COLOR STANDARD NO. 17778 (LIGHT NEUTRAL) AND THE MATERIAL AND APPLICATION SHALL CONFORM TO CMS 512.

THE COATING MATERIAL SUPPLIER MUST PROVIDE A LETTER VERIFYING THAT THE FULL COATING SYSTEM IS COMPATIBLE WITH THE INSTALLED FRC SYSTEM.

THE CERTIFIED AND EXPERIENCED INSTALLER SHALL SUBMIT A QUALITY CONTROL AND QUALITY ASSURANCE PLAN FOR THE FRC INSTALLATION.

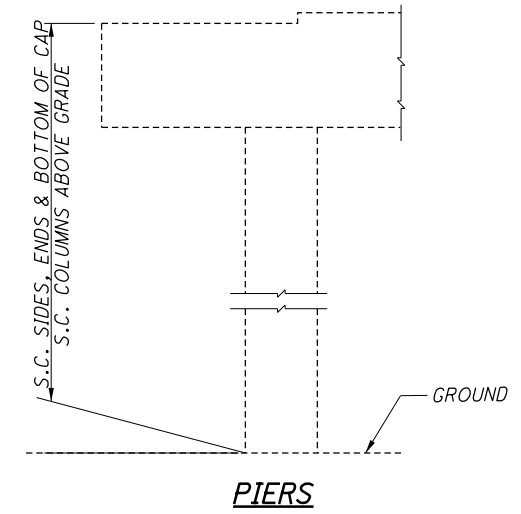
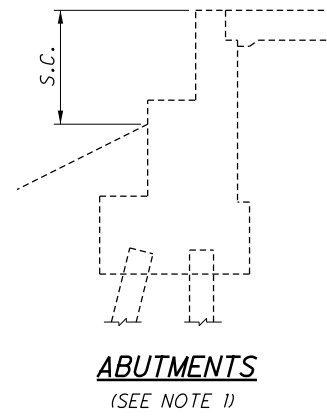
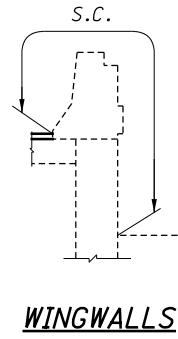
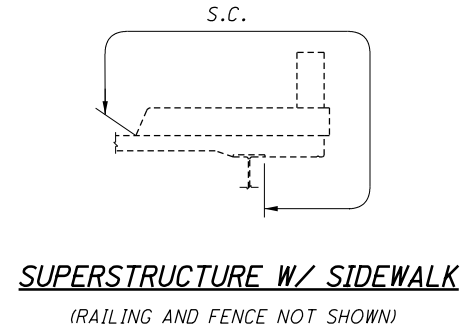
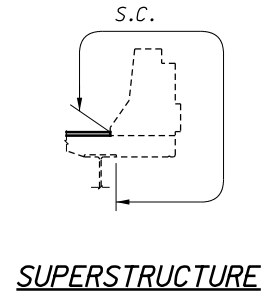
THE FRC SYSTEM SHALL BE INSTALLED UNDER THE DIRECT SUPERVISION OF A MANUFACTURER QUALIFIED TECHNICIAN UNTIL THE INSTALLER HAS DEMONSTRATED HIS ABILITY TO PERFORM THE INSTALLATION TO SATISFACTION OF THE ENGINEER AND THE MANUFACTURER.

THE COST OF ALL LABOR, EQUIPMENT, AND MATERIAL NECESSARY TO ACCOMPLISH THIS ITEM OF WORK SHALL BE PAID FOR BY SQUARE YARDAGE COVERED.

ITEM SPECIAL - URETHANE TOP COAT SEALER

HAM-IR71-8.42	PID No. 91826	3 / 5	<div style="border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; margin: 0 auto; display: flex; flex-direction: column; justify-content: center; align-items: center;"> 341 441 </div>	COMMON STRUCTURE GENERAL NOTES 3 COMBINED FOR ALL STRUCTURES HAM-71-8.42	DESIGN AGENCY BURGESS & NIPLE 312 PLUM ST. CINCINNATI OH
DESIGNED SUA	DRAWN SUA	REVIEWED DWL	DATE 2/20/2017	STRUCTURE FILE NUMBER COMBINED	
CHECKED XAC	REVISED				

GENERAL NOTES: (CONTINUED)



SEALING OF CONCRETE SURFACES

S.C. = LIMITS OF ITEM 512 - SEALING CONCRETE SURFACES (EPOXY-URETHANE)

NOTE 1: DO NOT SEAL SEAT UNDER ELASTOMERIC BEARINGS WITHOUT MASONRY PLATES.

BRIDGE WORK WITHIN PROJECT HAM-71-8.42

BRIDGE NUMBER	STRUCTURE FILE NUMBER
HAM-71-0875	3115283
HAM-71-0970L	3115313
HAM-71-0970R	3115364
HAM-71-0991	3115364
HAM-71-0992	3115372
HAM-71-1068L	3106888
HAM-71-1068R	3106896
HAM-71-1149	3106934
HAM-71-1181L	3106969
HAM-71-1181R	3106977
HAM-71-1277L	3107027
HAM-71-1277R	3107051

P:\PR54704\HAM\91826\Design\Structures\HAM071_0875C\Sheets\071_0875C_SNO03.dgn Sheet 10/26/2017 8:37:28 AM compton

HAM-IR71-8.42	PID No. 91826	COMMON STRUCTURE GENERAL NOTES 4	COMBINED FOR ALL STRUCTURES HAM-71-8.42	DESIGNED XAC CHECKED SJA	DRAWN XAC REVISED	REVIEWED DWL STRUCTURE FILE NUMBER COMBINED	DATE 2/20/2017	DESIGN AGENCY BURGESS & NIPLE 312 PLUM ST. CINCINNATI OH
----------------------	----------------------	---	--	-----------------------------------	-------------------------	--	-------------------	--

ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=13"), AS PER PLAN

BRIDGE HAM-71-0875:
THE REQUIREMENTS OF 511.03 AND 511.04 SHALL APPLY TO THIS ITEM OF WORK. THIS ITEM SHALL INCLUDE, BUT IS NOT LIMITED TO THE CONCRETE AND STEEL REINFORCEMENT NECESSARY TO FORM AND PLACE PORTIONS OF THE APPROACH SLABS AS SHOWN IN THE PLANS. PAYMENT FOR THIS ITEM SHALL ALSO INCLUDE THE ITEMS LISTED ON STANDARD DRAWING AS-1-15 AND ALL OTHER NECESSARY MATERIALS, LABOR, AND EQUIPMENT AND SHALL BE INCLUDED IN THE UNIT PRICE BID PER SQUARE YARD FOR ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=13"), AS PER PLAN.

ALSO SEE NOTE REINFORCED CONCRETE APPROACH SLAB (T=13"), AS PER PLAN FOR ADDITIONAL REQUIREMENT FOR APPROACH SLAB CONCRETE.

ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN

BRIDGES HAM-71-1068L AND HAM-71-1068R:
THE REQUIREMENTS OF 511.03 AND 511.04 SHALL APPLY TO THIS ITEM OF WORK. THIS ITEM SHALL INCLUDE, BUT IS NOT LIMITED TO THE CONCRETE AND STEEL REINFORCEMENT NECESSARY TO FORM AND PLACE THE APPROACH SLABS AS SHOWN IN THE PLANS. PAYMENT FOR THIS ITEM SHALL ALSO INCLUDE THE ITEMS LISTED ON STANDARD DRAWING AS-1-15 AND ALL OTHER NECESSARY MATERIALS, LABOR, AND EQUIPMENT AND SHALL BE INCLUDED IN THE UNIT PRICE BID PER SQUARE YARD FOR ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN.

ALSO SEE NOTE REINFORCED CONCRETE APPROACH SLAB (T=15"), AS PER PLAN FOR ADDITIONAL REQUIREMENT FOR APPROACH SLAB CONCRETE.

ITEM 526 - TYPE A INSTALLATION:

BRIDGES HAM-71-1068L AND HAM-71-1068R:
PAYMENT FOR THIS ITEM SHALL INCLUDE THE ITEMS LISTED ON STANDARD DRAWING AS-2-15 AND ALL OTHER NECESSARY MATERIALS, LABOR, AND EQUIPMENT AND SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT FOR ITEM 526 - TYPE A INSTALLATION.

ITEM 601 - DUMPED ROCK FILL, TYPE B, AS PER PLAN

BRIDGE HAM-71-1149:
EXCAVATE THE SLOPE AS NECESSARY TO ESTABLISH THE PROPER SUBGRADE DEPTH WHICH WILL ACCEPT THE PROPOSED ROCK CHANNEL PROTECTION AND MATCH THE EXISTING SLOPE NEAR THE SIDES OF THE BRIDGE. ADDITIONAL MATERIAL MEETING THE REQUIREMENTS OF ITEM 203 MAY BE REQUIRED TO FILL ERODED AREAS AS DIRECTED BY THE ENGINEER. ALL OTHER ASPECTS OF THE WORK SHALL CONFORM TO THE CMS 601. PAYMENT WILL BE MADE UNDER ITEM 601 - DUMPED ROCK FILL, TYPE B, AS PER PLAN.

ITEM SPECIAL - NOISE BARRIER: REPAIR LOOSE OR MISSING SOUNDWALL SHIMS AND WOODEN MEMBERS

BRIDGES HAM-71-1181L/R AND HAM-71-1277L/R:
CONTRACTOR SHALL EXAMINE NOISE BARRIER WALLS AND REPLACE ALL MISSING SHIMS AND MISSING NOISE BARRIER MEMBERS WITH NEW IN KIND MATERIAL. LUMP SUM PAYMENT WILL BE MADE UNDER ITEM SPECIAL - NOISE BARRIER: REPAIR LOOSE OR MISSING SOUNDWALL SHIMS AND WOODEN MEMBERS.

DECK PLACEMENT DESIGN ASSUMPTIONS:

BRIDGES HAM-71-1068L AND HAM-71-1068R:
THE FOLLOWING ASSUMPTIONS OF CONSTRUCTION MEANS AND METHODS WERE MADE FOR THE ANALYSIS AND DESIGN OF THE SUPERSTRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE FALSE-WORK SUPPORT SYSTEM WITHIN THESE PARAMETERS AND WILL ASSUME RESPONSIBILITY FOR SUPER-STRUCTURE ANALYSIS FOR DEVIATION FROM THESE DESIGN ASSUMPTIONS.

AN EIGHT WHEEL FINISHING MACHINE WITH A MAXIMUM WHEEL LOAD OF 2.82 KIPS.

A MINIMUM OUT-TO-OUT WHEEL SPACING AT EACH END OF THE MACHINE OF 103 INCHES.

A MAXIMUM SPACING OF OVERHANG FALSE-WORK BRACKETS OF 48 INCHES.

A MAXIMUM DISTANCE FROM THE CENTERLINE OF THE FASCIA GIRDER TO THE FACE OF THE SAFETY HANDRAIL OF 65".

MECHANICAL CONNECTORS FOR REINFORCING STEEL:

AN APPROVED TYPE OF MECHANICAL CONNECTOR FOR REINFORCING BARS SHALL BE PROVIDED WHERE REQUIRED. INSTALLATION OF CONNECTORS SHALL CONFORM WITH MANUFACTURER'S RECOMMENDED PROCEDURES. IF A DOWEL BAR SPLICE TYPE OF CONNECTOR IS FURNISHED, THE MINIMUM DOWEL BAR LENGTH TO BE FURNISHED WITH THE CONNECTOR SHALL BE AS SHOWN ON THE PLAN.

CONNECTORS AND DOWEL BARS SHALL BE EPOXY COATED. COATING FOR BOTH THE CONNECTORS AND BARS SHALL CONFORM TO THE SAME SPECIFICATIONS. COATINGS WHICH HAVE BEEN DAMAGED OR WHICH OTHERWISE DO NOT MEET SPECIFICATIONS WITH RESPECT TO COLOR, CONTINUITY, AND UNIFORMITY, MAY BE REPAIRED AS DIRECTED BY THE ENGINEER OR THEY SHALL BE REPLACED WITH MATERIAL WHICH MEETS THE SPECIFICATIONS.

CONNECTOR AND DOWEL BAR EXTENSIONS SHALL CONFORM WITH ITEM 509. THE COST OF FURNISHING THE CONNECTORS AND EXTENSIONS SHALL BE INCLUDED WITH ITEM 509 - EPOXY COATED REINFORCING STEEL, AS PER PLAN.

ITEM 848. SUPERPLASTICIZED DENSE CONCRETE OVERLAY USING HYDRODEMOLITION, AS PER PLAN.

THIS ITEM SHALL CONFORM TO SS 848 WITH THE FOLLOWING CONDITIONS AND REVISIONS:

THE OVERLAY MATERIAL SHALL MEET THE FOLLOWING CRITERIA:
2 LBS./C. Y. POLYPROPYLENE FIBERS 3/4" MIN. SHALL BE ADDED TO THE MIX.

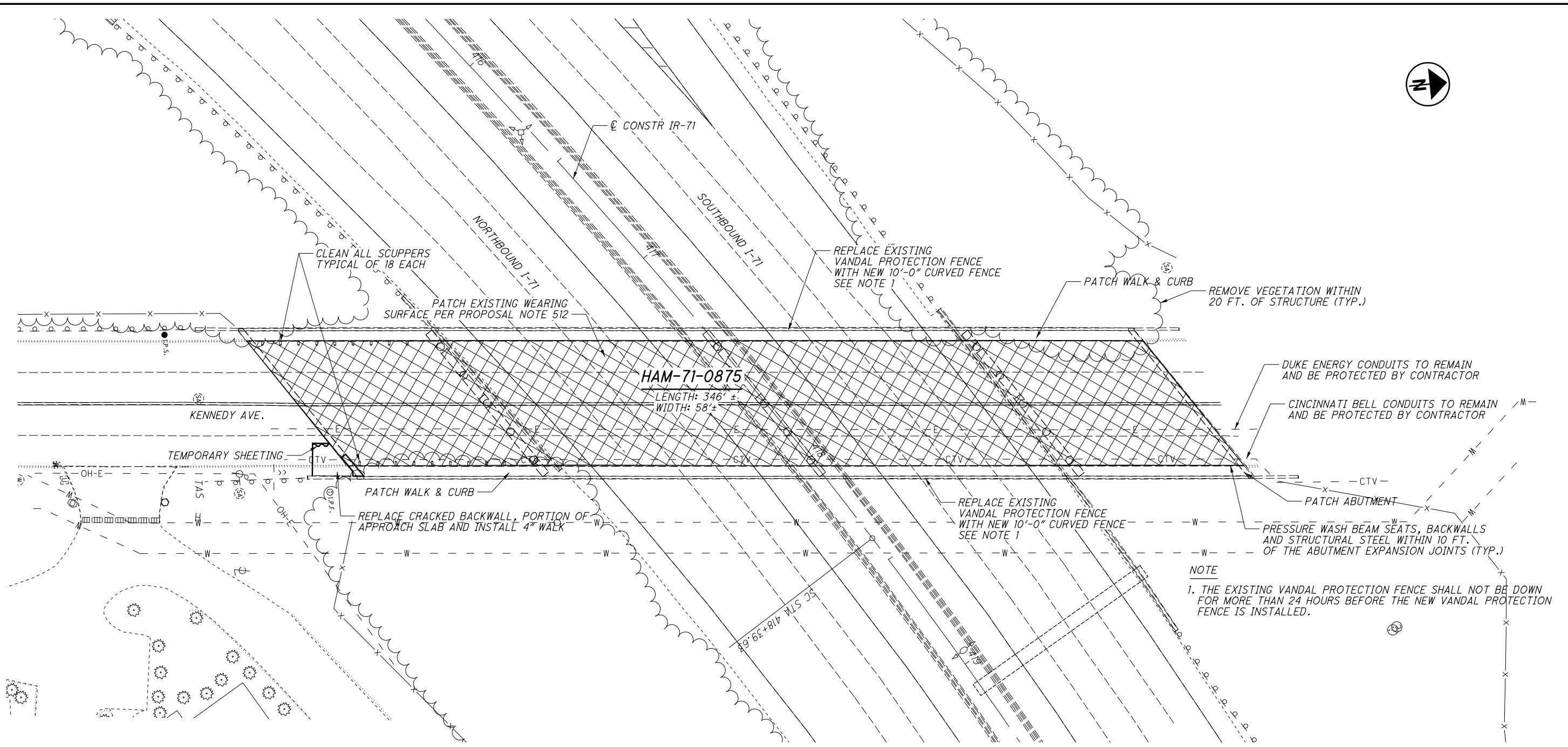
THE FIBERS SHALL BE INCORPORATED INTO THE MIX IN SUCH A WAY THAT NO 'BALLING' OCCURS. UPON INSPECTION OF THE MIX AT THE TIME OF PLACEMENT, IF ANY 'BALLING' OCCURS, THE ENGINEER SHALL REJECT THE REMAINDER OF THE LOAD AT ANY TIME DURING THE POUR.

CONCRETE SUPPLIERS SHOULD RECOGNIZE THAT ADMIXTURES MAY HAVE AN EFFECT ON STRENGTH, ENTRAINED AIR CONTENT, WORKABILITY, ETC. OF THEIR CONCRETE MIXES. THE CONCRETE SUPPLIERS CHOICE OF ONE OF THESE ADMIXTURES DOES NOT ALLEVIATE MEETING DESIGN REQUIREMENTS.

P:\PR54704\HAM\91826\Design\Structures\HAM071_0875C_Sheets\071_0875C_SN005.dgn Sheet 10/26/2017 8:37:30 AM compton

DESIGNED		DRAWN	REVIEWED	DATE	DESIGN AGENCY
SJA	SJA	SJA	DWL	2/20/2017	BURGESS & NIPLE
CHECKED	REVISED	STRUCTURE FILE NUMBER	312 PLUM ST. CINCINNATI OH		
XAC		COMBINED			
COMMON STRUCTURE GENERAL NOTES 5					
COMBINED FOR ALL STRUCTURES HAM-71-8.42					
HAM-IR71-8.42					
PID No. 91826					
5 / 5					
343 441					

P:\PR54704\HAM\91826\Design\Structures\HAM071_0875C\Sheets\071_0875C_SG001.dgn Sheet 3/15/2018 10:52:22 AM chen



PLAN

LEGEND

SEAL WEARING SURFACE WITH HIGH MOLECULAR WEIGHT METHACRYLATE (HMWM)

EXISTING STRUCTURE
TYPE: CONTINUOUS WELDED PLATE GIRDER WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 72'-0", 107'-0", 100'-0", 65'-0"
ROADWAY: 48'-0"± F/F OF 4'-0" SIDEWALKS
LOADING: C.F. = 2000 (57)
SKEW: 39°20'0" R.F.
APPROACH SLABS: AS-1-67 (25'-0" LONG)
ALIGNMENT: TANGENT
CROWN: 0.016±
STRUCTURAL FILE NUMBER: 3115283
DATE BUILT: 1972

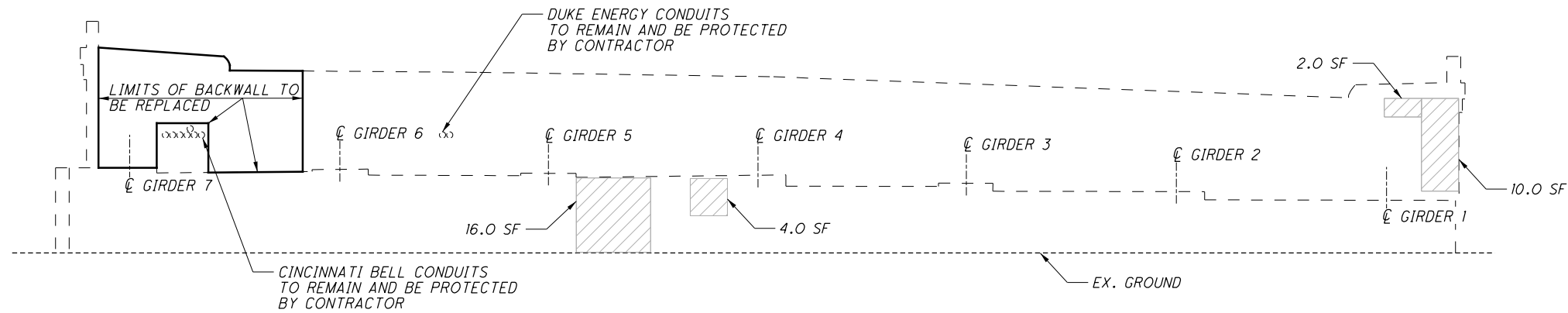
PROPOSED STRUCTURE
TYPE: CONTINUOUS WELDED PLATE GIRDER WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 72'-0", 107'-0", 100'-0", 65'-0"
ROADWAY: 48'-0"± F/F OF 4'-0" SIDEWALKS
LOADING: C.F. = 2000 (57)
SKEW: 39°20'0" R.F.
APPROACH SLABS: AS-1-67 (25'-0" LONG)
ALIGNMENT: TANGENT
CROWN: 0.016±
COORDINATES: LATITUDE 39°10'11" N LONGITUDE 84°25'12" W

PROPOSED WORK:

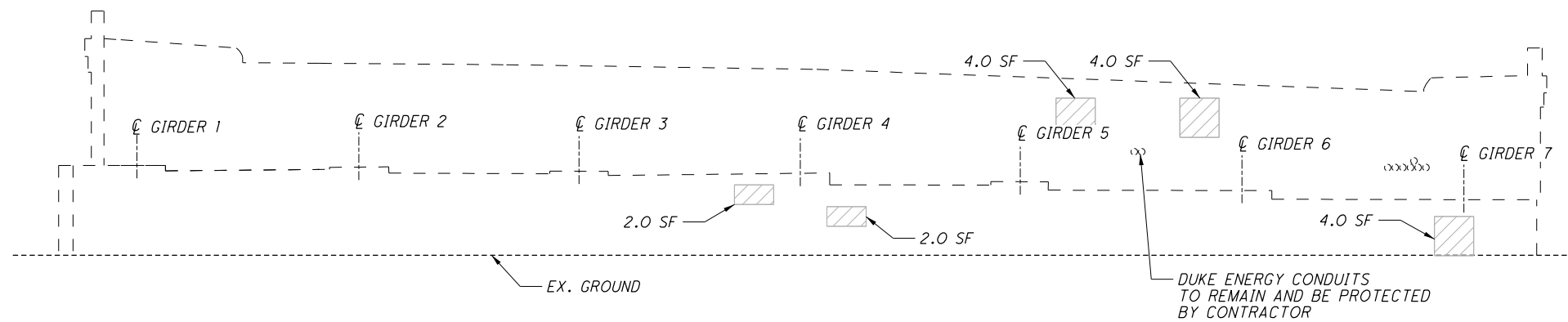
1. PATCH EXISTING MICRO-SILICA WEARING SURFACE PER PROPOSAL NOTE 512, TYPE B.
2. SEAL WEARING SURFACE WITH HIGH MOLECULAR WEIGHT METHACRYLATE (HMWM), PER ITEM 512.
3. PATCH EXISTING SIDEWALK/CURB AND SUBSTRUCTURE WITH CMS ITEM 519 PATCHING.
4. REMOVE VEGETATION WITHIN 20 FEET OF STRUCTURE.
5. CLEAN SCUPPERS.
6. REPLACE EXISTING VANDAL PROTECTION FENCE WITH NEW 12'-0" CURVED FENCE.
7. REPLACE CRACKED BACKWALL AND PORTION OF APPROACH SLAB.
8. PRESSURE WASH BEAM SEATS, BACKWALLS AND STRUCTURAL STEEL WITHIN 10 FEET OF THE ABUTMENT EXPANSION JOINTS.
9. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH MAINTENANCE OF TRAFFIC PLANS AND NOTES.

GENERAL PLAN	HAM-71-0875 KENNEDY AVE OVER IR-71
HAM-IR71-8.42	PID No. 91826
1 / 9	<div style="border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto;"> 344 441 </div>
DESIGNED XAC CHECKED SJA	DRAWN XAC REVISED
REVIEWED DWL STRUCTURE FILE NUMBER 3115283	DATE 2/20/2017
DESIGN AGENCY BURGESS & NIPLE 302 PLUM ST. CINCINNATI OH	

P:\PR54704\HAM\91826\Design\Structures\HAM071_0875C\Sheets\071_0875C_SR004.dgn Sheet 10/26/2017 8:37:35 AM compton



SOUTH ABUTMENT ELEVATION
(PILES NOT SHOWN)



NORTH ABUTMENT ELEVATION
(PILES NOT SHOWN)

LEGEND:

SF = SQUARE FEET

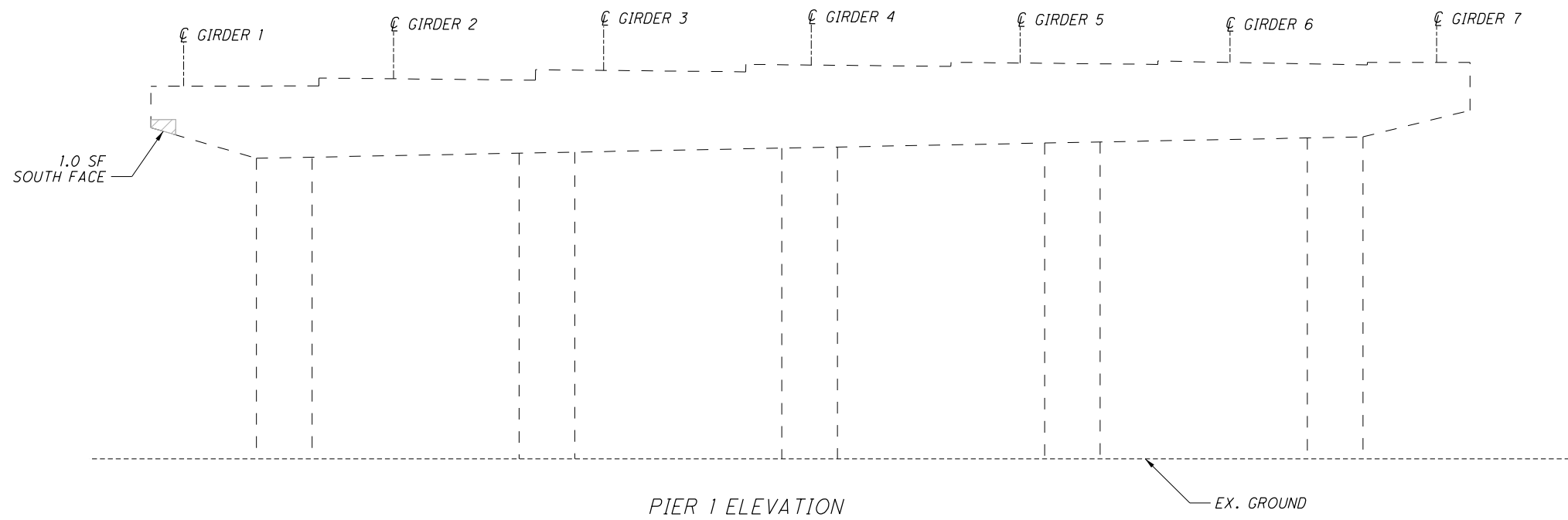
= APPROXIMATE LIMITS OF CONCRETE PATCHING

NOTES:

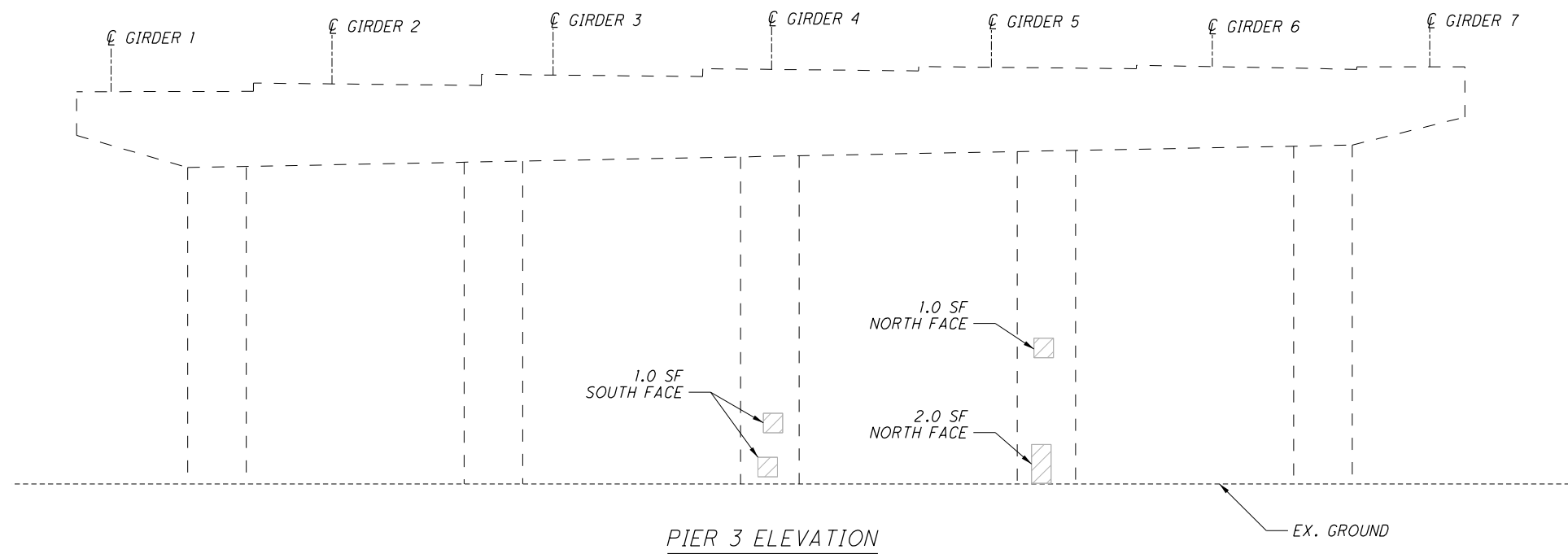
- REPAIR APPROXIMATELY 48 SQUARE FEET OF DELAMINATED AND SPALLING AREAS OF THE ABUTMENTS BY PATCHING CONCRETE IN ACCORDANCE WITH ITEM 519 SPECIFICATIONS. 2 x 48 = 96 SQUARE FEET ARE INCLUDED IN THE ESTIMATED QUANTITIES TO OFFSET THE INCREASE IN DAMAGE FROM SURVEY TO REPAIR.
- ABUTMENT ELEVATIONS ARE SHOWN WITH APPROXIMATE PATCHING BASED ON SOUNDINGS.

DESIGN AGENCY BURGESS & NIPLE 303 PLUM ST. CINCINNATI OH	
REVIEWED DWL	DATE 2/20/2017
DRAWN XAC	STRUCTURE FILE NUMBER 3115283
DESIGNED XAC	CHECKED SJA
ABUTMENT PATCHING AND REPAIR ELEVATIONS HAM-71-0875 KENNEDY AVE OVER IR-71	
HAM-IR71-8.42 PID No. 91826	
2 / 9	
345 441	

P:\PR54704\HAM\91826\Design\Structures\HAM071_0875C\Sheets\071_0875C_S1001.dgn Sheet 10/26/2017 8:37:37 AM compton



PIER 2 - NO PATCHING REQUIRED

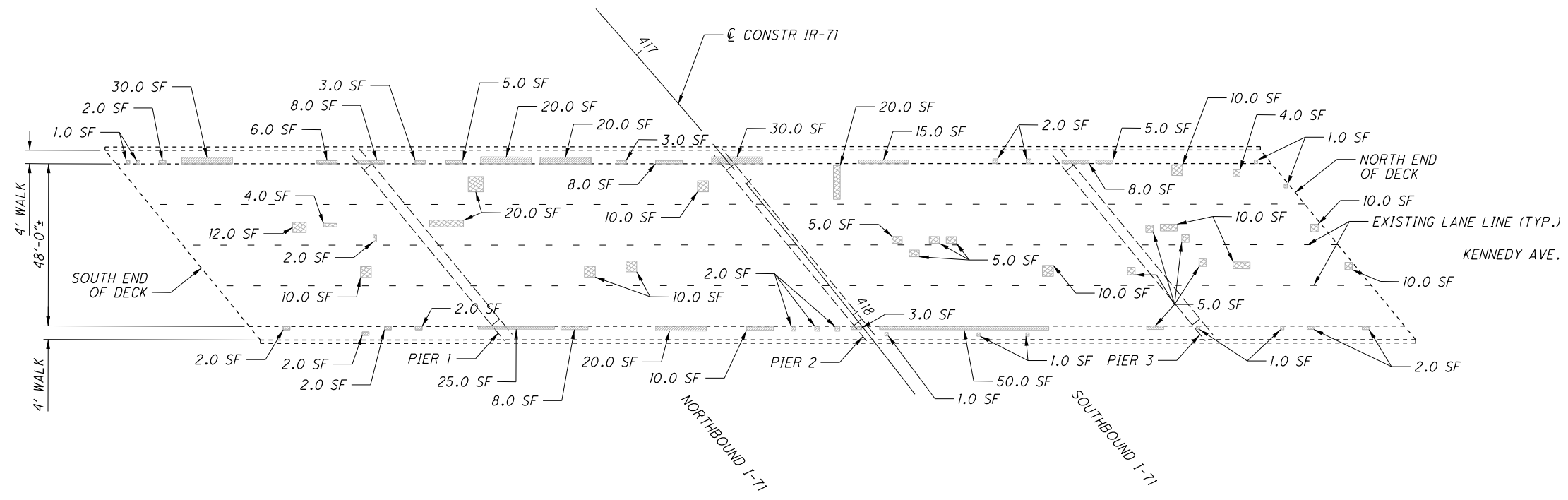


LEGEND:
 SF = SQUARE FEET
 = APPROXIMATE LIMITS OF CONCRETE PATCHING

- NOTES:**
- REPAIR APPROXIMATELY 6 SQUARE FEET OF DELAMINATED AND SPALLING AREAS OF THE PIERS BY PATCHING CONCRETE IN ACCORDANCE WITH ITEM 519 SPECIFICATIONS. 2 x 6 = 12 SQUARE FEET IS INCLUDED IN THE ESTIMATED QUANTITIES TO OFFSET THE INCREASE IN DAMAGE FROM SURVEY TO REPAIR.
 - PIER ELEVATIONS ARE SHOWN WITH APPROXIMATE PATCHING BASED ON SOUNDINGS.

HAM-IR71-8.42 PID No. 91826	PIER PATCHING ELEVATIONS HAM-71-0875 KENNEDY AVE OVER IR-71		DESIGNED XAC CHECKED SJA	DRAWN XAC REVISED	REVIEWED DWL STRUCTURE FILE NUMBER 3115283	DATE 2/20/2017	DESIGN AGENCY BURGESS & NIPL 304 PLUM ST. CINCINNATI OH
	3 / 9	346 441					

P:\PR54704\HAM\91826\Design\Structures\HAM071_0875C\Sheets\071_0875C_SD001.dgn Sheet 10/26/2017 8:37:39 AM compton



DECK PATCHING PLAN

LEGEND:

- SF = SQUARE FEET
- [Hatched Box] = APPROXIMATE LIMITS OF CONCRETE PATCHING PER ITEM 519
- [Cross-hatched Box] = APPROXIMATE LIMITS OF PATCHING EXISTING MICRO-SILICA CONCRETE WEARING SURFACE PER PROPOSAL NOTE 512

NOTES:

1. REPAIR APPROXIMATELY 314 SQUARE FEET OF DELAMINATED AND SPALLING AREAS OF THE SIDEWALK BY PATCHING CONCRETE IN ACCORDANCE WITH ITEM 519 SPECIFICATIONS. $2 \times 314 = 628$ SQUARE FEET ARE INCLUDED IN THE ESTIMATED QUANTITIES TO OFFSET THE INCREASE IN DAMAGE FROM SURVEY TO REPAIR.
2. REPAIR APPROXIMATELY 25 SQUARE YARDS OF DELAMINATED AND SPALLING AREAS OF THE BRIDGE DECK BY PATCHING CONCRETE IN ACCORDANCE WITH PROPOSAL NOTE 512. $2 \times 25 = 50$ SQUARE YARD ARE INCLUDED IN THE ESTIMATED QUANTITIES TO OFFSET THE INCREASE IN DAMAGE FROM SURVEY TO REPAIR.
3. DECK PLAN IS SHOWN WITH APPROXIMATE PATCHING BASED ON SOUNDINGS.

DESIGN AGENCY BURGESS & NIPLÉ 305 PLUM ST. CINCINNATI OH	
REVIEWED DWL	DATE 2/20/2017
DRAWN XAC	STRUCTURE FILE NUMBER 3115283
DESIGNED XAC	CHECKED SJA
DECK PATCHING PLAN HAM-71-0875 KENNEDY AVE OVER IR-71	
HAM-IR71-8.42 PID No. 91826	
4 / 9	
347 441	



REPLACE
BACKWALL

VIEW B-B

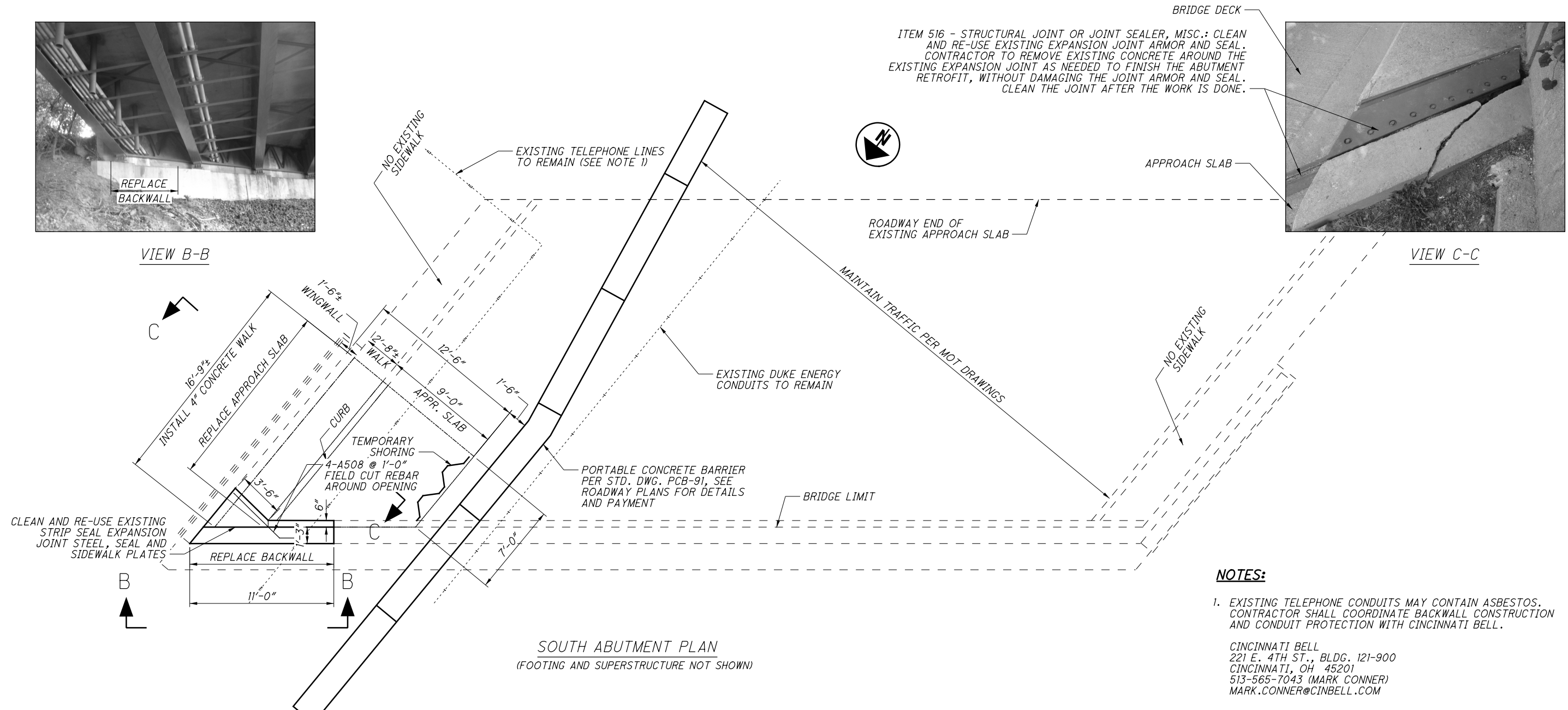


BRIDGE DECK

APPROACH SLAB

VIEW C-C

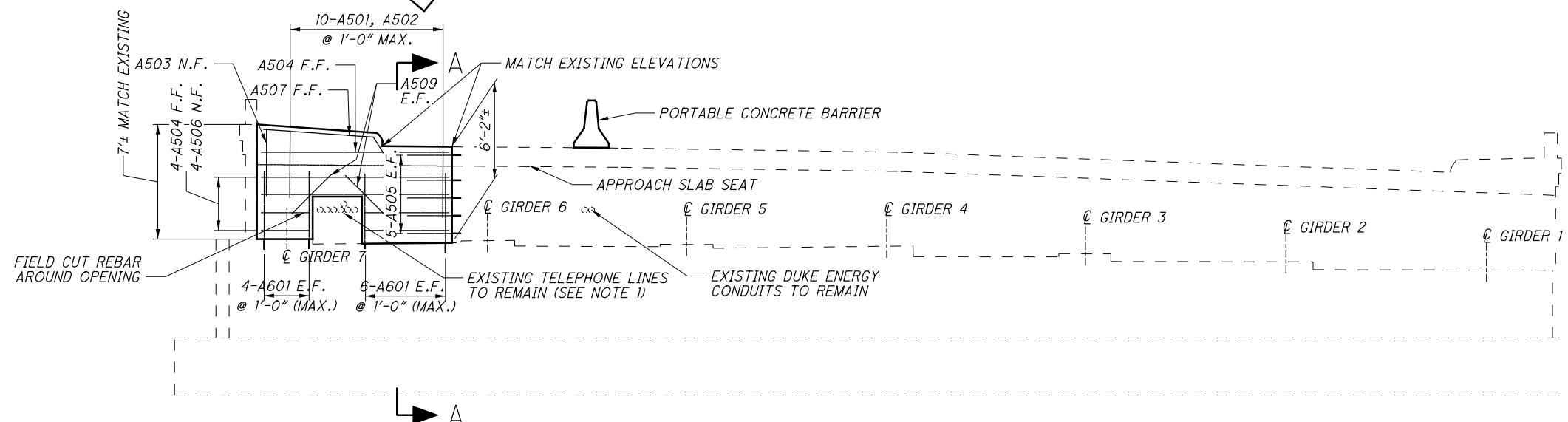
ITEM 516 - STRUCTURAL JOINT OR JOINT SEALER, MISC.: CLEAN AND RE-USE EXISTING EXPANSION JOINT ARMOR AND SEAL. CONTRACTOR TO REMOVE EXISTING CONCRETE AROUND THE EXISTING EXPANSION JOINT AS NEEDED TO FINISH THE ABUTMENT RETROFIT, WITHOUT DAMAGING THE JOINT ARMOR AND SEAL. CLEAN THE JOINT AFTER THE WORK IS DONE.



NOTES:

- EXISTING TELEPHONE CONDUITS MAY CONTAIN ASBESTOS. CONTRACTOR SHALL COORDINATE BACKWALL CONSTRUCTION AND CONDUIT PROTECTION WITH CINCINNATI BELL.

CINCINNATI BELL
221 E. 4TH ST., BLDG. 121-900
CINCINNATI, OH 45201
513-565-7043 (MARK CONNER)
MARK.CONNER@CINBELL.COM
- FOR SECTION A-A SEE SHEET 6/9.
- FOR APPROACH SLAB DETAILS SEE SHEET 6/9.
- CUT OFF EXISTING REINFORCING FLUSH WITH EDGE OF REMOVAL.
- EPOXY GROUT # 5 BARS 5" MINIMUM INTO EXISTING CONCRETE
- MIN. LAP LENGTH FOR #5 BAR IS 2'-6".



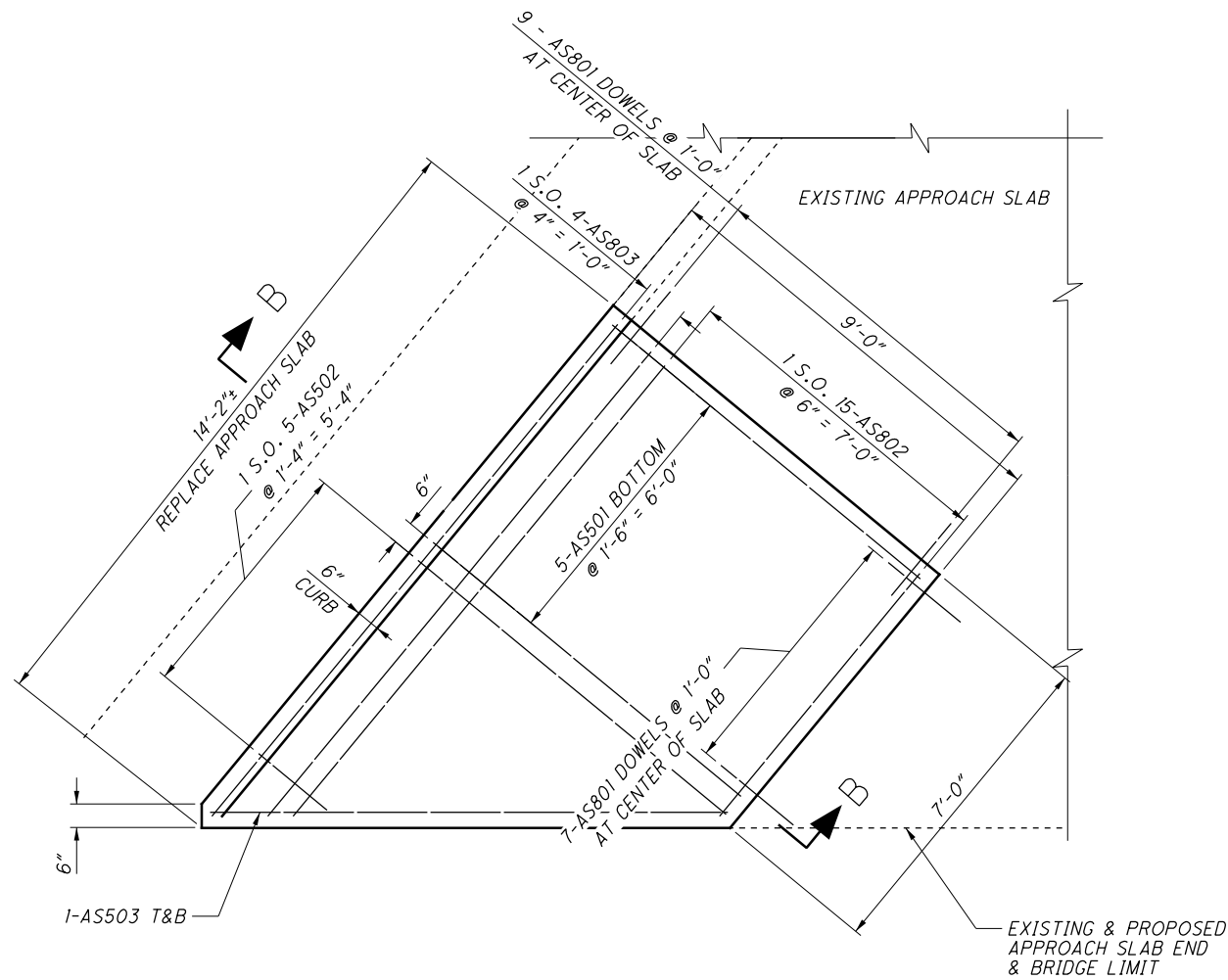
LEGEND:

E.F. = EACH FACE
F.F. = FAR FACE
N.F. = NEAR FACE

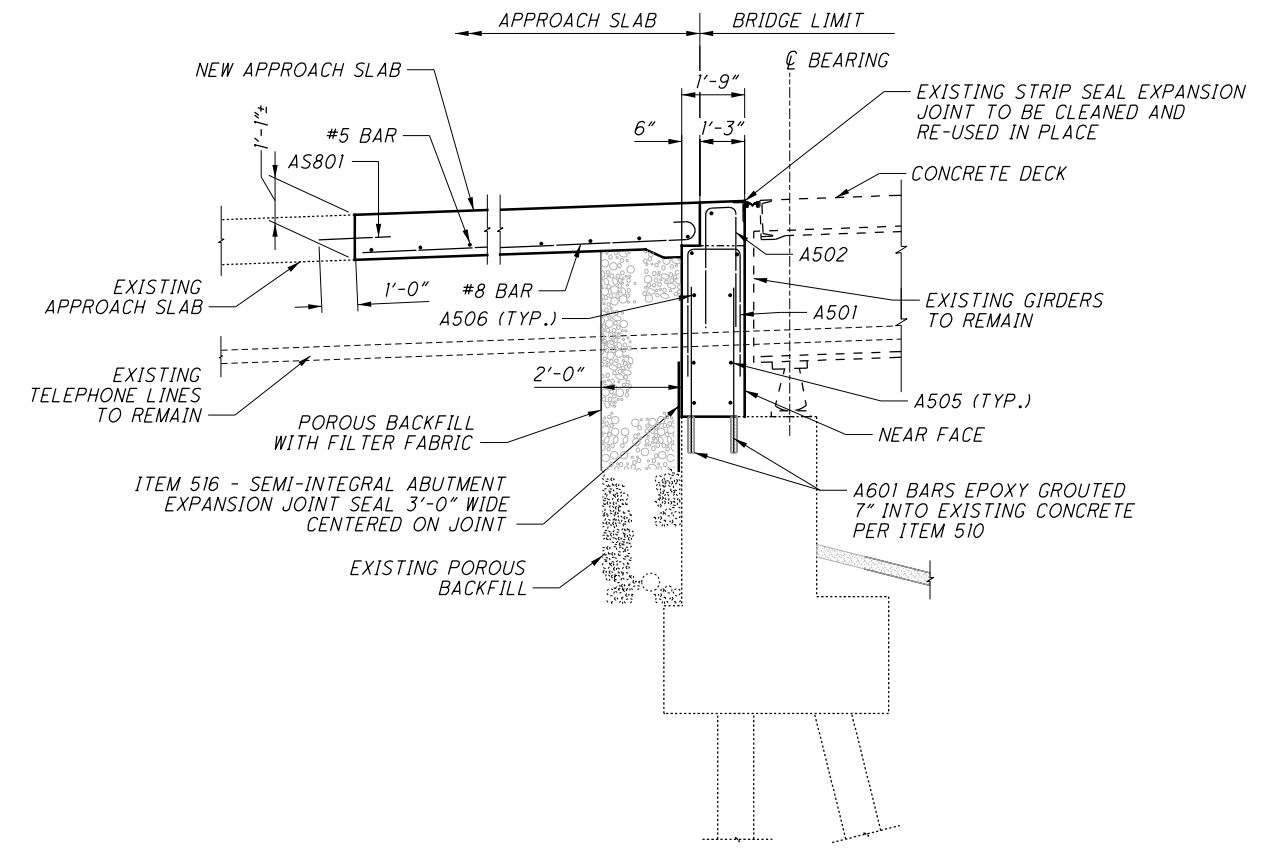
P:\PR54704\HAM\91826\Design\Structures\HAM071_0875C\Sheets\071_0875C_SR001.dgn Sheet 3/2/2018 1:00:30 PM chen

DESIGNED		SJA		CHECKED		XAC	
DRAWN		SJA		REVISED			
REVIEWED		DWL		DATE		2/20/2017	
STRUCTURE FILE NUMBER		3115283		DESIGN AGENCY		BURGESS & NIPLE	
ADDRESS		306 PLUM ST.		CINCINNATI OH		HAM-71-0875	
PROJECT NAME		KENNEDY AVE OVER IR-71		SOUTH ABUTMENT DETAILS - 1		HAM-IR71-8.42	
PID No.		91826		PAGE		5 / 9	
DRAWING NO.		348		REVISION		441	

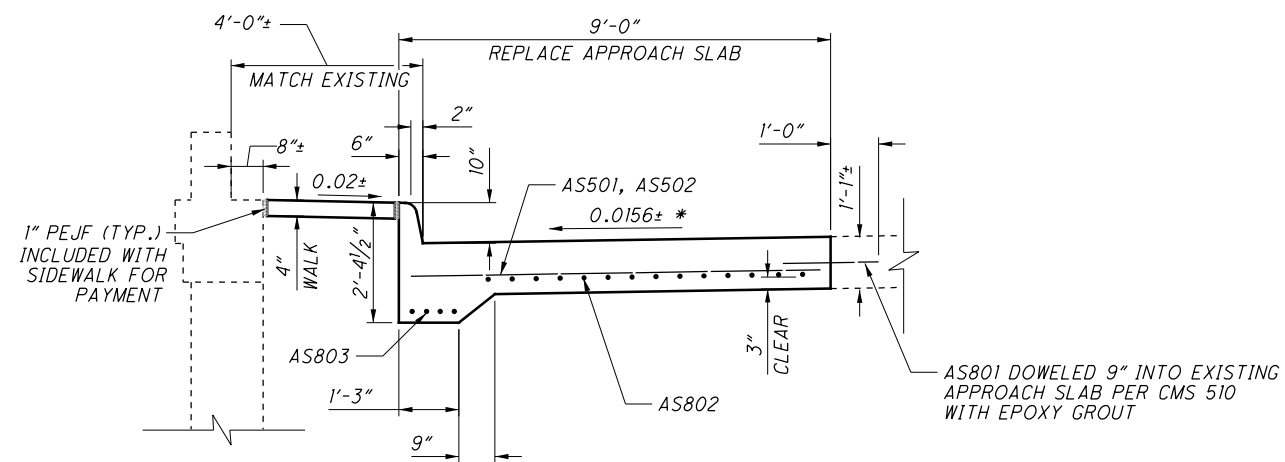
P:\PR54704\HAM\91826\Design\Structures\HAM071_0875C\Sheets\071_0875C_SR002.dgn Sheet 10/26/2017 8:37:46 AM compton



APPROACH SLAB PLAN
(ABUTMENT NOT SHOWN)



SECTION A-A



SECTION B-B

LEGEND:

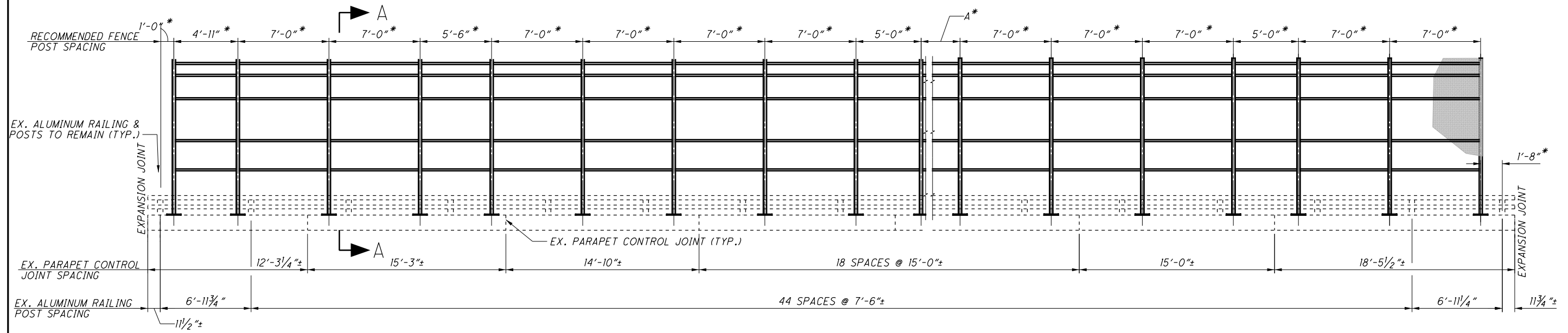
E.F. = EACH FACE
* = MATCH EXISTING

NOTES:

1. EPOXY GROUT AS801 DOWELS 9" INTO EXISTING APPROACH SLAB PER ITEM 510 - DOWEL HOLES WITH NON SHRINK, NON METALIC GROUT, AS PER PLAN.
2. APPROACH SLAB REINFORCING SHALL HAVE 3" (MIN.) CLEAR COVER
3. BACKWALL REINFORCING SHALL HAVE 2" (MIN.) CLEAR COVER

DESIGNED	SJA	CHECKED	XAC
DRAWN	SJA	REVISED	
REVIEWED	DWL	DATE	2/20/2017
STRUCTURE FILE NUMBER			3115283
DESIGN AGENCY			
BURGESS & NIPLE			
307 PLUM ST. CINCINNATI OH			
SOUTH ABUTMENT DETAILS - 2			
HAM-71-0875			
KENNEDY AVE OVER IR-71			
HAM-IR71-8.42			
PID No. 91826			
6/9			
349			
441			

P:\PR54704\HAM\91826\Design\Structures\HAM071_0875C\Sheets\071_0875C_SA001.dgn Sheet 10/26/2017 8:37:48 AM compton



WEST RAILING ELEVATION
(VIEW LOOKING WEST FROM BRIDGE DECK)

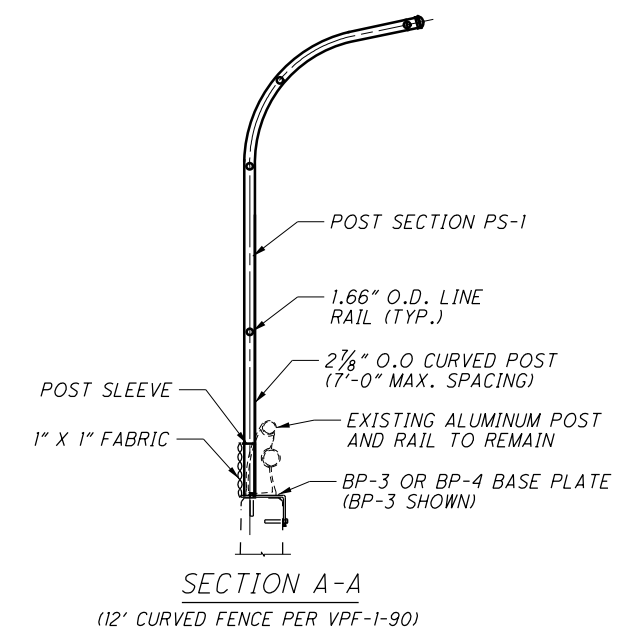
LEGEND:

* = CONTRACTOR MAY USE A DIFFERENT FENCE POST SPACING AS LONG AS THE MAXIMUM SPACING IS 7'-0" AND THE BASE PLATES CLEAR THE EXISTING RAILING POSTS BY AT LEAST 2" IN ACCORDANCE WITH STANDARD DRAWING VPF-1-90 .

EX. = EXISTING

SPA. = SPACES

A = 13 @ 7'-0", 5'-0", 2 @ 7'-0", 5'-0", 2 @ 6'-0", 4 @ 7'-0", 5'-0", 3 @ 7'-0", 5'-0", 2 @ 7'-0", 5'-0", 2 @ 6'-0", 4 @ 7'-0", 5'-0", 2 @ 6'-0", 4 @ 7'-0", 5'-0", 2 @ 6'-0", 7'-0"*

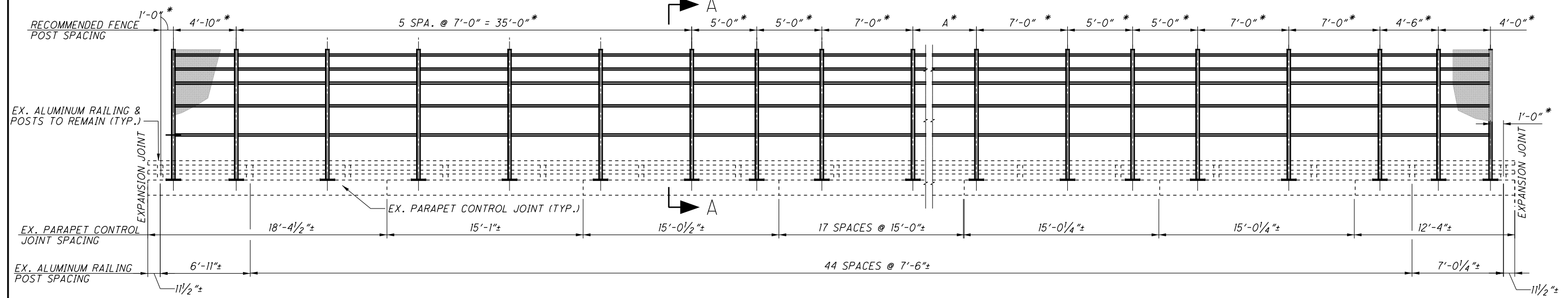


NOTES:

1. SEE STANDARD DRAWING VPF-1-90 FOR VANDAL PROTECTION FENCE DETAILS.
2. EXISTING ALUMINUM BRIDGE RAILING TO REMAIN. SPACE FENCING POSTS TO CLEAR EXISTING RAILING POST AND PARAPET CONTROL JOINT LOCATIONS. DIMENSIONS SHOWN ARE APPROXIMATE AND SHALL BE VERIFIED BY CONTRACTOR PRIOR TO FENCE FABRICATION.

DESIGNED		CHECKED		XAC	
DRAWN		SUA		REVISED	
REVIEWED		DWL		STRUCTURE FILE NUMBER	
DATE		2/20/2017		3115283	
DESIGN AGENCY		BURGESS & NIPLE			
		308 PLUM ST. CINCINNATI OH			
RAILING DETAILS 1		HAM-71-0875			
HAM-IR71-8.42		KENNEDY AVE OVER IR-71			
PID No. 91826					
7 / 9					
350					
441					

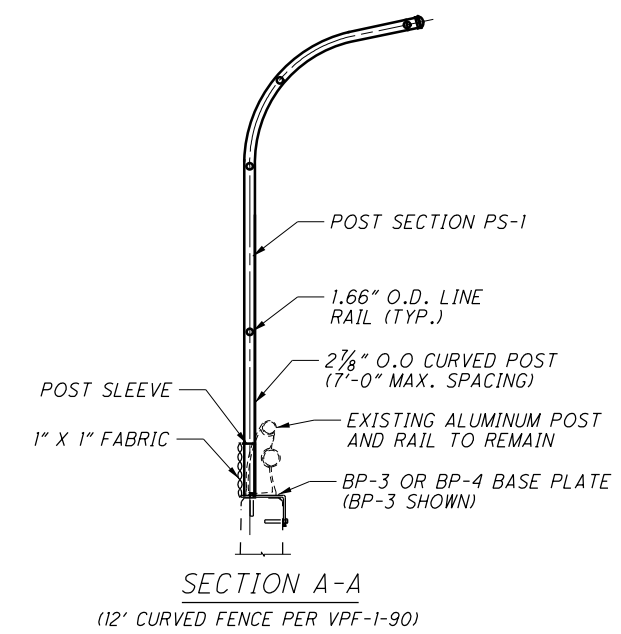
P:\PR54704\HAM\91826\Design\Structures\HAM071_0875C\Sheets\071_0875C_SA002.dgn Sheet 10/26/2017 8:37:50 AM compton



EAST RAILING ELEVATION
(VIEW LOOKING EAST FROM BRIDGE DECK)

LEGEND:

- * = CONTRACTOR MAY USE A DIFFERENT FENCE POST SPACING AS LONG AS THE MAXIMUM SPACING IS 7'-0" AND THE BASE PLATES CLEAR THE EXISTING RAILING POSTS BY AT LEAST 2" IN ACCORDANCE WITH STANDARD DRAWING VPF-1-90 .
- EX. = EXISTING
- SPA. = SPACES
- A = (4 @ 7'-0", 2 @ 5'-0", 5 @ 7'-0", 2 @ 5'-0", 5 @ 7'-0", 2 @ 5'-0", 5 @ 7'-0", 2 @ 5'-0", 5 @ 7'-0", 2 @ 5'-0", 4 @ 7'-0")*

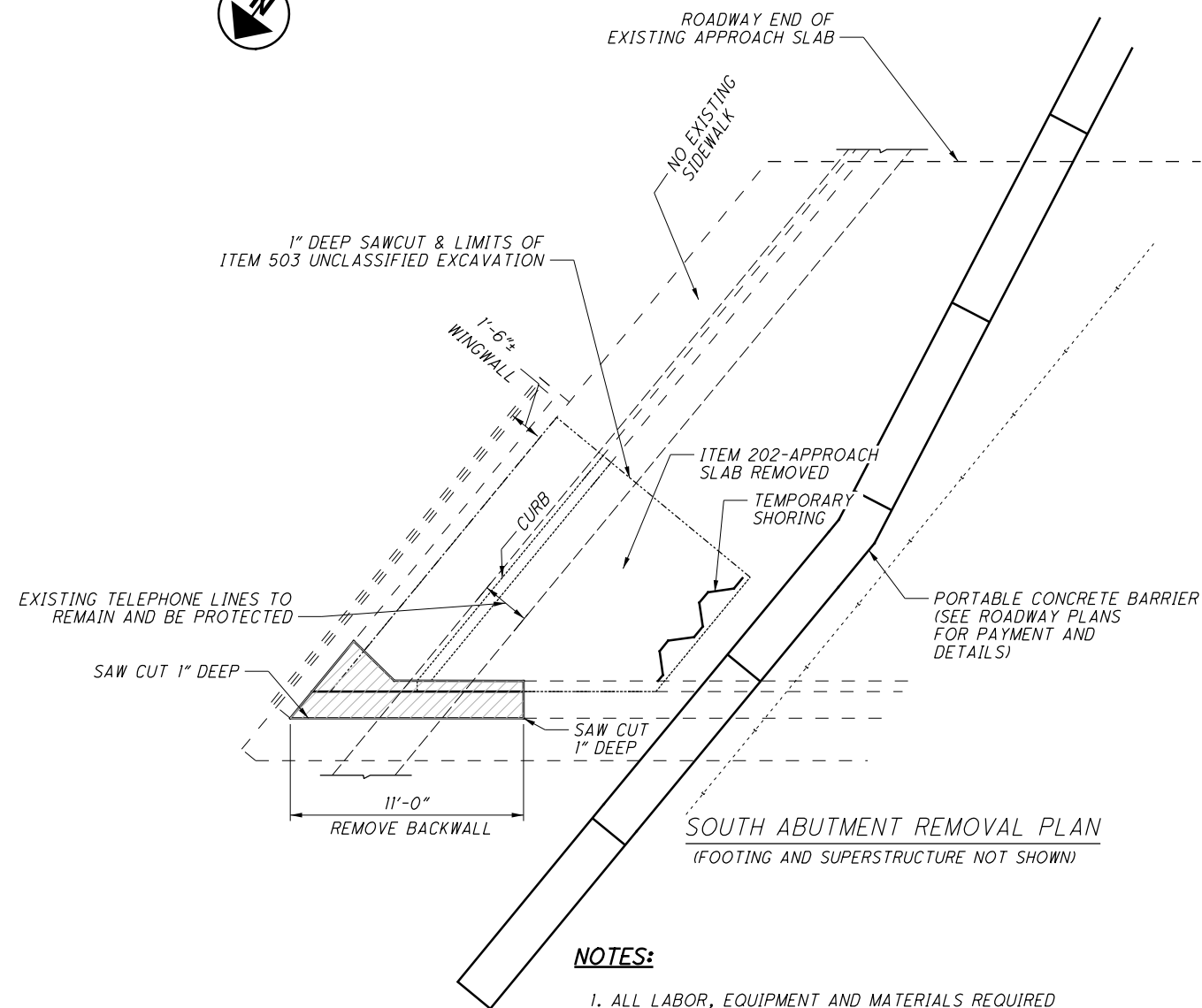


NOTES:

1. SEE STANDARD DRAWING VPF-1-90 FOR VANDAL PROTECTION FENCE DETAILS.
2. EXISTING ALUMINUM BRIDGE RAILING TO REMAIN. SPACE FENCING POSTS TO CLEAR EXISTING RAILING POST AND PARAPET CONTROL JOINT LOCATIONS. DIMENSIONS SHOWN ARE APPROXIMATE AND SHALL BE VERIFIED BY CONTRACTOR PRIOR TO FENCE FABRICATION.

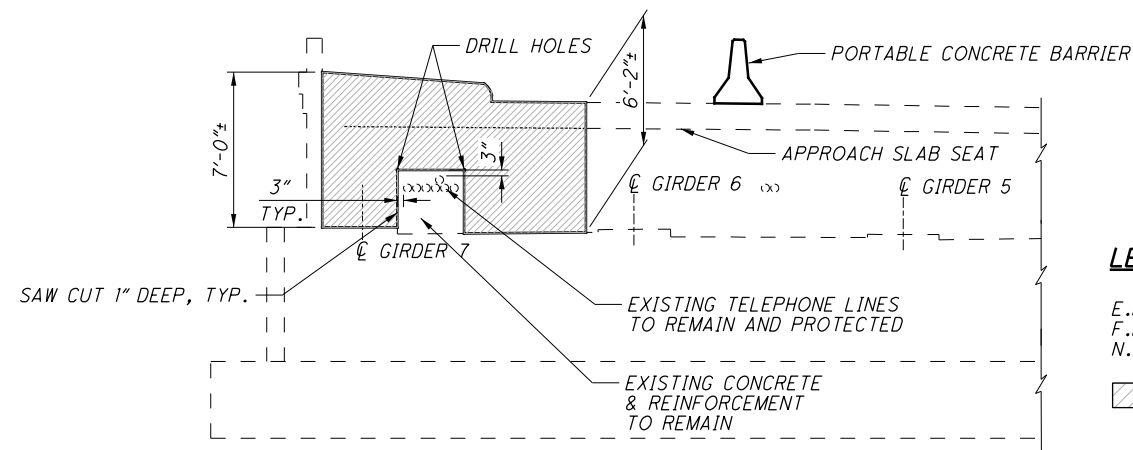
DESIGNED SJA CHECKED XAC	DRAWN SJA REVISED	REVIEWED DWL STRUCTURE FILE NUMBER 3115283	DATE 2/20/2017
RAILING DETAILS 2			
HAM-71-0875 KENNEDY AVE OVER IR-71			
HAM-IR71-8.42		PID No. 91826	
8 / 9		351 441	
DESIGN AGENCY BURGESS & NIPLÉ 309 PLUM ST. CINCINNATI OH			

P:\PR54704\HAM\91826\Design\Structures\HAM071_0875C_Sheets\071_0875C_SR003.dgn Sheet 10/26/2017 8:37:52 AM compton



NOTES:

1. ALL LABOR, EQUIPMENT AND MATERIALS REQUIRED FOR BACKWALL REMOVAL SHALL BE INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.



LEGEND:

E.F. = EACH FACE
 F.F. = FAR FACE
 N.F. = NEAR FACE

STRUCTURE REMOVAL

SOUTH ABUTMENT REMOVAL ELEVATION
 (PILES NOT SHOWN)

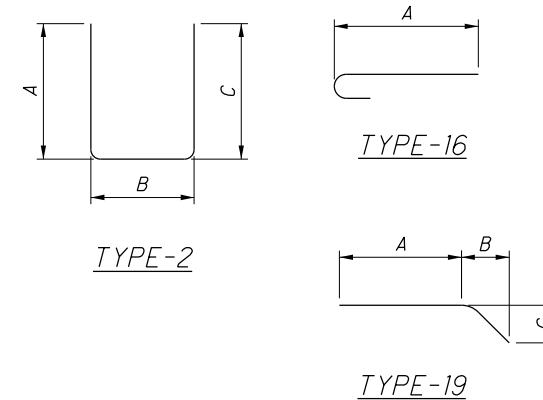
MARK	NUMBER		LENGTH	WEIGHT	TYPE	DIMENSIONS						
	TOTAL					A	B	C	D	E	R	INC
APPROACH SLAB REINFORCING STEEL LIST *												
AS501	5		8'-6"	44	STR							
	1 SR		1'-10"									
AS502	OF		TO	27	STR							1'-8"
	5		8'-6"									
AS503	2		11'-0"	23	STR							
AS801	16		2'-0"	85	STR							
	1 SR		7'-4"			6'-6"						
AS802	OF		TO	412	16	TO						0'-3/8"
	15		13'-3"			12'-5"						
	1 SR		13'-8"			12'-10"						
AS803	OF		TO	150	16	TO						0'-2 3/4"
	4		14'-4"			13'-6"						

* APPROACH SLAB REINFORCING PAYMENT IS INCLUDED WITH ITEM 526, REINFORCED CONCRETE APPROACH SLAB (T=13"), AS PER PLAN

MARK	NUMBER		LENGTH	WEIGHT	TYPE	DIMENSIONS						
	TOTAL					A	B	C	D	E	R	INC
ABUTMENT REINFORCING STEEL LIST												
A501	10		10'-6"	110	2	4'-8"	1'-5"	4'-8"				
A502	10		6'-0"	63	2	2'-8"	0'-11"	2'-8"				
A503	1		4'-8"	5	STR							
A504	5		10'-5"	54	STR							
A505	10		3'-1"	32	STR							
A506	4		9'-3"	39	STR							
A507	1		7'-8"	8	19	6'-2"	0'-11"	1'-3"				
A508	4		6'-4"	26	19	4'-11"	1'-0"	1'-0"				
A509	4		3'-0"	13	STR							
A601	20		5'-3"	158	STR							
	TOTAL WEIGHT			508								

NOTES

1. ALL BARS SHALL BE EPOXY COATED.
2. BAR DIMENSIONS SHOWN ARE OUT TO OUT AND RAD INDICATES INSIDE RADIUS.



EXISTING STRUCTURE

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
 SPANS: 46'-0", 66'-0", 46'-0"
 ROADWAY: VARIES
 LOADING: C.F. = 2000 (57)
 SKEW: 24°54'0" L.F.
 APPROACH SLABS: AS-1-54 (25'-0" LONG)
 ALIGNMENT: 3°0' CURVE TO LEFT
 SUPERELEVATION: 0.083
 STRUCTURAL FILE NUMBER: 3115313/3115321
 DATE BUILT: 1970

PROPOSED STRUCTURE

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
 SPANS: 46'-0", 66'-0", 46'-0"
 ROADWAY: VARIES
 LOADING: C.F. = 2000 (57)
 SKEW: 24°54'0" L.F.
 APPROACH SLABS: AS-1-54 (25'-0" LONG)
 ALIGNMENT: 3°0' CURVE TO LEFT
 SUPERELEVATION: 0.083
 COORDINATES: LATITUDE 39°10'11" N
 LONGITUDE 84°25'12" W

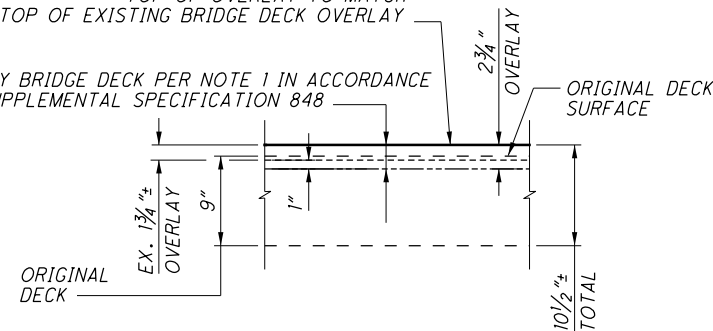
LEGEND

 REMOVE LMC OVERLAY AND INSTALL SDC OVERLAY

BTA-T1 = MGS BRIDGE TERMINAL ASSEMBLY TYPE 1 (SEE ROADWAY PLANS)
 BTA-T2 = MGS BRIDGE TERMINAL ASSEMBLY TYPE 2 (SEE ROADWAY PLANS)

TOP OF OVERLAY TO MATCH
 TOP OF EXISTING BRIDGE DECK OVERLAY

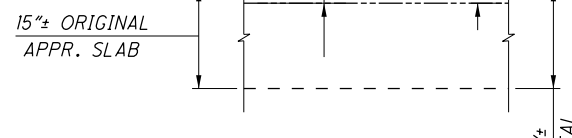
OVERLAY BRIDGE DECK PER NOTE 1 IN ACCORDANCE
 WITH SUPPLEMENTAL SPECIFICATION 848



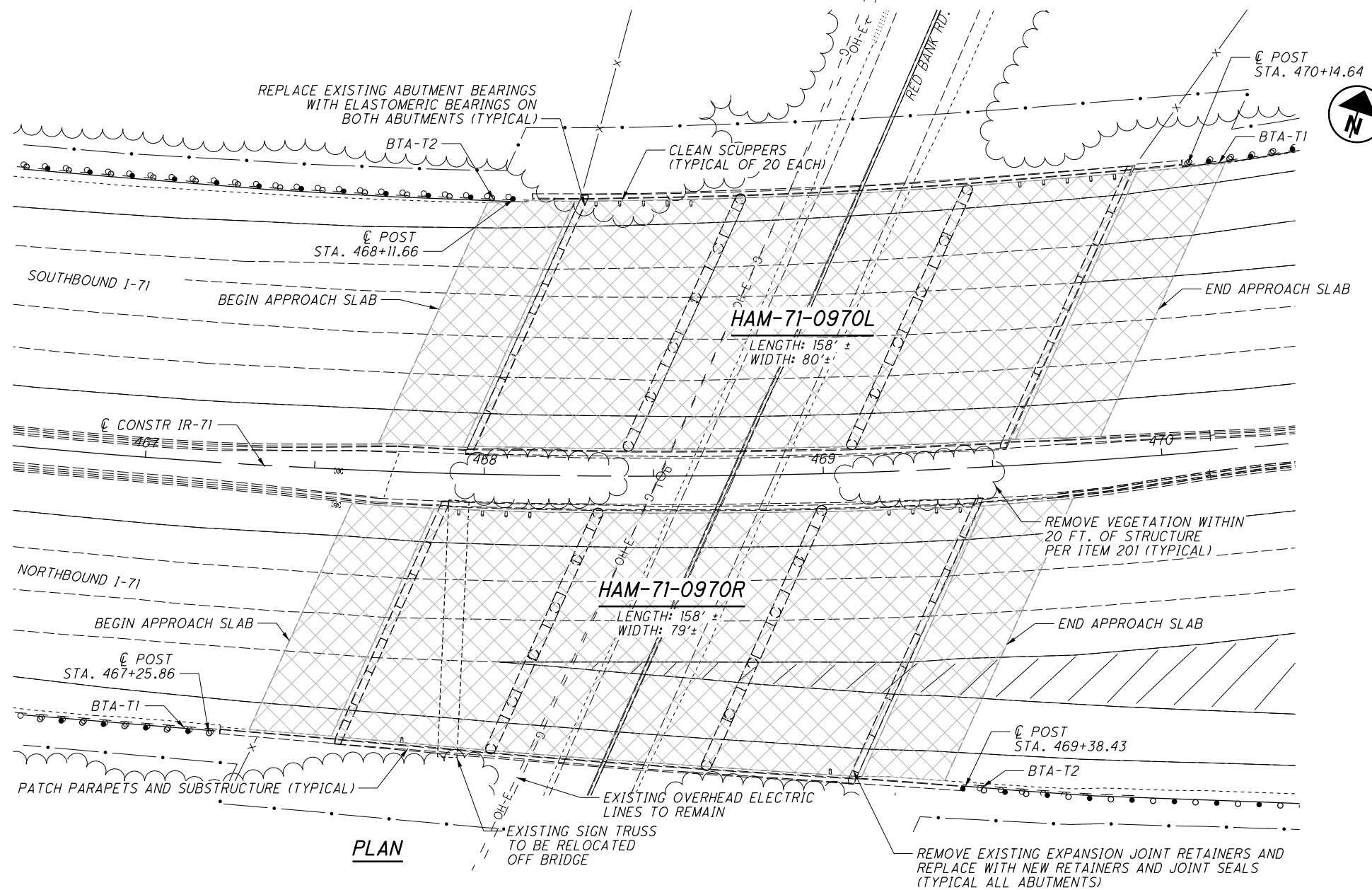
DECK SLAB OVERLAY DETAIL

TOP OF OVERLAY TO MATCH
 TOP OF EXISTING APPROACH SLAB

OVERLAY APPROACH SLAB PER NOTE 2 IN ACCORDANCE
 WITH SUPPLEMENTAL SPECIFICATION 848



APPROACH SLAB OVERLAY DETAIL



PLAN

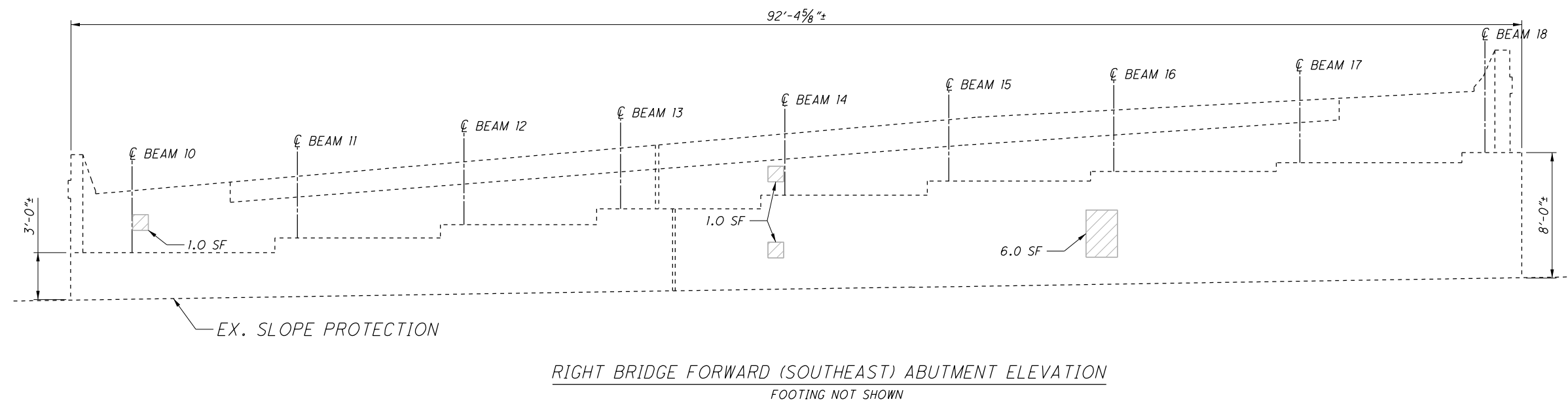
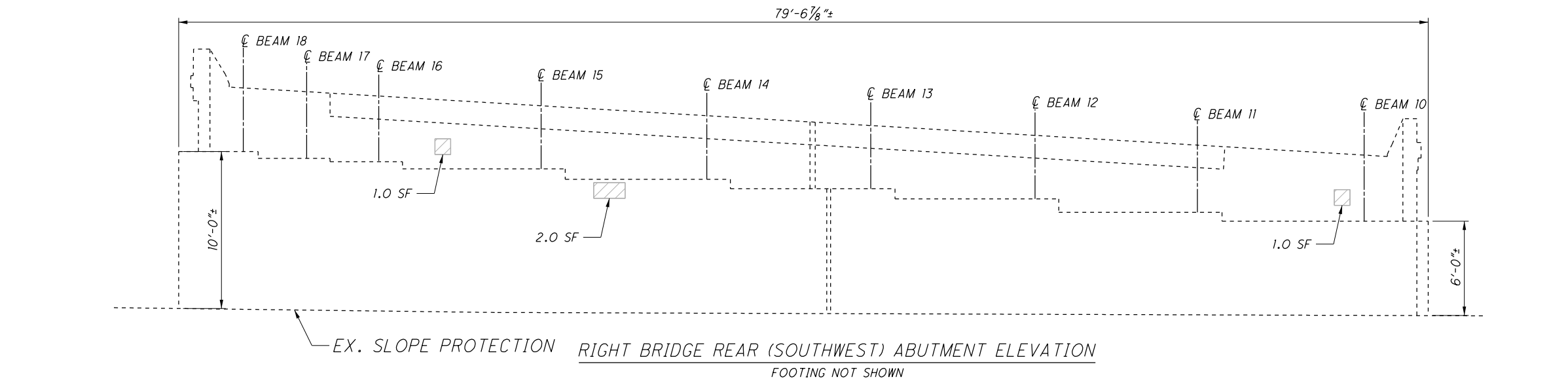
PROPOSED WORK:

1. REMOVE THE EXISTING 1 3/4" ± THICK LATEX MODIFIED CONCRETE OVERLAY AND 1" OF THE ORIGINAL CONCRETE USING HYDRODEMOLITION AND REPLACE WITH 2 3/4" THICK SUPERPLASTICIZED DENSE CONCRETE (SDC) OVERLAY ON THE DECK AND TOP OF BACKWALLS. REMOVE 1 3/4" OF THE ORIGINAL CONCRETE ON THE APPROACH SLABS USING HYDRODEMOLITION AND REPLACE WITH 1 3/4" OF SDC OVERLAY.
2. REMOVE EXISTING EXPANSION JOINT SEAL RETAINERS AND REPLACE WITH NEW RETAINERS AND STRIP SEALS.
3. RELOCATE EXISTING SIGN TRUSS DOWN TO PAINTED STRUCTURAL SUPPORTS OFF OF THE BRIDGE (SEE ROADWAY PLANS).
4. REPLACE EXISTING ABUTMENT SLIDING BEARINGS WITH ELASTOMERIC BEARINGS.
5. PATCH PARAPETS AND SUBSTRUCTURE PER ITEM 519 SPECIFICATIONS.
6. REMOVE VEGETATION WITHIN 20 FEET OF STRUCTURE.
7. ZONE PAINT STRUCTURAL STEEL USING ITEM 514 OZEU SPECIFICATIONS IN THE FOLLOWING AREAS:
 - a. WITHIN 10 FEET OF ABUTMENT EXPANSION JOINTS, FEDERAL COLOR 16440 GREY.
 - b. EXTERIOR OF THE FASCIA BEAMS INCLUDING THE BOTTOM OF THE BOTTOM FLANGE (INCLUDING PORTIONS OF SIGN TRUSS STRUCTURAL SUPPORTS THAT ARE TO REMAIN), FEDERAL COLOR 14277 GREEN.
 - c. HEAVILY CORRODED AREA OF INTERIOR SURFACE OF INTERIOR FASCIA BEAM OF NORTHBOUND BRIDGE, FEDERAL COLOR 16440 GREY.
 ALTERNATE BID ITEM FOR PAINTING ALL STRUCTURAL STEEL INSTEAD OF THE ZONE PAINTING NOTED ABOVE SHALL BE INCLUDED, FEDERAL COLOR 14277 GREEN.
9. REMOVE EXISTING SEALER AND SEAL THE ABUTMENTS, PIERS, PARAPETS AND DECK EDGES OF THE EXPOSED CONCRETE TO THE TYPICAL LIMITS SHOWN IN PLANS WITH EPOXY URETHANE SEALER, FEDERAL COLOR NUMBER 17778.
10. CLEAN SCUPPERS.
11. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH MAINTENANCE OF TRAFFIC PLANS AND NOTES.

DESIGN AGENCY BURGESS & NIPLÉ	DATE 2/20/2017	REVIEWED DWL	STRUCTURE FILE NUMBER 3115313/3115321	DESIGNED XAC	DRAWN XAC
311 PLUM ST. CINCINNATI OH				CHECKED SJA	REVISED
GENERAL PLAN					
HAM-71-0970L/R					
IR-71 OVER RED BANK ROAD					
HAM-IR71-8.42					
PID No. 91826					
1 / 7					
353 441					

P:\PR54704\HAM\91826\Design\Structures\HAM071_0970L_Sheets\01_0970L_SG001.dgn Sheet 10/26/2017 8:37:58 AM compton

P:\PR54704\HAM\91826\Design\Structures\HAM071_0970L\Sheets\071_0970L_SR001.dgn Sheet 10/26/2017 8:38:01 AM compton



LEGEND:

SF = SQUARE FEET

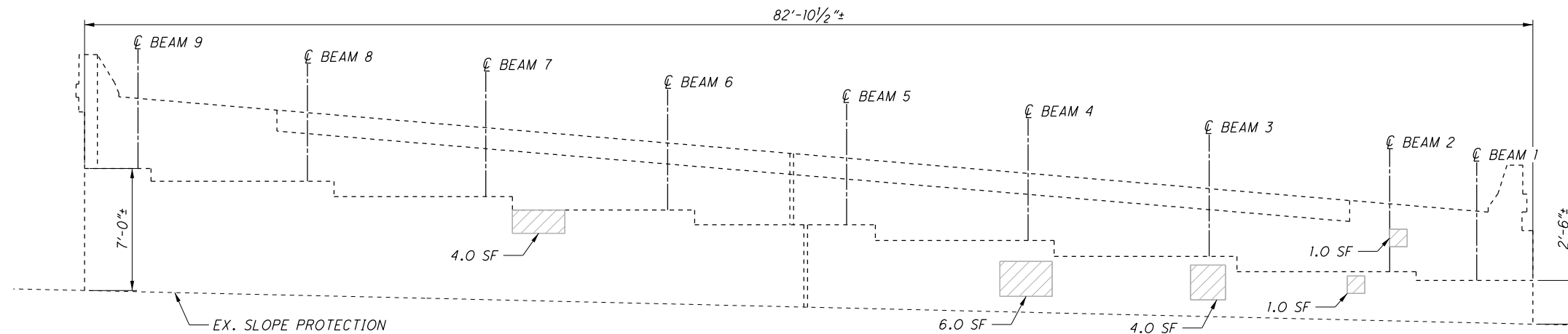
= APPROXIMATE LIMITS OF CONCRETE PATCHING

NOTES:

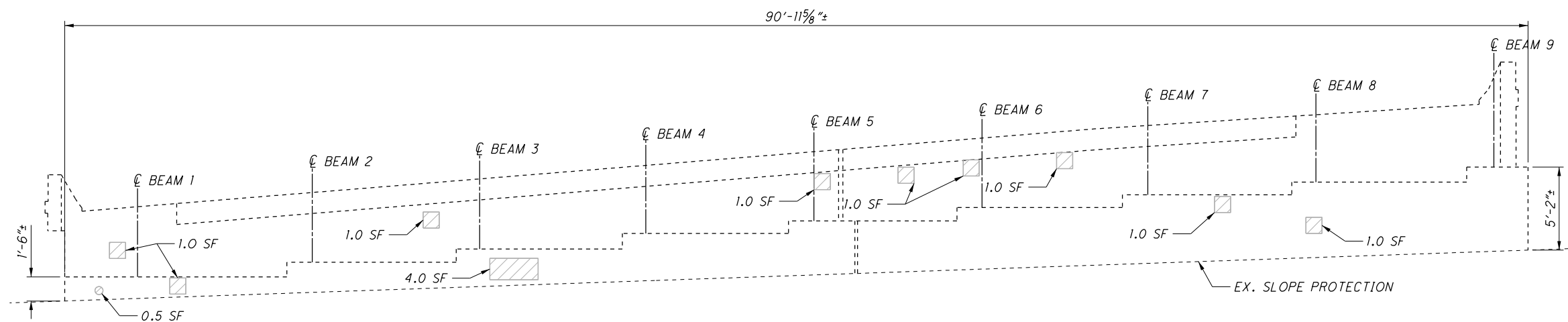
1. REPAIR APPROXIMATELY 13 SQUARE FEET OF DELAMINATED AND SPALLING AREAS OF THE ABUTMENTS BY PATCHING CONCRETE IN ACCORDANCE WITH ITEM 519 SPECIFICATIONS. 2 x 13 = 26 SQUARE FEET ARE INCLUDED IN THE ESTIMATED QUANTITIES TO OFFSET THE INCREASE IN DAMAGE FROM SURVEY TO REPAIR.
2. ABUTMENT ELEVATIONS ARE SHOWN WITH APPROXIMATE PATCHING BASED ON SOUNDINGS.

<p>HAM-IR71-8.42 PID No. 91826</p>	<p>ABUTMENT PATCHING ELEVATIONS HAM-71-0970R IR-71 OVER RED BANK ROAD</p>	<p>DESIGNED SJA CHECKED XAC</p>	<p>DRAWN SJA REVISED</p>	<p>REVIEWED DWL STRUCTURE FILE NUMBER 3115313/3115321</p>	<p>DATE 2/20/2017</p>	<p>DESIGN AGENCY BURGESS & NIPLÉ 312 PLUM ST. CINCINNATI OH</p>
<p>2 / 7</p>	<p>354 441</p>					

P:\PR54704\HAM\91826\Design\Structures\HAM071_0970L\Sheets\071_0970L_SR002.dgn Sheet 10/26/2017 8:38:03 AM compton



LEFT BRIDGE REAR (NORTHWEST) ABUTMENT ELEVATION
FOOTING NOT SHOWN



LEFT BRIDGE FORWARD (NORTHEAST) ABUTMENT ELEVATION
FOOTING NOT SHOWN

LEGEND:

SF = SQUARE FEET

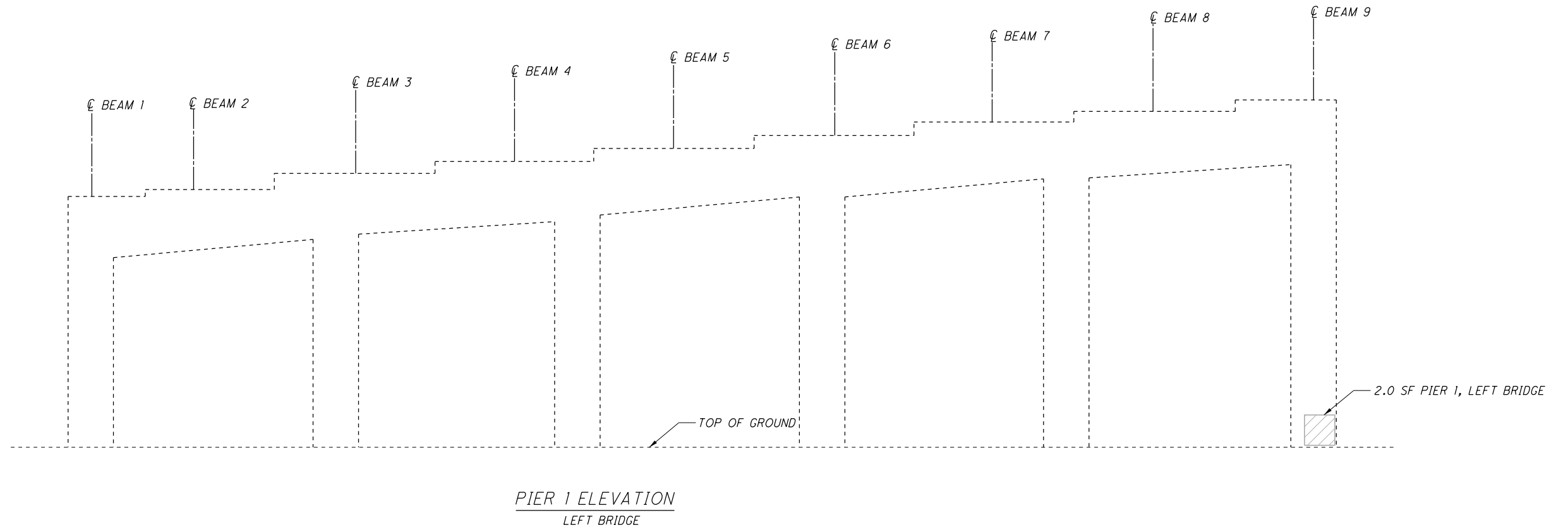
 = APPROXIMATE LIMITS OF CONCRETE PATCHING

NOTES:


- REPAIR APPROXIMATELY 29.5 SQUARE FEET OF DELAMINATED AND SPALLING AREAS OF THE ABUTMENTS BY PATCHING CONCRETE IN ACCORDANCE WITH ITEM 519 SPECIFICATIONS. $2 \times 29.5 = 59$ SQUARE FEET ARE INCLUDED IN THE ESTIMATED QUANTITIES TO OFFSET THE DAMAGE INCREASE BETWEEN SURVEY AND REPAIR.
- ABUTMENT ELEVATIONS ARE SHOWN WITH APPROXIMATE PATCHING BASED ON SOUNDINGS.

DESIGNED SJA		DRAWN SJA		REVIEWED DWL		DATE 2/20/2017		DESIGN AGENCY BURGESS & NIPL	
CHECKED XAC		REVISED		STRUCTURE FILE NUMBER 3115313/3115321		312 PLUM ST. CINCINNATI OH			
ABUTMENT PATCHING ELEVATIONS					HAM-71-0970L				
HAM-IR71-8.42					IR-71 OVER RED BANK ROAD				
PID No. 91826									
3 / 7									
355					441				

P:\PR54704\HAM\91826\Design\Structures\HAM071_0970L\Sheets\071_0970L_S1001.dgn Sheet 10/26/2017 8:38:05 AM compton



LEGEND:

- SF = SQUARE FEET
-  = APPROXIMATE LIMITS OF CONCRETE PATCHING

NOTES:

1. REPAIR APPROXIMATELY 2 SQUARE FEET OF DELAMINATED AND SPALLING AREAS OF THE PIERS BY PATCHING CONCRETE IN ACCORDANCE WITH ITEM 519 SPECIFICATIONS. 4 SQUARE FEET ARE INCLUDED IN THE ESTIMATED QUANTITIES TO OFFSET THE DAMAGE INCREASE BETWEEN SURVEY AND REPAIR.
2. PIER ELEVATION IS SHOWN WITH APPROXIMATE PATCHING BASED ON SOUNDINGS.
3. NO PATCHING REQUIRED ON PIER 1 RIGHT BRIDGE OR ON PIER 2.

<p>HAM-IR71-8.42 PID No. 91826</p>	<p>PIER PATCHING ELEVATIONS HAM-71-0970L IR-71 OVER RED BANK ROAD</p>	<p>DESIGNED SJA CHECKED XAC</p>	<p>DRAWN SJA REVISED</p>	<p>REVIEWED DWL STRUCTURE FILE NUMBER 3115313/3115321</p>	<p>DATE 2/20/2017</p>	<p>DESIGN AGENCY BURGESS & NIPLÉ 312 PLUM ST. CINCINNATI OH</p>
<p>4 / 7</p>	<p>356 441</p>					

LAMINATED ELASTOMERIC BEARINGS

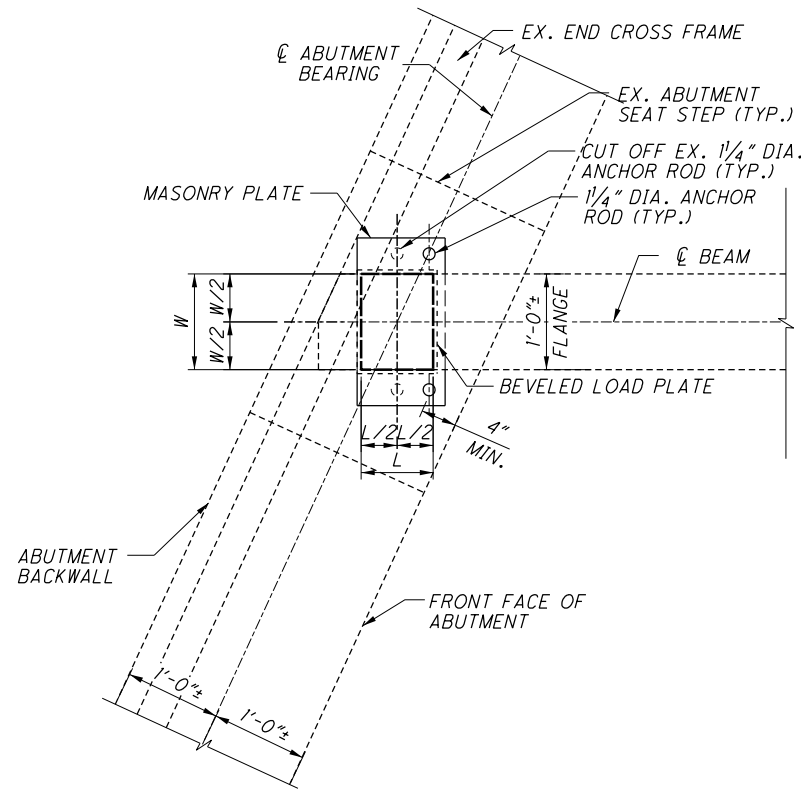
LOCATION	BEARING DIMENSIONS							STEEL LOAD PLATES	REACTIONS		MAX. SERVICE
	L	W	t _i	t _e	t _L	T	N	LENGTH x WIDTH x THICKNESS	DL	LL	DESIGN LOAD
REAR ABUTMENT (EXP.)	0'-9"	1'-0"	0.38"	NONE	0.0747"	2.17"	5	0'-10" x 1'-1" x VARIES	33 KIPS	53 KIPS	86 KIPS

t_i = THICKNESS OF INTERNAL LAMINATE
 t_e = THICKNESS OF EXTERNAL LAMINATE
 T = TOTAL THICKNESS OF ELASTOMERIC BEARING

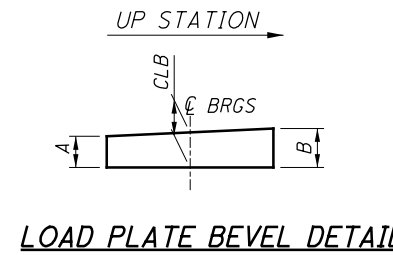
N = NO. INTERNAL ELASTOMERIC LAYERS
 t_L = INTERNAL STEEL LAMINATE THICKNESS
 DUROMETER OF ELASTOMER = 50 DUROMETER
 LOAD PLATE THICKNESS IS MEASURED AT CENTERLINE OF BEARINGS.

BEVEL DIMENSIONS ***

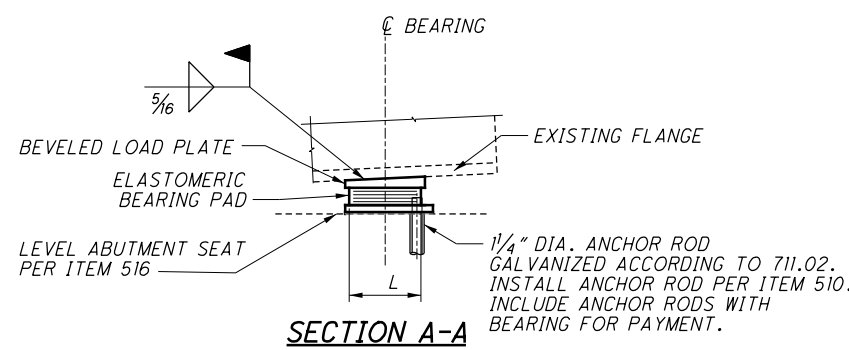
	BEAM	REAR ABUTMENT		
		A	B	CLB
LEFT BRIDGE	1	1 7/8" ±	2" ±	1 15/16" ±
	2	1 7/8" ±	1 15/16" ±	1 7/8" ±
	3	1 3/4" ±	1 13/16" ±	1 13/16" ±
	4	1 3/4" ±	1 13/16" ±	1 3/4" ±
	5	1 9/16" ±	1 9/16" ±	1 9/16" ±
	6	1 1/2" ±	1 9/16" ±	1 1/2" ±
	7	1 3/4" ±	1 13/16" ±	1 3/4" ±
	8	1 15/16" ±	1 15/16" ±	1 15/16" ±
	9	1 11/16" ±	1 5/8" ±	1 5/8" ±
RIGHT BRIDGE	10	1 1/2" ±	1 9/16" ±	1 1/2" ±
	11	1 11/16" ±	1 11/16" ±	1 11/16" ±
	12	1 5/8" ±	1 3/4" ±	1 11/16" ±
	13	1 11/16" ±	1 3/4" ±	1 11/16" ±
	14	2 1/8" ±	2 3/16" ±	2 1/8" ±
	15	1 13/16" ±	1 15/16" ±	1 7/8" ±
	16	1 3/4" ±	1 7/8" ±	1 13/16" ±
	17	1 3/4" ±	1 5/8" ±	1 11/16" ±
	18	2 1/8" ±	2 1/16" ±	2 1/16" ±



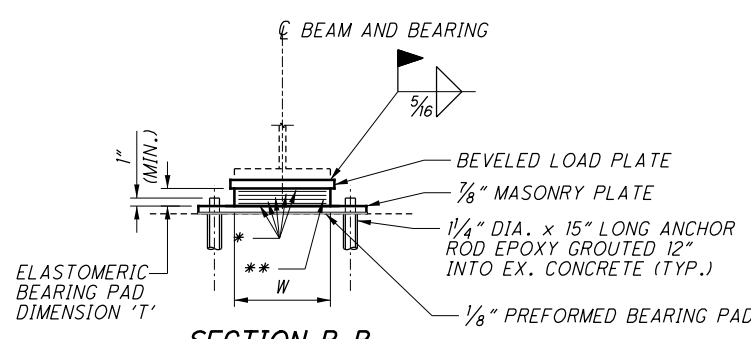
PLAN - REAR ABUTMENT BEARING



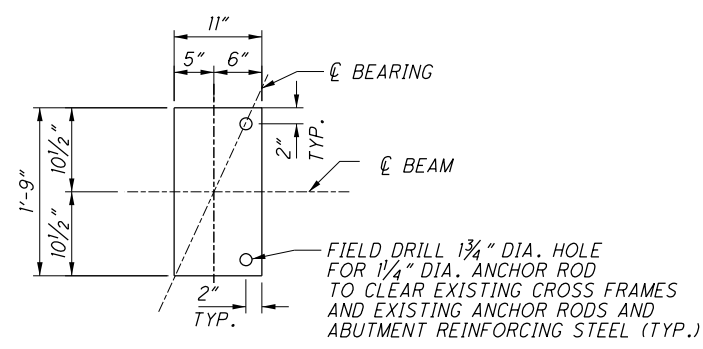
LOAD PLATE BEVEL DETAIL



SECTION A-A



SECTION B-B



PLAN - REAR ABUTMENT MASONRY PLATE

LEGEND:
 * = 'N' INTERNAL ELASTOMER LAYERS
 ** = (N-1) INTERNAL STEEL LAMINATES THICKNESS = 0.0747"

*** DIMENSIONS SHOWN ARE APPROXIMATE. FIELD VERIFY EXISTING BEARING DIMENSION PRIOR TO FABRICATION. THE CONTRACTOR SHALL ADJUST THE BEVELLED LOAD PLATE BASED ON THE DIFFERENCE BETWEEN HIS CALCULATED CENTER LINE BEARING HEIGHT AND THAT SHOWN IN THE PLANS.

SOME BEAM SEATS ARE NOT LEVEL AND WILL REQUIRE CONCRETE REPAIR PER ITEM 516 PRIOR TO SETTING NEW BEARINGS. THE CONTRACTOR IS TO ASSURE THAT HIS MODIFIED BEAM SEAT ELEVATIONS ARE IN AGREEMENT WITH HIS SUPPLIED BEARING HEIGHTS.

THE CONTRACTOR IS REQUIRED TO MEASURE THE EXISTING BOTTOM OF BEAM AND BEAM SEAT ELEVATIONS PRIOR TO THE JACKING OPERATIONS. THE CONTRACTOR IS TO SUBMIT THE ELEVATIONS TO SCOTT KRAMER, DISTRICT 8 BRIDGE DESIGN ENGINEER PRIOR TO THE JACKING OPERATIONS. APPROVAL OF THE ELEVATIONS IS NOT REQUIRED. THE CONTRACTOR IS TO VERIFY THE CENTER OF BEARING HEIGHT BY SUBTRACTING THE EXISTING BEAM SEAT ELEVATION FROM THE EXISTING BOTTOM OF BEAM ELEVATION AT THE BEARING CENTERLINE.

THE BEVELLED LOAD PLATE THICKNESS IS A CONTRACTOR CALCULATED DIMENSION AND ANY SHIMS NEEDED AS A RESULT OF THE CONTRACTOR'S ERROR WILL BE AT THE CONTRACTOR'S EXPENSE AND WILL NEED TO BE APPROVED BY THE DISTRICT 8 BRIDGE DESIGN ENGINEER.

FIELD MEASUREMENTS USED TO CALCULATE BEVEL DIMENSIONS WERE BASED ON EXISTING CONDITIONS AND DO NOT ACCOUNT FOR PROPOSED LEVEL BEAM SEATS.

NOTES:

- EACH BEARING ASSEMBLY SHALL BE SHOP MARKED WITH THE FOLLOWING INFORMATION: TOP, FORWARD STATION DIRECTION, LOCATION (REAR ABUTMENT), AND BEAM NAME. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED.
- ELASTOMERIC BEARINGS: THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED IN ACCORDANCE WITH SECTION 14.7.6 (METHOD A) OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. THE LONG-TERM COMPRESSION PROOF LOAD TEST (AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DIVISION II, SECTION 18.7.2.6) IS NOT REQUIRED.
- STEEL MATERIALS: ANCHOR RODS SHALL BE ASTM F1554, GRADE 55, GALVANIZED ACCORDING TO 711.02. THE STEEL LOAD PLATES AND MASONRY PLATES SHALL BE ASTM A709- GRADE 50 OR 50W STRUCTURAL STEEL AND BE CLEANED AND COATED. SURFACE PREPARATION AND PRIMING SHALL BE DONE IN THE SHOP AND BE INCLUDED IN THE PRICE BID FOR BEARINGS. FIELD COATS SHALL BE PER ITEM 514 AND ALSO INCLUDED IN THE PRICE BID FOR BEARINGS. FINISH PAINT COLOR TO MATCH EXISTING BEAMS.
- STEEL LOAD PLATE AND MASONRY PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.
- BASIS OF PAYMENT: THE UNIT PRICE BID SHALL INCLUDE ALL MATERIALS, LABOR, TESTING, STEEL LOAD PLATES, MASONRY PLATES, ANCHOR RODS AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS. PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE BID FOR EACH ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN.

P:\PR54704\HAM\91826\Design\Structures\HAM071_0970L_0970L_Sheets\071_0970L_Sheet.dgn Sheet 10/26/2017 8:38:07 AM compton

DESIGN AGENCY: BURGESS & NIPLE
 312 PLUM ST. CINCINNATI OH

DESIGNED: XAC
 CHECKED: SJA

DRAWN: XAC
 REVISED:

REVIEWED: DWL
 STRUCTURE FILE NUMBER: 3106667

DATE: 2/20/2017

REAR ABUTMENT BEARING DETAILS
 HAM-71-0970L/R
 I-71 OVER RED BANK ROAD

HAM-IR71-8.42
 PID No. 91826

5 / 7

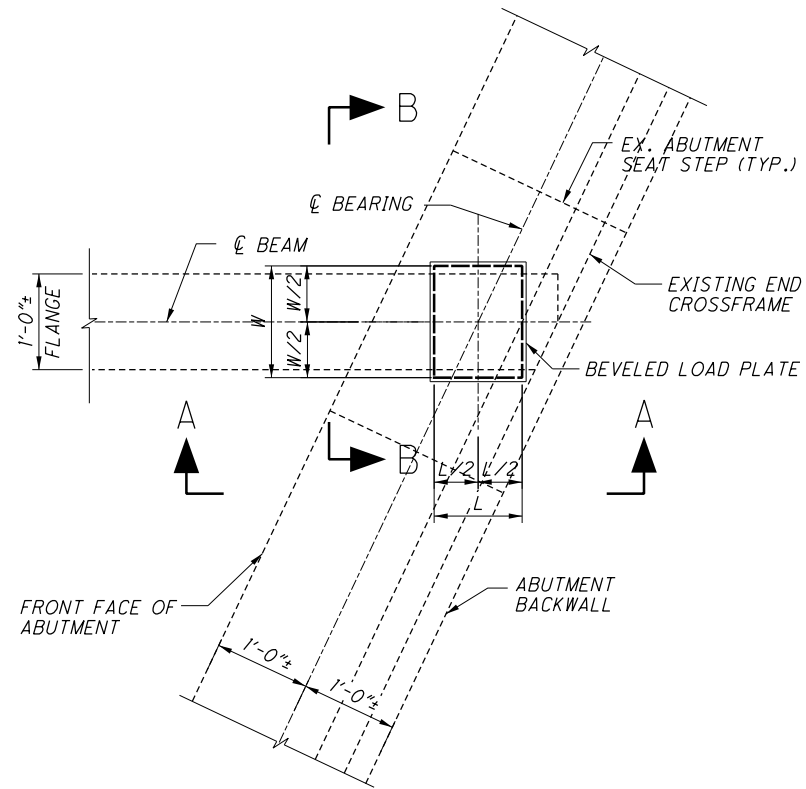
357
 441

LAMINATED ELASTOMERIC BEARINGS

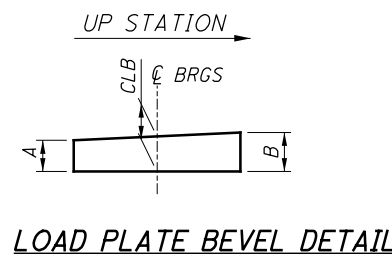
LOCATION	BEARING DIMENSIONS							STEEL LOAD PLATES	REACTIONS		MAX. SERVICE
	L	W	t _i	t _e	t _L	T	N	LENGTH x WIDTH x THICKNESS	DL	LL	DESIGN LOAD
FORWARD ABUTMENT (EXP.)	0'-11"	1'-2"	0.38"	0.26"	0.0747"	3.41"	7	1'-0" x 1'-3" X VARIES	35 KIPS	80 KIPS	115 KIPS

t_i = THICKNESS OF INTERNAL LAMINATE
 t_e = THICKNESS OF EXTERNAL LAMINATE
 T = TOTAL THICKNESS OF ELASTOMERIC BEARING

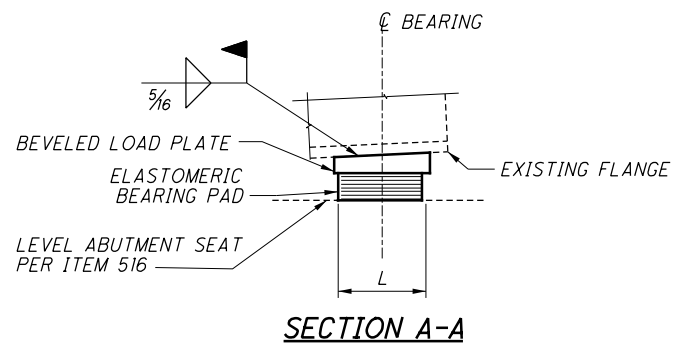
N = NO. INTERNAL ELASTOMERIC LAYERS
 t_L = INTERNAL STEEL LAMINATE THICKNESS
 DUROMETER OF ELASTOMER = 50 DUROMETER
 LOAD PLATE THICKNESS IS MEASURED AT CENTERLINE OF BEARINGS.



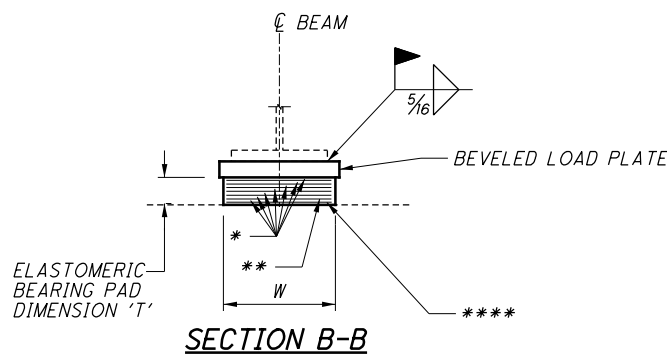
PLAN - FORWARD ABUTMENT BEARING



LOAD PLATE BEVEL DETAIL



SECTION A-A



SECTION B-B

LEGEND:

- * = 'N' INTERNAL ELASTOMER LAYERS
- ** = (N-1) INTERNAL STEEL LAMINATES THICKNESS = 0.0747"
- **** = EXTERNAL ELASTOMER LAYER

BEVEL DIMENSIONS ***

BEAM	FORWARD ABUTMENT		
	A	B	CLB
LEFT BRIDGE			
1	2 1/16" ±	2 1/8" ±	2 1/16" ±
2	1 3/8" ±	1 7/16" ±	1 3/8" ±
3	1 1/4" ±	1 5/16" ±	1 1/4" ±
4	1 1/4" ±	1 5/16" ±	1 1/4" ±
5	1 1/2" ±	1 9/16" ±	1 1/2" ±
6	2" ±	2" ±	2" ±
7	2 13/16" ±	2 13/16" ±	2 13/16" ±
8	2 1/4" ±	2 1/4" ±	2 1/4" ±
9	2 1/4" ±	2 5/16" ±	2 1/4" ±
RIGHT BRIDGE			
10	2 7/16" ±	2 7/16" ±	2 7/16" ±
11	1 11/16" ±	1 3/4" ±	1 11/16" ±
12	1 9/16" ±	1 11/16" ±	1 5/8" ±
13	1 7/16" ±	1 1/2" ±	1 7/16" ±
14	1 1/2" ±	1 1/2" ±	1 1/2" ±
15	1 3/4" ±	1 13/16" ±	1 3/4" ±
16	1 5/8" ±	1 5/8" ±	1 5/8" ±
17	1 1/2" ±	1 5/8" ±	1 9/16" ±
18	1 1/2" ±	1 5/8" ±	1 9/16" ±

***DIMENSIONS SHOWN ARE APPROXIMATE. FIELD VERIFY EXISTING BEARING DIMENSION PRIOR TO FABRICATION. THE CONTRACTOR SHALL ADJUST THE BEVELED LOAD PLATE BASED ON THE DIFFERENCE BETWEEN HIS CALCULATED CENTER LINE BEARING HEIGHT AND THAT SHOWN IN THE PLANS.

SOME BEAM SEATS ARE NOT LEVEL AND WILL REQUIRE CONCRETE REPAIR PER ITEM 516 PRIOR TO SETTING NEW BEARINGS. THE CONTRACTOR IS TO ASSURE THAT HIS MODIFIED BEAM SEAT ELEVATIONS ARE IN AGREEMENT WITH HIS SUPPLIED BEARING HEIGHTS.

THE CONTRACTOR IS REQUIRED TO MEASURE THE EXISTING BOTTOM OF BEAM AND BEAM SEAT ELEVATIONS PRIOR TO THE JACKING OPERATIONS. THE CONTRACTOR IS TO SUBMIT THE ELEVATIONS TO SCOTT KRAMER, DISTRICT 8 BRIDGE DESIGN ENGINEER PRIOR TO THE JACKING OPERATIONS. APPROVAL OF THE ELEVATIONS IS NOT REQUIRED. THE CONTRACTOR IS TO VERIFY THE CENTER OF BEARING HEIGHT BY SUBTRACTING THE EXISTING BEAM SEAT ELEVATION FROM THE EXISTING BOTTOM OF BEAM ELEVATION AT THE BEARING CENTERLINE.

THE BEVELED LOAD PLATE THICKNESS IS A CONTRACTOR CALCULATED DIMENSION AND ANY SHIMS NEEDED AS A RESULT OF THE CONTRACTOR'S ERROR WILL BE AT THE CONTRACTOR'S EXPENSE AND WILL NEED TO BE APPROVED BY THE DISTRICT 8 BRIDGE DESIGN ENGINEER.

FIELD MEASUREMENTS USED TO CALCULATE BEVEL DIMENSIONS WERE BASED ON EXISTING CONDITIONS AND DO NOT ACCOUNT FOR PROPOSED LEVEL BEAM SEATS.

NOTES:

- EACH BEARING ASSEMBLY SHALL BE SHOP MARKED WITH THE FOLLOWING INFORMATION: TOP, FORWARD STATION DIRECTION, LOCATION (FORWARD ABUTMENT) AND BEAM NAME. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED.
- ELASTOMERIC BEARINGS:
THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED IN ACCORDANCE WITH SECTION 14.7.6 (METHOD A) OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. THE LONG-TERM COMPRESSION PROOF LOAD TEST (AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DIVISION II, SECTION 18.7.2.6) IS NOT REQUIRED.
- STEEL MATERIALS:
THE STEEL LOAD PLATES SHALL BE ASTM A709- GRADE 50 OR 50W STRUCTURAL STEEL AND BE CLEANED AND COATED. SURFACE PREPARATION AND PRIMING SHALL BE DONE IN THE SHOP AND BE INCLUDED IN THE PRICE BID FOR BEARINGS. FIELD COATS SHALL BE PER ITEM 514 AND ALSO INCLUDED IN THE PRICE BID FOR BEARINGS. FINISH PAINT COLOR TO MATCH EXISTING BEAMS.
- STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.
- BASIS OF PAYMENT: THE UNIT PRICE BID SHALL INCLUDE ALL MATERIALS, LABOR, TESTING, STEEL LOAD PLATES AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS. PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE BID FOR EACH ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN.

P:\PR54704\HAM\91826\Design\Structures\HAM071_09701_Sheets\071_09701_SB002.dgn Sheet 10/26/2017 8:38:08 AM compton

DESIGN AGENCY: BURGESS & NIPLE
 312 PLUM ST. CINCINNATI, OH

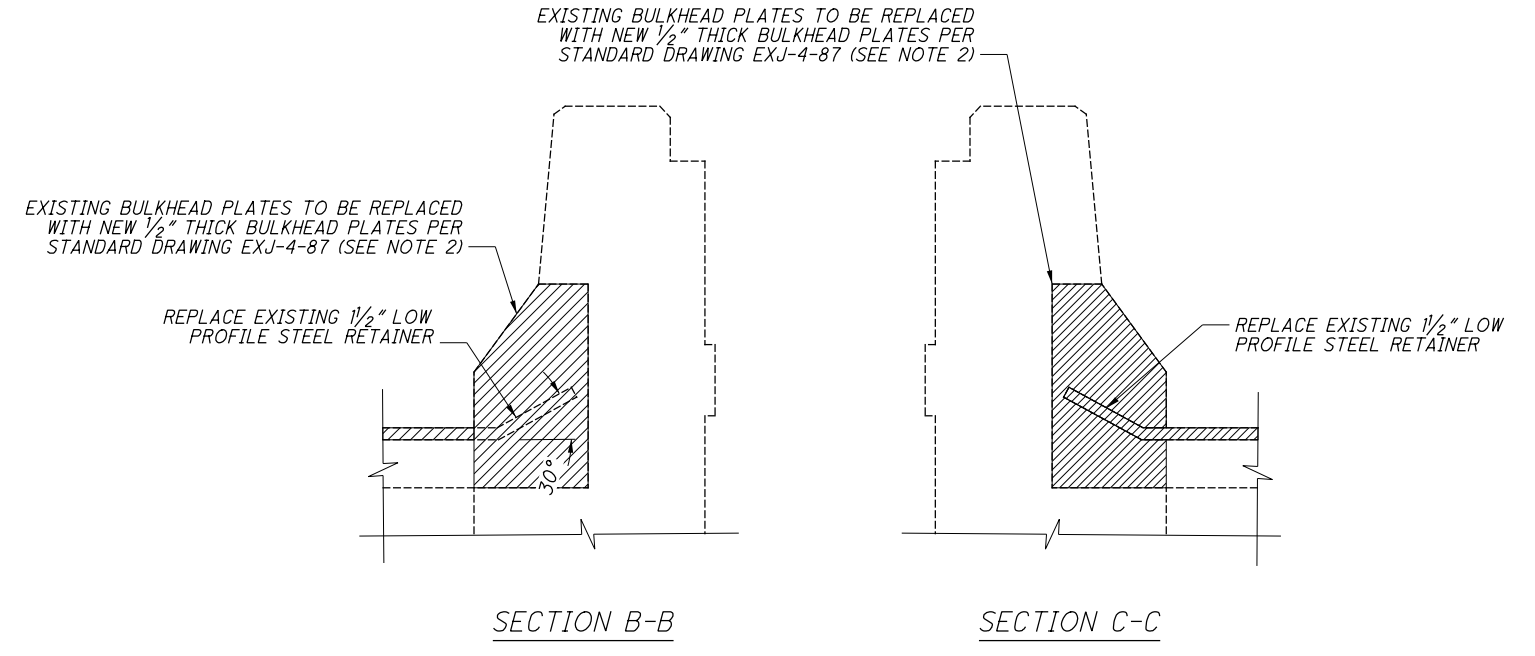
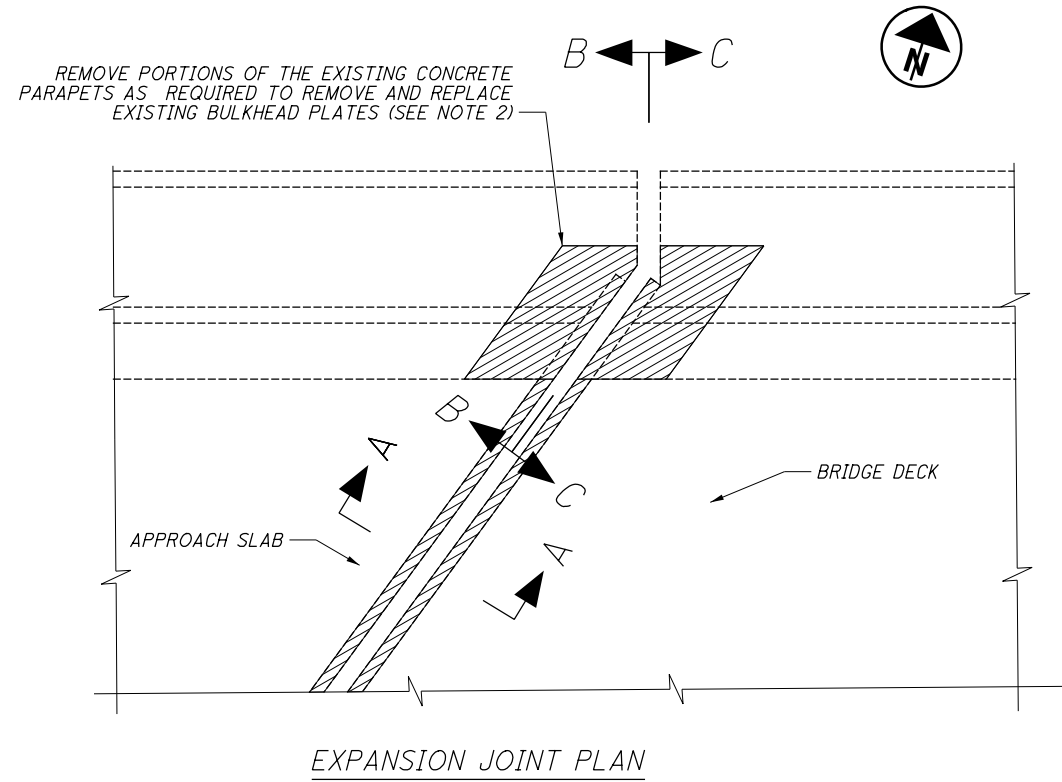
DATE: 2/20/2017
 FILE NUMBER: 3106667

REVIEWED: DWL
 DRAWN: XAC
 CHECKED: SJA

FORWARD ABUTMENT BEARING DETAILS
 HAM-71-09701/R
 I-71 OVER RED BANK ROAD

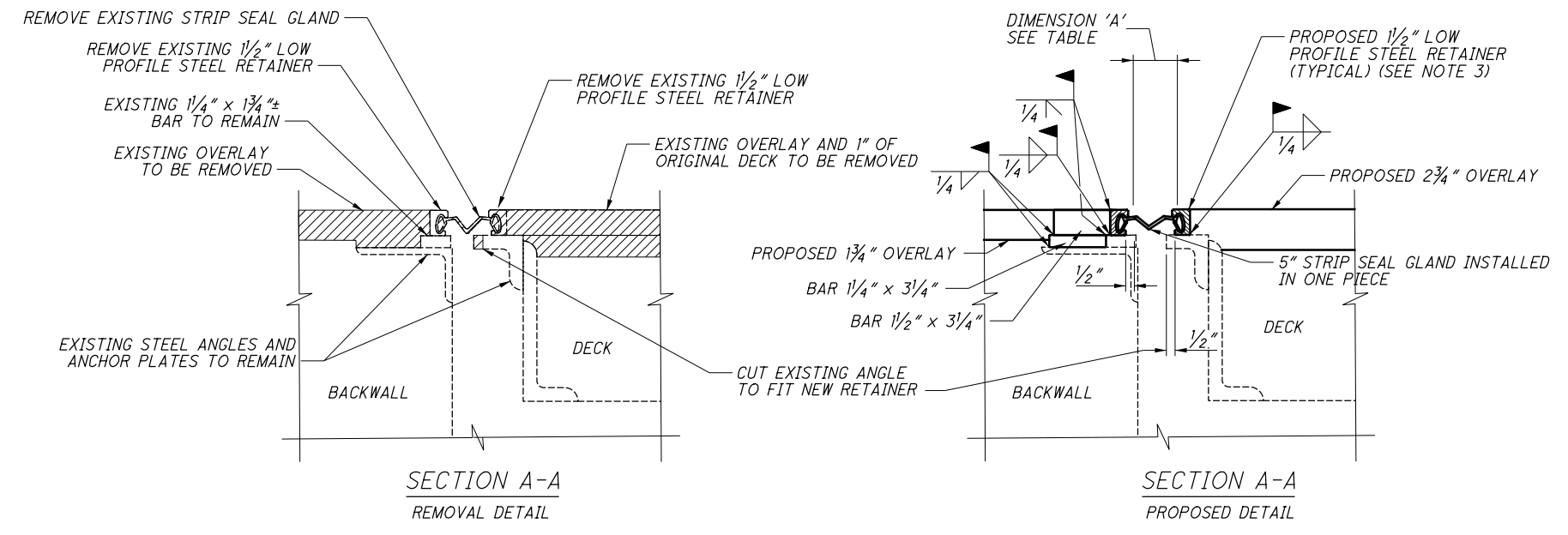
HAM-IR71-8.42
 PID No. 91826

6 / 7
 358
 441



EXPANSION JOINT TABLE - DIMENSION A

TEMPERATURE	REAR ABUT.	FWD. ABUT.
30°	3 1/2"	3 1/4"
40°	3 7/16"	3 3/16"
50°	3 5/16"	3 3/16"
60°	3 1/4"	3 1/8"
70°	3 3/16"	3 1/16"
80°	3 1/16"	3 1/16"
90°	3"	3"



LEGEND:

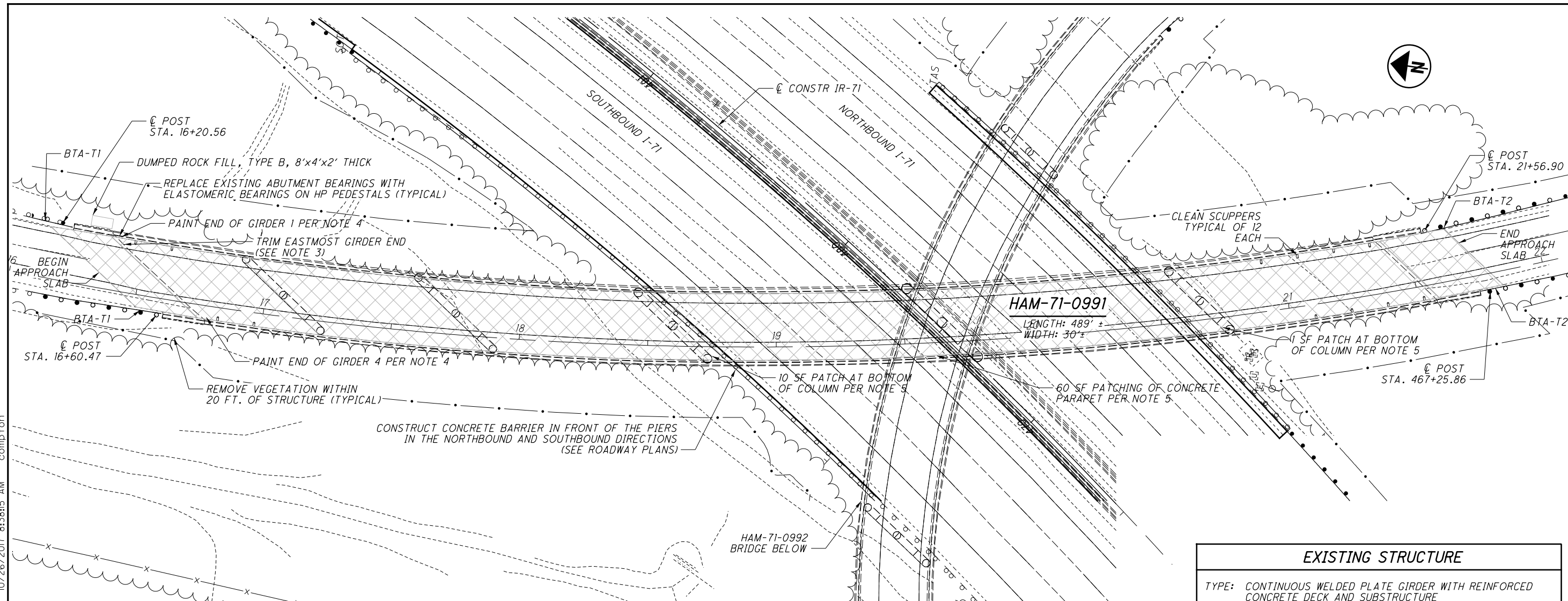


NOTES:

- CONTRACTOR SHALL REMOVE EXISTING RETAINERS AND DECK ANGLE AND GRIND EXISTING WELDS SMOOTH AND FLUSH WITH SURROUNDING SURFACE. THE COST OF ALL LABOR, EQUIPMENT AND MATERIALS REQUIRED TO REMOVE PORTIONS OF THE EXISTING EXPANSION JOINTS SHALL BE INCLUDED WITH THE UNIT PRICE FOR ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.
- CONTRACTOR SHALL REMOVE PORTIONS OF THE EXISTING CONCRETE PARAPETS AS REQUIRED TO REMOVE AND REPLACE EXISTING 1/2" THICK BULKHEAD PLATES AND STRIP SEAL RETAINERS IN THE PARAPETS. REMOVE CONCRETE AS REQUIRED TO PROVIDE 2" CLEAR FROM STUD ANCHORS. BEND AND TRIM EXISTING REINFORCING STEEL TO MAINTAIN 2" CLEAR. THE COST OF ALL LABOR, EQUIPMENT AND MATERIALS REQUIRED TO REMOVE EXISTING CONCRETE AND 1/2" BULKHEAD PLATES SHALL BE INCLUDED WITH ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FT. SPAN, AS PER PAN.
- CONTRACTOR SHALL FIELD CUT, WELD AND BEND PROPOSED STRIP SEAL RETAINERS TO FIT EXISTING JOINTS, EXCEPT FOR THE UPTURNS AT PARAPETS WHICH SHALL BE SHOP FABRICATED. STRIP SEAL JOINTS SHALL BE REMOVED AND REPLACED WITHIN MAINTENANCE OF TRAFFIC PHASING. COST FOR ALL LABOR MATERIALS AND EQUIPMENT FOR INSTALLING THE REPLACEMENT STRIP SEAL JOINTS SHALL BE INCLUDED WITH ITEM 516 - STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN.
- FOR ADDITIONAL STRIP SEAL DETAILS AND NOTES SEE STANDARD DRAWING EXJ-4-87.

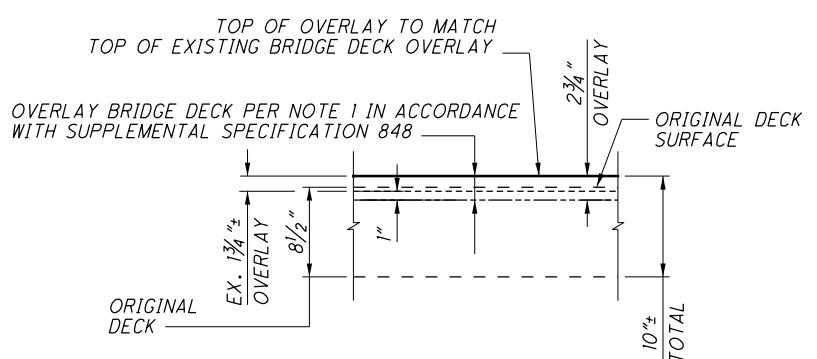
P:\PR54704\HAM\91826\Design\Structures\HAM071_09701\Sheets\071_09701_SX001.dgn Sheet 2/28/2018 8:30:30 AM chen

P:\PR54704\HAM\91826\Design\Structures\HAM071_0991C_Sheets\071_0991C_SG001.dgn Sheet 10/26/2017 8:38:15 AM comp ton



EXISTING STRUCTURE	
TYPE:	CONTINUOUS WELDED PLATE GIRDER WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS:	47'-0", 67'-0", 84'-0", 104'-0", 100'-0", 80'-0"
ROADWAY:	28'-0"± F/F PARAPET
LOADING:	C.F. = 400 (57)
SKEW:	43°23'17" R.F.
APPROACH SLABS:	AS-1-54 (25'-0" LONG)
ALIGNMENT:	4°0'0" CURVE LEFT
SUPERELEVATION:	0.0833
STRUCTURAL FILE NUMBER:	3115364
DATE BUILT:	1969

PROPOSED STRUCTURE	
TYPE:	CONTINUOUS WELDED PLATE GIRDER WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS:	47'-0", 67'-0", 84'-0", 104'-0", 100'-0", 80'-0"
ROADWAY:	28'-0"± F/F PARAPET
LOADING:	C.F. = 400 (57)
SKEW:	43°23'17" R.F.
APPROACH SLABS:	AS-1-54 (25'-0" LONG)
ALIGNMENT:	4°0'0" CURVE LEFT
SUPERELEVATION:	0.0833
COORDINATES:	LATITUDE 39°10'21" N LONGITUDE 84°23'58" W



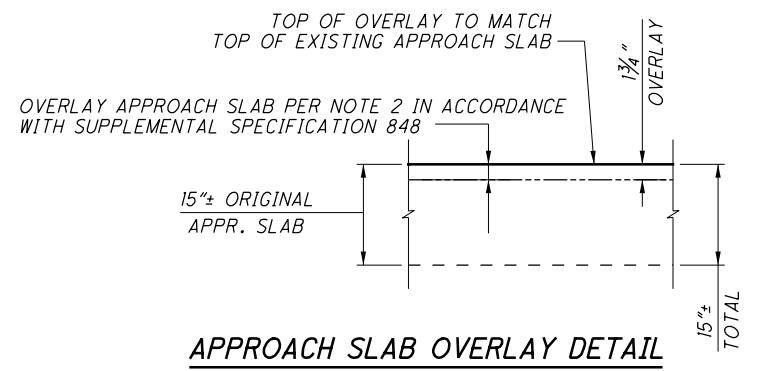
LEGEND

REMOVE LMC OVERLAY AND INSTALL SDC OVERLAY

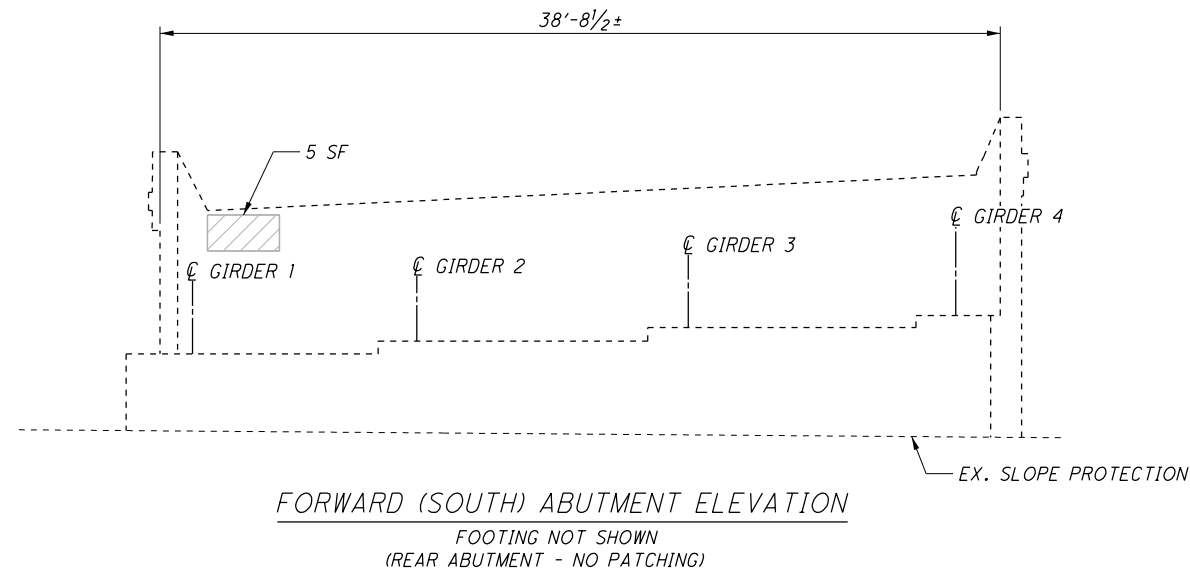
BTA-T1 = MGS BRIDGE TERMINAL ASSEMBLY TYPE 1 (SEE ROADWAY PLANS)
BTA-T2 = MGS BRIDGE TERMINAL ASSEMBLY TYPE 2 (SEE ROADWAY PLANS)

PROPOSED WORK:

1. REMOVE THE EXISTING 1 3/4"± THICK LATEX MODIFIED CONCRETE OVERLAY AND 1" OF THE ORIGINAL CONCRETE USING HYDRODEMOLITION AND REPLACE WITH 2 3/4" THICK SUPERPLASTICIZED DENSE CONCRETE (SDC) OVERLAY ON THE DECK AND TOP OF BACKWALLS. REMOVE 1 3/4" OF THE ORIGINAL CONCRETE USING HYDRODEMOLITION AND REPLACE WITH 1 3/4" OF SDC OVERLAY ON THE APPROACH SLABS.
2. REPLACE EXISTING ABUTMENT ROCKER BEARINGS WITH ELASTOMERIC BEARINGS ON HP PEDESTALS.
3. TRIM GIRDER ENDS TO ACHIEVE 2" CLEARANCE TO BACKWALL. PAYMENT INCLUDED WITH ITEM 513 - STRUCTURAL STEEL MISC.: TRIM BEAM ENDS.
4. REPAIR DAMAGED PAINT PER ITEM 514 - PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN.
5. PATCH PARAPETS AND SUBSTRUCTURE PER CMS ITEM 519 SPECIFICATIONS. 2 x 71 = 142 SQUARE FEET IS INCLUDED IN THE PARAPET AND PIER ESTIMATED QUANTITIES TO OFFSET DAMAGE INCREASE BETWEEN SURVEY AND REPAIR.
6. REMOVE VEGETATION WITHIN 20 FEET OF STRUCTURE.
7. SEAL THE ABUTMENTS, PIERS, PARAPETS AND DECK EDGES OF THE EXPOSED CONCRETE TO THE TYPICAL LIMITS SHOWN IN THE PLANS WITH EPOXY URETHANE SEALER, FEDERAL COLOR NUMBER 17778. THERE IS A SEPARATE PAY ITEM FOR SEALER REMOVAL.
8. CLEAN SCUPPERS.
9. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH MAINTENANCE OF TRAFFIC PLANS AND NOTES.



DESIGNED	SJA	CHECKED	XAC
DRAWN	SJA	REVISED	
REVIEWED	DWL	DATE	2/20/2017
DESIGN AGENCY	BURGESS & NIPLE		
STRUCTURE FILE NUMBER	3115364		
GENERAL PLAN	HAM-71-0991		
	RAMP FROM IR-715B TO RED BANK ROAD		
HAM-IR71-8.42	PID No. 91826		
1 / 4			
360	441		
	299 PLUM ST. - CINCINNATI OH		



LEGEND:

- SF = SQUARE FEET
- = APPROXIMATE LIMITS OF CONCRETE PATCHING

NOTES:

1. REPAIR APPROXIMATELY 5 SQUARE FEET OF DELAMINATED AND SPALLING AREAS OF THE ABUTMENTS BY PATCHING CONCRETE IN ACCORDANCE WITH ITEM 519 SPECIFICATIONS. 2 x 5 = 10 SQUARE FEET ARE INCLUDED IN THE ESTIMATED QUANTITIES TO OFFSET DAMAGE INCREASE BETWEEN SURVEY AND REPAIR.
2. ABUTMENT ELEVATIONS ARE SHOWN WITH APPROXIMATE PATCHING BASED ON SOUNDINGS.

HAM-IR71-8.42	ABUTMENT PATCHING ELEVATIONS	DATE 2/20/2017	DESIGN AGENCY BURGESS & NIPLÉ
PID No. 91826	HAM-71-0991 RAMP FROM IR-71SB TO RED BANK ROAD	REVIEWED DWL	300 PLUM ST. CINCINNATI OH
2 / 4		STRUCTURE FILE NUMBER 3115364	
361 441		DRAWN SJA	
		CHECKED XAC	
		REVISED	

LAMINATED ELASTOMERIC BEARINGS

LOCATION	BEARING DIMENSIONS							STEEL LOAD PLATES	REACTIONS	MAX. SERVICE	
	L	W	t _i	t _e	t _L	T	N	LENGTH x WIDTH x THICKNESS	DL	LL	DESIGN LOAD
REAR ABUTMENT (EXP.)	0'-11 1/2"	0'-11 1/2"	0.4"	0.28"	0.0747"	4.08"	8	TOP = 0'-11" x 1'-1" x 3/4" BOT. = 1'-0 1/2" x 1'-0 1/2" x 1/2"	34 KIPS	51 KIPS	85 KIPS

t_i = THICKNESS OF INTERNAL LAMINATE
t_e = THICKNESS OF EXTERNAL LAMINATE
T = TOTAL THICKNESS OF ELASTOMERIC BEARING

N = NO. INTERNAL ELASTOMERIC LAYERS
t_L = INTERNAL STEEL LAMINATE THICKNESS
DUROMETER OF ELASTOMER = 50 DUROMETER
LOAD PLATE THICKNESS IS MEASURED AT CENTERLINE OF BEARINGS.

HP POST DIMENSIONS ***

GIRDER	REAR ABUTMENT		
	A	B	CLB
G1	4 1/8" ±	4 3/8" ±	4 1/4" ±
G2	4 13/16" ±	4 7/8" ±	4 13/16" ±
G3	4 15/16" ±	5 1/8" ±	5 1/16" ±
G4	4 3/16" ±	4 1/2" ±	4 5/16" ±

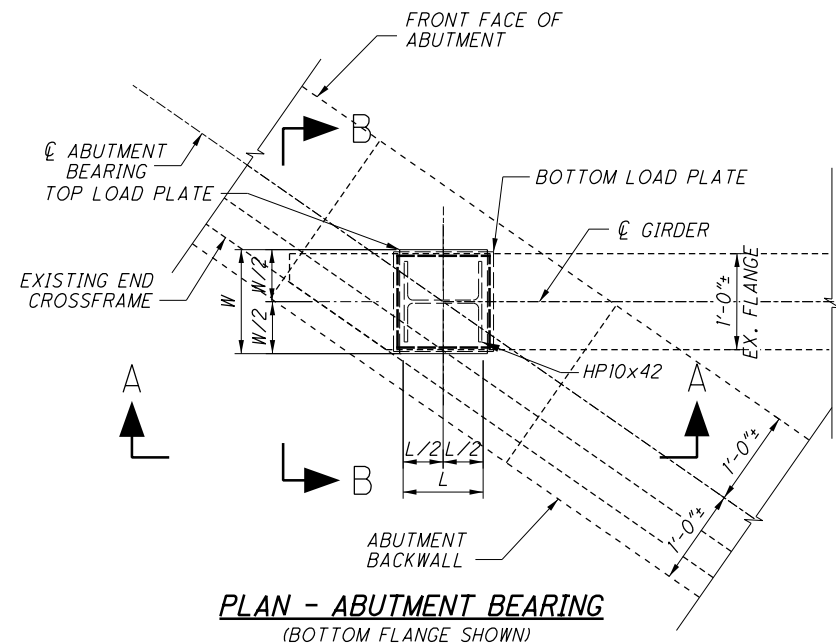
*** DIMENSIONS SHOWN ARE APPROXIMATE. FIELD VERIFY EXISTING BEARING DIMENSION PRIOR TO FABRICATION. THE CONTRACTOR SHALL ADJUST THE HP POST HEIGHT BASED ON THE DIFFERENCE BETWEEN HIS CALCULATED CENTER LINE BEARING HEIGHT AND THAT SHOWN ON THE PLANS. SOME GIRDER SEATS ARE NOT LEVEL AND WILL REQUIRE CONCRETE REPAIR PER ITEM 516 PRIOR TO SETTING NEW BEARINGS. THE CONTRACTOR IS TO ASSURE THAT HIS MODIFIED BEAM SEAT ELEVATIONS ARE IN AGREEMENT WITH HIS SUPPLIED BEARING HEIGHTS.

THE CONTRACTOR IS REQUIRED TO MEASURE THE EXISTING BOTTOM OF BEAM AND BEAM SEAT ELEVATIONS PRIOR TO THE JACKING OPERATIONS. THE CONTRACTOR IS TO SUBMIT THE ELEVATIONS TO SCOTT KRAMER, DISTRICT 8 BRIDGE DESIGN ENGINEER PRIOR TO THE JACKING OPERATIONS. APPROVAL OF THE ELEVATIONS IS NOT REQUIRED. THE CONTRACTOR IS TO VERIFY THE CENTER OF BEARING HEIGHT BY SUBTRACTING THE EXISTING BEAM SEAT ELEVATION FROM THE EXISTING BOTTOM OF BEAM ELEVATION AT THE BEARING CENTERLINE.

THE HP POST HEIGHT IS A CONTRACTOR CALCULATED DIMENSION AND ANY SHIMS NEEDED AS A RESULT OF THE CONTRACTOR'S ERROR WILL BE AT THE CONTRACTOR'S EXPENSE AND WILL NEED TO BE APPROVED BY THE DISTRICT 8 BRIDGE DESIGN ENGINEER.

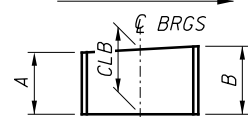
FIELD MEASUREMENTS USED TO CALCULATE HP POST DIMENSIONS WERE BASED ON EXISTING CONDITIONS AND DO NOT ACCOUNT FOR PROPOSED LEVEL BEAM SEATS.

THE CONTRACTOR CAN USE A MAXIMUM OF 3 PLATES WELDED TOGETHER TO REPLACE THE HP POST DETAILED ON THESE PLANS.

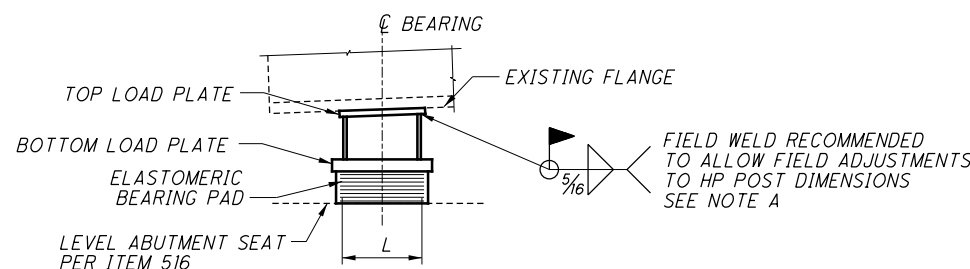


PLAN - ABUTMENT BEARING
(BOTTOM FLANGE SHOWN)

UP STATION

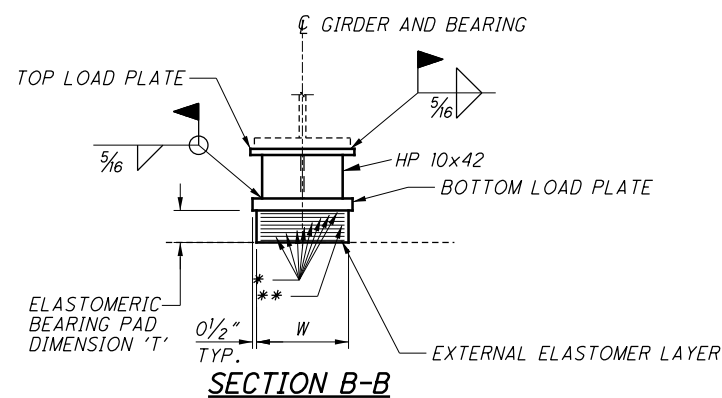


HP10x42 DETAIL



SECTION A-A

NOTE A: FIELD WELD THE HP SECTION TO THE TOP LOAD PLATE WITH THE HP SECTION AND TOP PLATE INVERTED SO THE FIELD WELD CAN BE PERFORMED IN THE DOWNHAND POSITION BEFORE FINAL INSTALLATION



SECTION B-B

LEGEND:

- * = 'N' INTERNAL ELASTOMER LAYERS
- ** = (N-1) INTERNAL STEEL LAMINATES THICKNESS = 0.0747"
- G1 = EAST MOST GIRDER

NOTES:

1. EACH BEARING ASSEMBLY SHALL BE SHOP MARKED WITH THE FOLLOWING INFORMATION: TOP, FORWARD STATION DIRECTION, LOCATION (REAR ABUTMENT) AND GIRDER NAME. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED.
2. ELASTOMERIC BEARINGS: THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED IN ACCORDANCE WITH SECTION 14.7.6 (METHOD A) OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. THE LONG- TERM COMPRESSION PROOF LOAD TEST (AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DIVISION II, SECTION 18.7.2.6) IS NOT REQUIRED.
3. STEEL MATERIALS: THE STEEL LOAD PLATES AND HP 10x42 SUPPORT PEDESTAL SHALL BE ASTM A709-GRADE 50 OR 50W STRUCTURAL STEEL AND BE CLEANED AND COATED. SURFACE PREPARATION AND PRIMING SHALL BE DONE IN THE SHOP AND BE INCLUDED IN THE PRICE BID FOR BEARINGS. FIELD COATS SHALL BE PER ITEM 514 AND ALSO INCLUDED IN THE PRICE BID FOR BEARINGS. FINISH PAINT COLOR TO MATCH EXISTING BEAMS.
4. THE BOTTOM STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.
5. BASIS OF PAYMENT: THE UNIT PRICE BID SHALL INCLUDE ALL MATERIALS, LABOR, TESTING, STEEL LOAD PLATES, HP 10x42 SUPPORT PEDESTAL AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS. PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE BID FOR ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN.

P:\PR54704\HAM\91826\Design\Structures\HAM071_0991C_Sheets\071_0991C_Sheet_10/26/2017 8:38:20 AM compton

DESIGN AGENCY: BURGESS & NIPLE
 301 PLUM ST. CINCINNATI, OH
 DATE: 2/20/2017
 STRUCTURE FILE NUMBER: 3115364
 REVIEWED: DWL
 DRAWN: XAC
 CHECKED: SJA
 DESIGNED: XAC
 REVISIONS: REVISED
 REAR ABUTMENT BEARING DETAILS
 HAM-71-0991
 RAMP FROM IR-715B TO RED BANK ROAD
 HAM-IR71-8.42
 PID No. 91826
 3 / 4
 362
 441

LAMINATED ELASTOMERIC BEARINGS

LOCATION	BEARING DIMENSIONS							STEEL LOAD PLATES	REACTIONS	MAX. SERVICE	
	L	W	t _i	t _e	t _L	T	N	LENGTH x WIDTH x THICKNESS	DL	LL	DESIGN LOAD
FORWARD ABUTMENT (EXP.)	1'-0"	1'-3"	0.60"	NONE	0.0747"	6.0"	9	TOP = 0'-11" x 1'-5" x 3/4" BOTTOM = 1'-1" x 1'-4" x 1/2"	62 KIPS	56 KIPS	118 KIPS

t_i = THICKNESS OF INTERNAL LAMINATE
t_e = THICKNESS OF EXTERNAL LAMINATE
T = TOTAL THICKNESS OF ELASTOMERIC BEARING

N = NO. INTERNAL ELASTOMERIC LAYERS
t_L = INTERNAL STEEL LAMINATE THICKNESS
DUROMETER OF ELASTOMER = 50 DUROMETER
LOAD PLATE THICKNESS IS MEASURED AT CENTERLINE OF BEARINGS.

GIRDER	HP POST DIMENSIONS ***		
	A	B	CLB
G1	4 15/16" ±	4 3/4" ±	4 7/8" ±
G2	3 7/16" ±	3 5/16" ±	3 3/8" ±
G3	3 5/16" ±	3 3/16" ±	3 1/4" ±
G4	2 15/16" ±	2 7/8" ±	2 15/16" ±

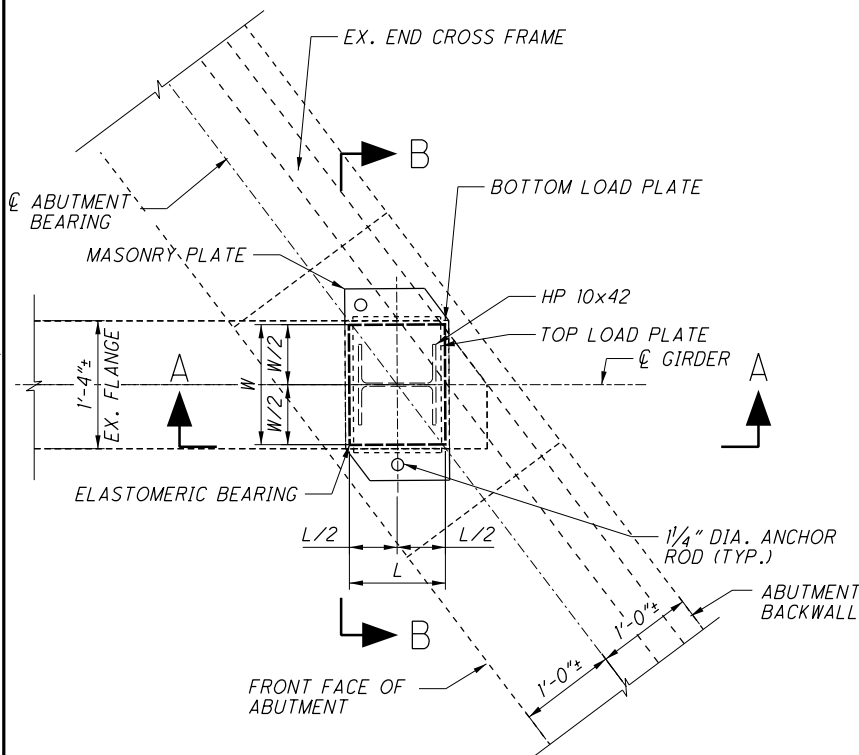
*** DIMENSIONS SHOWN ARE APPROXIMATE. FIELD VERIFY EXISTING BEARING DIMENSION PRIOR TO FABRICATION. THE CONTRACTOR SHALL ADJUST THE HP POST HEIGHT BASED ON THE DIFFERENCE BETWEEN HIS CALCULATED CENTER LINE BEARING HEIGHT AND THAT SHOWN ON THE PLANS. SOME GIRDER SEATS ARE NOT LEVEL AND WILL REQUIRE CONCRETE REPAIR PER ITEM 516 PRIOR TO SETTING NEW BEARINGS. THE CONTRACTOR IS TO ASSURE THAT HIS MODIFIED BEAM SEAT ELEVATIONS ARE IN AGREEMENT WITH HIS SUPPLIED BEARING HEIGHTS.

THE CONTRACTOR IS REQUIRED TO MEASURE THE EXISTING BOTTOM OF BEAM AND BEAM SEAT ELEVATIONS PRIOR TO THE JACKING OPERATIONS. THE CONTRACTOR IS TO SUBMIT THE ELEVATIONS TO SCOTT KRAMER, DISTRICT 8 BRIDGE DESIGN ENGINEER PRIOR TO THE JACKING OPERATIONS. APPROVAL OF THE ELEVATIONS IS NOT REQUIRED. THE CONTRACTOR IS TO VERIFY THE CENTER OF BEARING HEIGHT BY SUBTRACTING THE EXISTING BEAM SEAT ELEVATION FROM THE EXISTING BOTTOM OF BEAM ELEVATION AT THE BEARING CENTERLINE.

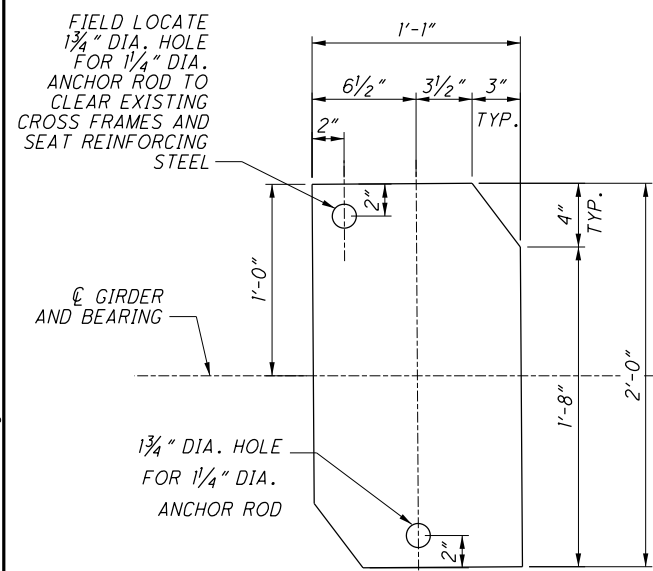
THE HP POST HEIGHT IS A CONTRACTOR CALCULATED DIMENSION AND ANY SHIMS NEEDED AS A RESULT OF THE CONTRACTOR'S ERROR WILL BE AT THE CONTRACTOR'S EXPENSE AND WILL NEED TO BE APPROVED BY THE DISTRICT 8 BRIDGE DESIGN ENGINEER.

FIELD MEASUREMENTS USED TO CALCULATE HP POST DIMENSIONS WERE BASED ON EXISTING CONDITIONS AND DO NOT ACCOUNT FOR PROPOSED LEVEL BEAM SEATS.

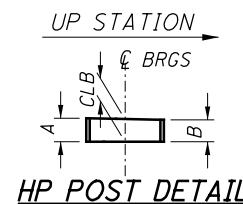
THE CONTRACTOR CAN USE A MAXIMUM OF 3 PLATES WELDED TOGETHER TO REPLACE THE HP POST DETAILED ON THESE PLANS.



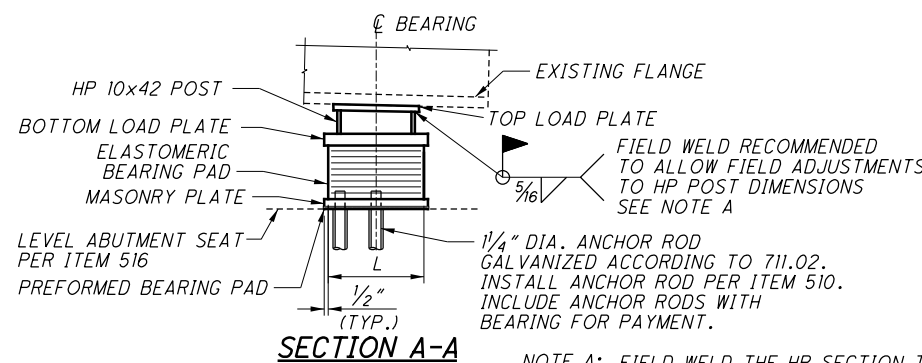
PLAN - ABUTMENT BEARING
(BOTTOM FLANGE SHOWN)



PLAN - MASONRY PLATE

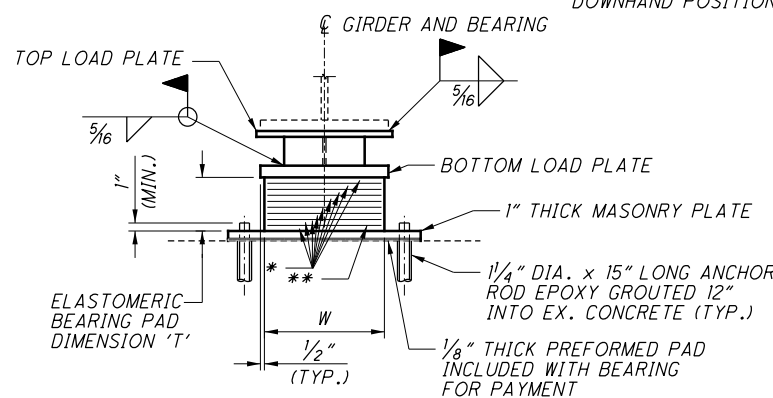


HP POST DETAIL



SECTION A-A

NOTE A: FIELD WELD THE HP SECTION TO THE TOP LOAD PLATE WITH THE HP SECTION AND TOP PLATE INVERTED SO THE FIELD WELD CAN BE PERFORMED IN THE DOWNHAND POSITION BEFORE FINAL INSTALLATION



SECTION B-B

LEGEND:

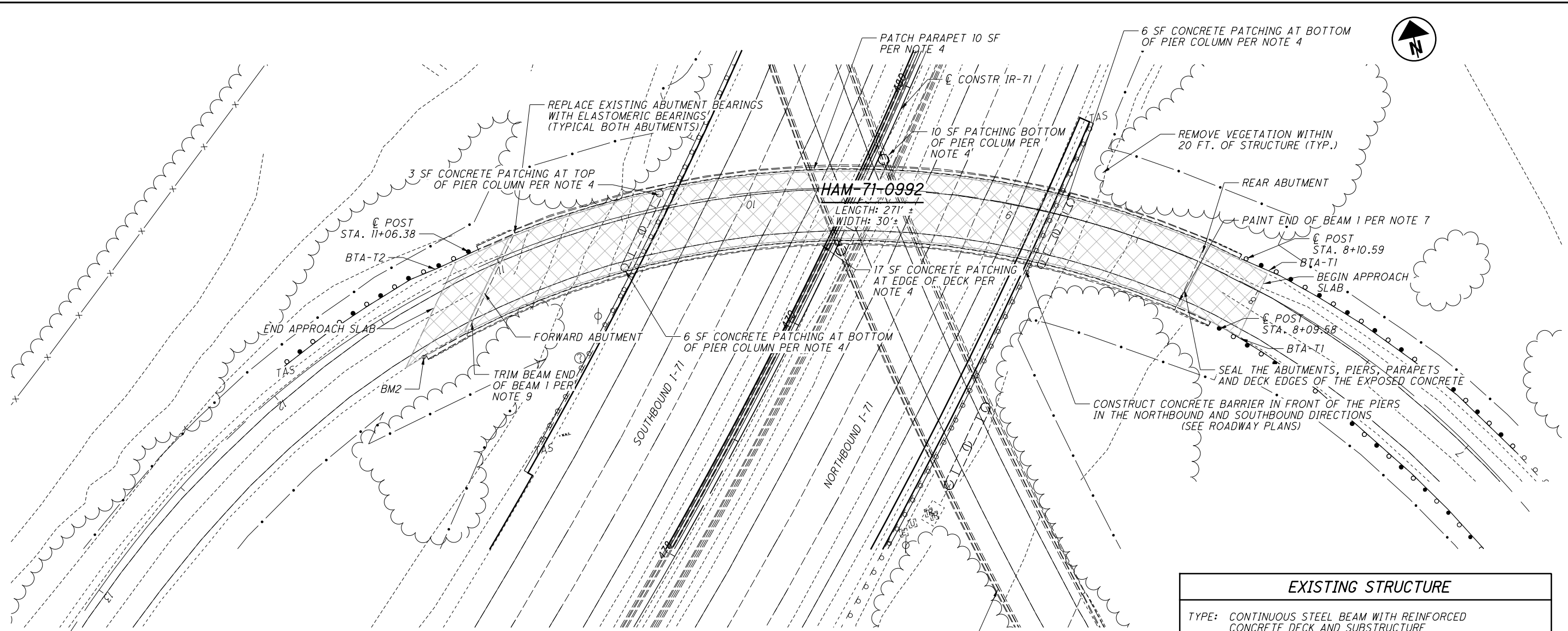
- * = 'N' INTERNAL ELASTOMER LAYERS
- ** = (N-1) INTERNAL STEEL LAMINATES THICKNESS = 0.0747"
- G1 = NORTH MOST GIRDER

NOTES:

1. EACH BEARING ASSEMBLY SHALL BE SHOP MARKED WITH THE FOLLOWING INFORMATION: TOP, FORWARD STATION DIRECTION, LOCATION (REAR ABUTMENT, FORWARD ABUTMENT) AND GIRDER NAME. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED.
2. ELASTOMERIC BEARINGS: THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED IN ACCORDANCE WITH SECTION 14.7.5 (METHOD B) OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. PERFORM THE LONG-TERM COMPRESSION PROOF LOAD TEST IN ACCORDANCE WITH THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DIVISION II, SECTION 18.7.2.6 AND 18.7.4.5.
3. STEEL MATERIALS: ANCHOR RODS SHALL BE ASTM F1554, GRADE 55, GALVANIZED ACCORDING TO 711.02. THE STEEL LOAD PLATES, HP 10x42 SUPPORT PEDESTAL AND MASONRY PLATES SHALL BE ASTM A709- GRADE 50 OR 50W STRUCTURAL STEEL AND BE CLEANED AND COATED. SURFACE PREPARATION AND PRIMING SHALL BE DONE IN THE SHOP AND BE INCLUDED IN THE PRICE BID FOR BEARINGS. FIELD COATS SHALL BE PER ITEM 514 AND ALSO INCLUDED IN THE PRICE BID FOR BEARINGS. FINISH PAINT COLOR TO MATCH EXISTING BEAMS.
4. STEEL LOAD PLATE AND MASONRY PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.
5. BASIS OF PAYMENT: THE UNIT PRICE BID SHALL INCLUDE ALL MATERIALS, LABOR, TESTING, STEEL LOAD PLATES, MASONRY PLATES, HP 10x42 SUPPORT PEDESTAL, ANCHOR RODS AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS. PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE BID FOR ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN.

P:\PR54704\HAM\91826\Design\Structures\HAM071_0991C_Sheets\071_0991C_Sheet.dgn Sheet 10/26/2017 8:38:22 AM compton

P:\PR54704\HAM\91826\Design\Structures\HAM071_0992C\Sheets\071_0992C_SG001.dgn Sheet 10/26/2017 8:38:26 AM compton



PLAN

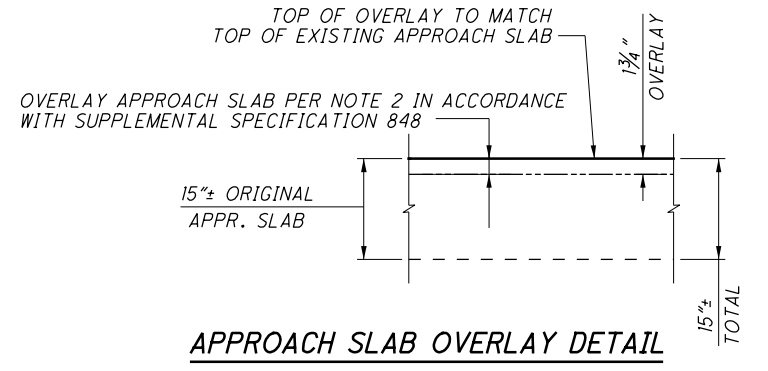
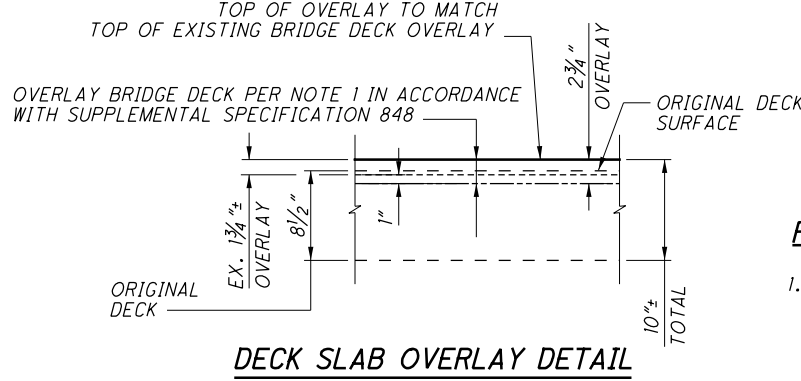
LEGEND
 REMOVE LMC OVERLAY AND INSTALL SDC OVERLAY
 BTA-T1 = MGS BRIDGE TERMINAL ASSEMBLY TYPE 1 (SEE ROADWAY PLANS)
 BTA-T2 = MGS BRIDGE TERMINAL ASSEMBLY TYPE 2 (SEE ROADWAY PLANS)
 SF = SQUARE FEET

PROPOSED WORK:

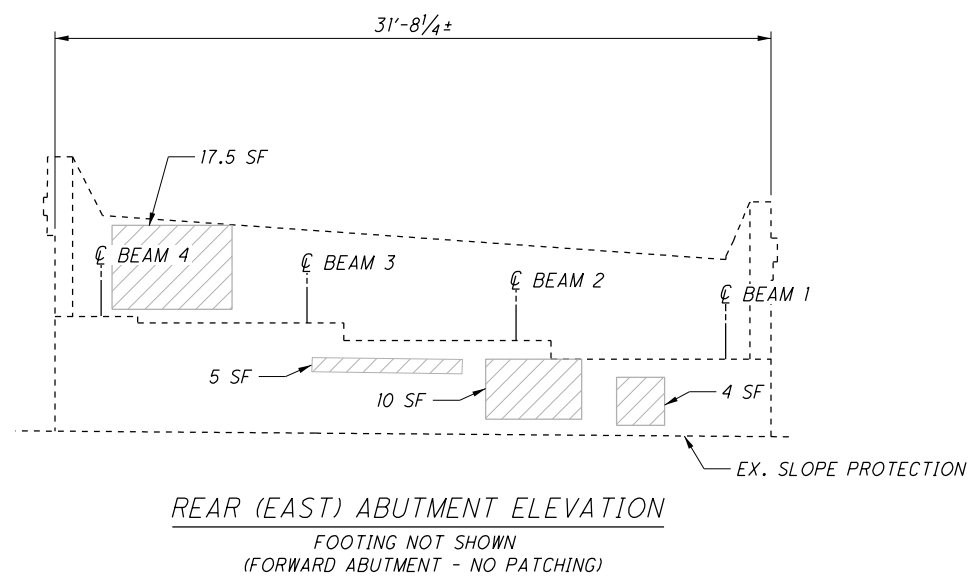
1. REMOVE THE EXISTING 1 3/4" THICK LATEX MODIFIED CONCRETE OVERLAY AND 1" OF THE ORIGINAL CONCRETE USING HYDRODEMOLITION AND REPLACE WITH 2 3/4" THICK SUPERPLASTICIZED DENSE CONCRETE (SDC) OVERLAY ON THE DECK AND TOP OF BACKWALLS. REMOVE 1 3/4" OF THE ORIGINAL CONCRETE USING HYDRODEMOLITION AND REPLACE WITH 1 3/4" OF SDC OVERLAY ON THE APPROACH SLABS.
2. REPLACE EXISTING ABUTMENT SLIDING BEARINGS WITH ELASTOMERIC BEARINGS.
3. REMOVE VEGETATION WITHIN 20 FEET OF STRUCTURE.
4. PATCH PARAPETS AND SUBSTRUCTURE PER CMS ITEM 519 SPECIFICATIONS. 2 x 36 = 72 SQUARE FEET ARE INCLUDED IN THE PARAPET AND PIER ESTIMATED QUANTITIES TO OFFSET DAMAGE INCREASE BETWEEN SURVEY AND REPAIR.
5. SEAL THE ABUTMENTS, PIERS, PARAPETS AND DECK EDGES OF THE EXPOSED CONCRETE TO THE TYPICAL LIMITS SHOWN IN THE PLANS WITH EPOXY URETHANE SEALER, FEDERAL COLOR NUMBER 17778. A SEPARATE PAY ITEM IS USED FOR SEALER REMOVAL.
6. PLACE CONCRETE BARRIER IN FRONT OF THE PIERS IN THE NORTHBOUND AND SOUTHBOUND DIRECTIONS (SEE ROADWAY PLANS.)
7. REPAIR DAMAGED PAINT WITH OZEU SPECIFICATIONS BY PAINTING LAST 5' OF NOTED BEAMS. COLOR TO MATCH EXISTING. PAY UNDER ITEM 514 - FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN.
8. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH MAINTENANCE OF TRAFFIC PLANS AND NOTES.
9. TRIM GIRDER END TO PROVIDE 2" CLEARANCE TO BACKWALL. PAY UNDER ITEM 513 - STRUCTURAL STEEL MISC.: TRIM BEAM ENDS.

EXISTING STRUCTURE
TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 53'-0", 75'-0", 84'-0", 59'-0"
ROADWAY: 28'-0"± F/F PARAPET
LOADING: C.F. = 400 (57)
SKEW: 24°15'12" L.F.
APPROACH SLABS: AS-1-54 (25'-0" LONG)
ALIGNMENT: 17°0'0" CURVE LEFT
SUPERELEVATION: 0.0833
STRUCTURAL FILE NUMBER: 3115372
DATE BUILT: 1969

PROPOSED STRUCTURE
TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 53'-0", 75'-0", 84'-0", 59'-0"
ROADWAY: 28'-0"± F/F PARAPET
LOADING: C.F. = 400 (57)
SKEW: 24°15'12" L.F.
APPROACH SLABS: AS-1-54 (25'-0" LONG)
ALIGNMENT: 17°0'0" CURVE LEFT
SUPERELEVATION: 0.0833
COORDINATES: LATITUDE 39°10'22" N LONGITUDE 84°23'57" W



GENERAL PLAN	DESIGN AGENCY BURGESS & NIPLE 303 PLUM ST. - CINCINNATI, OH	DATE 2/20/2017	STRUCTURE FILE NUMBER 3115372
DRAWN XAC	REVIEWED DWL	CHECKED XAC	REVISIONS SUJ
HAM-71-0992 RAMP FROM RED BANK TO IR-71 SB	HAM-71-0992 RAMP FROM RED BANK TO IR-71 SB	HAM-71-0992 RAMP FROM RED BANK TO IR-71 SB	HAM-71-0992 RAMP FROM RED BANK TO IR-71 SB
PID No. 91826	HAM-IR71-8.42	1 / 4	364 441



LEGEND:

SF = SQUARE FEET
 = APPROXIMATE LIMITS OF CONCRETE PATCHING

NOTES:

1. REPAIR APPROXIMATELY 37 SQUARE FEET OF DELAMINATED AND SPALLING AREAS OF THE ABUTMENTS BY PATCHING CONCRETE IN ACCORDANCE WITH ITEM 519 SPECIFICATIONS. 2 x 37 = 74 SQUARE FEET ARE INCLUDED IN THE ESTIMATED QUANTITIES TO OFFSET DAMAGE INCREASE BETWEEN SURVEY AND REPAIR.
2. ABUTMENT ELEVATION IS SHOWN WITH APPROXIMATE PATCHING BASED ON SOUNDINGS.

HAM-IR71-8.42	ABUTMENT PATCHING ELEVATION	DESIGNED SJA	DRAWN SJA	REVIEWED DWL	DATE 2/20/2017	DESIGN AGENCY BURGESS & NIPL
PID No. 91826	RAMP FROM RED BANK TO IR-71 SB	CHECKED XAC	REVISED	STRUCTURE FILE NUMBER 3115372		304 PLUM ST. CINCINNATI OH
2 / 4						
365 441						

LAMINATED ELASTOMERIC BEARINGS

LOCATION	BEARING DIMENSIONS							STEEL LOAD PLATES	REACTIONS		MAX. SERVICE
	L	W	t _i	t _e	t _L	T	N	LENGTH x WIDTH x THICKNESS	DL	LL	DESIGN LOAD
REAR ABUTMENT (EXP.)	0'-8"	0'-10"	0.45"	0.32"	0.0747"	2.94"	5	0'-9" x 1'-1" X VARIES	30 KIPS	45 KIPS	75 KIPS

t_i = THICKNESS OF INTERNAL LAMINATE
 t_e = THICKNESS OF EXTERNAL LAMINATE
 T = TOTAL THICKNESS OF ELASTOMERIC BEARING

N = NO. INTERNAL ELASTOMERIC LAYERS
 t_L = INTERNAL STEEL LAMINATE THICKNESS
 DUROMETER OF ELASTOMER = 50 DUROMETER
 LOAD PLATE THICKNESS IS MEASURED AT CENTERLINE OF BEARINGS.

BEAM	REAR ABUTMENT		
	A	B	CLB
1	2 1/4" ±	2 1/8" ±	2 3/16" ±
2	1 3/4" ±	1 5/8" ±	1 11/16" ±
3	2 1/8" ±	1 7/8" ±	2" ±
4	1 15/16" ±	1 11/16" ±	1 13/16" ±

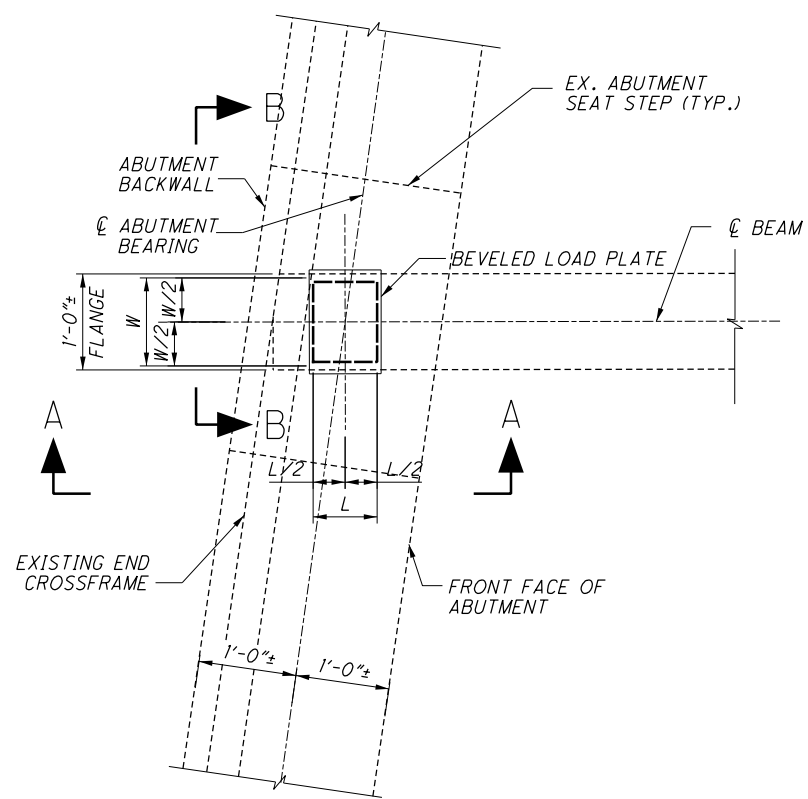
*** DIMENSIONS SHOWN ARE APPROXIMATE. FIELD VERIFY EXISTING BEARING DIMENSION PRIOR TO FABRICATION. THE CONTRACTOR SHALL ADJUST THE BEVELED LOAD PLATE BASED ON THE DIFFERENCE BETWEEN HIS CALCULATED CENTER LINE BEARING HEIGHT AND THAT SHOWN IN THE PLANS.

SOME BEAM SEATS ARE NOT LEVEL AND WILL REQUIRE CONCRETE REPAIR PER ITEM 516 PRIOR TO SETTING NEW BEARINGS. THE CONTRACTOR IS TO ASSURE THAT HIS MODIFIED BEAM SEAT ELEVATIONS ARE IN AGREEMENT WITH HIS SUPPLIED BEARING HEIGHTS.

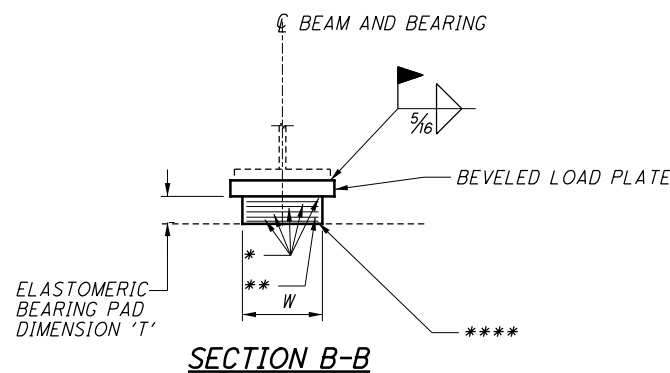
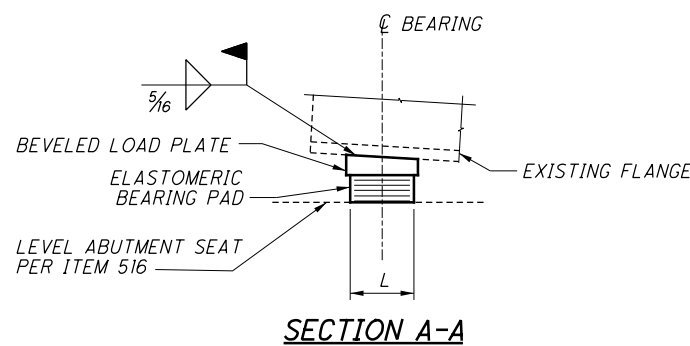
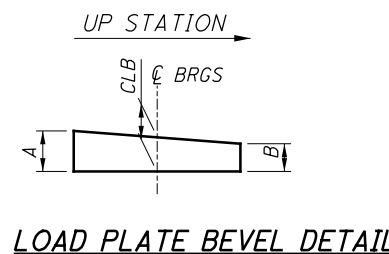
THE CONTRACTOR IS REQUIRED TO MEASURE THE EXISTING BOTTOM OF BEAM AND BEAM SEAT ELEVATIONS PRIOR TO THE JACKING OPERATIONS. THE CONTRACTOR IS TO SUBMIT THE ELEVATIONS TO SCOTT KRAMER, DISTRICT 8 BRIDGE DESIGN ENGINEER PRIOR TO THE JACKING OPERATIONS. APPROVAL OF THE ELEVATIONS IS NOT REQUIRED. THE CONTRACTOR IS TO VERIFY THE CENTER OF BEARING HEIGHT BY SUBTRACTING THE EXISTING BEAM SEAT ELEVATION FROM THE EXISTING BOTTOM OF BEAM ELEVATION AT THE BEARING CENTERLINE.

THE BEVELED LOAD PLATE THICKNESS IS A CONTRACTOR CALCULATED DIMENSION AND ANY SHIMS NEEDED AS A RESULT OF THE CONTRACTOR'S ERROR WILL BE AT THE CONTRACTOR'S EXPENSE AND WILL NEED TO BE APPROVED BY THE DISTRICT 8 BRIDGE DESIGN ENGINEER.

FIELD MEASUREMENTS USED TO CALCULATE BEVEL DIMENSIONS WERE BASED ON EXISTING CONDITIONS AND DO NOT ACCOUNT FOR PROPOSED LEVEL BEAM SEATS.



PLAN - REAR ABUTMENT BEARING



- LEGEND:**
- * = 'N' INTERNAL ELASTOMER LAYERS
 - ** = (N-1) INTERNAL STEEL LAMINATES THICKNESS = 0.0747"
 - **** = EXTERNAL ELASTOMER LAYER

NOTES:

1. EACH BEARING ASSEMBLY SHALL BE SHOP MARKED WITH THE FOLLOWING INFORMATION: TOP, FORWARD STATION DIRECTION, LOCATION (REAR ABUTMENT) AND BEAM NAME. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED.
2. ELASTOMERIC BEARINGS:
 THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED IN ACCORDANCE WITH SECTION 14.7.5 (METHOD B) OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. PERFORM THE LONG-TERM COMPRESSION PROOF LOAD TEST IN ACCORDANCE WITH THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DIVISION II, SECTION 18.7.2.6 AND 18.7.4.5.
3. STEEL MATERIALS:
 THE STEEL LOAD PLATES SHALL BE ASTM A709- GRADE 50 OR 50W STRUCTURAL STEEL AND BE CLEANED AND COATED. SURFACE PREPARATION AND PRIMING SHALL BE DONE IN THE SHOP AND BE INCLUDED IN THE PRICE BID FOR BEARINGS. FIELD COATS SHALL BE PER ITEM 514 AND ALSO INCLUDED IN THE PRICE BID FOR BEARINGS. FINISH PAINT COLOR TO MATCH EXISTING BEAMS.
4. STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.
5. BASIS OF PAYMENT: THE UNIT PRICE BID SHALL INCLUDE ALL MATERIALS, LABOR, TESTING, STEEL LOAD PLATES AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS. PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE BID FOR ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN.

P:\PR54704\HAM\91826\Design\Structures\HAM071_0992C\Sheets\071_0992C...SB001.dgn Sheet 10/26/2017 8:38:31 AM compton

DESIGN AGENCY: BURGESS & NIPLE
 305 PLUM ST. CINCINNATI OH
 DATE: 2/20/2017
 REVIEWED: DWL
 DRAWN: XAC
 CHECKED: SJA
 STRUCTURE FILE NUMBER: 3115372
 REAR ABUTMENT BEARING DETAILS
 HAM-71-0992
 RAMP FROM RED BANK TO IR-71 SB
 HAM-IR71-8.42
 PID No. 91826
 3/4
 366
 441

LAMINATED ELASTOMERIC BEARINGS

LOCATION	BEARING DIMENSIONS							STEEL LOAD PLATES	REACTIONS		MAX. SERVICE
	L	W	t _i	t _e	t _L	T	N	LENGTH x WIDTH x THICKNESS	DL	LL	DESIGN LOAD
FORWARD ABUTMENT (EXP.)	0'-8"	0'-11"	0.45"	0.32"	0.0747"	2.94"	5	0'-9" x 1'-1" X VARIES	33 KIPS	48 KIPS	81 KIPS

t_i = THICKNESS OF INTERNAL LAMINATE
 t_e = THICKNESS OF EXTERNAL LAMINATE
 T = TOTAL THICKNESS OF ELASTOMERIC BEARING

N = NO. INTERNAL ELASTOMERIC LAYERS
 t_L = INTERNAL STEEL LAMINATE THICKNESS
 DUROMETER OF ELASTOMER = 50 DUROMETER
 LOAD PLATE THICKNESS IS MEASURED AT CENTERLINE OF BEARINGS.

BEAM	BEVEL DIMENSIONS ***		
	FORWARD ABUTMENT		
	A	B	CLB
1	1 15/16" ±	1 3/4" ±	1 13/16" ±
2	2 3/16" ±	1 15/16" ±	2 1/16" ±
3	2 5/16" ±	1 15/16" ±	2 1/8" ±
4	1 15/16" ±	1 11/16" ±	1 13/16" ±

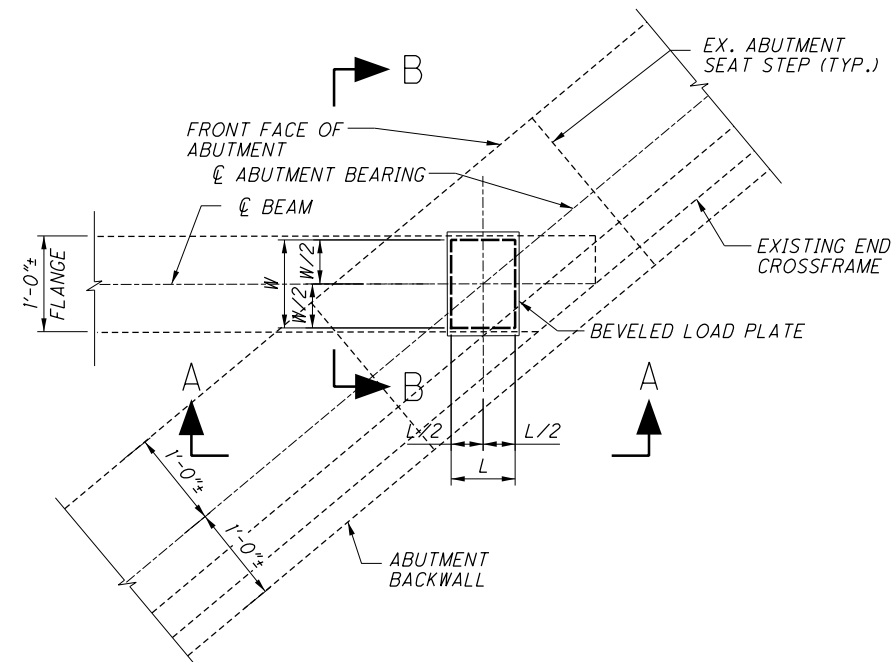
***DIMENSIONS SHOWN ARE APPROXIMATE. FIELD VERIFY EXISTING BEARING DIMENSION PRIOR TO FABRICATION. THE CONTRACTOR SHALL ADJUST THE BEVELED LOAD PLATE BASED ON THE DIFFERENCE BETWEEN HIS CALCULATED CENTER LINE BEARING HEIGHT AND THAT SHOWN IN THE PLANS.

SOME BEAM SEATS ARE NOT LEVEL AND WILL REQUIRE CONCRETE REPAIR PER ITEM 516 PRIOR TO SETTING NEW BEARINGS. THE CONTRACTOR IS TO ASSURE THAT HIS MODIFIED BEAM SEAT ELEVATIONS ARE IN AGREEMENT WITH HIS SUPPLIED BEARING HEIGHTS.

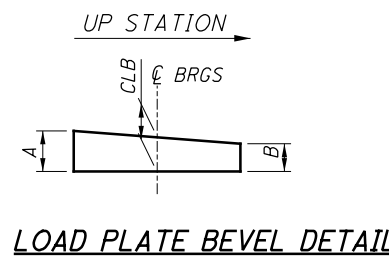
THE CONTRACTOR IS REQUIRED TO MEASURE THE EXISTING BOTTOM OF BEAM AND BEAM SEAT ELEVATIONS PRIOR TO THE JACKING OPERATIONS. THE CONTRACTOR IS TO SUBMIT THE ELEVATIONS TO SCOTT KRAMER, DISTRICT 8 BRIDGE DESIGN ENGINEER PRIOR TO THE JACKING OPERATIONS. APPROVAL OF THE ELEVATIONS IS NOT REQUIRED. THE CONTRACTOR IS TO VERIFY THE CENTER OF BEARING HEIGHT BY SUBTRACTING THE EXISTING BEAM SEAT ELEVATION FROM THE EXISTING BOTTOM OF BEAM ELEVATION AT THE BEARING CENTERLINE.

THE BEVELED LOAD PLATE THICKNESS IS A CONTRACTOR CALCULATED DIMENSION AND ANY SHIMS NEEDED AS A RESULT OF THE CONTRACTOR'S ERROR WILL BE AT THE CONTRACTOR'S EXPENSE AND WILL NEED TO BE APPROVED BY THE DISTRICT 8 BRIDGE DESIGN ENGINEER.

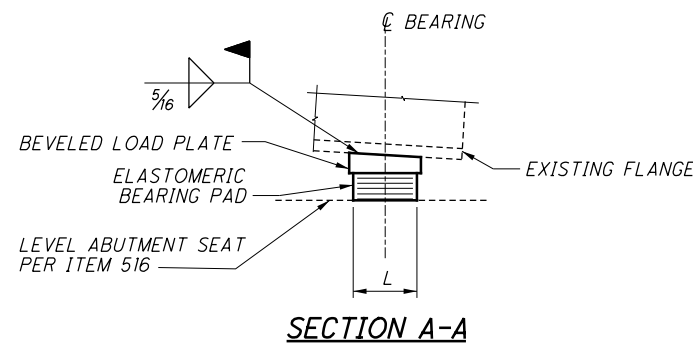
FIELD MEASUREMENTS USED TO CALCULATE BEVEL DIMENSIONS WERE BASED ON EXISTING CONDITIONS AND DO NOT ACCOUNT FOR PROPOSED LEVEL BEAM SEATS.



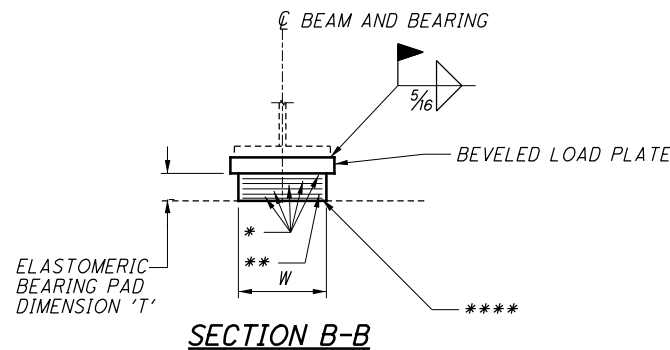
PLAN - FORWARD ABUTMENT BEARING



LOAD PLATE BEVEL DETAIL



SECTION A-A



SECTION B-B

LEGEND:

- * = 'N' INTERNAL ELASTOMER LAYERS
- ** = (N-1) INTERNAL STEEL LAMINATES THICKNESS = 0.0747"
- **** = EXTERNAL ELASTOMER LAYER

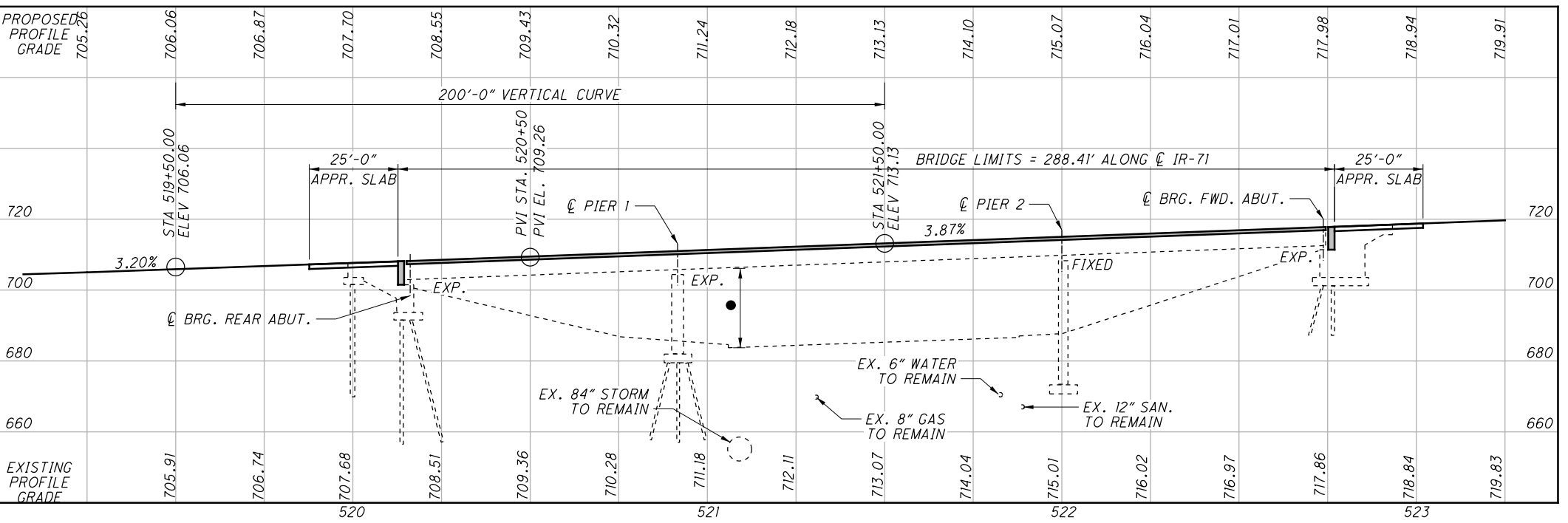
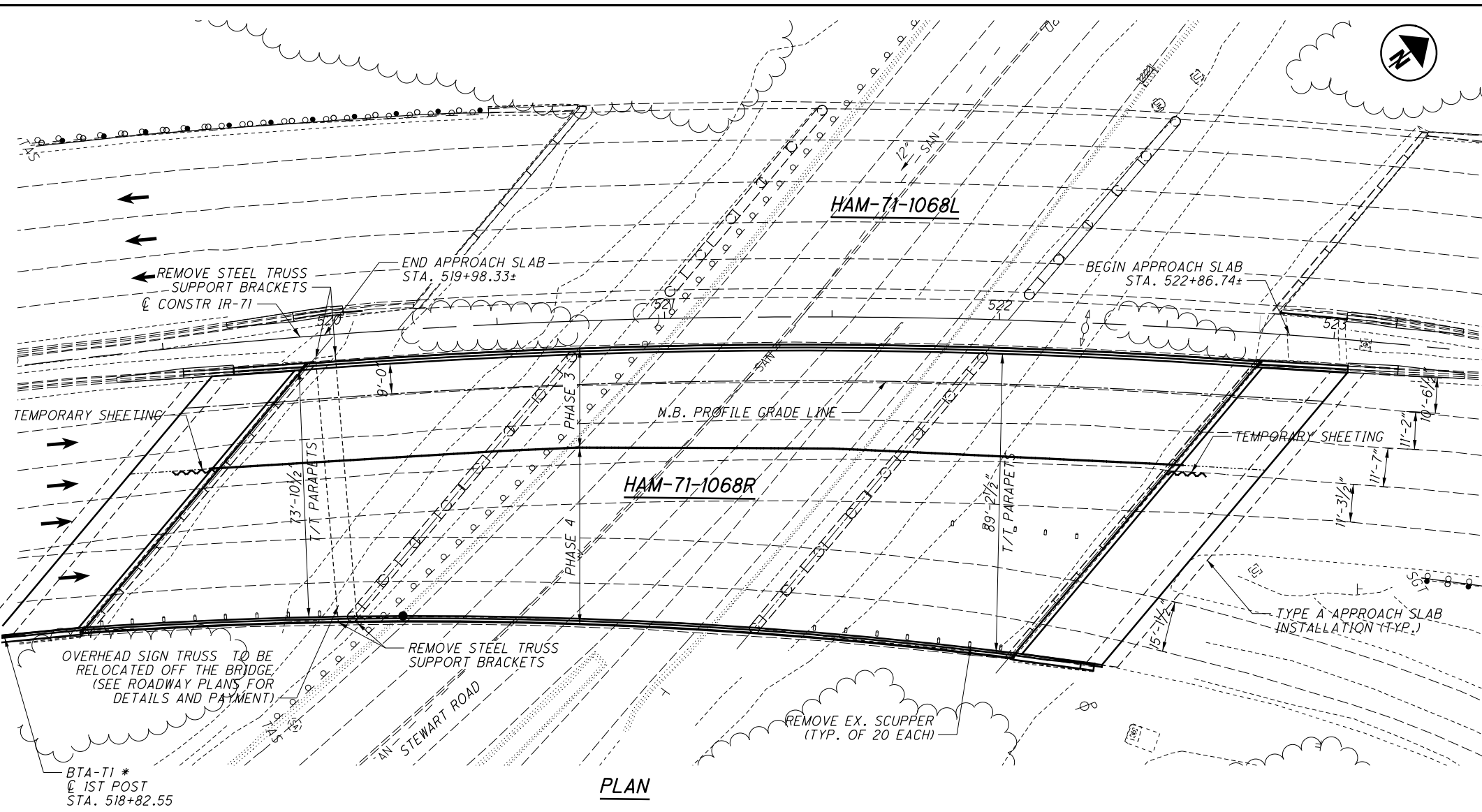
NOTES:

1. EACH BEARING ASSEMBLY SHALL BE SHOP MARKED WITH THE FOLLOWING INFORMATION: TOP, FORWARD STATION DIRECTION, LOCATION (FORWARD ABUTMENT) AND BEAM NAME. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED.
2. ELASTOMERIC BEARINGS: THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED IN ACCORDANCE WITH SECTION 14.7.5 (METHOD B) OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. PERFORM THE LONG-TERM COMPRESSION PROOF LOAD TEST IN ACCORDANCE WITH THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DIVISION II, SECTION 18.7.2.6 AND 18.7.4.5.
3. STEEL MATERIALS: THE STEEL LOAD PLATES SHALL BE ASTM A709- GRADE 50 OR 50W STRUCTURAL STEEL AND BE CLEANED AND COATED. SURFACE PREPARATION AND PRIMING SHALL BE DONE IN THE SHOP AND BE INCLUDED IN THE PRICE BID FOR BEARINGS. FIELD COATS SHALL BE PER ITEM 514 AND ALSO INCLUDED IN THE PRICE BID FOR BEARINGS. FINISH PAINT COLOR TO MATCH EXISTING BEAMS.
4. STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.
5. BASIS OF PAYMENT: THE UNIT PRICE BID SHALL INCLUDE ALL MATERIALS, LABOR, TESTING, STEEL LOAD PLATES AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS. PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE BID FOR ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN.

P:\PR54704\HAM\91826\Design\Structures\HAM071_0992C\Sheets\071_0992C...SB002.dgn Sheet 10/26/2017 8:38:33 AM compton

DESIGN AGENCY: BURGESS & NIPLE
 306 PLUM ST. CINCINNATI OH
 DATE: 2/20/2017
 REVIEWED: DWL
 DRAWN: XAC
 CHECKED: SJA
 STRUCTURE FILE NUMBER: 3115372
 FORWARD ABUTMENT BEARING DETAILS
 HAM-IR71-8.42
 PID No. 91826
 RAMP FROM RED BANK TO IR-71 SB
 HAM-71-0992
 4 / 4
 367
 441

P:\PR54704\HAM-91826\Design\Structures\HAM071_068R_Sheets\071_068R_SP001.dgn Sheet 10/26/2017 8:38:36 AM compton



BENCHMARK DATA	
IP #1	STA. 492+64.62, ELEV. 630.067 OFFSET 76.18' LEFT
MONII STA.	578+62.21, ELEV. 865.440, OFFSET 70.92' LEFT
FOR ADDITIONAL BENCHMARK INFORMATION. SEE ROADWAY PLAN SHEET (B/37)	
DESIGN TRAFFIC:	
2018 ADT = 130,480	2018 ADTT = 15,658
2038 ADT = 143,480	2038 ADTT = 17,218
DIRECTIONAL DISTRIBUTION = 0.61	

- LEGEND**
- 14'-6" REQUIRED MINIMUM VERTICAL CLEARANCE
 - 17'-10" ACTUAL MINIMUM VERTICAL CLEARANCE
 - BTA-T1 = MGS BRIDGE TERMINAL ASSEMBLY TYPE 1 *
 - BTA-T2 = MGS BRIDGE TERMINAL ASSEMBLY TYPE 2 *
 - * = SEE ROADWAY PLANS FOR DETAILS AND PAYMENT

NOTES

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.

- PROPOSED WORK:**
1. REPLACE THE EXISTING DECK IN PHASES.
 2. REPLACE THE EXPANSION JOINTS, APPROACH SLABS, AND BACKWALLS.
 3. WELD THE CROSSFRAME STIFFENERS TO THE TOP AND BOTTOM FLANGES.
 4. REPLACE THE ABUTMENT ROCKER BEARINGS WITH ELASTOMERIC BEARINGS.
 5. PAINT DETERIORATED AREAS OF THE GIRDERS.
 6. RELOCATE OVERHEAD SIGN AND REMOVE EXTERIOR SUPPORT BRACKETS.
 7. PATCH THE ABUTMENTS AND PIERS. EPOXY INJECT ABUTMENT CRACKS.
 8. REMOVE VEGETATION WITHIN 20 FEET OF THE BRIDGE.
 9. REMOVE EXISTING BRIDGE SCUPPERS.
 10. REMOVE EXISTING SEALER AND RESEAL THE ABUTMENTS, PIERS, PARAPETS AND DECK EDGES TO THE TYPICAL LIMITS SHOWN IN THE PLANS WITH EPOXY URETHANE SEALER, FEDERAL COLOR NUMBER 17778.
 11. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH MAINTENANCE OF TRAFFIC PLANS AND NOTES.

EXISTING STRUCTURE

TYPE: THREE SPAN CONTINUOUS STEEL GIRDER BRIDGE WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE

SPANS: 80'-0"±, 122'-6"±, 80'-0"±

ROADWAY: VARIES T/T PARAPETS

LOADING: CF-2000-ADEQUATE FOR ALTERNATE MILITARY LOADING

SKEW: 40°52'03"± L.F.

APPROACH SLABS: AS-1-54 (25'± LONG)

ALIGNMENT: 3° HORIZONTAL CURVE TO THE RIGHT

SUPERELEVATION 0.083± FT/FT

STRUCTURAL FILE NUMBER: 3106896

DATE BUILT: 1965

DISPOSITION: TO REMAIN WITH NEW CONCRETE DECK

PROPOSED STRUCTURE

TYPE: THREE SPAN CONTINUOUS STEEL PATE GIRDERS A36 WITH COMPOSITE REINFORCED CONCRETE DECK, SUPPORTED BY REINFORCED CONCRETE AUBTMENTS AND PIERS ON PILING.

SPANS: 80'-0"±, 122'-6"±, 80'-0"±

ROADWAY: VARIES T/T PARAPETS

LOADING: HS-20 CASE I AND ALTERNATE MILITARY

SKEW: 40°52'03"± L.F.

APPROACH SLABS: 25' LONG (AS-1-15) MODIFIED

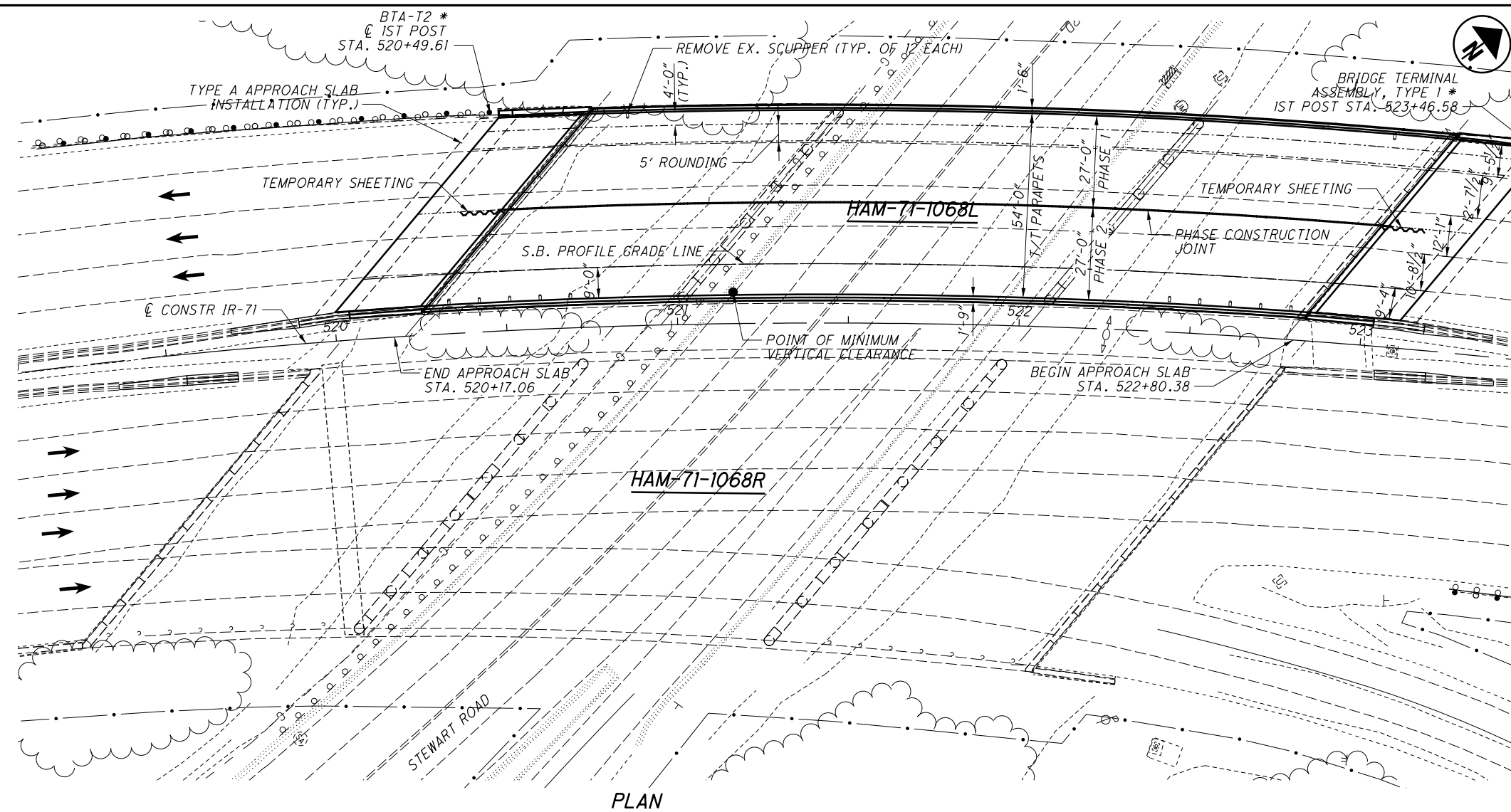
ALIGNMENT: 3° HORIZONTAL CURVE TO THE RIGHT

SUPERELEVATION: 0.083 FT/FT

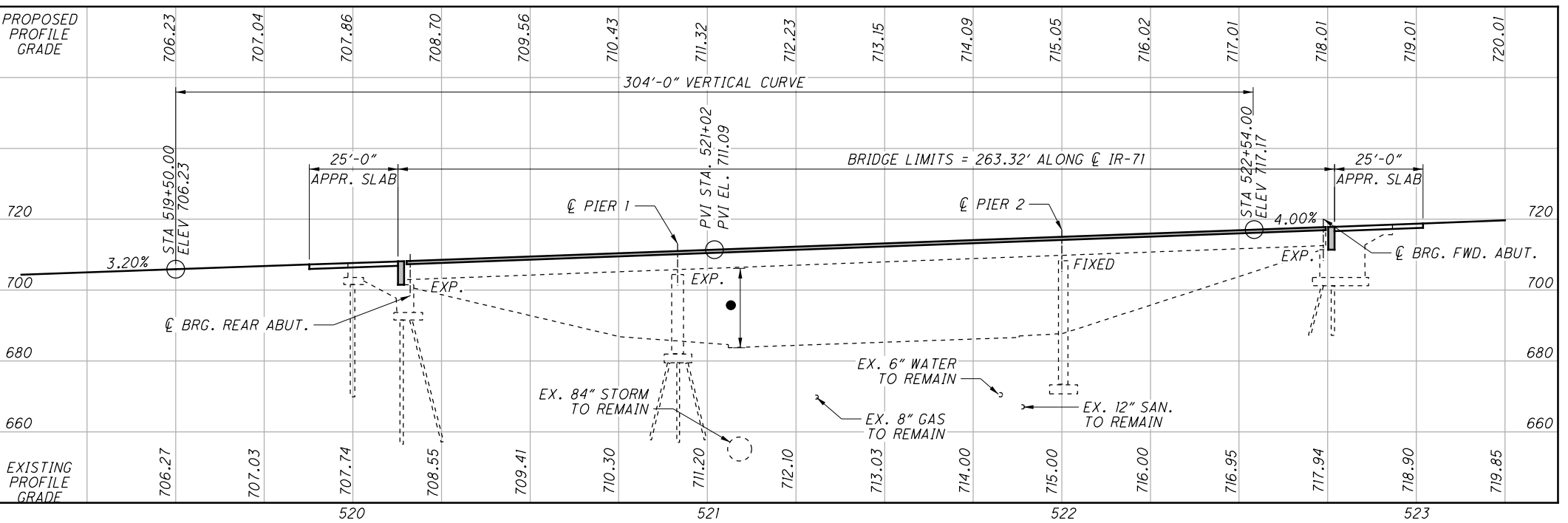
COORDINATES: LATITUDE 39° 11' 00" N
LONGITUDE 84° 23' 44" W

DESIGN AGENCY	BURGESS & NIPLE
DATE	2/20/2017
REVIEWED	DWL
DRAWN	SJA
DESIGNED	SJA
CHECKED	XAC
STRUCTURE FILE NUMBER	3106896
HAMILTON COUNTY	STA. 519+98.33±
	STA. 522+86.74±
SITE PLAN - RIGHT BRIDGE	
	IR-71 OVER STEWART ROAD
HAM-IR71-8.42	PID No. 91826
1 / 57	
368 441	

P:\PR54704\HAM\91826\Design\Structures\HAM071_068L\SP001.dgn Sheet 10/26/2017 8:38:38 AM compton



PLAN



PROFILE

ALONG IR-71 SB PROFILE GRADE

BENCHMARK DATA	
IP #1 STA. 492+64.62, ELEV. 630.067 OFFSET 76.18' LEFT	
MONII STA. 578+62.21, ELEV. 865.440, OFFSET 70.92' LEFT	
FOR ADDITIONAL BENCHMARK INFORMATION. SEE ROADWAY PLAN SHEET 6/137	

DESIGN TRAFFIC:
 2018 ADT = 130,480 2018 ADTT = 15,658
 2038 ADT = 143,480 2038 ADTT = 17,218
 DIRECTIONAL DISTRIBUTION = 0.61

LEGEND
 ● 14'-6" REQUIRED MINIMUM VERTICAL CLEARANCE
 ○ 21'-1" ACTUAL MINIMUM VERTICAL CLEARANCE
 BTA-T1 = MGS BRIDGE TERMINAL ASSEMBLY TYPE 1 *
 BTA-T2 = MGS BRIDGE TERMINAL ASSEMBLY TYPE 2 *
 * = SEE ROADWAY PLANS

NOTES
 EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.

- PROPOSED WORK:**
1. REPLACE THE EXISTING DECK IN PHASES.
 2. REPLACE THE EXPANSION JOINTS, APPROACH SLABS, AND BACKWALLS.
 3. WELD THE CROSSFRAME STIFFENERS TO THE TOP AND BOTTOM FLANGES.
 4. REPLACE THE ABUTMENT ROCKER BEARINGS WITH ELASTOMERIC BEARINGS.
 5. PAINT DETERIORATED AREAS OF THE GIRDERS.
 6. PATCH THE ABUTMENTS AND PIERS. EPOXY INJECT ABUTMENT CRACKS.
 7. REMOVE VEGETATION WITHIN 20 FEET OF THE BRIDGE.
 8. REPAIR OUT OF PLANE BENDING CRACKS
 - a. DRILL 2 HOLES PER WELD CRACK LOCATION.
 - b. CONTRACTOR TO VISUALLY INSPECT ALL POTENTIAL WELD CRACKS.
 9. REMOVE EXISTING BRIDGE SCUPPERS.
 10. REMOVE EXISTING SEALER AND RESEAL THE ABUTMENTS, PIERS, PARAPETS AND DECK EDGES TO THE TYPICAL LIMITS SHOWN IN THE PLANS WITH EPOXY URETHANE SEALER, FEDERAL COLOR NUMBER 17778.
 11. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH MAINTENANCE OF TRAFFIC PLANS AND NOTES.

EXISTING STRUCTURE

TYPE: THREE SPAN CONTINUOUS STEEL GIRDER BRIDGE WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE

SPANS: 75'-0"±, 107'-6"±, 75'-0"±

ROADWAY: VARIES 53'- 8 1/2" T/T PARAPETS

LOADING: CF-2000-ADEQUATE FOR ALTERNATE MILITARY LOADING

SKEW: 40°52'03"± L.F.

APPROACH SLABS: AS-1-54 (25'± LONG)

ALIGNMENT: 3° HORIZONTAL CURVE TO THE RIGHT

SUPERELEVATION 0.083 FT/FT

STRUCTURAL FILE NUMBER: 3106888

DATE BUILT: 1965

DISPOSITION: TO REMAIN WITH NEW CONCRETE DECK

PROPOSED STRUCTURE

TYPE: THREE SPAN CONTINUOUS STEEL PATE GIRDERS A36 WITH COMPOSITE REINFORCED CONCRETE DECK, SUPPORTED BY REINFORCED CONCRETE AUBTMENTS AND PIERS ON PILING.

SPANS: 75'-0"±, 107'-6"±, 75'-0"±

ROADWAY: 54'-0" T/T PARAPETS

LOADING: HS20 CASE I AND ALTERNATE MILITARY

SKEW: 40°52'03"± L.F.

APPROACH SLABS: 25' LONG (AS-1-15) MODIFIED

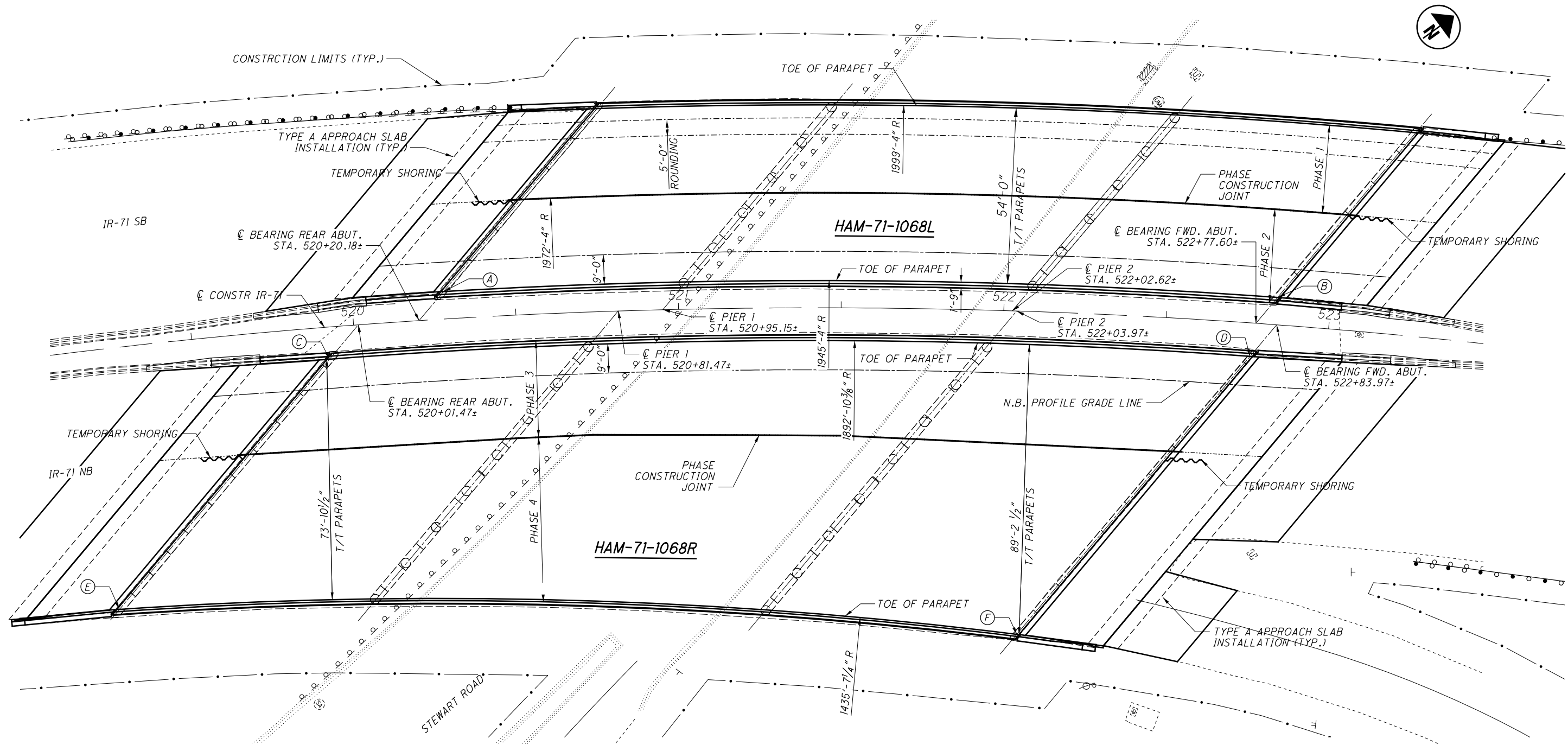
ALIGNMENT: 3° HORIZONTAL CURVE TO THE RIGHT

SUPERELEVATION: 0.083 FT/FT

COORDINATES: LATITUDE 39° 11' 01" N
 LONGITUDE 84° 23' 45" W

DESIGN AGENCY BURGESS & NIPLÉ 308 PLUM ST. CINCINNATI, OH
DATE 2/20/2017
REVIEWED DWL
DRAWN SJA
DESIGNED SJA
HAMILTON COUNTY STA. 520+17.06± STA. 522+80.38±
SITE PLAN - LEFT BRIDGE
HAM-71-1068L IR-71 OVER STEWART ROAD
HAM-IR71-8.42
PID No. 91826
2 / 57
369 441

P:\PR54704\HAM-91826\Design\Structures\HAM071_068L\Sheets\071_068L_S0001.dgn Sheet 10/26/2017 8:38:40 AM compton



GENERAL PLAN

PARAPET LAYOUT POINTS

TOE OF PARAPET AT \ominus ABUTMENT BEARING

LOCATION	STATION	OFFSET
(A)	520+28.21	8.46
(B)	522+83.65	8.39
(C)	519+91.79	9.86
(D)	522+76.52	10.27
(E)	519+18.25	80.08
(F)	522+07.36	99.31

NOTES:
 THE NEW DECK GEOMETRY SHALL MAINTAIN THE EXISTING TOE OF PARAPET, EXCEPT FOR THE NORTHMOST PARAPET OF THE LEFT BRIDGE WHICH WILL BE WIDENED TO PROVIDE 54'-0" WIDE CONSTANT WIDTH DECK FOR IR-71 SB. THE NEW DECK IS DEFINED BY THE LAYOUT POINTS (A-F) AND THE RADIUS OF THE TOE OF PARAPETS. REFERENCE POINTS ARE AT THE INTERSECTION OF CENTERLINE OF BEARING WITH TOE OF PROPOSED PARAPETS.

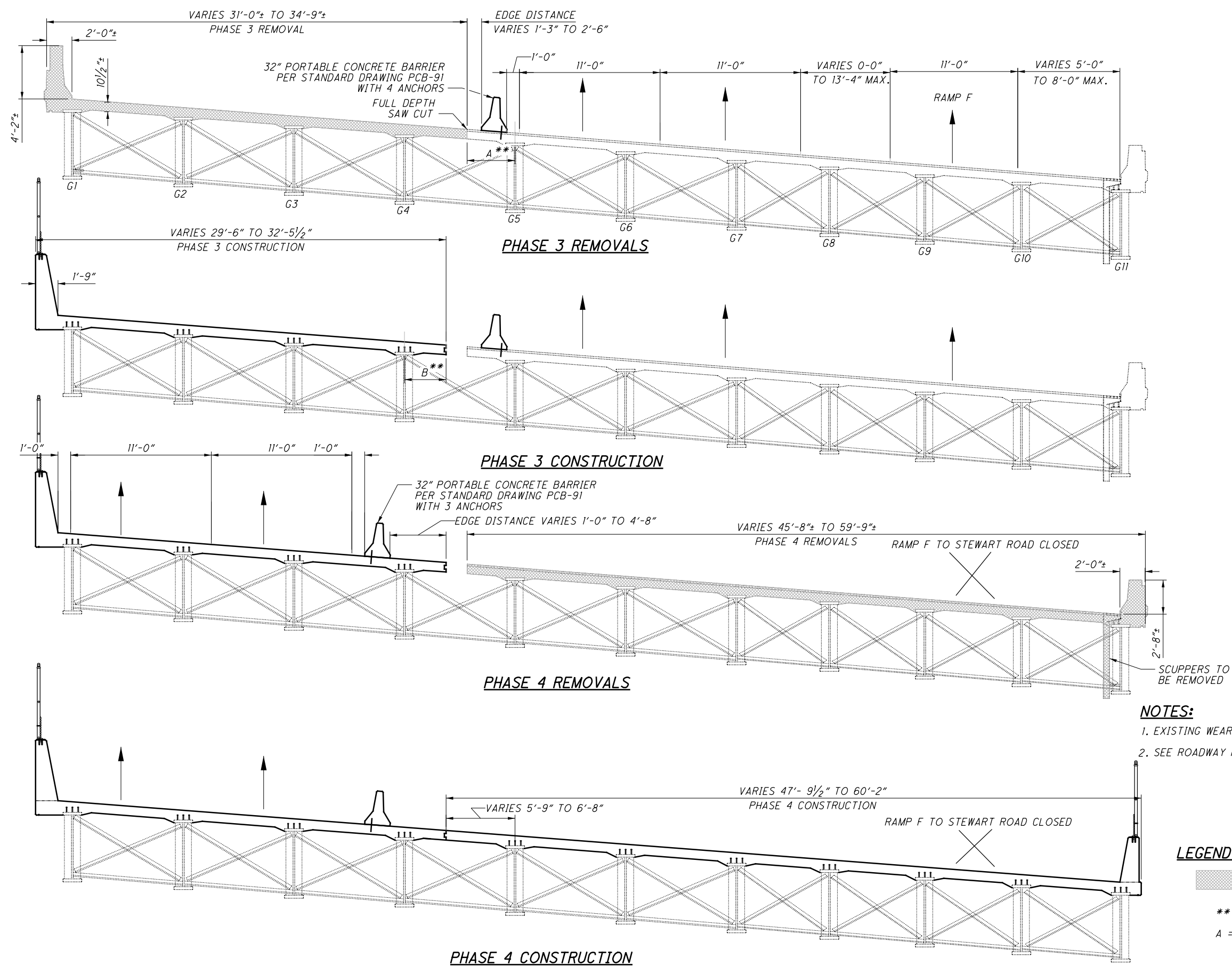
HAM-IR71-8.42 **PID No. 91826** **3/57** **370/441**

GENERAL PLAN
 HAM-71-1068L/R
 IR-71 OVER STEWART ROAD

DESIGNED	SJA	CHECKED	XAC
DRAWN	SJA	REVISED	
REVIEWED	DWL	DATE	2/20/2017
STRUCTURE FILE NUMBER	3106888 3106896		

DESIGN AGENCY
 BURGESS & NIPLÉ
 309 PLUM ST. CINCINNATI, OH

P:\PR54704\HAM\91826\Design\Structures\HAM071_068R\Sheets\071_068R_SC001.dgn Sheet 10/26/2017 8:38:42 AM compton



NOTES:

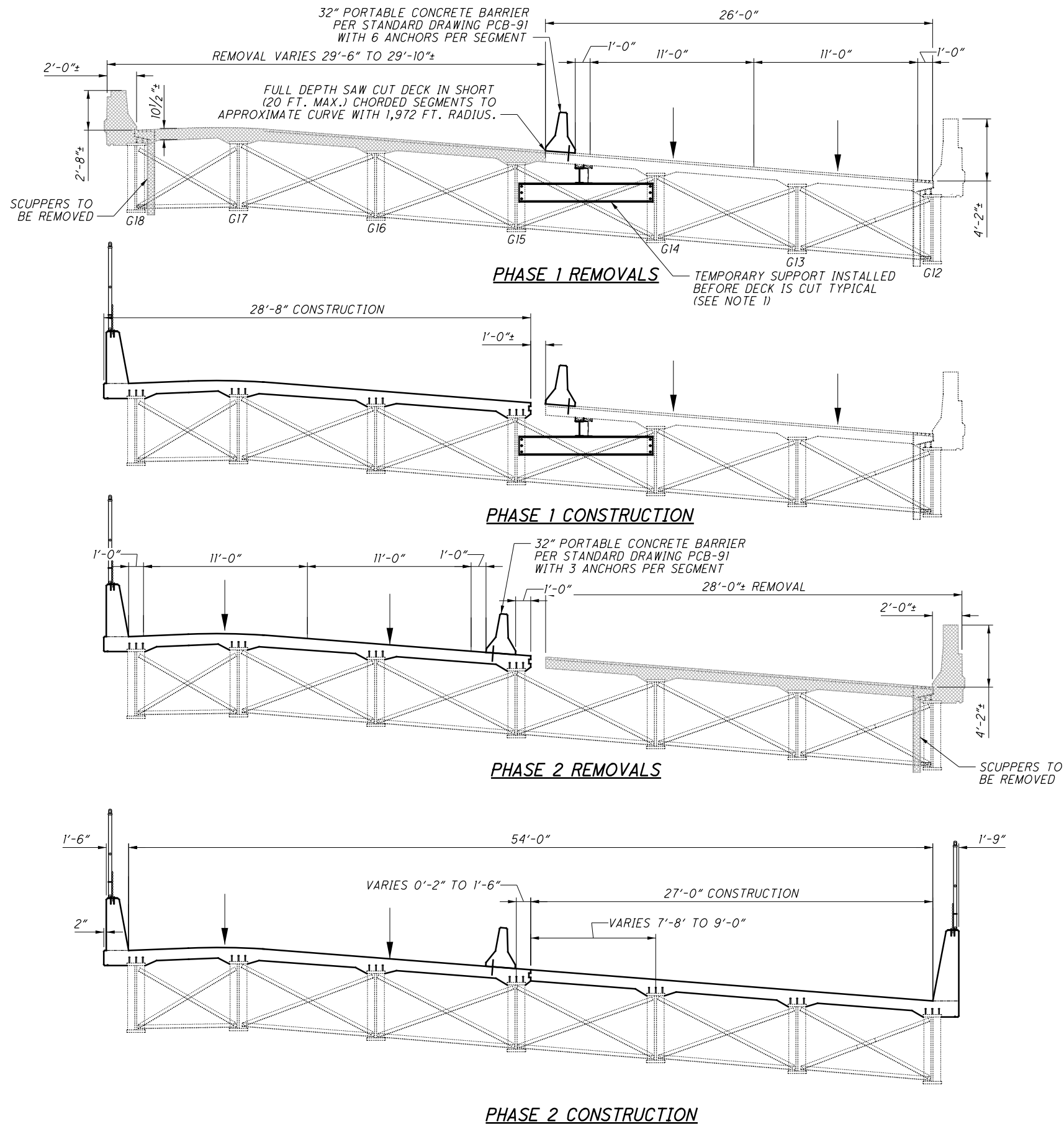
- EXISTING WEARING SURFACE IS $1 \frac{3}{4}$ " LATEX MODIFIED CONCRETE.
- SEE ROADWAY PLANS FOR PCB PAYMENT.

LEGEND:

- [Hatched Box] = PORTIONS OF EXISTING STRUCTURE TO BE REMOVED
- ** = DISTANCE MEASURED NORMAL TO GIRDER
- A = DIMENSION VARIES 3'-9" AT REAR ABUTMENT TO 4'-9" AT PIER 1. DIMENSION IS 4'-9" FROM PIER 1 TO FORWARD ABUTMENT.
- B = DIMENSION VARIES 3'-3" AT REAR ABUTMENT TO 2'-3" AT PIER 1. DIMENSION IS 2'-3" FROM PIER 1 TO FORWARD ABUTMENT.

DESIGN AGENCY BURGESS & NIPLÉ 310 PLUM ST. CINCINNATI, OH	
REVIEWED DWL	DATE 2/20/2017
DRAWN SJA	STRUCTURE FILE NUMBER 3106896
DESIGNED SJA	CHECKED XAC
PHASED REMOVAL AND CONSTRUCTION DETAILS - RIGHT BRIDGE	
HAM-IR71-8.42 HAM-71-1068R IR-71 OVER STEWART ROAD	
PID No. 91826	
4/57	
371 441	

P:\PR54704\HAM\91826\Design\Structures\HAM071_068L\Sheets\071_068L_SC001.dgn Sheet 10/26/2017 8:38:44 AM compton



LEGEND:

 - PORTIONS OF EXISTING STRUCTURE TO BE REMOVED

NOTES:

1. FOR TEMPORARY DECK SLAB SUPPORT DETAILS SEE SHEET 24/57.
2. EXISTING WEARING SURFACE IS 1 3/4"± LATEX MODIFIED CONCRETE
3. SEE ROADWAY PLANS FOR PCB PAYMENT.

PHASED REMOVAL AND CONSTRUCTION DETAILS - LEFT BRIDGE

HAM-IR71-8.42
PID No. 91826

HAM-71-1068L
IR-71 OVER STEWART ROAD

DESIGNED
SJA
CHECKED
XAC

DRAWN
SJA
REVISED

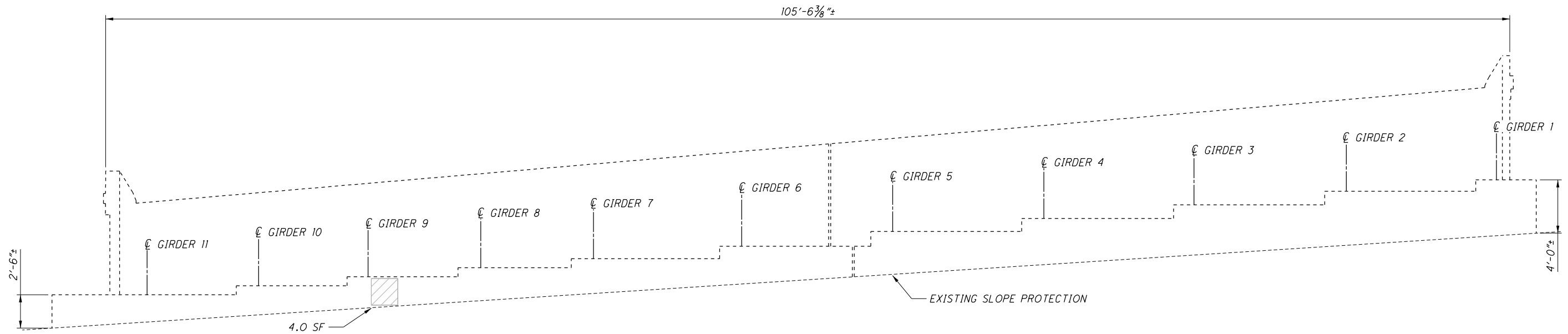
REVIEWED
DWL
DATE
2/20/2017
STRUCTURE FILE NUMBER
3106888

DESIGN AGENCY
BURGESS & NIPLE
311 PLUM ST. CINCINNATI OH

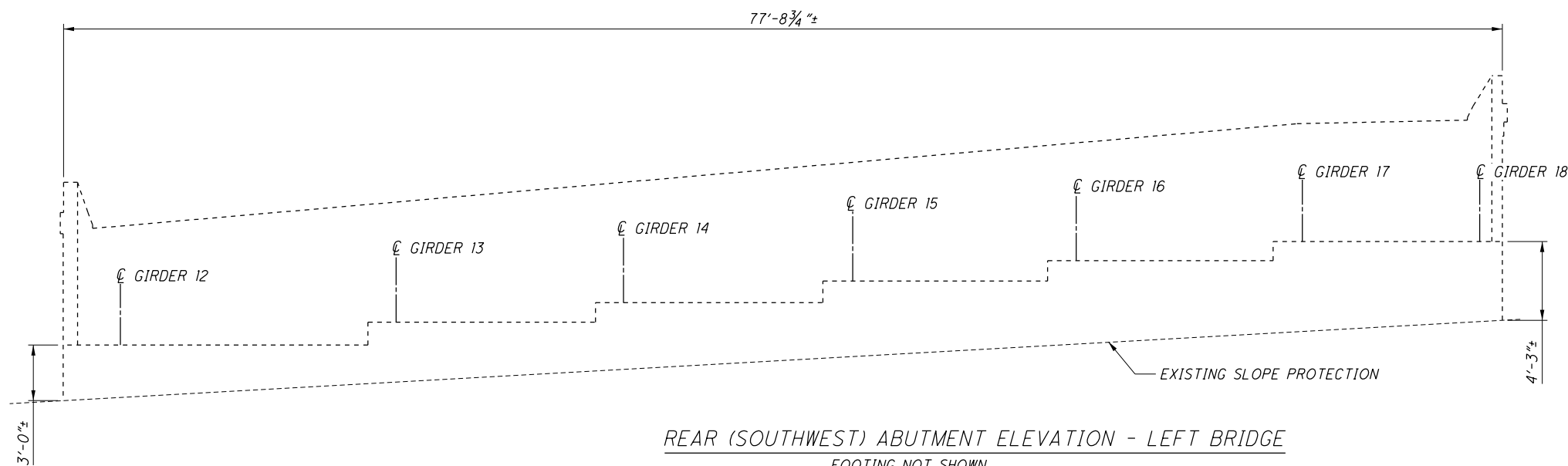
5/57

372
441

P:\PR54704\HAM\91826\Design\Structures\HAM071_1068L\Sheets\071_1068L_SR001.dgn Sheet 10/26/2017 8:38:46 AM compton



REAR (SOUTHEAST) ABUTMENT ELEVATION - RIGHT BRIDGE
FOOTING NOT SHOWN



REAR (SOUTHWEST) ABUTMENT ELEVATION - LEFT BRIDGE
FOOTING NOT SHOWN

LEGEND:

SF = SQUARE FEET

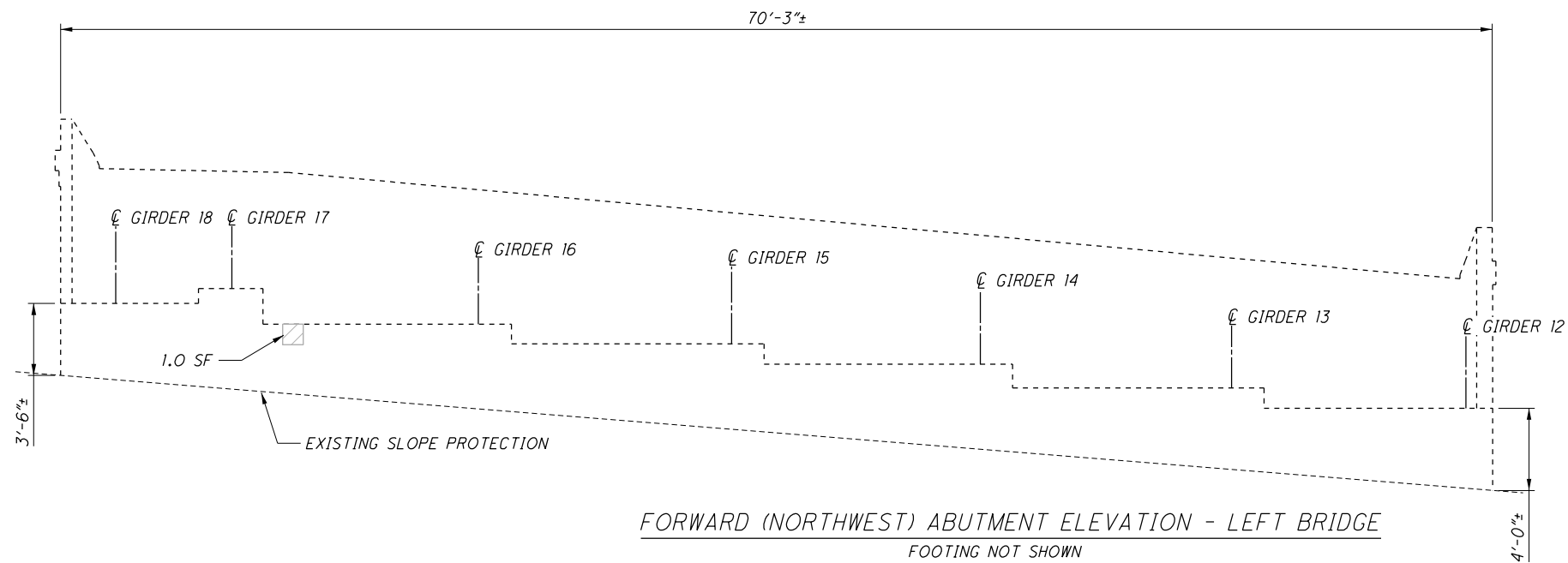
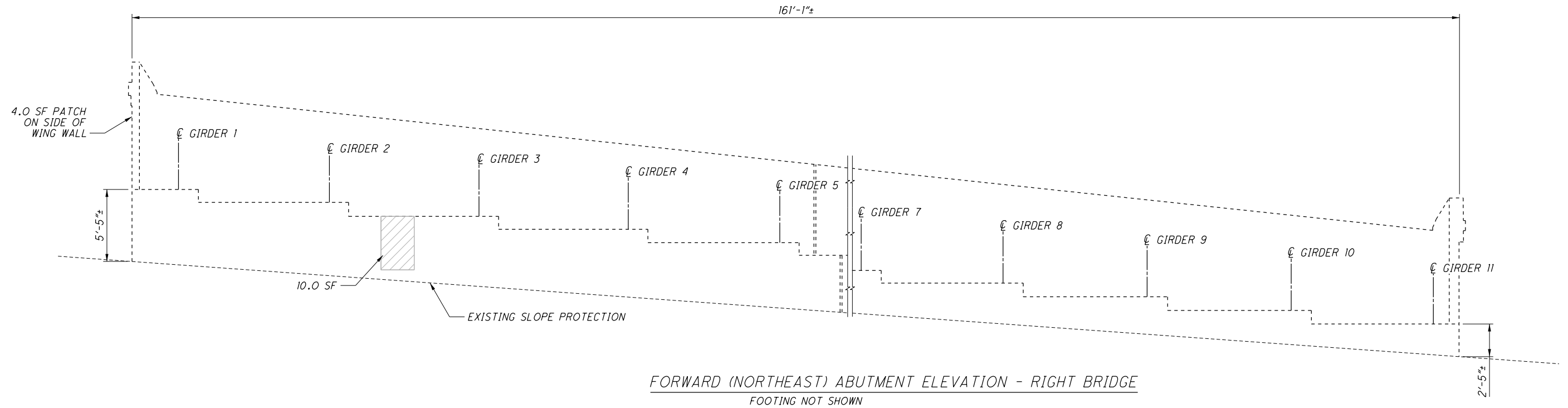
 = APPROXIMATE LIMITS OF CONCRETE PATCHING

NOTES:

- REPAIR APPROXIMATELY 4 SQUARE FEET OF DELAMINATED AND SPALLING AREAS OF THE ABUTMENTS BY PATCHING CONCRETE IN ACCORDANCE WITH CMS ITEM 519 SPECIFICATIONS. 2 x 4 = 8 SQUARE FEET ARE INCLUDED IN THE ESTIMATED QUANTITIES TO OFFSET THE INCREASE IN DAMAGE FROM SURVEY TO REPAIR.
- ABUTMENT ELEVATIONS ARE SHOWN WITH APPROXIMATE PATCHING BASED ON SOUNDINGS.

DESIGNED SJA		DRAWN SJA		REVIEWED DWL		DATE 2/20/2017		DESIGN AGENCY BURGESS & NIPL	
CHECKED XAC		REVISED		STRUCTURE FILE NUMBER 3106888/3106896		312 PLUM ST. CINCINNATI OH			
ABUTMENT PATCHING ELEVATIONS - 1					HAM-IR71-8.42				
HAM-71-1068L/R					PID No. 91826				
IR-71 OVER STEWART ROAD									
6 / 57					373 / 441				

P:\PR54704\HAM\91826\Design\Structures\HAM071_1068L_Sheets\071_1068L_SR002.dgn Sheet 10/26/2017 8:38:48 AM compton



LEGEND:

SF = SQUARE FEET

 = APPROXIMATE LIMITS OF CONCRETE PATCHING

NOTES:

1. REPAIR APPROXIMATELY 15 SQUARE FEET OF DELAMINATED AND SPALLING AREAS OF THE ABUTMENTS BY PATCHING CONCRETE IN ACCORDANCE WITH CMS ITEM 519 SPECIFICATIONS. 2 x 15 = 30 SQUARE FEET ARE INCLUDED IN THE ESTIMATED QUANTITIES TO OFFSET THE INCREASE IN DAMAGE FROM SURVEY TO REPAIR.
2. ABUTMENT ELEVATIONS ARE SHOWN WITH APPROXIMATE PATCHING BASED ON SOUNDINGS.

DESIGN AGENCY
BURGESS & NIPLÉ
312 PLUM ST. CINCINNATI OH

REVIEWED DATE 2/20/2017
DWL STRUCTURE FILE NUMBER 3106888/3106896

DRAWN SJA
SJA REVISIONS
CHECKED XAC

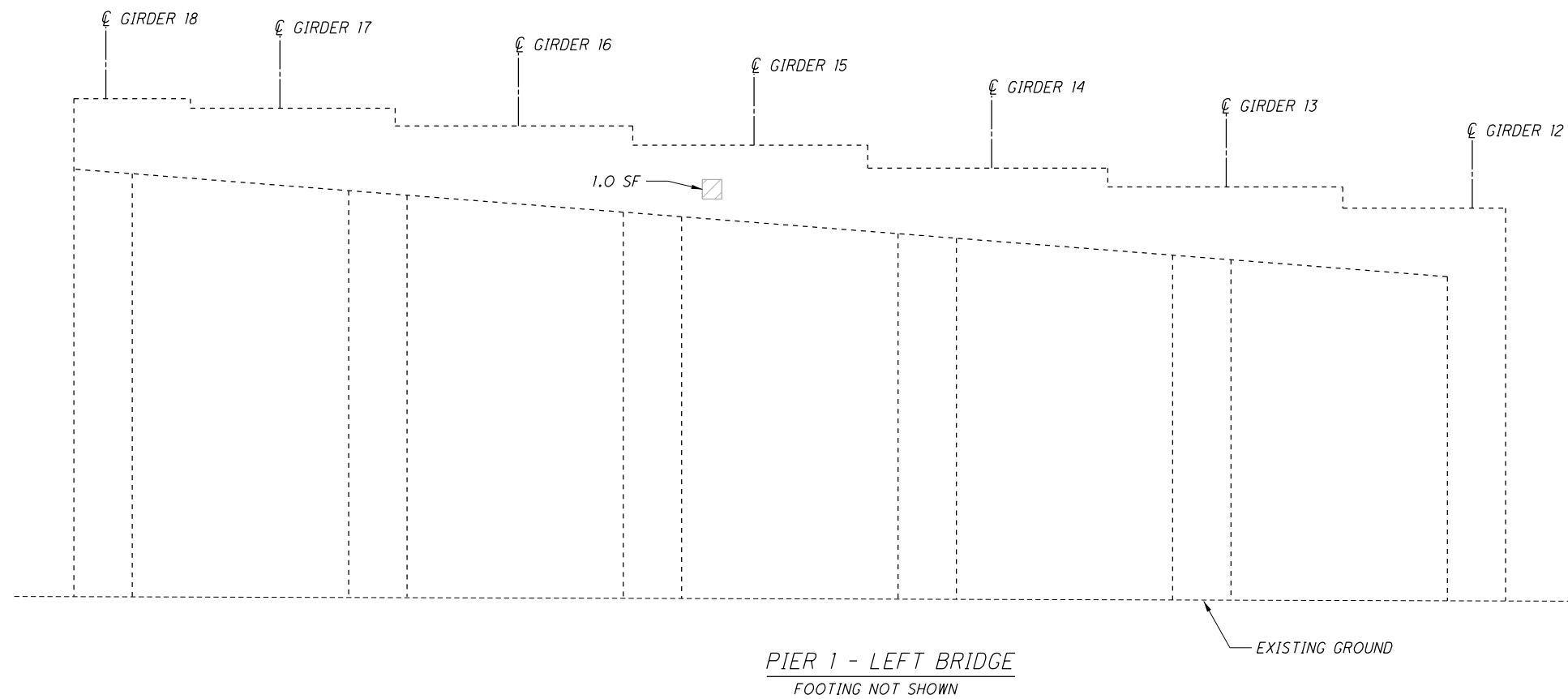
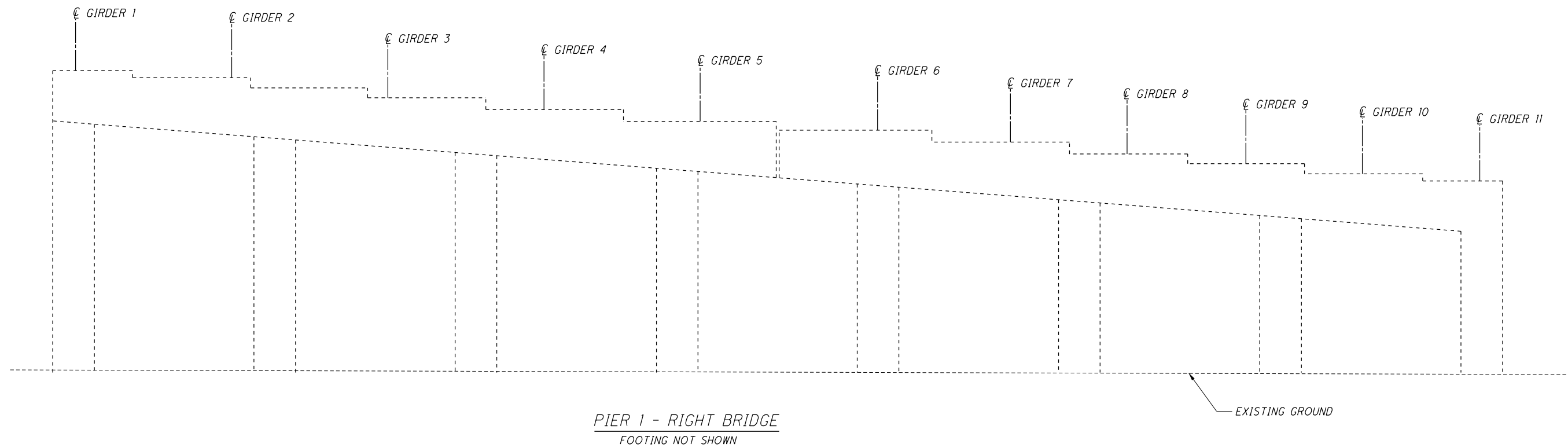
ABUTMENT PATCHING ELEVATIONS - 2
HAM-71-1068L/R
IR-71 OVER STEWART ROAD

HAM-IR71-8.42
PID No. 91826

7 / 57

374
441

P:\PR54704\HAM\91826\Design\Structures\HAM071_1068L\Sheets\071_1068L_S1001.dgn Sheet 10/26/2017 8:38:50 AM compton



LEGEND:

SF = SQUARE FEET



= APPROXIMATE LIMITS OF CONCRETE PATCHING

NOTES:

1. REPAIR APPROXIMATELY 1 SQUARE FEET OF DELAMINATED AND SPALLING AREAS OF THE PIERS BY PATCHING CONCRETE IN ACCORDANCE WITH CMS ITEM 519 SPECIFICATIONS. 2 x 1 = 2 SQUARE FEET ARE INCLUDED IN THE ESTIMATED QUANTITIES TO OFFSET THE INCREASE IN DAMAGE FROM SURVEY TO REPAIR.
2. PIER ELEVATIONS ARE SHOWN WITH APPROXIMATE PATCHING BASED ON SOUNDINGS.

DESIGN AGENCY
BURGESS & NIPLÉ
312 PLUM ST. CINCINNATI OH

REVIEWED DATE
DWL 2/20/2017
STRUCTURE FILE NUMBER
3106888/3106896

DRAWN
SJA
SJA
REVISED

DESIGNED
SJA
SJA
CHECKED
XAC
XAC

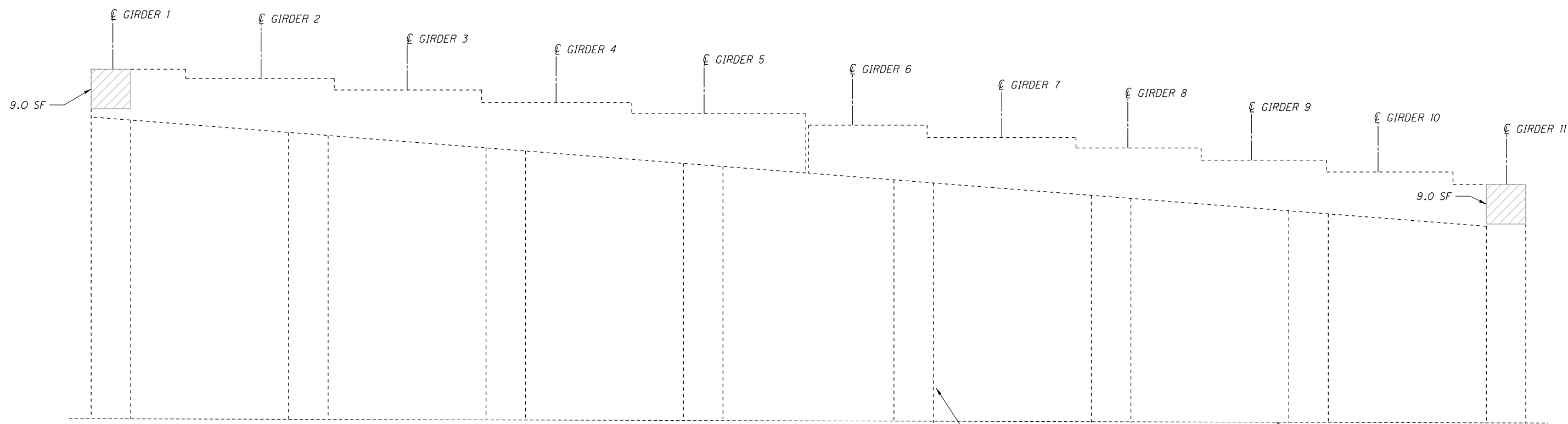
PIER PATCHING ELEVATIONS - 1
HAM-71-1068L/R
IR-71 OVER STEWART ROAD

HAM-IR71-8.42
PID No. 91826

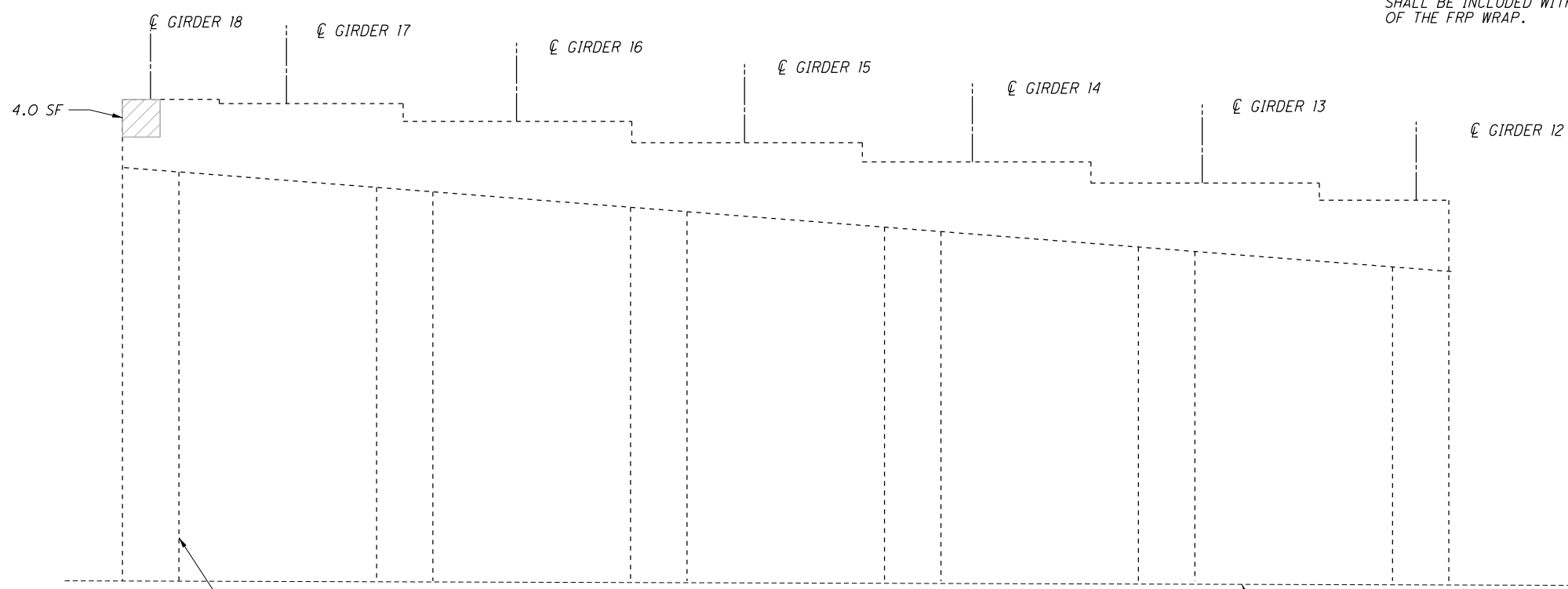
8 / 57

375
441

P:\PR54704\HAM-91826\Design\Structures\HAM071_1068L_Sheets\071_1068L_S1002.dgn Sheet 10/26/2017 8:38:51 AM compton



PIER 2 - RIGHT BRIDGE
FOOTING NOT SHOWN



PIER 2 - LEFT BRIDGE
FOOTING NOT SHOWN

LEGEND:

SF = SQUARE FEET

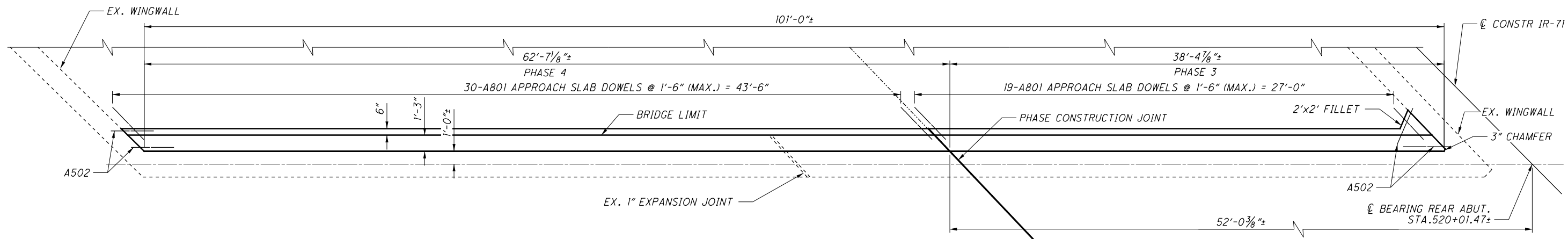
= APPROXIMATE LIMITS OF CONCRETE PATCHING

NOTES:

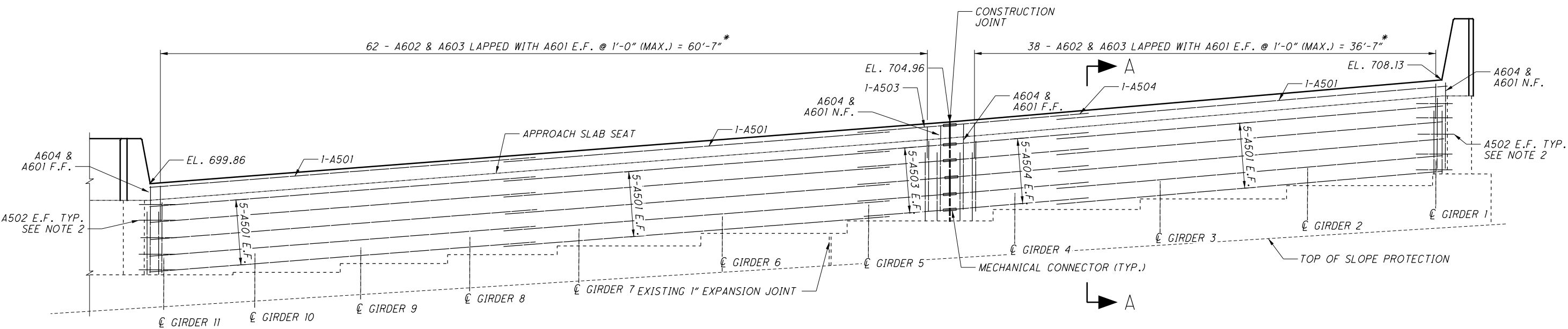
1. REPAIR APPROXIMATELY 22 SQUARE FEET OF DELAMINATED AND SPALLING AREAS OF THE PIERS BY PATCHING CONCRETE IN ACCORDANCE WITH ITEM CMS 519 SPECIFICATIONS. 2 x 22 = 44 SQUARE FEET ARE INCLUDED IN THE ESTIMATED QUANTITIES TO OFFSET THE INCREASE IN DAMAGE FROM SURVEY TO REPAIR.
2. PIER ELEVATIONS ARE SHOWN WITH APPROXIMATE PATCHING BASED ON SOUNDINGS.

HAM-IR71-8.42 PID No. 91826	PIER PATCHING ELEVATIONS - 2 HAM-71-1068L/R IR-71 OVER STEWART ROAD	DESIGNED SJA CHECKED XAC	DRAWN SJA REVISED	REVIEWED DWL STRUCTURE FILE NUMBER 3106888/3106896	DATE 2/20/2017	DESIGN AGENCY BURGESS & NIPLE 312 PLUM ST. CINCINNATI OH
9 / 57						

P:\PR54704\HAM\91826\Design\Structures\HAM071_1068L_Sheets\071_1068L_SR003.dgn Sheet 10/26/2017 8:38:53 AM compton



REAR ABUTMENT PLAN - RIGHT BRIDGE
SUPERSTRUCTURE AND FOOTING NOT SHOWN



REAR ABUTMENT ELEVATION - RIGHT BRIDGE
FOOTING NOT SHOWN

LEGEND:

- E.F. = EACH FACE
- F.F. = FAR FACE
- N.F. = NEAR FACE
- SPA. = SPACE
- * = EXISTING VERTICAL REINFORCING STEEL TO BE CLEANED AND RE-USED. NON-CONTACT LAP SPLICES WITH A601 BARS ARE ACCEPTABLE.

NOTES:

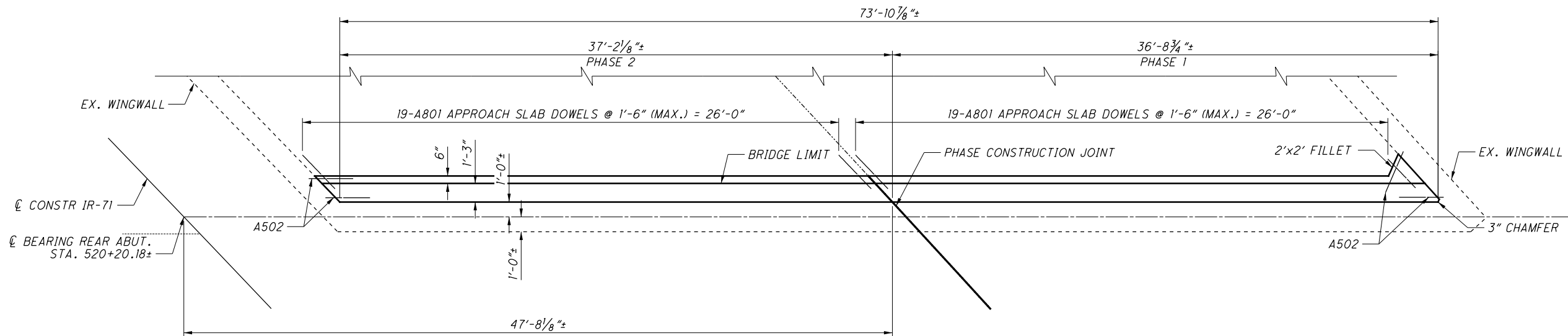
1. FOR SECTION A-A SEE SHEET 14/57.
2. NO. 5 BAR TO BE EPOXY GROUTED 5" INTO EXISTING CONCRETE PER CMS ITEM 510 - DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN.
3. MINIMUM LAP LENGTHS:
#5 BAR = 2'-6"
#6 BAR = 3'-6"



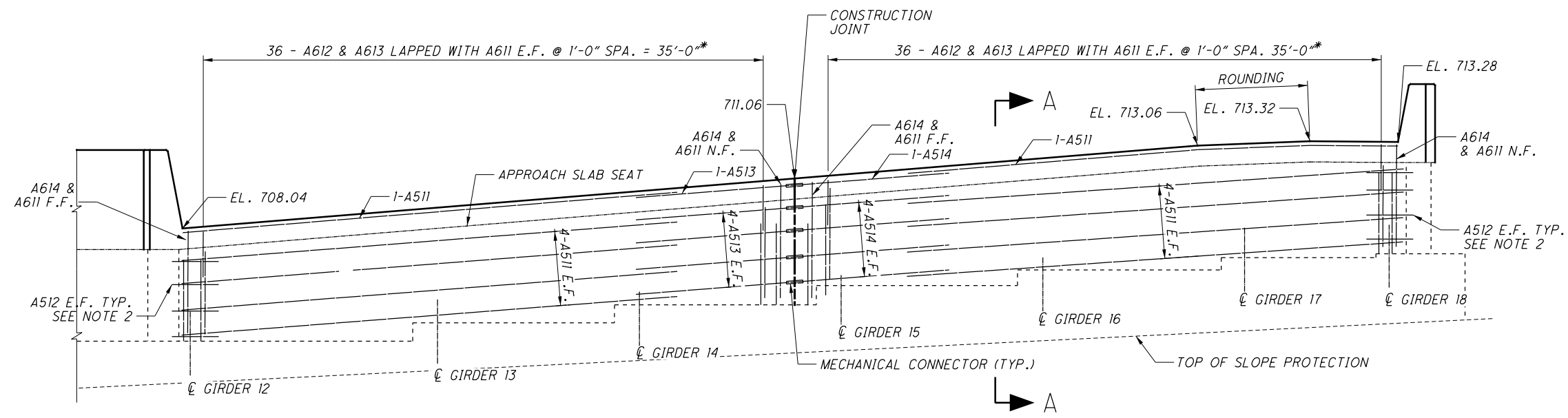
DESIGN AGENCY BURGESS & NIPLÉ 312 PLUM ST. CINCINNATI OH	DATE 2/20/2017	DESIGNED XAC	DRAWN XAC
STRUCTURE FILE NUMBER 3106896	REVIEWED DWL	CHECKED SJA	REVISED
ABUTMENT BACKWALL DETAILS - 1			
HAM-71-1068R IR-71 OVER STEWART ROAD			
HAM-IR71-8.42	PID No. 91826		
10/57	377 441		



P:\PR54704\HAM\91826\Design\Structures\HAM071_1068L_Sheets\071_1068L_SR004.dgn Sheet 10/26/2017 8:38:55 AM compton



REAR ABUTMENT PLAN - LEFT BRIDGE
SUPERSTRUCTURE AND FOOTING NOT SHOWN



REAR ABUTMENT ELEVATION - LEFT BRIDGE
FOOTING NOT SHOWN

LEGEND:

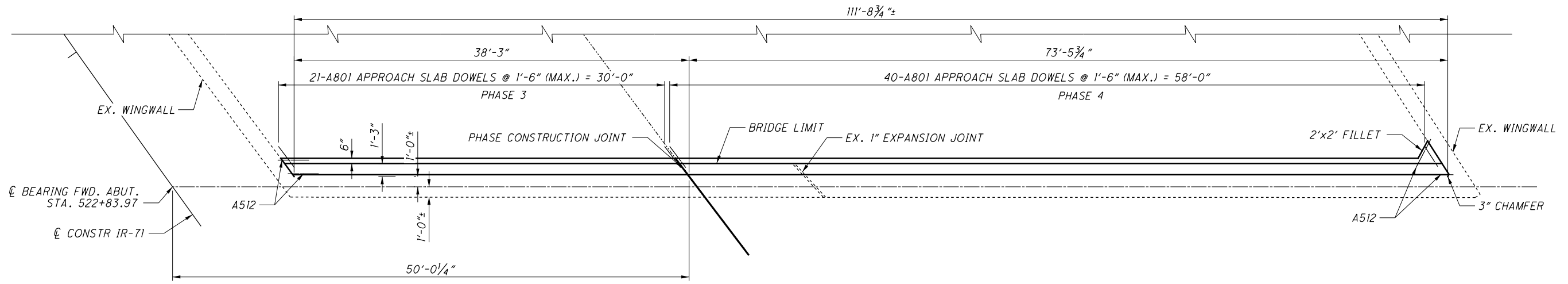
E.F. = EACH FACE
F.F. = FAR FACE
N.F. = NEAR FACE
SPA. = SPACE
* = EXISTING VERTICAL REINFORCING STEEL TO BE CLEANED AND RE-USED. NON-CONTACT LAP SPLICES WITH A611 BARS ARE ACCEPTABLE.

NOTES:

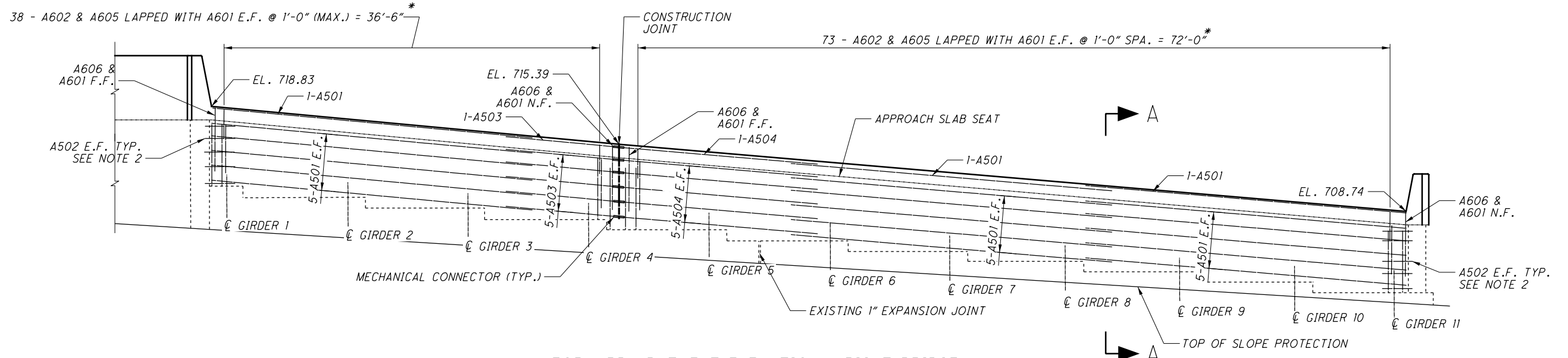
- FOR SECTION A-A SEE SHEET 14/57.
- NO. 5 BAR TO BE EPOXY GROUTED 5" INTO EXISTING CONCRETE PER CMS ITEM 510 - DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN.
- MINIMUM LAP LENGTHS:
#5 BAR = 2'-6"
#6 BAR = 3'-6"

HAM-IR71-8.42	DESIGN AGENCY BURGESS & NIPLE	DATE 2/20/2017	STRUCTURE FILE NUMBER 3106888	312 PLUM ST. CINCINNATI OH
PID No. 91826	HAM-71-1068L	DRAWN XAC	REVIEWED DWL	DESIGNED XAC
IR-71 OVER STEWART ROAD	ABUTMENT BACKWALL DETAILS - 2	CHECKED SJA	STRUCTURE FILE NUMBER 3106888	FILE NUMBER 3106888
11 / 57	378 441			

P:\PR54704\HAM\91826\Design\Structures\HAM071_1068L_Sheets\071_1068L_SF001.dgn Sheet 10/26/2017 8:38:57 AM compton



FORWARD ABUTMENT PLAN - RIGHT BRIDGE
SUPERSTRUCTURE AND FOOTING NOT SHOWN



FORWARD ABUTMENT ELEVATION - RIGHT BRIDGE
FOOTING NOT SHOWN

LEGEND:

E.F. = EACH FACE
F.F. = FAR FACE
N.F. = NEAR FACE
SPA. = SPACE
* = EXISTING VERTICAL REINFORCING STEEL TO BE CLEANED AND RE-USED. NON-CONTACT LAP SPLICES WITH A601 BARS ARE ACCEPTABLE.

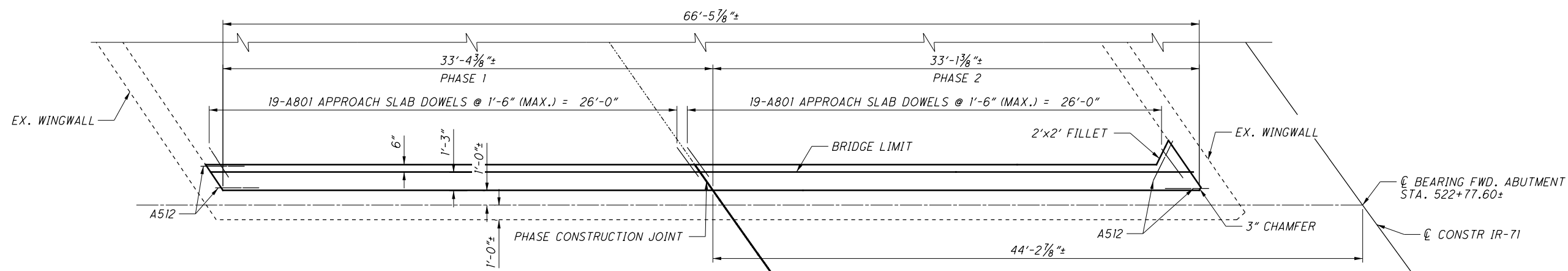
NOTES:

- FOR SECTION A-A SEE SHEET 14/57.
- NO. 5 BAR TO BE EPOXY GROUTED 5" INTO EXISTING CONCRETE PER CMS ITEM 510 - DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN.
- MINIMUM LAP LENGTHS:
#5 BAR = 2'-6"
#6 BAR = 3'-6"



DESIGN AGENCY BURGESS & NIPLÉ 312 PLUM ST. CINCINNATI OH	
DESIGNED XAC CHECKED SJA	REVIEWED DWL DATE 2/20/2017 STRUCTURE FILE NUMBER 3106896
HAM-IR71-8.42 ABUTMENT BACKWALL DETAILS - 3 HAM-71-1068R IR-71 OVER STEWART ROAD	
PID No. 91826	
12 / 57	
379 441	

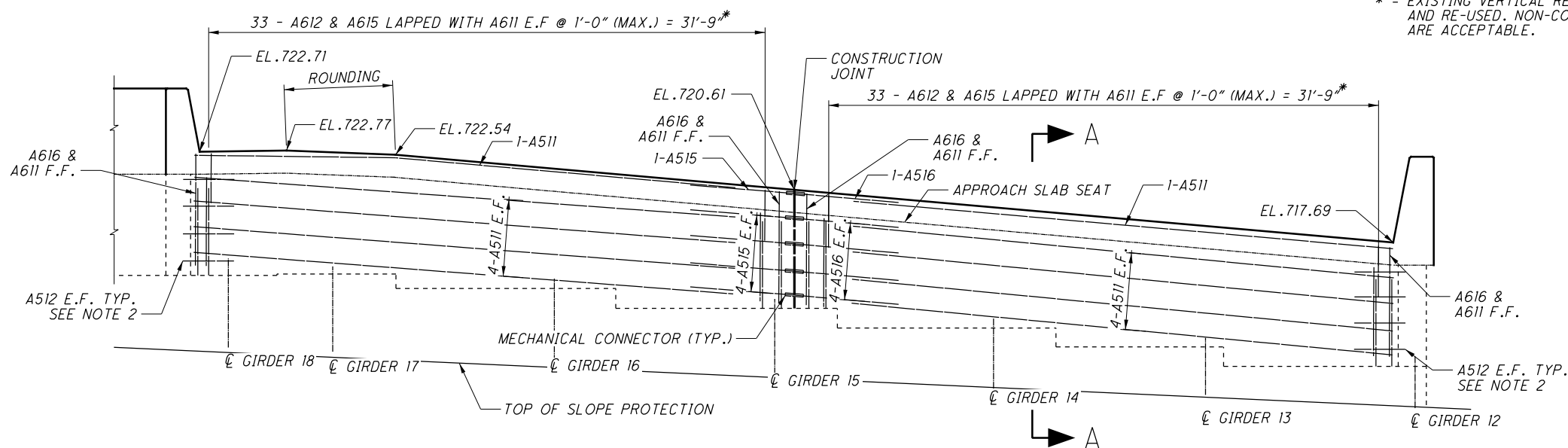
P:\PR54704\HAM\91826\Design\Structures\HAM071_1068L_Sheets\071_1068L_SF002.dgn Sheet 10/26/2017 8:38:59 AM compton



FORWARD ABUTMENT PLAN - LEFT BRIDGE
SUPERSTRUCTURE AND FOOTING NOT SHOWN

LEGEND:

E.F. = EACH FACE
F.F. = FAR FACE
N.F. = NEAR FACE
SPA. = SPACE
* = EXISTING VERTICAL REINFORCING STEEL TO BE CLEANED AND RE-USED. NON-CONTACT LAP SPLICES WITH A611 BARS ARE ACCEPTABLE.



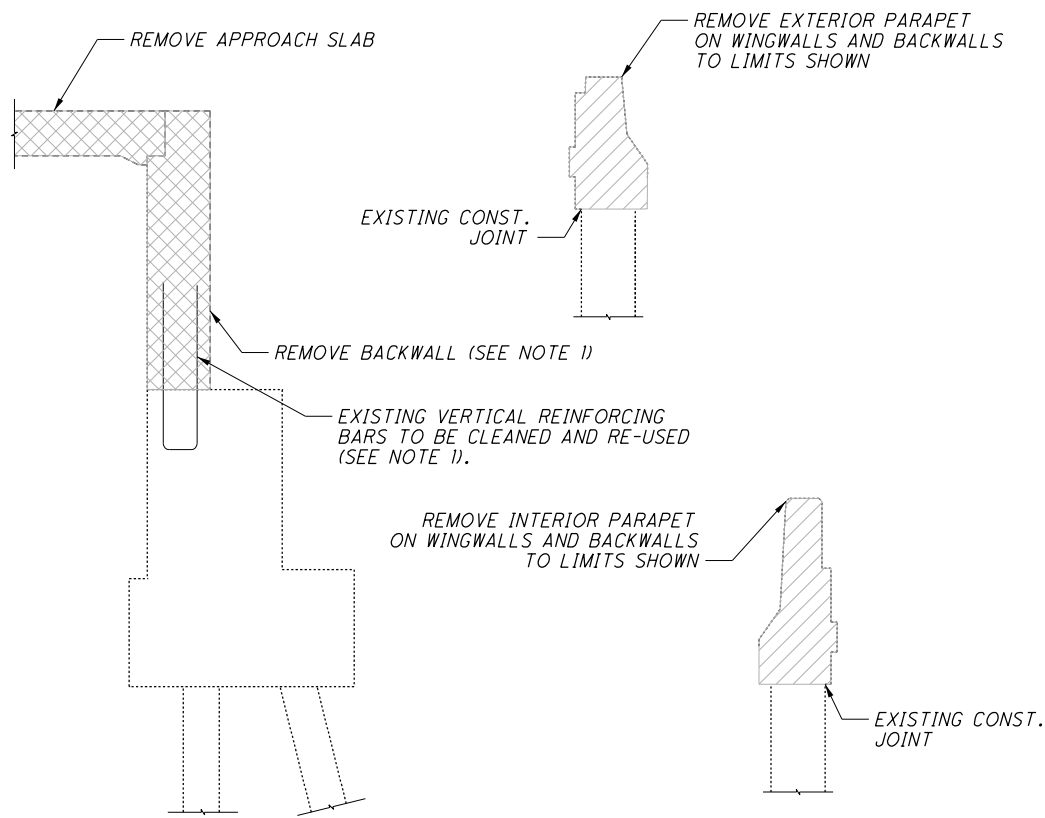
FORWARD ABUTMENT ELEVATION - LEFT BRIDGE
FOOTING NOT SHOWN

NOTES:

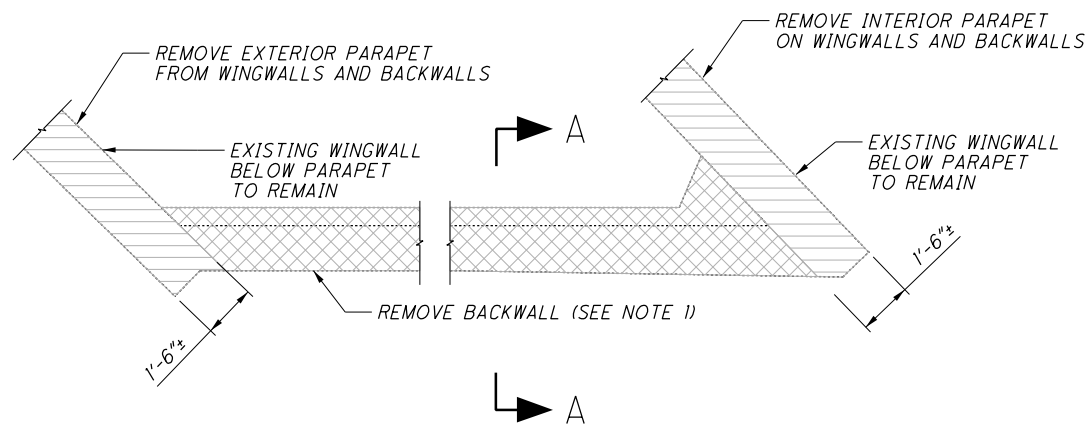
- FOR SECTION A-A SEE SHEET 14/57.
- NO. 5 BAR TO BE EPOXY GROUTED 5" INTO EXISTING CONCRETE PER CMS ITEM 510 - DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN.
- MINIMUM LAP LENGTHS:
#5 BAR = 2'-6"
#6 BAR = 3'-6"

DESIGNED XAC		DRAWN XAC		REVIEWED DWL	DATE 2/20/2017	DESIGN AGENCY BURGESS & NIPLE
CHECKED SJA		REVISED		STRUCTURE FILE NUMBER 3106888		312 PLUM ST. CINCINNATI OH
ABUTMENT BACKWALL DETAILS - 4						
HAM-IR71-8.42						
PID No. 91826						
HAM-71-1068L						
IR-71 OVER STEWART ROAD						
13		57				
380						
441						

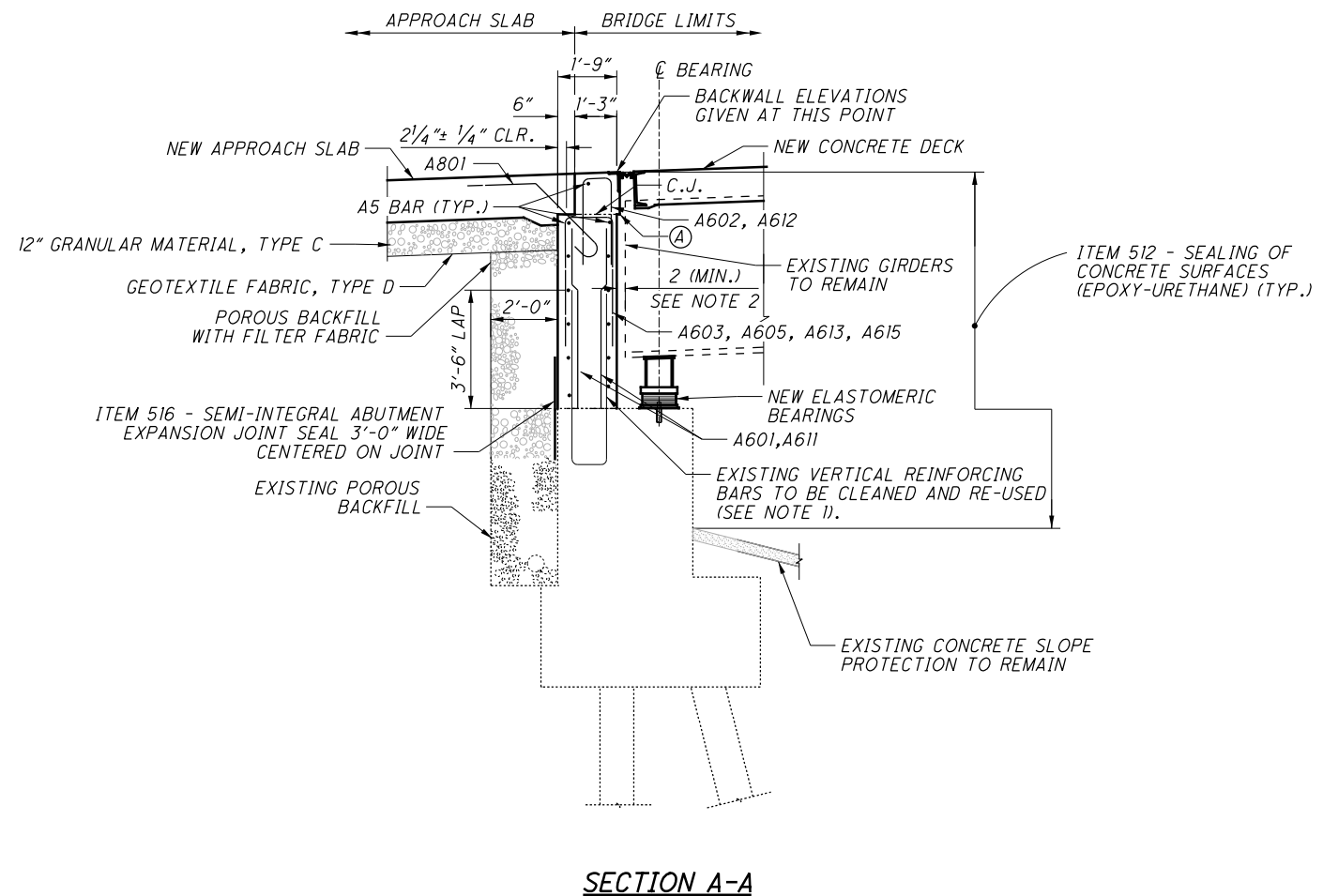
P:\PR54704\HAM\91826\Design\Structures\HAM071_068L_Sheets\071_068L_SR005.dgn_Sheet 10/26/2017 8:39:01AM compton



ABUTMENT REMOVAL SECTIONS



ABUTMENT REMOVAL PLAN
(SECTION ABOVE BRIDGE SEAT)



SECTION A-A

LEGEND:

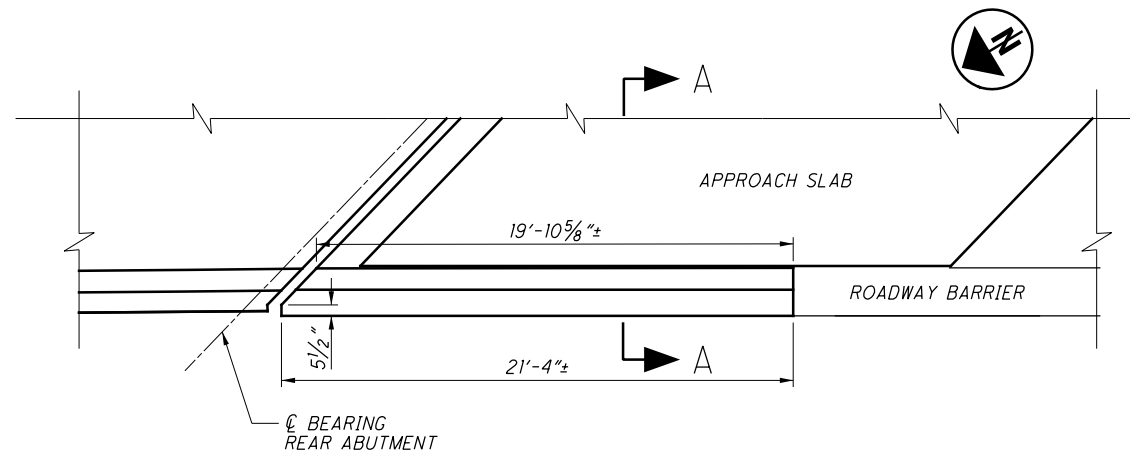
- Ⓐ = ADJUST BACKWALL ABOVE CONSTRUCTION JOINT TO FIT EXPANSION JOINT OPENING
- = PORTION OF EXISTING PARAPET TO BE REMOVED
- = PORTIONS OF EXISTING ABUTMENT TO BE REMOVED
- PEJF = PREFORMED EXPANSION JOINT FILLER
- CLR = CLEAR
- C.J. = CONSTRUCTION JOINT

NOTES:

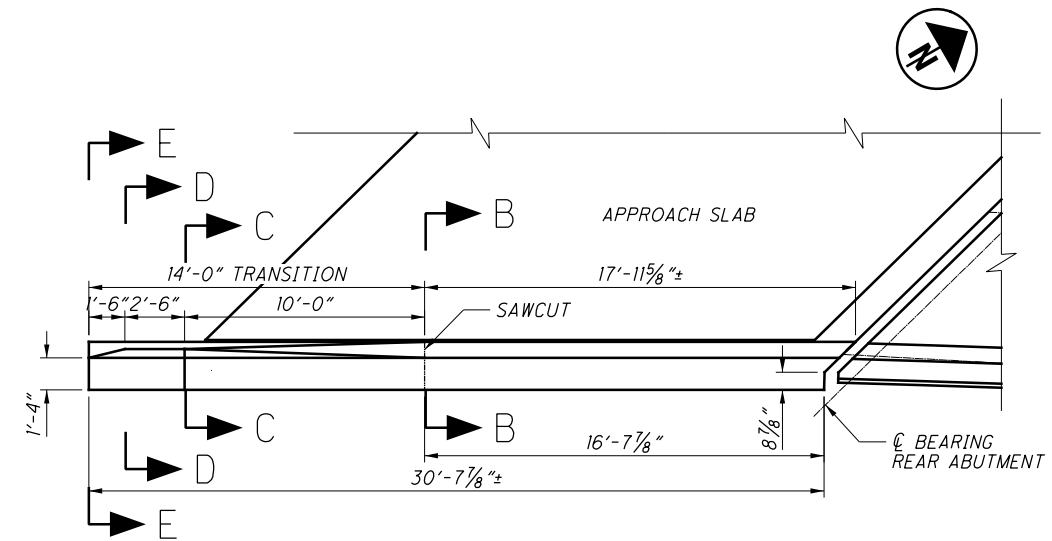
1. REMOVE EXISTING BACKWALL DOWN TO THE BEAM SEAT ELEVATION. THE VERTICAL REINFORCING STEEL THAT COMES OUT OF THE BREASTWALL SHALL BE SALVAGED. SAW CUTTING OF THE VERTICAL REINFORCEMENT AND REPLACING WITH DOWELS SHALL NOT BE PERMITTED. THE CONTRACTOR HAS THE OPTION OF SAW CUTTING THE EXISTING BACKWALL HIGH ENOUGH ABOVE THE BEAM SEAT SO THAT ENOUGH VERTICAL REINFORCING CAN BE SALVAGED TO INSTALL MECHANICAL CONNECTORS AFTER HAND CHIPPING AT NO ADDITIONAL COST TO THE STATE.
2. INSTALL NEW BACKWALL TO BE A MINIMUM OF 2" CLEAR FROM END OF EXISTING GIRDERS (TYP.)

DESIGN AGENCY BURGESS & NIPLE 311 PLUM ST. CINCINNATI OH
DESIGNED XAC CHECKED SJA
DRAWN XAC REVISED
REVIEWED DWL STRUCTURE FILE NUMBER 3106888/3106896
DATE 2/20/2017
ABUTMENT SECTIONS HAM-71-1068L/R IR-71 OVER STEWART ROAD
HAM-IR71-8.42 PID No. 91826
14 / 57
381 441

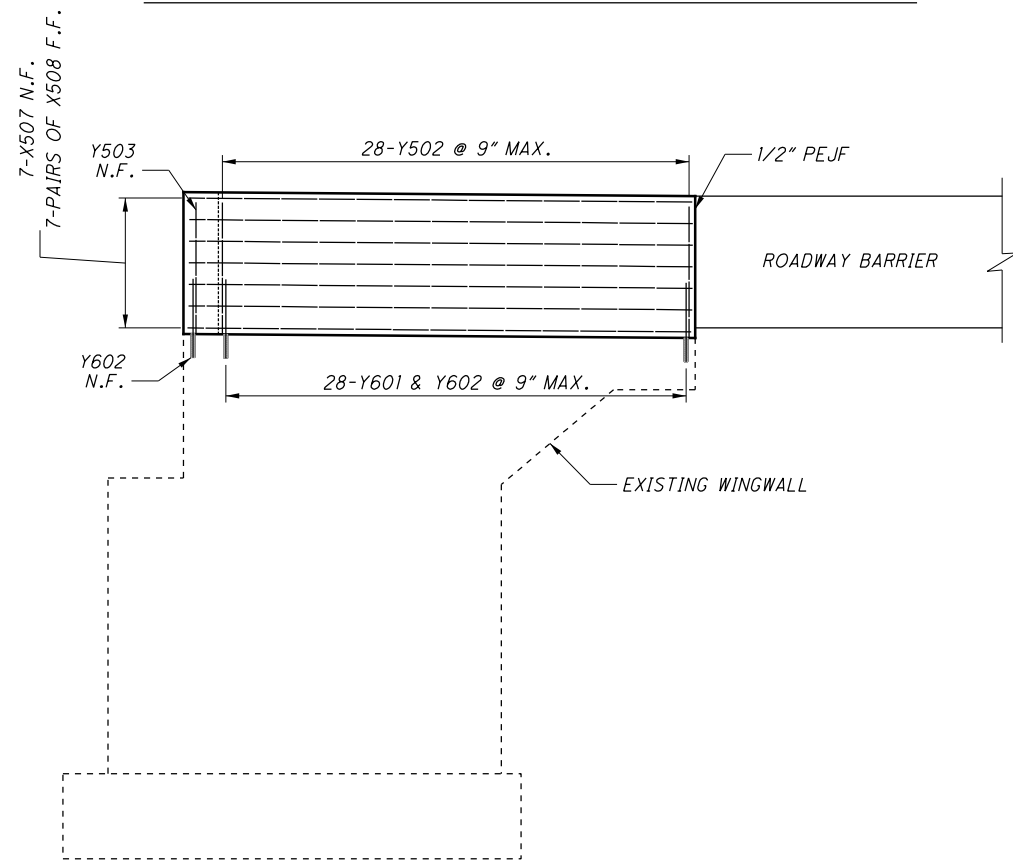
P:\PR54704\HAM\91826\Design\Structures\HAM071_1068L_Sheets\071_1068L_SR006.dgn Sheet 10/26/2017 8:39:03 AM compton



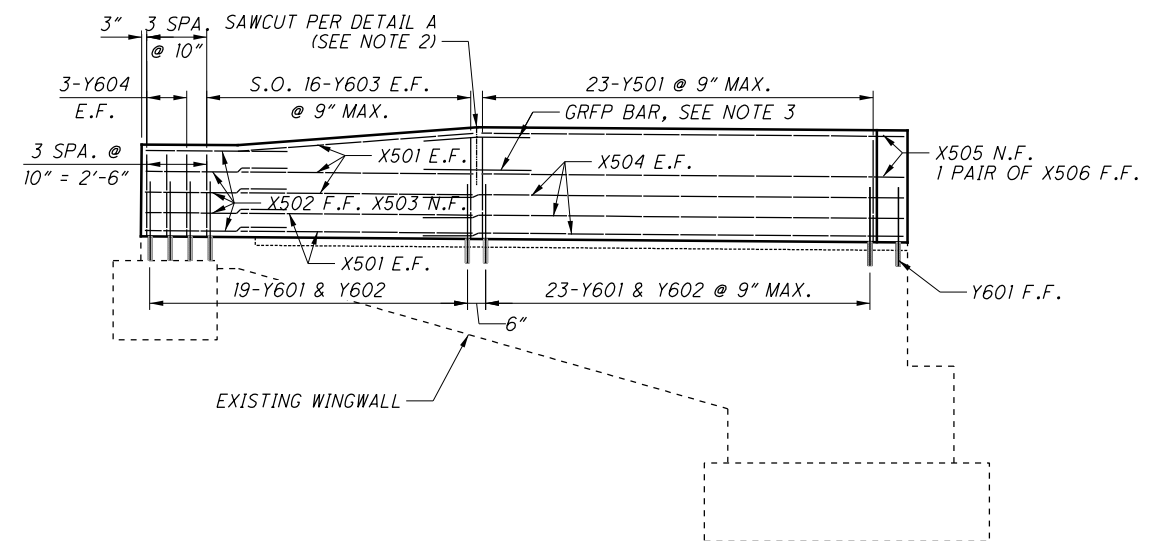
REAR ABUTMENT LEFT WINGWALL PLAN - RIGHT BRIDGE



REAR ABUTMENT RIGHT WINGWALL PLAN - RIGHT BRIDGE



REAR ABUTMENT LEFT WINGWALL ELEVATION - RIGHT BRIDGE
PILING NOT SHOWN



REAR ABUTMENT RIGHT WINGWALL ELEVATION - RIGHT BRIDGE
PILING NOT SHOWN

LEGEND:

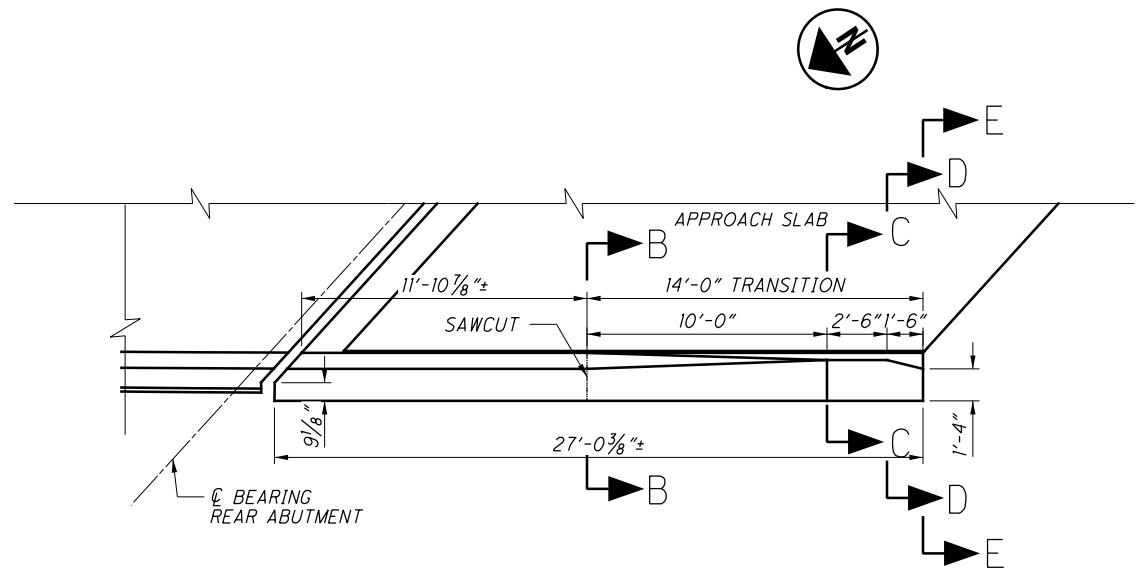
E.F. = EACH FACE
N.F. = NEAR FACE
F.F. = FAR FACE

NOTES:

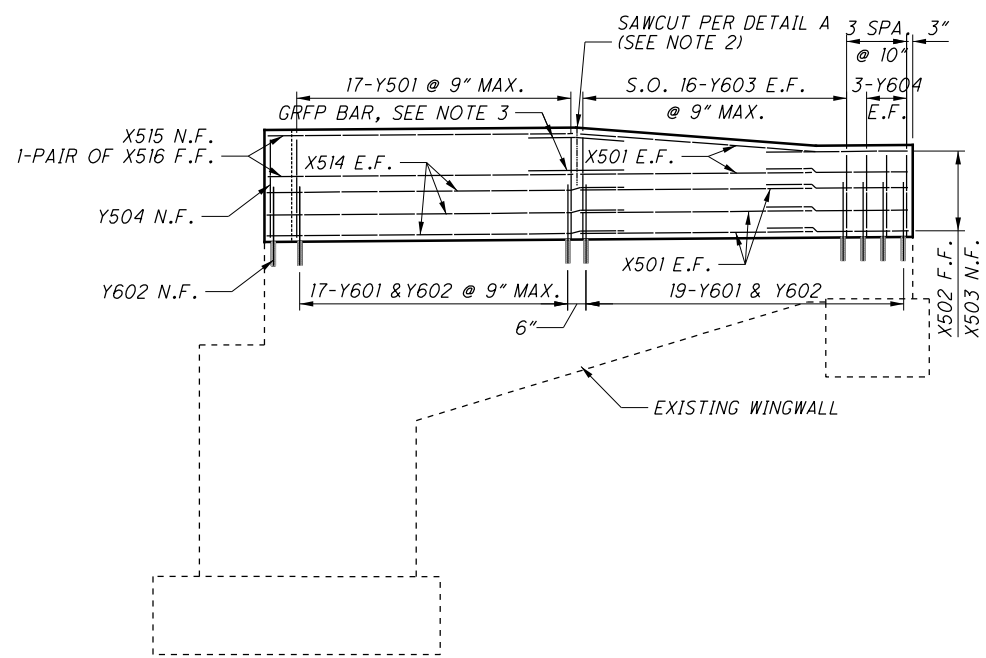
- FOR SECTION A-A THROUGH E-E SEE SHEET 19/57.
- FOR DETAIL A, SEE STANDARD DRAWING SBR-1-13.
- 1/2" DIA. GLASS FIBER REINFORCED POLYMER (GFRP) STIFFENING REINFORCEMENTS, 4'-6" LONG, CENTERED ON SAWCUT JOINT.
- MINIMUM LAP LENGTHS:
#5 BAR = 2'-6"

DESIGNED XAC		DRAWN XAC		REVIEWED DWL		DATE 2/20/2017		DESIGN AGENCY BURGESS & NIPLÉ	
CHECKED SJA		REVISED		STRUCTURE FILE NUMBER 3106896		312 PLUM ST. CINCINNATI OH			
ABUTMENT WINGWALL DETAILS - 1									
HAM-IR71-8.42					HAM-71-1068R				
PID No. 91826					IR-71 OVER STEWART ROAD				
15 / 57									
382					441				

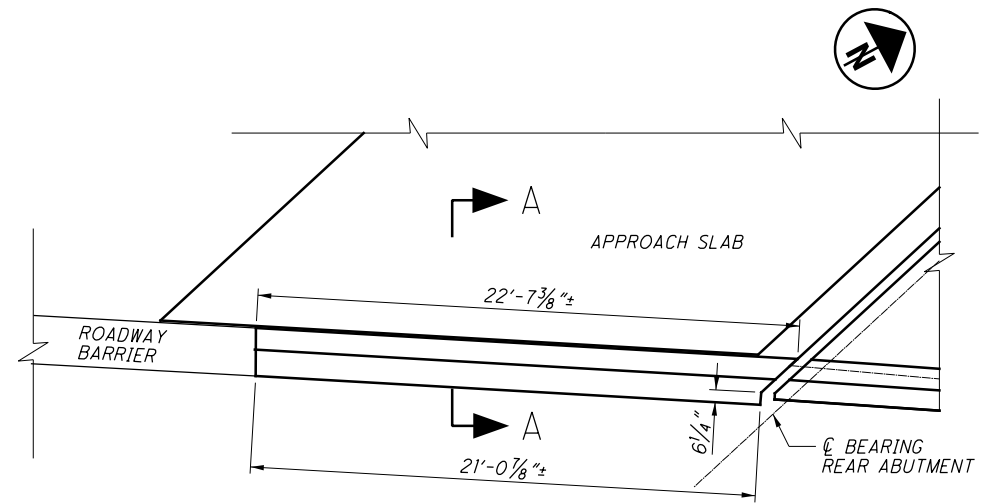
P:\PR54704\HAM\91826\Design\Structures\HAM071_1068L_Sheets\071_1068L_Sheet.dgn Sheet 10/26/2017 8:39:05 AM compton



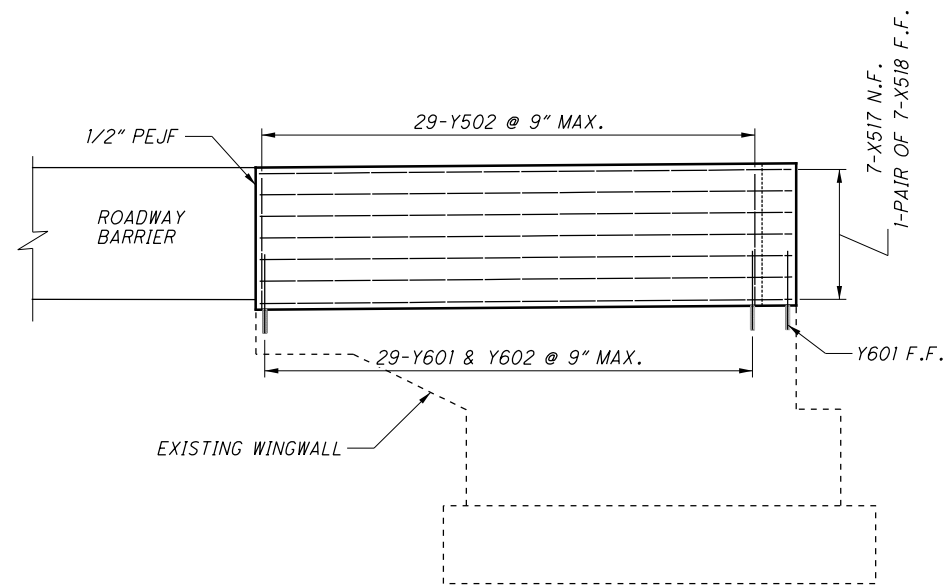
REAR ABUTMENT LEFT WINGWALL PLAN - LEFT BRIDGE



REAR ABUTMENT LEFT WINGWALL ELEVATION - LEFT BRIDGE
PILING NOT SHOWN



REAR ABUTMENT RIGHT WINGWALL PLAN - LEFT BRIDGE



REAR ABUTMENT RIGHT WINGWALL ELEVATION - LEFT BRIDGE
PILING NOT SHOWN

LEGEND:

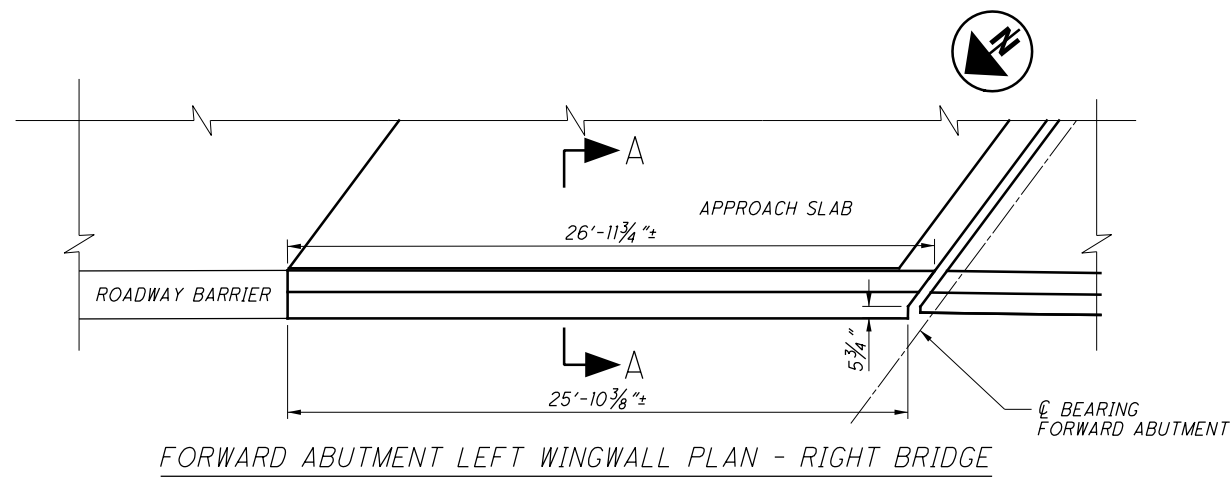
E.F. = EACH FACE
N.F. = NEAR FACE
F.F. = FAR FACE

NOTES:

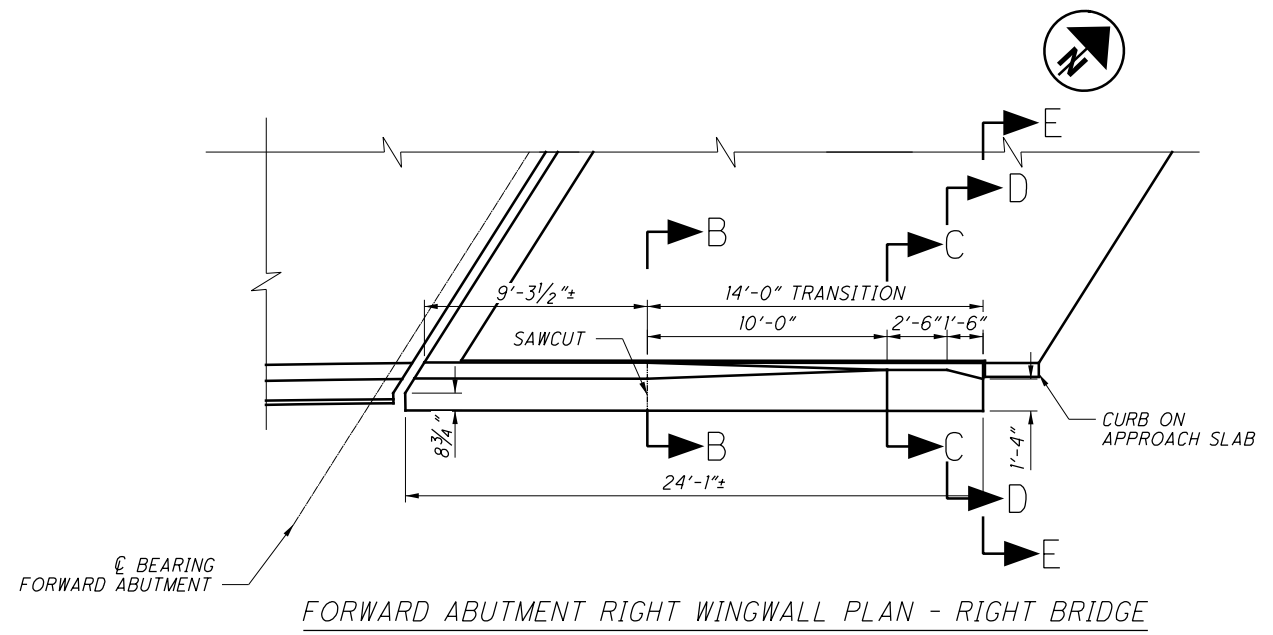
- FOR SECTIONS A-A THRU E-E, SEE SHEET 19/57.
- FOR DETAIL A, SEE STANDARD DRAWING SBR-1-13.
- 1/2" DIA. GLASS FIBER REINFORCED POLYMER (GFRP) STIFFENING REINFORCEMENTS, 4'-6" LONG, CENTERED ON SAWCUT JOINT.
- MINIMUM LAP LENGTHS:
#5 BAR = 2'-6"

DESIGNED		CHECKED		DESIGN AGENCY	
XAC	SJA	XAC	SJA	BURGESS & NIPLE	312 PLUM ST. CINCINNATI OH
DRAWN		REVIEWED		DATE	
XAC	DWL	DWL	2/20/2017	STRUCTURE FILE NUMBER	
3106888		3106888			
ABUTMENT WINGWALL DETAILS - 2 HAM-71-1068L IR-71 OVER STEWART ROAD					
HAM-IR71-8.42 PID No. 91826		16 / 57			
383 441					

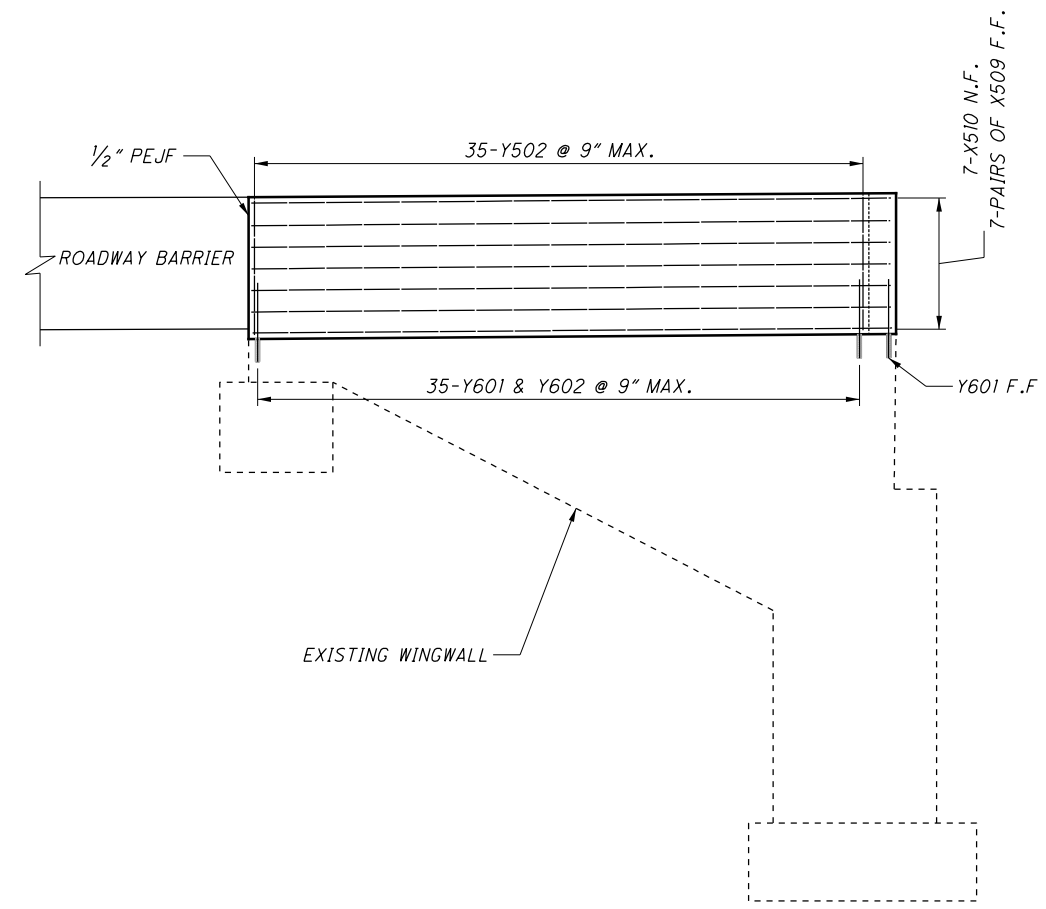
P:\PR54704\HAM\91826\Design\Structures\HAM071_1068L\Sheets\071_1068L_SR008.dgn Sheet 10/26/2017 8:39:07 AM compton



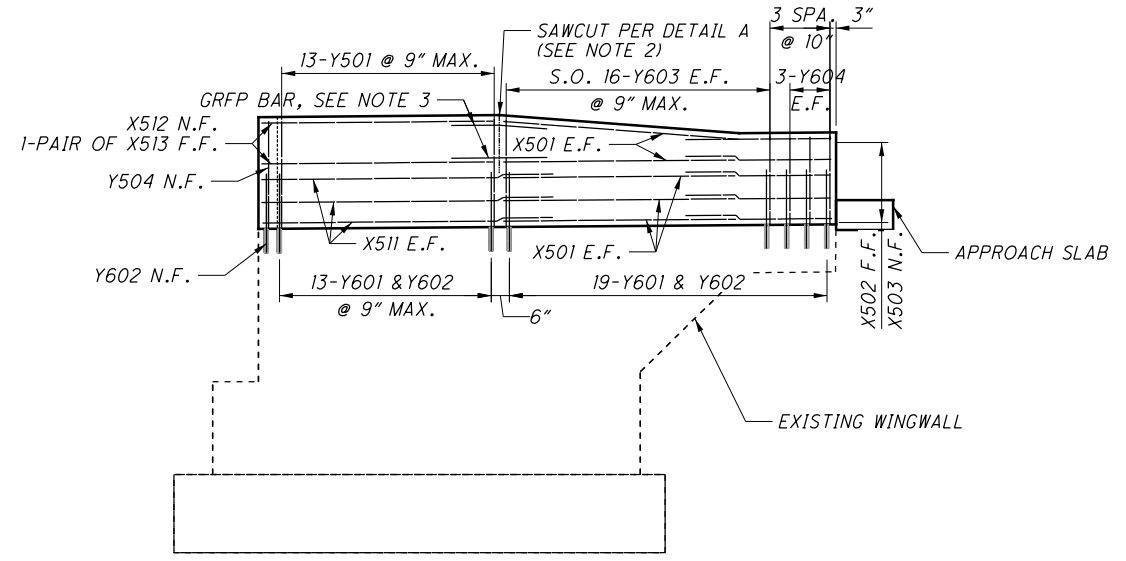
FORWARD ABUTMENT LEFT WINGWALL PLAN - RIGHT BRIDGE



FORWARD ABUTMENT RIGHT WINGWALL PLAN - RIGHT BRIDGE



FORWARD ABUTMENT LEFT WINGWALL ELEVATION - RIGHT BRIDGE
PILING NOT SHOWN



FORWARD ABUTMENT RIGHT WINGWALL ELEVATION - RIGHT BRIDGE
PILING NOT SHOWN

LEGEND:

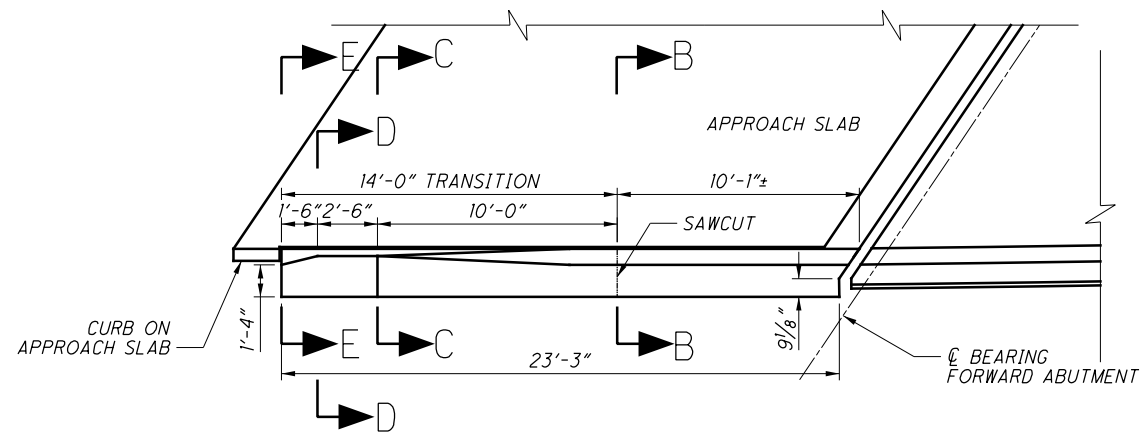
E.F. = EACH FACE
N.F. = NEAR FACE
F.F. = FAR FACE

NOTES:

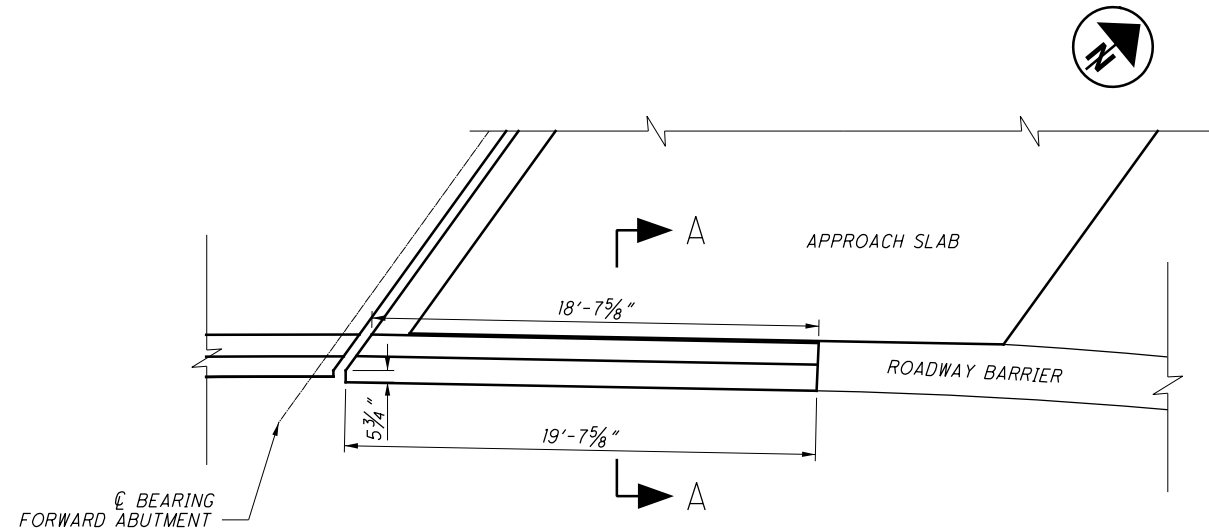
- FOR SECTIONS A-A THRU E-E, SEE SHEET 19/57.
- FOR DETAIL A, SEE STANDARD DRAWING SBR-1-13.
- 1/2" DIA. GLASS FIBER REINFORCED POLYMER (GFRP) STIFFENING REINFORCEMENTS, 4'-6" LONG, CENTERED ON SAWCUT JOINT.
- MINIMUM LAP LENGTHS:
#5 BAR = 2'-6"

DESIGNED		XAC		CHECKED		SJA	
DRAWN		XAC		REVISED			
REVIEWED		DWL		DATE		2/20/2017	
STRUCTURE FILE NUMBER		3106896		DESIGN AGENCY		BURGESS & NIPLE	
312 PLUM ST. CINCINNATI OH				HAM-IR71-8.42		PID No. 91826	
IR-71 OVER STEWART ROAD		HAM-71-1068R		17		57	
ABUTMENT WINGWALL DETAILS - 3				384		441	

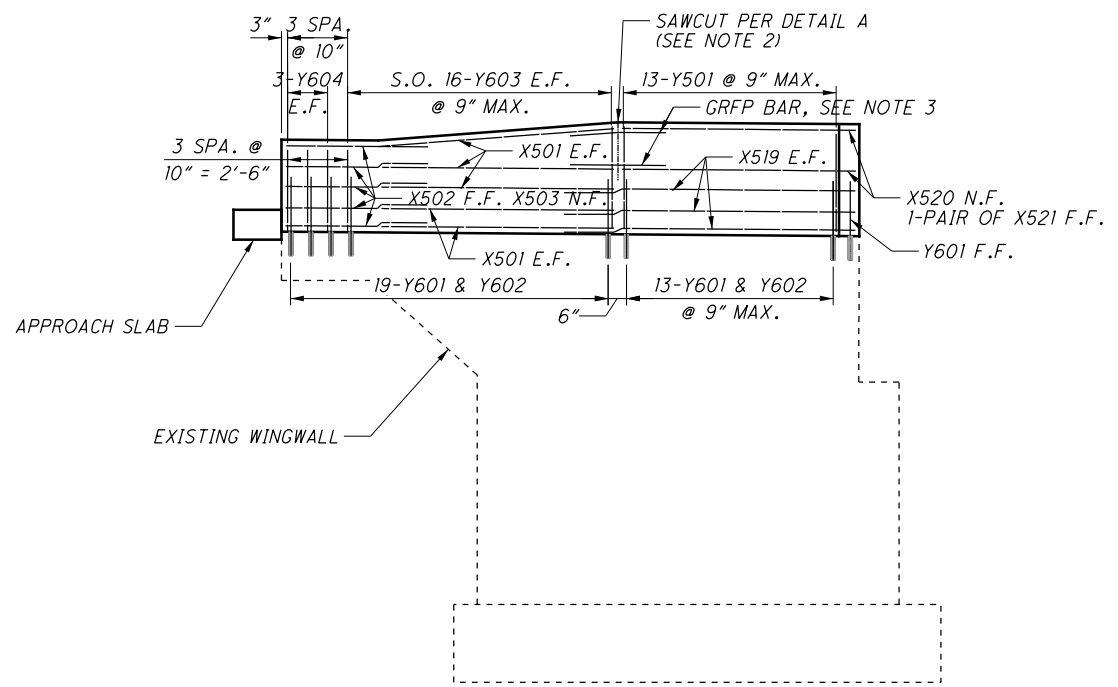
P:\PR54704\HAM\91826\Design\Structures\HAM071_1068L_Sheets\071_1068L_SR009.dgn Sheet 10/26/2017 8:39:10 AM compton



FORWARD ABUTMENT LEFT WINGWALL PLAN - LEFT BRIDGE

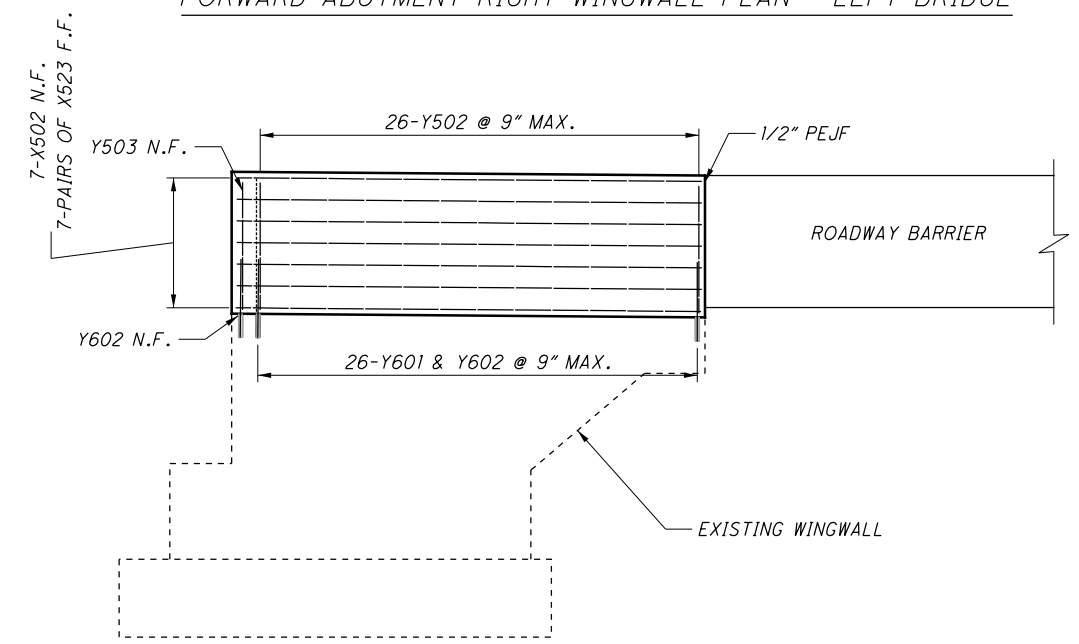


FORWARD ABUTMENT RIGHT WINGWALL PLAN - LEFT BRIDGE



FORWARD ABUTMENT LEFT WINGWALL ELEVATION - LEFT BRIDGE

PILING NOT SHOWN



FORWARD ABUTMENT RIGHT WINGWALL ELEVATION - LEFT BRIDGE

PILING NOT SHOWN

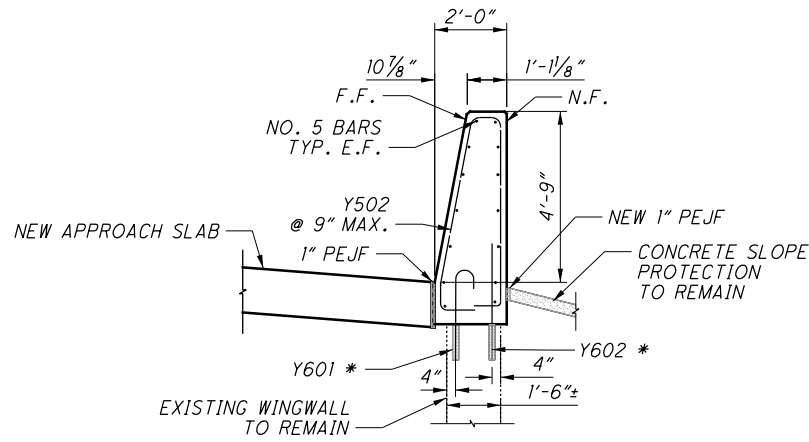
LEGEND:

E.F. = EACH FACE
N.F. = NEAR FACE
F.F. = FAR FACE

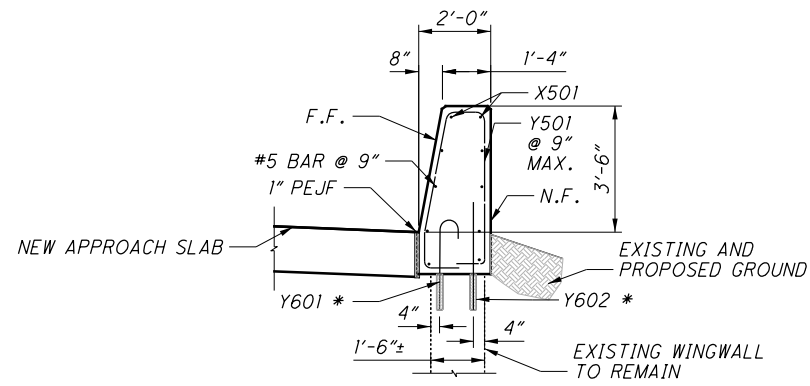
NOTES:

- FOR SECTIONS A-A THRU E-E, SEE SHEET 19/57.
- FOR DETAIL A, SEE STANDARD DRAWING SBR-1-13.
- 1/2" DIA. GLASS FIBER REINFORCED POLYMER (GFRP) STIFFENING REINFORCEMENTS, 4'-6" LONG, CENTERED ON DEFLECTION JOINT.
- MINIMUM LAP LENGTHS:
#5 BAR = 2'-6"

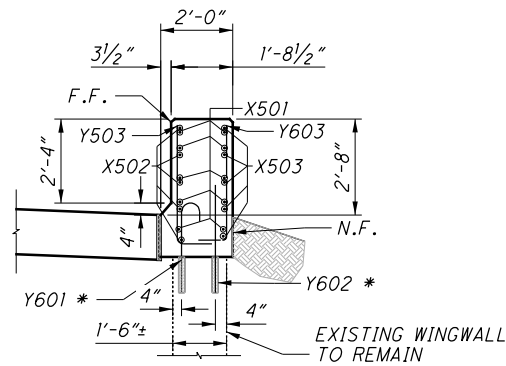
DESIGNED		CHECKED		DRAWN		REVIEWED		DATE		DESIGN AGENCY	
XAC	SJA	XAC	SJA	XAC	XAC	DWL	DWL	2/20/2017	2/20/2017	BURGESS & NIPL	BURGESS & NIPL
HAM-71-1068L		IR-71 OVER STEWART ROAD		HAM-IR71-8.42		PID No. 91826		3106888		312 PLUM ST. CINCINNATI OH	
ABUTMENT WINGWALL DETAILS - 4		HAM-71-1068L		IR-71 OVER STEWART ROAD		PID No. 91826		3106888		312 PLUM ST. CINCINNATI OH	
18		57		385		441					



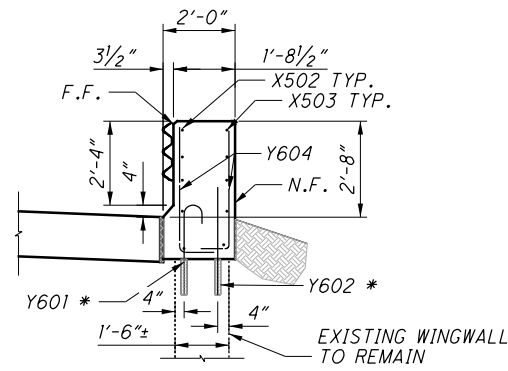
SECTION A-A



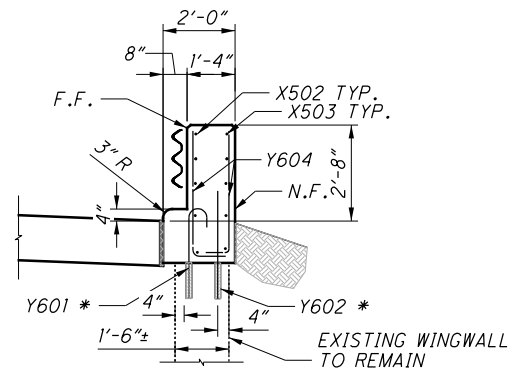
SECTION B-B



SECTION C-C



SECTION D-D



SECTION E-E

LEGEND:

E.F. = EACH FACE
 N.F. = NEAR FACE
 F.F. = FAR FACE

PEJF = PREFORMED EXPANSION JOINT FILLER
 * = EPOXY GROUTED 7" INTO EXISTING CONCRETE PER CMS ITEM 510 - DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN.

NOTES:

1. CONCRETE FOR WINGWALL PARAPETS IS INCLUDED WITH ITEM 511-CLASS QC2 CONCRETE, BRIDGE DECK (PARAPET) FOR PAYMENT.

P:\PR54704\HAM\91826\Design\Structures\HAM071_068L_Sheets\071_068L_SRO10.dgn Sheet 10/26/2017 8:39:12 AM compton

DESIGN AGENCY
 BURGESS & NIPLE
 311 PLUM ST. CINCINNATI OH

REVIEWED DATE
 DWL 2/20/2017
 STRUCTURE FILE NUMBER
 3106888/3106896

DRAWN
 XAC
 REVISED

DESIGNED
 XAC
 CHECKED
 SJA

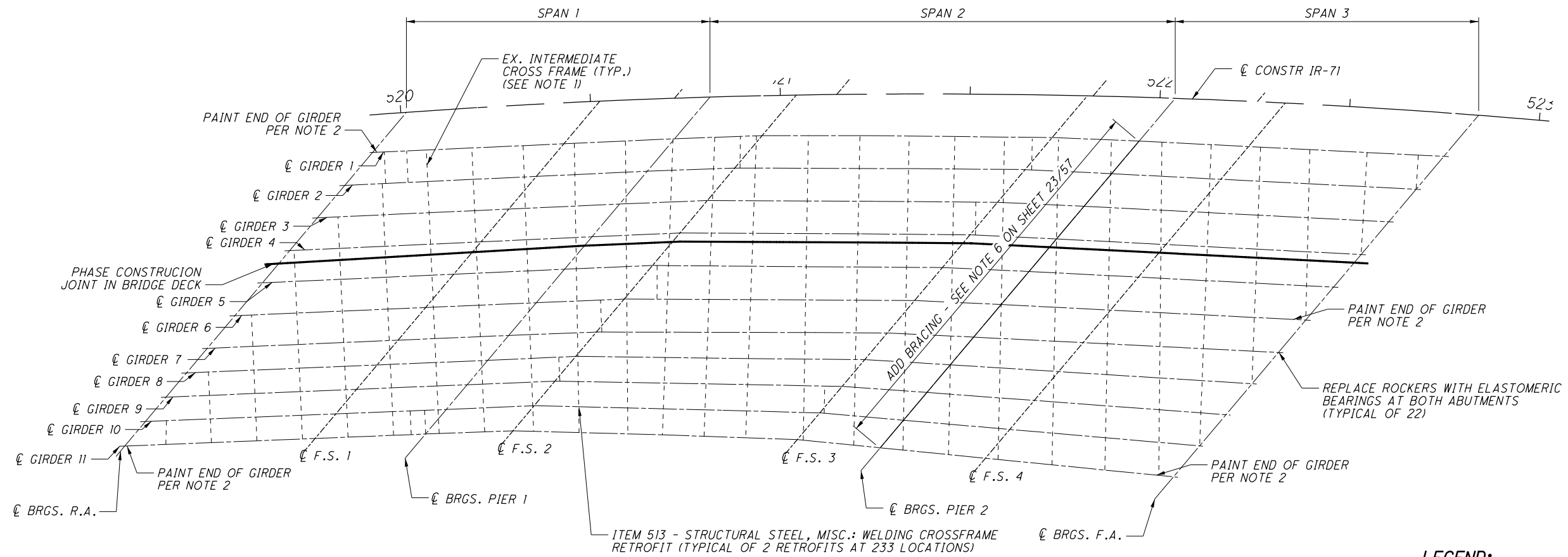
WINGWALL SECTIONS
 HAM-71-1068L/R
 IR-71 OVER STEWART ROAD

HAM-IR71-8.42
 PID No. 91826

19 / 57

386
 441

P:\PR54704\HAM\91826\Design\Structures\HAM071_1068R\Sheets\071_1068R_SS003.dgn Sheet 10/26/2017 8:39:14 AM compton



FRAMING PLAN - RIGHT BRIDGE

LEGEND:
 BRGS. = BEARINGS
 F.S. = FIELD SPLICE
 R.A. = REAR ABUTMENT
 F.A. = FORWARD ABUTMENT

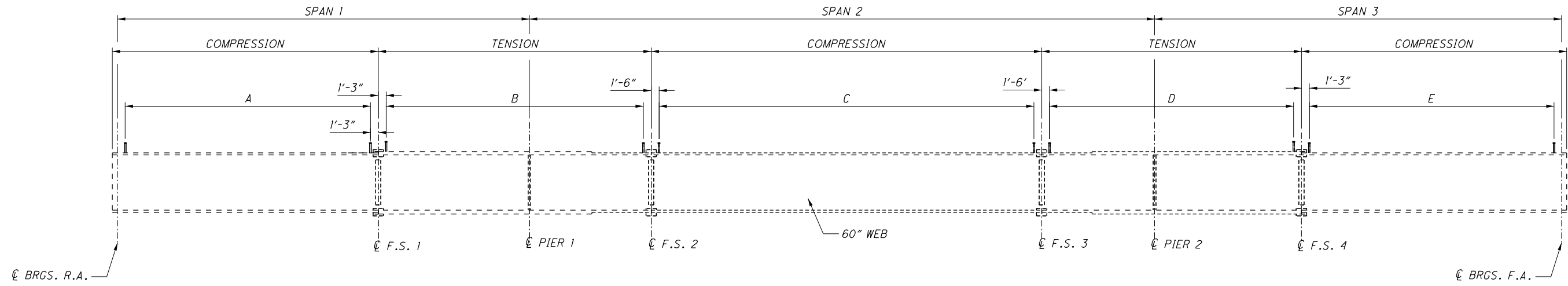
NOTES:

- SEE SHEET 25/57 FOR INTERMEDIATE CROSS FRAME STIFFENER WELDING RETROFIT DETAILS.
- PAINT DETERIORATED AREAS WITHIN THE LAST 5 FEET OF FOUR GIRDER ENDS, COLOR TO MATCH EXISTING PER ITEM 514 - FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN.

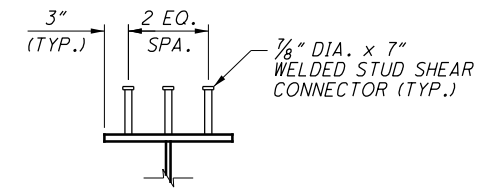


DESIGNED		DRAWN		REVIEWED		DATE		DESIGN AGENCY	
SJA	XAC	SJA	DWL	DWL	2/20/2017	BURGESS & NIPL	312 PLUM ST. CINCINNATI OH		
CHECKED		REVISED		STRUCTURE FILE NUMBER					
XAC				3106896					
FRAMING PLAN - RIGHT BRIDGE									
HAM-IR71-8.42					HAM-71-1068R				
PID No. 91826					IR-71 OVER STEWART ROAD				
20/57									
387									
441									

P:\PR54704\HAM\91826\Design\Structures\HAM071_1068R_Sheets\071_1068R_SS004.dgn Sheet 10/26/2017 8:39:15 AM compton



GIRDER ELEVATION - RIGHT BRIDGE



GIRDER SHEAR CONNECTOR DETAIL

LEGEND:

- BRGS. = BEARINGS
- F.S. = FIELD SPLICE
- G# = GIRDER DESIGNATION
- R.A. = REAR ABUTMENT
- F.A. = FORWARD ABUTMENT

NOTES:

1. ALL DIMENSIONS ARE HORIZONTAL AND REQUIRE ADJUSTMENT FOR CAMBER AND FINISHED GRADE.
2. WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE TO AREAS OF THE GIRDER FLANGES DESIGNATED "COMPRESSION". DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM EDGE OF FLANGE, BE NO MORE THAN 2" LONG, AND BE AT LEAST 5/16".
3. INTERMEDIATE AND CROSSFRAME STIFFENERS NOT SHOWN IN ELEVATION. SEE FRAMING PLAN FOR LOCATIONS.
4. ADJUST SHEAR CONNECTOR SPACING LOCALLY AS REQUIRED TO CLEAR BOLTED FLANGE SPLICES.

SHEAR CONNECTOR SPACING					
GIRDER	A	B	C	D	E
G1 - G7	44 SPA @ 13 1/2" (MAX.) = 49'-1"	34 SPA @ 18" (MAX.) = 49'-10"	49 SPA @ 18" (MAX.) = 73'-6"	30 SPA @ 20" (MAX.) = 49'-9"	47 SPA @ 13" (MAX.) = 50'-3"
G8	44 SPA @ 13 1/2" (MAX.) = 49'-0"	34 SPA @ 18" (MAX.) = 49'-10"	49 SPA @ 18" (MAX.) = 73'-0"	29 SPA @ 20" (MAX.) = 48'-3"	46 SPA @ 13" (MAX.) = 49'-10"
G9	44 SPA @ 13 1/2" (MAX.) = 49'-0"	34 SPA @ 18" (MAX.) = 49'-10"	49 SPA @ 18" (MAX.) = 72'-8"	29 SPA @ 20" (MAX.) = 47'-10"	46 SPA @ 13" (MAX.) = 49'-5"
G10	44 SPA @ 13 1/2" (MAX.) = 49'-0"	34 SPA @ 18" (MAX.) = 49'-9"	49 SPA @ 18" (MAX.) = 72'-2"	29 SPA @ 20" (MAX.) = 47'-4"	46 SPA @ 13" (MAX.) = 48'-11"
G11	44 SPA @ 13 1/2" (MAX.) = 48'-11"	34 SPA @ 18" (MAX.) = 49'-9"	48 SPA @ 18" (MAX.) = 71'-9"	29 SPA @ 20" (MAX.) = 47'-0"	45 SPA @ 13" (MAX.) = 48'-6"

GIRDER DETAILS - RIGHT BRIDGE

HAM-71-1068R
IR-71 OVER STEWART ROAD

DESIGN AGENCY: BURGESS & NIPLE
312 PLUM ST. CINCINNATI OH

DATE: 2/20/2017
REVIEWED: DWL
STRUCTURE FILE NUMBER: 3106896

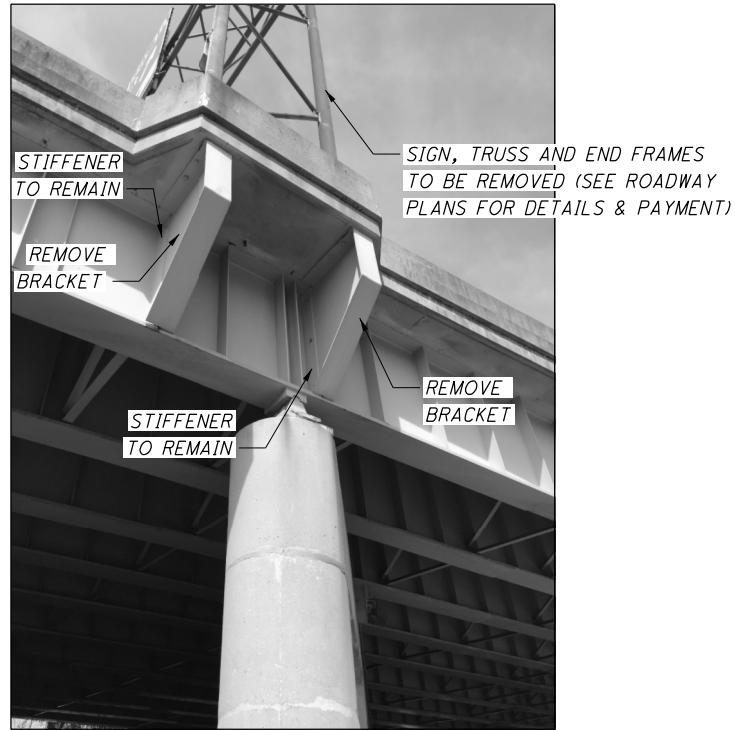
DRAWN: SJA
CHECKED: XAC

DESIGNED: SJA
CHECKED: XAC

HAM-IR71-8.42
PID No. 91826

21/57

388
441



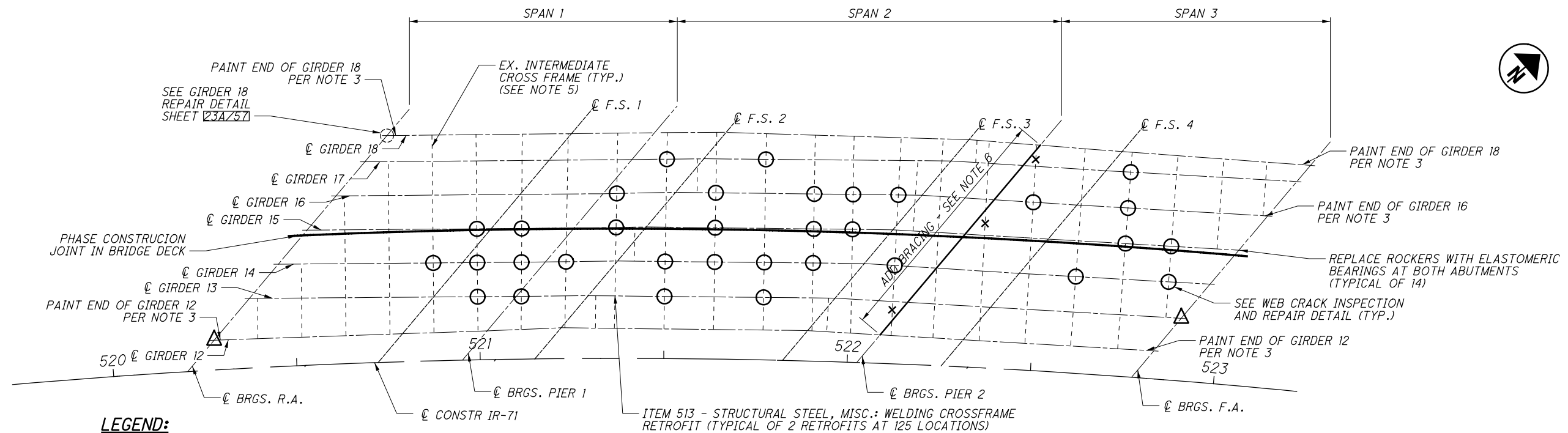
EXISTING SIGN TRUSS BRACKET REMOVAL
(SEE NOTE 1)

NOTES:

- CONTRACTOR SHALL FIELD CUT AND REMOVE FOUR EXISTING BRACKETS AND HARDWARE FROM THE EXTERIOR GIRDERS. GRIND REMAINING EDGES SMOOTH AND TOUCH-UP PAINT WITH COLOR TO MATCH EXISTING. THE COST OF ALL LABOR, EQUIPMENT AND MATERIALS REQUIRED TO REMOVE THE EXISTING TRUSS BRACKETS SHALL BE INCLUDED WITH THE UNIT PRICE FOR ITEM 202 - REMOVAL MISC.: SIGN TRUSS SUPPORT BRACKETS (LUMP SUM).

DESIGNED SJA		DRAWN SJA		REVIEWED DWL		DATE 2/20/2017		DESIGN AGENCY BURGESS & NIPLÉ	
CHECKED XAC		REVISED		STRUCTURE FILE NUMBER 3106896				312 PLUM ST. CINCINNATI OH	
SUPERSTRUCTURE DETAILS- RIGHT BRIDGE					HAM-IR71-8.42				
HAM-71-1068R					PID No. 91826				
IR-71 OVER STEWART ROAD									
22		57		389		441			

P:\PR54704\HAM-91826\Design\Structures\HAM071_1068L_S5002.dgn Sheet 1/24/2018 9:43:24 AM compton



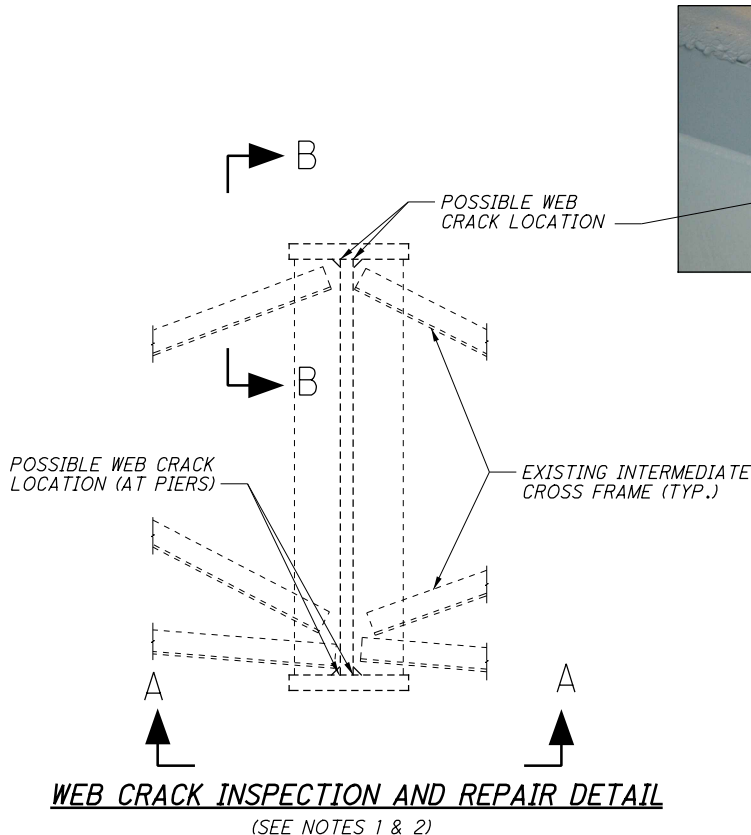
LEGEND:

- BRGS. = BEARINGS
- F.S. = FIELD SPLICE
- R.A. = REAR ABUTMENT
- F.A. = FORWARD ABUTMENT
- = SUSPECTED WEB CRACK LOCATION
- ✕ = EXISTING INTERMEDIATE STEEL CROSS BRACING TO BE REMOVED (SEE NOTE 7)
- △ = SEE SHEET 234/57 FOR END GIRDER WEB CRACK REPAIR DETAIL

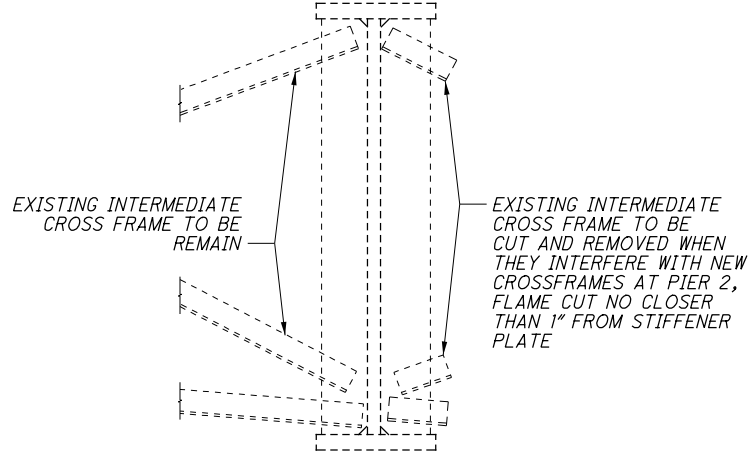
FRAMING PLAN - LEFT BRIDGE

NOTES:

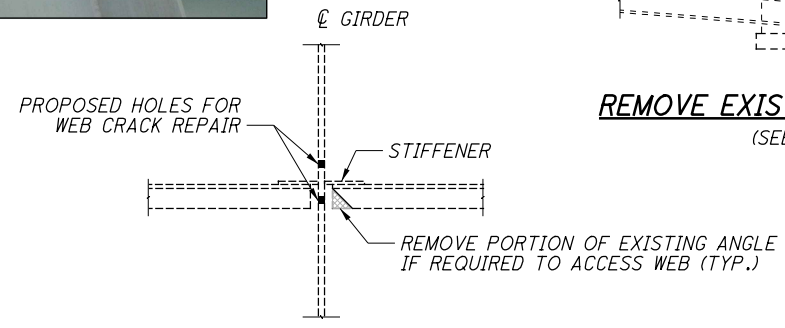
1. CONTRACTOR SHALL PROVIDE ACCESS FOR PROJECT ENGINEER TO VISUALLY INSPECT ALL INTERMEDIATE CROSS FRAME STIFFENER LOCATIONS FOR CRACKS IN WEB. THE COST OF ALL LABOR, EQUIPMENT AND MATERIALS REQUIRED TO INSPECT EACH CROSS FRAME STIFFENER LOCATIONS FOR CRACKS SHALL BE INCLUDED UNDER ITEM SPECIAL STRUCTURES: STRUCTURE INSPECTION AND MECHANIZED ACCESS (HOUR).
2. RETROFIT WEB CRACKS USING THE FOLLOWING REPAIR PROCEDURE:
 - A: CLEAN AREA NEAR CRACK USING PENCIL ABRASIVE BLASTING ON EACH SIDE OF THE GIRDER WEB (SEE COMMON GENERAL NOTES SHEETS 1 & 2).
 - B: LOCATE CRACK TIPS USING DYE PENETRANT AND/OR MAGNETIC PARTICLE (NDT) TESTING. MORE THAN ONE NDT MAY BE REQUIRED BUT ADDITIONAL NDT WORK SHALL BE INCLUDED IN THE COST PER EACH LOCATION (SEE COMMON GENERAL NOTES SHEETS 1 & 2).
 - C: USING A MAGNETIC-BASE DRILL, DRILL HOLES 2" INCH DIAMETER AT TIPS OF CRACKS. A CARBIDE-TIPPED ANNULAR CUTTER SHALL BE USED FOR THE BIT (SEE COMMON GENERAL NOTES SHEETS 1 & 2).
 - D: PAINT REPAIR LOCATIONS PER ITEM 514 - FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN.
3. PAINT ALL STEEL AREAS WITHIN THE LAST 5 FEET OF FIVE GIRDER ENDS, COLOR TO MATCH EXISTING PER ITEM 514.
4. FOR TEMPORARY SHORING DETAILS SEE SHEET 24/57.
5. SEE SHEET 25/57 FOR INTERMEDIATE CROSS FRAME STIFFENER WELDING DETAILS.
6. INSTALL NEW STEEL CROSS BRACING BETWEEN EXISTING BEARING STIFFENERS OVER PIER 2 PER DETAILS ON SHEET 25/57.
7. REMOVE EXISTING INTERMEDIATE CROSSFRAMES WHEN INTERFERE WITH NEW CROSSFRAME, ALL LABOR, EQUIPMENT AND MATERIALS REQUIRED TO CUT AND REMOVE EXISTING ANGLES SHALL BE INCLUDED WITH THE UNIT PRICE FOR ITEM 513 - STRUCTURAL STEEL MISC.: REMOVE EXISTING INTERMEDIATE CROSSFRAME.



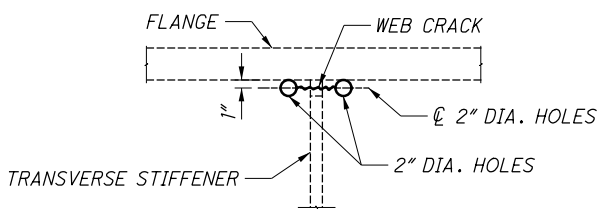
WEB CRACK INSPECTION AND REPAIR DETAIL
(SEE NOTES 1 & 2)



REMOVE EXISTING CROSSFRAME
(SEE NOTES 7)

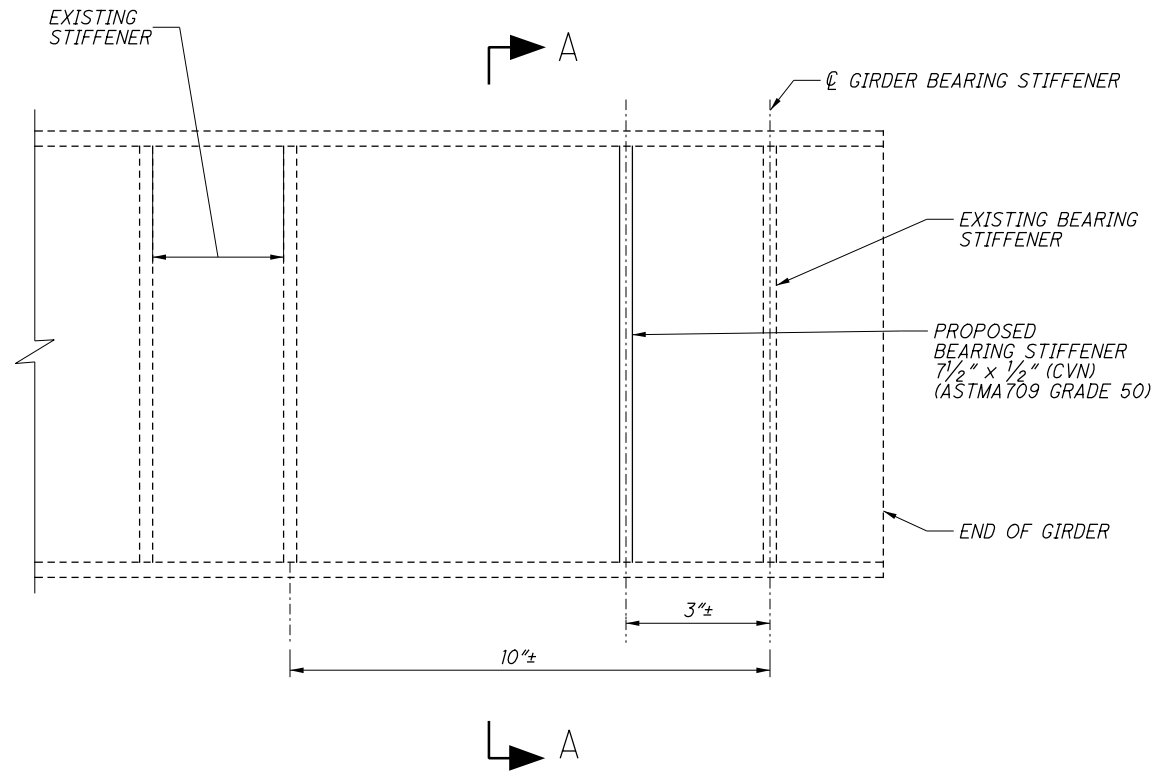


VIEW A-A

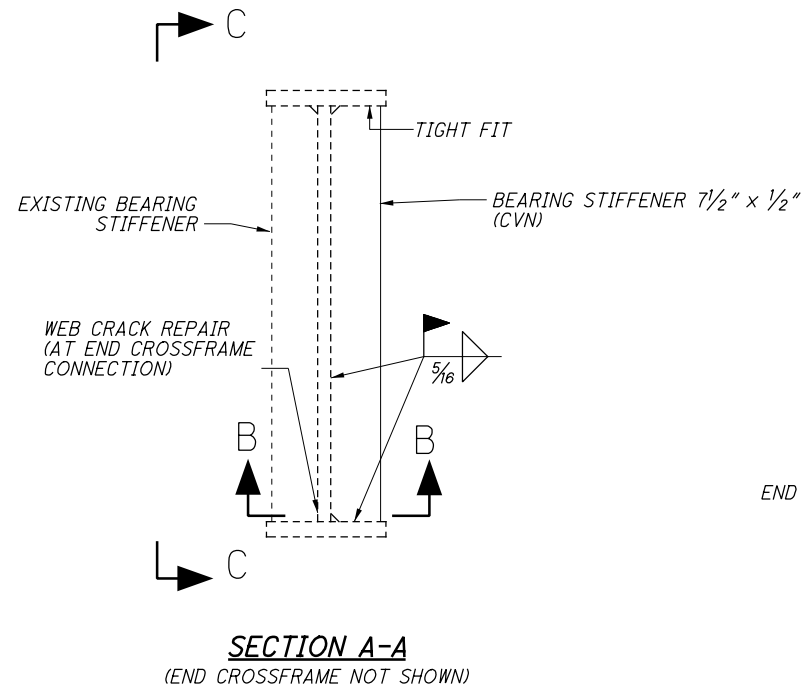


VIEW B-B

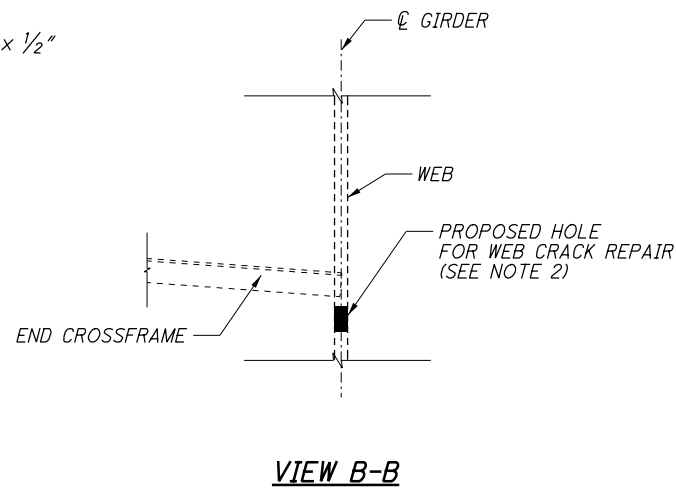
P:\PR54704\HAM\91826\Design\Structures\HAM071_068L\Sheets\071_068L_SM007.dgn Sheet 1/24/2018 11:00:28 AM compton



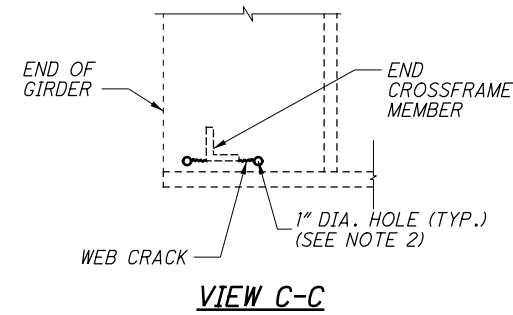
GIRDER 18 BEARING STIFFENER REPAIR DETAIL
(OUTSIDE FACE SHOWN)



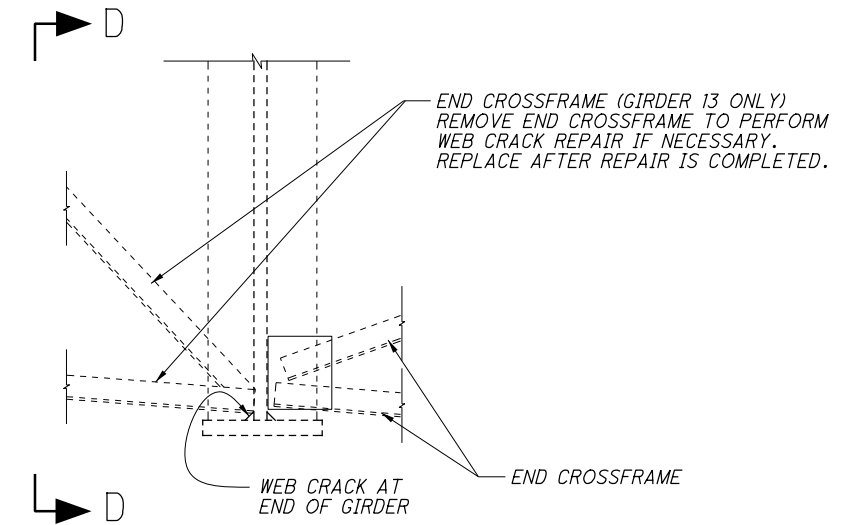
SECTION A-A
(END CROSSFRAME NOT SHOWN)



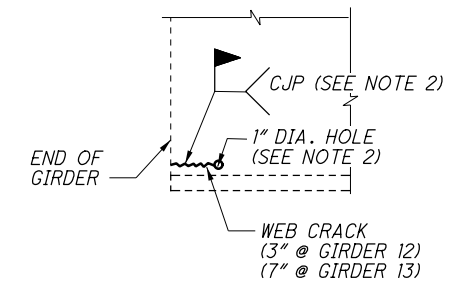
VIEW B-B



VIEW C-C



END GIRDER WEB CRACK REPAIR



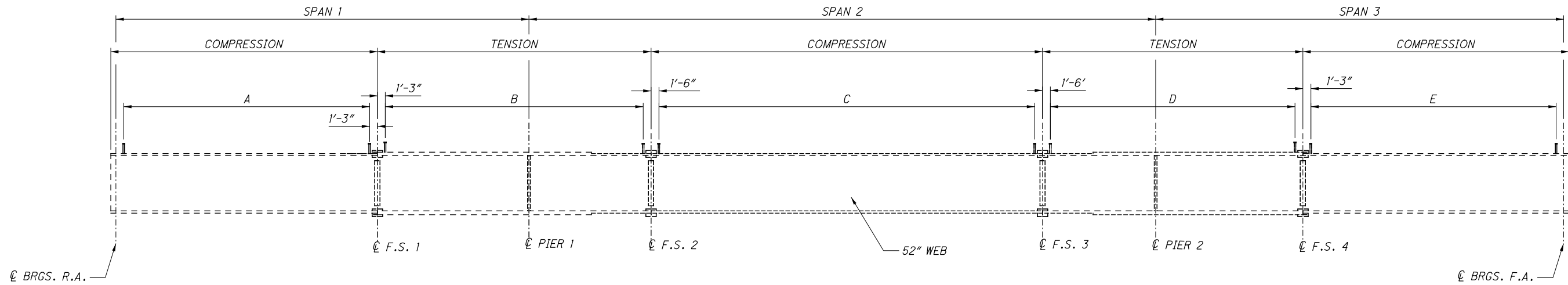
SECTION D-D

NOTES:

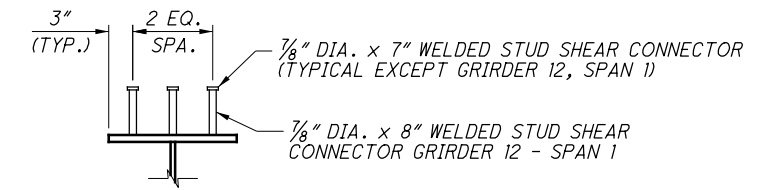
1. WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.
2. RETROFIT WEB CRACKS USING THE FOLLOWING REPAIR PROCEDURE:
 - A: CLEAN AREA NEAR CRACK USING PENCIL ABRASIVE BLASTING ON EACH SIDE OF THE GIRDER WEB (SEE COMMON GENERAL NOTES SHEETS 1 & 2).
 - B: LOCATE CRACK TIPS USING DYE PENETRANT AND/OR MAGNETIC PARTICLE (NDT) TESTING. MORE THAN ONE NDT MAY BE REQUIRED BUT ADDITIONAL NDT WORK SHALL BE INCLUDED IN THE COST PER EACH LOCATION (SEE COMMON GENERAL NOTES SHEETS 1 & 2).
 - C: USING A MAGNETIC-BASE DRILL, DRILL HOLES 1" INCH DIAMETER AT TIPS OF CRACKS. A CARBIDE-TIPPED ANNULAR CUTTER SHALL BE USED FOR THE BIT (SEE COMMON GENERAL NOTES SHEETS 1 & 2).
 - D: PAINT REPAIR LOCATIONS PER ITEM 514 - FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN.
 - E: FOR END GIRDER WEB CRACK REPAIR ONLY, PERFORM A COMPLETE JOINT PENETRATION (CJP) WELD TO REATTACH WEB AND FLANGE. PAYMENT FOR WELD AND ANY REMOVAL AND REPLACEMENT OF CROSSFRAMES SHALL BE INCLUDED UNDER ITEM 513-STRUCTURAL STEEL MISC.: FIELD WELD CRACK REPAIR.
 - F: FOR GIRDER 18 BEARING STIFFENER REPAIR, ALL NECESSARY TOOLS, LABOR, EQUIPMENT AND MATERIAL TO SUCCESSFULLY PERFORM THIS ITEM OF WORK IS INCLUDED IN THE ITEM 513-STRUCTURAL STEEL MISC.: BEARING STIFFENER REPAIR.

DESIGNED MAB		DRAWN SDC		REVIEWED XAC		DATE 01/23/18		DESIGN AGENCY BURGESS & NIPLE	
CHECKED SJA		REVISED XXX		STRUCTURE FILE NUMBER 3106888		312 PLUM ST. CINCINNATI OH			
GIRDER REPAIR DETAILS									
HAM-71-1068L IR-71 OVER STEWART ROAD									
HAM-IR71-8.42									
PID No. 91826									
23A/57									
390A 441									

A - REVISED 01/23/2018 - NEW SHEET



GIRDER ELEVATION - LEFT BRIDGE



GIRDER SHEAR CONNECTOR DETAIL

LEGEND:
 BRGS. = BEARINGS
 F.S. = FIELD SPLICE
 G# = GIRDER DESIGNATION
 R.A. = REAR ABUTMENT
 F.A. = FORWARD ABUTMENT

NOTES:

1. ALL DIMENSIONS ARE HORIZONTAL AND REQUIRE ADJUSTMENT FOR CAMBER AND FINISHED GRADE.
2. WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE TO AREAS OF THE GIRDER FLANGES DESIGNATED "COMPRESSION". DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM EDGE OF FLANGE, BE NO MORE THAN 2" LONG, AND BE AT LEAST 5/16".
3. INTERMEDIATE AND CROSSFRAME STIFFENERS NOT SHOWN IN ELEVATION. SEE FRAMING PLAN FOR LOCATIONS.
4. ADJUST SHEAR CONNECTOR SPACING LOCALLY AS REQUIRED TO CLEAR BOLTED FLANGE SPLICES.
5. TEMPORARY DECK SLAB SUPPORTS:

PRIOR TO DECK SLAB REMOVALS, TEMPORARY DECK SLAB SUPPORTS SHALL BE FURNISHED AND INSTALLED AS SHOWN ON THE PLANS. HIGH STRENGTH BOLTS SHALL BE FULLY TIGHTENED.

MATERIALS:
 STEEL SHALL BE ASTM A709, GRADE 50. USED STRUCTURAL STEEL IN GOOD CONDITION MAY BE PROVIDED. HIGH STRENGTH BOLTS SHALL BE NEW 1" DIAMETER ASTM A325.

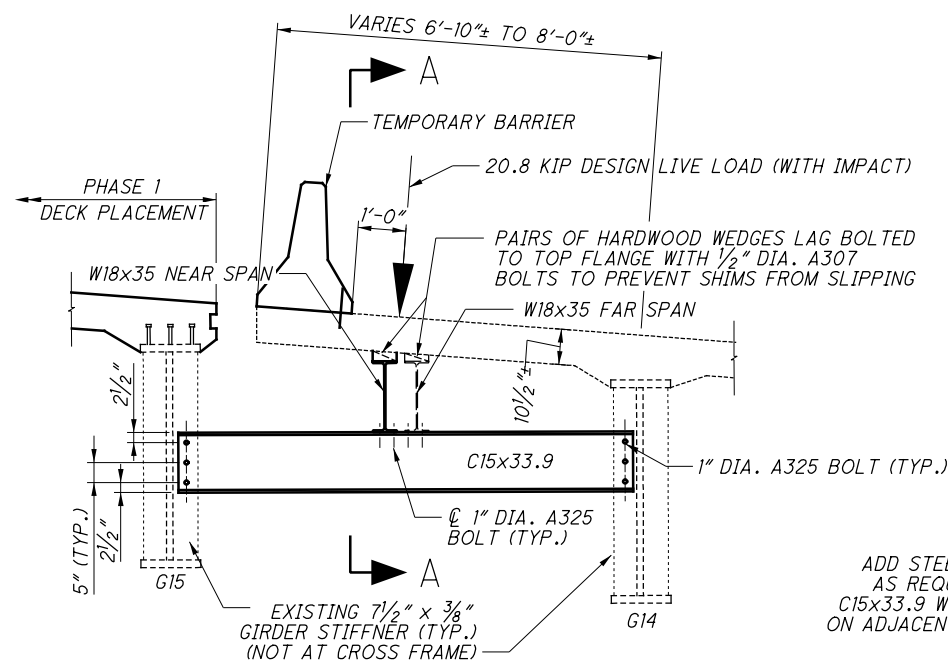
HARDWOOD WEDGES:
 3-INCH WIDE OF HARDWOOD WEDGES SHALL BE PROVIDED AS PART OF THE TEMPORARY DECK SLAB SUPPORTS. THESE WEDGES SHALL BE INSTALLED TIGHT PRIOR TO PHASE 1 DECK REMOVAL. WEDGES SHALL BE USED IN PAIRS.

TEMPORARY DECK SLAB SUPPORT REMOVAL:
 TEMPORARY DECK SLAB SUPPORT SHALL REMAIN UNTIL THE EXISTING PHASE 2 DECK IS NO LONGER NEEDED TO SUPPORT TRAFFIC.

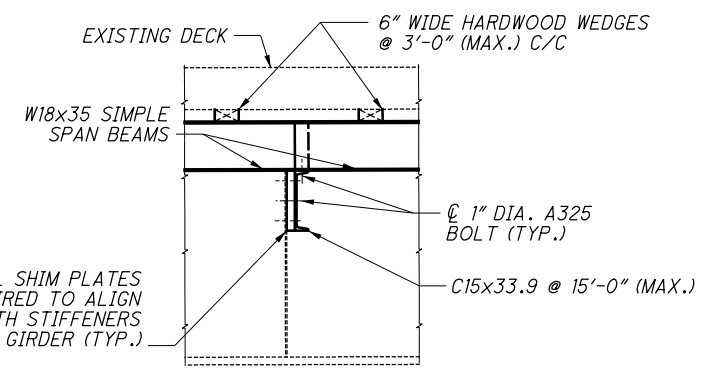
OPTIONAL DESIGN:
 IN LIEU OF THE TEMPORARY DECK SLAB SUPPORT DESIGN SPECIFIED BY THESE PLANS, THE CONTRACTOR HAS THE OPTION OF PROVIDING ANOTHER SYSTEM, PROVIDED THAT SUCH SYSTEM IS DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER AND IS APPROVED BY THE DIRECTOR PRIOR TO ITS FABRICATION AND INSTALLATION.
 ANY CONTRACTOR ELECTED CHANGES TO THE PLAN DETAILED SHORING WILL BE TREATED AS A VALUE ENGINEERING CHANGE PROPOSAL.

PAYMENT:
 THE COST OF PROVIDING, MAINTAINING AND REMOVING TEMPORARY DECK SLAB SUPPORT SHALL BE INCLUDED IN THE LUMP SUM ITEM 202 - PORTIONS OF STRUCTURE REMOVED FOR PAYMENT.

SHEAR CONNECTOR SPACING					
GIRDER	A	B	C	D	E
G18	42 SPA @ 14" (MAX.) = 49'-0"	20 SPA @ 24" (MAX.) = 39'-9"	36 SPA @ 21" (MAX.) = 63'-1"	24 SPA @ 20" (MAX.) = 39'-0"	47 SPA @ 13" (MAX.) = 50'-4"
G17	42 SPA @ 14" (MAX.) = 49'-0"	30 SPA @ 16" (MAX.) = 39'-9"	49 SPA @ 16" (MAX.) = 64'-3"	30 SPA @ 16" (MAX.) = 36'-6"	44 SPA @ 13" (MAX.) = 50'-10"
G16	42 SPA @ 14" (MAX.) = 49'-0"	30 SPA @ 16" (MAX.) = 39'-9"	49 SPA @ 16" (MAX.) = 64'-3"	30 SPA @ 16" (MAX.) = 39'-6"	44 SPA @ 13" (MAX.) = 50'-10"
G15	42 SPA @ 14" (MAX.) = 49'-0"	30 SPA @ 16" (MAX.) = 39'-9"	49 SPA @ 16" (MAX.) = 64'-3"	30 SPA @ 16" (MAX.) = 39'-6"	44 SPA @ 13" (MAX.) = 50'-10"
G14	42 SPA @ 14" (MAX.) = 49'-0"	30 SPA @ 16" (MAX.) = 39'-9"	49 SPA @ 16" (MAX.) = 64'-3"	30 SPA @ 16" (MAX.) = 39'-6"	44 SPA @ 13" (MAX.) = 50'-10"
G13	42 SPA @ 14" (MAX.) = 49'-0"	30 SPA @ 16" (MAX.) = 39'-9"	49 SPA @ 16" (MAX.) = 64'-3"	30 SPA @ 16" (MAX.) = 39'-6"	44 SPA @ 13" (MAX.) = 50'-10"
G12	43 SPA @ 14" (MAX.) = 50'-3"	21 SPA @ 24" (MAX.) = 40'-10"	37 SPA @ 21" (MAX.) = 64'-3"	24 SPA @ 20" (MAX.) = 39'-6"	47 SPA @ 13" (MAX.) = 50'-10"



TEMPORARY DECK SLAB SUPPORT DETAIL
 (SEE NOTE 5)

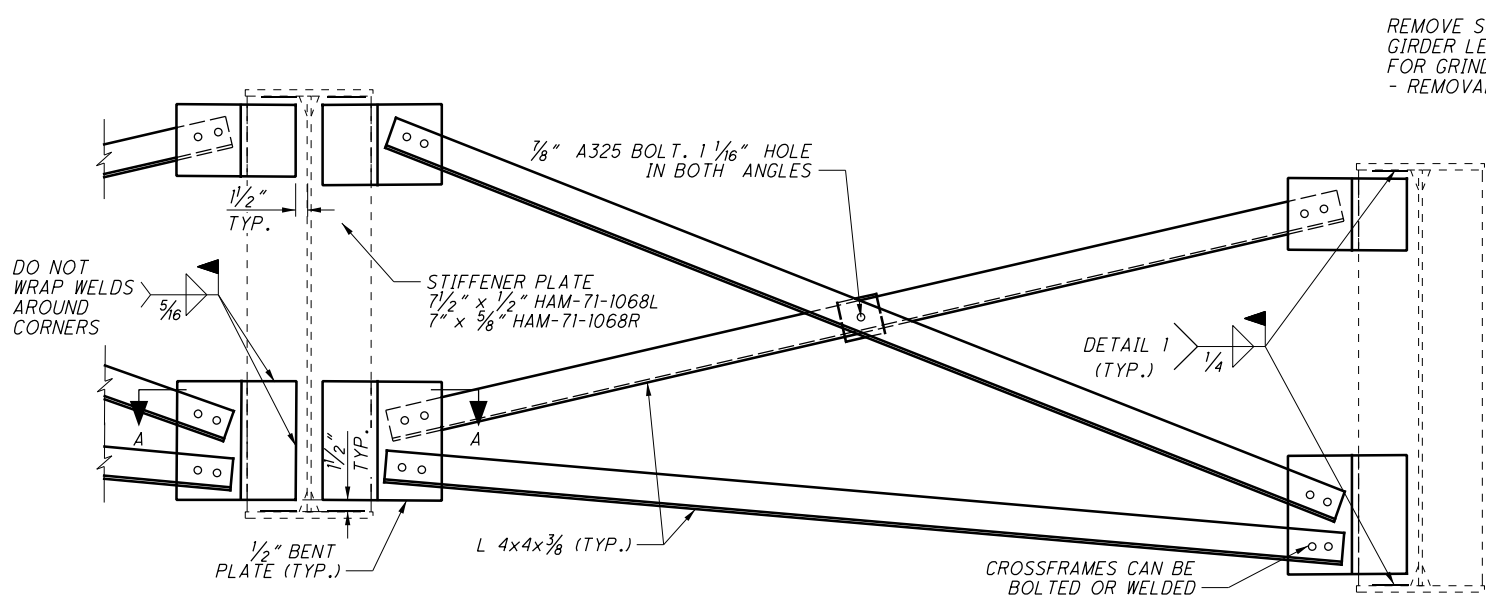


SECTION A-A

P:\PR54704\HAM\91826\Design\Structures\HAM071_1068L_Sheets\071_1068L_SS004.dgn Sheet 3/2/2018 12:14:18 PM chen

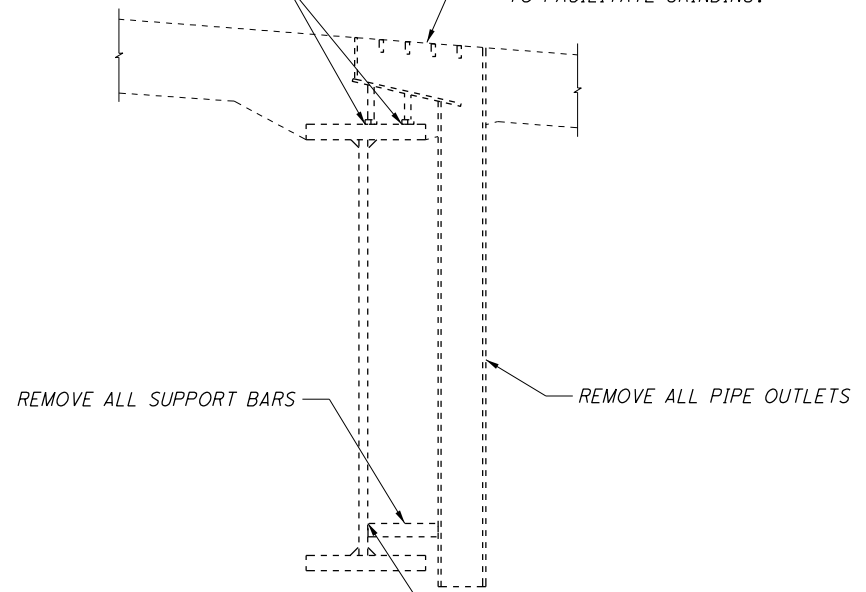
DESIGNED	SJA	CHECKED	XAC
DRAWN	SJA	REVISED	
REVIEWED	DWL	DATE	2/20/2017
STRUCTURE FILE NUMBER	3106888		
DESIGN AGENCY	BURGESS & NIPLÉ 312 PLUM ST. CINCINNATI, OH		
GIRDER DETAILS - LEFT BRIDGE			
HAM-71-1068L IR-71 OVER STEWART ROAD			
HAM-IR71-8.42		PID No. 91826	
24/57		391 441	

P:\PR54704\HAM\91826\Design\Structures\HAM071_1068L_Sheets\071_1068L_SS003.dgn Sheet 10/26/2017 8:39:24 AM compton



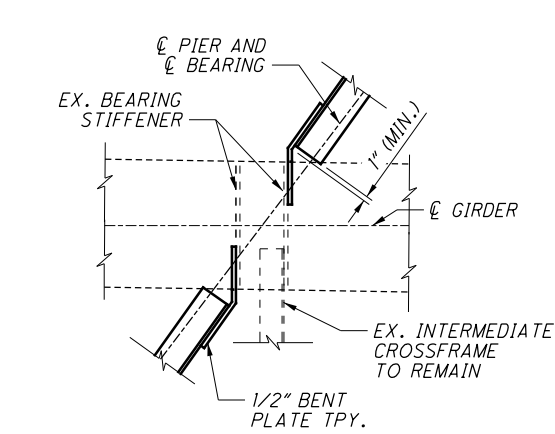
REMOVE SUPPORT BOLT WELDS BY GRINDING PARALLEL TO THE GIRDER LENGTH. COST OF ALL LABOR, EQUIPMENT AND MATERIALS FOR GRINDING WELDS SMOOTH SHALL BE INCLUDED WITH ITEM 202
- REMOVAL MISC.: SCUPPER AND DOWNSPOUT REMOVAL

REMOVE ALL SCUPPERS AND SUPPORT BOLTS, DO NOT CUT FLANGE. CONTRACTOR MAY FLAME CUT NO CLOSER THAN 1" FROM THE GIRDER TO FACILITATE GRINDING.



REMOVE SUPPORT BAR WELDS FROM WEB BY GRINDING PARALLEL TO THE GIRDER LENGTH. COST OF ALL LABOR, EQUIPMENT AND MATERIALS FOR GRINDING WELDS SMOOTH SHALL BE INCLUDED WITH ITEM 202
- REMOVAL MISC.: SCUPPER AND DOWNSPOUT REMOVAL (EACH)

SCUPPER REMOVAL DETAIL
(SEE NOTE 1)

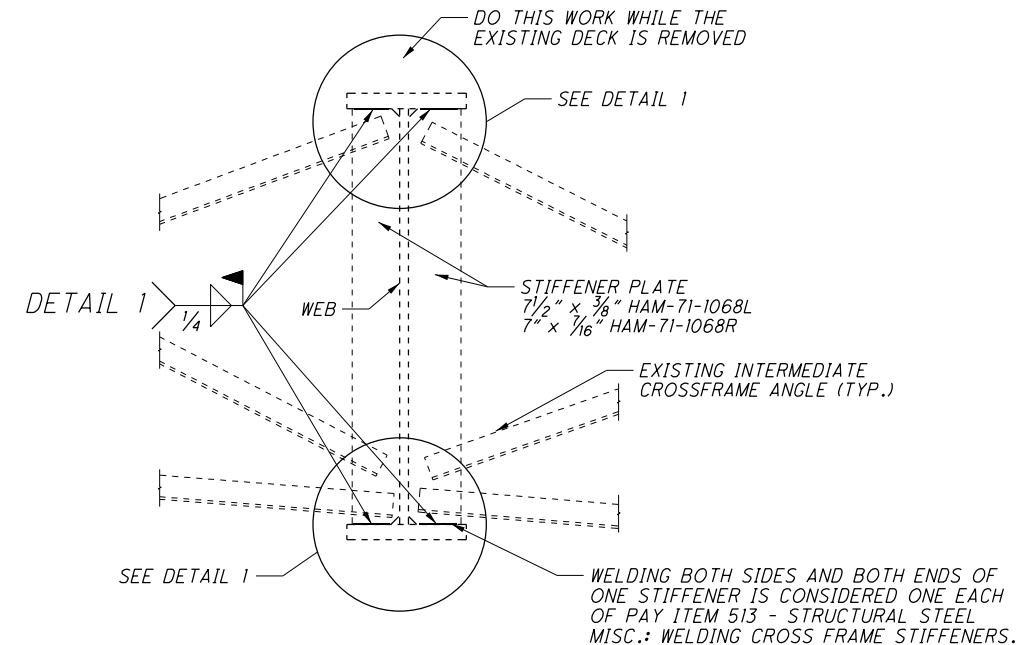


SECTION A-A

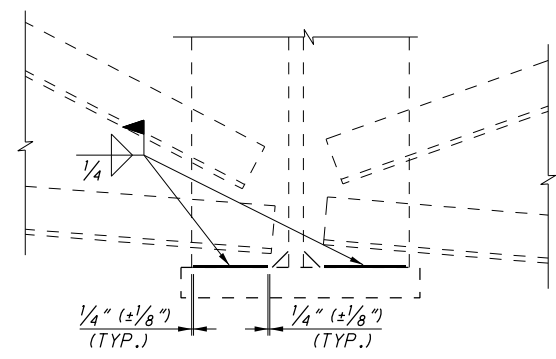
NEW CROSSFRAME OVER PIER 2

SEE STANDARD DRAWING GSD-I-99 FOR ADDITIONAL DETAILS
CONTRACTOR SHALL FIELD VERIFY DIMENSION PRIOR TO MANUFACTURING THE CROSSFRAMES. CROSSFRAMES, PLATES, WELDS AND BOLTS SHALL BE PAINTED PER ITEM 514, COLOR TO MATCH EXISTING. THE COST OF ALL LABOR, EQUIPMENT AND MATERIALS REQUIRED TO INSTALL AND PAINT THE NEW CROSSFRAME OVER PIER 2 SHALL BE INCLUDED WITH THE UNIT PRICE ITEM 513 - STRUCTURAL STEEL MISC.: INTERMEDIATE CROSSFRAMES (EACH).

CONTRACTOR SHALL FIELD WELD ALL BEARING STIFFENERS AT PIER 2 TO BOTH GIRDER FLANGES WHILE DECK IS REMOVED ABOVE. DO NOT EXTEND WELDS TO THE EDGE OF THE STIFFENERS OR INTO THE CLIP AREA PER 513.13. PAINT WELD LOCATIONS PER ITEM 514- FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN. THE COST OF ALL LABOR, EQUIPMENT AND MATERIALS REQUIRED TO WELD AND PAINT BEARING STIFFENERS SHALL BE INCLUDED WITH THE UNIT PRICE FOR ITEM 513 - STRUCTURAL STEEL MISC.: INTERMEDIATE CROSSFRAMES (EACH).



INTERMEDIATE CROSSFRAME STIFFENER WELDING RETROFIT DETAIL
(TYPICAL FOR ALL INTERMEDIATE CROSS FRAME STIFFENERS FOR HAM-71-1068L AND HAM-71-1068R)
DETAIL SHOWN REPRESENTS TWO WELDING CROSS FRAME STIFFENER RETROFITS (EACH)
(SEE NOTE 2)



DETAIL 1

NOTES:

- CONTRACTOR SHALL REMOVE EXISTING SCUPPER DRAINS AND DOWNSPOUT PIPES. THE COST OF ALL LABOR, EQUIPMENT AND MATERIALS REQUIRED TO REMOVE SCUPPERS SHALL BE INCLUDED UNDER ITEM 202 - REMOVAL MISC.: SCUPPER AND DOWNSPOUT REMOVAL (EACH).
- CONTRACTOR SHALL FIELD WELD ALL INTERMEDIATE CROSS FRAME STIFFENERS TO BOTH GIRDER FLANGES WHILE DECK IS REMOVED ABOVE. DO NOT EXTEND WELDS TO THE EDGE OF THE STIFFENERS OR INTO THE CLIP AREA PER 513.13. THE COST OF ALL LABOR, EQUIPMENT AND MATERIALS REQUIRED TO WELD ONE STIFFENER SHALL BE INCLUDED WITH THE UNIT PRICE FOR ITEM 513 - STRUCTURAL STEEL MISC.: WELDING CROSSFRAME STIFFENERS (EACH). PAINT WELD LOCATIONS PER ITEM 514- FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN

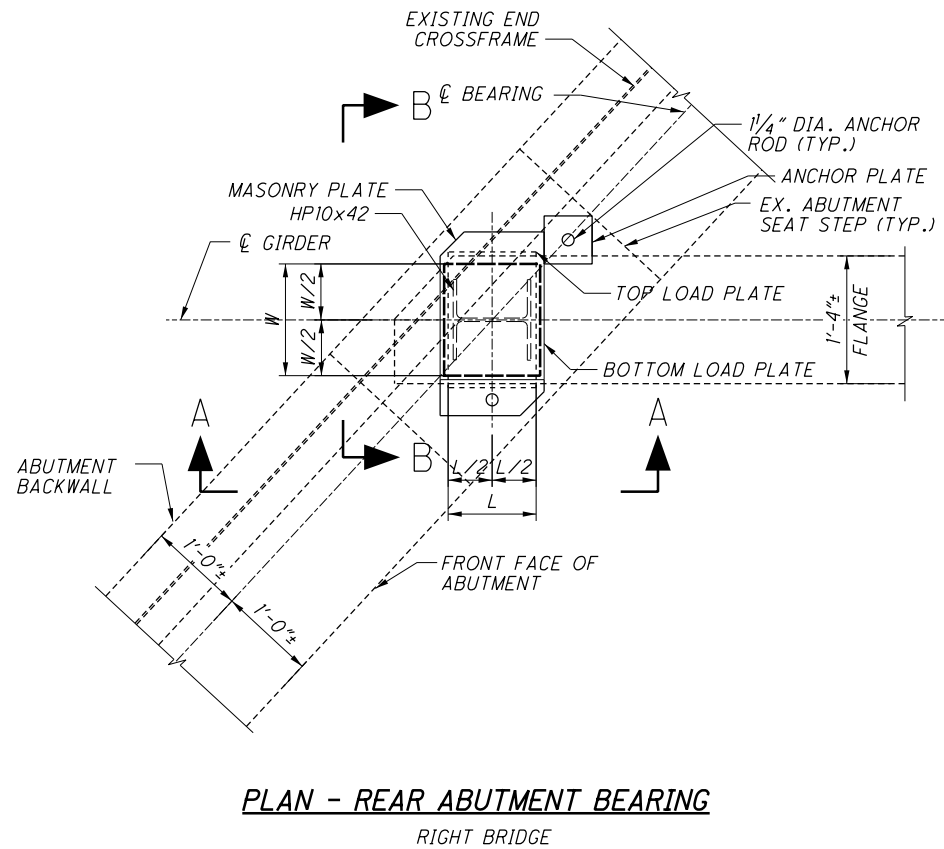
DESIGN AGENCY		BURGESS & NIPLE		312 PLUM ST. CINCINNATI OH	
DESIGNED	CHECKED	DRAWN	REVIEWED	DATE	STRUCTURE FILE NUMBER
SJA	XAC	SJA	DWL	2/20/2017	3106888/3106896
SUPERSTRUCTURE RETROFIT DETAILS					
HAM-71-1068L/R					
IR-71 OVER STEWART ROAD					
HAM-IR71-8.42		PID No. 91826			
25/57					
392					
441					

LAMINATED ELASTOMERIC BEARINGS

LOCATION	BEARING DIMENSIONS							STEEL LOAD PLATES	REACTIONS		MAX. SERVICE
	L	W	t _i	t _e	t _L	T	N	LENGTH x WIDTH x THICKNESS	DL	LL	DESIGN LOAD
REAR ABUTMENT (EXP.) RIGHT BRIDGE	1'-0"	1'-2"	0.48"	0.34"	0.0747"	3.25"	6	TOP 0'-11" x 1'-5" x 3/4" BOTTOM 1'-1" x 1'-3" x 1/2"	44 KIPS	55 KIPS	99 KIPS

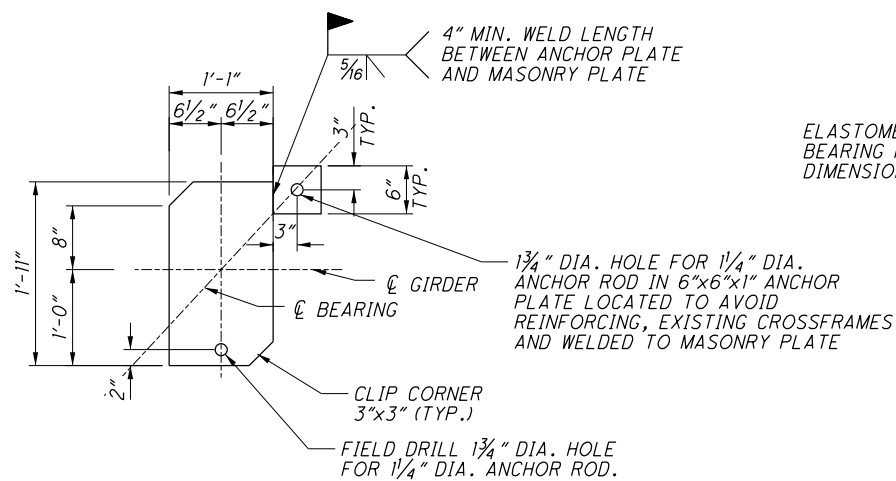
t_i = THICKNESS OF INTERNAL LAMINATE
t_e = THICKNESS OF EXTERNAL LAMINATE
T = TOTAL THICKNESS OF ELASTOMERIC BEARING

N = NO. INTERNAL ELASTOMERIC LAYERS
t_L = INTERNAL STEEL LAMINATE THICKNESS
DUROMETER OF ELASTOMER = 50 DUROMETER
LOAD PLATE THICKNESS IS MEASURED AT CENTERLINE OF BEARINGS.

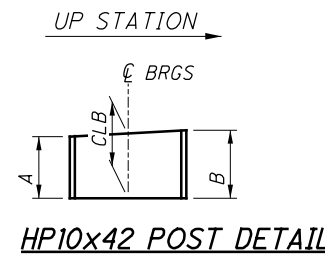


PLAN - REAR ABUTMENT BEARING

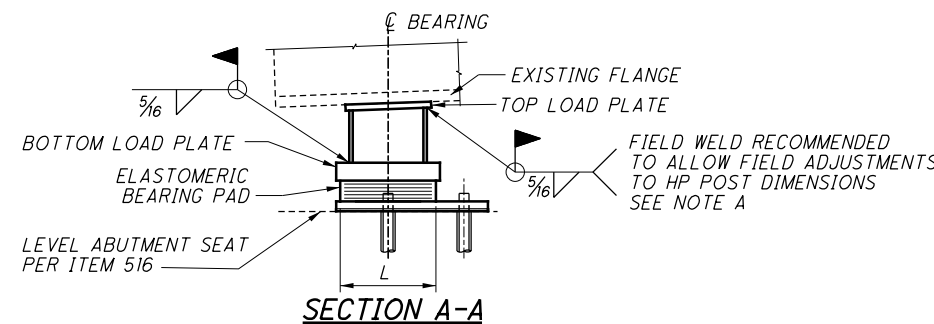
RIGHT BRIDGE



PLAN - MASONRY PLATE

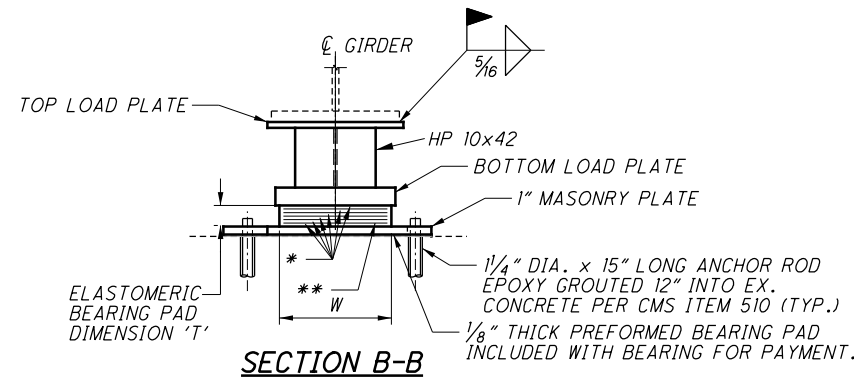


HP10x42 POST DETAIL



SECTION A-A

NOTE A: FIELD WELD THE HP SECTION TO THE TOP PLATE WITH THE HP SECTION AND TOP PLATE INVERTED SO THE FIELD WELD CAN BE PERFORMED IN THE HORIZONTAL POSITION BEFORE FINAL INSTALLATION



SECTION B-B

LEGEND:

- * = 'N' INTERNAL ELASTOMER LAYERS
- ** = (N-1) INTERNAL STEEL LAMINATES THICKNESS = 0.0747"

HP POST DIMENSIONS ***			
GIRDER	REAR ABUTMENT		
	A	B	CLB
1	5 7/8" ±	6 1/4" ±	6 1/16" ±
2	5 13/16" ±	6 3/16" ±	6" ±
3	5 11/16" ±	6 3/16" ±	5 15/16" ±
4	5 7/8" ±	6 1/4" ±	6 1/16" ±
5	6 1/8" ±	6 3/8" ±	6 1/4" ±
6	5 15/16" ±	6 5/16" ±	6 1/8" ±
7	6 3/16" ±	6 9/16" ±	6 3/8" ±
8	6 11/16" ±	7 1/16" ±	6 7/8" ±
9	7 3/16" ±	7 9/16" ±	7 3/8" ±
10	7 3/8" ±	7 5/8" ±	7 1/2" ±
11	7 3/16" ±	7 9/16" ±	7 3/8" ±

*** DIMENSIONS SHOWN ARE APPROXIMATE. FIELD VERIFY EXISTING BEARING DIMENSION PRIOR TO FABRICATION. THE CONTRACTOR SHALL ADJUST THE HP POST HEIGHT BASED ON THE DIFFERENCE BETWEEN HIS CALCULATED CENTERLINE BEARING HEIGHT AND THAT SHOWN IN THE PLANS.

SOME BEAM SEATS ARE NOT LEVEL AND WILL REQUIRE CONCRETE REPAIR PER ITEM 516 PRIOR TO SETTING NEW BEARINGS. THE CONTRACTOR IS TO ASSURE THAT HIS MODIFIED BEAM SEAT ELEVATIONS ARE IN AGREEMENT WITH HIS SUPPLIED BEARING HEIGHTS.

THE CONTRACTOR IS REQUIRED TO MEASURE THE EXISTING BOTTOM OF BEAM AND BEAM SEAT ELEVATIONS PRIOR TO THE JACKING OPERATIONS. THE CONTRACTOR IS TO SUBMIT THE ELEVATIONS TO SCOTT KRAMER, DISTRICT 8 BRIDGE DESIGN ENGINEER PRIOR TO THE JACKING OPERATIONS. APPROVAL OF THE ELEVATIONS IS NOT REQUIRED. THE CONTRACTOR IS TO VERIFY THE CENTER OF BEARING HEIGHT BY SUBTRACTING THE EXISTING BEAM SEAT ELEVATION FROM THE EXISTING BOTTOM OF BEAM ELEVATION AT THE BEARING CENTERLINE.

THE BEVELED HP POST HEIGHT IS A CONTRACTOR CALCULATED DIMENSION AND ANY SHIMS NEEDED AS A RESULT OF THE CONTRACTOR'S ERROR WILL BE AT THE CONTRACTOR'S EXPENSE AND WILL NEED TO BE APPROVED BY THE DISTRICT 8 BRIDGE DESIGN ENGINEER.

FIELD MEASUREMENTS USED TO CALCULATE BEVEL DIMENSIONS WERE BASED ON EXISTING CONDITIONS AND DO NOT ACCOUNT FOR PROPOSED LEVEL BEAM SEATS.

NOTES:

- EACH BEARING ASSEMBLY SHALL BE SHOP MARKED WITH THE FOLLOWING INFORMATION: TOP, FORWARD STATION DIRECTION, LOCATION (FORWARD ABUTMENT) AND GIRDER NAME. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED.
- ELASTOMERIC BEARINGS: THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED IN ACCORDANCE WITH SECTION 14.7.6 (METHOD A) OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. THE LONG-TERM COMPRESSION PROOF LOAD TEST (AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DIVISION II, SECTION 18.7.2.6) IS NOT REQUIRED.
- STEEL MATERIALS: ANCHOR RODS SHALL BE ASTM F1554, GRADE 55, GALVANIZED ACCORDING TO 711.02. THE STEEL LOAD PLATES, MASONRY PLATES, ANCHOR PLATES AND HP10x42 SUPPORT PEDESTALS SHALL BE ASTM A709- GRADE 50 OR 50W STRUCTURAL STEEL AND BE CLEANED AND COATED. SURFACE PREPARATION AND PRIMING SHALL BE DONE IN THE SHOP AND BE INCLUDED IN THE PRICE BID FOR BEARINGS. FIELD COATS SHALL BE IN ACCORDANCE WITH ITEM 514 AND INCLUDED IN THE PRICE BID FOR ITEM 514.
- THE BOTTOM STEEL LOAD PLATE AND MASONRY PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.
- BASIS OF PAYMENT: THE UNIT PRICE BID SHALL INCLUDE ALL MATERIALS, LABOR, TESTING, STEEL LOAD PLATES, MASONRY PLATES, ANCHOR RODS, HP SUPPORT PEDESTALS AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS. PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE BID FOR ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN.

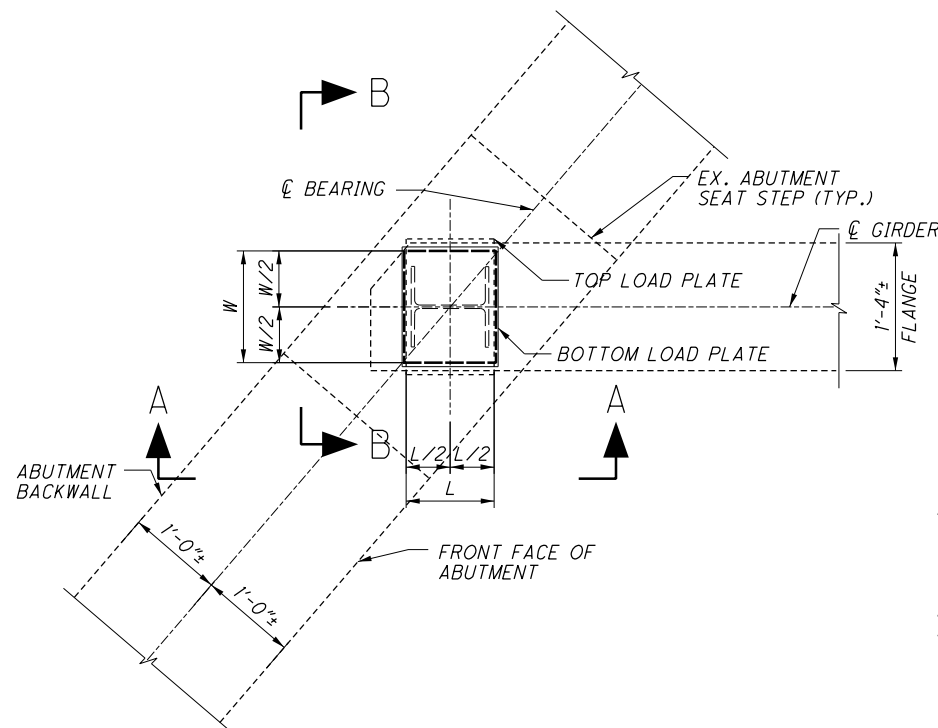
P:\PR54704\HAM\91826\Design\Structures\HAM071_1068L_Sheets\071_1068L_SB001.dgn Sheet 10/26/2017 8:39:26 AM compton

LAMINATED ELASTOMERIC BEARINGS

LOCATION	BEARING DIMENSIONS							STEEL LOAD PLATES	REACTIONS		MAX. SERVICE
	L	W	t _i	t _e	t _L	T	N	LENGTH x WIDTH x THICKNESS	DL	LL	DESIGN LOAD
REAE ABUTMENT (EXP.) LEFT BRIDGE	0'-11 1/2"	1'-1"	0.45"	0.32"	0.0747"	5.04"	9	TOP 0'-11" x 1'-5" x 3/4" BOTTOM 1'-0 1/2" x 1'-2" x 1/2"	58 KIPS	61 KIPS	119 KIPS

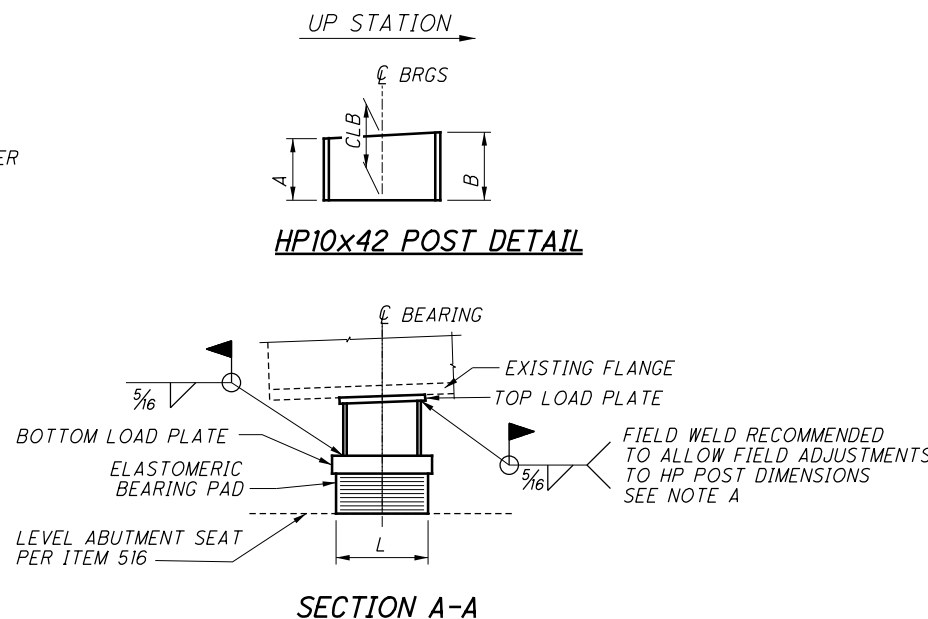
t_i = THICKNESS OF INTERNAL LAMINATE
 t_e = THICKNESS OF EXTERNAL LAMINATE
 T = TOTAL THICKNESS OF ELASTOMERIC BEARING

N = NO. INTERNAL ELASTOMERIC LAYERS
 t_L = INTERNAL STEEL LAMINATE THICKNESS
 DUROMETER OF ELASTOMER = 50 DUROMETER
 LOAD PLATE THICKNESS IS MEASURED AT CENTERLINE OF BEARINGS.



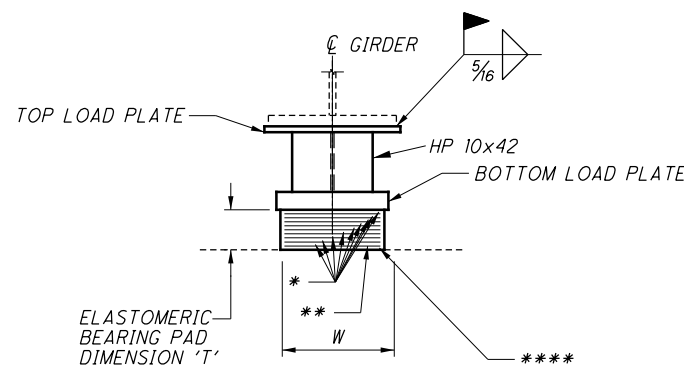
PLAN - REAR ABUTMENT BEARING

LEFT BRIDGE



SECTION A-A

NOTE A: FIELD WELD THE HP SECTION TO THE TOP PLATE WITH THE HP SECTION AND TOP PLATE INVERTED SO THE FIELD WELD CAN BE PERFORMED IN THE HORIZONTAL POSITION BEFORE FINAL INSTALLATION



SECTION B-B

LEGEND:

- * = 'N' INTERNAL ELASTOMER LAYERS
- ** = (N-1) INTERNAL STEEL LAMINATES THICKNESS = 0.0747"
- **** = EXTERNAL ELASTOMER LAYER

GIRDER	REAR ABUTMENT		
	A	B	CLB
18	5 9/16" ±	6 1/16" ±	5 13/16" ±
17	5 3/8" ±	5 5/8" ±	5 1/2" ±
16	5 1/4" ±	5 11/16" ±	5 7/16" ±
15	5 7/16" ±	5 3/4" ±	5 9/16" ±
14	5 5/16" ±	5 13/16" ±	5 9/16" ±
13	5 7/16" ±	5 3/4" ±	5 9/16" ±
12	5 7/16" ±	5 3/4" ±	5 9/16" ±

***DIMENSIONS SHOWN ARE APPROXIMATE. FIELD VERIFY EXISTING BEARING DIMENSION PRIOR TO FABRICATION. THE CONTRACTOR SHALL ADJUST THE HP POST HEIGHT BASED ON THE DIFFERENCE BETWEEN HIS CALCULATED CENTERLINE BEARING HEIGHT AND THAT SHOWN IN THE PLANS.

SOME BEAM SEATS ARE NOT LEVEL AND WILL REQUIRE CONCRETE REPAIR PER ITEM 516 PRIOR TO SETTING NEW BEARINGS. THE CONTRACTOR IS TO ASSURE THAT HIS MODIFIED BEAM SEAT ELEVATIONS ARE IN AGREEMENT WITH HIS SUPPLIED BEARING HEIGHTS.

THE CONTRACTOR IS REQUIRED TO MEASURE THE EXISTING BOTTOM OF BEAM AND BEAM SEAT ELEVATIONS PRIOR TO THE JACKING OPERATIONS. THE CONTRACTOR IS TO SUBMIT THE ELEVATIONS TO SCOTT KRAMER, DISTRICT 8 BRIDGE DESIGN ENGINEER PRIOR TO THE JACKING OPERATIONS. APPROVAL OF THE ELEVATIONS IS NOT REQUIRED. THE CONTRACTOR IS TO VERIFY THE CENTER OF BEARING HEIGHT BY SUBTRACTING THE EXISTING BEAM SEAT ELEVATION FROM THE EXISTING BOTTOM OF BEAM ELEVATION AT THE BEARING CENTERLINE.

THE BEVELED HP POST HEIGHT IS A CONTRACTOR CALCULATED DIMENSION AND ANY SHIMS NEEDED AS A RESULT OF THE CONTRACTOR'S ERROR WILL BE AT THE CONTRACTOR'S EXPENSE AND WILL NEED TO BE APPROVED BY THE DISTRICT 8 BRIDGE DESIGN ENGINEER.

FIELD MEASUREMENTS USED TO CALCULATE BEVEL DIMENSIONS WERE BASED ON EXISTING CONDITIONS AND DO NOT ACCOUNT FOR PROPOSED LEVEL BEAM SEATS.

NOTES:

1. EACH BEARING ASSEMBLY SHALL BE SHOP MARKED WITH THE FOLLOWING INFORMATION: TOP, FORWARD STATION DIRECTION, LOCATION (REAR ABUTMENT) AND GIRDER NAME. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED.
2. ELASTOMERIC BEARINGS: THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED IN ACCORDANCE WITH SECTION 14.7.5 (METHOD B) OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. PERFORM THE LONG-TERM COMPRESSION PROOF LOAD TEST IN ACCORDANCE WITH THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DIVISION II, SECTION 18.7.2.6 AND 17.8.4.5.
3. STEEL MATERIALS: THE STEEL LOAD PLATES AND HP POST SHALL BE ASTM A709- GRADE 50 OR 50W STRUCTURAL STEEL AND BE CLEANED AND COATED. SURFACE PREPARATION AND PRIMING SHALL BE DONE IN THE SHOP AND BE INCLUDED IN THE PRICE BID FOR BEARINGS. FIELD COATS SHALL BE PER ITEM 514 AND ALSO INCLUDED IN THE PRICE BID FOR BEARINGS. FINISH PAINT COLOR TO MATCH EXISTING BEAMS.
4. STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.
5. BASIS OF PAYMENT: THE UNIT PRICE BID SHALL INCLUDE ALL MATERIALS, LABOR, TESTING, STEEL LOAD PLATES, HP POST AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS. PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE BID FOR ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN.

P:\PR54704\HAM\91826\Design\Structures\HAM071_1068L_Sheets\071_1068L_SBO003.dgn Sheet 10/26/2017 8:39:28 AM compton

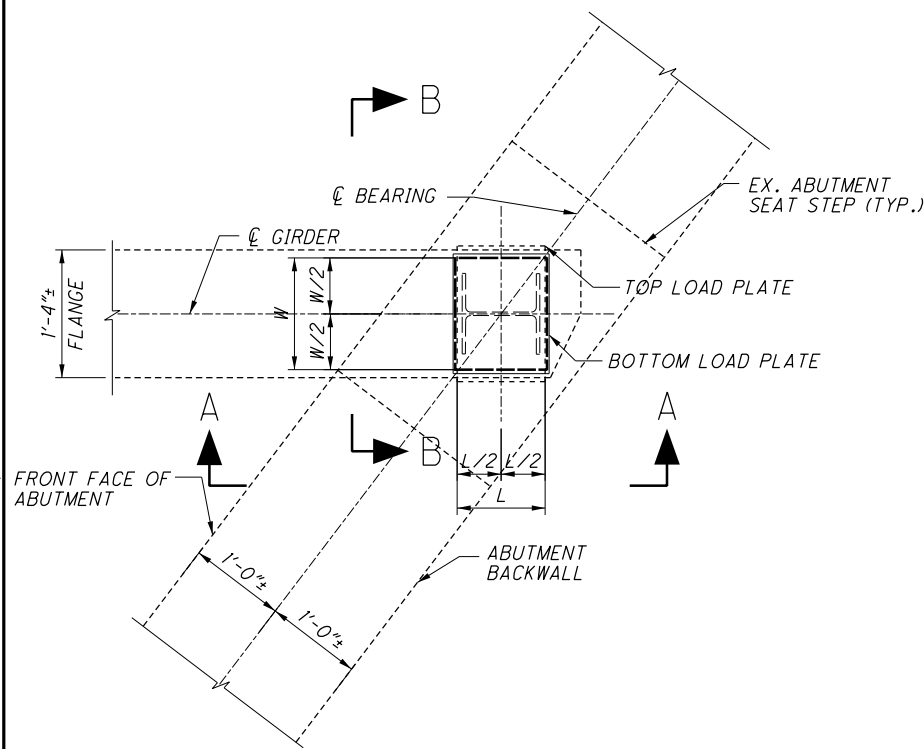
DESIGN AGENCY: BURGESS & NIPLE
 312 PLUM ST. CINCINNATI OH
 DATE: 2/20/2017
 REVIEWED: DWL
 DRAWN: XAC
 DESIGNED: XAC
 CHECKED: SJA
 STRUCTURE FILE NUMBER: 3106888
 REAR ABUTMENT BEARING DETAILS - LEFT BRIDGE
 HAM-71-1068 L
 I-71 OVER STEWART ROAD
 HAM-IR71-8.42
 PID No. 91826
 27/57
 394
 441

LAMINATED ELASTOMERIC BEARINGS

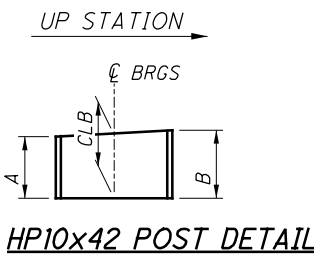
LOCATION	BEARING DIMENSIONS							STEEL LOAD PLATES	REACTIONS		MAX. SERVICE
	L	W	t _i	t _e	t _L	T	N	LENGTH x WIDTH x THICKNESS	DL	LL	DESIGN LOAD
FORWARD ABUTMENT (EXP.) LEFT BRIDGE	0'-11 1/2"	1'-2"	0.5"	0.35"	0.0747"	3.22"	5	TOP 0'-11" x 1'-5" x 3/4"	60 KIPS	56 KIPS	116 KIPS
FORWARD ABUTMENT (EXP.) RIGHT BRIDGE	0'-11 1/2"	1'-2"	0.5"	0.35"	0.0747"	3.22"	5	BOTTOM 1'-0 1/2" x 1'-3" x 1/2"	50 KIPS	62 KIPS	112 KIPS

t_i = THICKNESS OF INTERNAL LAMINATE
 t_e = THICKNESS OF EXTERNAL LAMINATE
 T = TOTAL THICKNESS OF ELASTOMERIC BEARING

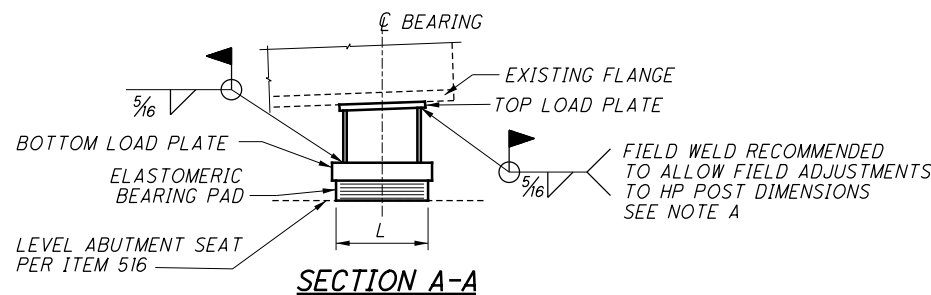
N = NO. INTERNAL ELASTOMERIC LAYERS
 t_L = INTERNAL STEEL LAMINATE THICKNESS
 DUROMETER OF ELASTOMER = 50 DUROMETER
 LOAD PLATE THICKNESS IS MEASURED AT CENTERLINE OF BEARINGS.



PLAN - FORWARD ABUTMENT BEARING

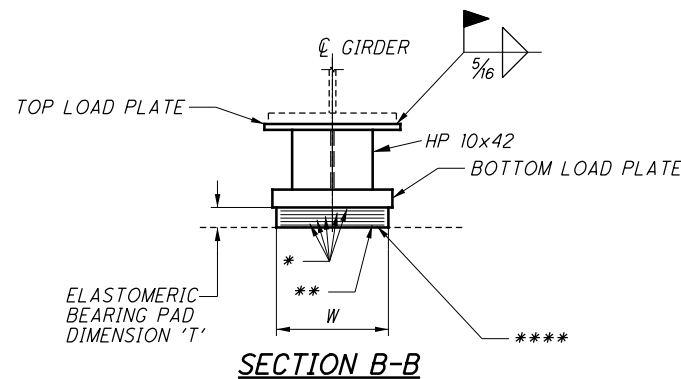


HP10x42 POST DETAIL



SECTION A-A

NOTE A: FIELD WELD THE HP SECTION TO THE TOP PLATE WITH THE HP SECTION AND TOP PLATE INVERTED SO THE FIELD WELD CAN BE PERFORMED IN THE HORIZONTAL POSITION BEFORE FINAL INSTALLATION



SECTION B-B

LEGEND:

- * = 'N' INTERNAL ELASTOMER LAYERS
- ** = (N-1) INTERNAL STEEL LAMINATES THICKNESS = 0.0747"
- **** = EXTERNAL ELASTOMER LAYER

HP POST DIMENSIONS ***

GIRDER	FORWARD ABUTMENT			
	A	B	CLB	
LEFT BRIDGE	18	8 1/16" ±	8 5/16" ±	8 3/16" ±
	17	7 3/16" ±	7 1/2" ±	7 5/16" ±
	16	6 15/16" ±	7 5/16" ±	7 1/8" ±
	15	6 15/16" ±	7 5/16" ±	7 1/8" ±
	14	6 7/8" ±	7 9/16" ±	7 1/4" ±
	13	7 1/4" ±	7 3/8" ±	7 5/16" ±
RIGHT BRIDGE	12	7 3/16" ±	7 1/2" ±	7 5/16" ±
	1	7 11/16" ±	7 7/8" ±	7 3/4" ±
	2	7 1/2" ±	7 1/2" ±	7 1/2" ±
	3	7 3/16" ±	7 3/8" ±	7 1/4" ±
	4	7 1/4" ±	7 7/16" ±	7 5/16" ±
	5	7 1/4" ±	7 5/16" ±	7 1/4" ±
	6	6 15/16" ±	7 1/8" ±	7" ±
	7	7 1/4" ±	7 9/16" ±	7 3/8" ±
	8	7 5/8" ±	7 11/16" ±	7 5/8" ±
	9	7 15/16" ±	8 1/4" ±	8 1/16" ±
	10	7 3/4" ±	7 15/16" ±	7 13/16" ±
11	7" ±	7 5/16" ±	7 1/8" ±	

***DIMENSIONS SHOWN ARE APPROXIMATE. FIELD VERIFY EXISTING BEARING DIMENSION PRIOR TO FABRICATION. THE CONTRACTOR SHALL ADJUST THE HP POST HEIGHT BASED ON THE DIFFERENCE BETWEEN HIS CALCULATED CENTERLINE BEARING HEIGHT AND THAT SHOWN IN THE PLANS.

SOME BEAM SEATS ARE NOT LEVEL AND WILL REQUIRE CONCRETE REPAIR PER ITEM 516 PRIOR TO SETTING NEW BEARINGS. THE CONTRACTOR IS TO ASSURE THAT HIS MODIFIED BEAM SEAT ELEVATIONS ARE IN AGREEMENT WITH HIS SUPPLIED BEARING HEIGHTS.

THE CONTRACTOR IS REQUIRED TO MEASURE THE EXISTING BOTTOM OF BEAM AND BEAM SEAT ELEVATIONS PRIOR TO THE JACKING OPERATIONS. THE CONTRACTOR IS TO SUBMIT THE ELEVATIONS TO SCOTT KRAMER, DISTRICT 8 BRIDGE DESIGN ENGINEER PRIOR TO THE JACKING OPERATIONS. APPROVAL OF THE ELEVATIONS IS NOT REQUIRED. THE CONTRACTOR IS TO VERIFY THE CENTER OF BEARING HEIGHT BY SUBTRACTING THE EXISTING BEAM SEAT ELEVATION FROM THE EXISTING BOTTOM OF BEAM ELEVATION AT THE BEARING CENTERLINE.

THE BEVELED HP POST HEIGHT IS A CONTRACTOR CALCULATED DIMENSION AND ANY SHIMS NEEDED AS A RESULT OF THE CONTRACTOR'S ERROR WILL BE AT THE CONTRACTOR'S EXPENSE AND WILL NEED TO BE APPROVED BY THE DISTRICT 8 BRIDGE DESIGN ENGINEER.

FIELD MEASUREMENTS USED TO CALCULATE BEVEL DIMENSIONS WERE BASED ON EXISTING CONDITIONS AND DO NOT ACCOUNT FOR PROPOSED LEVEL BEAM SEATS.

NOTES:

- EACH BEARING ASSEMBLY SHALL BE SHOP MARKED WITH THE FOLLOWING INFORMATION: TOP, FORWARD STATION DIRECTION, LOCATION (FORWARD ABUTMENT) AND GIRDER NAME. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED.
- ELASTOMERIC BEARINGS: THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED IN ACCORDANCE WITH SECTION 14.7.6 (METHOD A) OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. THE LONG-TERM COMPRESSION PROOF LOAD TEST (AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DIVISION II, SECTION 18.7.2.6) IS NOT REQUIRED.
- STEEL MATERIALS: THE STEEL LOAD PLATES AND HP POST SHALL BE ASTM A709- GRADE 50 OR 50W STRUCTURAL STEEL AND BE CLEANED AND COATED. SURFACE PREPARATION AND PRIMING SHALL BE DONE IN THE SHOP AND BE INCLUDED IN THE PRICE BID FOR BEARINGS. FIELD COATS SHALL BE PER ITEM 514 AND ALSO INCLUDED IN THE PRICE BID FOR BEARINGS. FINISH PAINT COLOR TO MATCH EXISTING BEAMS.
- STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.
- BASIS OF PAYMENT: THE UNIT PRICE BID SHALL INCLUDE ALL MATERIALS, LABOR, TESTING, STEEL LOAD PLATES, HP POST AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS. PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE BID FOR ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN.

P:\PR54704\HAM\91826\Design\Structures\HAM071_1068L_Sheets\071_1068L_SB002.dgn Sheet 10/26/2017 8:39:30 AM compton

DESIGN AGENCY
 BURGESS & NIPLE
 312 PLUM ST. CINCINNATI OH

DATE
 2/20/2017

REVIEWED
 DWL
 STRUCTURE FILE NUMBER
 3106888/3106896

DRAWN
 XAC
 XAC
 REVISED

DESIGNED
 XAC
 CHECKED
 SUA

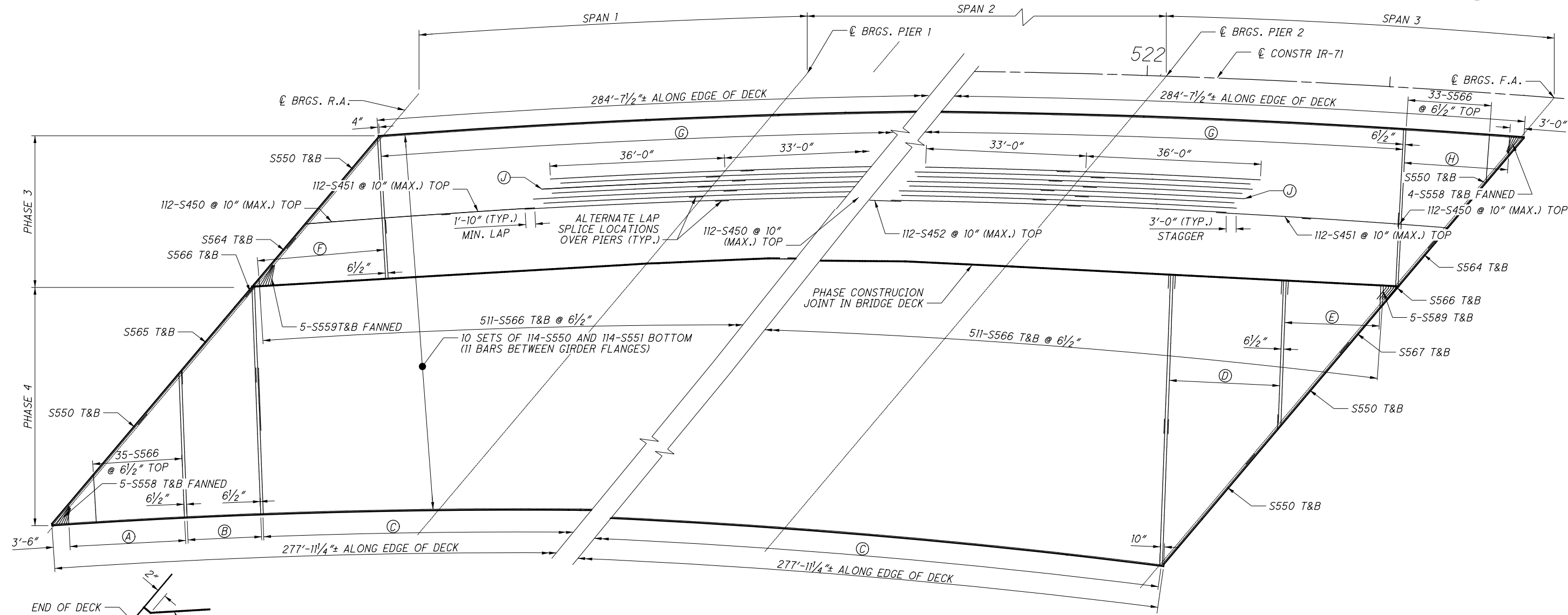
FORWARD ABUTMENT BEARING DETAILS
 HAM-71-1068 L/R
 I-71 OVER STEWART ROAD

HAM-IR71-8.42
 PID No. 91826

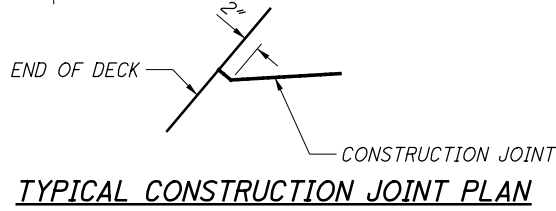
28/57

395
 441

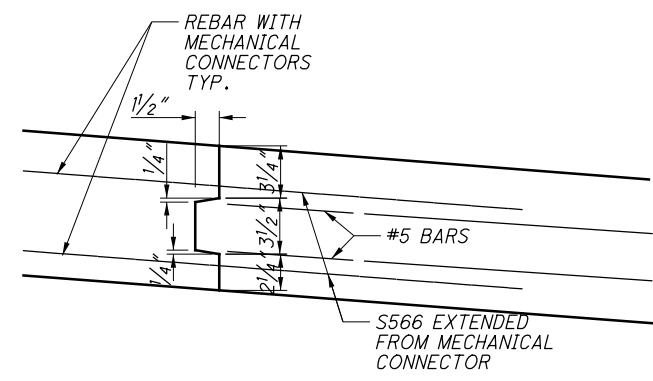
P:\PR54704\HAM\91826\Design\Structures\HAM071_1068R\Sheets\071_1068R_SD001.dgn Sheet 2/27/2018 7:13:08 AM chen



DECK PLAN - RIGHT BRIDGE
(RAILING NOT SHOWN)



TYPICAL CONSTRUCTION JOINT PLAN



CONSTRUCTION JOINT DETAIL

REINFORCING LEGEND

- (A) 1 S.O. 45-S553 BOT., 1 S.O. 45-S594 TOP @ 6 1/2" = 23'-10"
- (B) 1 S.O. 29-S554 LAPPED WITH 29-S550 BOT., 29-S591 TOP, 29-S560 TOP @ 6 1/2" = 15'-2"
- (C) 433-S555 T&B LAPPED WITH 433-S550 BOT., 433-S591 TOP, 433-S560 TOP @ 6 1/2" (MAX.) = 233'-7" ALTERNATE LAP SPLICE LOCATIONS (MEASURED ALONG CONSTRUCTION JOINT)
- (D) 1 S.O. 43-S556 LAPPED WITH 43-S550 T&B @ 6 1/2" = 22'-9"
- (E) 1 S.O. 37-S557 T&B @ 6 1/2" = 19'-6" T&B
- (F) 1 S.O. 49-S561 T&B @ 6 1/2" = 26'-0"
- (G) 481-S562 T&B LAPPED WITH 481-S568 BOT., 481-S569 TOP, 481-S560 TOP @ 6 1/2" = 259'-8" MEASURED ALONG EDGE OF DECK, ALTERNATE LAP SPLICE LOCATIONS
- (H) 1 S.O. 40-S563 BOT., 1 S.O. 40-S595 TOP @ 6 1/2" = 17'-10 1/2"
- (J) 224-S552 PAIRS @ 5" (MAX.) TOP OVER PIER

LEGEND:

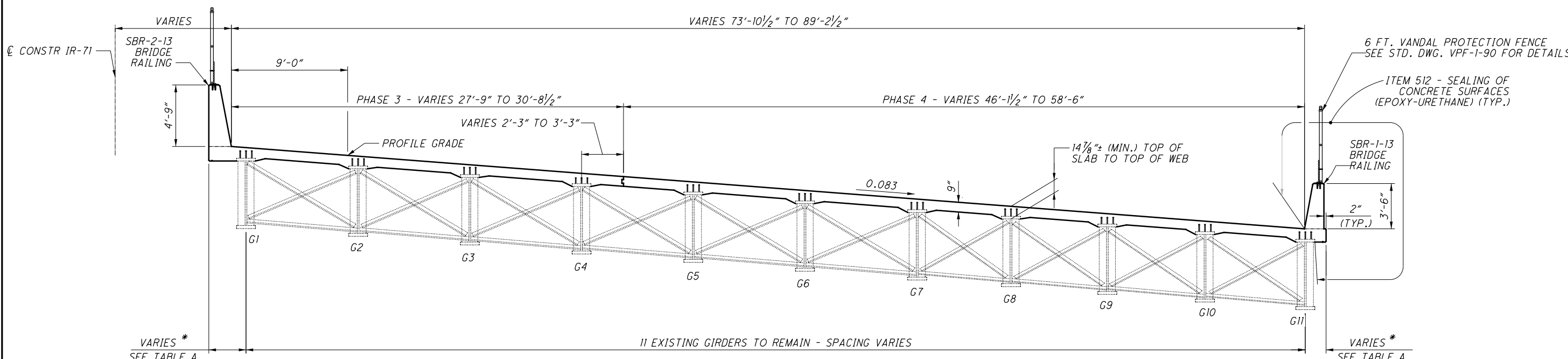
- BRGS. = BEARINGS
- F.A. = FORWARD ABUTMENT
- R.A. = REAR ABUTMENT
- S.O. = SERIES OF
- SPA. = SPACES
- T&B = TOP AND BOTTOM

NOTES:

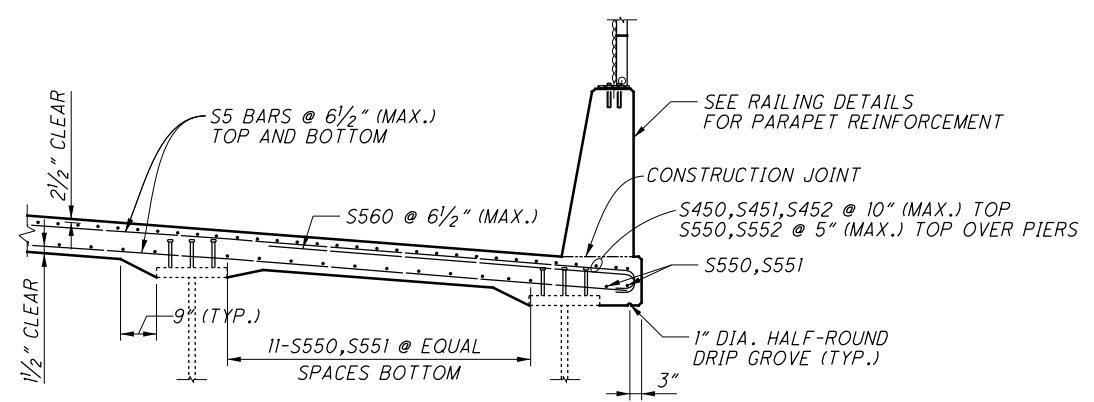
1. MINIMUM LAP LENGTHS:
#4 BAR = 1'-10"
#5 BAR = 2'-10"
2. FOR DECK LAYOUT INFORMATION SEE GENERAL PLAN ON SHEET 3/57.

DESIGN AGENCY BURGESS & NIPLE 312 PLUM ST. CINCINNATI, OH	DATE 2/20/2017	REVIEWED DWL	DRAWN SJA	DESIGNED SJA
STRUCTURE FILE NUMBER 3106896	CHECKED XAC	REVISED	REVISED	XAC
DECK PLAN - RIGHT BRIDGE				
HAM-71-1068R IR-71 OVER STEWART ROAD				
HAM-IR71-8.42				
PID No. 91826				
29/57				
396 441				

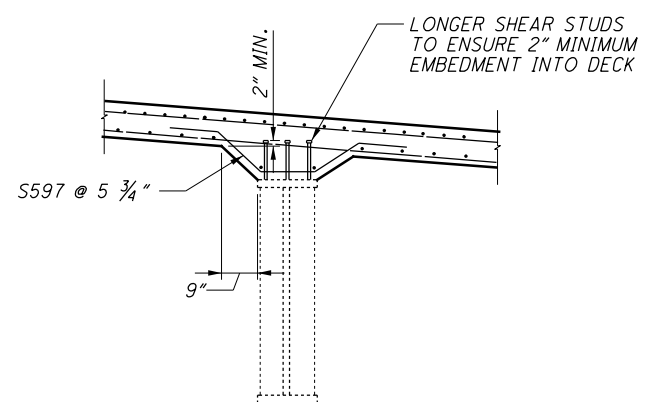
P:\PR54704\HAM\91826\Design\Structures\HAM071_068R_Sheets\071_068R_ST001.dgn Sheet 10/26/2017 8:39:35 AM compton



TRANSVERSE SECTION - RIGHT BRIDGE
(REINFORCEMENT NOT SHOWN)



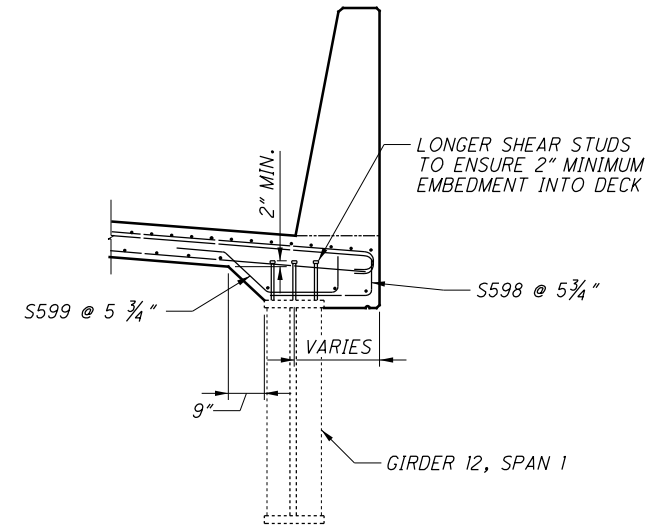
REINFORCEMENT DETAIL
RIGHT SIDE SHOWN, LEFT SIDE SIMILAR



DEEP HAUNCH DETAIL
(FOR HAUNCHES LARGER THAN 5" ONLY)
INTERIOR GIRDERS

LEGEND:

- * = FASCIA OFFSETS ARE APPROXIMATE AND MEASURED NORMAL TO GIRDERS
- ** = LOCATION AT EDGE OF DECK



DEEP HAUNCH DETAIL
(FOR HAUNCHES LARGER THAN 5" ONLY)
EXTERIOR GIRDERS

DECK FASCIA OFFSET TABLE - A*

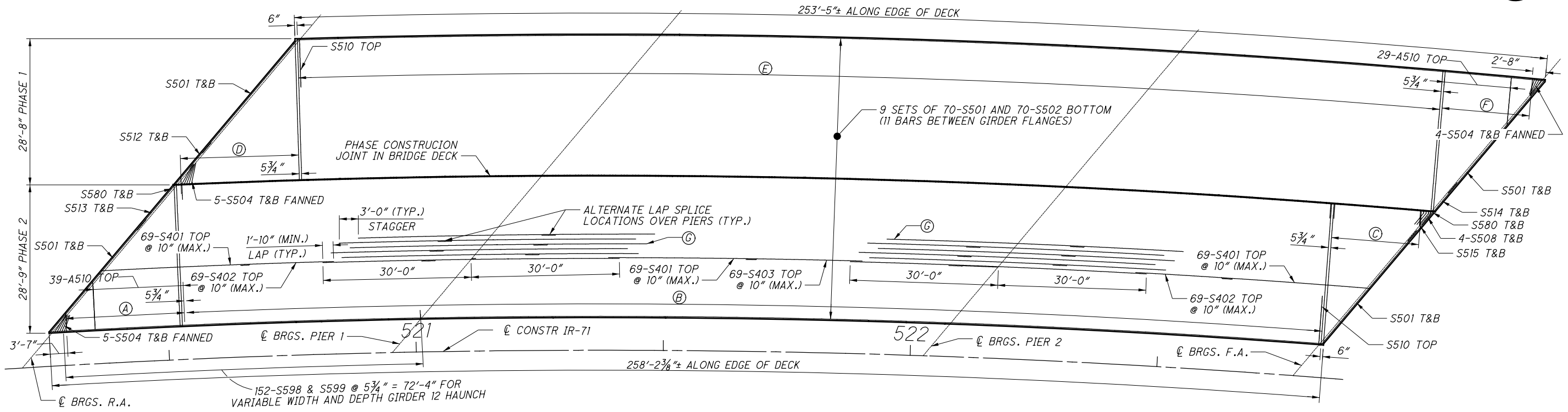
LOCATION **	GIRDER I	GIRDER II
C.L. BRG. REAR ABUT.	1'-9 3/4"	1'-2 1/8"
1/4 SPAN 1	2'-3 1/2"	0'-9 3/8"
1/2 SPAN 2	2'-6 5/8"	0'-7 7/8"
F.S. 1	2'-7 1/4"	0'-8 1/2"
3/4 SPAN 1	2'-7 1/8"	0'-9 3/4"
C.L. BRG. PIER 1	2'-5 3/8"	1'-2 7/8"
F.S. 2	2'-3 5/8"	1'-11 7/8"
3/10 SPAN 2	2'-6 1/4"	1'-10"
1/2 SPAN 2	2'-9 5/8"	1'-8 3/4"
7/10 SPAN 2	2'-10 5/8"	1'-9 7/8"
F.S. 3	2'-10 3/8"	2'-0 3/8"
C.L. BRG. PIER 2	3'-2 3/8"	1'-4 1/4"
1/4 SPAN 3	3'-5 3/8"	0'-11 1/2"
F.S. 4	3'-5 3/4"	0'-11 1/2"
1/2 SPAN 3	3'-5 5/8"	0'-10"
3/4 SPAN 3	3'-3 1/2"	0'-11 5/8"
C.L. BRG. FWD. ABUT.	2'-10 3/4"	1'-4 3/8"

NOTES:

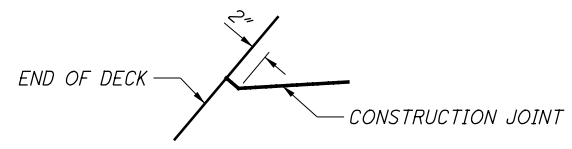
1. DECK SLAB CONCRETE QUANTITY: THE ESTIMATED QUANTITY OF DECK SLAB CONCRETE IS BASED ON THE CONSTANT DECK SLAB THICKNESS, AS SHOWN, PLUS THE QUANTITY OF CONCRETE THAT FORMS EACH GIRDER HAUNCH. THE ESTIMATE ASSUMES A CONSTANT HAUNCH THICKNESS OF 4 INCHES AND A CONSTANT HAUNCH WIDTH OUTSIDE THE EDGE OF EACH GIRDER FLANGE OF 9 INCHES. DEVIATE FROM THIS HAUNCH THICKNESS AS NECESSARY TO PLACE THE DECK SURFACE AT THE FINISHED GRADE. THE ALLOWABLE TOLERANCE FOR THE HAUNCH WIDTH OUTSIDE THE EDGE OF EACH GIRDER FLANGE IS ± 3 INCHES.
2. THE HAUNCH THICKNESS WAS MEASURED AT THE CENTERLINE OF THE GIRDER, FROM THE SURFACE OF THE DECK TO THE BOTTOM OF THE TOP FLANGE MINUS THE DECK SLAB THICKNESS. THE AREA OF ALL EMBEDDED STEEL PLATES HAS BEEN DEDUCTED FROM THE HAUNCH QUANTITY IN ACCORDANCE WITH 511.23.

DESIGN AGENCY: BURGESS & NIPLE
 311 PLUM ST. CINCINNATI OH
 DATE: 2/20/2017
 REVIEWED: DWL
 DRAWN: SJA
 CHECKED: XAC
 STRUCTURE FILE NUMBER: 3106896
 HAM-71-1068R
 IR-71 OVER STEWART ROAD
HAM-IR71-8.42
 PID No. 91826
 30/57
 397
 441

P:\PR54704\HAM\91826\Design\Structures\HAM071_1068L_Sheets\071_1068L_SD001.dgn Sheet 2/26/2018 5:32:36 PM chen



DECK PLAN - LEFT BRIDGE
(RAILING NOT SHOWN)

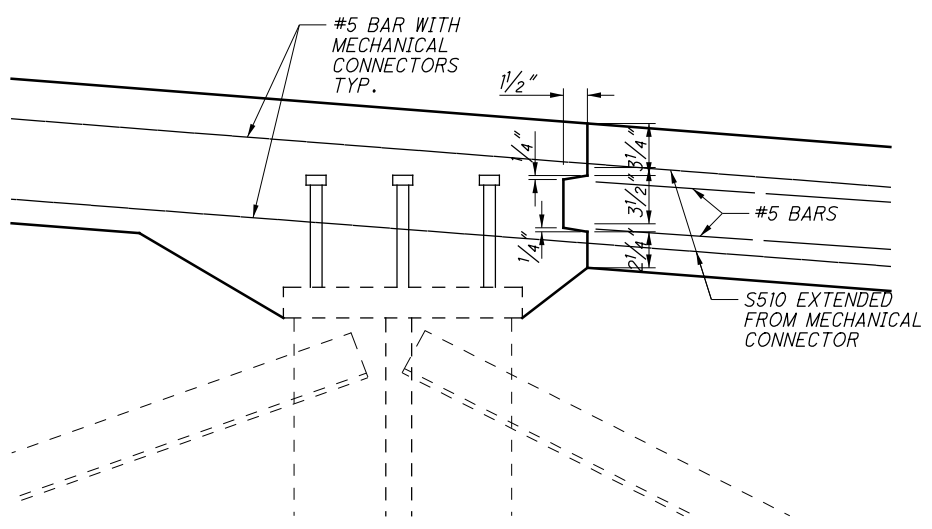


TYPICAL CONSTRUCTION JOINT PLAN

REINFORCING LEGEND

- (A) 1 S.O. 49-S503 BOT. 1 S.O. 49-S592 TOP @ 5 3/4" = 23'-0"
- (B) 482-S505 BOT., 482-S590 TOP, 482-S510 TOP, 482-S580 T&B @ 5 3/4" = 230'-5 3/4" (MEASURED ALONG CONSTRUCTION JOINT)
- (C) 1 S.O. 38-S506 T&B @ 5 3/4" = 17'-8 3/4"
- (D) 1 S.O. 51-S507 T&B @ 5 3/4" = 23'-11 1/2"
- (E) 486 S505 BOT., 486-S590 TOP, 486-S510 TOP, 486 S580 T&B @ 5 3/4" (MAX.) = 232'-1" (MEASURED ALONG EDGE OF DECK)
- (F) 1 S.O. 39-S509 BOT., 1 S.O. 39-S593 TOP @ 5 3/4" = 17'-9"
- (G) 138-S501, S511 PAIRS @ 5" (MAX.) TOP OVER PIERS

LEGEND:
 BRGS. = BEARINGS
 F.A. = FORWARD ABUTMENT
 R.A. = REAR ABUTMENT
 S.O. = SERIES OF
 SPA. = SPACES
 T&B = TOP AND BOTTOM



CONSTRUCTION JOINT DETAIL

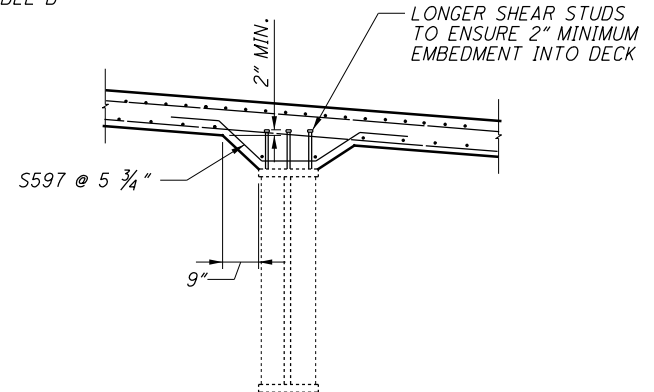
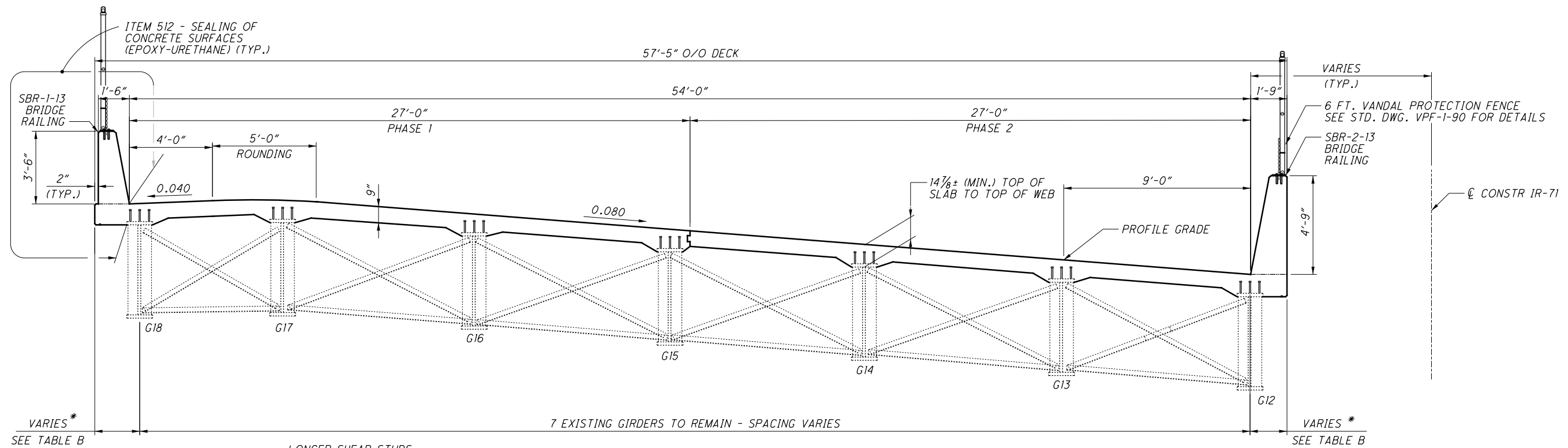
NOTES:

1. MINIMUM LAP LENGTHS:
 #4 BAR = 1'-10"
 #5 BAR = 2'-10"
2. FOR DECK LAYOUT INFORMATION SEE GENERAL PLAN ON SHEET 3/57.

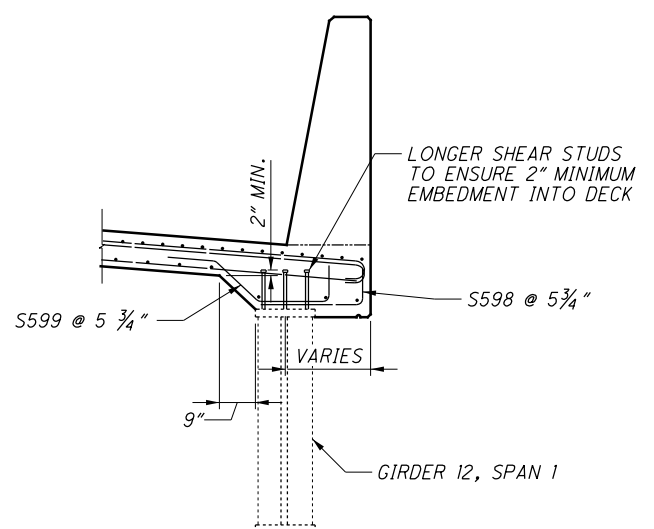


DESIGN AGENCY BURGESS & NIPLÉ 312 PLUM ST. CINCINNATI, OH	
DESIGNED SJA XAC	DATE 2/20/2017 STRUCTURE FILE NUMBER 3106888
DECK PLAN - LEFT BRIDGE HAM-71-1068L IR-71 OVER STEWART ROAD	
HAM-IR71-8.42 PID No. 91826	
31/57	
398 441	

P:\PR54704\HAM\91826\Design\Structures\HAM071_068L\ST001.dgn Sheet 10/26/2017 8:39:39 AM compton



DEEP HAUNCH DETAIL
(FOR HAUNCHES LARGER THAN 5" ONLY)
INTERIOR GIRDERS

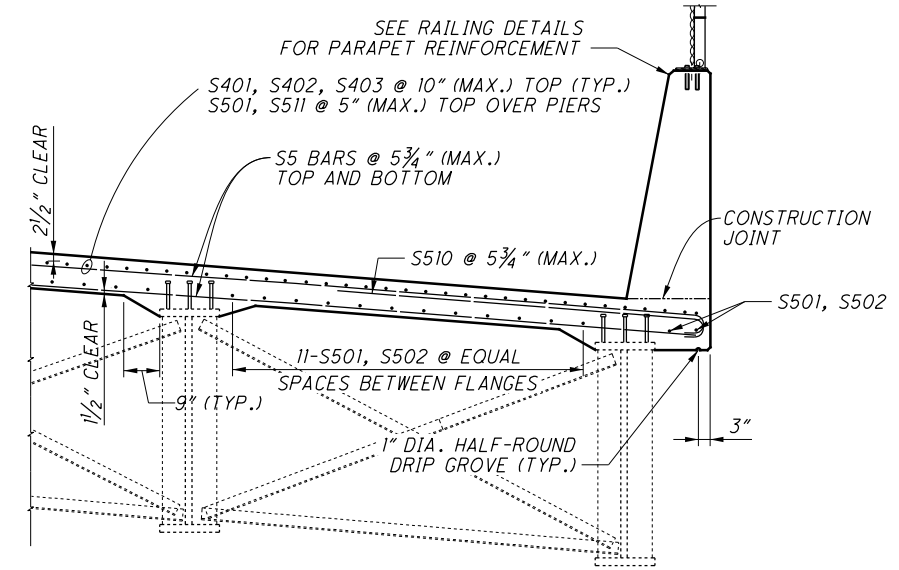


DEEP HAUNCH DETAIL
(FOR HAUNCHES LARGER THAN 5" ONLY)
EXTERIOR GIRDERS

TRANSVERSE SECTION - LEFT BRIDGE
(REINFORCEMENT NOT SHOWN)

LEGEND:

- * = FASCIA OFFSETS ARE APPROXIMATE AND MEASURED NORMAL TO GIRDERS
- ** = LOCATION AT EDGE OF DECK



REINFORCEMENT DETAIL
RIGHT SIDE SHOWN, LEFT SIDE SIMILAR

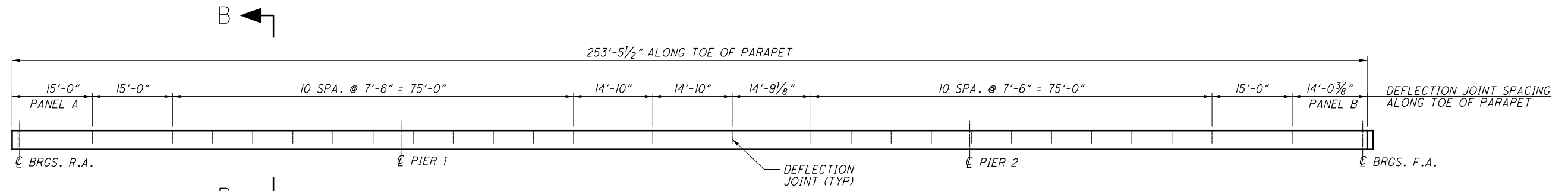
DECK FASCIA OFFSET TABLE B *		
LOCATION **	GIRDER 12	GIRDER 18
C.L. BRG. REAR ABUT.	1'-5 3/8 "	2'-4 3/8 "
1/4 SPAN 1	1'-1 3/8 "	2'-7 3/4 "
1/2 SPAN 2	0'-11 1/2 "	2'-9 "
F.S. 1	0'-11 5/8 "	2'-8 5/8 "
C.L. BRG. PIER 1	1'-2 1/4 "	2'-5 1/2 "
F.S. 2	1'-9 "	2'-2 7/8 "
3/10 SPAN 2	1'-7 1/4 "	2'-4 1/2 "
1/2 SPAN 2	1'-5 3/8 "	2'-5 "
7/10 SPAN 2	1'-6 1/4 "	2'-2 7/8 "
F.S. 3	1'-7 7/8 "	2'-1 5/8 "
C.L. BRG. PIER 2	1'-2 "	2'-7 1/8 "
F.S. 4	0'-9 1/2 "	2'-10 1/2 "
1/2 SPAN 3	0'-8 1/2 "	2'-10 3/8 "
3/4 SPAN 3	0'-9 1/8 "	2'-8 3/8 "
C.L. BRG. FWD. ABUT.	0'-11 7/8 "	2'-4 3/8 "

NOTES:

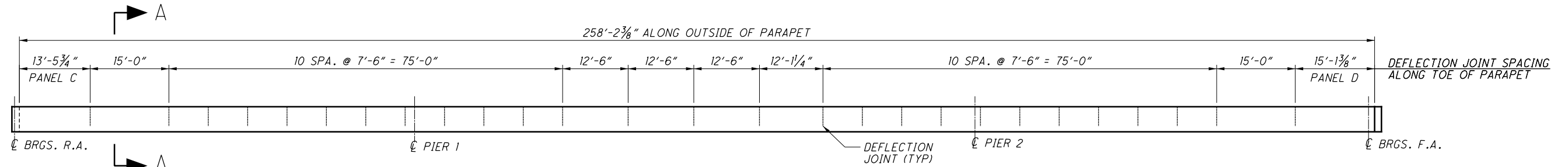
1. DECK SLAB CONCRETE QUANTITY: THE ESTIMATED QUANTITY OF DECK SLAB CONCRETE IS BASED ON THE CONSTANT DECK SLAB THICKNESS, AS SHOWN, PLUS THE QUANTITY OF CONCRETE THAT FORMS EACH GIRDER HAUNCH. THE ESTIMATE ASSUMES A CONSTANT HAUNCH THICKNESS OF 4 INCHES AND A CONSTANT HAUNCH WIDTH OUTSIDE THE EDGE OF EACH GIRDER FLANGE OF 9 INCHES. DEVIATE FROM THIS HAUNCH THICKNESS AS NECESSARY TO PLACE THE DECK SURFACE AT THE FINISHED GRADE. THE ALLOWABLE TOLERANCE FOR THE HAUNCH WIDTH OUTSIDE THE EDGE OF EACH GIRDER FLANGE IS ± 3 INCHES.
2. THE HAUNCH THICKNESS WAS MEASURED AT THE CENTERLINE OF THE GIRDER, FROM THE SURFACE OF THE DECK TO THE BOTTOM OF THE TOP FLANGE MINUS THE DECK SLAB THICKNESS. THE AREA OF ALL EMBEDDED STEEL PLATES HAS BEEN DEDUCTED FROM THE HAUNCH QUANTITY IN ACCORDANCE WITH 511.23.

DESIGN AGENCY: BURGESS & NIPLE
 312 PLUM ST. CINCINNATI, OH
 DATE: 2/20/2017
 STRUCTURE FILE NUMBER: 3106888
 REVIEWED: DWL
 DRAWN: SJA
 CHECKED: XAC
 DESIGNED: SJA
 TRANSVERSE SECTION - LEFT BRIDGE
 HAM-71-1068L
 IR-71 OVER STEWART ROAD
 HAM-IR71-8.42
 PID No. 91826
 32/57
 399
 441

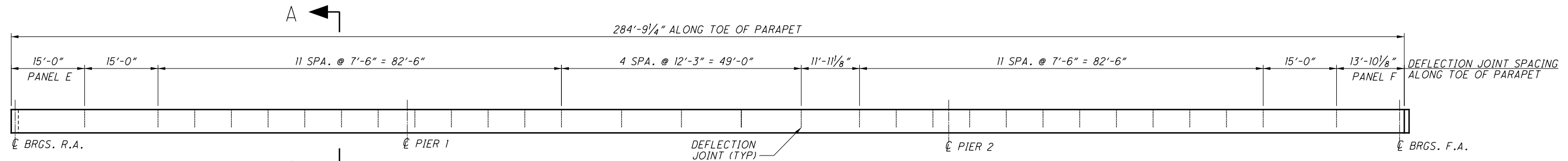
P:\PR54704\HAM\91826\Design\Structures\HAM071_1068L_Sheets\071_1068L_SA003.dgn Sheet 10/26/2017 8:39:42 AM compton



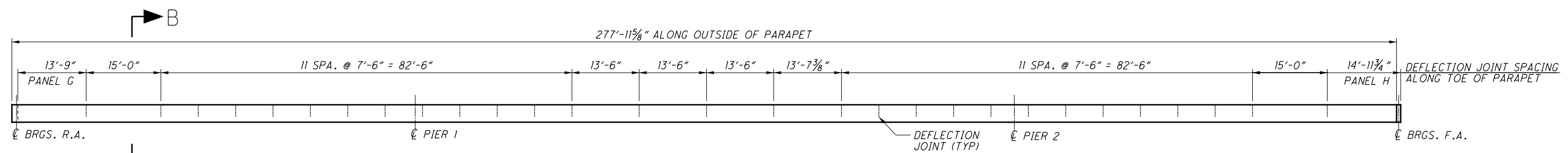
LEFT (EXTERIOR) PARAPET ELEVATION - LEFT BRIDGE
(LOOKING AT INSIDE FACE OF PARAPET)



RIGHT (MEDIAN) PARAPET ELEVATION - LEFT BRIDGE
(LOOKING AT OUTSIDE FACE OF PARAPET)



LEFT (MEDIAN) PARAPET ELEVATION - RIGHT BRIDGE
(LOOKING AT INSIDE FACE OF PARAPET)



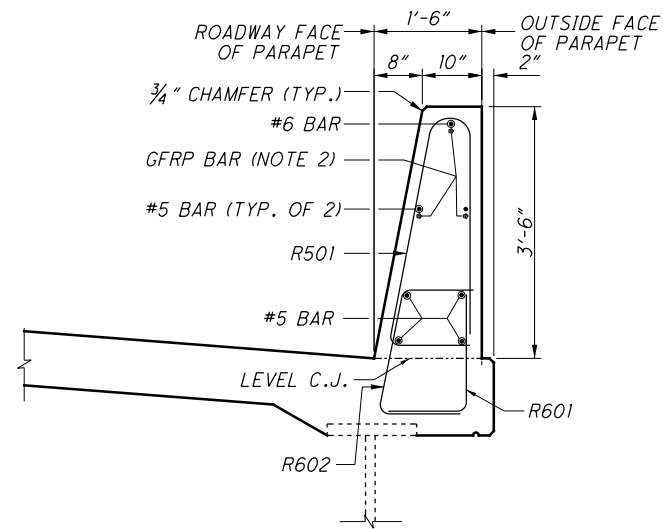
RIGHT (EXTERIOR) PARAPET ELEVATION - RIGHT BRIDGE
(LOOKING AT OUTSIDE FACE OF PARAPET)

LEGEND:
R.A. = REAR ABUTMENT
F.A. = FORWARD ABUTMENT
SPA. = SPACES

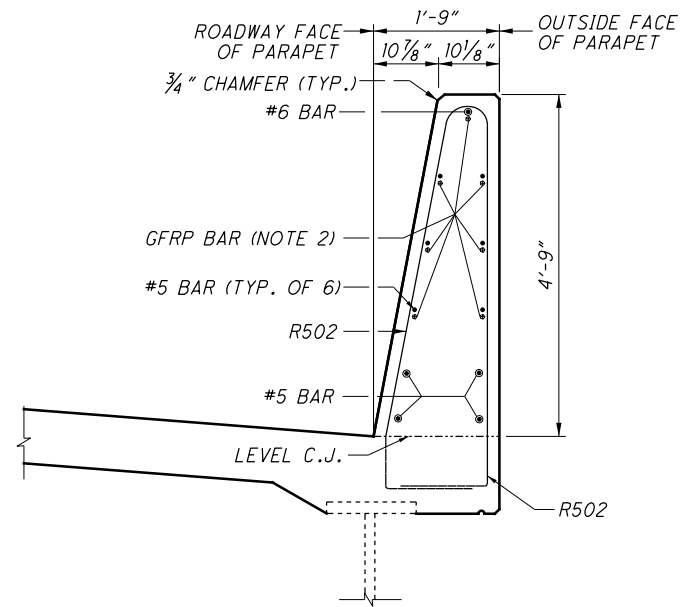
- NOTES:**
1. SEE STD. DWGS. SBR-1-13 & SBR-2-13 FOR NOTES REGARDING INSTALLATION AND SEALING OF DEFLECTION JOINTS.
 2. FOR SECTIONS A-A & B-B SEE SHEET 34/57.
 3. FOR PANELS A THRU D SEE SHEET 36/57.
 4. FOR PANELS E THRU H SEE SHEET 37/57.
 5. FOR TYPICAL PANEL DETAILS, SEE SHEET 35/57.
 6. FOR VANDAL PROTECTION FENCE, SEE SHEET 38/57.

DESIGNED	SJA	CHECKED	MAB
DRAWN	SJA	REVISED	
REVIEWED	DWL	STRUCTURE FILE NUMBER	3106888/3106896
DATE	2/20/2017		
DESIGN AGENCY	BURGESS & NIPLE 312 PLUM ST. CINCINNATI OH		
PARAPET DETAILS 1			
HAM-71-1068L/R IR-71 OVER STEWART ROAD			
HAM-IR71-8.42		PID No. 91826	
33/57		400 441	

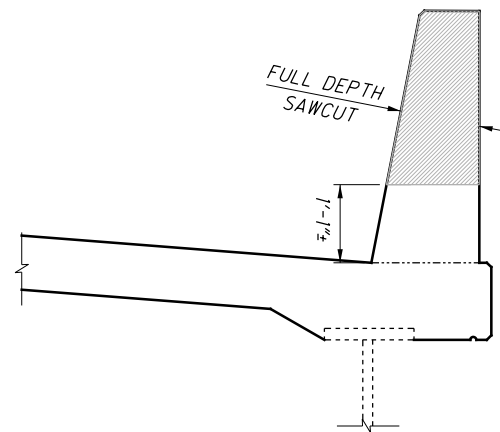
P:\PR54704\HAM\91826\Design\Structures\HAM071_1068L_Sheets\071_1068L_SA002.dgn Sheet 10/26/2017 8:39:44 AM compton



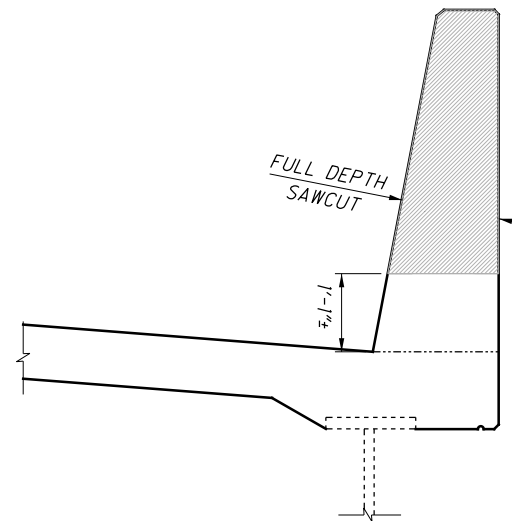
SECTION B-B
(EXTERIOR PARAPET)



SECTION A-A
(MEDIAN PARAPET)



SECTION B-B AT DEFLECTION JOINT
(SEE NOTE 1)




SECTION A-A AT DEFLECTION JOINT
(SEE NOTE 1)

LEGEND:

C.J. = CONSTRUCTION JOINT

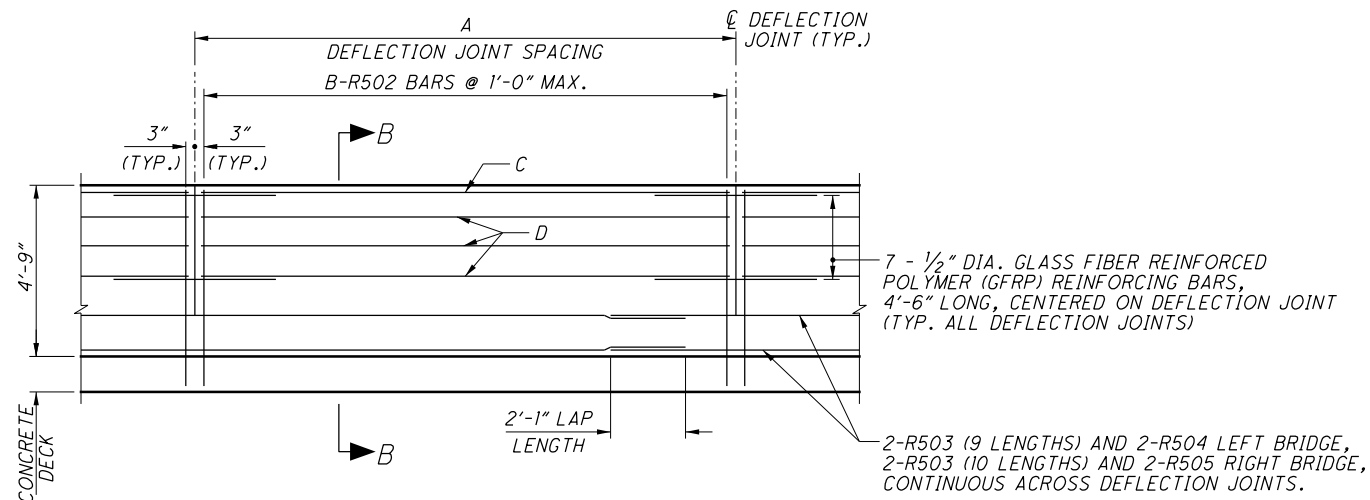
GFRP = GLASS FIBER REINFORCED POLYMER

 = LIMITS OF FULL DEPTH SAW CUT

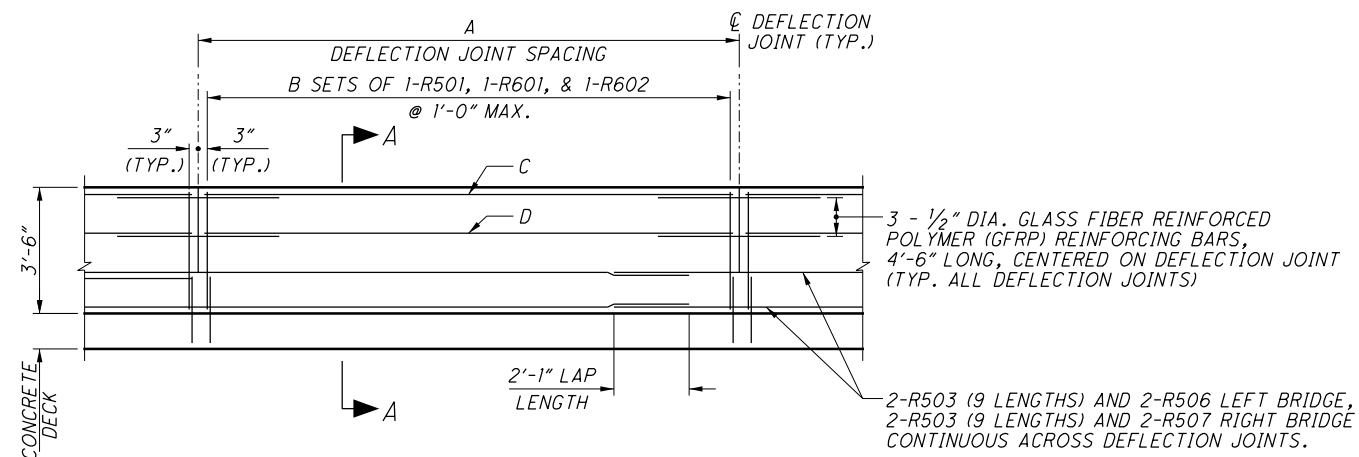
NOTES:

- FOR ADDITIONAL DEFLECTION JOINT DETAILS AND NOTES SEE STANDARD DRAWING SBR-1-13 & SBR-2-13 SHEET 5/5.
- SEE STD. DWGS. SBR-1-13 & SBR-2-13 FOR NOTES AND PAYMENT DETAILS FOR THE GFRP REINFORCEMENT. ALL GFRP BARS SHALL BE 1/2" DIA. x 4'-6" LONG.

DESIGNED SJA		DRAWN SJA		REVIEWED DWL		DATE 2/20/2017		DESIGN AGENCY BURGESS & NIPLE	
CHECKED MAB		REVISED		STRUCTURE FILE NUMBER 3106888/3106896		312 PLUM ST. CINCINNATI OH			
PARAPET DETAILS 2					HAM-71-1068L/R				
IR-71 OVER STEWART ROAD					PID No. 91826				
HAM-IR71-8.42					34/57				
401					441				



TYPICAL MEDIAN PARAPET ELEVATION
LOOKING AT OUTSIDE FACE OF PARAPET



TYPICAL EXTERIOR PARAPET ELEVATION
LOOKING AT OUTSIDE FACE OF PARAPET

LEFT BRIDGE MEDIAN PARAPET TABLE				
NUMBER OF PANELS	A	B	C	D
2	15'-0"	16	1-R603	6-R508
20	7'-6"	8	1-R604	6-R509
3	12'-6"	13	1-R605	6-R510
1	12'-1 1/4"	13	1-R606	6-R511

RIGHT BRIDGE MEDIAN PARAPET TABLE				
NUMBER OF PANELS	A	B	C	D
2	15'-0"	16	1-R615	6-R524
22	7'-6"	8	1-R616	6-R525
4	12'-3"	13	1-R617	6-R526
1	11'-11 1/8"	13	1-R618	6-R527

LEFT BRIDGE EXTERIOR PARAPET TABLE				
NUMBER OF PANELS	A	B	C	D
2	15'-0"	16	1-R607	2-R512
20	7'-6"	8	1-R608	2-R513
2	14'-10"	16	1-R609	2-R514
1	14'-9 1/8"	16	1-R610	2-R515

RIGHT BRIDGE EXTERIOR PARAPET TABLE				
NUMBER OF PANELS	A	B	C	D
2	15'-0"	16	1-R619	2-R528
22	7'-6"	8	1-R620	2-R529
3	13'-6"	14	1-R621	2-R530
1	13'-7 3/8"	15	1-R622	2-R531

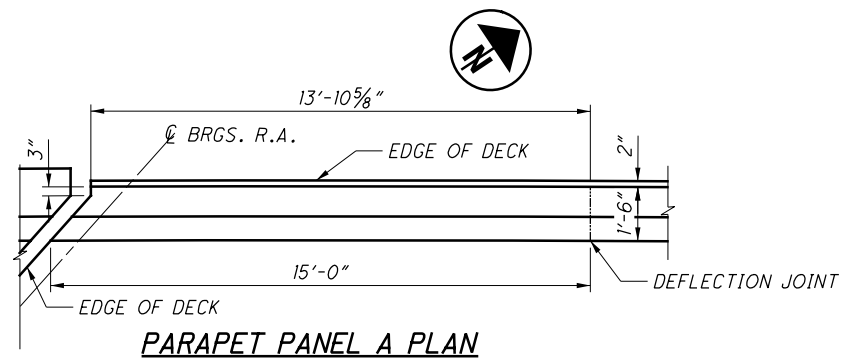
NOTES:

- SEE STD. DWGS. SBR-1-13 & SBR-2-13 FOR NOTES REGARDING INSTALLATION AND SEALING OF DEFLECTION JOINTS.
- SEE STD. DWGS. SBR-1-13 & SBR-2-13 FOR NOTES AND PAYMENT DETAILS FOR THE GFRP REINFORCEMENT. ALL GFRP BARS SHALL BE 1/2" DIA. x 4'-6" LONG.
- FOR SECTIONS A-A & B-B SEE SHEET 34/57.

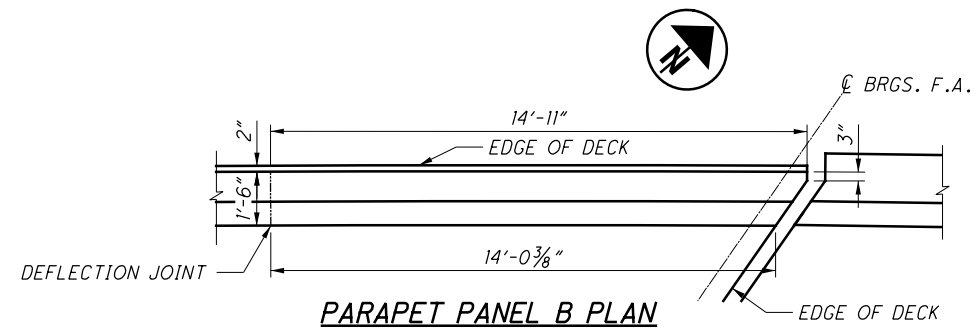
P:\PR54704\HAM\91826\Design\Structures\HAM071_1068L_Sheets\071_1068L_SA001.dgn Sheet 10/26/2017 8:39:45 AM compton

DESIGNED SJA	CHECKED MAB	DRAWN SJA	REVISED	REVIEWED DWL	DATE 2/20/2017	DESIGN AGENCY BURGESS & NIPLE
				STRUCTURE FILE NUMBER 3106888/3106896	312 PLUM ST. CINCINNATI OH	
PARAPET DETAILS 3				HAM-71-1068L/R		HAM-IR71-8.42 PID No. 91826
				IR-71 OVER STEWART ROAD		
				35/57		402 441

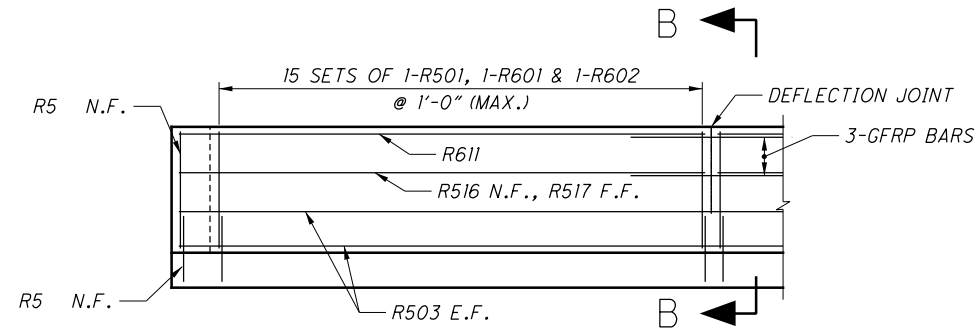
P:\PR54704\HAM\91826\Design\Structures\HAM071_1068L_Sheets\071_1068L_SA004.dgn Sheet 10/26/2017 8:39:48 AM compton



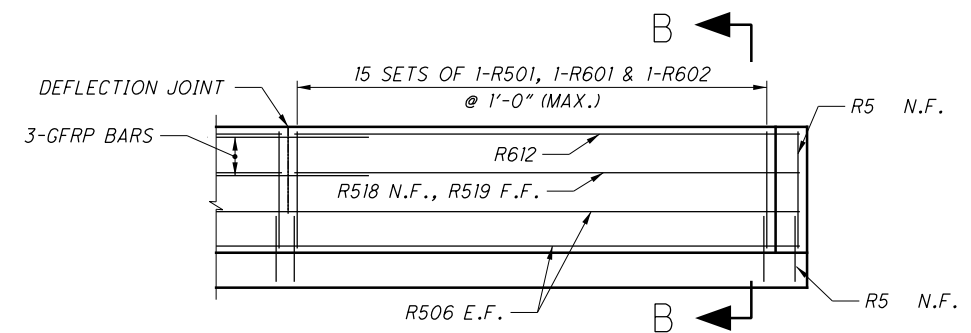
PARAPET PANEL A PLAN



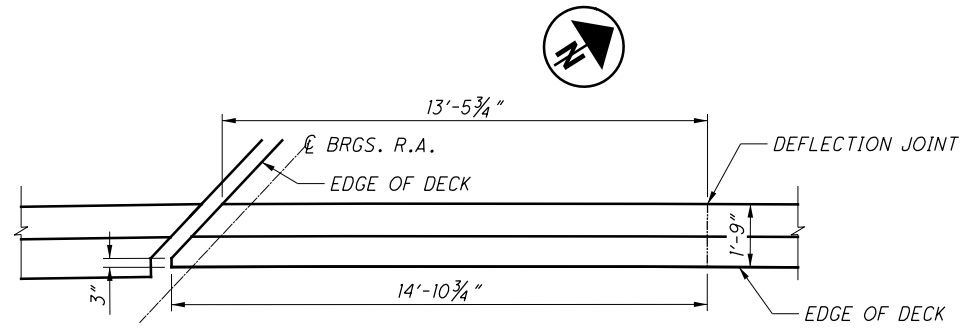
PARAPET PANEL B PLAN



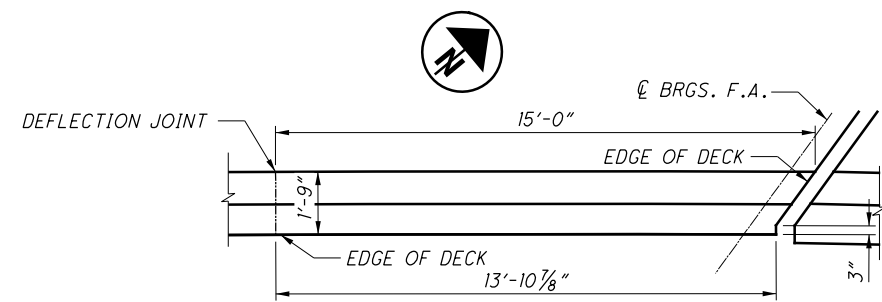
PARAPET PANEL A ELEVATION



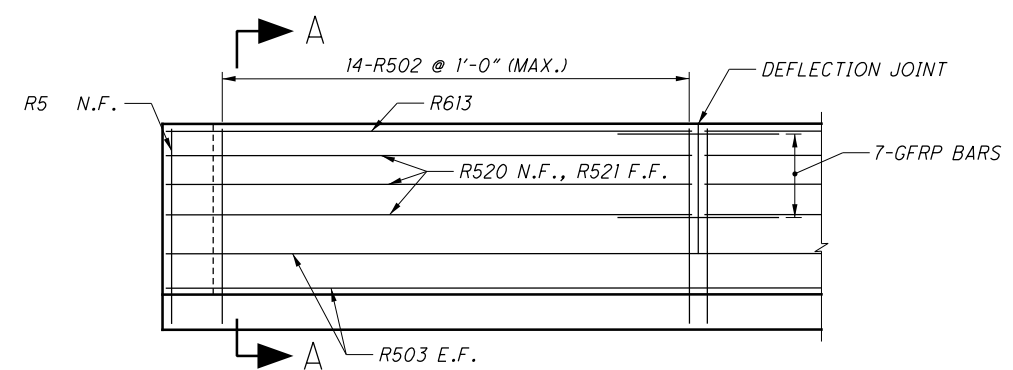
PARAPET PANEL B ELEVATION



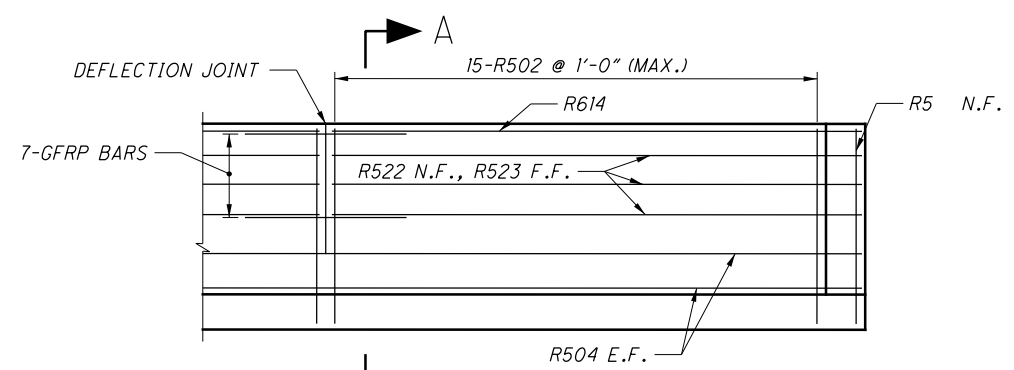
PARAPET PANEL C PLAN



PARAPET PANEL D PLAN



PARAPET PANEL C ELEVATION



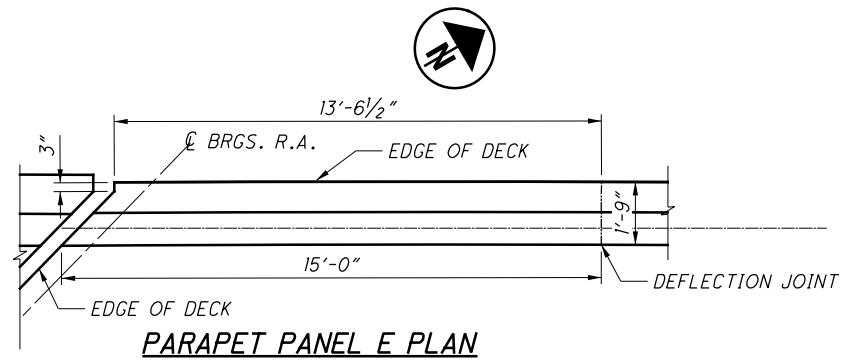
PARAPET PANEL D ELEVATION

LEGEND:
 F.A. = FORWARD ABUTMENT
 F.F. = FAR FACE
 N.F. = NEAR FACE
 R.A. = REAR ABUTMENT
 SPA. = SPACES
 GFRP = GLASS FIBER REINFORCED POLYMER

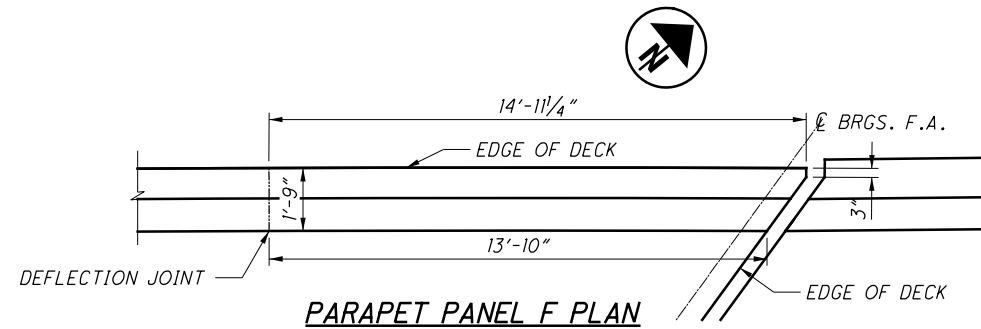
NOTES:
 1. SEE STD. DWGS. SBR-1-13 & SBR-2-13 FOR NOTES REGARDING INSTALLATION AND SEALING OF DEFLECTION JOINTS.
 2. SEE STD. DWGS. SBR-1-13 & SBR-2-13 FOR NOTES AND PAYMENT DETAILS. FOR THE GFRP REINFORCEMENT. ALL GFRP BARS SHALL BE 1/2" DIA. x 4'-6" LONG.
 3. FOR SECTIONS A-A & B-B SEE SHEET 34/57.

DESIGNED SJA	CHECKED MAB	DRAWN SJA	REVISED	REVIEWED DWL	DATE 2/20/2017	DESIGN AGENCY BURGESS & NIPLE 312 PLUM ST. CINCINNATI OH
				STRUCTURE FILE NUMBER 3106888/3106896		
PARAPET DETAILS 4				HAM-71-1068L/R		IR-71 OVER STEWART ROAD
HAM-IR71-8.42		PID No. 91826		36/57		
				403		441

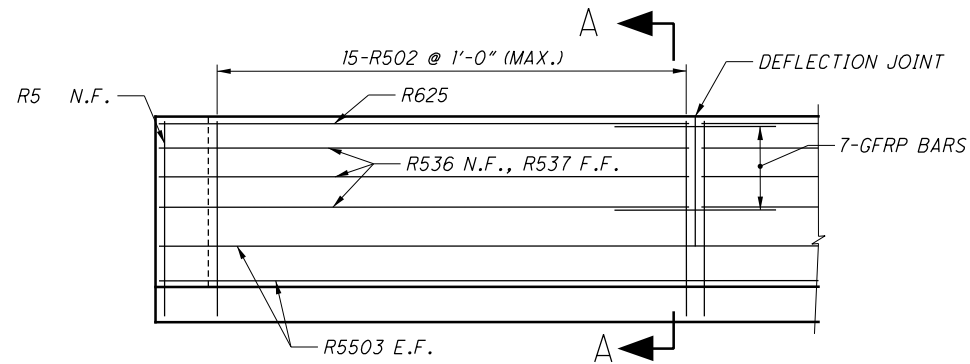
P:\PR54704\HAM\91826\Design\Structures\HAM071_1068L_Sheets\071_1068L_SA005.dgn Sheet 10/26/2017 8:39:51 AM compton



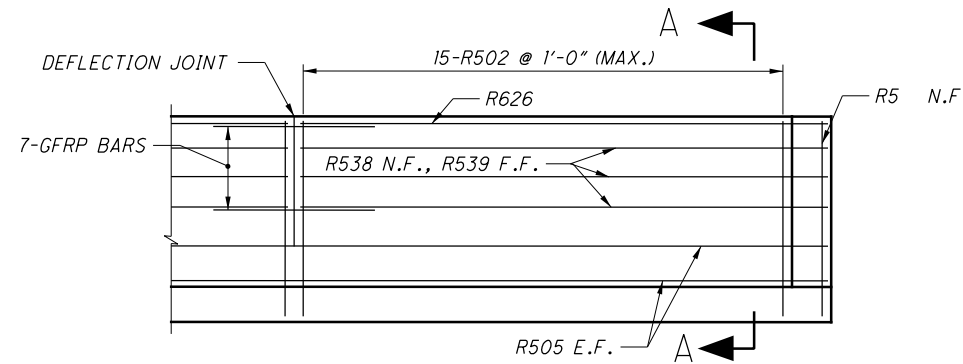
PARAPET PANEL E PLAN



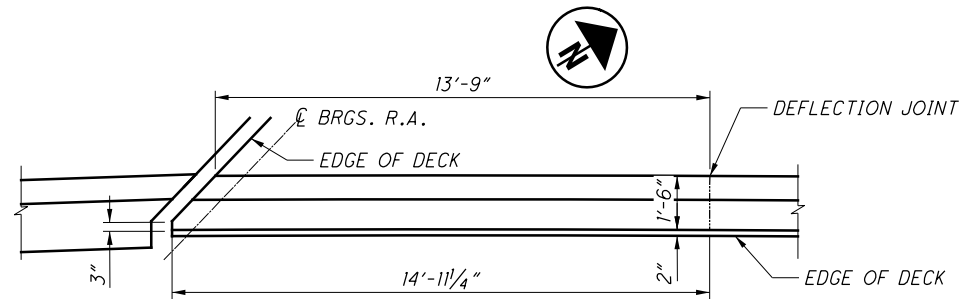
PARAPET PANEL F PLAN



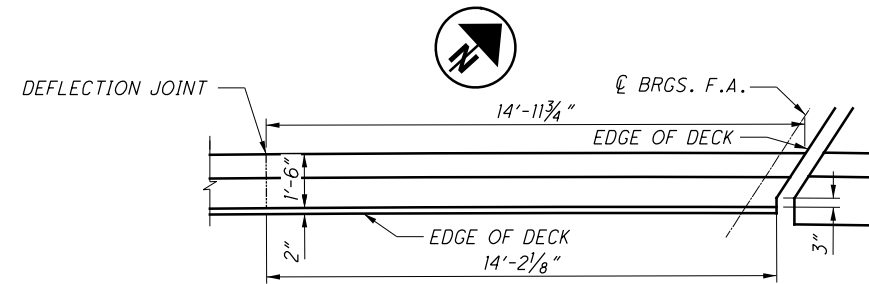
PARAPET PANEL E ELEVATION



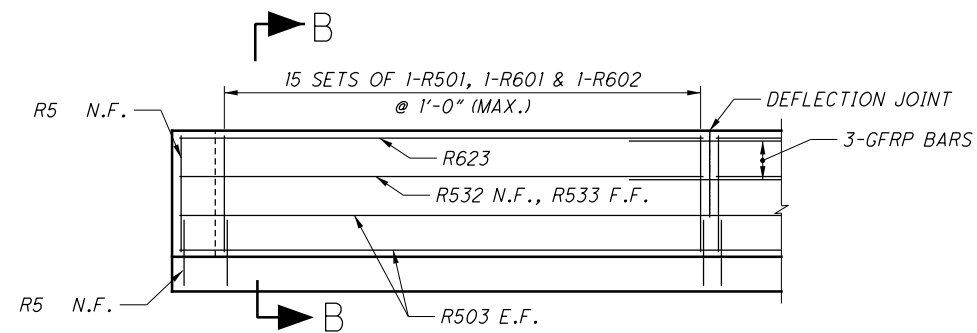
PARAPET PANEL F ELEVATION



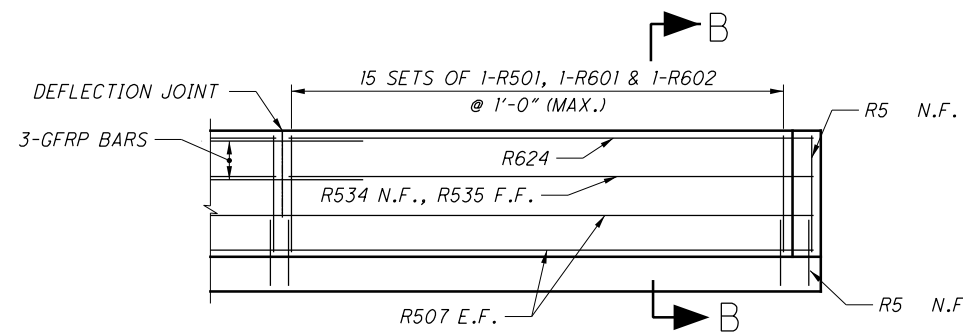
PARAPET PANEL G PLAN



PARAPET PANEL H PLAN



PARAPET PANEL G ELEVATION



PARAPET PANEL H ELEVATION

LEGEND:

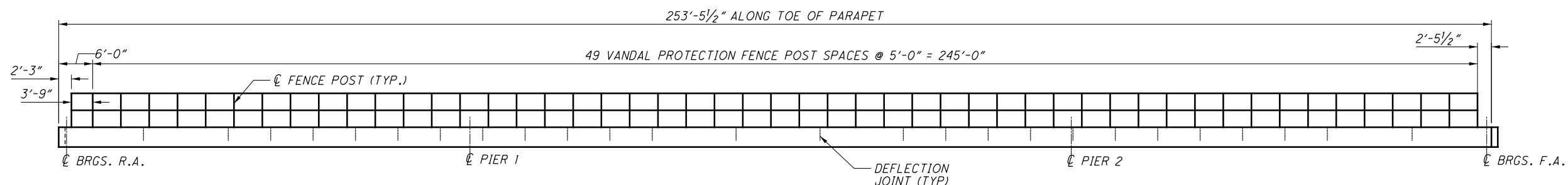
- F.A. = FORWARD ABUTMENT
- F.F. = FAR FACE
- N.F. = NEAR FACE
- R.A. = REAR ABUTMENT
- SPA. = SPACES
- GFRP = GLASS FIBER REINFORCED POLYMER

NOTES:

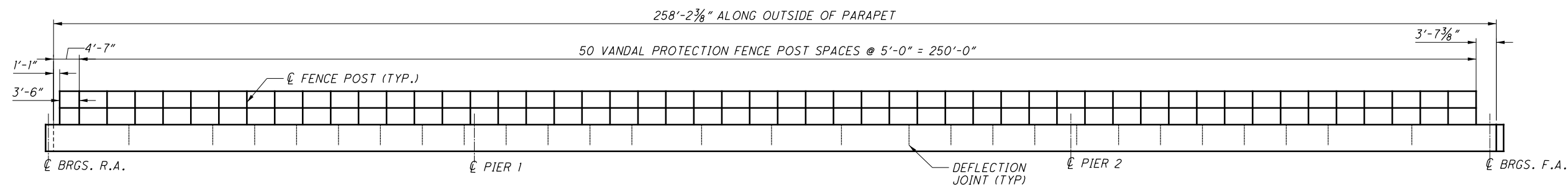
1. SEE STD. DWGS. SBR-1-13 & SBR-2-13 FOR NOTES REGARDING INSTALLATION AND SEALING OF DEFLECTION JOINTS.
2. SEE STD. DWGS. SBR-1-13 & SBR-2-13 FOR NOTES AND PAYMENT DETAILS FOR THE GFRP REINFORCEMENT. ALL GFRP BARS SHALL BE 1/2" DIA. x 4'-6" LONG.
3. FOR SECTIONS A-A & B-B SEE SHEET 34/57.

DESIGNED SJA		DRAWN SJA		REVIEWED DWL		DATE 2/20/2017		DESIGN AGENCY BURGESS & NIPLE	
CHECKED MAB		REVISED		STRUCTURE FILE NUMBER 3106888/3106896		312 PLUM ST. CINCINNATI OH			
PARAPET DETAILS 5					HAM-71-1068L/R				
IR-71 OVER STEWART ROAD					PID No. 91826				
HAM-IR71-8.42					37/57				
					404				
					441				

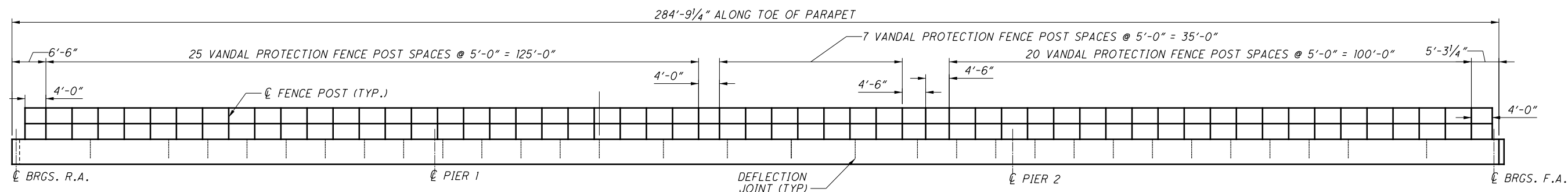
P:\PR54704\HAM\91826\Design\Structures\HAM071_1068L\Sheets\071_1068L_SA006.dgn Sheet 10/26/2017 8:39:53 AM compton



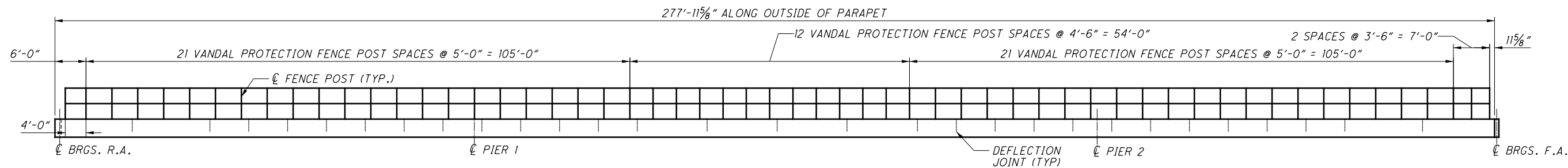
LEFT (EXTERIOR) PARAPET ELEVATION - LEFT BRIDGE
(LOOKING AT INSIDE FACE OF PARAPET)



RIGHT (MEDIAN) PARAPET ELEVATION - LEFT BRIDGE
(LOOKING AT OUTSIDE FACE OF PARAPET)



LEFT (MEDIAN) PARAPET ELEVATION - RIGHT BRIDGE
(LOOKING AT INSIDE FACE OF PARAPET)



RIGHT (EXTERIOR) PARAPET ELEVATION - RIGHT BRIDGE
(LOOKING AT OUTSIDE FACE OF PARAPET)

LEGEND:

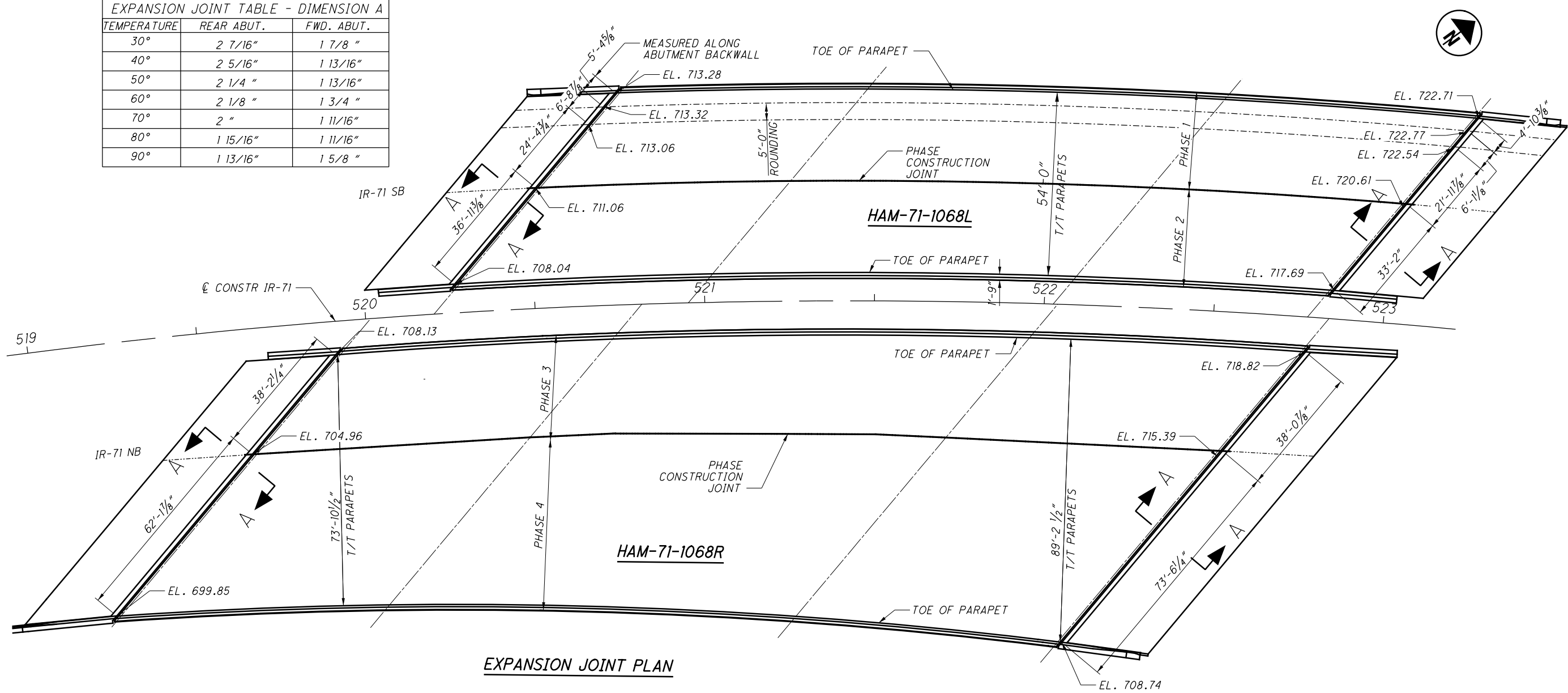
R.A. = REAR ABUTMENT
F.A. = FORWARD ABUTMENT
SPA. = SPACES

NOTES:

- FABRICATE AND INSTALL 6'-0" STRAIGHT VANDAL PROTECTION FENCE PER STD. DWG. VPF-1-90 USING PS-4 POSTS AND BP-5 BASE PLATES.
- CONTRACTOR MAY USE A DIFFERENT POST SPACING AS LONG AS THE MAXIMUM SPACING IS 5'-0" AND THE BASE PLATES CLEAR THE PARAPET DEFLECTION JOINTS BY 2".

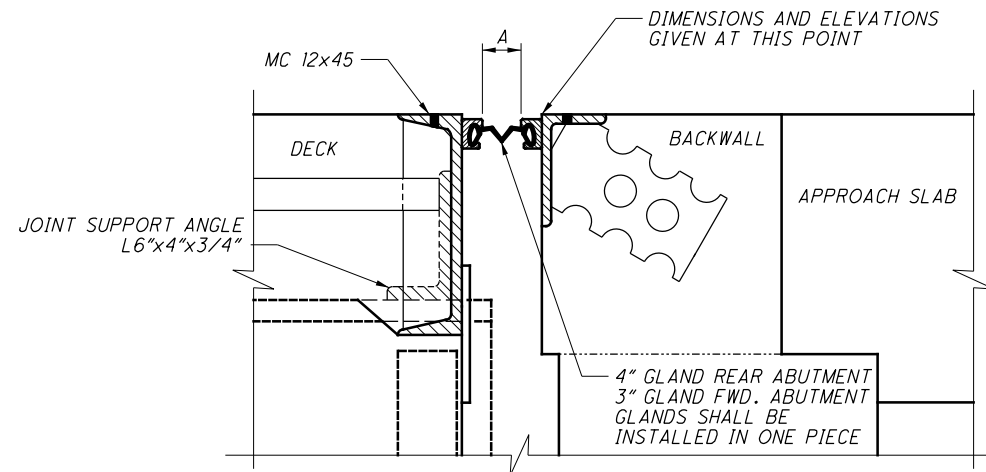
DESIGNED		DRAWN		REVIEWED		DATE		DESIGN AGENCY	
SJA		SJA		DWL		2/20/2017		BURGESS & NIPLE	
CHECKED		REVISED		STRUCTURE FILE NUMBER		3106888/3106896		313 PLUM ST. CINCINNATI OH	
XAC									
VANDAL PROTECTION FENCE DETAILS									
HAM-71-1068L/R					IR-71 OVER STEWART ROAD				
HAM-IR71-8.42		PID No. 91826							
38/57									
405									
441									

HAM-71-1068L		
EXPANSION JOINT TABLE - DIMENSION A		
TEMPERATURE	REAR ABUT.	FWD. ABUT.
30°	2 7/16"	1 7/8 "
40°	2 5/16"	1 13/16"
50°	2 1/4 "	1 13/16"
60°	2 1/8 "	1 3/4 "
70°	2 "	1 11/16"
80°	1 15/16"	1 11/16"
90°	1 13/16"	1 5/8 "



EXPANSION JOINT PLAN

HAM-71-1068R		
EXPANSION JOINT TABLE - DIMENSION A		
TEMPERATURE	REAR ABUT.	FWD. ABUT.
30°	2 3/8 "	1 7/8 "
40°	2 1/4 "	1 7/8 "
50°	2 1/8 "	1 13/16"
60°	2 "	1 3/4 "
70°	1 7/8 "	1 11/16"
80°	1 3/4 "	1 5/8 "
90°	1 5/8 "	1 5/8 "



SECTION A-A

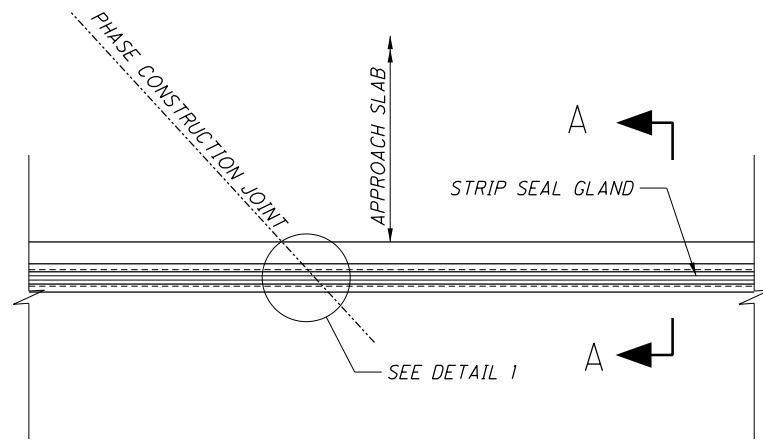
NOTES:

1. DIMENSIONS AND ELEVATIONS ARE AT FACE OF ABUTMENT BACKWALL.
2. FOR EXPANSION JOINT AND REMOVAL DETAILS SEE SHEET 40/57.

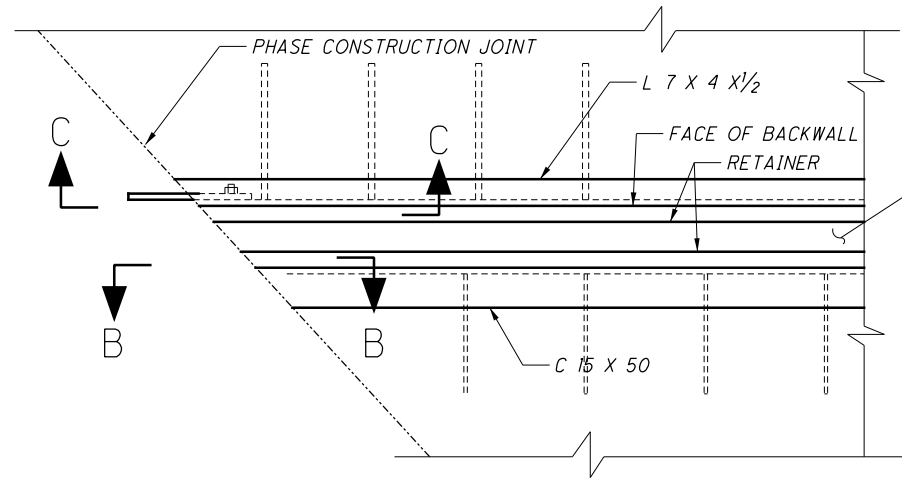
P:\PR54704\HAM\91826\Design\Structures\HAM071_068L\Sheets\071_068L_SX003.dgn_Sheet 10/26/2017 8:39:55 AM comp ton

DESIGN AGENCY BURGESS & NIPLE 312 PLUM ST. CINCINNATI, OH	
DATE 2/20/2017	DESIGNED SJA
REVIEWED DWL	CHECKED XAC
STRUCTURE FILE NUMBER 3106888	DRAWN SJA
3106896	REVISED
EXPANSION JOINT DETAILS - 1	
HAM-71-1068L/R	
IR-71 OVER STEWART ROAD	
PID No. 91826	
HAM-IR71-8.42	
39/57	
406	
441	

P:\PR54704\HAM\91826\Design\Structures\HAM071_1068L_Sheets\071_1068L_SX001.dgn Sheet 10/26/2017 8:39:57 AM compton

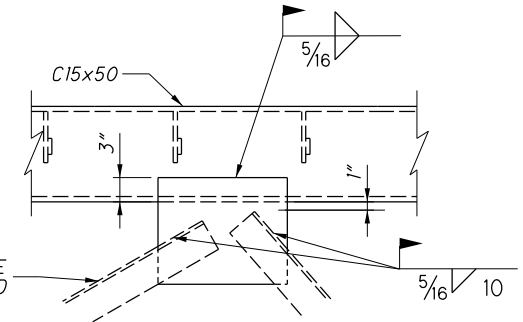


EXPANSION JOINT PLAN

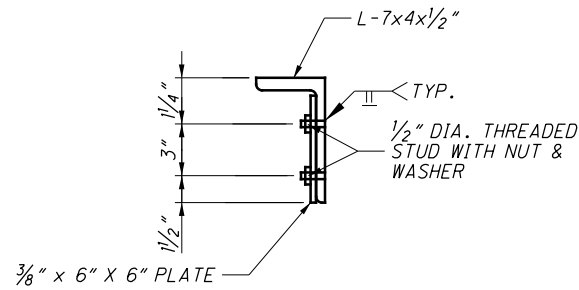


EXPANSION JOINT DETAIL 1

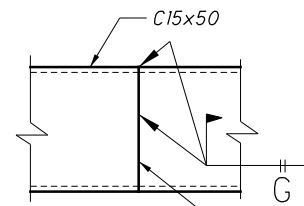
STRIP SEAL GLAND TO BE PLACED IN ONE CONTINUOUS PIECE AFTER COMPLETION OF END DAM INSTALLATION



**ELEVATION E-E
END CROSS FRAME WELDING DETAIL**

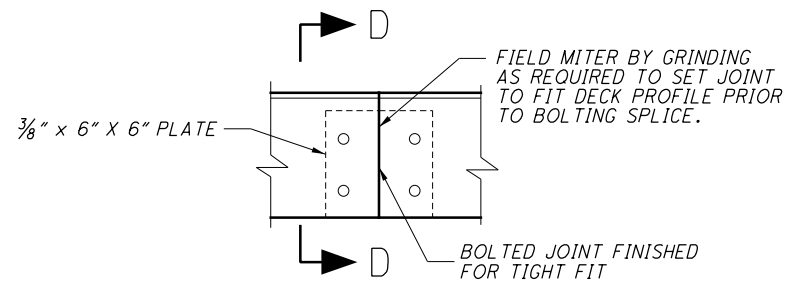


SECTION D-D



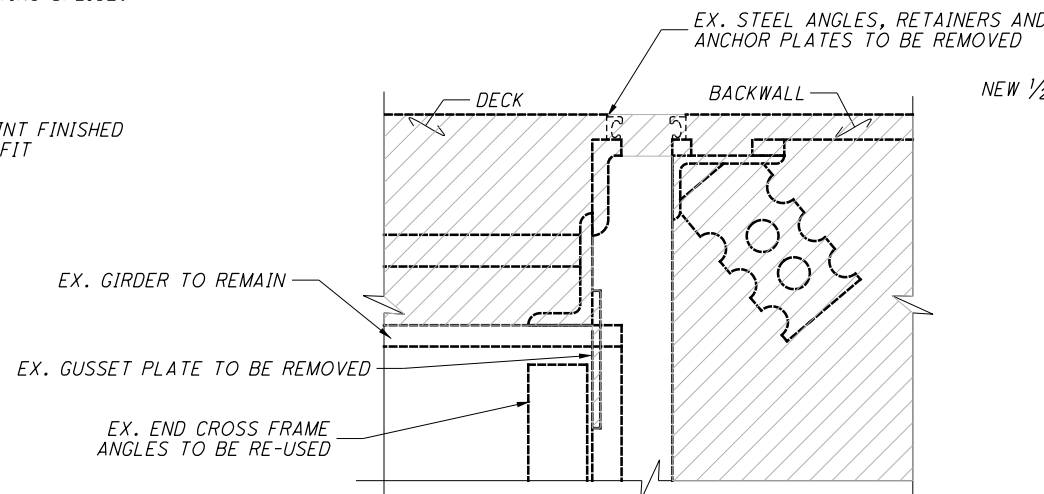
VIEW B-B

FIELD MITER BY GRINDING AS REQUIRED TO SET JOINT TO FIT DECK PROFILE PRIOR TO WELDING SPLICE.



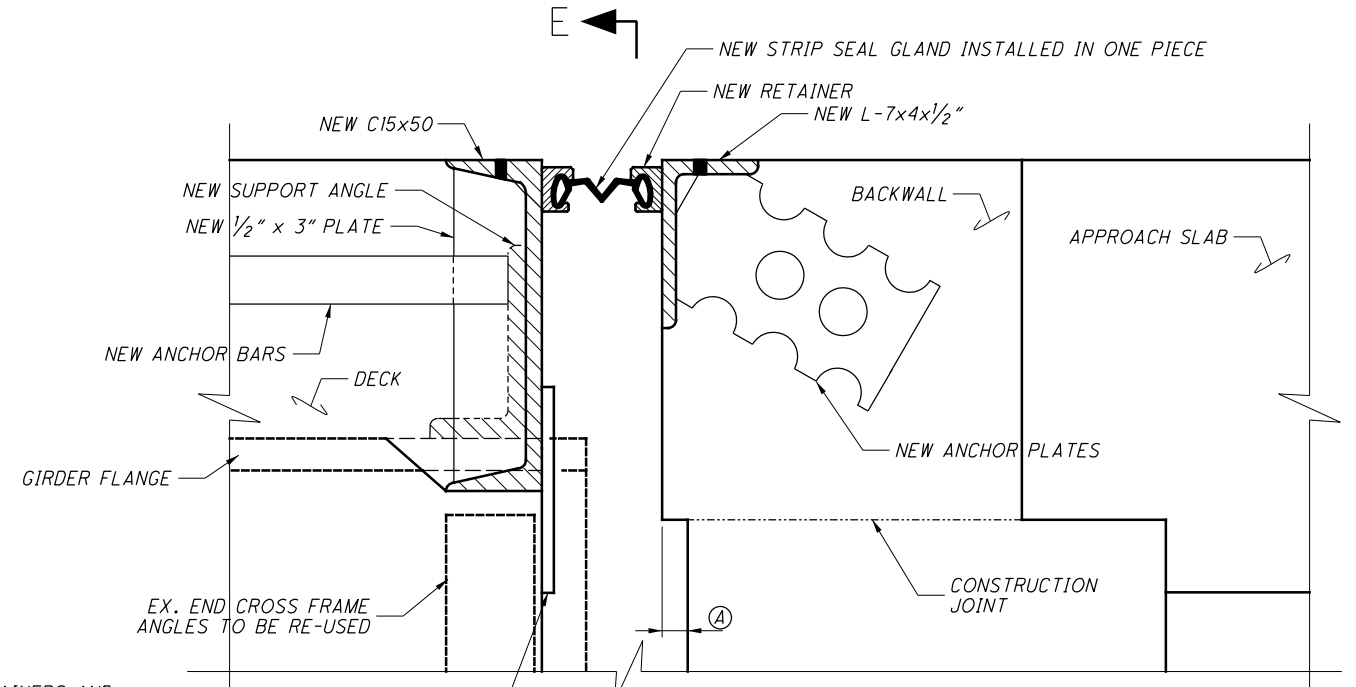
VIEW C-C

BOLTED JOINT FINISHED FOR TIGHT FIT



EXISTING EXPANSION JOINT SECTION

ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FT. SPAN, AS PER PLAN



SECTION A-A

LEGEND:

- EX. = EXISTING
- MAX. = MAXIMUM
- MIN. = MINIMUM
- TYP. = TYPICAL

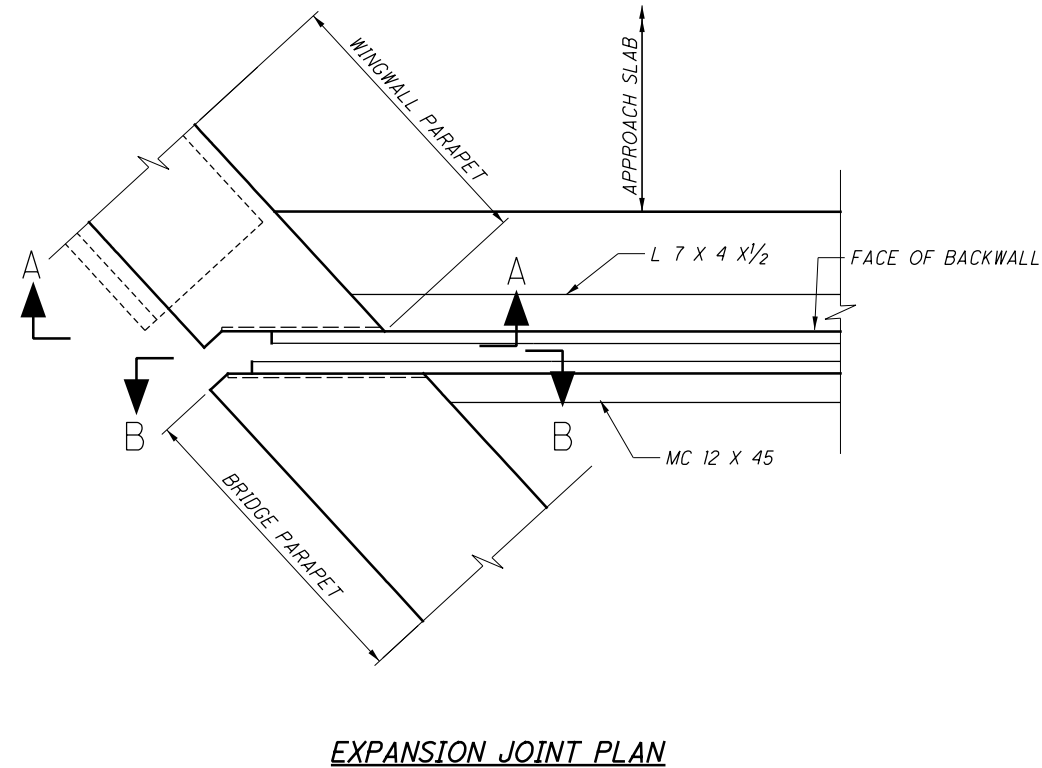
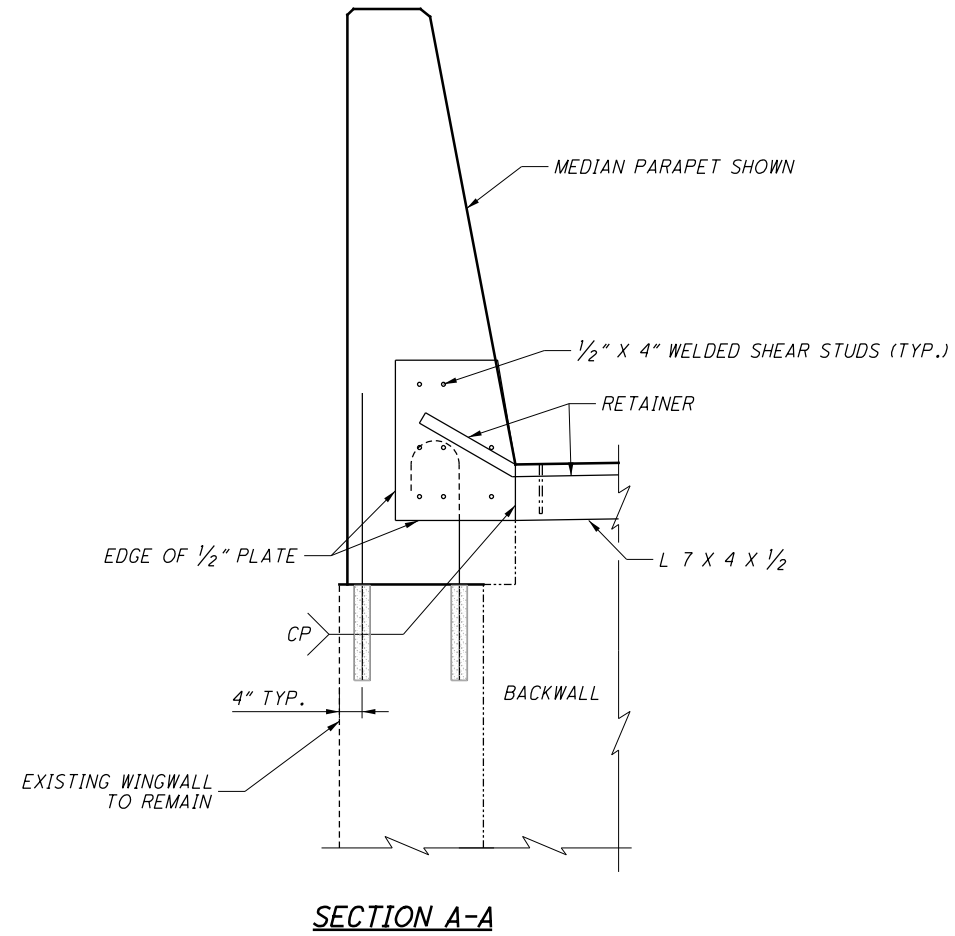
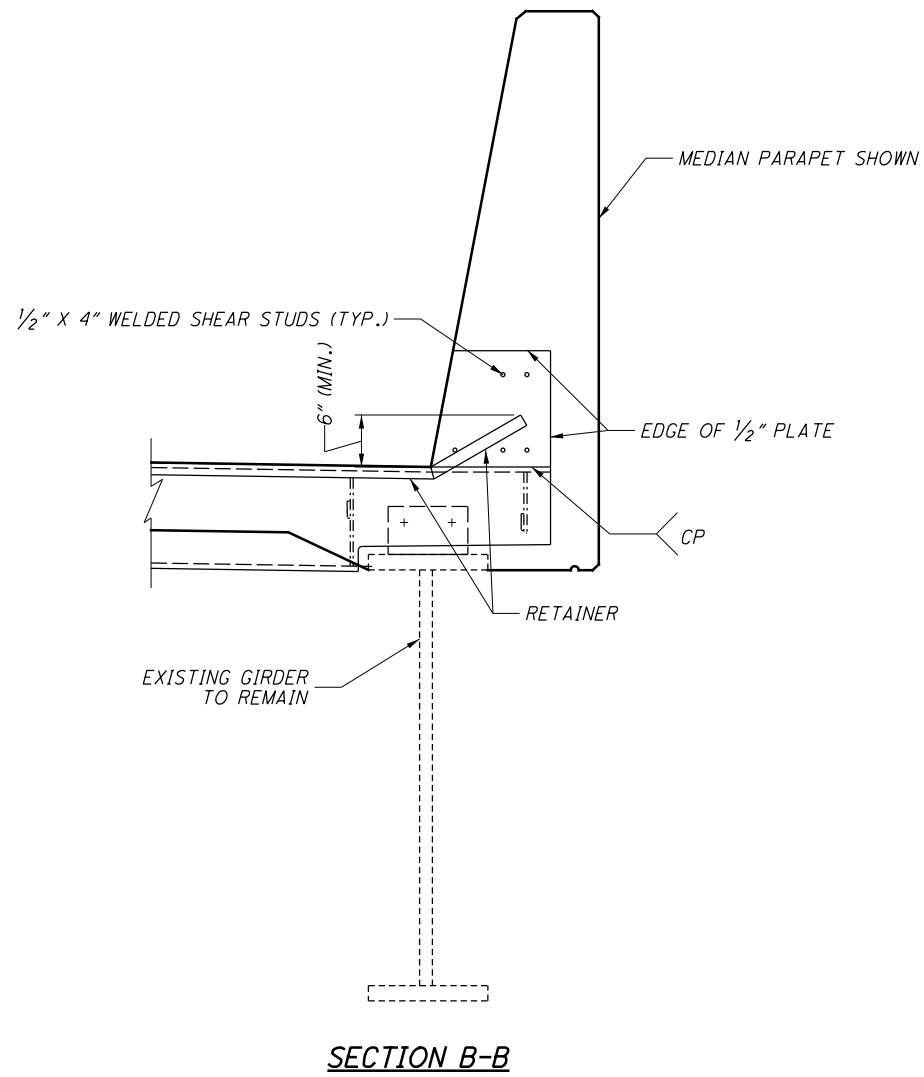
(A) = ADJUST BACKWALL ABOVE CONSTRUCTION JOINT TO SET EXPANSION JOINT OPENING

NOTES:

1. SEE STANDARD CONSTRUCTION DRAWING EXJ-4-87, CMS ITEM 516- STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL AND THE OTHER EXPANSION JOINT PLAN SHEETS FOR ADDITIONAL EXPANSION JOINT DETAILS.
2. INSTALLATION OF SEAL:
DURING INSTALLATION OF THE SUPPORT/ARMOR FOR THE SUPERSTRUCTURE SIDE OF THE EXPANSION JOINT SEAL, THE SEATING OF BEAMS ON BEARINGS SHALL BE CAREFULLY OBSERVED TO ASSURE THAT POSITIVE BEARING IS MAINTAINED. PROPER VERTICAL FIT OF THE SUPPORT/ARMOR ON THE BEAMS SHALL BE ACHIEVED BY POSITIONING OF THE BEVEL FILL PLATES RATHER THAN BY CLAMPING FORCES.
3. EXPANSION JOINT FABRICATION SHALL BE METALIZED.

DESIGNED SJA		CHECKED XAC		DRAWN SJA	REVISED	DATE 2/20/2017	DESIGN AGENCY BURGESS & NIPLE
EXPANSION JOINT DETAILS - 2		HAM-71-1068L/R		IR-71 OVER STEWART ROAD		STRUCTURE FILE NUMBER 3106888/3106896	312 PLUM ST. CINCINNATI OH
HAM-IR71-8.42		PID No. 91826		40/57		407 441	

P:\PR54704\HAM\91826\Design\Structures\HAM071_1068L_Sheets\071_1068L_SX002.dgn Sheet 10/26/2017 8:39:59 AM compton



LEGEND:

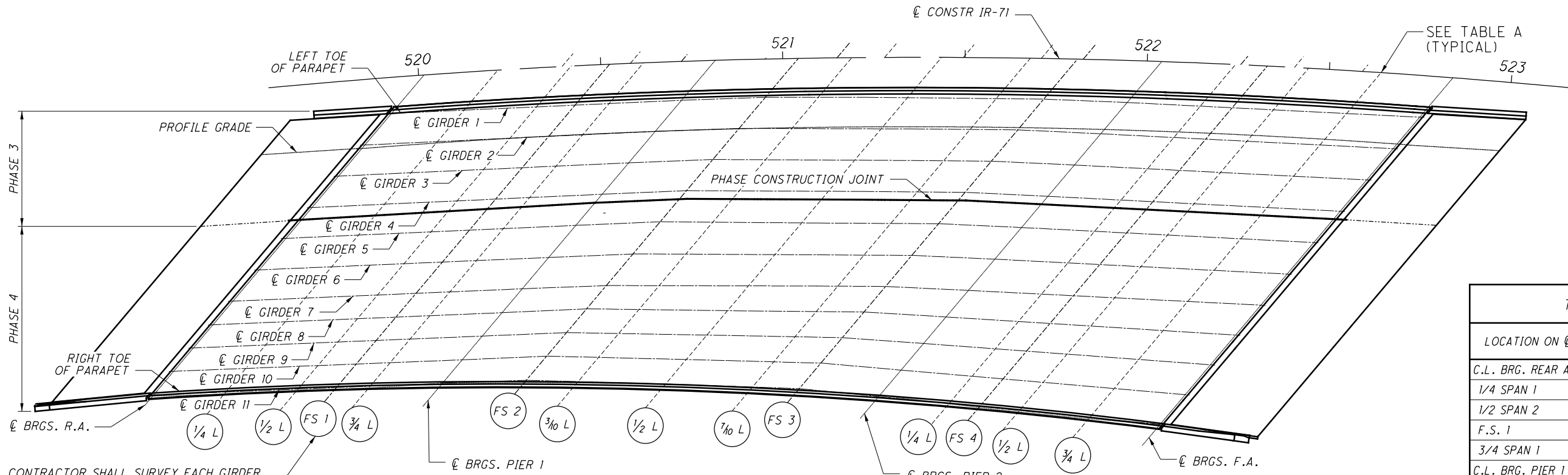
CP = COMPLETE PENETRATION WELDS
TYP. = TYPICAL

NOTES:

- SEE STANDARD CONSTRUCTION DRAWING EXJ-4-87, CMS ITEM 516- STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL AND OTHER EXPANSION JOINT PLAN SHEETS FOR ADDITIONAL EXPANSION JOINT DETAILS.

DESIGNED SJA		DRAWN SJA		REVIEWED DWL		DATE 2/20/2017		DESIGN AGENCY BURGESS & NIPLE	
CHECKED XAC		REVISED		STRUCTURE FILE NUMBER 3106888/3106896		312 PLUM ST. CINCINNATI OH			
EXPANSION JOINT DETAILS - 3									
HAM-IR71-8.42					HAM-71-1068L/R				
PID No. 91826					IR-71 OVER STEWART ROAD				
41		57		408					
				441					

P:\PR54704\HAM\91826\Design\Structures\HAM071_1068R_Sheets\071_1068R_SS001.dgn Sheet 10/26/2017 8:40:00 AM compton

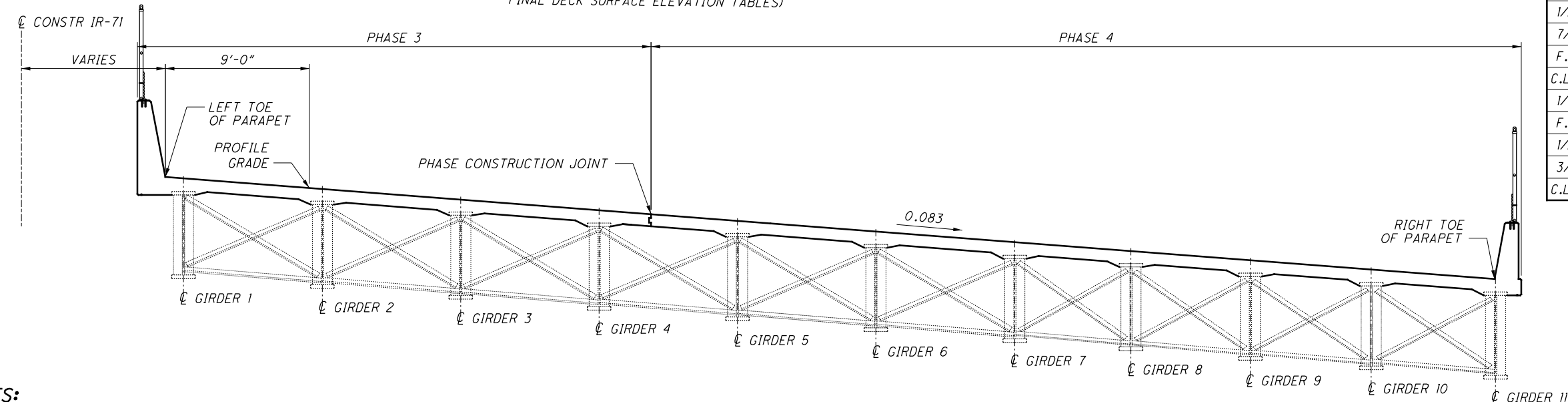


CONTRACTOR SHALL SURVEY EACH GIRDER AT CIRCLED LOCATIONS PER NOTE 1 (TYP.)

BRIDGE ELEVATION POINTS PLAN - RIGHT BRIDGE

(FOR USE WITH SCREED, TOP OF HAUNCH AND FINAL DECK SURFACE ELEVATION TABLES)

TABLE A	
LOCATION ON C 1-71	STATION
C.L. BRG. REAR ABUT.	520+01.47
1/4 SPAN 1	520+21.77
1/2 SPAN 2	520+41.86
F.S. 1	520+52.47
3/4 SPAN 1	520+61.76
C.L. BRG. PIER 1	520+81.47
F.S. 2	521+04.24
3/10 SPAN 2	521+18.93
1/2 SPAN 2	521+43.55
7/10 SPAN 2	521+67.90
F.S. 3	521+80.86
C.L. BRG. PIER 2	522+03.97
1/4 SPAN 3	522+24.21
F.S. 4	522+32.97
1/2 SPAN 3	522+44.29
3/4 SPAN 3	522+64.21
C.L. BRG. FWD. ABUT.	522+83.97



BRIDGE ELEVATION POINTS TRANSVERSE SECTION - RIGHT BRIDGE

NOTES:

- FIELD PROCEDURES DURING STAGED CONSTRUCTION OF DECKS:
 - CONTRACTOR SHALL SURVEY ELEVATIONS OF EXISTING GIRDERS BEFORE AND AFTER THE DECK REMOVALS FOR EACH PHASE.
 - CONTRACTOR SHALL COMPUTE THE REBOUND OF THE GIRDERS BY SUBTRACTING THE ELEVATIONS BEFORE REMOVAL FROM THE ELEVATIONS AFTER REMOVAL.
 - CONTRACTOR SHALL COMPUTE THE ADJUSTED REBOUND DEFLECTION (A.R.D.) FOR EACH GIRDER LOCATION BY MULTIPLYING THE SURVEYED REBOUND DEFLECTION BY 0.86.
 - CONTRACTOR SHALL ADD THE ADJUSTED REBOUND DEFLECTION TO THE FINAL ELEVATIONS TO DETERMINE THE SCREED AND HAUNCH ELEVATIONS.
 - CONTRACTOR SHALL SURVEY ELEVATIONS ALONG PROFILE GRADE EVERY 25 FEET TO VERIFY THE EXISTING PROFILE SHOWN ON THE SITE PLANS AND NOTIFY THE ENGINEER OF ANY DIFFERENCES PRIOR TO DECK REMOVALS.
 - COST OF ALL EQUIPMENT, LABOR AND MATERIALS REQUIRED FOR CONTRACTOR SURVEYS OF THE EXISTING BRIDGE AS NOTED ABOVE SHALL BE INCLUDED WITH ITEM 511 - CONCRETE MISC.: SURVEYING EXISTING BRIDGE (LUMP SUM).

LEGEND:

- L = SPAN LENGTH
- FS = FIELD SPLICE
- R.A. = REAR ABUTMENT
- F.A. = FORWARD ABUTMENT

DESIGN AGENCY: BURGESS & NIPLÉ
 312 PLUM ST. CINCINNATI OH

REVIEWED: DWL 2/20/2017
 STRUCTURE FILE NUMBER: 3106896

DRAWN: SJA
 CHECKED: XAC

DESIGNED: SJA
 CHECKED: XAC

BRIDGE ELEVATION POINTS - RIGHT BRIDGE

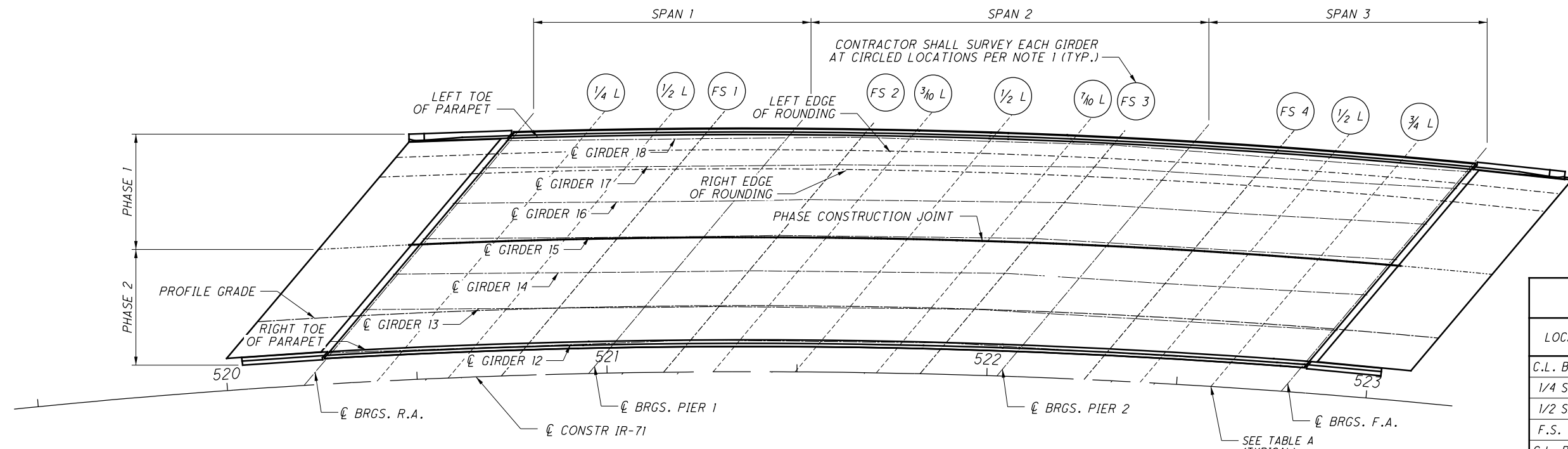
HAM-71-1068R
 IR-71 OVER STEWART ROAD

HAM-IR71-8.42
 PID No. 91826

42 / 57

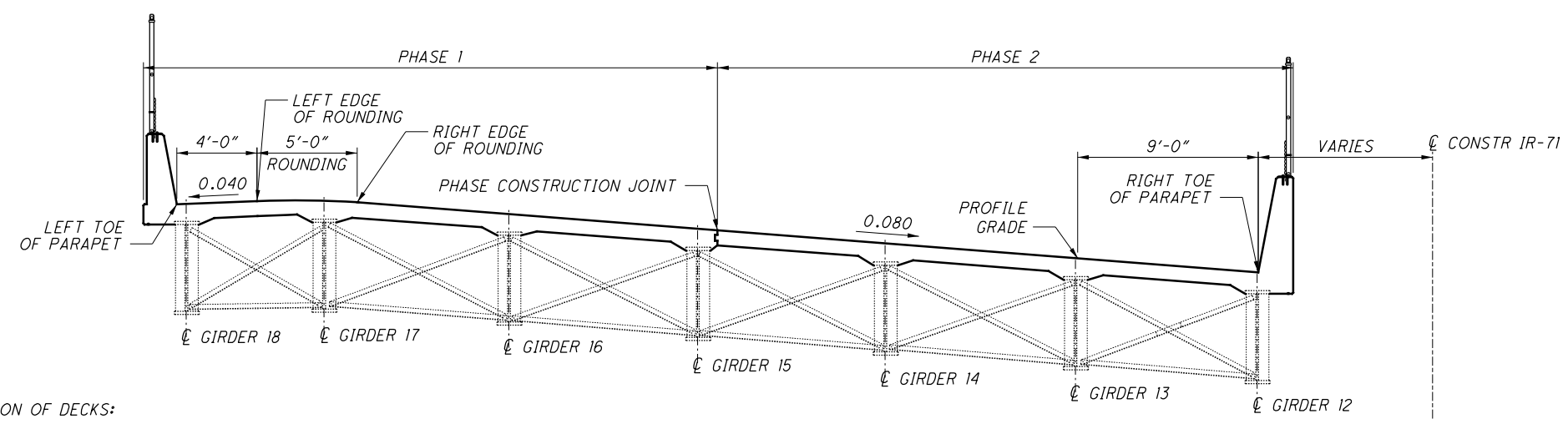
409
 441

P:\PR54704\HAM\91826\Design\Structures\HAM071_1068L_Sheets\071_1068L_SS001.dgn Sheet 10/26/2017 8:40:02 AM compton



BRIDGE ELEVATION POINTS PLAN - LEFT BRIDGE
(FOR USE WITH SCREED, TOP OF HAUNCH AND FINAL DECK SURFACE ELEVATION TABLES)

TABLE A	
LOCATION ON C.L. I-71	STATION
C.L. BRG. REAR ABUT.	520+20.18
1/4 SPAN 1	520+39.43
1/2 SPAN 2	520+58.17
F.S. 1	520+72.16
C.L. BRG. PIER 1	520+95.15
F.S. 2	521+14.87
3/10 SPAN 2	521+27.93
1/2 SPAN 2	521+49.52
7/10 SPAN 2	521+70.90
F.S. 3	521+82.38
C.L. BRG. PIER 2	522+02.62
F.S. 4	522+25.61
1/2 SPAN 3	522+40.39
3/4 SPAN 3	522+59.06
C.L. BRG. FWD. ABUT.	522+77.60



BRIDGE ELEVATION POINTS TRANSVERSE SECTION - LEFT BRIDGE

NOTES:

- FIELD PROCEDURES DURING STAGED CONSTRUCTION OF DECKS:
 - CONTRACTOR SHALL SURVEY ELEVATIONS OF EXISTING GIRDERS BEFORE AND AFTER THE DECK REMOVALS FOR EACH PHASE.
 - CONTRACTOR SHALL COMPUTE THE REBOUND OF THE GIRDERS BY SUBTRACTING THE ELEVATIONS BEFORE REMOVAL FROM THE ELEVATIONS AFTER REMOVAL.
 - CONTRACTOR SHALL COMPUTE THE ADJUSTED REBOUND DEFLECTION (A.R.D.) FOR EACH GIRDER LOCATION BY MULTIPLYING THE SURVEYED REBOUND DEFLECTION BY 0.86.
 - CONTRACTOR SHALL ADD THE ADJUSTED REBOUND DEFLECTION TO THE FINAL ELEVATIONS TO DETERMINE THE SCREED AND HAUNCH ELEVATIONS.
 - CONTRACTOR SHALL SURVEY ELEVATIONS ALONG PROFILE GRADE EVERY 25 FEET TO VERIFY THE EXISTING PROFILE SHOWN ON THE SITE PLANS AND NOTIFY THE ENGINEER OF ANY DIFFERENCES PRIOR TO DECK REMOVALS.
 - COST OF ALL EQUIPMENT, LABOR AND MATERIALS REQUIRED FOR CONTRACTOR SURVEYS OF THE EXISTING BRIDGE AS NOTED ABOVE SHALL BE INCLUDED WITH ITEM 511 - CONCRETE MISC.: SURVEYING EXISTING BRIDGE (LUMP SUM).

LEGEND:
 L = SPAN LENGTH
 FS = FIELD SPLICE
 R.A. = REAR ABUTMENT
 F.A. = FORWARD ABUTMENT

DESIGN AGENCY: BURGESS & NIPLE
 312 PLUM ST. CINCINNATI OH

DATE: 2/20/2017
 STRUCTURE FILE NUMBER: 3106888

DRAWN: SJA
 CHECKED: XAC

DESIGNED: SJA
 REVIEWED: DWL

BRIDGE ELEVATION POINTS - LEFT BRIDGE
 HAM-71-1068L
 IR-71 OVER STEWART ROAD

HAM-IR71-8.42
 PID No. 91826

43/57

410
 441

P:\PR54704\HAM\91826\Design\Structures\HAM071_1068L_Sheets\071_1068L_SM006.dgn Sheet 10/26/2017 8:40:08 AM compton

REBOUND ELEVATIONS AND DEFLECTIONS - RIGHT BRIDGE

LOCATION	GIRDER 1			GIRDER 2			GIRDER 3			GIRDER 4			GIRDER 5			GIRDER 6		
	ELEV. A	ELEV. B	REBOUND	ELEV. A	ELEV. B	REBOUND	ELEV. A	ELEV. B	REBOUND	ELEV. A	ELEV. B	REBOUND	ELEV. A	ELEV. B	REBOUND	ELEV. A	ELEV. B	REBOUND
1/4 SPAN 1																		
1/2 SPAN 2																		
F.S. 1																		
3/4 SPAN 1																		
F.S. 2																		
3/10 SPAN 2																		
1/2 SPAN 2																		
7/10 SPAN 2																		
F.S. 3																		
1/4 SPAN 3																		
F.S. 4																		
1/2 SPAN 3																		
3/4 SPAN 3																		

REBOUND ELEVATIONS AND DEFLECTIONS - RIGHT BRIDGE

LOCATION	GIRDER 7			GIRDER 8			GIRDER 9			GIRDER 10			GIRDER 11		
	ELEV. A	ELEV. B	REBOUND	ELEV. A	ELEV. B	REBOUND	ELEV. A	ELEV. B	REBOUND	ELEV. A	ELEV. B	REBOUND	ELEV. A	ELEV. B	REBOUND
1/4 SPAN 1															
1/2 SPAN 2															
F.S. 1															
3/4 SPAN 1															
F.S. 2															
3/10 SPAN 2															
1/2 SPAN 2															
7/10 SPAN 2															
F.S. 3															
1/4 SPAN 3															
F.S. 4															
1/2 SPAN 3															
3/4 SPAN 3															

REBOUND ELEVATIONS AND DEFLECTIONS - LEFT BRIDGE

LOCATION	GIRDER 12			GIRDER 13			GIRDER 14			GIRDER 15			GIRDER 16			GIRDER 17		
	ELEV. A	ELEV. B	REBOUND	ELEV. A	ELEV. B	REBOUND	ELEV. A	ELEV. B	REBOUND	ELEV. A	ELEV. B	REBOUND	ELEV. A	ELEV. B	REBOUND	ELEV. A	ELEV. B	REBOUND
1/4 SPAN 1																		
1/2 SPAN 2																		
F.S. 1																		
F.S. 2																		
3/10 SPAN 2																		
1/2 SPAN 2																		
7/10 SPAN 2																		
F.S. 3																		
F.S. 4																		
1/2 SPAN 3																		
3/4 SPAN 3																		

LEFT BRIDGE - CONTINUED

LOCATION	GIRDER 18		
	ELEV. A	ELEV. B	REBOUND
1/4 SPAN 1			
1/2 SPAN 2			
F.S. 1			
F.S. 2			
3/10 SPAN 2			
1/2 SPAN 2			
7/10 SPAN 2			
F.S. 3			
F.S. 4			
1/2 SPAN 3			
3/4 SPAN 3			

LEGEND:

ABUT. = ABUTMENT
 BRG. = BEARING
 ELEV. A = CONTRACTOR SURVEYED GIRDER ELEVATION BEFORE DECK REMOVAL
 ELEV. B = CONTRACTOR SURVEYED GIRDER ELEVATION AFTER DECK REMOVAL
 REBOUND = ELEV. B - ELEV. A
 F.S. = FIELD SPLICE
 FWD. = FORWARD

NOTES:

1. CONTRACTOR SHALL SURVEY GIRDER ELEVATIONS BEFORE AND AFTER DECK REMOVAL TO DETERMINE THE REBOUND DEFLECTION OF EACH GIRDER AND ENTER VALUES IN TABLE. SUBMIT COMPLETED TABLE TO PROJECT ENGINEER.
2. FOR RIGHT BRIDGE ELEVATION POINTS SEE SHEET42/57
3. FOR LEFT BRIDGE ELEVATION POINTS SEE SHEET43/57

DESIGNED SJA CHECKED XAC	DRAWN SJA REVISED	REVIEWED DWL STRUCTURE FILE NUMBER 3106888/3106896	DATE 2/20/2017	DESIGN AGENCY BURGESS & NIPLE 312 PLUM ST. CINCINNATI OH
				HAM-IR71-8.42 PID No. 91826 REBOUND ELEVATIONS AND DEFLECTOINS HAM-71-1068L/R IR-71 OVER STEWART ROAD
46/57				413 441

P:\PR54704\HAM\91826\Design\Structures\HAM071_1068L_Sheets\071_1068L_SM001.dgn Sheet 10/26/2017 8:40:10 AM compton

SCREED ELEVATIONS - RIGHT BRIDGE												
LOCATION	LEFT TOE			PROFILE GRADE			PHASE CONSTRUCTION JOINT			RIGHT TOE		
	FINAL EL.	A.R.D.	ELEVATION	FINAL EL.	A.R.D.	ELEVATION	FINAL EL.	A.R.D.	ELEVATION	FINAL EL.	A.R.D.	ELEVATION
C.L. BRG. REAR ABUT.	708.17			707.13			705.00			699.89		
1/4 SPAN 1	708.87			707.82			705.65			700.53		
1/2 SPAN 2	709.56			708.52			706.32			701.14		
F.S. 1	709.94			708.89			706.68			701.46		
3/4 SPAN 1	710.27			709.23			707.01			701.73		
C.L. BRG. PIER 1	710.98			709.94			707.74			702.29		
F.S. 2	711.82			710.78			708.60			702.97		
3/10 SPAN 2	712.37			711.33			709.10			703.42		
1/2 SPAN 2	713.31			712.27			709.97			704.18		
7/10 SPAN 2	714.25			713.22			710.88			704.94		
F.S. 3	714.76			713.73			711.40			705.36		
C.L. BRG. PIER 2	715.66			714.63			712.24			706.10		
1/4 SPAN 3	716.45			715.43			712.98			706.76		
F.S. 4	716.79			715.77			713.32			707.05		
1/2 SPAN 3	717.23			716.22			713.75			707.42		
3/4 SPAN 3	718.01			717.00			714.54			708.07		
C.L. BRG. FWD. ABUT.	718.79			717.78			715.35			708.71		

SCREED ELEVATIONS - LEFT BRIDGE																		
LOCATION	LEFT TOE			LEFT EDGE OF ROUNDING			RIGHT EDGE OF ROUNDING			PHASE CONSTRUCTION JOINT			PROFILE GRADE			RIGHT TOE		
	FINAL EL.	A.R.D.	ELEVATION	FINAL EL.	A.R.D.	ELEVATION	FINAL EL.	A.R.D.	ELEVATION	FINAL EL.	A.R.D.	ELEVATION	FINAL EL.	A.R.D.	ELEVATION	FINAL EL.	A.R.D.	ELEVATION
C.L. BRG. REAR ABUT.	713.33			713.36			713.11			711.11			709.1			708.09		
1/4 SPAN 1	713.97			714.01			713.75			711.76			709.75			708.75		
1/2 SPAN 2	714.61			714.65			714.39			712.4			710.4			709.39		
F.S. 1	715.09			715.13			714.88			712.88			710.88			709.88		
C.L. BRG. PIER 1	715.89			715.93			715.68			713.69			711.69			710.69		
F.S. 2	716.59			716.63			716.38			714.39			712.4			711.4		
3/10 SPAN 2	717.06			717.1			716.85			714.87			712.88			711.88		
1/2 SPAN 2	717.84			717.88			717.63			715.65			713.67			712.67		
7/10 SPAN 2	718.63			718.67			718.43			716.45			714.47			713.47		
F.S. 3	719.06			719.1			718.85			716.88			714.9			713.91		
C.L. BRG. PIER 2	719.82			719.86			719.62			717.65			715.67			714.68		
F.S. 4	720.69			720.74			720.5			718.53			716.56			715.58		
1/2 SPAN 3	721.26			721.3			721.06			719.11			717.14			716.16		
3/4 SPAN 3	721.97			722.02			721.78			719.11			717.88			716.9		
C.L. BRG. FWD. ABUT.	722.67			722.73			722.49			720.56			718.61			717.63		

LEGEND:

ABUT. = ABUTMENT
A.R.D. = ADJUSTED REBOUND DEFLECTION = REBOUND DEFLECTION x 0.86
BRG. = BEARING
EL. = ELEVATION
ELEV. = FINAL ELEVATION + ADJUSTED REBOUND DEFLECTION
F.S. = FIELD SPLICE
FWD. = FORWARD

NOTES:

1. SCREED ELEVATIONS SHOWN REPRESENT THE THEORETICAL DECK SURFACE LOCATION PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.

CONTRACTOR SHALL CALCULATE THE SCREED ELEVATION BY ADDING THE ADJUSTED ROUNDED DEFLECTION (A.R.D.) OF THE GRIDER NEAREST THE SCREED LOCATION TO THE FINAL ELEVATION PROVIDED IN THIS TABLE. SUBMIT COMPLETED TABLE TO PROJECT ENGINEER.

2. FOR RIGHT BRIDGE ELEVATION POINTS SEE SHEET42/57

3. FOR LEFT BRIDGE ELEVATION POINTS SEE SHEET43/57

DESIGNED SJA	DRAWN SJA	REVIEWED DWL	DATE 2/20/2017	DESIGN AGENCY BURGESS & NIPLÉ
CHECKED XAC	REVISED	STRUCTURE FILE NUMBER 3106888/3106896		312 PLUM ST. CINCINNATI OH
SCREED ELEVATIONS				
HAM-71-1068L/R				
IR-71 OVER STEWART ROAD				
HAM-IR71-8.42				
PID No. 91826				
47/57				
414 441				

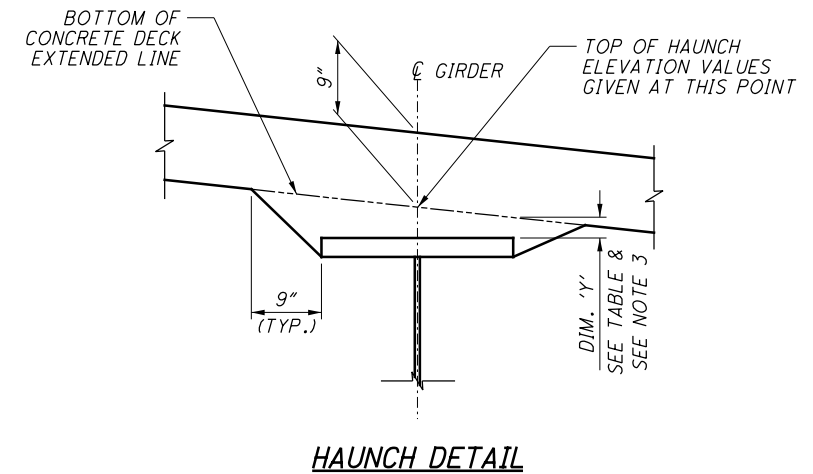
P:\PR54704\HAM\91826\Design\Structures\HAM071_1068L_Sheets\071_1068L_SM002.dgn Sheet 10/26/2017 8:40:12 AM compton

TOP OF HAUNCH ELEVATIONS - RIGHT BRIDGE

LOCATION	GIRDER 1			GIRDER 2			GIRDER 3			GIRDER 4			GIRDER 5			GIRDER 6			GIRDER 7		
	FINAL EL.	A.R.D.	ELEV.	FINAL EL.	A.R.D.	ELEV.	FINAL EL.	A.R.D.	ELEV.	FINAL EL.	A.R.D.	ELEV.	FINAL EL.	A.R.D.	ELEV.	FINAL EL.	A.R.D.	ELEV.	FINAL EL.	A.R.D.	ELEV.
C.L. BRG. REAR ABUT.	707.42			706.48			705.55			704.62			703.70			702.77			701.84		
1/4 SPAN 1	708.06			707.11			706.18			705.24			704.33			703.38			702.45		
1/2 SPAN 2	708.72			707.77			706.83			705.88			704.95			704.00			703.06		
F.S. 1	709.09			708.14			707.19			706.23			705.30			704.33			703.39		
3/4 SPAN 1	709.42			708.47			707.51			706.55			705.61			704.64			703.70		
C.L. BRG. PIER 1	710.15			709.19			708.22			707.25			706.30			705.32			704.37		
F.S. 2	711.01			710.04			709.07			708.11			707.14			706.15			705.17		
3/10 SPAN 2	711.53			710.55			709.57			708.60			707.63			706.63			705.65		
1/2 SPAN 2	712.44			711.45			710.46			709.48			708.48			707.48			706.50		
7/10 SPAN 2	713.37			712.39			711.39			710.39			709.39			708.38			707.40		
F.S. 3	713.89			712.90			711.90			710.90			709.90			708.89			707.90		
C.L. BRG. PIER 2	714.75			713.75			712.74			711.74			710.74			709.72			708.71		
1/4 SPAN 3	715.51			714.50			713.50			712.49			711.48			710.46			709.46		
F.S. 4	715.85			714.84			713.83			712.82			711.81			710.79			709.79		
1/2 SPAN 3	716.29			715.28			714.27			713.26			712.25			711.23			710.22		
3/4 SPAN 3	717.08			716.07			715.06			714.04			713.03			712.01			711.00		
C.L. BRG. FWD. ABUT.	717.90			716.88			715.87			714.85			713.84			712.81			711.80		

TOP OF HAUNCH ELEVATIONS - RIGHT BRIDGE

LOCATION	GIRDER 8			GIRDER 9			GIRDER 10			GIRDER 11		
	FINAL EL.	A.R.D.	ELEV.	FINAL EL.	A.R.D.	ELEV.	FINAL EL.	A.R.D.	ELEV.	FINAL EL.	A.R.D.	ELEV.
C.L. BRG. REAR ABUT.	701.15			700.46			699.77			699.08		
1/4 SPAN 1	701.75			701.06			700.37			699.68		
1/2 SPAN 2	702.37			701.67			700.97			700.28		
F.S. 1	702.68			701.98			701.30			700.60		
3/4 SPAN 1	702.98			702.28			701.57			700.89		
C.L. BRG. PIER 1	703.64			702.93			702.21			701.50		
F.S. 2	704.46			703.73			703.01			702.27		
3/10 SPAN 2	704.91			704.17			703.43			702.69		
1/2 SPAN 2	705.73			704.96			704.20			703.44		
7/10 SPAN 2	706.60			705.80			705.01			704.21		
F.S. 3	707.09			706.27			705.46			704.65		
C.L. BRG. PIER 2	707.86			707.01			706.16			705.31		
1/4 SPAN 3	708.58			707.69			706.81			705.93		
F.S. 4	708.89			708.00			707.10			706.21		
1/2 SPAN 3	709.31			708.40			707.49			706.58		
3/4 SPAN 3	710.06			709.12			708.18			707.24		
C.L. BRG. FWD. ABUT.	710.83			709.86			708.89			707.93		



LEGEND:

- ABUT. = ABUTMENT
- A.R.D. = ADJUSTED REBOUND DEFLECTION = REBOUND DEFLECTION x 0.86
- BRG. = BEARING
- EL. = ELEVATION
- ELEV. = FINAL ELEVATION + ADJUSTED REBOUND DEFLECTION
- F.S. = FIELD SPLICE
- FWD. = FORWARD

NOTES:

1. TOP OF HAUNCH ELEVATIONS SHOWN REPRESENT THE THEORETICAL LOCATION OF THE BOTTOM OF THE DECK ABOVE THE ϕ OF THE GIRDER PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.
2. FOR RIGHT BRIDGE ELEVATION POINTS SEE SHEET42/57
3. CONTRACTOR IS REQUIRED TO MEASURE THE MINIMUM DISTANCE FROM THE PROPOSED BOTTOM OF DECK TO THE EXISTING TOP OF GIRDER FLANGE AND VERIFY THAT THE CLEARANCE WILL BE AT LEAST $\frac{1}{2}$ ". THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY CLEARANCES ARE LESS THAN $\frac{1}{2}$ ". THE CONTRACTOR SHALL NOT PROCEED WITH DECK PLACEMENT IF THE MINIMUM $\frac{1}{2}$ " CLEARANCE FROM THE BOTTOM OF DECK TO TOP OF GIRDER FLANGE IS NOT PROVIDED, UNLESS APPROVED BY THE DISTRICT 8 BRIDGE ENGINEER SCOTT KRAMER.

ANTICIPATED HAUNCH DIMENSION 'Y' - RIGHT BRIDGE (INCHES)

LOCATION	GIRDER 1	GIRDER 2	GIRDER 3	GIRDER 4	GIRDER 5	GIRDER 6	GIRDER 7	GIRDER 8	GIRDER 9	GIRDER 10	GIRDER 11
	DIM. Y	DIM. Y	DIM. Y	DIM. Y	DIM. Y	DIM. Y	DIM. Y	DIM. Y	DIM. Y	DIM. Y	DIM. Y
C.L. BRG. REAR ABUT.	4 5/16"	4 11/16"	4 9/16"	4 11/16"	3 15/16"	3 13/16"	3 1/4 "	3 1/4 "	3 13/16"	3 3/4 "	4 9/16"
C.L. BRG. PIER 1	2 9/16"	2 11/16"	3 "	2 7/8 "	3 1/4 "	2 13/16"	3 "	2 13/16"	2 7/8 "	2 7/8 "	3 3/8 "
C.L. BRG. PIER 2	2 11/16"	2 7/8 "	2 13/16"	2 7/8 "	3 3/8 "	3 1/8 "	3 1/8 "	3 1/4 "	3 "	3 1/4 "	3 "
C.L. BRG. FWD. ABUT.	3 15/16"	4 1/16"	4 1/16"	4 11/16"	4 3/16"	4 3/16"	3 13/16"	3 3/8 "	3 5/8 "	3 3/8 "	4 1/16"

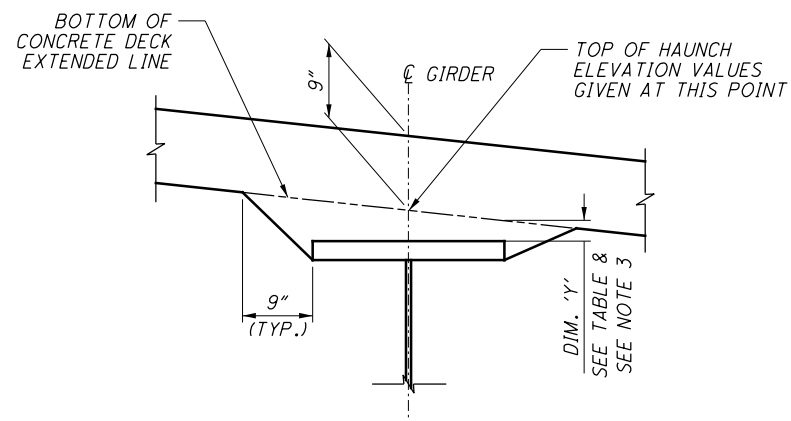
DESIGN AGENCY: BURGESS & NIPLE
 312 PLUM ST. CINCINNATI OH
 DATE: 2/20/2017
 REVIEWED: DWL
 STRUCTURE FILE NUMBER: 3106896
 DRAWN: SJA
 CHECKED: XAC
 DESIGNED: SJA
 TOP OF HAUNCH ELEVATIONS - RIGHT BRIDGE
 HAM-IR71-8.42
 PID No. 91826
 HAM-71-1068R
 IR-71 OVER STEWART ROAD
 48/57
 415
 441

TOP OF HAUNCH ELEVATIONS - LEFT BRIDGE

LOCATION	GIRDER 12			GIRDER 13			GIRDER 14			GIRDER 15			GIRDER 16			GIRDER 17			GIRDER 18		
	FINAL EL.	A.R.D.	ELEV.	FINAL EL.	A.R.D.	ELEV.	FINAL EL.	A.R.D.	ELEV.	FINAL EL.	A.R.D.	ELEV.	FINAL EL.	A.R.D.	ELEV.	FINAL EL.	A.R.D.	ELEV.	FINAL EL.	A.R.D.	ELEV.
C.L. BRG. REAR ABUT.	707.31			708.517			709.52			710.51			711.51			712.48			712.58		
1/4 SPAN 1	707.92			709.087			710.10			711.10			712.11			713.10			713.23		
1/2 SPAN 2	708.55			709.677			710.69			711.70			712.72			713.72			713.87		
F.S. 1	709.04			710.127			711.15			712.16			713.19			714.20			714.35		
C.L. BRG. PIER 1	709.88			710.907			711.95			712.96			714.00			715.01			715.15		
F.S. 2	710.66			711.617			712.67			713.70			714.75			715.74			715.84		
3/10 SPAN 2	711.11			712.077			713.13			714.16			715.22			716.22			716.31		
1/2 SPAN 2	711.89			712.867			713.93			714.96			716.02			717.03			717.10		
7/10 SPAN 2	712.70			713.687			714.76			715.79			716.86			717.85			717.88		
F.S. 3	713.15			714.147			715.22			716.26			717.32			718.30			718.31		
C.L. BRG. PIER 2	713.87			714.867			715.93			716.99			718.06			719.05			719.08		
F.S. 4	714.72			715.727			716.79			717.86			718.93			719.93			719.96		
1/2 SPAN 3	715.29			716.307			717.37			718.44			719.51			720.50			720.52		
3/4 SPAN 3	716.04			717.057			718.13			719.20			720.27			721.24			721.23		
C.L. BRG. FWD. ABUT.	716.80			717.827			718.90			719.97			721.04			721.97			721.93		

ANTICIPATED HAUNCH DIMENSION 'Y' - LEFT BRIDGE (INCHES)

LOCATION	GIRDER 12	GIRDER 13	GIRDER 14	GIRDER 15	GIRDER 16	GIRDER 17	GIRDER 18
	DIM. Y	DIM. Y	DIM. Y	DIM. Y	DIM. Y	DIM. Y	DIM. Y
C.L. BRG. REAR ABUT.	5 3/4 "	4 5/8 "	5 "	4 7/8 "	3 5/8 "	3 11/16"	4 7/8 "
C.L. BRG. PIER 1	3 3/4 "	3 1/4 "	3 "	2 5/16"	1 11/16"	1 7/8 "	2 3/8 "
C.L. BRG. PIER 2	3 1/8 "	2 5/8 "	2 "	1 9/16"	1 11/16"	2 1/4 "	2 1/8 "
C.L. BRG. FWD. ABUT.	4 11/16"	3 3/4 "	3 3/16"	3 1/16"	3 1/16"	4 15/16"	4 1/2 "



HAUNCH DETAIL

LEGEND:

- ABUT. = ABUTMENT
- A.R.D. = ADJUSTED REBOUND DEFLECTION = REBOUND DEFLECTION x 0.86
- BRG. = BEARING
- EL. = ELEVATION
- ELEV. = FINAL ELEVATION + ADJUSTED REBOUND DEFLECTION
- F.S. = FIELD SPLICE
- FWD. = FORWARD

NOTES:

1. TOP OF HAUNCH ELEVATIONS SHOWN REPRESENT THE THEORETICAL LOCATION OF THE BOTTOM OF THE DECK ABOVE THE C OF THE GIRDER PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.
2. FOR LEFT BRIDGE ELEVATION POINTS SEE SHEET 43/57
3. CONTRACTOR IS REQUIRED TO MEASURE THE MINIMUM DISTANCE FROM THE PROPOSED BOTTOM OF DECK TO THE EXISTING TOP OF GIRDER FLANGE AND VERIFY THAT THE CLEARANCE WILL BE AT LEAST 1/2". THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY CLEARANCES ARE LESS THAN 1/2". THE CONTRACTOR SHALL NOT PROCEED WITH DECK PLACEMENT IF THE MINIMUM 1/2" CLEARANCE FROM THE BOTTOM OF DECK TO TOP OF GIRDER FLANGE IS NOT PROVIDED, UNLESS APPROVED BY THE DISTRICT 8 BRIDGE ENGINEER SCOTT KRAMER.

P:\PR54704\HAM\91826\Design\Structures\HAM071_1068L_Sheets\071_1068L_SM003.dgn Sheet 10/26/2017 8:40:13 AM compton

DESIGNED SJA	DRAWN SJA	REVIEWED DWL	DATE 2/20/2017	DESIGN AGENCY BURGESS & NIPLE	
CHECKED XAC	REVISED	STRUCTURE FILE NUMBER 3106888	312 PLUM ST. CINCINNATI OH		
TOP OF HAUNCH ELEVATIONS - LEFT BRIDGE					
HAM-IR71-8.42 PID No. 91826 HAM-71-1068L IR-71 OVER STEWART ROAD					
49/57					
416 441					

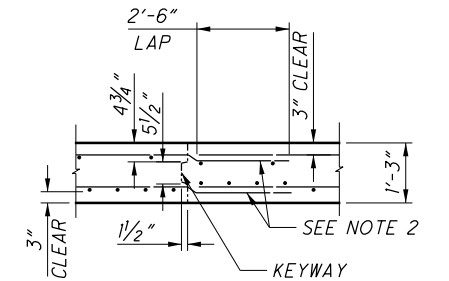
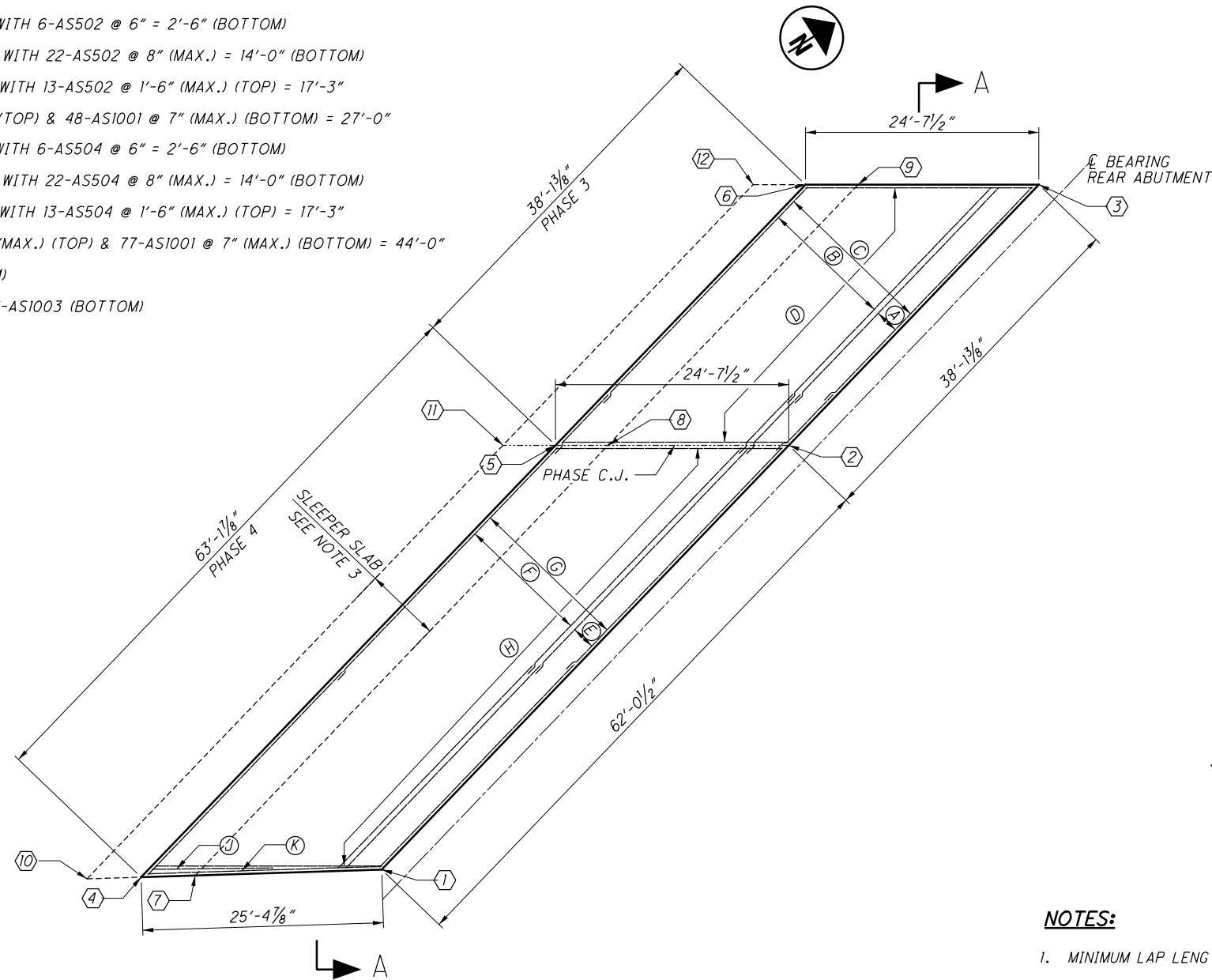
P:\PR54704\HAM\91826\Design\Structures\HAM071_1068R_Sheets\071_1068R_SD002.dgn Sheet 10/26/2017 8:40:16 AM compton

REINFORCING LEGEND:

- (A) 6-AS501 LAPPED WITH 6-AS502 @ 6" = 2'-6" (BOTTOM)
- (B) 22-AS501 LAPPED WITH 22-AS502 @ 8" (MAX.) = 14'-0" (BOTTOM)
- (C) 13-AS501 LAPPED WITH 13-AS502 @ 1'-6" (MAX.) (TOP) = 17'-3"
- (D) 19-AS503 @ 1'-6" (TOP) & 48-AS1001 @ 7" (MAX.) (BOTTOM) = 27'-0"
- (E) 6-AS501 LAPPED WITH 6-AS504 @ 6" = 2'-6" (BOTTOM)
- (F) 22-AS501 LAPPED WITH 22-AS504 @ 8" (MAX.) = 14'-0" (BOTTOM)
- (G) 13-AS501 LAPPED WITH 13-AS504 @ 1'-6" (MAX.) (TOP) = 17'-3"
- (H) 31-AS503 @ 1'-6" (MAX.) (TOP) & 77-AS1001 @ 7" (MAX.) (BOTTOM) = 44'-0"
- (J) 1-AS1002 (BOTTOM)
- (K) 1-AS505 (TOP) & 1-AS1003 (BOTTOM)

APPROACH SLAB SURFACE ELEVATIONS			
LOCATION	STATION	OFFSET RIGHT (FT.)	ELEVATION
①	519+15.08	79.85	699.80
②	519+61.23	36.87	704.90
③	519+88.54	9.94	708.06
④	518+88.58	79.14	699.91
⑤	519+36.15	36.00	704.10
⑥	519+63.80	9.43	707.24

SLEEPER SLAB SURFACE ELEVATIONS			
LOCATION	STATION	OFFSET RIGHT (FT.)	ELEVATION
⑦	518+94.55	79.33	697.86
⑧	519+41.79	36.23	703.03
⑨	519+69.37	9.57	706.17
⑩	518+82.62	78.93	697.50
⑪	519+30.50	35.76	702.67
⑫	519+58.23	9.27	705.81



CONSTRUCTION JOINT DETAIL

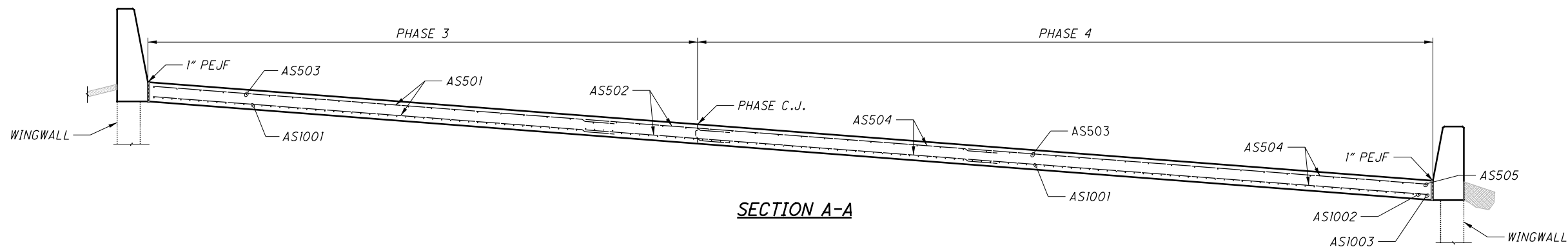
REAR APPROACH SLAB PLAN - RIGHT BRIDGE
(WINGWALLS AND PARAPETS NOT SHOWN)

NOTES:

1. MINIMUM LAP LENGTHS:
#5 BAR = 2'-6"
2. BEND BARS UP AS REQUIRED TO MISS TEMPORARY SHEETING AND BEND BACK DOWN FOR PHASE 4 CONSTRUCTION.
3. APPROACH SLAB INSTALLATION SHALL BE TYPE A PER STANDARD DRAWING AS-2-15.
4. SEE STANDARD DRAWING AS-1-15 FOR ADDITIONAL DETAILS.

LEGEND:

C.J. = CONSTRUCTION JOINT
PEJF = PREFORMED EXPANSION JOINT FILLER



SECTION A-A

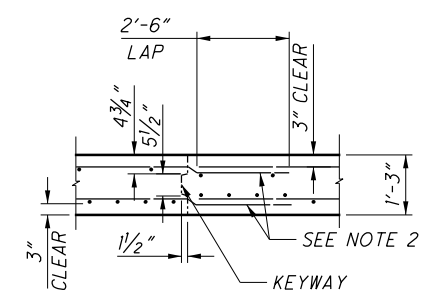
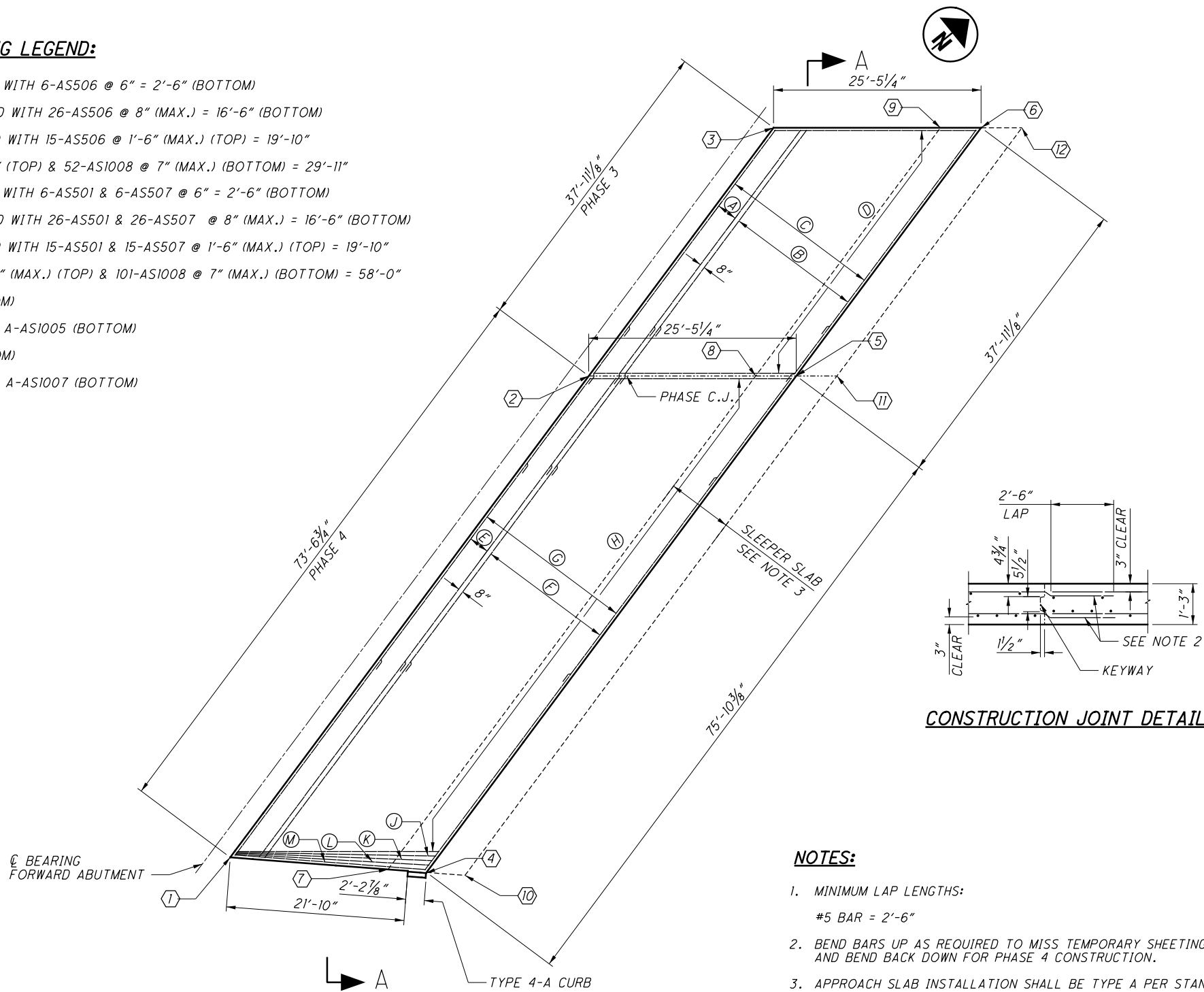
P:\PR54704\HAM\91826\Design\Structures\HAM071_1068R_Sheets\SD003.dgn Sheet 10/26/2017 8:40:28 AM compton

REINFORCING LEGEND:

- (A) 6-AS501 LAPPED WITH 6-AS506 @ 6" = 2'-6" (BOTTOM)
- (B) 26-AS501 LAPPED WITH 26-AS506 @ 8" (MAX.) = 16'-6" (BOTTOM)
- (C) 15-AS501 LAPPED WITH 15-AS506 @ 1'-6" (MAX.) (TOP) = 19'-10"
- (D) 21-AS503 @ 1'-6" (TOP) & 52-AS1008 @ 7" (MAX.) (BOTTOM) = 29'-11"
- (E) 6-AS501 LAPPED WITH 6-AS501 & 6-AS507 @ 6" = 2'-6" (BOTTOM)
- (F) 26-AS501 LAPPED WITH 26-AS501 & 26-AS507 @ 8" (MAX.) = 16'-6" (BOTTOM)
- (G) 15-AS501 LAPPED WITH 15-AS501 & 15-AS507 @ 1'-6" (MAX.) (TOP) = 19'-10"
- (H) 40-AS503 @ 1'-6" (MAX.) (TOP) & 101-AS1008 @ 7" (MAX.) (BOTTOM) = 58'-0"
- (J) 1-AS1004 (BOTTOM)
- (K) 1-AS508 (TOP) & A-AS1005 (BOTTOM)
- (L) 1-AS1006 (BOTTOM)
- (M) 1-AS509 (TOP) & A-AS1007 (BOTTOM)

APPROACH SLAB SURFACE ELEVATIONS			
LOCATION	STATION	OFFSET RIGHT (FT.)	ELEVATION
①	522+10.24	99.47	708.81
②	522+56.51	40.94	715.46
③	522+79.25	10.36	718.88
④	522+35.54	101.78	709.60
⑤	522+82.51	40.73	716.47
⑥	523+04.82	9.85	719.87

SLEEPER SLAB SURFACE ELEVATIONS			
LOCATION	STATION	OFFSET RIGHT (FT.)	ELEVATION
⑦	522+30.62	101.29	708.20
⑧	522+77.41	40.80	715.02
⑨	522+99.81	9.97	718.44
⑩	522+40.58	102.11	708.55
⑪	522+87.60	40.65	715.41
⑫	523+09.83	9.71	718.81



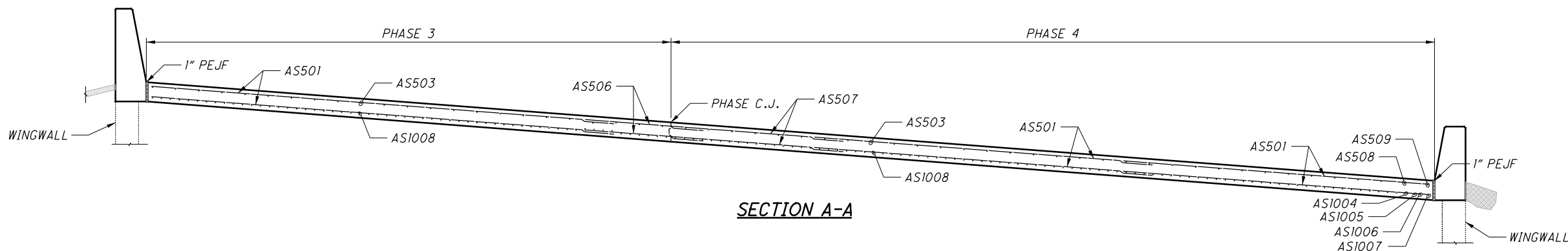
NOTES:

1. MINIMUM LAP LENGTHS:
#5 BAR = 2'-6"
2. BEND BARS UP AS REQUIRED TO MISS TEMPORARY SHEETING AND BEND BACK DOWN FOR PHASE 4 CONSTRUCTION.
3. APPROACH SLAB INSTALLATION SHALL BE TYPE A PER STANDARD DRAWING AS-2-15.
4. SEE STANDARD DRAWING AS-1-15 FOR ADDITIONAL DETAILS.

FORWARD APPROACH SLAB PLAN - RIGHT BRIDGE
(WINGWALLS AND PARAPETS NOT SHOWN)

LEGEND:

C.J. = CONSTRUCTION JOINT
PEJF = PREFORMED EXPANSION JOINT FILLER



SECTION A-A

DESIGN AGENCY: BURGESS & NIPLE
 312 PLUM ST. CINCINNATI OH
 REVIEWED: DWL 2/20/2017
 STRUCTURE FILE NUMBER: 3106896
 DRAWN: SJA
 CHECKED: MAB
 DESIGNED: SJA
 DATE: 2/20/2017
 FILE NUMBER: 3106896
FORWARD APPROACH SLAB DETAILS - RIGHT BRIDGE
 HAM-71-1068R
 IR-71 OVER STEWART ROAD
HAM-IR71-8.42
 PID No. 91826
 51/57
 418
 441

P:\PR54704\HAM_91826\Design\Structures\HAM071_1068L_Sheets\071_1068L_SD002.dgn Sheet 10/26/2017 8:40:50 AM compton

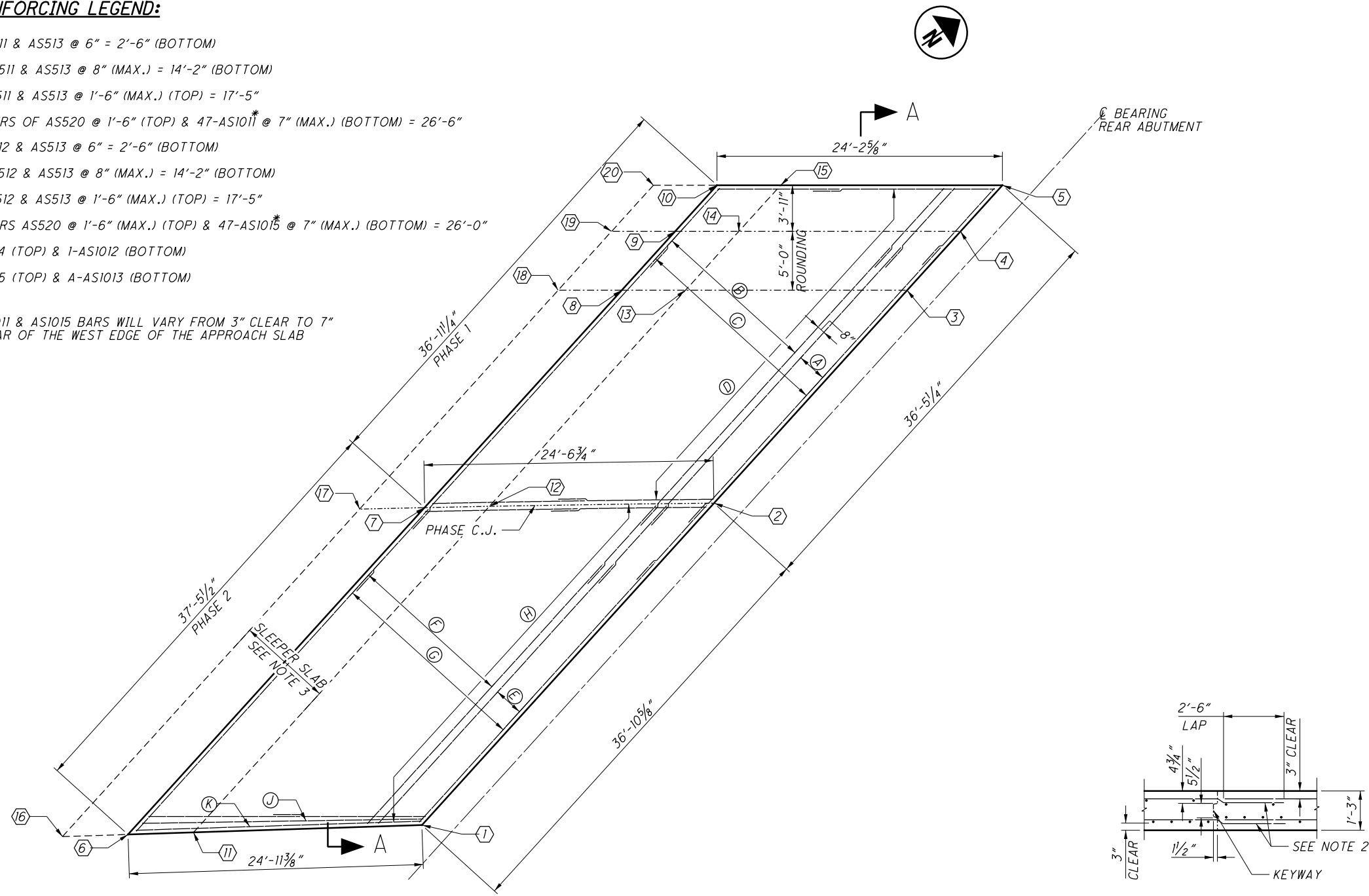
REINFORCING LEGEND:

- (A) 6-AS511 & AS513 @ 6" = 2'-6" (BOTTOM)
- (B) 23-AS511 & AS513 @ 8" (MAX.) = 14'-2" (BOTTOM)
- (C) 13-AS511 & AS513 @ 1'-6" (MAX.) (TOP) = 17'-5"
- (D) 19-PAIRS OF AS520 @ 1'-6" (TOP) & 47-AS1011* @ 7" (MAX.) (BOTTOM) = 26'-6"
- (E) 6-AS512 & AS513 @ 6" = 2'-6" (BOTTOM)
- (F) 23-AS512 & AS513 @ 8" (MAX.) = 14'-2" (BOTTOM)
- (G) 13-AS512 & AS513 @ 1'-6" (MAX.) (TOP) = 17'-5"
- (H) 19-PAIRS AS520 @ 1'-6" (MAX.) (TOP) & 47-AS1015* @ 7" (MAX.) (BOTTOM) = 26'-0"
- (J) 1-AS514 (TOP) & 1-AS1012 (BOTTOM)
- (K) 1-AS515 (TOP) & 1-AS1013 (BOTTOM)

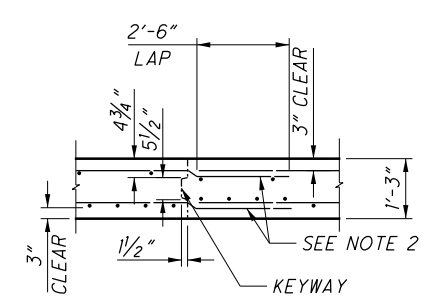
* = AS1011 & AS1015 BARS WILL VARY FROM 3" CLEAR TO 7" CLEAR OF THE WEST EDGE OF THE APPROACH SLAB

APPROACH SLAB SURFACE ELEVATIONS			
LOCATION	STATION	OFFSET LEFT (FT.)	ELEVATION
①	520+25.19	8.53	707.99
②	520+50.14	35.44	711.00
③	520+66.26	53.41	713.00
④	520+70.67	58.41	713.26
⑤	520+74.11	62.33	713.22
⑥	520+00.35	8.47	707.15
⑦	520+26.02	35.46	710.18
⑧	520+42.70	53.60	712.20
⑨	520+47.17	58.54	712.45
⑩	520+50.65	62.42	712.41

SLEEPER SLAB SURFACE ELEVATIONS			
LOCATION	STATION	OFFSET LEFT (FT.)	ELEVATION
⑪	520+05.89	8.46	706.09
⑫	520+31.43	35.46	709.11
⑬	520+47.95	53.53	711.12
⑭	520+52.41	58.48	711.38
⑮	520+55.88	62.37	711.34
⑯	519+94.81	8.50	705.71
⑰	520+20.61	35.47	708.74
⑱	520+37.45	53.68	710.77
⑲	520+41.93	58.61	711.02
⑳	520+45.42	62.48	710.98



REAR APPROACH SLAB PLAN - LEFT BRIDGE
(WINGWALLS AND PARAPETS NOT SHOWN)



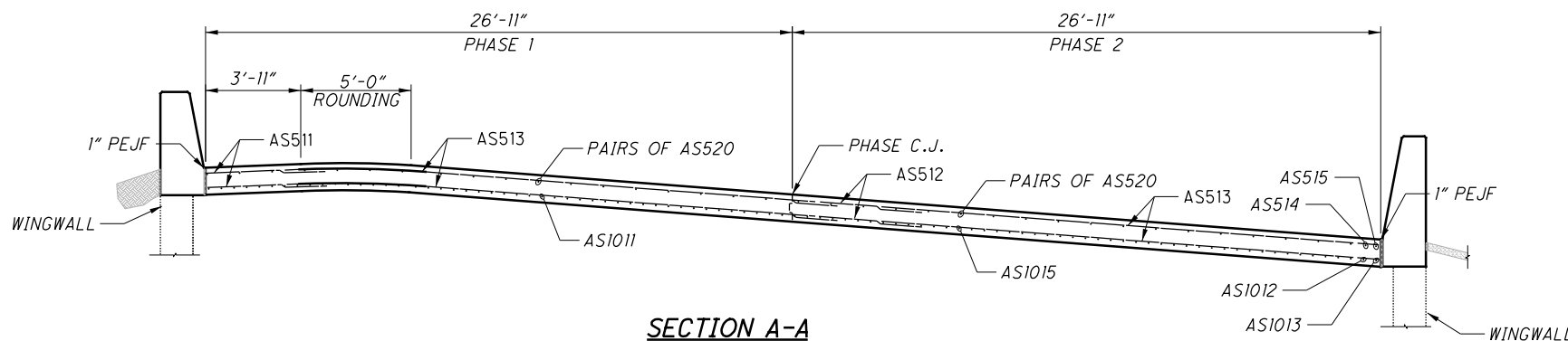
CONSTRUCTION JOINT DETAIL

LEGEND:

- C.J. = CONSTRUCTION JOINT
- PEJF = PREFORMED EXPANSION JOINT FILLER

NOTES:

1. MINIMUM LAP LENGTHS:
#5 BAR = 2'-6"
2. BEND BARS UP AS REQUIRED TO MISS TEMPORARY SHEETING AND BEND BACK DOWN FOR PHASE 4 CONSTRUCTION.
3. APPROACH SLAB INSTALLATION SHALL BE TYPE A PER STANDARD DRAWING AS-2-15.
4. SEE STANDARD DRAWING AS-1-15 FOR ADDITIONAL DETAILS.



SECTION A-A

DESIGNED SJA	CHECKED MAB	DRAWN SJA	REVISED	REVIEWED DWL	DATE 2/20/2017
				STRUCTURE FILE NUMBER 3106888	
DESIGN AGENCY BURGESS & NIPLE 312 PLUM ST. CINCINNATI OH					
HAM-IR71-8.42 PID No. 91826					
REAR APPROACH SLAB DETAILS - LEFT BRIDGE HAM-71-1068L IR-71 OVER STEWART ROAD					
52 / 57					
419 441					

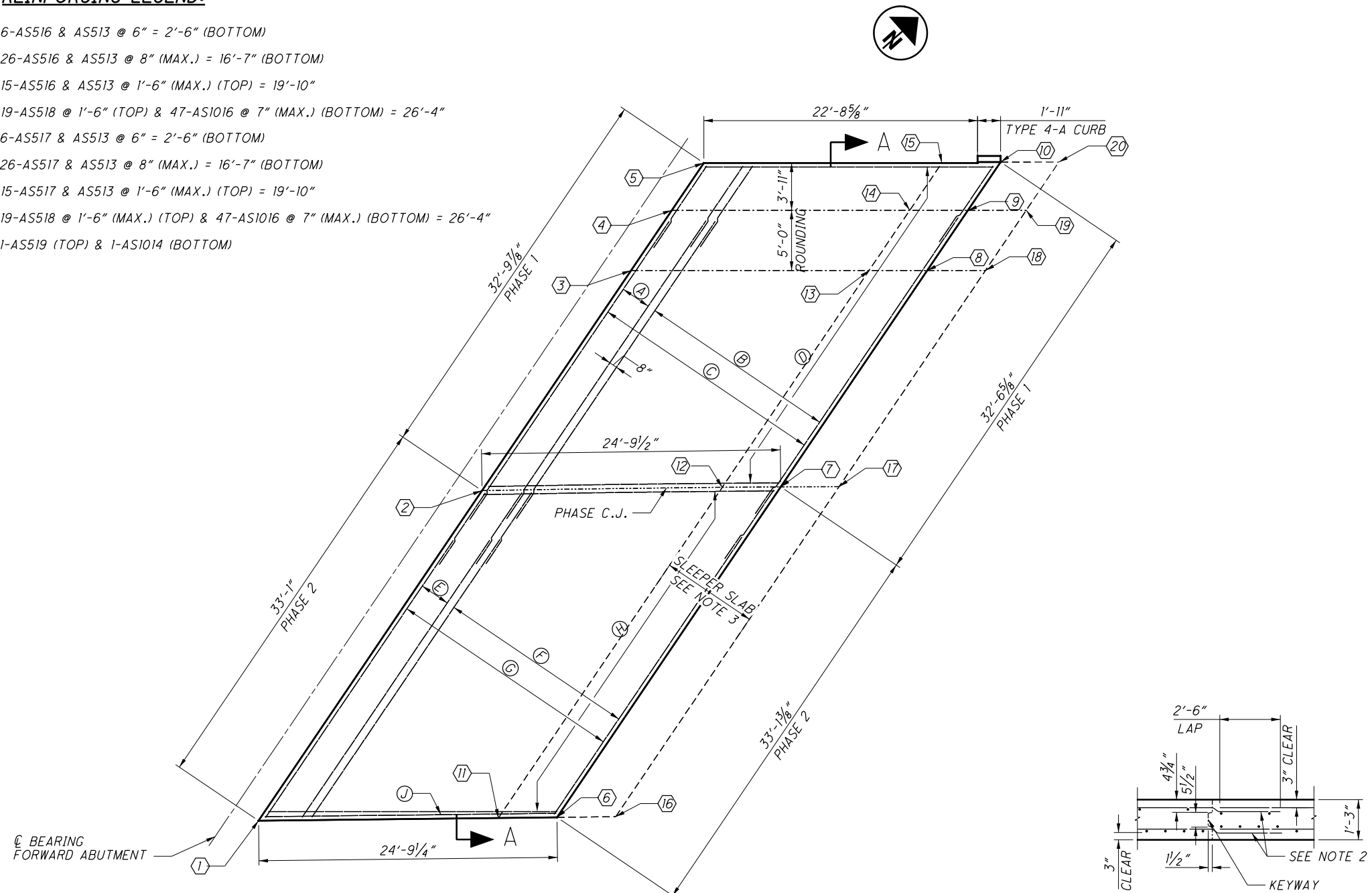
P:\PR54704\HAM\91826\Design\Structures\HAM071_1068L_Sheets\071_1068L_SD003.dgn Sheet 10/26/2017 8:40:52 AM compton

REINFORCING LEGEND:

- (A) 6-AS516 & AS513 @ 6" = 2'-6" (BOTTOM)
- (B) 26-AS516 & AS513 @ 8" (MAX.) = 16'-7" (BOTTOM)
- (C) 15-AS516 & AS513 @ 1'-6" (MAX.) (TOP) = 19'-10"
- (D) 19-AS518 @ 1'-6" (TOP) & 47-AS1016 @ 7" (MAX.) (BOTTOM) = 26'-4"
- (E) 6-AS517 & AS513 @ 6" = 2'-6" (BOTTOM)
- (F) 26-AS517 & AS513 @ 8" (MAX.) = 16'-7" (BOTTOM)
- (G) 15-AS517 & AS513 @ 1'-6" (MAX.) (TOP) = 19'-10"
- (H) 19-AS518 @ 1'-6" (MAX.) (TOP) & 47-AS1016 @ 7" (MAX.) (BOTTOM) = 26'-4"
- (J) 1-AS519 (TOP) & 1-AS1014 (BOTTOM)

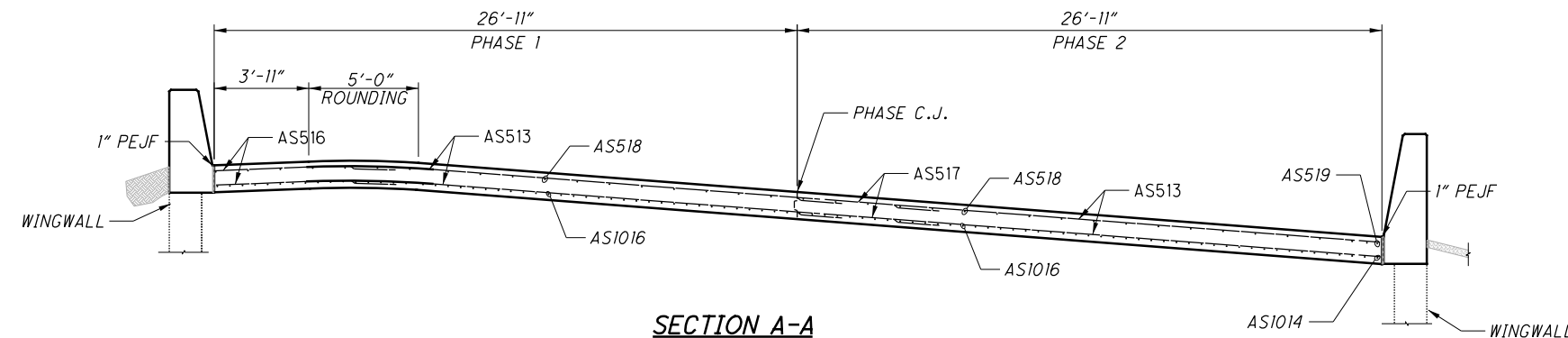
APPROACH SLAB SURFACE ELEVATIONS			
LOCATION	STATION	OFFSET LEFT (FT.)	ELEVATION
①	522+86.46	8.45	717.75
②	523+05.41	35.41	720.67
③	523+17.67	53.49	722.61
④	523+21.10	58.45	722.83
⑤	523+23.70	62.34	722.78
⑥	523+11.12	8.20	718.72
⑦	523+29.75	35.43	721.64
⑧	523+41.66	53.36	723.55
⑨	523+44.94	58.36	723.79
⑩	523+47.56	62.37	723.74

SLEEPER SLAB SURFACE ELEVATIONS			
LOCATION	STATION	OFFSET LEFT (FT.)	ELEVATION
⑪	523+06.27	8.22	717.27
⑫	523+24.98	35.42	720.20
⑬	523+36.97	53.36	722.11
⑭	523+40.26	58.35	722.35
⑮	523+42.82	62.27	722.30
⑯	523+15.96	8.18	717.66
⑰	523+34.51	35.43	720.58
⑱	523+46.36	53.37	722.49
⑲	523+49.63	58.38	722.69
⑳	523+52.18	62.31	722.74



FORWARD APPROACH SLAB PLAN - LEFT BRIDGE
(WINGWALLS AND PARAPETS NOT SHOWN)

CONSTRUCTION JOINT DETAIL



SECTION A-A

LEGEND:

- C.J. = CONSTRUCTION JOINT
- PEJF = PREFORMED EXPANSION JOINT FILLER

NOTES:

1. MINIMUM LAP LENGTHS:
#5 BAR = 2'-6"
2. BEND BARS UP AS REQUIRED TO MISS TEMPORARY SHEETING AND BEND BACK DOWN FOR PHASE 4 CONSTRUCTION.
3. APPROACH SLAB INSTALLATION SHALL BE TYPE A PER STANDARD DRAWING AS-2-15.
4. SEE STANDARD DRAWING AS-1-15 FOR ADDITIONAL DETAILS.

DESIGN AGENCY
BURGESS & NIPLE
312 PLUM ST. CINCINNATI OH

DATE
2/20/2017

REVIEWED
DWL

DRAWN
SJA

DESIGNED
SJA

CHECKED
MAB

STRUCTURE FILE NUMBER
3106888

FORWARD APPROACH SLAB DETAILS - LEFT BRIDGE

HAM-71-1068L
IR-71 OVER STEWART ROAD

HAM-IR71-8.42
PID No. 91826

53/57

420
441

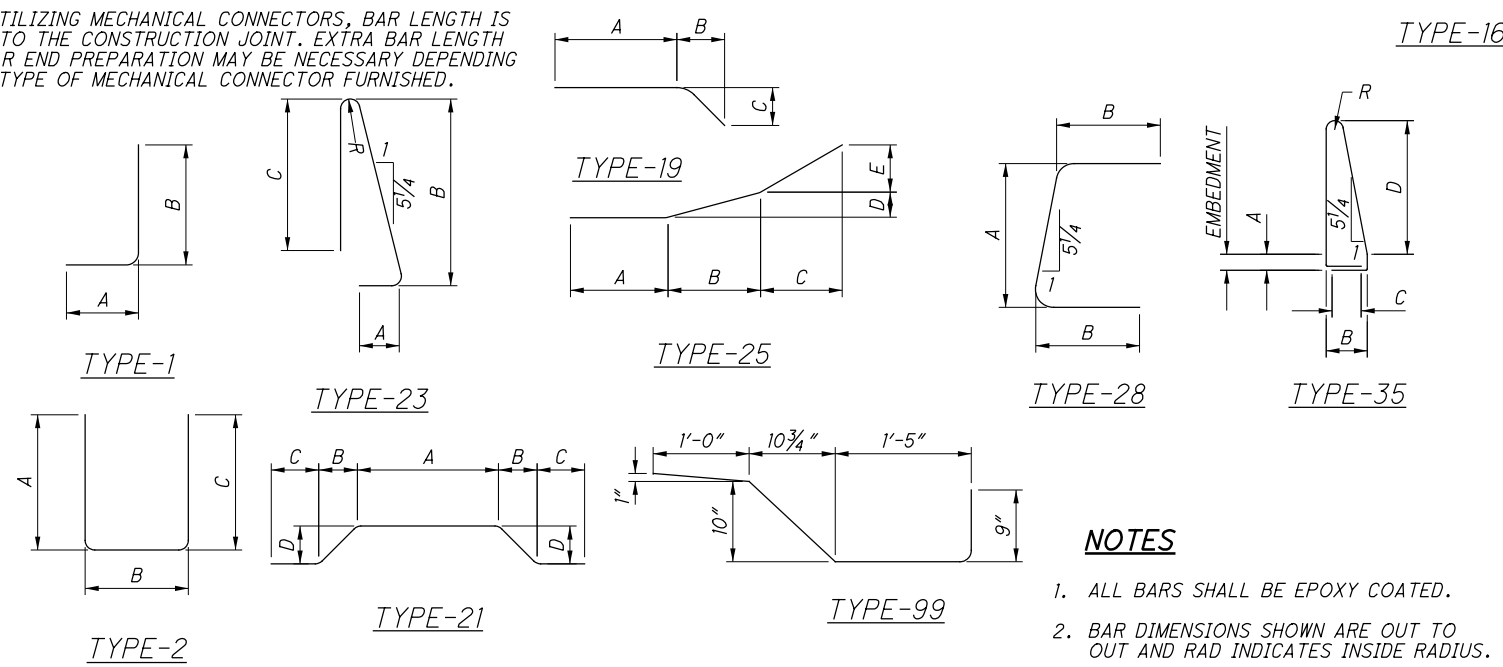
MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS						
					A	B	C	D	E	R	INC
SUPERSTRUCTURE REINFORCING STEEL LIST											
S401	207	30'-0"	4148	STR							
S402	138	19'-3"	1775	STR							
S403	69	22'-8"	1045	STR							
S501	914	30'-0"	28599	STR							
S502	70	13'-5"	980	STR							
	1 SR	3'-8"									
* S503	OF 49	TO 28'-7"	824	STR							0'-6"
S504	36	4'-2"	156	STR							
* S505	968 2 SR	28'-6" 3'-7"	28774	STR							
* S506	OF 38 2 SR	TO 28'-3" 1'-6"	1262	STR							0'-8"
* S507	OF 51	TO 28'-0"	1569	STR							0'-6 1/4"
* S508	8 1 SR	3'-3" 3'-8"	27	19	0'-6"	2'-3"	1'-8"				
S509	OF 39	TO 28'-6"	654	STR							0'-8"
S510	1036	9'-7"	10355	16	9'-0"						
S511	276	32'-10"	9452	STR							
* S512	2	11'-4"	24	STR							
* S513	2	11'-10"	25	STR							
* S514	2	7'-8"	16	STR							
* S515	2	7'-10"	16	STR							
S580	2012	3'-0"	6295	STR							
* S590	968 1 SR	29'-1" 4'-3"	29363	16	28'-6"						
* S592	OF 49 1 SR	TO 29'-2" 4'-3"	853	16	TO 28'-7" 3'-8"						0'-6"
S593	OF 39	TO 29'-1"	677	16	TO 28'-6"						0'-8"
S597	228	5'-5"	1288	21	1'-2"	0'-10"	1'-0"	0'-10"			
S598	152	2'-1"	330	1	0'-9"	1'-5"					
S599	304	4'-0"	1268	99							
		TOTAL	129,775								

MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS						
					A	B	C	D	E	R	INC
APPROACH SLAB REINFORCING STEEL LIST **											
AS511	42	12'-0"	526	STR							
AS512	42	9'-6"	416	STR							
AS513	178	30'-0"	5570	STR							
AS514	1	23'-8"	25	STR							
AS515	1	24'-3"	25	STR							
AS516	47	7'-6"	368	STR							
AS517	47	5'-3"	257	STR							
AS518	38	24'-0"	951	STR							
AS519	1	24'-2"	25	STR							
AS520	76	13'-3"	1050	STR							
AS1011	47	25'-1"	5072	16	23'-8"						
AS1012	1	23'-8"	102	STR							
AS1013	1	24'-3"	100	STR							
AS1014	1	24'-2"	104	STR							
AS1015	47	25'-5"	5140	16	24'-0"						
AS1016	94	25'-5"	10281	16	24'-0"						

** APPROACH SLAB REINFORCING PAYMENT IS INCLUDED WITH ITEM 526, REINFORCED CONCRETE APPROACH SLAB, AS PER PLAN

MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS						
					A	B	C	D	E	R	INC
PARAPET REINFORCING STEEL LIST											
R501	270	7'-4"	2065	23	0'-11"	3'-3"	3'-0"				0'-3"
R502	273	12'-11"	3678	35	0'-7"	1'-5"	1'-0"	4'-7"			0'-3"
R503	72	30'-0"	2253	STR							
R504	4	6'-8"	28	STR							
R505	NOT USED										
R506	4	1'-10"	8	STR							
R507	NOT USED										
R508	12	14'-8"	184	STR							
R509	120	7'-2"	897	STR							
R510	18	12'-2"	228	STR							
R511	6	11'-9"	74	STR							
R512	4	14'-8"	61	STR							
R513	40	7'-2"	299	STR							
R514	4	14'-6"	60	STR							
R515	2	14'-5"	30	STR							
R516	1	14'-0"	15	STR							
R517	1	13'-6"	14	STR							
R518	1	14'-2"	15	STR							
R519	1	14'-6"	15	STR							
R520	6	14'-6"	91	STR							
R521	6	13'-8"	86	STR							
R522	6	13'-6"	84	STR							
R523	6	14'-2"	89	STR							
R601	270	2'-5"	980	1	1'-0"	1'-7"					
R602	270	3'-1"	1250	28	1'-7"	0'-11"					
R603	2	14'-8"	44	STR							
R604	20	7'-1"	214	STR							
R605	3	12'-2"	55	STR							
R606	1	11'-9"	18	STR							
R607	2	14'-8"	44	STR							
R608	20	7'-2"	215	STR							
R609	2	14'-6"	44	STR							
R610	1	14'-5"	22	STR							
R611	1	13'-8"	21	STR							
R612	1	14'-5"	22	STR							
R613	1	13'-11"	21	STR							
R614	1	14'-0"	21	STR							
		TOTAL	13,245								

* REBAR UTILIZING MECHANICAL CONNECTORS, BAR LENGTH IS MEASURED TO THE CONSTRUCTION JOINT. EXTRA BAR LENGTH AND/OR BAR END PREPARATION MAY BE NECESSARY DEPENDING UPON THE TYPE OF MECHANICAL CONNECTOR FURNISHED.



NOTES

- ALL BARS SHALL BE EPOXY COATED.
- BAR DIMENSIONS SHOWN ARE OUT TO OUT AND RAD INDICATES INSIDE RADIUS.

DESIGN AGENCY
BURGESS & NIPLE
312 PLUM ST. CINCINNATI, OH

DESIGNED BY
SJA
CHECKED BY
XAC

DRAWN BY
SJA
REVISED

REVIEWED BY
DWL
DATE
2/20/2017
STRUCTURE FILE NUMBER
3106888

REINFORCING STEEL LIST 1
HAM-71-1068L
IR-71 OVER STEWART ROAD

HAM-IR71-8.42
PID No. 91826

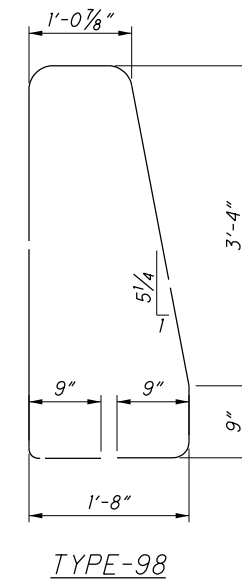
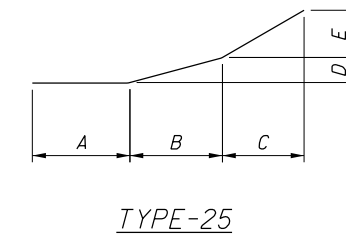
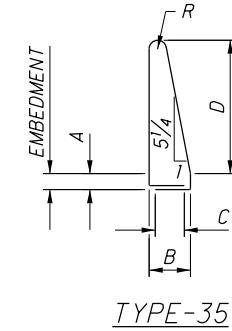
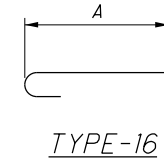
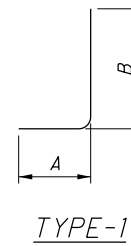
54 / 57

P:\PR54\704\HAM-91826\Design\Structures\HAM071_1068L_Sheets\071_1068L_SL002.dgn Sheet 10/26/2017 8:40:56 AM compton

MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS						
	TOTAL				A	B	C	D	E	R	INC
REAR ABUTMENT REINFORCING STEEL LIST											
A511	18	30'-0"	563	STR							
A512	16	3'-0"	50	STR							
A513	9	9'-8"	91	STR							
A514	9	9'-5"	88	STR							
A611	148	5'-0"	1111	STR							
A612	72	4'-1"	442	2	0'-11"	2'-7"	0'-11"				
A612	72	7'-4"	793	2	1'-5"	4'-10"	1'-5"				
A614	4	5'-8"	34	STR							
A801	38	5'-8"	575	18	3'-6"	1'-0"	1'-0"				
		TOTAL	3,747								

MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS						
	TOTAL				A	B	C	D	E	R	INC
FORWARD ABUTMENT REINFORCING STEEL LIST											
A511	18	30'-0"	563	STR							
A512	16	3'-0"	50	STR							
A513-A514	NOT USED										
A515	9	5'-10"	55	STR							
A516	9	5'-10"	55	STR							
A611	136	5'-7"	1141	STR							
A612	66	4'-1"	405	2	0'-11"	2'-7"	0'-11"				
A613-A614	NOT USED										
A615	66	7'-3"	719	2	1'-5"	4'-9"	1'-5"				
A616	4	5'-11"	36	STR							
A801	38	5'-8"	575	18	3'-6"	1'-0"	1'-0"				
		TOTAL	3,599								

MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS						
	TOTAL				A	B	C	D	E	R	INC
WINGWALL REINFORCING STEEL LIST											
Y501	22	10'-3"	235	98							
Y502	57	13'-3"	788	35	0'-9"	1'-5"	1'-0"	4'-7"		0'-3"	
Y503	1	5'-4"	6	STR							
Y504	1	4'-1"	4	STR							
X501	20	10'-0"	209	STR							
X502	10	5'-9"	60	25	1'-10"	2'-5"	1'-5"	0'-1 1/2"	0'-5"		
X503	10	5'-8"	59	STR							
X514	6	15'-4"	96	STR							
X515	2	12'-8"	26	STR							
X516	4	7'-7"	32	STR							
X517	7	20'-8"	151	STR							
X518	14	12'-5"	181	STR							
X519	6	11'-5"	71	STR							
X520	2	8'-11"	19	STR							
X521	4	6'-1"	25	STR							
X522	7	19'-4"	141	STR							
X523	14	10'-5"	152	STR							
Y601	137	2'-9"	566	16	2'-1"						
Y602	137	3'-3"	669	STR							
	4 SR	4'-0"				3'-2"				0'-1"	
Y603	OF	TO	429	1	1'-0"	TO					
	16	4'-11"				4'-1"					
Y604	12	4'-1"	74	1	1'-0"	3'-3"					
		TOTAL	3,993								



NOTES

- ALL BARS SHALL BE EPOXY COATED.
- BAR DIMENSIONS SHOWN ARE OUT TO OUT AND RAD INDICATES INSIDE RADIUS.

REINFORCING STEEL LIST 2

HAM-71-1068L
IR-71 OVER STEWART ROAD

HAM-IR71-8.42
PID No. 91826

DESIGN AGENCY
BURGESS & NIPLE
312 PLUM ST., CINCINNATI OH

DESIGNED
SJA
CHECKED
XAC

DRAWN
SJA
REVISED

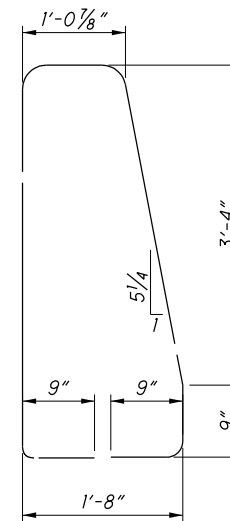
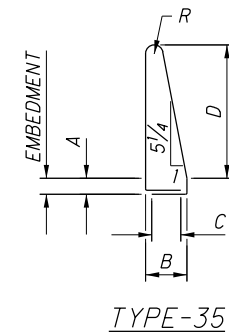
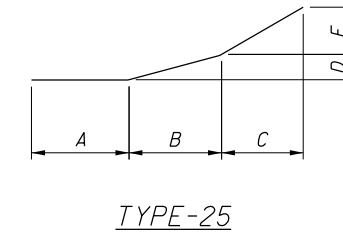
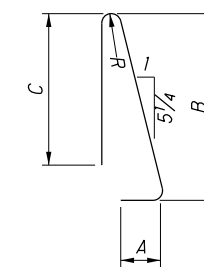
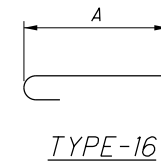
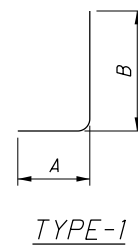
REVIEWED
DWL
DATE
2/20/2017
STRUCTURE FILE NUMBER
3106888

P:\PR54704\HAM\91826\Design\Structures\HAM071_1068L_Sheets\071_1068L_S004.dgn Sheet 10/26/2017 8:40:59 AM compton

MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS						
	TOTAL				A	B	C	D	E	R	INC
REAR ABUTMENT REINFORCING STEEL LIST											
A501	33	30'-0"	1033	STR							
A502	20	3'-0"	63	STR							
A503	11	7'-3"	83	STR							
A504	11	10'-10"	124	STR							
A601	204	5'-2"	1583	STR							
A602	100	4'-1"	613	2	0'-11"	2'-7"	0'-11"				
A603	100	7'-3"	1089	2	1'-5"	4'-9"	1'-5"				
A604	4	5'-11"	36	STR							
A801	49	5'-8"	741	18	3'-6"	1'-0"	1'-0"				
TOTAL			5,365								

MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS						
	TOTAL				A	B	C	D	E	R	INC
FORWARD ABUTMENT REINFORCING STEEL LIST											
A501	33	30'-0"	1033	STR							
A502	20	3'-0"	63	STR							
A503-A504	NOT USED										
A505	11	10'-9"	123	STR							
A506	11	18'-9"	215	STR							
A601	226	5'-9"	1952	STR							
A602	111	4'-1"	681	2	0'-11"	2'-7"	0'-11"				
A603-A604	NOT USED										
A605	111	8'-0"	1334	2	1'-7"	5'-2"	1'-7"				
A606	4	6'-5"	39	STR							
A801	61	5'-8"	923	18	3'-6"	1'-0"	1'-0"				
TOTAL			6,363								

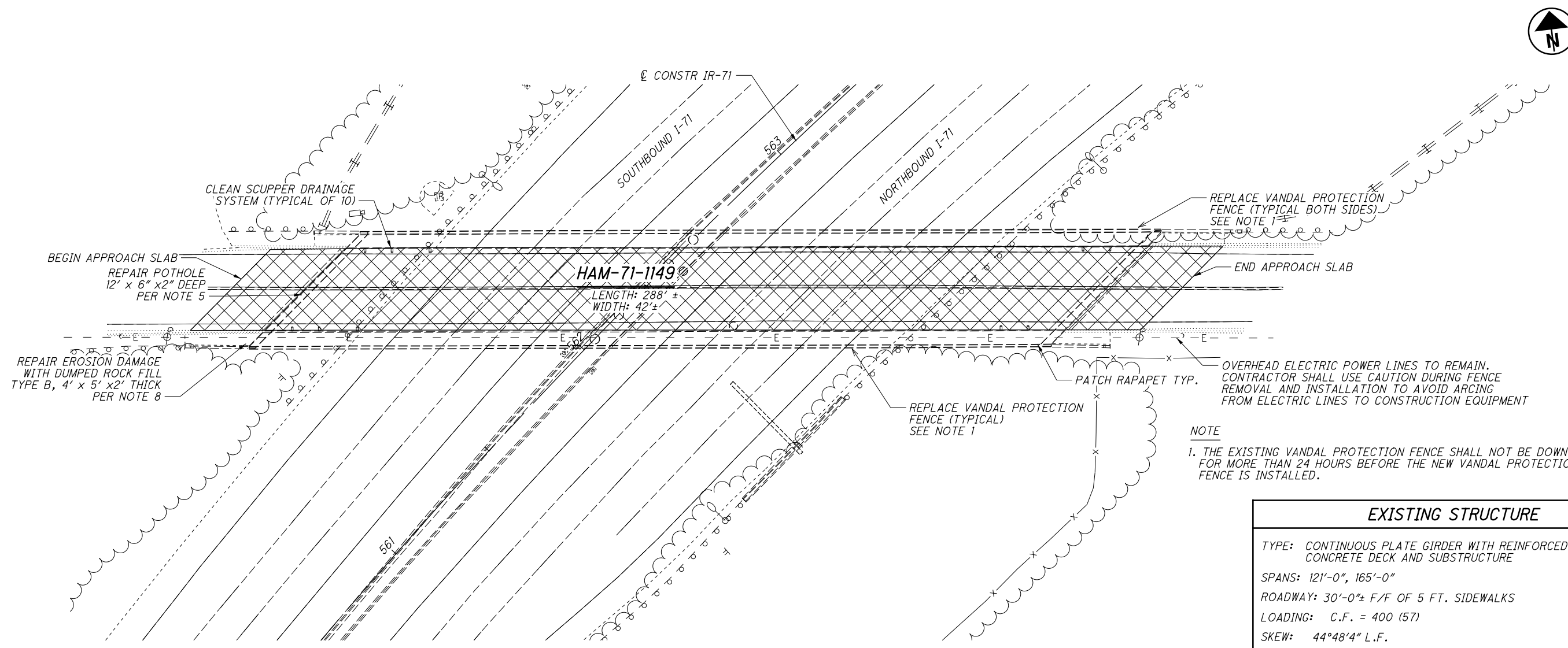
MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS						
	TOTAL				A	B	C	D	E	R	INC
WINGWALL REINFORCING STEEL LIST											
Y501	27	10'-3"	289	98							
Y502	61	13'-3"	843	35	0'-9"	1'-5"	1'-0"	4'-7"		0'-3"	
Y503	1	5'-4"	6	STR							
Y504	1	4'-1"	4	STR							
X501	20	10'-0"	209	STR							
X502	10	5'-9"	60	25	1'-10"	2'-5"	1'-5"	0'-1 1/2"	0'-5"		
X503	10	5'-8"	59	STR							
X504	6	20'-4"	127	STR							
X505	2	16'-4"	34	STR							
X506	4	10'-1"	42	STR							
X507	7	21'-0"	153	STR							
X508	14	11'-9"	172	STR							
X509	14	14'-7"	213	STR							
X510	7	25'-6"	186	STR							
X511	6	12'-5"	78	STR							
X512	2	9'-9"	20	STR							
X513	4	5'-9"	24	STR							
Y601	127	2'-9"	525	16	2'-1"						
Y602	127	3'-3"	620	STR							
	4 SR	4'-0"						3'-2"			0'-1"
Y603	OF	TO	429	1	1'-0"			TO			
	16	4'-11"						4'-1"			
Y604	12	4'-1"	74	1	1'-0"			3'-3"			
TOTAL			4,167								



NOTES

- ALL BARS SHALL BE EPOXY COATED.
- BAR DIMENSIONS SHOWN ARE OUT TO OUT AND RAD INDICATES INSIDE RADIUS.

P:\PR54704\HAM_91826\Design\Structures\HAM071_1149C_S0001.dgn Sheet 3/15/2018 10:53:40 AM chen



PLAN

LEGEND

SEAL WEARING SURFACE OF DECK AND APPROACH SLABS WITH HIGH MOLECULAR WEIGHT METHACRYLATE (HMWM).

PROPOSED WORK:

1. REPLACE THE EXISTING VANDAL PROTECTION FENCE WITH A NEW 12' CURVED VANDAL PROTECTION FENCE.
2. REPAIR PORTIONS OF PARAPET THAT ARE SPALLED USING 519 SPECIFICATIONS.
3. PAINT ALL SUPERSTRUCTURE STEEL PER OZEU SPECIFICATIONS. FINISH COAT COLOR TO BE FEDERAL COLOR NUMBER 14277.
4. REMOVE EXISTING SEALER AND RESEAL PARAPETS, SIDEWALKS, DECK EDGES, PIERS, AND ABUTMENTS WITH EPOXY URETHANE SEALER.
5. PATCH SMALL POTHOLE NEAR THE EXPANSION JOINT PER PROPOSAL NOTE 512, TYPE B.
6. SEAL WEARING SURFACE OF DECK AND APPROACH SLABS WITH HIGH MOLECULAR WEIGHT METHACRYLATE (HMWM) PER ITEM 512.
7. CLEAN SCUPPER DRAINAGE SYSTEM.
8. REPAIR EROSION AT THE SOUTH WEST END OF THE APPROACH SLAB.
9. REPLACE MISSING OR DAMAGED RAISED PAVEMENT MARKERS IN KIND PER ITEM 621.
10. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH MAINTENANCE OF TRAFFIC PLANS AND NOTES.

NOTE
 1. THE EXISTING VANDAL PROTECTION FENCE SHALL NOT BE DOWN FOR MORE THAN 24 HOURS BEFORE THE NEW VANDAL PROTECTION FENCE IS INSTALLED.

EXISTING STRUCTURE
TYPE: CONTINUOUS PLATE GIRDER WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 121'-0", 165'-0"
ROADWAY: 30'-0"± F/F OF 5 FT. SIDEWALKS
LOADING: C.F. = 400 (57)
SKEW: 44°48'4" L.F.
APPROACH SLABS: AS-1-54 (25'-0" LONG)
ALIGNMENT: TANGENT
CROWN: 0.016
STRUCTURAL FILE NUMBER: 3106934
DATE BUILT: 1969

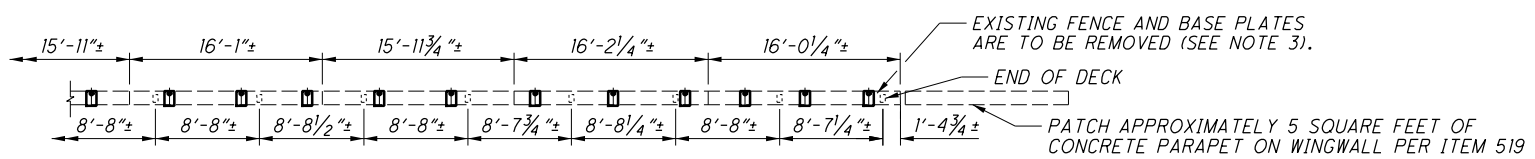
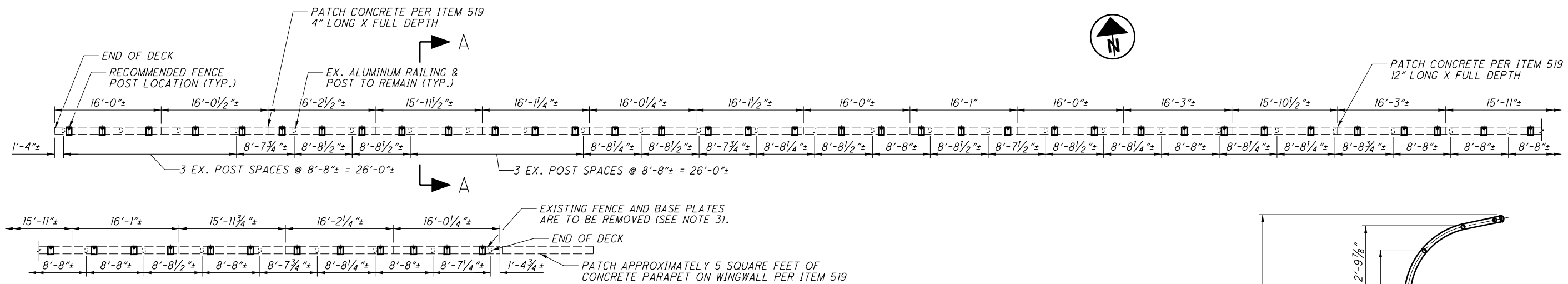
PROPOSED STRUCTURE
TYPE: CONTINUOUS PLATE GIRDER WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 121'-0", 165'-0"
ROADWAY: 30'-0"± F/F OF 5 FT. SIDEWALKS
LOADING: C.F. = 400 (57)
SKEW: 44°48'4" L.F.
APPROACH SLABS: AS-1-54 (25'-0" LONG)
ALIGNMENT: TANGENT
CROWN: 0.016
COORDINATES: LATITUDE 39°11'33" N LONGITUDE 84°23'12" W



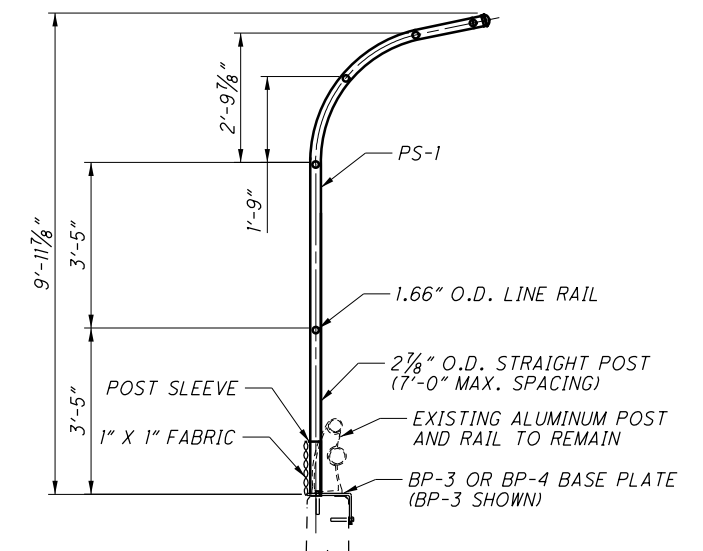
DESIGNED	XAC	CHECKED	SUA	
DRAWN	XAC	REVISED		
REVIEWED	DWL	DATE	2/20/2017	STRUCTURE FILE NUMBER
3106934				3106934
GENERAL PLAN				
HAM-71-1149				
EUCLID RD. OVER IR-71				
HAM-IR71-8.42				
PID No. 91826				
1 / 3				
425 441				

DESIGN AGENCY
 BURGESS & NIPLE
 312 PLUM ST. CINCINNATI, OH

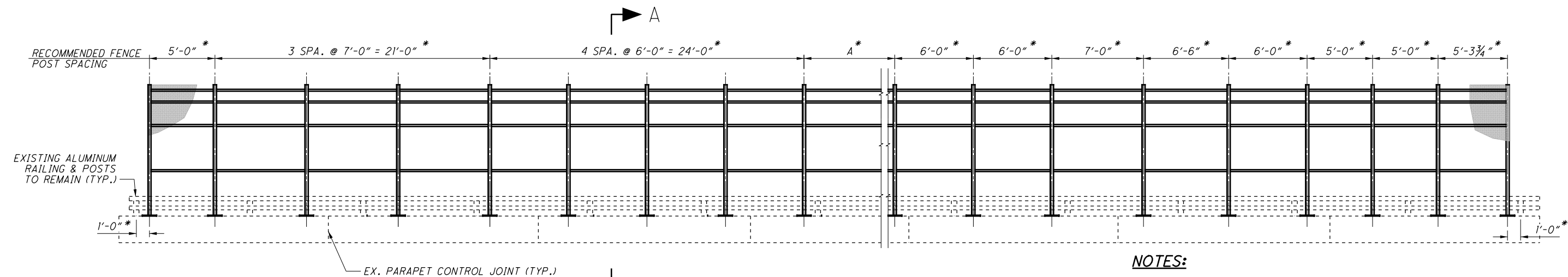
P:\PR54704\HAM\91826\Design\Structures\HAM071_1149C\Sheets\071_1149C_SAO01.dgn_Sheet 10/26/2017 8:41:07 AM compton



NORTH PARAPET RAILING PLAN



SECTION A-A
(12' CURVED FENCE)



NORTH PARAPET RAILING ELEVATION
(INSIDE FENCE)

LEGEND:

* = CONTRACTOR MAY USE A DIFFERENT FENCE POST SPACING AS LONG AS THE MAXIMUM SPACING IS 7'-0" AND THE BASE PLATES CLEAR THE EXISTING RAILING POSTS BY AT LEAST 2" IN ACCORDANCE WITH STANDARD DRAWING VPF-1-90 .

EX. = EXISTING

SPA. = SPACES

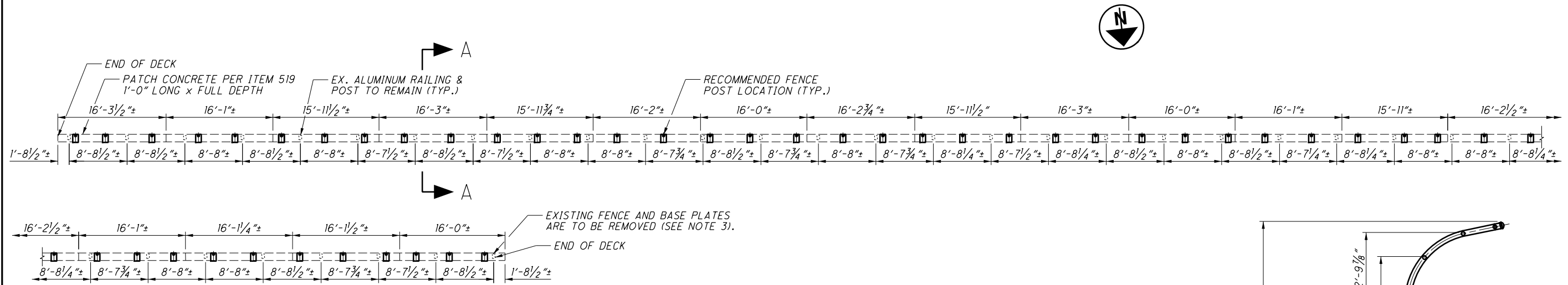
A = (2 @ 7'-0", 3 @ 6'-0", 2 @ 7'-0", 6'-0", 2 @ 7'-0", 3 @ 6'-0", 2 @ 7'-0", 6'-0", 7'-0", 6'-6", 2 @ 6'-0", 3 @ 7'-0", 5'-0", 2 @ 7'-0", 6'-6" 6'-0", 5'-6")

NOTES:

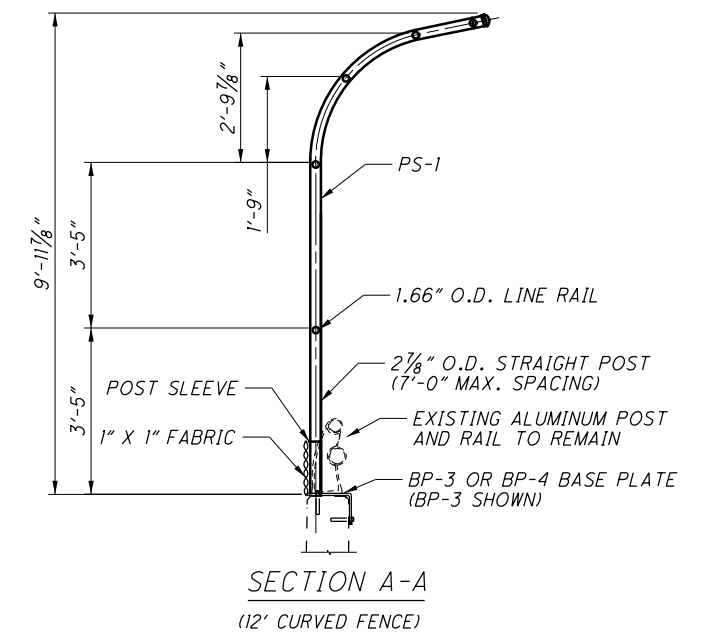
1. SEE STANDARD BRIDGE DRAWING VPF-1-90 FOR VANDAL PROTECTION FENCE DETAILS.
2. EXISTING ALUMINUM BRIDGE RAILING TO REMAIN. SPACE FENCING POSTS TO CLEAR EXISTING RAILING POST, EXISTING FENCE ANCHOR BOLTS AND PARAPET CONTROL JOINT LOCATIONS. DIMENSIONS SHOWN ARE APPROXIMATE AND SHALL BE VERIFIED BY CONTRACTOR PRIOR TO FENCE FABRICATION.
3. EXISTING FENCE AND BASE PLATES ARE TO BE REMOVED. EXISTING ANCHOR BOLTS MAY BE CUT-OFF OR REMOVED. IF ANCHOR BOLTS ARE REMOVED THE HOLES SHALL BE FILLED WITH NON-SHRINK GROUT.
4. REPAIR APPROXIMATE 8 SQUARE FEET OF PARAPET PER ITEM 519 - PATCHING CONCRETE STRUCTURES. 2 x 8 = 16 SQUARE FT. ARE INCLUDED IN THE ESTIMATED QUANTITIES TO OFFSET DAMAGE INCREASE BETWEEN SURVEY AND REPAIR.

DESIGNED	SJA	CHECKED	XAC
DRAWN	SJA	REVISED	
REVIEWED	DWL	STRUCTURE FILE NUMBER	3106934
DATE	2/20/2017		
DESIGN AGENCY	BURGESS & NIPLE 312 PLUM ST. CINCINNATI OH		
RAILING DETAILS 1			
HAM-71-1149 EUCLID RD. OVER IR-71			
HAM-IR71-8.42		PID No. 91826	
2 / 3		426 441	

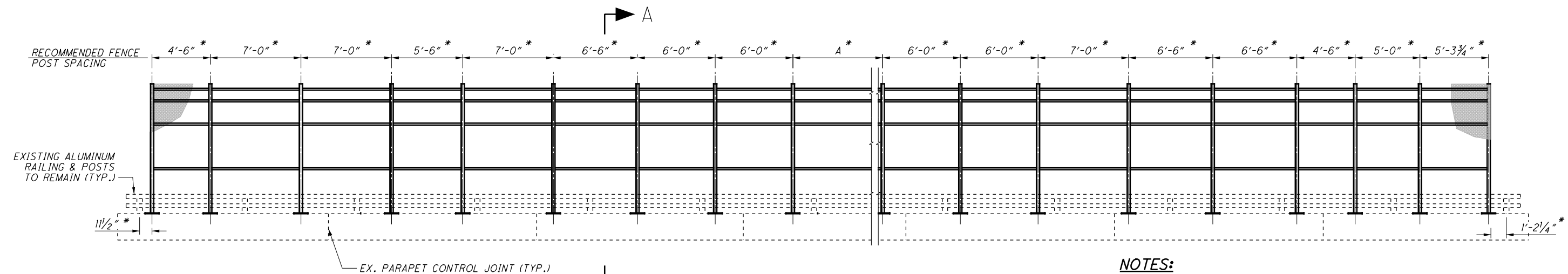
P:\PR54704\HAM\91826\Design\Structures\HAM071_1149C\Sheets\071_1149C_SAO02.dgn Sheet 10/26/2017 8:41:10 AM compton



SOUTH PARAPET RAILING PLAN



SECTION A-A
(12' CURVED FENCE)



SOUTH PARAPET RAILING ELEVATION
(INSIDE FENCE)

LEGEND:

* = CONTRACTOR MAY USE A DIFFERENT FENCE POST SPACING AS LONG AS THE MAXIMUM SPACING IS 7'-0" AND THE BASE PLATES CLEAR THE EXISTING RAILING POSTS BY AT LEAST 2" IN ACCORDANCE WITH STANDARD DRAWING VPF-1-90.

EX. = EXISTING

SPA. = SPACES

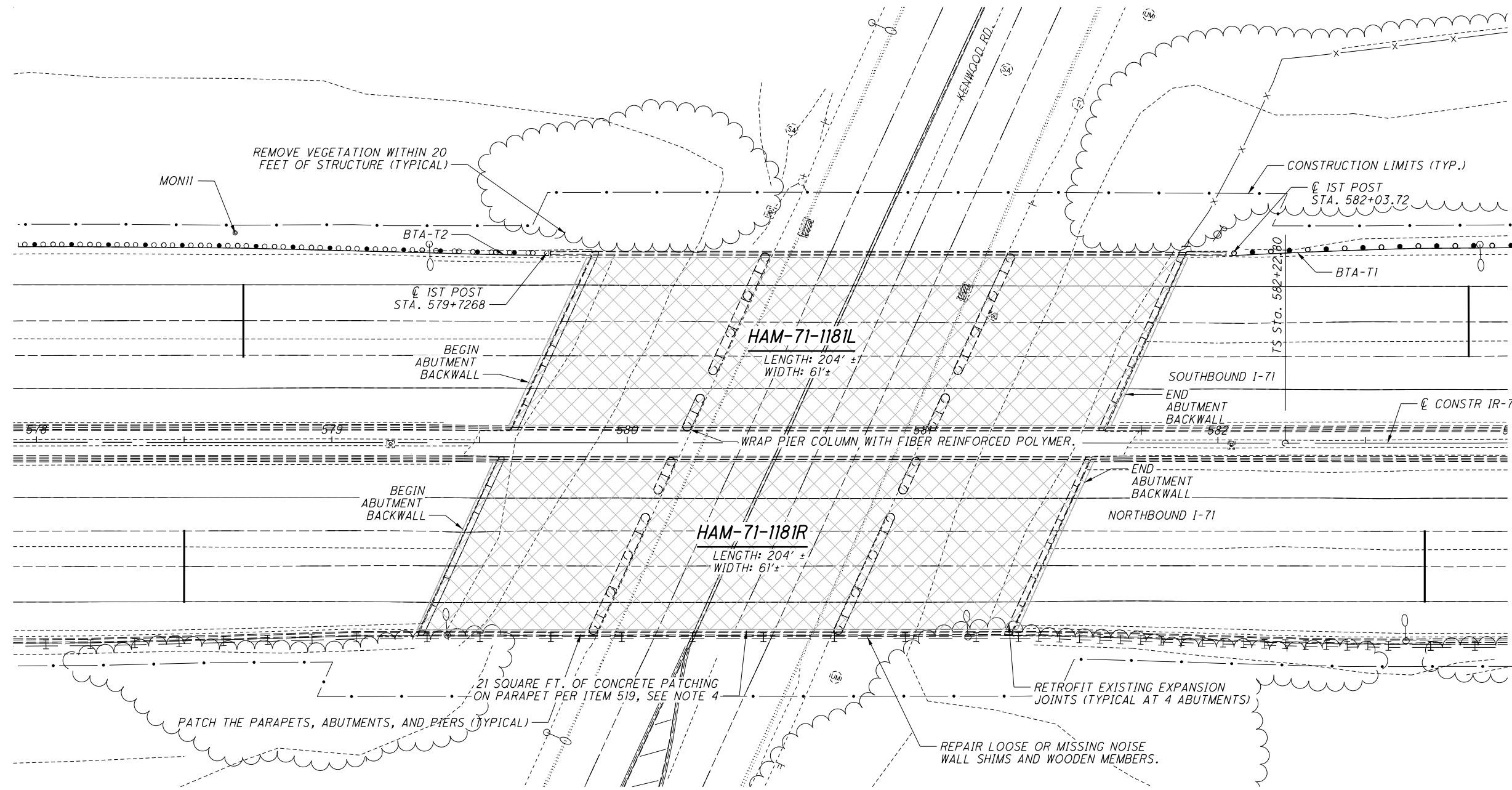
A = (2 @ 7'-0", 3 @ 6'-0", 2 @ 7'-0", 6'-0", 2 @ 7'-0", 3 @ 6'-0", 2 @ 7'-0", 6'-0", 7'-0", 2 @ 6'-6", 5'-6", 3 @ 7'-0", 5'-0", 2 @ 7'-0", 6'-6", 6'-0", 5'-6")

NOTES:

- SEE STANDARD DRAWING VPF-1-90 FOR VANDAL PROTECTION FENCE DETAILS.
- EXISTING ALUMINUM BRIDGE RAILING TO REMAIN. SPACE FENCING POSTS TO CLEAR EXISTING RAILING POST, EXISTING FENCE ANCHOR BOLTS AND PARAPET CONTROL JOINT LOCATIONS. DIMENSIONS SHOWN ARE APPROXIMATE AND SHALL BE VERIFIED BY CONTRACTOR PRIOR TO FENCE FABRICATION.
- EXISTING FENCE AND BASE PLATES ARE TO BE REMOVED. EXISTING ANCHOR BOLTS MAY BE CUT-OFF OR REMOVED. IF ANCHOR BOLTS ARE REMOVED THE HOLES SHALL BE FILLED WITH NON-SHRINK GROUT.
- REPAIR APPROXIMATE 2 SQUARE FEET OF PARAPET PER ITEM 519 - PATCHING CONCRETE STRUCTURES. 2 x 2 = 4 SQUARE FT. ARE INCLUDED IN THE ESTIMATED QUANTITIES TO OFFSET DAMAGE INCREASE BETWEEN SURVEY AND REPAIR.

DESIGNED XAC		DRAWN XAC		REVIEWED DWL		DATE 2/20/2017		DESIGN AGENCY BURGESS & NIPLE	
CHECKED SJA		REVISED		STRUCTURE FILE NUMBER 3106934		312 PLUM ST. CINCINNATI OH			
RAILING DETAILS 2					HAM-IR71-8.42				
EUCLID RD. OVER IR-71					PID No. 91826				
					3 / 3				
					427 441				

P:\PR54704\HAM\91826\Design\Structures\HAM071_1181L_SG001.dgn Sheet 10/26/2017 8:41:14 AM compton



PLAN

LEGEND

SEAL THE WEARING SURFACE WITH SOLUBLE REACTIVE SILICATE

FOR BENCHMARKS AND SURVEY CONTROL POINTS
SEE SHEET 7.

BTA-T1 = MGS BRIDGE TERMINAL ASSEMBLY TYPE 1 (SEE ROADWAY PLANS)
BTA-T2 = MGS BRIDGE TERMINAL ASSEMBLY TYPE 2 (SEE ROADWAY PLANS)

EXISTING STRUCTURE

TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
 SPANS: 58'-0", 83'-0", 58'-0"
 ROADWAY: 57'-0"± F/F PARAPET
 LOADING: C.F. = 2000 (57)
 SKEW: 24°42'43" L.F.
 APPROACH SLABS: AS-1-54 (25'-0" LONG)
 ALIGNMENT: TANGENT
 CROWN: 0.016
 STRUCTURAL FILE NUMBER: 3106969/3106977
 DATE BUILT: 1967

PROPOSED STRUCTURE

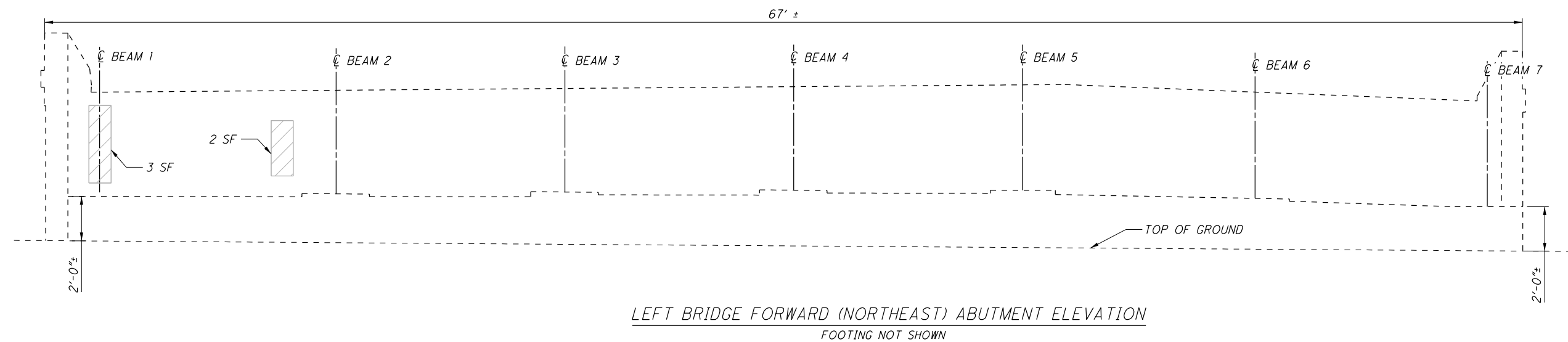
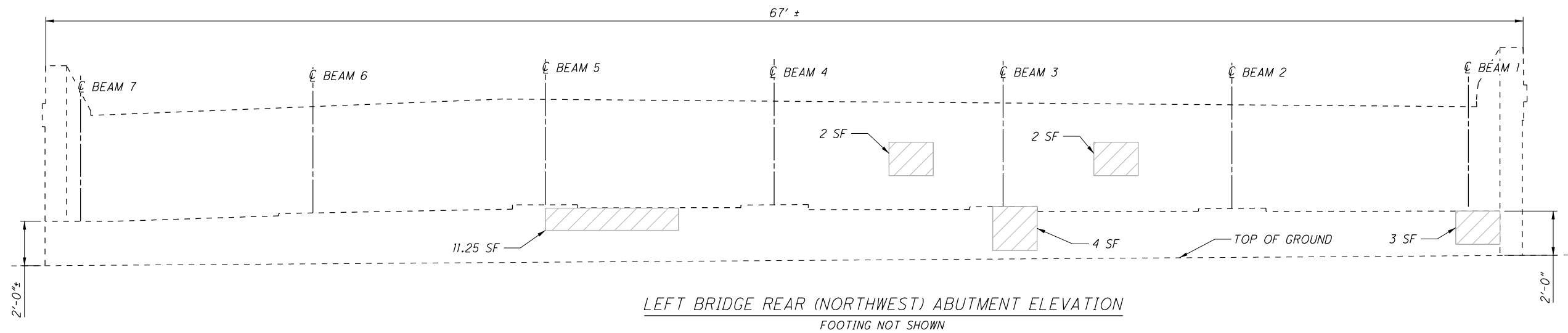
TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
 SPANS: 58'-0", 83'-0", 58'-0"
 ROADWAY: 57'-0"± F/F PARAPET
 LOADING: C.F. = 2000 (57)
 SKEW: 24°42'43" L.F.
 APPROACH SLABS: AS-1-54 (25'-0" LONG)
 ALIGNMENT: TANGENT
 CROWN: 0.016
 COORDINATES: LATITUDE 39°11'41" N
 LONGITUDE 84°22'33" W

PROPOSED WORK:

1. SEAL THE WEARING SURFACE WITH SOLUBLE REACTIVE SILICATE PER ITEM 512.
2. RETROFIT EXISTING EXPANSION JOINTS TO ACCOMMODATE A NEW PREFORMED ARMORLESS JOINT SEAL. GRIND STEEL AND CONCRETE AREAS OF EXPANSION JOINTS TO REMOVE "HIGH" AREAS.
3. PAINT ALL SUPERSTRUCTURE STEEL PER ITEM 514 OZEU SPECIFICATIONS. COLOR TO BE FEDERAL COLOR NUMBER 14277.
4. PATCH THE EXISTING PARAPETS, ABUTMENTS, AND PIERS WITH 519 PATCHING AS SHOWN IN THE PLANS. FOR PARAPET, 2 x 21 = 42 SQUARE FT. ARE INCLUDED IN THE ESTIMATED QUANTITIES TO OFFSET THE DAMAGE INCREASE BETWEEN SURVEY AND REPAIR.
5. WRAP THE SOUTHERNMOST PIER COLUMN OF THE REAR PIER ON THE LEFT BRIDGE WITH FIBER REINFORCED POLYMER.
6. REMOVE EXISTING SEALER AND RESEAL THE THE EXPOSED CONCRETE OF ABUTMENTS, PIERS, PARAPETS AND DECK EDGES TO THE TYPICAL LIMITS SHOWN IN PLANS WITH EPOXY URETHANE SEALER, FEDERAL COLOR NUMBER 17778.
7. REPAIR LOOSE OR MISSING NOISE WALL SHIMS AND WOODEN MEMBERS.
8. REMOVE VEGETATION WITHIN 20 FEET OF STRUCTURE.
9. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH MAINTENANCE OF TRAFFIC PLANS AND NOTES.

DESIGNED	XAC	CHECKED	SJA
DRAWN	XAC	REVISED	
REVIEWED	DWL	DATE	2/20/2017
STRUCTURE FILE NUMBER	3106969/3106977		
DESIGN AGENCY	BURGESS & NIPLE		
312 PLUM ST. CINCINNATI, OH			
GENERAL PLAN			
HAM-71-1181L/R			
IR-71 OVER KENWOOD ROAD			
HAM-IR71-8.42		PID No. 91826	
1/6		428 441	

P:\PR54704\HAM\91826\Design\Structures\HAM071_1181L\Sheets\071_1181L_SRO01.dgn Sheet 10/26/2017 8:41:17 AM compton



LEGEND:

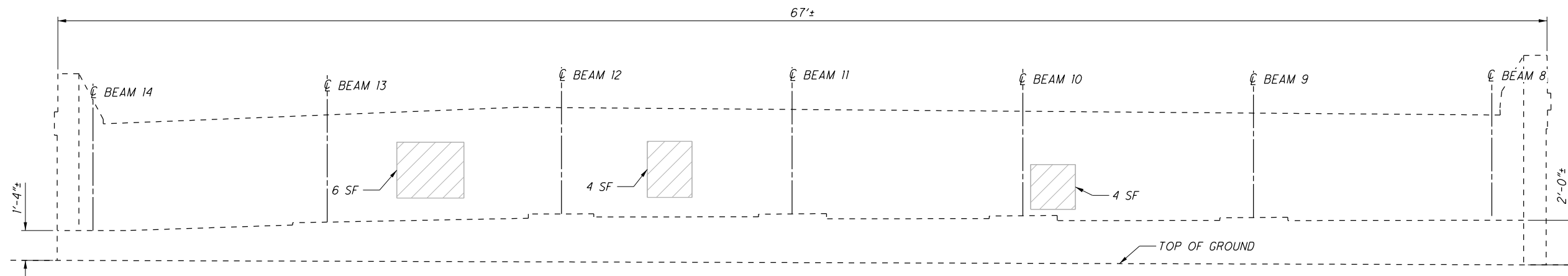
SF = SQUARE FEET
 = APPROXIMATE LIMITS OF CONCRETE PATCHING

NOTES:

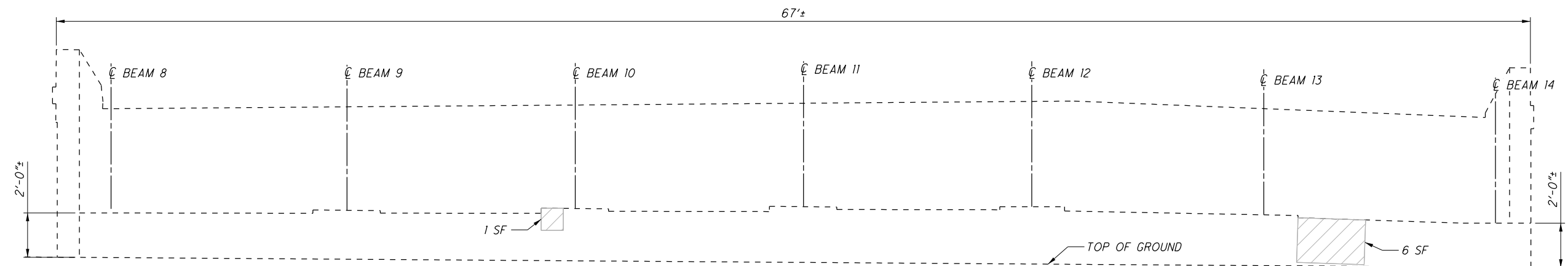
1. REPAIR APPROXIMATELY 27.25 SQUARE FEET OF DELAMINATED AND SPALLING AREAS OF THE ABUTMENTS BY PATCHING CONCRETE IN ACCORDANCE WITH ITEM 519 SPECIFICATIONS. 2 x 27.25 = 54.5 SQUARE FT. ARE INCLUDED IN THE ESTIMATED QUANTITIES TO OFFSET THE DAMAGE INCREASE BETWEEN SURVEY AND REPAIR.
2. ABUTMENT ELEVATIONS ARE SHOWN WITH APPROXIMATE PATCHING BASED ON SOUNDINGS.

HAM-IR71-8.42	ABUTMENT PATCHING ELEVATIONS - LEFT BRIDGE	DESIGN AGENCY BURGESS & NIPLÉ 312 PLUM ST. CINCINNATI OH
PID No. 91826	HAM-71-1181L/R IR-71 OVER KENWOOD ROAD	REVIEWED DATE DWL 2/20/2017 STRUCTURE FILE NUMBER 3106969
2 / 6	DRAWN SJA REVISÉ	DESIGNED SJA CHECKED XAC
429 441		

P:\PR54704\HAM\91826\Design\Structures\HAM071_1181\Sheets\071_1181L_SRO02.dgn Sheet 10/26/2017 8:41:19 AM compton



RIGHT BRIDGE REAR (SOUTHWEST) ABUTMENT ELEVATION
FOOTING NOT SHOWN



RIGHT BRIDGE FORWARD (NORTHEAST) ABUTMENT ELEVATION
FOOTING NOT SHOWN

LEGEND:

SF = SQUARE FEET

 = APPROXIMATE LIMITS OF CONCRETE PATCHING

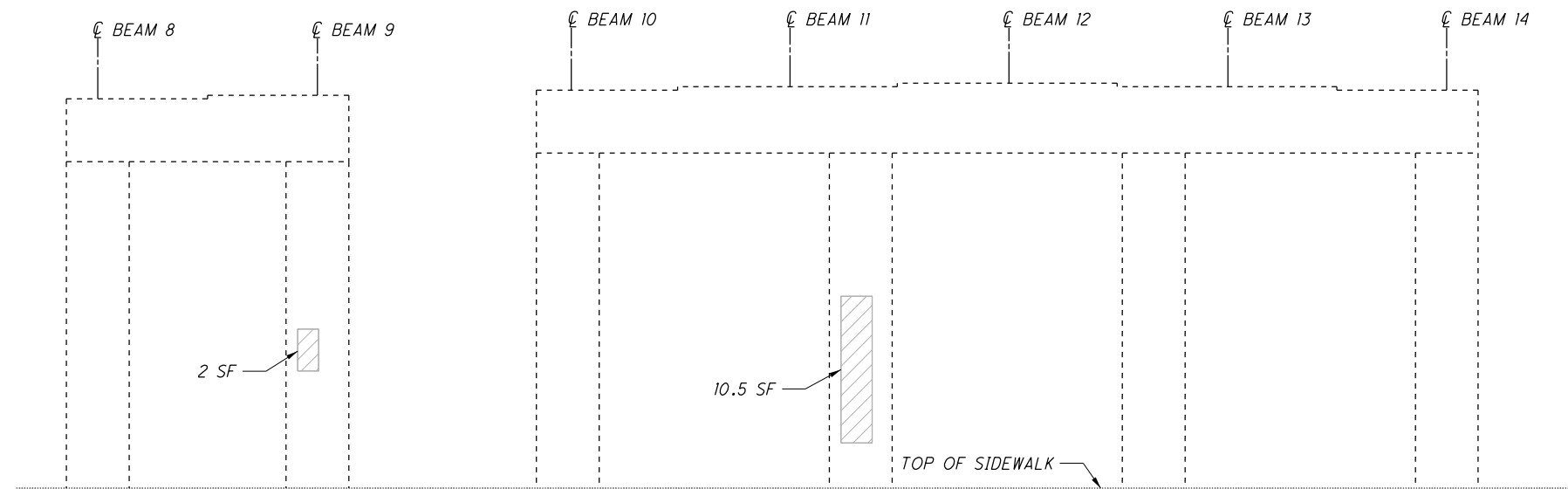
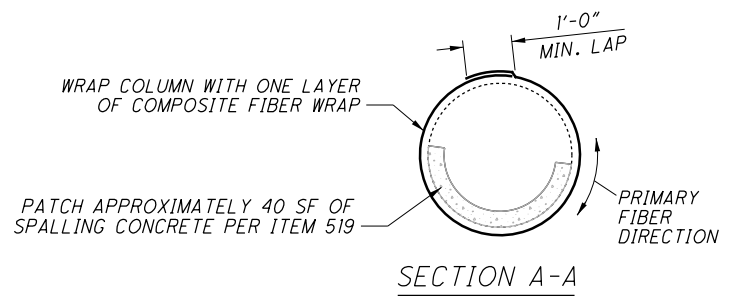
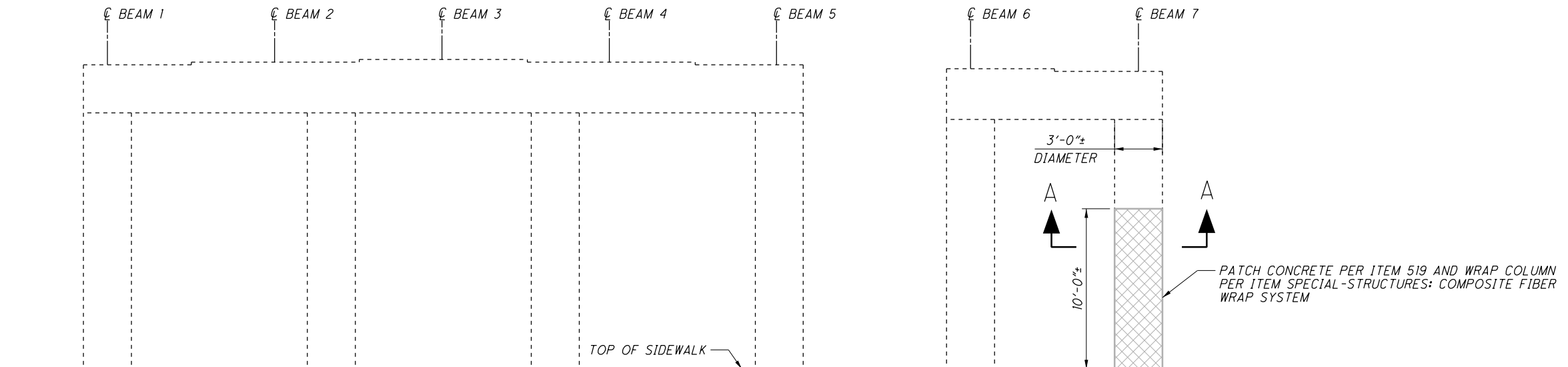
NOTES:

- REPAIR APPROXIMATELY 21 SQUARE FEET OF DELAMINATED AND SPALLING AREAS OF THE ABUTMENTS BY PATCHING CONCRETE IN ACCORDANCE WITH ITEM 519 SPECIFICATIONS. 2 x 21 = 42 SQUARE FT. ARE INCLUDED IN THE ESTIMATED QUANTITIES TO OFFSET THE DAMAGE INCREASE BETWEEN SURVEY AND REPAIR.
- ABUTMENT ELEVATIONS ARE SHOWN WITH APPROXIMATE PATCHING BASED ON SOUNDINGS.



DESIGNED SJA		DRAWN SJA		REVIEWED DWL		DATE 2/20/2017		DESIGN AGENCY BURGESS & NIPLÉ	
CHECKED XAC		REVISED		STRUCTURE FILE NUMBER 3106977		3106977		312 PLUM ST. CINCINNATI OH	
HAM-IR71-8.42					ABUTMENT PATCHING ELEVATIONS - RIGHT BRIDGE				
PID No. 91826					HAM-71-118 IR				
					IR-71 OVER KENWOOD ROAD				
3 / 6									
430		441							

P:\PR54704\HAM\91826\Design\Structures\HAM071_1181L\Sheets\071_1181L_S1001.dgn Sheet 10/26/2017 8:41:20 AM compton



LEGEND:

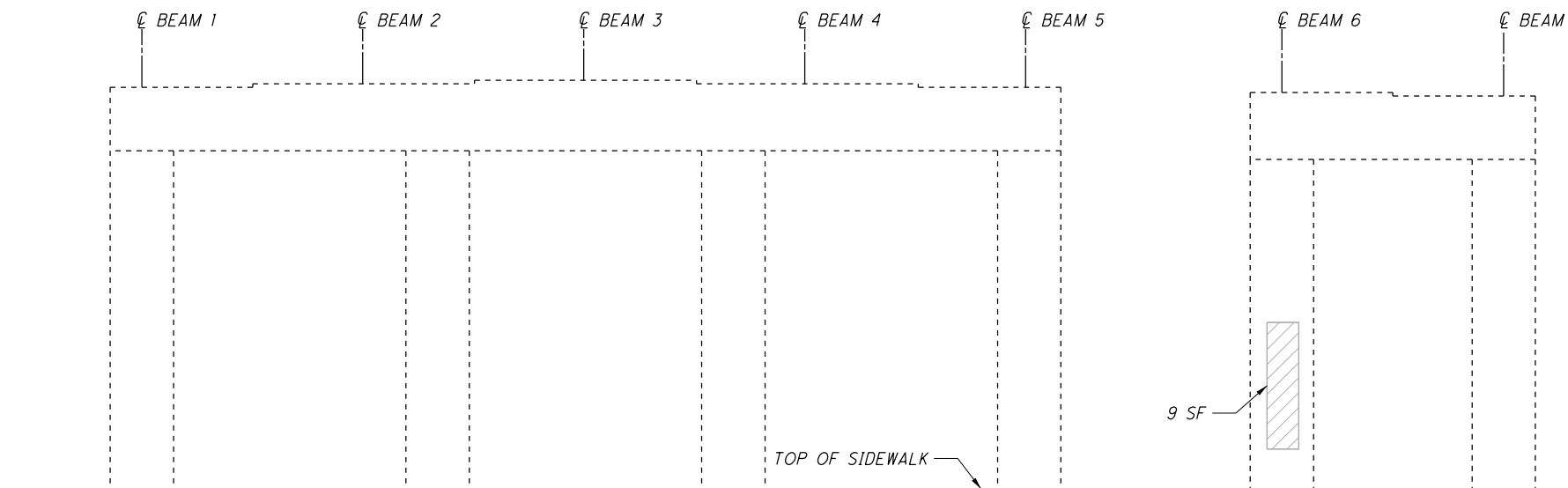
- SF = SQUARE FEET
- = APPROXIMATE LIMITS OF CONCRETE PATCHING
- = APPROXIMATE LIMITS OF CONCRETE PATCHING AND COMPOSITE FIBER WRAP

NOTES:

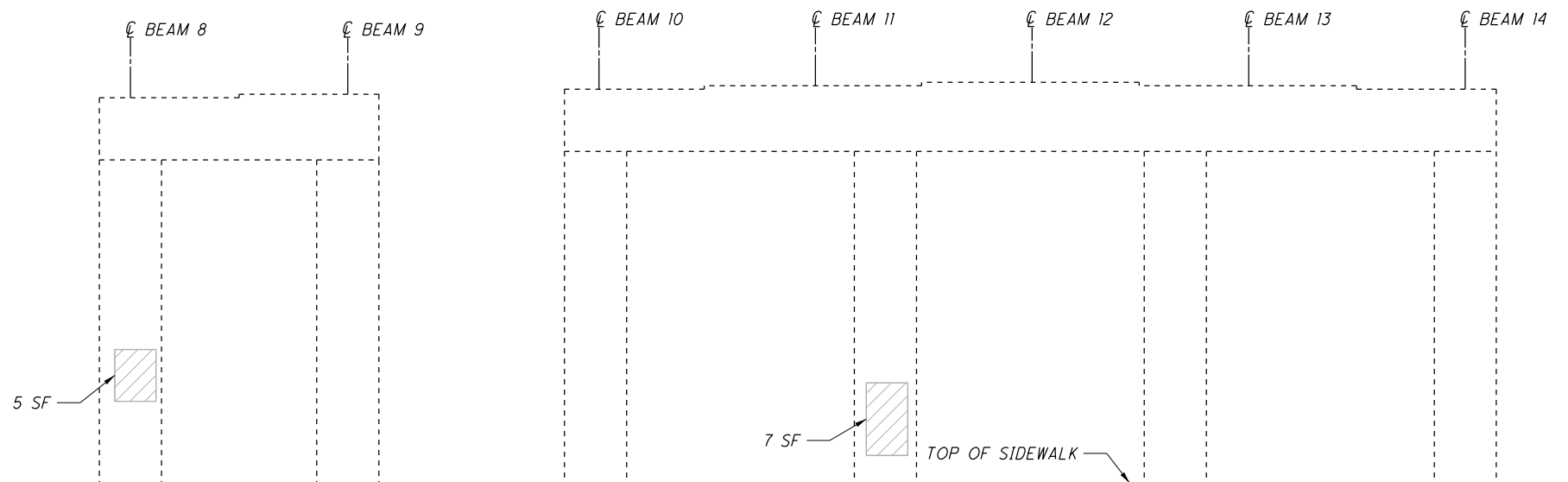
1. REPAIR APPROXIMATELY 52.5 SQUARE FEET OF DELAMINATED AND SPALLING AREAS OF THE PIERS BY PATCHING CONCRETE IN ACCORDANCE WITH ITEM 519 SPECIFICATIONS. 2 x 52.5 = 105 SQUARE FT. ARE INCLUDED IN THE ESTIMATED QUANTITIES TO OFFSET THE DAMAGE INCREASE BETWEEN SURVEY AND REPAIR.
2. PIER ELEVATIONS ARE SHOWN WITH APPROXIMATE PATCHING BASED ON SOUNDINGS.

HAM-IR71-8.42	PIER 1 ELEVATION	DESIGN AGENCY BURGESS & NIPLE 312 PLUM ST. CINCINNATI OH
PID No. 91826	HAM-71-1181L/R IR-71 OVER KENWOOD ROAD	DESIGNED SJA CHECKED XAC
4 / 6	DRAWN SJA REVISED	REVIEWED DWL STRUCTURE FILE NUMBER 310699/3106977
431 441	DATE 2/20/2017	DATE 2/20/2017

P:\PR54704\HAM\91826\Design\Structures\HAM071_1181L\Sheets\071_1181L_S1002.dgn_Sheet 10/26/2017 8:41:22 AM compton



PIER 2 LEFT BRIDGE ELEVATION
FOOTING NOT SHOWN



PIER 2 RIGHT BRIDGE ELEVATION
FOOTING NOT SHOWN

LEGEND:

SF = SQUARE FEET

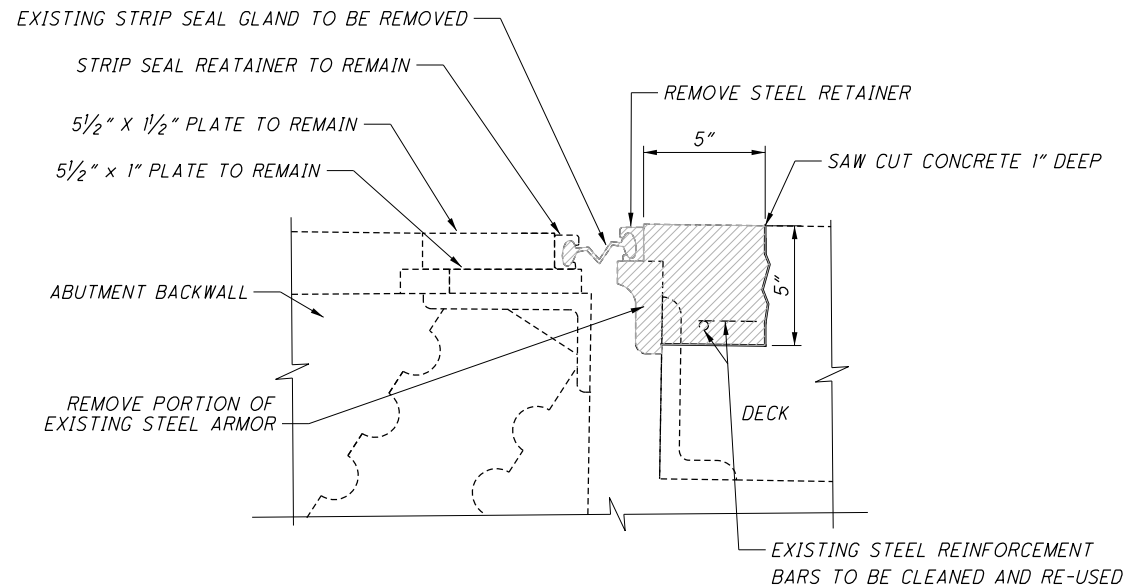
 = APPROXIMATE LIMITS OF CONCRETE PATCHING

NOTES:

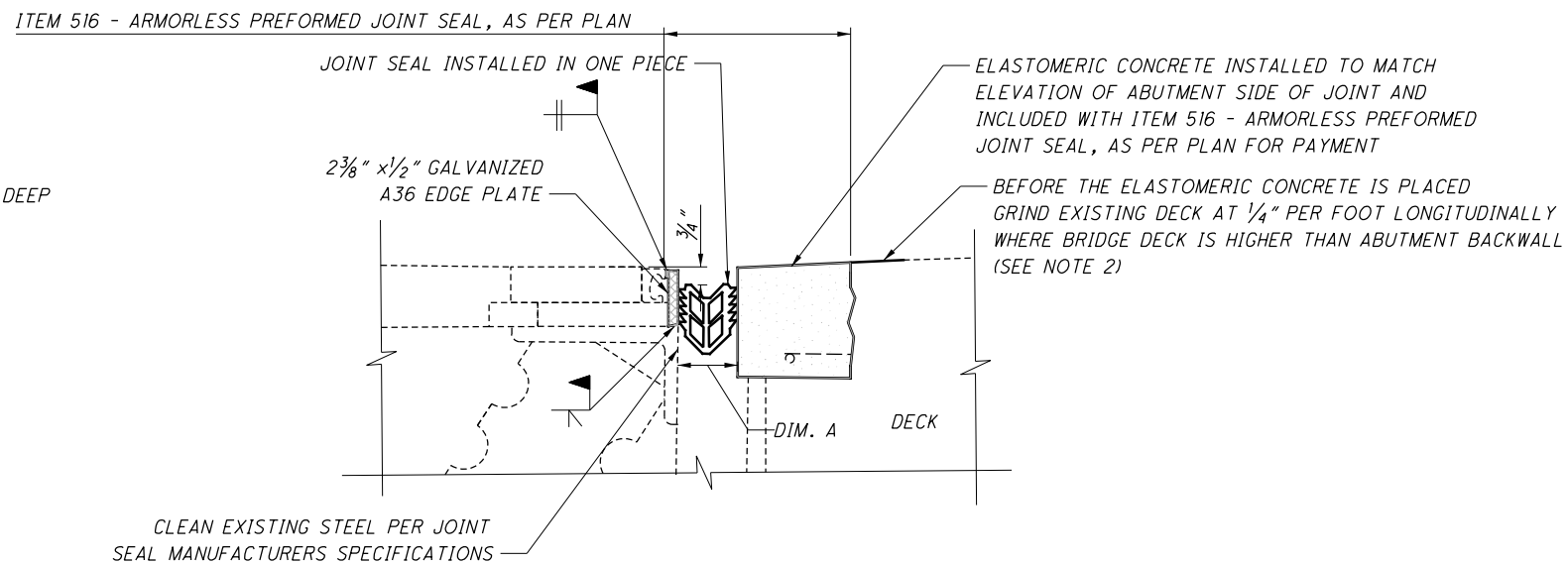
- REPAIR APPROXIMATELY 21 SQUARE FEET OF DELAMINATED AND SPALLING AREAS OF THE PIERS BY PATCHING CONCRETE IN ACCORDANCE WITH ITEM 519 SPECIFICATIONS. 2 x 21 = 42 SQUARE FT. ARE INCLUDED IN THE ESTIMATED QUANTITIES TO OFFSET DAMAGE INCREASE BETWEEN SURVEY AND REPAIR.
- PIER ELEVATIONS ARE SHOWN WITH APPROXIMATE PATCHING BASED ON SOUNDINGS.

DESIGNED SJA		DRAWN SJA		REVIEWED DWL		DATE 2/20/2017		DESIGN AGENCY BURGESS & NIPLE	
CHECKED XAC		REVISED		STRUCTURE FILE NUMBER 3106969/3106977		312 PLUM ST. CINCINNATI OH			
PIER 2 ELEVATION									
HAM-71-1181L/R IR-71 OVER KENWOOD ROAD									
HAM-IR71-8.42		PID No. 91826							
5 / 6									
432 441									

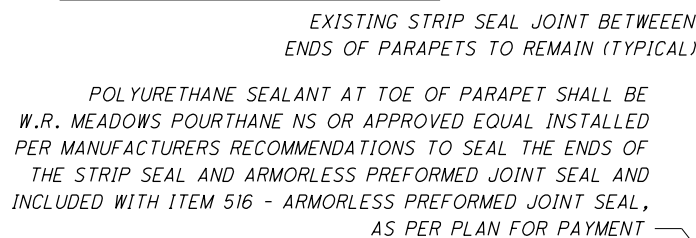
P:\PR54704\HAM\91826\Design\Structures\HAM071_1181L\Sheets\071_1181L_SX001.dgn Sheet 10/26/2017 8:41:24 AM compton



REMOVAL DETAIL



EXPANSION JOINT SECTION



PARAPET SECTION

EXPANSION JOINT TABLE - DIMENSION A

TEMPERATURE	REAR ABUT.	FWD. ABUT.
30°	2 7/8 "	2 11/16"
40°	2 13/16"	2 5/8 "
50°	2 11/16"	2 9/16"
60°	2 5/8 "	2 9/16"
70°	2 1/2 "	2 1/2 "
80°	2 3/8 "	2 7/16"
90°	2 5/16"	2 7/16"

ITEM 516 - ARMORLESS PREFORMED JOINT SEAL, AS PER PLAN:
 INSTALL THE ARMORLESS PREFORMED JOINT SEAL TOE TO TOE OF PARAPETS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND UNDER THE SUPERVISION OF THE MANUFACTURER'S DESIGNATED REPRESENTATIVE.

SELECT THE ARMORLESS PREFORMED JOINT SEAL FROM ONE OF THE MANUFACTURERS LISTED BELOW:

WATSON BOWMAN ACME CORP.
 95 PINEVIEW DRIVE
 AMHERST, NY 14228-2121
 PHONE: (716) 691-7566
 FAX: (716) 691-9239
 - JEENE SERIES 65W (MAX. MOVEMENT RATING: 2 1/2")
 - WABO CRETE ELASTOMERIC CONCRETE

D.S. BROWN COMPANY
 300 EAST CHERRY STREET
 NORTH BALTIMORE, OH 45872-1227
 PHONE: (419) 257-3561
 FAX: (419) 257-2200
 - J SERIES SEALING SYSTEMS J-250 (MAX. MOVEMENT RATING: 2 1/2")
 - DELCRETE ELASTOMERIC CONCRETE

THE SEAL, ELASTOMERIC CONCRETE AND ADHESIVE ARE AN INTEGRAL JOINT SYSTEM THAT SHALL BE DESIGNED AND SUPPLIED BY THE SAME MANUFACTURER.



ITEM 516 - ARMORLESS PREFORMED JOINT SEAL, AS PER PLAN (CONT.):
 SET THE TOP OF THE JOINT SEAL 3/4" BELOW ROADWAY SURFACE.

SUBMIT THE JOINT SEAL INSTALLATION PROCEDURES TO THE ENGINEER AT LEAST SEVEN (7) DAYS BEFORE CONSTRUCTION BEGINS. THE DEPARTMENT'S ACCEPTANCE IS NOT REQUIRED.

THE DEPARTMENT WILL MEASURE THE ARMORLESS PREFORMED JOINT SEAL BY THE NUMBER OF FEET HORIZONTALLY ALONG THE JOINT CENTERLINE.

THE DEPARTMENT WILL INCLUDE ALL MATERIALS, LABOR, EQUIPMENT, SURFACE PREPARATIONS, TOOLS AND INCIDENTALS NEEDED TO COMPLETE THE WORK DESCRIBED ABOVE IN THE CONTRACT PRICE FOR ITEM 516 - ARMORLESS PREFORMED JOINT SEAL, AS PER PLAN.

LEGEND:

-  = REMOVALS
-  = ELASTOMERIC CONCRETE

NOTES:

1. THE COST OF ALL LABOR, EQUIPMENT AND MATERIALS REQUIRED TO REMOVE PORTIONS OF THE EXISTING EXPANSION JOINTS AND BRIDGE DECK SHALL BE INCLUDED WITH THE UNIT PRICE FOR ITEM 202 - REMOVAL MISC.: EXPANSION JOINT REMOVAL (LF).
2. THE COST OF ALL LABOR, EQUIPMENT AND MATERIALS NEEDED TO GRIND EXISTING BRIDGE DECK SHALL BE INCLUDED WITH ITEM 257 - DIAMOND GRINDING PORTLAND CEMENT CONCRETE PAVEMENT.

EXPANSION JOINT DETAILS

HAM-71-1181L/R
 IR-71 OVER KENWOOD ROAD

DESIGN AGENCY
 BURGESS & NIPLE
 312 PLUM ST. CINCINNATI OH

REVIEWED DATE 2/20/2017
 DWL STRUCTURE FILE NUMBER 310699/3106977

DRAWN SJA
 CHECKED XXX

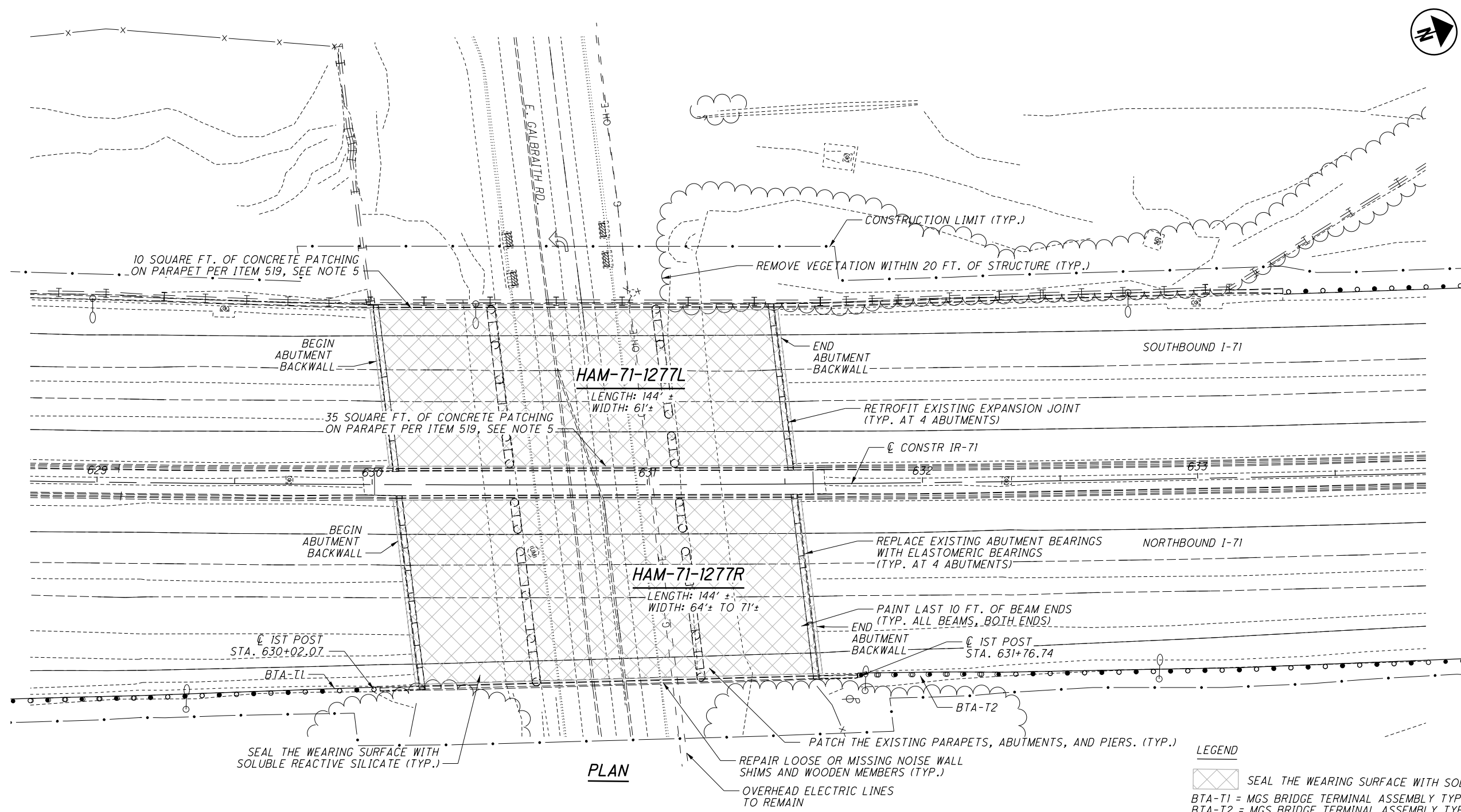
DESIGNED SJA
 CHECKED XXX

HAM-IR71-8.42
 PID No. 91826

6 / 6

433
 441

P:\PR54704\HAM\91826\Design\Structures\HAM071\277L\277L.dgn Sheet 10/26/2017 8:41:28 AM compton



PLAN

LEGEND

- SEAL THE WEARING SURFACE WITH SOLUBLE REACTIVE SILICATE
- BTA-T1 = MGS BRIDGE TERMINAL ASSEMBLY TYPE 1 (SEE ROADWAY PLANS)
- BTA-T2 = MGS BRIDGE TERMINAL ASSEMBLY TYPE 2 (SEE ROADWAY PLANS)

EXISTING STRUCTURE
TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 42'-0", 60'-0", 42'-0"
ROADWAY: 57'-0"± F/F PARAPET SOUTH BOUND VARIES 63'-6" TO 67'-1" NORTH BOUND
LOADING: C.F. = 2000 (57)
SKEW: 6°50'30" R.F.
APPROACH SLABS: AS-1-81 (25'-0" LONG)
ALIGNMENT: 0°28' CURVE LEFT TO STRAIGHT
CROWN: 0.016
STRUCTURAL FILE NUMBER: 3107027/3107051
DATE BUILT: 1968

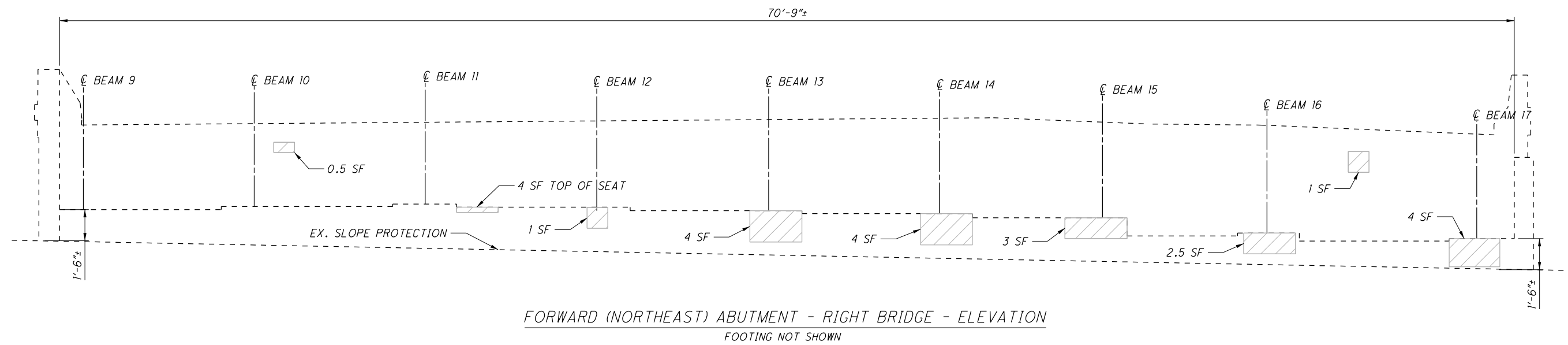
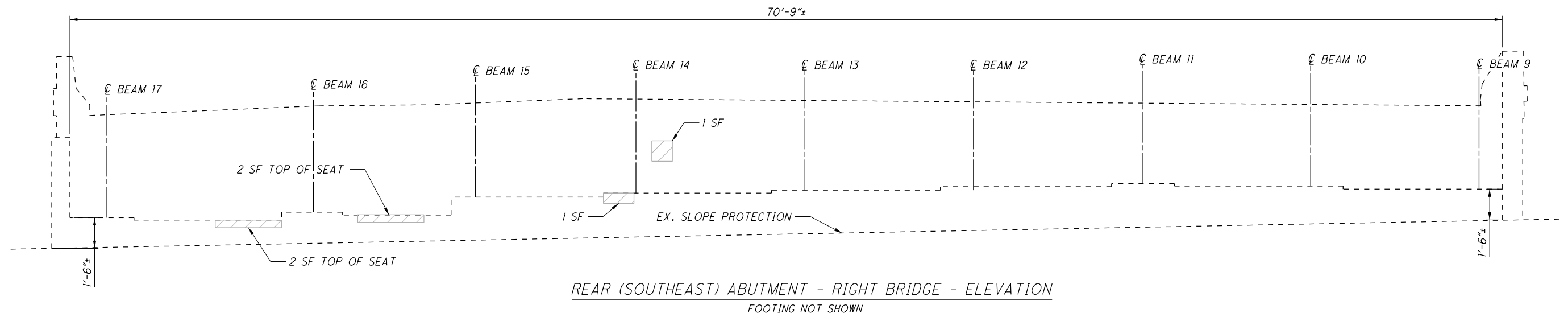
PROPOSED STRUCTURE
TYPE: CONTINUOUS STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE
SPANS: 42'-0", 60'-0", 42'-0"
ROADWAY: 57'-0"± F/F PARAPET SOUTH BOUND VARIES 63'-6" TO 67'-1" NORTH BOUND
LOADING: C.F. = 2000 (57)
SKEW: 6°50'30" R.F.
APPROACH SLABS: AS-1-81 (25'-0" LONG)
ALIGNMENT: 0°28' CURVE LEFT TO STRAIGHT
CROWN: 0.016
COORDINATES: LATITUDE 39°12'20" N LONGITUDE 84°22'20" W

PROPOSED WORK:

1. SEAL THE LATEX CONCRETE WEARING SURFACE WITH SOLUBLE REACTIVE SILICATE PER ITEM 512.
2. RETROFIT EXISTING EXPANSION JOINT TO ACCOMMODATE A NEW PREFORMED ARMORLESS JOINT SEAL. GRIND STEEL AND CONCRETE AREAS OF EXPANSION JOINTS TO REMOVE "HIGH" AREAS.
3. REPLACE THE EXISTING ABUTMENT BEARINGS WITH NEW ELASTOMERIC BEARINGS.
4. PAINT THE LAST 10 FEET OF ALL BEAM ENDS PER CMS 514 OZEU SPECIFICATIONS. COLOR TO MATCH EXISTING PAINT.
5. PATCH THE EXISTING PARAPETS, ABUTMENTS, AND PIERS WITH ITEM 519 PATCHING AS NOTED IN PLANS. FOR PARAPETS, 2 x 45 = 90 SQUARE FT. ARE INCLUDED IN THE ESTIMATED QUANTITIES TO OFFSET THE DAMAGE INCREASE BETWEEN SURVEY AND REPAIR.
6. REPAIR LOOSE OR MISSING NOISE WALL SHIMS AND WOODEN MEMBERS PER ITEM SPECIAL - NOISE BARRIER: REPAIR LOOSE OR MISSING NOISE WALL SHIMS AND WOODEN MEMBERS (EACH).
7. REMOVE VEGETATION WITHIN 20 FEET OF STRUCTURE.
8. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH MAINTENANCE OF TRAFFIC PLANS AND NOTES.

GENERAL PLAN	IR-71 OVER GALBRAITH ROAD	HAM-71-1277L/R	PID No. 91826
DESIGNED XAC CHECKED SJA	DRAWN XAC REVISED	REVIEWED DWL STRUCTURE FILE NUMBER 3107027/3107051	DATE 2/20/2017
		DESIGN AGENCY BURGESS & NIPLÉ	312 PLUM ST. CINCINNATI, OH

P:\PR54704\HAM\91826\Design\Structures\HAM071_1277L_Sheets\071_1277L_SR001.dgn Sheet 10/26/2017 8:41:31 AM compton



LEGEND:

SF = SQUARE FEET

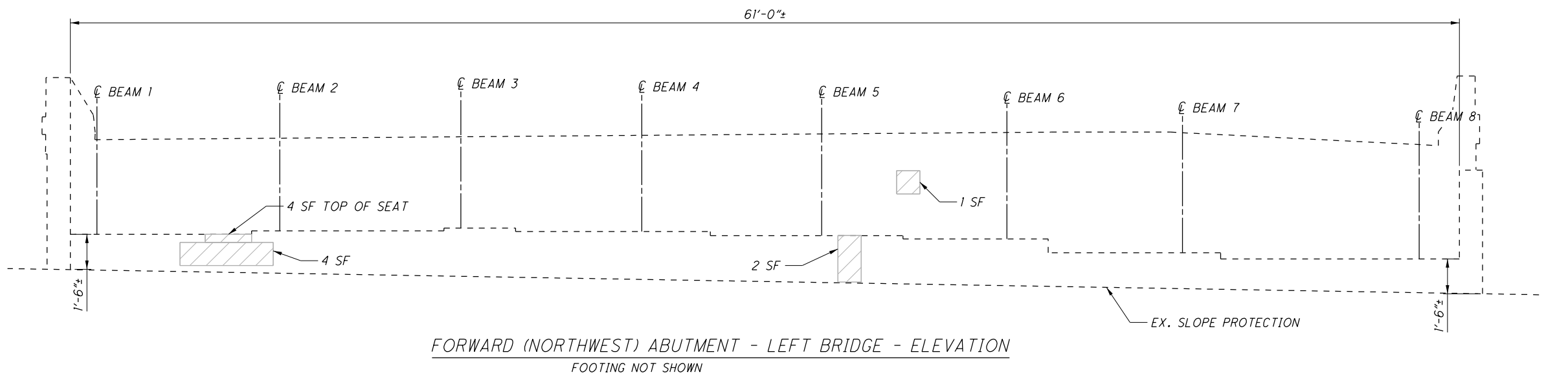
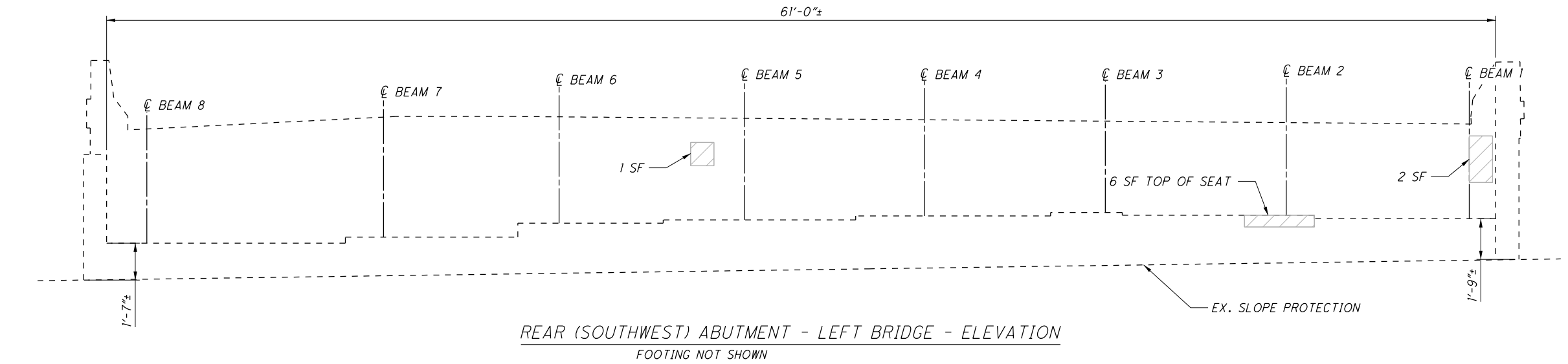
= APPROXIMATE LIMITS OF CONCRETE PATCHING

NOTES:

1. REPAIR APPROXIMATELY 30 SQUARE FEET OF DELAMINATED AND SPALLING AREAS OF THE ABUTMENTS BY PATCHING CONCRETE IN ACCORDANCE WITH ITEM 519 SPECIFICATIONS. 2 x 30 = 60 SQUARE FT. ARE INCLUDED IN THE ESTIMATED QUANTITIES TO OFFSET DAMAGE INCREASE BETWEEN SURVEY AND REPAIR.
2. ABUTMENT ELEVATIONS ARE SHOWN WITH APPROXIMATE PATCHING BASED ON SOUNDINGS.

HAM-IR71-8.42 PID No. 91826	ABUTMENT PATCHING ELEVATIONS - RIGHT BRIDGE HAM-71-1277R IR-71 OVER GALBRAITH ROAD	DESIGNED SJA CHECKED XAC	DRAWN SJA REVISED	REVIEWED DWL STRUCTURE FILE NUMBER 3107051	DATE 2/20/2017	DESIGN AGENCY BURGESS & NIPLÉ 312 PLUM ST. CINCINNATI OH
2 / 8	435 441					

P:\PR54704\HAM\91826\Design\Structures\HAM071_1277L\Sheets\071_1277L_SR002.dgn Sheet 10/26/2017 8:41:33 AM compton



LEGEND:

SF = SQUARE FEET

 = APPROXIMATE LIMITS OF CONCRETE PATCHING

NOTES:

1. REPAIR APPROXIMATELY 20 SQUARE FEET OF DELAMINATED AND SPALLING AREAS OF THE ABUTMENTS BY PATCHING CONCRETE IN ACCORDANCE WITH ITEM 519 SPECIFICATIONS. 2 x 20 = 40 SQUARE FT. ARE INCLUDED IN THE ESTIMATED QUANTITIES TO OFFSET DAMAGE INCREASE BETWEEN SURVEY AND REPAIR.
2. ABUTMENT ELEVATIONS ARE SHOWN WITH APPROXIMATE PATCHING BASED ON SOUNDINGS.

DESIGN AGENCY BURGESS & NIPLE 312 PLUM ST. CINCINNATI OH	
REVIEWED DWL	DATE 2/20/2017
DRAWN SJA	STRUCTURE FILE NUMBER 3107027
DESIGNED SJA	CHECKED XAC
ABUTMENT PATCHING ELEVATIONS - LEFT BRIDGE	
HAM-IR71-8.42	
HAM-71-1277L	
IR-71 OVER GALBRAITH ROAD	
PID No. 91826	
3 / 8	
436	
441	

LAMINATED ELASTOMERIC BEARINGS

LOCATION	BEARING DIMENSIONS							STEEL LOAD PLATES	REACTIONS	MAX. SERVICE	
	L	W	t _i	t _e	t _L	T	N	LENGTH x WIDTH x THICKNESS	DL	LL	DESIGN LOAD
REAR ABUTMENT (EXP.)	0'-8"	1'-0"	0.375"	0.26"	0.0747"	2.51"	5	TOP = 0'-11" x 1'-0 1/2" x 3/4"	29 KIPS	41 KIPS	70 KIPS
B1 TO B6 & B11 TO B17								BOTTOM = 0'-11" x 1'-1" x 1 1/2"			

t_i = THICKNESS OF INTERNAL LAMINATE
 t_e = THICKNESS OF EXTERNAL LAMINATE
 T = TOTAL THICKNESS OF ELASTOMERIC BEARING

N = NO. INTERNAL ELASTOMERIC LAYERS
 t_L = INTERNAL STEEL LAMINATE THICKNESS
 DUROMETER OF ELASTOMER = 50 DUROMETER
 LOAD PLATE THICKNESS IS MEASURED AT CENTERLINE OF BEARINGS.

HP POST DIMENSIONS ***

BEAM	REAR ABUTMENT			
	A	B	CLB	
LEFT BRIDGE	B1	7 13/16" ±	7 13/16" ±	7 13/16" ±
	B2	8 1/16" ±	8 1/16" ±	8 1/16" ±
	B3	8" ±	7 7/8" ±	7 15/16" ±
	B4	8 1/8" ±	7 15/16" ±	8 1/16" ±
	B5	8" ±	8" ±	8 1/16" ±
	B6	8 3/16" ±	8 1/8" ±	8 3/16" ±
RIGHT BRIDGE	B11	7 1/2" ±	7 9/16" ±	7 9/16" ±
	B12	7 3/4" ±	7 9/16" ±	7 5/8" ±
	B13	7 1/2" ±	7 7/16" ±	7 1/2" ±
	B14	7 9/16" ±	7 7/16" ±	7 1/2" ±
	B15	7 5/16" ±	7 3/8" ±	7 5/16" ±
	B16	7 3/4" ±	7 11/16" ±	7 3/4" ±
	B17	7 5/8" ±	7 5/8" ±	7 5/8" ±

*** DIMENSIONS SHOWN ARE APPROXIMATE. FIELD VERIFY EXISTING BEARING DIMENSION PRIOR TO FABRICATION. CONTRACTOR SHALL ADJUST THE HP POST HEIGHT BASED ON THE DIFFERENCE BETWEEN HIS CALCULATED CENTER LINE BEARING HEIGHT AND THAT SHOWN IN THE PLANS.

SOME BEAM SEATS ARE NOT LEVEL AND WILL REQUIRE CONCRETE REPAIR PER ITEM 516 PRIOR TO SETTING NEW BEARINGS. THE CONTRACTOR IS TO ASSURE THAT HIS MODIFIED BEAM SEAT ELEVATIONS ARE IN AGREEMENT WITH HIS SUPPLIED BEARING HEIGHTS.

THE CONTRACTOR IS REQUIRED TO MEASURE THE EXISTING BOTTOM OF BEAM AND BEAM SEAT ELEVATIONS PRIOR TO THE JACKING OPERATIONS. THE CONTRACTOR IS TO SUBMIT THE ELEVATIONS TO SCOTT KRAMER, DISTRICT 8 BRIDGE DESIGN ENGINEER PRIOR TO THE JACKING OPERATIONS. APPROVAL OF THE ELEVATIONS IS NOT REQUIRED. THE CONTRACTOR IS TO VERIFY THE CENTER OF BEARING HEIGHT BY SUBTRACTING THE EXISTING BEAM SEAT ELEVATION FROM THE EXISTING BOTTOM OF BEAM ELEVATION AT THE BEARING CENTERLINE.

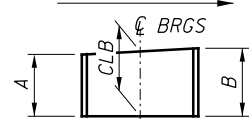
THE HP POST DIMENSION IS A CONTRACTOR CALCULATED DIMENSION AND ANY SHIMS NEEDED AS A RESULT OF THE CONTRACTOR'S ERROR WILL BE AT THE CONTRACTOR'S EXPENSE AND WILL NEED TO BE APPROVED BY THE DISTRICT 8 BRIDGE DESIGN ENGINEER.

FIELD MEASUREMENTS USED TO CALCULATE HP POST DIMENSIONS WERE BASED ON EXISTING CONDITIONS AND DO NOT ACCOUNT FOR PROPOSED LEVEL BEAM SEATS.

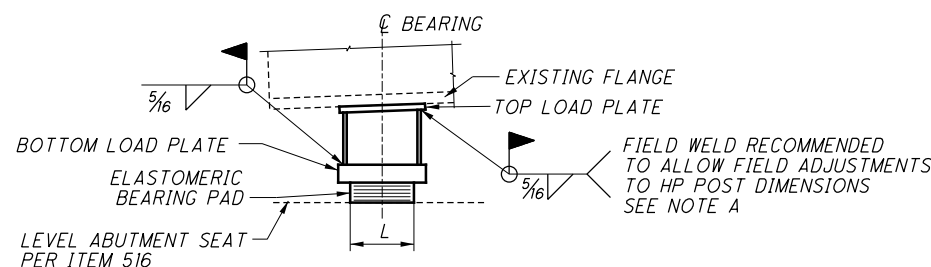
NOTES:

- EACH BEARING ASSEMBLY SHALL BE SHOP MARKED WITH THE FOLLOWING INFORMATION: TOP, FORWARD STATION DIRECTION, LOCATION (REAR ABUTMENT) AND BEAM NAME. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED.
- ELASTOMERIC BEARINGS: THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED IN ACCORDANCE WITH SECTION 14.7.6 (METHOD A) OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. THE LONG-TERM COMPRESSION PROOF LOAD TEST (AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DIVISION II, SECTION 18.7.2.6) IS NOT REQUIRED.
- STEEL MATERIALS: THE STEEL LOAD PLATES AND HP 10x42 POST SHALL BE ASTM A709- GRADE 50 OR 50W STRUCTURAL STEEL AND BE CLEANED AND COATED. SURFACE PREPARATION AND PRIMING SHALL BE DONE IN THE SHOP AND BE INCLUDED IN THE PRICE BID FOR BEARINGS. FIELD COATS SHALL BE PER ITEM 514 AND ALSO INCLUDED IN THE PRICE BID FOR BEARINGS. FINISH PAINT COLOR TO MATCH EXISTING BEAMS.
- STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.
- BASIS OF PAYMENT: THE UNIT PRICE BID SHALL INCLUDE ALL MATERIALS, LABOR, TESTING, STEEL LOAD PLATES, HP POST AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS. PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE BID FOR ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN.

UP STATION

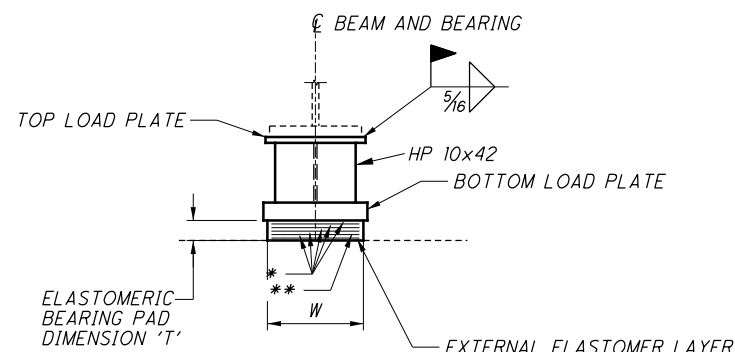


HP10x42 DETAIL



SECTION A-A

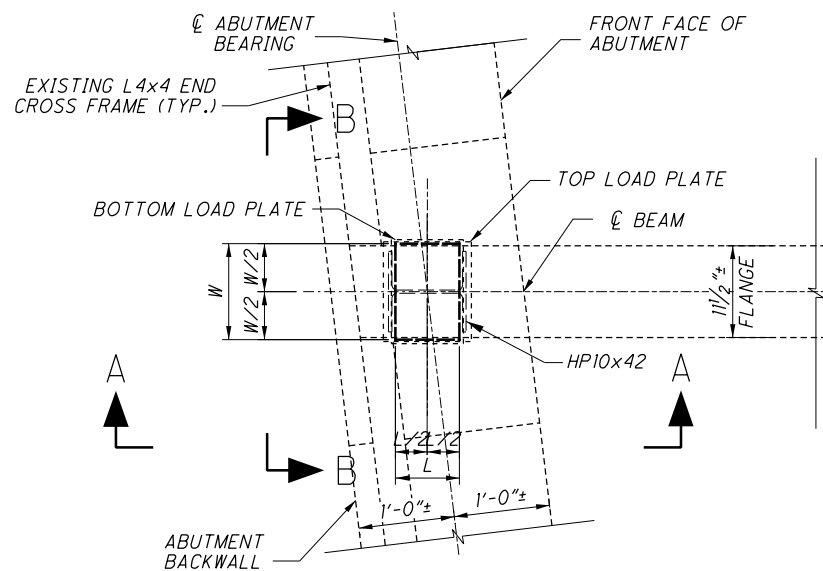
NOTE A: FIELD WELD THE HP SECTION TO THE TOP LOAD PLATE WITH THE HP SECTION AND TOP PLATE INVERTED SO THE FIELD WELD CAN BE PERFORMED IN THE DOWNHAND POSITION BEFORE FINAL INSTALLATION



SECTION B-B

LEGEND:

- * = 'N' INTERNAL ELASTOMER LAYERS
- ** = (N-1) INTERNAL STEEL LAMINATES THICKNESS = 0.0747"
- B1 = WEST MOST BEAM



PLAN - ABUTMENT BEARING

B1 TO B6 & B11 TO B17

LAMINATED ELASTOMERIC BEARINGS

LOCATION	BEARING DIMENSIONS							STEEL LOAD PLATES	REACTIONS		MAX. SERVICE
	L	W	t _i	t _e	t _L	T	N	LENGTH x WIDTH	DL	LL	DESIGN LOAD
REAR ABUTMENT (EXP.)	0'-8"	1'-0"	0.375"	0.26"	0.0747"	2.51"	5	0'-9" x 1'-1"	29 KIPS	41 KIPS	70 KIPS
B7 TO B10								THICKNESS VARIES SEE TABLE			

t_i = THICKNESS OF INTERNAL LAMINATE
 t_e = THICKNESS OF EXTERNAL LAMINATE
 T = TOTAL THICKNESS OF ELASTOMERIC BEARING

N = NO. INTERNAL ELASTOMERIC LAYERS
 t_L = INTERNAL STEEL LAMINATE THICKNESS
 DUROMETER OF ELASTOMER = 50 DUROMETER
 LOAD PLATE THICKNESS IS MEASURED AT CENTERLINE OF BEARINGS.

LOAD PLATE DIMENSIONS ***

BEAM	REAR ABUTMENT			
	A = CLB - X	B = CLB + X	CLB	X
LEFT BRIDGE	B7	3" ±	3" ±	3" ±
	B8	2 1/8" ±	2 1/8" ±	2 1/8" ±
RIGHT BRIDGE	B9	2 3/16" ±	2 3/16" ±	2 3/16" ±
	B10	2 5/8" ±	2 5/8" ±	2 5/8" ±

*** DIMENSIONS SHOWN ARE APPROXIMATE. FIELD VERIFY EXISTING BEARING DIMENSION PRIOR TO FABRICATION. THE CONTRACTOR SHALL ADJUST THE BEVELED LOAD PLATE BASED ON THE DIFFERENCE BETWEEN HIS CALCULATED CENTER LINE BEARING HEIGHT AND THAT SHOWN IN THE PLANS.

SOME BEAM SEATS ARE NOT LEVEL AND WILL REQUIRE CONCRETE REPAIR PER ITEM 516 PRIOR TO SETTING NEW BEARINGS. THE CONTRACTOR IS TO ASSURE THAT HIS MODIFIED BEAM SEAT ELEVATIONS ARE IN AGREEMENT WITH HIS SUPPLIED BEARING HEIGHTS.

THE CONTRACTOR IS REQUIRED TO MEASURE THE EXISTING BOTTOM OF BEAM AND BEAM SEAT ELEVATIONS PRIOR TO THE JACKING OPERATIONS. THE CONTRACTOR IS TO SUBMIT THE ELEVATIONS TO SCOTT KRAMER, DISTRICT 8 BRIDGE DESIGN ENGINEER PRIOR TO THE JACKING OPERATIONS. APPROVAL OF THE ELEVATIONS IS NOT REQUIRED. THE CONTRACTOR IS TO VERIFY THE CENTER OF BEARING HEIGHT BY SUBTRACTING THE EXISTING BEAM SEAT ELEVATION FROM THE EXISTING BOTTOM OF BEAM ELEVATION AT THE BEARING CENTERLINE.

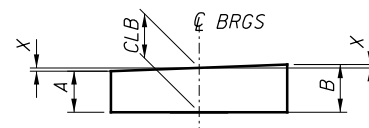
THE BEVELED LOAD PLATE THICKNESS IS A CONTRACTOR CALCULATED DIMENSION AND ANY SHIMS NEEDED AS A RESULT OF THE CONTRACTOR'S ERROR WILL BE AT THE CONTRACTOR'S EXPENSE AND WILL NEED TO BE APPROVED BY THE DISTRICT 8 BRIDGE DESIGN ENGINEER.

FIELD MEASUREMENTS USED TO CALCULATE BEVEL DIMENSIONS WERE BASED ON EXISTING CONDITIONS AND DO NOT ACCOUNT FOR PROPOSED LEVEL BEAM SEATS.

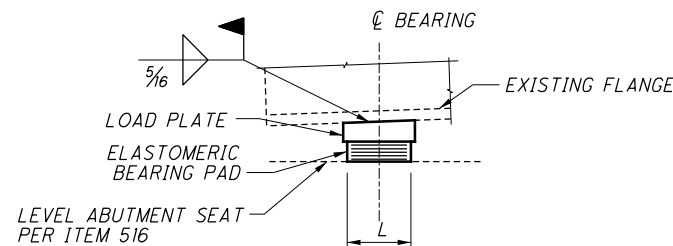
NOTES:

- EACH BEARING ASSEMBLY SHALL BE SHOP MARKED WITH THE FOLLOWING INFORMATION: TOP, FORWARD STATION DIRECTION, LOCATION (REAR ABUTMENT) AND BEAM NAME. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED.
- ELASTOMERIC BEARINGS: THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED IN ACCORDANCE WITH SECTION 14.7.6 (METHOD A) OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. THE LONG- TERM COMPRESSION PROOF LOAD TEST (AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DIVISION II, SECTION 18.7.2.6) IS NOT REQUIRED.
- STEEL MATERIALS: THE STEEL LOAD PLATES SHALL BE ASTM A709- GRADE 50 OR 50W STRUCTURAL STEEL AND BE CLEANED AND COATED. SURFACE PREPARATION AND PRIMING SHALL BE DONE IN THE SHOP AND BE INCLUDED IN THE PRICE BID FOR BEARINGS. FIELD COATS SHALL BE PER ITEM 514 AND ALSO INCLUDED IN THE PRICE BID FOR BEARINGS. FINISH PAINT COLOR TO MATCH EXISTING BEAMS.
- STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.
- BASIS OF PAYMENT: THE UNIT PRICE BID SHALL INCLUDE ALL MATERIALS, LABOR, TESTING, STEEL LOAD PLATES AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS. PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE BID FOR ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN.

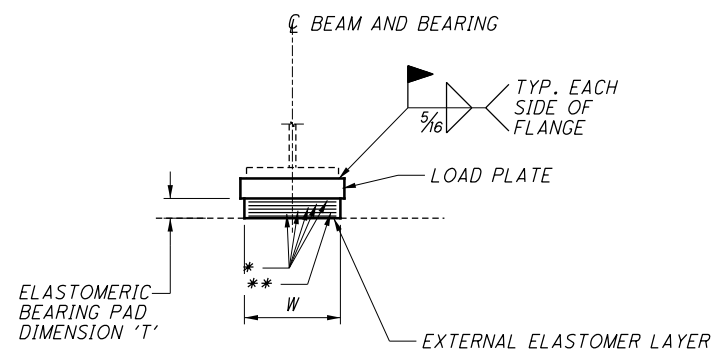
UP STATION



LOAD PLATE DETAIL



SECTION A-A

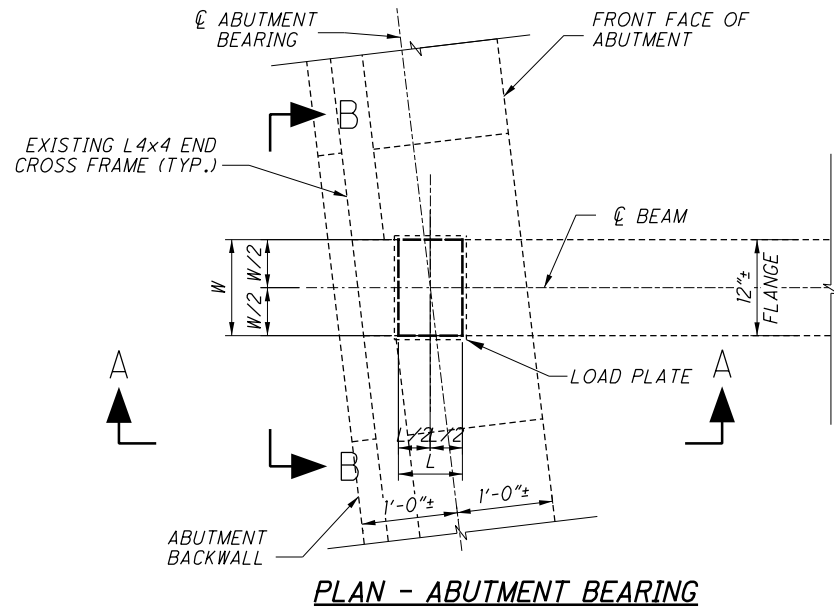


SECTION B-B

LEGEND:

- * = 'N' INTERNAL ELASTOMER LAYERS
- ** = (N-1) INTERNAL STEEL LAMINATES THICKNESS = 0.0747"

B7 TO B10== BEAMS IN MEDIAN PORTION OF THE BRIDGES



PLAN - ABUTMENT BEARING

B7 TO B10

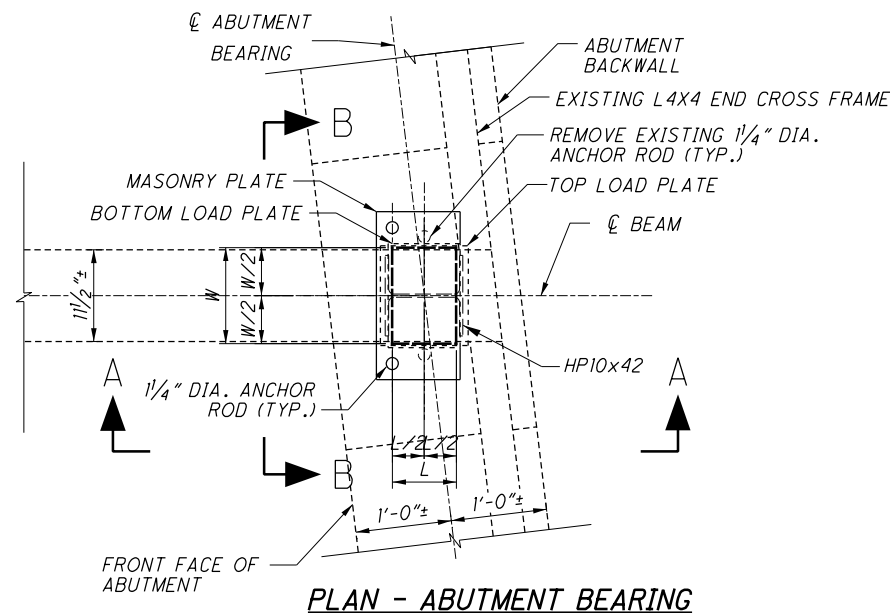
LAMINATED ELASTOMERIC BEARINGS

LOCATION	BEARING DIMENSIONS						N	STEEL LOAD PLATES LENGTH x WIDTH x THICKNESS	REACTIONS		MAX. SERVICE DESIGN LOAD
	L	W	t _i	t _e	t _L	T			DL	LL	
FWD. ABUTMENT (EXP.)	0'-8"	1'-0"	0.36"	NONE	0.0747"	2.53"	6	TOP = 0'-11" x 1'-0 1/2" x 3/4"	29 KIPS	41 KIPS	70 KIPS
B1 TO B6 & B11 TO B17								BOTTOM = 0'-9" x 1'-1" x 1 1/2"			

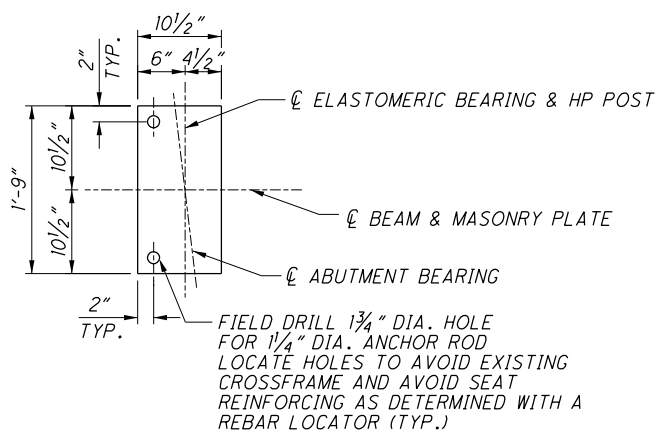
t_i = THICKNESS OF INTERNAL LAMINATE
 t_e = THICKNESS OF EXTERNAL LAMINATE
 T = TOTAL THICKNESS OF ELASTOMERIC BEARING

N = NO. INTERNAL ELASTOMERIC LAYERS
 t_L = INTERNAL STEEL LAMINATE THICKNESS
 DUROMETER OF ELASTOMER = 50 DUROMETER
 LOAD PLATE THICKNESS IS MEASURED AT CENTERLINE OF BEARINGS.

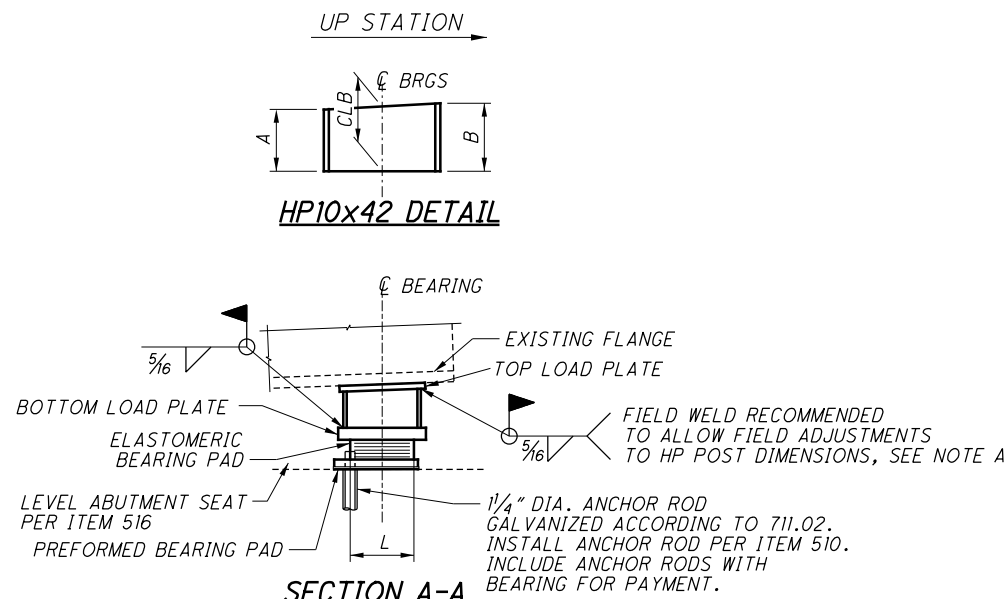
HP POST DIMENSIONS ***				
BEAM	FORWARD ABUTMENT			
	A	B	CLB	
LEFT BRIDGE	B1	6 3/4" ±	6 9/16" ±	6 5/8" ±
	B2	6 7/16" ±	6 3/8" ±	6 3/8" ±
	B3	6 7/16" ±	6 3/8" ±	6 3/8" ±
	B4	6 5/8" ±	6 7/16" ±	6 9/16" ±
	B5	6 13/16" ±	6 13/16" ±	6 13/16" ±
	B6	7 3/16" ±	7 1/8" ±	7 3/16" ±
RIGHT BRIDGE	B11	6 7/16" ±	6 9/16" ±	6 1/2" ±
	B12	6 1/2" ±	6 1/2" ±	6 1/2" ±
	B13	6 1/4" ±	6 1/8" ±	6 3/16" ±
	B14	6 3/8" ±	6 7/16" ±	6 7/16" ±
	B15	6 3/8" ±	6 1/4" ±	6 5/16" ±
	B16	6 11/16" ±	6 5/8" ±	6 5/8" ±
	B17	7 3/8" ±	7 3/8" ±	7 3/8" ±



B1 TO B6 & B11 TO B17

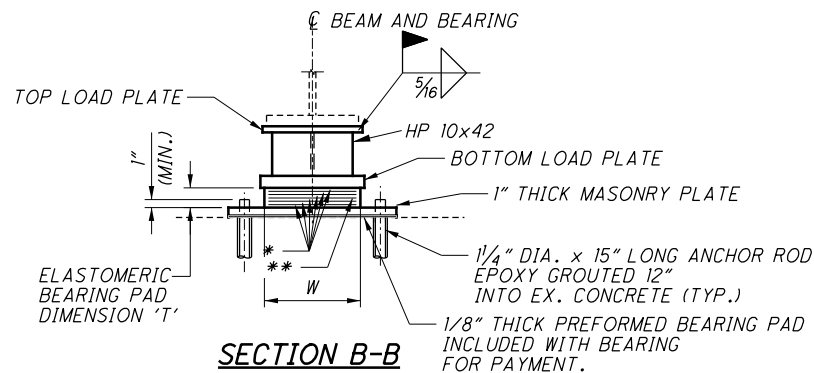


PLAN - MASONRY PLATE



SECTION A-A

NOTE A: FIELD WELD THE HP SECTION TO THE TOP LOAD PLATE WITH THE HP SECTION AND TOP PLATE INVERTED SO THE FIELD WELD CAN BE PERFORMED IN THE DOWNHAND POSITION BEFORE FINAL INSTALLATION



SECTION B-B

LEGEND:

- * = 'N' INTERNAL ELASTOMER LAYERS
- ** = (N-1) INTERNAL STEEL LAMINATES THICKNESS = 0.0747"
- B1 = WEST MOST BEAM

*** DIMENSIONS SHOWN ARE APPROXIMATE. FIELD VERIFY EXISTING BEARING DIMENSION PRIOR TO FABRICATION. CONTRACTOR SHALL ADJUST THE HP POST HEIGHT BASED ON THE DIFFERENCE BETWEEN HIS CALCULATED CENTER LINE BEARING HEIGHT AND THAT SHOWN IN THE PLANS.

SOME BEAM SEATS ARE NOT LEVEL AND WILL REQUIRE CONCRETE REPAIR PER ITEM 516 PRIOR TO SETTING NEW BEARINGS. THE CONTRACTOR IS TO ASSURE THAT HIS MODIFIED BEAM SEAT ELEVATIONS ARE IN AGREEMENT WITH HIS SUPPLIED BEARING HEIGHTS.

THE CONTRACTOR IS REQUIRED TO MEASURE THE EXISTING BOTTOM OF BEAM AND BEAM SEAT ELEVATIONS PRIOR TO THE JACKING OPERATIONS. THE CONTRACTOR IS TO SUBMIT THE ELEVATIONS TO SCOTT KRAMER, DISTRICT 8 BRIDGE DESIGN ENGINEER PRIOR TO THE JACKING OPERATIONS. APPROVAL OF THE ELEVATIONS IS NOT REQUIRED. THE CONTRACTOR IS TO VERIFY THE CENTER OF BEARING HEIGHT BY SUBTRACTING THE EXISTING BEAM SEAT ELEVATION FROM THE EXISTING BOTTOM OF BEAM ELEVATION AT THE BEARING CENTERLINE.

THE HP POST DIMENSION IS A CONTRACTOR CALCULATED DIMENSION AND ANY SHIMS NEEDED AS A RESULT OF THE CONTRACTOR'S ERROR WILL BE AT THE CONTRACTOR'S EXPENSE AND WILL NEED TO BE APPROVED BY THE DISTRICT 8 BRIDGE DESIGN ENGINEER.

FIELD MEASUREMENTS USED TO CALCULATE HP POST DIMENSIONS WERE BASED ON EXISTING CONDITIONS AND DO NOT ACCOUNT FOR PROPOSED LEVEL BEAM SEATS.

NOTES:

1. EACH BEARING ASSEMBLY SHALL BE SHOP MARKED WITH THE FOLLOWING INFORMATION: TOP, FORWARD STATION DIRECTION, LOCATION (FORWARD ABUTMENT) AND BEAM NAME. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED.
2. ELASTOMERIC BEARINGS: THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED IN ACCORDANCE WITH SECTION 14.7.6 (METHOD A) OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. THE LONG-TERM COMPRESSION PROOF LOAD TEST (AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DIVISION II, SECTION 18.7.2.6) IS NOT REQUIRED.
3. STEEL MATERIALS: ANCHOR RODS SHALL BE ASTM F1554, GRADE 55, GALVANIZED ACCORDING TO 711.02. THE STEEL LOAD PLATES AND HP 10x42 POST SHALL BE ASTM A709- GRADE 50 OR 50W STRUCTURAL STEEL AND BE CLEANED AND COATED. SURFACE PREPARATION AND PRIMING SHALL BE DONE IN THE SHOP AND BE INCLUDED IN THE PRICE BID FOR BEARINGS. FIELD COATS SHALL BE PER ITEM 514 AND ALSO INCLUDED IN THE PRICE BID FOR BEARINGS. FINISH PAINT COLOR TO MATCH EXISTING BEAMS.
4. STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.
5. BASIS OF PAYMENT: THE UNIT PRICE BID SHALL INCLUDE ALL MATERIALS, LABOR, TESTING, STEEL LOAD PLATES, HP POST AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS. PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE BID FOR ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN.

LAMINATED ELASTOMERIC BEARINGS

LOCATION	BEARING DIMENSIONS							STEEL LOAD PLATES	REACTIONS	MAX. SERVICE	
	L	W	t _i	t _e	t _L	T	N	LENGTH x WIDTH x THICKNESS	DL	LL	DESIGN LOAD
FWD. ABUTMENT (EXP.)	0'-8"	1'-0"	0.36"	NONE	0.0747"	2.53"	6	9"x1'-1" THICKNESS VARIES	29 KIPS	41 KIPS	70 KIPS
B7 TO B10								SEE TABLE			

t_i = THICKNESS OF INTERNAL LAMINATE
 t_e = THICKNESS OF EXTERNAL LAMINATE
 T = TOTAL THICKNESS OF ELASTOMERIC BEARING

N = NO. INTERNAL ELASTOMERIC LAYERS
 t_L = INTERNAL STEEL LAMINATE THICKNESS
 DUROMETER OF ELASTOMER = 50 DUROMETER
 LOAD PLATE THICKNESS IS MEASURED AT CENTERLINE OF BEARINGS.

LOAD PLATE DIMENSIONS***

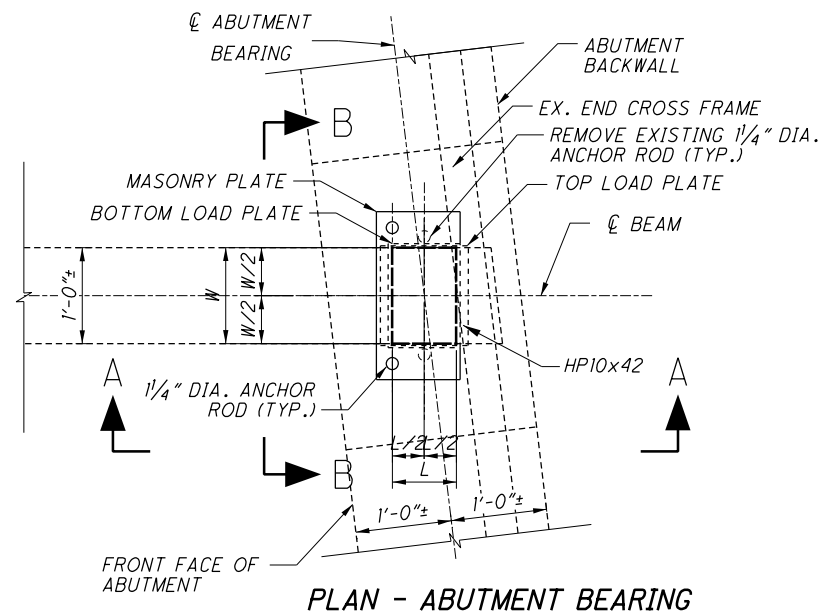
	BEAM	FORWARD ABUTMENT			
		A = CLB - X	B = CLB + X	CLB	X
LEFT BRIDGE	B7	2 5/16" ±	2 3/16" ±	2 1/4" ±	- 1/16" ±
	B8	1 15/16" ±	1 11/16" ±	1 13/16" ±	- 1/8" ±
RIGHT BRIDGE	B9	1 15/16" ±	1 7/8" ±	1 15/16" ±	- 1/16" ±
	B10	2 3/8" ±	2 5/16" ±	2 5/16" ±	- 1/16" ±

*** DIMENSIONS SHOWN ARE APPROXIMATE. FIELD VERIFY EXISTING BEARING DIMENSION PRIOR TO FABRICATION. SOME BEAM SEATS ARE NOT LEVEL AND WILL REQUIRE CONCRETE REPAIR PER ITEM 516 PRIOR TO SETTING NEW BEARINGS. THE CONTRACTOR IS TO ASSURE THAT HIS MODIFIED BEAM SEAT ELEVATIONS ARE IN AGREEMENT WITH HIS SUPPLIED BEARING HEIGHTS.

THE CONTRACTOR IS REQUIRED TO MEASURE THE EXISTING BOTTOM OF BEAM AND BEAM SEAT ELEVATIONS PRIOR TO THE JACKING OPERATIONS. THE CONTRACTOR IS TO SUBMIT THE ELEVATIONS TO SCOTT KRAMER, DISTRICT 8 BRIDGE DESIGN ENGINEER PRIOR TO THE JACKING OPERATIONS. APPROVAL OF THE ELEVATIONS IS NOT REQUIRED. THE CONTRACTOR IS TO VERIFY THE CENTER OF BEARING HEIGHT BY SUBTRACTING THE EXISTING BEAM SEAT ELEVATION FROM THE EXISTING BOTTOM OF BEAM ELEVATION AT THE BEARING CENTERLINE.

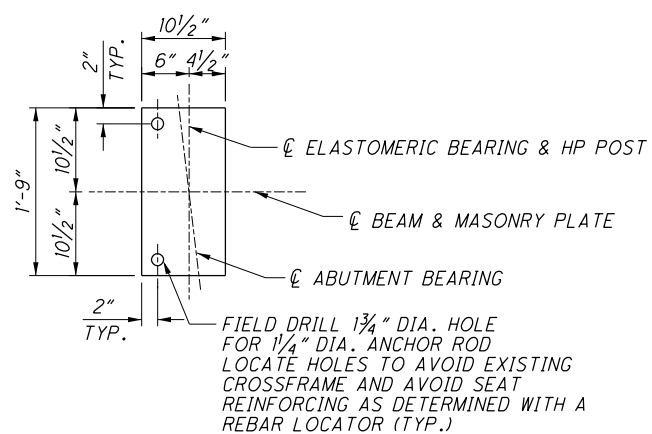
THE LOAD PLATE THICKNESS IS A CONTRACTOR CALCULATED DIMENSION AND ANY SHIMS NEEDED AS A RESULT OF THE CONTRACTOR'S ERROR WILL BE AT THE CONTRACTOR'S EXPENSE AND WILL NEED TO BE APPROVED BY THE DISTRICT 8 BRIDGE DESIGN ENGINEER.

FIELD MEASUREMENTS USED TO CALCULATE THE LOAD PLATE THICKNESS WERE BASED ON EXISTING CONDITIONS AND DO NOT ACCOUNT FOR PROPOSED LEVEL BEAM SEATS.

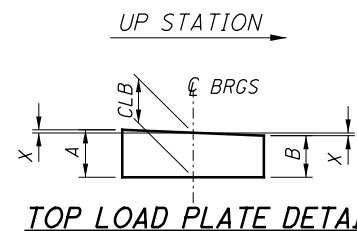


PLAN - ABUTMENT BEARING

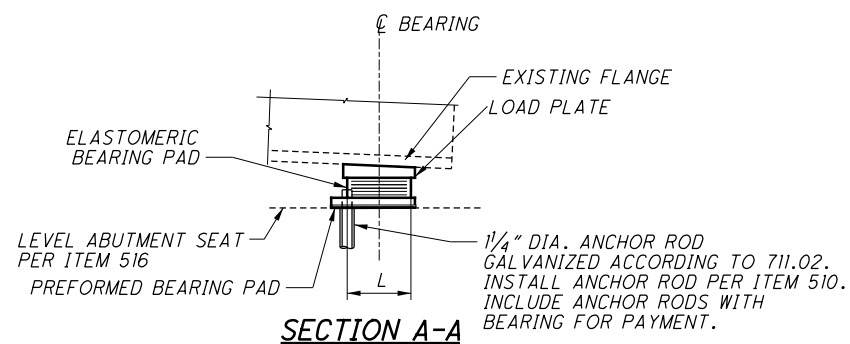
B7 TO B10



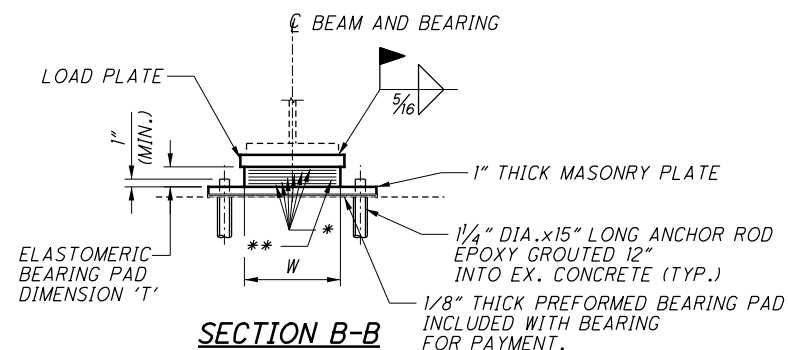
PLAN - MASONRY PLATE



TOP LOAD PLATE DETAIL



SECTION A-A



SECTION B-B

LEGEND:

- * = 'N' INTERNAL ELASTOMER LAYERS
- ** = (N-1) INTERNAL STEEL LAMINATES THICKNESS = 0.0747"

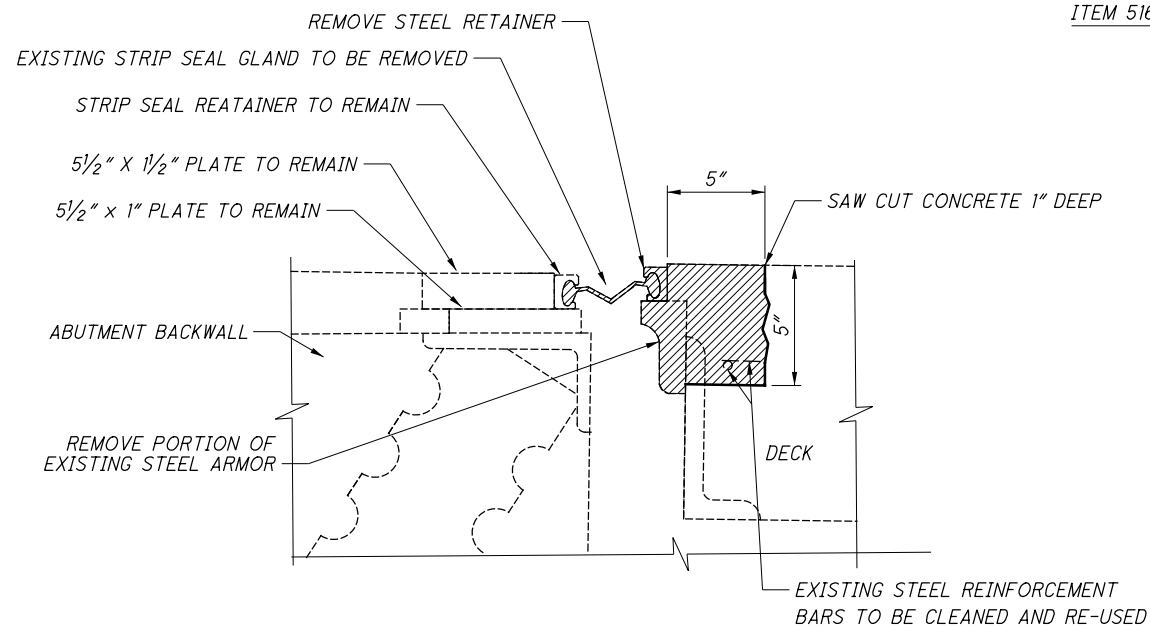
B7 TO B10== BEAMS IN MEDIAN PORTION OF THE BRIDGES

NOTES:

1. EACH BEARING ASSEMBLY SHALL BE SHOP MARKED WITH THE FOLLOWING INFORMATION: TOP, FORWARD STATION DIRECTION, LOCATION (FORWARD ABUTMENT) AND BEAM NAME. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED.
2. ELASTOMERIC BEARINGS:
 THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED IN ACCORDANCE WITH SECTION 14.7.6 (METHOD A) OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. THE LONG-TERM COMPRESSION PROOF LOAD TEST (AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DIVISION II, SECTION 18.7.2.6) IS NOT REQUIRED.
3. STEEL MATERIALS:
 ANCHOR RODS SHALL BE ASTM F1554, GRADE 55, GALVANIZED ACCORDING TO 711.02.

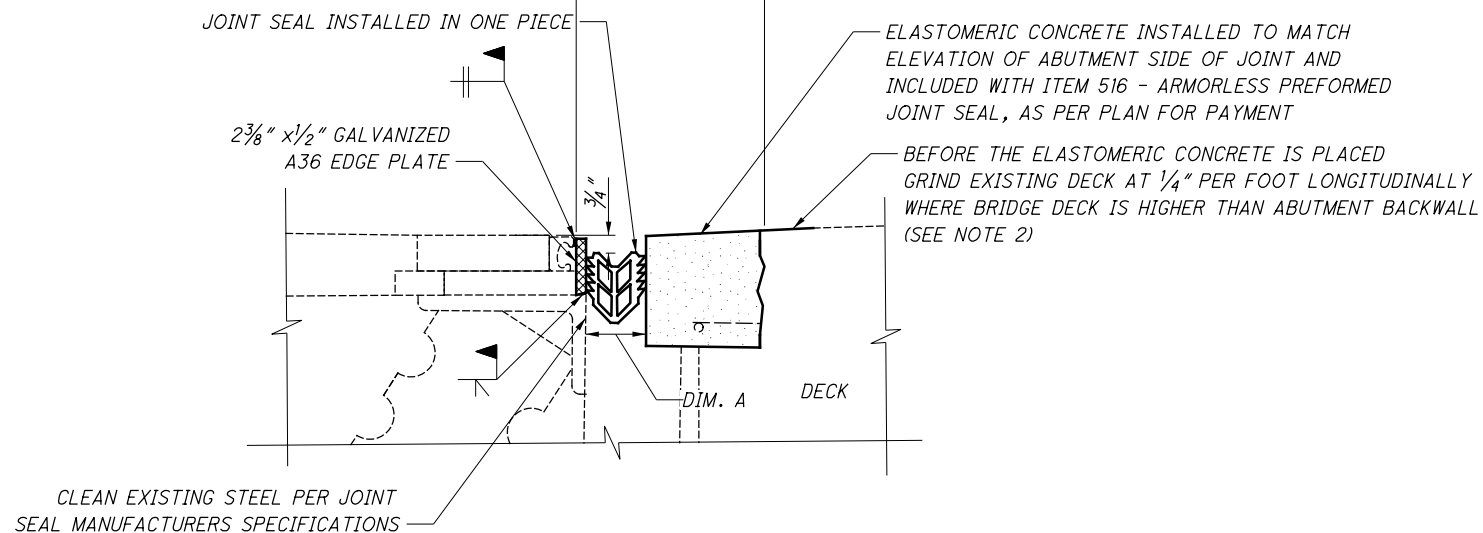
 THE STEEL LOAD PLATES SHALL BE ASTM A709- GRADE 50 OR 50W STRUCTURAL STEEL AND BE CLEANED AND COATED. SURFACE PREPARATION AND PRIMING SHALL BE DONE IN THE SHOP AND BE INCLUDED IN THE PRICE BID FOR BEARINGS. FIELD COATS SHALL BE PER ITEM 514 AND ALSO INCLUDED IN THE PRICE BID FOR BEARINGS. FINISH PAINT COLOR TO MATCH EXISTING BEAMS.
4. STEEL LOAD PLATES SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.
5. BASIS OF PAYMENT: THE UNIT PRICE BID SHALL INCLUDE ALL MATERIALS, LABOR, TESTING, STEEL LOAD PLATES AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL LAMINATED ELASTOMERIC BEARINGS. PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE BID FOR ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN.

P:\PR54704\HAM-91826\Design\Structures\HAM071_1277L_Sheets\071_1277L_SX001.dgn Sheet_3/13/2018 8:23:10 AM chen



REMOVAL DETAIL

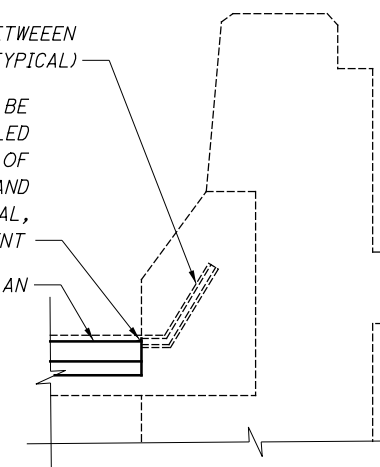
ITEM 516 - ARMORLESS PREFORMED JOINT SEAL, AS PER PLAN



EXPANSION JOINT SECTION

EXISTING STRIP SEAL JOINT BETWEEN ENDS OF PARAPETS TO REMAIN (TYPICAL)

POLYURETHANE SEALANT AT TOE OF PARAPET SHALL BE W.R. MEADOWS POURTHANE NS OR APPROVED EQUAL INSTALLED PER MANUFACTURERS RECOMMENDATIONS TO SEAL THE ENDS OF THE STRIP SEAL AND ARMORLESS PREFORMED JOINT SEAL AND INCLUDED WITH ITEM 516 - ARMORLESS PREFORMED JOINT SEAL, AS PER PLAN FOR PAYMENT



PARAPET SECTION

EXPANSION JOINT TABLE - DIMENSION A		
TEMPERATURE	REAR ABUT.	FWD. ABUT.
30°	2 5/8"	2 13/16"
40°	2 5/8"	2 3/4"
50°	2 9/16"	2 11/16"
60°	2 1/2"	2 9/16"
70°	2 1/2"	2 1/2"
80°	2 1/16"	2 1/16"
90°	2 1/16"	2 5/16"

ITEM 516 - ARMORLESS PREFORMED JOINT SEAL, AS PER PLAN (CONT.):
SET THE TOP OF THE JOINT SEAL AT 3/4" BELOW ROADWAY SURFACE.

SUBMIT THE JOINT SEAL INSTALLATION PROCEDURES TO THE ENGINEER AT LEAST SEVEN (7) DAYS BEFORE CONSTRUCTION BEGINS. THE DEPARTMENT'S ACCEPTANCE IS NOT REQUIRED.

THE DEPARTMENT WILL MEASURE THE ARMORLESS PREFORMED JOINT SEAL BY THE NUMBER OF FEET HORIZONTALLY ALONG THE JOINT CENTERLINE.

THE DEPARTMENT WILL INCLUDE ALL MATERIALS, LABOR, EQUIPMENT, SURFACE PREPARATIONS, TOOLS AND INCIDENTALS NEEDED TO COMPLETE THE WORK DESCRIBED ABOVE IN THE CONTRACT PRICE FOR ITEM 516 - ARMORLESS PREFORMED JOINT SEAL, AS PER PLAN (FT.).

ITEM 516 - ARMORLESS PREFORMED JOINT SEAL, AS PER PLAN:
INSTALL THE ARMORLESS PREFORMED JOINT SEAL TOE TO TOE OF PARAPETS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND UNDER THE SUPERVISION OF THE MANUFACTURER'S DESIGNATED REPRESENTATIVE.


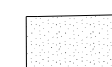
SELECT THE ARMORLESS PREFORMED JOINT SEAL FROM ONE OF THE MANUFACTURERS LISTED BELOW:

WATSON BOWMAN ACME CORP.
95 PINEVIEW DRIVE
AMHERST, NY 14228-2121
PHONE: (716) 691-7566
FAX: (716) 691-9239
- JEENE SERIES 65W (MAX. MOVEMENT RATING: 2 1/2")
- WABO CRETE ELASTOMERIC CONCRETE

D.S. BROWN COMPANY
300 EAST CHERRY STREET
NORTH BALTIMORE, OH 45872-1227
PHONE: (419) 257-3561
FAX: (419) 257-2200
- J SERIES SEALING SYSTEMS J-250 (MAX. MOVEMENT RATING: 2 1/2")
- DELCRETE ELASTOMERIC CONCRETE

THE SEAL, ELASTOMERIC CONCRETE AND ADHESIVE ARE AN INTEGRAL JOINT SYSTEM THAT SHALL BE DESIGNED AND SUPPLIED BY THE SAME MANUFACTURER.

LEGEND:

-  = REMOVALS
-  = ELASTOMERIC CONCRETE

NOTES:

1. THE COST OF ALL LABOR, EQUIPMENT AND MATERIALS REQUIRED TO REMOVE PORTIONS OF THE EXISTING EXPANSION JOINTS AND BRIDGE DECK SHALL BE INCLUDED WITH THE UNIT PRICE FOR ITEM 202 - REMOVAL MISC.: EXPANSION JOINT REMOVAL (LF).
2. THE COST OF ALL LABOR, EQUIPMENT AND MATERIALS NEEDED TO GRIND EXISTING BRIDGE DECK SHALL BE INCLUDED WITH ITEM 257 - DIAMOND GRINDING PORTLAND CEMENT CONCRETE PAVEMENT.

EXPANSION JOINT DETAILS	HAM-71-1277L/R IR-71 OVER GALBRAITH ROAD	DESIGNED SJA CHECKED XAC	DRAWN SJA REVISED	REVIEWED DWL STRUCTURE FILE NUMBER 3107027/3107051	DATE 2/20/2017	DESIGN AGENCY BURGESS & NIPLE 312 PLUM ST. CINCINNATI, OH
HAM-IR71-8.42	PID No. 91826			8 / 8	441 441	

PROJECT DESCRIPTION

THIS PROJECT, HAM-71-8.42, BEGINS AT MILE 8.42 AND ENDS AT MILE 13.85 FOR A TOTAL LENGTH OF 5.43 MILES. THE SCOPE OF THIS STUDY IS LIMITED TO THE SOUTHBOUND MAIN LINE LOWERING (APPROXIMATELY 5 INCHES) BETWEEN STATION 469+00 AND 490+00 TO OBTAIN THE NECESSARY VERTICAL CLEARANCE.

HISTORIC RECORDS

FIVE (5) HISTORIC TEST BORINGS ALONG I-71, FROM THE ORIGINAL MAINLINE CONSTRUCTION, DATED 1964, ARE PRESENTED ON THIS SOIL PROFILE.

GEOLOGY

THE SITE LIES IN THE SOUTHWEST PORTION OF OHIO, WITHIN THE ILLINOIAN TILL PLAIN PHYSIOGRAPHIC REGION. THE OVERBURDEN SOILS IN THE PROJECT AREA CONSIST PRIMARILY OF NATURAL COHESIVE SOILS, MOSTLY SILT AND CLAY AND SILTY CLAY. THE OVERBURDEN SOILS ARE UNDERLAIN BY ORDOVICIAN AGE BEDROCK OF THE KOPE FORMATION.

RECONNAISSANCE

A SITE VISIT WAS MADE ON APRIL 6, 2016 BY TERRACON. THE LAND USAGE AROUND THE SITE PROJECT IS GENERALLY WOODED WITH RESIDENTIAL AREAS LOCATED TO THE SOUTH AND EAST. THE TERRAIN RISES IN ELEVATION TO THE NORTH AND WEST OF THE PROJECT AND DROPS TO THE EAST AND SOUTH. A CREEK IS LOCATED TO THE EAST OF MAINLINE I-71 NORTH OF RED BANK EXPRESSWAY.

SUBSURFACE EXPLORATION

A TOTAL OF SIX (6) TEST BORINGS WERE PERFORMED FOR THIS PROJECT. THE BORING LOCATIONS WERE SELECTED BY TERRACON BASED ON ROADWAY LAYOUT, AND IN CONSULTATION WITH BURGESS & NIPLE AND ODOT DISTRICT 8. THE TEST BORINGS WERE PERFORMED WITH A TRUCK-MOUNTED DRILL RIG. THE TEST BORINGS WERE DRILLED TO DEPTHS OF ABOUT 7.5 FEET BELOW THE EXISTING ROADWAY AND GROUND SURFACE. THE DRILL RIG UTILIZED HOLLOW STEM AUGERS TO PERMIT SPLIT-BARREL SAMPLING IN OVERBURDEN SOILS. DRILLING AND SAMPLING PROCEDURES WERE PERFORMED IN GENERAL ACCORDANCE WITH AASHTO T206 AND THE ODOT SGE. THE TRUCK-RIG HAMMER SYSTEM USED WAS MOST RECENTLY CALIBRATED ON FEBRUARY 20, 2015. THE AVERAGE DRILL ROD ENERGY RATIO (ER) FOR THE TRUCK DRILL RIG (RIG NO. 3255) USED TO PERFORM THE TEST BORINGS WAS 74.8 PERCENT. UPON COMPLETION OF THE DRILLING ACTIVITIES AND FOLLOWING WATER LEVEL OBSERVATIONS, THE BOREHOLES WERE BACKFILLED WITH CUTTINGS MIXED WITH BENTONITE CHIPS (PER ODOT'S SGE) AND PATCHED AT THE SURFACE WITH ASPHALT AFTER BACKFILLING OPERATIONS.

EXPLORATION FINDINGS

THE TEST BORINGS LOCATED WITHIN THE PROPOSED ROADWAY LOWERING AREA (STATION 469+00 TO 490+00) GENERALLY ENCOUNTERED EXISTING COHESIVE FILL AND NATURAL COHESIVE SOILS WITH OCCASIONAL GRANULAR SEAMS/LAYERS. THE OVERBURDEN SOILS AT/NEAR THE ANTICIPATED SUBGRADE LEVEL TYPICALLY CLASSIFY AS SILTY CLAY (A-6B), SILT AND CLAY (A-6A), CLAY (A-7-6), AND SANDY SILT (A-4A) PER THE ODOT CLASSIFICATION SYSTEM. BASED ON OUR LABORATORY TESTING, THE EXISTING SUBGRADE SOILS HAVE MOISTURE CONTENTS RANGING FROM ABOUT 7 TO 24 PERCENT, WITH AN AVERAGE MOISTURE CONTENT OF THE SUBGRADE SOILS ACROSS THE PROJECT AREA OF ABOUT 15 PERCENT. PLASTICITY INDICES IN SUBGRADE SOILS RANGED FROM ABOUT 3 TO 23, WITH AN AVERAGE PLASTICITY INDEX OF ABOUT 15. BEDROCK WAS NOT ENCOUNTERED WITHIN THE DEPTHS EXPLORED.

SPECIFICATIONS

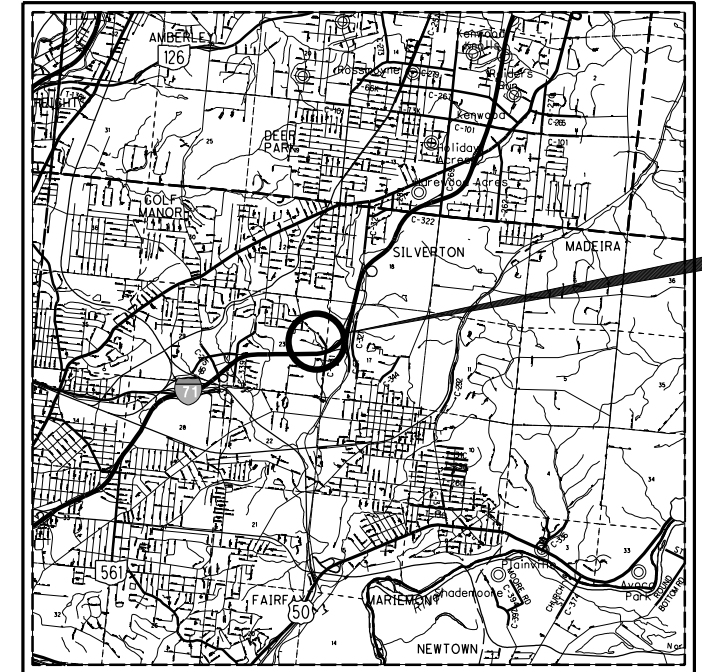
THIS GEOTECHNICAL EXPLORATION WAS PERFORMED IN ACCORDANCE WITH THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, OFFICE OF GEOTECHNICAL ENGINEERING, SPECIFICATIONS FOR GEOTECHNICAL EXPLORATIONS, DATED JANUARY, 15, 2016.

AVAILABLE INFORMATION

ALL AVAILABLE SOIL AND BEDROCK INFORMATION THAT CAN BE CONVENIENTLY SHOWN ON THE GEOTECHNICAL EXPLORATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL EXPLORATIONS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECT OF THE PROJECT. COPIES OF THIS DATA, IF ANY, MAY BE INSPECTED IN THE DISTRICT DEPUTY DIRECTOR'S OFFICE, THE OFFICE OF GEOTECHNICAL ENGINEERING AT 1600 WEST BROAD STREET OR THE OFFICE OF STRUCTURAL ENGINEERING AT 1980 WEST BROAD STREET, COLUMBUS, OHIO.

LEGEND

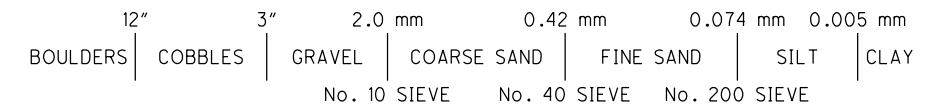
DESCRIPTION	ODOT CLASS	CLASSIFIED MECH./VISUAL
GRAVEL/STONE FRAGMENTS WITH SAND	A-1-b	1 -
GRAVEL/STONE FRAGMENTS WITH SAND AND SILT	A-2-4	1 -
SANDY SILT	A-4a	2 2
SILT AND CLAY	A-6a	2 2
SILTY CLAY	A-6b	5 8
CLAY	A-7-6	1 -
TOTAL	TOTAL	12 12
PAVEMENT OR BASE = X = APPROXIMATE THICKNESS	<i>VISUAL</i>	
BORING LOCATION - PLAN VIEW.		
DRIVE SAMPLE AND/OR ROCK CORE BORING PLOTTED TO VERTICAL SCALE ONLY. HORIZONTAL BAR INDICATES A CHANGE IN STRATIGRAPHY.		
<i>WC</i>		INDICATES WATER CONTENT IN PERCENT.
<i>N₆₀</i>		INDICATES STANDARD PENETRATION RESISTANCE NORMALIZED TO 60% DRILL ROD ENERGY RATIO.
<i>X/Y/Z</i>		NUMBER OF BLOWS FOR STANDARD PENETRATION TEST (SPT): X= NUMBER OF BLOWS FOR FIRST 6 INCHES. Y= NUMBER OF BLOWS FOR SECOND 6 INCHES. Z= NUMBER OF BLOWS FOR THIRD 6 INCHES.
<i>W</i>		INDICATES FREE WATER ELEVATION.
*		INDICATES A SAMPLE TAKEN WITHIN 3 FT OF PROPOSED GRADE.
SS		INDICATES A SPLIT SPOON SAMPLE.
NP		INDICATES A NON-PLASTIC SAMPLE.
HISTORIC BORING DESCRIPTIONS	ODOT CLASS	CLASSIFIED MECH./VISUAL
GRAVEL/STONE FRAGMENTS WITH SAND AND SILT	A-2-4	2 -
GRAVEL/STONE FRAGMENTS WITH SAND, SILT AND CLAY	A-2-6	1 -
SANDY SILT	A-4a	5 -
SILT AND CLAY	A-6a	7 -
SILTY CLAY	A-6b	1 -
TOTAL	TOTAL	16 -
SOD AND TOPSOIL = X = APPROXIMATE THICKNESS	<i>VISUAL</i>	
BORING LOCATION - PLAN VIEW.		
DRIVE SAMPLE AND/OR ROCK CORE BORING PLOTTED TO VERTICAL SCALE ONLY. HORIZONTAL BAR INDICATES A CHANGE IN STRATIGRAPHY.		
<i>WC</i>		INDICATES WATER CONTENT IN PERCENT.
<i>W</i>		INDICATES FREE WATER ELEVATION.



LOCATION MAP
SCALE IN MILES



PARTICLE SIZE DEFINITIONS



INDEX OF SHEETS

LOCATION FROM STA. TO STA.	PLAN VIEW SHEET	PROFILE SHEET	CROSS-SECTION SHEET	CUT MAX.	FILL EMB. MAX.
I-71					
470+00 480+00	3	3	-	1 FT	0 FT
480+00 489+00	4	4	-	1 FT	0 FT

RECON. - 4/6/16 JW
 DRILLING - 5/18/16 JM
 DRAWN - 6/28/17 KM
 REVIEWED - 6/28/17 AM

N:\HCN Projects\AutoCAD\2016\116\1165108\91826\CO01.dgn Design 6/28/2017 10:43:50 AM kjmankin



SUMMARY OF SOIL TEST DATA

STATION & OFFSET	FROM TO	SAMPLE ID	HP TSF	I-71							LL	PL	PI	% WC	ODOT CLASS
				% REC	% GR	% CS	% FS	% SILT	% CLAY						
B-001-0-16	01.50-03.00	SS-1	2.50	78									13	A-6b (VISUAL) *	
STA. 470+06, 10' LT.	03.00-04.50	SS-2	3.25	67	16	10	7	30	37	38	17	21	14	A-6b (III)	
LATITUDE = 39.171374	04.50-06.00	SS-3	3.50	78									20	A-6b (VISUAL)	
LONGITUDE = -84.402206	06.00-07.50	SS-4	1.75	56	1	5	5	33	56	44	21	23	16	A-7-6 (14)	
B-002-0-16	01.50-03.00	SS-1	1.75	56	28	10	9	23	30	39	16	23	19	A-6b (9) *	
STA. 473+55, 60' LT.	03.00-04.50	SS-2	2.00	67									18	A-6b (VISUAL)	
LATITUDE = 39.171969	04.50-06.00	SS-3	2.00	78									17	A-6b (VISUAL)	
LONGITUDE = -84.401264	06.00-07.50	SS-4	2.25	78	31	6	4	26	33	33	16	17	15	A-6b (7)	
B-003-0-16	01.50-03.00	SS-1	2.00	67									11	A-6b (VISUAL) *	
STA. 477+75, 10' LT.	03.00-04.50	SS-2	2.25	78	18	6	5	33	38	37	17	20	14	A-6b (III)	
LATITUDE = 39.172603	04.50-06.00	SS-3	3.75	100									20	A-6b (VISUAL)	
LONGITUDE = -84.400095	06.00-07.50	SS-4	3.50	100	2	7	17	36	38	34	16	18	17	A-6b (III)	
B-004-0-16	01.50-03.00	SS-1	2.00	100									7	A-6b (VISUAL) *	
STA. 481+45, 60' LT.	03.00-04.50	SS-2	2.25	78									15	A-6b (VISUAL)	
LATITUDE = 39.173477	04.50-06.00	SS-3		78	50	17	12	13	8	16	13	3	10	A-1-b (10)	
LONGITUDE = -84.399481	06.00-07.50	SS-4		100	25	23	24	19	9	NP	NP	NP	14	A-2-4 (10)	
B-005-0-16	01.50-03.00	SS-1		78									14	A-4a (VISUAL) *	
STA. 485+44, 10' LT.	03.00-04.50	SS-2		100	24	16	20	25	15	19	14	5	11	A-4a (I)	
LATITUDE = 39.174367	04.50-06.00	SS-3		100									7	A-4a (VISUAL)	
LONGITUDE = -84.398758	06.00-07.50	SS-4		100	33	17	13	21	16	20	12	8	9	A-4a (10)	
B-006-0-16	01.50-03.00	SS-1	3.00	44	1	5	4	42	48	33	18	15	21	A-6a (10) *	
STA. 489+25, 60' LT.	03.00-04.50	SS-2	3.25	28									17	A-6a (VISUAL)	
LATITUDE = 39.175379	04.50-06.00	SS-3	1.75	78									24	A-6a (VISUAL)	
LONGITUDE = -84.398568	06.00-07.50	SS-4	1.50	78	3	5	16	41	35	29	16	13	23	A-6a (9)	

SUMMARY OF SOIL TEST DATA

STATION & OFFSET	FROM TO	I-71 HISTORIC BORINGS							LL	PI	% WC	ODOT CLASS
		% GR	% CS	% FS	% SILT	% CLAY						
X-001-0-64	00.00-04.00	0	2	2	57	39	33	11	25	A-6a		
I-71, STA. 473+00, CL	04.00-08.00	0	3	8	47	42	34	14	19	A-6a		
	08.00-12.00	32	3	9	30	26	39	19	20	A-6b		
X-002-0-64	00.00-4.00	37	5	11	22	25	32	13	20	A-6a		
I-71, STA. 479+00, CL	04.00-09.00	22	4	12	35	27	31	12	17	A-6a		
	09.00-14.00	30	4	13	32	21	27	11	22	A-6a		
	14.00-19.00	38	9	14	23	16	20	5	10	A-4a		
	19.00-23.50	55	6	6	23	10	22	6	9	A-2-4		
X-003-0-64	00.00-04.00	35	7	11	27	20	24	8	14	A-4a		
I-71, STA. 482+70, 28' RT.	04.00-10.50	33	13	13	25	16	19	5	9	A-4a		
X-004-0-64	00.00-05.00	41	6	10	24	19	28	9	10	A-4a		
I-71, STA. 487+00, CL	05.00-10.00	51	13	6	17	13	26	7	15	A-2-4		
	10.00-12.00	66	7	4	12	11	32	11	18	A-2-6		
X-005-0-64	00.30-04.00	0	1	5	56	38	32	12	18	A-6a		
I-71, STA. 489+50, CL	04.00-09.00	0	1	7	53	39	36	13	20	A-6a		
	09.00-12.50	30	4	14	28	24	28	9	13	A-4a		

SOIL PROFILE
SUMMARY OF SOIL TEST DATA

HAM-71-08.42



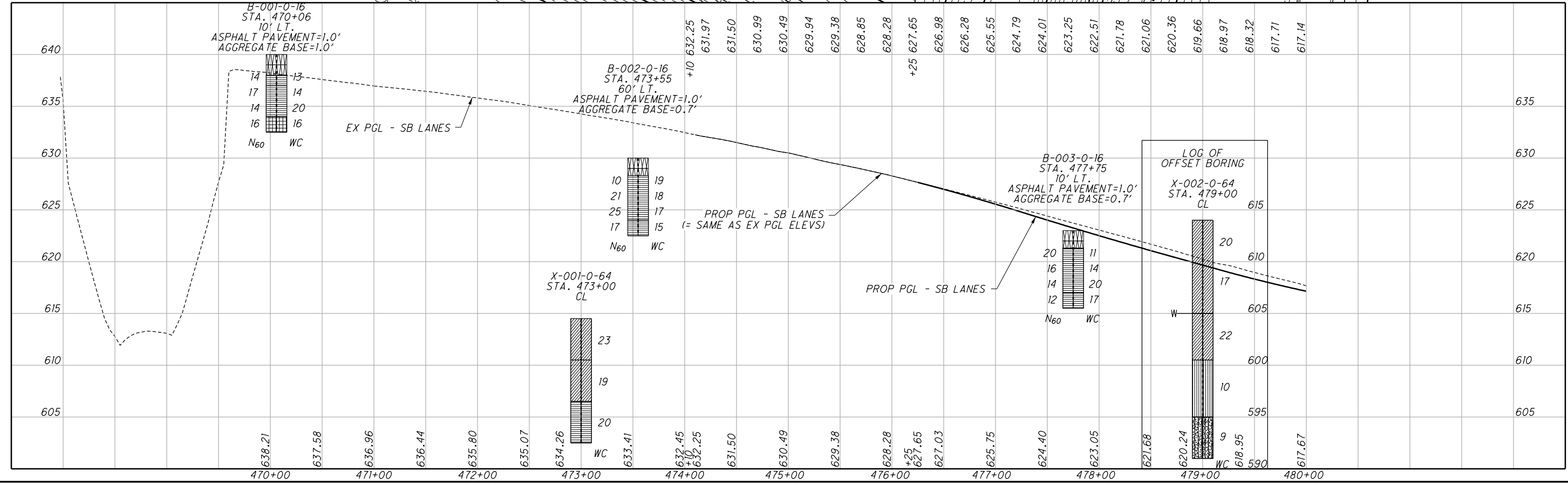
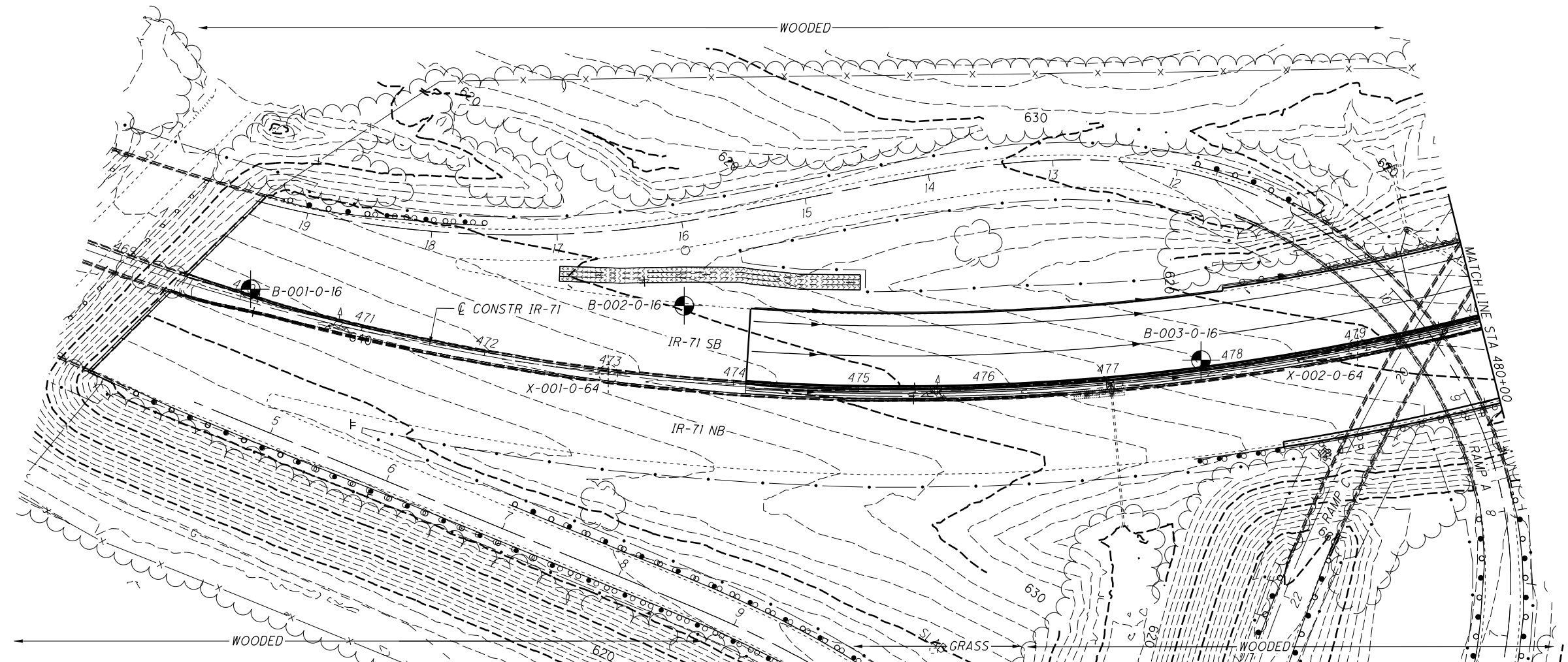


0 50 100
 25
 HORIZONTAL
 SCALE IN FEET

DRAWN
KJM
 CHECKED
DWW

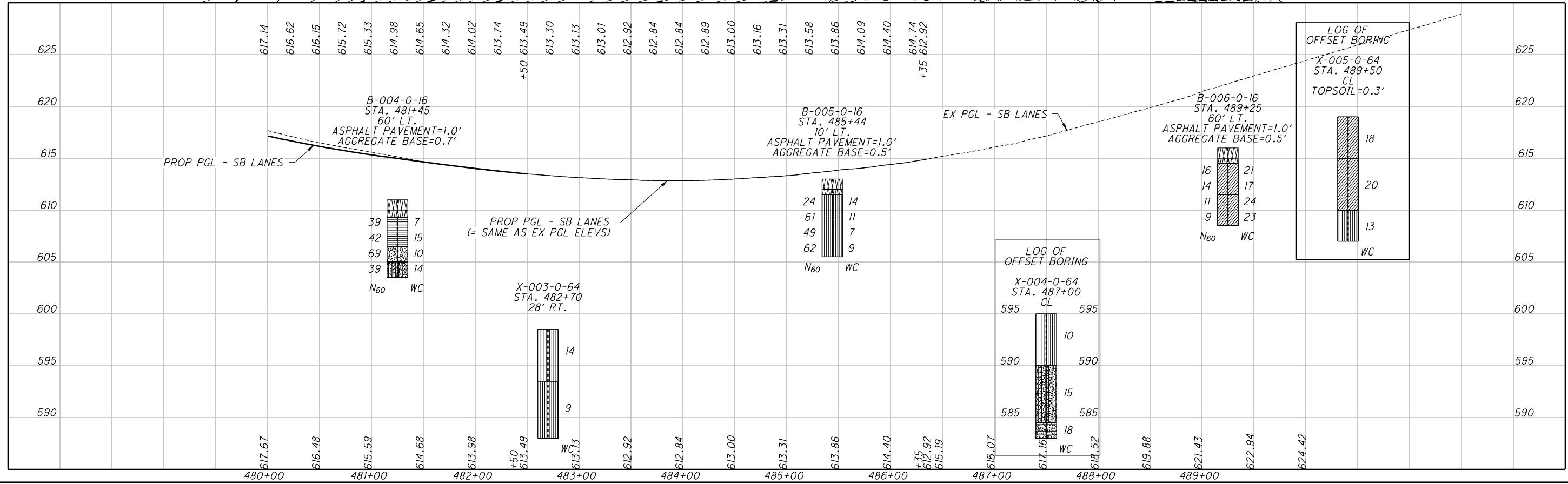
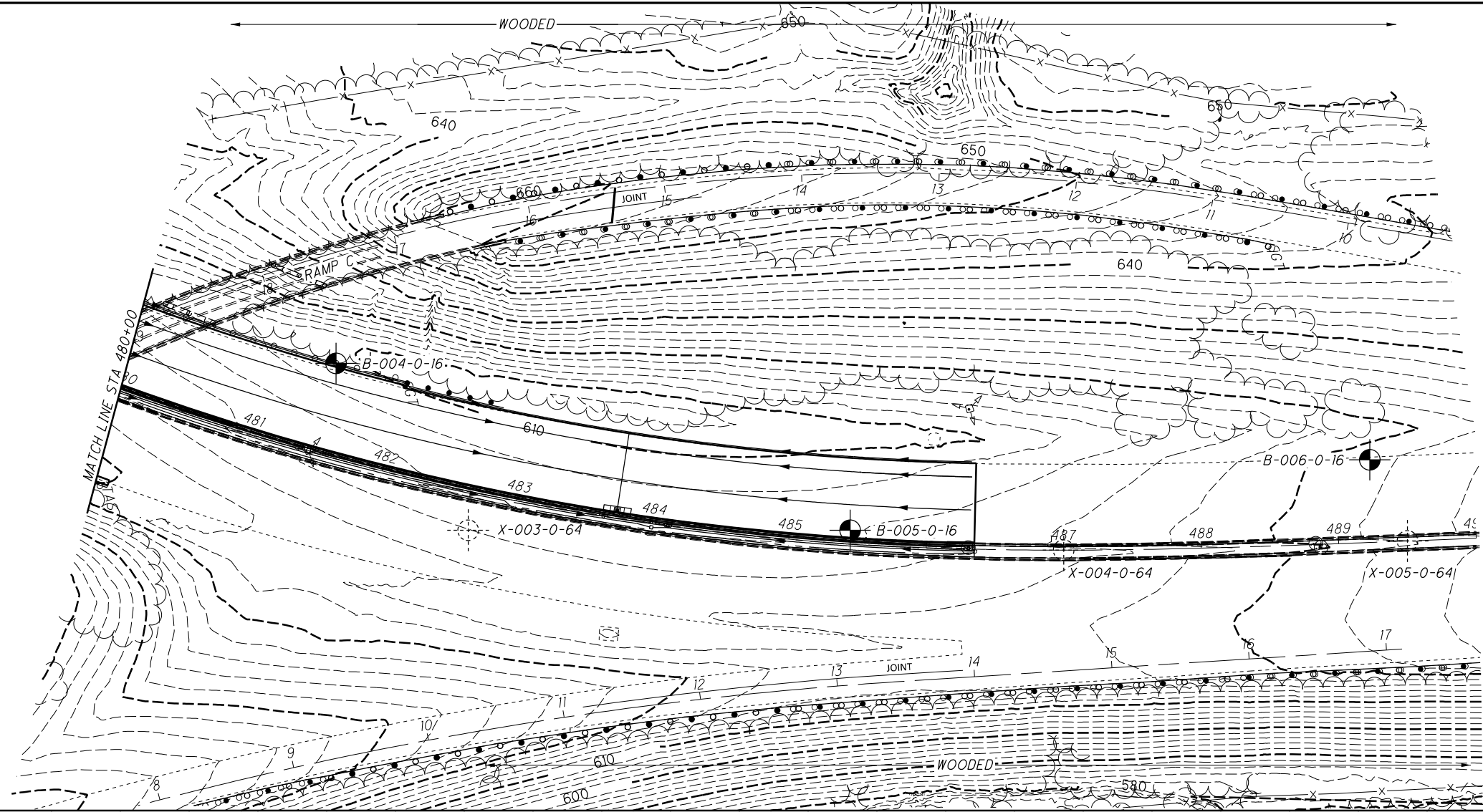
SOIL PROFILE
STA 470+00 TO STA 480+00

HAM-71-8.42



N:\HCN Projects\AutoCAD\2016\16\165108\918261P001.dgn Sheet 6/28/2017 7:46:30 AM kjmankin

N:\HCN Projects\AutoCAD\2016\16\165108\918261P002.dgn Sheet 6/28/2017 10:45:37 AM k.jrankin



DRAWN: KJM
CHECKED: DWJ

**SOIL PROFILE
STA 480+00 TO STA 489+00**

HAM-71-8.42



STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
HAM-71-6.86
PART 2
CITY OF CINCINNATI
COLUMBIA TOWNSHIP
HAMILTON COUNTY

PROJECT DESCRIPTION

WIDENING OF NORTHBOUND I.R. 71 TO PROVIDE THREE CONTINUOUS THROUGH LANES THROUGH THE S.R. 562 INTERCHANGE. THIS WIDENING WILL RESULT IN ONE ADDITIONAL LANE FROM S.R. 562 TO RED BANK EXPRESSWAY. ADD ENTRANCE AND EXIT RAMP TO KENNEDY AVENUE FROM I.R. 71 NORTHBOUND. CLOSE EXISTING NORTHBOUND EXIT TO RIDGE AVENUE.

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA: 23.27 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 1.50 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA: 24.77 ACRES

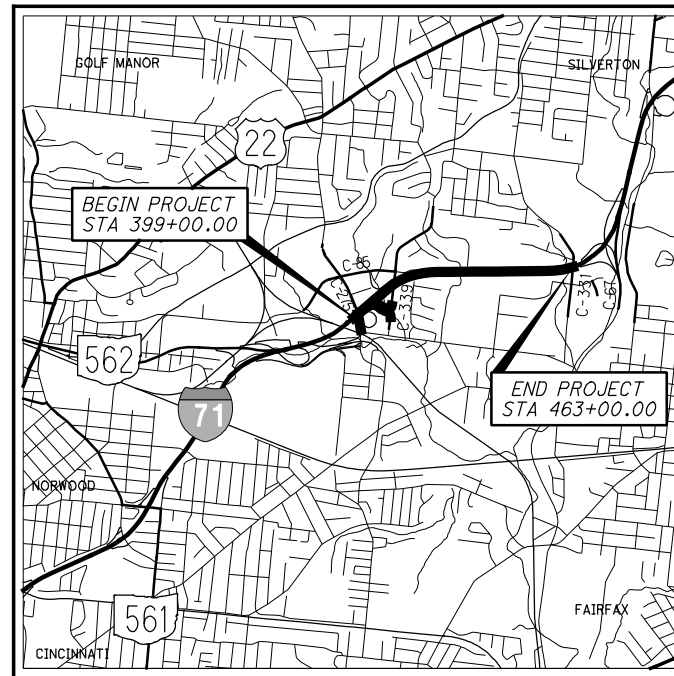
LIMITED ACCESS

THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02 OF THE OHIO REVISED CODE.

2016 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY EXCEPT FOR THE SIDE ROADS AS DESCRIBED ON SHEETS 13 AND 14 AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.



LOCATION MAP

LATITUDE: 39°10'05" N LONGITUDE: -84°25'20" W



PORTION TO BE IMPROVED	
INTERSTATE HIGHWAY	
FEDERAL ROUTES	
STATE ROUTES	
COUNTY & TOWNSHIP ROADS	
OTHER ROADS	

DESIGN DESIGNATION

SEE SHEET NO. 2 FOR ROADWAY SPECIFIC INFORMATION

INDEX OF SHEETS:

TITLE SHEET	1	INFIELD GRADING PLAN AND	
SCHEMATIC	2	CROSS SECTIONS	129-131
TYPICAL SECTIONS	3-5	CROSS SECTIONS - RIDGE AVENUE	132-134
GENERAL NOTES	6-8A	SUPERELEVATION TABLES	135-136
MAINTENANCE OF TRAFFIC	9-41	INTERSECTION DETAILS	137
GENERAL SUMMARY	42-48	INTERCHANGE DETAILS	138-141
SUBSUMMARY	49	PAVEMENT JOINT DETAIL	142
ROADWAY QUANTITIES	50-51	GRADING PLAN	143
PAVEMENT QUANTITIES	52	CULVERT SUBSUMMARY	144
DRAINAGE QUANTITIES	53-54	CULVERT DETAILS	145-162
UNDERDRAIN QUANTITIES	55	STORM SEWER PROFILES	163-165
REFERENCE SHEET	56	ITS PLANS AND QUANTITIES	166-188
PROJECT SITE PLAN	57	PAVEMENT MARKING & SIGNING PLANS	189-195A
PLAN - I.R. 71	58-70	SIGNAL PLANS	196-202
PLAN - RAMP	71	LIGHTING PLAN	203-208
PLAN - RIDGE AVENUE	72-73	NOISE WALL DETAILS	209-216
PROFILE - RAMP N	74	SOIL NAIL WALL DETAILS	217-230
PROFILE - RAMP P	75	FENCING PLAN	231-235
CROSS SECTIONS - I.R. 71	76-116	RIGHT OF WAY PLANS	236-253
CROSS SECTIONS - RAMP N	117-121	SOIL PROFILE AND STRUCTURE	
CROSS SECTIONS - RAMP P	122-128	FOUNDATION EXPLORATION	

UNDERGROUND UTILITIES
CONTACT BOTH SERVICES TWO WORKING DAYS BEFORE YOU DIG.

Call Before You Dig
1-800-362-2764
(Non-members must be called directly)
OIL & GAS PRODUCERS
UNDERGROUND PROTECTION SERVICE
1-800-925-0988

PLAN PREPARED BY:

11687 Lebanon Road
Cincinnati, Ohio 45249
(513) 842-8200

LJB Inc. • 2500 Newmark Drive
Miamisburg, OH 45342
(937) 259-5000 tel • (937) 259-5100 fax • LJBinc.com

ENGINEERS SEAL:	ENGINEERS SEAL:
SIGNED: <i>Steven N. Shadix</i> DATE: SEPTEMBER 28, 2017	SIGNED: <i>Matthew A. Gardner</i> DATE: SEPTEMBER 28, 2017
ENGINEERS SEAL:	ENGINEERS SEAL:
SIGNED: <i>Doug K. Iles</i> DATE: AUGUST 1, 2017	SIGNED: <i>Angela Tremblay</i> DATE: AUGUST 1, 2017

ADDITIONAL SHEETS: 8A, 167A, 168A, 195A

STANDARD CONSTRUCTION DRAWINGS	SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS
SEE PART 1	SEE PART 1	SEE PART 1

APPROVED _____
DATE _____ DISTRICT DEPUTY DIRECTOR

APPROVED _____
DATE _____ DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO.
E130 (238)

PID NO.
94741

CONSTRUCTION PROJECT NO.
NONE

RAILROAD INVOLVEMENT
NONE

HAM-71-6.86

V:\1736\active\173620049\design\94741\roadway\sheet\94741_G1001.dgn 9/27/2017 11:45:52 AM pdurham

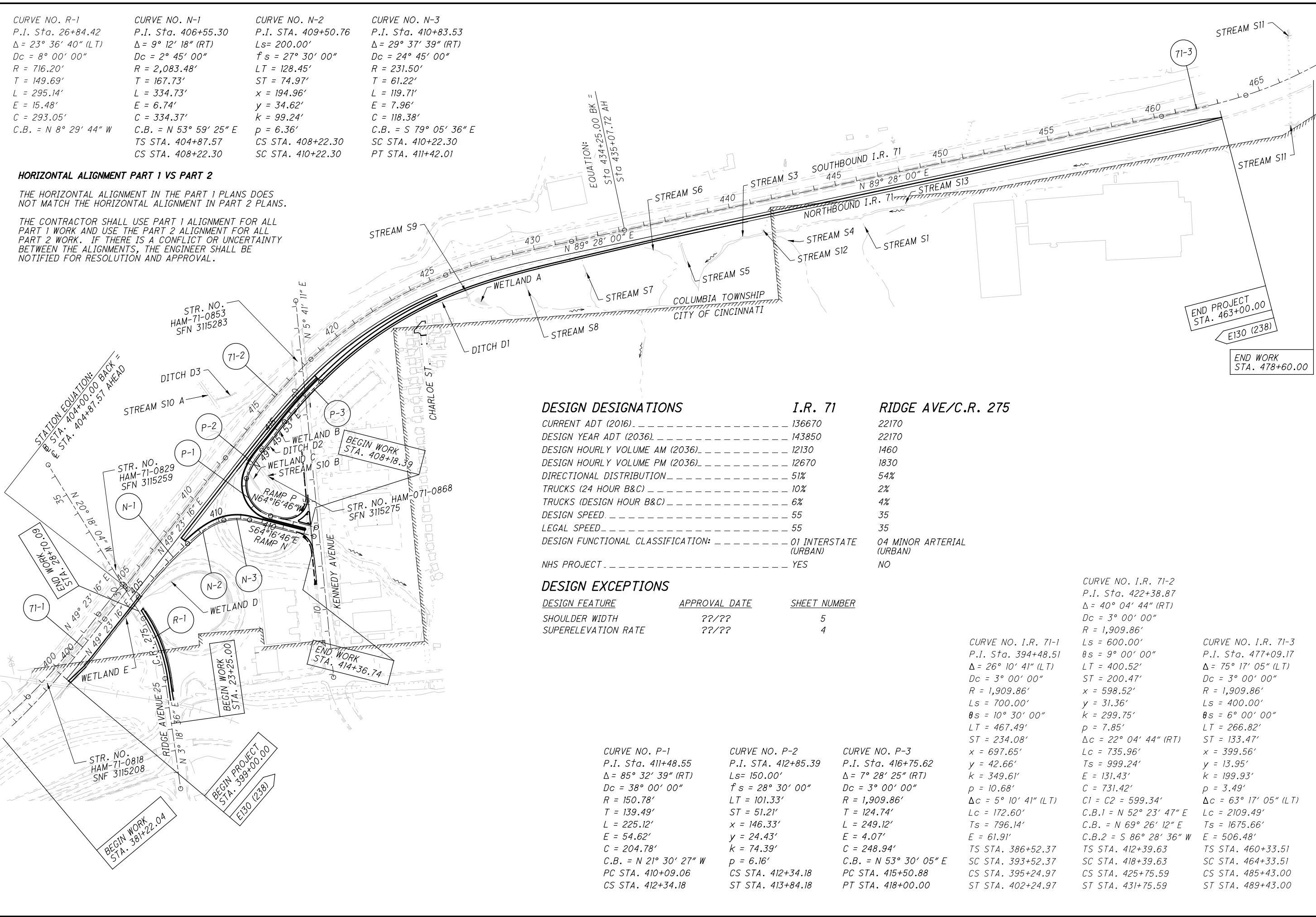
CURVE NO. R-1 P.I. Sta. 26+84.42 $\Delta = 23^\circ 36' 40''$ (LT) $Dc = 8^\circ 00' 00''$ $R = 716.20'$ $T = 149.69'$ $L = 295.14'$ $E = 15.48'$ $C = 293.05'$ C.B. = N 8° 29' 44" W	CURVE NO. N-1 P.I. Sta. 406+55.30 $\Delta = 9^\circ 12' 18''$ (RT) $Dc = 2^\circ 45' 00''$ $R = 2,083.48'$ $T = 167.73'$ $L = 334.73'$ $E = 6.74'$ $C = 334.37'$ C.B. = N 53° 59' 25" E TS STA. 404+87.57 CS STA. 408+22.30	CURVE NO. N-2 P.I. STA. 409+50.76 $Ls = 200.00'$ $f_s = 27^\circ 30' 00''$ $LT = 128.45'$ $ST = 74.97'$ $x = 194.96'$ $y = 34.62'$ $k = 99.24'$ $p = 6.36'$ CS STA. 408+22.30 SC STA. 410+22.30	CURVE NO. N-3 P.I. Sta. 410+83.53 $\Delta = 29^\circ 37' 39''$ (RT) $Dc = 24^\circ 45' 00''$ $R = 231.50'$ $T = 61.22'$ $L = 119.71'$ $E = 7.96'$ $C = 118.38'$ C.B. = S 79° 05' 36" E SC STA. 410+22.30 PT STA. 411+42.01
---	---	---	--

HORIZONTAL ALIGNMENT PART 1 VS PART 2

THE HORIZONTAL ALIGNMENT IN THE PART 1 PLANS DOES NOT MATCH THE HORIZONTAL ALIGNMENT IN PART 2 PLANS.

THE CONTRACTOR SHALL USE PART 1 ALIGNMENT FOR ALL PART 1 WORK AND USE THE PART 2 ALIGNMENT FOR ALL PART 2 WORK. IF THERE IS A CONFLICT OR UNCERTAINTY BETWEEN THE ALIGNMENTS, THE ENGINEER SHALL BE NOTIFIED FOR RESOLUTION AND APPROVAL.

V:\1736\active\173620049\roadway\design\94741\roadway\sheet\94741_GB0001.dgn 9/27/2017 10:41:14 AM pdurham



DESIGN DESIGNATIONS

	I.R. 71	RIDGE AVE/C.R. 275
CURRENT ADT (2016)	136670	22170
DESIGN YEAR ADT (2036)	143850	22170
DESIGN HOURLY VOLUME AM (2036)	12130	1460
DESIGN HOURLY VOLUME PM (2036)	12670	1830
DIRECTIONAL DISTRIBUTION	51%	54%
TRUCKS (24 HOUR B&C)	10%	2%
TRUCKS (DESIGN HOUR B&C)	6%	4%
DESIGN SPEED	55	35
LEGAL SPEED	55	35
DESIGN FUNCTIONAL CLASSIFICATION:	01 INTERSTATE (URBAN)	04 MINOR ARTERIAL (URBAN)
NHS PROJECT	YES	NO

DESIGN EXCEPTIONS

DESIGN FEATURE	APPROVAL DATE	SHEET NUMBER
SHOULDER WIDTH	??/??	5
SUPERELEVATION RATE	??/??	4

CURVE NO. P-1 P.I. Sta. 411+48.55 $\Delta = 85^\circ 32' 39''$ (RT) $Dc = 38^\circ 00' 00''$ $R = 150.78'$ $T = 139.49'$ $L = 225.12'$ $E = 54.62'$ $C = 204.78'$ C.B. = N 21° 30' 27" W PC STA. 410+09.06 CS STA. 412+34.18
--

CURVE NO. P-2 P.I. STA. 412+85.39 $Ls = 150.00'$ $f_s = 28^\circ 30' 00''$ $LT = 101.33'$ $ST = 51.21'$ $x = 146.33'$ $y = 24.43'$ $k = 74.39'$ $p = 6.16'$ CS STA. 412+34.18 ST STA. 413+84.18

CURVE NO. P-3 P.I. Sta. 416+75.62 $\Delta = 7^\circ 28' 25''$ (RT) $Dc = 3^\circ 00' 00''$ $R = 1,909.86'$ $T = 124.74'$ $L = 249.12'$ $E = 4.07'$ $C = 248.94'$ C.B. = N 53° 30' 05" E PC STA. 415+50.88 PT STA. 418+00.00

CURVE NO. I.R. 71-1 P.I. Sta. 394+48.51 $\Delta = 26^\circ 10' 41''$ (LT) $Dc = 3^\circ 00' 00''$ $R = 1,909.86'$ $Ls = 700.00'$ $\theta_s = 10^\circ 30' 00''$ $LT = 467.49'$ $ST = 234.08'$ $x = 697.65'$ $y = 42.66'$ $k = 349.61'$ $p = 10.68'$ $\Delta c = 5^\circ 10' 41''$ (LT) $Lc = 172.60'$ $Ts = 796.14'$ $E = 61.91'$ $TS STA. 386+52.37$ $SC STA. 393+52.37$ $CS STA. 395+24.97$ $ST STA. 402+24.97$
--

CURVE NO. I.R. 71-2 P.I. Sta. 422+38.87 $\Delta = 40^\circ 04' 44''$ (RT) $Dc = 3^\circ 00' 00''$ $R = 1,909.86'$ $Ls = 600.00'$ $\theta_s = 9^\circ 00' 00''$ $LT = 400.52'$ $ST = 200.47'$ $x = 598.52'$ $y = 31.36'$ $k = 299.75'$ $p = 7.85'$ $\Delta c = 22^\circ 04' 44''$ (RT) $Lc = 735.96'$ $Ts = 999.24'$ $E = 131.43'$ $C = 731.42'$ $C1 = C2 = 599.34'$ C.B.1 = N 52° 23' 47" E C.B.2 = S 86° 28' 36" W TS STA. 412+39.63 SC STA. 418+39.63 CS STA. 425+75.59 ST STA. 431+75.59
--

CURVE NO. I.R. 71-3 P.I. Sta. 477+09.17 $\Delta = 75^\circ 17' 05''$ (LT) $Dc = 3^\circ 00' 00''$ $R = 1,909.86'$ $Ls = 400.00'$ $\theta_s = 6^\circ 00' 00''$ $LT = 266.82'$ $ST = 133.47'$ $x = 399.56'$ $y = 13.95'$ $k = 199.93'$ $p = 3.49'$ $\Delta c = 63^\circ 17' 05''$ (LT) $Lc = 2109.49'$ $Ts = 1675.66'$ $E = 506.48'$ $TS STA. 460+33.51$ $SC STA. 464+33.51$ $CS STA. 485+43.00$ $ST STA. 489+43.00$
--



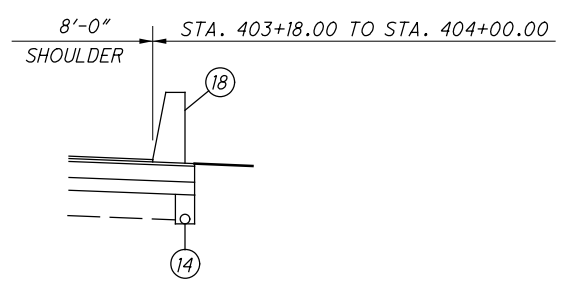
200
400
HORIZONTAL SCALE IN FEET

CALCULATED
EDA
CHECKED
PJD

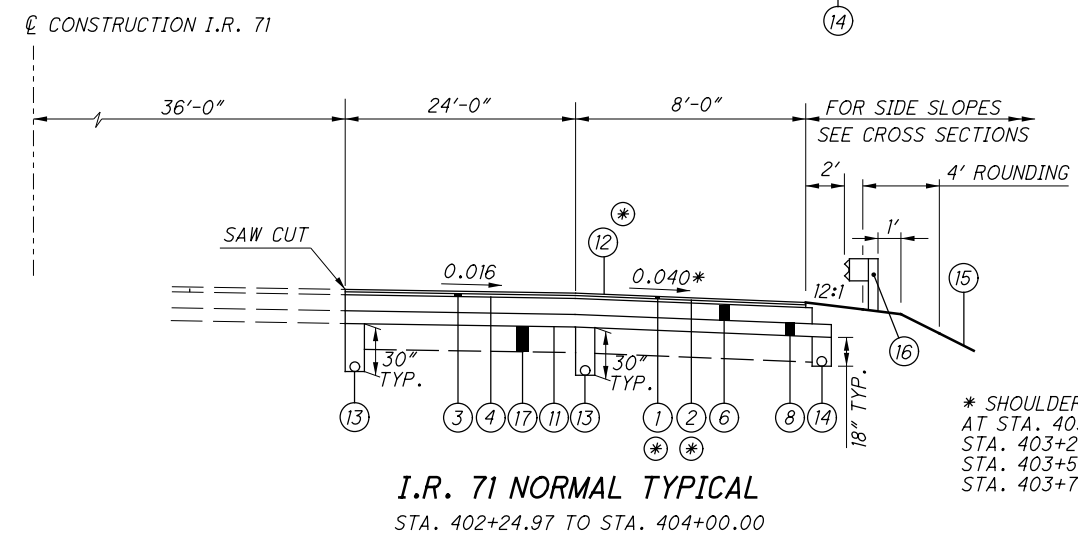
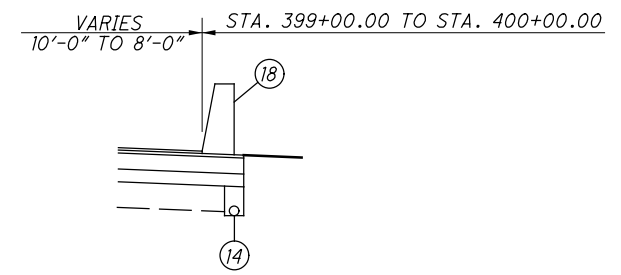
SCHEMATIC

HAM-71-6.86

2
253



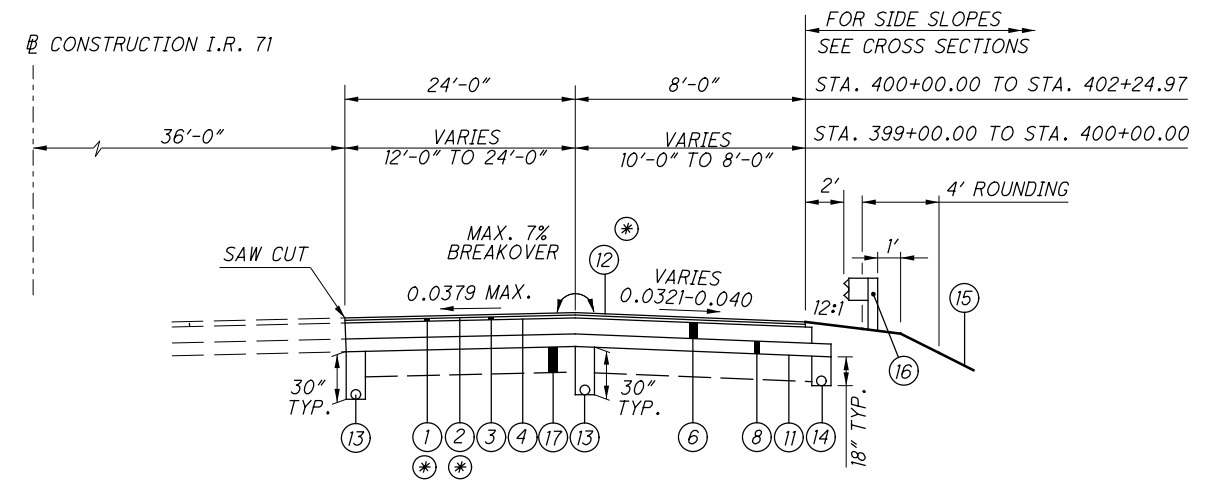
NOTE: SAW CUT
THE EXISTING PAVEMENT EDGE SHALL BE
SAW CUT TO LOCATE A SOUND PAVEMENT
EDGE PER SECTION 203.04 (e) OF THE
CMS. FOR ESTIMATING PURPOSES,
PAVEMENT CALCULATIONS INCLUDED IN
THE PLANS INDICATE AN AVERAGE WIDTH
OF 1 FOOT OF EXISTING PAVEMENT
BEING REPLACED.



I.R. 71 NORMAL TYPICAL
STA. 402+24.97 TO STA. 404+00.00

STATION EQUATION
BASELINE STA. 404+00.00 BACK
CENTERLINE STA. 404+87.57 AHEAD

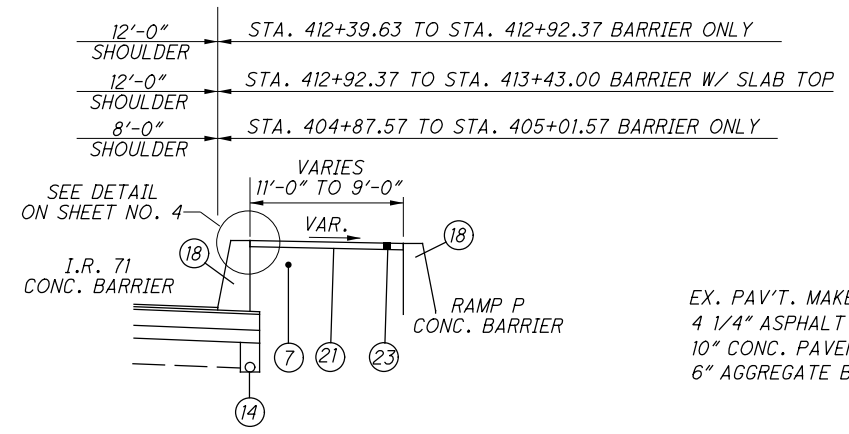
* SHOULDER VARIES FROM 0.040
AT STA. 403+00.00 TO 0.054 AT
STA. 403+25.00 AND FROM 0.054 AT
STA. 403+50.00 TO 0.040 AT
STA. 403+75.00



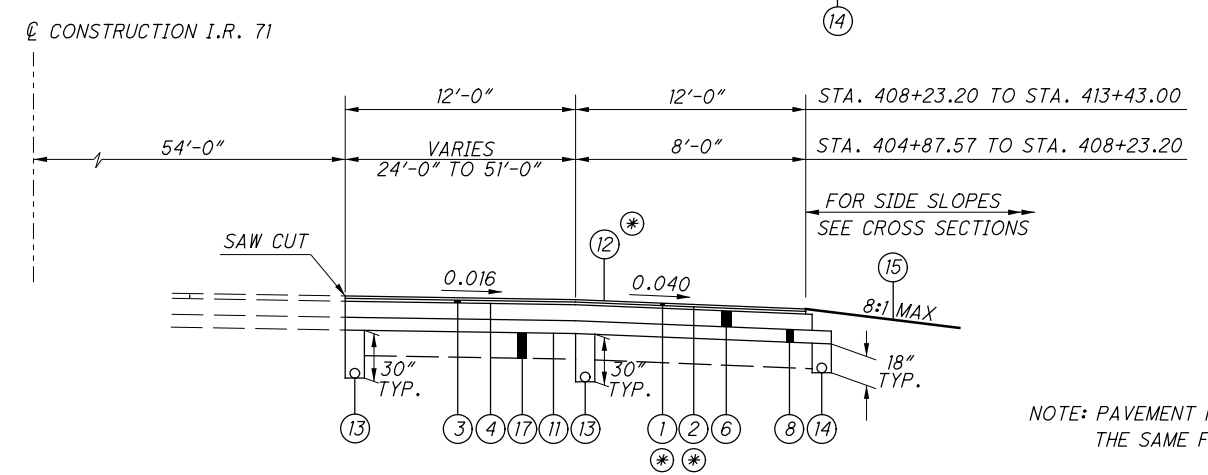
I.R. 71 SUPERELEVATED TYPICAL
STA. 399+00.00 TO STA. 402+24.97 (TRAN.)

LEGEND

- ① ITEM 806, 1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A
- ② ITEM 407, NON-TRACKING TACK COAT
- ③ ITEM 442, 1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446)
- ④ ITEM 407, TACK COAT
- ⑤ ITEM 302, 8" ASPHALT CONCRETE BASE, PG64-22
- ⑥ ITEM 302, 10" ASPHALT CONCRETE BASE, PG64-22
- ⑦ ITEM 203, GRANULAR MATERIAL, TYPE B
- ⑧ ITEM 304, 6" AGGREGATE BASE
- ⑨ NOT USED
- ⑩ ITEM 452, 13 1/2" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC1
- ⑪ ITEM 204, PROOF ROLLING
- ⑫ ITEM 618, RUMBLE STRIPS, ASPHALT
- ⑬ ITEM 605, 6" SHALLOW PIPE UNDERDRAINS
- ⑭ ITEM 605, 6" BASE PIPE UNDERDRAINS
- ⑮ ITEM 659, SEEDING AND MULCHING
- ⑯ ITEM 606, GUARDRAIL, TYPE MGS
- ⑰ ITEM 206, CEMENT STABILIZED SUBGRADE (DEPTH 16"), RIDGE AVE. (DEPTH 12")
- ⑱ ITEM 622, CONCRETE BARRIER, SINGLE SLOPE, TYPE D
- ⑲ NOT USED
- ⑳ ITEM 609, TYPE 6 CURB
- ㉑ ITEM 204, SUBGRADE COMPACTION
- ㉒ ITEM 608, 5" CONCRETE WALK
- ㉓ ITEM 609, 4" CONCRETE TRAFFIC ISLAND
- ㉔ ITEM 442, 1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446)
- ㉕ ITEM 407, NON-TRACKING TACK COAT



EX. PAV'T. MAKE-UP IR-71
4 1/4" ASPHALT
10" CONC. PAVEMENT
6" AGGREGATE BASE

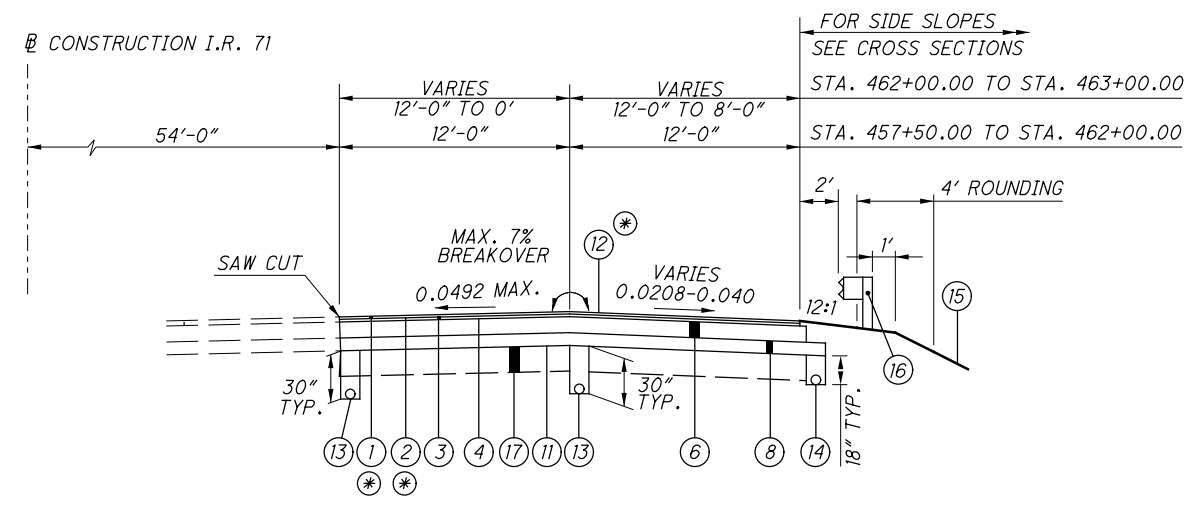


I.R. 71 NORMAL TYPICAL
STA. 404+87.57 TO STA. 413+43.00

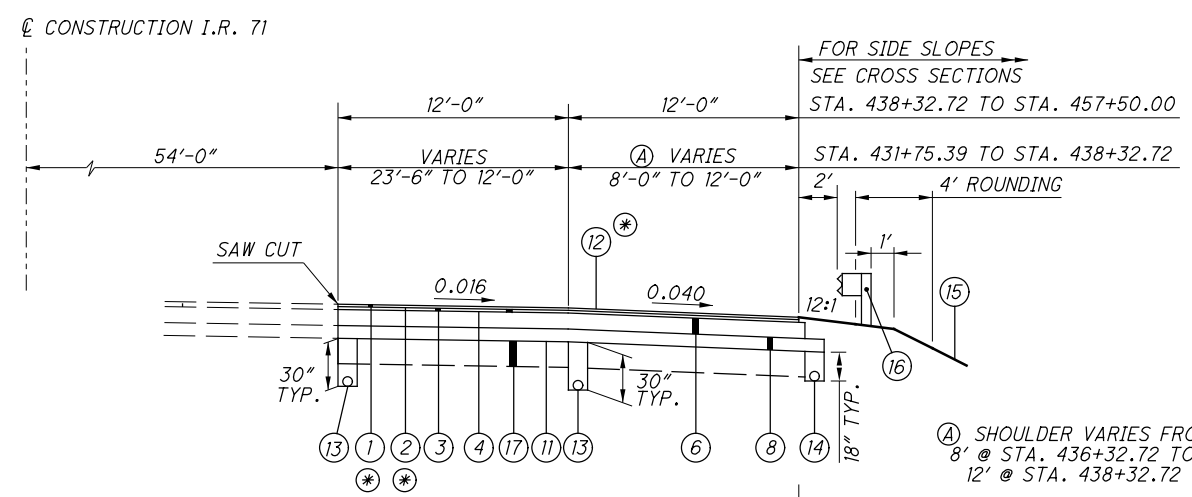
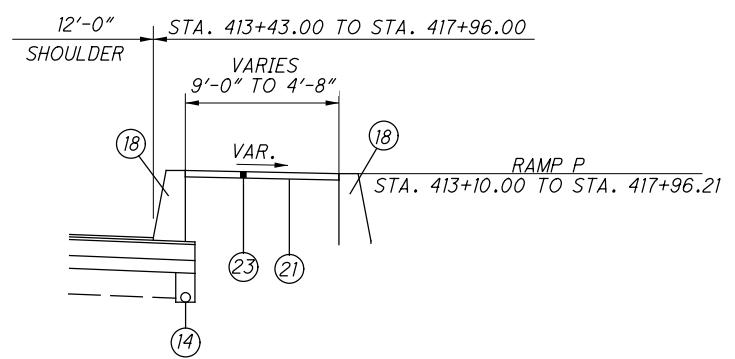
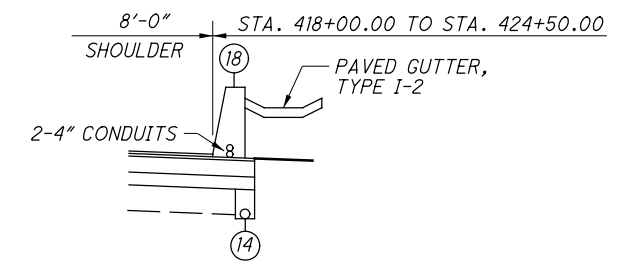
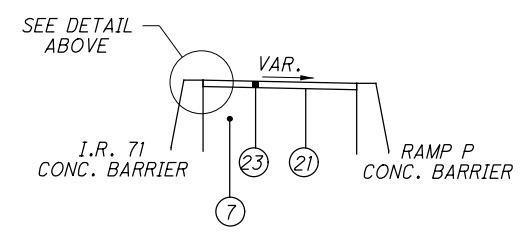
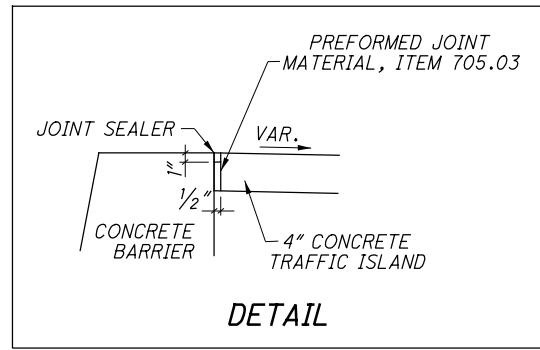
NOTE: PAVEMENT MAKE-UP FOR NEW SHOULDER WILL HAVE
THE SAME FULL DEPTH PAVEMENT MAKE-UP.

⊛ TO BE INSTALLED UNDER PART I

V:\1736\active\173620049\design\94741\roadway\sheets\94741_GY001.dgn 9/27/2017 10:41:15 AM pdurham

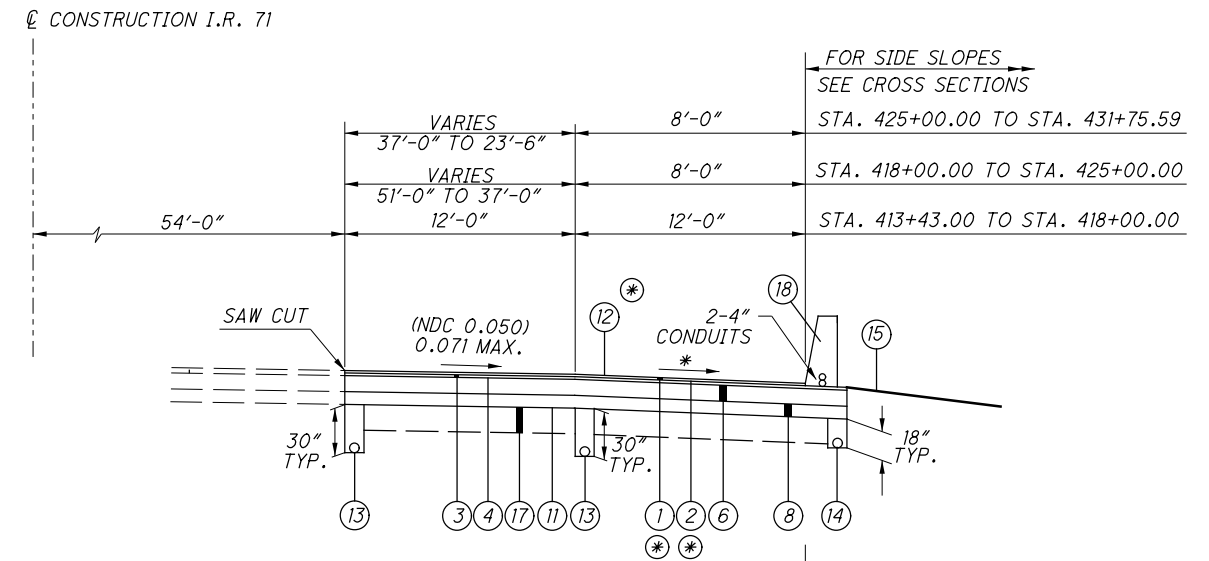
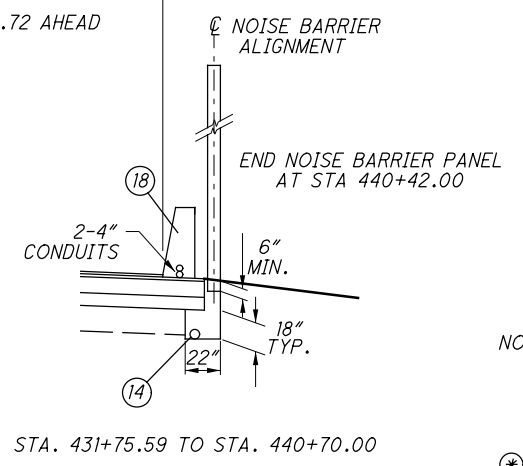


I.R. 71 SUPERELEVATED TYPICAL
STA. 457+50.00 TO STA. 463+00.00 (TRAN.)



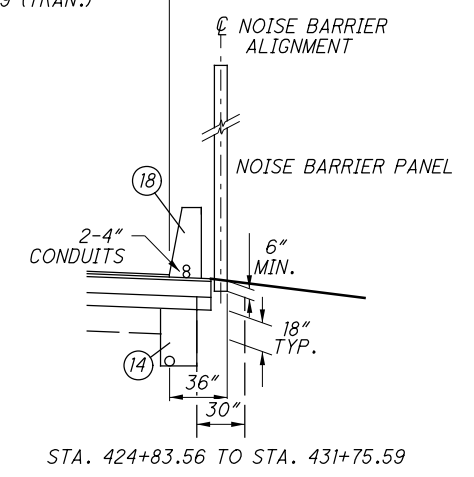
I.R. 71 NORMAL TYPICAL
STA. 431+75.59 TO STA. 457+50.00

STATION EQUATION
STA. 434+25.00 BACK = STA. 435+07.72 AHEAD



I.R. 71 SUPERELEVATED TYPICAL
STA. 413+43.00 TO STA. 418.39.63 (TRAN.)
STA. 418+39.63 TO STA. 425+75.59 (0.071)
STA. 425+75.59 TO STA. 431+75.59 (TRAN.)

* DENOTES SE OR 0.040
WHICHEVER IS GREATER



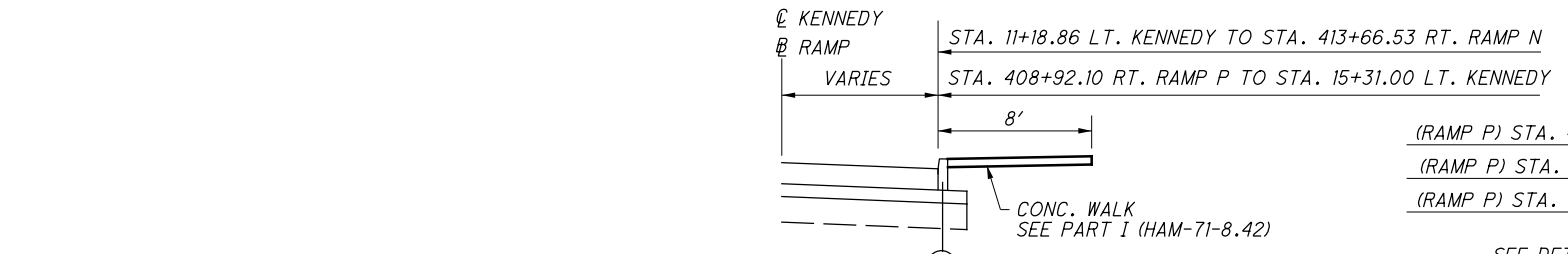
NOTE: PAVEMENT MAKE-UP FOR NEW SHOULDER WILL HAVE THE SAME FULL DEPTH PAVEMENT MAKE-UP.

⊛ TO BE INSTALLED UNDER PART I

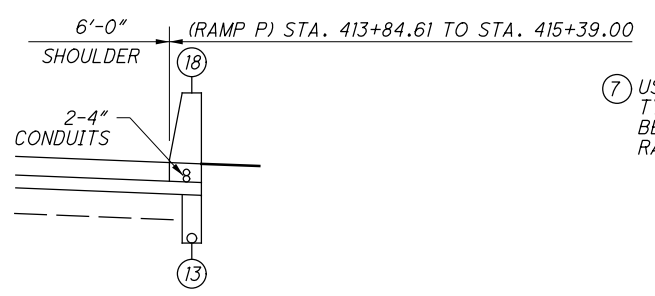
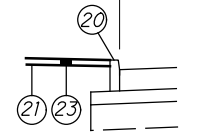
SEE SAW CUT NOTE ON SHEET NO. 3
FOR LEGEND, SEE SHEET NO. 3

V:\1736\active\173620049\design\94741\roadway\sheets\94741_GY001.dgn 9/27/2017 10:41:15 AM pdurham

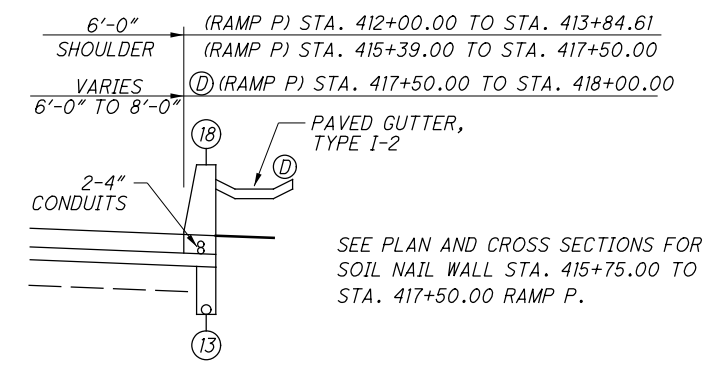
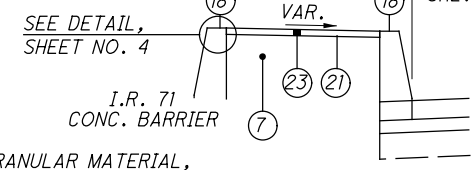
[A] RAMP P LEFT SHOULDER VARIES FROM -0.031 @ STA 417+50 TO +0.039 @ STA 418+00.



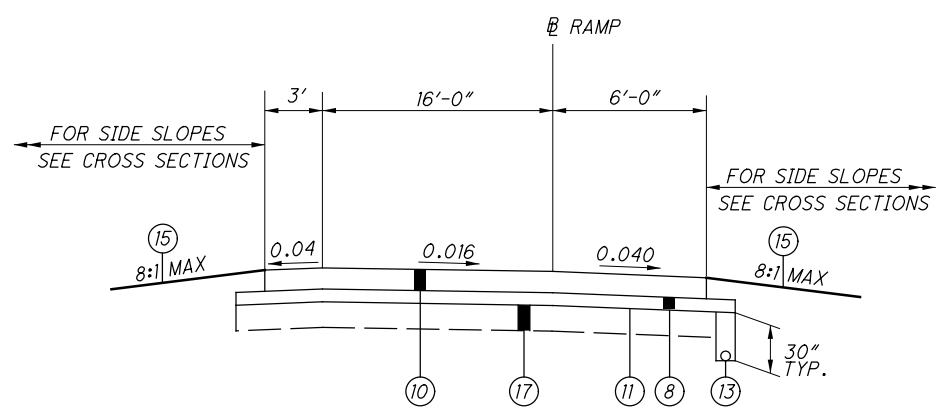
(RAMP P) STA. 408+22.24 TO STA. 408+79.25 NO SHL.
 (RAMP P) STA. 408+41.07 TO STA. 410+36.85 3' SHL.
 (RAMP N) STA. 412+00.00 TO STA. 414+00.00 3' SHL.



[7] USE GRANULAR MATERIAL, TYPE B AS BACKFILL BETWEEN BARRIERS ALONG RAMP P.

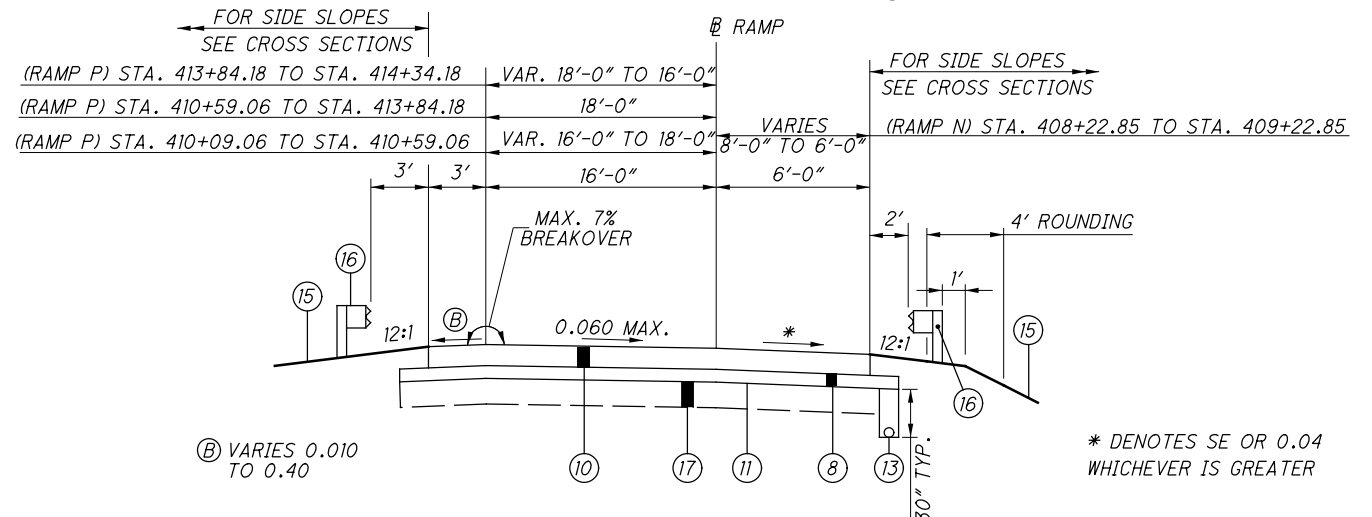


SEE PLAN AND CROSS SECTIONS FOR SOIL NAIL WALL STA. 415+75.00 TO STA. 417+50.00 RAMP P.



NORMAL RAMP TYPICAL

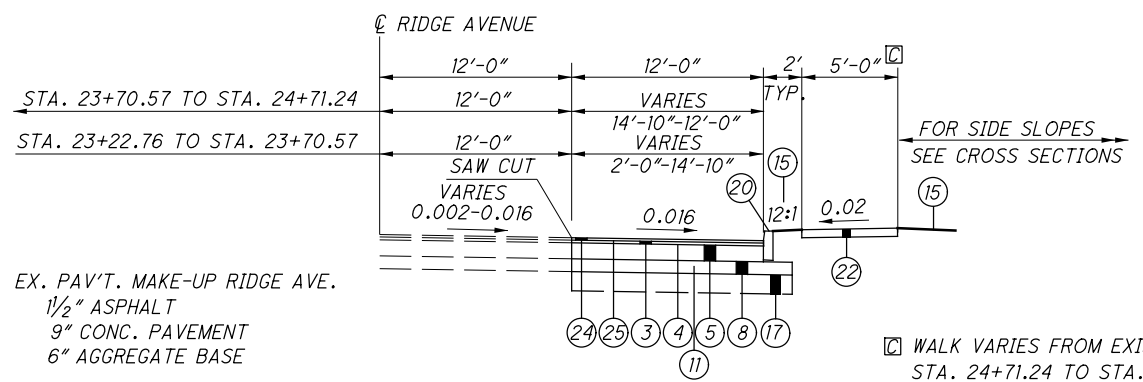
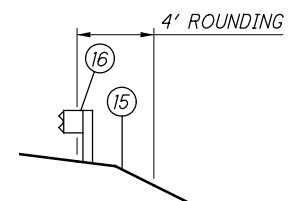
(RAMP N) STA. 412+25.55 TO STA. 414+36.74
 (RAMP P) STA. 408+18.39 TO STA. 409+60.55
 (RAMP P) STA. 413+84.14 TO STA. 415+28.45



SUPERELEVATED RAMP TYPICAL

(RAMP N)
 STA. 408+22.30 TO STA. 410+22.30 (TRAN.)
 STA. 410+22.30 TO STA. 410+95.18 (0.060)
 STA. 410+95.18 TO STA. 412+25.55 (TRAN.)**
 (RAMP P***)
 **STA. 409+60.55 TO STA. 410+74.10 (TRAN.)
 STA. 410+74.10 TO STA. 412+34.18 (0.060)
 STA. 412+34.18 TO STA. 413+84.18 (TRAN.)
 (RAMP P)
 STA. 415+28.45 TO STA. 415+96.60 (TRAN.)
 STA. 415+96.60 TO STA. 418+00.00 (0.039)

**SEE PAVEMENT DETAIL SHEET FOR STA. 412+25.55 TO STA. 414+36.74 (RAMP N) STA. 408+18.39 TO STA. 409+60.55 (RAMP P)



NORMAL TYPICAL

STA. 23+22.76 TO STA. 28+70.09

[15] WALK VARIES FROM EXIST. TO 5'-0" BETWEEN STA. 24+71.24 TO STA. 24+96.24 AND FROM 5'-0" TO EXIST. BETWEEN STA. 28+00.00 TO STA. 28+52.70

NOTE: PAVEMENT MAKE-UP FOR NEW SHOULDER WILL HAVE THE SAME FULL DEPTH PAVEMENT MAKE-UP.

SEE SAW CUT NOTE ON SHEET NO. 3 FOR LEGEND, SEE SHEET NO. 3

V:\1736\active\173620049\design\94741\roadway\sheets\94741_GY001.dgn 9/27/2017 10:41:15 AM pdurham

ROUNDING

THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLIES TO ALL CROSS-SECTIONS EVEN THOUGH OTHERWISE SHOWN.

UTILITIES

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

ELECTRIC:
DUKE ENERGY
139 EAST FOURTH STREET, ROOM 467A
CINCINNATI, OHIO 45202
(513) 287-3674 (AARON WRIGHT)

ELECTRIC TRANSMISSION:
DUKE ENERGY
139 EAST FOURTH STREET, ROOM 552A
CINCINNATI, OHIO 45202
(513) 287-1266 (TIM MEYER)

GAS:
DUKE ENERGY
139 EAST FOURTH STREET, ROOM 460A
CINCINNATI, OHIO 45202
(513) 287-1205 (KELSEY PACE)

TELEPHONE:
CINCINNATI BELL
221 EAST FOURTH STREET, BLDG. 121-900
CINCINNATI, OHIO 45202
(513) 565-7043 (MARK CONNER)

CINCINNATI BELL AERIAL & PLACING
209 WEST SEVENTH STREET, BLDG. 121-900
CINCINNATI, OHIO 45202
(513) 566-5120 (DORIAN JOHNSON)

WATER:
GREATER CINCINNATI WATER WORKS
4747 SPRING GROVE AVENUE
CINCINNATI, OHIO 45232
(513) 591-7362 (JON HUNSEDER)
EMERGENCIES (513) 591-7900

SANITARY:
METROPOLITAN SEWER DISTRICT (MSD)
1600 GEST STREET
CINCINNATI, OHIO 45204
(513) 557-7108 (ROB FRANKLIN)
EMERGENCIES (513) 352-4900 OR (513) 244-5500

CABLE:
CHARTER COMMUNICATIONS (FKA) TIME WARNER CABLE
11252 CORNELL PARK DRIVE
CINCINNATI, OHIO 45242
(513) 469-5483 (KENT RIEGER)

STORMWATER MANAGEMENT:
CINCINNATI STORMWATER MANAGEMENT UTILITY
225 W. GALBRAITH ROAD
CINCINNATI, OHIO 45215
(513) 352-4287 (JEFF OXENHAM)

TRAFFIC:
CITY OF CINCINNATI TRAFFIC
801 PLUM STREET, ROOM 320
CINCINNATI, OHIO 45202
(513) 352-6229 (JEFF WILHOIT)

UTILITIES (CONTINUED)

TRAFFIC MAINTENANCE:
ODOT DISTRICT 8
505 SOUTH STATE ROUTE 741
LEBANON, OH 45036
PHONE: (513) 933-6689

ITS:
ODOT OFFICE OF TRAFFIC OPERATIONS
1980 W. BROAD STREET
COLUMBUS, OH 43223
PHONE: (614) 752-8846

THE OHIO DEPARTMENT OF TRANSPORTATION HAS UTILITY FACILITIES (HIGHWAY LIGHTING, TRAFFIC SIGNALS, AND ITS) WITHIN THE LIMITS OF THIS PROJECT.

IN ADDITION TO THE INFORMATION OUTLINED IN THE UTILITY NOTE OF THIS CONTRACT, THE CONTRACTOR SHALL TAKE THE FOLLOWING ACTION TO PROTECT ODOT'S FACILITIES DURING CONSTRUCTION:

HIGHWAY LIGHTING AND TRAFFIC SIGNALS:

EVEN THOUGH ODOT IS LISTED AS A MEMBER OF THE OHIO UTILITIES PROTECTION SERVICE (OUPS), THE CONTRACTOR ON THIS PROJECT IS REQUIRED TO CONTACT ODOT, DISTRICT 8 TRAFFIC MAINTENANCE DEPARTMENT DIRECTLY SO THAT THE ODOT UTILITIES LOCATED WITHIN THIS PROJECT ARE MARKED. THE CONTRACTOR SHALL NOTIFY DISTRICT 8 TRAFFIC MAINTENANCE AT 513-933-6689 AND THE PROJECT ENGINEER, FOURTEEN (14) CALENDAR DAYS IN ADVANCE OF ANY WORK, FOR THE NEED TO MARK ODOT OWNED UTILITIES.

ITS:

ITS FACILITIES AREN'T LISTED WITH OUPS, SO THE CONTRACTOR IS REQUIRED TO CONTACT ODOT CENTRAL OFFICE ITS LAB DIRECTLY SO THAT THE ODOT UTILITIES LOCATED WITHIN THIS PROJECT ARE MARKED. THE CONTRACTOR SHALL NOTIFY ODOT CENTRAL OFFICE ITS LAB AT THE CONTACT INFORMATION LISTED BELOW AND THE PROJECT ENGINEER, FOURTEEN (14) CALENDAR DAYS IN ADVANCE OF ANY WORK FOR MARKING OF ODOT OWNED UTILITIES.

CENTRAL OFFICE ITS LAB
614-387-4113 - PHONE
614-887-4134 - FAX
CEN.ITS.LAB@DOT.OHIO.GOV - EMAIL

THE ABOVE REQUIREMENTS ARE IN ADDITION TO SECTION 105.07 & 107.16 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS AND THE UTILITY PROPOSAL NOTE.

THE CONTRACTOR SHALL NOTIFY OTHER UTILITIES THROUGH OUPS OR DIRECTLY A MINIMUM OF FORTY-EIGHT (48) HOURS IN ADVANCE OF ANY WORK.

THE COST FOR THE ABOVE DESCRIBED WORK IS INCIDENTAL TO THE OVERALL BID PRICE OF THE PROJECT.

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.

ITEM 206 - CURING COAT, AS PER PLAN

CURE THE CHEMICALLY STABILIZED SUBGRADE WITH RAPID SETTING EMULSIFIED ASPHALT, CONFORMING TO 702.04. NO SUBSTITUTE FOR THE EMULSIFIED ASPHALT CURE SHALL BE PERMITTED. ALL OTHER ITEMS OF ITEM 206, CHEMICALLY STABILIZED SUBGRADE SHALL APPLY.

IN STREAM WORK

IN STREAM WORK IS NOT PERMITTED BETWEEN APRIL 15 THROUGH JUNE 30, IN ORDER TO PROTECT AQUATIC HABITAT:

ALSO NO WASTEWATER OF ANY KIND SHALL BE DISCHARGED INTO DUCK CREEK. NO STORAGE OF ANY IDLE EQUIPMENT, FUELS, LUBRICANTS, OR OTHER POTENTIALLY TOXIC OR HAZARDOUS MATERIALS SHALL BE PERMITTED WITHIN THE 100-YEAR FLOODPLAIN OF DUCK CREEK.

CONSTRUCTION NOISE

ACTIVITIES AND LAND USE ADJACENT TO THIS PROJECT MAY BE AFFECTED BY CONSTRUCTION NOISE. IN ORDER TO MINIMIZE ANY ADVERSE CONSTRUCTION NOISE IMPACTS, DO NOT OPERATE POWER-OPERATED CONSTRUCTION-TYPE DEVICES BETWEEN THE HOURS OF 7 AM AND 7 PM. IN ADDITION, DO NOT OPERATE AT ANY TIME ANY DEVICE IN SUCH A MANNER THAT THE NOISE CREATED SUBSTANTIALLY EXCEEDS THE NOISE CUSTOMARILY AND NECESSARILY ATTENDANT TO THE REASONABLE AND EFFICIENT PERFORMANCE OF SUCH EQUIPMENT.

SURVEYING PARAMETERS

PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITIONING ON ODOT PROJECTS. SEE SHEET 56 OF THE PLANS FOR A TABLE CONTAINING PROJECT CONTROL INFORMATION.

USE THE FOLLOWING PROJECT CONTROL, VERTICAL POSITIONING, AND HORIZONTAL POSITIONING PARAMETERS FOR ALL SURVEYING:

PROJECT CONTROL

POSITIONING METHOD: GPS OPUS
MONUMENT TYPE: 30" x 3/4" IRON PIN W/ CAP

VERTICAL POSITIONING

ORTHOMETRIC HEIGHT DATUM: NAVD 88
GEOID: 12A

HORIZONTAL POSITIONING

REFERENCE FRAME: NAD-83 (2011) (EPOCH 2010.0000)
ELLIPSOID: (GRS-80)
MAP PROJECTION: LAMBERT CONFORMAL
COORDINATE SYSTEM: SPC (3402 OH SOUTH)
COMBINED SCALE FACTOR: 1.000080436
ORIGIN OF COORDINATE SYSTEM: 0,0

USE THE POSITIONING METHODS AND MONUMENT TYPE USED IN THE ORIGINAL SURVEY TO RESTORE ALL MONUMENTS RELATED TO PRIMARY PROJECT CONTROL THAT ARE DAMAGED OR DESTROYED BY CONSTRUCTION ACTIVITIES. RESTORE THE DAMAGED OR DESTROYED MONUMENTS IN ACCORDANCE WITH CMS 623. UNITS ARE IN U.S. SURVEY FEET. USE THE FOLLOWING CONVERSION FACTOR: 1 METER = 3.280833333 U.S. SURVEY FEET.

MONUMENT ASSEMBLIES

CONSTRUCT MONUMENT ASSEMBLIES IN ACCORDANCE WITH THE DETAILS SHOWN ON THE STANDARD CONSTRUCTION DRAWINGS AND AT THE LOCATIONS SHOWN ON SHEET NO. 237.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

CLEARING AND GRUBBING

ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, A LUMP SUM QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM ARE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

BENCHING OF FOUNDATION SLOPES

ALTHOUGH CROSS-SECTIONS INDICATE SPECIFIC DIMENSIONS FOR PROPOSED BENCHING OF THE EMBANKMENT FOUNDATIONS IN CERTAIN AREAS, NO WAIVER OF THE SPECIFICATIONS IS INTENDED. BENCH ALL OTHER SLOPED EMBANKMENT AREAS AS SET FORTH IN 203.05. NO ADDITIONAL PAYMENT WILL BE MADE FOR BENCHING REQUIRED UNDER THE PROVISIONS OF 203.05.

ITEM 204 - PROOF ROLLING

THE FOLLOWING QUANTITY IS PROVIDED IN THE GENERAL SUMMARY TO ADDRESS LOCATIONS REQUIRING PROOF ROLLING. SEE PLAN SHEET NO. 49 FOR ADDITIONAL INFORMATION.

ITEM 204 - PROOF ROLLING 15 HOURS.

ITEM 203 - EMBANKMENT USING GRANULAR MATERIAL, TYPE C, AS PER PLAN

FURNISH DURABLE, NATURAL AGGREGATE NO. 8 SIZE. PLACE THE AGGREGATE AT THE THICKNESS AND SLOPE AS SHOWN ON THE CROSS-SECTIONS. WITH ITEM 204, GEOTEXTILE FABRIC ABOVE AND BELOW.

CHANNEL EMBANKMENTS

FILL AND SLOPE PORTIONS OF THE EXISTING CHANNEL TO DRAIN AS SHOWN IN THESE PLANS. IN CHANNEL EMBANKMENT AREAS WHICH WILL NOT SUPPORT ANY PORTION OF THE NEW ROAD BED OR STRUCTURAL EMBANKMENTS, THE CONTRACTOR MAY UTILIZE EMBANKMENT METHODS MEETING THE FOLLOWING REQUIREMENTS:

CLEAR ALL WEEDS AND BRUSH IN AREAS WHERE CHANNEL EMBANKMENTS ARE TO BE PLACED. THE REQUIREMENTS FOR MOISTURE, DENSITY CONTROL, BENCHING AND SUITABLE MATERIALS IS WAIVED. PLACE THE MATERIAL IN 8-INCH LOOSE LIFTS. THE ENGINEER MAY INCREASE THE LIFT THICKNESS IN ORDER TO BRIDGE THE SOFT OR WET FOUNDATIONS DEPENDING ON THE STABILITY OF THE FOUNDATION. THE ENGINEER MAY INCREASE THE LIFT THICKNESS UP TO 24-INCHES TO OBTAIN STABILITY AT THE TOP OF THE LIFT.

PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR ITEM 203, EMBANKMENT.

CALCULATED
LBA
CHECKED
SNS

GENERAL NOTES

HAM-71-6.86

V:\1736\active\173620049\design\94741\roadway\sheets\94741_GN001.dgn 9/27/2017 10:41:16 AM pdurham

AIRWAY/HIGHWAY CLEARANCE FOR AIRPORTS AND HELIPORTS

THIS PROJECT HAS BEEN IDENTIFIED AS BEING WITHIN THE INFLUENCE AREA OF A PUBLIC USE AIRPORT OR HELIPORT. NO TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT AT MAXIMUM OPERATING HEIGHT SHALL EXCEED A HEIGHT OF 60 FT.. IF ANY TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT WILL EXCEED THIS HEIGHT, FURTHER COORDINATION WITH THE FEDERAL AVIATION ADMINISTRATION (FAA), AND ODOT OFFICE OF AVIATION, WILL BE NECESSARY PRIOR TO ERRECTING SUCH TEMPORARY STRUCTURES OR OPERATING SUCH EQUIPMENT ON THE PROJECT. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT FORM 7460-1 TO THE FAA. NOTIFY THE ODOT OFFICE OF AVIATION WHEN SUBMITTING AN FAA FORM 7460-1.

NO TEMPORARY STRUCTURES OR CONSTRUCTION EQUIPMENT SHALL EXCEED THE PERMISSIBLE HEIGHT, UNTIL A COPY OF THE FAA APPROVAL AND ODOT OFFICE OF AVIATION PERMIT HAS BEEN FURNISHED TO THE PROJECT ENGINEER.

EXPRESS PROCESSING CENTER
THE FEDERAL AVIATION ADMINISTRATION
SOUTHWEST REGIONAL OFFICE
AIR TRAFFIC AIRSPACE BRANCH ASW-520
2601 MEACHAN BLVD.
FORT WORTH, TX 76137-4298

OHIO DEPARTMENT OF TRANSPORTATION
OFFICE OF AVIATION
2829 WEST DUBLIN-GRANVILLE ROAD
COLUMBUS, OHIO 43235
614-387-2346

FENCE LENGTHS

THE LENGTHS OF FENCE SHOWN IN THE PLANS ARE HORIZONTAL DIMENSIONS. MEASUREMENTS OF THE FINAL QUANTITIES WILL BE IN ACCORDANCE WITH ITEM 607.

CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL

WHEN IT IS NECESSARY TO SPLICE PROPOSED GUARDRAIL TO EXISTING GUARDRAIL, ONLY THE EXISTING GUARDRAIL SHALL BE CUT, DRILLED, OR PUNCHED. THE CONNECTION SHALL BE MADE USING A W-BEAM, BEAM SPLICE AS SHOWN IN AASHTO M 180-12, EXCEPT THE BEAM WASHERS ARE NOT TO BE USED. PAYMENT SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE GUARDRAIL ITEMS.

ITEM 606 - ANCHOR ASSEMBLY, MGS TYPE E

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY OF THE GUARDRAIL END TERMINALS FOR TYPE MGS GUARDRAIL AS LISTED ON ROADWAY ENGINEERING'S WEB PAGE UNDER ROADSIDE SAFETY DEVICES FOR APPROVED GUARDRAIL END TREATMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE FACE OF THE TYPE E IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19.

REFER TO THE MANUFACTURER'S INSTRUCTIONS REGARDING THE INSTALLATION OF, AND THE GRADING AROUND THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4 INCHES ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 31 INCHES FROM THE EDGE OF THE SHOULDER.

ITEM 606 - ANCHOR ASSEMBLY, MGS TYPE E (CONTINUED)

ON-SITE GRADING IS REQUIRED IF THE TOP OF THE FOUNDATION TUBES OR TOP OF THE GROUND STRUT DOES PROJECT MORE THAN 4 INCHES ABOVE THE GROUND LINE.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, MGS TYPE E, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED TRANSITIONS, REFLECTIVE SHEETING, HARDWARE, GRADING, EMBANKMENT AND EXCAVATION NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

ITEM 203E98100 - ROADWAY, MISC: HIGH PERFORMANCE TURF REINFORCEMENT MAT, AS PER PLAN

PRIOR TO INSTALLATION OF THE HIGH PERFORMANCE TURF REINFORCEMENT MAT (HPTRM), SURFACE GRADE THE SLOPE AS NECESSARY TO FILL IN ANY EROSION RAVELING TO CREATE A SMOOTH FINAL PROPOSED SLOPE. LIGHTLY COMPACT THE GRADED SLOPE SURFACE. INSTALL ITEM 659 TOPSOIL ON THE PREPARED SLOPE SURFACE. SURFACE GRADING AND PLACEMENT OF THE TOPSOIL SHALL BE PAID UNDER **ITEM 659 - TOPSOIL, AS PER PLAN.**

PROVIDE A PERMANENT HIGH PERFORMANCE EROSION CONTROL MAT WITH MINIMUM PROPERTY VALUES OUTLINED IN THE TABLE. PLACE THE EROSION CONTROL MAT WITHIN 7 DAYS OF EXCAVATING THE CUT SLOPE TO THE FINAL PROPOSED CONFIGURATION. THE HIGH PERFORMANCE TURF REINFORCEMENT MAT SHALL CONSIST OF NON- DEGRADABLE SYNTHETIC FIBERS, MONOFILAMENTS, MESH AND/OR OTHER ELEMENTS, PROCESSED INTO A THREE DIMENSIONAL MATRIX CAPABLE OF SUPPORTING THE DENSE GROWTH OF GRASS ROOTS THROUGH THE MATERIAL; SHALL BE A WOVEN POLYPROPYLENE OR POLYESTER, BOTH OF WHICH ARE SPECIALLY DESIGNED FOR EROSION RESISTANCE ON THE PROPOSED SLOPE.

INSTALL THE EROSION CONTROL MAT IN ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED INSTALLATION GUIDELINES. SUBMIT THE GUIDELINES TO THE ENGINEER FOR REVIEW AT LEAST 14 DAYS PRIOR TO COMMENCENT OF THE WORK. A MANUFACTURER'S REPRESENTATIVE SHALL BE ON-SITE AT THE BEGINNING OF THE INSTALLATION (ONE COMPLETE WORKING DAY MINIMUM) TO DIRECT INSTALLATION PROCEDURES AND PROVIDE TECHNICAL GUIDANCE AS PROBLEMS ARISE. PROVIDE A MINIMUM OF 12 INCHES OF OVERLAP BETWEEN ADJACENT EROSION CONTROL MAT PANELS.

ANCHOR THE HIGH PERFORMANCE TURF REINFORCEMENT MAT WITH PNEUMATICALLY DRIVEN GALVANIZED OR STAINLESS STEEL ANCHORS EXTENDING A MINIMUM OF 4 FT. FROM THE FINAL SLOPE FACE. THE ANCHORS SHALL BE COMPRISED OF SOLID BARS OR BRAIDED STAINLESS STEEL WIRE. THE ANCHOR, ANCHOR LENGTH AND ANCHOR HEAD ASSEMBLY SHALL BE DESIGNED BY THE MANUFACTURER OF THE HIGH PERFORMANCE TURF REINFORCEMENT MAT. THE HEAD OF THE ANCHOR SHALL INCLUDE A BEARING PLATE OR WASHER THAT IS AT LEAST 3 INCHES IN DIMENSION WHILE PROVIDING A BEARING SURFACE OF AT LEAST 6 SQUARE INCHES. THE ANCHOR BEARING PLATE SHALL BE CONNECTED TO THE ANCHOR SUCH THAT TENSION CAN BE PLACED AND MAINTAINED IN THE ANCHOR FOLLOWING INSTALLATION.

ITEM 203E98100 - ROADWAY, MISC: HIGH PERFORMANCE TURF REINFORCEMENT MAT, AS PER PLAN (CONTINUED)

MANUFACTURER/SUPPLIER SHALL SUBMIT PRODUCT DATA SHEETS DEMONSTRATING PROPOSED PRODUCT MEETS OR EXCEEDS MINIMUM REQUIREMENTS SPECIFIED ABOVE. ADDITIONALLY, PROVIDE INDEPENDENT THIRD PARTY TESTING DATA TO THE ENGINEER AT LEAST 30 DAYS PRIOR TO PLACEMENT. THE THIRD PARTY TESTING DATA SHALL BE PERFORMED WITHIN 6 MONTHS OF THE PROPOSED INSTALLATION. ALL MATERIAL PROPERTIES SHALL BE IN ACCORDANCE WITH THE REQUIRED ASTM TEST METHODS REFERENCED ABOVE. AT THE TIME OF BIDDING, ONLY HPTRM MANUFACTURER/SUPPLIER'S HAVING A MINIMUM OF 100,000 SQUARE YARDS OF DOCUMENTED FIELD INSTALLATIONS SHALL BE APPROVED FOR CONSIDERATION.

BASIS OF PAYMENT
THE HIGH PERFORMANCE TURF REINFORCEMENT MAT SHALL BE PAID ON A PER SQUARE YARD BASIS OF INSTALLED MATERIAL. THE UNIT PRICE INCLUDES ALL MATERIALS, EQUIPMENT, LABOR, TESTING, AND DESIGN TO SATISFACTORILY INSTALL THE HIGH PERFORMANCE TURF REINFORCEMENT MAT WITH THE EXCEPTION OF TOPSOIL, TO THE PLAN REQUIREMENTS.

SURFACE GRADING AND TOPSOIL SHALL BE PAID FOR SEPERATELY ON A CUBIC YARD BASIS AS NOTED IN THE FIRST PARAGRAPH.

High Performance Turf Reinforcement Mat Properties		
Property	Test Method	Minimum Values
Material type		Polypropylene or Polyester
Mass per Unit Area	ASTM D6566	Mass Per Unit Area
Thickness	ASTM D6525	Thickness
Elongation	ASTM D6818 (MARV)	Elongation
Grab Tensile Strength	ASTM D6818 (MARV)	Grab Tensile Strength
Light Penetration	ASTM D6567 (MARV)	Light Penetration
UV Resistance	ASTM D4355 (MARV)	UV Resistance
Resiliency	ASTM D6524	Resiliency
Pneumatically Driven Anchor Properties		
Anchor Head		3" min. in any direction
Anchor Head Bearing Area		6 square inches minimum
Ultimate Working Strength		2600 lbs minimum
Working Load		1500 lbs
Anchor Head Bearing Area		6 square inches minimum

MARV = Minimum Average Roll Values

CONTRACTION AND/OR EXPANSION JOINTS

ALTHOUGH SPECIFIC LOCATIONS OF CERTAIN CONTRACTION AND EXPANSION JOINTS HAVE BEEN DETAILED ON THIS PLAN, NO WAIVER OF THE SPECIFICATIONS IS INTENDED. IN ALL CASES, THE PROVISION OF EXPANSION JOINTS AT ALL MAJOR STRUCTURES INCLUDING THE MAXIMUM SPACING BETWEEN CONTRACTION JOINTS IS IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING BP-2.2 AND THE SPECIFICATIONS.

CONTRACTION JOINTS IN CONCRETE PAVEMENT OR BASE WIDENING

WHERE NEW CONCRETE IS PLACED ADJACENT TO EXISTING CONCRETE, PROVIDE CONTRACTION JOINTS IN THE NEW CONCRETE TO FORM CONTINUOUS JOINTS WITH THOSE IN THE EXISTING CONCRETE.

THE MAXIMUM DISTANCE BETWEEN THE JOINTS IN THE NEW CONCRETE ARE IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING BP-2.2, IF NECESSARY, ADDITIONAL JOINTS MAY BE PROVIDED IN THE NEW CONCRETE AT APPROXIMATELY EQUAL INTERVALS BETWEEN EXISTING JOINTS THAT EXCEED THE MAXIMUM SPACING.

PART-WIDTH CONSTRUCTION

BECAUSE OF THE NECESSITY TO BUILD THIS PROJECT UNDER TRAFFIC AND TO CONSTRUCT THE FULL PAVEMENT WIDTH IN STAGES, EXERCISE CARE TO PREVENT THE CONSTRUCTION OF A BUTT JOINT IN THE BASE COURSES. LAP LONGITUDINAL JOINTS AS SHOWN ON STANDARD CONSTRUCTION DRAWING BP-3.1.

ITEM SPECIAL - FILL AND PLUG EXISTING CONDUIT

THIS ITEM SHALL CONSIST OF THE CONSTRUCTION OF BULKHEADS IN AN EXISTING 12 INCH DIAMETER CONDUIT AND FILLING THE AREA THUS SEALED OFF WITH ITEM 613, SAND OR OTHER MATERIAL APPROVED BY THE ENGINEER.

BULKHEADS SHALL BE LOCATED AT THE LIMITS OF THE AREA TO BE FILLED AS INDICATED ON THE PLANS. THE BULKHEADS SHALL CONSIST OF BRICK OR CONCRETE MASONRY WITH A MINIMUM THICKNESS OF 12 INCHES.

THE FILL MATERIAL SHALL BE PUMPED INTO PLACE, OR PLACED BY OTHER MEANS APPROVED BY THE ENGINEER, SO THAT, AFTER SETTLEMENT, AT LEAST 90 PERCENT OF THE CROSS-SECTIONAL AREA OF THE CONDUIT, FOR ITS ENTIRE LENGTH, SHALL BE FILLED. THE LENGTH OF FILLED AND PLUGGED CONDUIT TO BE PAID FOR SHALL BE THE ACTUAL NUMBER OF FEET (MEASURED ALONG THE CENTERLINE OF EACH CONDUIT FROM OUTER FACE TO OUTER FACE OF BULKHEADS) FILLED AND PLUGGED AS DESCRIBED ABOVE.

IN LIEU OF FILLING AND PLUGGING THE EXISTING CONDUIT, THE PIPE MAY BE CRUSHED AND BACK-FILLED IN ACCORDANCE WITH THE PROVISIONS OF 203, OR IT MAY BE REMOVED. THE LENGTH, MEASURED AS PROVIDED ABOVE, SHALL BE PAID FOR AT THE CONTRACT PRICE PER FOOT FOR, ITEM SPECIAL, FILL AND PLUG EXISTING CONDUIT.

CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES

WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT.

IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE TO BE CONNECTED, DIFFERS FROM THE PLAN ELEVATION OR RESULTS IN A CHANGE IN THE PLAN CONDUIT SLOPE, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY.

PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEM.

V:\1736\active\173620049\design\94741\roadway\sheets\94741_GN001.dgn 9/27/2017 10:41:16 AM pdurham

CALCULATED
LBA
CHECKED
SNS

GENERAL NOTES

HAM-71-6.86

PIPE CONNECTIONS TO CORRUGATED METAL STRUCTURES

CONNECTIONS OF PROPOSED LONGITUDINAL DRAINAGE TO CORRUGATED METAL STRUCTURES SHALL BE MADE BY MEANS OF A SHOP FABRICATED OR FIELD WELDED STUB ON THE STRUCTURE. THE STUB SHALL MEET THE REQUIREMENTS OF 707 AND HAVE A MINIMUM LENGTH OF 2 FEET AND A MINIMUM WALL THICKNESS OF 0.064 INCHES.

THE LOCATION AND ELEVATION OF THE STUB ARE TO BE CONSIDERED APPROXIMATE AND MAY BE ADJUSTED BY THE ENGINEER TO AVOID CUTTING THROUGH JOINTS IN THE STRUCTURE.

THE FIELD WELDED JOINT, IF USED, SHALL BE THOROUGHLY CLEANED AND RE-GALVANIZED OR OTHERWISE SUITABLY REPAIRED. WELDING SHALL MEET THE REQUIREMENTS OF 513.21.

A MASONRY COLLAR, AS PER STANDARD DRAWING DM-1.1, WILL BE REQUIRED TO CONNECT THE LONGITUDINAL DRAINAGE TO THE STUB, WHEN PIPE OTHER THAN CORRUGATED METAL IS PROVIDED FOR THE LONGITUDINAL DRAINAGE.

PAYMENT FOR CUTTING INTO THE STRUCTURE AND PROVIDING THE CONNECTION DESCRIBED, SHALL BE INCLUDED IN THE CONTRACT PRICE FOR ITEM 611 OR 522.

REVIEW OF DRAINAGE FACILITIES

BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE STATE, REPRESENTATIVES OF THE STATE AND THE CONTRACTOR, ALONG WITH LOCAL REPRESENTATIVES, SHALL MAKE AN INSPECTION OF ALL EXISTING SEWERS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCE SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE KEPT IN WRITING BY THE STATE.

ALL NEW CONDUITS, INLETS, CATCH BASINS, AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE STATE.

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEMS.

UNRECORDED STORM WATER DRAINAGE

FURNISH A CONTINUANCE FOR ALL UNRECORDED STORM WATER DRAINAGE, SUCH AS ROOF DRAINS, FOOTER DRAINS, OR YARD DRAINS, DISTURBED BY THE WORK. FURNISH EITHER AN OPEN CONTINUANCE OR AN UNOBSTRUCTED CONTINUANCE BY CONNECTING A CONDUIT THROUGH THE CURB OR INTO A DRAINAGE STRUCTURE. THE LOCATION, TYPE, SIZE AND GRADE OF THE NEEDED CONDUIT TO REPLACE OR EXTEND AN EXISTING DRAIN WILL BE DETERMINED BY THE ENGINEER. ALL SUCH CONTINUANCE REQUIRES A RIGHT OF WAY USE PERMIT.

UNRECORDED STORM WATER DRAINAGE (CONTINUED)

THE FOLLOWING CONDUIT TYPES MAY BE USED: 707.33, 707.41 NON-PERFORATED, 707.42, 707.43, 707.45, 707.46, 707.47, 707.51, 707.52 SDR35.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR THE WORK NOTED ABOVE:

611, 6" CONDUIT, TYPE B, FOR DRAINAGE CONNECTION 100 FT.

611, 6" CONDUIT, TYPE C, FOR DRAINAGE CONNECTION 100 FT.

611, 6" CONDUIT, TYPE E, FOR DRAINAGE CONNECTION 100 FT.

611, 6" CONDUIT, TYPE F, FOR DRAINAGE CONNECTION 100 FT.

ITEM SPECIAL - PIPE CLEAN-OUT

THIS WORK SHALL CONSIST OF REMOVING SEDIMENT AND DEBRIS FROM THE EXISTING DRAINAGE CONDUITS SPECIFIED IN THE PLANS. ALL MATERIAL REMOVED SHALL BE DISPOSED OF AS PER 105.16 AND 105.17. ALL SEWERS SHALL BE CLEANED OUT TO THE SATISFACTION OF THE ENGINEER.

CLEAN-OUT OF THE PIPE SHALL BE PAID FOR AT THE UNIT PRICE BID FOR ITEM SPECIAL - PIPE CLEAN-OUT. THIS PRICE SHALL INCLUDE THE COST FOR MATERIAL, EQUIPMENT, LABOR, AND ALL INCIDENTALS REQUIRED TO COMPLETE THE CLEAN-OUT.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE ABOVE NOTED WORK:

SPECIAL, PIPE CLEAN-OUT, OVER 48" 386 FT.

POST CONSTRUCTION STORM WATER DESIGN

THIS PLAN UTILIZES STRUCTURAL BEST MANAGEMENT PRACTICES (BMP'S) FOR POST CONSTRUCTION STORM WATER TREATMENT.

SEEDING AND MULCHING

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS:

659, SOIL ANALYSIS TEST 2 EACH

659, SEEDING AND MULCHING 73488 SQ. YD.

659, REPAIR SEEDING AND MULCHING 3675 SQ. YD

659, COMMERCIAL FERTILIZER 10 TONS

659, LIME 16 ACRES

659, WATER 397 M. GAL.

659, MOWING 166 M. SQ. FT.

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES, AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS.

SPECIAL REQUIREMENT FOR PROTECTION OF ENDANGERED SPECIES HABITAT - INDIANA BAT, NORTHERN LONG-EARED BAT

UNAVOIDABLE CUTTING OF TREES, 3" DIAMETER OR GREATER, WILL BE PERFORMED ONLY BEFORE APRIL 1 OR AFTER SEPTEMBER 30 WHEN BATS, INCLUDING THE INDIANA BAT AND THE NORTHERN LONG-EARED BAT, WILL NOT BE USING TREES FOR ROOST HABITAT. NO TREES SHALL BE CLEARED PRIOR TO THE ISSUANCE OF ALL REQUIRED WATERWAY PERMITS.

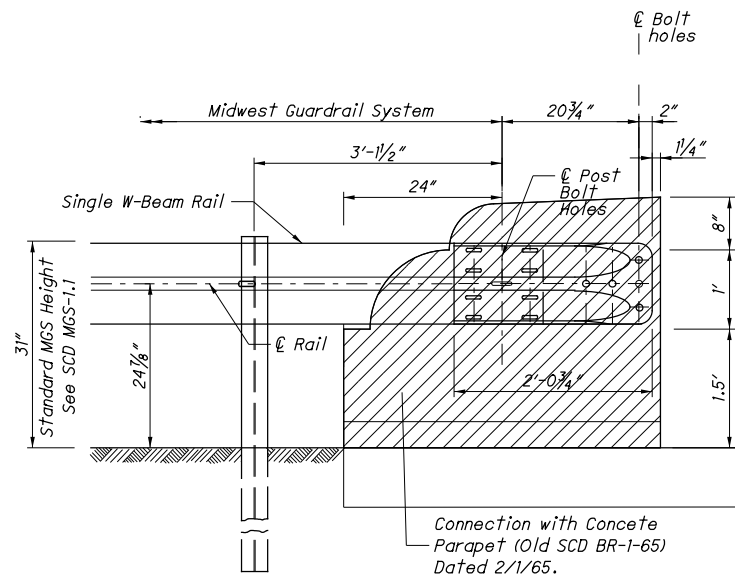
WATERWAY PERMITTING

CONSTRUCTION ACTIVITIES IN STREAMS AND WETLANDS ("WATERS OF THE U.S.") ARE SUBJECT TO U.S. ARMY CORPS OF ENGINEER'S (USACE) AND OHIO EPA JURISDICTION UNDER THE CLEAN WATER ACT. USACE/OHIO EPA PERMIT AUTHORIZATION FOR THE ACTIVITIES SHOWN IN THE PLANS HAS BEEN OBTAINED BY ODOT. EXCAVATION, DISCHARGE OF FILL MATERIAL, EQUIPMENT OPERATION, AND OTHER DISTURBANCES IN STREAMS AND/OR WETLANDS WITHIN THE CONSTRUCTION LIMITS MUST BE CONDUCTED IN ACCORDANCE WITH THE PLANS, AND THE CONTRACTOR MUST ABIDE BY ALL CONDITIONS OF THE PERMIT AUTHORIZATION.

THE CONTRACTOR SHALL NOT DISTURB ANY WETLAND OR PORTION THEREOF OUTSIDE OF THE CONSTRUCTION LIMITS AS SHOWN ON THE PLANS.

ITEM 606 - MGS BRIDGE TERMINAL ASSEMBLY TYPE 2, AS PER PLAN

STANDARD CONSTRUCTION DRAWING MGS 3.2 BRIDGE TERMINAL ASSEMBLY TYPE 2 SHALL APPLY, EXCEPT THE MGS GUARDRAIL SHALL BE ANCHORED INTO THE EXISTING 10 1/2" THICK PARAPET. THE COST OF ALL COMPONENTS, INCLUDING THE TERMINAL END SHOE, CONNECTOR, BEARING PLATE, BOLTS, WASHERS, NUTS, AND ANY OTHER HARDWARE NEEDED TO ATTACH THE GUARDRAIL TO THE TRAILING END OF THE CONCRETE PARAPET, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 606 - MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2, AS PER PLAN. SEE ELEVATION DETAIL BELOW



ELEVATION

EXISTING SEWERS TO REMAIN

ALL EXISTING SEWERS TO REMAIN IN SERVICE MUST BE VIDEOTAPED PRE AND POST CONSTRUCTION. ANY DAMAGE CAUSED TO THE SEWERS DURING CONSTRUCTION MUST BE REPAIRED TO THE SATISFACTION OF MSD. VIDEO MUST CONFORM WITH THE NATIONAL ASSOCIATION OF SEWER SERVICE COMPANIES' (NASSCO) PIPELINE ASSESSMENT CERTIFICATION PROGRAM (PACP) AND LATERAL ASSESSMENT CERTIFICATION PROGRAM (LACP). NO ADDITIONAL LOADING MAY BE ADDED TO THE EXISTING SEWER.

621 RAISED PAVEMENT MARKER REMOVED

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR PURPOSES OF REMOVING RAISED PAVEMENT MARKERS.

ITEM 621 RAISED PAVEMENT MARKER REMOVED 10 EACH

ITEM SPECIAL - ASBESTOS INSPECTION

AN ASBESTOS INSPECTION OF THE BUILDING STRUCTURE SCHEDULED FOR DEMOLITION BY A LICENSED ASBESTOS HAZARD EVALUATION SPECIALIST IS INCLUDED IN THE PLANS. IF THE ASBESTOS INSPECTION DETERMINES THAT ASBESTOS IS PRESENT ON THE BUILDING STRUCTURE (5405 CHARLOE STREET, PARCEL 51) IN EXCESS OF THE ALLOWABLE REGULATORY LIMITS IT WILL REQUIRE ABATEMENT.

THE CONTRACTOR SHALL ENSURE THAT THE ABATEMENT, TRANSPORT, AND DISPOSAL OF ANY ASBESTOS CONTAINING MATERIAL BE CONDUCTED IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS. THE CONTRACTOR SHALL ENSURE THAT ALL DOCUMENTATION RELATED TO THE INSPECTION, ABATEMENT, TRANSPORT, AND DISPOSAL OF ASBESTOS CONTAINING MATERIALS BE SUBMITTED TO THE PROJECT ENGINEER OR DISTRICT ENVIRONMENTAL COORDINATOR FOR RECORD KEEPING. A LUMP SUM PRICE WILL BE NEGOTIATED BY CHANGE ORDER SHOULD ABATEMENT BE NECESSARY.

V:\1736\active\173620049\design\94741\roadway\sheets\94741_GN001.dgn 9/28/2017 11:40:25 AM pdurham

CALCULATED
LBA
CHECKED
SNS

GENERAL NOTES

HAM-71-6.86

ITEM SPECIAL - SETTLEMENT PLATFORMS

DESCRIPTION: THIS ITEM CONSISTS OF FURNISHING, CONSTRUCTING, AND MAINTAINING SETTLEMENT PLATFORMS AND OBTAINING SETTLEMENT READINGS AS REQUIRED BY THE PLANS OR AS DIRECTED BY THE ENGINEER. AT THE OPTION AND EXPENSE OF THE CONTRACTOR, ADDITIONAL SETTLEMENT PLATFORMS MAY BE INSTALLED AT LOCATIONS APPROVED BY THE ENGINEER. SETTLEMENT READINGS SHALL BE TAKEN WEEKLY DURING CONSTRUCTION AND DURING ANY SPECIFIED WAITING PERIOD. THE READINGS SHALL BE PLOTTED ON GRAPH PAPER PRESENTING DEFORMATION (ON THE NEGATIVE Y-AXIS) AND FILL HEIGHT (ON THE POSITIVE Y-AXIS) VERSUS TIME (ON THE X-AXIS). IN ORDER TO CREATE THE GRAPH, USE THE SETTLEMENT PLATFORM SPREADSHEET LOCATED AT [HTTP://WWW.DOT.STATE.OH.US/DIVISIONS/PROD MGT/GEOTECHNICAL/GEOTECHNICAL DOCUMENTS/BLANK SET TLEMENT READING PLOTS-ENGLISH.XLS](http://www.dot.state.oh.us/divisions/prod/mgt/geotechnical/geotechnical_documents/blank_settlement_reading_plots-english.xls) IN THE OGE WEBSITE PUBLICATIONS AND DOCUMENTS SECTION. A COPY OF EACH CUMULATIVE PLOT SHALL BE SENT TO THE DISTRICT GEOTECHNICAL ENGINEER, AND THE OFFICE OF GEOTECHNICAL ENGINEERING, ATTENTION: GEOTECHNICAL DESIGN COORDINATOR, AFTER EACH SETTLEMENT READING IS RECORDED.

THE DEPARTMENT WILL CONSIDER VIBRATING WIRE SETTLEMENT MONITORING PLATFORMS IN LIEU OF THE CONVENTIONAL SETTLEMENT PLATFORMS. THE CONTRACTOR SHOULD PROVIDE DETAILS OF THE PROPOSED VIBRATING WIRE SETTLEMENT PLATFORMS AS WELL AS DESIGN DRAWINGS OF THE PROPOSED PLATFORM AND CABLING LAYOUT TO THE ENGINEER AT LEAST 30 DAYS PRIOR TO CONSTRUCTION. THE DEPARTMENT WILL REQUIRE 10 WORKING DAYS FOR REVIEW AND APPROVAL. THE DESIGN DRAWINGS SHOULD ILLUSTRATE THE PROPOSED SETTLEMENT VIBRATING WIRE SETTLEMENT PLATFORM LOCATIONS WITH ALL EXISTING AND PROPOSED SITE FEATURES TO VERIFY THE PROPOSED CABLING WILL NOT CONFLICT WITH EXISTING FACILITIES, PROPOSED FACILITIES OR UTILITIES. NO ADDITIONAL PAYMENT WILL BE PROVIDED IF THE CONTRACTOR ELECTS TO UTILIZE VIBRATING WIRE SETTLEMENT PLATFORMS.

MATERIALS: SOUND LUMBER SUCH AS 3/4 INCH EXTERIOR GRADE PLYWOOD SHALL BE USED FOR THE BASE. THE PIPE SHALL BE 2-1/2-INCH STANDARD BLACK PIPE WITH THREADED FITTINGS AS SHOWN ON THE PLANS. A STEEL PLATE 36" X 36" X 1/8" MAY BE SUBSTITUTED FOR THE LUMBER FOR THE PLATFORMS, AT THE CONTRACTOR'S OPTION.

THE CONTRACTOR MAY UTILIZE VIBRATING WIRE SETTLEMENT MONITOR DEVICES IN LIEU OF THE SETTLEMENT PLATFORMS AT NO ADDITIONAL COST TO THE PROJECT. THE CONTRACTOR MUST SUBMIT THE PROPOSED VIBRATING WIRE SETTLEMENT MONITORING EQUIPMENT AND METHODS TO THE DISTRICT GEOTECHNICAL ENGINEER FOR APPROVAL PRIOR TO ORDER MATERIALS OR FIELD INSTALLATION.

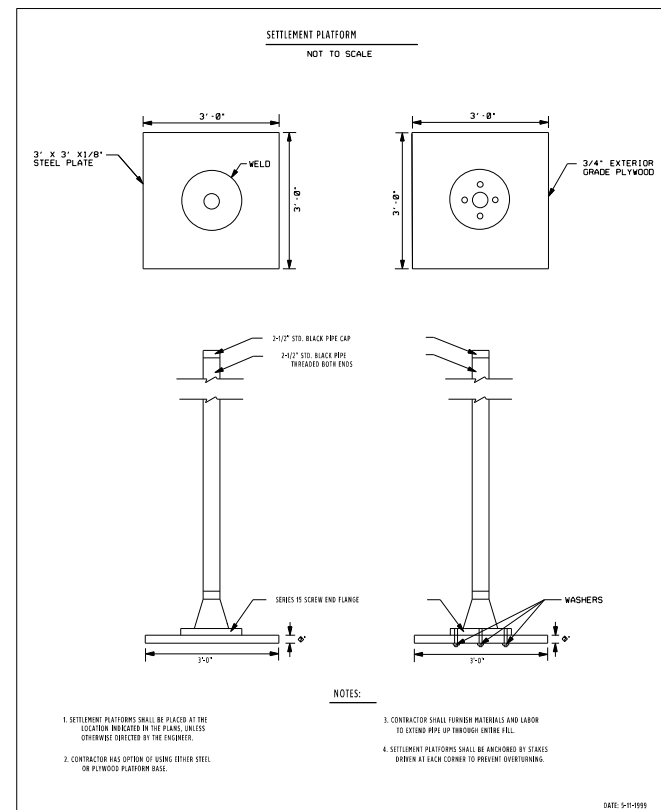
CONSTRUCTION METHODS: THE PLATFORMS SHALL CONFORM TO THE DETAILS SHOWN ON THE PLANS. THE PLATFORM SHALL BE SET ON A LEVEL SURFACE. THE PIPE SHALL BE FIRMLY SECURED TO THE PLATFORM AND SHALL BE MAINTAINED IN A PLUMB POSITION DURING THE PLACEMENT OF THE EMBANKMENT. THE PIPE SHALL BE MARKED AT INTERVALS TO FACILITATE MEASUREMENT OF THE DEPTH OF FILL. THE CONTRACTOR SHALL STOP WORK IN ANY LOCATION WHERE THE SETTLEMENT PLATFORM HAS BEEN DISTURBED OR DAMAGED. PLATFORMS OR PIPES DAMAGED OR DISPLACED DURING CONSTRUCTION SHALL BE RESTORED TO THEIR PROPER CONDITION AT THE CONTRACTOR'S EXPENSE. PRIOR TO PAVING, THE TOP OF THE SETTLEMENT PLATFORM PIPE SHALL BE CUT OFF TWO FEET BELOW THE FINISHED SURFACE OF THE SUBGRADE OR FINISHED GROUND SURFACE, WHICHEVER IS APPLICABLE.

ITEM SPECIAL - SETTLEMENT PLATFORMS (CONTINUED)

METHOD OF MEASUREMENT: THE NUMBER OF SETTLEMENT PLATFORMS TO BE PAID FOR SHALL BE THE ACTUAL NUMBER OF SETTLEMENT PLATFORMS COMPLETED, MAINTAINED, AND ACCEPTED BY THE ENGINEER.

BASIS OF PAYMENT: PAYMENT SHALL BE MADE AT THE CONTRACT UNIT PRICE EACH FOR "ITEM SPECIAL - SETTLEMENT PLATFORMS" WHICH IS COMPENSATION FOR CONSTRUCTING, MAINTAINING, AND MONITORING THE SETTLEMENT PLATFORMS INCLUDING FURNISHING ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK. PAYMENT SHALL NOT BE MADE FOR SETTLEMENT PLATFORMS WHICH BECOME USELESS DUE TO DAMAGE CAUSED BY THE CONTRACTOR'S OPERATION.

THE SETTLEMENT PLATFORM REQUIRES A 30 DAY WAITING PERIOD ONCE THE PAVEMENT SUBGRADE ELEVATION HAS BEEN ACHIEVED. PROPOSED STORM SEWERS SHOULD NOT BE INSTALLED NOR SHOULD THE SUBGRADE BE STABILIZED UNTIL THE SETTLEMENT WAITING PERIOD HAS ENDED.



LOCATION FOR SETTLEMENT PLATFORMS

- STA. 442+00.00, 86' RT
- STA. 454+00.00, 87' RT
- STA. 462+00.00, 83' RT

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN ADDED TO THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE.

ITEM SPECIAL, SETTLEMENT PLATFORMS, 3 EACH

V:\1736\active\173620049\design\94741\roadway\sheets\94741_GN001.dgn 9/27/2017 10:41:17 AM pdurham

CALCULATED
LBA
CHECKED
SNS

GENERAL NOTES

HAM-71-6.86

8A
253

ITEM 614, MAINTAINING TRAFFIC

MAINTAIN ALL EXISTING LANES IN EACH DIRECTION AT ALL TIMES, EXCEPT IN ACCORDANCE WITH THE PERMITTED LANE CLOSURE TIMES NOTE, BY USE OF THE EXISTING PAVEMENT, THE COMPLETED PAVEMENT, AND ITEM 615 PAVEMENT FOR MAINTAINING TRAFFIC.

NO WORK SHALL BE PERFORMED AND ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS OR EVENTS:

CHRISTMAS	FOURTH OF JULY	EASTER
NEW YEARS	LABOR DAY	
MEMORIAL DAY	THANKSGIVING	

THE PERIOD OF TIME THAT THE LANES ARE TO BE OPEN DEPENDS ON THE DAY OF THE WEEK ON WHICH THE HOLIDAY OR EVENT FALLS. THE FOLLOWING SCHEDULE SHALL BE USED TO DETERMINE THIS PERIOD:

DAY OF HOLIDAY OR EVENT	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00N FRIDAY THROUGH 6:00 AM MONDAY
MONDAY	12:00N FRIDAY THROUGH 6:00 AM TUESDAY
TUESDAY	12:00N MONDAY THROUGH 6:00 AM WEDNESDAY
WEDNESDAY	12:00N TUESDAY THROUGH 6:00 AM THURSDAY
THURSDAY	12:00N WEDNESDAY THROUGH 6:00 AM FRIDAY (THANKSGIVING ONLY)
FRIDAY	6:00 AM WEDNESDAY THROUGH 6:00 AM MONDAY
SATURDAY	12:00N THURSDAY THROUGH 6:00 AM MONDAY
	12:00N FRIDAY THROUGH 6:00 AM MONDAY

LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTIONS SHALL BE AT THE APPROVAL OF THE ENGINEER. IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH C&S 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

PERMITTED LANE CLOSURE TIMES

SHORT TERM LANE CLOSURES ARE THOSE WHICH ARE PERMITTED BY THE PERMITTED LANE CLOSURE NOTE. THESE TIMES SHALL NOT BE REVISED WITHOUT PRIOR APPROVAL FROM THE DISTRICT 8 WORK ZONE TRAFFIC CONTROL MANAGER. SHORT TERM LANE CLOSURES SHALL ONLY BE IMPLEMENTED WHEN WORK BEING CONTINUOUSLY PERFORMED IN THE LANE. THE CLOSURE SHALL BE REMOVED AS SOON AS POSSIBLE AFTER WORK HAS STOPPED. PERMITTED LANE CLOSURE SHALL ONLY BE ALLOWED DURING THE TIMES SPECIFIED IN THE PERMITTED LANE CLOSURE TIMES AND UNAUTHORIZED LAND USE TABLE INCLUDED IN THESE PLANS. NO LANE OR SHOULDER CLOSURE SHALL BE IN PLACE WHEN NO WORK IS BEING PERFORMED.

TRENCH FOR WIDENING

TRENCH EXCAVATION FOR BASE WIDENING SHALL BE ONLY ON ONE SIDE OF THE PAVEMENT AT A TIME. THE OPEN TRENCH SHALL BE ADEQUATELY MAINTAINED AND PROTECTED WITH DRUMS OR BARRICADES AT ALL TIMES. PLACEMENT OF PROPOSED SUBBASE AND BASE MATERIAL SHALL FOLLOW AS CLOSELY AS POSSIBLE BEHIND EXCAVATION OPERATIONS. THE LENGTH OF WIDENING TRENCH WHICH IS OPEN AT ANY ONE TIME SHALL BE HELD TO A MINIMUM AND SHALL AT ALL TIMES BE SUBJECT TO APPROVAL OF THE ENGINEER.

OVERNIGHT TRENCH CLOSING

THE BASE WIDENING SHALL BE COMPLETED TO A DEPTH OF NO MORE THAN 3 INCHES BELOW THE EXISTING PAVEMENT BY THE END OF EACH WORK DAY. NO TRENCH SHALL BE LEFT OPEN OVERNIGHT EXCEPT FOR A SHORT LENGTH (25 FEET OR LESS) OF A WORK SECTION AT THE END OF THE TRENCH. IN CASE WORK MUST BE SUSPENDED BECAUSE OF INCLEMENT WEATHER OR OTHER REASONS, THE TRENCH FOR THE UNCOMPLETED BASE WIDENING SHALL BE BACKFILLED AT THE DIRECTION OF THE ENGINEER.

DUST CONTROL

THE CONTRACTOR SHALL FURNISH AND APPLY WATER FOR DUST CONTROL AS DIRECTED BY THE ENGINEER. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED FOR DUST CONTROL PURPOSES:

ITEM 616, WATER 100 M. GAL

WORK ZONE MARKINGS AND SIGNS

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AT LOCATIONS IDENTIFIED BY THE ENGINEER FOR WORK ZONE PAVEMENT MARKINGS AND SIGNS PER THE REQUIREMENTS OF C&S 614.04 AND 614.11.

ITEM 614, REPLACEMENT SIGN

FLATSHEET SIGNS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS AND PROPOSAL WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND WHEN ORDERED BY THE ENGINEER. REPLACEMENT SIGNS SHALL BE NEW. OTHER MATERIALS MAY BE IN USED, BUT GOOD, CONDITION SUBJECT TO APPROVAL BY THE ENGINEER.

PAYMENT FOR THE NEW SIGNS SHALL BE MADE AT THE CONTRACT PRICE PER EACH FOR ITEM 614, REPLACEMENT SIGN, AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF DAMAGED SIGNS, HARDWARE AND SUPPORTS, AND PROVIDING THE NECESSARY REPLACEMENT HARDWARE, SUPPORTS, ETC.

AN ESTIMATED QUANTITY OF 10 EACH HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

ITEM 614, REPLACEMENT DRUM

DRUMS FURNISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS, SPECIFICATIONS AND PROPOSAL WHICH BECOME DAMAGED BY TRAFFIC FOR REASONS BEYOND THE CONTROL OF THE CONTRACTOR SHALL BE REPLACED IN KIND WHEN ORDERED BY THE ENGINEER. REPLACEMENT DRUMS SHALL BE NEW.

PAYMENT FOR THE NEW DRUMS SHALL BE MADE AT THE CONTRACT PRICE PER EACH FOR ITEM 614, REPLACEMENT DRUM, AND SHALL INCLUDE THE COST OF REMOVING AND DISPOSING OF THE DAMAGED DRUM, AND PROVIDING AND MAINTAINING THE REPLACEMENT DRUM IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS FOR THE ORIGINAL DRUM.

AN ESTIMATED QUANTITY OF 100 EACH HAS BEEN PROVIDED IN THE GENERAL SUMMARY.

FLOODLIGHTING

FLOODLIGHTING OF THE WORK SITE FOR OPERATIONS CONDUCTED DURING NIGHTTIME PERIODS SHALL BE ACCOMPLISHED SO THAT THE LIGHTS DO NOT CAUSE GLARE TO THE DRIVERS ON THE ROADWAY. TO ENSURE THE ADEQUACY OF THE FLOODLIGHT PLACEMENT, THE CONTRACTOR AND THE ENGINEER SHALL DRIVE THROUGH THE WORK SITE EACH NIGHT WHEN THE LIGHTING IS IN PLACE AND OPERATIVE PRIOR TO COMMENCING ANY WORK. IF GLARE IS DETECTED, THE LIGHT PLACEMENT AND SHIELDING SHALL BE ADJUSTED TO THE SATISFACTION OF THE ENGINEER BEFORE WORK PROCEEDS.

PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC.

DRUM REQUIREMENTS

IN ADDITION TO THE REQUIREMENTS OF THE PLANS, SPECIFICATION AND PROPOSAL, DRUMS FURNISHED BY THE CONTRACTOR SHALL BE NEW AND UNUSED AT THE TIME OF ARRIVAL ON THE PROJECT. ANY DRUMS BROUGHT ON THE PROJECT, WHICH HAVE PREVIOUSLY BEEN USED ELSEWHERE, WILL NOT BE ACCEPTED.

PAYMENT FOR DRUMS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR MAINTAINING TRAFFIC UNLESS SEPARATELY ITEMIZED.

ITEM 614, WORK ZONE IMPACT ATTENUATOR FOR 24" WIDE HAZARDS (UNIDIRECTIONAL OR BIDIRECTIONAL)

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A NON-GATING IMPACT ATTENUATOR. FURNISH AN IMPACT ATTENUATOR FROM THE OFFICE OF ROADWAY ENGINEERING'S APPROVED LIST FOR WORK ZONE IMPACT ATTENUATORS, FROM THE ROADWAY STANDARDS WEB PAGE FOR ROADWAY STANDARDS WEB PAGE.

INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE CONTRACTOR SHALL REPAIR OR REPLACE A DAMAGED UNIT WITHIN 24 HOURS OF A DAMAGING IMPACT.

WHEN BIDIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS.

WHEN GATING IMPACT ATTENUATORS ARE DESIRED, THE CONTRACTOR SHALL SUBMIT DOCUMENTATION TO THE ENGINEER FOR ACCEPTANCE.

THE COST FOR THE ADDITIONAL BARRIER REQUIRED FOR A GATING IMPACT ATTENUATOR SHALL BE INCLUDED IN THE COST OF THE GATING IMPACT ATTENUATOR.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT AND MAINTAIN A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS, TRANSITIONS, LEVELING PADS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, A CHANGEABLE MESSAGE SIGN. THE SIGN SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS AVAILABLE ON THE (OFFICE OF MATERIALS MANAGEMENT WEB PAGE). THE LIST CONTAINS CLASS A AND B UNITS WITH MINIMUM LEGIBILITY DISTANCES OF 800 FEET AND 650 FEET, RESPECTIVELY.

EACH SIGN SHALL BE TRAILER-MOUNTED AND EQUIPPED WITH A FUNCTIONAL DIMMING MECHANISM, TO DIM THE SIGN DURING DARKNESS, AND A TAMPER AND VANDAL PROOF ENCLOSURE. EACH SIGN SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ON-SITE PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT. THE SIGN SHALL ALSO BE CAPABLE OF BEING POWERED BY AN ELECTRICAL SERVICE DROP FROM A LOCAL UTILITY COMPANY. THE PCMS SHALL BE DELINEATED IN ACCORDANCE WITH C&S 614.03.

THE PROBABLE PCMS LOCATIONS AND WORK LIMITS FOR THOSE LOCATIONS ARE SHOWN ON SHEET 15 OF THE PLAN. PLACEMENT, OPERATION, MAINTENANCE AND ALL ACTIVATION OF THE SIGNS BY THE CONTRACTOR SHALL BE AS DIRECTED BY THE ENGINEER. THE PCMS SHALL BE LOCATED IN A HIGHLY VISIBLE POSITION YET PROTECTED FROM TRAFFIC. THE CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE VISIBILITY OR ACCOMMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS SHALL BE TURNED OFF. ADDITIONALLY, WHEN NOT IN USE FOR EXTENDED PERIODS OF TIME, THE PCMS SHALL BE TURNED AWAY FROM ALL TRAFFIC.

THE ENGINEER SHALL BE PROVIDED ACCESS TO EACH SIGN UNIT AND SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ODOT PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT, AND TO REVISE SIGN MESSAGES, IF NECESSARY.

THE CONTRACTOR SHALL IMPLEMENT A SYSTEM WHEREBY CHANGEABLE MESSAGES WILL BE IMPLEMENTED WITHIN 1 HOUR FOLLOWING TELEPHONE NOTIFICATION FROM THE PROJECT ENGINEER TO A DESIGNATED PHONE.

PCMS SHALL BE PLACED 14 DAYS IN ADVANCE OF THE CLOSURE AND REMAIN IN PLACE FOR 14 DAYS FOLLOWING THE CLOSURE.

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN (CONTINUED)

ALL MESSAGES TO BE DISPLAYED ON THE SIGN WILL BE PROVIDED BY THE ENGINEER. A LIST OF ALL REQUIRED PRE-PROGRAMMED MESSAGES WILL BE GIVEN TO THE CONTRACTOR AT THE PROJECT PRECONSTRUCTION CONFERENCE. THE SIGN SHALL HAVE THE CAPABILITY TO STORE UP TO 99 MESSAGES. MESSAGE MEMORY OR PRE-PROGRAMMED DISPLAYS SHALL NOT BE LOST AS A RESULT OF POWER FAILURES TO THE ON-BOARD COMPUTER. THE SIGN LEGEND SHALL BE CAPABLE OF BEING CHANGED IN THE FIELD. THREE-LINE PRESENTATION FORMATS WITH UP TO SIX MESSAGE PHASES SHALL BE SUPPORTED. PCMS FORMAT SHALL PERMIT THE COMPLETE MESSAGE FOR EACH PHASE TO BE READ AT LEAST TWICE. THE PCMS SHALL CONTAIN AN ACCURATE CLOCK AND PROGRAMMING LOGIC WHICH WILL ALLOW THE SIGN TO BE ACTIVATED, DEACTIVATED OR MESSAGES CHANGED AUTOMATICALLY AT DIFFERENT TIMES OF THE DAY FOR DIFFERENT DAYS OF THE WEEK.

THE PCMS SHALL CONTAIN A CELLULAR TELEPHONE DATA LINK WHICH WILL (IN ACTIVE CELLULAR PHONE AREAS) ALLOW REMOTE SIGN ACTIVATION, MESSAGE CHANGES, MESSAGE ADDITIONS AND REVISIONS TO TIME OF DAY PROGRAMS. THE SYSTEM SHALL ALSO PERMIT VERIFICATION OF CURRENT AND PROGRAMMED MESSAGES. ONE REMOTE DATA INPUT DEVICE (LAPTOP COMPUTER PLUS MODEM OR EQUIVALENT) SHALL BE FURNISHED FOR USE BY THE DISTRICT TRAFFIC ENGINEER, OR EQUIVALENT, AND SHALL BE INSURED AGAINST THEFT.

THE PCMS UNIT SHALL BE MAINTAINED IN GOOD WORKING ORDER BY THE CONTRACTOR IN ACCORDANCE WITH THE PROVISIONS OF C&S 614.07. THE CONTRACTOR SHALL, PRIOR TO ACTIVATING THE UNIT, MAKE ARRANGEMENTS, WITH AN AUTHORIZED SERVICE AGENT FOR THE PCMS, TO ASSURE PROMPT SERVICE IN THE EVENT OF FAILURE. ANY FAILURE SHALL NOT RESULT IN THE SIGN BEING OUT OF SERVICE FOR MORE THAN 12 HOURS, INCLUDING WEEKENDS. FAILURE TO COMPLY MAY RESULT IN AN ORDER TO STOP WORK AND OPEN ALL TRAFFIC LANES AND/OR IN THE DEPARTMENT TAKING APPROPRIATE ACTION TO SAFELY CONTROL TRAFFIC. THE ENTIRE COST TO CONTROL TRAFFIC, ACCRUED BY THE DEPARTMENT DUE TO THE CONTRACTOR'S NONCOMPLIANCE, WILL BE DEDUCTED FROM MONEYS DUE, OR TO BECOME DUE THE CONTRACTOR ON HIS CONTRACT.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR 24-HOUR-PER-DAY OPERATION AND MAINTENANCE OF THESE SIGNS ON THE PROJECT FOR THE DURATION OF THE PHASES WHEN THE PLAN REQUIRES THEIR USE.

PAYMENT FOR THE ABOVE DESCRIBED ITEM SHALL BE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FUELS, LUBRICATING OILS, SOFTWARE, HARDWARE AND INCIDENTALS TO PERFORM THE ABOVE DESCRIBED WORK.

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN II SIGN MONTH

O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\94741\mot\sheet\94741\MN001.dgn 9/26/2017 1:28:47 PM jhensley

CALCULATED
LDW
CHECKED
GKB

MAINTENANCE OF TRAFFIC NOTES

HAM-71-6.86

o:\odot_dot_08\108249A.00 - HAM-71-686 PID94741\94741\mot\sheets\94741\MN002.dgn 9/26/2017 1:28:48 PM jhensley

WORKSITE TRAFFIC SUPERVISOR

SUBJECT TO APPROVAL OF THE ENGINEER, THE CONTRACTOR SHALL EMPLOY AND IDENTIFY (SOMEONE OTHER THAN THE SUPERINTENDENT) A CERTIFIED WORKSITE TRAFFIC SUPERVISOR (WTS) BEFORE STARTING WORK IN THE FIELD. THE WTS SHALL BE CERTIFIED FROM ONE OF THE FOLLOWING ORGANIZATIONS:

1. AMERICAN TRAFFIC SAFETY SERVICE ASSOCIATION (ATSSA), PHONE NUMBER 1-800-272-8772, CERTIFIED TRAFFIC CONTROL SUPERVISOR (TCS).
2. NATIONAL HIGHWAY INSTITUTE, DESIGN AND OPERATION OF WORK ZONE TRAFFIC CONTROL, PHONE NUMBER 1-703-235-0500.
3. THE OHIO CONTRACTORS ASSOCIATION, TRAFFIC CONTROL SUPERVISOR (OCA/TCS) WORK ZONE CLASS, ONLY IF TAKEN AFTER MAY 5, 2004, PHONE NUMBER 1-800-229-1388.
4. OHIO LABORERS TRAINING, TRAFFIC CONTROL SUPERVISORS CLASS, PHONE NUMBER 1-740-599-7915.

A COPY OF EACH WTS'S CERTIFICATION AND 24-HOUR CONTACT INFORMATION SHALL BE PROVIDED TO THE ENGINEER AT THE PRECONSTRUCTION CONFERENCE. IF THE DESIGNATED WTS WILL NOT BE AVAILABLE FULL TIME (24/7), THE CONTRACTOR MAY DESIGNATE AN ALTERNATE WTS TO BE AVAILABLE WHEN THE PRIMARY IS OFF DUTY. EACH WTS SHALL HAVE A WTS CERTIFICATION CONTAINING THE DATE OF ISSUE AND SHALL BE FROM ANY OF THE APPROVED ORGANIZATIONS. AT THE TIME OF THE PRECONSTRUCTION, THE WTS CERTIFICATION DATE OF ISSUE SHALL BE WITHIN 5 YEARS PRIOR TO THE ORIGINAL COMPLETION DATE OF THE PROJECT.

THE WTS POSITION HAS THE RESPONSIBILITY OF MONITORING TRAFFIC CONTROL DEFICIENCIES FOR THE ENTIRE WORK ZONE. THE DUTIES OF THE WTS ARE AS FOLLOWS:

1. BE AVAILABLE ON A 24-HOUR PER DAY BASIS, AND BE ABLE TO BE ON SITE FOR ALL EMERGENCY TRAFFIC CONTROL NEEDS WITHIN ONE HOUR OF NOTIFICATION BY POLICE OR PROJECT STAFF AND BE PREPARED TO EFFECT CORRECTIVE MEASURES IMMEDIATELY ON EXISTING WORK ZONE TRAFFIC CONTROL DEVICES.
2. ATTEND PRECONSTRUCTION MEETING AND ALL PROJECT MEETINGS WHERE TRAFFIC CONTROL MANAGEMENT IS DISCUSSED.
3. BE AVAILABLE FOR MEETINGS OR DISCUSSIONS WITH THE ENGINEER UPON REQUEST OR WITHIN 36 HOURS.
4. COORDINATE A TRAFFIC INCIDENT MANAGEMENT MEETING EACH YEAR BEFORE CONSTRUCTION WORK BEGINS WITH ODOT AND THE SAFETY FORCES THAT WILL RESPOND TO INCIDENTS ON THE PROJECT.

ITEMS TO BE DISCUSSED WILL BE THE:

- A. TRAFFIC INCIDENT MANAGEMENT PLAN (TIMP);
- B. EMERGENCY RESPONSE AND NOTIFICATION;
- C. PROJECT WORK/PHASING CONCERNS (E.G., RAMP CLOSURES); AND
- D. RESPONDERS CONCERNS.

5. BE AWARE OF, AND COORDINATE IF NECESSARY, ALL TRAFFIC CONTROL OPERATIONS, INCLUDING THOSE OF SUBCONTRACTORS AND SUPPLIERS.
6. COORDINATE PROJECT ACTIVITIES WITH ALL LAW ENFORCEMENT OFFICERS (LEOS). A WTS SHALL ALSO BE THE MAIN CONTACT PERSON WITH THE LEOS WHILE THEY ARE ON THE PROJECT.
7. COORDINATE MEETINGS WITH ODOT PERSONNEL, LEOS AND OTHER APPLICABLE ENTITIES BEFORE EACH PLAN PHASE SWITCH TO DISCUSS WORK ZONE TRAFFIC CONTROL.
8. ENSURE COMPLIANCE WITH THE CONTRACT DOCUMENTS FOR SIGNS, BARRICADES, TEMPORARY CONCRETE BARRIER, PAVEMENT MARKINGS, PORTABLE MESSAGE SIGNS, AND OTHER TRAFFIC CONTROL DEVICES ON A DAILY BASIS; AND FACILITATE ANY CORRECTIVE ACTION NECESSARY.
9. NOTIFY THE CONTRACTOR OF THE NEED FOR CLEANING AND MAINTENANCE OF ALL TRAFFIC CONTROL DEVICES, INCLUDING THE COVERING AND REMOVAL OF INAPPLICABLE SIGNS.

WORKSITE TRAFFIC SUPERVISOR (CONTINUED)

10. INSPECT, EVALUATE, PROPOSE NECESSARY MODIFICATIONS TO, AND DOCUMENT THE EFFECTIVENESS OF, THE TRAFFIC CONTROL DEVICES AND/OR TRAFFIC OPERATIONS ON A DAILY BASIS (7 DAYS A WEEK). IN ADDITION, A WEEKLY NIGHT INSPECTION OF THE WORK ZONE SETUP FOR DAYTIME WORK OPERATIONS; AND ONE DAYTIME INSPECTION PER WEEK FOR NIGHTTIME PROJECTS. THIS SHALL INCLUDE (BUT NOT BE LIMITED TO) DOCUMENTATION ON THE FOLLOWING PROJECT EVENTS:

- A. INITIAL TRAFFIC CONTROL SETUP (DAY AND NIGHT REVIEW).
- B. DAILY TRAFFIC CONTROL SETUP AND REMOVAL.
- C. WHEN CONSTRUCTION STAGING CAUSES A CHANGE IN THE TRAFFIC CONTROL SETUP.
- D. CRASH OCCURRENCES WITHIN THE CONSTRUCTION AREA.
- E. REMOVAL OF TRAFFIC CONTROL DEVICES AT THE END OF A PHASE OR PROJECT.
- F. ALL OTHER EMERGENCY TRAFFIC CONTROL NEEDS.

11. COMPLETE THE DEPARTMENT APPROVED LONG TERM INSPECTION FORM (CA-D-8) AFTER EACH INSPECTION AS REQUIRED IN # 10 AND SUBMIT IT TO THE ENGINEER THE FOLLOWING WORK DAY. THESE REPORTS SHALL INCLUDE A CHECKLIST OF ALL TRAFFIC CONTROL MAINTENANCE ITEMS TO BE REVIEWED. A COPY OF THE FORM WILL BE PROVIDED AT THE PRE-CONSTRUCTION MEETING. ANY DEFICIENCIES OBSERVED SHALL BE NOTED, ALONG WITH RECOMMENDED CORRECTIVE ACTIONS AND THE DATES BY WHICH SUCH CORRECTIONS WERE, OR WILL BE, COMPLETED. A COPY OF THIS DOCUMENT CAN BE FOUND IN THE CURRENT REVISION OF THE DEPARTMENT OF TRANSPORTATION CONSTRUCTION INSPECTION FORMS MANUAL.

12. VERIFY THAT ALL FLAGGING OPERATIONS ARE BEING CONDUCTED PER THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

13. HAVE COPIES OF THE ODOT TEMPORARY TRAFFIC CONTROL MANUAL AND APPLICABLE STANDARDS AND SPECIFICATIONS INCLUDED IN THE CONTRACT DOCUMENTS AVAILABLE AT ALL TIMES ON THE PROJECT.

14. IDENTIFY AND CONTACT ALL POSSIBLE RESPONSE PERSONNEL; PREPLAN AND KEEP AN UPDATED ROSTER WITH PHONE NUMBERS:

- A. FEDERAL, STATE, AND LOCAL TRANSPORTATION AGENCIES (TRAFFIC MANAGEMENT CENTER);
- B. REGIONAL, COUNTY OR LOCAL 911 DISPATCH; AND
- C. TOWING AND RECOVERY PROVIDERS.

15. COMPLY WITH THE PROVISIONS OF ODOT CHAPTER 6I, CONTROL OF TRAFFIC THROUGH TRAFFIC INCIDENT MANAGEMENT AREAS.

16. PROPOSE A RESPONSE/ACTION PLAN TO:

- A. ESTABLISH ALTERNATE ROUTE PLANS PER THE PROVIDED ODOT PLAYBOOK;
- B. REMOVE TRAFFIC DEMAND FROM IMPACTED ROADWAY(S);
- C. DIVERT TRAFFIC TO ROUTES THAT CAN ACCOMMODATE DEMANDS;
- D. DETOUR TRAFFIC AWAY FROM SENSITIVE AREAS (SUCH AS SCHOOLS, HOSPITALS, ETC.);
- E. DISCUSS METHODS OF DETERMINING A STAGING AREA FOR RESPONDERS WITHIN OR NEAR THE CONSTRUCTION ZONE; AND
- F. DISCUSS METHODS OF DEVELOPING INGRESS AND EGRESS SITES WITHIN THE CONSTRUCTION ZONE.

THE RESPONSE/ACTION PLAN SHALL BE SUBMITTED TO ODOT FOR ACCEPTANCE BEFORE THE CONTRACTOR'S FIRST DAY OF WORK.

17. PERFORM, AT A MINIMUM, THE FOLLOWING FUNCTIONS IN INCIDENT DETECTION AND VERIFICATION:

- A. CALL 911/ NOTIFY TRAFFIC MANAGEMENT CENTER AND PROVIDE THE FOLLOWING:
 - I. LOCATION - INCLUDING MILEPOST NUMBER AND DIRECTION OF TRAVEL.
 - II. NUMBER AND TYPE OF VEHICLES INVOLVED.
 - III. ESTIMATED EXTENT OF DAMAGE OR INJURY.
 - IV. ESTIMATED NUMBER OF PATIENTS INVOLVED.
 - V. ANY POTENTIAL HAZARDOUS CONDITIONS.
 - VI. THE PLACARD NUMBER ON ANY HAZARDOUS MATERIALS PLACARD FROM A SAFE DISTANCE.

- B. INITIATE TRAFFIC MANAGEMENT / PROVIDE TRAFFIC CONTROL.
- C. ASSIST MOTORIST WITH DISABLED VEHICLES.
- D. RECOMMEND ROADWAY REPAIR NEEDS.
- E. PROVIDE REPAIR RESOURCES.

WORKSITE TRAFFIC SUPERVISOR (CONTINUED)

18. ATTEND POST-INCIDENT DEBRIEFINGS IF REQUIRED. THE DEPARTMENT WILL DEDUCT THE PRORATED DAILY AMOUNT OF THE UNIT PRICE BID FOR THE WTS FOR ANY DAY ON WHICH THE CONTRACTOR FAILS TO PERFORM THE DUTIES SET FORTH ABOVE. SHOULD THE CONTRACTOR'S FAILURE TO PERFORM ANY OF THE DUTIES DESCRIBED ABOVE RESULT IN A MAINTENANCE OF TRAFFIC SAFETY ISSUE, THE DEPARTMENT WILL DEDUCT THE PRORATED DAILY AMOUNT FOR ITEM 614 MAINTENANCE OF TRAFFIC FROM THE CONTRACTOR'S NEXT SCHEDULED ESTIMATE.

IF THREE OR MORE FAILURES TO PERFORM THE DUTIES SET FORTH ABOVE OCCUR, THE WTS SHALL BE IMMEDIATELY REMOVED FROM THE WORK IN ACCORDANCE WITH C&MS 108.05.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN INCLUDED FOR THE WORKSITE TRAFFIC SUPERVISOR:

ITEM 614 WORKSITE TRAFFIC SUPERVISOR 9 MONTHS

DELINEATION OF PORTABLE AND PERMANENT BARRIER

BARRIER REFLECTORS AND OBJECT MARKERS SHALL BE INSTALLED ON ALL PORTABLE BARRIER (PB) USED FOR TRAFFIC CONTROL AND ON PERMANENT CONCRETE BARRIER (INCLUDING BRIDGE PARAPETS) LOCATED WITHIN 5 FEET OF THE EDGE OF THE ADJACENT TRAVEL LANE.

BARRIER REFLECTORS SHALL CONFORM TO C&MS 626, EXCEPT THAT THE SPACING SHALL BE AS PER TRAFFIC SCD MT-101.70. OBJECT MARKERS AND THEIR INSTALLATION SHALL CONFORM TO C&MS 614.03 AND SCD MT-101.70. WHEN THE PB CONTAINS GLARE SCREEN, ONE SET OF THREE VERTICAL STRIPES OF SHEETING SHALL BE CONSIDERED EQUIVALENT TO AN OBJECT MARKER, ONE-WAY.

INCREASED BARRIER DELINEATION, AS SPECIFIED HEREIN, SHALL BE INSTALLED ON ALL PB AND CONCRETE PERMANENT BARRIER LOCATED WITHIN 5 FEET OF THE EDGE OF THE TRAVELED LANE ALONG TAPERS AND TRANSITION AREAS AND ALONG CURVES (OUTSIDE ONLY) WITH DEGREE OF CURVATURE GREATER THAN OR EQUAL TO 3 DEGREES.

THE INCREASED BARRIER DELINEATION SHALL CONSIST OF EITHER DELINEATION PANELS OR THE TRIPLE STACKING OF WORK ZONE BARRIER REFLECTORS.

DELINEATION PANELS SHALL CONSIST OF PANELS OF DELINEATION, APPROXIMATELY 34 INCHES LONG AND 6 INCHES WIDE AND SHALL BE "CRIMPED." PANELS SHALL BE INSTALLED AND SPACED PER TRAFFIC SCD MT-101.70.

TRIPLE-STACKED BARRIER REFLECTORS SHALL CONSIST OF ALIGNING THREE BARRIER REFLECTORS VERTICALLY, AT LOCATIONS WHERE A SINGLE BARRIER REFLECTOR WOULD BE OTHERWISE ATTACHED. THERE SHALL BE NO OPEN SPACE BETWEEN THE ADJACENT BARRIER REFLECTORS. THE TRIPLE-STACKED BARRIER REFLECTORS SHALL CONFORM TO C&MS 626, EXCEPT THAT THEY SHALL BE SPACED AND ALIGNED PER TRAFFIC SCD MT-101.70.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE MOT SUBSUMMARY:

ITEM 614, BARRIER REFLECTOR, TYPE B	334 EACH
ITEM 614, OBJECT MARKER, ONE-WAY	334 EACH
ITEM 614, INCREASED BARRIER DELINEATION	16,481 FEET

PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIAL, LABOR, INCIDENTALS AND EQUIPMENT NECESSARY FOR FURNISHING, INSTALLING, MAINTAINING AND REMOVING EACH OF THE ABOVE ITEMS.

ALONG RUNS OF INCREASED BARRIER DELINEATION WHERE THIS ITEM IS PROVIDED, THE QUANTITY SHALL BE MEASURED AS THE ENTIRE LENGTH OF THE RUN OF INCREASED BARRIER DELINEATION, INCLUDING THE SPACES BETWEEN THE INDIVIDUAL DELINEATION PANELS OR STACKS OF BARRIER REFLECTORS.

TRUCK MOUNTED ATTENUATOR

WHEN CONTRACTOR IS SETTING/REMOVING A SHORT TERM WORK ZONE IN I-71, A TRUCK MOUNTED ATTENUATOR (TMA) MUST TRAIL THE OPERATION, INCLUDING SETTING THE ADVANCED WARNING SIGNS OR TAKING THEM DOWN. THIS SAME TRUCK MUST HAVE A TYPE B FLASHING ARROW PANEL MOUNTED ON IT FACING THE REAR OF THE TRUCK. THE CONTRACTOR SHALL USE A TMA FOR ANY APPLICATION WHERE THE ODOT OR STANDARD CONSTRUCTION DRAWINGS USES THE PHRASE "OPTIONAL" OR "WHEN SPECIFIED IN THE PLAN".

THE TMA MUST BRING A VEHICLE WEIGHING 1800 TO 4500 LBS. AND TRAVELLING AT 60 MPH TO A SAFE CONTROLLED STOP, PER NCHRP 350 CRITERIA. THE MANUFACTURER'S SPECIFICATION SHALL BE FOLLOWED CONCERNING THE SIZE OF THE TRUCK AND THE CONNECTIONS TO THE TMA.

ITEM 614 - LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS

USE OF LAW ENFORCEMENT OFFICERS (LEOS) BY CONTRACTORS OTHER THAN THE USES SPECIFIED BELOW WILL NOT BE PERMITTED AT PROJECT COST. LEOS SHOULD NOT BE USED WHERE THE ODOT INTENDS THAT FLAGGERS BE USED. USE OF LEOS SHALL BE RESTRICTED TO I-71 MAINLINE, I-71 COLLECTOR ROADS, TO SIGNAL WORK ON THE LOCAL STREETS, AND AS DIRECTED BY THE ENGINEER.

IN ADDITION TO THE REQUIREMENTS OF C&MS 614 AND THE ODOT, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHALL BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS:

DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.

DURING A TRAFFIC SIGNAL INSTALLATION WHEN IMPACTING THE NORMAL FUNCTION OF THE SIGNAL OR THE FLOW OF TRAFFIC OR WHEN TRAFFIC NEEDS TO BE DIRECTED THROUGH AN ENERGIZED TRAFFIC SIGNAL CONTRARY TO THE SIGNAL DISPLAY (E.G., DIRECTING MOTORISTS THROUGH A RED LIGHT).

IN ADDITION TO THE REQUIREMENT OF C&MS 614 AND THE ODOT, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHOULD BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS AS APPROVED BY THE ENGINEER:

FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED FOR LONG-TERM LANE CLOSURES/SHIFTS (FOR THE FIRST AND LAST DAY OF MAJOR CHANGES IN TRAFFIC CONTROL SETUP).

ONE LEO IS NEEDED WHEN INSTALLING A SINGLE OR DOUBLE LANE CLOSURE. WHEN LANE CLOSURES ARE BEING INSTALLED IN MULTIPLE DIRECTIONS OR MULTIPLE LOCATIONS, 1 LEO IS NEEDED PER MOT WORK CREW. IN OTHER WORDS, IF THE SAME WORK CREW INSTALLS BOTH LANE CLOSURES, THEN ONLY 1 LEO IS NEEDED; IF 2 SEPARATE WORK CREWS INSTALL A LANE CLOSURE IN EACH DIRECTION, THEN 2 LEOS WILL BE NEEDED. THE LEO SHOULD BE POSITIONED IN ADVANCE OF AND ON THE SAME SIDE AS THE LANE RESTRICTION.

LEOS SHOULD NOT FORGO THEIR TRAFFIC CONTROL RESPONSIBILITIES TO APPREHEND MOTORISTS FOR ROUTINE TRAFFIC VIOLATIONS. HOWEVER, IF A MOTORIST'S ACTIONS ARE CONSIDERED TO BE RECKLESS, THEN PURSUIT OF THE MOTORIST IS APPROPRIATE.

THE LEOS WORK AT THE DIRECTION OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE SERVICES OF THE LEOS WITH THE APPROPRIATE AGENCIES AND COMMUNICATING THE INTENTIONS OF THE PLANS WITH RESPECT TO DUTIES OF THE LEOS. THE ENGINEER SHALL HAVE FINAL CONTROL OVER THE LEOS' DUTIES AND PLACEMENT, AND WILL RESOLVE ANY ISSUES THAT MAY ARISE BETWEEN THE TWO PARTIES.

THE LEO SHALL REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT, IN ORDER TO RECEIVE INSTRUCTIONS REGARDING SPECIFIC WORK ASSIGNMENTS DURING HIS/HER SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF HIS/HER SHIFT. THE LEO SHALL REPORT TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT. ONCE THE LEO HAS COMPLETED THE DUTIES DESCRIBED ABOVE AND STILL HAS TIME REMAINING ON HIS/HER SHIFT, THE LEO MAY BE ASKED TO PATROL THROUGH THE WORK ZONE (WITH FLASHING LIGHTS OFF) OR BE PLACED AT A LOCATION TO DETER MOTORISTS FROM SPEEDING. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE LEO WITH A TWO-WAY COMMUNICATION DEVICE WHICH SHALL BE RETURNED TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT.

LEOS (WITH PATROL CAR) REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614, LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE 900 HOURS

THE HOURS PAID SHALL INCLUDE ANY MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED. THE HOURS PAID SHALL INCLUDE UP TO 1/2 HOUR PRIOR TO THE START

MAINTENANCE OF TRAFFIC NOTES

HAM-71-6.86

OF THE SHIFT TO RECEIVE INSTRUCTIONS FOR THE WORK ASSIGNMENTS; SPECIAL WORK ASSIGNMENTS REQUIRING ADDITIONAL TIME SHALL BE APPROVED BY THE ENGINEER PRIOR TO SCHEDULING THE LEO. THE HOURS PAID PER LEO FOR LANE CLOSURES SHALL INCLUDE THE MINIMUM SHOW-UP TIME FOR THE INITIAL SET-UP PERIOD AND THE MINIMUM SHOW-UP TIME FOR THE TEAR DOWN PERIOD; BUT NO MORE THAN THE ACTUAL INVOICED HOURS.

ANY ADDITIONAL COSTS (ADMINISTRATIVE OR OTHERWISE) INCURRED BY THE CONTRACTOR TO OBTAIN THE SERVICES OF AN LEO ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE.

ITEM 614, WORK ZONE SPEED ZONES (WZSZS)

THE FOLLOWING WORK ZONE SPEED ZONE (WZSZ) SPEED LIMIT REVISION(S) HAVE BEEN APPROVED FOR USE ON THIS PROJECT WHEN WORK ZONE CONDITIONS AND FACTORS ARE MET AS DESCRIBED BELOW:

WZSZ REVISION NUMBER	COUNTY & ROUTE	DIRECTION
WZ-45064	HAM-71	N.B.

POTENTIAL WZSZ LOCATIONS SHALL HAVE AN ORIGINAL (PRE-CONSTRUCTION) POSTED SPEED LIMIT OF GREATER THAN OR EQUAL TO 55 MPH, A QUALIFYING WORK ZONE CONDITION OF AT LEAST 0.5 MILE IN LENGTH, AN EXPECTED WORK DURATION OF AT LEAST THREE HOURS, AND A WORK ZONE CONDITION IN PLACE THAT REDUCES THE EXISTING FUNCTIONALITY OF THE TRAVEL LANES OR SHOULDERS (I.E., LANE CLOSURE, LANE SHIFT, CROSSOVER, CONTRAFLOW AND/OR SHOULDER CLOSURE). THE LENGTH OF THE WORK ZONE CONDITION IS MEASURED FROM THE BEGINNING OF THE TAPER FOR THE SUBJECT WORK ZONE CONDITION IMPACTING THE TRAVEL LANES AND/OR SHOULDER TO THE END OF THE DOWNSTREAM TAPER, WHERE DRIVERS ARE RETURNED TO TYPICAL ALIGNMENT. AN EXPECTED WORK DURATION OF AT LEAST THREE HOURS IS REQUIRED TO BALANCE THE ADDITIONAL EXPOSURE CREATED BY INSTALLING AND REMOVING WZSZ SIGNING WITH THE TIME NEEDED TO COMPLETE THE WORK.

IF THE WORK ZONE MEETS THESE MINIMUM CRITERIA, IT SHALL BE ANALYZED FURTHER USING TABLE 1 BELOW TO DETERMINE IF AND WHEN IT QUALIFIES FOR A SPEED LIMIT REDUCTION. DEPENDING ON THE ORIGINAL POSTED SPEED LIMIT, THE TYPE OF TEMPORARY TRAFFIC CONTROL USED, AND WHETHER OR NOT WORKERS ARE PRESENT, A WARRANTED WZSZ WILL VARY IN THE APPROVED SPEED LIMIT TO BE POSTED OVER TIME.

C&MS ITEM 614, PARAGRAPH 614.02(B), INDICATES THAT TWO DIRECTIONS OF A DIVIDED HIGHWAY ARE CONSIDERED SEPARATE HIGHWAY SECTIONS. THEREFORE, IF THE WORK ON A MULTI-LANE DIVIDED HIGHWAY IS LIMITED TO ONLY ONE DIRECTION, A SPEED LIMIT REDUCTION IN THE DIRECTION OF THE WORK DOES NOT AUTOMATICALLY CONSTITUTE A SPEED LIMIT REDUCTION IN THE OPPOSITE DIRECTION. EACH DIRECTION SHALL BE ANALYZED INDEPENDENTLY FROM EACH OTHER.

ALL WZSZS FLUCTUATE BETWEEN TWO APPROVED REDUCED SPEED LIMITS OR BETWEEN AN APPROVED REDUCED SPEED LIMIT AND THE ORIGINAL POSTED SPEED LIMIT. ONLY ONE OF TWO SIGNING STRATEGIES SHALL BE USED TO IMPLEMENT A WZSZ.

WZSZS USING DSL SIGN ASSEMBLIES SHALL BE IN ACCORDANCE WITH THIS NOTE, APPROVED LIST, SUPPLEMENTAL SPECIFICATIONS (SS) 808 AND 908, AND TRAFFIC SCD MT-104.10.

ONLY ONE WARRANTED SPEED LIMIT APPLIES AT ANY ONE TIME; SPEED LIMIT REDUCTIONS ARE NOT CUMULATIVE. WZSZS SHALL NOT BE USED FOR MOVING/MOBILE ACTIVITIES, AS DEFINED IN OMUTCD PART 6.

WHEN LOOKING UP THE WARRANTED WORK ZONE SPEED LIMITS, ALWAYS USE THE ORIGINAL, PRE-CONSTRUCTION, POSTED SPEED LIMIT. DO NOT USE A PRIOR OR CURRENT WORK ZONE SPEED LIMIT AS A LOOK UP VALUE IN THE TABLE. POSITIVE PROTECTION IS GENERALLY REGARDED AS PORTABLE BARRIER OR OTHER RIGID BARRIER IN USE ALONG THE WORK AREA WITHIN THE SUBJECT WARRANTED WORK ZONE CONDITION. WITHOUT POSITIVE PROTECTION IS GENERALLY REGARDED AS USING DRUMS, CONES, SHADOW VEHICLE, ETC., ALONG THE WORK AREA WITHIN THE SUBJECT WARRANTED WORK ZONE CONDITION. WORKERS ARE CONSIDERED AS BEING PRESENT WHEN ON-SITE, WORKING WITHIN THE SUBJECT WARRANTED WORK ZONE CONDITION. WHEN THE WORK ZONE CONDITION REDUCING THE EXISTING FUNCTIONALITY OF THE TRAVEL LANES OR SHOULDERS IS REMOVED, THE SPEED LIMIT DISPLAYED SHALL RETURN TO THE ORIGINAL POSTED SPEED LIMIT.

TABLE 1: WARRANTED WORK ZONE SPEED LIMITS (MPH) FOR WORK ZONES ON HIGH-SPEED (GREATER THAN, OR EQUAL TO, 55 MPH) MULTI-LANE HIGHWAYS

ORIGINAL POSTED SPEED LIMIT	WITH POSITIVE PROTECTION		WITHOUT POSITIVE PROTECTION	
	WORKERS PRESENT	WORKERS NOT PRESENT	WORKERS PRESENT	WORKERS NOT PRESENT
70	60	65	55	65
65	55	60	50	60
60	55	60	50	60
55	50	55	45	55

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY. ITEM 614, DIGITAL SPEED LIMIT (DSL) SIGN ASSEMBLY 24 SIGN MNTH (ASSUMING 2 DSL SIGN ASSEMBLIES FOR 12 MONTHS)

WORK ZONE INCREASED PENALTIES SIGN (R11-H5A)

R11-H5A-48 SIGNS SHALL BE FURNISHED, ERECTED, AND MAINTAINED IN GOOD CONDITION AND/OR REPLACED AS NECESSARY AND SUBSEQUENTLY REMOVED BY THE CONTRACTOR. SIGNS SHALL BE MOUNTED AT THE APPROPRIATE OFFSETS AND ELEVATIONS AS PRESCRIBED BY THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. THEY SHALL BE MAINTAINED ON SUPPORTS MEETING CURRENT SAFETY CRITERIA.

THE SIGNS MAY BE ERECTED OR UNCOVERED NO MORE THAN FOUR HOURS BEFORE THE ACTUAL START OF WORK. THE SIGNS SHALL BE REMOVED OR COVERED NO LATER THAN FOUR HOURS FOLLOWING RESTORATION OF ALL LANES TO TRAFFIC WITH NO RESTRICTIONS, OR SOONER AS DIRECTED BY THE ENGINEER. TEMPORARY SIGN COVERING AND UNCOVERING DUE TO TEMPORARY LANE RESTORATIONS SHALL BE GUIDED BY THE FOUR-HOUR LIMITATIONS STATED ABOVE. SUCH LANE RESTORATIONS SHOULD BE EXPECTED TO REMAIN IN EFFECT FOR 30 OR MORE CONSECUTIVE CALENDAR DAYS, SUCH AS DURING WINTER SHUTDOWNS.

THE SIGNS ON THE MAINLINE SHALL BE DUAL MOUNTED UNLESS NOT PHYSICALLY POSSIBLE. THE FIRST SIGN SHALL BE PLACED BETWEEN THE ROAD WORK AHEAD (W20-1) SIGN AND THE NEXT SIGN IN THE SEQUENCE. SIGNS SHALL BE ERECTED ON EACH ENTRANCE RAMP AND EVERY 2 MILES THROUGH THE CONSTRUCTION WORK LIMITS. SIGNS ON THE MAINLINE SHALL BE R11-H5A-48. SIGNS USED ON THE RAMPS SHALL BE R11-H5A-24. R11-H5A-24 SIGNS MAY BE USED IN THE MEDIAN IN LIEU OF R11-H5A-48 SIGNS IF IT IS NOT PHYSICALLY POSSIBLE TO PROVIDE R11-H5A-48 SIGNS IN THE MEDIAN.

THE CONTRACTOR MAY USE SIGNS AND SUPPORTS IN USED, BUT GOOD, CONDITION PROVIDED THE SIGNS MEET CURRENT ODOT SPECIFICATIONS. SIGN FACES SHALL BE RETROREFLECTORIZED WITH TYPE G SHEETING COMPLYING WITH THE REQUIREMENTS OF C&MS 730.19.

WORK ZONE INCREASED PENALTIES SIGNS AND SUPPORTS WILL BE MEASURED AS THE NUMBER OF SIGN INSTALLATIONS, INCLUDING THE SIGN AND NECESSARY SUPPORTS. IF A SIGN AND SUPPORT COMBINATION IS REMOVED AND RE-ERECTED AT ANOTHER LOCATION AS DIRECTED BY THE ENGINEER, IT SHALL BE CONSIDERED ANOTHER UNIT.

PAYMENT FOR ACCEPTED QUANTITIES, COMPLETE, IN PLACE WILL BE MADE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTALS AND EQUIPMENT FOR FURNISHING, ERECTING, MAINTAINING, COVERING DURING SUSPENSION OF WORK, AND REMOVAL OF THE SIGN AND SUPPORT.

ITEM 614, WORK ZONE INCREASED PENALTIES SIGN 2 EACH

WORK ZONE INCREASED PENALTIES SIGNS WILL BE PLACED AT THE FOLLOWING LOCATIONS:

STA. 341+17 NORTHBOUND, CL & RT

ITEM 614 - WORK ZONE RAISED PAVEMENT MARKER, AS PER PLAN

WORK ZONE RAISED PAVEMENT MARKERS, AS PER PLAN, AND THEIR INSTALLATION SHALL CONFORM TO C&MS 614 OR C&MS 621 AS SPECIFIED HEREIN.

RAISED PAVEMENT MARKERS IN USE DURING THE SNOW-PLOWING SEASON SHALL CONFORM TO 621.

RAISED PAVEMENT MARKERS IN USE DURING THE NON-SNOW-PLOW SEASON SHALL CONFORM TO EITHER 614 OR TO 621.

THE SNOW-PLOWING SEASON SHALL RUN FROM OCTOBER 15TH THROUGH APRIL 1ST.

IF PROJECT DELAYS, NOT THE FAULT OF ODOT, CAUSE THE WORK TO EXTEND INTO THE SNOW-PLOWING SEASON, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING WORK ZONE RAISED PAVEMENT MARKERS (WZRPMS) CONFORMING TO C&MS 614, WITH RAISED PAVEMENT MARKERS CONFORMING TO 621, AS DETERMINED BY THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.

THIS ITEM SHALL INCLUDE PURCHASE, INSTALLATION AND REMOVAL OF ITEM 614 WORK ZONE RAISED PAVEMENT MARKER, AS PER PLAN, INCLUDING FILLING OF ANY DEPRESSIONS CREATED IN THE PAVEMENT AS PER C&MS 621.08.

RESURFACING OF THE TRANSITION AREAS SHALL BE PERFORMED AT THE TIME THAT THE SURFACE COURSE IS BEING APPLIED TO THE ENTIRE PROJECT. PRIOR TO APPLICATION OF THE SURFACE COURSE ON THE PROJECT, THE EXISTING PAVEMENT WITHIN THE TRANSITION AREA SHALL BE REMOVED TO A DEPTH NECESSARY TO REACH THE LEVEL OF THE INTERMEDIATE COURSE OF THE PAVEMENT, AS DETERMINED BY THE ENGINEER.

THE FOLLOWING BID ITEMS ARE INCLUDED IN THE MOT SUBSUMMARY ON SHEET 15: ITEM 254 - PAVEMENT PLANNING, ASPHALT CONCRETE 1200 SY

ITEM 614 - WORK ZONE RAISED PAVMENT MARKER, AS PER PLAN 675 EACH

PAYMENT FOR RESURFACING WITHIN THE TRANSITION AREA SHALL BE PAID FOR UNDER THE APPROPRIATE BID ITEMS FOR THE WORK REQUIRED, AS PROVIDED FOR IN THE PLANS.

ITEM 614 MAINTAINING TRAFFIC, MISC.: MAINTENANCE OF MAJOR GUIDE SIGNS

THE CONTRACTOR SHALL MAINTAIN THE SAME NUMBER OF GUIDE SIGNS AS CURRENTLY EXIST FOR EACH FREEWAY EXIT/ENTRANCE WHICH IS TO REMAIN OPEN DURING EACH PHASE OF CONSTRUCTION IN ORDER TO ALLOW MOTORISTS TO FIND THEIR DESTINATIONS SAFELY. ERECTION/DISMANTLING OF THE OVERHEAD SIGN SUPPORTS WHICH WILL BE AFFECTED BY THE PROPOSED CONSTRUCTION SHALL BE COMPLETED PRIOR TO THAT PHASE OF CONSTRUCTION. NO MORE THAN ONE SIGN FOR ANY EXIT OR ENTRANCE RAMP MAY BE REMOVED AT ANY TIME. IN INSTANCES WHERE THE COPY ON THE REPLACEMENT SIGN IS SUBSTANTIALLY DIFFERENT FROM THE COPY ON THE EXISTING SIGNS FOR A PARTICULAR EXIT OR ENTRANCE RAMP, ALL OF THE SIGNS IN THE SEQUENCE FOR THAT RAMP SHALL BE CHANGED WITHIN ONE CALENDAR DAY. IN SOME CASES IT SHALL BE NECESSARY TO SUPPLY AND INSTALL TEMPORARY SUPPORTS.

PAYMENT FOR ALL THE MATERIALS, INSTALLATION, AND WORK DESCRIBED ABOVE SHALL BE INCLUDED IN THE LUMP SUM PRICE FOR ITEM 614, MAINTAINING TRAFFIC, MISC.: MAINTENANCE OF MAJOR GUIDE SIGNS.

NOTIFICATION OF TRAFFIC RESTRICTIONS

THROUGHOUT THE DURATION OF THE PROJECT, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IN WRITING OF ALL TRAFFIC RESTRICTIONS AND UPCOMING MAINTENANCE OF TRAFFIC CHANGES. THE CONTRACTOR SHALL ENSURE THE WRITTEN NOTIFICATION IS SUBMITTED IN A TIMELY MANNER TO ALLOW THE PROJECT ENGINEER TO MEET THE REQUIRED TIME FRAMES SET FORTH IN THE TABLE BELOW TO INFORM THE OFFICE OF COMMUNICATIONS. THIS NOTIFICATION SHALL BE RECEIVED BY THE PROJECT ENGINEER PRIOR TO THE PHYSICAL SETUP OF ANY APPLICABLE SIGNS OR MESSAGE BOARDS.

INFORMATION SHOULD INCLUDE, BUT IS NOT LIMITED TO, ALL AND SHALL LIST THE SPECIFIC LOCATION, TYPE OF WORK, ROAD STATUS, DATE AND TIME OF RESTRICTION, DURATION OF RESTRICTION, NUMBER OF LANES MAINTAINED, NUMBER OF LANES CLOSED, DETOUR ROUTES, IF APPLICABLE, AND ANY OTHER INFORMATION REQUESTED BY THE PROJECT ENGINEER.

NOTICE TO OFFICE OF COMMUNICATIONS TIME TABLE

ITEM	DURATION	NOTICE DUE TO OFFICE OF COMMUNICATIONS
RAMP & ROAD CLOSURES	< 12 HOURS >= 12 HOURS & < 2 WEEKS >= 2 WEEKS	4 BUSINESS DAYS 14 CALENDAR DAYS 21 CALENDAR DAYS
LANE CLOSURES & RESTRICTIONS	< 2 WEEKS >= 2 WEEKS	2 BUSINESS DAYS 21 CALENDAR DAYS
START OF CONSTRUCTION & TRAFFIC PATTERN CHANGES	N/A	14 CALENDAR DAYS

ANY UNFORESEEN CONDITIONS NOT SPECIFIED IN THE PLANS REQUIRING TRAFFIC RESTRICTIONS SHALL ALSO BE REPORTED TO THE PROJECT ENGINEER USING THE NOTICE TO OFFICE OF COMMUNICATIONS TIME TABLE.

c:\odot_\0108249A.00 - HAM-71-686 PID94741\94741\mot\sheet\94741\11\003.dgn 9/26/2017 1:28:55 PM jhensley

CALCULATED
LDW
CHECKED
GKB

SEQUENCE OF CONSTRUCTION

PRECONSTRUCTION PHASE (NOT SHOWN)

1. RECONSTRUCT I-71 NB MEDIAN SHOULDER AS FULL DEPTH PAVEMENT. THIS WORK SHALL BE PERFORMED BY MAINTAINING ALL EXISTING NORTHBOUND LANES AT ALL TIMES, EXCEPT IN ACCORDANCE WITH THE PERMITTED LANE CLOSURE TIMES NOTE, AS DESCRIBED ON THIS SHEET. UTILIZING DRUMS AS SHOWN IN STANDARD CONSTRUCTION DRAWING MT-95.30 AND AS DETAILED IN PHASE 1: FROM STATION 379+36 TO STATION 379+78. FROM STATION 383+90 TO STATION 467+50.

PHASE 1

1. PLACE ADVANCED SIGNING AS SHOWN IN STAGE 1 PLANS.
2. PLACE WORK ZONE PAVEMENT MARKING AND SHIFT I-71 NORTHBOUND LANES ONTO NEWLY CONSTRUCTED MEDIAN SHOULDER AND EXISTING PAVEMENT FROM STATION 379+36.65 TO STATION 385+00. SHIFT ENTRANCE RAMP I TO THE INSIDE SHOULDER FROM STATION 383+50 TO STATION 386+52.37.
3. SHIFT LANES BACK TO EXISTING LOCATION FROM STATION 461+33 TO STATION 470+50.
4. BETWEEN STATION 422+50 AND STATION 463+00, CONSTRUCT PAVEMENT WIDENING TO THE TOP OF THE INTERMEDIATE COURSE, CONSTRUCT CULVERTS, CONSTRUCT ROAD SIDE DITCHES, AND CONSTRUCT NOISE WALL.

PHASE 2

1. ERECT RIDGE AVENUE NORTHBOUND EXIT RAMP DETOUR SIGNING AS SHOWN ON DETOUR SHEET 14.
2. ERECT DETOUR SIGNING FOR KENNEDY AVENUE ON RAMP TO I-71 NORTH AS SHOWN ON DETOUR SHEET 13.
3. PLACE PB BETWEEN STATION 396+49.18 AND STATION 423+00 AS SHOWN IN PHASE 2 PLANS.
4. KENNEDY AVENUE: PROVIDE MOT SIGNAGE ON KENNEDY AVE. IN ACCORDANCE WITH MT-98.30. CLOSE SOUTHBOUND KENNEDY AVENUE OUTSIDE LANE FROM STATION 11+25 TO STATION 24+00 AS SHOWN ON SHEETS 30 AND 31. PLACE PB ALONG KENNEDY AVENUE AS SHOWN IN THE PLANS FROM STATION 11+25 TO STATION 16+50. MAINTAIN TWO NORTHBOUND LANES AND ONE SOUTHBOUND LANE ON EXISTING PAVEMENT AND EXISTING LANES.
5. RIDGE AVENUE: ALL WORK ALONG RIDGE AVENUE SHALL BE ACCOMPLISHED USING SHORT TERM LANE CLOSURE. CONES SHALL BE USED TO SEPARATE BETWEEN LANES. ALLOWABLE HOURS FOR LANE CLOSURE SHALL BE FROM 9:00AM TO 3:00PM AND FROM 8:00PM TO 5:00AM MONDAY THROUGH FRIDAY AS SHOWN IN THE "LANE VALUE CONTRACT TABLE". ALL SOUTHBOUND LANES SHALL BE OPEN TO TRAFFIC ON THE WEEKENDS. FOR ADVANCED SIGNING AND LANE CLOSURES DURING THE PERMITTED LANE CLOSURE TIMES SEE PHASE 2A SHEETS 37 TO 41. FOR ADVANCED SIGNING AND LANING DURING THE NON-PERMITTED LANE CLOSURE TIMES SEE PHASE 2B SHEETS 32 TO 36. NO TRENCH SHALL BE LEFT OPEN DURING THE NON-PERMITTED LANE CLOSURE TIMES. MAXIMUM DROP OFF SHALL NOT EXCEED 3".
6. CONSTRUCT RAMPS N AND P, CONSTRUCT THE NEW STORAGE PONDS AT THE LOCATIONS SHOWN IN THE PLANS. EXTEND THE BOX CULVERT TO THE LIMITS SHOWN IN THE PLANS. REMOVE EXISTING RAMP N CONNECTION TO RIDGE AVENUE. CONSTRUCT THE NEW RAMP P CONNECTION TO KENNEDY AVENUE TO THE TOP OF THE INTERMEDIATE COURSE.

PHASE 3 (NOT SHOWN)

PLACE THE SURFACE COURSE AND PROPOSED PAVEMENT MARKING AS SHOWN IN THE TRAFFIC CONTROL PLANS.

TO ALERT MOTORISTS OF THE NEW RAMP CONFIGURATIONS, PLACE A PCMS FOR 7 DAYS IN ADVANCE OF THE OPENING OF RAMP N (CONSTRUCTED DURING STAGE 2). THE PCMS SHALL REMAIN FOR 21 DAYS FOLLOWING THE OPENING OF RAMP N. THE PCMS SHALL BE LOCATED ALONG THE OUTSIDE SHOULDER OF I-71 NORTHBOUND 600' NORTH OF THE ROBERTSON AVENUE OVERPASS.

LOCATION	NO. OF EXISTING THRU LANES PER DIRECTION	1 LANE CLOSED		2 LANES CLOSED		15 MINUTE SHORT DURATION COMPLETE CLOSURES	COMPLETE CLOSURE	TIME UNIT	DISINCENTIVE PER LANE PER TIME UNIT
		WEEKDAY	WEEKEND	WEEKDAY	WEEKEND	ANY DAY	ANY DAY		
I-71	3	8 PM - 6 AM	7 PM - 7 AM	11 PM - 5 AM	10 PM - 6 AM	12 MIDNIGHT - 4 PM	NONE	15 MINUTES	\$1,875
ALL RAMPS	VAR.	9 PM - 6 AM	7 PM - 6 AM	NONE	NONE	12 MIDNIGHT - 4 PM	10 PM - 5 AM	15 MINUTES	\$1,200
KENNEDY AVE.	2	9 AM - 3 PM	7 AM - 4 PM	NONE	NONE	NONE	NONE	15 MINUTES	\$750

NOTES:

1. NO SHORT-TERM INTERSTATE SHOULDER CLOSURE BETWEEN THE HOURS OF 6 AM TO 9 AM AND 3 PM TO 7 PM, MONDAY THROUGH FRIDAY.
2. NO CLOSURES 2 HOURS BEFORE TO 2 HOURS AFTER EVENTS AT GREAT AMERICAN BALL PARK, PAUL BROWN STADIUM, OR US BANK ARENA. THIS RESTRICTION ALSO APPLIES TO ANY OTHER LOCAL VENUE GENERATING AN ATTENDANCE OF 20,000+.
3. RAMP J/I-71 LANE CLOSURES: SHORT-TERM CLOSURES WITH RAMP J AS AN ADD LANE, SHEETS 96-99 OF PART 1, IS CONSIDERED 1 LANE CLOSED. SHORT TERM LANE CLOSURES WITH RAMP J AS A MERGE, SHEETS 100-10 OF PART 1, IS CONSIDERED 2 LANES CLOSED.
4. SHORT-TERM PARTIAL-WIDTH RAMP CLOSURE, MAINTAINING ONE 11' LANE, IS PERMITTED DURING THE TIMES FOR 1 LANE CLOSED. MAINTAIN THE EXISTING DECISION SIGHT DISTANCE ON MERGE RAMPS.
5. A MAXIMUM OF 1 RAMP MAY BE CLOSED AT ANY TIME.

DESCRIPTION OF CRITICAL LANE/RAMP TO BE MAINTAINED	RESTRICTED TIME PERIOD	TIME UNIT	DISINCENTIVE PER TIME UNIT PER LANE
RAMP A - RED BANK TO I-71 SB	30 DAYS	1 DAY	\$2,500
RAMP B - I-71 NB TO RED BANK	30 DAYS	1 DAY	\$2,500
RAMP C - I-71 SB TO RED BANK	MONDAY 6 AM TO FRIDAY 9 PM	15 MIN.	\$1,200
RAMP F - I-71 NB TO STEWART	45 DAYS	1 DAY	\$2,500
RAMP N - I-71 NB TO RIDGE	120 DAYS	1 DAY	\$2,500
RAMP P - KENNEDY TO I-71 NB	120 DAYS	1 DAY	\$2,500

NOTES:

1. RAMP C IS PERMITTED TO BE CLOSED A MAXIMUM OF 2 WEEKENDS. A WEEKEND CLOSURE IS DEFINED AS BEGINNING AT 9 PM ON FRIDAY AND ENDING AT 6 AM ON MONDAY.

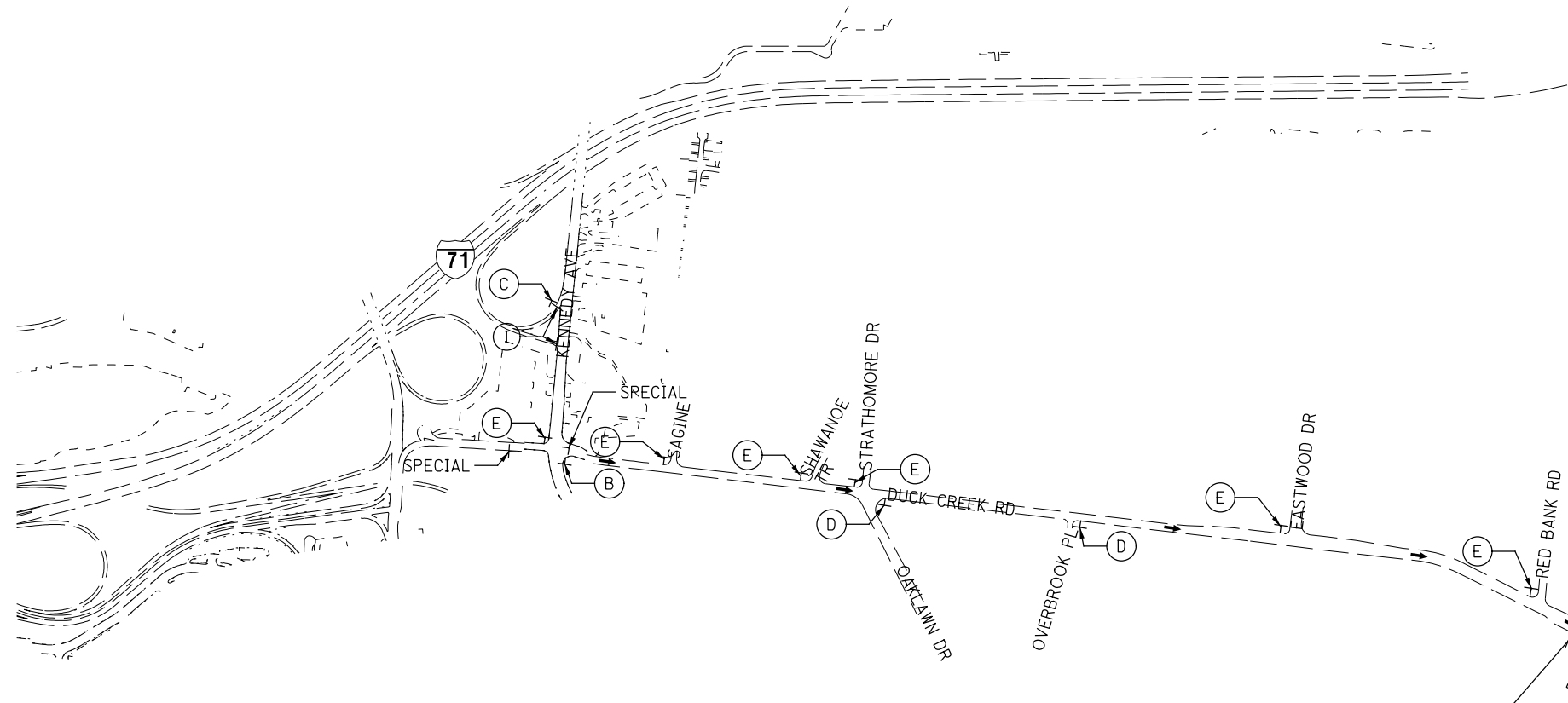
O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\94741\mot\sheet\94741\MO04.dgn 3/14/2018 11:56:04 AM dbruno

CALCULATED
LDW
CHECKED
GKB

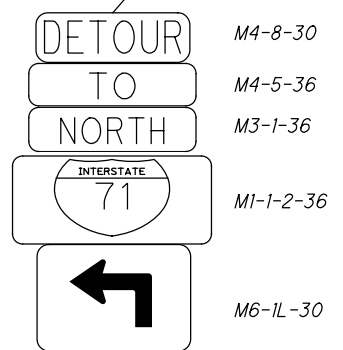
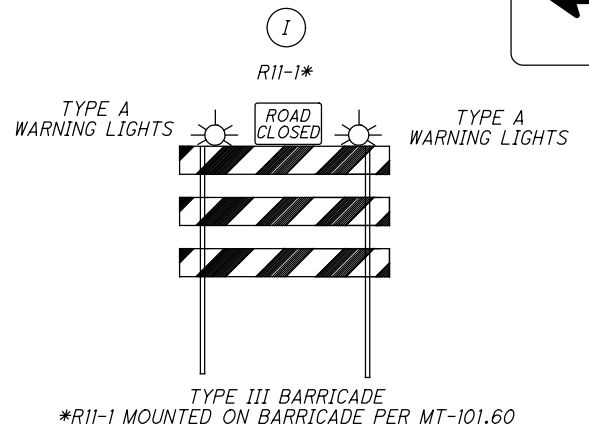
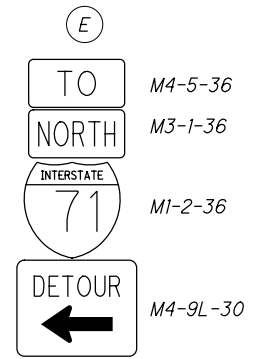
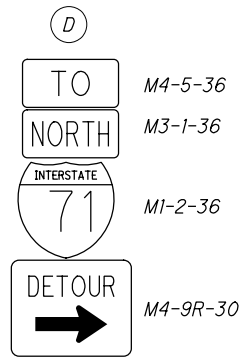
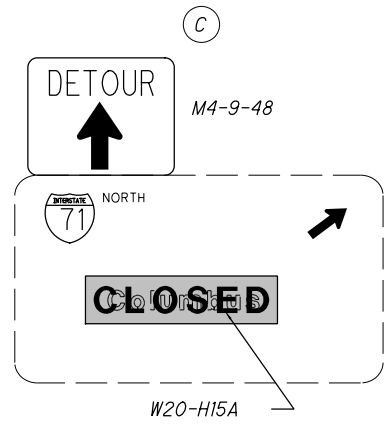
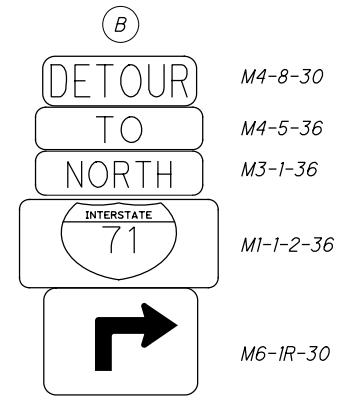
MAINTENANCE OF TRAFFIC NOTES

HAM-71-6.86

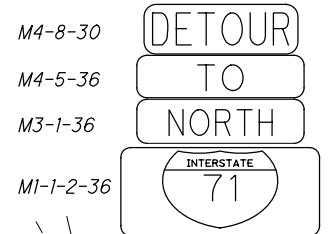
O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\94741\mot\sheets\94741MD001.dgn 9/26/2017 1:29:04 PM jhenstey



NOTE: MOT ON KENNEDY RD SHALL CONFORM TO SCD MT-98.30



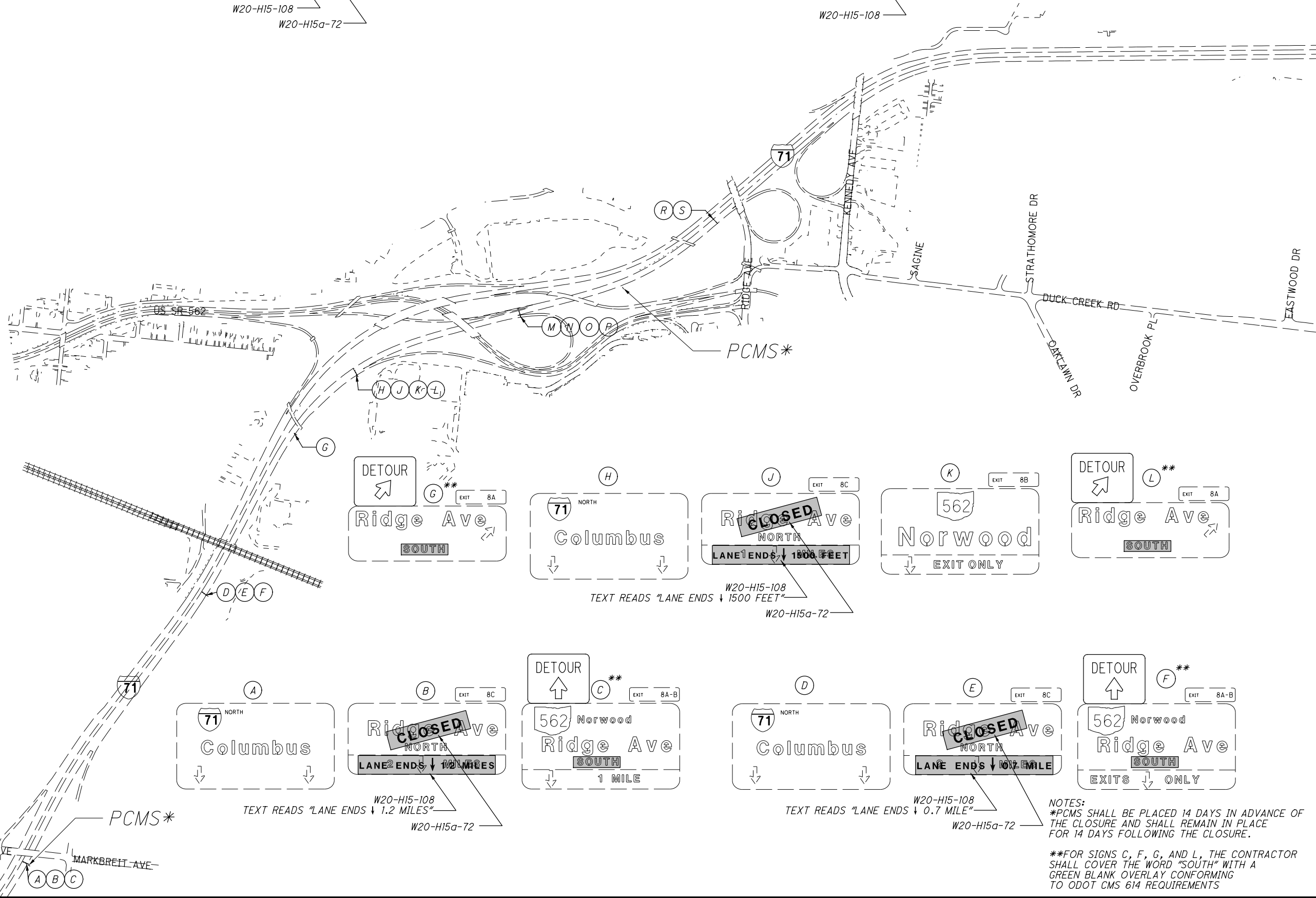
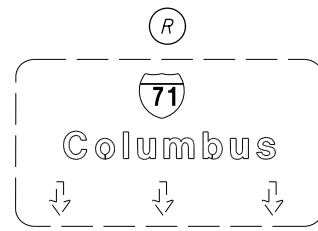
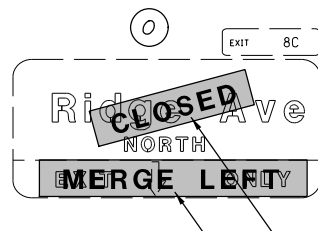
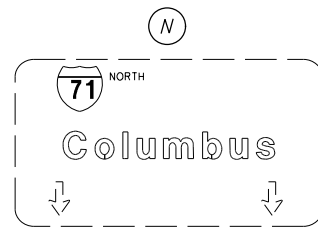
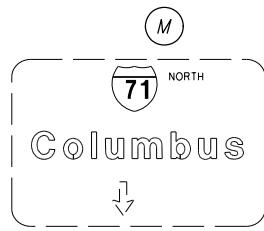
SPECIAL
KENNEDY AVE
RAMP CLOSED
USE
RED BANK EXPY
RAMP TO
I-71 N



**MAINTENANCE OF TRAFFIC
DETOUR PLAN KENNEDY AVE. DURING PHASE 2**

HAM-71-6.86

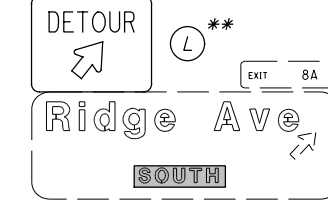
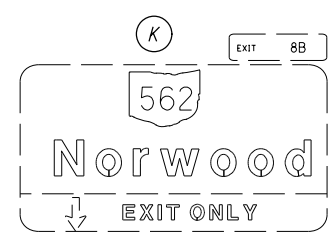
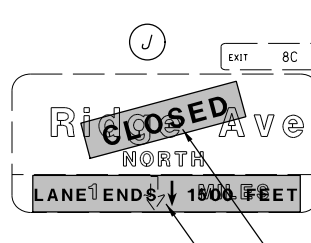
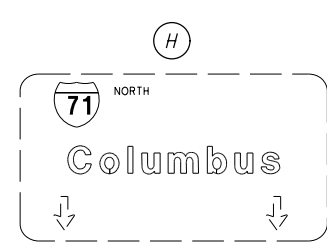
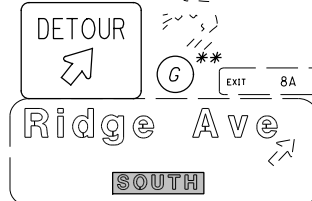
O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\94741\mot\sheet\94741MD002.dgn 9/26/2017 1:29:06 PM jhensley



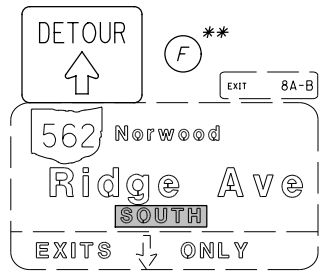
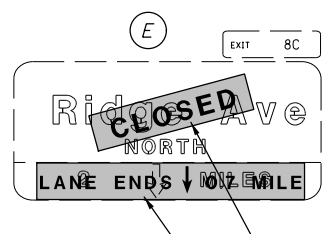
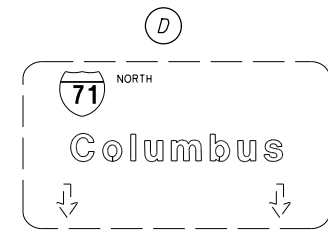
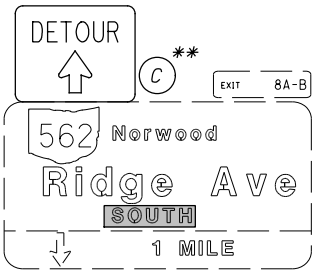
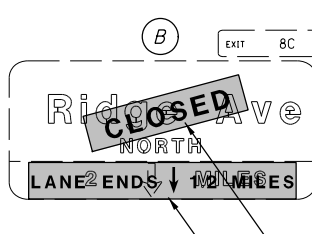
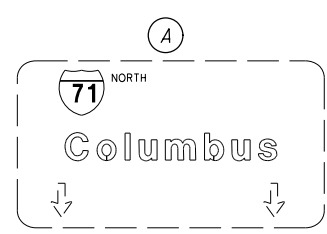
W20-H15-108
W20-H15a-72

W20-H15-108

PCMS*



W20-H15-108
W20-H15a-72
TEXT READS "LANE ENDS 1500 FEET"



W20-H15-108
W20-H15a-72
TEXT READS "LANE ENDS 1.2 MILES"

W20-H15-108
W20-H15a-72
TEXT READS "LANE ENDS 0.7 MILE"

NOTES:
*PCMS SHALL BE PLACED 14 DAYS IN ADVANCE OF THE CLOSURE AND SHALL REMAIN IN PLACE FOR 14 DAYS FOLLOWING THE CLOSURE.
**FOR SIGNS C, F, G, AND L, THE CONTRACTOR SHALL COVER THE WORD "SOUTH" WITH A GREEN BLANK OVERLAY CONFORMING TO ODOT CMS 614 REQUIREMENTS



Maintenance of Traffic
Detour Plan Ridge Ave. During Phase 2

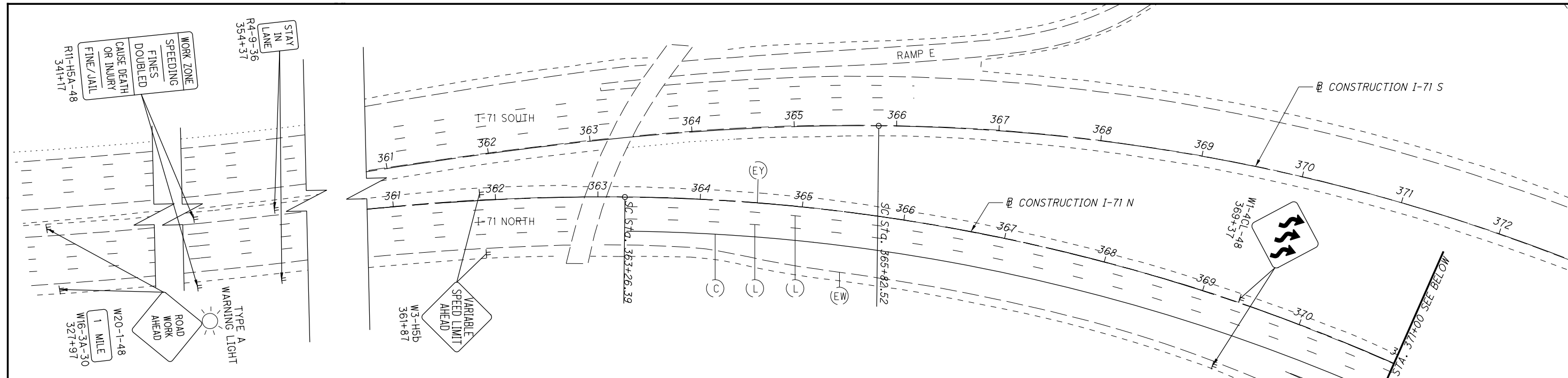
HAM-71-6.86

o:\odot_D8\0108249A.00 - HAM-71-686 PID94741\94741\mot\sheet\94741MS001.dgn 9/26/2017 1:29:07 PM jhenstey












REF. NO.	SHEET NO.	STATION		SIDE	614			614	614			614			615	622	254
		FROM	TO		BARRIER REFLECTOR, TYPE B	OBJECT MARKER, ONE WAY	INCREASED BARRIER DELINEATION	WORK ZONE IMPACT ATTENUATOR (BIDIRECTIONAL)	WORK ZONE LANE LINE, CLASS 1	WORK ZONE EDGE LINE, CLASS 1 (YELLOW)	WORK ZONE EDGE LINE, CLASS 1 (WHITE)	WORK ZONE CHANNELIZING LINE, CLASS 1	WORK ZONE RAISED PAVEMENT MARKERS, AS PER PLAN	WORK ZONE DOTTED LINE, CLASS 1	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A	PORTABLE BARRIER, 32"	PAVEMENT PLANING, ASPHALT CONCRETE
					EACH	EACH	FT	EACH	MILE	MILE	MILE	FT	EACH	FT	SQ YD	FT	SQ YD
		PRE-CONSTRUCTION PHASE (I-71)															
16-22		383+90.00	467+50.00												9687		
16		379+36.00	379+79.00												45		
		PHASE 1 (I-71)															
16-17		376+35.00	388+00.00									3886	329				731
18		402+15.00	403+09.00									89					
18		411+16.00	414+75.00									359					
22		461+33.00	470+50.00									2068	211				469
18-19		414+75.00	422+53.00											761			
22		464+33.00	468+53.00											428			
16-22		383+50.00	467+50.00														
16-17		379+36.00	399+00.00							1.557							
18		402+15.00	411+16.00								0.374						
18-22		412+00.00	465+65.00								0.152						
17-18		388+00.00	402+20.00							0.812							
18-22		402+20.00	461+33.00							2.166							
18-22		413+08.50	465+50.00		104	104	5129	1								5130	
16-22		383+90.00	467+10.00		167	167	8320										
		PHASE 2 (I-71)															
24		386+00.00	392+60.00											664			
24-25		386+00.00	402+15.00								0.310						
25-26		411+69.00	422+53.00								0.202						
24-26		396+50.00	422+50.00		51	51	2502	1								2500	
		PHASE 2 (KENNEDY AVE.)															
30		11+20.00	16+50.00		12	12	530	2								530	
TOTALS CARRIED TO GENERAL SUMMARY					334	334	16481	4	2.98	3.59		6402	675	1853	9732	8160	1200

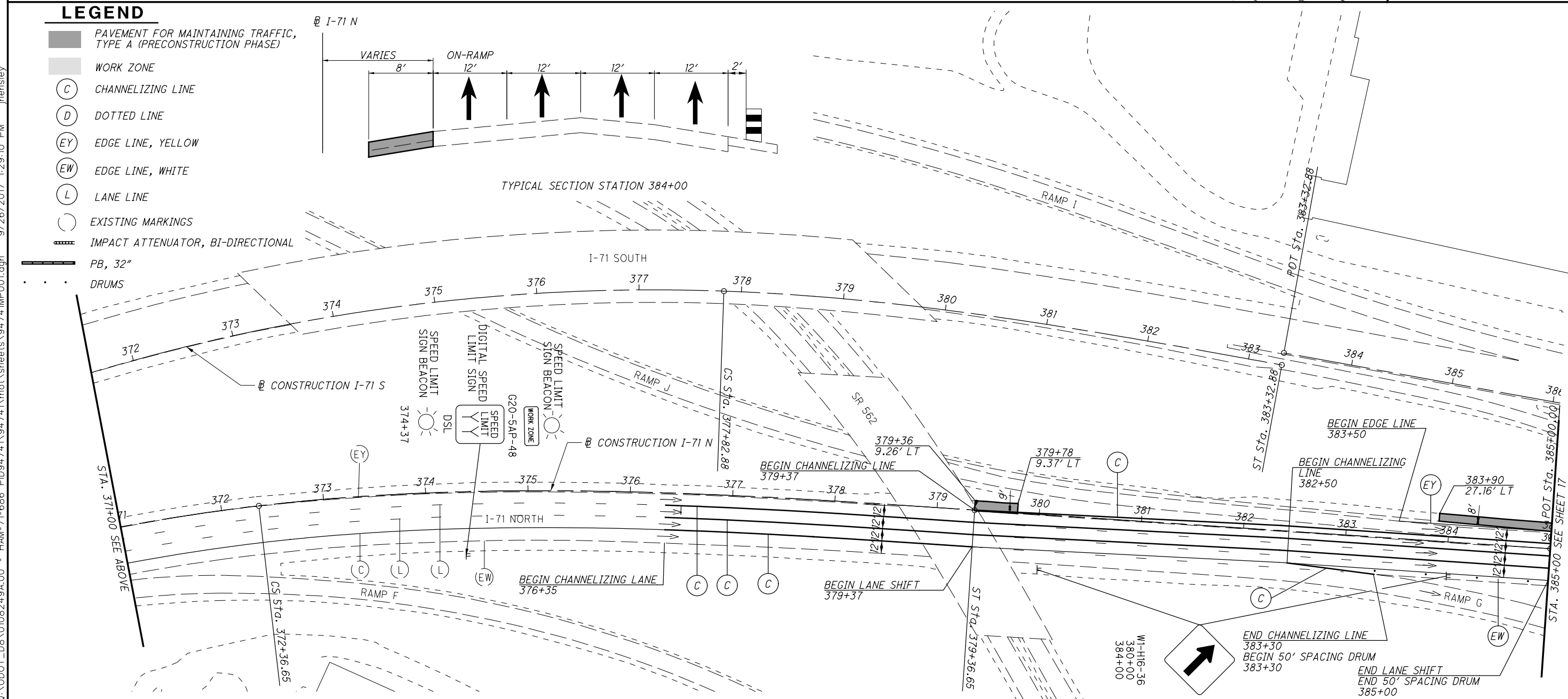
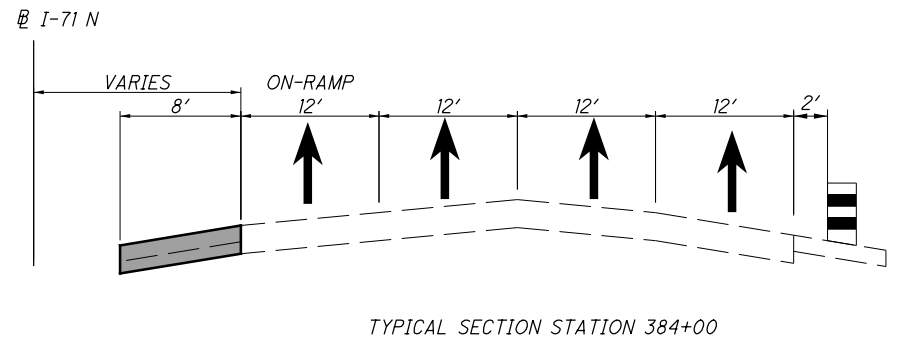
MAINTENANCE OF TRAFFIC SUBSUMMARY	CALCULATED
	LDW
CHECKED	
GKB	

HAM-71-6.86



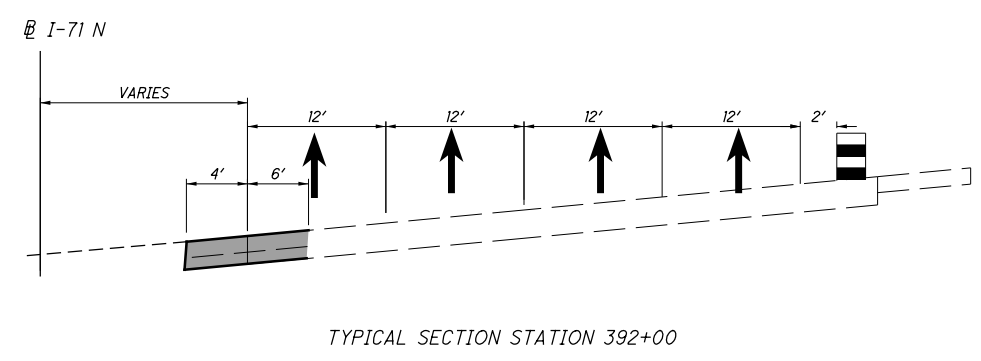
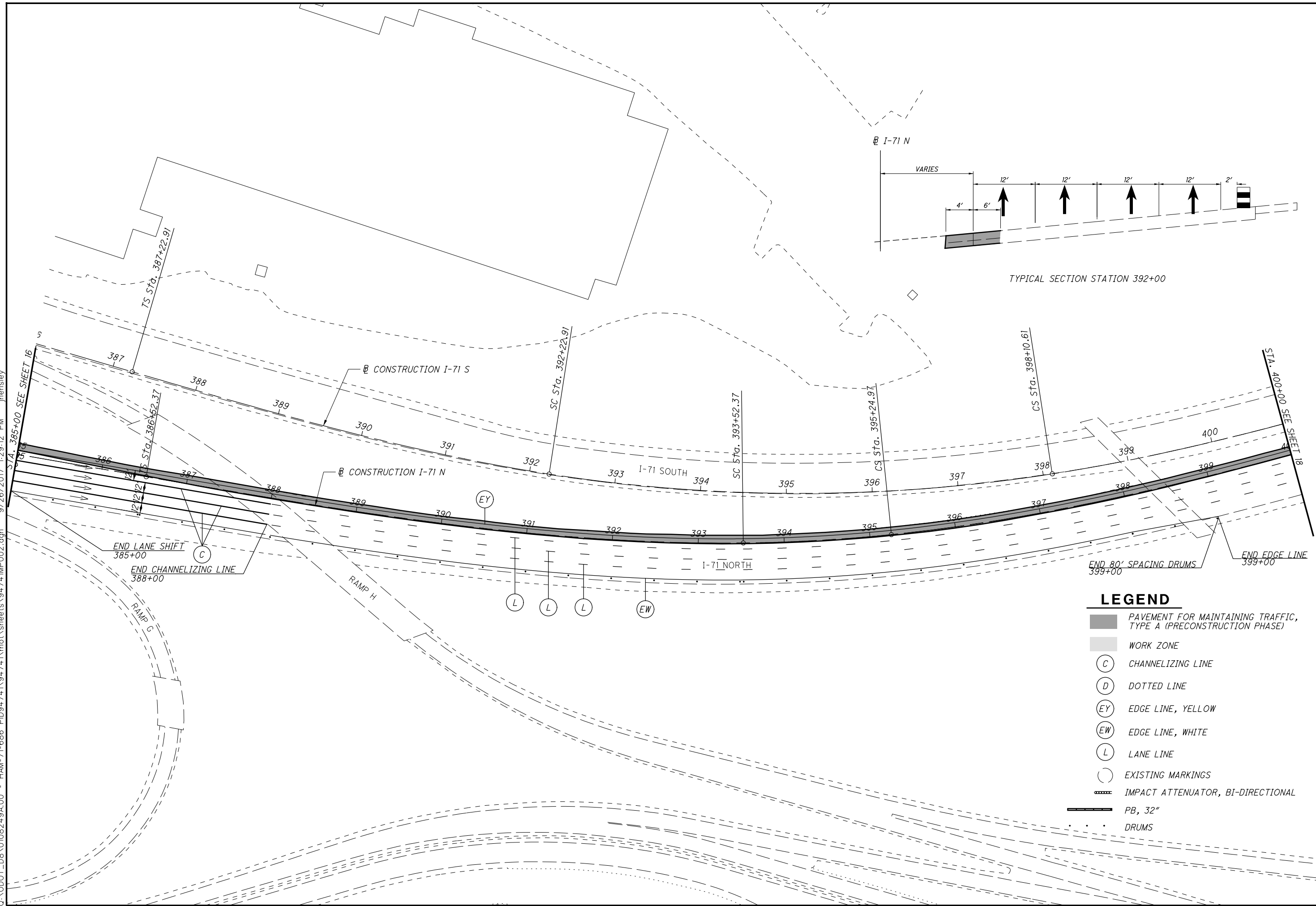
LEGEND

-  PAVEMENT FOR MAINTAINING TRAFFIC, TYPE A (PRECONSTRUCTION PHASE)
-  WORK ZONE
-  CHANNELIZING LINE
-  DOTTED LINE
-  EDGE LINE, YELLOW
-  EDGE LINE, WHITE
-  LANE LINE
-  EXISTING MARKINGS
-  IMPACT ATTENUATOR, BI-DIRECTIONAL
-  PB, 32"
-  DRUMS



O:\DOT_DB\0108249A.00 - HAM-71-686 PID94741\94741\mot\sheets\94741MP001.dgn 9/26/2017 1:29:10 PM jhensley

O:\ODOT_D8\108249A.00 - HAM-71-686 PID94741\94741\mot\sheets\94741\MP002.dgn 9/26/2017 1:29:12 PM jhenstey



- LEGEND**
- PAVEMENT FOR MAINTAINING TRAFFIC, TYPE A (PRECONSTRUCTION PHASE)
 - WORK ZONE
 - CHANNELIZING LINE
 - DOTTED LINE
 - EDGE LINE, YELLOW
 - EDGE LINE, WHITE
 - LANE LINE
 - EXISTING MARKINGS
 - IMPACT ATTENUATOR, BI-DIRECTIONAL
 - PB, 32"
 - DRUMS

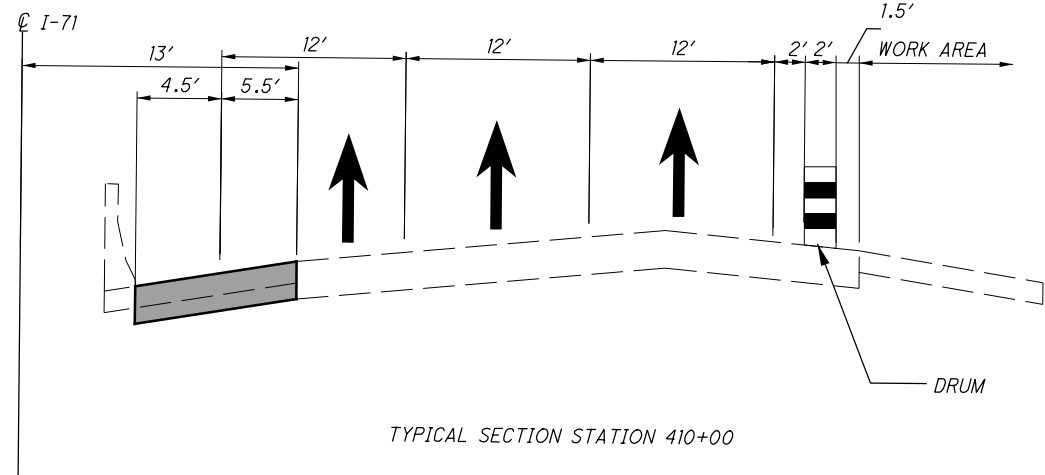
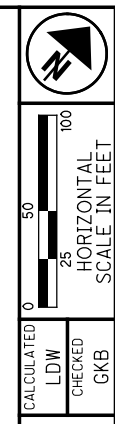


MAINTENANCE OF TRAFFIC
STA. 385+00 TO STA. 400+00 PHASE 1

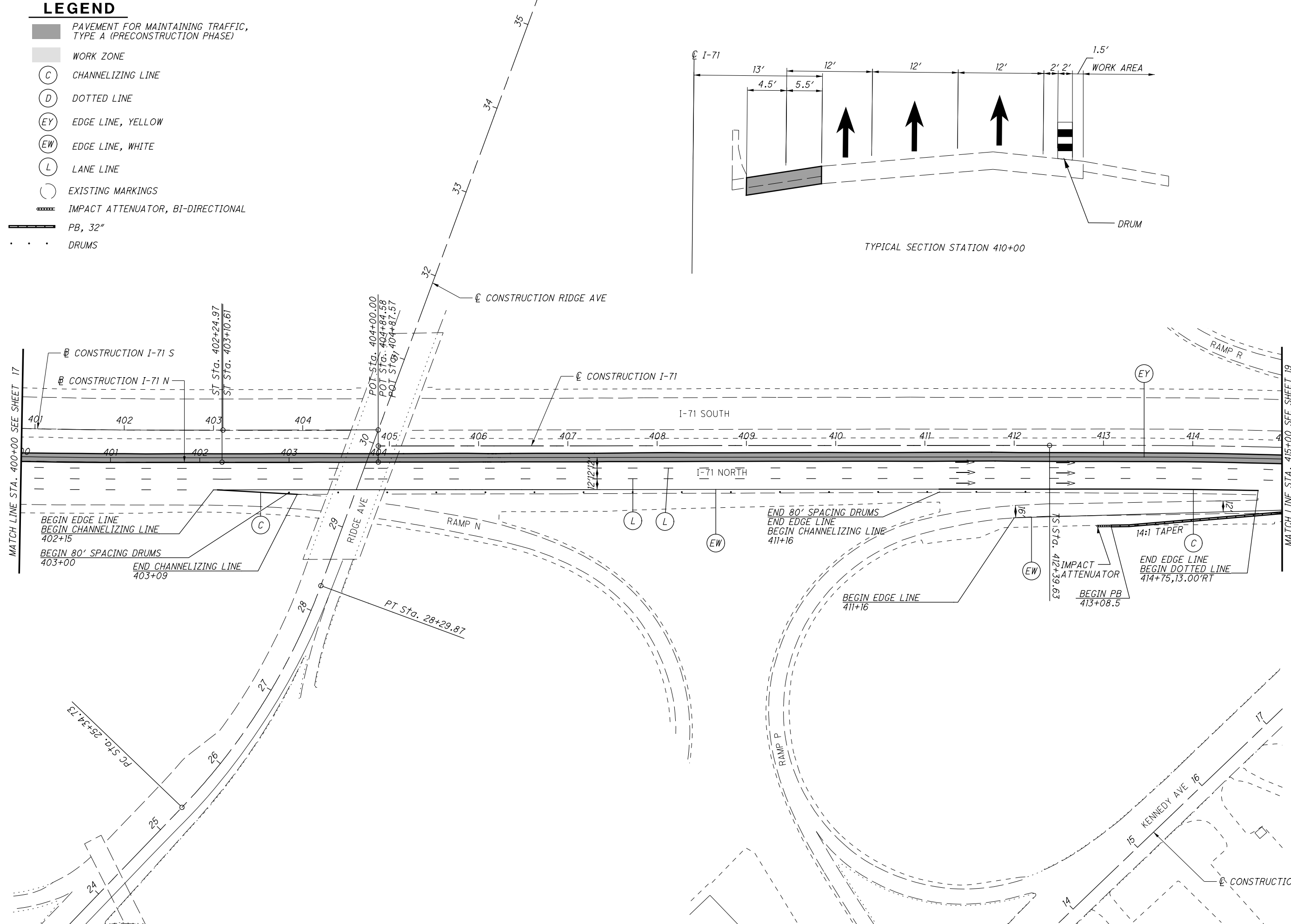
HAM-71-6.86

LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, TYPE A (PRECONSTRUCTION PHASE)
- WORK ZONE
- CHANNELIZING LINE
- DOTTED LINE
- EDGE LINE, YELLOW
- EDGE LINE, WHITE
- LANE LINE
- EXISTING MARKINGS
- IMPACT ATTENUATOR, BI-DIRECTIONAL
- PB, 32"
- DRUMS



TYPICAL SECTION STATION 410+00



CALCULATED

LDW

CHECKED

GKB

**MAINTENANCE OF TRAFFIC
STA. 400+00 TO STA. 415+00 PHASE 1**

HAM-71-6.86

18
253

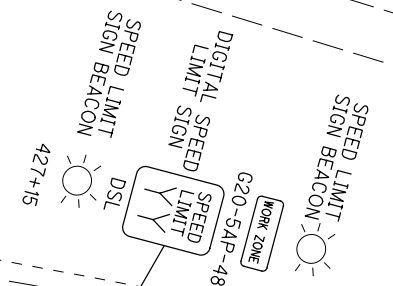
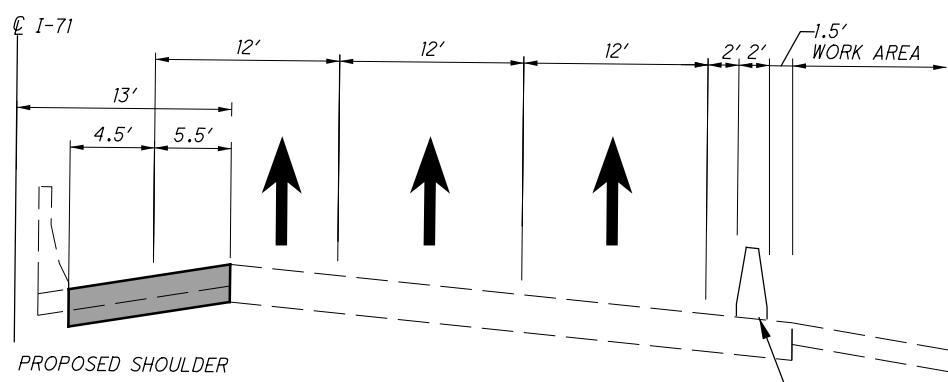
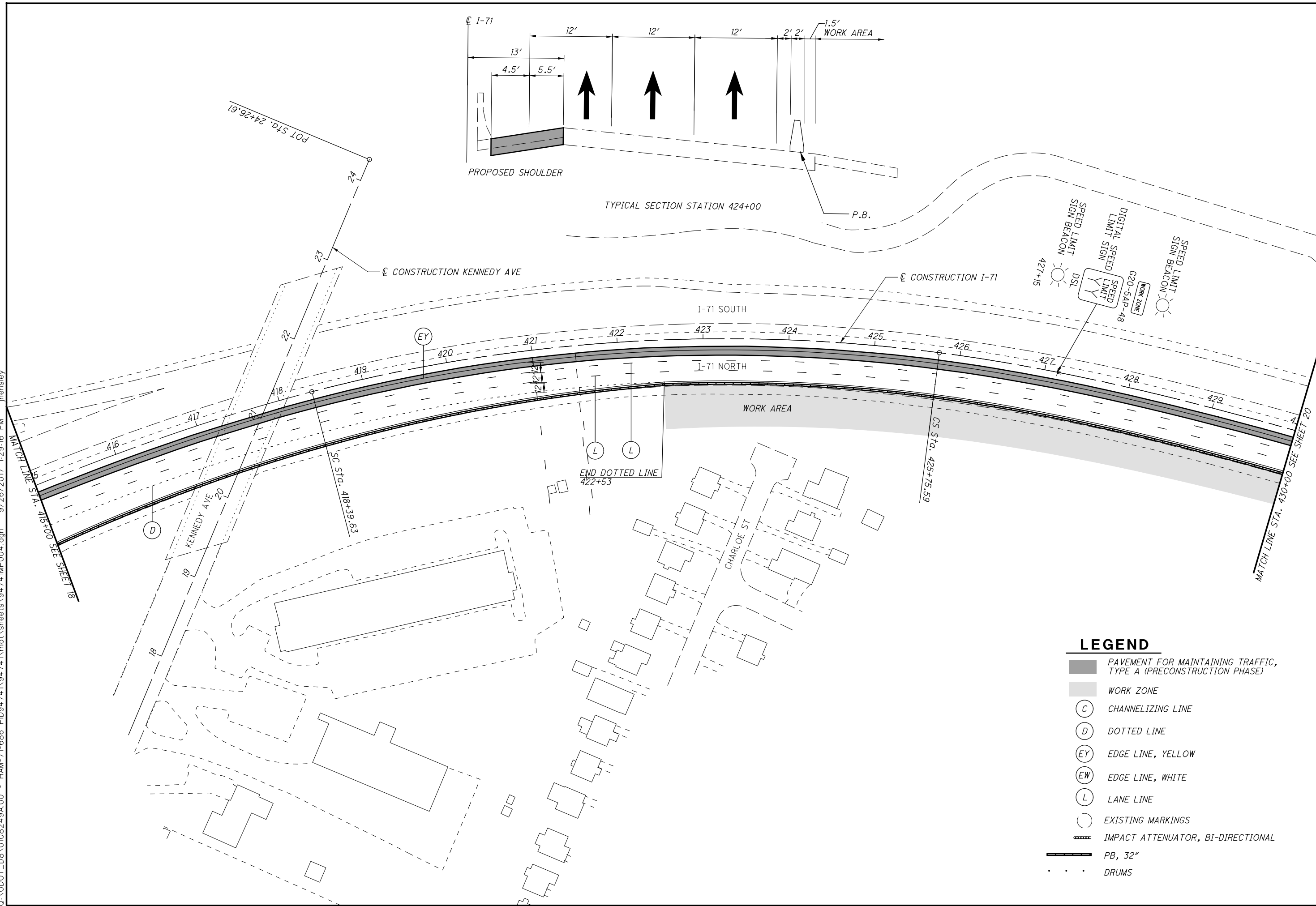
0:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\94741\mot\sheets\94741\94741.dgn 9/26/2017 1:29:14 PM jhenstey

O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\94741\mot\sheet\94741MP004.dgn 9/26/2017 1:29:16 PM jhenstey

CALCULATED
 LDW
 CHECKED
 GKB

0 50 100
 HORIZONTAL
 SCALE IN FEET

MAINTENANCE OF TRAFFIC
STA. 415+00 TO STA. 430+00 PHASE 1



LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, TYPE A (PRECONSTRUCTION PHASE)
- WORK ZONE
- CHANNELIZING LINE
- DOTTED LINE
- EY EDGE LINE, YELLOW
- EW EDGE LINE, WHITE
- L LANE LINE
- EXISTING MARKINGS
- IMPACT ATTENUATOR, BI-DIRECTIONAL
- PB, 32"
- DRUMS

O:\ODOT_D8\0108249A.00 - HAM-71-686_PID94741\94741\mot\sheets\94741\MP005.dgn 9/26/2017 1:29:18 PM jhenstey

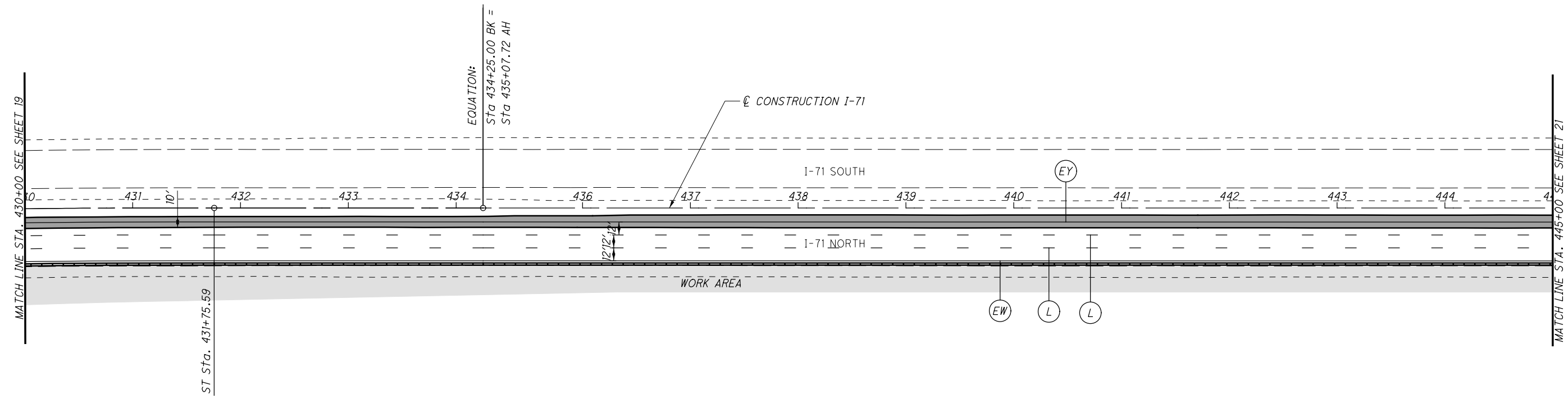
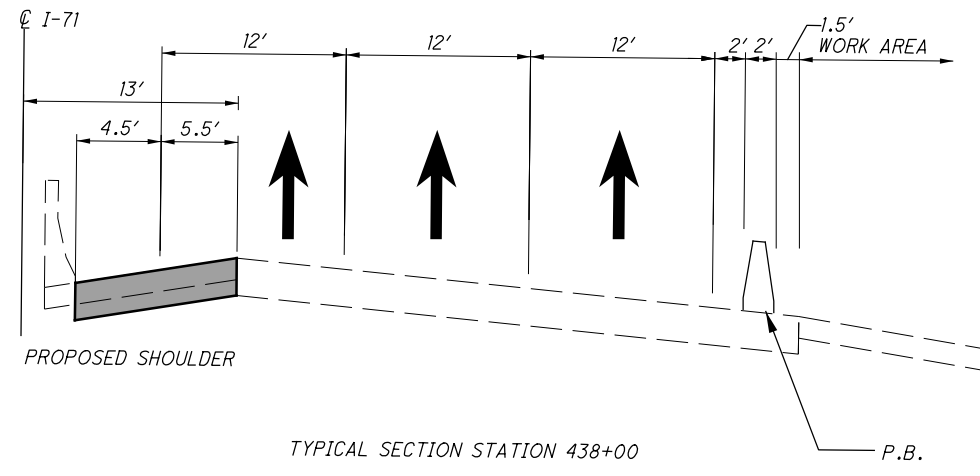
LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, TYPE A (PRECONSTRUCTION PHASE)
- WORK ZONE
- CHANNELIZING LINE
- DOTTED LINE
- EY EDGE LINE, YELLOW
- EW EDGE LINE, WHITE
- L LANE LINE
- EXISTING MARKINGS
- IMPACT ATTENUATOR, BI-DIRECTIONAL
- PB, 32"
- DRUMS

N

HORIZONTAL SCALE IN FEET

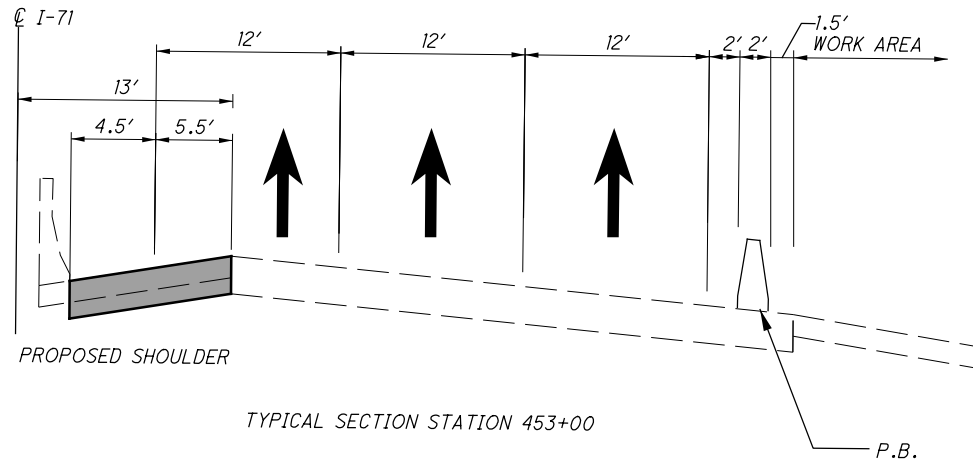
CALCULATED	LDW	CHECKED	GKB



**MAINTENANCE OF TRAFFIC
STA. 430+00 TO STA. 445+00 PHASE 1**

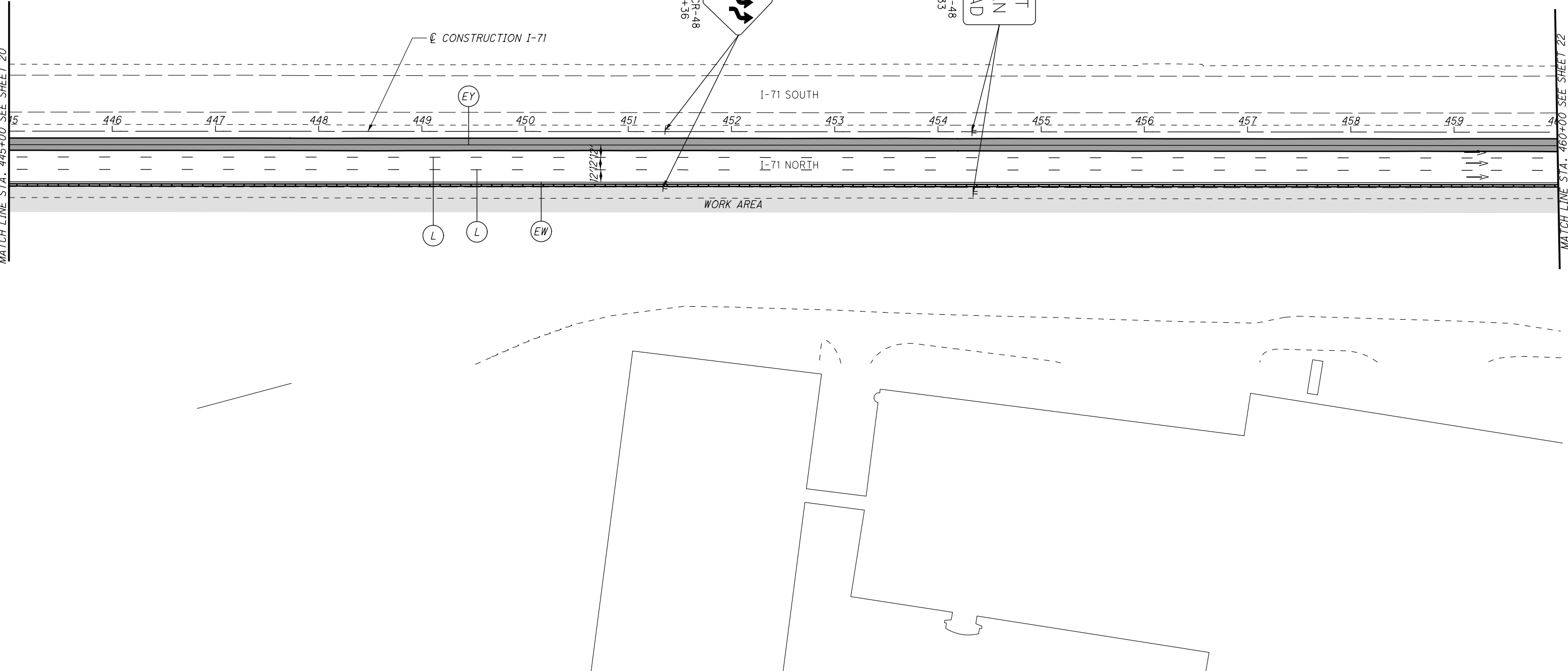
HAM-71-6.86

O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\94741\mot\sheets\94741\MP006.dgn 9/26/2017 1:29:20 PM jhenstley
 MATCH LINE STA. 445+00 SEE SHEET 20



LEGEND












- PAVEMENT FOR MAINTAINING TRAFFIC, TYPE A (PRECONSTRUCTION PHASE)
- WORK ZONE
- CHANNELIZING LINE
- DOTTED LINE
- EDGE LINE, YELLOW
- EDGE LINE, WHITE
- LANE LINE
- EXISTING MARKINGS
- IMPACT ATTENUATOR, BI-DIRECTIONAL
- PB, 32"
- DRUMS



MATCH LINE STA. 460+00 SEE SHEET 22
MAINTENANCE OF TRAFFIC
STA. 445+00 TO STA. 460+00 PHASE 1

O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\94741\mot\sheets\94741MP007.dgn 9/26/2017 1:29:22 PM jhensley

LEGEND

-  PAVEMENT FOR MAINTAINING TRAFFIC, TYPE A (PRECONSTRUCTION PHASE)
-  WORK ZONE
-  CHANNELIZING LINE
-  DOTTED LINE
-  EDGE LINE, YELLOW
-  EDGE LINE, WHITE
-  LANE LINE
-  EXISTING MARKINGS
-  IMPACT ATTENUATOR, BI-DIRECTIONAL
-  PB, 32"
-  DRUMS

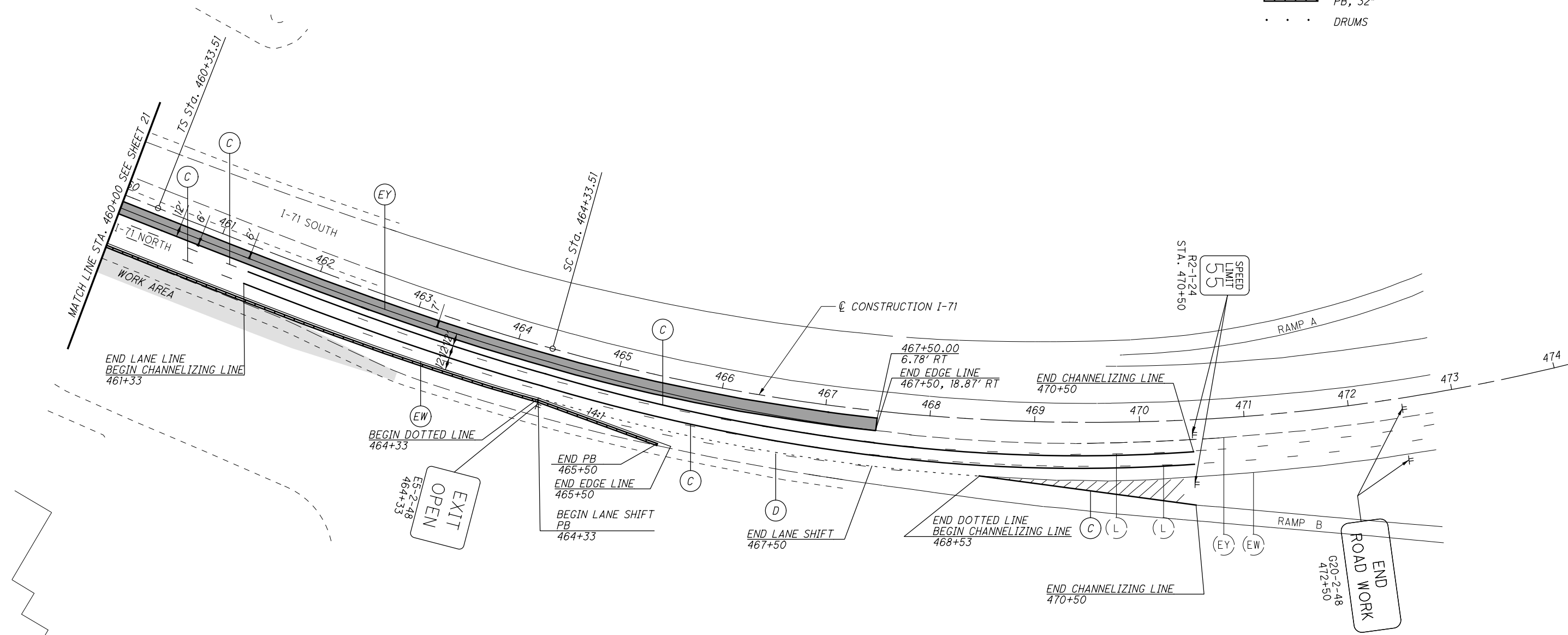
CALCULATED LDW CHECKED GKB




HORIZONTAL SCALE IN FEET

MAINTENANCE OF TRAFFIC STA. 460+00 TO STA. 474+00 PHASE 1

HAM-71-6.86

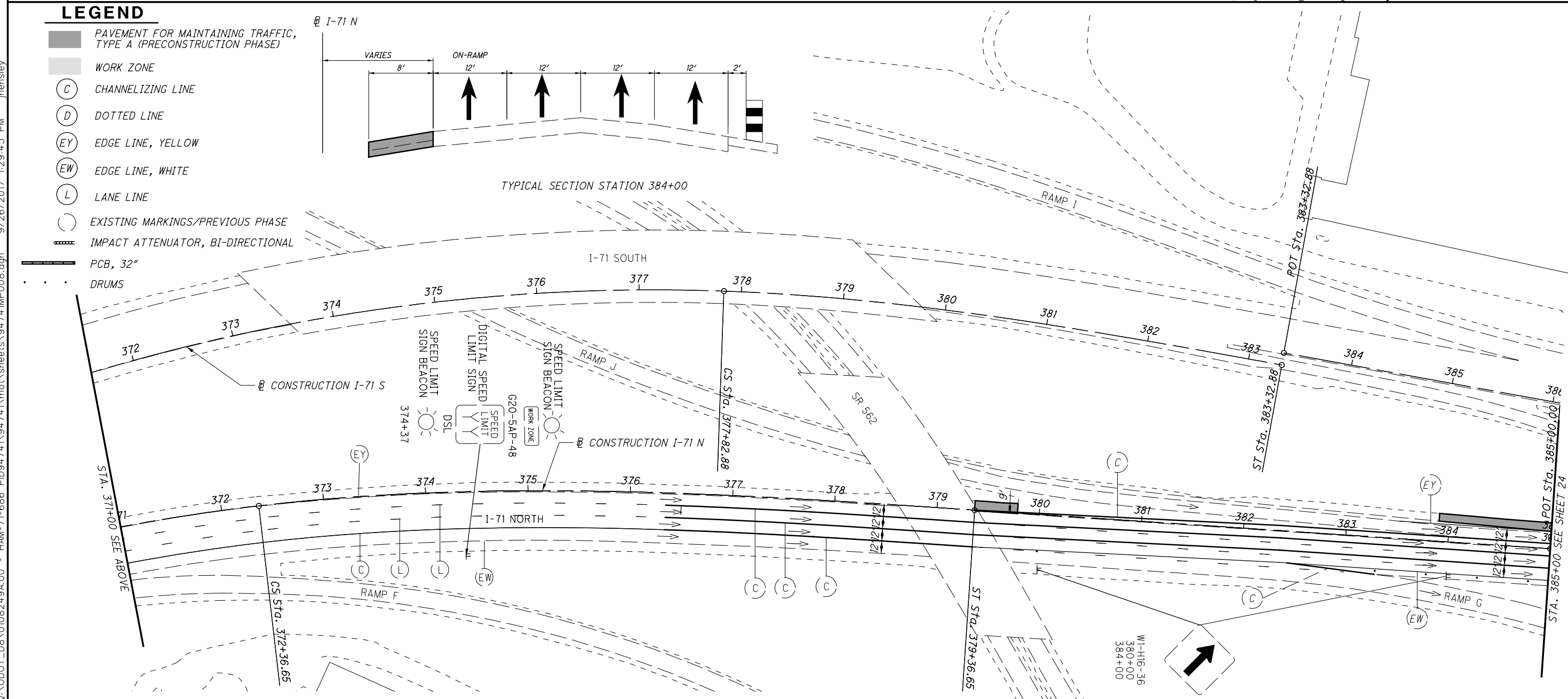
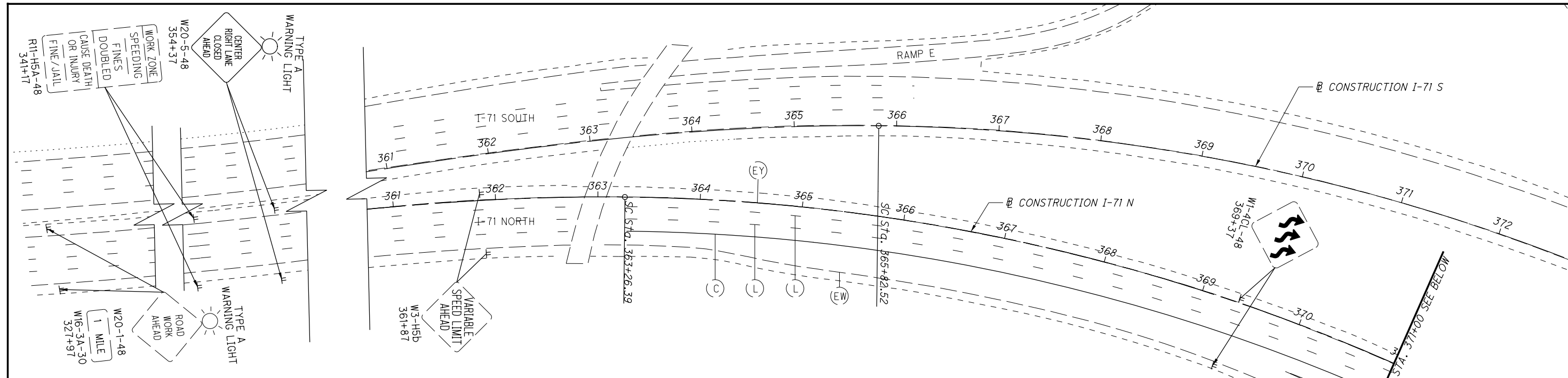




CALCULATED
LDW
CHECKED
GKB

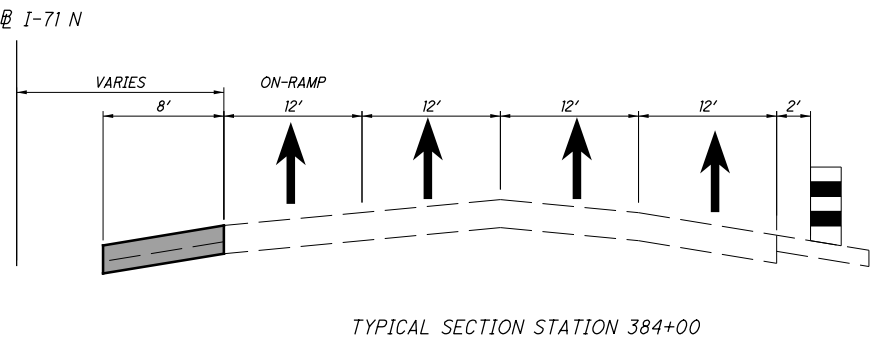
**MAINTENANCE OF TRAFFIC
STA. 370+00 TO STA. 385+00 PHASE 2**

HAM-71-6.86
23
253



LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, TYPE A (PRECONSTRUCTION PHASE)
- WORK ZONE
- CHANNELIZING LINE
- DOTTED LINE
- EDGE LINE, YELLOW
- EDGE LINE, WHITE
- LANE LINE
- EXISTING MARKINGS/PREVIOUS PHASE
- IMPACT ATTENUATOR, BI-DIRECTIONAL
- PCB, 32"
- DRUMS



O:\ODOT_DB\0108249A.00 - HAM-71-686 PID94741\94741\mot\sheets\94741MP008.dgn 9/26/2017 1:29:45 PM jhensley

C:\ODOT_D8\108249A.00 - HAM-71-686 PID94741\94741\mot\sheet\94741MP009.dgn 9/26/2017 1:29:47 PM jhenstey



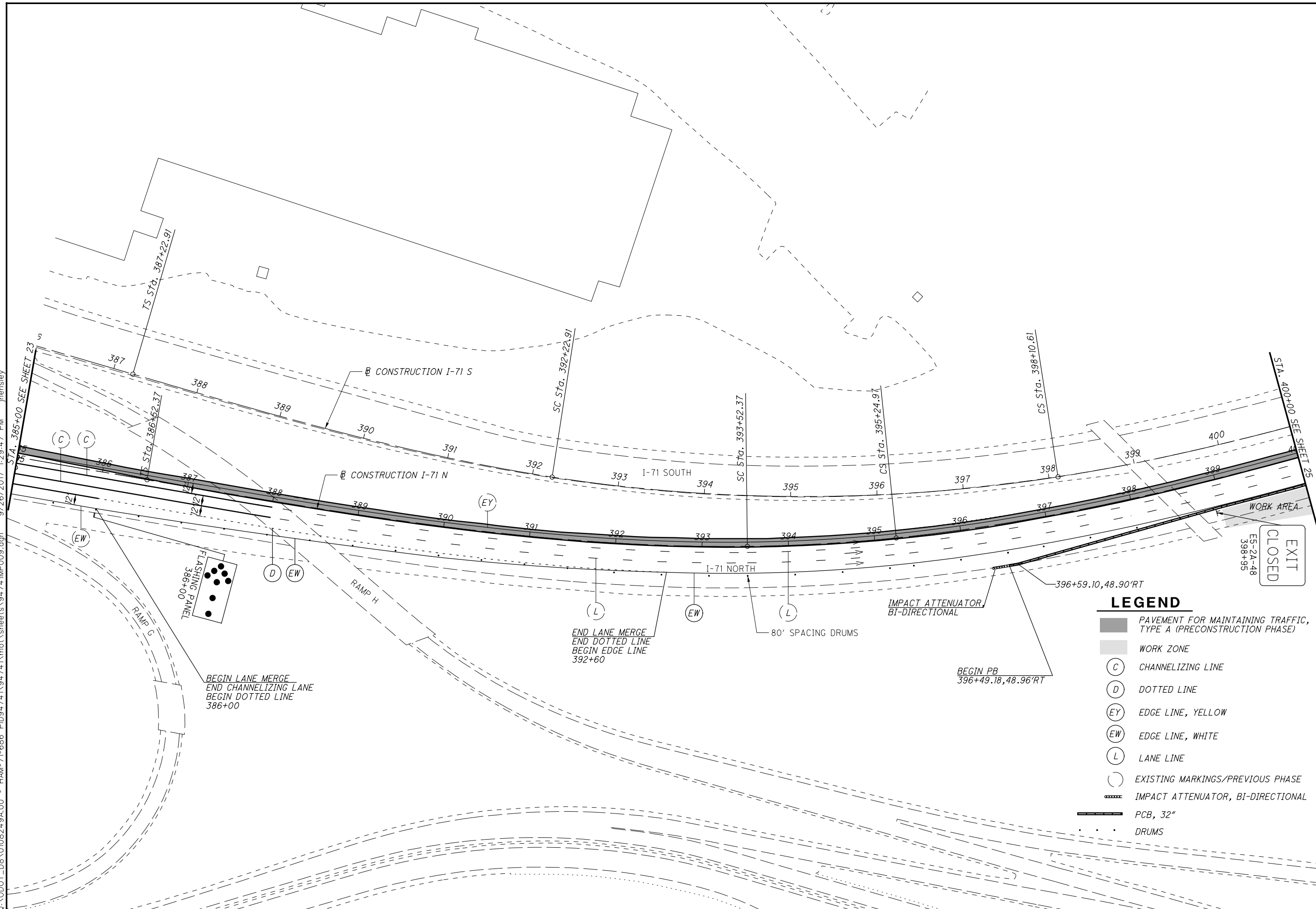
0 50 100
HORIZONTAL
SCALE IN FEET

CALCULATED
LDW
CHECKED
GKB

MAINTENANCE OF TRAFFIC STA. 385+00 TO STA. 400+00 PHASE 2

HAM-71-6.86

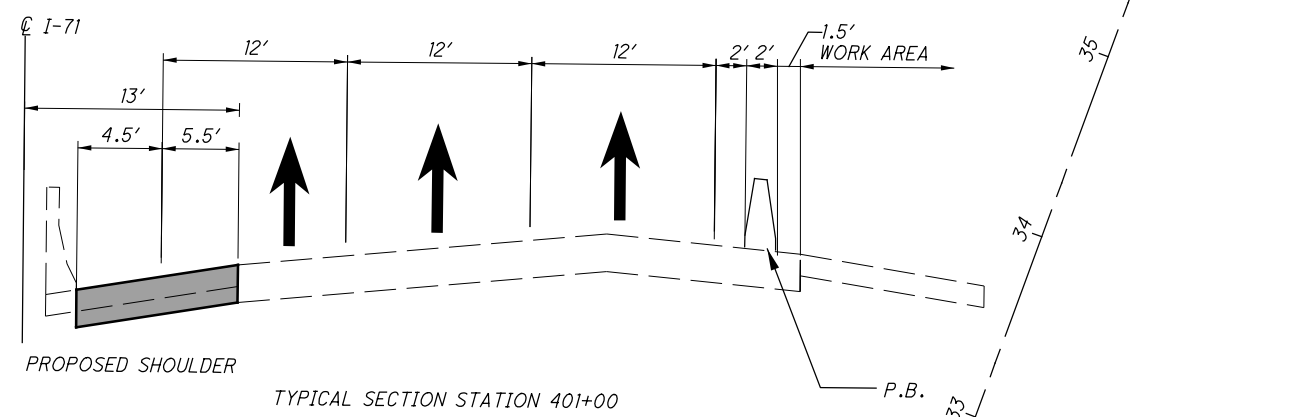
24
253



LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, TYPE A (PRECONSTRUCTION PHASE)
- WORK ZONE
- CHANNELIZING LINE
- DOTTED LINE
- EDGE LINE, YELLOW
- EDGE LINE, WHITE
- LANE LINE
- EXISTING MARKINGS/PREVIOUS PHASE
- IMPACT ATTENUATOR, BI-DIRECTIONAL
- PCB, 32"
- DRUMS

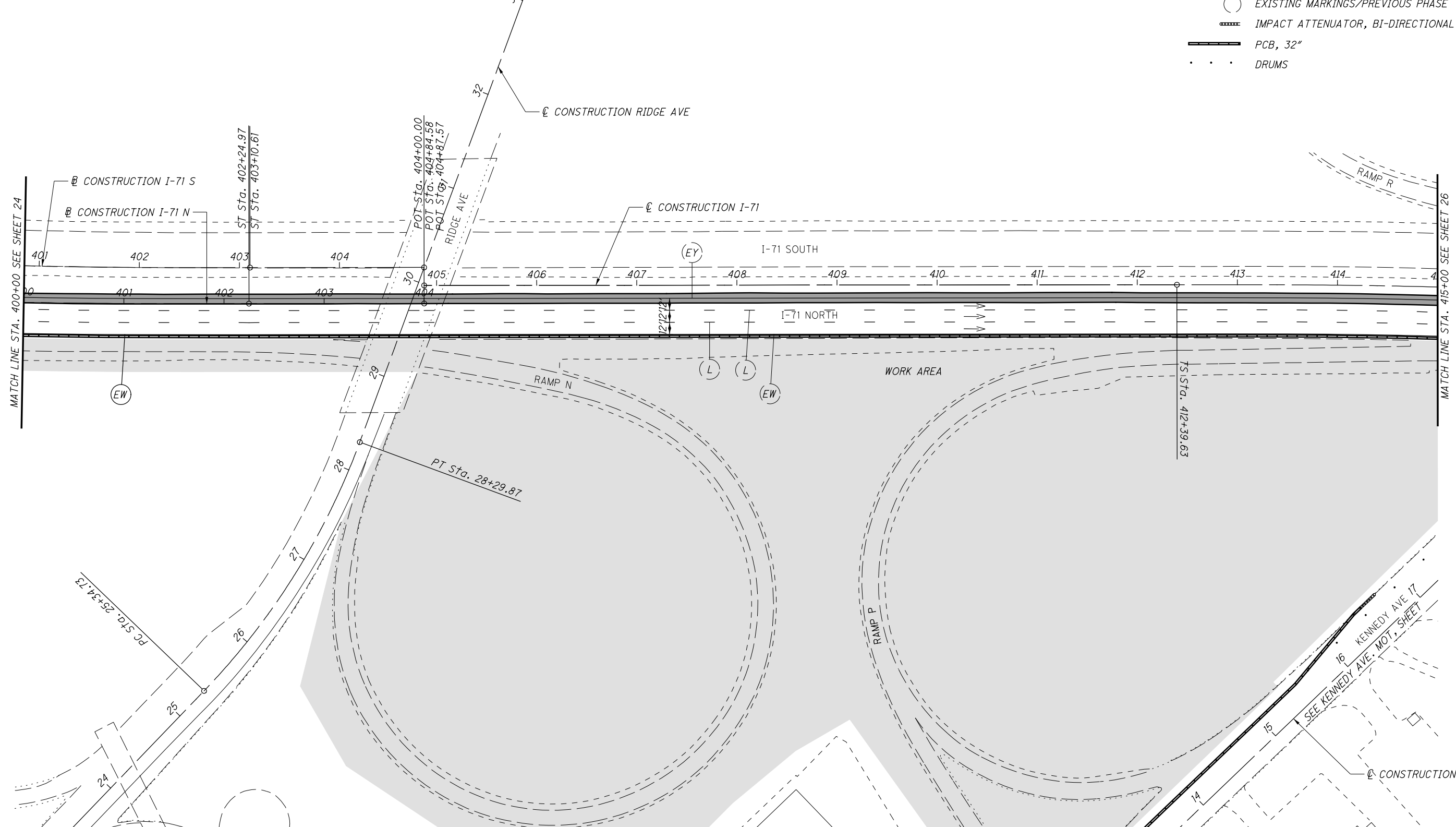
O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\94741\mot\sheets\94741MP010.dgn 9/26/2017 1:29:49 PM jhensley



- ### LEGEND
- PAVEMENT FOR MAINTAINING TRAFFIC, TYPE A (PRECONSTRUCTION PHASE)
 - WORK ZONE
 - (C) CHANNELIZING LINE
 - (D) DOTTED LINE
 - (EY) EDGE LINE, YELLOW
 - (EW) EDGE LINE, WHITE
 - (L) LANE LINE
 - () EXISTING MARKINGS/PREVIOUS PHASE
 - IMPACT ATTENUATOR, BI-DIRECTIONAL
 - PCB, 32"
 - DRUMS

0 50 100
HORIZONTAL SCALE IN FEET

CALCULATED
LDW
CHECKED
GKB



**MAINTENANCE OF TRAFFIC
STA. 400+00 TO STA. 415+00 PHASE 2**

HAM-71-6.86

O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\94741\mot\sheets\94741MP011.dgn 9/26/2017 1:29:51 PM jhensley



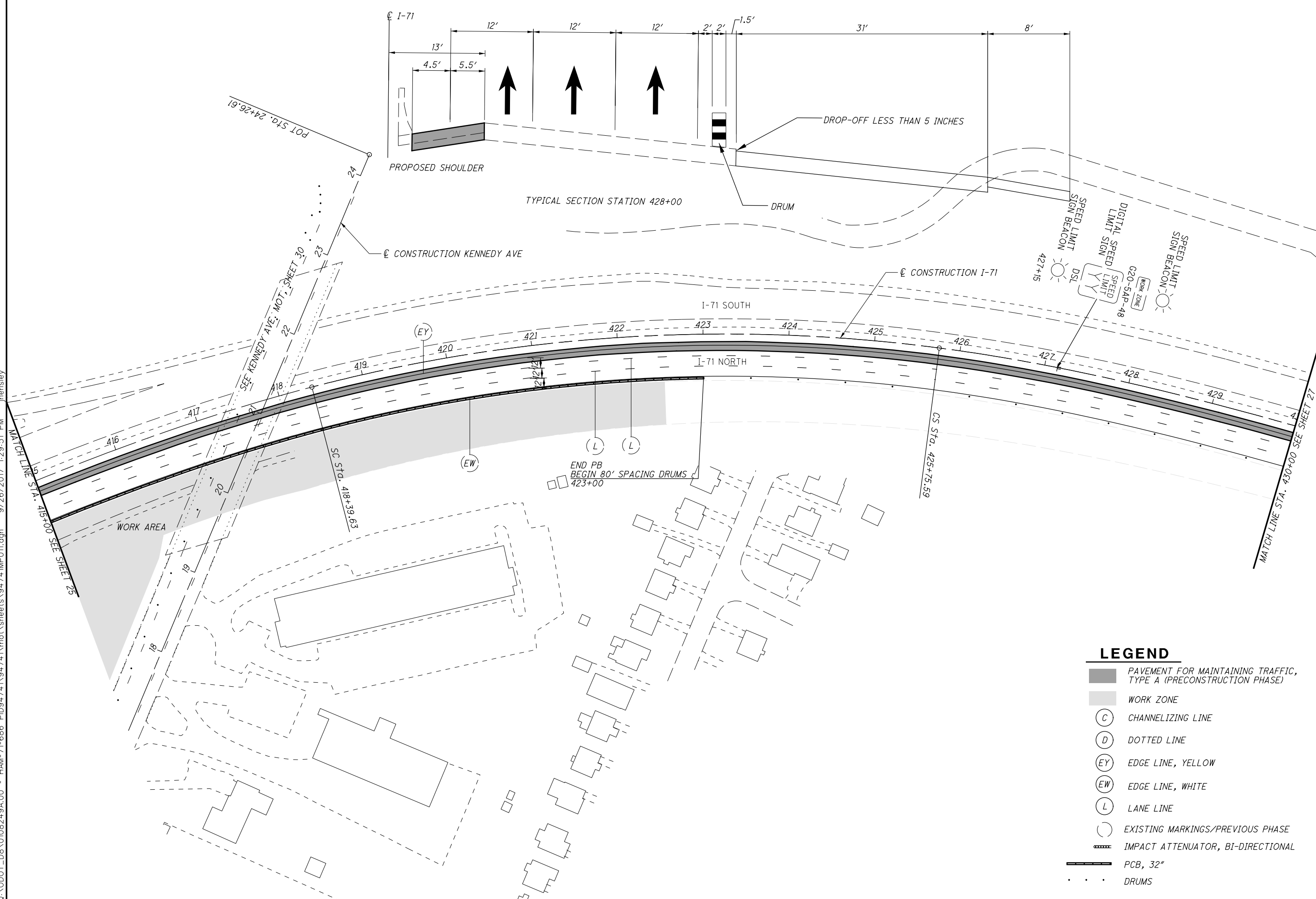
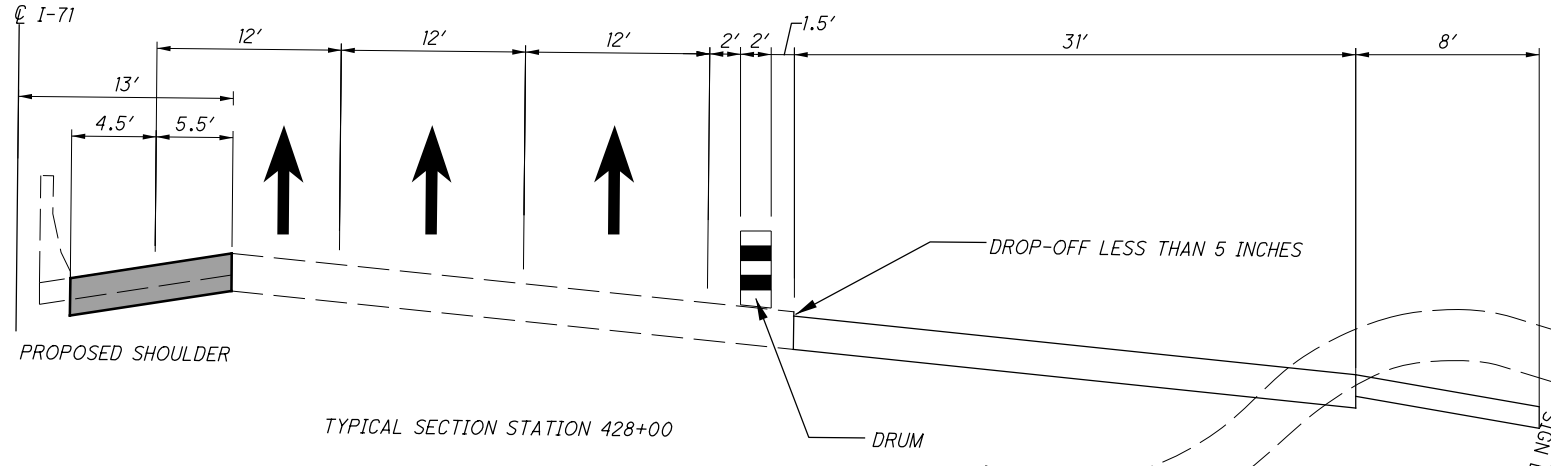
0 25 50 100
HORIZONTAL
SCALE IN FEET

CALCULATED
LDW
CHECKED
GKB

**MAINTENANCE OF TRAFFIC
STA. 415+00 TO STA. 430+00 PHASE 2**

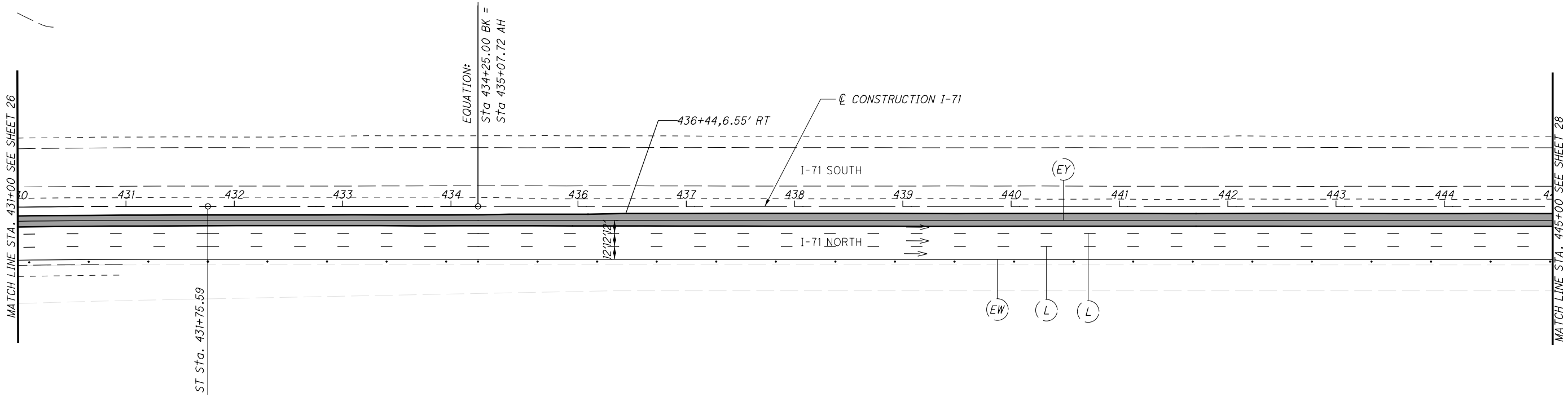
HAM-71-6.86

26
253



LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, TYPE A (PRECONSTRUCTION PHASE)
- WORK ZONE
- CHANNELIZING LINE
- DOTTED LINE
- EDGE LINE, YELLOW
- EDGE LINE, WHITE
- LANE LINE
- EXISTING MARKINGS/PREVIOUS PHASE
- IMPACT ATTENUATOR, BI-DIRECTIONAL
- PCB, 32"
- DRUMS



LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, TYPE A (PRECONSTRUCTION PHASE)
- WORK ZONE
- CHANNELIZING LINE
- DOTTED LINE
- EDGE LINE, YELLOW
- EDGE LINE, WHITE
- LANE LINE
- EXISTING MARKINGS/PREVIOUS PHASE
- IMPACT ATTENUATOR, BI-DIRECTIONAL
- PCB, 32"
- DRUMS

CALCULATED
LDW
CHECKED
GKB

HORIZONTAL SCALE IN FEET

**MAINTENANCE OF TRAFFIC
STA. 430+00 TO STA. 445+00 PHASE 2**












HAM-71-6.86

O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\94741\mot\sheets\94741MP013.dgn 9/26/2017 1:29:55 PM jhenstey

MATCH LINE STA. 445+00 SEE SHEET 27

MATCH LINE STA. 460+00 SEE SHEET 29

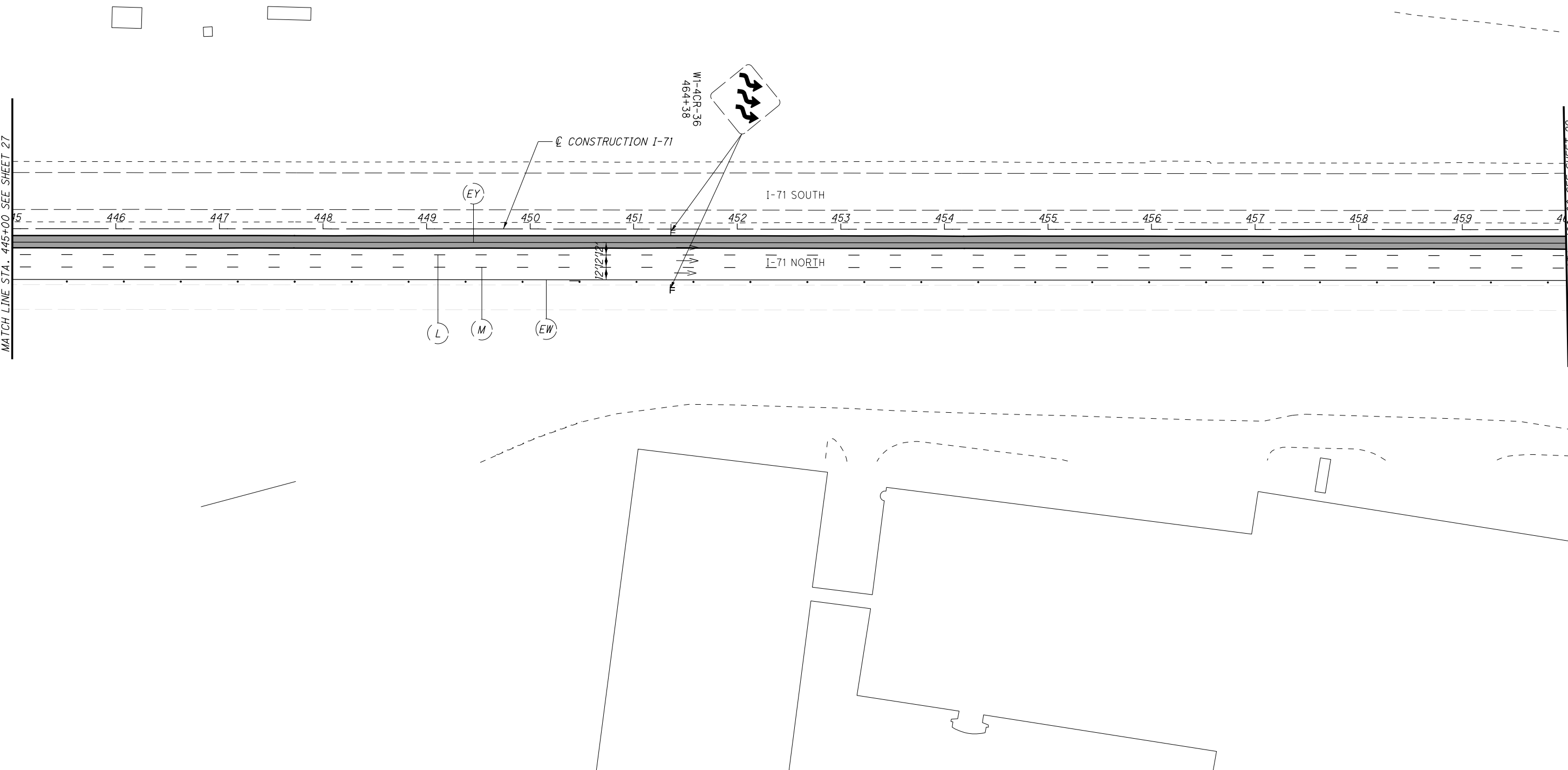
LEGEND

-  PAVEMENT FOR MAINTAINING TRAFFIC, TYPE A (PRECONSTRUCTION PHASE)
-  WORK ZONE
-  CHANNELIZING LINE
-  DOTTED LINE
-  EDGE LINE, YELLOW
-  EDGE LINE, WHITE
-  LANE LINE
-  EXISTING MARKINGS/PREVIOUS PHASE
-  IMPACT ATTENUATOR, BI-DIRECTIONAL
-  PCB, 32"
-  DRUMS

CALCULATED
LDW
CHECKED
GKB




HORIZONTAL SCALE IN FEET



HAM-71-6.86
MAINTENANCE OF TRAFFIC
STA. 445+00 TO STA. 460+00 PHASE 2

O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\94741\mot\sheets\94741MP014.dgn 9/26/2017 1:29:58 PM jhenstey



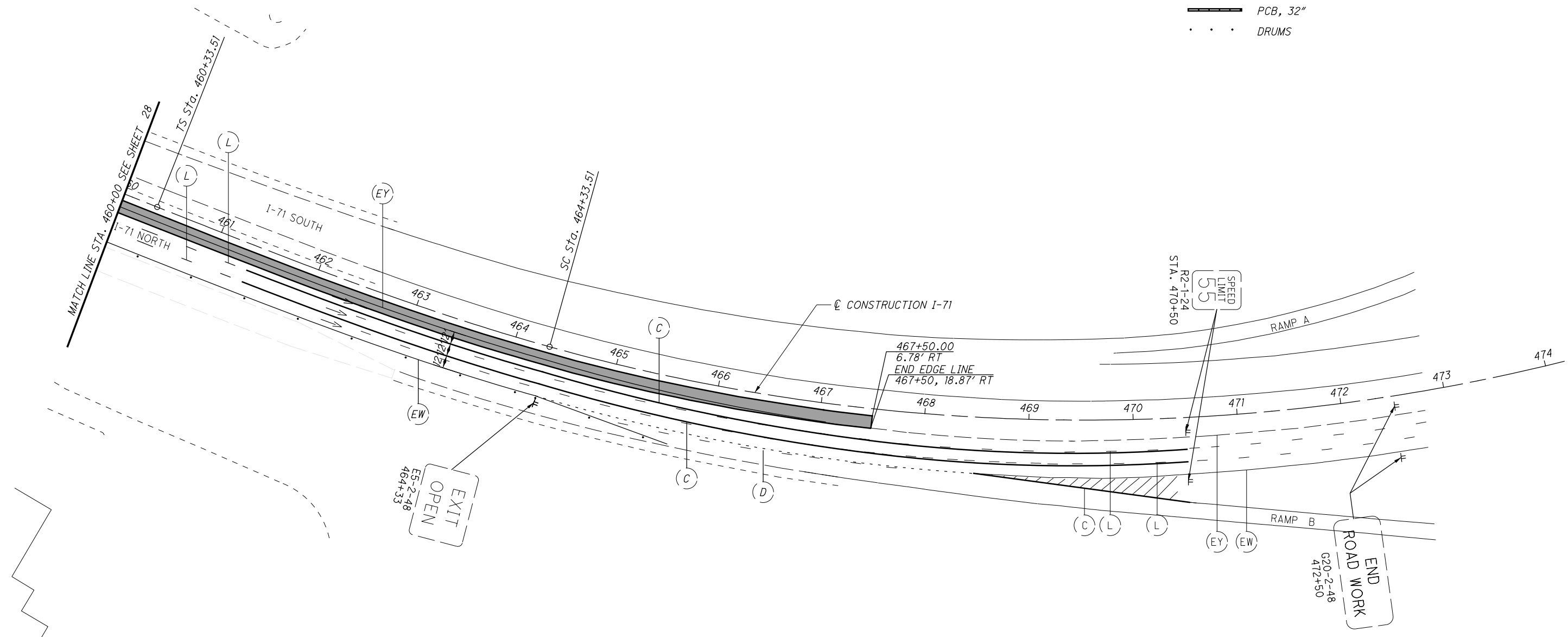
CALCULATED
LDW
CHECKED
GKB

LEGEND


- PAVEMENT FOR MAINTAINING TRAFFIC, TYPE A (PRECONSTRUCTION PHASE)
- WORK ZONE
- CHANNELIZING LINE
- DOTTED LINE
- EDGE LINE, YELLOW
- EDGE LINE, WHITE
- LANE LINE
- EXISTING MARKINGS/PREVIOUS PHASE
- IMPACT ATTENUATOR, BI-DIRECTIONAL
- PCB, 32"
- DRUMS


MAINTENANCE OF TRAFFIC STA. 460+00 TO STA. 474+00 PHASE 2

HAM-71-6.86




O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\94741\mot\sheets\94741MP015.dgn 9/26/2017 1:29:59 PM jhenstey

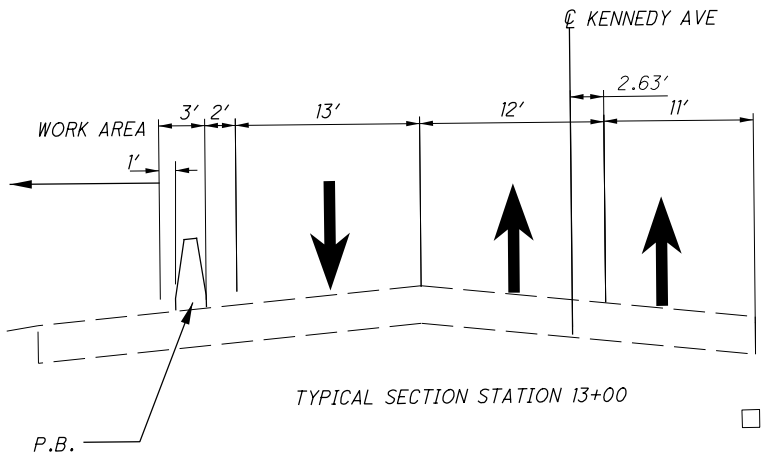
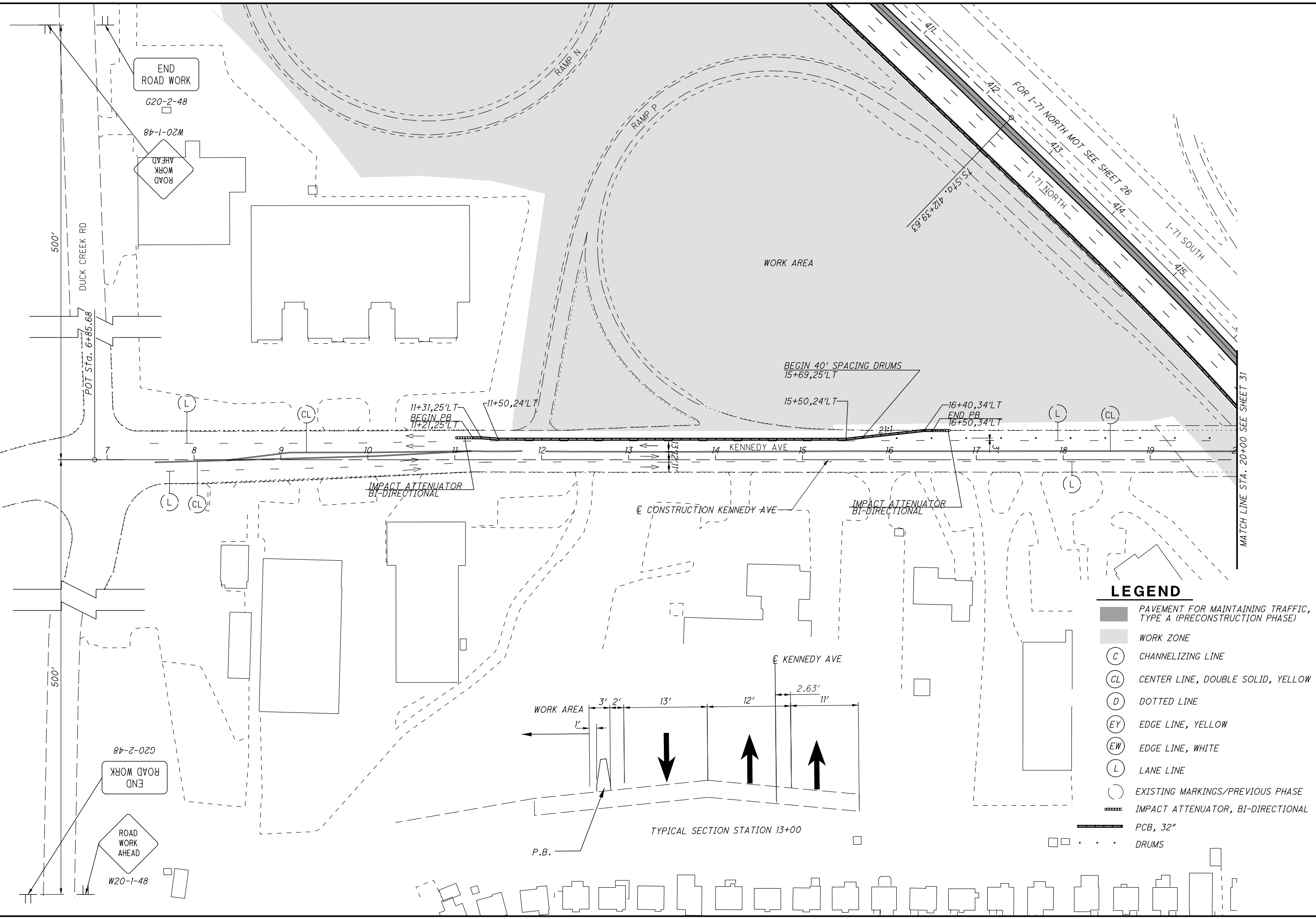
















 HORIZONTAL SCALE IN FEET

MAINTENANCE OF TRAFFIC
KENNEDY AVE STA. 6+85.68 TO STA. 20+00 PHASE 2

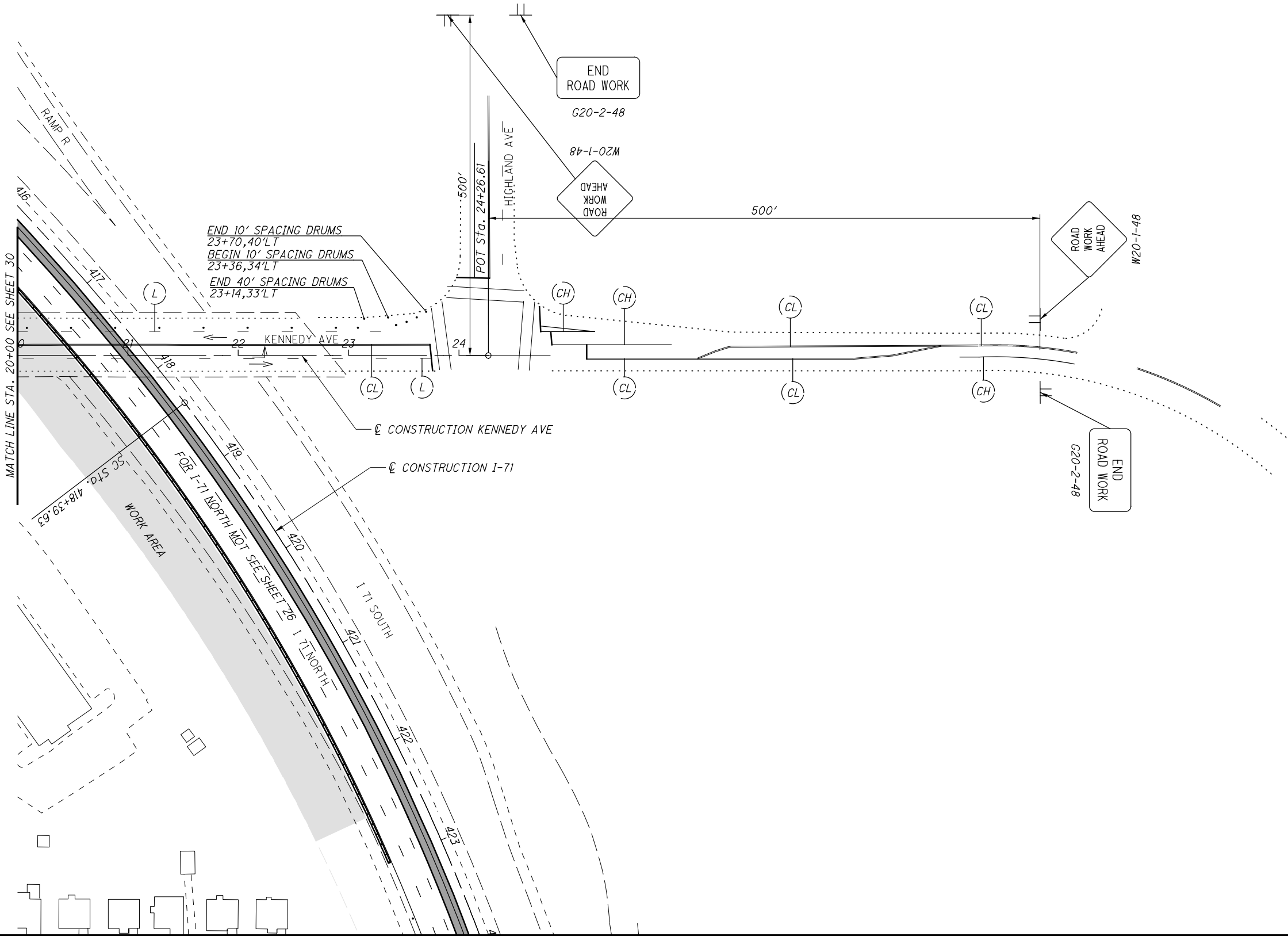
HAM-71-6.86




LEGEND

-  PAVEMENT FOR MAINTAINING TRAFFIC, TYPE A (PRECONSTRUCTION PHASE)
-  WORK ZONE
-  CHANNELIZING LINE
-  CENTER LINE, DOUBLE SOLID, YELLOW
-  DOTTED LINE
-  EDGE LINE, YELLOW
-  EDGE LINE, WHITE
-  LANE LINE
-  EXISTING MARKINGS/PREVIOUS PHASE
-  IMPACT ATTENUATOR, BI-DIRECTIONAL
-  PCB, 32"
-  DRUMS

C:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\94741\mot\sheets\94741MP016.dgn 9/26/2017 1:30:06 PM jhenstey



LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, TYPE A (PRECONSTRUCTION PHASE)
- WORK ZONE
- CHANNELIZING LINE
- CENTER LINE, DOUBLE SOLID, YELLOW
- DOTTED LINE
- EDGE LINE, YELLOW
- EDGE LINE, WHITE
- LANE LINE
- EXISTING MARKINGS/PREVIOUS PHASE
- IMPACT ATTENUATOR, BI-DIRECTIONAL
- PCB, 32"
- DRUMS

N

0 20 40
HORIZONTAL SCALE IN FEET

CALCULATED
LDW
CHECKED
GKB













MAINTENANCE OF TRAFFIC
KENNEDY AVE STA. 20+00 TO STA. 24+26.61 PHASE 2

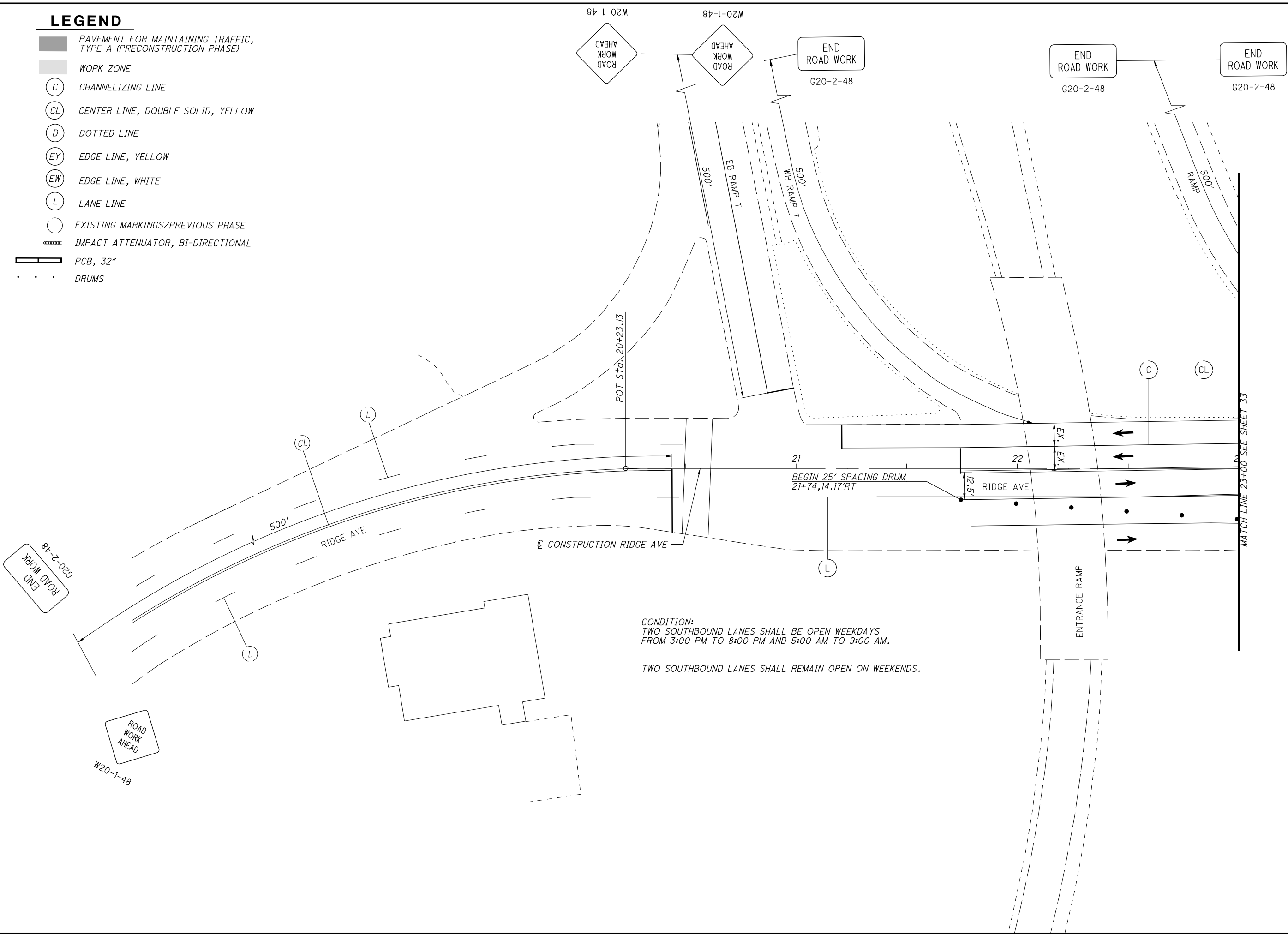
HAM-71-6.86

31
253

O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\94741\mot\sheet\94741MP017.dgn 9/26/2017 1:30:12 PM jhensley

LEGEND

-  PAVEMENT FOR MAINTAINING TRAFFIC, TYPE A (PRECONSTRUCTION PHASE)
-  WORK ZONE
-  CHANNELIZING LINE
-  CENTER LINE, DOUBLE SOLID, YELLOW
-  DOTTED LINE
-  EDGE LINE, YELLOW
-  EDGE LINE, WHITE
-  LANE LINE
-  EXISTING MARKINGS/PREVIOUS PHASE
-  IMPACT ATTENUATOR, BI-DIRECTIONAL
-  PCB, 32"
-  DRUMS



CONDITION:
 TWO SOUTHBOUND LANES SHALL BE OPEN WEEKDAYS
 FROM 3:00 PM TO 8:00 PM AND 5:00 AM TO 9:00 AM.
 TWO SOUTHBOUND LANES SHALL REMAIN OPEN ON WEEKENDS.

N



0 20 40
 HORIZONTAL
 SCALE IN FEET

CALCULATED
 LDW
 CHECKED
 GKB

**MAINTENANCE OF TRAFFIC
 RIDGE AVE STA 20+23 TO STA 23+00 PHASE 2A**

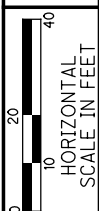
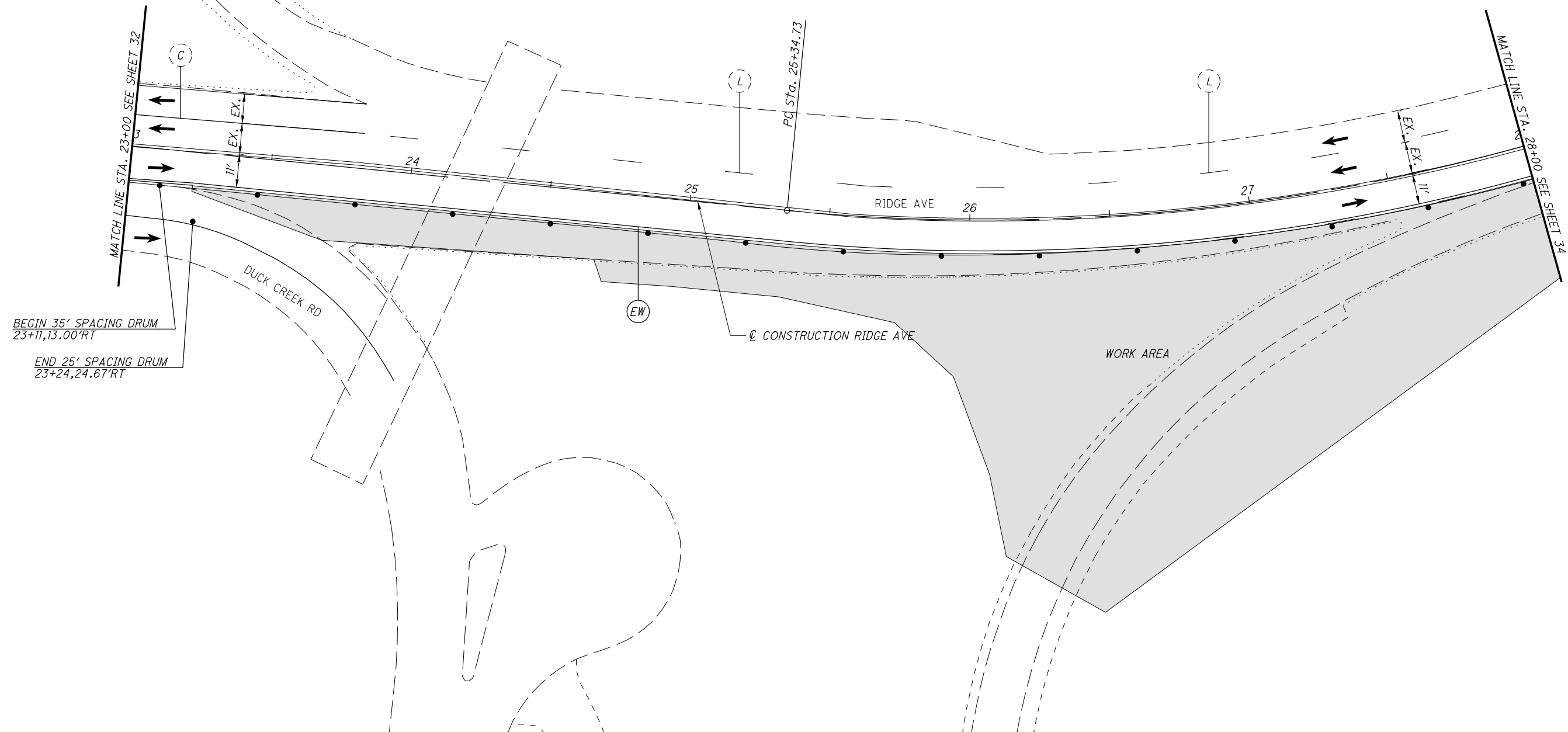
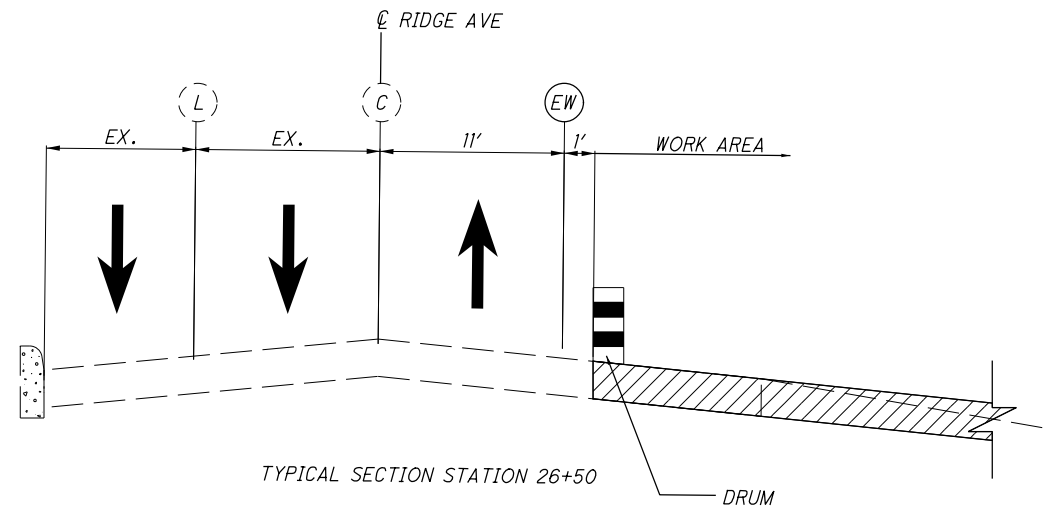
HAM-71-6.86

32
 253

LEGEND

- PAVEMENT FOR MAINTAINING TRAFFIC, TYPE A (PRECONSTRUCTION PHASE)
- WORK ZONE
- C CHANNELIZING LINE
- CL CENTER LINE, DOUBLE SOLID, YELLOW
- D DOTTED LINE
- EY EDGE LINE, YELLOW
- EW EDGE LINE, WHITE
- L LANE LINE
- EXISTING MARKINGS/PREVIOUS PHASE
- IMPACT ATTENUATOR, BI-DIRECTIONAL
- PCB, 32"
- DRUMS

CONDITION:
SOUTHBOUND LANES OPEN WEEKENDS AND WEEKDAYS
FROM 3:00 PM TO 8:00 PM AND 5:00 AM TO 9:00 AM.



CALCULATED
LDW
CHECKED
GKB













MAINTENANCE OF TRAFFIC
RIDGE ROAD STA. 23+00 TO STA. 28+00 PHASE 2A

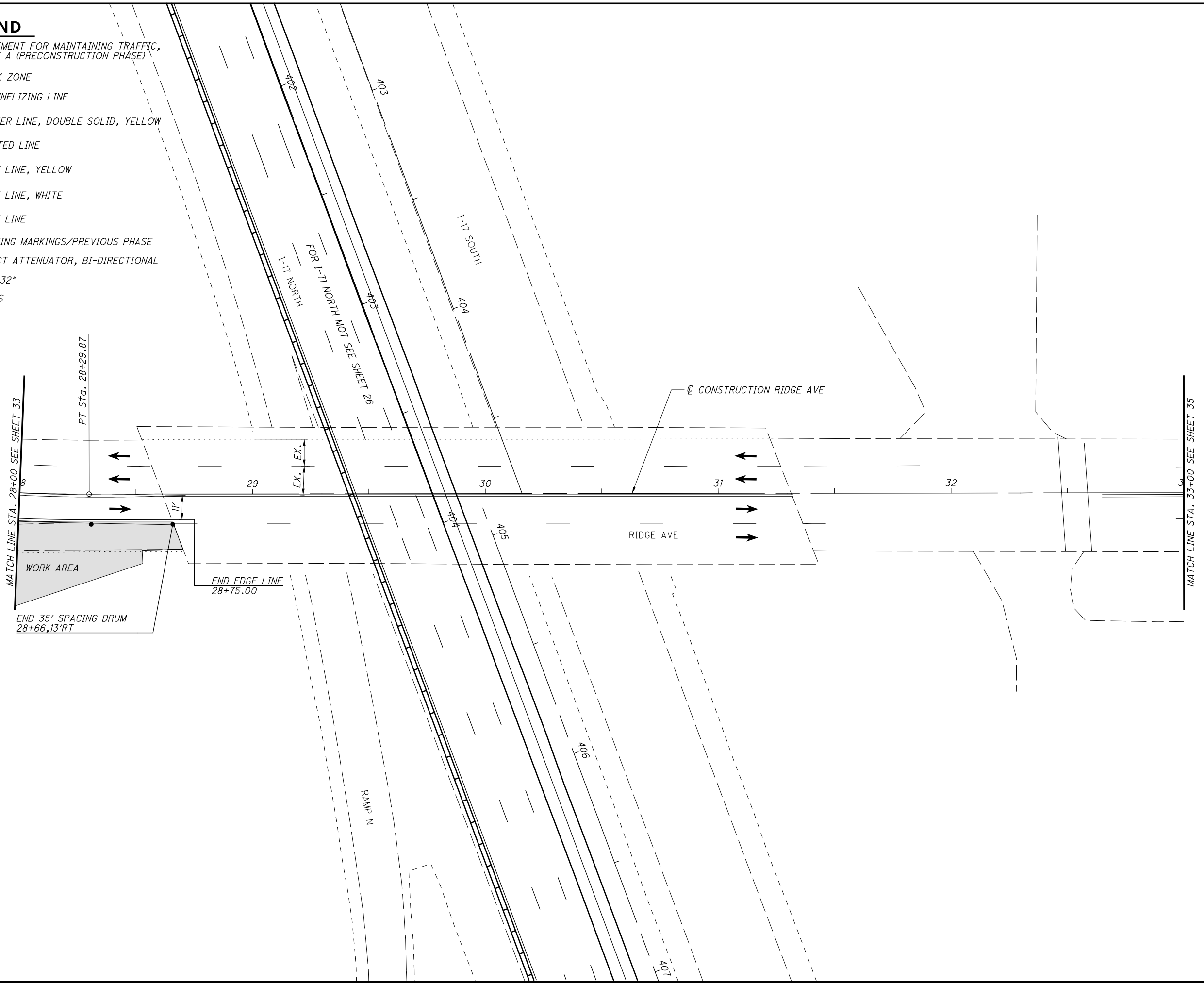
HAM-71-6.86

O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\94741\mot\sheet\94741MP01B.dgn 9/26/2017 1:30:18 PM jhensley

O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\94741\mot\sheets\94741MP019.dgn 9/26/2017 1:30:32 PM jhenstey

LEGEND

-  PAVEMENT FOR MAINTAINING TRAFFIC, TYPE A (PRECONSTRUCTION PHASE)
-  WORK ZONE
-  CHANNELIZING LINE
-  CENTER LINE, DOUBLE SOLID, YELLOW
-  DOTTED LINE
-  EDGE LINE, YELLOW
-  EDGE LINE, WHITE
-  LANE LINE
-  EXISTING MARKINGS/PREVIOUS PHASE
-  IMPACT ATTENUATOR, BI-DIRECTIONAL
-  PCB, 32"
-  DRUMS



CALCULATED
LDW
CHECKED
GKB













0 20 40
HORIZONTAL
SCALE IN FEET

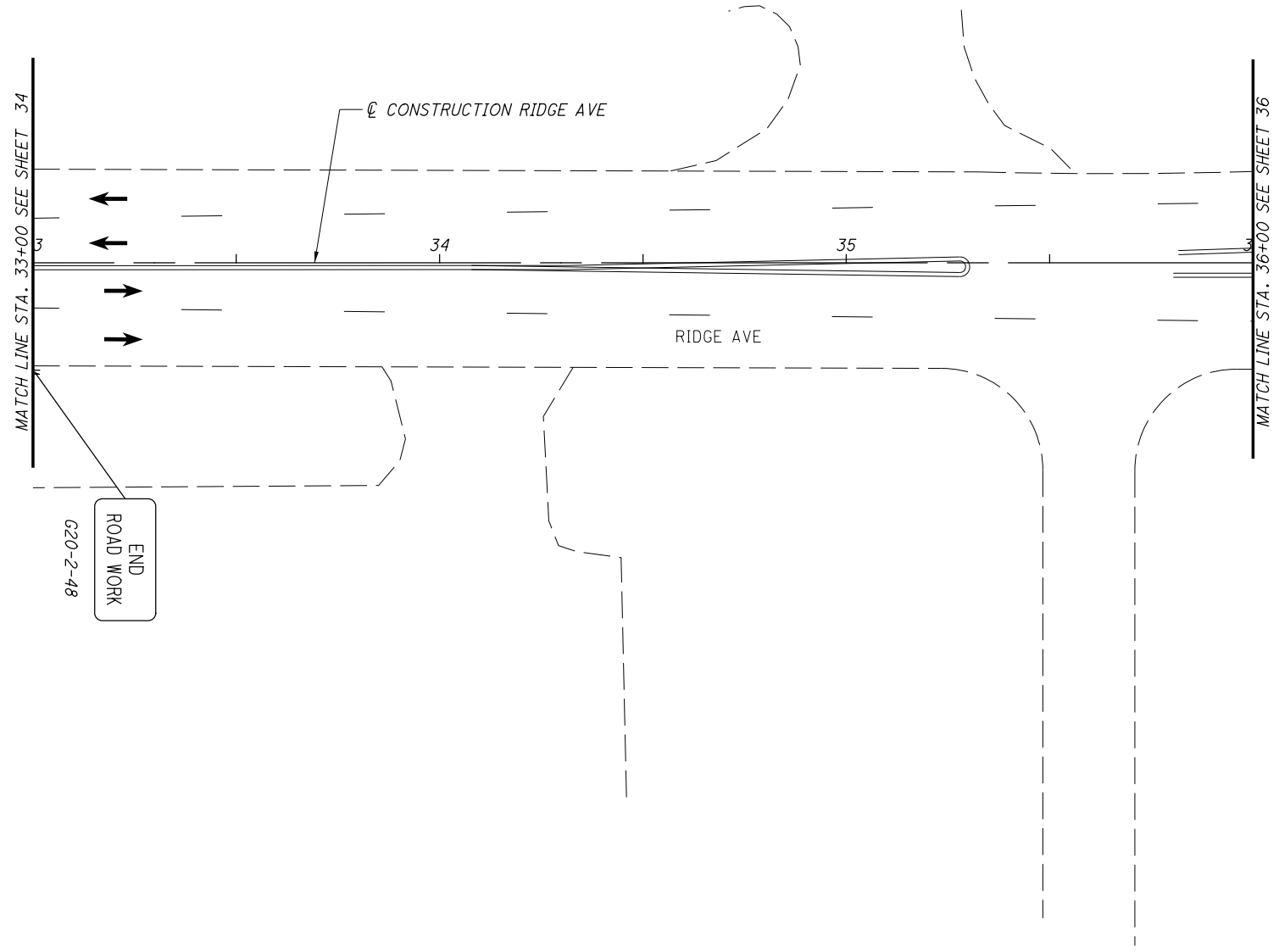
MAINTENANCE OF TRAFFIC
RIDGE AVE STA. 28+00 TO STA. 33+00 PHASE 2A

HAM-71-6.86

34
253

LEGEND

-  PAVEMENT FOR MAINTAINING TRAFFIC, TYPE A (PRECONSTRUCTION PHASE)
-  WORK ZONE
-  CHANNELIZING LINE
-  CENTER LINE, DOUBLE SOLID, YELLOW
-  DOTTED LINE
-  EDGE LINE, YELLOW
-  EDGE LINE, WHITE
-  LANE LINE
-  EXISTING MARKINGS/PREVIOUS PHASE
-  IMPACT ATTENUATOR, BI-DIRECTIONAL
-  PCB, 32"
-  DRUMS



CALCULATED
LDW
CHECKED
GKB













0 20 40
HORIZONTAL
SCALE IN FEET

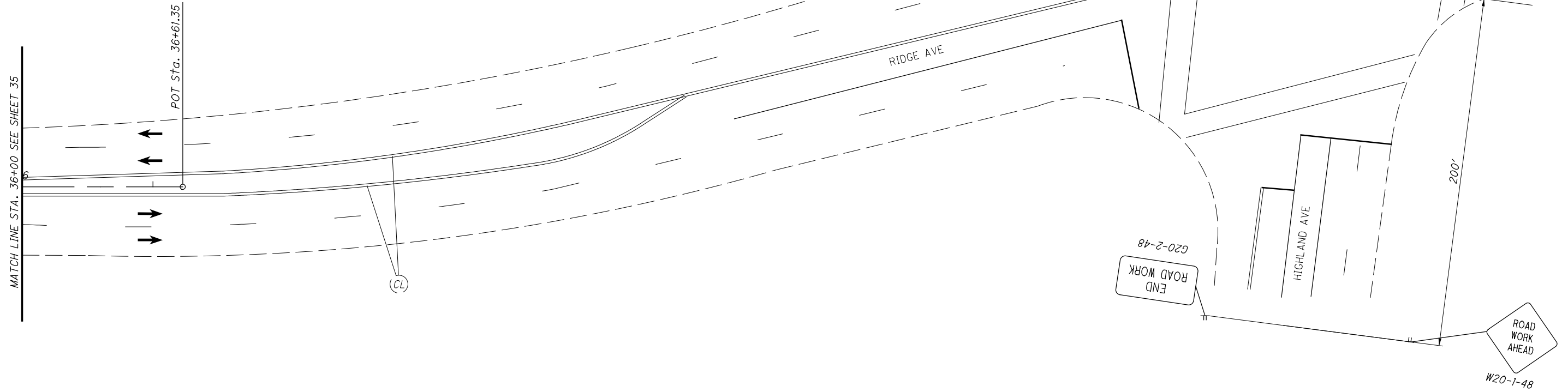
HAM-71-6.86
MAINTENANCE OF TRAFFIC
RIDGE AVE STA. 33+00 TO STA. 36+00 PHASE 2A

35
253

O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\94741\mot\sheets\94741MP021.dgn 9/26/2017 1:30:45 PM jhenstey

LEGEND


-  PAVEMENT FOR MAINTAINING TRAFFIC, TYPE A (PRECONSTRUCTION PHASE)
-  WORK ZONE
-  CHANNELIZING LINE
-  CENTER LINE, DOUBLE SOLID, YELLOW
-  DOTTED LINE
-  EDGE LINE, YELLOW
-  EDGE LINE, WHITE
-  LANE LINE
-  EXISTING MARKINGS/PREVIOUS PHASE
-  IMPACT ATTENUATOR, BI-DIRECTIONAL
-  PCB, 32"
-  DRUMS





 HORIZONTAL SCALE IN FEET
 CALCULATED LDW
 CHECKED GKB

MAINTENANCE OF TRAFFIC
RIDGE AVE 36+00 TO END OF PROJECT PHASE 2A

HAM-71-6.86
















CALCULATED
LDW
CHECKED
GKB

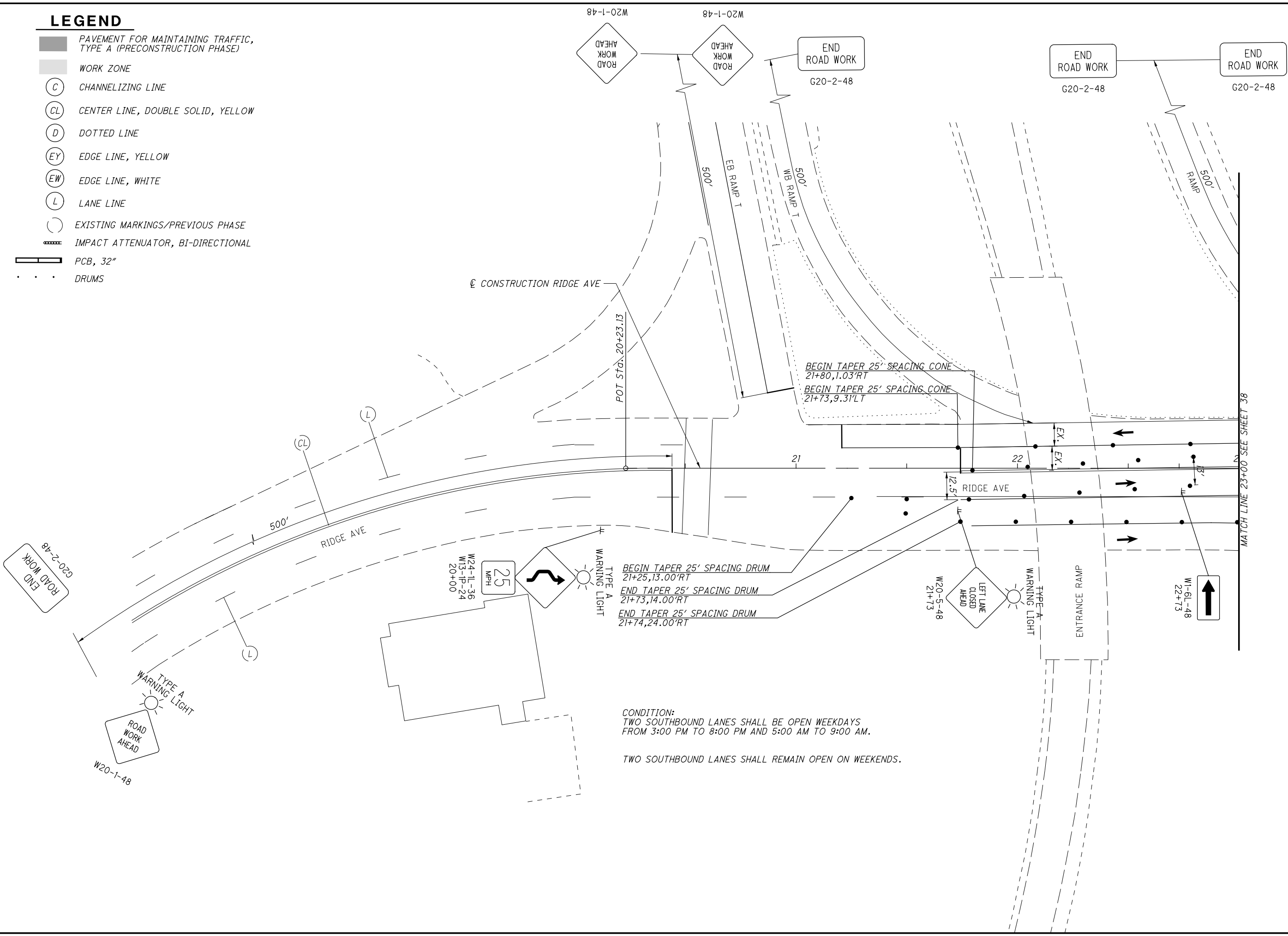
MAINTENANCE OF TRAFFIC
RIDGE AVE STA 20+23 TO STA 23+00 PHASE 2B

HAM-71-6.86

LEGEND













-  PAVEMENT FOR MAINTAINING TRAFFIC, TYPE A (PRECONSTRUCTION PHASE)
-  WORK ZONE
-  CHANNELIZING LINE
-  CENTER LINE, DOUBLE SOLID, YELLOW
-  DOTTED LINE
-  EDGE LINE, YELLOW
-  EDGE LINE, WHITE
-  LANE LINE
-  EXISTING MARKINGS/PREVIOUS PHASE
-  IMPACT ATTENUATOR, BI-DIRECTIONAL
-  PCB, 32"
-  DRUMS

O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\94741\mot\sheet\94741MP022.dgn 9/26/2017 1:30:51 PM jhenstey



CONDITION:
 TWO SOUTHBOUND LANES SHALL BE OPEN WEEKDAYS
 FROM 3:00 PM TO 8:00 PM AND 5:00 AM TO 9:00 AM.
 TWO SOUTHBOUND LANES SHALL REMAIN OPEN ON WEEKENDS.

LEGEND

-  PAVEMENT FOR MAINTAINING TRAFFIC, TYPE A (PRECONSTRUCTION PHASE)
-  WORK ZONE
-  CHANNELIZING LINE
-  CENTER LINE, DOUBLE SOLID, YELLOW
-  DOTTED LINE
-  EDGE LINE, YELLOW
-  EDGE LINE, WHITE
-  LANE LINE
-  EXISTING MARKINGS/PREVIOUS PHASE
-  IMPACT ATTENUATOR, BI-DIRECTIONAL
-  PCB, 32"
-  DRUMS

N



0 20 40
HORIZONTAL SCALE IN FEET

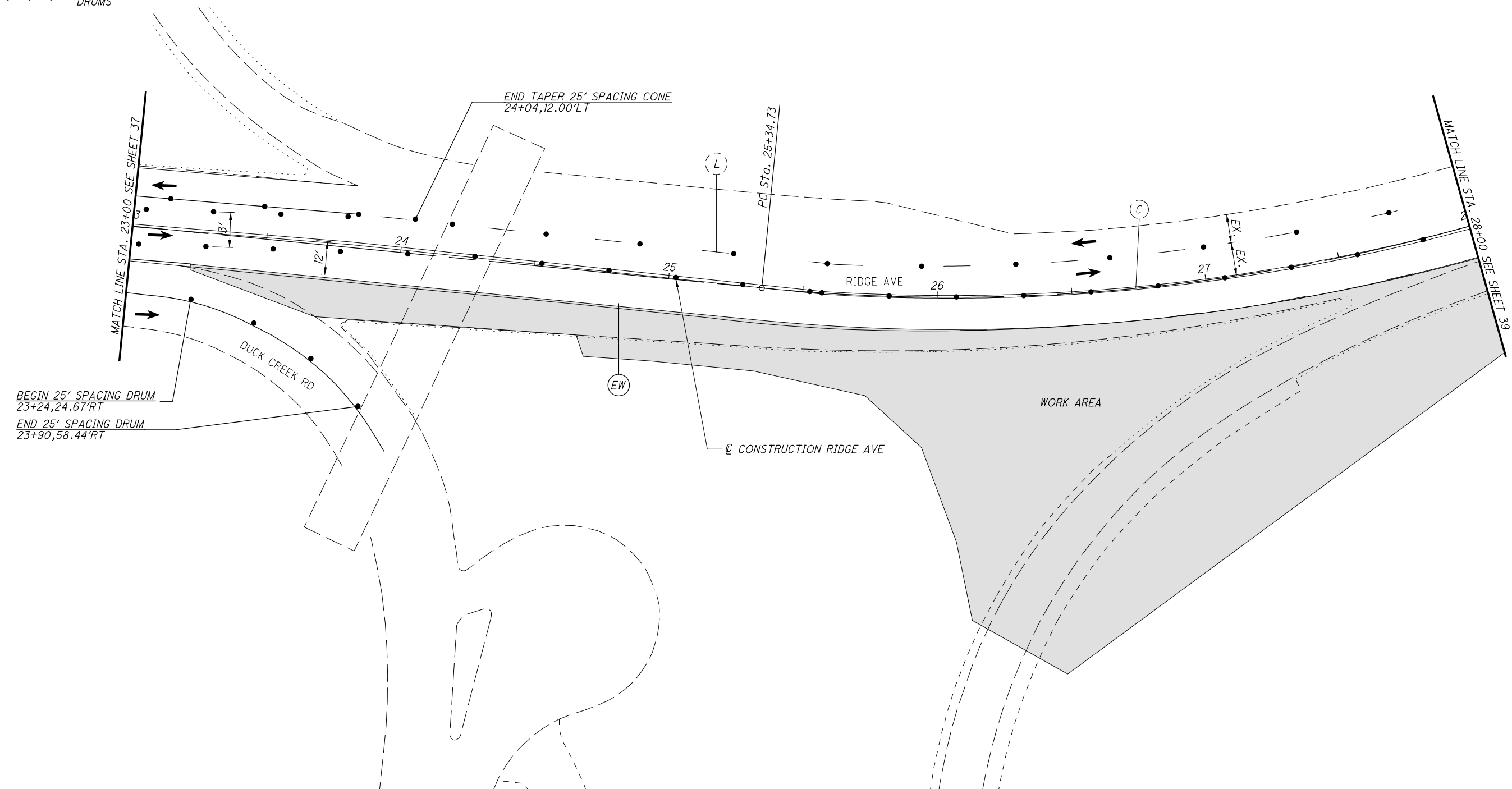
CALCULATED LDW	CHECKED GKB
-------------------	----------------

MAINTENANCE OF TRAFFIC
RIDGE ROAD STA. 23+00 TO STA. 28+00 PHASE 2B

HAM-71-6.86













38	253
----	-----

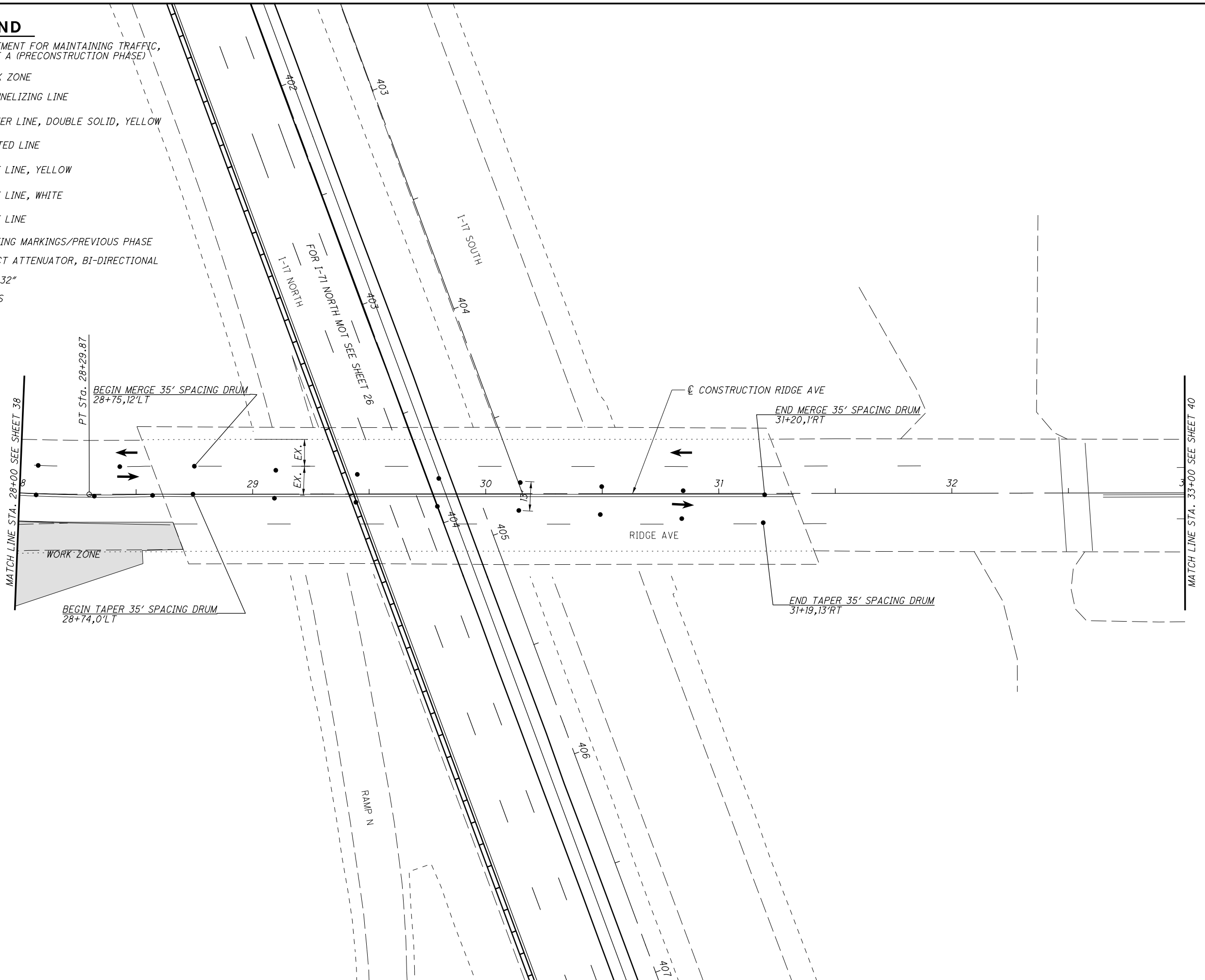
O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\94741\mot\sheets\94741MP023.dgn 9/26/2017 1:30:57 PM jhensley



O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\94741\mot\sheets\94741MP024.dgn 9/26/2017 1:31:03 PM jhenstey

LEGEND

-  PAVEMENT FOR MAINTAINING TRAFFIC, TYPE A (PRECONSTRUCTION PHASE)
-  WORK ZONE
-  CHANNELIZING LINE
-  CENTER LINE, DOUBLE SOLID, YELLOW
-  DOTTED LINE
-  EDGE LINE, YELLOW
-  EDGE LINE, WHITE
-  LANE LINE
-  EXISTING MARKINGS/PREVIOUS PHASE
-  IMPACT ATTENUATOR, BI-DIRECTIONAL
-  PCB, 32"
-  DRUMS



CALCULATED
LDW
CHECKED
GKB













MAINTENANCE OF TRAFFIC
RIDGE AVE STA. 28+00 TO STA. 33+00 PHASE 2B

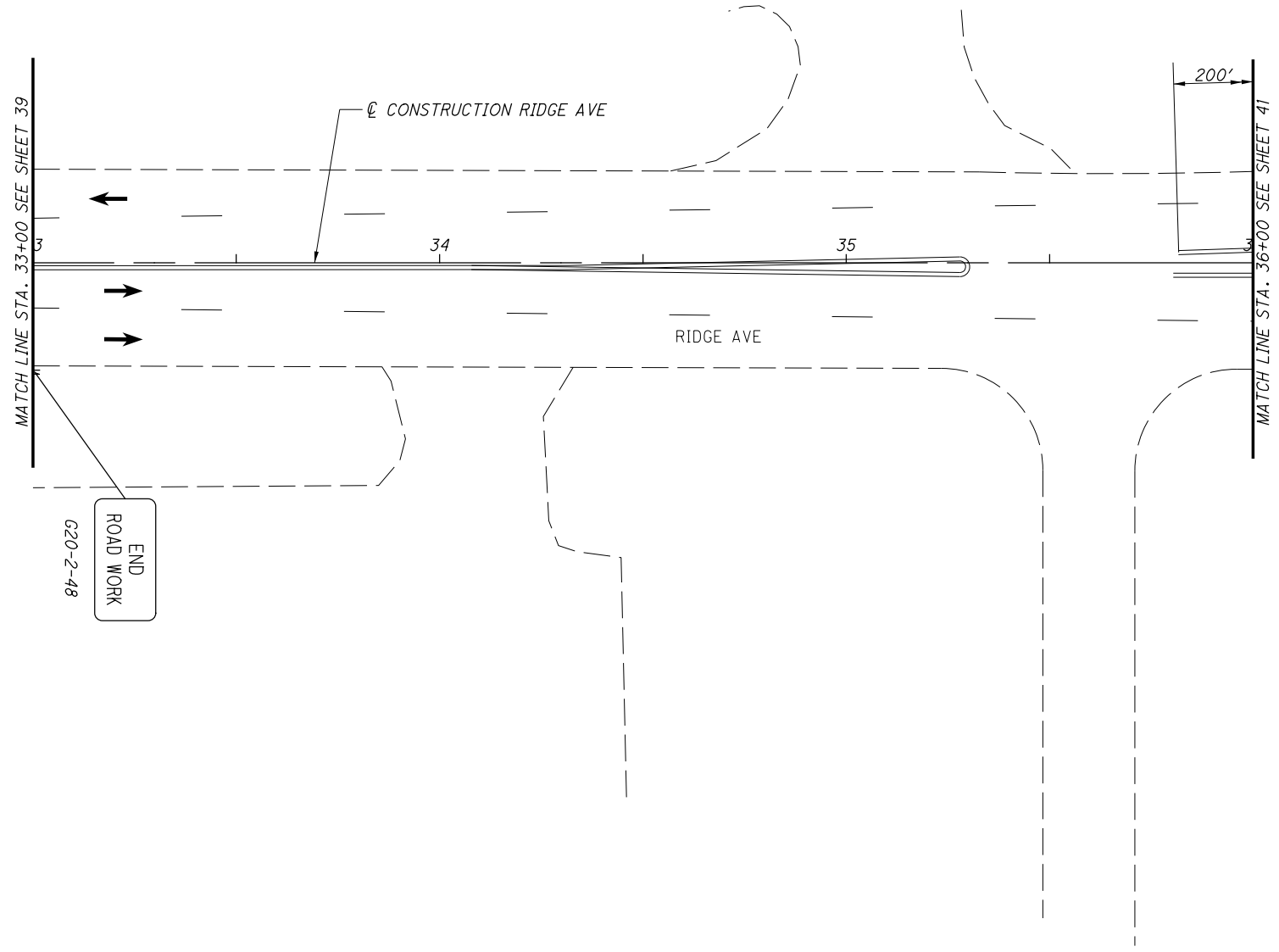
HAM-71-6.86

39
253

O:\ODOT_D8\0108249A.00 - HAM-71-686_PID94741\94741\nmot\sheets\94741MP025.dgn 9/26/2017 1:31:11 PM jhensley

LEGEND

-  PAVEMENT FOR MAINTAINING TRAFFIC, TYPE A (PRECONSTRUCTION PHASE)
-  WORK ZONE
-  CHANNELIZING LINE
-  CENTER LINE, DOUBLE SOLID, YELLOW
-  DOTTED LINE
-  EDGE LINE, YELLOW
-  EDGE LINE, WHITE
-  LANE LINE
-  EXISTING MARKINGS/PREVIOUS PHASE
-  IMPACT ATTENUATOR, BI-DIRECTIONAL
-  PCB, 32"
-  DRUMS



CALCULATED
LDW
CHECKED
GKB

0 20 40
HORIZONTAL
SCALE IN FEET

HAM-71-6.86













MAINTENANCE OF TRAFFIC

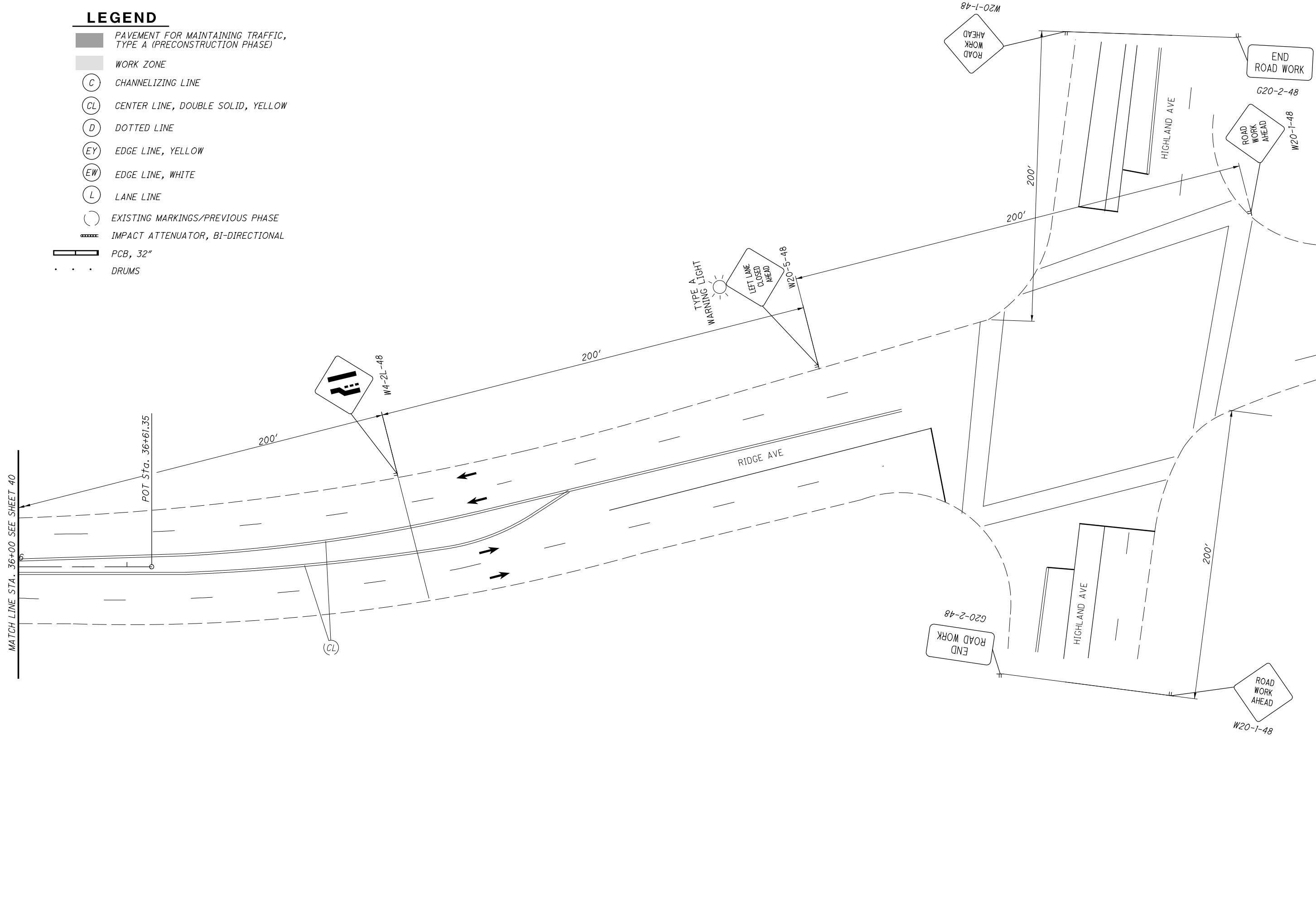
RIDGE AVE STA. 33+00 TO STA. 36+00 PHASE 2B

40
253

O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\94741\mot\sheets\94741MP026.dgn 9/26/2017 1:31:17 PM jhensley

LEGEND

-  PAVEMENT FOR MAINTAINING TRAFFIC, TYPE A (PRECONSTRUCTION PHASE)
-  WORK ZONE
-  CHANNELIZING LINE
-  CENTER LINE, DOUBLE SOLID, YELLOW
-  DOTTED LINE
-  EDGE LINE, YELLOW
-  EDGE LINE, WHITE
-  LANE LINE
-  EXISTING MARKINGS/PREVIOUS PHASE
-  IMPACT ATTENUATOR, BI-DIRECTIONAL
-  PCB, 32"
-  DRUMS







 0 20 40

 HORIZONTAL

 SCALE IN FEET

CALCULATED
 LDW
 CHECKED
 GKB

MAINTENANCE OF TRAFFIC

RIGDE AVE 36+00 TO END OF PROJECT PHASE 2B

HAM-71-6.86

41
253

v:\B\736\active\173620049\design\9474\design\reviews\final\Tracings\Revised\Final\Tracing Sheets 2-14-18\94741.GG001.dgn 2/14/2018 1:10:07 PM eodkins

SHEET NUM.											PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
6	8	8A	49	50	51	52	144	237			03/SAF/PV							
ROADWAY																		
LS											LS		201	11000	LS		CLEARING AND GRUBBING	
				5			9				14		202	20010	14	EACH	HEADWALL REMOVED	
				7,544							7,544		202	23000	7,544	SY	PAVEMENT REMOVED	
				905							905		202	30000	905	SF	WALK REMOVED	
				727							727		202	30700	727	FT	CONCRETE BARRIER REMOVED	
				1,207							1,207		202	32000	1,207	FT	CURB REMOVED	
				134							134		202	32700	134	SY	GUTTER REMOVED	
		38		599			218				855		202	35100	855	FT	PIPE REMOVED, 24" AND UNDER	
				247			74				321		202	35200	321	FT	PIPE REMOVED, OVER 24"	
				5,069							5,069		202	38000	5,069	FT	GUARDRAIL REMOVED	
				1							1		202	58000	1	EACH	MANHOLE REMOVED	
				9							9		202	58100	9	EACH	CATCH BASIN REMOVED	
				50							50		SPECIAL	20270000	50	FT	FILL AND PLUG EXISTING CONDUIT	7
							578				578		SPECIAL	20270120	578	FT	PIPE CLEANOUT, 27" TO 48"	
	386										386		SPECIAL	20270130	386	FT	PIPE CLEANOUT OVER 48"	8
				2,080							2,080		202	75000	2,080	FT	FENCE REMOVED	
				LS							LS		202	98000	LS		REMOVAL MISC.: LIGHT TOWER RETAINING WALL	
				LS							LS		202	98000	LS		REMOVAL MISC.: TWO BLOCK RETAINING WALLS (20' AND 24' LONG)	
				84,444							84,444		203	10000	84,444	CY	EXCAVATION	
				71,640							71,640		203	20000	71,640	CY	EMBANKMENT	
				438							438		203	35110	438	CY	GRANULAR MATERIAL, TYPE B	
				4,768							4,768		203	35121	4,768	CY	GRANULAR MATERIAL, TYPE C, AS PER PLAN	6
		3									3		SPECIAL	20365000	3	EACH	SETTLEMENT PLATFORM	8A
15											15		204	45000	15	hour	PROOF ROLLING	
				1,124							1,124		206	10500	1,124	TON	CEMENT	
				28,564							28,564		206	11001	28,564	SY	CURING COAT, AS PER PLAN	6
							801				801		206	15010	801	SY	CEMENT STABILIZED SUBGRADE, 12 INCHES DEEP	
							27,763				27,763		206	15030	27,763	SY	CEMENT STABILIZED SUBGRADE, 16 INCHES DEEP	
					18						18		518	12500	18	EACH	SCUPPER, MISC.: PLUG SCUPPER	61
					3,450						3,450		606	15050	3,450	FT	GUARDRAIL, TYPE MGS	
					3						3		606	26150	3	EACH	ANCHOR ASSEMBLY, MGS TYPE E	7
					5						5		606	35002	5	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1	
					2						2		606	35102	2	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2	
					1						1		606	35103	1	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2, AS PER PLAN	8
				1,874							1,874		607	23000	1,874	FT	FENCE, TYPE CLT	
				1,159							1,159		607	70000	1,159	FT	FENCELINE SEEDING AND MULCHING	
				1,902							1,902		608	12000	1,902	SF	5" CONCRETE WALK	
					108						108		608	52000	108	SF	CURB RAMP	
					3,464						3,464		622	10160	3,464	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE D	
					7						7		622	25000	7	EACH	CONCRETE BARRIER END SECTION, TYPE D	
						17					17		622	25050	17	EACH	CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE D	
						9					9		623	40500	9	EACH	REFERENCE MONUMENT	
			3								3		625	32000	3	EACH	GROUND ROD	
					42						42		626	00102	42	EACH	BARRIER REFLECTOR, TYPE 1, TYPE 1, 1 WAY	
					45						45		626	00110	45	EACH	BARRIER REFLECTOR, TYPE 2, TYPE 2, 1 WAY	
						3					3		626	00110	3	EACH	BARRIER REFLECTOR, TYPE 2, TYPE 2, BIDIRECTIONAL	
						LS					LS		878	25000	LS		INSPECTION AND COMPACTION TESTING OF UNBOUND MATERIALS	

GENERAL SUMMARY

HAM-71-6.86

CALCULATED
LBA
CHECKED
SNS

V:\1736\octfive\173620049\design\94741\roadway\sheet\94741.GG002.dgn 9/27/2017 10:41:18 AM pdurham

SHEET NUM.										PART.		ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.	
8	54	57	144	148	209					03/SAF/PV		EXT	TOTAL					
	4,928											203	98100	4,928	SY	ROADWAY, MISC.: HIGH PERFORMANCE TURF REINFORCEMENT MAT, AS PER PLAN	7	
			1.74									601	10000	1.74	SY	RIPRAP		
				72								601	11000	72	SY	RIPRAP, TYPE D		
	92		25		3.6							601	21050	120.6	SY	TIED CONCRETE BLOCK MAT, TYPE 1		
			25									601	32100	25	CY	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER		
	24											601	32104	24	CY	ROCK CHANNEL PROTECTION, TYPE B WITH GEOTEXTILE FABRIC		
			28									601	32200	28	CY	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER		
	121											601	32204	121	CY	ROCK CHANNEL PROTECTION, TYPE C WITH GEOTEXTILE FABRIC		
	901											601	37500	901	FT	PAVED GUTTER, TYPE 1-2		
	111											601	37501	111	FT	PAVED GUTTER, TYPE 1-2, AS PER PLAN	227	
	1,002											601	38101	1,002	FT	PAVED GUTTER, TYPE 1-6, AS PER PLAN	67	
2												659	00100	2	EACH	SOIL ANALYSIS TEST		
		1,795										659	00300	1,795	CY	TOPSOIL		
		730										659	00301	730	CY	TOPSOIL, AS PER PLAN	7	
73,488												659	10000	73,488	SY	SEEDING AND MULCHING		
3,675												659	14000	3,675	SY	REPAIR SEEDING AND MULCHING		
10												659	20000	10	TON	COMMERCIAL FERTILIZER		
16												659	31000	16	ACRE	LIME		
397												659	35000	397	MGAL	WATER		
166												659	40000	166	MSF	MOWING		
	2,700											670	00500	2,700	SY	SLOPE EROSION PROTECTION		
	1,582											670	00710	1,582	SY	DITCH EROSION PROTECTION MAT, TYPE A		
		LS										832	15000	LS		STORM WATER POLLUTION PREVENTION PLAN		
		165,000										832	30000	165,000	EACH	EROSION CONTROL		

CALCULATED	LBA	CHECKED	SNS
GENERAL SUMMARY			
HAM-71-6.86			
43			
253			

v:\b\736\oc\tive\73620049\design\9474\design\admin\reviews\final\Tracings\Revised\Final\Tracing Sheets\2-14-18\94741.GG003.dgn 2/14/2018 1:20:35 PM eadkins

SHEET NUM.											PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.	
8	15	50	51	52	53	55	144	148	209	223	03/SAF/PV								
DRAINAGE																			
					1.58		7.75					9.33		602	20000	9.33	CY	CONCRETE MASONRY	
							1.43					1.43		602	20001	1.43	CY	CONCRETE MASONRY, AS PER PLAN	155
						14,321						14,321		605	11100	14,321	FT	6" SHALLOW PIPE UNDERDRAINS, 707.31, 707.41	
						376						376		605	13300	376	FT	6" UNCLASSIFIED PIPE UNDERDRAINS, 707.31, 707.41	
						5,898						5,898		605	14000	5,898	FT	6" BASE PIPE UNDERDRAINS, 707.31, 707.41	
									266			266		605	98000	266	FT	UNDERDRAINS, MISC.: BARRIER DRAINAGE	209
									18			18		611	00410	18	FT	4" CONDUIT, TYPE F FOR UNDERDRAIN OUTLET	
										537		537		611	00510	537	FT	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	
											310	310		611	00900	310	FT	6" CONDUIT, TYPE B	
100												100		611	00900	100	FT	6" CONDUIT, TYPE B FOR DRAINAGE CONNECTION	
100												100		611	01100	100	FT	6" CONDUIT, TYPE C FOR DRAINAGE CONNECTION	
100												100		611	01400	100	FT	6" CONDUIT, TYPE E FOR DRAINAGE CONNECTION	
100												100		611	01500	100	FT	6" CONDUIT, TYPE F FOR DRAINAGE CONNECTION	
					6							6		611	04600	6	FT	12" CONDUIT, TYPE C	
					276		57					333		611	05900	333	FT	15" CONDUIT, TYPE B	
					4							4		611	06100	4	FT	15" CONDUIT, TYPE C	
					96		291					387		611	06700	387	FT	15" CONDUIT, TYPE F	
					340							340		611	07400	340	FT	18" CONDUIT, TYPE B	
					129							129		611	07600	129	FT	18" CONDUIT, TYPE C	
							29					29		611	08700	29	FT	21" CONDUIT, TYPE A, 706.02	
												346		611	10600	346	FT	24" CONDUIT, TYPE C	
					4							4		611	12100	4	FT	27" CONDUIT, TYPE C	
					239							239		611	13400	239	FT	30" CONDUIT, TYPE B	
					235							235		611	13600	235	FT	30" CONDUIT, TYPE C	
							42					42		611	16201	42	FT	36" CONDUIT, TYPE A, AS PER PLAN	158
												38		611	16400	38	FT	36" CONDUIT, TYPE B	
												36		611	19201	36	FT	42" CONDUIT, TYPE A, AS PER PLAN	157
												35		611	20700	35	FT	48" CONDUIT, TYPE A, 706.02	
					52							52		611	21100	52	FT	48" CONDUIT, TYPE C	
												44		611	23600	44	FT	60" CONDUIT, TYPE A, 706.02	
												386		611	97400	386	FT	CONDUIT, MISC.: 60" CONDUIT REHABILITATION	162
										35		35		611	97400	35	FT	CONDUIT, MISC.: 12' X 9' CONDUIT, TYPE A, 706.05, DESIGN COVER 3 FT	146-147
					1							1		611	98150	1	EACH	CATCH BASIN, NO. 3	
					4							4		611	98180	4	EACH	CATCH BASIN, NO. 3A	
					2							2		611	98470	2	EACH	CATCH BASIN, NO. 2-2B	
												2		611	98510	2	EACH	CATCH BASIN, NO. 2-3	
					6							6		611	99114	6	EACH	INLET, NO. 3 FOR SINGLE SLOPE BARRIER, TYPE D	
					10		1					11		611	99574	11	EACH	MANHOLE, NO. 3	
						5						7		611	99710	7	EACH	PRECAST REINFORCED CONCRETE OUTLET	
							285					285		611	96550	285	FT	FIELD PAVING OF EXISTING PIPE, 36" CMP	
							311					311		611	96550	311	FT	FIELD PAVING OF EXISTING PIPE, 42" CMP	
							660					660		611	97400	660	FT	CONDUIT, MISC.:VIDEO LOG	
							112					112		611	97400	112	FT	CONDUIT, MISC.:CURED-IN-PLACE PIPE LINER (15")	
							262					262		611	97400	262	FT	CONDUIT, MISC.:CURED-IN-PLACE PIPE LINER (36")	
												286		611	97400	286	FT	CONDUIT, MISC.:CURED-IN-PLACE PIPE LINER (42")	
																		PAVEMENT	
	1,200				180							1,380		254	01000	1,380	SY	PAVEMENT PLANING, ASPHALT CONCRETE	
					6,158							6,158		302	46000	6,158	CY	ASPHALT CONCRETE BASE, PG64-22	
					4,780							4,780		304	20000	4,780	CY	AGGREGATE BASE	
					1,689							1,689		407	10000	1,689	GAL	TACK COAT	
					34							34		407	20000	34	GAL	NON-TRACKING TACK COAT	
					664							664		442	00100	664	CY	ANTI-SEGREGATION EQUIPMENT	
					43							43		442	10000	43	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446)	
					1,082							1,082		442	10100	1,082	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446)	
					5,556							5,556		452	16060	5,556	SY	13.5" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC1 WITH QC/QA	
			72									72		609	24510	72	FT	CURB, TYPE 4-C	
												1,525		609	26000	1,525	FT	CURB, TYPE 6	
		347	190									537		609	50000	537	SY	4" CONCRETE TRAFFIC ISLAND	

CALCULATED	LBA	CHECKED	SNS
GENERAL SUMMARY			
HAM-71-6.86			
44			
253			

V:\1736\octfive\173620049\design\94741\roadway\sheet\94741.LGG004.dgn 9/27/2017 10:41:09 AM pdurham

SHEET NUM.										PART.			ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
49	167A	203								03/SAF/PV								
WATER WORK																		
22										22			638	00700	22	FT	6" WATER MAIN DUCTILE IRON PIPE ANSI CLASS 52, MECHANICAL JOINTS AND FITTINGS	
1										1			638	10600	1	EACH	FIRE HYDRANT AND GATE VALVE REMOVED AND RESET	
SANITARY SEWER																		
30										30			611	97400	30	FT	CONDUIT, MISC.: CONCRETE ENCASEMENT	59
LIGHTING																		
	9									9			625	00450	9	EACH	CONNECTION, FUSED PULL APART	
	18									18			625	00480	18	EACH	CONNECTION, UNFUSED PERMANENT	
	2									2			625	10490	2	EACH	LIGHT POLE, CONVENTIONAL, AT12B35	
	2									2			625	14000	2	EACH	LIGHT POLE FOUNDATION, 24" X 6' DEEP	
	282									282			625	23400	282	FT	NO. 10 AWG POLE AND BRACKET CABLE	
	329									329			625	24320	329	FT	1-1/2" DUCT CABLE WITH THREE NO. 4 AWG 2400 VOLT CABLES	
	591									591			625	24330	591	FT	1-1/2" DUCT CABLE WITH THREE NO. 2 AWG 2400 VOLT CABLES	
	90									90			625	25500	90	FT	CONDUIT, 3", 725.04	
	78									78			625	25902	78	FT	CONDUIT, JACKED OR DRILLED, 725.04, 3"	
	1									1			625	26251	1	EACH	LUMINAIRE, CONVENTIONAL, AS PER PLAN, TYPE II, 200 W HPS, 240V	205
	1									1			625	26251	1	EACH	LUMINAIRE, CONVENTIONAL, AS PER PLAN, TYPE II, 200 W HPS, 480V	205
	940									940			625	29002	940	FT	TRENCH, 24" DEEP	
	6									6			625	30700	6	EACH	PULL BOX, 725.08, 18"	
	4									4			625	31510	4	EACH	PULL BOX REMOVED	
	2									2			625	32000	2	EACH	GROUND ROD	
	940									940			625	36000	940	FT	PLASTIC CAUTION TAPE	
	1									1			625	39520	1	EACH	PULL BOX CLEANED	
	LS									LS			SPECIAL	62540000	LS		MAINTAIN EXISTING LIGHTING	205
	2									2			SPECIAL	62540010	2	EACH	REPLACEMENT OF EXISTING LIGHTING UNIT	205
	1									1			625	75350	1	EACH	LIGHT TOWER REMOVED	
	2									2			625	75400	2	EACH	LIGHT POLE REMOVED	
	2									2			625	75500	2	EACH	LIGHT POLE FOUNDATION REMOVED	
	8									8			625	75506	8	EACH	LUMINAIRE REMOVED	
	1									1			625	75540	1	EACH	LIGHT TOWER FOUNDATION REMOVED	
	2									2			625	75800	2	EACH	DISCONNECT CIRCUIT	
	188									188			632	40500	188	FT	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG	
TRAFFIC SURVEILLANCE																		
	75									75			625	23200	75	FT	NO. 4 AWG 2400 VOLT DISTRIBUTION CABLE	
	4									4			625	29941	4	EACH	BARRIER JUNCTION BOX, AS PER PLAN	166, 168
	14									14			625	30711	14	EACH	PULL BOX, 725.08, 32", AS PER PLAN	166
	3,969									3,969			625	25750	3,969	FT	CONDUIT, 4", MULTICELL, 725.20 , EPC-40	166
	3,934									3,934			625	25910	3,934	FT	CONDUIT CLEANED AND CABLES REMOVED	
	3,849									3,849			625	29000	3,849	FT	TRENCH	
	120									120			625	29600	120	FT	TRENCH IN PAVED AREA, TYPE B	
	11									11			625	31510	11	EACH	PULL BOX REMOVED	
	3									3			625	32001	3	EACH	GROUND ROD, AS PER PLAN	166
	3,969									3,969			625	36000	3,969	FT	PLASTIC CAUTION TAPE	
	13									13			625	39520	13	EACH	PULL BOX CLEANED	
	1									1			625	75400	1	EACH	LIGHT POLE REMOVED	
	2									2			630	89812	2	EACH	REMOVAL OF WOOD POLE AND DISPOSAL	
	3									3			632	90400	3	EACH	SIGNALIZATION, MISC.: REMOVAL OF SIDE FIRED RADAR DETECTOR	166
	2									2			632	90400	2	EACH	SIGNALIZATION, MISC.: REMOVAL OF CCTV SYSTEM	166
	3									3			632	90400	3	EACH	SIGNALIZATION, MISC.: REMOVAL OF ITS CABINET - GROUND MOUNTED	166
	10,880									10,880			804	15010	10,880	FT	FIBER OPTIC CABLE, 24 FIBER	
	3									3			804	34022	3	EACH	FIBER TERMINATION PANEL, 24 FIBER	
	7									7			804	37000	7	EACH	SPLICE ENCLOSURE	
	3									3			809	60000	3	EACH	CCTV IP-CAMERA SYSTEM, DOME-TYPE	
	3									3			809	61000	3	EACH	CCTV CONCRETE POLE WITH LOWERING UNIT, 70 FEET	
	3									3			809	65000	3	EACH	ITS CABINET - GROUND MOUNTED	

GENERAL SUMMARY

HAM-71-6.86

SHEET NUM.										PART.		ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE	
8	189	198								03/SAF/PV		EXT	TOTAL				NO.	
	36											36	621	00100	36	EACH	TRAFFIC CONTROL	
10												10	621	54000	10	EACH	RPM	
	1											1	625	10500	1	EACH	RAISED PAVEMENT MARKER REMOVED	
	1											1	625	14000	1	EACH	LIGHT POLE, MISC.: PREPARE TO STOP WHEN FLASHING SUPPORT	195A
	3											3	625	32000	3	EACH	LIGHT POLE FOUNDATION, 24" X 6' DEEP	
	55.1											55.1	630	03100	55.1	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	
	1											1	630	45500	1	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-7.65, DESIGN 8	
	64											64	630	80100	64	SF	SIGN, FLAT SHEET	
	132											132	630	80224	132	SF	SIGN, OVERHEAD EXTRUSHEET	
	2											2	630	84510	2	EACH	RIGID OVERHEAD SIGN SUPPORT FOUNDATION	
	6											6	630	84900	6	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
	4											4	630	86002	4	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
	3											3	630	87400	3	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL	
	1											1	630	89802	1	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TYPE TC-7.65	
	1											1	631	92000	1	EACH	SIGN FLASHER ASSEMBLY	
	1											1	631	94470	1	EACH	REMOVAL OF SIGN SERVICE	
	1											1	631	94490	1	EACH	REMOVAL, MISC.: SIGN FLASHER ASSEMBLY	194
	0.13											0.13	644	00200	0.13	MILE	LANE LINE, 4"	
	175											175	644	00400	175	FT	CHANNELIZING LINE, 8"	
	50											50	644	00500	50	FT	STOP LINE	
	99											99	644	01500	99	FT	DOTTED LINE, 4"	
	332											332	644	30000	332	FT	REMOVAL OF PAVEMENT MARKING	
	0.63											0.63	646	10010	0.63	MILE	EDGE LINE, 6"	
	21											21	646	10400	21	FT	STOP LINE	
	2											2	646	20320	2	EACH	WRONG WAY ARROW	
	20											20	646	20800	20	FT	YIELD LINE	
		45										45	625	25400	45	FT	TRAFFIC SIGNALS	
		97										97	625	25500	97	FT	CONDUIT, 2", 725.04	
		119										119	625	25600	119	FT	CONDUIT, 3", 725.04	
		133										133	625	25908	133	FT	CONDUIT, 4", 725.04	
		171										171	625	29000	171	FT	CONDUIT, JACKED OR DRILLED, 725.052, 4"	
		4										4	625	30706	4	EACH	TRENCH	
		3										3	625	32000	3	EACH	PULL BOX, 725.08, 24"	
		6										6	632	05007	6	EACH	GROUND ROD	
		2										2	632	20731	2	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	196
		2										2	632	26000	2	EACH	PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN	197
		1										1	632	28200	1	EACH	PEDESTRIAN PUSHBUTTON	
		217										217	632	40200	217	FT	DISCONNECT SWITCH WITH ENCLOSURE	
		232										232	632	40500	232	FT	SIGNAL CABLE, 2 CONDUCTOR, NO. 14 AWG	
		1,299										1,299	632	40700	1,299	FT	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG	
		2										2	632	64010	2	EACH	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	
		2										2	632	64020	2	EACH	SIGNAL SUPPORT FOUNDATION	
		200										200	632	68200	200	FT	PEDESTAL FOUNDATION	
		150										150	632	69800	150	FT	POWER CABLE, 2 CONDUCTOR, NO. 6 AWG	
		1										1	632	70000	1	EACH	SERVICE CABLE, 3 CONDUCTOR, NO. 6 AWG	
		1										1	632	70200	1	EACH	POWER SERVICE	
		1										1	632	75410	1	EACH	CONDUIT RISER, 1" DIAMETER	
		1										1	632	77230	1	EACH	SIGNAL SUPPORT, TYPE TC-12.30 DESIGN 8 POLE, WITH MAST ARMS TC-81.21 DESIGN 13 AND DESIGN 11	
		1										1	632	80620	1	EACH	SIGNAL SUPPORT, MECHANICAL DAMPER FOR TC-81.21 MAST ARM (GREATER THAN 59' IN LENGTH)	
		2										2	632	89700	2	EACH	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 13	
		1										1	633	01651	1	EACH	PEDESTAL, 11'	
		1										1	633	67100	1	EACH	CONTROLLER UNIT, TYPE 2070E WITH 2070-1C CPU AND ASC/3 SOFTWARE, AS PER PLAN	196
		1										1	633	67200	1	EACH	CABINET FOUNDATION	
		1										1	633	75001	1	EACH	CONTROLLER WORK PAD	
		1										1	809	69101	1	EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN	196
		1										1	809	69101	1	EACH	STOP-BAR RADAR DETECTION, AS PER PLAN	197

GENERAL SUMMARY

V:\1736\octfive\173620049\design\94741\roadway\sheet\94741.LG007.dgn 9/27/2017 10:41:20 AM pdurham

SHEET NUM.										PART.		ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.
9	10	11	15							03/SAF/PV		EXT	TOTAL				
	900											614	1110	900	hour	MAINTENANCE OF TRAFFIC	
	9											614	11500	9	MNTH	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
			16,481									614	11630	16,481	FT	WORKSITE TRAFFIC SUPERVISOR	
			4									614	12338	4	EACH	INCREASED BARRIER DELINEATION	
												614	12420	4	EACH	WORK ZONE IMPACT ATTENUATOR (BIDIRECTIONAL)	9
												LS				DETOUR SIGNING	
		2										2		2	EACH	WORK ZONE INCREASED PENALTIES SIGN	
10												10		10	EACH	REPLACEMENT SIGN	
100												100		100	EACH	REPLACEMENT DRUM	
			675									675		675	EACH	WORK ZONE RAISED PAVEMENT MARKER, AS PER PLAN	11
			334									334		334	EACH	BARRIER REFLECTOR, TYPE 1, ONE WAY	
												334		334	EACH	OBJECT MARKER, ONE WAY	
		LS										LS		LS		MAINTAINING TRAFFIC, MISC.: MAINTENANCE OF MAJOR GUIDE SIGNS	11
11												11		11	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	9
		24										24		24	SNMT	DIGITAL SPEED LIMIT (DSL) SIGN ASSEMBLY	
			2.98									2.98		2.98	MILE	WORK ZONE LANE LINE, CLASS I, 4"	
												614	22000	3.59	MILE	WORK ZONE EDGE LINE, CLASS I, 4"	
			3.59									614	23000	6,402	FT	WORK ZONE CHANNELIZING LINE, CLASS I, 8"	
			6,402									614	24000	1,853	FT	WORK ZONE DOTTED LINE, CLASS I	
			1,853									LS	10000	LS		ROADS FOR MAINTAINING TRAFFIC	
												615	20000	9,732	SY	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A	
			9,732									615	20000	9,732	SY	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A	
100												100		100	MGAL	WATER	
			8,160									622	41000	8,160	FT	PORTABLE BARRIER, 32"	
												LS		LS		INCIDENTALS	
												LS	11000	LS		MAINTAINING TRAFFIC	
												LS	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
												LS	10000	LS		MOBILIZATION	

GENERAL SUMMARY

CALCULATED
LBA
CHECKED
SNS

HAM-71-6.86

V:\1736\active\173620049\design\94741\roadway\sheets\94741_GS004.dgn 9/27/2017 10:41:20 AM pdurham

EARTHWORK QUANTITIES														
STATION	SHEET NO.	203				659								659
		EXCAVATION	EMBANKMENT	GRANULAR MATERIAL, TYPE B	GRANULAR MATERIAL, TYPE C, AS PER PLAN	SEEDING & MULCHING AREA	TIED CONCRETE BLOCK MAT, TYPE 1	DEDUCT FOR ROCK CHANNEL PROTECTION	DEDUCT FOR ROCK CHANNEL PROTECTION (CULVERT)	DEDUCT FOR RIP RAP	DEDUCT FOR DITCH EROSION PROTECTION	DEDUCT FOR PAVED GUTTER	SEEDING & MULCHING	
I.R. 71														
398+50.00	404+00.00	80	1174	39		1625						-29.00	1596.00	
404+87.57	463+00.00	116	57681	63500	4768	47618	-120.00	-264.00	-86.00	-74.00	-934.00	-2190.00	43950	
RAMP N														
408+22.30	414+00.00	121	5819	4079		11992						-441.00	11551	
RAMP P														
408+50.00	418+00.00	128	7046	2748	438	4346						-207.00	4139	
RIDGE AVENUE														
23+50.00	28+50.00	134	708	77		1686							1686	
ABANDON RIDGE AVENUE (OLD RAMP N)		143	1111	0		3875							3875	
INFIELD DRAINAGE BASIN		131	10905	1197		6691							6691	
SUBTOTAL			84444	71640	438	4768	77833	-120.00	-264.00	-86.00	-74.00	-1582.00	-2219.00	73488
TOTALS TO GENERAL SUMMARY			84444*	71640*	438*	4768*								73488**

* TOTALS CARRIED TO GENERAL SUMMARY
 ** QUANTITIES CARRIED TO GENERAL NOTES

ITEM 659 SOIL ANALYSIS TEST
 73488 SQ YD X 9 X 1/43560 AREA X 1 EACH/10 AREA = 1.52 EACH
 USE 2 EACH **

ITEM 659 REPAIR SEEDING AND MULCHING
 73488 SQ YD X 0.05 = 3674.40 SQ YD
 USE 3675 SQ YD **

ITEM 659 COMMERCIAL FERTILIZER
 73488 SQ YD X 1 TON/7410 SQ YD = 9.92 TONS
 USE 10 TONS **

ITEM 659 LIME
 73488 SQ YD X 9 X 1/43560 = 15.18 ACRES
 USE 16 ACRES**

ITEM 659 WATER
 73488 SQ YD X 0.0027 M GAL/SQ YD X 2 = 396.84 M GAL
 USE 397 M GAL **

ITEM 659 MOWING
 73488 SQ YD X 9 X 0.25/1000 = 165.35 M SQ FT
 USE 166 M SQ FT **

ITEM 204 PROOF ROLLING
 USING ITEM 206 CHEMICALLY STABILIZED SUBGRADE 27763+801 SY (FROM PAVT CALCULATIONS)
 28564 SQ YD X 1 HR/2000 SQ YD = 14.28 HOURS, USE 15 HOURS **

ITEM 206 CEMENT
 AREA OF ITEM 206 CEMENT STABILIZED SUBGRADE 16" DEEP = 27763 SQ YD (FROM PAVT CALCULATIONS)
 27763 SQ YD X (0.75 X 16" X 110 X 0.06) LBS/SQ YD X 1 TON/2000 LBS = 1099.41 TONS
 AREA OF ITEM 206 CEMENT STABILIZED SUBGRADE 12" DEEP = 801 SQ YD (FROM PAVT CALCULATIONS)
 801 SQ YD X (0.75 X 12" X 110 X 0.06) LBS/SQ YD X 1 TON/2000 LBS = 23.79 TONS
 1099.41+23.79 = 1123.20 USE 1124 TONS*

ITEM 206 CURING COAT, AS PER PLAN
 AREA OF ITEM 206 STABILIZED SUBGRADE, 27763+801 SY (FROM PAVT CALCULATIONS) = 28564 SY *

SANITARY SEWER QUANTITIES								
REF. NO.	SHEET NO.	STATION					CONDUIT, MISC.: CONCRETE ENCASEMENT	611 FOOT
		STATION	OFFSET	STATION	OFFSET	SIDE		
E1	59	403+14.19	80.34	403+24.28	52.09	RT	30	
TOTALS CARRIED TO GENERAL SUMMARY							30	

WATER LINE QUANTITIES CHARLOE STREET							
REF. NO.	SHEET NO.	STATION		SIDE	INFO		
		IR 71 STATION	STATION		PIPE REMOVED, 24" AND UNDER	6" WATER MAIN, DUCTILE IRON PIPE ANSI CLASS 52, MECHANICAL JOINTS AND FITTINGS	FIRE HYDRANT AND GATE VALVE REMOVED AND RESET
W1	63	423+69.48	423+84.42	RT	38		
W2	63	423+69.48	423+91.41	RT		22	1
TOTALS CARRIED TO GENERAL SUMMARY					38	22	1

REF. NO.	SHEET NO.	STATION			202	607	625	FOR INFORMATION ONLY						
		STATION	STATION	SIDE	FENCE REMOVED FOOT	FENCE, TYPE CLT FOOT	FENCE LINE SEEDING & MULCHING FOOT	GROUND ROD EACH	END POST ASSEMBLY EACH	INTERMEDIATE ANCHOR POST ASSEMBLY EACH	ABUTMENT CONNECTOR EACH	STREAM CROSSING, TYPE 2 EACH	STREAM CROSSING, TYPE 3 EACH	
K = KENNEDY AVENUE 71 = I.R. 71 NORTHBOUND														
F1	231	15+50.00 (K)	18+94.00 (K)	LT		350			1	1	1			
F2	232	416+77.51	422+18.86 (71)	RT		547	377	3		6	1			
F3	233	424+28.86 (71)	426+35.42 (71)	RT		207	167		1	3		1		
F4	233-234	426+42.70 (71)	429+84.45 (71)	RT		363	343		1	5		2		
F5	234	431+90.00 (71)	432+30.00 (71)	RT		40	15			2		1		
F6	235	437+28.90 (71)	437+43.67 (71)	RT		39	23		1	1				
F7	235	437+55.95 (71)	438+05.43 (71)	RT		70	42		1	2				1
F8	235	439+24.84 (71)	441+80.07 (71)	RT			258			3		1		
F9	231	14+81.14 (K)	18+94.00 (K)	LT	418									
F10	232-234	416+91.22 (71)	429+84.45 (71)	RT	1233									
F11	234	431+90.00 (71)	432+30.00 (71)	RT	40									
F12	235	437+28.90 (71)	437+39.73 (71)	RT	56									
F13	235	437+52.24 (71)	438+05.43 (71)	RT	75									
F14	235	439+24.84 (71)	441+80.07 (71)	RT	258									
SUBTOTAL					2080	1874	1159	3	5	23	2	5	1	
TOTALS CARRIED TO GENERAL SUMMARY					2080	1874	1159	3						

CALCULATED
LEH
CHECKED
SNS

SUBSUMMARY

HAM-71-6.86

V:\1736\active\173620049\design\94741\roadway\sheet\94741_GS001.dgn 9/27/2017 10:41:21 AM pdurham

REF. NO.	SHEET NO.	STATION		SIDE	202													608	609	SPECIAL		REMARKS
		FROM	TO		HEADWALL REMOVED	PAVEMENT REMOVED, CONCRETE	WALK REMOVED	CONCRETE BARRIER REMOVED	CURB REMOVED	GUTTER REMOVED	PIPE REMOVED, 24" AND UNDER	PIPE REMOVED, OVER 24"	GUARDRAIL REMOVED	MANHOLE REMOVED	BUILDING DEMOLISHED	CATCH BASIN REMOVED	REMOVAL MISC.:	5" CONCRETE WALK	4" CONCRETE TRAFFIC ISLAND	FILL & PLUG EXISTING CONDUIT	ASBESTOS INSPECTION	
					EACH	SQ YD	SQ FT	FOOT	FOOT	SQ YD	FOOT	FOOT	FOOT	EACH	LUMP	EACH	LUMP	SQ FT	SQ YD	FOOT	EACH	
R1	58	399+00.00	399+61.00	RT				61														
R2	58	399+61.00	401+77.00	RT							216.00											
R3	58-59	401+77.00	403+90.00	RT				215														
R4	58	399+00.00	403+00.00	RT		559																
R5		NOT USED																				
R6	59	403+00.00	406+22.94	RT		820																
R7		NOT USED																				
R8	60	411+85.93	412+50.89	RT	1					126				3								
R9	60-61	411+39.04	414+90.75	RT				360														
R10	60	411+16.57	413+00.00	RT		578																
R11	61	414+90.75	416+47.82	RT									153.00									
R12	61	416+47.82	417+41.36	RT				91														
R13	61	412+91.78	417+96.00	RT													347					
R14	61	413+00.00	418+00.00	RT		1001																
R15	61	415+51.00		RT						4												
R16		NOT USED																				
R17	62-63	420+80.19	423+03.32	RT									212.50									
R18	62	418+00.00	422+53.07	RT		329																
R19	63-64	425+30.86	429+38.07	RT									400.00									
R20		NOT USED																				
R21	65	436+55.05		RT						8												
R22	65-70	435+29.69	463+00.00	RT									2775.00									
R23	68	450+00.94	450+89.39	RT	1							95		1								
R24		NOT USED																				
R25	60,71	412+03.60 P	14+67.00 K	LT/LT									675.00									
R26	60,71	411+96.04 P	13+87.47 K	LT/LT		1747																
R27	71	409+95.00 P	411+76.00 N	RT/RT	1					237				1								
R28	71	12+19.34 K	12+69.46 K	LT						72				1								
R29	71	12+69.46 K		LT						4	8											
R30	71	413+28.00 N	12+69.46 K	RT/LT							144											
R31	71	411+69.84 N	413+84.40 N	RT/LT						134												
R32	71	11+18.86 K	11+92.00 K	LT				83														
R33	71	12+10.65 K	13+78.92 K	LT				581														
R34	71	13+87.88 K	15+31.00 K	LT				146														
R35	61	17+63.00 K	18+88.00 K	LT									125.00									
R36	71	412+22.63 N	412+56.98 N	RT											LUMP					LIGHT TOWER RETAINING WALL		
R37	71	413+03.47 N	413+10.65 N	RT	1					46				1								
R38	71	14+50.00 K		LT/RT										1				50		PLUG AND SEAL 12" CONDUIT		
R39		NOT USED																				
R40	59,72-73	406+22.94 I.R. 71	28+04.56 R	RT/RT		1899																
R41	72-73	25+93.70 R	27+14.22 R	RT									387.50									
R42	72	24+71.24 R	25+62.00 R	RT				310														
R43	72	26+59.27 R	27+29.91 R	RT	1									1								
R44	72	24+71.24 R	28+52.70 R	RT													1902					
R45	72	24+71.24 R	27+52.00 R	RT				397														
R46	72	27+32.29 R	28+52.70 R	RT									125.00									
R47	72	25+33.59 R	25+50.00 R	RT						28				1								
R48	72	23+22.76 R	28+70.09 R	RT		573																
R50	63	CHARLOE STREET																				
R51	63	423+45.15 I.R. 71	423+64.84 I.R. 71	RT				234														
R52	63	422+76.10 I.R. 71	423+45.51 I.R. 71	RT				361					LUMP						1	PARCEL NO. 36, 1 1/2 STORY RESIDENCE		
R52	63	423+16.01 I.R. 71	423+60.92 I.R. 71	RT		38								LUMP						TWO BLOCK RETAINING WALLS (20' AND 24' LONG)		
TOTALS CARRIED TO GENERAL SUMMARY					5	7544	905	727	1207	134	599	247	5069	1	LUMP	9	LUMP	1902	347	50	1	

ROADWAY QUANTITIES

HAM-71-6.86

CALCULATED
LEH
CHECKED
SNS

50
253

V:\1736\active\173620049\design\94741\roadway\sheet\94741_GS002.dgn 9/27/2017 10:41:21 AM pdurham

REF. NO.	SHEET NO.	STATION		SIDE	518			606			608	609		622			626			
		FROM	TO		SCUPPER MISC.: PLUG SCUPPER	GUARDRAIL, TYPE MGS	ANCHOR ASSEMBLY, MGS TYPE E	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2	BRIDGE TERMINAL ASSEMBLY, TYPE 2, AS PER PLAN	CURB RAMP, TYPE A1	CURB, TYPE 4-C	CURB, TYPE 6	4" CONCRETE TRAFFIC ISLAND	CONCRETE BARRIER, SINGLE SLOPE, TYPE D	CONCRETE BARRIER END SECTION, TYPE D	CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE D	BARRIER REFLECTOR, TYPE 1, 1WAY	BARRIER REFLECTOR, TYPE 2, 1WAY	BARRIER REFLECTOR, TYPE 2, BIDIRECTIONAL
					EACH	FOOT	EACH	EACH	EACH	SQ FT	FOOT	FOOT	SQ YD	FOOT	EACH	EACH	EACH	EACH	EACH	
I.R. 71																				
G1	58-59	399+98.00	403+10.50	RT		287.50		1	1									3		
G2	60	411+15.23	412+40.23	RT		50		1										2		
G3	66-70	440+68.00	463+00.00	RT		2237.50			1									22		
RAMP P																				
G4	60-61	412+32.58	413+10.60	LT		12.50		1										2		
G5	60-61,71	18+90.39 KENNEDY	412+75.60	LT/RT		812.50			1									16		
RIDGE AVENUE																				
G6	72	27+34.00	28+53.30	RT		50		1	1										3	
I.R. 71																				
C1	58-59	402+91.90	403+09.90	RT															18	
C2	60	412+21.63	412+39.63	RT															18	
RAMP P																				
C3	60-61	412+92.00	413+10.00	LT															18	
C4	60	412+57.00	412+75.00	RT															18	
C5	61	417+96.00	418+00.00	LT															12	
C6	71	408+22.24	408+79.25	RT						108		184.50	122							
RAMP N																				
C7	71	412+00.00	414+00.00	LT															401.50	
KENNEDY AVENUE																				
C8	71	11+18.86	413+66.53 RAMP N	LT/RT															277	
C9	71	408+92.10 RAMP P	15+31.00	RT/LT															117	
RIDGE AVENUE																				
C10	72	24+71.24	28+52.70	RT															392	
CHARLOE STREET																				
C11	63	423+20.06 I.R. 71	424+04.08 I.R. 71	RT															141	
I.R. 71																				
B1	58	399+00.00	400+00.00	RT										73	1	1		2		
B2	59	403+09.90	405+01.47	RT										76	2			1		
B3	60-61	412+39.63	417+96.00	RT										507	1	3		6		
B4	62-66	418+00.00	440+70.00	RT										1911	1	9		21		
RAMP P																				
B5	61	413+10.00	417+96.00	LT										463	1	1		6		
B6	60-61	412+75.00	418+00.00	RT										434	1	3		6		
STRUCTURAL WORK KENNEDY AVENUE																				
SW1	61	19+16.33	20+11.42	LT/RT	18															
TOTALS CARRIED TO GENERAL SUMMARY					18	3450	3	5	2	1	108	72	1525	190	3464	7	17	42	45	3

CALCULATED	LEH	CHECKED	SNS
ROADWAY QUANTITIES			
HAM-71-6.86			
51			
253			

V:\1736\active\173620049\design\94741\roadway\sheet\94741_GS003.dgn 9/27/2017 10:41:22 AM palurham

REF. NO.	SHEET NO.	STATION		SIDE	COMPUTER GENERATED AREA SQ FT	206		254	302		304	407		ANTI-SEGREGATION EQUIPMENT (COMPUTER GENERATED) CU YD	442		452	REMARKS		
		FROM	TO			CEMENT STABILIZED SUBGRADE, 12 INCHES DEEP (AREA/9) SQ YD	CEMENT STABILIZED SUBGRADE, 16 INCHES DEEP (AREA/9) SQ YD	PAVEMENT PLANING, ASPHALT CONCRETE (AREA/9) SQ YD	8" ASPHALT CONCRETE BASE, PG64-22 (AREAX0.67/27) CU YD	10' ASPHALT CONCRETE BASE, PG64-22 (AREAX0.833/27) CU YD	6" AGGREGATE BASE (AREAX0.50/27) CU YD	TACK COAT 0.075/SY (AREAX0.075/9) GAL	NON-TRACKING TACK COAT 0.04 GAL/SY (AREAX0.04/9) GAL		1 1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446) (AREAX0.125/27) CU YD	1 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446) (AREAX0.146/27) CU YD	13.5" NON-REINFORCED CONCRETE PAVEMENT, CLASS CC WITH OC/OA (AREA/9) SQ YD			
I.R. 71																				
P1	58	399+00.00	403+00.00	RT	12359		1437.00			391.20	239.50	105.67		48.35		68.03		ADD 321 SF FOR 302, 407; ADD 574 SF FOR 206, 304; ADD 222 SF FOR 442		
P2	59	403+00.00	408+00.00	RT	15656		1803.89			492.61	300.65	133.06		66.67		85.77		ADD 311 SF FOR 302, 407; ADD 579 SF FOR 206, 304; ADD 205 SF FOR 442		
P3	60	408+00.00	413+00.00	RT	12589		1470.11			396.88	245.02	107.20		36.34		68.78		ADD 275 SF FOR 302, 407; ADD 642 SF FOR 206, 304; ADD 131 SF FOR 442		
P4	61	413+00.00	418+00.00	RT	11825		1431.67			397.40	238.61	107.34		32.24		69.64		ADD 1056 SF FOR 302, 407; ADD 1060 SF FOR 206, 304; ADD 1054 SF FOR 442		
P5	62	418+00.00	423+00.00	RT	25856		2986.78			829.33	497.80	224.01		119.26		145.35		ADD 1025 SF FOR 302, 407; ADD 1025 SF FOR 206, 304; ADD 1024 SF FOR 442		
P6	63	423+00.00	428+00.00	RT	21196		2470.11			685.87	411.69	185.26		93.89		120.21		ADD 1035 SF FOR 302, 407; ADD 1035 SF FOR 206, 304; ADD 1034 SF FOR 442		
P7	64	428+00.00	433+00.00	RT	16844		1990.89			552.80	331.81	149.32		69.61		96.89		ADD 1074 SF FOR 302, 407; ADD 1074 SF FOR 206, 304; ADD 1074 SF FOR 442		
P8	65	433+00.00	439+00.00	RT	13058		1575.67			437.51	262.61	118.18		44.56		76.68		ADD 1123 SF FOR 302, 407; ADD 1123 SF FOR 206, 304; ADD 1123 SF FOR 442		
P9	66	439+00.00	444+00.00	RT	12000		1417.22			384.82	236.20	103.94		32.41		66.88		ADD 473 SF FOR 302, 407; ADD 755 SF FOR 206, 304; ADD 369 SF FOR 442		
P10	67	444+00.00	449+00.00	RT	12000		1398.33			375.31	233.06	101.38		32.41		64.89		ADD 165 SF FOR 302, 407; ADD 585 SF FOR 206, 304		
P11	68	449+00.00	454+00.00	RT	12000		1398.33			375.31	233.06	101.38		32.41		64.89		ADD 165 SF FOR 302, 407; ADD 585 SF FOR 206, 304		
P12	69	454+00.00	459+00.00	RT	12000		1398.33			375.31	233.06	101.38		32.41		64.89		ADD 165 SF FOR 302, 407; ADD 585 SF FOR 206, 304		
P13	70	459+00.00	463+00.00	RT	8864		1036.89			277.54	172.81	74.97		23.03		47.93		ADD 132 SF FOR 302, 407; ADD 468 SF FOR 206, 304		
RAMP N																				
P14	60	408+22.30	410+50.00	LT/RT	5861		728.56				121.43					651.22		ADD 696 SF FOR 206, 304		
P15	71	410+50.00	12+73.83 KENNEDY	LT/RT	10183		1255.44				209.24					1131.44		ADD 1116 SF FOR 206, 304		
RAMP P																				
P16	71	15+31.00 KENNEDY	411+50.00	LT/RT	14392		1737.22				289.54					1599.11		ADD 1243 SF FOR 304, 206		
P17	60	411+50.00	413+00.00	LT/RT	4207		519.67				86.61					467.44		ADD 470 SF FOR 304, 206		
P18	61	413+00.00	418+00.00	LT/RT	13187		1706.78				284.46					1706.78		ADD 2174 SF FOR 206, 304, 452		
RIDGE AVENUE																				
P19	72	23+22.76	281+70.09	RT	6616	800.44			164.17		133.41	55.13	29.40		30.63	35.78		ADD 588.5 SF FOR 206, 304		
CHARLOE DRIVE																				
P20	63	423+45.80 (I.R. 71)	423+99.54 (I.R. 71)	RT	1615			179.44				13.46			7.48					
P21	63	423+21.19 (I.R. 71)	423+64.41 (I.R. 71)	RT	871				21.61		18.61	7.26	3.87		4.03	4.71		ADD 134 SF FOR 304		
SUBTOTAL																				
					800.44	27762.89	179.44	185.78	5971.89	4779.18	1688.94	33.27	663.59	42.14	1081.32	5555.99				
TOTALS CARRIED TO GENERAL SUMMARY					801	27763	180	6158	4780	1689	34	664	43	1082	5556					

CALCULATED	LEH	CHECKED	SNS
PAVEMENT QUANTITIES			
HAM-71-6.86			
52			
253			

V:\1736\active\173620049\design\94741\drainage\sheet\94741_DS002.dgn 9/27/2017 10:41:22 AM padurham

REF. NO.	SHEET NO.	STATION <i>P = RAMP P N = RAMP N K = KENNEDY R = RIDGE</i>		SIDE	602										611							
					CONCRETE MASONRY	12" CONDUIT, TYPE C	15" CONDUIT, TYPE B	15" CONDUIT, TYPE C	15" CONDUIT, TYPE F	18" CONDUIT, TYPE B	18" CONDUIT, TYPE C	24" CONDUIT, TYPE C	27" CONDUIT, TYPE C	30" CONDUIT, TYPE B	30" CONDUIT, TYPE C	48" CONDUIT, TYPE C	CATCH BASIN, NO. 3	CATCH BASIN, NO. 3A	CATCH BASIN, NO. 2-2B	CATCH BASIN, NO. 2-3	INLET, NO. 3 FOR SINGLE SLOPE BARRIER, TYPE D	MANHOLE, NO. 3
					CU YD	FOOT	FOOT	FOOT	FOOT	FOOT	FOOT	FOOT	FOOT	FOOT	FOOT	FOOT	EACH	EACH	EACH	EACH	EACH	EACH
FROM	TO																					
D1	60,163	412+50.93	413+00.00 I.R. 71	RT			49												1			
D2	60,163	411+09.14	412+50.93 I.R. 71	RT					13				159							1		
D3	60,71,163	411+07.22 P	411+09.14 I.R. 71	RT								106					1					
D4	71,163	411+07.22 P	412+05.00 N	RT/LT											85			1				
D5	71,163-164	412+05.00 N	412+25.00 N	LT/RT											148					1		
D6	71,163	412+05.00 N	412+20.00 N	LT			19											1				
D7	71,163	410+15.17 P	412+24.00 N	LT			4										1					
D8	71,164	412+25.00 N	12+69.48 K	RT/LT											235				1			
D9	71,164	12+69.48 K		LT		6							6							1		
D10	62,163	418+00.00 I.R. 71	419+00.00 I.R. 71	RT						94									1			
D11	61,163	418+00.00 I.R. 71	417+55.00 P	RT						42									1			
D12	61,163	416+00.00 P	417+55.00 P	RT						155										1		
D13	61,163	417+55.00 P		RT			6										1					
D14	61,163	415+60.74 P	416+00.00 P	RT					36										1			
D15	61,163	415+03.55 P	415+60.74	RT			15			52									1			
D16	65,164	436+00.00 I.R. 71	436+55.05 I.R. 71	RT			55												1			
D17	65,164	436+55.05 I.R. 71	437+00.00 I.R. 71	RT			45												1			
D18	65,164	436+55.05 I.R. 71		RT			8													1		
D19	72,164	25+33.59 R	25+50.00 R	RT			21	4									1			1		
D20	61,165	18+85.00 K	19+10.00 K	LT/RT			54															
D21	61,165	18+85.00 K	414+99.50 P	LT/RT	0.46				96			20				1				1		
D22	68,164	449+93.71 I.R. 71	451+00.00 I.R. 71	RT	0.46							55	4		52					1		
D23	71,165	409+98.38 P	409+59.31 P	RT	0.33					62												
D24	71,165	409+86.60 P	410+03.25 P	LT	0.33					15	6									1		
TOTALS CARRIED TO GENERAL SUMMARY					1.58	6	276	4	96	340	129	346	4	239	235	52	1	4	2	2	6	10

CALCULATED	LEH
	CHECKED
SNS	
DRAINAGE SUBSUMMARY	
HAM-71-6.86	
53	
253	

V:\1736\active\173620049\design\94741\drainage\sheet\94741_DS003.dgn 9/27/2017 10:41:23 AM padurham

REF. NO.	SHEET NO.	STATION		SIDE	203			601			670		670								
		FROM	TO		ROADWAY, MISC.: HIGH PERFORMANCE TURF REINFORCEMENT MAT, AS PER PLAN	TIED CONCRETE BLOCK MAT, TYPE 1	ROCK CHANNEL PROTECTION, TYPE B WITH GEOTEXTILE FABRIC	ROCK CHANNEL PROTECTION, TYPE C WITH GEOTEXTILE FABRIC	PAVED GUTTER, TYPE 1-2	PAVED GUTTER, TYPE 1-2, AS PER PLAN	PAVED GUTTER, TYPE 1-6, AS PER PLAN	SLOPE EROSION PROTECTION (VEGETATED FILTER STRIP)	DITCH EROSION PROTECTION MAT, TYPE A (* VEGETATED BIOFILTER)								
					SQ YD	SQ YD	CU YD	CU YD	FOOT	FOOT	FOOT	SQ YD	SQ YD								
		I.R. 71																			
D25	59	403+25.00	403+90.00	RT					65												
D26	60	408+50.00	412+50.00	RT									351								
D27	61	414+81.31	414+93.67	RT				2													
D28	61-63	417+50.00	424+50.00	RT					663												
D29	63	424+83.56	426+34.30	RT					148												
D30	63	426+40.14	427+50.00	RT																	
D31	64	428+50.00	429+19.72	RT																	
D32	64	429+24.18	430+00.00	RT																	
D33	64	431+50.00	432+07.38	RT																	
D34	64	432+13.19	433+00.00	RT																	
D35	65	434+50.00	436+00.00	RT																	
D36	66	439+55.70	439+69.87	RT																	
D37	66-68	439+69.87	449+72.00	RT							1002										
D38	66	443+50.00		RT		27															
D39	68	449+50.00		RT		32															
D40	68	451+00.00	452+00.00	RT																	
D41	69	456+50.00		RT																	
D42	61-63	417+50.00	424+50.00	RT																	
D43	66	440+25.00	441+25.00	RT																	
D44	67	446+00.00	447+75.00	RT																	
		RAMP P																			
D45	71	408+83.00	414+07.28	RT																	
D46	61	415+50.88	416+44.82	RT																	
D47	61	417+13.19	417+55.00	RT																	
		RAMP N																			
D48	71	409+50.00	412+25.00	RT																	
D49	71	412+25.00	414+74.25	RT																	
D50	57	409+25.00 (N)	411+45.00 (N)	LT																	
D51	57	409+75.00 (I.R. 71)	411+95.00 (I.R. 71)	RT																	
D52	57	411+05.00 (RAMP P)	412+65.00	LT																	
D53	70	459+00.00 (I.R. 71)	462+50.00 (I.R. 71)	RT																	
TOTALS CARRIED TO GENERAL SUMMARY						4928		92	24	121	901	111	1002		2700	1582					

CALCULATED
LEH
CHECKED
SNS

DRAINAGE SUBSUMMARY

HAM-71-6.86

V:\1736\active\17362004g\design\94741\drainage\sheets\94741_DS001.dgn 9/27/2017 10:41:23 AM pdurhohm

REF. NO.	SHEET NO.	STATION		SIDE	BEGINNING ELEVATION	ENDING ELEVATION	OUTLET STATION	OUTLET OFFSET	OUTLET FLOW ELEVATION	FOR INFORMATION ONLY																	
										FROM	TO	6" SHALLOW PIPE UNDERDRAINS 707.31, 707.41	605			611		OUTLET INTO UNDERDRAIN	OUTLET INTO DRAINAGE STRUCTURE	11.25° BEND	22.50° BEND	45° BEND	90° BEND	END CAP	TEE	CROSS	WYE
													FOOT	FOOT	FOOT	FOOT	FOOT										
		I.R. 71																									
U1	58	399+00.00	402+00.00	RT	562.97	562.90	399+00.00	49.00	562.89																		
U2	58-60	402+00.00	412+45.92	RT	562.97	553.26	412+50.92	73.00	552.36	959							1	1			1						
U3	58	399+00.00	399+99.94	RT	563.06	562.89	399+00.00	49.00	562.89	102													1				
U4	58-60	399+99.94	408+22.30 N	RT	563.06	557.57	408+22.30 N	9.00	557.32	736												1					
U5	58	398+99.91	399+99.95	RT	563.74	563.49	399+00.00	60.49	562.89														1				
U6	58-60	399+99.95	408+22.30 N	RT	563.74	557.32	408+22.30	9.00	557.32		22	713												1			
U7	60	408+24.20	412+45.92	RT	558.87	553.07	412+45.92	67.00	553.07	422															1		
U8	60	408+24.20	412+45.92	RT	558.39	553.59	412+50.92	73.00	553.20			422	8				1	1	1								
U9	60-61	412+55.92	418+00.00	RT	562.82	553.24	412+50.92	73.00	552.36	537			15				1	1			1						
U10	62-63	412+55.92	417+98.00	RT	561.97	553.05	412+55.92	67.00	553.05	533												1					
U11	60	412+55.92	412+87.95	RT	553.65	553.57	412+50.92	73.00	553.20			32	8				1	1	1								
U12	61	413+00.00	416+50.00	RT	558.71	553.68	413+00.00	76.42	553.59			335	10			1			1								
U13	62-63	418+00.00	425+00.00	RT	580.72	562.82	418+00.00	111.42	559.21	680			56				1					3					
U14	62-63	418+00.00	425+00.00	RT	579.23	561.22	418+00.00	81.00	561.22	672																	
U15	62-63	418+00.00 P	425+00.00	RT	579.09	559.82	418+00.00	104.00	559.82	664																	
U16	62	418+00.00	418+87.84	RT	562.79	560.50	418+00.00	9.00	560.41			74	10				1							1			
U17	62-63	419+00.00	425+05.28	RT	578.62	563.20	419+00.00	109.38	563.11			562	10				1										
U18	63-64	425+00.00	430+00.00	RT	585.57	580.72	425+00.00	113.00	577.85	490			59	1			1						1	2	1		
U19	63-64	425+00.00	429+00.00	RT	584.75	579.23	425+00.00	76.00	579.23	389													1				
U20	63-64	425+05.28	430+00.00	RT	585.49	578.62	425+00.00	110.00	577.96			478	12										1				
U20.1	63-64	425+00.00	430+00.00	RT	584.81	578.09	425+00.00	91.00	578.09	484																	
U21	64-65	430+00.00	437+00.00	RT	585.57	581.98	437+00.00	76.42	581.30	616				24									1	1			
U22	64-65	430+00.00	436+00.00	RT	584.81	581.98	436+00.00	77.07	581.49	517				8									1				
U23	64-65	430+00.00	436+00.00	RT	585.49	582.58	436+00.00	77.07	582.49			507	10				1										
U24	65-66	437+00.00	443+50.00	RT	594.68	581.98	436+00.00	54.00	581.98	651													1				
U25	65	436+00.00	437+00.00	RT	581.90	581.75	437+00.00	69.16	581.75	100																	
U26	65	436+12.00	437+00.00	RT	582.55	582.38	437+00.00	76.42	582.29			78	10														
U27	65-66	437+00.00	443+50.00	RT	594.49	581.75	437+00.00	69.00	581.75	651																	
U28	65-66	437+00.00	443+45.00	RT	594.88	582.38	437+00.00	76.42	582.29			636	10				1	2									
U29	66-68	443+50.00	449+50.00	RT	610.36	594.68	443+50.00	93.83	591.34	600													1	1	1		
U30	66-68	443+50.00	449+50.00	RT	610.17	594.49	449+50.00	67.00	594.49	600																	
U31	66-68	443+45.00	449+45.00	RT	613.75	594.88	443+50.00	88.83	591.98			600	12					1						1	1		
U32	68-69	449+50.00	456+50.00	RT	627.88	610.36	449+50.00	93.83	607.13	700													1	1	1		
U33	68-69	449+50.00	456+50.00	RT	627.69	610.17	456+50.00	67.00	610.17	700															1		
U34	68-69	449+50.00	456+45.00	RT	628.11	613.75	449+45.00	83.80	607.75			700	12					1							1		
U35	69-70	456+50.00	461+99.89	RT	636.55	627.88	456+50.00	93.83	624.64	551														1	1		
U36	69-70	456+50.00	463+00.00	RT	638.30	637.69	456+50.00	67.00	627.69	659															1		
U37	69-70	456+45.00	463+00.00	RT	639.13	628.11	456+45.00	83.83	625.26			659	12					1							1		
U38	60-70	408+22.30	412+24.00	RT	557.23	551.28	412+24.00	19' LT	550.80	396														1			
U39	70	412+24.00	413+66.53	RT	552.07	551.28	412+24.14	8.00		143														1			
U40	70	413+76.53	412+69.48 K	RT	552.34	549.64	412+69.48 K	45.76' LT		106														1			
U41	70	411+31.00 K	410+16.53	RT	561.56	550.87	410+18.00	35.00	550.00	244													1	1			
U42	70	410+16.53	410+70.00	RT	551.39	550.87	410+16.53	7.00	550.87			52												1			
U43	60-61, 70	411+07.38	415+48.00	RT	554.12	550.05	411+07.22	14.92	550.05	419															1		
SUBTOTAL										14321	376	5898	537	5	23	21	4	6	11	7	14	18	7	7			
TOTALS CARRIED TO GENERAL SUMMARY										14321	376	5898	537	5													

CALCULATED
LEH
CHECKED
SNS

UNDERDRAIN SUBSUMMARY

HAM - 71 - 6.86

CENTERLINE CONTROL					
HAM-71-6.86 Job#173620049					
PROPOSED CENTERLINE COORDINATES					
I-71	Grid North	Grid East	C.S.F.	Project North	Project East
P.O.T. 404+87.57	431089.0412	1423357.5154	0.999919570	431123.7165	1423472.0053
T.S. 412+39.63	431440.2771	1423767.1336	0.999919570	431474.9806	1423881.6564
S.C. 418+39.63	431806.0392	1424241.8666	0.999919570	431840.7722	1424356.4276
C.S. 425+75.59	432063.0357	1424926.5847	0.999919570	432097.7893	1425041.2008
S.T. 431+75.59	432099.9623	1425524.7400	0.999919570	432134.7189	1425639.4042
P.O.T. 440+00.00	432106.8646	1426266.3383	0.999919570	432141.6218	1426381.0621
P.O.T. 450+00.00	432116.1708	1427266.2145	0.999919570	432150.9287	1427381.0188
T.S. 460+33.51	432125.7889	1428299.5966	0.999919570	432160.5476	1428414.4840
S.C. 464+33.51	432143.4573	1428698.9789	0.999919570	432178.2174	1428813.8984
KENNEDY RD.	Grid North	Grid East	C.S.F.	Project North	Project East
P.O.T. 6+58.45	430325.0229	1424052.9449	0.999919570	430359.6367	1424167.4907
P.O.T. 24+39.25	432096.9139	1424229.4692	0.999919570	432131.6703	1424344.0292

NOTE:
THE HORIZONTAL ALIGNMENT OF I.R. 71
AS SHOWN IN PART 1 DOES NOT MATCH
THE HORIZONTAL ALIGNMENT SHOWN IN
PART 2. SEE NOTE ON SHEET NO. 2.

PROJECT CONTROL							
HAM-71-6.86 Job#173620049							
CONTROL POINT COORDINATES AND MONUMENT LOCATION							
SOURCE OF CONTROL	Grid North	Grid East	C.S.F.	Project North	Project East	MON. TYPE AND ELEVATION	
						TYPE	ELEVATION
GPS POINT 1	430388.553	1422628.418	0.99991957	430423.172	1422742.849	I Pin Set	565.640
GPS POINT 2	431076.276	1423475.936	0.99991957	431110.950	1423590.435	I Pin Set	562.123
GPS POINT 3	432179.474	1429227.674	0.99991957	432214.237	1429342.636	I Pin Set	642.677
GPS POINT 4	432506.841	1429765.064	0.99991957	432541.630	1429880.069	I Pin Set	631.565
TRAVERSE	Grid North	Grid East	C.S.F.	Project North	Project East	TYPE	ELEVATION
Trav. Pt. 100	431633.435	1424121.589	0.99991957	431668.154	1424236.140	Mag Nail Set	561.694
Trav. Pt. 101	431831.115	1424427.598	0.99991957	431865.850	1424542.174	Mag Nail Set	572.518
Trav. Pt. 102	431941.789	1424688.912	0.99991957	431976.533	1424803.509	Mag Nail Set	580.628
Trav. Pt. 103	432018.172	1425069.708	0.99991957	432052.922	1425184.336	Mag Nail Set	587.240
Trav. Pt. 104	432029.989	1425510.475	0.99991957	432064.740	1425625.138	I Pin Set	588.801
Trav. Pt. 105	432035.145	1425933.302	0.99991957	432069.896	1426047.999	I Pin Set	585.179
Trav. Pt. 106	432038.923	1426352.165	0.99991957	432073.675	1426466.896	I Pin Set	590.486
Trav. Pt. 107	432042.080	1426752.812	0.99991957	432076.832	1426867.575	I Pin Set	601.211
Trav. Pt. 108	432046.228	1427171.182	0.99991957	432080.980	1427285.979	I Pin Set	612.255
Trav. Pt. 109	432049.952	1427595.969	0.99991957	432084.705	1427710.800	I Pin Set	623.196
Trav. Pt. 110	432055.321	1428139.876	0.99991957	432090.074	1428254.751	I Pin Set	635.049
Trav. Pt. 111	432077.654	1428757.552	0.99991957	432112.409	1428872.476	Mag Nail Set	644.440
BENCHMARKS	Grid North	Grid East	C.S.F.	Project North	Project East	TYPE	ELEVATION
TBM A	430508.072	1422786.300	0.99991957	430542.701	1422900.744	Cut Sq Conc Barrier	569.172
TBM B	430878.153	1423247.234	0.99991957	430912.811	1423361.715	Cut Sq Conc Barrier	568.280
TBM B-1	431309.092	1423775.629	0.99991957	431343.785	1423890.153	Cut Sq Conc Barrier	559.791
TBM C	431633.972	1424130.706	0.99991957	431668.692	1424245.258	Cut Sq Conc Barrier	564.250
TBM D	431926.420	1424671.534	0.99991957	431961.163	1424786.130	Cut Sq Conc Foun.	579.252
TBM E	432026.922	1425280.063	0.99991957	432061.673	1425394.708	"X" on Bolt	589.351
TBM F	432001.704	1425788.314	0.99991957	432036.452	1425902.999	R/R spike 10" Locust	587.265
TBM G	432034.060	1426193.277	0.99991957	432068.811	1426307.995	"X" on NW Bolt	587.818
TBM H	432041.136	1426667.722	0.99991957	432075.888	1426782.478	Cut Sq Conc Pullbox	598.850
TBM I	432041.150	1427024.687	0.99991957	432075.902	1427139.472	"X" on NW Bolt	607.423
TBM J	432050.305	1427654.818	0.99991957	432085.058	1427769.654	Cut Sq Conc Pullbox	624.962
TBM K	432053.982	1428342.899	0.99991957	432088.735	1428457.790	Cut Sq Conc Pullbox	637.988
TBM L	432122.566	1429006.464	0.99991957	432157.324	1429121.408	Cut Sq Conc Parapet	646.934

PROJECT DESCRIPTION

WIDENING OF NORTHBOUND I.R. 71 TO PROVIDE THREE CONTINUOUS THROUGH LANES THROUGH THE S.R. 562 INTERCHANGE. THIS WIDENING WILL RESULT IN ONE ADDITIONAL LANE FROM S.R. 562 TO RED BANK EXPRESSWAY. ADD ENTRANCE AND EXIT RAMP TO KENNEDY AVENUE FROM I.R. 71 NORTHBOUND. CLOSE EXISTING NORTHBOUND EXIT TO RIDGE AVENUE.

LATITUDE: 39°10'05"
LONGITUDE: 84°25'20"

USGS QUADRANT: CINCINNATI EAST, OHIO-HAMILTON CO.

ITEM 832 STORM WATER POLLUTION PREVENTION PLAN 1 LUMP
ITEM 832 EROSION CONTROL 165,000 EACH

QUANTITIES CARRIED TO GENERAL SUMMARY

ALL TOPSOIL IS PLACED 4" THICK

ITEM 659 TOPSOIL			
ITEM	CALC AREA	⊗ TOPSOIL	⊗⊗ TOPSOIL AS PER PLAN
		CU YD	CU YD
D42	37746 SFx4/12x1/27		466
D43	6804 SFx4/12x1/27		84
D44	14580 SFx4/12x1/27		180
D48	56542 SFx4/12x1/27	698.05	
D49	38789 SFx4/12x1/27	478.88	
D50	9404 SFx4/12x1/27	116.10	
D51	9415 SFx4/12x1/27	116.23	
D52	5501 SFx4/12x1/27	67.91	
D53	25724 SFx4/12x1/27	317.58	
TOTAL		1795	730

TOTALS CARRIED TO GENERAL SUMMARY

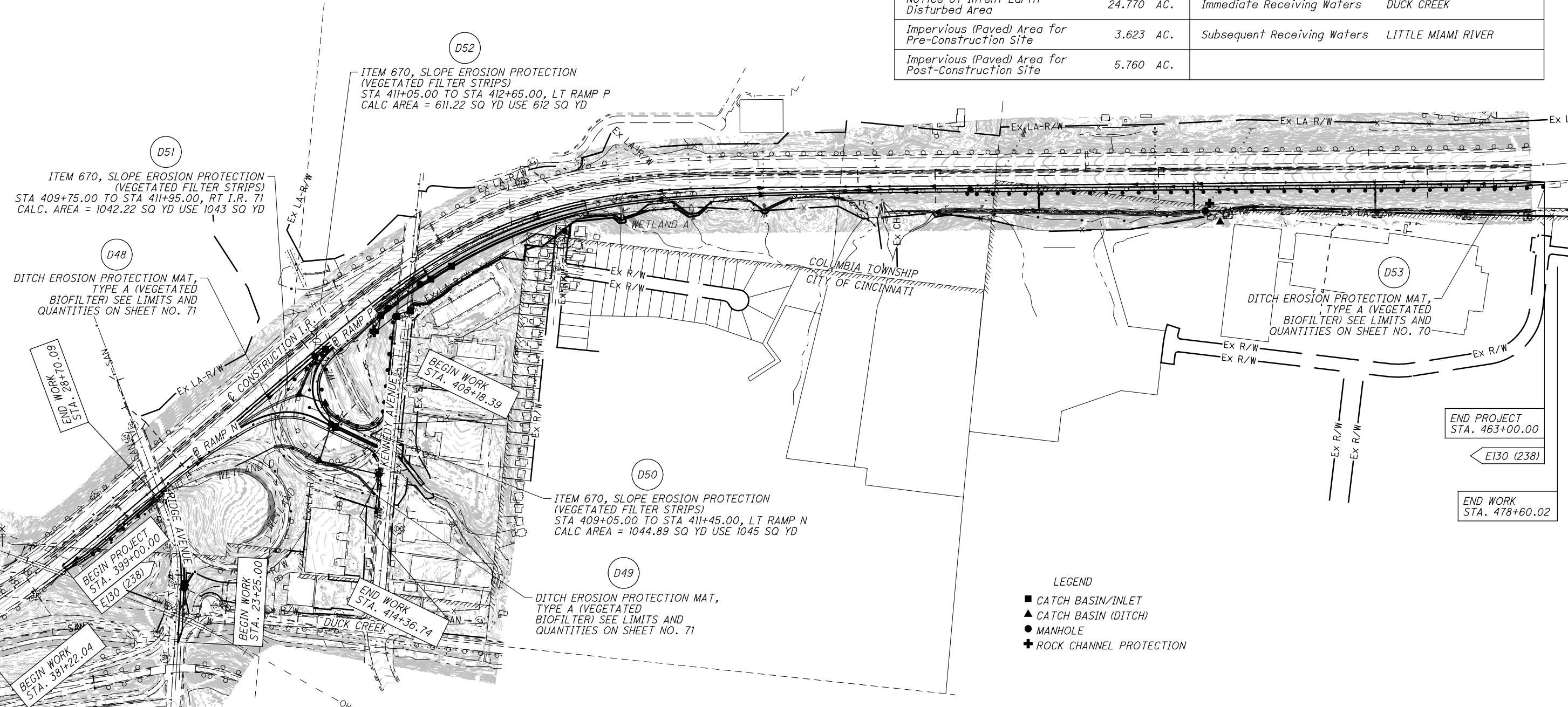
- ⊗ TOPSOIL REQUIRED FOR ITEM 670, SLOPE EROSION PROTECTION AND DITCH EROSION PROTECTION MAT, TYPE A (VEGETATED BIOFILTER)
- ⊗⊗ TOPSOIL REQUIRED FOR ITEM 203, HIGH PERFORMANCE TURF REINFORCEMENT MAT, AS PER PLAN

Linear BMP Locations					
Description	Start Lat.	Start Long.	End Lat.	End Long.	EDA Treatment Credit (Acres)
Vegetated Biofilter (D48)	39.16734877	84.42236056	39.16742745	84.42121447	1.49
Vegetated Biofilter (D49)	39.16707835	84.42045552	39.16742745	84.42121447	1.18
Vegetated Biofilter (D53)	39.1703301	84.40566957	39.17035596	84.40471596	1.25
Vegetated Filter Strip (D50)	39.16790503	84.42208128	39.16791389	84.4213449	0.23
Vegetated Filter Strip (D51)	39.16797159	84.42194611	39.16836403	84.42138288	0.39
Vegetated Filter Strip (D52)	39.16797131	84.42131064	39.16848015	84.42129438	0.14
Treatment Provided					4.68
*Treatment Required					4.65

*Calculated per L & D Vol. 2, Sec. 1115.7

PROJECT DATA			
Total Area (Right-of Way)	22.644 AC.	Runoff Coefficient for Pre-Construction Site	0.56
Project Earth Disturbed Area	23.270 AC.	Runoff Coefficient for Post-Construction Site	0.60
Estimated Contractor Earth Disturbed Area	1.500 AC.	Post Construction BMP:	VEGETATED FILTER STRIPS AND VEGETATED BIOFILTERS
Notice of Intent Earth Disturbed Area	24.770 AC.	Immediate Receiving Waters	DUCK CREEK
Impervious (Paved) Area for Pre-Construction Site	3.623 AC.	Subsequent Receiving Waters	LITTLE MIAMI RIVER
Impervious (Paved) Area for Post-Construction Site	5.760 AC.		

V:\1736\active\173620049\design\94741\roadway\sheet\94741_DE001.dgn 9/27/2017 10:41:26 AM pdurham



- LEGEND
- CATCH BASIN/INLET
 - ▲ CATCH BASIN (DITCH)
 - MANHOLE
 - ⊕ ROCK CHANNEL PROTECTION



SITE PLAN

HAM-71-6.86

V:\1736\active\173620049\design\94741\roadway\sheet\94741_GP001.dgn 9/27/2017 10:41:29 AM pdurham

BEGIN WORK
STA. 381+22.04

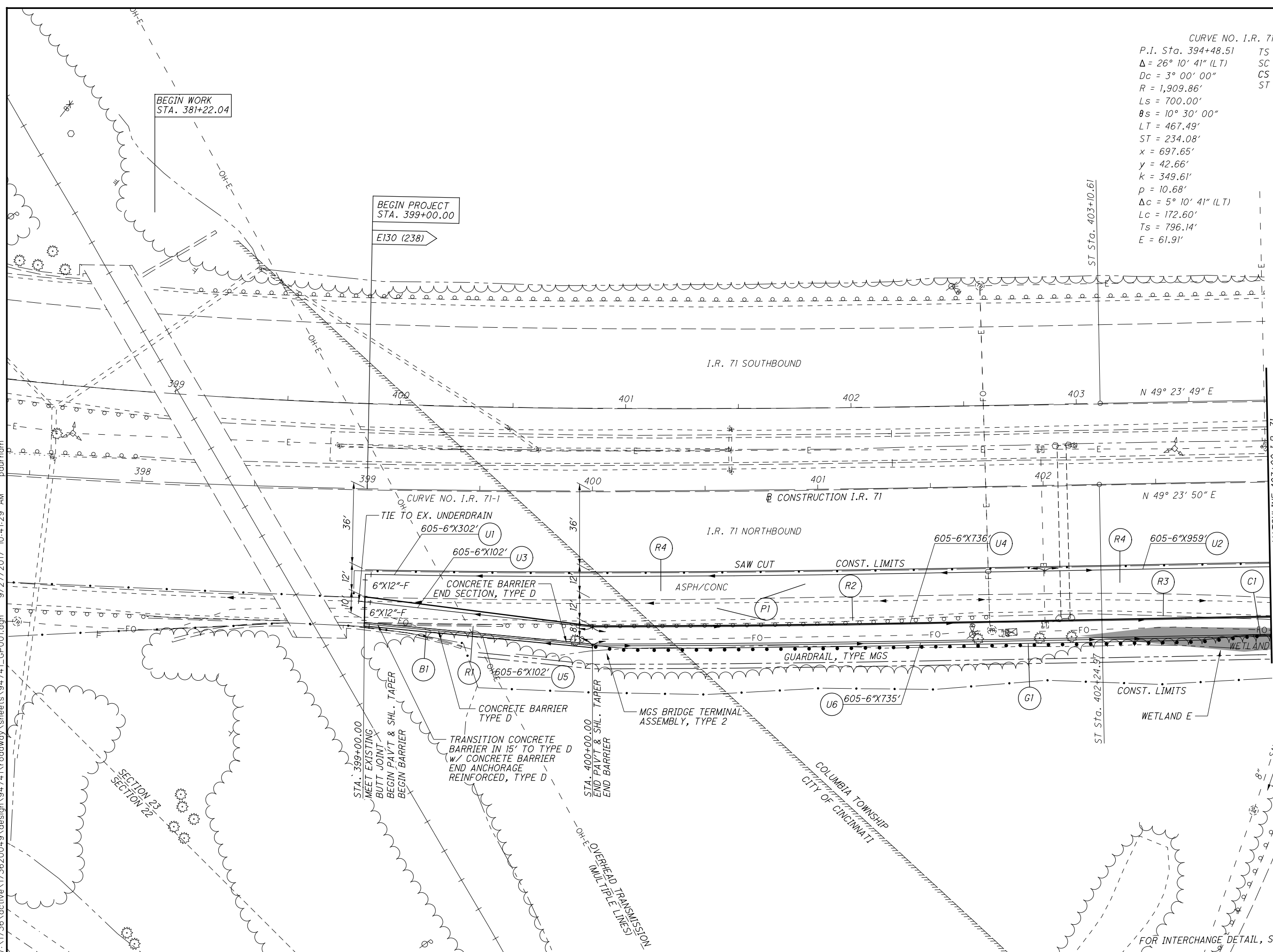
BEGIN PROJECT
STA. 399+00.00

E130 (238)

CURVE NO. I.R. 71-1
 P.I. Sta. 394+48.51 TS STA. 386+52.37
 $\Delta = 26^\circ 10' 41''$ (LT) SC STA. 393+52.37
 $D_c = 3^\circ 00' 00''$ CS STA. 395+24.97
 $R = 1,909.86'$ ST STA. 402+24.97
 $L_s = 700.00'$
 $\theta_s = 10^\circ 30' 00''$
 $LT = 467.49'$
 $ST = 234.08'$
 $x = 697.65'$
 $y = 42.66'$
 $k = 349.61'$
 $p = 10.68'$
 $\Delta_c = 5^\circ 10' 41''$ (LT)
 $L_c = 172.60'$
 $T_s = 796.14'$
 $E = 61.91'$



CALCULATED
LEH
CHECKED
SNS



MATCHLINE 403+00 I.R. 71

PLAN SHEET I.R. 71
 BEGIN TO STA 403+00.00

HAM-71-6.86

58
253

FOR INTERCHANGE DETAIL, SEE SHEET NO. 138



0 20 40
 HORIZONTAL SCALE IN FEET

CALCULATED
 LEH
 CHECKED
 SNS

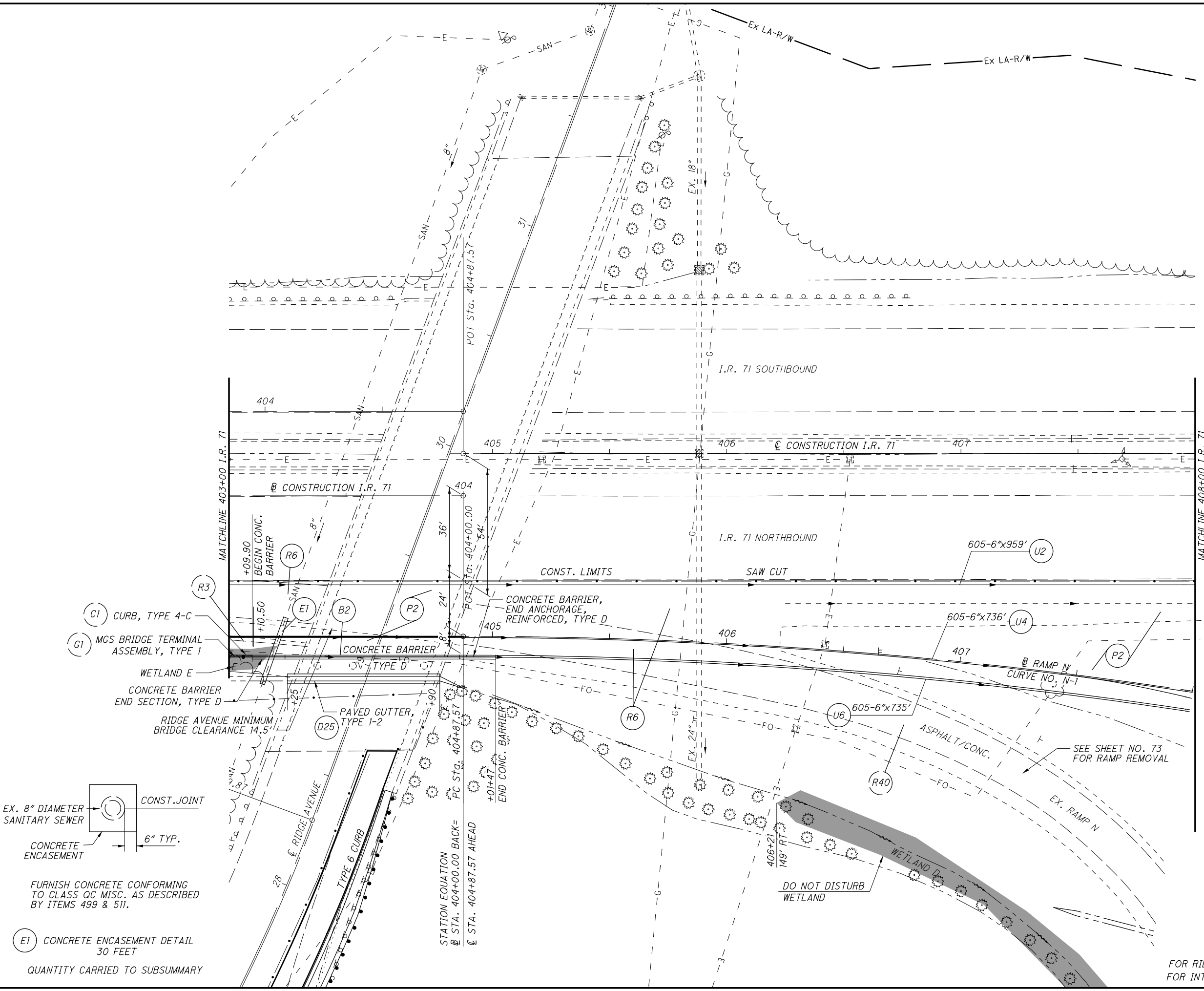
CURVE NO. N-1
 P.I. Sta. 406+55.30
 $\Delta = 9^\circ 12' 18''$ (RT)
 $Dc = 2^\circ 45' 00''$
 $R = 2,083.48'$
 $T = 167.73'$
 $L = 334.73'$
 $E = 6.74'$
 $C = 334.37'$
 C.B. = N $53^\circ 59' 25''$ E

PLAN SHEET I.R. 71
 STA 403+00.00 TO STA 408+00.00

HAM-71-6.86

59
 253

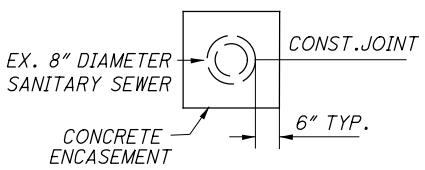
V:\1736\active\173620049\design\94741\roadway\sheet\94741_GP002.dgn 9/27/2017 10:41:30 AM pdurham



- (C1) CURB, TYPE 4-C
- (G1) MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1

WETLAND E
 CONCRETE BARRIER END SECTION, TYPE D
 RIDGE AVENUE MINIMUM BRIDGE CLEARANCE 14.5'

PAVED GUTTER, TYPE 1-2
 TYPE D CONCRETE BARRIER



FURNISH CONCRETE CONFORMING TO CLASS QC MISC. AS DESCRIBED BY ITEMS 499 & 511.

(E1) CONCRETE ENCASEMENT DETAIL 30 FEET

QUANTITY CARRIED TO SUBSUMMARY

STATION EQUATION
 @ STA. 404+00.00 BACK =
 @ STA. 404+87.57 AHEAD

SEE SHEET NO. 73 FOR RAMP REMOVAL

FOR RIDGE AVE. PLAN SEE SHEET NO. 72
 FOR INTERCHANGE DETAIL, SEE SHEET NO. 138

CURVE NO. N-1
 P.I. Sta. 406+55.30
 $\Delta = 9^\circ 12' 18''$ (RT)
 $D_c = 2^\circ 45' 00''$
 $R = 2,083.48'$
 $T = 167.73'$
 $L = 334.73'$
 $E = 6.74'$
 $C = 334.37'$
 $C.B. = N 53^\circ 59' 25'' E$
 $TS STA. 404+87.57$
 $CS STA. 408+22.30$

CURVE NO. N-2
 P.I. STA. 409+50.76
 $L_s = 200.00'$
 $f_s = 27^\circ 30' 00''$
 $LT = 128.45'$
 $ST = 74.97'$
 $x = 194.96'$
 $y = 34.62'$
 $k = 99.24'$
 $p = 6.36'$
 $CS STA. 408+22.30$
 $SC STA. 410+22.30$

CURVE NO. N-3
 P.I. Sta. 410+83.53
 $\Delta = 29^\circ 37' 39''$ (RT)
 $D_c = 24^\circ 45' 00''$
 $R = 231.50'$
 $T = 61.22'$
 $L = 119.71'$
 $E = 7.96'$
 $C = 118.38'$
 $C.B. = S 79^\circ 05' 36'' E$
 $SC STA. 410+22.30$
 $PT STA. 411+42.01$

CURVE NO. P-1
 P.I. Sta. 411+48.55
 $\Delta = 85^\circ 32' 39''$ (RT)
 $D_c = 38^\circ 00' 00''$
 $R = 150.78'$
 $T = 139.49'$
 $L = 225.12'$
 $E = 54.62'$
 $C = 204.78'$
 $C.B. = N 21^\circ 30' 27'' W$
 $PC STA. 410+09.06$
 $CS STA. 412+38.18$

CURVE NO. P-2
 P.I. STA. 412+85.39
 $L_s = 150.00'$
 $f_s = 28^\circ 30' 00''$
 $LT = 101.33'$
 $ST = 51.21'$
 $x = 146.33'$
 $y = 24.43'$
 $k = 74.39'$
 $p = 6.16'$
 $CS STA. 412+34.18$
 $ST STA. 413.84.18$

CURVE NO. I.R. 71-2
 P.I. Sta. 422+38.87
 $\Delta = 40^\circ 04' 44''$ (RT)
 $D_c = 3^\circ 00' 00''$
 $R = 1,909.86'$
 $L_s = 600.00'$
 $\theta_s = 9^\circ 00' 00''$
 $LT = 400.52'$
 $ST = 200.47'$
 $x = 598.52'$
 $y = 31.36'$
 $k = 299.75'$
 $p = 7.85'$
 $\Delta_c = 22^\circ 04' 44''$ (RT)
 $L_c = 735.96'$
 $T_s = 999.24'$
 $E = 131.43'$
 $C = 731.42'$
 $C1 = C2 = 599.34'$
 $C.B.1 = N 52^\circ 23' 47'' E$
 $C.B. = N 69^\circ 26' 12'' E$
 $C.B.2 = S 86^\circ 28' 36'' W$
 $TS STA. 412+39.63$
 $SC STA. 418+39.63$
 $CS STA. 425+75.59$
 $ST STA. 431+75.59$

PROFILE GRADE NOTE FOR I.R. 71
 SEE CROSS SECTIONS AND TYPICAL SECTION BETWEEN STA. 408+23.20 AND STA. 413+43.00 FOR ELEVATIONS AT EDGE OF TRAVELED WAY WITH NORMAL CROSS SLOPE OF .016 PER TYPICAL.

CALCULATED
 LEH
 CHECKED
 SNS

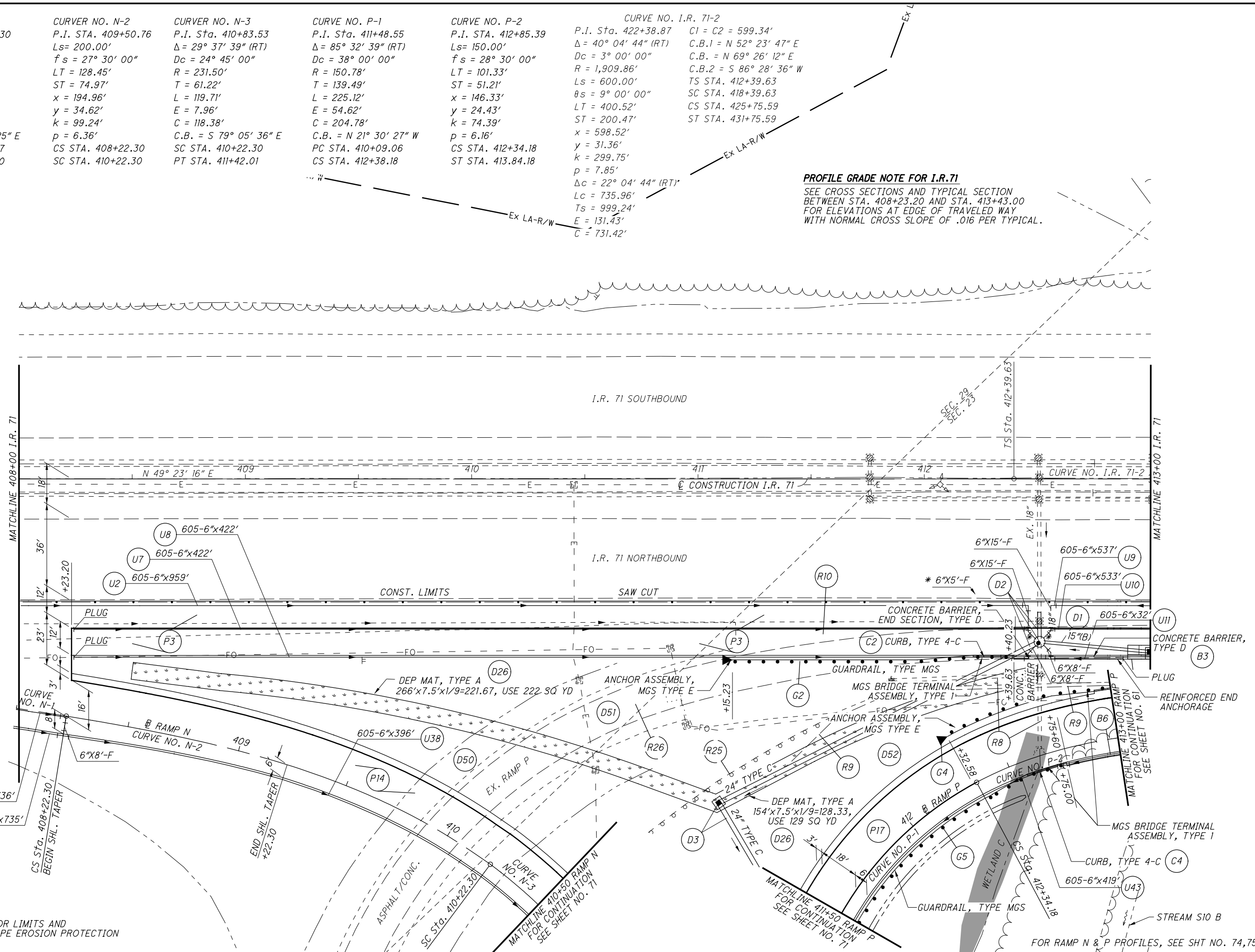
0 20 40
 HORIZONTAL SCALE IN FEET

PLAN SHEET I.R. 71
 STA 408+00.00 TO STA 413+00.00

HAM-71-6.86

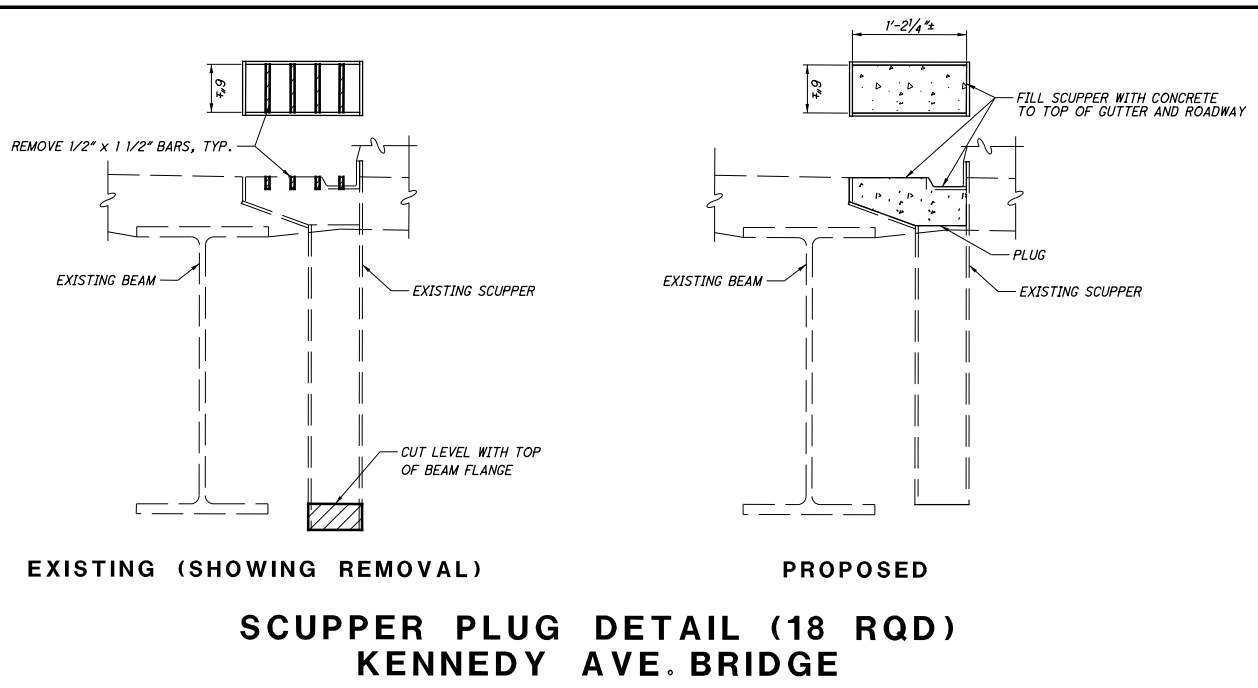
60
 253

V:\1736\active\173620049\design\roadway\sheet\94741\GP003.dgn 9/27/2017 10:41:31 AM pdurham

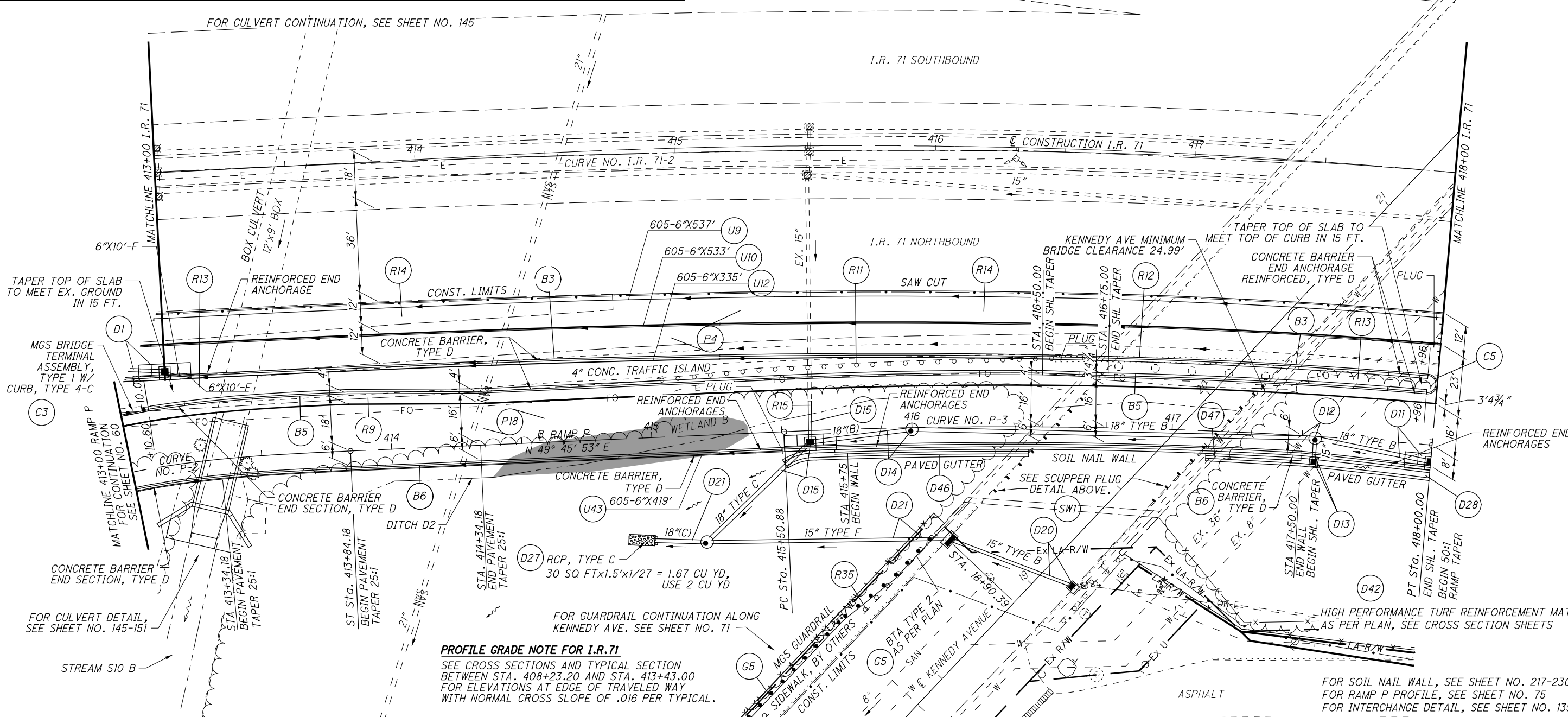
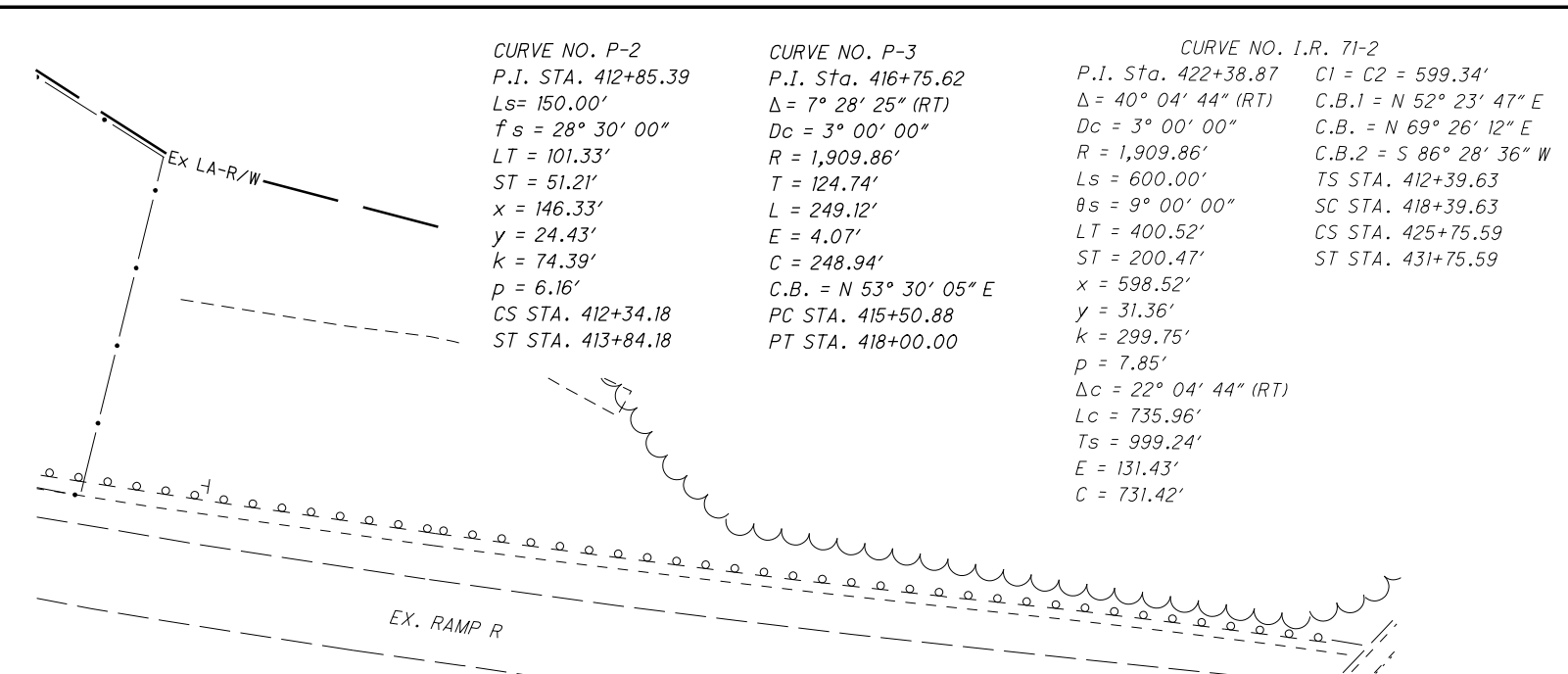


D50 - D52
 SEE SHEET NO. 57 FOR LIMITS AND
 QUANTITIES FOR SLOPE EROSION PROTECTION

FOR RAMP N & P PROFILES, SEE SHT NO. 74,75



**SCUPPER PLUG DETAIL (18 RQD)
KENNEDY AVE. BRIDGE**



PROFILE GRADE NOTE FOR I.R. 71
SEE CROSS SECTIONS AND TYPICAL SECTION BETWEEN STA. 408+23.20 AND STA. 413+43.00 FOR ELEVATIONS AT EDGE OF TRAVELED WAY WITH NORMAL CROSS SLOPE OF .016 PER TYPICAL.

FOR SOIL NAIL WALL, SEE SHEET NO. 217-230
FOR RAMP P PROFILE, SEE SHEET NO. 75
FOR INTERCHANGE DETAIL, SEE SHEET NO. 139

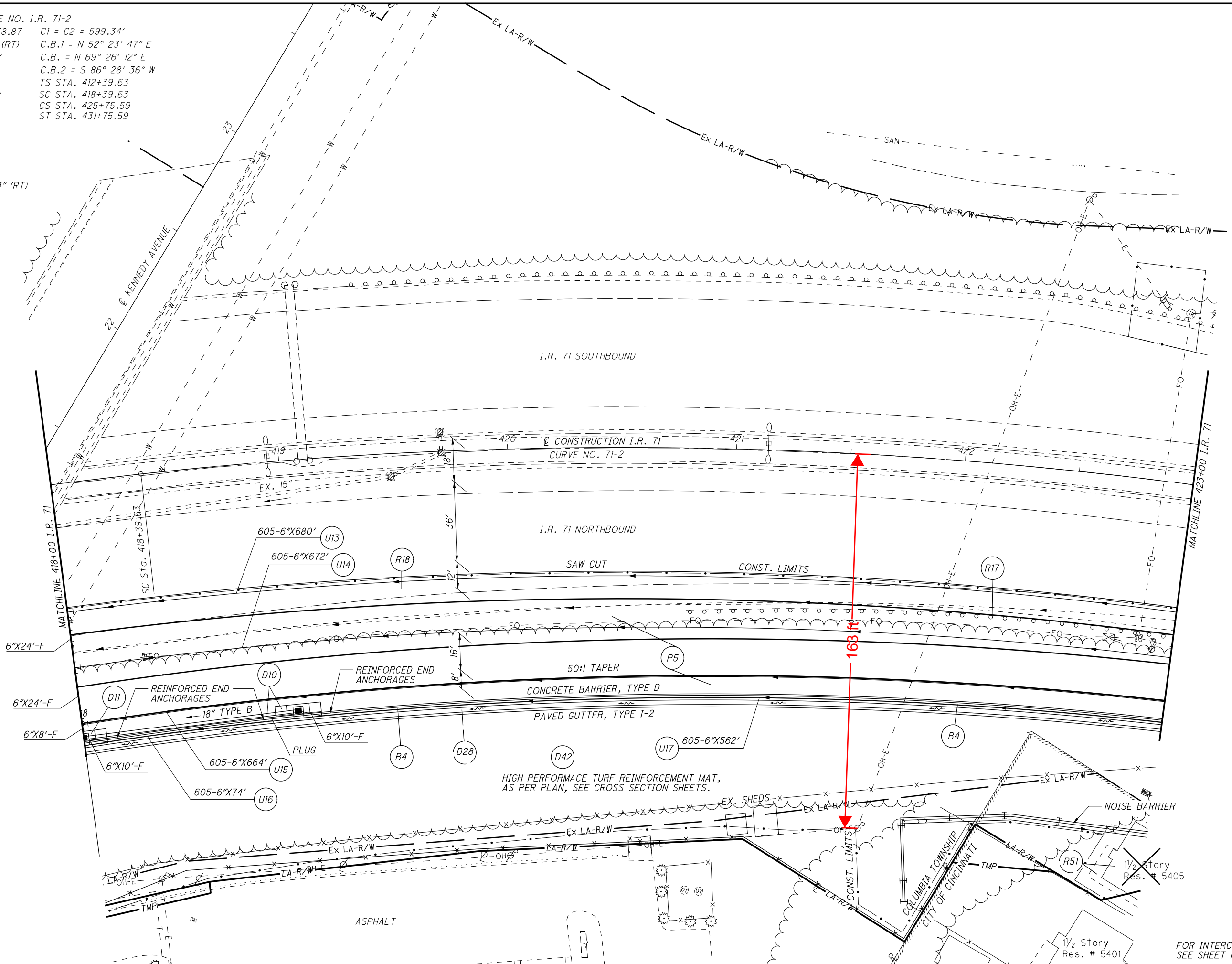
V:\1736\active\173620049\design\94741\roadway\sheet\94741_GPO04.dgn 9/27/2017 10:41:31 AM p.durham

CURVE NO. I.R. 71-2
 P.I. Sta. 422+38.87 C1 = C2 = 599.34'
 $\Delta = 40^\circ 04' 44''$ (RT) C.B.1 = N 52° 23' 47" E
 $D_c = 3^\circ 00' 00''$ C.B. = N 69° 26' 12" E
 $R = 1,909.86'$ C.B.2 = S 86° 28' 36" W
 $L_s = 600.00'$ TS STA. 412+39.63
 $\theta_s = 9^\circ 00' 00''$ SC STA. 418+39.63
 $LT = 400.52'$ CS STA. 425+75.59
 $ST = 200.47'$ ST STA. 431+75.59
 $x = 598.52'$
 $y = 31.36'$
 $k = 299.75'$
 $p = 7.85'$
 $\Delta c = 22^\circ 04' 44''$ (RT)
 $L_c = 735.96'$
 $T_s = 999.24'$
 $E = 131.43'$
 $C = 731.42'$

CALCULATED
 LEH
 CHECKED
 SNS

0 20 40
 HORIZONTAL
 SCALE IN FEET

PLAN SHEET I.R. 71
 STA 418+00.00 TO STA 423+00.00



HIGH PERFORMANCE TURF REINFORCEMENT MAT,
 AS PER PLAN, SEE CROSS SECTION SHEETS.

FOR INTERCHANGE DETAIL,
 SEE SHEET NO. 140

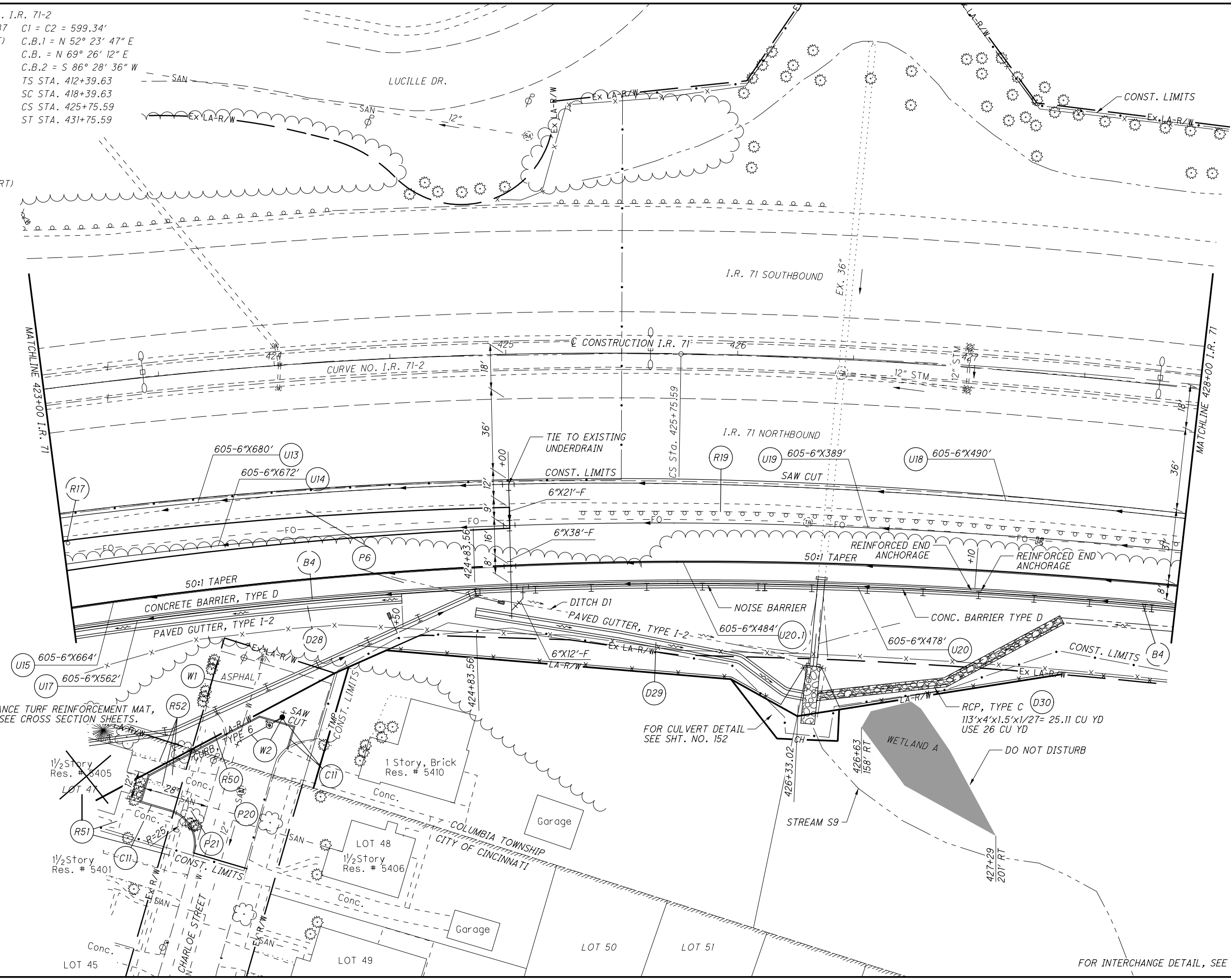
V:\1736\active\173620049\design\94741\roadway\sheets\94741_GP005.dgn 9/27/2017 10:41:32 AM pdurham

V:\1736\active\173620049\design\94741\roadway\sheets\94741_GP006.dgn 3/14/2018 11:35:21 AM pdurham

CURVE NO. I.R. 71-2
 P.I. Sta. 422+38.87 CI = C2 = 599.34'
 $\Delta = 40^\circ 04' 44''$ (RT) C.B.1 = N 52° 23' 47" E
 $Dc = 3^\circ 00' 00''$ C.B. = N 69° 26' 12" E
 $R = 1,909.86'$ C.B.2 = S 86° 28' 36" W
 $Ls = 600.00'$ TS STA. 412+39.63
 $\theta_s = 9^\circ 00' 00''$ SC STA. 418+39.63
 $LT = 400.52'$ CS STA. 425+75.59
 $ST = 200.47'$ ST STA. 431+75.59
 $x = 598.52'$
 $y = 31.36'$
 $k = 299.75'$
 $p = 7.85'$
 $\Delta c = 22^\circ 04' 44''$ (RT)
 $Lc = 735.96'$
 $Ts = 999.24'$
 $E = 131.43'$
 $C = 731.42'$

CALCULATED
 LEH
 CHECKED
 SNS

0 20 40
 HORIZONTAL
 SCALE IN FEET



PLAN SHEET I.R. 71
 STA 423+00.00 TO STA 428+00.00

HAM-71-6.86

63
 253

D42
 HIGH PERFORMANCE TURF REINFORCEMENT MAT,
 AS PER PLAN, SEE CROSS SECTION SHEETS.

FOR CULVERT DETAIL
 SEE SHT. NO. 152

RCP, TYPE C (D30)
 113'x4'x1.5'x1/27= 25.11 CU YD
 USE 26 CU YD

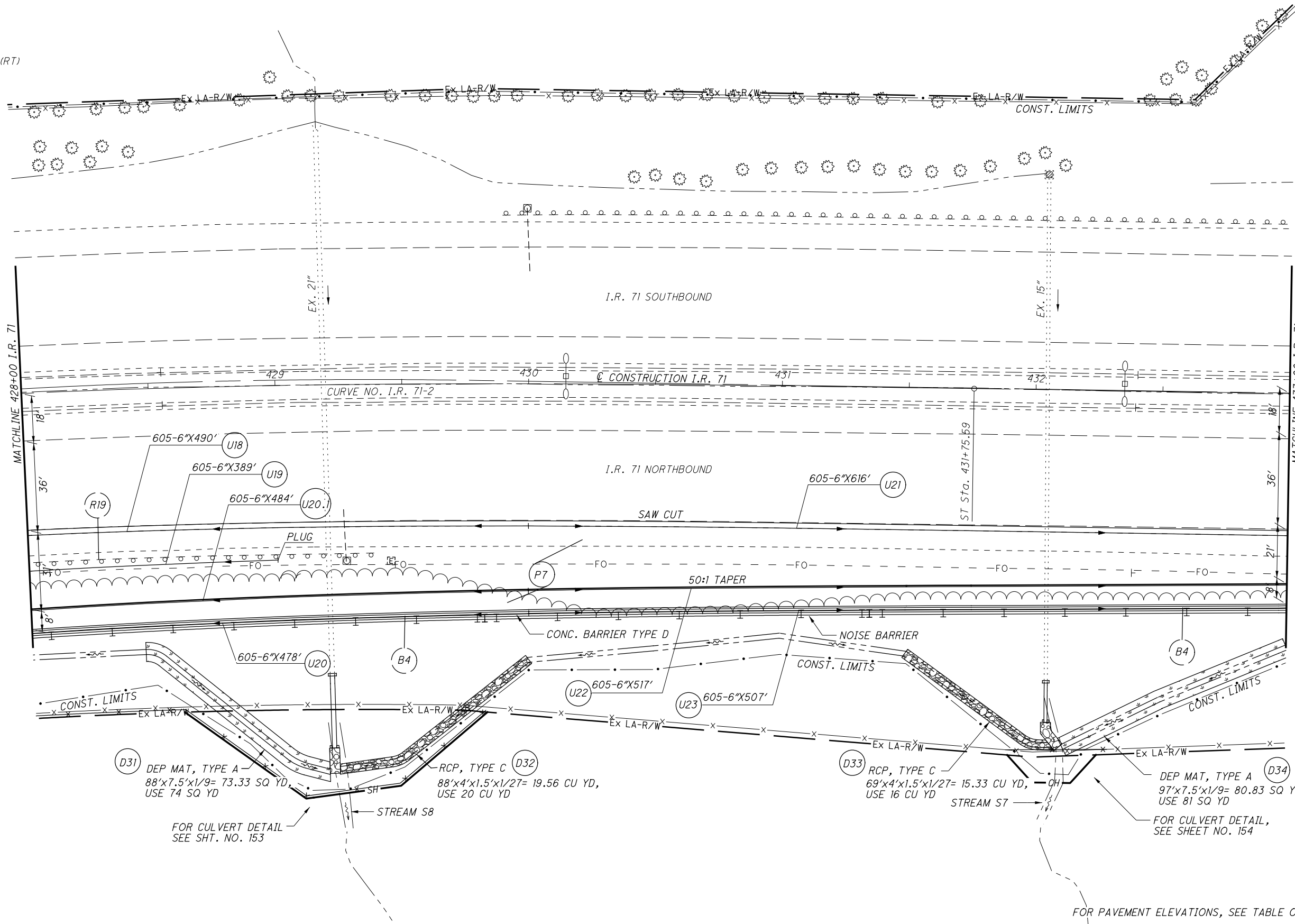
DO NOT DISTURB

FOR INTERCHANGE DETAIL, SEE SHEET NO. 140

CURVE NO. I.R. 71-2
 P.I. Sta. 422+38.87 CI = C2 = 599.34'
 $\Delta = 40^\circ 04' 44''$ (RT) C.B.1 = N 52° 23' 47" E
 $D_c = 3^\circ 00' 00''$ C.B. = N 69° 26' 12" E
 $R = 1,909.86'$ C.B.2 = S 86° 28' 36" W
 $L_s = 600.00'$ TS STA. 412+39.63
 $\theta_s = 9^\circ 00' 00''$ SC STA. 418+39.63
 $LT = 400.52'$ CS STA. 425+75.59
 $ST = 200.47'$ ST STA. 431+75.59
 $x = 598.52'$
 $y = 31.36'$
 $k = 299.75'$
 $p = 7.85'$
 $\Delta c = 22^\circ 04' 44''$ (RT)
 $L_c = 735.96'$
 $T_s = 999.24'$
 $E = 131.43'$
 $C = 731.42'$

LUCILLE DR.

2 STY
COMMERCIAL



D31 DEP MAT, TYPE A
 88'x7.5'x1/9= 73.33 SQ YD,
 USE 74 SQ YD

D32 RCP, TYPE C
 88'x4'x1.5'x1/27= 19.56 CU YD,
 USE 20 CU YD

D33 RCP, TYPE C
 69'x4'x1.5'x1/27= 15.33 CU YD,
 USE 16 CU YD

D34 DEP MAT, TYPE A
 97'x7.5'x1/9= 80.83 SQ YD,
 USE 81 SQ YD

FOR PAVEMENT ELEVATIONS, SEE TABLE ON SHEET NO. 140

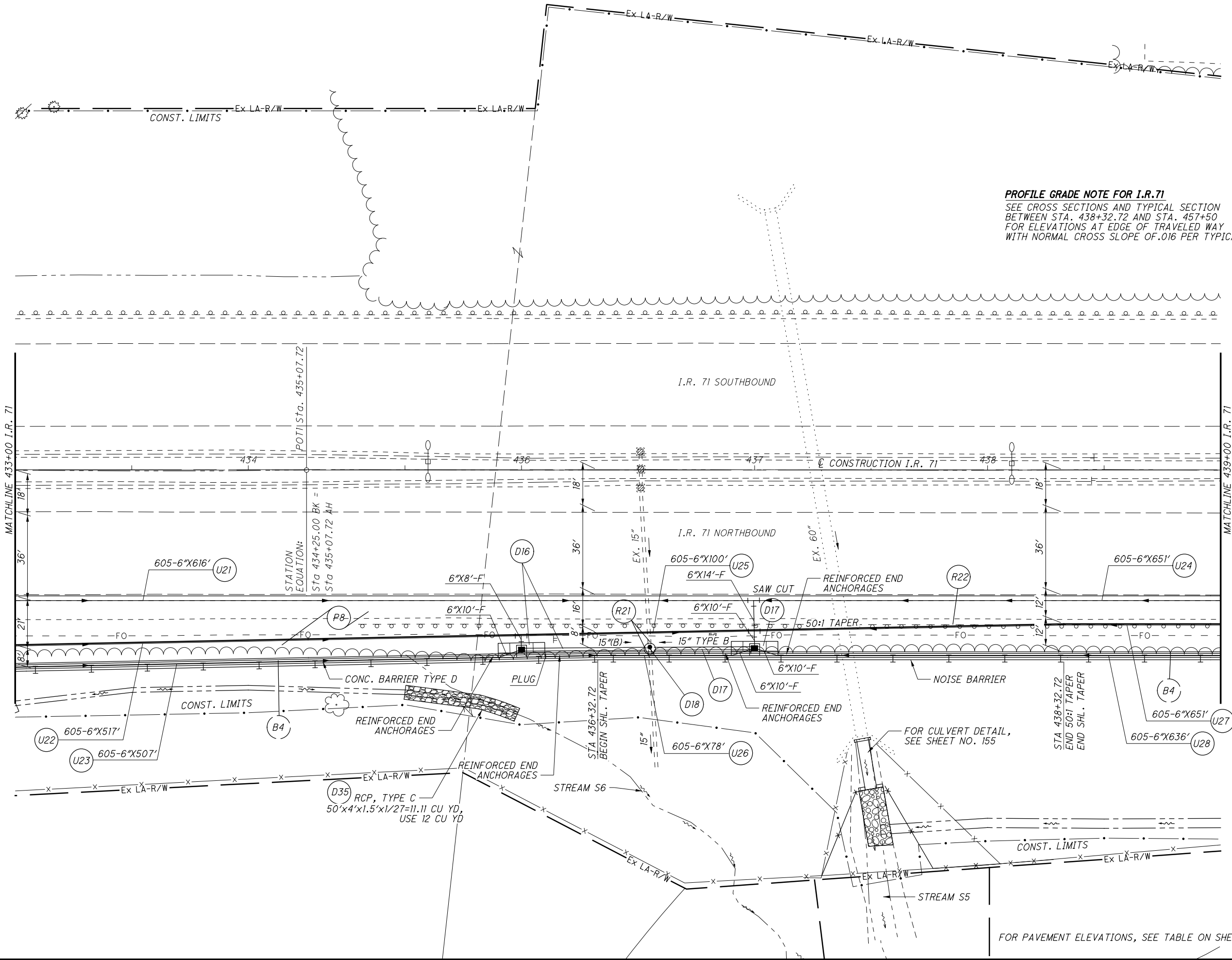
V:\1736\active\173620049\design\94741\roadway\sheets\94741_GP007.dgn 3/14/2018 11:35:22 AM pdurham

PLAN SHEET I.R. 71
 STA 428+00.00 TO STA 433+00.00

HAM-71-6.86

64
253

V:\1736\active\173620049\design\94741\roadway\sheets\94741_GP008.dgn 3/14/2018 11:35:22 AM pduham



PROFILE GRADE NOTE FOR I.R. 71
 SEE CROSS SECTIONS AND TYPICAL SECTION
 BETWEEN STA. 438+32.72 AND STA. 457+50
 FOR ELEVATIONS AT EDGE OF TRAVELED WAY
 WITH NORMAL CROSS SLOPE OF .016 PER TYPICAL.

CALCULATED
 LEH
 CHECKED
 SNS

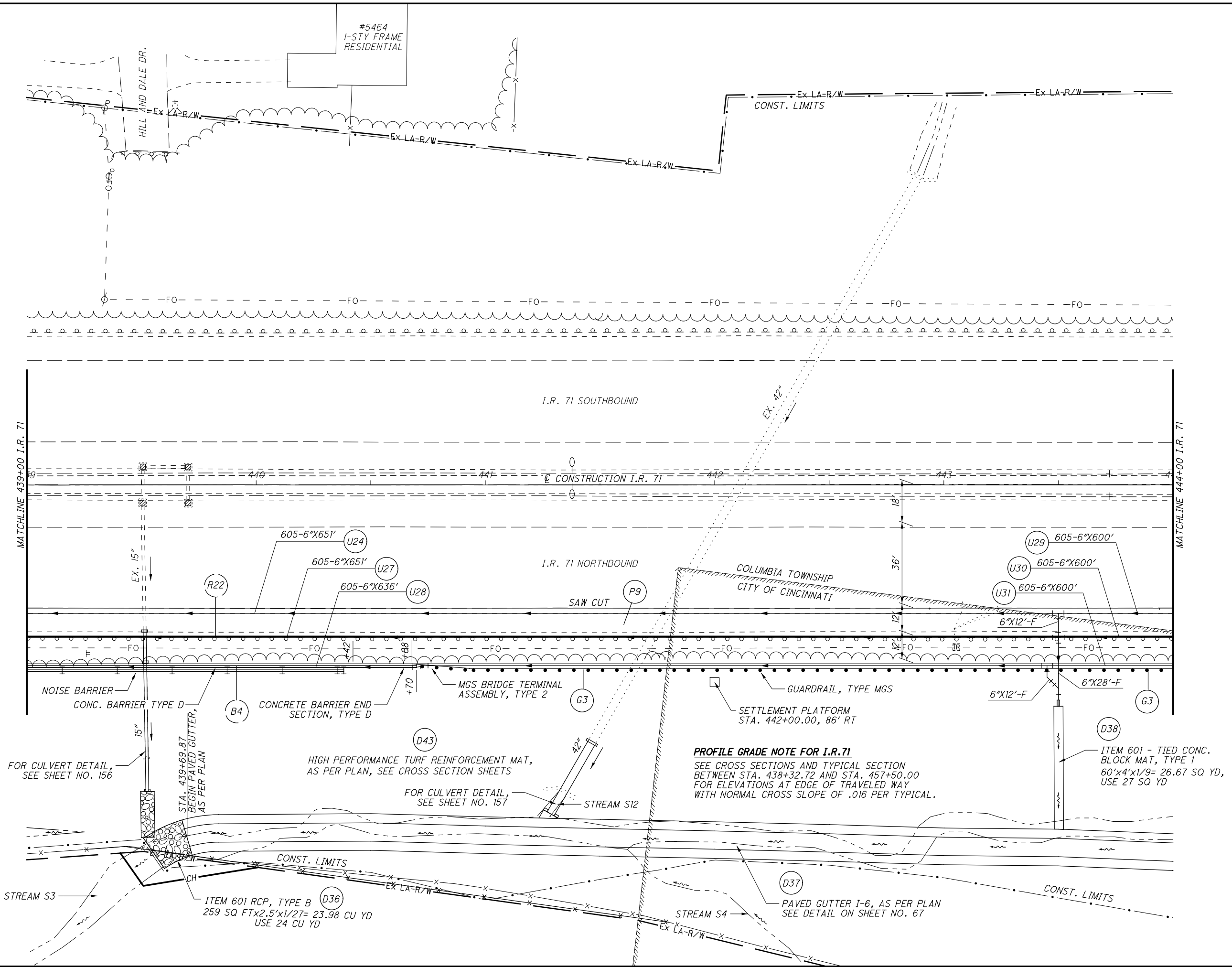
0 20 40
 10
 HORIZONTAL
 SCALE IN FEET

PLAN SHEET I.R. 71
STA 433+00.00 TO STA 439+00.00

HAM-71-6.86

FOR PAVEMENT ELEVATIONS, SEE TABLE ON SHEET NO. 140

V:\1736\active\173620049\design\94741\roadway\sheets\94741_GP009.dgn 3/14/2018 11:35:23 AM pdurham



CALCULATED
LEH
CHECKED
SNS

0 20 40
10
HORIZONTAL
SCALE IN FEET

PLAN SHEET I.R. 71
STA 439+00.00 TO STA 444+00.00

HAM-71-6.86



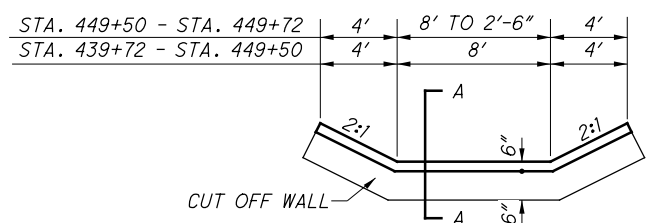
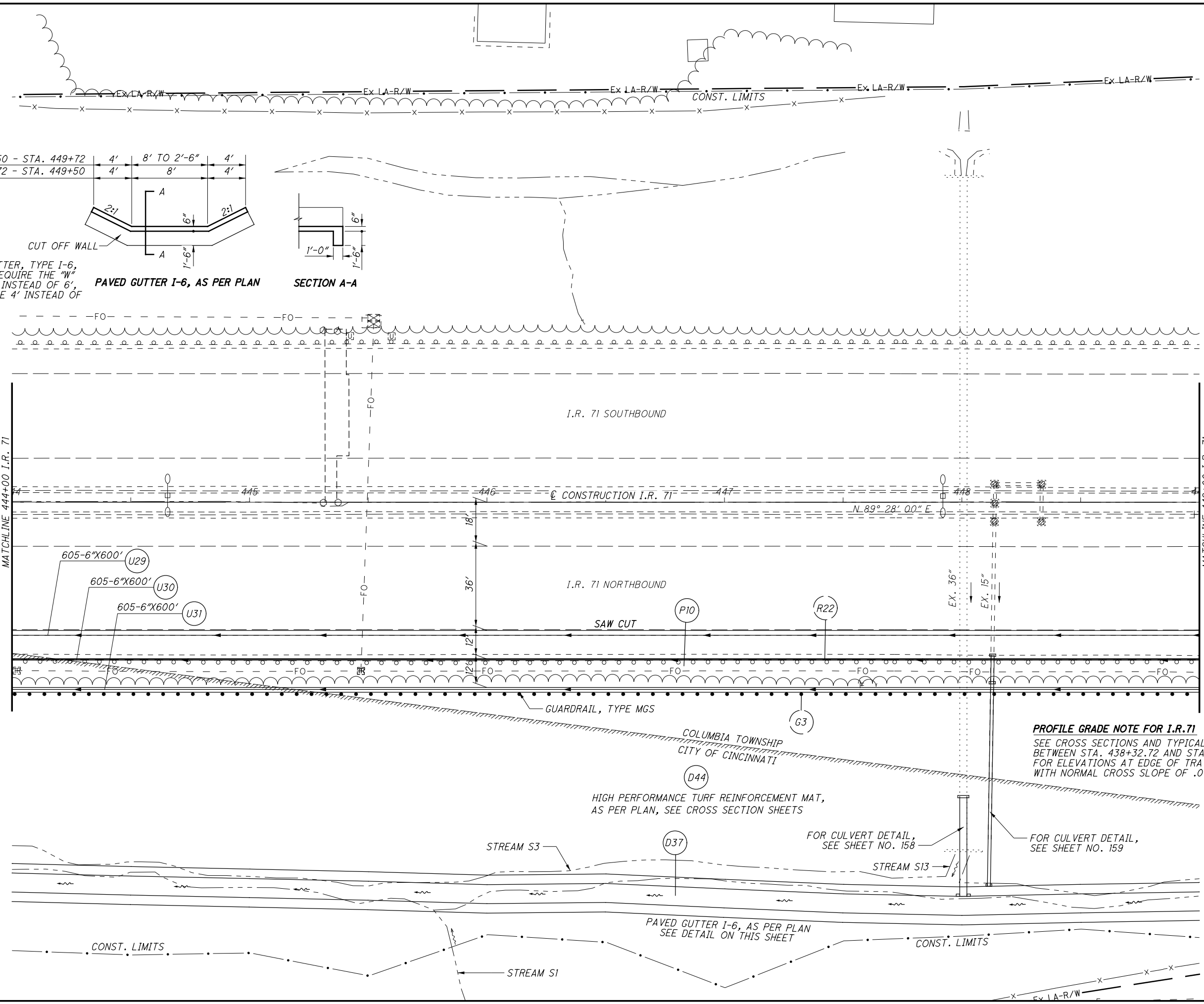
0 20 40
10
HORIZONTAL
SCALE IN FEET

CALCULATED
LEH
CHECKED
SNS

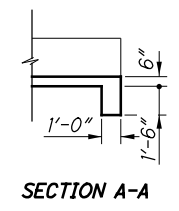
PLAN SHEET I.R. 71
STA 444+00.00 TO STA 449+00.00

HAM-71-6.86

67
253



PAVED GUTTER I-6, AS PER PLAN



ITEM 601, PAVED GUTTER, TYPE I-6, AS PER PLAN WILL REQUIRE THE "W" DIMENSION TO BE 8' INSTEAD OF 6', AND SIDE SLOPES ARE 4' INSTEAD OF 1'. SEE DETAIL.

PROFILE GRADE NOTE FOR I.R. 71
SEE CROSS SECTIONS AND TYPICAL SECTION BETWEEN STA. 438+32.72 AND STA. 457+50.00 FOR ELEVATIONS AT EDGE OF TRAVELED WAY WITH NORMAL CROSS SLOPE OF .016 PER TYPICAL.

HIGH PERFORMANCE TURF REINFORCEMENT MAT, AS PER PLAN, SEE CROSS SECTION SHEETS

FOR CULVERT DETAIL, SEE SHEET NO. 158

FOR CULVERT DETAIL, SEE SHEET NO. 159

PAVED GUTTER I-6, AS PER PLAN SEE DETAIL ON THIS SHEET

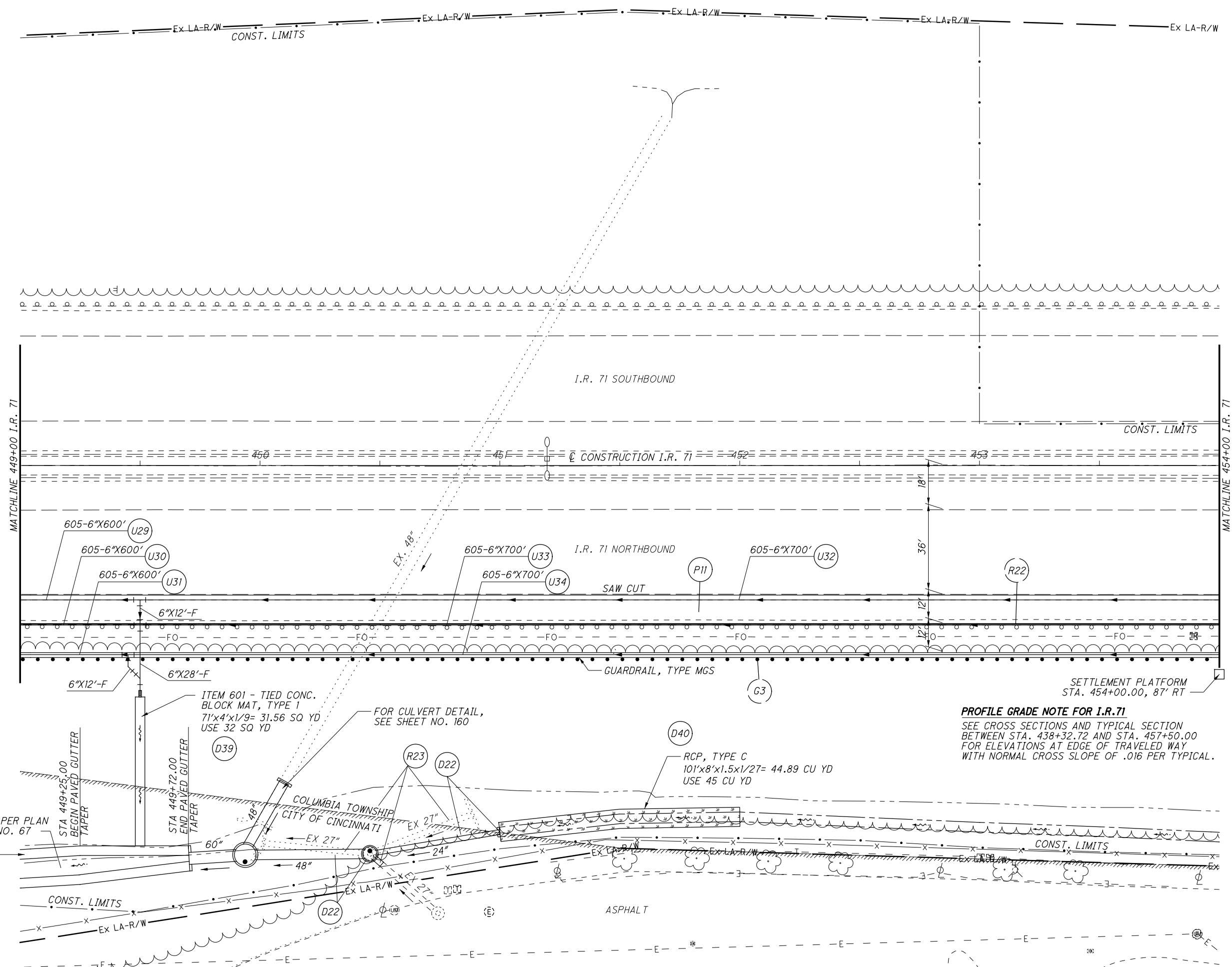
V:\1736\active\173620049\design\94741\roadway\sheets\94741_GP010.dgn 3/14/2018 11:35:23 AM pdurham

V:\1736\active\173620049\design\94741\roadway\sheet\94741_GP011.dgn 3/14/2018 11:35:23 AM pdurham

CALCULATED
LEH
CHECKED
SNS

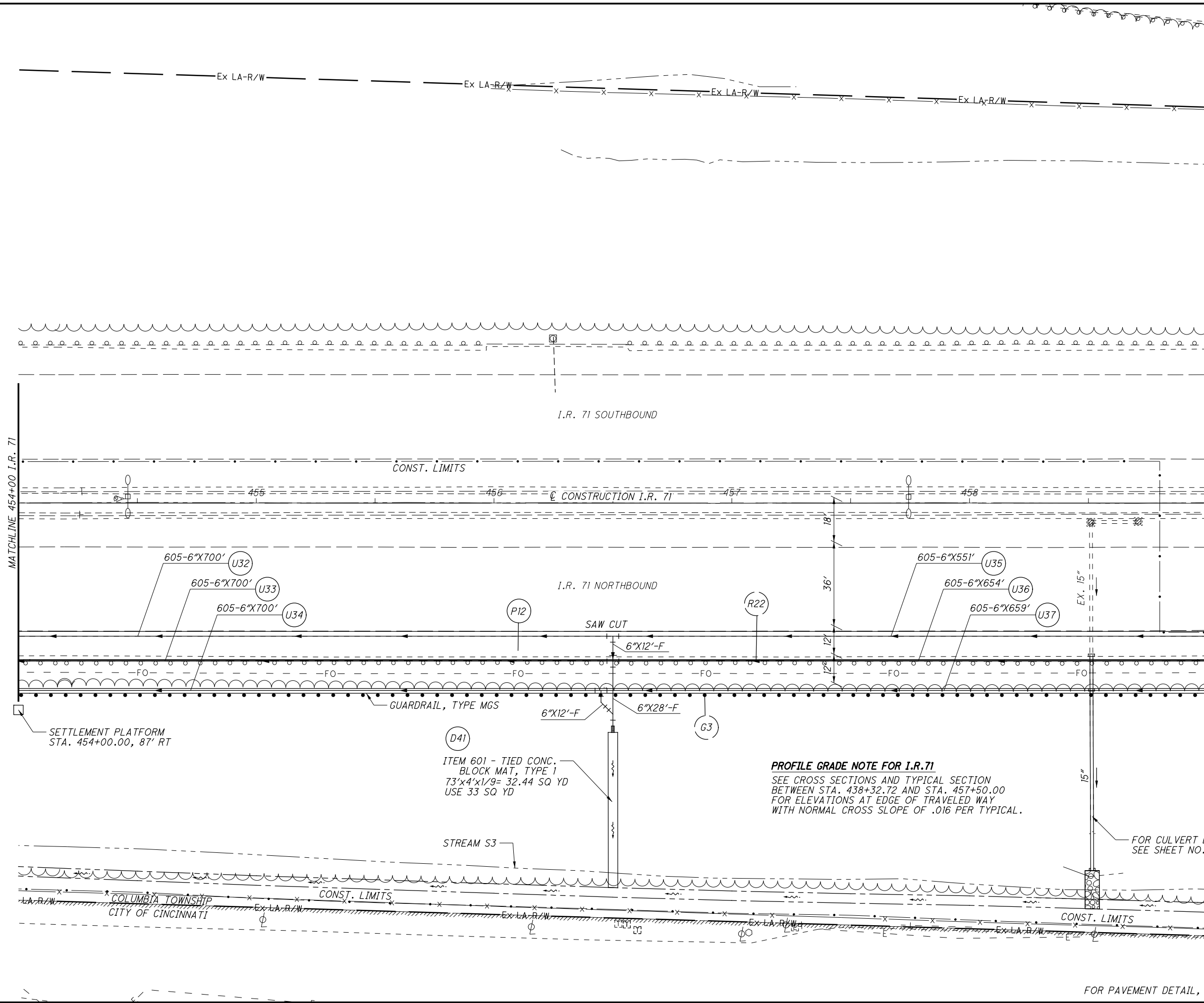
0 20 40
10
HORIZONTAL
SCALE IN FEET

PLAN SHEET I.R. 71
STA 449+00.00 TO STA 454+00.00



PROFILE GRADE NOTE FOR I.R. 71
SEE CROSS SECTIONS AND TYPICAL SECTION BETWEEN STA. 438+32.72 AND STA. 457+50.00 FOR ELEVATIONS AT EDGE OF TRAVELED WAY WITH NORMAL CROSS SLOPE OF .016 PER TYPICAL.

V:\1736\active\173620049\design\94741\roadway\sheets\94741_GP012.dgn 3/14/2018 12:53:09 PM pdurham



PROFILE GRADE NOTE FOR I.R.71
 SEE CROSS SECTIONS AND TYPICAL SECTION
 BETWEEN STA. 438+32.72 AND STA. 457+50.00
 FOR ELEVATIONS AT EDGE OF TRAVELED WAY
 WITH NORMAL CROSS SLOPE OF .016 PER TYPICAL.

ITEM 601 - TIED CONC. BLOCK MAT, TYPE 1
 73'x4'x1/9" = 32.44 SQ YD
 USE 33 SQ YD

FOR CULVERT DETAIL,
 SEE SHEET NO. 161

FOR PAVEMENT DETAIL, SEE SHEET NO. 141

CALCULATED
 LEH
 CHECKED
 SNS

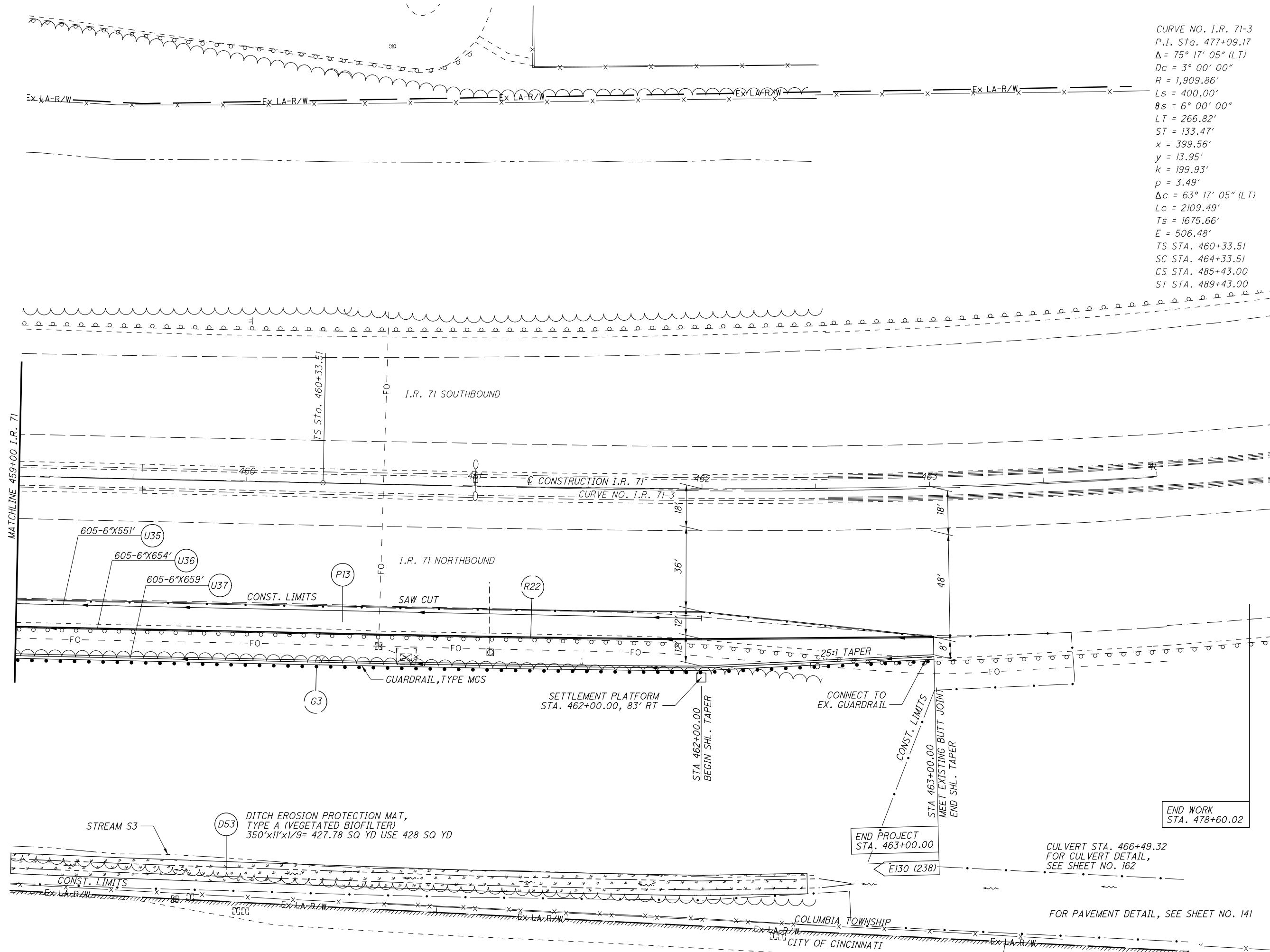
0 20 40
 HORIZONTAL
 SCALE IN FEET

↑
 N

PLAN SHEET I.R. 71
STA 454+00.00 TO STA 459+00.00

HAM-71-6.86

V:\1736\active\173620049\design\94741\roadway\sheets\94741_GPO13.dgn 9/27/2017 10:41:36 AM pdurham



CURVE NO. I.R. 71-3
 P.I. Sta. 477+09.17
 $\Delta = 75^\circ 17' 05''$ (LT)
 $D_c = 3^\circ 00' 00''$
 $R = 1,909.86'$
 $L_s = 400.00'$
 $\theta_s = 6^\circ 00' 00''$
 $LT = 266.82'$
 $ST = 133.47'$
 $x = 399.56'$
 $y = 13.95'$
 $k = 199.93'$
 $p = 3.49'$
 $\Delta_c = 63^\circ 17' 05''$ (LT)
 $L_c = 2109.49'$
 $T_s = 1675.66'$
 $E = 506.48'$
 $TS \text{ STA. } 460+33.51$
 $SC \text{ STA. } 464+33.51$
 $CS \text{ STA. } 485+43.00$
 $ST \text{ STA. } 489+43.00$

CALCULATED
 LEH
 CHECKED
 SNS

0 20 40
 HORIZONTAL
 SCALE IN FEET

PLAN SHEET I.R. 71
 STA 459+00.00 TO END

HAM-71-6.86

70
 253

END WORK
 STA. 478+60.02

END PROJECT
 STA. 463+00.00

CULVERT STA. 466+49.32
 FOR CULVERT DETAIL,
 SEE SHEET NO. 162

FOR PAVEMENT DETAIL, SEE SHEET NO. 141

COLUMBIA TOWNSHIP
 CITY OF CINCINNATI

CURVE NO. N-3
 P.I. Sta. 410+83.53
 $\Delta = 29^\circ 37' 39''$ (RT)
 $D_c = 24^\circ 45' 00''$
 $R = 231.50'$
 $T = 61.22'$
 $L = 119.71'$
 $E = 7.96'$
 $C = 118.38'$
 C.B. = S $79^\circ 05' 36''$ E
 SC STA. 410+22.30
 PT STA. 411+42.01

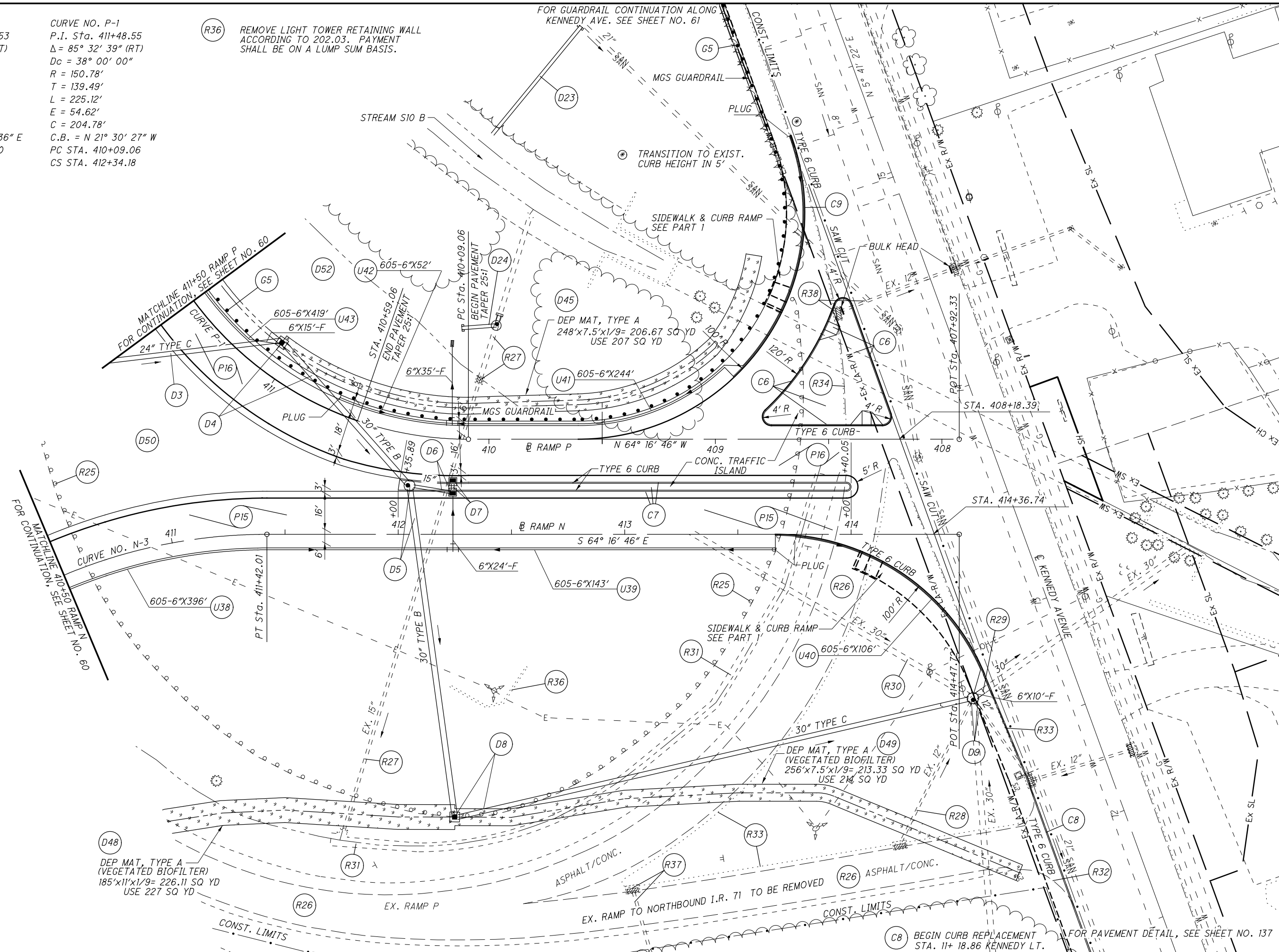
CURVE NO. P-1
 P.I. Sta. 411+48.55
 $\Delta = 85^\circ 32' 39''$ (RT)
 $D_c = 38^\circ 00' 00''$
 $R = 150.78'$
 $T = 139.49'$
 $L = 225.12'$
 $E = 54.62'$
 $C = 204.78'$
 C.B. = N $21^\circ 30' 27''$ W
 PC STA. 410+09.06
 CS STA. 412+34.18

(R36) REMOVE LIGHT TOWER RETAINING WALL
 ACCORDING TO 202.03. PAYMENT
 SHALL BE ON A LUMP SUM BASIS.

FOR GUARDRAIL CONTINUATION ALONG
 KENNEDY AVE. SEE SHEET NO. 61

CALCULATED
 LEH
 CHECKED
 SNS

0 20 40
 HORIZONTAL
 SCALE IN FEET



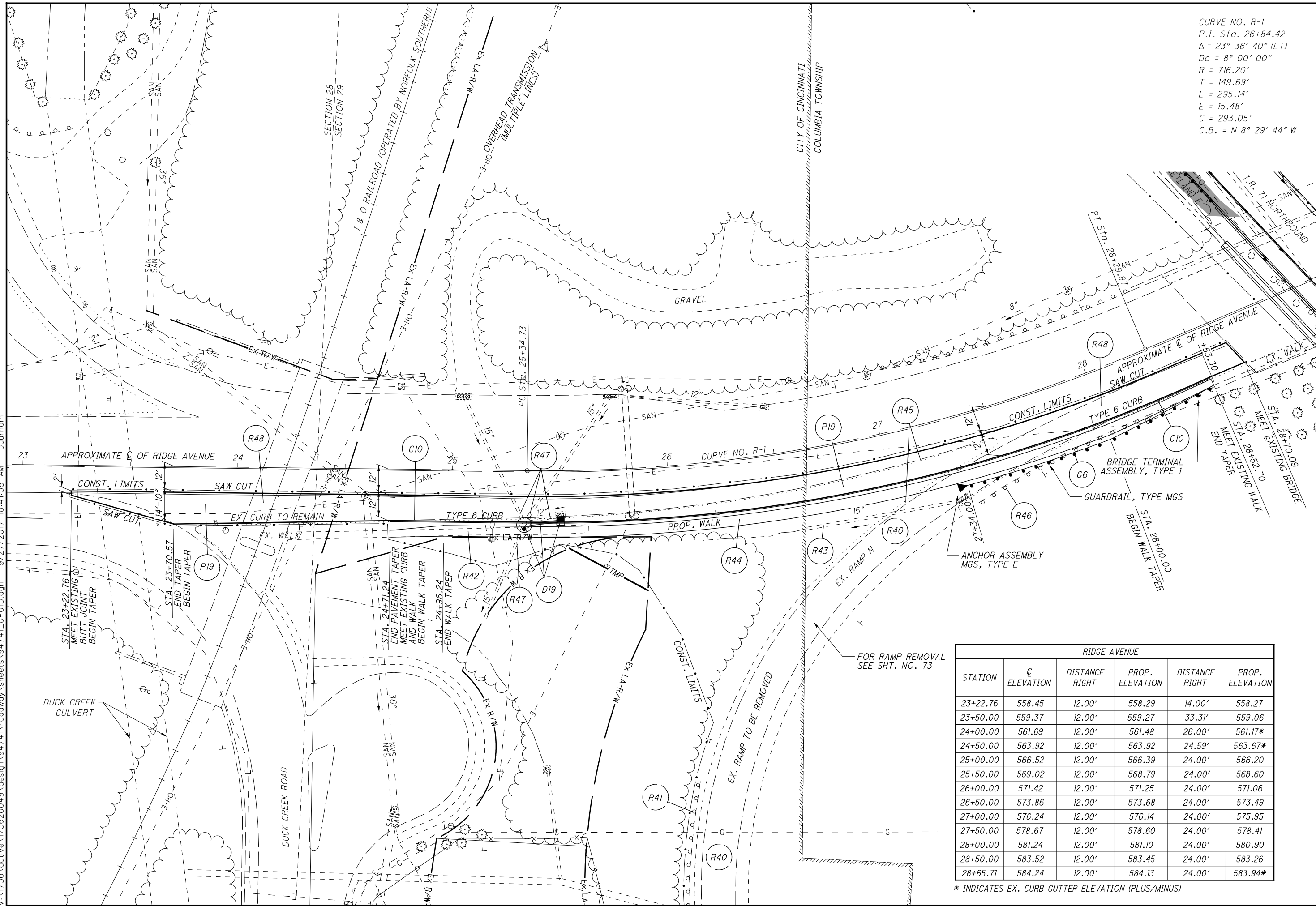
V:\1736\active\173620049\design\94741\roadway\sheets\94741_GP014.dgn 9/27/2017 10:41:37 AM pdurham

PLAN SHEET RAMP N
 STA 410+50.00 TO END

HAM-71-6.86

FOR PAVEMENT DETAIL, SEE SHEET NO. 137

V:\1736\active\173620049\design\94741\roadway\sheets\94741_GPO15.dgn 9/27/2017 10:41:38 AM pdurhom



CURVE NO. R-1
 P.I. Sta. 26+84.42
 $\Delta = 23^\circ 36' 40''$ (LT)
 $Dc = 8^\circ 00' 00''$
 $R = 716.20'$
 $T = 149.69'$
 $L = 295.14'$
 $E = 15.48'$
 $C = 293.05'$
 C.B. = N $8^\circ 29' 44''$ W

CALCULATED
 LEH
 CHECKED
 SNS

0 20 40
 HORIZONTAL
 SCALE IN FEET

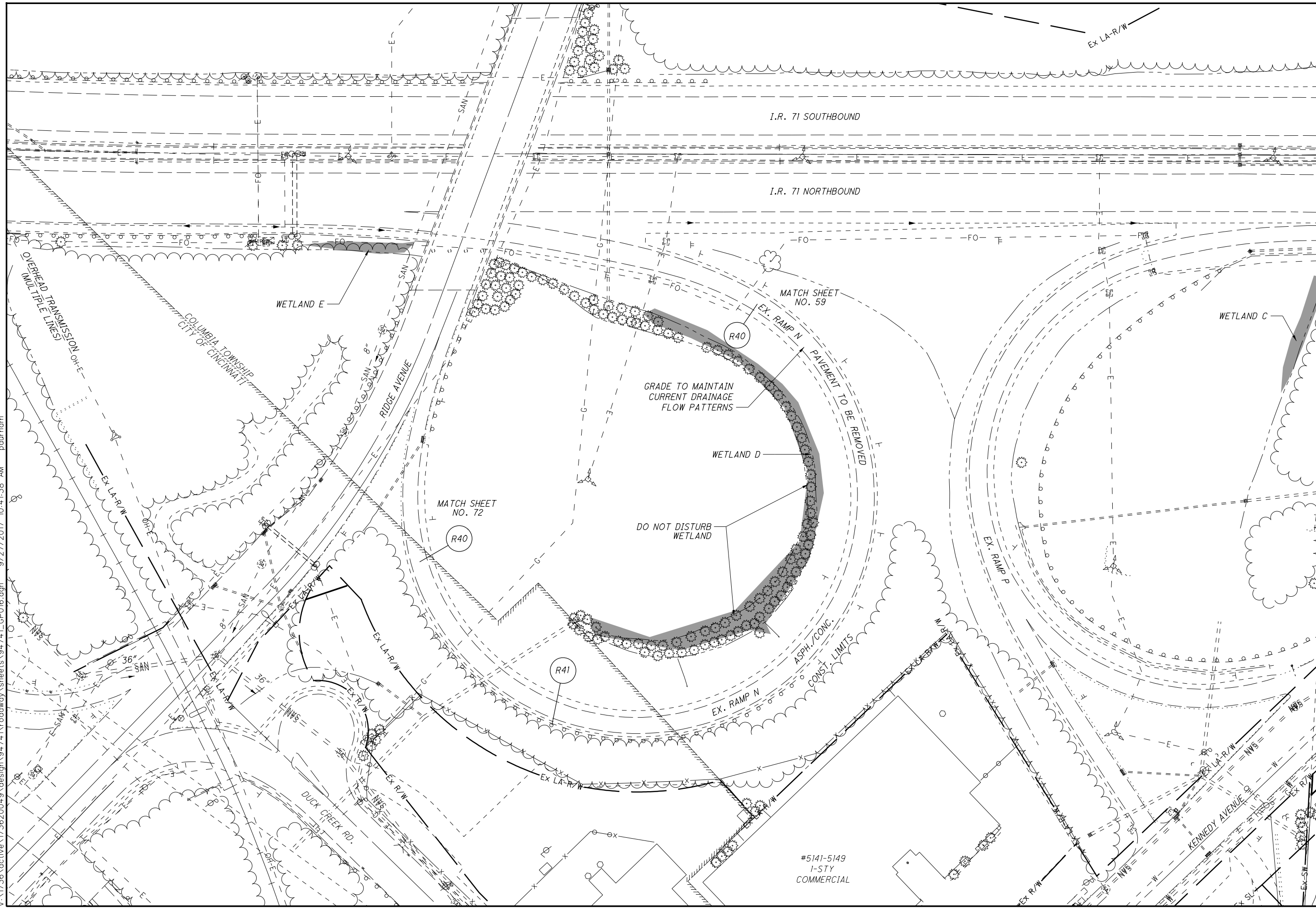
**PLAN SHEET RIDGE AVE
 STA 23+00.00 TO STA 29+00.00**

HAM-71-6.86

RIDGE AVENUE					
STATION	¢ ELEVATION	DISTANCE RIGHT	PROP. ELEVATION	DISTANCE RIGHT	PROP. ELEVATION
23+22.76	558.45	12.00'	558.29	14.00'	558.27
23+50.00	559.37	12.00'	559.27	33.31'	559.06
24+00.00	561.69	12.00'	561.48	26.00'	561.17*
24+50.00	563.92	12.00'	563.92	24.59'	563.67*
25+00.00	566.52	12.00'	566.39	24.00'	566.20
25+50.00	569.02	12.00'	568.79	24.00'	568.60
26+00.00	571.42	12.00'	571.25	24.00'	571.06
26+50.00	573.86	12.00'	573.68	24.00'	573.49
27+00.00	576.24	12.00'	576.14	24.00'	575.95
27+50.00	578.67	12.00'	578.60	24.00'	578.41
28+00.00	581.24	12.00'	581.10	24.00'	580.90
28+50.00	583.52	12.00'	583.45	24.00'	583.26
28+65.71	584.24	12.00'	584.13	24.00'	583.94*

* INDICATES EX. CURB GUTTER ELEVATION (PLUS/MINUS)

V:\1736\active\173620049\design\94741\roadway\sheets\94741_GP016.dgn 9/27/2017 10:41:38 AM pdurham



CALCULATED
LEH
CHECKED
SNS

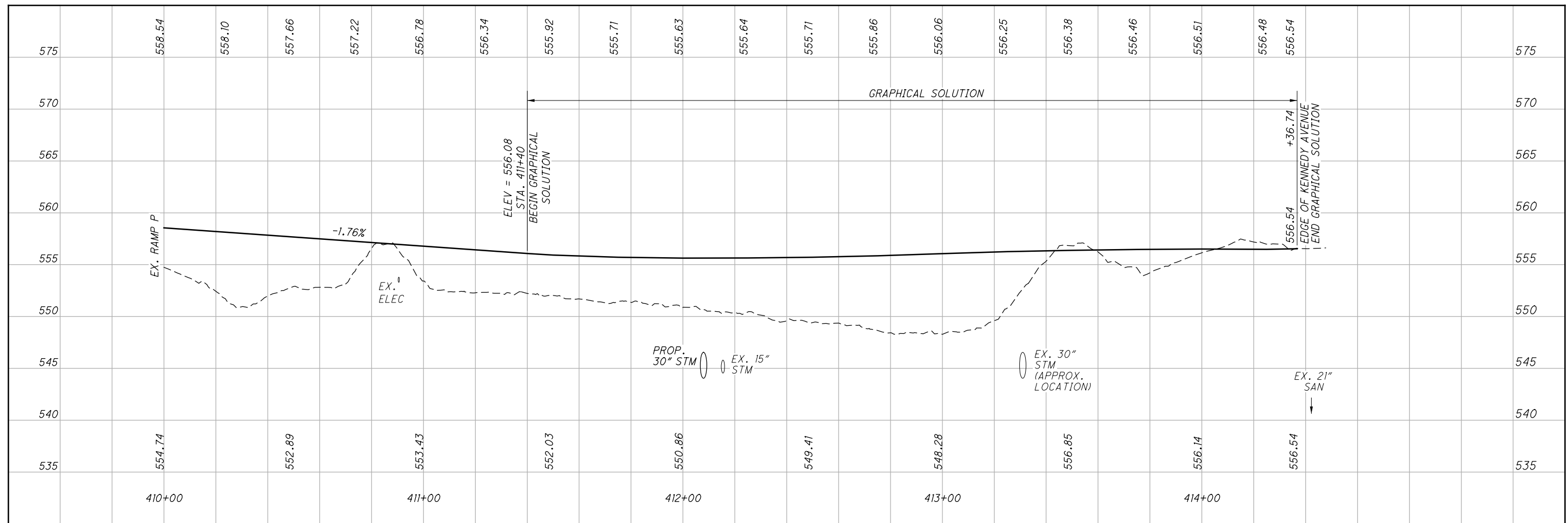
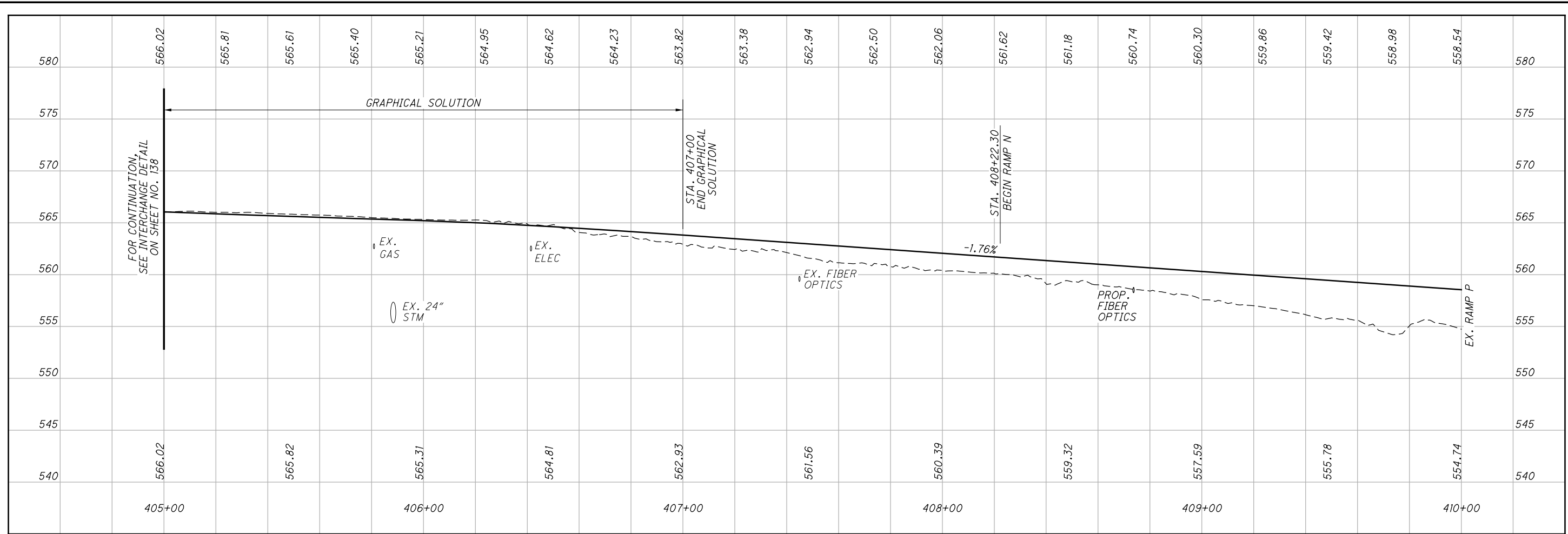
0 20 40 80
HORIZONTAL
SCALE IN FEET

**RAMP REMOVAL PLAN
EXISTING RAMP N TO RIDGE AVE.**

HAM-71-6.86

73
253

V:\1736\active\173620049\design\94741\roadway\sheet\94741_GF017.dgn 9/27/2017 10:41:39 AM pdurham

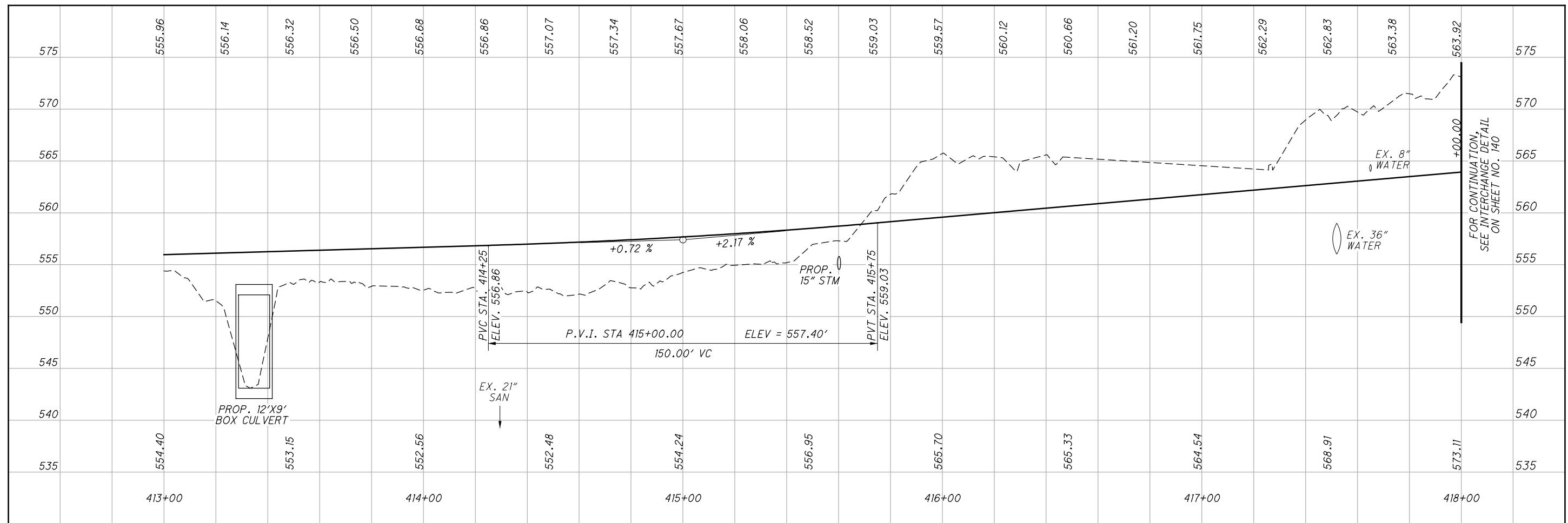
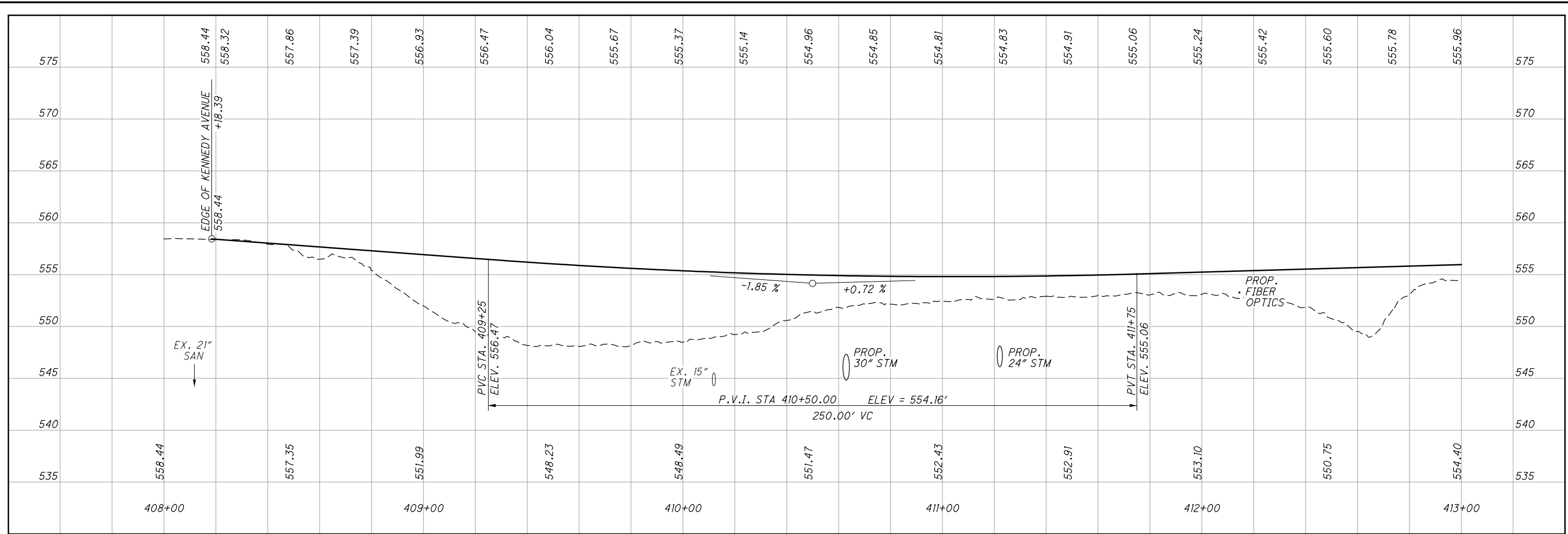


CALCULATED
LEH
CHECKED
SNS

PROFILE - RAMP N

HAM-71-6.86

V:\1736\active\173620049\design\94741\roadway\sheets\94741_GF018.dgn 9/27/2017 10:41:39 AM pdurham

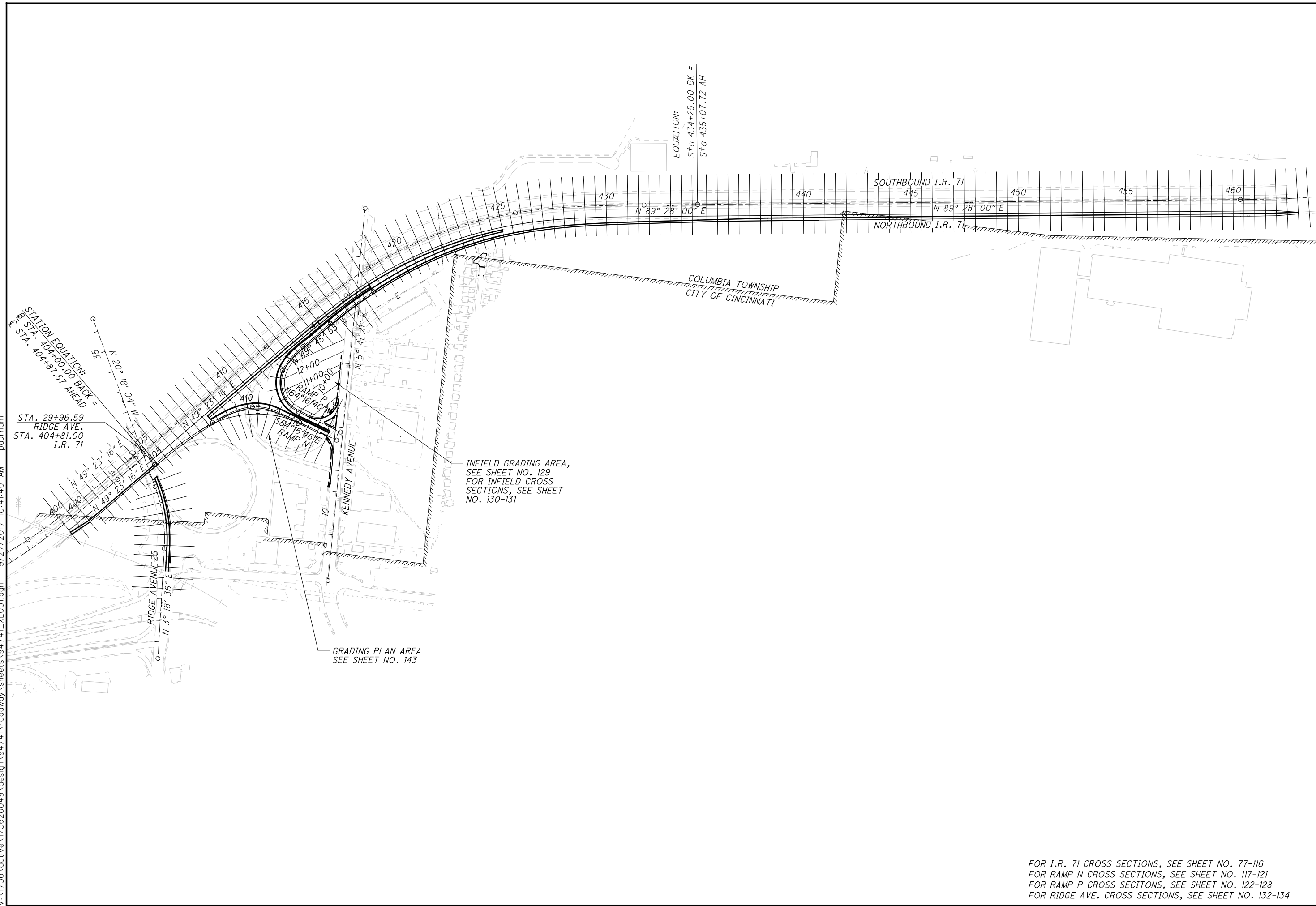


CALCULATED
LEH
CHECKED
SNS

PROFILE - RAMP P

HAM-71-6.86

V:\1736\active\173620049\design\94741\roadway\sheet\94741_XL001.dgn 9/27/2017 10:41:40 AM pdurham



CALCULATED
EDA
CHECKED
PJD

0 200 400
HORIZONTAL
SCALE IN FEET

CROSS SECTION LAYOUT PLAN

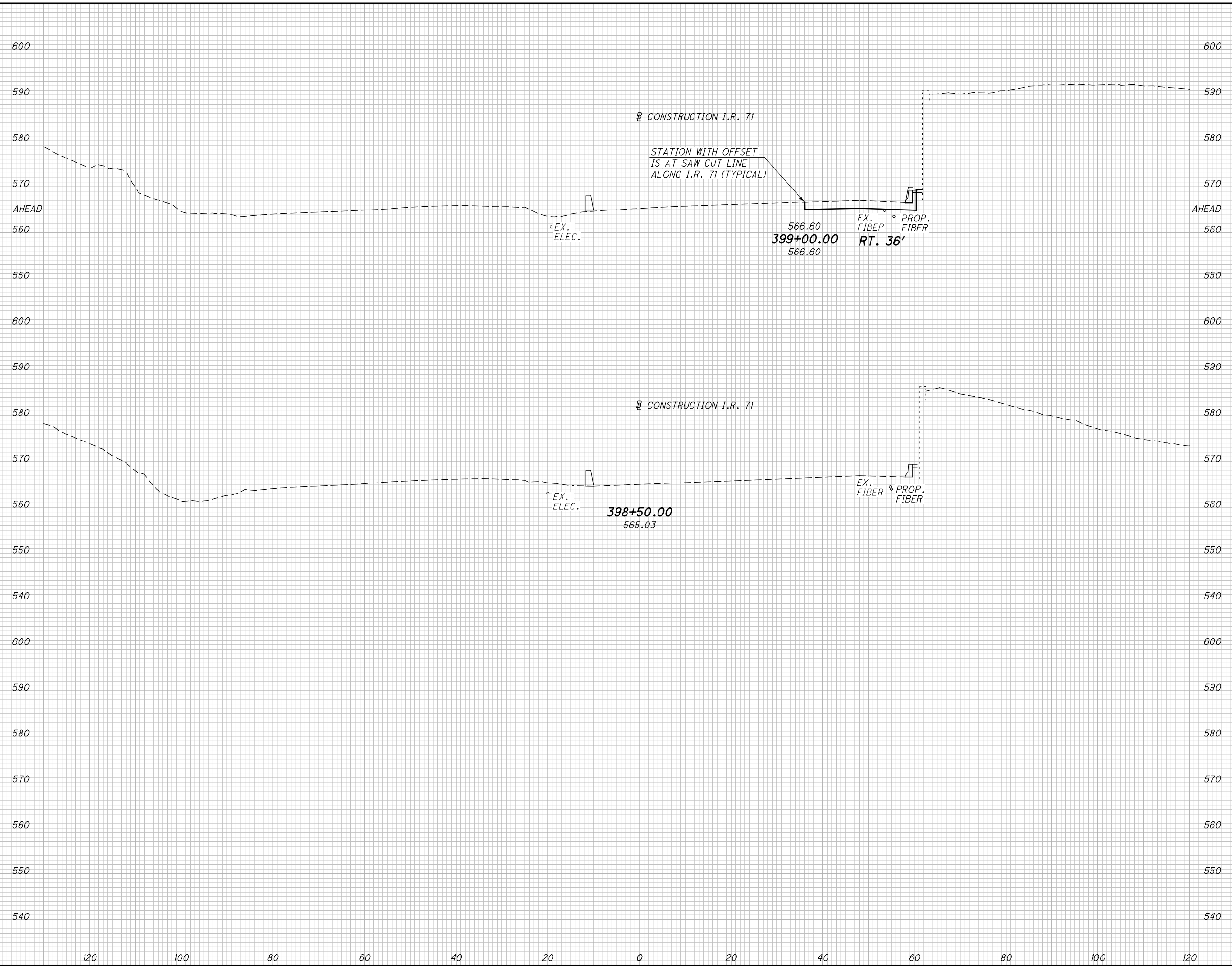
HAM-71-6.86

76
253

FOR I.R. 71 CROSS SECTIONS, SEE SHEET NO. 77-116
FOR RAMP N CROSS SECTIONS, SEE SHEET NO. 117-121
FOR RAMP P CROSS SECTIONS, SEE SHEET NO. 122-128
FOR RIDGE AVE. CROSS SECTIONS, SEE SHEET NO. 132-134

V:\1736\active\173620049\design\94741\roadway\sheet\94741_XS000.dgn 9/27/2017 10:41:41 AM pdurham

SEEDING	
END WIDTH	SO. YDS.
97	97
97	97



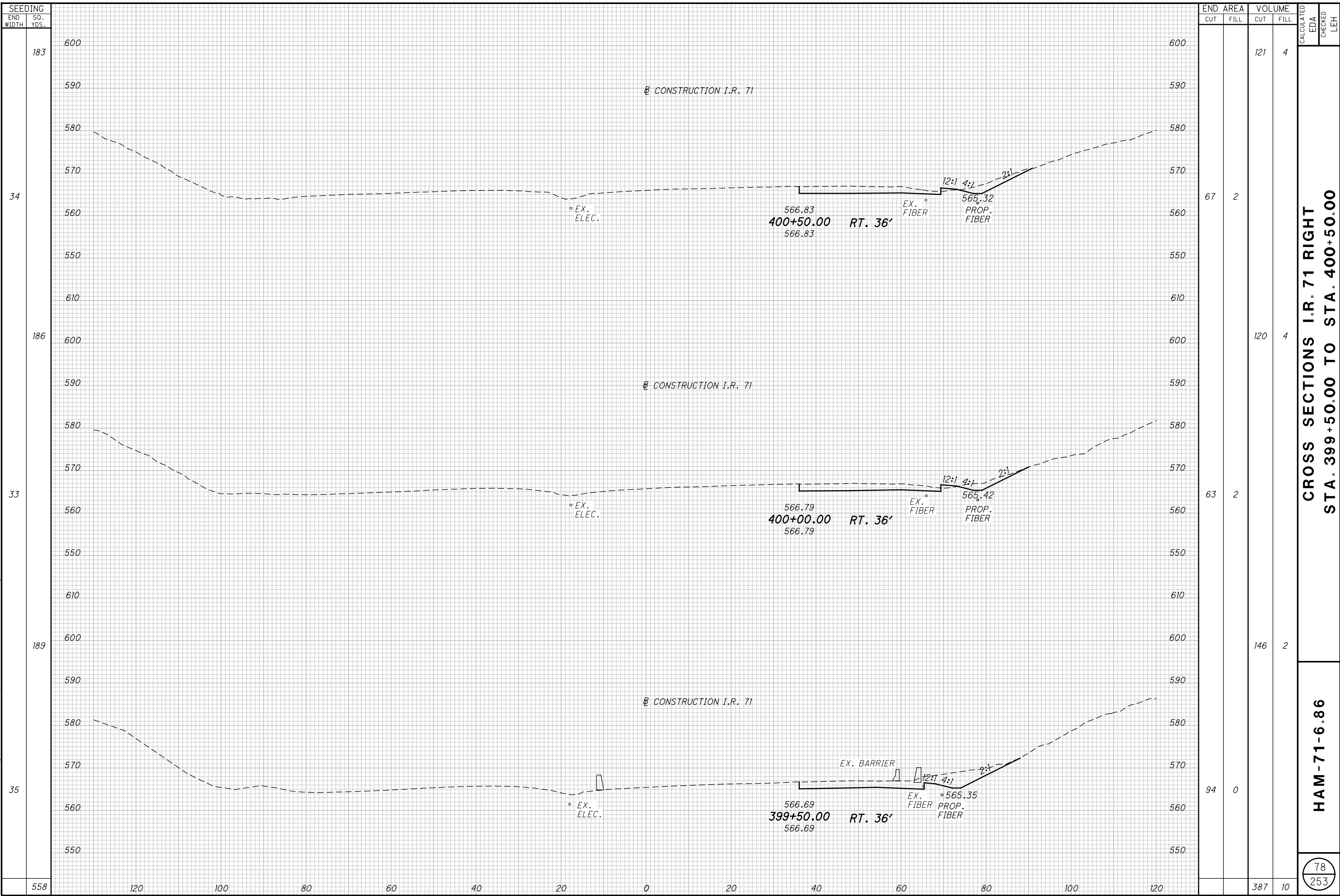
END AREA		VOLUME	
CUT	FILL	CUT	FILL
42	1	126	1

**CROSS SECTIONS I.R. 71 RIGHT
STA. 398+50.00 TO STA. 399+00.00**

HAM-71-6.86

77
253

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS000.dgn 9/27/2017 10:41:41 AM pdurham



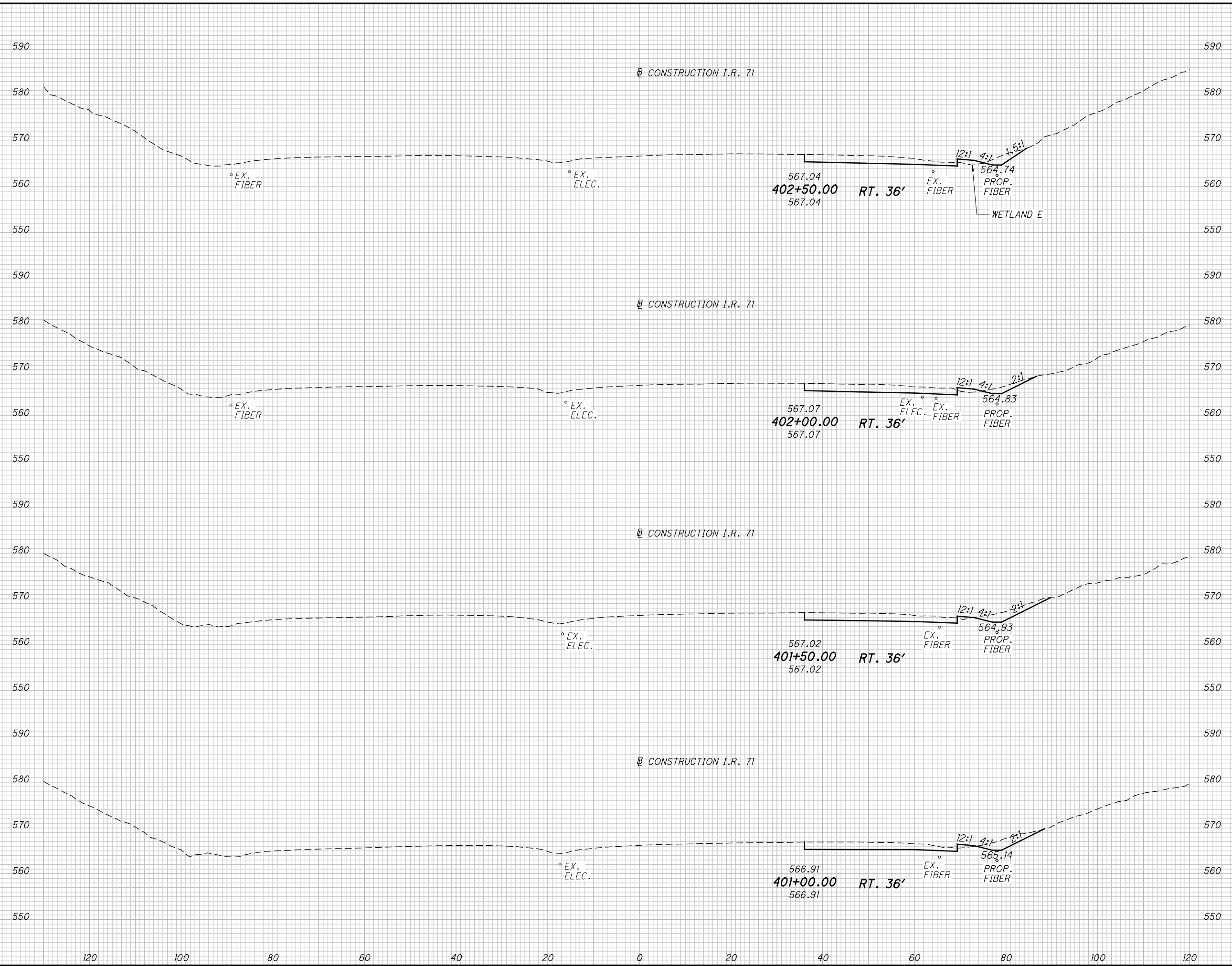
**CROSS SECTIONS I.R. 71 RIGHT
STA. 399+50.00 TO STA. 400+50.00**

HAM-71-6.86

78
253

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS000.dgn 9/27/2017 10:41:41 AM pdurham

SEEDING	
END WIDTH	SO. YDS.
164	590
28	580
161	590
30	580
175	590
33	580
181	590
32	580
681	550



END AREA		VOLUME	
CUT	FILL	CUT	FILL
		102	8
56	4		
		108	7
61	3		
		120	4
69	1		
		123	3
64	2		
		453	22

CALCULATED
EDA
CHECKED
LEH

**CROSS SECTIONS I.R. 71 RIGHT
STA. 401+00.00 TO STA. 402+50.00**

HAM-71-6.86

79
253

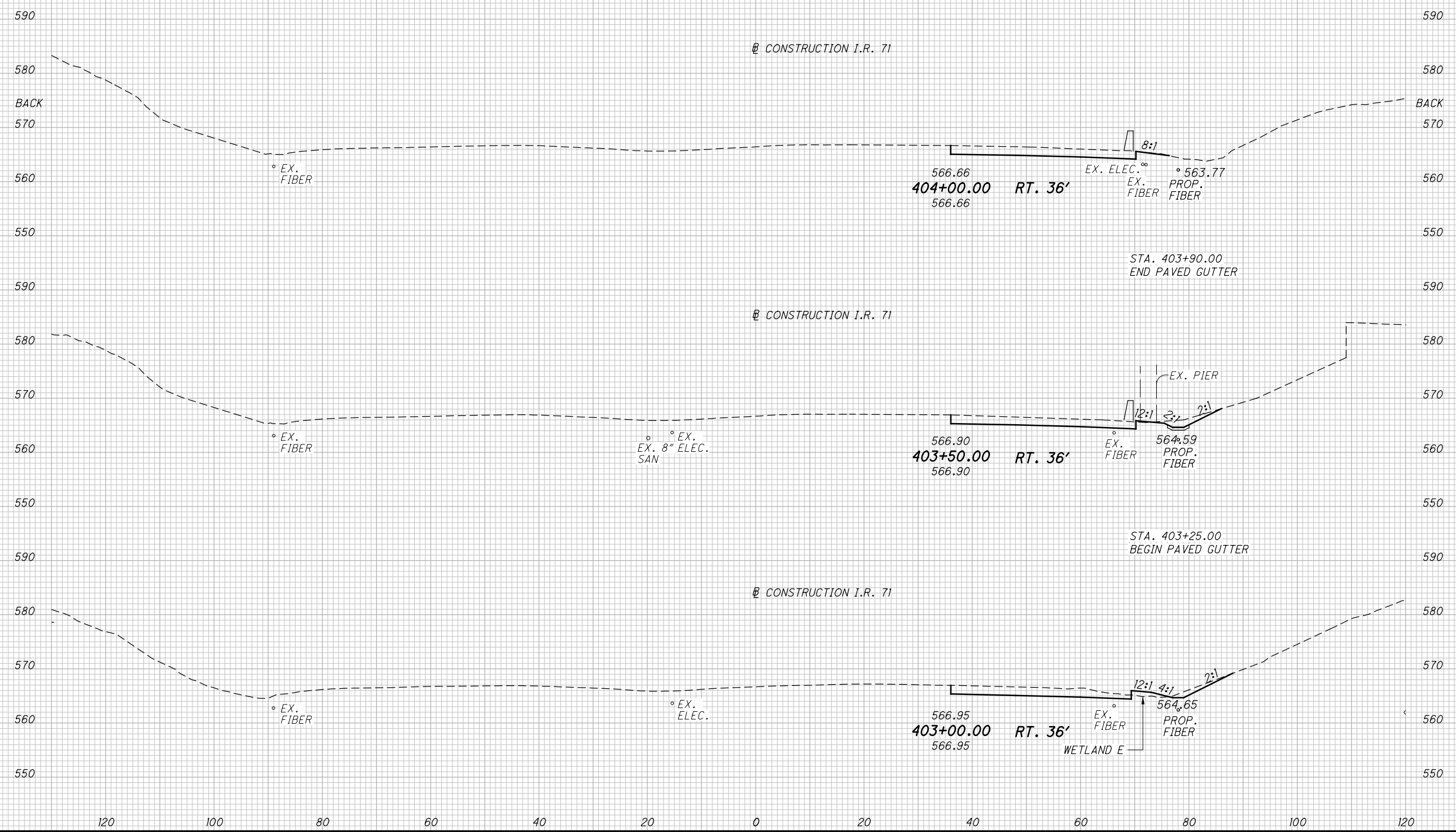
V:\1736\active\173620049\design\94741\roadway\sheet\94741_XS000.dgn 9/27/2017 10:41:42 AM palurham

SEEDING	END AREA		VOLUME		CALCULATED	EDA	CHECKED	LEH
	END WIDTH	SO. YDS.	CUT	FILL				
	17		53	0				
	28		59	1				
	31		55	5				
	289		208	6				

I.R. 71	
EXCAVATION	EMBANKMENT
1174 CU YD	39 CU YD
SEEDING & MULCHING	
1625 SQ YD	

QUANTITIES CARRIED TO SUBSUMMARY

STATION EQUATION
 @ STA. 404+00.00 BACK=
 @ STA. 404+87.57 AHEAD

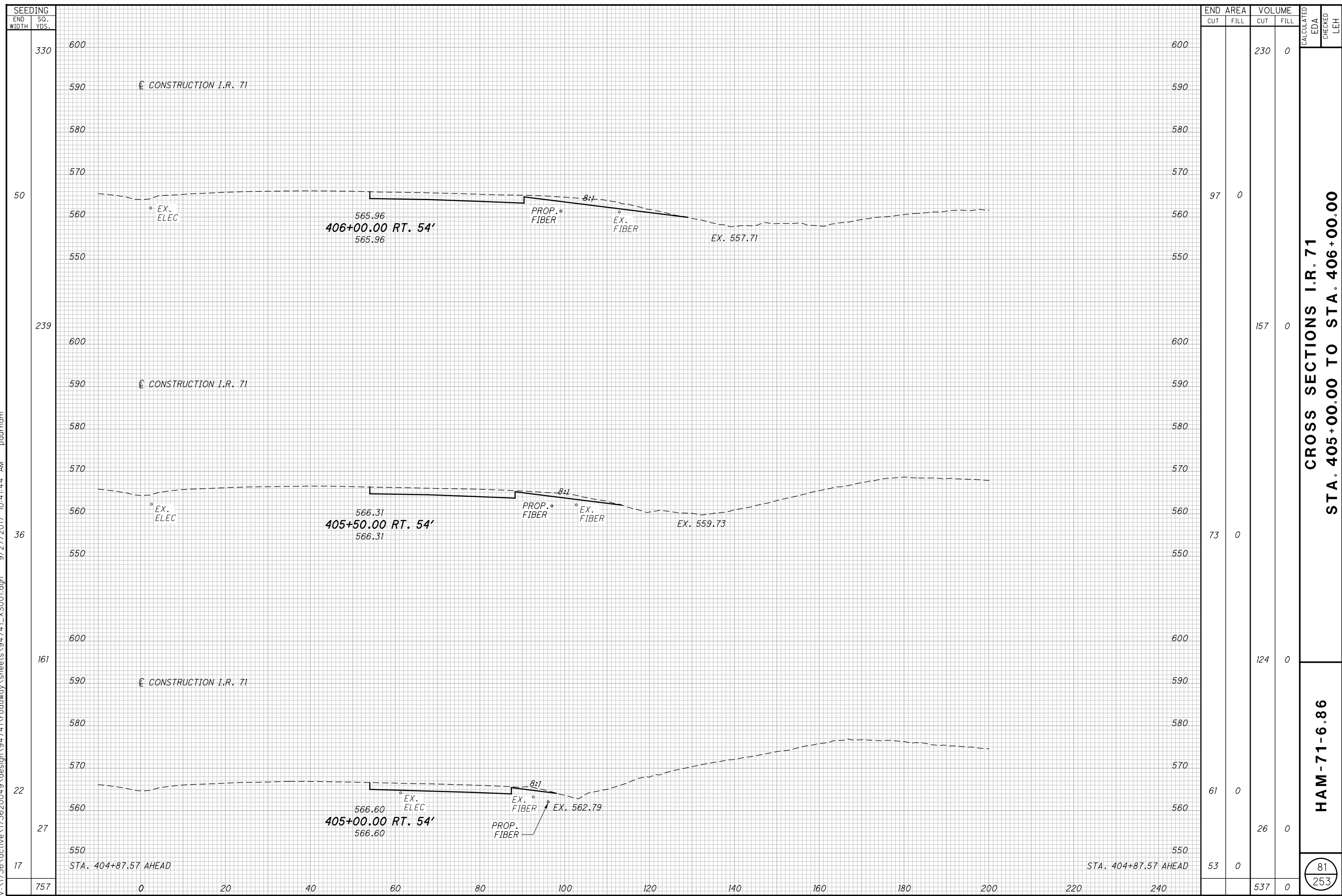


CROSS SECTIONS I.R. 71 RIGHT
STA. 403+00.00 TO STA. 404+00.00

HAM-71-6.86

80
 253

V:\1736\active\173620049\design\94741\roadway\sheet\94741_XS001.dgn 9/27/2017 10:41:44 AM pdurham



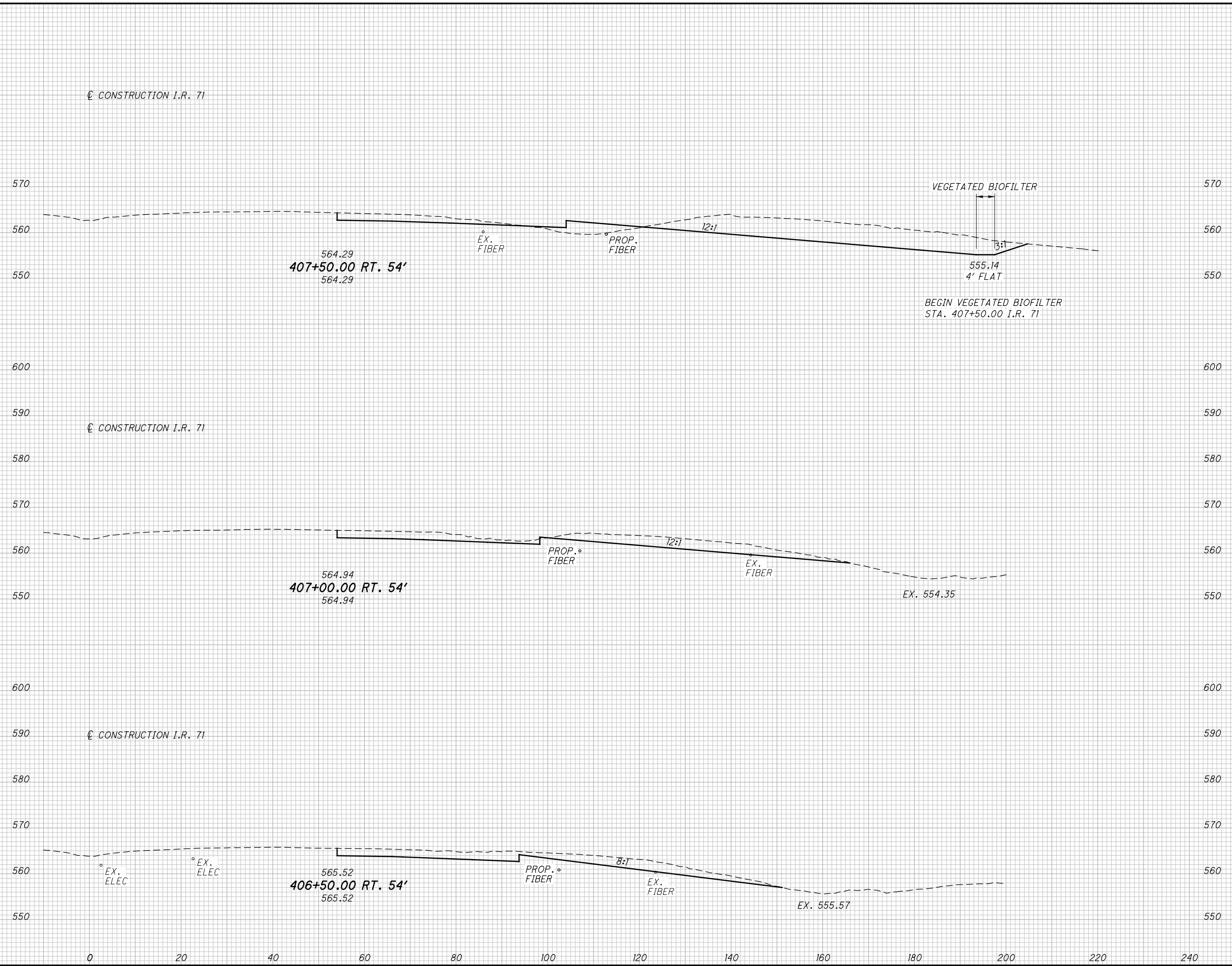
CROSS SECTIONS I.R. 71
STA. 405+00.00 TO STA. 406+00.00

HAM-71-6.86

81
253

V:\1736\active\173620049\design\94741\roadway\sheet\94741_XS001.dgn 9/27/2017 10:41:44 AM pdurham

SEEDING	END AREA		VOLUME		CALCULATED	CHECKED	LEH
	CUT	FILL	CUT	FILL			
686			775	111			
113	349	35					
533			477	32			
79	167	0					
411			295	0			
69	152	0					
1630			1547	143			



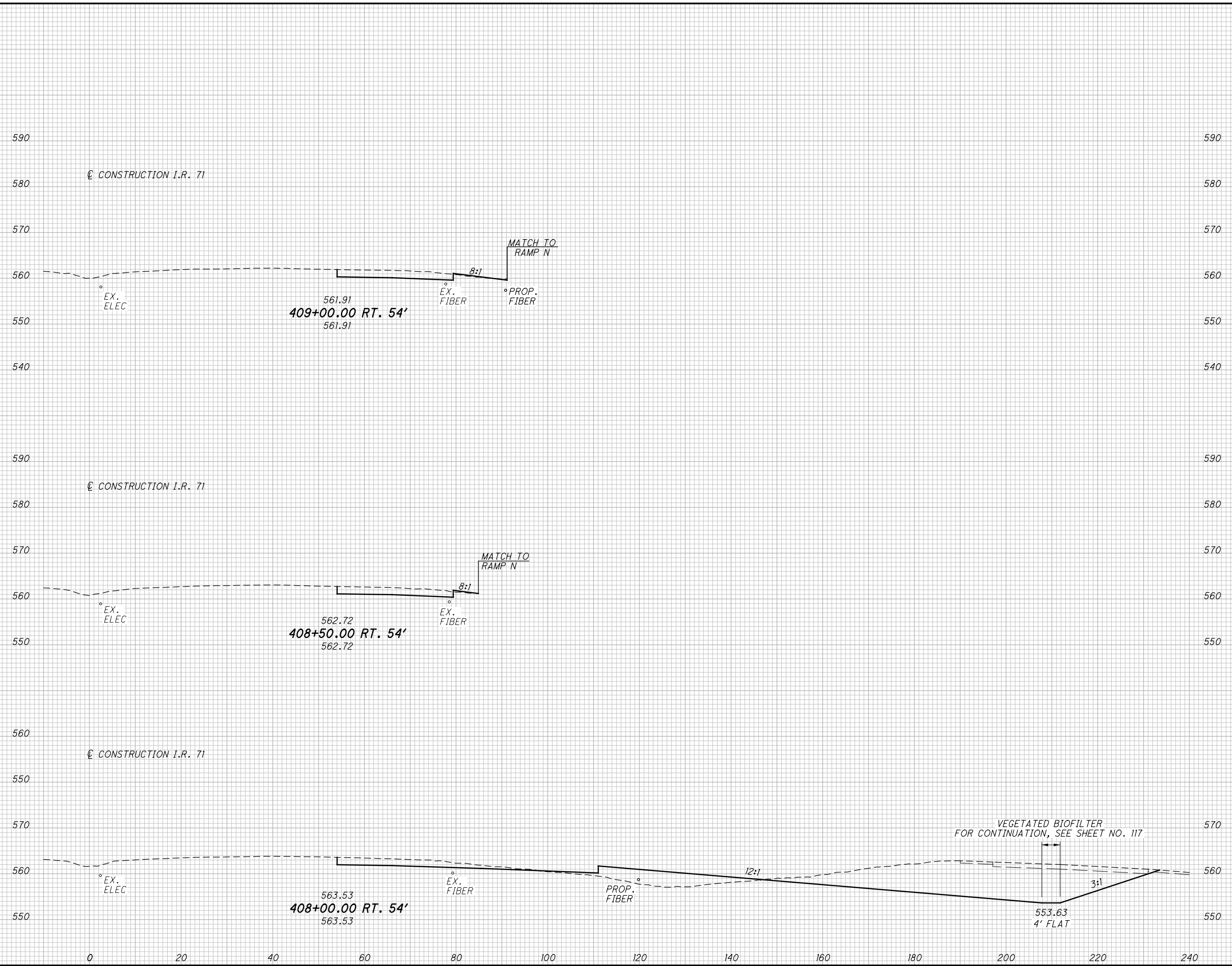
END AREA	VOLUME		CALCULATED	CHECKED	LEH
	CUT	FILL			
775	111				
349	35				
477	32				
167	0				
295	0				
152	0				
1547	143				

HAM-71-6.86
CROSS SECTIONS I.R. 71
STA. 406+50.00 TO STA. 407+50.00

82
253

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS001.dgn 9/27/2017 10:41:45 AM pdurham

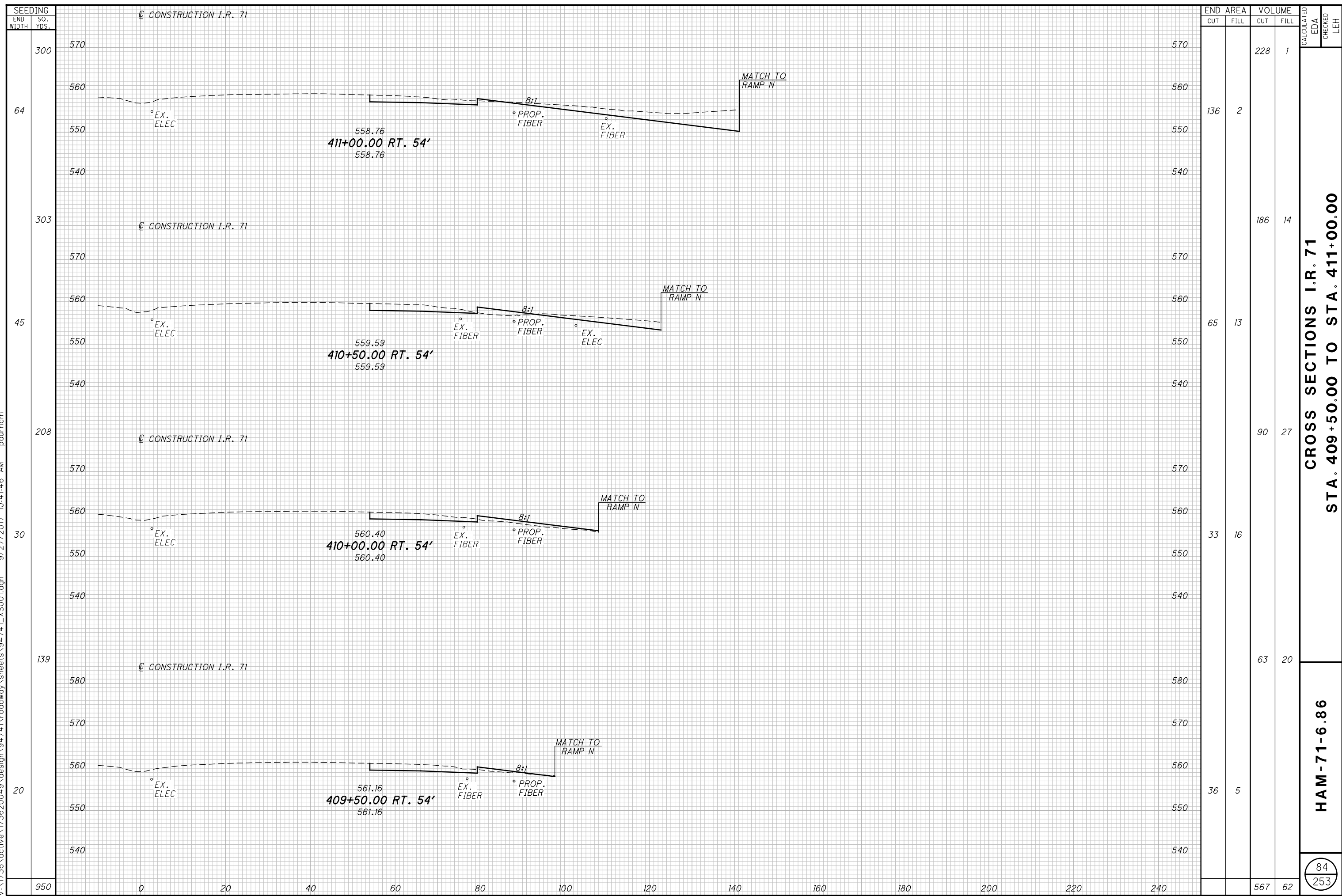
SEEDING	
END WIDTH	SO. YDS.
13	92
56	
7	
392	
134	
540	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
		70	6
40	1		
		73	2
39	1		
		487	80
488	86		
		630	88

CROSS SECTIONS I.R. 71
STA. 408+00.00 TO STA. 409+00.00
HAM-71-6.86
 CALCULATED EDA
 CHECKED LEH
 83
 253

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS001.dgn 9/27/2017 10:41:46 AM pdurham

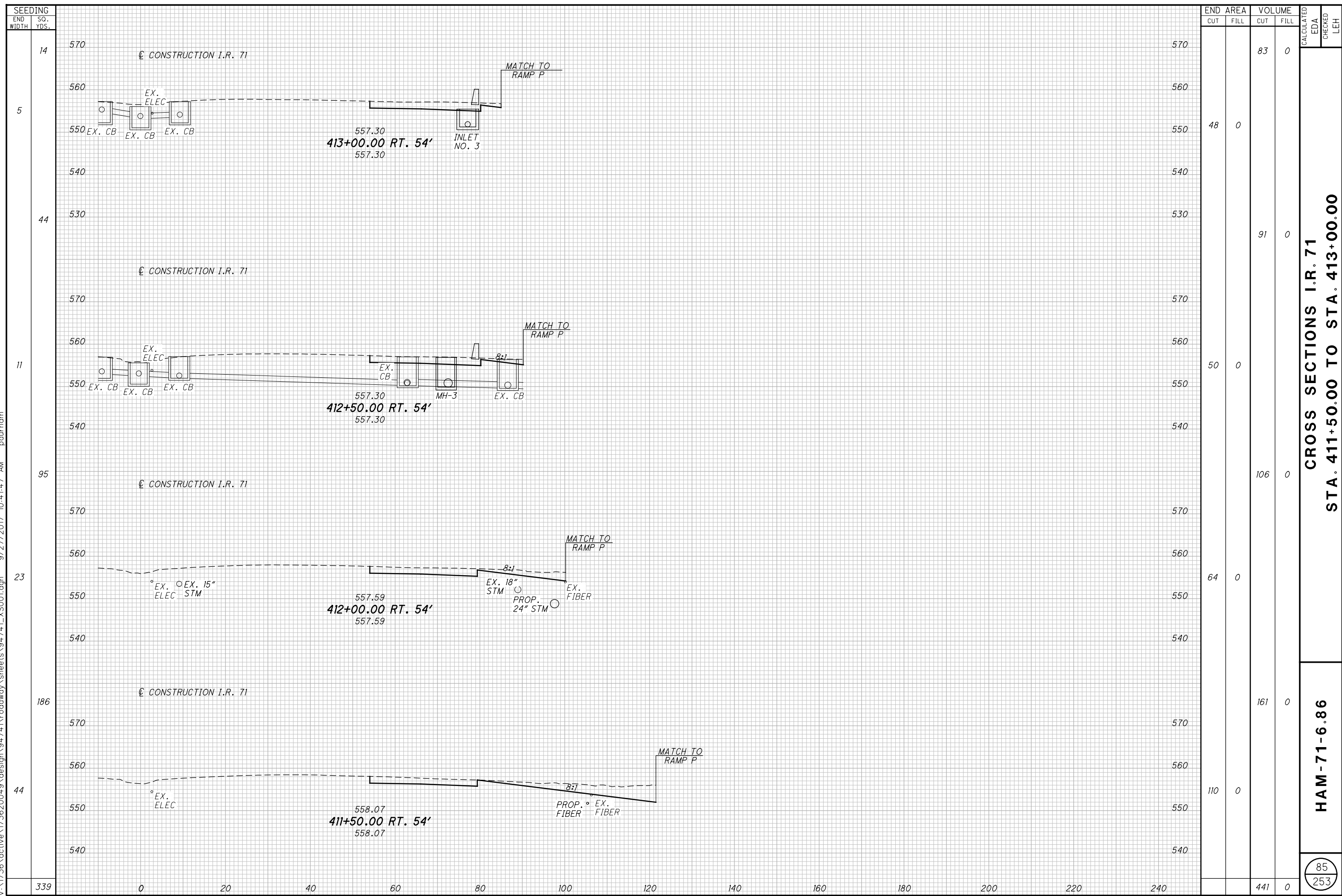


CROSS SECTIONS I.R. 71
STA. 409+50.00 TO STA. 411+00.00

HAM-71-6.86

84
253

V:\1736\active\173620049\design\94741\roadway\sheet\94741_XS001.dgn 9/27/2017 10:41:47 AM pdurham



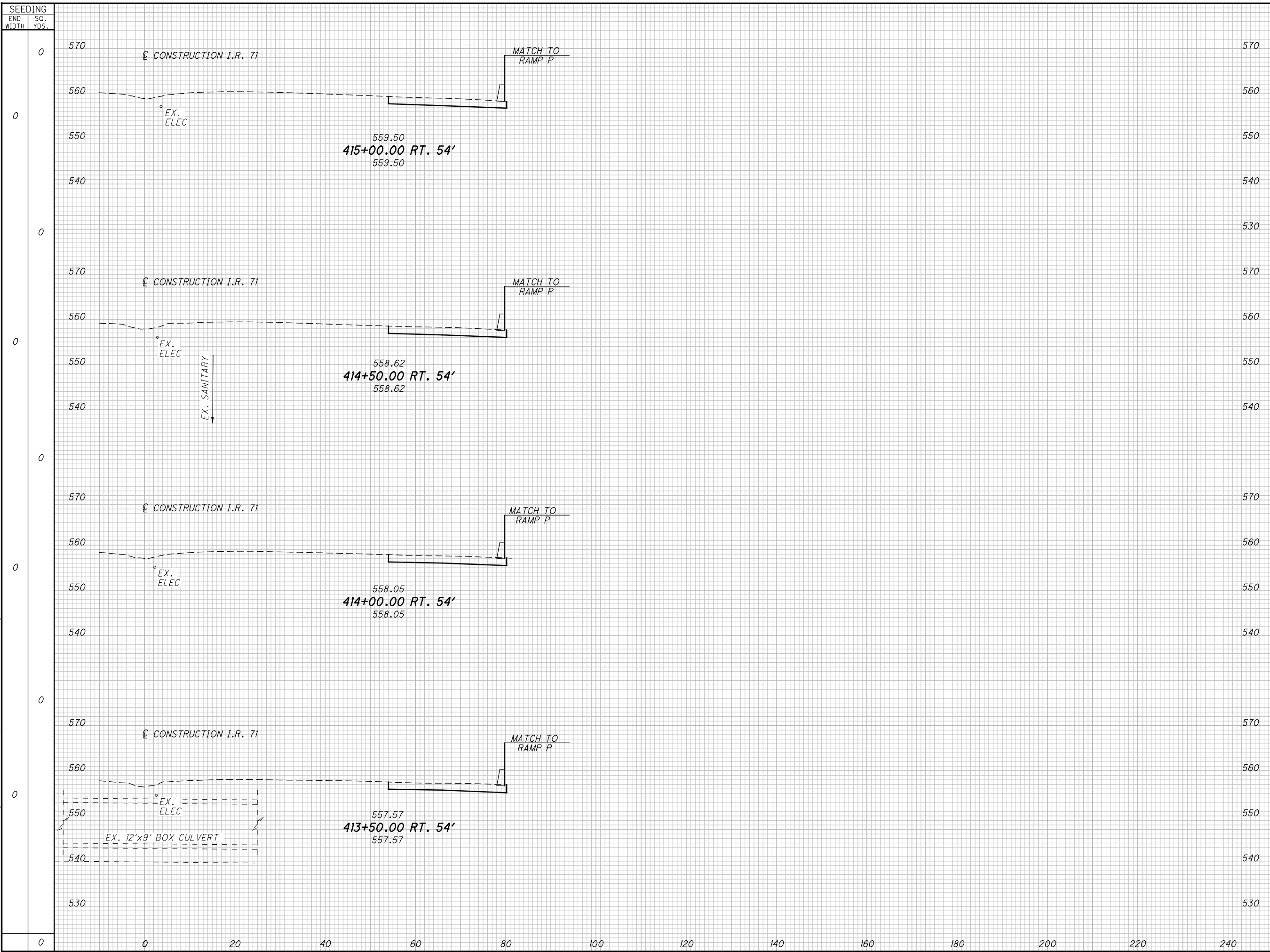
END STA.	AREA		VOLUME		CALCULATED	EDA	CHECKED	LEH
	CUT	FILL	CUT	FILL				
570			83	0				
560								
550	48	0						
540								
530			91	0				
520								
510								
500			50	0				
490								
480								
470								
460			64	0				
450								
440								
430								
420								
410								
400			161	0				
390								
380								
370								
360								
350								
340			110	0				
330								
320								
310								
300								
290								
280								
270								
260								
250								
240								
230								
220								
210								
200								
190								
180								
170								
160								
150								
140								
130								
120								
110								
100								
90								
80								
70								
60								
50								
40								
30								
20								
10								
0								
339			441	0				

CROSS SECTIONS I.R. 71
STA. 411+50.00 TO STA. 413+00.00

HAM-71-6.86

85
253

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS001.dgn 9/27/2017 10:41:48 AM pdurham



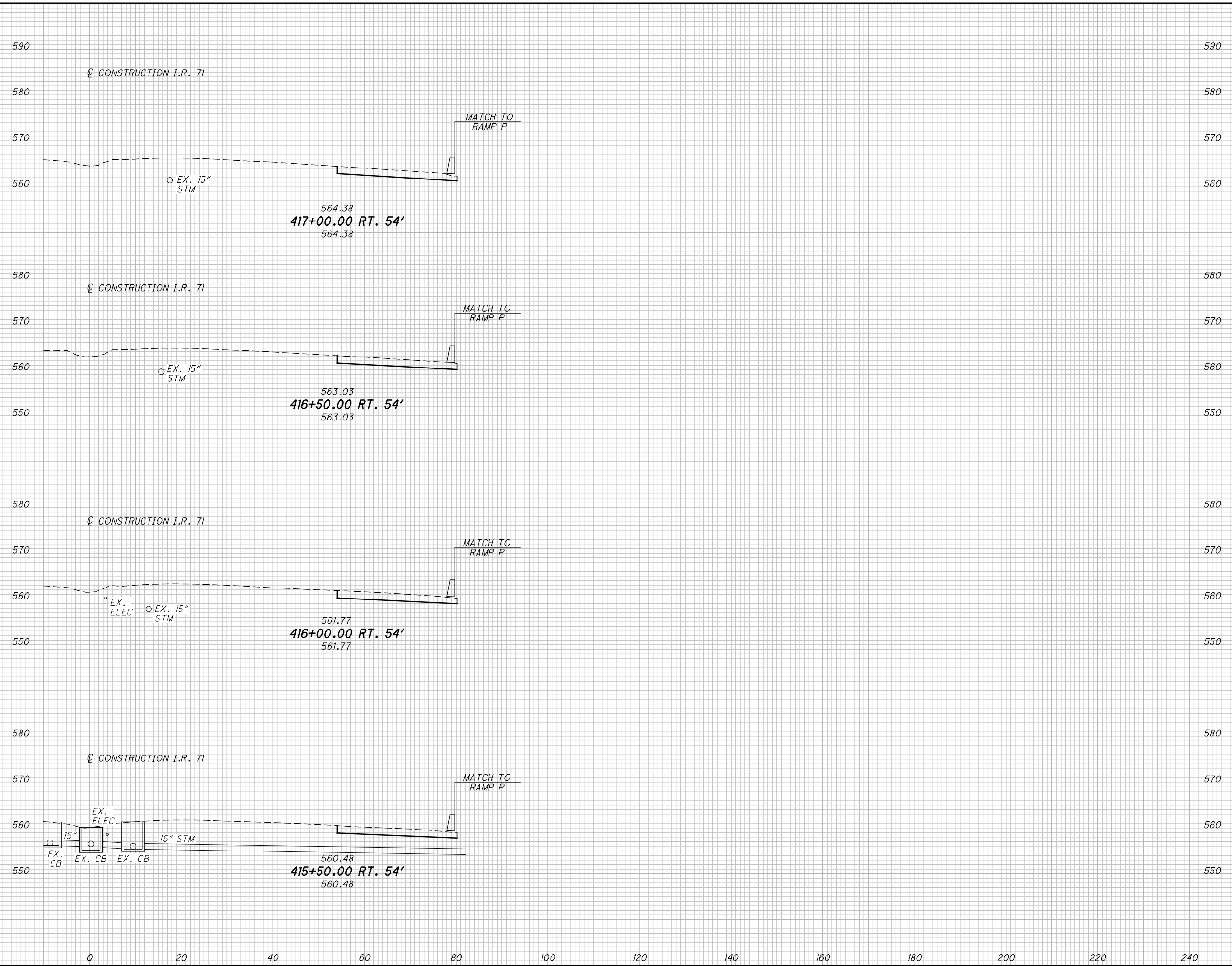
END STA.	AREA		VOLUME		CALCULATED	EDA	CHECKED	LEH
	CUT	FILL	CUT	FILL				
570			73	0				
560								
550	42	0						
540								
530			78	0				
570								
560								
550	43	0						
540			78	0				
570								
560								
550	42	0						
540			78	0				
570								
560								
550	42	0						
540			78	0				
570								
560								
550	42	0						
540			78	0				
530								
0			307	0				

CROSS SECTIONS I.R. 71
STA. 413+50.00 TO STA. 415+00.00

HAM-71-6.86

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS001.dgn 9/27/2017 10:41:49 AM pdurham

SEEDING	
END WIDTH	SO. YDS.
0	590
0	580
0	570
0	560
0	550
0	540
0	530
0	520
0	510
0	500
0	490
0	480
0	470
0	460
0	450
0	440
0	430
0	420
0	410
0	400
0	390
0	380
0	370
0	360
0	350
0	340
0	330
0	320
0	310
0	300
0	290
0	280
0	270
0	260
0	250
0	240
0	230
0	220
0	210
0	200
0	190
0	180
0	170
0	160
0	150
0	140
0	130
0	120
0	110
0	100
0	90
0	80
0	70
0	60
0	50
0	40
0	30
0	20
0	10
0	0



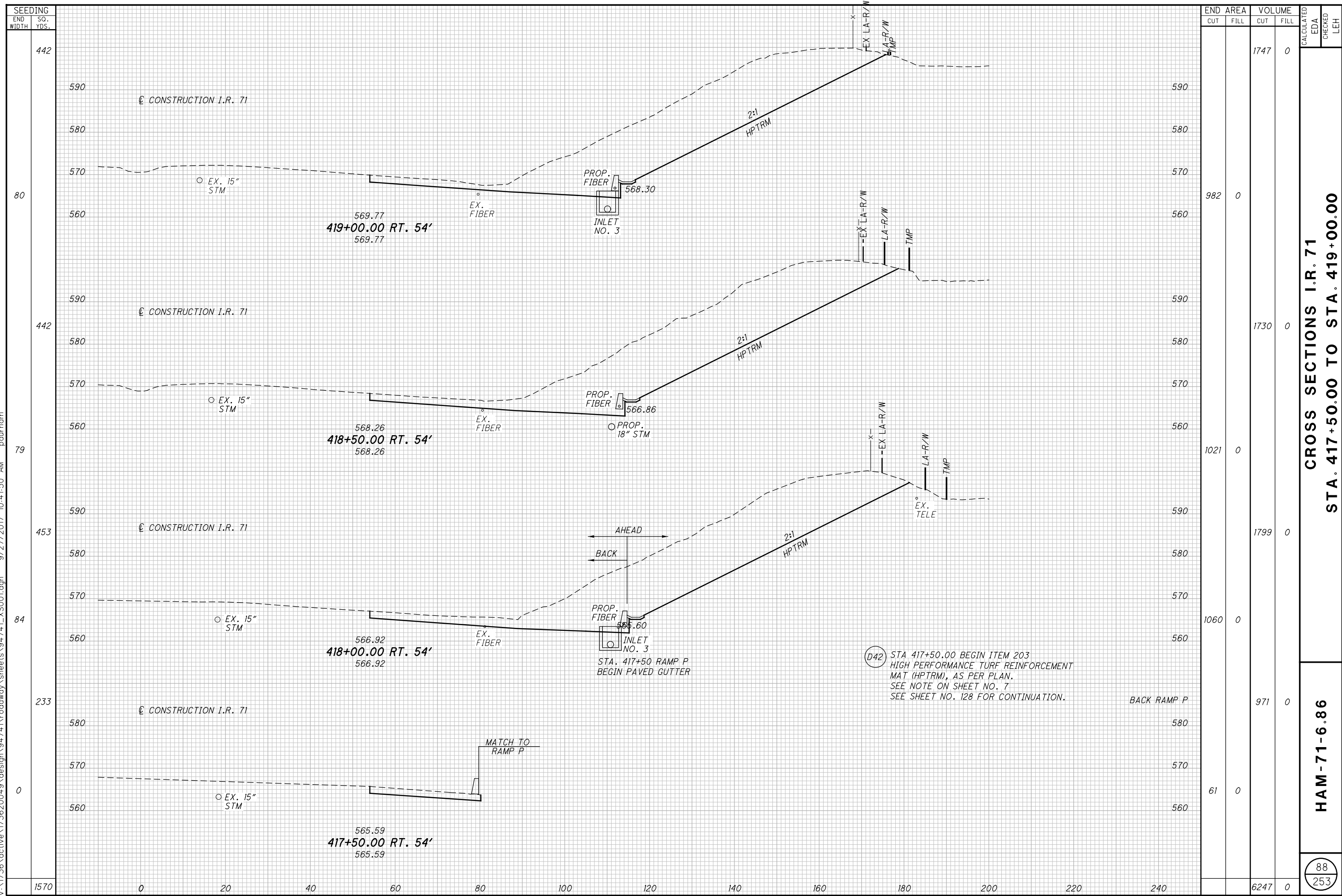
END AREA		VOLUME	
CUT	FILL	CUT	FILL
39	0	70	0
40	0	71	0
40	0	72	0
39	0	71	0
284	0	284	0

CROSS SECTIONS I.R. 71
STA. 415+50.00 TO STA. 417+00.00

HAM-71-6.86

87
253

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS001.dgn 9/27/2017 10:41:50 AM pdurham



**CROSS SECTIONS I.R. 71
STA. 417+50.00 TO STA. 419+00.00**

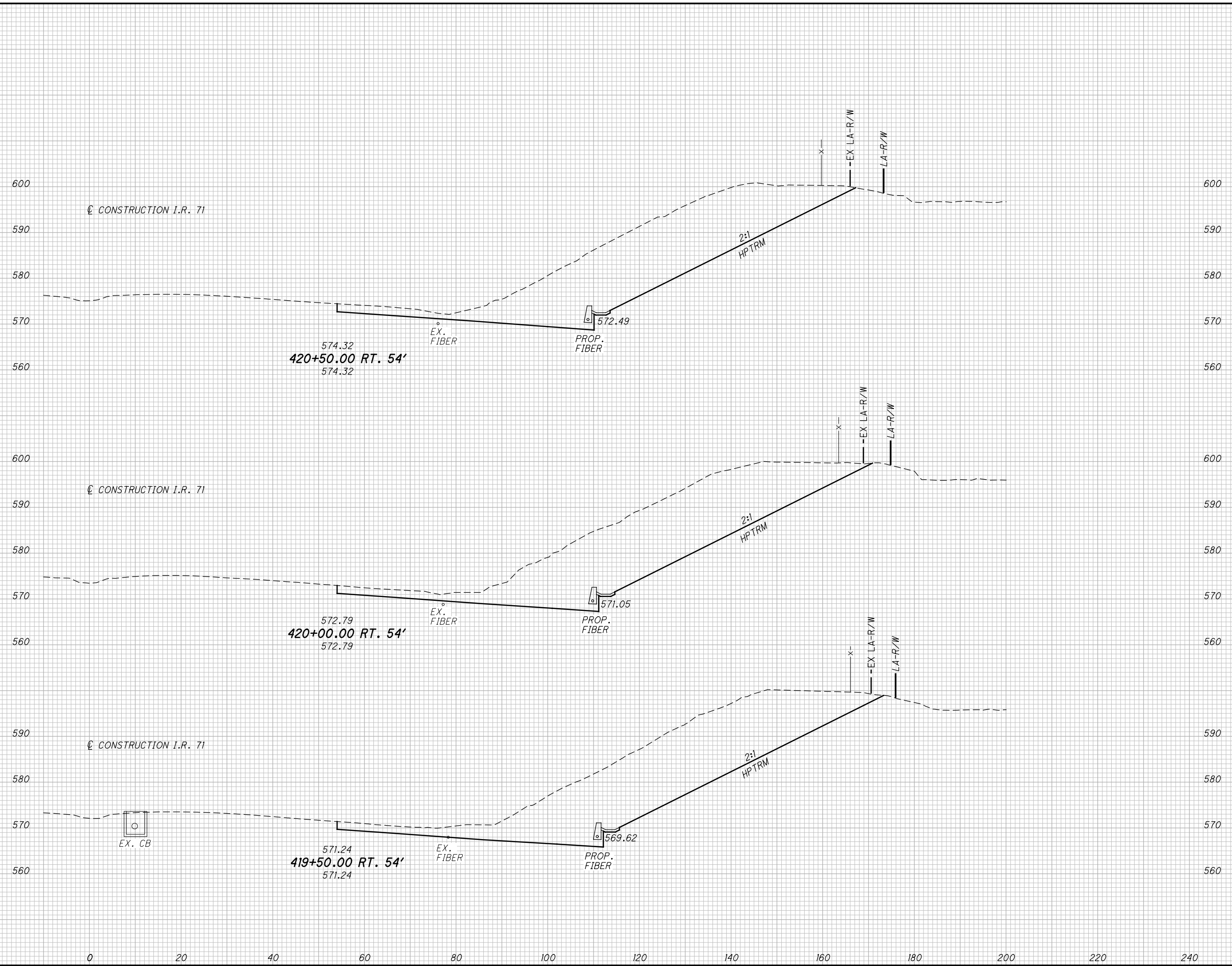
HAM-71-6.86

88
253

(D42) STA 417+50.00 BEGIN ITEM 203
HIGH PERFORMANCE TURF REINFORCEMENT
MAT (HPTRM), AS PER PLAN.
SEE NOTE ON SHEET NO. 7
SEE SHEET NO. 128 FOR CONTINUATION.

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS001.dgn 9/27/2017 10:41:51 AM pdurham

SEEDING	
END WIDTH	SO. YDS.
408	
74	
419	
77	
433	
79	
1260	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
		1585	0
942	0	1672	0
986	0	1753	0
1038	0		
		5010	0

CALCULATED	CHECKED
EDA	LEH

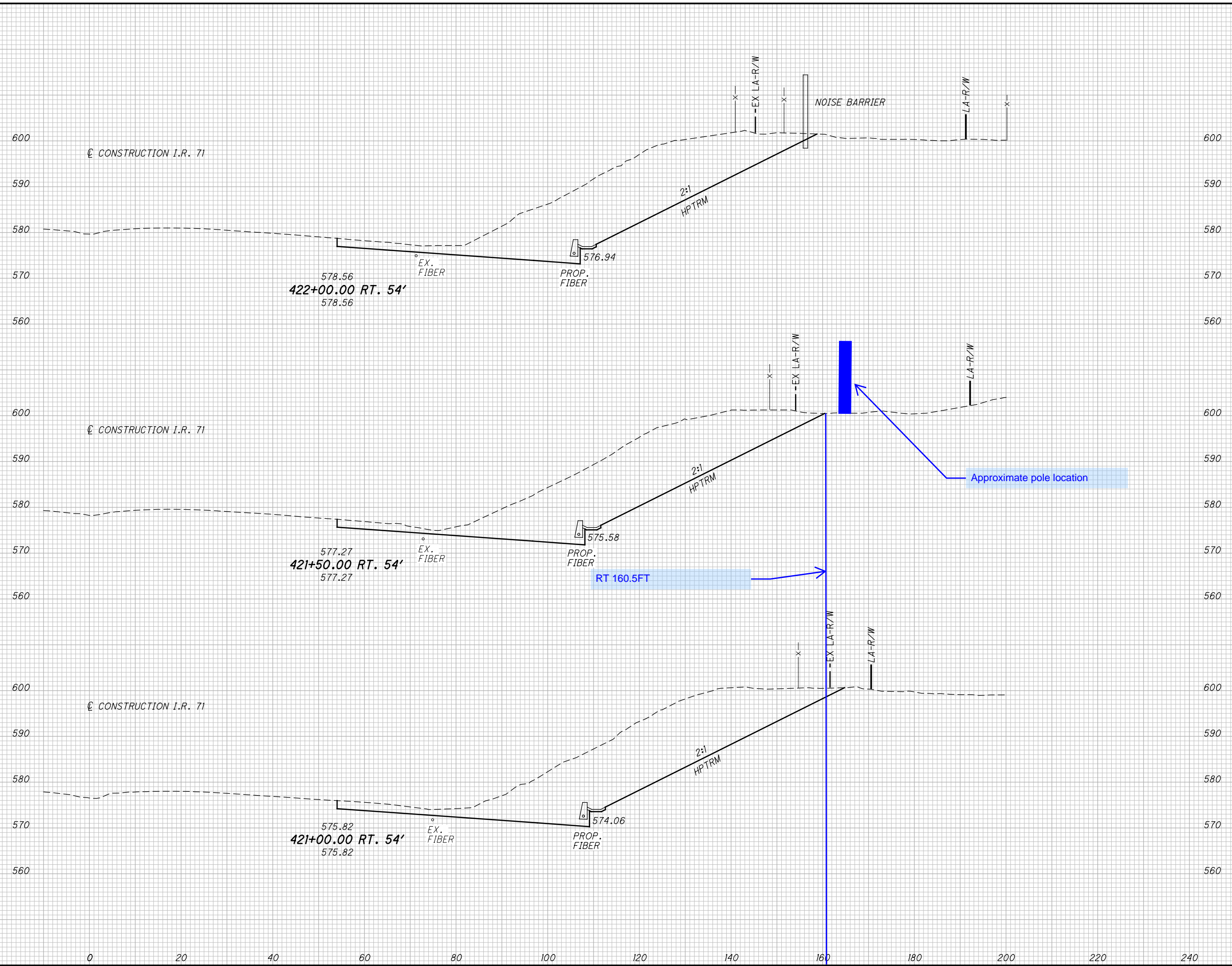
**CROSS SECTIONS I.R. 71
STA. 419+50.00 TO STA. 420+50.00**

HAM-71-6.86

89
253

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS001.dgn 9/27/2017 10:41:52 AM pdurham

SEEDING	END		SO.
	WIDTH	YDS.	
			372
			68
			381
			69
			394
			73
			1147

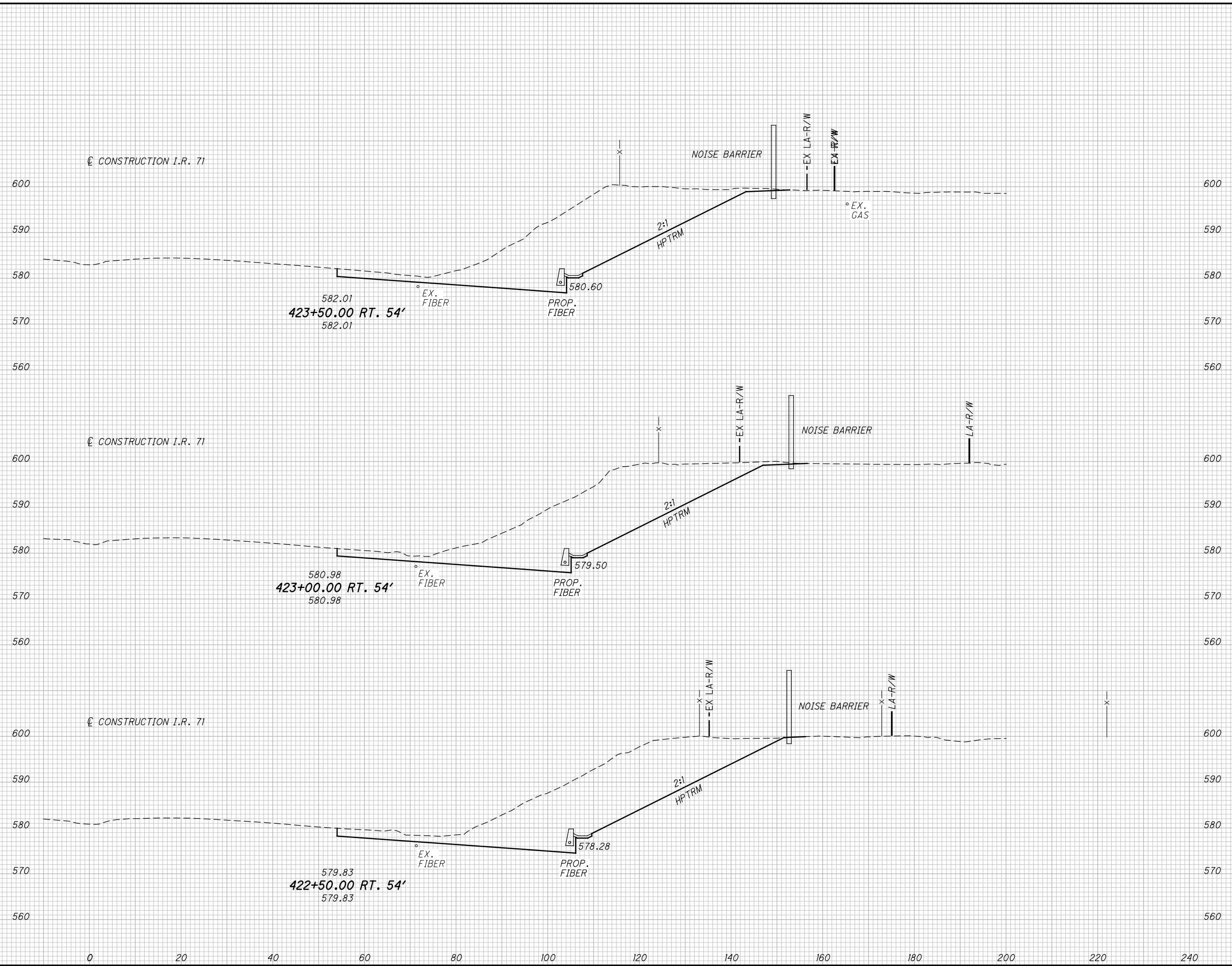


END AREA	VOLUME		CALCULATED	EDA	CHECKED	LEH
	CUT	FILL				
			1343	0		
			830	0		
			1454	0		
			842	0		
			1499	0		
			883	0		
			4296	0		

CROSS SECTIONS I.R. 71
STA. 421+00.00 TO STA. 422+00.00
HAM-71-6.86
 90
 253

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS001.dgn 9/27/2017 10:41:52 AM pdurham

SEEDING	
END WIDTH	SO. YDS.
1056	322
66	64
370	364
67	67
66	370
1056	322



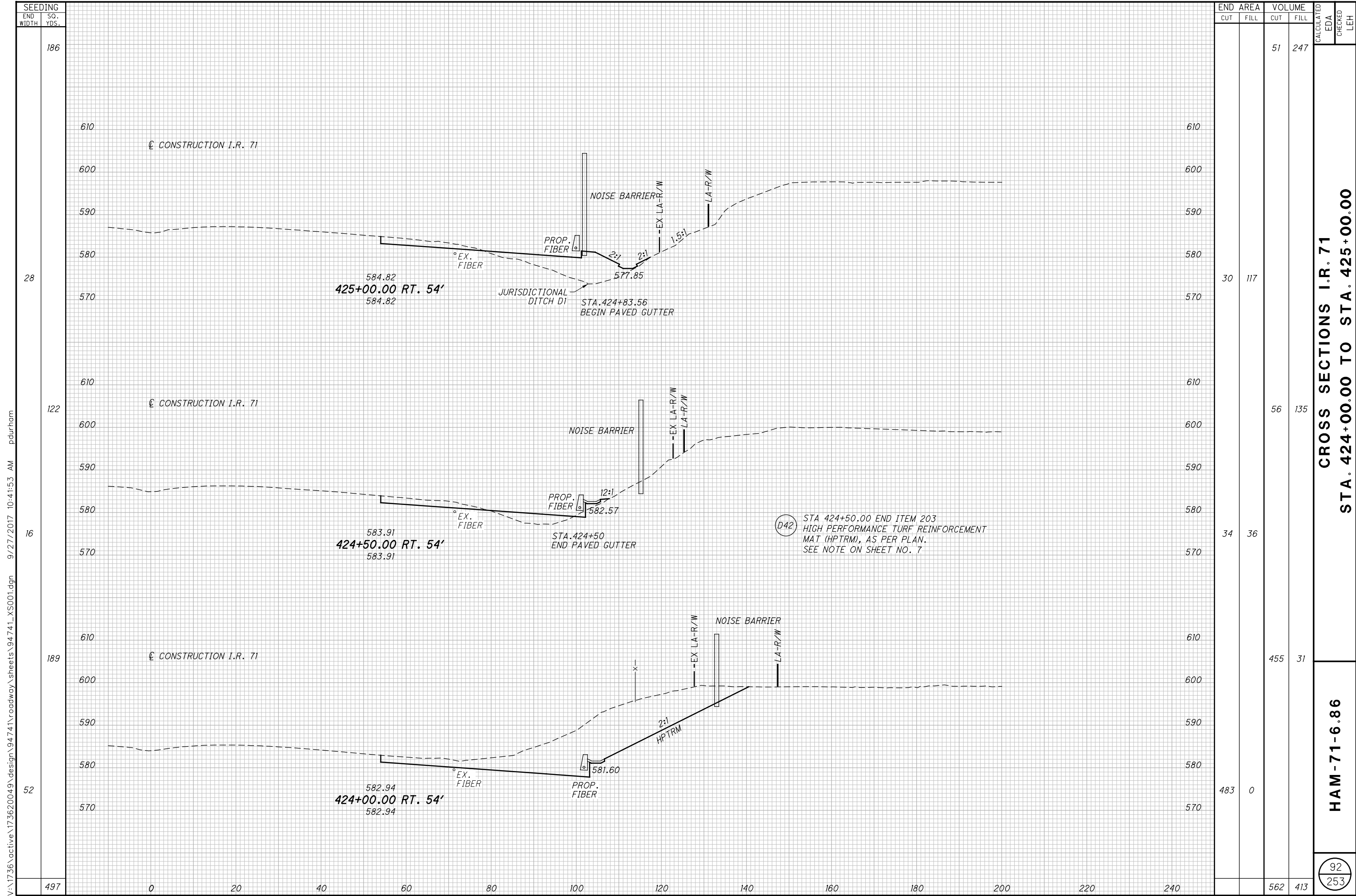
END AREA		VOLUME	
CUT	FILL	CUT	FILL
711	0	3435	0
689	0	1196	0
680	0	1017	0

HAM-71-6.86

CROSS SECTIONS I.R. 71
STA. 422+50.00 TO STA. 423+50.00

CALCULATED
EDA
CHECKED
LEH

91
253

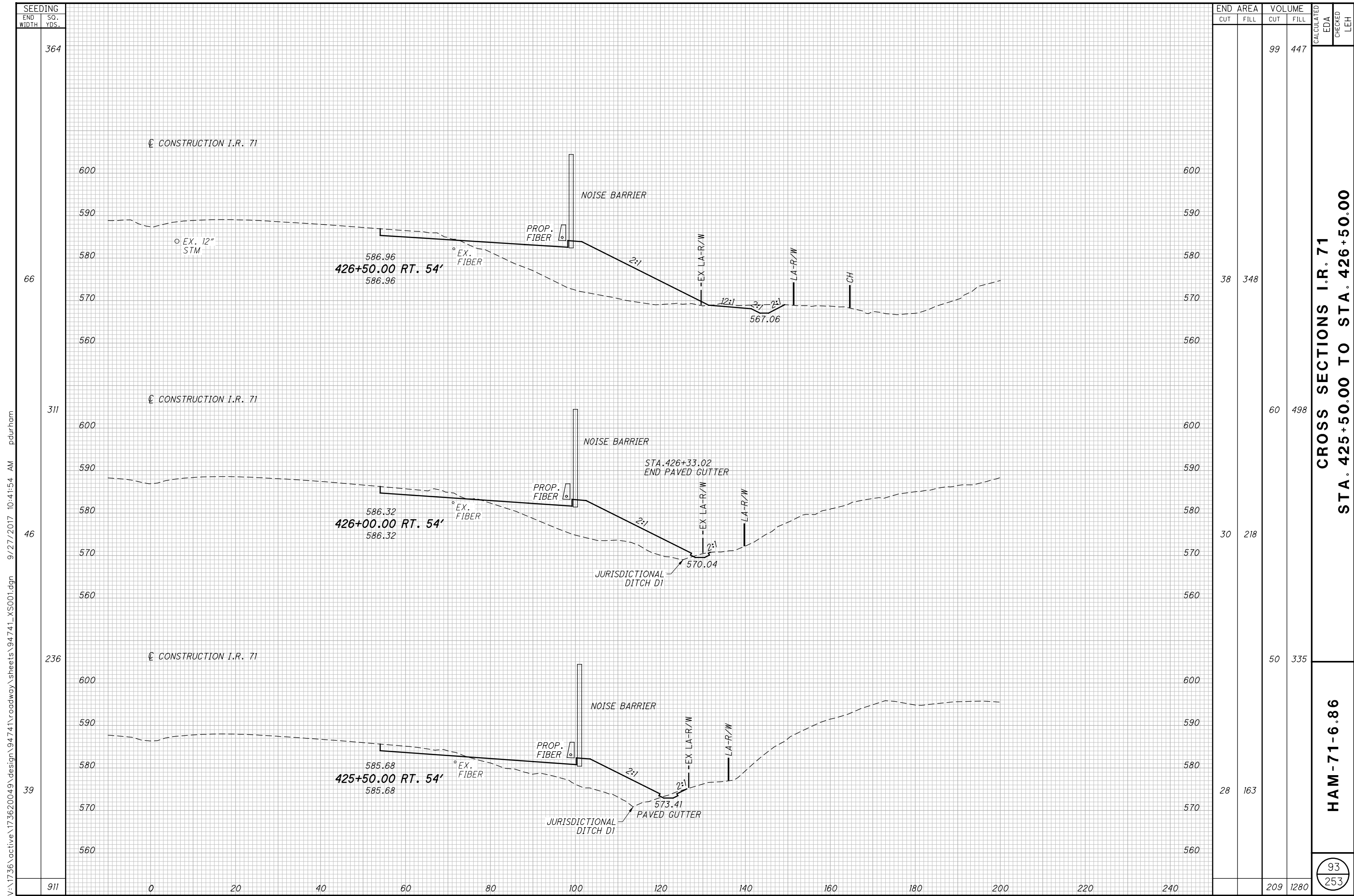


CROSS SECTIONS I.R. 71
STA. 424+00.00 TO STA. 425+00.00

HAM-71-6.86

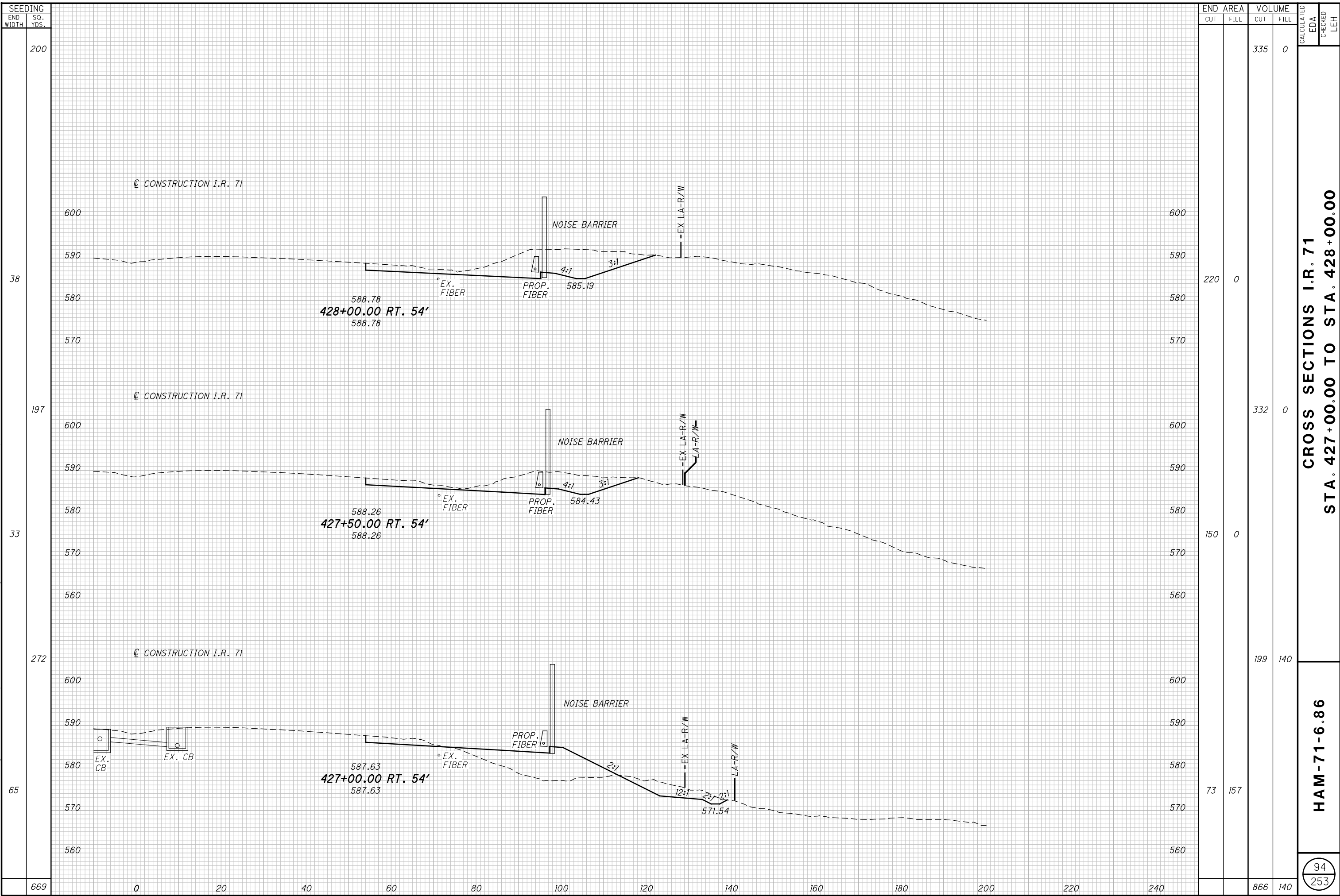
92
 253

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS001.dgn 9/27/2017 10:41:53 AM pdurham



V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS001.dgn 9/27/2017 10:41:54 AM pdurham

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS001.dgn 9/27/2017 10:41:55 AM pdurham



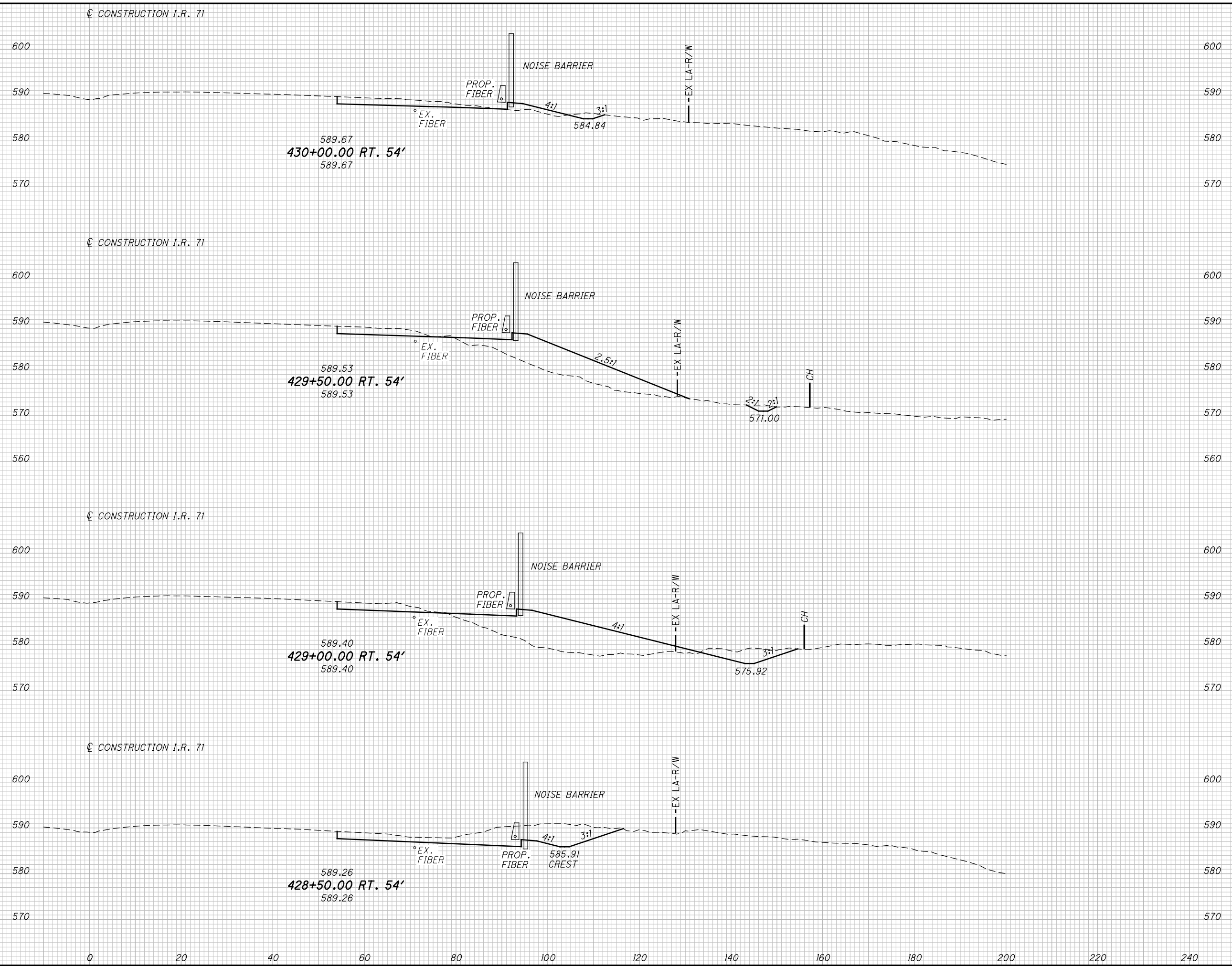
CROSS SECTIONS I.R. 71
STA. 427+00.00 TO STA. 428+00.00

HAM-71-6.86

94
253

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS001.dgn 9/27/2017 10:41:56 AM pdurham

SEEDING	END	
	WIDTH	SO. YDS.
181		
32		
289		
72		
406		
74		
300		
34		
1176		



END	AREA		VOLUME	
	CUT	FILL	CUT	FILL
600				
590			111	13
580	44	14		
570				
600			72	181
590				
580	34	185		
570				
560				
600			92	379
590				
580	68	234		
570				
600			198	211
590				
580				
570	152	0		
473			784	

CALCULATED
EDA
CHECKED
LEH

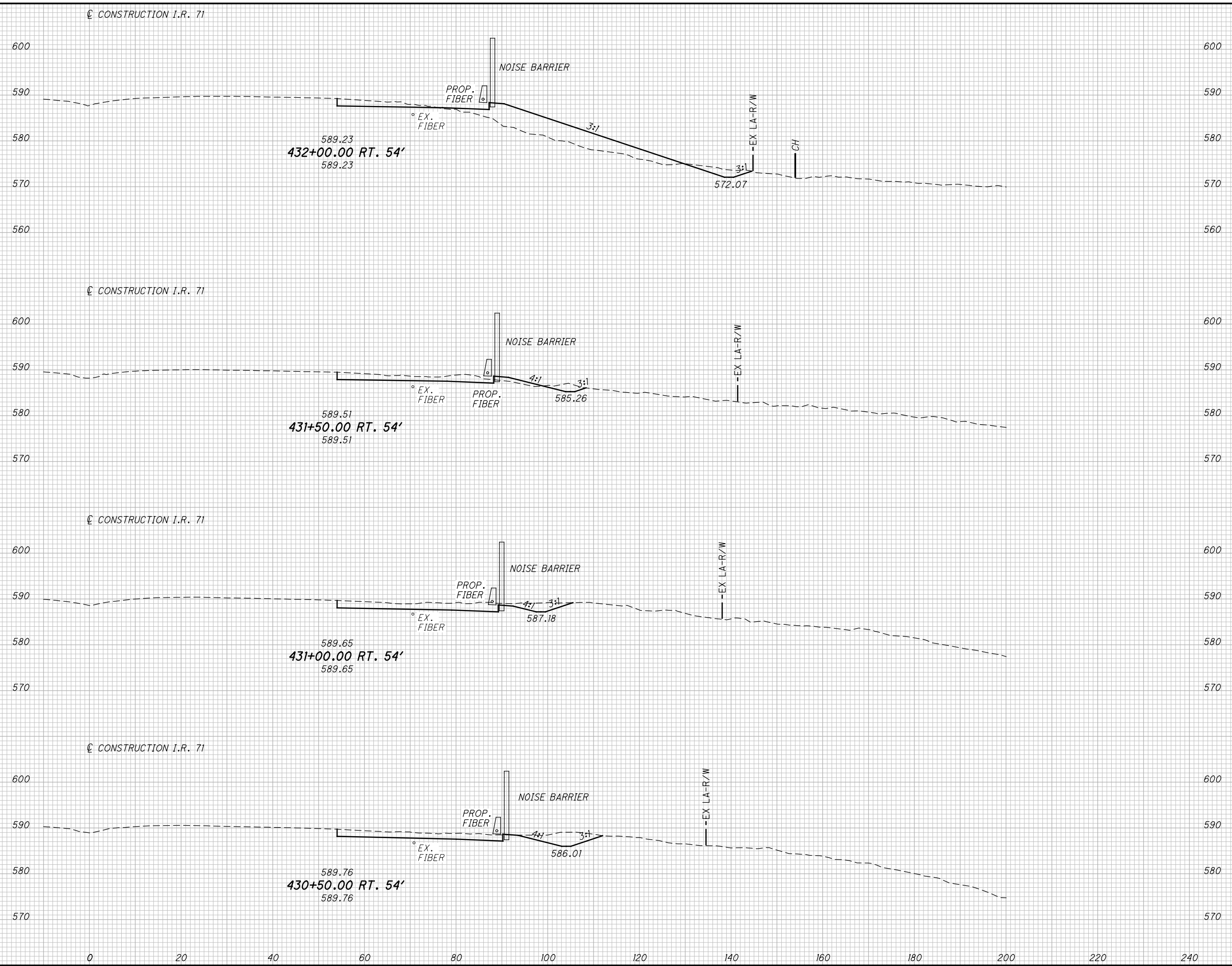
**CROSS SECTIONS I.R. 71
STA. 428+50.00 TO STA. 430+00.00**

HAM-71-6.86

95
253

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS001.dgn 9/27/2017 10:41:57 AM pdurham

SEEDING	END	
	WIDTH	SO. YDS.
339		
71		
283		
31		
161		
27		
167		
33		
950		



END	AREA		VOLUME	
	CUT	FILL	CUT	FILL
339			57	229
71	37	144		
283			80	140
31	49	7		
161			111	7
27	71	0		
167			136	0
33	77	0		
950			384	376

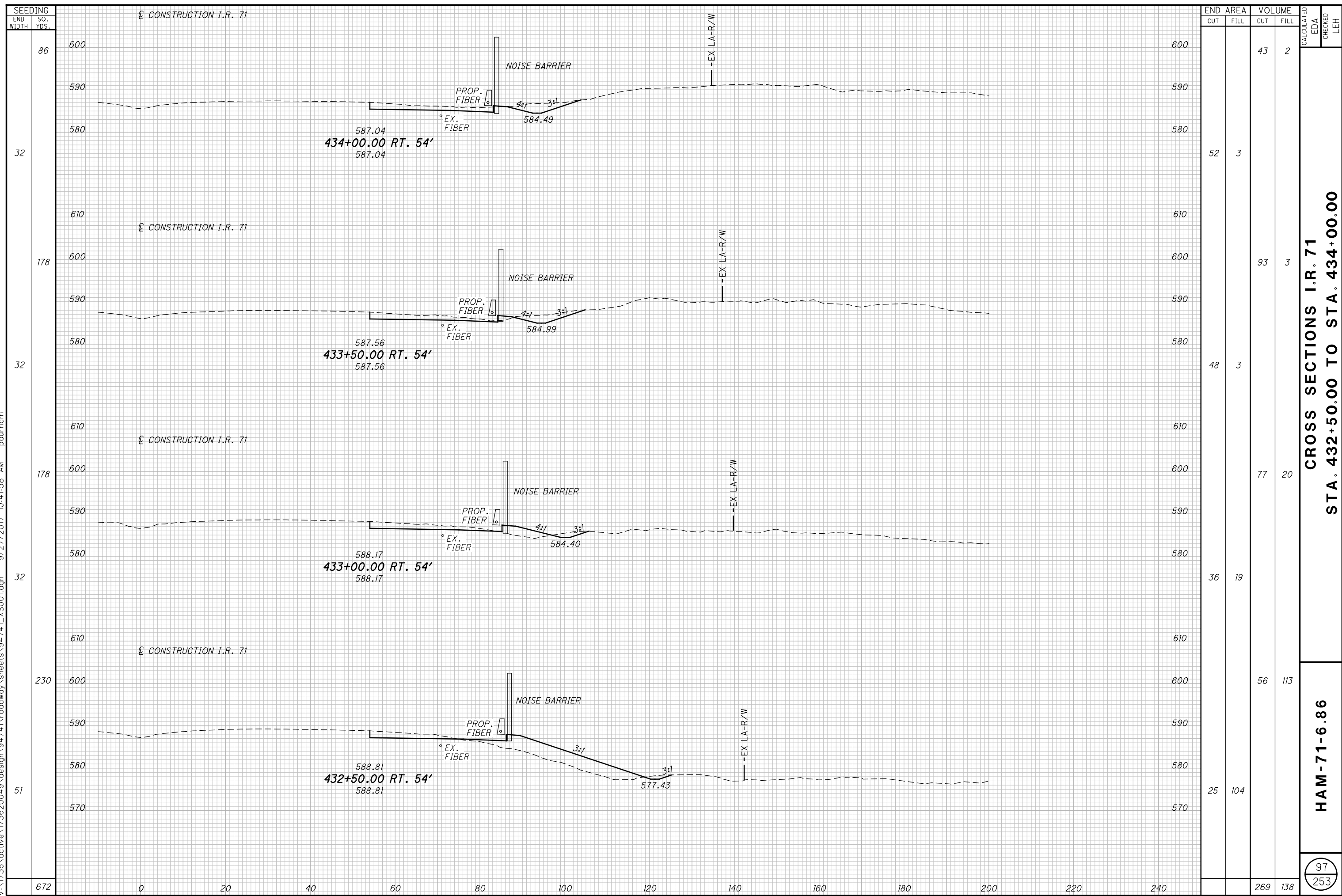
CALCULATED
EDA
CHECKED
LEH

**CROSS SECTIONS I.R. 71
STA. 430+50.00 TO STA. 432+00.00**

HAM-71-6.86

96
253

V:\1736\active\173620049\design\94741\roadway\sheet\94741_XS001.dgn 9/27/2017 10:41:58 AM pdurham



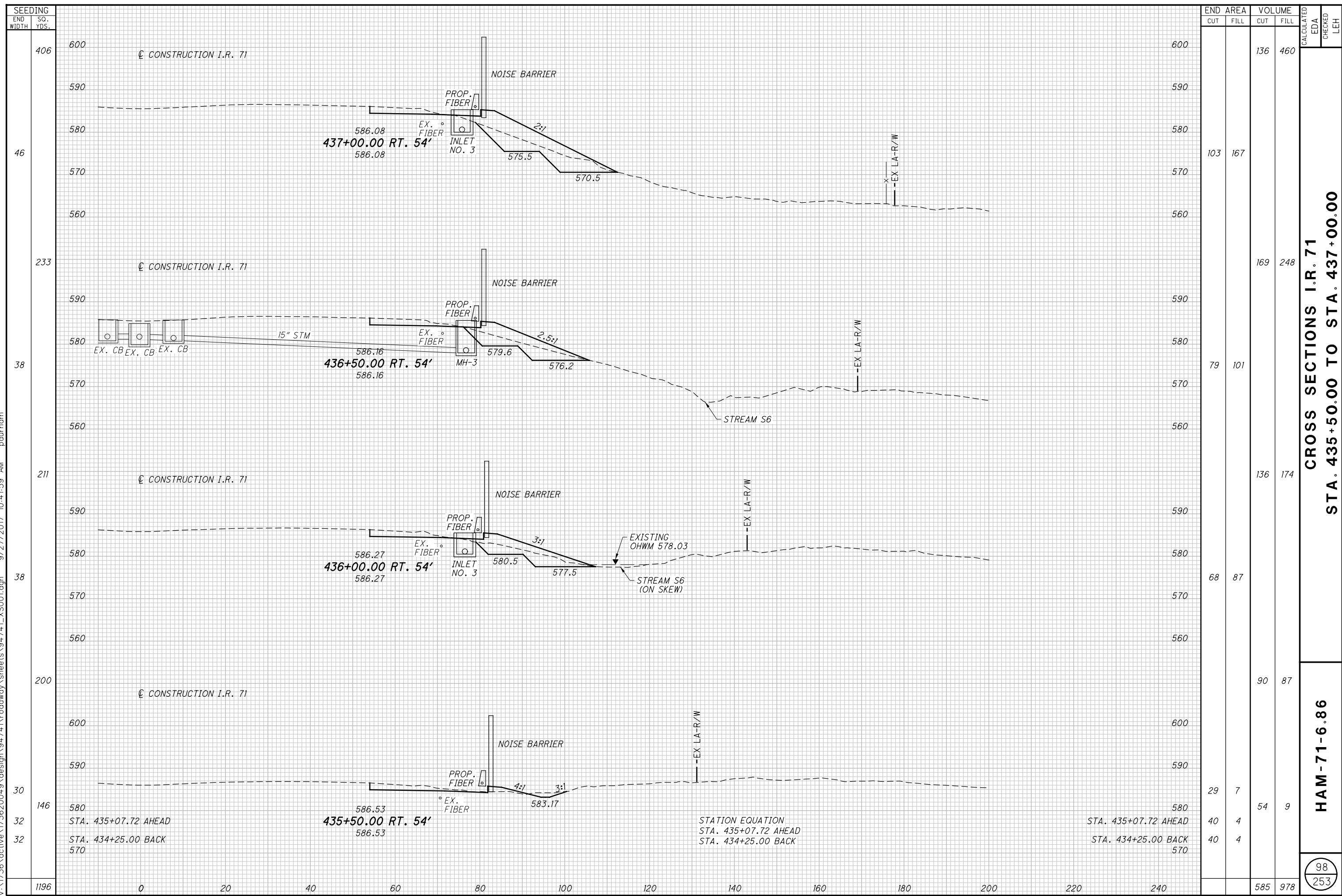
END STA.	AREA		VOLUME		CALCULATED	CHECKED	LEH
	CUT	FILL	CUT	FILL			
86			43	2			
32	52	3					
178			93	3			
32	48	3					
178			77	20			
32	36	19					
230			56	113			
51	25	104					
672			269	138			

CROSS SECTIONS I.R. 71
STA. 432+50.00 TO STA. 434+00.00

HAM-71-6.86

97
 253

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS001.dgn 9/27/2017 10:41:59 AM pdurham

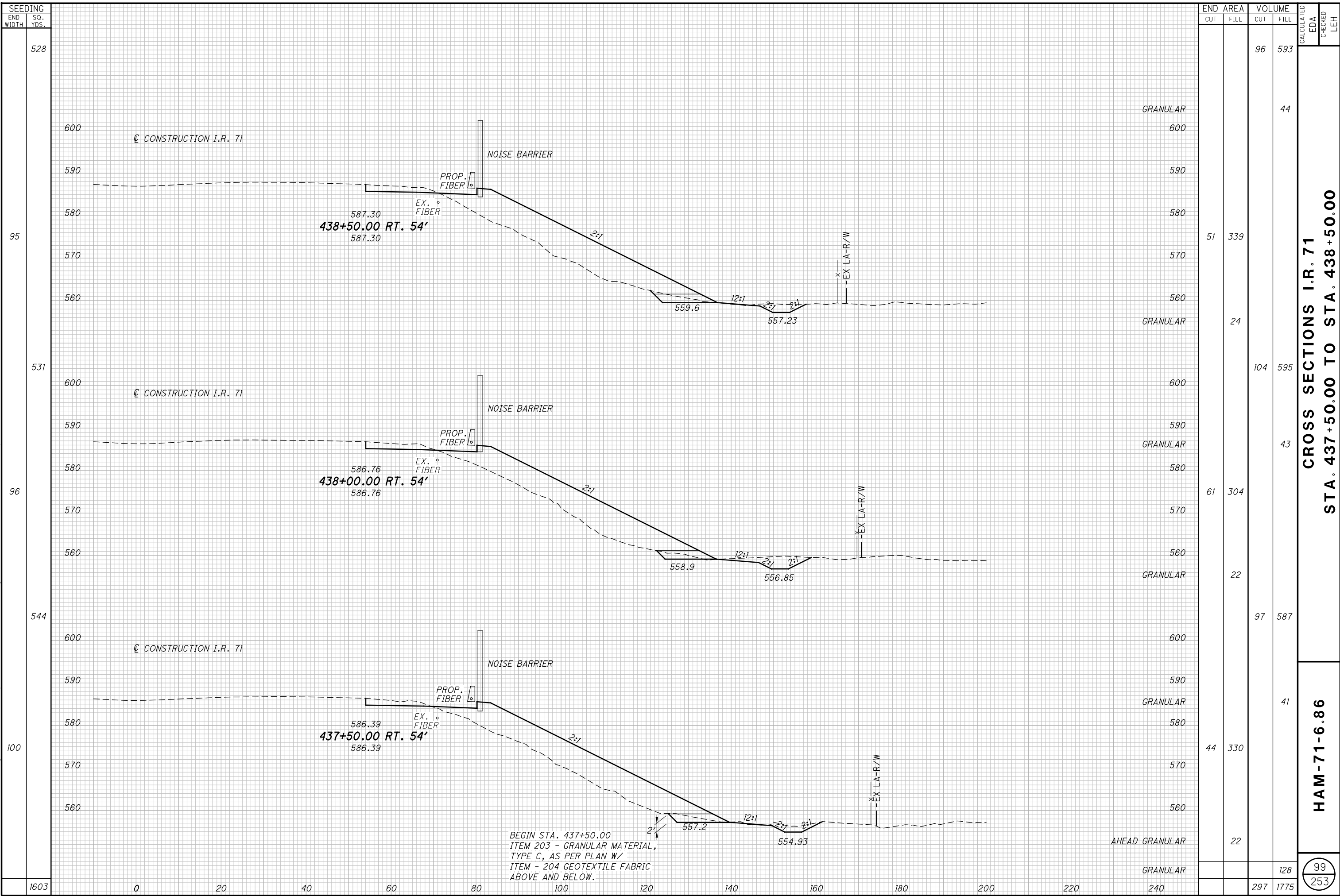


SEEDING	END AREA		VOLUME		CALCULATED	CHECKED	LEH
	CUT	FILL	CUT	FILL			
406			136	460			
46	103	167					
233			169	248			
38	79	101					
211			136	174			
38	68	87					
200			90	87			
30	29	7					
146			54	9			
32	40	4					
32	40	4					
1196			585	978			

CROSS SECTIONS I.R. 71
STA. 435+50.00 TO STA. 437+00.00

HAM-71-6.86

V:\1736\active\173620049\design\94741\roadway\sheet\94741_XS001.dgn 9/27/2017 10:41:59 AM pdurham



BEGIN STA. 437+50.00
 ITEM 203 - GRANULAR MATERIAL,
 TYPE C, AS PER PLAN W/
 ITEM - 204 GEOTEXTILE FABRIC
 ABOVE AND BELOW.

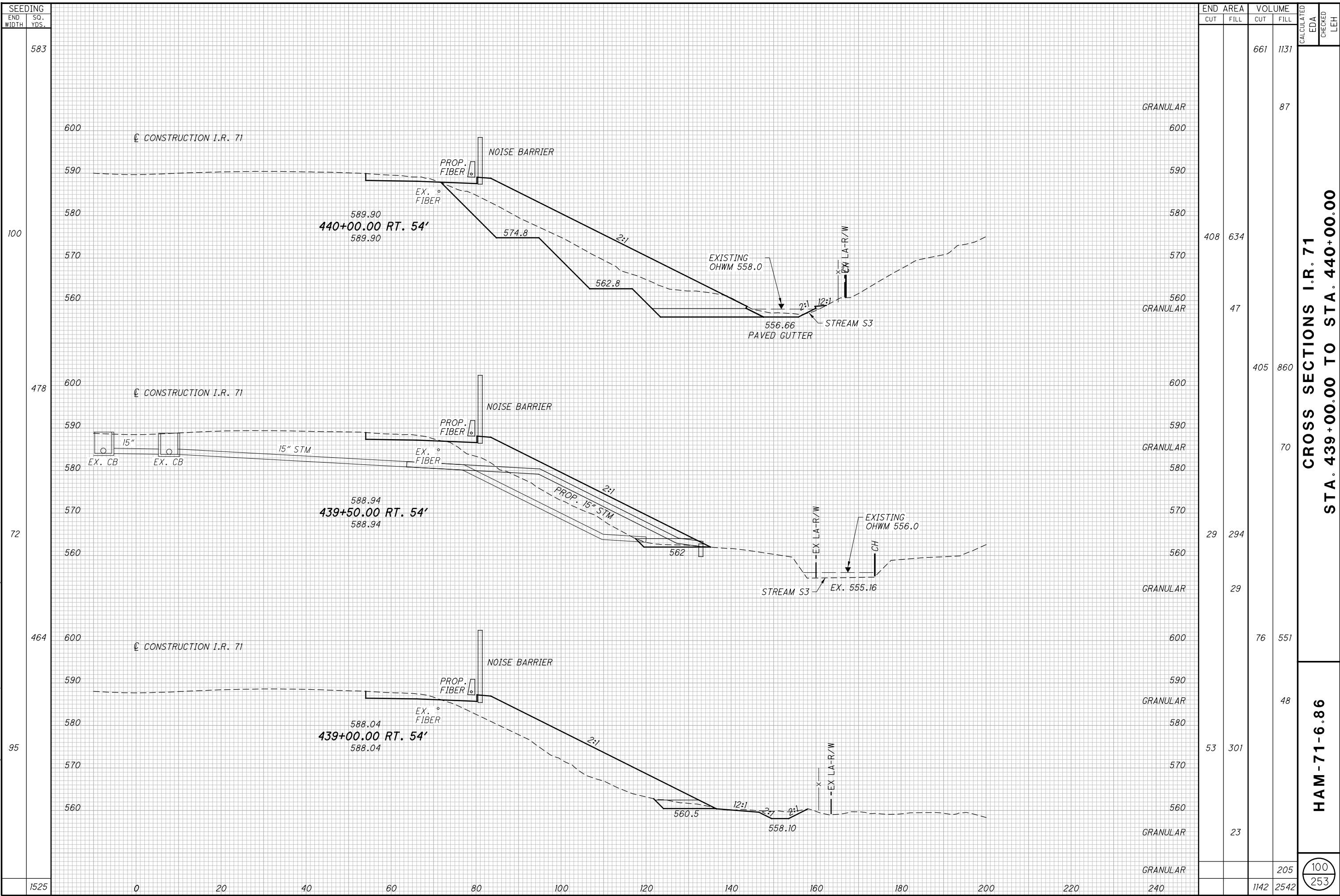
END STA.	END AREA		VOLUME		CALCULATED	CHECKED	LEH
	CUT	FILL	CUT	FILL			
528			96	593			
95				44			
531			104	595			
96				43			
544			97	587			
100				41			
1603			297	1775			

**CROSS SECTIONS I.R. 71
 STA. 437+50.00 TO STA. 438+50.00**

HAM-71-6.86

99
 253

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS001.dgn 9/27/2017 10:42:00 AM pdurham

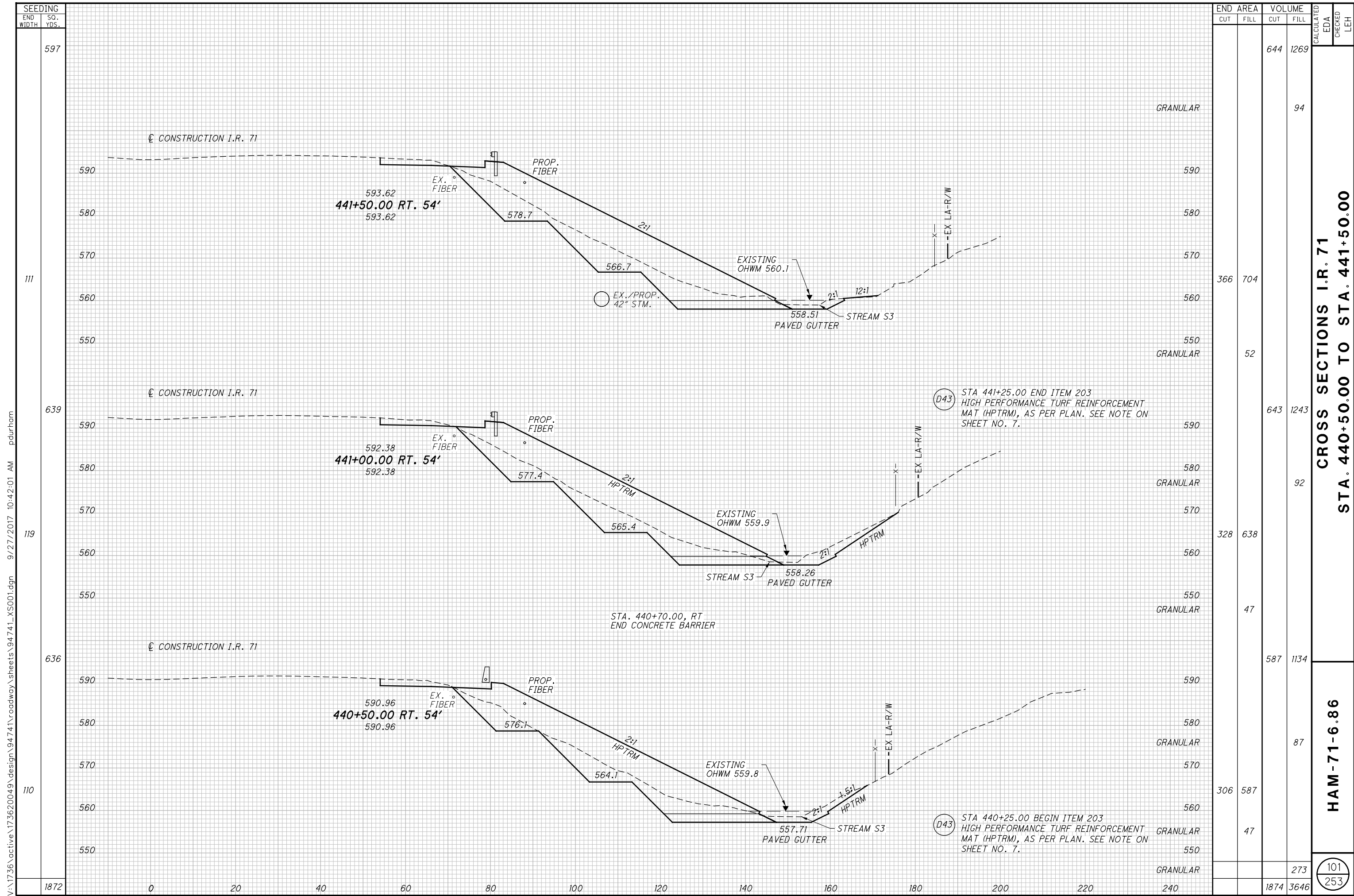


END STA.	END AREA		VOLUME		CALCULATED	CHECKED	LEH
	CUT	FILL	CUT	FILL			
583			661	1131			
478			405	860			
72			29	294			
464			76	551			
95			53	301			
1525			1142	2542			

CROSS SECTIONS I.R. 71
STA. 439+00.00 TO STA. 440+00.00

HAM-71-6.86

100
 253

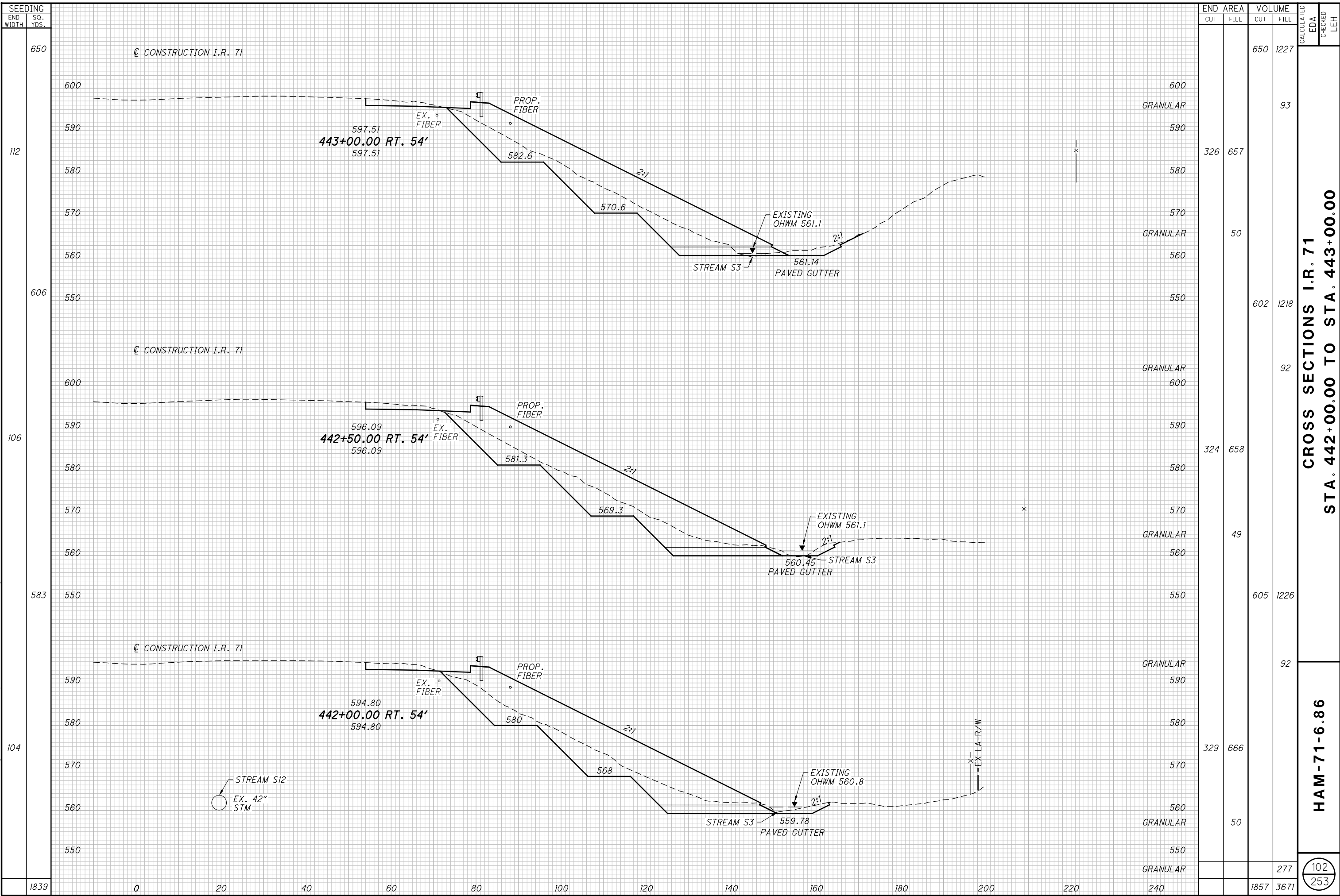


CROSS SECTIONS I.R. 71
STA. 440+50.00 TO STA. 441+50.00

HAM-71-6.86

V:\1736\active\173620049\design\94741\roadway\sheet\94741_XS001.dgn 9/27/2017 10:42:01 AM pdurham

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS001.dgn 9/27/2017 10:42:02 AM pdurham



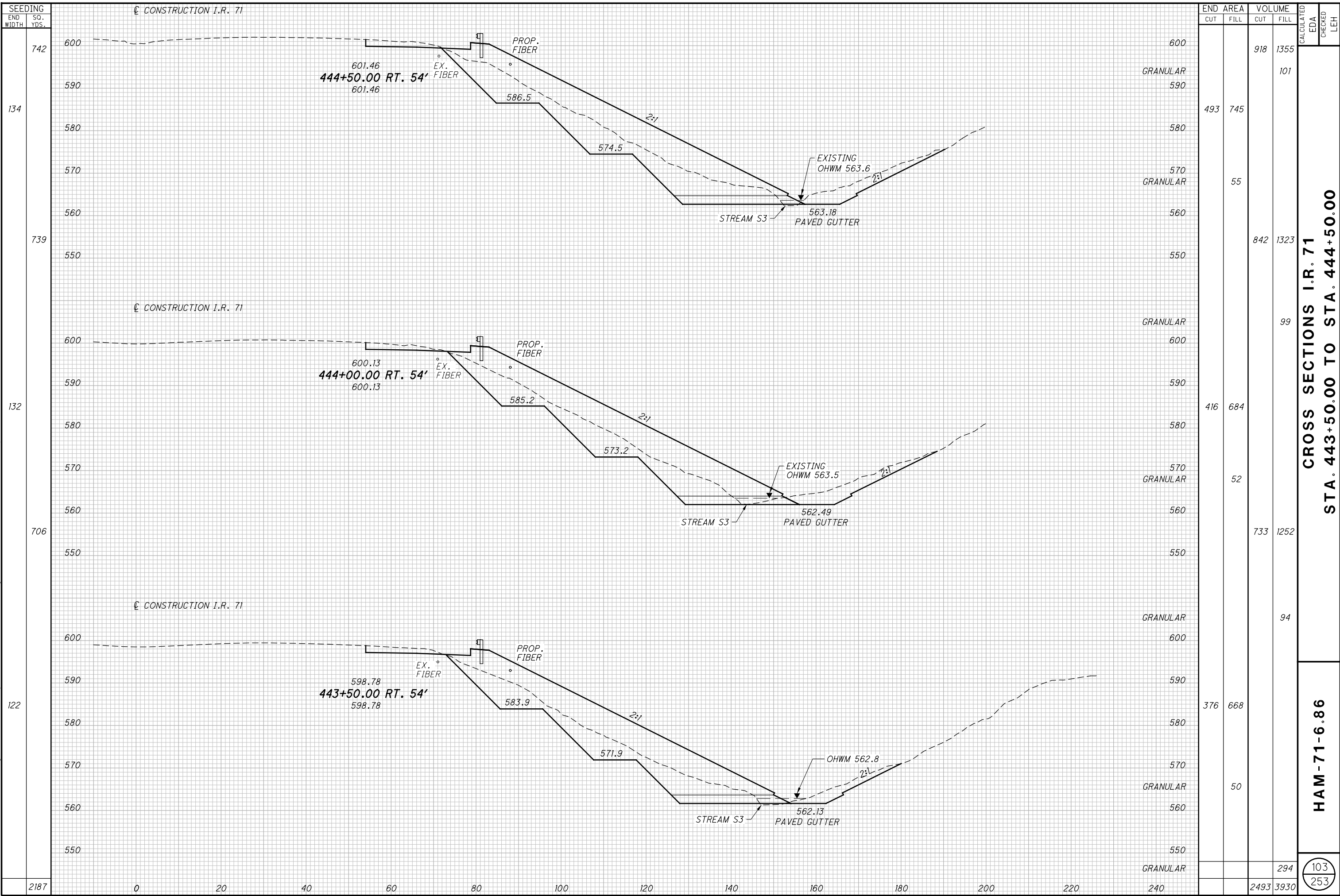
END STA.	END AREA		VOLUME		CALCULATED	CHECKED	LEH
	CUT	FILL	CUT	FILL			
650			650	1227			
606	326	657	602	1218			
106	324	658	605	1226			
583	329	666					
104							
1839			1857	3671			

CROSS SECTIONS I.R. 71
STA. 442+00.00 TO STA. 443+00.00

HAM-71-6.86

102
 253

V:\1736\active\173620049\design\94741\roadway\sheet\94741_XS001.dgn 9/27/2017 10:42:03 AM pdurham



SEEDING	END AREA		VOLUME		CALCULATED	EDA	CHECKED	LEH
	CUT	FILL	CUT	FILL				
742			918	1355				
134	493	745						
739			842	1323				
132	416	684						
706			733	1252				
122	376	668						
2187			2493	3930				

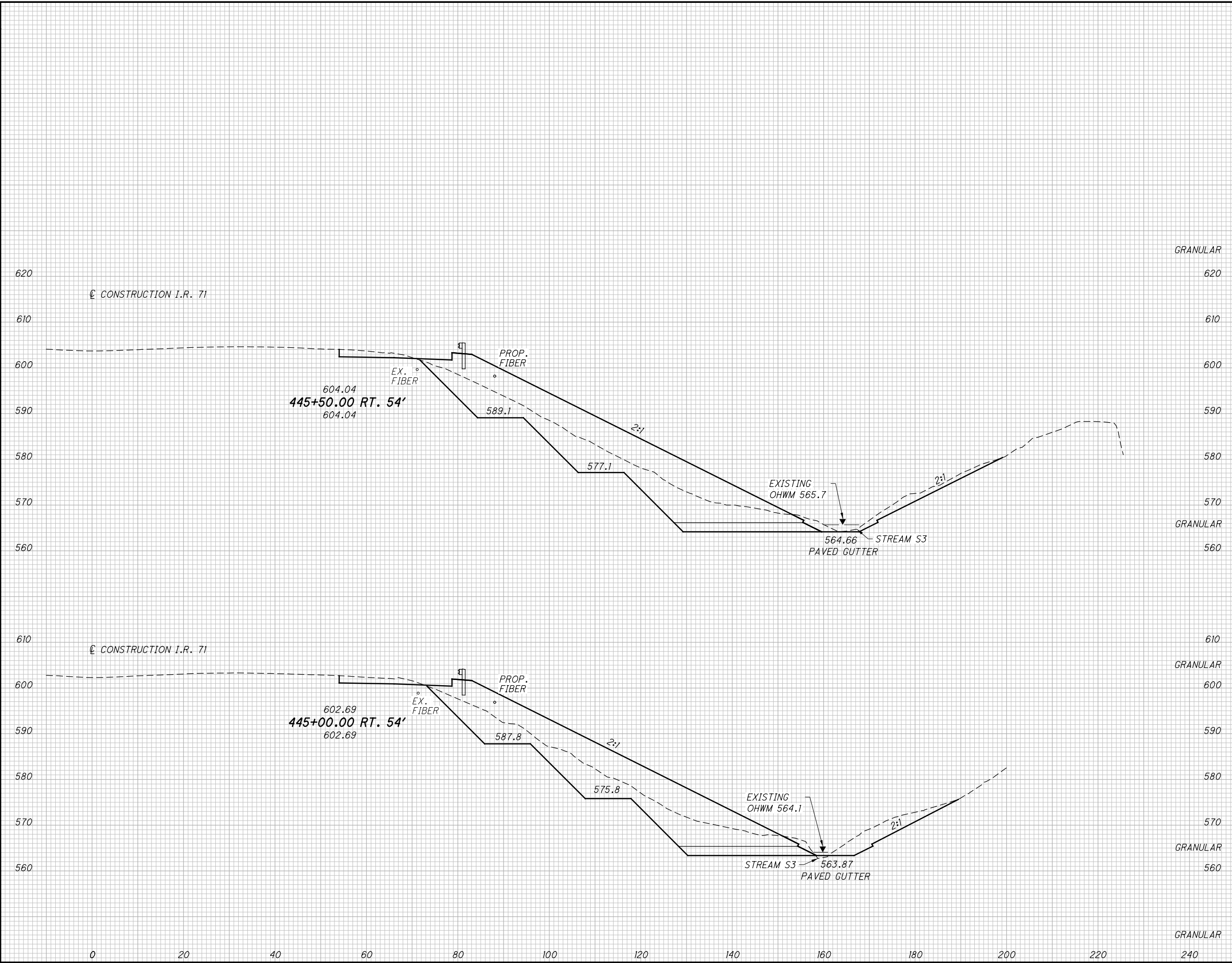
**CROSS SECTIONS I.R. 71
STA. 443+50.00 TO STA. 444+50.00**

HAM-71-6.86

103
253

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS001.dgn 9/27/2017 10:42:04 AM pdurham

SEEDING	
END WIDTH	SO. YDS.
144	747
769	
133	
1516	



END AREA		VOLUME		CALCULATED	EDA	CHECKED	LEH
CUT	FILL	CUT	FILL				
		919	1475				
			109				
512	793						
		59					
		935	1399				
			105				
498	718						
		54					
			214				
		1854	2874				

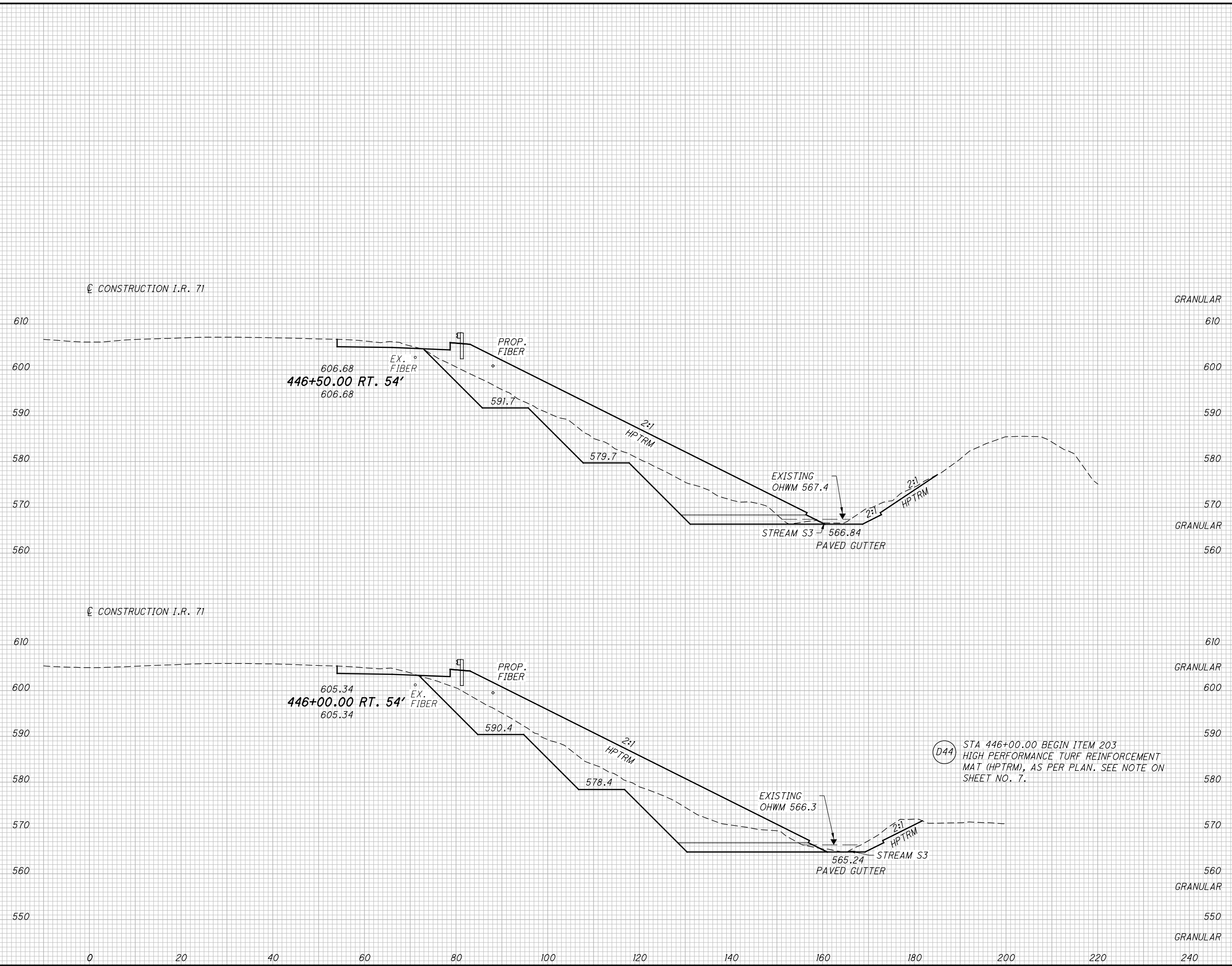
**CROSS SECTIONS I.R. 71
STA. 445+00.00 TO STA. 445+50.00**

HAM-71-6.86

104
253

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS001.dgn 9/27/2017 10:42:05 AM pdurham

SEEDING	END AREA		VOLUME		CALCULATED	EDA	CHECKED	LEH
	CUT	FILL	CUT	FILL				
831			880	1445				
129					107			
706			813	1441				
125					107			
1537			1693	2886				

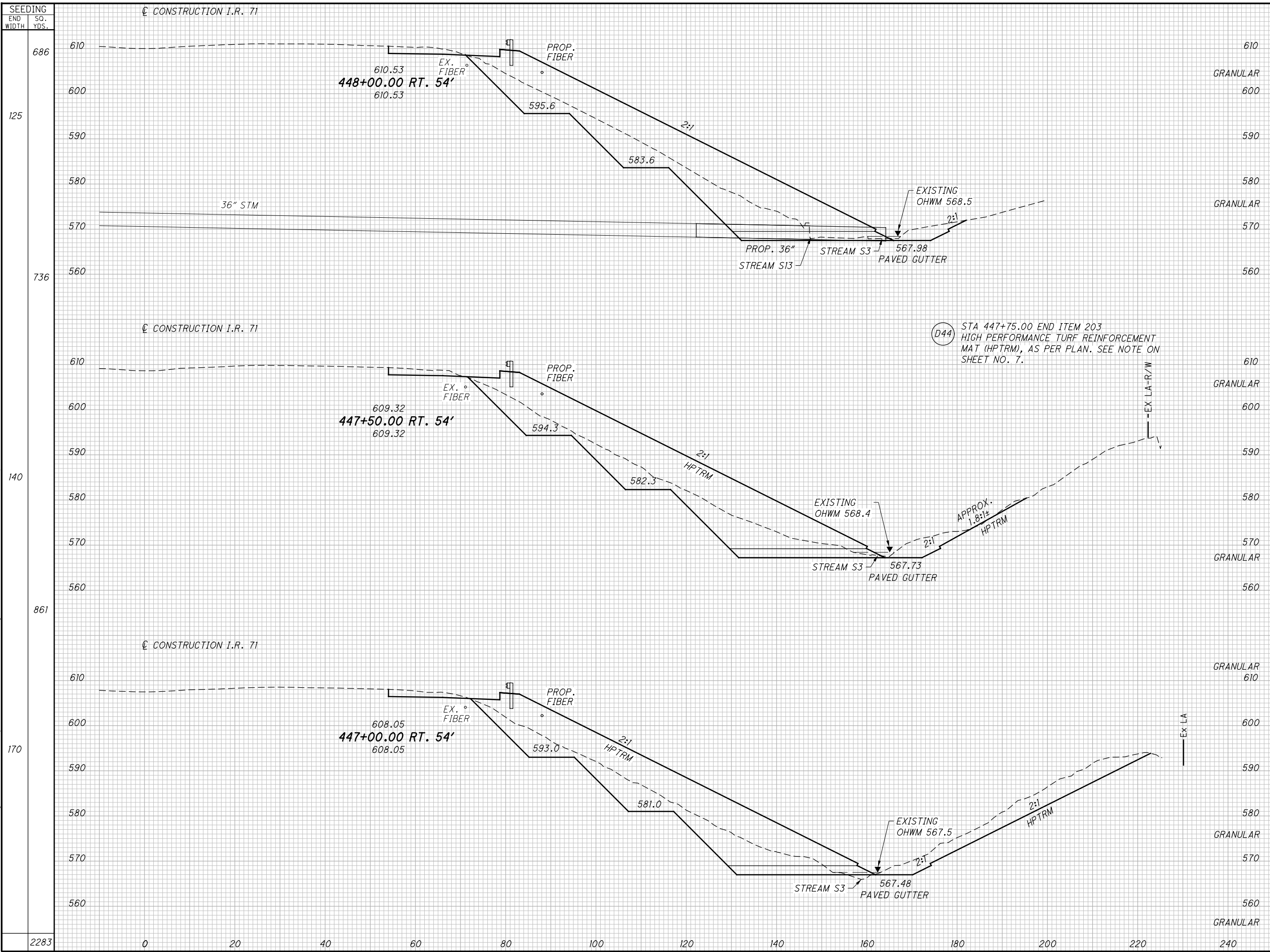


CROSS SECTIONS I.R. 71
STA. 446+00.00 TO STA. 446+50.00

HAM-71-6.86

105
253

V:\1736\active\173620049\design\94741\roadway\sheet\94741_XS001.dgn 9/27/2017 10:42:06 AM pdurham



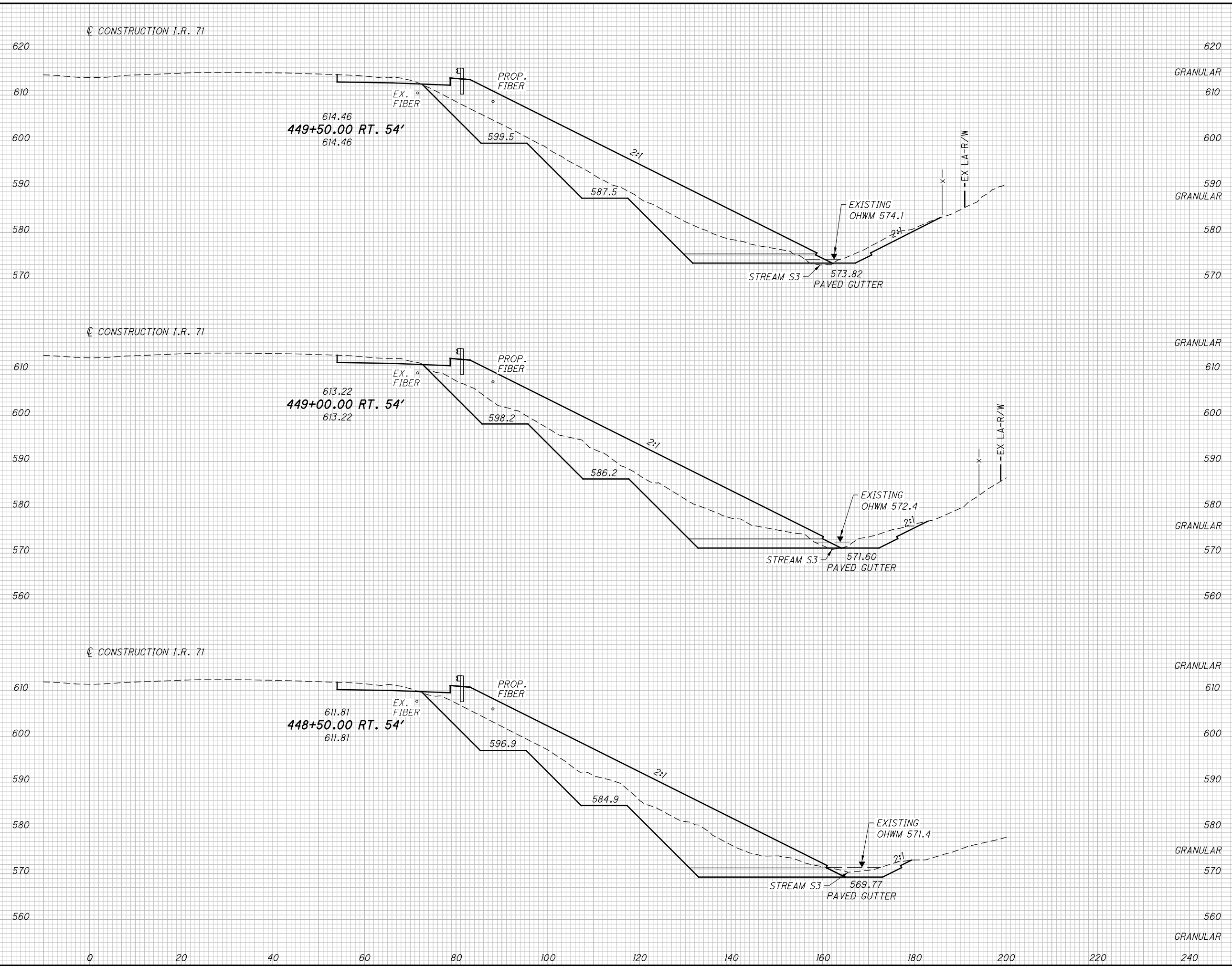
END STA.	AREA		VOLUME		CALCULATED	EDA	CHECKED	LEH
	CUT	FILL	CUT	FILL				
686								
125								
736								
140								
861								
170								
2283								
0								
20								
40								
60								
80								
100								
120								
140								
160								
180								
200								
220								
240								
END AREA			VOLUME					
CUT			CUT					
FILL			FILL					
447			899					
63			63					
817			1627					
935			858					
915			1540					
553			805					
59			59					
338			338					
2638			4773					
					106			
					253			

**CROSS SECTIONS I.R. 71
 STA. 447+00.00 TO STA. 448+00.00**

HAM-71-6.86

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS001.dgn 9/27/2017 10:42:07 AM pdurham

SEEDING	END	
	WIDTH	SO. YDS.
667	129	708
689	126	689
122	122	2064



END	AREA		VOLUME		CALCULATED	EDA	CHECKED	LEH
	CUT	FILL	CUT	FILL				
620			719	1497				
610								
600	392	789						
590								
580		59						
570			788	1483				
610								
600								
590	459	813						
580								
570		60						
560			917	1526				
610								
600								
590								
580								
570								
560								
610								
600								
590	531	835						
580								
570		62						
560								
610								
600								
590								
580								
570								
560								
240								
2424		4506						

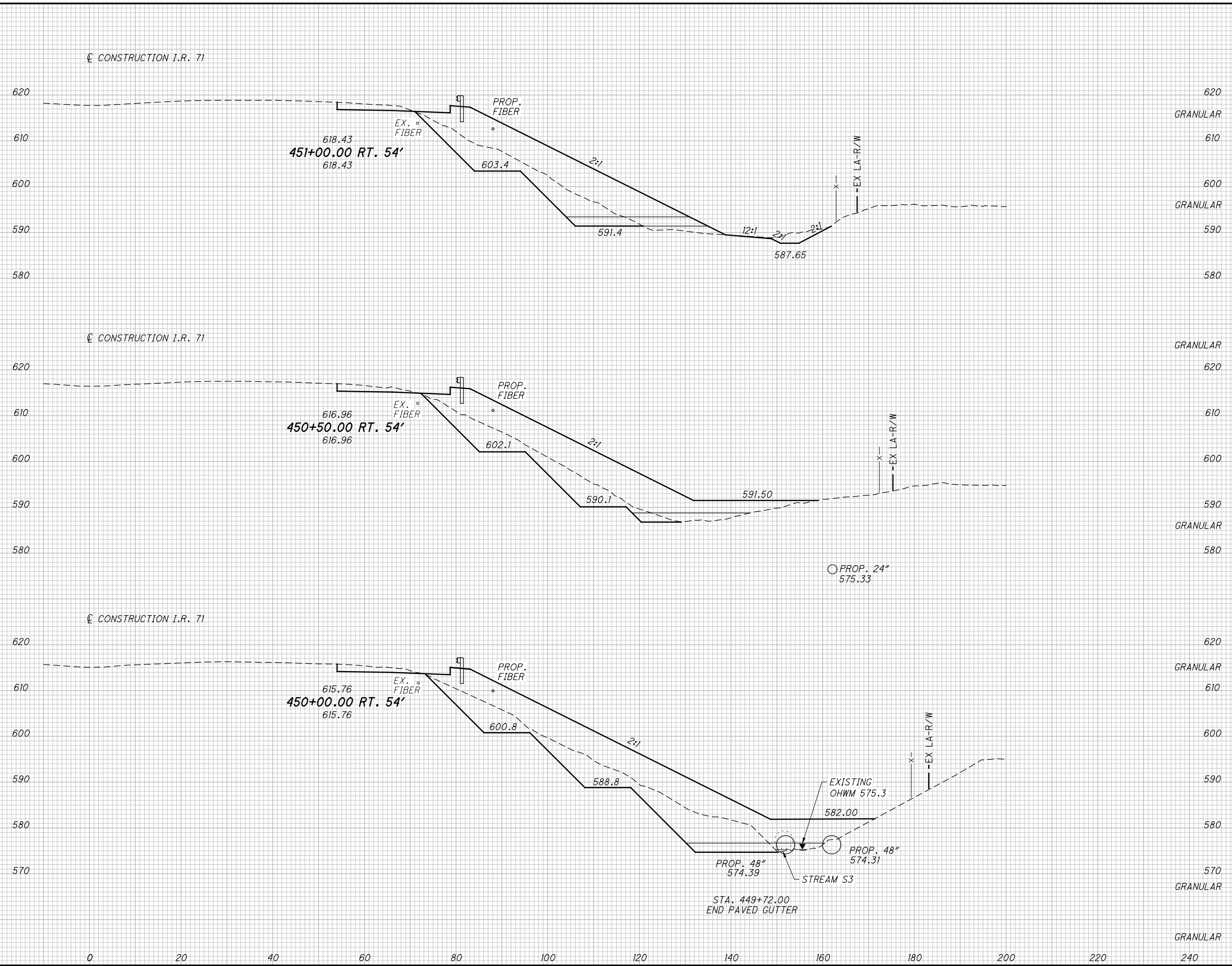
CROSS SECTIONS I.R. 71
STA. 448+50.00 TO STA. 449+50.00

HAM-71-6.86

107
 253

V:\1736\active\173620049\design\94741\roadway\sheet\94741_XS001.dgn 9/27/2017 10:42:07 AM pdurham

SEEDING	END	
	WIDTH	SO. YDS.
544		
102		
553		
97		
578		
111		
1675		



END	AREA		VOLUME		CALCULATED	EDA	CHECKED	LEH
	CUT	FILL	CUT	FILL				
544			510	927				
102	233	505						111
553			410	1002				
97	210	577						88
578			545	1301				
111	379	828						83
1675								282
			1465	3230				253

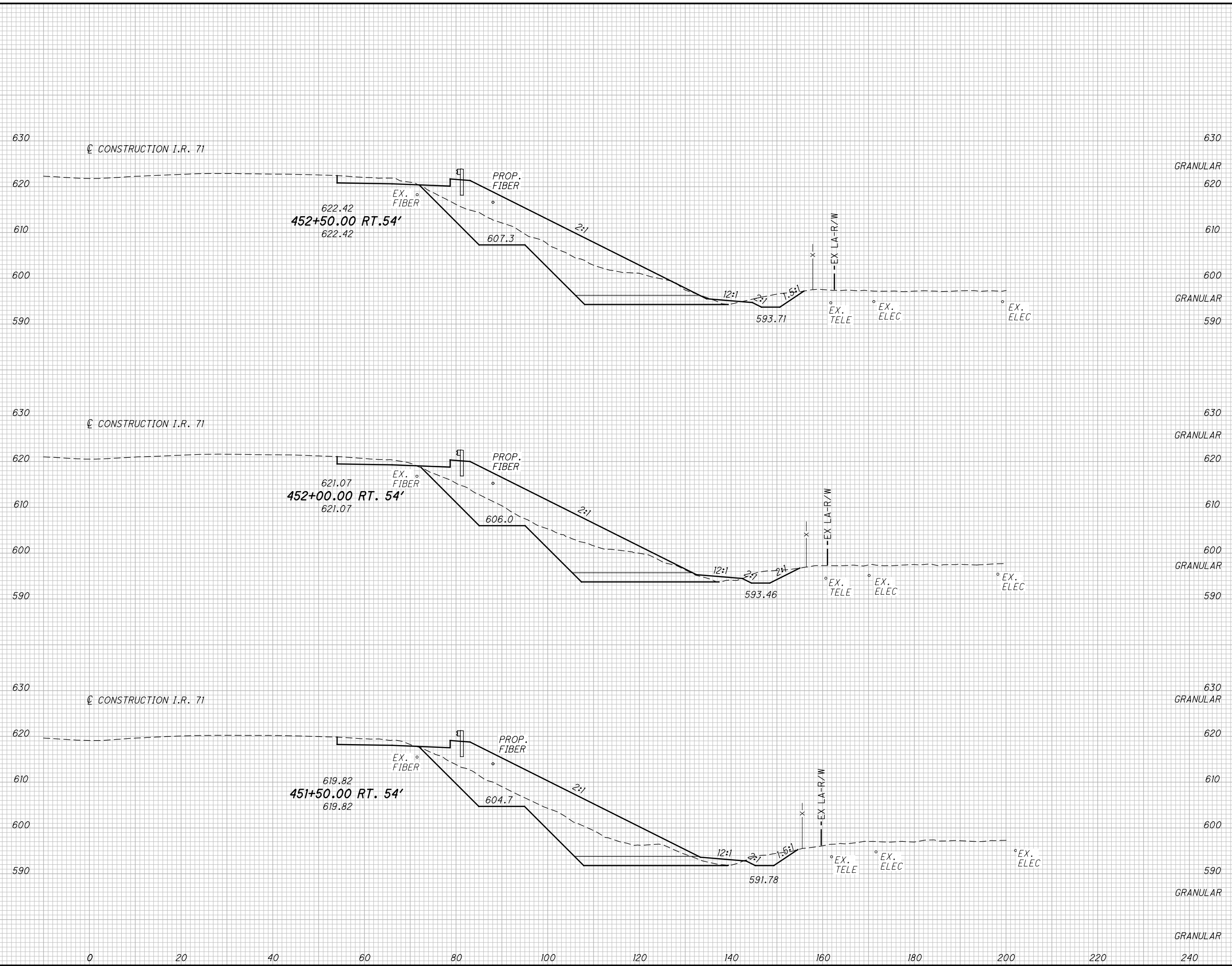
**CROSS SECTIONS I.R. 71
STA. 450+00.00 TO STA. 451+00.00**

HAM-71-6.86

(108)
253

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS001.dgn 9/27/2017 10:42:08 AM pdurham

SEEDING	END AREA		VOLUME		CALCULATED	CHECKED	LEH
	CUT	FILL	CUT	FILL			
567			669	932			
95			367	499			
525			648	908			
94			333	482			
522			603	906			
94			318	496			
1614			1920	2746			

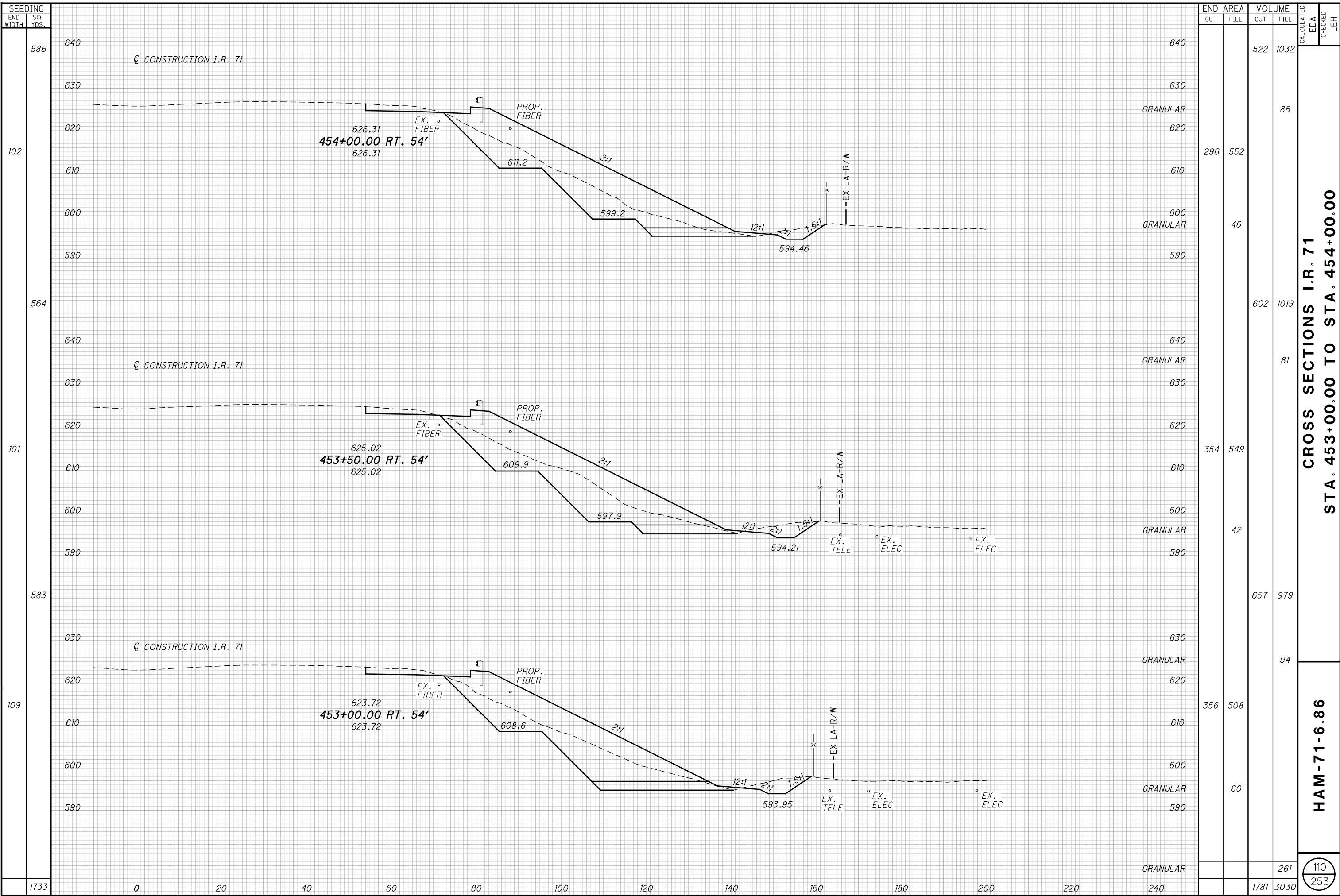


END AREA	VOLUME		CALCULATED	CHECKED	LEH
	CUT	FILL			
630					
620			112		
610			61		
600			648		
590			333		
630			603		
620			318		
610			64		
600					
590					
GRANULAR					
GRANULAR			343		
GRANULAR			109		
GRANULAR			253		

CROSS SECTIONS I.R. 71
STA. 451+50.00 TO STA. 452+50.00

HAM-71-6.86

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS001.dgn 9/27/2017 10:42:09 AM pdurham

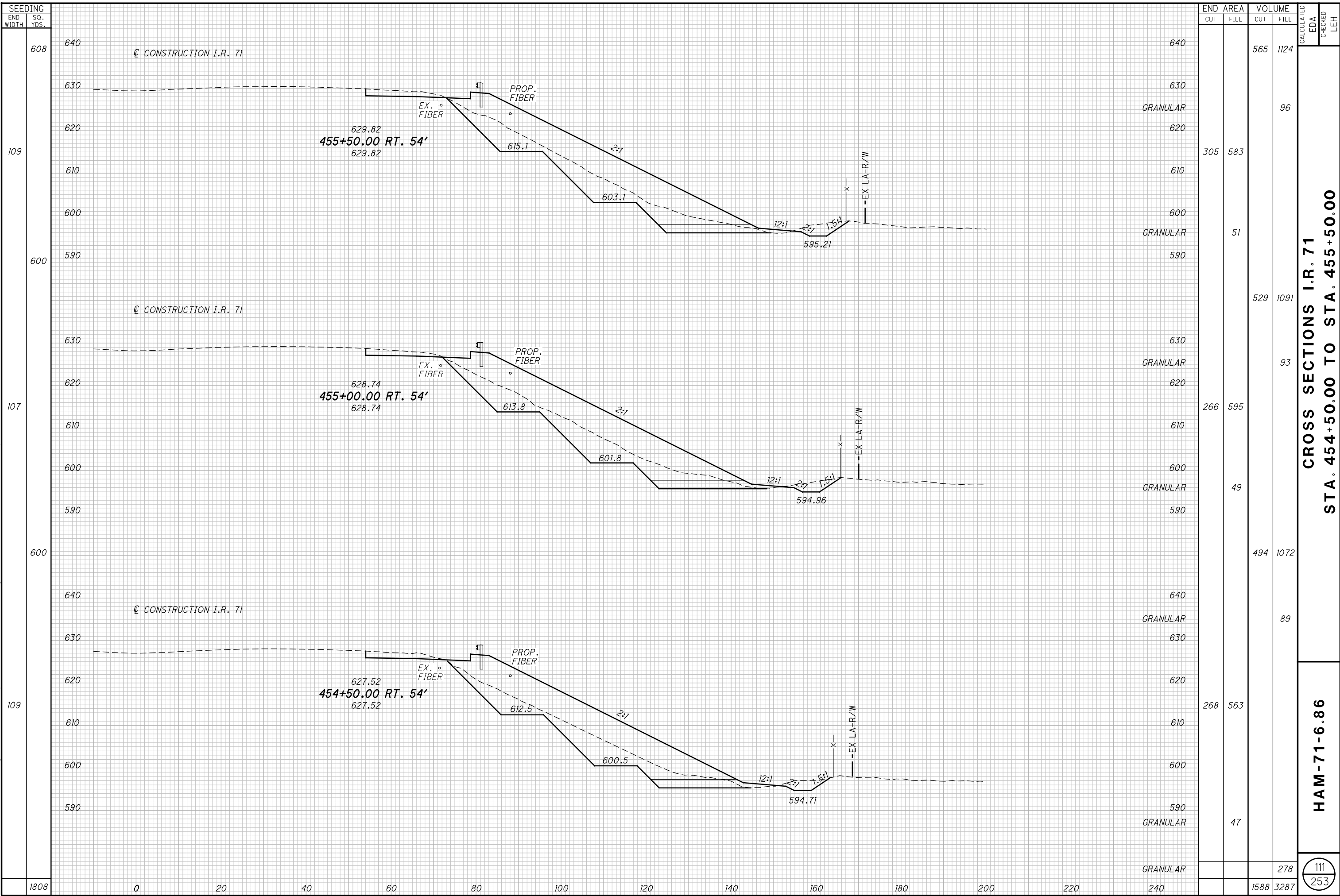


CROSS SECTIONS I.R. 71
STA. 453+00.00 TO STA. 454+00.00

HAM-71-6.86

110
 253

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS001.dgn 9/27/2017 10:42:10 AM pdurham



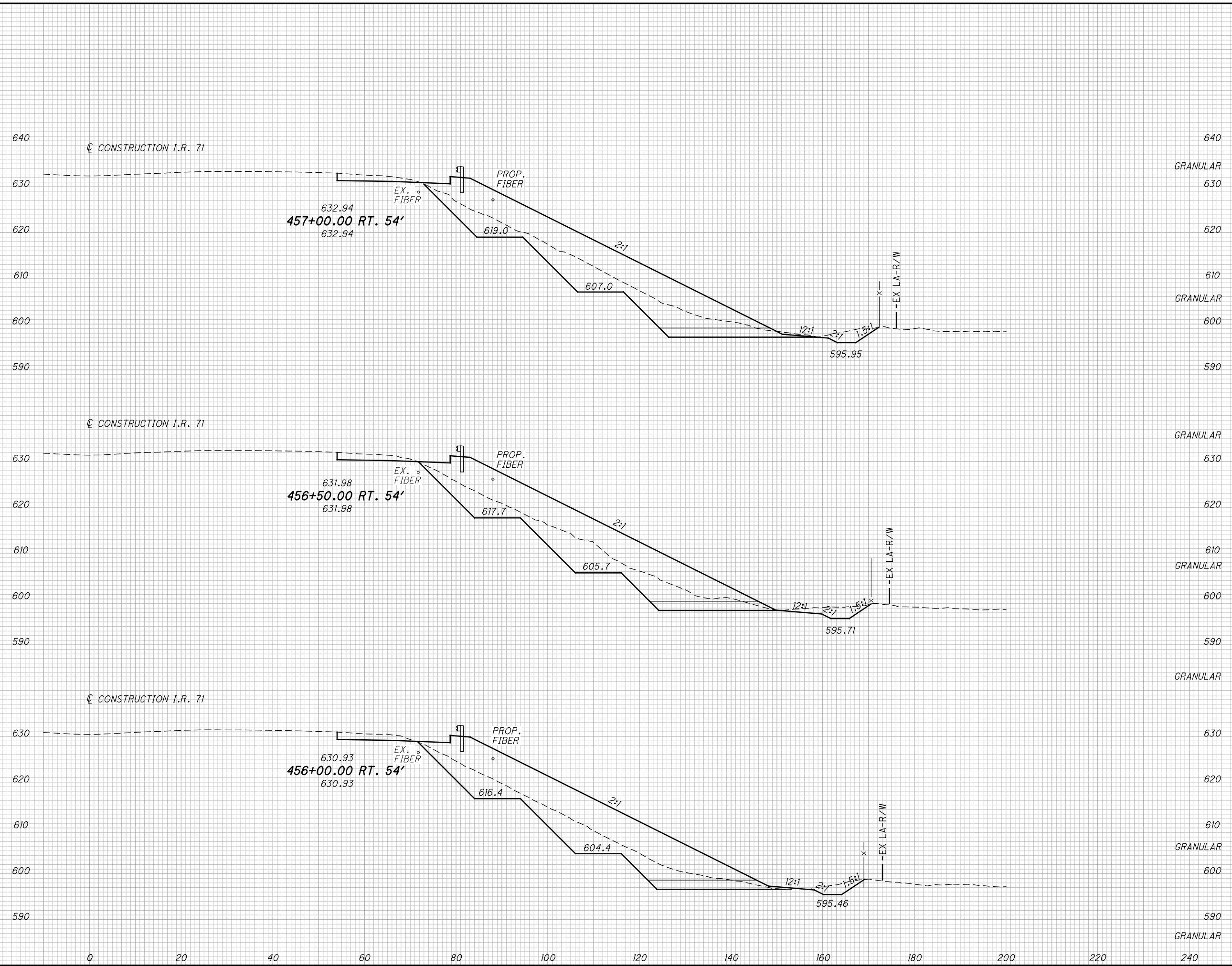
CROSS SECTIONS I.R. 71
STA. 454+50.00 TO STA. 455+50.00

HAM-71-6.86

111
 253

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS001.dgn 9/27/2017 10:42:11 AM pdurham

SEEDING	END		SO.
	WIDTH	YDS.	
	114	633	
	112	633	
	110	633	
	1878		



END	AREA		VOLUME		CALCULATED	EDA	CHECKED	LEH
	CUT	FILL	CUT	FILL				
633			605	1120				
630								
621	339	621						
620								
610								
600			52					
590								
628			625	1152				
630								
620								
610								
600			49					
590								
617			594	1161				
630								
620								
610								
600								
590								
110			94					
630								
620								
610								
600			53					
590								
112			281					
1878			1824	3433				

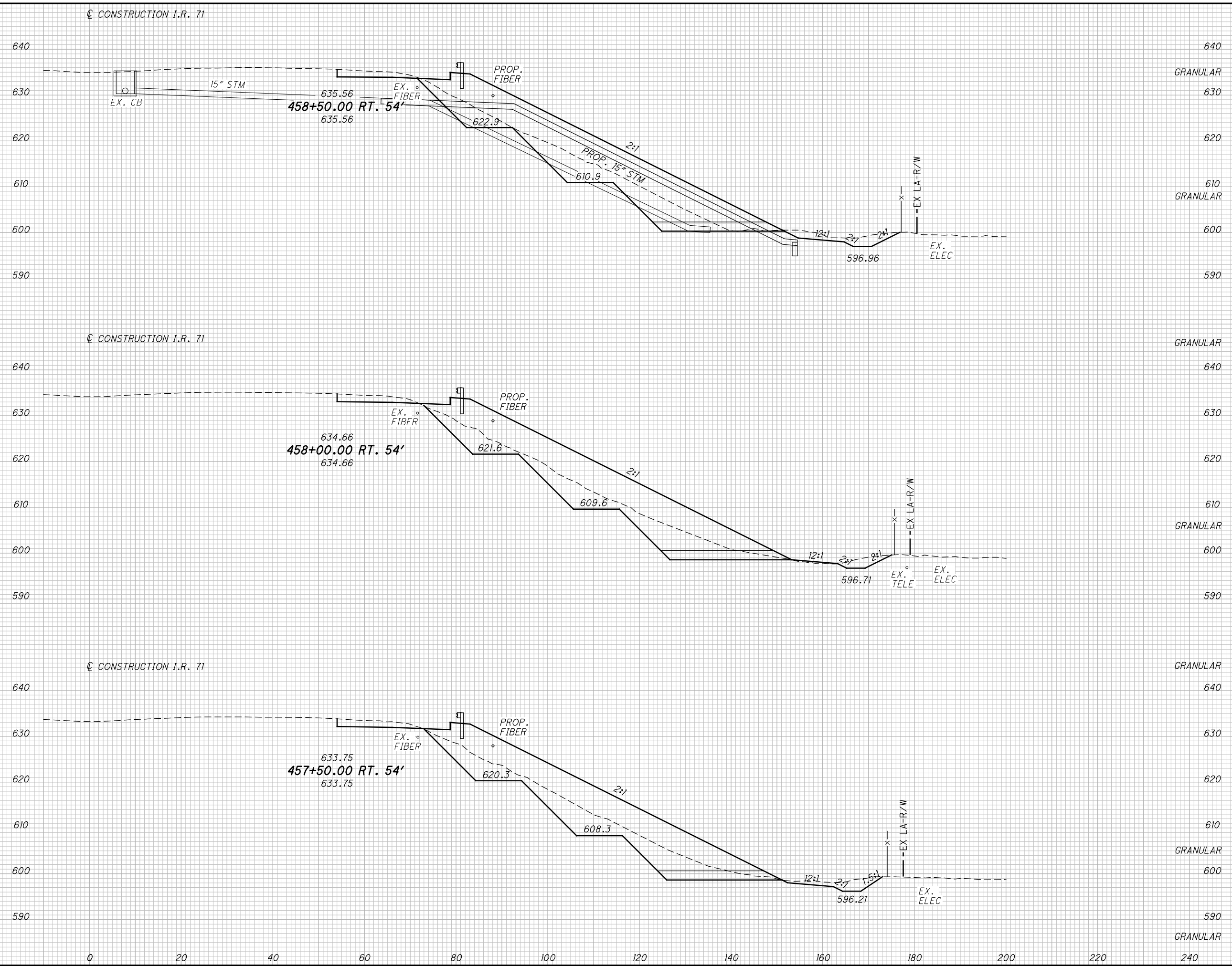
CROSS SECTIONS I.R. 71
STA. 456+00.00 TO STA. 457+00.00

HAM-71-6.86

(112)
253

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS001.dgn 9/27/2017 10:42:12 AM pdurham

SEEDING	END WIDTH	SO. YDS.	END AREA		VOLUME		CALCULATED	EDA	CHECKED	LEH
			CUT	FILL	CUT	FILL				
661	118	650	301	623	624	1229				
650	116	639	300	621	557	1152				
639	114	590	314	589	569	1120				
1950					291					
					1750	3501				



END AREA	VOLUME	CALCULATED	EDA	CHECKED	LEH
301	623	624	1229		
300	621	557	1152		
314	589	569	1120		
		291			
		1750	3501		

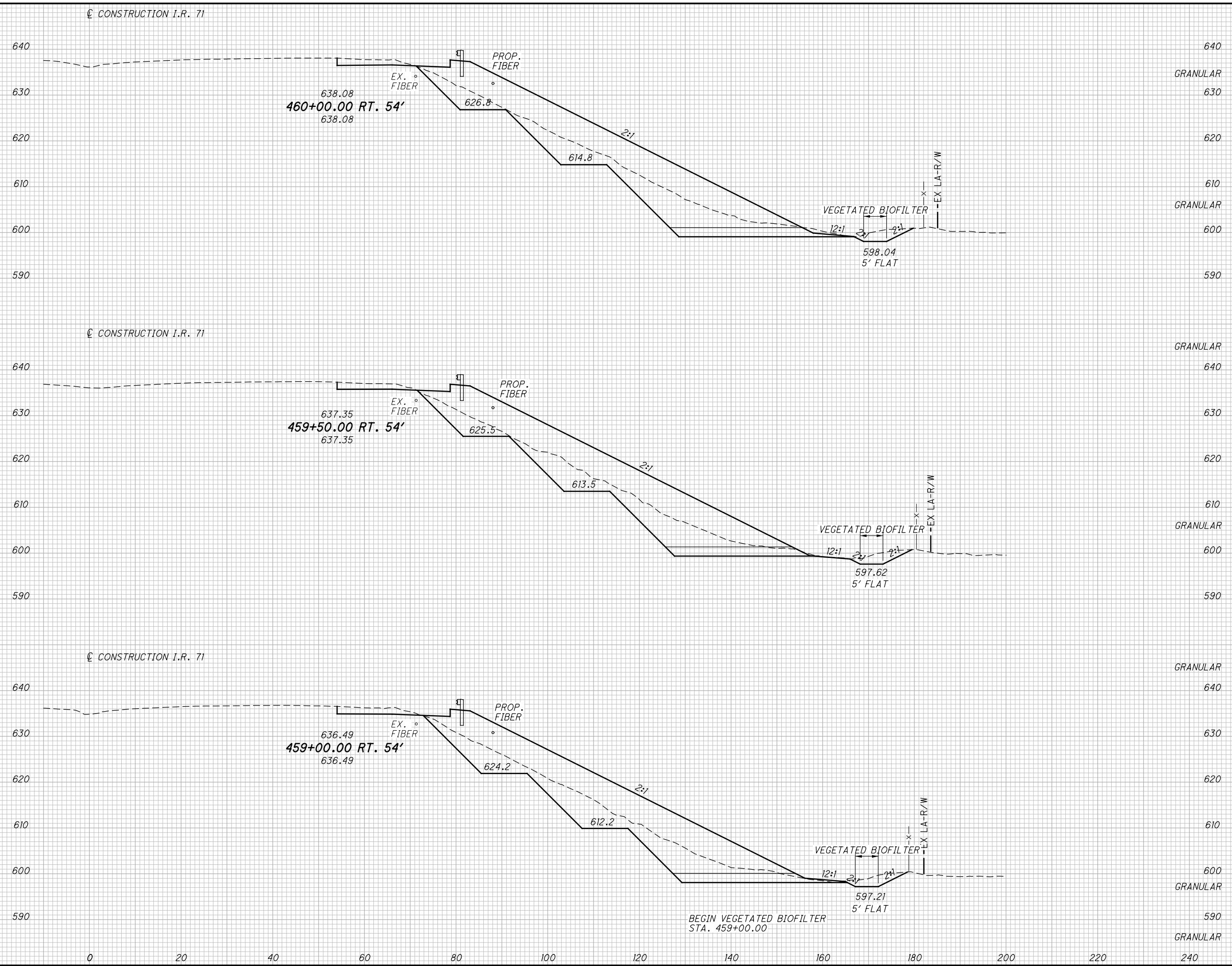
**CROSS SECTIONS I.R. 71
STA. 457+50.00 TO STA. 458+50.00**

HAM-71-6.86

(113)
253

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS001.dgn 9/27/2017 10:42:13 AM pdurham

SEEDING	END	
	WIDTH	SO. YDS.
122	678	640
121	675	640
120	669	640
2022	0	240



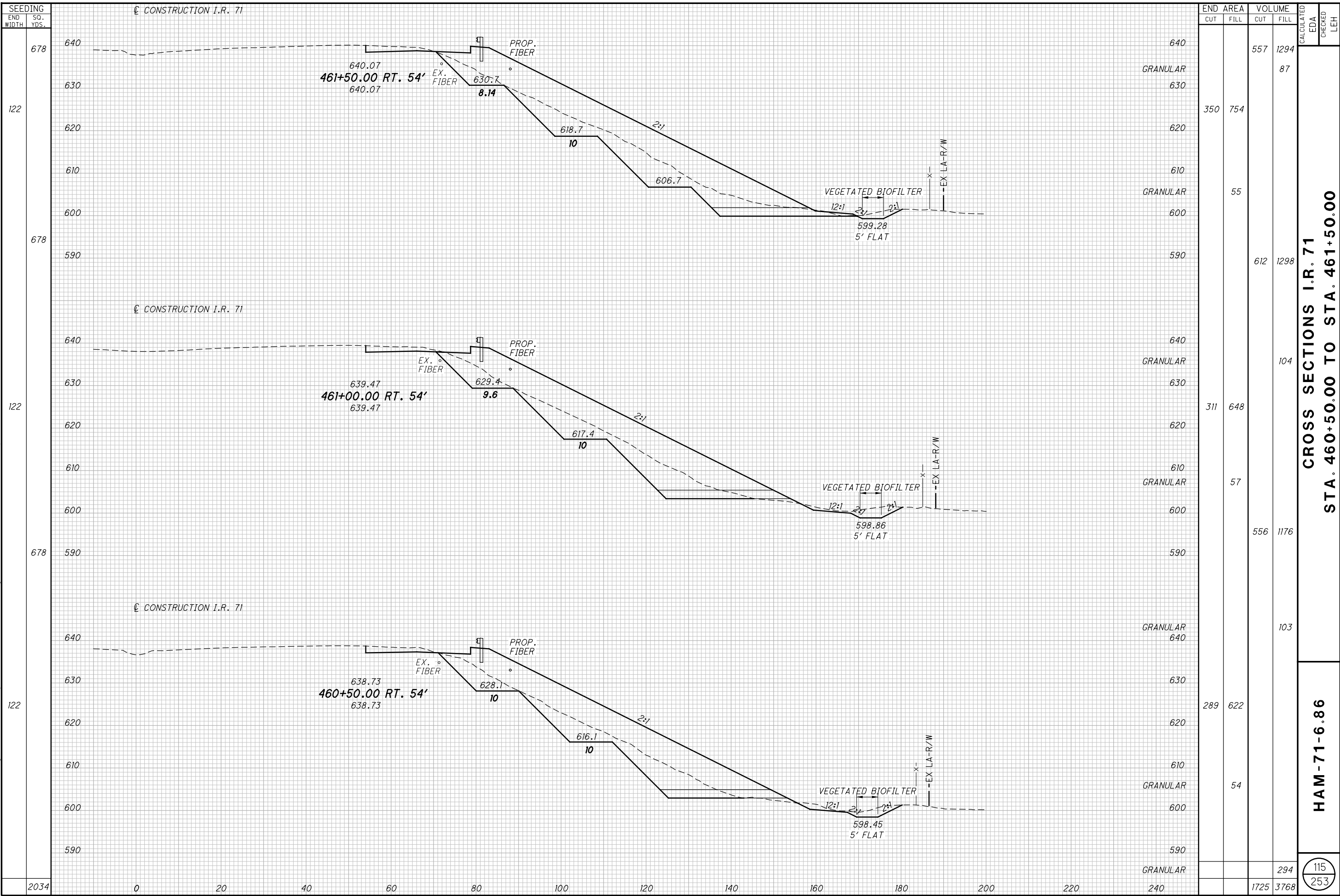
END	AREA		VOLUME		CALCULATED	EDA	CHECKED	LEH
	CUT	FILL	CUT	FILL				
678			619	1236				
675	379	713						
669	287	686						
2022			327					
			1847	3818				

**CROSS SECTIONS I.R. 71
STA. 459+00.00 TO STA. 460+00.00**

HAM-71-6.86

114
253

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS001.dgn 9/27/2017 10:42:14 AM pdurham



CROSS SECTIONS I.R. 71
STA. 460+50.00 TO STA. 461+50.00

HAM-71-6.86

V:\1736\active\173620049\design\94741\roadway\sheet\94741_XS001.dgn 9/27/2017 10:42:15 AM pdurham

SEEDING	END AREA		VOLUME		CALCULATED	EDA	CHECKED	LEH
	CUT	FILL	CUT	FILL				
10								
58								
32								
425								
121								
675								
122								
1158								

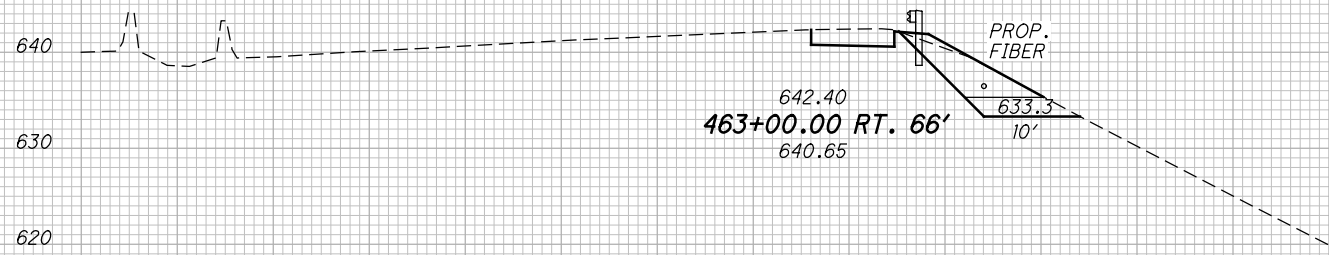
STA. 463+25.00 BACK

CONSTRUCTION I.R. 71

END STA. 463+00.00
ITEM 203 - GRANULAR MATERIAL, TYPE C, AS PER PLAN W/
ITEM - 204, GEOTEXTILE FABRIC ABOVE AND BELOW.

I.R. 71		
EXCAVATION	EMBANKMENT	GRANULAR
57681 CU YD	63500 CU YD	4768 CU YD
SEEDING & MULCHING		
47618 SQ YD		

QUANTITIES CARRIED TO SUBSUMMARY



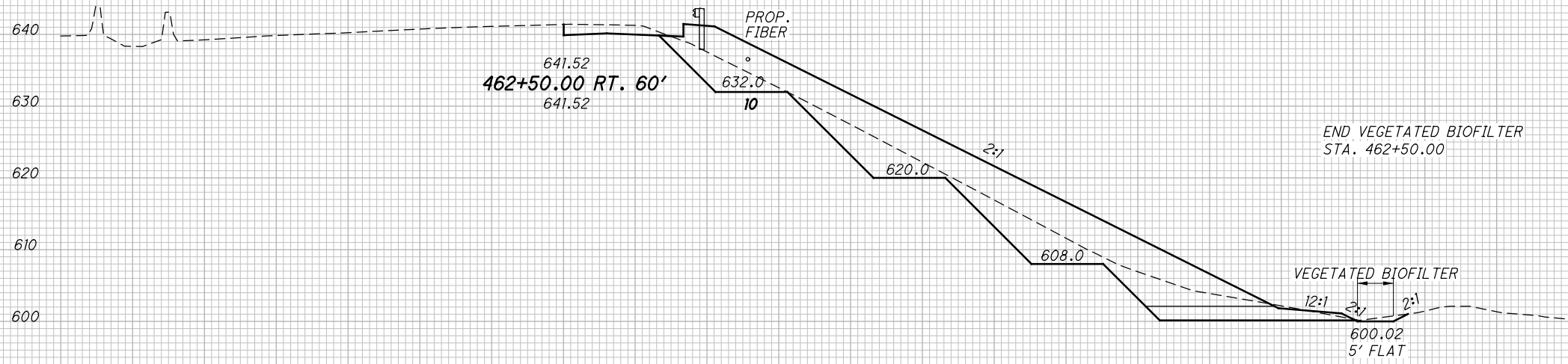
640
BACK
630
GRANULAR BACK
620

67	34
	18

CONSTRUCTION I.R. 71

462+50.00 RT. 60'

END VEGETATED BIOFILTER
STA. 462+50.00



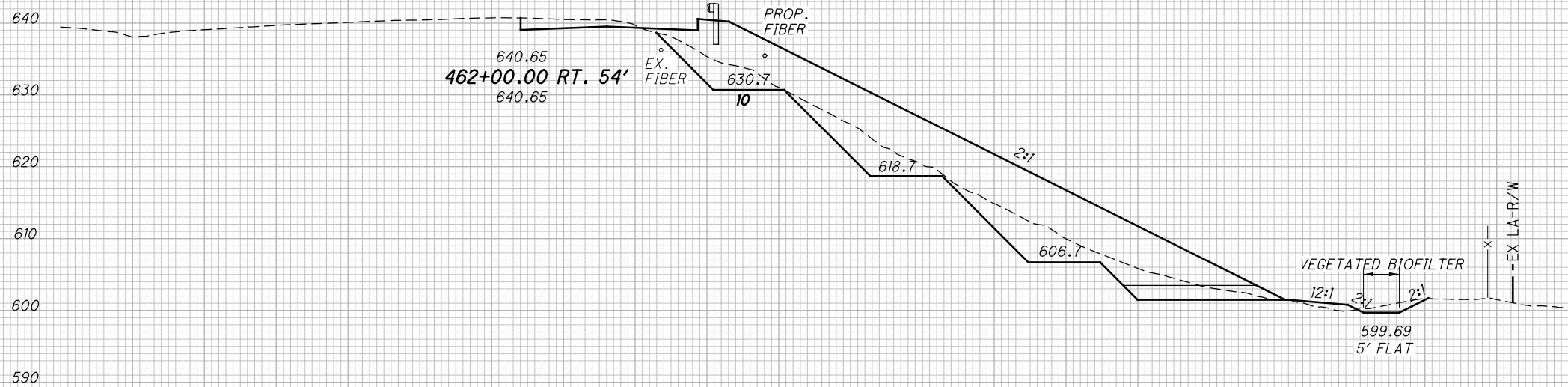
GRANULAR
640
630
620
GRANULAR
610
600
590
GRANULAR

344	559
	62
305	570
	49
	516
	1123
	81

CONSTRUCTION I.R. 71

462+00.00 RT. 54'

VEGETATED BIOFILTER



640
630
620
GRANULAR
610
600
590
GRANULAR

252	643
	39
	143
	860
	1682

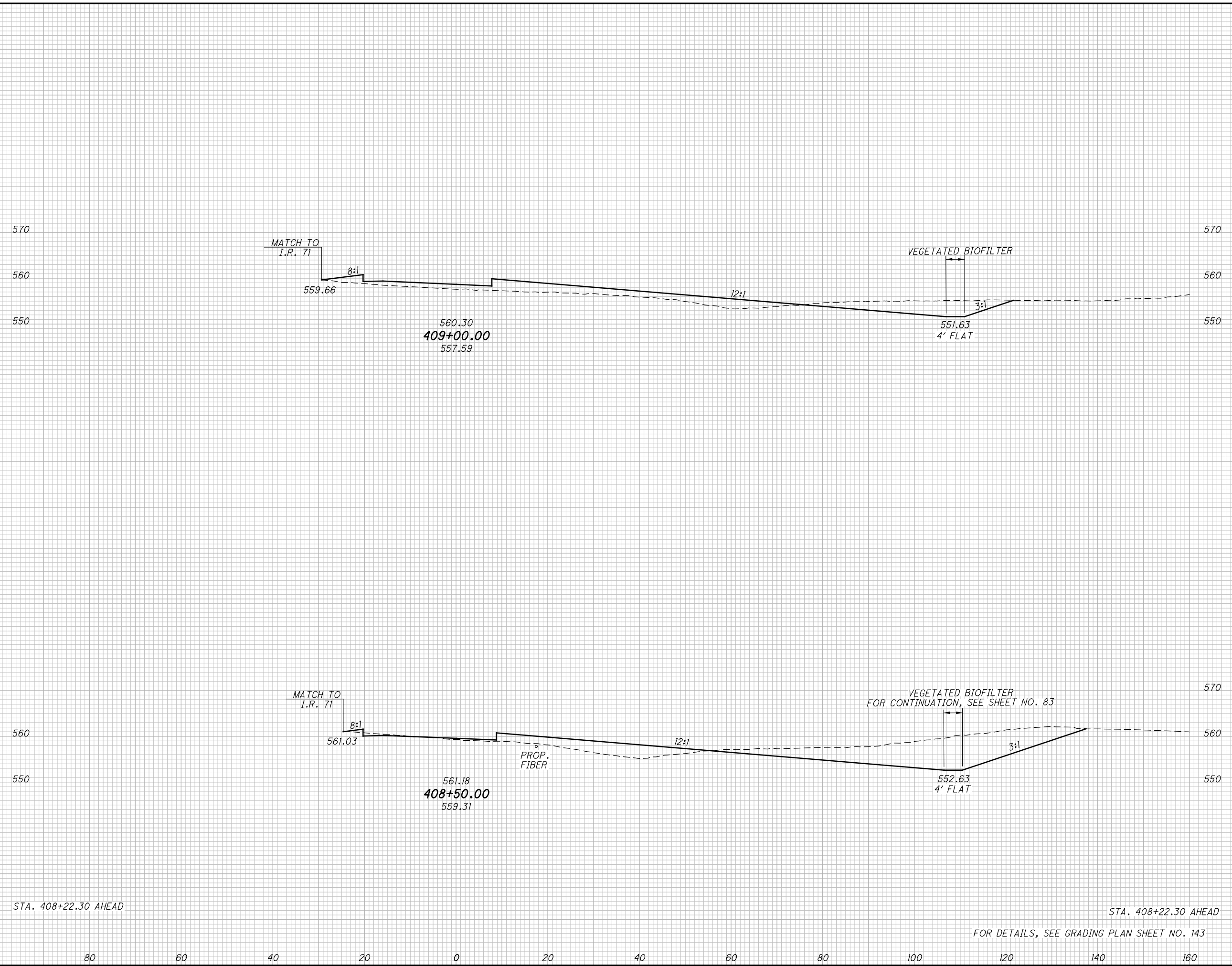
CROSS SECTIONS I.R. 71
STA. 462+00.00 TO STA. 463+00.00

HAM-71-6.86

116
253

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS002.dgn 9/27/2017 10:42:15 AM pdurham

SEEDING	
END WIDTH	SO. YDS.
137	803
775	
142	
437	
142	
2015	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
97	143	106	284
305	97	331	199
305	97	313	100
750	583		

CALCULATED
EDA
CHECKED
LEH

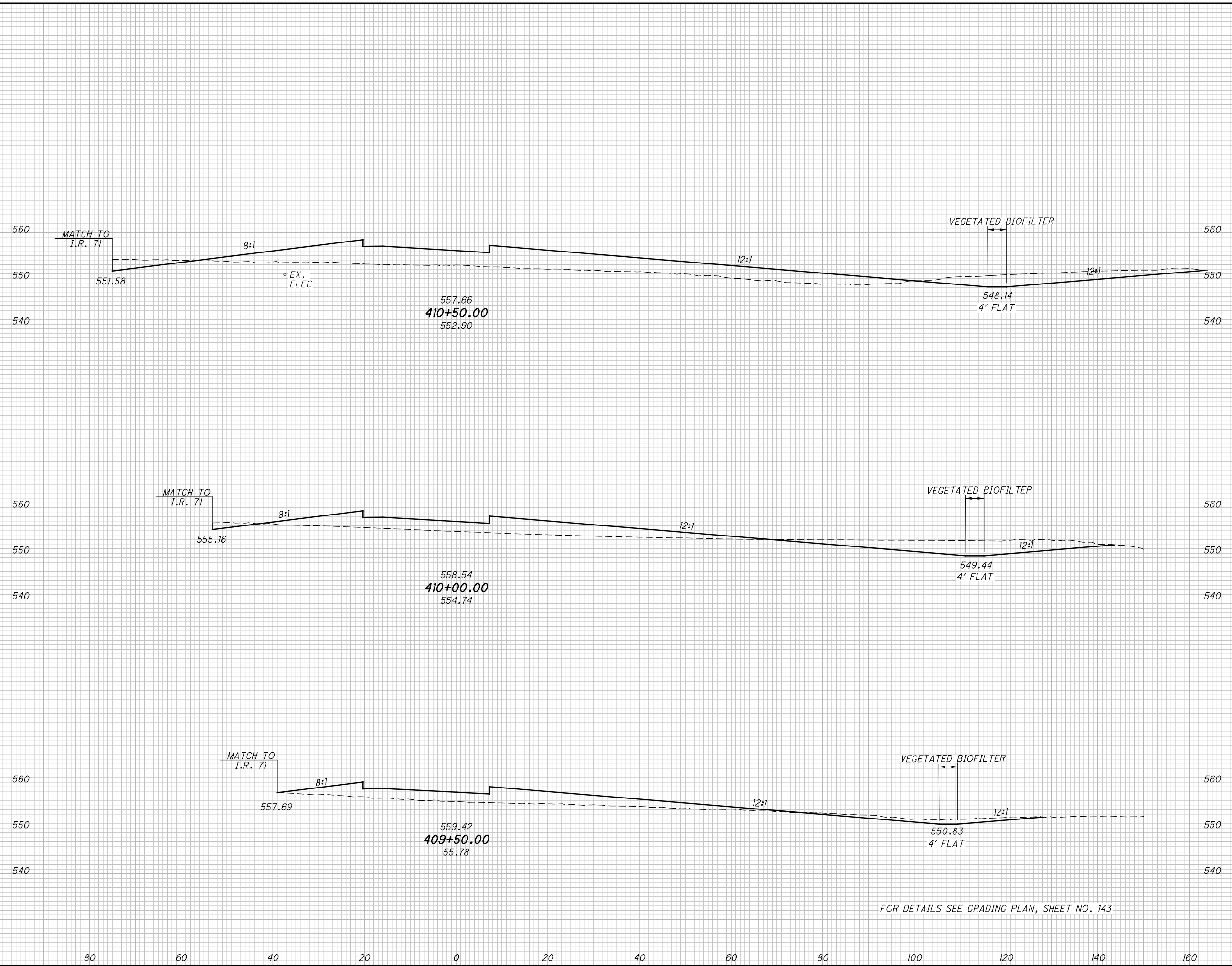
CROSS SECTIONS RAMP N
STA. 408+00.00 TO STA. 409+00.00

HAM-71-6.86

117
253

V:\1736\active\173620049\design\94741\roadway\sheet\94741_XS002.dgn 9/27/2017 10:42:16 AM pdurham

SEEDING	END	
	WIDTH	SO. YDS.
1233		
224		
1128		
182		
928		
152		
3289		

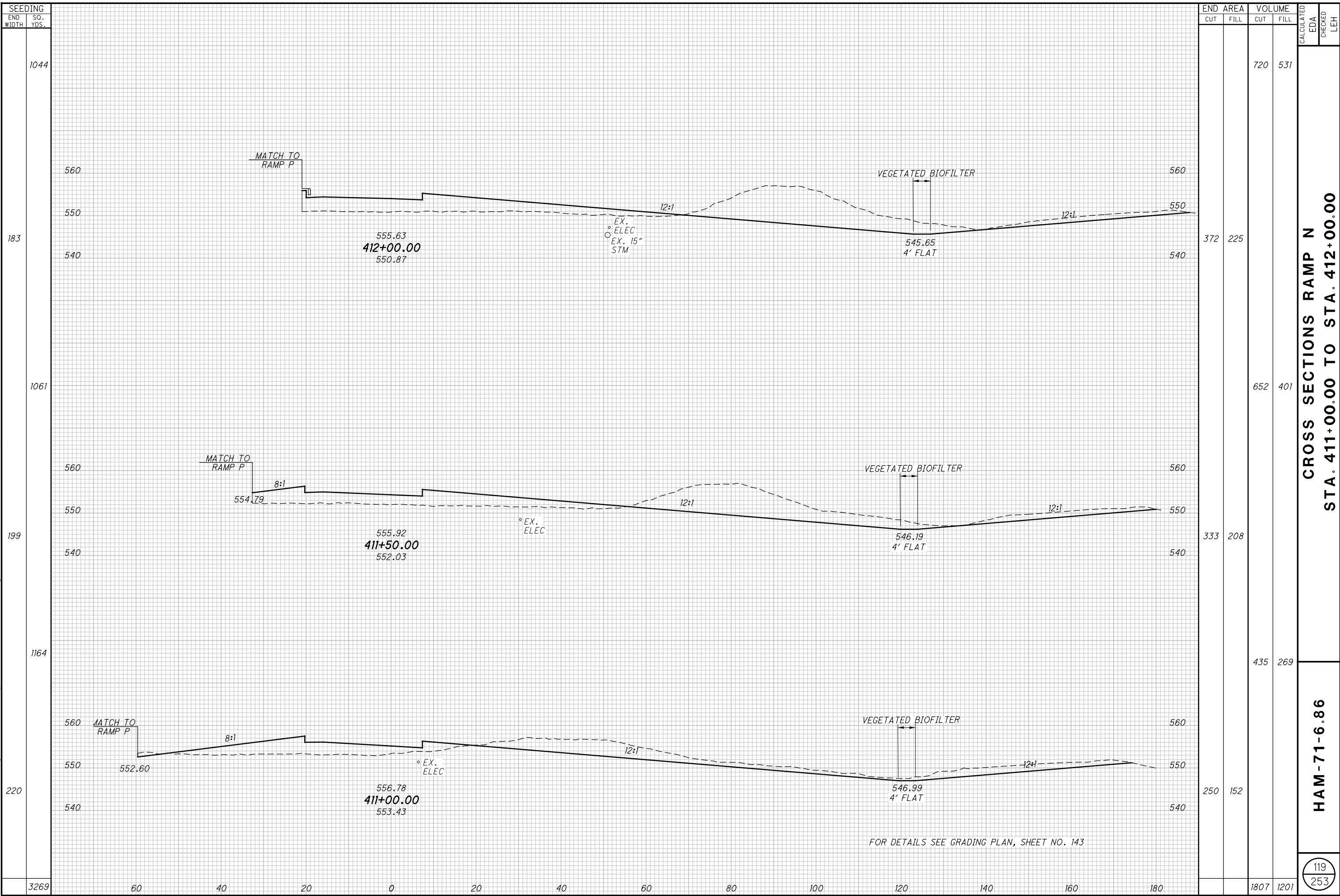


END AREA	VOLUME	
	CUT	FILL
	288	471
124	459	
	211	527
149	224	
	148	344
32	197	
	647	1342

CROSS SECTIONS RAMP N
 STA. 409+50.00 TO STA. 410+50.00
 HAM-71-6.86
 118
 253

FOR DETAILS SEE GRADING PLAN, SHEET NO. 143

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS002.dgn 9/27/2017 10:42:16 AM pdurham

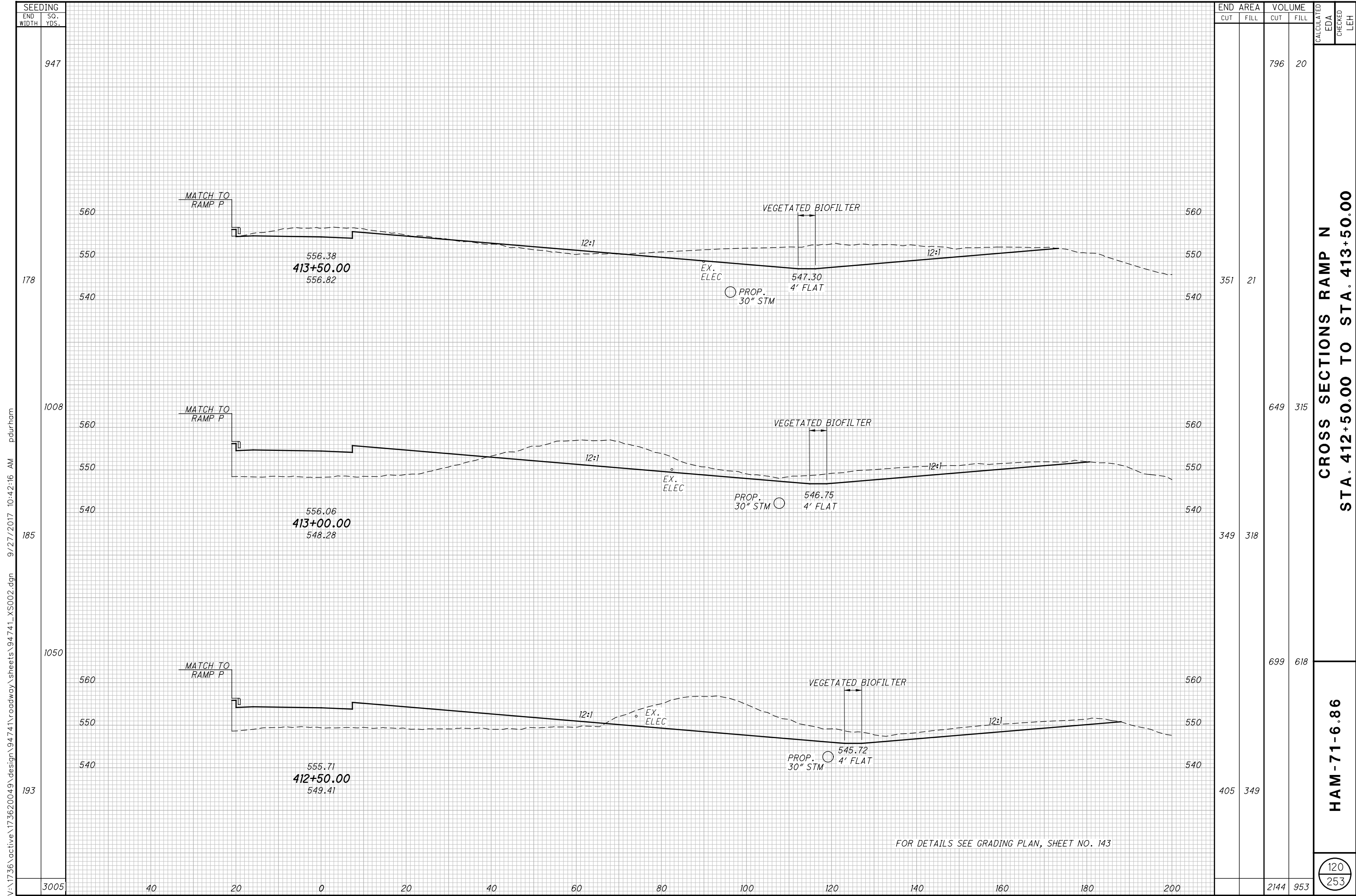


CROSS SECTIONS RAMP N
STA. 411+00.00 TO STA. 412+00.00

HAM-71-6.86

119
253

FOR DETAILS SEE GRADING PLAN, SHEET NO. 143



CROSS SECTIONS RAMP N
STA. 412+50.00 TO STA. 413+50.00

HAM-71-6.86

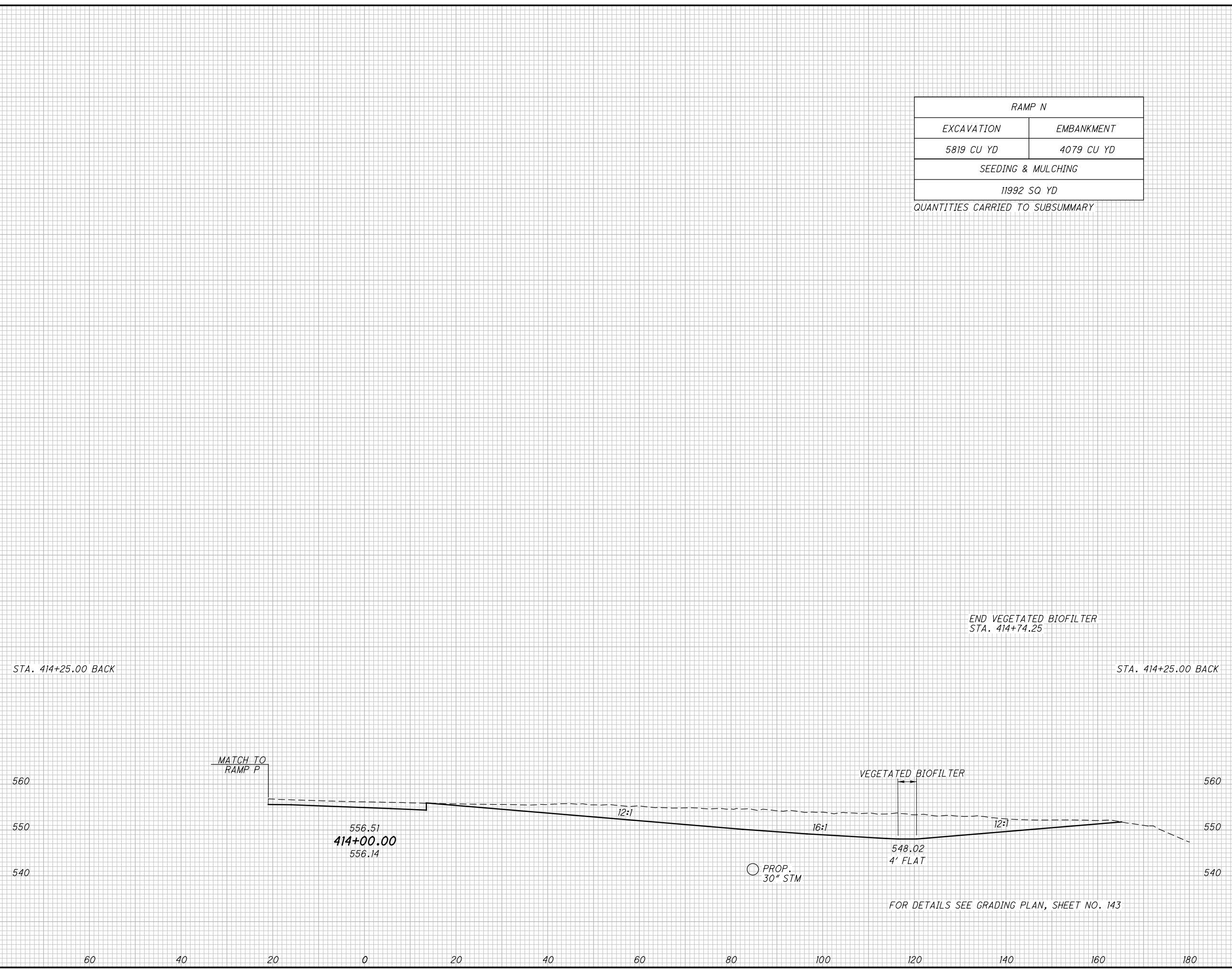
120
253

FOR DETAILS SEE GRADING PLAN, SHEET NO. 143

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS002.dgn 9/27/2017 10:42:16 AM pdurham

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS002.dgn 9/27/2017 10:42:17 AM pdurham

SEEDING	
END WIDTH	SO. YDS.
414	
163	
414	



RAMP N	
EXCAVATION	EMBANKMENT
5819 CU YD	4079 CU YD
SEEDING & MULCHING	
11992 SQ YD	

QUANTITIES CARRIED TO SUBSUMMARY

END AREA		VOLUME		CALCULATED EDA	CHECKED LEH
CUT	FILL	CUT	FILL		
509	0	471	0		
		471	0		

CROSS SECTIONS RAMP N
STA. 414+00.00

HAM-71-6.86

FOR DETAILS SEE GRADING PLAN, SHEET NO. 143

END VEGETATED BIOFILTER
STA. 414+74.25

MATCH TO
RAMP P

VEGETATED BIOFILTER

PROP.
30" STM

556.51
414+00.00
556.14

548.02
4' FLAT

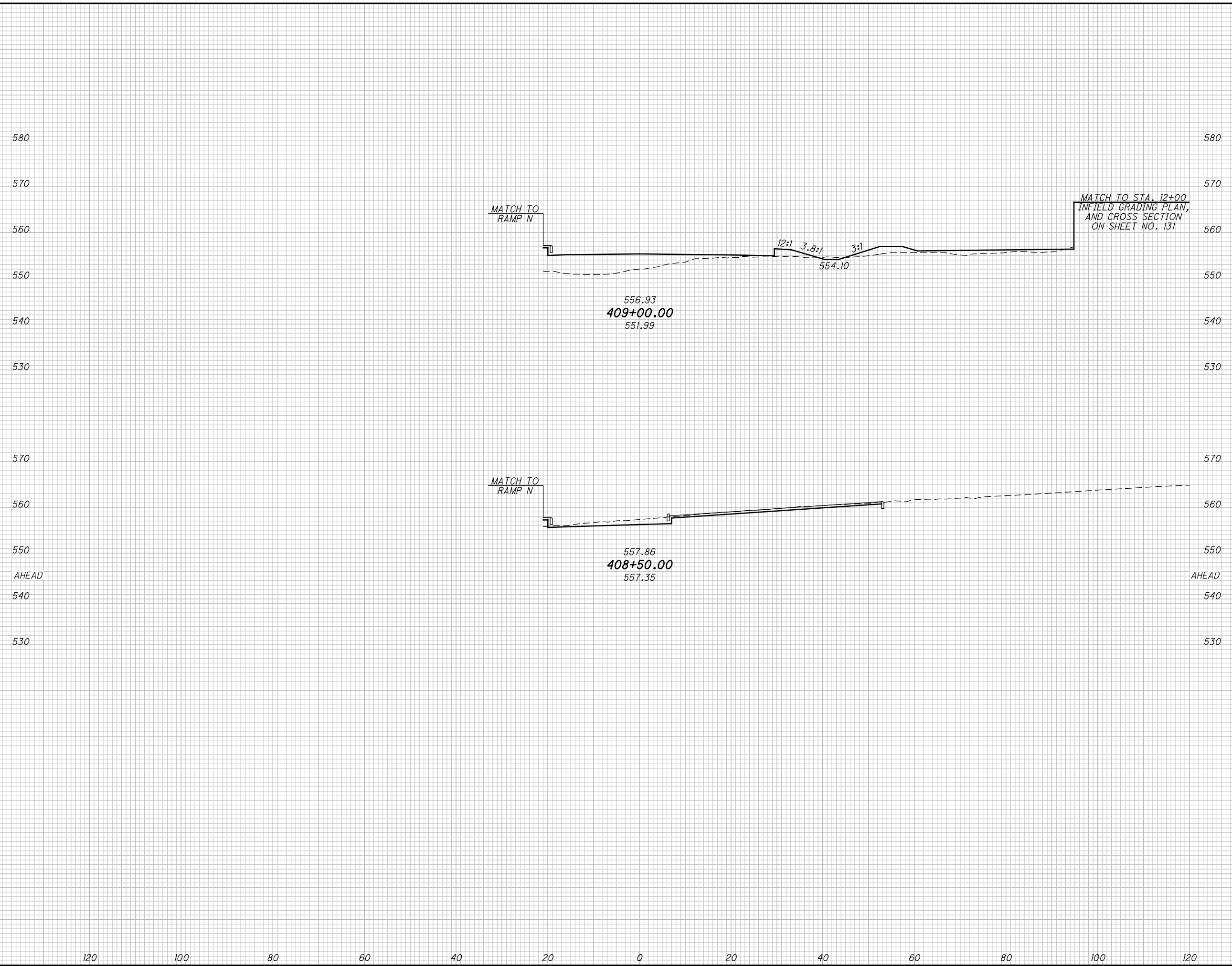
STA. 414+25.00 BACK

STA. 414+25.00 BACK

60 40 20 0 20 40 60 80 100 120 140 160 180

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS003.dgn 9/27/2017 10:42:17 AM pdurham

SEEDING	
END WIDTH	SO. YDS.
228	
68	
217	
10	
445	



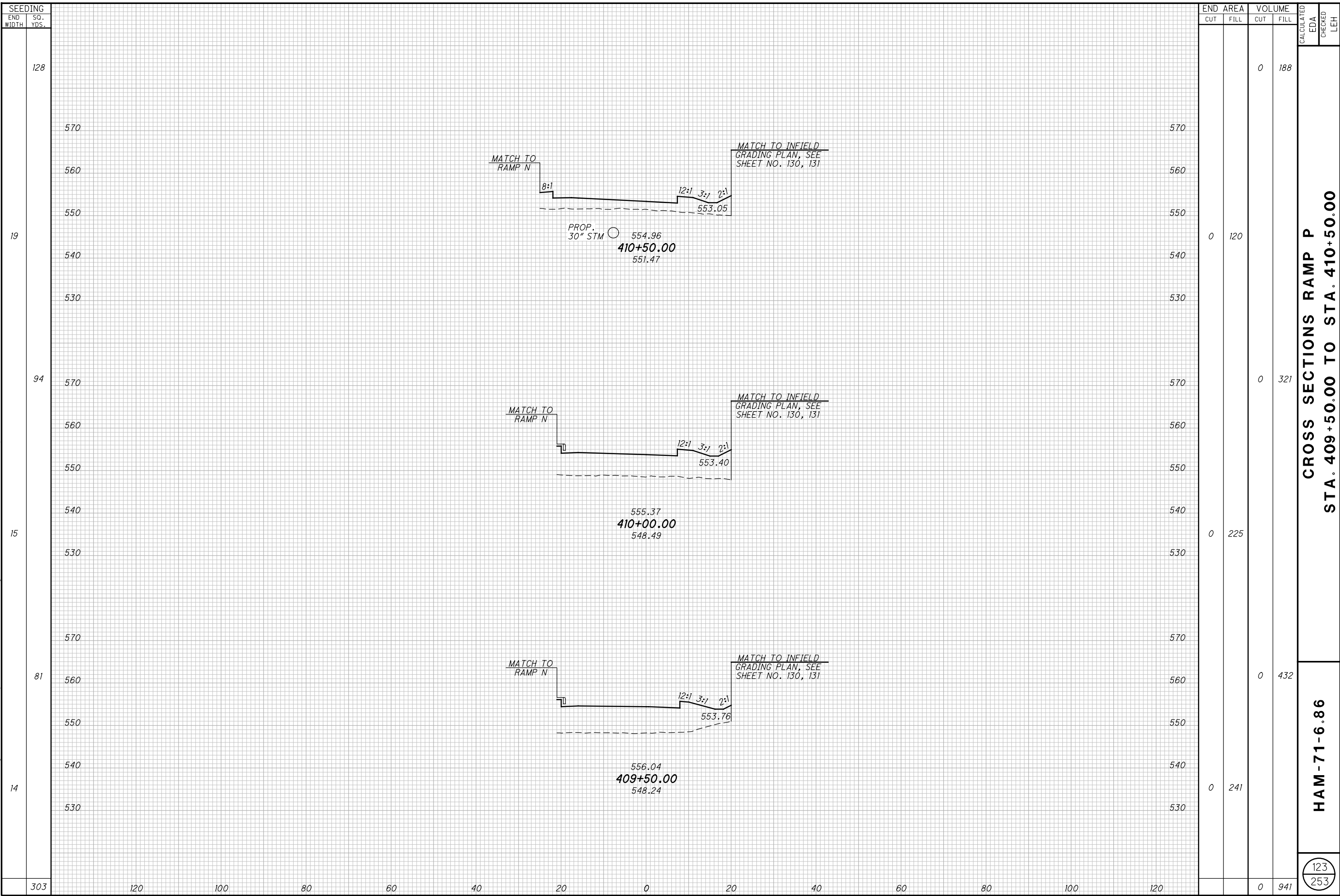
END AREA		VOLUME		CALCULATED	CHECKED
CUT	FILL	CUT	FILL		
		2	379		
3	168	43	157		
44	1				
		45	536		

CROSS SECTIONS RAMP P
STA. 408+50.00 TO STA. 409+00.00

HAM-71-6.86

122
253

V:\1736\active\173620049\design\94741\roadway\sheet\94741_XS003.dgn 9/27/2017 10:42:18 AM pdurham



SEEDING	
END WIDTH	SO. YDS.
128	570
19	540
94	570
15	540
81	560
14	530
303	530

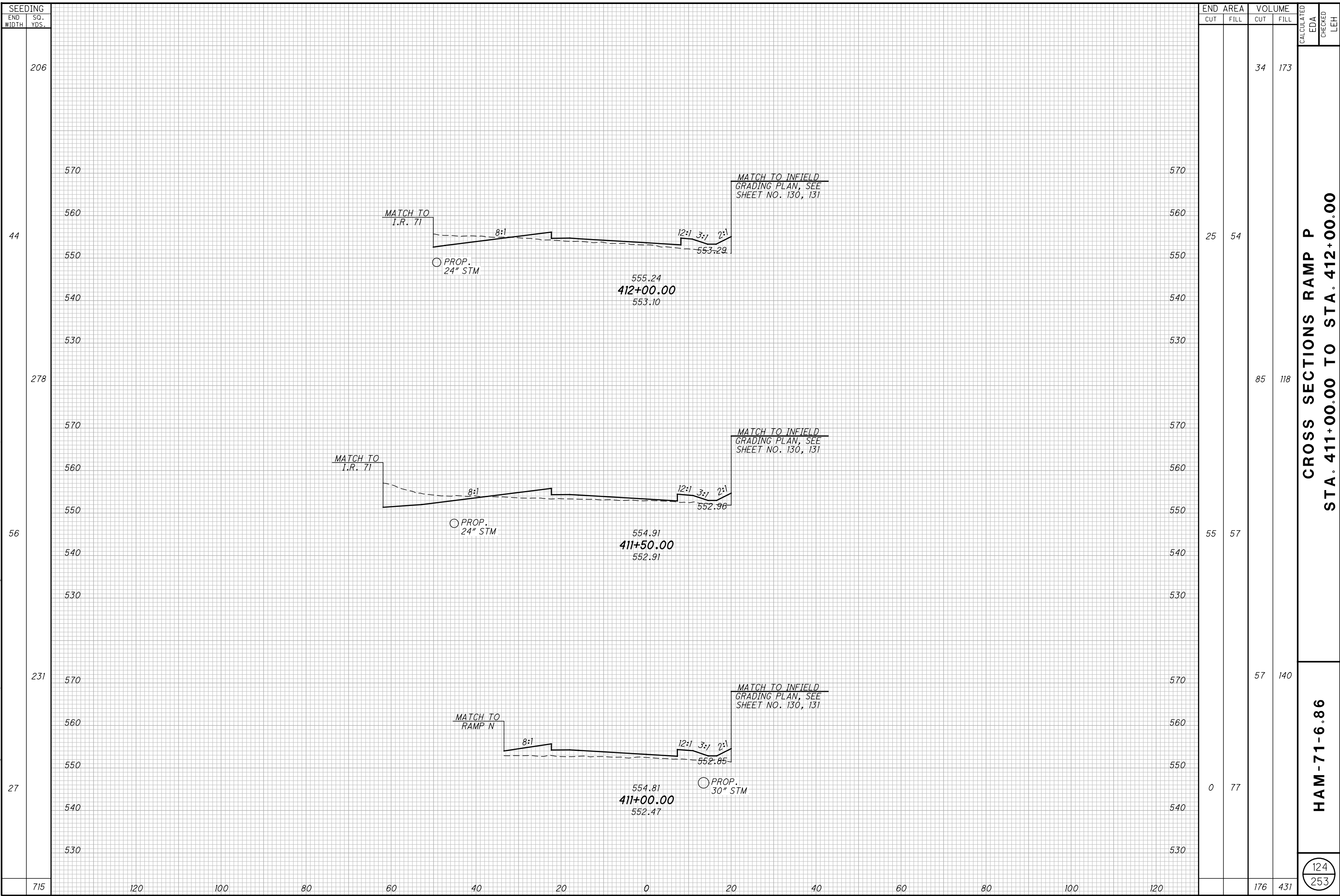
END AREA		VOLUME		CALCULATED	EDA	CHECKED	LEH
CUT	FILL	CUT	FILL				
0	120	0	188				
0	225	0	321				
0	241	0	432				
0	941	0	941				

CROSS SECTIONS RAMP P
STA. 409+50.00 TO STA. 410+50.00

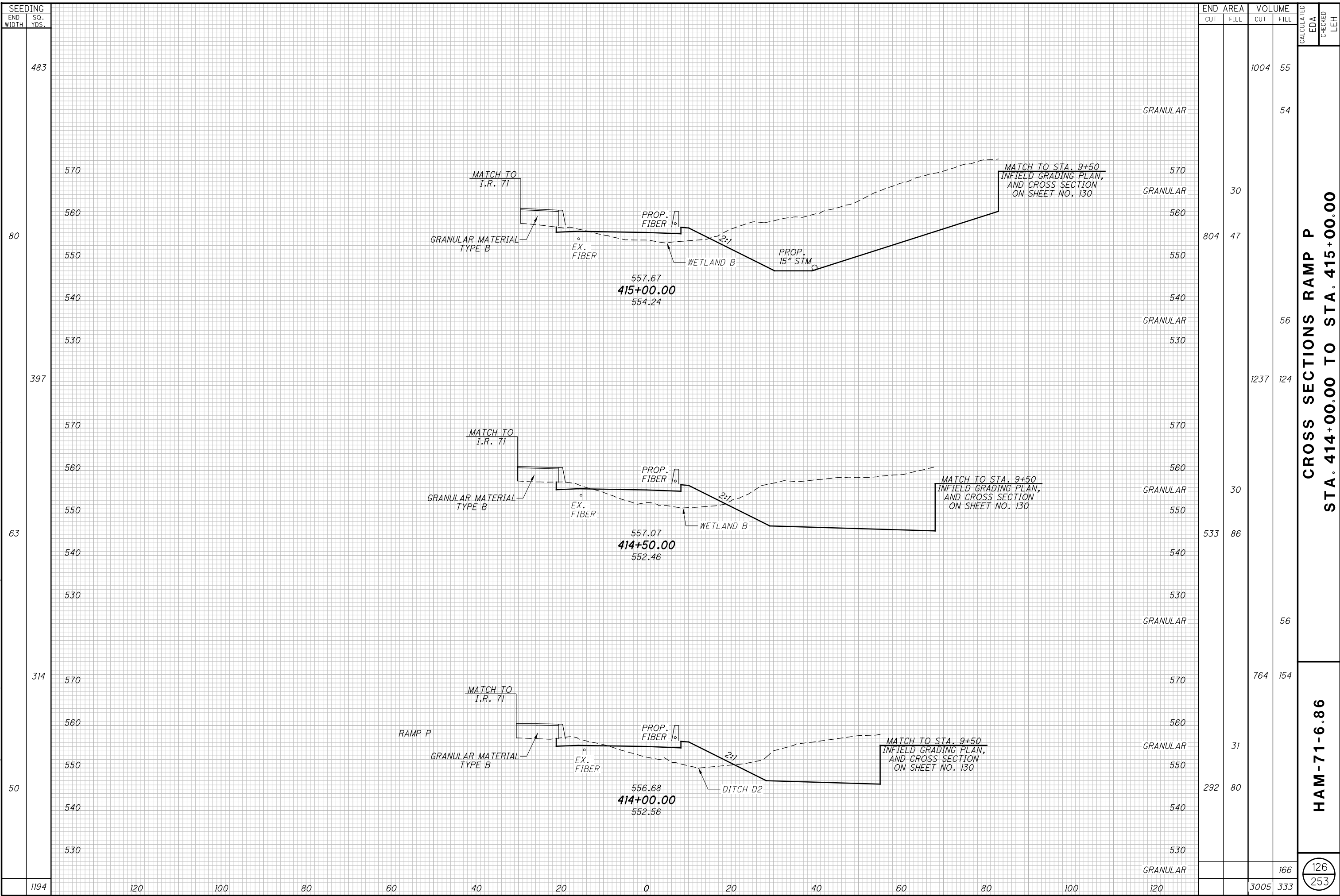
HAM-71-6.86

123
253

V:\1736\active\173620049\design\94741\roadway\sheet\94741_XS003.dgn 9/27/2017 10:42:18 AM pdurham



V:\1736\active\173620049\design\94741\roadway\sheet\94741_XS003.dgn 9/27/2017 10:42:19 AM pdurham



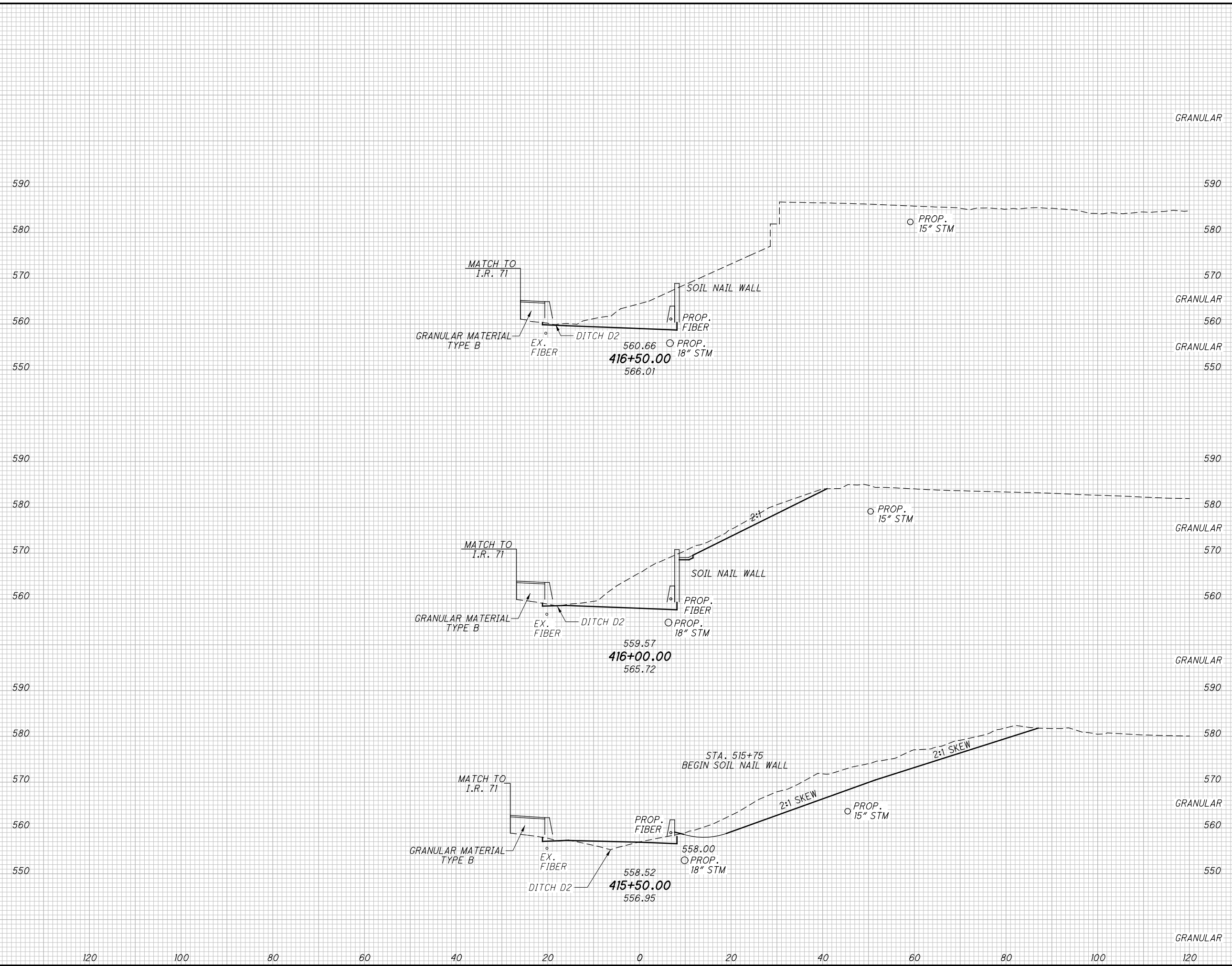
CROSS SECTIONS RAMP P
STA. 414+00.00 TO STA. 415+00.00

HAM-71-6.86

126
253

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS003.dgn 9/27/2017 10:42:19 AM pdurham

SEEDING	END AREA		VOLUME		CALCULATED	CHECKED	LEH
	CUT	FILL	CUT	FILL			
56			282	4			
590				36			
10	104	0					
570		21					
560				42			
550							
56			268	0			
590							
10	186	0					
570		24					
560				48			
550							
289			427	12			
570		28					
560				13			
550							
94							
401	120	100	977	16	127	253	



CROSS SECTIONS RAMP P
STA. 415+50.00 TO STA. 416+50.00

HAM-71-6.86

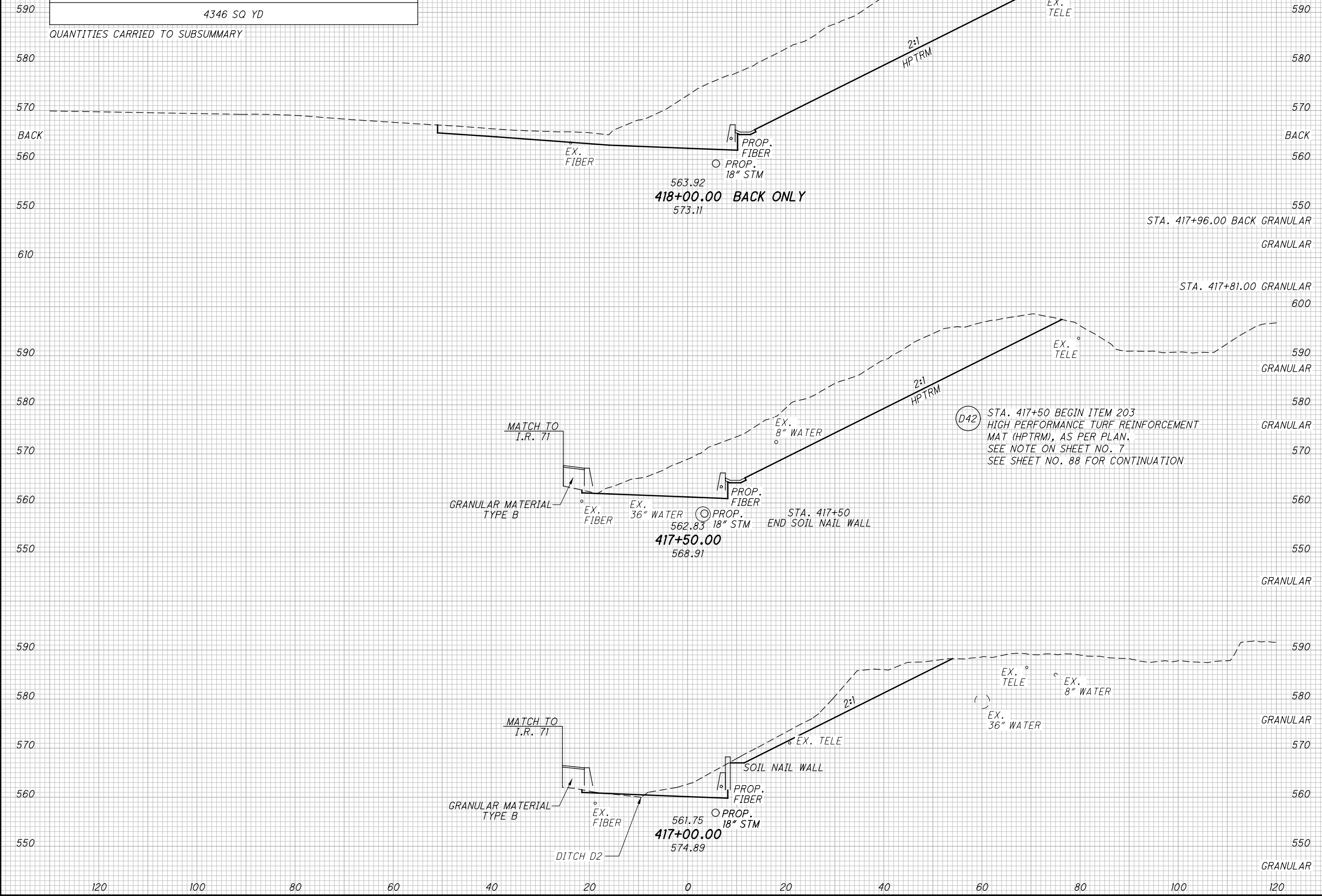
127
253

V:\1736\active\173620049\design\94741\roadway\sheet\94741_XS003.dgn 9/27/2017 10:42:19 AM pdurham

SEEDING	
END WIDTH	SO. YDS.
84	590
87	590
10	590
744	590

RAMP P		
EXCAVATION	EMBANKMENT	GRANULAR TYPE B
7046 CU YD	2748 CU YD	438 CU YD
SEEDING & MULCHING		
4346 SQ YD		

QUANTITIES CARRIED TO SUBSUMMARY



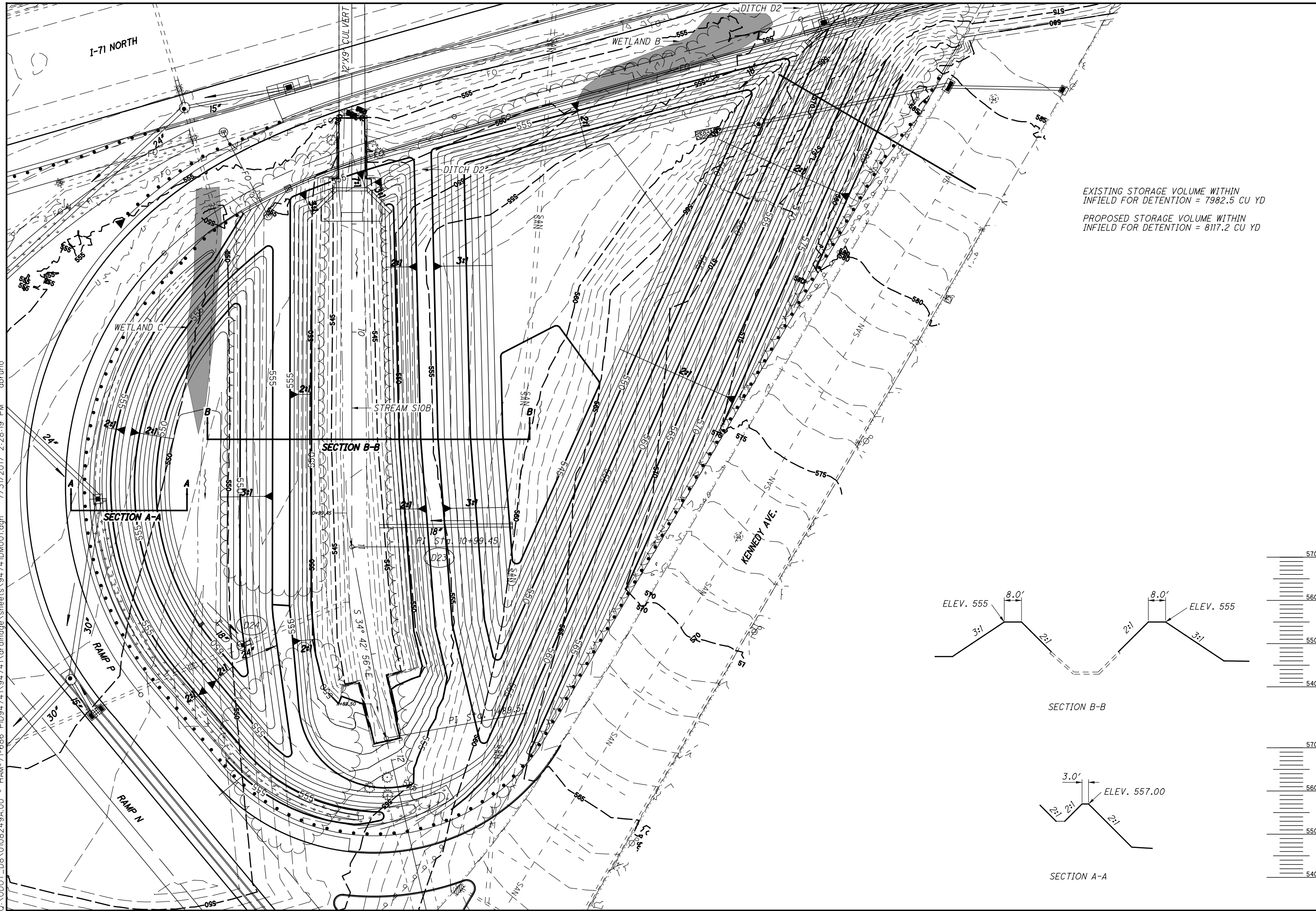
END AREA		VOLUME	
CUT	FILL	CUT	FILL
1060	0	0	0
0	0	5	0
17	17	1631	0
17	17	20	0
728	0	17	0
0	0	32	0
269	269	859	4
10	10	18	2
200	200	57	0
744	744	2490	4

CROSS SECTIONS RAMP P
STA. 417+00.00 TO STA. 418+00.00

HAM-71-6.86

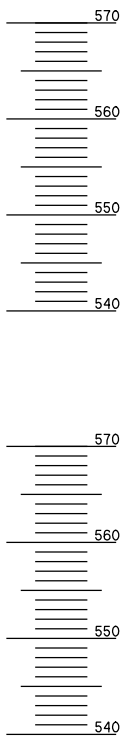
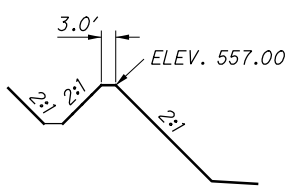
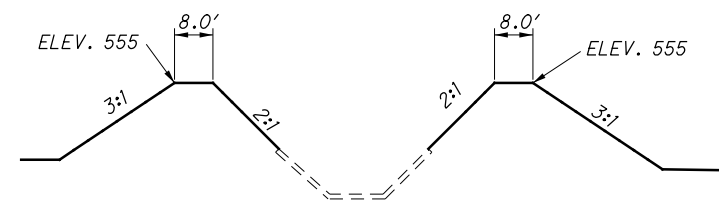
128
253

O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\94741\drainage\sheets\94741DM001.dgn 7/31/2017 2:28:19 PM dbruno



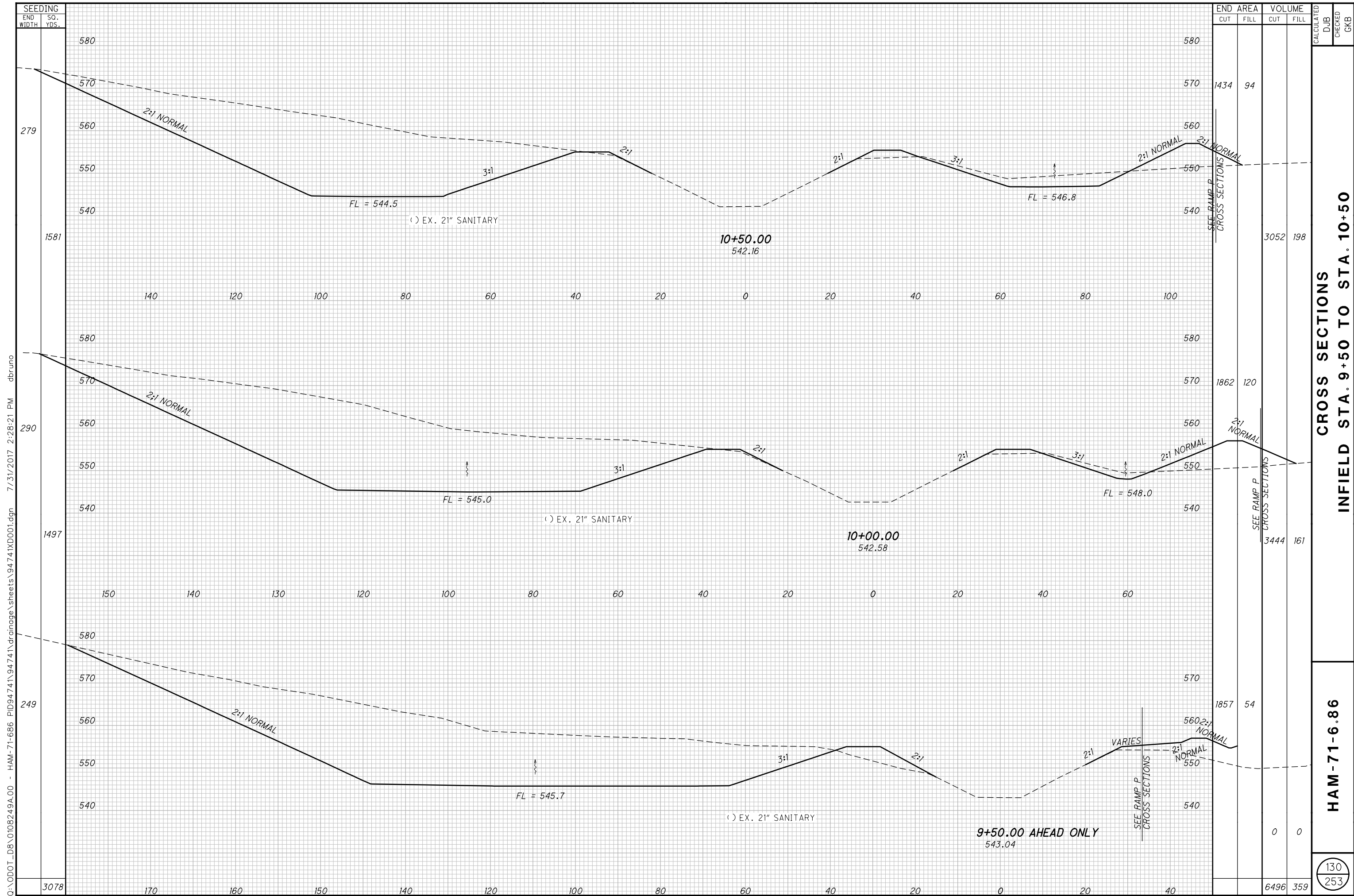
EXISTING STORAGE VOLUME WITHIN
INFIELD FOR DETENTION = 7982.5 CU YD

PROPOSED STORAGE VOLUME WITHIN
INFIELD FOR DETENTION = 8117.2 CU YD



INFIELD GRADING PLAN - RAMP P

HAM-71-6.86



SEEDING	
END WIDTH	SO. YDS.
279	
1581	
290	
1497	
249	
3078	

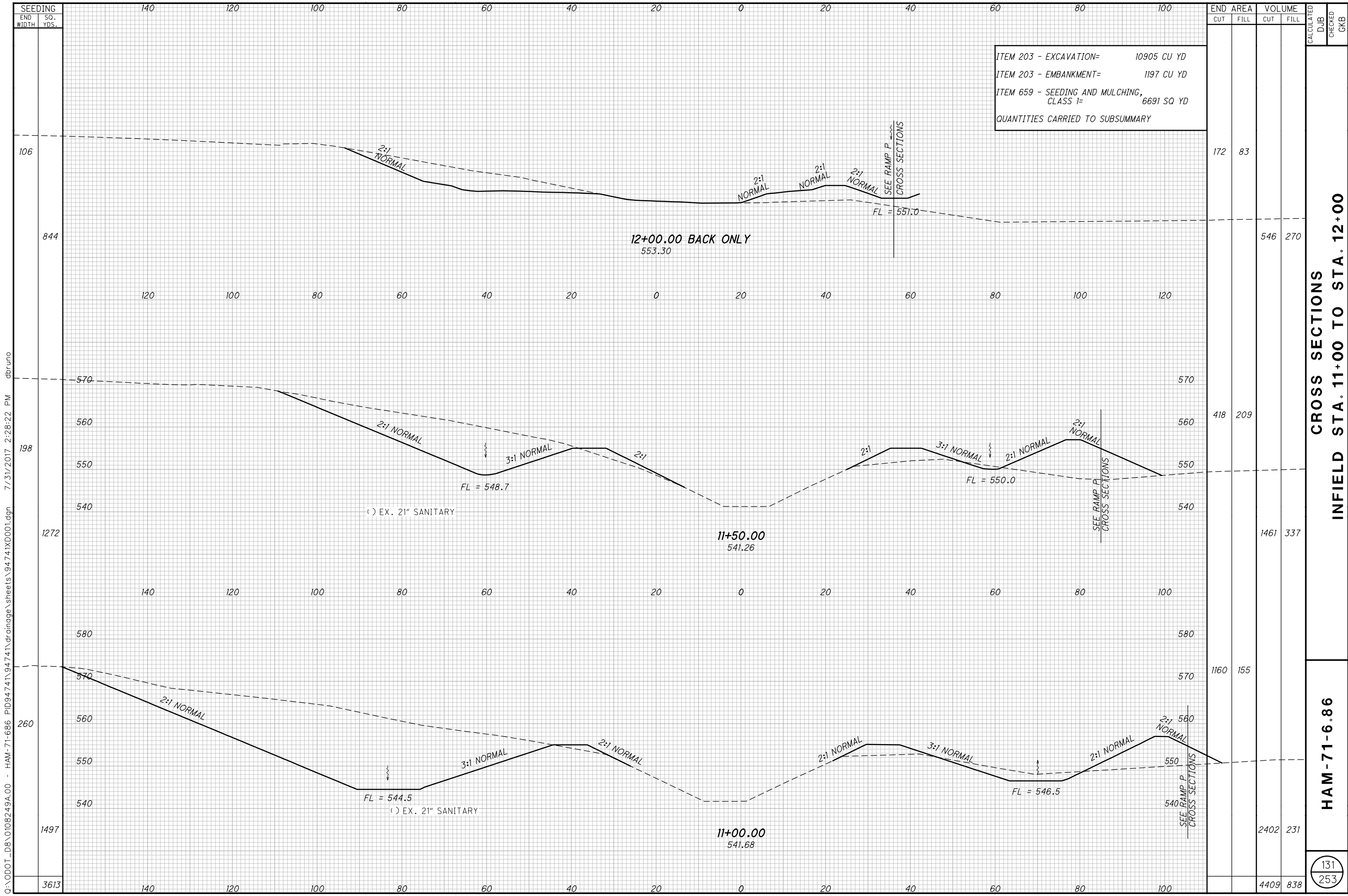
END AREA		VOLUME		CALCULATED DJB	CHECKED GKB
CUT	FILL	CUT	FILL		
1434	94				
1862	120	3052	198		
1857	54	3444	161		
		0	0		
		6496	359		

**CROSS SECTIONS
INFIELD STA. 9+50 TO STA. 10+50**

HAM-71-6.86

130
253

O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\94741\drainage\sheets\94741XD001.dgn 7/31/2017 2:28:21 PM dbruno



ITEM 203 - EXCAVATION=	10905 CU YD
ITEM 203 - EMBANKMENT=	1197 CU YD
ITEM 659 - SEEDING AND MULCHING, CLASS 1=	6691 SQ YD
QUANTITIES CARRIED TO SUBSUMMARY	

END STA	END AREA		VOLUME		CALCULATED DJB	CHECKED GKB
	CUT	FILL	CUT	FILL		
106	172	83				
844			546	270		
198	418	209				
1272			1461	337		
260	1160	155				
1497			2402	231		
3613			4409	838		

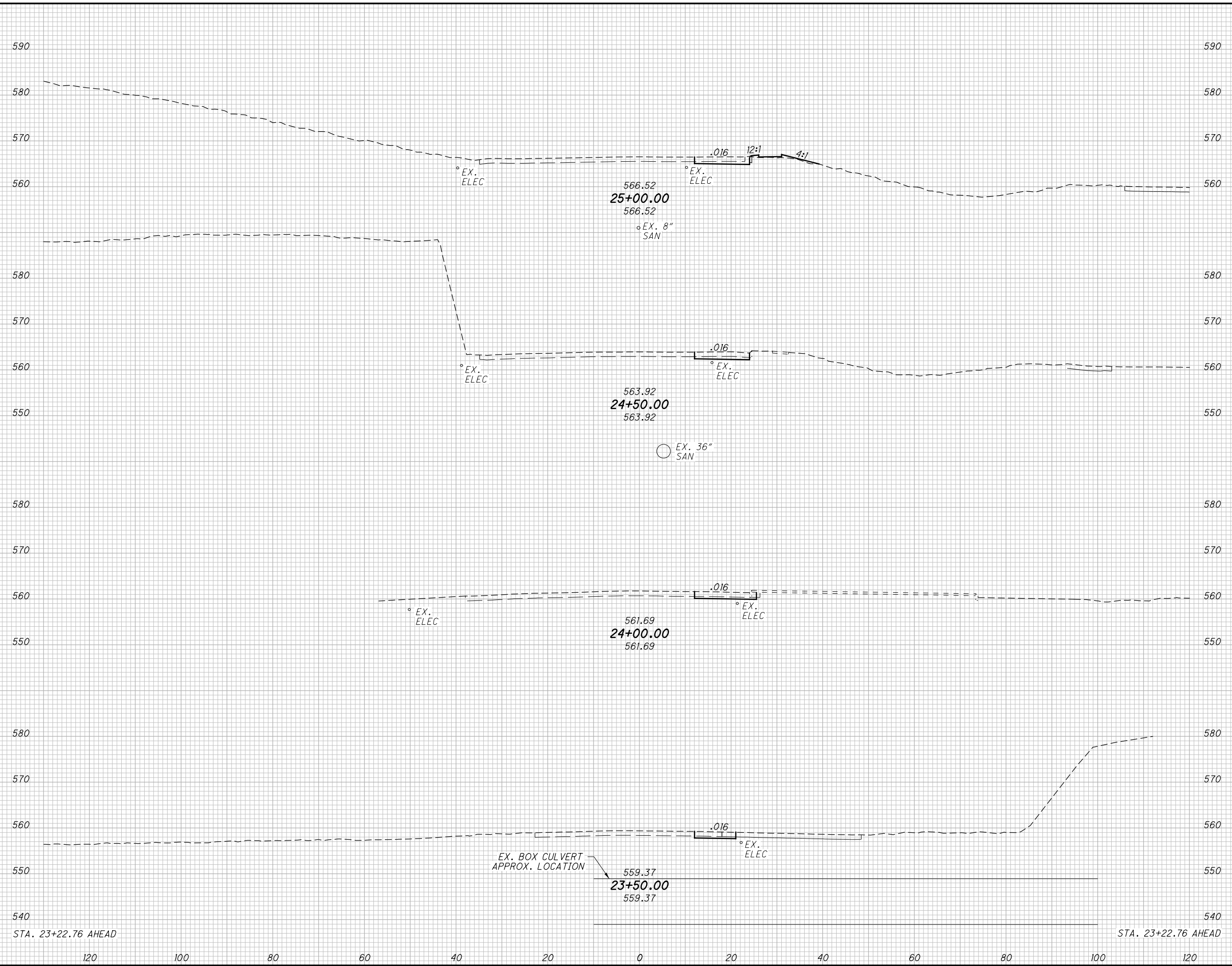
CROSS SECTIONS
INFIELD STA. 11+00 TO STA. 12+00

HAM-71-6.86

O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\94741\drainage\sheets\94741\XD001.dgn 7/31/2017 2:28:22 PM dbruno

V:\1736\active\173620049\design\94741\roadway\sheet\94741_XS004.dgn 9/27/2017 10:42:20 AM pdurham

SEEDING	
END WIDTH	SO. YDS.
94	590
19	560
81	580
10	550
28	580
0	550
0	580
0	570
0	560
0	550
0	540
203	540



END STA.	AREA		VOLUME	
	CUT	FILL	CUT	FILL
94			33	5
19		4		
81		35		4
10		0		
28		39		0
0	23	0		
0		34		0
0	14	0		
0		10		0
0	50	0		
			151	9

**CROSS SECTIONS RIDGE AVENUE
STA. 23+50.00 TO STA. 25+00.00**

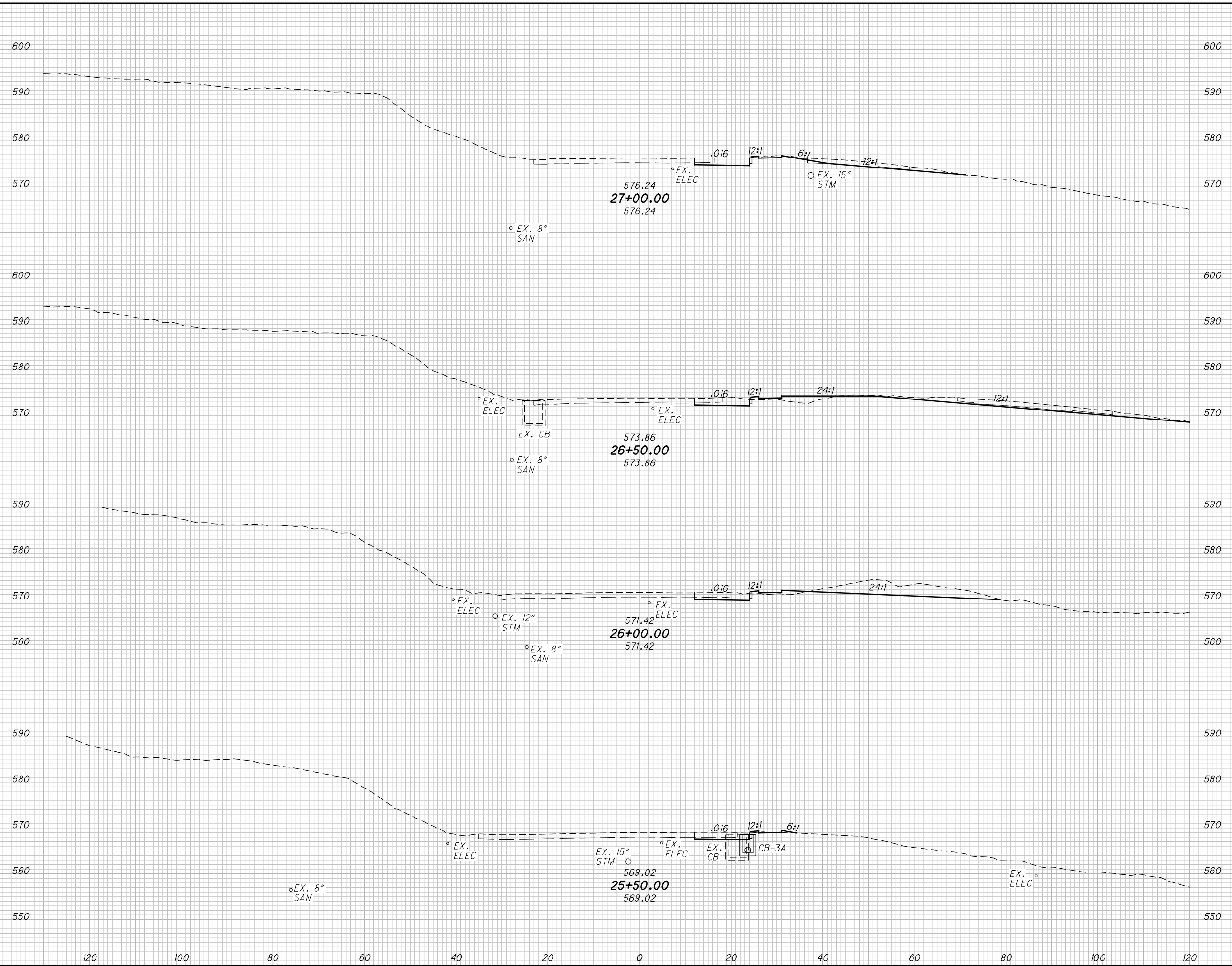
HAM-71-6.86

CALCULATED	EDA
CHECKED	LEH

132
253

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS004.dgn 9/27/2017 10:42:20 AM pdurham

SEEDING	END AREA		VOLUME		CALCULATED	CHECKED	LEH
	CUT	FILL	CUT	FILL			
197			62	9			
51	47	0					
422			126	15			
101	80	15					
444			178	21			
59	98	6					
206			112	7			
15	17	1					
1269			478	52			



**CROSS SECTIONS RIDGE AVENUE
STA. 25+50.00 TO STA. 27+00.00**

HAM-71-6.86

133
253

V:\1736\active\173620049\design\94741\roadway\sheets\94741_XS004.dgn 9/27/2017 10:42:21 AM pdurham

SEEDING	END AREA		VOLUME		CALCULATED	EDA	CHECKED	LEH
	CUT	FILL	CUT	FILL				
10	16	0	13	0				
28	20	0						
15			34	4				
86								
16	17	4						
100			32	12				
20	17	9						
214			79	16				

RIDGE AVENUE	
EXCAVATION	EMBANKMENT
708 CU YD	77 CU YD
SEEDING & MULCHING	
1686 SQ YD	

QUANTITIES CARRIED TO SUBSUMMARY
STA. 28+70.09 BACK

600
STA. 28+70.09 BACK

590

580

570

560

600

590

580

570

600

590

580

570

560

560

560

560

560

120

100

80

60

40

20

0

20

40

60

80

100

120

583.52
28+50.00
583.52

EX. 8" SAN

.016 12:1
EX. ELEC

581.24
28+00.00
581.24

EX. 8" SAN

.016 12:1 6:1
EX. ELEC

578.67
27+50.00
578.67

EX. 8" SAN

.016 12:1 12:1
EX. ELEC

CROSS SECTIONS RIDGE AVENUE
STA. 27+50.00 TO STA. 28+50.00

HAM-71-6.86

134
253

SUPERELEVATION TABLE

RAMP N

N-2 & N-3

LEFT SIDE					CENTERLINE CONTROL		RIGHT SIDE					REMARKS
EDGE ELEVATION	TRANSITION RATE	ELEVATION CORRECTION	CROSS SLOPE	WIDTH	STATION	PROFILE GRADE	WIDTH	CROSS SLOPE	ELEVATION CORRECTION	TRANSITION RATE	EDGE ELEVATION	
FOR CONTINUATION, SEE PAVEMENT DETAIL SHEET NO. 138												
562.26	543:1	0.59	0.037	16'	408+22.30	561.67						C.S.
562.21		0.59	0.037	16'	408+25.00	561.62						
561.82		0.64	0.040	16'	408+50.00	561.18						
561.43		0.69	0.043	16'	408+75.00	560.74						
561.04		0.74	0.046	16'	409+00.00	560.30						
560.64		0.78	0.049	16'	409+25.00	559.86						
560.25		0.73	0.052	16'	409+50.00	559.42						
559.86		0.88	0.055	16'	409+75.00	558.98						
559.45		0.91	0.057	16'	410+00.00	558.54						
559.11	543:1	0.96	0.060	16'	410+22.30	558.15						S.C.
559.06		0.96	0.060	16'	410+25.00	558.10						
558.62		0.96	0.060	16'	410+50.00	557.66						
558.18		0.96	0.060	16'	410+75.00	557.22						
557.82	185:1	0.96	0.060	16'	410+95.18	556.86						F.S.
557.71		0.93	0.058	16'	411+00.00	556.78						
557.14		0.80	0.050	16'	411+25.00	556.34						
556.75		0.70	0.044	16'	411+42.01	556.05						P.T.
556.58		0.66	0.041	16'	411+50.00	555.92						
556.24		0.53	0.033	16'	411+75.00	555.71						
556.01		0.38	0.024	16'	412+00.00	555.63						
555.90		0.26	0.016	16'	412+25.00	555.64						
555.90	185:1	0.26	0.016	16'	412+25.55	555.64						N.C.
FOR CONTINUATION, SEE PAVEMENT DETAIL SHEET NO. 137												

V:\1736\active\173620049\design\94741\roadway\sheet\94741_GE001.dgn 9/27/2017 10:42:21 AM pdurham

CALCULATED
LEH
CHECKED
SNS

SUPERELEVATION TABLE RAMP N

HAM-71-6.86

V:\1736\active\173620049\design\94741\roadway\sheet\94741_GE002.dgn 9/27/2017 10:42:24 AM pdurham

SUPERELEVATION TABLE												
RAMP P					P-1 & P-2							
LEFT SIDE					CENTERLINE CONTROL		RIGHT SIDE					REMARKS
EDGE ELEVATION	TRANSITION RATE	ELEVATION CORRECTION	CROSS SLOPE	WIDTH	STATION	PROFILE GRADE	WIDTH	CROSS SLOPE	ELEVATION CORRECTION	TRANSITION RATE	EDGE ELEVATION	
FOR CONTINUATION, SEE PAVEMENT DETAIL SHEET NO. 137												
556.14	168:1	0.26	0.0160	16	409+60.55	555.88						N.C.
556.00	↑	0.33	0.0206	16	409+75.00	555.67						
555.83	↑	0.46	0.0286	16	410+00.00	555.37						
555.78	↑	0.50	0.0315	16	410+09.06	555.28						P.C.
555.71	↓	0.57	0.0365	16.64	410+25.00	555.14						
555.74	161:1	0.78	0.0445	17.64	410+50.00	554.96						
555.80		0.95	0.0525	18	410+75.00	554.85						
555.89	168:1	1.08	0.0600	18	410+98.55	554.81						F.S.
555.89		1.08	0.0600	18	411+00.00	554.81						
555.91		1.08	0.0600	18	411+25.00	554.83						
555.99		1.08	0.0600	18	411+50.00	554.91						
556.14		1.08	0.0600	18	411+75.00	555.06						
556.32		1.08	0.0600	18	412+00.00	555.24						
556.50		1.08	0.0600	18	412+25.00	555.42						
556.57	189:1	1.08	0.0600	18	412+34.18	555.49						F.S.
556.60	↑	1.00	0.0554	18	412+50.00	555.60						
556.64	↑	0.86	0.0480	18	412+75.00	555.78						
556.69		0.73	0.0407	18	413+00.00	555.96						
556.74		0.60	0.0334	18	413+25.00	556.14						
556.79		0.47	0.0260	18	413+50.00	556.32						
556.84		0.34	0.0187	18	413+75.00	556.50						
556.86	189:1	0.29	0.0160	18	413+84.18	556.57						N.C.

SUPERELEVATION TABLE												
RAMP P					CURVE P-3							
LEFT SIDE					CENTERLINE CONTROL		RIGHT SIDE					REMARKS
EDGE ELEVATION	TRANSITION RATE	ELEVATION CORRECTION	CROSS SLOPE	WIDTH	STATION	PROFILE GRADE	WIDTH	CROSS SLOPE	ELEVATION CORRECTION	TRANSITION RATE	EDGE ELEVATION	
558.38	185:1	0.26	0.016	16	415+28.45	558.12						N.C.
558.89	↑	0.37	0.023	16	415+50.00	558.52						
558.91	↓	0.38	0.024	16	415+50.88	558.53						P.C.
559.54	185:1	0.51	0.032	16	415+75.00	559.03						
560.12		0.62	0.039	16	415+96.90	559.50						F.S.
560.19		0.62	0.039	16	416+00.00	559.57						
560.74		0.62	0.039	16	416+25.00	560.12						
561.28		0.62	0.039	16	416+50.00	560.66						
561.82		0.62	0.039	16	416+75.00	561.20						
562.37		0.62	0.039	16	417+00.00	561.75						
562.91		0.62	0.039	16	417+25.00	562.29						
563.45		0.62	0.039	16	417+50.00	562.83						
563.91		0.62	0.039	16	417+71.00	563.29						
564.00		0.62	0.039	16	417+75.00	563.38						
564.54		0.62	0.039	16	418+00.00	563.92						F.S.

CALCULATED LEH CHECKED SNS
 SUPERELEVATION TABLE
 RAMP P
 HAM-71-6.86
 136
 253



10
HORIZONTAL
SCALE IN FEET

CALCULATED
LEH
CHECKED
SNS

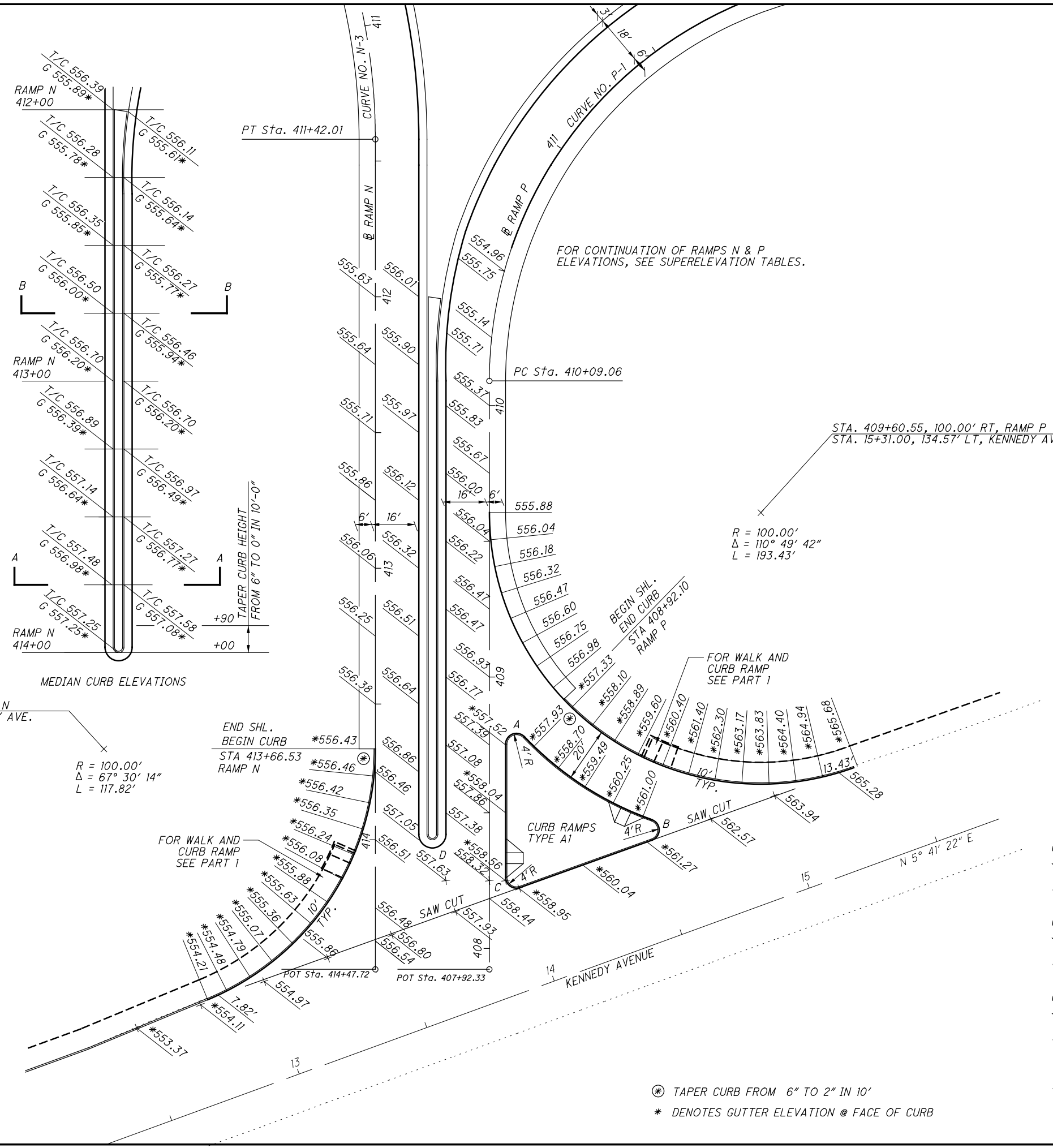
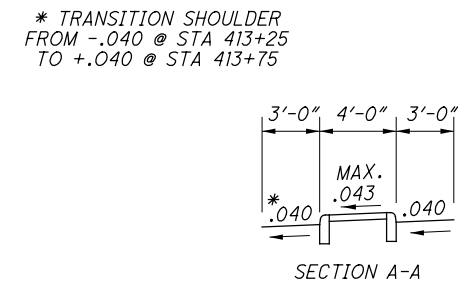
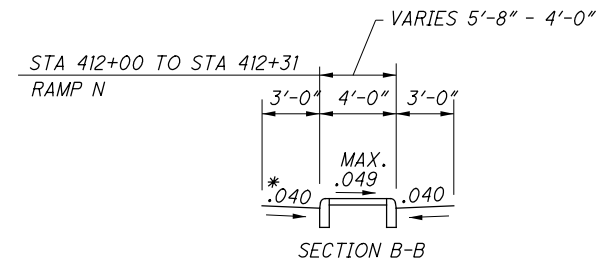
INTERSECTION DETAIL
I.R. 71 & KENNEDY AVE.

HAM-71-6.86

137
253

CURVE NO. N-3
P.I. Sta. 410+83.53
 $\Delta = 29^\circ 37' 39''$ (RT)
Dc = 24' 45" 00"
R = 231.50'
T = 61.22'
L = 119.71'
E = 7.96'
C = 118.38'
C.B. = S 79° 05' 36" E

CURVE NO. P-1
P.I. Sta. 411+48.55
 $\Delta = 85^\circ 32' 39''$ (RT)
Dc = 38' 00" 00"
R = 150.78'
T = 139.49'
L = 225.12'
E = 54.62'
C = 204.78'
C.B. = N 21° 30' 27" W



STA. 413+66.53, 100.00' RT, RAMP N
STA. 12+73.83, 135.71' LT, KENNEDY AVE.

R = 100.00'
 $\Delta = 67^\circ 30' 14''$
L = 117.82'

R = 100.00'
 $\Delta = 110^\circ 49' 42''$
L = 193.43'

CURVE A
STA. 408+75.25, 10.00' RT, RAMP P
R = 4.00'
 $\Delta = 136^\circ 32' 10''$
L = 9.53'

CURVE B
STA. 408+43.68, 58.56' RT, RAMP P
R = 4.00'
 $\Delta = 140^\circ 43' 09''$
L = 9.82'

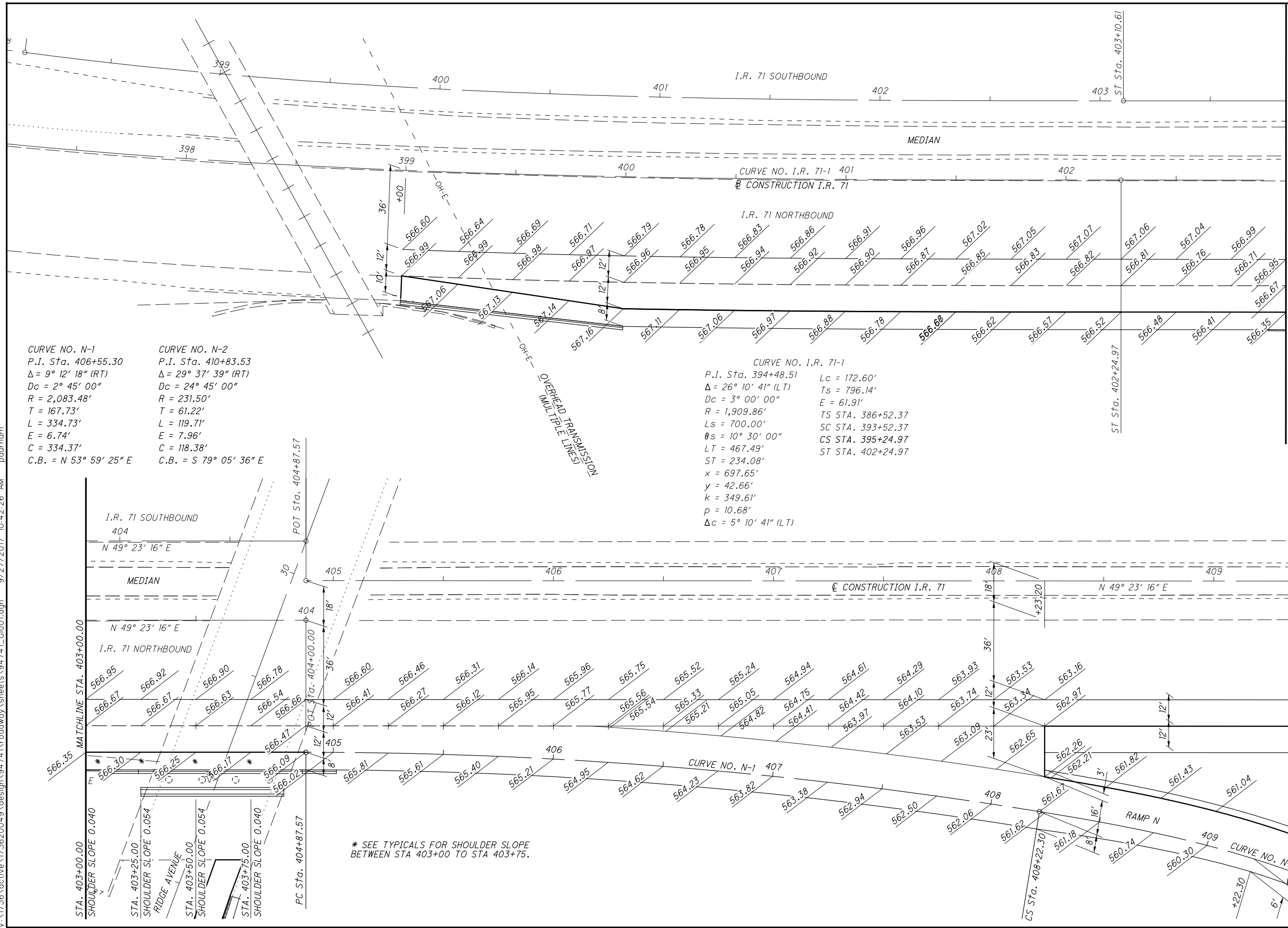
CURVE C
STA. 408+26.23, 10.00' RT, RAMP P
R = 4.00'
 $\Delta = 110^\circ 39' 22''$
L = 7.66'

CURVE D
STA. 408+42.05, 21.00' LT, RAMP P
R = 5.00'
 $\Delta = 180^\circ 00' 00''$
L = 15.71'

⊙ TAPER CURB FROM 6" TO 2" IN 10'
* DENOTES GUTTER ELEVATION @ FACE OF CURB

V:\1736\active\173620049\design\94741\roadway\sheet\94741_G1002.dgn 9/27/2017 10:42:26 AM pduham

V:\1736\active\173620049\design\94741\roadway\sheets\94741_G1001.dgn 9/27/2017 10:42:26 AM pdurham



CURVE NO. N-1
 P.I. Sta. 406+55.30
 $\Delta = 9^\circ 12' 18''$ (RT)
 $Dc = 2^\circ 45' 00''$
 $R = 2,083.48'$
 $T = 167.73'$
 $L = 334.73'$
 $E = 6.74'$
 $C = 334.37'$
 C.B. = N $53^\circ 59' 25''$ E

CURVE NO. N-2
 P.I. Sta. 410+83.53
 $\Delta = 29^\circ 37' 39''$ (RT)
 $Dc = 24^\circ 45' 00''$
 $R = 231.50'$
 $T = 61.22'$
 $L = 119.71'$
 $E = 7.96'$
 $C = 118.38'$
 C.B. = S $79^\circ 05' 36''$ E

CURVE NO. I.R. 71-1
 P.I. Sta. 394+48.51
 $\Delta = 26^\circ 10' 41''$ (LT)
 $Dc = 3^\circ 00' 00''$
 $R = 1,909.86'$
 $Ls = 700.00'$
 $\theta_s = 10^\circ 30' 00''$
 $LT = 467.49'$
 $ST = 234.08'$
 $x = 697.65'$
 $y = 42.66'$
 $k = 349.61'$
 $p = 10.68'$
 $\Delta c = 5^\circ 10' 41''$ (LT)

$Lc = 172.60'$
 $Ts = 796.14'$
 $E = 61.91'$
 $TS STA. 386+52.37$
 $SC STA. 393+52.37$
 $CS STA. 395+24.97$
 $ST STA. 402+24.97$

* SEE TYPICALS FOR SHOULDER SLOPE BETWEEN STA 403+00 TO STA 403+75.



CALCULATED
 LEH
 CHECKED
 SNS

**INTERCHANGE DETAIL
 I.R. 71 & RAMP N**

HAM-71-6.86

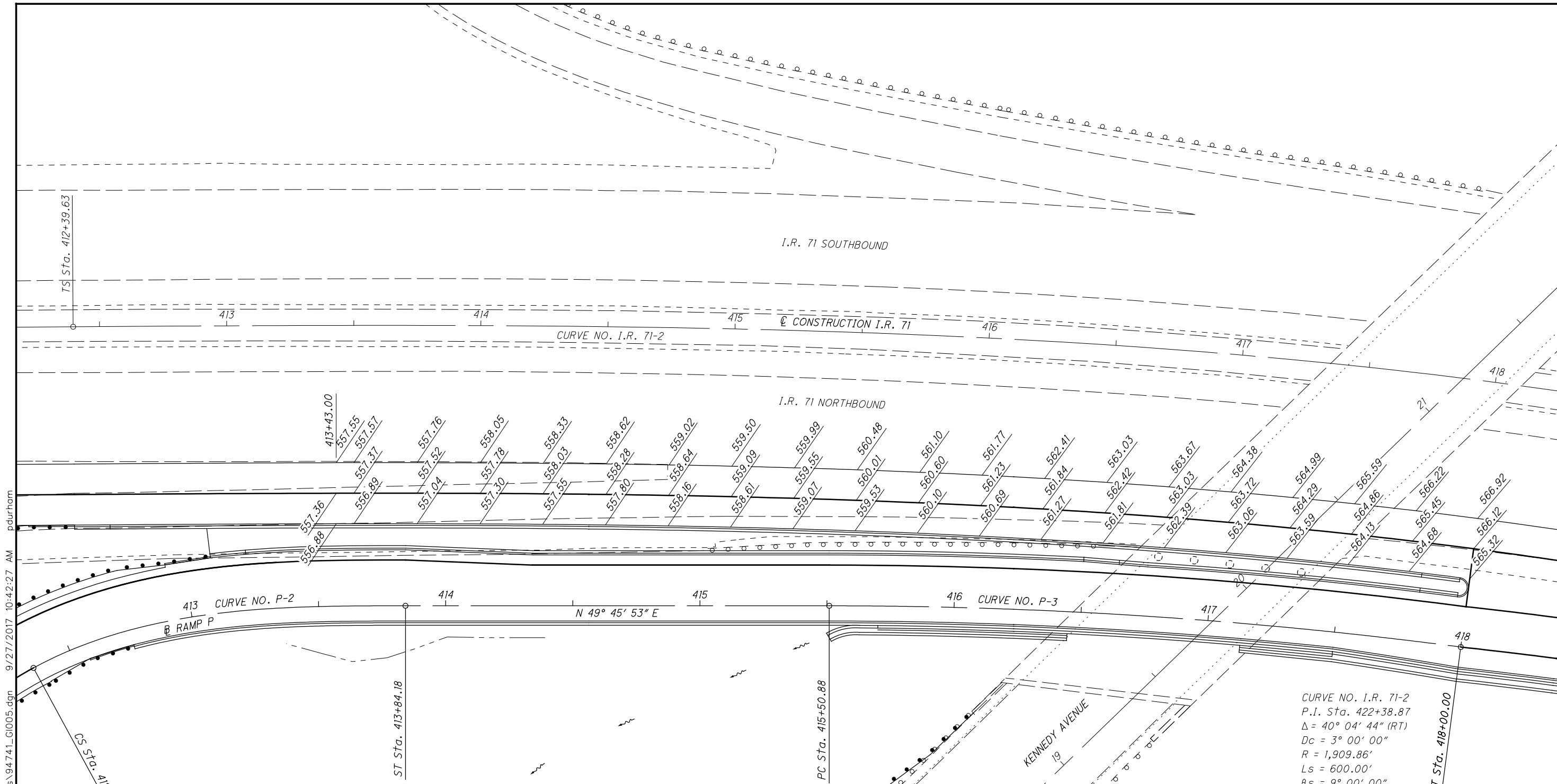


0 20 40
HORIZONTAL
SCALE IN FEET

CALCULATED
LEH
CHECKED
SNS

INTERCHANGE DETAIL
I.R. 71

HAM-71-6.86



I.R. 71 WIDENING				
STATION	DISTANCE RIGHT	EX. ELEVATION	DISTANCE RIGHT	PROP. ELEVATION
408+23.20	54	563.16	66	562.97
408+50.00	54	562.72	66	562.53
409+00.00	54	561.91	66	561.72
409+50.00	54	561.16	66	560.97
410+00.00	54	560.40	66	560.20
410+50.00	54	559.59	66	559.40
411+00.00	54	558.76	66	558.57
411+50.00	54	557.07	66	557.88
412+00.00	54	557.59	66	557.40
412+50.00	54	557.30	66	557.11
413+00.00	54	557.30	66	557.11
413+43.00	54	557.55	66	557.36

CURVE NO. P-2
P.I. STA. 412+85.39
Ls = 150.00'
fs = 28° 30' 00"
LT = 101.33'
ST = 51.21'
x = 146.33'
y = 24.43'
k = 74.39'
p = 6.16'
CS STA. 412+34.18
ST STA. 413.84.18

CURVE NO. P-3
P.I. Sta. 416+75.62
Δ = 7° 28' 25" (RT)
Dc = 3° 00' 00"
R = 1,909.86'
T = 124.74'
L = 249.12'
E = 4.07'
C = 248.94'
C.B. = N 53° 30' 05" E
PC STA. 415+50.88
PT STA. 418+00.00

CURVE NO. I.R. 71-2
P.I. Sta. 422+38.87
Δ = 40° 04' 44" (RT)
Dc = 3° 00' 00"
R = 1,909.86'
Ls = 600.00'
Bs = 9° 00' 00"
LT = 400.52'
ST = 200.47'
x = 598.52'
y = 31.36'
k = 299.75'
p = 7.85'
Δc = 22° 04' 44" (RT)
Lc = 735.96'
Ts = 999.24'
E = 131.43'
C = 731.42'
C1 = C2 = 599.34'
C.B.1 = N 52° 23' 47" E
C.B. = N 69° 26' 12" E
C.B.2 = S 86° 28' 36" W
TS STA. 412+39.63
SC STA. 418+39.63
CS STA. 425+75.59
ST STA. 431+75.59

V:\1736\active\173620049\design\94741\roadway\sheet\94741_G1005.dgn 9/27/2017 10:42:27 AM pduham

V:\1736\active\173620049\design\94741\roadway\sheets\94741_G1003.dgn 9/27/2017 10:42:27 AM pduurham

I.R.71 WIDENING					I.R.71 WIDENING				
STATION	DISTANCE RIGHT	EX. ELEVATION	DISTANCE RIGHT	PROP. ELEVATION	STATION	DISTANCE RIGHT	EX. ELEVATION	DISTANCE RIGHT	PROP. ELEVATION
425+00.00	54.00'	584.82	91.00'	582.19	431+50.00	54.00'	589.51	78.00'	589.13
425+25.00	54.00'	585.24	90.50'	582.65	431+75.00	54.00'	589.40	77.50'	589.02
425+50.00	54.00'	585.68	90.00'	583.12	432+00.00	54.00'	589.23	77.00'	588.86
425+75.00	54.00'	586.00	89.50'	583.48	432+25.00	54.00'	589.06	76.50'	588.70
426+00.00	54.00'	586.32	89.00'	583.93	432+50.00	54.00'	588.81	76.00'	588.46
426+25.00	54.00'	586.64	88.50'	584.37	432+75.00	54.00'	588.49	75.50'	588.15
426+50.00	54.00'	586.96	88.00'	584.81	433+00.00	54.00'	588.17	75.00'	587.83
426+75.00	54.00'	587.26	87.50'	585.22	433+25.00	54.00'	587.85	74.50'	587.52
427+00.00	54.00'	587.63	87.00'	585.71	433+50.00	54.00'	587.56	74.00'	587.24
427+25.00	54.00'	587.96	86.50'	586.25	433+75.00	54.00'	587.30	73.50'	586.99
427+50.00	54.00'	588.26	86.00'	586.55	434+00.00	54.00'	587.04	73.00'	586.74
427+75.00	54.00'	588.52	85.50'	586.92	435+07.72	54.00'	586.82	72.50'	586.52
428+00.00	54.00'	588.78	85.00'	587.28	435+25.00	54.00'	586.66	72.16'	586.37
428+25.00	54.00'	589.04	84.50'	587.64	435+50.00	54.00'	586.53	71.65'	586.25
428+50.00	54.00'	589.26	84.00'	587.96	435+75.00	54.00'	586.40	71.15'	586.13
428+75.00	54.00'	589.32	83.50'	588.12	436+00.00	54.00'	586.27	70.65'	586.00
429+00.00	54.00'	589.40	83.00'	588.29	436+25.00	54.00'	586.20	70.15'	585.94
429+25.00	54.00'	589.45	82.50'	588.43	436+50.00	54.00'	586.16	69.65'	585.91
429+50.00	54.00'	589.53	82.00'	588.60	436+75.00	54.00'	586.11	69.15'	585.87
429+75.00	54.00'	589.60	81.50'	588.75	437+00.00	54.00'	586.08	68.65'	585.85
430+00.00	54.00'	589.67	81.00'	588.91	437+25.00	54.00'	586.21	68.15'	585.98
430+25.00	54.00'	589.73	80.50'	589.05	437+50.00	54.00'	586.39	67.65'	586.17
430+50.00	54.00'	589.76	80.00'	589.15	437+75.00	54.00'	586.58	67.15'	586.37
430+75.00	54.00'	589.70	79.50'	589.17	438+00.00	54.00'	586.76	66.65'	586.56
431+00.00	54.00'	589.65	79.00'	589.19	438+25.00	54.00'	587.05	66.15'	586.86
431+25.00	54.00'	589.59	78.50'	589.20	438+32.72	54.00'	587.15	66.00'	586.96



CURVE NO. P-3
 P.I. Sta. 416+75.62
 $\Delta = 7^\circ 28' 25''$ (RT)
 $Dc = 3^\circ 00' 00''$
 $R = 1,909.86'$
 $T = 124.74'$
 $L = 249.12'$
 $C = 248.94'$
 $C.B. = N 53^\circ 30' 05'' E$
 PC STA. 415+50.88
 PT STA. 418+00.00

CURVE NO. I.R. 71-2
 $\Delta c = 22^\circ 04' 44''$ (RT)
 $Lc = 735.96'$
 $Ts = 999.24'$
 $R = 1,909.86'$
 $E = 131.43'$
 $C = 731.42'$
 $CI = C2 = 599.34'$
 $C.B.1 = N 52^\circ 23' 47'' E$
 $C.B. = N 69^\circ 26' 12'' E$
 $C.B.2 = S 86^\circ 28' 36'' W$
 TS STA. 412+39.63
 SC STA. 418+39.63
 CS STA. 425+75.59
 ST STA. 431+75.59



0 20 40
 HORIZONTAL SCALE IN FEET

CALCULATED
 LEH
 CHECKED
 SNS

**INTERCHANGE DETAIL
 I.R. 71 & RAMP P**

HAM-71-6.86

140
 253

V:\1736\active\173620049\design\94741\roadway\sheet\94741_G1004.dgn 9/27/2017 10:42:28 AM pduhnm

I.R. 71 WIDENING				
STATION	DISTANCE RIGHT	EX. ELEVATION	DISTANCE RIGHT	PROP. ELEVATION
438+32.72	54	587.15	66	586.96
438+50.00	54	587.30	66	587.11
439+00.00	54	588.04	66	587.85
439+50.00	54	588.94	66	588.74
440+00.00	54	589.90	66	589.70
440+50.00	54	590.96	66	590.77
441+00.00	54	592.38	66	592.19
441+50.00	54	593.62	66	593.42
442+00.00	54	594.80	66	594.61
442+50.00	54	596.09	66	595.90
443+00.00	54	597.51	66	597.32
443+50.00	54	598.78	66	598.59
444+00.00	54	600.13	66	599.94
444+50.00	54	601.46	66	601.26

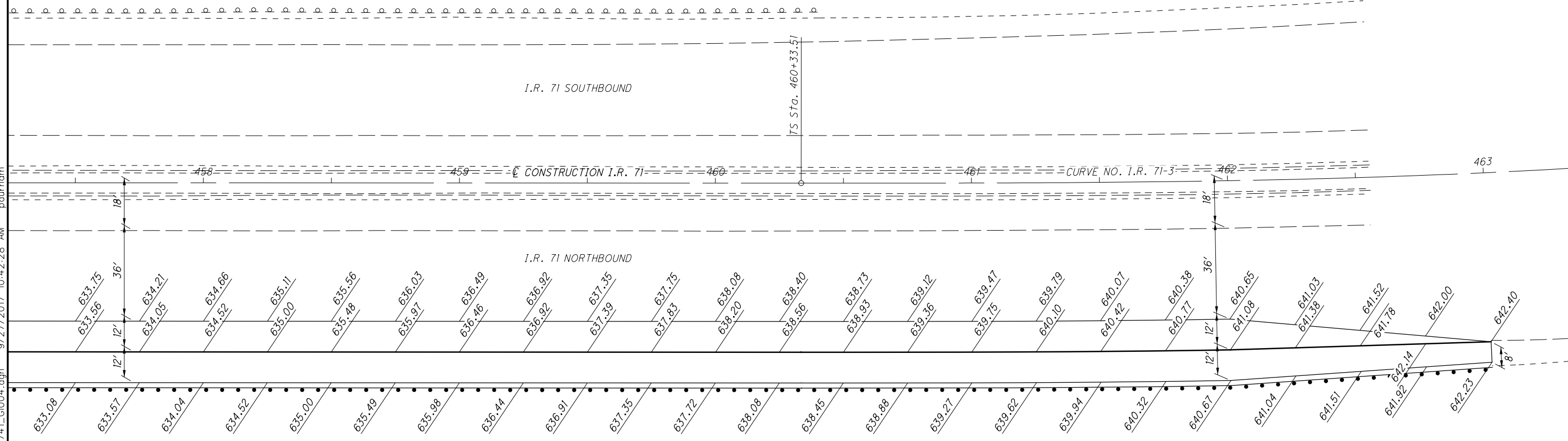
I.R. 71 WIDENING				
STATION	DISTANCE RIGHT	EX. ELEVATION	DISTANCE RIGHT	PROP. ELEVATION
445+00.00	54	602.69	66	602.50
445+50.00	54	604.04	66	603.84
446+00.00	54	605.34	66	605.15
446+50.00	54	606.68	66	606.49
447+00.00	54	608.05	66	607.86
447+50.00	54	609.32	66	609.13
448+00.00	54	610.53	66	610.34
448+50.00	54	611.81	66	611.62
449+00.00	54	613.22	66	613.03
449+50.00	54	614.46	66	614.27
450+00.00	54	615.76	66	615.56
450+50.00	54	616.96	66	616.77
451+00.00	54	618.43	66	618.24
451+50.00	54	619.82	66	619.63

I.R. 71 WIDENING				
STATION	DISTANCE RIGHT	EX. ELEVATION	DISTANCE RIGHT	PROP. ELEVATION
452+00.00	54	621.07	66	620.88
452+50.00	54	622.42	66	622.23
453+00.00	54	623.72	66	623.53
453+50.00	54	625.02	66	624.83
454+00.00	54	626.31	66	626.12
454+50.00	54	627.52	66	627.33
455+00.00	54	628.74	66	628.54
455+50.00	54	629.82	66	629.63
456+00.00	54	630.93	66	630.73
456+50.00	54	631.98	66	631.79
457+00.00	54	632.94	66	632.75
457+50.00	54	633.75	66	633.56

CURVE NO. I.R. 71-3
P.I. Sta. 477+09.17
 $\Delta = 75^\circ 17' 05''$ (LT)
 $D_c = 3^\circ 00' 00''$
 $R = 1,909.86'$
 $L_s = 400.00'$
 $\theta_s = 6^\circ 00' 00''$
 $LT = 266.82'$
 $ST = 133.47'$
 $x = 399.56'$
 $y = 13.95'$
 $k = 199.93'$
 $p = 3.49'$
 $\Delta_c = 63^\circ 17' 05''$ (LT)
 $L_c = 2109.49'$
 $T_s = 1675.66'$
 $E = 506.48'$
TS STA. 460+33.51
SC STA. 464+33.51
CS STA. 485+43.00
ST STA. 489+43.00

CALCULATED
LEH
CHECKED
SNS

HORIZONTAL SCALE IN FEET

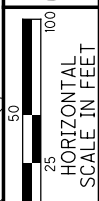


INTERCHANGE DETAIL
I.R. 71

HAM-71-6.86

LEGEND

- (A) STANDARD LONGITUDINAL JOINT, AS PER BP-2.1
- (B) CONTRACTION JOINT, AS PER BP-2.2
- (C) EXPANSION JOINT, AS PER BP-2.2
- (D) STANDARD LONGITUDINAL JOINT, AS PER BP-2.1 WITHOUT TIE BARS

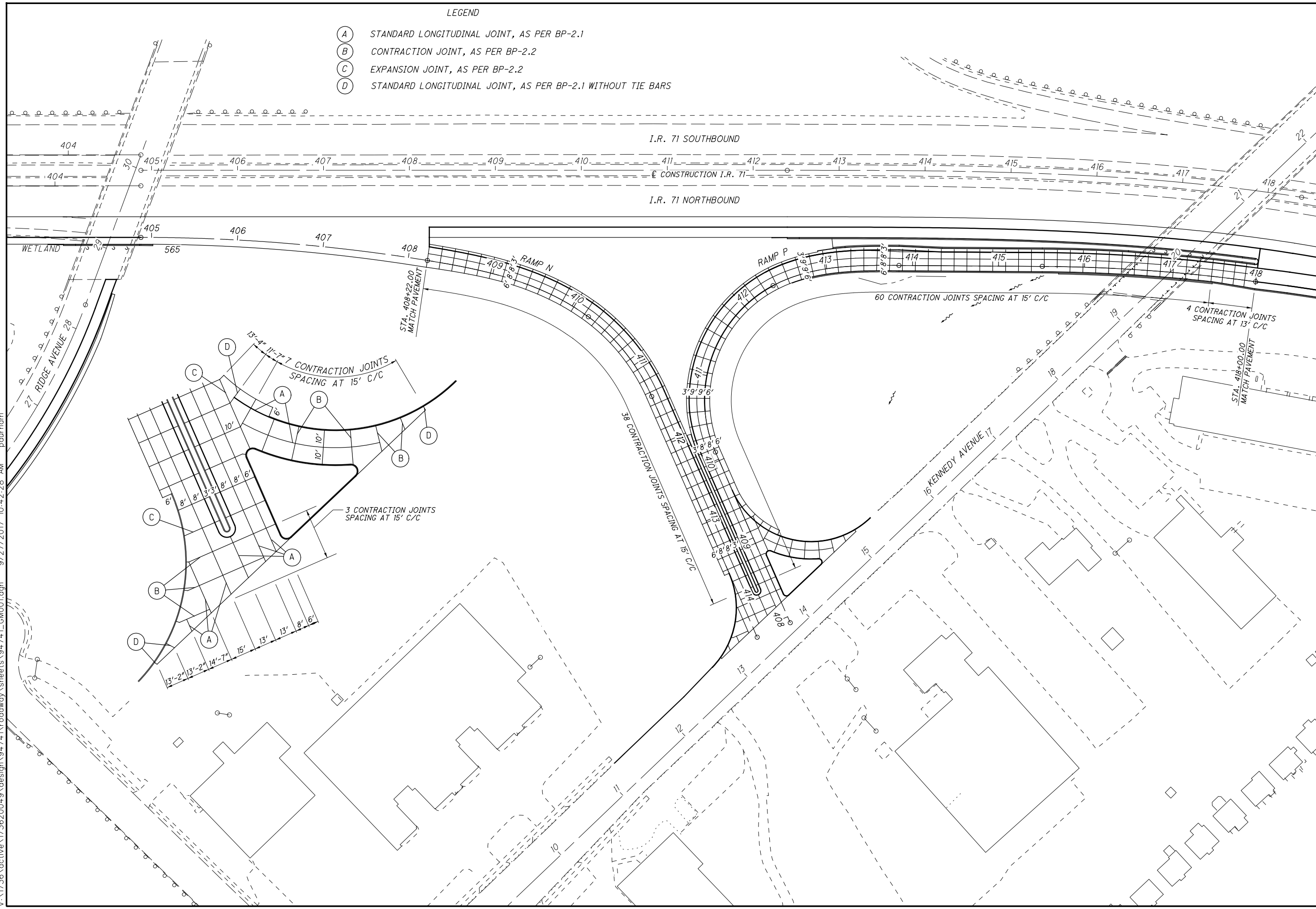


CALCULATED
LEH
CHECKED
SNS

PAVEMENT JOINT DETAILS
RAMPS N & P

HAM-71-6.86

142
253



V:\1736\active\173620049\design\94741\roadway\sheet\94741_GM001.dgn 9/27/2017 10:42:28 AM pduham



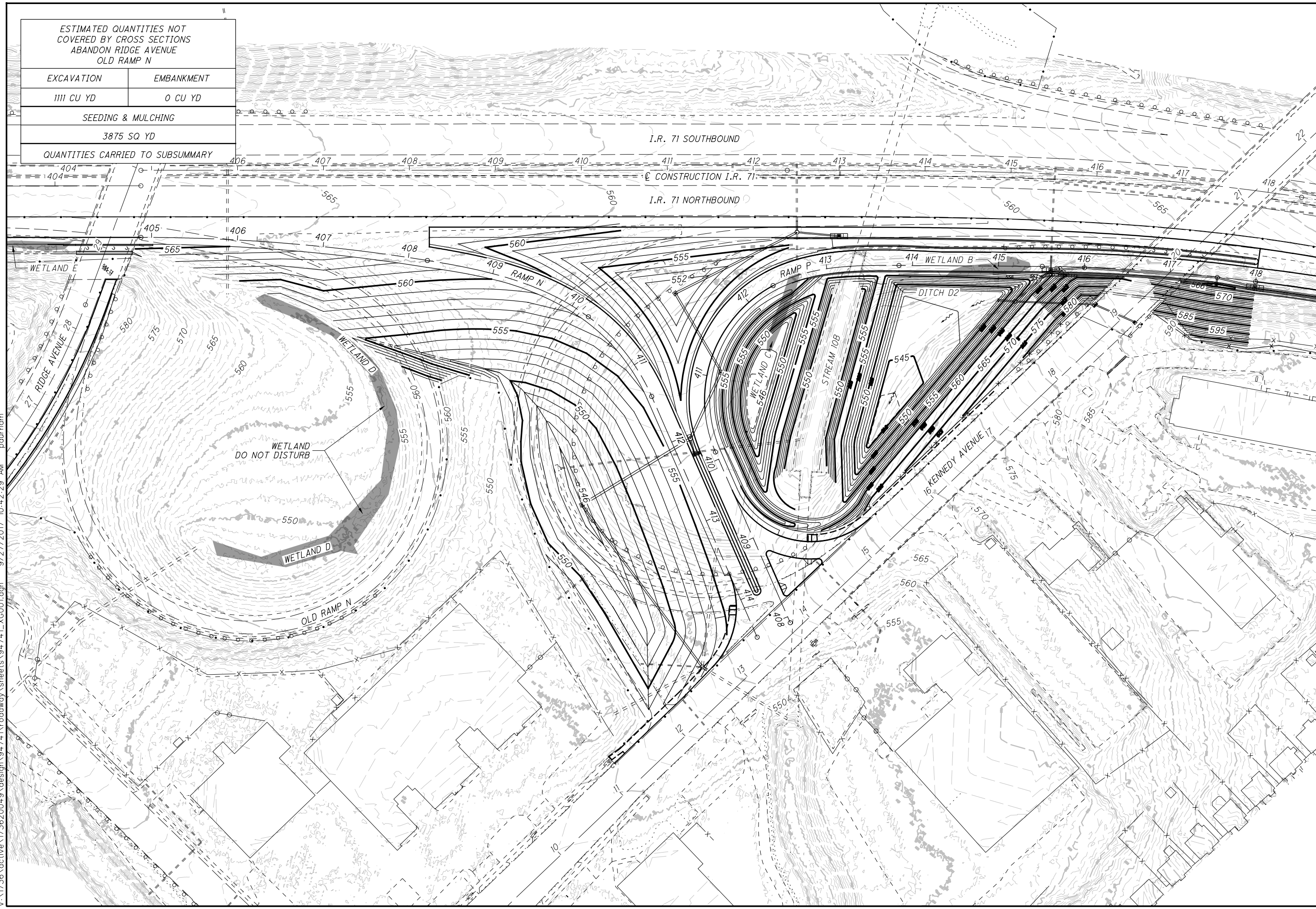
CALCULATED
LEH
CHECKED
SNS

GRADING PLAN
I.R. 71

HAM-71-6.86

143
253

ESTIMATED QUANTITIES NOT COVERED BY CROSS SECTIONS ABANDON RIDGE AVENUE OLD RAMP N	
EXCAVATION	EMBANKMENT
1111 CU YD	0 CU YD
SEEDING & MULCHING	
3875 SQ YD	
QUANTITIES CARRIED TO SUBSUMMARY	



V:\1736\active\173620049\design\94741\roadway\sheet\94741_XG001.dgn 9/27/2017 10:42:29 AM pduham

V:\1736\active\173620049\design\94741\admin\reviews\final_tracings\Revised_Final_Tracing_Sheets_2-14-18\94741\DS001.dgn 2/14/2018 12:20:18 PM eodkins

SHEET NO.	STATION		SIDE	202				601			602		611																	
				HEADWALL REMOVED	PIPE REMOVED, 24" AND UNDER	PIPE REMOVED, OVER 24"	PIPE CLEANOUT, 27" TO 48"	RIPRAP	TIED CONCRETE BLOCK MAT, TYPE 1	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	CONCRETE MASONRY	CONCRETE MASONRY, AS PER PLAN	15" CONDUIT, TYPE B	15" CONDUIT, TYPE F	21" CONDUIT, TYPE A, 706.02	36" CONDUIT, TYPE A, AS PER PLAN	36" CONDUIT, TYPE B	42" CONDUIT, TYPE A, AS PER PLAN	48" CONDUIT, TYPE A, 706.02	60" CONDUIT, TYPE A, 706.02	CONDUIT, MISC.: 60" CONDUIT REHABILITATION	MANHOLE, NO. 3	FIELD PAVING OF EXISTING PIPE, 36" CMP	FIELD PAVING OF EXISTING PIPE, 42" CMP	CONDUIT, MISC.: VIDEO LOG	CONDUIT, MISC.: CURED-IN-PLACE PIPE LINER (15')	CONDUIT, MISC.: CURED-IN-PLACE PIPE LINER (36')	CONDUIT, MISC.: CURED-IN-PLACE PIPE LINER (42')	
	FROM	TO		EACH	FT	FT	FT	SY	SY	CY	CY	CY	FT	FT	FT	FT	FT	FT	FT	FT	FT	FT	EACH	FT	FT	FT	FT	FT	FT	FT
	I-71																													
152	426+45.27		RT	1		6	238				8.33	0.76																		
153	429+19.11		RT	1	6						2.22	0.37																		
154	432+04.61		RT	1	6						2.58	0.27		16																
155	437+26.17		RT								14.58	1.93	1.43																	
156	439+50.44		RT	1	56					14		0.27		14	79															
157	442+11.26		RT	1		25		1.74				0.92																		
158	448+00.67		RT	1		23						0.76																		
159	448+13.89		RT	1	78							0.27		12	113															
160	450+86.07		RT	1		20	340					1.93																		
161	458+51.00		RT	1	72					11		0.27		15	99															
162	466+49.32		RT							25																				
TOTALS CARRIED TO GENERAL SUMMARY				9	218	74	578	1.74	25	25	28	7.75	1.43	57	291	29	42	38	36	35	44	386	1	285	311	660	112	262	286	

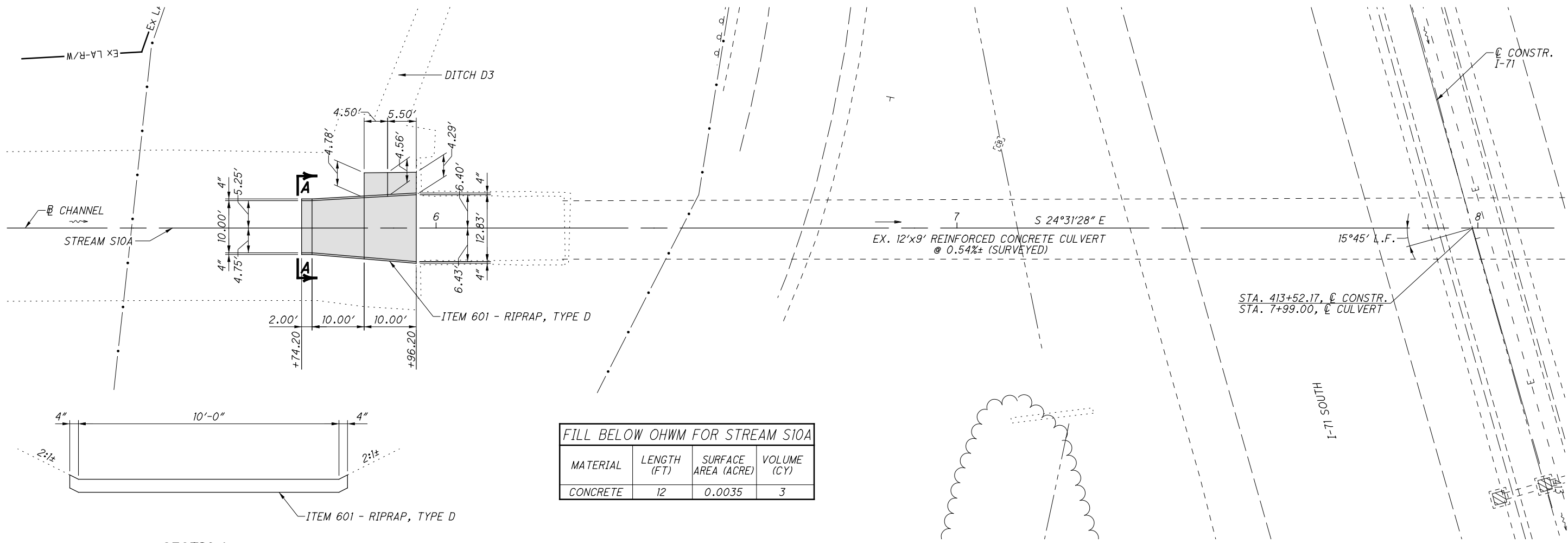
CALCULATED	JRW
	CHECKED
MAG	

CULVERT SUBSUMMARY

HAM-71-6.86

144
253

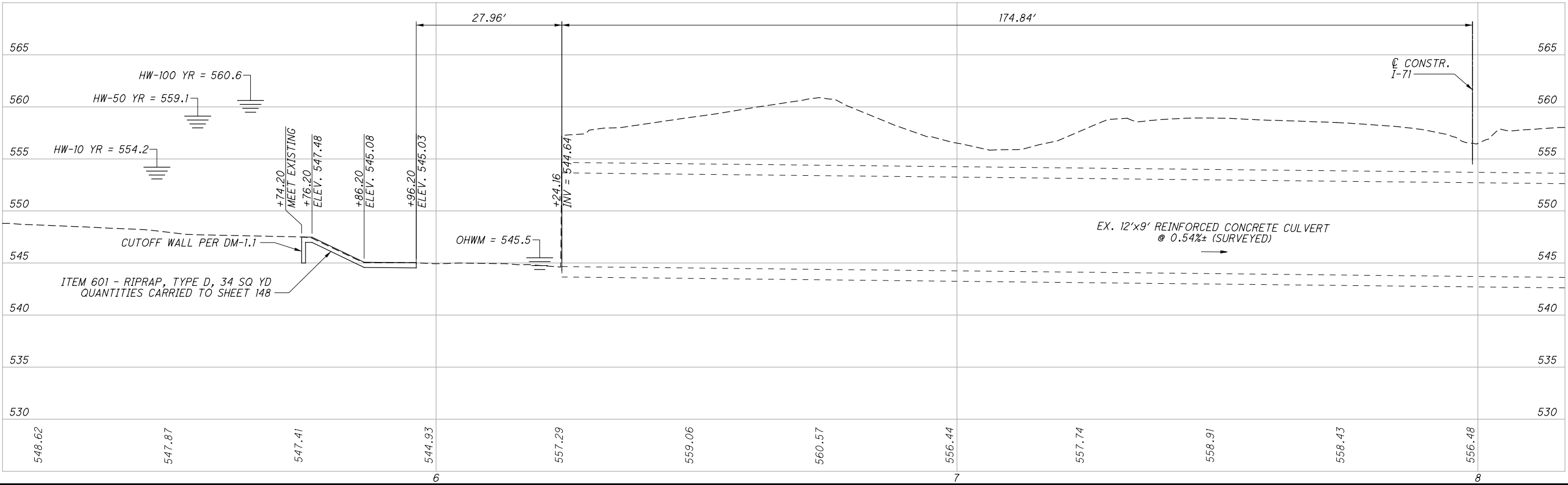
O:\ODOT_D8\108249A.00 - HAM-71-686 PID94741\94741\drainage\sheet\94741DC001.dgn 7/31/2017 2:23:26 PM dbruno



FILL BELOW OHWM FOR STREAM S10A			
MATERIAL	LENGTH (FT)	SURFACE AREA (ACRE)	VOLUME (CY)
CONCRETE	12	0.0035	3

SECTION A-A

NOTE:
FOR HYDRAULIC DESIGN DATA, SEE SHEET 146.
FOR EXISTING STRUCTURE DATA, SEE SHEET 146.



CALCULATED
GKB
CHECKED
HGH

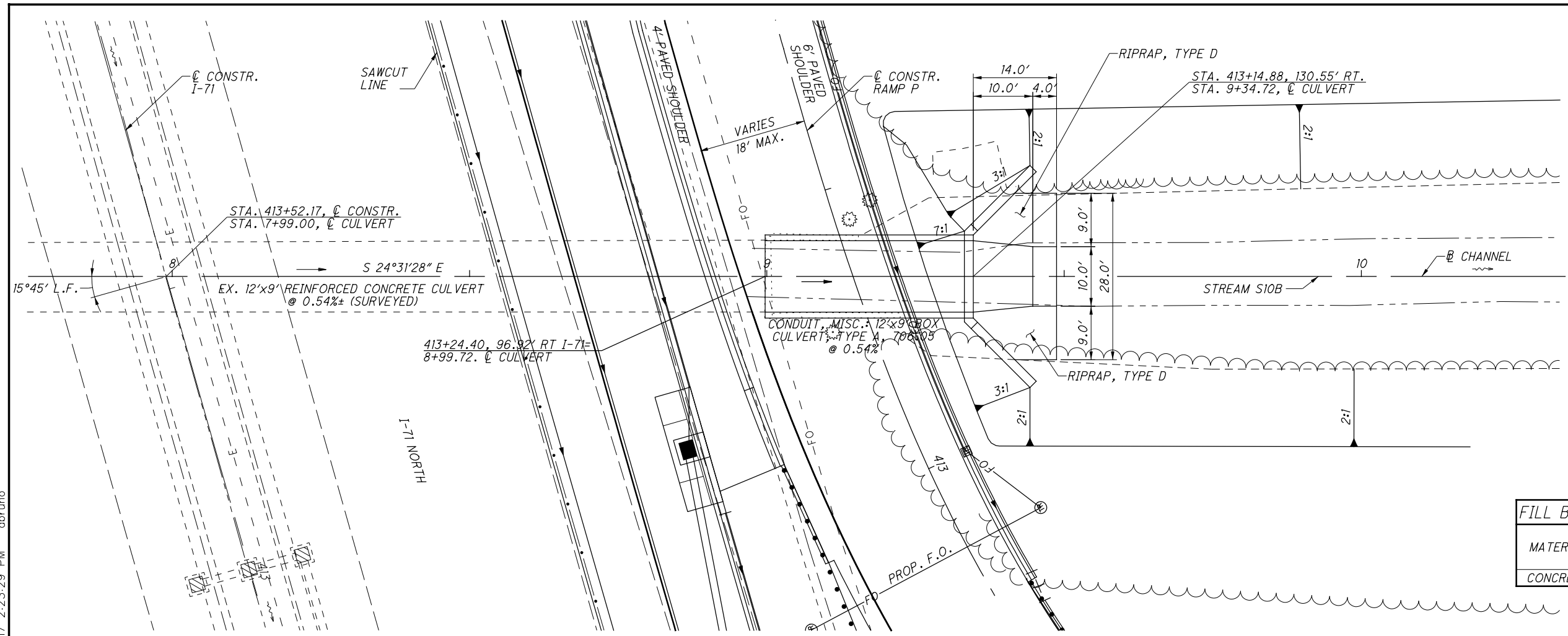
0 10 20
HORIZONTAL
SCALE IN FEET

CULVERT DETAIL
STA. 413+52.17 (I-71)

HAM-71-6.86

FOR CONTINUATION,
SEE SHEET 2 / 2

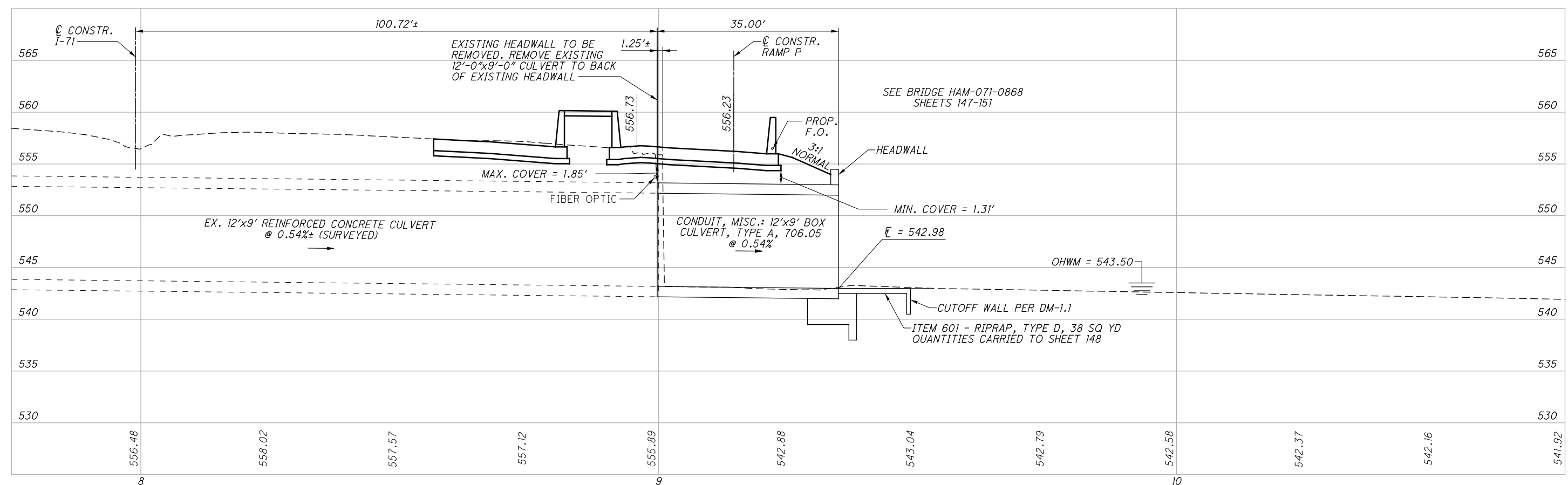
O:\ODOT_D8\108249A.00 - HAM-71-686 PID94741\94741\drainage\sheet\94741DC002.dgn 7/31/2017 2:23:29 PM dbruno



HYDRAULIC DESIGN DATA	
DRAINAGE AREA	= 1024 A _c
Q ₁₀	= 830 cfs
Q ₅₀	= 1360 cfs
Q ₁₀₀	= 1470 cfs
HW ₁₀	= 554.2
HW ₅₀	= 559.1
HW ₁₀₀	= 560.6
V ₁₀	= 3.5 fps
V ₅₀	= 2.1 fps
V ₁₀₀	= 1.71 fps
DESIGN SERVICE LIFE	= 75 YRS.
pH	= 7.01
ABRASION LEVEL	= 1
EXISTING STRUCTURE	
SFN	3115275
TYPE	12'x9' REINFORCED CONCRETE CULVERT
SKREW	15°45' L.F.
ALIGNMENT	TANGENT
LENGTH	276 FT
DATE BUILT	1966

FILL BELOW OHWM FOR STREAM SLOB			
MATERIAL	LENGTH (FT)	SURFACE AREA (ACRE)	VOLUME (CY)
CONCRETE	49	0.0146	12

FOR CONTINUATION, SEE SHEET 1 / 2



CALCULATED GK B CHECKED HGH
 HORIZONTAL SCALE IN FEET
 0 5 10 20

CULVERT DETAIL
I-71 STA. 413+52.17

HAM-71-6.86

2	2
---	---

146
253

GENERAL NOTES

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS 2014, INCLUDING THE 2015 AND 2016 INTERIM SPECIFICATIONS, AND THE ODOT BRIDGE DESIGN MANUAL, 2007.

DESIGN DATA

CONCRETE, CLASS QC1, SUBSTRUCTURE - COMPRESSIVE STRENGTH 4 K.S.I.
 REINFORCING STEEL - ASTM A615 OR A996
 GRADE 60, MINIMUM YIELD STRENGTH 60 K.S.I. (ALL REINFORCING SHALL BE EPOXY COATED)
 PRECAST STRUCTURE: FOR BOX AND PIPE CULVERTS, SEE CMS SECTION 611.

OPERATIONAL IMPORTANCE

A LOAD MODIFIER OF 1.0 HAS BEEN ASSUMED FOR THE DESIGN OF THIS STRUCTURE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, ARTICLE 1.3.5 AND THE ODOT BRIDGE DESIGN MANUAL, 2007.

FOUNDATION BEARING RESISTANCE

THE HEADWALL AND WINGWALL FOOTINGS, AS DESIGNED, PRODUCE A MAXIMUM SERVICE LOAD PRESSURE OF 1.00 K.S.F. AND A MAXIMUM STRENGTH LOAD PRESSURE OF 3.14 K.S.F. THE FACTORED BEARING RESISTANCE IS 8.00 K.S.F.

REINFORCING STEEL COVER

THE MINIMUM CONCRETE COVER OVER REINFORCING STEEL IS 2" UNLESS OTHERWISE NOTED.

FORESLOPE WALL ANCHOR DOWELS

ANCHOR PER CMS 510 WITH NONSHRINK, NONMETALLIC GROUT CONFORMING TO CMS 705.20 AND TO A DEPTH OF 9 INCHES. PAYMENT FOR DOWEL HOLES, GROUT AND INSTALLATION SHALL BE INCLUDED WITH ITEM 511.

AS AN ALTERNATIVE TO RESIN BONDING, THREADED INSERTS OR NONPROTRUDING MECHANICAL CONNECTORS CAST INTO THE CULVERT BY THE MANUFACTURER MAY BE USED PROVIDED THEY CAN RESIST AN ULTIMATE PULL-OUT STRENGTH OF 12 KIPS AND MAINTAIN A MINIMUM COVER OF 3 INCHES AT THE BOTTOM OF THE CULVERT SLAB. MECHANICAL CONNECTORS MUST PROVIDE AN "L-SHAPED" BAR INSIDE THE CULVERT WITH A MINIMUM HORIZONTAL LENGTH OF 12 INCHES. PAYMENT FOR INSERTS OR MECHANICAL CONNECTORS SHALL BE INCLUDED WITH ITEM 611.

PREFORMED EXPANSION JOINT FILLER

PREFORMED EXPANSION JOINT FILLER (PEJF) CONFORMING TO CMS 705.03, 1 INCH THICK, SHALL BE PLACED ABOVE THE FOOTING BETWEEN THE SIDES OF THE BOX CULVERT AND THE ENDS OF THE WINGWALLS. PAYMENT FOR MATERIALS AND INSTALLATION SHALL BE INCLUDED WITH ITEM 516 - 1" PREFORMED EXPANSION JOINT FILLER.

BASIS OF PAYMENT

ALL LABOR, EQUIPMENT AND INCIDENTALS REQUIRED TO CONSTRUCT THE FOOTING, CUTOFF WALL, WINGWALLS AND FORESLOPE WALL SHALL BE INCLUDED WITH THE APPROPRIATE CONCRETE ITEM 511. PAYMENT FOR REINFORCING STEEL SHALL BE INCLUDED WITH ITEM 509 - EPOXY COATED REINFORCING STEEL.

POROUS BACKFILL WITH GEOTEXTILE FABRIC

POROUS BACKFILL WITH GEOTEXTILE FABRIC 1'-6" THICK SHALL BE PLACED BEHIND THE WINGWALLS ONLY AND SHALL EXTEND AT LEAST 6" BELOW THE BOTTOM OF THE WEEPHOLES TO 1'-0" BELOW THE EMBANKMENT SURFACE. GEOTEXTILE FABRIC SHALL BE PLACED BETWEEN THE POROUS BACKFILL AND REPLACED EXCAVATION ADJACENT TO THE STRUCTURE. IT SHALL TURN UNDER THE BOTTOM OF THE POROUS BACKFILL AND RETURN 6" ABOVE THE TOP ELEVATION OF THE WEEPHOLE.

WEEPHOLES SHALL BE PLACED 6" TO 12" ABOVE THE NORMAL WATER ELEVATION OR GROUND LINE AND SHALL HAVE A MAXIMUM SPACING OF 10'-0". A MINIMUM OF ONE WEEPHOLE SHALL BE PROVIDED PER WINGWALL.

ITEM 503, UNCLASSIFIED EXCAVATION, AS PER PLAN

UNCLASSIFIED EXCAVATION SHALL BE IN ACCORDANCE WITH 503 EXCEPT THAT THE BACKFILL MATERIAL SHALL BE 203 MATERIAL PLACED IN 6 INCH LIFTS.

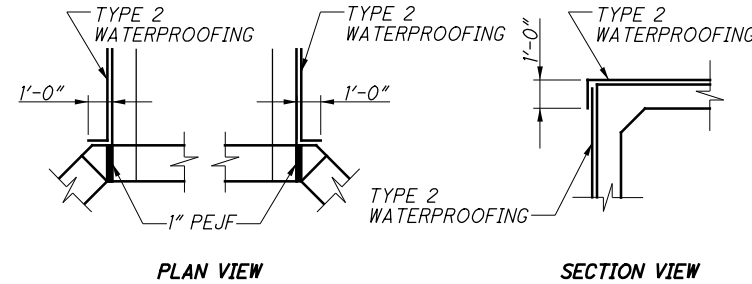
PRECAST CONCRETE

AT THE OPTION OF THE CONTRACTOR, PRECAST HEADWALLS AND WINGWALLS MAY BE FURNISHED PER ITEM 602.03 PRECAST STRUCTURES, PROVIDED THEY ARE SIZED TO MEET THE SOIL LOADING AND RESISTANCE PARAMETERS, AND MEET OR EXCEED THE MATERIAL STRENGTHS AND WALL LIMITS AS SHOWN AND SPECIFIED. FULL COMPENSATION FOR THE PRECAST SUBSTITUTION IS THE VOLUME OF CONCRETE AND THE WEIGHT OF THE REINFORCING STEEL FOR THE CORRESPONDING CAST-IN-PLACE STRUCTURE.

WATERPROOFING

TYPE 2 WATERPROOFING, PER CMS 512.08 AND 711.25, SHALL EXTEND VERTICALLY DOWN THE ENTIRE SIDES OF THE PRECAST CULVERT SECTIONS FOR ALL PORTIONS OF THE CULVERT WHICH SHALL BE IN CONTACT WITH THE BACKFILL. PAYMENT FOR THE MEMBRANE WATERPROOFING SHALL BE AT THE CONTRACT PRICE BID PER SQUARE YARD FOR ITEM 512 - TYPE 2 WATERPROOFING.

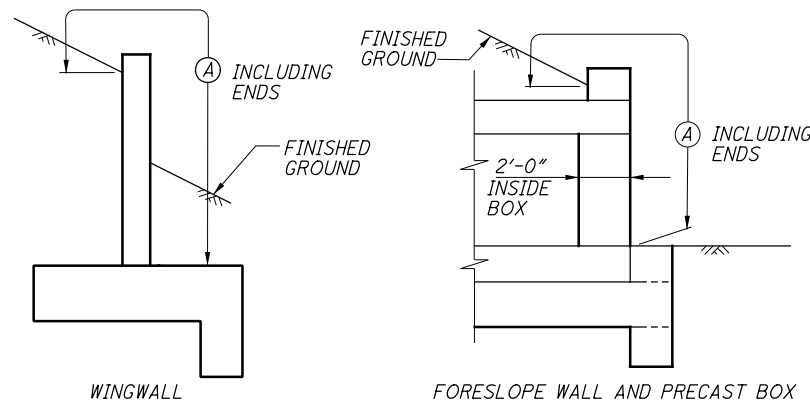
TYPE 2 WATERPROOFING, PER CMS 512.08 AND 711.25 SHALL BE APPLIED TO THE TOP SURFACE OF THE PRECAST CULVERT SECTIONS AND SHALL EXTEND ONE FOOT VERTICALLY DOWN THE SIDES FOR ALL PORTIONS OF THE CULVERT WHICH SHALL BE IN CONTACT WITH THE BACKFILL. PAYMENT FOR THE MEMBRANE WATERPROOFING SHALL BE AT THE CONTRACT PRICE BID PER SQUARE YARD FOR ITEM 512 - TYPE 2 WATERPROOFING.



WATERPROOFING DETAILS

SEALING OF FORESLOPE WALL AND WINGWALLS

ALL EXPOSED FORESLOPE WALL AND WINGWALL CONCRETE SHALL BE SEALED WITH EPOXY-URETHANE SEALER. THE LIMITS SHALL BE AS SHOWN IN THE DIAGRAMS BELOW. PAYMENT FOR THE EPOXY-URETHANE SEALER SHALL BE PER ITEM 512 - SEALING OF CONCRETE SURFACES. THE COLOR SHALL BE LIGHT NEUTRAL, FEDERAL COLOR NUMBER 17778.



LIMITS OF ITEM 512-SEALING CONCRETE SURFACES

(A) - SEAL ENTIRE CONCRETE SURFACE AREA

ITEM 611, CONDUIT MISC.: 12"x9' CONDUIT, TYPE A, 706.05, DESIGN COVER 3 FT.
 CONSTRUCT THE NEW CULVERT SECTIONS ADJACENT TO THE EXISTING STRUCTURE PER CMS 611. JOIN THE EXISTING AND NEW BOX CULVERTS ACCORDING TO THE CMS 611.08.

ITEM 202, PORTIONS OF STRUCTURE REMOVED, AS PER PLAN

REMOVE EXISTING WINGWALLS AND FOOTINGS AS NECESSARY TO ACCOMMODATE THE NEW STRUCTURE. SEE SHEET 146/253.

THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE-RAMS WILL NOT BE PERMITTED. THE METHOD OF REMOVAL AND THE WEIGHT OF HAMMER SHALL BE APPROVED BY THE ENGINEER. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 90-POUND CLASS. CARE SHALL BE TAKEN NOT TO DESTROY THE EXISTING CULVERT WHEN REMOVING THE EXISTING WINGWALLS AND FOOTINGS. SUBMIT CONSTRUCTION PLANS ACCORDING TO CMS 501.05.

o:\ODOT_D8\108249A.00 - HAM-71-686 PID94741\94741\structures\HAM071_0868\sheets\071_0868gn001.dgn 7/31/2017 2:23:30 PM dbruno

DESIGN AGENCY LIB Inc. • 2500 Newmark Drive Miamiburg, OH 45342 1937 250-0000 (tel) • 1937 250-5100 (fax) • libinc.com	
DATE 7-17	STRUCTURE FILE NUMBER 3115275
REVIEWED DWS	MINM REVISED
DRAWN MINM	CHECKED SUM
GENERAL NOTES BRIDGE No. HAM-071-0868 I-71 OVER TRIBUTARY OF DUCK CREEK	
HAM-71-0686 PID No. 94741	
1 / 5	
147 253	

O:\ODOT_D8\0108249A.00 - HAM-71-686_PID94741\structures\HAM071_0868\sheets\071_0868eq001.dgn 7/31/2017 2:23:31 PM dbruno

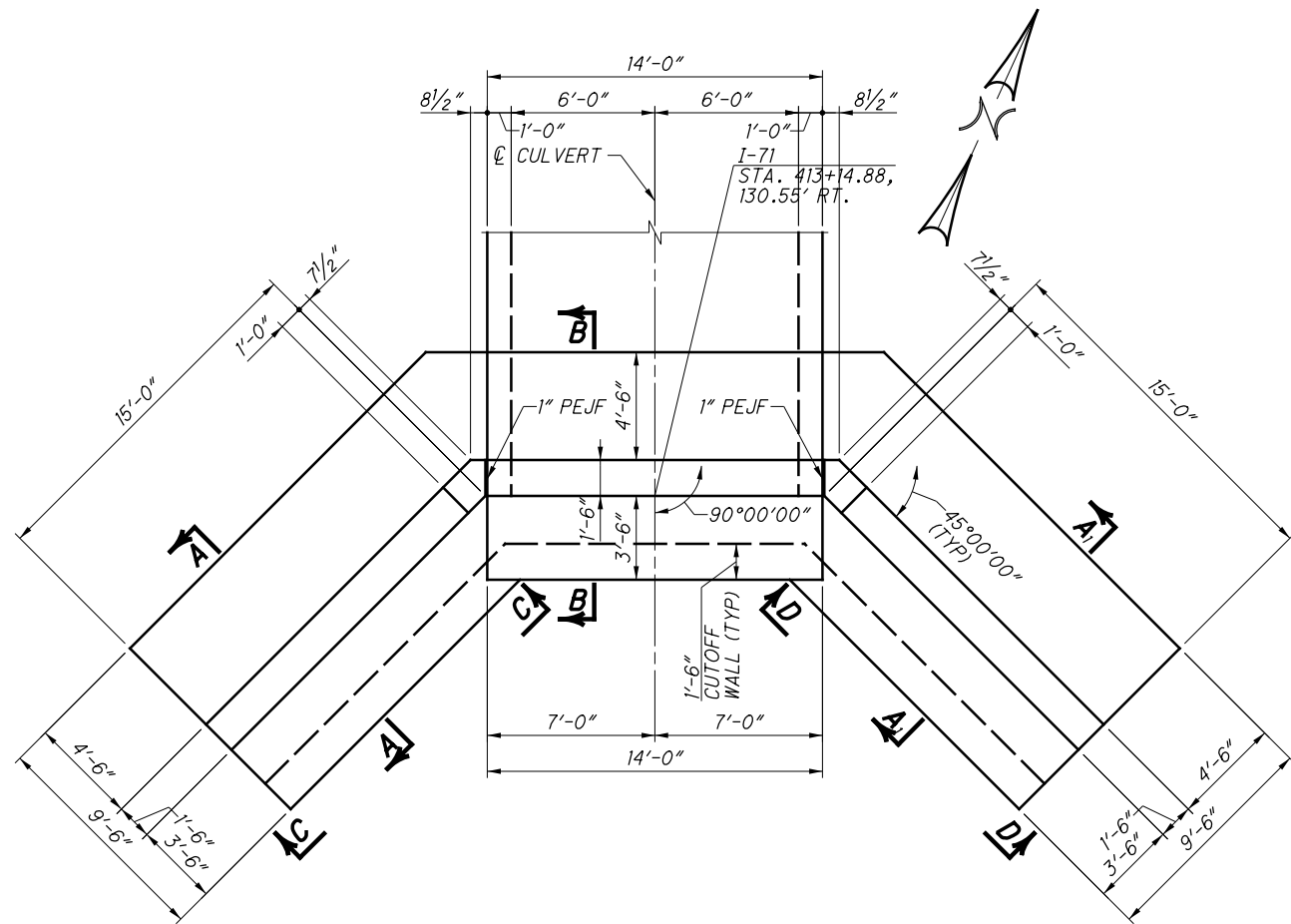
ESTIMATED QUANTITIES - CARRIED TO GENERAL SUMMARY

ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET NUMBER
202	11201	LUMP		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	1 / 5
503	11100	LUMP		COFFERDAMS AND EXCAVATION BRACING	
503	21301	LUMP		UNCLASSIFIED EXCAVATION, AS PER PLAN	1 / 5
509	10000	6160	POUND	EPOXY COATED REINFORCING STEEL	
511	46210	65	CU YD	CLASS QC1 CONCRETE, RETAINING/WINGWALL INCLUDING FOOTING	
511	46610	2	CU YD	CLASS QC1 CONCRETE, HEADWALL	
512	10100	68	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
512	33000	150	SQ YD	TYPE 2 WATERPROOFING	
516	13600	38	SQ FT	1" PREFORMED EXPANSION JOINT FILLER	
518	21200	12	CU YD	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
601	11000	72	SQ YD	RIPRAP, TYPE D	
611	97400	35	FT	CONDUIT, MISC.: 12' X 9' CONDUIT, TYPE A, 706.05, DESIGN COVER 3 FT	1 / 5

QUANTITIES COMPUTED BY: JBR 8/16
 QUANTITIES CHECKED BY: AMT 3/17

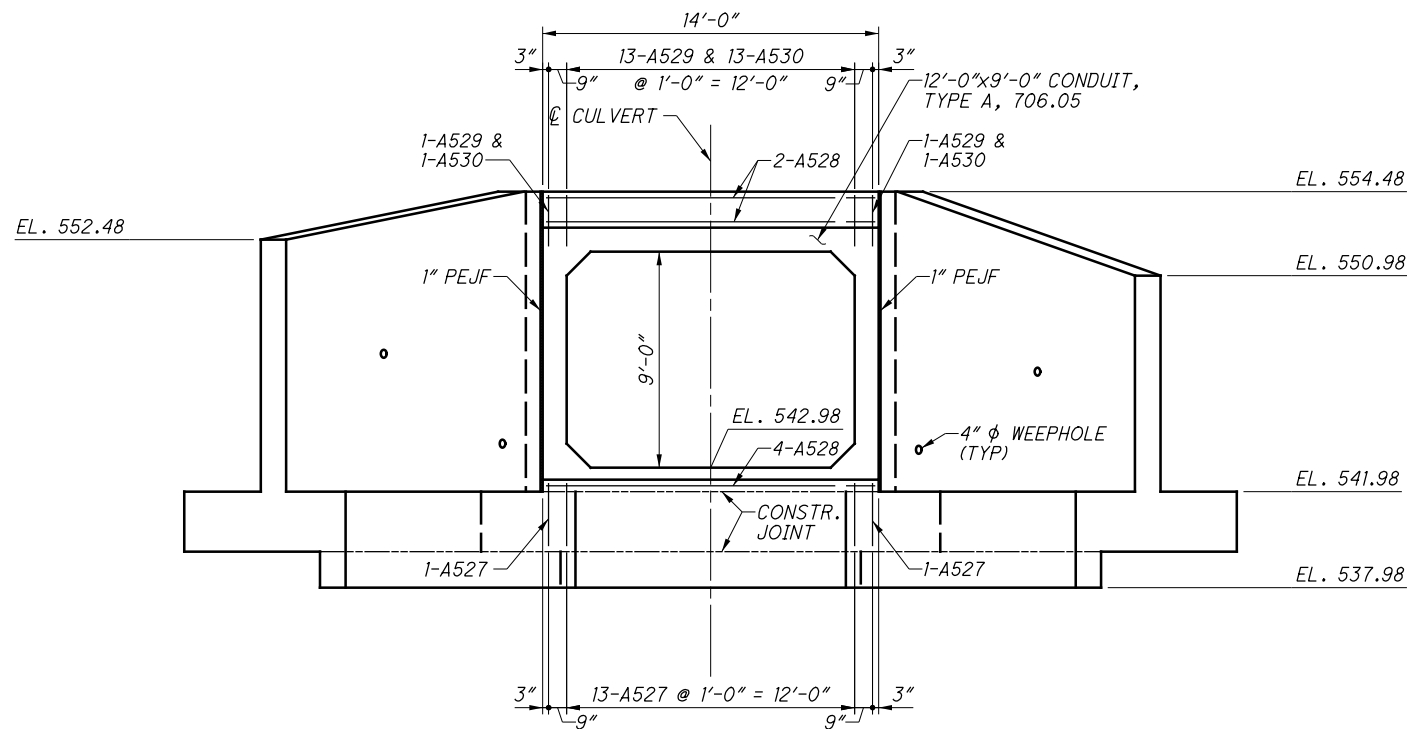


O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\structures\HAM071_0868\sheets\071_0868sd001.dgn 7/31/2017 2:23:33 PM dbruno

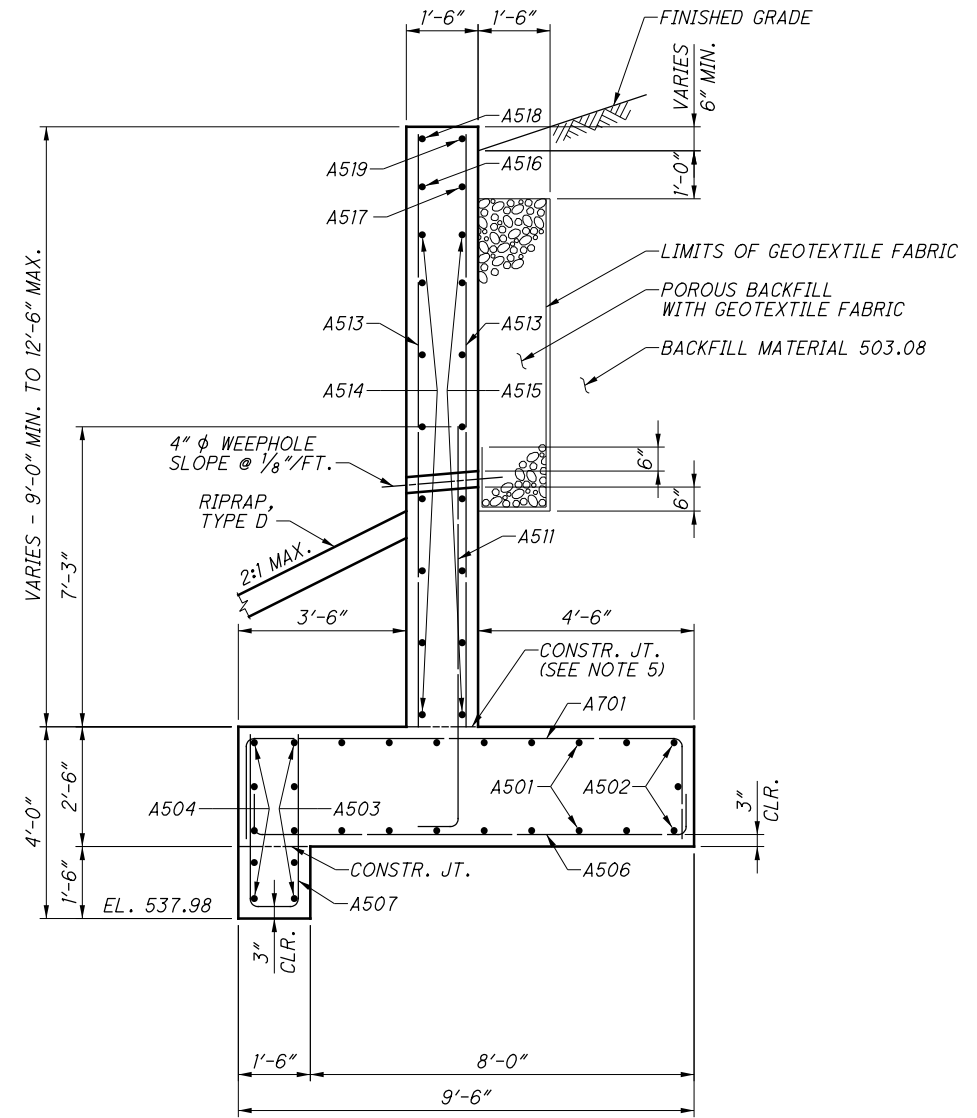


HEADWALL AND WINGWALL PLAN

FOR 6" REINFORCED CONCRETE
RIPRAP LIMITS, SEE SHEET 146/253



ELEVATION



SECTION A-A
(SECTION A₁-A₁ SIMILAR)

LEGEND

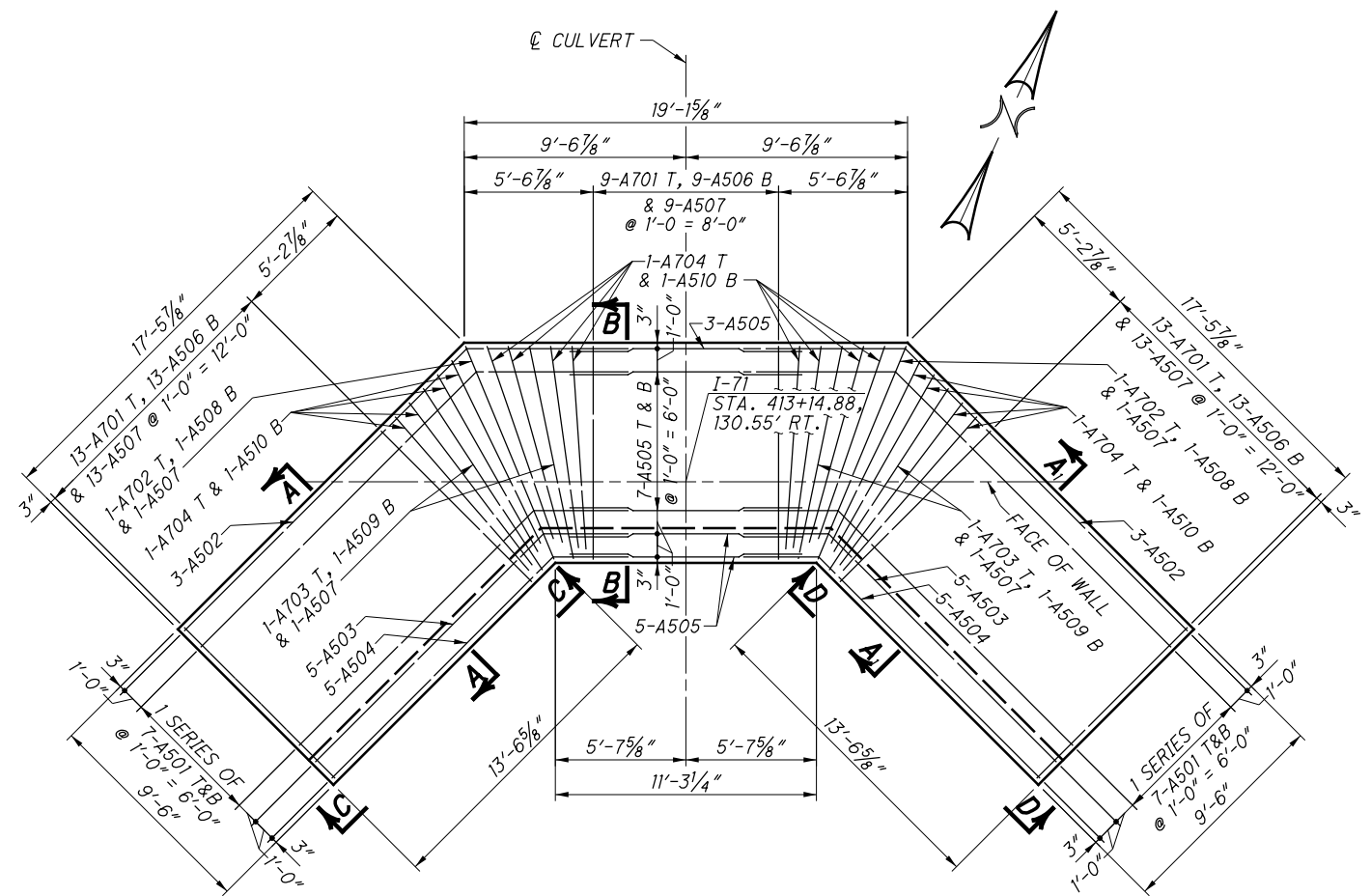
PEJF = PREFORMED EXPANSION JOINT FILLER

NOTES

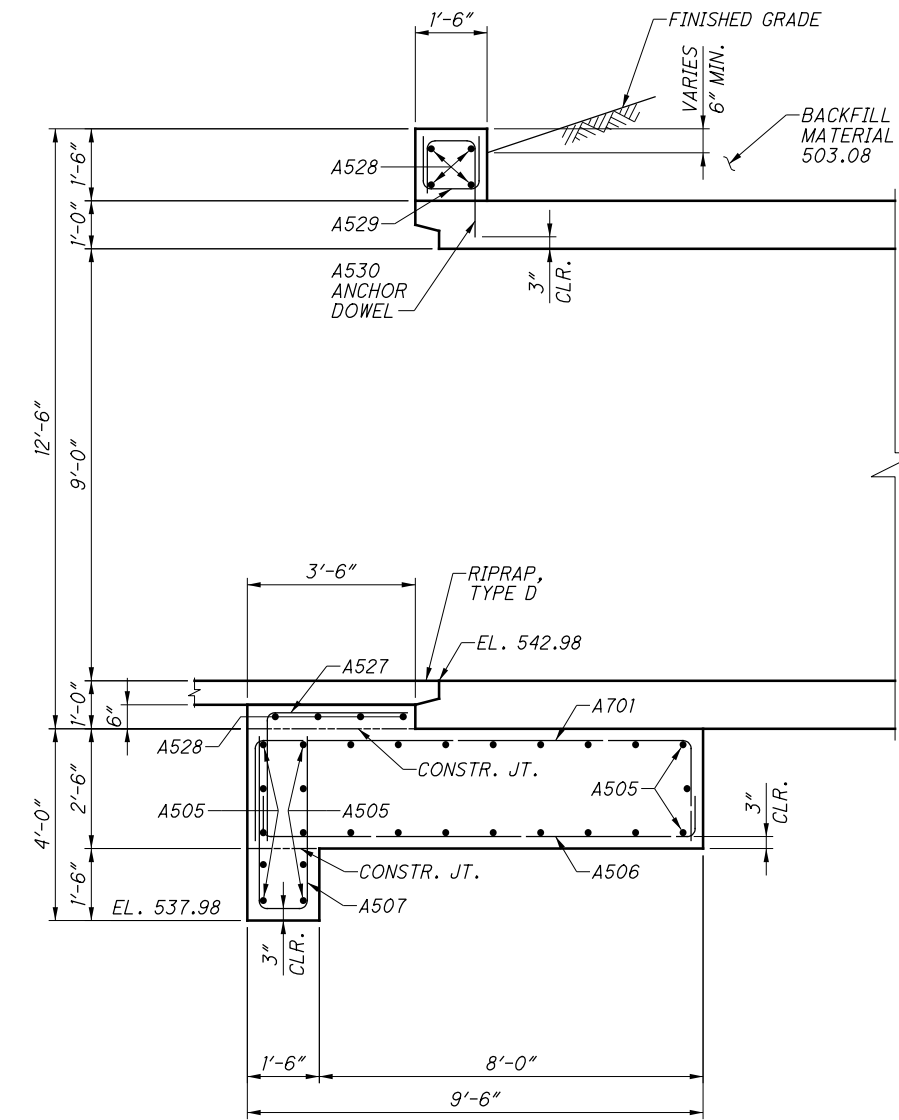
1. FOR GENERAL NOTES, SEE SHEET 1/5.
2. FOR REINFORCING STEEL LIST, SEE SHEET 5/5.
3. FOR SECTION B-B, SEE SHEET 4/5.
4. FOR VIEWS C-C AND D-D, SEE SHEET 4/5.
5. THE INTERFACE BETWEEN THE TOP OF FOOTING AND BASE OF WINGWALL STEM SHALL BE INTENTIONALLY ROUGHENED TO A FULL AMPLITUDE OF APPROXIMATELY 1/4" BY MEANS OF A SERRATED TROWEL.

HAM-71-0686	DESIGN AGENCY LJB Inc. • 2500 Newmark Drive Miamisburg, OH 45342 1937 254-0000 (tel) • 1937 254-5100 (fax) • LJBinc.com	DATE 7-17	REVIEWED DWS	DRAWN MMM
PID No. 94741	BRIDGE No. HAM-071-0868	STRUCTURE FILE NUMBER 3115275		
HEADWALL AND WINGWALL PLAN, ELEVATION AND SECTION DETAIL				
I-71 OVER TRIBUTARY OF DUCK CREEK				
3/5	149			
253				

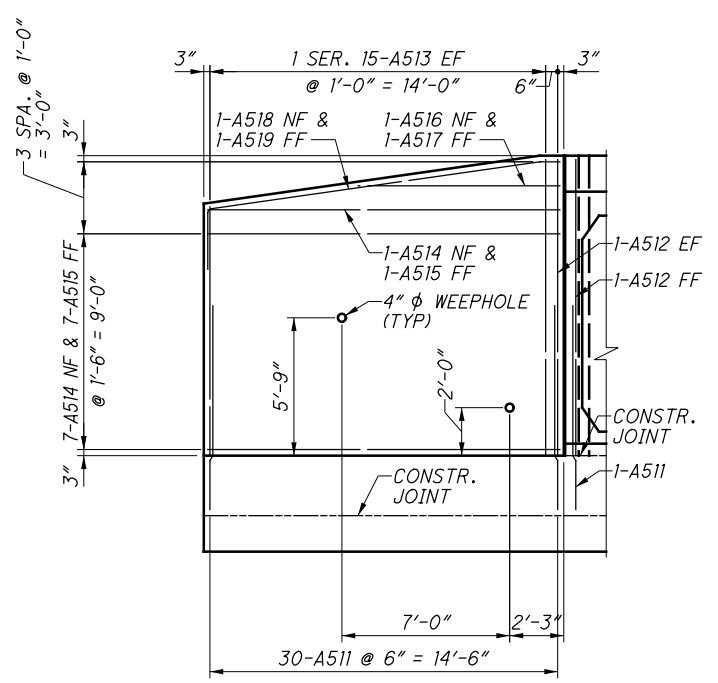
O:\ODOT_DB\108249A.00 - HAM-71-686 PID94741\structures\HAM071_0868\sheets\071_0868sd002.dgn 7/31/2017 2:23:34 PM dbruno



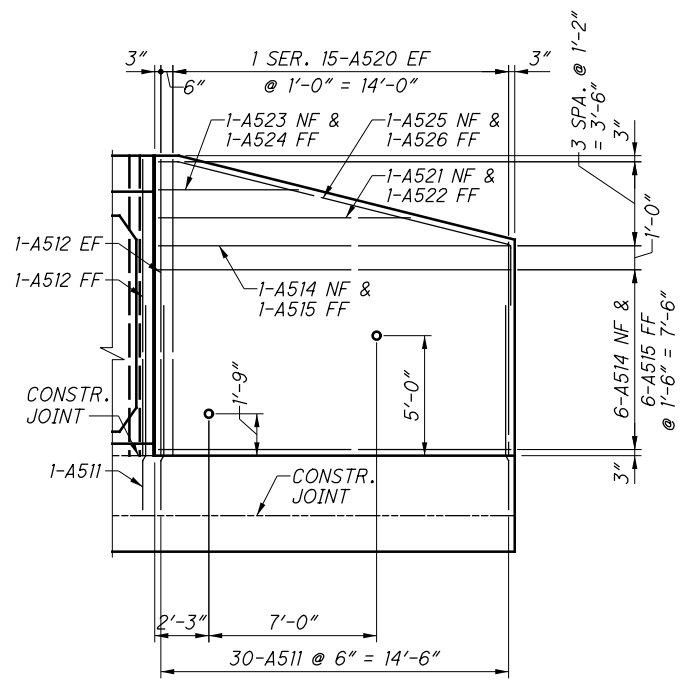
FOOTING PLAN
(A511, A527 & A528 NOT SHOWN FOR CLARITY)



SECTION B-B



VIEW C-C



VIEW D-D

LEGEND

- PEJF = PREFORMED EXPANSION JOINT FILLER
- T = TOP
- B = BOTTOM
- EF = EACH FACE
- NF = NEAR FACE
- FF = FAR FACE

NOTES

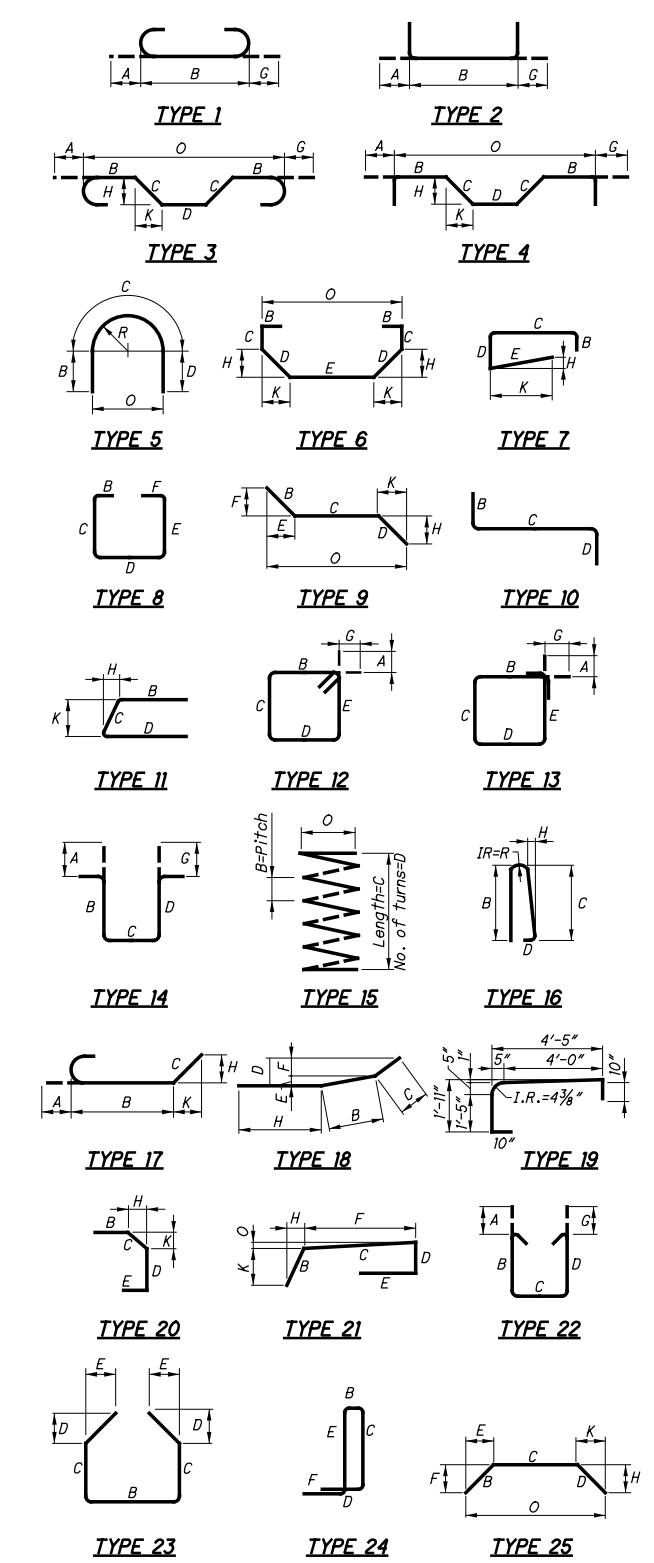
1. FOR GENERAL NOTES, SEE SHEET 1/5.
2. FOR REINFORCING STEEL LIST, SEE SHEET 5/5.
3. FOR SECTIONS A-A AND A₁-A₁, SEE SHEET 3/5.
4. THE LAP LENGTH FOR #5 FOOTING BARS SHALL BE 2'-6\"/>

		DESIGN AGENCY	DATE	REVIEWED	DRAWN	DESIGNED
		JLD Inc. • 2500 Newmark Drive Middletown, OH 45342 (937) 295-5000 (el) • (937) 295-5100 (fx) • Liblic.com	7-17	DWS	MM	AMT
		STRUCTURE FILE NUMBER	CHECKED	SUM		
		3115275				
FOOTING PLAN, WINGWALL VIEWS AND SECTION DETAIL						
BRIDGE No. HAM-071-0868						
I-71 OVER TRIBUTARY OF DUCK CREEK						
HAM-71-0686						
PID No. 94741						
4 / 5						
150						
253						

MARK	NUMBER	LENGTH	WEIGHT	TYPE	A	B	C	D	E	F	G	H	K	O	R	
HEADWALL AND WINGWALL REINFORCING STEEL LIST																
A501	4 SER. OF 7 = 28	VAR. 23'-4" TO 18'-4" INCR. 10"	608	9			VAR. 16'-10" TO 14'-4" INCR. 5"	VAR. 6'-7" TO 4'-1" INCR. 5"						VAR. 4'-7 1/2" TO 2'-10 1/2" INCR. 3 1/2"	VAR. 4'-7 1/2" TO 2'-10 1/2" INCR. 3 1/2"	
A502	6	24'-2"	151	9			17'-3"	7'-0"						4'-11"	4'-11"	
A503	10	17'-6"	183	9			13'-11"	3'-8"						2'-7"	2'-7"	
A504	10	16'-8"	174	9			13'-6"	3'-3"						2'-3"	2'-3"	
A505	27	10'-0"	282	STR.												
A506	35	10'-5"	380	2	8 1/2"	9'-0"								8 1/2"		
A507	41	7'-11"	339	8			3'-7"	1'-0"	3'-7"							
A508	2	11'-4"	24	2	8 1/2"	9'-11"								8 1/2"		
A509	4	10'-9"	45	2	8 1/2"	9'-4"								8 1/2"		
A510	16	10'-2"	170	2	8 1/2"	8'-9"								8 1/2"		
A511	62	10'-2"	657	2	8 1/2"	9'-6"										
A512	6	12'-4"	77	STR.												
A513	2 SER. OF 15 = 30	VAR. 12'-4" TO 10'-4" INCR. 1 3/4"	355	STR.												
A514	15	14'-8"	229	STR.												
A515	15	15'-3"	239	STR.												
A516	1	8'-4"	9	STR.												
A517	1	8'-11"	9	STR.												
A518	1	17'-0"	18	25			2'-6"	13'-10"	9"	4 1/4"	2'-5 3/4"	1 1/4"	8 3/8"	14'-11 1/8"		
A519	1	17'-7"	18	25			2'-6"	13'-10"	1'-4"	4 1/4"	2'-5 3/4"	2 1/4"	1'-3 3/8"	15'-6 1/8"		
A520	2 SER. OF 15 = 30	VAR. 12'-4" TO 8'-10" INCR. 3"	331	STR.												
A521	1	10'-5"	11	STR.												
A522	1	11'-0"	11	STR.												
A523	1	5'-9"	6	STR.												
A524	1	6'-4"	7	STR.												
A525	1	17'-3"	18	25			2'-6"	14'-1"	9"	7 1/4"	2'-5 1/8"	2 1/8"	8 3/4"	15'-5"		
A526	1	17'-10"	19	25			2'-6"	14'-1"	1'-4"	7 1/4"	2'-5 1/8"	3 3/8"	1'-3 1/2"	15'-11 3/4"		
A527	15	5'-6"	86	10			2'-7"	3'-0"								
A528	8	13'-8"	114	STR.												
A529	15	3'-3"	51	8				1'-2"	1'-2"	1'-2"						
A530	15	4'-2"	65	8				1'-2"	1'-2"	2'-1"						
A701	35	12'-8"	906	8				2'-0"	9'-0"	2'-0"						
A702	2	13'-7"	56	8				2'-0"	9'-11"	2'-0"						
A703	4	13'-0"	106	8				2'-0"	9'-4"	2'-0"						
A704	16	12'-5"	406	8				2'-0"	8'-9"	2'-0"						
		TOTAL =	6160													

o:\odot_D8\0108249A.00 - HAM-71-686 PID94741\94741\structures\HAM071_0868\sheets\071_0868r1001.dgn 7/31/2017 2:23:35 PM dbruno

BENDING DIAGRAMS



- NOTES:**
1. ALL REINFORCING STEEL BARS SHALL BE EPOXY COATED.
 2. ALL DIMENSIONS ARE OUT TO OUT OF BAR.
 3. DIMENSIONS "A" AND "G" ARE STANDARD BEND DIMENSIONS. REFER TO SECTION 509.05 OF THE CMS.
 4. RADIUS DIMENSION "R" IS TO THE OUTSIDE OF THE BAR.
 5. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER.

DESIGN AGENCY
 LIB Inc. • 2500 Newmark Drive
 Miamiburg, OH 45342
 9371 264-0000 (tel) • (937) 295-5100 (fax) • libinc.com

DATE
 7-17

REVIEWED
 DWS

STRUCTURE FILE NUMBER
 3116275

DRAWN
 MIM

REVISIONS

DESIGNED
 MSD

CHECKED
 AMT

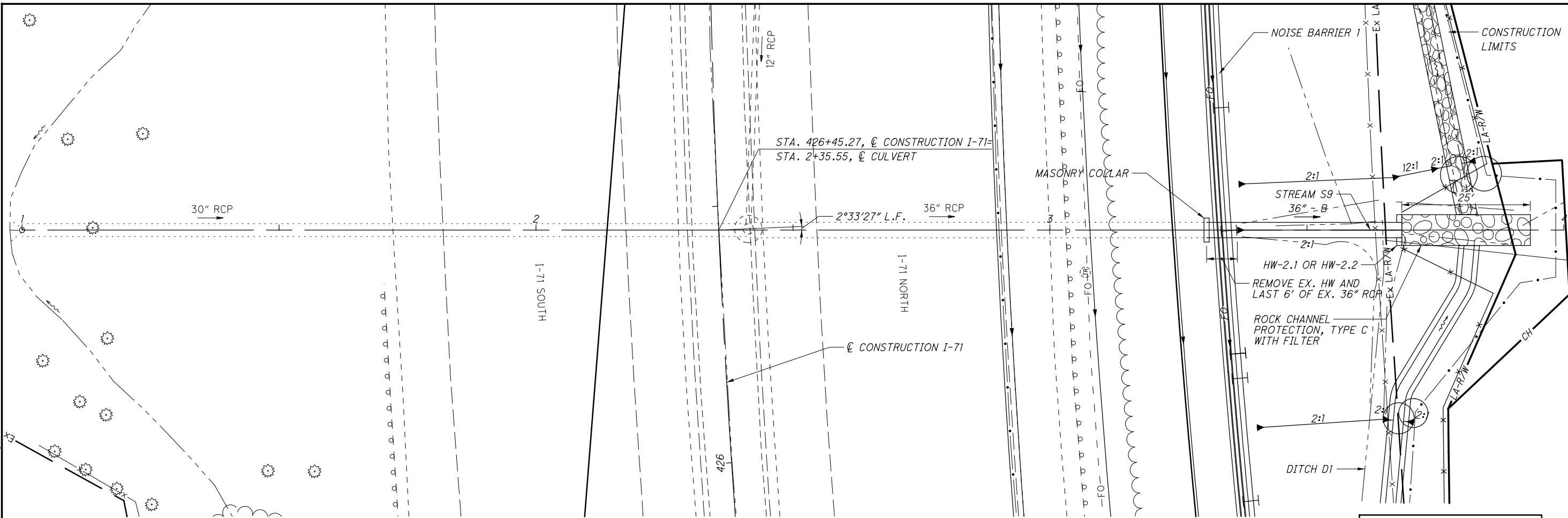
REINFORCING STEEL LIST
 BRIDGE No. HAM-071-0868
 I-71 OVER TRIBUTARY OF DUCK CREEK

HAM-71-0686
 PID No. 94741

5 / 5

151
253

V:\1736\active\173620049\design\94741\admin\reviews\final_tracings\Revised_Final_Tracing_Sheets_2-14-18\18\94741DC003.dgn 2/14/2018 4:32:29 PM eodkins



CALCULATED JMD CHECKED FES

0 5 10 20

HORIZONTAL SCALE IN FEET

CALCULATED JMD CHECKED FES

0 5 10 20

HORIZONTAL SCALE IN FEET

CALCULATED JMD CHECKED FES

0 5 10 20

HORIZONTAL SCALE IN FEET

CALCULATED JMD CHECKED FES

0 5 10 20

HORIZONTAL SCALE IN FEET

CALCULATED JMD CHECKED FES

0 5 10 20

HORIZONTAL SCALE IN FEET

CALCULATED JMD CHECKED FES

0 5 10 20

HORIZONTAL SCALE IN FEET

CALCULATED JMD CHECKED FES

0 5 10 20

HORIZONTAL SCALE IN FEET

CALCULATED JMD CHECKED FES

0 5 10 20

HORIZONTAL SCALE IN FEET

CALCULATED JMD CHECKED FES

0 5 10 20

HORIZONTAL SCALE IN FEET

CALCULATED JMD CHECKED FES

0 5 10 20

HORIZONTAL SCALE IN FEET

CALCULATED JMD CHECKED FES

0 5 10 20

HORIZONTAL SCALE IN FEET

CALCULATED JMD CHECKED FES

0 5 10 20

HORIZONTAL SCALE IN FEET

CALCULATED JMD CHECKED FES

0 5 10 20

HORIZONTAL SCALE IN FEET

CALCULATED JMD CHECKED FES

0 5 10 20

HORIZONTAL SCALE IN FEET

CALCULATED JMD CHECKED FES

0 5 10 20

HORIZONTAL SCALE IN FEET

CALCULATED JMD CHECKED FES

0 5 10 20

HORIZONTAL SCALE IN FEET

CALCULATED JMD CHECKED FES

0 5 10 20

HORIZONTAL SCALE IN FEET

CALCULATED JMD CHECKED FES

0 5 10 20

HORIZONTAL SCALE IN FEET

CALCULATED JMD CHECKED FES

0 5 10 20

HORIZONTAL SCALE IN FEET

CALCULATED JMD CHECKED FES

0 5 10 20

HORIZONTAL SCALE IN FEET

CALCULATED JMD CHECKED FES

0 5 10 20

HORIZONTAL SCALE IN FEET

CALCULATED JMD CHECKED FES

0 5 10 20

HORIZONTAL SCALE IN FEET

CALCULATED JMD CHECKED FES

0 5 10 20

HORIZONTAL SCALE IN FEET

CALCULATED JMD CHECKED FES

0 5 10 20

HORIZONTAL SCALE IN FEET

CALCULATED JMD CHECKED FES

0 5 10 20

HORIZONTAL SCALE IN FEET

CALCULATED JMD CHECKED FES

0 5 10 20

HORIZONTAL SCALE IN FEET

CALCULATED JMD CHECKED FES

ESTIMATED QUANTITIES TO BE CARRIED TO THE CULVERT SUBSUMMARY

ITEM	DESCRIPTION	TOTAL	UNIT
202	HEADWALL REMOVED	1	EACH
202	PIPE REMOVED, OVER 24"	6	FT
202	PIPE CLEANOUT, 27" TO 48"	238	FT
601	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	8.33	CY
602	CONCRETE MASONRY	0.76	CY
611	36" CONDUIT, TYPE B	38	FT

FILL BELOW OHWM STREAM S9

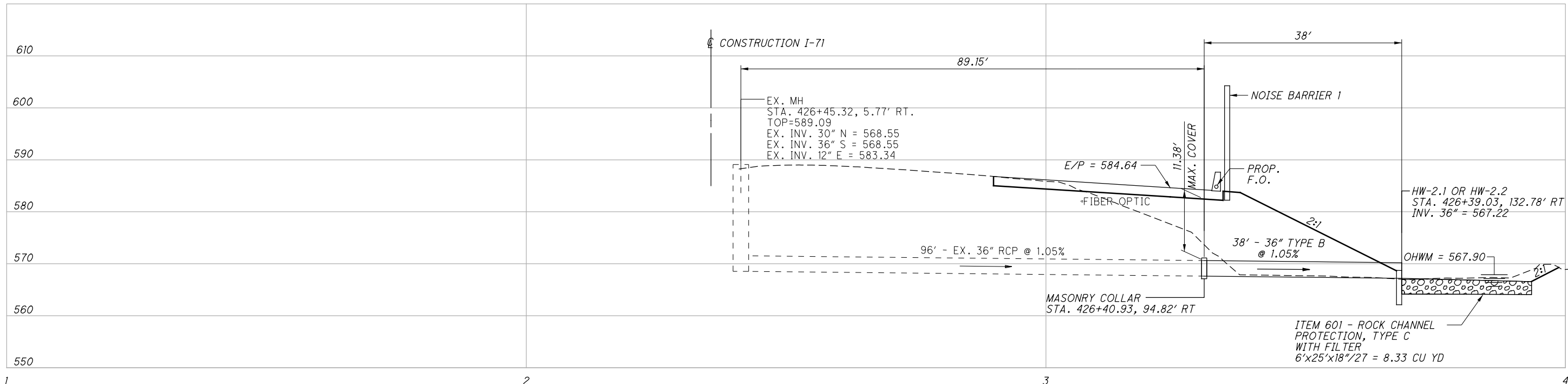
MATERIAL	LENGTH (FT)	SURFACE AREA (ACRE)	VOLUME (CY)
CONCRETE	38	0.0026	4
ROCK	25	0.0035	8
EARTH	57	0.0024	2

HYDRAULIC DESIGN DATA

OHWM	= 567.90
pH	= 6.3
ABRASION LEVEL:	3

EXISTING STRUCTURE

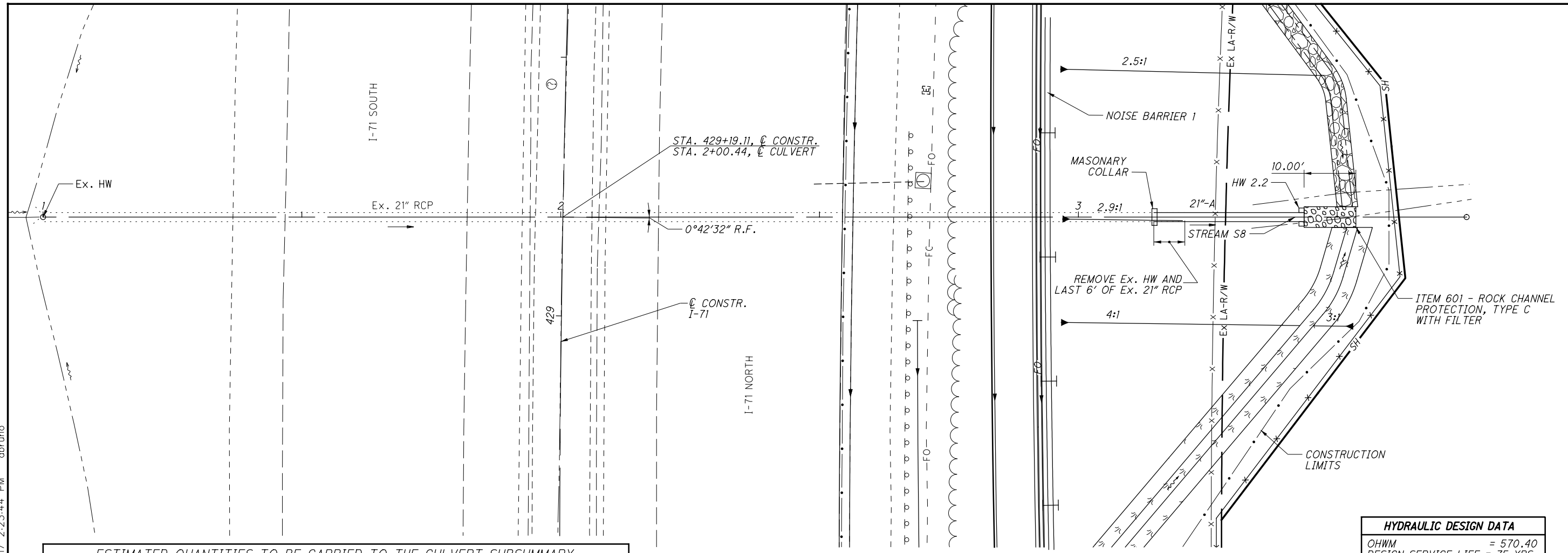
TYPE:	36" RCP
SKEW:	2°33'27"
ALIGNMENT:	TANGENT
LENGTH:	96 FT
DATE BUILT:	1969



CULVERT DETAIL
I-71 STA. 426+45.27

HAM-71-6.86

O:\ODOT_D8\108249A.00 - HAM-71-686 PID94741\94741\drainage\sheet\94741DC004.dgn 7/31/2017 2:23:44 PM dbruno



ESTIMATED QUANTITIES TO BE CARRIED TO THE CULVERT SUBSUMMARY

ITEM	DESCRIPTION	TOTAL	UNIT
202	HEADWALL REMOVED	1	EACH
202	PIPE REMOVED, 24" AND UNDER	6	FT
601	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	2.22	CY
602	CONCRETE MASONRY	0.37	CY
611	21" CONDUIT, TYPE A, 706.02	29	FT

FILL BELOW OHWM FOR STREAM S8

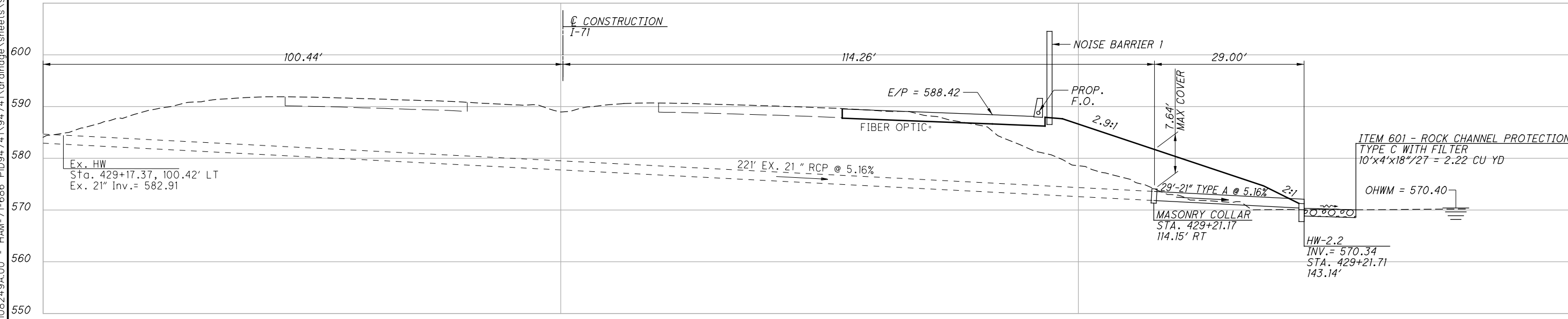
MATERIAL	LENGTH (FT)	SURFACE AREA (ACRE)	VOLUME (CY)
CONCRETE	2	0.0002	0.4
ROCK	10	0.0008	2
EARTH	12	0.0002	0.5

HYDRAULIC DESIGN DATA

OHWM = 570.40
 DESIGN SERVICE LIFE = 75 YRS.
 PH = 8.3
 ABRASION LEVEL: 2

EXISTING STRUCTURE

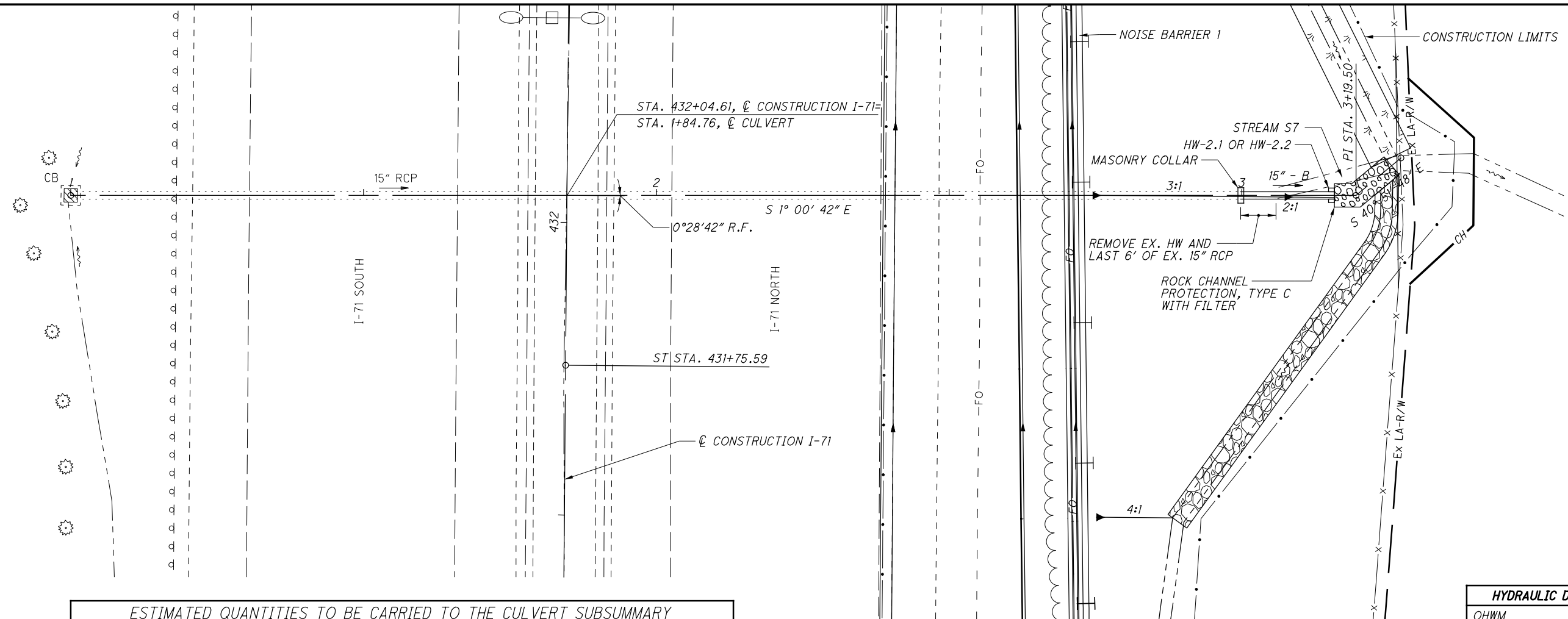
TYPE: 21" RCP
 SKEW: 0°42'32" R.F.
 ALIGNMENT: TANGENT
 LENGTH: 221 FT
 DATE BUILT: 1969



CULVERT DETAIL
I-71 STA. 429+19.11

HAM-71-6.86

O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\94741\drainage\sheet\94741DC005.dgn 7/31/2017 2:23:47 PM dbruno



ESTIMATED QUANTITIES TO BE CARRIED TO THE CULVERT SUBSUMMARY

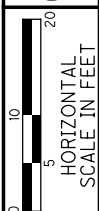
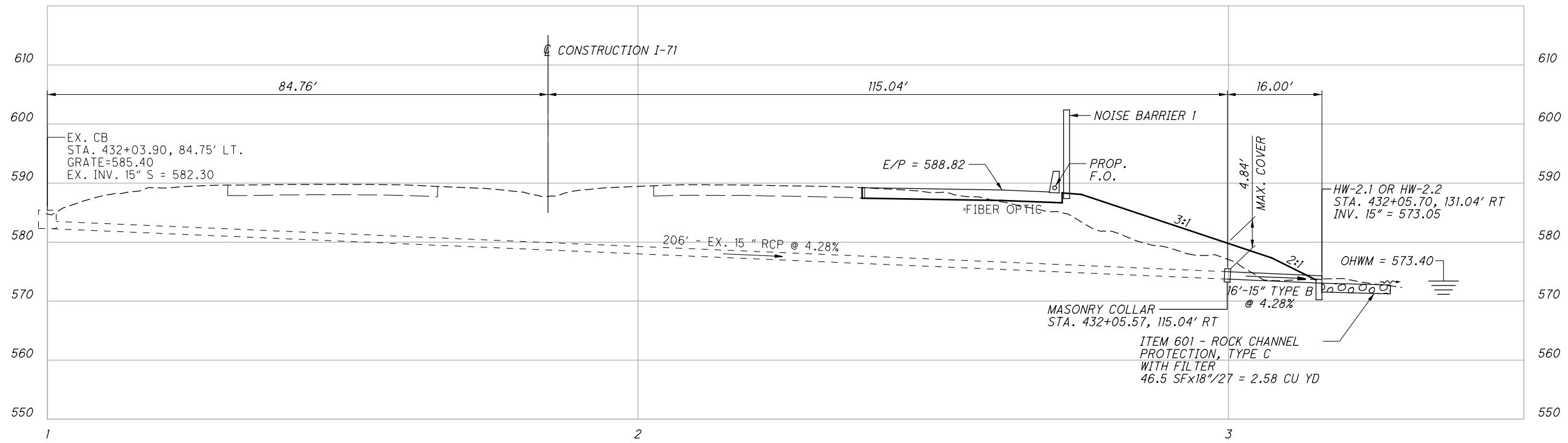
ITEM	DESCRIPTION	TOTAL	UNIT
202	HEADWALL REMOVED	1	EACH
202	PIPE REMOVED, 24" AND UNDER	6	FT
601	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	2.58	CY
602	CONCRETE MASONRY	0.27	CY
611	15" CONDUIT, TYPE B	16	FT

FILL BELOW OHWM FOR STREAM S7

MATERIAL	LENGTH (FT)	SURFACE AREA (ACRE)	VOLUME (CY)
CONCRETE	10	0.0004	0.5
ROCK	12	0.0010	3
EARTH	22	0.0008	1

HYDRAULIC DESIGN DATA

OHWM	= 573.40
pH	= 8.3
ABRASION LEVEL:	2
EXISTING STRUCTURE	
TYPE:	15" RCP
SKEW:	0°28'42" R.F.
ALIGNMENT:	TANGENT
LENGTH:	206 FT
DATE BUILT:	1969

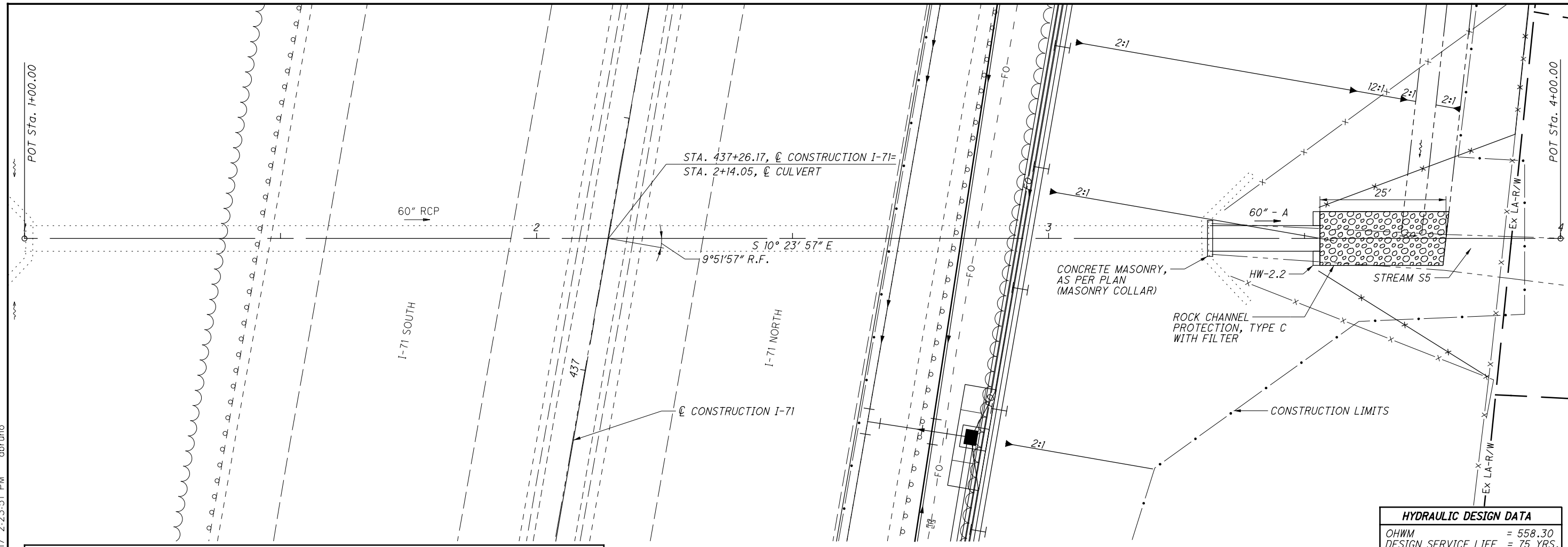


CALCULATED JMD
CHECKED FES

CULVERT DETAIL
I-71 STA. 432+04.61

HAM-71-6.86

O:\ODOT_D8\108249A.00 - HAM-71-686 PID94741\94741\drainage\sheets\94741DC006.dgn 7/31/2017 2:23:51 PM dbruno



ESTIMATED QUANTITIES TO BE CARRIED TO THE CULVERT SUBSUMMARY

ITEM	DESCRIPTION	TOTAL	UNIT
601	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	14.58	CY
602	CONCRETE MASONRY	1.93	CY
602	CONCRETE MASONRY, AS PER PLAN	1.43	CY
611	60' CONDUIT, TYPE A, 706.02	22	FT

FILL BELOW OHWM FOR STREAM S5

MATERIAL	LENGTH (FT)	SURFACE AREA (ACRE)	VOLUME (CY)
CONCRETE	21	0.0024	4
ROCK	25	0.0061	15
EARTH	46	0.0030	2

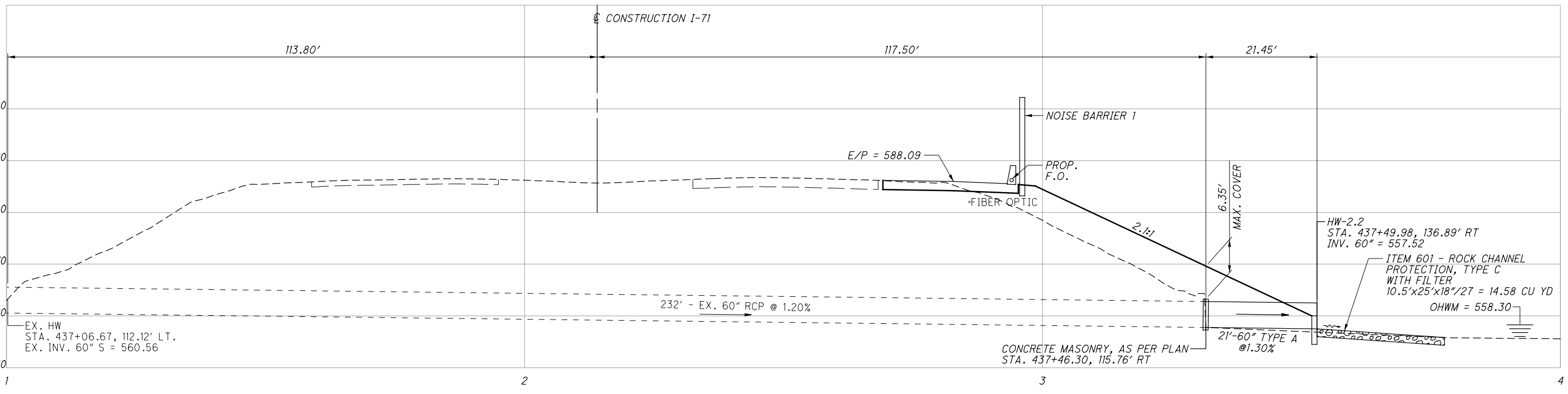
ITEM 602- CONCRETE MASONRY, AS PER PLAN
 DRILL AND GROUT #5 BARS INTO THE EXISTING HEADWALL AT 18" SPACING AROUND THE CIRCUMFERENCE OF THE EXISTING PIPE. FIT NEW CONCRETE PIPE UP TO EXISTING PIPE AND POUR 1'-6" X 1'-6" MASONRY COLLAR AROUND THE NEW PIPE ENCAPSULATING THE DRILLED REINFORCING. THE #5 BARS SHALL BE EMBEDDED 3" INTO THE EXISTING HEADWALL.

HYDRAULIC DESIGN DATA

OHWM = 558.30
 DESIGN SERVICE LIFE = 75 YRS.
 pH = 6.6
 ABRASION LEVEL: 5

EXISTING STRUCTURE

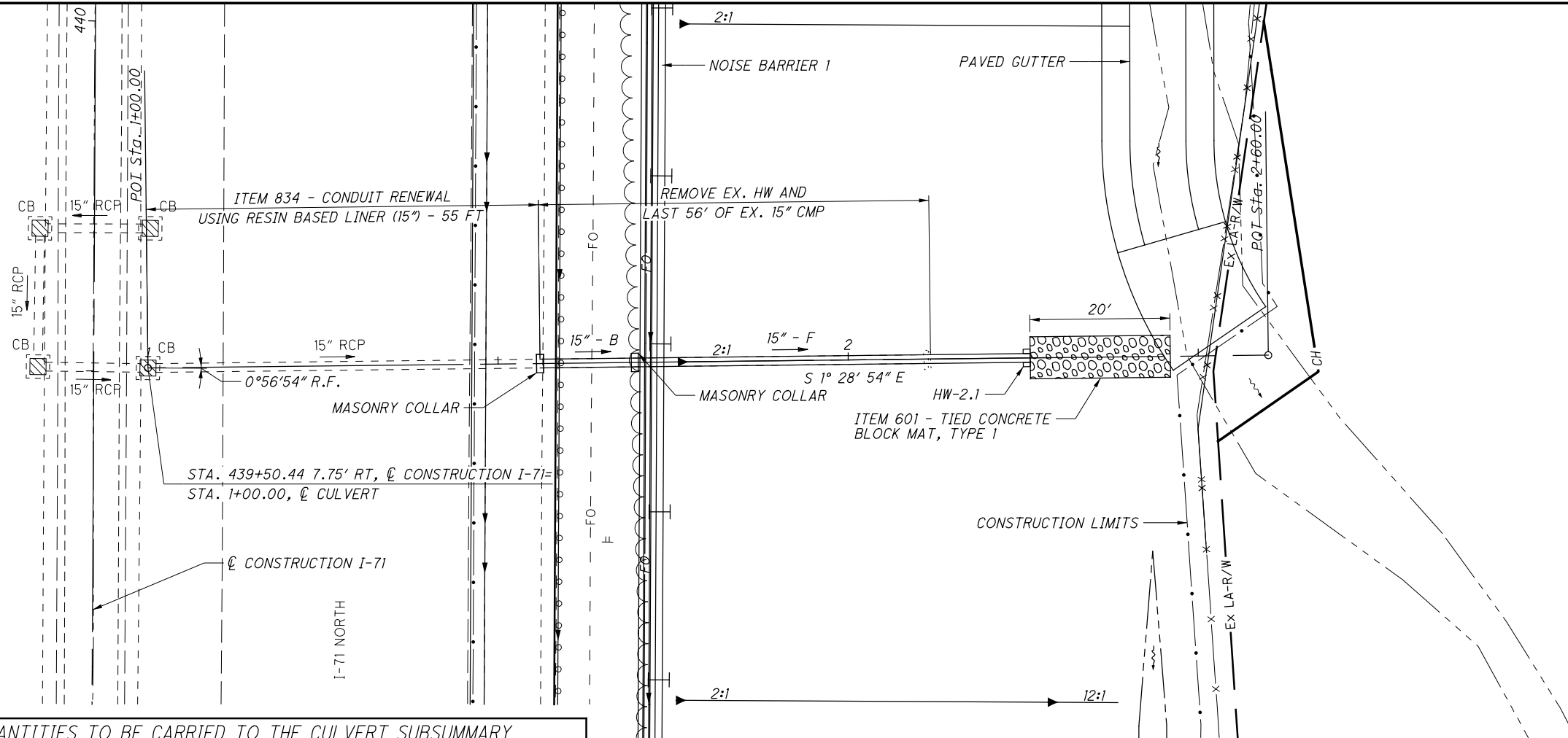
TYPE: 60" RCP PIPE
 SKEW: 9°51'57" R.F.
 ALIGNMENT: TANGENT
 LENGTH: 232 FT
 DATE BUILT: 1969



CULVERT DETAIL
I-71 STA. 437+26.17

HAM-71-6.86

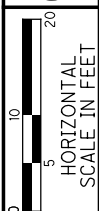
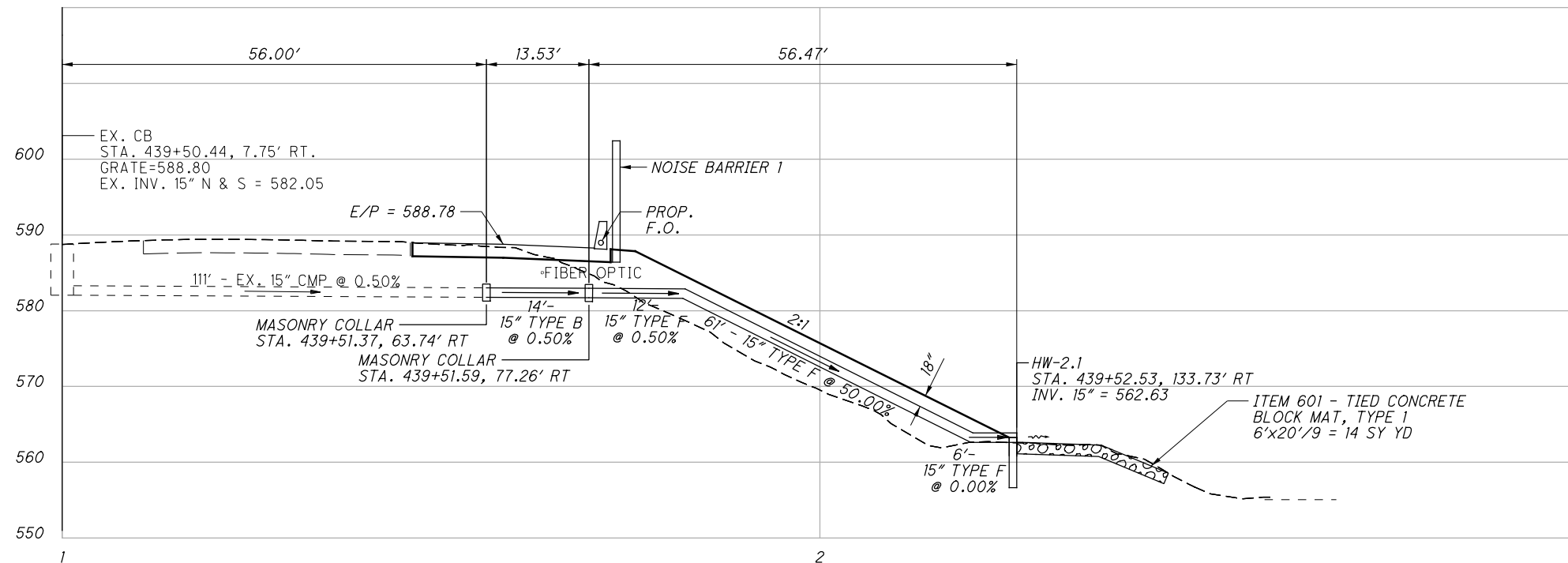
O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\94741\drainage\sheet\94741DC007.dgn 7/31/2017 2:23:55 PM dbruno



ESTIMATED QUANTITIES TO BE CARRIED TO THE CULVERT SUBSUMMARY

ITEM	DESCRIPTION	TOTAL	UNIT
202	HEADWALL REMOVED	1	EACH
202	PIPE REMOVED, 24" AND UNDER	56	FT
601	TIED CONCRETE BLOCK MAT, TYPE 1	14	SY
602	CONCRETE MASONRY	0.27	CY
611	15" CONDUIT, TYPE B	14	FT
611	15" CONDUIT, TYPE F	79	FT

EXISTING STRUCTURE	
TYPE:	15" CMP
SKEW:	0°56'54" R.F.
ALIGNMENT:	TANGENT
LENGTH:	111 FT
DATE BUILT:	1969



CALCULATED JMD CHECKED FES

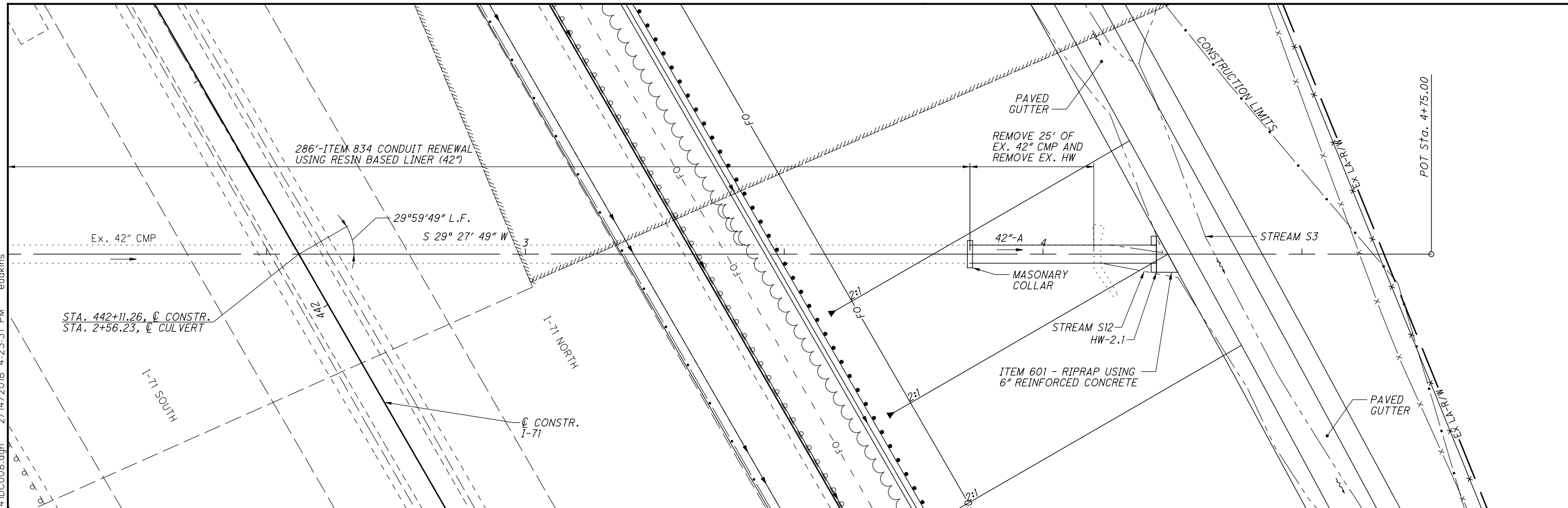
CULVERT DETAIL
I-71 STA. 439 +50.44

HAM-71-6.86

V:\1736\active\173620049\design\94741\admin\reviews\final_tracings\Revised_Final_Tracing_Sheets_2-14-18\94741DC008.dgn 2/14/2018 4:23:31 PM eodkins

CALCULATED
JAH
CHECKED
FES

0 10 20
HORIZONTAL
SCALE IN FEET



ESTIMATED QUANTITIES TO BE CARRIED TO THE CULVERT SUBSUMMARY

ITEM	DESCRIPTION	TOTAL	UNIT
202	HEADWALL REMOVED	1	EACH
202	PIPE REMOVED, OVER 24"	25	FT
601	RIPRAP	1.74	SY
602	CONCRETE MASONRY	0.92	CY
611	42" CONDUIT, TYPE A, AS PER PLAN	36	FT
611	FIELD PAVING OF EXISTING PIPE, 42" CMP	311	FT
611	CONDUIT MISC.: VIDEO LOG	286	FT
611	CONDUIT MISC.: CURED-IN-PLACE PIPE LINER (42")	286	FT

FILL BELOW OHWM STREAM S12

MATERIAL	LENGTH (FT)	SURFACE AREA (ACRE)	VOLUME (CY)
STEEL	36	0.0029	2
CONCRETE	3	0.0003	3
EARTH	10	0.0010	3

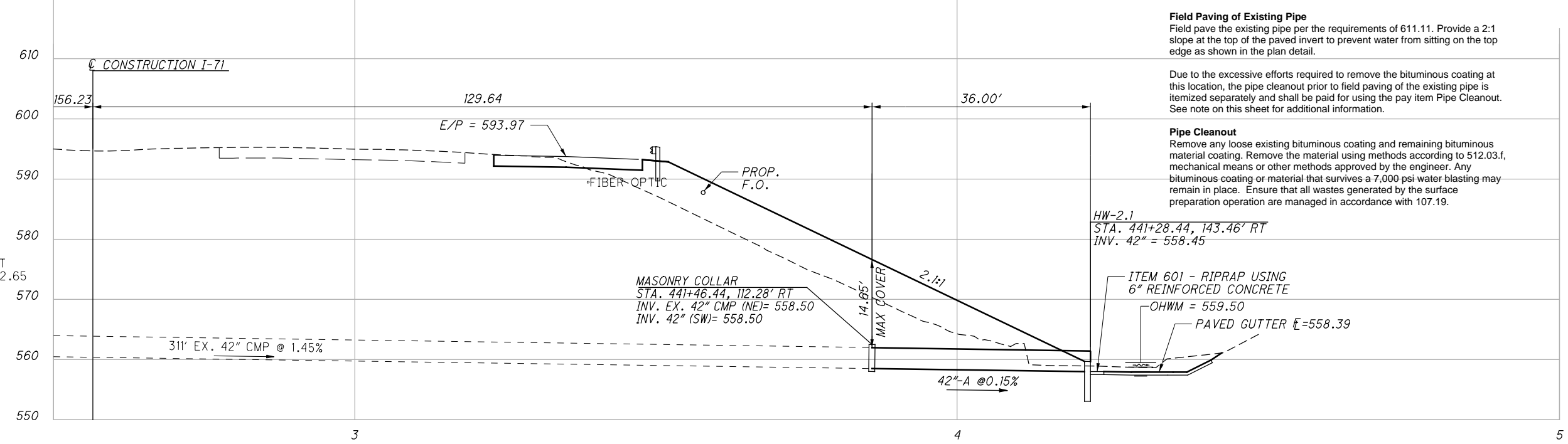
HYDRAULIC DESIGN DATA

OHWM = 559.50
DESIGN SERVICE LIFE = 75 YRS.
pH = 6.3
ABRASION LEVEL: 2

EXISTING STRUCTURE

TYPE: 42" CMP PIPE
SKEW: 29°59'49" L.F.
ALIGNMENT: TANGENT
LENGTH: 311 FT
DATE BUILT: 1969

42" CONDUIT, TYPE A, AS PER PLAN
THE FOLLOWING PIPE ALTERNATES ARE PERMITTED FOR THIS CULVERT EXTENSION:
42" CONDUIT, TYPE A, 707.01 (0.102) ALUMINIZED OR 707.02 (0.102) ALUMINIZED, 707.05 (0.168), 707.07 (0.168), 707.05 (0.051) ALUMINIZED, 707.07 (0.051) ALUMINIZED, 707.04 (1/2") (0.064), 707.04 (1") (0.064), 707.02 (0.063) W CFP, 707.03 (0.109) INVERT PLATES



Field Paving of Existing Pipe
Field pave the existing pipe per the requirements of 611.11. Provide a 2:1 slope at the top of the paved invert to prevent water from sitting on the top edge as shown in the plan detail.

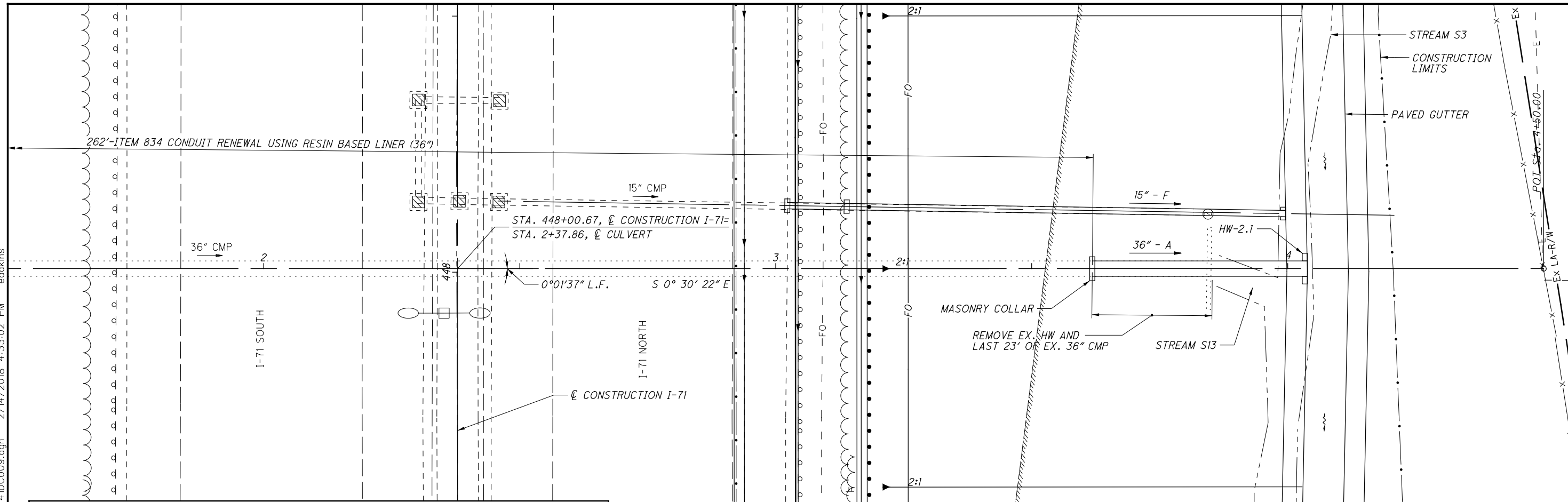
Due to the excessive efforts required to remove the bituminous coating at this location, the pipe cleanout prior to field paving of the existing pipe is itemized separately and shall be paid for using the pay item Pipe Cleanout. See note on this sheet for additional information.

Pipe Cleanout
Remove any loose existing bituminous coating and remaining bituminous material coating. Remove the material using methods according to 512.03.f, mechanical means or other methods approved by the engineer. Any bituminous coating or material that survives a 7,000 psi water blasting may remain in place. Ensure that all wastes generated by the surface preparation operation are managed in accordance with 107.19.

CULVERT DETAIL
I-71 STA. 442+11.26

HAM-71-6.86

V:\1736\active\173620049\design\94741\admin\reviews\final_tracings\Revised_Final_Tracing_Sheets_2-14-18\18\94741DC009.dgn 2/14/2018 4:33:02 PM eodkins



CALCULATED JMD CHECKED FES

CULVERT DETAIL
I-71 STA. 448+00.67

HAM-71-6.86

158
253

ESTIMATED QUANTITIES TO BE CARRIED TO THE CULVERT SUBSUMMARY

ITEM	DESCRIPTION	TOTAL	UNIT
202	HEADWALL REMOVED	1	EACH
202	PIPE REMOVED, OVER 24"	23	FT
602	CONCRETE MASONRY	0.76	CY
611	36" CONDUIT, TYPE A, AS PER PLAN	42	FT
611	FIELD PAVING OF EXISTING PIPE, 36" CMP	285	FT
611	CONDUIT MISC.: VIDEO LOG	262	FT
611	CONDUIT MISC.: CURED-IN-PLACE PIPE LINER (36")	262	FT

36" CONDUIT, TYPE A, AS PER PLAN
THE FOLLOWING PIPE ALTERNATES ARE PERMITTED FOR THIS CULVERT EXTENSION:
36" CONDUIT, TYPE A, 707.01 (0.081) ALUMINIZED OR 707.02 (0.081) ALUMINIZED, 707.05 (0.138), 707.07 (0.138), 707.05 (0.051) ALUMINIZED, 707.07 (0.051) ALUMINIZED, 707.04 (1/2") (0.064), 707.04 (1") (0.064), 707.02 (0.063) W CFP, 707.03 (0.109) INVERT PLATES

FILL BELOW OHWM FOR STREAM S13

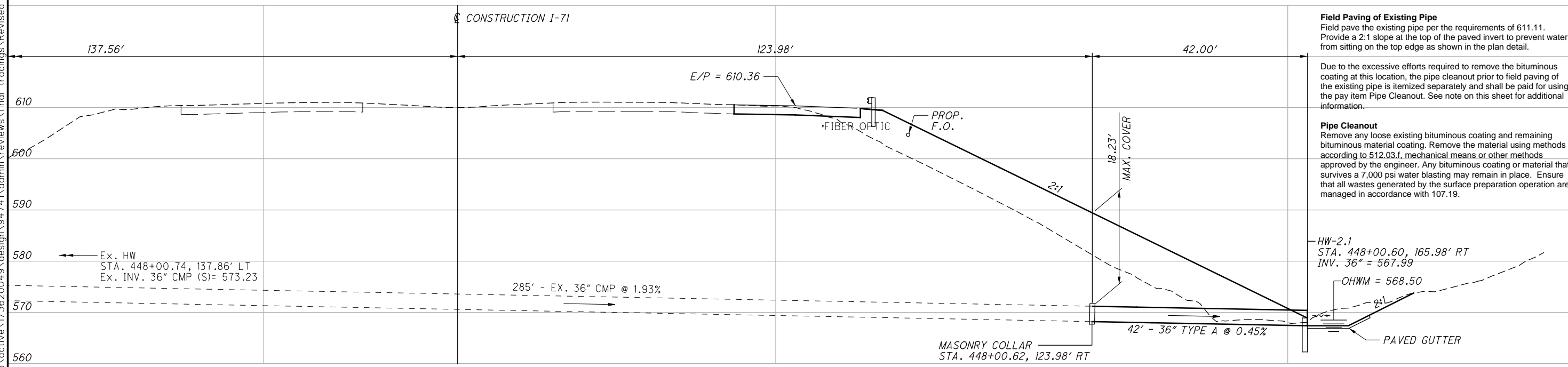
MATERIAL	LENGTH (FT)	SURFACE AREA (ACRE)	VOLUME (CY)
STEEL	33	0.0026	2
EARTH	9	0.0020	2

HYDRAULIC DESIGN DATA

OHWM = 568.50
DESIGN SERVICE LIFE = 75 YRS.
pH = 6.5
ABRASION LEVEL: 2

EXISTING STRUCTURE

TYPE: 36" CMP
SKEW: 0°01'37" L.F.
ALIGNMENT: TANGENT
LENGTH: 285 FT
DATE BUILT: 1969



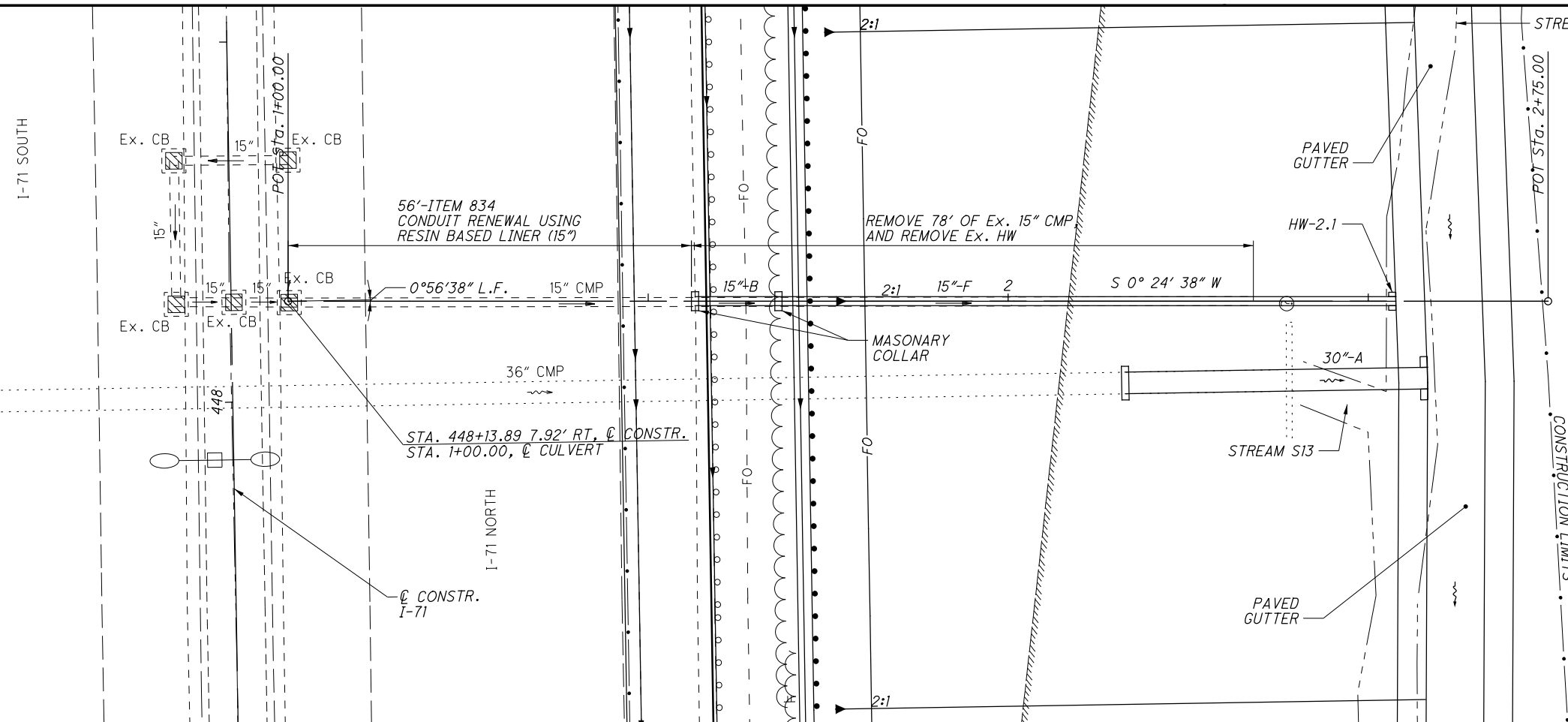
Field Paving of Existing Pipe
Field pave the existing pipe per the requirements of 611.11. Provide a 2:1 slope at the top of the paved invert to prevent water from sitting on the top edge as shown in the plan detail.

Due to the excessive efforts required to remove the bituminous coating at this location, the pipe cleanout prior to field paving of the existing pipe is itemized separately and shall be paid for using the pay item Pipe Cleanout. See note on this sheet for additional information.

Pipe Cleanout
Remove any loose existing bituminous coating and remaining bituminous material coating. Remove the material using methods according to 512.03.f, mechanical means or other methods approved by the engineer. Any bituminous coating or material that survives a 7,000 psi water blasting may remain in place. Ensure that all wastes generated by the surface preparation operation are managed in accordance with 107.19.

HW-2.1
STA. 448+00.60, 165.98' RT
INV. 36" = 567.99
OHWM = 568.50
PAVED GUTTER

V:\1736\active\173620049\design\94741\admin\reviews\final_tracings\Revised_Final_Tracing_Sheets_2-14-18\18\94741DC010.dgn 2/14/2018 4:09:38 PM eodkins



ITEM 611 – conduit MISC.: Cured-in-place pipe liner, 15", 36", 42", Type C

INSTALL A CONTINUOUS (JOINT-LESS) CURED-IN-PLACE PIPELINER SYSTEM TO LINE THE INTERIOR OF THE HOST PIPE TO BE REHABILITATED. THE LINER PIPE MUST BE ABLE TO MOLD ITSELF OR FIT TIGHTLY TO THE SHAPE OF THE EXISTING PIPE. THE LINER MUST PROVIDE FOR COMPLETE STRUCTURAL INTEGRITY, INDEPENDENT OF THE LOAD BEARING CAPACITY OF THE EXISTING HOST PIPE. THE PIPELINER MUST BE CAPABLE OF CONFORMING TO THE PIPELINE BENDS IN THE HOST PIPE WITHOUT SPLITTING, RUPTURING, OR WRINKLING OF THE PIPE LINER MATERIAL. THE LINING MUST PROVIDE A FLOW CAPACITY EQUAL TO, OR GREATER THAN, THAT OF THE HOST PIPE PRIOR TO REHABILITATION. CURED-IN-PLACE PIPELINERS SHALL CONFORM TO ASTM D5813 AND BE DESIGNED ACCORDING TO ASTM F1216 AS A FULLY DETERIORATED GRAVITY PIPE. REFER TO SUPPLEMENTAL SPECIFICATION 833, SPECIFICALLY SECTION 833.04 ITEM 1. AND TABLES 833.01 AND 833.03 FOR THE DESIGN PARAMETERS.

INSTALLATION SHALL BE PER ASTM F 1216, ASTM F 1743, ASTM 2019 AND PER THE MANUFACTURER'S RECOMMENDATIONS.

INSPECT THE EXISTING HOST PIPE USING EXPERIENCED PERSONNEL TRAINED IN LOCATING BREAKS, OBSTACLES, AND SERVICE CONNECTIONS BY CLOSED-CIRCUIT TELEVISION OR MAN ENTRY BEFORE AND AFTER INSTALLATION OF THE PIPELINER. CLEAN, REMOVE DEBRIS, AND REPAIR CONDUIT WALLS AND JOINTS PRIOR TO INSTALLING THE PIPELINER. RESTORE ACTIVE SERVICE CONNECTIONS AFTER INSTALLATION OF THE PIPELINER. PAYMENT FOR THE ABOVE WORK SHALL BE INCLUDED IN THE CONTRACT PRICE FOR ITEM 611, CONDUIT MISC.; CURED-IN-PLACE PIPE LINER.

ITEM 611 – conduit, misc.: video log

PERFORM A VIDEO LOG OF THE 30" DIAMETER DRAINAGE SYSTEM ON TWO OCCASIONS. PERFORM THE FIRST VIDEO LOG PRIOR TO ACCEPTANCE OF THE PIPE CLEANOUT BY THE ENGINEER AND THE APPLICATION OF THE PIPE LINER. PERFORM THE SECOND VIDEO LOG AFTER THE INSTALLATION OF THE CURED-IN-PLACE PIPE LINER IS COMPLETE.

IF A BLOCKAGE IS ENCOUNTERED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY AND THE



ESTIMATED QUANTITIES TO BE CARRIED TO THE CULVERT SUBSUMMARY

ITEM	DESCRIPTION	TOTAL	UNIT
202	HEADWALL REMOVED	1	EACH
202	PIPE REMOVED, 24" AND UNDER	78	FT
602	CONCRETE MASONRY	0.27	CY
611	15" CONDUIT, TYPE B	12	FT
611	15" CONDUIT, TYPE F	113	FT
611	CONDUIT MISC.: VIDEO LOG	56	FT
611	CONDUIT MISC.: CURED-IN-PLACE PIPE LINER (15")	56	FT

FILL BELOW OHWM FOR STREAM S3

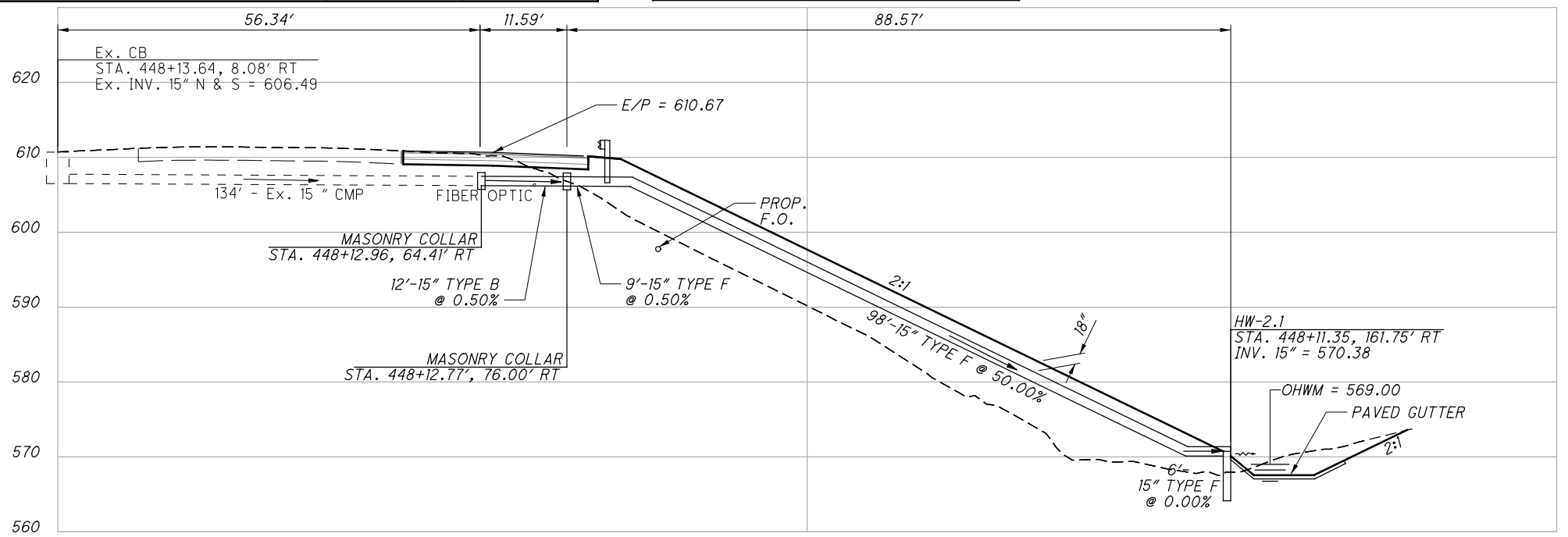
MATERIAL	LENGTH (FT)	SURFACE AREA (ACRE)	VOLUME (CY)
CONCRETE	1	0.0001	0.5
EARTH	3	0.0001	1

HYDRAULIC DESIGN DATA

OHWM = 569.00
pH = 6.3
ABRASION LEVEL: 4

EXISTING STRUCTURE

TYPE: 15" CMP PIPE
SKEW: 0°56'38" L.F.
ALIGNMENT: TANGENT
LENGTH: 134 FT
DATE BUILT: 1969



CULVERT DETAIL
I-71 STA. 448+13.89

HAM-71-6.86

159
253

FILL BELOW OHWM

MATERIAL	LENGTH (FT)	SURFACE AREA (AC)	VOLUME (CY)
CONCRETE	54	0.0041	4
EARTH	34	0.0236	5

PROPOSED STRUCTURE

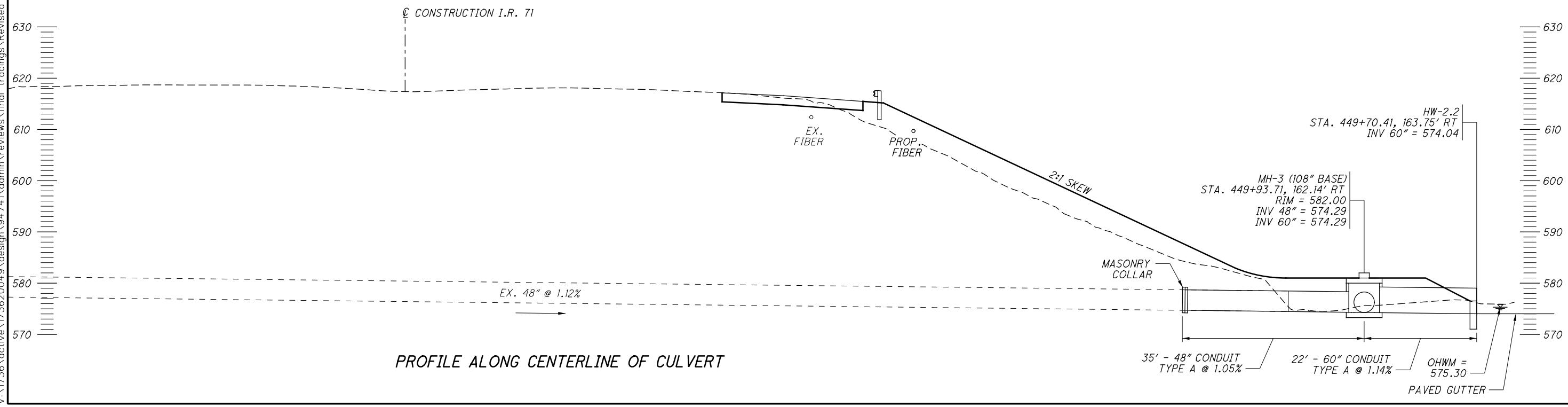
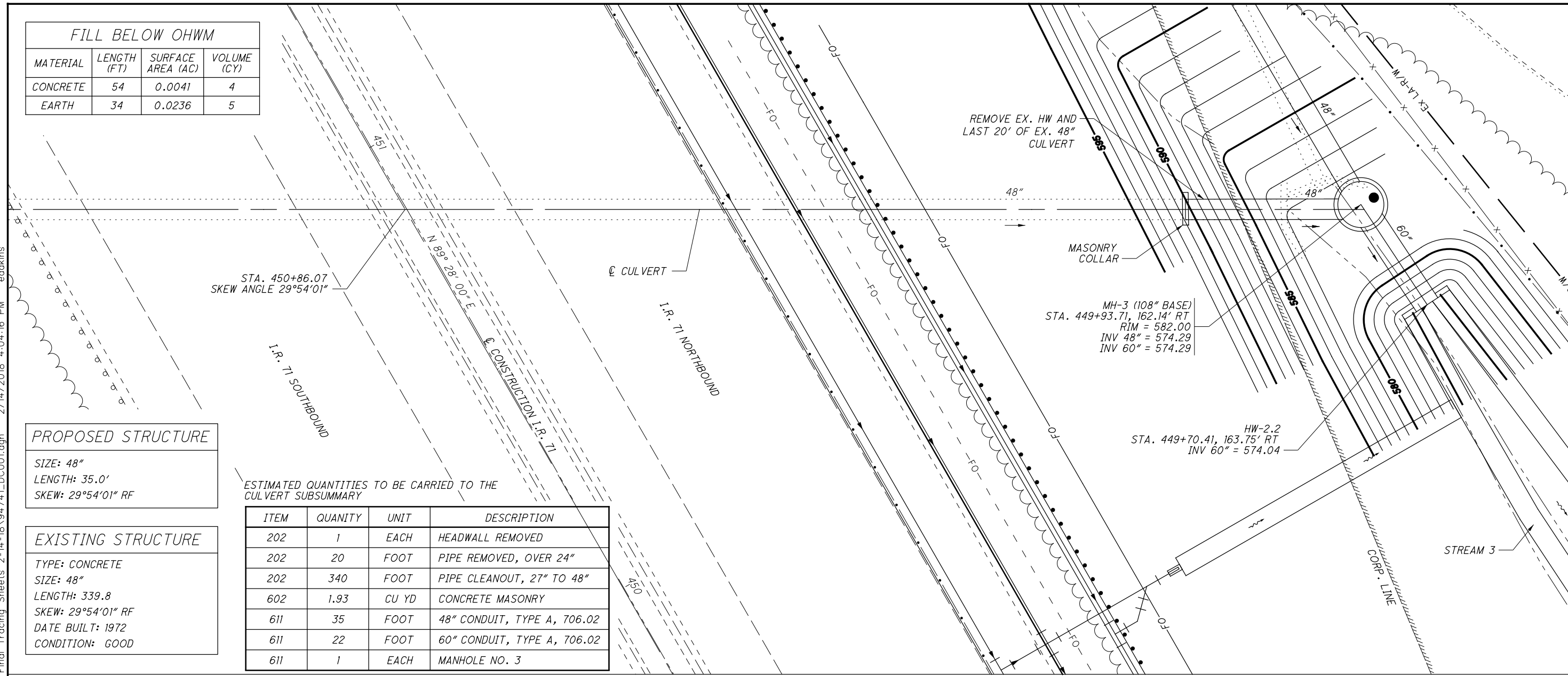
SIZE: 48"
LENGTH: 35.0'
SKEW: 29°54'01" RF

EXISTING STRUCTURE

TYPE: CONCRETE
SIZE: 48"
LENGTH: 339.8
SKEW: 29°54'01" RF
DATE BUILT: 1972
CONDITION: GOOD

ESTIMATED QUANTITIES TO BE CARRIED TO THE CULVERT SUBSUMMARY

ITEM	QUANTITY	UNIT	DESCRIPTION
202	1	EACH	HEADWALL REMOVED
202	20	FOOT	PIPE REMOVED, OVER 24"
202	340	FOOT	PIPE CLEANOUT, 27" TO 48"
602	1.93	CU YD	CONCRETE MASONRY
611	35	FOOT	48" CONDUIT, TYPE A, 706.02
611	22	FOOT	60" CONDUIT, TYPE A, 706.02
611	1	EACH	MANHOLE NO. 3



PROFILE ALONG CENTERLINE OF CULVERT

CULVERT DETAIL SHEET
STA. 450+86.07

HAM-71-6.86

V:\1736\active\173620049\design\94741\admin\reviews\final_tracings\Revised_Final_Tracing_Sheets_2-14-18\18\94741_DC001.dgn 2/14/2018 4:04:16 PM eodkins

V:\1736\active\173620049\design\94741\admin\reviews\final_tracings\Revised_Final_Tracing_Sheets_2-14-18\94741DC011.dgn 2/14/2018 4:35:10 PM eodkins



CALCULATED
JAH
CHECKED
FES

0 5 10 20
HORIZONTAL
SCALE IN FEET

CULVERT DETAIL
I-71 STA. 458+51.00

HAM-71-6.86

161
253

ITEM 611 – conduit MISC.: Cured-in-place pipe liner, 15", 36", 42", Type C

INSTALL A CONTINUOUS (JOINT-LESS) CURED-IN-PLACE PIPELINER SYSTEM TO LINE THE INTERIOR OF THE HOST PIPE TO BE REHABILITATED. THE LINER PIPE MUST BE ABLE TO MOLD ITSELF OR FIT TIGHTLY TO THE SHAPE OF THE EXISTING PIPE. THE LINER MUST PROVIDE FOR COMPLETE STRUCTURAL INTEGRITY, INDEPENDENT OF THE LOAD BEARING CAPACITY OF THE EXISTING HOST PIPE. THE PIPELINER MUST BE CAPABLE OF CONFORMING TO THE PIPELINE BENDS IN THE HOST PIPE WITHOUT SPLITTING, RUPTURING, OR WRINKLING OF THE PIPE LINER MATERIAL. THE LINING MUST PROVIDE A FLOW CAPACITY EQUAL TO, OR GREATER THAN, THAT OF THE HOST PIPE PRIOR TO REHABILITATION. CURED-IN-PLACE PIPELINERS SHALL CONFORM TO ASTM D5813 AND BE DESIGNED ACCORDING TO ASTM F1216 AS A FULLY DETERIORATED GRAVITY PIPE. REFER TO SUPPLEMENTAL SPECIFICATION 833, SPECIFICALLY SECTION 833.04 ITEM 1. AND TABLES 833.01 AND 833.03 FOR THE DESIGN PARAMETERS.

INSTALLATION SHALL BE PER ASTM F 1216, ASTM F 1743, ASTM 2019 AND PER THE MANUFACTURER'S RECOMMENDATIONS.

INSPECT THE EXISTING HOST PIPE USING EXPERIENCED PERSONNEL TRAINED IN LOCATING BREAKS, OBSTACLES, AND SERVICE CONNECTIONS BY CLOSED-CIRCUIT TELEVISION OR MAN ENTRY BEFORE AND AFTER INSTALLATION OF THE PIPELINER. CLEAN, REMOVE DEBRIS, AND REPAIR CONDUIT WALLS AND JOINTS PRIOR TO INSTALLING THE PIPELINER. RESTORE ACTIVE SERVICE CONNECTIONS AFTER INSTALLATION OF THE PIPELINER. PAYMENT FOR THE ABOVE WORK SHALL BE INCLUDED IN THE CONTRACT PRICE FOR ITEM 611, CONDUIT MISC.: CURED-IN-PLACE PIPE LINER.

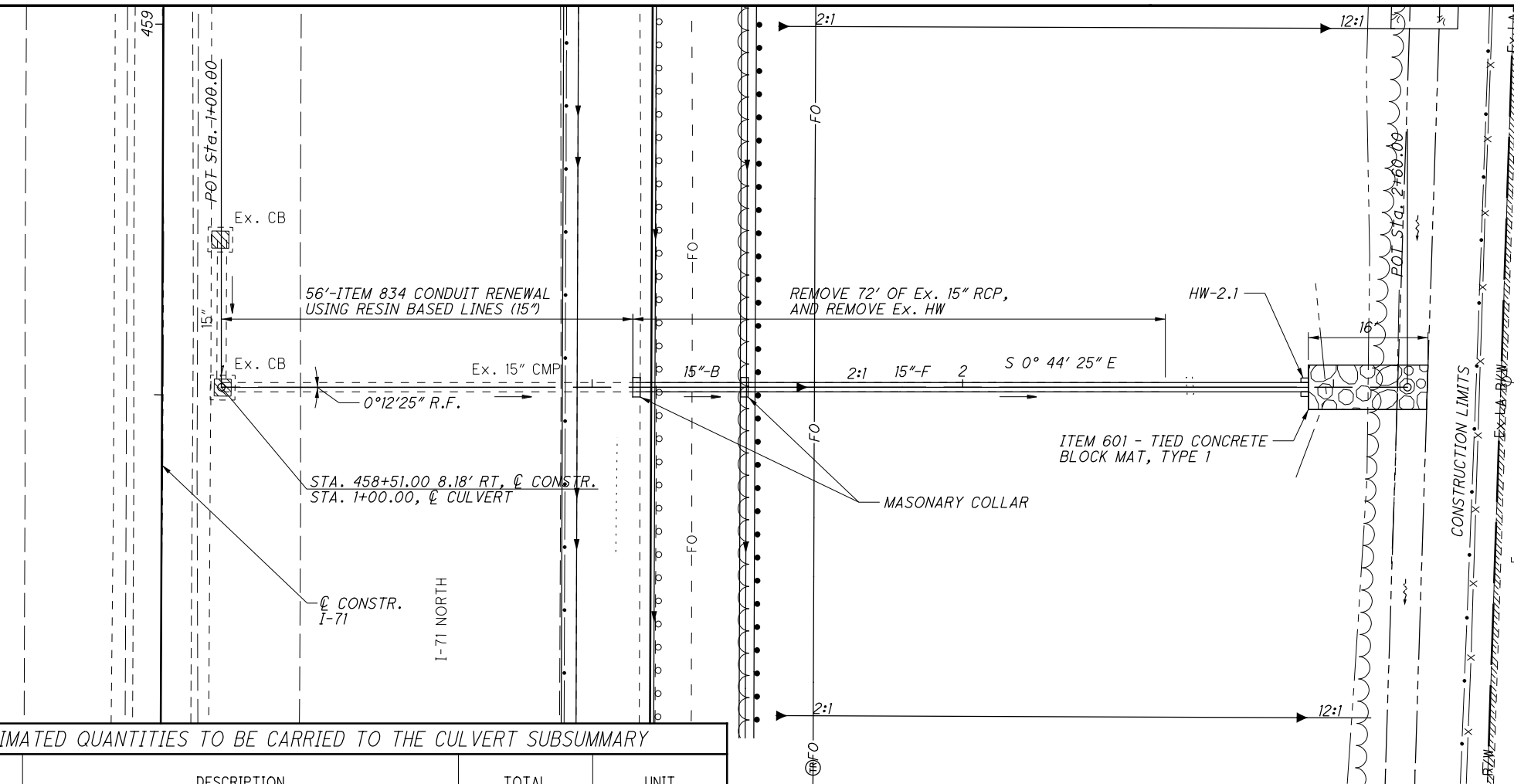
ITEM 611 – conduit, misc.: video log

PERFORM A VIDEO LOG OF THE 30" DIAMETER DRAINAGE SYSTEM ON TWO OCCASIONS. PERFORM THE FIRST VIDEO LOG PRIOR TO ACCEPTANCE OF THE PIPE CLEANOUT BY THE ENGINEER AND THE APPLICATION OF THE PIPE LINER. PERFORM THE SECOND VIDEO LOG AFTER THE INSTALLATION OF THE CURED-IN-PLACE PIPE LINER IS COMPLETE.

IF A BLOCKAGE IS ENCOUNTERED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY AND THE

I-71 SOUTH

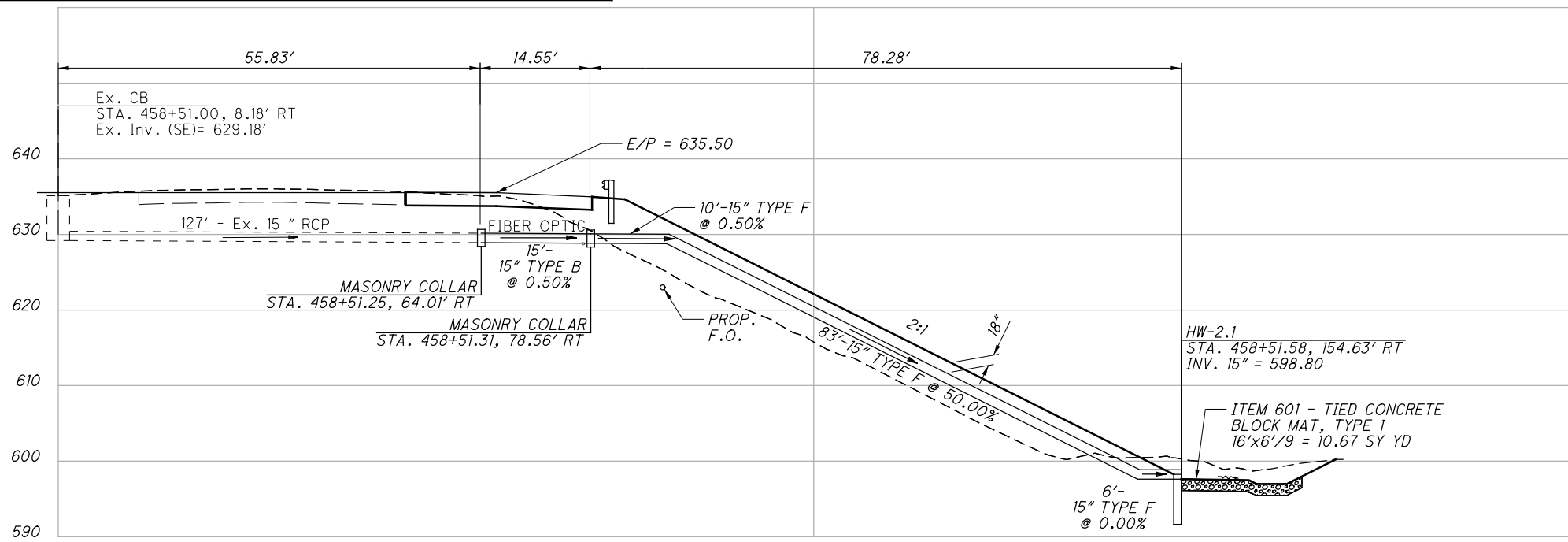
I-71 NORTH



ESTIMATED QUANTITIES TO BE CARRIED TO THE CULVERT SUBSUMMARY

ITEM	DESCRIPTION	TOTAL	UNIT
202	HEADWALL REMOVED	1	EACH
202	PIPE REMOVED, 24" AND UNDER	72	FT
601	TIED CONCRETE BLOCK MAT, TYPE 1	11	SY
602	CONCRETE MASONRY	0.27	CY
611	15" CONDUIT, TYPE B	15	FT
611	15" CONDUIT, TYPE F	99	FT
611	CONDUIT MISC.: VIDEO LOG	56	FT
611	CONDUIT MISC.: CURED-IN-PLACE PIPE LINER (15")	56	FT

EXISTING STRUCTURE	
TYPE:	15" RCP
SKEW:	0°12'25" R.F.
ALIGNMENT:	TANGENT
LENGTH:	127 FT
DATE BUILT:	1969



1

2

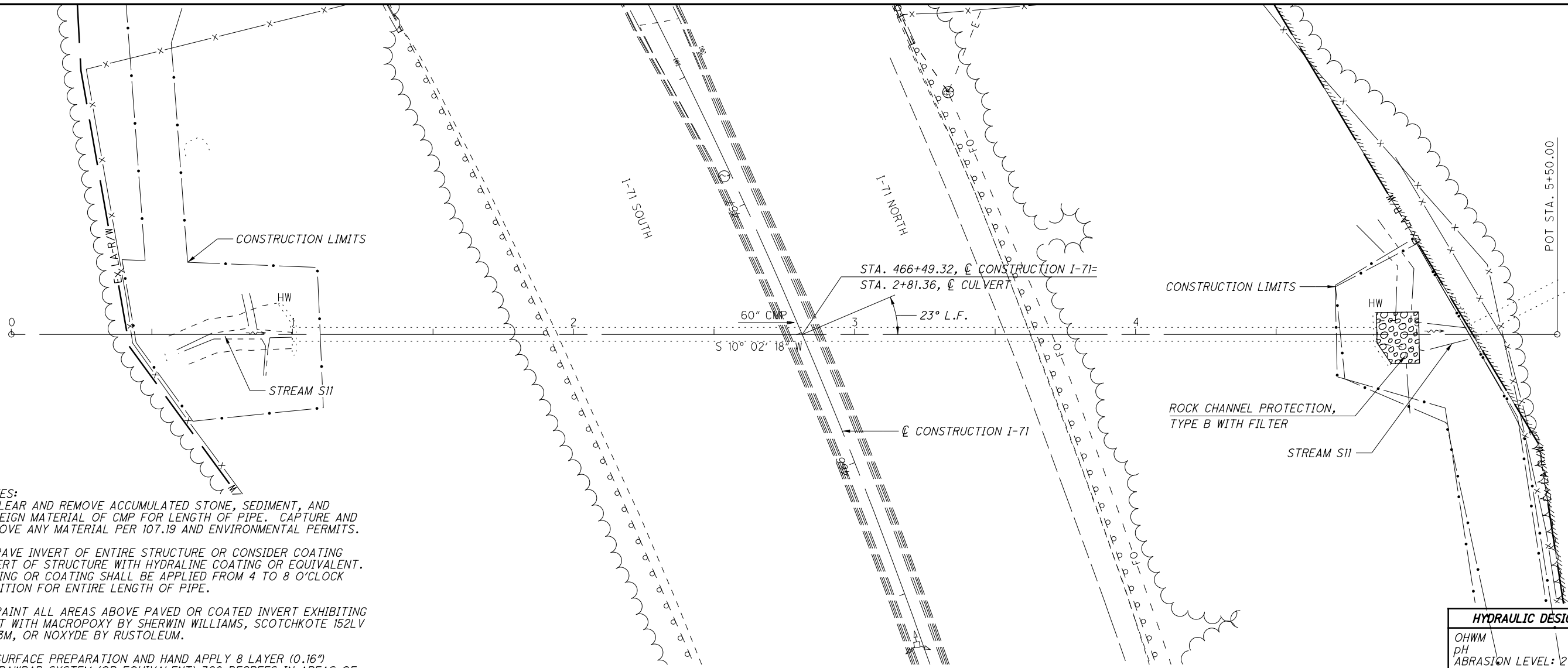
3



CALCULATED JMD CHECKED GKB

CULVERT DETAIL
I-71 STA. 466+49.32

HAM-71-6.86



- NOTES:
1. CLEAR AND REMOVE ACCUMULATED STONE, SEDIMENT, AND FOREIGN MATERIAL OF CMP FOR LENGTH OF PIPE. CAPTURE AND REMOVE ANY MATERIAL PER 107.19 AND ENVIRONMENTAL PERMITS.
 2. PAVE INVERT OF ENTIRE STRUCTURE OR CONSIDER COATING INVERT OF STRUCTURE WITH HYDRALINE COATING OR EQUIVALENT. PAVING OR COATING SHALL BE APPLIED FROM 4 TO 8 O'CLOCK POSITION FOR ENTIRE LENGTH OF PIPE.
 3. PAINT ALL AREAS ABOVE PAVED OR COATED INVERT EXHIBITING RUST WITH MACROPOXY BY SHERWIN WILLIAMS, SCOTCHKOTE 152LV BY 3M, OR NOXYDE BY RUSTOLEUM.
 4. SURFACE PREPARATION AND HAND APPLY 8 LAYER (0.16") HYDRAWRAP SYSTEM (OR EQUIVALENT) 360 DEGREES IN AREAS OF PIPE WHERE RIPPLING OF CMP SIDEWALLS ARE REVEALED.
 5. PLACE ROCK CHANNEL PROTECTION TO FILL SCOUR HOLE AT OUTLET.
- THE ABOVE DESCRIBED ITEMS 1-4 SHALL BE PAID BY ITEM 611 - CONDUIT, MISC.: 60" CONDUIT REHABILITATION.

ESTIMATED QUANTITIES TO BE CARRIED TO THE CULVERT SUBSUMMARY

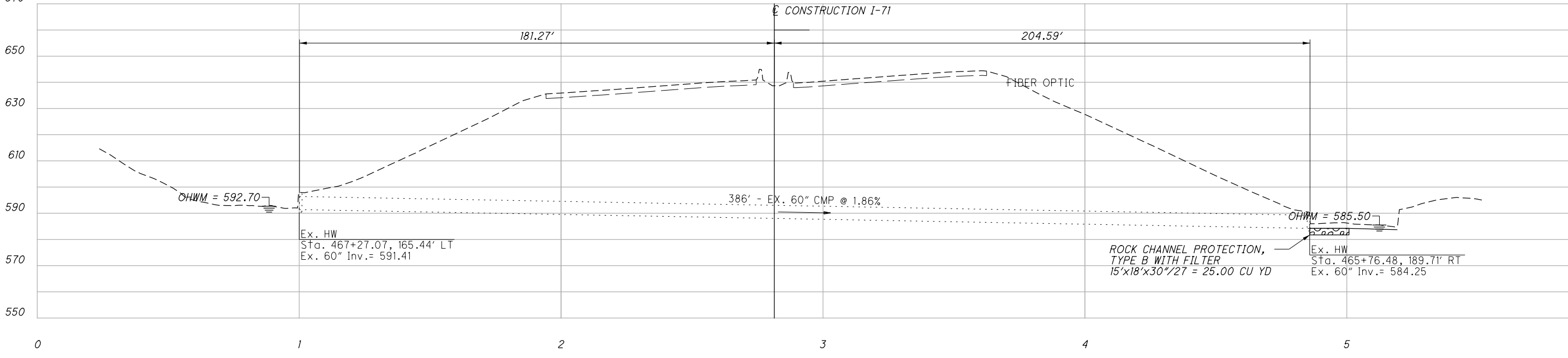
ITEM	DESCRIPTION	TOTAL	UNIT
601	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER	25	CY
611	CONDUIT, MISC.: 60" CONDUIT REHABILITATION	386	FT

FILL BELOW OHWM FOR STREAM S11

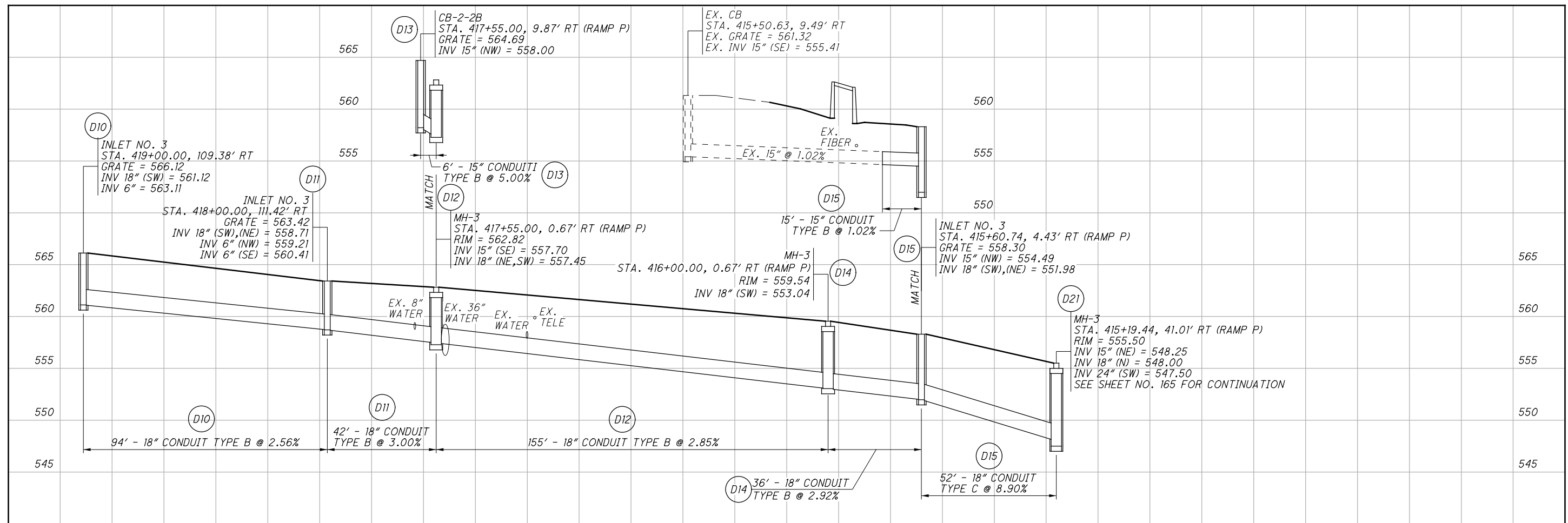
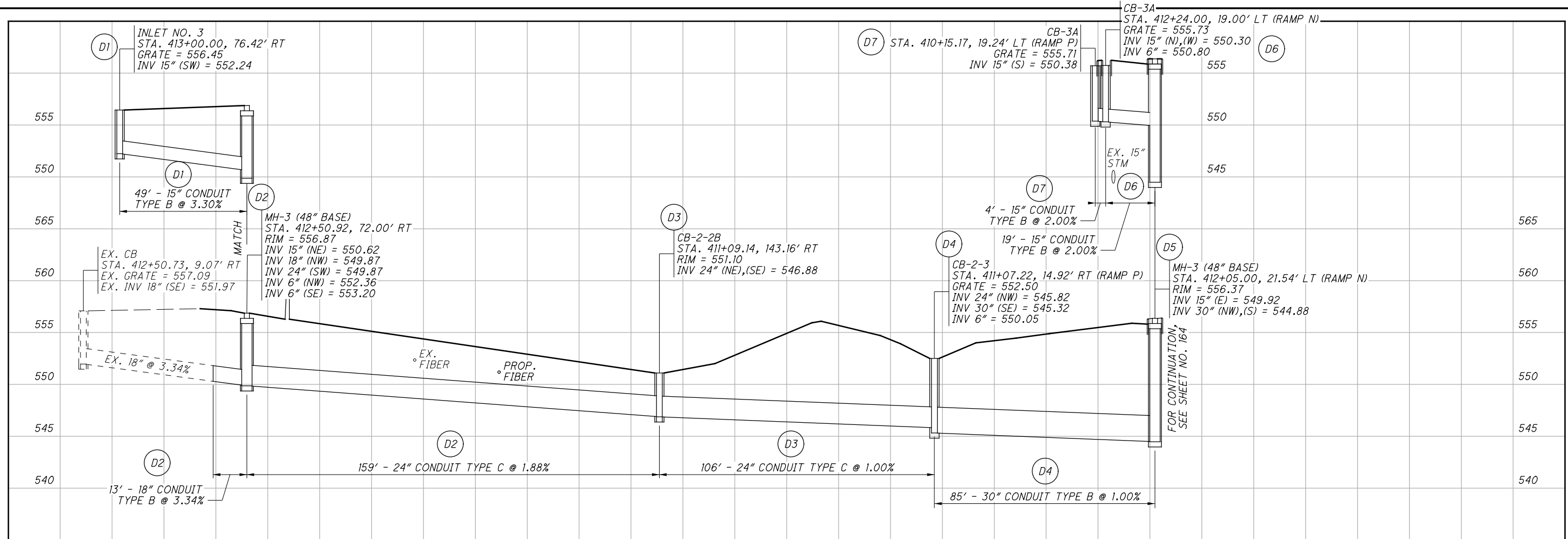
MATERIAL	LENGTH (FT)	SURFACE AREA (ACRE)	VOLUME (CY)
ROCK	15	0.0061	25

HYDRAULIC DESIGN DATA

OHWM	= 585.50
pH	= 8.3
ABRASION LEVEL: 2	
EXISTING STRUCTURE	
TYPE:	60" CMP
SKEW:	23° L.F.
ALIGNMENT:	TANGENT
LENGTH:	386 FT
DATE BUILT:	1969



V:\1736\active\173620049\design\94741\drainage\sheets\94741_DF001.dgn 9/27/2017 10:42:31 AM pdurham

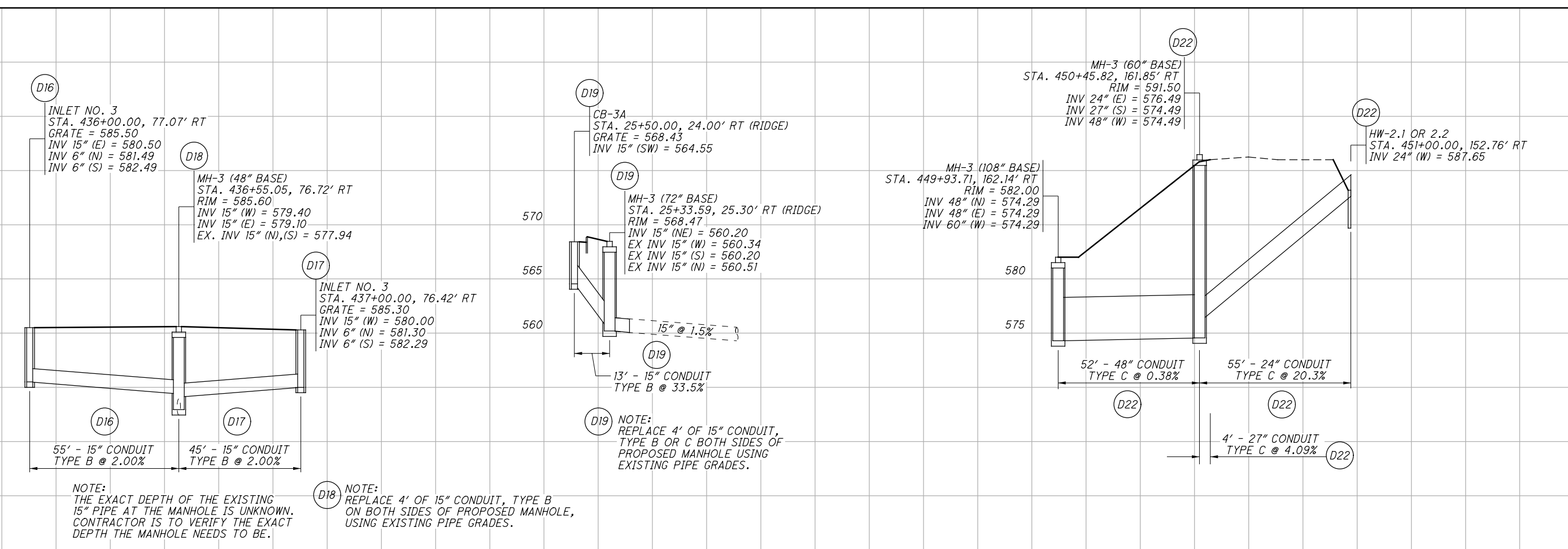
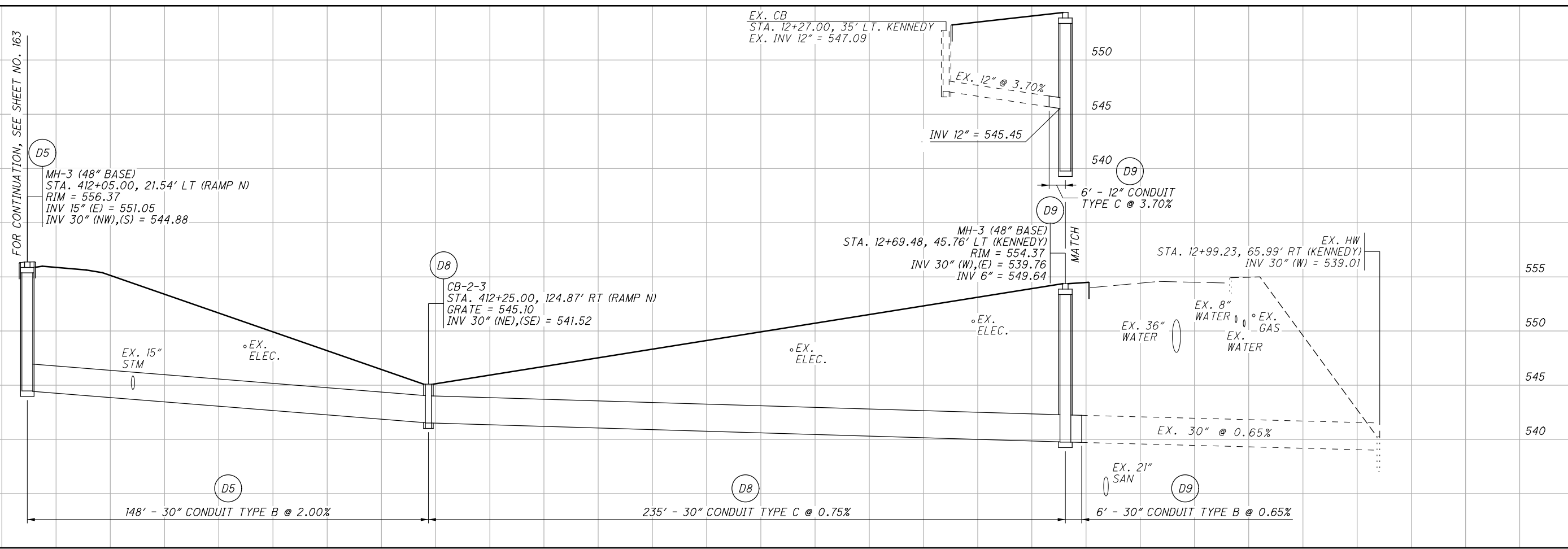


CALCULATED
P.J.D.
CHECKED
LEH

STORM PROFILES

HAM-71-6.86

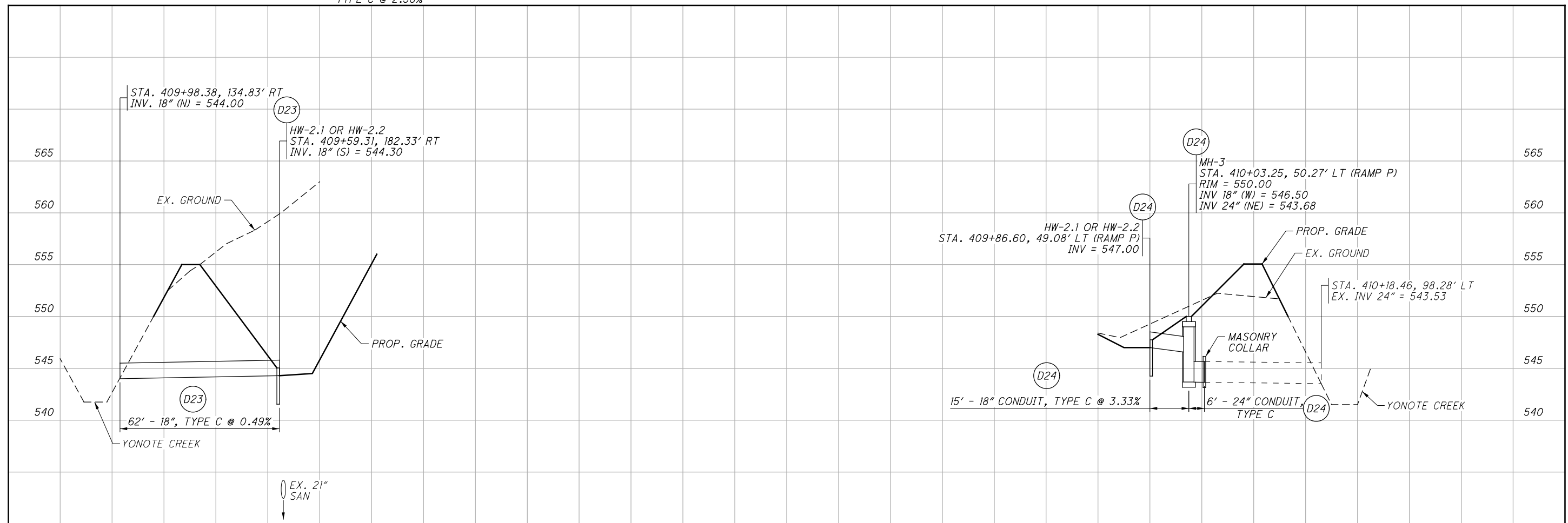
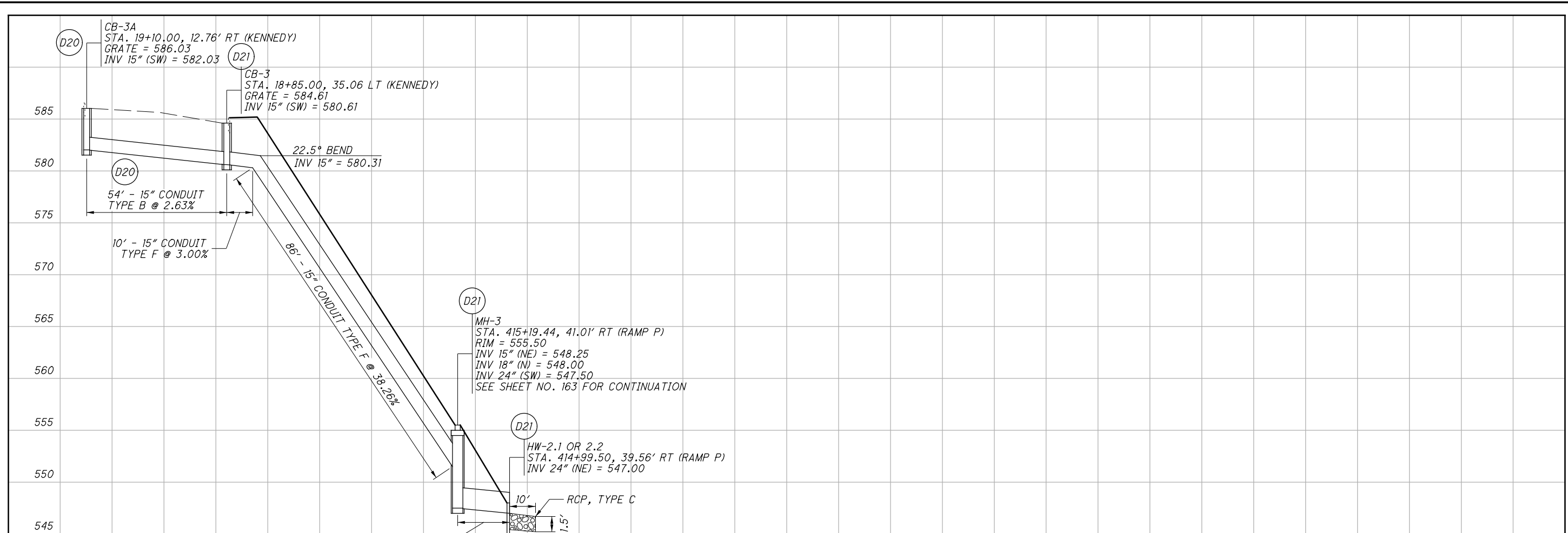
163
253



STORM PROFILES

V:\1736\active\173620049\design\94741\drainage\sheet\94741_DF001.dgn 9/27/2017 10:42:31 AM pdurham

V:\1736\active\173620049\design\94741\drainage\sheet\94741_DF001.dgn 9/27/2017 10:42:32 AM palurham



CALCULATED
PJD
CHECKED
LEH

STORM PROFILES

HAM-71-6.86

CCTV INSTALLATIONS

THE CONTRACTOR SHALL FURNISH AND INSTALL THIS ITEM ACCORDING TO ODOT SUPPLEMENTAL SPECIFICATION 809, AS WELL AS ANY STANDARD CONSTRUCTION DRAWINGS NOTED ON THE PLANS.

ITEM 625, CONDUIT, 4", MULTICELL, 725.20, EPC-40

DESCRIPTION

THIS CONDUIT IS INTENDED FOR THE USE IN UNDERGROUND SITUATIONS REQUIRING MORE THAN ONE SINGLE CONDUIT. THIS INCLUDES THE MAIN CONDUIT RACEWAY ALONG THE FREEWAY, CONNECTION FROM PULL BOXES TO THE ROAD SIDE CABINETS AND FOR RUNS OF CONDUIT FOR MULTIPLE PURPOSES, E.G., AT RAMP METER INSTALLATIONS, FOR LOOP LEAD-IN CABLE, SIGNALS CABLE FOR RAMP METER DISPLAYS, SIGNAL CABLE FOR RAMP METER SIGNING FLASHERS & ILLUMINATION AND POWER. THE CONTRACTOR SHALL PLUG ALL UNUSED CELLS WITH CONDUIT CAPS TO ASSURE AIR AND WATER INTEGRITY OF EACH INDIVIDUAL INNERDUCT.

MATERIALS

THE TRAFFIC SURVEILLANCE RACEWAY SHALL CONSIST OF A FACTORY-ASSEMBLED SYSTEM OF FOUR (4) INNERDUCTS ASSEMBLED WITHIN A PROTECTIVE OUTER DUCT. THE INNERDUCTS SHALL BE NOMINAL 1.25 INCH INSIDE DIAMETER, TYPE DB PVC PER NEMA TC-8 WITH A BELL INSERTION DEPTH OF 1.75 INCHES MINIMUM. THE OUTER DUCT SHALL BE NOMINAL 4 INCH (INSIDE DIAMETER), SCHEDULE 40 PVC. CARLON TYPE SCHEDULE 40 OR APPROVED EQUIVALENT. THE COUPLING SHALL BE DESIGNED IN A MANNER TO PERMIT EASY FIELD ASSEMBLY. THE COUPLING SHALL BE MARKED OR KEYPED IN A MANNER TO ENSURE THE INNERDUCTS ARE PROPERLY ALIGNED, ANY COLOR CODES ARE CONTINUED AND THE ADJOINING SECTION IS INSERTED TO THE PROPER DEPTH IN THE BELL. ALL KEYS AND/OR MARKINGS SHALL BE VISIBLE AFTER ASSEMBLY TO ALLOW THE INSPECTION OF EACH JOINT FOR PROPER ASSEMBLY BEFORE BURIAL. THE SEALING SYSTEM SHALL BE DESIGNED TO ASSURE AIR INTEGRITY OF EACH INDIVIDUAL INNERDUCT AND WATER INTEGRITY OF THE ENTIRE SYSTEM. WHERE INNERDUCT(S) WITHIN A MULTI-CELL DUCT ARE TO REMAIN EMPTY, ONE 1/4-INCH NYLON ROPE SHALL BE INSTALLED IN EACH OF THE OPEN INNERDUCTS, THE ROPE WILL REMAIN TO BE USED FOR A FUTURE CABLE INSTALLATION. ALSO, EACH INNERDUCT SHALL BE PLUGGED TO MAINTAIN THE AIR AND WATER INTEGRITY. IN ADDITION, THE OUTER DUCT SHALL BE CAPPED TO MAINTAIN THE AIR AND WATER INTEGRITY OF THE ENTIRE SYSTEM.

INSTALLED IN TRENCH

INSTALLATION WILL BE IN 30-INCH DEEP TRENCH, EXCEPT AS NOTED ON THE PLANS. ALL JOINTS WILL BE JOINED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS, IN ORDER TO PROVIDE AN AIR-TIGHT ENCLOSURE OF THE INTERIOR DUCTS AND A WATER-TIGHT ENCLOSURE OF THE OUTER DUCT.

INSTALLED UNDER ROADWAY

INSTALLATION WILL BE AT LEAST 30 INCHES DEEP JACKED OR DRILLED UNDER PAVEMENT, EXCEPT AS NOTED ON THE PLANS. ALL JOINTS WILL BE JOINED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS, IN ORDER TO PROVIDE AN AIR-TIGHT ENCLOSURE OF THE INTERIOR DUCTS AND A WATER-TIGHT ENCLOSURE OF THE OUTER DUCT.

ITEM 625, CONDUIT 4" MULTI-CELL SCHEDULE 40, 725.20

METHOD OF MEASUREMENT

THE CONDUIT WILL BE MEASURED BY THE AMOUNT OF CONDUIT IN FEET FURNISHED AND INSTALLED MEASURED FROM CENTER-TO-CENTER OF PULL BOXES, FOUNDATION, ETC., AND WILL INCLUDE ALL FITTINGS AND APPURTENANCES, JOINTS, BENDS, GROUNDS AND CONCRETE ENCASEMENT WHERE SPECIFIED. THE TRENCH WILL BE MEASURED BY THE NUMBER OF FEET OF TRENCH COMPLETED AS PER C&MS 625.21.

BASIS OF PAYMENT

THE PAYMENT FOR THESE ITEMS WILL BE MADE FOR THE ACCEPTED LINEAR FOOT QUANTITIES AT THE CONTRACT BID PRICE.

ITEM 625, BARRIER JUNCTION BOX, AS PER PLAN

THE CONTRACTOR SHALL SUPPLY THE MEDIAN PULL BOX THAT MEETS THE FOLLOWING SPECIFICATIONS:

SHALL BE OF TYPE POLYMER-CONCRETE
SIZE: 17 INCHES (HEIGHT) X 30 INCHES (LENGTH)
MINIMUM WALL THICKNESS: 0.5 INCH
MINIMUM LID THICKNESS: 2 INCHES
ANSI TIER 22 RATING WITH A MINIMUM DESIGN LOAD OF 22,000 POUNDS
LID SHALL BE MARKED "TRAFFIC."

THE MEDIAN JUNCTION BOX SHALL BE SECURED IN THE MEDIAN BARRIER WALL USING DOWELS. (NONSHRINK GROUT MAY BE USED WHEN NECESSARY).

SEE DETAIL ON SHEET NO. 168

TRACER WIRE

TRACER WIRE SHALL BE INSTALLED IN ONE OF THE MULTI-CELL INNERDUCTS IN ALL CONDUIT RUNS. TRACER WIRE SHALL BE NO SMALLER THAN #12 AWG WIRE. THE WIRE SHALL BE HDPE INSULATED, ORANGE IN COLOR, AND CONSTRUCTED OF COPPER CLAD STEEL. APPROXIMATELY 10 FEET OF SLACK OF THE TRACER WIRE SHALL BE LEFT INSIDE THE ADJACENT PULL BOXES CONNECTING THE CONDUIT RUNS. IN SITUATIONS WHERE A TYPE 2 FIBER OPTIC CABLE MARKER IS TO BE INSTALLED IN CONJUNCTION WITH THE TRACER WIRE, THE TRACER WIRE SHALL BE RUN THROUGH THE MARKER AND CONNECTED TO TERMINALS AT THE TOP OF THE MARKER. PAYMENT FOR ALL TRACER WIRE SHALL BE INCLUDED IN THE BID ITEM FOR THE FIBER OPTIC CABLE PAY ITEM.

ITEM 625, PULL BOX, 725.08, 32", AS PER PLAN

IN ADDITION TO THE REQUIREMENTS SET FORTH BY SPECIFICATION 725.08 PULL BOXES FOR INTELLIGENT TRANSPORTATION SYSTEMS SHALL COMPLY WITH STANDARD CONSTRUCTION DRAWING ITS-14.11. THIS ITEM INCLUDES CONSTRUCTION OF A 60" SQUARE CONCRETE WORK PAD AS SHOWN ON ITS-14.11. PAYMENT SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH AND SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

FIBER OPTIC CABLE MARKERS

FIBER OPTIC CABLE MARKERS SHALL BE INSTALLED AS DIRECTED BY THE ODOT ENGINEER AND/OR AT EVERY PULL BOX CONTAINING FIBER OPTIC CABLE AND SHALL BE ONE OF TWO TYPES:

TYPE 1 - COTTMARK 511, FRICK FLEXPOST, OR CARSONITE CURV-FLEX MARKER

TYPE 2 - COTT BIGFINK, FRICK TESTPOST, OR RHINODOME TEST STATION

THE FIBER OPTIC CABLE MARKERS SHALL BE 6 FEET IN LENGTH AND SHALL BE SECURELY PLACED IN THE GROUND AT A DEPTH OF 2 FEET. CARE SHALL BE TAKEN DURING INSTALLATION NOT TO DAMAGE ANY UNDERGROUND CONDUIT IN THE VICINITY. THE CONTRACTOR SHALL USE A TYPE 2 MARKER WHEN THE PATH OF THE FIBER CROSSES UNDERNEATH A ROADWAY AND WHEN CAPABLE SHALL PLACE A MARKER ON BOTH SIDES OF THE ROADWAY AT CROSSING. THE CONTRACTOR SHALL CONNECT TRACER WIRE TO TERMINAL AT TOP OF TYPE 2 MARKER. TYPE 1 MARKERS SHALL ONLY BE PLACED ON STRAIGHT FIBER RUNS BETWEEN PULL BOXES IN THE SHOULDER, AND THE CONTRACTOR SHALL BE LIMITED TO THE USE OF TYPE 1 MARKERS SO THAT A TYPE 2 MARKER SHALL BE PLACED BETWEEN ANY TWO TYPE 1 MARKERS. TYPE 1 MARKERS SHALL NOT BE PLACED IN SUCCESSION DOWN A FIBER PATH. THE MARKERS SHALL BE ORANGE IN COLOR AND SHALL HAVE THE FOLLOWING INFORMATION LOCATED ON THE UPPER PORTION OF THE MARKER IN A READABLE FORMAT:

WARNING
CONTACT OUPS 48 HRS BEFORE DIGGING
OHIO DEPARTMENT OF TRANSPORTATION FIBER OPTIC CABLE
614-752-8846

PAYMENT FOR ALL FIBER OPTIC CABLE MARKERS SHALL BE INCLUDED IN THE BID ITEM FOR THE FIBER OPTIC CABLE PAY ITEM.

ITEM 625, GROUND ROD, AS PER PLAN

THE CONTRACTOR SHALL INSTALL AND TEST GROUND RODS PER ODOT C&MS. FOR THIS PURPOSE ALL ITS INSTALLATIONS SHALL MATCH THE SAME GROUNDING REQUIREMENTS OF A TRAFFIC SIGNAL.

ITEM 632 SIGNALIZATION MISC.: REMOVAL OF SIDE FIRED RADAR DETECTOR

THIS ITEM SHALL INCLUDE THE REMOVAL OF THE EXISTING SIDE FIRED RADAR DETECTORS AND ASSOCIATED WIRING.

ITEM 632 SIGNALIZATION MISC.: REMOVAL OF CCTV SYSTEM

THIS ITEM SHALL INCLUDE THE REMOVAL OF THE EXISTING CCTV CAMERA, POLE, POLE FOUNDATION, LOWERING DEVICE, CONTROLLER, AND ASSOCIATED WIRING FOR THE EXISTING CCTV SYSTEMS TO BE REMOVED. ALL ITEMS REMOVED SHALL BE STORED AND RETURNED TO ODOT, AS DIRECTED BY THE ENGINEER, EXCEPT THE CAMERA POLE, WHICH SHALL BECOME THE PROPERTY OF THE CONTRACTOR. CONTACT THE ODOT CENTRAL OFFICE ITS LAB VIA THE METHODS LISTED ON SHEET NO. 6.

ITEM 632 SIGNALIZATION MISC.: REMOVAL OF ITS CABINET-GROUND MOUNTED

THIS ITEM SHALL INCLUDE THE REMOVAL OF THE EXISTING GROUND MOUNTED ITS CABINETS, FOUNDATIONS, CONTROLLERS, WORKPADS, AND ASSOCIATED WIRING.

V:\1736\active\173620049\design\94741\tr\office\sheet\94741_TN001.dgn 9/27/2017 10:42:32 AM pduurham

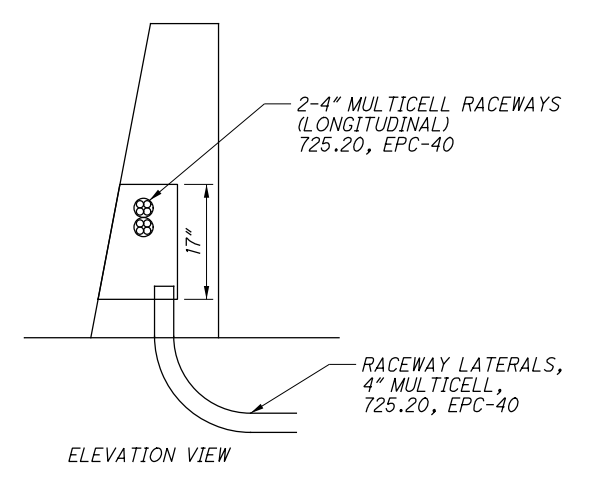
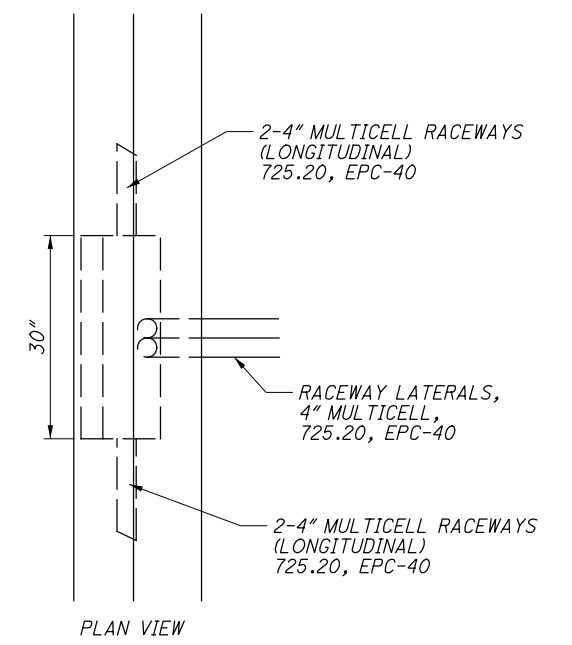
CALCULATED
PJD
CHECKED
SNS

INTELLIGENT TRANSPORTATION SYSTEMS NOTES

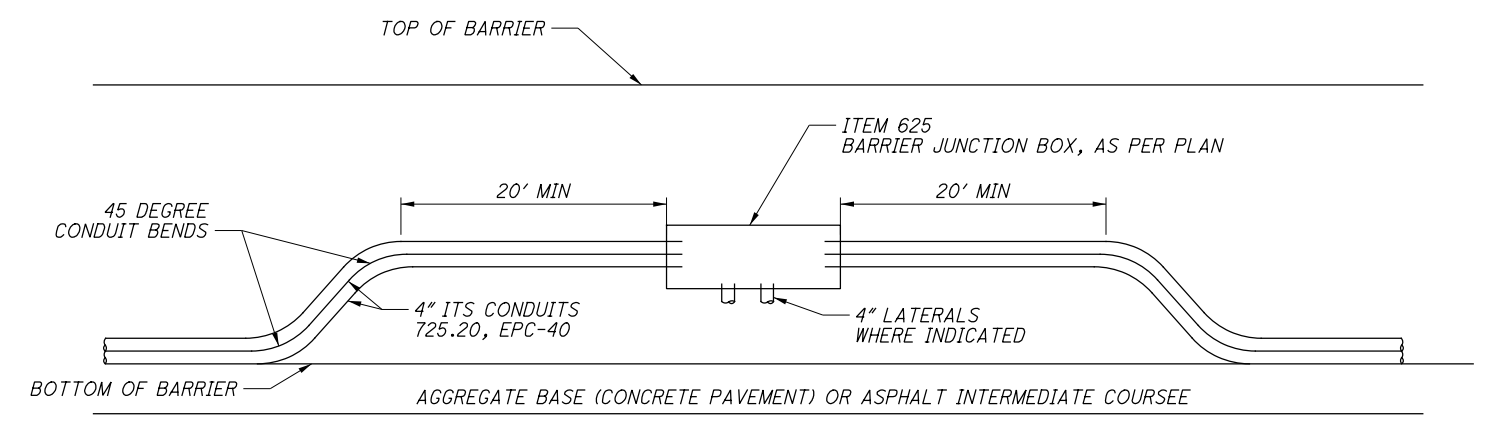
HAM-71-6.86

REFERENCE NO.	SHEET NO.	SIDE	ROADWAY	STATION		625											630		632			804			809		
				FROM	TO	NO. 4 AWG 2400 VOLT DISTRIBUTION CABLE	BARRIER JUNCTION BOX, AS PER PLAN	PULL BOX, 725.08, 32", AS PER PLAN	CONDUIT, 4", MULTICELL, 725.20, EPC-40	CONDUIT CLEANED AND CABLES REMOVED	TRENCH	TRENCH IN PAVED AREA, TYPE B	PULL BOX REMOVED	GROUND ROD, AS PER PLAN	PLASTIC CAUTION TAPE	PULL BOX CLEANED	LIGHT POLE REMOVED	REMOVAL OF WOOD POLE AND DISPOSAL	SIGNALIZATION MISC.: REMOVAL OF SIDE FIRED RADAR DETECTOR	SIGNALIZATION, MISC.: REMOVAL OF CCTV SYSTEM	SIGNALIZATION, MISC.: REMOVAL OF ITS CABINET - GROUND-MOUNTED	FIBER OPTIC CABLE, 24 FIBER	FIBER TERMINATION PANEL, 24 FIBER	SPLICE ENCLOSURE	CCTV IP-CAMERA SYSTEM, DOME-TYPE	CCTV CONCRETE POLE WITH LOWERING UNIT, 70 FEET	ITS CABINET-GROUND MOUNTED
				FOOT	FOOT	FOOT	EACH	EACH	FOOT	FOOT	FOOT	FOOT	EACH	EACH	FOOT	EACH	EACH	EACH	EACH	FOOT	EACH	EACH	EACH	EACH	EACH		
1	178	RT	I.R. 71	423+00.00	428+00.00															477							
2	178	RT	I.R. 71	426+34.00									1														
3	178	RT	I.R. 71	427+37.00									1														
1	179	RT	I.R. 71	428+00.00	431+00.00															295							
2	179	RT	I.R. 71	431+00.00			1																				
3	179	RT	I.R. 71	431+00.00	433+00.00															200							
1	180	RT	I.R. 71	433+00.00	439+00.00															518							
1	181	RT	I.R. 71	439+00.00	440+50.00															150							
2	181	RT	I.R. 71	440+50.00			1																				
3	181	RT	I.R. 71	440+50.00					10		10					10				10							
4	181	RT	I.R. 71	440+50.00				1																			
5	181	RT	I.R. 71	440+50.00	444+00.00				350		350					350				350							
6	181	LT	I.R. 71	443+05.00									1														
1	182	RT	I.R. 71	444+00.00	445+45.00				145		145					145				145							
2	182	RT	I.R. 71	445+45.00				1														1					
3	182	RT	I.R. 71	445+45.00	449+00.00				355		355					355				355							
4	182	RT	I.R. 71	445+45.00	445+52.00			1	18	146	18		1			18				348							
5	182	RT	I.R. 71	445+52.00																	1						
1	183	RT	I.R. 71	449+00.00	453+00.00				400		400					400				400							
2	183	RT	I.R. 71	453+00.00				1																			
3	183	RT	I.R. 71	453+00.00	454+00.00				100		100					100				100							
4	183	RT	I.R. 71	453+90.00									1														
1	184	RT	I.R. 71	454+00.00	458+00.00				400		400					400				400							
2	184	RT	I.R. 71	458+00.00				1																			
3	184	RT	I.R. 71	458+00.00	459+00.00				100		100					100				100							
1	185	RT	I.R. 71	459+00.00	463+50.00				456		456					456				456							
2	185	RT	I.R. 71	463+50.00				1																			
3	185	RT	I.R. 71	463+50.00	464+00.00															52							
4	185	RT	I.R. 71	463+60.00	460+72.00								1						1								
1	186	RT	I.R. 71	464+00.00	467+06.00															319							
2	186	RT	I.R. 71	467+06.00																	1						
3	186	RT	I.R. 71	467+06.00	469+00.00															204							
1	187	RT	I.R. 71	469+00.00	470+48.00															157							
2	187	RT	I.R. 71	470+48.00																							
3	187	RT	I.R. 71	470+48.00	470+54.00															35							
4	187	RT	I.R. 71	470+54.00																							
5	187	RT	I.R. 71	470+54.00	474+00.00															359							
1	188	RT	I.R. 71	474+00.00	475+59.00															165							
2	188	RT	I.R. 71	475+59.00																	1						
3	188	RT	I.R. 71	475+59.00	478+54.00															307							
4	188	RT	I.R. 71	478+54.00																	1						
5	188	RT	I.R. 71	478+54.00	478+60.00															10							
6	188	RT	I.R. 71	478+60.00																							
7	188	RT	I.R. 71	475+57.00	475+75.00				16		16					16				16							
8	188	RT	I.R. 71	475+75.00																							
9	188	RT	I.R. 71	477+34.00	478+60.00																						
TOTAL SHEET NO. 167						75	2	8	1619	2180	1499	120	5	2	1619	8	1	2	3	1	2	4952	1	4	2	2	2
TOTAL THIS SHEET						0	2	6	2350	1754	2350	0	6	1	2350	5	0	0	0	1	1	5928	2	3	1	1	1
SUBTOTAL						75	4	14	3969	3934	3849	120	11	3	3969	13	1	2	3	2	3	10880	3	7	3	3	3
TOTALS CARRIED TO GENERAL SUMMARY						75	4	14	3969	3934	3849	120	11	3	3969	13	1	2	3	2	3	10880	3	7	3	3	3

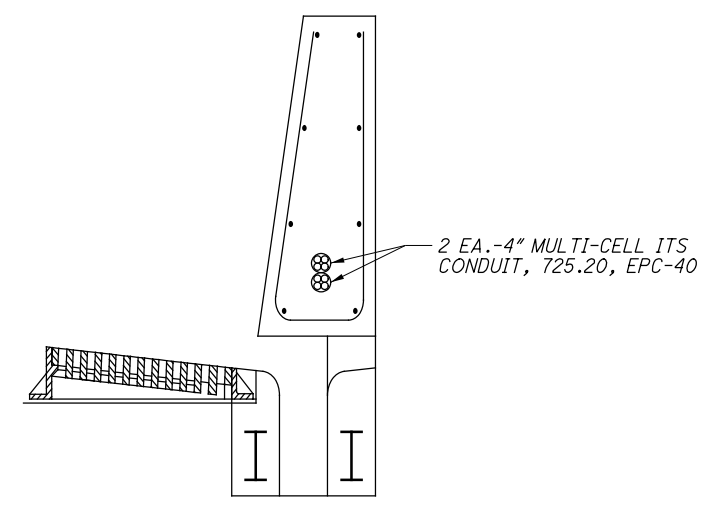
CALCULATED PJD CHECKED SNS
INTELLIGENT TRANSPORTATION SYSTEMS QUANTITIES
HAM-71-6.86
 167A
 253



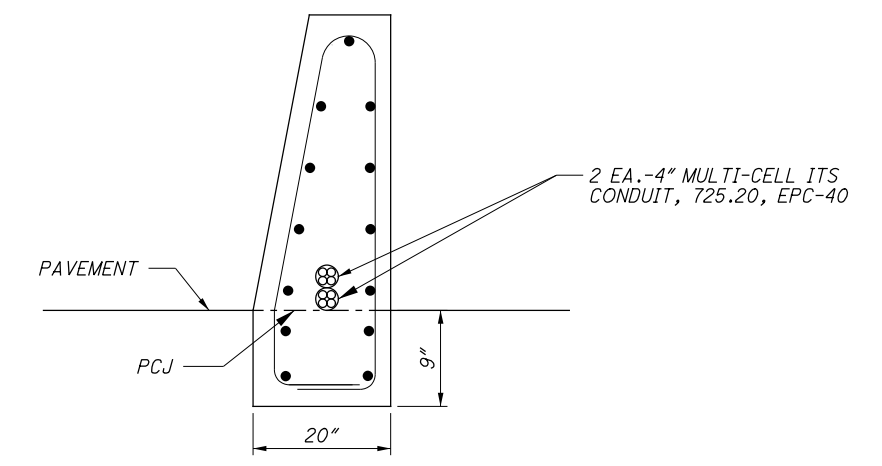
BARRIER JUNCTION BOX, AS PER PLAN, AND CONDUIT



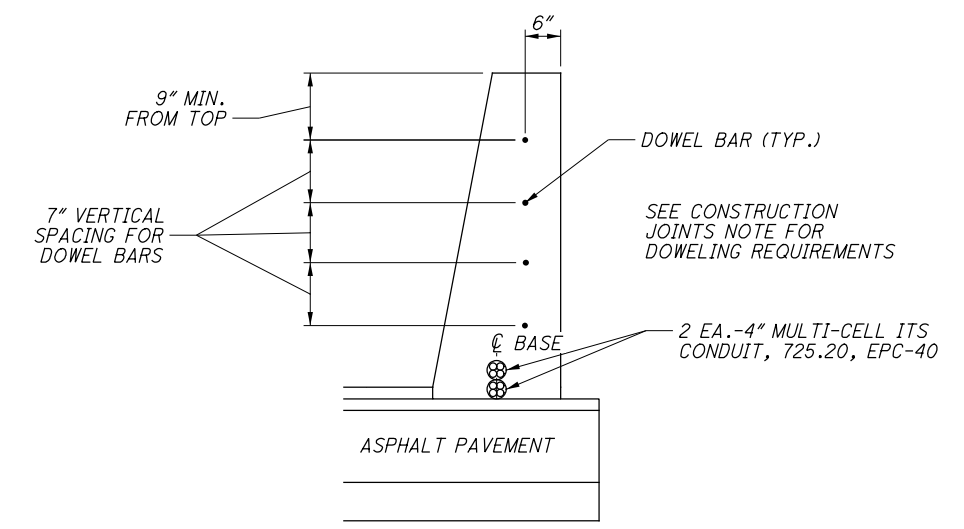
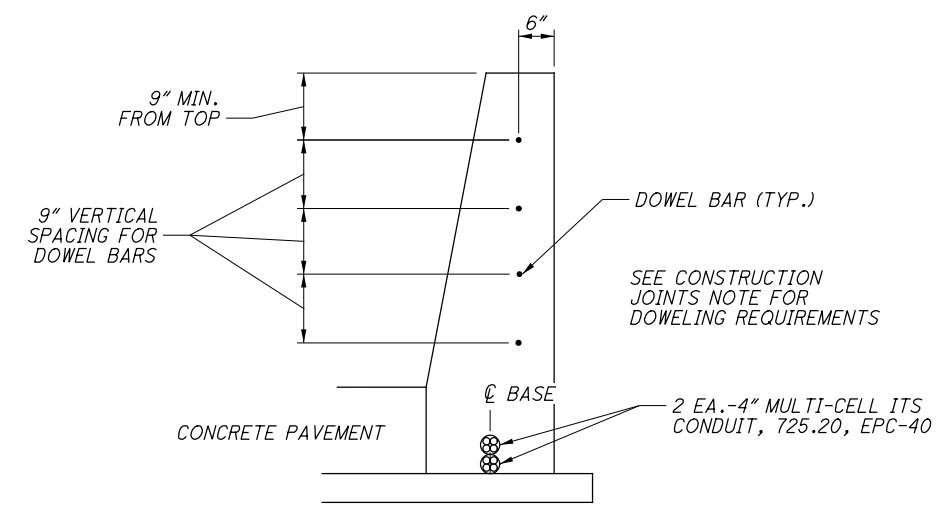
CONDUIT TRANSITION TO BARRIER JUNCTION BOX



RACEWAY PLACEMENT IN INLETS



RACEWAY PLACEMENT IN END ANCHORAGE



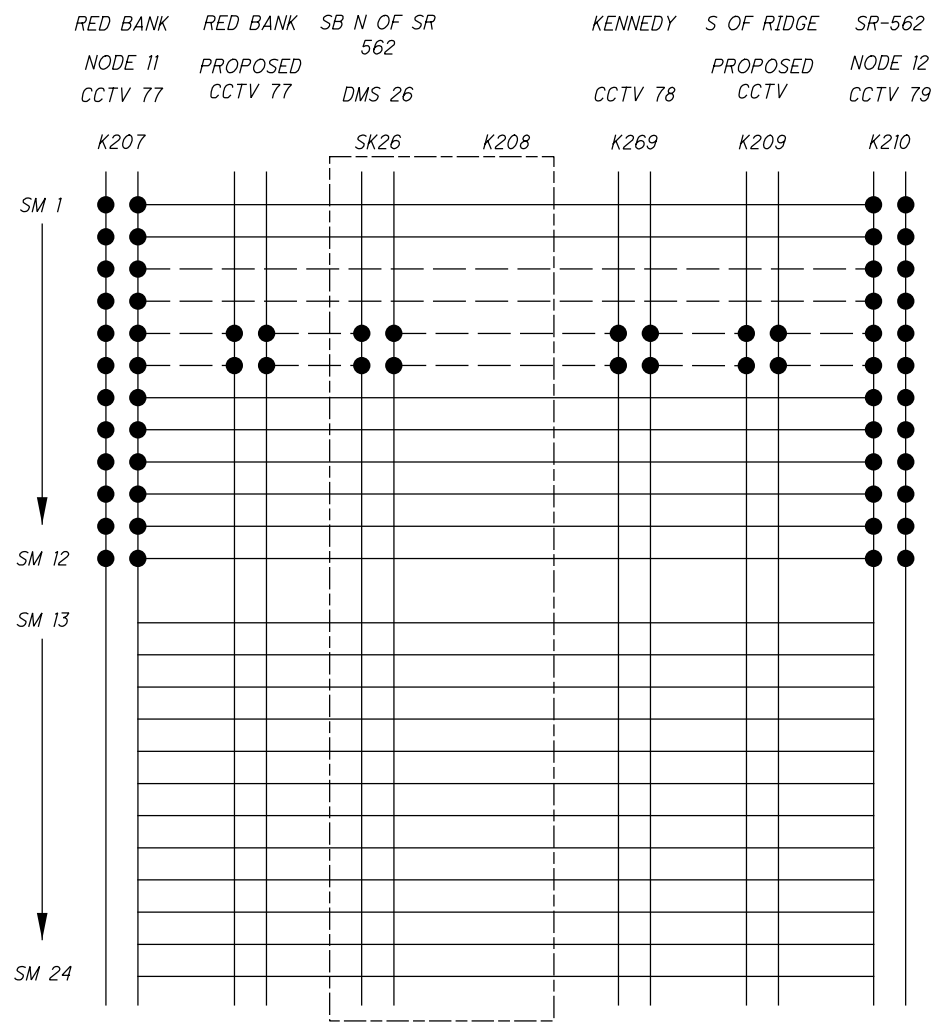
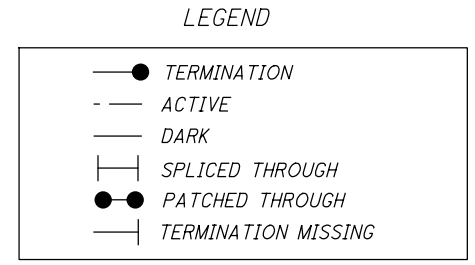
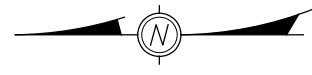
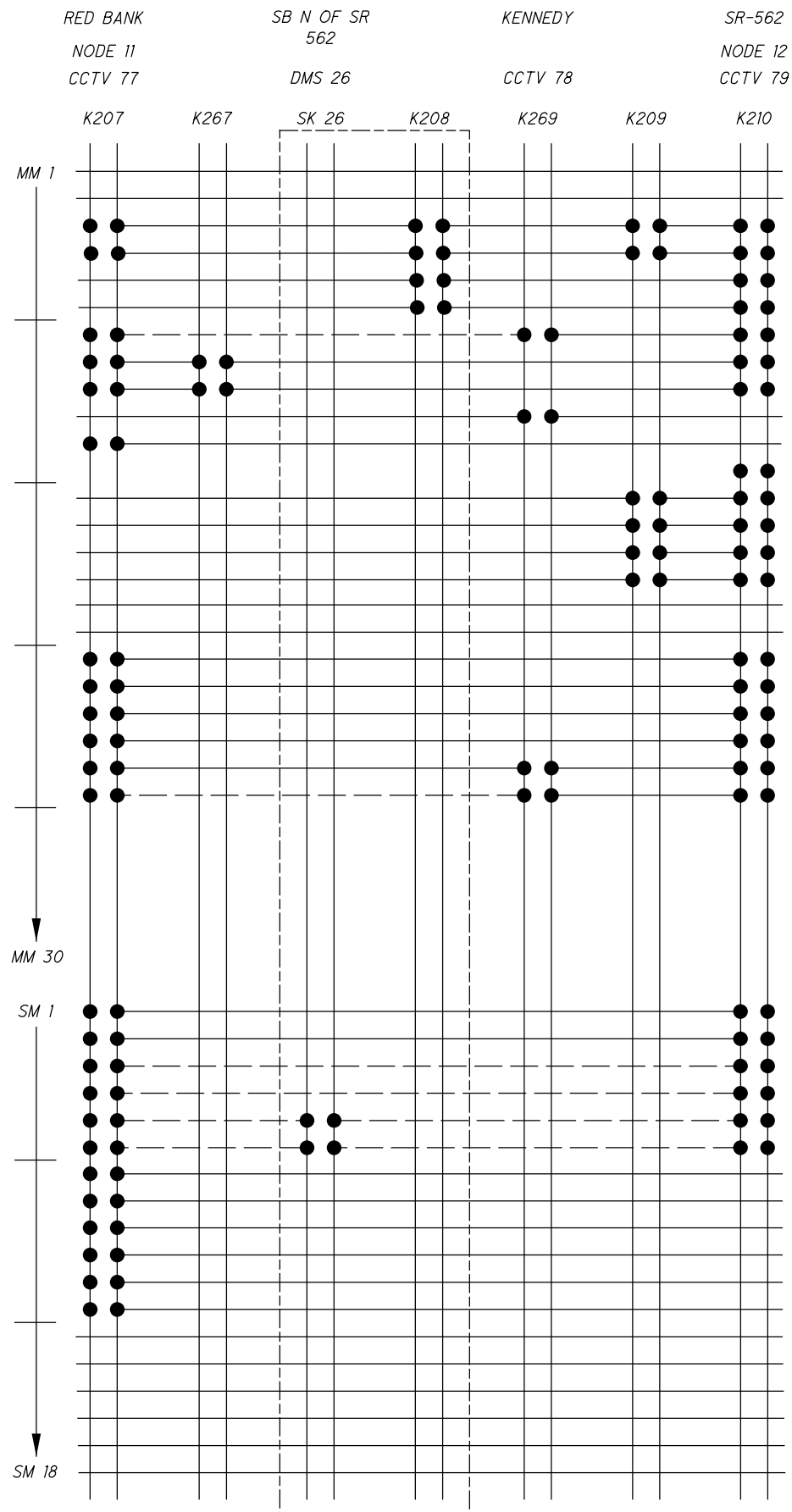
RACEWAY AND DOWEL BAR PLACEMENT

CONSTRUCTION JOINTS: BARRIER RUNS WITH ABUTTING VERTICAL SURFACES AT EITHER REQUIRED OR PERMISSIBLE CONSTRUCTION JOINTS ARE TO BE DOWELED TO EACH OTHER BY USE OF 3/4" DIA. BY 18" LONG EPOXY COATED DEFORMED DOWEL BARS AS PER CMS 622.02. BARS ARE TO BE PLACED AS SHOWN ON THE RACEWAY AND DOWEL BAR PLACEMENT DETAIL.

RACEWAYS: LOCATE AS SHOWN, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. ENSURE THAT THE ELECTRICAL RACEWAY IS CLEAR OF OBSTRUCTIONS. COST OF THE 4" POLYVINYL CHLORIDE RACEWAYS IS INCLUDED WHERE SHOWN ON THE PLANS THE COST FOR ADDITIONAL RACEWAYS AND NO. 10 AWG COPPERCLAD WIRE OR ALUMINUMCLAD WIRE IS ALSO INCLUDED WHERE SHOWN ON THE PLANS FOR FUTURE INSTALLATION OF CIRCUITS. PROVIDE A 4" CLEARANCE TO BARRIER SURFACES AND TO ANY REINFORCING.

V:\1736\active\173620049\design\94741\traffic\sheet\94741_T0001.dgn 9/27/2017 10:42:33 AM pdurham

V:\1736\active\173620049\design\94741\traffic\sheets\94741_ID10.dgn 9/27/2017 10:42:34 AM pdurham

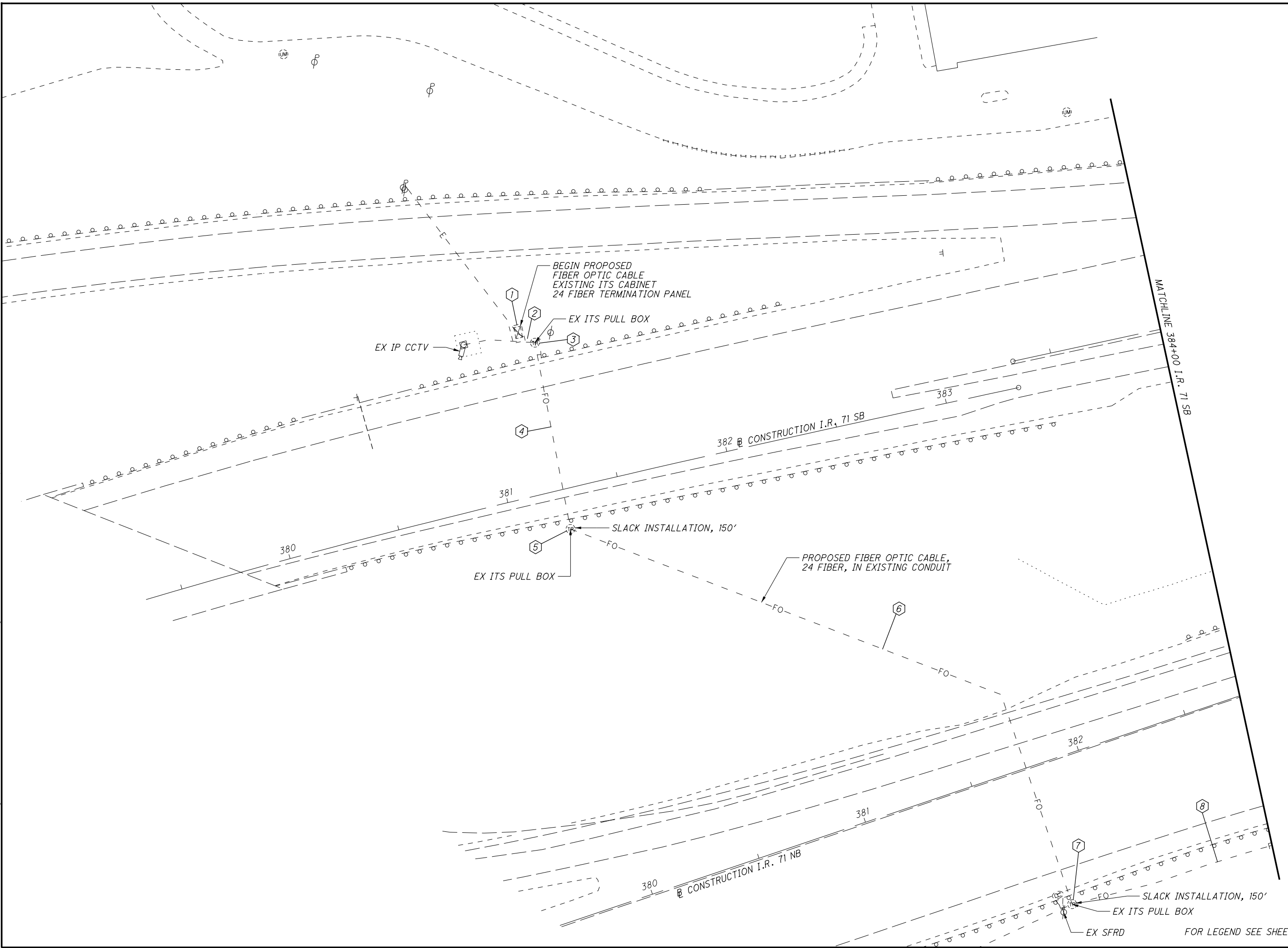


CALCULATED
 PJD
 CHECKED
 SNS

FIBER TERMINATION DETAILS

HAM-71-6.86

V:\1736\active\173620049\design\94741\traffic\sheets\94741_TP020.dgn 9/27/2017 10:42:35 AM pdurham



CALCULATED PJD CHECKED SNS

0 20 40
10
HORIZONTAL SCALE IN FEET

ITS PLAN I.R. 71
BEGIN TO STA 384+00.00 SB

HAM-71-6.86

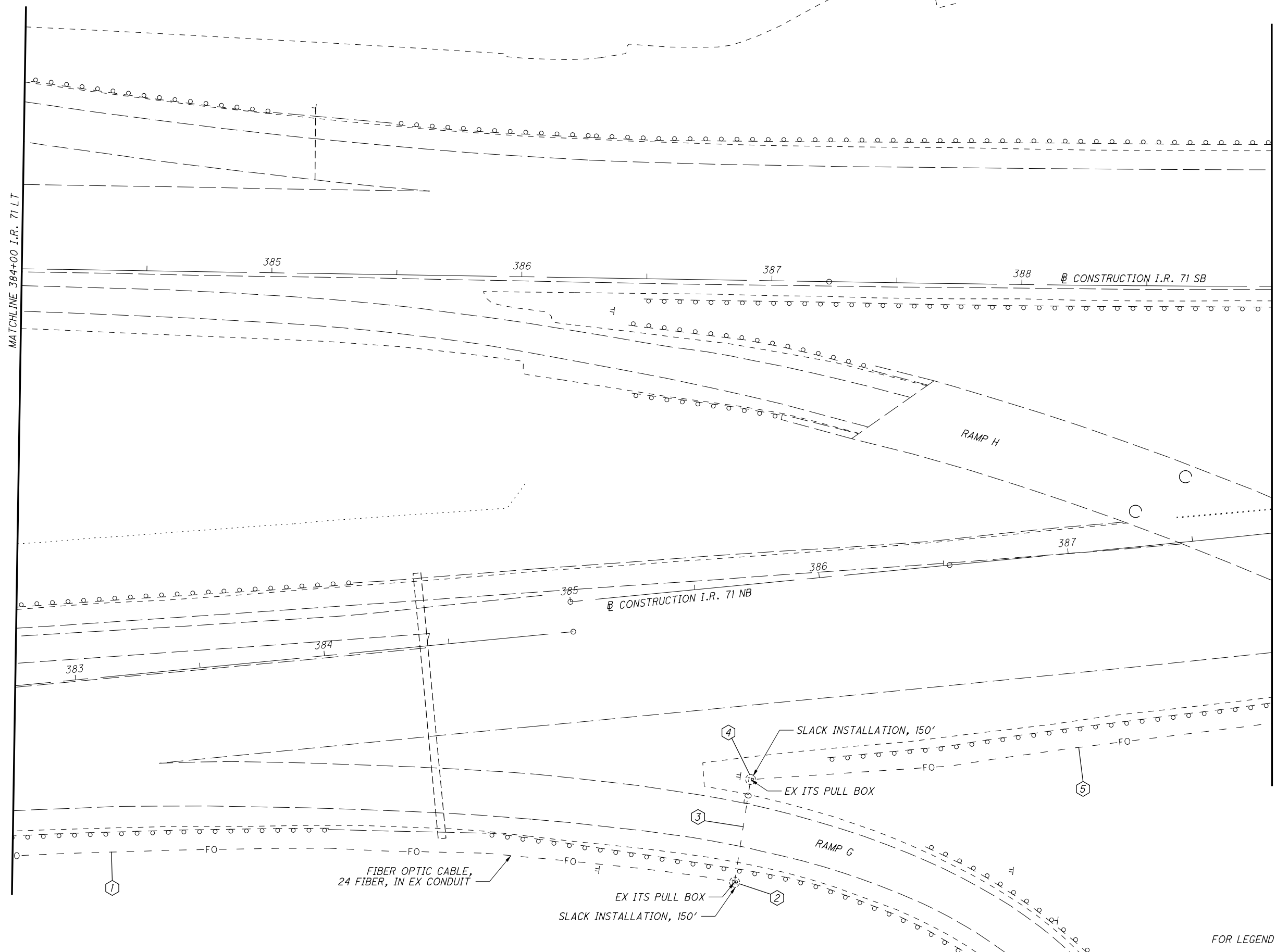
169
253

FOR LEGEND SEE SHEET NO. 173

V:\1736\active\173620049\design\94741\traffic\sheets\94741_TP019.dgn 9/27/2017 10:42:35 AM pdurham

MATCHLINE 384+00 I.R. 71 LT

MATCHLINE 389+00 I.R. 71 SB



CALCULATED	
PJD	
CHECKED	SNS

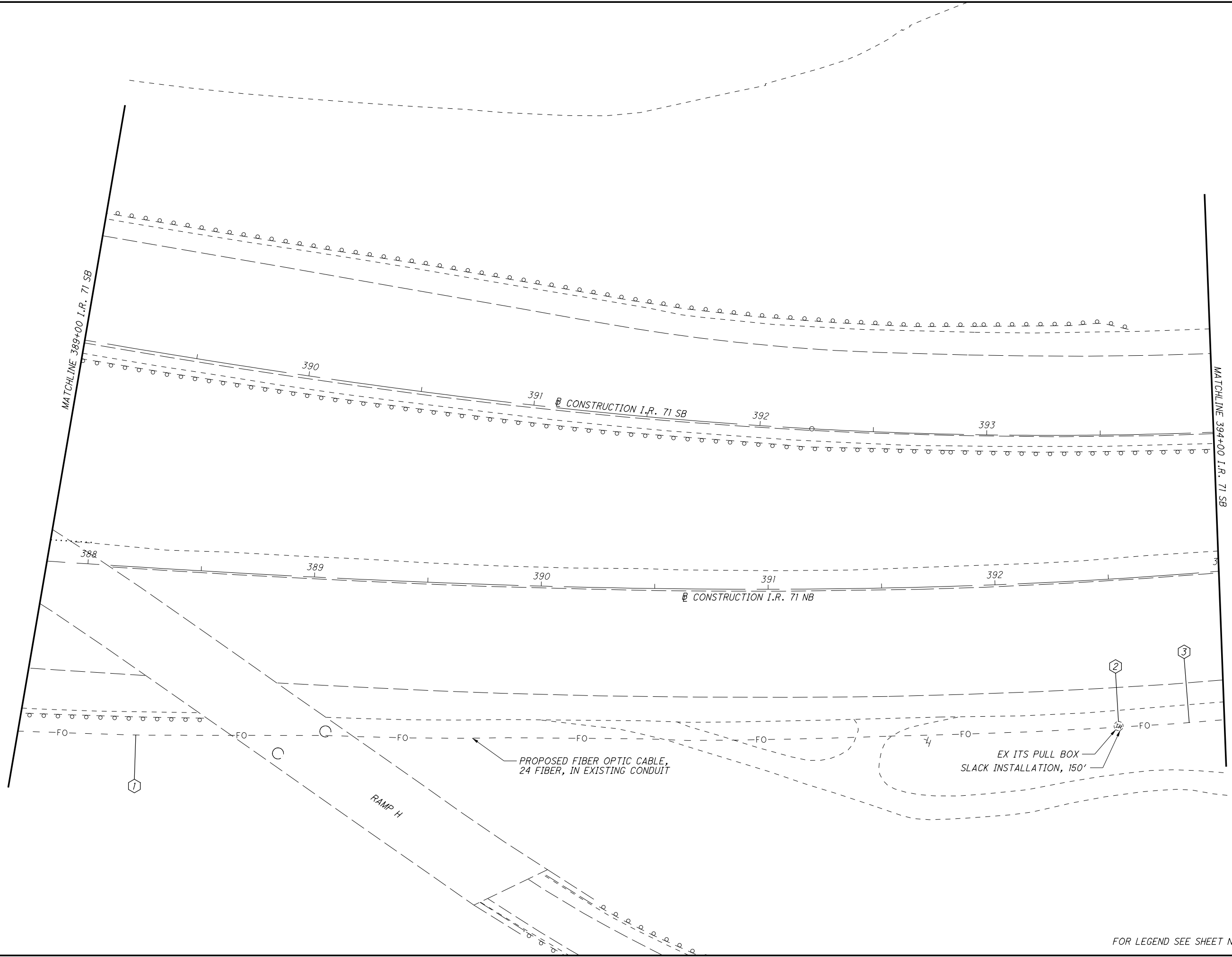
0 20 40
HORIZONTAL SCALE IN FEET

ITS PLAN I.R. 71
STA. 384+00.00 SB TO STA 389+00.00 SB

HAM-71-6.86

FOR LEGEND SEE SHEET NO. 173

V:\1736\active\173620049\design\94741\traffic\sheets\94741_TP018.dgn 9/27/2017 10:42:36 AM pdurham



CALCULATED	PJD
CHECKED	SNS

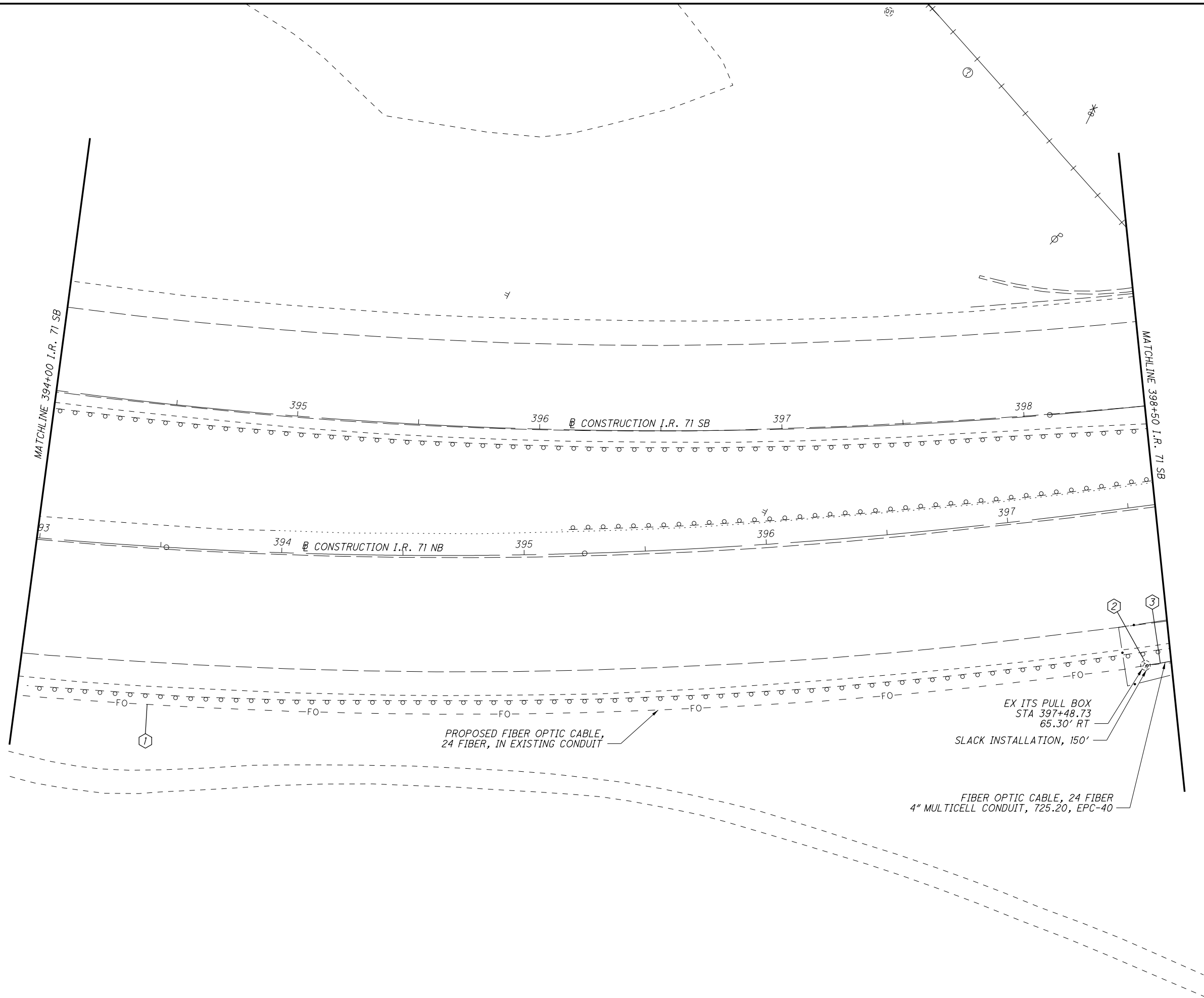
ITS PLAN I.R. 71
STA. 389+00.00 SB TO STA 394+00.00 SB

HAM-71-6.86

171
253

FOR LEGEND SEE SHEET NO. 173

V:\1736\active\173620049\design\94741\traffic\sheets\94741_TP017.dgn 9/27/2017 10:42:36 AM pdurham

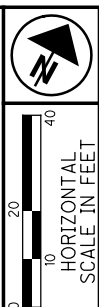


CALCULATED	
PJD	
CHECKED	SNS

ITS PLAN I.R. 71
STA. 394+00.00 SB TO STA 398+50.00 SB

HAM-71-6.86

172
253

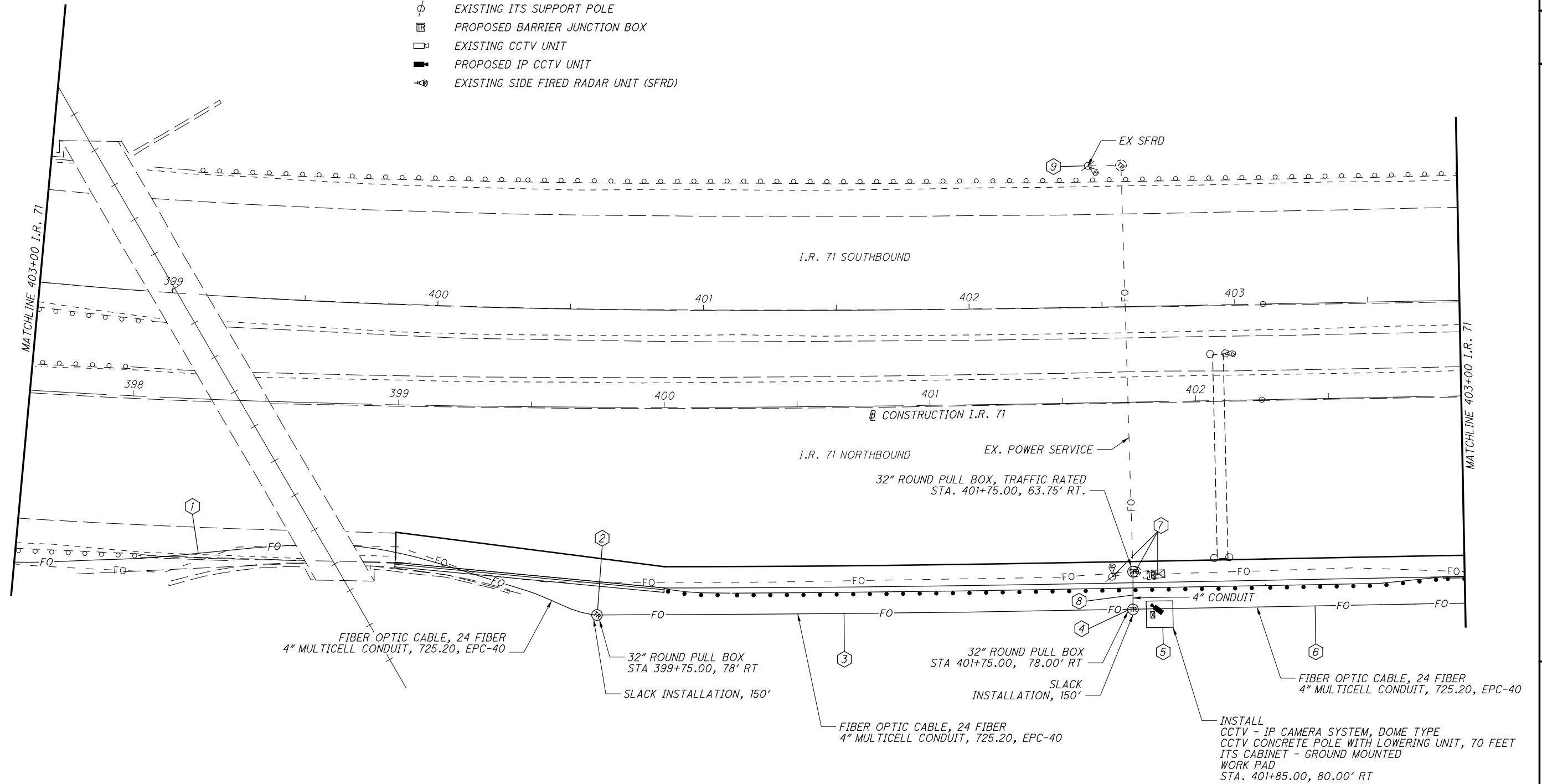


FOR LEGEND SEE SHEET NO. 173

V:\1736\active\173620049\design\94741\traffic\sheets\94741_TP001.dgn 9/27/2017 10:42:36 AM pduham

INTELLIGENT TRANSPORTATION SYSTEMS (ITS) LEGEND

- ☒ EXISTING ITS CONTROLLER CABINET
- ☒ PROPOSED ITS CONTROLLER CABINET
- ☒ or ☒ EXISTING ITS PULL BOX
- ⊕ PROPOSED ITS PULL BOX
- ⊕ EXISTING ITS SUPPORT POLE
- ☒ PROPOSED BARRIER JUNCTION BOX
- ☐ EXISTING CCTV UNIT
- PROPOSED IP CCTV UNIT
- Ⓜ EXISTING SIDE FIRED RADAR UNIT (SFRD)



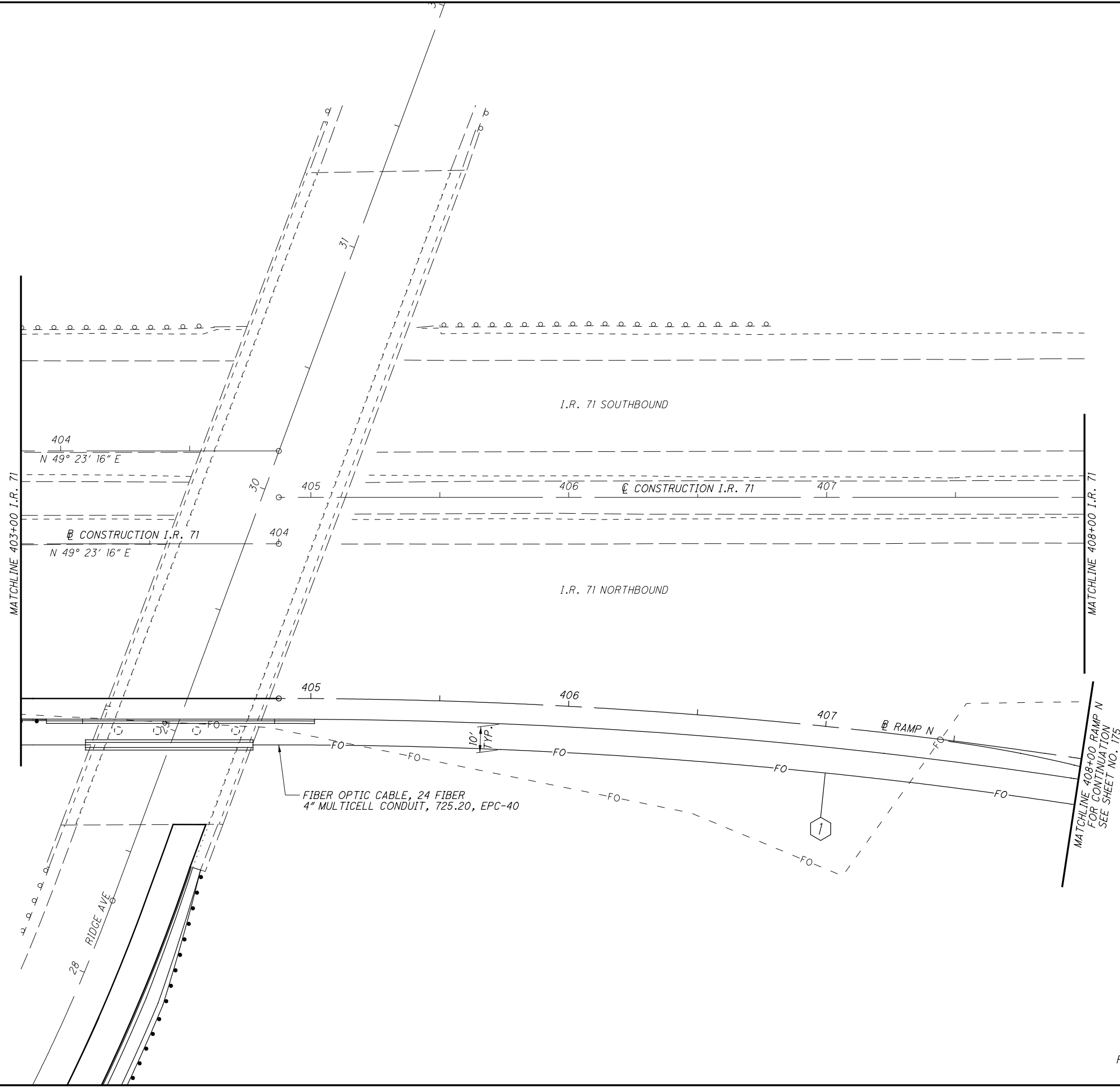
CALCULATED 0
PJD
CHECKED SNS

0 20 40
10
HORIZONTAL SCALE IN FEET

ITS PLAN I.R. 71
STA 398+50.00 SB TO STA 403+00.00

HAM-71-6.86

V:\1736\active\173620049\design\94741\traffic\sheets\94741_TP002.dgn 9/27/2017 10:42:37 AM pdurham



FOR LEGEND SEE SHEET. NO. 173

CALCULATED	PJD
CHECKED	SNS

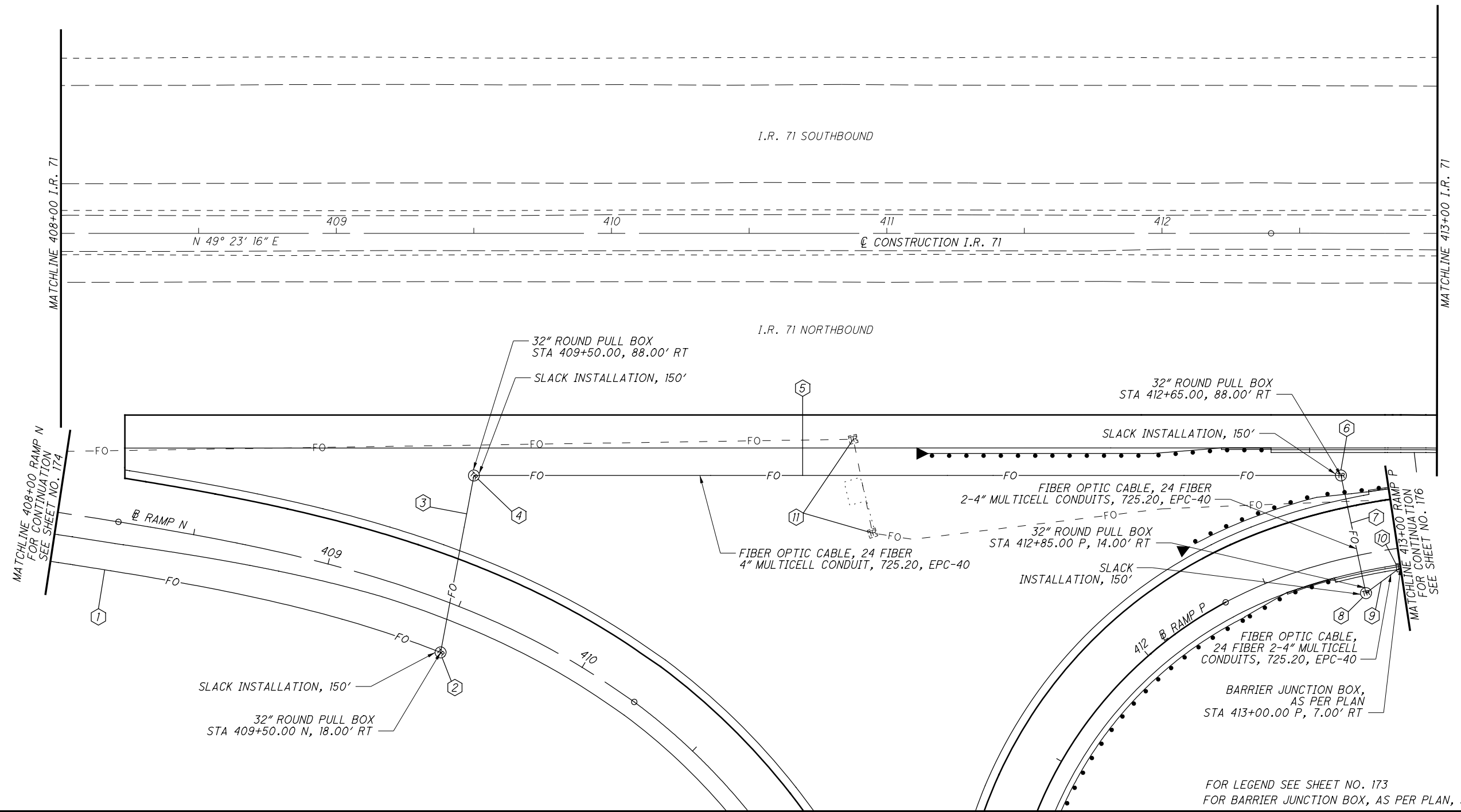
0 20 40
1" = 40'
HORIZONTAL SCALE IN FEET

HAM-71-6.86

ITS PLAN I.R. 71

STA 403+00.00 TO STA 408+00.00

V:\1736\active\173620049\design\94741\trafficsheets\94741_TP003.dgn 9/27/2017 10:42:37 AM pdurham



CALCULATED PJD CHECKED SNS

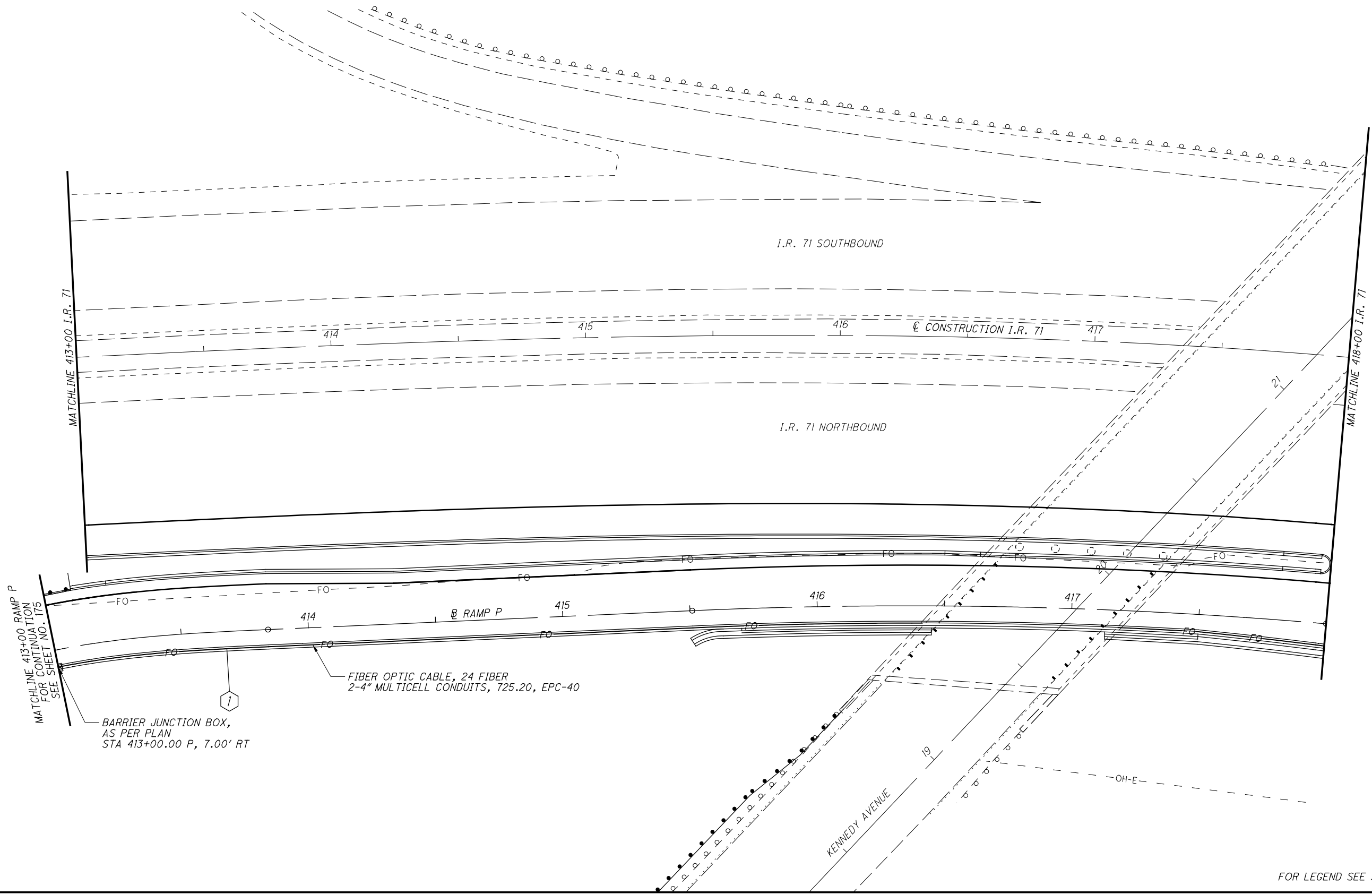
0 20 40
10
HORIZONTAL
SCALE IN FEET

ITS PLAN I.R. 71
STA 408+00.00 TO STA 413+00.00

HAM-71-6.86

175
253

V:\1736\active\173620049\design\94741\traffic\sheets\94741_TP004.dgn 9/27/2017 10:42:38 AM pdurham



MATCHLINE 413+00 RAMP P
 FOR CONTINUATION
 SEE SHEET NO. 175

BARRIER JUNCTION BOX,
 AS PER PLAN
 STA 413+00.00 P, 7.00' RT

FIBER OPTIC CABLE, 24 FIBER
 2-4" MULTICELL CONDUITS, 725.20, EPC-40

I.R. 71 SOUTHBOUND

I.R. 71 NORTHBOUND

CONSTRUCTION I.R. 71

RAMP P

KENNEDY AVENUE

OH-E

MATCHLINE 413+00 I.R. 71

MATCHLINE 418+00 I.R. 71

CALCULATED	
PJD	
CHECKED	SNS

0 20 40
 HORIZONTAL
 SCALE IN FEET

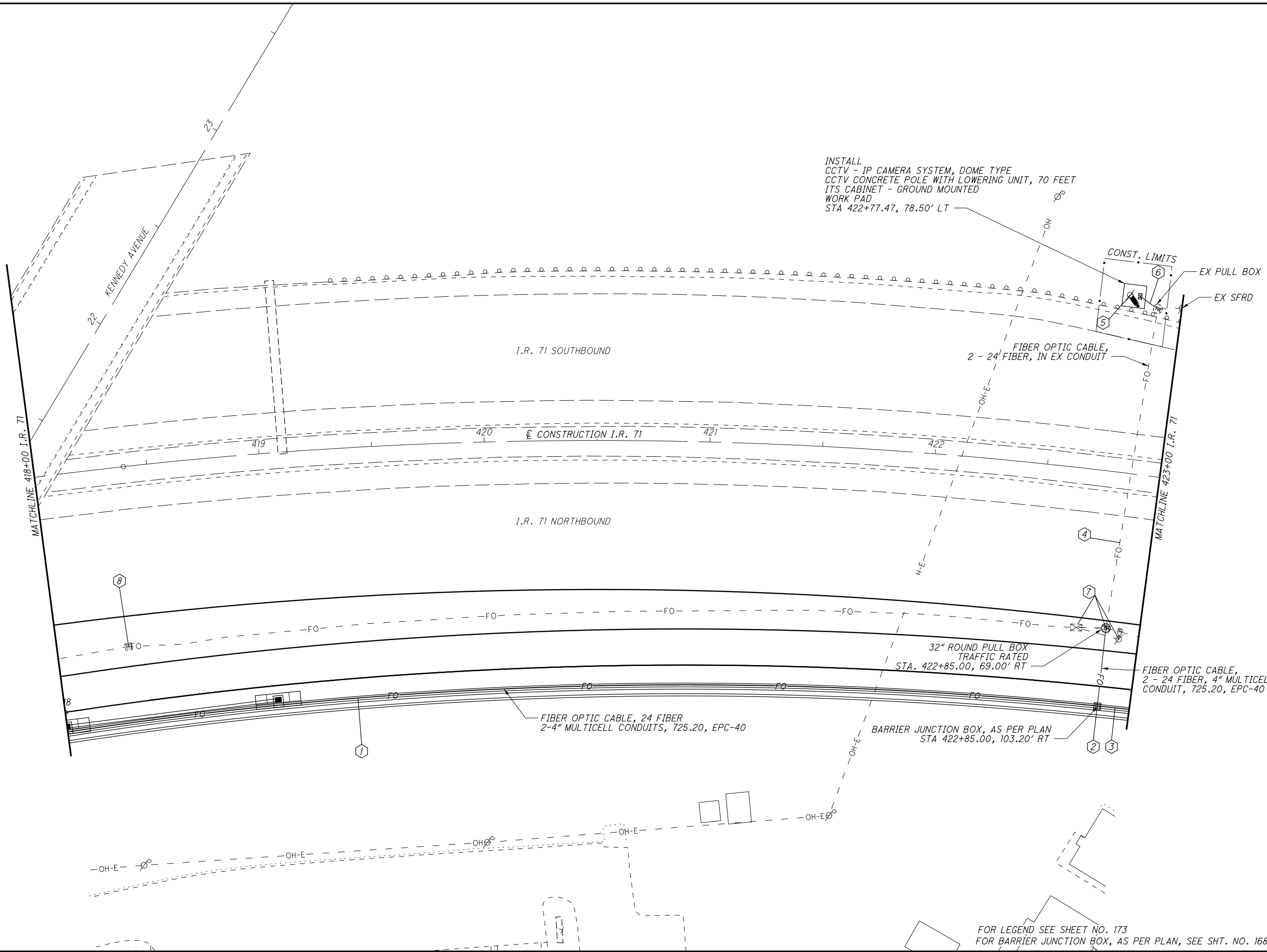
ITS PLAN I.R. 71
 STA 413+00.00 TO STA 418+00.00

HAM-71-6.86

176
 253

FOR LEGEND SEE SHEET NO. 173

V:\1736\active\173620049\design\94741\traffic\sheets\94741_TP005.dgn 9/27/2017 10:42:38 AM pdurham



CALCULATED PJD CHECKED SNS

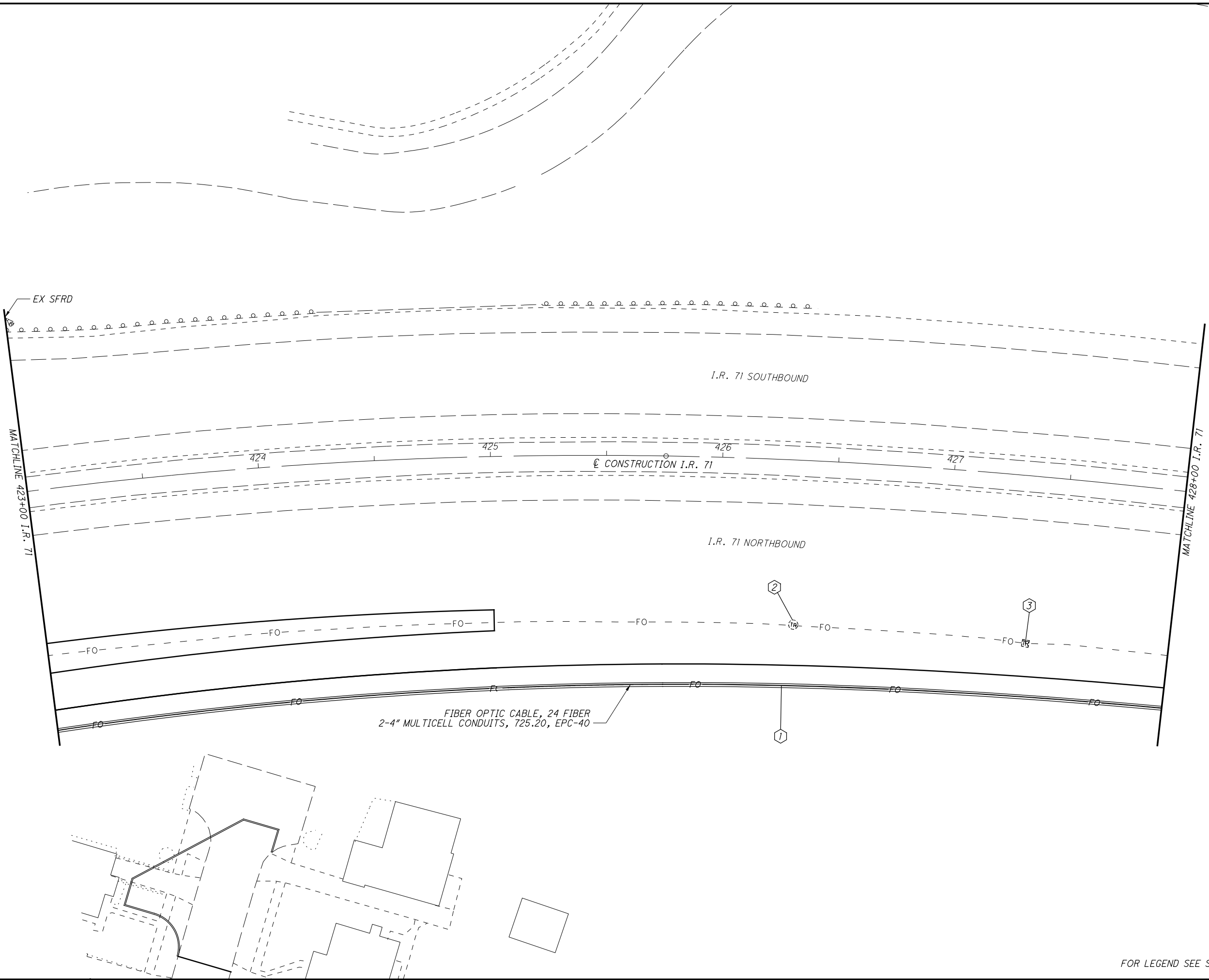
0 20 40
10
HORIZONTAL SCALE IN FEET

ITS PLAN I.R. 71
STA 418+00.00 TO STA 423+00.00

HAM-71-6.86

FOR LEGEND SEE SHEET NO. 173
FOR BARRIER JUNCTION BOX, AS PER PLAN, SEE SHT. NO. 168

V:\1736\active\173620049\design\94741\traffic\sheets\94741_TP006.dgn 9/27/2017 10:42:39 AM pduham



CALCULATED	
PJD	
CHECKED	SNS

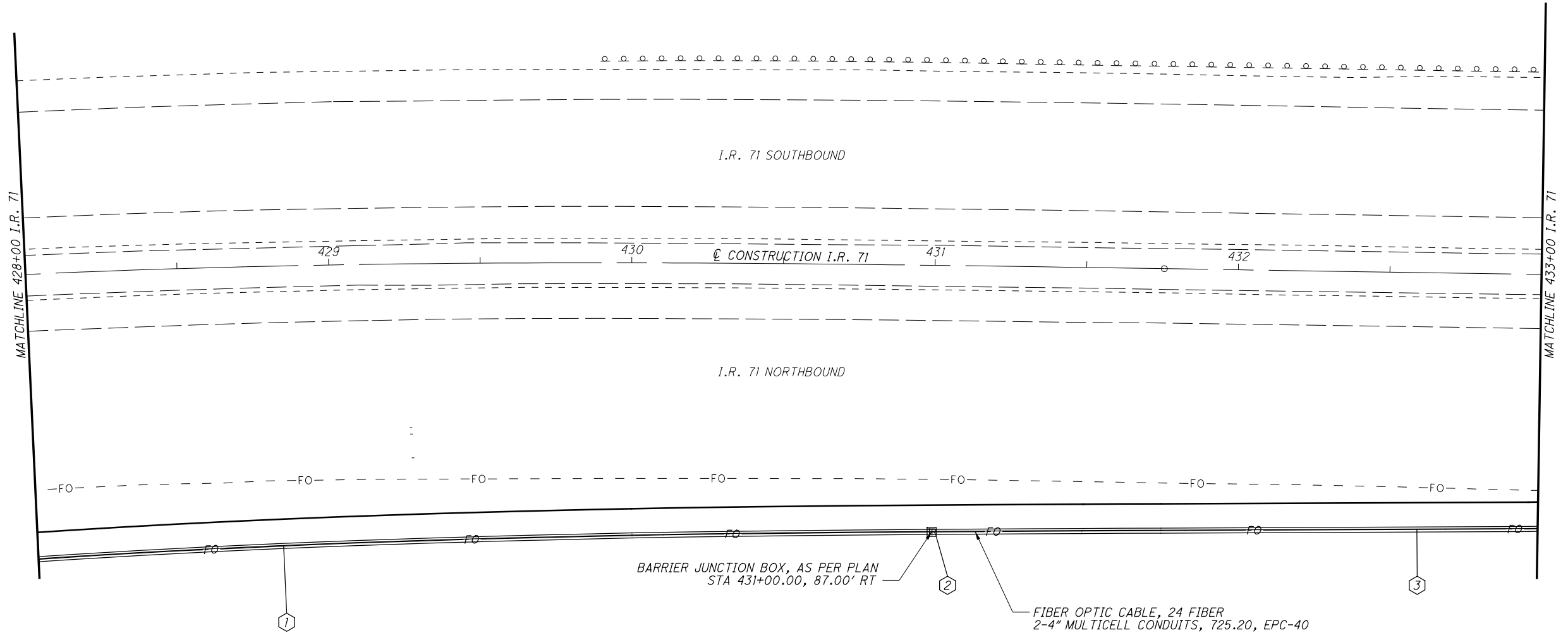
0 20 40
HORIZONTAL SCALE IN FEET

ITS PLAN I.R. 71
STA 423+00.00 TO STA 428+00.00

HAM-71-6.86

FOR LEGEND SEE SHEET NO. 173

V:\1736\active\173620049\design\94741\traffic\sheets\94741_TP007.dgn 9/27/2017 10:42:40 AM pdurham



BARRIER JUNCTION BOX, AS PER PLAN
STA 431+00.00, 87.00' RT

FIBER OPTIC CABLE, 24 FIBER
2-4" MULTICELL CONDUITS, 725.20, EPC-40

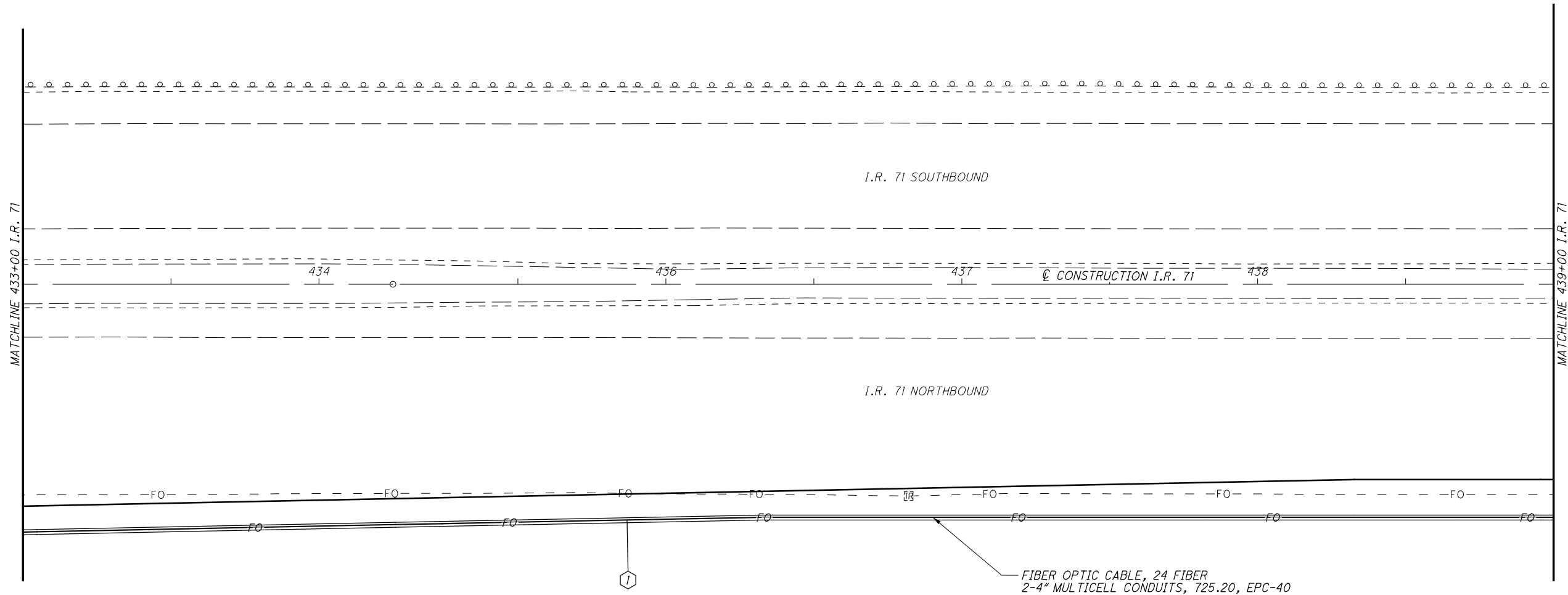
CALCULATED	
PJD	
CHECKED	SNS

0 20 40
HORIZONTAL
SCALE IN FEET

ITS PLAN I.R. 71
STA 428+00.00 TO STA 433+00.00

HAM-71-6.86

FOR LEGEND SEE SHEET NO. 173
FOR BARRIER JUNCTION BOX, AS PER PLAN, SEE SHT. NO. 168



FOR LEGEND SEE SHEET NO. 173

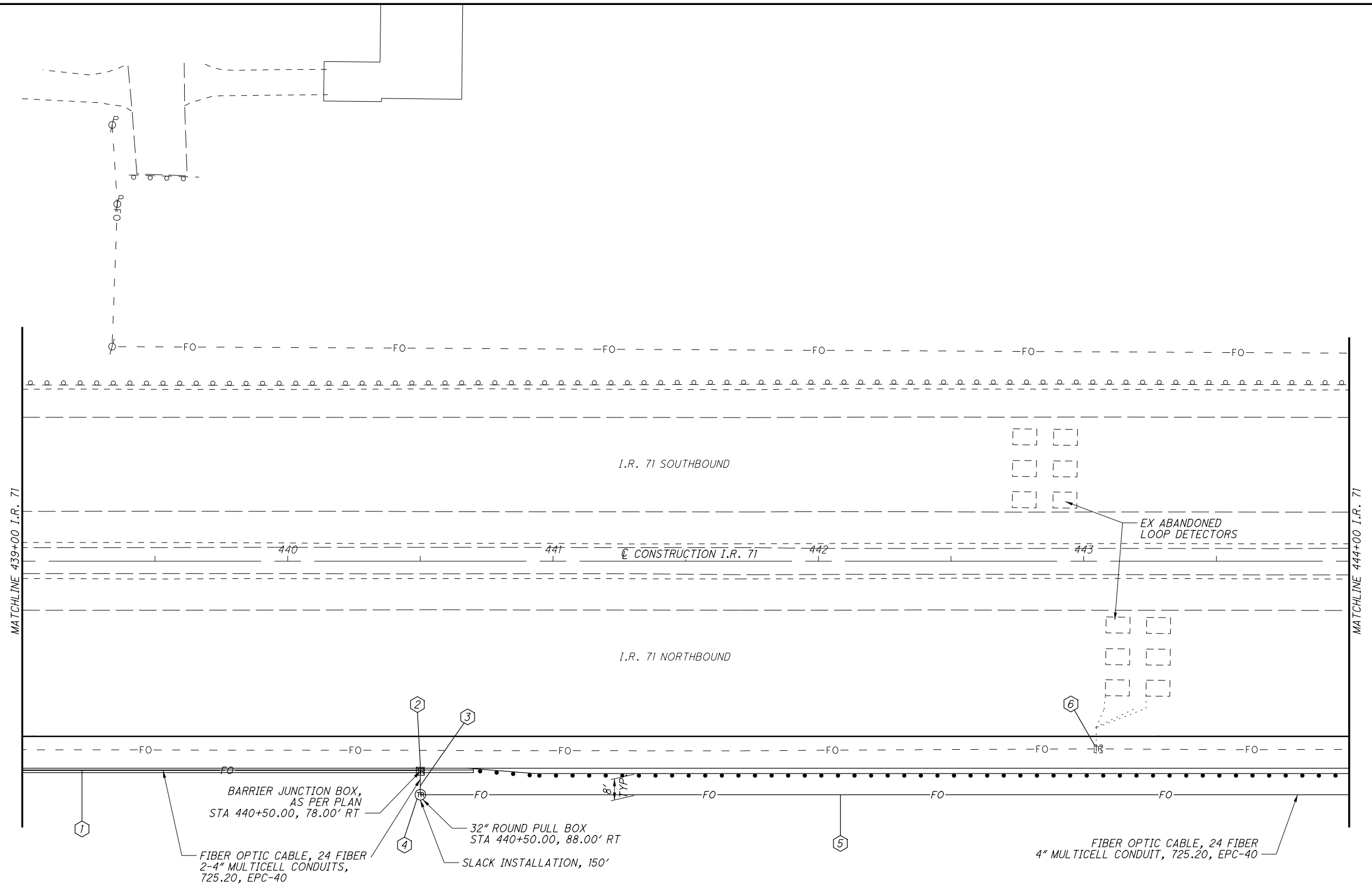
CALCULATED	PJD
CHECKED	SNS

0 20 40
HORIZONTAL
SCALE IN FEET

ITS PLAN I.R. 71
STA 433+00.00 TO STA 439+00.00

HAM-71-6.86

V:\1736\active\173620049\design\94741\traffic\sheets\94741_TP009.dgn 9/27/2017 10:42:40 AM pduurham



BARRIER JUNCTION BOX,
AS PER PLAN
STA 440+50.00, 78.00' RT

32" ROUND PULL BOX
STA 440+50.00, 88.00' RT

FIBER OPTIC CABLE, 24 FIBER
2-4" MULTICELL CONDUITS,
725.20, EPC-40

SLACK INSTALLATION, 150'

FIBER OPTIC CABLE, 24 FIBER
4" MULTICELL CONDUIT, 725.20, EPC-40

CALCULATED
PJD
CHECKED
SNS

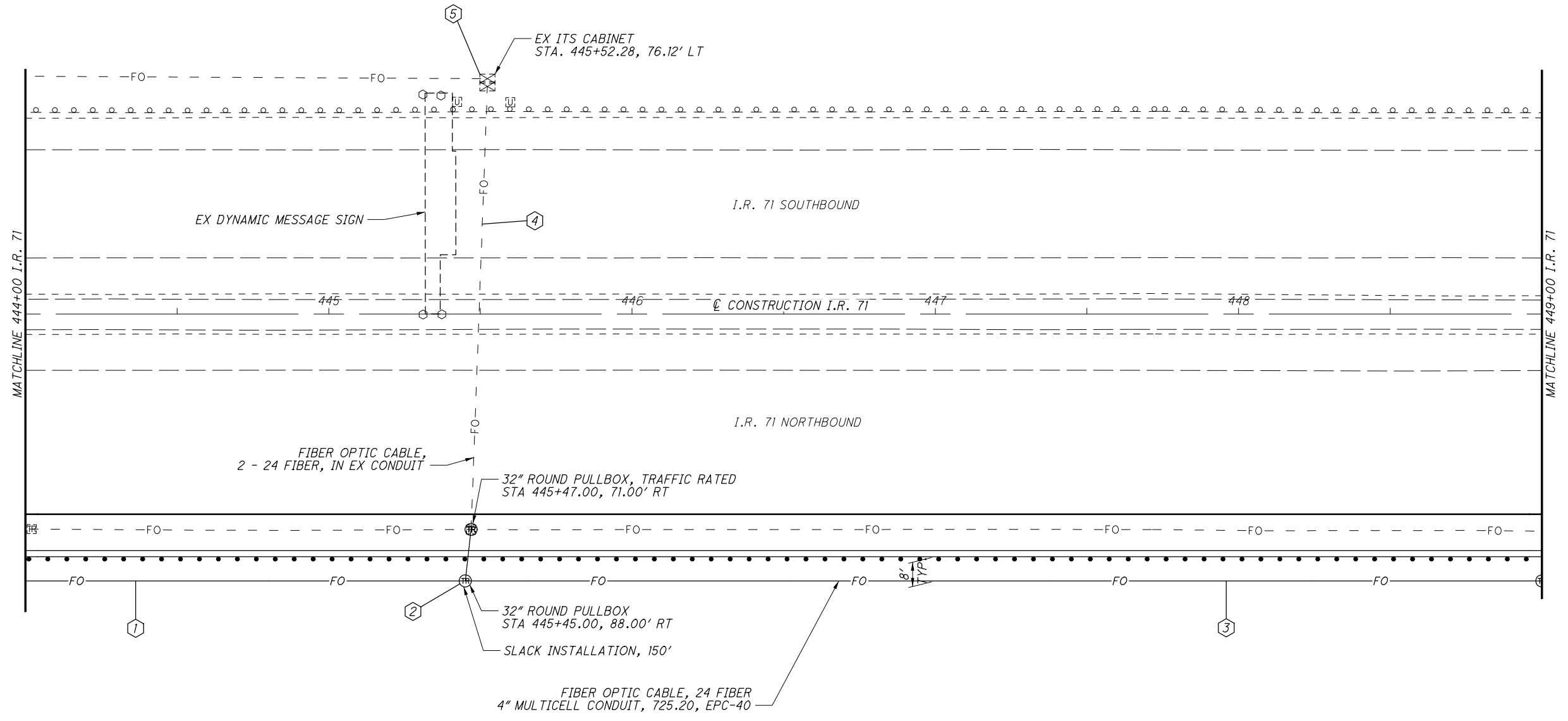
0 20 40
HORIZONTAL
SCALE IN FEET

ITS PLAN I.R. 71
STA 439+00.00 TO STA 444+00.00

HAM-71-6.86

181
253

FOR LEGEND SEE SHEET NO. 173
FOR BARRIER JUNCTION BOX, AS PER PLAN, SEE SHT. NO. 168



CALCULATED
PJD
CHECKED
SNS

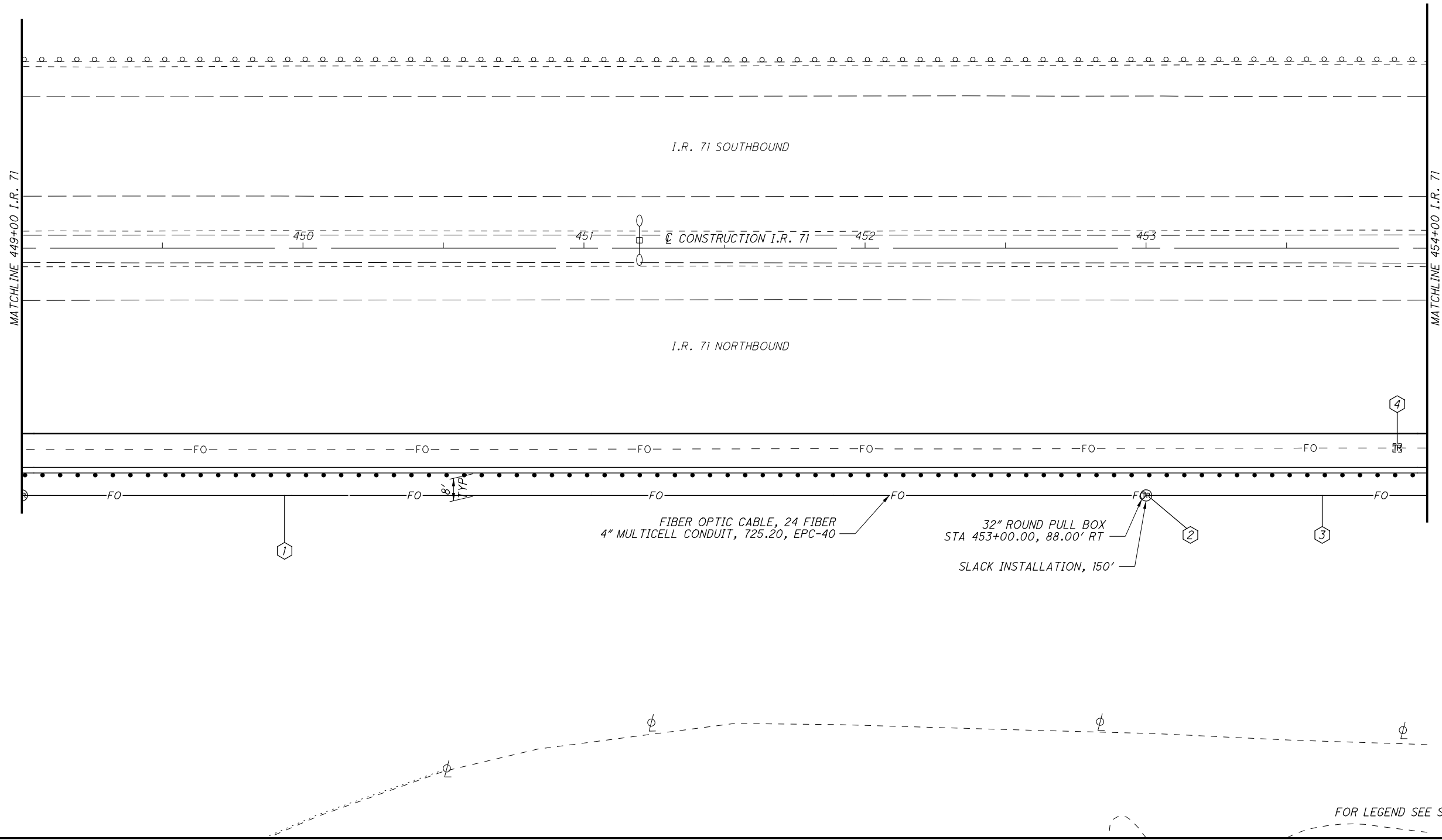
0 20
10
HORIZONTAL
SCALE IN FEET

ITS PLAN I.R. 71
STA 444+00.00 TO STA 449+00.00

HAM-71-6.86

FOR LEGEND SEE SHEET NO. 173

V:\1736\active\173620049\design\94741\traffic\sheets\94741_TP011.dgn 9/27/2017 10:42:41 AM pdurham



FOR LEGEND SEE SHEET NO. 173

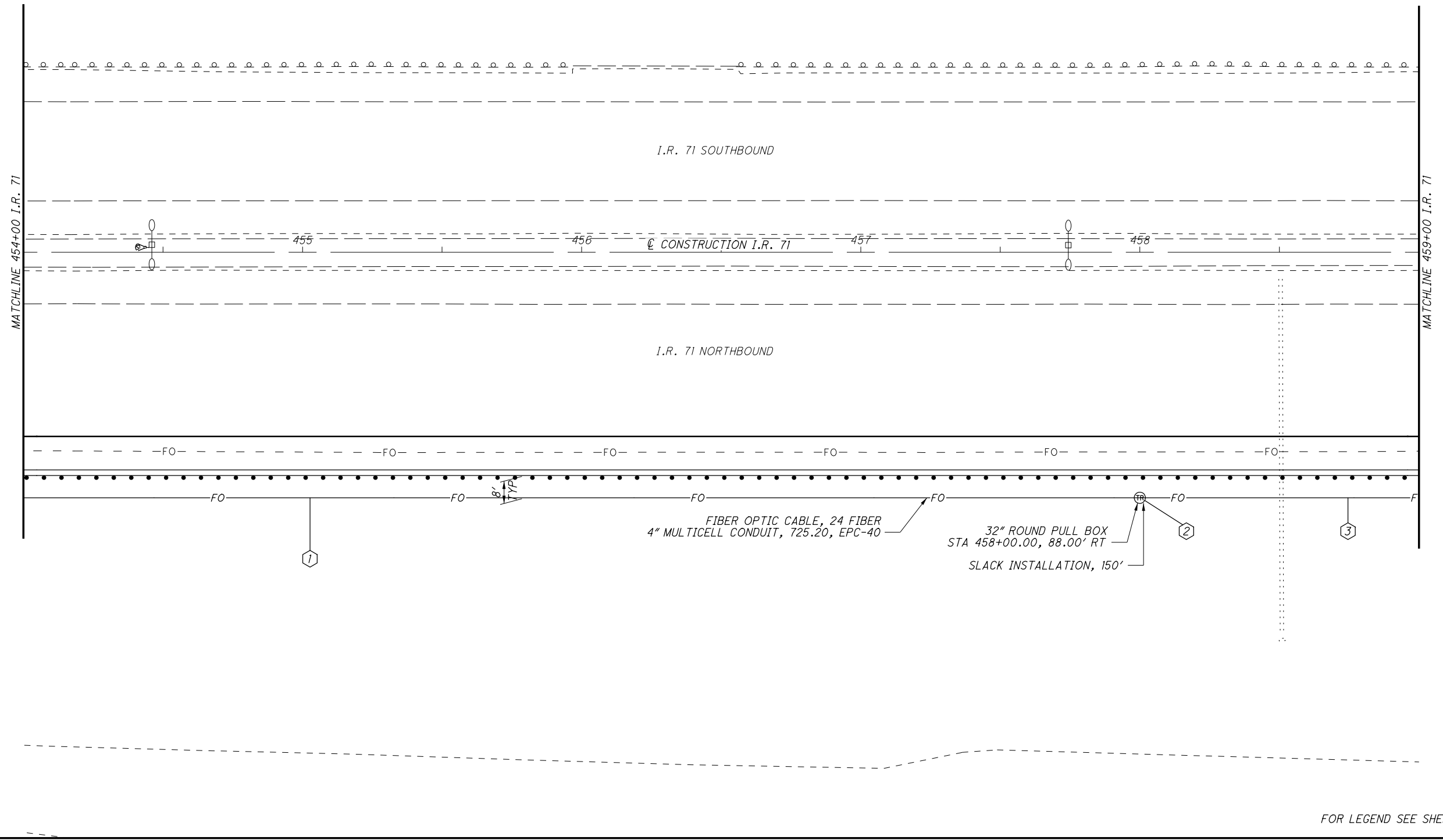
CALCULATED	
PJD	
CHECKED	SNS

0 20 40
HORIZONTAL SCALE IN FEET

ITS PLAN I.R. 71
STA 449+00.00 TO STA 454+00.00

HAM-71-6.86

183
253



CALCULATED
PJD
CHECKED
SNS

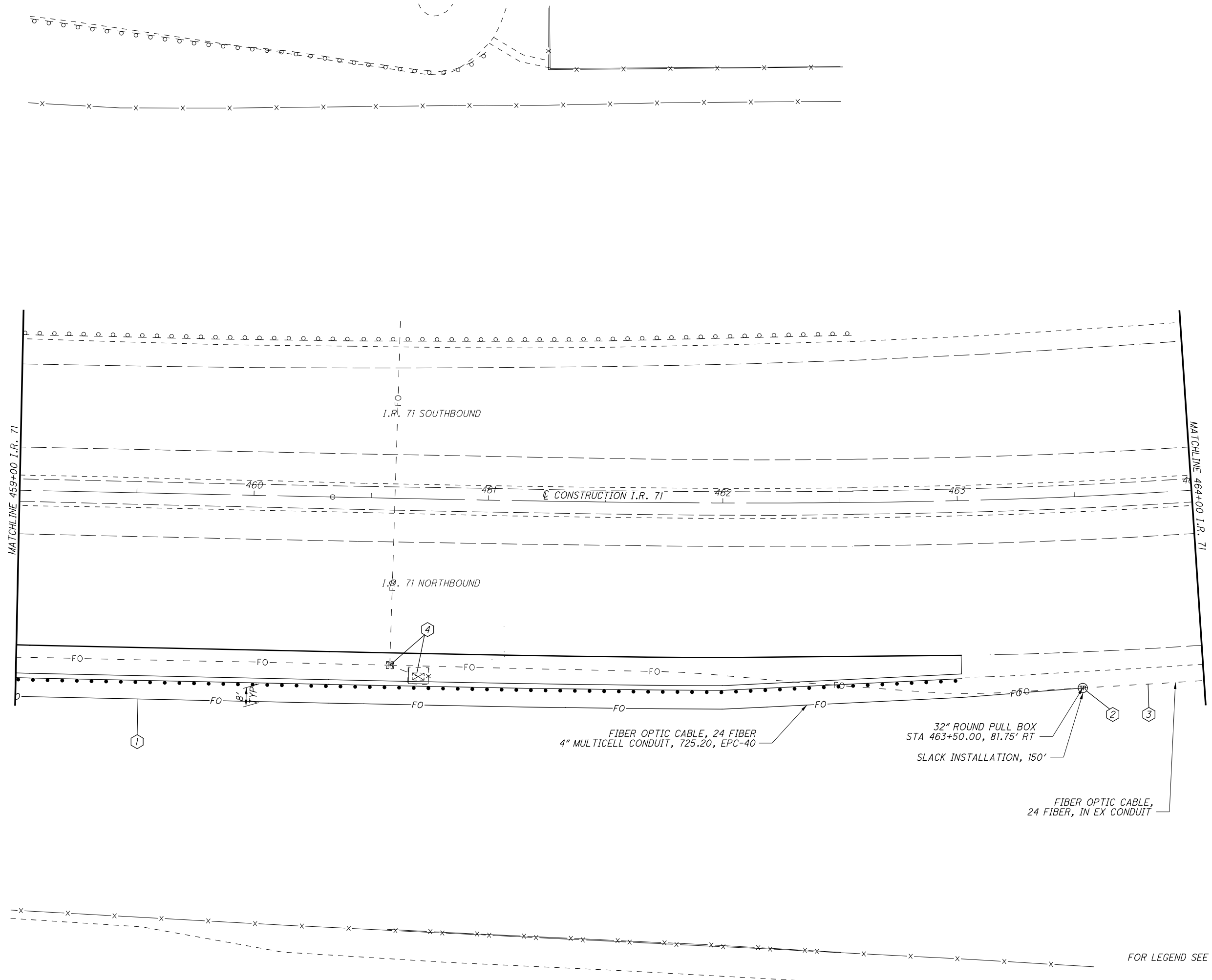
0 20 40
10
HORIZONTAL
SCALE IN FEET

ITS PLAN I.R. 71
STA 454+00.00 TO STA 459+00.00

HAM-71-6.86

FOR LEGEND SEE SHEET NO. 173

V:\1736\active\173620049\design\94741\traffic\sheets\94741_TP013.dgn 9/27/2017 10:42:42 AM pdurham



CALCULATED	
PJD	
CHECKED	SNS

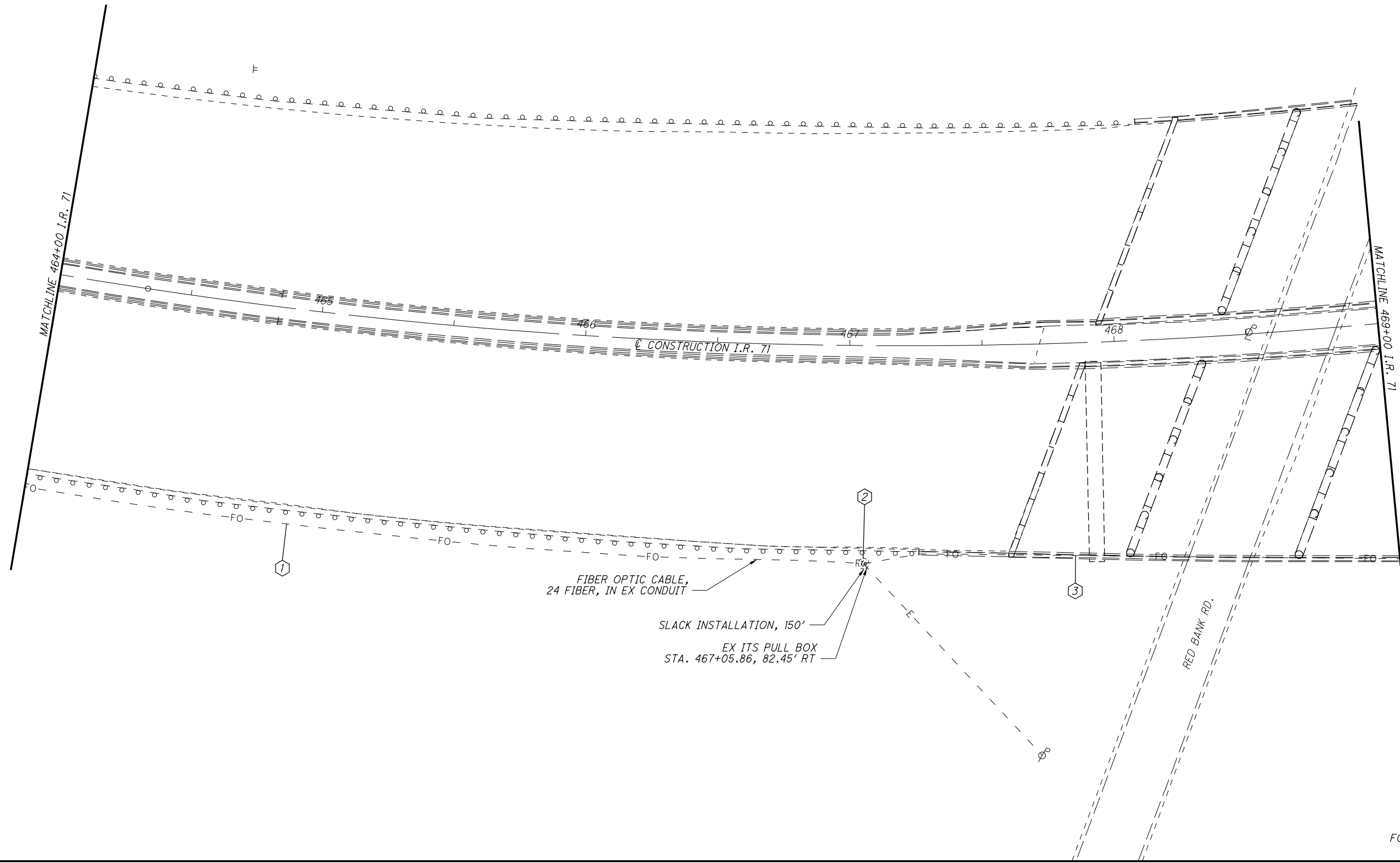
ITS PLAN I.R. 71
 STA 459+00.00 TO STA 464+00.00

HAM-71-6.86

185
253

FOR LEGEND SEE SHEET NO. 173

V:\1736\active\173620049\design\94741\traffic\sheets\94741_TP021.dgn 9/27/2017 10:42:43 AM pdurham



FOR LEGEND SEE SHEET NO. 173

CALCULATED	
PJD	
CHECKED	SNS

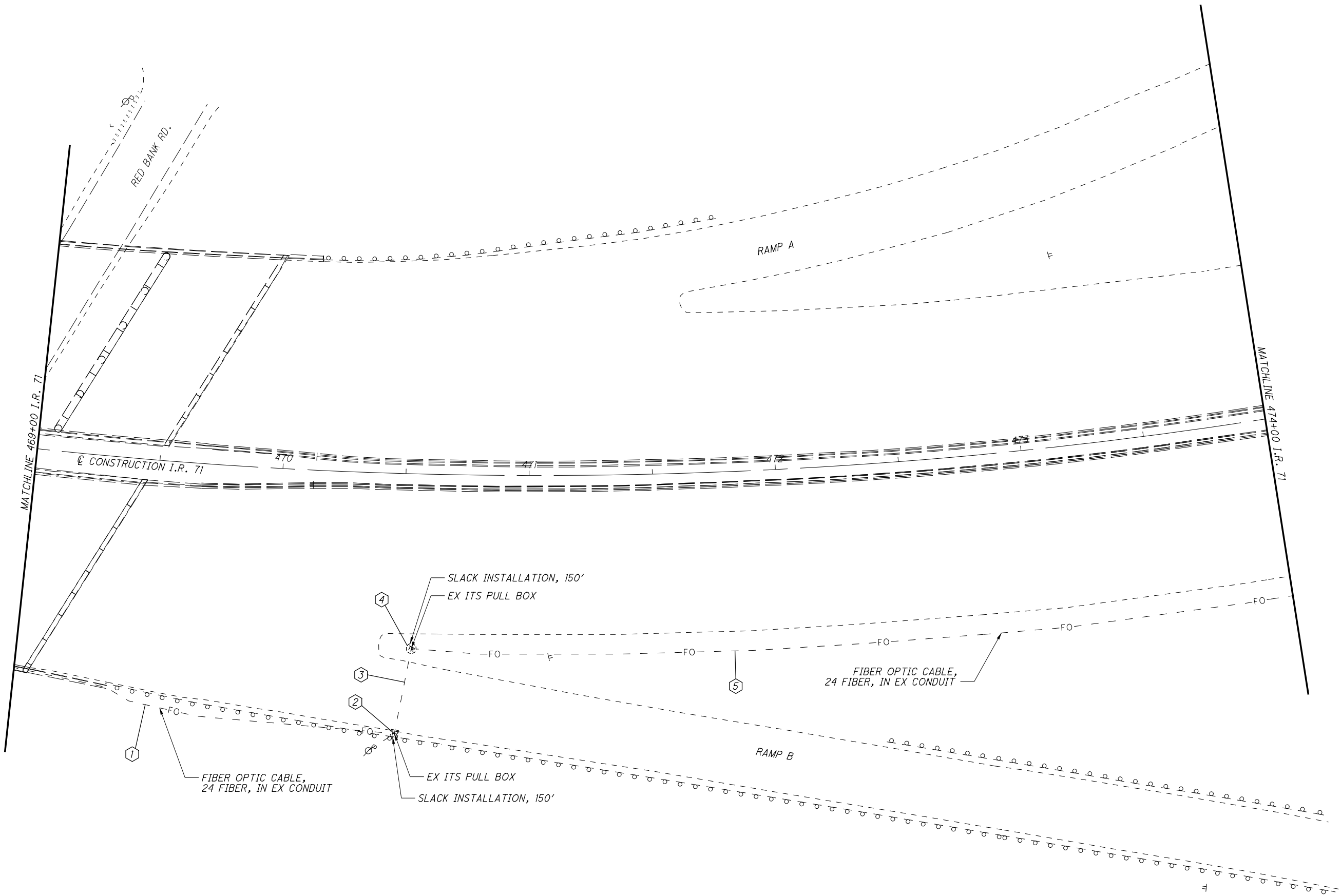
0 10 20 40
HORIZONTAL SCALE IN FEET

ITS PLAN I.R. 71
STA 459+00.00 TO STA 464+00.00

HAM-71-6.86

186
253

V:\1736\active\173620049\design\94741\traffic\sheets\94741_TP022.dgn 9/27/2017 10:42:43 AM pdurham



CALCULATED PJD CHECKED SNS

0 20 40

HORIZONTAL SCALE IN FEET

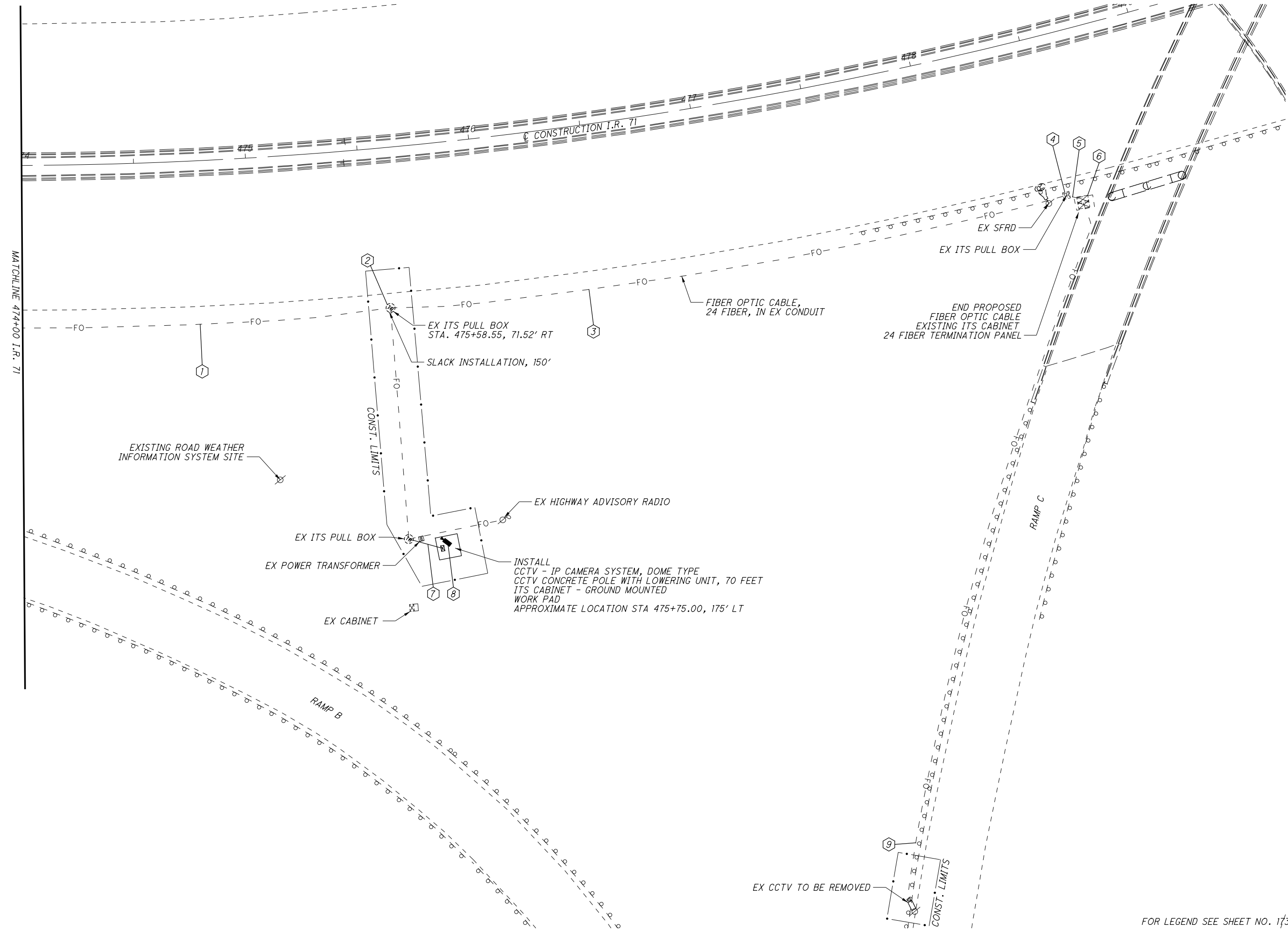
HAM-71-6.86

ITS PLAN I.R. 71

STA 469+00.00 TO STA 474+00.00

FOR LEGEND SEE SHEET NO. 173

V:\1736\active\173620049\design\94741\traffic\sheets\94741_TP023.dgn 9/27/2017 10:42:44 AM pdurham



CALCULATED
PJD
CHECKED
SNS

10
HORIZONTAL
SCALE IN FEET

ITS PLAN I.R. 71
STA 474+00.00 TO END

HAM-71-6.86

188
253

FOR LEGEND SEE SHEET NO. 173

GROUND MOUNTED AND OVERHEAD SIGNING SUBSUMMARY

REFERENCE NO.	SHEET NO.	LOCATION	STATION	SIDE	CODE	SIZE (INCHES)	625			630							631					
							LIGHT POLE, MISC.: PREPARE TO STOP WHEN FLASHING SUPPORT	LIGHT POLE FOUNDATION, 24"x6" DEEP	GROUND ROD	GROUND MOUNTED SUPPORT, NO. 3 POST	OVERHEAD SIGN SUPPORT, TYPE TC-7.65, DESIGN 8	SIGN, FLAT SHEET	SIGN, OVERHEAD EXTRUSHEET	RIGID OVERHEAD SIGN SUPPORT FOUNDATION	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TYPE TC-7.65	SIGN FLASHER ASSEMBLY	REMOVAL OF SIGN SERVICE	REMOVAL MISC.: SIGN FLASHER ASSEMBLY	
							EACH	EACH	EACH	FOOT	EACH	SQ FT	SQ FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	
S-1	192	KENNEDY AVE	12+75	RT	R3-H8BM-36	36x30				13.2		7.5										
S-2	192	KENNEDY AVE	12+82	RT											1	1						
S-3	192	KENNEDY AVE	15+00	RT	R2-1-30	30x36				13.7		7.5										
S-4	192	KENNEDY AVE	15+50	LT	R3-H8BK-36	36x30				13.2		7.5										
S-5	193	RAMP T	48+50	RT	M2-H10-66	66x36						16.5					1					
S-6	194	RIDGE AVE	24+29	RT											1	1						
S-7	194	RIDGE AVE	26+20	RT											1	1						
S-8	194	RIDGE AVE	26+84	LT											2							
S-9	194	RIDGE AVE	26+79	LT	W3-H4A-48	48x48	1	1	1			16							1			
S-10	194	RIDGE AVE	27+50	RT	W8-13-36	36x36				15.0		9										
S-11	194	RIDGE AVE	27+67	RT											1	1						
S-12	194	RIDGE AVE	25+60	LT/RT		108x96 144x60								1		72 60	2					
S-13	194	RIDGE AVE	25+82	LT/RT														2	1			1 1
TOTALS CARRIED TO GENERAL SUMMARY							1	1	3	55.1	1	64	132	2	6	4	3	1		1	1	1

PAVEMENT MARKING SUBSUMMARY

REFERENCE NO.	SHEET NO.	LOCATION	STATION		SIDE	621			644					646						
			FROM	TO		RPM (YELLOW/RED)	RMP (WHITE/RED)	RPM (WHITE)	LANE LINE, 4"	CHANNELIZING LINE, 8"	STOP LINE	DOTTED LINE, 4"	REMOVAL OF PAVEMENT MARKING	EDGE LINE, 6" (WHITE)	EDGE LINE, 6" (YELLOW)	STOP LINE	WRONG WAY ARROW	YIELD LINE		
						EACH	EACH	EACH	MILE	FOOT	FOOT	FOOT	FOOT		MILE	MILE	FOOT	EACH	FOOT	
EW-1	190,192	RAMP N	408+22.30	12+77.75 KENNEDY	RT										0.13					
EY-1	190,192	RAMP N	408+22.30	414+03.00	LT	9										0.11				
SL-1	192	RAMP N	413+98.00		LT/RT												21			
WW-1	192	RAMP N	411+68.00		LT													1		
WW-2	192	RAMP N	413+68.00		LT													1		
EW-2	190-192	RAMP P	15+32.00 KENNEDY	418+00.00	RT										0.20					
EY-2	190-192	RAMP P	408+37.00	418+00.00	LT	13										0.19				
DL-1	192	RAMP P	13+05.00 KENNEDY	408+42.00	LT						99									
YL-1	192	RAMP P	408+92.00		LT															20
SL-2	192	KENNEDY AVENUE	13+00.00		LT/RT						24									
SL-3	192	KENNEDY AVENUE	14+10.00		LT						26									
	192	KENNEDY AVENUE	12+55.00	14+10.00	LT/RT								332							
LL-1	193	RIDGE AVENUE	21+87.00	28+70.00	RT			9	0.13											
CH-1	193-194	RIDGE AVENUE	21+79.00	23+53.00	RT		5			175										
TOTALS CARRIED TO GENERAL SUMMARY						36			0.13	175	50	99	332		0.63	21	2	20		

CALCULATED PJD CHECKED SNS
TRAFFIC CONTROL QUANTITIES
HAM-71-6.86
 189
 253

NOTE: ALL SIGNING TO BE PERFORMED WITH PART I (PID 91826)
 NOTE: ALL PAVEMENT MARKING ON I-71 TO BE PERFORMED WITH PART I (PID 91826)

PAVEMENT MARKING LEGEND

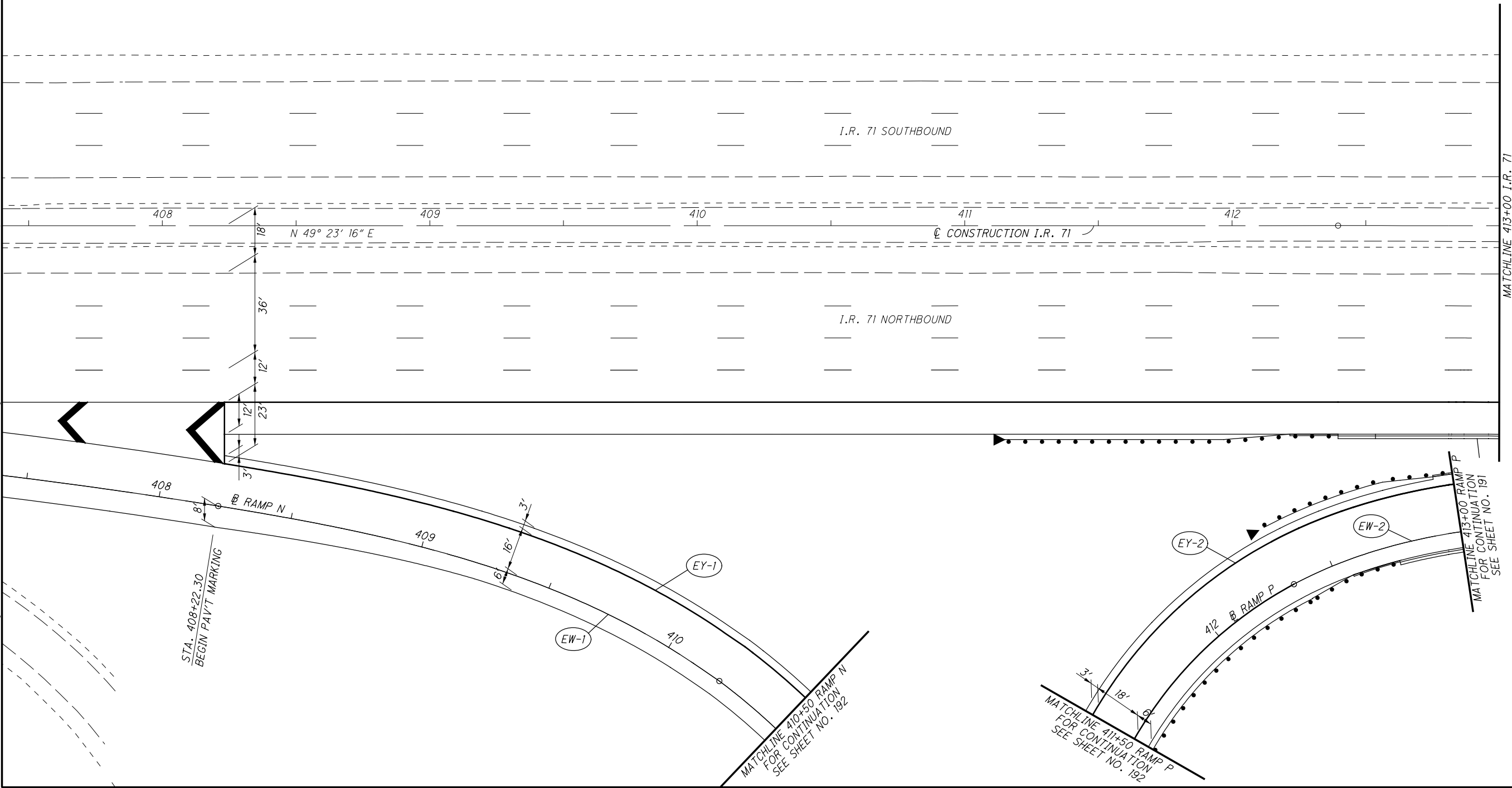
ALL PAVEMENT MARKING IS
 ITEM 646 EPOXY PAVEMENT MARKING
 UNLESS OTHERWISE INDICATED

- | | | | |
|------|------------------------|-------|---|
| (CH) | CHANNELIZING LINE, 8" | (LL) | LANE LINE, 4" |
| (DL) | DOTTED LINE, 6" | (SL) | STOP LINE |
| (EW) | EDGE LINE (WHITE), 6" | (YL) | YIELD LINE |
| (EY) | EDGE LINE (YELLOW), 6" | (*) | ITEM 644 THERMOPLASTIC PAVEMENT MARKING |
| (WW) | WRONG WAY ARROW | (-X-) | PAVEMENT MARKING REMOVED |

SIGNING LEGEND

- | | |
|--|-----------------------------|
| | EXISTING SIGN TO BE REMOVED |
| | EXISTING SIGN TO REMAIN |
| | PROPOSED SIGN |

V:\1736\active\173620049\design\94741\traffic\sheets\94741_TP100.dgn 9/27/2017 10:42:45 AM pduham

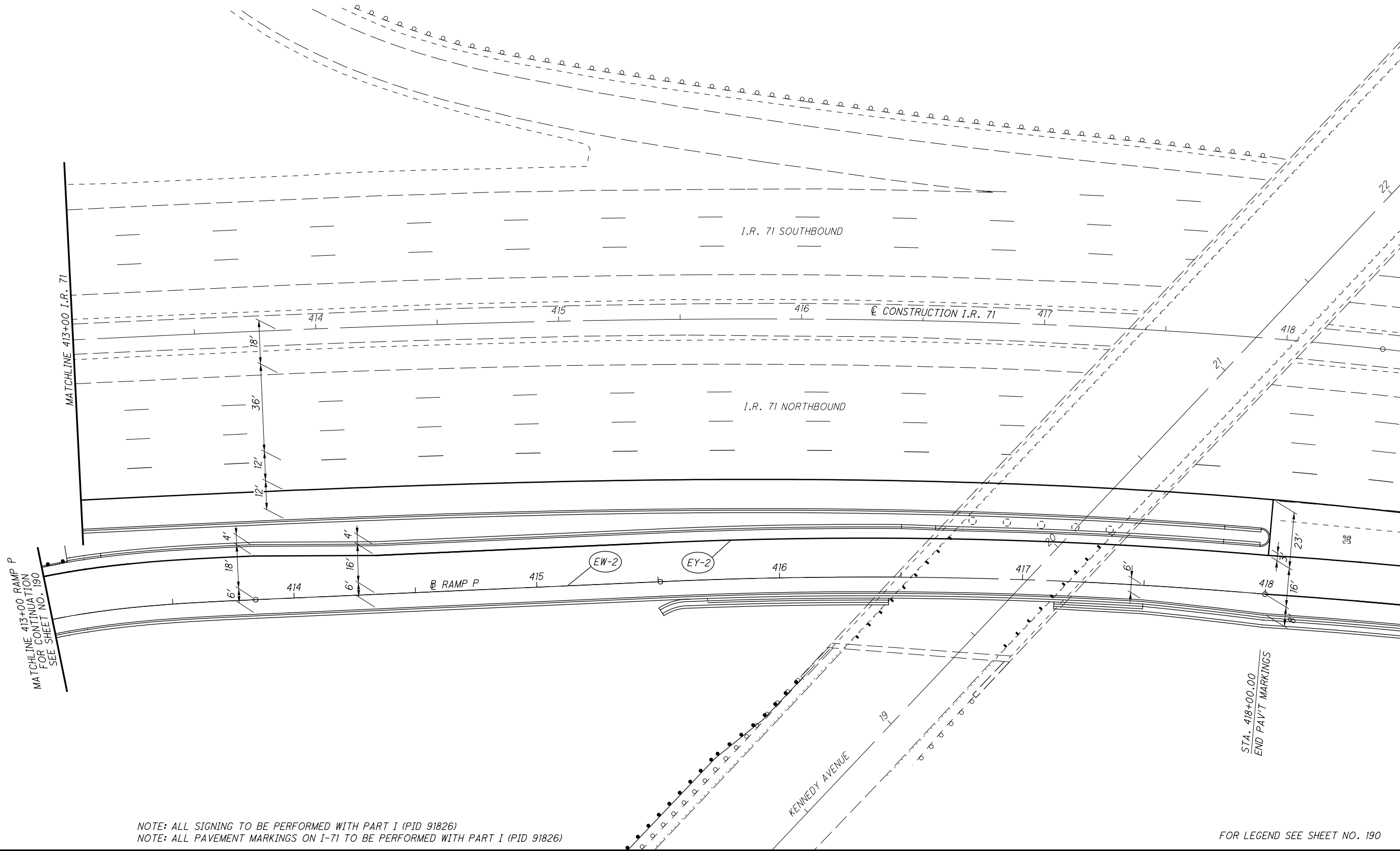


CALCULATED PJD CHECKED SNS
 0 20 40
 HORIZONTAL SCALE IN FEET

TRAFFIC CONTROL PLAN I.R. 71
 STA 408+00.00 TO STA 413+00.00

HAM-71-6.86

V:\1736\active\173620049\design\94741\traffic\sheets\94741_TPI01.dgn 9/27/2017 10:42:45 AM pdurnham



NOTE: ALL SIGNING TO BE PERFORMED WITH PART I (PID 91826)
NOTE: ALL PAVEMENT MARKINGS ON I-71 TO BE PERFORMED WITH PART I (PID 91826)

FOR LEGEND SEE SHEET NO. 190

CALCULATED	PJD	CHECKED	SNS

0 10 20 40
HORIZONTAL SCALE IN FEET

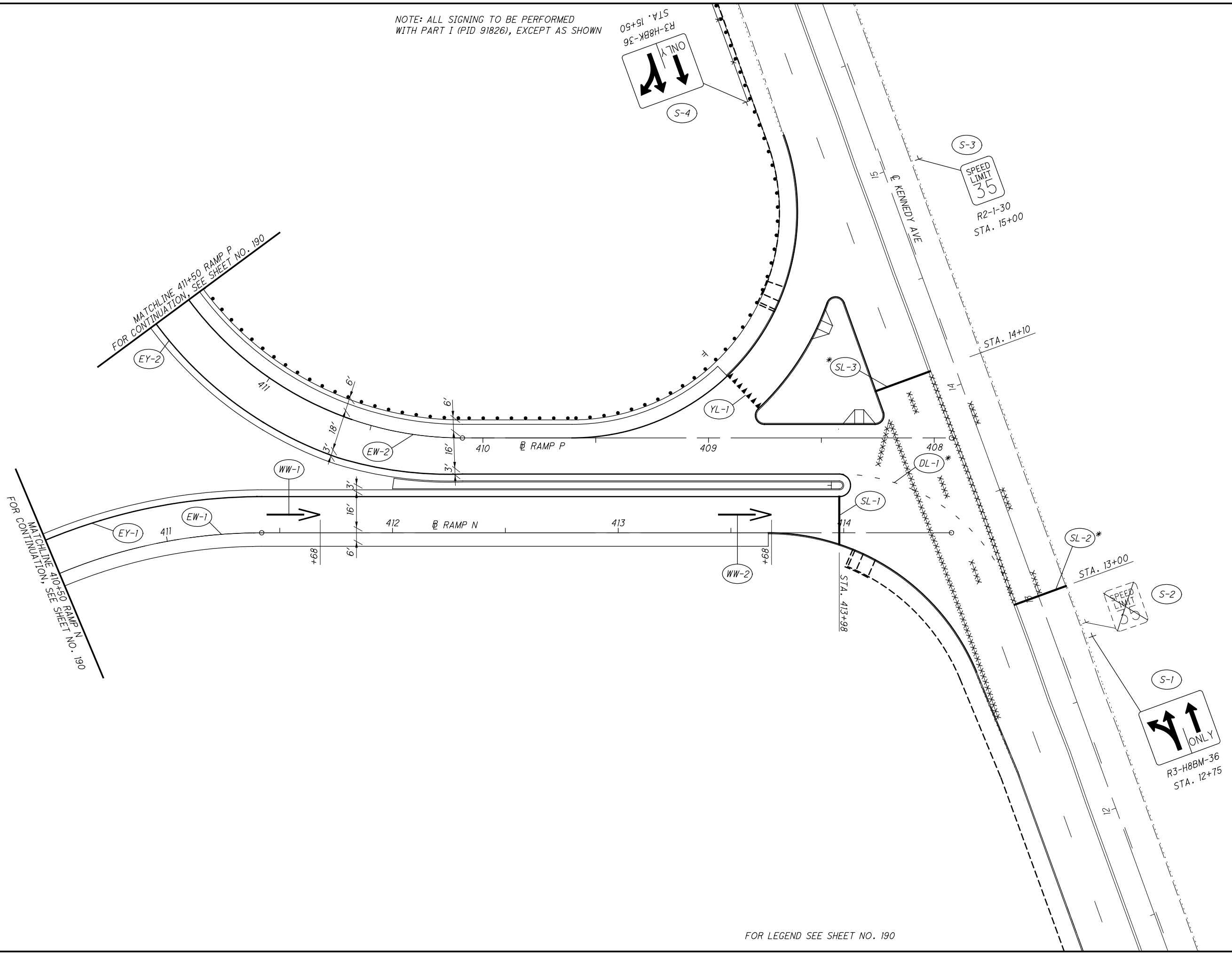
TRAFFIC CONTROL PLAN I.R. 71
STA 413+00.00 TO STA 418+00.00

HAM-71-6.86

191
253

V:\1736\active\173620049\design\94741\traffic\sheets\94741_TPI02.dgn 9/27/2017 10:42:46 AM pduham

NOTE: ALL SIGNING TO BE PERFORMED WITH PART 1 (PID 91826), EXCEPT AS SHOWN



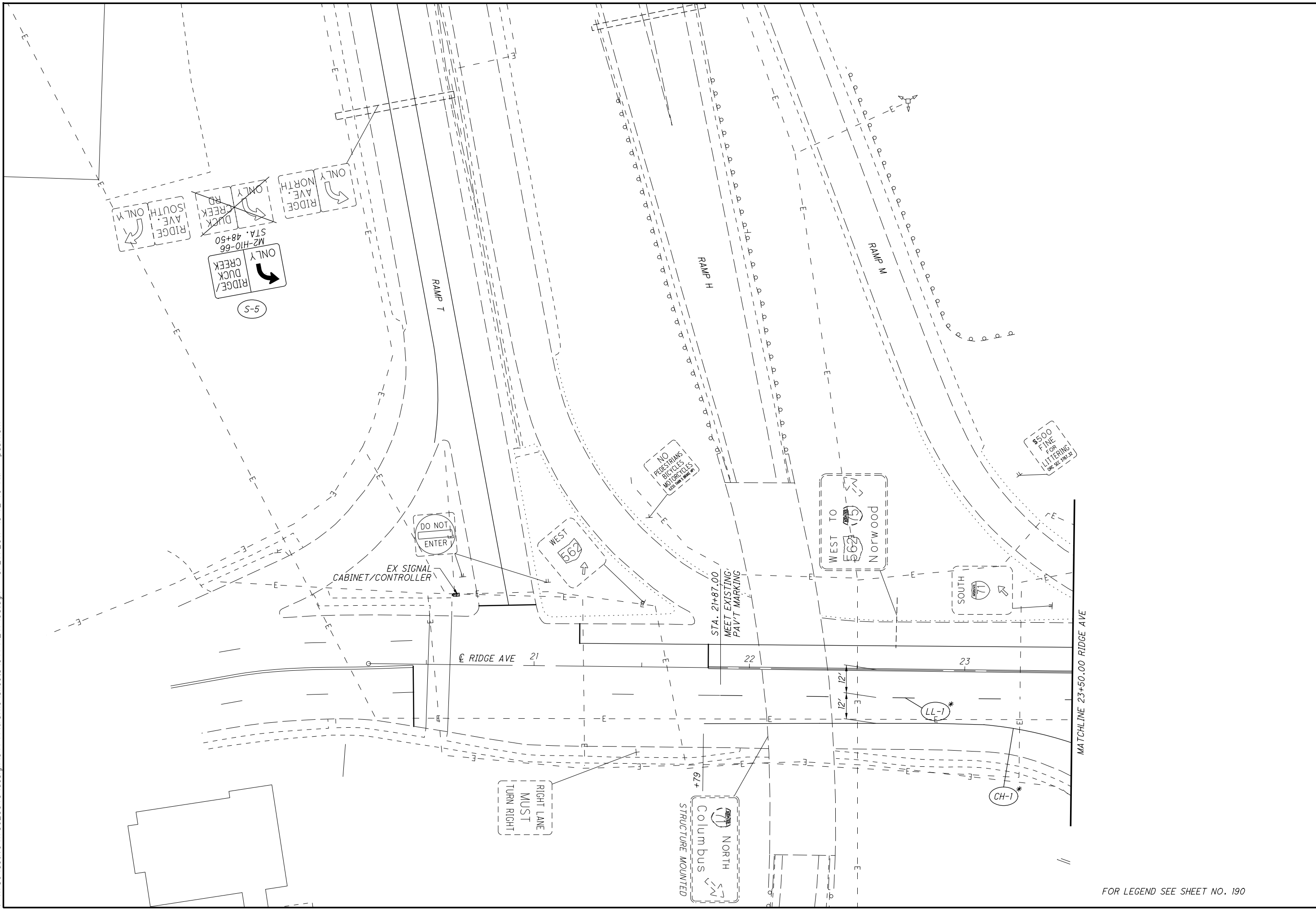
CALCULATED
PJD
CHECKED
SNS

0 20 40
HORIZONTAL
SCALE IN FEET

TRAFFIC CONTROL PLAN
RAMP N, RAMP P & KENNEDY AVE

HAM-71-6.86

FOR LEGEND SEE SHEET NO. 190



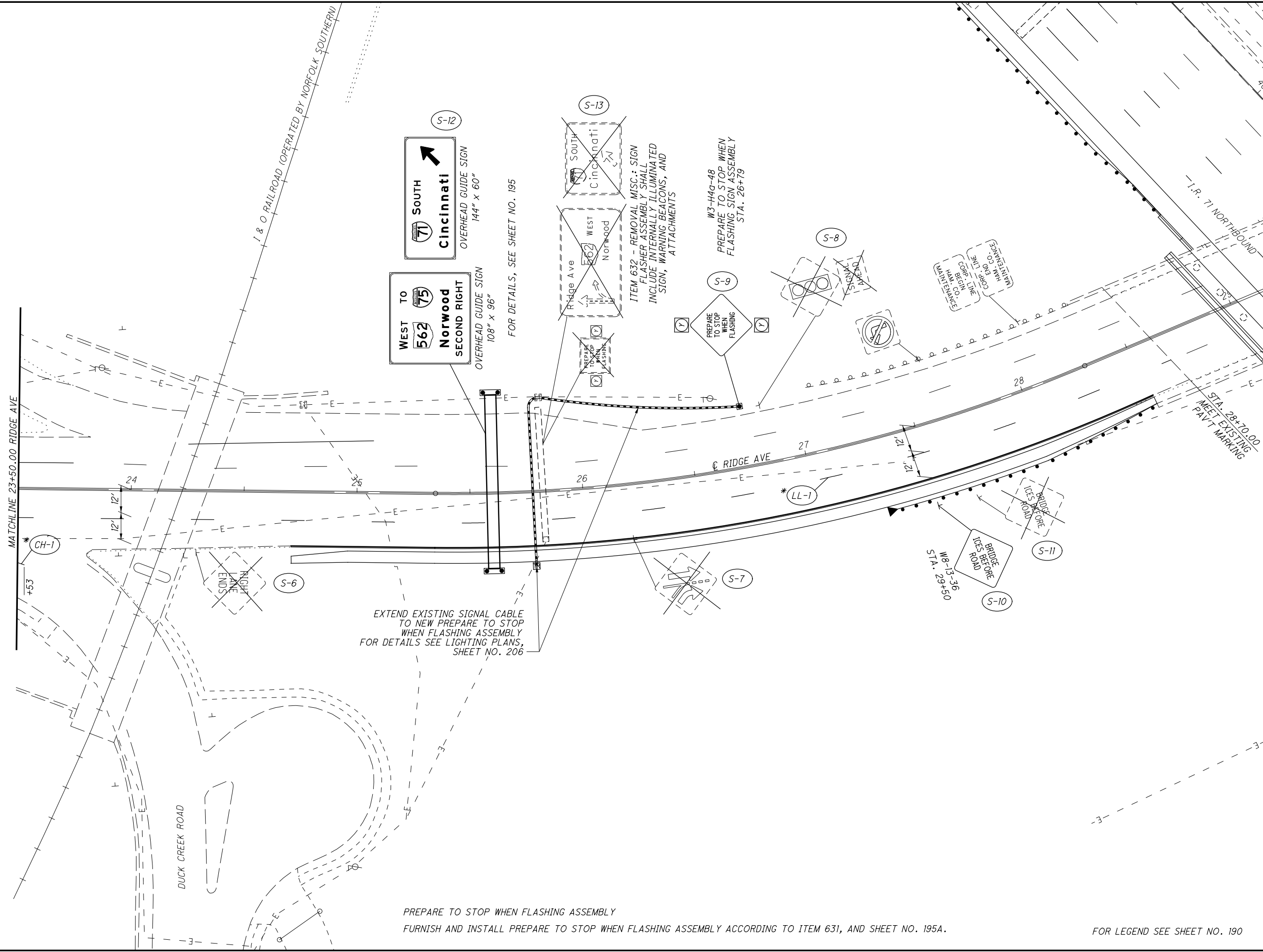
CALCULATED PJD CHECKED SNS

0 20 40
10
HORIZONTAL SCALE IN FEET

**TRAFFIC CONTROL PLAN RIDGE AVE
STA 20+23.13 TO STA 23+50.00**

HAM-71-6.86

FOR LEGEND SEE SHEET NO. 190



EXTEND EXISTING SIGNAL CABLE TO NEW PREPARE TO STOP WHEN FLASHING ASSEMBLY FOR DETAILS SEE LIGHTING PLANS, SHEET NO. 206

FOR DETAILS, SEE SHEET NO. 195

PREPARE TO STOP WHEN FLASHING ASSEMBLY FURNISH AND INSTALL PREPARE TO STOP WHEN FLASHING ASSEMBLY ACCORDING TO ITEM 631, AND SHEET NO. 195A.

FOR LEGEND SEE SHEET NO. 190

CALCULATED PJD CHECKED SNS

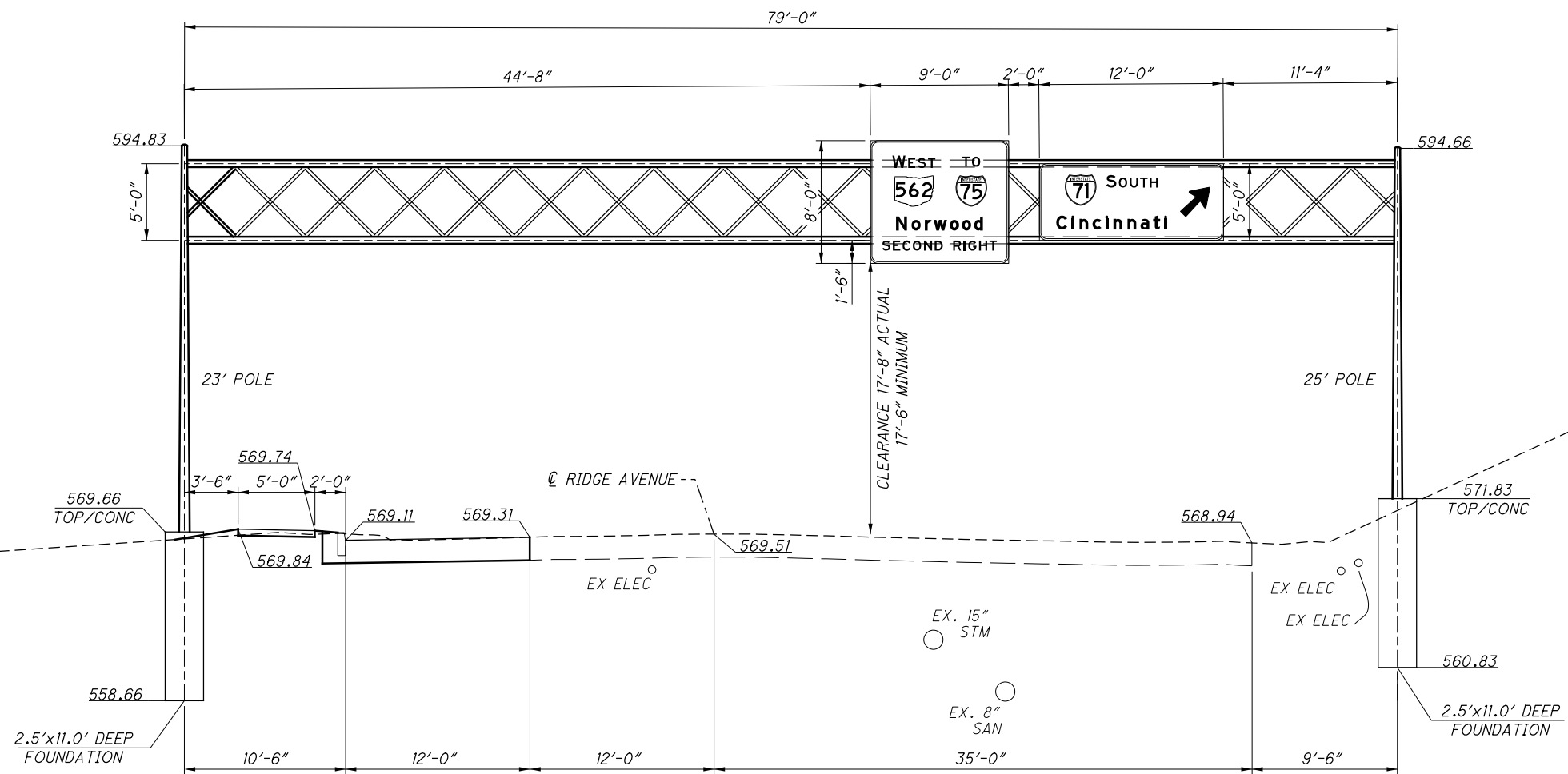
0 20 40

10 HORIZONTAL SCALE IN FEET

TRAFFIC CONTROL PLAN RIDGE AVE STA 412+00.00 TO STA 417+00.00

HAM-71-6.86

V:\1736\active\173620049\design\94741\traffic\sheets\94741_TE100.dgn 9/27/2017 10:42:48 AM pdurom



SIGN NO. S-11
 STA. 25+60.00 RIDGE AVE
 TC-7.65 DESIGN 8, 23' & 25' POLES, 79' SPAN

CALCULATED
PJD
CHECKED
SNS

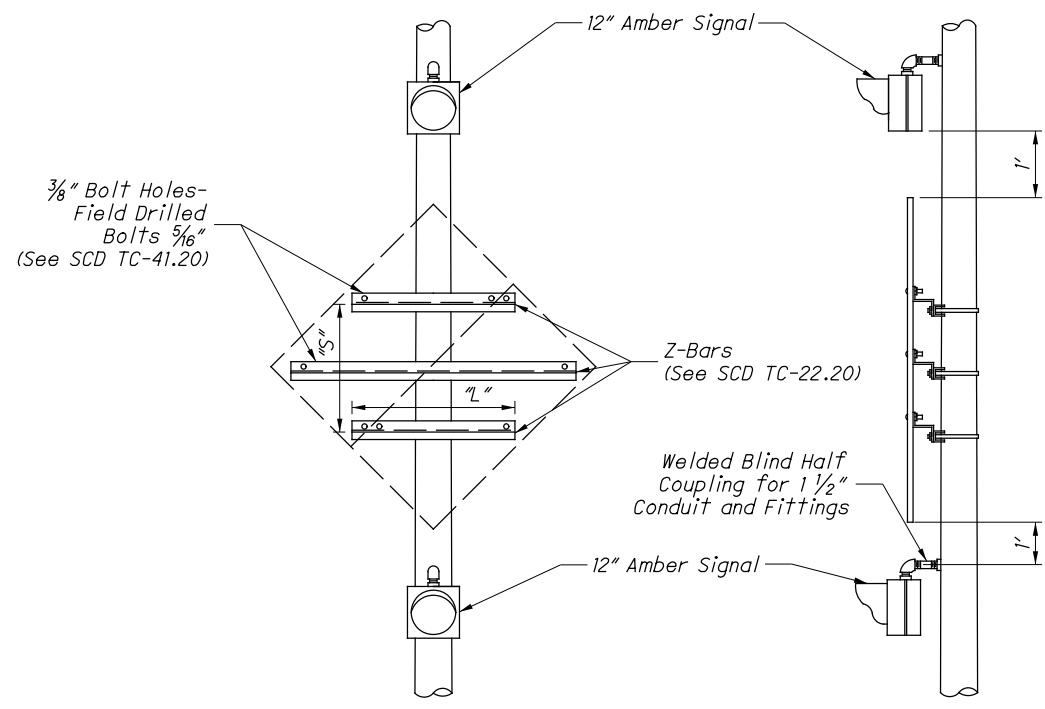
SIGN ELEVATION STA. 25+60.00 RIDGE AVE

HAM-71-6.86

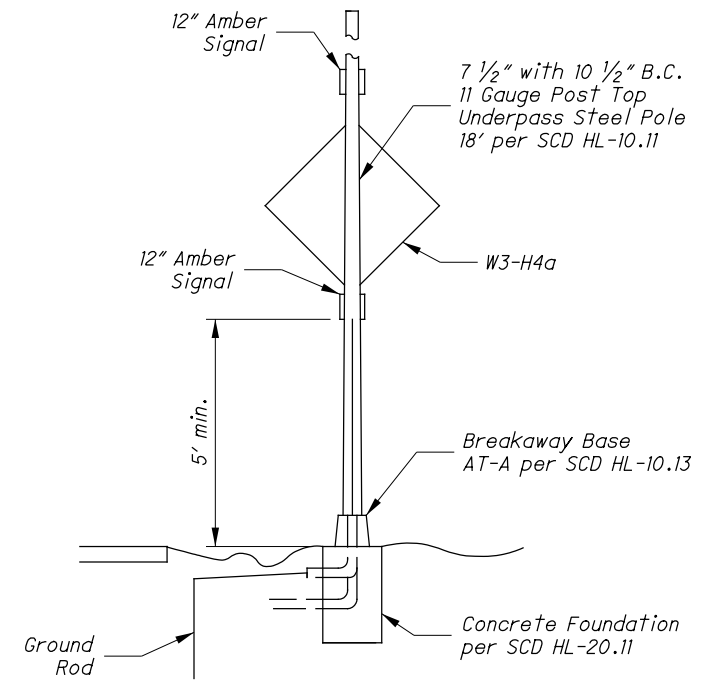
195
253

NOTES:

1. Make electrical connections inside AT-X Base with 15 amp fused CMS 713.15 Type VIII connection kits (ground return-unfused).
2. Contact between aluminum and galvanized parts shall be prevented with a minimum 1/16" thick chloroprene gasket approved substitute. Gaskets are not required between stainless steel and aluminum.



W3-H4a



ALL DIMENSIONS ARE IN INCHES

SIGN SIZE	NO. OF BRACKETS	SPACING "S"	LENGTH OF BRACKETS "L"
72	3	42	54 (2), 90
60	2	36	46
34	2	32	40

SIGNAL ACTIVATION

PRIOR TO ACTIVATING THE NEW TRAFFIC SIGNAL TO STOP-AND-GO MODE AND/OR REMOVING THE EXISTING TRAFFIC SIGNAL FROM SERVICE, ALL ITEMS IN THE PROPOSED SIGNAL PLAN SHALL BE FULLY COMPETED, (I.E., VEHICLE DETECTION, PEDESTRIAN SIGNAL HEADS, ETC). IF THERE ARE CONSTRUCTABILITY ISSUES (I.E., ROADWAY WIDENING, ETC.) THAT PREVENT THE SIGNAL FROM BEING COMPLETED PRIOR TO ACTIVATION, IT SHALL BE BROUGHT TO THE ATTENTION OF THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER. THE DISTRICT TRAFFIC ENGINEER WILL THEN REVIEW, APPROVE OR REJECT PROPOSALS TO ACTIVATE THE TRAFFIC SIGNAL PRIOR TO COMPLETION.

THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER AT LEAST 10 WORKING DAYS PRIOR TO SCHEDULING THE FINAL INSPECTION OF THE SIGNAL INSTALLATION. FINAL INSPECTION IS NOT CONSIDERED COMPLETE UNTIL DESIGNATED DISTRICT TRAFFIC PERSONNEL INSPECT THE TRAFFIC SIGNAL AND ISSUE WRITTEN APPROVAL. IF ISSUES ARE FOUND DURING THE FINAL INSPECTION THAT EFFECT THE SAFETY OF THE TRAVELING PUBLIC AND/OR THE EFFICIENCY OF THE INTERSECTION, THE SIGNAL SHALL BE CORRECTED AND REINSPECTED BY DISTRICT PERSONNEL PRIOR TO FINAL ACCEPTANCE. ODOT FORCES SHALL ONLY ASSUME DAY TO DAY MAINTENANCE OF THE TRAFFIC SIGNAL AFTER FINAL WRITTEN ACCEPTANCE HAS BEEN ISSUED.

MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATION

THE CONTRACTOR SHALL BE RESPONSBLE FOR MAINTAINING TRAFFIC SIGNAL/FLASHER INSTALLATIONS WITHIN THE PROJECT UNDER THE FOLLOWING CONDITIONS:

1. EXISTING SIGNAL/FLASHER INSTALLATIONS WHICH THE PLANS REQUIRE THE CONTRACTOR TO ADJUST, MODIFY, ADD ONTO OR REMOVE, OR WHICH THE CONTRACTOR ACTUALLY ADJUSTS, MODIFIES OR OTHERWISE DISTURBS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ENTIRE INSTALLATION (AT AN INTERSECTION) FROM THE TIME HIS OPERATIONS FIRST DISTURB THE INSTALLATION UNTIL THE INSTALLATION HAS BEEN SUBSEQUENTLY REMOVED OR MODIFIED AND THE WORK ACCEPTED.
2. NEW OR REUSED SIGNAL/FLASHER INSTALLATIONS OR DEVICES, INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF THESE FROM THE TIME OF INSTALLATION UNTIL THE WORK IS ACCEPTED.

THE CONTRACTOR SHALL CORRECT AS QUICKLY AS POSSIBLE ALL OUTAGES OR MALFUNCTIONS. HE SHALL PROVIDE THE MAINTAINING AGENCY AND THE ENGINEER SUCH ADDRESSES AND PHONE NUMBERS WHERE HIS MAINTENANCE FORCES CAN BE CONTACTED. THE CONTRACTOR SHALL PROVIDE ONE OR MORE PERSONS TO RECEIVE ALL CALLS AND DISPATCH THE NECESSARY MAINTENANCE FORCES TO CORRECT OUTAGES. SUCH A PERSON OR PERSONS MAY BE USED TO PERFORM OTHER DUTIES AS LONG AS PROMPT ATTENTION IS GIVEN TO THESE CALLS AND A PERSON IS READILY AVAILABLE CONTINUOUSLY 24 HOURS A DAY, 7 DAYS A WEEK. ALL LAMP OUTAGES, CABLE OUTAGES, ELECTRICAL FAILURES, EQUIPMENT MALFUNCTIONS AND MIS-ALIGNED SIGNAL HEADS SHALL BE CORRECTED TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK TO SERVICE WITHIN FOUR HOURS AFTER THE CONTRACTOR HAS BEEN NOTIFIED OF THE OUTAGE.

MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATION (CONTINUED)

IN THE EVENT NEW SIGNALS ARE DAMAGED PRIOR TO ACCEPTANCE, ALL DAMAGED EQUIPMENT EXCEPT POLES AND CONTROL EQUIPMENT SHALL BE REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK IN SERVICE WITHIN 8 HOURS AFTER THE CONTRACTOR'S NOTIFICATION OF THE OUTAGE. THE CONTRACTOR SHALL ARRANGE FOR FULL TRAFFIC CONTROL UNTIL THE SIGNAL IS BACK IN OPERATION.

IF POLES AND/OR CONTROL EQUIPMENT ARE DAMAGED AND MUST BE REPLACED, THE CONTRACTOR SHALL MAKE TEMPORARY REPAIRS AS NECESSARY TO BRING THE SIGNAL BACK INTO FULL OPERATION WITHIN THE ALLOWED 8-HOUR PERIOD, AND SHALL MAKE PERMANENT REPAIRS OR REPLACEMENT AS SOON THEREAFTER AS POSSIBLE.

NONE OF THE ABOVE SHALL BE CONSTRUED AS COLLECTIVE OR CONSECUTIVE OUTAGE TIME PERIODS AT ANY ONE LOCATION. THAT IS, WHERE MORE THAN ONE OUTAGE OCCURS AT ANY ONE LOCATION THEN THE ALLOTTED TIME LIMIT SHALL BE FOR THE WORST SINGLE OUTAGE.

WHERE OUTAGES ARE THE DIRECT RESULT OF A VEHICLE ACCIDENT, THE RESPONSE OF THE CONTRACTOR SHALL BE AS OUTLINED ABOVE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COLLECTION OF ANY COMPENSATION FOR THIS WORK FROM THOSE PARTIES RESPONSIBLE FOR THE DAMAGE.

WHERE THE CONTRACTOR HAS FAILED TO, OR CANNOT RESPOND TO, AN OUTAGE OR SIGNAL EQUIPMENT MALFUNCTION, AT THESE LOCATIONS WITHIN HIS RESPONSIBILITY, WITHIN PERIODS AS SPECIFIED ABOVE, THE ENGINEER MAY INVOKE THE PROVISIONS OF SECTION 105.15 AND ANY SUBSEQUENT BILLINGS TO THE STATE FOR LAW ENFORCEMENT SERVICES AND MAINTENANCE SERVICES SHALL BE DEDUCTED FROM MONIES DUE OR TO BECOME DUE THE CONTRACTOR IN ACCORDANCE WITH PROVISIONS OF SECTION 105.15.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY TRAFFIC SIGNAL COMPONENTS REQUIRED TO BE HANDLED DURING THE RELOCATION OF POLES AND REVISIONS TO THE SIGNAL SYSTEM.

WHEN A TRAFFIC SIGNAL MUST BE TAKEN OUT OF SERVICE BY THE CONTRACTOR, DUE TO CONSTRUCTION PROCEDURES, THIS OUTAGE SHALL NOT EXCEED 4 HOURS AND SHALL NOT INCLUDE THE HOURS OF 6AM TO 9AM OR 3 PM TO 7PM. ANY SIGNALIZED INTERSECTION, WHERE THE SIGNAL IS OUT OF SERVICE DUE TO CONSTRUCTION PROCEDURES, OR DUE TO AN OUTAGE OR MALFUNCTION OF EQUIPMENT AS DESCRIBED ABOVE, SHALL BE PROTECTED, BY THE CONTRACTOR, BY THE INSTALLATION OF TEMPORARY "STOP" SIGNS, EXCEPT FOR THE FOLLOWING INTERSECTIONS WHICH SHALL BE PROTECTED BY AN OFF-DUTY LAW ENFORCEMENT OFFICER, HIRED BY THE CONTRACTOR.

ANY VEHICULAR TRAFFIC SIGNAL HEAD, EITHER NEW OR EXISTING WHICH WILL BE OUT OF OPERATION SHALL BE COVERED IN THE MANNER DESCRIBED IN 632.25.

THE CONTRACTOR SHALL MAINTAIN COMPLETE RECORDS OF MALFUNCTIONS INCLUDING:

1. TIME OF NOTIFICATION OF MALFUNCTION;
2. TIME OF WORK CREWS ARRIVAL TO CORRECT THE MALFUNCTION;
3. ACTIONS TAKEN TO CORRECT THE MALFUNCTION, INCLUDING A LIST OF PARTS REPAIRED OR REPLACED;
4. A DIAGNOSIS OF REASON FOR THE MALFUNCTION AND PROBABILITY OF REOCCURRENCE;

MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATION (CONTINUED)

5. TIME OF COMPLETION OF THE REPAIR AND SYSTEM RESTORED TO FULL SERVICE.

A COPY OF THESE RECORDS SHALL BE PROVIDED TO THE ENGINEER WITHIN THREE (3) WORKING DAYS FOLLOWING COMPLETION OF EACH REPAIR.

ALL COSTS RESULTING FROM THE ABOVE REQUIREMENTS SHALL BE CONSIDERED TO BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614, MAINTAINING TRAFFIC.

632 VEHICULAR SIGNAL HEAD, (LED), (BY TYPE), 1- WAY, POLYCARBONATE, WITH BACKPLATE, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF C&MS 632 AND 732, THE FOLLOWING REQUIREMENTS SHALL APPLY:

1. SIGNAL HEADS AND VISORS SHALL BE CONSTRUCTED OF BLACK POLYCARBONATE PLASTIC WITH VISORS AS SPECIFIED AND MEET ITE SPECIFICATIONS.
2. PROPER EXTERIOR COLORS SHALL BE OBTAINED BY USE OF COLORED PLASTIC MATERIAL RATHER THAN PAINTING.
3. ALL UPPER SIGNAL SUPPORT HARDWARE AND PIPING UP TO AND INCLUDING THE WIRE INLET FITTING SHALL BE FERROUS METAL.
4. THE ENTRANCE FITTING SHALL BE OF THE TRI-STUD DESIGN WITH SERRATED RINGS IN ORDER TO ACHIEVE POSITIVE LOCKING.
5. ALL SIGNAL HEADS SHALL BE RIGIDLY MOUNTED TO THE MAST ARM WITH THE (COLOR) LENS LOCATED IN FRONT OF THE MAST ARM.
6. ALUMINUM BACKPLATES SHALL BE IN ACCORDANCE WITH THE C&MS AND INCLUDE A FLUORESCENT YELLOW REFLECTIVE BORDER.
7. THE LIGHT EMITTING DIODE (LED) SIGNAL LAMP UNITS SHALL MEET THE REQUIREMENTS OF C&MS 732.04-C. THE CONTRACTOR SHALL PROVIDE ODOT, IN WRITING, WITH THE LED MANUFACTURER NAME, SERIAL NUMBER, PART NUMBER, DESCRIPTION OF LAMP, AND DATE OF MANUFACTURE FOR ALL LED UNITS THAT ARE TO BE USED IN THE SIGNAL HEAD PRIOR TO INSTALLATION, FOR ACCEPTANCE AND WARRANTY PURPOSES.
8. SIGNAL HEADS SHALL HAVE A MINIMUM WALL THICKNESS OF 0.117 INCHES.
9. SIGNAL HEADS SHALL INCLUDE CUTAWAY TYPE VISORS UNLESS OTHERWISE SPECIFIED IN THE PLANS.
10. APPLY A BEAD OF SILICONE TO THE SIGNAL HEAD, WASHER, AND ENTRANCE ADAPTER SERRATIONS TO PREVENT WATER INTRUSION. ALSO, FILL THE SPACE BETWEEN CONCENTRIC SERRATION RINGS ON THE TOP OF THE SIGNAL HEAD TO COMPLETELY EXCLUDE WATER FROM THE SPACE BETWEEN THE CONCENTRIC RINGS.
11. BALANCE ADJUSTERS SHALL NOT BE USED ON ONE-WAY HEADS OR TETHERED HEADS.

PAYMENT FOR ITEM 632 VEHICULAR SIGNAL HEAD, LED, BLACK, (BY TYPE), WITH BACKPLATE, AS PER PLAN SHALL BE MADE FOR COMPLETE SIGNAL HEAD FURNISHED AND INSTALLED, INCLUDING ALL LABOR, EQUIPMENT, MATERIALS, AND NEW ATTACHMENT HARDWARE.

633 CONTROLLER UNIT, TYPE 2070E WITH 2070-IC CPU AND ASC/3 SOFTWARE, AS PER PLAN

THE CONTROLLER UNIT SHALL BE EQUIPMENT MANUFACTURED IN CONFORMANCE TO THE CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS) SPECIFICATIONS TITLES "TRANSPORTATION ELECTRICAL EQUIPMENT SPECIFICATIONS (TEES)." THE CONTROLLER UNIT, MODEL 2070E, SHALL BE COMPLIANT WITH THE 2070E MANUFACTURER AND BUILD AS PER THE TRAFFIC AUTHORIZED PRODUCTS (TAP) LIST. THE 2070E CONTROLLER UNIT SHALL INCLUDE THE FOLLOWING:

1. UNIT CHASSIS
2. 2070-1E CPU MODULE
3. 2070-2A FIELD I/O MODULE
4. 2070-3B FRONT PANEL
5. 2070-4A POWER SUPPLY
6. 2070-7A SERIAL COMMUNICATION MODULE

THE CONTROLLER SHALL BE SUPPLIED WITH THE FOLLOWING TRAFFIC SIGNAL INTERSECTION CONTROL SOFTWARE: ASC/3. THE CONTROLLER SHALL BE SUPPLIED WITH MICROWARE EMBEDDED OS-9 RELEASE 1.3 OR LATER WITH KERNEL EDITION #376 OR LATER, AS REQUIRED BY CALTRANS TEES. FOR WARRANTY PURPOSES, A VENDOR-SPECIFIC DECAL, AS PER ODOT C&MS 733.02 SHALL BE APPLIED TO EACH CONTROLLER UNIT AT TIME OF DELIVERY TO THE PROJECT. THE CONTRACTOR SHALL NOT REASSIGN THE CABINET DETECTOR INPUTS IN ORDER TO REDUCE THE NUMBER OF 2-CHANNEL DETECTOR UNITS SUPPLIED, BUT SHALL USE THE STANDARD CALTRANS INPUT FILE DESIGNATIONS. THIS ITEM SHALL INCLUDE THE CONTROLLER CABINET.

633 UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF C&MS 633 AND 733, POLE ATTACHMENT HARDWARE WILL BE INCLUDED FOR POLE-MOUNTED CABINETS, AND A CABINET RISER (8 INCH MINIMUM) AND ANCHOR BOLTS WILL BE PROVIDED FOR BASE-MOUNTED CABINETS. BEFORE PERFORMING THE WORK, THE CONTRACTOR, THE DISTRICT TRAFFIC ENGINEER AND THE PROJECT ENGINEER WILL PERFORM A SITE INSPECTION TO ESTABLISH THE LOCATION OF THE UPS CABINET AND FOUNDATION.

THE UPS CABINET SHALL INCLUDE A GENERATOR POWER PANEL WITH A HEAVY DUTY POWER RELAY VERSUS THE LINE VOLTAGE GENERATOR SWITCH. THE GENERATOR INLET SHALL BE A RECESSED PANEL WITH A DOOR THAT IS FLUSH WITH THE EXTERNAL SIDE OF THE UPS CABINET. IT SHALL INCLUDE A RECESSED PLUG, AUTOMATIC TRANSFER SWITCH AND A DOOR THAT SECURELY CLOSES OVER THE POWER CORD.

THE UPS OUTPUT NOTIFICATIONS FOR ON BATTERY, BATTERY 2-HOUR TIMER, AND LOW BATTERY SHALL BE WIRED INTO THE TRAFFIC SIGNAL CABINET BACK PANEL TO PROVIDE SPECIAL STATUS ALARMS FOR EACH OUTPUT INTO THE SIGNAL CONTROLLER.

V:\1736\active\173620049\design\94741\signals\sheet\94741_CN001.dgn 9/27/2017 10:42:49 AM pdurham

633 UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN (CONTINUED)

THIS ITEM SHALL INCLUDE A RED LED STATUS INDICATOR LAMP TO ALLOW MAINTENANCE PERSONNEL AND LAW ENFORCEMENT TO QUICKLY ASSESS WHETHER A TRAFFIC SIGNAL CABINET IS BEING POWERED BY A UPS. THE LED HOUSING SHALL BE NEMA 4X, IP65 OR IP66, RATED FOR OUTDOOR USE AND BE TAMPER/SHATTER RESISTANT. IT SHALL BE A DOMED ENCLOSURE CONTAINING A RED LENS WITH LED THAT IS VISIBLE FROM 100 FOOT MINIMUM. THE ENCLOSURE AND LED LAMP UNIT SHOULD BE PLACED AND CENTERED ON THE TOP SURFACE OF THE UPS CABINET AND SEALED FROM WATER INTRUSION. IT SHOULD BE WIRED USING MINIMUM 20GA STRANDED, INSULATED HOOKUP WIRE TO THE STATUS RELAY OUTPUTS OF THE UPS. THE WIRES SHALL BE TERMINATED BY LUGS AT THE DISPLAY END AND PERMANENTLY LABELED "BACKUP POWER STATUS DISPLAY," WITH WIRE POLARITY INDICATED. THE RED LED SHALL ONLY ILLUMINATE TO INDICATE THE CABINET IS OPERATING UNDER UPS BACKUP POWER (THE "BACKUP" OPERATING CONDITION). THIS ITEM INCLUDES PROGRAMMING THE UPS STATUS RELAY OUTPUTS TO PRODUCE THE LAMP STATUS DISPLAYS. THESE STATUS DISPLAYS WILL BE SOLID 100% DUTY CYCLE (NOT FLASHING) DISPLAYS. THE OPERATING VOLTAGE OF THE LED LAMP SHALL BE 120V AC UNLESS OTHERWISE INDICATED.

633 STOP BAR DETECTION RADAR, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING A WAVETRONIX SMARTSENSOR MATRIX DETECTION UNIT. THE DETECTION UNIT SHALL INCLUDE THE FOLLOWING:

1. POWER SHALL BE PROVIDED FROM THE TRAFFIC CABINET.
2. ALL REQUIRED INPUTS CARDS SHALL BE INCLUDED IN THE TRAFFIC CABINET AND SHALL BE COMPATIBLE WITH CALTRANS, NEMA TSI AND NEMA TS2 DETECTOR RACKS. THE CARDS SHALL PROVIDE TRUE PRESENCE DETECTOR CALLS OR CONTACT CLOSURE TO THE TRAFFIC CONTROLLER.
3. THE UNIT SHALL BE MOUNTED DIRECTLY TO A POLE OR MAST ARM, AS RECOMMENDED BY THE MANUFACTURER. CABLE(S) SHALL BE PROVIDED AS REQUIRED AND RECOMMENDED BY THE MANUFACTURER.
4. SURGE PROTECTION DEVICES, AS RECOMMENDED BY THE MANUFACTURER SHALL BE INCLUDED BOTH AT THE POLE WHERE THE UNIT IS LOCATED TO PROTECT THE UNIT AND IN THE TRAFFIC CABINET TO PROTECT THE CABINET ELECTRONICS.
5. THE MANUFACTURER'S REPRESENTATIVE SHALL BE ON SITE DURING INSTALLATION AND TESTING AND SHALL PROVIDE ONSITE TRAINING ON THE SETUP, OPERATION AND MAINTENANCE OF THE UNIT.
6. A SERIAL TO ETHERNET COMMUNICATIONS MODULE AND ETHERNET CABLE (MINIMUM 7 FEET).
7. THE POWER SUPPLY AND COMMUNICATION MODULES SHALL BE SECURED TO A SINGLE PANEL THAT CAN BE MOUNTED INTERIOR TO THE TRAFFIC CABINET. THE PANEL SHALL INCLUDE MODULAR-PLUG STYLE CONNECTIONS FOR UP TO FOUR (4) SENSOR CABLES. ADDITIONAL SENSORS MAY BE HARD-WIRED TO THE COMMUNICATION MODULES, AS NECESSARY.

PAYMENT FOR ITEM 633 STOP BAR DETECTION RADAR, AS PER PLAN SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH UNIT, COMPLETE AND IN PLACE INCLUDING ALL REQUIRED CABINET HARDWARE, MOUNTING BRACKETS, CABLES, CONDUIT AND CONNECTIONS TESTED AND ACCEPTED.

GROUNDING AND BONDING

THE REQUIREMENTS OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (CMS) AND THE TC SERIES OF STANDARD CONSTRUCTION DRAWINGS ARE MODIFIED AS FOLLOWS:

1. ALL METALLIC PARTS CONTAINING ELECTRICAL CONDUCTORS SHALL BE PERMANENTLY JOINED TO FORM AN EFFECTIVE GROUND FAULT CURRENT PATH BACK TO THE GROUNDED CONDUCTOR IN THE POWER SERVICE DISCONNECT SWITCH.
 - A. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR IN METALLIC CONDUITS (725.04) IN ADDITION TO THE CONDUCTORS SPECIFIED AND BOND THE CONDUIT TO THIS GROUNDING CONDUCTOR.
 - B. WHEN AN EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED IN PLASTIC CONDUIT (725.05), THE INSTALLATION SHALL INCLUDE A SEPARATE EQUIPMENT GROUNDING CONDUCTOR IN ADDITION TO THE CONDUCTORS SPECIFIED.
 - C. METALLIC CONDUIT CARRYING THE LOOP WIRES FROM IN THE PAVEMENT TO THE PULL BOX SPLICE LOCATION WILL ONLY BE BONDED AT THE PULL BOX END, AND WILL NOT CONTAIN AN EQUIPMENT GROUNDING CONDUCTOR.
 - D. IF MULTIPLE CONDUIT RUNS BEGIN AND END AT THE SAME POINTS, ONLY ONE EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED.
 - E. IF AN EQUIPMENT GROUNDING CONDUCTOR IS NEEDED IN CONDUIT BETWEEN SIGNALIZED INTERSECTIONS FOR UNDERGROUND INTERCONNECT CABLE, THE GROUNDING SYSTEM FOR EACH SIGNALIZED INTERSECTION WILL BE SEPARATED ABOUT MIDWAY BETWEEN THE INTERSECTIONS.
 - F. THE MESSENGER WIRE AT SIGNALIZED INTERSECTIONS WILL BE USED AS THE CONDUCTIVE PATH FROM CORNER TO CORNER IF CONDUIT IS NOT PROVIDED UNDER THE ROADWAY. WHEN CONDUIT CONNECTS THE CORNERS OF AN INTERSECTION, AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE USED IN THE CONDUIT.
2. CONDUITS.
 - A. THE 725.04 CONDUIT SHALL HAVE GROUNDING BUSHINGS INSTALLED AT ALL TERMINATION POINTS. THE BUSHING MATERIAL SHALL BE COMPATIBLE WITH GALVANIZED STEEL CONDUIT AND THE GROUNDING LUG MATERIAL SHALL BE COMPATIBLE FOR USE WITH COPPER WIRE. THREADED OR COMPRESSION TYPE BUSHINGS MAY BE USED.
 - B. THE 725.05 CONDUIT SHALL HAVE THE INSIDE AND OUTSIDE DIAMETERS OF THE CONDUIT DEBURRED AT ALL TERMINATION POINTS.
 - C. BOTH ENDS OF METALLIC CONDUIT SHALL BE BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.
 - D. METALLIC CONDUIT MAY BE BONDED TO METALLIC BOXES THROUGH THE USE OF CONDUIT FITTINGS UL APPROVED FOR THIS TYPE OF CONNECTION, WITH THE BOX BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.
3. WIRE FOR GROUNDING AND BONDING.
 - A. USE INSULATED, COPPER WIRE FOR THE EQUIPMENT GROUNDING CONDUCTOR. BONDING JUMPERS IN BOXES AND ENCLOSURES MAY BE BARE OR INSULATED COPPER WIRE. WIRE SIZE SHALL BE AS FOLLOWS:
 - I. USE 4 AWG BETWEEN THE POWER SERVICE AND SUPPORTS, POLES, PEDESTALS, CONTROLLER OR FLASHER CABINETS.
 - II. USE A MINIMUM 8 AWG BETWEEN LOOP DETECTOR PULL BOXES AND THE FIRST CONDUIT THAT REQUIRES A LARGER SIZE AS SPECIFIED IN 3.A.I ABOVE.
 - III. USE A MINIMUM 8 AWG BETWEEN THE "PREPARE TO STOP WHEN FLASHING" INSTALLATION (INCLUDING SUPPORT) AND THE FIRST CONDUIT THAT REQUIRES A LARGER SIZE AS SPECIFIED IN 3.A.I ABOVE.

GROUNDING AND BONDING (CONTINUED)

- IV. THE INSULATION SHALL BE GREEN OR GREEN WITH YELLOW STRIPE(S). FOR 4 AWG OR LARGER, INSULATION MAY ALSO BE BLACK WITH GREEN TAPE/LABELS INSTALLED AT ALL ACCESS POINTS.
- B. IN A HIGHWAY LIGHTING SYSTEM, THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE THE SAME WIRE SIZE AS THE DUCT CABLE OR DISTRIBUTION CABLE CIRCUIT CONDUCTORS, WITH THE MINIMUM CONDUCTOR SIZE OF 4 AWG. BONDING JUMPERS WILL BE MINIMUM SIZE 4 AWG.
4. GROUND ROD.
 - A. A 3/4 INCH SCHEDULE 40 PVC CONDUIT WILL BE USED IN FOUNDATIONS AND CONCRETE WALLS FOR THE GROUNDING CONDUCTOR (GROUND WIRE) RACEWAY TO THE GROUND ROD. SHOULD METALLIC CONDUIT BE USED, BOTH ENDS OF THE CONDUIT SHALL BE BONDED TO THE GROUNDING CONDUCTOR.
 - B. THE TYPICAL GROUNDING CONDUCTOR (GROUND WIRE) SHALL BE 4 AWG INSULATED, COPPER.
5. THE GREEN CONDUCTOR IN SIGNAL CABLES (CONDUCTOR #4) SHALL NOT BE USED TO SUPPLY POWER TO A SIGNAL INDICATION. IT WILL BE CONNECTED TO THE SIGNAL BODY AS AN EQUIPMENT GROUND IN ALUMINUM HEADS AND IT WILL BE UNUSED IN PLASTIC HEADS. UNUSED CONDUCTORS SHALL BE GROUNDED IN THE CABINET. TYPICAL USE OF CONDUCTORS IS AS FOLLOWS:

COND. NO.	COLOR	VEHICLE SIGNAL	PEDESTRIAN SIGNAL
1	BLACK	GREEN BALL	#1 WALK
2	WHITE	AC NEUTRAL	AC NEUTRAL
3	RED	RED BALL	#1 DW/FDW
4	GREEN	EQUIPMENT GROUND	EQUIPMENT GROUND
5	ORANGE	YELLOW BALL	#2 DW/FDW
6	BLUE	GREEN ARROW	#2 WALK
7	WHITE/BLACK STRIPE	YELLOW ARROW	NOT USED
6. POWER SERVICE AND DISCONNECT SWITCH.
 - A. AT THE POWER SERVICE LOCATION, THE GROUNDING CONDUCTOR (GROUND WIRE) FROM THE DISCONNECT SWITCH NEUTRAL (AC-) BAR TO THE GROUND ROD SHALL BE A CONTINUOUS, UNSPLICED CONDUCTOR. IF SPLICED, IT SHALL BE AN EXOTHERMIC WELD BUTT SPLICE.
 - B. THE SERVICE NEUTRAL (AC-) SHALL ONLY BE CONNECTED TO GROUND AT THE PRIMARY POWER SERVICE DISCONNECT SWITCH.
 - I. NEMA CONTROLLER CABINETS: IF A POWER SERVICE DISCONNECT SWITCH IS LOCATED BEFORE THE CONTROLLER CABINET, THE NEUTRAL (AC-) AND THE GROUNDING BARS IN THE CONTROLLER CABINET SHALL NOT BE CONNECTED TOGETHER AS SHOWN IN NEMA TS-2, FIGURE 5-4.
 - II. IF SECONDARY DISCONNECT SWITCHES ARE CONNECTED AFTER THE PRIMARY DISCONNECT SWITCH, THE NEUTRAL (AC-) SHALL ONLY BE GROUNDED AT THE PRIMARY SWITCH. EQUIPMENT GROUNDING CONDUCTORS SHALL BE BROUGHT TO THE PRIMARY SWITCH, BUT SHALL BE GROUNDED AT BOTH SECONDARY AND PRIMARY SWITCHES.
7. PAYMENT - ALL MATERIALS AND WORK REQUIRED TO COMPLETE THE EFFECTIVE GROUND FAULT CURRENT PATH SYSTEM ARE INCIDENTAL TO THE CONDUCTORS INSTALLED BY CONTRACT.

632 PEDESTRIAN SIGNAL HEAD (LED), COUNTDOWN, TYPE D2, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF C&MS 632 AND 732 THE FOLLOWING SHALL APPLY:

1. SIGNAL HEADS AND VISORS SHALL BE CONSTRUCTED OF BLACK POLYCARBONATE PLASTIC AND MEET ITE SPECIFICATIONS.
2. PROPER EXTERIOR COLORS SHALL BE OBTAINED BY USE OF COLORED PLASTIC MATERIAL RATHER THAN PAINTING.
3. PIPE, SPACERS AND FITTINGS CONSTRUCTED OF POLYCARBONATE PLASTIC MAY BE USED IN LIEU OF GALVANIZED STEEL OR ALUMINUM.
4. THE PEDESTRIAN SIGNAL HEAD SHALL BE OF THE LED COUNTDOWN TYPE.
5. NEW ATTACHMENT HARDWARE AND FITTINGS SHALL BE USED.
6. THE LIGHT EMITTING DIODE (LED) MODULES SHALL MEET THE REQUIREMENTS OF C&MS 732.04-C.

THE CONTRACTOR SHALL PROVIDE ODOT, IN WRITING, WITH THE LED MANUFACTURER NAME, SERIAL NUMBER, PART NUMBER, DESCRIPTION OF LAMP, AND DATE OF MANUFACTURE FOR ALL LED UNITS THAT ARE TO BE USED IN THE SIGNAL HEAD PRIOR TO INSTALLATION, FOR ACCEPTANCE AND WARRANTY PURPOSES.

PAYMENT FOR ITEM 632 PEDESTRIAN SIGNAL HEAD (LED), COUNTDOWN, TYPE D2, AS PER PLAN SHALL BE MADE FOR THE NUMBER OF COMPLETE SIGNAL HEAD FURNISHED AND INSTALLED, INCLUDING ALL LABOR, EQUIPMENT, MATERIALS AND NEW ATTACHMENT HARDWARE.

V:\1736\active\173620049\design\94741\signals\sheets\94741_CN001.dgn 9/27/2017 10:42:49 AM pdurham

CALCULATED
DKI
CHECKED
PJM

TRAFFIC SIGNAL NOTES

HAM-71-6.86

V:\1736\active\173620049\design\94741\signals\sheet\94741_CS001.dgn 9/27/2017 10:42:50 AM pdurham

SHEET NUM.									PART.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
199															
														TRAFFIC SIGNALS	
45									625	25400	45	FT	CONDUIT, 2", 725.04		
97									625	25500	97	FT	CONDUIT, 3", 725.04		
119									625	25600	119	FT	CONDUIT, 4", 725.04		
133									625	25908	133	FT	CONDUIT, JACKED OR DRILLED, 725.052, 4"		
171									625	29000	171	FT	TRENCH		
4									625	30706	4	EACH	PULL BOX, 725.08, 24"		
3									625	32000	3	EACH	GROUND ROD		
6									632	05007	6	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	196	
2									632	20731	2	EACH	PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN	197	
2									632	26000	2	EACH	PEDESTRIAN PUSHBUTTON		
1									632	28200	1	EACH	DISCONNECT SWITCH WITH ENCLOSURE		
217									632	40200	217	FT	SIGNAL CABLE, 2 CONDUCTOR, NO. 14 AWG		
232									632	40500	232	FT	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG		
1,299									632	40700	1,299	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG		
2									632	64010	2	EACH	SIGNAL SUPPORT FOUNDATION		
2									632	64020	2	EACH	PEDESTAL FOUNDATION		
200									632	68200	200	FT	POWER CABLE, 2 CONDUCTOR, NO. 6 AWG		
150									632	69800	150	FT	SERVICE CABLE, 3 CONDUCTOR, NO. 6 AWG		
1									632	70000	1	EACH	POWER SERVICE		
1									632	70200	1	EACH	CONDUIT RISER, 1" DIAMETER		
1									632	75410	1	EACH	SIGNAL SUPPORT, TYPE TC-12.30 DESIGN 8 POLE, WITH MAST ARMS TC-81.21 DESIGN 13 AND DESIGN 11		
1									632	77230	1	EACH	SIGNAL SUPPORT, MECHANICAL DAMPER FOR TC-81.21 MAST ARM (GREATER THAN 59' IN LENGTH)		
1									632	80620	1	EACH	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 13		
2									632	89700	2	EACH	PEDESTAL, 11'		
1									633	01651	1	EACH	CONTROLLER UNIT, TYPE 2070E WITH 2070-IC CPU AND ASC/3 SOFTWARE, AS PER PLAN	196	
1									633	67100	1	EACH	CABINET FOUNDATION		
1									633	67200	1	EACH	CONTROLLER WORK PAD		
1									633	75001	1	EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN	196	
1									809	69101	1	EACH	STOP-BAR RADAR DETECTION, AS PER PLAN	197	

TRAFFIC SIGNAL SUBSUMMARY

HAM-71-6.86

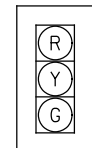
CALCULATED
DKI
CHECKED
PJM

V:\1736\active\173620049\design\94741\signals\sheet\94741_CP001.dgn 9/27/2017 10:42:50 AM pdurham

LEGEND:

- R/W — RIGHT OF WAY
- - W - - WATER LINE
- - G - - GAS LINE
- - T - - UNDERGROUND TELEPHONE CABLE
- OH-T - OVERHEAD TELEPHONE CABLE
- - E - - UNDERGROUND ELECTRIC CABLE
- OH-E - OVERHEAD ELECTRIC CABLE
- OH-Comb - OVERHEAD UTILITY CABLE
- - - - STORM SEWER
- - SAN - - SANITARY SEWER
- - EOP - - EOP
- - EQS - - EOS
- - - - B/C - - BACK OF CURB
- - - - DITCH
- CB - CATCH BASIN
- MH - MANHOLE
- ⊙ - POWER POLE
- ⊙ - TELEPHONE POLE
- ⊙ - LIGHT POLE
- ⊙ - SINGLE POST SIGN
- ⊙ - SIGN W/ BEAM SUPPORT
- ⊙ - LUMINAIRE
- ⊙ - PULL BOX
- ⊙ - SIGNAL SUPPORT
- ⊙ - 3 SECTION SIGNAL HEAD
- ⊙ - 5 SECTION SIGNAL HEAD
- ⊙ - LUMINAIRE
- ⊙ - CONTROLLER
- 2" C - PROPOSED TRAFFIC CONDUIT
- - TR - - TRAFFIC INTERCONNECT
- ⊙ - FIRE HYDRANT
- ⊙ - GUY WIRE
- ⊙ - DILEMMA ZONE RADAR DETECTION UNIT
- ⊙ - STOP BAR RADAR DETECTION UNIT
- ⊙ - PEDESTRIAN PUSH BUTTON
- ⊙ - PEDESTRIAN SIGNAL

SIGNAL HEADS
12" LED WITH BACKPLATE

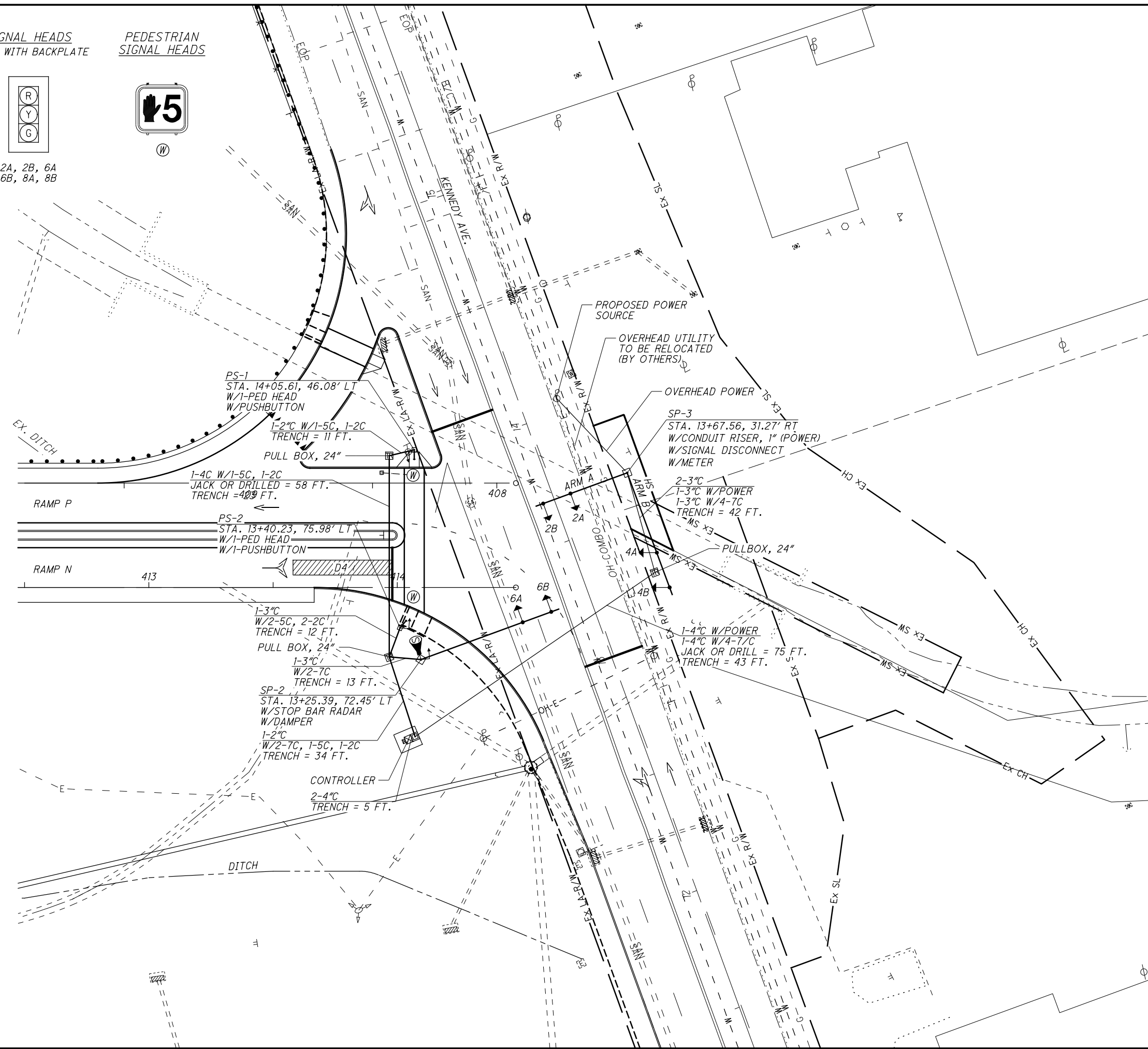


2A, 2B, 6A
6B, 8A, 8B

PEDESTRIAN
SIGNAL HEADS



⊙



CALCULATED 0
DKI 20
CHECKED PJM
HORIZONTAL SCALE IN FEET

SIGNAL PLAN
RAMP N, RAMP P & KENNEDY AVE

HAM-71-6.86

SIGNAL TIMING CHART (TEM FORM 496-3)

INTERSECTION: I-71 & RAMP N/RAMP P MAINTAINING AGENCY: ODOT									
START UP		DUAL ENTRY: YES	PHASES: 2+6						
START IN: ALL RED		REST IN RED: RING 1 - RING 2 -		OVERLAP		A	B	C	D
TIME FOR FLASH OR ALL RED: 0 SEC.						-	-	-	-
FIRST PHASE(S): 2,6									
COLOR DISPLAYED: GREEN									
INTERVAL OR FEATURE		CONTROLLER MOVEMENT NO.							
INTERSECTION MOVEMENT (PHASE)		1	2	3	4	5	6	7	8
DIRECTION		-	NB	-	EB	-	SB	-	-
MINIMUM GREEN (INITIAL) (SEC.)		-	20	-	10	-	20	-	-
ADDED INITIAL *(SEC./ACTUATION)		-	-	-	-	-	-	-	-
MAXIMUM INITIAL (SEC.)		-	-	-	-	-	-	-	-
PASSAGE TIME (PRESET GAP) (SEC.)		-	-	-	-	-	-	-	-
TIME BEFORE REDUCTION *(SEC.)		-	-	-	-	-	-	-	-
MINIMUM GAP *(SEC.)		-	-	-	-	-	-	-	-
TIME TO REDUCE *(SEC.)		-	-	-	-	-	-	-	-
MAXIMUM GREEN I (SEC.)		-	49	-	30	-	40	-	-
MAXIMUM GREEN II (SEC.)		-	-	-	-	-	-	-	-
YELLOW CHANGE (SEC.)		-	3.6	-	5	-	3.6	-	-
ALL RED CLEARANCE (SEC.)		-	2.5	-	1	-	2.5	-	-
WALK (SEC.)		-	12	-	-	-	-	-	-
PEDESTRIAN CLEARANCE (SEC.)		-	37	-	-	-	-	-	-
RECALL	MAXIMUM (ON/OFF)	-	OFF	-	OFF	-	OFF	-	-
	MINIMUM (ON/OFF)	-	ON	-	OFF	-	ON	-	-
	PEDESTRIAN (ON/OFF)	-	OFF	-	OFF	-	OFF	-	-
MEMORY (ON/OFF)	-	OFF	-	OFF	-	OFF	-	-	-

*VOLUME DENSITY CONTROLS

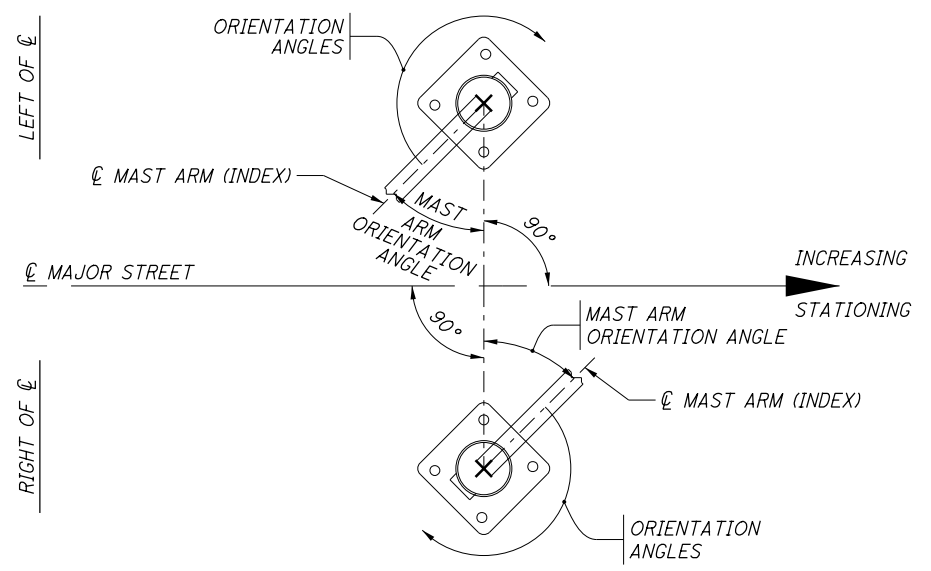
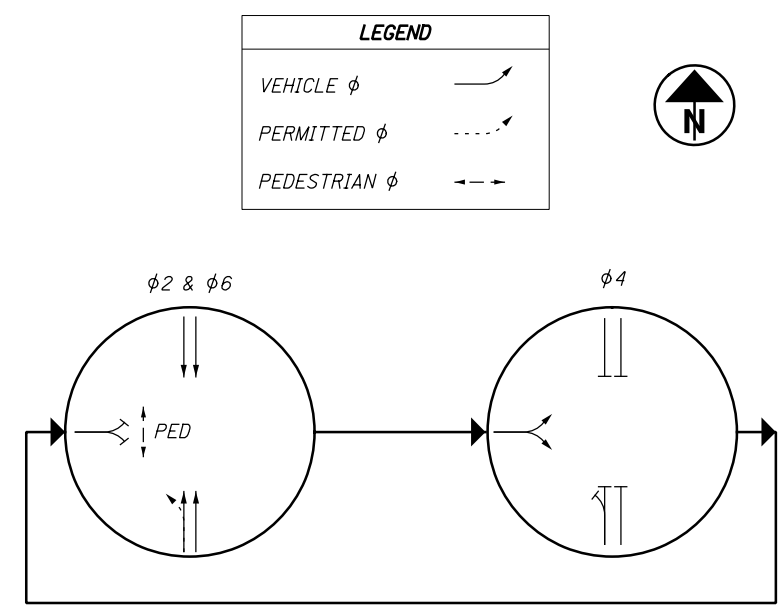
FIELD WIRING HOOKUP CHART

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
2A	R	φ 2 R	R
2B	Y	φ 2 Y	
(NB)	G	φ 2 G	
4A	R	φ 4 R	R
4B	Y	φ 4 Y	
(EB)	G	φ 4 G	
6A	R	φ 6 R	R
6B	Y	φ 6 Y	
(SB)	G	φ 6 G	

RADAR DETECTION CHART (TEM FORM 496-4)

RADAR DETECTION NO.	MOVEMENT	PULSE OR PRESENCE	DELAY (SEC) CONTROLLER	ASSOCIATED CONTROLLER PHASE
D4	EB	PRESENCE	-	4

PHASING DIAGRAM (TYPICAL)



POLE ORIENTATION

SUPPORT NO.	STATION	OFFSET	ELEVATION		SIGNAL SUPPORT DETAILS											ORIENTATION ANGLES FROM MAST ARM								
			A	B	DESIGN TYPE	DESIGN NO.	POLE HEIGHT	ARM HEIGHT	L	L1	L2	L3	D1	D2	X	MAST ARM A ANGLE	MAST ARM B ANGLE	PEDESTRIAN SIGNAL	PEDESTRIAN BUTTON	POWER SERVICE	CONTROLLER	BRACKET ARM	HANDHOLE	CABLE ENTRANCE 12" FROM TOP
							FT	FT	FT	FT	FT	FT	FT	FT	FT	DEG	DEG	DEG	DEG	DEG	DEG	DEG	DEG	DEG
SP-2	13+25	72 LT	*	*	TC-81.21	13	23	21.5	59	44	56					0					120		180	0
SP-3	13+68	31 RT	*	*	TC-12.30	8	23	21.5	39	24	36					0						180	0	
SP-3	13+68	31 RT	*	*	TC-12.30	8	23	17.5	52	34	49						270		70					
PS-1	14+06	46 LT																180	110					
PS-2	13+40	76 LT																30	315					

NOTE: * SEE DETAIL FOR ELEVATIONS
SP-2 ARM DESIGN 13
SP-1 ARM A DESIGN 11, ARM B DESIGN 13

V:\1736\active\173620049\design\94741\signals\sheet\94741_CD002.dgn 9/27/2017 10:42:51 AM pdurham

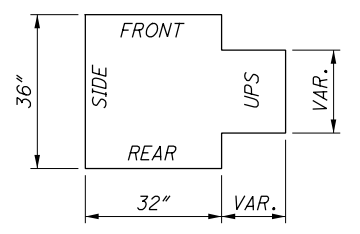
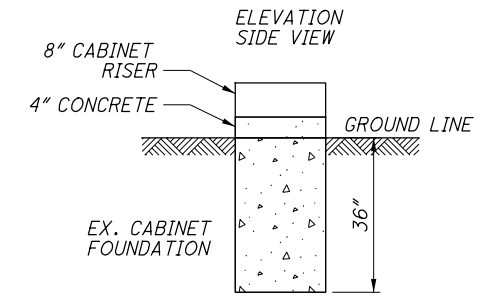
CALCULATED
DKI
CHECKED
PJM

TRAFFIC SIGNAL PLAN DETAILS
RAMP N, RAMP P AND KENNEDY AVENUE

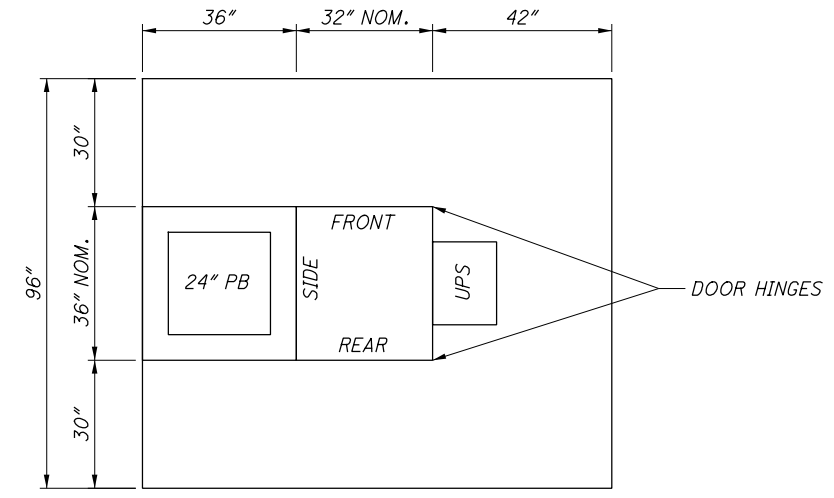
HAM-71-6.86

200
253

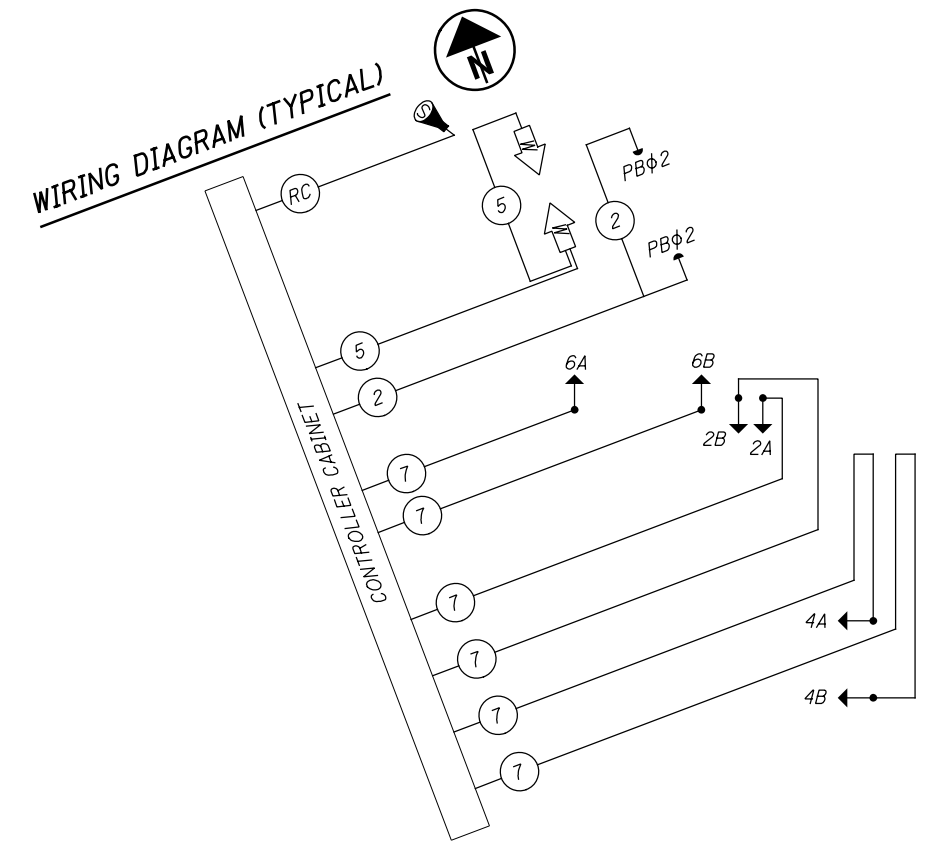
UPS FOUNDATION DETAIL



UPS WORK PAD DETAIL

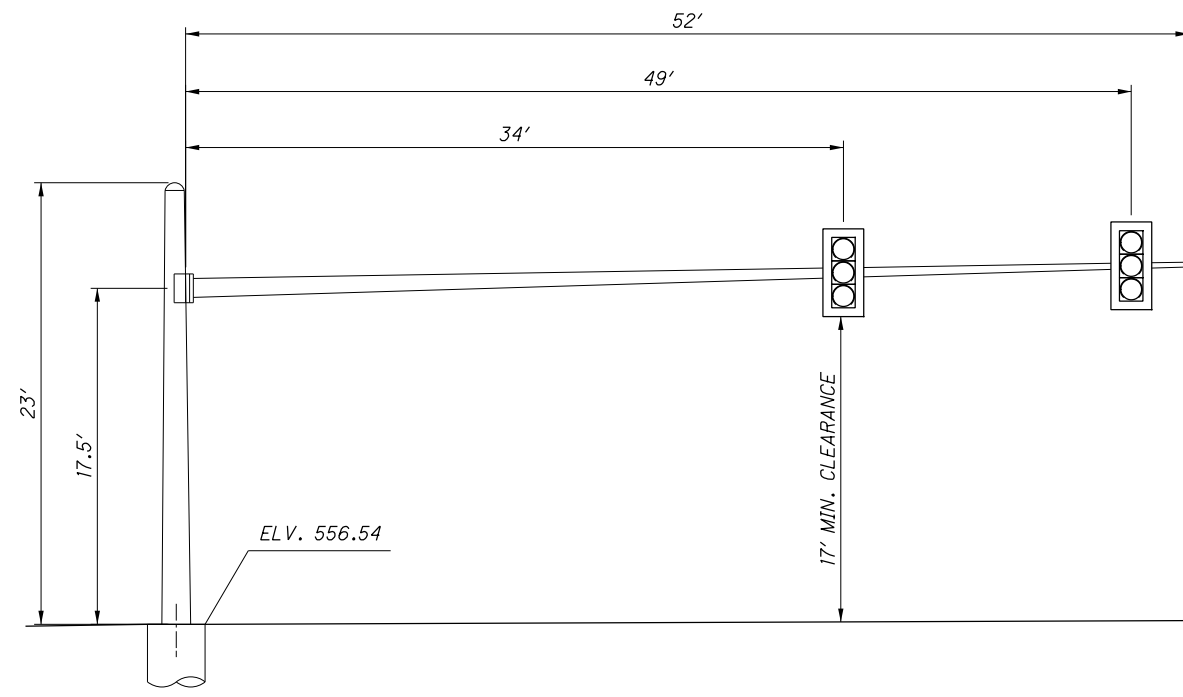


PLAN VIEW

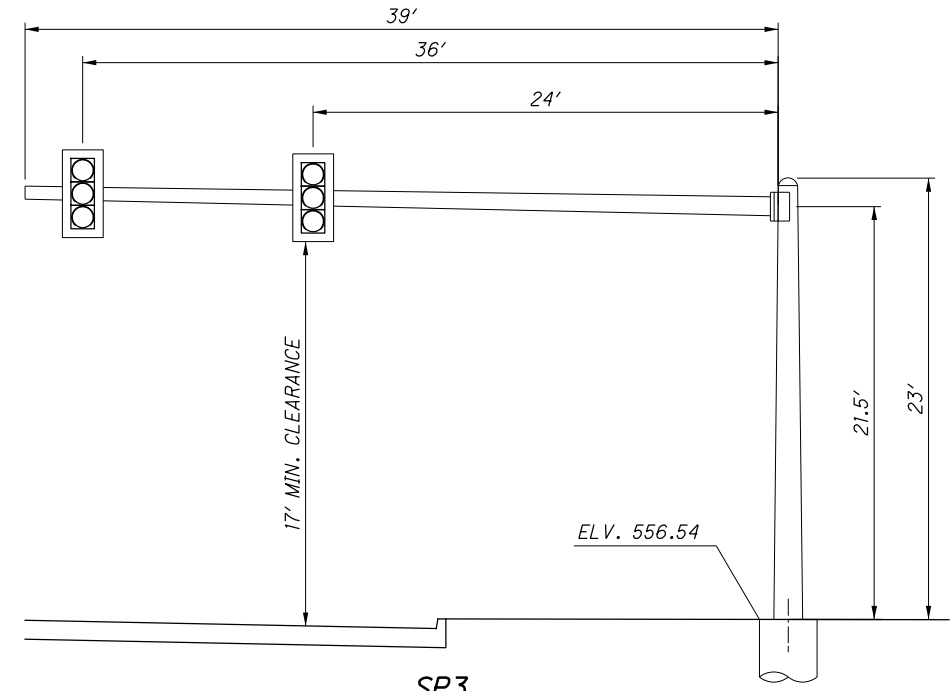


V:\1736\active\173620049\design\94741\signals\sheets\94741_CD001.dgn 9/27/2017 10:42:51 AM pdurham

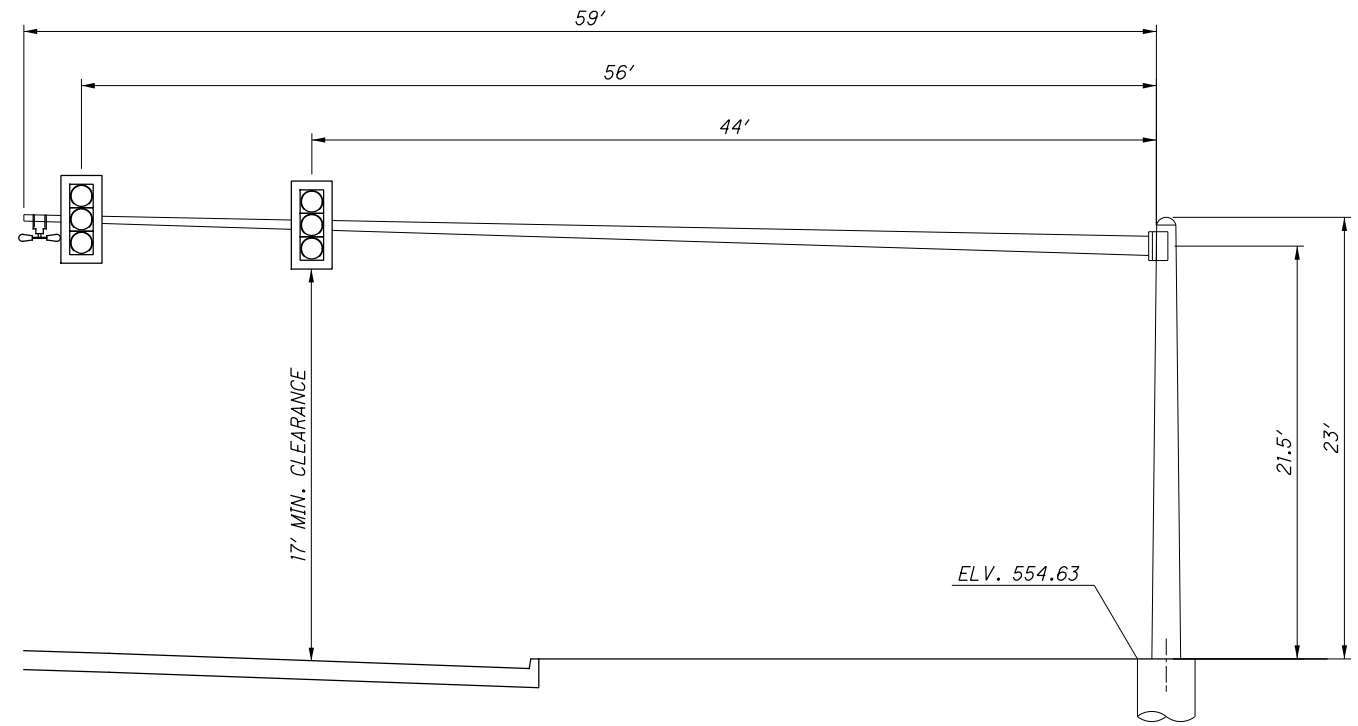
V:\1736\active\173620049\design\94741\signals\sheets\94741_CD003.dgn 9/27/2017 10:42:52 AM pdurham



SP3
LOOKING EAST
(ARM B)



SP3
LOOKING NORTH
(ARM A)



SP2 W/DAMPER
LOOKING SOUTH

CALCULATED
DKI
CHECKED
PJM

**TRAFFIC SIGNAL PLAN DETAILS
KENNEDY AVENUE**

HAM-71-6.86

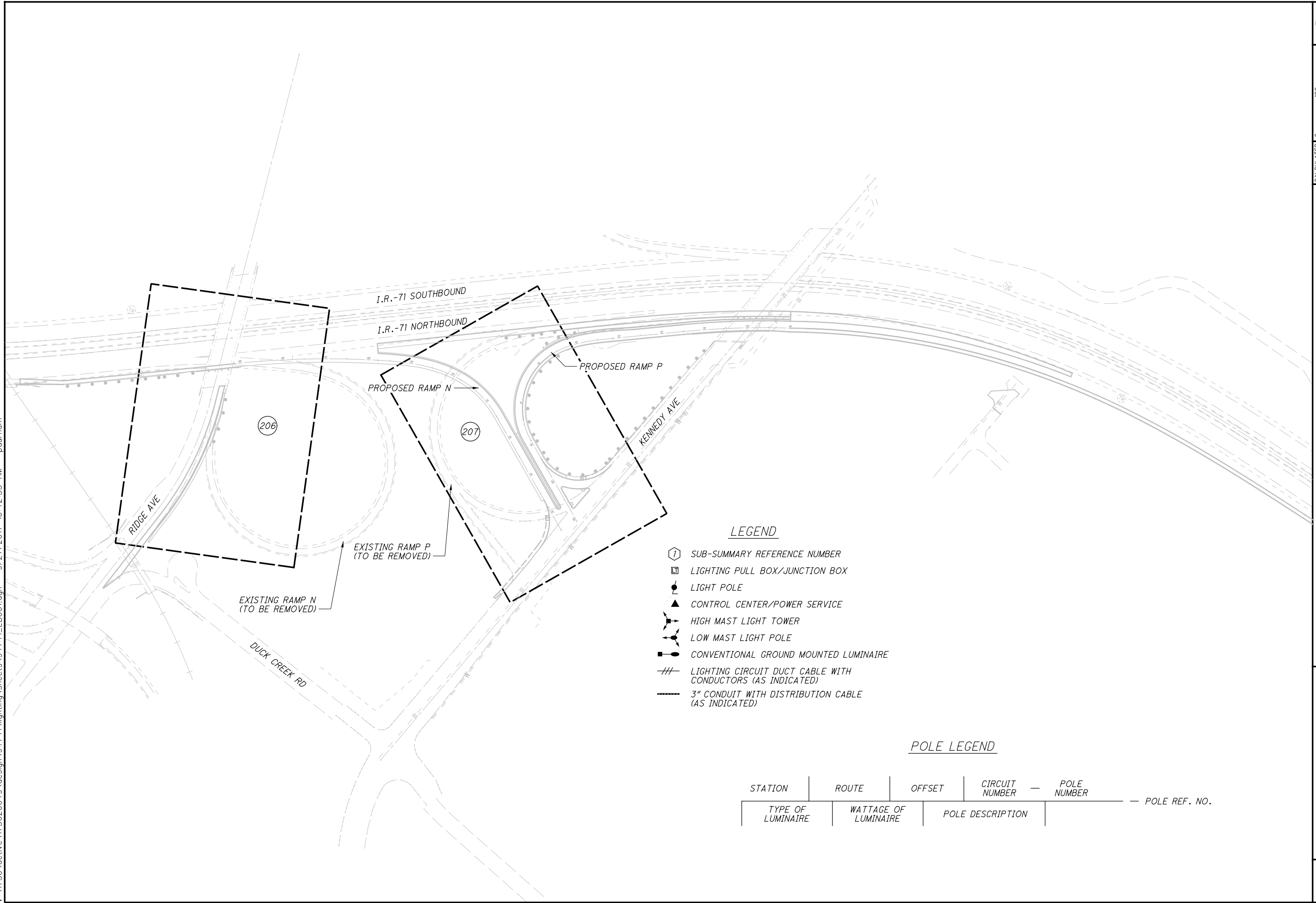
202
253

V:\1736\active\173620049\design\94741\lighting\sheet\94741_LS001.dgn 9/27/2017 10:42:52 AM pdurham

REFERENCE NO.	SHEET NO.	SIDE	ROADWAY	STATION TO STATION	625																											
					CONNECTION, FUSED PULL APART	CONNECTION, UNFUSED PERMANENT	LIGHT POLE, CONVENTIONAL, AT12B35	LIGHT POLE FOUNDATION, 24" X 6' DEEP	NO. 10 AWG POLE AND BRACKET CABLE	1-1/2" DUCT CABLE WITH 3 NO.4 AWG 2400 VOLT CABLES	1-1/2" DUCT CABLE WITH 3 NO.2 AWG 2400 VOLT CABLES	CONDUIT, 3", 725.04	CONDUIT, JACKED OR DRILLED, 725.04, 3"	LUMINAIRE, CONVENTIONAL, AS PER PLAN, TYPE II, 200 W HPS, 240 V	LUMINAIRE, CONVENTIONAL, AS PER PLAN, TYPE II, 200 W HPS, 480 V	TRENCH, 24" DEEP	PULL BOX, 725.08, 18"	PULL BOX REMOVED	GROUND ROD	PLASTIC CAUTION TAPE	PULL BOX CLEANED	SPECIAL - MAINTAIN EXISTING LIGHTING	SPECIAL - REPLACEMENT OF EXISTING LIGHTING UNIT	LIGHT TOWER REMOVED	LIGHT POLE REMOVED	LIGHT POLE FOUNDATION REMOVED	LUMINAIRE REMOVED	LIGHT TOWER FOUNDATION REMOVED	DISCONNECT CIRCUIT	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG	632	
					EACH	EACH	EACH	EACH	FT	FT	FT	FT	FT	FT	EACH	EACH	FT	EACH	EACH	LUMP	EACH	EACH	EACH	EACH	EACH	EACH	EACH	FOOT				
1	205																			LS	2											
1	206	RT	RIDGE AVENUE	25+15.59		3												1														
2	206	RT	RIDGE AVENUE	25+15.59 TO 25+20.00					25					15			15															
3	206	RT	RIDGE AVENUE	25+20.00		3												1														
4	206	RT	RIDGE AVENUE	25+20.00 TO 25+22.50						17				7			7															
5	206	RT	RIDGE AVENUE	25+22.50	2		1	1	141						1																	
6	206	RT	RIDGE AVENUE	25+32.00																												
7	206	RT	IR 71	405+70.00																		1		1								
8	206	RT	IR 71	406+30.00																												
9	206	RT	IR 71	406+42.00																												
10	206	RT	IR 71	406+53.00																												
11	206	RT	RIDGE AVENUE	25+78.00		3																										
12	206	LT/RT	RIDGE AVENUE	25+78.00 TO 25+82.00																									88			
13	206	LT	RIDGE AVENUE	25+82.00																												
14	206	LT	RIDGE AVENUE	25+82.00 TO 26+75.00	3								90				90												100			
1	207	RT	IR 71	410+47.50		3																										
2	207	LT/RT	RAMP N	410+47.50 (71) TO 412+42.00	2																											
3	207	RT	RAMP N	412+40.00 TO 412+42.00																												
4	207	RT	RAMP N	412+40.00		3																										
5	207	RT	RAMP N	412+40.00 TO 414+35.00																												
6	207	LT/RT	RAMP N	412+40.00 TO 410+00.00 (P)																												
7	207	RT	RAMP P	410+00.00		3																										
8	207	RT	RAMP P	15+21.10 (KEN) TO 410+00.00																												
9	207	LT	KENNEDY AVE	15+21.10	2		1	1	141																							
10	207	RT	IR 71	410+55.00																												
11	207	RT	RAMP N	413+84.00																												
TOTALS CARRIED TO GENERAL SUMMARY					9	18	2	2	282	329	591	90	78	1	1	940	6	4	2	940	1	LS	2	1	2	2	8	1	2	188		

CALCULATED	PJD
	CHECKED
SNS	
LIGHTING SUBSUMMARY QUANTITIES	
HAM-71-6.86	
203 253	

V:\1736\active\173620049\design\94741\lighting\sheet\94741.LB001.dgn 9/27/2017 10:42:53 AM pdurham



CALCULATED
PJD
CHECKED
TJS

0 100 200
HORIZONTAL
SCALE IN FEET

LIGHTING SCHEMATIC PLAN

HAM-71-6.86

204
253

LEGEND

- ① SUB-SUMMARY REFERENCE NUMBER
- LIGHTING PULL BOX/JUNCTION BOX
- LIGHT POLE
- ▲ CONTROL CENTER/POWER SERVICE
- ⚡ HIGH MAST LIGHT TOWER
- ⚡ LOW MAST LIGHT POLE
- ⚡ CONVENTIONAL GROUND MOUNTED LUMINAIRE
- LIGHTING CIRCUIT DUCT CABLE WITH CONDUCTORS (AS INDICATED)
- 3" CONDUIT WITH DISTRIBUTION CABLE (AS INDICATED)

POLE LEGEND

STATION	ROUTE	OFFSET	CIRCUIT NUMBER	POLE NUMBER	POLE REF. NO.
TYPE OF LUMINAIRE	WATTAGE OF LUMINAIRE	POLE DESCRIPTION			

625, LUMINAIRE, CONVENTIONAL, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ODOT'S CONSTRUCTION AND MATERIAL SPECIFICATIONS, LUMINAIRES FOR CONVENTIONAL LIGHTING UNITS SHALL BE AS FOLLOWS:

LUMINAIRES FOR CONVENTIONAL LIGHTING UNITS WITH AN IES III-M-SC DISTRIBUTION AND 200 WATT HIGH PRESSURE SODIUM LAMPS SHALL BE AMERICAN ELECTRIC "SERIES 126" WITH PHOTOMETRIC DISTRIBUTION AE3849I, COOPER "OVD" WITH PHOTOMETRIC DISTRIBUTION OVD2S2F, GENERAL ELECTRIC "M-400" WITH PHOTOMETRIC DISTRIBUTION 1014, OR EQUAL AS APPROVED BY THE ENGINEER. PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH C&MS ITEM 625, "LUMINAIRE, CONVENTIONAL, AS PER PLAN, TYPE III, 200 W HPS, 240/480 V" FOR EACH LUMINAIRE WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

HIGH VOLTAGE TEST WAIVED

THE HIGH VOLTAGE TEST SHALL NOT BE PERFORMED ON THE CIRCUITS CONSTRUCTED BY THIS PROJECT, SINCE THE TEST COULD DAMAGE THE PORTION OF THE COMPLETED CIRCUIT WHICH HAS BEEN IN SERVICE PRIOR TO THIS PROJECT.

SPECIAL, MAINTAIN EXISTING LIGHTING

EXISTING ROADWAYS WHICH ARE TO REMAIN OPEN TO TRAFFIC DURING CONSTRUCTION OF THIS PROJECT AND WHICH ARE LIGHTED SHALL HAVE THE LIGHTING MAINTAINED AS DESCRIBED HEREIN. BEFORE ANY WORK IS STARTED IN THE IMMEDIATE VICINITY OF THE EXISTING LIGHTING CIRCUITS, REPRESENTATIVES OF ODOT, THE MAINTAINING AGENCY AND THE CONTRACTOR SHALL MAKE A VISUAL INSPECTION OF THE EXISTING ROADWAY LIGHTING CIRCUITS TO BE MAINTAINED. DURING THIS INSPECTION, A WRITTEN RECORD OF THE CONDITION OF EXISTING LIGHTING SHALL BE MADE BY ODOT'S REPRESENTATIVE. THIS WRITTEN REPORT SHALL NOTE INDIVIDUAL LUMINAIRES WHICH ARE NOT IN WORKING ORDER, INDIVIDUAL POLES WHICH ARE NOT STANDING, AND INDIVIDUAL CIRCUITS WHICH ARE NOT IN WORKING ORDER. THE COMPLETED REPORT SHALL BE SIGNED BY THE REPRESENTATIVES OF ODOT, THE MAINTAINING AGENCY AND THE CONTRACTOR.

IF, AS A RESULT OF THIS INSPECTION, IT IS DETERMINED THAT THE CONDITION OF THE EXISTING SYSTEM IS BELOW THAT REQUIRED FOR THE SAFETY OF THE TRAVELING PUBLIC, THEN THE MAINTAINING AGENCY SHALL MAKE THE REPAIRS NECESSARY TO RETURN THE SYSTEM TO AN ACCEPTABLE CONDITION. FOLLOWING THESE REPAIRS, THE SYSTEM SHALL AGAIN BE INSPECTED AND A REPORT SHALL BE MADE AND SIGNED AS OUTLINED HEREIN.

WHEN THE EXISTING SYSTEM IS IN AN ACCEPTABLE CONDITION, IT SHALL BE TURNED OVER TO THE CONTRACTOR WHO SHALL THEN BE REQUIRED TO MAINTAIN THE EXISTING LIGHTING TO THE CONDITION OUTLINED IN THIS REPORT WITH THE EXCEPTION OF KNOCKDOWNS DUE TO TRAFFIC ACCIDENTS.

REPLACEMENT OF KNOCKED DOWN UNITS SHALL BE DONE ONLY WHEN THE ENGINEER HAS DETERMINED THAT THE REPLACEMENT OF THE KNOCKED DOWN UNIT IS NECESSARY AND SHALL BE PAID SEPARATELY ON A UNIT BASIS.

BETTERMENTS SHALL BE COVERED IN ITEMS OF WORK PERTAINING TO THE CONSTRUCTION OF PERMANENT IMPROVEMENT.

WHEN THE SEQUENCE OF CONSTRUCTION ACTIVITIES REQUIRES, OR SHOULD THE CONTRACTOR DESIRE, THE REMOVAL OF THE EXISTING LIGHTING BEFORE THE NEW LIGHTING IS OPERATIONAL, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY LIGHTING OF THIS PORTION OF THE ROADWAY.

PRIOR TO INSTALLING SUCH LIGHTING, THE CONTRACTOR SHALL PREPARE AND SUBMIT FOUR SETS OF THE TEMPORARY LIGHTING PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL.

THIS PLAN SHALL SHOW LOCATIONS OF POLES, LENGTHS OF BRACKET ARMS, STYLES OF LUMINAIRES, MOUNTING HEIGHTS, WIRING METHODS AND OTHER PERTINENT INFORMATION. THE TEMPORARY LIGHTING SHALL PROVIDE AN AVERAGE INITIAL INTENSITY OF 1.2 FOOTCANDLES WITH AN AVERAGE TO MINIMUM UNIFORMITY NOT TO EXCEED 3:1. MOUNTING HEIGHT OF TEMPORARY LUMINAIRES SHALL NOT BE LESS THAN 30 FEET, AND THE MINIMUM OVERHEAD CONDUCTOR CLEARANCE SHALL BE 20 FEET. TEMPORARY OVERHEAD CONSTRUCTION SHALL NOT BE LESS THAN GRADE "A" FOR STRENGTH REQUIREMENTS AS DEFINED BY THE NATIONAL ELECTRIC SAFETY CODE. WOOD POLES WITH OVERHEAD WIRING MAY BE USED. HOWEVER, TEMPORARY LIGHTING SHALL MEET FEDERAL AND STATE SAFETY CRITERIA. IF BREAKAWAY POLES ARE USED TO MEET THESE CRITERIA, THEN UNDERGROUND WIRING SHALL BE USED. RECONDITIONED OR USED MATERIALS MAY BE FURNISHED FOR TEMPORARY LIGHTING.

SPECIAL, MAINTAIN EXISTING LIGHTING (CONT'D)

ALL MATERIALS NECESSARY TO COMPLETE THE TEMPORARY LIGHTING SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. WHEN NO LONGER NEEDED, THE TEMPORARY LIGHTING INSTALLATION SHALL BE REMOVED AND PROPERLY DISPOSED OF BY THE CONTRACTOR.

THE MAINTAINING AGENCY WILL PAY FOR ELECTRICAL ENERGY CONSUMED BY EXISTING POWER SERVICES AND BY PROPOSED PERMANENT POWER SERVICES AFTER ACCEPTANCE OF THE LIGHTING WORK. THE CONTRACTOR WILL PAY FOR ELECTRICAL ENERGY, INSTALLATION, REMOVAL AND MAINTENANCE OF ANY TEMPORARY POWER SERVICES.

THE LUMP SUM PRICE BID FOR ITEM SPECIAL "MAINTAIN EXISTING LIGHTING" SHALL INCLUDE PAYMENT FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO MAINTAIN THE EXISTING LIGHTING AS SPECIFIED HEREIN.

THE UNIT PRICE BID FOR ITEM SPECIAL "REPLACEMENT OF EXISTING LIGHTING UNIT" SHALL BE FULL PAYMENT FOR THE REPLACEMENT OF AN EXISTING LIGHTING UNIT WHICH HAS BEEN KNOCKED DOWN AFTER THE AFOREMENTIONED INSPECTION AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO PROVIDE A REPLACEMENT FOR SUCH UNIT.

THE FOLLOWING ESTIMATED QUANTITIES ARE INCLUDED IN THE LIGHTING SUBSUMMARY FOR THE WORK NOTED ABOVE:

SPECIAL, MAINTAIN EXISTING LIGHTING, LUMP SUM
SPECIAL, REPLACEMENT OF EXISTING LIGHTING UNIT, 2 EACH

V:\1736\active\173620049\design\94741\lighting\sheet\94741_LN001.dgn 9/27/2017 10:42:53 AM pdurham

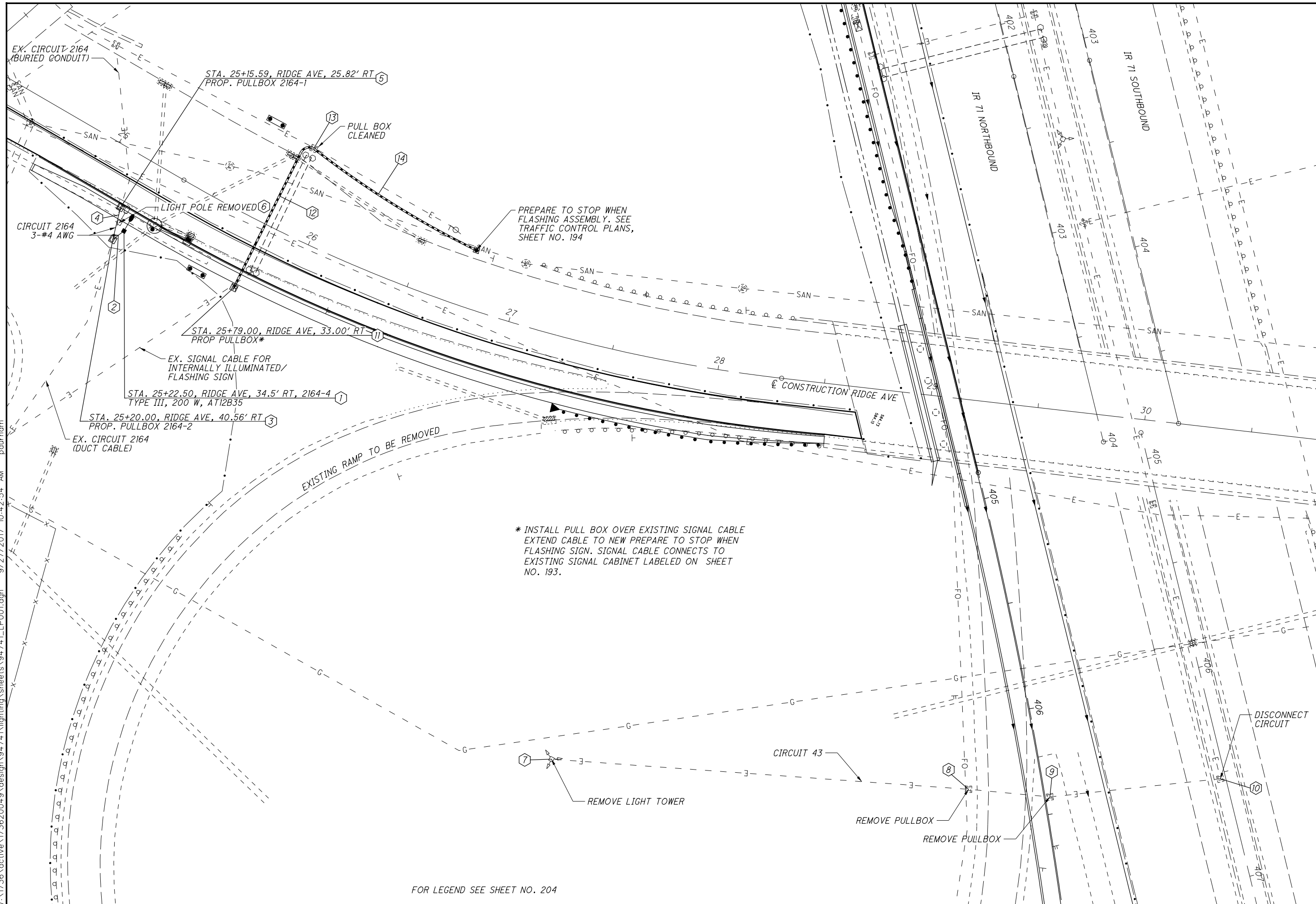
CALCULATED
PJD
CHECKED
TJS

LIGHTING GENERAL NOTES

HAM-71-6.86

205
253

V:\1736\active\173620049\design\94741\lighting\sheet\94741_LP001.dgn 9/27/2017 10:42:54 AM pdurham



CALCULATED PJD CHECKED TJS

0 20 40
10
HORIZONTAL SCALE IN FEET

**LIGHTING PLAN
RIDGE AVENUE**

HAM-71-6.86

206
253

EX. CIRCUIT 2164 (BURIED CONDUIT)
STA. 25+15.59, RIDGE AVE, 25.82' RT
PROP. PULLBOX 2164-1

PULL BOX CLEANED
LIGHT POLE REMOVED
CIRCUIT 2164 3-#4 AWG

STA. 25+79.00, RIDGE AVE, 33.00' RT
PROP PULLBOX*

EX. SIGNAL CABLE FOR INTERNALLY ILLUMINATED/FLASHING SIGN
STA. 25+22.50, RIDGE AVE, 34.5' RT, 2164-4
TYPE III, 200 W, AT12B35
STA. 25+20.00, RIDGE AVE, 40.56' RT
PROP. PULLBOX 2164-2

EX. CIRCUIT 2164 (DUCT CABLE)
EXISTING RAMP TO BE REMOVED

PREPARE TO STOP WHEN FLASHING ASSEMBLY. SEE TRAFFIC CONTROL PLANS, SHEET NO. 194

* INSTALL PULL BOX OVER EXISTING SIGNAL CABLE
EXTEND CABLE TO NEW PREPARE TO STOP WHEN FLASHING SIGN. SIGNAL CABLE CONNECTS TO EXISTING SIGNAL CABINET LABELED ON SHEET NO. 193.

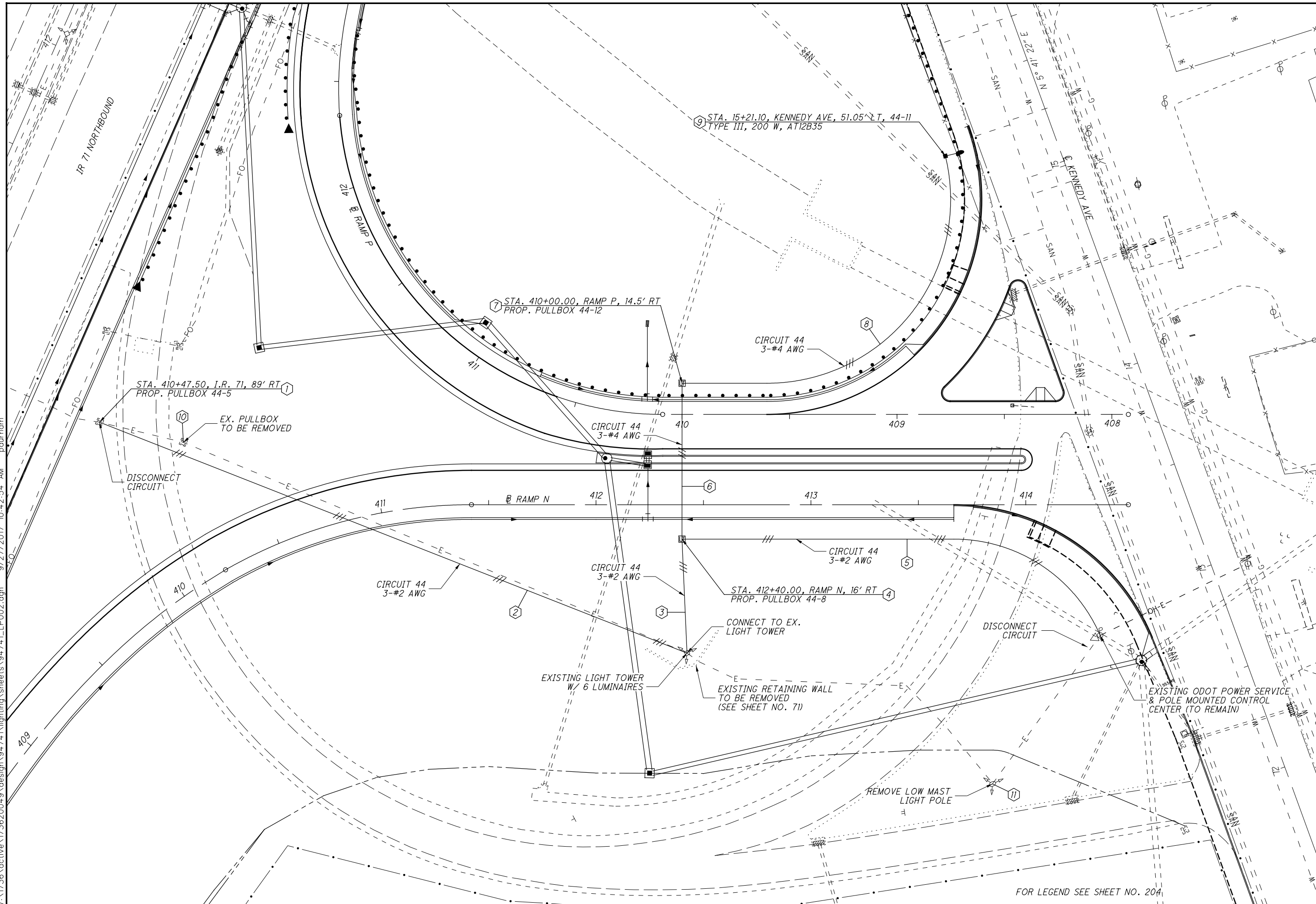
REMOVE LIGHT TOWER

REMOVE PULLBOX
REMOVE PULLBOX

DISCONNECT CIRCUIT

FOR LEGEND SEE SHEET NO. 204

V:\1736\active\173620049\design\94741\lighting\sheet\94741_LP002.dgn 9/27/2017 10:42:54 AM pdurham



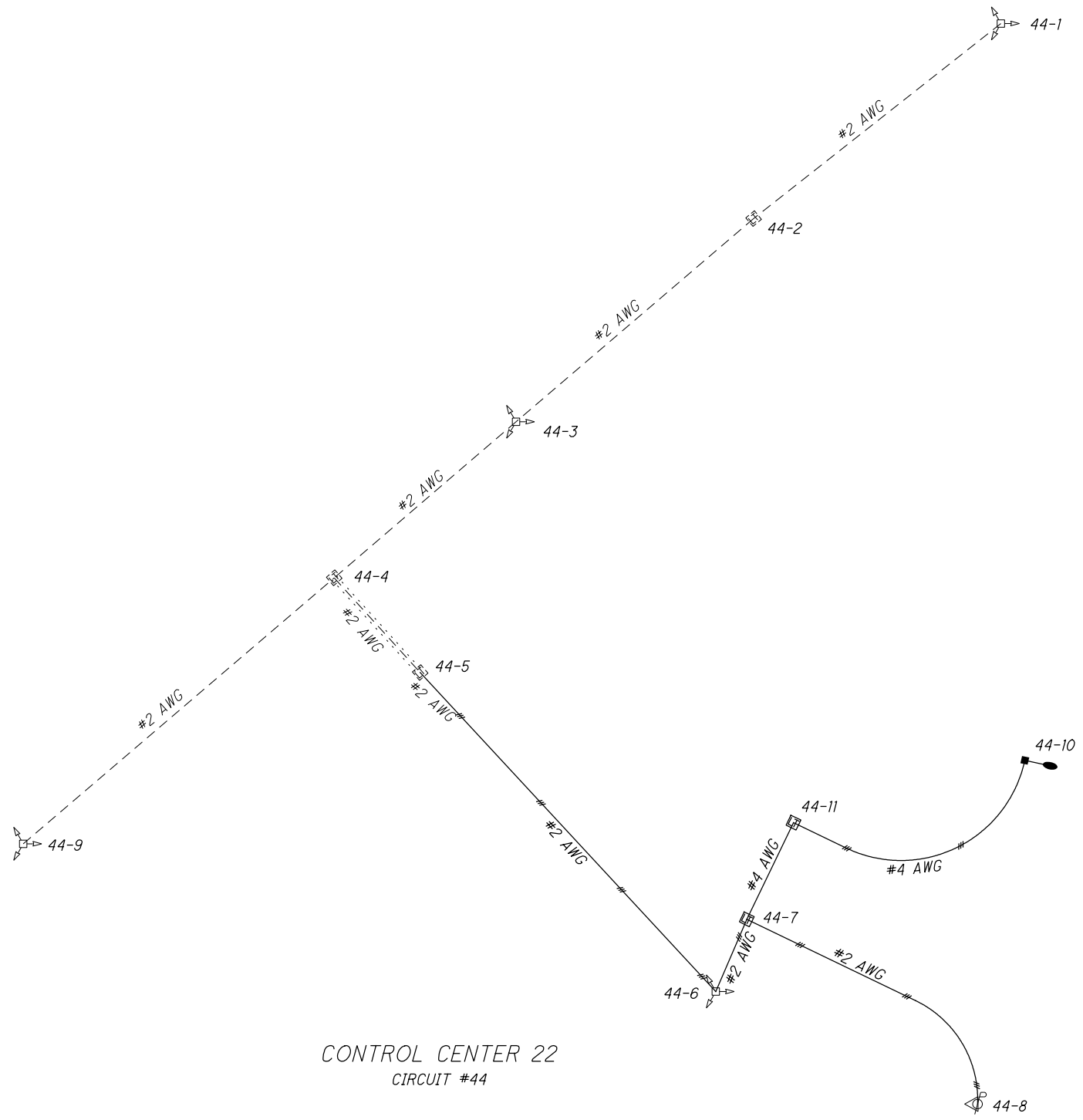
CALCULATED PJD CHECKED TJS

0 20 40
10
HORIZONTAL SCALE IN FEET

**LIGHTING PLAN
RAMPS N & P**

HAM-71-6.86

FOR LEGEND SEE SHEET NO. 204



CONTROL CENTER 22
CIRCUIT #44

FOR LEGEND SEE SHEET NO. 204

ITEM 606 - SPECIAL - NOISE BARRIER

CONCRETE POSTS SHALL BE USED. USE AN INTEGRAL POST CAP, NOT NON-INTEGRAL.

THE CONTRACTOR SHALL BE PAID FOR SQUARE FOOT OF NOISE BARRIER AS CALLED FOR IN PLANS. ANY ADDITIONAL SQUARE FEET SHALL BE AT THE CONTRACTOR'S EXPENSE EXCEPT WHEN THE EXISTING GROUND LINE ALONG THE WALL, AS FIELD MEASURED, IS LOWER THAN WHAT IS SHOWN IN THE PLANS BY AN AMOUNT REQUIRING AN ADDITIONAL EQUIVALENT ADDED TO THE PROPOSED MEDIAN THEORETICAL TOP OF WALL. THE SQUARE FOOT UNIT PRICE SHALL INCLUDE ALL MATERIALS, LABOR AND THE USE OF ALL EQUIPMENT AND TOOLS REQUIRED TO CONSTRUCT THE NOISE BARRIER AS SHOWN IN THESE PLANS.

THE CALCULATED NOISE WALL AREA SHOWN IN THE PLANS IS BASED UPON A 1-FOOT INCREMENTAL PANEL HEIGHT. IF THE PANELS SUPPLIED HAVE GREATER MINIMUM INCREMENTS AND THEREFORE EXTEND ABOVE THE TOP OF WALL ELEVATION OR BELOW THE BOTTOM OF WALL ELEVATION, AS SHOWN IN THE PLANS, THE ADDITIONAL WALL AREA WILL NOT BE INCLUDED IN THE MEASURED AREA FOR PAYMENT.

PRIOR TO THE CREATION OF THE SHOP DRAWINGS, THE CONTRACTOR SHALL PERFORM A FIELD SURVEY. UTILITY LOCATIONS SHALL BE INCLUDED IN THIS SURVEY BUT SHALL BE PERFORMED BY THE OWNER OF THE UTILITY. THIS INFORMATION SHALL BE SHOWN ON THE SHOP DRAWINGS AND ALL FOUNDATIONS MOVED TO AVOID ANY UNDERGROUND FEATURES.

THE SHOP DRAWINGS SHALL BE SUBMITTED TO THE DISTRICT AND APPROVED BY THE PROJECT ENGINEER PRIOR TO THE START OF CONSTRUCTION.

FORMLINER: PROVIDE A MINIMUM PATTERN RELIEF OF 1/2" FOR ALL AREAS OF THE FORMLINER. PATTERNS WITH A RELIEF OF LESS THAN 1/2" WILL NOT BE ACCEPTED.

COPING: PROVIDE A 12" WIDE INTEGRAL SMOOTH COPING FOR ALL NOISE BARRIER POSTS AND PANELS. A RUSTIFICATION GROOVE OF AT LEAST 1" DEEP SHALL BE UTILIZED AT THE BASE OF THE SMOOTH COPING.

FOR POSTS 21, 22 AND 23 THE COMBINATION OF PANEL HEIGHT AND POST SPACING EXCEEDS THE PERMISSIBLE RANGE IN THE NOISE WALL STANDARD DRAWINGS, NBS-1-09. AS SUCH, THE NOISE WALL POST SHALL BE DESIGNED BY THE FABRICATOR AND APPROVED BY ODOT. THE TOP OF SHAFT ELEVATION PROVIDED ASSUMES A POST DESIGNED UTILIZING A 23-FOOT TALL PANEL AND THE ASSOCIATIVE HARDWARE AT THE BASE OF THE WALL.

FOR POSTS 5, 9 AND 20 THE DEFLECTION ANGLE IS OUTSIDE THE RANGE IN THE NOISE WALL STANDARD DRAWINGS, NBS-1-09. AS SUCH, THE NOISE WALL POST SHALL BE DESIGNED BY THE FABRICATOR AND APPROVED BY ODOT.

ITEM 605 - UNDERDRAINS, MISC.: BARRIER DRAINAGE

THIS ITEM SHALL BE USED TO INSTALL DRAINAGE IN SLOPED AREAS AS DIRECTED BY THE ENGINEER. DETAILS ARE PROVIDED IN NBS-1-09 AND ON THE TYPICAL SLOPED SECTION ON THIS SHEET.

PAYMENT WILL INCLUDE THE COST TO CONSTRUCT THE TRENCH, BACKFILL WITH STONE, TYPE F UNDERDRAIN OUTLETS, TIED CONCRETE BLOCK MAT, PRECAST REINFORCED CONCRETE OUTLETS, AND OTHER MINOR RESTORATION WORK AS DIRECTED BY THE ENGINEER.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:
 ITEM 601 - TIED CONCRETE BLOCK MAT, TYPE I.....3.6 SY
 ITEM 605 - UNDERDRAINS, MISC.: BARRIER DRAINAGE.....266 FT
 ITEM 611 - 4" CONDUIT, TYPE F FOR UNDERDRAIN OUTLET.....18 FT
 ITEM 611 - PRECAST REINFORCED CONCRETE OUTLET.....2 EACH

THE FOLLOWING ESTIMATED QUANTITIES ARE FOR INFORMATION ONLY:
 45° ELBOW.....1 EACH
 90° ELBOW.....1 EACH

SEALING OF CONCRETE SURFACES

SEALING OF THE NOISE BARRIER PANELS SHALL BE AS PER SHEET 3/13 OF STANDARD DRAWING NBS-1-09. THE COLOR FOR THE SEALER SHALL MEET THE FOLLOWING FEDERAL STANDARD COLOR NUMBERS:

INTERSTATE 71 SIDE:
 WALL 1: 25630 (LIGHT GRAY)

RESIDENTS SIDE:
 WALL 1: 25630 (LIGHT GRAY)

THE COST OF SEALING THE ADDITIONAL SURFACE AREA OF THE AESTHETIC TREATMENT SHALL BE CONSIDERED INCIDENTAL TO THE NOISE BARRIERS.

AESTHETIC SURFACE TREATMENT

THIS ITEM OF WORK SHALL CONSIST OF PROVIDING AESTHETIC TREATMENT TO THE CONCRETE SURFACES OF THE NOISE BARRIER PANELS. IT SHALL INCLUDE, BUT NOT BE LIMITED TO FORM LINERS AND TEXTURED SURFACES. ALL NOISE BARRIER PANELS SHALL BE REFLECTIVE.

INTERSTATE 71 SIDE: NOISE BARRIER PANELS SHALL HAVE A SURFACE FINISH WITH A MINIMUM OF 1/2" AND A MAXIMUM OF 1/4" RELIEF, AS PER STANDARD DRAWING NBS-1-09.

RESIDENTS SIDE: NOISE BARRIER PANELS SHALL HAVE A SURFACE FINISH WITH A MINIMUM OF 1/2" AND A MAXIMUM OF 1/4" RELIEF, AS PER STANDARD DRAWING NBS-1-09.

INTERSTATE 71 SIDE:
 WALL 1: ASHLAR STONE

RESIDENTS SIDE:
 WALL 1: ASHLAR STONE

THE CONTRACTOR SHALL SUBMIT PRODUCT INFORMATION FOR THE PROPOSED PATTERNED FORM LINERS TO THE ENGINEER FOR APPROVAL. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL TO THE ENGINEER FOR ANY CUSTOM DESIGNED FORM LINERS.

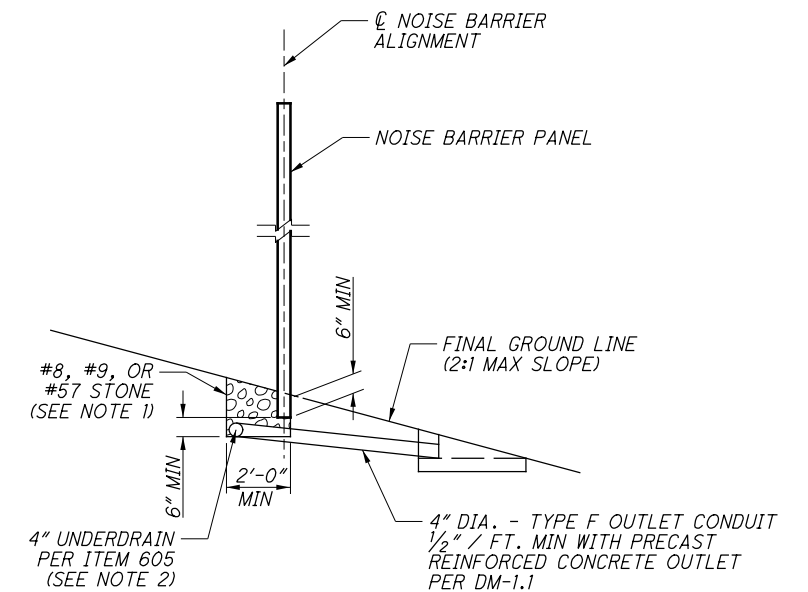
ALL PRODUCT INFORMATION AND SHOP DRAWINGS SHALL BE SUBMITTED PRIOR TO BEGINNING OF ANY WORK.

ALL MATERIALS, LABOR AND EQUIPMENT NECESSARY TO PRODUCE THE AESTHETIC TREATMENTS AS LISTED ABOVE SHALL BE CONSIDERED INCIDENTAL TO THE NOISE BARRIERS.

Vertical formliners must be used for concrete noise wall panels. Noise wall construction will adhere to NBS-1-09 dated 1/19/18.

6" Rustication groove on the post shall meet the top of the highest adjacent panel cap.

Use a concrete waterproofing admixture for all concrete posts. Pentron and BSAF Masterlife 300d are approved suppliers. The posts will not be sealed with a color.



TYPICAL SLOPED SECTION

SLOPED SECTION DRAINAGE NOTES:

1. CONSTRUCT A TRENCH WITH A MINIMUM LONGITUDINAL SLOPE OF 1.0% UNDER THE NOISE BARRIER PANELS AS SHOWN IN THE TYPICAL ELEVATION.
2. PROVIDE UNDERDRAIN SLOPE OF 1% MINIMUM OR AS SPECIFIED IN PROJECT PLANS. INSTALL IN ACCORDANCE WITH ITEM 605.

NOTE: SEE SHEET 4 FOR BARRIER ADJACENT TO PAVEMENT TYPICAL SECTION

o:\ODOT_D8\108249A.00 - HAM-71-686 PID94741\94741\structures\wall_001\sheet\94741_001\WNO01.dgn 9/15/2017 1:14:43 PM jdelaney

CALCULATED
 JRW
 CHECKED
 MAG

NOISE BARRIER GENERAL NOTES

HAM-71-6.86

209
 253

O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\94741\structures\wall_001\sheet\94741_001WS001.dgn 9/15/2017 1:14:44 PM jdelaney

PANEL NO.	DRILLED SHAFT NO.	DRILLED SHAFT STATION	DRILLED SHAFT NO.	DRILLED SHAFT STATION	TOP OF WALL	BOTTOM OF WALL	LENGTH OF PANEL (FT)	HEIGHT OF PANEL (FT)			606 SPECIAL - NOISE BARRIER (REFLECTIVE), 10' HEIGHT AND UNDER SF 96		606 SPECIAL - NOISE BARRIER (REFLECTIVE), OVER 10' TO 14' HEIGHT SF 264		606 SPECIAL - NOISE BARRIER (REFLECTIVE), OVER 14' TO 20' HEIGHT SF 360		606 SPECIAL - NOISE BARRIER (REFLECTIVE), OVER 20' TO 25' HEIGHT SF 252			
1	1	103+64	2	103+76	606.41	598.41	12	8												
2	2	103+76	3	104+00	610.41	599.41	24	11												
3	3	104+00	4	104+24	614.41	599.41	24	15												
4	4	104+24	5	104+48	614.41	598.41	24	16												
5	5	104+48	6	104+72	614.41	598.41	24	16												
6	6	104+72	7	104+96	614.41	598.41	24	16												
7	7	104+96	8	105+20	614.41	598.41	24	16												
8	8	105+20	9	105+44	614.41	598.41	24	16												
9	9	105+44	10	105+68	613.41	598.41	24	15												
10	10	105+68	11	105+80	613.41	597.41	12	16												
11	11	105+80	12	105+92	612.41	595.41	12	17												
12	12	105+92	13	106+04	611.41	594.41	12	17												
13	13	106+04	14	106+16	610.41	592.41	12	18												
14	14	106+16	15	106+28	609.41	590.41	12	19												
15	15	106+28	16	106+40	608.41	588.41	12	20												
16	16	106+40	17	106+52	607.41	586.41	12	21												
17	17	106+52	18	106+64	606.41	583.41	12	23												
18	18	106+64	19	106+76	605.41	581.41	12	24												
19	19	106+76	20	106+88	604.41	580.41	12	24												
20	20	106+88	21	107+00	604.41	580.41	12	24												
21	21	107+00	22	107+24	604.41	580.41	24	24												
22	22	107+24	23	107+48	604.41	580.41	24	24												
23	23	107+48	24	107+72	604.41	581.41	24	23												
24	24	107+72	25	107+96	604.41	581.41	24	23												
25	25	107+96	26	108+20	604.41	582.41	24	22												
26	26	108+20	27	108+44	604.41	582.41	24	22												
27	27	108+44	28	108+68	604.41	583.41	24	21												
28	28	108+68	29	108+92	604.41	583.41	24	21												
29	29	108+92	30	109+16	604.41	584.41	24	20												
30	30	109+16	31	109+40	604.41	584.41	24	20												
31	31	109+40	32	109+64	604.41	584.41	24	20												
32	32	109+64	33	109+88	604.41	585.41	24	19												
33	33	109+88	34	110+12	604.41	585.41	24	19												
34	34	110+12	35	110+36	604.41	586.41	24	18												
35	35	110+36	36	110+60	604.41	586.41	24	18												
36	36	110+60	37	110+84	604.41	586.41	24	18												
37	37	110+84	38	110+96	604.41	586.41	12	18												
38	38	110+96	39	111+20	603.41	586.41	24	17												
39	39	111+20	40	111+44	603.41	587.41	24	16												
40	40	111+44	41	111+68	603.41	587.41	24	16												
41	41	111+68	42	111+92	603.41	587.41	24	16												
42	42	111+92	43	112+16	602.41	587.41	24	15												
43	43	112+16	44	112+40	602.41	587.41	24	15												
44	44	112+40	45	112+64	602.41	587.41	24	15												
45	45	112+64	46	112+88	602.41	587.41	24	15												
46	46	112+88	47	113+12	602.41	587.41	24	15												
47	47	113+12	48	113+36	602.41	587.41	24	15												
48	48	113+36	49	113+60	602.41	587.41	24	15												
49	49	113+60	50	113+84	602.41	587.41	24	15												
50	50	113+84	51	114+08	602.41	587.41	24	15												
TOTALS CARRIED TO SHEET 211											96		264		12588		5712			

NOISE BARRIER 1 ESTIMATED QUANTITIES

HAM-71-6.86

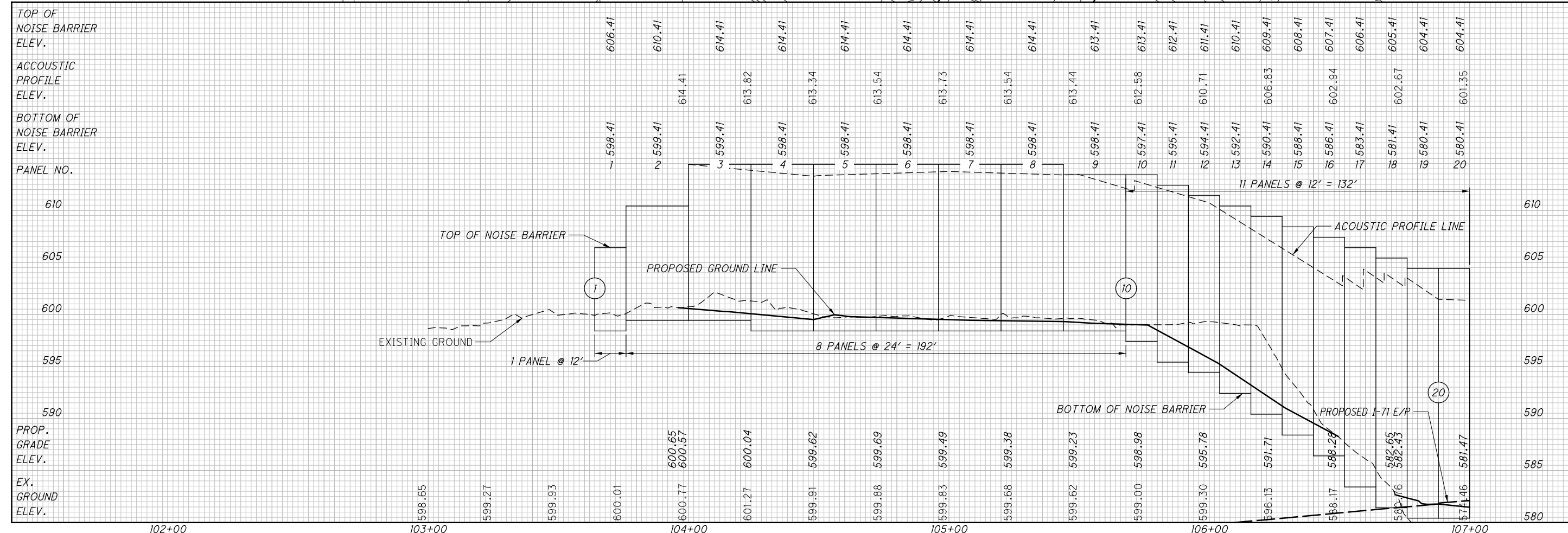
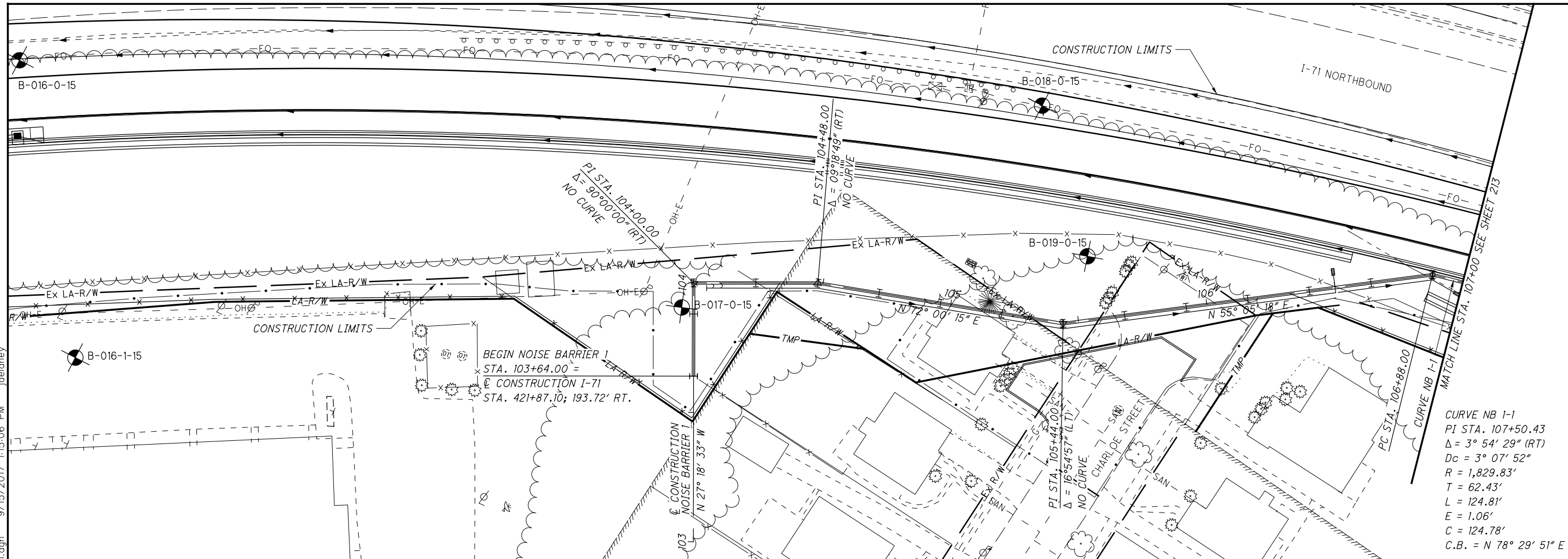
CALCULATED
JRW
CHECKED
MAG

O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\94741\structures\wall_001\sheets\94741_001WS002.dgn 9/15/2017 1:14:45 PM jdelaney

PANEL NO.	DRILLED SHAFT NO.	DRILLED SHAFT STATION	DRILLED SHAFT NO.	DRILLED SHAFT STATION	TOP OF WALL	BOTTOM OF WALL	LENGTH OF PANEL (FT)	HEIGHT OF PANEL (FT)			606 SPECIAL - NOISE BARRIER (REFLECTIVE), 10' HEIGHT AND UNDER SF	606 SPECIAL - NOISE BARRIER (REFLECTIVE), OVER 10' TO 14' HEIGHT SF	606 SPECIAL - NOISE BARRIER (REFLECTIVE), OVER 14' TO 20' HEIGHT SF	606 SPECIAL - NOISE BARRIER (REFLECTIVE), OVER 20' TO 25' HEIGHT SF			
51	51	114+08	52	114+32	602.41	587.41	24	15									
52	52	114+32	53	114+56	602.41	586.41	24	16									
53	53	114+56	54	114+80	601.41	586.41	24	15									
54	54	114+80	55	115+04	601.41	586.41	24	15									
55	55	115+04	56	115+28	601.41	585.41	24	16									
56	56	115+28	57	115+52	601.41	585.41	24	16									
57	57	115+52	58	115+76	600.41	585.41	24	15									
58	58	115+76	59	116+00	600.41	585.41	24	15									
59	59	116+00	60	116+24	600.41	584.41	24	16									
60	60	116+24	61	116+48	599.41	584.41	24	15									
61	61	116+48	62	116+72	599.41	584.41	24	15									
62	62	116+72	63	116+96	599.41	584.41	24	15									
63	63	116+96	64	117+20	599.41	584.41	24	15									
64	64	117+20	65	117+44	599.41	584.41	24	15									
65	65	117+44	66	117+68	599.41	584.41	24	15									
66	66	117+68	67	117+92	599.41	584.41	24	15									
67	67	117+92	68	118+16	599.41	584.41	24	15									
68	68	118+16	69	118+28	599.41	584.41	12	15									
69	69	118+28	70	118+52	599.41	584.41	24	15									
70	70	118+52	71	118+76	599.41	584.41	24	15									
71	71	118+76	72	119+00	599.41	584.41	24	15									
72	72	119+00	73	119+24	599.41	584.41	24	15									
73	73	119+24	74	119+48	600.41	585.41	24	15									
74	74	119+48	75	119+72	600.41	585.41	24	15									
75	75	119+72	76	119+96	600.41	585.41	24	15									
76	76	119+96	77	120+20	601.41	586.41	24	15									
77	77	120+20	78	120+44	601.41	586.41	24	15									
78	78	120+44	79	120+68	601.41	586.41	24	15									
79	79	120+68	80	120+92	601.41	587.41	24	14									
80	80	120+92	81	121+16	597.41	587.41	24	10									
81	81	121+16	82	121+40	594.41	588.41	24	6			240		336				
											144						
SUBTOTAL FROM THIS SHEET																	
SUBTOTAL FROM SHEET 210																	
TOTALS CARRIED TO GENERAL SUMMARY																	
											384	336	9996	0			
											96	264	12588	5712			
											480	600	22584	5712			

NOISE BARRIER 1 ESTIMATED QUANTITIES	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">CALCULATED</td> <td style="width: 50%; text-align: center;">JRW</td> </tr> <tr> <td style="width: 50%; text-align: center;">CHECKED</td> <td style="width: 50%; text-align: center;">MAG</td> </tr> </table>	CALCULATED	JRW	CHECKED	MAG
CALCULATED	JRW				
CHECKED	MAG				
HAM-71-6.86	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">211</td> <td style="width: 50%; text-align: center;">253</td> </tr> </table>	211	253		
211	253				

o:\odot\d8\108249A.00 - HAM-71-686 PID94741\94741\structures\wall_001\sheets\94741_001\WP001.dgn 9/15/2017 1:15:06 PM jdetney



CALCULATED
 JRW
 CHECKED
 MAG

HORIZONTAL
 SCALE IN FEET

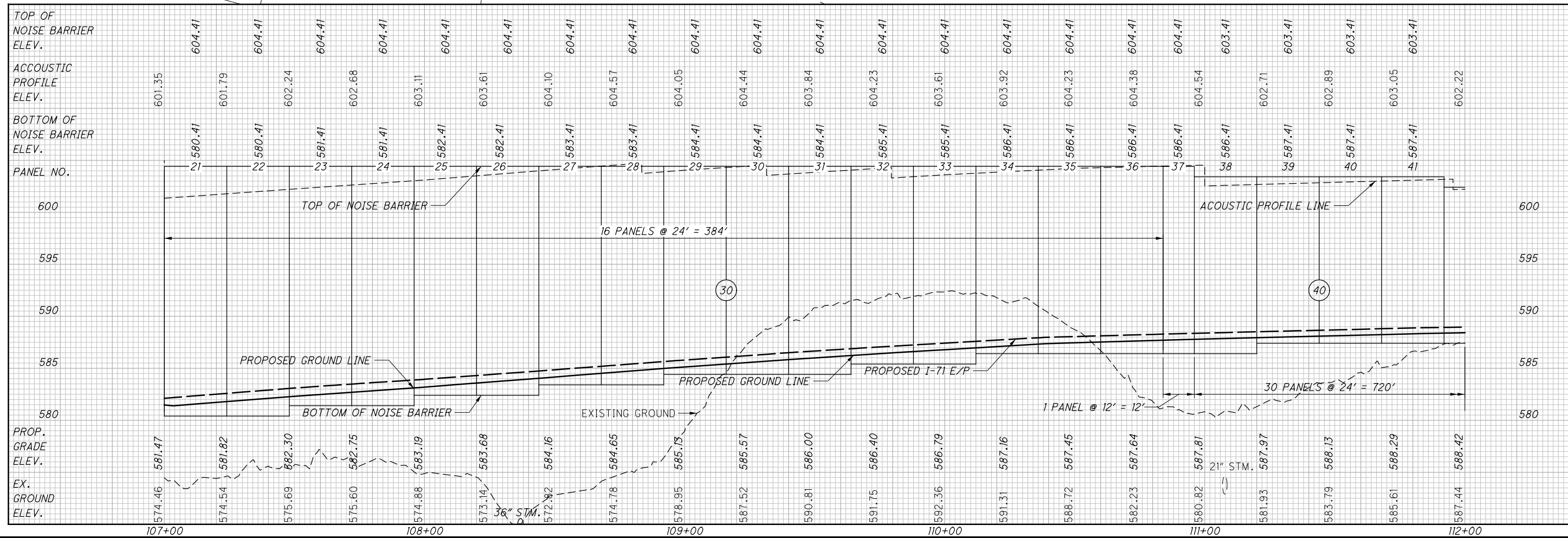
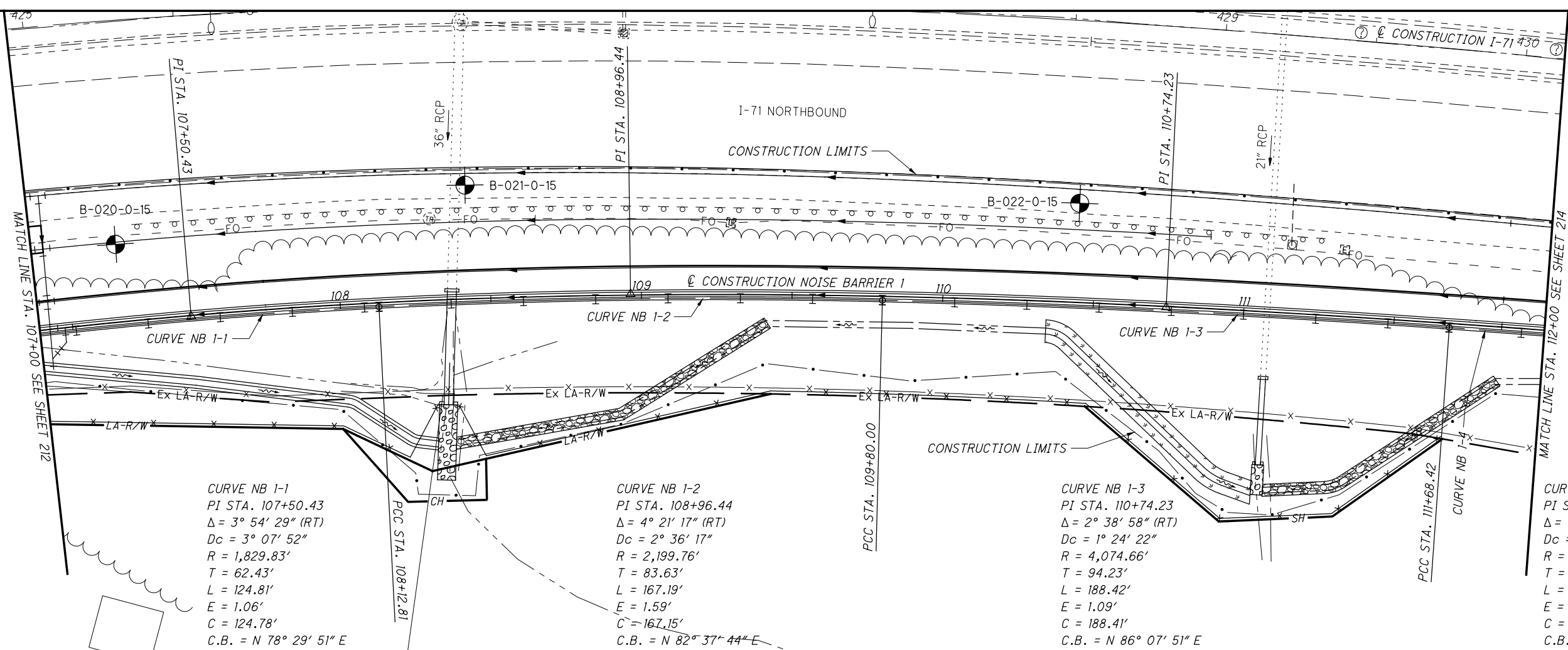
PLAN AND PROFILE - NOISE BARRIER 1

STA. 103+64.00 TO STA. 107+00.00

HAM-71-6.86

212
 253

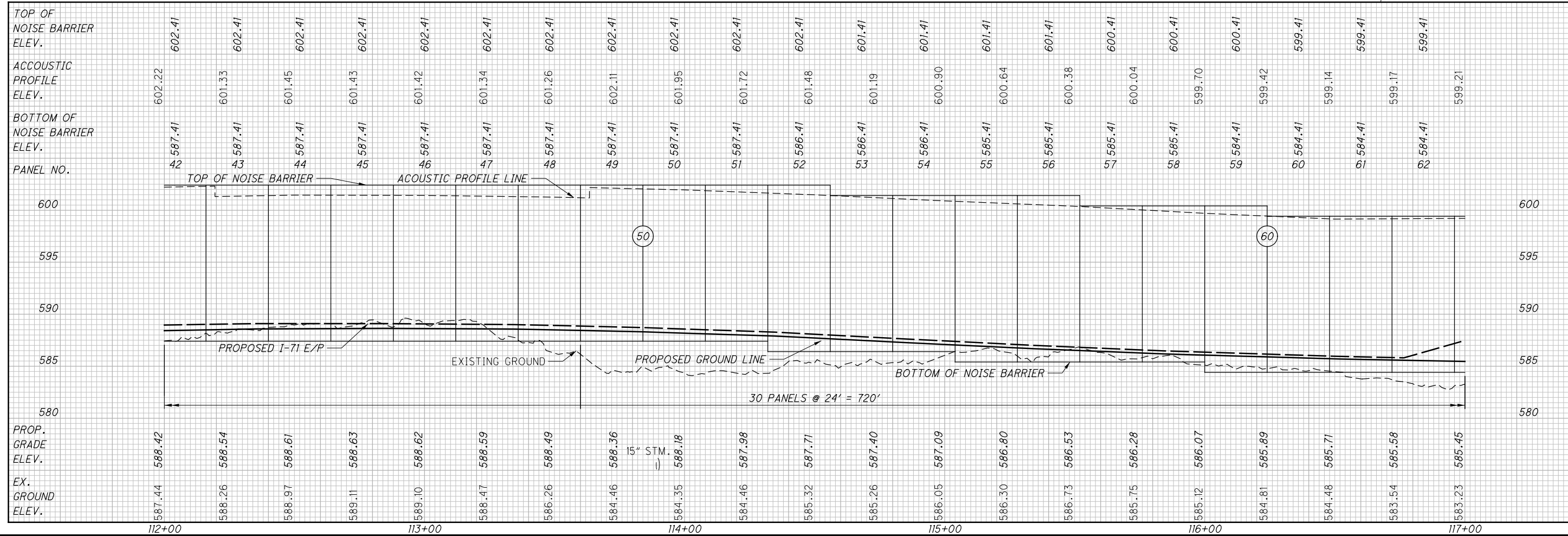
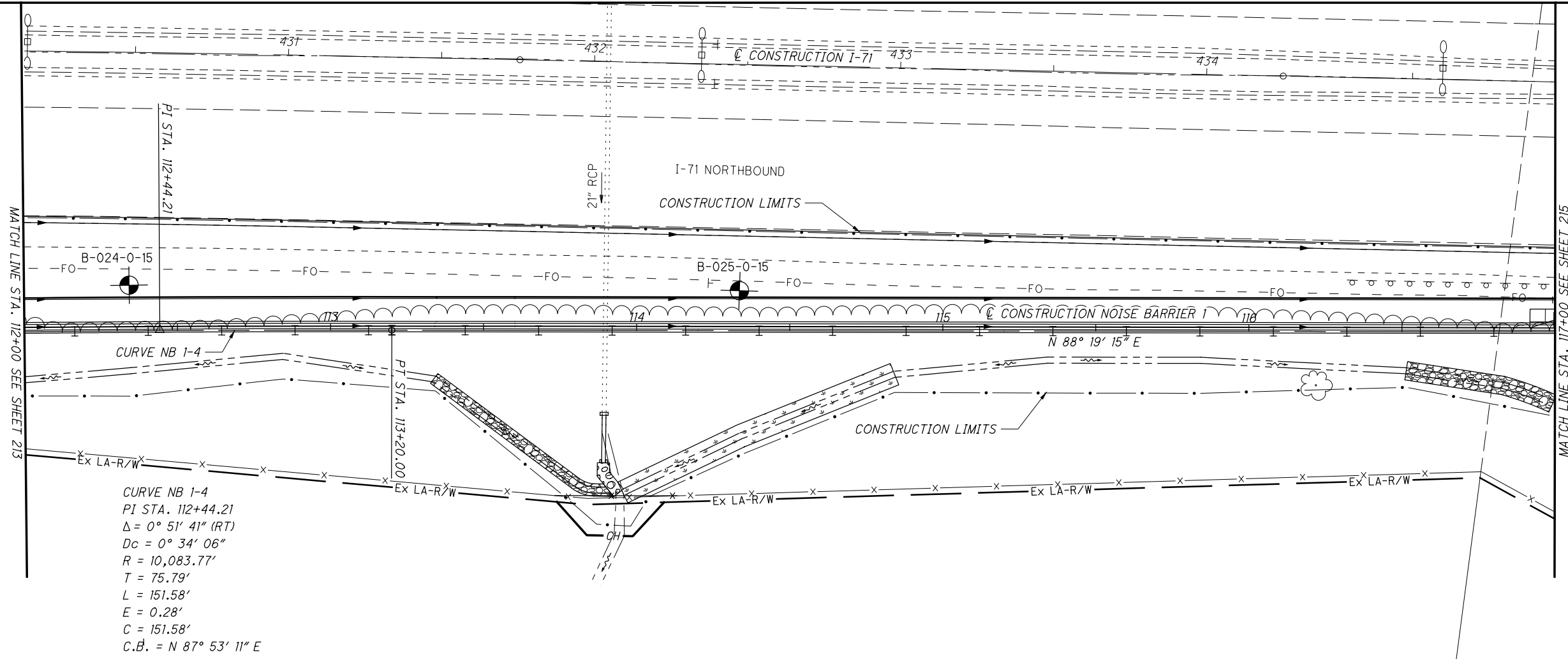
O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\94741\structures\wall_001\sheets\94741_001WP002.dgn 9/15/2017 1:15:16 PM jdetoney



PLAN AND PROFILE - NOISE BARRIER 1
STA. 107+00.00 TO STA. 112+00.00

HAM-71-6.86

O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\94741\structures\wall_001\sheets\94741_001WP003.dgn 9/15/2017 1:15:26 PM jdelaney



0 20 40
HORIZONTAL SCALE IN FEET

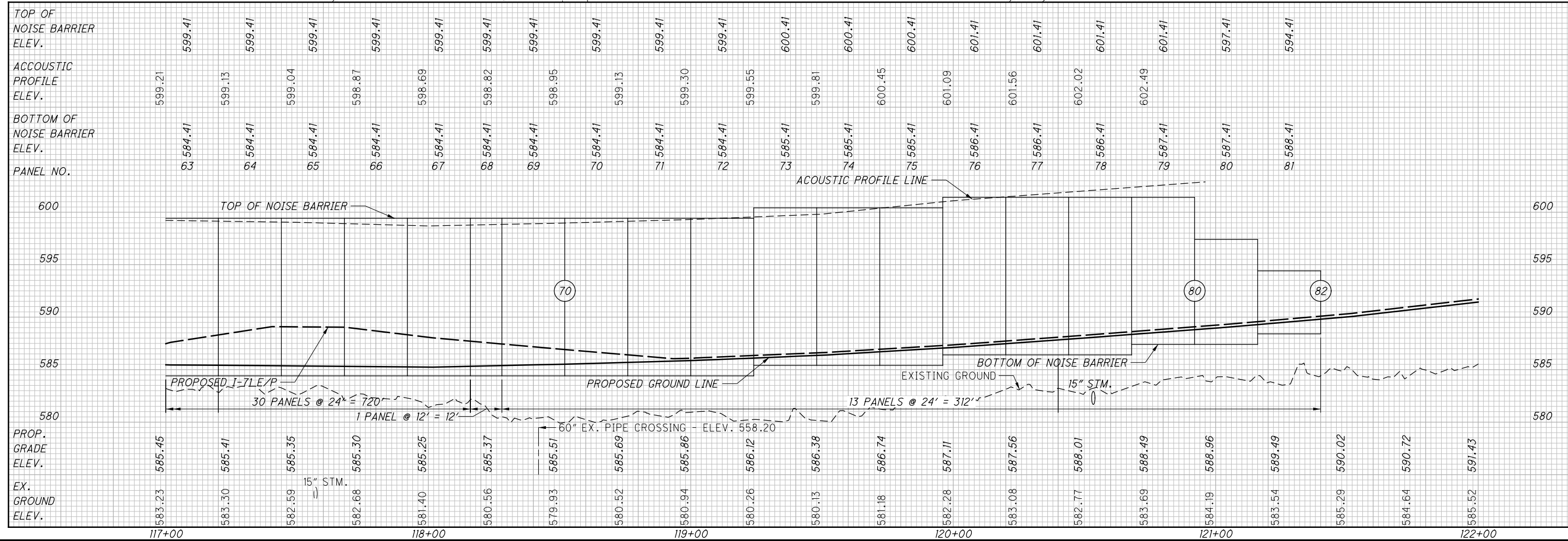
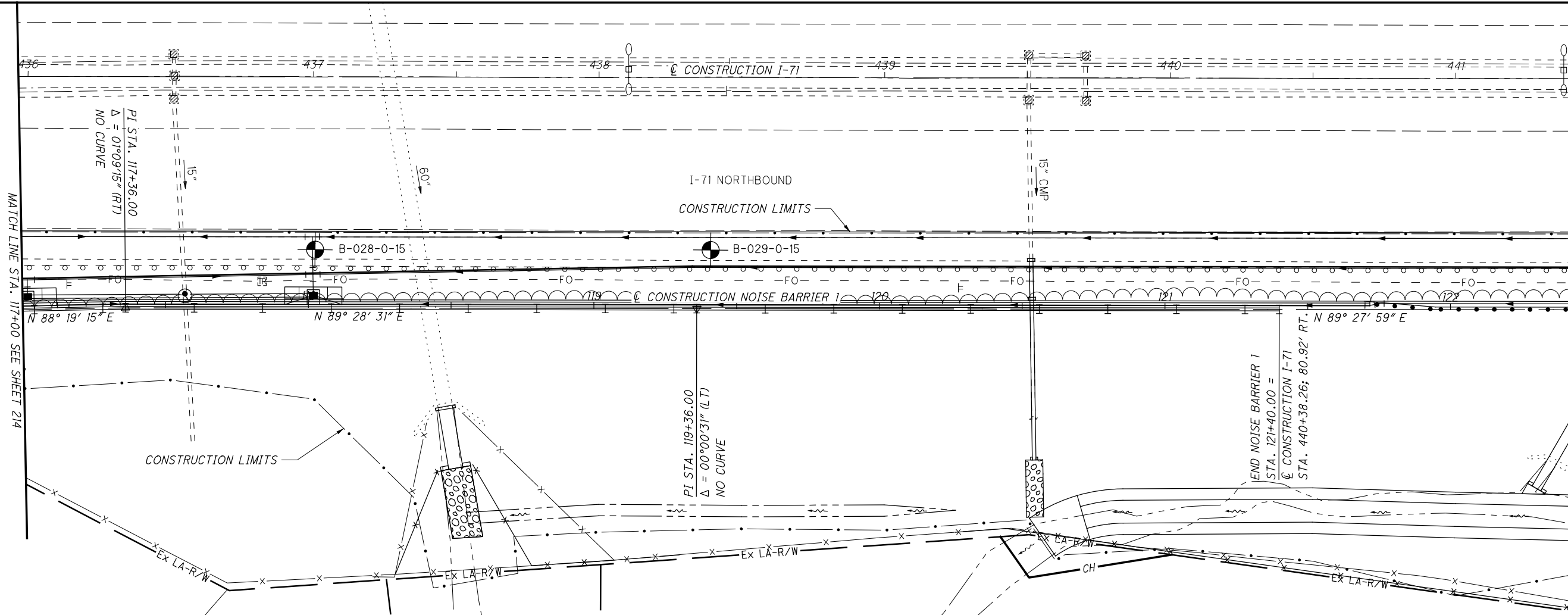
CALCULATED
JRW
CHECKED
MAG

PLAN AND PROFILE - NOISE BARRIER 1
STA. 112+00.00 TO STA. 117+00.00

HAM-71-6.86

(214)
(253)

o:\odot_08\0108249A.00 - HAM-71-686 PID94741\94741\structures_wall_001\sheets_94741_001\WP004.dgn 9/15/2017 1:15:36 PM jdelaney



PANEL NO.	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81
TOP OF NOISE BARRIER ELEV.	599.41	599.41	599.41	599.41	599.41	599.41	599.41	599.41	599.41	599.41	600.41	600.41	600.41	601.41	601.41	601.41	601.41	597.41	594.41
ACOUSTIC PROFILE ELEV.	599.21	599.13	599.04	598.87	598.69	598.82	598.95	599.13	599.30	599.55	599.81	600.45	601.09	601.56	602.02	602.49	597.41	594.41	594.41
BOTTOM OF NOISE BARRIER ELEV.	584.41	584.41	584.41	584.41	584.41	584.41	584.41	584.41	584.41	584.41	585.41	585.41	585.41	586.41	586.41	586.41	587.41	587.41	588.41

0 20 40
HORIZONTAL SCALE IN FEET

CALCULATED
JRW
CHECKED
MAG

PLAN AND PROFILE - NOISE BARRIER 1
 STA. 117+00.00 TO STA. 121+40.00

HAM-71-6.86

215
253

O:\ODOT_D8\108249A.00 - HAM-71-686 PID94741\94741\structures\wall_001\sheets\94741_001WC001.dgn 9/15/2017 1:15:37 PM jdelaney

NOISE BARRIER 1

DRILLED SHAFT NO.	WORKPOINT STATION	PRECAST CONCRETE POST	TOP OF DRILLED SHAFT ELEVATION	DRILLED SHAFT LENGTH (FEET)
1	103+64.00	16" TYPE B	598.17	15.0
2	103+76.00	16" TYPE A	599.10	15.0
3	104+00.00	16" TYPE A	599.10	15.0
4	104+24.00	16" TYPE A	598.10	15.0
5	104+48.00	16" TYPE A	598.10	15.0
6	104+72.00	16" TYPE A	598.10	15.0
7	104+96.00	16" TYPE A	598.10	15.0
8	105+20.00	16" TYPE A	598.10	15.0
9	105+44.00	16" TYPE D	598.10	15.0
10	105+68.00	16" TYPE A	597.10	20.0
11	105+80.00	16" TYPE A	594.99	20.0
12	105+92.00	16" TYPE A	593.99	20.0
13	106+04.00	16" TYPE A	591.99	20.0
14	106+16.00	16" TYPE A	589.99	20.0
15	106+28.00	16" TYPE A	587.99	20.0
16	106+40.00	16" TYPE A	585.99	20.0
17	106+52.00	16" TYPE A	582.99	20.0
18	106+64.00	16" TYPE A	580.99	20.0
19	106+76.00	16" TYPE A	579.99	20.0
20	106+88.00	16" TYPE D	579.99	20.0
21	107+00.00	20" TYPE A	579.96	20.0
22	107+24.00	20" TYPE A	579.96	20.0
23	107+48.00	20" TYPE A	579.96	20.0
24	107+72.00	20" TYPE A	580.96	20.0
25	107+96.00	20" TYPE A	580.96	20.0
26	108+20.00	20" TYPE A	581.96	20.0
27	108+44.00	20" TYPE A	581.96	20.0
28	108+68.00	20" TYPE A	582.96	20.0
29	108+92.00	20" TYPE A	582.96	20.0
30	109+16.00	20" TYPE A	583.96	15.0
31	109+40.00	20" TYPE A	583.96	15.0
32	109+64.00	20" TYPE A	583.96	15.0
33	109+88.00	20" TYPE A	584.96	15.0
34	110+12.00	20" TYPE A	584.96	15.0
35	110+36.00	20" TYPE A	585.96	15.0
36	110+60.00	20" TYPE A	585.96	15.0
37	110+84.00	20" TYPE A	585.96	15.0
38	110+96.00	20" TYPE A	585.96	15.0
39	111+20.00	20" TYPE A	585.96	15.0
40	111+44.00	16" TYPE A	587.10	15.0
41	111+68.00	16" TYPE A	587.10	15.0
42	111+92.00	16" TYPE A	587.10	15.0
43	112+16.00	16" TYPE A	587.10	15.0
44	112+40.00	16" TYPE A	587.10	15.0
45	112+64.00	16" TYPE A	587.10	15.0
46	112+88.00	16" TYPE A	587.10	15.0
47	113+12.00	16" TYPE A	587.10	15.0
48	113+36.00	16" TYPE A	587.10	15.0
49	113+60.00	16" TYPE A	587.10	15.0
50	113+84.00	16" TYPE A	587.10	15.0
51	114+08.00	16" TYPE A	587.10	15.0
52	114+32.00	16" TYPE A	586.10	15.0
53	114+56.00	16" TYPE A	586.10	15.0
54	114+80.00	16" TYPE A	586.10	15.0
55	115+04.00	16" TYPE A	585.10	15.0
56	115+28.00	16" TYPE A	585.10	15.0
57	115+52.00	16" TYPE A	585.10	15.0
58	115+76.00	16" TYPE A	585.10	15.0
59	116+00.00	16" TYPE A	584.10	15.0
60	116+24.00	16" TYPE A	584.10	15.0
61	116+48.00	16" TYPE A	584.10	15.0
62	116+72.00	16" TYPE A	584.10	15.0
63	116+96.00	16" TYPE A	584.10	15.0
64	117+20.00	16" TYPE A	584.10	15.0
65	117+44.00	16" TYPE A	584.10	15.0

NOISE BARRIER 1 (CONTINUED)

DRILLED SHAFT NO.	WORKPOINT STATION	PRECAST CONCRETE POST	TOP OF DRILLED SHAFT ELEVATION	DRILLED SHAFT LENGTH (FEET)
66	117+68.00	16" TYPE A	584.10	15.0
67	117+92.00	16" TYPE A	584.10	15.0
68	118+16.00	16" TYPE A	584.10	15.0
69	118+28.00	16" TYPE A	584.10	15.0
70	118+52.00	16" TYPE A	584.10	15.0
71	118+76.00	16" TYPE A	584.10	15.0
72	119+00.00	16" TYPE A	584.10	15.0
73	119+24.00	16" TYPE A	584.10	15.0
74	119+48.00	16" TYPE A	585.10	15.0
75	119+72.00	16" TYPE A	585.10	15.0
76	119+96.00	16" TYPE A	585.10	15.0
77	120+20.00	16" TYPE A	586.10	15.0
78	120+44.00	16" TYPE A	586.10	15.0
79	120+68.00	16" TYPE A	586.10	15.0
80	120+92.00	16" TYPE A	587.10	15.0
81	121+16.00	16" TYPE A	587.10	15.0
82	121+40.00	16" TYPE B	588.17	15.0

CALCULATED
AMM
CHECKED
SUM

NOISE BARRIER DATA TABLES

HAM-71-6.86

GENERAL NOTES

DESIGN SPECIFICATIONS

THIS SOIL NAIL WALL HAS BEEN DESIGNED IN ACCORDANCE WITH THE DESIGN PROCEDURES IN THE FHWA "GEOTECHNICAL ENGINEERING CIRCULAR NO. 7, SOIL NAIL WALLS", PUBLICATION NO. FHWA-NHI-14-007. STRUCTURAL DESIGN OF ANY INDIVIDUAL WALL ELEMENTS NOT COVERED IN THE FHWA MANUAL HAVE BEEN DESIGNED IN ACCORDANCE WITH AASHTO LRFD SPECIFICATIONS 7TH EDITION AND ALL INTERIM SPECIFICATIONS.

DESIGN SOIL PARAMETERS

MATERIAL	UNIT WEIGHT (LB/CU FT)	COHESION (LB/SQ FT)	FRICTION ANGLE (DEGREES)	ULTIMATE BOND STRENGTH (LB/SQ IN)	ULTIMATE PULLOUT (LB/FT)	ALLOWABLE PULLOUT (LB/FT)
SANDY SILT (1)	135	100	28	8.7	1960	980
SANDY SILT (2)	125	0	30	8.7	1960	980
SILT AND CLAY	140	100	28	8.7	1960	980
GRAVEL WITH SAND	130	0	34	14.5	3270	1635
SILT	135	0	34	8.7	1960	980

DESIGN LOADING

LIVE LOAD SURCHARGE (LS) = 0.25 KSF

DESIGN DATA

CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4.0 KSI (CIP WALL FACING)

SHOTCRETE - COMPRESSIVE STRENGTH 4 KSI

REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI (EPOXY COATED)

WELDED WIRE FABRIC (ASTM A185) - MINIMUM YIELD STRENGTH 60 KSI (PLAIN)

STRUCTURAL STEEL - ASTM A36 - YIELD STRENGTH 36 KSI (BEARING PLATE)

NAIL GROUT - COMPRESSIVE STRENGTH 3 KSI

NAIL BAR, WASHERS, NUTS AND HEADED STUDS - MINIMUM YIELD STRENGTH 60 KSI

SOIL NAIL - AASHTO M31/ASTM A615 GRADE 60 DEFORMED BAR, CONTINUOUS WITHOUT SPLICES OR WELDS.

HEADED STUDS - ASTM A307, GRADE A

MATERIALS

MATERIALS FOR SOIL NAIL STRUCTURES SHALL CONSIST OF THE FOLLOWING:

SOLID BAR NAIL TENDONS:
AASHTO M31/ASTM A615, GRADE 60. DEFORMED BAR, CONTINUOUS WITHOUT SPLICES OR WELDS, NEW, STRAIGHT, UNDEFORMED, EPOXY COATED. THREADED A MINIMUM OF 6 INCHES ON THE WALL ANCHORAGE END TO ALLOW PROPER ATTACHMENT OF BEARING PLATE AND NUT. THREADING MAY BE CONTINUOUS SPIRAL DEFORMED RIBBING PROVIDED BY THE BAR DEFORMATIONS (E.G. CONTINUOUS THREADBARS) OR MAY BE CUT INTO A REINFORCING BAR. IF THREADS ARE CUT INTO A REINFORCING BAR, PROVIDE THE NEXT LARGER BAR NUMBER DESIGNATION FROM THAT SHOWN ON THE PLANS, AT NO ADDITIONAL COST.

FUSION BONDED EPOXY COATING:
ASTM A775. MINIMUM 0.016 INCH THICKNESS ELECTROSTATICALLY APPLIED. BEND TEST REQUIREMENTS ARE WAIVED. COATING AT THE WALL ANCHORAGE END OF EPOXY COATED BARS MAY BE OMITTED OVER THE LENGTH PROVIDED FOR THREADING THE NUT AGAINST THE BEARING PLATE.

CENTRALIZERS:
MANUFACTURED FROM SCHEDULE 40 PVC PIPE OR TUBE STEEL OR OTHER MATERIAL NOT DETRIMENTAL TO THE NAIL STEEL (WOOD SHALL NOT BE USED); SECURELY ATTACHED TO THE NAIL BAR; SIZED TO POSITION THE NAIL BAR WITHIN 1 INCH OF THE CENTER OF THE DRILLHOLE; SIZED TO ALLOW TREMIE PIPE INSERTION TO THE BOTTOM OF THE DRILLHOLE; AND SIZED TO ALLOW GROUT TO FREELY FLOW UP THE DRILLHOLE.

NAIL GROUT:
NEAT CEMENT OR SAND/CEMENT MIXTURE WITH A MINIMUM 3-DAY COMPRESSIVE STRENGTH OF 1500 PSI AND A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI PER AASHTO T106/ASTM C109.

ADMIXTURES:
AASHTO M194/ASTM C494. ADMIXTURES WHICH CONTROL BLEED, IMPROVE FLOWABILITY, REDUCE WATER CONTENT AND RETARD SET MAY BE USED IN THE GROUT SUBJECT TO REVIEW AND ACCEPTANCE BY ODOT. ACCELERATORS ARE NOT PERMITTED. ADMIXTURES SHALL BE COMPATIBLE WITH THE GROUT AND MIXED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

WELDED WIRE FABRIC:
AASHTO M55/ASTM A185

REINFORCING BARS FOR SHOTCRETE FACING:
AASHTO M31/ASTM A615, GRADE 420, DEFORMED

BEARING PLATE:
THE BEARING PLATE SHALL CONFORM TO REQUIREMENTS OF 711.

ANCHORAGE:
THE ANCHORAGE SHALL BE THE STANDARD PRODUCT OF THE BAR MANUFACTURER AND CONFORM TO THE REQUIREMENTS OF 711. IT SHALL BE CAPABLE OF TRANSFERRING 100 PERCENT OF THE GUARANTEED ULTIMATE TENSILE STRENGTH (GUTS) FROM THE SOIL NAIL TENDON TO THE BEARING PLATE.

NUTS:
AASHTO M291, GRADE B, HEXAGONAL, FITTED WITH BEVELED WASHER OR SPHERICAL SEAT TO PROVIDE UNIFORM BEARING.

GEOCOMPOSITE DRAIN STRIP:
AMERDRAIN 500, MIRAFI G100W, C-DRAIN C-180.

FILM PROTECTION:
POLYETHYLENE FILM PER AASHTO M171

MATERIALS HANDLING AND STORAGE

STORE STEEL REINFORCEMENT ON SUPPORTS TO KEEP THE STEEL FROM CONTACTING THE GROUND. DAMAGE TO THE NAIL STEEL AS A RESULT OF ABRASION, CUTS, NICKS, WELDS, AND WELD SPLATTER SHALL BE CAUSE FOR REJECTION. DO NOT GROUND WELDING LEADS TO NAIL BAR. PROTECT NAIL STEEL FROM DIRT, RUST, AND OTHER DELETERIOUS SUBSTANCES PRIOR TO INSTALLATION. HEAVY CORROSION OR PITTING OF NAILS SHALL BE CAUSE FOR REJECTION. LIGHT RUST THAT HAS NOT RESULTED IN PITTING IS ACCEPTABLE. PLACE PROTECTIVE WRAP OVER ANCHORAGE END OF NAIL BAR TO WHICH BEARING PLATE AND NUT WILL BE ATTACHED TO PROTECT DURING HANDLING, INSTALLATION, GROUTING AND SHOTCRETING.

HANDLE AND STORE EPOXY COATED BARS IN A WAY THAT WILL PREVENT THEM FROM BEING DAMAGED BEYOND WHAT IS PERMITTED BY ASTM 3963. REPAIR DAMAGED EPOXY COATING IN ACCORDANCE WITH ASTM A775 AND THE COATER'S RECOMMENDATIONS USING AN EPOXY FIELD REPAIR KIT APPROVED BY THE EPOXY MANUFACTURER. REPAIRED AREAS SHALL HAVE A MINIMUM 0.012 INCH COATING THICKNESS.

QUALIFICATION OF CONTRACTOR

SOIL NAILS
THE CONTRACTOR PERFORMING THE SOIL NAILING WORK FOR THIS PROJECT SHALL BE PREQUALIFIED WITH THE OHIO DEPARTMENT OF TRANSPORTATION (ODOT) PER THE OHIO REVISED CODE 5525.02 THROUGH 5525.09. PRIOR TO THE COMMENCEMENT OF SOIL NAILING WORK, THE CONTRACTOR SHALL SUBMIT TO THE PROJECT ENGINEER A REPORT WHICH IDENTIFIES THE CONTRACTOR'S PERSONNEL WHO WILL BE PERFORMING AND SUPERVISING THE SOIL NAILING WORK. THE REPORT SHALL INCLUDE THE NAMES OF A SOIL NAIL ENGINEER, SOIL NAIL SITE SUPERVISOR, AND DRILL OPERATORS. THE REPORT SHALL ALSO CONTAIN A LIST OF EMPLOYER'S NAMES AND TELEPHONE NUMBERS, LOCATIONS AND DATES OF PREVIOUS PERMANENT SOIL NAILING OR TIEBACK PROJECTS, AND THE EXTENT OF WORK PERFORMED. THIS INFORMATION MUST BE VERIFIABLE. SOIL NAILING WORK SHALL BE DEFINED AS ALL ACTIVITIES RELATED TO THE SOIL NAILING, INCLUDING FURNISHING, FABRICATING, DRILLING, INSTALLING AND TESTING. FURTHER, IN ORDER TO MEET THE REQUIREMENTS OF ODOT SPECIFICATION 108.05, THE PERSONNEL PERFORMING SOIL NAILING WORK SHALL HAVE ACQUIRED WORK EXPERIENCE WHICH IS NOT LESS THAN THE LEVEL OF EXPERIENCE AS DEFINED BELOW:

THE ENGINEER WILL APPROVE OR REJECT THE CONTRACTOR'S PERSONNEL WITHIN THIRTY (30) CALENDAR DAYS FOLLOWING THE SUBMISSION OF THE REPORT OF NAMES AND VERIFIABLE RESUME INFORMATION. SOIL NAILING WORK SHALL NOT COMMENCE UNTIL THE PROJECT ENGINEER HAS PROVIDED A WRITTEN LETTER OF APPROVAL. IN THE EVENT THE CONTRACTOR ELECTS TO SUBSTITUTE PERSONNEL, VERIFIABLE RESUME INFORMATION SHALL BE SUBMITTED TO THE PROJECT ENGINEER PRIOR TO THAT INDIVIDUAL'S PERFORMANCE OF SOIL NAILING WORK. THE PROJECT ENGINEER WILL APPROVE OR REJECT THE CONTRACTOR'S PROPOSED SUBSTITUTE WITHIN FIFTEEN (15) CALENDAR DAYS. THE PROJECT ENGINEER WILL TAKE ACTION AFFORDED TO HIM PURSUANT TO ODOT SPECIFICATIONS, INCLUDING BUT NOT LIMITED TO SPECIFICATION 108.05, IN ORDER TO BE ASSURED THAT ALL PERSONNEL HAVE THE SUFFICIENT AND REQUISITE SKILL AND EXPERIENCE TO PERFORM PROPERLY THE WORK ASSIGNED TO THEM.

THE SOIL NAIL ENGINEER SHALL BE A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF OHIO AND SHALL BE RESPONSIBLE FOR OVERSEEING THE SOIL NAILING WORK AND VERIFYING THE RESULTS OF THE TESTING. THE SOIL NAIL ENGINEER SHALL HAVE FIVE (5) YEARS OF CONSTRUCTION EXPERIENCE IN THE INSTALLATION OF PERMANENT SOIL NAILS OR TIEBACKS AND SHALL HAVE OVERSEEN THE SUCCESSFUL INSTALLATION OF OVER 100 PERMANENT SOIL NAILS OR TIEBACKS. THE WORK EXPERIENCE TIME PERIOD IS COMPUTED BY THE ADDITION OF ALL DOCUMENTED DURATIONS OF SOIL NAILING OR TIEBACK WORK TIME ON CONSTRUCTION PROJECTS.

THE SOIL NAIL SITE SUPERVISOR SHALL BE PRESENT AT THE JOB SITE AT ALL TIMES DURING THE PERFORMANCE OF SOIL NAILING WORK. THE SOIL NAIL SITE SUPERVISOR SHALL HAVE FIVE (5) YEARS OF CONSTRUCTION EXPERIENCE IN THE INSTALLATION OF PERMANENT SOIL NAILS OR TIEBACKS AND SHALL HAVE SUPERVISED THE SUCCESSFUL INSTALLATION OF OVER 100 PERMANENT SOIL NAILS OR TIEBACKS. THE WORK EXPERIENCE TIME PERIOD IS COMPUTED BY THE ADDITION OF ALL DOCUMENTED DURATIONS OF SOIL NAILING OR TIEBACK WORK TIME ON CONSTRUCTION PROJECTS.

DRILL OPERATORS SHALL HAVE SUCCESSFULLY INSTALLED 50 PERMANENT SOIL NAILS OR TIEBACKS.

SHOTCRETE
WORKERS, INCLUDING FOREMEN, NOZZLEMEN, AND DELIVERY EQUIPMENT OPERATORS SHALL BE FULLY EXPERIENCED TO PERFORM THE WORK. ALL SHOTCRETE NOZZLEMEN ON THIS PROJECT SHALL HAVE EXPERIENCE ON AT LEAST 3 PROJECTS IN THE PAST 3 YEARS IN SIMILAR SHOTCRETE APPLICATION WORK AND SHALL DEMONSTRATE ABILITY TO SATISFACTORILY PLACE THE SHOTCRETE.

NOZZLEMEN SHALL HAVE AMERICAN CONCRETE INSTITUTE NOZZLEMEN CERTIFICATION. SUBMIT DOCUMENTED PROOF THEY HAVE BEEN CERTIFIED IN ACCORDANCE WITH THE ACI 506.3R GUIDE TO CERTIFICATION OF SHOTCRETE NOZZLEMEN. THE CERTIFICATION SHALL HAVE BEEN DONE BY AN ACI RECOGNIZED SHOTCRETE TESTING LAB AND/OR RECOGNIZED SHOTCRETING CONSULTANT AND HAVE COVERED THE TYPE OF SHOTCRETE TO BE USED. ALL NOZZLEMEN WILL BE REQUIRED TO PERIODICALLY SHOOT PRODUCTION TEST PANELS DURING THE COURSE OF THE WORK AT THE FREQUENCY SPECIFIED HEREIN.

NOTIFY THE ENGINEER NO LESS THAN 2 DAYS PRIOR TO THE SHOOTING OF PRECONSTRUCTION TEST PANELS TO BE USED TO QUALIFY NOZZLEMEN WITHOUT PREVIOUS ACI CERTIFICATION. USE THE SAME SHOTCRETE MIX AND EQUIPMENT TO MAKE THE QUALIFICATION TEST PANELS AS THOSE TO BE USED FOR THE SOIL NAIL WALL SHOTCRETE FACING. INITIAL QUALIFICATION OF THE NOZZLEMEN WILL BE BASED ON A VISUAL INSPECTION OF THE SHOTCRETE DENSITY AND VOID STRUCTURE AND ON ACHIEVING THE SPECIFIED 3-DAY AND 28-DAY COMPRESSIVE STRENGTH REQUIREMENTS DETERMINED FROM TEST SPECIMENS EXTRACTED FROM THE PRECONSTRUCTION TEST PANELS. PRECONSTRUCTION AND PRODUCTION TEST PANELS, CORE EXTRACTION AND COMPRESSIVE STRENGTH TESTING SHALL BE CONDUCTED IN ACCORDANCE WITH ACI 506.2 AND AASHTO T24/ASTM C42, UNLESS OTHERWISE SPECIFIED HEREIN. NOZZLEMEN WITHOUT ACI CERTIFICATION WILL BE ALLOWED TO BEGIN PRODUCTION SHOOTING BASED ON SATISFACTORY COMPLETION OF THE PRECONSTRUCTION TEST PANELS AND PASSING 3-DAY STRENGTH TEST REQUIREMENTS. CONTINUED QUALIFICATION WILL BE SUBJECT TO PASSING THE 28-DAY STRENGTH TESTS AND SHOOTING SATISFACTORY DURING PRODUCTION TEST PANELS.

SUBMITTALS

AT LEAST 2 WEEKS PRIOR TO INITIATING THE SOIL NAIL WALL CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT 5 COPIES OF THE FOLLOWING, IN WRITING, TO ODOT FOR REVIEW AND THEIR RECORDS.

- THE PROPOSED START DATE AND PROPOSED DETAILED WALL CONSTRUCTION SEQUENCE INCLUDING:
 - PLAN DESCRIBING HOW SURFACE WATER WILL BE DIVERTED, CONTROLLED AND DISPOSED OF.
 - PROPOSED METHODS AND EQUIPMENT FOR EXCAVATING THE SOIL TO THE STAGED EXCAVATION LIFTS INDICATED IN THE PLANS, INCLUDING THE PROPOSED GRADE ELEVATIONS FOR EACH EXCAVATION LIFT SHOWN ON A WALL ELEVATION VIEW.
 - MEASURES TO ENSURE WALL AND SLOPE STABILITY DURING VARIOUS STAGES OF WALL CONSTRUCTION AND EXCAVATION WHERE DISCONTINUOUS ROWS OF NAILS WILL BE INSTALLED (IF APPLICABLE); INFORMATION ON SPACE REQUIREMENTS FOR INSTALLATION EQUIPMENT; TEMPORARY SHORING PLANS (IF APPLICABLE); INFORMATION ON PROVISIONS FOR WORKING IN THE PROXIMITY OF UNDERGROUND FACILITIES OR UTILITIES (IF APPLICABLE).
 - PROPOSED NAIL DRILLING METHODS AND EQUIPMENT INCLUDING DRILLHOLE DIAMETER PROPOSED TO ACHIEVE THE SPECIFIED PULLOUT RESISTANCE VALUES AND ANY VARIATION OF THESE ALONG THE WALL ALIGNMENT.
- NAIL GROUT MIX DESIGN INCLUDING:
 - TYPE OF PORTLAND CEMENT.
 - AGGREGATE SOURCE AND GRADATION.
 - PROPORTIONS OF MIX BY WEIGHT AND WATER/CEMENT RATIO.
 - MANUFACTURER, BRAND NAME AND TECHNICAL LITERATURE FOR PROPOSED ADMIXTURES.
 - COMPRESSIVE STRENGTH TEST RESULTS (PER AASHTO T106/ASTM C109) SUPPLIED BY A QUALIFIED INDEPENDENT TESTING LAB VERIFYING THE SPECIFIED MINIMUM 3-DAY AND 28-DAY GROUT COMPRESSIVE STRENGTHS. PREVIOUS TEST RESULTS FOR THE PROPOSED GROUT MIX COMPLETED WITHIN ONE YEAR OF THE START OF GROUTING MAY BE SUBMITTED FOR INITIAL VERIFICATION AND ACCEPTANCE OF THE REQUIRED COMPRESSIVE STRENGTHS AND START OF PRODUCTION WORK. DURING PRODUCTION, THE NAIL GROUT SHALL BE TESTED AT A FREQUENCY OF NO LESS THAN ONE TEST FOR EVERY 50 CUBIC YARDS OF GROUT PLACED, WITH THE GROUT CUBE TEST RESULTS PROVIDED TO ODOT WITHIN 24 HOURS OF TESTING.

c:\odot_\D0T_8\108249A.00 - HAM-71-0686 PID94741\94741\structures\Soil Nail Wall\sheets\94741\w001.dgn 7/20/2017 9:20:27 AM sdillingr

	DESIGN AGENCY LIB Inc. • 2500 Newmark Drive Miamiburg, OH 45342 1937 256-0000 (tel) • 1937 256-5100 (fax) • libinc.com
DESIGNED AMT CHECKED AMM	REVIEWED DWS STRUCTURE FILE NUMBER
DRAWN MNM REVISED	DATE 7-17 FILE NUMBER
SOIL NAIL WALL GENERAL NOTES (1 OF 7) SOIL NAIL WALL KENNEDY AVENUE OVER I-71	
HAM-71-0686 PID No. 94741	1 / 14 217 253

GENERAL NOTES (CON'T)

3. PROPOSED NAIL GROUT PLACEMENT PROCEDURES AND EQUIPMENT.
4. SHOTCRETE MIX DESIGN INCLUDING:
 - A. TYPE OF PORTLAND CEMENT.
 - B. AGGREGATE SOURCE AND GRADATION.
 - C. PROPORTIONS OF MIX BY WEIGHT AND WATER-CEMENT RATIO.
 - D. MANUFACTURER, BRAND NAME, DOSAGE, AND TECHNICAL LITERATURE FOR PROPOSED ADMIXTURES.
 - E. PREVIOUS STRENGTH TEST RESULTS FOR THE PROPOSED SHOTCRETE MIX COMPLETED WITHIN ONE YEAR OF THE START OF SHOTCRETING MAY BE SUBMITTED FOR INITIAL VERIFICATION OF THE REQUIRED COMPRESSIVE STRENGTHS AT START OF PRODUCTION WORK.
5. WRITTEN DOCUMENTATION OF THE NOZZLEMEN'S QUALIFICATIONS INCLUDING PROOF OF ACI CERTIFICATION (IF APPLICABLE).
6. PROPOSED METHODS OF SHOTCRETE PLACEMENT AND OF CONTROLLING/MAINTAINING THE FACING ALIGNMENT, LOCATION AND SHOTCRETE THICKNESS.
7. CERTIFICATES OF COMPLIANCE FOR DRAINAGE AGGREGATE AND PVC DRAIN PIPING.
8. PROPOSED NAIL TESTING METHODS AND EQUIPMENT SETUP INCLUDING:
 - A. DETAILS OF THE JACKING FRAME AND APPURTENANT BRACING.
 - B. DETAILS SHOWING METHODS OF ISOLATING TEST NAILS DURING SHOTCRETE APPLICATION (I.E., METHODS TO PREVENT BONDING OF THE SOIL NAIL BAR AND THE SHOTCRETE FACING DURING TESTING).
 - C. DETAILS SHOWING METHODS OF PROVIDING THE TEMPORARY UNBONDED LENGTH AND OF GROUTING THE TEMPORARY UNBONDED LENGTH OF TEST NAILS AFTER COMPLETION OF TESTING.
 - D. EQUIPMENT LIST.
9. IDENTIFICATION NUMBER AND CERTIFIED CALIBRATION RECORDS FOR EACH TEST JACK AND PRESSURE GAUGE AND LOAD CELL TO BE USED. JACK AND PRESSURE GAUGE SHALL BE CALIBRATED AS A UNIT. CALIBRATION RECORDS SHALL INCLUDE THE DATE TESTED, DEVICE IDENTIFICATION NUMBER, AND THE CALIBRATION TEST RESULTS AND SHALL BE CERTIFIED FOR AN ACCURACY OF AT LEAST 2 PERCENT OF THE APPLIED CERTIFICATION LOADS BY A QUALIFIED INDEPENDENT TESTING LABORATORY WITHIN 90 DAYS PRIOR TO SUBMITTAL.
10. MANUFACTURER CERTIFICATES OF COMPLIANCE FOR THE SOIL NAIL CENTRALIZERS AND EPOXY COATING.
11. CERTIFICATES OF COMPLIANCE, MANUFACTURERS' ENGINEERING DATA AND INSTALLATION INSTRUCTIONS FOR THE GEOCOMPOSITE DRAIN STRIP, DRAIN GRATE, PVC DRAIN PIPING, AND ACCESSORIES.
12. CERTIFICATES OF COMPLIANCE FOR BEARING PLATES AND NUTS.
13. FORMWORK DIMENSIONS AND DETAILS FOR CASTING THE CAST IN PLACE CONCRETE FACING OVER THE SHOTCRETE CONSTRUCTION FACING, INCLUDING DETAILS FOR FORMWORK CONNECTIONS TO THE SHOTCRETE FACING AND/OR NAILS (IF APPLICABLE), PROPOSED CONCRETE PLACEMENT METHOD AND PLACEMENT RATES, AND ACCOMPANYING STRUCTURAL CALCULATIONS VERIFYING THE STRUCTURAL ADEQUACY OF THE FORMWORK, CONNECTIONS, AND SHOTCRETE FACING AND/OR NAILS TO SUPPORT THE LOADING INDUCED BY THE FLUID CAST IN PLACE CONCRETE. WHEN ANCHORS EMBEDDED INTO THE SHOTCRETE FACING WILL BE USED TO SUPPORT THE I-SIDED CAST IN PLACE CONCRETE FACE FORM, INCLUDE CALCULATIONS ILLUSTRATING THE ANCHOR DESIGN LOAD (CALCULATED AS THE DESIGN CONCRETE FLUID PRESSURE TIMES THE ANCHOR TRIBUTARY AREA). THE STRUCTURAL CALCULATIONS SHALL BE PREPARED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF OHIO.

THE ENGINEER WILL APPROVE OR REJECT THE CONTRACTOR'S SUBMITTALS WITHIN FIFTEEN (15) CALENDAR DAYS AFTER RECEIPT OF A COMPLETE SUBMISSION. THE CONTRACTOR WILL NOT BE ALLOWED TO BEGIN WALL CONSTRUCTION OR INCORPORATE MATERIALS INTO THE WORK UNTIL THE SUBMITTAL REQUIREMENTS ARE SATISFIED AND FOUND ACCEPTABLE TO THE ENGINEER. CHANGES OR DEVIATIONS FROM THE APPROVED SUBMITTALS MUST BE RESUBMITTED FOR APPROVAL. NO ADJUSTMENTS IN CONTRACT TIME WILL BE ALLOWED DUE TO INCOMPLETE SUBMITTALS.

UPON DELIVERY TO THE PROJECT SITE, PROVIDE CERTIFIED MILL TEST RESULTS FOR NAIL BARS AND ALL REINFORCING STEEL FROM EACH HEAT SPECIFYING THE ULTIMATE STRENGTH, YIELD STRENGTH, ELONGATION AND COMPOSITION.

PRE-CONSTRUCTION MEETING

A PRE-CONSTRUCTION MEETING SCHEDULED BY THE ENGINEER, WILL BE HELD PRIOR TO THE START OF WALL CONSTRUCTION. THE PROJECT ENGINEER, PRIME CONTRACTOR, AND SOIL NAIL SPECIALTY CONTRACTOR SHALL ATTEND THE MEETING. THE EXCAVATION CONTRACTOR, SHOTCRETING CONTRACTOR AND SURVEY CONTRACTOR, IF DIFFERENT THAN THE PRIME OR SOIL NAIL SPECIALTY CONTRACTOR, SHALL ALSO ATTEND. ATTENDANCE IS MANDATORY. THE PRE-CONSTRUCTION MEETING WILL BE CONDUCTED TO CLARIFY THE CONSTRUCTION REQUIREMENTS FOR THE WORK, TO COORDINATE THE CONSTRUCTION SCHEDULE AND ACTIVITIES, AND TO IDENTIFY CONTRACTUAL RELATIONSHIPS AND DELINEATION OF RESPONSIBILITIES AMONGST THE PRIME CONTRACTOR AND THE VARIOUS SUBCONTRACTORS - PARTICULARLY THOSE PERTAINING TO WALL EXCAVATION, NAIL INSTALLATION AND TESTING, EXCAVATION AND WALL ALIGNMENT, SURVEY CONTROL, AND SHOTCRETE AND CAST IN PLACE FACING CONSTRUCTION. SOIL NAIL WALL CONSTRUCTION REQUIRES EXCAVATION IN STAGED LIFTS AND EXCAVATION IN THE VICINITY OF THE WALL FACE REQUIRES SPECIAL CARE AND EFFORT COMPARED TO GENERAL EARTHWORK EXCAVATION.

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING BRIDGE STRUCTURE CARRYING KENNEDY AVENUE OVER I-71 HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE.

THE CONTRACTOR IS RESPONSIBLE FOR FIELD LOCATING AND VERIFYING THE LOCATIONS OF ALL KNOWN STRUCTURE FOUNDATIONS ADJACENT TO THE SOIL NAIL WALL. SOIL NAILS SHALL BE LOCATED SO THEY DO NOT CONFLICT WITH THESE FOUNDATIONS.

THE EXISTING ABUTMENT PILING SHALL BE AVOIDED AT ALL TIMES. IF THE CONTRACTOR STRIKES A PILE, THE CONTRACTOR SHALL STOP PLACEMENT OF THE NAIL, FILL THE ABANDONED DRILLHOLE WITH GROUT AND RELOCATE THE NAIL AT NO ADDITIONAL COST TO THE STATE.

TYPICAL CONSTRUCTION SEQUENCE

THE SOIL NAIL WALL SHALL BE BUILT FROM THE TOP DOWN IN GENERAL ACCORDANCE WITH THE STAGED EXCAVATION LIFTS SHOWN ON THE TYPICAL SOIL NAIL WALL SECTIONS ON SHEET [12/14]. FOR PROPOSED TEST NAIL LOCATIONS, SEE SHEET [9/14].

THE FOLLOWING WALL CONSTRUCTION SEQUENCE FOR EACH EXCAVATION LIFT SHALL BE COMPLETE PRIOR TO INITIATING WORK ON THE NEXT EXCAVATION LIFT UNLESS OTHERWISE APPROVED BY THE GEOTECHNICAL ENGINEER OF RECORD:

INSTALL PRE-PRODUCTION VERIFICATION TEST NAILS FOR THE ANTICIPATED STRATUM, SEE SHEET [9/14].

PERFORM SOIL NAIL PULLOUT VERIFICATION TESTS AFTER NAIL GROUT HAS ATTAINED THE SPECIFIED STRENGTH BELOW. PROCEED WITH CONSTRUCTION ONLY AFTER SUCCESSFUL TESTS HAVE BEEN COMPLETED.

EXCAVATE TO ROUGH GRADE OF THE EXCAVATION LIFT.

TRIM TO FINAL WALL FACE EXCAVATION LINE OR TO STABILIZING BERM (IF USED).

DRILL, INSTALL AND GROUT SOIL NAILS. TRIM STABILIZATION BERM (IF USED) TO FINAL WALL FACE EXCAVATION LINE.

INSTALL GEOCOMPOSITE DRAINAGE STRIP.

PLACE REINFORCING AND APPLY TEMPORARY FACING SHOTCRETE. ANCHOR PLATES SHALL BE SET AGAINST THE FACE OF THE SHOTCRETE WHILE IT IS STILL PLASTIC AND BEFORE IT'S INITIAL SET. NUTS SHALL BE TIGHTENED AGAINST THE ANCHOR PLATES ONLY AFTER THE SHOTCRETE HAS CURED. NO EXCAVATION WHICH HAS AN EXPOSED WALL FACE SHALL BE LEFT UNSTABILIZED BY SHOTCRETE AT THE END OF THE WORK DAY.

PERFORM NAIL PULLOUT PROOF TESTS PER SPECIFICATIONS AFTER THE SHOTCRETE AND THE NAIL GROUT HAVE ATTAINED THEIR SPECIFIED STRENGTHS.
 FOR SHOTCRETE:
 3 DAY COMPRESSIVE STRENGTH = 2,000 PSI
 28 DAY COMPRESSIVE STRENGTH = 4,000 PSI
 FOR NAIL GROUT:
 3 DAY COMPRESSIVE STRENGTH = 1,500 PSI
 28 DAY COMPRESSIVE STRENGTH = 3,000 PSI

INSTALL PVC CONNECTOR PIPES DURING CONSTRUCTION OF THE FINAL SHOTCRETE LIFT TO PROVIDE DRAINAGE OF THE GEOCOMPOSITE DRAINAGE STRIPS INTO THE WALL TOE DRAIN AS SHOWN ON THE TYPICAL DETAILS ON SHEET [13/14].

INSTALL CIP PERMANENT WALL FACING AS SHOWN ON SHEETS [11/14] AND [12/14].

IF NECESSARY, COMPACT BACKFILL WITHIN 3 FEET BEHIND THE UPPER CANTILEVER OF THE WALL FACING USING LIGHT MECHANICAL TAMPERS.

THE CONTRACTOR MAY PROPOSE AN ALTERNATIVE CONSTRUCTION SEQUENCE TO THE PROJECT ENGINEER. IT MUST BE SUBMITTED THIRTY (30) CALENDAR DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION. THE PROJECT ENGINEER SHALL APPROVE OR REJECT THE ALTERNATIVE CONSTRUCTION SEQUENCE PROPOSAL BEFORE THE CONTRACTOR CAN INITIATE THE ALTERNATIVE CONSTRUCTION SEQUENCE.

ANY ADDITIONAL COST INVOLVED WITH THE RECOMMENDED CONSTRUCTION SEQUENCE SHALL BE INCLUDED WITH THE CONTRACT PRICE FOR ITEM 610, RETAINING WALL, MISC.: SHOTCRETE CONSTRUCTION FACING AND WALL DRAINAGE.

ITEM 503, UNCLASSIFIED EXCAVATION, AS PER PLAN

THIS WORK CONSISTS OF EXCAVATION REQUIRED TO INSTALL THE PERMANENT SOIL NAIL WALL AS DESCRIBED IN THE PLANS AND GENERAL NOTES IN ACCORDANCE WITH PERTINENT PORTIONS OF CMS 503. IN ADDITION TO THE REQUIREMENTS IN RETAINING WALL MISC.; PERMANENT SOIL NAILS, THE WORK SHALL ALSO INCLUDE THE FOLLOWING:

EXCAVATION FACE PROTRUSIONS, VOIDS OR OBSTRUCTIONS REMOVE ALL OR PORTIONS OF COBBLES, BOULDERS, RUBBLE OR OTHER SUBSURFACE OBSTRUCTIONS ENCOUNTERED AT THE WALL FINAL EXCAVATION FACE WHICH WILL PROTRUDE INTO THE DESIGN SHOTCRETE FACING. DETERMINE METHOD OF REMOVAL OF FACE PROTRUSIONS, INCLUDING METHOD TO SAFELY SECURE REMNANT PIECES LEFT BEHIND THE EXCAVATION FACE AND FOR PROMPTLY BACKFILLING VOIDS RESULTING FROM REMOVAL OF PROTRUSIONS EXTENDING BEHIND THE EXCAVATION FACE. NOTIFY THE ENGINEER OF THE PROPOSED METHOD(S) FOR REMOVAL OF FACE PROTRUSIONS AT LEAST 24 HOURS PRIOR TO BEGINNING REMOVAL. VOIDS, OVERBREAK OR OVER-EXCAVATION BEYOND THE PLAN WALL EXCAVATION LINE RESULTING FROM THE REMOVAL OF FACE PROTRUSIONS OR EXCAVATION OPERATIONS SHALL BE BACKFILLED WITH SHOTCRETE OR CONCRETE, AS APPROVED BY THE ENGINEER. REMOVAL OF FACE PROTRUSIONS AND BACKFILLING OF VOIDS OR OVER-EXCAVATION IS CONSIDERED INCIDENTAL TO THE WORK.

BACKFILL ONCE THE CONCRETE FACING HAS CURED AND THE BACK FORMS ARE REMOVED. BACKFILL THE AREAS BEHIND THE PROPOSED WALL WITH 203 EMBANKMENT USING NATURAL SOILS, PLACED AND COMPACTED IN 4 INCH LIFTS UP TO PROPOSED FINISHED GRADE. THE CONTRACTOR SHALL EXERCISE CARE IN THE VICINITY OF THE EXPOSED SOIL NAILS TO PREVENT DAMAGE TO THE CORROSION PROTECTION OF THE NAIL.

ITEM 511, CLASS QC1 CONCRETE, MISC.: CIP WALL FACING

THIS ITEM OF WORK SHALL CONSIST OF CONSTRUCTING THE PERMANENT WALL FACING AND PROVIDING AN ARCHITECTURAL FINISH, AS DESCRIBED BELOW, TO THE CONCRETE SURFACES OF SOIL NAIL WALL AS SHOWN IN THE PLANS.

UNLESS OTHERWISE SHOWN ON THE PLANS, ALL EXTERIOR CORNERS AND EDGES SHALL HAVE A 3/4" CHAMFER AND ALL INTERIOR CORNERS SHALL HAVE A 3/4" FILLET.

ARCHITECTURAL FINISH THE FORMLINER USED FOR THE SOIL NAIL WALL SHALL MATCH THAT USED FOR THE NOISE WALL. THE FORMLINER MANUFACTURER SHALL SUBMIT AT LEAST FIVE YEARS RELATED EXPERIENCE. THE PRECONSTRUCTION TEST SAMPLE SHOULD BE SEALED THE SAME COLOR AS THE PERMANENT CIP FACING AS APPROVED BY THE DIRECTOR.

A PRECONSTRUCTION TEST SAMPLE SHALL BE PROVIDED FOR APPROVAL BY THE DIRECTOR. IF THE TEST SAMPLE DOES NOT MEET THE APPROVAL OF THE DIRECTOR, THE RESULTS MAY BE GROUNDS TO REJECT THE PROPOSED FORMLINER AND/OR THE EPOXY-URETHANE SEALED CONCRETE. THE TEST SAMPLE MUST PASS APPROVAL. FAILURE WILL CONSTITUTE PLACEMENT OF ANOTHER TEST SAMPLE. A THREE FOOT BY SIX FOOT LONG TEST SAMPLE SHALL BE MADE. THE MOCK-UP SHALL INCLUDE THE ARCHITECTURAL RELIEF AS SHOWN IN THE PLANS. THE MINIMUM SAMPLE THICKNESS SHALL BE 9 INCHES AND SHOULD BE PLACED UPRIGHT AS USED IN THE SOIL NAIL WALL. THE TEST SAMPLE SHALL BE OF THE SAME CEMENT, AGGREGATE SOURCE, AND EPOXY-URETHANE SEALED CONCRETE THAT WILL BE USED ON THE CONCRETE CIP SOIL NAIL WALL AND CURED IN THE SAME MANNER. PLACEMENT SHALL BE DONE IN A MANNER TO DUPLICATE CONSTRUCTION METHODS THAT WILL BE USED IN THE FIELD. THE TEST SLAB SHALL BE CONSTRUCTED AT DISTRICT OFFICE OR AN APPROVED SITE AGREED UPON BY THE PROJECT ENGINEER. AFTER APPROVAL, THE CONCRETE TEST SAMPLE SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.

A RELEASING AGENT COMPATIBLE WITH THE FORMLINER SHALL BE APPLIED TO THE FORMLINER SURFACE. THE FORMLINER SHALL BE SUPPORTED AS NECESSARY TO PREVENT DEFORMATIONS OR AS PER MANUFACTURER'S RECOMMENDATIONS. HORIZONTAL LINES OF THE STONE PATTERN SHALL BE ALIGNED AND AT THE SAME ELEVATION. COMPLETE SHOP DRAWINGS DETAILING THE STONE PATTERNS SHALL BE SUBMITTED FOR APPROVAL PRIOR TO PLACING ANY CONCRETE WHERE THE FORMLINER IS TO BE USED. THE SHOP DRAWINGS SHALL SHOW PLAN, ELEVATION AND DETAILS TO SHOW OVERALL PATTERN, JOINT LOCATIONS, FORM TIE LOCATIONS AND OTHER SPECIAL CONSIDERATIONS. COMPLETE STONE PATTERNS SHALL BE DETAILED AROUND RADIUS CORNERS ON THE SOIL NAIL WALL. THE FINISHED TEXTURE SHALL BE SIMILAR TO THAT RUBBED CONCRETE. THE CONCRETE SHALL BE SEALED WITH AN EPOXY-URETHANE SEALER TINTED LIGHT NEUTRAL IN COLOR (FEDERAL COLOR FS-595B-17778).

CAST-IN-PLACE FACING, INCLUDING ARCHITECTURAL FINISH AND TEST SAMPLE SHALL BE INCLUDED WITH ITEM 511, CLASS QC1 CONCRETE, MISC.: CIP WALL FACING FOR PAYMENT. SEALING OF FINISHED SOIL NAIL WALL FACING SHALL BE INCLUDED WITH ITEM 512, SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) FOR PAYMENT.

O:\ODOT_D8\108249A.00 - HAM-71-0686 PID94741\structures\Soil Nail Wall\sheets\94741\w002.dgn 7/20/2017 9:20:28 AM sdilling

DESIGNED AMT CHECKED AMM	DRAWN MMM REVISED	REVIEWED DWS STRUCTURE FILE NUMBER	DATE 7-17	DESIGN AGENCY LIB Inc. • 2500 Newmark Drive Miamingburg, OH 45342 (937) 295-0000 (tel) • (937) 295-5100 (fax) • libinc.com
SOIL NAIL WALL GENERAL NOTES (2 OF 7)				
SOIL NAIL WALL KENNEDY AVENUE OVER I-71				
HAM-71-0686 PID No. 94741		2 / 14		
218 253				

o:\ODOT_D8\108249A.00 - HAM-71-686 PID94741\94741\structures\Soil Nail Wall\sheets\94741\wn003.dgn 7/20/2017 9:20:29 AM sdilling

GENERAL NOTES (CON'T)

ITEM 610, RETAINING WALL, MISC.: PERMANENT SOIL NAILS

THIS WORK SHALL CONSIST OF EXCAVATION IN STAGED LIFTS, DRILLING OF THE SOIL NAIL HOLES TO THE SPECIFIED MINIMUM LENGTH, INSTALLING THE PERMANENT SOIL NAILS, AND THE MATERIALS NEEDED FOR THE SOIL NAIL INSTALLATION IN ACCORDANCE WITH THESE PLANS AND THE GENERAL NOTES. THE TERM "SOIL NAIL" AS USED IN THESE PLANS IS INTENDED AS A GENERIC TERM AND REFERS TO A REINFORCING BAR GROUTED INTO A DRILLED HOLE INSTALLED IN ANY TYPE OF GROUND. ALL NAIL DRILLED LENGTHS, DIAMETER, SPACING, AND BAR SIZES SHOWN ON THE PLANS ARE BASED ON ALLOWABLE PULLOUT RESISTANCES AS LISTED IN THE DESIGN SOIL PARAMETERS ON SHEET [1 / 14].

THE SOIL NAIL LOCATIONS SHOWN ON SHEET [9 / 14] ARE CONSIDERED TO BE THE MINIMUM NUMBER OF SOIL NAILS NEEDED TO CONSTRUCT A STABLE WALL BASED ON THE SUBSURFACE CONDITIONS ENCOUNTERED AT THE TEST BORING LOCATIONS IN THE VICINITY OF THE WALL. THESE SUBSURFACE SOIL CONDITIONS AT THE WALL LOCATION GENERALLY CONSIST OF MEDIUM DENSE SANDY SILT (A-4a) AND MEDIUM STIFF SILT AND CLAY (A-6a). FOR ADDITIONAL INFORMATION REGARDING THE SUBSURFACE CONDITIONS AT THE WALL SITE, THE CONTRACTOR SHOULD REFER TO THE STRUCTURE FOUNDATION EXPLORATION SHEETS, WHICH ARE CONTAINED ELSEWHERE IN THE PROJECT PLANS. THE CONTRACTOR SHOULD NOTE THAT, AS THE TEST BORINGS SHOWN ON THESE SHEETS ARE OF AN EXPLORATORY NATURE, THE INFORMATION PROVIDED IS REPRESENTATIVE OF THE SUBSURFACE CONDITIONS ONLY AT THE LOCATIONS AND DEPTHS WHERE SUCH INFORMATION WAS OBTAINED. THERE IS NO EXPRESSED OR IMPLIED AGREEMENT THAT UNIFORMITY OF MATERIAL EXISTS BETWEEN THE EXPLORED LOCATIONS.

THE CONTRACTOR IS RESPONSIBLE FOR FIELD LOCATING AND VERIFYING ALL KNOWN UTILITIES AND SHALL TAKE ALL PRECAUTIONS NECESSARY TO FULLY PROTECT THE UTILITY AND THE SERVICE THROUGHOUT THE WORK.

THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING APPROPRIATE SITE DRAINAGE CONTROL. PROVIDE POSITIVE CONTROL AND DISCHARGE OF ALL SURFACE WATER THAT WILL AFFECT CONSTRUCTION OF THE SOIL NAIL RETAINING WALL. MAINTAIN ALL PIPES OR CONDUITS USED TO CONTROL SURFACE WATER DURING CONSTRUCTION. REPAIR CAUSED BY SURFACE WATER AT NO ADDITIONAL COST. UPON SUBSTANTIAL COMPLETION OF THE WALL, REMOVE SURFACE WATER CONTROL PIPES OR CONDUITS FROM THE SITE. ALTERNATIVELY, WITH THE APPROVAL OF THE ENGINEER, PIPES OR CONDUITS THAT ARE LEFT IN PLACE, MAY BE FULLY GROUTED AND ABANDONED OR LEFT IN A WAY THAT PROTECTS THE STRUCTURE AND ALL ADJACENT FACILITIES FROM MIGRATION OF FINES THROUGH THE PIPE OR CONDUIT AND POTENTIAL GROUND LOSS.

THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND MAINTAINING STABLE SLOPES ABOVE AND BELOW THE NAIL WALLS. HEAVY EQUIPMENT SHALL NOT BE ALLOWED ABOVE THE WALL DURING CONSTRUCTION OF THE WALL, WITH THE CONTRACTOR TO OBSERVE THE CONDITIONS OF THE SLOPE ABOVE THE WALL ON A DAILY BASIS DURING CONSTRUCTION FOR SIGNS OF GROUND MOVEMENT IN THE VICINITY OF THE WALL AND THE BRIDGE ABUTMENT. IMMEDIATELY NOTIFY THE ENGINEER IF SIGNS OF MOVEMENTS SUCH AS NEW CRACKS IN STRUCTURES, INCREASED SIZE OF OLD CRACKS OR SEPERATION OF JOINTS IN STRUCTURES, FOUNDATIONS, STREETS, OR PAVED AND UNPAVED JOINTS IN STRUCTURES, FOUNDATIONS, STREETS, OR PAVED AND UNPAVED SURFACES ARE OBSERVED. CORRECTIVE ACTIONS SHOULD BE PERFORMED AS NECESSARY TO STOP OR REPAIR ANY MOVEMENT THAT OCCURS.

EXCAVATION IN THE VICINITY OF THE WALL FACE REQUIRES SPECIAL CARE AND EFFORT COMPARED TO GENERAL EARTHWORK EXCAVATION. THE CONTRACTOR SHALL NOT OVEREXCAVATE THE ORIGINAL GROUND OR COMPACTED FILL BEHIND THE WALL BEYOND THE LIMITS SHOWN ON THE PLANS. GENERAL EARTHWORK EXCAVATION THAT WILL AFFECT THE SOIL NAIL WALLS SHALL NOT BE PERFORMED UNTIL AFTER THE SECOND ROW OF NAILS IS INSTALLED.

NO GENERAL EARTHWORK EXCAVATION CUTS STEEPER THAN 1H:1V SHALL BE MADE WITHIN 15' IN FRONT OF THE SOIL NAIL WALLS WITHOUT APPROVAL OF THE GEOTECHNICAL ENGINEER OF RECORD.

THE CONTRACTOR IS RESPONSIBLE FOR SURVEY CONTROL POINTS FOR THE TOP OF WALL ALIGNMENT AND FOR SURVEY CONTROL AS EXCAVATION PROGRESSES AND THE NAILS INSTALLED IN ORDER TO ALLOW FOR CONSTRUCTION OF THE TEMPORARY SHOTCRETE FACING AND THE CIP WALL FACING TO THE SPECIFIED MINIMUM THICKNESSES AND TO THE LINE AND GRADE INDICATED IN THE PLANS.

EXCAVATION FOR THE WALL FACE SHALL BE PERFORMED USING PROCEDURES THAT:

1. PREVENT OVER EXCAVATION.
2. PREVENT GROUND LOSS, SWELLING, AIR SLAKING, OR LOOSENING
3. PREVENT LOSS OF SUPPORT FOR COMPLETED PORTIONS OF THE WALL AND THE ADJACENT BRIDGE ABUTMENT
4. PREVENT LOSS OF SOIL MOISTURE AT THE FACE
5. PREVENT GROUND FREEZING

COSTS ASSOCIATED WITH ADDITIONAL THICKNESS OF SHOTCRETE OR CONCRETE OR OTHER REMEDIAL MEASURES REQUIRED DUE TO IRREGULARITIES IN THE CUT FACE, EXCAVATION OVERBREAK OR INADVERTENT OVER EXCAVATION, SHALL BE BORNE BY THE CONTRACTOR.

WALL EXCAVATION SHALL PROCEED FROM THE TOP DOWN IN A HORIZONTAL STAGED EXCAVATION LIFT SEQUENCE WITH THE GROUND LEVEL FOR EACH LIFT EXCAVATED NO MORE THAN 2 FEET BELOW EACH NAIL ROW. THE EXISTING EMBANKMENT IN FRONT OF THE SOIL NAIL WALL SHALL BE EXCAVATED AT EACH STAGE TO FORM A WORKING BENCH TO SERVE AS A PLATFORM FOR THE DRILLING EQUIPMENT. THE BENCH SHALL BE WIDE ENOUGH TO PROVIDE A SAFE WORKING AREA FOR THE DRILL EQUIPMENT AND WORKERS. WHERE NECESSARY FOR STABILITY OF THE EXCAVATION FACE, THE CONTRACTOR SHALL HAVE THE OPTION OF PLACING A SEALING LAYER (FLASHCOAT) OF UNREINFORCED SHOTCRETE OR STEEL FIBER REINFORCED SHOTCRETE OR OF DRILLING AND GROUTING OF NAILS THROUGH A TEMPORARY STABILIZING BERM OF NATIVE SOIL TO PROTECT AND STABILIZE THE FACE OF THE EXCAVATION. IF A STABILIZING BERM IS UTILIZED, DO NOT EXCAVATE THE STABILIZING BERM UNTIL THE NAIL GROUT HAS AGED FOR AT LEAST 24 HOURS. REMOVE HARDENED NAIL GROUT PROTRUDING FROM THE FINAL WALL EXCAVATION LINE MORE THAN 2" IN A MANNER THAT PREVENTS FRACTURING OF THE GROUT AT THE NAIL HEAD.

EXCAVATION TO THE NEXT LIFT SHALL NOT PROCEED UNTIL NAIL INSTALLATION, REINFORCED SHOTCRETE PLACEMENT, ATTACHMENT OF BEARING PLATES AND NUTS AND NAIL TESTING HAS BEEN COMPLETED AND ACCEPTED IN THE CURRENT LIFT. NAIL GROUT AND SHOTCRETE SHALL HAVE CURED FOR AT LEAST 72 HOURS OR ATTAINED AT LEAST THEIR SPECIFIED 3-DAY COMPRESSIVE STRENGTH BEFORE EXCAVATING THE NEXT UNDERLYING LIFT. EXCAVATING THE NEXT LIFT IN LESS THAN 72 HOURS WILL ONLY BE ALLOWED IF THE CONTRACTOR SUBMITS COMPRESSIVE STRENGTH TEST RESULTS, FROM TESTS PERFORMED BY A QUALIFIED INDEPENDENT TESTING LAB, VERIFYING THAT THE NAIL GROUT AND SHOTCRETE MIXES BEING USED WILL PROVIDE THE SPECIFIED 3-DAY COMPRESSIVE STRENGTHS IN THE LESSER TIME.

NOTIFY THE ENGINEER IMMEDIATELY IF RAVELING OR LOCAL INSTABILITY OF THE FINAL WALL FACE EXCAVATION OCCURS. UNSTABLE AREAS SHALL BE TEMPORARILY STABILIZED BY MEANS OF BUTTRESSING THE EXPOSED FACE WITH AN EARTH BERM OR OTHER METHODS. SUSPEND WORK IN UNSTABLE AREAS UNTIL REMEDIAL MEASURES ARE DEVELOPED.

THE CONTRACTOR IS TO DETERMINE THE REQUIRED DRILLHOLE DIAMETER, DRILLING METHOD, GROUT COMPOSITION AND INSTALLATION METHOD NECESSARY TO ACHIEVE THE NAIL PULLOUT RESISTANCE(S) SPECIFIED ON SHEET [1 / 14] IN ACCORDANCE WITH LOAD TESTING ACCEPTANCE CRITERIA PRESENTED ON SHEETS [6 / 14] AND [7 / 14]. UNDER NO CIRCUMSTANCES SHALL NAILS BE LESS THAN THE LENGTHS AND DIAMETER(S) SPECIFIED IN THE PLANS.

NO DRILLING OR INSTALLATION OF PRODUCTION NAILS WILL BE PERMITTED IN ANY SOIL AND/OR ROCK UNIT UNTIL SUCCESSFUL VERIFICATION LOAD TESTING OF THE NAILS IS COMPLETED IN THAT UNIT AND APPROVED BY ODOT. INSTALL VERIFICATION TEST NAILS USING THE SAME EQUIPMENT, METHODS, NAIL INCLINATION AND DRILLHOLE DIAMETER AS PLANNED FOR THE PRODUCTION NAILS. PERFORM THE VERIFICATION LOAD TESTS PRIOR TO STARTING THE WALL EXCAVATION AND PRIOR TO INSTALLATION OF PRODUCTION NAILS IN THE SPECIFIC LIFT IN WHICH THE DESIGNATED VERIFICATION TEST NAILS ARE LOCATED. THE NUMBER AND LOCATION OF THE VERIFICATION TESTS ARE SHOWN ON SHEET [9 / 14]. VERIFICATION TEST NAILS MAY BE INSTALLED THROUGH EITHER THE EXISTING SLOPE FACE PRIOR TO START OF WALL EXCAVATION, DRILL PLATFORM WORK BENCH, STABILIZATION BERM OR INTO SLOT CUTS MADE FOR THE PARTICULAR LIFT IN WHICH THE VERIFICATION TEST NAILS ARE LOCATED.

INSTALL THE PRODUCTION SOIL NAILS BEFORE THE APPLICATION OF THE REINFORCED SHOTCRETE FACING. AT THE CONTRACTOR'S REQUEST AND SUBJECT TO THE ENGINEER'S WRITTEN APPROVAL, THE SHOTCRETE FACING MAY BE PLACED BEFORE DRILLING AND INSTALLING THE NAILS. PROVIDE A BLOCKOUT THROUGH THE SHOTCRETE FACING AT THE DRILLHOLE LOCATIONS USING PVC PIPE OR OTHER SUITABLE MATERIAL. TO PREVENT DAMAGE TO THE FACING DURING DRILLING, AS PART OF THE REQUIRED CONSTRUCTION SUBMITTALS, PROVIDE THE ENGINEER WITH ACCEPTABLE STRUCTURAL DESIGN CALCULATIONS DEMONSTRATING THAT THE FACING STRUCTURAL CAPACITY WILL NOT BE REDUCED AND THAT THE BEARING PLATES ARE ADEQUATE TO SPAN THE NAIL DRILLHOLE BLOCKOUT THROUGH THE CONSTRUCTION FACING. IF THIS REQUIRES LARGER SIZE BEARING PLATES AND/OR ADDITIONAL REINFORCEMENT BEYOND THAT DETAILED ON THE PLANS, THE EXTRA COST WILL BE INCIDENTAL.

THE DRILL HOLES FOR THE SOIL NAILS ARE TO BE MADE AT THE LOCATIONS, ORIENTATIONS, AND LENGTHS SHOWN ON SHEETS [9 / 14] AND [11 / 14]. SELECT DRILLING EQUIPMENT AND METHODS SUITABLE FOR THE ANTICIPATED GROUND CONDITIONS. SELECT DRILLHOLE DIAMETER(S) REQUIRED TO DEVELOP THE SPECIFIED PULLOUT RESISTANCE AND TO ALSO PROVIDE A MINIMUM 1 INCH GROUT COVER OVER THE EPOXY COATED BARS. A MINIMUM REQUIRED DRILLHOLE DIAMETER IS SHOWN ON SHEET [11 / 14]; HOWEVER, IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE FINAL DRILLHOLE DIAMETER(S) REQUIRED TO PROVIDE THE SPECIFIED PULLOUT RESISTANCE BASED ON THE VERIFICATION TESTING. USE OF DRILLING MUDS SUCH AS BENTONITE SLURRY TO ASSIST IN DRILL CUTTING REMOVAL IS NOT ALLOWED, BUT AIR MAY BE USED. WITH THE ENGINEER'S APPROVAL, THE CONTRACTOR MAY BE ALLOWED TO USE WATER OR FOAM FLUSHING UPON SUCCESSFUL DEMONSTRATION, AT THE CONTRACTOR'S COST, THAT THE INSTALLATION METHOD STILL PROVIDES ADEQUATE NAIL PULLOUT RESISTANCE. IF CAVING GROUND IS ENCOUNTERED, USE CASED DRILLING METHODS TO SUPPORT THE SIDES OF THE DRILLHOLES.

IMMEDIATELY SUSPEND OR MODIFY DRILLING OPERATIONS IF GROUND SUBSIDENCE IS OBSERVED, IF THE SOIL NAIL WALL IS ADVERSELY AFFECTED, OR IF ADJACENT STRUCTURES ARE DAMAGED FROM THE DRILLING OPERATION.

ALL SOIL NAIL LENGTHS AND BAR SIZES SHALL BE IN ACCORDANCE WITH THAT SHOWN IN THE SOIL NAIL SCHEDULE PRESENTED ON SHEET [7 / 14]. NO BAR COUPLES ARE ALLOWED UNLESS VERIFICATION TESTS INDICATE THAT LONGER NAILS ARE REQUIRED.

PROVIDE CENTRALIZERS SIZED TO POSITION THE BAR WITHIN 1 INCH OF THE CENTER OF THE DRILLHOLE. LOCATE CENTRALIZERS SO THEIR MAXIMUM CENTER-TO-CENTER SPACING DOES NOT EXCEED 8 FEET AND THAT THEY ARE WITHIN 2 FEET OF THE TOP AND BOTTOM OF THE DRILLHOLE. SECURELY ATTACH THE CENTRALIZERS TO THE BAR SO THEY WILL NOT SHIFT DURING HANDLING OR INSERTION INTO THE DRILL HOLE YET WILL STILL ALLOW TREMIE PIPE INSERTION TO THE BOTTOM OF DRILLHOLE AND ALLOW GROUT TO FLOW FREELY UP THE HOLE.

INSPECT EACH NAIL BAR BEFORE INSTALLATION AND REPAIR OR REPLACE DAMAGED BARS OR CORROSION PROTECTION. CHECK UNCASD DRILLHOLES FOR CLEANLINESS PRIOR TO INSERTION OF THE SOIL NAIL BAR. INSERT NAIL BARS WITH CENTRALIZERS INTO THE DRILL HOLE TO THE REQUIRED LENGTH WITHOUT DIFFICULTY AND IN A WAY THAT PREVENTS DAMAGE TO THE DRILL HOLE, BAR, OR CORROSION PROTECTION. DO NOT DRIVE OR FORCE PARTIALLY INSERTED SOIL NAILS INTO THE HOLE. REMOVE NAILS WHICH CANNOT BE FULLY INSERTED TO THE DESIGN DEPTH AND CLEAN THE DRILL HOLE TO ALLOW UNOBSTRUCTED INSTALLATION.

WHEN USING CASED OR HOLLOW STEM AUGER DRILLING EQUIPMENT WHICH DOES NOT ALLOW FOR THE CENTRALIZERS TO PASS THROUGH THE CASING OR AUGER STEM, THE CONTRACTOR MAY DELETE THE CENTRALIZERS IF THE NEAT CEMENT GROUT PUMPED THROUGH THE CASING IS PLACED USING GROUT PRESSURES GREATER THAN 150 PSI OR IF THE SAND-CEMENT GROUT PLACED THROUGH THE STEM OF THE AUGER HAS A SLUMP OF 9 INCHES OR LESS.

NAIL LOCATION AND ORIENTATION TOLERANCES ARE:
A. NAIL HEAD LOCATION, DEVIATION FROM PLAN LOCATION; 6 INCHES IN ANY DIRECTION.
B. NAIL INCLINATION, DEVIATION FROM PLAN; + OR - 3 DEGREES.

THESE LOCATION TOLERANCES ARE APPLICABLE TO ONLY ONE NAIL AND NOT ACCUMULATIVE OVER LARGE WALL AREAS. SOIL NAILS WHICH DO NOT SATISFY THE SPECIFIED TOLERANCES SHOULD BE REPLACED AT NO ADDITIONAL COST AND ABANDONED NAIL DRILL HOLES BACKFILLED WITH TREMIED GROUT. NAILS THAT ENCOUNTER UNANTICIPATED OBSTRUCTION DURING DRILLING SHALL BE RELOCATED, AS APPROVED BY THE ENGINEER. COST OF DRILLING AND BACKFILLING DRILLHOLES ABANDONED DUE TO UNANTICIPATED OBSTRUCTIONS WILL BE PAID AS EXTRA WORK.

GROUT EQUIPMENT SHALL PRODUCE A UNIFORMLY MIXED GROUT FREE OF LUMPS AND UNDISPERSED CEMENT, AND BE CAPABLE OF CONTINUOUSLY AGITATING THE MIX. USE A POSITIVE DISPLACEMENT GROUT PUMP EQUIPPED WITH A PRESSURE GAUGE THAT CAN MEASURE AT LEAST TWICE BUT NO MORE THAN THREE TIMES THE INTENDED GROUT PRESSURE. SIZE THE GROUTING EQUIPMENT TO ENABLE THE ENTIRE NAIL TO BE GROUTED IN ONE CONTINUOUS OPERATION. PLACE THE GROUT WITHIN 60 MINUTES AFTER MIXING OR WITHIN THE TIME RECOMMENDED BY THE ADMIXTURE MANUFACTURER, IF ADMIXTURES ARE USED. GROUT NOT PLACED IN THE ALLOWED TIME LIMIT WILL BE REJECTED.

GROUT THE DRILLHOLE AFTER INSTALLATION OF THE NAIL BAR AND WITHIN 2 HOURS OF COMPLETION OF DRILLING. INJECT THE GROUT AT THE LOWEST POINT OF EACH DRILL HOLE THROUGH A GROUT TUBE. KEEP THE OUTLET END OF THE CONDUIT DELIVERING THE GROUT BELOW THE SURFACE OF THE GROUT AS THE CONDUIT IS WITHDRAWN TO PREVENT THE CREATION OF VOIDS AND TO PREVENT UNSTABLE SOIL OR GROUNDWATER FROM CONTAMINATING OR DILUTING THE GROUT. COMPLETELY FILL THE DRILLHOLE IN ONE CONTINUOUS OPERATION. COLD JOINTS IN THE GROUT COLUMN ARE NOT ALLOWED EXCEPT AT THE TOP OF THE TEST BOND LENGTH OF PROOF TESTED PRODUCTION NAILS. AT THE CONTRACTOR'S OPTION, THE GROUT TUBE MAY REMAIN IN THE HOLE PROVIDED IT IS FILLED WITH GROUT. GROUTING BEFORE INSERTION OF THE NAIL IS ALLOWED PROVIDED THE NAIL BAR IS IMMEDIATELY INSERTED THROUGH THE GROUT TO THE SPECIFIED LENGTH WITHOUT DIFFICULTY.

DURING CASING REMOVAL FOR DRILLHOLES ADVANCED BY EITHER CASED OR HOLLOW-STEM AUGER METHODS, MAINTAIN SUFFICIENT GROUT LEVEL WITHIN THE CASING TO OFFSET THE EXTERNAL GROUNDWATER/SOIL PRESSURE AND PREVENT HOLE CAVING. MAINTAIN GROUT HEAD OR GROUT PRESSURES SUFFICIENT TO ENSURE THAT THE DRILLHOLE WILL BE COMPLETELY FILLED WITH GROUT AND TO PREVENT UNSTABLE SOIL OR GROUNDWATER FROM CONTAMINATING OR DILUTING THE GROUT. RECORD THE GROUT PRESSURES FOR SOIL NAILS INSTALLED USING PRESSURE GROUTING TECHNIQUES. CONTROL THE GROUT PRESSURES TO PREVENT EXCESSIVE GROUT HEAVE OR FRACTURING.

REMOVE THE GROUT AND NAIL IF GROUTING IS SUSPENDED FOR MORE THAN 30 MINUTES AND REPLACE WITH FRESH GROUT AND UNDAMAGED NAIL BAR AT NO ADDITIONAL COST.

METHOD OF MEASUREMENT
PERMANENT SOIL NAILS SHALL BE MEASURED PER EACH SOIL NAIL AUTHORIZED AND ACCEPTED. THIS ITEM SHALL BE PAID AT THE CONTRACT UNIT PRICE PER EACH AND SHALL INCLUDE ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THE WORK. THE MAJOR ITEMS INCLUDED IN THIS ITEM ARE DRILLING, CASING, BARS, GROUT, CORROSION PROTECTION, WELDED SHEAR STUDS, AND ANCHORAGE.

EXCAVATION REQUIRED TO INSTALL THE SOIL NAILS, AS DESCRIBED IN THIS ITEM, WILL BE PAID SEPERATELY AT THE CONTRACT UNIT PRICE FOR ITEM 503, UNCLASSIFIED EXCAVATION, AS PER PLAN, LUMP.

BASIS OF PAYMENT
ITEM 503, UNCLASSIFIED EXCAVATION, AS PER PLAN LUMP
ITEM 610, RETAINING WALL, MISC.: PERMANENT SOIL NAILS EACH

DESIGN AGENCY LIB Inc. • 2500 Newmark Drive Middletown, OH 45342 (937) 256-0000 (e) • (937) 256-1100 (f) • libinc.com	DATE 7-17	REVIEWED DWS	DRAWN MMM	DESIGNED AMT	SOIL NAIL WALL KENNEDY AVENUE OVER I-71	SOIL NAIL WALL GENERAL NOTES (3 OF 7)	HAM-71-0686	PID No. 94741	3 / 14	219 253

c:\odot_08249A.00 - HAM-71-686 PID94741\structures\Soil Nail\sheets\94741\004.dgn 7/20/2017 9:20:30 AM sdjllinger

GENERAL NOTES (CON'T)

ITEM 610, RETAINING WALL, MISC.: TEMPORARY SHOTCRETE FACING AND WALL DRAINAGE
THIS WORK SHALL CONSIST OF FURNISHING AND INSTALLING TEMPORARY SHOTCRETE CONSTRUCTION FACING AND WALL DRAINAGE ELEMENTS IN ACCORDANCE WITH THESE PLANS AND GENERAL NOTES. MATERIALS INCLUDE, BUT ARE NOT LIMITED TO, REINFORCING STEEL, CONNECTOR PLATES, AND NUTS FOR THE SHOTCRETE FACING AND GEOCOMPOSITE DRAIN STRIPS, CONNECTION PIPES, AND TOE DRAINS FOR THE WALL DRAINAGE.

THE WALL DRAINAGE SYSTEM SHALL CONSIST OF 2 FOOT PANELS OF GEOCOMPOSITE DRAIN STRIPS EMPTYING INTO A 6" DIAMETER PVC CONNECTOR PIPE LOCATED 12" ABOVE THE BOTTOM OF THE WALL, AND CONNECTED TO THE WALL TOE DRAIN. GEOCOMPOSITE DRAIN STRIPS SHALL BE PLACED AGAINST THE EXPOSED SOIL FACE AND FULLY COVERED BY THE SHOTCRETE FACING. GEOCOMPOSITE DRAIN STRIPS SHALL NOT BE USED TO CONTROL SURFACE DRAINAGE. THE GEOCOMPOSITE DRAIN STRIPS ARE TO BE CONTINUOUS, AND SPLICES MADE WITH A 12" MINIMUM OVERLAP.

DETAILS OF A TYPICAL WALL TOE DRAIN AND ASSOCIATED DRAIN GATE ARE SHOWN ON SHEET 13/14.

SHOTCRETE SHALL COMPLY WITH THE REQUIREMENTS OF ACI 506.2 "SPECIFICATIONS FOR MATERIALS, PROPORTIONING AND APPLICATION OF SHOTCRETE", EXCEPT AS OTHERWISE SPECIFIED. SHOTCRETE SHALL CONSIST OF AN APPLICATION OF ONE OR MORE LAYERS OF CONCRETE CONVEYED THROUGH A HOSE AND PNEUMATICALLY PROJECTED AT A HIGH VELOCITY AGAINST A PREPARED SURFACE.

SHOTCRETE MAY BE PRODUCED BY EITHER A WET-MIX OR DRY-MIX PROCESS. THE WET-MIX PROCESS CONSISTS OF THOROUGHLY MIXING ALL THE INGREDIENTS (EXCEPT ACCELERATING ADMIXTURES, BUT INCLUDING THE MIXING WATER) INTRODUCING THE MIXTURE INTO THE DELIVERY EQUIPMENT AND DELIVERING IT, BY POSITIVE DISPLACEMENT, TO THE NOZZLE. THE WET-MIX SHOTCRETE SHALL THEN BE AIR JETTED FROM THE NOZZLE AT HIGH VELOCITY ONTO THE SURFACE. THE DRY-MIX PROCESS CONSISTS OF SHOTCRETE WITHOUT MIXING WATER WHICH IS CONVEYED THROUGH THE HOSE PNEUMATICALLY WITH THE MIXING WATER INTRODUCED AT THE NOZZLE.

MATERIALS
ALL MATERIALS FOR SHOTCRETE SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

- CEMENT** AASHTO M85/ASTM C150, TYPE I, II, III OR V
- FINE AGGREGATE** FURNISH ROUNDED PARTICLES CONFORMING TO AASHTO M6, CLASS B INCLUDING THE REACTIVE AGGREGATE SUPPLEMENTARY REQUIREMENT, EXCEPT AS AMENDED OR SUPPLEMENTED BY THE FOLLOWING: MATERIAL PASS THE 75 MM SIEVE, AASHTO T 11...3% MAX
- COARSE AGGREGATE** CONFORM TO AASHTO M80, CLASS B, EXPECT AS AMENDED OR SUPPLEMENTED BY THE FOLLOWING: LOS ANGELES ABRASION, AASHTO T96...40% MAX
- WATER** CLEAN AND POTABLE, AASHTO M157/ASTM C94
- CHEMICAL ADMIXTURES:**
- ACCELERATOR** FLUID TYPE, APPLIED AT NOZZLE, MEETING REQUIREMENTS OF AASHTO M194/ASTM C494/ASTM C1141
- WATER-REDUCER AND SUPERPLASTICIZER** AASHTO M194/ASTM C494 TYPE A, C, D, E, F OR G
- RETARDERS** AASHTO M194/ASTM C494 TYPE B AND D
- MINERAL ADMIXTURES:**
- FLY ASH** AASHTO M295/ASTM C618 TYPE F OR C, CEMENT REPLACEMENT UP TO 35 PERCENT BY WEIGHT OF CEMENT
- SILICA FUME** ASTM C 1240, 90 PERCENT, MINIMUM SILICON DIOXIDE SOLIDS CONTENT, NOT TO EXCEED 12 PERCENT BY WEIGHT OF CEMENT
- WELDED WIRE FABRIC** AASHTO M55/ASTM A185 OR A497
- REINFORCING BARS FOR SHOTCRETE FACING** AASHTO M31/ASTM A615, GRADE 60, DEFORMED
- PREPACKAGE SHOTCRETE** ASTM C928
- DRAINAGE GEOTEXTILE:**
- FOR DRAIN STRIP** AASHTO M288 CLASS 3, MIN. PERMITTIVITY 0.2 PER SECOND; AOS 0.01 INCH MAX
- GEOCOMPOSITE DRAIN STRIP** AMERDRAIN 500, MIRAFAI G100W, C-DRAIN C-180
- FILM PROTECTION** POLYETHYLENE FILMS PER AASHTO M-171

PVC CONNECTION AND DRAIN PIPES:

- PIPE** ASTM 1785 SCHEDULE 40 PVC, SOLID AND PERFORATED WALL. CELL CLASSIFICATION 12454-B OR 12454-C, WALL THICKNESS SDR 35, WITH SOLVENT WELD OR ELASTOMERIC GASKET JOINTS
- FITTINGS** ASTM D3034, CELL CLASSIFICATION 12454-B OR 12454-C WALL THICKNESS SDR 35, WITH SOLVENT WELD OR ELASTOMERIC GASKET JOINTS.
- SOLVENT CEMENT** ASTM D2564
- PRIMER** ASTM F656

MATERIALS SHALL BE DELIVERED, STORED AND HANDLED TO PREVENT CONTAMINATION, SEGREGATION, CORROSION OR DAMAGE. STORE LIQUID ADMIXTURES TO PREVENT EVAPORATION AND FREEZING.

DRAINAGE GEOTEXTILE AND GEOCOMPOSITE DRAIN STRIPS SHALL BE PROVIDED IN ROLLS WRAPPED WITH A PROTECTIVE COVERING AND STORED IN A MANNER WHICH PROTECTS THE FABRIC FROM MUD, DIRT, DUST, DEBRIS, AND SHOTCRETE REBOUND. PROTECTIVE WRAPPING SHALL NOT BE REMOVED UNTIL IMMEDIATELY BEFORE THE GEOTEXTILE OR DRAIN STRIP IS INSTALLED. EXTENDED EXPOSURE TO ULTRA-VIOLET LIGHT SHALL BE AVOIDED. EACH ROLL OF GEOTEXTILE OR DRAIN STRIP IN THE SHIPMENT SHALL BE LABELED TO IDENTIFY THE PRODUCTION RUN.

1. SHOTCRETE MIX DESIGN

- A. AGGREGATE**
AGGREGATE FOR SHOTCRETE SHALL MEET THE STRENGTH AND DURABILITY REQUIREMENTS OF AASHTO M6/M80 AND THE FOLLOWING GRADATION REQUIREMENTS

SIEVE SIZE	PERCENT PASSING BY WEIGHT
12.5MM	100
9.50MM	90-100
4.75MM	70-85
2.36MM	50-70
1.18MM	35-55
0.60MM	20-35
0.30MM	8-20
0.15MM	2-10

- B. PROPORTIONING AND USE OF ADMIXTURES**
PROPORTION THE SHOTCRETE TO BE PUMPABLE WITH THE CONCRETE PUMP FURNISHED FOR THE WORK, WITH A CEMENTING MATERIALS CONTENT OF AT LEAST 24 POUNDS PER CUBIC FOOT AND WATER/CEMENT RATIO NOT GREATER THAN 0.45. THOROUGHLY MIX ANY ADMIXTURES INTO THE SHOTCRETE AT THE RATE SPECIFIED BY THE MANUFACTURER. ACCELERATORS, IF USED, SHALL BE COMPATIBLE WITH THE CEMENT USED, BE NON-CORROSIVE TO STEEL AND NOT PROMOTE OTHER DETRIMENTAL EFFECTS SUCH AS CRACKING OR EXCESSIVE SHRINKAGE. THE MAXIMUM ALLOWABLE CHLORIDE ION CONTENT OF ALL INGREDIENTS SHALL NOT EXCEED 0.10% WHEN TESTED TO AASHTO T260.

- C. AIR ENTRAINMENT**
AIR ENTRAINMENT IS REQUIRED FOR WET-MIX SHOTCRETE. THE AIR CONTENT MEASURED AT THE TRUCK SHALL BE BETWEEN 7 TO 10 PERCENT WHEN TESTED IN ACCORDANCE WITH AASHTO T152/ASTM C231. AIR ENTRAINMENT IS NOT REQUIRED IN DRY-MIX SHOTCRETE.

- D. STRENGTH AND DURABILITY REQUIREMENTS**
PROVIDE A SHOTCRETE MIX CAPABLE OF ATTAINING 2,000 PSI COMPRESSIVE STRENGTH IN 3 DAYS AND 4,000 PSI IN 28 DAYS. THE AVERAGE COMPRESSIVE STRENGTH OF EACH SET OF THREE TEST CORES EXTRACTED FROM TEST PANELS OR WALL FACE MUST EQUAL OR EXCEED 85 PERCENT OF THE SPECIFIED COMPRESSIVE STRENGTH, WITH NO INDIVIDUAL CORE LESS THAN 75 PERCENT OF THE SPECIFIED COMPRESSIVE STRENGTH, IN ACCORDANCE WITH ACI 506.2. THE BOILED ABSORPTION OF SHOTCRETE, WHEN TESTED IN ACCORDANCE WITH ASTM C642 AT 7 DAYS, SHALL NOT EXCEED 8.0 PERCENT.

- E. MIXING AND BATCHING**
AGGREGATE AND CEMENT MAY BE BATCHED BY WEIGHT OR BY VOLUME IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM C94 OR AASHTO M241/ASTM C685. MIXING EQUIPMENT SHALL THOROUGHLY BLEND THE MATERIALS IN SUFFICIENT QUANTITY TO MAINTAIN PLACING CONTINUITY. THE SHOTCRETE SHALL COMPLY WITH AASHTO M157, AND BE BATCHED, DELIVERED, AND PLACED WITHIN 90 MINUTES OF MIXING.

PREMIXING AND PACKAGED SHOTCRETE MIX MAY BE PROVIDED FOR ON-SITE MIXING. THE PACKAGES SHALL CONTAIN MATERIALS CONFORMING TO THE MATERIALS SECTION OF THIS SPECIFICATION. PLACING TIME LIMIT AFTER MIXING SHALL BE PER THE MANUFACTURER'S RECOMMENDATIONS.

- 2. FIELD QUALITY CONTROL FOR SHOTCRETE**
PRODUCTION TEST PANELS OR TEST CORES FROM THE WALL FACING ARE REQUIRED. THE CONTRACTOR SHALL PROVIDE EQUIPMENT, MATERIALS, AND PERSONNEL AS NECESSARY TO OBTAIN THE SHOTCRETE CORES FOR TESTING INCLUDING CONSTRUCTION OF TEST PANEL BOXES, FIELD CURING REQUIREMENTS AND CORING, WITH THE COMPRESSIVE STRENGTH TESTING PERFORMED BY AN INDEPENDENT TESTING LAB. SHOTCRETE FINAL ACCEPTANCE WILL BE BASED ON THE 28-DAY STRENGTH OF 4,000 PSI.

SHOTCRETE PRODUCTION WORK MAY COMMENCE UPON RECEIPT BY ODOT OF THE SHOTCRETE MIX DESIGN AND CONTINUE IF THE SPECIFIED STRENGTHS ARE OBTAINED. THE SHOTCRETE WORK SHALL BE SUSPENDED IF THE TEST RESULTS INDICATE THE SHOTCRETE DOES NOT SATISFY THE STRENGTH REQUIREMENTS. THE CONTRACTOR SHALL CHANGE ALL OR SOME OF THE FOLLOWING: THE MIX, THE CREW, THE EQUIPMENT, OR THE PROCEDURES, WITH THE CREW SHOOTING NEW TEST PANELS AND ADDITIONAL TESTING PERFORMED IN ORDER TO DEMONSTRATE THAT THE PANELS SATISFY THE SPECIFIED STRENGTH REQUIREMENTS BEFORE SHOTCRETE PRODUCTION WORK CAN RESUME.

- A. PRECONSTRUCTION TEST PANELS**
EACH NOZZLEMAN WITHOUT PREVIOUS ACI CERTIFICATION SHALL FURNISH AT LEAST ONE PRECONSTRUCTION TEST PANEL FOR EACH PROPOSED MIXTURE BEING CONSIDERED AND FOR EACH SHOOTING POSITION TO BE ENCOUNTERED ON THE JOB. PRECONSTRUCTION TEST PANELS SHALL BE MADE PRIOR TO THE COMMENCEMENT OF PRODUCTION WORK USING THE SAME EQUIPMENT, MATERIALS, MIXTURE PROPORTIONS AND PROCEDURES PROPOSED FOR THE JOB.

MAKE PRECONSTRUCTION TEST PANELS WITH MINIMUM DIMENSIONS OF 36 X 36 INCHES SQUARE AND AT LEAST 4 INCHES THICK. SLOPE THE SIDES OF PRECONSTRUCTION AND PRODUCTION TEST PANELS AT 45 DEGREES OVER THE FULL PANEL THICKNESS TO RELEASE REBOUND.

- B. PRODUCTION TEST PANELS**
FURNISH AT LEAST ONE PRODUCTION TEST PANEL OR, IN LIEU OF PRODUCTION TEST PANELS, NINE 3-INCH DIAMETER CORES TAKEN FROM THE SHOTCRETE FACING, DURING THE FIRST PRODUCTION APPLICATION OF SHOTCRETE AND FOR EVERY 5,000 SQUARE FEET OF SHOTCRETE PLACED THEREAFTER. CONSTRUCT THE PRODUCTION TEST PANELS SIMULTANEOUSLY WITH THE SHOTCRETE FACING INSTALLATION AT TIMES DESIGNATED BY THE ENGINEER. MAKE PRODUCTION TEST PANELS WITH MINIMUM FULL THICKNESS DIMENSIONS OF 18X18 INCHES SQUARE AND AT LEAST 4 INCHES THICK.

- C. TEST PANEL CURING, TEST SPECIMEN EXTRACTION AND TESTING**
IMMEDIATELY AFTER SHOOTING, FIELD MOIST CURE THE TEST PANELS BY COVERING AND TIGHTLY WRAPPING WITH A SHEET OF MATERIAL MEETING THE REQUIREMENTS OF ASTM C171 UNTIL THEY ARE DELIVERED TO THE TESTING LAB OR TEST SPECIMENS ARE EXTRACTED. DO NOT IMMERSE THE TEST PANELS IN WATER. DO NOT FURTHER DISTURB THE TEST PANELS FOR THE FIRST 24 HOURS AFTER SHOOTING. PROVIDE AT LEAST THREE 3-INCH DIAMETER CORE SAMPLES CUT FROM EACH TEST PANEL WITH REINFORCEMENT FOR CORE GRADING. PROVIDE AT LEAST NINE 3-INCH DIAMETER CORE SAMPLES CUT FROM EACH UNREINFORCED PRODUCTION TEST PANEL FOR ABSORPTION AND COMPRESSION STRENGTH TESTING. THE CONTRACTOR HAS THE OPTION OF EXTRACTING TEST SPECIMENS FROM TEST PANELS IN THE FIELD OR TRANSPORTING THE TEST PANELS TO ANOTHER LOCATION FOR EXTRACTION. KEEP PANELS IN THEIR FORMS WHEN TRANSPORTED. DO NOT TAKE CORES FROM THE OUTER 6 INCHES OF TEST PANELS MEASURED IN FROM THE TOP OUTSIDE EDGES OF THE PANEL FORM. TRIM THE ENDS OF THE COMPRESSIVE STRENGTH CORES TO PROVIDE TEST CYLINDERS AT LEAST 3 INCHES LONG. DO NOT TRIM THE ENDS OF THE CORES TO BE TESTED FOR BOILED ABSORPTION.

IF THE CONTRACTOR CHOOSES TO TAKE CORES FROM THE WALL FACE IN LIEU OF MAKING PRODUCTION TEST PANELS, LOCATIONS WILL BE DESIGNATED BY ODOT. FILL THE CORE HOLES IN THE WALL BY DRY-PACKING WITH NON-SHRINK PATCHING MORTAR AFTER THE HOLES HAVE BEEN CLEANED AND DAMPENED. DO NOT FILL THE CORE HOLES WITH SHOTCRETE. CLEARLY MARK THE CORES AND CONTAINER TO IDENTIFY THE CORE LOCATIONS AND WHETHER THEY ARE FOR PRECONSTRUCTION OR PRODUCTION TESTING. IF FOR PRODUCTION TESTING, MARK THE SECTION OF THE WALL REPRESENTED BY THE CORES ON THE CORES AND CONTAINER. IMMEDIATELY WRAP CORES IN WET BURLAP OR MATERIAL MEETING THE REQUIREMENTS OF ASTM C171 AND SEAL IN A PLASTIC BAG. DELIVER CORES TO THE INDEPENDENT TESTING LAB WITHIN 48 HOURS OF SHOOTING THE PANELS.

COMPRESSIVE STRENGTH AND BOILED ABSORPTION TESTING ARE TO BE PERFORMED BY AN INDEPENDENT TESTING LAB. UPON DELIVERY TO THE INDEPENDENT TESTING LABS, SAMPLES SHOULD BE PLACED IN THE MOIST ROOM UNTIL THE TIME OF TEST. WHEN THE TEST LENGTH OF A CORE IS LESS THAN TWICE THE DIAMETER, THE CORRECTION FACTORS GIVEN IN AASHTO T24/ASTM C42 WILL BE APPLIED TO OBTAIN THE COMPRESSIVE STRENGTH OF INDIVIDUAL CORES. THREE CORES WILL BE TESTED AT 3 DAYS AND THREE CORES WILL BE TESTED AT 28 DAYS FOR COMPRESSIVE STRENGTH PER AASHTO T24/ASTM C42. THREE CORES WILL BE TESTED AT 7 DAYS FOR BOILED ABSORPTION PER ASTM C642.

	DESIGN AGENCY LIB Inc. • 2500 Newmark Drive Miamiburg, OH 45342 (937) 294-0000 (tel.) • (937) 294-5100 (fax) • libinc.com	DATE 7-17	REVIEWED DWS	DRAWN MMM	DESIGNED AMT	CHECKED AMM	STRUCTURE FILE NUMBER
SOIL NAIL WALL GENERAL NOTES (4 OF 7)							
SOIL NAIL WALL KENNEDY AVENUE OVER I-71							
HAM-71-0686				PID No. 94741			
4 / 14							
220 253							

GENERAL NOTES (CON'T)

3. TEMPORARY SHOTCRETE FACING

CLEAN THE FACE OF THE EXCAVATION AND OTHER SURFACES TO BE SHOTCRETED OF LOOSE MATERIALS, MUD, REBOUND, OVERSPRAY OR OTHER FOREIGN MATTER THAT COULD PREVENT OR REDUCE SHOTCRETE BOND. AVOID LOOSENING, CRACKING, OR SHATTERING THE GROUND DURING EXCAVATION AND CLEANING. REMOVE ANY SURFACE MATERIAL WHICH IS LOOSE OR DAMAGED, TO A SUFFICIENT DEPTH TO PROVIDE A BASE THAT IS SUITABLE TO RECEIVE THE SHOTCRETE. REMOVE ANY SURFACE MATERIAL THAT LOOSENS AS THE SHOTCRETE IS APPLIED. COST OF ADDITIONAL SHOTCRETE IS INCIDENTAL TO THE WORK. DIVERT WATER FLOW AND REMOVE STANDING WATER SO THAT SHOTCRETE PLACEMENT WILL NOT BE DETRIMENTALLY AFFECTED BY STANDING WATER. DO NOT PLACE SHOTCRETE ON FROZEN SURFACES. PROTECT ADJACENT SURFACES FROM OVERSPRAY DURING SHOOTING.

ENSURE THAT THE THICKNESS OF THE SHOTCRETE SATISFIES THE MINIMUM REQUIREMENTS SHOWN IN THE PLANS USING THICKNESS CONTROL DEVICES INSTALLED NORMAL TO THE SURFACE SUCH THAT THEY PROTRUDE THE REQUIRED SHOTCRETE THICKNESS OUTSIDE THE SURFACE AND MAINTAIN A PLANE SURFACE. REMOVE SHOOTING WIRES AFTER COMPLETION OF SHOTCRETING.

THE MINIMUM CONCRETE COVER TO ANY REINFORCING BARS FOR THE TEMPORARY SHOTCRETE FACING IS NOTED ON STRUCTURAL WALL DETAIL ON SHEET 11/14. UNLESS OTHERWISE NOTED ON THE PLANS, MINIMUM SHOTCRETE COVER MEASURED FROM THE FACE OF SHOTCRETE TO THE FACE OF ANY REINFORCING BAR SHALL BE 2".

MAINTAIN A CLEAN, DRY, OIL-FREE SUPPLY OF COMPRESSED AIR SUFFICIENT FOR MAINTAINING ADEQUATE NOZZLE VELOCITY AT ALL TIMES. THE EQUIPMENT SHALL BE CAPABLE OF DELIVERING THE PREMIXED MATERIAL ACCURATELY, UNIFORMLY, AND CONTINUOUSLY THROUGH THE DELIVERY HOSE. CONTROL SHOTCRETE APPLICATION THICKNESS, NOZZLE TECHNIQUE, AIR PRESSURE, AND RATE OF SHOTCRETE PLACEMENT TO PREVENT SAGGING OR SLOUGHING OF FRESHLY APPLIED SHOTCRETE.

APPLY THE SHOTCRETE FROM THE LOWER PART OF THE AREA UPWARDS TO PREVENT ACCUMULATION OF REBOUND. ORIENT NOZZLE AT A DISTANCE AND APPROXIMATELY PERPENDICULAR TO THE WORKING FACE SO THAT REBOUND WILL BE MINIMAL AND COMPACTION WILL BE MAXIMIZED. DO NOT WORK REBOUND BACK INTO THE CONSTRUCTION. WHERE SHOTCRETE IS USED TO COMPLETE THE TOP UNGROUTED ZONE OF THE NAIL DRILL HOLE NEAR THE FACE, POSITION THE NOZZLE INTO THE MOUTH OF THE DRILL HOLE TO COMPLETELY FILL THE VOID.

A CLEARLY DEFINED PATTERN OF CONTINUOUS HORIZONTAL OR VERTICAL RIDGES OR DEPRESSIONS AT THE REINFORCING ELEMENTS AFTER THEY ARE COVERED WITH SHOTCRETE WILL BE CONSIDERED AN INDICATION OF INSUFFICIENT REINFORCEMENT COVER OR POOR NOZZLE TECHNIQUES. IN THIS CASE, THE APPLICATION OF SHOTCRETE SHALL BE IMMEDIATELY SUSPENDED AND THE CONTRACTOR SHALL IMPLEMENT CORRECTIVE MEASURES BEFORE RESUMING THE SHOTCRETE OPERATIONS.

DEFECTIVE CONCRETE
REPAIR SHOTCRETE SURFACE DEFECTS AS SOON AS POSSIBLE AFTER PLACEMENT. REMOVE AND REPLACE SHOTCRETE WHICH EXHIBITS SEGREGATION, HONEYCOMBING, LAMINATION, VOIDS, OR SAND POCKETS. IN-PLACE SHOTCRETE DETERMINED NOT TO MEET THE SPECIFIED STRENGTH REQUIREMENT WILL BE SUBJECT TO REMEDIATION AS DETERMINED BY THE ENGINEER. POSSIBLE REMEDIATION OPTIONS INCLUDE PLACEMENT OF ADDITIONAL SHOTCRETE THICKNESS OR OTHER REMOVAL AND REPLACEMENT, AT THE CONTRACTOR'S COST.

CONSTRUCTION JOINTS
TAPER CONSTRUCTION JOINTS UNIFORMLY TOWARD THE EXCAVATION FACE OVER A MINIMUM DISTANCE EQUAL TO THE THICKNESS OF THE SHOTCRETE LAYER. PROVIDE A MINIMUM REINFORCEMENT OVERLAP AT REINFORCEMENT SPLICE JOINTS AS SHOWN ON THE PLANS. CLEAN AND WET THE SURFACE OF A JOINT BEFORE ADJACENT SHOTCRETE IS APPLIED. WHERE SHOTCRETE IS USED TO COMPLETE THE TOP UNGROUTED ZONE OF THE NAIL DRILL HOLE NEAR THE FACE, TO THE MAXIMUM EXTENT PRACTICAL, CLEAN AND DAMPEN THE UPPER GROUT SURFACE TO RECEIVE SHOTCRETE, SIMILAR TO A CONSTRUCTION JOINT.

FINISH
SHOTCRETE FINISH SHALL BE EITHER AN UNDISTURBED GUN FINISH AS APPLIED FROM THE NOZZLE OR A ROUGH SCREEDED FINISH. REMOVE SHOTCRETE EXTENDING INTO THE CAST IN PLACE CONCRETE FINISH FACE SECTION BEYOND THE TOLERANCES SHOWN ON THE PLANS OR SPECIFIED HEREIN.

ATTACHMENT OF NAIL HEAD BEARING PLATE AND NUT
ATTACH A BEARING PLATE AND NUT TO EACH NAIL HEAD AS SHOWN ON THE PLANS. WHILE THE SHOTCRETE IS STILL PLASTIC AND BEFORE IT'S INITIAL SET, UNIFORMLY SEAT THE PLATE ON THE SHOTCRETE BY HAND WRENCH TIGHTENING THE NUT. WHERE UNIFORM CONTACT BETWEEN THE PLATE AND THE SHOTCRETE CANNOT BE PROVIDED, SET THE PLATE IN A BED OF GROUT. AFTER GROUT HAS SET FOR 24 HOURS, HAND WRENCH TIGHTEN THE NUT. ENSURE BEARING PLATES WITH HEADED STUDS ARE IN INTIMATE CONTACT WITH THE CONSTRUCTION FACING AND THE STUDS ARE LOCATED WITHIN THE TOLERANCES SHOWN ON THE PLANS OR SPECIFIED HEREIN.

WEATHER LIMITATIONS

PROTECT THE SHOTCRETE IF IT MUST BE PLACED WHEN THE AMBIENT TEMPERATURE IS BELOW 32 DEGREES FAHRENHEIT AND FALLING OR WHEN IT IS LIKELY TO BE SUBJECT TO FREEZING TEMPERATURES BEFORE GAINING SUFFICIENT STRENGTH. MAINTAIN COLD WEATHER PROTECTION UNTIL THE IN PLACE COMPRESSIVE STRENGTH OF THE SHOTCRETE IS GREATER THAN 700 PSI. COLD WEATHER PROTECTION INCLUDES BLANKETS, HEATING UNDER TENTS, OR OTHER MEANS ACCEPTABLE TO THE ENGINEER. THE TEMPERATURE OF THE SHOTCRETE MIX, WHEN DEPOSITED, SHALL BE NOT LESS THAN 50 DEGREES FAHRENHEIT OR MORE THAN 95 DEGREES FAHRENHEIT.

SUSPEND SHOTCRETE APPLICATION DURING HIGH WINDS AND HEAVY RAINS UNLESS SUITABLE PROTECTIVE COVERS, ENCLOSURES OR WIND BREAKS ARE INSTALLED. REMOVE AND REPLACE NEWLY PLACED SHOTCRETE EXPOSED TO RAIN THAT WASHES OUT CEMENT OR OTHERWISE MAKES THE SHOTCRETE UNACCEPTABLE. PROVIDE A POLYETHYLENE FILM OR EQUIVALENT TO PROTECT THE WORK FROM EXPOSURE TO ADVERSE WEATHER.

CURING

CURING IS NOT REQUIRED FOR TEMPORARY CONSTRUCTION FACINGS TO BE COVERED BY A CAST IN PLACE CONCRETE FACING OR WHOSE SERVICE LIFE IS LESS THAN 36 MONTHS.

CONSTRUCTION TOLERANCES FOR THE TEMPORARY SHOTCRETE FACING ARE

- A. HORIZONTAL LOCATION OF WIRE MESH AND REBAR, FROM PLAN LOCATION: 0.4 INCH
- B. HEADED STUD LOCATION ON BEARING PLATE, FROM PLAN LOCATION: 0.25 INCH
- C. SPACING BETWEEN REINFORCING BARS, FROM PLAN DIMENSION: 1 INCH
- D. REINFORCING LAP, FROM SPECIFIED DIMENSION: 1 INCH
- E. COMPLETED THICKNESS OF SHOTCRETE, FROM PLAN DIMENSION: 0.4 INCH
- F. NAIL HEAD BEARING PLATE, DEVIATION FROM PARALLEL TO WALL FACE: 10 DEGREES

BACKFILLING BEHIND WALL FACING UPPER CANTILEVER
COMPACT BACKFILL WITHIN 3 FEET BEHIND THE WALL FACING UPPER CANTILEVER USING LIGHT MECHANICAL TAMPERS.

SAFETY REQUIREMENTS

NOZZLEMEN AND HELPERS SHALL BE EQUIPPED WITH GLOVES, EYE PROTECTION, AND ADEQUATE PROTECTIVE CLOTHING DURING THE APPLICATION OF SHOTCRETE. THE CONTRACTOR IS RESPONSIBLE FOR MEETING ALL FEDERAL, STATE AND LOCAL SAFETY CODE REQUIREMENTS.

CAST IN PLACE CONCRETE FORM CONNECTION TO SHOTCRETE FACING
WHEN MECHANICAL GROUTED, OR EPOXIED ANCHORS EMBEDDED INTO THE SHOTCRETE FACING ARE USED TO SUPPORT A ONE-SIDED CAST IN PLACE CONCRETE FACE FORM, PERFORM PULLOUT TESTING OF THE EMBEDDED ANCHORS IN ACCORDANCE WITH ASTM C900 AND AS MODIFIED HEREIN. PERFORM PULLOUT TESTING OF INSTALLED ANCHORS PRIOR TO ATTACHMENT OF THE FACE FORM. SELECT TEST ANCHOR LOCATIONS TO BE REPRESENTATIVE OF THE FULL WALL SURFACE AREA TO BE COVERED.

FOR FACING AREAS UP TO 5,000 SQUARE FEET, PERFORM A MINIMUM OF THREE FLEXURE/SHEAR PULLOUT TESTS WITH THE ANCHOR LOCATED APPROXIMATELY MID-SPAN BETWEEN TWO ADJACENT NAIL HEADS AND WITH THE NAIL HEADS OR OTHER REACTION POINTS LOCATED APPROXIMATELY ONE-HALF THE NAIL SPACING FROM THE ANCHOR. FOR FACING AREAS IN EXCESS OF 5,000 SQUARE FEET, PERFORM ONE ADDITIONAL 2,500 SQUARE FEET OF FACE AREA. TEST THESE ANCHORS TO 1.5 TIMES THEIR REQUIRED DESIGN LOAD (CALCULATED AS THE DESIGN CONCRETE FLUID PRESSURE TIMES THE ANCHOR TRIBUTARY AREA).

PERFORM LOCAL PUNCHING SHEAR PULLOUT TESTING ON 2 PERCENT OF THE INSTALLED ANCHORS. PLACE THE LOAD REACTION SUPPORT NO CLOSER TO THE END OF THE ANCHOR THAN THE EMBEDDED DEPTH OF THE ANCHORS INTO THE CONSTRUCTION FACING. TEST THESE ANCHORS TO 2.0 TIMES THEIR REQUIRED DESIGN LOAD.

MODIFY THE ANCHOR AND/OR FACE FORM SUPPORT SYSTEM IF THE TESTED ANCHORS DO NOT MEET THE ABOVE TEST ACCEPTANCE CRITERIA. MODIFIED ANCHOR INSTALLATION WILL REQUIRE RE-TESTING IN ACCORDANCE WITH THE ABOVE TESTING CRITERIA. COST OF ANCHOR PULLOUT TESTING IS INCIDENTAL TO THE WORK.

METHOD OF MEASUREMENT

THE SHOTCRETE FACING WILL BE MEASURED IN SQUARE FEET OF THE SHOTCRETE AREA COMPLETED AND ACCEPTED IN THE FINAL WORK. THE NET AREA LYING IN A PLANE OF THE OUTSIDE FRONT FACE OF THE STRUCTURE AS SHOWN ON THE PLANS WILL BE MEASURED. NO MEASUREMENT OR PAYMENT WILL BE MADE FOR ADDITIONAL SHOTCRETE IRREGULARITIES IN THE CUT FACE, EXCAVATION OVERBREAK OR INADVERTENT EXCAVATION BEYOND THE PLAN FINAL WALL FACE EXCAVATION LINE, OR FAILURE TO CONSTRUCT THE FACING TO THE SPECIFIED LINE AND GRADE AND TOLERANCES. THE FINAL PAY QUANTITY SHALL INCLUDE ALL STRUCTURAL SHOTCRETE, ADMIXTURES, REINFORCEMENT, WELDED WIRE MESH, WIRE HOLDING DEVICES, EMBEDDED CAST IN PLACE CONCRETE FACE FORM SUPPORT ANCHORS, WALL DRAINAGE MATERIALS, TEST PANELS AND ALL SAMPLING, TESTING AND REPORTING REQUIRED BY THE PLANS AND THIS SPECIFICATION.

BASIS OF PAYMENT

THE ACCEPTED QUANTITY MEASURED AS PROVIDED ABOVE WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT. PAYMENT WILL BE FULL COMPENSATION FOR FURNISHING ALL EQUIPMENT, MATERIALS, LABOR, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SPECIFIED AND AS DETAILED ON THE PLANS, INCLUDING THE WORK REQUIRED TO PROVIDE THE PROPER SHOTCRETE FACING ALIGNMENT AND THICKNESS CONTROL. ALL WALL DRAINAGE MATERIALS INCLUDING GEOCOMPOSITE DRAIN STRIPS, CONNECTION PIPES, DRAIN GRATES, DRAIN AGGREGATE AND GEOTEXTILE, FITTINGS AND ACCESSORIES ARE CONSIDERED INCIDENTAL TO THE SHOTCRETE FACING AND WILL NOT BE PAID SEPARATELY.

PAYMENT WILL BE MADE FOR THE FOLLOWING BID ITEM INCLUDED IN THE BID FORM: RETAINING WALL, MISC.: TEMPORARY SHOTCRETE FACING AND WALL DRAINAGE SQUARE FOOT

o:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\structures\Soil Nail Wall\sheets\94741\w005.dgn 7/20/2017 9:20:31 AM sdilling

	DESIGN AGENCY JTB Inc. • 2500 Newmark Drive Miamingburg, OH 45342 (937) 296-0000 (tel) • (937) 296-5100 (fax) • jtbinc.com	DATE 7-17	REVIEWED DWS	STRUCTURE FILE NUMBER	
DRAWN MIM	REVISIONS	DESIGNED AMT	CHECKED AMM		
SOIL NAIL WALL GENERAL NOTES (5 OF 7)					
SOIL NAIL WALL KENNEDY AVENUE OVER I-71					
HAM-71-0686 PID No. 94741					
5 / 14					
221 253					

GENERAL NOTES (CON'T)

**ITEM 610, RETAINING WALL, MISC.: VERIFICATION TEST NAILS
ITEM 610, RETAINING WALL, MISC.: PROOF TESTS**

LOAD TESTING NOTES

PERFORM BOTH VERIFICATION AND PROOF TESTING OF DESIGNATED TEST NAILS. PERFORM PRE-PRODUCTION VERIFICATION TEST ON SACRIFICIAL TEST NAILS AT LOCATION SHOWN ON THE PLANS OR LISTED HEREIN. PERFORM PROOF TEST ON PRODUCTION NAILS AT LOCATION SELECTED BY THE ENGINEER. REQUIRED NAIL TEST DATA SHALL BE RECORDED BY THE ENGINEER. DO NOT PERFORM NAIL TESTING UNTIL THE NAIL GROUT AND SHOTCRETE FACING HAVE CURED FOR AT LEAST 72 HOURS AND ATTAINED AT LEAST THEIR SPECIFIED 3 DAY COMPRESSIVE STRENGTH. TESTING IN LESS THAN 72 HOURS WILL ONLY BE ALLOWED IF THE CONTRACTOR SUBMITS COMPRESSIVE STRENGTH TEST RESULTS, FOR TESTS PERFORMED BY A QUALIFIED INDEPENDENT TESTING LAB, VERIFYING THAT THE NAIL GROUT AND SHOTCRETE MIXES BEING USED WILL PROVIDE THE SPECIFIED 3 DAY COMPRESSIVE STRENGTHS IN THE LESSER TIME.

TESTING OF ANY NAIL SHALL NOT BE PERFORMED UNTIL THE NAIL GROUT SHOTCRETE, AS APPLICABLE, HAVE CURED FOR AT LEAST 72 HOURS AND HAVE ATTAINED AT LEAST THEIR SPECIFIED 3 DAY COMPRESSIVE STRENGTH.

SHOULD ANY TEST NAILS FAIL TO REACH ADEQUATE CAPACITY DURING TESTING, THE CONTRACTOR SHALL MODIFY THE CONSTRUCTION METHODS AND PROCEDURES, INSTALL ADDITIONAL NAILS, AND RETEST TO ENSURE REQUIRED CAPACITY IS ACHIEVED.

TESTING EQUIPMENT

TESTING EQUIPMENT SHALL INCLUDE DIAL GAUGES, DIAL GAUGE SUPPORT, JACK AND PRESSURE GAUGE, ELECTRONIC LOAD CELL, AND A REACTION FRAME. THE LOAD CELL IS REQUIRED ONLY FOR THE CREEP TEST PORTION OF THE VERIFICATION TEST. PROVIDE DESCRIPTION OF TEST SETUP AND JACK PRESSURE GAUGE AND LOAD CELL CALIBRATION CURVES IN ACCORDANCE WITH SUBMITTALS SECTION OF THE GENERAL NOTES.

DESIGN THE TESTING REACTION FRAME TO BE SUFFICIENTLY RIGID AND OF ADEQUATE DIMENSIONS SUCH THAT EXCESSIVE DEFORMATION OF THE TESTING EQUIPMENT DOES NOT OCCUR. IF THE REACTION FRAME WILL BEAR DIRECTLY ON THE SHOTCRETE FACING, DESIGN IT TO PREVENT CRACKING OF THE SHOTCRETE. INDEPENDENTLY SUPPORT AND CENTER THE JACK OVER THE NAIL BAR SO THAT THE BAR DOES NOT CARRY THE WEIGHT OF THE TESTING EQUIPMENT. ALIGN THE JACK, BEARING PLATES, AND STRESSING ANCHORAGE WITH THE BAR SUCH THAT UNLOADING AND REPOSITIONING OF THE EQUIPMENT WILL NOT BE REQUIRED DURING THE TEST.

APPLY AND MEASURE THE TEST LOAD WITH A HYDRAULIC JACK AND PRESSURE GAUGE. THE PRESSURE GAUGE SHALL BE GRADUATED IN 50 PSI INCREMENTS OR LESS. THE JACK AND PRESSURE GAUGE SHALL HAVE A PRESSURE RANGE NOT EXCEEDING TWICE THE ANTICIPATED MAXIMUM TEST PRESSURE. JACK RAM TRAVEL SHALL BE SUFFICIENT TO ALLOW THE TEST TO BE DONE WITHOUT RESETTING THE EQUIPMENT. MONITOR THE NAIL LOAD DURING VERIFICATION TESTS WITH BOTH THE PRESSURE GAUGE AND THE LOAD CELL. USE THE LOAD CELL TO MAINTAIN CONSTANT LOAD HELD DURING THE CREEP TEST LOAD HOLD INCREMENT OF THE VERIFICATION TEST.

MEASURE THE NAIL HEAD MOVEMENT WITH A DIAL GAUGE CAPABLE OF MEASURING TO 0.001 INCH. THE DIAL GAUGE SHALL HAVE A TRAVEL SUFFICIENT TO ALLOW THE TEST TO BE DONE WITHOUT HAVING TO RESET THE GAUGE. VISUALLY ALIGN THE GAUGE TO BE PARALLEL WITH THE AXIS OF THE NAIL AND SUPPORT THE GAUGE INDEPENDENTLY FROM THE JACK, WALL OR REACTION FRAME. USE TWO DIAL GAUGES WHEN THE TEST SETUP REQUIRES REACTION AGAINST A SOIL CUT FACE.

VERIFICATION LOAD TESTING

PRE-PRODUCTION VERIFICATION TESTING SHALL BE PERFORMED PRIOR TO INSTALLATION OF PRODUCTION NAILS TO VERIFY THE CONTRACTOR'S INSTALLATION METHODS AND THE NAIL PULLOUT RESISTANCE. A MINIMUM OF TWO VERIFICATION LOAD TESTS WILL BE REQUIRED. PERFORM PRE-PRODUCTION VERIFICATION TESTS AT THE LOCATIONS AND ELEVATIONS SHOWN ON THE PLANS OR HEREIN AND AS DESCRIBED IN ITEM 610, RETAINING WALL, MISC.: PERMANENT SOIL NAILS NOTE UNLESS OTHERWISE APPROVED BY THE ENGINEER. PERFORM A MINIMUM OF 2 VERIFICATION TESTS IN EACH DIFFERENT SOIL/ROCK UNIT AND FOR EACH DIFFERENT DRILLING/GROUTING METHOD PROPOSED TO BE USED AT EACH WALL LOCATION. THE VERIFICATION TEST NAILS ARE SACRIFICIAL NAILS AND SHALL NOT BE USED AS PRODUCTION NAILS. BARE BARS CAN BE USED FOR THE SACRIFICIAL VERIFICATION TEST NAILS.

DEVELOP AND SUBMIT THE DETAILS OF THE VERIFICATION TESTING ARRANGEMENT INCLUDING THE METHOD OF DISTRIBUTION TEST LOAD PRESSURES TO THE EXCAVATION SURFACE (REACTION FRAME), TEST NAIL BAR SIZE, GROUTED DRILLHOLE DIAMETER AND REACTION FRAME DIMENSIONING TO THE ENGINEER FOR APPROVAL IN ACCORDANCE WITH SUBMITTALS SECTION. CONSTRUCT VERIFICATION TEST NAILS USING THE SAME EQUIPMENT, INSTALLATION METHODS, NAIL INCLINATION, AND DRILLHOLE DIAMETER AS PLANNED FOR THE PRODUCTION NAILS. CHANGES IN THE DRILLING OR INSTALLATION METHOD MAY REQUIRE ADDITIONAL VERIFICATION TESTS REQUIRED DUE TO DIFFERING SITE CONDITIONS, IF DETERMINED BY THE ENGINEER, SHALL BE PER THE CONTRACT UNIT PRICE.

THE TEST NAILS SHALL HAVE BOTH BONDED AND UNBONDED LENGTHS. SET BONDED LENGTH COMPLETELY INTO ONE SOIL OR ROCK UNIT FOR VERIFICATION TEST NAILS.

PRIOR TO TESTING, ONLY THE BONDED LENGTH OF THE TEST NAIL SHALL BE GROUTED. THE TEMPORARY UNBONDED LENGTH OF THE TEST NAIL SHALL BE AT LEAST 3 FEET. THE BONDED LENGTH OF THE TEST NAIL SHALL BE DETERMINED BASED ON THE PRODUCTION NAIL BAR GRADE AND SIZE SUCH THAT THE ALLOWABLE BAR STRUCTURAL LOAD IS NOT EXCEEDED DURING TESTING, BUT SHALL NOT BE LESS THAN 10 FEET. THE ALLOWABLE BAR STRUCTURAL LOAD DURING TESTING SHALL NOT BE GREATER THAN 90 PERCENT OF THE YIELD STRENGTH FOR GRADE 60 BARS. THE CONTRACTOR SHALL PROVIDE LARGER VERIFICATION TEST BAR SIZES, IF REQUIRED TO SAFELY ACCOMMODATE THE 10 FEET MINIMUM TEST BOND LENGTH AND TESTING TO 2 TIMES THE ALLOWABLE PULLOUT RESISTANCE REQUIREMENTS, AT NO ADDITIONAL COST.

THE VERIFICATION TEST BONDED LENGTH (LBV) SHALL NOT EXCEED THE TEST ALLOWABLE BAR STRUCTURAL LOAD DIVIDED BY 2 TIMES THE ALLOWABLE PULLOUT RESISTANCE VALUE. THE FOLLOWING EQUATION SHALL BE USED FOR DETERMINING THE VERIFICATION TEST NAIL MAXIMUM BONDED LENGTH TO BE USED TO AVOID STRUCTURALLY OVERSTRESSING THE VERIFICATION TEST NAIL BAR SIZE:

$LBV = C \times X \times FY \times AS / 2 \times QD$, OR 10 FEET, WHICHEVER IS GREATER

LBV = MAXIMUM VERIFICATION TEST NAIL BONDED LENGTH (FEET)
C = 0.9 FOR GRADE 60 BARS
FY = BAR YIELD OR ULTIMATE STRESS (KSI)
QD = ALLOWABLE PULLOUT RESISTANCE (KIP/FT, KIPS PER LINEAL FOOT OF GROUTED NAIL LENGTH AS SPECIFIED ON SHEET 1 / 14)

THE MAXIMUM BONDED LENGTH SHALL BE PREFERABLY BASED ON PRODUCTION NAIL MAXIMUM BAR GRADE. PROVIDE LARGER BAR SIZES, IF REQUIRED, TO MEET THE 10 FOOT MINIMUM TEST BONDED LENGTH REQUIREMENTS AT NO ADDITIONAL COST.

THE DESIGN TEST LOAD (DTL) DURING VERIFICATION TESTING SHALL BE DETERMINED BY THE FOLLOWING EQUATION:

$DTL = LBV \times QD$

LBV = AS-BUILD BONDED TEST LENGTH (FEET)
MTL = 2.0 X DTL = MAXIMUM TEST LOAD (KIP)

VERIFICATION TEST NAILS SHALL BE INCREMENTALLY LOADED TO A MAXIMUM TEST LOAD OF 200 PERCENT OF THE DESIGN TEST (DTL) IN ACCORDANCE WITH THE FOLLOWING LOADING SCHEDULE. THE SOIL NAIL MOVEMENTS SHALL BE RECORDED AT EACH LOAD INCREMENT.

VERIFICATION TEST LOADING SCHEDULE

LOAD	HOLD TIME
AL (0.05 DTL MAX)	1 MINUTE
0.25 DTL	10 MINUTES
0.50 DTL	10 MINUTES
0.75 DTL	10 MINUTES
1.00 DTL	10 MINUTES
1.25 DTL	10 MINUTES
1.5 DTL (CREEP TEST)	60 MINUTES
1.75 DTL	10 MINUTES
2.00 DTL (MAX TEST LOAD)	10 MINUTES

THE ALIGNMENT LOAD (AL) SHOULD BE THE MINIMUM LOAD REQUIRED TO ALIGN THE TESTING APPARATUS AND SHOULD NOT EXCEED 5 PERCENT OF THE DESIGN TEST LOAD (DTL). DIAL GAUGES SHOULD BE SET TO "ZERO" AFTER THE ALIGNMENT LOAD HAS BEEN APPLIED.

EACH LOAD INCREMENT SHALL BE HELD FOR AT LEAST 10 MINUTES. THE VERIFICATION TEST NAIL SHALL BE MONITORED FOR CREEP AT THE 1.50 DTL LOAD INCREMENT. NAIL MOVEMENTS DURING THE CREEP PORTION OF THE TEST SHALL BE MEASURED AND RECORDED AT 1 MINUTE, 2, 3, 5, 6, 10, 20, 30, 50, AND 60 MINUTES. THE LOAD DURING THE CREEP TEST SHALL BE MAINTAINED WITHIN 2 PERCENT OF THE INTENDED LOAD BY USE OF THE LOAD CELL.

PROOF LOAD TESTING

PROOF LOAD TESTING OF THE SOIL NAILS SHALL BE PERFORMED ON 5% OF THE PRODUCTION NAILS IN EACH ROW. THE PROOF TEST LOCATIONS SHALL BE UNIFORMLY DISTRIBUTED WITHIN THE LIMITS OF THE WALL SURFACE, WITH AT LEAST ONE TEST PER ROW. THE ENGINEER SHALL DETERMINE THE LOCATIONS AND NUMBER OF PROOF TESTS PRIOR TO NAIL INSTALLATION IN EACH ROW.

PROVIDE TEMPORARY UNBONDED LENGTHS FOR EACH TEST NAIL. ISOLATE THE TEST NAIL BAR FROM THE SHOTCRETE FACING AND/OR THE REACTION FRAME USED DURING TESTING. ISOLATION OF A TEST NAIL THROUGH THE SHOTCRETE FACING SHALL NOT AFFECT THE LOCATION OF THE REINFORCING STEEL UNDER THE BEARING PLATE. ACCEPTED PROOF TEST NAILS MAY BE INCORPORATED AS PRODUCTION NAILS PROVIDED THE TEMPORARY TEST UNBONDED LENGTH IS FULLY GROUTED SUBSEQUENT TO TESTING. SUBMIT THE PROPOSED TEST NAIL ISOLATION METHODS, METHODS FOR PROVIDING AN UNBONDED TEST LENGTH, AND METHODS FOR GROUTING THE UNBONDED LENGTH SUBSEQUENT TO TESTING TO THE ENGINEER FOR REVIEW AND APPROVAL IN ACCORDANCE WITH THE SUBMITTALS SECTION. WHERE TEMPORARY CASING OF THE UNBONDED LENGTH OF TEST NAILS IS PROVIDED, INSTALL THE CASING IN A WAY THAT PREVENTS ANY REACTION BETWEEN THE CASING AND THE GROUTED BOND LENGTH OF THE NAIL AND/OR THE STRESSING APPARATUS.

PRODUCTION PROOF TEST NAILS SHALL HAVE BOTH BONDED AND TEMPORARY UNBONDED LENGTHS. PRIOR TO TESTING ONLY THE BONDED LENGTH OF THE TEST NAIL SHALL BE GROUTED. THE TEMPORARY UNBONDED LENGTH OF THE TEST NAIL SHALL BE AT LEAST 3 FEET. THE BONDED LENGTH OF THE TEST NAIL SHALL BE DETERMINED BASED ON THE PRODUCTION NAIL BAR GRADE AND SIZE SUCH THAT THE ALLOWABLE BAR STRUCTURAL LOAD IS NOT EXCEEDED DURING TESTING, BUT SHALL NOT BE LESS THAN 10 FEET. PRODUCTION PROOF TEST NAILS SHORTER THAN 12 FEET IN LENGTH MAY BE CONSTRUCTED WITH LESS THAN THE MINIMUM 10 FEET BOND LENGTH WITH THE UNBONDED LENGTH LIMITED TO 3 FEET. THE ALLOWABLE BAR STRUCTURAL LOAD DURING TESTING SHALL NOT BE GREATER THAN 90 PERCENT OF THE YIELD STRENGTH FOR GRADE 60 BARS.

THE PROOF TEST BONDED LENGTH (LBP) SHALL NOT EXCEED THE TEST ALLOWABLE BAR LOAD DIVIDED BY 2.0 TIMES THE ALLOWABLE PULLOUT RESISTANCE VALUE, OR ABOVE MINIMUM LENGTHS, WHICHEVER IS GREATER. THE FOLLOWING EQUATION SHALL BE USED FOR SIZING THE PROOF TEST NAIL BONDED LENGTH TO AVOID OVERSTRESSING THE PRODUCTION NAIL BAR SIZE:

$LBP = C \times X \times FY \times AS / 2.0 \times QD$, OR ABOVE MINIMUM LENGTHS, WHICHEVER IS GREATER

LBP = MAXIMUM PROOF TEST NAIL BONDED LENGTH (FEET)
C = 0.9 FOR GRADE 60 BARS
FY = BAR YIELD OR ULTIMATE STRESS (KSI)
AS = BAR STEEL AREA (IN²)
2.0 = PULLOUT RESISTANCE SAFETY FACTOR
QD = ALLOWABLE PULLOUT RESISTANCE (KIP/FT, KIPS PER LINEAL FOOT OF GROUTED NAIL LENGTH, AS SPECIFIED ON SHEET 1 / 14)

THE DESIGN TEST LOAD (DTL) DURING PROOF TESTING SHALL BE DETERMINED BY THE FOLLOWING EQUATION:

$DTL = LBP \times QD$

LBP = AS-BUILT BONDED TEST LENGTH
MTL = 2.0 X DTL = MAXIMUM TEST LOAD (KIP)

PROOF TESTS SHALL BE PERFORMED BY INCREMENTALLY LOADING THE PROOF TEST NAIL TO A MAXIMUM TEST LOAD OF 150 PERCENT OF THE DESIGN TEST LOAD (DTL). THE NAIL MOVEMENT AT EACH LOAD SHALL BE MEASURED AND RECORDED BY THE ENGINEER IN THE SAME MANNER AS FOR VERIFICATION TESTS. THE TEST LOAD SHALL BE MONITORED BY A JACK PRESSURE GAUGE WITH A SENSITIVITY AND RANGE MEETING THE REQUIREMENTS OF PRESSURE GAUGES USED FOR VERIFICATION TEST NAILS. AT LOAD INCREMENTS OTHER THAN MAXIMUM TEST LOAD, THE LOAD SHALL BE HELD LONG ENOUGH TO OBTAIN A STABLE READING. INCREMENTAL LOADING FOR PROOF TESTS SHALL BE IN ACCORDANCE WITH THE FOLLOWING LOADING SCHEDULE. THE SOIL NAIL MOVEMENTS SHALL BE RECORDED AT EACH LOAD INCREMENT.

PROOF TEST LOADING SCHEDULE

LOAD	HOLD TIME
AL (0.05 DTL MAX)	UNTIL STABLE
0.25 DTL	UNTIL STABLE
0.50 DTL	UNTIL STABLE
0.75 DTL	UNTIL STABLE
1.00 DTL	UNTIL STABLE
1.25 DTL	UNTIL STABLE
2.0 DTL (MAX TEST LOAD)	SEE BELOW

THE ALIGNMENT LOAD (AL) SHOULD BE THE MINIMUM LOAD REQUIRED TO ALIGN THE TESTING APPARATUS AND SHOULD NOT EXCEED 5 PERCENT OF THE DESIGN TEST LOAD (DTL). DIAL GAUGES SHOULD BE SET TO "ZERO" AFTER THE ALIGNMENT LOAD HAS BEEN APPLIED.

o:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\94741\structures\Soil Nail Wall\sheets\94741\w006.dgn 7/20/2017 9:20:31 AM sdilling

DESIGN AGENCY: LIB Inc. • 2500 Newmark Drive, Miamiburg, OH 45342, (937) 295-5000 (tel.), (937) 295-5100 (fax) • libinc.com
 DESIGNED BY: AMT
 CHECKED BY: AMM
 DRAWN BY: MIM
 REVISED BY:
 REVIEWED BY: DWS
 DATE: 7-17
 FILE NUMBER: STRUCTURE
 SOIL NAIL WALL GENERAL NOTES (6 OF 7)
 SOIL NAIL WALL
 KENNEDY AVENUE OVER I-71
 HAM-71-0686
 PID No. 94741
 6 / 14
 222
 253

GENERAL NOTES (CON'T)

ALL LOAD INCREMENTS SHALL BE MAINTAINED WITHIN 5 PERCENT OF THE INTENDED LOAD. DEPENDING ON PERFORMANCE, EITHER 10 MINUTE OR 60 MINUTE CREEP TESTS SHALL BE PERFORMED AT THE MAXIMUM TEST LOAD (1.50 DTL). THE CREEP PERIOD SHALL START AS SOON AS THE MAXIMUM TEST LOAD IS APPLIED AND THE NAIL MOVEMENT SHALL BE MEASURED AND RECORDED AT 1 MINUTE, 2, 3, 5, 6 AND 10 MINUTES. WHERE THE NAIL MOVEMENT BETWEEN 1 MINUTE AND 10 MINUTES EXCEEDS 1 MM, THE MAXIMUM TEST LOAD SHALL BE MAINTAINED AN ADDITIONAL 50 MINUTES AND MOVEMENTS SHALL BE RECORDED AT 20 MINUTES, 30, 50, AND 60 MINUTES.

TEST NAIL ACCEPTANCE CRITERIA

A. TEST NAIL SHALL BE CONSIDERED ACCEPTABLE WHEN:

1. FOR VERIFICATION TESTS, A TOTAL CREEP MOVEMENT OF LESS THAN 0.08 INCH PER LOG CYCLE OF TIME BETWEEN THE 6 AND 60 MINUTE READINGS IS MEASURED DURING CREEP TESTING AND THE CREEP RATE IS LINEAR OR DECREASING THROUGHOUT THE CREEP TEST LOAD HOLD PERIOD.
2. FOR PROOF TESTS, A TOTAL CREEP MOVEMENT OF LESS THAN 0.04 INCH IS MEASURED BETWEEN THE 1 AND 10 MINUTE READINGS OR A TOTAL CREEP MOVEMENT OF LESS THAN 0.08 INCH IS MEASURED BETWEEN THE 6 AND 60 MINUTE READINGS AND THE CREEP RATE IS LINEAR OR DECREASING THROUGHOUT THE CREEP TEST LOAD HOLD PERIOD.
3. THE TOTAL MEASURED MOVEMENT AT THE MAXIMUM TEST LOAD EXCEEDS 80 PERCENT OF THE THEORETICAL ELASTIC ELONGATION OF THE TEST NAIL UNBONDED LENGTH.
4. A PULLOUT FAILURE DOES NOT OCCUR AT THE MAXIMUM TEST LOAD. PULLOUT FAILURE IS DEFINED AS THE LOAD AT WHICH ATTEMPTS TO FURTHER INCREASE THE TEST LOAD SIMPLY RESULTS IN CONTINUED PULLOUT MOVEMENT OF THE TEST NAIL. THE PULLOUT FAILURE LOAD SHALL BE RECORDED AS PART OF THE TEST DATA.

SUCCESSFUL PROOF TESTED NAILS MEETING THE ABOVE TEST ACCEPTANCE CRITERIA MAY BE INCORPORATED AS PRODUCTION NAILS, PROVIDED THAT (1) THE UNBONDED LENGTH OF THE TEST NAIL DRILLHOLE HAS NOT COLLAPSED DURING TESTING, (2) THE MINIMUM REQUIRED DRILLHOLE DIAMETER HAS BEEN MAINTAINED, (3) THE SPECIFIED CORROSION PROTECTION IS PROVIDED, AND (4) THE TEST NAIL LENGTH IS EQUAL TO OR GREATER THAN THE SCHEDULED PRODUCTION NAIL LENGTH. TEST NAILS MEETING THESE REQUIREMENTS CAN BE COMPLETED BY SATISFACTORILY GROUTING UP THE UNBONDED TEST LENGTH. MAINTAINING THE TEMPORARY UNBONDED TEST LENGTH FOR SUBSEQUENT GROUTING IS THE CONTRACTOR'S RESPONSIBILITY. IF THE UNBONDED TEST LENGTH OF PRODUCTION PROOF TEST NAILS CANNOT BE SATISFACTORILY GROUTED SUBSEQUENT TO TESTING, THE PROOF TEST NAIL SHALL BECOME SACRIFICIAL AND SHALL BE REPLACED WITH AN ADDITIONAL PRODUCTION NAIL INSTALLED AT NO ADDITIONAL COSTS.

TEST NAIL REJECTION

IF A TEST NAIL DOES NOT SATISFY THE ACCEPTANCE CRITERION, THE CONTRACTOR SHALL DETERMINE THE CAUSE.

VERIFICATION TEST NAILS

THE ENGINEER WILL EVALUATE THE RESULTS OF EACH VERIFICATION TEST. INSTALLATION METHODS WHICH DO NOT SATISFY THE NAIL TESTING REQUIREMENTS SHALL BE REJECTED. THE CONTRACTOR SHALL PROPOSE ALTERNATIVE METHODS AND INSTALL REPLACEMENT VERIFICATION TEST NAILS. REPLACEMENT TEST NAILS SHALL BE INSTALLED AND TESTED AT NO ADDITIONAL COST.

PROOF TEST NAILS

THE ENGINEER MAY REQUIRE THE CONTRACTOR TO REPLACE SOME OR ALL OF THE INSTALLED PRODUCTION NAILS BETWEEN A FAILED PROOF TEST NAIL AND THE ADJACENT PASSING PROOF TEST NAIL. ALTERNATIVELY, THE ENGINEER MAY REQUIRE THE INSTALLATION AND TESTING OF ADDITIONAL PROOF TEST NAILS TO VERIFY THAT ADJACENT PREVIOUSLY INSTALLED PRODUCTION NAILS HAVE SUFFICIENT LOAD CARRYING CAPACITY. CONTRACTOR MODIFICATIONS MAY INCLUDE, BUT ARE NOT LIMITED TO: THE INSTALLATION OF ADDITIONAL PROOF TEST NAILS; INCREASING THE DRILLHOLE DIAMETER TO PROVIDE INCREASED CAPACITY; MODIFYING THE INSTALLATION OR GROUTING METHODS; REDUCING THE PRODUCTION NAIL SPACING FROM THAT SHOWN ON THE PLANS AND INSTALLING MORE PRODUCTION NAILS AT A REDUCED CAPACITY; OR INSTALLING LONGER PRODUCTION NAILS IF SUFFICIENT RIGHT-OF-WAY IS AVAILABLE AND THE PULLOUT CAPACITY BEHIND THE FAILURE SURFACE CONTROLS THE ALLOWABLE NAIL DESIGN CAPACITY. THE NAILS MAY NOT BE LENGTHENED BEYOND THE TEMPORARY CONSTRUCTION EASEMENTS OR THE PERMANENT RIGHT-OF-WAY ON THE PLANS. INSTALLATION AND TESTING OF ADDITIONAL PROOF TEST NAILS OR INSTALLATION OF ADDITIONAL OR MODIFIED NAILS AS A RESULT OF PROOF TEST NAIL FAILURE(S) WILL BE AT NO ADDITIONAL COST.

NAIL INSTALLATION RECORDS

RECORDS DOCUMENTING THE SOIL NAIL WALL CONSTRUCTION WILL BE MAINTAINED BY THE ENGINEER, UNLESS SPECIFIED OTHERWISE. TYPICAL RECORDS MAINTAINED BY THE ENGINEER SHOULD INCLUDE THE FOLLOWING:

- A. CONTRACTOR'S NAME
- B. DRILL RIG OPERATOR'S NAME
- C. DATE AND TIME OF START AND FINISH OF DRILLING
- D. DRILLING DIFFICULTIES
- E. CAVING OR SLOUGHING OF EXCAVATION OR DRILLHOLE
- F. GROUNDWATER CONDITIONS
- G. DRILL CASING REQUIREMENTS
- H. INSTALLED NAIL DRILLHOLE AND BAR DIAMETER
- I. DESIGN NAIL LENGTH
- J. INSTALLED NAIL LENGTH
- K. AS-BUILT NAIL LOCATION AND DEVIATION FROM SPECIFIED TOLERANCES
- L. DATE, TIME AND METHOD GROUT WAS PLACED INCLUDING GROUT PRESSURE (IF APPLICABLE)
- M. DESIGN CHANGES

THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH AS-BUILT DRAWINGS SHOWING AS-BUILT NAIL LOCATIONS AND AS-BUILT SHOTCRETE FACING AND GRADE WITHIN 5 DAYS AFTER COMPLETION OF THE SHOTCRETE FACING AND AS-BUILT CAST IN PLACE CONCRETE FACING LINE AND GRADE WITHIN 5 DAYS AFTER COMPLETION OF THE CAST IN PLACE CONCRETE FACING.

METHOD OF MEASUREMENT

VERIFICATION TESTS SHALL BE MEASURED AS THE ACTUAL NUMBER OF VERIFICATION TESTS AUTHORIZED AND ACCEPTED. THIS ITEM SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER EACH AND SHALL INCLUDE ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THE WORK.

PROOF TESTS SHALL BE MEASURED AS THE ACTUAL NUMBER OF PROOF TESTS AUTHORIZED AND ACCEPTED. THIS ITEM SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER EACH AND SHALL INCLUDE ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THE WORK.

BASIS OF PAYMENT

ITEM 610, RETAINING WALL, MISC.: VERIFICATION TEST NAILS EACH
 ITEM 610, RETAINING WALL, MISC.: PROOF TESTS EACH

SOIL NAIL SCHEDULE

ROW	MINIMUM LENGTH	NAIL DECLINATION	MINIMUM STEEL BAR SIZE	MINIMUM GROUT HOLE DIAMETER	NUMBER OF SOIL NAILS
	(FT)	(DEGREES)		(IN)	
1	30	15	#8	6	32
2	30	15	#8	6	17
3	30	15	#8	6	32

ESTIMATED QUANTITIES - SOIL NAIL WALL - CARRIED TO GENERAL SUMMARY

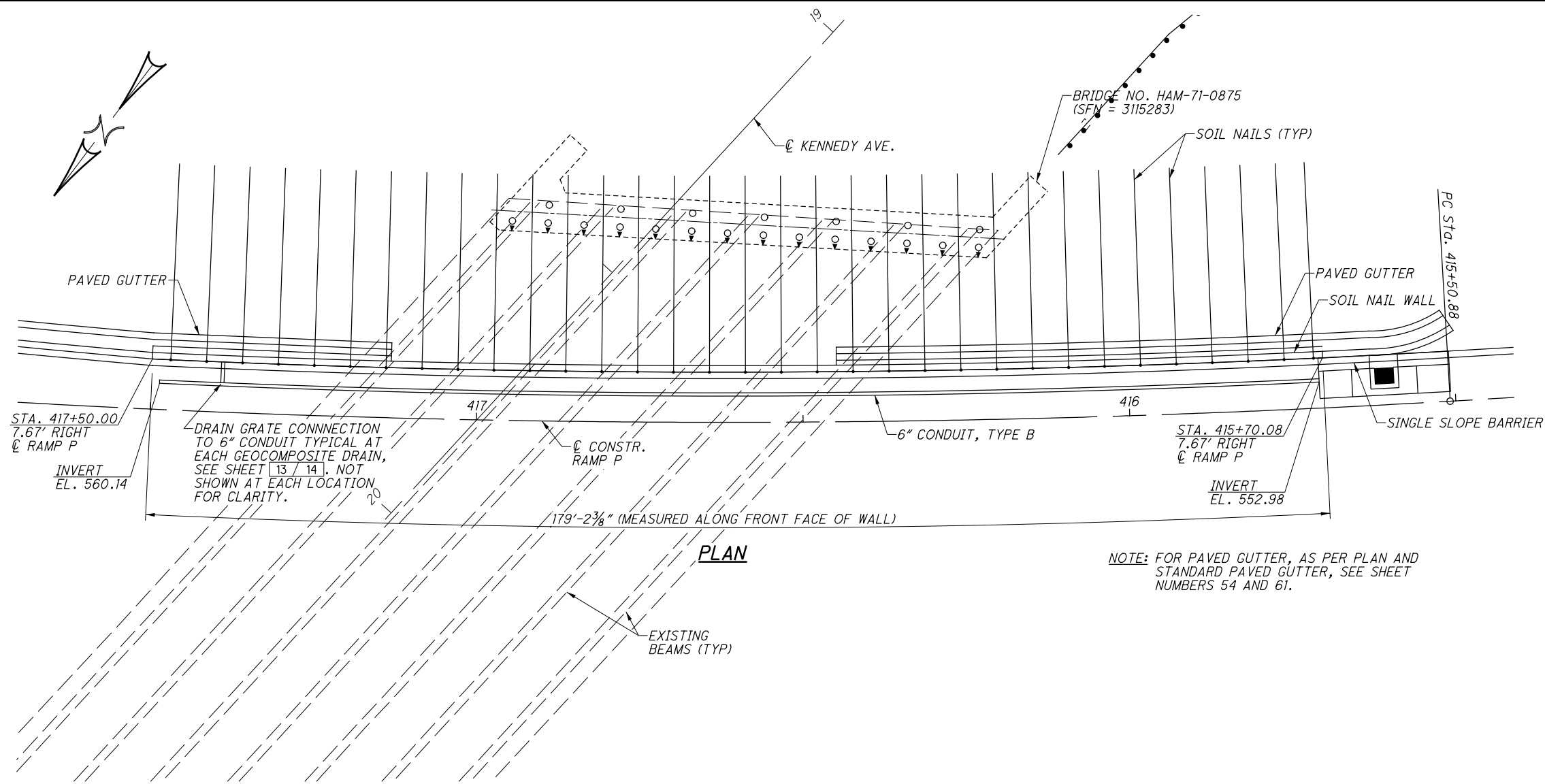
ITEM	ITEM EXTENSION	TOTAL	UNIT	DESCRIPTION	AS PER PLAN SHEET NUMBER
503	21301	LUMP		UNCLASSIFIED EXCAVATION, AS PER PLAN	2 / 14
509	10000	6550	LB	EPOXY COATED REINFORCING STEEL	
511	53010	63	CU YD	CLASS QC1 CONCRETE, MISC.: CIP WALL FACING	2 / 14
512	10100	115	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
610	50000	81	EACH	RETAINING WALL, MISC.: PERMANENT SOIL NAILS (NO. 8 BARS)	3 / 14
610	50000	2	EACH	RETAINING WALL, MISC.: VERIFICATION TEST NAILS	6 / 14 AND 7 / 14
610	50000	5	EACH	RETAINING WALL, MISC.: PROOF TESTS	6 / 14 AND 7 / 14
610	50010	1760	SQ FT	RETAINING WALL, MISC.: TEMPORARY SHOTCRETE FACING AND WALL DRAINAGE	4 / 14 AND 5 / 14
611	00900	310	FT	6" CONDUIT, TYPE B	

QUANTITIES COMPUTED BY: AMT 3/17
 QUANTITIES CHECKED BY: JLM 3/17

O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\structures\Soil Nail Wall\sheets\94741\w007.dgn 7/20/2017 9:20:32 AM sdilling

DESIGN AGENCY: LIB Inc. • 2500 Newmark Drive • Columbus, OH 43242 • (614) 296-5100 fax • (614) 296-5100
 SOIL NAIL WALL - KENNEDY AVENUE OVER I-71
 SOIL NAIL WALL
 HAM-71-0686
 PID No. 94741
 7 / 14
 223
 253

O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\94741\structures\Soil Nail Wall\sheets\94741\wp001.dgn 7/20/2017 9:20:36 AM sdilling



PLAN

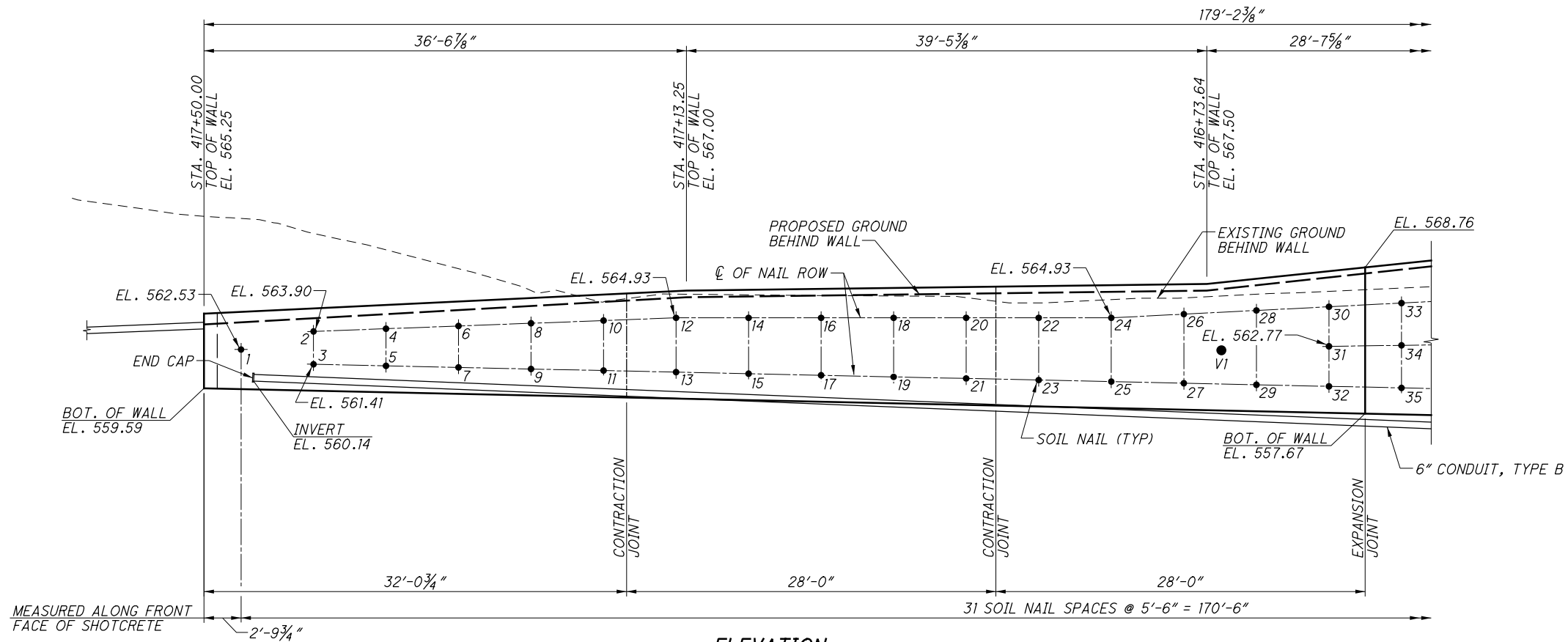
NOTE: FOR PAVED GUTTER, AS PER PLAN AND STANDARD PAVED GUTTER, SEE SHEET NUMBERS 54 AND 61.

LEGEND
NF = NEAR FACE

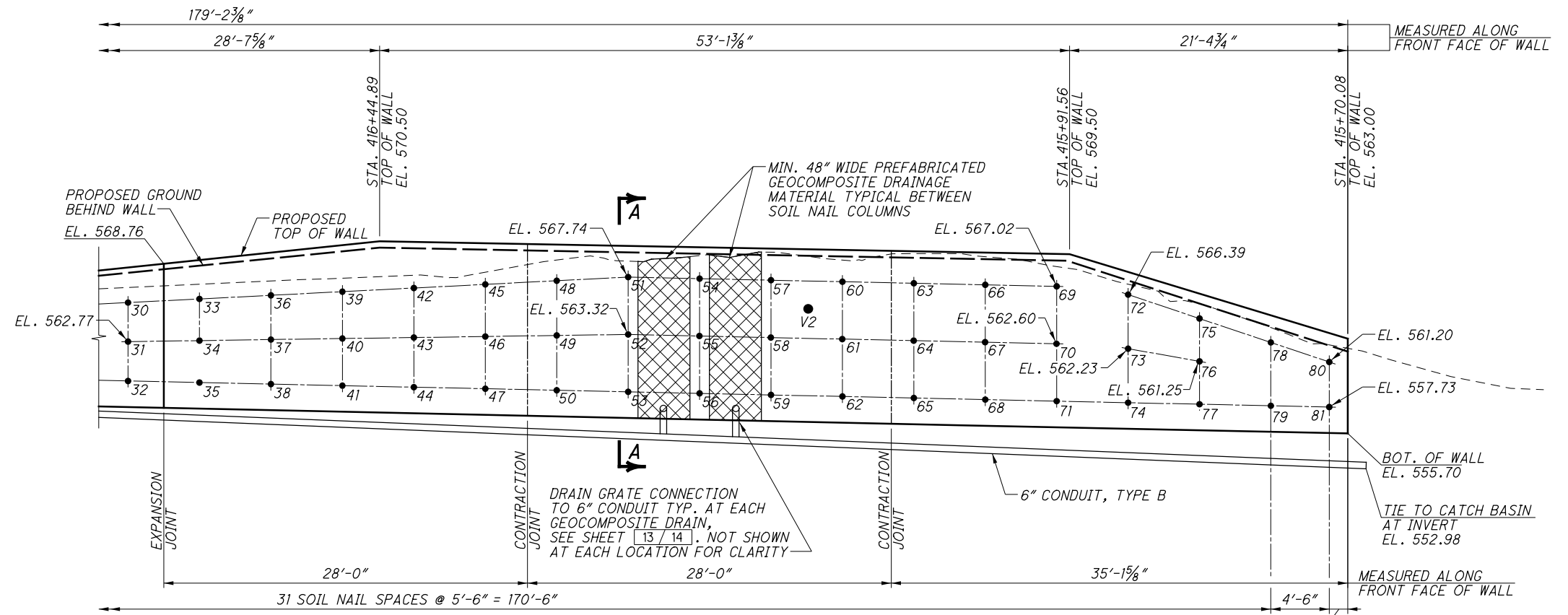
- NOTES:**
- FOR GENERAL NOTES, SEE SHEETS 1 / 14 THRU 7 / 14.
 - FOR RAMP P CURVE DATA, SEE SHEET 2 / 253.

<p>HAM-71-0686 PID No. 94741</p>	<p>SOIL NAIL WALL PLAN SOIL NAIL WALL KENNEDY AVENUE OVER I-71</p>	<p>DESIGNED AMT</p>	<p>DRAWN MSD</p>	<p>REVIEWED DWS</p>	<p>DATE 7-17</p>	<p>DESIGN AGENCY LJB Inc. • 2500 Newmark Drive Miamisburg, OH 45342 (937) 295-5000 (tel) • (937) 295-5100 (fax) • LJBinc.com</p>
<p>8 / 14</p>	<p>224 253</p>	<p>CHECKED AWM</p>	<p>REVISED</p>	<p>STRUCTURE FILE NUMBER</p>	<p>FILE NUMBER</p>	

O:\ODOT_D8\108249A.00 - HAM-71-686 PID94741\structures\Soil Nail Wall\sheet\94741wp002.dgn 7/20/2017 9:20:37 AM scilling



ELEVATION
BARRIER AND PAVEMENT
NOT SHOWN FOR CLARITY



ELEVATION
BARRIER AND PAVEMENT
NOT SHOWN FOR CLARITY

LEGEND

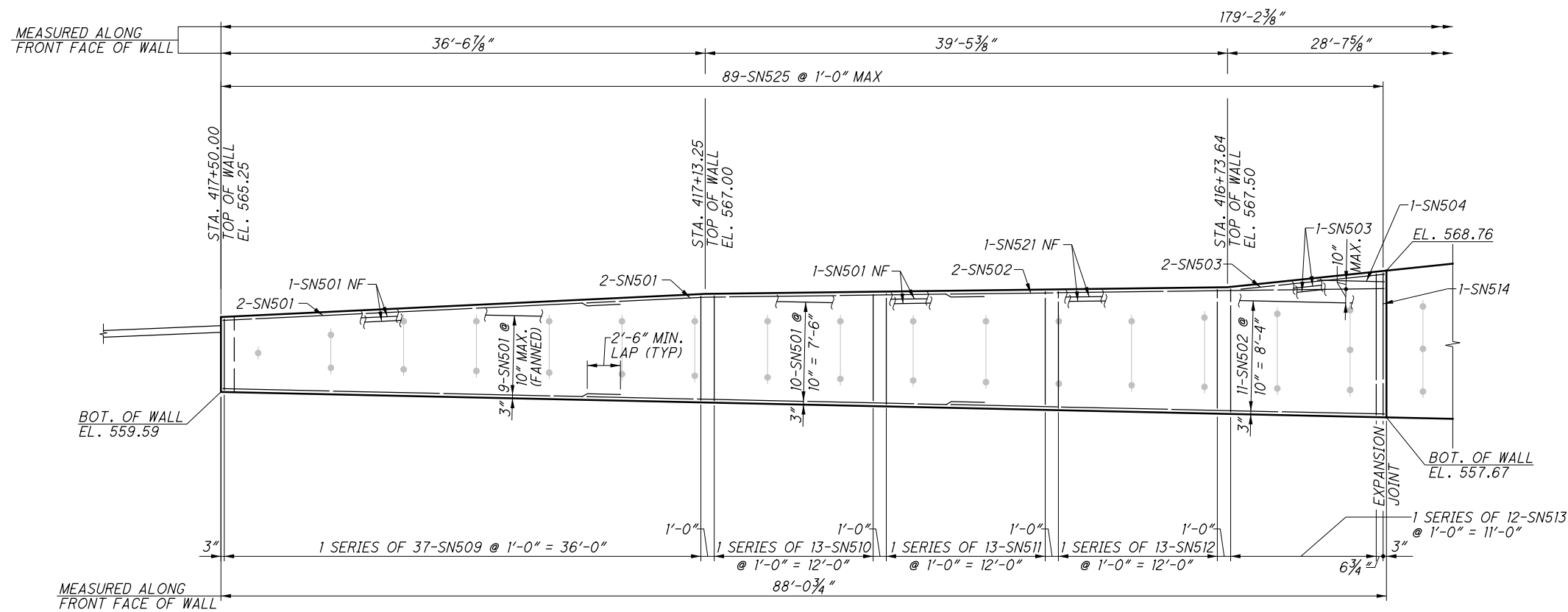
- - SOIL NAIL
- - VERIFICATION NAIL

NOTES:

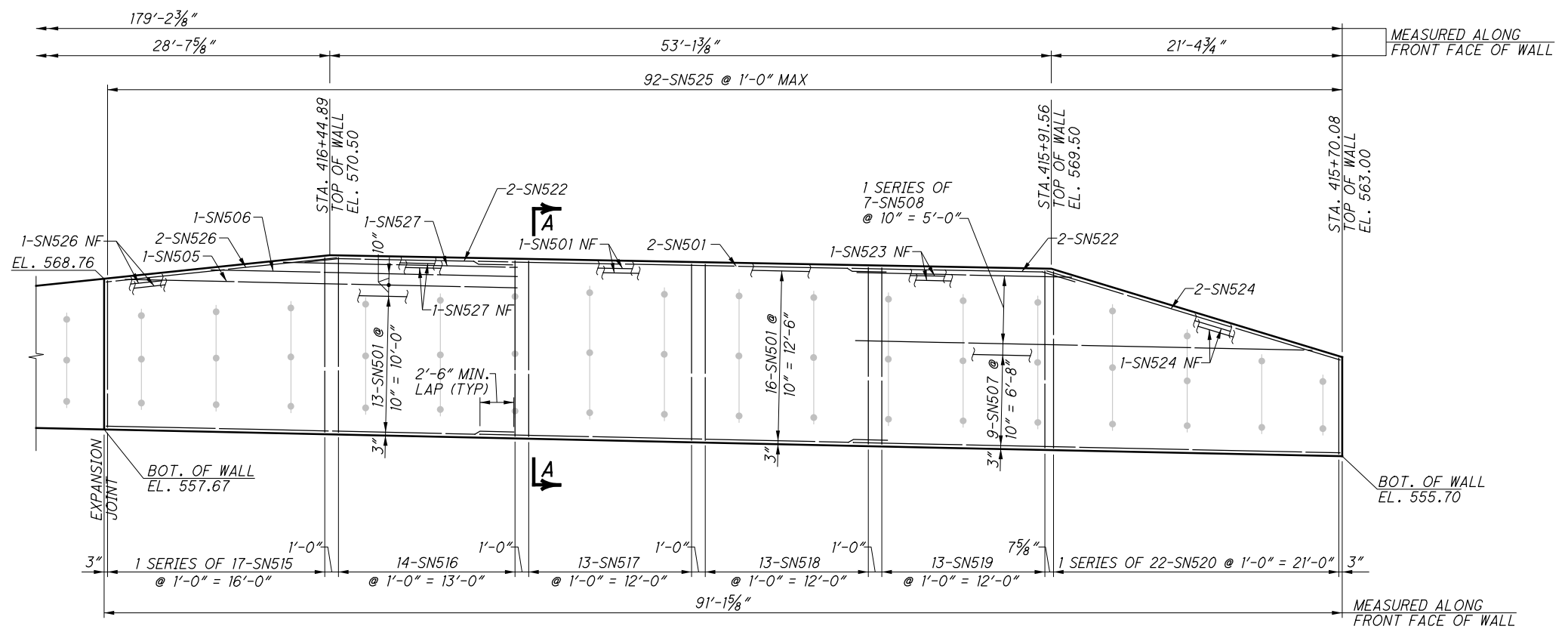
1. FOR GENERAL NOTES, SEE SHEETS 1 / 14 THRU 7 / 14 .
2. WALL ELEVATIONS ARE SHOWN VIEWED FROM THE FRONT EXPOSED FACE OF WALL.
3. NAIL ELEVATIONS NOT SHOWN SHALL BE LINEARLY INTERPOLATED BETWEEN THOSE SHOWN.
4. FOR PLAN VIEW, SEE SHEET 8 / 14 .
5. FOR SECTION A-A, SEE SHEET 11 / 14 .
6. FOR EXPANSION AND CONTRACTION JOINT DETAILS, SEE SHEET 12 / 14 .

	DESIGN AGENCY JLB Inc. • 2500 Newmark Drive Mansfield, OH 44842 (937) 295-0000 (e) (937) 295-5100 (f) • jlbinc.com
DATE 7-17	REVIEWED DWS
DRAWN MSD	STRUCTURE FILE NUMBER
DESIGNED AMT	CHECKED AWM
SOIL NAIL WALL ELEVATION SOIL NAIL WALL KENNEDY AVENUE OVER I-71	
HAM-71-0686 PID No. 94741	
9 / 14	
225 253	

O:\ODOT_D8\108249A.00 - HAM-71-686 PID94741\structures\Soil Nail Wall\sheets\94741\wp003.dgn 7/20/2017 9:20:38 AM scilling



ELEVATION - PERMANENT CIP WALL REINFORCING
BARRIER AND PAVEMENT
NOT SHOWN FOR CLARITY




ELEVATION - PERMANENT CIP WALL REINFORCING
BARRIER AND PAVEMENT
NOT SHOWN FOR CLARITY

LEGEND

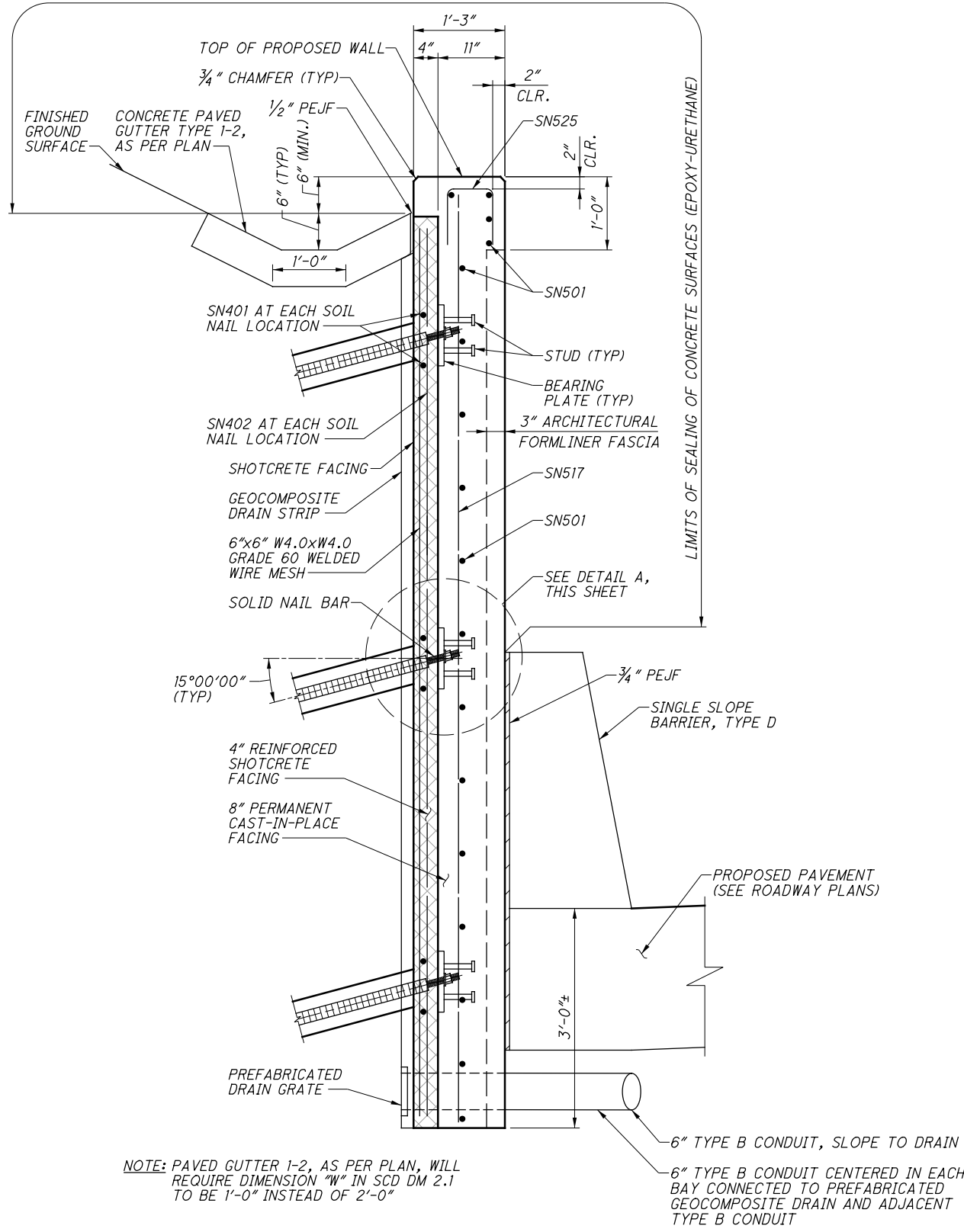
- NF = NEAR FACE
- - SOIL NAIL

NOTES:

1. FOR GENERAL NOTES, SEE SHEETS 1/14 THRU 7/14.
2. FOR TYPICAL SHOTCRETE REINFORCEMENT, SEE SHEET 13/14.
3. FOR REINFORCING STEEL LIST, SEE SHEET 14/14.
4. FOR SECTION A-A, SEE SHEET 11/14.
5. FOR SOIL NAIL LAYOUT, SEE SHEET 9/14.
6. FOR EXPANSION JOINT DETAIL, SEE SHEET 12/14.

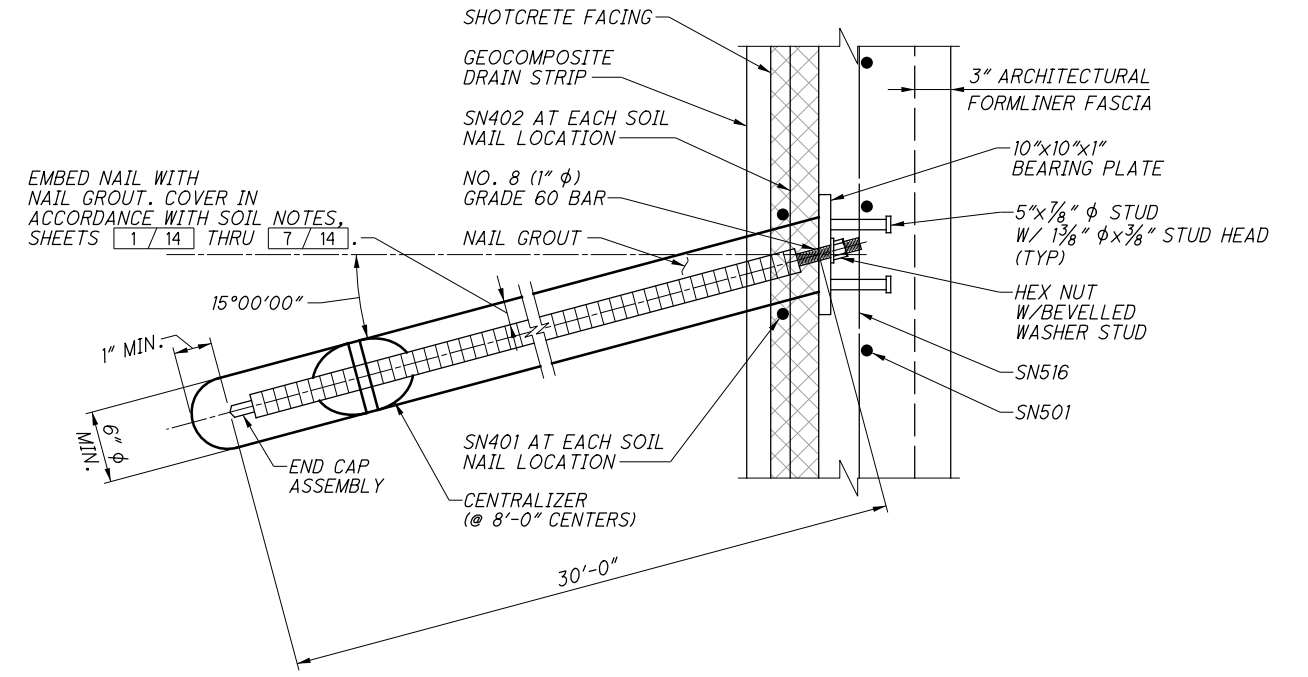
	DESIGN AGENCY LIB Inc. • 2500 Newmark Drive Miamisburg, OH 45342 937.256-0000 (tel.) • (937) 256-5100 (fax) • libinc.com
DATE 7-17	REVIEWED DWS
DRAWN MSD	STRUCTURE FILE NUMBER
DESIGNED AMT	CHECKED AMM
SOIL NAIL WALL REINFORCING SOIL NAIL WALL KENNEDY AVENUE OVER I-71	
HAM-71-0686	PID No. 94741
10 / 14	
226 253	

O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\structures\Soil Nail Wall\sheet\94741\dwg001.dgn 7/20/2017 9:20:39 AM sdilling

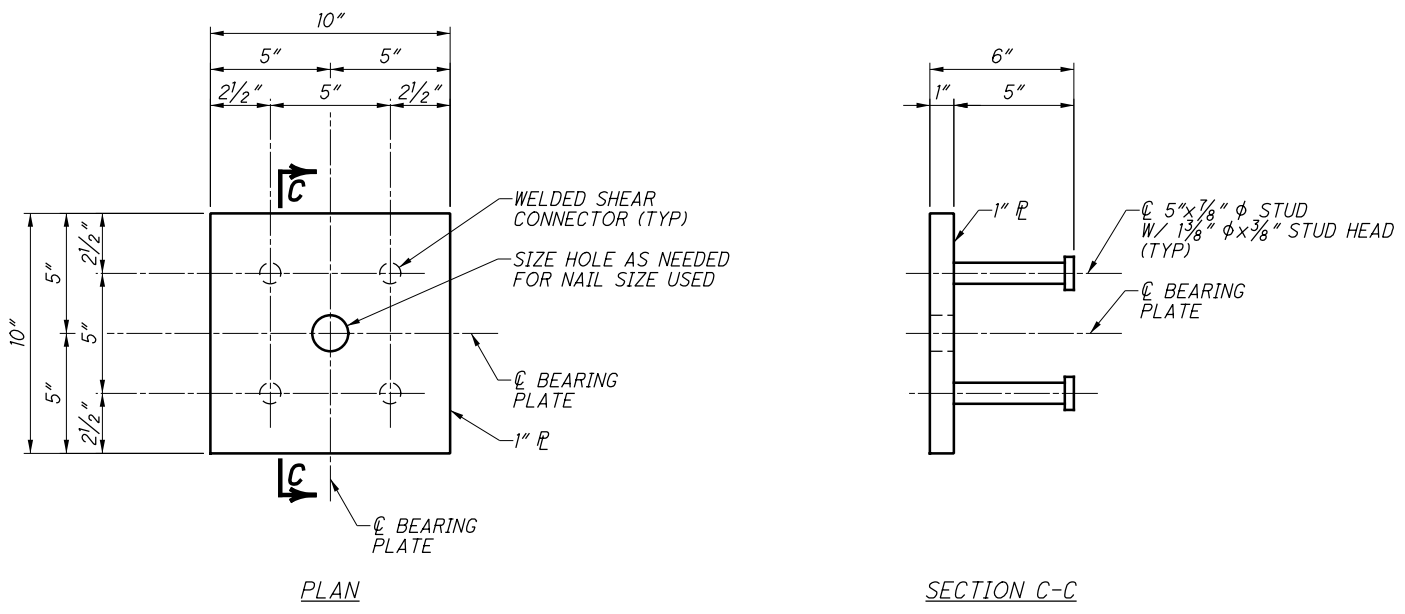


NOTE: PAVED GUTTER 1-2, AS PER PLAN, WILL REQUIRE DIMENSION "W" IN SCD DM 2.1 TO BE 1'-0" INSTEAD OF 2'-0"

SECTION A-A



DETAIL A



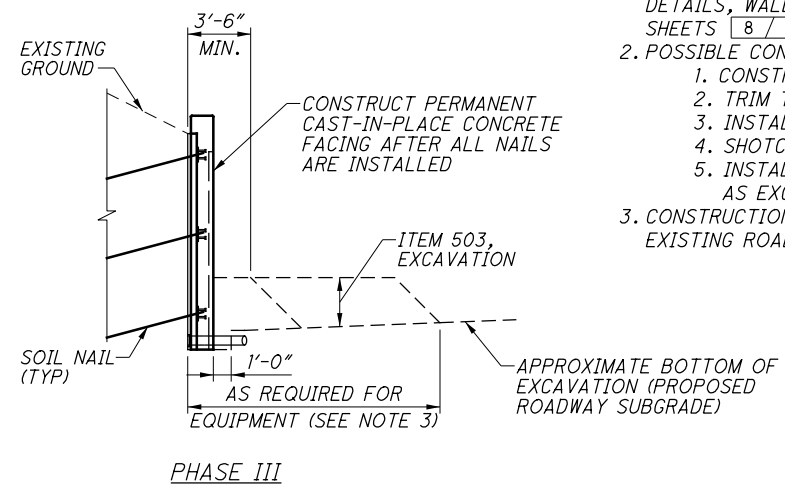
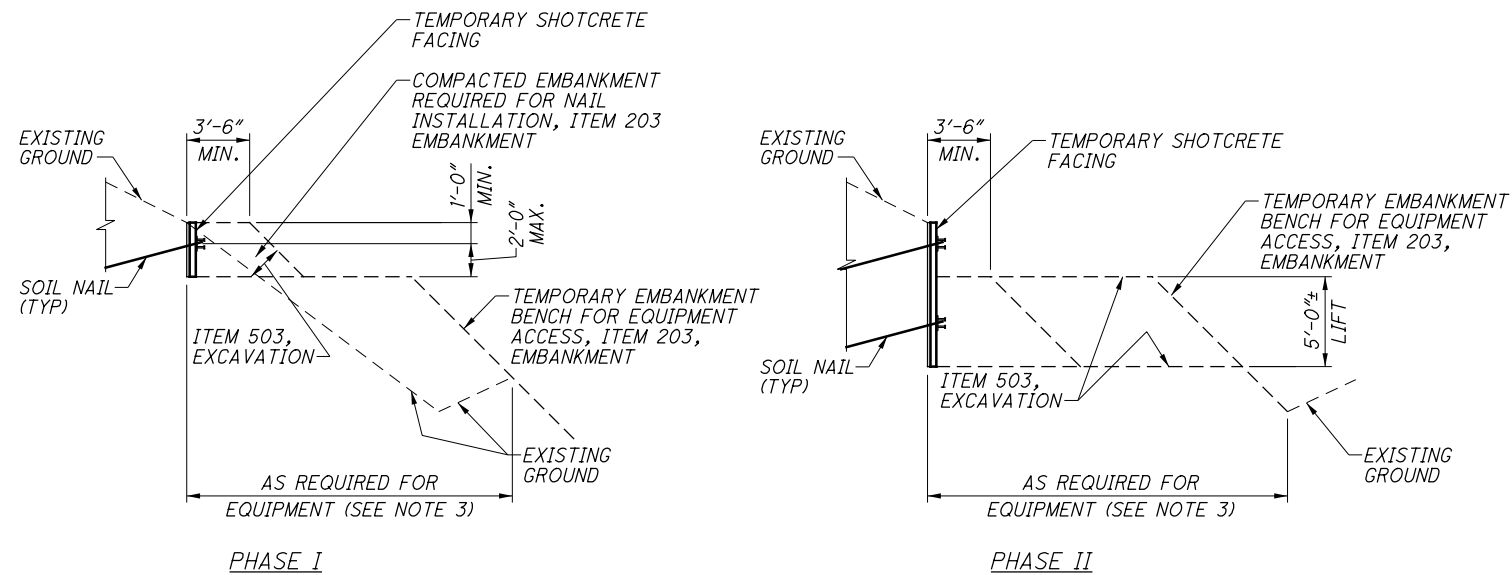
BEARING PLATE DETAILS

NOTES:

- FOR GENERAL NOTES, SEE SHEETS 1/14 THRU 7/14.
- FOR REINFORCING STEEL LIST, SEE SHEET 14/14.
- SOIL NAIL LOCATION ADJUSTMENT: BECAUSE OF THE POSSIBILITY OF THE EXISTING ABUTMENT PILES BEING AT DIFFERENT LOCATIONS THAN SHOWN ON THE PLANS OR THE SOIL NAILS HITTING OBSTACLES (ROCKS OR BURIED DEBRIS), THE NAIL LOCATIONS CAN BE ADJUSTED AS PER NAIL WALL INSTALLATION TOLERANCE. THE MAXIMUM HORIZONTAL SPACING OF THE SOIL NAILS IS 6'-0". THE MAXIMUM VERTICAL SPACING IS 5'-6". THE CONTRACTOR SHALL MAKE EVERY EFFORT TO CONSTRUCT THE SOIL NAILS AT THE PLAN LOCATIONS. THE TOTAL NUMBER OF SOIL NAILS BETWEEN EXPANSION OR CONTRACTION JOINTS SHALL ALWAYS BE CONSTRUCTED.

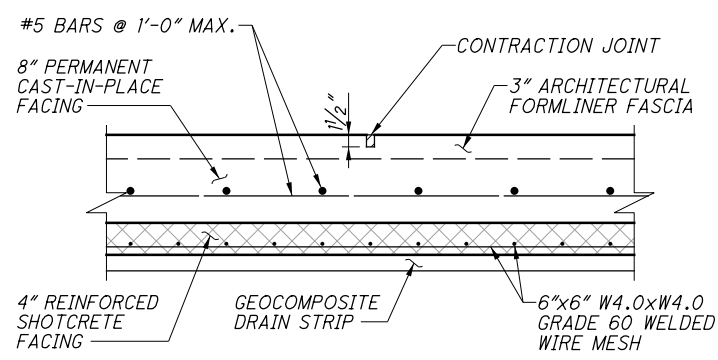
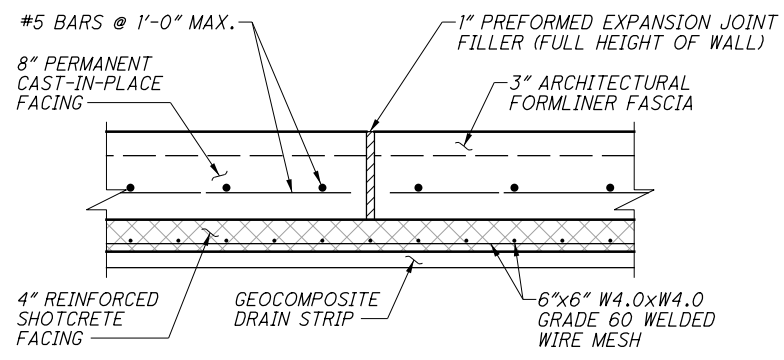
SOIL NAIL WALL SECTIONS AND DETAILS (1 OF 3) SOIL NAIL WALL KENNEDY AVENUE OVER I-71	DESIGN AGENCY LIB Inc. • 2500 Newmark Drive Miamisburg, OH 45342 1937 254-0000 (tel) • 1937 254-5100 (fax) • libinc.com	DATE 7-17	REVIEWED DWS	STRUCTURE FILE NUMBER	DRAWN MMM	CHECKED AMM
HAM-71-0686 PID No. 94741	11 / 14 227 253					

O:\ODOT_D8\108249A.00 - HAM-71-686 PID94741\94741\structures\Soil Nail Wall\sheets\94741\dwg002.dgn 7/20/2017 9:20:40 AM scilling



- NOTES**
- NAILS SHOWN FOR REFERENCE, FOR NAIL LOCATIONS, WALL DETAILS, WALL ELEVATIONS, STATIONS AND OFFSETS, SEE SHEETS [8 / 14] AND [9 / 14] .
 - POSSIBLE CONSTRUCTION SEQUENCE (SEE PHASES I THRU III):
 - CONSTRUCT FILL.
 - TRIM TEMPORARY FILL TO ALLOW FOR NAIL INSTALLATION.
 - INSTALL FIRST NAIL FROM CONSTRUCTION BENCH.
 - SHOTCRETE EXPOSED FACE.
 - INSTALL REMAINING NAILS AND REMOVE CONSTRUCTION BENCH AS EXCAVATION PROGRESSES.
 - CONSTRUCTION BENCH TO BE SIZED TO MINIMIZE IMPACT TO EXISTING ROADWAY AND MAINTAIN REQUIRED ROADWAY DRAINAGE.

TYPICAL FILL SECTIONS
 STA. 416+50.00 @ RAMP P
 (LOW BEAM AT ADJACENT ABUTMENT IS EL. 580.76)



DESIGNED	AMT	CHECKED	AMM
DRAWN	MMM	REVISED	
REVIEWED	DWS	STRUCTURE FILE NUMBER	
DATE	7-17		
DESIGN AGENCY	LIB Inc. • 2500 Newmark Drive Miamisburg, OH 45342 (937) 256-0000 (tel) • (937) 256-5100 (fax) • libinc.com		

SOIL NAIL WALL SECTIONS AND DETAILS (2 OF 3)

SOIL NAIL WALL
KENNEDY AVENUE OVER I-71

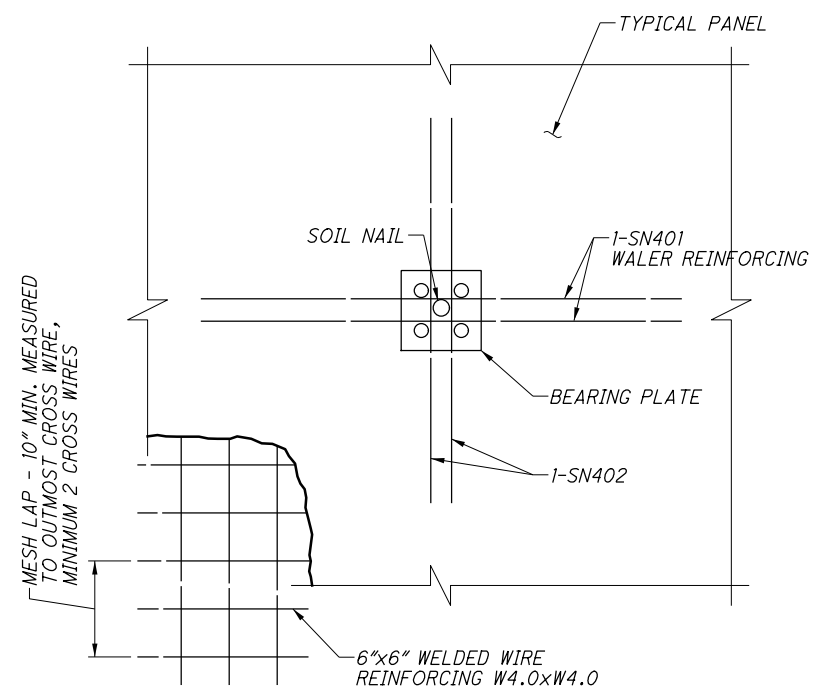
HAM-71-0686
PID No. 94741

12 / 14

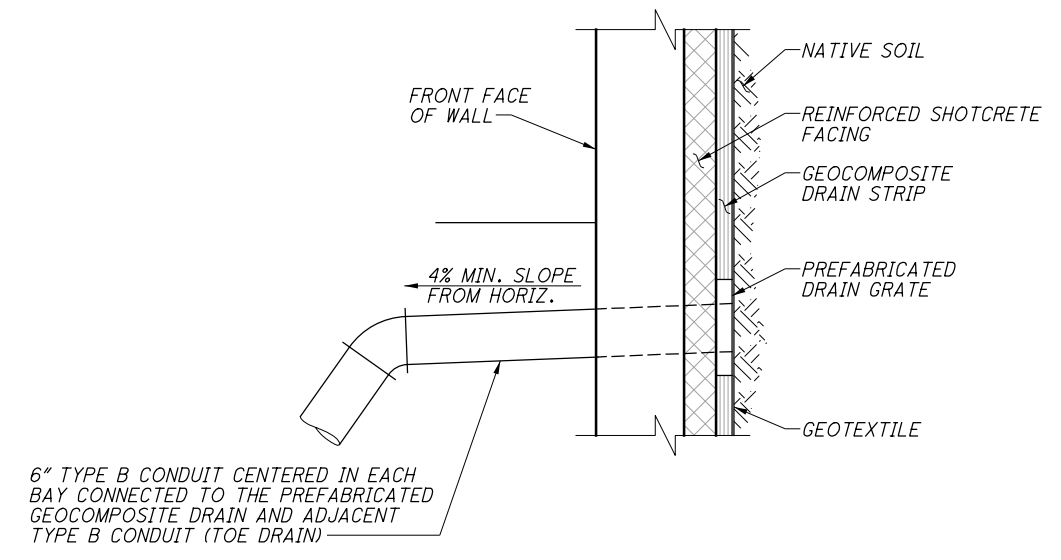
228
253

- NOTES:**
- FOR GENERAL NOTES, SEE SHEETS [1 / 14] THRU [7 / 14] .
 - FOR REINFORCING STEEL LIST, SEE SHEET [14 / 14] .

O:\ODOT_D8\0108249A.00 - HAM-71-686 PID94741\structures\Soil Nail Wall\sheets\94741\dwg003.dgn 7/20/2017 9:20:41 AM sdilling



TYPICAL SHOTCRETE REINFORCING STEEL AT ANCHOR ASSEMBLY
(TYPICAL AT 81 SOIL NAIL LOCATIONS)



TYPICAL WALL TOE DRAIN
SPLICES OF GEOCOMPOSITE DRAIN STRIPS SHALL CONSIST OF A 1'-0" MIN. LAP OF UPPER GEOTEXTILE FABRIC OVER THE LOWER FABRIC

NOTES:

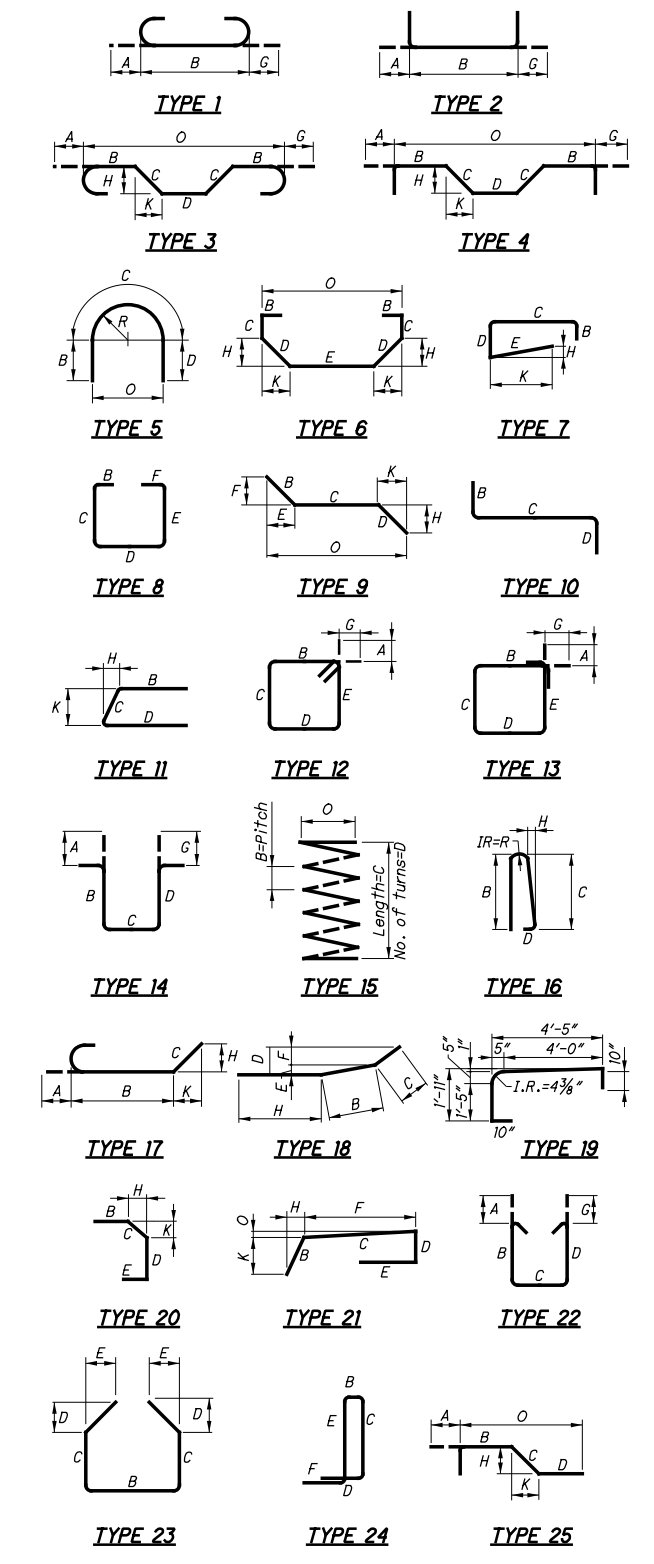
1. FOR GENERAL NOTES, SEE SHEETS 1 / 14 THRU 7 / 14 .
2. FOR SOIL NAIL LAYOUT, SEE SHEET 9 / 14 .

DESIGNED AMT		DRAWN MMM		REVIEWED DWS		DATE 7-17		 DESIGN AGENCY LJB Inc. • 2500 Newmark Drive Miamisburg, OH 45342 1937 295-5000 (tel) • (937) 295-5100 (fax) • LJBinc.com	
CHECKED AMM		REVISED		STRUCTURE FILE NUMBER		FILE NUMBER		SOIL NAIL WALL KENNEDY AVENUE OVER I-71	
HAM-71-0686		PID No. 94741		SOIL NAIL WALL SECTIONS AND DETAILS (3 OF 3)					
13 / 14									
229		253							

MARK	NUMBER	LENGTH	WEIGHT	TYPE	A	B	C	D	E	F	G	H	K	O	R
SOIL NAIL WALL															
SN401	162	5'-0"	541	STR.											
SN402	162	4'-0"	433	STR.											
SN501	60	30'-0"	1877	STR.											
SN502	13	32'-9"	444	STR.											
SN503	4	12'-0"	50	STR.											
SN504	1	5'-0"	5	STR.											
SN505	1	28'-10"	30	STR.											
SN506	1	22'-6"	24	STR.											
SN507	9	35'-10"	336	STR.											
SN508	1 SERIES OF 7 = 7	VAR. 15'-9" TO 33'-9" INCR. 3'-0"	181	STR.											
SN509	1 SERIES OF 37 = 37	VAR. 5'-4" TO 7'-10" INCR. 7/8"	254	STR.											
SN510	1 SERIES OF 13 = 13	VAR. 7'-11" TO 8'-4" INCR. 7/16"	110	STR.											
SN511	1 SERIES OF 13 = 13	VAR. 8'-4" TO 8'-9" INCR. 7/16"	116	STR.											
SN512	1 SERIES OF 13 = 13	VAR. 8'-9" TO 9'-2" INCR. 7/16"	121	STR.											
SN513	1 SERIES OF 12 = 12	VAR. 9'-3" TO 10'-8" INCR. 1 1/2"	125	STR.											
SN514	1	10'-9"	11	STR.											
SN515	1 SERIES OF 17 = 17	VAR. 10'-9" TO 12'-9" INCR. 1 1/2"	208	STR.											
SN516	14	12'-10"	187	STR.											
SN517	13	12'-11"	175	STR.											
SN518	13	12'-11"	175	STR.											
SN519	13	13'-0"	176	STR.											
SN520	1 SERIES OF 22 = 22	VAR. 7'-0" TO 12'-11" INCR. 3 3/8"	229	STR.											
SN521	2	21'-3"	44	STR.											
SN522	4	16'-5"	68	9			14'-0"	2'-6"				8"	2'-5"		
SN523	2	15'-9"	33	STR.											
SN524	4	22'-6"	94	STR.											
SN525	181	2'-0"	378	8			1'-0"	7"	8"						
SN526	4	17'-0"	71	STR.											
SN527	3	17'-3"	54	STR.											
		TOTAL =	6550												

o:\ODOT_D8\0108249A.00 - HAM-71-0686 PID94741\94741\structures\Soil Nail Wall\sheets\94741r1001.dgn 7/20/2017 9:20:44 AM scilling

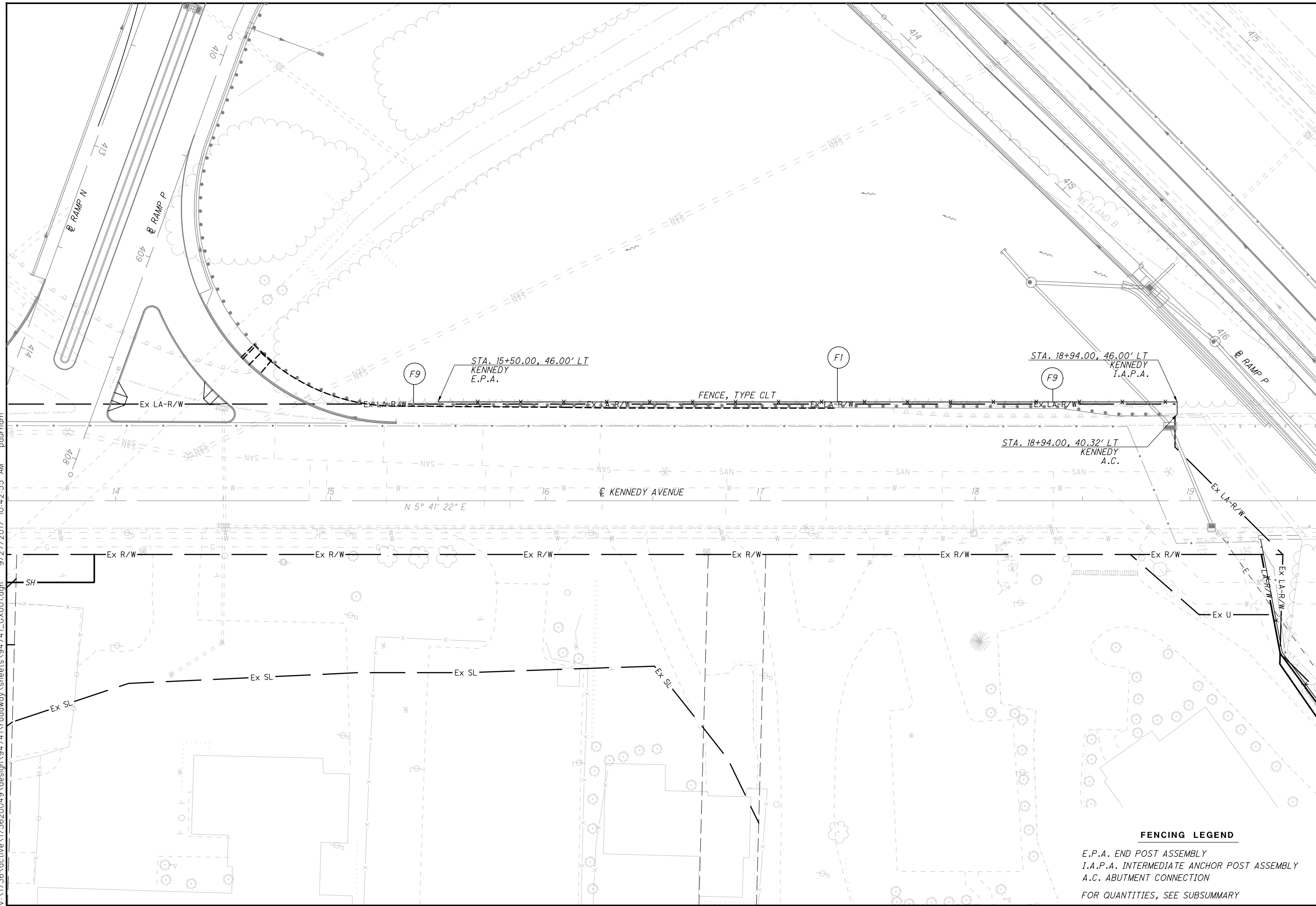
BENDING DIAGRAMS



- NOTES:**
1. ALL REINFORCING STEEL BARS SHALL BE EPOXY COATED.
 2. ALL DIMENSIONS ARE OUT TO OUT OF BAR.
 3. DIMENSIONS "A" AND "G" ARE STANDARD BEND DIMENSIONS. REFER TO SECTION 509.05 OF THE CMS.
 4. RADIUS DIMENSION "R" IS TO THE OUTSIDE OF THE BAR.
 5. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER.

DESIGN AGENCY: LJB Inc. • 2500 Newmark Drive • Columbus, OH 43242 • (614) 296-5000 • (614) 296-5100 fax • LJBinc.com
 DATE: 7-17
 REVIEWED: DWS
 DRAWN: MSD
 DESIGNED: AMT
 CHECKED: JLM
 STRUCTURE FILE NUMBER: SOIL NAIL WALL
 FILE NUMBER: KENNEDY AVENUE OVER I-71
REINFORCING STEEL LIST
HAM-71-0686
PID No. 94741
 14 / 14
 230
 253

V:\1736\active\173620049\design\94741\roadway\sheets\94741_GX001.dgn 9/27/2017 10:42:55 AM padurham



CALCULATED
LEH
CHECKED
SNS

0 20 40
HORIZONTAL
SCALE IN FEET

FENCING PLAN
STA. 16+00.00 TO STA. 418+94.00

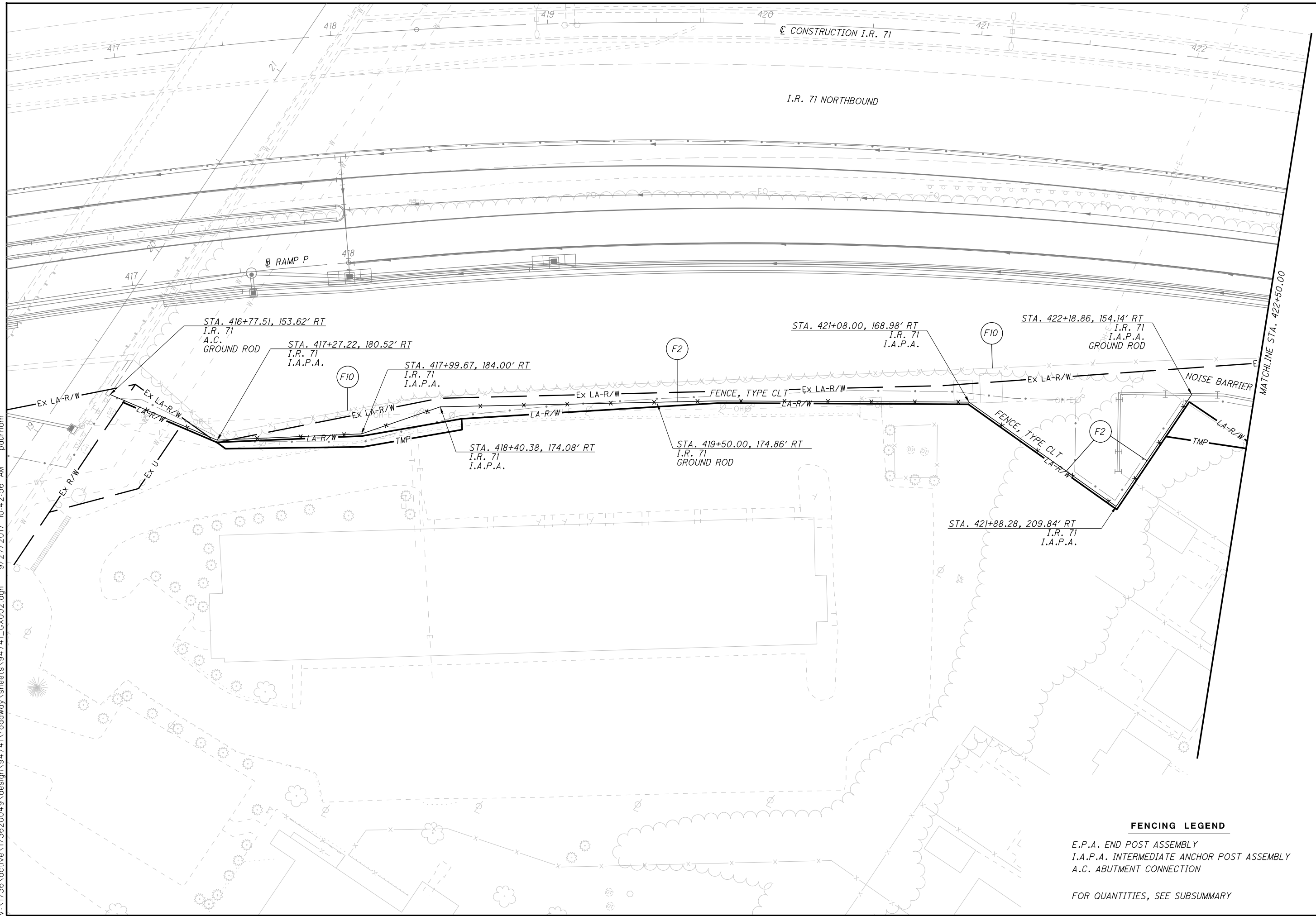
HAM-71-6.86

231
253

FENCING LEGEND

E.P.A. END POST ASSEMBLY
I.A.P.A. INTERMEDIATE ANCHOR POST ASSEMBLY
A.C. ABUTMENT CONNECTION
FOR QUANTITIES, SEE SUBSUMMARY

V:\1736\active\173620049\design\94741\roadway\sheet\94741_GX002.dgn 9/27/2017 10:42:56 AM pdurham



CALCULATED
LEH
CHECKED
SNS

0 20 40
10
HORIZONTAL
SCALE IN FEET

FENCING PLAN
STA. 16+50.00 TO STA. 422+50.00

HAM-71-6.86

232
253

FENCING LEGEND

- E.P.A. END POST ASSEMBLY
- I.A.P.A. INTERMEDIATE ANCHOR POST ASSEMBLY
- A.C. ABUTMENT CONNECTION

FOR QUANTITIES, SEE SUBSUMMARY

V:\1736\active\173620049\design\94741\roadway\sheets\94741_GX003.dgn 9/27/2017 10:42:56 AM pdurham

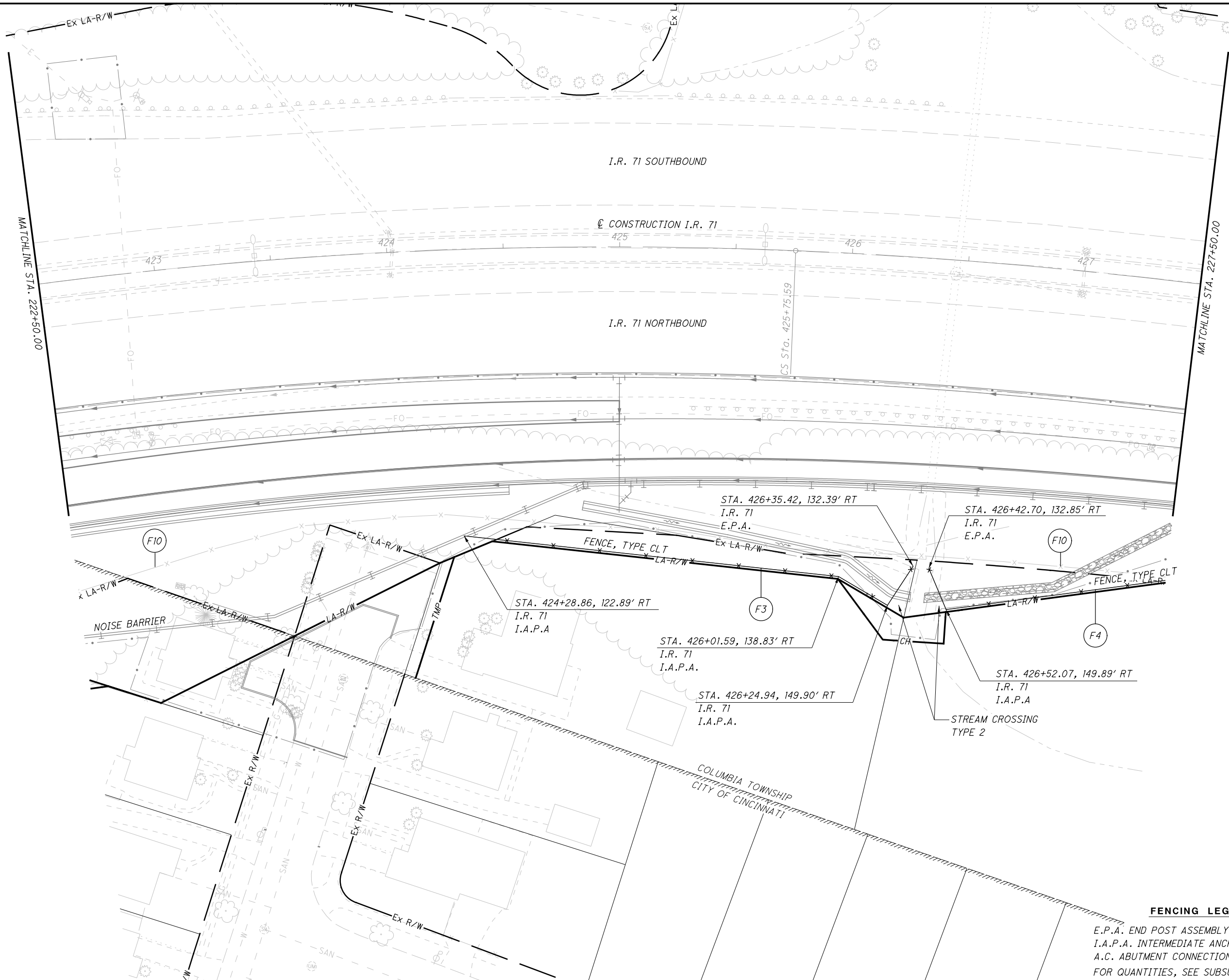
CALCULATED
LEH
CHECKED
SNS

0 20 40
10
HORIZONTAL
SCALE IN FEET

FENCING PLAN
STA. 422+50.00 TO STA. 427+50.00

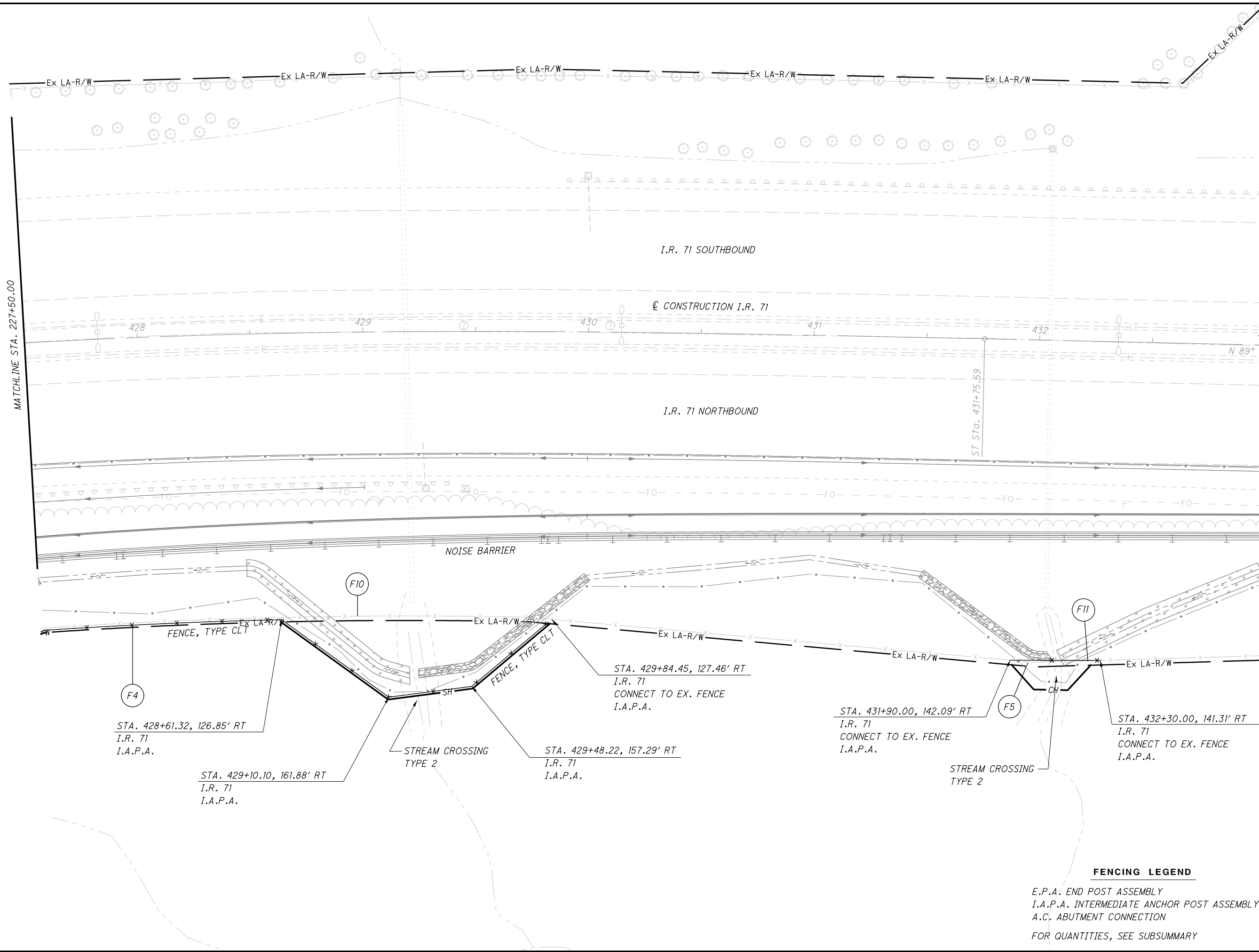
HAM-71-6.86

233
253



FENCING LEGEND
E.P.A. END POST ASSEMBLY
I.A.P.A. INTERMEDIATE ANCHOR POST ASSEMBLY
A.C. ABUTMENT CONNECTION
FOR QUANTITIES, SEE SUBSUMMARY

V:\1736\active\173620049\design\94741\roadway\sheet\94741_GX004.dgn 9/27/2017 10:42:57 AM pdurham



MATCHLINE STA. 227+50.00

I.R. 71 SOUTHBOUND

CONSTRUCTION I.R. 71

I.R. 71 NORTHBOUND

NOISE BARRIER

F4

STA. 428+61.32, 126.85' RT
I.R. 71
I.A.P.A.

STA. 429+10.10, 161.88' RT
I.R. 71
I.A.P.A.

F10

STREAM CROSSING
TYPE 2

STA. 429+48.22, 157.29' RT
I.R. 71
I.A.P.A.

STA. 429+84.45, 127.46' RT
I.R. 71
CONNECT TO EX. FENCE
I.A.P.A.

F5

STA. 431+90.00, 142.09' RT
I.R. 71
CONNECT TO EX. FENCE
I.A.P.A.

STREAM CROSSING
TYPE 2

F11

STA. 432+30.00, 141.31' RT
I.R. 71
CONNECT TO EX. FENCE
I.A.P.A.

FENCING LEGEND

- E.P.A. END POST ASSEMBLY
 - I.A.P.A. INTERMEDIATE ANCHOR POST ASSEMBLY
 - A.C. ABUTMENT CONNECTION
- FOR QUANTITIES, SEE SUBSUMMARY

CALCULATED
LEH
CHECKED
SNS

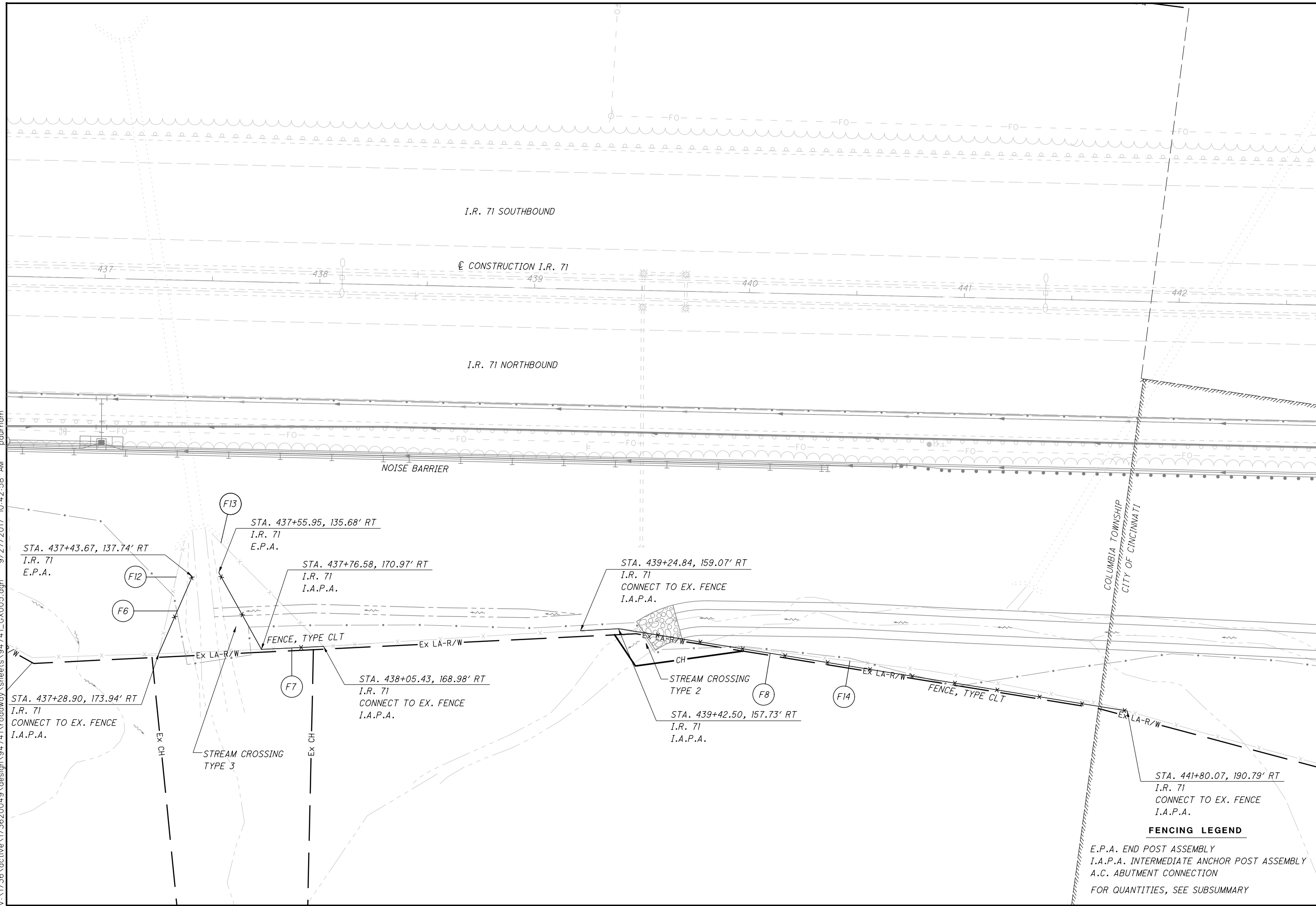
0 10 20 40
HORIZONTAL
SCALE IN FEET

FENCING PLAN
STA. 427+50.00 TO STA. 432+50.00

HAM-71-6.86

234
253

V:\1736\active\173620049\design\94741\roadway\sheet\94741_GX005.dgn 9/27/2017 10:42:58 AM pdurham



CALCULATED
LEH
CHECKED
SNS

0 20 40
HORIZONTAL
SCALE IN FEET

FENCING PLAN
STA. 437+00.00 TO STA. 442+00.00

HAM-71-6.86

235
253

FENCING LEGEND

- E.P.A. END POST ASSEMBLY
- I.A.P.A. INTERMEDIATE ANCHOR POST ASSEMBLY
- A.C. ABUTMENT CONNECTION
- FOR QUANTITIES, SEE SUBSUMMARY

COLUMBIA TOWNSHIP
CITY OF CINCINNATI

UTILITY OWNERS

DUKE ENERGY
139 EAST FOURTH STREET
ROOM 467A
CINCINNATI, OHIO 45202
(513) 287-3674

ELECTRIC TRANSMISSION
DUKE ENERGY
139 EAST FOURTH STREET
ROOM 552A
CINCINNATI, OHIO 45202
(513) 287-1266

GAS
DUKE ENERGY
139 EAST FOURTH STREET
ROOM 460A
CINCINNATI, OHIO 45202
(513) 287-2762

TELEPHONE
CINCINNATI BELL
221 EAST FOURTH STREET
BUILDING 343
(513) 565-7043

UTILITY OWNERS

**GREATER CINCINNATI
WATER WORKS**
4747 SPRING GROVE AVENUE
CINCINNATI, OHIO 45232
(513) 591-7362
EMERGENCIES (513) 591-7900

**SANITARY, STORM
METROPOLITAN SEWER DISTRICT
(MSD)**
1600 GEST STREET
CINCINNATI, OHIO 45204
(513) 557-7108
EMERGENCIES (513) 352-4900

CABLE
TIME WARNER CABLE
11252 CORNELL PARK DRIVE
CINCINNATI, OHIO 45242
(513) 469-5483

TRAFFIC MAINTENANCE
ODOT DISTRICT 8
505 SOUTH STATE ROUTE 74
LEBANON, OHIO 45036
(513) 933-6689

HAM-71-6.86 RIGHT OF WAY

SECTION 23, TOWNSHIP 4, FRACTIONAL RANGE 2
CITY OF CINCINNATI, COLUMBIA TOWNSHIP
HAMILTON COUNTY, OHIO

INDEX OF SHEETS:

LEGEND SHEET	1
CENTERLINE PLAT	2
PROPERTY MAP	3-4
SUMMARY SHEETS	5-7
DETAIL SCHEMATIC	8
DETAIL SHEETS	9-18

PROJECT DESCRIPTION

DEVELOPMENT WIDENING OF NORTHBOUND I.R.71 PROVIDE THREE CONTINUOUS THROUGH LANES THROUGH THE S.R. 562 INTERCHANGE. THIS WIDENING WILL RESULT IN ONE ADDITIONAL LANE FROM S.R. 562 TO RED BANK EXPRESSWAY. ADD RAMP FOR I.R. 71 NORTHBOUND AND SOUTHBOUND FROM KENNEDY AVENUE AND CLOSING NORTHBOUND EXIT TO RIDGE ROAD.

LEGEND:
WL = FEE SIMPLE WITH LIMITATION OF ACCESS
WD = WARRANTY DEED
SH = STANDARD HIGHWAY EASEMENT
PRE = PROPERTY RIGHT EASEMENT
CH = CHANNEL EASEMENT
T = TEMPORARY EASEMENT

STRUCTURE KEY
RESIDENTIAL
COMMERCIAL
OUT-BUILDING



LOCATION MAP

LATITUDE: 39°10'05" N LONGITUDE: 84°25'20" W



PROJECT CONTROL

TO OBTAIN STATE PLANE COORDINATES
SCALE ABOUT THE ORIGIN COORDINATE,
N = 0.00, E = 0.00

FROM PROJECT COORD. TO SPC = 0.999919570
FROM SPC TO PROJECT COORD. = 1.000080436

PLANS PREPARED BY:

FIRM NAME : STANTEC CONSULTING SERVICES INC.

R/W DESIGNER: NICHOLAS J. KLEINER

R/W REVIEWER: STEVEN E. RADER

FIELD REVIEW BY: NICHOLAS J. KLEINER DATE 07/18/16

OWNERSHIP VERIFIED BY: STEVEN E. RADER DATE 07/22/16

DATE COMPLETED: _____

CERTIFICATION

I, Steven E. Rader, as the Project Surveyor for Stantec, have conducted a survey of the existing conditions for the Ohio Department of Transportation from 2013 to 2016. The results of that survey are contained herein. The horizontal coordinates expressed herein are based on the Ohio State Plane Coordinates System, South Zone, NAD 83 (2011), as measured using Static GPS methods and derived from NGS OPUS Solutions Reports. Further more, I have reestablished the locations of the existing property lines and centerline of existing Right of Way for the property takes contained herein. As a part of this project I have established the proposed property lines, calculated the Gross Take, Present Roadway Occupied (PRO), Net Take and Net Residue; as well as prepared the legal descriptions necessary to acquire the parcels as shown herein. The aforementioned survey work was conducted in accordance with Ohio Administrative Code 4733-37 commonly known as, "A Minimum Standards for Boundary Surveys in the State of Ohio", unless so noted. The words I and my as used herein are to mean that either myself or someone working under my direct supervision.



Steven E. Rader 11/22/16
Steven E. Rader, P.S. No. 7191 Date



THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE OBTAINED FROM THE OWNER OF THE UTILITIES AS REQUIRED BY SECTION 153.64 O.R.C.

UNDERGROUND UTILITIES
CONTACT BOTH SERVICES TWO WORKING DAYS BEFORE YOU DIG.

Call Before You Dig
1-800-362-2764
(Non-members must be called directly)

OIL & GAS PRODUCERS
UNDERGROUND PROTECTION SERVICE
1-800-925-0988

CONVENTIONAL SYMBOLS

County Line	-----	Ditch / Creek (Ex)	-----
Township Line	-----	Ditch / Creek (Pr)	-----
Section Line	-----	Tree Line (Ex)	~~~~~
Corporation Line	----- or -----	Ownership Hook Symbol	Example
Fence Line (Ex)	x-x-(Pr)	Property Line Symbol	Example
Center Line	-----	Break Line Symbol	Example
Right of Way (Ex)	----- Ex R/W	Tree (Pr)	Tree (Ex) Shrub (Ex)
Right of Way (Pr)	----- R/W	Tree (Remove)	Shrub (Remove)
Standard Highway Ease.(Ex)	----- Ex SH	Evergreen (Ex)	Stump
Temporary Right of Way	----- TMP	Evergreen (Remove)	Stump (Remove)
Channel Ease. (Pr)	----- CH	Wetland (Pr)	Gross (Pr) Aerial Target
Utility Ease. (Ex)	----- Ex U	Post (Ex)	Mailbox (Ex) Mailbox (Pr)
Railroad	----- or -----	Light (Ex)	Telephone Marker (Ex) TEL
Guardrail (Ex)	----- (Pr)	Fire Hydrant (Ex)	Water Meter (Ex)
Construction Limits	-----	Water Valve (Ex)	Utility Valve Unknown (Ex)
Edge of Pavement (Ex)	-----	Telephone Pole (Ex)	Power Pole (Ex)
Edge of Pavement (Pr)	-----	Light Pole (Ex)	
Edge of Shoulder (Ex)	-----		
Edge of Shoulder (Pr)	-----		

V:\1736\active\173620049\design\94741\row\sheet\94741.rwl\001.dgn 9/27/2017 12:58:34 PM sroder

FEDERAL PROJECT NO. E130 (238)
 PID NO. 94741
 CALCULATED NJK CHECKED SER
RIGHT OF WAY LEGEND SHEET
 HAM-71-6.86
 1 / 18
 236
 253

SETTING OF ALL MONUMENTS SHALL BE PERFORMED BY A SURVEYOR REGISTERED IN THE STATE OF OHIO. THE MONUMENT ASSEMBLIES AND REFERENCE MONUMENTS WILL BE INSTALLED BY THE CONTRACTOR AT THE TIME OF CONSTRUCTION. THE IRON PIN AND CAP (WHEN REQUIRED) ARE TO BE INSTALLED BY THE CONTRACTOR'S SURVEYOR.

CHANGES OR ALTERATIONS TO THE LOCATION OF ANY MONUMENTS SHOWN IN THIS TABLE, REQUIRE PRIOR APPROVAL FROM THE DISTRICT REAL ESTATE ADMINISTRATOR OF THE OHIO DEPARTMENT OF TRANSPORTATION. IN THE EVENT THAT CHANGES OR ALTERATIONS ARE APPROVED, A REVISED CENTERLINE PLAT WITH THE NEW LOCATIONS SHALL BE RECORDED IN THE APPLICABLE COUNTY RECORDS AND THE OHIO DEPARTMENT OF TRANSPORTATION. SPECIFICATIONS FOR MONUMENT ASSEMBLIES, REFERENCE MONUMENTS AND RIGHT OF-WAY MONUMENTS ARE SHOWN ON STANDARD CONSTRUCTION DRAWING RM-1.1.

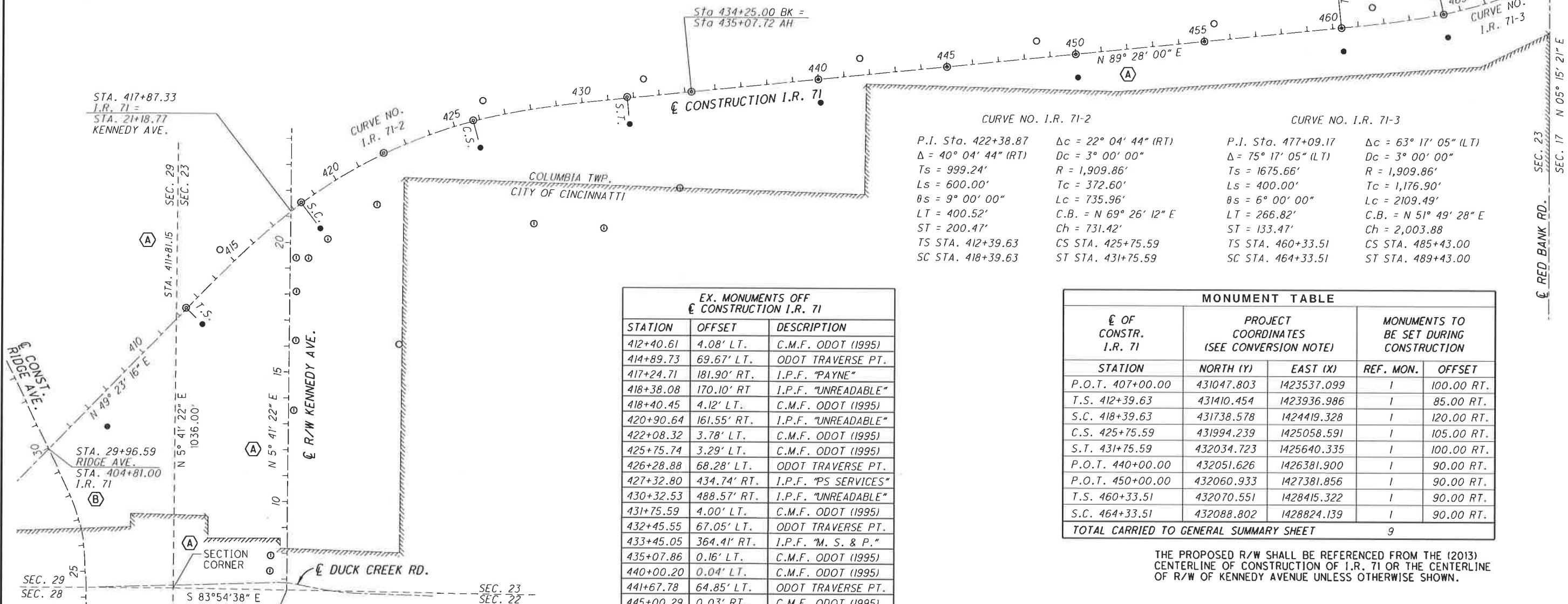
HAM-71-6.86
 SEC 23, T4, F.R. 2
 CITY OF CINCINNATI, COLUMBIA TOWNSHIP
 HAMILTON COUNTY, OHIO

BASIS OF EXISTING R/W

THE EXISTING RIGHT-OF-WAY WIDTHS AND LOCATIONS WERE DETERMINED USING:
 - ROAD RECORDS, EASEMENTS RECORDS, SURVEY PLATS, TAX MAPS ON FILE WITH THE HAMILTON COUNTY ENGINEER'S OFFICE
 - ODOT R/W PLAN HAM-71-7.45 (1967)
 - ODOT R/W PLAN HAM-71-8.86 (1965)

BASIS OF EXISTING R/W

- CITY OF CINCINNATI PLAN KENNEDY CONNECTOR (2011)
 - SHAWANOE TRAIL SUBDIVISION BLOCK C, P.B. 44, PG. 44
 - GALLENSTEIN'S SIXTH SUBDIVISION P.B. 93, PG. 67



CURVE NO. I.R. 71-2

P.I. Sta. 422+38.87	Δc = 22° 04' 44" (RT)
Δ = 40° 04' 44" (RT)	Dc = 3° 00' 00"
Ts = 999.24'	R = 1,909.86'
Ls = 600.00'	Tc = 372.60'
Rs = 9° 00' 00"	Lc = 735.96'
LT = 400.52'	C.B. = N 69° 26' 12" E
ST = 200.47'	Ch = 731.42'
TS STA. 412+39.63	TS STA. 425+75.59
SC STA. 418+39.63	ST STA. 431+75.59

CURVE NO. I.R. 71-3

P.I. Sta. 477+09.17	Δc = 63° 17' 05" (LT)
Δ = 75° 17' 05" (LT)	Dc = 3° 00' 00"
Ts = 1675.66'	R = 1,909.86'
Ls = 400.00'	Tc = 1,176.90'
Rs = 6° 00' 00"	Lc = 2109.49'
LT = 266.82'	C.B. = N 51° 49' 28" E
ST = 133.47'	Ch = 2,003.88
TS STA. 460+33.51	TS STA. 485+43.00
SC STA. 464+33.51	ST STA. 489+43.00

EX. MONUMENTS OFF CONSTRUCTION I.R. 71

STATION	OFFSET	DESCRIPTION
412+40.61	4.08' LT.	C.M.F. ODOT (1995)
414+89.73	69.67' LT.	ODOT TRAVERSE PT.
417+24.71	181.90' RT.	I.P.F. "PAYNE"
418+38.08	170.10' RT.	I.P.F. "UNREADABLE"
418+40.45	4.12' LT.	C.M.F. ODOT (1995)
420+90.64	161.55' RT.	I.P.F. "UNREADABLE"
422+08.32	3.78' LT.	C.M.F. ODOT (1995)
425+75.74	3.29' LT.	C.M.F. ODOT (1995)
426+28.88	68.28' LT.	ODOT TRAVERSE PT.
427+32.80	434.74' RT.	I.P.F. "PS SERVICES"
430+32.53	488.57' RT.	I.P.F. "UNREADABLE"
431+75.59	4.00' LT.	C.M.F. ODOT (1995)
432+45.55	67.05' LT.	ODOT TRAVERSE PT.
433+45.05	364.41' RT.	I.P.F. "M. S. & P."
435+07.86	0.16' LT.	C.M.F. ODOT (1995)
440+00.20	0.04' LT.	C.M.F. ODOT (1995)
441+67.78	64.85' LT.	ODOT TRAVERSE PT.
445+00.29	0.03' RT.	C.M.F. ODOT (1995)
448+53.39	65.36' LT.	ODOT TRAVERSE PT.
450+00.34	0.04' LT.	C.M.F. ODOT (1995)
455+00.34	0.05' RT.	C.M.F. ODOT (1995)
455+43.66	65.10' LT.	ODOT TRAVERSE PT.
460+34.29	0.15' RT.	C.M.F. ODOT (1995)
461+61.81	66.63' LT	ODOT TRAVERSE PT.
464+34.32	0.48' RT.	C.M.F. ODOT (1995)

MONUMENT TABLE

STATION	PROJECT COORDINATES (SEE CONVERSION NOTE)		MONUMENTS TO BE SET DURING CONSTRUCTION	
	NORTH (Y)	EAST (X)	REF. MON.	OFFSET
P.O.T. 407+00.00	431047.803	1423537.099	1	100.00 RT.
T.S. 412+39.63	431410.454	1423936.986	1	85.00 RT.
S.C. 418+39.63	431738.578	1424419.328	1	120.00 RT.
C.S. 425+75.59	431994.239	1425058.591	1	105.00 RT.
S.T. 431+75.59	432034.723	1425640.335	1	100.00 RT.
P.O.T. 440+00.00	432051.626	1426381.900	1	90.00 RT.
P.O.T. 450+00.00	432060.933	1427381.856	1	90.00 RT.
T.S. 460+33.51	432070.551	1428415.322	1	90.00 RT.
S.C. 464+33.51	432088.802	1428824.139	1	90.00 RT.
TOTAL CARRIED TO GENERAL SUMMARY SHEET			9	

THE PROPOSED R/W SHALL BE REFERENCED FROM THE (2013) CENTERLINE OF CONSTRUCTION OF I.R. 71 OR THE CENTERLINE OF R/W OF KENNEDY AVENUE UNLESS OTHERWISE SHOWN.

CERTIFICATION

I, Steven E. Roder, as the Project Surveyor for Stantec, have conducted a survey of the existing conditions for the Ohio Department of Transportation from 2013 to 2016. The results of that survey are contained herein. The horizontal coordinates expressed herein are based on the Ohio State Plane Coordinates System, South Zone, NAD 83 (2011), as measured using Static GPS methods and derived from NGS OPUS Solutions Reports. Further more, I have reestablished the locations of the existing property lines and centerline of existing Right of Way for the property takes contained herein. As a part of this project I have established the proposed property lines, calculated the Gross Take, Present Roadway Occupied (PRO), Net Take and Net Residue; as well as prepared the legal descriptions necessary to acquire the parcels as shown herein. The aforementioned survey work was conducted in accordance with Ohio Administrative Code 4733-37 commonly known as, "A Minimum Standards for Boundary Surveys in the State of Ohio", unless so noted. The words I and my as used herein are to mean that either myself or someone working under my direct supervision.

Steven E. Roder 11/22/16
 Steven E. Roder, P.S. No. 7191 Date

ODOT MADE A SURVEY IN (1995) LOCATING THE EXISTING CENTERLINE MONUMENTS. THESE MONUMENTS HAVE SINCE BEEN DESTROYED DUE TO MEDIAN IMPROVEMENTS IN I.R. 71

PROJECT CONTROL

TO OBTAIN STATE PLANE COORDINATES SCALE ABOUT THE ORIGIN COORDINATE, N = 0.00, E = 0.00
 FROM PROJECT COORD. TO SPC = 0.999919570
 FROM SPC TO PROJECT COORD. = 1.000080436

BASIS OF BEARINGS

THE BEARINGS SHOWN HEREON ARE BASED ON THE OHIO STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NAD 83 (2011), AS MEASURED USING STATIC GPS METHODS AND DERIVED FROM NGS OPUS SOLUTION REPORTS.

- MONUMENT LEGEND**
- R.R.S. FOUND
 - R.R.S. SET
 - P.K. NAIL FOUND
 - CONC. MONUMENT FD.
 - REFER. MONUMENT SET
 - REBAR FOUND
 - IRON PIN FOUND
 - I.P.F. WITH I.D. CAP
 - MONUMENT BOX FD.
 - MONUMENT BOX SET

EX. MONUMENTS OFF R/W KENNEDY AVENUE

STATION	OFFSET	DESCRIPTION
7+32.66	63.39' LT.	I.P.F. "#5684"
7+92.46	61.26' LT.	I.P.F. "#5684"
13+52.91	20.43' RT.	I.P.F. "UNREADABLE"
16+11.68	419.91' RT.	5/8" I.P.F.
16+22.15	25.00' RT.	I.P.F. "UNREADABLE"
18+10.98	25.04' RT.	I.P.F. "BERDING"
19+41.34	22.92' RT.	I.P.F. "PAYNE"

- (A) THE LOCATION OF THE EXISTING LA-R/W LINES, THE SECTION LINES, AND THE CENTERLINE OF RED BANK ROAD, ARE BASED ON THE CENTERLINE OF R/W DATA OF I.R. 71 AS DELINEATED ON THE ODOT R/W PLANS HAM-71-7.45 (1967) AND HAM-71-8.86 (1965). THE CENTERLINE OF R/W WAS REESTABLISHED BY BASING THE STATIONING ON THE CENTERLINE MONUMENT FOUND AT STATION 460+33.51, AND USING A BEARING OF S 89° 28' 26" W FOR THE LONG TANGENT LINE.
- (B) THE CENTERLINE OF CONSTRUCTION OF RIDGE AVENUE WAS ESTABLISHED BY KEEPING THE RELATIONSHIP TO THE CENTERLINE OF CONSTRUCTION OF INTERSTATE ROUTE 71 AS DELINEATED UPON THE ODOT PLAN HAM-71-7.45 (1967).

RECEIVED _____, 20____
 RECORDED _____, 20____
 BOOK _____ PAGE _____
 COUNTY RECORDER

N

HORIZONTAL SCALE IN FEET

PID NO. 94741

R/W DESIGNER NUK R/W REVIEWER SER

CENTERLINE PLAT

HAM-71-6.86

2 / 18

237
253

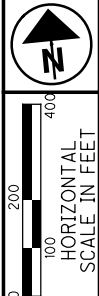
Stantec
 1500 Lake Shore Drive, Suite 100
 Columbus, Ohio 43204
 (614) 486-4383

STATE OF OHIO
 STEVEN E. RADER
 7191
 REGISTERED PROFESSIONAL SURVEYOR

SEC 23, T4, F.R. 2
CITY OF CINCINNATI
COLUMBIA TOWNSHIP
HAMILTON COUNTY, OHIO

⬡ = SHAWANOE TRAIL SUBDIVISION
BLOCK C, P.B. 44, PG. 44
⬢ = GALLENSTEIN'S SIXTH SUBDIVISION
P.B. 93, PG. 67

- 33 SHAHIL, LLC
520-0240-0032
- 34 LOT KING LIMITED PARTNERSHIP
520-0240-0001
- 35 TOYA Y. HOLLOWAY
051-0010-0091
- 36 KENNETH R. LEE
051-0010-0090
- 37 GALLENSTEIN DEVELOPMENT CORPORATION
520-0241-0108
- 38 JANET M. BLACKBURN
520-0241-0141
- 39 GESUND GROUP LTD
520-0241-0008
- 40 MARK H. JANSEN AND STEVEN J. BRENNER
520-0241-0037
- 41 3439 MICHIGAN, LLC
520-0241-0021
- 42 MARK H. JANSEN AND STEVEN J. BRENNER
051-0011-0001
- 43 THE BOARD OF COUNTY COMMISSIONERS OF HAMILTON COUNTY
051-0011-0052
- 44 FIFTH THIRD BANK, CENTRAL OHIO
051-0011-0066
- 45 5150 BIG CHIEF DRIVE, LLC
051-0011-0048



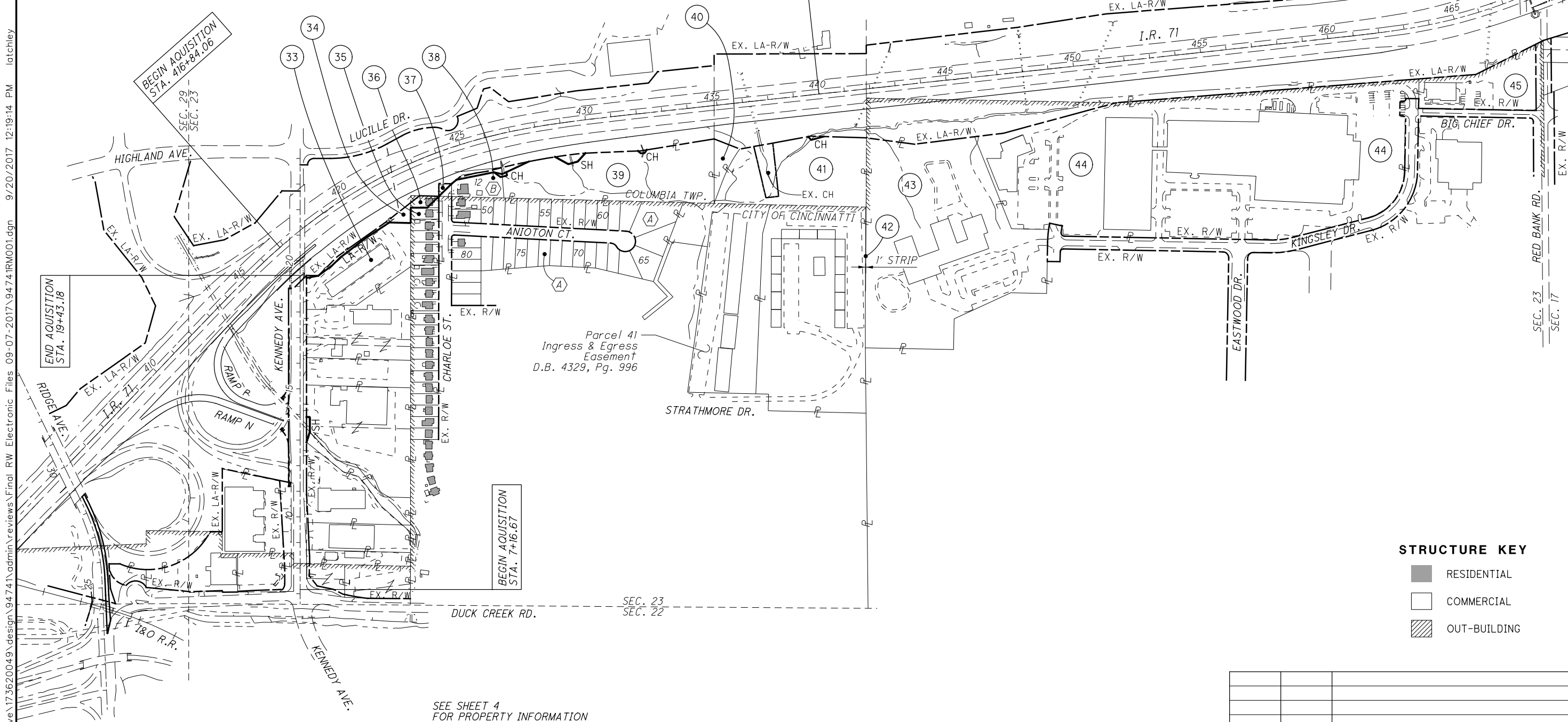
PID NO. **94741**
R/W DESIGNER NJK
R/W REVIEWER SER

PROPERTY MAP

HAM-71-6-86

3 / 18

238
253



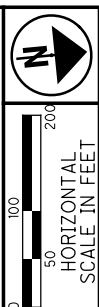
V:\1736\active\173620049\design\94741\admin\reviews\Final_RW_Electronic_Files_09-07-2017-2017\94741\RM001.dgn 9/20/2017 12:19:14 PM latchley

REV. BY	DATE	DESCRIPTION

V:\1736\active\173620049\design\94741\admin\reviews\Final_RW_Electronic_Files_09-07-2017\94741\RM002.dgn 9/20/2017 12:19:16 PM latchley

SEC 23, T4, F.R. 2
 CITY OF CINCINNATI
 COLUMBIA TOWNSHIP
 HAMILTON COUNTY, OHIO

- (A) = SHAWANOE TRAIL SUBDIVISION
BLOCK C, P.B. 44, PG. 44
- (B) = GALLENSTEIN'S SIXTH SUBDIVISION
P.B. 93, PG. 67
- (C) = SHAWANOE TRAIL SUBDIVISION, BLOCK B
P.B. 44, PG. 3



PID NO.
94741

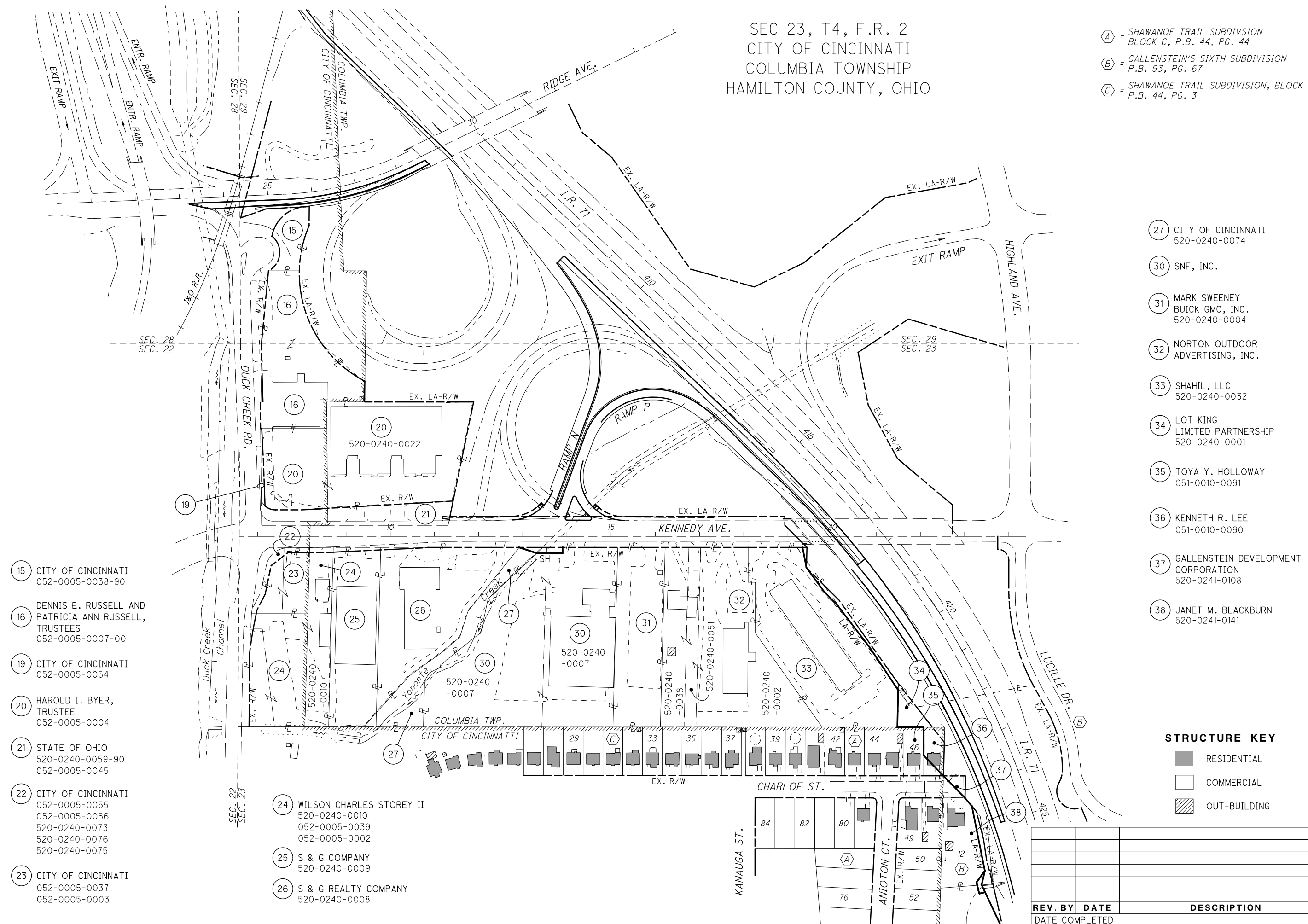
R/W DESIGNER
NUJ
R/W REVIEWER
SER

PROPERTY MAP

HAM-71-6.86

4 / 18

(239)
(253)



- (15) CITY OF CINCINNATI
052-0005-0038-90
- (16) DENNIS E. RUSSELL AND
PATRICIA ANN RUSSELL,
TRUSTEES
052-0005-0007-00
- (19) CITY OF CINCINNATI
052-0005-0054
- (20) HAROLD I. BYER,
TRUSTEE
052-0005-0004
- (21) STATE OF OHIO
520-0240-0059-90
052-0005-0045
- (22) CITY OF CINCINNATI
052-0005-0055
052-0005-0056
520-0240-0073
520-0240-0076
520-0240-0075
- (23) CITY OF CINCINNATI
052-0005-0037
052-0005-0003

- (24) WILSON CHARLES STOREY II
520-0240-0010
052-0005-0039
052-0005-0002
- (25) S & G COMPANY
520-0240-0009
- (26) S & G REALTY COMPANY
520-0240-0008

- (27) CITY OF CINCINNATI
520-0240-0074
- (30) SNF, INC.
- (31) MARK SWEENEY
BUICK GMC, INC.
520-0240-0004
- (32) NORTON OUTDOOR
ADVERTISING, INC.
- (33) SHAHIL, LLC
520-0240-0032
- (34) LOT KING
LIMITED PARTNERSHIP
520-0240-0001
- (35) TOYA Y. HOLLOWAY
051-0010-0091
- (36) KENNETH R. LEE
051-0010-0090
- (37) GALLENSTEIN DEVELOPMENT
CORPORATION
520-0241-0108
- (38) JANET M. BLACKBURN
520-0241-0141

STRUCTURE KEY

- RESIDENTIAL
- COMMERCIAL
- OUT-BUILDING

REV. BY	DATE	DESCRIPTION

TOTAL NUMBER OF :
 17 OWNERSHIPS 3 TOTAL TAKES
 28 PARCELS 1 OWNERSHIPS W/STRUCTURES INVOLVED

NET RESIDUE = RECORD AREA - TOTAL PRO - NET TAKE

GRANTEE:
 ALL RIGHT OF WAY ACQUIRED IN THE NAME OF
 THE STATE OF OHIO, UNLESS OTHERWISE SHOWN.

**ALL AREAS IN ACRES
 UNLESS OTHERWISE NOTED**

PARCEL NO.	OWNER	SHEET NO.	OWNERS RECORD		AUDITOR'S PARCEL	RECORD AREA	TOTAL P.R.O.	GROSS TAKE	P.R.O. IN TAKE	NET TAKE	STRUC-TURE	NET RESIDUE		TYPE FUND	REMARKS	AS ACQUIRED	
			BOOK	PAGE								LEFT	RIGHT			BOOK	PAGE
1 - 14	NOT USED																
15-T	CITY OF CINCINNATI	18	2573	628	052-0005-0038-90	0.196 (C)	0.000	0.012	0.000	0.012	NO			%	FOR GRADING AND SIDEWALK CONSTRUCTION NET RESIDUE FROM HAM-71-7.45, PARCEL 7871 8527 S.F. (0.196 AC.)		
16	DENNIS E. RUSSELL AND PATRICIA ANN RUSSELL, TRUSTEES	4			052-0005-0007-00	1.150	0.000	0.000	0.000						NO R/W REQUIRED		
17 - 18	NOT USED																
19	CITY OF CINCINNATI	15	O.R. 11764	1539	052-0005-0054	0.0224 (D)	0.022	0.000	0.000						KENNEDY AVE. CONNECTOR PROJECT, PARCEL 49 NO R/W REQUIRED		
20-PRW	HAROLD I. BYER, TRUSTEE OF THE HAROLD I. BYER REVOCABLE TRUST TOTAL	15, 16	O.R. 8319	2208	052-0005-0004 520-0240-0022	0.605 1.644 2.249	0.000 0.000 0.000	0.000 0.000 0.000	0.000 0.000 0.000					%	LIMIT ACCESS TO KENNEDY AVENUE		
21	STATE OF OHIO	15, 16	3662	883	520-0240-0059-90 052-0005-0045	0.297 (C) 0.130	0.297 0.130	0.000 0.000	0.000 0.000						HAM-71-7.45, PARCEL No. 7874WD NO R/W REQUIRED		
22	CITY OF CINCINNATI TOTAL	15, 16	O.R. 12804 O.R. 12804 O.R. 11344 O.R. 11575 O.R. 11575	886 886 1014 2411 2400	052-0005-0055 052-0005-0056 520-0240-0073 520-0240-0076 520-0240-0075	0.0971 (D) 0.0157 (D) 0.0145 (D) 0.0203 (D) 0.0077 (D) 0.155	0.097 0.016 0.014 0.020 0.008 0.155	0.000 0.000 0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000 0.000 0.000						KENNEDY AVE. CONNECTOR PROJECT, PARCEL 56 KENNEDY AVE. CONNECTOR PROJECT, PARCEL 56 KENNEDY AVE. CONNECTOR PROJECT, PARCEL 55 KENNEDY AVE. CONNECTOR PROJECT, PARCEL 54 KENNEDY AVE. CONNECTOR PROJECT, PARCEL 53 NO R/W REQUIRED		
23	CITY OF CINCINNATI	15	O.R. 11276	1048	052-0005-0037 052-0005-0003	0.419 (D)	0.000	0.000	0.000		NO			%	NO R/W REQUIRED 0.419 ACRES INCLUDES BOTH AUDITOR PARCELS ** BILLBOARD ENCROACHES		
24-PRW	WILSON CHARLES STOREY II TOTAL	15	O.R. 7367	1767	520-0240-0010 052-0005-0039 052-0005-0002	0.480 0.530 0.213 1.223	0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000					%	LIMIT ACCESS TO KENNEDY AVENUE AUDITOR'S AREA WAS REVISED 12/12/16 UPDATED TOTAL PARCEL AREA		
25-PRW	S & G COMPANY	15	4368	797	520-0240-0009	0.976	0.000	0.000	0.000		NO			%	LIMIT ACCESS TO KENNEDY AVENUE COMMON DRIVEWAY AND PARKING EASEMENT O.R. 9421, PG. 1140		
26-PRE	S & G REALTY COMPANY	15, 16	4278	1498	520-0240-0008	1.438 (C)	0.000	0.000	0.000		NO			%	LIMIT ACCESS TO KENNEDY AVENUE		

FEDERAL PROJECT NO. E130 (238)
 PID NO. 94741
 STATE JOB NO. 488175
 R/W DESIGNER NJK
 R/W REVIEWER SER
**SUMMARY OF ADDITIONAL
 RIGHT OF WAY (PARCELS 1-26)**
 HAM-71-6.86

TYPES OF TITLE LEGEND:
 WL = FEE SIMPLE WITH LIMITATION OF ACCESS
 SH = STANDARD HIGHWAY EASEMENT
 PRE = PROPERTY RIGHT EASEMENT
 CH = CHANNEL EASEMENT
 T = TEMPORARY EASEMENT

NOTE: ALL TEMPORARY PARCELS TO BE OF 24 MONTH DURATION.

NOTE: UNDER NO CIRCUMSTANCES ARE TEMPORARY EASEMENTS TO BE USED FOR STORAGE OF MATERIAL OR EQUIPMENT BY THE CONTRACTOR UNLESS NOTED OTHERWISE.

(C) = CALCULATED AREA
 (D) = DEED AREA

+ DENOTES REMOVAL ITEMS, FOR LOCATION AND DESCRIPTION OF ITEM SEE CORRESPONDING R/W DETAIL SHEET

** DENOTES RIGHT OF WAY ENCROACHMENT

(%) = 10% STATE
 90% FEDERAL

REV. BY	DATE	DESCRIPTION
FIELD REVIEW BY	DATE:	
OWNERSHIP VERIFIED BY	DATE:	
DATE COMPLETED		

V:\1736\active\173620049\design\94741\admin\Reviews\Final_RW_Electronic_Files_09-18-2017\94741RS001.dgn 9/20/2017 12:19:18 PM latchley

NET RESIDUE = RECORD AREA - TOTAL PRO - NET TAKE

**ALL AREAS IN ACRES
UNLESS OTHERWISE NOTED**

GRANTEE:

ALL RIGHT OF WAY ACQUIRED IN THE NAME OF
THE STATE OF OHIO, UNLESS OTHERWISE SHOWN.

PARCEL NO.	OWNER	SHEET NO.	OWNERS RECORD		AUDITOR'S PARCEL	RECORD AREA	TOTAL P.R.O.	GROSS TAKE	P.R.O. IN TAKE	NET TAKE	STRUC-TURE	NET RESIDUE		TYPE FUND	REMARKS	AS ACQUIRED		
			BOOK	PAGE								LEFT	RIGHT			BOOK	PAGE	
27	CITY OF CINCINNATI	16	O.R. 11393	1347	520-0240-0074	0.479	0.000	0.000										
28-29	NOT USED																	
30-SH	SNF, INC.	16	O.R. 6162	4109	520-0240-0007 520-0240-0005	1.587 1.500	0.000 0.000	0.011 0.004	0.000 0.000	0.011 0.004	S NO			%	INCLUDES 0.011 AC. OVERLAP WITH EXISTING SLOPE EASEMENT (HAM-71-7.45) + REMOVE OVERHEAD SIGN			
	TOTAL					3.087	0.000	0.015	0.000	0.015	NO		3.072					
30-PRE		16, 17						0.000	0.000	0.000	NO			%	LIMIT ACCESS TO KENNEDY AVENUE			
31-PRE	MARK SWEENEY BUICK GMC, INC. FKA WALT SWEENEY PONTIAC-GMC TRUCK INC.	17	O.R. 12848 O.R. 12165	709 1371	520-0240-0004	1.030	0.000	0.000	0.000	0.000	NO			%	AFFIDAVIT OF FACTS RELATING TO TITLE LIMIT ACCESS TO KENNEDY AVENUE			
32-PRE	NORTON OUTDOOR ADVERTISING, INC.	17	O.R. 6189	1149	520-0240-0038 520-0240-0051 520-0240-0002	0.470 0.242 1.548	0.000 0.000 0.000	0.000 0.000 0.000	0.000 0.000 0.000	0.000 0.000 0.000	NO			%	LIMIT ACCESS TO KENNEDY AVENUE			
	TOTAL		O.R. 7994	2338		2.260	0.000	0.000	0.000	0.000	NO							
33-WL1	SHAHIL, LLC	9	O.R. 11133	863	520-0240-0032	1.886	0.000	0.005	0.000	0.005	NO			%	INCLUDES 0.004 AC. OVERLAP WITH EXISTING UTILITY EASEMENT (HAM-71-7.45)			
33-WL2		9, 10						0.057	0.000	0.057	NO			%	** 2 SHEDS (SEE PARCEL 34-WL) + REMOVE (3) LIGHT POLES + REMOVE 40 L.F. OF BLOCK RETAINING WALL + REMOVE 3' X 9' DUMPSTER PAD & FENCE			
	GRAND TOTAL					1.886	0.000	0.062	0.000	0.062			1.824					
33-PRE		9, 17						0.000	0.000	0.000	NO			%	LIMIT ACCESS TO KENNEDY AVENUE			
33-T		9, 10						0.011	0.000	0.011	NO			%	FOR MINOR GRADING, TO RECONSTRUCT BLOCK WALL, AND TO REMOVE LIGHT POLES			
34-WL	LOT KING LIMITED PARTNERSHIP	10	O.R. 8964	329	520-0240-0001	0.090 (C)	0.000	0.090	0.000	0.090	NO		0.000	%	TOTAL TAKE *** SHEDS ARE BELIEVED TO BE PROPERTY OF PARCEL 33			
35-T	TOYA Y. HOLLOWAY	10	O.R. 7826	1387	051-0010-0091	0.109	0.000	0.009	0.000	0.009	NO			%	LOT 46 SHAWANOE TRAIL SUBDIVISION, BLOCK C, P.B. 44, PG. 44 + REMOVE 50 L.F. FENCE (NORTH R) + REMOVE 7 L.F. FENCE (SOUTH R)			
36-WL 36-WD	KENNETH R. LEE	10, 11	O.R. 11488	1412	051-0010-0090	0.106 (C)	0.000	0.082 0.024 0.106	0.000 0.000 0.000	0.082 0.024 0.106	YES		0.000	%	TOTAL TAKE, + HOUSE, DOG HOUSE, COOP LOT 47 SHAWANOE TRAIL SUBDIVISION, BLOCK C, P.B. 44, PG. 44 ** BBQ GRILL			
	GRAND TOTAL																	

V:\1736\active\173620049\design\94741\admin\reviews\Final RW Electronic Files 09-18-2017\94741RS002.dgn 9/20/2017 12:19:19 PM latchley

FEDERAL PROJECT NO. E130 (238)
PID NO. 94741
STATE JOB NO. 488175
R/W DESIGNER NJK
R/W REVIEWER SER
SUMMARY OF ADDITIONAL RIGHT OF WAY (PARCELS 27-36)
HAM-71-6.86
6 / 18
241
253

TYPES OF TITLE LEGEND:
WL = FEE SIMPLE WITH LIMITATION OF ACCESS
SH = STANDARD HIGHWAY EASEMENT
PRE = PROPERTY RIGHT EASEMENT
T = TEMPORARY EASEMENT
CH = CHANNEL EASEMENT

NOTE: ALL TEMPORARY PARCELS TO BE OF 24 MONTH DURATION.

NOTE: UNDER NO CIRCUMSTANCES ARE TEMPORARY EASEMENTS TO BE USED FOR STORAGE OF MATERIAL OR EQUIPMENT BY THE CONTRACTOR UNLESS NOTED OTHERWISE.

(C) = CALCULATED AREA
(D) = DEED AREA

+ DENOTES REMOVAL ITEMS, FOR LOCATION AND DESCRIPTION OF ITEM SEE CORRESPONDING R/W DETAIL SHEET

** DENOTES RIGHT OF WAY ENCROACHMENT

(%) = 10% STATE
90% FEDERAL

REV. BY	DATE	DESCRIPTION
SER	9/18/17	ELIMINATED PARCEL 27-SH
SER	3/19/17	REV. PARCELS 34-WL, 35-T, 36-WL, 36-WD
FIELD REVIEW BY	DATE:	
OWNERSHIP VERIFIED BY	DATE:	
DATE COMPLETED		

NET RESIDUE = RECORD AREA - TOTAL PRO - NET TAKE

**ALL AREAS IN ACRES
UNLESS OTHERWISE NOTED**

GRANTEE:

ALL RIGHT OF WAY ACQUIRED IN THE NAME OF
THE STATE OF OHIO, UNLESS OTHERWISE SHOWN.

PARCEL NO.	OWNER	SHEET NO.	OWNERS RECORD		AUDITOR'S PARCEL	RECORD AREA	TOTAL P.R.O.	GROSS TAKE	P.R.O. IN TAKE	NET TAKE	STRUC-TURE	NET RESIDUE		TYPE FUND	REMARKS	AS ACQUIRED	
			BOOK	PAGE								LEFT	RIGHT			BOOK	PAGE
37-WL	GALLENSTEIN DEVELOPMENT CORPORATION	11	2914	96	520-0241-0108	0.058 (C)	0.000	0.029	0.000	0.029	NO			%	TOTAL TAKE, AUDITOR LIST THEM AS CURRENT OWNERS		
37-WD		11					0.000	0.029	0.000	0.029	NO			%	50 FT CHARLOE STREET, DEDICATED BUT NOT ACCEPTED		
	TOTAL					0.058 (C)	0.000	0.058	0.000	0.058			0.000		P.B. 93, PG. 67, AND SHOWN ON SURVEY RECORD 520-241-108		
38-WL	JANET M. BLACKBURN SCHERRY ANN BLACKBURN (TOD)	11	O.R. 12602	805	520-0241-0141	0.425	0.004	0.048	0.004	0.044	NO		0.377	%	PART OF LOT 12 GALLENSTEIN'S SIXTH SUBDIVISION P.B. 93, PG. 67 - TRANSFER ON DEATH AFFIDAVIT OF JOINT SURVIVOR GOVERNOR'S DEED CONVEYED PARCEL 7882H-EL (HAM-71-7.45) GRANTED ABUTTER'S RIGHT OF INGRESS AND EGRESS TO ADJOINING CHARLOE ST. ADDITIONAL R/W PARCEL PARCEL 7882H-WL1 (HAM-71-7.45) (NO DEED RECORD FOUND)		
			O.R. 12602	801													
			3948	520													
38-CH		11					0.000	0.006	0.000	0.006	NO			%			
38-T							0.000	0.006	0.000	0.006					FOR MINOR GRADING & REMOVAL OF EX. PAVEMENT		
39-WL	GESUND GROUP LTD	11	---	---	520-0241-0008	3.500	0.000	0.032	0.000	0.032	NO			%	AUDITOR LIST THEM AS THE CURRENT OWNER UNABLE TO FIND RECORDED DEED TO GESUND GROUP LTD CURRENT DEED SHOWN IN TITLE SEARCH		
	QUALLS HOLDINGS LLC (PREVIOUS OWNER)		O.R. 11798	1485	520-0241-0008												
39-SH		12					0.000	0.059	0.000	0.059	NO			%			
	TOTAL					3.500	0.000	0.091	0.000	0.091			3.409				
39-CH1		11					0.000	0.005	0.000	0.005	NO			%			
39-CH2		12					0.000	0.006	0.000	0.006	NO			%			
40	MARK H. JANSEN AND STEVEN J. BRENNER	13			520-0241-0037	0.221	0.000	0.000	0.000						NO R/W REQUIRED R.L. CERTIFICATE NUMBER ----- PREVIOUS R.L. CERTIFICATE NUMBER 50140		
41-CH	3439 MICHIGAN, LLC	14	O.R. 12710	1960	520-0241-0021	3.200	0.000	0.010	0.000	0.010	NO			%	R.L. CERTIFICATE NUMBER 240075 INCLUDES EXISTING 0.297 AC. CHANNEL EASEMENT		
42	MARK H. JANSEN AND STEVEN J. BRENNER	3			051-0011-0001	0.139	0.000	0.000	0.000						NO R/W REQUIRED 1 FOOT STRIP - NOT INCLUDED IN R.L. CERT. 240075		

V:\1736\active\173620049\design\94741\admin\reviews\Final_RW_Electronic_Files_09-18-2017\94741RS003.dgn 9/20/2017 12:19:20 PM latchley

FEDERAL PROJECT NO. E130 (238)
PID NO. 94741
STATE JOB NO. 488175
R/W DESIGNER NJK
R/W REVIEWER SER
**SUMMARY OF ADDITIONAL
RIGHT OF WAY (PARCELS 37-42)**
HAM-71-6.86

TYPES OF TITLE LEGEND:
WL = FEE SIMPLE WITH LIMITATION OF ACCESS
WD = WARRANTY DEED
SH = STANDARD HIGHWAY EASEMENT
PRE = PROPERTY RIGHT EASEMENT
T = TEMPORARY EASEMENT
CH = CHANNEL EASEMENT

NOTE: ALL TEMPORARY PARCELS TO BE OF 24 MONTH DURATION.

NOTE: UNDER NO CIRCUMSTANCES ARE TEMPORARY EASEMENTS TO BE USED FOR STORAGE OF MATERIAL OR EQUIPMENT BY THE CONTRACTOR UNLESS NOTED OTHERWISE.

(C) = CALCULATED AREA
(D) = DEED AREA

+ DENOTES REMOVAL ITEMS, FOR LOCATION AND DESCRIPTION OF ITEM SEE CORRESPONDING R/W DETAIL SHEET

** DENOTES RIGHT OF WAY ENCROACHMENT

(%) = 10% STATE
90% FEDERAL

REV. BY	DATE	DESCRIPTION
SER	3/09/17	REV. PARCELS 37-WD, 37-WL, 38-WL, 38-T
FIELD REVIEW BY	DATE:	
OWNERSHIP VERIFIED BY	DATE:	
DATE COMPLETED		

V:\1736\active\173620049\design\94741\admin\reviews\Final RW Electronic Files 09-07-2017\94741SCHEMATIC.dgn 9/20/2017 12:19:23 PM latchley

HAM-71-6.86

SEC 23, T4, F.R. 2
CITY OF CINCINNATI, COLUMBIA TOWNSHIP
HAMILTON COUNTY, OHIO



PID NO.
94741

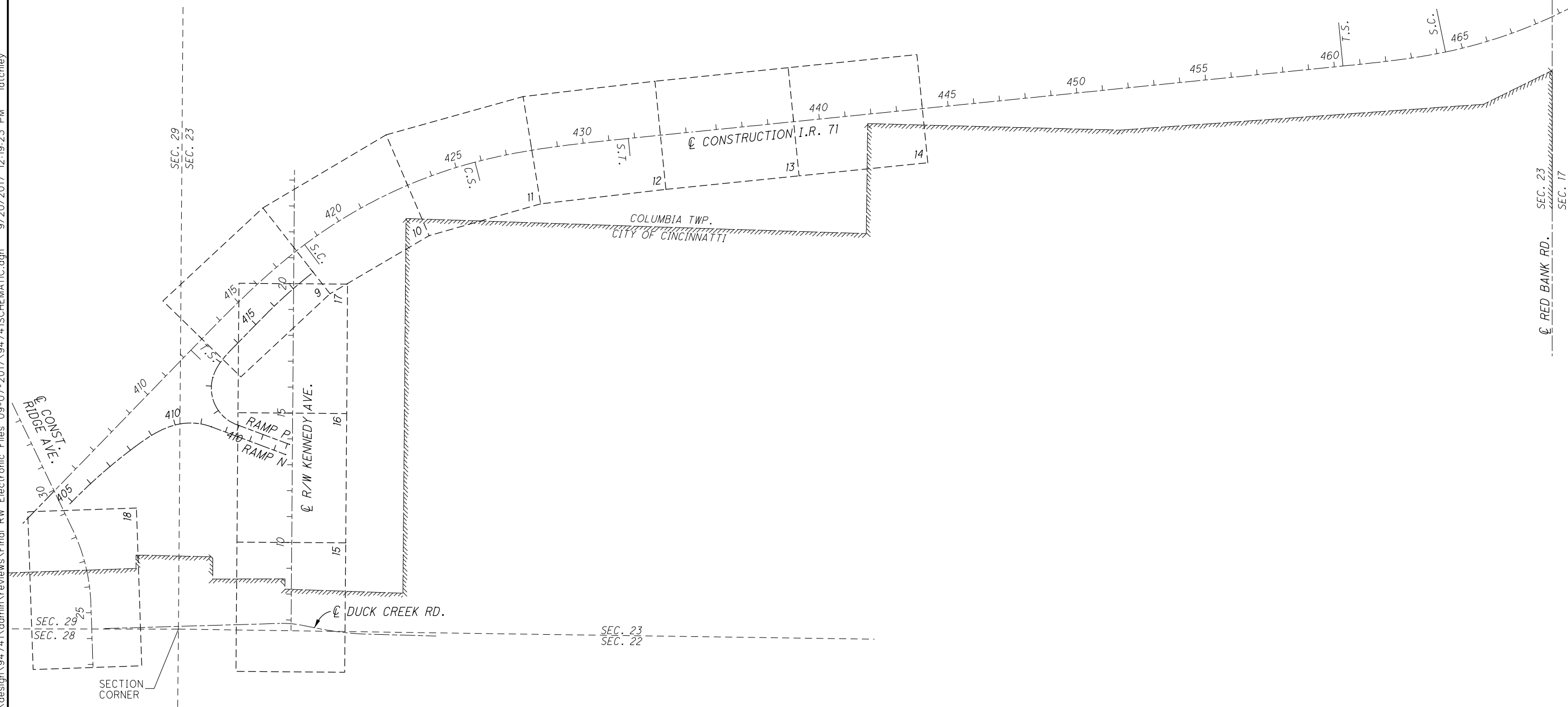
R/W DESIGNER
NUK
R/W REVIEWER
SER

**RIGHT OF WAY
SCHEMATIC**

HAM-71-6.86

8 / 18

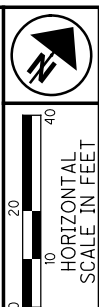
243
253



SEC 23, T4, F.R. 2
COLUMBIA TOWNSHIP
HAMILTON COUNTY, OHIO

CURVE NO. I.R. 71-2

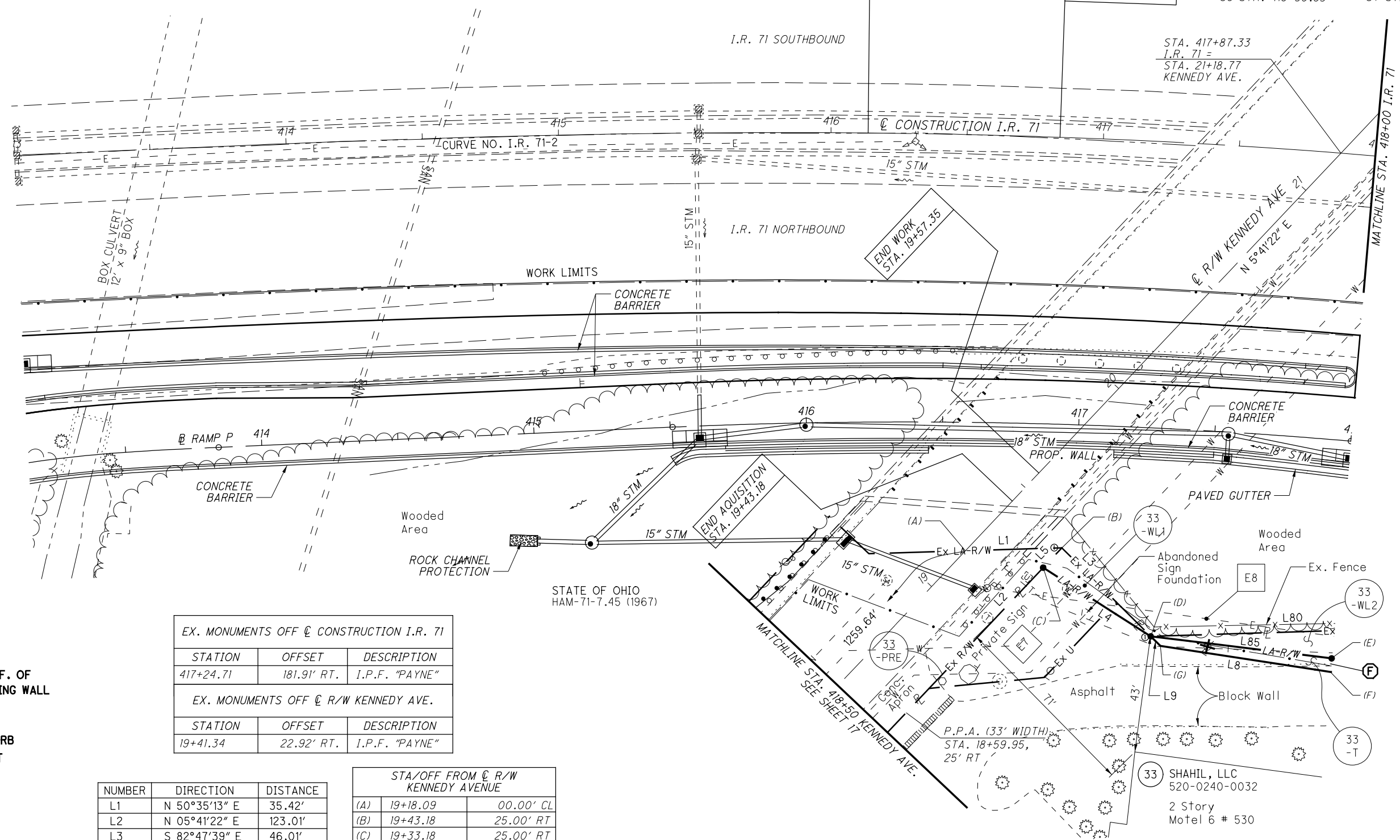
P.I. Sta. 422+38.87 Δc = 22° 04' 44" (RT)
 Δ = 40° 04' 44" (RT) Dc = 3° 00' 00"
 Ts = 999.24' R = 1,909.86'
 Ls = 600.00' Tc = 372.60'
 θs = 9° 00' 00" Lc = 735.96'
 LT = 400.52' C.B. = N 69° 26' 12" E
 ST = 200.47' Ch = 731.42'
 TS STA. 412+39.63 CS STA. 425+75.59
 SC STA. 418+39.63 ST STA. 431+75.59



PID NO. 94741
 R/W DESIGNER NUK
 R/W REVIEWER SER

RIGHT OF WAY PLAN
 STA. 413+00 TO STA. 418+00

HAM-71-6.86



EX. MONUMENTS OFF C/L CONSTRUCTION I.R. 71		
STATION	OFFSET	DESCRIPTION
417+24.71	181.91' RT.	I.P.F. "PAYNE"

EX. MONUMENTS OFF C/L R/W KENNEDY AVE.		
STATION	OFFSET	DESCRIPTION
19+41.34	22.92' RT.	I.P.F. "PAYNE"

NUMBER	DIRECTION	DISTANCE
L1	N 50°35'13" E	35.42'
L2	N 05°41'22" E	123.01'
L3	S 82°47'39" E	46.01'
L4	S 84°52'43" W	46.82'
L5	N 05°41'22" E	10.00'
L8	S 60°59'52" W	63.12'
L9	N 82°47'38" W	5.00'
L80	N 50°33'20" E	104.75'
L85	S 59°15'08" W	66.88'

STA/OFF FROM C/L R/W KENNEDY AVENUE	
(A)	19+18.09 00.00' CL
(B)	19+43.18 25.00' RT
(C)	19+33.18 25.00' RT

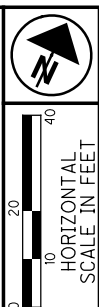
STA/OFF FROM C/L CONSTRUCTION I.R. 71	
(B)	416+90.40 150.53' RT
(D)	417+26.90 181.51' RT
(E)	417+99.79 185.00' RT
(F)	417+99.77 190.00' RT
(G)	417+30.94 184.84' RT

- E7 Utility Esmt.
HAM-71-7.45 (1967)
- E8 Overhead Electric
No Easement Listed
in Title Search

* P.P.A. DENOTES POINT OF PERMISSIBLE ACCESS

REV. BY	DATE	DESCRIPTION

V:\1736\active\173620049\design\94741\admin\reviews\Final_RW_Electronic_Files_09-18-2017_94741\RD001.dgn 9/20/2017 12:19:25 PM latchley



PID NO. 94741
 R/W DESIGNER NJK
 R/W REVIEWER SER

RIGHT OF WAY PLAN
 STA. 418+00 TO STA. 423+00

HAM-71-6-86

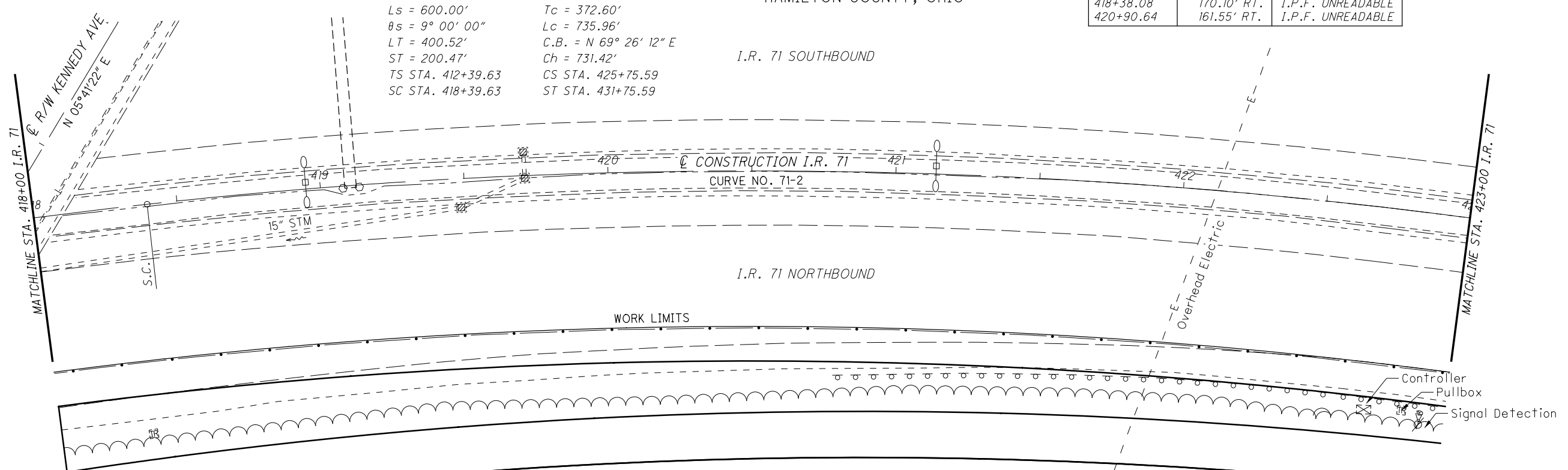
10 / 18

245
 253

SEC 23, T4, F.R. 2
 COLUMBIA TOWNSHIP
 HAMILTON COUNTY, OHIO

EX. MONUMENTS OFF I.R. 71		
STATION	OFFSET	DESCRIPTION
418+38.08	170.10' RT.	I.P.F. UNREADABLE
420+90.64	161.55' RT.	I.P.F. UNREADABLE

CURVE NO. I.R. 71-2
 P.I. Sta. 422+38.87 Δc = 22° 04' 44" (RT)
 Δ = 40° 04' 44" (RT) Dc = 3° 00' 00"
 Ts = 999.24' R = 1,909.86'
 Ls = 600.00' Tc = 372.60'
 θs = 9° 00' 00" Lc = 735.96'
 LT = 400.52' C.B. = N 69° 26' 12" E
 ST = 200.47' Ch = 731.42'
 TS STA. 412+39.63 CS STA. 425+75.59
 SC STA. 418+39.63 ST STA. 431+75.59



- MONUMENT LEGEND**
- ◻ R.R.S. FOUND
 - R.R.S. SET
 - ⊙ P.K. NAIL FOUND
 - ⊙ CONC. MONUMENT FD.
 - ⊙ REFER. MONUMENT SET
 - ⊙ REBAR FOUND
 - IRON PIN FOUND
 - ⊙ I.P.F. WITH I.D. CAP
 - 3/4" BAR SET
 - ▣ MONUMENT BOX FD.
 - ▣ MONUMENT BOX SET

STA/OFF FROM C CONSTRUCTION I.R. 71		
(A)	418+40.51	170.09' RT
(B)	420+93.82	162.41' RT
(C)	421+07.74	170.01' RT
(D)	419+80.89	175.05' RT
(E)	418+50.89	180.09' RT
(F)	418+50.89	185.09' RT
(H)	422+27.54	139.89' RT
(I)	422+08.91	174.97' RT
(J)	421+88.76	211.20' RT
(K)	422+73.23	130.05' RT
(L)	422+58.11	174.96' RT
(M)	422+18.21	157.66' RT
(N)	417+99.79	185.00' RT
(P)	417+99.77	190.00' RT
(R)	422+81.99	184.80' RT

NUMBER	DIRECTION	DISTANCE
L6	S 31°17'38" E	5.00'
L7	S 51°53'44" W	46.49'
L12	S 05°43'35" W	19.29'
L13	S 05°43'35" W	59.79'
L14	N 57°39'43" E	43.59'
L15	S 82°49'52" E	75.71'
L16	N 84°14'42" W	64.09'
L17	S 84°14'42" E	40.32'
L18	S 70°11'04" W	44.69'

NUMBER	DIRECTION	DISTANCE
L19	N 05°43'35" E	19.74'
L80	N 50°33'20" E	104.75'
L81	S 82°53'45" E	14.81'
L82	S 62°01'43" W	115.48'
L83	S 58°13'44" W	118.00'
L84	S 51°54'34" W	46.59'
L91	S 51°28'15" W	64.11'
L92	N 84°14'42" W	23.77'

- (C) = REMOVE 81 L.F. FENCE
- (D) = REMOVE 7 L.F. FENCE
- (F) = REMOVE 40 L.F. OF BLOCK RETAINING WALL
- (G) = REMOVE 3' X 9' DUMPSTER PAD & FENCE
- X = REMOVE
- DND = DO NOT DISTURB
- (**) = ENCROACHMENT

E8 Overhead Electric
 No Easement Listed
 in Title Search

(A) = SHAWANOE TRAIL SUBDIVISION
 BLOCK C, P.B. 44, PG. 44

*** SHEDS ARE BELIEVED
 TO BE PROPERTY OF
 PARCEL 33.

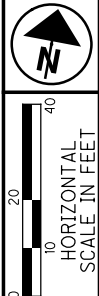
- (34) LOT KING LTD PARTNERSHIP
520-0240-0001
- (35) TOYA Y. HOLLOWAY
051-0010-0091
- (36) KENNETH R. LEE
051-0010-0090

REV. BY	DATE	DESCRIPTION
SER	3/09/17	REVISED PARCELS 34-WL, 35-T, 36-WL
DATE COMPLETED		

V:\1736\active\173620049\design\94741\admin\reviews\Final_RW_Electronic_Files_09-18-2017_12:19:27_PM_latchley

SEC 23, T4, F.R. 2
COLUMBIA TOWNSHIP
HAMILTON COUNTY, OHIO

NO.	RADIUS	DELTA ANG.	ARC LEN	CHORD DIRECT.	CHORD
C1	2417.23'	02°34'44"	108.80'	N 83°06'27" E	108.79'
C2	2417.23'	02°28'27"	104.39'	N 85°38'02" E	104.38'

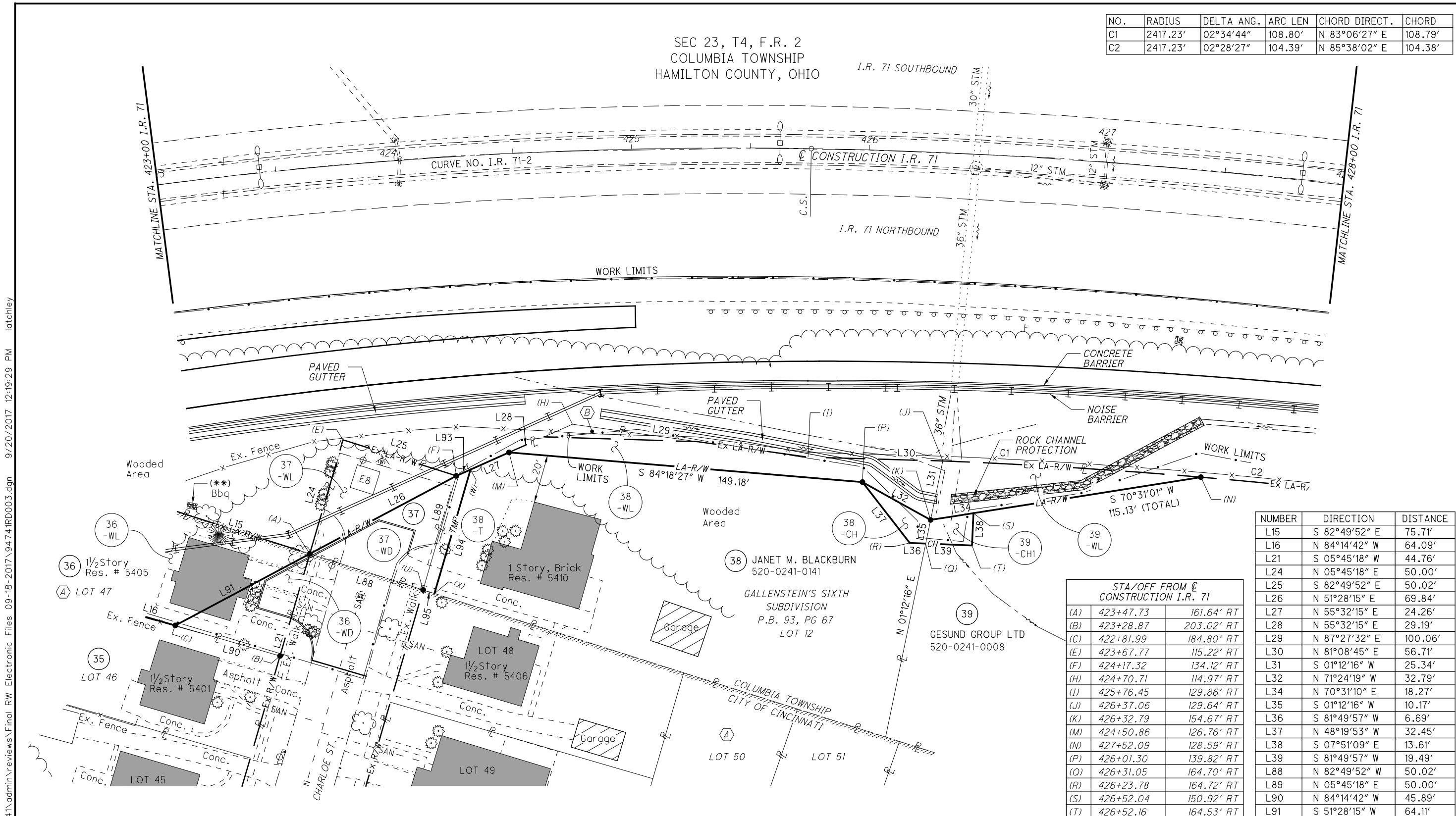


PID NO. **94741**
R/W DESIGNER: NJK
R/W REVIEWER: SER

RIGHT OF WAY PLAN
STA. 423+00 TO STA. 428+00

HAM-71-6.86

11 / 18
246
253



NUMBER	DIRECTION	DISTANCE
L15	S 82°49'52" E	75.71'
L16	N 84°14'42" W	64.09'
L21	S 05°45'18" W	44.76'
L24	N 05°45'18" E	50.00'
L25	S 82°49'52" E	50.02'
L26	N 51°28'15" E	69.84'
L27	N 55°32'15" W	24.26'
L28	N 55°32'15" E	29.19'
L29	N 87°27'32" E	100.06'
L30	N 81°08'45" E	56.71'
L31	S 01°12'16" W	25.34'
L32	N 71°24'19" W	32.79'
L34	N 70°31'10" E	18.27'
L35	S 01°12'16" W	10.17'
L36	S 81°49'57" W	6.69'
L37	N 48°19'53" W	32.45'
L38	S 07°51'09" E	13.61'
L39	S 81°49'57" W	19.49'
L88	N 82°49'52" W	50.02'
L89	N 05°45'18" E	50.00'
L90	N 84°14'42" W	45.89'
L91	S 51°28'15" W	64.11'
L93	N 55°32'15" E	6.55'
L94	S 05°45'18" W	54.35'
L95	N 82°49'52" W	5.00'

STA/OFF FROM C CONSTRUCTION I.R. 71	
(A)	423+47.73 161.64' RT
(B)	423+28.87 203.02' RT
(C)	422+81.99 184.80' RT
(E)	423+67.77 115.22' RT
(F)	424+17.32 134.12' RT
(H)	424+70.71 114.97' RT
(I)	425+76.45 129.86' RT
(J)	426+37.06 129.64' RT
(K)	426+32.79 154.67' RT
(M)	424+50.86 126.76' RT
(N)	427+52.09 128.59' RT
(P)	426+01.30 139.82' RT
(Q)	426+31.05 164.70' RT
(R)	426+23.78 164.72' RT
(S)	426+52.04 150.92' RT
(T)	426+52.16 164.53' RT
(U)	423+98.39 181.00' RT
(W)	424+23.92 131.85' RT
(X)	424+03.52 182.87' RT

MONUMENT LEGEND

- ⊕ R.R.S. FOUND
 - R.R.S. SET
 - ⊙ P.K. NAIL FOUND
 - ⊙ CONC. MONUMENT FD.
 - ⊙ REFER. MONUMENT SET
 - ⊙ REBAR FOUND
 - ⊙ IRON PIN FOUND
 - ⊙ I.P.F. WITH I.D. CAP
 - 3/4" BAR SET
 - ⊙ MONUMENT BOX FD.
 - ⊙ MONUMENT BOX SET
- (35) TOYA Y. HOLLOWAY
051-0010-0091
 (36) KENNETH R. LEE
051-0010-0090
 (37) GALLENSTEIN
DEVELOPMENT CORPORATION
520-0241-0108
- (E8) State of Ohio Granted
Abutter's Right of
Ingress and Egress
D.B. 3948, Pg. 520
 (A) = SHAWANOE TRAIL SUBDIVISION
BLOCK C, P.B. 44, PG. 44
 (B) = R/W PARCEL
7882H-WL1, HAM-71-7.45
ADDED 4/22/74

CURVE NO. I.R. 71-2

P.I. Sta. 422+38.87 Δc = 22° 04' 44" (RT)
 Δ = 40° 04' 44" (RT) Dc = 3° 00' 00"
 Ts = 999.24' R = 1,909.86'
 Ls = 600.00' Tc = 372.60'
 θs = 9° 00' 00" Lc = 735.96'
 LT = 400.52' C.B. = N 69° 26' 12" E
 ST = 200.47' Ch = 731.42'
 TS STA. 412+39.63 CS STA. 425+75.59
 SC STA. 418+39.63 ST STA. 431+75.59

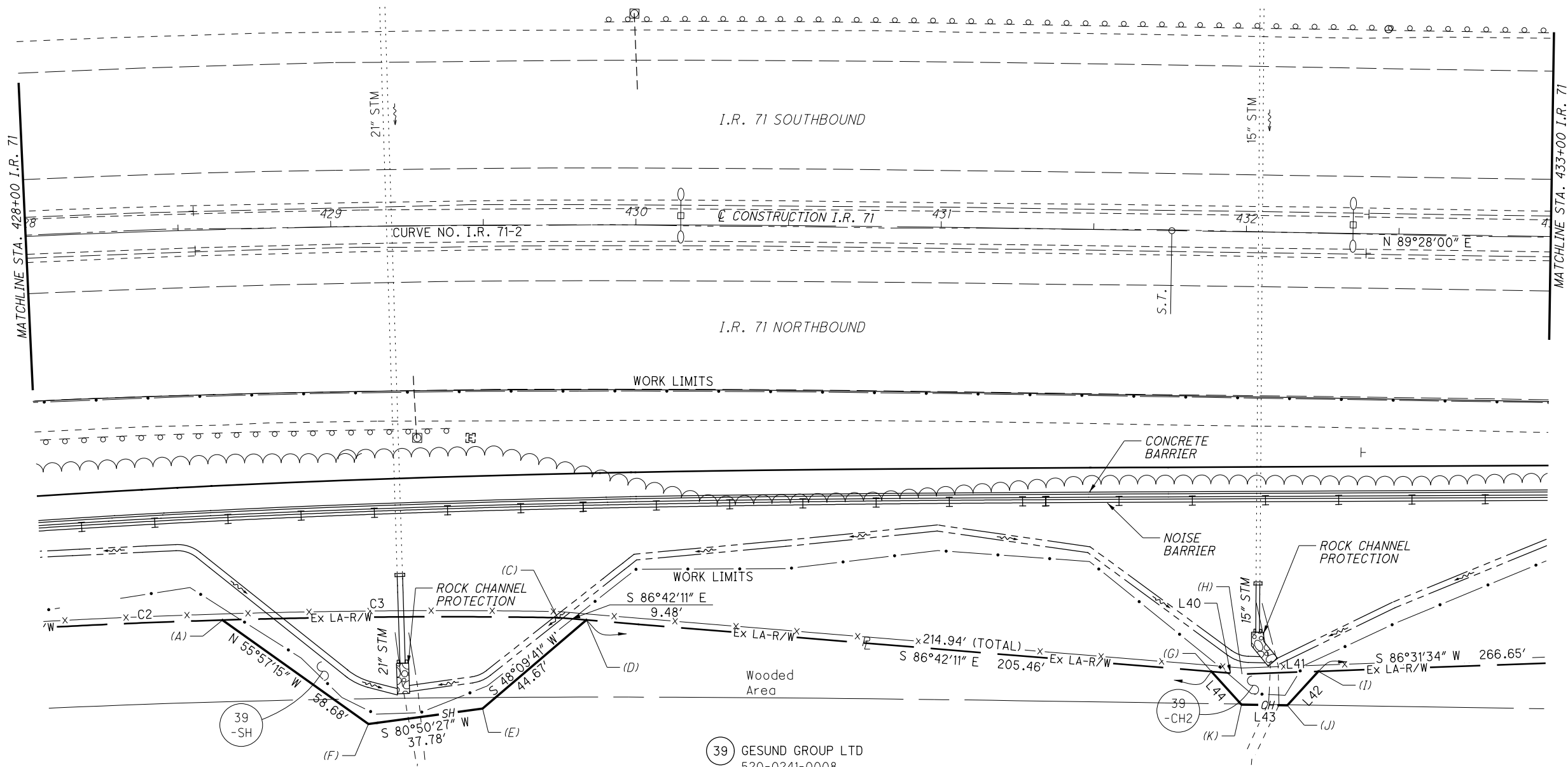
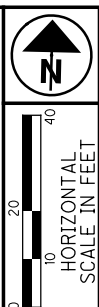
- X = REMOVE
- DND = DO NOT DISTURB
- (**) = ENCROACHMENT

REV. BY	DATE	DESCRIPTION
SER	3/09/17	REVISED PARCELS 36-WL, 36-WD, 37-WL, 37-WD, 38-WL, 38-T

V:\1736\active\173620049\design\94741\admin\reviews\Final_RW_Electronic_Files_09-18-2017\94741RD003.dgn 9/20/2017 12:19:29 PM latchley

SEC 23, T4, F.R. 2
COLUMBIA TOWNSHIP
HAMILTON COUNTY, OHIO

NO.	RADIUS	DELTA ANG.	ARC LEN	CHORD DIRECT.	CHORD
C2	2417.23'	02°28'27"	104.39'	N 85°38'02" E	104.38'
C3	2417.23'	02°36'10"	109.80'	N 88°10'21" E	109.80'



PID NO. **94741**
R/W DESIGNER NUK
R/W REVIEWER SER

RIGHT OF WAY PLAN
STA. 428+00 TO STA. 423+00

HAM-71-6.86

12 / 18
247
253

V:\1736\active\173620049\design\94741\admin\reviews\Final_RW_Electronic_Files_09-18-2017\94741RD004.dgn 9/20/2017 12:19:31 PM latchley

- MONUMENT LEGEND**
- ⊠ R.R.S. FOUND
 - R.R.S. SET
 - ⊙ P.K. NAIL FOUND
 - ⊕ CONC. MONUMENT FD.
 - ⊗ REFER. MONUMENT SET
 - REBAR FOUND
 - IRON PIN FOUND
 - ⊙ I.P.F. WITH I.D. CAP
 - 3/4" BAR SET
 - ⊠ MONUMENT BOX FD.
 - ⊡ MONUMENT BOX SET

CURVE NO. I.R. 71-2

P.I. Sta. 422+38.87 Δc = 22° 04' 44" (RT)
 Δ = 40° 04' 44" (RT) Dc = 3° 00' 00"
 Ts = 999.24' R = 1,909.86'
 Ls = 600.00' Tc = 372.60'
 θs = 9° 00' 00" Lc = 735.96'
 LT = 400.52' C.B. = N 69° 26' 12" E
 ST = 200.47' Ch = 731.42'
 TS STA. 412+39.63 CS STA. 425+75.59
 SC STA. 418+39.63 ST STA. 431+75.59

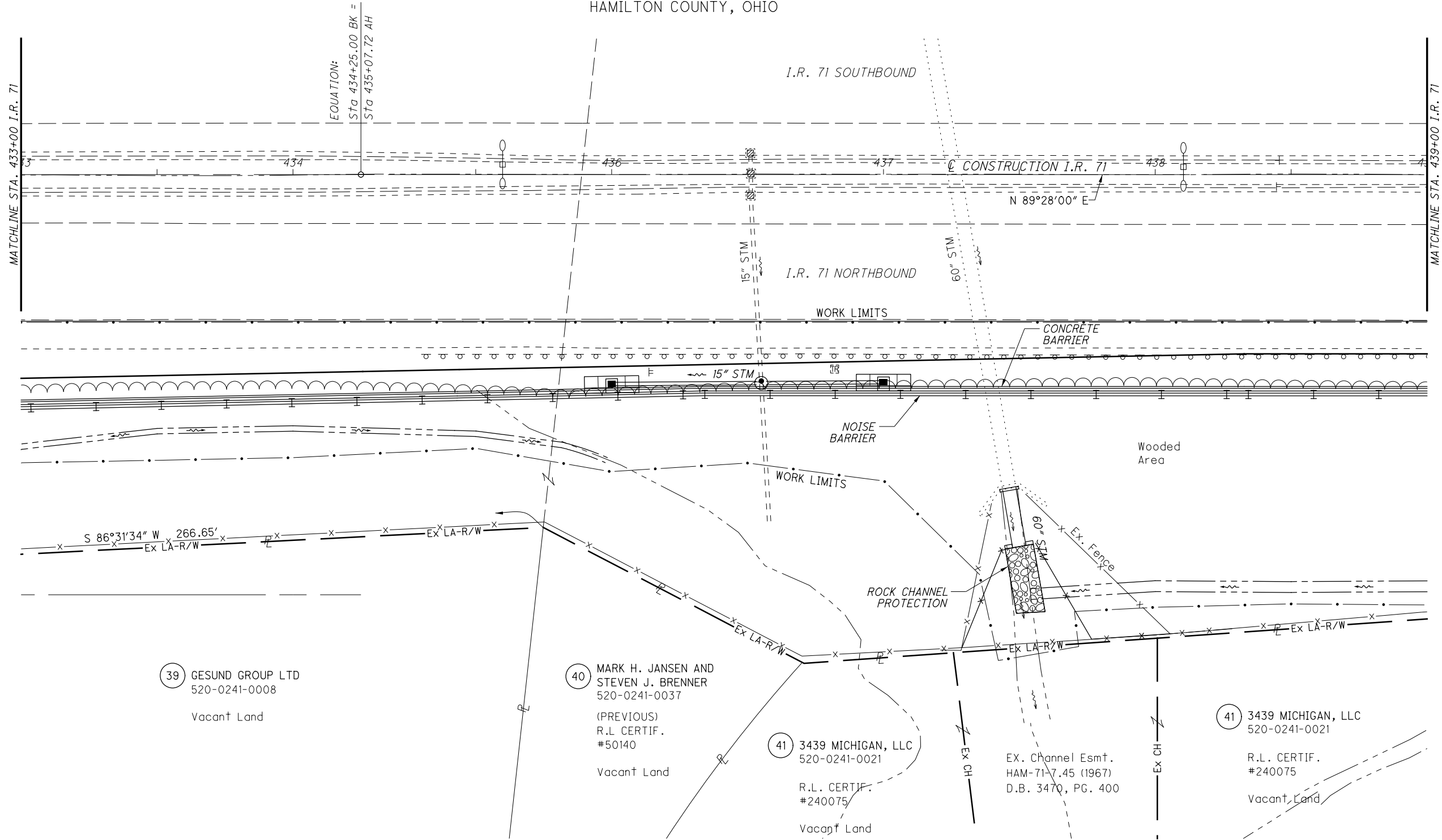
	STA/OFF FROM C	CONSTRUCTION I.R. 71
(A)	428+60.97	127.85' RT
(C)	429+74.03	128.61' RT
(D)	429+83.69	129.41' RT
(E)	429+48.65	158.24' RT
(F)	429+09.82	162.92' RT
(G)	431+90.77	144.14' RT
(H)	432+00.77	144.81' RT
(I)	432+25.77	143.53' RT
(J)	432+15.77	154.81' RT
(K)	432+00.77	154.81' RT

NUMBER	DIRECTION	DISTANCE
L40	S 86°42'11" E	10.02'
L41	N 86°31'34" E	25.03'
L42	S 41°00'47" W	15.08'
L43	S 89°28'26" W	15.00'
L44	N 43°40'27" W	14.62'

- X = REMOVE
- DND = DO NOT DISTURB
- (**) = ENCROACHMENT

REV. BY	DATE	DESCRIPTION

SEC 23, T4, F.R. 2
COLUMBIA TOWNSHIP
HAMILTON COUNTY, OHIO



39 GESUND GROUP LTD
520-0241-0008
Vacant Land

40 MARK H. JANSEN AND
STEVEN J. BRENNER
520-0241-0037
(PREVIOUS)
R.L. CERTIF.
#50140
Vacant Land

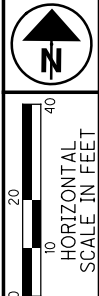
41 3439 MICHIGAN, LLC
520-0241-0021
R.L. CERTIF.
#240075
Vacant Land

41 3439 MICHIGAN, LLC
520-0241-0021
R.L. CERTIF.
#240075
Vacant Land

- MONUMENT LEGEND**
- R.R.S. FOUND
 - R.R.S. SET
 - P.K. NAIL FOUND
 - ⊗ CONC. MONUMENT FD.
 - ⊙ REFER. MONUMENT SET
 - REBAR FOUND
 - IRON PIN FOUND
 - ⊙ I.P.F. WITH I.D. CAP
 - 3/4" BAR SET
 - ▣ MONUMENT BOX FD.
 - ▤ MONUMENT BOX SET

- X = REMOVE
- DND = DO NOT DISTURB
- (**) = ENCROACHMENT

REV. BY	DATE	DESCRIPTION



PID NO.
94741

R/W DESIGNER
NUJ

R/W REVIEWER
SER

RIGHT OF WAY PLAN
STA. 433+00 TO STA. 439+00

HAM-71-6.86

13 / 18

248
253

V:\1736\active\173620049\design\94741\admin\reviews\Final_RW_Electronic_Files_09-18-2017\94741RD005.dgn 9/20/2017 12:19:34 PM latchley

19 CITY OF CINCINNATI
052-0005-0054

(A) SEE NOTE "A" ON
CENTERLINE PLAT
SHEET NO. 2 OF 18.

21 STATE OF OHIO
520-0240-0059-90
052-0005-0045

22 CITY OF CINCINNATI
(a) = 052-0005-0055
(b) = 052-0005-0056
(c) = 520-0240-0073
(d) = 520-0240-0076
(e) = 520-0240-0075

24 WILSON CHARLES
STOREY II
520-0240-0010

NUMBER	DIRECTION	DISTANCE
L49	N 82°47'47" W	25.01'
L50	N 05°41'22" E	39.83'
L51	N 84°53'45" W	38.41'
L52	S 05°41'22" W	60.00'
L53	S 02°20'42" W	58.49'
L54	S 02°20'42" W	284.34'
L55	S 82°47'47" E	37.12'
L57	N 05°45'25" E	26.84'
L58	N 02°56'04" E	26.86'
L59	N 02°56'04" E	107.53'
L60	N 02°56'04" E	107.52'

STA/OFF FROM C/R/W KENNEDY AVENUE		
(B)	8+18.29	0.00' CL
(C)	8+18.96	25.00' LT
(D)	8+58.79	25.00' LT
(E)	8+58.39	63.41' LT
(F)	8+00.00	60.00' LT
(G)	7+40.00	60.00' LT
(H)	7+16.67	68.90' LT
(J)	8+17.34	36.11' RT
(K)	8+17.31	37.11' RT
(L)	8+44.15	37.14' RT
(M)	8+70.98	35.85' RT
(N)	9+78.39	30.68' RT

MONUMENT LEGEND

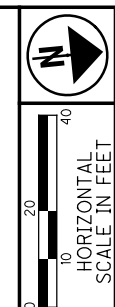
- ⊕ R.R.S. FOUND
- ⊙ R.R.S. SET
- ⊙ P.K. NAIL FOUND
- ⊙ CONC. MONUMENT FD.
- ⊙ REFER. MONUMENT SET
- ⊙ REBAR FOUND
- ⊙ IRON PIN FOUND
- ⊙ I.P.F. WITH I.D. CAP
- 3/4" BAR SET
- ⊕ MONUMENT BOX FD.
- ⊕ MONUMENT BOX SET

NO.	RADIUS	DELTA ANG.	ARC LEN	CHORD DIRECT.	CHORD
C5	35.00'	41°47'37"	25.53'	S 26°34'54" W	24.97'

- E4 EX. Slope & Esmt.
City of Cincinnati
O.R. 11764, Pg. 1545
- E5 Common Drive and Parking Easement
O.R. 9421, PG. 1140
- E6 24' C.G. & E. Easement
D.B. 5170, PG. 1165

SEC 23, T4, F.R. 2
CITY OF CINCINNATI
COLUMBIA TOWNSHIP
HAMILTON COUNTY, OHIO

EX. MONUMENTS OFF C/R/W KENNEDY AVENUE		
STATION	OFFSET	DESCRIPTION
7+32.66	63.39' LT.	I.P.F. "#5684"
7+92.46	61.26' LT.	I.P.F. "#5684"



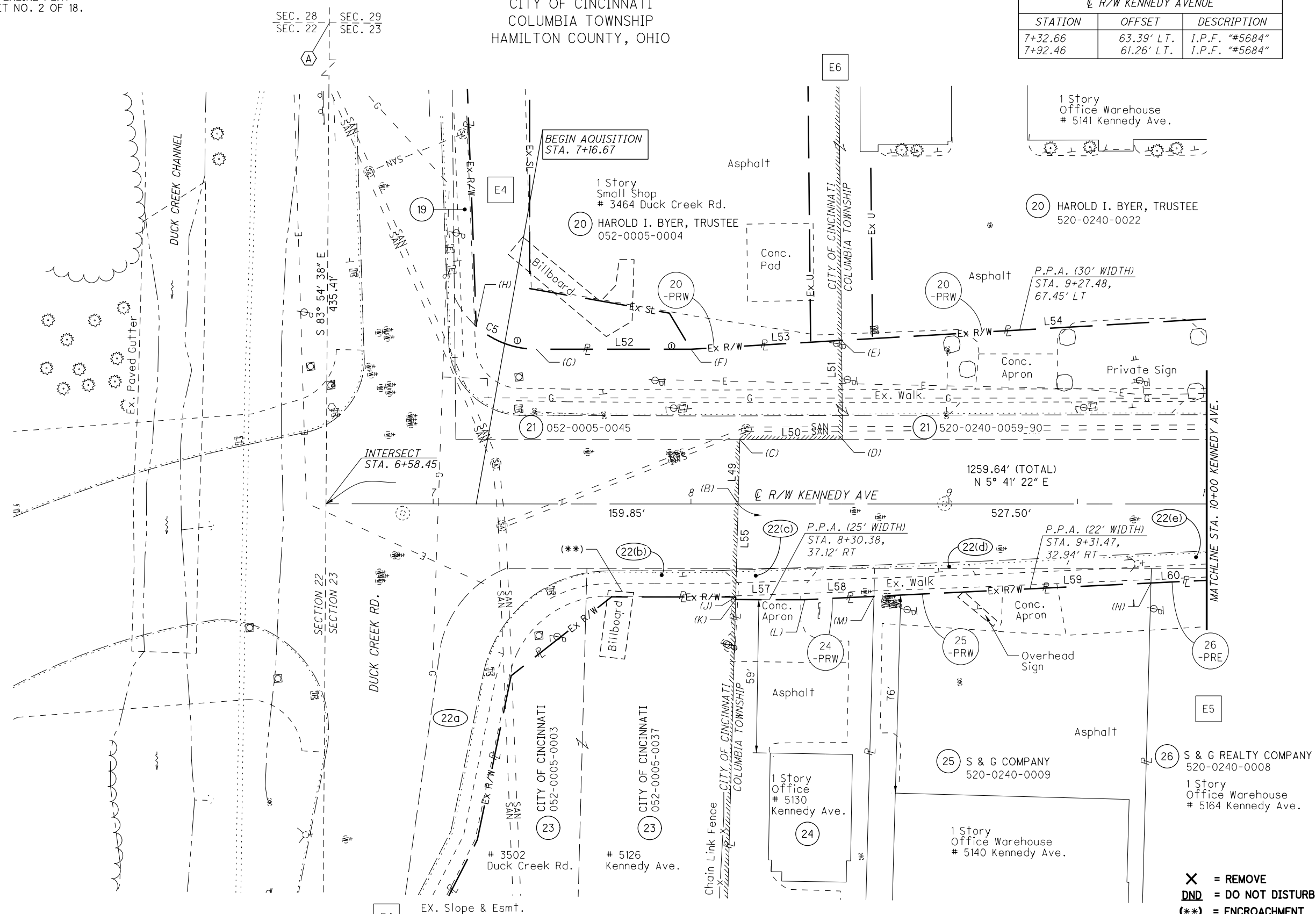
PID NO. **94741**
R/W DESIGNER NJK
R/W REVIEWER SER

RIGHT OF WAY PLAN
STA. 6+58.45 TO STA. 10+00

HAM-71-6-86

15 / 18

250
253



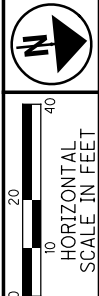
- X = REMOVE
- DND = DO NOT DISTURB
- (**) = ENCROACHMENT

REV. BY	DATE	DESCRIPTION
SER	6/01/17	REVISED EX. R/W ALONG PARCEL 24

* P.P.A. DENOTES
POINT OF PERMISSIBLE ACCESS

V:\1736\active\173620049\design\94741\row_sheets\94741RD012.dgn 9/27/2017 1:37:30 PM pduhrom

SEC 23, T4, F.R. 2
COLUMBIA TOWNSHIP
HAMILTON COUNTY, OHIO

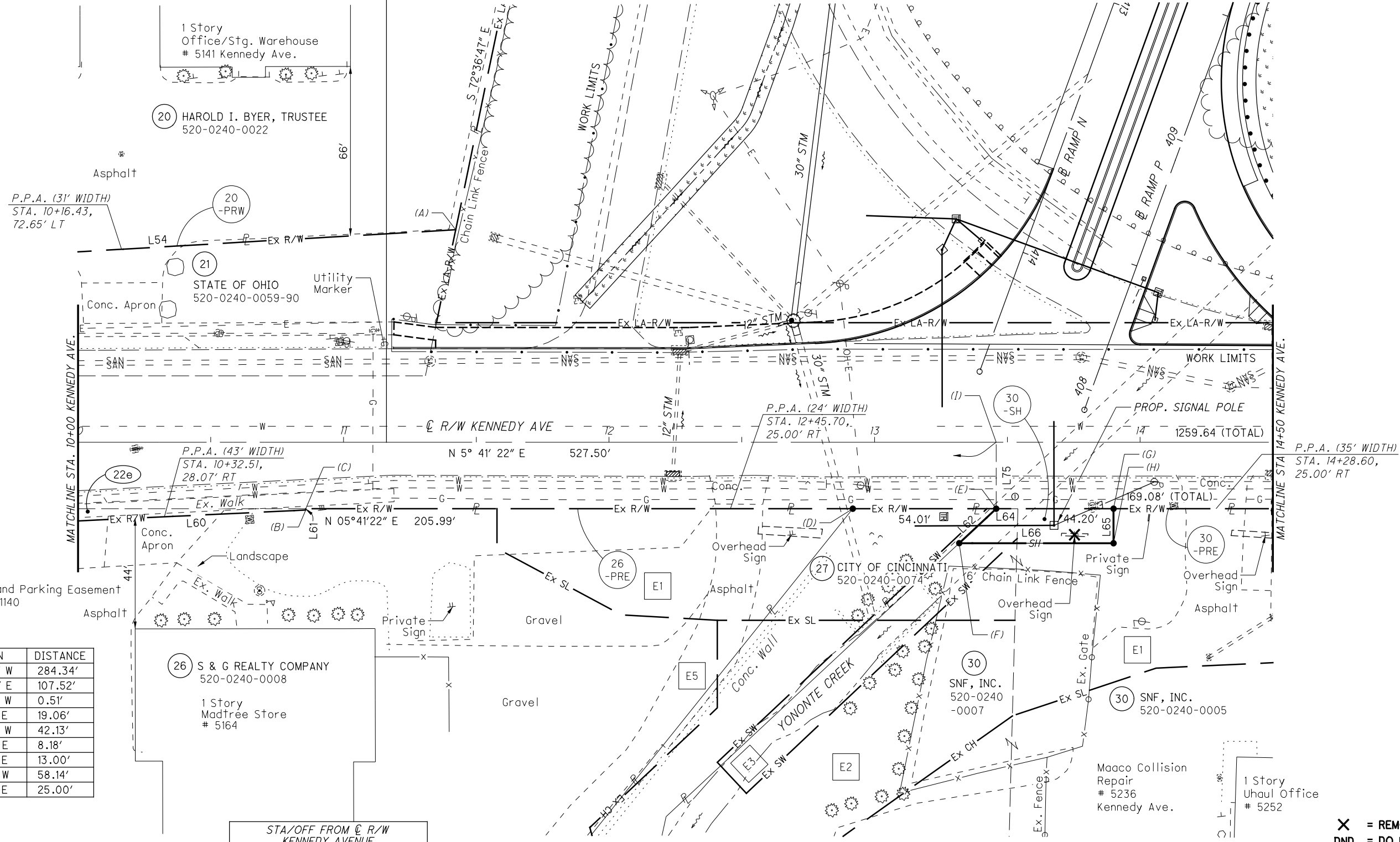


PID NO. **94741**
R/W DESIGNER: NJK
R/W REVIEWER: SER

RIGHT OF WAY PLAN
STA. 10+00 TO STA. 14+50

HAM-71-6.86

16 / 18
251
253



NUMBER	DIRECTION	DISTANCE
L54	S 02°20'42" W	284.34'
L60	N 02°56'04" E	107.52'
L61	N 82°47'56" W	0.51'
L62	S 37°18'56" E	19.06'
L63	S 23°39'52" W	42.13'
L64	N 05°41'22" E	8.18'
L65	S 84°18'38" E	13.00'
L66	S 05°41'22" W	58.14'
L75	S 84°18'38" E	25.00'

STA/OFF FROM C R/W KENNEDY AVENUE	DESCRIPTION
(A)	11+42.25 80.00' LT
(B)	10+85.78 25.51' RT
(C)	10+85.80 25.00' RT
(D)	12+91.79 25.00' RT
(E)	13+45.80 25.00' RT
(F)	13+31.86 38.00' RT
(G)	13+90.00 25.00' RT
(H)	13+90.00 38.00' RT
(I)	13+45.80 00.00' CL

STATION	OFFSET	DESCRIPTION
13+52.91	20.43' RT.	I.P.F. "UNREADABLE"

*P.P.A. DENOTES POINT OF PERMISSIBLE ACCESS

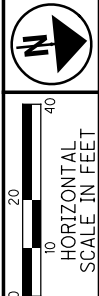
- E1 EX. Slope Esmt. HAM-71-7.45 (1967)
- E2 EX. Channel Esmt. HAM-71-7.45 (1967)
- E3 EX. Sewer Esmt. HAM-71-7.45 (1967)

REV. BY	DATE	DESCRIPTION
SER	9-18-17	Eliminated Parcel 27-SH
NJK	6-21-17	Changed P.P.A. width for PAR 26 & 30
DATE COMPLETED		

X = REMOVE
DND = DO NOT DISTURB
(**) = ENCROACHMENT

V:\1736\active\173620049\design\94741\admin\reviews\Final_RW_Electronic_Files_09-18-2017\94741RD013.dgn 9/20/2017 12:19:40 PM latchley

SEC 23, T4, F.R. 2
COLUMBIA TOWNSHIP
HAMILTON COUNTY, OHIO



EX. MONUMENTS OFF
R/W KENNEDY AVENUE

STATION	OFFSET	DESCRIPTION
16+11.68	419.91' RT.	5/8" I.P.F.
16+22.15	25.00' RT.	I.P.F. UNREADABLE
18+10.98	25.04' RT.	I.P.F. "BERDING"

NUMBER	DIRECTION	DISTANCE
L2	N 05°41'22" E	123.01'
L67	N 05°41'22" E	107.27'
L68	N 05°41'22" E	188.02'

STA/OFF FROM C R/W KENNEDY AVENUE		
(A)	15+14.88	25.00' RT
(B)	16+22.15	25.00' RT
(C)	18+10.17	25.00' RT

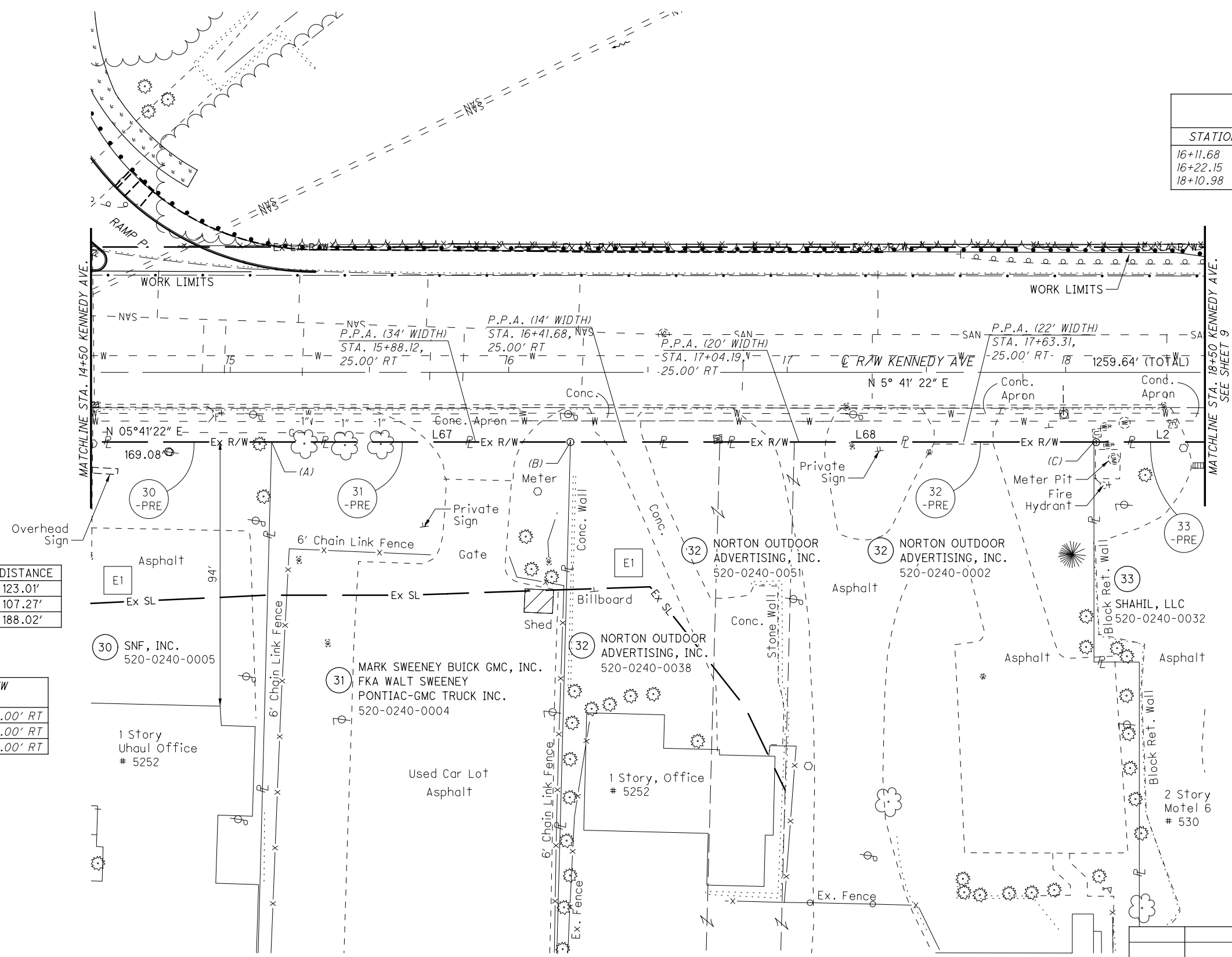
- MONUMENT LEGEND**
- ⊠ R.R.S. FOUND
 - ⬤ R.R.S. SET
 - ⊙ P.K. NAIL FOUND
 - ⊕ CONC. MONUMENT FD.
 - ⊖ REFER. MONUMENT SET
 - ⊡ REBAR FOUND
 - IRON PIN FOUND
 - ⊙ I.P.F. WITH I.D. CAP
 - 3/4" BAR SET
 - ⊠ MONUMENT BOX FD.
 - ⊡ MONUMENT BOX SET

E1 EX. Slope Esmt.
HAM-71-7.45 (1967)

- X = REMOVE
- DND = DO NOT DISTURB
- (**) = ENCROACHMENT

REV. BY	DATE	DESCRIPTION

*P.P.A. DENOTES
POINT OF PERMISSIBLE ACCESS



V:\1736\active\173620049\design\94741\admin\reviews\Final RW Electronic Files 09-18-2017\94741RD014.dgn 9/20/2017 12:19:42 PM latchley

PID NO.
R/W DESIGNER
R/W REVIEWER
SER

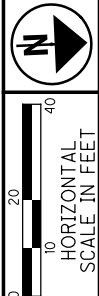
RIGHT OF WAY PLAN
STA. 14+50 TO STA. 18+50

HAM-71-6.86

SEC 29, T4, F.R. 2
CITY OF CINCINNATI
COLUMBIA TOWNSHIP
HAMILTON COUNTY, OHIO

(B) THE CENTERLINE OF CONSTRUCTION OF RIDGE AVENUE WAS ESTABLISHED BY KEEPING THE RELATIONSHIP TO THE CENTERLINE OF CONSTRUCTION OF INTERSTATE ROUTE 71 AS DELINEATED UPON THE ODOT PLAN HAM-71-7.45 (1967).

CURVE NO. R-1
P.I. Sta. 26+84.42
 $\Delta = 23^\circ 36' 40''$ (LT)
 $Dc = 8^\circ 00' 00''$
 $R = 716.20'$
 $T = 149.69'$
 $L = 295.14'$
 $E = 15.48'$
 $C = 293.05'$
C.B. = N 8° 29' 44" W

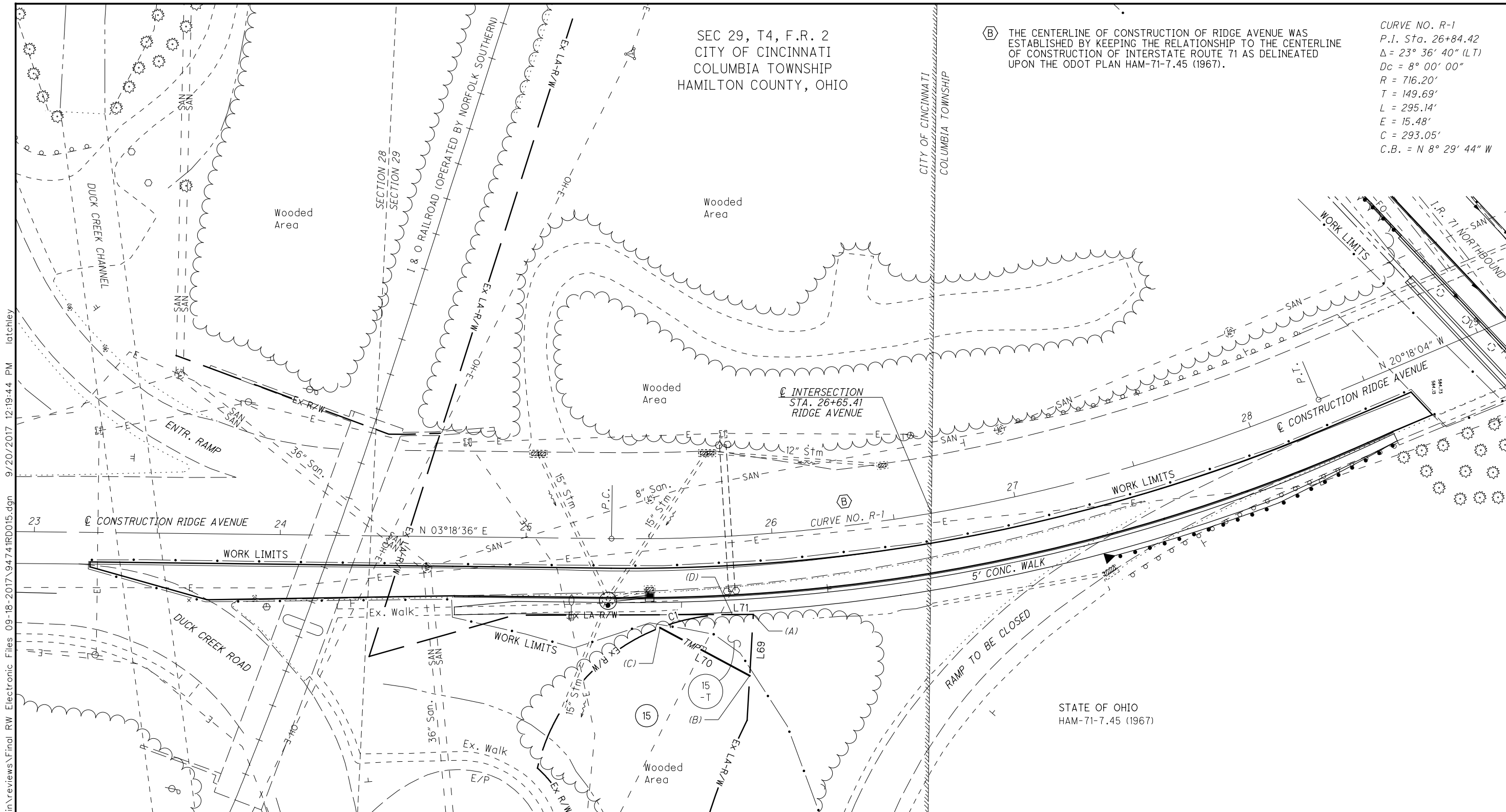


PID NO. 94741
R/W DESIGNER NJK
R/W REVIEWER SER

RIGHT OF WAY PLAN
STA. 23+00 TO STA. 29+00

HAM-71-6.86

18 / 18
253
253



V:\1736\active\173620049\design\94741\admin\reviews\Final_RW_Electronic_Files_09-18-2017\94741RD015.dgn 9/20/2017 12:19:44 PM latchley

- MONUMENT LEGEND**
- R.R.S. FOUND
 - R.R.S. SET
 - P.K. NAIL FOUND
 - ⊙ CONC. MONUMENT FD.
 - ⊙ REFER. MONUMENT SET
 - REBAR FOUND
 - IRON PIN FOUND
 - I.P.F. WITH I.D. CAP
 - 3/4" BAR SET
 - ▣ MONUMENT BOX FD.
 - ▣ MONUMENT BOX SET

NUMBER	DIRECTION	DISTANCE
L69	S 84°02'02" E	25.00'
L70	S 30°46'58" W	41.35'
L71	N 02°24'32" E	8.58'

STA/OFF FROM CENTERLINE
CONSTRUCTION RIDGE AVENUE

(A)	25+90.30	32.36' RT
(B)	25+87.43	57.18' RT
(C)	25+53.93	36.28' RT
(D)	25+82.10	31.88' RT

15 CITY OF CINCINNATI
052-0005-0038-90

NO.	RADIUS	DELTA ANG.	ARC LEN	CHORD DIRECT.	CHORD
C1	81.21'	21°09'57"	30.00'	N 07°49'37" W	29.83'

STATE OF OHIO
HAM-71-7.45 (1967)

- X = REMOVE
- DND = DO NOT DISTURB
- (**) = ENCROACHMENT

REV. BY	DATE	DESCRIPTION

PROJECT DESCRIPTION

THIS PROJECT, HAM-71-6.86, IS THE WIDENING OF I-71 FROM APPROXIMATELY 500 FEET WEST OF RIDGE AVENUE TO APPROXIMATELY 550 FEET WEST OF RED BANK ROAD. RIDGE AVENUE IS BEING WIDENED FROM DUCK CREEK ROAD TO THE EXISTING RAMP N ENTRY TO RIDGE AVENUE. ALSO INCLUDED IN THIS PROJECT IS THE REALIGNMENT OF RAMP N AND RAMP P, A CULVERT EXTENSION, A SOIL NAIL WALL, NOISE BARRIERS, A SIDEHILL CUT, AND A SIDEHILL FILL.

HISTORIC RECORDS

HISTORICAL GEOTECHNICAL EXPLORATIONS WERE PERFORMED FOR THE EXISTING ALIGNMENTS OF RIDGE AVENUE (HAM-71-7.45, 1965), KENNEDY AVENUE (HAM-71-6.14, 1965), I-71 (HAM-71-8.43, 1964 AND HAM-71-7.45, 1965), AND I-71 RAMPS (HAM-71-7.45, 1965). THESE EXPLORATIONS WERE USED TO UNDERSTAND THE GENERAL SUBSURFACE CONDITIONS OF THE PROJECT AREA. ONE BORING FROM HAM-71-6.14, FOUR BORINGS FROM HAM-71-7.45, AND ONE BORING FROM HAM-71-8.43 ARE SHOWN IN THESE GEOTECHNICAL DRAWINGS.

GEOLOGY

THE PROJECT SITE IS LOCATED IN THE ILLINOIAN TILL PLAIN. THE ILLINOIAN TILL PLAIN IS DESCRIBED AS HAVING ROLLING GROUND MORAINES OF OLDER TILL GENERALLY LACKING ICE-CONSTRUCTIONAL FEATURES. THE PROJECT SITE IS UNDERLAIN PREDOMINANTLY BY SILTY LOAM TILL WITH MODERATE LOESS COVER DEPOSITED DURING THE ILLINOIAN AGE. THE LOAM TILL ORIGINATES AS A FLAT, RELATIVELY CONTINUOUS GROUND MORAINES. SOIL IS UNDERLAIN BY INTERBEDDED LIMESTONE AND SHALE BEDROCK OF THE KOPE FORMATION AND THE POINT PLEASANT FORMATION OF THE ORDOVICIAN SYSTEM. THE DRIFT THICKNESS MAP INDICATES THAT BEDROCK IS 0 TO 210 FEET DEEP.

RECONNAISSANCE

STANTEC REPRESENTATIVES VISITED THE SITE ON APRIL 25, 2016 AND MAY 2, 2016. THE LAND USAGE AROUND THE PROJECT IS PRIMARILY VEGETATED/WOODED EASEMENT WITH SOME COMMERCIAL AND RESIDENTIAL AREAS. SEVERAL BORINGS WERE LOCATED ON THE MOTEL 6 PROPERTY ON KENNEDY AVENUE. ONE BORING WAS POSITIONED IN THE RIGHT-OF-WAY AT THE END OF CHARLOE STREET, WHICH IS A RESIDENTIAL STREET. TWO BORINGS WERE LOCATED AT THE NORTH END OF THE FIFTH THIRD BANK BUILDING PROPERTY ON KINGSLEY DRIVE. THE ENCLOSURE BETWEEN EXISTING RAMP P, I-71, AND KENNEDY AVENUE IS HEAVILY VEGETATED, BECOMING MORE WOODED NORTH OF THE EXISTING CULVERT/CHANNEL. THE EASEMENT FOR I-71 IS HEAVILY WOODED FROM KENNEDY AVENUE TO THE START OF THE FIFTH THIRD BANK BUILDING PROPERTY. DUE TO HEAVY VEGETATION, STEEP SLOPES, AND/OR UNDERGROUND/OVERHEAD UTILITIES AT VARIOUS LOCATIONS WITHIN THE PROJECT SITE, SOME BORINGS WERE RELOCATED FROM THE ORIGINAL BORING PLAN. IN GENERAL, THE EXISTING PAVEMENT APPEARED TO BE IN GOOD CONDITION.

SUBSURFACE EXPLORATION

FORTY-ONE BORINGS WERE COMPLETED AS PART OF THE EXPLORATION. THIRTY-TWO BORINGS WERE ADVANCED ALONG THE I-71 ALIGNMENT; THREE BORINGS WERE ADVANCED ALONG THE PROPOSED RAMP N ALIGNMENT; FOUR BORINGS WERE ADVANCED ALONG THE PROPOSED RAMP P ALIGNMENT; AND TWO BORINGS WERE ADVANCED ALONG THE RIDGE AVENUE ALIGNMENT. BORINGS WERE COMPLETED TO OBTAIN SUBSURFACE INFORMATION FOR THE SUBGRADE, ROADWAY, CULVERT EXTENSION, SOIL NAIL WALL, NOISE BARRIERS, SIDEHILL CUT, AND SIDEHILL FILL.

BORINGS WERE DRILLED WITH EITHER A CME 55 TRUCK-MOUNTED DRILL RIG, A CME 55 TRACK-MOUNTED DRILL RIG, OR A CME 45 TRACK-MOUNTED DRILL RIG USING 3 1/4-INCH I.D. HOLLOW-STEM AUGERS. DISTURBED SOIL SAMPLES WERE OBTAINED IN ACCORDANCE WITH THE STANDARD PENETRATION TEST (AASHTO T206) AT CONTINUOUS, 2.5-FOOT, AND 5-FOOT SAMPLING INTERVALS. THE DRILL ROD ENERGY RATIO IS 81.3 PERCENT FOR THE CME 55 TRUCK-MOUNTED RIG (CALIBRATED 02/24/16), 92.4 PERCENT FOR THE CME 55 TRACK-MOUNTED RIG (CALIBRATED 01/08/16), AND 91.6 PERCENT FOR THE CME 45 TRACK-MOUNTED RIG (CALIBRATED 06/23/16). SEVERAL UNDISTURBED SHELBY TUBE SAMPLES WERE OBTAINED FROM SELECT BORINGS AT VARIOUS DEPTHS.

EXPLORATION FINDINGS

THIRTY SUBGRADE AND ROADWAY BORINGS WERE COMPLETED. THE EXISTING PAVEMENT CONSISTED OF 0.5 TO 1.2 FEET OF ASPHALT PAVEMENT IN THE SHOULDER OF I-71, 0.3 TO 0.4 FEET OF ASPHALT PAVEMENT AND 0.9 FEET OF CONCRETE IN THE RIGHT DRIVING LANE OF I-71, AND 0.1 FEET OF ASPHALT PAVEMENT AND 0.9 FEET OF CONCRETE AT RIDGE AVENUE. BENEATH THE PAVEMENT, FINE-GRAINED SOILS CLASSIFYING AS SANDY SILT, SILT, SILT AND CLAY, SILTY CLAY AND CLAY WERE PRIMARILY ENCOUNTERED. COARSE-GRAINED SOILS CLASSIFIED AS GRAVEL, GRAVEL WITH SAND AND SILT, GRAVEL WITH SAND, SILT, AND CLAY, AND COARSE AND FINE SAND WERE ALSO ENCOUNTERED IN SOME SUBGRADE/ROADWAY BORINGS. SAMPLES THAT WERE TESTED FOR SULFATE CONTENTS DID NOT YIELD RESULTS GREATER THAN 3,000 PPM.

ONE BORING WAS ADVANCED FOR THE CULVERT EXTENSION. THE SOILS ENCOUNTERED IN THIS BORING CONSISTED OF SILT AND CLAY, GRAVEL WITH SAND, GRAVEL WITH SAND AND SILT, AND SANDY SILT. THE COHESIVE MATERIALS WERE DESCRIBED AS STIFF TO HARD AND DAMP TO MOIST. THE GRANULAR MATERIALS WERE DESCRIBED AS VERY LOOSE TO DENSE AND MOIST TO WET.

TWO BORINGS WERE COMPLETED FOR THE SOIL NAIL WALL. GRAVEL WITH SAND, SANDY SILT, SILT, AND SILT AND CLAY WERE ENCOUNTERED IN THESE BORINGS. THE COHESIVE MATERIALS WERE DESCRIBED AS MEDIUM STIFF TO HARD AND DAMP TO WET. THE GRANULAR MATERIALS WERE DESCRIBED AS VERY LOOSE TO VERY DENSE AND DAMP TO WET.

TEN NOISE BARRIER BORINGS WERE ADVANCED. COHESIVE MATERIALS COMPRISED OF SANDY SILT, SILT, SILT AND CLAY, SILTY CLAY, AND CLAY WERE PRIMARILY ENCOUNTERED. SOME NON-COHESIVE MATERIALS CONSISTING OF GRAVEL; GRAVEL WITH SAND, SILT, AND CLAY; SANDY SILT; AND SILT WERE ENCOUNTERED. SPT N60-VALUES RANGED FROM 3 TO 61 BLOWS PER FOOT, AVERAGING 16 BLOWS PER FOOT. WATER CONTENTS RANGED FROM 6 TO 29 PERCENT.

FIVE BORINGS WERE COMPLETED FOR THE PROPOSED SIDEHILL CUT. THE MATERIALS ENCOUNTERED IN THESE BORINGS CONSISTED OF GRAVEL WITH SAND AND SILT, COARSE AND FINE SAND, SANDY SILT, SILT, SILT AND CLAY, AND SILTY CLAY. THESE MATERIALS WERE DESCRIBED AS MEDIUM STIFF TO VERY STIFF OR MEDIUM DENSE TO VERY DENSE AND DAMP TO WET.

SEVEN BORINGS WERE PERFORMED FOR THE PLANNED SIDEHILL FILL. THE BORINGS REVEALED THAT THE EMBANKMENT FILL CONSISTS OF SOILS WITH HIGHER GRAVEL CONTENTS, CONSISTING OF GRAVEL; GRAVEL WITH SAND, SILT, AND CLAY; SILTY CLAY; AND CLAY. THESE SOILS WERE DESCRIBED AS MEDIUM DENSE TO VERY DENSE OR STIFF TO VERY STIFF AND DAMP TO MOIST. FOUNDATION SOILS WERE CLASSIFIED AS GRAVEL, GRAVEL WITH SAND, SANDY SILT, SILT AND CLAY, SILTY CLAY, AND CLAY. THESE SOILS WERE DESCRIBED AS DENSE OR MEDIUM STIFF TO HARD AND DAMP TO MOIST.

EXPLORATION FINDINGS (CONTINUED)

PERCHED GROUNDWATER WAS OBSERVED IN EIGHT BORINGS WITHIN SANDY OR SILTY ZONES. THREE BORINGS WERE TERMINATED BEFORE THE PLANNED DEPTH DUE TO AUGER REFUSAL FROM BOULDERS. BEDROCK WAS NOT ENCOUNTERED IN ANY BORINGS.

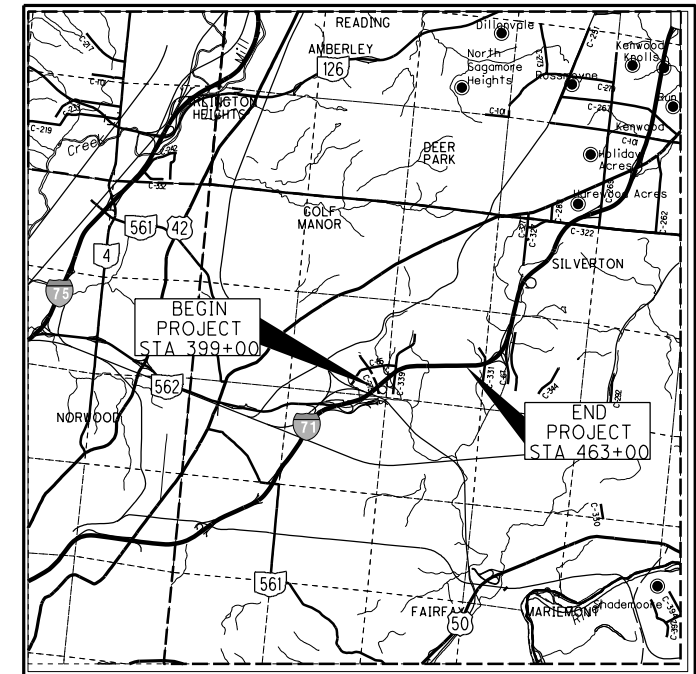
SPECIFICATIONS

THIS GEOTECHNICAL EXPLORATION WAS PERFORMED IN ACCORDANCE WITH THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, OFFICE OF GEOTECHNICAL ENGINEERING, SPECIFICATIONS FOR GEOTECHNICAL EXPLORATIONS, DATED JANUARY 2016.

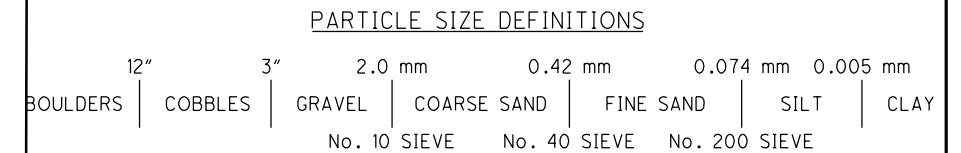
AVAILABLE INFORMATION

THE AVAILABLE SOIL AND BEDROCK INFORMATION THAT CAN BE CONVENIENTLY SHOWN ON THE GEOTECHNICAL EXPLORATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL EXPLORATIONS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECTS OF THE PROJECT. COPIES OF THIS DATA, IF ANY, MAY BE INSPECTED IN THE DISTRICT DEPUTY DIRECTOR'S OFFICE OF GEOTECHNICAL ENGINEERING AT 1980 WEST BROAD STREET.

DESCRIPTION	ODOT CLASS	CLASSIFIED MECH./VISUAL
GRAVEL AND/OR STONE FRAGMENTS	A-1-a	4 5
GRAVEL AND/OR STONE FRAGMENTS WITH SAND	A-1-b	5 1
GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT	A-2-4	5 3
GRAVEL AND/OR STONE FRAGMENTS WITH SAND, SILT AND CLAY	A-2-6	8 12
COARSE AND FINE SAND	A-3a	2 2
SANDY SILT	A-4a	21 32
SILT	A-4b	21 29
SILT AND CLAY	A-6a	35 39
SILTY CLAY	A-6b	56 50
CLAY	A-7-6	14 10
TOTAL		171 183
SOD AND/OR TOPSOIL = X = APPROXIMATE THICKNESS	VISUAL	
PAVEMENT OR BASE = X = APPROXIMATE THICKNESS	VISUAL	
BORING LOCATION - PLAN VIEW		
HISTORIC BORING LOCATION - PLAN VIEW		
DRIVE SAMPLE AND/OR ROCK CORE BORING PLOTTED TO VERTICAL SCALE ONLY. HORIZONTAL BAR INDICATES A CHANGE IN STRATIGRAPHY.		
N	INDICATES STANDARD PENETRATION RESISTANCE.	
N ₆₀	INDICATES STANDARD PENETRATION RESISTANCE NORMALIZED TO 60% DRILL ROD ENERGY RATIO.	
X/Y/D"	NUMBER OF BLOWS FOR STANDARD PENETRATION TEST (SPT): X= NUMBER OF BLOWS FOR 6 INCHES (UNCORRECTED). Y/D"= NUMBER OF BLOWS (UNCORRECTED) FOR D" OF PENETRATION AT REFUSAL.	
NR	NO SAMPLE RECOVERY	
WS	WASH SAMPLE	
WC	INDICATES WATER CONTENT IN PERCENT.	
NP	INDICATES A NON-PLASTIC SAMPLE.	
SS	INDICATES A SPLIT SPOON SAMPLE, STANDARD PENETRATION TEST.	
ST	INDICATES A SHELBY TUBE SAMPLE.	
W	INDICATES FREE WATER.	
	INDICATES A PLASTIC SOIL WITH WATER CONTENT GREATER THAN LIQUID LIMIT MINUS THREE.	
	INDICATES A NON-PLASTIC SOIL WITH MOISTURE CONTENT GREATER THAN 19% WITH A WET APPEARANCE.	



LOCATION MAP
SCALE IN MILES



LEGEND (CONTINUED)

HISTORIC BORING DESCRIPTIONS	ODOT CLASS	CLASSIFIED MECH./VISUAL
GRAVEL AND/OR STONE FRAGMENTS WITH SAND	A-1-b	3 -
GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT	A-2-4	4 -
FINE SAND	A-3	1 -
COARSE AND FINE SAND	A-3a	3 -
SANDY SILT	A-4a	19 -
SILT	A-4b	10 -
SILT AND CLAY	A-6a	12 -
SILTY CLAY	A-6b	4 -
CLAY	A-7-6	5 -
TOTAL		61 0

RECON. - EK & RL 04/25/16 & 05/02/16
 DRILLING - RL & SB 05/10/16 TO 06/14/16
 DRAWN - MJ 06/16-08/16, 05/17
 REVIEWED - RL & EK 08/16, 05/17

V:\1736\active\173620049\design\94741\geotechnical\sheet\94741\IC001.dgn Sheet 5/15/2017 9:54:45 AM mjenning

DESIGN AGENCY
Stantec
 11887 Lebanon Road
 Cincinnati, Ohio 45241
 (513) 842-9200

PID NO.
94741

SOIL PROFILE

HAM-71-6.86

1 / 44

INDEX OF SHEETS							
LOCATION FROM STA. TO STA.		PLAN VIEW SHEET	PROFILE SHEET	CROSS SECTION SHEET	CUT MAX	FILL MAX	STRUCTURES INCLUDED
							BRIDGE NO. SFN
HAM-71-6.86							
398+00	413+00	14	14	-	2 FT.	-	
413+00	428+00	15	15	28/29/30/31	2 FT.	-	
428+00	443+50	16	16	32	2 FT.	-	
443+50	458+00	17	17	33	2 FT.	-	
458+00	463+00	18	18	34	2 FT.	-	
413+00	414+00	19	19	-	-	-	HAM-071-0868
415+60.60	417+47.44	20	20	-	-	-	SOIL NAIL WALL
421+30.74	424+94.33	21	21	-	-	-	NOISE WALL
424+94.33	430+32.50	22	22	-	-	-	NOISE WALL
430+32.50	434+96.63	23	23	-	-	-	NOISE WALL
434+96.63	440+38.26	24	24	-	-	-	NOISE WALL
RIDGE RD.							
21+00	31+00	25	25	-	2 FT.	-	
RAMP N							
405+00	414+47.72	26	26	-	2 FT.	2 FT.	
RAMP P							
407+92.33	418+00	27	27	-	1 FT.	5 FT.	
BORING LOGS, SHEETS 35-44							

SUMMARY OF PAVEMENT CORES		
BORING NO.	ASPHALT (FT.)	GRANULAR BASE (FT.)
X-001-1-15	0.4	0.9
X-034-1-15	0.3	0.9

V:\1736\active\173620049\design\9474\geotechnical\sheet\9474\IC003.dgn 5/15/2017 10:18:12 AM mjennings

SUMMARY OF SOIL TEST DATA
INTERSTATE 71 (CONTINUED)

SUMMARY OF SOIL TEST DATA
INTERSTATE 71 (CONTINUED)

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	N60	% REC	HP tsf	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	WC	ODOT CLASS (GI)	ppm SO4
B-020-0-15 STA. 425+25, 74' RT. LATITUDE = 39.170313698 LONGITUDE = -84.417177660	02.50-04.00		SS-1	5	39	1.00	27	7	20	29	17	24	13	11	14	A-6a (3)	
	05.00-06.50		SS-2	20	67	4.50	27	7	20	29	17	24	13	11	15	A-6a (3)	
	07.50-09.00		SS-3	11	61	3.00	14	3	15	44	24	30	17	13	19	A-6a (8)	
	10.00-11.50		SS-4	6	67	2.00	14	3	15	44	24	30	17	13	21	A-6a (8)	
	12.50-14.00		SS-5	6	78	1.00				SAME AS SS-4				21	A-6a (VISUAL)		
	15.00-16.50		SS-6	8	39	-				GRAVEL AND STONE FRAGMENTS				20	A-1-a (VISUAL)		
	17.50-19.00		SS-7	11	39	-				GRAVEL AND STONE FRAGMENTS				11	A-1-a (VISUAL)		
	20.00-21.50		SS-8	20	61	4.50				SAME AS SS-9				8	A-4a (VISUAL)		
	22.50-24.00		SS-9	5	33	3.00	30	8	13	31	18	23	14	9	14	A-4a (3)	
	25.00-26.50		SS-10	20	89	2.50	30	8	13	31	18	23	14	9	16	A-4a (3)	
B-021-0-15 STA. 426+46, 59' RT. LATITUDE = 39.170409881 LONGITUDE = -84.416781348	01.50-03.00		SS-1	20	50	4.00				SAME AS SS-2				11	A-4a (VISUAL)		
	03.00-04.50		SS-2	24	72	3.50	18	7	21	43	11	21	18	3	10	A-4a (4)	
	04.50-06.00		SS-3	37	78	3.25	24	6	15	36	19	24	15	9	11	A-4a (4)	
	06.00-07.50		SS-4	34	78	3.75				SAME AS SS-3				11	A-4a (VISUAL)	<100	
	07.50-09.00		SS-5	27	100	4.50				SAME AS SS-3				14	A-4a (VISUAL)		
	10.00-11.50		SS-6	16	100	3.00				SAME AS SS-3				16	A-4a (VISUAL)		
	12.50-14.00		SS-7	4	56	1.25	20	7	8	35	30	40	16	24	19	A-6b (12)	
	15.00-16.50		SS-8	9	39	1.25	20	7	8	35	30	40	16	24	20	A-6b (12)	
	17.50-19.00		SS-9	4	28	1.50				SAME AS SS-8				18	A-6b (VISUAL)		
	20.00-21.50		SS-10	22	83	-	64	14	10	8	4	16	14	2	6	A-1-a (0)	
	22.50-24.00		SS-11	15	56	-	64	14	10	8	4	16	14	2	7	A-1-a (0)	
	25.00-26.50		SS-12	4	56	0.25	-	-	-	-	-	-	-	-	14	A-4b (VISUAL)	
B-022-0-15 STA. 428+55, 61' RT. LATITUDE = 39.170470026 LONGITUDE = -84.416065222	01.50-03.00		SS-1	8	67	1.75				SAME AS SS-2				18	A-7-6 (VISUAL)	<100	
	03.00-04.50		SS-2	12	78	2.75	5	5	11	42	37	41	15	26	17	A-7-6 (15)	
	04.50-06.00		SS-3	16	50	2.75	10	4	13	42	31	27	16	11	23	A-6a (8)	
	06.00-07.50		SS-4	20	44	3.00	10	4	13	42	31	27	16	11	25	A-6a (8)	
	07.50-09.00		SS-5	14	100	3.50				SAME AS SS-7				26	A-6b (VISUAL)		
	10.00-11.50		SS-6	14	89	3.50				SAME AS SS-7				25	A-6b (VISUAL)		
	12.50-14.00		SS-7	12	100	3.00	15	2	3	34	46	40	19	21	26	A-6b (12)	
	15.00-16.50		SS-8	9	83	2.75				SAME AS SS-7				24	A-6b (VISUAL)		
	17.50-19.00		SS-9	8	100	2.00				SAME AS SS-10				24	A-4b (VISUAL)		
	20.00-21.50		SS-10	4	100	1.25	0	0	0	59	41	24	15	9	23	A-4b (8)	
	22.50-24.00		SS-11	9	100	1.50				SAME AS SS-10				23	A-4b (VISUAL)		
	25.00-26.50		SS-12	11	100	1.00				SAME AS SS-10				22	A-4b (VISUAL)		
B-024-0-15 STA. 430+49, 76' RT. LATITUDE = 39.170455846 LONGITUDE = -84.415387932	01.50-03.00		SS-1	14	72	4.00				SAME AS SS-2				25	A-6b (VISUAL)	347	
	03.00-04.50		SS-2	15	89	2.00	15	1	1	38	45	40	20	20	26	A-6b (12)	
	04.50-06.00		SS-3	25	94	3.00	0	0	1	49	50	38	19	19	24	A-6b (12)	
	06.00-07.50		SS-4	29	89	4.50	0	0	1	49	50	38	19	19	22	A-6b (12)	
	07.50-09.00		SS-5	25	94	4.00				SAME AS SS-6				22	A-6a (VISUAL)		
	10.00-11.50		SS-6	12	89	3.00	0	0	0	57	43	29	17	12	23	A-6a (9)	
	12.50-14.00		SS-7	15	78	4.50	0	0	0	57	43	29	17	12	23	A-6a (9)	
	15.00-16.50		SS-8	14	100	3.50				SAME AS SS-7				24	A-6a (VISUAL)		
	17.50-19.00		SS-9	14	100	3.00				SAME AS SS-10				21	A-6a (VISUAL)		
	20.00-21.50		SS-10	8	67	1.50	0	0	0	59	41	27	16	11	24	A-6a (8)	
	22.50-24.00		SS-11	3	94	0.50	0	0	0	59	41	27	16	11	22	A-6a (8)	
	25.00-26.50		SS-12	5	100	2.00				SAME AS SS-11				24	A-6a (VISUAL)		
B-025-0-15 STA. 432+49, 74' RT. LATITUDE = 39.170355837 LONGITUDE = -84.414681868	01.50-03.00		SS-1	3	67	2.00				SAME AS SS-2				23	A-6b (VISUAL)	<100	
	03.00-04.50		SS-2	11	72	2.50	19	3	9	39	30	35	15	20	19	A-6b (11)	
	04.50-06.00		SS-3	15	72	3.00	24	3	8	27	38	48	15	33	24	A-7-6 (15)	
	06.00-07.50		SS-4	17	78	3.00	24	3	8	27	38	48	15	33	24	A-7-6 (15)	
	07.50-09.00		SS-5	12	89	2.50				SAME AS SS-4				22	A-7-6 (VISUAL)		
	10.00-11.50		SS-6	11	78	3.00				SAME AS SS-4				24	A-7-6 (VISUAL)		
	12.50-14.00		SS-7	6	72	2.50				SAME AS SS-9				29	A-6a (VISUAL)		
	15.00-16.50		SS-8	12	94	2.00				SAME AS SS-9				24	A-6a (VISUAL)		
	17.50-19.00		SS-9	18	94	3.00	0	0	2	57	41	30	16	14	21	A-6a (10)	
	20.00-21.50		SS-10	12	94	4.50	0	0	2	57	41	30	16	14	20	A-6a (10)	
	22.50-24.00		SS-11	12	72	3.50				SAME AS SS-10				21	A-6a (VISUAL)		
	25.00-26.50		SS-12	12	72	1.50				SAME AS SS-10				20	A-6a (VISUAL)		

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	N60	% REC	HP tsf	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	WC	ODOT CLASS (GI)	ppm SO4
B-027-0-15 STA. 435+25, 66' RT. LATITUDE = 39.170368643 LONGITUDE = -84.414001908	01.50-03.00		SS-1	8	33	-	-	-	-	-	-	-	-	-	8	A-2-4 (VISUAL)	
	03.00-04.50		SS-2	15	78	3.75				SAME AS SS-3				20	A-7-6 (VISUAL)	376	
	04.50-06.00		SS-3	20	89	3.25	8	3	3	39	47	43	18	25	24	A-7-6 (15)	
	06.00-07.50		SS-4	25	94	3.25	0	0	1	56	43	35	19	16	22	A-6b (10)	
	07.50-09.00		SS-5	23	83	4.00				SAME AS SS-4				22	A-6b (VISUAL)		
	10.00-11.50		SS-6	15	83	3.50				SAME AS SS-4				18	A-6b (VISUAL)		
	12.50-14.00		SS-7	5	28	-	-	-	-	-	-	-	-	-	24	A-3a (VISUAL)	
	15.00-16.50		SS-8	20	78	4.00	1	2	2	68	27	24	19	5	24	A-4b (8)	
	17.50-19.00		SS-9	42	33	-	1	2	2	68	27	24	19	5	24	A-4b (8)	
	20.00-21.50		SS-10	3	100	0.25				SAME AS SS-11				21	A-6a (VISUAL)		
	22.50-24.00		SS-11	5	100	0.25	0	1	3	50	46	29	16	13	24	A-6a (9)	
	25.00-26.50		SS-12	6	100	0.25				SAME AS SS-11				22	A-6a (VISUAL)		
B-028-0-15 STA. 437+01, 61' RT. LATITUDE = 39.170547121 LONGITUDE = -84.413385779	01.50-03.00		SS-1	5	89	2.50	23	8	7	31	31	42	14	28	28	A-7-6 (13)	
	03.00-04.50		SS-2	15	28	1.50				SAME AS SS-1				22	A-7-6 (VISUAL)	<100	
	04.50-06.00		SS-3	14	78	-	68	8	3	10	11	33	15	18	10	A-2-6 (0)	
	06.00-07.50		SS-4	23	6	-	68	8	3	10	11	33	15	18	8	A-2-6 (0)	
	07.50-09.00		SS-5	9	67	-				SAME AS SS-6				17	A-6b (VISUAL)		
	09.00-10.50		SS-6	35	67	2.50	49	7	3	20	21	34	16	18	14	A-6b (3)	
	10.50-12.00		SS-7	20	67	2.50	49	7	3	20	21	34	16	18	14	A-6b (3)	
	12.50-14.00		SS-8	12	6	-				SAME AS SS-7				12	A-6b (VISUAL)		
	15.00-16.50		SS-9	20	0	-				SAME AS SS-10				-	A-6a (VISUAL)		
	17.50-19.00		SS-10	18	100	3.00	0	0	1	57	42	32	18	14	19	A-6a (10)	
	20.00-21.50		SS-11	12	100	0.50				SAME AS SS-12				19	A-4a (VISUAL)		
	22.50-24.00		SS-12	9	100	1.50	9	6	16	46	23	22	15	7	18	A-4a (7)	
25.00-26.50		SS-13	14	100	2.50				SAME AS SS-12				23	A-4a (VISUAL)			

V:\1736\active\173620049\design\9474\geotechnical\sheets\94741C004.dgn Sheet 5/15/2017 10:13:15 AM m.jennings

SUMMARY OF SOIL TEST DATA
INTERSTATE 71 (CONTINUED)

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	% N60	HP REC	% tsf	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	WC	ODOT CLASS (GI)	ppm SO4
B-030-1-15 STA. 441+79, 139' RT. LATITUDE = 39.170372845 LONGITUDE = -84.411692208	02.50-04.00	05.00-06.50	SS-1 SS-2 ST-1 SS-3 SS-4 SS-5 SS-6	5 5 - 11 - 38 -	56 89 100 28 82 50 67	0.25 0.25 0.75 0.50 - 4.50 -	1 1 - - - - -	3 3 - - - - -	15 15 - - - - -	51 51 - - - - -	30 30 - - - - -	34 34 - - - - -	18 18 - - - - -	16 16 - - - - -	29 22 14 14 7 16 6	A-6b (10) A-6b (10) A-6b (VISUAL) A-6b (VISUAL) A-1-a (VISUAL) A-6a (VISUAL) A-6a (VISUAL)	
B-030-2-15 STA. 441+84, 139' RT. LATITUDE = 39.170373133 LONGITUDE = -84.411674576	20.00-21.50	25.00-26.50	SS-7 SS-8 SS-9 ST-2 SS-10	34 21 27 - -	44 100 78 0 0	4.50 4.50 4.50 - -	16 16 13 - -	10 10 11 - -	11 11 17 - -	31 31 37 - -	32 32 22 - -	25 25 21 - -	13 13 13 - -	12 12 8 - -	18 10 10 A-2-6 (VISUAL) A-2-6 (VISUAL)	A-6a (6) A-6a (6) A-4a (5) A-2-6 (VISUAL) A-2-6 (VISUAL)	
B-031-0-15 STA. 445+98, 61' RT. LATITUDE = 39.170621389 LONGITUDE = -84.410221950	01.50-03.00	03.00-04.50	SS-1 SS-2 SS-3 SS-4	11 11 15 16	100 39 44 72	4.50 4.50 1.00 2.00	19 16 16 -	4 4 4 -	5 3 3 -	34 36 36 -	38 41 40 -	36 40 40 -	15 17 17 -	21 23 23 -	16 22 18 26	A-6b (12) A-6b (13) A-6b (13) A-6b (VISUAL)	<100
B-032-0-15 STA. 449+89, 60' RT. LATITUDE = 39.170655972 LONGITUDE = -84.408841965	01.50-03.00	03.00-04.50	SS-1 SS-2 SS-3 SS-4	27 18 18 27	33 44 39 28	3.00 3.00 3.00 -	- 16 43 43	- 7 7 7	- 5 3 3	- 32 19 19	40 41 28 -	41 17 18 -	24 22 22 -	15 15 18 7	18 15 18 A-6b (6)	A-7-6 (VISUAL) A-7-6 (13) A-6b (6) A-6b (6)	<100
B-033-0-15 STA. 454+30, 60' RT. LATITUDE = 39.170693221 LONGITUDE = -84.407288855	01.50-03.00	03.00-04.50	SS-1 SS-2 SS-3 SS-4	11 23 23 27	28 22 22 72	- - - -	- 61 61 61	- 7 7 7	- 4 4 4	- 14 14 14	- 14 14 14	33 33 33 33	16 16 16 16	17 17 17 17	15 2 9 15	A-2-6 (VISUAL) A-2-6 (1) A-2-6 (1) A-2-6 (1)	2164
B-033-1-15 STA. 454+04, 158' RT. LATITUDE = 39.170422674 LONGITUDE = -84.407369477	00.00-01.50	02.50-04.00	SS-1 SS-2 SS-3 SS-4	3 17 14 17	72 89 61 67	2.50 1.50 2.00 3.00	- 1 1 1	- 6 6 2	- 17 17 6	- 28 28 70	48 48 21	50 50 26	14 14 19	7 7 7	24 22 22 20	A-7-6 (VISUAL) A-7-6 (18) A-7-6 (18) A-4b (8)	
B-034-0-15 STA. 458+29, 61' RT. LATITUDE = 39.170722798 LONGITUDE = -84.405881654	01.50-03.00	03.00-04.50	SS-1 SS-2 SS-3 SS-4	7 14 14 11	67 78 89 89	- - - -	- 38 26 -	- 9 10 -	- 5 5 -	- 26 25 -	22 34	35 43	17 18	18 25	17 13 25 11	A-6b (VISUAL) A-6b (5) A-7-6 (11) A-7-6 (VISUAL)	653

SUMMARY OF SOIL TEST DATA
INTERSTATE 71 (CONTINUED)

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	% N60	HP REC	% tsf	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	WC	ODOT CLASS (GI)	ppm SO4
B-035-0-15 STA. 462+00, 61' RT. LATITUDE = 39.170753231 LONGITUDE = -84.404570805	01.50-03.00	03.00-04.50	SS-1 SS-2 SS-3 SS-4 SS-5 ST-1 SS-6 SS-7 SS-8 ST-2 SS-9 SS-10 SS-11 SS-12	9 9 19 15 16 - 22 28 15 - 35 - 56 28	50 56 67 89 17 - 33 44 33 0 72 100 89 50	2.25 2.25 3.50 3.25 - - - - - - - - - -	- 13 13 39 - - 48 48 - - - 52 - -	- 11 11 9 - - 7 7 - - - 11 - -	- 6 6 5 - - 3 3 - - - 6 -	- 27 27 22 - - 18 18 - - - 11 -	43 43 25 - - 24 24 - - - 20 -	45 45 36 - - 34 34 - - - 32 -	17 17 16 - - 16 16 - - - 15 -	28 28 20 - - 18 18 - - - 17 -	9 23 21 17 13 10 12 14 7 2 9 23	A-7-6 (VISUAL) A-7-6 (15) A-7-6 (15) A-6b (6) A-6b (VISUAL) A-6b (VISUAL) A-6b (4) A-6b (4) A-6b (VISUAL) A-2-6 (VISUAL) A-2-6 (VISUAL) A-2-6 (VISUAL) A-2-6 (1) A-2-6 (VISUAL)	<100
B-035-1-15 STA. 461+86, 184' RT. LATITUDE = 39.170419154 LONGITUDE = -84.404598630	00.00-01.50	02.50-04.00	SS-1 SS-2 SS-3 SS-4 ST-1 SS-5 SS-6 SS-7 SS-8 ST-2 SS-9 SS-10 SS-11	3 18 23 20 - 40 79 66 40 - 46 18 18	39 89 78 89 100 89 67 61 78 75 94 78 67	1.50 4.00 3.50 4.50 2.00 3.00 2.50 4.00 4.00 2.00 4.00 4.50 3.00	- 1 1 - - 38 38 47 47 - - 0 0 0	- 2 2 - - 12 12 18 18 - - 0 0 0	- 8 8 8 4.50 2.00 4.00 4.00 4.00 2.00 4.00 4.50 3.00	- 37 37 37 22 22 14 14 43 14 43 54 54	52 52 52 15 15 4 4 5 5 - - - - -	17 17 17 10 10 NP NP NP NP NP 17 17 17	37 37 37 10 10 NP NP NP NP NP 13 13 13	25 21 18 20 21 10 11 14 10 21 27 17	A-7-6 (VISUAL) A-7-6 (19) A-7-6 (19) A-4a (VISUAL) A-4a (VISUAL) A-4a (0) A-4a (0) A-1-b (0) A-1-b (0) A-6a (VISUAL) A-6a (VISUAL) A-6a (9) A-6a (9)		
SUMMARY OF SOIL TEST DATA INTERSTATE 71 HISTORIC BORINGS																	
EXPLORATION NO., STATION & OFFSET	FROM	TO	% GR	% CS	% FS	% SILT	% CLAY	LL	PI	WC	SHTL. CLASS						
B-001-0-65 (KENNEDY) STA. 19+09, 40' LT. (KENNEDY) STA. 416+15, 133' RT. (I-71)	05.00-06.00	10.00-11.00	28	9	11	25	27	30	11	16	A-6a						
	17.50-18.50	20.00-21.00	0	0	0	30	70	43	22	23	A-7-6						
	22.50-23.50	25.00-26.00	0	0	0	53	47	29	11	25	A-6a						
	27.50-28.50	30.00-31.00	0	0	1	55	44	30	9	22	A-4b						
	32.50-33.50	35.00-36.00	27	25	13	25	10	NP	NP	13	A-2-4						
	37.50-38.50	40.00-41.00	0	71	13	-16-	NP	NP	NP	13	A-1-b						
	45.00-46.00	50.00-51.00	0	68	27	-5-	NP	NP	NP	19	A-1-b						
	55.00-56.00	60.00-60.50	32	3	15	31	19	19	3	10	A-4a						
			36	19	22	10	13	-	-	7	A-1-b						
B-446-0-64 STA. 446+00, 50' RT.	00.20-05.00	05.00-09.00	0	5	11	44	40	35	16	29	A-6b						
	09.00-12.00	12.00-15.00	24	7	10	36	23	25	6	26	A-4a						
			34	1	1	37	27	23	6	16	A-4a						
			0	10	15	42	33	32	13	19	A-6a						

SOIL PROFILE
SUMMARY OF SOIL TEST DATA

HAM-71-6.86



V:\1736\active\173620049\design\9474\geotechnical\sheet\947411C005.dgn Sheet 5/4/2017 7:39:49 AM mjenning

SUMMARY OF SOIL TEST DATA
RIDGE AVENUE

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	% N60	% REC	HP tsf	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	ODOT CLASS (GI)	ppm SO4	
B-003-0-15 STA. 23+81, 23' RT. LATITUDE = 39.165730034 LONGITUDE = -84.422642794	01.50-03.00	03.00-04.50	SS-1 SS-2 SS-3 SS-4	5 17 63 11	39 67 67 61	3.00 4.00 3.50 3.00										17 26 11 12	A-6b (VISUAL) A-6b (II) A-6b (7) A-6b (7)	<100
B-004-0-15 STA. 27+10, 27' RT. LATITUDE = 39.166646555 LONGITUDE = -84.422662299	01.50-03.00	03.00-04.50	SS-1 SS-2 SS-3 SS-4	14 28 31 28	89 61 89 67	4.00 4.50 4.00 4.00	0 0 10 0	0 0 0 0	0 0 1 0	39 39 42 25	61 61 47 26	36 36 32 34	18 18 17 14	18 18 15 20	22 23 21 24	A-6b (II) A-6b (II) A-6a (10) A-6a (VISUAL)	<100	

SUMMARY OF SOIL TEST DATA
RIDGE AVENUE HISTORIC BORINGS

EXPLORATION NO., STATION & OFFSET	FROM	TO	% GR	% CS	% FS	% SILT	% CLAY	LL	PI	% WC	SHTL. CLASS	
B-001-0-65 (RIDGE) STA. 28+27, 27' LT.	05.00-06.00	10.00-11.00	0	2	10	37	51	51	32	20	A-7-6	
	15.00-16.00	20.00-21.00	21	13	16	23	27	35	15	15	A-6a	
	25.00-26.00	30.00-31.00	25	8	14	30	23	25	12	10	A-6a	
	35.00-36.00	40.00-41.00	21	9	17	32	21	22	7	11	A-4a	
	42.50-43.50	45.00-46.00	0	2	2	41	55	35	15	23	A-6a	
	47.50-48.50	50.00-51.00	17	5	13	38	27	22	7	13	A-4a	
	52.50-53.50	55.00-56.00	0	6	13	59	22	NP	NP	15	A-4b	
	57.50-58.50	60.00-61.00	11	4	17	44	24	19	5	11	A-4a	
	65.00-65.80	70.00-71.00	0	1	2	72	25	20	5	22	A-4b	
	75.00-76.00	80.00-81.00	0	1	4	72	23	NP	NP	22	A-4b	
	85.00-86.00	90.00-90.60	0	1	9	78	12	NP	NP	17	A-4b	
			0	2	8	70	20	NP	NP	20	A-4b	
			0	8	23	43	26	NP	NP	21	A-4a	
			8	1	2	66	23	NP	NP	16	A-4b	
			8	2	4	47	39	25	12	23	A-6a	
			16	16	16	40	12	NP	NP	16	A-4a	
			0	0	36	55	9	NP	NP	20	A-4b	
			0	1	64	26	9	NP	NP	13	A-3a	
			21	8	21	26	24	23	10	7	A-4a	
			BROWN SAND AND STONE FRAGMENTS			5	VISUAL					
			GRAY SANDY SILTY CLAY & GRAVEL			23	11	9	VISUAL			
			32	7	18	24	19	22	11	11	A-6a	
			37	8	11	24	20	22	9	12	A-4a	
B-008-0-65 STA. 24+88, 47' LT. (RIDGE) STA. 20+04, 50' RT. (I & O RR OPERATED BY NORFOLK & SOUTHERN)	05.00-06.00	10.00-11.00	17	7	15	30	31	31	16	18	A-6b	
	12.50-13.50	15.00-16.00	0	4	3	33	60	41	23	23	A-7-6	
	20.00-21.00	22.50-23.50	0	6	9	41	44	29	14	16	A-6a	
	25.00-26.00	27.50-28.50	0	6	13	40	41	23	8	18	A-4a	
	30.00-31.00	35.00-36.00	0	8	26	35	31	22	9	13	A-4a	
	40.00-41.00	45.00-46.00	20	10	20	28	22	20	6	9	A-4a	
			GRAY SILTY SANDY GRAVEL			25	10	15	VISUAL			
			0	7	19	34	40	22	7	10	A-4a	
			7	6	14	37	36	26	13	16	A-6a	
			29	6	12	32	21	21	6	19	A-4a	
			0	3	67	20	10	NP	NP	5	A-3a	
			BROWN SAND			12	VISUAL					
			0	23	63	5	9	NP	NP	17	A-3a	
			0	41	53	-6-	NP	NP	18	A-3		

SUMMARY OF SOIL TEST DATA
RAMP N

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	% N60	% REC	HP tsf	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	ODOT CLASS (GI)	ppm SO4	
B-005-0-15 STA. 407+92, 2' RT. LATITUDE = 39.167730601 LONGITUDE = -84.422039603	00.00-01.50	02.50-04.00	SS-1 SS-2 SS-3 SS-4 SS-5	11 9 2 6 9	72 78 28 78 72	2.50 1.50 2.00 0.50 -	25	12	16	28	19	28	14	14	14	A-6a (4) A-6a (VISUAL) A-6a (VISUAL) A-3a (0) A-3a (0)	624	
B-006-0-15 STA. 411+01, CL LATITUDE = 39.167973117 LONGITUDE = -84.421034855	00.00-01.50	02.50-04.00	SS-1 SS-2 SS-3 SS-4 SS-5	9 14 8 3 3	61 56 72 78 72	4.50 4.00 2.00 1.00 1.50										14 16 25 29 33	A-6b (VISUAL) A-6b (VISUAL) A-6b (8) A-6b (8) A-6a (9)	2338
B-007-0-15 STA. 413+50, CL LATITUDE = 39.167698315 LONGITUDE = -84.420228683	00.00-01.50	02.50-04.00	SS-1 SS-2 SS-3 SS-4 SS-5	6 20 14 20 8	61 28 61 67 39	4.00 3.50 -										14 21 15 17 17	A-6a (VISUAL) A-6a (VISUAL) A-6a (7) A-6b (6) A-6a (VISUAL)	100

SUMMARY OF SOIL TEST DATA
RAMP N HISTORIC BORINGS

EXPLORATION NO., STATION & OFFSET	FROM	TO	% GR	% CS	% FS	% SILT	% CLAY	LL	PI	% WC	SHTL. CLASS
B-181-0-66 STA. 409+93, 50' RT. (CONST. RAMP N)	00.40-03.00	03.00-06.00	0	1	5	68	26	31	11	35	A-6a
	06.00-12.00	12.00-17.00	0	5	18	57	20	42	13	35	A-7-6
	17.00-20.00		35	14	23	21	7	NP	NP	20	A-2-4
			42	10	21	19	8	NP	NP	27	A-2-4
			15	5	14	45	21	NP	NP	13	A-4a

SUMMARY OF SOIL TEST DATA
RAMP P

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	% N60	% REC	HP tsf	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	ODOT CLASS (GI)	ppm SO4	
B-008-0-15 STA. 408+55, 56' RT. LATITUDE = 39.167903500 LONGITUDE = -84.419973184	00.00-01.50	02.50-04.00	SS-1 SS-2 SS-3	8 20 22	33 78 72	1.50 3.00 4.50										17 13 12	A-6a (VISUAL) A-6a (5) A-6a (VISUAL)	838
B-009-0-15 STA. 410+00, CL LATITUDE = 39.167930011 LONGITUDE = -84.420519522	00.00-01.50	02.50-04.00	SS-1 SS-2 SS-3 SS-4 SS-5	22 8 5 6 8	67 33 67 72 78	4.50 2.00 3.00 1.50 1.00										12 24 25 25 26	A-6b (VISUAL) A-6b (VISUAL) A-6b (10) A-6b (10) A-6a (5)	<100 <100
B-010-0-15 STA. 412+50, CL LATITUDE = 39.168497877 LONGITUDE = -84.420806363	00.00-01.50	02.50-04.00	SS-1 SS-2 SS-3 SS-4 SS-5	6 11 6 3 17	44 67 28 44 67	2.50 3.50 2.50 1.50 2.00										12 13 19 30 21	A-6a (VISUAL) A-6a (1) A-6a (VISUAL) A-6a (VISUAL) A-6a (10)	<100
B-014-0-15 STA. 414+87, 26' LT. LATITUDE = 39.169015596 LONGITUDE = -84.420288354	01.50-03.00	03.00-04.50	SS-1 SS-2 SS-3 SS-4	6 26 31 28	72 56 89 89	3.00 4.50 3.00 4.50	39	7	14	21	19	30	14	16	15	A-6b (3) A-6b (3) A-6b (VISUAL) A-6a (5)	<100	

SUMMARY OF SOIL TEST DATA
RAMP P HISTORIC BORINGS

EXPLORATION NO., STATION & OFFSET	FROM	TO	% GR	% CS	% FS	% SILT	% CLAY	LL	PI	% WC	SHTL. CLASS
B-179-0-66 STA. 408+42, 3' LT. (CONSTRUCTED RAMP P)	00.40-04.00	04.00-12.00	0	0	2	68	30	32	10	23	A-4b
	12.00-15.00		26	7	11	39	17	32	13	23	A-6a
			17	8	19	33	23	21	8	11	A-4a

SOIL PROFILE
SUMMARY OF SOIL TEST DATA

HAM-71-6.86



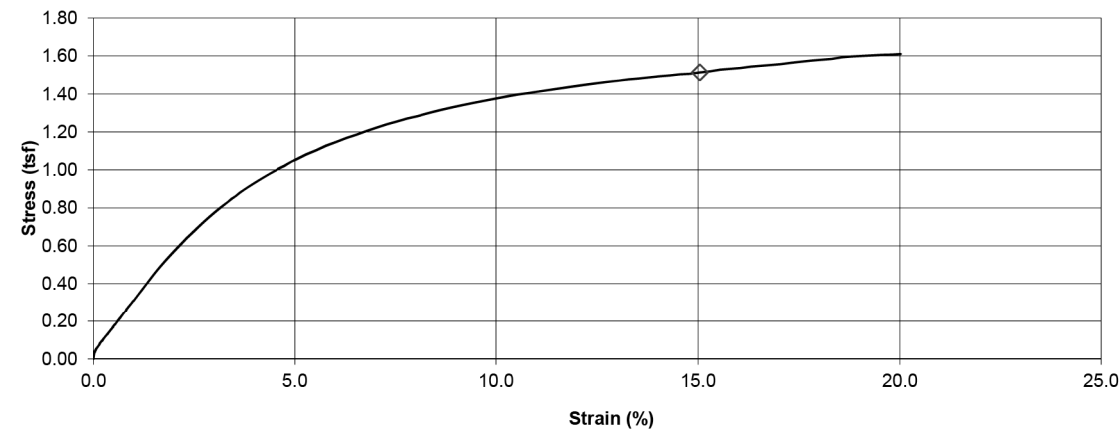
**Unconfined Compressive Strength
of Cohesive Soil**
ASTM D 2166

Project Name	HAM-71-6.86			Project Number	173620049	
Source	B-015-0-15, 5.0'-7.0'			Lab ID	384	
Visual Description	Silt with Sand (ML), gray, moist, firm					
Classification	Silt and Clay, A-6a (6)			Recovered	0.8'	
Atterberg Limits	LL	26	PL	14	PI	12
Gradation	%GR	15	%CS	11	%FS	13
	%SI	33	%CL	28		
				Test Interval	5.0' - 5.5'	
				Date Extruded	06/06/2016	
				Date Tested	07/15/2016	
Initial Wet Density (pcf)	143.9			Initial MC Taken	Before Test, From Trimmings	
Initial Moisture Content (%)	11.4					
Initial Dry Density (pcf)	129.1					
At Test Moisture Content (%)	10.9			At Test MC Taken	After Test, From Center of Specimen	
At Test Dry Density (pcf)	129.7					
Specific Gravity	N/A					
Degree of Saturation (%)	N/A			Unconfined Compressive Strength (tsf)	1.51	
Average Height (in)	5.995			Undrained Shear Strength (tsf)	0.76	
Average Diameter (in)	2.870			Strain at Maximum Stress (%)	15.0	
Height to Diameter Ratio	2.1			Strain rate to failure (% / min.)	1.00	

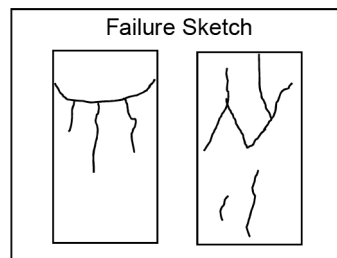
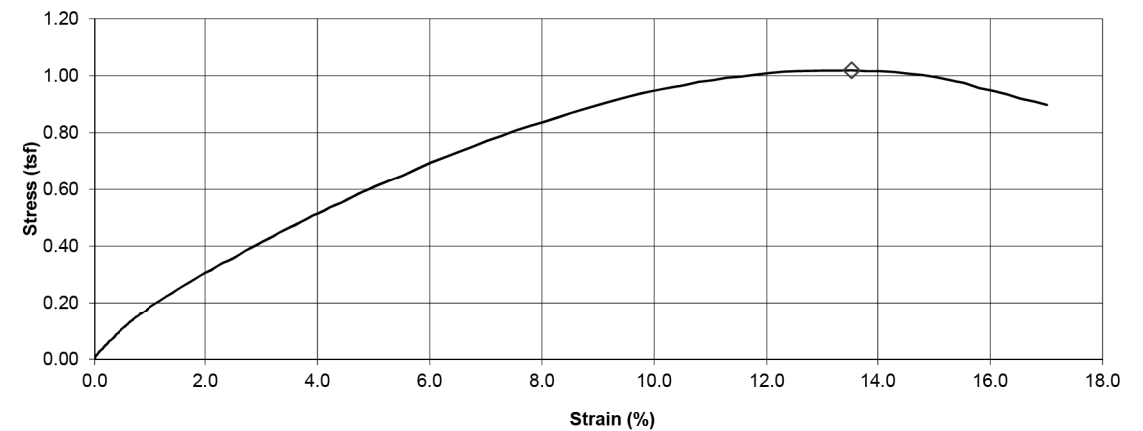
**Unconfined Compressive Strength
of Cohesive Soil**
ASTM D 2166

Project Name	HAM-71-6.86			Project Number	173620049	
Source	B-015-1-15, 5.0'-7.0'			Lab ID	386B	
Visual Description	Silt with Sand (ML), gray brown, moist, firm					
Classification	Sandy Silt, A-4a (1)			Recovered	1.1'	
Atterberg Limits	LL	24	PL	14	PI	10
Gradation	%GR	28	%CS	9	%FS	24
	%SI	23	%CL	16		
				Test Interval	5.5' - 6.0'	
				Date Extruded	06/06/2016	
				Date Tested	06/17/2016	
Initial Wet Density (pcf)	134.1			Initial MC Taken	N/A	
Initial Moisture Content (%)	N/A					
Initial Dry Density (pcf)	N/A					
At Test Moisture Content (%)	16.2			At Test MC Taken	After Test, From Center of Specimen	
At Test Dry Density (pcf)	115.5					
Specific Gravity	N/A					
Degree of Saturation (%)	N/A			Unconfined Compressive Strength (tsf)	1.02	
Average Height (in)	6.098			Undrained Shear Strength (tsf)	0.51	
Average Diameter (in)	2.787			Strain at Maximum Stress (%)	13.5	
Height to Diameter Ratio	2.2			Strain rate to failure (% / min.)	1.00	

Stress vs. Strain

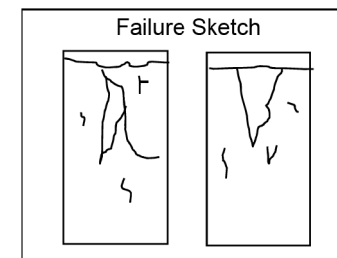


Stress vs. Strain



Pocket Penetrometer Reading (tsf) 4.0
Torvane Reading (kg/cm²) N/A

Comments
3C
Classification data taken from SS-1 (depth 2.5' to 4.0')



Pocket Penetrometer Reading (tsf) 1.0
Torvane Reading (kg/cm²) N/A

Comments
Classification data taken from SS-2 (depth 2.5' to 4.0')

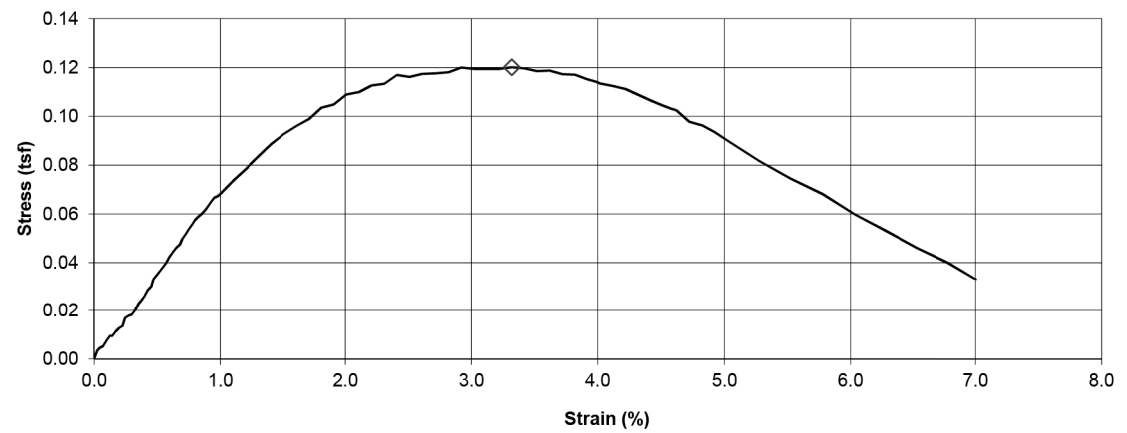
**Unconfined Compressive Strength
of Cohesive Soil**
ASTM D 2166

Project Name	HAM-71-6.86			Project Number	173620049	
Source	B-015-1-15, 15.0'-17.0'			Lab ID	387B	
Visual Description	Poorly Graded Sand (SP), brown, wet, very soft					
Classification	Sandy Silt, A-4a (2)			Recovered	1.4'	
Atterberg Limits	LL	18	PL	17	PI	1
Gradation	%GR	6	%CS	7	%FS	42
	%SI	35	%CL	10		
	Initial Wet Density (pcf)	125.3				
	Initial Moisture Content (%)	N/A				
	Initial Dry Density (pcf)	N/A				
	At Test Moisture Content (%)	22.8				
	At Test Dry Density (pcf)	102.0				
	Specific Gravity	N/A				
	Degree of Saturation (%)	N/A				
	Average Height (in)	6.067				
	Average Diameter (in)	2.804				
	Height to Diameter Ratio	2.2				
	Test Interval	15.5' - 16.0'				
	Date Extruded	06/06/2016				
	Date Tested	06/17/2016				
	Unconfined Compressive Strength (tsf)	0.12				
	Undrained Shear Strength (tsf)	0.06				
	Strain at Maximum Stress (%)	3.3				
	Strain rate to failure (% / min.)	1.00				

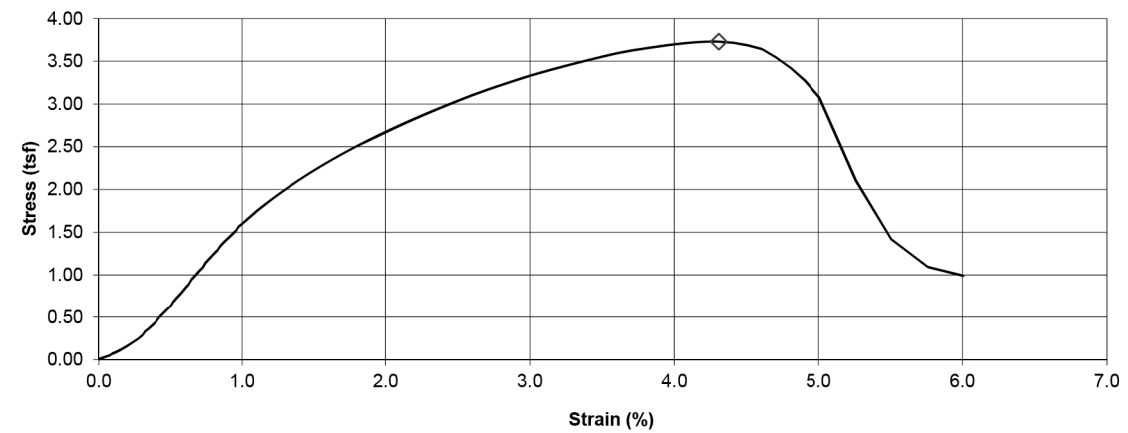
**Unconfined Compressive Strength
of Cohesive Soil**
ASTM D 2166

Project Name	HAM-71-6.86			Project Number	173620049	
Source	B-015-1-15, 35.0'-37.0'			Lab ID	389B	
Visual Description	Silt, gray brown, moist, hard					
Classification	Silt, A-4b (8)			Recovered	1.1'	
Atterberg Limits	LL	23	PL	15	PI	8
Gradation	%GR	5	%CS	5	%FS	10
	%SI	52	%CL	28		
	Initial Wet Density (pcf)	139.0				
	Initial Moisture Content (%)	N/A				
	Initial Dry Density (pcf)	N/A				
	At Test Moisture Content (%)	19.4				
	At Test Dry Density (pcf)	116.5				
	Specific Gravity	N/A				
	Degree of Saturation (%)	N/A				
	Average Height (in)	6.081				
	Average Diameter (in)	2.758				
	Height to Diameter Ratio	2.2				
	Test Interval	35.5' - 36.0'				
	Date Extruded	06/06/2016				
	Date Tested	06/17/2016				
	Unconfined Compressive Strength (tsf)	3.73				
	Undrained Shear Strength (tsf)	1.86				
	Strain at Maximum Stress (%)	4.3				
	Strain rate to failure (% / min.)	1.00				

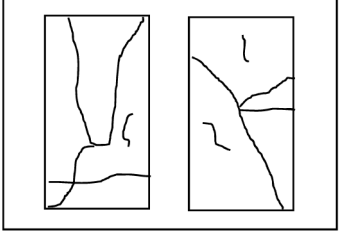
Stress vs. Strain



Stress vs. Strain



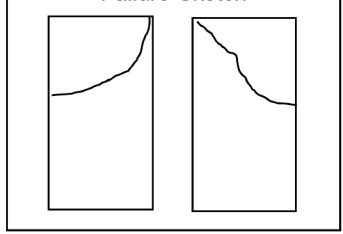
Failure Sketch



Pocket Penetrometer Reading (tsf) 1.0
 Torvane Reading (kg/cm²) N/A

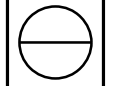
Comments
Classification data taken from SS-6 (depth 17.5' to 19.0')

Failure Sketch



Pocket Penetrometer Reading (tsf) >4.5
 Torvane Reading (kg/cm²) N/A

Comments
Classification data taken from SS-10 (depth 30.0' to 31.5')



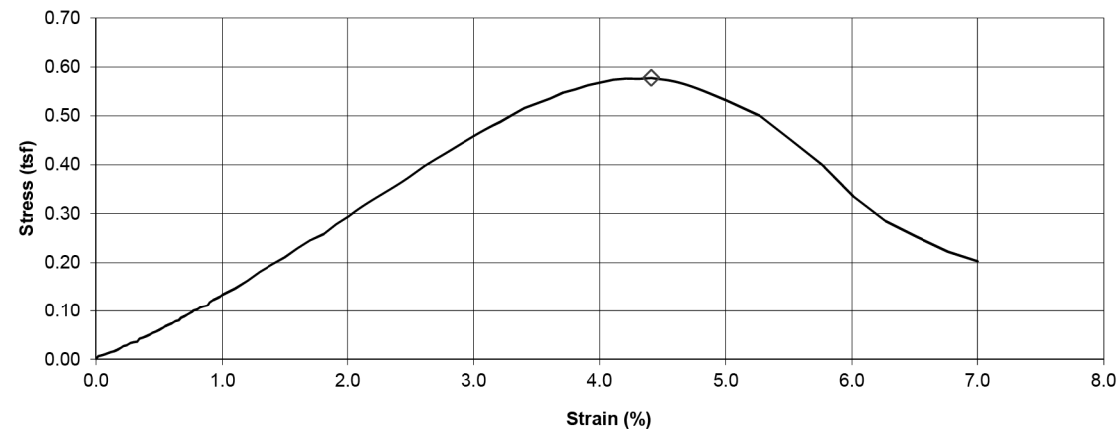
**Unconfined Compressive Strength
of Cohesive Soil**
ASTM D 2166

Project Name	HAM-71-6.86			Project Number	173620049			
Source	B-016-1-15, 25.0'-27.0'			Lab ID	391B			
Visual Description	Poorly Graded Sand (SP), brown and gray, wet, soft							
Classification	Silt, A-4b (8)							
Atterberg Limits	LL	NP	PL	NP	PI	NP	Recovered	1.3'
Gradation	%GR	2	%CS	1	%FS	21	Test Interval	25.5' - 26.0'
	%SI	66	%CL	10			Date Extruded	06/06/2016
							Date Tested	06/17/2016
Initial Wet Density (pcf)	134.2			Initial MC Taken	N/A			
Initial Dry Density (pcf)	N/A							
At Test Moisture Content (%)	18.3			At Test MC Taken	After Test, From Center of Specimen			
At Test Dry Density (pcf)	113.5							
Specific Gravity	N/A							
Degree of Saturation (%)	N/A			Unconfined Compressive Strength (tsf)	0.58			
Average Height (in)	6.072			Undrained Shear Strength (tsf)	0.29			
Average Diameter (in)	2.802			Strain at Maximum Stress (%)	4.4			
Height to Diameter Ratio	2.2			Strain rate to failure (% / min.)	1.00			

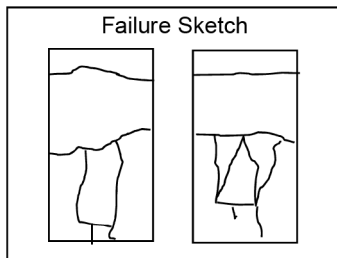
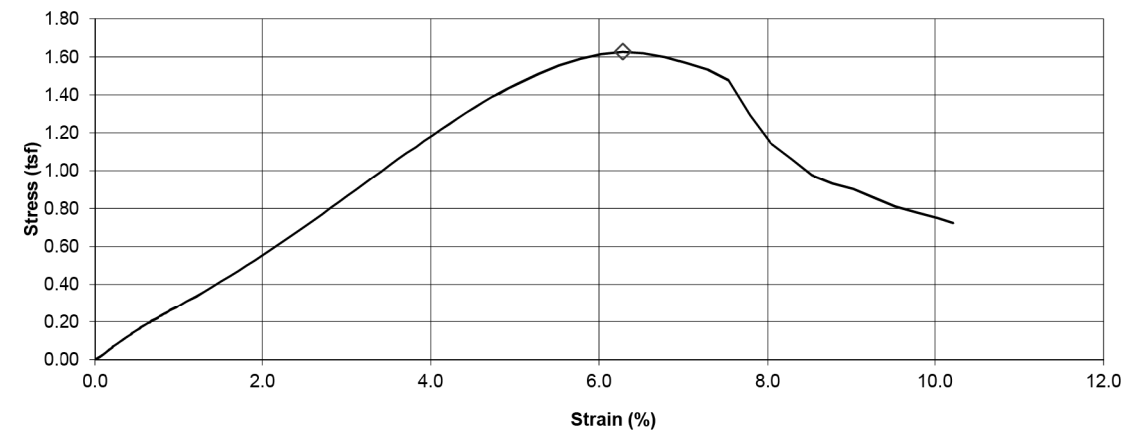
**Unconfined Compressive Strength
of Cohesive Soil**
ASTM D 2166

Project Name	HAM-71-6.86			Project Number	173620049			
Source	B-035-1-15, 25.0'-27.0'			Lab ID	395B			
Visual Description	Lean Clay with Sand (CL), brown, moist, firm							
Classification	Silt and Clay, A-6a (9)							
Atterberg Limits	LL	30	PL	17	PI	13	Recovered	1.1'
Gradation	%GR	0	%CS	0	%FS	3	Test Interval	25.5' - 26.0'
	%SI	43	%CL	54			Date Extruded	06/06/2016
							Date Tested	06/17/2016
Initial Wet Density (pcf)	130.0			Initial MC Taken	N/A			
Initial Dry Density (pcf)	N/A							
At Test Moisture Content (%)	20.6			At Test MC Taken	After Test, From Center of Specimen			
At Test Dry Density (pcf)	107.8							
Specific Gravity	N/A							
Degree of Saturation (%)	N/A			Unconfined Compressive Strength (tsf)	1.63			
Average Height (in)	6.055			Undrained Shear Strength (tsf)	0.81			
Average Diameter (in)	2.845			Strain at Maximum Stress (%)	6.3			
Height to Diameter Ratio	2.1			Strain rate to failure (% / min.)	1.00			

Stress vs. Strain

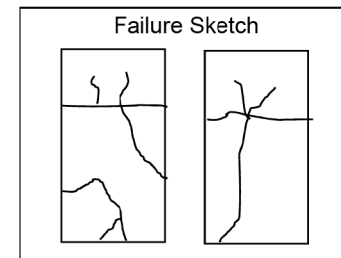


Stress vs. Strain



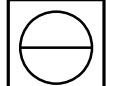
Pocket Penetrometer Reading (tsf) 1.5
 Torvane Reading (kg/cm²) N/A

Comments
Classification data taken from SS-10 (depth 27.5' to 29.0')



Pocket Penetrometer Reading (tsf) 2.0
 Torvane Reading (kg/cm²) N/A

Comments
Classification data taken from SS-10 (depth 35.0' to 36.5')



Unconsolidated Undrained Triaxial Compression
ASTM D 2850

Project Name HAM-71-6.86
Source B-015-1-15, 5.0'-5.5'
Description Silt with Sand (ML), gray brown, moist, firm
Specimen Type Intact

Project No. 173620049
Lab ID 386A
Test ID 386A-A

Specific Gravity 2.65 ASTM D 854, A
Classification Sandy Silt, A-4a (1) Classification data taken from SS-2 (depth 2.5' to 4.0')

Date Received 06/02/2016
Date Tested 06/20/2016

LL	24	%GR	28
PL	14	%CS	9
PI	10	%FS	24
		%SI	23
Pocket Pen	1.0	%CL	16

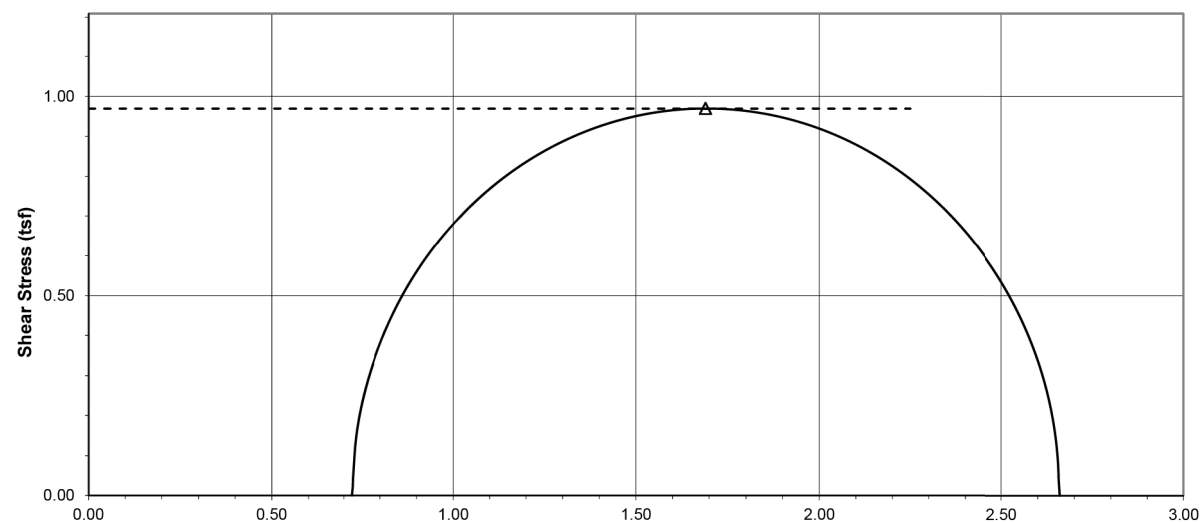
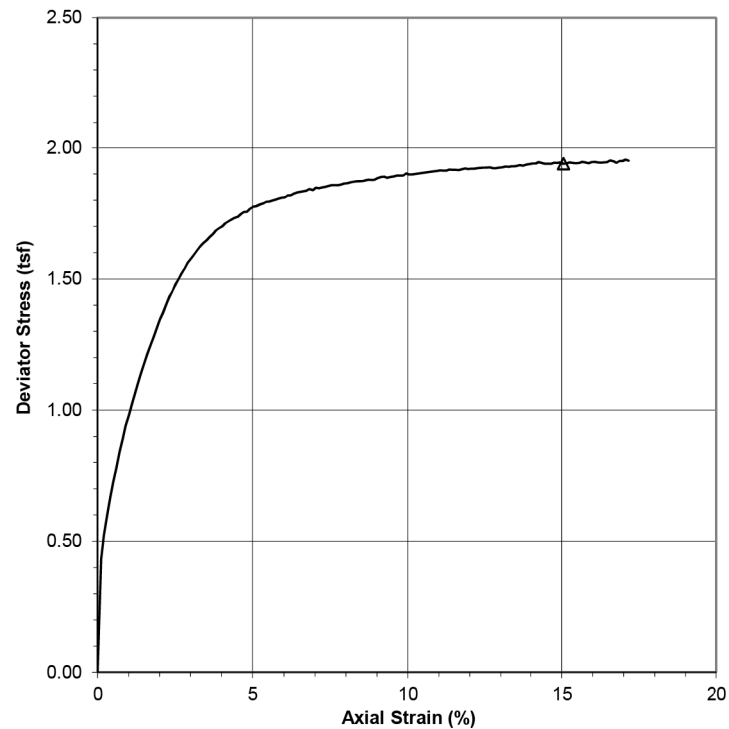
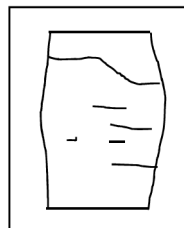
Target Test Parameters

Nominal Chamber Pressure (psi) 10
Actual Axial Strain Rate of Test (%/min) 0.597

At Unconsolidated Undrained Failure

Failure Criterion: 15% Axial Strain
Axial Strain (%) 15.05
Deviator Stress (tsf) 1.939
Minor Principal Stress, σ_3 (tsf) 0.722
Major Principal Stress, σ_1 (tsf) 2.661
Undrained Shear Strength, S_u (tsf) 0.969

Failure Sketch



Unconsolidated Undrained Triaxial Compression
ASTM D 2850

Project Name HAM-71-6.86
Source B-015-1-15, 15.0'-15.5'
Description Poorly Graded Sand (SP), brown, wet, very soft
Specimen Type Intact

Project No. 173620049
Lab ID 387A
Test ID 387A-A

Specific Gravity 2.67 ASTM D 854, A
Classification Sandy Silt, A-4a (2) Classification data taken from SS-6 (depth 17.5' to 19.0')

Date Received 06/02/2016
Date Tested 06/20/2016

LL	18	%GR	6
PL	17	%CS	7
PI	1	%FS	42
		%SI	35
Pocket Pen	1.0	%CL	10

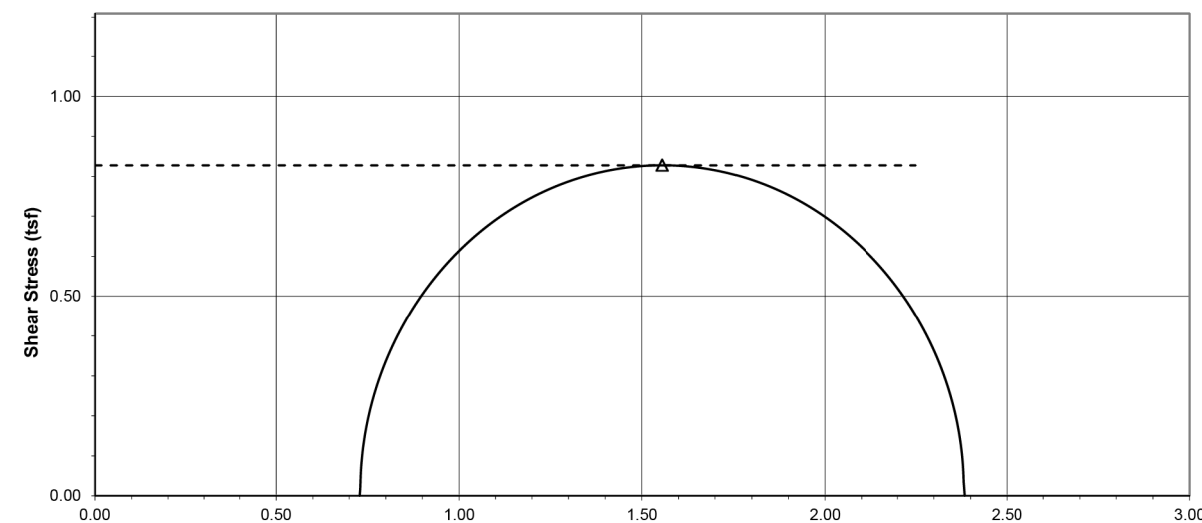
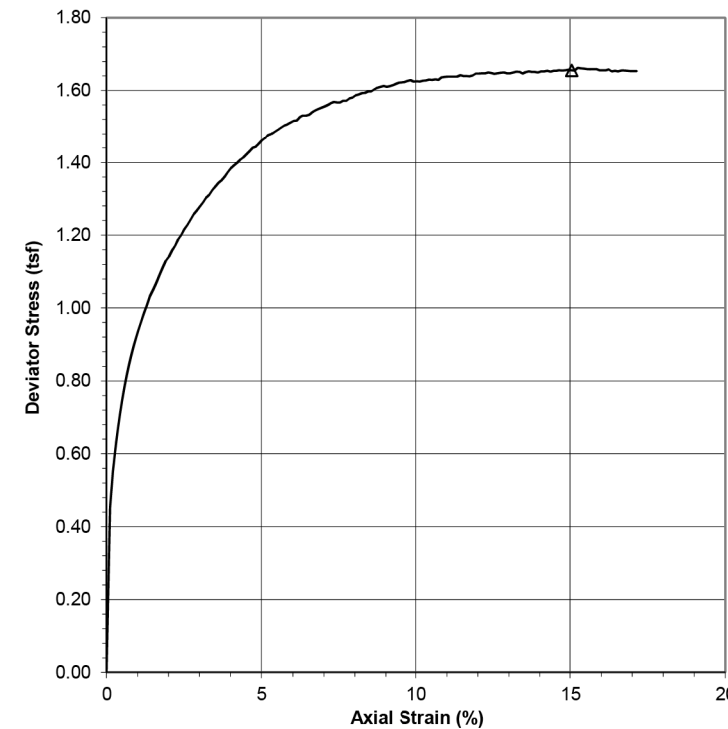
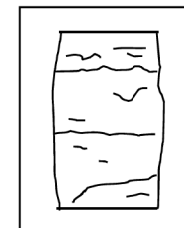
Target Test Parameters

Nominal Chamber Pressure (psi) 10
Actual Axial Strain Rate of Test (%/min) 0.599

At Unconsolidated Undrained Failure

Failure Criterion: 15% Axial Strain
Axial Strain (%) 15.04
Deviator Stress (tsf) 1.655
Minor Principal Stress, σ_3 (tsf) 0.728
Major Principal Stress, σ_1 (tsf) 2.384
Undrained Shear Strength, S_u (tsf) 0.828

Failure Sketch



Unconsolidated Undrained Triaxial Compression
ASTM D 2850

Project Name HAM-71-6.86
Source B-016-1-15, 25.0'-25.5'
Description Poorly Graded Sand (SP), brown and gray, wet, soft

Project No. 173620049
Lab ID 391A
Test ID 391A-A

Specimen Type Intact
Specific Gravity 2.69 ASTM D 854, A
Classification Silt, A-4b (8) Classification data taken from SS-10 (depth 27.5' to 29.0')

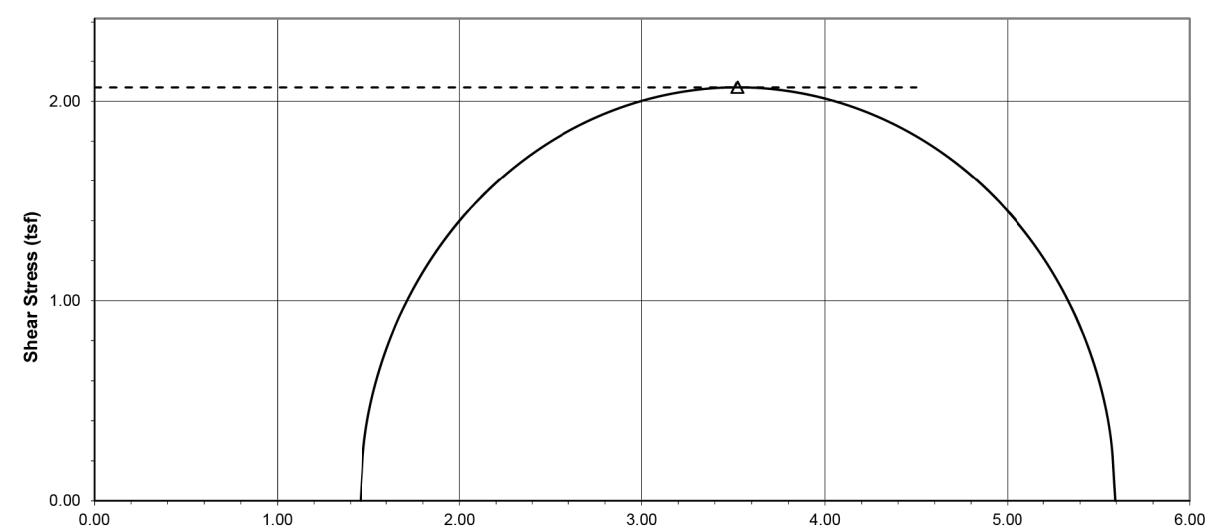
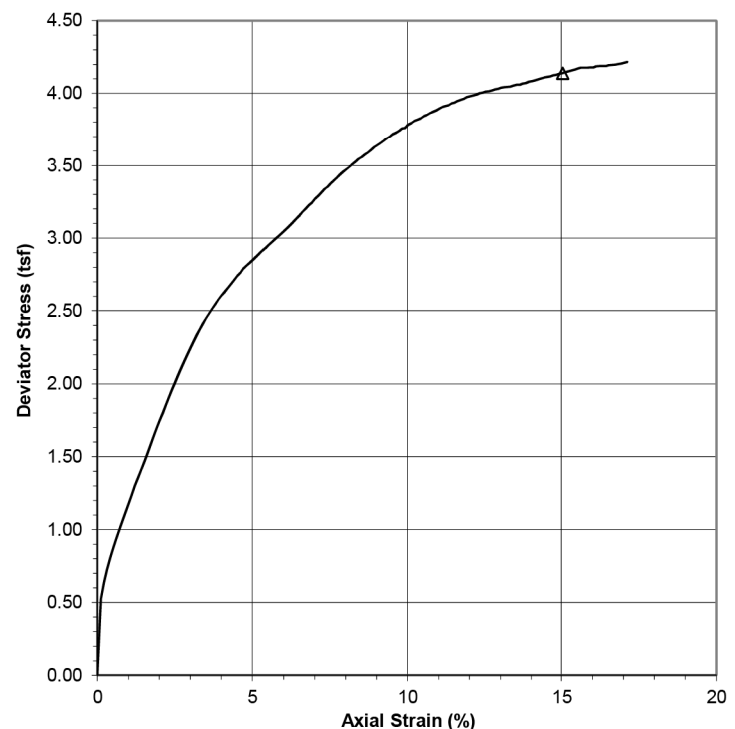
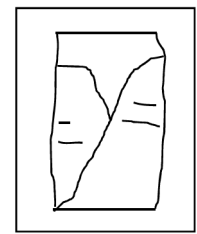
Date Received 06/02/2016
Date Tested 06/20/2016

LL	NP	%GR	2
PL	NP	%CS	1
PI	NP	%FS	21
		%SI	66
Pocket Pen	1.5	%CL	10

Target Test Parameters
Nominal Chamber Pressure (psi) 20
Actual Axial Strain Rate of Test (%/min) 0.605

At Unconsolidated Undrained Failure
Failure Criterion: 15% Axial Strain
Axial Strain (%) 15.03
Deviator Stress (tsf) 4.138
Minor Principal Stress, σ_3 (tsf) 1.455
Major Principal Stress, σ_1 (tsf) 5.593
Undrained Shear Strength, S_u (tsf) 2.069

Failure Sketch



Unconsolidated Undrained Triaxial Compression
ASTM D 2850

Project Name HAM-71-6.86
Source B-030-1-15, 8.4'-8.9'
Description Lean Clay with Gravel (CL), gray, moist, firm

Project No. 173620049
Lab ID 399B
Test ID 399B-A

Specimen Type Intact
Specific Gravity 2.74 ASTM D 854, A
Classification Silty Clay, A-6b (10) Classification data taken from SS-2 (depth 5.0' to 6.5')

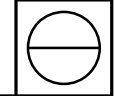
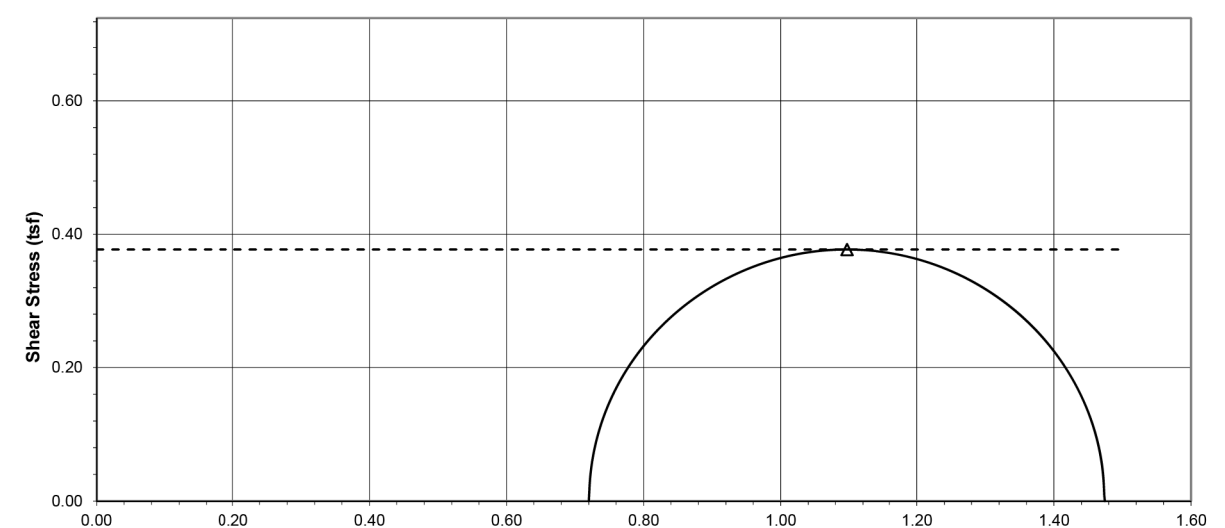
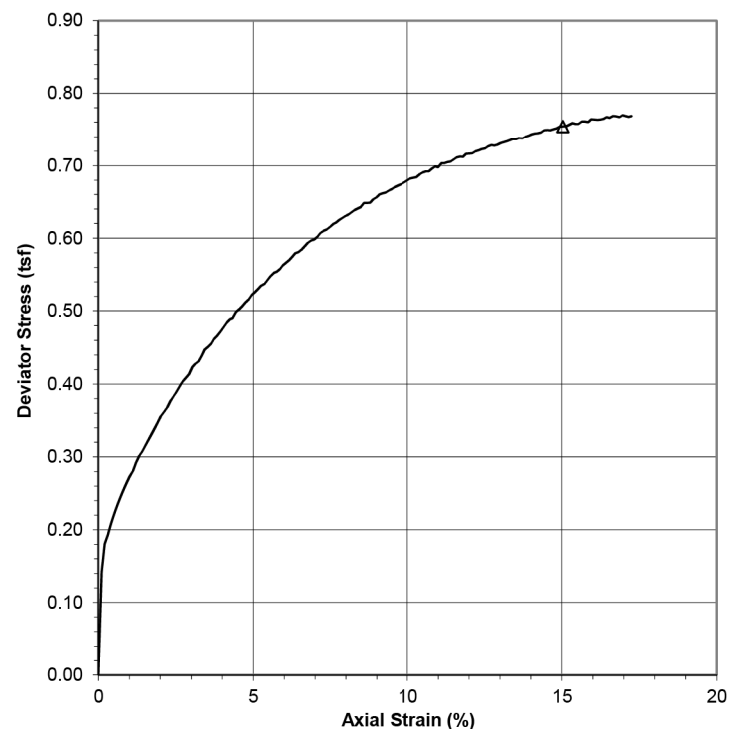
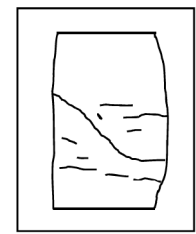
Date Received 06/15/2016
Date Tested 07/13/2016

LL	34	%GR	1
PL	18	%CS	3
PI	16	%FS	15
		%SI	51
Pocket Pen	1.0	%CL	30

Target Test Parameters
Nominal Chamber Pressure (psi) 10
Actual Axial Strain Rate of Test (%/min) 0.896

At Unconsolidated Undrained Failure
Failure Criterion: 15% Axial Strain
Axial Strain (%) 15.03
Deviator Stress (tsf) 0.754
Minor Principal Stress, σ_3 (tsf) 0.720
Major Principal Stress, σ_1 (tsf) 1.474
Undrained Shear Strength, S_u (tsf) 0.377

Failure Sketch



Unconsolidated Undrained Triaxial Compression ASTM D 2850

Project Name HAM-71-6.86
Source B-035-1-15, 25.0'-25.5'
Description Lean Clay with Sand (CL), brown, moist, firm

Project No. 173620049
Lab ID 395A
Test ID 395A-A

Specimen Type Intact
Specific Gravity 2.73 ASTM D 854, A
Classification Silt and Clay, A-6a (9) Classification data taken from SS-10 (depth 35.0' to 36.5')

Date Received 06/02/2016
Date Tested 06/20/2016

LL 30 %GR 0
PL 17 %CS 0
PI 13 %FS 3
%SI 43
%CL 54
Pocket Pen 2.0

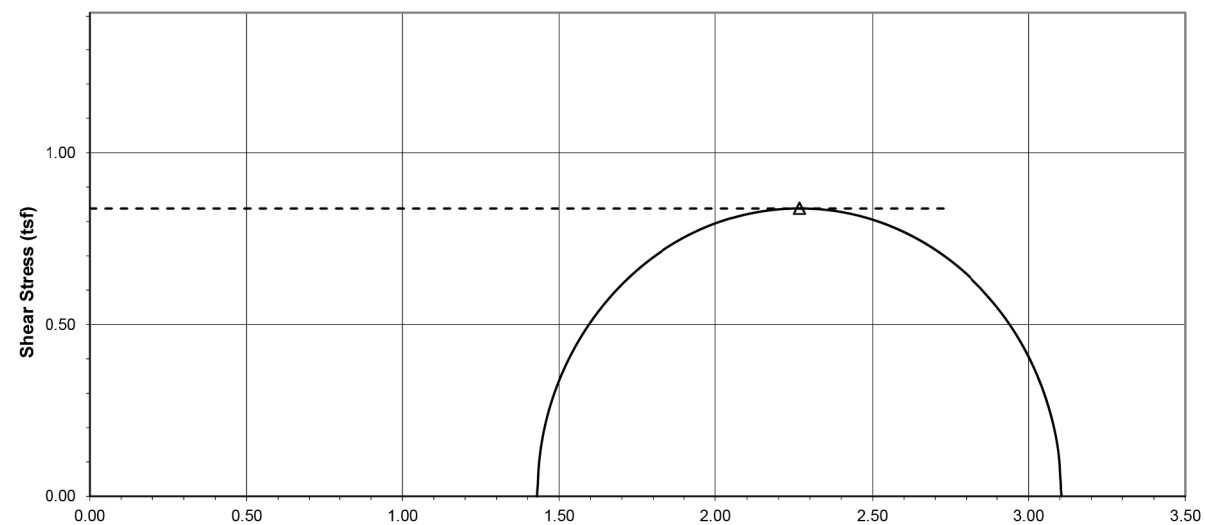
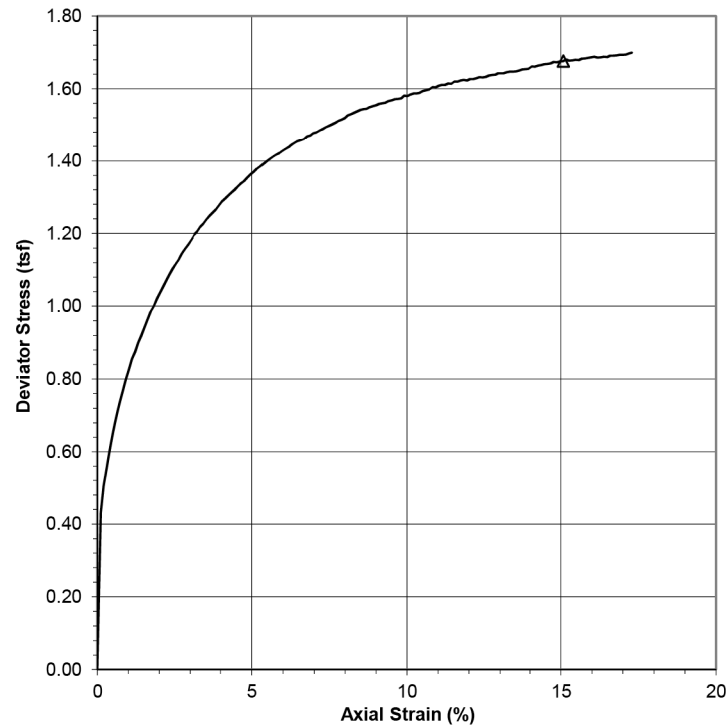
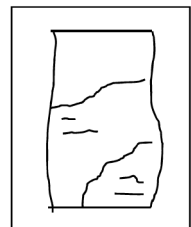
Target Test Parameters

Nominal Chamber Pressure (psi) 20
Actual Axial Strain Rate of Test (%/min) 0.604

At Unconsolidated Undrained Failure

Failure Criterion: 15% Axial Strain
Axial Strain (%) 15.07
Deviator Stress (tsf) 1.676
Minor Principal Stress, σ_3 (tsf) 1.429
Major Principal Stress, σ_1 (tsf) 3.106
Undrained Shear Strength, S_u (tsf) 0.838

Failure Sketch



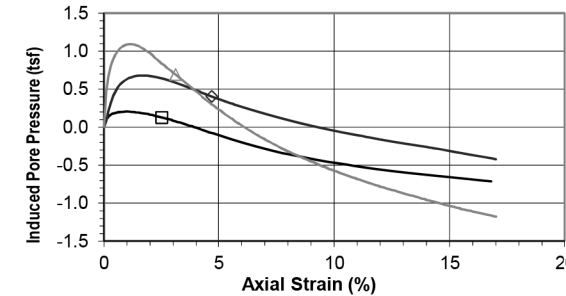
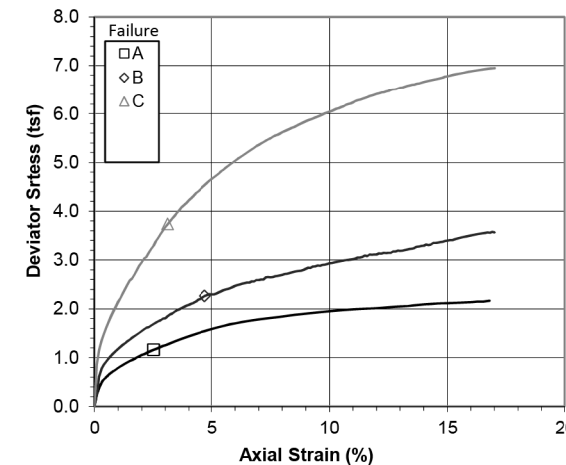
Consolidated Undrained Triaxial Compression ASTM D 4767

Project Name HAM-71-6.86

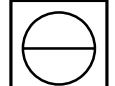
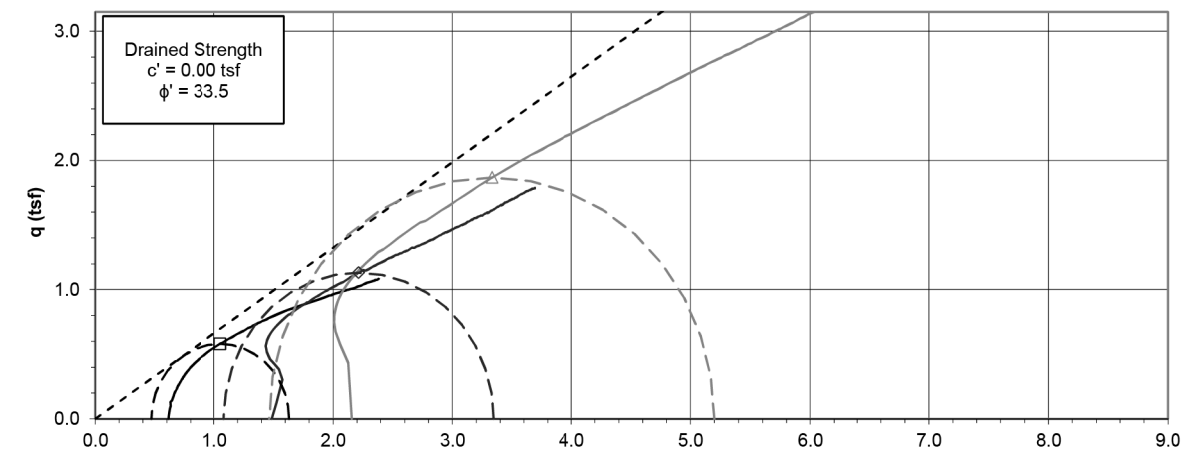
Project 173620049
Set ID 1

Test	Lab ID	Source	Description	Gs	LL	PL	PI
A	389A	B-015-1-15, 35.0'-35.5'	Fat Clay (CH), gray brown, moist, hard	2.74	23	15	8
B	385A	B-015-0-15, 20.0'-20.5'	Lean Clay w/Gravel (CL), gray brown, moist, firm	2.75	23	14	9
C	385B	B-015-0-15, 20.5'-21.0'	Lean Clay w/Gravel (CL), gray brown, moist, firm	2.75	23	14	9

Specimen A classification data from SS-10 (A-4b, GR=5, CS=5, FS=10, SI=52, CL=28)
Specimen B and C classification data from SS-6 (A-4a, GR=13, CS=9, FS=13, SI=38, CL=27)



Specimen	A	B	C
	Initial Specimen Conditions		
Average Height (in)	6.080	6.058	6.095
Average Diameter (in)	2.854	2.870	2.867
Moist Unit Weight (pcf)	131.8	135.3	146.3
Moisture Content (%)	18.7	14.1	10.1
Dry Unit Weight (pcf)	111.0	118.6	132.9
Void Ratio	0.539	0.445	0.289
Degree of Saturation (%)	95.3	87.2	95.9
Consolidated Specimen Conditions			
Moist Unit Weight (pcf)	132.3	139.1	147.4
Moisture Content (%)	20.1	15.3	10.2
Dry Unit Weight (pcf)	110.2	120.7	133.7
Void Ratio	0.549	0.420	0.282
Degree of Saturation (%)	100.0	100.0	100.0
Eff. Con. Stress, σ'_3 (tsf)	0.614	1.486	2.158
At Drained Failure			
Failure Criterion			
Max. Eff. Prin. Stress Ratio			
Axial Strain (%)	2.503	4.702	3.103
Deviator Stress (tsf)	1.160	2.263	3.735
Induced Pore Press. (tsf)	0.128	0.404	0.694
Minor Eff. Stress, σ'_3 (tsf)	0.471	1.082	1.465
Major Eff. Stress, σ'_1 (tsf)	1.631	3.346	5.200
Eff. Stress Ratio, σ'_1/σ'_3	3.463	3.091	3.550
p' (tsf)	1.051	2.214	3.332
q (tsf)	0.580	1.132	1.868

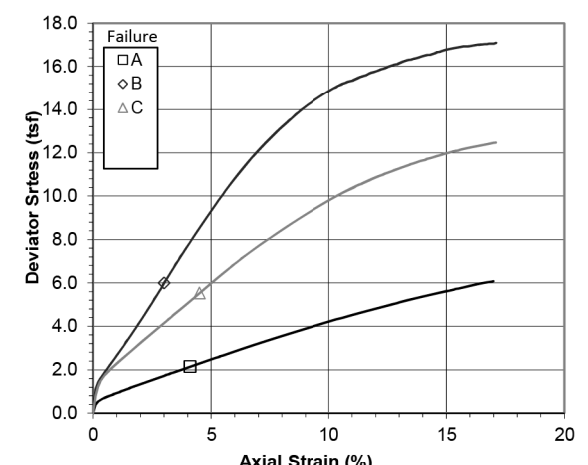


Consolidated Undrained Triaxial Compression ASTM D 4767

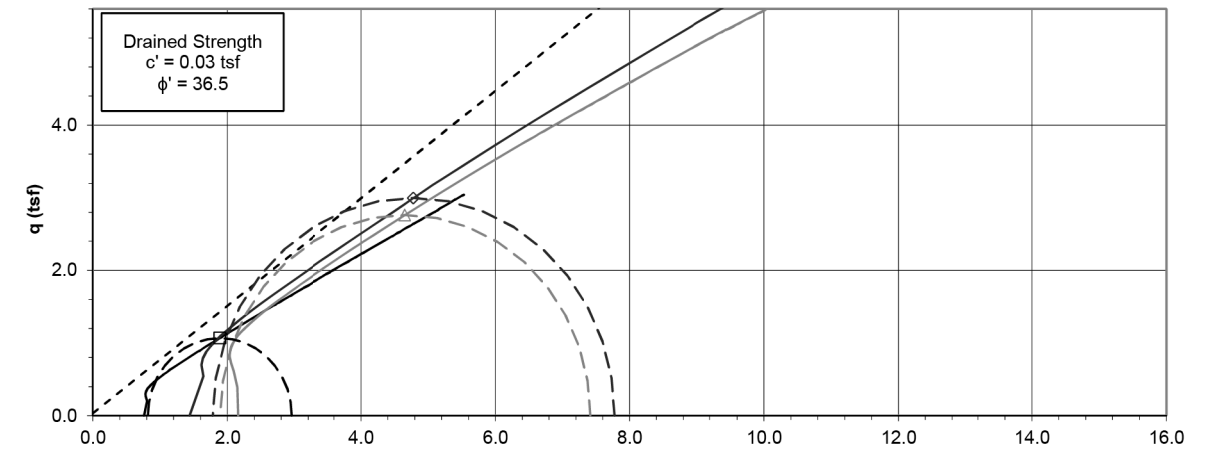
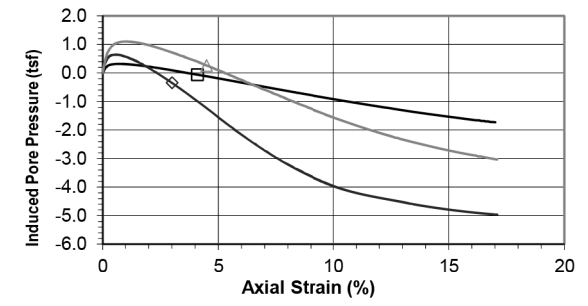
Project Name HAM-71-6.86 Project 173620049
Set ID 2

Test	Lab ID	Source	Description	Gs	LL	PL	PI
A	388A	B-015-1-15, 25.0'-25.5'	Poorly Graded Sand (SP), brown and gray, moist, soft	2.74	18	17	1
B	388B	B-015-1-15, 25.5'-26.0'	Silt with Sand (ML), brown and gray, wet, soft	2.74	18	17	1
C	388C	B-015-1-15, 26.1'-26.6'	Silt with Sand (ML), brown and gray, wet, soft	2.74	18	17	1

Classification data from SS-6 (A-4a, GR=6, CS=7, FS=42, SI=35, CL=10)



Specimen	A	B	C
Initial Specimen Conditions			
Average Height (in)	5.890	5.923	6.012
Average Diameter (in)	2.765	2.810	2.864
Moist Unit Weight (pcf)	138.3	142.8	138.0
Moisture Content (%)	18.3	16.2	16.7
Dry Unit Weight (pcf)	116.9	122.9	118.3
Void Ratio	0.461	0.389	0.444
Degree of Saturation (%)	108.9	114.0	103.1
Consolidated Specimen Conditions			
Moist Unit Weight (pcf)	138.8	139.8	139.3
Moisture Content (%)	15.2	14.6	14.9
Dry Unit Weight (pcf)	120.5	121.9	121.2
Void Ratio	0.417	0.400	0.409
Degree of Saturation (%)	100.0	100.0	100.0
Eff. Con. Stress, σ'_3 (tsf)	0.761	1.439	2.159
At Drained Failure			
Max. Eff. Prin. Stress Ratio			
Failure Criterion			
Axial Strain (%)	4.100	3.002	4.498
Deviator Stress (tsf)	2.138	5.994	5.525
Induced Pore Press. (tsf)	-0.059	-0.344	0.268
Minor Eff. Stress, σ'_3 (tsf)	0.819	1.783	1.891
Major Eff. Stress, σ'_1 (tsf)	2.957	7.776	7.415
Eff. Stress Ratio, σ'_1/σ'_3	3.609	4.363	3.922
p' (tsf)	1.888	4.779	4.653
q (tsf)	1.069	2.997	2.762

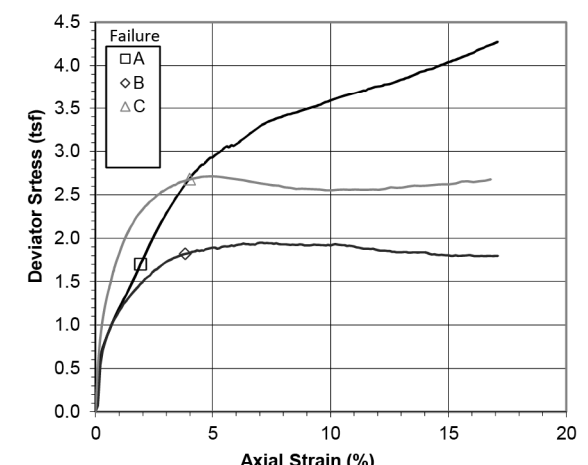


Consolidated Undrained Triaxial Compression ASTM D 4767

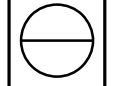
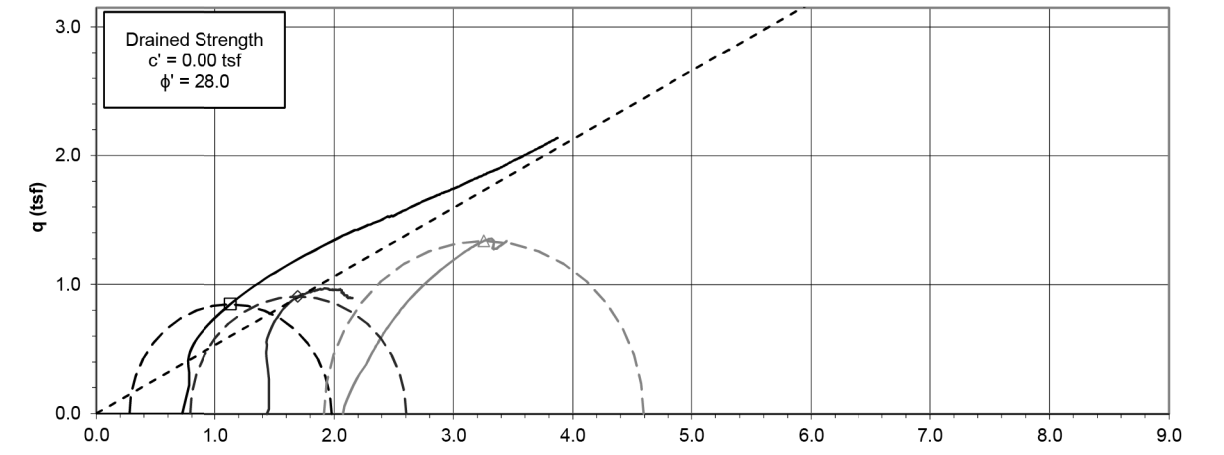
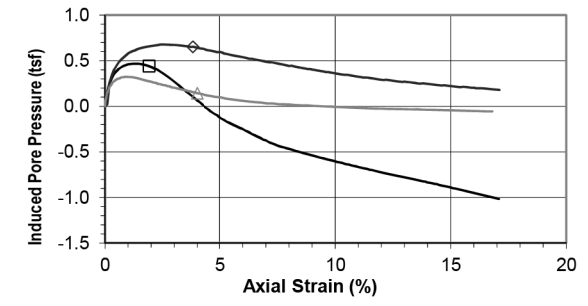
Project Name HAM-71-6.86 Project 173620049
Set ID 3

Test	Lab ID	Source	Description	Gs	LL	PL	PI
A	393A	B-033-1-15, 10.0'-10.5'	Silt with Sand (ML), brown, moist, firm	2.77	26	19	7
B	394A	B-035-1-15, 10.0'-10.5'	Silt with Sand (ML), brown, moist, firm	2.66	23	13	10
C	394B	B-035-1-15, 10.5'-11.0'	Silt with Sand (ML), gray and brown, moist, firm	2.66	23	13	10

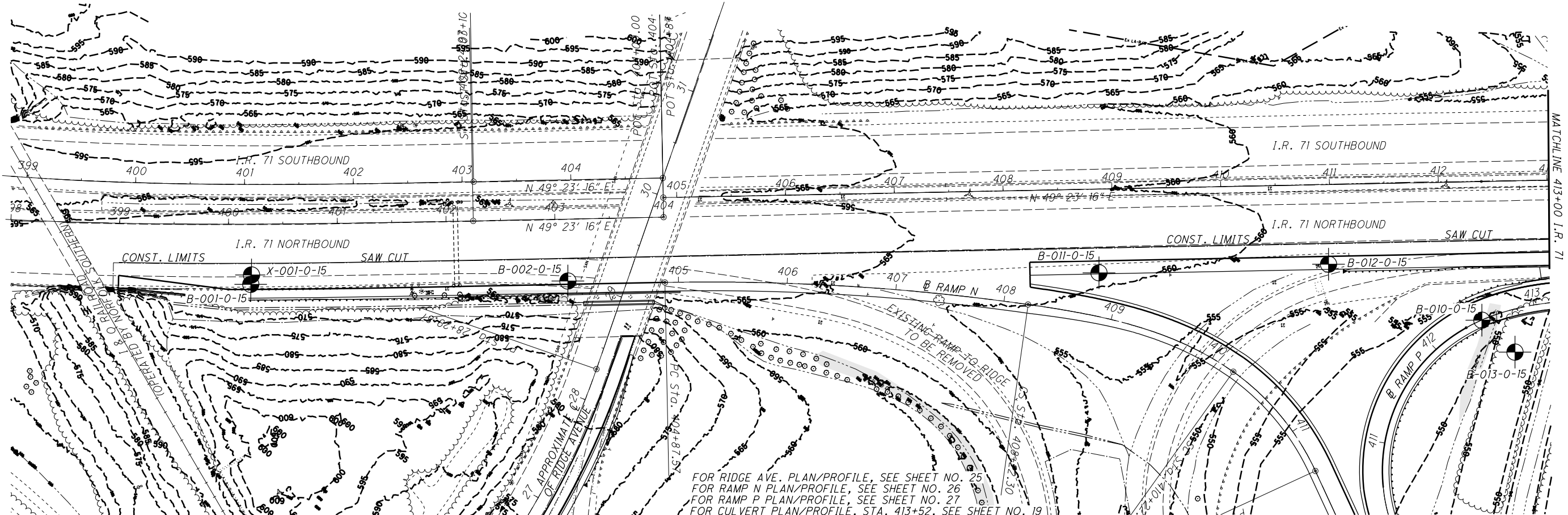
Specimen A classification data from SS-4 (A-4b, GR=1, CS=2, FS=6, SI=70, CL=21)
Specimen B and C classification data from SS-2 (A-4a, GR=38, CS=12, FS=13, SI=22, CL=15)



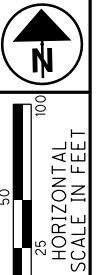
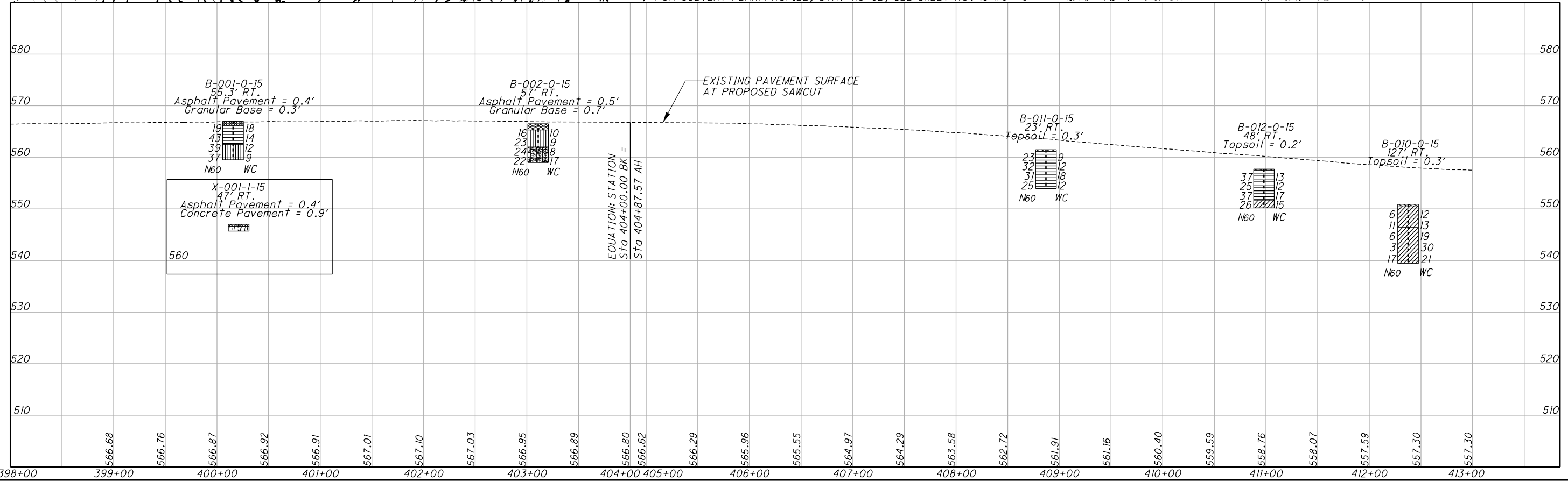
Specimen	A	B	C
Initial Specimen Conditions			
Average Height (in)	6.010	6.035	6.064
Average Diameter (in)	2.867	2.871	2.873
Moist Unit Weight (pcf)	129.6	126.9	130.6
Moisture Content (%)	21.6	21.2	18.5
Dry Unit Weight (pcf)	106.6	104.7	110.2
Void Ratio	0.620	0.583	0.505
Degree of Saturation (%)	96.5	96.6	97.6
Consolidated Specimen Conditions			
Moist Unit Weight (pcf)	132.1	128.1	131.1
Moisture Content (%)	21.0	21.5	18.9
Dry Unit Weight (pcf)	109.2	105.4	110.2
Void Ratio	0.581	0.572	0.504
Degree of Saturation (%)	100.0	100.0	100.0
Eff. Con. Stress, σ'_3 (tsf)	0.719	1.438	2.075
At Drained Failure			
Max. Eff. Prin. Stress Ratio			
Failure Criterion			
Axial Strain (%)	1.902	3.802	3.987
Deviator Stress (tsf)	1.700	1.819	2.679
Induced Pore Press. (tsf)	0.440	0.652	0.144
Minor Eff. Stress, σ'_3 (tsf)	0.279	0.786	1.915
Major Eff. Stress, σ'_1 (tsf)	1.979	2.606	4.594
Eff. Stress Ratio, σ'_1/σ'_3	7.095	3.315	2.399
p' (tsf)	1.129	1.696	3.255
q (tsf)	0.850	0.910	1.340



V:\1736\active\17362004\9\design\94.74\geotechnical\sheets\50_PP\94.74\IP001.dgn Design 5/23/2017 10:06:38 AM m.jernings



FOR RIDGE AVE. PLAN/PROFILE, SEE SHEET NO. 25
 FOR RAMP N PLAN/PROFILE, SEE SHEET NO. 26
 FOR RAMP P PLAN/PROFILE, SEE SHEET NO. 27
 FOR CULVERT PLAN/PROFILE, STA. 413+52, SEE SHEET NO. 19



DRAWN MSJ
 CHECKED EMK

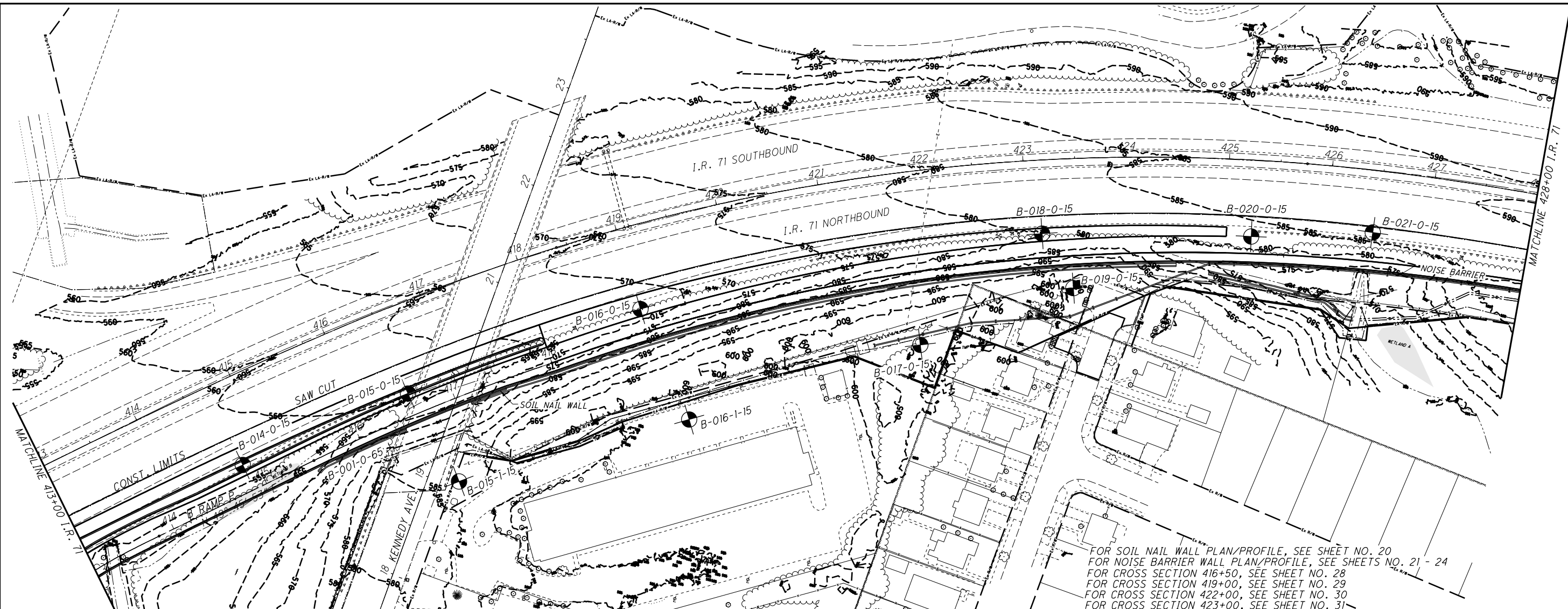
SOIL PROFILE
 STA. 398+00.00 TO 413+00.00 - I.R. 71

HAM-71-6.86

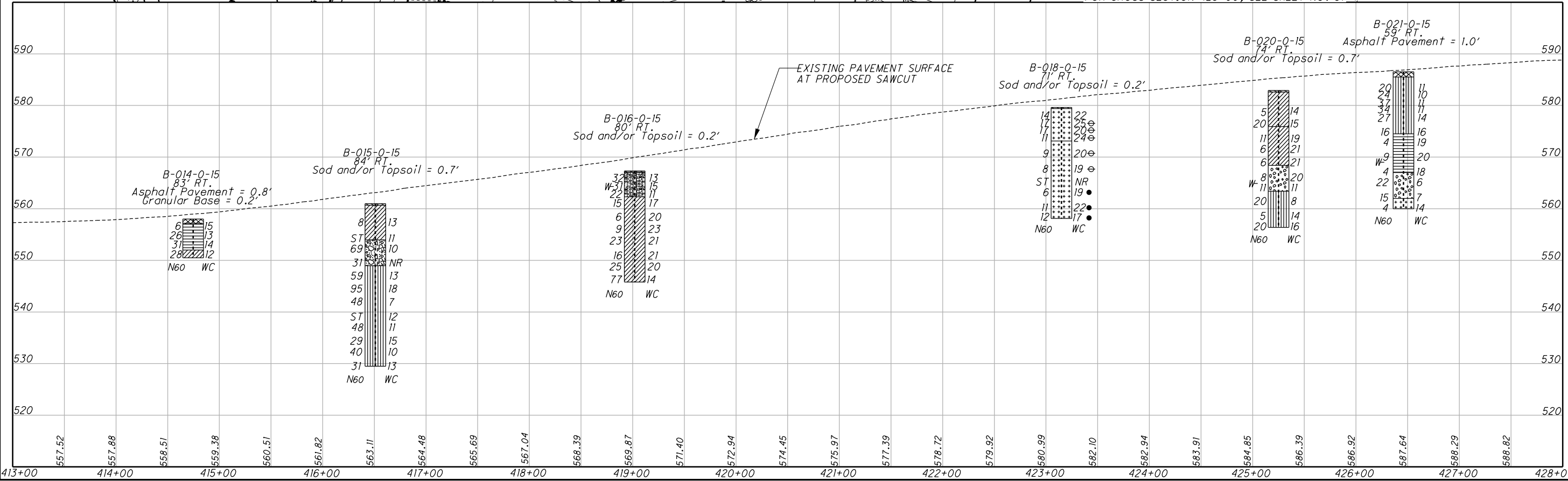
14 / 44



V:\1736\active\173620049\design\9474\geotechnical\sheet\9474\9474_HF002.dgn Design 5/23/2017 10:18:31 AM mjenmings

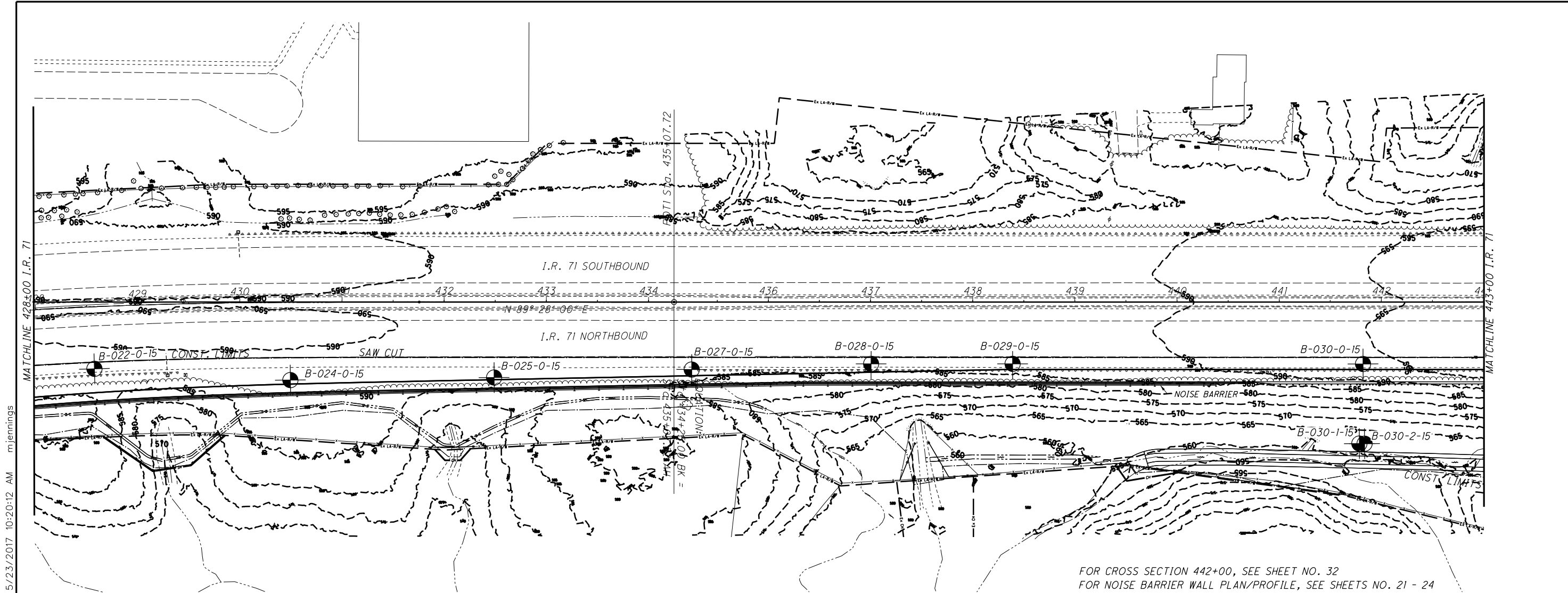


FOR SOIL NAIL WALL PLAN/PROFILE, SEE SHEET NO. 20
FOR NOISE BARRIER WALL PLAN/PROFILE, SEE SHEETS NO. 21 - 24
FOR CROSS SECTION 416+50, SEE SHEET NO. 28
FOR CROSS SECTION 419+00, SEE SHEET NO. 29
FOR CROSS SECTION 422+00, SEE SHEET NO. 30
FOR CROSS SECTION 423+00, SEE SHEET NO. 31

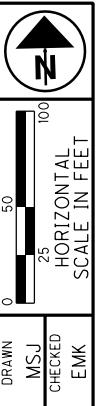
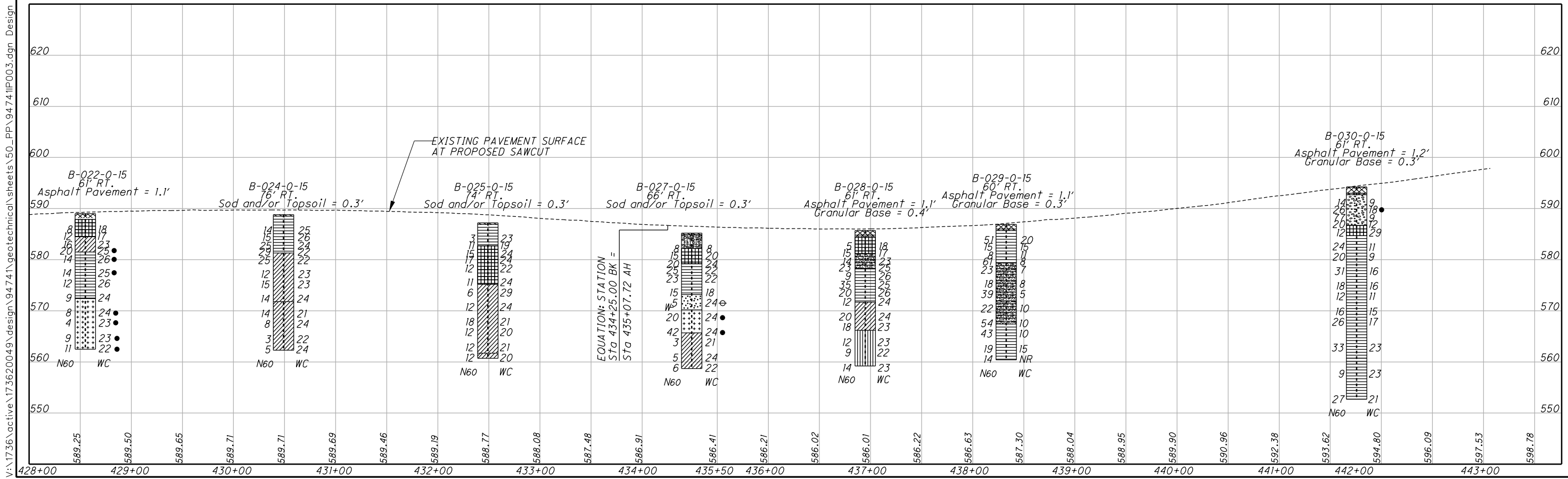


SOIL PROFILE
STA. 413+00.00 TO 428+00.00 - I.R. 71

HAM-71-6.86



FOR CROSS SECTION 442+00, SEE SHEET NO. 32
FOR NOISE BARRIER WALL PLAN/PROFILE, SEE SHEETS NO. 21 - 24

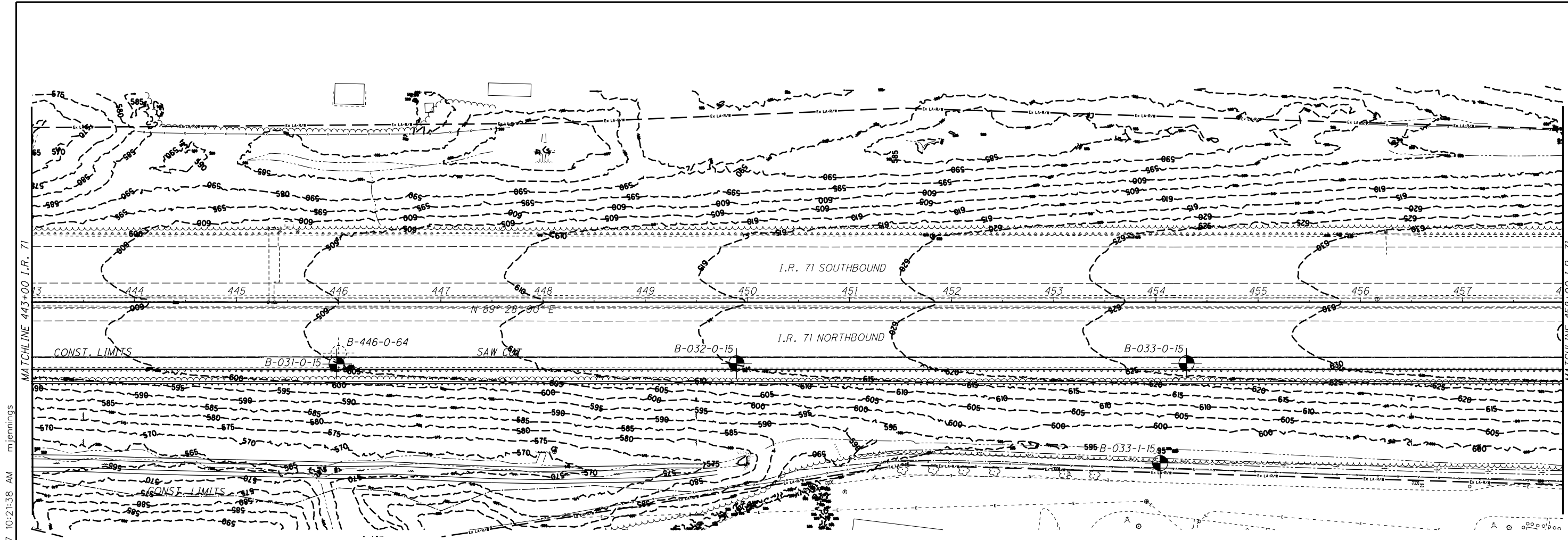


SOIL PROFILE
STA. 428+00.00 TO 443+50.00 - I.R. 71

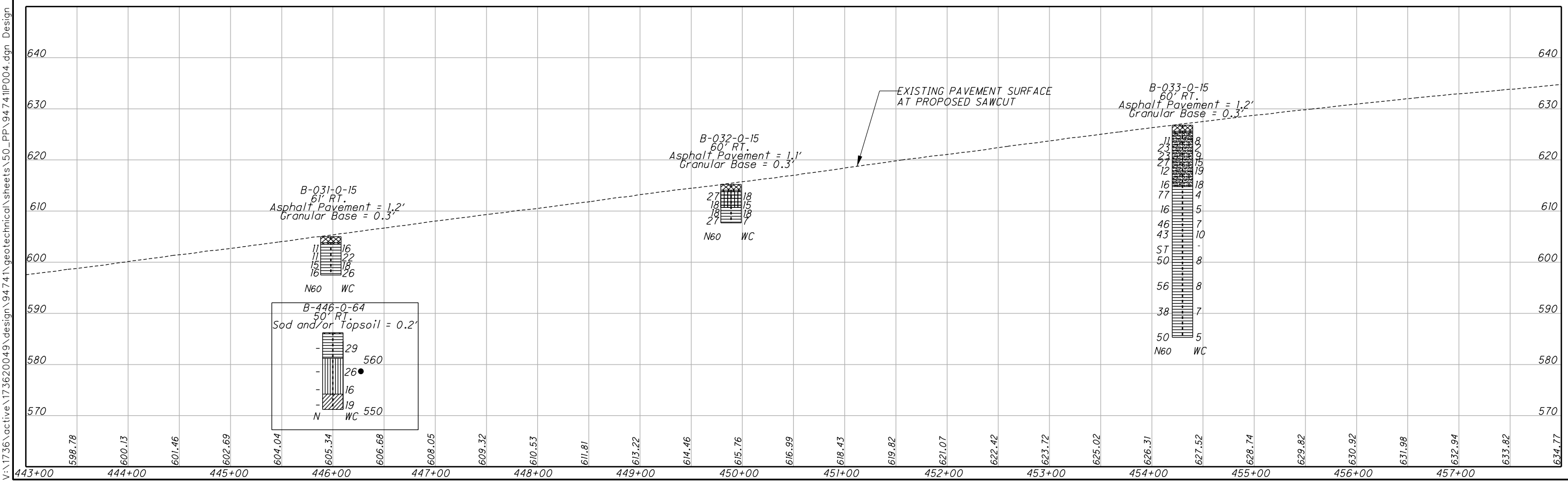
HAM-71-6.86

16 / 44

V:\1736\active\173620049\design\9474\geotechnical\sheet\50_PP\9474\IP003.dgn Design 5/23/2017 10:20:12 AM mjenjings



FOR CROSS SECTION 454+00, SEE SHEET NO. 33



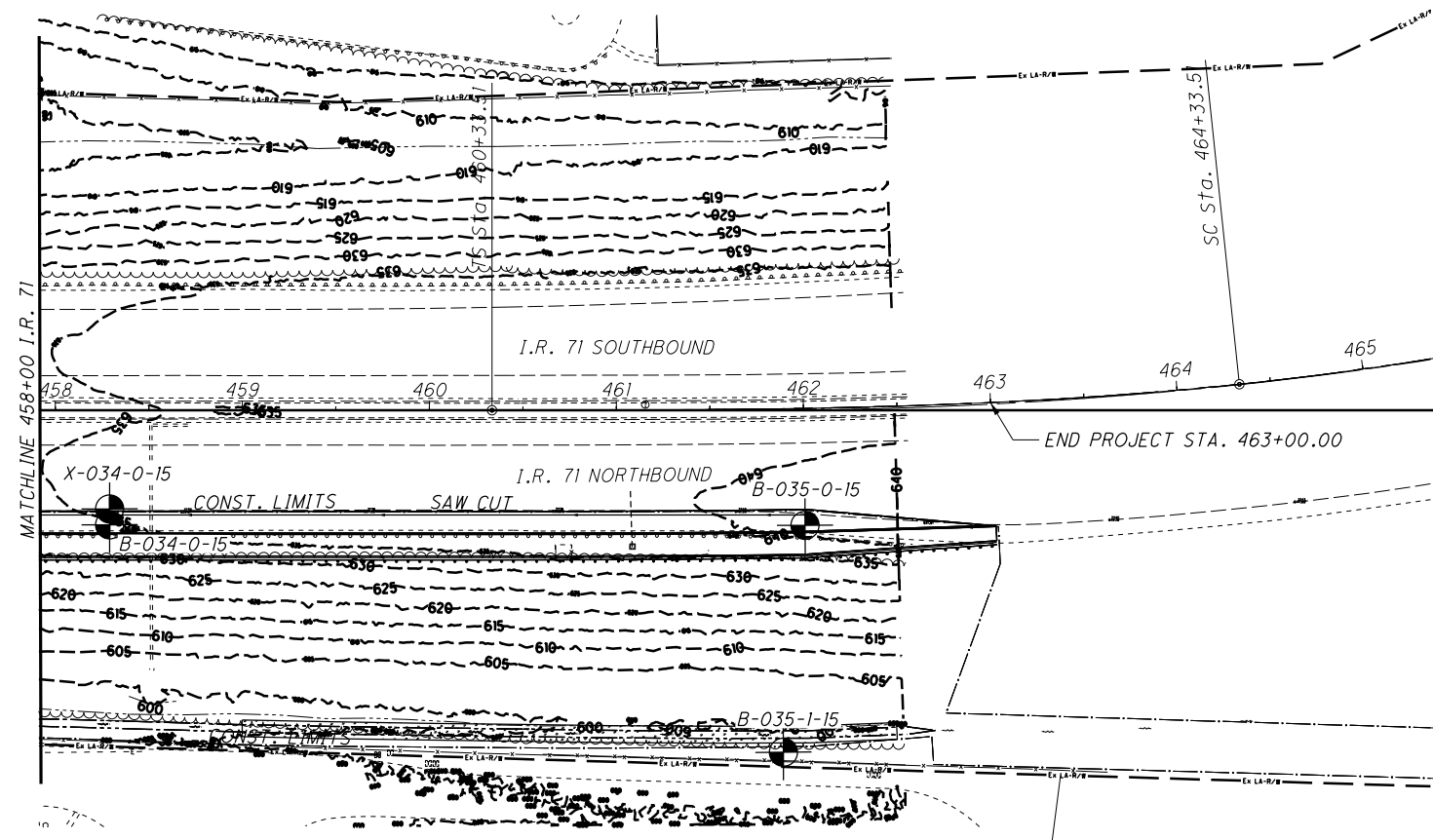
V:\1736\active\173620049\design\9474\geotechnical\sheets\50_PP_9474\IP004.dgn Design 5/23/2017 10:21:38 AM mjennings



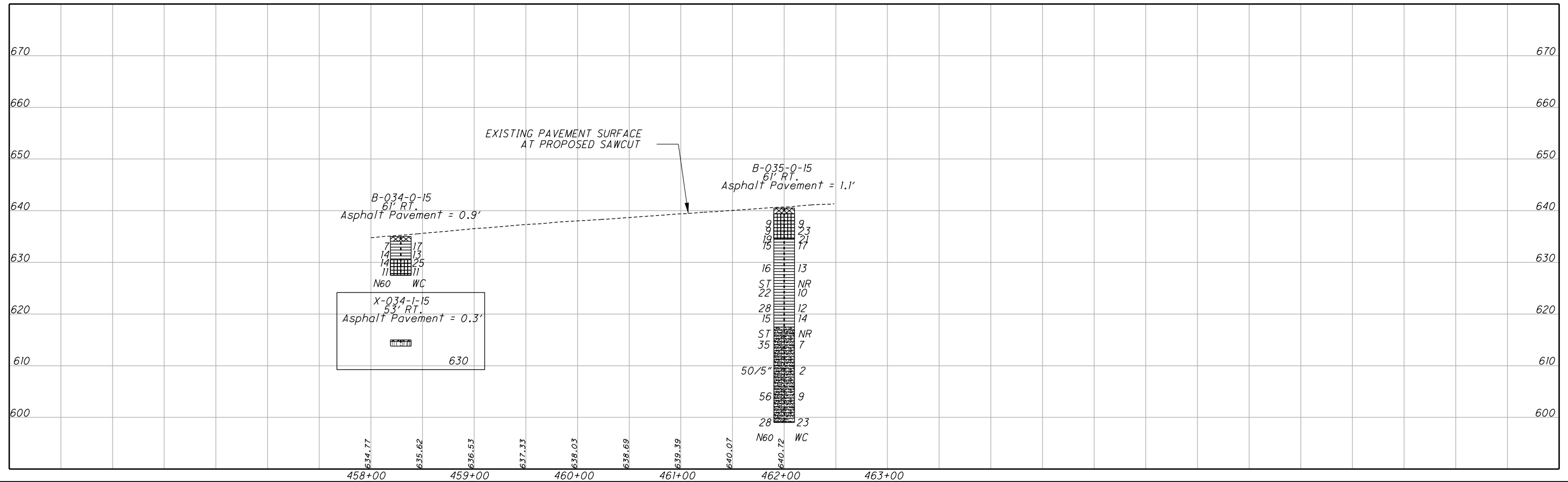
SOIL PROFILE
STA. 443+00.00 TO 458+00.00 - I.R. 71

HAM-71-6.86

V:\1736\active\173620049\design\9474\geotechnical\sheets\50_PP\9474\IP005.dgn Design 5/23/2017 10:23:59 AM mjenmings



FOR CROSS SECTION 463+00, SEE SHEET NO. 34



DRAWN MSJ
CHECKED EMK

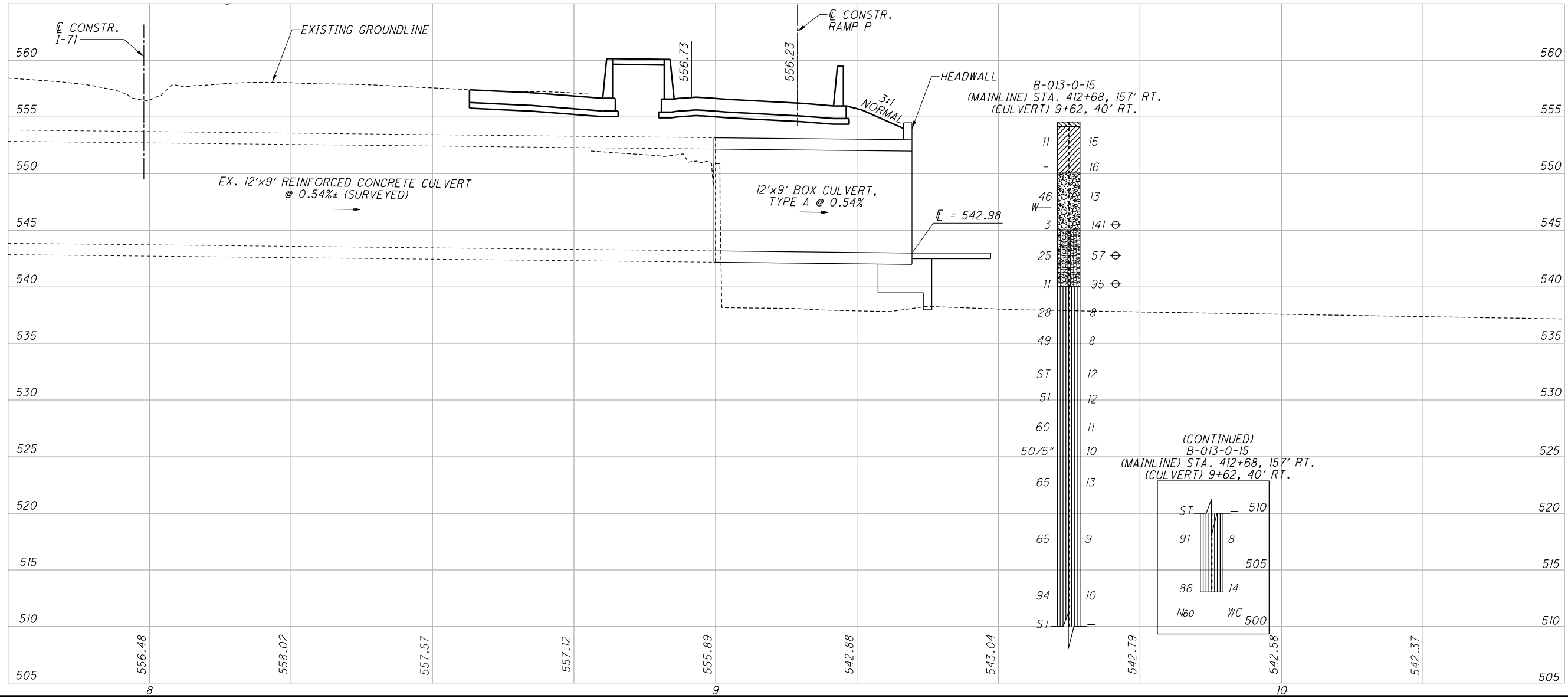
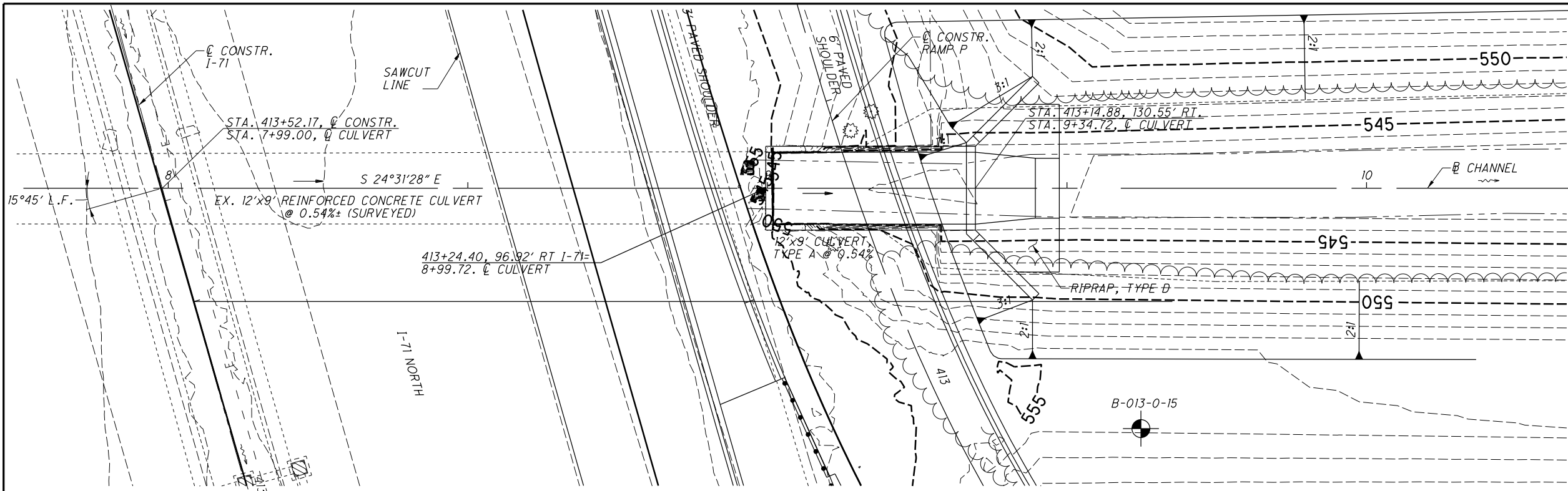
SOIL PROFILE
STA. 458+00.00 TO 463+00.00 - I.R. 71

HAM-71-6.86


18 / 44



V:\1736\active\173620049\design\9474\geotechnical\sheets\9474\ZP001.dgn Sheet 5/23/2017 10:30:02 AM mjenjings







 HORIZONTAL SCALE IN FEET

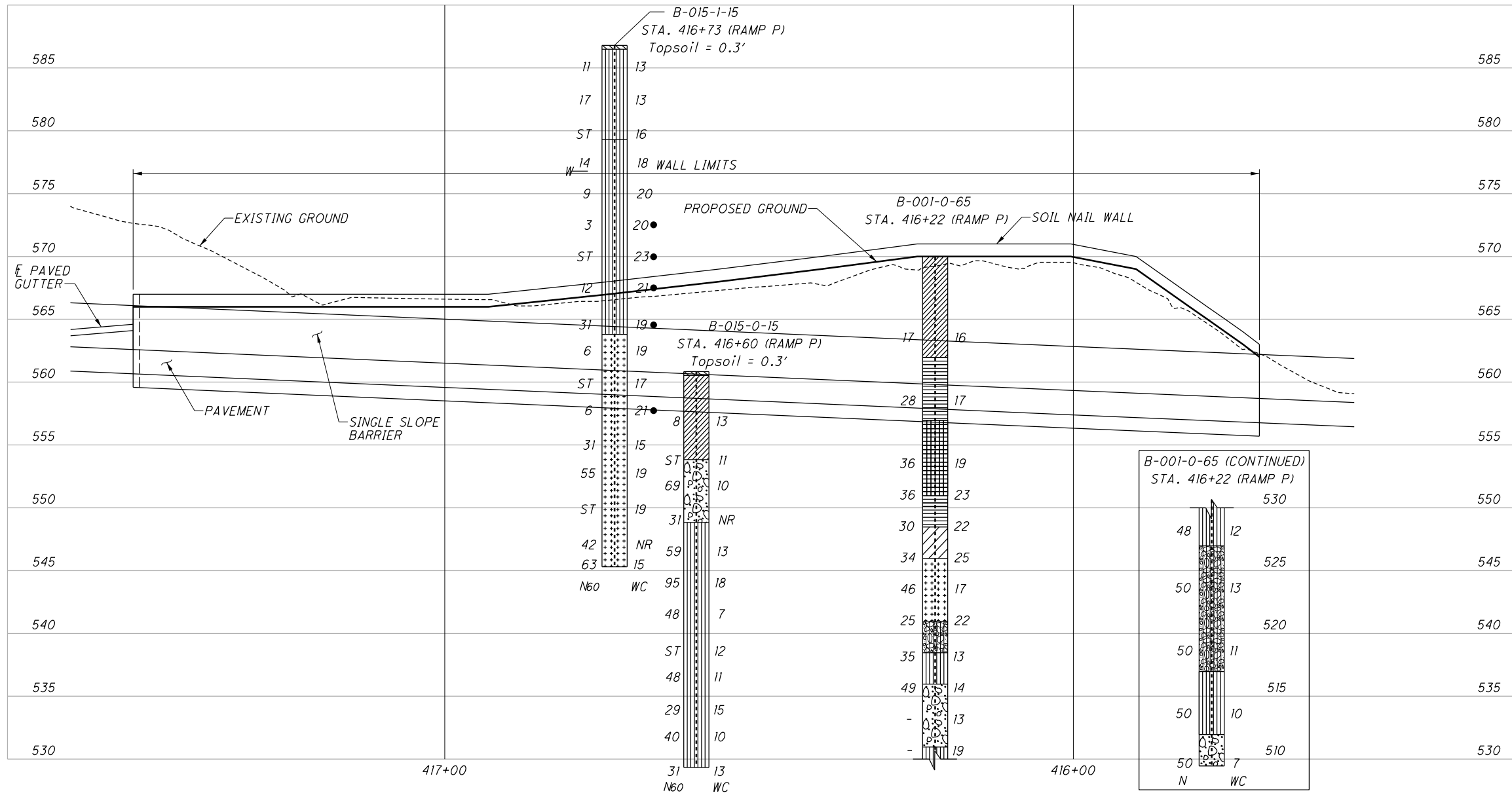
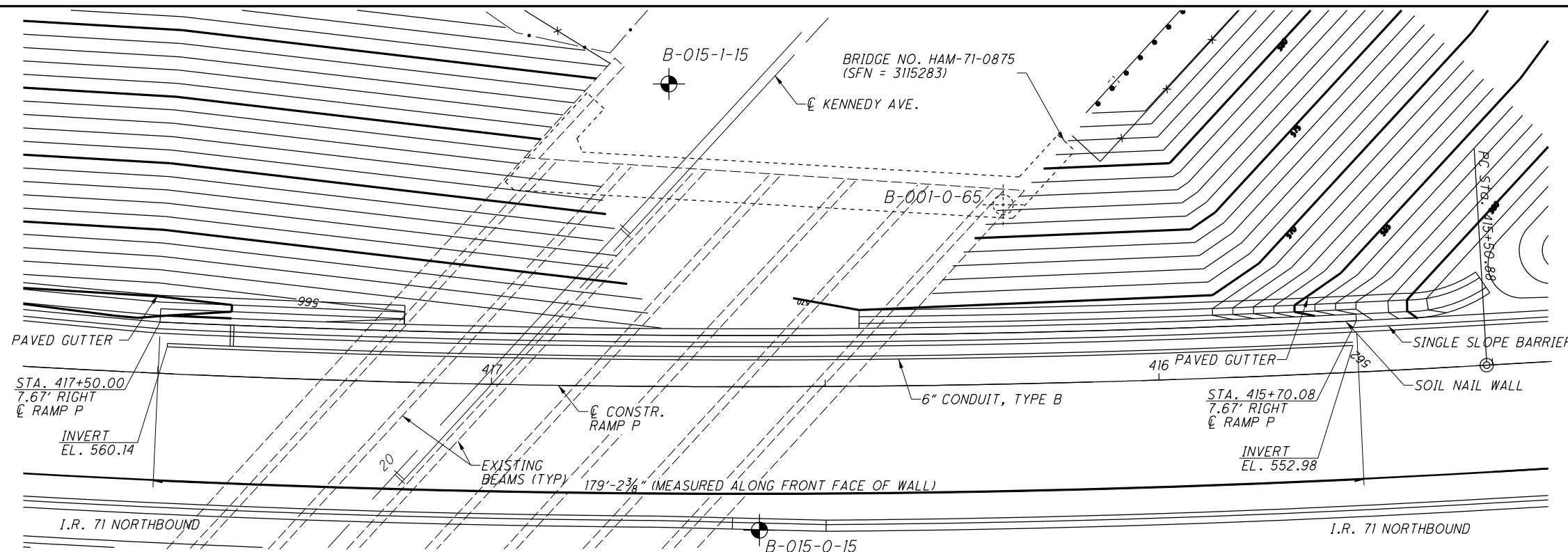
DRAWN: MSJ
 CHECKED: EMK

STRUCTURE FOUNDATION EXPLORATION
 CULVERT AT STA. 413+52.17 - 1-71

HAM-71-6.86

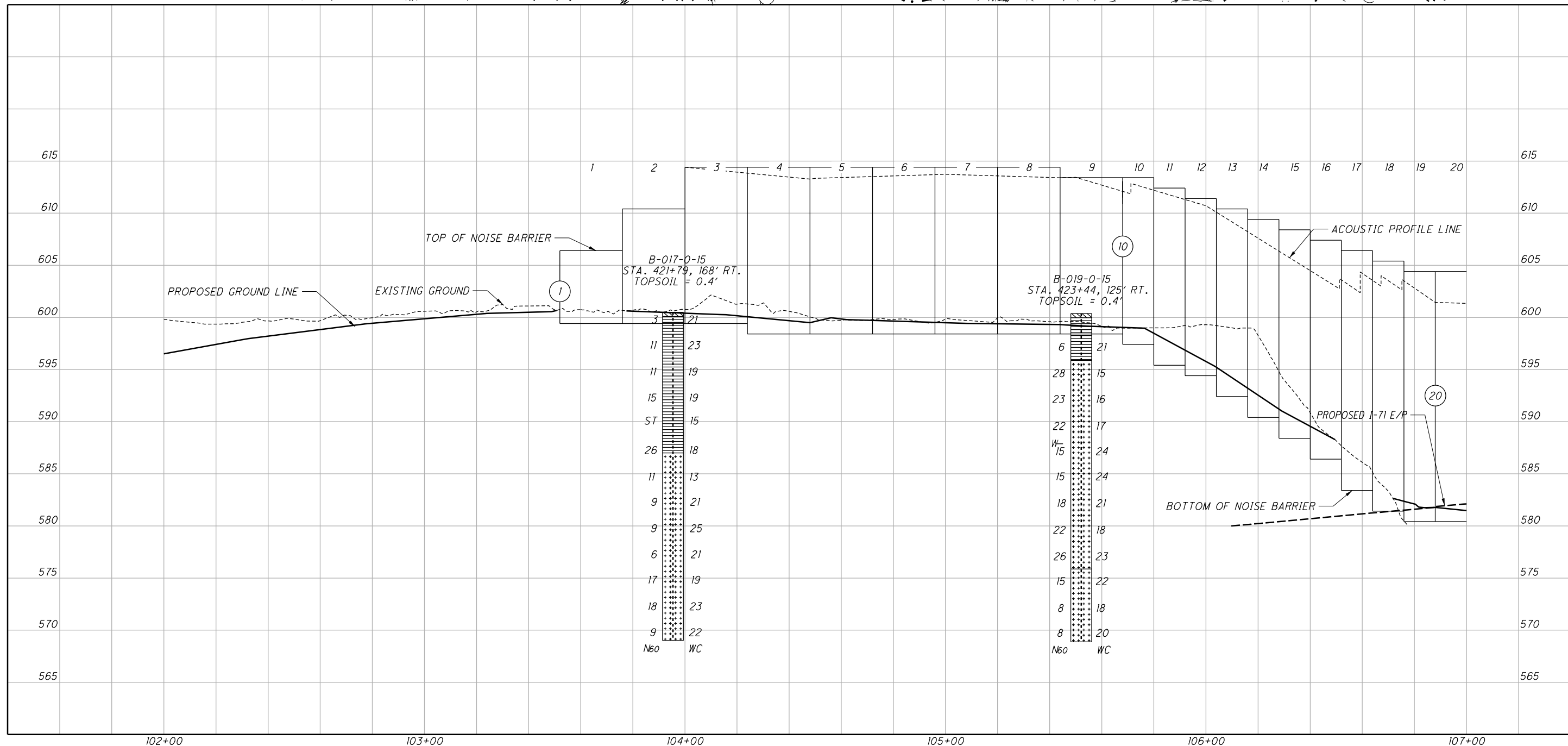
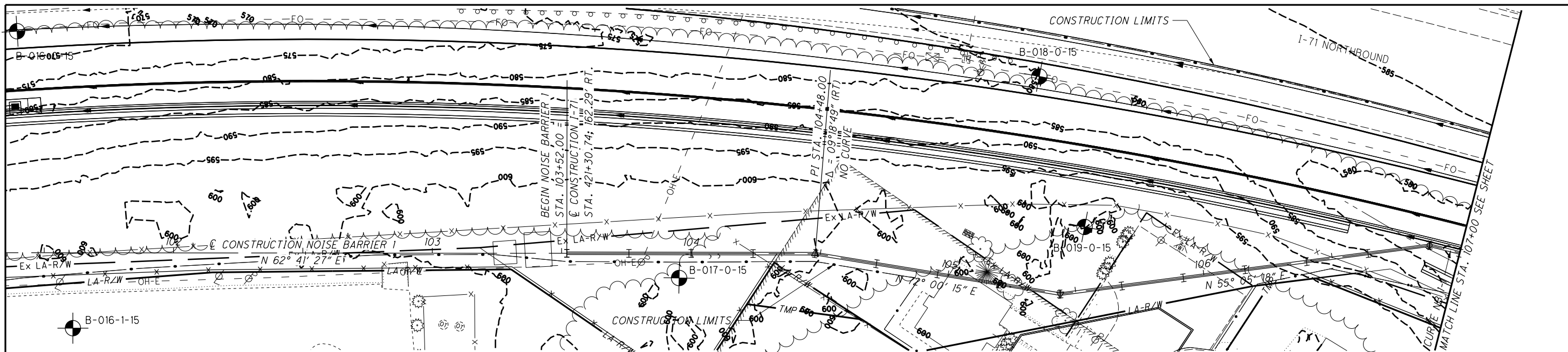
19 / 44

V:\1736\active\173620049\design\9474\geotechnical\sheets\9474\17P002.dgn Sheet 5/23/2017 10:31:28 AM mjenmings




 HORIZONTAL SCALE IN FEET
 0 5 10 20
 DRAWN: MSJ
 CHECKED: EMK
STRUCTURE FOUNDATION EXPLORATION
SOIL NAIL WALL STA 415+70.08 TO 417+50.00
HAM-71-6.86
 20 / 44


V:\1736\active\173620049\design\9474\geotechnical\sheets\9474\ZP003.dgn Sheet 5/23/2017 10:32:35 AM mjennings





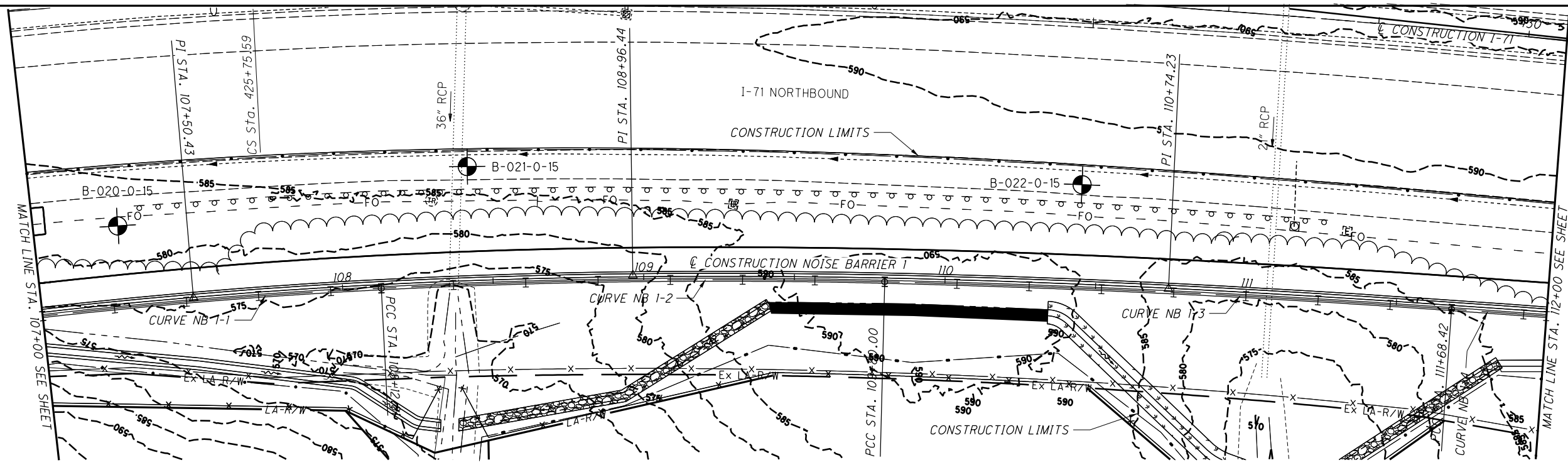
HORIZONTAL SCALE IN FEET

0 10 20 40

DRAWN	MSJ	CHECKED	EMK
STRUCTURE FOUNDATION EXPLORATION			
NOISE BARRIER STA. 103+52.00 TO STA. 107+00.00			
HAM-71-6.86			
21		44	



V:\1736\active\173620049\design\94741\geotechnical\sheets\94741ZP004.dgn Sheet 5/23/2017 10:34:05 AM mjenning






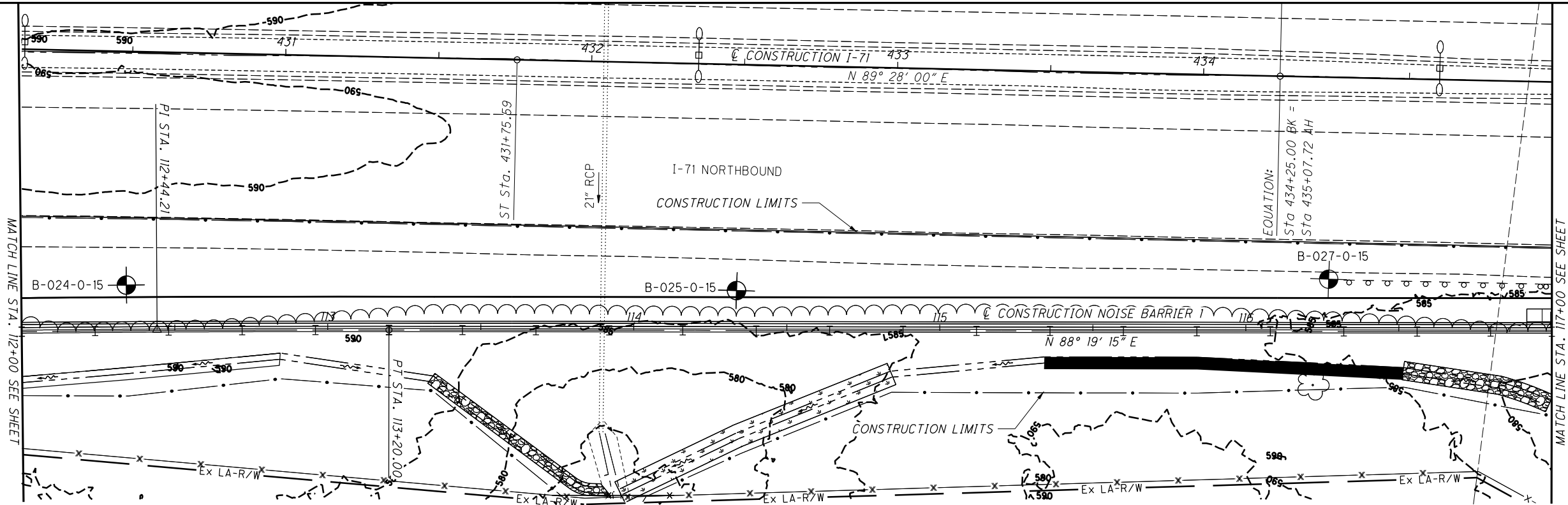


 HORIZONTAL SCALE IN FEET

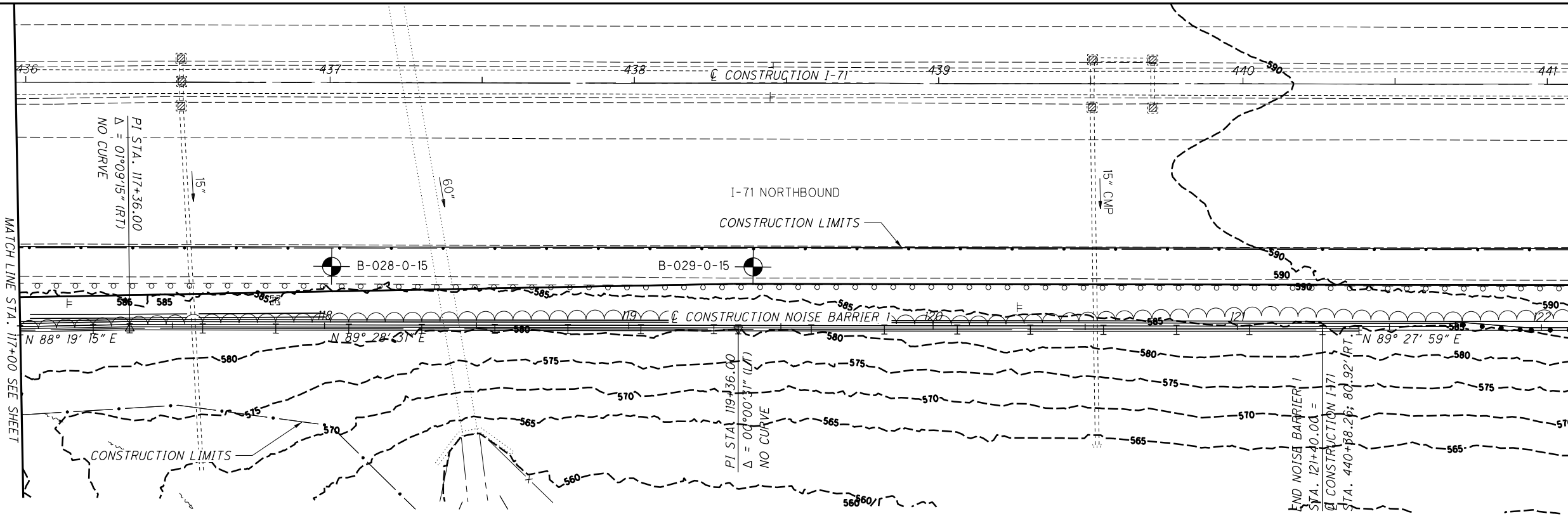
STRUCTURE FOUNDATION EXPLORATION
NOISE BARRIER STA. 107+00.00 TO STA. 112+00.00

HAM-71-6.8.6
 22 / 44


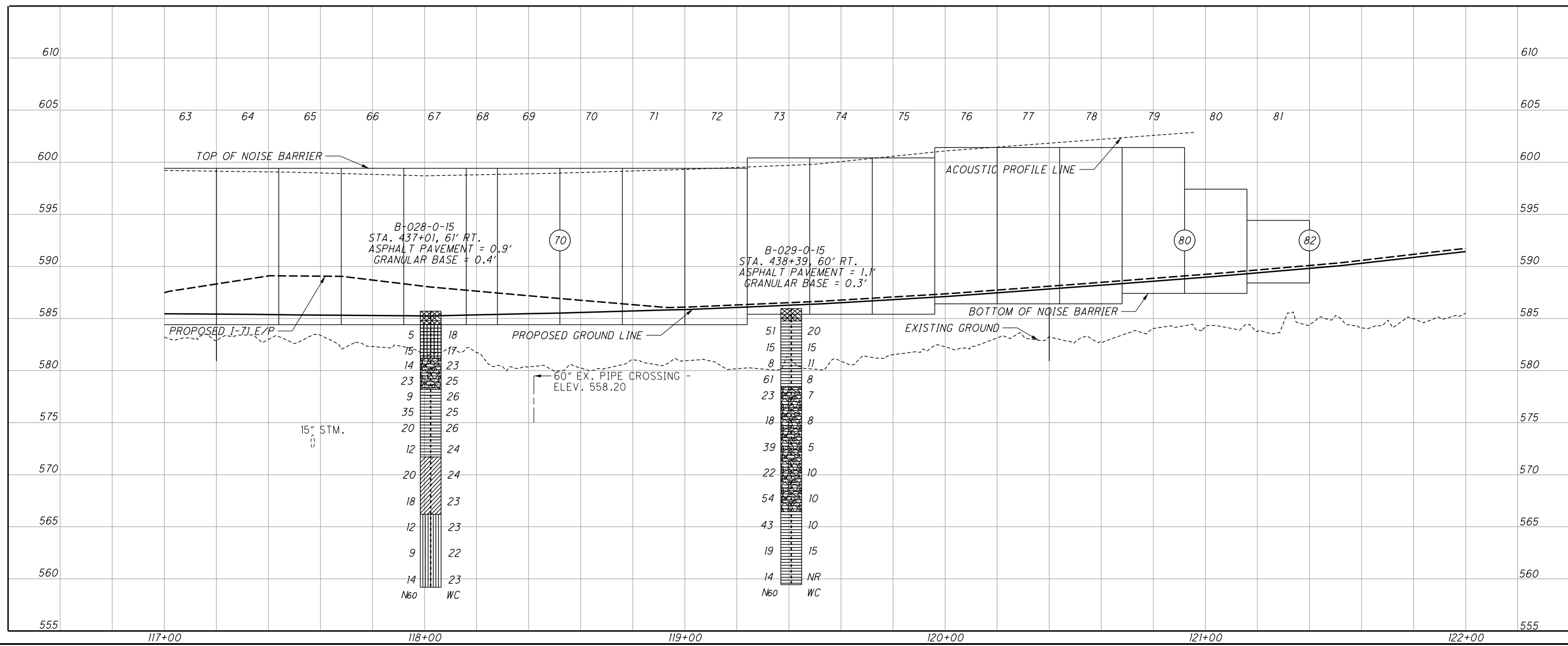
V:\1736\active\173620049\design\9474\geotechnical\sheets\9474\FP005.dgn Sheet 5/23/2017 10:35:22 AM mjennings



V:\1736\active\173620049\design\9474\geotechnical\sheet\9474 ZP006.dgn Sheet 5/23/2017 10:36:29 AM m.jennings

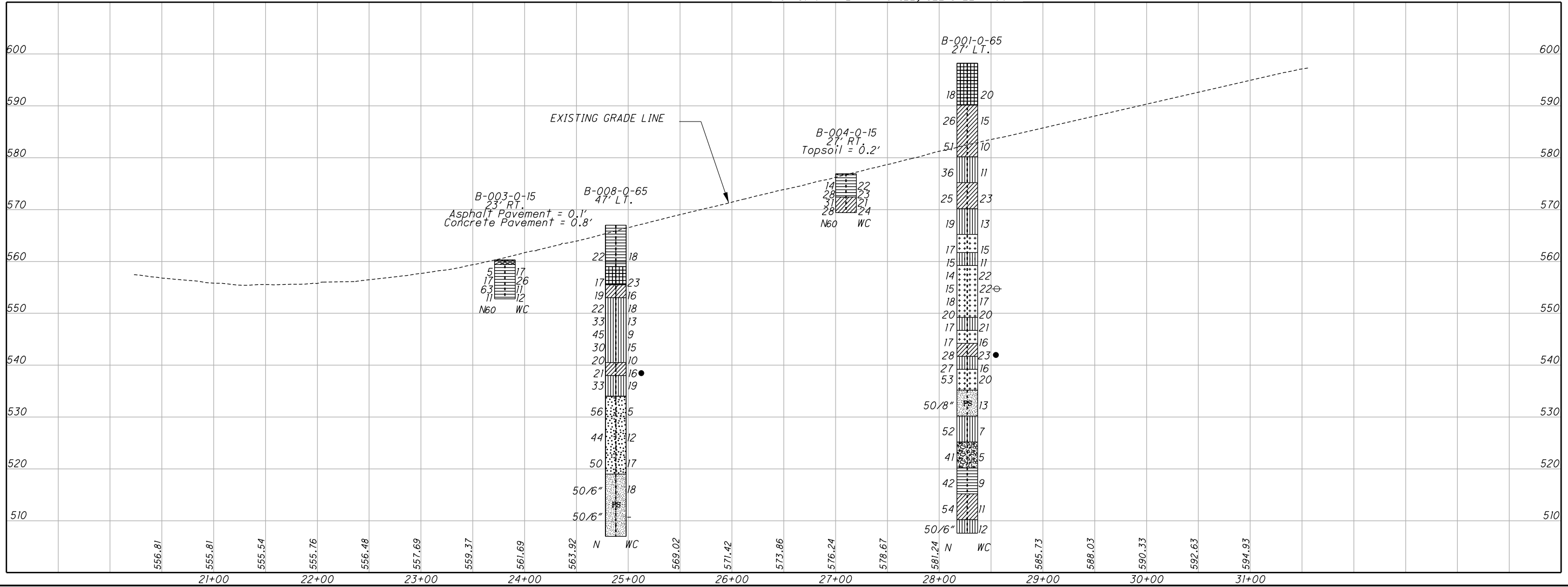
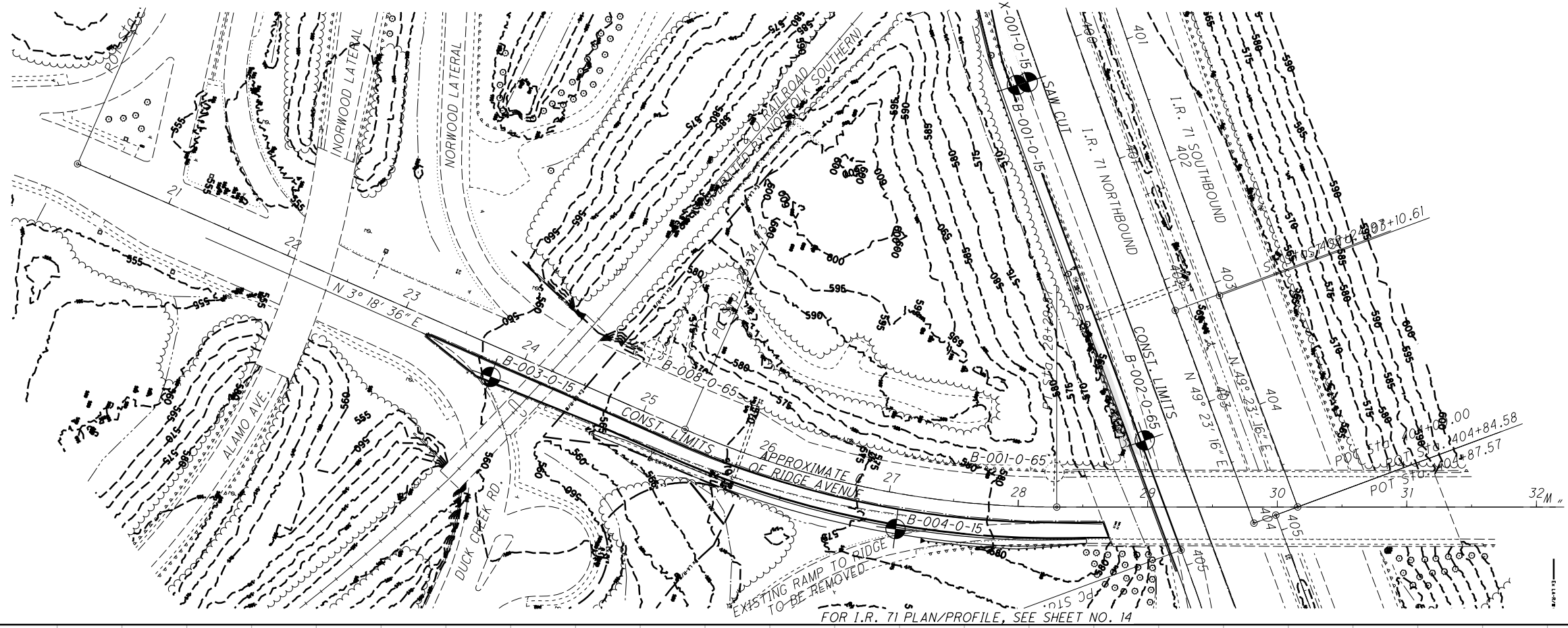


DRAWN MSJ
 CHECKED EMK
STRUCTURE FOUNDATION EXPLORATION
NOISE BARRIER STA. 117+00.00 TO STA. 121+40.00



HAM-71-6.86
 24 / 44

V:\1736\active\173620049\design\9474\geotechnical\sheets\50_PP\9474\IP00R.dgn Design 5/23/2017 10:25:27 AM mjenjings



0 50 100
HORIZONTAL SCALE IN FEET

DRAWN: MSJ
CHECKED: EMK

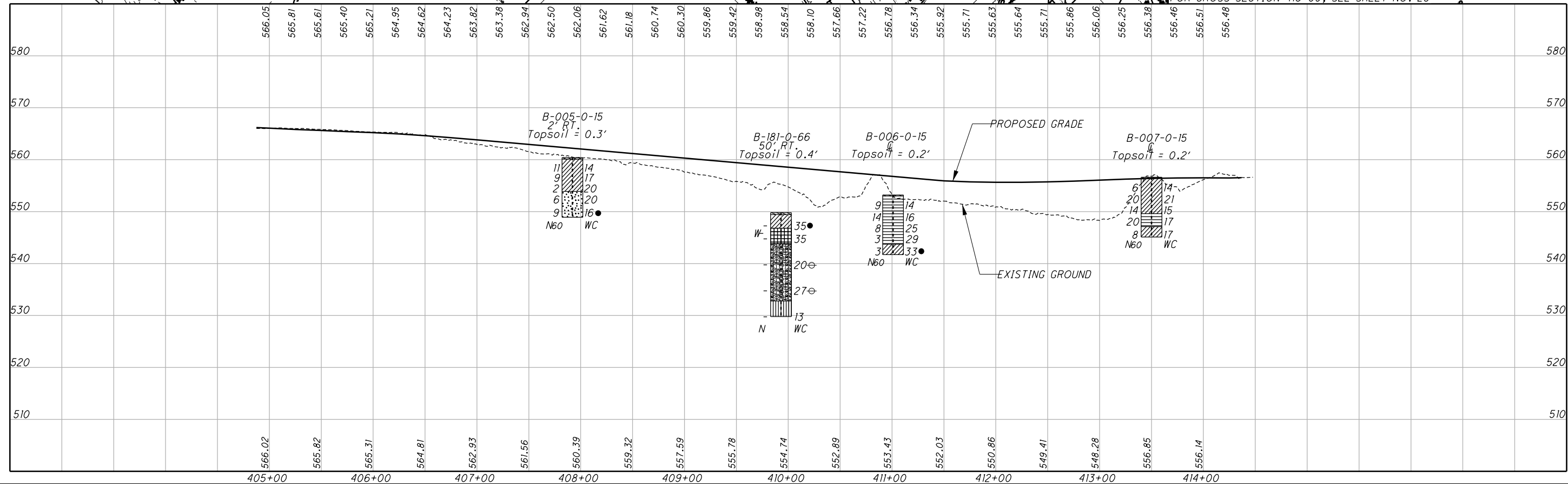
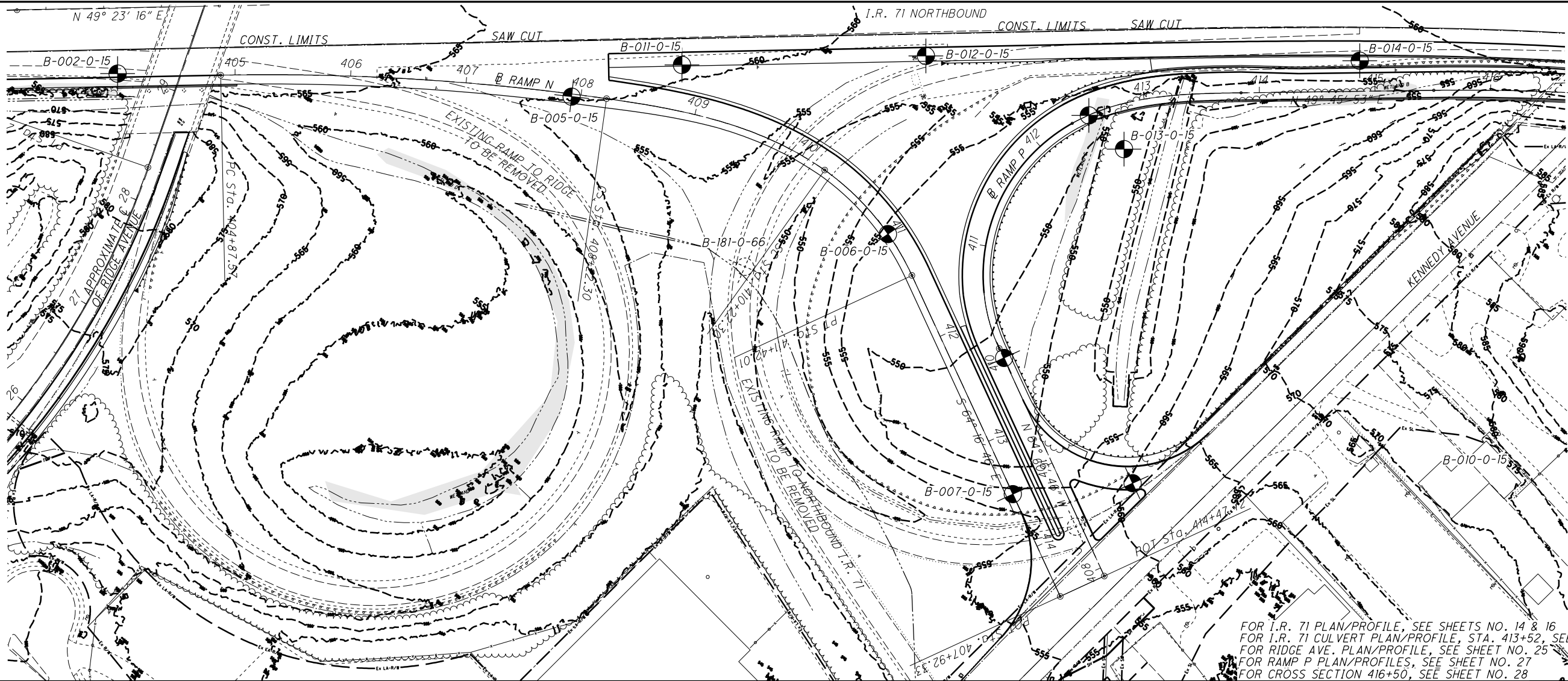
HAM-71-6.86

25 / 44

SOIL PROFILE

STA. 21+00.00 TO 31+00.00 - RIDGE AVE.

V:\1736\active\173620049\design\94741\geotechnical\sheet\50_PP\94741P006RN.dgn Design 5/23/2017 10:26:44 AM m_jennings



FOR I.R. 71 PLAN/PROFILE, SEE SHEETS NO. 14 & 16
 FOR I.R. 71 CULVERT PLAN/PROFILE, STA. 413+52, SEE SHEET NO. 19
 FOR RIDGE AVE. PLAN/PROFILE, SEE SHEET NO. 25
 FOR RAMP P PLAN/PROFILES, SEE SHEET NO. 27
 FOR CROSS SECTION 416+50, SEE SHEET NO. 28

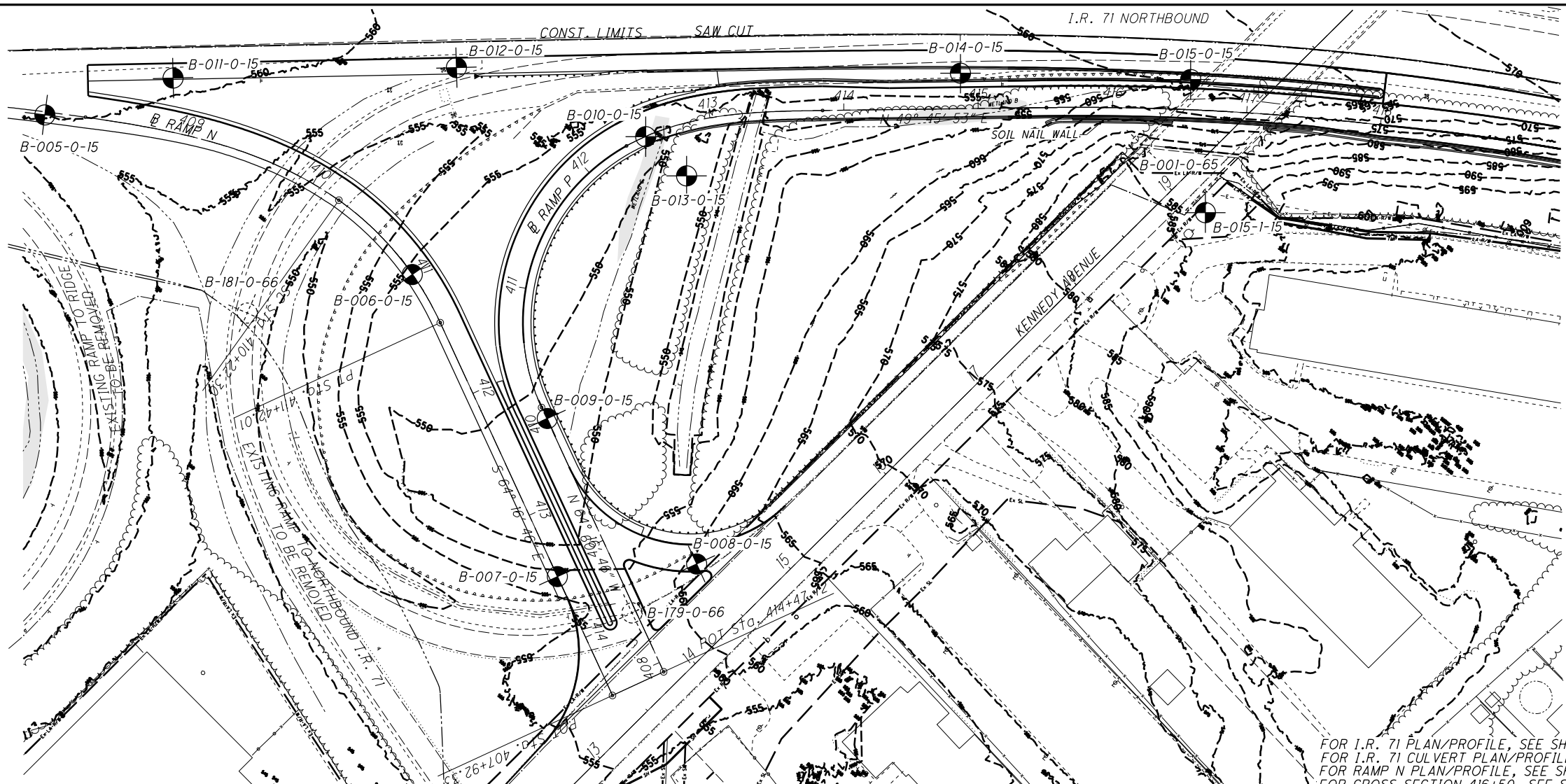
HAM-71-6.86

SOIL PROFILE

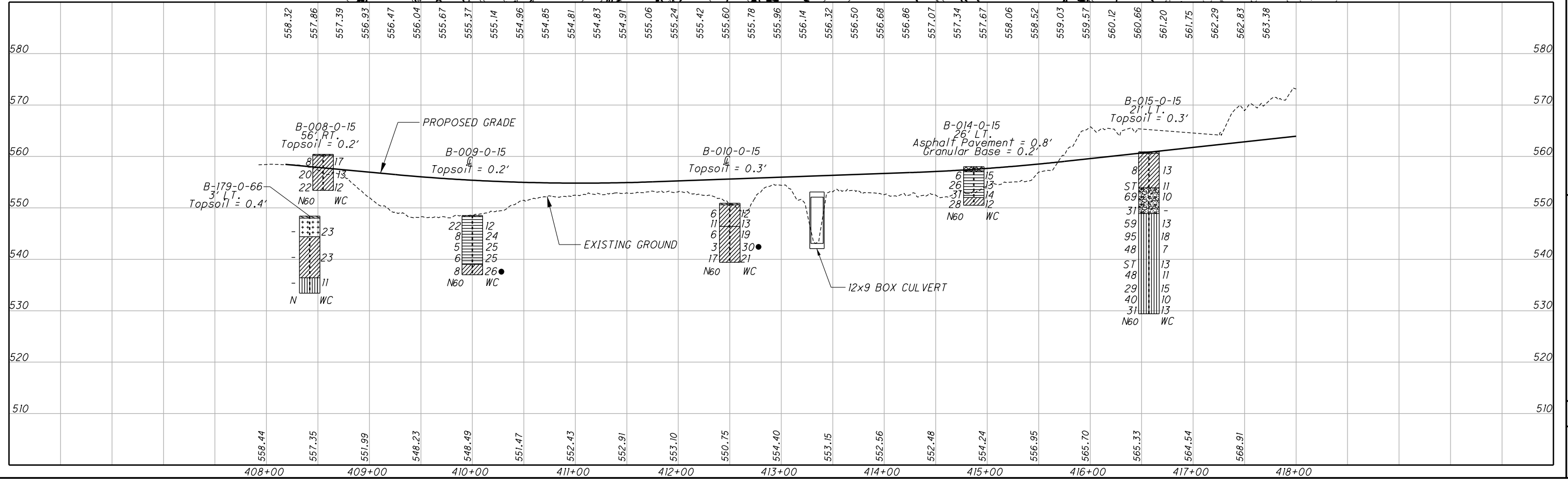
STA. 405+00.00 TO 414+47.72 - RAMP N

26 / 44

DRAWN: MSJ
 CHECKED: EMK



FOR I.R. 71 PLAN/PROFILE, SEE SHEETS NO. 14 & 15
 FOR I.R. 71 CULVERT PLAN/PROFILE, STA. 413+52, SEE SHEET NO. 19
 FOR RAMP N PLAN/PROFILE, SEE SHEET NO. 26
 FOR CROSS SECTION 416+50, SEE SHEET NO. 28



HORIZONTAL SCALE IN FEET

DRAWN: MSJ
 CHECKED: EMK

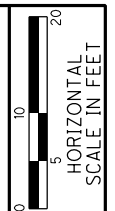
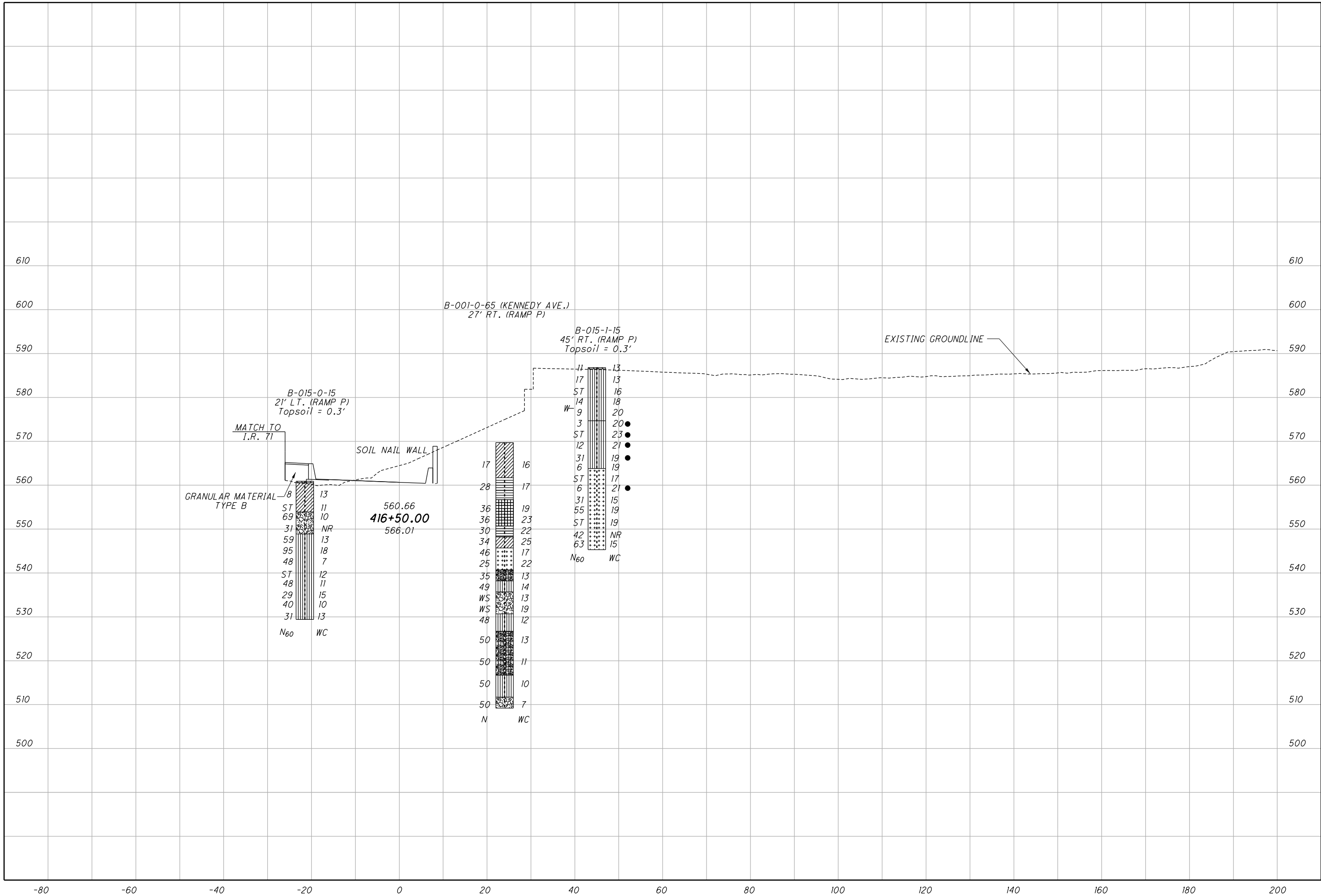
SOIL PROFILE

STA. 407+92.33 TO 418+00.00 - RAMP P

HAM-71-6.86

27 / 44

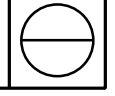
V:\1736\active\173620049\design\94741\geotechnical\sheet\94741\416+50RP.dgn Sheet 5/23/2017 10:37:38 AM mjenning



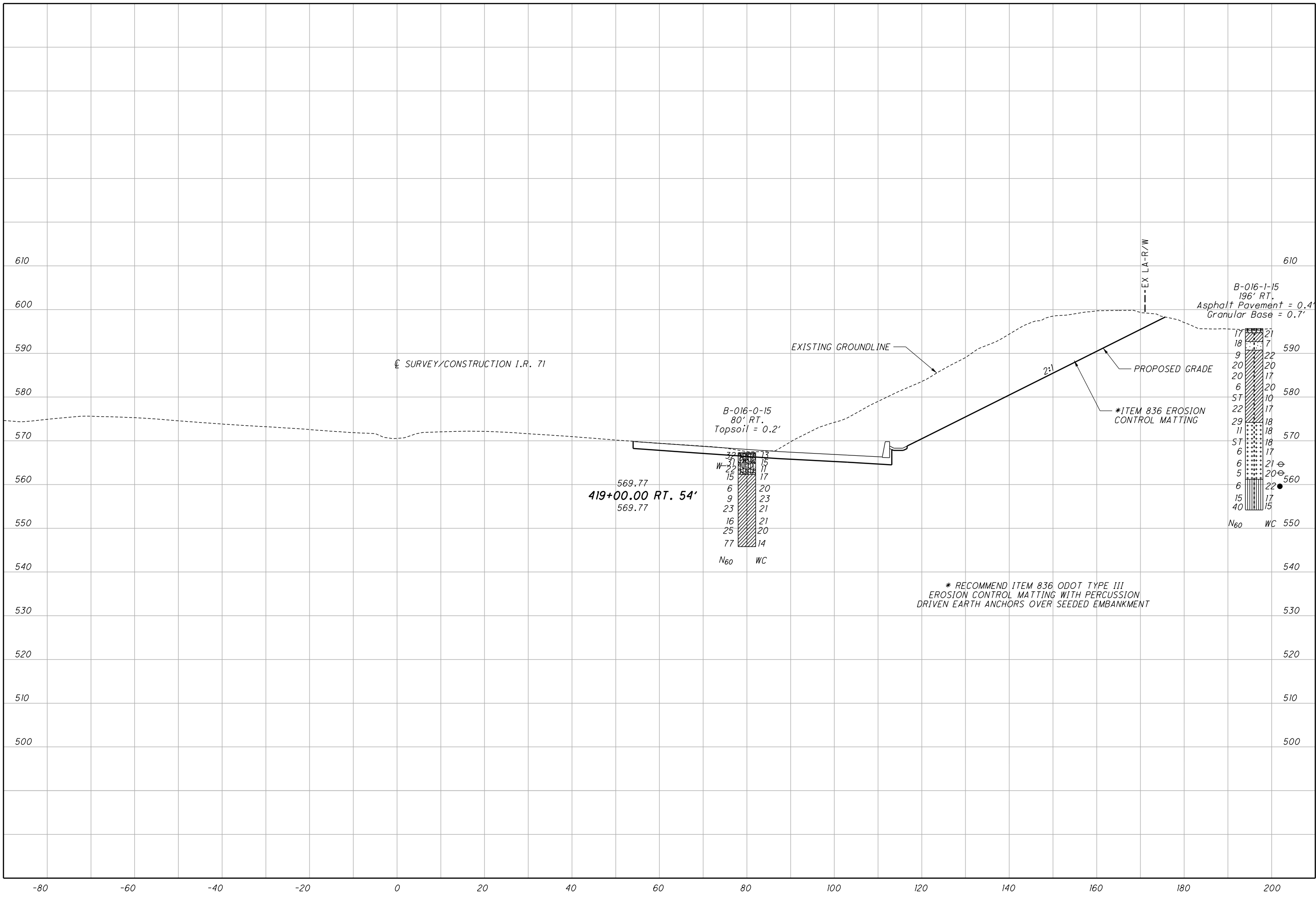
DRAWN MSJ
CHECKED EMK

**CROSS SECTION
STATION 416+50 (RAMP P)**

HAM-71-6.86



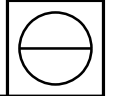
V:\1736\active\173620049\design\94741\geotechnical\sheets\94741X419-00.dgn Sheet 5/23/2017 10:38:50 AM mjenning



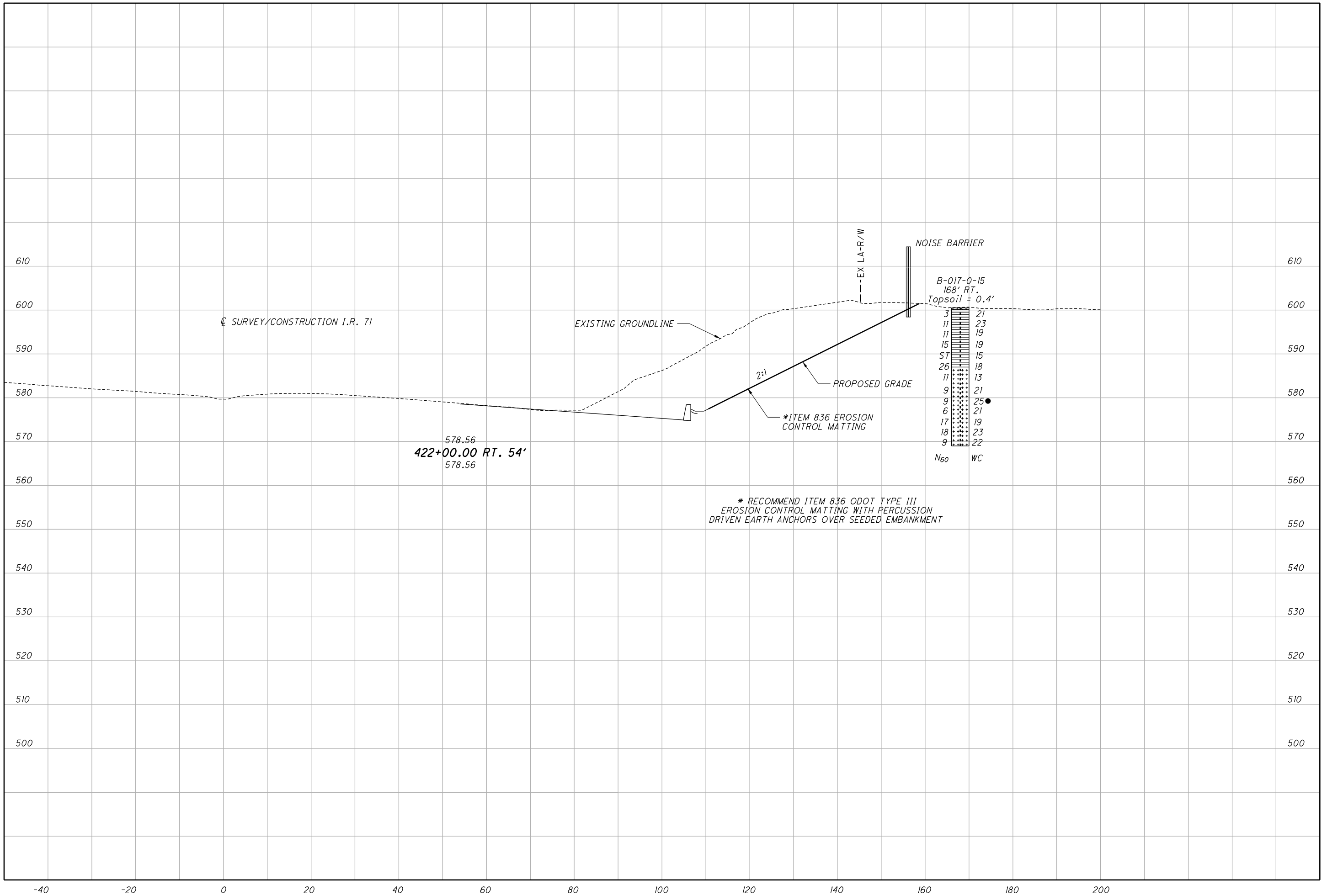
DRAWN MSJ
CHECKED EMK

**CROSS SECTION
STATION 419+00**

HAM-71-6.86



V:\1736\active\173620049\design\94741\geotechnical\sheets\94741X422+00.dgn Sheet 5/23/2017 10:39:55 AM mjennings



DRAWN MSJ
CHECKED EMK

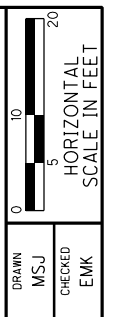
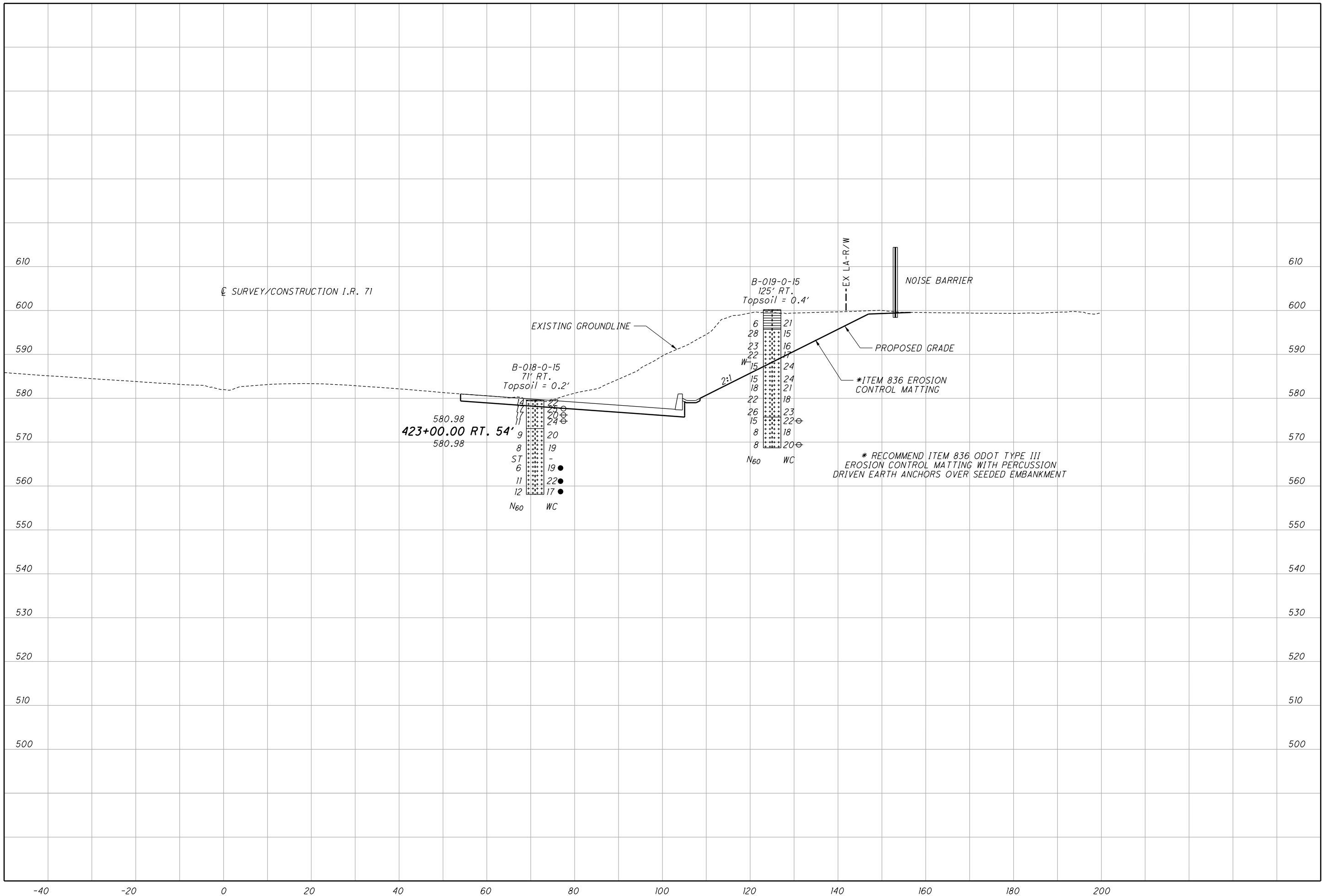
CROSS SECTION
STATION 422+00

HAM-71-6.86

30 / 44



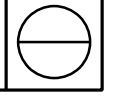
V:\1736\active\173620049\design\94741\geotechnical\sheet\94741X423+00.dgn Sheet 5/23/2017 10:41:03 AM mjennings



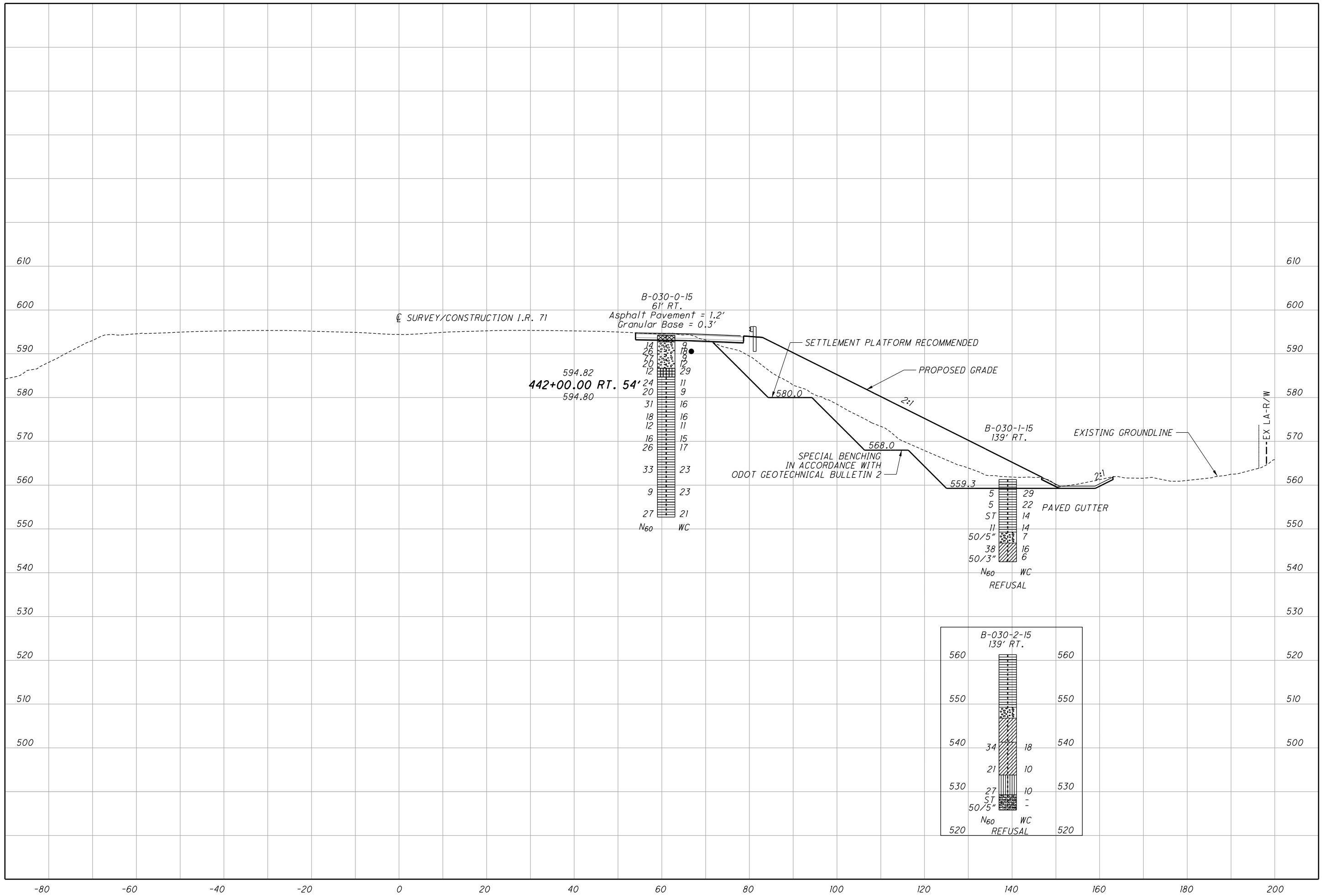
DRAWN MSJ
CHECKED EMK

**CROSS SECTION
STATION 423+00**

HAM-71-6.86



V:\1736\active\173620049\design\94741\geotechnical\sheet\94741X442-00.dgn Sheet 5/23/2017 10:42:19 AM mjmennings



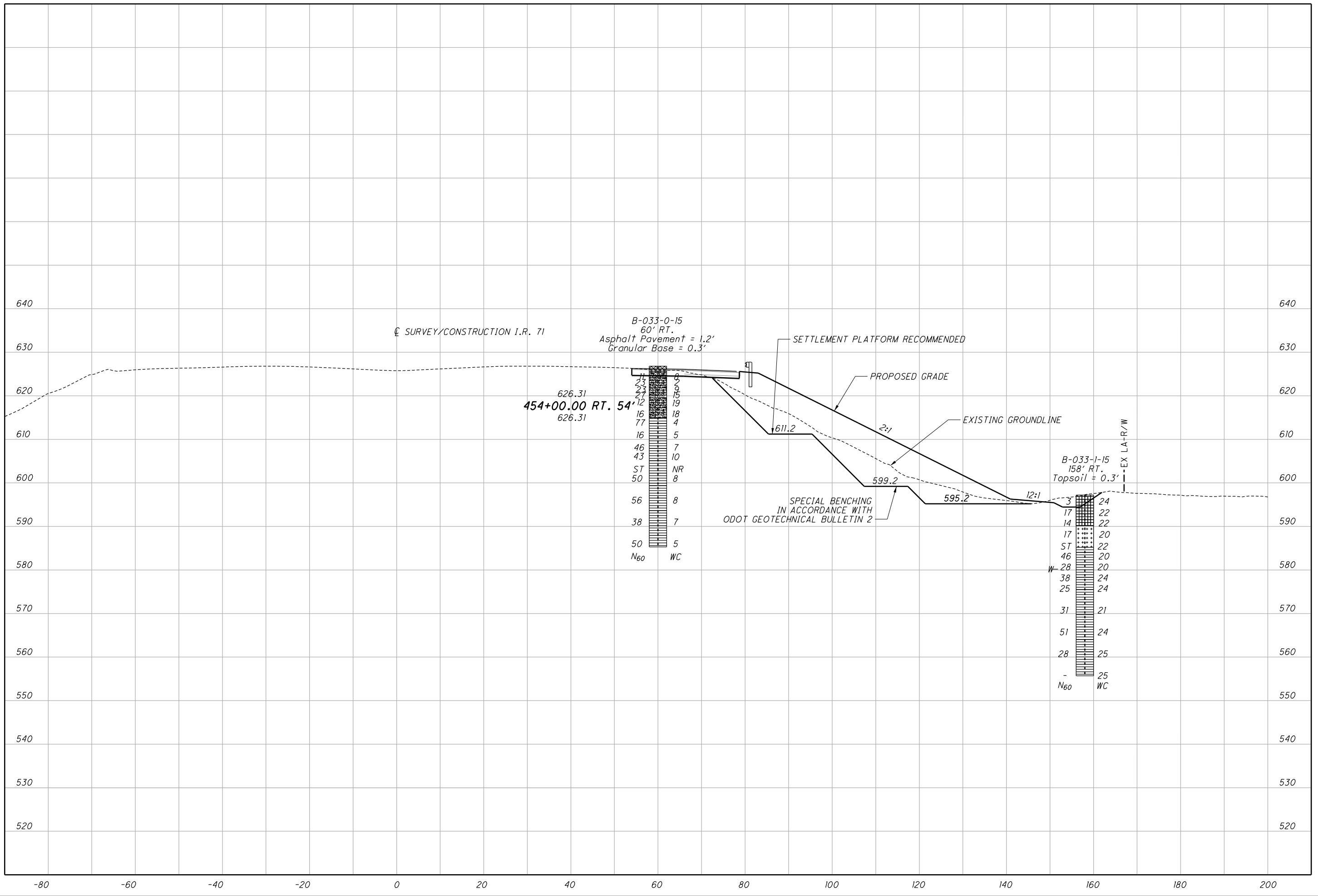
DRAWN: MSJ
 CHECKED: EMK

**CROSS SECTION
 STATION 442+00**

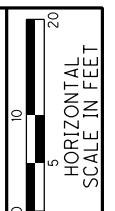
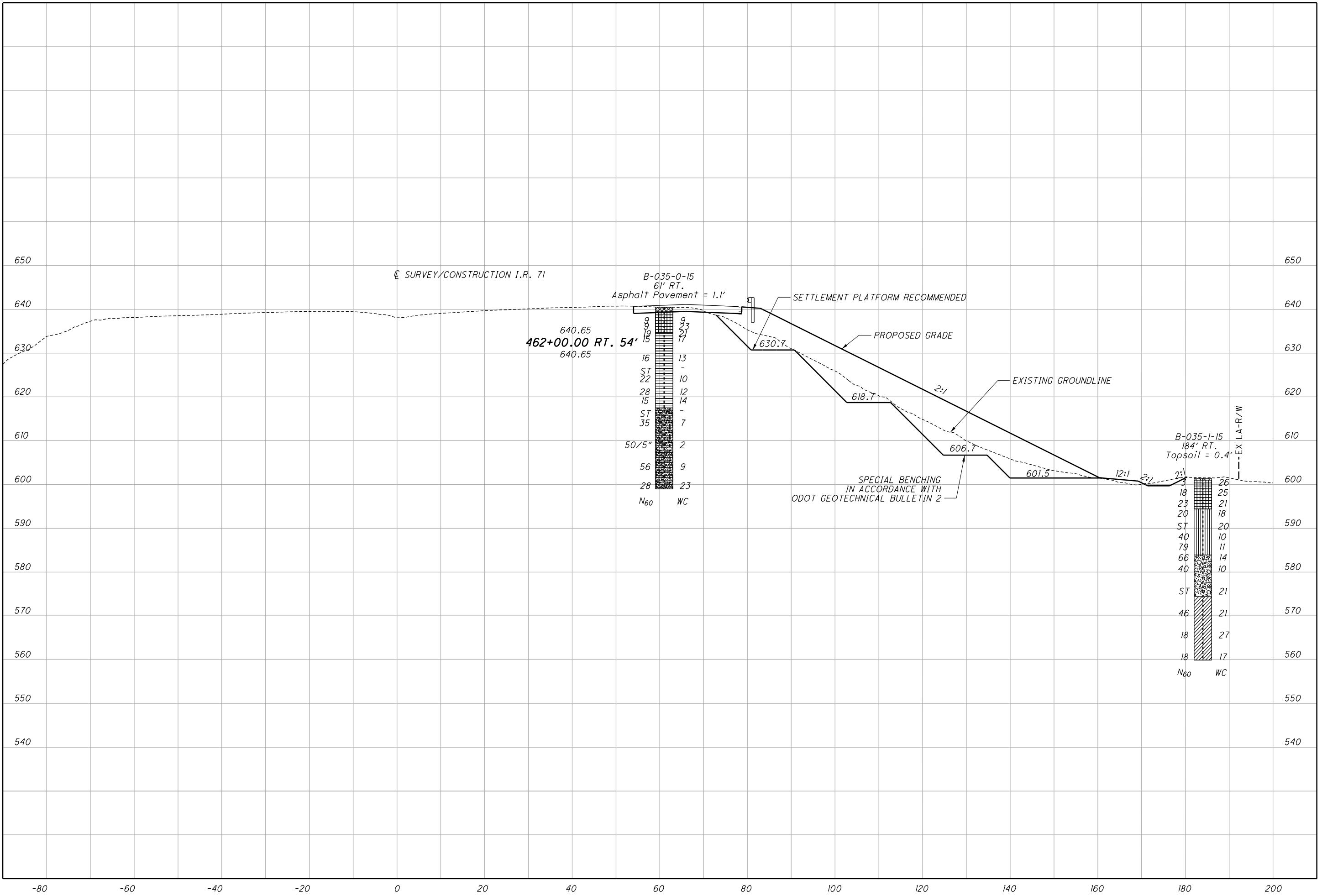
HAM-71-6.86



V:\1736\active\173620049\design\94741\geotechnical\sheet\94741X454+00.dgn Sheet 5/23/2017 10:43:28 AM mjmerrings



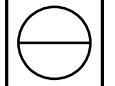
V:\1736\active\173620049\design\94741\geotechnical\94741X462+00.dgn Sheet 5/23/2017 10:44:49 AM mjenning



DRAWN	MSJ
CHECKED	EMK

**CROSS SECTION
STATION 462+00**

HAM-71-6.86



OHIO DEPARTMENT OF TRANSPORTATION
OFFICE OF GEOTECHNICAL ENGINEERING

LOG OF BORING

PROJECT: HAM-71-6.86		DRILLING FIRM / OPERATOR: STANTEC / BRADFORD		DRILL RIG: CME 55 TRACKED		STATION / OFFSET: 416+51.84' RT.		EXPLORATION ID									
TYPE: ROADWAY/SOIL NAIL WALL		SAMPLING FIRM / LOGGER: STANTEC / BRADFORD		HAMMER: CME AUTOMATIC		ALIGNMENT: I-71		B-015-0-15									
PID: 94741 SFN: 3115283		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/8/16		ELEVATION: 560.9 (MSL) EOB: 31.5 ft.		PAGE									
START: 5/17/16 END: 5/17/16		SAMPLING METHOD: SPT / ST		ENERGY RATIO (%): 92.4		LAT / LONG: 39.169312, -84.419815		1 OF 1									
MATERIAL DESCRIPTION AND NOTES																	
TOPSOIL	ELEV.	DEPTHS	SPT / RQD	N _a	REC SAMPLE (%)	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
	560.9	1															<L><L><L>
MEDIUM STIFF, GRAY, SILT AND CLAY, LITTLE GRAVEL, SOME SAND, DAMP	560.6	2															>>>>>>
		3	2	8	89	SS-1	2.50	15	11	13	33	28	26	14	12	13	A-6a (6)
		4	3														>>>>>>
		5															>>>>>>
		6			67	ST-1	4.00	-	-	-	-	-	-	-	11		>>>>>>
	553.9	7															>>>>>>
DENSE TO VERY DENSE, GRAY GRAVEL AND STONE FRAGMENTS WITH SAND, LITTLE SILT, TRACE CLAY, DAMP		8	22	69	89	SS-2	1.50	49	10	16	17	8	17	13	4	10	A-1-b (0)
		9	21														>>>>>>
		10	24														>>>>>>
		11	5	31	0	SS-3	-	-	-	-	-	-	-	-	-	-	A-1-b (V)
		12	7														>>>>>>
	548.9	13	15	59	89	SS-4	4.50	-	-	-	-	-	-	-	-	13	A-4a (V)
		14	15														>>>>>>
		15	12	95	61	SS-5	4.50	13	9	13	38	27	23	14	9	18	A-4a (6)
		16	23														>>>>>>
		17	39														>>>>>>
		18	12	48	100	SS-6	4.50	13	9	13	38	27	23	14	9	7	A-4a (6)
		19	5														>>>>>>
		20															>>>>>>
		21			71	ST-2	4.50	-	-	-	-	-	-	-	-	12	A-4a (V)
		22															>>>>>>
		23	6	12	48	SS-7	4.50	-	-	-	-	-	-	-	-	11	A-4a (V)
		24	19														>>>>>>
		25	7	12	29	SS-8	1.50	-	-	-	-	-	-	-	-	15	A-4a (V)
		26	12														>>>>>>
		27	7														>>>>>>
		28	8	14	40	SS-9	4.00	-	-	-	-	-	-	-	-	10	A-4a (V)
		29	12														>>>>>>
		30	7	10	31	SS-10	2.00	-	-	-	-	-	-	-	-	13	A-4a (V)
	529.4	31	10														>>>>>>
		EOB															>>>>>>

NOTES: NONE
ABANDONMENT METHODS, MATERIALS, QUANTITIES: AUGER CUTTINGS

OHIO DEPARTMENT OF TRANSPORTATION
OFFICE OF GEOTECHNICAL ENGINEERING

LOG OF BORING

PROJECT: HAM-71-6.86		DRILLING FIRM / OPERATOR: STANTEC / BRADFORD		DRILL RIG: CME 55 TRACKED		STATION / OFFSET: 416+68, 182' RT.										EXPLORATION ID			
TYPE: ROADWAY/SOIL NAIL WALL		SAMPLING FIRM / LOGGER: STANTEC / BRADFORD		HAMMER: CME AUTOMATIC		ALIGNMENT: I-71										B-015-1-15			
PID: 94741 SFN: 3115283		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/8/16		ELEVATION: 586.8 (MSL) EOB: 41.5 ft.										PAGE			
START: 5/23/16 END: 5/23/16		SPT / ST		ENERGY RATIO (%): 92.4		LAT / LONG: 39.169126, -84.419562										1 OF 1			
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/RQD	N _s	REC SAMPLE (%)	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL	
TOPSOIL LOOSE TO MEDIUM DENSE, BROWN, SANDY SILT, SOME GRAVEL, LITTLE CLAY, DAMP TO MOIST	586.5	1	3	4	11	78	4.00	28	9	24	23	16	24	14	10	13	A-4a (1)		
		2																	
		3	5	6	17	89	4.50	28	9	24	23	16	24	14	10	13	A-4a (1)		
		4																	
		5																	
		6				71	1.00	-	-	-	-	-	-	-	-	-	17	A-4a (V)	
		7																	
		8				14	89	3.50	-	-	-	-	-	-	-	-	18	A-4a (V)	
		9																	
		10																	
MEDIUM DENSE TO DENSE, BROWN, SANDY SILT, TRACE GRAVEL, LITTLE CLAY, WET	574.8	11	3	3	9	89	3.00	-	-	-	-	-	-	-	-	20	A-4a (V)		
		12																	
		13	1	1	3	72	2.00	-	-	-	-	-	-	-	-	20	A-4a (V)		
		14																	
		15																	
		16				92	1.00	-	-	-	-	-	-	-	-	22	A-4a (V)		
		17																	
		18	1	3	5	12	67	1.50	6	7	42	35	10	18	17	1	21	A-4a (2)	
		19																	
		20																	
VERY LOOSE TO LOOSE FROM 12.5' TO 17.0'		21	6	7	31	67	4.00	6	7	42	35	10	18	17	1	19	A-4a (2)		
		22																	
		23	2	1	3	6	61	1.00	-	-	-	-	-	-	-	19	A-4b (V)		
		24																	
		25																	
		26				100	2.50	-	-	-	-	-	-	-	-	18	A-4b (V)		
		27																	
		28	1	2	2	6	67	1.50	5	5	10	52	28	23	15	8	21	A-4b (8)	
		29																	
		30																	
MEDIUM STIFF, GRAY, SILT, TRACE GRAVEL, LITTLE SAND, SOME CLAY, MOIST TO WET	563.8	31	3	9	31	94	2.00	5	5	10	52	28	23	15	8	15	A-4b (8)		
		32																	
		33	9	15	21	55	94	4.50	-	-	-	-	-	-	-	19	A-4b (V)		
		34																	
		35																	
		36				79	4.50	-	-	-	-	-	-	-	-	19	A-4b (V)		
		37																	
		38	8	13	14	42	0	-	-	-	-	-	-	-	-	-	-	A-4b (V)	
		39																	
		40																	
HARD, GRAY, SILT, TRACE GRAVEL, LITTLE SAND, SOME CLAY, DAMP TO MOIST	545.3	41	5	19	63	67	4.50	-	-	-	-	-	-	-	-	15	A-4b (V)		
		42																	
		43																	

NOTES: PERCHED GROUNDWATER
ABANDONMENT METHODS, MATERIALS, QUANTITIES: AUGER CUTTINGS: BENTONITE PELLETS

OHIO DEPARTMENT OF TRANSPORTATION
OFFICE OF GEOTECHNICAL ENGINEERING

LOG OF BORING

PROJECT: HAM-71-6.86		DRILLING FIRM / OPERATOR: STANTEC / BRADFORD		DRILL RIG: CME 55 TRACKED		STATION / OFFSET: 421+79, 168' RT.		EXPLORATION ID										
TYPE: ROADWAY/NOISEWALL		SAMPLING FIRM / LOGGER: STANTEC / BRADFORD		HAMMER: CME AUTOMATIC		ALIGNMENT: I-71		B-017-0-15										
PID: 94741 SFN: N/A		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/8/16		ELEVATION: 600.5 (MSL) EOB: 31.5 ft.		PAGE										
START: 5/25/16 END: 5/25/16		SAMPLING METHOD: SPT / ST		ENERGY RATIO (%): 92.4		LAT / LONG: 39.169802, -84.418168		1 OF 1										
MATERIAL DESCRIPTION AND NOTES																		
ELEV.	DEPTHS	SPT/RQD	N _s	REC SAMPLE (%)	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL		
600.5	1	1	3	72	1.50	-	-	-	-	-	-	-	-	-	21	A-6b (V)	<LV><LV>	
600.1	2	1	3	72	1.50	-	-	-	-	-	-	-	-	-	-	-	<LV><LV>	
	3	3	11	56	3.00	-	-	-	-	-	-	-	-	-	-	-	<LV><LV>	
	4	4	11	56	3.00	-	-	-	-	-	-	-	-	-	-	-	<LV><LV>	
	5	2	3	72	2.50	4	9	37	25	30	13	17	19	-	-	A-6b (5)	<LV><LV>	
	6	3	4	72	2.50	4	9	37	25	30	13	17	19	-	-	-	<LV><LV>	
	7	4	4	72	2.50	4	9	37	25	30	13	17	19	-	-	-	<LV><LV>	
	8	3	5	56	3.00	4	9	37	25	30	13	17	19	-	-	A-6b (5)	<LV><LV>	
	9	5	5	56	3.00	4	9	37	25	30	13	17	19	-	-	-	<LV><LV>	
	10																<LV><LV>	
	11			100	2.00	-	-	-	-	-	-	-	-	-	15	A-6b (V)	<LV><LV>	
	12																<LV><LV>	
587.0	13	7	9	61	3.50	-	-	-	-	-	-	-	-	-	-	18	A-6b (V)	<LV><LV>
	14	8	9	61	3.50	-	-	-	-	-	-	-	-	-	-	-	-	<LV><LV>
	15																<LV><LV>	
	16	3	3	44	-	-	-	-	-	-	-	-	-	-	13	A-4b (V)	<LV><LV>	
	17	4	4	44	-	-	-	-	-	-	-	-	-	-	-	-	<LV><LV>	
	18	2	9	78	2.00	0	0	18	69	13	26	21	5	21	-	A-4b (8)	<LV><LV>	
	19	4	9	78	2.00	0	0	18	69	13	26	21	5	21	-	-	<LV><LV>	
	20	3	2	61	2.00	0	0	18	69	13	26	21	5	25	-	A-4b (8)	<LV><LV>	
	21	4	9	61	2.00	0	0	18	69	13	26	21	5	25	-	-	<LV><LV>	
	22																<LV><LV>	
	23	1	6	67	1.00	-	-	-	-	-	-	-	-	21	-	A-4b (V)	<LV><LV>	
	24	3	6	67	1.00	-	-	-	-	-	-	-	-	21	-	-	<LV><LV>	
	25																<LV><LV>	
	26	3	7	89	1.50	-	-	-	-	-	-	-	-	19	-	A-4b (V)	<LV><LV>	
	27	4	7	89	1.50	-	-	-	-	-	-	-	-	19	-	-	<LV><LV>	
	28	4	7	94	1.00	-	-	-	-	-	-	-	-	23	-	A-4b (V)	<LV><LV>	
	29	5	7	94	1.00	-	-	-	-	-	-	-	-	23	-	-	<LV><LV>	
	30																<LV><LV>	
569.0	31	2	3	67	2.50	-	-	-	-	-	-	-	-	22	-	A-4b (V)	<LV><LV>	
	EOB	3	3	67	2.50	-	-	-	-	-	-	-	-	22	-	-	<LV><LV>	

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: AUGER CUTTINGS

OHIO DEPARTMENT OF TRANSPORTATION
OFFICE OF GEOTECHNICAL ENGINEERING

LOG OF BORING

PROJECT:	HAM-71-6.86	DRILLING FIRM / OPERATOR:	STANTEC / BRADFORD	DRILL RIG:	CME 55 TRACKED	STATION / OFFSET:	423+44, 125' RT.	EXPLORATION ID	B-019-0-15
TYPE:	ROADWAY/NOISEWALL	SAMPLING FIRM / LOGGER:	STANTEC / LOPINA	HAMMER:	CME AUTOMATIC	ALIGNMENT:	I-71		
PID:	94741	SFN:	N/A	DRILLING METHOD:	3.25" HSA	ELEVATION:	600.2 (MSL) EOB: 31.5 ft.		
START:	5/27/16	END:	5/27/16	SAMPLING METHOD:	SPT	LAT / LONG:	39.170056, -84.417716		
MATERIAL DESCRIPTION AND NOTES									
TOPSOIL									
MEDIUM STIFF, BROWN, SILTY CLAY, LITTLE GRAVEL, LITTLE SAND, [FILL], MOIST									
STIFF TO VERY STIFF, BROWN, SILT, TRACE GRAVEL, TRACE SAND, SOME CLAY, DAMP TO MOIST									
MEDIUM STIFF TO STIFF, GRAY SILT, TRACE GRAVEL, SOME SAND, TRACE CLAY, MOIST TO WET									

NOTES: PERCHED GROUNDWATER
ABANDONMENT METHODS, MATERIALS, QUANTITIES: AUGER CUTTINGS

LOG OF BORING

PROJECT:	HAM-71-6.86	DRILLING FIRM / OPERATOR:	STANTEC / BRADFORD	DRILL RIG:	CME 55 TRACKED	STATION / OFFSET:	425+25, 74' RT.	EXPLORATION ID	B-020-0-15
TYPE:	ROADWAY	SAMPLING FIRM / LOGGER:	STANTEC / BRADFORD	HAMMER:	CME AUTOMATIC	ALIGNMENT:	I-71		
PID:	94741	SFN:	N/A	DRILLING METHOD:	3.25" HSA	ELEVATION:	582.9 (MSL) EOB: 26.5 ft.		
START:	5/18/16	END:	5/18/16	SAMPLING METHOD:	SPT	LAT / LONG:	39.170314, -84.417178		
MATERIAL DESCRIPTION AND NOTES									
TOPSOIL									
MEDIUM STIFF, BROWN, SILT AND CLAY, SOME GRAVEL, SOME SAND, MOIST									
VERY STIFF FROM 5.0' TO 6.5'									
MEDIUM STIFF TO STIFF, GRAY, SILT AND CLAY, LITTLE GRAVEL, LITTLE SAND, MOIST									
LOOSE TO MEDIUM DENSE, BROWN, GRAVEL AND STONE FRAGMENTS, SOME SAND, TRACE SILT, TRACE CLAY, MOIST TO WET									
VERY STIFF, GRAY, SANDY SILT, SOME GRAVEL, LITTLE CLAY, DAMP TO MOIST									
MEDIUM STIFF FROM 22.5' TO 24.0'									

NOTES: PERCHED GROUNDWATER
ABANDONMENT METHODS, MATERIALS, QUANTITIES: AUGER CUTTINGS; BENTONITE PELLETS

OHIO DEPARTMENT OF TRANSPORTATION
OFFICE OF GEOTECHNICAL ENGINEERING

LOG OF BORING

PROJECT: HAM-71-6.86 TYPE: ROADWAY/NOISEWALL PID: 94741 SFN: N/A START: 5/15/16 END: 5/15/16		DRILLING FIRM / OPERATOR: STANTEC / BRADFORD SAMPLING FIRM / LOGGER: STANTEC / LOPINA DRILLING METHOD: 3.25" HSA SAMPLING METHOD: SPT		DRILL RIG: CME 55 TRUCK HAMMER: CME AUTOMATIC CALIBRATION DATE: 2/24/16 ENERGY RATIO (%): 81.3		STATION / OFFSET: 426+46.59' RT. ALIGNMENT: I-71 ELEVATION: 586.5 (MSL) EOB: 26.5 ft. LAT / LONG: 39.170410, -84.416781						EXPLORATION ID B-021-0-15 PAGE 1 OF 1										
MATERIAL DESCRIPTION AND NOTES				ELEV.	DEPTHS	SPT/ ROD	N _s	REC SAMPLE (%)	ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (G)	BACK FILL	
ASPHALT PAVEMENT				586.5	1																	
VERY STIFF TO HARD, BROWN AND GRAY, SANDY SILT, LITTLE TO SOME GRAVEL, LITTLE CLAY, DAMP TO MOIST				585.5	2	4	20	50	SS-1	4.00	-	-	-	-	-	-	-	-	-	-	11	A-4a (V)
					3	8	24	72	SS-2	3.50	18	7	21	43	11	21	18	3	10	10	A-4a (4)	
					4	9	37	78	SS-3	3.25	24	6	15	36	19	24	15	9	11	11	A-4a (4)	
					5	10	34	78	SS-4	3.75	-	-	-	-	-	-	-	-	-	11	A-4a (V)	
					6	11	27	100	SS-5	4.50	-	-	-	-	-	-	-	-	-	14	A-4a (V)	
					7	14																
					8	10																
					9	10																
					10	5	16	100	SS-6	3.00	-	-	-	-	-	-	-	-	-	16	A-4a (V)	
					11	5	7															
					12																	
SOFT TO MEDIUM STIFF, LIGHT BROWN, SILTY CLAY, SOME GRAVEL, LITTLE SAND, MOIST				574.5	13	2	4	56	SS-7	1.25	20	7	8	35	30	40	16	24	19		A-6b (12)	
					14	1	2															
					15	3	9	39	SS-8	1.25	20	7	8	35	30	40	16	24	20		A-6b (12)	
					16	2	5															
					17																	
					18	4	4	28	SS-9	1.50	-	-	-	-	-	-	-	-	-	18	A-6b (V)	
					19	1	2															
					20	7	8	83	SS-10	-	64	14	10	8	4	16	14	2	6		A-1-a (0)	
MEDIUM DENSE, BROWN, GRAVEL AND STONE FRAGMENTS, SOME SAND, TRACE SILT, TRACE CLAY, DAMP				567.0	21	8	22															
					22																	
					23	5	15	56	SS-11	-	64	14	10	8	4	16	14	2	7		A-1-a (0)	
					24	6	5															
					25	1	4	56	SS-12	0.25	-	-	-	-	-	-	-	-	-	14	A-4b (V)	
SOFT, GRAY, SILT, "AND" CLAY, DAMP				560.0	26	1	2															
					EOB																	
NOTES: PERCHED GROUNDWATER																						
ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; AUGER CUTTINGS; BENTONITE PELLETS																						

LOG OF BORING

PROJECT: HAM-71-6.86 TYPE: ROADWAY/NOISEWALL PID: 94741 SFN: N/A START: 5/15/16 END: 5/15/16		DRILLING FIRM / OPERATOR: STANTEC / BRADFORD SAMPLING FIRM / LOGGER: STANTEC / LOPINA DRILLING METHOD: 3.25" HSA SAMPLING METHOD: SPT		DRILL RIG: CME 55 TRUCK HAMMER: CME AUTOMATIC CALIBRATION DATE: 2/24/16 ENERGY RATIO (%): 81.3		STATION / OFFSET: 428+55.61' RT. ALIGNMENT: I-71 ELEVATION: 589.0 (MSL) EOB: 26.5 ft. LAT / LONG: 39.170470, -84.416065						EXPLORATION ID B-022-0-15 PAGE 1 OF 1										
MATERIAL DESCRIPTION AND NOTES				ELEV.	DEPTHS	SPT/ ROD	N _s	REC SAMPLE (%)	ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (G)	BACK FILL	
ASPHALT PAVEMENT				589.0	1																	
MEDIUM STIFF TO STIFF, BROWN AND GRAY, CLAY, TRACE GRAVEL, LITTLE SAND, "AND" SILT, MOIST				587.9	2	2	8	67	SS-1	1.75	-	-	-	-	-	-	-	-	-	-	18	A-7-6 (V)
					3	3	12	78	SS-2	2.75	5	5	11	42	37	41	15	26	17		A-7-6 (15)	
					4	4	16	50	SS-3	2.75	10	4	13	42	31	27	16	11	23		A-6a (8)	
					5	7	20	44	SS-4	3.00	10	4	13	42	31	27	16	11	25		A-6a (8)	
					6	5	14	100	SS-5	3.50	-	-	-	-	-	-	-	-	-	26	A-6b (V)	
					7	4	14	89	SS-6	3.50	-	-	-	-	-	-	-	-	-	25	A-6b (V)	
					8	3	14	100	SS-7	3.00	15	2	3	34	46	40	19	21	26		A-6b (12)	
					9	4	12	100	SS-8	2.75	-	-	-	-	-	-	-	-	-		A-6b (V)	
					10	10	9	83	SS-8	2.75	-	-	-	-	-	-	-	-	-	24	A-6b (V)	
					11	4	3															
					12	1	8	100	SS-9	2.00	-	-	-	-	-	-	-	-	-	24	A-4b (V)	
					13	2	4	100	SS-10	1.25	0	0	0	59	41	24	15	9	23		A-4b (8)	
					14	4	2															
					15	3	9	100	SS-11	1.50	-	-	-	-	-	-	-	-	-	23	A-4b (V)	
					16	4	3															
					17	3	11	100	SS-12	1.00	-	-	-	-	-	-	-	-	-	22	A-4b (V)	
MEDIUM STIFF TO STIFF, GRAY, SILT, "AND" CLAY, WET				562.5	18	1	3															
					19	3	8															
					20	4	4	100	SS-10	1.25	0	0	0	59	41	24	15	9	23		A-4b (8)	
					21	2	1															
					22																	
					23	3	4	100	SS-11	1.50	-	-	-	-	-	-	-	-	-	23	A-4b (V)	
					24	4	3															
					25	3	4	100	SS-12	1.00	-	-	-	-	-	-	-	-	-	22	A-4b (V)	
					26	4	4															
NOTES: NONE																						
ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; AUGER CUTTINGS																						



OHIO DEPARTMENT OF TRANSPORTATION
OFFICE OF GEOTECHNICAL ENGINEERING

LOG OF BORING

PROJECT: HAM-71-6.86		DRILLING FIRM / OPERATOR: STANTEC / BRADFORD		DRILL RIG: CME 55 TRACKED		STATION / OFFSET: 435+25.66' RT.		EXPLORATION ID: B-027-0-15																											
TYPE: ROADWAY/NOISEWALL		SAMPLING FIRM / LOGGER: STANTEC / LOPINA		HAMMER: CME AUTOMATIC		ALIGNMENT: I-71		PAGE: B-027-0-15																											
PID: 94741 SFN: N/A		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 1/8/16		ELEVATION: 585.2 (MSL) EOB: 26.5 ft.		PAGE: 1 OF 1																											
START: 5/27/16 END: 5/27/16		SAMPLING METHOD: SPT		ENERGY RATIO (%): 92.4		LAT / LONG: 39.170369, -84.414002		PAGE: 1 OF 1																											
MATERIAL DESCRIPTION AND NOTES																																			
TOPSOIL		ELEV. 585.2		SPT/RQD		REC SAMPLE (%)		GRADATION (%)		ATTERBERG		ODOT CLASS (GI)		BACK FILL																					
		584.9		1																															
LOOSE, BROWN, GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT, TRACE CLAY, [FILL], DAMP		582.2		2		8		-		-		-		8																					
		579.2		3		15		78		-		-		20																					
STIFF TO VERY STIFF, BROWN AND GRAY, CLAY, TRACE GRAVEL, TRACE SAND, "AND" SILT, MOIST		579.2		4		20		89		3		39		47		24																			
		573.2		5		25		94		0		1		56		43		35		19		16		22											
LOOSE, BROWN, COARSE AND FINE SAND, WET		570.2		6		23		83		-		-		-		-		-		-		22		A-6b (V)											
		565.7		7		5		15		83		-		-		-		-		-		-		18		A-6b (V)									
VERY STIFF TO HARD, BROWN, SILT, TRACE GRAVEL, TRACE SAND, SOME SAND, WET		570.2		8		1		5		28		-		-		-		-		-		-		24		A-3a (V)									
		565.7		9		2		20		78		4.00		-		-		-		-		-		-		24		A-3a (V)							
SOFT TO MEDIUM STIFF, GRAY, SILT AND CLAY, TRACE SAND, MOIST		565.7		10		3		100		0.25		-		-		-		-		-		-		-		21		A-6a (V)							
		558.7		11		1		3		50		46		29		16		13		24		24		24		24		A-6a (9)							
PERCHED GROUNDWATER		558.7		12		2		6		100		0.25		-		-		-		-		-		-		-		22		A-6a (V)					
		558.7		13		1		2		2		68		27		24		19		5		24		24		24		24		A-4b (8)					
ABANDONMENT METHODS, MATERIALS, QUANTITIES: AUGER CUTTINGS; BENTONITE POWDER		558.7		14		7		12		42		33		68		27		24		19		5		24		24		24		A-4b (8)					
		558.7		15		1		3		100		0.25		-		-		-		-		-		-		-		-		21		A-6a (V)			
ASPHALT PAVEMENT		584.6		16		1		5		100		0.25		-		-		-		-		-		-		-		-		21		A-6a (V)			
		584.2		17		1		5		100		0.25		-		-		-		-		-		-		-		-		21		A-6a (V)			
MEDIUM STIFF TO STIFF, GRAY, CLAY, SOME GRAVEL, LITTLE SAND, SOME SILT, [FILL], DAMP		581.2		18		2		8		7		31		31		42		14		28		28		28		28		28		A-7-6 (13)					
		578.2		19		3		15		28		1.50		-		-		-		-		-		-		-		-		22		A-7-6 (V)			
STIFF TO VERY STIFF, GRAY, SILTY CLAY "AND" GRAVEL, TRACE SAND, [FILL], DAMP TO MOIST		571.7		20		3		14		78		-		68		8		3		10		11		33		15		18		10		A-2-6 (0)			
		566.2		21		4		23		6		-		68		8		3		10		11		33		15		18		8		A-2-6 (0)			
VERY STIFF, GRAY, SILT AND CLAY, TRACE SAND, MOIST		566.2		22		7		9		67		-		-		-		-		-		-		-		-		-		17		A-6b (V)			
		566.2		23		4		35		67		2.50		49		7		3		20		21		34		16		18		14		A-6b (3)			
STIFF, BROWN, SANDY SILT, TRACE GRAVEL, SOME CLAY, MOIST		559.2		24		6		20		67		2.50		49		7		3		20		21		34		16		18		14		A-6b (3)			
		559.2		25		5		12		6		-		-		-		-		-		-		-		-		-		-		12		A-6b (V)	
NONE		559.2		26		7		20		0		-		-		-		-		-		-		-		-		-		-		A-6a (V)			
		559.2		27		8		18		100		3.00		0		1		57		42		32		18		14		19		19		A-6a (10)			
ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; AUGER CUTTINGS		559.2		28		4		5		100		0.50		-		-		-		-		-		-		-		-		-		19		A-4a (V)	
		559.2		29		3		9		100		1.50		9		6		16		46		23		22		15		7		18		A-4a (7)			
NONE		559.2		30		4		14		100		2.50		-		-		-		-		-		-		-		-		-		23		A-4a (V)	
		559.2		31		5		14		100		2.50		-		-		-		-		-		-		-		-		-		23		A-4a (V)	

LOG OF BORING

PROJECT: HAM-71-6.86		DRILLING FIRM / OPERATOR: STANTEC / BRADFORD		DRILL RIG: CME 55 TRUCK		STATION / OFFSET: 437+01.61' RT.		EXPLORATION ID: B-028-0-15																													
TYPE: ROADWAY/NOISEWALL		SAMPLING FIRM / LOGGER: STANTEC / WILSON		HAMMER: CME AUTOMATIC		ALIGNMENT: I-71		PAGE: B-028-0-15																													
PID: 94741 SFN: N/A		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 2/24/16		ELEVATION: 585.7 (MSL) EOB: 26.5 ft.		PAGE: 1 OF 1																													
START: 5/10/16 END: 5/10/16		SAMPLING METHOD: SPT		ENERGY RATIO (%): 81.3		LAT / LONG: 39.170547, -84.413386		PAGE: 1 OF 1																													
MATERIAL DESCRIPTION AND NOTES																																					
TOPSOIL		ELEV. 585.7		SPT/RQD		REC SAMPLE (%)		GRADATION (%)		ATTERBERG		ODOT CLASS (GI)		BACK FILL																							
ASPHALT PAVEMENT		584.6		1																																	
		584.2		2		5		89		23		8		7		31		42		14		28		28		28		A-7-6 (13)									
MEDIUM STIFF TO STIFF, GRAY, CLAY, SOME GRAVEL, LITTLE SAND, SOME SILT, [FILL], DAMP		581.2		3		6		15		28		1.50		-		-		-		-		-		-		-		-		22		A-7-6 (V)					
		578.2		4		8		14		78		-		68		8		3		10		11		33		15		18		10		A-2-6 (0)					
STIFF TO VERY STIFF, GRAY, SILTY CLAY "AND" GRAVEL, TRACE SAND, [FILL], DAMP TO MOIST		571.7		5		7		23		6		-		68		8		3		10		11		33		15		18		8		A-2-6 (0)					
		566.2		6		9		9		67		-		-		-		-		-		-		-		-		-		-		17		A-6b (V)			
VERY STIFF, GRAY, SILT AND CLAY, TRACE SAND, MOIST		566.2		7		4		35		67		2.50		49		7		3		20		21		34		16		18		14		A-6b (3)					
		566.2		8		6		20		67		2.50		49		7		3		20		21		34		16		18		14		A-6b (3)					
NONE		566.2		9		5		12		6		-		-		-		-		-		-		-		-		-		-		12		A-6b (V)			
		566.2		10		7		20		0		-		-		-		-		-		-		-		-		-		-		-		A-6a (V)			
ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; AUGER CUTTINGS		566.2		11		8		18		100		3.00		0		1		57		42		32		18		14		19		19		A-6a (10)					
		566.2		12		4		5		12		0.50		-		-		-		-		-		-		-		-		-		-		19		A-4a (V)	
NONE		566.2		13		3		9		100		1.50		9		6		16		46		23		22		15		7		18		A-4a (7)					
		566.2		14		4		14		100		2.50		-		-		-		-		-		-		-		-		-		-		23		A-4a (V)	
NONE		566.2		15		5		14		100		2.50		-		-		-		-		-		-		-		-		-		-		23		A-4a (V)	
		566.2		16		4		14		100		2.50		-		-		-		-		-		-		-		-		-		-		23		A-4a (V)	

OHIO DEPARTMENT OF TRANSPORTATION
OFFICE OF GEOTECHNICAL ENGINEERING

LOG OF BORING

PROJECT: HAM-71-6.86		DRILLING FIRM / OPERATOR: STANTEC / BRADFORD		DRILL RIG: CME 55 TRUCK		STATION / OFFSET: 438+39, 60' RT.		EXPLORATION ID				
TYPE: ROADWAY/NOISEWALL		SAMPLING FIRM / LOGGER: STANTEC / WILSON		HAMMER: CME AUTOMATIC		ALIGNMENT: I-71		B-029-0-15				
PID: 94741 SFN: N/A		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 2/24/16		ELEVATION: 586.9 (MSL) EOB: 26.5 ft.		PAGE				
START: 5/10/16 END: 5/10/16		SAMPLING METHOD: SPT		ENERGY RATIO (%): 81.3		LAT / LONG: 39.170559, -84.412897		1 OF 1				
MATERIAL DESCRIPTION AND NOTES												
ASPHALT PAVEMENT		ELEV.	DEPTHS	SPT/ROD	N _a	REC SAMPLE (%)	HP (tsf)	GR	GRADATION (%)	ATTERBERG	WC	BACK FILL
		586.9							CS FS SI CL LL PL PI			
ODOT CLASS (GI)		585.8	1	2	51	28	3.00	47	12 5 18 18 35 15 20			
GRANULAR BASE		585.5	2	6	15	28	-	47	12 5 18 18 35 15 20			A-6b (2)
STIFF TO HARD, BROWN, SILTY CLAY, "AND" GRAVEL, LITTLE SAND, [FILL], DAMP TO MOIST		582.4	3	6	15	28	-	47	12 5 18 18 35 15 20			A-6b (2)
STIFF TO HARD, GRAY, SILTY CLAY, "AND" GRAVEL, LITTLE SAND, [FILL], DAMP		579.4	4	4	8	78	3.00	-	- - - - -			A-6b (V)
MEDIUM DENSE TO DENSE, GRAY, GRAVEL AND STONE FRAGMENTS WITH SAND, SILT, AND CLAY, [FILL], DAMP			5	3	3	61	3.50	39	9 5 24 23 35 16 19			A-6b (5)
			6	9	61	61	3.50	39	9 5 24 23 35 16 19			A-6b (5)
			7	9	23	28	-	-	- - - - -			A-2-6 (V)
			8	11	23	28	-	-	- - - - -			A-2-6 (V)
			9	6								
			10	7	18	72	2.50	65	8 4 12 11 27 14 13			A-2-6 (0)
			11	7	6							
			12									
			13	19	39	100	-	65	8 4 12 11 27 14 13			A-2-6 (0)
			14	12	17							
			15	7	8	22	1.50	-	- - - - -			A-2-6 (V)
			16	8	8	39	-	-	- - - - -			A-2-6 (V)
			17									
			18	39	54	39	-	-	- - - - -			A-2-6 (V)
			19	28	12							
		567.4	20	13	43	33	3.50	-	- - - - -			A-6b (V)
			21	17	15							
			22									
			23	11	9	89	2.00	43	5 5 25 22 37 17 20 15			A-6b (5)
			24	5								
			25	6	5	14	-	-	- - - - -			A-6b (V)
		560.4	26	5	5	0	-	-	- - - - -			A-6b (V)
			EOB									

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: ASPHALT PATCH; AUGER CUTTINGS



OHIO DEPARTMENT OF TRANSPORTATION
OFFICE OF GEOTECHNICAL ENGINEERING

TYPE: ROADWAY/SOIL NAIL WALL (I-71 UNDER KENNEDY AVE. REAR ABUTMENT)
SFN: 3115283

LOG OF BORING
Date Started 4-28-65 Sampler Type SS Dia. 1 3/8" Water Elev. _____
Date Completed 4-29-65 Casing Length 55' Dia. 3 1/2" Surface Elev. 569.7'
Boring No. B-1 Station & Offset 19+09.40' L₃ (REAR ABUTMENT)

Elev.	Depth	Std. Pen. (N)	Rec. Loss ft.	Description	Sample No.	Physical Characteristics						SHTL Class.	
						% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.		P.I.
569.7	0												
564.7	2												
	4												
	6	8/9		Brown and Gray Sandy Gravelly Clay	1	28	9	11	23	27	30	11	16
	8												
559.7	10	9/19		Gray Silty Clay	2	0	2	1	38	59	37	18	17
	12												
	14												
554.7	16	13/23		Gray Silty Clay	3	0	1	1	27	71	41	20	19
552.2	18	15/21		Gray Clay	4	0	0	0	30	70	43	22	23
549.7	20	11/19		Gray Clay	5	0	1	0	27	72	40	21	22
547.2	22	13/21		Gray Silt and Clay	6	0	0	0	53	47	29	11	25
544.7	24	21/25		Gray Clayey Silt	7	0	0	0	53	47	29	9	17
542.2	26	10/15		Gray Clayey Silt	8	0	0	1	55	44	30	9	22
539.7	30	14/21		Gray Silty Gravelly Sand	9	27	23	13	23	10	NP	NP	13
537.2	32	21/28		Gray Gravelly Sandy Silt	10	27	11	20	22	20	20	7	14
534.7	34												
532.2	36			Gray Silty Sand (Wash Sample)	11	0	71	13	-16-	NP	NP	NP	13
529.7	38			Gray Sand (Wash Sample)	12	0	68	27	-5-	NP	NP	NP	19
	40	20/28		Gray Gravelly Sandy Silt	13	20	7	14	37	22	21	5	12
	42												
	44												
524.7	46	50* (0.8')		Gray Silty Sandy Gravel	14	49	7	10	21	13	20	4	13
	48												
519.7	50	50* (0.4')		Gray Silty Sandy Gravel	15	V	I	S	U	A	L	22	9
	52												
514.7	54	50* (0.7')		Gray Sandy Gravelly Silt	16	32	3	15	31	19	19	3	10
	56												
509.7	58	50*		Gray Silty Sandy Gravel	17	36	19	22	10	13	--	--	7
509.2	60	(0.5')		Refusal									

BOTTOM OF BORING