STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
HAM-71-8.65
CITY OF CINCINNATI
COLUMBIA TOWNSHIP
HAMILTON COUNTY

LOCATION MAP

LATITUDE: 39°10'05" N LONGITUDE: -84°25'20" W

SCALE IN MILES
0 1 2

N

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

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ADDITIONAL SHEETS: 109A-D
NOT USED: 115

PROJECT DESCRIPTION

PROJECT SHALL MODIFY THE USACE FLOOD CONTROL PROJECT AND COMPLETE THE PROPOSED RAMPS FROM KENNEDY AVE. TO NORTHBOUND I.R. 71.

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.

2019 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.

UNDERGROUND UTILITIES

CONTACT BOTH SERVICES TWO WORKING DAYS **BEFORE YOU DIG.**

OHIO Utilities Protection SERVICE — *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:

Stantec
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: SHEETS: 1-58, 67-71, 78-116, 125-129
STATE OF OHIO — STEVEN N SHADIX — E-63359 — REGISTERED PROFESSIONAL ENGINEER
SIGNED: DATE:

ENGINEERS SEAL: SHEETS: 59-66
STATE OF OHIO — ERIC D. ADKINS — 74762 — REGISTERED PROFESSIONAL ENGINEER
SIGNED: DATE:

ENGINEERS SEAL: SHEETS: 72-77
SIGNED: DATE:

ENGINEERS SEAL: SHEETS: 117-124
SIGNED: DATE:

STANDARD CONSTRUCTION DRAWINGS

BP-2.1	7/17/15	F-1.1	7/19/13	HW-2.2	7/20/18	MT-95.50	7/21/17	MT-104.10	10/16/15	TC-74.10	7/16/21
BP-2.2	1/15/21	F-3.1	7/19/13	NBS-1-09	1/15/21	MT-95.61	4/19/19	MT-105.10	1/17/20	TC-81.22	7/16/21
BP-3.1	1/17/20	F-3.3	7/19/13	PCB-91	7/17/20	MT-95.73	1/17/20	MT-110.10	7/19/13	TC-83.10	1/17/20
		F-3.4	7/19/13	SBR-1-20	7/17/20	MT-96.11	4/16/21	MT-120.00	1/19/18	TC-83.20	7/21/17
CB-2-2A, 2B, 2C	7/16/21			SBR-2-20	1/15/21	MT-96.20	7/15/16			TC-85.10	4/17/20
CB-2-3, 2-4	7/16/21	MGS-1.1	7/16/21	VPF-1-90	7/20/18	MT-96.26	1/18/19	TC-12.31	7/16/21	TC-85.20	7/20/18
CB-3	7/16/21	MGS-2.1	1/19/18			MT-97.10	4/19/19	TC-21.21	7/16/21		
CB-3A	7/16/21	MGS-3.1	1/19/18	HL-10.11	1/15/21	MT-98.10	1/17/20	TC-22.10	4/17/20	ITS-14.10	1/15/21
CB-4	7/16/21	MGS-3.2	1/18/13	HL-10.12	1/20/17	MT-98.11	1/17/20	TC-22.20	1/17/14	ITS-14.11	1/15/21
CB-5	7/16/21	MGS-4.2	7/19/13	HL-10.13	4/17/20	MT-98.20	4/19/19	TC-41.10	7/19/13		
		MGS-4.3	1/18/13	HL-10.31	4/17/20	MT-98.22	1/17/20	TC-41.20	10/18/13		
DM-1.1	7/17/20	MGS-5.2	7/15/16	HL-20.11	1/15/21	MT-98.28	1/17/20	TC-41.30	10/18/13		
DM-1.2	7/16/21	MGS-5.3	7/15/16	HL-20.21	1/15/21	MT-98.29	1/17/20	TC-41.40	10/18/13		
DM-2.1	1/18/13	MGS-6.1	1/19/18	HL-30.11	1/15/21	MT-98.30	7/16/21	TC-41.41	7/19/19		
DM-4.2	7/20/12			HL-30.21	4/17/20	MT-99.20	4/19/19	TC-41.50	10/18/13		
DM-4.3	1/15/16	RM-1.1	1/15/21	HL-30.22	1/15/21	MT-99.30	1/17/20	TC-42.10	10/18/13		
DM-4.4	1/15/16	RM-4.1	7/21/17			MT-99.60	7/15/16	TC-42.20	10/18/13		
		RM-4.2	4/17/20	HL-30.33	4/17/20	MT-100.00	7/16/21	TC-51.11	1/15/16		
1-3D	7/16/21	RM-4.3	7/18/14	HL-60.11	7/21/17	MT-101.60	1/17/20	TC-51.12	1/15/16		
		RM-4.4	7/19/19	HL-60.21	7/20/18	MT-101.70	1/17/20	TC-52.10	10/18/13		
MH-1	7/16/21	RM-4.5	7/21/17	HL-60.31	1/17/20	MT-101.75	1/17/20	TC-52.20	1/15/21		
MH-3	7/16/21	RM-4.6	7/19/13			MT-101.80	1/17/20	TC-61.10	1/17/20		
				MT-95.30	7/19/19	MT-101.90	7/17/20	TC-61.30	7/19/19		
BP-5.1	1/18/19	AS-1-15	7/17/15	MT-95.31	7/19/19	MT-102.10	1/17/20	TC-65.10	1/17/14		
BP-7.1	7/17/20	AS-2-15	1/18/19	MT-95.40	1/17/20	MT-102.20	4/19/19	TC-65.11	7/21/17		
BP-9.1	1/18/19	EXJ-4-87	1/19/18	MT-95.41	1/17/20	MT-102.30	10/16/15	TC-72.20	7/20/18		
		HW-2.1	7/20/18	MT-95.45	1/17/20	MT-103.10	1/19/18	TC-73.20	1/17/20		

SUPPLEMENTAL SPECIFICATIONS

800-2019	10/15/21
804	10/15/21
807	7/16/21
808	1/18/19
809	10/15/21
821	4/20/12
831	10/21/16
832	10/19/18
836	1/19/18
848	1/15/21
850	4/16/21
878	4/16/21
902	7/19/19
904	10/15/21
908	10/20/17
921	4/20/12
961	4/17/20

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.

APPROVED _____
DATE _____ DISTRICT DEPUTY DIRECTOR

APPROVED _____
DATE _____ DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO. E210 (529)
PID NO. 114992
CONSTRUCTION PROJECT NO.
RAILROAD INVOLVEMENT NONE
HAM-71-8.65
1 / 129

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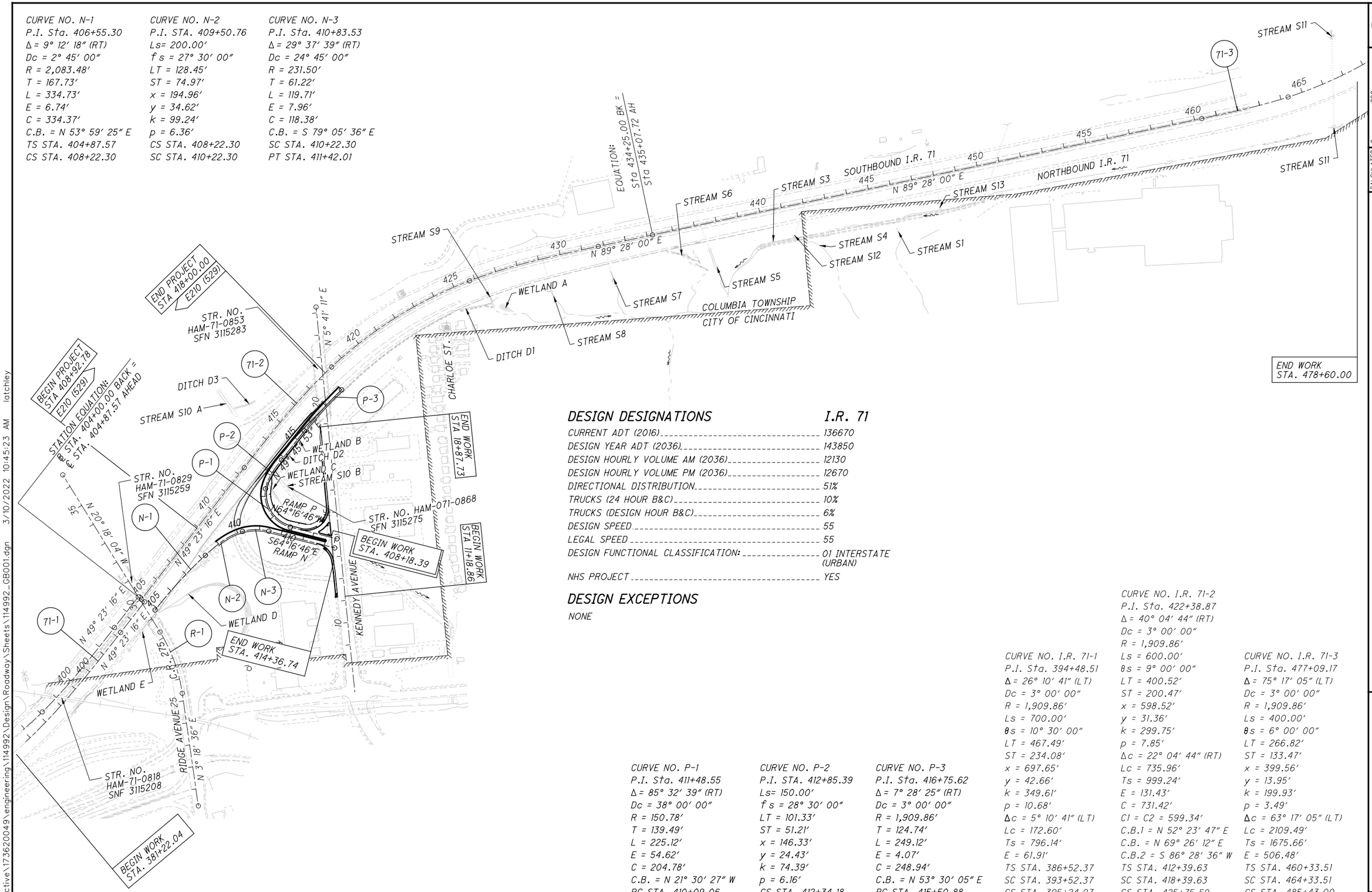
CURVE NO. N-1
P.I. Sta. 406+55.30
Δ = 9° 12′ 18″ (RT)
Dc = 2° 45′ 00″
R = 2,083.48′
T = 167.73′
L = 334.73′
E = 6.74′
C = 334.37′
C.B. = N 53° 59′ 25″ E
TS STA. 404+87.57
CS STA. 408+22.30

CURVE NO. N-2
P.I. STA. 409+50.76
Ls= 200.00′
f s = 27° 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
Δ = 29° 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
SC STA. 410+22.30
PT STA. 411+42.01



DESIGN DESIGNATIONS — I.R. 71

CURRENT ADT (2016)	136670
DESIGN YEAR ADT (2036)	143850
DESIGN HOURLY VOLUME AM (2036)	12130
DESIGN HOURLY VOLUME PM (2036)	12670
DIRECTIONAL DISTRIBUTION	51%
TRUCKS (24 HOUR B&C)	10%
TRUCKS (DESIGN HOUR B&C)	6%
DESIGN SPEED	55
LEGAL SPEED	55
DESIGN FUNCTIONAL CLASSIFICATION:	01 INTERSTATE (URBAN)
NHS PROJECT	YES

DESIGN EXCEPTIONS

NONE

CURVE NO. P-1
P.I. Sta. 411+48.55
Δ = 85° 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
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° 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. 71-1
P.I. Sta. 394+48.51
Δ = 26° 10′ 41″ (LT)
Dc = 3° 00′ 00″
R = 1,909.86′
Ls = 700.00′
θs = 10° 30′ 00″
LT = 467.49′
ST = 234.08′
x = 697.65′
y = 42.66′
k = 349.61′
p = 10.68′
Δc = 5° 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
Δ = 40° 04′ 44″ (RT)
Dc = 3° 00′ 00″
R = 1,909.86′
Ls = 600.00′
θs = 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

CURVE NO. I.R. 71-3
P.I. Sta. 477+09.17
Δ = 75° 17′ 05″ (LT)
Dc = 3° 00′ 00″
R = 1,909.86′
Ls = 400.00′
θs = 6° 00′ 00″
LT = 266.82′
ST = 133.47′
x = 399.56′
y = 13.95′
k = 199.93′
p = 3.49′
Δc = 63° 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

HORIZONTAL SCALE IN FEET
0 100 200 400
CALCULATED EDA
CHECKED PJD

SCHEMATIC

HAM-71-8.65

2
129

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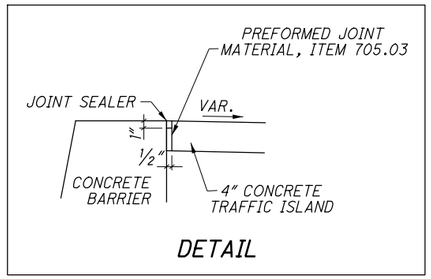
LEGEND

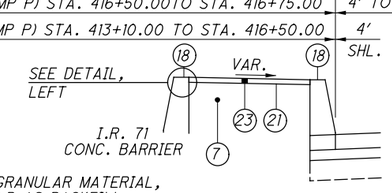
1. ITEM 442, 1½" ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446)
2. ITEM 407, NON-TRACKING TACK COAT
3. ITEM 254, PAVEMENT PLANING, ASPHALT CONCRETE, 1 1/2"
4. NOT USED
5. NOT USED
6. NOT USED
7. ITEM 203, GRANULAR MATERIAL, TYPE B
8. ITEM 304, 6" AGGREGATE BASE
9. NOT USED
10. ITEM 452, 13½" 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. NOT USED
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. ITEM 609, TYPE 4-C CURB
20. ITEM 609, TYPE 6 CURB
21. ITEM 204, SUBGRADE COMPACTION
22. ITEM 608, 5" CONCRETE WALK
23. ITEM 609, 4" CONCRETE TRAFFIC ISLAND



DETAIL

(NDC 4'-0")

(RAMP P) STA. 416+75.00 TO STA. 417+96.00 — 3'-4¾" [A]
(RAMP P) STA. 416+50.00TO STA. 416+75.00 — 4' TO 3'-4¾"
(RAMP P) STA. 413+10.00 TO STA. 416+50.00 — 4' SHL.

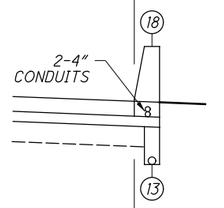


(7) USE GRANULAR MATERIAL, TYPE B AS BACKFILL BETWEEN BARRIERS ALONG RAMP P.

NOTE: SOME PORTIONS OF THE BARRIER IN THIS AREA HAVE BEEN CONSTRUCTED. TIE TO EXISTING BARRIERS AS NEEDED IN THIS AREA.

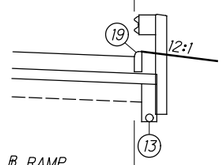
[A] RAMP P LEFT SHOULDER VARIES FROM -0.031 @ STA 417+50 TO +0.039 @ STA 418+00.

6'-0" SHOULDER — (RAMP P) STA. 412+75.00 TO STA. 413+84.61
(RAMP P) STA. 415+28.45 TO STA. 415+50.00



SEE PLAN AND CROSS SECTIONS FOR SOIL NAIL WALL STA. 415+75.00 TO STA. 417+50.00 RAMP P.

(RAMP P) STA. 408+95.89 TO STA. 412+75.00



FOR SIDE SLOPES SEE CROSS SECTIONS

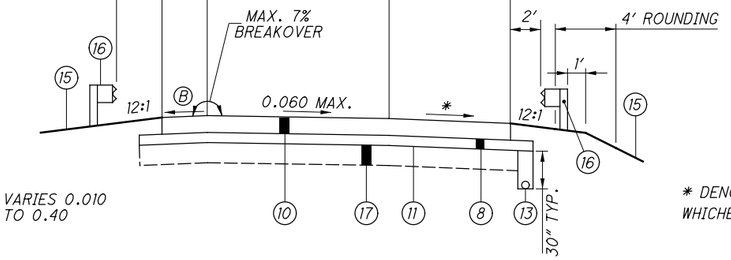
(RAMP P) STA. 413+84.18 TO STA. 414+34.18 — VAR. 18'-0" TO 16'-0"
(RAMP P) STA. 410+59.06 TO STA. 413+84.18 — 18'-0"
(RAMP P) STA. 410+09.06 TO STA. 410+59.06 — VAR. 16'-0" TO 18'-0"

℄ RAMP

FOR SIDE SLOPES SEE CROSS SECTIONS

VARIES — 6'-6" TO 6'-0" — (RAMP N) STA. 408+97.30 TO STA. 409+22.30

3' 3' 16'-0" 6'-0"



(B) VARIES 0.010 TO 0.40

* DENOTES SE OR 0.04 WHICHEVER IS GREATER

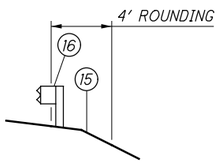
SUPERELEVATED RAMP TYPICAL

(RAMP N)
STA. 408+97.30 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+84.14 (TRAN.)

(RAMP P)
STA. 415+28.45 TO STA. 415+96.60 (TRAN.)
STA. 415+96.60 TO STA. 418+00.00 (0.039)

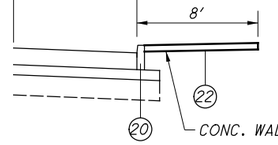
**SEE INTERSECTION DETAIL SHEET 69 FOR
STA. 412+25.55 TO STA. 414+36.74 (RAMP N)
STA. 408+18.39 TO STA. 409+60.55 (RAMP P)



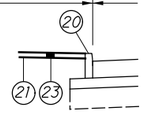
℄ KENNEDY
℄ RAMP
VARIES

STA. 11+18.86 LT. KENNEDY TO STA. 413+66.53 RT. RAMP N
STA. 408+92.10 RT. RAMP P TO STA. 15+31.00 LT. KENNEDY

8'

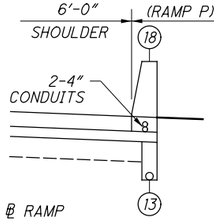


(RAMP P) STA. 408+22.24 TO STA. 408+79.25 — NO SHL.
(RAMP P) STA. 408+41.07 TO STA. 410+36.85 — 3' SHL.
(RAMP N) STA. 412+00.00 TO STA. 414+00.00 — 3' SHL.



4" CONC. TRAFFIC ISLAND

6'-0" SHOULDER — (RAMP P) STA. 413+84.61 TO STA. 415+39.00

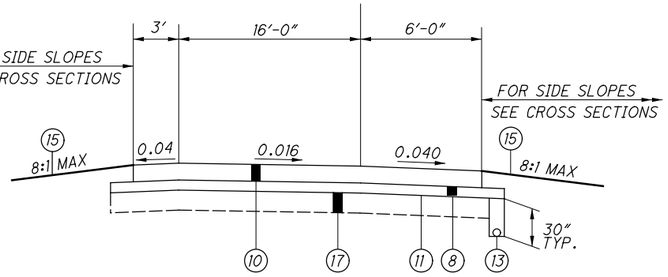


℄ RAMP

FOR SIDE SLOPES SEE CROSS SECTIONS

3' 16'-0" 6'-0"

FOR SIDE SLOPES SEE CROSS SECTIONS

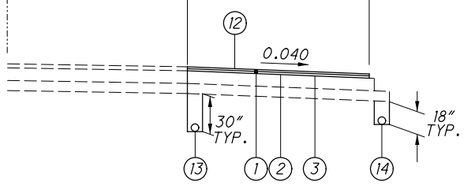


NORMAL RAMP TYPICAL

(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

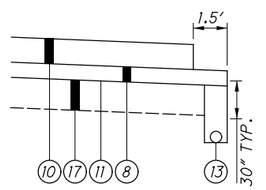
℄ CONSTRUCTION I.R. 71

66'-0" 12'-0" STA. 411+07.59 TO STA. 416+25.00



I.R. 71 NORMAL TYPICAL

STA. 411+07.59 TO STA. 416+25.00



STEP DETAIL

CALCULATED LEH CHECKED SNS

TYPICAL SECTIONS RAMPS N, P AND I.R. 71

HAM-71-8.65

3
129

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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 YONONTE 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 YONONTE 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 26 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.

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.

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 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

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.

CALCULATED LBA
CHECKED SNS

GENERAL NOTES

HAM-71-8.65

PAVEMENT RESTORATION FOR PIPE INSTALLATIONS AND/OR REMOVALS

THE FOLLOWING QUANTITY HAS BEEN PROVIDED FOR PAVEMENT RESTORATION FOLLOWING INSTALLATION AND/OR REMOVAL OF PIPES.

ITEM 301 - ASPHALT CONCRETE BASE, PG64-22 9 CU. YDS.
ITEM 441 - ASPHALT CONCRETE SURFACE 1.5 CU. YDS.
COURSE, TYPE 1, (448), PG64-22

THE ABOVE QUANTITY IS BASED ON A 301 THICKNESS OF 9 INCHES, A 441 THICKNESS OF 1.5 INCHES AND A PAVEMENT RESTORATION WIDTH THAT INCLUDES THE TRENCH WIDTH PLUS TWO FEET ON EACH SIDE OF THE TRENCH.

PROVIDE ANY MATERIALS USED OUTSIDE THE LIMITS STATED ABOVE AT NO ADDITIONAL COST.

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.

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.

ITEM SPECIAL - 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/QA PAY 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 1 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.

ITEM SPECIAL - CONSULTANT FOR CONCRETE QUALITY CONTROL INCLUDING TESTING AND INSPECTION (CONTINUED)

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%.

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

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.

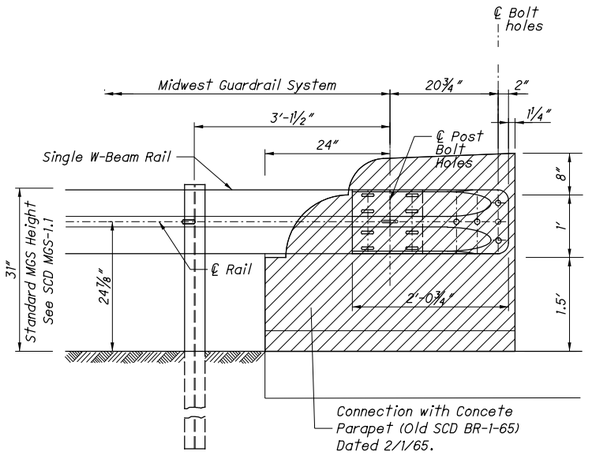
REFER TO THE MANUFACTURER'S INSTRUCTIONS REGARDING THE INSTALLATION OF, AND THE GRADING AROUND THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4 INCHES ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE 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.

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 ½" 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

CALCULATED LBA CHECKED SNS

GENERAL NOTES

HAM-71-8.65

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.

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.

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 ASSSESSMENT CERIFICATION PROGRAM (PACP) AND LATERAL ASSESSMENT CERTIFICATION PROGRAM (LACP). NO ADDITIONAL LOADING MAY BE ADDED TO THE EXISTING SEWER.

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 1 EACH

659, SEEDING AND MULCHING 20373 SQ. YD.

659, REPAIR SEEDING AND MULCHING 1020 SQ. YD

659, COMMERCIAL FERTILIZER 3 TONS

659, LIME 5 ACRES

659, WATER 111 M. GAL.

659, MOWING 46 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.

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 3 HOURS.

MONUMENT ASSEMBLIES

CONSTRUCT A MONUMENT ASSEMBLY IN ACCORDANCE WITH THE DETAILS SHOWN ON THE STANDARD CONSTRUCTION DRAWINGS AT STATION 412+39.63 AS SHOWN ON SHEET NO. 2 OF 18 IN THE HAM-71-6.86 RIGHT OF WAY PLANS.

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY FOR THIS WORK.

ITEM 623 REFERENCE MONUMENT 1 EACH

CONSTRUCTION OF THE LEVEE AND WORK IN THE USACE PERMITTED AREA

ALL WORK PERFORMED ON THE USACE LEVEE AND PERMITTED AREAS SHALL CONFORM TO ALL RESTRICTIONS AND REGUALTIONS SET FORTH IN THE APPROVED 408 PERMIT ON FILE WITH ODOT.

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

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 THEROF OUTSIDE OF THE CONSTRUCTION LIMITS AS SHOWN ON THE PLANS.

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 FUCNTIONS PROPERLY. REPAIR CONCRETE PER CMS 519 - PATCHING CONCRETE STRUCTURE.

ALL MATERIAL REMOVED SHALL BE DISPOSED OF AS PER CMS 105

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

MATERIALS FURNISHED BY PREVIOUS CONTRACTS:

SOME MATERIALS FOR THIS WORK HAVE ALREADY BEEN PURCHASED IN PREVIOUS CONTRACTS. THESE MATERIALS ARE BEING STORED WITHIN THE EXISTING INFIELD AREAS AND AT DISTRICT 8'S BLUE ASH STORAGE YARD. THE CONTRACTOR WILL BE RESPONSIBLE FOR TRANSPORTING ALL PREVIOUSLY FURNISHED MATERIALS TO THE CONSTRUCTION SITE IN A DESIGNATED LOCATION APPROVED BY THE ENGINEER. THESE MATERIALS SHALL BE STORED WITHIN THE CONSTRUCTION LIMITS AND IN A MANNER THAT WILL PRECLUDE THEM FROM BEING DAMAGED.

THE FOLLOWING IS A LIST OF THESE ITEMS.

BOX CULVERT EXTENSION ITEMS STORED AT THE DISTRICT'S BLUE ASH STORAGE YARD:

EXTENSION SECTIONS
PRECAST HEADWALLS
HEADWALL REBAR

DRAINAGE ITEMS STORED IN THE INFIELD AREA ON RAMP P:

CULVERT PIPE
15" TYPE B - 100'
18" TYPE B - 120'
24" TYPE C - 40'
30" TYPE C - 340'

MATERIALS FURNISHED BY PREVIOUS CONTRACTS (CONTINUED):

DRAINAGE ITEMS STORED IN THE INFIELD AREA OF RAMP P:

STRUCTURES
D2 - INLET, NO. 3 FOR SINGLE SLOPE BARRIER, TYPE D
D6 - CATCH BASIN, NO. 3A
D7 - CATCH BASIN, NO. 3A
D8 - CATCH BASIN, NO. 2-3
D9 - MANHOLE, NO. 3
D20 - CATCH BASIN, NO. 3A
D21 CB - CATCH BASIN, NO. 3
D21 MH - MANHOLE, NO. 3
D 24 - MANHOLE, NO. 3

UNDERDRAIN
6" PIPE, UNDERDRAIN - 3100'
6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLET - 240'
6" UD FITTINGS:
WYE - 8
EACH TEE - 28 EACH
45 BEND - 8 EACH
CROSS - 5 EACH
90 BEND - 2 EACH
COUPLING - 1 EACH
6" PRECAST INLET - 2 EACH

PAYMENT FOR THESE ITEMS SHALL BE MADE ACCORDING TO THE FOLLOWING CORRESPONDING PAY ITEMS:

ITEM 509 - EPOXY COATED REINFORCING STEEL, AS PER PLAN
ITEM 511 - CLASS QC1 CONCRETE, HEADWALL, AS PER PLAN
ITEM 611 - 15" CONDUIT, TYPE B, AS PER PLAN
ITEM 611 - 18" CONDUIT, TYPE B, AS PER PLAN
ITEM 611 - 24" CONDUIT, TYPE C, AS PER PLAN
ITEM 611 - 30" CONDUIT, TYPE C, AS PER PLAN
ITEM 611 - CATCH BASIN, NO. 3, AS PER PLAN
ITEM 611 - CATCH BASIN, NO. 3A, AS PER PLAN
ITEM 611 - CATCH BASIN, NO. 2-3, AS PER PLAN
ITEM 611 - INLET, NO. 3 FOR SINGLE SLOPE BARRIER, TYPE D, AS PER PLAN
ITEM 611 - MANHOLE NO. 3, AS PER PLAN
ITEM 611 - CONDUIT, MISC., EXTENSION SECTIONS, AS PER PLAN

PAYMENT SHALL BE MADE AT THE CORRESPONDING CONTRACT BID PRICE PER UNIT FOR EACH ITEM AND SHALL INCLUDE ALL EQUIPMENT, LABOR, AND INCIDENTALS (INCLUDING INCIDENTAL MATERIALS NOT PREVIOUSLY FURNISHED) REQUIRED TO COMPLETE THE WORK. THERE SHALL BE NO WAIVER OF ANY ITEM SPECIFICATION EXCEPT THAT THE LISTED MATERIALS WILL NOT BE FURNISHED BY THE CONTRACTOR. THE CONTRACTOR SHALL DELIVER ALL UNUSED MATERIAL TO DISTRICT 8'S BLUE ASH STORAGE YARD AT THE CONCLUSION OF THE PROJECT.

CALCULATED LBA CHECKED SNS

GENERAL NOTES

HAM-71-8.65

TRAFFIC GENERAL NOTES

ITEM 614, MAINTAINING TRAFFIC

ALL FOUR LANES OF NORTHBOUND I-71 TRAFFIC SHAL BE MAINTAINED AT ALL TIMES WITH EXISTING MAINLINE I-71 PAVEMENT. IN ADDITION, WORK ZONE AREAS FOR RAMP P AND RAMP N WILL BE PROTECTED FROM I-71 NORTHBOUND TRAFFIC BY TEMPORARY AND PERMANENT PROTECTIVE MEASURES AND ADVANCE WARNING SIGNS CURRENTLY IN PLACE. ALL TEMPORARY PROTECTIVE MEASURES AND ADVANCE WARNING SIGNS SHALL REMAIN IN PLACE THROUGH COMPLETION OF THIS PROJECT. RAMP N IS CURRENTLY CLOSED AND DETOUR SIGNS CURRENTLY IN PLACE SHALL ALSO REMAIN IN PLACE WHILE THE RAMP REMAINS CLOSED.

A MINIMUM OF 1 LANE OF TRAFFIC ON KENNEDY AVENUE IN THE SOUTHBOUND DIRECTION AND ALL EXISTING LANES IN THE NORTHBOUND DIRECTION SHALL BE MAINTAINED AT ALL TIMES.

RAMP P SHALL BE MAINTAINED AT ALL TIMES, EXCEPT FOR A PERIOD NOT TO EXCEED 60 CONSECUTIVE CALENDAR DAYS, WHEN THROUGH TRAFFIC MAY BE DETOURED AS SHOWN ON SHEET 9. A DISINCENTIVE SHALL BE ASSESSED IN THE AMOUNT OF $3,470 PER DAY FOR EACH CALENDAR DAY THE RAMP REMAINS CLOSED TO TRAFFIC BEYOND THE SPECIFIED LIMIT.

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.

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 CHANGEABLE 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.

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

THE SIGN SHALL DISPLAY THE DATE OF THE CLOSURE IN MM-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.

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.

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 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.

NOTIFICATION OF TRAFFIC RESTRICTIONS TIME TABLE

ITEM	DURATION OF CLOSURE	NOTICE DUE TO PERMITS & PIO
RAMP & ROAD CLOSURES	>= 2 WEEKS	21 CALENDAR DAYS PRIOR TO CLOSURE
	> 12 HOURS & < 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	<= 12 HOURS	4 BUSINESS DAYS PRIOR TO CLOSURE
LANE CLOSURES & RESTRICTIONS	>= 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	< 2 WEEKS	5 BUSINESS DAYS PRIOR TO CLOSURE
START OF CONSTRUCTION & TRAFFIC PATTERN CHANGES	N/A	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.

ITEM 614, WORK ZONE IMPACT ATTENUATOR, MISC.: WORK ZONE IMPACT ATTENUATOR REMOVED AND RELOCATED

THE WORK ZONE IMPACT ATTENUATOR LOCATED CURRENTLY INSTALLED ON RAMP P IS OWNED ODOT AND WILL BE RELOCATED TO KENNEDY AVENUE DURING PHASE 2. THE CONTRACTOR WILL BE PAID FOR THE REMOVAL AND RELOCATION OF THIS WORK ZONE IMPACT ATTENUTOR AT THE BEGINNING AT PHASE 2.

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 OMUTCD INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENTS OF C&MS 614 AND THE OMUTCD, 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 OMUTCD, 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).

FOR OPERATIONS WITHOUT POSITIVE PROTECTION OCCURRING WITHIN 10 FEET OF AN OPEN TRAVELED LANE THAT MEET ALL OF THE FOLLOWING CRITERIA: ON A MULTI-LANE DIVIDED INTERSTATE, OTHER FREEWAY OR EXPRESSWAY; AND AN AUTHORIZED SPEED LIMIT OF 45 MPH OR GREATER THAT IS IN EFFECT AT THE TIME OF THE OPERATION; AND, AADT OF 50,000 (OR AADT OF 30,000 WITH 25% OR HIGHER PERCENT TRUCKS)

"WITHOUT POSITIVE PROTECTION" MEANS USE OF DRUMS, CONES, SHADOW VEHICLE, ETC, WITHOUT PROTECTION FROM PORTABLE BARRIER OR OTHER RIGID BARRIER ALONG THE WORK AREA. THIS PHRASE DOES NOT APPLY TO CASES WHERE POSITIVE PROTECTION IS REQUIRED. MOBILE OPERATIONS ARE REGARDED AS "WITHOUT POSITIVE PROTECTION". FOR WORK ZONES USING A COMBINATION OF BARRIER AND TEMPORARY TRAFFIC CONTROL DEVICES (CONES, DRUMS, ETC), THE DESIGNATION SHALL BE BASED UPON THE TYPE OF DEVICES USED IN THE AREA THAT WORKERS ARE LOCATED.

IF MULTIPLE ACTIVE LOCALIZED QUALIFYING WORK AREAS OCCUR WITHOUT POSITIVE PROTECTION, PER MAINLINE TRAFFIC DIRECTION, PROVIDE A UNIFORMED LEO AND OFFICIAL PATROL CAR IN ADVANCE OF: THE FIRST ACTIVE WORK AREA THAT DRIVERS WILL ENCOUNTER; OR THE ACTIVE WORK AREA LATERALLY CLOSEST TO THE OPEN TRAVELED LANE; OR OTHER LOCATION AS APPROVED BY THE ENGINEER. THE UNIFORMED LEO AND OFFICIAL PATROL CAR MAY RELOCATE AMONG THE LISTED LOCATIONS AS APPROPRIATE AS THE OPERATIONS PROCEED IN THE LOCALIZED QUALIFYING WORK AREAS.

IN GENERAL, LEOS SHOULD BE POSITIONED IN ADVANCE OF AND ON THE SAME SIDE AS THE LANE RESTRICTION (OR AT THE POINT OF ROAD CLOSURE), AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH SIGNALIZED INTERSECTIONS IN WORK ZONES.

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

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.

ENSURE PROVIDED LEOS HAVE BEEN TRAINED APPROPRIATE TO THE JOB DECISIONS THEY ARE REQUIRED TO MAKE WHILE ON THE PROJECT, IN ACCORDANCE WITH C&MS 614.03.

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. 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 THAT 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 40 HOURS

THE HOURS PAID SHALL INCLUDE ANY MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED.

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

ITEM 614, MAINTAINING TRAFFIC, MISC.: REMOVE AND STORE ODOT OWNED SIGN

THE CONTRACTOR SHALL REMOVE AND RETURN ALL SIGNS THAT ARE PROPERTY OF ODOT AND DELIVER THESE SIGNS TO AN AREA AGREED UPON BY THE CONTRACTOR AND ODOT BEFORE THE COMPLETION OF THE PROJECT.

ITEM 622, BARRIER, MISC.: BARRIER REMOVED AND RELOCATED

THE PORTABLE BARRIER CURRENTLY INSTALLED ON RAMP P IS OWNED ODOT AND WILL BE RELOCATED TO KENNEDY AVENUE DURING PHASE 2. THE CONTRACTOR WILL BE PAID FOR THE REMOVAL AND RELOCATION OF THIS BARRIER AT THE BEGINNING AT PHASE 2.

ITEM 645, PREFORMED PAVEMENT MARKINGS, AS PER PLAN

ALL ASPECTS OF ITEMS OF ITEM 645 SHALL APPLY TO THE APPLICATION OF PREFORMED PAVEMENT MARKINGS, WHICH IS INCLUDED IN THE QUALIFIED PRODUCT LIST, ON ALL CONCRETE SURFACES.

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 PERMANENT CONCRETE BARRIER LOCATED WITHIN 5 FEET OF THE EDGE OF THE TRAVELED LANE UNDER EITHER OF THE FOLLOWING CONDITIONS: ALONG TAPERS AND TRANSITION AREAS; OR 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.

ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN MAINTENANCE OF TRAFFIC SUBSUMMARY AND CARRIED TO THE GENERAL SUMMARY.

DELINEATION OF PORTABLE AND PERMANENT BARRIER (CONTINUED)

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 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 APPROVED PRODUCTS 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.

PERMITTED LANE CLOSURE TIMES

SHORT TERM LANES 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 CLOSURE SHALL ONLY BE ALLOWED DURING THE TIMES SPECIFIED IN THE PERMITTED LANE CLOSURE TIMES AND UNAUTHORIZED LANE USE TABLE INCLUDED IN THESE PLANS. NO LANE OR SHOULDER CLOSURE SHALL BE IN PLACE WHEN NO WORK IS BEING PERFORMED.

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 85 M. GAL.

SEQUENCE OF CONSTRUCTION

PHASE 1 (NOT SHOWN)

1. PLACE ADVANCE WARNING SIGNS ALONG KENNEDY AVENUE SHOWN ON SHEETS 10 AND 11.

2. CONSTRUCT RAMP N FROM STA. 410+31.87 TO STA. 413+46.89 AND RAMP P FROM STA. 408+93.16 TO STA. 412+98.27 WHILE KEEPING THE ENTRANCE RAMP FROM KENNEDY AVENUE TO IR-71 NORTHBOUND IN SERVICE.

SEQUENCE OF CONSTRUCTION (CONTINUED)

PHASE 2

1. CLOSE RAMP P AND PLACE SIGNING FOR I-71 NORTHBOUND DETOUR.

2. SHIFT PORTABLE BARRIER ALONG THE OUTSIDE SHOULDER OF I-71 FROM STA. 414+00 TO 418+00 TO CLOSE THE OUTSIDE SHOULDER OF I-71 AND REMOVE THE PORTABLE BARRIER AND WORK ZONE IMPACT ATTENUATOR ON RAMP P.

3. RELOCATE WORK ZONE IMPACT ATTENUATOR AND PORTABLE BARRIER FROM RAMP P TO KENNEDY AVENUE AND CLOSE THE OUTSIDE LANE OF SOUTHBOUND KENNEDY AVENUE USING A COMBINATION OF THE RELOCATED BARRIER AND PROPOSED BARRIER AND RELOCATED AND PROPSEDWORK ZONE ATTENUATORS.

3. CONSTRUCT THE REMAINING PORTIONS OF RAMP P AND RAMP N, THE SIDEWALK AND CURB ALONG THE WEST SIDE OF KENNEDY AVENUE AND INSTALL THE SIGNAL POLE LOCATED ON THE OUTSIDE EDGE OF RAMP N.

4. REMOVE PORTABLE BARRIER ON KENNEDY AVENUE AND ALONG THE OUTSIDE SHOULDER OF I-71 AND OPEN RAMP N AND RAMP P TO TRAFFIC.

PHASE 3 (NOT SHOWN)

1. USING STANDARD CONSTRUCTION DRAWING MT-95.31, CLOSE THE OUTSIDE LANE OF NORTHBOUND KENNEDY AVENUE AND INSTALL THE SIGNAL POLE ON THE EAST SIDE OF KENNEDY AVENUE.

PERMITTED LANE CLOSURE TIMES AND UNAUTHORIZED LAND 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 MIDNIGHT - 4 PM	NONE	15 MINUTES	$1,875
KENNEDY AVE. to I-71 NB ENTRANCE RAMP (RAMP P)	1	9 PM - 6 AM	7 PM - 6 AM	NONE	NONE	12 MIDNIGHT - 4 PM	NONE	15 MINUTES	$1,200
KENNEDY AVE. to I-71 NB EXIT RAMP (RAMP N)	1	9 PM - 6 AM	7 PM - 6 AM	NONE	NONE	12 MIDNIGHT - 4 PM	NONE	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 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 (SOUTHBOUND) TO 2 HOURS AFTER (NORTHBOUND) EVENTS AT GREAT AMERICAN BALL PARK, PAUL BROWN STADIUM, OR HERITAGE BANK CENTER. THIS RESTRICTION ALSO APPLIES TO ANY OTHER LOCAL VENUE GENERATING AN EVENT ATTENDANCE OF 20,000+.

3.) 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 FOR THE MERGE ON RAMP P.

MAINTENANCE OF TRAFFIC SUBSUMMARY

SHEET NO.	STATION FROM	STATION TO	SIDE	614 INCREASED BARRIER DELINEATION	614 WORK ZONE IMPACT ATTENUATOR, 24" WIDE HAZARDS, (BIDIRECTIONAL)	614 WORK ZONE IMPACT ATTENUATOR, MISC.: REMOVE AND RELOCATE FROM RAMP P	614 WORK ZONE IMPACT ATTENUATOR, MISC.: REMOVE AND STORE ODOT OWNED ATTENUATOR	622 BARRIER REFLECTOR, TYPE I BIDIRECTIONAL	622 OBJECT MARKER, TWO WAY	622 MAINTAINING TRAFFIC, MISC.: REMOVE AND STORE ODOT OWNED SIGN	622 PORTABLE BARRIER, UNANCHORED	622 BARRIER, MISC.: REMOVE AND RELOCATE FROM RAMP P TO KENNEDY AVE.	622 BARRIER, MISC.: ADJUST BARRIER TO CLOSE OUTSIDE SHOULDER OF IR-71 NB	622 BARRIER, MISC.: REMOVE AND STORE ODOT OWNED PORTABLE BARRIER
				EACH	EACH	EACH	EACH	EACH	EACH	EACH	FEET	FEET	FEET	FEET
	PHASE 2 (KENNEDY AVE)													
10 - 11	11+21.00	19+82.00	LT	18	1			25	18		300	590 *		1910 *
	PHASE 2 (IR-71)													
	414+00.00	418+10.00	RT										410 *	
	EXISTING CONDITION (IR-71)													
28 - 30	404+90.00	416+95.00	RT			1 *	1 *			10 *				
TOTALS CARRIED TO GENERAL SUMMARY				18	1	1	1	25	18	10	300	590	410	1910

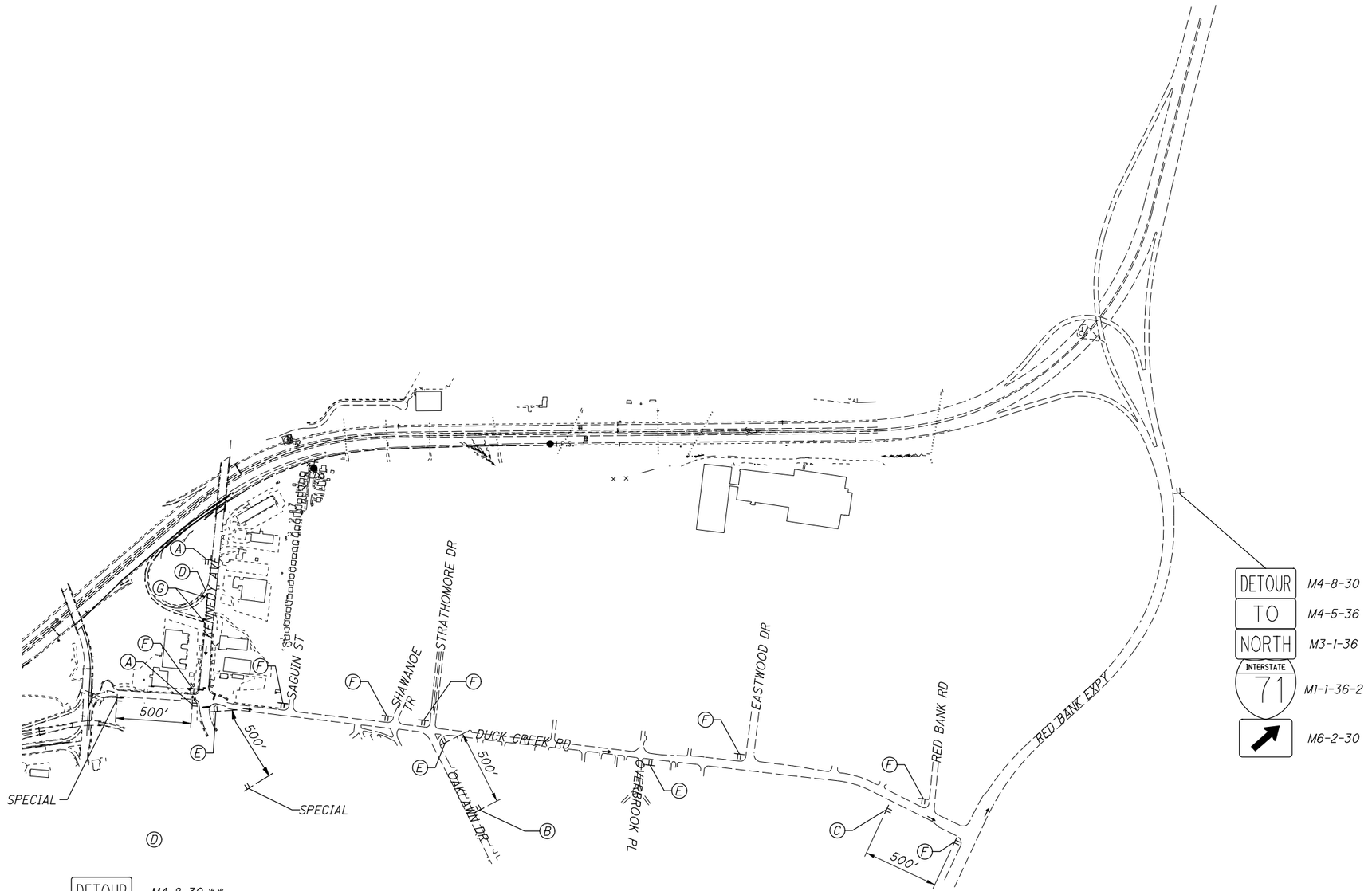
* QUANTITIES ARE FOR THE REMOVAL OF TRAFFIC CONTROL DEVICES THAT WERE PUT IN PLACE PRIOR TO THE START OF THIS PROJECT TO MAINTAIN RAMP P ACCESS TO NORTHBOUND I-71.

GENERAL NOTES

MAINTENANCE OF TRAFFIC

CALCULATED STC
CHECKED SNS

HAM-71-8.65



Ⓐ

DETOUR M4-8-30
TO M4-5-36
NORTH M3-1-36
INTERSTATE 71 M1-1-36-2
M6-3-30

Ⓑ

DETOUR M4-8-30
TO M4-5-36
NORTH M3-1-36
INTERSTATE 71 M1-1-36-2
M5-1-30

Ⓒ

DETOUR M4-8-30
TO M4-5-36
NORTH M3-1-36
INTERSTATE 71 M1-1-36-2
M5-1-30

Ⓓ

DETOUR M4-8-30 **
M6-3-30 **

INTERSTATE 71 NORTH
CLOSED

** W20-H15a-72

** THE CLOSED OVERLAY AND DETOUR SIGNING MOUNTED TO THE OVERHEAD SIGN STRUCTURE ARE SUPPLEMENTAL TO GROUND MOUNTED SIGNS AND WILL NOT REQUIRE RELOCATION WHEN THE OVERHEAD SIGN STRUCTURE IS REMOVED AND TAKEN OUT OF SERVICE.

Ⓔ

DETOUR M4-8-30
TO M4-5-36
NORTH M3-1-36
INTERSTATE 71 M1-1-36-2
DETOUR M4-9R-30

Ⓕ

DETOUR M4-8-30
TO M4-5-36
NORTH M3-1-36
INTERSTATE 71 M1-1-36-2
DETOUR M4-9L-30

Ⓖ R11-2*

TYPE B WARNING LIGHT

ROAD CLOSED

TYPE III BARRICADE
* R11-2 MOUNTED ON BARRICADE PER MT-101.60

SPECIAL

KENNEDY AVE
RAMP CLOSED
USE
RED BANK EXPY
RAMP TO
I-71 N

0 200 400 800
HORIZONTAL SCALE IN FEET

CALCULATED STC
CHECKED SNS

MAINTENANCE OF TRAFFIC
DETOUR PLAN KENNEDY AVENUE

HAM-71-8.65

9
129

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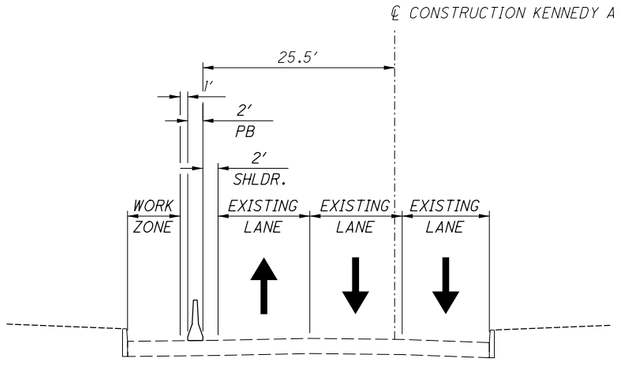
W20-1-48
ROAD WORK AHEAD
END ROAD WORK
G20-2-48
500'
DUCK CREEK ROAD
11+20, 27.5' LT
BEGIN 40' PB
11+10, 27.5' LT
11+50, 26.5' LT
RAMP CLOSED AHEAD
E5-H27f-48
RAMP CLOSED
E5-H2e-48
100'
100'
KENNEDY AVENUE
IMPACT ATTENUATOR
BI-DIRECTIONAL
END RELOCATED PB
BEGING PB
16+90, 26.5' LT
℄ CONSTRUCTION KENNEDY AVENUE
MATCH LINE STA. 18+00
END ROAD WORK
G20-2-48
ROAD WORK AHEAD
W20-1-48
DUCK CREEK ROAD
SAGUIN STREET
ROAD WORK AHEAD
W20-1-48

℄ CONSTRUCTION KENNEDY AVENUE



LEGEND

- WORK AREA
- SIGN POST
- DIRECTION OF TRAVEL
- DRUMS
- PORTABLE BARRIER
- PORTABLE BARRIER REMOVED AND RELOCATED FROM RAMP P
- WORK ZONE IMPACT ATTENUATOR REMOVED AND RELOCATED FROM RAMP P

N

0 25 50 100 HORIZONTAL SCALE IN FEET

CALCULATED STC
CHECKED SNS

MAINTENANCE OF TRAFFIC
KENNEDY AVE. BEGINN TO STA. 18+00.00

HAM-71-8.65

W20-1-48
ROAD WORK AHEAD
END ROAD WORK
G20-2-48
500'
HIGHLAND AVENUE
19+00, 25.5' LT
BEGIN 40' SPACING DRUMS
19+30, 26.5' LT
19+80, 34.5' LT
END PB
19+90, 34.5' LT
END 10' SPACING DRUMS
23+70, 44' LT
BEGIN 10' SPACING DRUMS
23+36, 26.5' LT
END 40' SPACING DRUMS
23+12, 26.5' LT
KENNEDY AVENUE
MATCH LINE STA. 18+00
℄ CONSTRUCTION KENNEDY AVENUE
℄ CONSTRUCTION I-71
500'
ROAD WORK AHEAD
W20-1-48
END ROAD WORK
G20-2-48

LEGEND

- WORK AREA
- SIGN POST
- DIRECTION OF TRAVEL
- DRUMS
- PORTABLE BARRIER
- PORTABLE BARRIER REMOVED AND RELOCATED FROM RAMP P
- WORK ZONE IMPACT ATTENUATOR REMOVED AND RELOCATED FROM RAMP P

N

0 25 50 100
HORIZONTAL SCALE IN FEET

CALCULATED STC
CHECKED SNS

MAINTENANCE OF TRAFFIC
KENNEDY AVE STA. 18+00.00 TO END

HAM-71-8.65

11
129

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SHEET NUM.													PART.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
4	6	19	20	21	22								03/SAF/PV						
																		ROADWAY	
LS													LS	201	11000	LS		CLEARING AND GRUBBING	
			3										3	202	20010	3	EACH	HEADWALL REMOVED	
			1,595	43									1,638	202	23000	1,638	SY	PAVEMENT REMOVED, CONCRETE	
			75										75	202	30700	75	FT	CONCRETE BARRIER REMOVED	
			810	538									1,348	202	32000	1,348	FT	CURB REMOVED	
			134										134	202	32700	134	SY	GUTTER REMOVED	
			477										477	202	35101	477	FT	PIPE REMOVED, 24" AND UNDER, AS PER PLAN	51
			152										152	202	35200	152	FT	PIPE REMOVED, OVER 24"	
			675										675	202	38000	675	FT	GUARDRAIL REMOVED	
			6										6	202	58100	6	EACH	CATCH BASIN REMOVED	
			50										50	SPECIAL	20270000	50	FT	FILL AND PLUG EXISTING CONDUIT	
			LS										LS	202	98000	LS		REMOVAL MISC.: LIGHT TOWER RETAINING WALL	
		20,257											20,257	203	10000	20,257	CY	EXCAVATION	
		8,298											8,298	203	20000	8,298	CY	EMBANKMENT	
		1,027											1,027	203	35110	1,027	CY	GRANULAR MATERIAL, TYPE B	
		2,155											2,155	203	98000	2,155	CY	ROADWAY, MISC.:FLOOD CONTROL EMBANKMENT	51
	3												3	204	45000	3	HOUR	PROOF ROLLING	
		207											207	206	10500	207	TON	CEMENT	
		5,226											5,226	206	11001	5,226	SY	CURING COAT, AS PER PLAN	
					5,425								5,425	206	15030	5,425	SY	CEMENT STABILIZED SUBGRADE, 16 INCHES DEEP	
				831.25									831.25	606	15050	831.25	FT	GUARDRAIL, TYPE MGS	
				3									3	606	26150	3	EACH	ANCHOR ASSEMBLY, MGS TYPE E	
				1									1	606	26500	1	EACH	ANCHOR ASSEMBLY, TYPE T	
				3									3	606	35002	3	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1	
				1									1	606	35103	1	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2, AS PER PLAN	5
				4,655									4,655	608	12000	4,655	SF	5" CONCRETE WALK	
				306									306	608	52000	306	SF	CURB RAMP	
				943									943	622	10160	943	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE D	
				3									3	622	25000	3	EACH	CONCRETE BARRIER END SECTION, TYPE D	
				4									4	622	25050	4	EACH	CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE D	
	1												1	623	40500	1	EACH	REFERENCE MONUMENT	
				13									13	626	00102	13	EACH	BARRIER REFLECTOR, TYPE 1, 1 WAY	
				20									20	626	00110	20	EACH	BARRIER REFLECTOR, TYPE 2, 1 WAY	
													LS	878	25000	LS		INSPECTION AND COMPACTION TESTING OF UNBOUND MATERIALS	

CALCULATED LBA
CHECKED SNS

GENERAL SUMMARY

HAM-71-8.65

SHEET NUM.													PART.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
6	24	27	74										03/SAF/PV						
																		EROSION CONTROL	
			72										72	601	11000	72	SY	RIPRAP, TYPE D	
	2												2	601	32204	2	CY	ROCK CHANNEL PROTECTION, TYPE C WITH GEOTEXTILE FABRIC	
1													1	659	00100	1	EACH	SOIL ANALYSIS TEST	
		1,478											1,478	659	00300	1,478	CY	TOPSOIL	
20,373													20,373	659	10000	20,373	SY	SEEDING AND MULCHING	
1,020													1,020	659	14000	1,020	SY	REPAIR SEEDING AND MULCHING	
3													3	659	20000	3	TON	COMMERCIAL FERTILIZER	
5													5	659	31000	5	ACRE	LIME	
111													111	659	35000	111	MGAL	WATER	
46													46	659	40000	46	MSF	MOWING	
	2,700												2,700	670	00500	2,700	SY	SLOPE EROSION PROTECTION	
	792												792	670	00710	792	SY	DITCH EROSION PROTECTION MAT, TYPE A	
		LS											LS	832	15000	LS		STORM WATER POLLUTION PREVENTION PLAN	
		LS											LS	832	15002	LS		STORM WATER POLLUTION PREVENTION INSPECTIONS	
		LS											LS	832	15010	LS		STORM WATER POLLUTION PREVENTION INSPECTION SOFTWARE	
		45,000											45,000	832	30000	45,000	EACH	EROSION CONTROL	

CALCULATED LBA
CHECKED SNS

GENERAL SUMMARY

HAM-71-8.65

SHEET NUM.													PART.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
5	6	20	21	22	23	25							03/SAF/PV						
																		DRAINAGE	
					1.12								1.12	602	20000	1.12	CY	CONCRETE MASONRY	
						1,253							1,253	605	11101	1,253	FT	6" SHALLOW PIPE UNDERDRAINS, AS PER PLAN, 707.31, 707.41	
						64							64	611	00511	64	FT	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS, AS PER PLAN	
	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	
					138								138	611	05900	138	FT	15" CONDUIT, TYPE B	
					100								100	611	05901	100	FT	15" CONDUIT, TYPE B, AS PER PLAN	
					96								96	611	06700	96	FT	15" CONDUIT, TYPE F	
					13								13	611	07401	13	FT	18" CONDUIT, TYPE B, AS PER PLAN	
					136								136	611	07600	136	FT	18" CONDUIT, TYPE C	
					295								295	611	10600	295	FT	24" CONDUIT, TYPE C	
					40								40	611	10601	40	FT	24" CONDUIT, TYPE C, AS PER PLAN	
					154								154	611	13400	154	FT	30" CONDUIT, TYPE B	
					235								235	611	13601	235	FT	30" CONDUIT, TYPE C, AS PER PLAN	
					1								1	611	98150	1	EACH	CATCH BASIN, NO. 3	
					1								1	611	98151	1	EACH	CATCH BASIN, NO. 3, AS PER PLAN	
					1								1	611	98180	1	EACH	CATCH BASIN, NO. 3A	
					3								3	611	98181	3	EACH	CATCH BASIN, NO. 3A, AS PER PLAN	
					1								1	611	98470	1	EACH	CATCH BASIN, NO. 2-2B	
					1								1	611	98511	1	EACH	CATCH BASIN, NO. 2-3, AS PER PLAN	
					1								1	611	99114	1	EACH	INLET, NO. 3 FOR SINGLE SLOPE BARRIER, TYPE D	
					1								1	611	99115	1	EACH	INLET, NO. 3 FOR SINGLE SLOPE BARRIER, TYPE D, AS PER PLAN	
					2								2	611	99574	2	EACH	MANHOLE, NO. 3	
					3								3	611	99575	3	EACH	MANHOLE, NO. 3, AS PER PLAN	
																		PAVEMENT	
				717									717	254	01000	717	SY	PAVEMENT PLANING, ASPHALT CONCRETE	
				905									905	304	20000	905	CY	AGGREGATE BASE	
9													9	301	46000	9	CY	ASPHALT CONCRETE BASE, PG64-22	
				574									574	407	20000	574	GAL	NON-TRACKING TACK COAT	
1.5													1.5	441	50000	1.5	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22	
				30									30	442	10000	30	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446)	
				4,912									4,912	452	16060	4,912	SY	13.5" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P WITH QC/QA	
			538										538	609	16000	538	FT	CURB, TYPE 2-B	
			66										66	609	24510	66	FT	CURB, TYPE 4-C	
			1,197										1,197	609	26000	1,197	FT	CURB, TYPE 6	
		347	190										537	609	50000	537	SY	4" CONCRETE TRAFFIC ISLAND	

CALCULATED LBA
CHECKED SNS

GENERAL SUMMARY

HAM-71-8.65

SHEET NUM.													PART.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
82	107	108	125										03/SAF/PV						
																		LIGHTING	
			4										4	625	00450	4	EACH	CONNECTION, FUSED PULL APART	
			15										15	625	00480	15	EACH	CONNECTION, UNFUSED PERMANENT	
			1										1	625	10490	1	EACH	LIGHT POLE, CONVENTIONAL, AT12B35	
			1										1	625	14000	1	EACH	LIGHT POLE FOUNDATION, 24" X 6' DEEP	
			462										462	625	23300	462	FT	NO. 2 AWG 2400 VOLT DISTRIBUTION CABLE	
			141										141	625	23400	141	FT	NO. 10 AWG POLE AND BRACKET CABLE	
			230										230	625	24320	230	FT	1-1/2" DUCT CABLE WITH THREE NO. 4 AWG 2400 VOLT CABLES	
			460										460	625	24330	460	FT	1-1/2" DUCT CABLE WITH THREE NO. 2 AWG 2400 VOLT CABLES	
		666											666	625	25400	666	FT	CONDUIT, 2", 725.04	
			144										144	625	25506	144	FT	CONDUIT, 3", 725.052	
			1										1	625	26251	1	EACH	LUMINAIRE, CONVENTIONAL, AS PER PLAN, TYPE II, 200 W HPS, 480V	127
		652											652	625	29000	652	FT	TRENCH	
			774										774	625	29002	774	FT	TRENCH, 24" DEEP	
		3											3	625	30500	3	EACH	PULL BOX, 725.06, SIZE 1.5	
			5										5	625	30700	5	EACH	PULL BOX, 725.08, 18"	
			2										2	625	31510	2	EACH	PULL BOX REMOVED	
	2	4	1										7	625	32000	7	EACH	GROUND ROD	
		652	774										1,426	625	36010	1,426	FT	UNDERGROUND WARNING/MARKING TAPE	
			LS										LS	SPECIAL	62540000	LS		MAINTAIN EXISTING LIGHTING	127
			1										1	625	75400	1	EACH	LIGHT POLE REMOVED	
			1										1	625	75500	1	EACH	LIGHT POLE FOUNDATION REMOVED	
			1										1	625	75506	1	EACH	LUMINAIRE REMOVED	
			1										1	625	75800	1	EACH	DISCONNECT CIRCUIT	
																		TRAFFIC SURVEILLANCE	
862													862	625	25750	862	FT	CONDUIT, 4", MULTICELL, 725.20 , EPC-40	
7,382													7,382	625	25910	7,382	FT	CONDUIT CLEANED AND CABLES REMOVED	
862													862	625	29000	862	FT	TRENCH	
1													1	625	29941	1	EACH	BARRIER JUNCTION BOX, AS PER PLAN	80
4													4	625	30711	4	EACH	PULL BOX, 725.08, 32", AS PER PLAN	80
4													4	625	31510	4	EACH	PULL BOX REMOVED	
862													862	625	36010	862	FT	UNDERGROUND WARNING/MARKING TAPE	
22													22	625	39520	22	EACH	PULL BOX CLEANED	
5													5	630	89812	5	EACH	REMOVAL OF WOOD POLE AND DISPOSAL	
10,854													10,854	804	15010	10,854	FT	FIBER OPTIC CABLE, 24 FIBER	
3													3	804	34022	3	EACH	FIBER TERMINATION PANEL, 24 FIBER	
8													8	804	37002	8	EACH	SPLICE ENCLOSURE, IN-LINE	

CALCULATED LBA
CHECKED SNS

GENERAL SUMMARY

HAM-71-8.65

SHEET NUM.													PART.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
6	51	107	108	109D									03/SAF/PV						
																		TRAFFIC CONTROL	
				1,526									1,526	621	00100	1,526	EACH	RPM	
10													10	621	54000	10	EACH	RAISED PAVEMENT MARKER REMOVED	
		1											1	625	32000	1	EACH	GROUND ROD	
		323.1											323.1	630	03100	323.1	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	
		35.6											35.6	630	06500	35.6	FT	GROUND MOUNTED STRUCTURAL BEAM SUPPORT, W6X9	
		10											10	630	08600	10	EACH	SIGN POST REFLECTOR	
		2											2	630	09000	2	EACH	BREAKAWAY STRUCTURAL BEAM CONNECTION	
		1											1	630	72320	1	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-12.31, DESIGN 6	
		2											2	630	75000	2	EACH	SIGN ATTACHMENT ASSEMBLY	
			8										8	630	79500	8	EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED	
		192											192	630	80100	192	SF	SIGN, FLAT SHEET	
		30											30	630	80200	30	SF	SIGN, GROUND MOUNTED EXTRUSHEET	
		112											112	630	80224	112	SF	SIGN, OVERHEAD EXTRUSHEET	
		2											2	630	84500	2	EACH	GROUND MOUNTED STRUCTURAL BEAM SUPPORT FOUNDATION	
		1											1	630	84510	1	EACH	RIGID OVERHEAD SIGN SUPPORT FOUNDATION	
			1										1	630	84900	1	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
			1										1	630	86002	1	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
			2										2	630	87000	2	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND STORAGE	
			2										2	630	89706	2	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TYPE TC-12.30	
			1										1	630	97700	1	EACH	SIGNING, MISC.: WRONG WAY DETECTION SYSTEM	105
	5												5	630	97700	5	EACH	SIGNING, MISC.: LEVEE SIGNAGE	51
			2										2	631	94470	2	EACH	REMOVAL OF SIGN SERVICE	
				0.06									0.06	644	00104	0.06	MILE	EDGE LINE, 6"	
				50									50	644	00500	50	FT	STOP LINE	
				88									88	644	00720	88	FT	CHEVRON MARKING	
				99									99	644	01500	99	FT	DOTTED LINE, 4"	
				1,414									1,414	644	30000	1,414	FT	REMOVAL OF PAVEMENT MARKING	
				1.64									1.64	645	00117	1.64	MILE	EDGE LINE, 6", TYPE A3, AS PER PLAN	105
				0.69									0.69	645	00217	0.69	MILE	LANE LINE, 6", TYPE A3, AS PER PLAN	105
				1,100									1,100	645	00417	1,100	FT	CHANNELIZING LINE, 12", TYPE A3, AS PER PLAN	105
				21									21	646	10400	21	FT	STOP LINE	
				138									138	646	10520	138	FT	CROSSWALK LINE, 24"	
				2									2	646	20320	2	EACH	WRONG WAY ARROW	
				319									319	646	20504	319	FT	DOTTED LINE, 6"	
				20									20	646	20800	20	FT	YIELD LINE	
				25.42									25.42	807	13010	25.42	MILE	WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, EDGE LINE, 6"	
				20.18									20.18	807	13110	20.18	MILE	WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, LANE LINE, 6"	
				14,185									14,185	807	13310	14,185	FT	WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, CHANNELIZING LINE, 12"	
				13,522									13,522	807	13410	13,522	FT	WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, DOTTED LINE, 6"	
				49.99									49.99	850	10010	49.99	MILE	GROOVING FOR 6" RECESSED PAVEMENT MARKING, (ASPHALT)	
				2.69									2.69	850	10030	2.69	MILE	GROOVING FOR 12" RECESSED PAVEMENT MARKING, (ASPHALT)	
				2.33									2.33	850	20010	2.33	MILE	GROOVING FOR 6" RECESSED PAVEMENT MARKING, (CONCRETE)	
				0.21									0.21	850	20030	0.21	MILE	GROOVING FOR 12" RECESSED PAVEMENT MARKING, (CONCRETE)	

CALCULATED LBA
CHECKED SNS

GENERAL SUMMARY

HAM-71-8.65

16
129

V:\1736\active\736200491\engineering\ll4992\Design\Roadway\Sheets\ll4992_GG005.dgn 3/10/2022 10:46:36 AM latchley

SHEET NUM.													PART.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
51	74	108	120										03/SAF/PV						
																		TRAFFIC SIGNALS	
			295										295	625	25500	295	FT	CONDUIT, 3", 725.04	
			10										10	625	25600	10	FT	CONDUIT, 4", 725.04	
			198										198	625	25908	198	FT	CONDUIT, JACKED OR DRILLED, 725.052, 3"	
			227										227	625	29000	227	FT	TRENCH	
			5										5	625	30706	5	EACH	PULL BOX, 725.08, 24"	
			5										5	625	32000	5	EACH	GROUND ROD	
			1										1	630	79100	1	EACH	SIGN HANGER ASSEMBLY, MAST ARM	
			1										1	630	79500	1	EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED	
			15.8										15.8	630	80100	15.8	SF	SIGN, FLAT SHEET	
			6										6	632	05006	6	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, BLACK	
			2										2	632	20731	2	EACH	PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN	115
			6										6	632	25000	6	EACH	COVERING OF VEHICULAR SIGNAL HEAD	
			2										2	632	26000	2	EACH	PEDESTRIAN PUSHBUTTON	
			976										976	632	40700	976	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	
			2										2	632	64011	2	EACH	SIGNAL SUPPORT FOUNDATION, AS PER PLAN	118
		4	2										6	632	64020	6	EACH	PEDESTAL FOUNDATION	
		1,503											1,503	632	66000	1,503	FT	POWER CABLE, 3 CONDUCTOR, NO. 14 AWG	
		909											909	632	67300	909	FT	POWER CABLE, 3 CONDUCTOR, NO. 8 AWG	
			251										251	632	68300	251	FT	POWER CABLE, 3 CONDUCTOR, NO. 6 AWG	
			50										50	632	69500	50	FT	SERVICE CABLE, 2 CONDUCTOR, NO. 6 AWG	
			1										1	632	70000	1	EACH	POWER SERVICE	
		1											1	632	70001	1	EACH	POWER SERVICE, AS PER PLAN	105
			1										1	632	71368	1	EACH	SIGNAL SUPPORT, TYPE TC-12.31 DESIGN 10 POLE, WITH MAST ARMS TC-81.22 DESIGN 13 AND DESIGN 12	
			1										1	632	72140	1	EACH	SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 13	
			2										2	632	89700	2	EACH	PEDESTAL, 11'	
		4											4	632	90010	4	EACH	PEDESTAL, MISC.: PEDESTAL, 15', TRANSFORMER BASE	105
			1										1	633	65521	1	EACH	CABINET, TYPE 332, AS PER PLAN	115
			1										1	633	67100	1	EACH	CABINET FOUNDATION	
			1										1	633	67200	1	EACH	CONTROLLER WORK PAD	
			1										1	633	75001	1	EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN	116
			1										1	809	69101	1	EACH	STOP LINE RADAR DETECTION, AS PER PLAN	116
			1										1	809	69123	1	EACH	ATC CONTROLLER, AS PER PLAN	115
																		RETAINING WALLS (I-WALL)	
LS													LS	503	21300	LS		UNCLASSIFIED EXCAVATION	
5,014													5,014	504	11101	5,014	SF	STEEL SHEET PILING LEFT IN PLACE, AS PER PLAN	73
11,485													11,485	509	10000	11,485	LB	EPOXY COATED REINFORCING STEEL	
139													139	511	46010	139	CY	CLASS QC1 CONCRETE, RETAINING/WINGWALL NOT INCLUDING FOOTING	
288													288	512	10100	288	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
533													533	516	13601	533	SF	1" PREFORMED EXPANSION JOINT FILLER, AS PER PLAN	
																		STRUCTURE 20 FOOT SPAN AND UNDER (3115275)	
	LS												LS	202	11201	LS		PORTIONS OF STRUCTURE REMOVED, AS PER PLAN	73
	LS												LS	503	11100	LS		COFFERDAMS AND EXCAVATION BRACING	
	LS												LS	503	21301	LS		UNCLASSIFIED EXCAVATION, AS PER PLAN	6, 73
	10,121												10,121	509	10001	10,121	LB	EPOXY COATED REINFORCING STEEL, AS PER PLAN	
	91												91	511	46210	91	CY	CLASS QC1 CONCRETE, RETAINING/WINGWALL INCLUDING FOOTING	
	2												2	511	46611	2	CY	CLASS QC1 CONCRETE, HEADWALL, AS PER PLAN	
	68												68	512	10100	68	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	
	150												150	512	33000	150	SY	TYPE 2 WATERPROOFING	
	38												38	516	13600	38	SF	1" PREFORMED EXPANSION JOINT FILLER	
	12												12	518	21200	12	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
	35												35	611	97400	35	FT	CONDUIT, MISC.:12' X 9' CONDUIT, TYPE A, 706.05, DESIGN COVER 3 FT, AS PER PLAN	6, 73

CALCULATED LBA
CHECKED SNS

GENERAL SUMMARY

HAM-71-8.65

SHEET NUM.													PART.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
5	7	8	9										03/SAF/PV						
																		MAINTENANCE OF TRAFFIC	
	40												40	614	11110	40	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
		25											25	614	11630	25	FT	INCREASED BARRIER DELINEATION	
		1											1	614	12384	1	EACH	WORK ZONE IMPACT ATTENUATOR, 24" WIDE HAZARDS, (BIDIRECTIONAL)	
		1											1	614	12400	1	EACH	WORK ZONE IMPACT ATTENUATOR, MISC.:REMOVE AND RELOCATE FROM RAMP P	
		1											1	614	12400	1	EACH	WORK ZONE IMPACT ATTENUATOR, MISC.:REMOVE AND STORE ODOT OWNED ATTENUATOR	
		25											25	614	13310	25	EACH	BARRIER REFLECTOR, TYPE 1, BIDIRECTIONAL	
		18											18	614	13360	18	EACH	OBJECT MARKER, TWO WAY	
		10											10	614	18000	10	EACH	MAINTAINING TRAFFIC, MISC.:REMOVE AND STORE ODOT OWNED SIGN	
		85											85	616	10000	85	MGAL	WATER	
		300											300	622	41100	300	FT	PORTABLE BARRIER, UNANCHORED	
		590											590	622	90000	590	FT	BARRIER, MISC.:REMOVE AND RELOCATE FROM RAMP P TO KENNEDY AVE.	
		410											410	622	90000	410	FT	BARRIER, MISC.:ADJUST BARRIER TO CLOSE OUTSIDE SHOULDER OF IR-71 NB	
		1,910											1,910	622	90000	1,910	FT	BARRIER, MISC.:REMOVE AND STORE ODOT OWNED PORTABLE BARRIER	
																		INCIDENTALS	
	LS												LS	614	11000	LS		MAINTAINING TRAFFIC	
													LS	623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
													LS	624	10000	LS		MOBILIZATION	
LS													LS	SPECIAL	69098400	LS		CONSULTANT FOR CONCRETE QUALITY CONTROL INCLUDING TESTING AND INSPECTION	5

CALCULATED LBA
CHECKED SNS

GENERAL SUMMARY

HAM-71-8.65

EARTHWORK QUANTITIES

STATION		SHEET NO.	203				659	DEDUCT						659
			EXCAVATION	EMBANKMENT	GRANULAR MATERIAL, TYPE B	ROADWAY MISC.: FLOOD CONTROL EMBANKMENT	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
			CU YD	CU YD	CU YD	CU YD	SQ YD	SQ YD	SQ YD	SQ YD	SQ YD	SQ YD	SQ YD	SQ YD
I.R. 71														
408+50.00	413+00.00	37	456	65			1431						-29.00	1402.00
RAMP N														
408+50.00	414+00.00	42	5501	4252			11161					-441.00		10720
RAMP P														
408+50.00	418+00.00	49	2057	1826	438		650					-207.00		443
LEVEE														
0+00.00	5+50.00	55	1577	2053	438	2053	2622					-207.00		2415
YONONTE CREEK														
9+50.00	5+50.00	58	10666	102	151	102	5600					-207.00		5393
	SUBTOTAL		20257	8298	1027	2155	21464	0.00	0.00	0.00	0.00	-1062.00	-29.00	20373
TOTALS TO GENERAL SUMMARY			20257*	8298*	1027*	2155								20373**

* TOTALS CARRIED TO GENERAL SUMMARY
** QUANTITIES CARRIED TO GENERAL NOTES

ITEM 659 SOIL ANALYSIS TEST
20373 SQ YD X 9 X 1/43560 AREA X 1 EACH/10 AREA = 0.42 EACH
USE 1 EACH **

ITEM 659 REPAIR SEEDING AND MULCHING
20373 SQ YD X 0.05 = 1018.65 SQ YD
USE 1020 SQ YD **

ITEM 659 COMMERCIAL FERTILIZER
20373 SQ YD X 1 TON/7410 SQ YD = 2.75 TONS
USE 3 TONS **

ITEM 659 LIME
20373 SQ YD X 9 X 1/43560 = 4.21 ACRES
USE 5 ACRES**

ITEM 659 WATER
20373 SQ YD X 0.0027 M GAL/SQ YD X 2 = 110.01 M GAL
USE 111 M GAL **

ITEM 659 MOWING
20373 SQ YD X 9 X 0.25/1000 = 45.84 M SQ FT
USE 46 M SQ FT **

ITEM 204 PROOF ROLLING
USING ITEM 206 CHEMICALLY STABILIZED SUBGRADE 5226 SY (FROM PAVT CALCULATIONS)
5226 SQ YD x 1 HR/2000 SQ YD = 2.61 HOURS, USE 3 HOURS **

ITEM 206 CEMENT
AREA OF ITEM 206 CEMENT STABILIZED SUBGRADE 16" DEEP = 5226 SQ YD (FROM PAVT CALCULATIONS)
5226 SQ YD x (0.75 x 16" x 110 x 0.06) LBS/SQ YD x 1 TON/2000 LBS = 206.95 TONS
USE 207 TONS*

ITEM 206 CURING COAT, AS PER PLAN
AREA OF ITEM 206 STABILIZED SUBGRADE, 5226 SY (FROM PAVT CALCULATIONS) = 5226 SY *

CALCULATED LEH
CHECKED SNS

SUBSUMMARY

HAM-71-8.65

REF. NO.	SHEET NO.	STATION (P = RAMP P, N = RAMP N, K = KENNEDY, R = RIDGE) FROM	TO	SIDE	202 HEADWALL REMOVED EACH	202 PAVEMENT REMOVED, CONCRETE SQ YD	202 CONCRETE BARRIER REMOVED FOOT	202 CURB REMOVED FOOT	202 GUTTER REMOVED SQ YD	202 PIPE REMOVED, 24" AND UNDER FOOT	202 PIPE REMOVED, OVER 24" FOOT	202 GUARDRAIL REMOVED FOOT	202 CATCH BASIN REMOVED EACH	202 REMOVAL MISC.: LUMP	609 4" CONCRETE TRAFFIC ISLAND SQ YD	SPECIAL FILL & PLUG EXISTING CONDUIT FOOT	REMARKS
R1		NOT USED															
R2		NOT USED															
R3		NOT USED															
R4		NOT USED															
R5		NOT USED															
R6		NOT USED															
R7		NOT USED															
R8	29	411+85.93	412+50.89	RT	1					118			2				
R9	29-30	411+39.04	414+90.75	RT			75										
R10		NOT USED															
R11		NOT USED															
R12		NOT USED															
R13	30	412+91.78	417+96.00	RT											347		
R14		NOT USED															
R15		NOT USED															
R16		NOT USED															
R17		NOT USED															
R18		NOT USED															
R19		NOT USED															
R20		NOT USED															
R21		NOT USED															
R22		NOT USED															
R23		NOT USED															
R24		NOT USED															
R25	29,31	412+03.60 P	14+67.00 K	LT/LT								675.00					
R26	29,31	411+96.04 P	13+87.47 K	LT/LT		1595											
R27	31	409+95.00 P	411+76.00 N	RT/RT	1					237			1				
R28	31	12+19.34 K	12+69.46 K	LT						72			1				
R29	31	12+69.46 K		LT						4	8						
R30	31	413+28.00 N	12+69.46 K	RT/LT							144						
R31	31	411+69.84 N	413+84.40 N	RT/LT					134								
R32	31	11+18.86 K	11+92.00 K	LT				83									
R33	31	12+10.65 K	13+78.92 K	LT				581									
R34	31	13+87.88 K	15+31.00 K	LT				146									
R35		NOT USED															
R36	31	412+22.63 N	412+56.98 N	RT										LUMP			LIGHT TOWER RETAINING WALL
R37	31	413+03.47 N	413+10.65 N	RT	1					46			1				
R38	31	14+50.00 K		LT/RT									1			50	PLUG AND SEAL 12" CONDUIT
TOTALS CARRIED TO GENERAL SUMMARY					3	1595	75	810	134	477	152	675	6	LUMP	347	50	

CALCULATED LEH CHECKED SNS

ROADWAY QUANTITIES

HAM-71-8.65

REF. NO.	SHEET NO.	STATION FROM	STATION TO	SIDE	202 PAVEMENT REMOVED, CONCRETE	202 CURB REMOVED	441 1-1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22	452 9" NON-REINFORSED CONCRETE PAVEMENT, CLASS QC1	519 PATCHING CONCRETE STRUCTURE	606 GUARDRAIL, TYPE MGS	606 ANCHOR ASSEMBLY, MGS TYPE E	606 ANCHOR ASSEMBLY, MGS TYPE T	606 MGS BRIDGE TERMINAL ASSEMBLY, TYPE I	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2, AS PER PLAN	608 CURB RAMP, TYPE A1	608 CURB RAMP, TYPE B1	608 5" CONCRETE WALK	609 CURB, TYPE 4-C	609 CURB, TYPE 6	609 CURB, TYPE 2-B	609 4" CONCRETE TRAFFIC ISLAND	622 CONCRETE BARRIER, SINGLE SLOPE, TYPE D	622 CONCRETE BARRIER END SECTION, TYPE D	622 CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE D	626 BARRIER REFLECTOR, TYPE 1, 1WAY	626 BARRIER REFLECTOR, TYPE 2, 1WAY
					SQ YD	FOOT	CY	SQ YD	SQ FT	FOOT	EACH	EACH	EACH	EACH	SQ FT	SQ FT	SQ FT	FOOT	FOOT	FOOT	SQ YD	FOOT	EACH	EACH	EACH	EACH
		I.R. 71																								
G1		NOT USED																								
G2	29	411+15.23	412+40.23	RT						50	1		1													2
G3		NOT USED																								
		RAMP P																								
G4	29-30	412+32.58	413+10.60	LT						12.50	1		1													2
G5	29-30,31	18+90.39 KENNEDY	409+15.61	LT/RT						468.75		1		1												16
G6	30,31	408+95.89	412+75.60	RT						300	1		1													
		I.R. 71																								
C1		NOT USED																								
C2	29	412+21.63	412+39.63	RT														18								
		RAMP P																								
C3	29-30	412+92.00	413+10.00	LT														18								
C4	29	412+57.00	412+75.00	RT														18								
C5	31	408+95.89	412+75.60	LT														12	358							
C6	31	408+22.24	408+79.25	RT											108				184.50		122					
		RAMP N																								
C7	31	412+00.00	414+00.00	LT															401.50		68					
		KENNEDY AVENUE																								
C8	31	11+18.86	413+66.53 RAMP N	LT/RT	18	159	0.8	18											132.2	159						
C9	31	408+92.10 RAMP P	18+90.39	RT/LT	43	379	1.8	43											121.1	379						
		I.R. 71																								
B1		NOT USED																								
B2		NOT USED																								
B3	29-30	412+39.63	416+24.99	RT																		336	1	2	5	
		RAMP P																								
B4		NOT USED																								
B5	30	413+10.00	417+00.19	LT																		376	1		4	
B6	29-30	412+75.00	415+50.00	RT																		231	1	2	4	
		KENNEDY AVE																								
W1	31	11+18.86	18+90.39	LT												198	4655									
		KENNEDY AVE																								
IP1	31	12+26.53		LT					10																	
TOTALS CARRIED TO GENERAL SUMMARY					61	538	2.6	61	10	831.25	3	1	3	1	306		4655	66	1197	538	190	943	3	4	13	20

CALCULATED LEH
CHECKED SNS

ROADWAY QUANTITIES

HAM-71-8.65

REF. NO.	SHEET NO.	STATION FROM	STATION TO	SIDE	COMPUTER GENERATED AREA	206 CEMENT STABILIZED SUBGRADE, 16 INCHES DEEP (AREA/9)	254 PAVEMENT PLANING, ASPHALT CONCRETE (AREA/9)	304 6" AGGREGATE BASE (AREAx0.50/27)	407 NON-TRACKING TACK COAT (AREAx2x0.055/9)	442 1 1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446) (AREAx0.125/27)	452 13.5" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC1 WITH QC/QA (AREA/9)						REMARKS
					SQ FT	SQ YD	SQ YD	CU YD	GAL	CU YD	SQ YD						
		I.R. 71															
P1		NOT USED															
P2		NOT USED															
P3	29	410+90.00	413+00.00	RT	2520		280		224	11.67							
P4	30	413+00.00	416+27.62	RT	3931		436.78		350	18.20							
P5		NOT USED															
P6		NOT USED															
P7		NOT USED															
P8		NOT USED															
P9		NOT USED															
P10		NOT USED															
		RAMP N															
P11		NOT USED															
P12		NOT USED															
P13		NOT USED															
P14	29	408+97.30	410+50.00	LT/RT	3918	487.56		81.26			435.33						ADD 470 SF FOR 206, 304
P15	31	410+50.00	12+73.83 KENNEDY	LT/RT	10183	1260.00		210.00			1131.44						ADD 1157 SF FOR 206, 304
		RAMP P															
P16	31	15+31.00 KENNEDY	411+50.00	LT/RT	14392	1759.00		293.17			1599.11						ADD 1439 SF FOR 304, 206
P17	29	411+50.00	413+00.00	LT/RT	4207	518.78		86.46			467.44						ADD 462 SF FOR 304, 206
P18	30	413+00.00	418+00.00	LT/RT	11500	1399.33		233.22			1277.78						ADD 1094 SF FOR 206, 304, 452
SUBTOTAL						5424.67	716.78	904.11	574.00	29.87	4911.10						
TOTALS CARRIED TO GENERAL SUMMARY						5425	717	905	574	30	4912						

CALCULATED LEH
CHECKED SNS

PAVEMENT QUANTITIES

HAM-71-8.65

REF. NO.	SHEET NO.	STATION (P = RAMP P, N = RAMP N, K = KENNEDY, R = RIDGE) FROM	TO	SIDE	602 CONCRETE MASONRY	611 12" CONDUIT, TYPE C	15" CONDUIT, TYPE B	15" CONDUIT, TYPE B, AS PER PLAN	15" CONDUIT, TYPE F	18" CONDUIT, TYPE B, AS PER PLAN	18" CONDUIT, TYPE C	24" CONDUIT, TYPE C	24" CONDUIT, TYPE C, AS PER PLAN	30" CONDUIT, TYPE B	30" CONDUIT, TYPE C, AS PER PLAN	CATCH BASIN, NO. 3	CATCH BASIN, NO. 3, AS PER PLAN	CATCH BASIN, NO. 3A	CATCH BASIN, NO. 3A, AS PER PLAN	CATCH BASIN, NO. 2-2B	CATCH BASIN, NO. 2-3, AS PER PLAN	INLET, NO. 3 FOR SINGLE SLOPE BARRIER, TYPE D	INLET, NO. 3 FOR SINGLE SLOPE BARRIER, TYPE D, AS PER PLAN	MANHOLE, NO. 3	MANHOLE, NO. 3, AS PER PLAN
					CU YD	FOOT	FOOT	FOOT	FOOT	FOOT	FOOT	FOOT	FOOT	FOOT	FOOT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
D1	30	413+15.00 P	413+00.00 I.R. 71	RT				41														1			
D2	30	413+00.00 P	412+50.93 I.R. 71	RT				49															1		
D3	30,31	411+07.22 P	411+09.14 I.R. 71	RT						13		159												1	
D3.5	29,31	411+09.14 P	412+05.00 N	LT/LT								130	40							1					
D4	31	411+50.00 P	412+05.00 N	RT/LT			38	10										1							
D4.5	31	411+00.00 P	412+05.00	RT/LT			77									1									
D5	31	412+05.00 N	412+25.00 N	LT/RT										148										1	
D6	31	412+05.00 N	412+20.00 N	LT			19												1						
D7	31	410+15.17 P	412+24.00 N	LT			4												1						
D8	31	412+25.00 N	12+69.48 K	RT/LT											235						1				
D9	31	12+69.48 K		LT		6								6											1
D10				NOT USED																					
D11				NOT USED																					
D12				NOT USED																					
D13				NOT USED																					
D14				NOT USED																					
D15	30	415+03.55 P	415+60.74	RT							52														
D16				NOT USED																					
D17				NOT USED																					
D18				NOT USED																					
D19				NOT USED																					
D20	30	18+85.00 K	19+10.00 K	LT/RT			54												1						
D21	30	18+85.00 K	414+99.50 P	LT/RT	0.46				96		20						1								1
D22				NOT USED																					
D23	31	409+98.38 P	409+63.44 P	RT	0.33						55														
D24	31	409+96.75 P	410+05.70 P	LT	0.33						9	6													1
TOTALS CARRIED TO GENERAL SUMMARY					1.12	6	192	100	96	13	136	295	40	154	235	1	1	1	3	1	1	1	1	2	3

CALCULATED LEH CHECKED SNS

DRAINAGE SUBSUMMARY

HAM-71-8.65

REF. NO.	SHEET NO.	STATION FROM	STATION TO	SIDE	601 ROCK CHANNEL PROTECTION, TYPE C WITH GEOTEXTILE FABRIC (CU YD)	670 SLOPE EROSION PROTECTION (VEGETATED FILTER STRIP) (SQ YD)	670 DITCH EROSION PROTECTION MAT, TYPE A (* VEGETATED BIOFILTER) (SQ YD)
		I.R. 71					
D25							
D26	29	408+50.00	412+50.00	RT			351
D27	30	414+81.31	414+93.67	RT	2		
D28		NOT USED					
D29		NOT USED					
D30		NOT USED					
D31		NOT USED					
D32		NOT USED					
D33		NOT USED					
D34		NOT USED					
D35		NOT USED					
D36		NOT USED					
D37		NOT USED					
D38		NOT USED					
D39		NOT USED					
D40		NOT USED					
D41		NOT USED					
D42		NOT USED					
D43		NOT USED					
D44		NOT USED					
		RAMP P					
D45		NOT USED					
D46		NOT USED					
D47		NOT USED					
		RAMP N					
D48	31	409+50.00	412+25.00	RT			227 *
D49	31	412+25.00	414+74.25	RT			214 *
D50	31	409+25.00 (N)	411+45.00 (N)	LT		1045	
D51	31	409+75.00 (I.R. 71)	411+95.00 (I.R. 71)	RT		1043	
D52	31	411+05.00 (RAMP P)	412+65.00	LT		612	
TOTALS CARRIED TO GENERAL SUMMARY					2	2700	792

CALCULATED LEH
CHECKED SNS

DRAINAGE SUBSUMMARY

HAM-71-8.65

REF. NO.	SHEET NO.	STATION FROM	STATION TO	SIDE	BEGINNING ELEVATION	ENDING ELEVATION	OUTLET STATION	OUTLET OFFSET	OUTLET FLOW ELEVATION		605 6" SHALLOW PIPE UNDERDRAINS 707.31,707.41 FOOT	611 6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLET FOOT				FOR INFORMATION ONLY: OUTLET INTO UNDERDRAIN EACH	OUTLET INTO DRAINAGE STRUCTURE EACH	11.25° BEND EACH	45° BEND EACH	END CAP EACH	TEE EACH				
		P = RAMP P N = RAMP N K = KENNEDY R = RIDGE																							
		I.R. 71																							
U1		NOT USED																							
U2		NOT USED																							
U3		NOT USED																							
U4		NOT USED																							
U5		NOT USED																							
U6		NOT USED																							
U7		NOT USED																							
U8		NOT USED																							
U9		NOT USED																							
U10		NOT USED																							
U11		NOT USED																							
U12		NOT USED																							
U13		NOT USED																							
U14		NOT USED																							
U15		NOT USED																							
U16		NOT USED																							
U17		NOT USED																							
U18		NOT USED																							
U19		NOT USED																							
U20		NOT USED																							
U21		NOT USED																							
U22		NOT USED																							
U23		NOT USED																							
U24		NOT USED																							
U25		NOT USED																							
U26		NOT USED																							
U27		NOT USED																							
U28		NOT USED																							
U29		NOT USED																							
U30		NOT USED																							
U31		NOT USED																							
U32		NOT USED																							
U33		NOT USED																							
U34		NOT USED																							
U35		NOT USED																							
U36		NOT USED																							
U37		NOT USED																							
		RAMP N																							
U38	29,31	408+97.30	412+24.00	RT	554.10	551.28	412+24.00	19' LT	550.80		321	24					1				1				
U39	31	412+24.00	413+66.53	RT	552.07	551.28	412+24.14	8.00			143					1				1					
U40	31	413+76.53	12+69.48 K	RT	552.34	549.64	12+69.48 K	45.76' LT			106	10					1		1	1					
		RAMP P																							
U41	31	15+31.00	411+00.00	RT	561.56	550.87	411+00.00	6.00	550.29		314	10					1		2	1					
U42	31	413+00.00	411+50.00	RT	554.12	550.05	411+50.00	6.00	550.39		136	10					1			1					
U43	30,31	415+48.00	413+15.00	RT	551.39	550.87	413+15.00	6.00	551.55		233	10					1	2		1					
SUBTOTAL											1253	64				1	5	2	3	5	1				
TOTALS CARRIED TO GENERAL SUMMARY											1253	64				1	5	2	3	5	1				

CALCULATED LEH
CHECKED SNS

UNDERDRAIN SUBSUMMARY

HAM-71-8.65

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

PROJECT CONTROL

HAM-71-6.86 Job#173620049

CONTROL POINT COORDINATES AND MONUMENT LOCATION

						MON. TYPE AND ELEVATION	
SOURCE OF CONTROL	Grid North	Grid East	C.S.F.	Project North	Project East	TYPE	ELEVATION
GPS POINT 1	430388.553	1422628.418	0.99991957	430423.172	1422742.849	I Pin Set	565.640
GPS POINT 2	431078.276	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

CALCULATED PJD
CHECKED SNS

CENTERLINE REFERENCE

HAM-71-8.65

PROJECT DESCRIPTION

THE OVERALL PROJECT CONSISTS OF THE 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 RAMPS TO KENNEDY AVENUE FROM I.R. 71 NORTHBOUND. CLOSE EXISTING NORTHBOUND EXIT TO RIDGE AVENUE. THIS PHASE OF THE PROJECT WILL COMPLETE THE WORK AS PLANNED.

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 45,000 EACH
ITEM 832 STORM WATER POLLUTION PREVENTION PLAN INSPECTIONS 1 LUMP
ITEM 832 STORM WATER POLLUTION PREVENTION INSPECTION SOFTWARE 1 LUMP

QUANTITIES CARRIED TO GENERAL SUMMARY

ALL TOPSOIL IS PLACED 4" THICK

ITEM 659 TOPSOIL

ITEM	CALC AREA	⊛ TOPSOIL
		CU YD
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
	TOTAL	1478

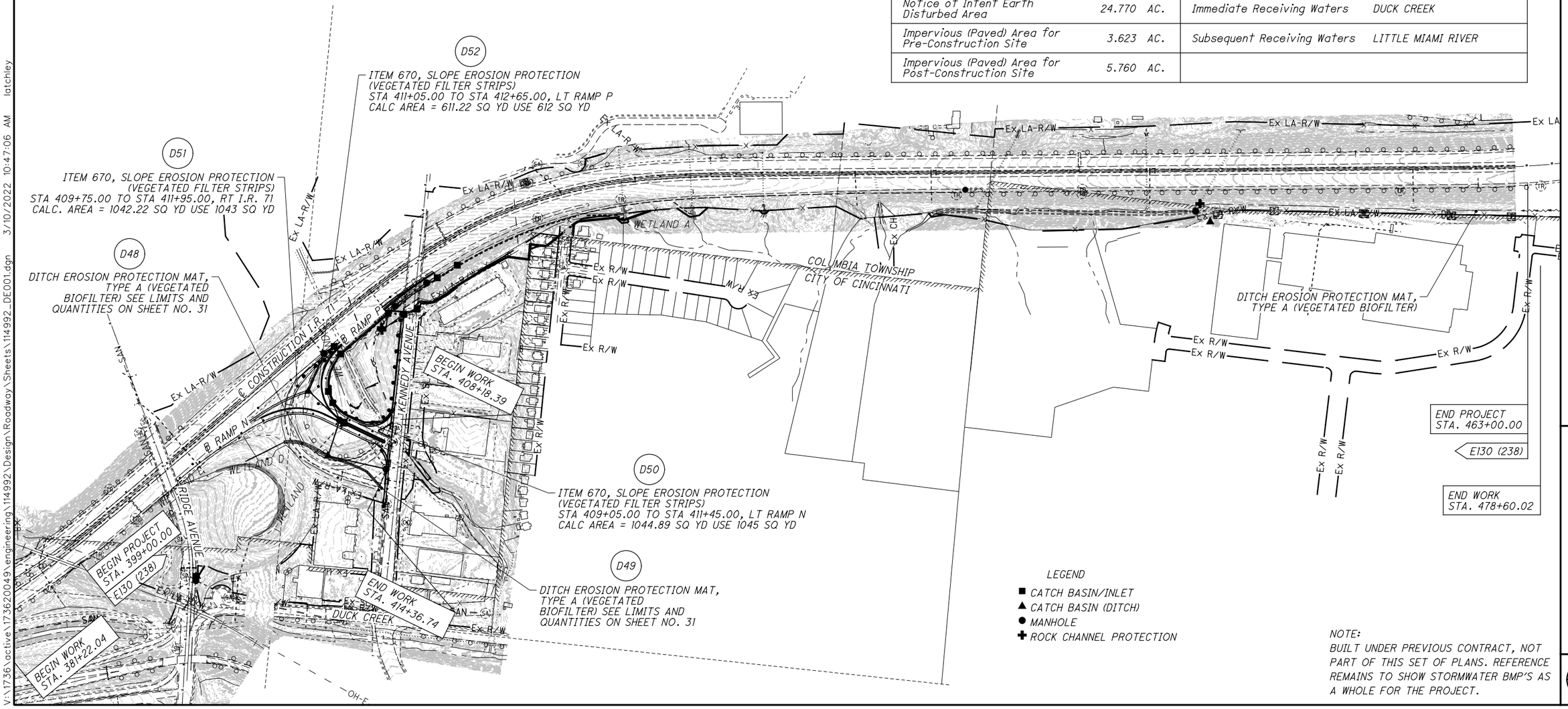
TOTALS CARRIED TO GENERAL SUMMARY

⊛ TOPSOIL REQUIRED FOR ITEM 670, SLOPE EROSION PROTECTION AND DITCH EROSION PROTECTION MAT, TYPE A (VEGETATED BIOFILTER)

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	84.42123449	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.		



LEGEND
- ■ CATCH BASIN/INLET
- ▲ CATCH BASIN (DITCH)
- ● MANHOLE
- ✚ ROCK CHANNEL PROTECTION

NOTE:
BUILT UNDER PREVIOUS CONTRACT, NOT PART OF THIS SET OF PLANS. REFERENCE REMAINS TO SHOW STORMWATER BMP'S AS A WHOLE FOR THE PROJECT.

HORIZONTAL SCALE IN FEET
0 100 200 300
CALCULATED PJD
CHECKED SNS

SITE PLAN

HAM-71-8.65

27
129

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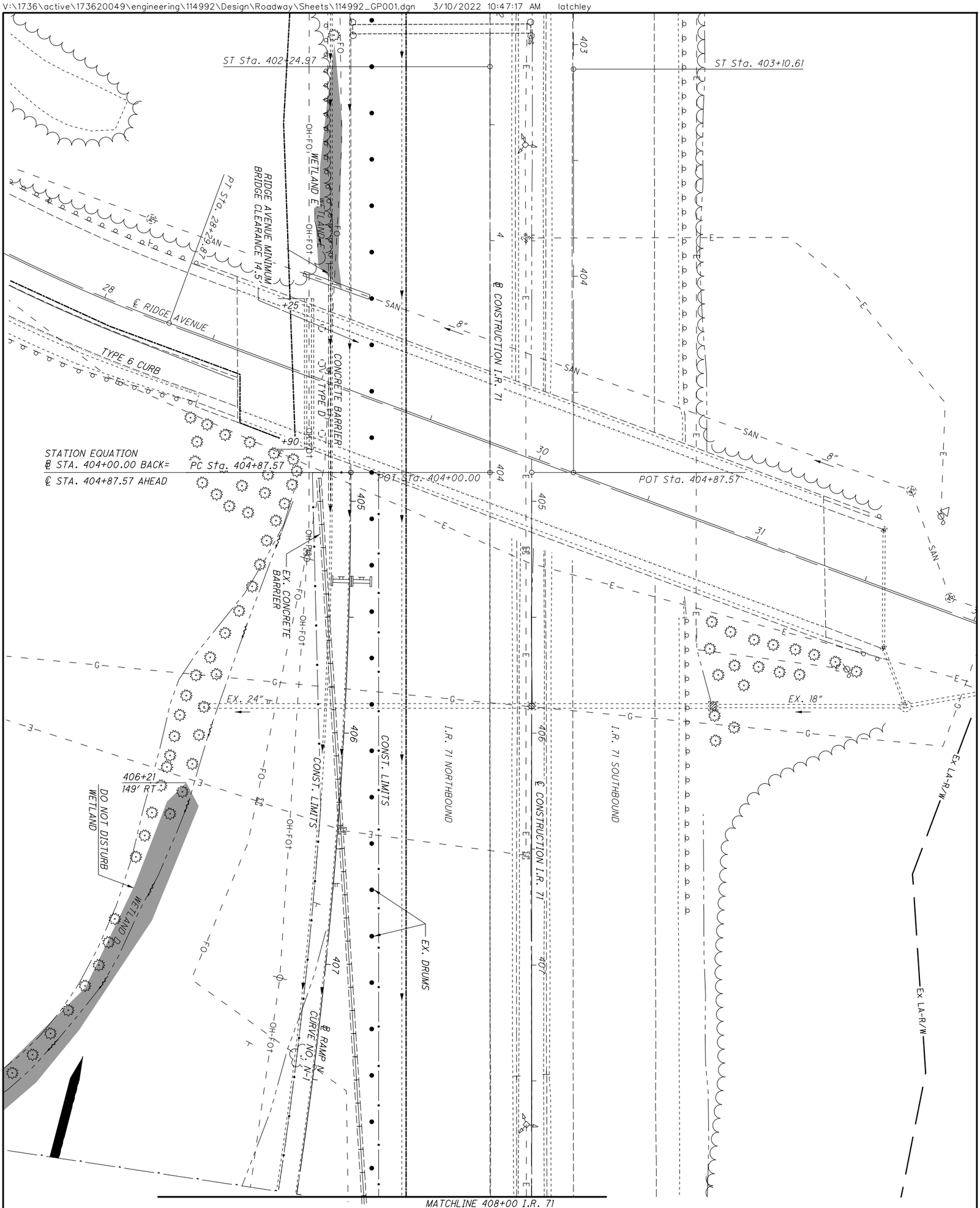

CURVE NO. N-1
P.I. Sta. 406+55.30
Δ = 9° 12' 18" (RT)
Dc = 2° 45' 00"
R = 2,083.48'
T = 167.73'
L = 334.73'
E = 6.74'
C = 334.37'
C.B. = N 53° 59' 25" E

28 / 129	HAM-71-8.65	PLAN SHEET I.R. 71 STA 403+00.00 TO STA 408+00.00	CALCULATED EDA CHECKED SNS 0 10 20 40 HORIZONTAL SCALE IN FEET

CURVE NO. N-1
P.I. Sta. 406+55.30
Δ = 9° 12′ 18″ (RT)
Dc = 2° 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

CURVER NO. N-2
P.I. STA. 409+50.76
Ls= 200.00′
f s = 27° 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

CURVER NO. N-3
P.I. Sta. 410+83.53
Δ = 29° 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
SC STA. 410+22.30
PT STA. 411+42.01

CURVE NO. P-1
P.I. Sta. 411+48.55
Δ = 85° 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
PC STA. 410+09.06
CS STA. 412+38.18

CURVE NO. P-2
P.I. STA. 412+85.39
Ls= 150.00′
f s = 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. 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′
θs = 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

Ex LA-R/W
Ex LA-R/W
Ex L

I.R. 71 SOUTHBOUND
I.R. 71 NORTHBOUND
℄ CONSTRUCTION I.R. 71
MATCHLINE 408+00 I.R. 71
MATCHLINE 413+00 I.R. 71
N 49° 23′ 16″ E
409
410
411
412
SEC. 29
SEC. 25
TS Sta. 412+39.63
CURVE NO. I.R. 71-2
EX. 18″
+23.20
EX. BARRIER
CONST. LIMITS
EX. FIOPTICS
CONCRETE BARRIER, END SECTION, TYPE D
CONCRETE BARRIER, TYPE D
REINFORCED END ANCHORAGE
GUARDRAIL, TYPE MGS
MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1
ANCHOR ASSEMBLY, MGS TYPE E
DEP MAT, TYPE A 266′x7.5′x1/9=221.67, USE 222 SQ YD
DEP MAT, TYPE A 154′x7.5′x1/9=128.33, USE 129 SQ YD
CURVE NO. N-1
℄ RAMP N
CURVE NO. N-2
℄ RAMP P
CURVE NO. P-1
CURVE NO. P-2
CURVE NO. N-3
605-6″x321′
605-6″x136′
6″X8′-F
6″X10′-F
24″ TYPE C
CURB, TYPE 4-C
15″(B)
+40.23
+39.63
+15.23
+32.58
+75.00
+97.31, 6.5′ RT. MEET EXISTING BEGIN SHL. TAPER
END SHL. TAPER +22.30
CS Sta. 408+22.30
SC Sta. 410+22.30
CS Sta. 412+34.18
ASPHALT/CONC.
EX. RAMP P
WETLAND 6
STREAM S10 B
MATCHLINE 410+50 RAMP N FOR CONTINUATION SEE SHEET NO. 31
MATCHLINE 411+50 RAMP P FOR CONTINUATION SEE SHEET NO. 31
MATCHLINE 413+00 FOR CONTINUATION SEE SHEET NO. 30
D50 - D52
SEE SHEET NO. 27 FOR LIMITS AND QUANTITIES FOR SLOPE EROSION PROTECTION
FOR RAMP N & P PROFILES, SEE SHT NO. 32,33

HORIZONTAL SCALE IN FEET
0 10 20 40
CALCULATED EDA
CHECKED SNS

PLAN SHEET I.R. 71
STA 408+00.00 TO STA 413+00.00

HAM-71-8.65

29
129

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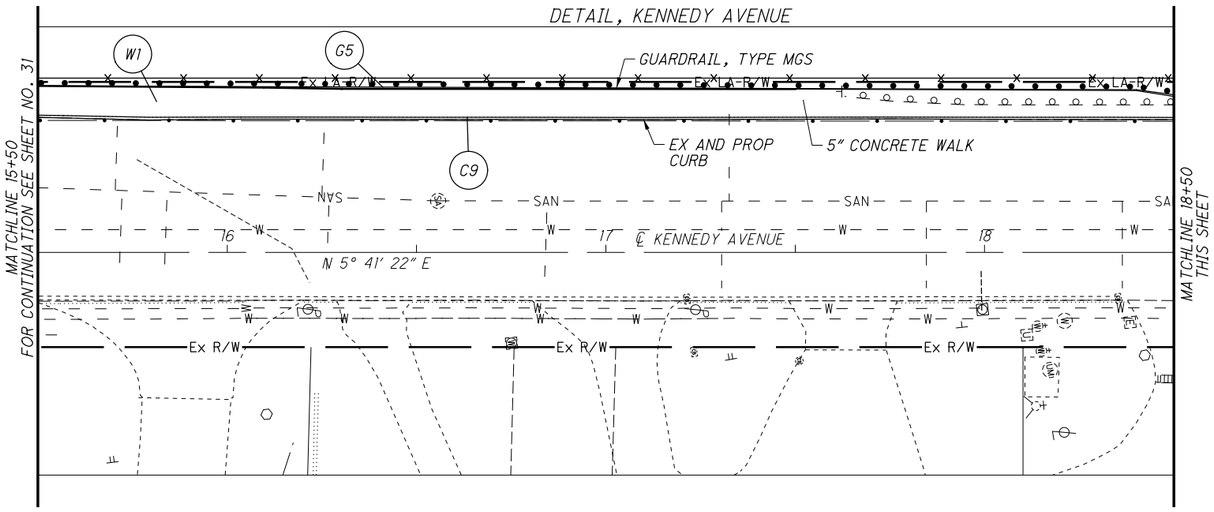
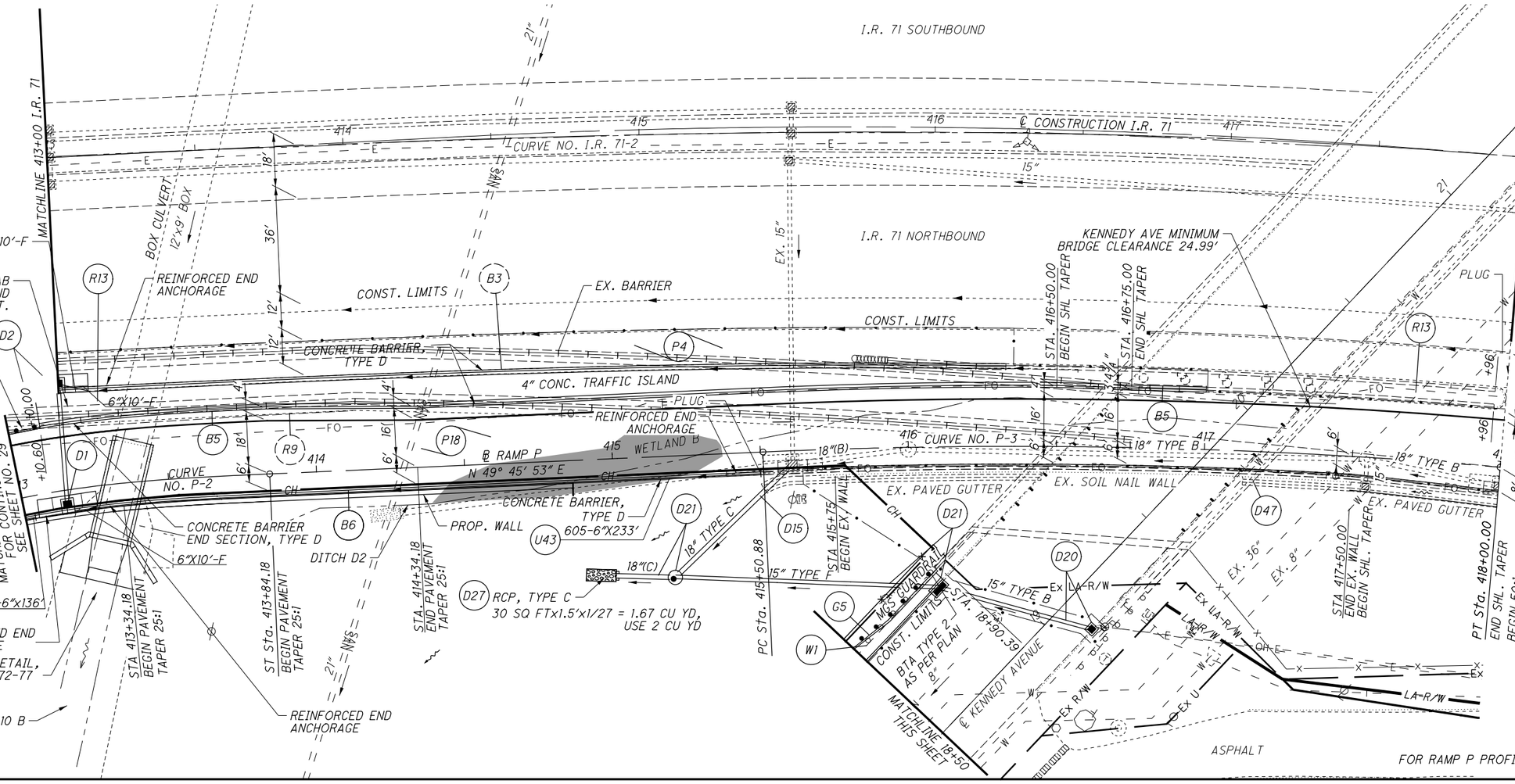


CURVE NO. P-2
P.I. STA. 412+85.39
Ls= 150.00'
f s = 28° 30' 00"
LT = 101.33'
ST = 51.21'
x = 146.33'
y = 24.43'
k = 74.39'
p = 6.16'
CS STA. 412+34.18
ST STA. 413+84.18

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'
θs = 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



HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED EDA
CHECKED SNS

PLAN SHEET I.R. 71
STA 413+00.00 TO STA 418+00.00

HAM-71-8.65

30
129

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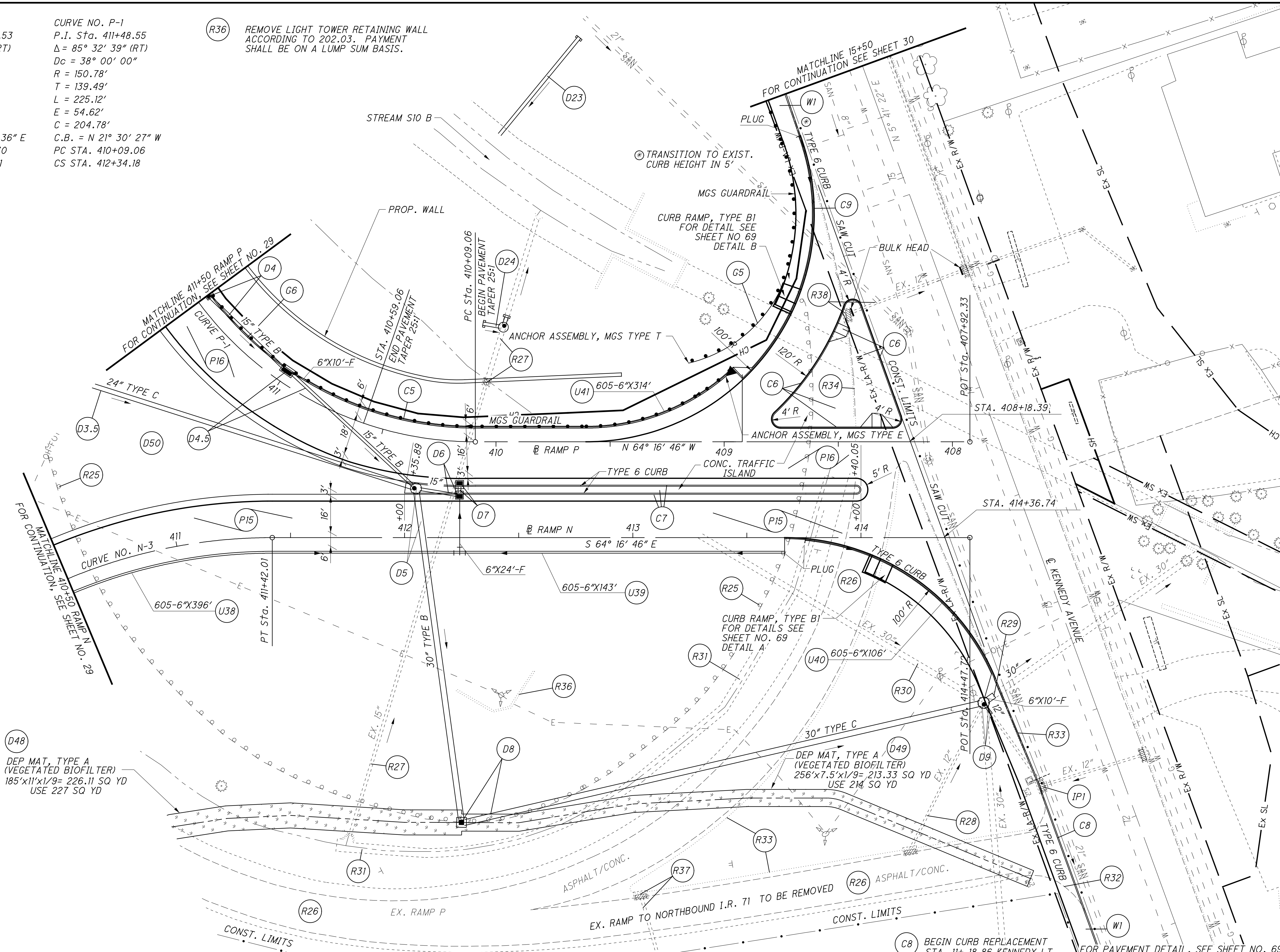
CURVE NO. N-3
P.I. Sta. 410+83.53
Δ = 29° 37′ 39″ (RT)
Dc = 24° 45′ 00″
R = 231.50′
T = 61.22′
L = 119.71′
E = 7.96′
C = 118.38′
C.B. = S 79° 05′ 36″ E
SC STA. 410+22.30
PT STA. 411+42.01

CURVE NO. P-1
P.I. Sta. 411+48.55
Δ = 85° 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
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.



HORIZONTAL SCALE IN FEET 0 10 20 40

CALCULATED EDA
CHECKED SNS

PLAN SHEET RAMP N
STA 410+50.00 TO END

HAM-71-8.65

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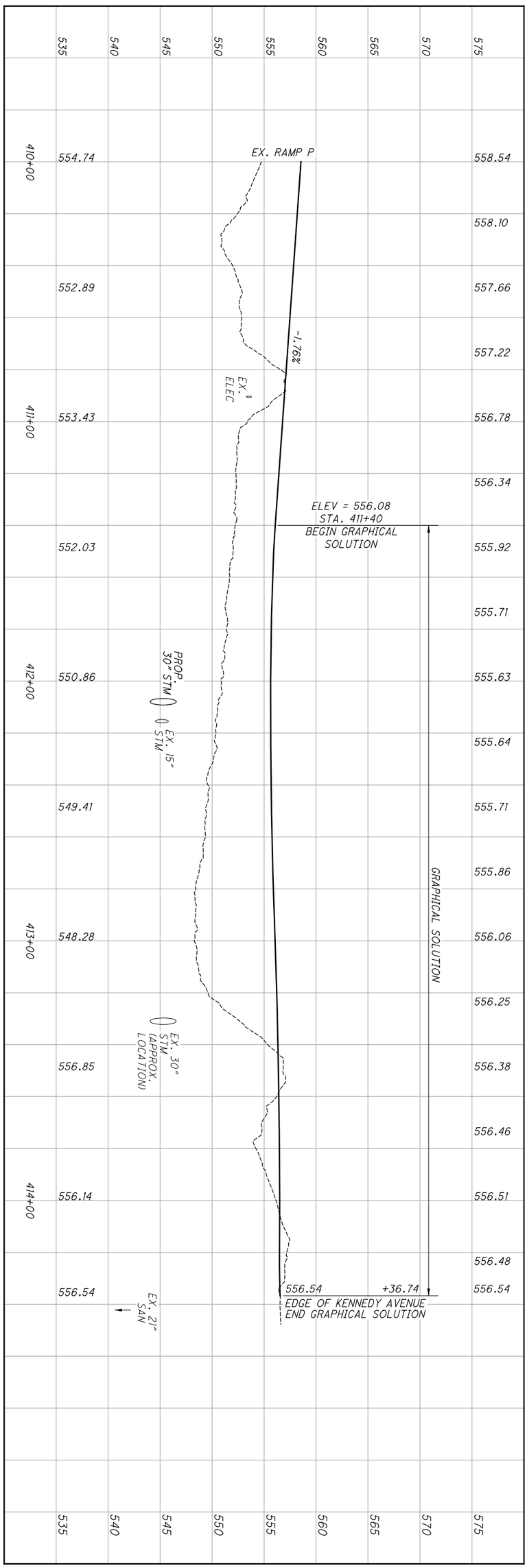

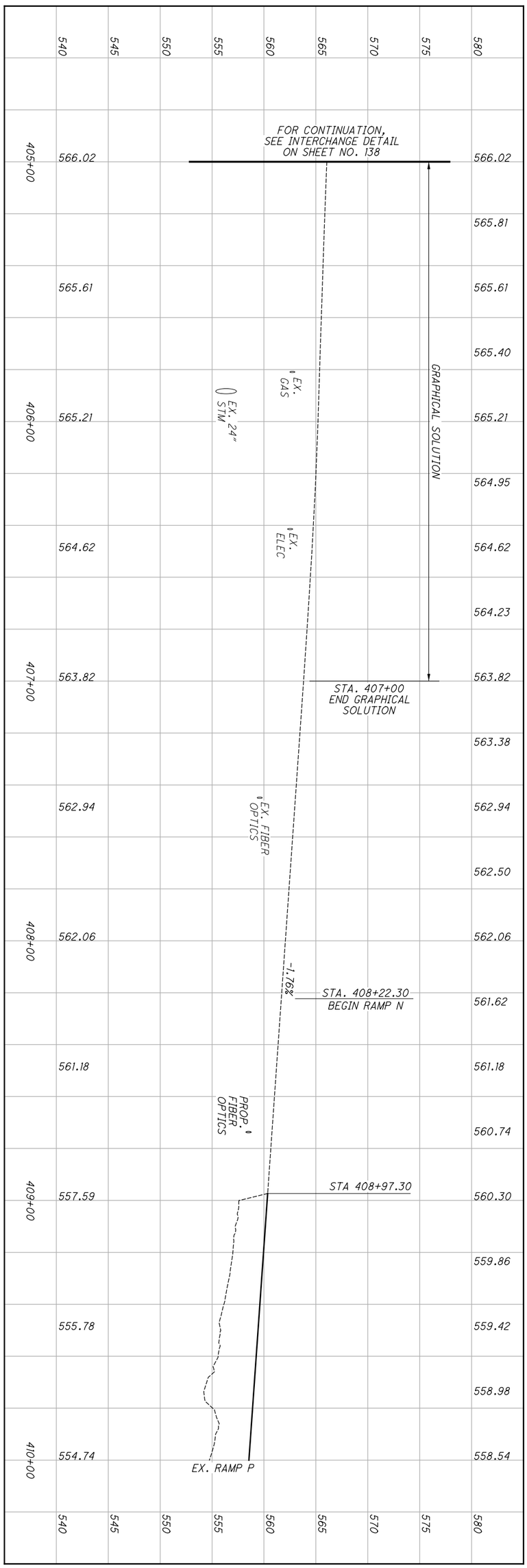

HAM-71-8.65

PROFILE - RAMP N

CALCULATED EDA
CHECKED SNS

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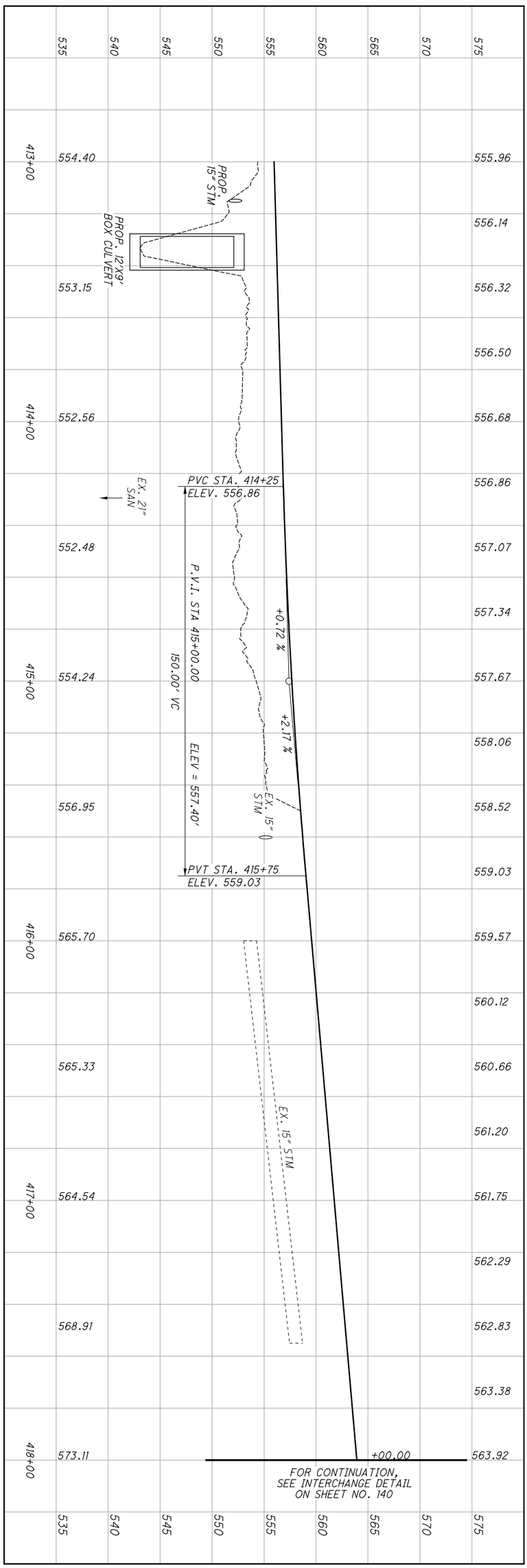
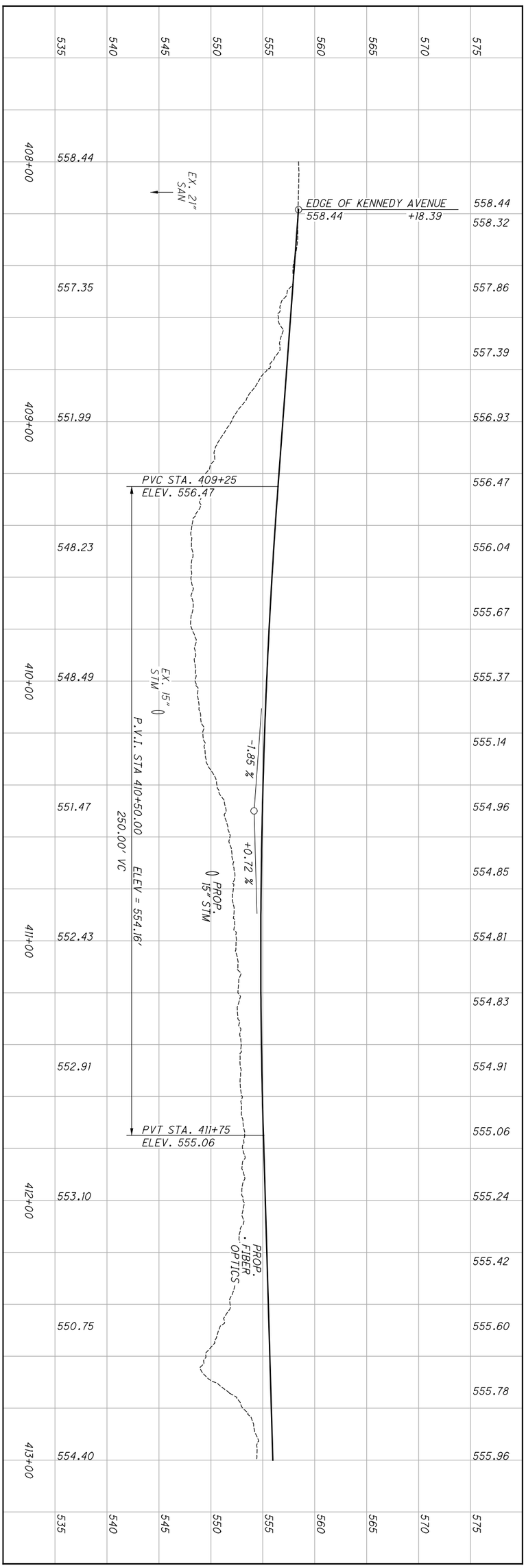
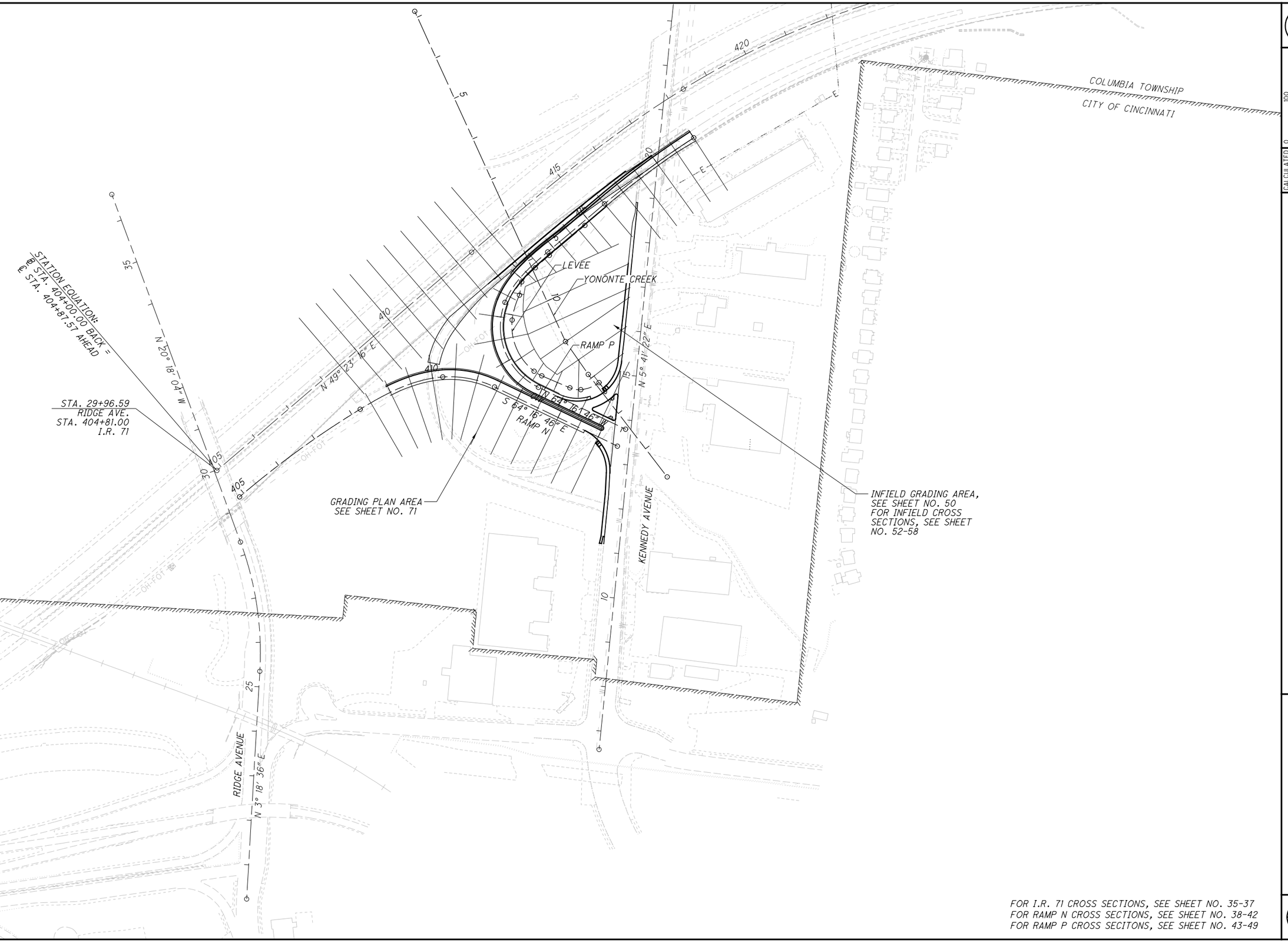




HAM-71-8.65

PROFILE - RAMP P

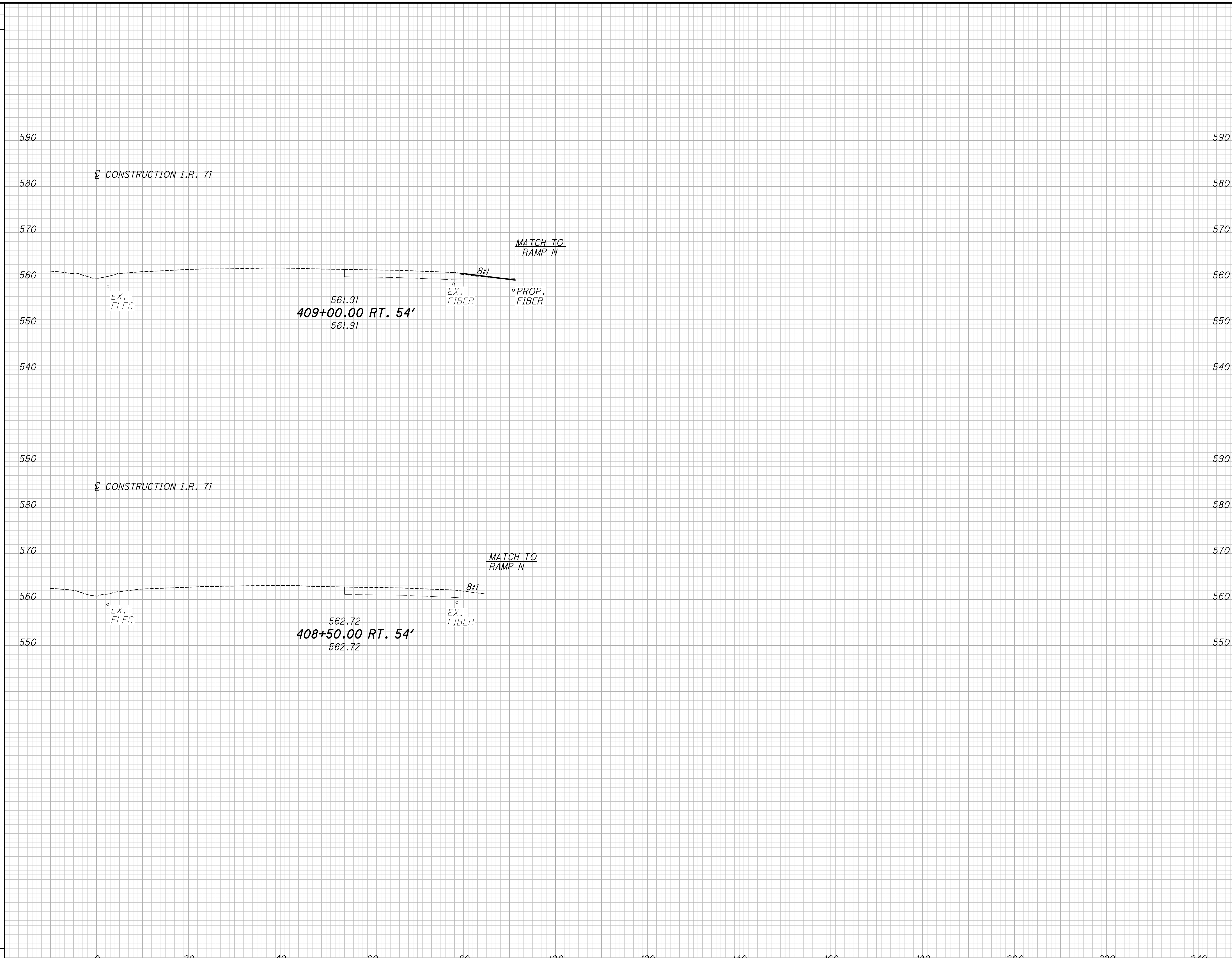
CALCULATED EDA
CHECKED SNS



CROSS SECTION LAYOUT PLAN

HAM-71-8.65

FOR I.R. 71 CROSS SECTIONS, SEE SHEET NO. 35-37
FOR RAMP N CROSS SECTIONS, SEE SHEET NO. 38-42
FOR RAMP P CROSS SECITONS, SEE SHEET NO. 43-49



SEEDING END WIDTH	SEEDING SQ. YDS.
	92
13	
	56
7	
	148

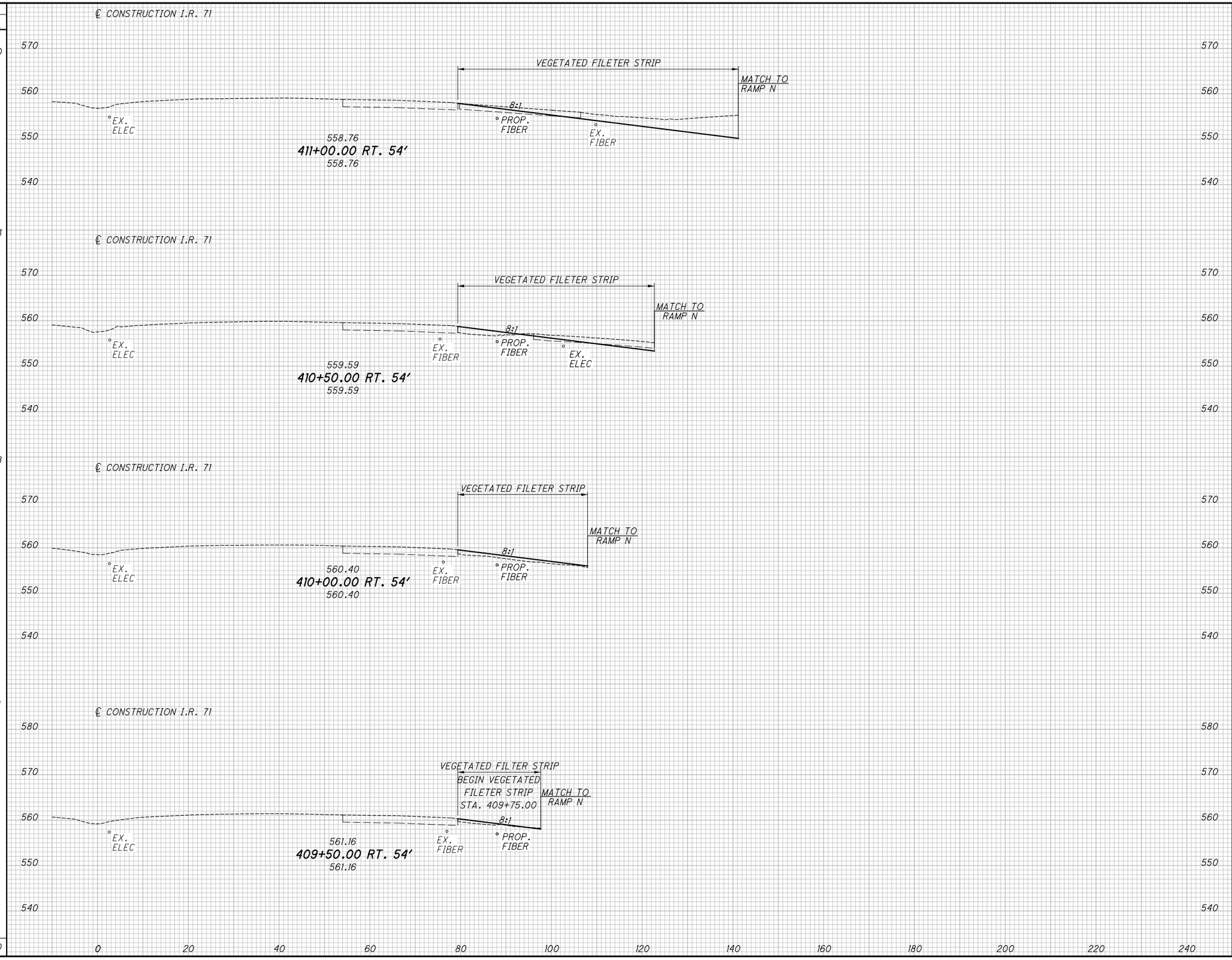
END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		0	6
0	1		
		0	1
0	0		
		0	7

CALCULATED EDA
CHECKED LEH

CROSS SECTIONS I.R. 71
STA. 408+00.00 TO STA. 409+00.00

HAM-71-8.65

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	300			170	0
64		107	0		
	303			130	12
45		33	13		
	208			31	27
30		0	16		
	139			0	19
20		0	5		
	950			331	58



CALCULATED EDA
CHECKED LEH

CROSS SECTIONS I.R. 71
STA. 409+50.00 TO STA. 411+00.00

HAM-71-8.65

36
129

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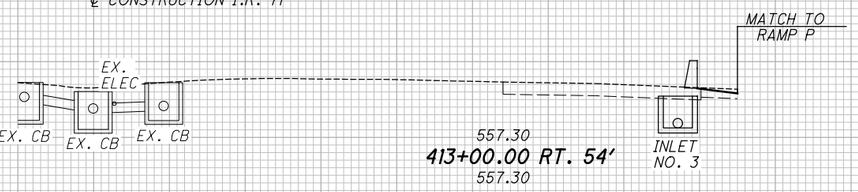
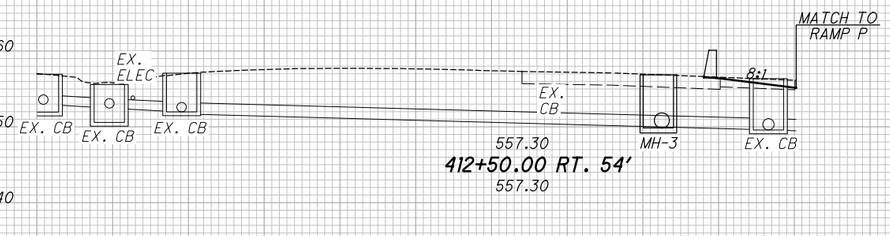
SEEDING END WIDTH	SEEDING SQ. YDS.
0	
	14
5	
	44
11	
	92
22	
	183
44	
	333

STA 413+50.00 BACK

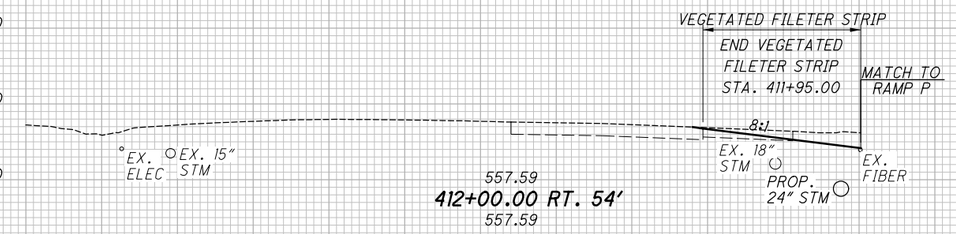
℄ CONSTRUCTION I.R. 71



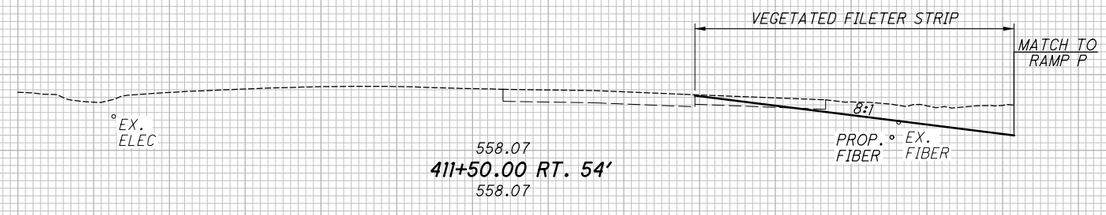
℄ CONSTRUCTION I.R. 71



℄ CONSTRUCTION I.R. 71



℄ CONSTRUCTION I.R. 71



STA 413+50.00 BACK

I.R. 71	
EXCAVATION	EMBANKMENT
456 CU YD	65 CU YD
SEEDING & MULCHING	
1431 SQ YD	

QUANTITIES CARRIED TO SUBSUMMARY

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
0	0		
		2	0
2	0		
		7	0
6	0		
		25	0
21	0		
		91	0
77	0		
		125	0

0 20 40 60 80 100 120 140 160 180 200 220 240

CALCULATED EDA
CHECKED LEH

CROSS SECTIONS I.R. 71
STA. 411+50.00 TO STA. 413+00.00

HAM-71-8.65

37
129

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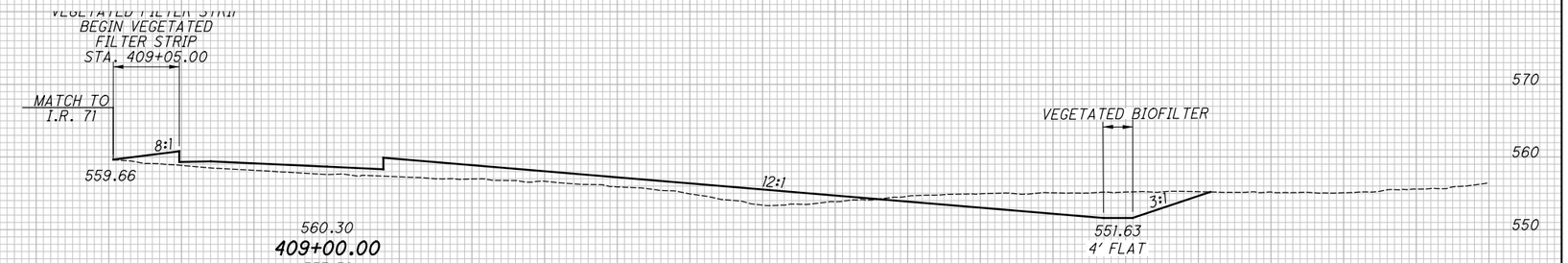
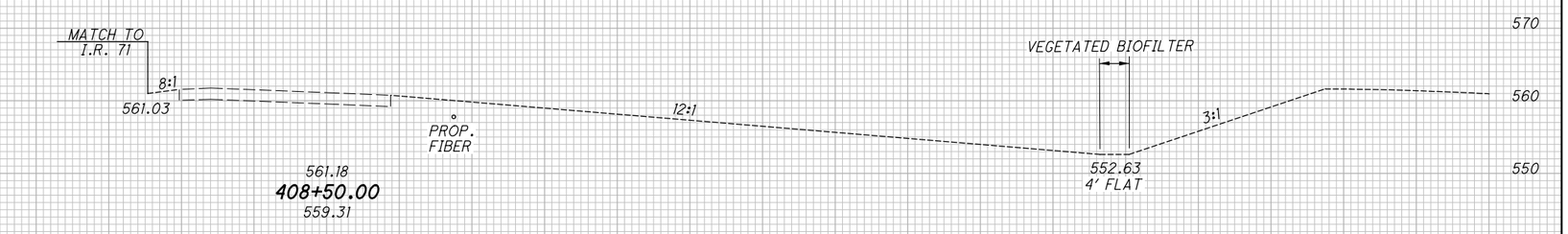
SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	803			119	315
	137			97	143
	381			90	132
	0			0	0
	2015			209	447





FOR DETAILS, SEE GRADING PLAN SHEET NO. 71

80 60 40 20 0 20 40 60 80 100 120 140 160

CALCULATED EDA
CHECKED LEH

CROSS SECTIONS RAMP N
STA. 408+00.00 TO STA. 409+00.00

HAM-71-8.65

38
129

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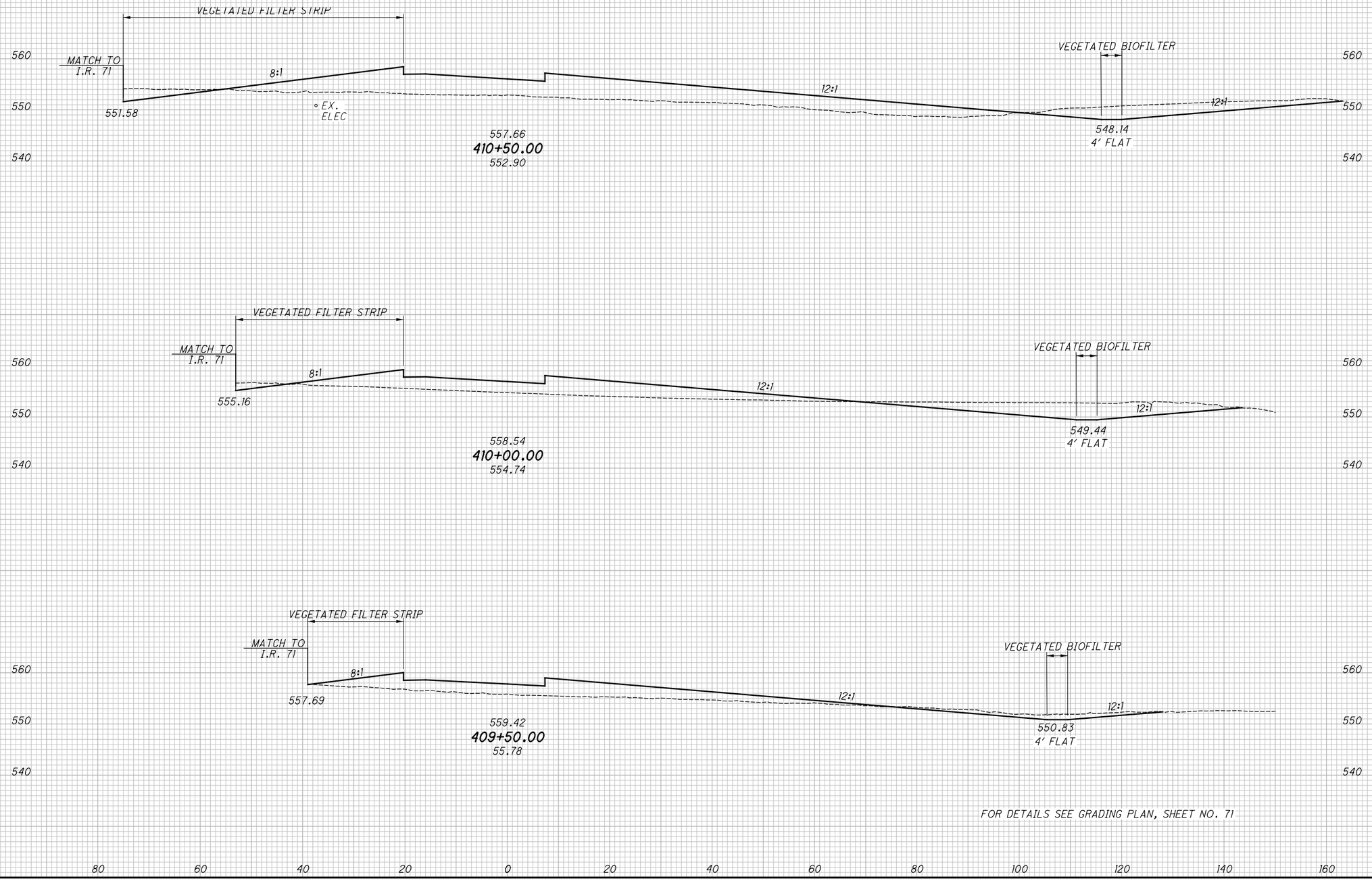
SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
	1233			346	566
	224	124	459		
	1128			253	632
	182	149	224		
	928			168	390
	152	32	197		
	3289			767	1588



CALCULATED EDA
CHECKED LEH

CROSS SECTIONS RAMP N
STA. 409+50.00 TO STA. 410+50.00

HAM-71-8.65

39
129

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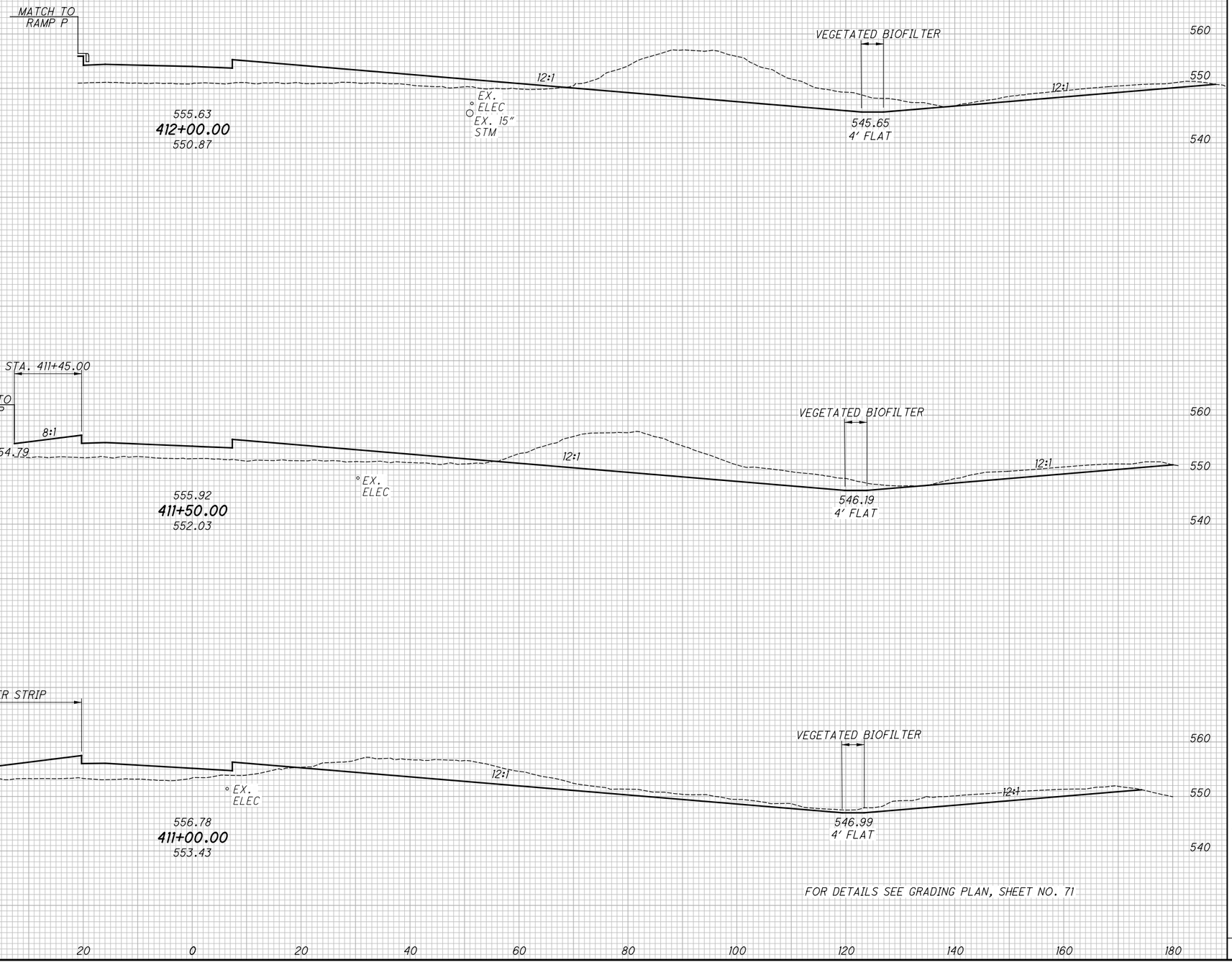
SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	1044			720	531
183		372	225		
	1061			652	401
199		333	208		
	1164			540	333
220		250	152		
	3269			1912	1265



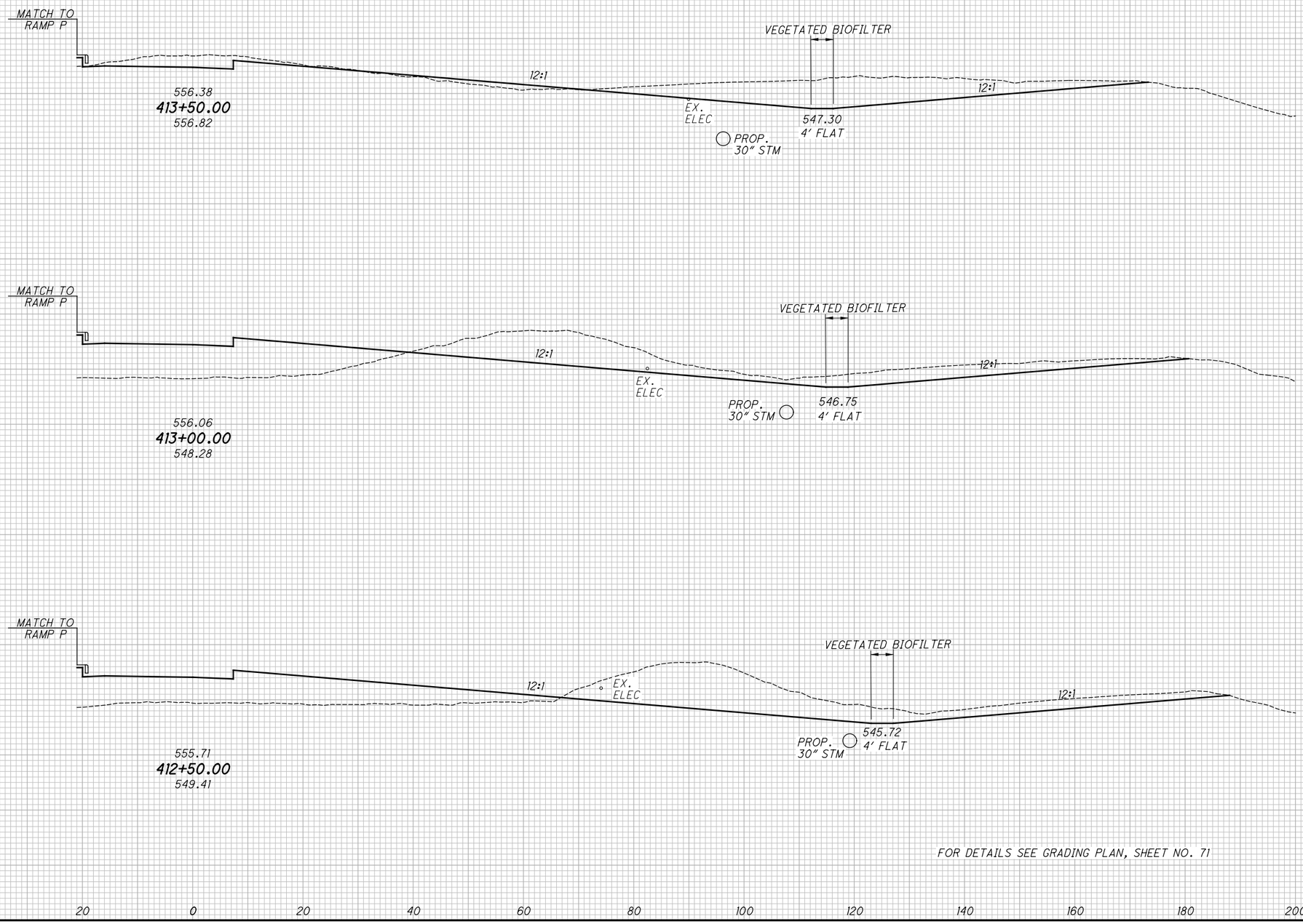
CALCULATED EDA

CHECKED LEH

CROSS SECTIONS RAMP N STA. 411+00.00 TO STA. 412+00.00

HAM-71-8.65

SEEDING END WIDTH	SEEDING SQ. YDS.
	947
178	
	1008
185	
	1050
193	
	3005



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		796	20
351	21		
		648	314
349	318		
		698	618
405	349		
		2142	952

CALCULATED EDA
CHECKED LEH

CROSS SECTIONS RAMP N
STA. 412+50.00 TO STA. 413+50.00

HAM-71-8.65

41
129

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SEEDING	
END WIDTH	SQ. YDS.
135	
	414
163	
	414

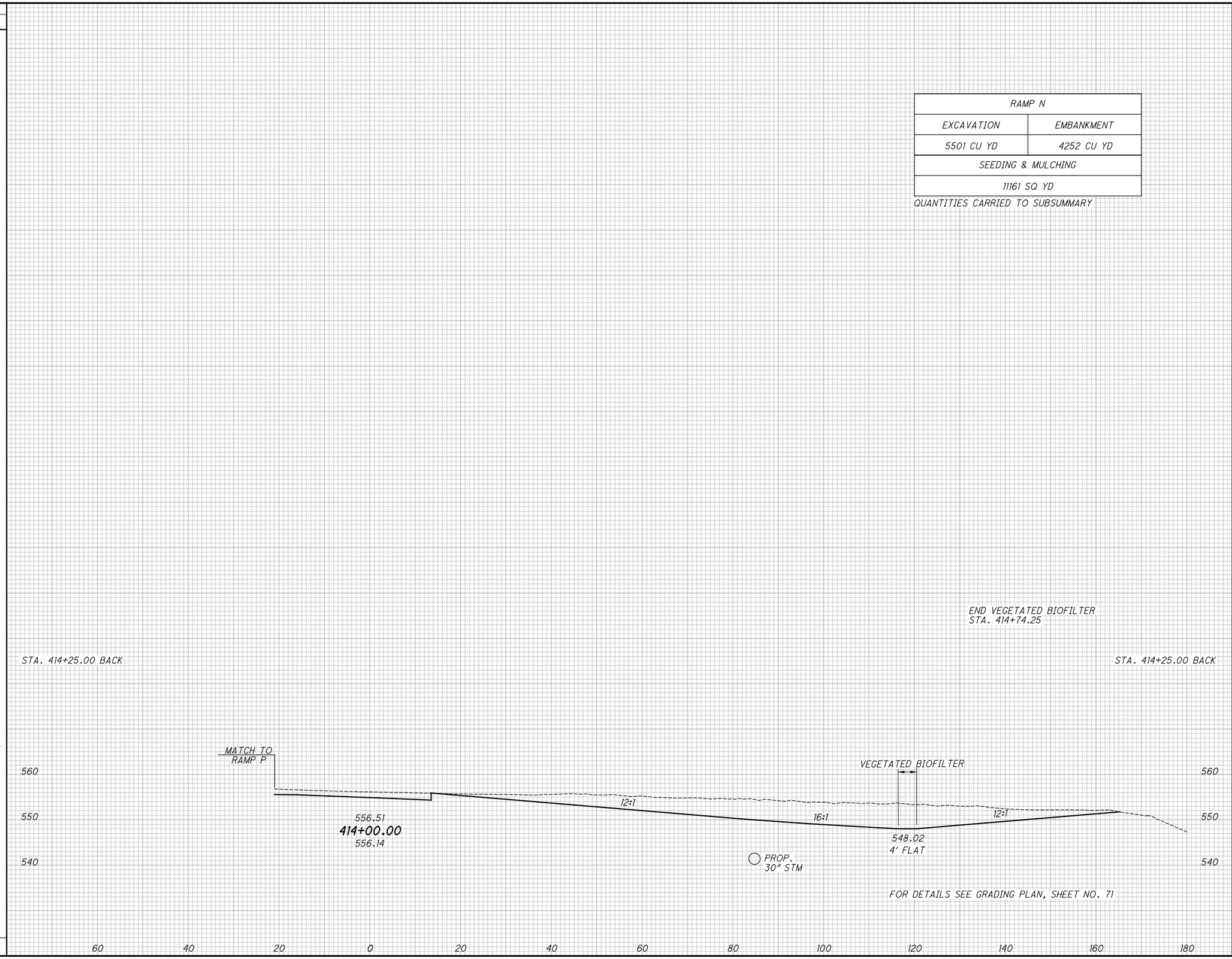
	RAMP N
EXCAVATION	EMBANKMENT
5501 CU YD	4252 CU YD
SEEDING & MULCHING	
11161 SQ YD	

QUANTITIES CARRIED TO SUBSUMMARY

END AREA	
CUT	FILL
509	0
509	0

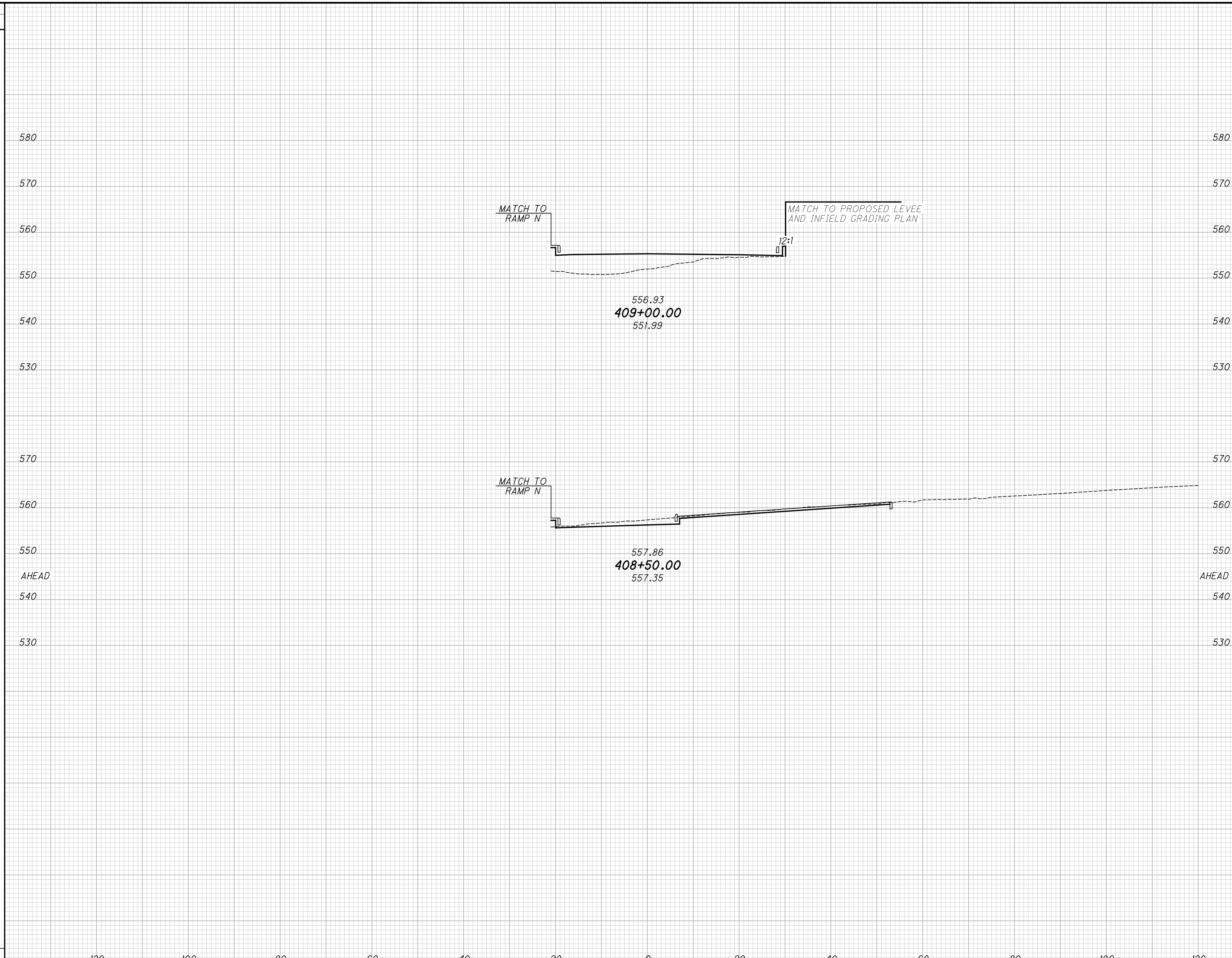
VOLUME	
CUT	FILL
471	0
471	0

CALCULATED EDA
CHECKED LEH



CROSS SECTIONS RAMP N
STA. 414+00.00

HAM-71-8.65



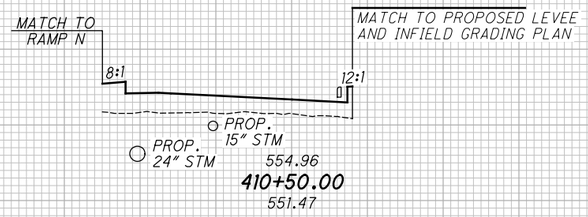
SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	6			0	286
2		0	124		
	6			41	116
0		44	1		
	12			41	403

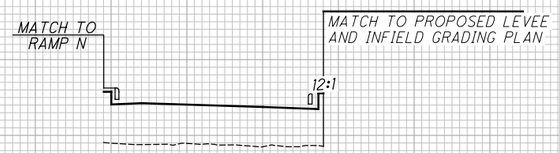
CALCULATED EDA
CHECKED SNS

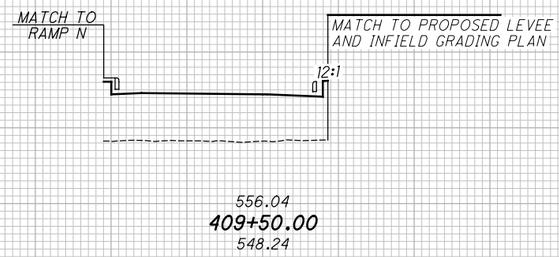
CROSS SECTIONS RAMP P
STA. 408+50.00 TO STA. 409+00.00

HAM-71-8.65

SEEDING	
END WIDTH	SQ. YDS.
	50
5	
	19
2	
11	
2	
	80







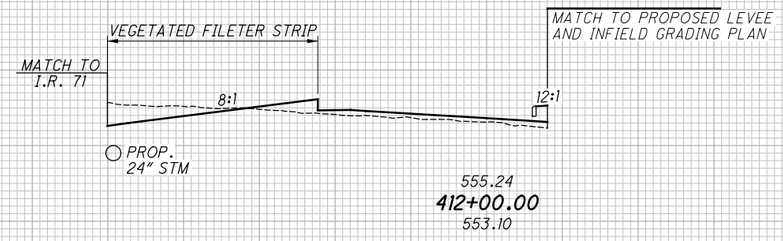
END AREA		VOLUME	
CUT	FILL	CUT	FILL
		0	126
0	80		
		0	216
0	153		
		0	313
0	185		
		0	655

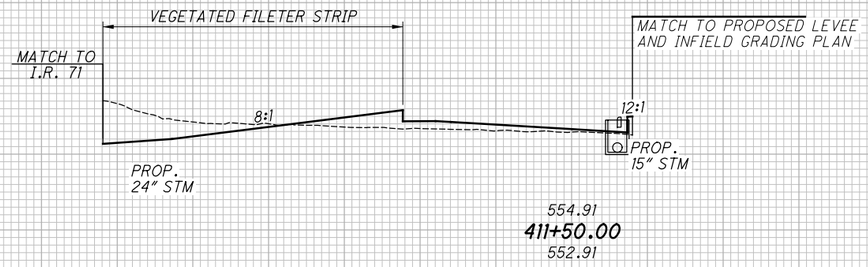
CALCULATED EDA
CHECKED SNS

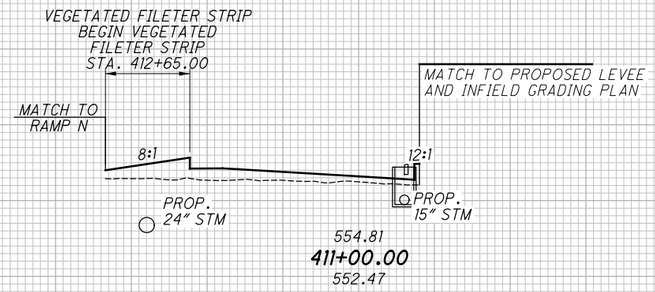
CROSS SECTIONS RAMP P
STA. 409+50.00 TO STA. 410+50.00

HAM-71-8.65

SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	128			32	85
30		25	27		
	200			74	61
42		55	39		
	153			51	88
12		0	56		
	481			157	234







570 560 550 540 530

120 100 80 60 40 20 0 20 40 60 80 100 120

CALCULATED EDA
CHECKED SNS

CROSS SECTIONS RAMP P
STA. 411+00.00 TO STA. 412+00.00

HAM-71-8.65

45
129

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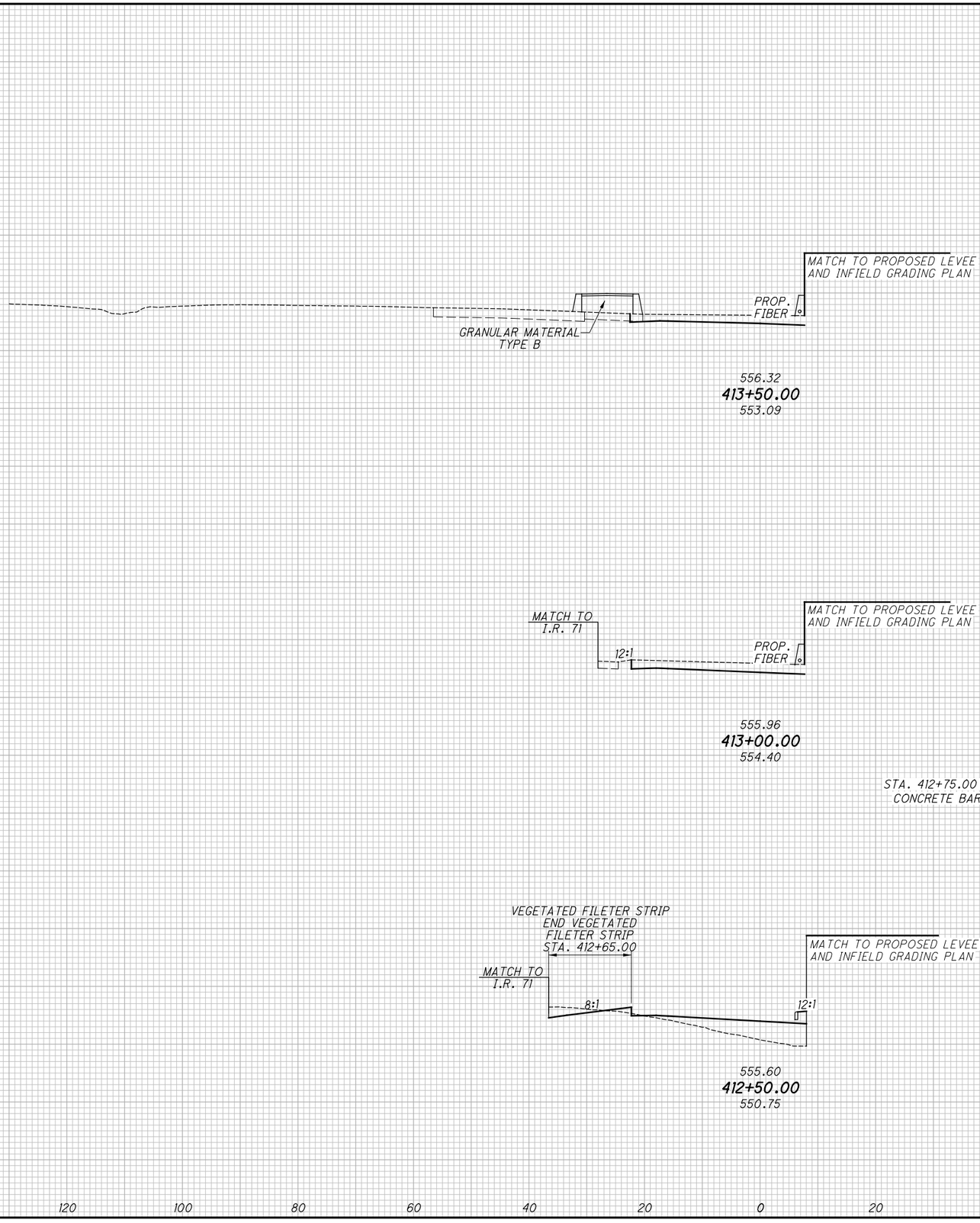


SEEDING END WIDTH	SEEDING SQ. YDS.		END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	0				75	0
		GRANULAR				55
		570				
		GRANULAR		28		
		560				
0			40	0		
		550				
		GRANULAR				26
		540				
		STA. 413+25.00 GRANULAR		28		
		GRANULAR				8
		530				
		STA. 413+10.00 AHEAD GRANULAR		0		
	17				78	0
		570				
		560				
6			44	0		
		550				
		540				
		530				
	61	570			50	60
		560				
		550				
16			10	65		
		540				
		530				
		GRANULAR				89
	78				203	60

120 100 80 60 40 20 0 20 40 60 80 100 120

CALCULATED EDA
CHECKED SNS

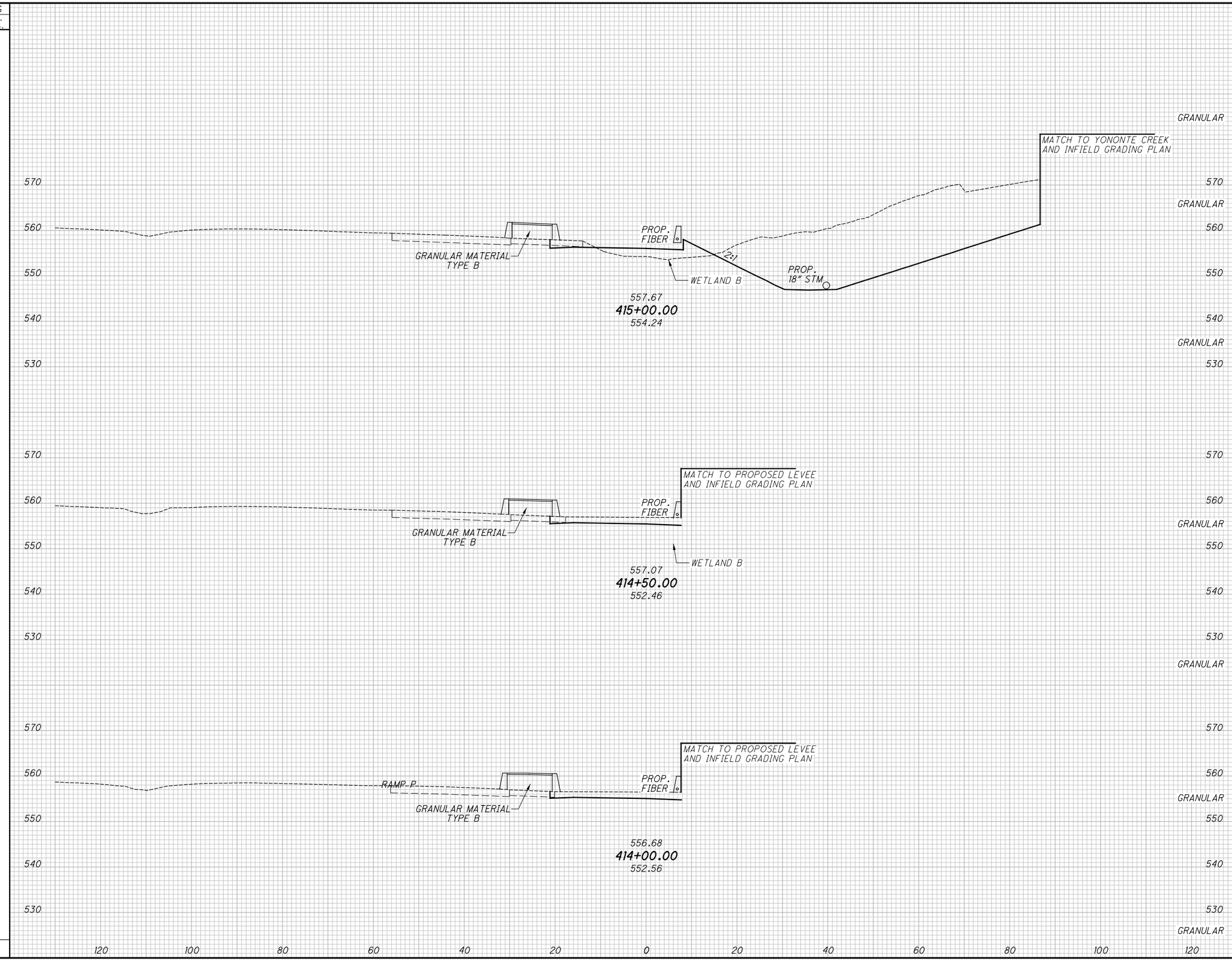
CROSS SECTIONS RAMP P
STA. 412+50.00 TO STA. 413+50.00

HAM-71-8.65

46
129

V:\1736\active\173620049\engineering\114992\Design\Roadway\Sheets\114992_XS003.dgn 3/10/2022 10:50:26 AM latchley

SEEDING END WIDTH	SEEDING SQ. YDS.
	0
	0
	0
	0
	0



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		790	76
			54
	30		
854	47		
			56
		790	82
	30		
41	0		
			56
		76	0
	31		
41	0		
			166
1656	158		

CALCULATED EDA
CHECKED SNS

CROSS SECTIONS RAMP P
STA. 414+00.00 TO STA. 415+00.00

HAM-71-8.65

47
129

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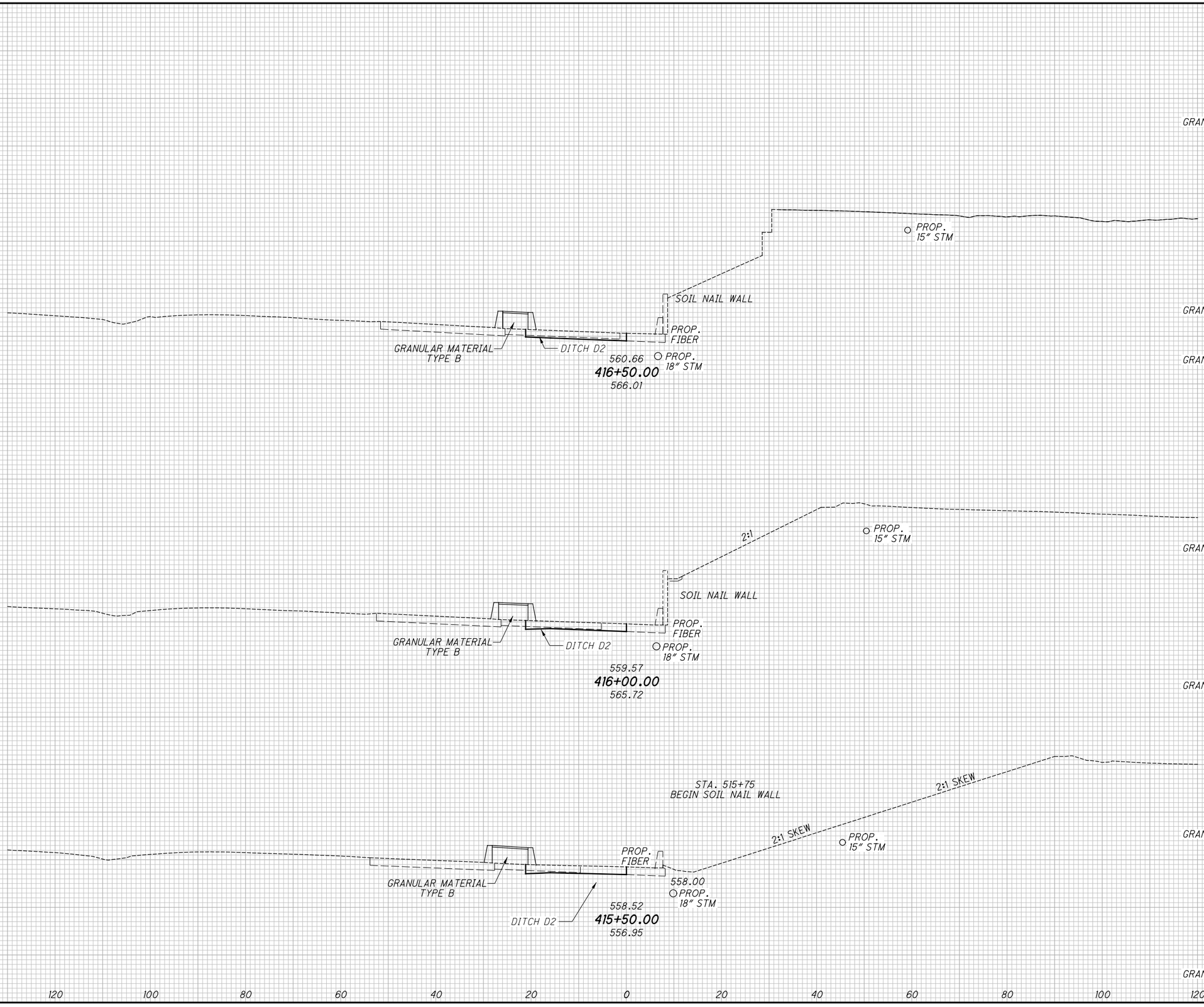
SEEDING	
END WIDTH	SQ. YDS.
	0
0	
	0
	0
0	
	0



END AREA		VOLUME	
CUT	FILL	CUT	FILL
		0	65
			36
0	34		
	21		
			42
		0	65
	24		
0	35		
			48
		0	65
	28		
0	35		
			126
		0	195

CALCULATED EDA
CHECKED SNS

CROSS SECTIONS RAMP P
STA. 415+50.00 TO STA. 416+50.00

HAM-71-8.65

48
129

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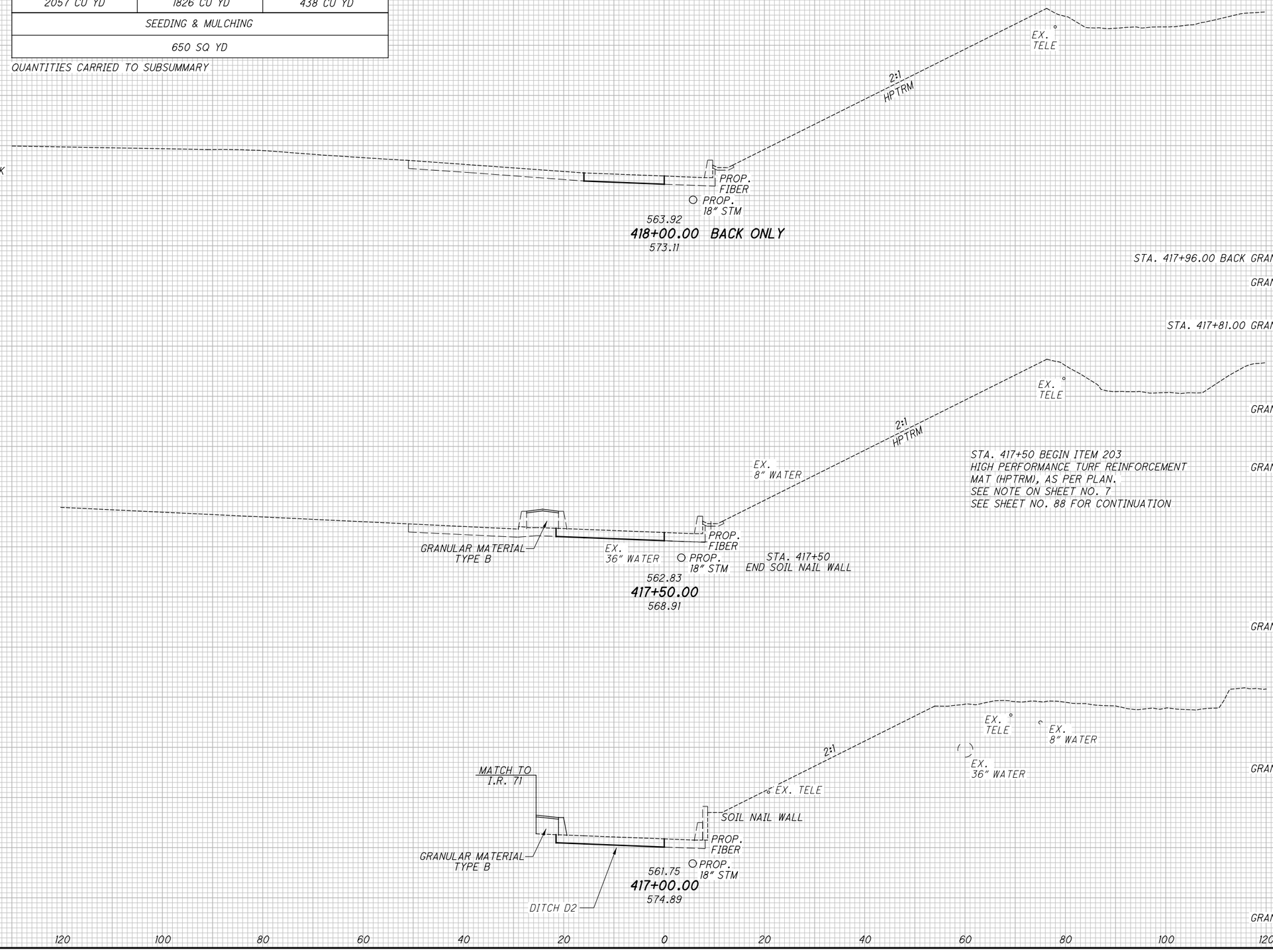
SEEDING	
END WIDTH	SQ. YDS.
0	0
	0
	0
	0
	0
	0
	0

RAMP P		
EXCAVATION	EMBANKMENT	GRANULAR TYPE B
2057 CU YD	1826 CU YD	438 CU YD
SEEDING & MULCHING		
650 SQ YD		

QUANTITIES CARRIED TO SUBSUMMARY



END AREA		VOLUME	
CUT	FILL	CUT	FILL
0	26		
	0		5
	17	0	57
			20
0	35		
			32
		0	65
	18		
0	35		
			57
		0	122

CALCULATED EDA
CHECKED SNS

CROSS SECTIONS RAMP P
STA. 417+00.00 TO STA. 418+00.00

HAM-71-8.65

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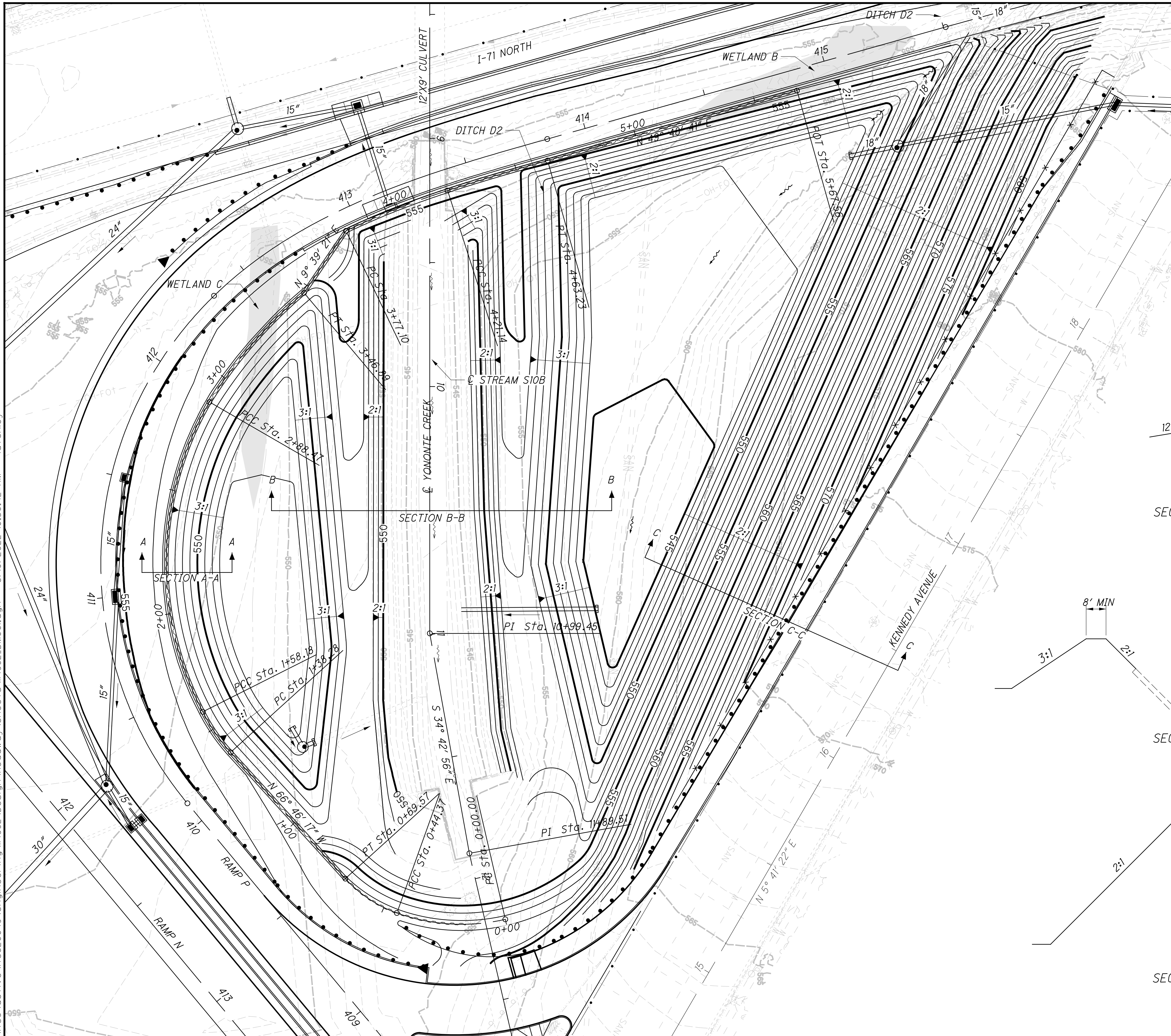


EXISTING STORAGE VOLUME WITHIN INFIELD FOR DETENTION = 7982.5 CU YD

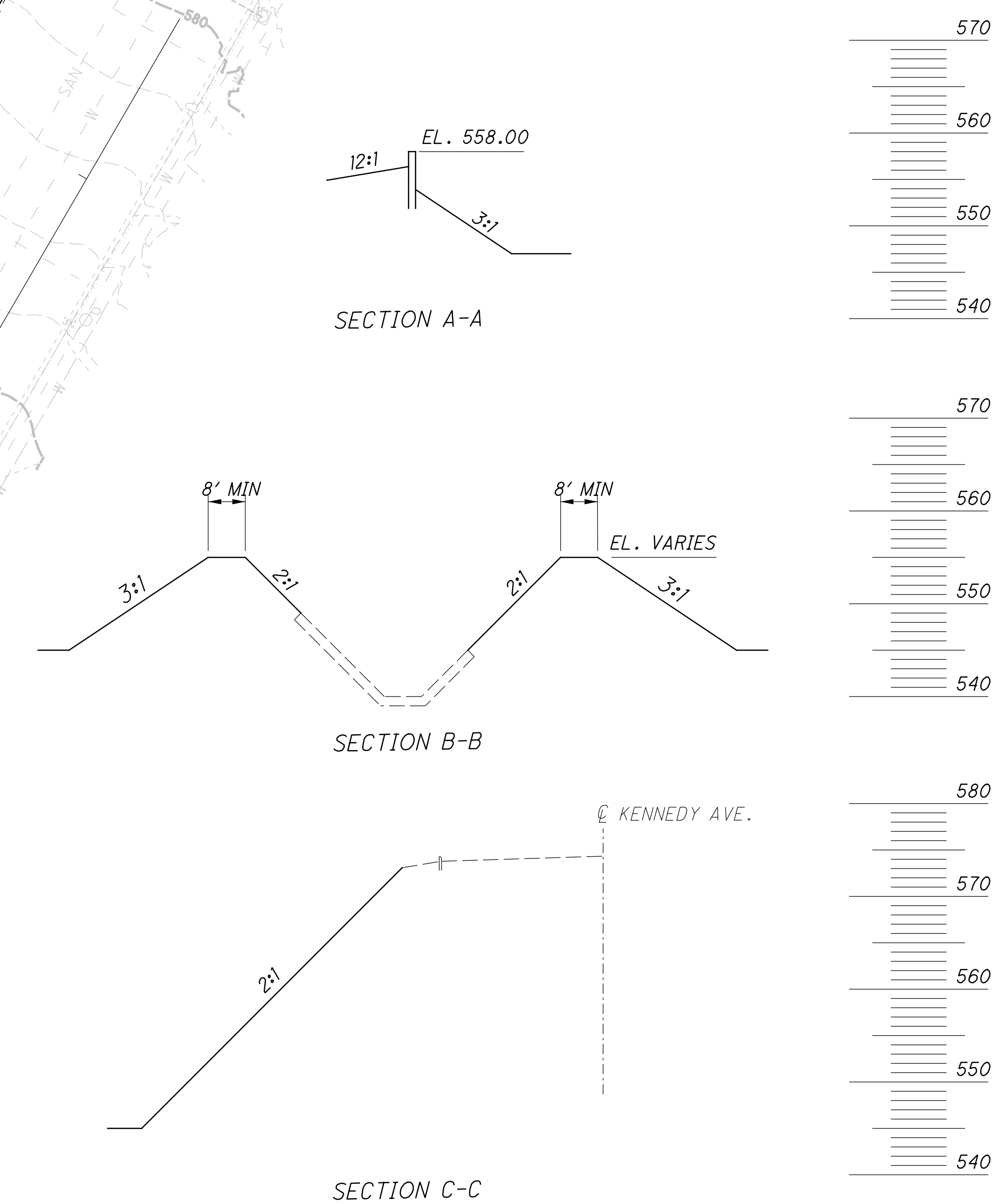
PROPOSED STORAGE VOLUME WITHIN INFIELD FOR DETENTION = 9170.2 CU YD

NOTE:

1) FOR RAMP P CROSS SECTIONS SEE SHEETS 43-49.

2) FOR PROPOSED LEVEE CROSS SECTIONS SEE SHEETS 52-55.

3) FOR YONONTE CREEK CROSS SECTIONS SEE SHEETS 56-58.



HORIZONTAL SCALE IN FEET

CALCULATED GKB

CHECKED HGH

RAMP P INFIELD GRADING PLAN

HAM-71-8.65

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ITEM 203 ROADWAY MISC.; FLOOD CONTROL EMBANKMENT

THE PLACING OF EMBANKMENT WITHIN THE LEVEE LIMITS SHALL REQUIRE THE FOLLOWING:

THE EXISTING GROUND SURFACE SHALL BE STRIPPED OF ORGANICS AND TOPSOIL TO A DEPTH OF APPROXIMATELY 6 INCHES PRIOR TO BENCHING THE FLOOD CONTROL EMBANKMENT.

THE SOIL ON WHICH THE BACKFILL IS TO BE PLACED SHOULD NOT BE EXCAVATED UNTIL IMMEDIATELY BEFORE BACKFILLING, AND SHALL NOT BE ALLOWED TO BECOME OVERLY WET OR DRY WHILE EXPOSED. THE SURFACE AREA OF THE SOIL SHALL BE SCARIFIED AS NECESSARY TO ENSURE A GOOD BOND BETWEEN THE EXISTING SOIL AND THE BACKFILL MATERIAL.

BACKFILL MATERIAL MUST BE LOW PERMEABILITY SOILS - IMPERMEABLE SOILS (E.G. SC, CL OR CL-ML WITH AN ESTIMATED HYDRAULIC CONDUCTIVITY LESS THAN 1 X 10^{-5} CM/SEC) IN ACCORDANCE WITH ASTM 2488 - USCS CLASSIFICATION SYSTEM.

BACKFILL MATERIAL SHALL BE PLACED IN LOOSE LIFTS WITH THICKNESSES NOT TO EXCEED 6-INCHES AND COMPACTED TO A MINIMUM OF 95 PERCENT STANDARD PROCTOR DENSITY DETERMINED AT OPTIMUM MOISTURE CONTENT ACCORDING TO ASTM D-698. MOISTURE CONTROL LIMITS ARE TO BE WITHIN -1% TO +3% OF OPTIMUM.

COMPACTION TEST RESULTS OF WORK ACCOMPLISHED AS DESCRIBED ABOVE SHALL BE SUBMITTED TO THE US ARMY CORPS OF ENGINEERS FOR REVIEW AND APPROVAL THROUGHOUT THE CONSTRUCTION PROCESS.

THE DISTURBED AREAS SHALL BE SEEDED AND COVERED WITH A BIO-DEGRADABLE GEOTEXTILE CONFORMING TO ODOT SPECIFICATION 712.11 FOR TYPE B TEMPORARY EROSION CONTROL MAT, WHEN FINAL GRADING IS COMPLETE.

PAYMENT FOR THE LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK SHALL BE AT THE UNIT PRICE BID PER CUBIC YARD FOR ITEM 203 ROADWAY MISC.; FLOOD CONTROL EMBANKMENT.

UNDERCUT AREAS

THE UNDERCUT AREAS ON THE PROPOSED LEVEE AND YONONTE CREEK CROSS SECTIONS ARE LOCATIONS WHERE THE EXISTING SOIL MUST BE REMOVED AND REPLACED WITH ITEM 203 ROADWAY MISC.; FLOOD CONTROL EMBANKMENT FOR THE PURPOSE OF PREVENTING SEEPAGE UNDER THE PROPOSED LEVEE.

ITEM 630 SIGNING, MISC; LEVEE SIGNAGE

FIVE SIGNS, AS SHOWN BELOW, SHALL BE PLACED ALONG THE LENGTH OF THE I-WALL. SIGNS SHALL BE SPACED NO MORE THAN 150 FEET APART AND SHOULD BE LOCATED TO MINIMIZE ANY IMPACTS TO INSPECTION, OPERATION AND MAINTENANCE, OR ABILITY TO PERFORM EFFORTS DURING HIGH WATER OR FLOOD EVENTS. SIGNS SHALL MEET ALL THE REQUIREMENTS OF ITEM 630.

PAYMENT FOR THE LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE ABOVE WORK SHALL BE INCLUDED IN THE FOLLOWING QUANTITIES CARRIED TO THE GENERAL SUMMARY.

ITEM 630 SIGNING, MISC; LEVEE SIGNAGE 5 EACH

RIPRAP REPAIR

THE CONTRACTOR SHALL TAKE CARE TO NOT DAMAGE THE CONCRETE LINING OF THE YONONTE CREEK CHANNEL. ANY DAMAGE TO THE CHANNEL LINING SHALL BE REPAIRED USING ITEM 601 RIPRAP, TYPE D AS DEFINED IN THE ODOT CMS. REPAIRING DAMAGE SHALL BE AT THE CONTRACTOR'S EXPENSE.

ITEM 202 PIPE REMOVED, 24" AND UNDER, AS PER PLAN

THIS ITEM SHALL BE IDENTICAL TO ITEM 202 PIPE REMOVED, 24" AND UNDER WITH THE EXCEPTION THAT ALL BACKFILL FOR THE REMOVAL SHALL USE ITEM 203 ROADWAY MISC.; FLOOD CONTROL EMBANKMENT WITHIN THE FLOODWALL INFLUENCE ZONE. THE FLOODWALL INFLUENCE ZONE IS 15' FROM THE OUTERMOST FLOODWALL FEATURE THAT EXTENDS AT A 1:1 SLOPE INTO THE GROUND.

I-WALL ESTIMATED QUANTITIES

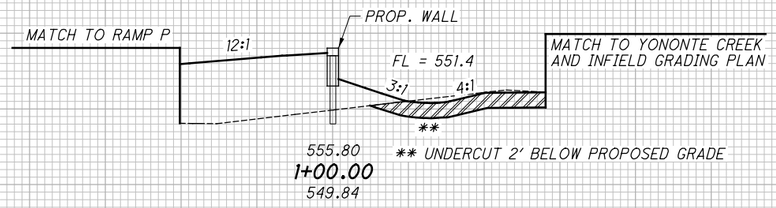
ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION	GEN.	SHEET #
503	21300	LUMP	LS	UNCLASSIFIED EXCAVATION	1	
504	11101	5014	SF	STEEL SHEET PILING LEFT IN PLACE, AS PER PLAN	5014	131-131B
509	10000	11,485	LB	EPOXY COATED REINFORCING STEEL	11,485	131G
511	46010	139	CY	CLASS QC1 CONCRETE, RETAINING/WINGWALL NOT INCLUDING FOOTING	139	131-131B
512	10100	288	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	288	131G
516	13601	533	SF	1" PREFORMED EXPANSION JOINT FILLER, APP	533	131G

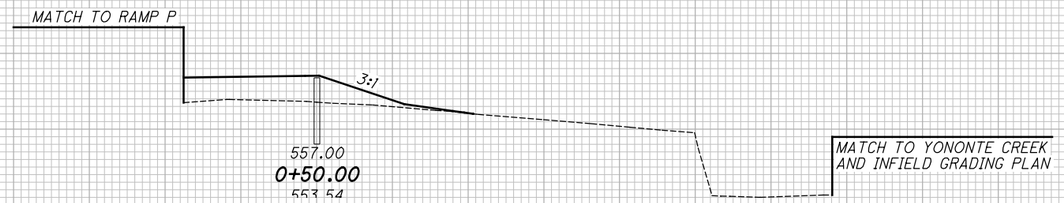
CALCULATED EDA
CHECKED PJD

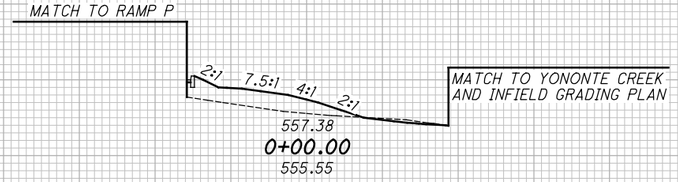
GENERAL NOTES

HAM-71-8.65

SEEDING END WIDTH	SEEDING SQ. YDS.
	273
50	
	256
42	
	192
27	
	721







580	570	560	550	540	530
UNDERCUT					
580	570	560	UNDERCUT	550	540
580	570	560	UNDERCUT	550	540
580	570	560	UNDERCUT	550	540
580	570	560	UNDERCUT	550	540
120	100	80	60	40	20

0	20	40	60	80	100	120
UNDERCUT						
580	570	560	550	540	530	

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
		62	
		14	326
42			
6	179		
		39	
		6	252
0			
0	81		
		2	121
2	42		
		101	
		22	699

CALCULATED EDA
CHECKED SNS

CROSS SECTIONS PROPOSED LEVEE
STA 0+00.00 TO 1+00.00

HAM-71-8.65

52
129

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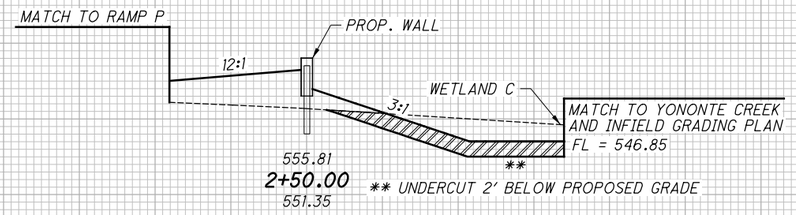
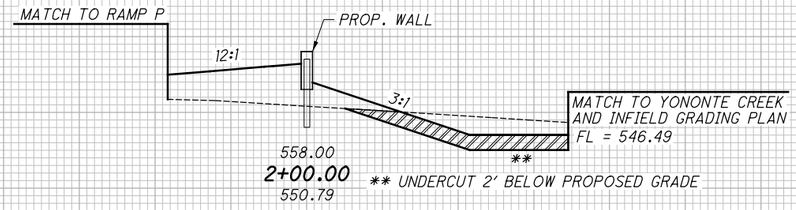
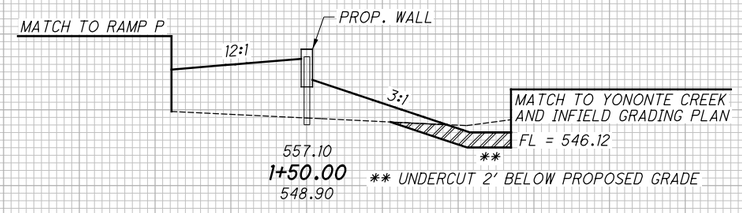
SEEDING END WIDTH	SEEDING SQ. YDS.
	278
55	
	309
56	
48	
	289
	876







	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
UNDERCUT			82	
			59	181
UNDERCUT	56			
	49	85		
UNDERCUT			100	
			78	172
UNDERCUT	52			
	38	100		
UNDERCUT			71	
			43	247
UNDERCUT	25			
	9	167		
UNDERCUT			253	
			180	599

120 100 80 60 40 20 0 20 40 60 80 100 120

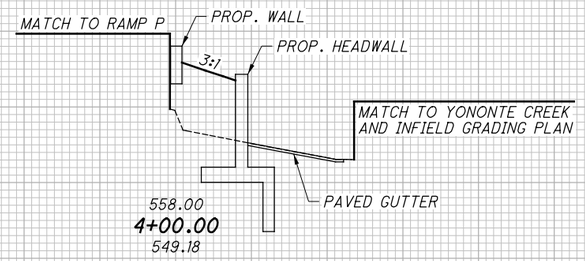
CALCULATED EDA
CHECKED SNS

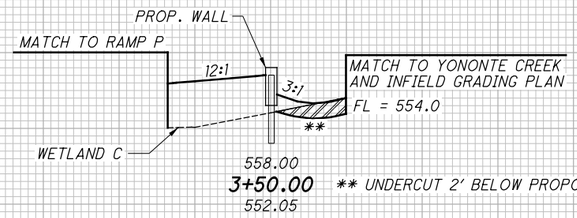
CROSS SECTIONS PROPOSED LEVEE
STA 1+50.00 TO 2+50.00

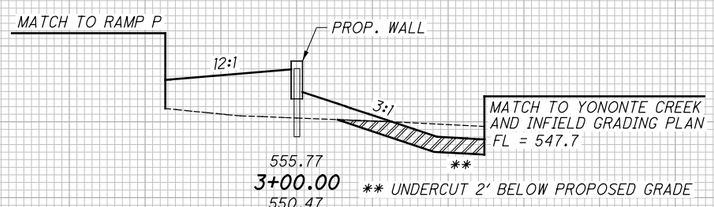
HAM-71-8.65

53
129

SEEDING END WIDTH	SEEDING SQ. YDS.
	131
8	
	92
25	
	195
45	
	418







	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
580			10	198
570				
560				
UNDERCUT	0			
550	0	66		
540				
UNDERCUT				
580			13	
			0	137
570				
560				
UNDERCUT	14			
550	0	82		
540				
530				
UNDERCUT			44	
			15	180
570				
560				
UNDERCUT	33			
550	16	112		
540				
530				
UNDERCUT			57	
			25	515

120	100	80	60	40	20	0	20	40	60	80	100	120

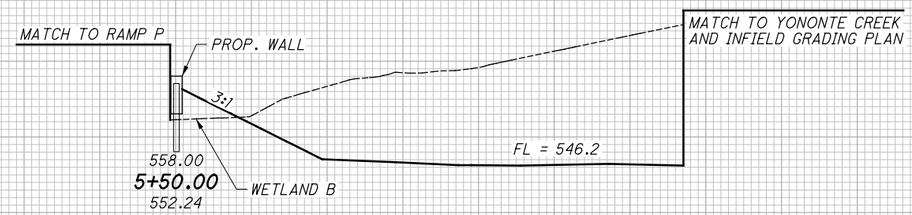
CALCULATED EDA
CHECKED SNS

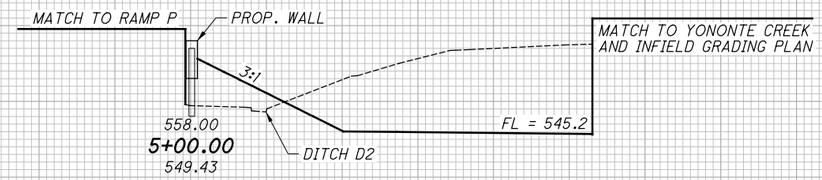
CROSS SECTIONS PROPOSED LEVEE
STA 3+00.00 TO 4+00.00

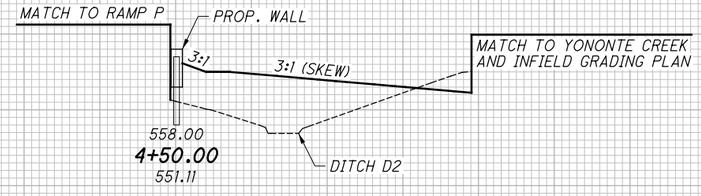
HAM-71-8.65

54
129

PROPOSED LEVEE	
EXCAVATION	ROADWAY MISC.: FLOOD CONTROL EMBANKMENT
1577 CU YD	2053 CU YD
SEEDING AND MULCHING	UNDERCUT
2622 SQ YD	411 CU YD







SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
69	345	717	16	1003	58
55	262	366	46	347	182
39	607	11	152	1350	240

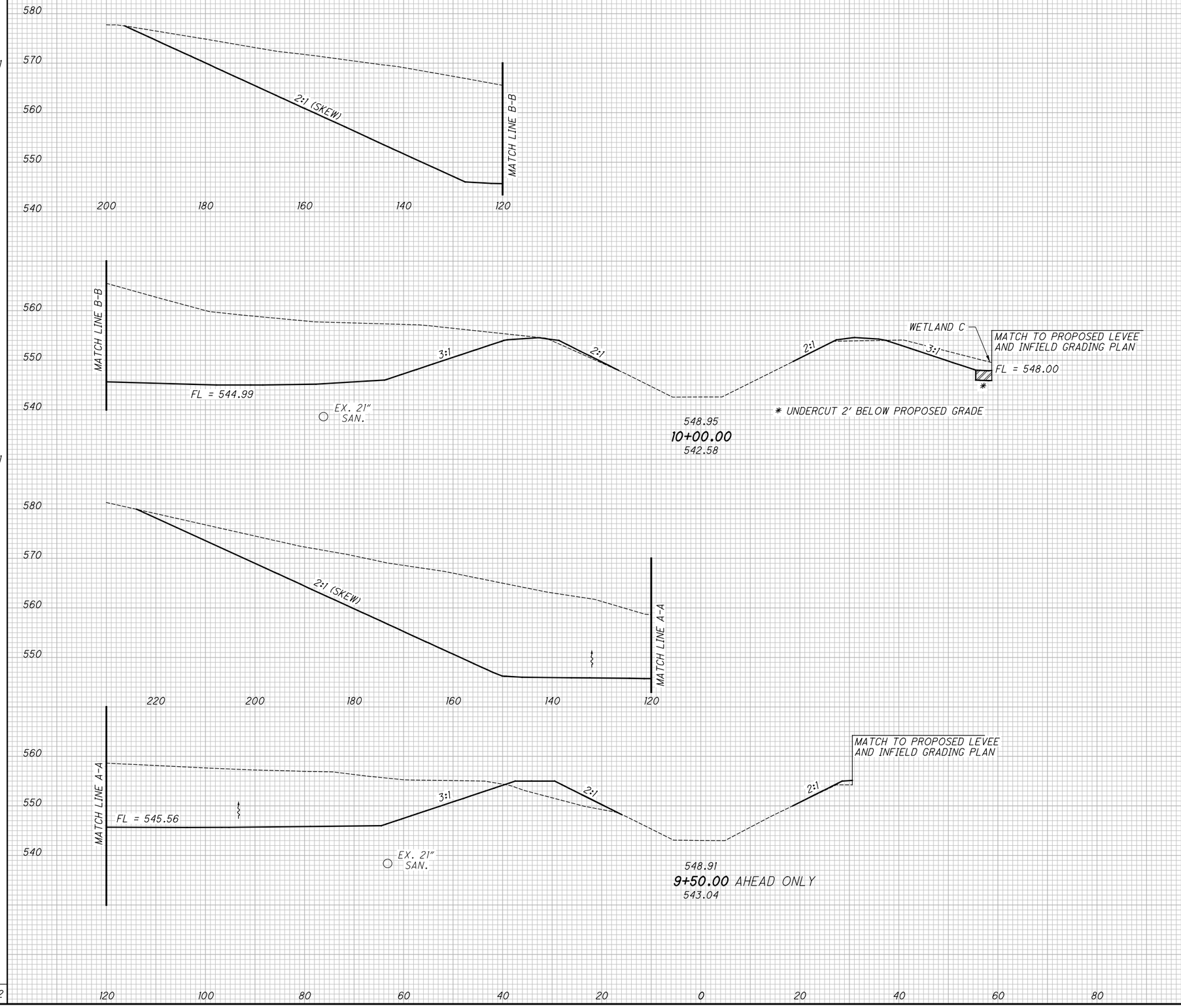
CALCULATED EDA
CHECKED SNS

CROSS SECTIONS PROPOSED LEVEE
STA 4+50.00 TO 5+50.00

HAM-71-8.65

55
129

SEEDING END WIDTH	SEEDING SQ. YDS.
249	1331
	1381
248	
	2712



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
UNDERCUT		36	
		3140	10
UNDERCUT			
7			
1889	9		
UNDERCUT		7	
		3531	52
1924	47		
		0	0
UNDERCUT		43	
		6671	62

CALCULATED LBA
CHECKED SNS

CROSS SECTIONS YONONTE CREEK
STA. 9+50.00 TO STA. 10+00.00

HAM-71-8.65

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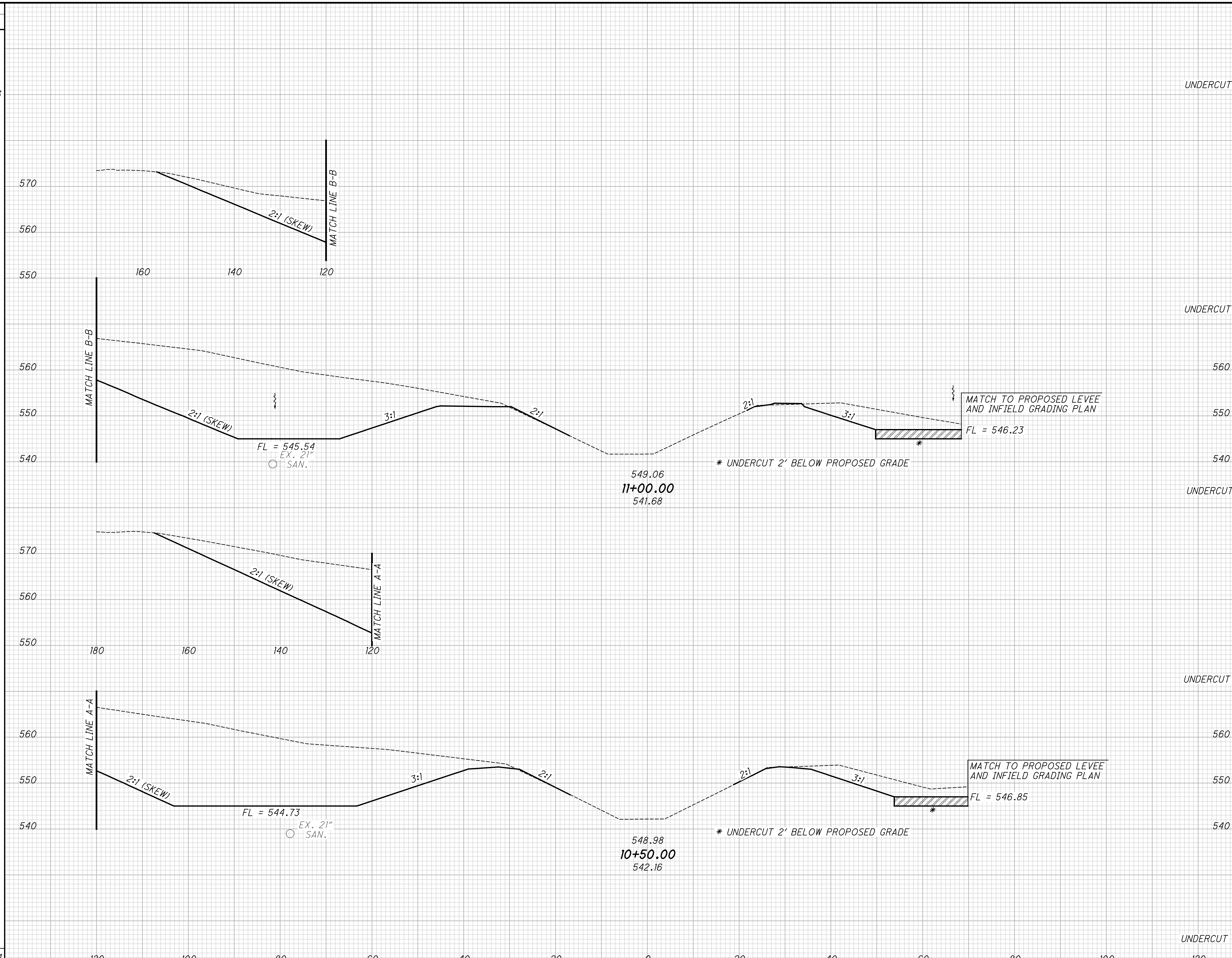
SEEDING END WIDTH	SEEDING SQ. YDS.	STATION	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
	1023				UNDERCUT 39 1591	20
213		11+00.00	UNDERCUT 37 1219	4		
	1231				UNDERCUT 64 1774	3
230		10+50.00	UNDERCUT 32 1503	2		
	2254				UNDERCUT 103 3365	23



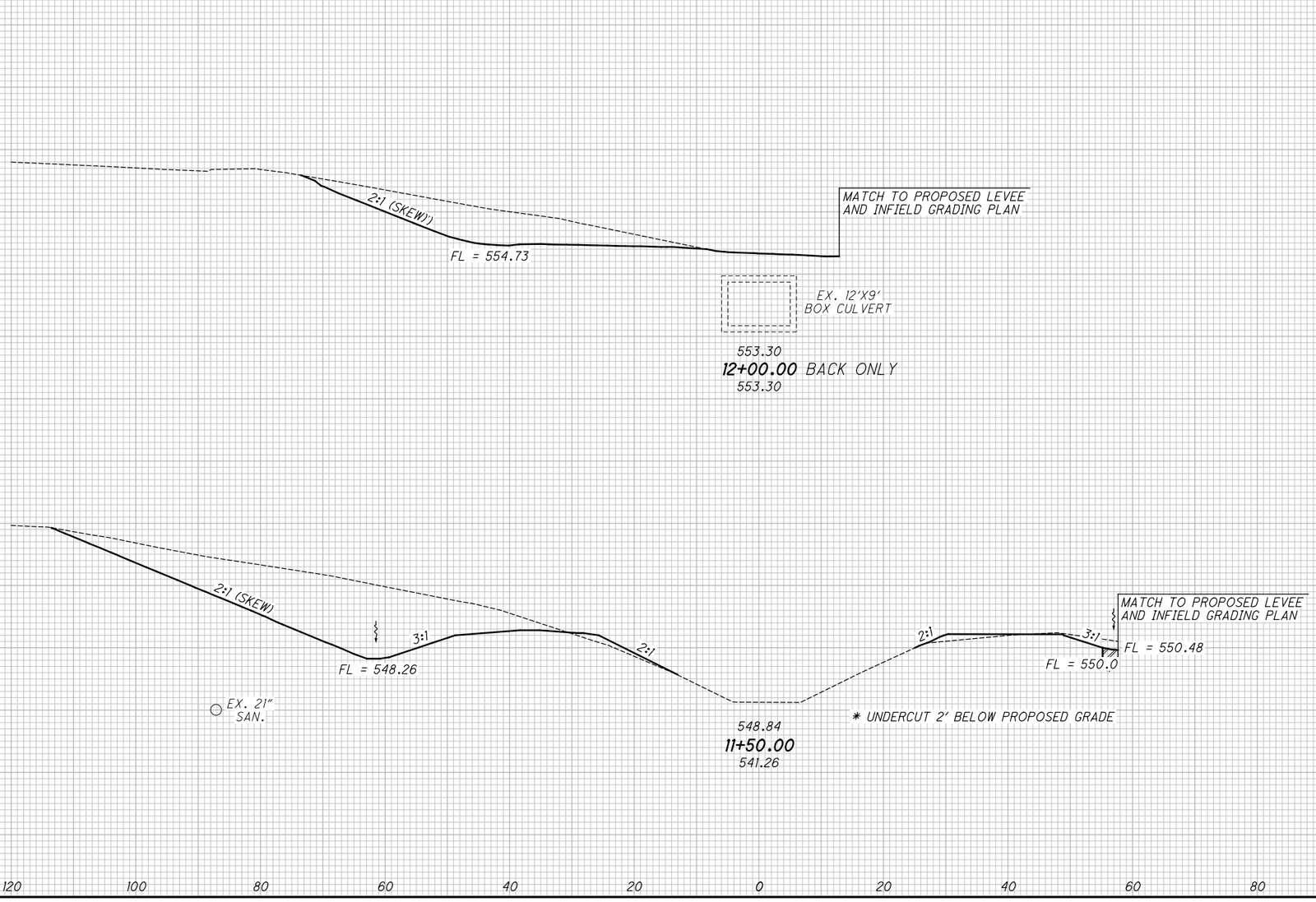
CALCULATED LBA
CHECKED SNS

CROSS SECTIONS YONONTE CREEK
STA. 10+50.00 TO STA. 11+00.00

HAM-71-8.65

SEEDING	
END WIDTH	SQ. YDS.
73	
	634
155	
	634

YONONTE CREEK	
EXCAVATION	ROADWAY MISC.: FLOOD CONTROL EMBANKMENT
10666 CU YD	102 CU YD
SEEDING AND MULCHING	UNDERCUT
5600 SQ YD	151 CU YD



END AREA		VOLUME	
CUT	FILL	CUT	FILL
213	0		
		5	
		630	17
		UNDERCUT	
5			
499	18		
		UNDERCUT	
		5	
		630	17

CALCULATED LBA
CHECKED SNS

CROSS SECTIONS YONONTE CREEK STA. 11+50.00 TO STA. 12+00.00

HAM-71-8.65

58
129

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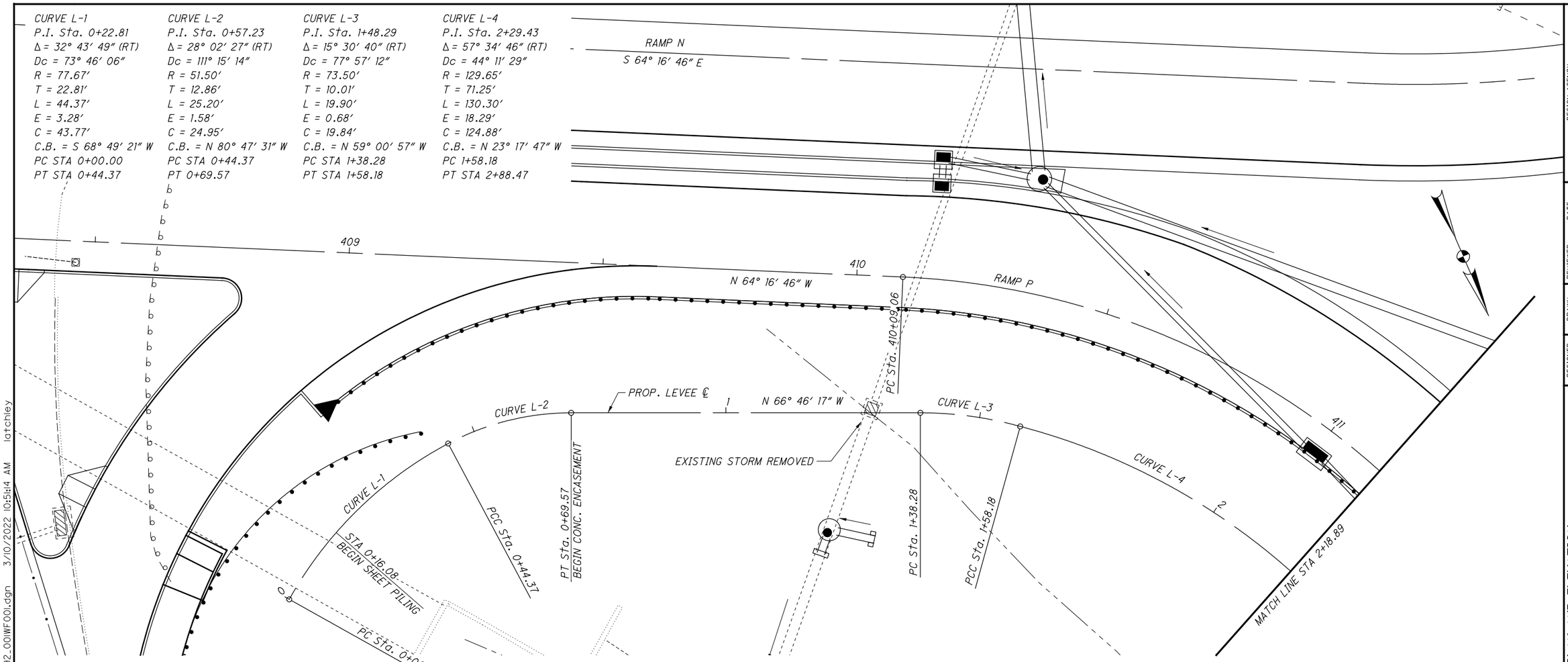
CURVE L-1
P.I. Sta. 0+22.81
Δ = 32° 43′ 49″ (RT)
Dc = 73° 46′ 06″
R = 77.67′
T = 22.81′
L = 44.37′
E = 3.28′
C = 43.77′
C.B. = S 68° 49′ 21″ W
PC STA 0+00.00
PT STA 0+44.37

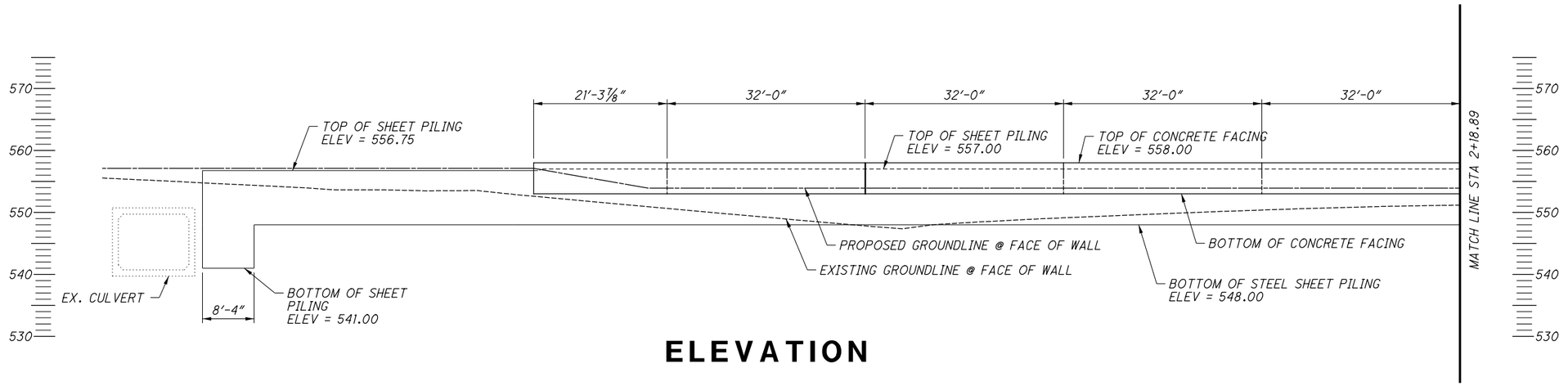
CURVE L-2
P.I. Sta. 0+57.23
Δ = 28° 02′ 27″ (RT)
Dc = 111° 15′ 14″
R = 51.50′
T = 12.86′
L = 25.20′
E = 1.58′
C = 24.95′
C.B. = N 80° 47′ 31″ W
PC STA 0+44.37
PT 0+69.57

CURVE L-3
P.I. Sta. 1+48.29
Δ = 15° 30′ 40″ (RT)
Dc = 77° 57′ 12″
R = 73.50′
T = 10.01′
L = 19.90′
E = 0.68′
C = 19.84′
C.B. = N 59° 00′ 57″ W
PC STA 1+38.28
PT STA 1+58.18

CURVE L-4
P.I. Sta. 2+29.43
Δ = 57° 34′ 46″ (RT)
Dc = 44° 11′ 29″
R = 129.65′
T = 71.25′
L = 130.30′
E = 18.29′
C = 124.88′
C.B. = N 23° 17′ 47″ W
PC 1+58.18
PT STA 2+88.47



PLAN



ELEVATION

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DESIGN AGENCY
Stantec
11687 Lebanon Road
Cincinnati, Ohio 45241
(513) 842-8200

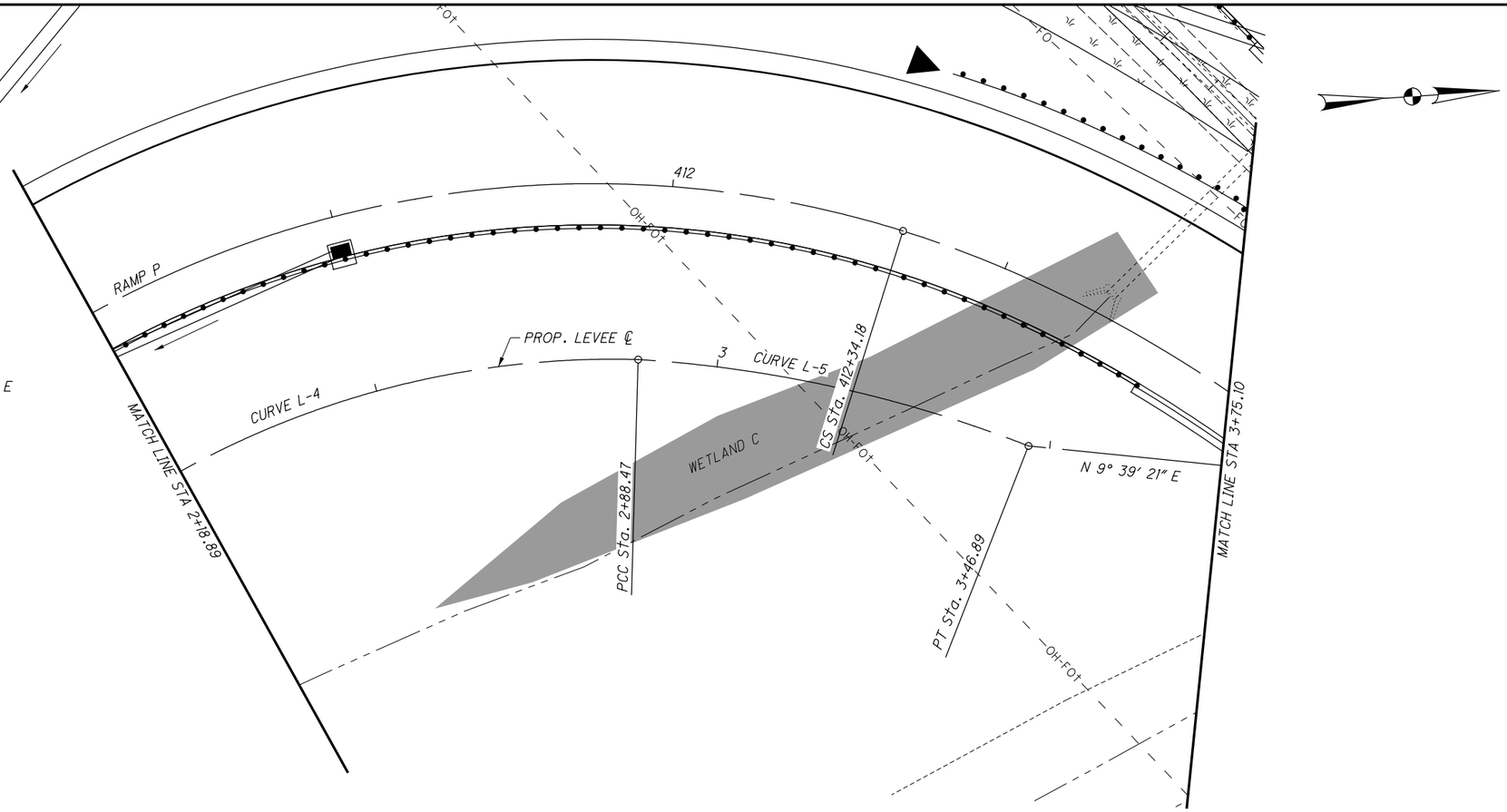
DESIGNED	DRAWN	REVIEWED	DATE
EDA	JTK	PJD	02/14/20
CHECKED	REVISED	STRUCTURE FILE NUMBER	
MRS	XXX	N/A	

WALL PLAN AND ELEVATION
FLOODWALL ALONG RAMP P

HAM-71-8.65
PID No. 114992

CURVE L-4
P.I. Sta. 2+29.43
= 57° 34′ 46″ (RT)
Dc = 44° 11′ 29″
R = 129.65′
T = 71.25′
L = 130.30′
E = 18.29′
C = 124.88′
C.B. = N 23° 17′ 47″ W
PC 1+58.18
PT STA 2+88.47

CURVE L-5
P.I. Sta. 3+17.92
Δ = 17° 51′ 29″ (RT)
Dc = 30° 34′ 20″
R = 187.41′
T = 29.45′
L = 58.41′
E = 2.30′
C = 58.18′
C.B. = N 16° 21′ 56″ E
PC STA 2+88.47
PT STA 3+46.89



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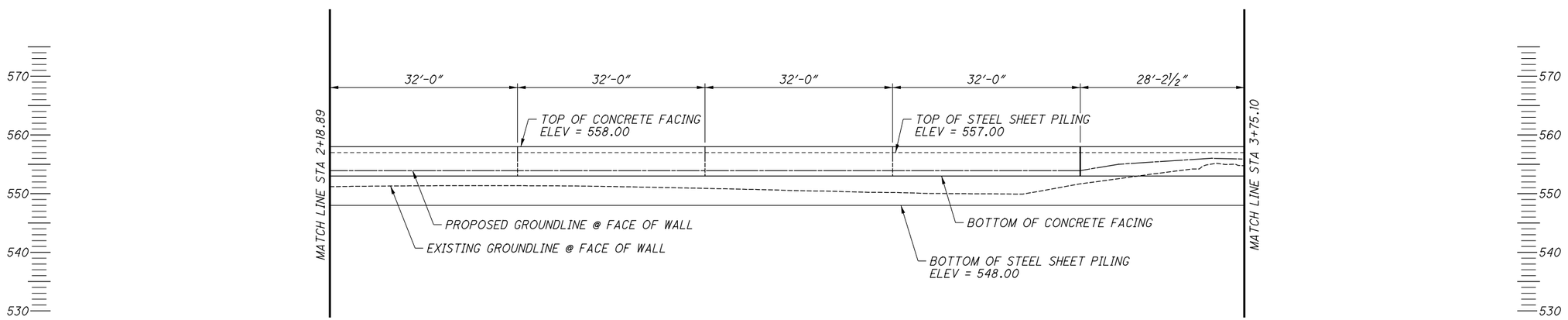


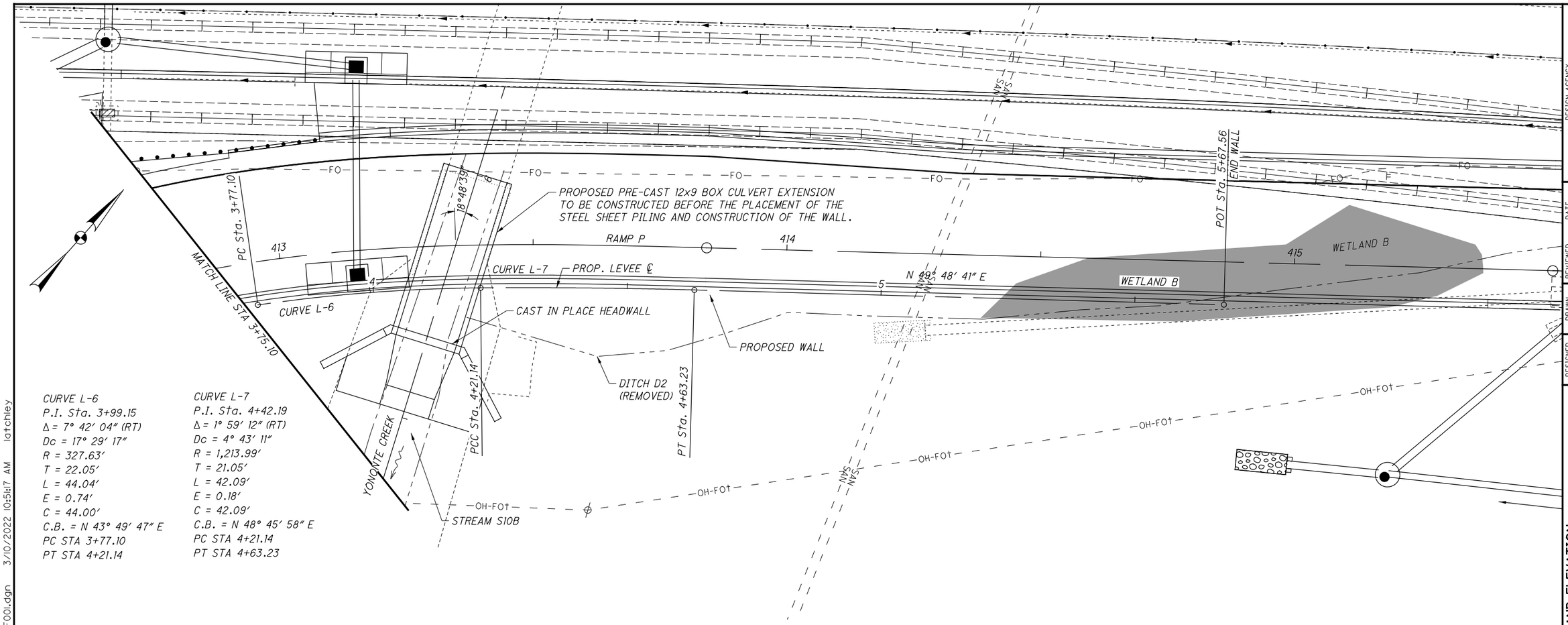
ELEVATION

DESIGN AGENCY
Stantec
11687 Lebanon Road
Cincinnati, Ohio 45241
(513) 842-8200

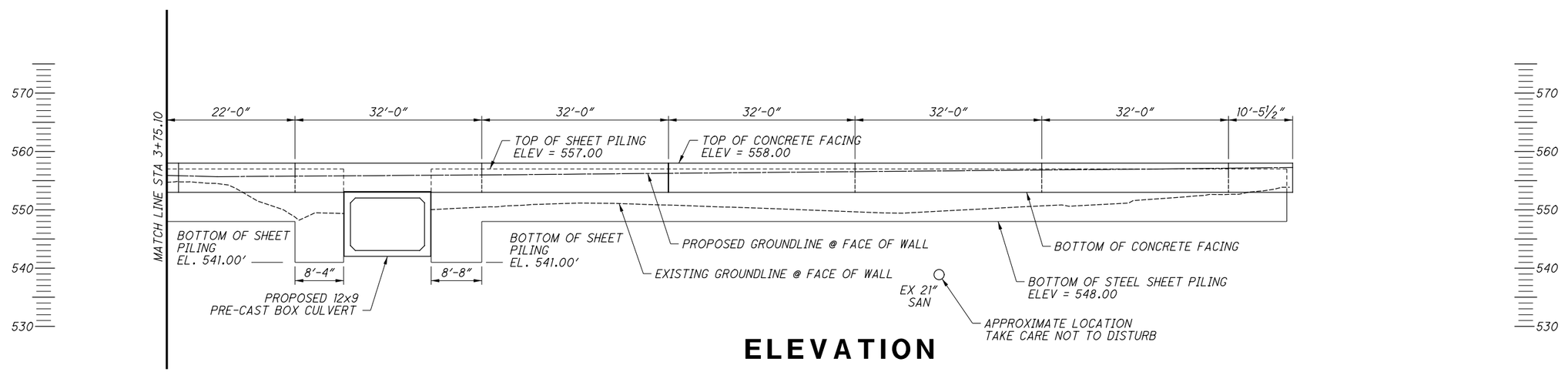
DESIGNED	DRAWN	REVIEWED	DATE
EDA	JTK	PJD	02/14/20
CHECKED	REVISED	STRUCTURE FILE NUMBER	
MRS	XXX	N/A	

WALL PLAN AND ELEVATION
FLOODWALL ALONG RAMP P

HAM-71-8.65
PID No. 114992



PLAN



ELEVATION

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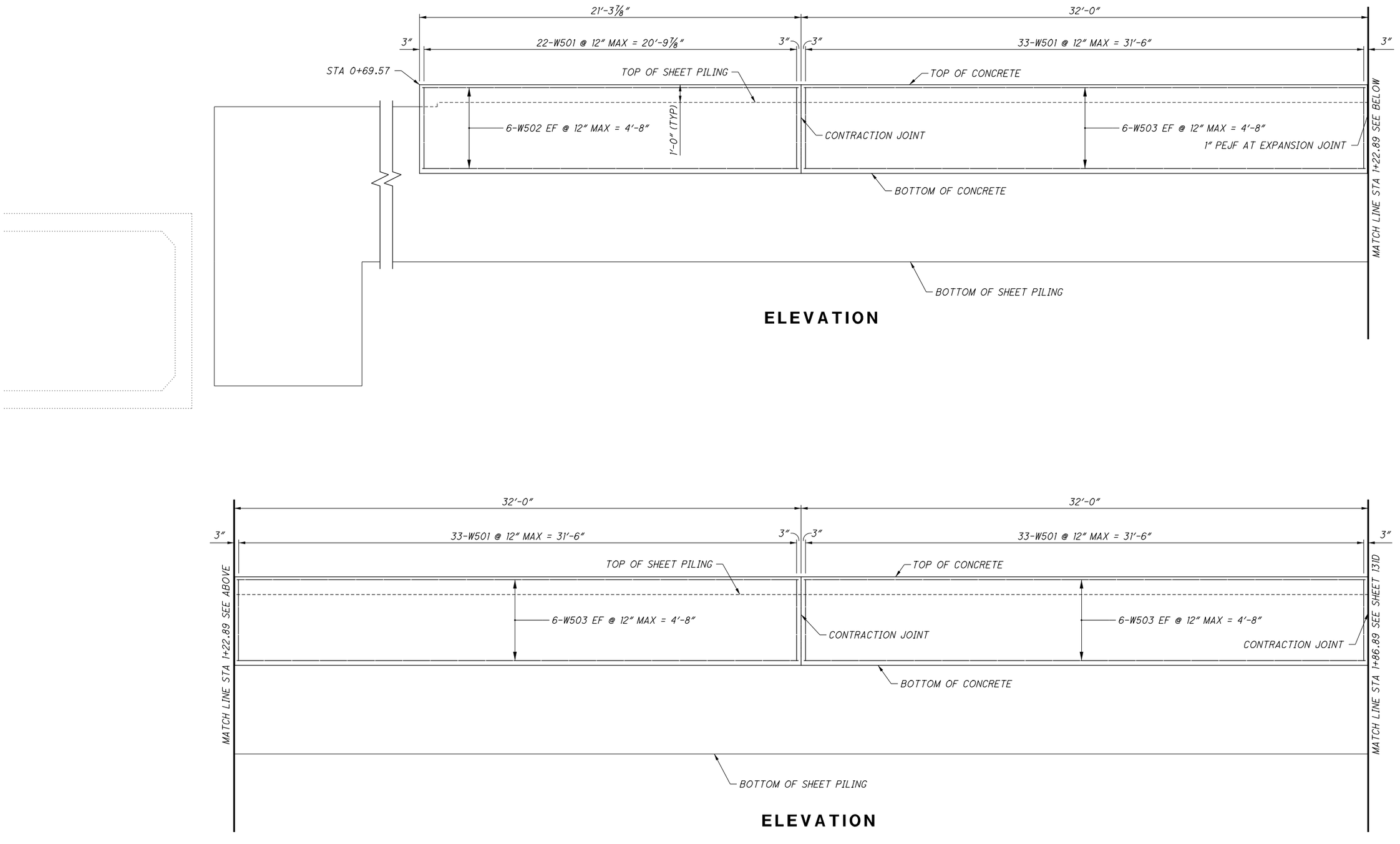
DESIGN AGENCY
Stantec
16807 Lebanon Road
Cincinnati, Ohio 45241
(513) 842-8200

DESIGNED	DRAWN	REVIEWED	DATE
EDA	JTK	PJD	02/14/20
CHECKED	REVISED	STRUCTURE FILE NUMBER	
MRS	XXX	N/A	

WALL PLAN AND ELEVATION
FLOODWALL ALONG RAMP P

HAM-71-8.65
PID No. 114992



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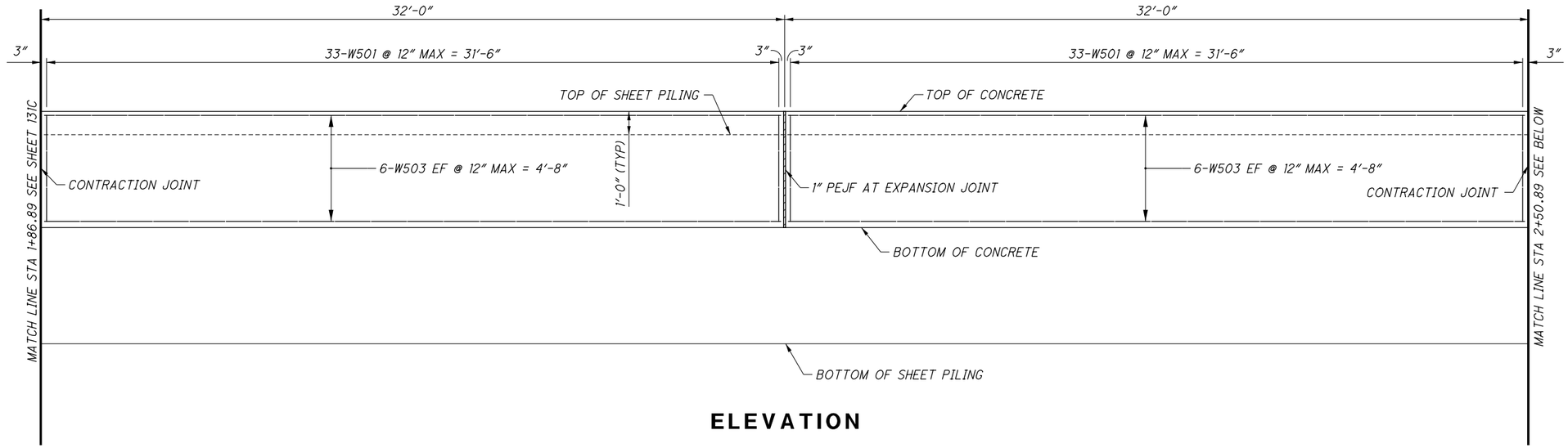
DESIGN AGENCY
Stantec
11687 Lebanon Road
Cincinnati, Ohio 45241
(513) 842-8200

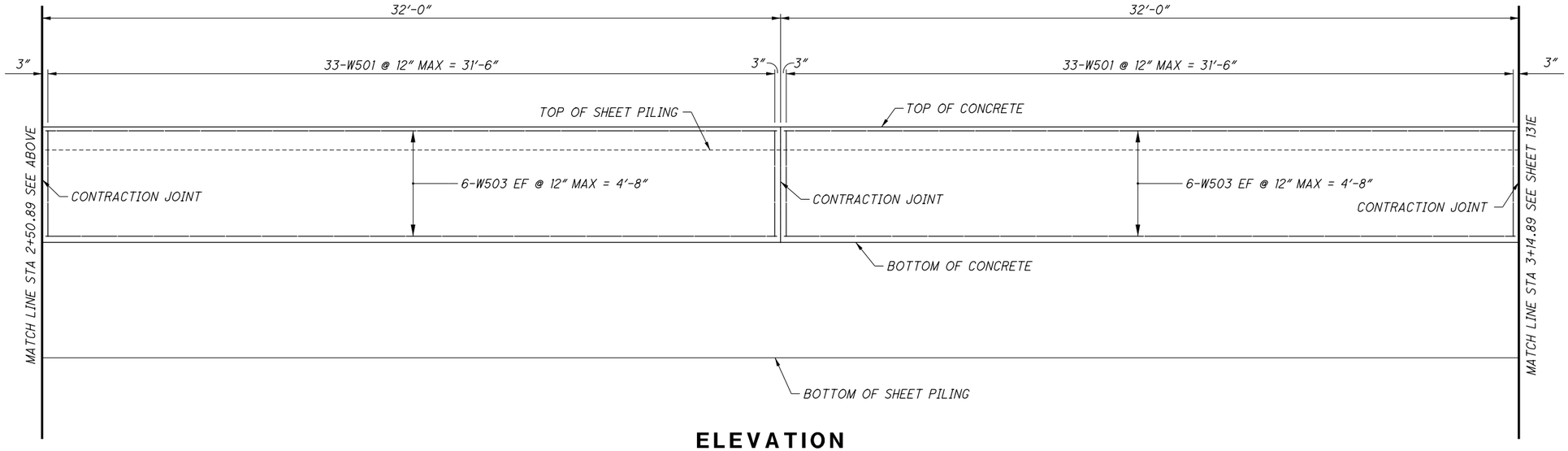
DESIGNED	DRAWN	REVIEWED	DATE
EDA	JTK	PJD	2/13/20
CHECKED	REVISED	STRUCTURE FILE NUMBER	
MRS	XXX	N/A	

WALL ELEVATION 1
FLOOD WALL ALONG RAMP P

HAM-71-8.65
PID No. 114992



ELEVATION



ELEVATION

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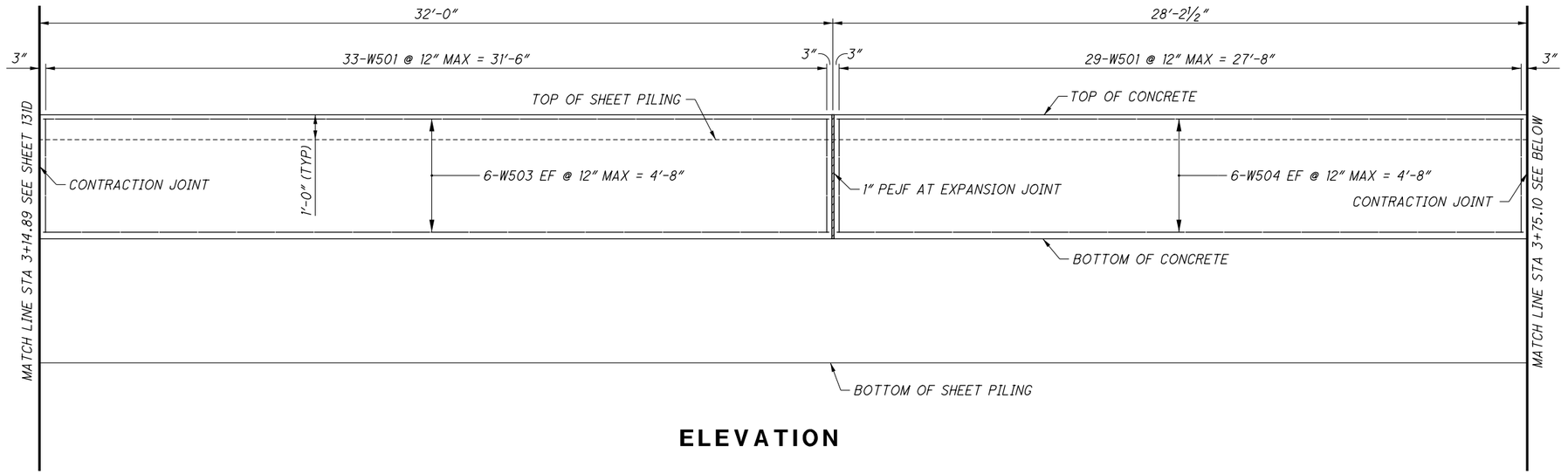
DESIGN AGENCY
Stantec
11687 Lebanon Road
Cincinnati, Ohio 45241
(513) 842-8200

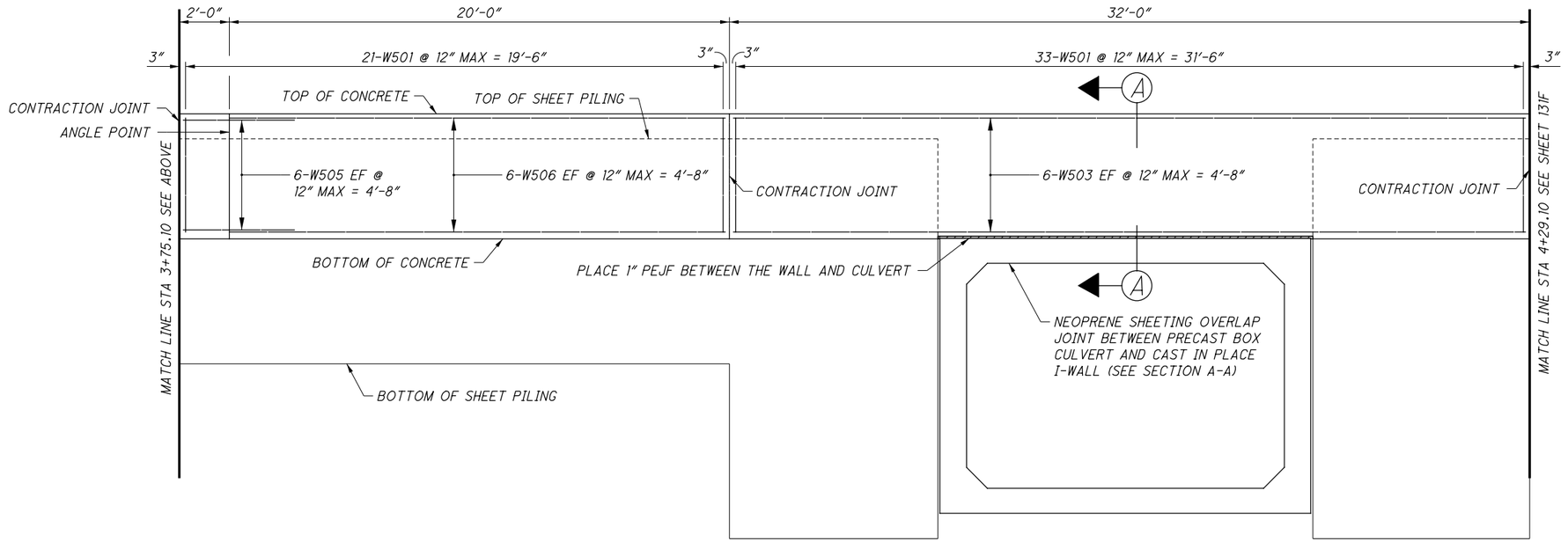
DESIGNED	DRAWN	REVIEWED	DATE
EDA	JTK	PJD	2/13/20
CHECKED	REVISED	STRUCTURE FILE NUMBER	
MRS	XXX	N/A	

WALL ELEVATION 2
FLOOD WALL ALONG RAMP P

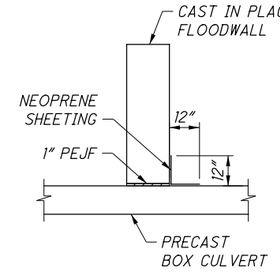
HAM-71-8.65
PID No. 114992



ELEVATION



ELEVATION



SECTION A-A

DESIGN AGENCY
Stantec
11687 Lebanon Road
Cincinnati, Ohio 45241
(513) 842-8200

DESIGNED	DRAWN	REVIEWED	DATE
EDA	JTK	PJD	2/13/20
CHECKED	REVISED	STRUCTURE FILE NUMBER	
MRS	XXX	N/A	

WALL ELEVATION 3
FLOOD WALL ALONG RAMP P

HAM-71-8.65
PID No. 114992

6 / 8

64
129

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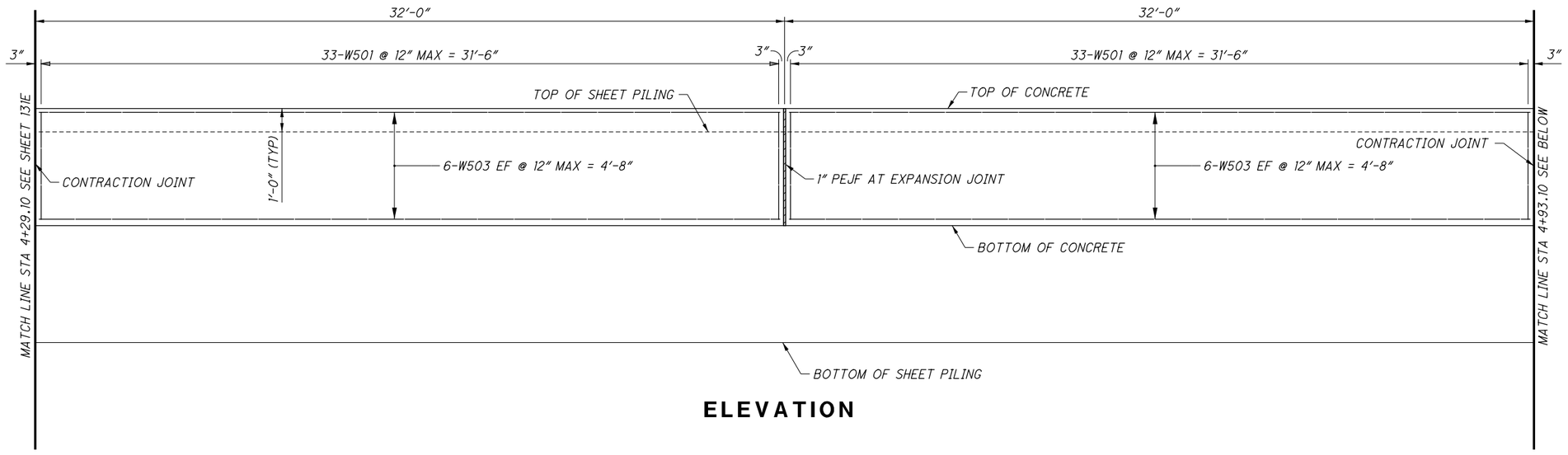

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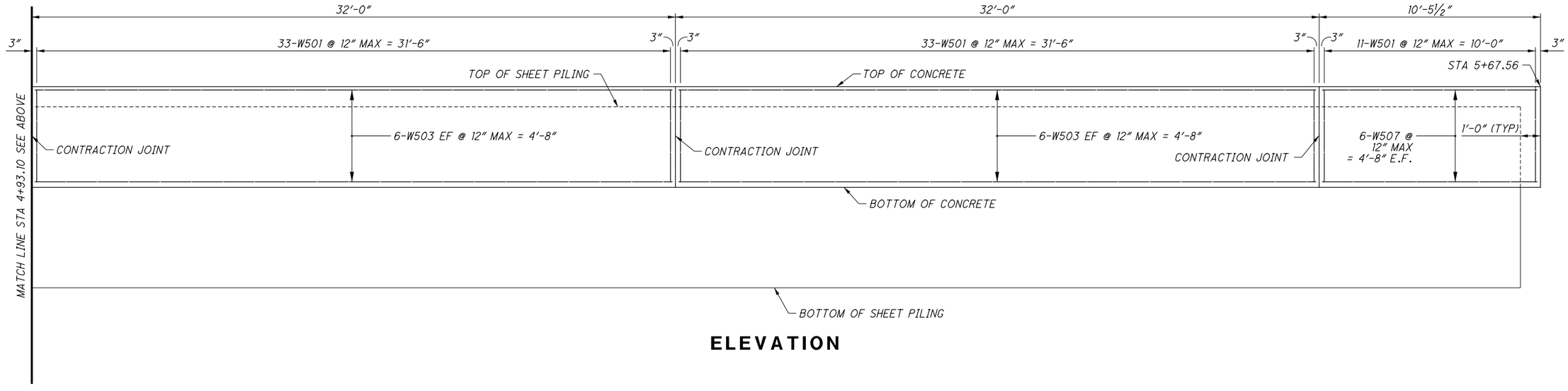


ELEVATION

V:\1736\active\173620049\engineering\114992\Design\Structures\Sheets\114992_00WF002.dgn 3/10/2022 10:51:23 AM latchley

DESIGN AGENCY
Stantec
11687 Lebanon Road
Cincinnati, Ohio 45241
(513) 842-8200

DESIGNED	DRAWN	REVIEWED	DATE
EDA	JTK	PJD	2/13/20
CHECKED	REVISED	STRUCTURE FILE NUMBER	
MRS	XXX	N/A	

WALL ELEVATION 4
FLOOD WALL ALONG RAMP P

HAM-71-8.65
PID No. 114992

GENERAL NOTES

DESIGN SPECIFICATIONS

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2020 AND THE ODOT BRIDGE DESIGN MANUAL, 2020.

DESIGN DATA:

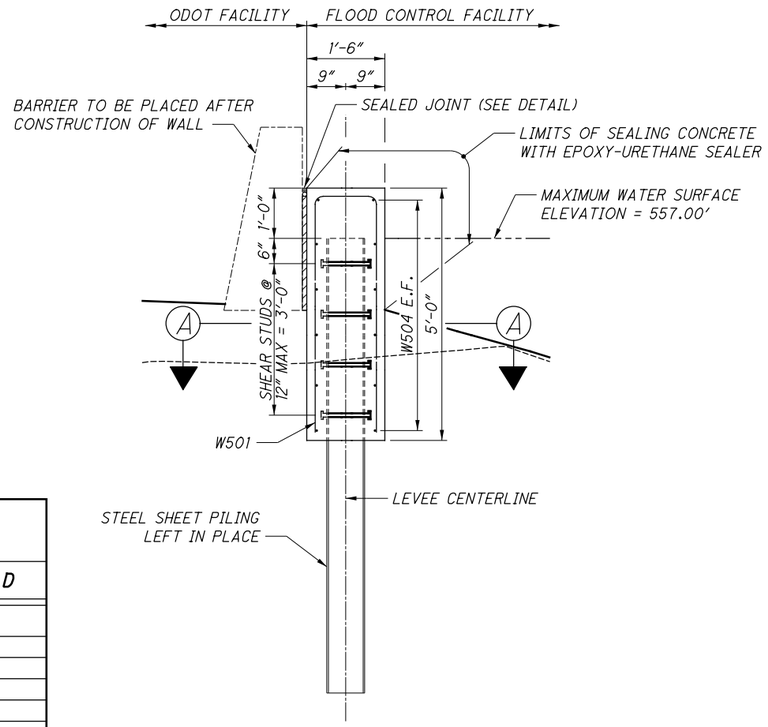
CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4000 PSI (FLOODWALL)
STEEL SHEET PILING - ASTM A572 GRADE 50 YIELD STRENGTH - 50 KSI
REINFORCING STEEL - ASTM A615 OR A996, GRADE 60 MINIMUM YIELD STRENGTH 60,000 PSI

ITEM 504 STEEL SHEET PILING LEFT IN PLACE, AS PER PLAN

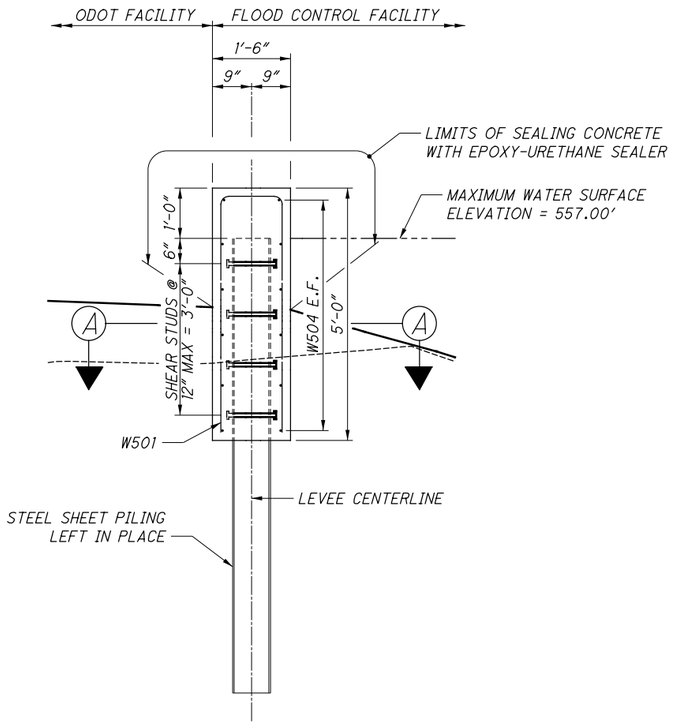
STEEL SHEET PILING SHALL BE PZ 22 WITH A MINIMUM ELASTIC SECTION MODULUS OF 18.1 IN^3/FT.

PAYMENT FOR SUPPLYING AND INSTALLING SHEAR STUDS SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 504 STEEL SHEET PILING LEFT IN PLACE, AS PER PLAN.

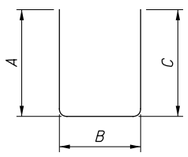
MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D
FLOODWALL								
W501	512	9'-11"	5296	2	4'-6"	1'-2"	4'-6"	
W502	12	20'-11"	262	STR				
W503	156	31'-8"	5152	STR				
W504	12	27'-10"	348	STR				
W505	12	4'-3"	53	19	2'-6"	1'-6"	0'-11"	
W506	12	19'-10"	248	STR				
W507	12	10'-1"	126	STR				
SUB-TOTAL			11,485					



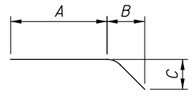
WALL TYPICAL SECTION WITH BARRIER



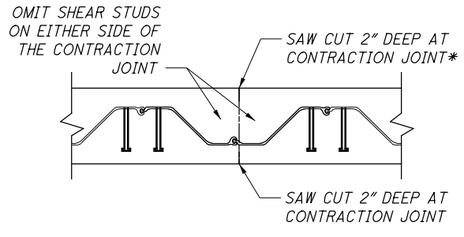
WALL TYPICAL SECTION WITHOUT BARRIER



TYPE-2

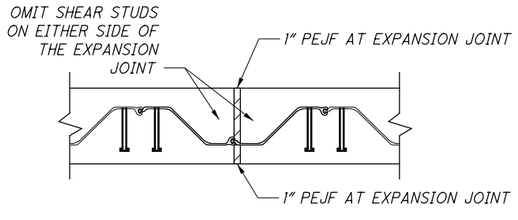


TYPE-19

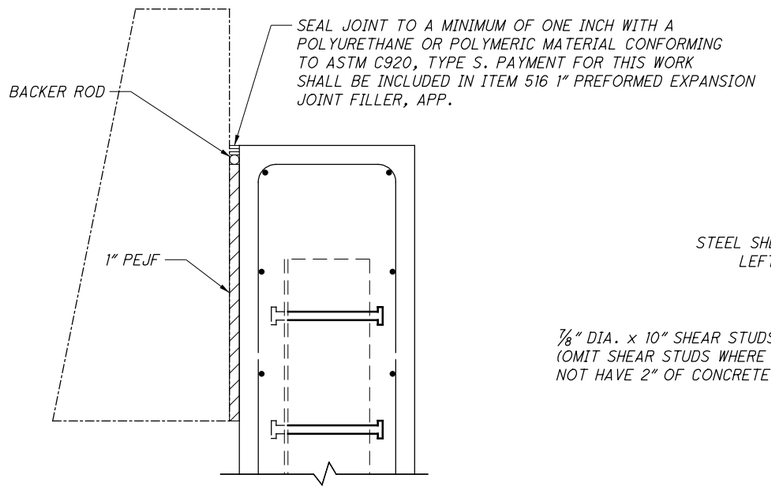


*SAW CUT MAY BE OMITTED ON THE SIDE HIDDEN BY BARRIER

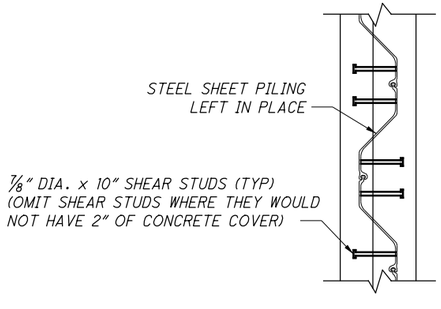
CONTRACTION JOINT DETAIL



EXPANSION JOINT DETAIL



SEALED JOINT DETAIL



SECTION A-A

NOTES:
1. FOR ESTIMATED QUANTITIES, SEE SHEET 74.

DESIGN AGENCY
Stantec
1687 Lobdon Road
Cincinnati, Ohio 45241
(513) 842-8200

DESIGNED	DRAWN	REVIEWED	DATE
EDA	JTK	PJD	02/14/20
CHECKED	REVISED	STRUCTURE FILE NUMBER	
MRS	XXX	N/A	

WALL GENERAL NOTES AND DETAILS
FLOODWALL ALONG RAMP P

HAM-71-8.65
PID No. 114992

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. 69												

CALCULATED LEH
CHECKED SNS

SUPERELEVATION TABLE
RAMP N

HAM-71-8.65

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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-71-8.65

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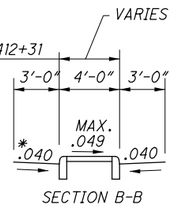
129

CURVE NO. N-3
P.I. Sta. 410+83.53
Δ = 29° 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

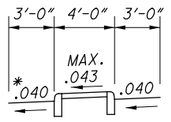
CURVE NO. P-1
P.I. Sta. 411+48.55
Δ = 85° 32′ 39″ (RT)
Dc = 38° 00′ 00″
R = 150.78′
T = 139.49′
L = 225.12′
E = 54.62′
C = 204.78′
C.B. = N 21° 30′ 27″ W

STA 412+00 TO STA 412+31
RAMP N

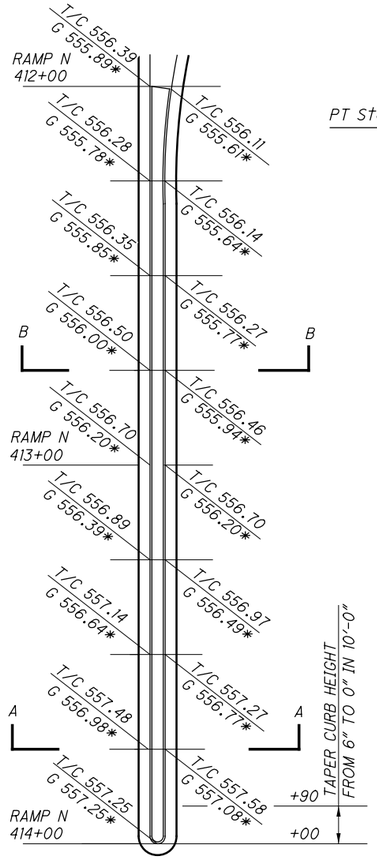


SECTION B-B

* TRANSITION SHOULDER
FROM -.040 @ STA 413+25
TO +.040 @ STA 413+75

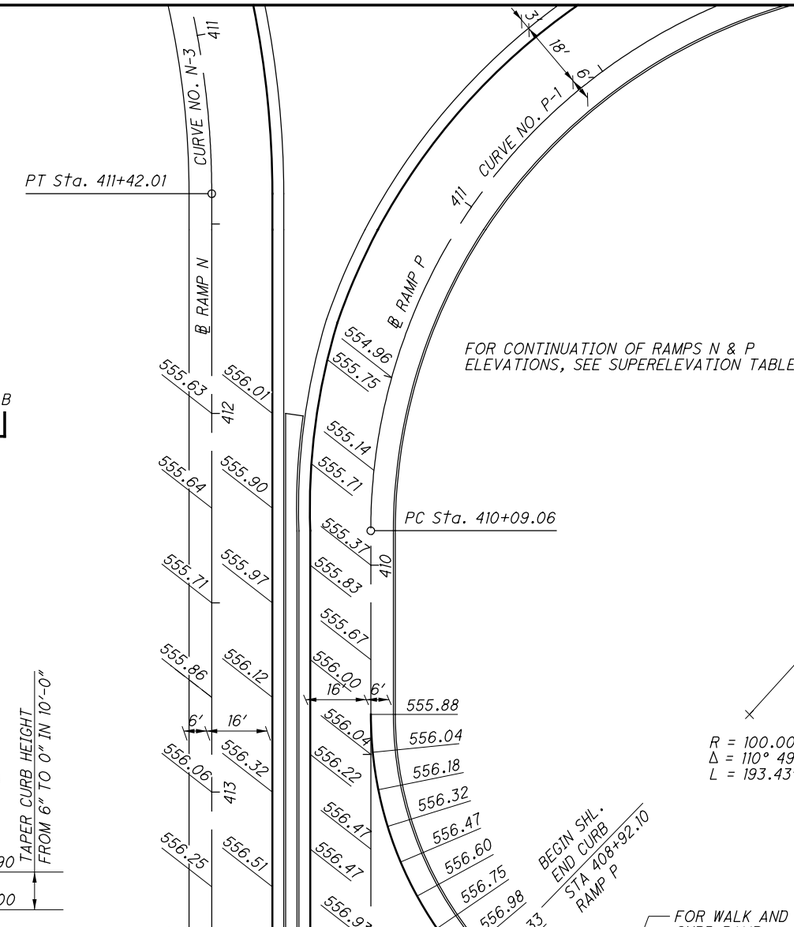


SECTION A-A

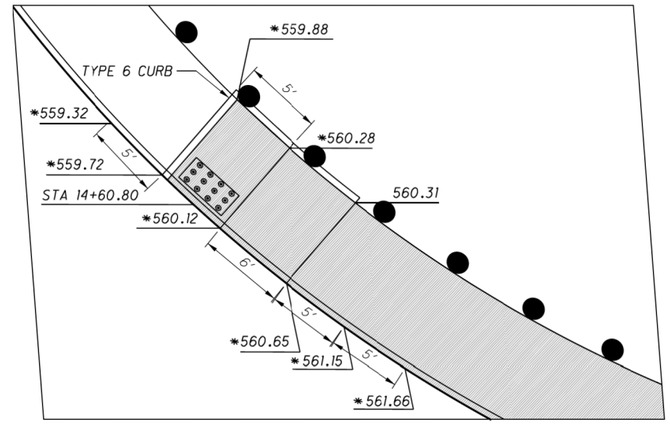


MEDIAN CURB ELEVATIONS

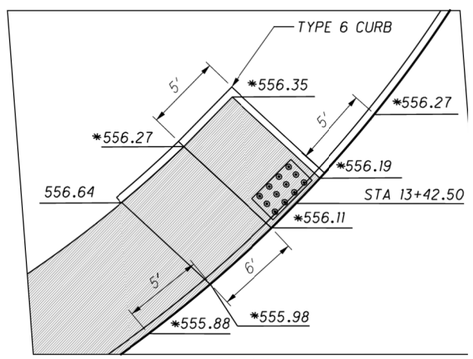
PT Sta. 411+42.01



FOR CONTINUATION OF RAMPS N & P
ELEVATIONS, SEE SUPERELEVATION TABLES.



DETAIL B



DETAIL A

CURVE A
STA. 408+75.25, 10.00′ RT, RAMP P
R = 4.00′
Δ = 136° 32′ 10″
L = 9.53′

CURVE B
STA. 408+43.68, 58.56′ RT, RAMP P
R = 4.00′
Δ = 140° 43′ 09″
L = 9.82′

CURVE C
STA. 408+26.23, 10.00′ RT, RAMP P
R = 4.00′
Δ = 110° 39′ 22″
L = 7.66′

CURVE D
STA. 408+42.05, 21.00′ LT, RAMP P
R = 5.00′
Δ = 180° 00′ 00″
L = 15.71′

⊠ TAPER CURB FROM 6″ TO 4″ IN 6′
⊛ TAPER CURB FROM 6″ TO 2″ IN 10′
* DENOTES GUTTER ELEVATION @ FACE OF CURB

HORIZONTAL SCALE IN FEET
0 10 40

CALCULATED LEH
CHECKED SNS

INTERSECTION DETAIL
I.R. 71 & KENNEDY AVE.

HAM-71-8.65

69
129

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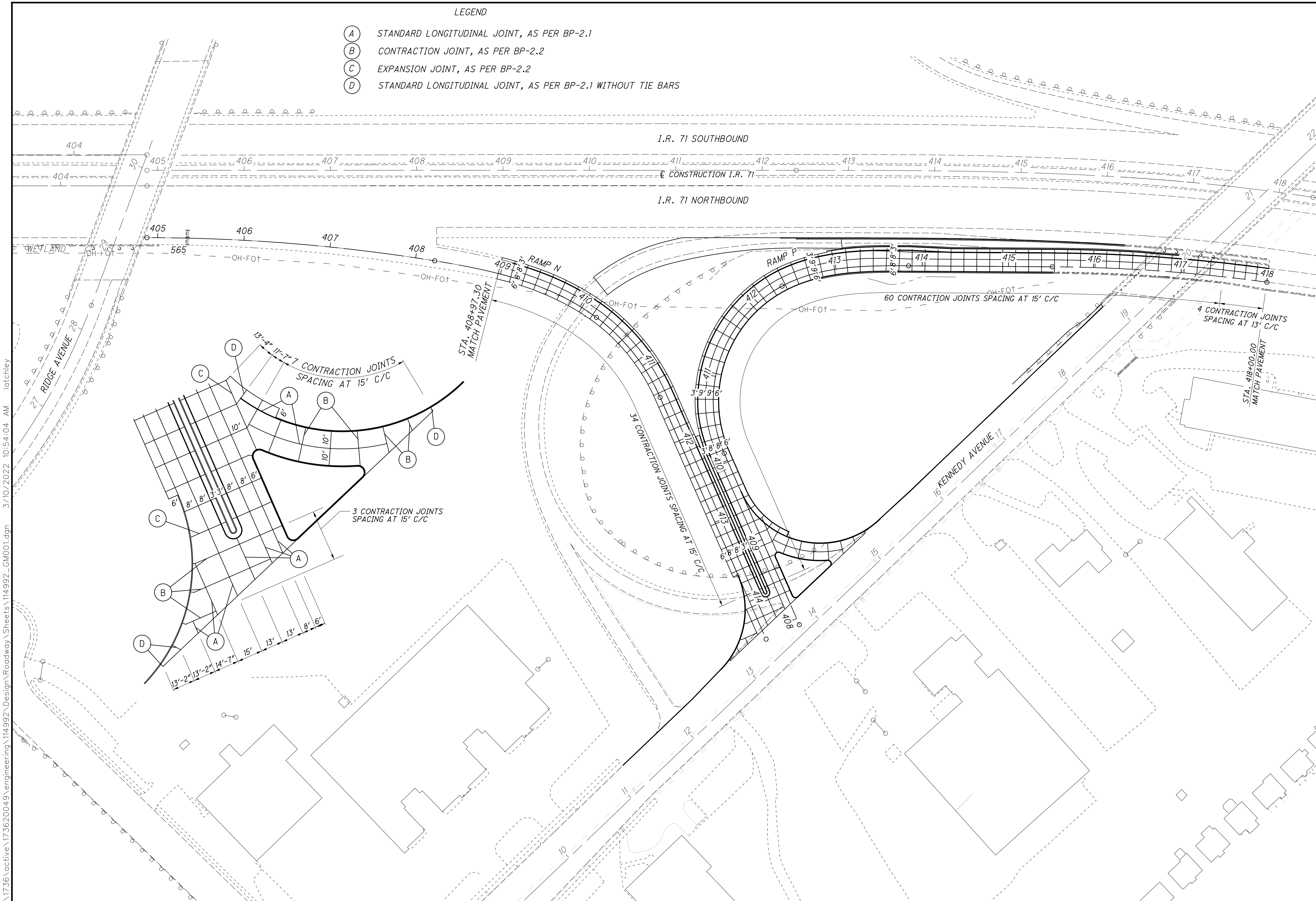

PAVEMENT JOINT DETAILS RAMPS N & P

HORIZONTAL SCALE IN FEET 0 25 50 100

CALCULATED LEH
CHECKED SNS

HAM-71-8.65

I.R. 71 SOUTHBOUND

℄ CONSTRUCTION I.R. 71

I.R. 71 NORTHBOUND

WETLAND E

WETLAND D

WETLAND DO NOT DISTURB

WETLAND B

WETLAND C

RAMP N

RAMP P

DITCH D2

YONONITE CREEK STREAM 10B

27 RIDGE AVENUE 28

16 KENNEDY AVENUE 17

OH-FO†

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED LEH
CHECKED SNS

GRADING PLAN
I.R. 71

HAM-71-8.65

71
129

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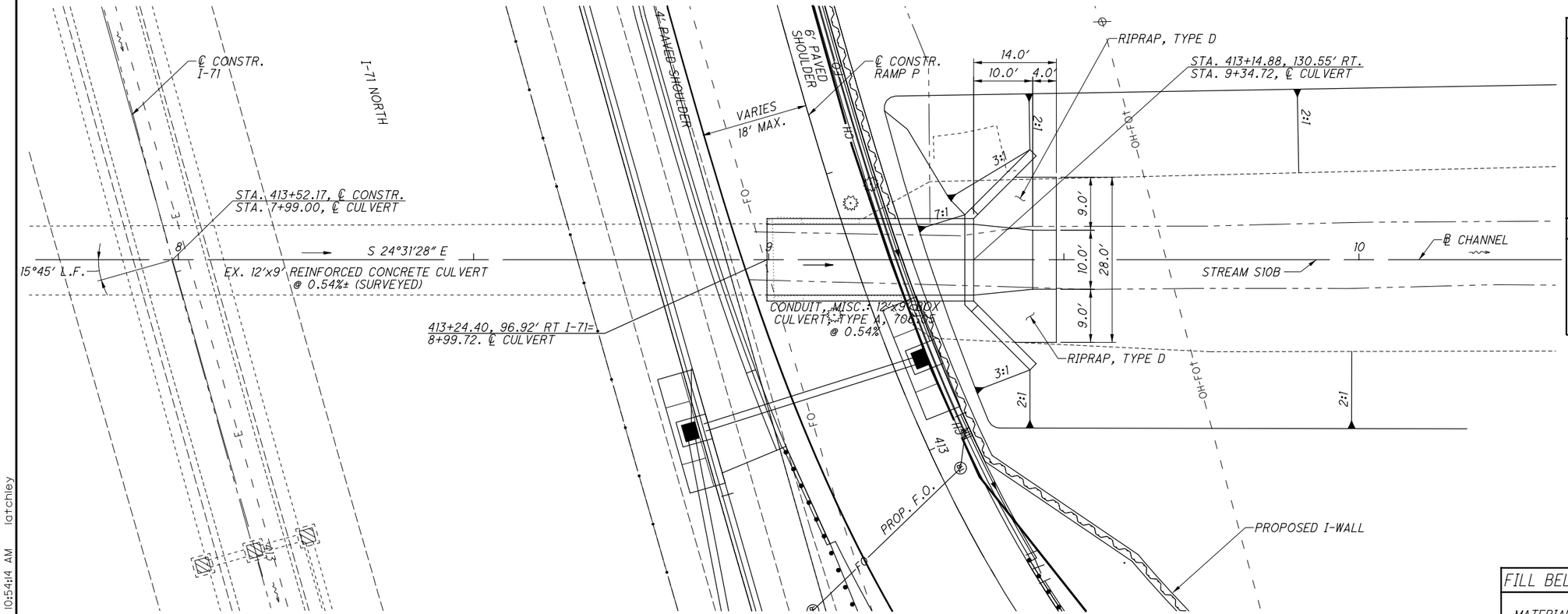


HYDRAULIC DESIGN DATA

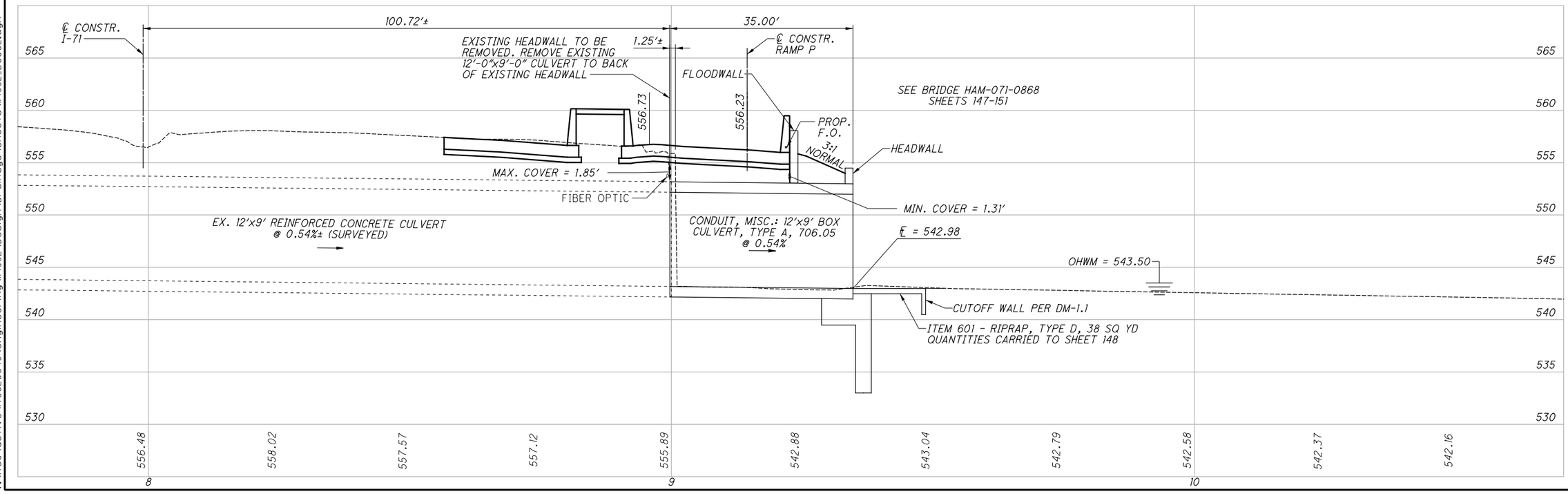
DRAINAGE AREA	= 1024 Ac.
Q_{10}	= 830 cfs
Q_{50}	= 1360 cfs
Q_{100}	= 1470 cfs
HW_{10}	= 554.2
HW_{50}	= 559.1
HW_{100}	= 560.6
V_{10}	= 3.5 fps
V_{50}	= 2.1 fps
V_{100}	= 1.71 fps

DESIGN SERVICE LIFE = 75 YRS.
pH = 7.01
ABRASION LEVEL: 1

EXISTING STRUCTURE

SFN 3115275
TYPE: 12'x9' REINFORCED CONCRETE CULVERT
SKEW: 15°45' L.F.
ALIGNMENT: TANGENT
LENGTH: 276 FT
DATE BUILT: 1966

FILL BELOW OHWM FOR STREAM S10B			
MATERIAL	LENGTH (FT)	SURFACE AREA (ACRE)	VOLUME (CY)
CONCRETE	49	0.0146	12



CALCULATED GKB
CHECKED HGH

HORIZONTAL SCALE IN FEET
0 5 10 20

CULVERT DETAIL
I-71 STA. 413+52.17

HAM-71-6.85

2 2

72
129

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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.

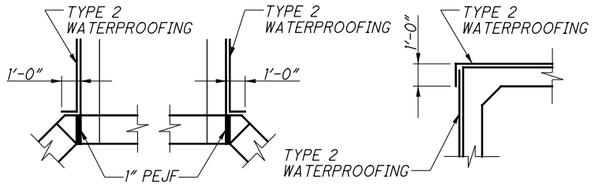
WEEPHOLES SHALL BE PLACED 6" TO 12" ABOVE THE NORMAL WATER ELEVATION OR GROUND LINE AND SHALL HAVE A MAXIMUM SPACING OF 10'-0". A MINIMUM OF ONE WEEPHOLE SHALL BE PROVIDED PER WINGWALL.

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.

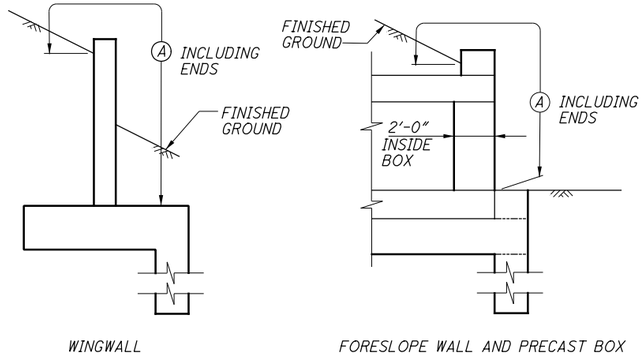
WATERPROOFING
TYPE 2 WATERPROOFING, PER CMS 512.08 AND 711.25, SHALL EXTEND VERTICALLY DOWN THE ENTIRE SIDES OF THE PRECAST CULVERT SECTIONS FOR ALL PORTIONS OF THE CULVERT WHICH SHALL BE IN CONTACT WITH THE BACKFILL. PAYMENT FOR THE MEMBRANE WATERPROOFING SHALL BE AT THE CONTRACT PRICE BID PER SQUARE 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 FLOOD WALL, WINGWALLS AND FOOTINGS AS NECESSARY TO ACCOMMODATE THE NEW STRUCTURE. SEE SHEET 72/129.

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.

DESIGN AGENCY
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DESIGNED	DRAWN	REVIEWED	DATE
AMT	MNM	DWS	7-17
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SJM	JWG	3115275	

GENERAL NOTES
BRIDGE No. HAM-071-0868
I-71 OVER TRIBUTARY OF DUCK CREEK

HAM-71-8.65
PID No. 114992

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	10001	10121	POUND	EPOXY COATED REINFORCING STEEL, AS PER PLAN	
511	46210	91	CU YD	CLASS QC1 CONCRETE, RETAINING/WINGWALL INCLUDING FOOTING	
511	46611	2	CU YD	CLASS QC1 CONCRETE, HEADWALL, AS PER PLAN	
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, AS PER PLAN	1 / 5

QUANTITIES COMPUTED BY: JBR 8/16

QUANTITIES CHECKED BY: AMT 3/17

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ESTIMATED QUANTITIES
BRIDGE No. HAM-071-0868
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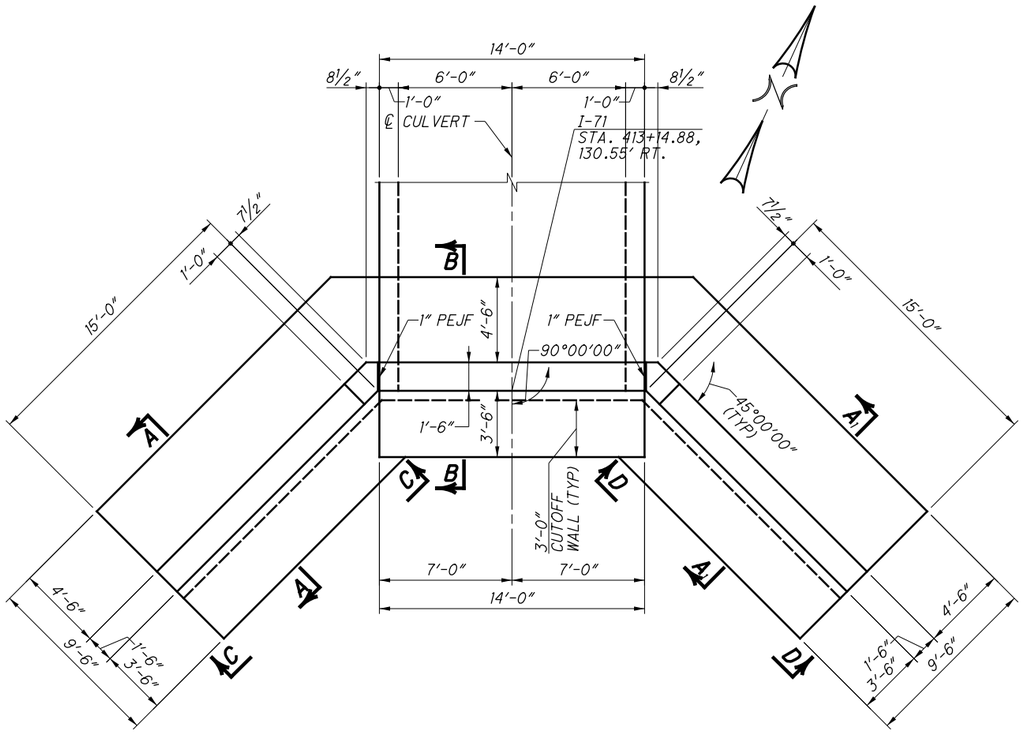
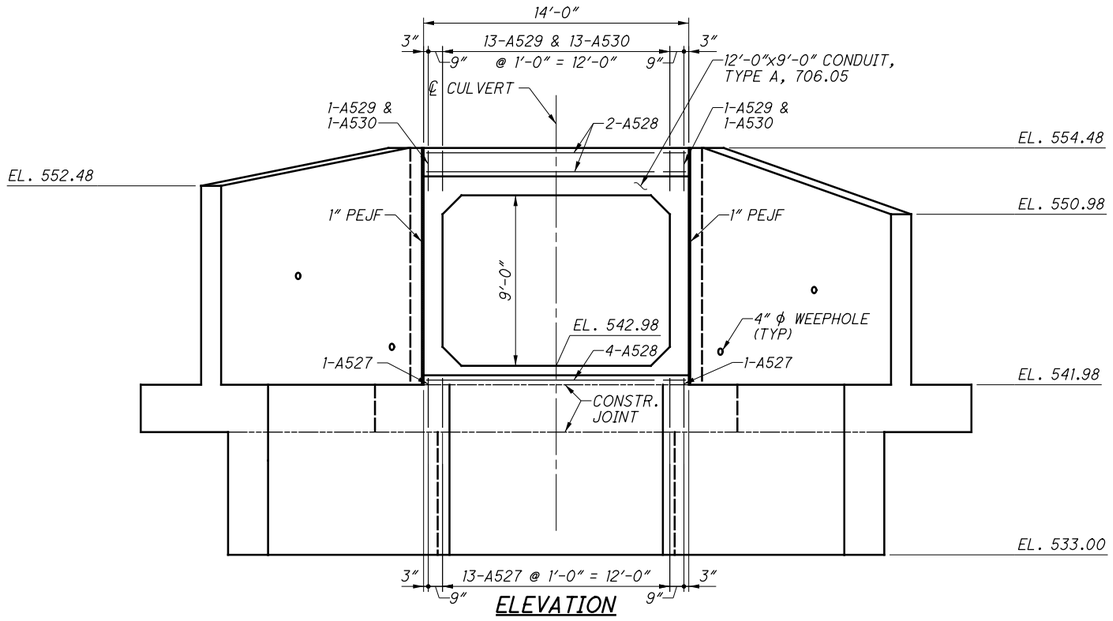
PID No. 114992

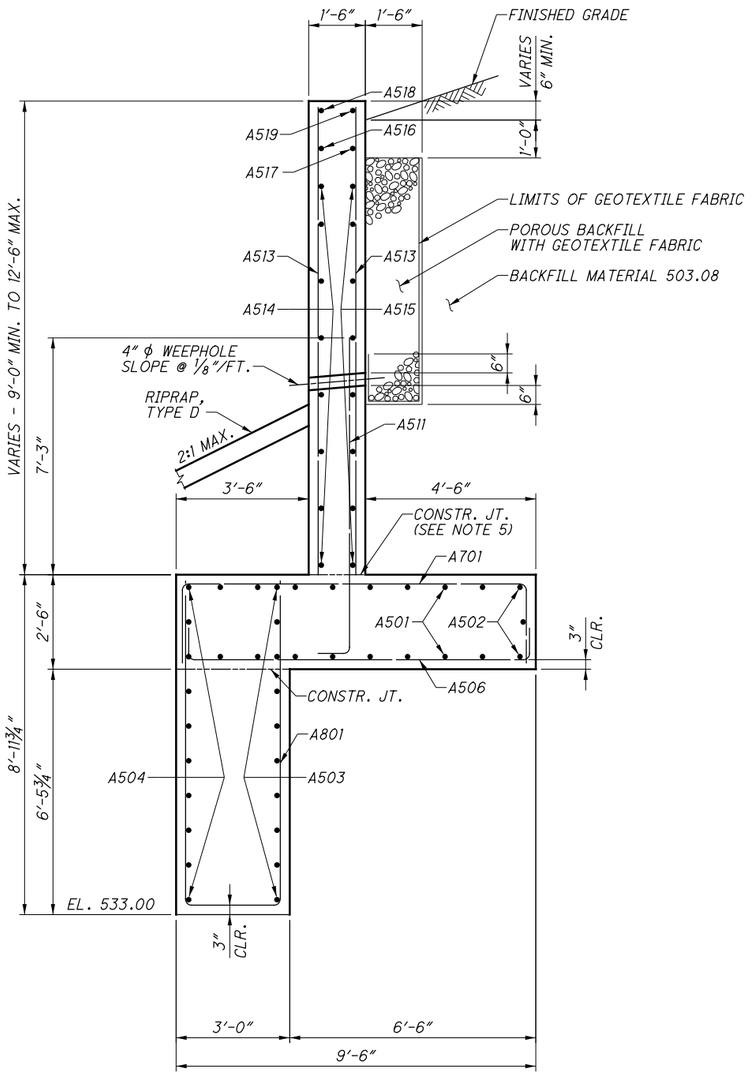


HEADWALL AND WINGWALL PLAN

FOR 6" REINFORCED CONCRETE
RIPRAP LIMITS, SEE SHEET (146/253).



ELEVATION



SECTION A-A

(SECTION A_1-A_1 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 ¼" BY MEANS OF A SERRATED TROWEL.

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CHECKED	REVISED	STRUCTURE FILE NUMBER	
SJM	JWG	3115275	

HEADWALL AND WINGWALL PLAN, ELEVATION AND SECTION DETAIL
BRIDGE No. HAM-071-0868
I-71 OVER TRIBUTARY OF DUCK CREEK

HAM-71-8.65
PID No. 114992

3 / 5

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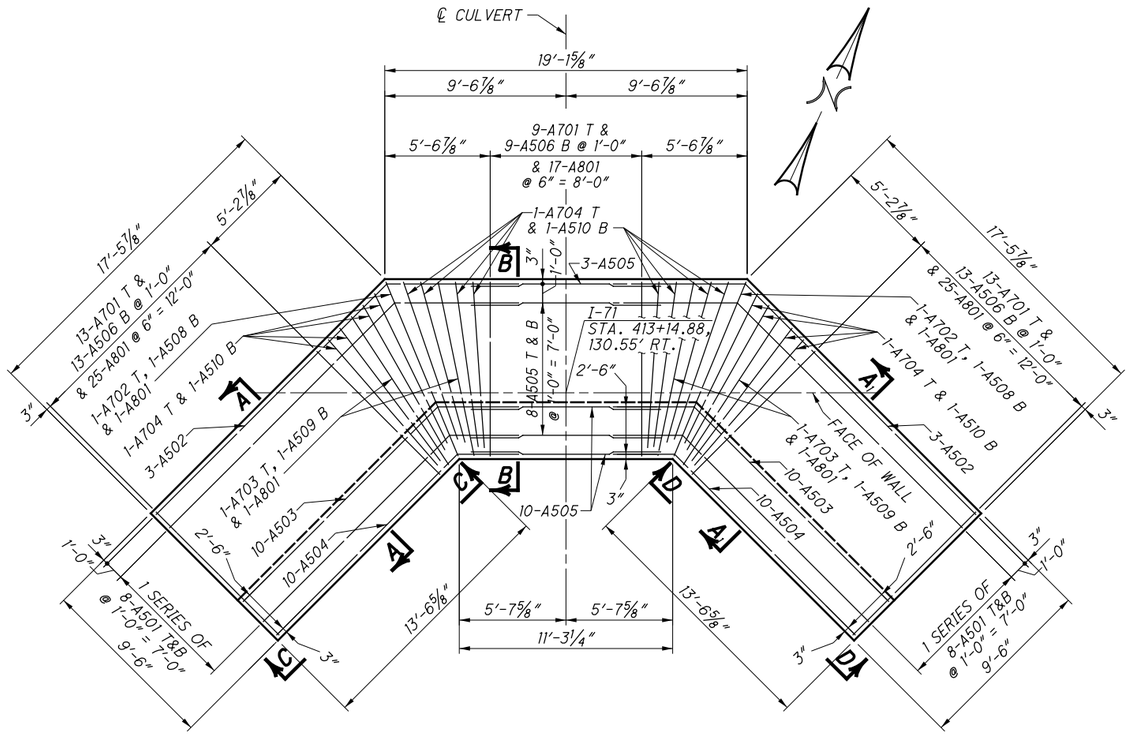
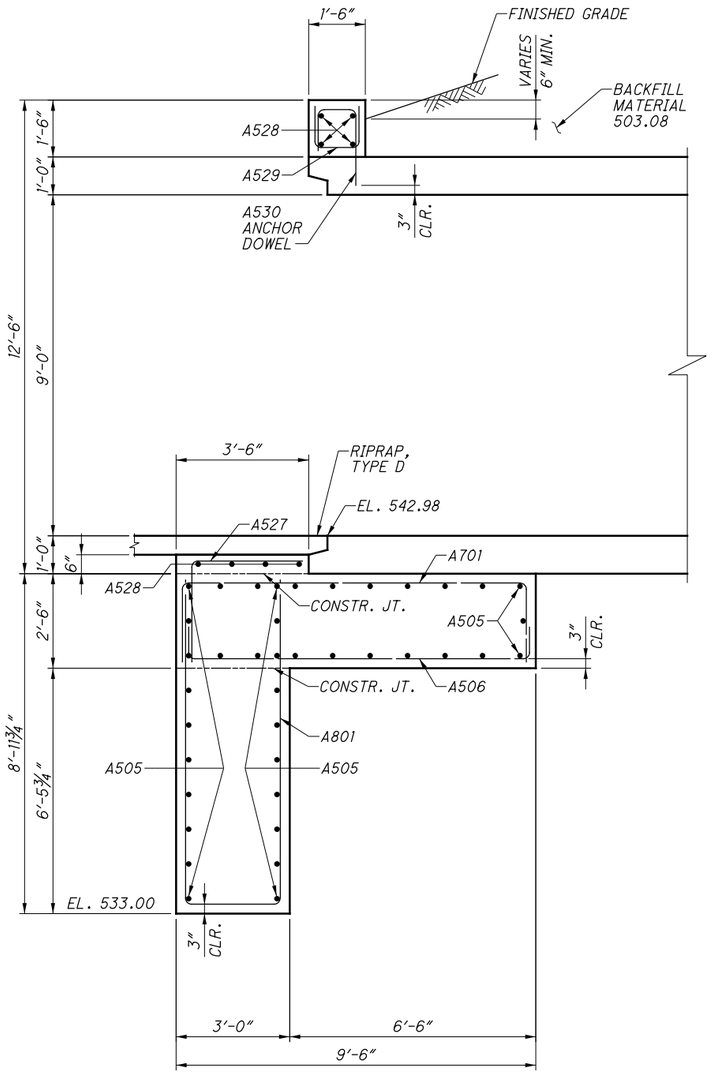
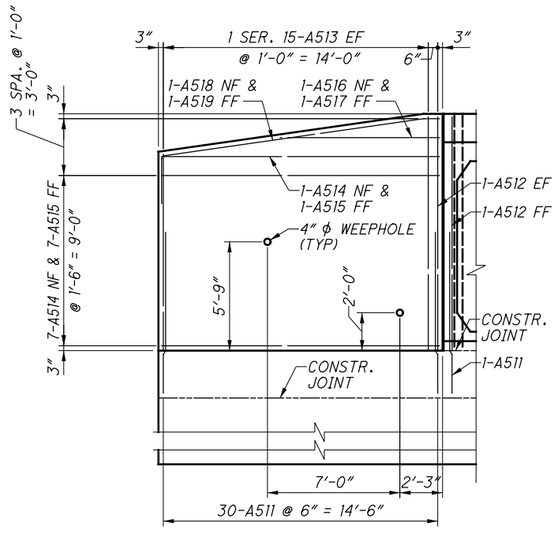


FOOTING PLAN

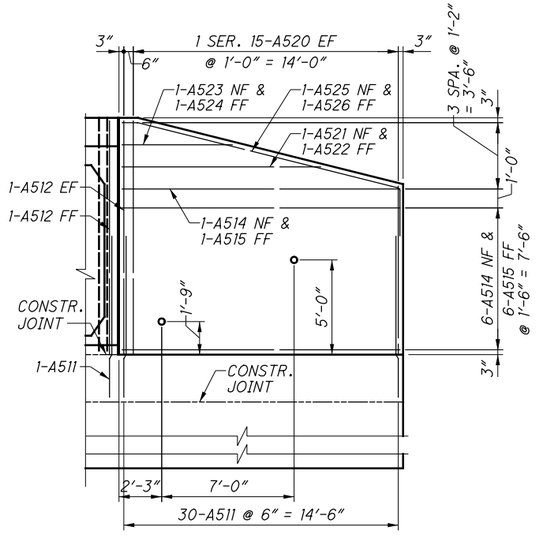
(A511, A527 & A528
NOT SHOWN FOR CLARITY)



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 A_1-A_1 , SEE SHEET 3 / 5 .
4. THE LAP LENGTH FOR #5 FOOTING BARS SHALL BE 2'-6" MINIMUM.

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AMT	MNM	DWS	7-17
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SJM	JWG	31152 75	

FOOTING PLAN, WINGWALL VIEWS AND SECTION DETAIL
BRIDGE No. HAM-071-0868
I-71 OVER TRIBUTARY OF DUCK CREEK

HAM-71-8.65
PID No. 114992

4 / 5

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129

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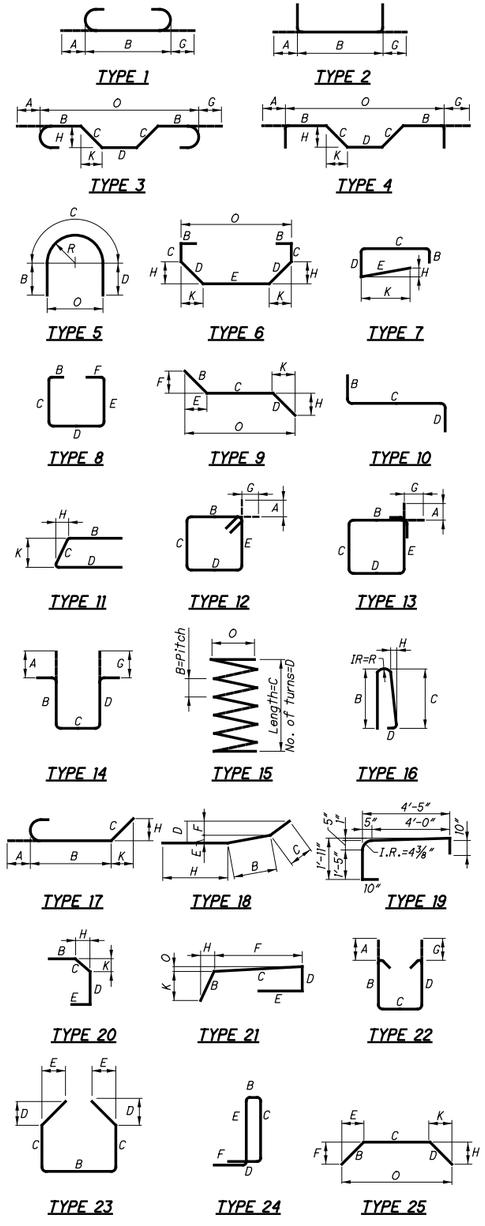
HEADWALL AND WINGWALL REINFORCING STEEL LIST

MARK	NUMBER	LENGTH	WEIGHT	TYPE	A	B	C	D	E	F	G	H	K	O	R
A501	4 SER.	VAR. 23'-4"	681	9			VAR. 16'-10"	VAR. 6'-7"				VAR. 4'-7½"	VAR. 4'-7½"		
	OF 8	TO 17'-6"					TO 13'-11"	TO 3'-8"				TO 2'-7"	TO 2'-7"		
	= 32	INCR. 10"					INCR. 5"	INCR. 5"				INCR. 3½"	INCR. 3½"		
A502	6	24'-2"	151	9			17'-3"	7'-0"				4'-11"	4'-11"		
A503	20	18'-9"	391	9			14'-6"	4'-3"				3'-0"	3'-0"		
A504	20	16'-8"	348	9			13'-6"	3'-3"				2'-3"	2'-3"		
A505	39	10'-0"	407	STR.											
A506	35	10'-5"	380	2	8½"	9'-0"					8½"				
A507		BAR MARK NOT USED													
A508	2	11'-4"	24	2	8½"	9'-11"					8½"				
A509	4	10'-9"	45	2	8½"	9'-4"					8½"				
A510	16	10'-2"	170	2	8½"	8'-9"					8½"				
A511	62	10'-2"	657	2	8½"	9'-6"									
A512	6	12'-4"	77	STR.											
A513	2 SER.	VAR. 12'-4"	355	STR.											
	OF 15	TO 10'-4"													
	= 30	INCR. 1¾"													
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"	4¼"	2'-5¾"		1¼"	8⅜"	14'-11⅛"	
A519	1	17'-7"	18	25		2'-6"	13'-10"	1'-4"	4¼"	2'-5¾"		2¼"	1'-3⅜"	15'-6⅛"	
A520	2 SER.	VAR. 12'-4"	331	STR.											
	OF 15	TO 8'-10"													
	= 30	INCR. 3"													
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"	7¼"	2'-5⅛"		2⅛"	8¾"	15'-5"	
A526	1	17'-10"	19	25		2'-6"	14'-1"	1'-4"	7¼"	2'-5⅛"		3⅞"	1'-3½"	15'-11¾"	
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"						
A801	73	19'-1"	3720	8			8'-5"	2'-8"	8'-5"						
		TOTAL =	10121												

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
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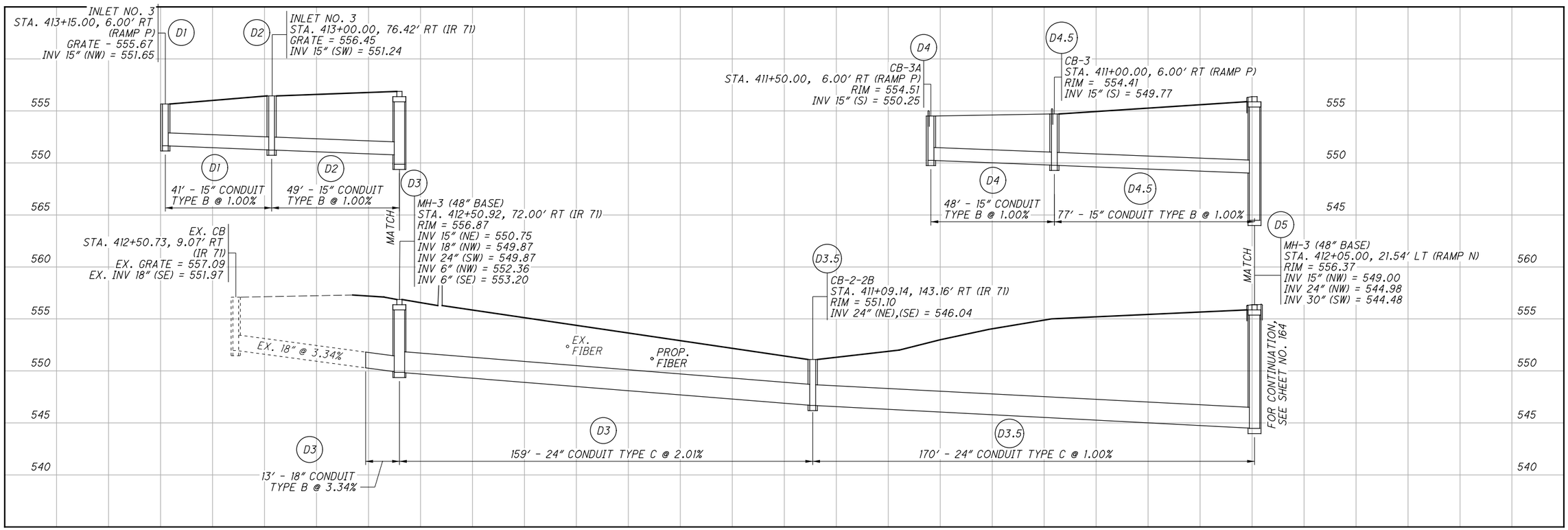
DESIGNED MSD | DRAWN MNM | CHECKED AMT | REVIEWED DWS | DATE 7-17 | REVISED JWG | STRUCTURE FILE NUMBER 31152775

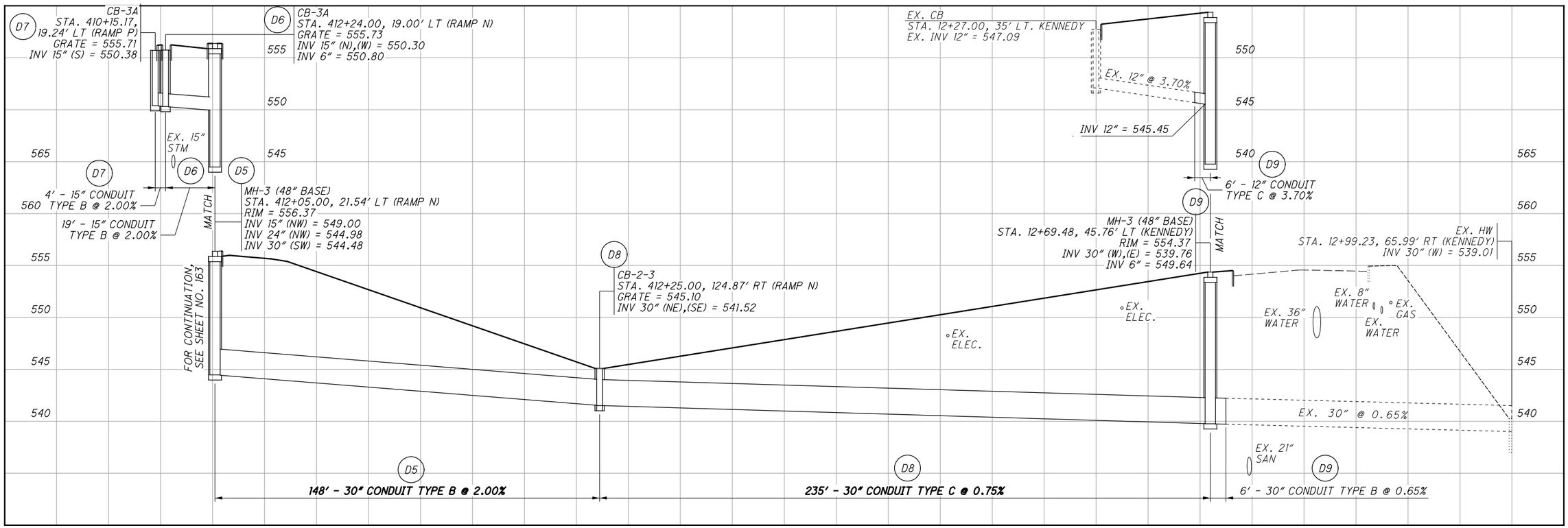
REINFORCING STEEL LIST
BRIDGE No. HAM-071-0868
I-71 OVER TRIBUTARY OF DUCK CREEK

HAM-71-8.65
PID No. 114992

5 / 5

77
129





CALCULATED PJD
CHECKED LEH

STORM PROFILES

HAM-71-8.65

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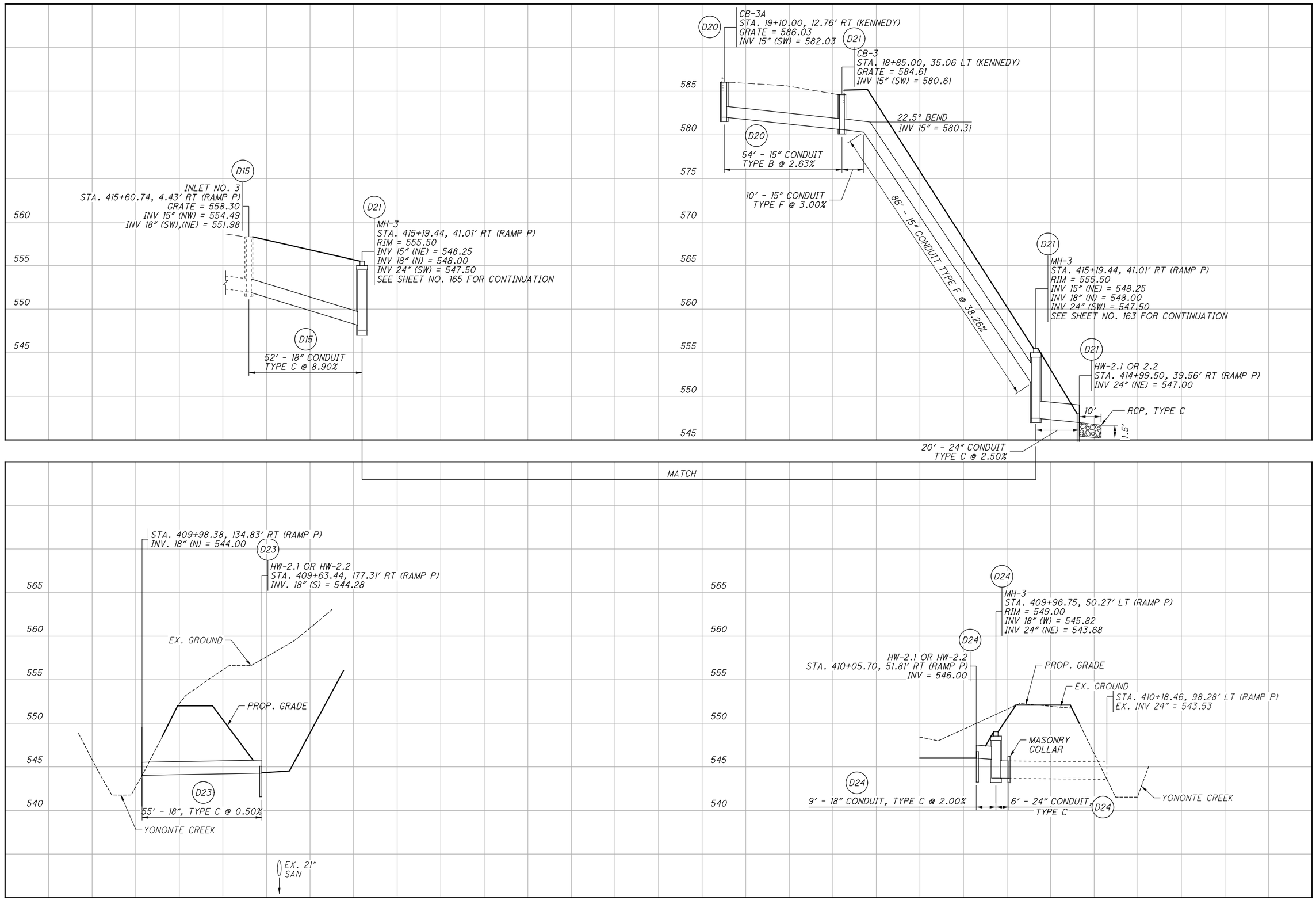

CALCULATED PJD
CHECKED LEH

STORM PROFILES

HAM-71-8.65

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ITEM 625E25740: CONDUIT, MULTICELL, 4", 725.20 & ITEM 625E25740: CONDUIT, MULTICELL, 4", 725.20, JACKED OR DRILLED

DESCRIPTION

THIS CONDUIT IS INTENDED FOR THE USE UNDERGROUND OR ENCASED INSIDE CONCRETE BARRIER WALL SITUATIONS REQUIRING MORE THAN ONE SINGLE CONDUIT. THIS INCLUDES THE MAIN CONDUIT RACEWAY ALONG THE FREEWAY, CONNECTION FROM PULL BOXES TO THE ROADSIDE 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 RAMPMETER 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 CONDUIT SHALL ADHERE TO 725.20 AND BE POLYVINYL CHLORIDE (PVC) SCHEDULE 40 OR 80, HIGH DENSITY POLYETHYLENE (HDPE), OR APPROVED EQUIVALENT. THE INNERDUCTS SHALL BE A MINIMUM OF 1.10 INCH INSIDE DIAMETER. THE OUTER DUCT SHALL BE NOMINAL 4 INCH INSIDE DIAMETER AND MAXIMUM OUTSIDE DIAMETER OF 4.8 INCH.

WHERE COUPLINGS ARE NEEDED, THE COUPLING SHALL BE DESIGNED IN A MANNER TO PERMIT EASY FIELD ASSEMBLY. THE COUPLING SHALL BE MARKED OR KEYED 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 *-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. FOR MULTI-CELL DUCT INSTALLED IN MEDIAN WALLS, ALL ROPES AND PLUGS SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT.

INSTALLATION

FOR PVC CONDUITS, INSTALLATION WILL BE IN 30-INCH DEEP TRENCH, EXCEPT AS NOTED ON THE PLANS. PVC CONDUITS SHALL NOT BE INSTALLED INSIDE CONCRETE BARRIER WALL. ALL PVC MULTI-CELL CONDUIT INSTALLED OUTSIDE OF THE ROADWAY IN TRENCH SHALL BE SCHEDULE 40 UNLESS DIRECTED BY THE PROJECT ENGINEER.

FOR INSTALLATIONS UNDER ROADWAYS, 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. ALL PVC MULTI-CELL CONDUIT INSTALLED UNDER THE ROADWAY SHALL BE SCHEDULE 80.

ITEM 625E25740: CONDUIT, MULTICELL, 4", 725.20 & ITEM 625E25740: CONDUIT, MULTICELL, 4", 725.20, JACKED OR DRILLED (CONTINUED)

FOR HDPE CONDUITS, INSTALLATION WILL BE IN 30-INCH DEEP TRENCH, DRILLED OR PLOWED TO A MINIMUM OF 30? DEEP, ENCASED INSIDE CONCRETE BARRIER WALL, OR AS NOTED ON THE PLANS. THE HDPE CONDUIT SHALL BE INSTALLED IN CONTINUOUS LENGTHS WITHOUT JOINTS OR COUPLINGS BETWEEN PULL BOXES OR JUNCTION BOXES.

INSTALLATION WITHIN 6 FEET OF GUARDRAIL WILL BE AT LEAST 30 INCHES DEEP TRENCH AND ENCASED IN CONCRETE.

WHEN ENTERING A PULL BOX, CONDUIT SHALL BE BROUGHT IN 3 INCHES MINIMUM AND A MAXIMUM OF 6 INCHES FROM THE EDGE OF THE PULL BOX WALL KNOCKOUT.

METHOD OF MEASUREMENT

THE CONDUIT WILL BE MEASURED BY THE AMOUNT OF CONDUIT IN FEET FURNISHED AND INSTALLED OF EACH TYPE SCHEDULE 40 OR 80 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.

BASIS OF PAYMENT

THE PAYMENT FOR THESE ITEMS WILL BE MADE FOR THE ACCEPTED LINER 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

THE CONTRACTOR SHALL FURNISH AND INSTALL THIS ITEM ACCORDING TO ODOT SUPPLEMENTAL SPECIFICATIONS 804/904.

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 MARKER

THE CONTRACTOR SHALL FURNISH AND INSTALL THIS ITEM ACCORDING TO ODOT SUPPLEMENTAL SPECIFICATIONS 804/904.

ITEM 630 REMOVAL OF WOOD POLE

EQUIPMENT TO BE REMOVED INCLUDES THE WOOD POLE, EQUIPMENT ENCLOSURES, ASSOCIATED CONDUITS, WIRING, CABLING, AND OTHER APPURTENANCES. BACKFILL THE RESULTANT DEPRESSION AND RESTORE THE DISTURBED AREA.

THE LOCATIONS OF WOOD POLES IDENTIFIED ON THE ITS PLAN SHEETS ARE FOR QUANTITY CALCULATIONS ONLY, EXACT LOCATIONS OF POLES ARE UNKNOWN

CALCULATED PJD
CHECKED SNS

INTELLIGENT TRANSPORTATION SYSTEMS NOTES

HAM-71-8.65

REFERENCE NO.	SHEET NO.	SIDE	ROADWAY	STATION FROM	STATION TO	625 BARRIER JUNCTION BOX, AS PER PLAN EACH	625 PULL BOX, 725.08, 32", AS PER PLAN EACH	625 CONDUIT, 4", MULTICELL, 725.20, EPC-40 FOOT	625 CONDUIT CLEANED AND CABLES REMOVED FOOT	625 TRENCH FOOT	625 UNDERGROUND WARNING/MARKING TAPE FOOT	625 PULL BOX CLEANED EACH	625 PULL BOX REMOVED EACH	630 REMOVAL OF WOOD POLE AND DISPOSAL EACH	804 FIBER OPTIC CABLE, 24 FIBER FOOT	804 FIBER TERMINATION PANEL, 24 FIBER EACH	804 SPLICE ENCLOSURE, IN-LINE EACH
1	85	LT	I.R. 71 SB	381+22.04												1	
2	85	LT	I.R. 71 SB	381+22.04	381+28.14				10						10		
3	85	LT	I.R. 71 SB	381+28.14								1					1
4	85	LT/RT	I.R. 71 SB	381+28.14	381+24.40				85						85		
5	85	RT	I.R. 71 SB	381+24.40								1					
6	85	RT/LT	I.R. 71 SB/NB	381+24.40	381+75.44				305						305		
7	85	RT	I.R. 71 NB	381+75.44								1					1
8	85	RT	I.R. 71 NB	381+75.44	382+68.09				95						95		
1	86	RT	I.R. 71 NB	382+68.09	385+54.52				290						290		
2	86	RT	I.R. 71 NB	385+54.52								1					
3	86	RT	I.R. 71 NB	385+54.52	385+64.88				42						42		
4	86	RT	I.R. 71 NB	385+64.88								1					
5	86	RT	I.R. 71 NB	385+64.88	387+74.22				210						210		
1	87	RT	I.R. 71 NB	387+74.22	392+50.59				485						485		
2	87	RT	I.R. 71 NB	392+50.59								1					
3	87	RT	I.R. 71 NB	392+50.59	392+95.93				48						48		
1	88	RT	I.R. 71 NB	392+95.93	397+48.73				467						467		
2	88	RT	I.R. 71 NB	397+48.73								1					
3	88	RT	I.R. 71 NB	397+48.73	397+59.22				11						11		
1	89	RT	I.R. 71 NB	397+59.22	399+75.00				224						224		
2	89	RT	I.R. 71 NB	399+75.00								1					
3	89	RT	I.R. 71 NB	399+75.00	401+75.00				202						202		
4	89	RT	I.R. 71 NB	401+75.00								1					1
5				NOT USED													
6	89	RT	I.R. 71 NB	401+75.00	403+00.00				125						125		
7				NOT USED													
8				NOT USED													
9				NOT USED													
1	90	RT	I.R. 71/RAMP N	403+00.00	408+00.00			275	135	275	275				410		
2	90	RT	I.R. 71	405+24.66									1	2			
1	91	RT	RAMP N	408+00.00	409+50.00			146		146	146				146		
2	91	RT	RAMP N	409+50.00			1										
3	91	RT	RAMP N/I.R. 71	409+50.00	409+50.00			66		66	66				66		
4	91	RT	I.R. 71	409+50.00			1										
5	91	RT	I.R. 71	409+50.00	412+65.00			315		315	315				315		
6	91	RT	I.R. 71	412+65.00			1										
7	91	RT	I.R. 71/RAMP P	412+65.00	412+85.00			44		44	44				44		
8	91	RT	RAMP P	412+85.00			1										
9	91	RT	RAMP P	412+85.00	413+00.00			16		16	16				16		
10	91	RT	RAMP P	413+00.00		1											
11	91	RT	I.R. 71	410+53.11										1			
12	91	RT	I.R. 71	410+88.00	410+95.00								2				
1	92	RT	RAMP P	413+00.00	418+00.00										497		
2	92	RT	RAMP P	413+64.53	415+60.82								1	2			
1	93	RT	I.R. 71	418+00.00	422+85.00										458		
2	93	RT	I.R. 71	422+85.00													1
3	93	RT	I.R. 71	422+85.00	423.00.00										15		
4	93	RT/LT	I.R. 71	422+85.00	422+90.00				376			1			376		
5				NOT USED													
6	93	LT	I.R. 71	420+78.00	422+90.00							1					1
TOTALS CARRIED TO SHEET NO. 82						1	4	862	3110	862	862	11	4	5	4942	1	5

CALCULATED PJD
CHECKED SNS

INTELLIGENT TRANSPORTATION SYSTEMS QUANTITIES

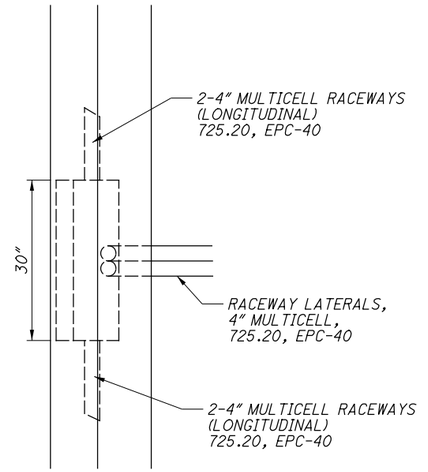
HAM-71-6.85

REFERENCE NO.	SHEET NO.	SIDE	ROADWAY	STATION FROM	STATION TO	625 BARRIER JUNCTION BOX, AS PER PLAN EACH	625 PULL BOX, T25.08, 32", AS PER PLAN EACH	625 CONDUIT, 4", MULTICELL, T25.20, EPC-40 FOOT	625 CONDUIT CLEANED AND CABLES REMOVED FOOT	625 TRENCH FOOT	625 UNDERGROUND WARNING/MARKING TAPE FOOT	625 PULL BOX CLEANED EACH	625 PULL BOX REMOVED EACH	630 REMOVAL OF WOOD POLE AND DISPOSAL EACH	804 FIBER OPTIC CABLE, 24 FIBER FOOT	804 FIBER TERMINATION PANEL, 24 FIBER EACH	804 SPLICE ENCLOSURE, IN-LINE EACH
1	94	RT	I.R. 71	423+00.00	428+00.00										477		
2				NOT USED													
3				NOT USED													
1	95	RT	I.R. 71	428+00.00	431+00.00										295		
2				NOT USED													
3	95	RT	I.R. 71	431+00.00	433+00.00										200		
1	96	RT	I.R. 71	433+00.00	439+00.00										518		
1	97	RT	I.R. 71	439+00.00	440+50.00										150		
2				NOT USED													
3	97	RT	I.R. 71	440+50.00					10						10		
4	97	RT	I.R. 71	440+50.00								1					
5	97	RT	I.R. 71	440+50.00	444+00.00				350						350		
6				NOT USED													
1	98	RT	I.R. 71	444+00.00	445+45.00				145						145		
2	98	RT	I.R. 71	445+45.00								1					1
3	98	RT	I.R. 71	445+45.00	449+00.00				355						355		
4	98	RT	I.R. 71	445+45.00	445+52.00				348			1			348		
5	98	RT	I.R. 71	445+52.00												1	
1	99	RT	I.R. 71	449+00.00	453+00.00				400						400		
2	99	RT	I.R. 71	453+00.00								1					
3	99	RT	I.R. 71	453+00.00	454+00.00				100						100		
4				NOT USED													
1	100	RT	I.R. 71	454+00.00	458+00.00				400						400		
2	100	RT	I.R. 71	458+00.00								1					
3	100	RT	I.R. 71	458+00.00	459+00.00				100						100		
1	101	RT	I.R. 71	459+00.00	463+50.00				456						456		
2	101	RT	I.R. 71	463+50.00								1					
3	101	RT	I.R. 71	463+50.00	464+00.00				52						52		
4				NOT USED													
1	102	RT	I.R. 71	464+00.00	467+06.00				319						319		
2	102	RT	I.R. 71	467+06.00								1					
3	102	RT	I.R. 71	467+06.00	469+00.00				204						204		
1	103	RT	I.R. 71	469+00.00	470+48.00				157						157		
2	103	RT	I.R. 71	470+48.00								1					
3	103	RT	I.R. 71	470+48.00	470+54.00				35						35		
4	103	RT	I.R. 71	470+54.00								1					
5	103	RT	I.R. 71	470+54.00	474+00.00				359						359		
1	104	RT	I.R. 71	474+00.00	475+59.00				165						165		
2	104	RT	I.R. 71	475+59.00								1					1
3	104	RT	I.R. 71	475+59.00	478+54.00				307						307		
4	104	RT	I.R. 71	478+54.00								1					1
5	104	RT	I.R. 71	478+54.00	478+60.00				10						10		
6	104	RT	I.R. 71	478+60.00												1	
7				NOT USED													
8				NOT USED													
9				NOT USED													
TOTAL SHEET NO. 81						1	4	862	3110	862	862	11	4	5	4942	1	5
TOTAL THIS SHEET						0	0	0	4272	0	0	11	0	0	5912	2	3
SUBTOTAL						1	4	862	7382	862	862	22	4	5	10854	3	8
TOTALS CARRIED TO GENERAL SUMMARY						1	4	862	7382	862	862	22	4	5	10854	3	8

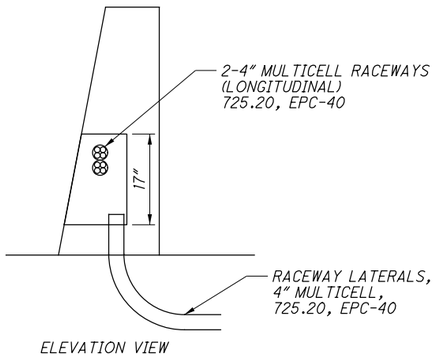
CALCULATED PJD
CHECKED SNS

INTELLIGENT TRANSPORTATION SYSTEMS QUANTITIES

HAM-71-8.65

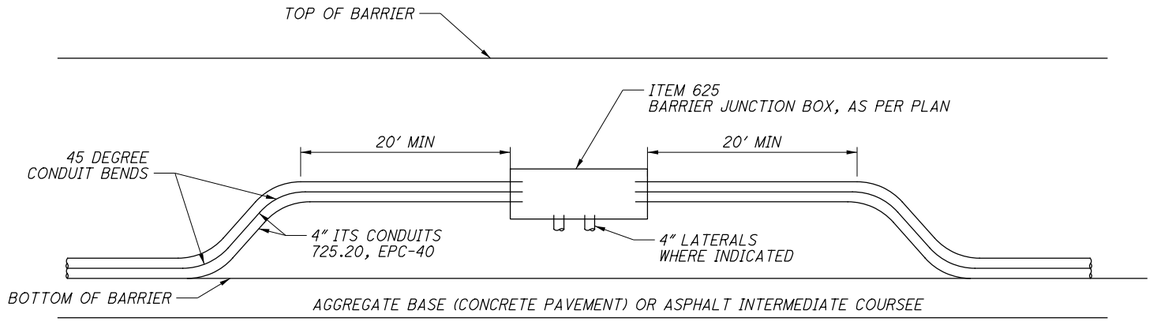


PLAN VIEW

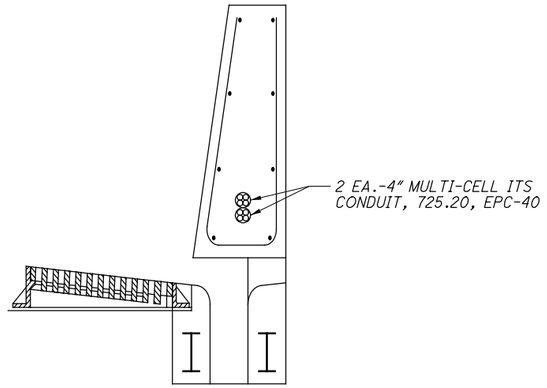


ELEVATION VIEW

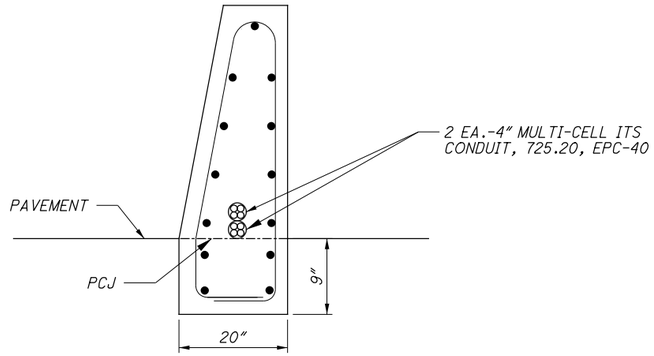
BARRIER JUNCTION BOX, AS PER PLAN, AND CONDUIT



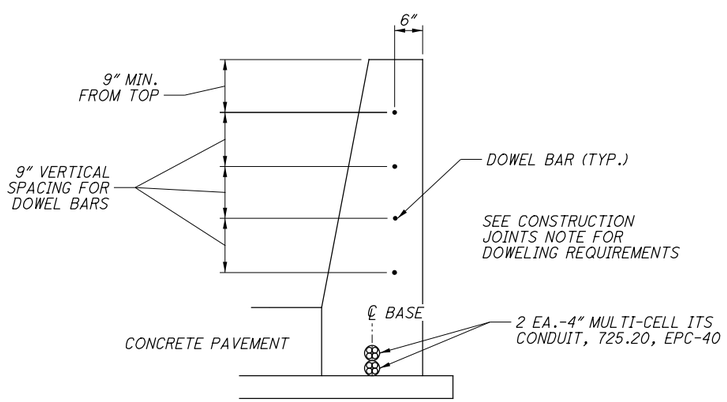
CONDUIT TRANSITION TO BARRIER JUCTION BOX

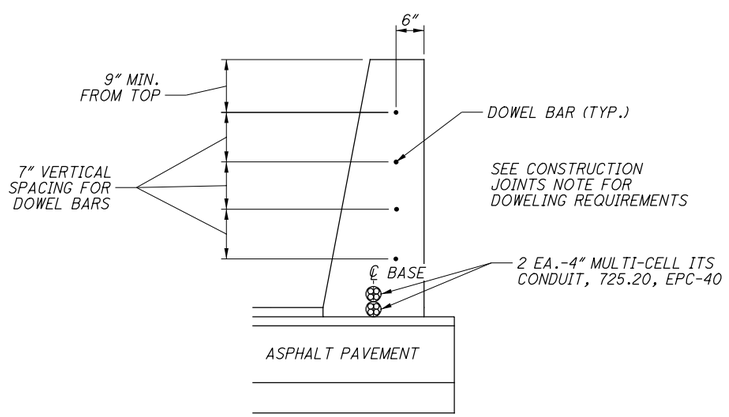


RACEWAY PLACEMENT IN INLETS



RACEWAY PLACEMENT IN END ANCHORAGE





RACEWAY AND DOWEL BAR PLACEMENT

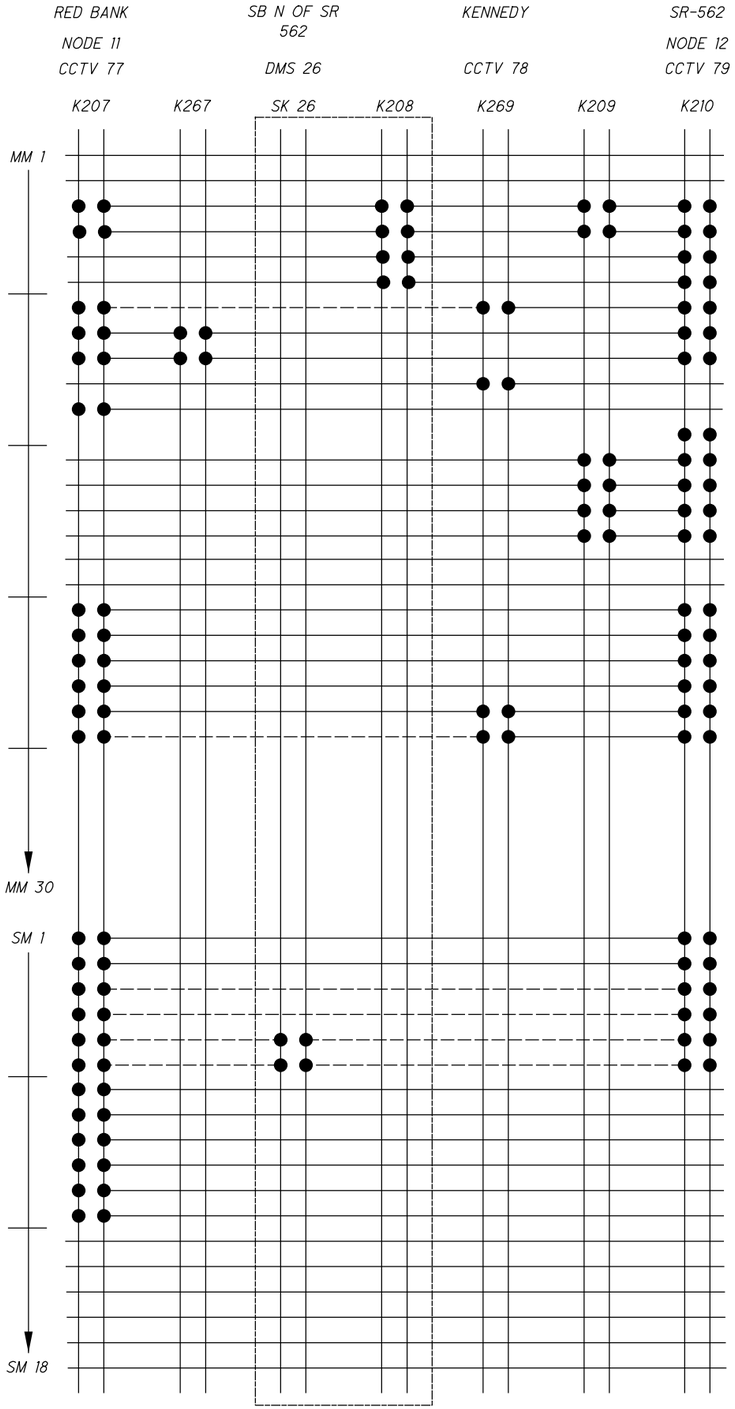
CONSTRUCTION JOINTS: BARRIER RUNS WITH ABUTTING VERTICAL SURFACES AT EITHER REQUIRED OR PERMISSIBLE CONSTRUCTION JOINTS ARE TO BE DOWELED TO EACH OTHER BY USE OF ¾" DIA. BY 18" LONG EPOXY COATED DEFORMED DOWEL BARS AS PER CMS 622.02. BARS ARE TO BE PLACED AS SHOWN ON THE RACEWAY AND DOWEL BAR PLACEMENT 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 ALUMINUMCCLAD 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.

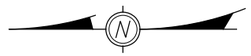
CALCULATED PJD
CHECKED SNS

BARRIER JUNCTION BOX AND CONDUIT DETAILS

HAM-71-8.65

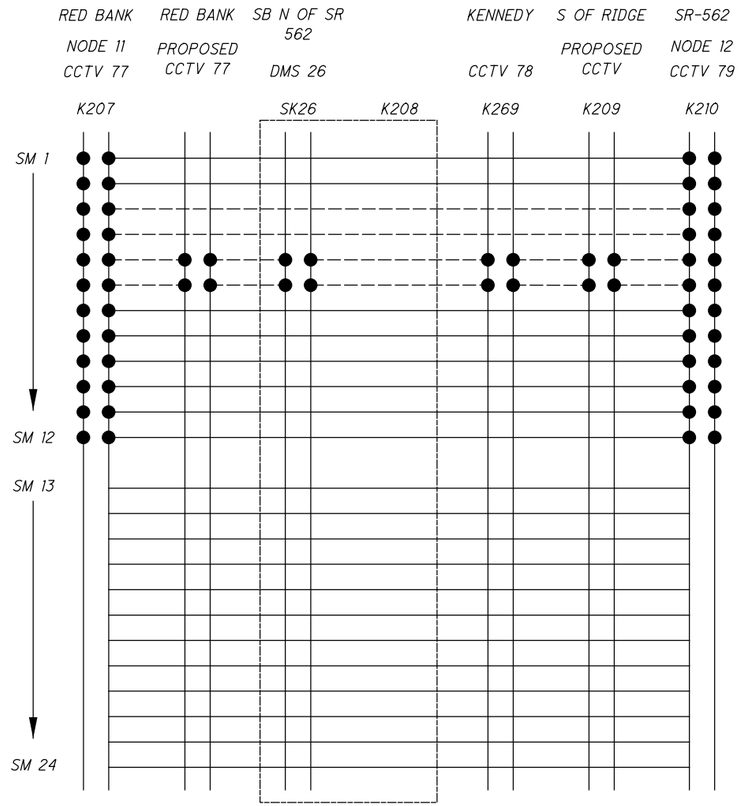


EXISTING FIBER SCHEMATIC



LEGEND

- TERMINATION
- ACTIVE
- DARK
- SPLICED THROUGH
- PATCHED THROUGH
- TERMINATION MISSING



PROPOSED FIBER SCHEMATIC

CALCULATED PJD
CHECKED SNS

FIBER TERMINATION DETAILS

HAM-71-8.65

BEGIN PROPOSED
FIBER OPTIC CABLE
EXISTING ITS CABINET
24 FIBER TERMINATION PANEL

EX ITS PULL BOX

EX IP CCTV

MATCHLINE 384+00 I.R. 71 SB

℄ CONSTRUCTION I.R. 71 SB

383

382

381

380

SLACK INSTALLATION, 150'

EX ITS PULL BOX

PROPOSED FIBER OPTIC CABLE,
24 FIBER, IN EXISTING CONDUIT

℄ CONSTRUCTION I.R. 71 NB

382
N 75° 33' 57" E

381

380

SLACK INSTALLATION, 150'

EX ITS PULL BOX

EX SFRD

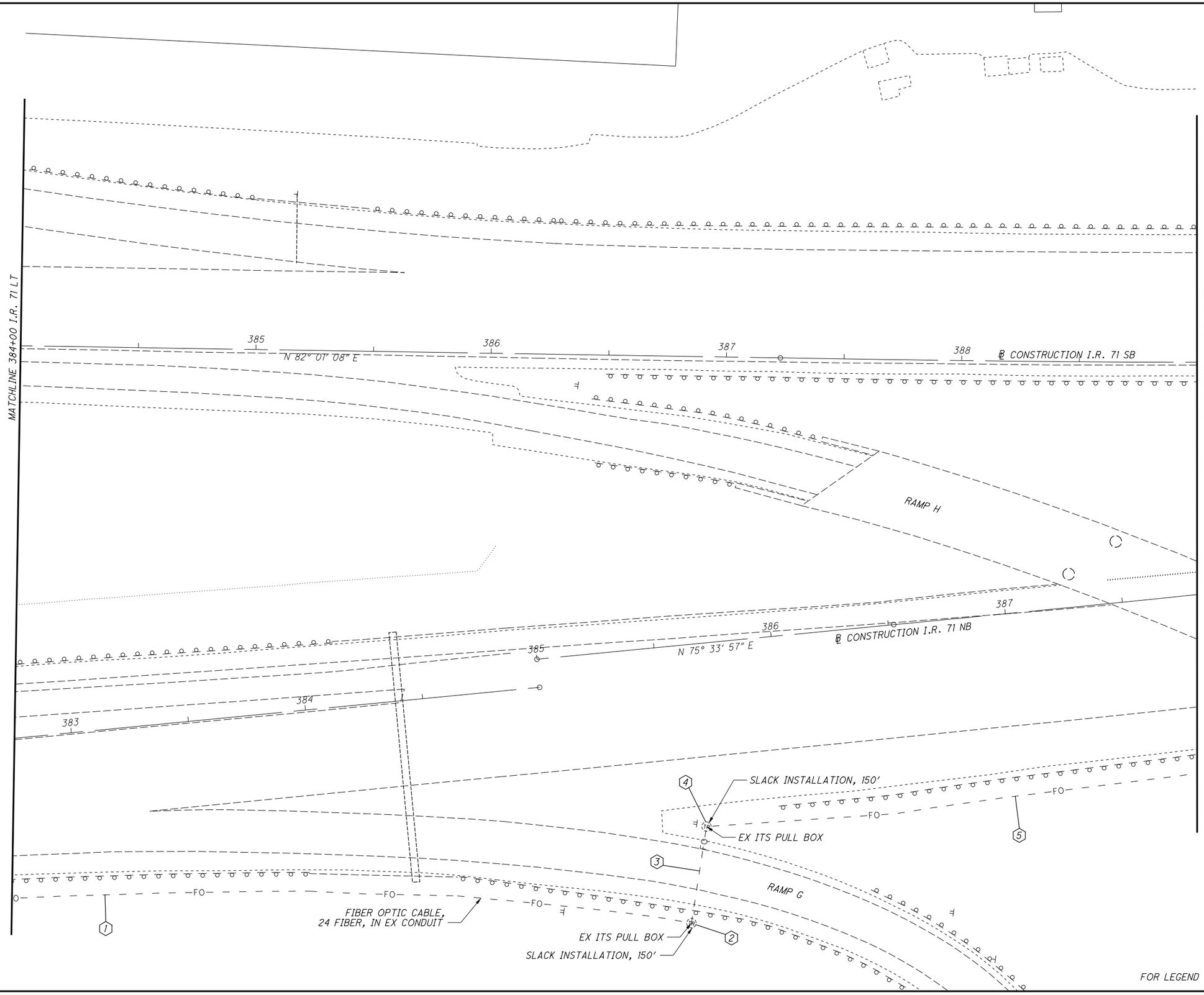
FOR LEGEND SEE SHEET NO. 89

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED PJD
CHECKED SNS

ITS PLAN I.R. 71
BEGIN TO STA 384+00.00 SB

HAM-71-8.65



FOR LEGEND SEE SHEET NO. 89

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED PJD
CHECKED SNS

ITS PLAN I.R. 71
STA. 384+00.00 SB TO STA 389+00.00 SB

HAM-71-8.65

86
129

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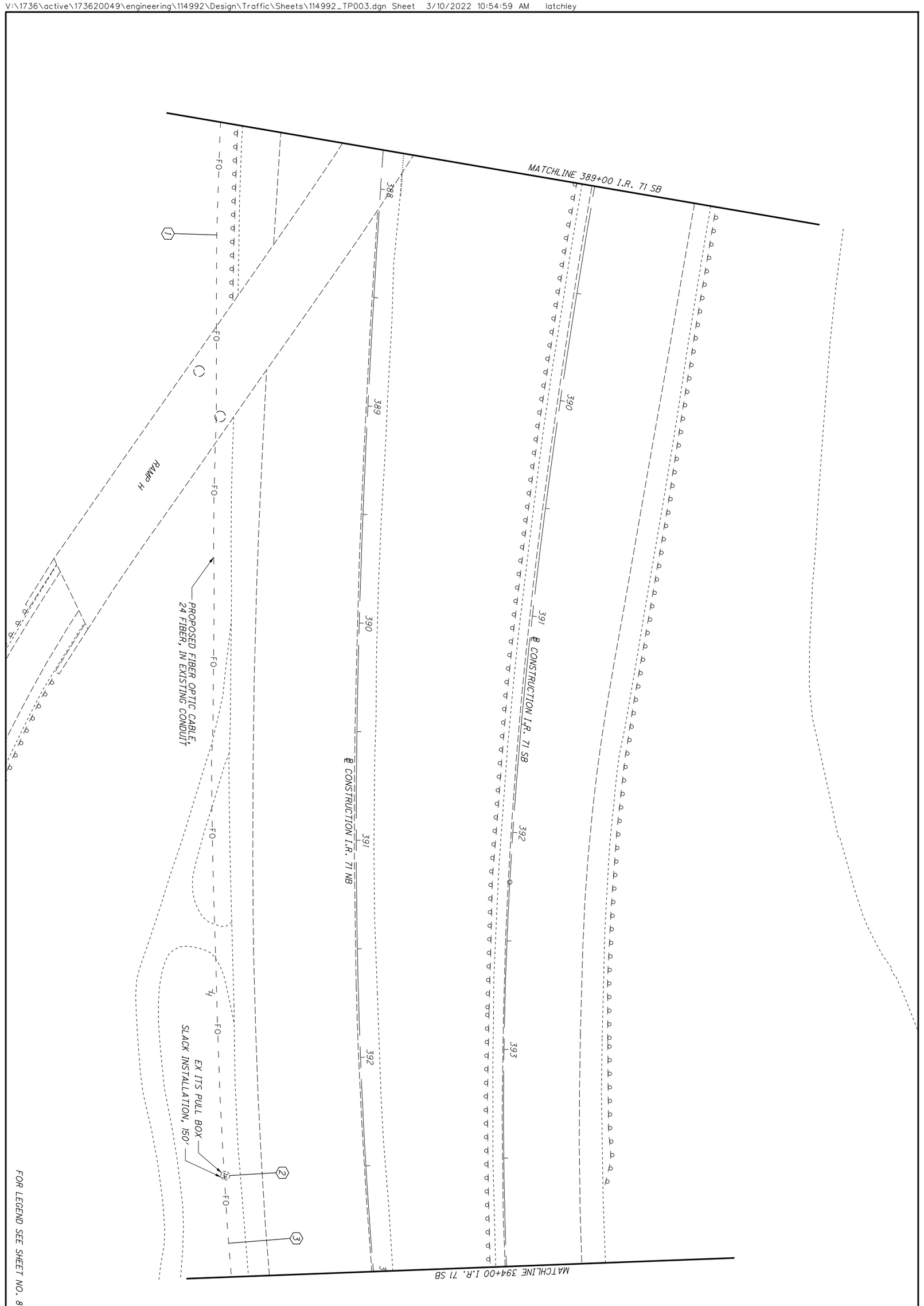
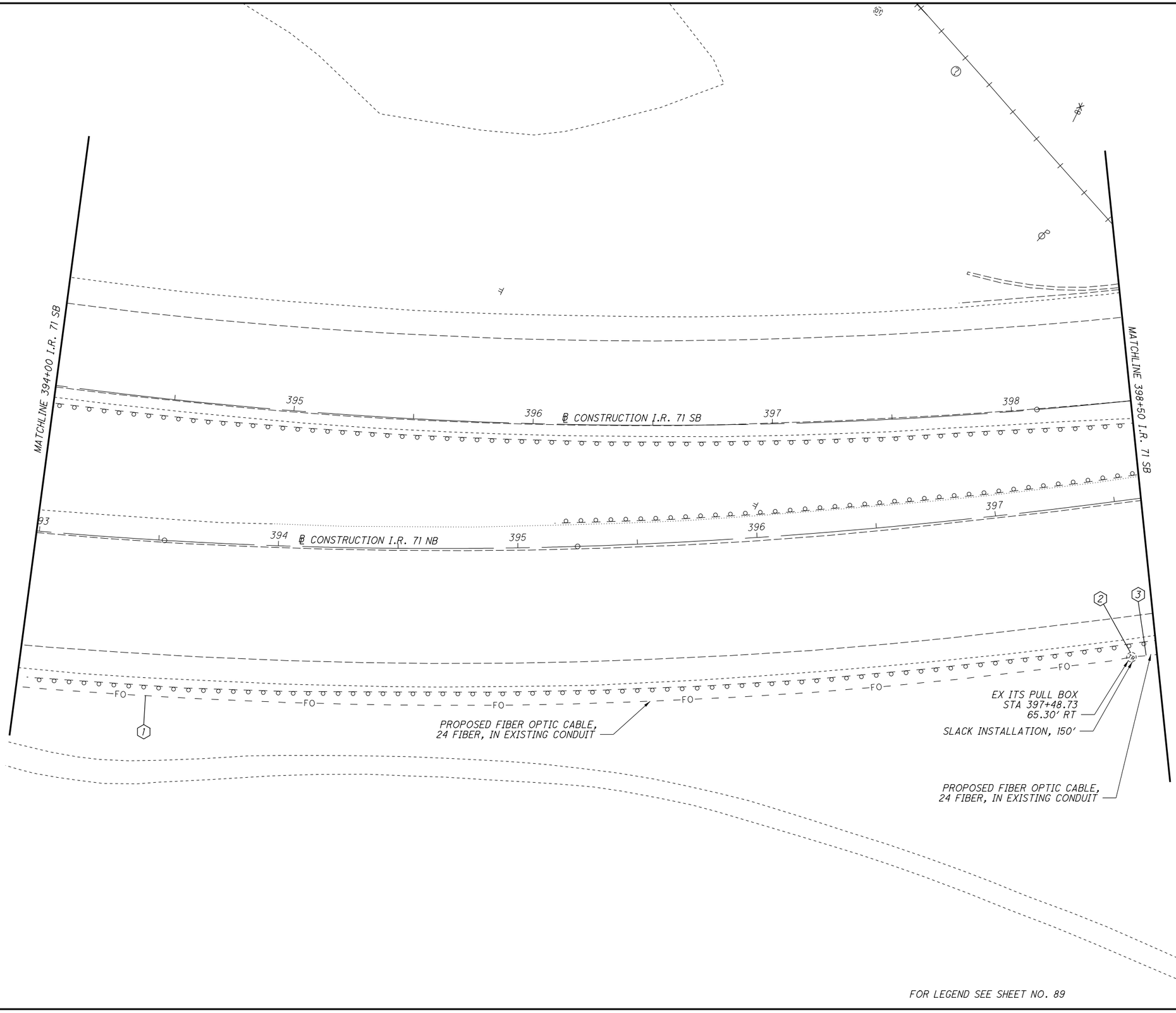


FOR LEGEND SEE SHEET NO. 89

87 / 129	HAM-71-8.65	ITS PLAN I.R. 71 STA. 389+00.00 SB TO STA 394+00.00 SB	CALCULATED PJD CHECKED SNS	0 10 20 40 HORIZONTAL SCALE IN FEET



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CALCULATED PJD
CHECKED SNS

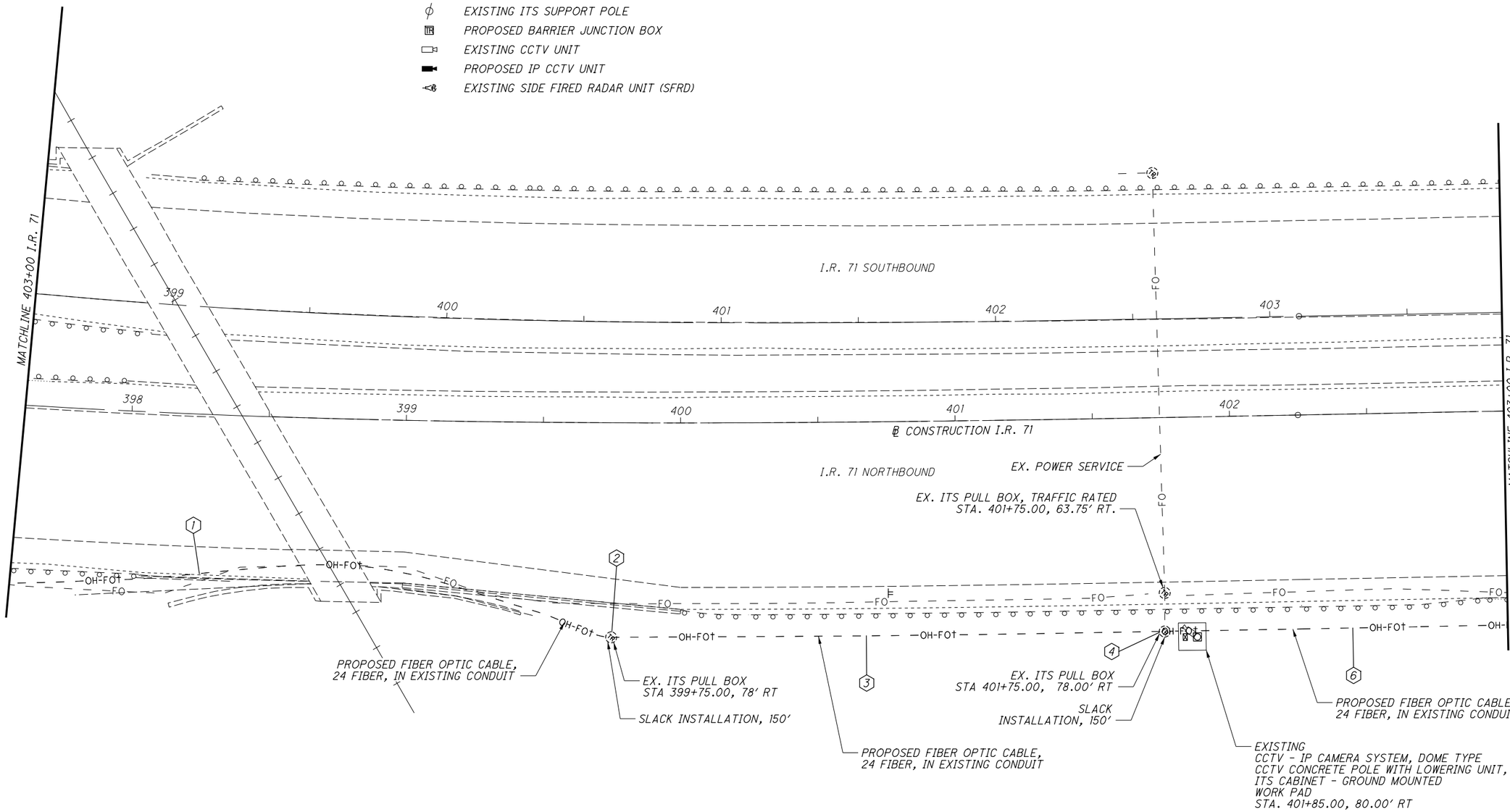
HORIZONTAL SCALE IN FEET
0 10 20 40

ITS PLAN I.R. 71
STA. 394+00.00 SB TO STA 398+50.00 SB

HAM-71-8.65

INTELLIGENT TRANSPORTATION SYSTEMS (ITS) LEGEND

- EXISTING ITS CONTROLLER CABINET
- PROPOSED ITS CONTROLLER CABINET
- 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)



HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED PJD
CHECKED SNS

ITS PLAN I.R. 71
STA 398+50.00 SB TO STA 403+00.00

HAM-71-8.65

89
129

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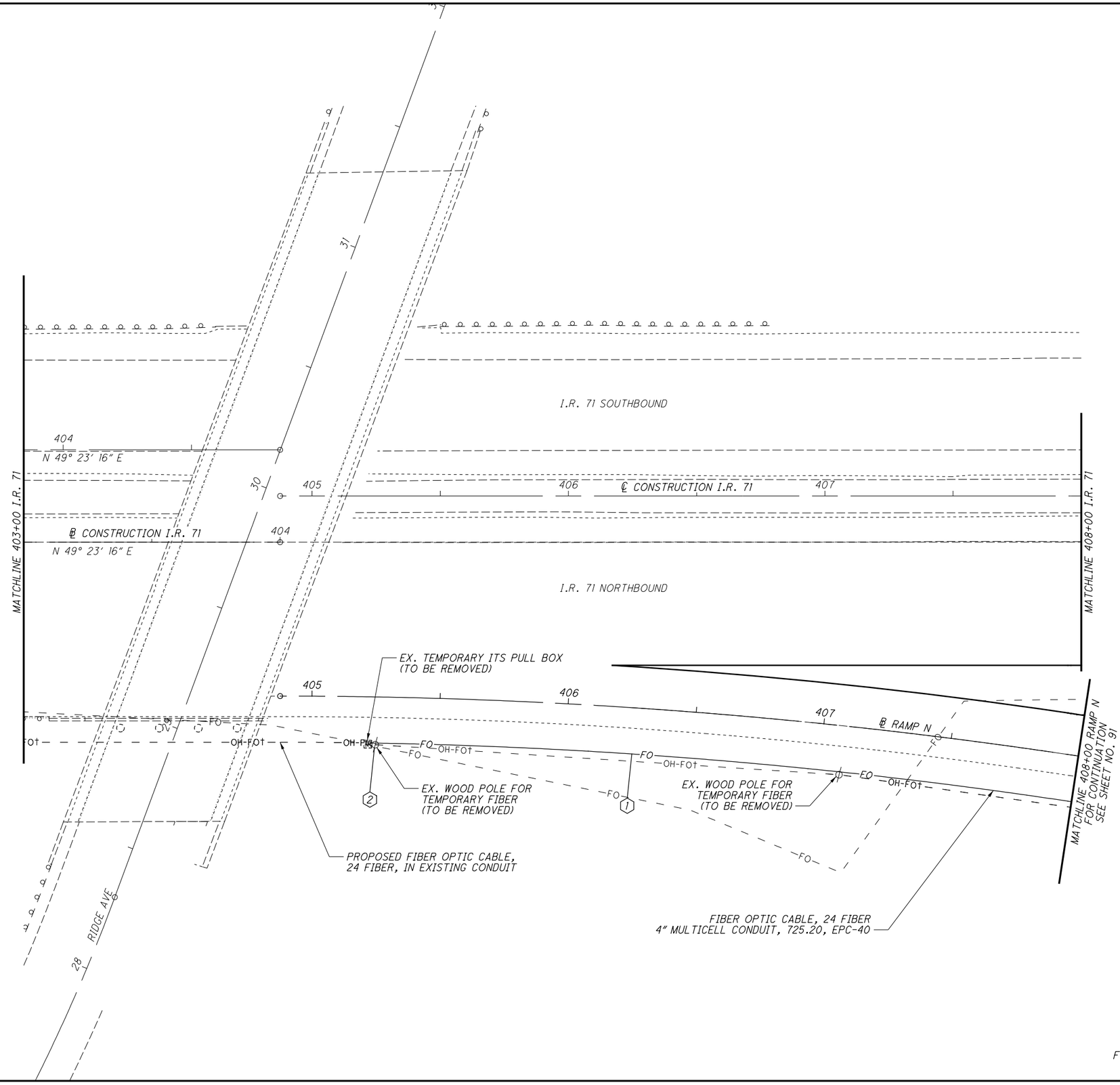

FOR LEGEND SEE SHEET. NO. 89

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED PJD
CHECKED SNS

ITS PLAN I.R. 71
STA 403+00.00 TO STA 408+00.00

HAM-71-8.65

90
129

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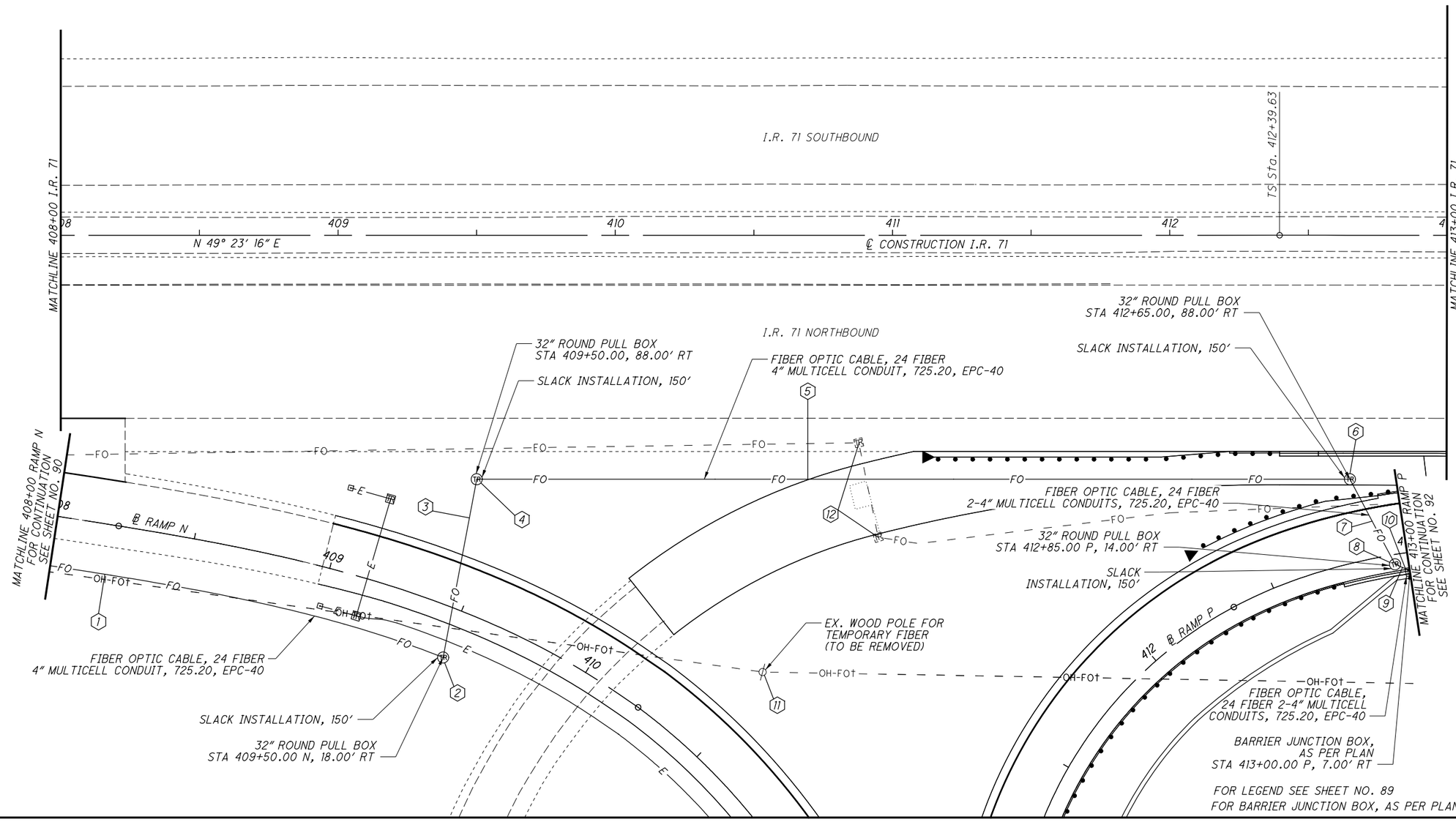

FOR LEGEND SEE SHEET NO. 89
FOR BARRIER JUNCTION BOX, AS PER PLAN, SEE SHT. NO. 83

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED PJD
CHECKED SNS

ITS PLAN I.R. 71
STA 408+00.00 TO STA 413+00.00

HAM-71-8.65

91
129

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I.R. 71 SOUTHBOUND

I.R. 71 NORTHBOUND

MATCHLINE 413+00 I.R. 71

MATCHLINE 418+00 I.R. 71

MATCHLINE 413+00 RAMP P
FOR CONTINUATION
SEE SHEET NO. 91

414 415 416 417

℄ CONSTRUCTION I.R. 71

℄ RAMP P

FO

OH-FO

OH-E

EXISTING BARRIER
JUNCTION BOX
STA 413+00.00 P, 7.00' RT

EX. WOOD POLE FOR
TEMPORARY FIBER
(TO BE REMOVED)

FIBER OPTIC CABLE, 24 FIBER
2-4" MULTICELL CONDUITS, 725.20, EPC-40

EX. WOOD POLE FOR
TEMPORARY FIBER
(TO BE REMOVED)

EX. TEMPORARY ITS
PULL BOX
(TO BE REMOVED)

PROPOSED FIBER OPTIC CABLE,
24 FIBER, IN EXISTING CONDUIT

KENNEDY AVENUE

FOR LEGEND SEE SHEET NO. 89

HORIZONTAL
SCALE IN FEET
0 10 20 40

CALCULATED P.JD
CHECKED SNS

ITS PLAN I.R. 71
STA 413+00.00 TO STA 418+00.00

HAM-71-8.65

EXISTING
CCTV - IP CAMERA SYSTEM, DOME TYPE
CCTV CONCRETE POLE WITH LOWERING UNIT, 70 FEET
ITS CABINET - GROUND MOUNTED
WORK PAD
STA 422+77.47, 78.50' LT

CONST. LIMITS

EX PULL BOX

EX SFRD

FIBER OPTIC CABLE,
2 - 24 FIBER, IN EX CONDUIT

KENNEDY AVENUE

I.R. 71 SOUTHBOUND

I.R. 71 NORTHBOUND

℄ CONSTRUCTION I.R. 71

419 420 421 422

MATCHLINE 418+00 I.R. 71

MATCHLINE 423+00 I.R. 71

PROPOSED FIBER OPTIC CABLE,
24 FIBER, IN EXISTING CONDUIT

EX. ITS PULL BOX
TRAFFIC RATED
STA. 422+85.00, 69.00' RT

PROPOSED FIBER OPTIC
CABLE, 2 - 24 FIBER, IN
EXISTING CONDUIT

EXISTING BARRIER JUNCTION BOX
STA 422+85.00, 103.20' RT

FOR LEGEND SEE SHEET NO. 89

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED PJD
CHECKED SNS

ITS PLAN I.R. 71
STA 418+00.00 TO STA 423+00.00

HAM-71-8.65

EX SFRD

I.R. 71 SOUTHBOUND

MATCHLINE 423+00 I.R. 71

424 425 426 427

℄ CONSTRUCTION I.R. 71

MATCHLINE 428+00 I.R. 71

I.R. 71 NORTHBOUND

FO

PROPOSED FIBER OPTIC CABLE,
24 FIBER, IN EXISTING CONDUIT

1

FOR LEGEND SEE SHEET NO. 89

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED PJD
CHECKED SNS

ITS PLAN I.R. 71
STA 423+00.00 TO STA 428+00.00

HAM-71-8.65

94
129

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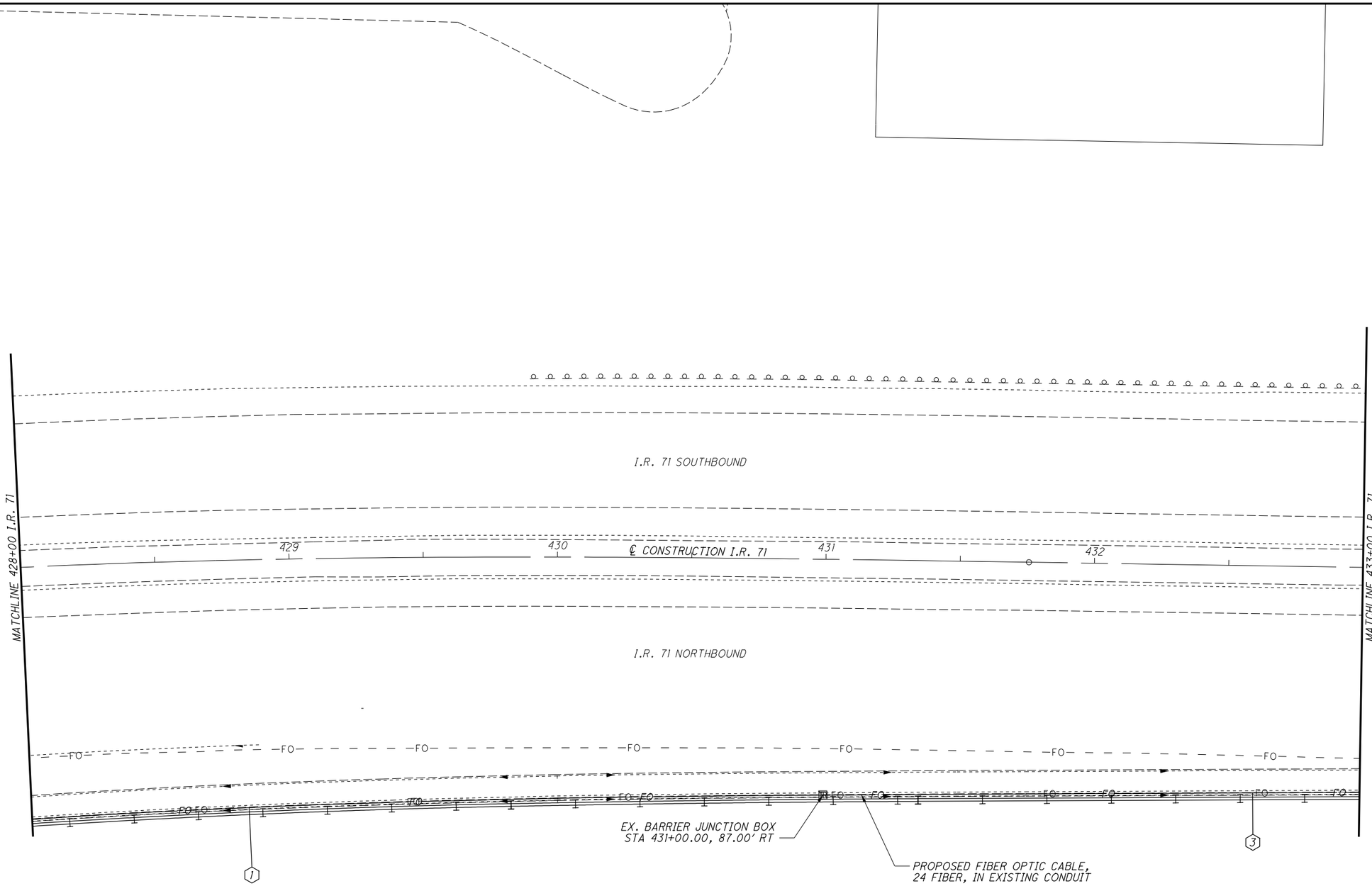

FOR LEGEND SEE SHEET NO. 89
FOR BARRIER JUNCTION BOX, AS PER PLAN, SEE SHT. NO. 83

0 10 20 40
HORIZONTAL
SCALE IN FEET

CALCULATED PJD
CHECKED SNS

ITS PLAN I.R. 71
STA 428+00.00 TO STA 433+00.00

HAM-71-8.65

95
129

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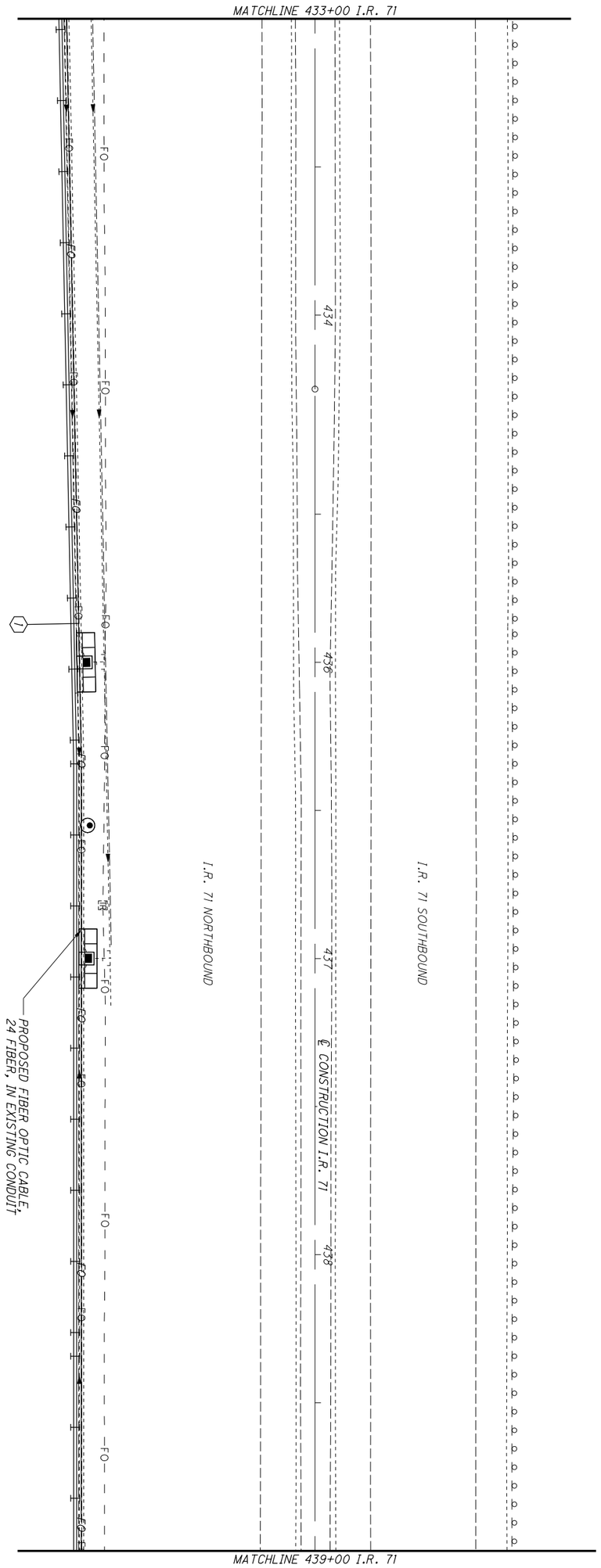
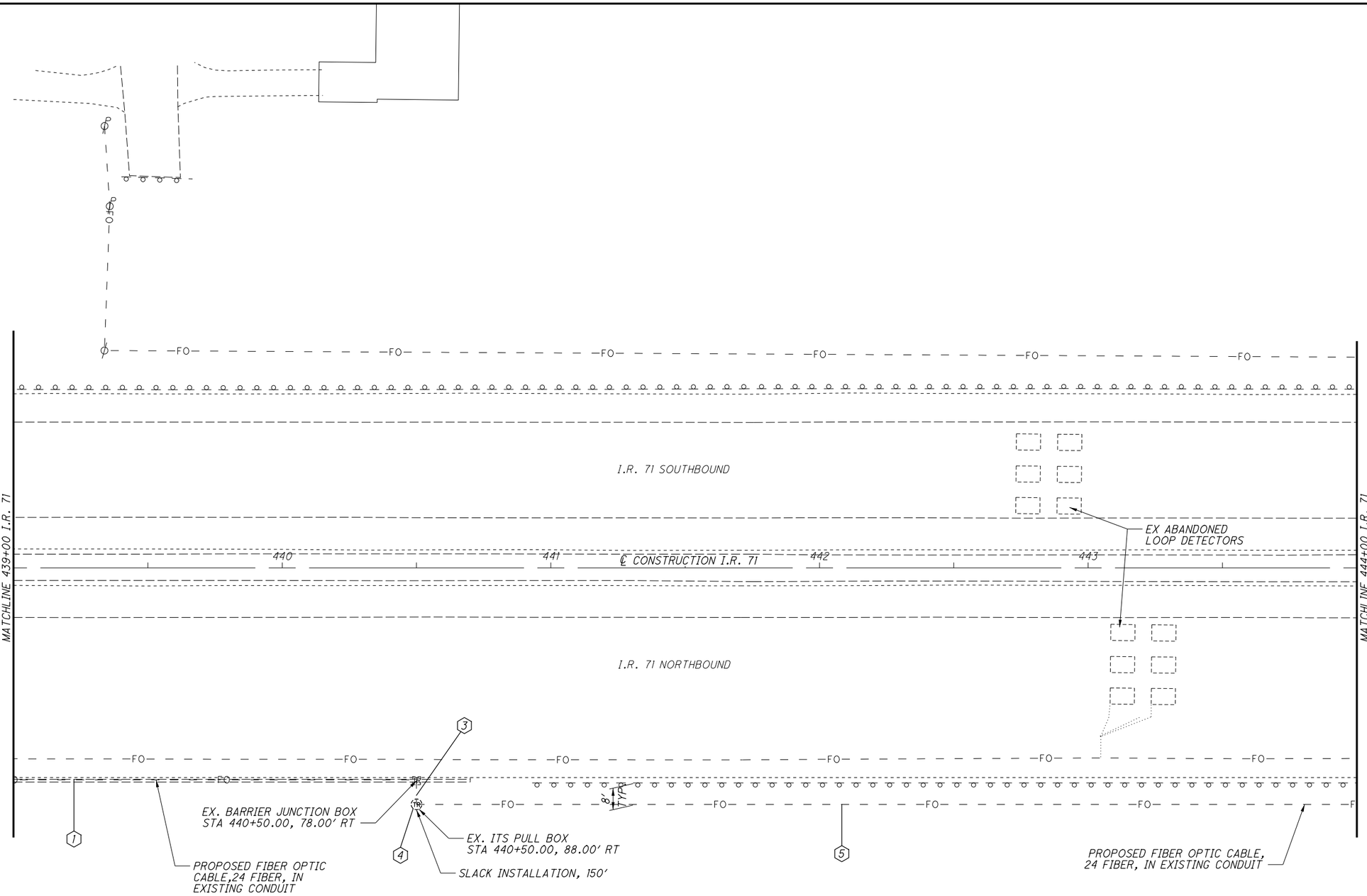


FOR LEGEND SEE SHEET NO. 89

96 / 129	HAM-71-8.65	ITS PLAN I.R. 71 STA 433+00.00 TO STA 439+00.00	CALCULATED PJD CHECKED SNS	0 10 20 40 HORIZONTAL SCALE IN FEET



FOR LEGEND SEE SHEET NO. 89
FOR BARRIER JUNCTION BOX, AS PER PLAN, SEE SHT. NO. 83

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED PJD
CHECKED SNS

ITS PLAN I.R. 71
STA 439+00.00 TO STA 444+00.00

HAM-71-8.65

97
129

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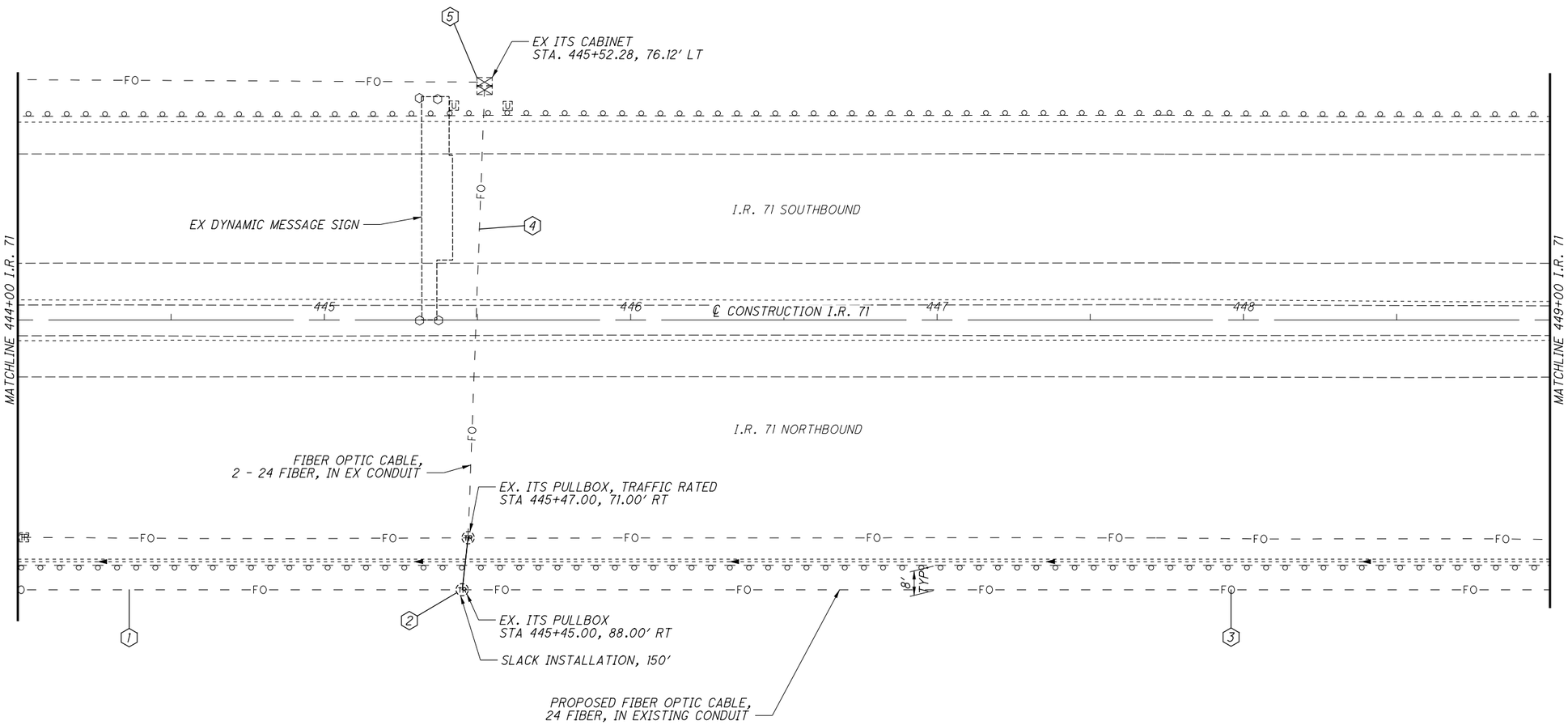


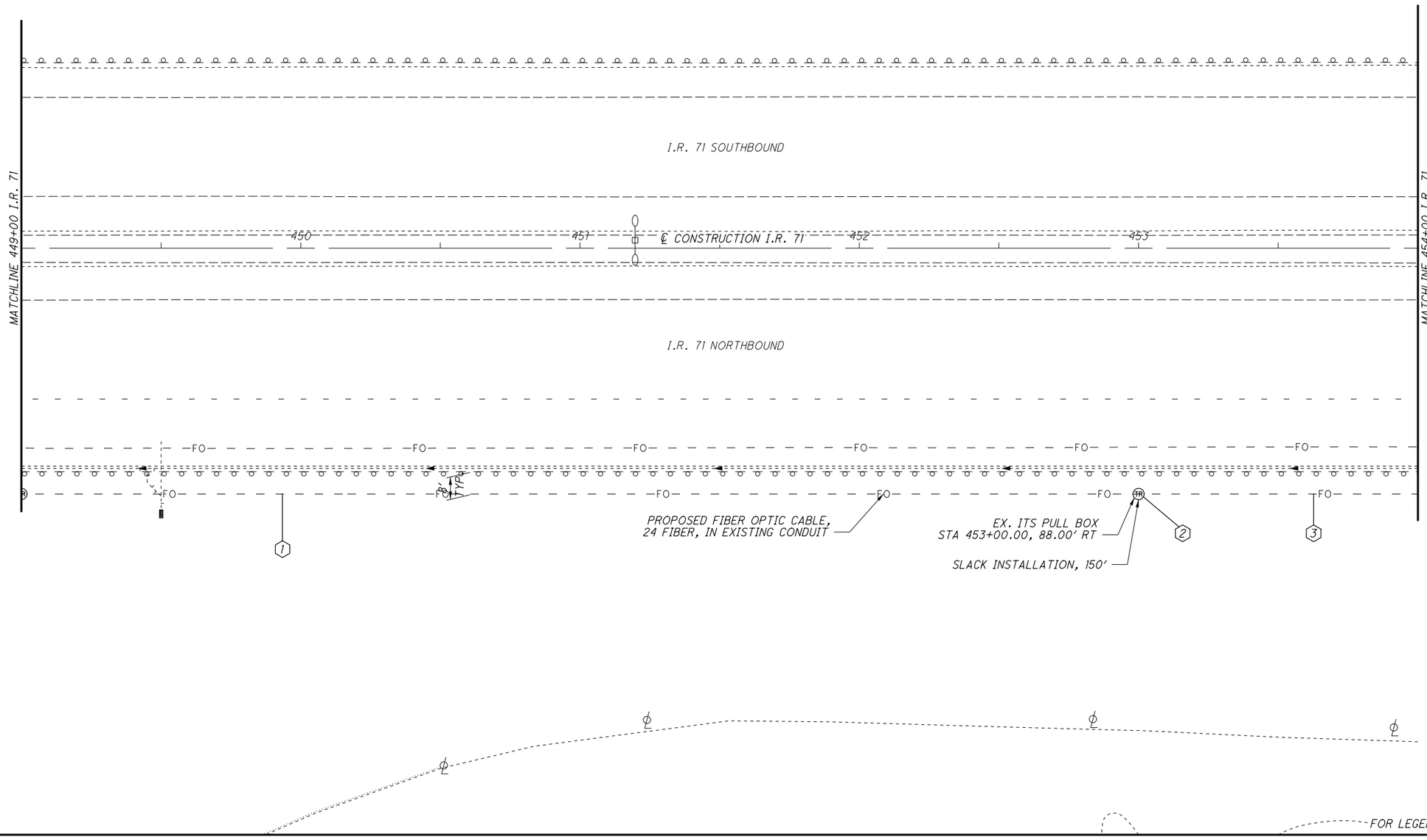
FOR LEGEND SEE SHEET NO. 89

HORIZONTAL SCALE IN FEET
0 10 20

CALCULATED PJD
CHECKED SNS

ITS PLAN I.R. 71
STA 444+00.00 TO STA 449+00.00

HAM-71-8.65



ITS PLAN I.R. 71

STA 449+00.00 TO STA 454+00.00

CALCULATED PJD

CHECKED SNS

HORIZONTAL SCALE IN FEET

0 10 20 40

HAM-71-8.65

99
129

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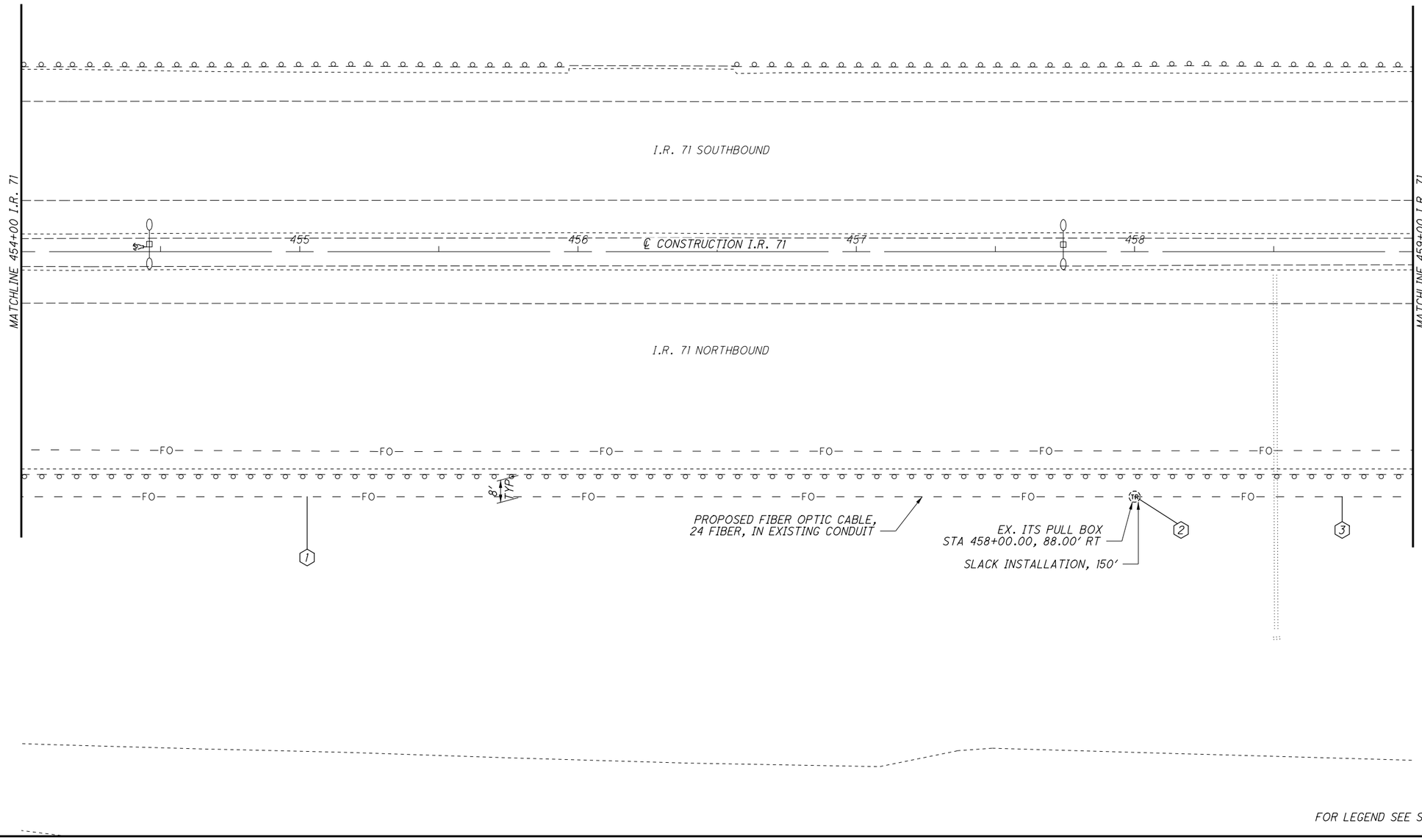


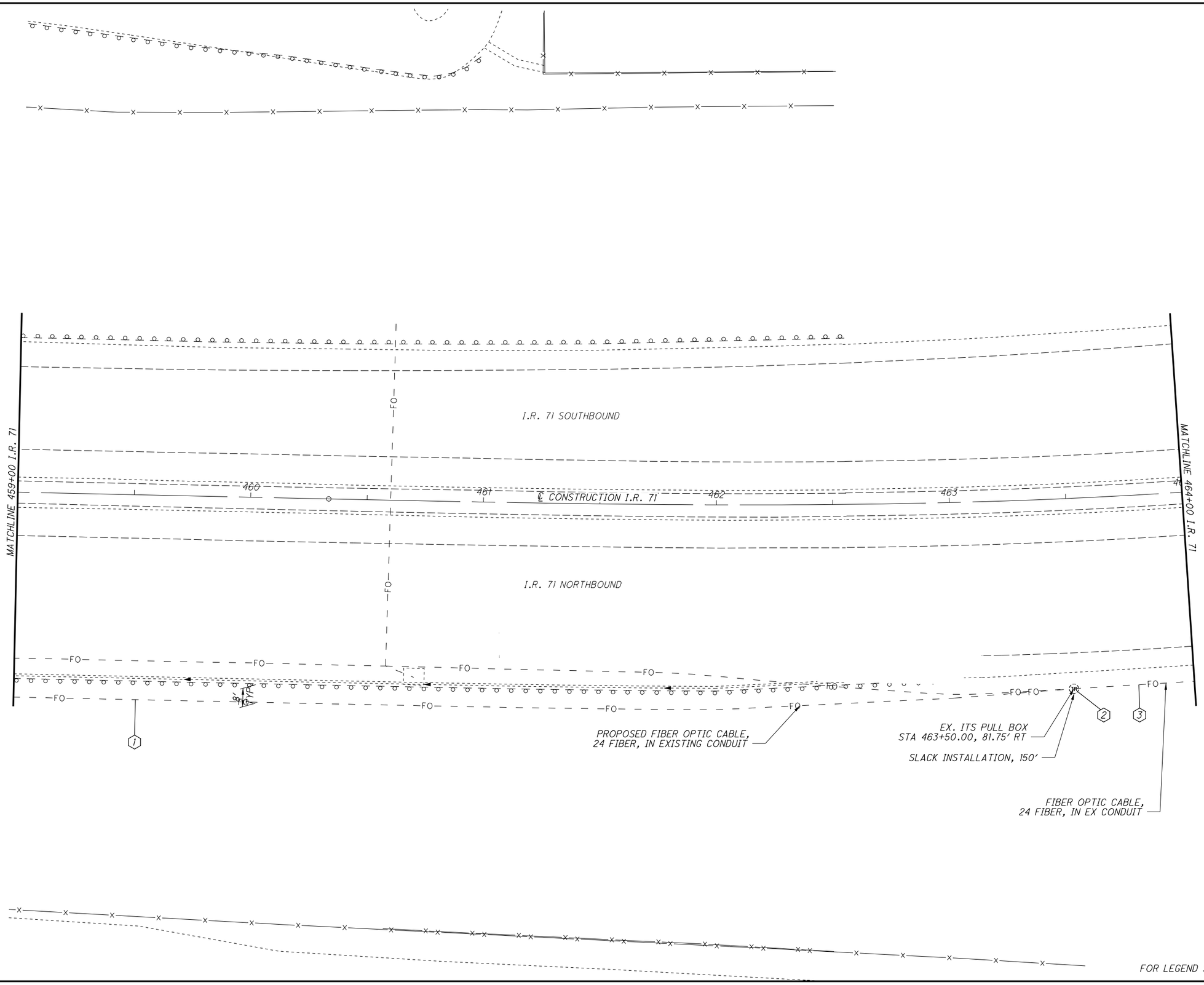
FOR LEGEND SEE SHEET NO. 89

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED PJD
CHECKED SNS

ITS PLAN I.R. 71
STA 454+00.00 TO STA 459+00.00

HAM-71-8.65



FOR LEGEND SEE SHEET NO. 89

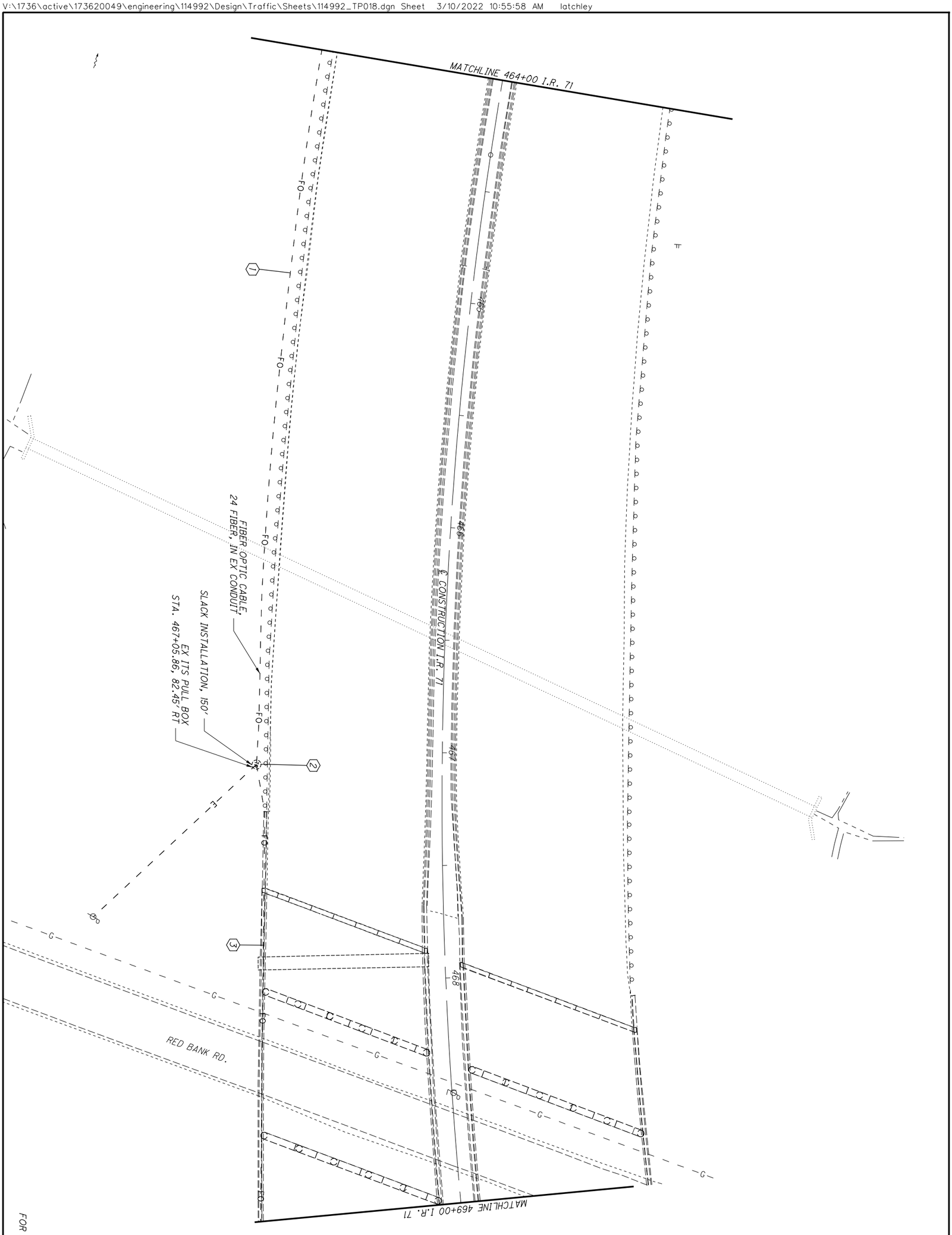
HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED PJD
CHECKED SNS

ITS PLAN I.R. 71
STA 459+00.00 TO STA 464+00.00

HAM-71-8.65

101
129



FOR LEGEND SEE SHEET NO. 89

102 / 129	HAM-71-8.65	ITS PLAN I.R. 71 STA 459+00.00 TO STA 464+00.00	CALCULATED PJD CHECKED SNS	0 10 20 40 HORIZONTAL SCALE IN FEET

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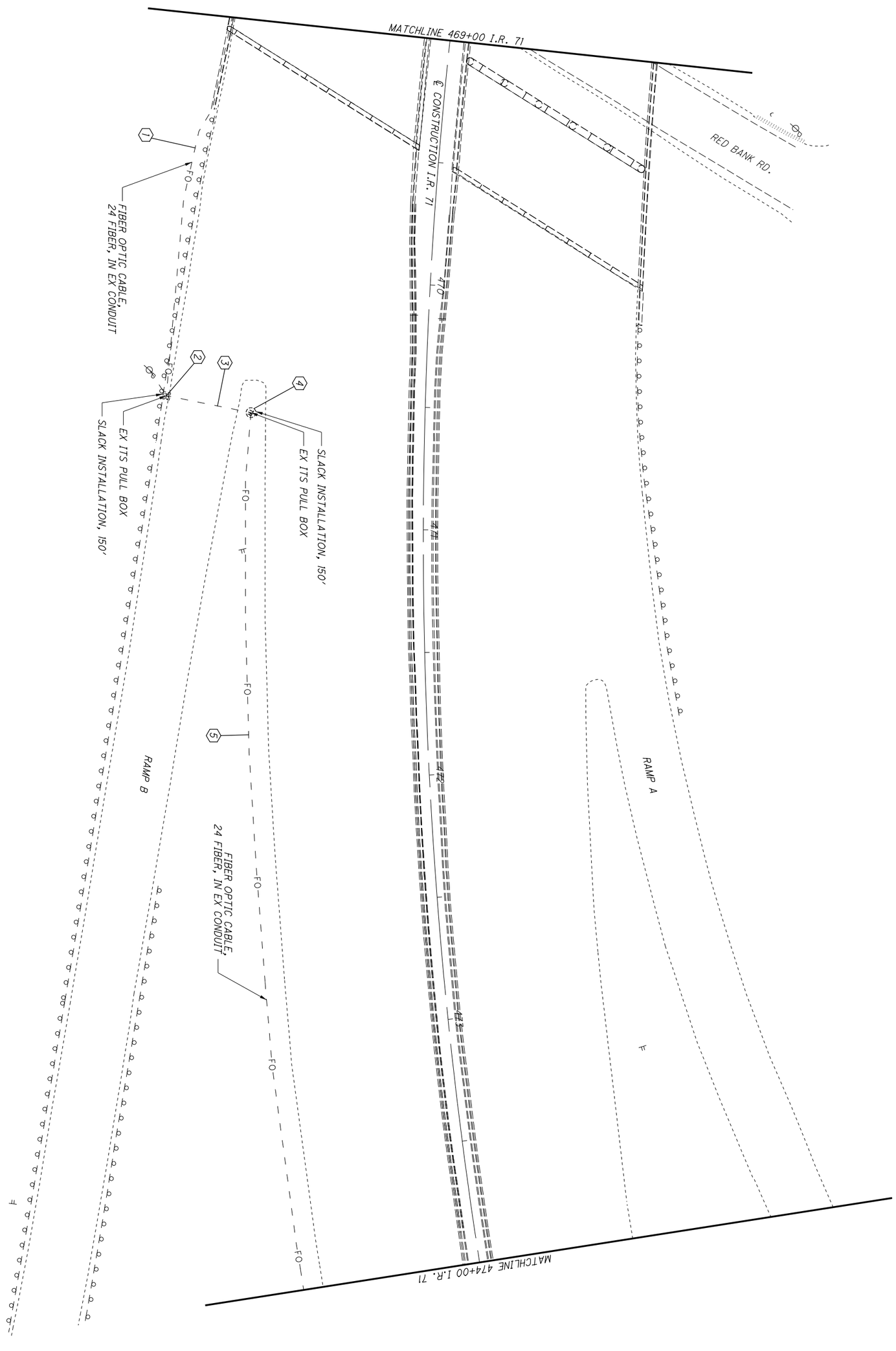

FOR LEGEND SEE SHEET NO. 89

103 / 129	HAM-71-8.65	ITS PLAN I.R. 71 STA 469+00.00 TO STA 474+00.00	CALCULATED PJD CHECKED SNS	0 10 20 40 HORIZONTAL SCALE IN FEET

MATCHLINE 474+00 I.R. 71

℄ CONSTRUCTION I.R. 71

475

476

-FO-

1

2

3

4

5

6

EX ITS PULL BOX
STA. 475+58.55, 71.52' RT

SLACK INSTALLATION, 150'

FIBER OPTIC CABLE,
24 FIBER, IN EX CONDUIT

EX SFRD

EX ITS PULL BOX

END PROPOSED
FIBER OPTIC CABLE
EXISTING ITS CABINET
24 FIBER TERMINATION PANEL

EXISTING ROAD WEATHER
INFORMATION SYSTEM SITE

EX HIGHWAY ADVISORY RADIO

EX ITS PULL BOX

EX POWER TRANSFORMER

EXISTING
CCTV - IP CAMERA SYSTEM, DOME TYPE
CCTV CONCRETE POLE WITH LOWERING UNIT, 70 FEET
ITS CABINET - GROUND MOUNTED
WORK PAD
APPROXIMATE LOCATION STA 475+75.00, 175' LT

SLAB

EX CABINET

RAMP B

RAMP C

CONST. LIMITS

FOR LEGEND SEE SHEET NO. 89

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED P.JD
CHECKED SNS

ITS PLAN I.R. 71
STA 474+00.00 TO END

HAM-71-8.65

104
129

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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, RED 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 TRAFFICALM SYSTEMS.

ALL ELEMENTS OF THE WRONG WAY DETECTION SYSTEM SHALL BE CONSIDERED INCIDENTAL TO THIS 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:

- DOPPLER 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 K-BAND DOPPLER 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.
- (2)-CONFIRMATION CAMERAS.
  - WIDE ANGLE HDTV 720P 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)-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 MANUFACTURER 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

ITEM 630 SIGNING MISC.: WRONG WAY DETECTION SYSTEM (CONTINUED)

- (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
  - 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, 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, LED EDGE LIT.
- 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

ITEM 630 SIGNING MISC.: WRONG WAY DETECTION SYSTEM (CONTINUED)

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 ON SHEET 106.

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 THE PROPOSED ODOT OWNED SIGNAL CABINET AT THE INTERSECTION OF THE RAMPS AND KENNEDY AVE. AS SPECIFIED IN THE PLAN.

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, MISC.: PEDESTAL, 15', TRANSFORMER BASE

THE PEDESTAL SHALL BE PER ITEM 632 AND THE DETAILS FURNISHED WITHIN.

PAYMENT SHALL BE PER ITEM 632.

ITEM 645 PREFORMED PAVEMENT MARKINGS, AS PER PLAN

THIS WORK CONSISTS OF FURNISHING AND APPLYING PREFORMED PAVEMENT MARKING MATERIAL ACCORDING TO ITEM 641, 645, 740.01, 740.05, AND THE ADDITIONAL REQUIREMENTS SPECIFIED BELOW.

PAVEMENT MARKING MATERIALS SHALL BE 380 AW AND 381 AW MARKINGS PRODUCED BY 3M. ALL OTHER ASPECTS OF ITEM 645 SHALL APPLY.

PAYMENT FOR ITEM 645 PAVEMENT MARKINGS AS PER PLAN SHALL BE MADE AT THE CORRESPONDING BID PRICE PER UNIT FOR EACH ITEM, AND SHALL INCLUDE ALL EQUIPMENT, LABOR, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

CALCULATED PJD
CHECKED SNS

TRAFFIC CONTROL GENERAL NOTES

HAM-71-8.65

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.

SOLAR POWERED LED SIGN REQUIREMENTS (CONTINUED)

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 INSOLATION 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).

ELECTRICAL REQUIREMENTS FOR SOLAR-POWERED DEVICES (CONTINUED)

- 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.

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)
- 2019 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.

GROUNDING AND BONDING (CONTINUED)

- 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.

CALCULATED PJD CHECKED SNS

TRAFFIC CONTROL GENERAL NOTES

HAM-71-8.65

GROUND MOUNTED AND OVERHEAD SIGNING SUBSUMMARY

REFERENCE NO.	SHEET NO.	LOCATION	STATION	SIDE	CODE	SIZE (INCHES)	625	630										
							GROUND ROD	GROUND MOUNTED SUPPORT, NO. 3 POST	GROUND MOUNTED STRUCTURAL BEAM SUPPORT, W6x9	SIGN POST REFLECTOR (YELLOW)	SIGN POST REFLECTOR (RED)	BREAKAWAY STRUCTURAL BEAM CONNECTION	OVERHEAD SIGN SUPPORT, TYPE TC-12.31, DESIGN 6	SIGN ATTACHMENT ASSEMBLY	SIGN, FLAT SHEET	SIGN, GROUND MOUNTED EXTRUSHEET	SIGN, OVERHEAD EXTRUSHEET	GROUND MOUNTED STRUCTURAL BEAM SUPPORT FOUNDATION	RIGID OVERHEAD SIGN SUPPORT FOUNDATION
							EACH	FOOT	FOOT	EACH	EACH	EACH	EACH	EACH	SQ FT	SQ FT	SQ FT	EACH	EACH
S-1	110	IR-71	400+75	RT	W13-3-48	48x60		16.5 / 17.0							20.0				
S-2	110	IR-71	407+25	RT	W13-3-48	48x60		16.5 / 17.0							20.0				
S-3	111	IR-71	408+34	RT	E5-H1A-72	72x60			17.8 / 17.8			2				30		2	
S-4	111	RAMP N	410+24	RT	D10-H5A-30	30x30		14.0							6.25				
S-5	111	RAMP N	409+08	LT	W1-8R-36	36x48		12.5		1					12.0				
S-5	111	RAMP N	410+24	LT	W1-8R-36	36x48		12.5		1					12.0				
S-6	111	RAMP P	412+00	LT	W1-8R-36	36x48		12.5		1					12.0				
S-7	112	IR-71	416+00	RT	W4-1R-48	48x48		14.0 / 14.5							16.0				
S-8	113	RAMP N	410+96	LT	W1-8R-36	36x48		12.5		1					12.0				
S-9	113	RAMP N	413+67	RT	R5-1-30	30x30		15.5 / 16.0			2				6.25				
S-9	113	RAMP N	413+67	RT	R6-1L-36	36x12								1	3.0				
S-9	113	RAMP N	413+67	RT	R6-1R-36	36x12								1	3.0				
S-10	113	RAMP N	413+98	LT	R4-7-24	24x30		13.0							5.0				
S-11	113	RAMP P	410+60	LT	W1-8R-36	36x48		12.5		1					12.0				
S-11	113	RAMP P	411+33	LT	W1-8R-36	36x48		12.5		1					12.0				
S-12	113	RAMP P	410+09	RT	D10-H5A-30	30x30		14.0							6.25				
S-13	113	RAMP P	408+75	RT	R1-2-36	36x36x36		14.0			2				3.9				
S-14	113	RAMP P	408+76	RT	R5-H10E-30	30x30		14.0							6.25				
OH-01	113	RAMP P	408+39	RT			1						1						1
S-15	113	RAMP P	408+39	RT		96x84											56		
S-16	113	RAMP P	408+39	RT		96x84											56		
S-17	113	KENNEDY AVE	12+75	RT	R3-H8BM-36	36x30		13.2							7.5				
S-18	113	KENNEDY AVE	14+02	RT	R9-3A-12	12x18		12.0							1.5				
S-19	113	KENNEDY AVE	15+00	RT	R2-1-30	30x36		13.7							7.5				
S-20	113	KENNEDY AVE	15+50	LT	R3-H8BK-36	36x30		13.2							7.5				
TOTALS CARRIED TO GENERAL SUMMARY							1	323.1	35.6	10		2	1	2	192	30	112	2	1

CALCULATED PJD
CHECKED SNS

TRAFFIC CONTROL QUANTITIES

HAM-71-8.65

107
129

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GROUND MOUNTED AND OVERHEAD SIGN REMOVAL SUBSUMMARY

REFERENCE NO.	SHEET NO.	LOCATION	STATION	SIDE	CODE	SIZE (INCHES)	630				631
							REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	REMOVAL OF OVERHEAD MOUNTED SIGN AND STORAGE	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TYPE TC-12.30	SIGN LIGHTING, MISC.: REMOVE SIGN SERVICE
							EACH	EACH	EACH	EACH	EACH
SR-1	113	KENNEDY	12+30	LT					1	1	1
SR-2	113	KENNEDY	12+82	RT			1	1			
SR-3	113	RAMP P	408+47	RT					1	1	1
TOTALS CARRIED TO GENERAL SUMMARY							1	1	2	2	2

WRONG WAY DETECTION SYSTEM QUANTITIES

REFERENCE NO.	SHEET NO.	STATION		625						630		632				
		FROM	TO	CONDUIT, 2", 725.04	TRENCH	PULL BOX, 725.06, SIZE 1.5	PULL BOX, 725.06, SIZE 7	GROUND ROD	UNDERGROUND WARNING/MARKING TAPE	SIGN SUPPORT ASSEMBLY, POLE MOUNTED	SIGNING, MISC.: WRONG WAY DETECTION SYSTEM	PEDESTAL FOUNDATION	POWER CABLE, 3 CONDUCTOR, NO. 14 AWG	POWER CABLE, 3 CONDUCTOR, NO. 8 AWG	POWER SERVICE, AS PER PLAN	PEDESTAL, MISC.: PEDESTAL, 15', TRANSFORMER BASE
				FOOT	FOOT	EACH	EACH	EACH	FOOT	EACH	EACH	EACH	FOOT	FOOT	EACH	EACH
1	111	409+00.00						1		2		1				1
2	111	409+00.00	409+14.00	14	14				14				72			
3	111	409+14.00				1										
4	111	409+14.00		44	44				44				162			
5	111	409+14.00				1										
6	111	409+14.00	410+50.00	131	131				131				408			
7	111	409+00.00						1		2		1				1
8	111	409+00.00	409+14.00	14	14				14				144			
1	113	410+50.00	411+64.00	110	110				110				345			
2	113	411+64.00					1									
3	113	411+50.00	411+64.00	28	14				14				144	72		
4	113	411+50.00						1		2	1	1				1
5	113	411+64.00	414+07.00	269	269				269					837		
6	113	414+07.00													1	
7	113	411+50.00						1		2		1				1
8	113	411+50.00	411+64.00	14	14				14				72			
9	113	411+64.00				1										
10	113	411+64.00		42	42				42				156			
TOTALS CARRIED TO GENERAL SUMMARY				666	652	3	1	4	652	8	1	4	1503	909	1	4

CALCULATED PJD CHECKED SNS

TRAFFIC CONTROL QUANTITIES

HAM-71-8.65

PAVEMENT MARKING SUBSUMMARY

CALCULATED PJD | CHECKED SNS

REFERENCE NO.	SHEET NO.	LOCATION	STATION FROM	STATION TO	SIDE	621 RPM (ONE WAY WHITE) EACH	621 RPM (YELLOW/RED) EACH	621 RPM (WHITE/RED) EACH	644 EDGE LINE, 6" (WHITE) FOOT	644 STOP LINE FEET	644 CHEVRON MARKING FEET	644 DOTTED LINE FEET	644 REMOVAL OF PAVEMENT MARKING FOOT	645 EDGE LINE, 6", TYPE A3 (WHITE), AS PER PLAN MILE	645 EDGE LINE, 6", TYPE A3 (YELLOW), AS PER PLAN MILE	645 LANE LINE, 6", TYPE A3, AS PER PLAN MILE	645 CHANNELIZING LINE, 12", TYPE A3, AS PER PLAN FEET	646 STOP LINE FEET	646 CROSSWALK LINE, 24" FEET	646 WRONG WAY ARROW EACH	646 DOTTED LINE, 6" FEET	646 YIELD LINE FEET	807 WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, EDGE LINE, 6" (WHITE) MILE	807 WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, EDGE LINE, 6" (YELLOW) MILE	807 WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, LANE LINE, 6" MILE	807 WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, CHANNELIZING LINE, 12" FEET	807 WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, DOTTED LINE, 6" FEET	850 GROOVING FOR 6" RECESSED PAVEMENT MARKING (ASPHALT) MILE	850 GROOVING FOR 12" RECESSED PAVEMENT MARKING (ASPHALT) MILE	850 GROOVING FOR 6" RECESSED PAVEMENT MARKING (CONCRETE) MILE	850 GROOVING FOR 12" RECESSED PAVEMENT MARKING (CONCRETE) MILE
EW-1	110	IR-71 / RAMP N	399+00.00	408+97.30 RAMP N	RT																	0.19					0.19			
DL-1	110	IR-71	400+00.00	406+17.11	RT																						632	0.12			
CH-1	110	IR-71	406+17.11	408+22.30	RT			6																		206			0.04		
CH-2	110	RAMP N	406+16.20	408+22.30	LT			6																		206			0.04		
CV-1	110	IR-71	406+16.20	408+22.30	RT						88																				
PR-1	110	IR-71	399+00.00	408+22.30	RT								922																		
EY-1	111	RAMP N	408+22.30	408+97.30	LT		2															0.02					0.02			
EY-2	111	RAMP N	408+97.30	414+03.00	LT		6							0.10															0.10	
EW-2	111	RAMP N	408+97.30	12+93.19										0.11															0.11	
EY-3	111	RAMP P	408+37.05	418+00.00	LT		13							0.19															0.19	
EW-3	111	RAMP P	15+08.10	418+00.00				14						0.2															0.2	
WW-1	113	RAMP N	411+68.00		LT															1										
WW-2	113	RAMP N	413+68.00		LT															1										
SL-1	113	RAMP N	413+98.00		LT/RT													21												
CW-1	113	RAMP N	414+02.82	414+10.82	LT/RT														114											
EW-4	113	KENNEDY	11+18.86	12+93.19	LT				0.04																					
SL-2	113	KENNEDY	13+00.00		LT/RT					24																				
SL-3	113	KENNEDY	14+10.00		LT					26																				
PR-2	113	KENNEDY	12+54.79	13+96.15	LT								162																	
PR-3	113	KENNEDY	13+00.00	14+10.00	LT								110																	
PR-4	113	KENNEDY	13+00.00	14+10.00	LT								110																	
PR-5	113	KENNEDY	13+10.00	14+10.00	RT								110																	
DL-2	113	KENNEDY / RAMP P	13+05.00	408+42.00 RAMP P								99																		
EW-5	113	RAMP P	408+22.47	408+79.25	RT									0.02															0.02	
YL-1	113	RAMP P	408+78.00	408+79.25	RT																20									
EW-6	113	RAMP P	408+39.91	408+79.25	RT									0.02															0.02	
EW-7	113	KENNEDY	14+00.00	14+01.59	RT				0.01																					
EW-8	113	KENNEDY	15+08.10	15+31.97	LT				0.01																					
CW-2	113	RAMP P	408+49.68	40871.21	RT														24											
THE FOLLOWING QUANTITIES AND PAGE NUMBERS REFERENCED ARE TAKEN FROM PID 91826 - HAM-71-8.42																														
EL-41	264 -265	RAMP C	0+00	16+44	CL																	0.31					0.31			
EL-42	264 -265	RAMP C	3+29	16+20	LT		18																0.24				0.24			
CH-18	287	RAMP C	26+95	28+97	CL			7																		202			0.04		
CH-19	287	RAMP B	14+75	16+73	LT			6																		198			0.04		
EL-43	263	RAMP C	16+44	21+78	CL									0.10															0.10	
EL-44	263 - 264	RAMP C	16+20	21+67	LT										0.10														0.10	
EL-45	263 , 287	RAMP C	21+78	26+95	CL																	0.10					0.10			
EL-46	263 , 287	RAMP C	21+67	28+97	LT		11																0.14							
EL-82	262 , 287	RAMP B	4+89	14+75	LT		14																0.19							
EL-83	262 , 287	RAMP B	469+35	16+73	CL																	0.25					0.25			
EL-84	264 , 287	RAMP D	0+00	17+00	CL		19															0.33					0.33			
EL-85	264 , 287	RAMP D	4+86	13+92	LT																		0.27				0.27			
EL-86	272 - 273	RAMP H	0+00	11+50	RT																	0.22					0.22			
EL-87	272 - 273	RAMP H	3+49	11+59	LT		12																0.15				0.15			
CH-41	273	RAMP H	8+50	11+59	LT																					309			0.06		
CH-42	273	RAMP H	8+50	11+59	CL																					309			0.06		
CH-43	273	RAMP H	11+12	11+55	RT																					43			0.01		
LL-41	273	RAMP H	0+00	8+50	CL / LT			12																	0.16			0.16			
SUBTOTAL							146		0.06	50	88	99	1414	0.84		0	0	21	138	2	0	20	2.41		0.16	1473	632	2.36	0.28	0.84	0.00
TOTALS CARRIED TO SHEET 109D							146		0.06	50	88	99	1414	0.84		0	0	21	138	2	0	20	2.41		0.16	1473	632	2.36	0.28	0.84	0.00

TRAFFIC CONTROL QUANTITIES

HAM-71-8.65

PAVEMENT MARKING SUBSUMMARY

REFERENCE NO.	SHEET NO.	LOCATION	STATION FROM	STATION TO	SIDE	621 RPM (ONE WAY WHITE) EACH	621 RPM (YELLOW/RED) EACH	621 RPM (WHITE/RED) EACH	644 EDGE LINE, 6" (WHITE) FEET	644 STOP LINE FEET	644 CHEVRON MARKING FEET	644 DOTTED LINE FEET	644 REMOVAL OF PAVEMENT MARKING FEET	645 EDGE LINE, 6", TYPE A3 (WHITE), AS PER PLAN MILE	645 EDGE LINE, 6", TYPE A3 (YELLOW), AS PER PLAN MILE	645 LANE LINE, 6", TYPE A3, AS PER PLAN MILE	645 CHANNELIZING LINE, 12", TYPE A3, AS PER PLAN FEET	646 STOP LINE FEET	646 CROSSWALK LINE, 24" FEET	646 WRONG WAY ARROW FEET	646 DOTTED LINE, 6" FEET	646 YIELD LINE FEET	807 WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, EDGE LINE, 6" (WHITE) MILE	807 WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, EDGE LINE, 6" (YELLOW) MILE	807 WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, LANE LINE, 6" MILE	807 WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, CHANNELIZING LINE, 12" FEET	807 WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, DOTTED LINE, 6" FEET	850 GROOVING FOR 6" RECESSED PAVEMENT MARKING (ASPHALT) MILE	850 GROOVING FOR 12" RECESSED PAVEMENT MARKING (ASPHALT) MILE	850 GROOVING FOR 6" RECESSED PAVEMENT MARKING (CONCRETE) MILE	850 GROOVING FOR 12" RECESSED PAVEMENT MARKING (CONCRETE) MILE
LL-1	256 - 262	IR-71 SB	398+96.00	467+84.00	LT	59																		1.30				1.30			
LL-2	256 - 262	IR-71 SB	398+96.00	467+79.00	LT	59																		1.30				1.30			
EL-1	256 - 257	IR-71 SB	398+96.00	415+12.00	LT																	0.31					0.31			
EL-2	256- 262	IR-71 SB	398+96.00	467+74.00	LT																		1.30				1.30			
DL-1	257 - 258	IR-71 SB	416+96.00	423+46.00	LT																					650	0.12			
CH-1	257	IR-71 SB	415+15.00	416+96.00	LT			6																	181			0.03		
CH-2	257	IR-71 SB	415+12.00	416+96.00	LT			6																	184			0.03		
EL-3	257 - 262	IR-71 SB	418+00.00	467+99.00	LT																	0.95					0.95			
DL-2	261 - 262	IR-71 SB	458+91.00	467+89.00	LT																					898	0.17			
DL-3	262	IR-71 SB	467+89.00	469+63.00	LT																174									
EL-4	262	IR-71 SB	467+99.00	470+20.00	LT									0.04															0.04	
LL-3	262	IR-71 SB	467+84.00	469+98.00	LT											0.04													0.04	
LL-4	262	IR-71 SB	467+79.00	469+92.00	LT											0.04													0.04	
EL-5	262	IR-71 SB	467+74.00	469+85.00	LT									0.04															0.04	
CH-3	262 - 263	IR-71 SB	469+63.00	471+64.00	LT			7																	201			0.04		
CH-4	262 - 263	IR-71 SB	469+63.00	471+64.00	LT																				201			0.04		
LL-5	262 - 267	IR-71 SB	469+98.00	520+33.00	LT	43																		0.95			0.95			
LL-6	262 - 267	IR-71 SB	469+92.00	520+21.00	LT	43																		0.95			0.95			
EL-6	262 - 265	IR-71 SB	471+64.00	495+69.00	LT																	0.46					0.46			
EL-7	262 - 267	IR-71 SB	469+85.00	520+10.00	LT																		0.95				0.95			
EL-8	265 - 266	IR-71 SB / RAMP E	499+00.00	513+56.00	LT																	0.28					0.28			
DL-4	265 - 266	IR-71 SB	497+85.00	507+85.00	LT																					1001	0.19			
CH-5	265	IR-71 SB	495+70.00	497+85.00	LT			7																	215			0.04		
CH-6	265	IR-71 SB	495+69.00	497+85.00	LT			7																	215			0.04		
CH-7	266	IR-71 SB / RAMP E	507+85.00	515+95.00	LT			22																	813			0.15		
CH-8	266	IR-71 SB	507+85.00	515+99.00	LT																				814			0.15		
EL-9	266 - 267	RAMP E	1+40.00	12+00.00	CL																	0.20					0.20			
EL-10	267	RAMP E	2+30.00	9+52.00	RT		11																0.14				0.14			
EL-11	267	RAMP E	2+15.00	2+46.00	RT																	0.01					0.01			
EL-12	267	RAMP E	1+38.00	2+46.00	RT																		0.02				0.02			
EL-13	267	IR-71 SB	515+99.00	520+44.00	LT																	0.08					0.08			
EL-14	267	IR-71 SB	520+44.00	523+41.00	LT									0.06															0.06	
LL-7	267	IR-71 SB	520+33.00	523+33.00	LT											0.06													0.06	
LL-8	267	IR-71 SB	520+21.00	523+25.00	LT											0.06													0.06	
EL-15	267	IR-71 SB	520+10.00	523+17.00	LT									0.06															0.06	
EL-16	267 - 273	IR-71 SB	523+17.00	579+42.00	LT																		1.07				1.07			
EL-17	267 - 272	IR-71 SB	523+41.00	568+84.00	LT																	0.86					0.86			
LL-9	267 - 273	IR-71 SB	523+33.00	579+53.00	LT	48																		1.06			1.06			
LL-10	267 - 273	IR-71 SB	523+25.00	579+47.00	LT	48																		1.06			1.06			
DL-5	271 - 272	IR-71 SB	559+77.00	568+39.00	LT																					862	0.16			
CH-9	272	IR-71 SB	568+39.00	570+91.00	LT			8																	252			0.05		
CH-10	272	IR-71 SB	568+39.00	570+92.00	LT																				252			0.05		
EL-18	272 - 273	IR-71 SB	570+92.00	579+59.00	LT																	0.16					0.16			
EL-19	272 - 273	RAMP G	0+32.00	13+00.00	LT																	0.24					0.24			
EL-20	272 - 273	RAMP G	0+87.00	10+90.00	LT		14																0.19				0.19			
SUBTOTAL							388		0	0	0	0	0	0.2		0.2	0	0	0	0	174	0	7.22		6.62	3328	3411	14.49	0.63	0.40	0.00
TOTALS CARRIED TO SHEET 109D							388		0	0	0	0	0	0.20		0.2	0	0	0	0	174	0	7.22		6.62	3328	3411	14.49	0.63	0.40	0.00

CALCULATED PJD
CHECKED SNS

TRAFFIC CONTROL QUANTITIES

HAM-71-8.65

109A
129

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PAVEMENT MARKING SUBSUMMARY

REFERENCE NO.	SHEET NO.	LOCATION	STATION FROM	STATION TO	SIDE	621 RPM (ONE WAY WHITE) EACH	621 RPM (YELLOW/RED) EACH	621 RPM (WHITE/RED) EACH	644 EDGE LINE, 6" (WHITE) FOOT	644 STOP LINE FEET	644 CHEVRON MARKING FEET	644 DOTTED LINE FEET	644 REMOVAL OF PAVEMENT MARKING FEET	645 EDGE LINE, 6", TYPE A3 (WHITE), AS PER PLAN MILE	645 EDGE LINE, 6", TYPE A3 (YELLOW), AS PER PLAN MILE	645 LANE LINE, 6", TYPE A3, AS PER PLAN MILE	645 CHANNELIZING LINE, 12", TYPE A3, AS PER PLAN FEET	646 STOP LINE FEET	646 CROSSWALK LINE, 24" FEET	646 WRONG WAY ARROW FEET	646 DOTTED LINE, 6" FEET	646 YIELD LINE FEET	807 WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, EDGE LINE, 6" (WHITE) MILE	807 WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, EDGE LINE, 6" (YELLOW) MILE	807 WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, LANE LINE, 6" MILE	807 WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, CHANNELIZING LINE, 12" FEET	807 WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, DOTTED LINE, 6" FEET	850 GROOVING FOR 6" RECESSED PAVEMENT MARKING (ASPHALT) MILE	850 GROOVING FOR 12" RECESSED PAVEMENT MARKING (ASPHALT) MILE	850 GROOVING FOR 6" RECESSED PAVEMENT MARKING (CONCRETE) MILE	850 GROOVING FOR 12" RECESSED PAVEMENT MARKING (CONCRETE) MILE
EL-21	273	RAMP G	0+23.00	1+70.00	LT																			0.03				0.03			
EL-22	273	RAMP G	0+75.00	1+70.00	LT																	0.02						0.02			
LL-11	273	IR-71 SB	579+78.00	581+79.00	LT											0.04														0.04	
LL-12	273	IR-71 SB	579+72.00	581+73.00	LT											0.04														0.04	
EL-23	273	IR-71 SB	579+84.00	581+84.00	LT									0.04																0.04	
EL-24	273	IR-71 SB	579+67.00	581+68.00	LT									0.04																0.04	
EL-25	273 - 278	IR-71 SB	581+68.00	630+06.00	LT																			0.92				0.92			
EL-26	273 - 276	IR-71 SB / RAMP C	581+84.00	605+09.00	LT																	0.44						0.44			
LL-13	273 - 278	IR-71 SB	581+79.00	630+03.00	LT	42																			0.91			0.91			
LL-14	273 - 278	IR-71 SB	581+73.00	630+04.00	LT	42																			0.91			0.91			
DL-6	274 - 275	IR-71 SB	592+33.00	597+87.00	LT																						554	0.10			
CH-11	275 - 276	IR-71 SB	597+87.00	605+12.00	LT			20																		725			0.14		
CH-12	275 - 276	IR-71 SB	597+87.00	605+14.00	LT																					726			0.14		
LL-15	275 - 276	RAMP C	603+50.00	605+11.00	LT			4																	0.03			0.03			
EL-27	276 - 277	IR-71 SB	605+14.00	619+52.00	LT																	0.27						0.27			
CH-13	277	IR-71 SB	619+53.00	621+43.00	LT			6																		190			0.04		
CH-14	277	IR-71 SB	619+52.00	621+43.00	LT			6																		191			0.04		
EL-28	277 - 278	IR-71 SB	619+56.00	630+01.00	LT																	0.20						0.20			
DL-7	277 - 278	IR-71 SB	621+43.00	627+78.00	LT																						635	0.12			
LL-16	278	IR-71 SB	630+03.00	631+48.00	LT											0.03														0.03	
LL-17	278	IR-71 SB	630+04.00	631+49.00	LT											0.03														0.03	
EL-29	278	IR-71 SB	630+01.00	631+50.00	LT									0.03																0.03	
EL-30	278	IR-71 SB	630+06.00	631+52.00	LT									0.03																0.03	
EL-31	278 - 284	IR-71 SB	631+50.00	688+15.00	LT																	1.07						1.07			
EL-32	278 - 284	IR-71 SB	631+52.00	688+15.00	LT																		1.07					1.07			
LL-18	278 - 284	IR-71 SB	631+48.00	688+15.00	LT	49																			1.07			1.07			
LL-19	278 - 284	IR-71 SB	631+49.00	688+15.00	LT	49																			1.07			1.07			
EL-33	257 , 286	RAMP R	0+00.00	9+71.00	CL/RT																	0.18						0.18			
EL-34	257 , 286	RAMP R	2+91.00	10+00.00	LT	21	5																	0.13					0.13			
CH-15	286	RAMP R	7+55.00	10+00.00	CL			8																		245			0.05		
EL-35	263	RAMP A	11+42.00	17+78.00	LT		9																	0.12				0.12			
EL-36	262 - 263	RAMP A	11+22.00	19+13.00	CL																	0.15						0.15			
EL-37	263	RAMP A	8+01.00	11+42.00	LT										0.06															0.06	
EL-38	263	RAMP A	8+00.00	11+22.00	CL									0.06																0.06	
EL-39	263 , 287	RAMP A	0+00.00	8+01.00	LT		12																	0.15				0.15			
EL-40	263 , 287	RAMP A	4+87.00	8+00.00	CL																	0.06						0.06			
LL-20	287	RAMP A	0+00.00	2+15.00	CL			4																	0.04			0.04			
CH-16	287	RAMP A	2+15.00	4+87.00	CL			8																		272			0.05		
CH-17	287	RAMP D	2+15.00	4+86.00	LT			8																		272			0.05		
SUBTOTAL							293		0	0	0	0	0	0.26		0.14	0	0	0	0	0	0	4.81		4.03	2621	1189	9.07	0.50	0.40	0.00
TOTALS CARRIED TO SHEET 109D							293		0	0	0	0	0	0.26		0.14	0	0	0	0	0	0	4.81		4.03	2621	1189	9.07	0.50	0.40	0.00

CALCULATED PJD
CHECKED SNS

TRAFFIC CONTROL QUANTITIES

HAM-71-8.65

PAVEMENT MARKING SUBSUMMARY

REFERENCE NO.	SHEET NO.	LOCATION	STATION FROM	STATION TO	SIDE	621 RPM (ONE WAY WHITE) EACH	621 RPM (YELLOW/RED) EACH	621 RPM (WHITE/RED) EACH	644 EDGE LINE, 6" (WHITE) FOOT	644 STOP LINE FEET	644 CHEVRON MARKING FEET	644 DOTTED LINE FEET	644 REMOVAL OF PAVEMENT MARKING FOOT	645 EDGE LINE, 6", TYPE A3 (WHITE), AS PER PLAN MILE	645 EDGE LINE, 6", TYPE A3 (YELLOW), AS PER PLAN MILE	645 LANE LINE, 6", TYPE A3, AS PER PLAN MILE	645 CHANNELIZING LINE, 12", TYPE A3, AS PER PLAN FEET	646 STOP LINE FEET	646 CROSSWALK LINE, 24" FEET	646 WRONG WAY ARROW EACH	646 DOTTED LINE, 6" FEET	646 YIELD LINE FEET	807 WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, EDGE LINE, 6" (WHITE) MILE	807 WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, EDGE LINE, 6" (YELLOW) MILE	807 WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, LANE LINE, 6" MILE	807 WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, CHANNELIZING LINE, 12" FEET	807 WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, DOTTED LINE, 6" FEET	850 GROOVING FOR 6" RECESSED PAVEMENT MARKING (ASPHALT) MILE	850 GROOVING FOR 12" RECESSED PAVEMENT MARKING (ASPHALT) MILE	850 GROOVING FOR 6" RECESSED PAVEMENT MARKING (CONCRETE) MILE	850 GROOVING FOR 12" RECESSED PAVEMENT MARKING (CONCRETE) MILE
EL-47	256	IR-71 NB	398+01	399+00	RT																		0.02					0.02			
EL-48	256 - 257	IR-71 NB	408+22.30	418+00	RT																		0.19					0.19			
EL-49	256 - 262	IR-71 NB	398+01	467+58	RT																			1.30				1.30			
DL-8	256	IR-71 NB	399+04	406+18	RT																						631	0.12			
LL-21	256 - 262	IR-71 NB	398+01	467+53	RT	59																			1.30			1.30			
LL-22	256 - 262	IR-71 NB	398+01	467+48	RT	59																			1.30			1.30			
LL-23	256 - 260	IR-71 NB	398+01	440+55	RT	36																			0.81			0.81			
CH-20	256	IR-71 NB	406+18	408+24	RT			7																			206		0.04			
CH-21	256	IR-71 NB	406+18	408+24	RT			7																			207		0.04			
CH-22	257 - 258	IR-71 NB	418+01	425+01	RT																						700		0.13			
CH-23	257 - 258	IR-71 NB / RAMP P	418+01	425+01	RT			19																			700		0.13			
DL-9	260 - 261	IR-71 NB	425+01	438+33	RT																						1333	0.25				
EL-50	257 - 262	IR-71 NB / RAMP B	418+01	467+37	RT																		0.93					0.93			
DL-10	260 - 261	IR-71 NB	440+55	453+23	RT																						1268	0.24				
CH-24	261 - 262	IR-71 NB	453+23	467+43	RT			40																			1526		0.29			
EL-51	262	IR-71 NB / RAMP B	418+01	467+37	RT									0.04																0.04	
LL-24	262	IR-71 NB	467+53	469+60	RT											0.04														0.04	
LL-25	262	IR-71 NB	467+48	469+54	RT											0.04														0.04	
CH-25	262	IR-71 NB	467+43	469+48	RT												205														0.04
CH-26	262	IR-71 NB / RAMP B	467+43	469+43	RT												200														0.04
EL-52	262	IR-71 NB	467+58	469+66	RT										0.04															0.04	
CH-27	262	IR-71 NB	469+43	470+42	RT			5																			143		0.03			
CH-28	262	IR-71 NB / RAMP B	469+43	470+42	RT			4																			99		0.02			
EL-53	262 - 264	IR-71 NB	470+41	486+27	RT																		0.30					0.30			
EL-54	262 - 267	IR-71 NB	469+66	519+55	RT																			0.94				0.94			
LL-26	262 - 267	IR-71 NB	469+60	519+43	RT	43																			0.94			0.94			
LL-27	262 - 267	IR-71 NB	469+54	519+31	RT	43																			0.94			0.94			
CH-29	264	IR-71 NB	486+27	491+94	RT																						568		0.11			
CH-30	264	IR-71 NB / RAMP D	486+28	491+94	RT			16																			566		0.11			
DL-11	264 - 267	IR-71 NB	491+94	518+97	RT																						2703	0.51				
EL-55	264 - 267	IR-71 NB	489+32	519+00	RT																		0.56					0.56			
LL-28	267	IR-71 NB	519+43	522+86	RT											0.06														0.06	
LL-29	267	IR-71 NB	519+31	522+77	RT											0.07														0.07	
EL-56	267	IR-71 NB	519+55	522+95	RT										0.06															0.06	
EL-57	267	IR-71 NB	2+76	6+04	CL									0.06																0.06	
CH-31	267	IR-71 NB	519+14	522+70	RT												356														0.07
CH-32	267	IR-71 NB / RAMP F	519+14	522+53	RT												339														0.06
EL-58	267	RAMP F	6+04	21+91	CL																		0.30					0.30			
EL-59	267	RAMP F1	0+82	2+66	RT																		0.03					0.03			
EL-60	267	RAMP F	6+14	17+35	LT		16																	0.21				0.21			
EL-61	267	RAMP F	18+14	21+91	LT		6																	0.07				0.07			
EL-62	267	RAMP F1	0+00	2+66	CL		5																	0.05				0.05			
SUBTOTAL							365		0	0	0	0	0	0.2		0.21	1100	0	0	0	0	0	4.9		5.29	4715	5935	11.31	0.89	0.41	0.21
TOTALS CARRIED TO SHEET 109D							365		0	0	0	0	0	0.20		0.21	1100	0	0	0	0	0	4.90		5.29	4715	5935	11.31	0.89	0.41	0.21

CALCULATED PJD
CHECKED SNS

TRAFFIC CONTROL QUANTITIES

HAM-71-8.65

109C
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PAVEMENT MARKING SUBSUMMARY

CALCULATED PJD | CHECKED SNS

REFERENCE NO.	SHEET NO.	LOCATION	STATION FROM	STATION TO	SIDE	621 RPM (ONE WAY WHITE) EACH	621 RPM (YELLOW/RED) EACH	621 RPM (WHITE/RED) EACH	644 EDGE LINE, 6" (WHITE) FOOT	644 STOP LINE FEET	644 CHEVRON MARKING FEET	644 DOTTED LINE FEET	644 REMOVAL OF PAVEMENT MARKING FOOT	645 EDGE LINE, 6", TYPE A3 (WHITE), AS PER PLAN MILE	645 EDGE LINE, 6", TYPE A3 (YELLOW), AS PER PLAN MILE	645 LANE LINE, 6", TYPE A3, AS PER PLAN MILE	645 CHANNELIZING LINE, 12", TYPE A3, AS PER PLAN FEET	646 STOP LINE FEET	646 CROSSWALK LINE, 24" FEET	646 WRONG WAY ARROW EACH	646 DOTTED LINE, 6" FEET	646 YIELD LINE FEET	807 WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, EDGE LINE, 6" (WHITE) MILE	807 WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, EDGE LINE, 6" (YELLOW) MILE	807 WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, LANE LINE, 6" MILE	807 WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, CHANNELIZING LINE, 12" FEET	807 WET REFLECTIVE SPRAY THERMOPLASTIC PAVEMENT MARKING, DOTTED LINE, 6" FEET	850 GROOVING FOR 6" RECESSED PAVEMENT MARKING (ASPHALT) MILE	850 GROOVING FOR 12" RECESSED PAVEMENT MARKING (ASPHALT) MILE	850 GROOVING FOR 6" RECESSED PAVEMENT MARKING (CONCRETE) MILE	850 GROOVING FOR 12" RECESSED PAVEMENT MARKING (CONCRETE) MILE
EL-63	267 - 273	IR-71 NB	522+95	579+51	RT																			1.07				1.07			
LL-30	267 - 273	IR-71 NB	522+86	579+45	RT	49																			1.07				1.07			
LL-31	267 - 273	IR-71 NB	522+77	579+40	RT	49																			1.07				1.07			
EL-64	267 - 272	IR-71 NB	522+70	567+07	RT																		0.84						0.84			
LL-32	271 - 272	IR-71 NB	561+59	567+08	RT	6																			0.10				0.10			
CH-33	272	IR-71 NB	566+73	570+71	RT			11																			398			0.08		
CH-34	272	IR-71 NB	566+73	570+66	RT			11																			394			0.07		
EL-65	272 - 273	IR-71 NB	570+71	579+34	RT																		0.16						0.16			
EL-66	273	IR-71 NB	579+51	581+51	RT										0.04															0.04		
EL-67	273	IR-71 NB	579+34	581+35	RT									0.04																0.04		
LL-33	273	IR-71 NB	579+45	581+46	RT											0.04														0.04		
LL-34	273	IR-71 NB	579+40	581+40	RT											0.04														0.04		
LL-35	273 - 278	IR-71 NB	581+46	630+12	RT	42																			0.92				0.92			
LL-36	273 - 278	IR-71 NB	581+40	630+13	RT	42																			0.92				0.92			
EL-68	273 - 276	IR-71 NB / RAMP D	581+35	606+99	RT																		0.49						0.49			
EL-69	273 - 278	IR-71 NB	581+51	630+10	RT																			0.92					0.92			
DL-12	275 - 276	IR-71 NB	598+78	605+25	RT																							647	0.12			
CH-35	276	IR-71 NB	605+25	60703	RT																						177			0.03		
CH-36	276	IR-71 NB / RAMP D	605+25	607+01	RT			6																			175			0.03		
EL-70	276 - 277	IR-71 NB	607+03	622+35	RT																		0.29						0.29			
CH-37	277	IR-71 NB	622+35	625+00	RT																						265			0.05		
CH-38	277	IR-71 NB / RAMP F	622+32	625+00	RT			8																			269			0.05		
DL-13	277	RAMP F	622+32	625+02	RT																							271	0.05			
EL-71	277 , 278	IR-71 NB / RAMP F	622+32	630+16	RT																		0.15						0.15			
DL-14	278	IR-71 NB	625+00	630+15	RT																							515	0.10			
LL-37	278	IR-71 NB	630+12	631+57	RT											0.03														0.03		
LL-38	278	IR-71 NB	630+13	631+59	RT											0.03														0.03		
DL-15	278	IR-71 NB	630+15	631+60	RT																145											
EL-72	278	IR-71 NB	630+10	631+56	RT										0.03															0.03		
EL-73	278	IR-71 NB	630+16	631+61	RT									0.03																0.03		
LL-39	278 - 284	IR-71 NB	631+57	688+41	RT	49																						1.08	1.08			
LL-40	278 - 284	IR-71 NB	631+59	688+41	RT	49																						1.08	1.08			
EL-74	278 - 284	IR-71 NB	631+56	688+41	RT																			1.08					1.08			
EL-75	278 - 284	IR-71 NB	631+61	688+41	RT																		1.08						1.08			
DL-16	278	IR-71 NB	631+60	634+46	RT																							283	0.05			
DL-17	283 - 284	IR-71 NB	680+19	686+56	RT																							637	0.12			
CH-39	287	IR-71 NB	686+56	688+41	RT			6																			185			0.04		
CH-40	287	IR-71 NB / RAMP B	686+56	688+41	RT			6																			185			0.04		
TOTALS THIS SHEET						334			0	0	0	0	0	0.14		0.14	0	0	0	0	145	0	6.08		4.08	2048	2355	12.77	0.39	0.28	0.00
TOTALS SHEET 109						146			0.06	50	88	99	1414	0.84		0	0	21	138	2	0	20	2.41		0.16	1473	632	2.36	0.28	0.84	0.00
TOTALS SHEET 109A						388			0	0	0	0	0	0.20		0.2	0	0	0	2	174	0	7.22		6.62	3328	3411	14.49	0.63	0.40	0.00
TOTALS SHEET 109B						293			0	0	0	0	0	0.26		0.14	0	0	0	0	0	0	4.81		4.03	2621	1189	9.07	0.50	0.40	0.00
TOTALS SHEET 109C						365			0	0	0	0	0	0.20		0.21	1100	0	0	0	0	0	4.90		5.29	4715	5935	11.31	0.89	0.41	0.21
TOTALS CARRIED TO GENERAL SUMMARY						1526			0.06	50	88	99	1414	1.64		0.69	1100	21	138	2	319	20	25.42		20.18	14,185	13,522	49.99	2.69	2.33	0.21

TRAFFIC CONTROL QUANTITIES

HAM-71-8.65

109D
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PAVEMENT MARKING LEGEND

ALL PAVEMENT MARKING IS
ITEM 645 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	**	ITEM 807 WET REFLECTIVE PAVEMENT MARKING
PR	PAVEMENT MARKING REMOVED		PAVEMENT MARKING REMOVED

NOTE: *** INDICATES THE REMOVAL OF THE EXISTING EDGE LINE LOCATED ALONG THE OUTSIDE LANE THAT IS NOT SHOWN.

SIGNING LEGEND

EXISTING SIGN TO BE REMOVED

EXISTING SIGN TO REMAIN

PROPOSED SIGN

1 WRONG WAY DETECTION SYSTEM REFERENCE NUMBER

RIDGE AVE 31

I.R. 71 SOUTHBOUND

℄ CONSTRUCTION I.R. 71

I.R. 71 NORTHBOUND

℄ RAMP N

MATCHLINE 408+00 I.R. 71

MATCHLINE 408+00 RAMP N
FOR CONTINUATION
SEE SHEET NO. 111

W13-3-48
STA. 400+75
25 MPH RAMP

W13-3-48
STA. 407+25
25 MPH RAMP

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED STC
CHECKED PJD

TRAFFIC CONTROL PLAN
BEGIN TO STA 408+00

HAM-71-8.65

110
129

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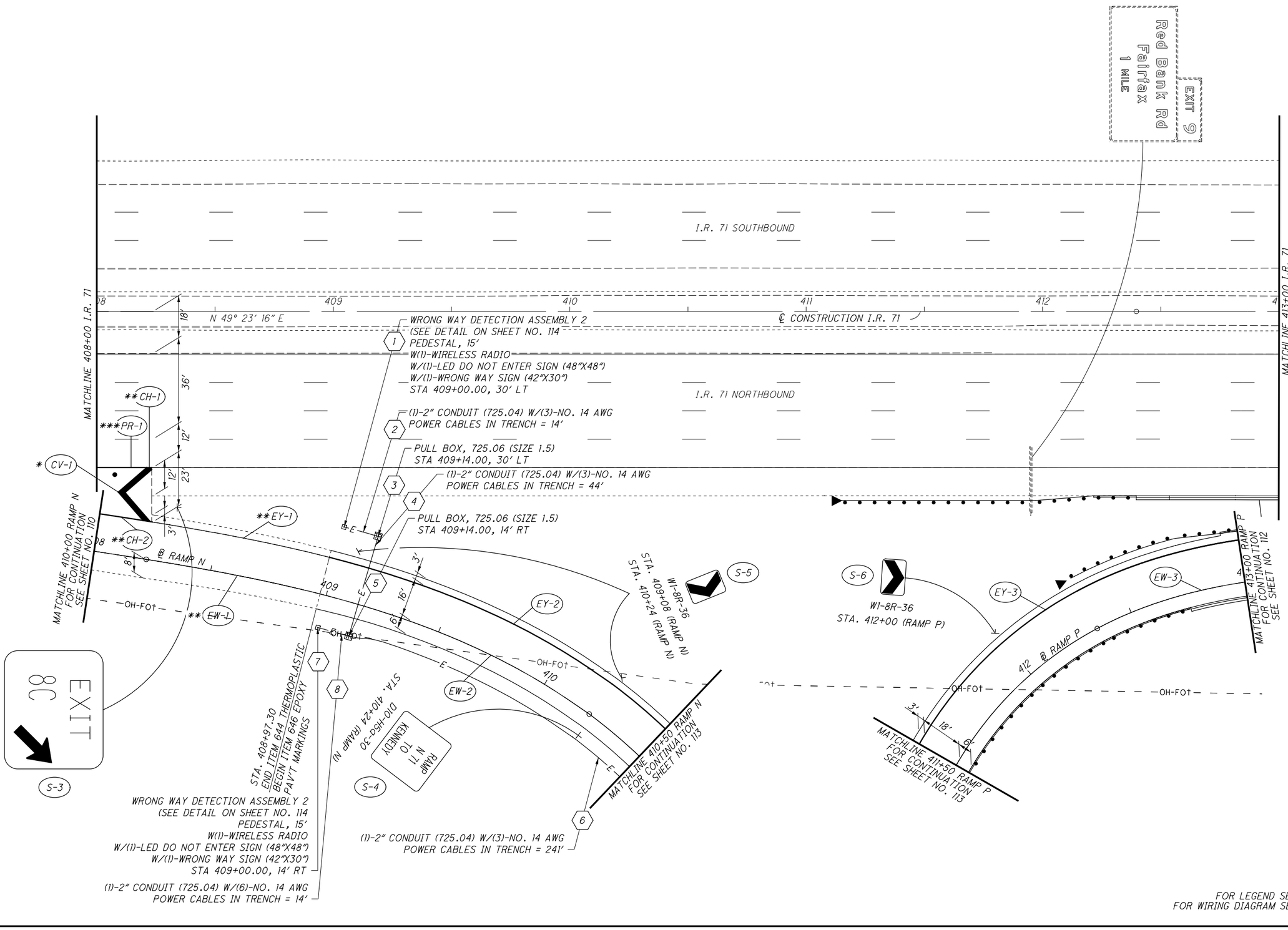
NOTE: ** INDICATES THE REMOVAL OF THE EXISTING EDGE LINE LOCATED ALONG THE OUTSIDE LANE THAT IS NOT SHOWN.



FOR LEGEND SEE SHEET NO. 110
FOR WIRING DIAGRAM SEE SHEET NO. 114

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED STC
CHECKED PJD

TRAFFIC CONTROL PLAN
STA 408+00 TO STA 413+00

HAM-71-8.65

111
129

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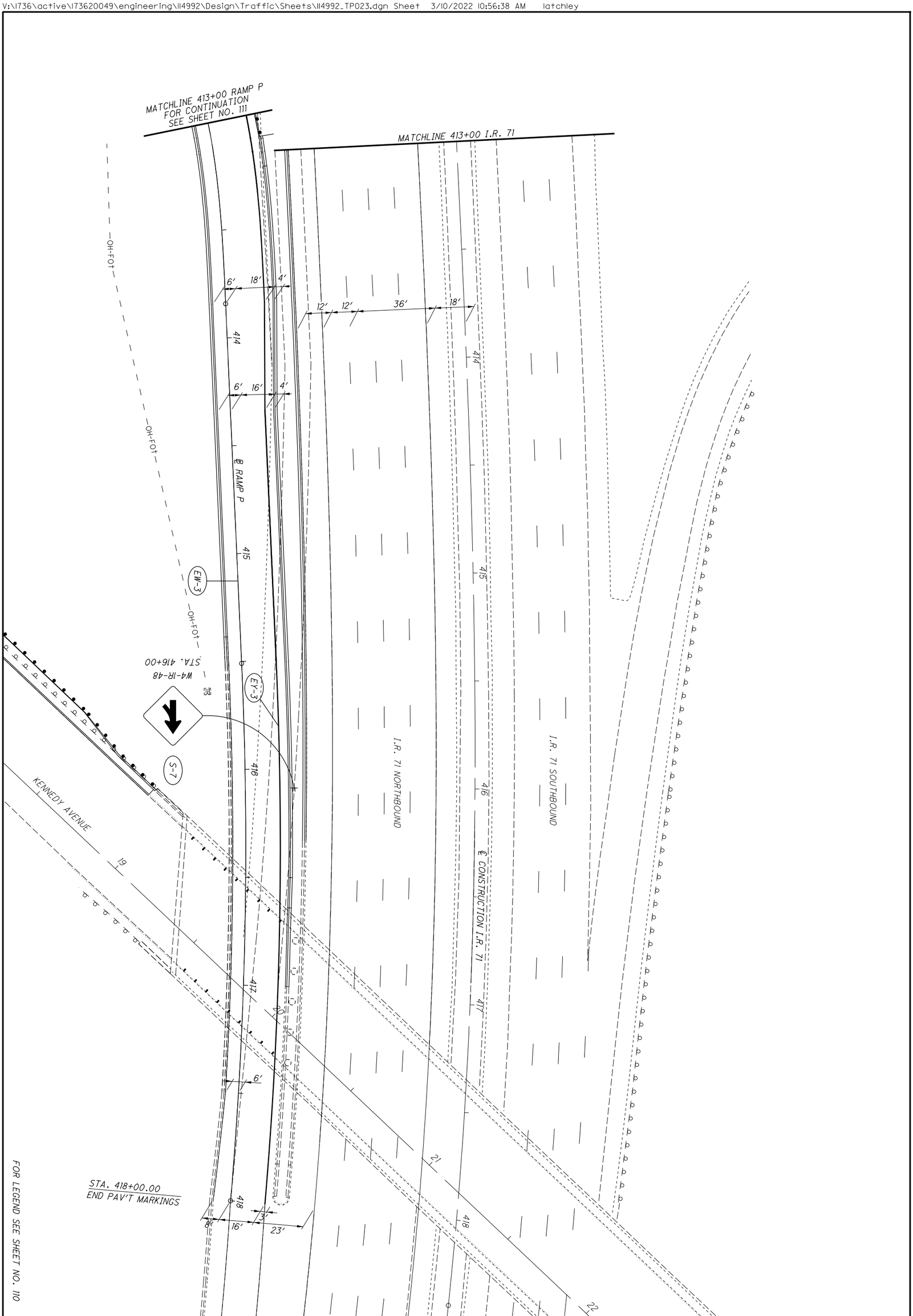
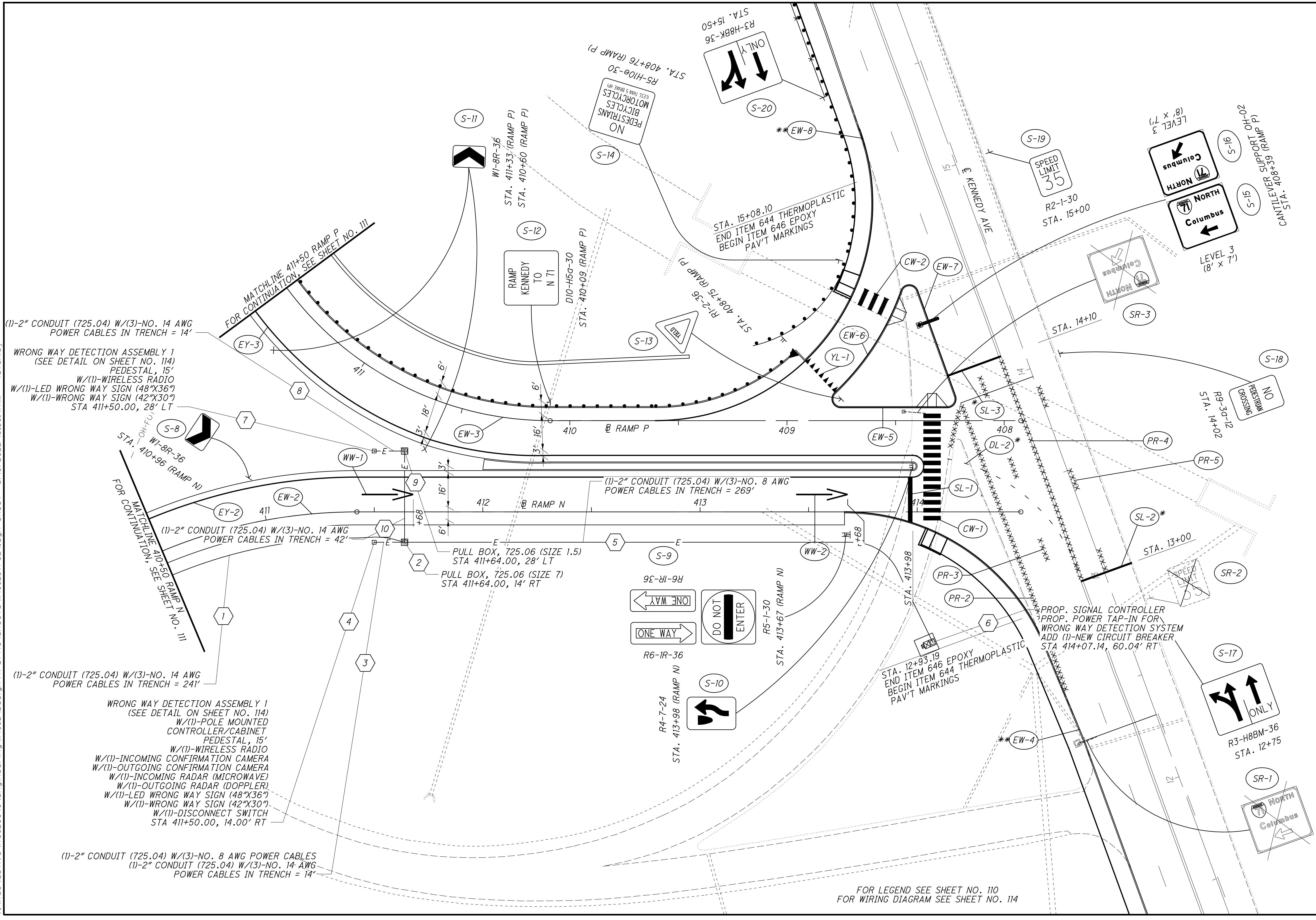


112 / 129	HAM-71-8.65	TRAFFIC CONTROL PLAN STA 413+00 TO END	CALCULATED STC CHECKED PJD	0 10 20 40 HORIZONTAL SCALE IN FEET

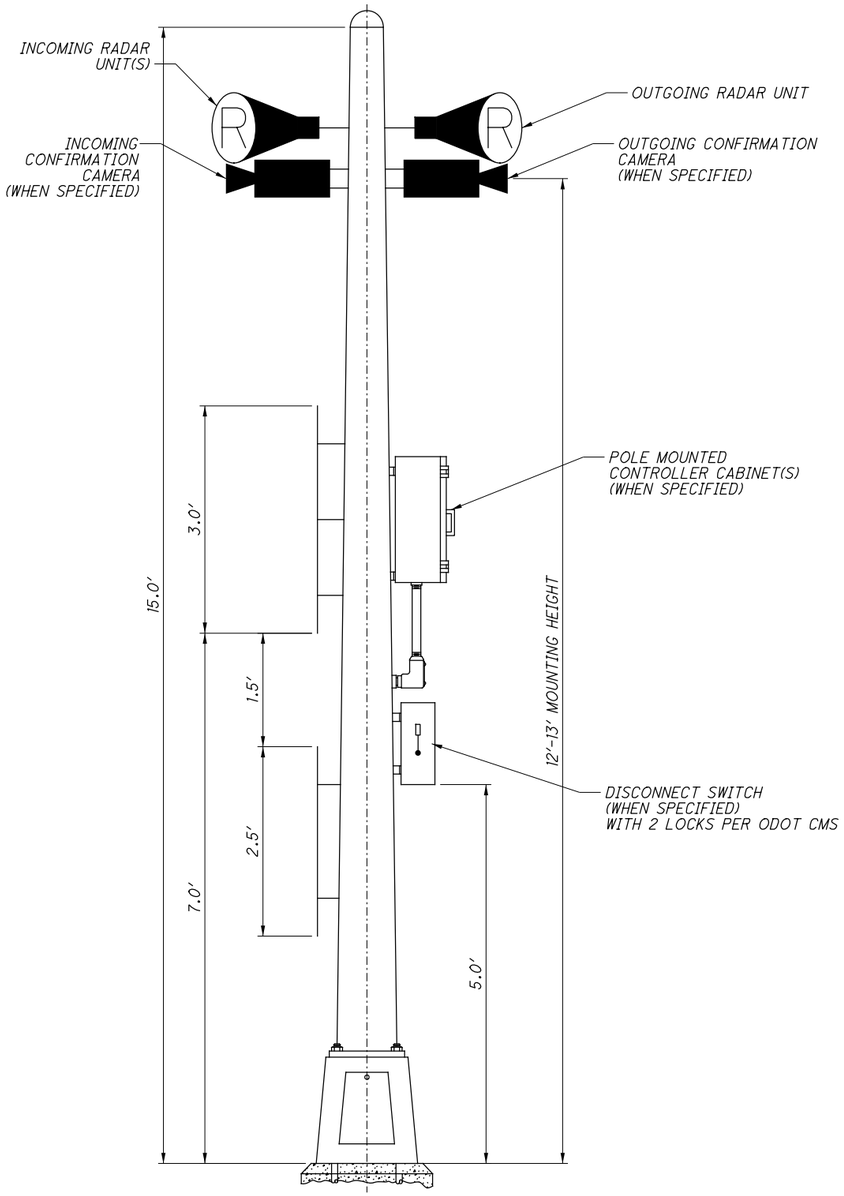


TRAFFIC CONTROL PLAN
RAMP N, RAMP P & KENNEDY AVE

HAM-71-8.65

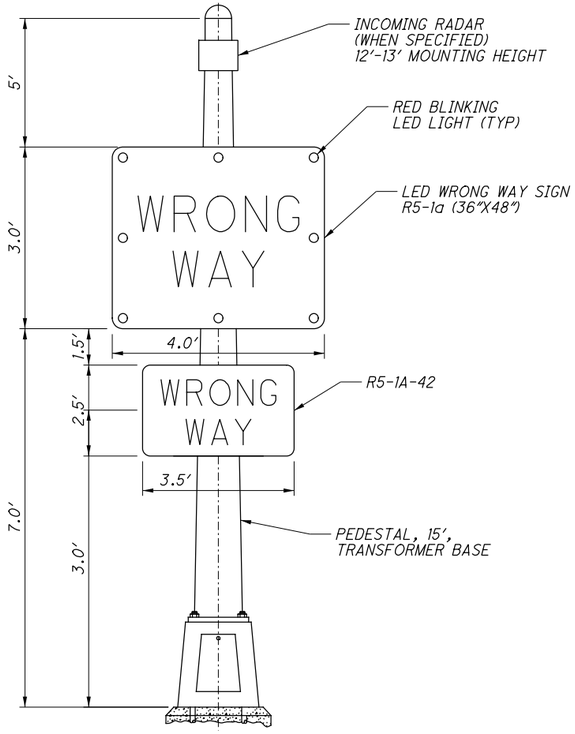
HORIZONTAL SCALE IN FEET 0 10 20 40

CALCULATED STC
CHECKED PJD



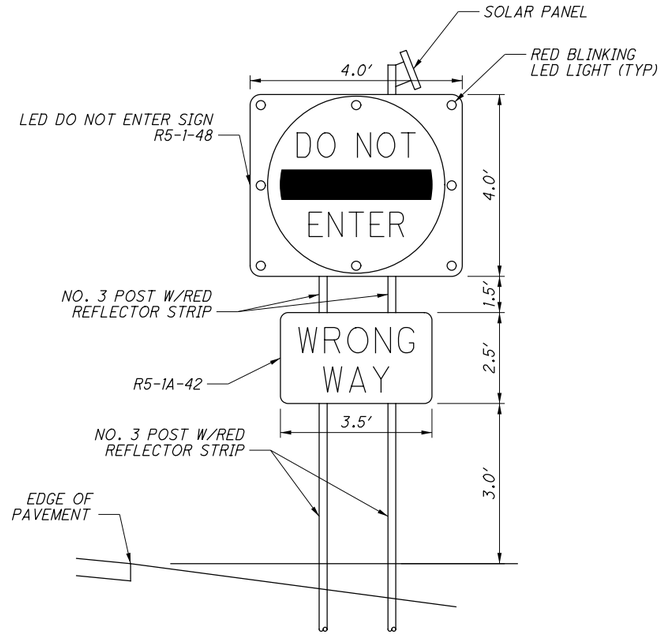
PEDESTAL, MISC.: PEDESTAL, 15', TRANSFORMER BASE

NOT TO SCALE



WRONG WAY DETECTION ASSEMBLY 1

NOT TO SCALE



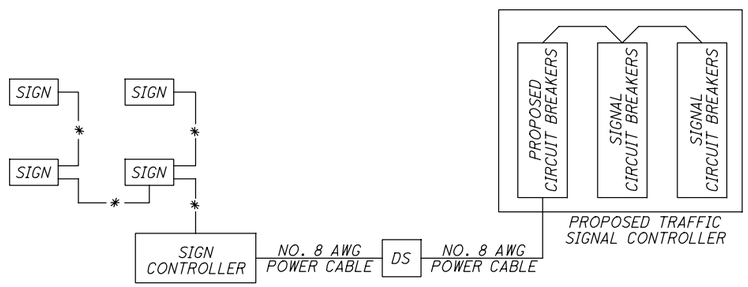
WRONG WAY DETECTION ASSEMBLY 2

NOT TO SCALE

WIRING DIAGRAM LEGEND

* - (3)-NO. 14 AWG

DS - DISCONNECT SWITCH



WIRING DIAGRAM

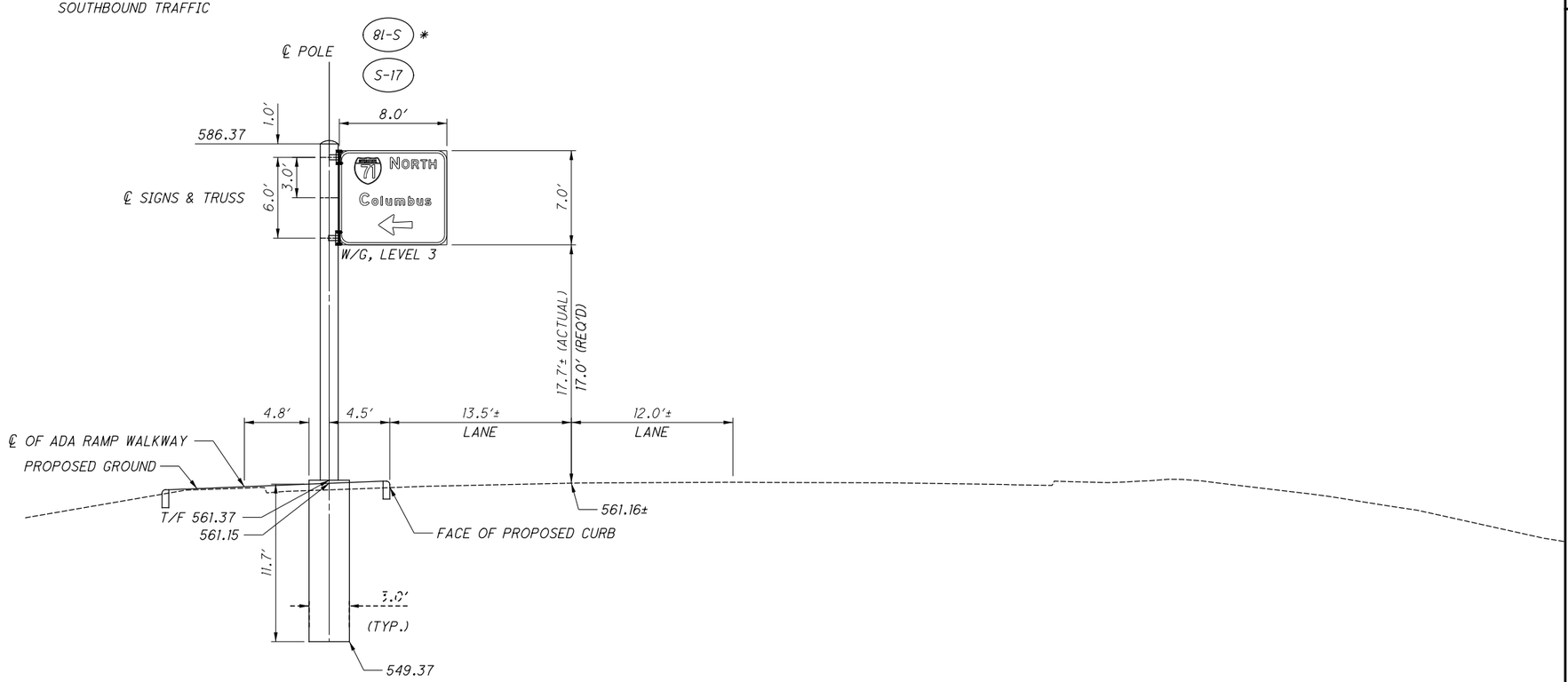
NOTE:
1. ROTATION ANGLE SHALL BE FIELD APPROVED BY THE ENGINEER.

CALCULATED STC
CHECKED PJD

TRAFFIC CONTROL DETAILS

HAM-71-8.42

* = ADDITIONAL 8' X 7' GUIDE SIGN
MOUNTED BEHIND S-18 FACING
SOUTHBOUND TRAFFIC



FRONT ELEVATION VIEW

CANTILEVER OH-02
KENNEDY AVE/RAMP P
STA. 408+39 (RAMP P)
SIGN NOS. S-17 AND S-18
LOOKING NORTH
TC-12.31, DESIGN 6, 25' POLE, 8' ARMS

CANTILEVER SIGN OH-01
STA. 408+39 RAMP P

CALCULATED STC
CHECKED PJD

HORIZONTAL SCALE IN FEET
0 0 0 0

HAM-71-8.65

116
129

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POWER SUPPLY FOR TRAFFIC SIGNALS

ELECTRIC POWER SHALL BE OBTAINED FROM DUKE ENERGY AT THE LOCATION INDICATED ON THE PLANS. POWER SUPPLIED SHALL BE 120 VOLTS.

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 COMPLETED, (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 NOT BE ACTIVATED ON THE PROPOSED DATE. ANY PUNCH LIST ITEMS THAT ARE FOUND SHALL BE CORRECTED AND REINSPECTED BY DISTRICT TRAFFIC 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.

WORK INSPECTION

THE CONTRACTOR SHALL PROVIDE THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER WITH 72-HOUR NOTICE OF ANY SIGNAL WORK TO BE PERFORMED AT THE INTERSECTION SITE SO THAT INSPECTION SERVICES CAN BE SUPPLIED.

MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATION

THE CONTRACTOR SHALL BE RESPONSIBLE 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 IS 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.

MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATION (CONTINUED)

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 MISALIGNED 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.

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 OR THE CITY OF CINCINNATI FOR POLICE SERVICES AND MAINTENANCE SERVICES BY CITY FORCES SHALL BE DEDUCTED FROM MONIES DUE OR TO BECOME DUE THE CONTRACTOR IN ACCORDANCE WITH PROVISIONS OF SECTION 105.15.

THE CONTRACTOR SHALL PROVIDE THE MAINTENANCE SERVICE ENTIRELY WITH HIS FORCES OR HE MAY CHOOSE TO ENTER INTO A COOPERATIVE UNDERSTANDING WITH THE LOCAL MAINTAINING AGENCY TO PROVIDE THE MAINTENANCE. THE CONTRACTOR SHALL INFORM THE ENGINEER, IN WRITING, OF THE MAINTENANCE METHOD SELECTED.

MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATION (CONTINUED)

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 CONST- RUCTION 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 OFF-DUTY CITY OF CINCINNATI POLICE, 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;
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.

CALCULATED PJD
CHECKED PJM

TRAFFIC SIGNAL NOTES

HAM-71-8.65

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. 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:

GROUNDING AND BONDING (CONTINUED)

   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.

   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.

GROUNDING AND BONDING (CONTINUED)

   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.

809 ATC V6.24 CONTROLLER, AS PER PLAN

THE CONTROLLER UNIT SHALL BE FURNISHED AND INSTALLED PER SS 809 AND BE LISTED ON THE TRAFFIC AUTHORIZED PRODUCTS (TAP) LIST.

THE CONTROLLER SHALL BE AN ECONOLITE COBALT AND COMPATIBLE WITH THE CABINET TYPE BEING INSTALLED.

633 CABINET, TYPE 332, AS PER PLAN

THE CABINET SHALL BE FURNISHED AND INSTALLED ACCORDING TO CMS 633 AND 733, AND BE LISTED ON THE TRAFFIC AUTHORIZED PRODUCTS LIST (TAP).

THE CABINET SHALL BE FURNISHED WITH AN EDI MONITOR AS ALLOWED ON THE TAP/APPROVED PRODUCTS LIST.

THE CONTRACTOR SHALL NOT REASSIGN THE CABINET DETECTOR INPUTS IN ORDER TO REDUCE THE NUMBER OF 2-CHANNEL DETECTOR UNITS SUPPLIED AND SHALL USE THE STANDARD CALTRANS INPUT FILE DESIGNATIONS FOLLOWING PLAN INSERT SHEET 203324.

PAYMENT FOR ITEM 633 CABINET, TYPE 33X, AS PER PLAN WILL BE AT THE CONTRACT BID PRICE PER EACH COMPLETE AND IN PLACE INCLUDING ALL CONNECTIONS TESTED AND ACCEPTED.

625 PULL BOX, 725.08, 24", AS PER PLAN

PULL BOXES SHALL HAVE NOMINAL OPENING DIMENSIONS OF 24 INCHES BY 35 INCHES. MATERIALS SHALL CONFORM TO 725.06, 725.07 OR 725.08. THE WORD "TRAFFIC" SHALL BE INTEGRALLY CAST AS PART OF THE COVER OR SECURELY FASTENED WITH CORROSION RESISTANT HARDWARE. THE SUPPLIED PULL BOXES SHALL SUPPORT A 20,000-POUND MINIMUM VERTICAL LOADING WITHOUT PERMANENT DAMAGE OR DEFLECTION TO THE UNIT. DISPOSE OF SURPLUS MATERIAL AND RESTORE DISTURBED FACILITIES AND SURFACES.

THE LARGEST BEND RADIUS POSSIBLE SHALL BE MAINTAINED FOR THE FIBER OPTIC CABLE.

ALL COSTS RESULTING FROM THE ABOVE REQUIREMENTS SHALL BE INCLUDED IN THE UNIT PRICE BID PER EACH FOR ITEM 625 "PULL BOX, 24" X 35" X 26".

632 SIGNAL SUPPORT FOUNDATION

PRIOR TO ORDERING THE SIGNAL SUPPORTS, THE CONTRACTOR SHALL CONTACT OUPS TO HAVE ALL THE UTILITIES LOCATED IN THE FIELD THEN MEET WITH THE PROJECT ENGINEER TO LOCATE THE PROPOSED SUPPORT LOCATIONS TO INSURE THERE ARE NO CONFLICTS WITH UTILITIES. IF THERE ARE ISSUES, THE PROJECT ENGINEER SHALL PROVIDE GUIDANCE AS TO THE RELOCATION OF THE SUPPORT POLES.

PAYMENT WILL BE AT THE CONTRACT UNIT PRICE AND WILL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND OTHER INCIDENTALS NECESSARY FOR EACH SUPPORT FURNISHED, IN PLACE, COMPLETE AND ACCEPTED.

CALCULATED PJD CHECKED PJM

TRAFFIC SIGNAL NOTES

HAM-71-8.65

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 CABINET SHALL HAVE A DOOR STOP MECHANISM AND THERMOSTATICALLY CONTROLLED FAN.

THE CABINET SHALL INCLUDE A BATTERY BALANCING DEVICE THAT REGULATES THE BATTERIES AND OPTIMIZES PERFORMANCE.

AFTER FOUR (4) HOURS OF BATTERY RUNTIME, THE SYSTEM SHALL BE PROGRAMMED TO SWITCH THE INTERSECTION FROM FULL OPERATION TO CONTROLLER AUTOMATIC FLASH OPERATION THROUGH THE MONITOR. THE CONTROLLER SHALL BE PROGRAMMED SO THAT FLASH OPERATION SHALL BEGIN ONCE THE INTERSECTION RUNS MINOR STREET GREEN (TYP. PH. 4 &8), ALL-RED CLEARANCE, AND THEN FLASH OPERATION.

THE UPS OUTPUT NOTIFICATIONS FOR ON BATTERY, BATTERY 2-HOUR TIMER, AND LOW BATTERY SHALL BE WIRED INTO THE TRAFFIC SIGNAL CABINET BACK PANEL OR THROUGH THE CONTROLLER WITH A C11 TO PROVIDE SPECIAL STATUS ALARMS FOR EACH OUTPUT INTO THE SIGNAL CONTROLLER.

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 MODULE SHOULD BE PLACED ON THE SIDE OF THE UPS CABINET FACING TOWARDS THE MAINLINE ROADWAY 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.

809 STOP-LINE RADAR DETECTION, 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 TS1 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.
8. THE CONTRACTOR SHALL INSTALL THE RADAR DETECTION PRIOR TO MILLING/DISABLING EXISTING LOOPS.
9. THE INSTALLATION SHALL INCLUDE ALL CONTROLLER PROGRAMMING FOR COMPLETE INSTALLATION, WHICH INCLUDES MODIFICATIONS FOR REMOVAL OF EXISTING DETECTION.

PAYMENT FOR ITEM 809 STOP-LINE RADAR DETECTION, 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.

CALCULATED PJD
CHECKED PJM

TRAFFIC SIGNAL NOTES

HAM-71-8.65

SHEET NUM.	PART.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
121	1						
						TRAFFIC SIGNALS	
295	295	625	25500	295	FT	CONDUIT, 3", 725.04	
10	10	625	25600	10	FT	CONDUIT, 4", 725.04	
198	198	625	25908	198	FT	CONDUIT, JACKED OR DRILLED, 725.052, 3"	
227	227	625	29000	227	FT	TRENCH	
5	5	625	30707	5	EACH	PULL BOX, 725.08, 24", AS PER PLAN	115
5	5	625	32000	5	EACH	GROUND ROD	
1	1	630	79100	1	EACH	SIGN HANGER ASSEMBLY, MAST ARM	
1	1	630	79500	1	EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED	
15.8	15.8	630	80100	15.8	SF	SIGN, FLAT SHEET	
6	6	632	05006	6	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, BLACK	
2	2	632	20731	2	EACH	PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN	115
6	6	632	25000	6	EACH	COVERING OF VEHICULAR SIGNAL HEAD	
2	2	632	26000	2	EACH	PEDESTRIAN PUSHBUTTON	
976	976	632	40700	976	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	
2	2	632	64011	2	EACH	SIGNAL SUPPORT FOUNDATION, AS PER PLAN	115
2	2	632	64020	2	EACH	PEDESTAL FOUNDATION	
251	251	632	68300	251	FT	POWER CABLE, 3 CONDUCTOR, NO. 6 AWG	
50	50	632	69500	50	FT	SERVICE CABLE, 2 CONDUCTOR, NO. 6 AWG	
1	1	632	70000	1	EACH	POWER SERVICE	
1	1	632	71368	1	EACH	SIGNAL SUPPORT, TYPE TC-12.31 DESIGN 10 POLE, WITH MAST ARMS TC-81.22 DESIGN 13 AND DESIGN 12	
1	1	632	72140	1	EACH	SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 13	
2	2	632	89700	2	EACH	PEDESTAL, 11'	
1	1	633	65521	1	EACH	CABINET, TYPE 332, AS PER PLAN	115
1	1	633	67100	1	EACH	CABINET FOUNDATION	
1	1	633	67200	1	EACH	CONTROLLER WORK PAD	
1	1	633	75001	1	EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN	116
1	1	809	69101	1	EACH	STOP LINE RADAR DETECTION, AS PER PLAN	116
1	1	809	69123	1	EACH	ATC CONTROLLER, AS PER PLAN	115

CALCULATED PJD
CHECKED PJM

TRAFFIC SIGNAL SUBSUMMARY

HAM-71-8.65

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
- EOS - EOS
- B/C - BACK OF CURB
- DITCH
- CB - CATCH BASIN
- MH - MANHOLE
- POWER POLE
- TELEPHONE POLE
- LIGHT POLE
- SINGLE POST SIGN
- LUMINAIRE
- PULL BOX
- SIGNAL SUPPORT
- 3 SECTION SIGNAL HEAD
- CONTROLLER
- 2"C - PROPOSED TRAFFIC CONDUIT
- FIRE HYDRANT
- GUY WIRE
- STOP BAR RADAR DETECTION UNIT
- PEDESTRIAN PUSH BUTTON
- PEDESTRIAN SIGNAL

HDPE - CONDUIT TYPE 725.052
RS - CONDUIT TYPE 725.04

SIGNAL HEADS
12" LED WITH BACKPLATE

R Y G

2A, 2B, 6A
6B, 4A, 4B

PEDESTRIAN SIGNAL HEADS

5

6PA,
6PB

POLE MOUNTED SIGNS

R10-3E-9
(9"X15")
(NEW)
S-2

R10-3E-9
(9"X15")
(NEW)
S-1

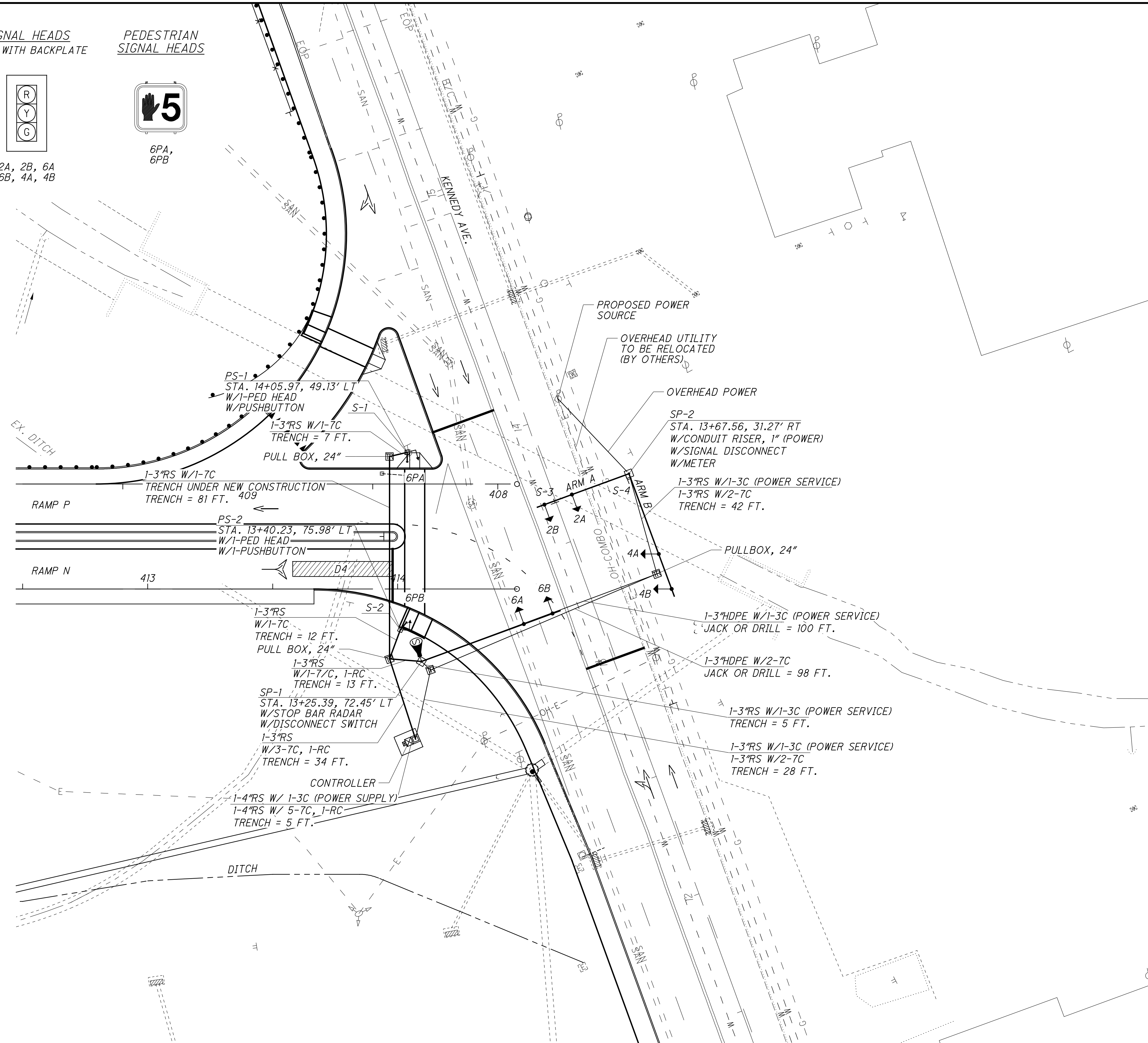
KENNEDY AVE.

D3-1-18
(66"X18")
(NEW)
S-4

OVERHEAD MOUNTED SIGNS

LEFT TURN
YIELD
ON GREEN

R10-12-30
(30"X36")
(NEW)
S-3



0 10 20 40
HORIZONTAL SCALE IN FEET

CALCULATED PJD
CHECKED PJM

SIGNAL PLAN
RAMP N, RAMP P & KENNEDY AVE

HAM-71-8.65

SIGNAL TIMING CHART (TEM FORM 496-3)

INTERSECTION: I-71 RAMP N/RAMP P @ KENNEDY AVE.
MAINTAINING AGENCY: ODOT

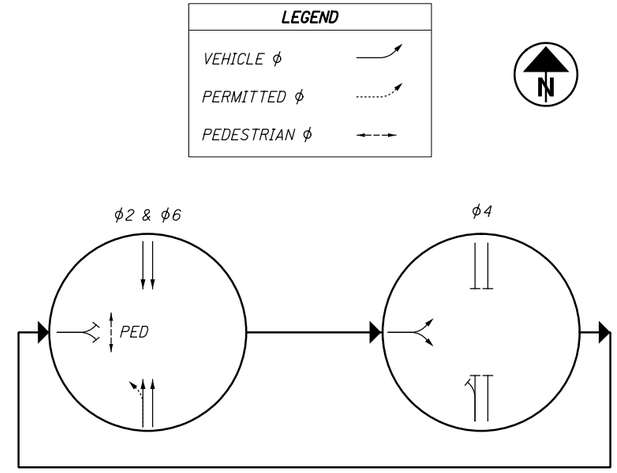
START UP
START IN: ALL RED
TIME FOR FLASH OR ALL RED: 9, 6 SEC.
FIRST PHASE(S): 2,6
COLOR DISPLAYED: GREEN

DUAL ENTRY: YES | PHASES: 2+6
REST IN RED: RING 1 NO | RING 2 NO
OVERLAP: A NO | B NO | C NO | D NO

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.)	-	-	-	4	-	-	-	-
TIME BEFORE REDUCTION		*(SEC.)	-	-	-	-	-	-	-	-
MINIMUM GAP		*(SEC.)	-	-	-	-	-	-	-	-
TIME TO REDUCE		*(SEC.)	-	-	-	-	-	-	-	-
MAXIMUM GREEN I		(SEC.)	-	40	-	30	-	40	-	-
MAXIMUM GREEN II		(SEC.)	-	-	-	-	-	-	-	-
YELLOW CHANGE		(SEC.)	-	4	-	3	-	4	-	-
ALL RED CLEARANCE		(SEC.)	-	1.5	-	2.5	-	1.5	-	-
WALK		(SEC.)	-		-	-	-	8	-	-
PEDESTRIAN CLEARANCE		(SEC.)	-		-	-	-	15	-	-
RECALL	MAXIMUM	(ON/OFF)	-	ON	-	OFF	-	ON	-	-
	MINIMUM	(ON/OFF)	-	OFF	-	OFF	-	OFF	-	-
	PEDESTRIAN	(ON/OFF)	-	OFF	-	OFF	-	OFF	-	-
MEMORY		(ON/OFF)	-	OFF	-	OFF	-	OFF	-	-

*VOLUME DENSITY CONTROLS

PHASING DIAGRAM (TYPICAL)



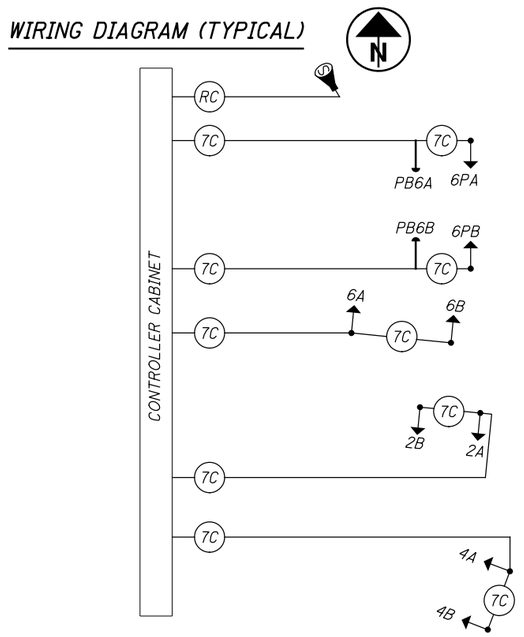
FIELD WIRING HOOKUP CHART

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	
PEDESTRIAN MOVEMENTS			
6PA	W	ϕ 6 G/LS10G	
6PB	DW	ϕ 6 R/LS10R	

RADAR DETECTION CHART (TEM FORM 496-4)

RADAR DETECTION NO.	MOVEMENT	PULSE OR PRESENCE	DELAY (SEC) CONTROLLER	ASSOCIATED CONTROLLER PHASE
D4	EB	PRESENCE	-	4

WIRING DIAGRAM (TYPICAL)



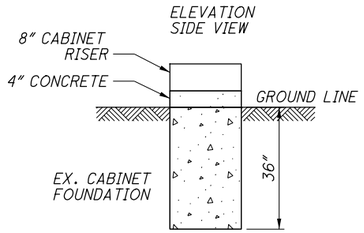
CALCULATED PJD | CHECKED PJM

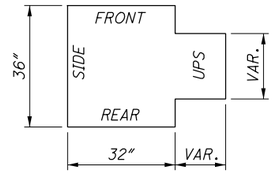
TRAFFIC SIGNAL PLAN DETAILS
RAMP N, RAMP P AND KENNEDY AVENUE

HAM-71-8.65

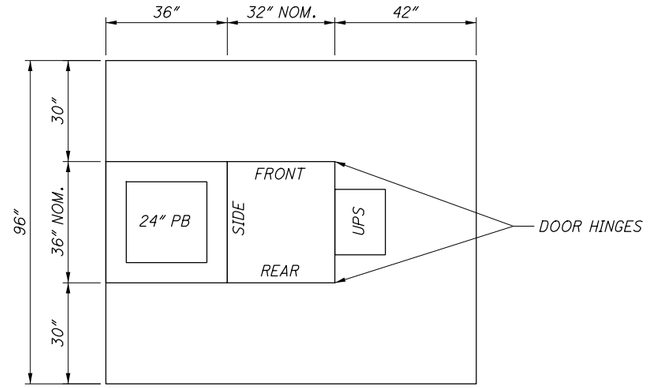
122
129

UPS FOUNDATION DETAIL





UPS WORK PAD DETAIL



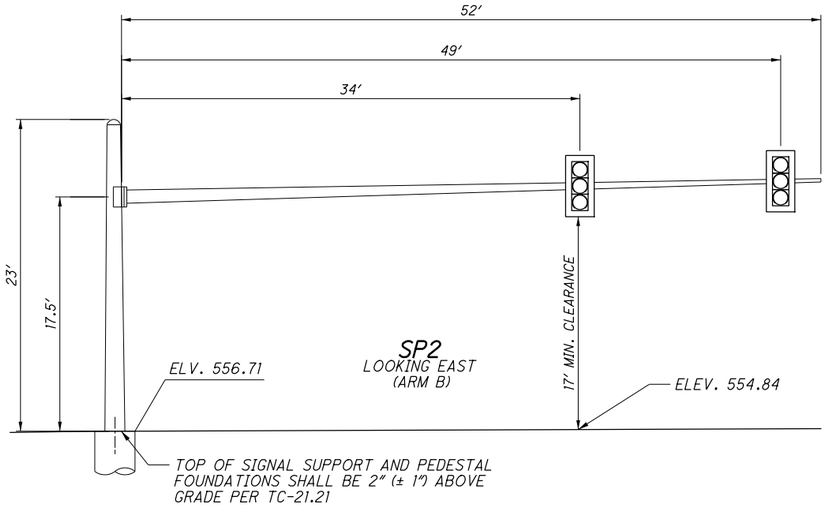
PLAN VIEW

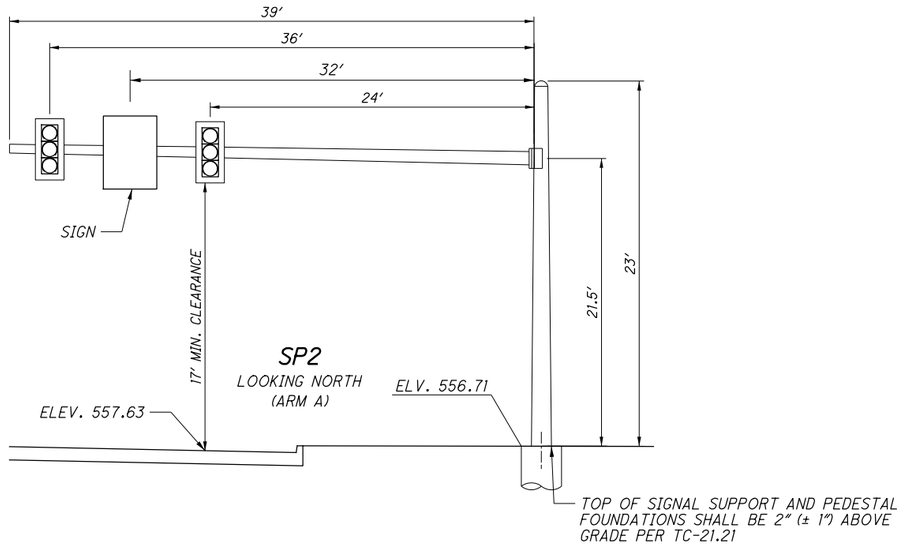
CALCULATED PJD
CHECKED PJM

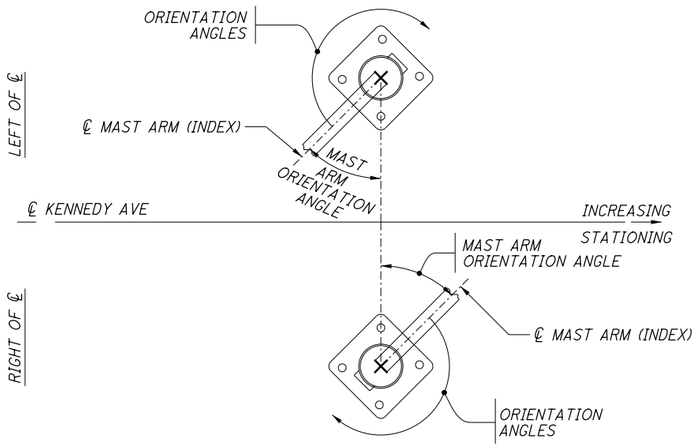
TRAFFIC SIGNAL PLAN DETAILS
RAMP N, RAMP P AND KENNEDY AVENUE

HAM-71-8.65

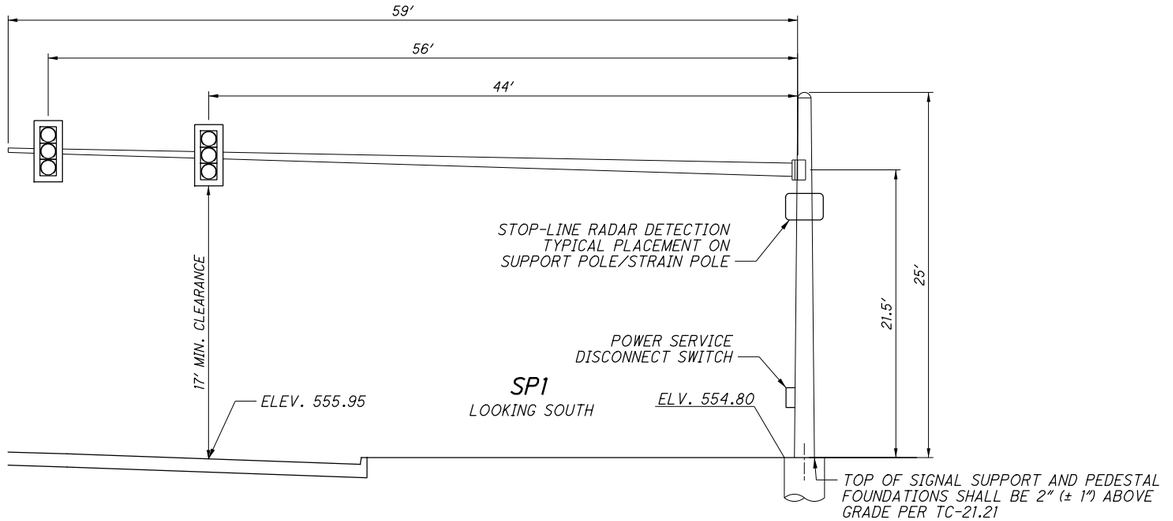
123
129







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-1	13+25.39	72.45 LT	555.95	554.80	TC-81.22	13	25	21.5	59	56	44					0							180	0
SP-2	13+67.56	31.27 RT	557.63	556.71	TC-12.31	10	23	21.5	39	36	32	24				0				70			180	0
SP-2	13+67.56	31.27 RT	554.84	556.71	TC-12.31	10	23	17.5	52	49	34						270							
PS-1	14+05.97	49.13 LT					8											120	0					
PS-2	13+40.23	75.98 LT					8											300	30					

SP-1 ARM DESIGN 13
SP-2 ARM A DESIGN 12, ARM B DESIGN 13

CALCULATED PJD
CHECKED PJM

TRAFFIC SIGNAL PLAN DETAILS
KENNEDY AVENUE

HAM-71-8.65

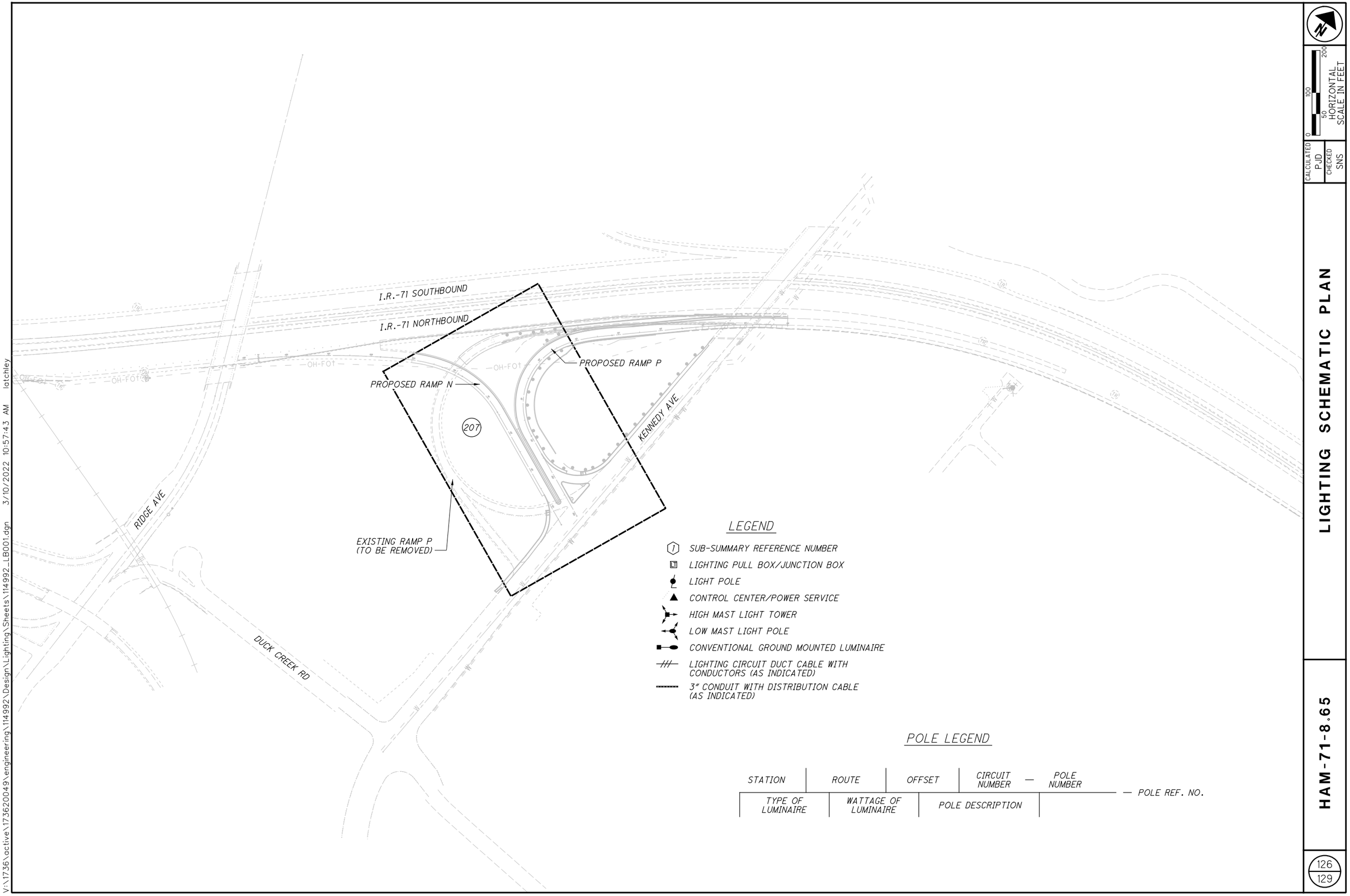
REFERENCE NO.	SHEET NO.	SIDE	ROADWAY	STATION TO STATION	625 CONNECTION, FUSED PULL APART EACH	CONNECTION, UNFUSED PERMANENT EACH	LIGHT POLE, CONVENTIONAL, AT12B35 EACH	LIGHT POLE FOUNDATION, 24" X 6" DEEP EACH	NO. 10 AWG POLE AND BRACKET CABLE FT	1-1/2" DUCT CABLE WITH 3 NO.4 AWG 2400 VOLT CABLES FT	1-1/2" DUCT CABLE WITH 3 NO.2 AWG 2400 VOLT CABLES FT	LUMINAIRE, CONVENTIONAL, AS PER PLAN, TYPE II, 200 W HPS, 480 V EACH	TRENCH, 24" DEEP FT	PULL BOX, 725.08, 18" EACH	PULL BOX REMOVED EACH	GROUND ROD EACH	UNDERGROUND WARNING/MARKING TAPE FT	SPECIAL - MAINTAIN EXISTING LIGHTING LUMP	LIGHT POLE REMOVED EACH	LIGHT POLE FOUNDATION REMOVED EACH	LUMINAIRE REMOVED EACH	DISCONNECT CIRCUIT EACH	NO. 2 AWG 2400 VOLT DISTRIBUTION CABLE FT	CONDUIT, 3", 725.052 FT
1	127																	1							
1	128	RT	IR 71	410+47.50		3								1	1								1		
2	128	LT/RT	RAMP N	410+47.50 (71) TO 411+01.00									144				144							462	144
3	128	RT	RAMP N	411+01.00		3								1											
4	128	LT/RT	RAMP N	411+01.00 TO 412+42.00	2						160		150				150								
5	128	RT	RAMP N	412+40.00 TO 412+42.00							63		53				53								
6	128	RT	RAMP N	412+40.00		3								1											
7	128	RT	RAMP N	412+40.00 TO 414+20.00							200		190				190								
8	128	LT/RT	RAMP N	414+20.00 TO 408+75.00 (P)						195			185				185								
9	128	RT	RAMP P	408+75.00		3								1											
10	128	RT	RAMP P	15+21.10 (KEN) TO 410+00.00						35			25				25								
11	128	LT	KENNEDY AVE	15+22.20	2		1	1	141			1				1									
12	128	RT	IR 71	410+55.00											1										
13	128	RT	RAMP N	413+84.00															1	1	1				
14	128	RT	RAMP N	12+88.00 (KEN) TO 414+20.00							37		27				27								
15	128	RT	RAMP N	414+20.00		3								1											
TOTALS CARRIED TO GENERAL SUMMARY					4	15	1	1	141	230	460	1	774	5	2	1	774	LS	1	1	1	1	462	144	

CALCULATED PJD
CHECKED SNS

LIGHTING SUBSUMMARY QUANTITIES

HAM-71-8.65

125
129



LEGEND

- 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

HORIZONTAL SCALE IN FEET
0 50 100 200

CALCULATED PJD
CHECKED SNS

LIGHTING SCHEMATIC PLAN

HAM-71-8.65

126
129

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 DOWNED 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.

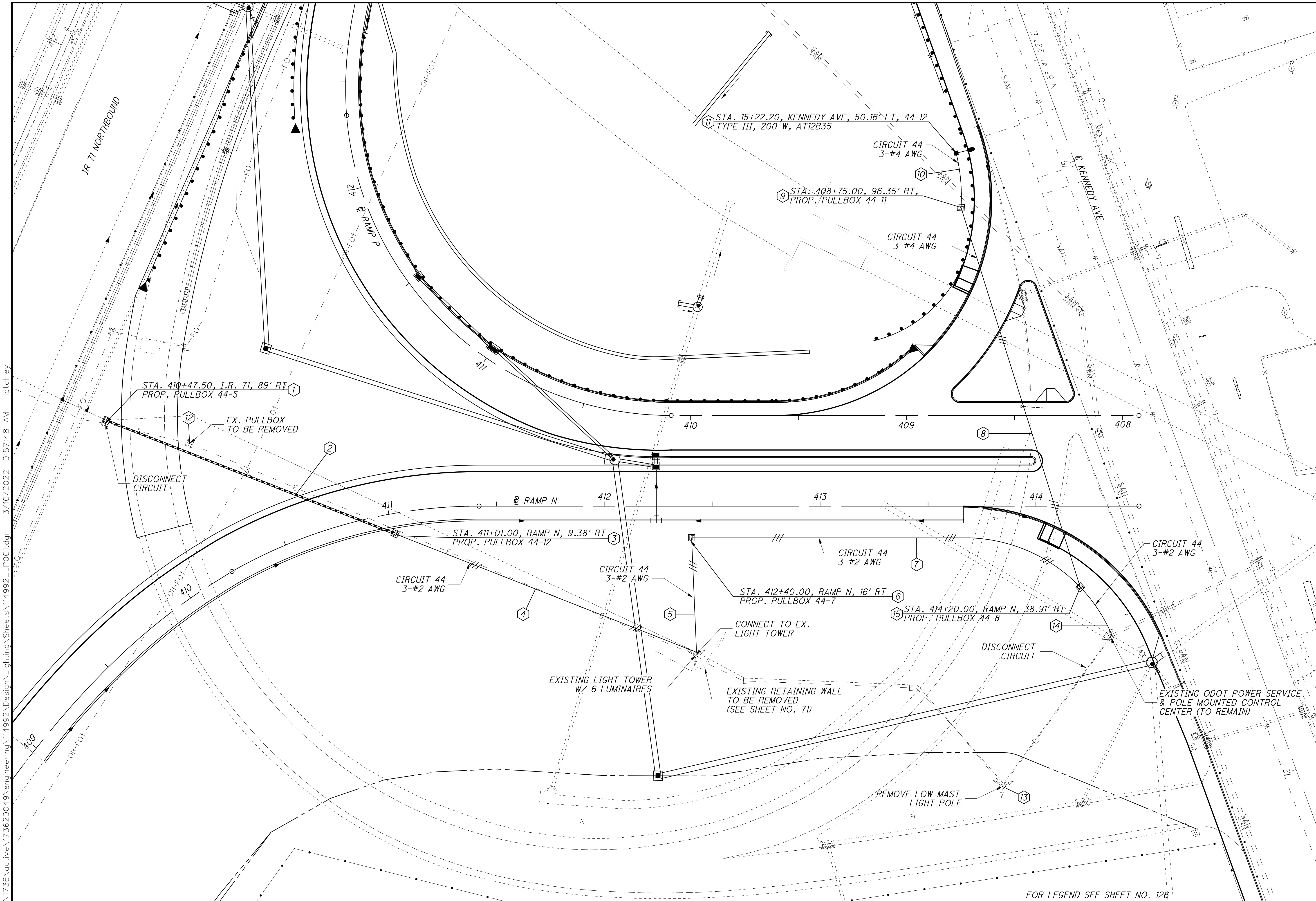
THE FOLLOWING ESTIMATED QUANTITY IS INCLUDED IN THE LIGHTING SUBSUMMARY FOR THE NOTED ABOVE:

SPECIAL, MAINTAIN EXISTING LIGHT, LUMP SUM

CALCULATED PJD
CHECKED SNS

LIGHTING GENERAL NOTES

HAM-71-8.65



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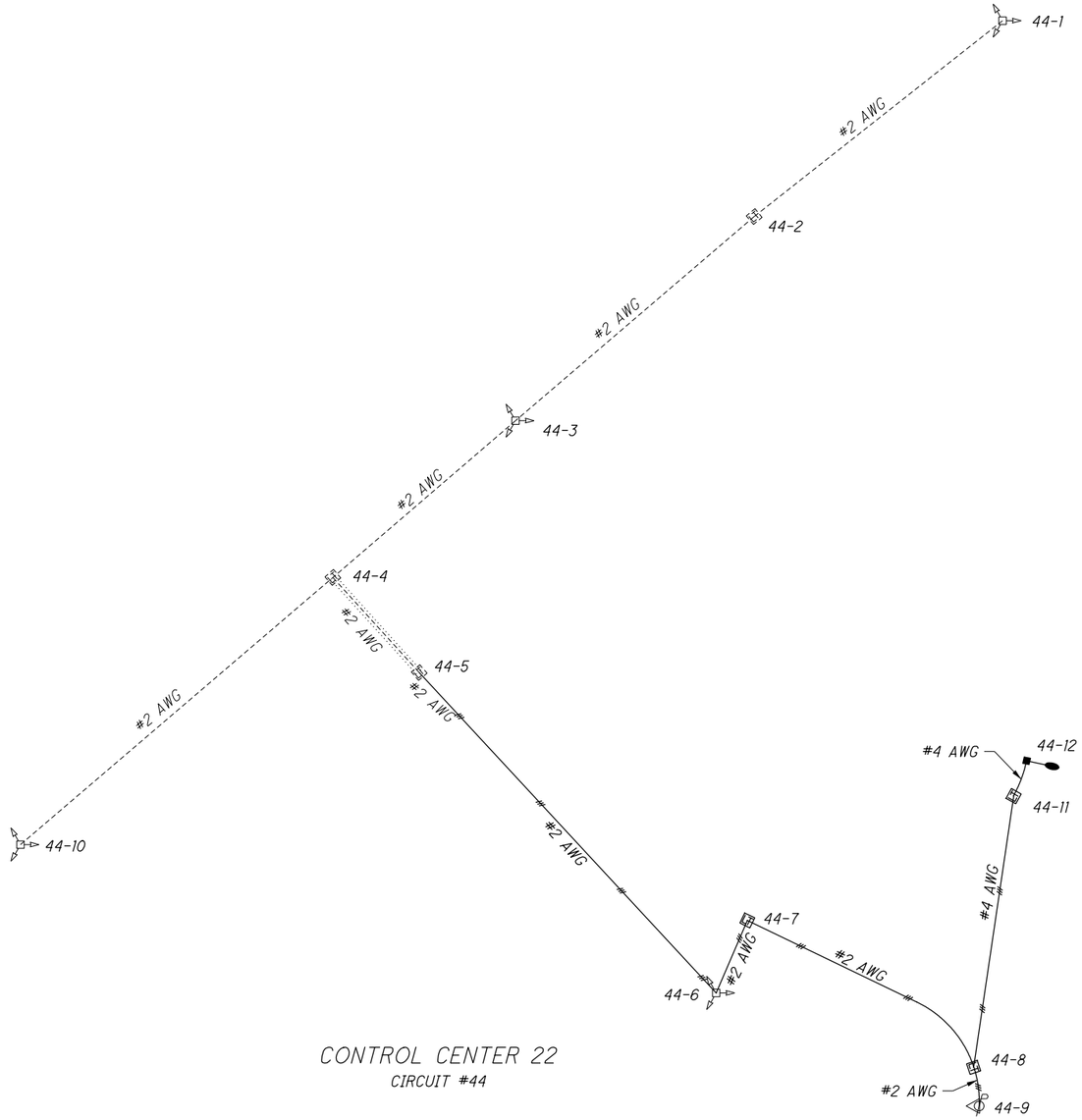
CALCULATED PJD
CHECKED SNS

LIGHTING PLAN
RAMPS N & P

HAM-71-8.65



CONTROL CENTER 22

CIRCUIT #44

FOR LEGEND SEE SHEET NO. 126

CALCULATED PJD

CHECKED SNS

LIGHTING CIRCUIT DIAGRAM

HAM-71-8.65