

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

FRA-71-9.07
CITY OF COLUMBUS
CITY OF GROVE CITY
JACKSON TOWNSHIP
FRANKLIN COUNTY

PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF THE RESURFACING AND FULL DEPTH WIDENING OF IR-71 NORTHBOUND IN ORDER TO EXTEND THE EXPRESS LANE FROM IR-270 TO SOUTH OF STRINGTOWN ROAD AND REMOVE THE NORTHBOUND WEAVE BETWEEN THE TWO INTERCHANGES. WORK INCLUDES RECONSTRUCTION OF RAMPS, ROADWAY, MEDIAN BARRIERS, DRAINAGE, LIGHTING, AND NOISEWALLS.

PROJECT EARTH DISTURBED AREA: 15.55 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 2.96 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA: 18.51 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.

MAINTENANCE OF TRAFFIC ENDORSEMENT

I HEREBY APPROVED THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

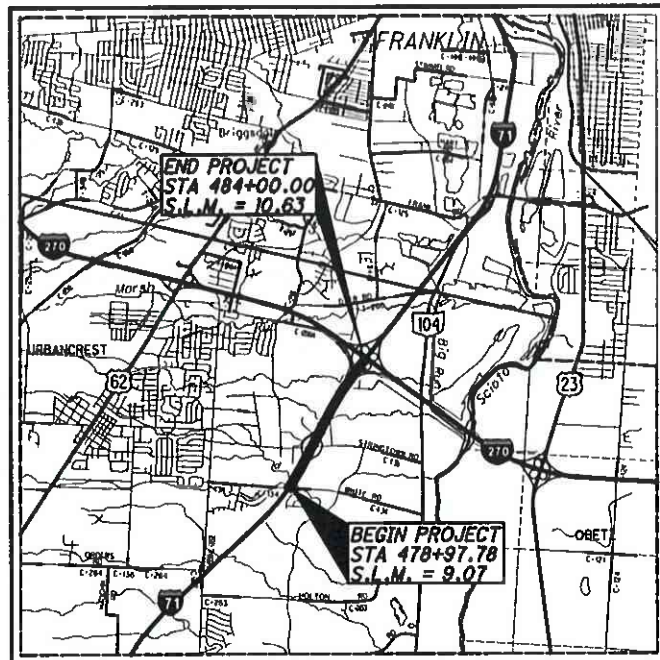
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PLAN PREPARED BY:



400 W. NATIONWIDE BLVD.,
SUITE 225, COLUMBUS, OH 43215



LOCATION MAP

LATITUDE: 39°53'06" LONGITUDE: 83°02'43"

SCALE IN MILES



PORTION TO BE IMPROVED	—————
INTERSTATE HIGHWAY	—————
FEDERAL ROUTES	—————
STATE ROUTES	—————
COUNTY & TOWNSHIP ROADS	—————
OTHER ROADS	—————

DESIGN DESIGNATION

CURRENT ADT (2019)	102,000
DESIGN YEAR ADT (2039)	112,000
DESIGN HOURLY VOLUME (2039)	11,000
DIRECTIONAL DISTRIBUTION	0.62
TRUCKS (24 HOUR B&C)	0.18
T _d	0.11
DESIGN SPEED	70 MPH
LEGAL SPEED	65 MPH
DESIGN FUNCTIONAL CLASSIFICATION:	URBAN INTERSTATE
NHS PROJECT	YES

DESIGN EXCEPTIONS

DESIGN FEATURES	APPROVED	SHEET NUMBERS
LANE WIDTH	02/12/2019	13

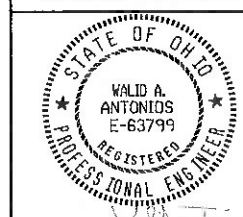
UNDERGROUND UTILITIES

Contact Two Working Days
Before You Dig



OHIO811, 8-1-1, or 1-800-362-2764
(Non-members must be called directly)

ENGINEERS SEAL:



SIGNED: [Signature]
DATE: 05-31-2019

STANDARD CONSTRUCTION DRAWINGS										SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS	
BP-1.1	7/28/00	MGS-1.1	1/19/18	HL-30.22	1/17/14	MT-102.10	1/18/19	TC-52.20	7/20/18	800	10/18/19	
BP-2.1	7/17/15	MGS-2.1	1/19/18	HL-40.20	7/20/18	MT-102.30	10/16/15	TC-61.30	1/20/17	804	1/18/19	
BP-2.2	7/18/08	MGS-3.1	1/19/18	HL-60.11	7/21/17	MT-103.10	1/19/18	TC-65.10	1/17/14	808	1/18/19	
BP-2.5	7/19/13	MGS-3.2	1/18/13	HL-60.12	7/15/16	MT-104.10	10/16/15	TC-65.11	7/21/17	809	1/18/19	
BP-3.1	7/18/14	MGS-4.2	7/19/13	HL-60.21	7/20/18	MT-105.10	7/19/13	TC-71.10	1/19/18	821	4/20/12	
BP-5.1	7/20/18	MGS-4.3	1/18/13	HL-60.31	1/18/19	TC-7.65	7/20/18	TC-72.20	7/20/18	832	10/19/18	
BP-6.1	7/19/13	MGS-5.3	7/15/16	MT-95.30	4/19/19	TC-12.30	1/19/18	ITS-14.11	1/18/19			
BP-9.1	1/18/19	RM-4.3	7/18/14	MT-95.45	4/19/19	TC-21.10	7/21/17	ITS-14.50	7/20/18	875	1/18/19	
CB-2.3	1/15/16	RM-4.4	7/21/17	MT-98.10	1/20/17	TC-21.20	7/20/18	ITS-15.10	7/17/15	878	1/18/19	
CB-3.1	1/15/16	RM-4.5	7/21/17	MT-98.11	4/19/19	TC-21.50	7/15/16	ITS-18.00	1/18/19	902	12/31/12	
CB-3.3	1/15/16	RM-4.6	7/19/13	MT-98.20	4/19/19	TC-22.20	1/17/14	ITS-50.10	1/19/18	904	1/18/19	
CB-3.4	1/15/16	NBS-1-09	1/19/18	MT-98.21	7/18/14	TC-41.10	7/19/13	ITS-60.10	7/15/16	908	10/20/17	
HW-2.1	7/20/18	HL-10.11	7/20/18	MT-99.20	4/19/19	TC-41.15	10/18/13	ITS-76.10	1/18/19	921	4/20/12	
HW-2.2	7/20/18	HL-10.12	1/20/17	MT-101.60	1/20/17	TC-41.20	10/18/13					
I-2.1	1/15/16	HL-10.13	7/20/18	MT-101.70	7/20/18	TC-41.30	10/18/13					
MH-1.2	1/15/16	HL-20.11	4/21/17	MT-101.75	7/15/16	TC-42.20	10/18/13					
DM-1.1	7/21/17	HL-20.21	1/19/18	MT-101.90	7/21/17	TC-51.11	1/15/16					
DM-1.2	1/18/13	HL-30.11	1/18/19			TC-51.12	1/15/16					
DM-2.1	1/18/13	HL-30.21	1/17/14			TC-52.10	10/18/13					

APPROVED: [Signature] DISTRICT DEPUTY DIRECTOR
DATE 11/20/19

APPROVED: [Signature] DIRECTOR, DEPARTMENT OF TRANSPORTATION
DATE 12/3/19

FEDERAL PROJECT NO.
E151(115)

PID NO.
92615

CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT
NONE

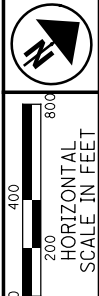
FRA-71-9.07

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264

FRA-71-9.07
200083
Dist 6
PID - 92615
3/12/2020

Contract Proposal Available @
www.contracts.dot.state.oh.us/home

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CURVE DATA RAMP C

CURVE #3
 P.I. Sta. 434+99.72
 $\Delta = 38^\circ 15' 14''$ (RT)
 $Dc = 6^\circ 30' 00''$
 $R = 881.47'$
 $Ls = 200.00'$
 $\theta_s = 6^\circ 30' 00''$
 $LT = 133.42'$
 $ST = 66.75'$
 $Lc = 488.52'$
 $Ts = 403.26'$
 $Es = 52.51'$
 $\theta_{max} = 0.057$
 PC Sta. 431+90.97
 CS Sta. 436+79.49
 ST Sta. 438+79.49

CURVE DATA RAMP D

CURVE #4
 P.I. Sta. 486+85.14
 $\Delta = 2^\circ 46' 36''$ (LT)
 $Dc = 1^\circ 00' 00''$
 $R = 5,729.58'$
 $T = 138.86'$
 $L = 277.67'$
 $E = 1.68'$
 $\theta_{max} = 0.033$
 PC Sta. 485+46.28
 PRC Sta. 488+23.95

CURVE #5
 P.I. Sta. 490+86.62
 $\Delta = 2^\circ 16' 34''$ (RT)
 $Dc = 0^\circ 26' 00''$
 $R = 13,222.11'$
 $T = 262.68'$
 $L = 525.29'$
 $E = 2.61'$
 $\theta_{max} = 0.016$
 PRC Sta. 488+23.95
 PCC Sta. 493+49.23

CURVE #6
 P.I. Sta. 494+99.15
 $\Delta = 22^\circ 12' 21''$ (RT)
 $Dc = 7^\circ 30' 00''$
 $R = 763.94'$
 $T = 149.92'$
 $L = 296.08'$
 $E = 14.57'$
 $\theta_{max} = 0.059$
 PCC Sta. 493+49.23
 PT Sta. 496+45.31

CURVE DATA RAMP H

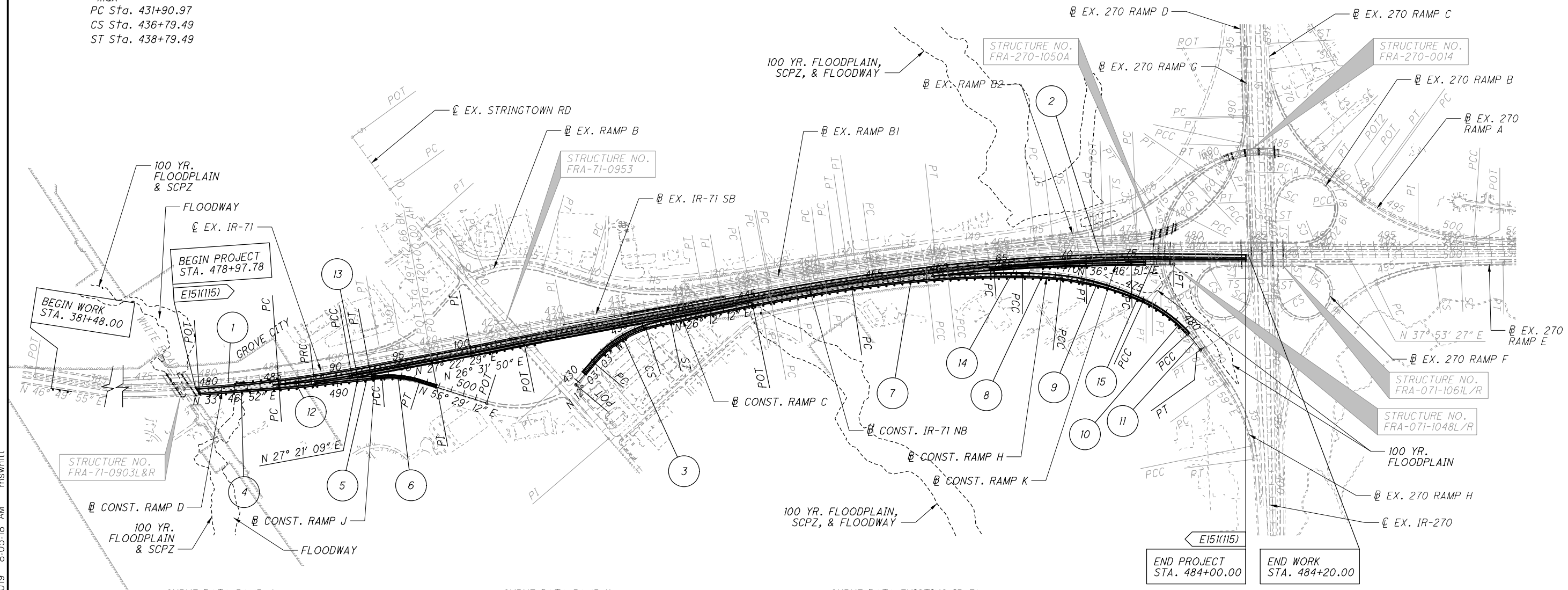
CURVE #7
 P.I. Sta. 459+82.16
 $\Delta = 8^\circ 52' 16''$ (RT)
 $Dc = 0^\circ 40' 00''$
 $R = 8,594.37'$
 $T = 666.66'$
 $L = 1,330.66'$
 $E = 25.82'$
 $\theta_{max} = 0.019$
 PC Sta. 453+15.50
 PCC Sta. 466+46.15

CURVE #8
 P.I. Sta. 467+96.62
 $\Delta = 6^\circ 00' 46''$ (RT)
 $Dc = 2^\circ 00' 00''$
 $R = 2,864.79'$
 $T = 150.46'$
 $L = 300.64'$
 $E = 3.95'$
 $\theta_{max} = 0.035$
 PCC Sta. 466+46.15
 PCC Sta. 469+46.80

CURVE #9
 P.I. Sta. 472+81.45
 $\Delta = 18^\circ 15' 00''$ (RT)
 $Dc = 2^\circ 45' 00''$
 $R = 2,083.48'$
 $T = 334.65'$
 $L = 663.63'$
 $E = 26.70'$
 $\theta_{max} = 0.042$
 PCC Sta. 469+46.80
 PCC Sta. 476+10.43

CURVE #10
 P.I. Sta. 478+29.80
 $\Delta = 22^\circ 43' 52''$ (RT)
 $Dc = 5^\circ 15' 00''$
 $R = 1,091.35'$
 $T = 219.37'$
 $L = 432.97'$
 $E = 21.83'$
 $\theta_{max} = 0.057$
 PCC Sta. 476+10.43
 PCC Sta. 480+43.41

CURVE #11
 P.I. Sta. 481+21.97
 $\Delta = 7^\circ 03' 42''$ (RT)
 $Dc = 4^\circ 30' 00''$
 $R = 1,273.24'$
 $T = 78.56'$
 $L = 156.93'$
 $E = 2.42'$
 $\theta_{max} = X$
 PCC Sta. 480+43.41
 PT Sta. 482+00.33



CURVE DATA RAMP J

CURVE #12
 P.I. Sta. 88+31.66
 $\Delta = 5^\circ 43' 37''$ (LT)
 $Dc = 1^\circ 00' 15''$
 $R = 5,705.58'$
 $T = 285.38'$
 $L = 570.29'$
 $E = 7.13'$
 $\theta_{max} = 0.033$
 PC Sta. 85+46.28
 PCC Sta. 91+16.57

CURVE DATA RAMP K

CURVE #13
 P.I. Sta. 91+89.53
 $\Delta = 0^\circ 42' 06''$ (LT)
 $Dc = 0^\circ 28' 51''$
 $R = 11,916.51'$
 $T = 72.96'$
 $L = 145.92'$
 $E = 0.22'$
 $\theta_{max} = 0.018$
 PCC Sta. 91+16.57
 PT Sta. 92+62.49

CURVE #14
 P.I. Sta. 67+92.03
 $\Delta = 3^\circ 34' 44''$ (RT)
 $Dc = 0^\circ 30' 00''$
 $R = 11,459.16'$
 $T = 358.00'$
 $L = 715.77'$
 $E = 5.59'$
 $\theta_{max} = NC$
 PC Sta. 64+34.03
 PT Sta. 71+49.79

CURVE #15
 P.I. Sta. 76+67.41
 $\Delta = 1^\circ 06' 35''$ (RT)
 $Dc = 0^\circ 20' 07''$
 $R = 17,088.74'$
 $T = 165.51'$
 $L = 331.02'$
 $E = 0.80'$
 $\theta_{max} = NC$
 PC Sta. 75+01.89
 PT Sta. 78+32.91

CURVE DATA EXISTING IR-71

CURVE #1
 P.I. Sta. 472+61.69
 $\Delta = 19^\circ 28' 45''$ (LT)
 $Dc = 0^\circ 29' 02''$
 $R = 11,843.51'$
 $T = 2,032.88'$
 $L = 4,026.53'$
 $E = 173.20'$
 $\theta_{max} = 0.018$
 PC Sta. 452+28.81
 PT Sta. 492+55.33

CURVE #2
 P.I. Sta. 462+63.86
 $\Delta = 10^\circ 32' 30''$ (RT)
 $Dc = 0^\circ 20' 00''$
 $R = 17,188.74'$
 $T = 1,585.73'$
 $L = 3,162.50'$
 $E = 72.99'$
 $\theta_{max} = NC$
 PC Sta. 446+78.13
 PC Sta. 587+51.41

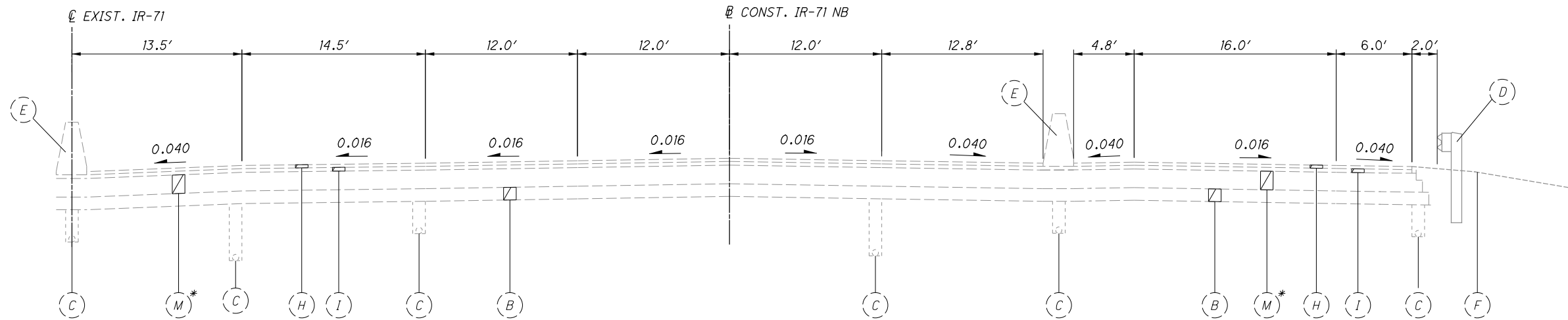
PRIMARY PROJECT CONTROL INFORMATION

POINT NUMBER	GRID COORDINATES U.S. SURVEY FEET		ORTHOMETRIC HEIGHT (ELEVATION)	DESCRIPTION
	NORTHING	EASTING		
CP1	681129.7378	1812102.8864	782.9300	CONCRETE MONUMENT WITH ALUMINUM DISK STAMPED "PRIMARY PROJECT CONTROL"
CP2	685958.4642	1815048.0823	771.1420	CONCRETE MONUMENT WITH ALUMINUM DISK STAMPED "PRIMARY PROJECT CONTROL"
CP3	690217.0867	1817896.8898	744.2770	CONCRETE MONUMENT WITH ALUMINUM DISK STAMPED "PRIMARY PROJECT CONTROL"
CP4	694584.2917	1821251.5763	705.7910	CONCRETE MONUMENT WITH ALUMINUM DISK STAMPED "PRIMARY PROJECT CONTROL"
CP5	692629.5737	1811828.3446	774.6350	CONCRETE MONUMENT WITH ALUMINUM DISK STAMPED "PRIMARY PROJECT CONTROL"
CP6	688262.8526	1818985.5178	715.6070	CONCRETE MONUMENT WITH ALUMINUM DISK STAMPED "PRIMARY PROJECT CONTROL"

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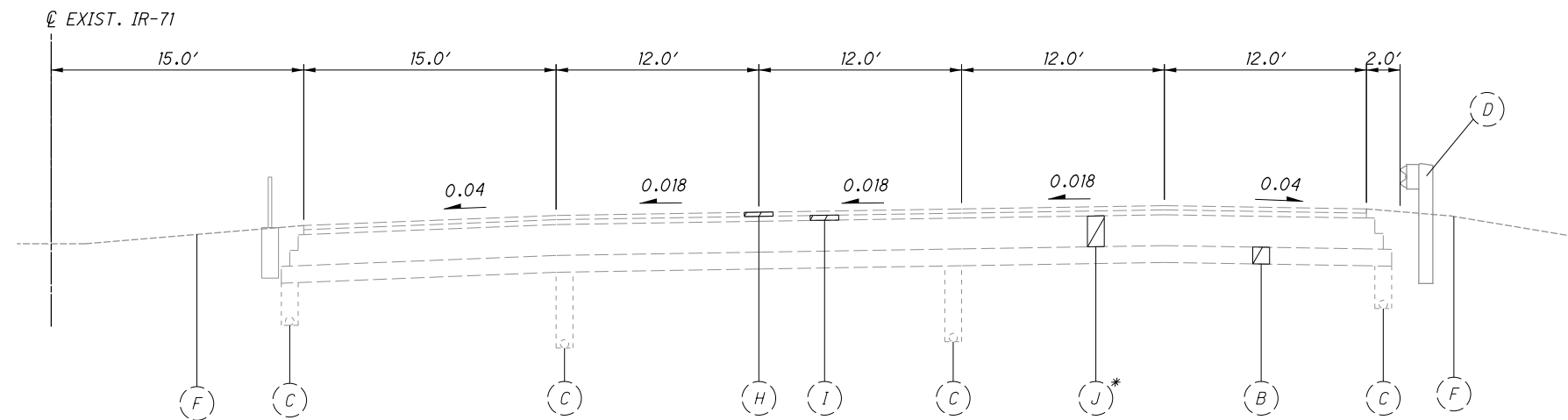
SCHEMATIC PLAN

FRA-71-9.07



NORMAL SECTION - IR-71 (NORTHBOUND)

SECTION APPLIES:
STA. 483+39.25 BK



SUPERELEVATED SECTION - IR-71 (NORTHBOUND)

SECTION APPLIES:
STA. 478+97.78 AH

* NOTE:

ITEM (J), EXISTING 12" ASPHALT CONCRETE BASE USED FROM BEGIN PROJECT TO 431+57.34.

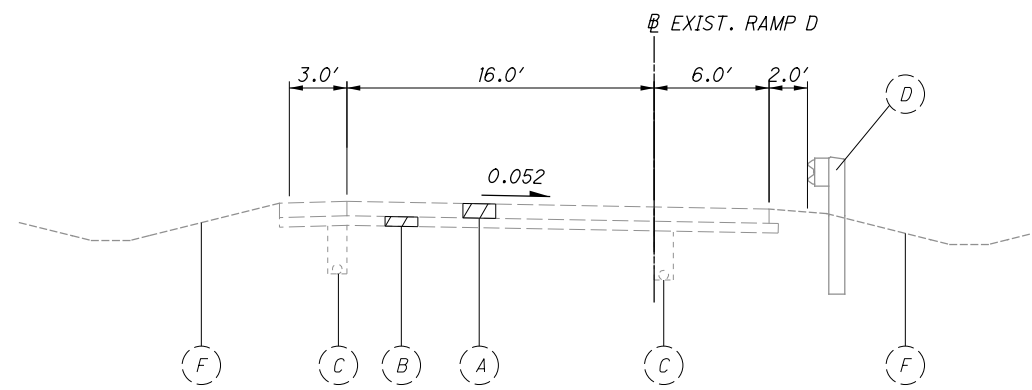
ITEM (M), EXISTING 9.5" ASPHALT CONCRETE BASE USED FROM 431+57.34 TO END PROJECT.

EXISTING LEGEND

- | | | |
|--|--|---------------------|
| (A) 14" NON-REINFORCED CONCRETE PAVEMENT | (H) 1.5" ASPHALT CONCRETE SURFACE COURSE | (O) 9" ASPHALT BASE |
| (B) 6" AGGREGATE BASE | (I) 1.75" ASPHALT CONCRETE INTERMEDIATE COURSE | |
| (C) 6" UNDERDRAIN | (J) 12" ASPHALT CONCRETE BASE | |
| (D) GUARDRAIL | (K) 9" REINFORCED CONCRETE PAVEMENT | |
| (E) CONCRETE BARRIER, SINGLE SLOPE | (L) VARIABLE DEPTH ASPHALT BASE (AS SHOWN) | |
| (F) EXISTING GROUND | (M) 9.5" ASPHALT CONCRETE BASE | |
| (G) 3"± VARIABLE DEPTH ASPHALT | (N) 11.5" ASPHALT CONCRETE BASE | |

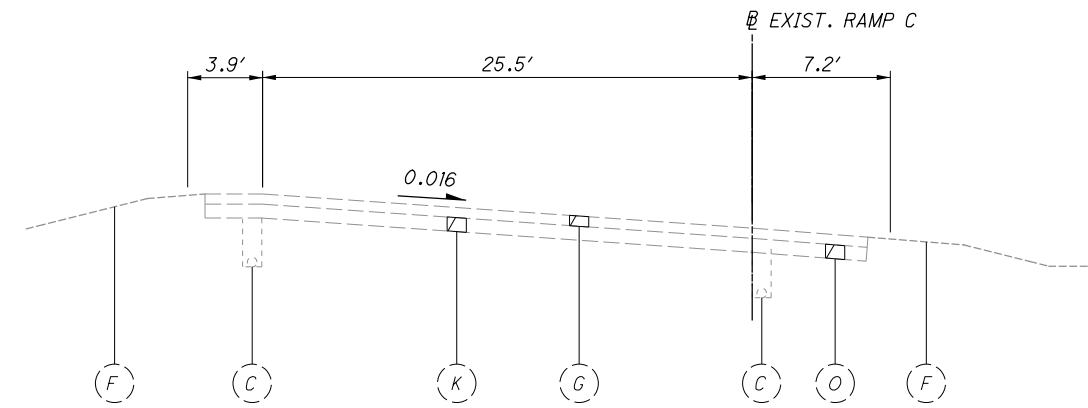
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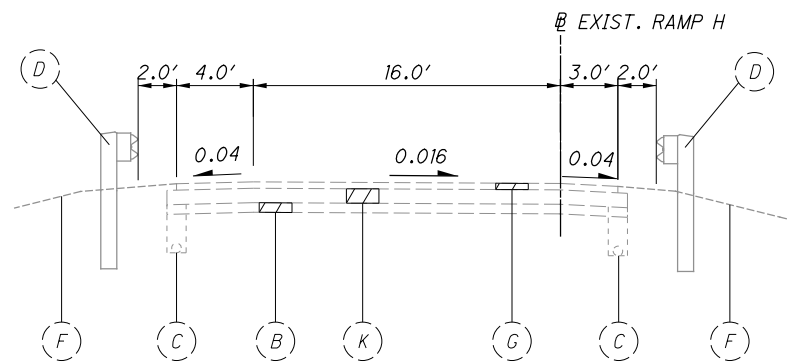
SUPERELEVATED SECTION - IR-71 RAMP D

SECTION APPLIES:
STA. 497+80.00 AH



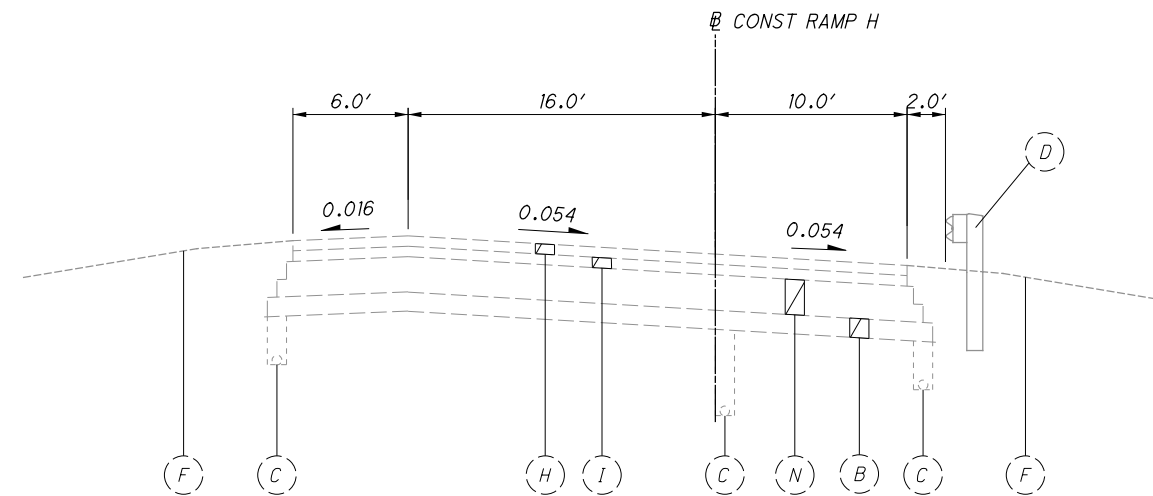
SUPERELEVATED SECTION - IR-71 RAMP C

SECTION APPLIES:
STA. 430+80.00 BK



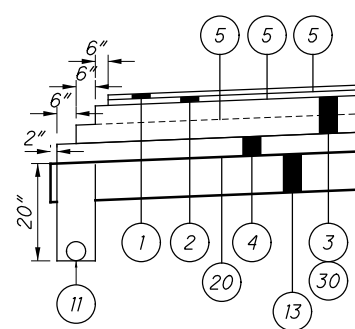
SUPERELEVATED SECTION - IR-270 RAMP H

SECTION APPLIES:
STA. 480+43.41 BK

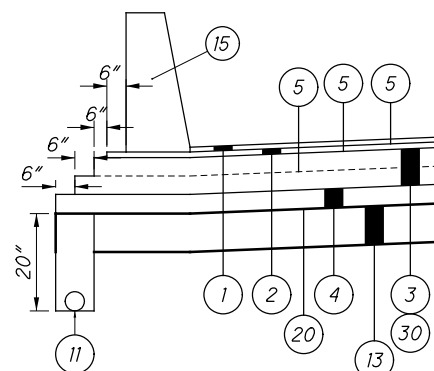


SUPERELEVATED SECTION - IR-270 RAMP H

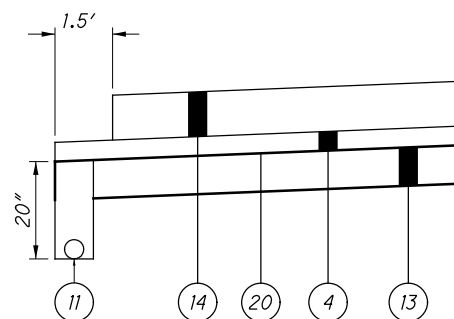
SECTION APPLIES:
STA. 480+43.41 AH



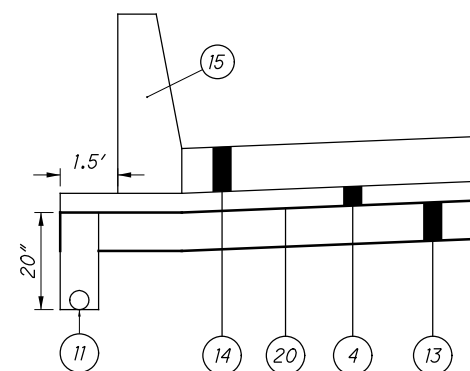
ASPHALT EDGE COURSE DETAIL



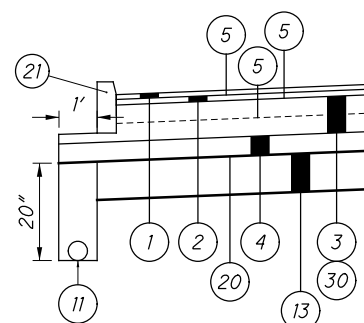
CONCRETE BARRIER
ASPHALT EDGE COURSE DETAIL



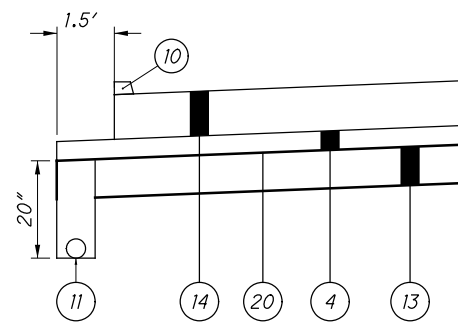
CONCRETE EDGE COURSE DETAIL



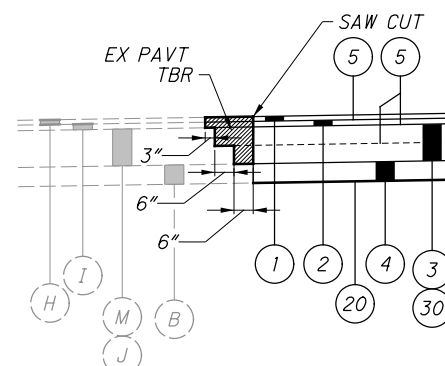
CONCRETE BARRIER
CONCRETE EDGE COURSE DETAIL



CURB TYPE 4C
ASPHALT EDGE COURSE DETAIL



CURB TYPE 4A
CONCRETE EDGE COURSE DETAIL



PHASING JOINT DETAIL

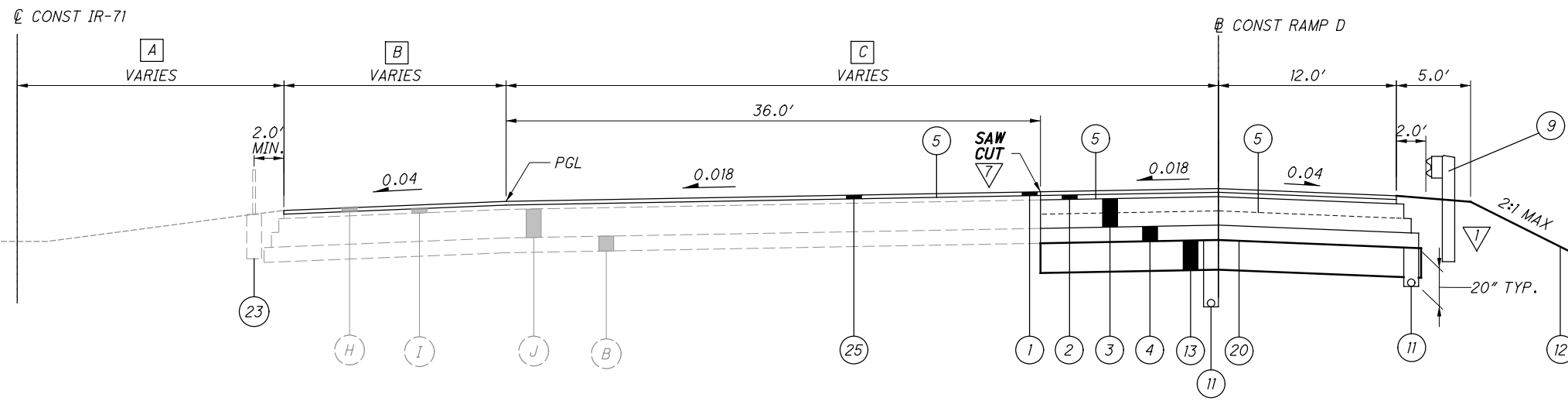


LEGEND:

- 1 ITEM 442 - 1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A (447), AS PER PLAN
- 2 ITEM 442 - 3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)
- 3 ITEM 302 - 12" ASPHALT CONCRETE BASE
- 4 ITEM 304 - AGGREGATE BASE (DEPTH VARIES, 6" UNLESS OTHERWISE NOTED, 10.2" MAX)
- 5 ITEM 407 - NON-TRACKING TACK COAT
- 6 ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE C1
- 7 ITEM 526 - REINFORCED CONCRETE APPROACH SLABS (T=17")
- 8 ITEM 204 - SUBGRADE COMPACTION
- 9 ITEM 606 - GUARDRAIL, TYPE MGS
- 10 ITEM 609 - CURB, TYPE 4A
- 11 ITEM 605 - 6" SHALLOW PIPE UNDERDRAINS, 707.31
- 12 ITEM 659 - SEEDING AND MULCHING
- 13 ITEM 206 - CEMENT STABILIZED SUBGRADE, 12" DEEP
- 14 ITEM 452 - 14" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC IP
- 15 ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE D
- 16 ITEM 442 - 1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A (446), AS PER PLAN
- 17 CAST IN PLACE CONCRETE BARRIER WITH MOMENT SLAB
- 18 CAST IN PLACE CONCRETE (CIP) RETAINING WALL
- 19 ITEM 609 - CURB & GUTTER, TYPE 2, AS PER PLAN
- 20 ITEM 204 - PROOF ROLLING
- 21 ITEM 609 - CURB, TYPE 4C
- 22 ITEM 606 - GUARDRAIL, TYPE MGS WITH LONG POSTS
- 23 ITEM SPECIAL - CABLE BARRIER
- 24 ITEM 254 - PAVEMENT PLANING (AS SHOWN)
- 25 ITEM 202 - WEARING COURSE REMOVED
- 26 ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE B
- 27 ITEM 622 - CONCRETE BARRIER, SINGLE SLOPE, TYPE C
- 28 ITEM 302 - 4" ASPHALT CONCRETE BASE
- 29 ITEM 601 - PAVED GUTTER, TYPE 1-2
- 30 ITEM 302 - 9.5" ASPHALT CONCRETE BASE

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FOR EXISTING LEGEND, SEE SHEET 3



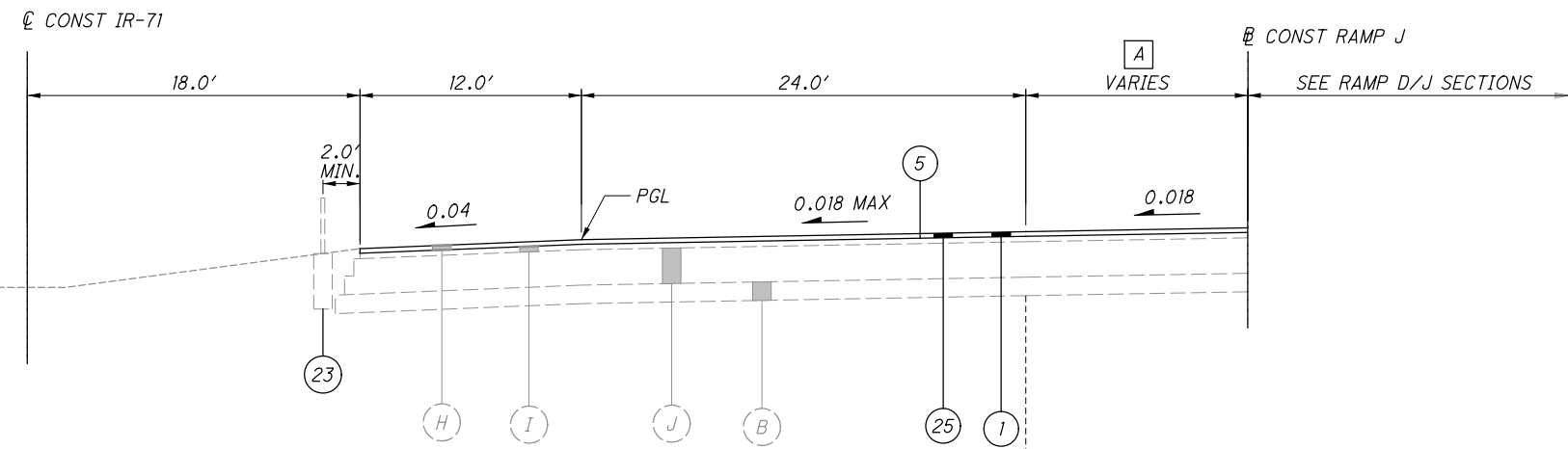
SUPERELEVATED SECTION - IR-71 NB

SECTION APPLIES:
STA. 478+97.78 TO STA 485+42.29

- A** VARIES 15' TO 18'
STA. 478+97.78 TO STA 481+31.00
18'
STA. 481+31.00 TO STA. 485+42.29
- B** VARIES 15' TO 12'
STA. 478+97.78 TO STA 481+31.00
12'
STA. 481+31.00 TO STA. 485+42.29
- C** VARIES 36' TO 52.1'
STA. 478+97.78 TO STA. 485+42.29

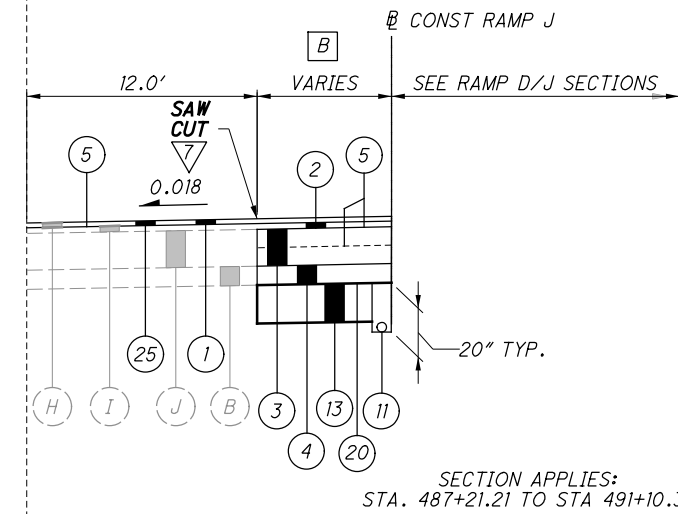
▽ FOR EDGE COURSE DETAILS, SEE SHEET 5
FOR PROPOSED LEGEND, SEE SHEET 5
FOR EXISTING LEGEND, SEE SHEET 3

- A VARIES 4.1' TO 12'
STA. 485+42.29 TO STA 487+21.21
- B VARIES 0' TO 7'
STA. 487+21.21 TO STA 491+10.31

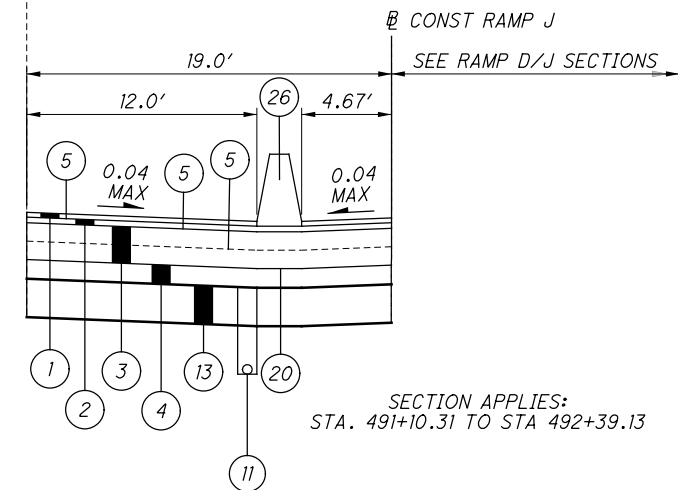


SUPERELEVATED SECTION - IR-71 NB

SECTION APPLIES:
STA. 485+42.29 TO STA 492+39.13

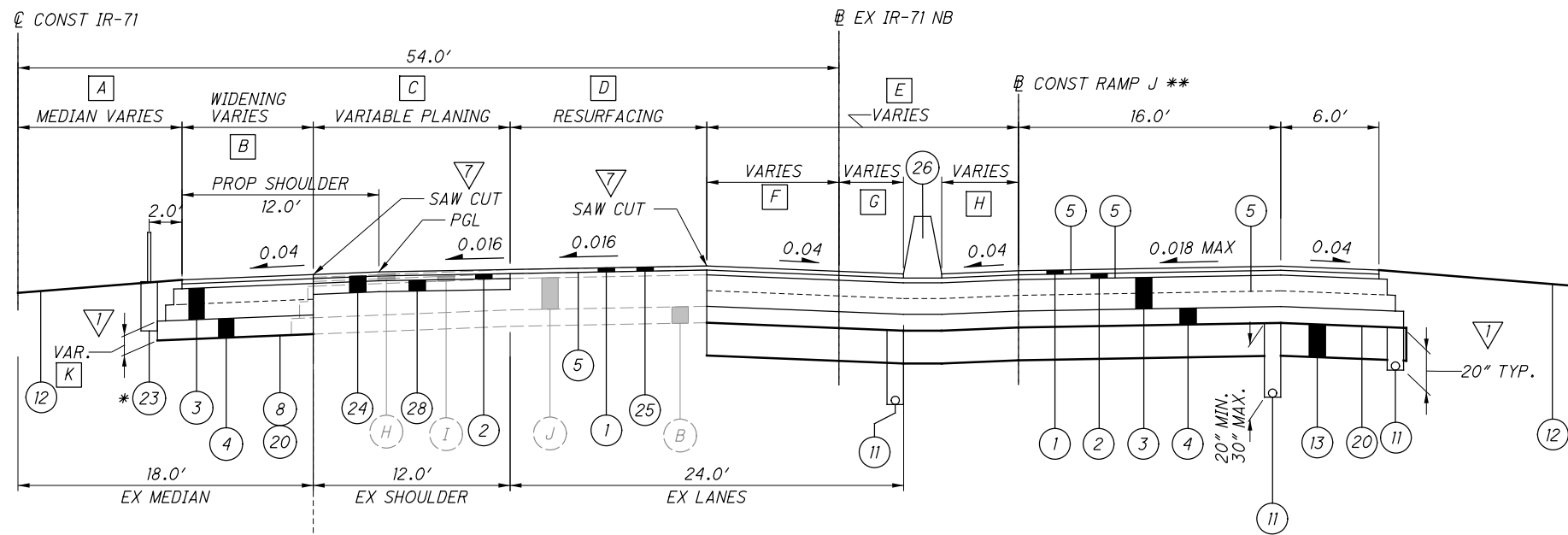


SECTION APPLIES:
STA. 487+21.21 TO STA 491+10.31

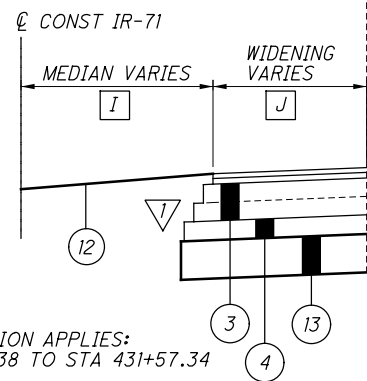


SECTION APPLIES:
STA. 491+10.31 TO STA 492+39.13

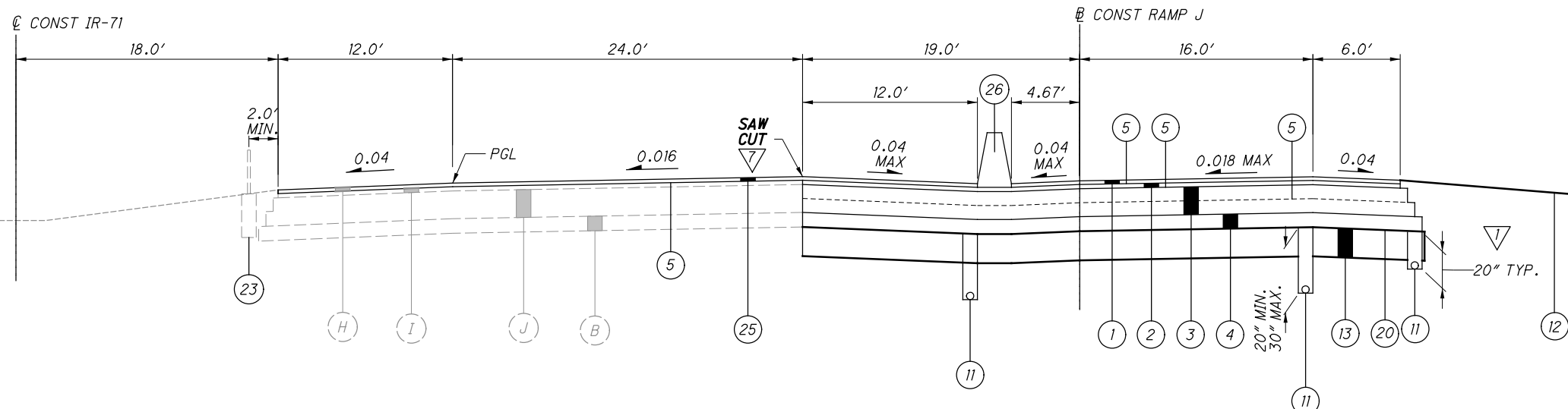
▽ FOR EDGE COURSE DETAILS, SEE SHEET 5
 FOR PROPOSED LEGEND, SEE SHEET 5
 FOR EXISTING LEGEND, SEE SHEET 3



NORMAL SECTION - IR-71 NB
SECTION APPLIES:
STA 423+10.00 TO STA 431+57.34



SECTION APPLIES:
STA 428+75.38 TO STA 431+57.34

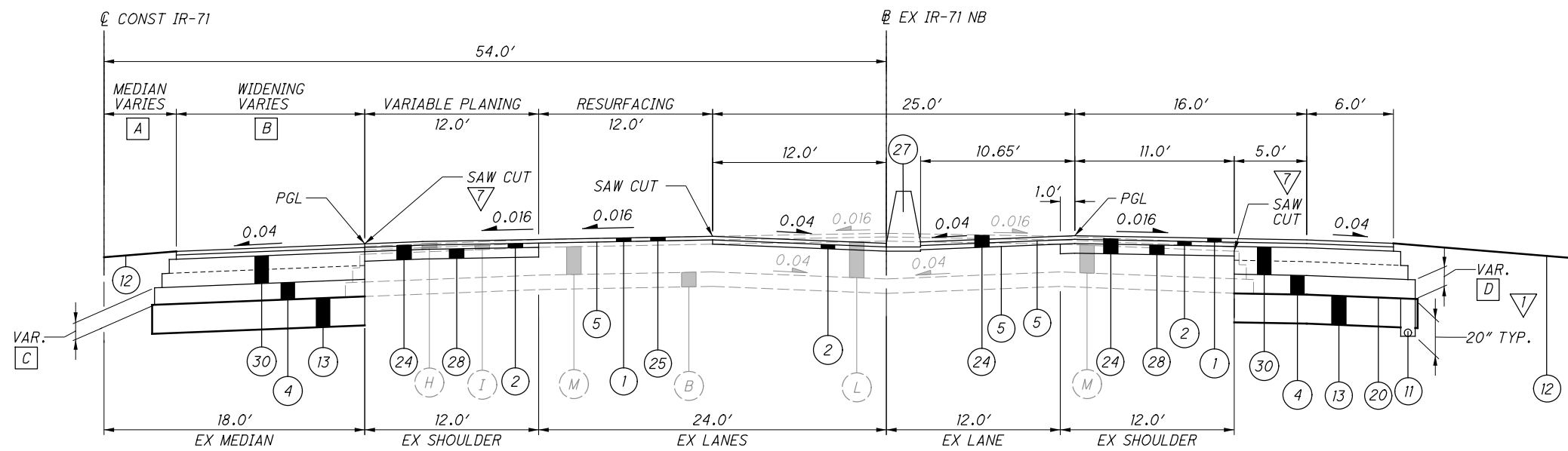


NORMAL SECTION - IR-71 NB
SECTION APPLIES:
STA 492+39.13 TO STA 423+10.00
(STA EQ. 497+42.66 BK = 420+00.00 AH)

- A VARIES 18' TO 9.9'
STA. 423+10.00 TO STA 428+75.38
- B VARIES 2' TO 8'
STA. 423+10.00 TO STA 428+75.38
- C VARIES 10' TO 12'
STA. 423+10.00 TO STA. 424+57.66
12'
STA. 424+57.66 TO STA. 431+57.34
- D VARIES 24' TO 12'
STA. 423+10.00 TO STA 431+57.34
- E VARIES 19' TO 25'
STA. 423+10.00 TO STA 431+57.34
- F VARIES 0' TO 12'
STA. 423+10.00 TO STA 431+57.34
- G VARIES 12' TO 0'
STA. 423+10.00 TO STA 431+57.34
- H VARIES 4.7' TO 10.7'
STA. 423+10.00 TO STA 431+57.34
- I VARIES 9.9' TO 5.9'
STA. 428+75.38 TO STA. 431+57.34
- J VARIES 8' TO 12.1'
STA. 428+75.38 TO STA. 431+57.34
- K VARIES 6.0" TO 9.5"
STA. 423+10.00 TO STA. 431+57.34

* CABLE BARRIER
STA. 423+10.00 TO STA. 426+72.62
** B CONST RAMP J ENDS
STA. 427+30.29 (EX IR-71 NB)

▽ FOR EDGE COURSE DETAILS, SEE SHEET 5
FOR PROPOSED LEGEND, SEE SHEET 5
FOR EXISTING LEGEND, SEE SHEET 3



NORMAL SECTION - IR-71 NB

SECTION APPLIES:
STA 431+57.34 TO STA 435+54.90

† 0.04 OR RATE OF SUPERELEVATION, WHICHEVER IS GREATER

▽ FOR EDGE COURSE DETAILS, SEE SHEET 5

FOR PROPOSED LEGEND, SEE SHEET 5

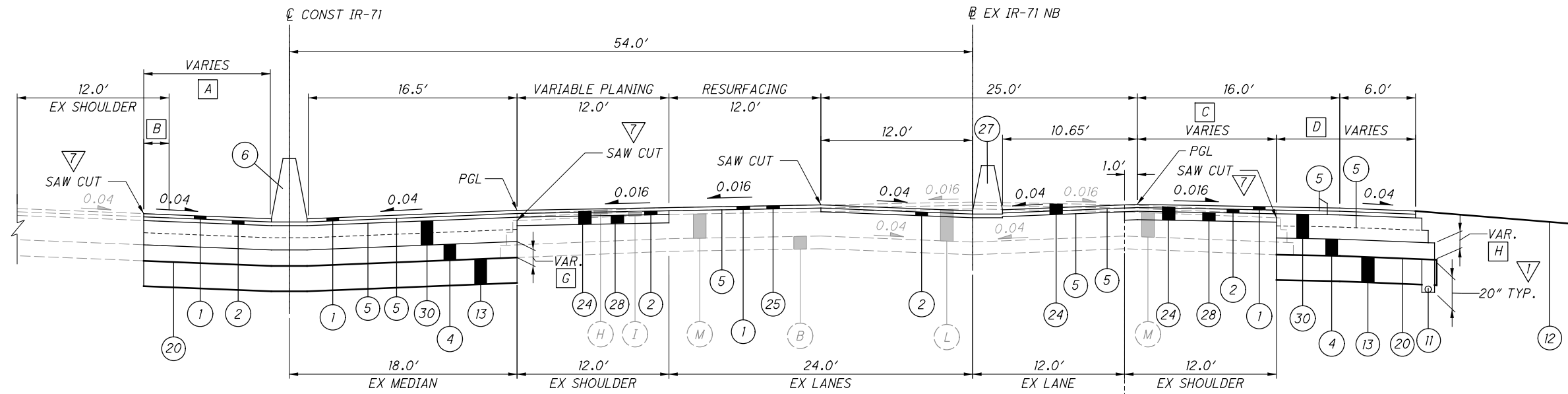
FOR EXISTING LEGEND, SEE SHEET 3

A VARIES 5.9' TO 1.5'
STA. 431+57.34 TO STA. 434+64.91
1.5'
STA. 434+64.91 TO 435+54.90

B VARIES 12' TO 16.5'
STA. 431+57.34 TO STA. 434+64.91
16.5'
STA. 434+64.91 TO 435+54.90

C 9.5'
STA. 431+57.34 TO 435+54.90

D 10.2'
STA. 431+57.34 TO 435+54.90

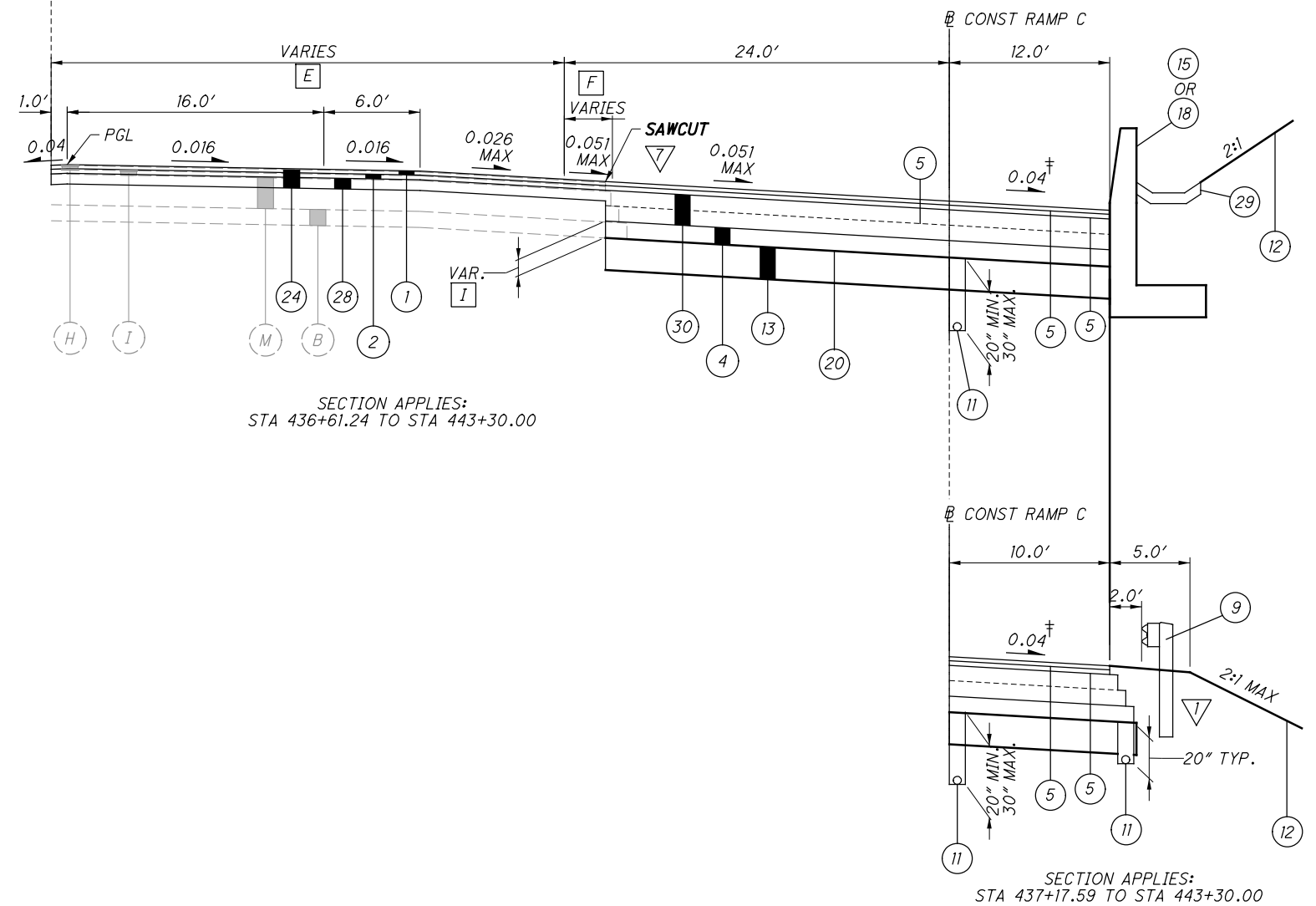


NORMAL SECTION - IR-71 NB
SECTION APPLIES:
STA 435+54.90 TO STA 443+30.00

- A VARIES 10' TO 2'
STA. 435+54.90 TO STA. 441+66.08
2'
STA. 441+66.08 TO STA. 443+30.00
- B VARIES 2' TO 0'
STA. 441+66.08 TO STA. 443+30.00
- C 11'
STA. 435+54.90 TO STA. 436+52.80
16'
STA. 436+52.80 TO STA. 436+61.24
- D 11'
STA. 435+54.90 TO STA. 436+52.80
0'
STA. 436+52.80 TO STA. 436+61.24
- E VARIES 39.9' TO 17'
STA. 436+61.24 TO STA. 443+30.00
- F 3.8'
STA. 436+61.24 TO STA. 438+43.26
VARIES 3.8' TO 7.3'
STA. 438+43.26 TO STA. 438+93.37
7.3'
STA. 438+93.37 TO STA. 443+30.00
- G 9.5"
STA. 435+54.90 TO STA. 443+30.00
- H 10.2"
STA. 435+54.90 TO STA. 436+52.80
VARIES 6.0" TO 6.8"
STA. 436+52.80 TO STA. 436+61.24
- I VARIES 7.1" TO 9.4"
STA. 436+61.24 TO STA. 443+30.00

† 0.04 OR RATE OF SUPERELEVATION, WHICHEVER IS GREATER

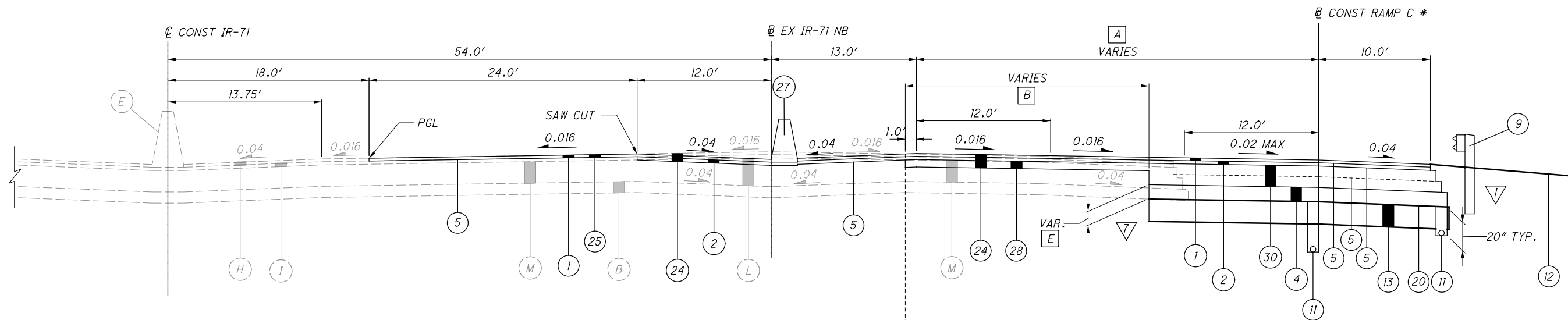
▽ FOR EDGE COURSE DETAILS, SEE SHEET 5
FOR PROPOSED LEGEND, SEE SHEET 5
FOR EXISTING LEGEND, SEE SHEET 3



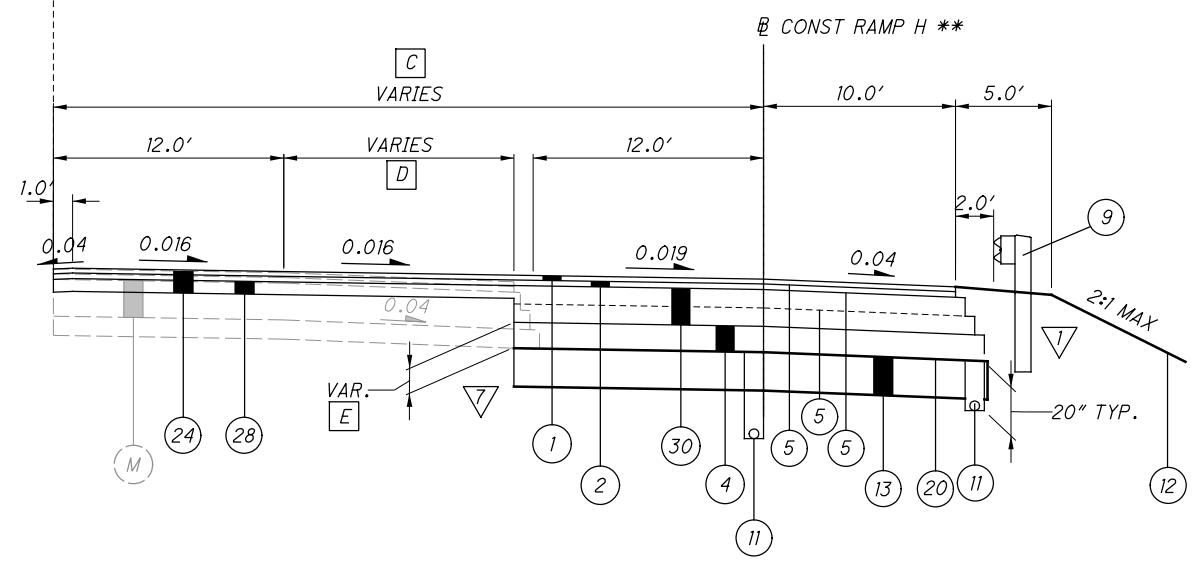
SECTION APPLIES:
STA 436+61.24 TO STA 443+30.00

SECTION APPLIES:
STA 437+17.59 TO STA 443+30.00

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NORMAL SECTION - IR-71 NB
SECTION APPLIES:
STA 443+30.00 TO STA 457+25.90



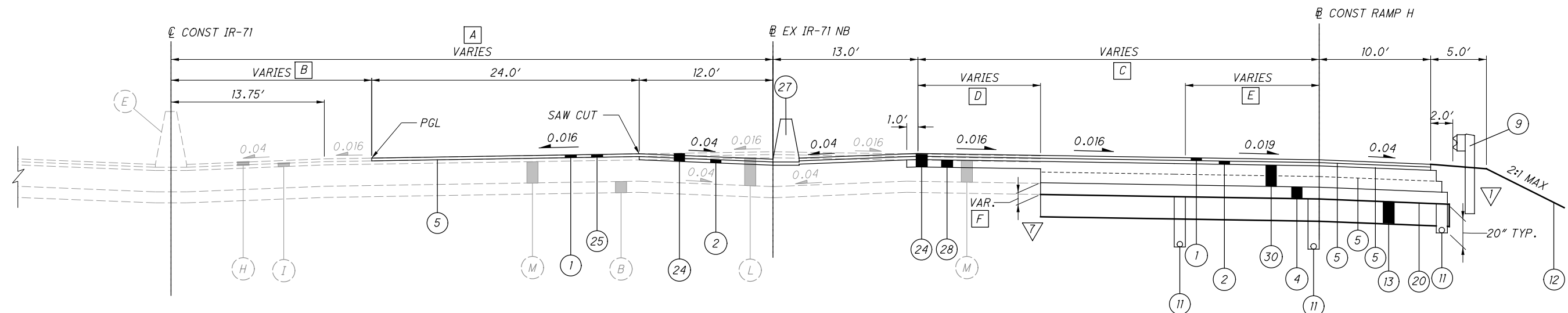
SECTION APPLIES:
STA 453+13.50 TO STA 457+25.90

- A** VARIES 40' TO 36'
STA. 443+30.00 TO STA. 445+29.62
36'
STA. 445+29.62 TO STA. 453+15.50
- B** VARIES 24.3' TO 24'
STA. 443+30.00 TO STA. 443+43.21
24'
STA. 443+43.21 TO STA. 444+29.42
VARIES 24' TO 22'
STA. 444+29.42 TO STA. 445+29.47
22'
STA. 445+29.47 TO STA. 453+13.50
- C** VARIES 37' TO 41.9'
STA. 453+13.50 TO STA. 457+25.90
- D** 10'
STA. 453+13.50 TO STA. 454+14.59
VARIES 10' TO 8.6'
STA. 454+14.59 TO STA. 454+62.63
VARIES 8.6' TO 15.7'
STA. 454+62.63 TO STA. 457+25.90
- E** VARIES 9.0" TO 9.6"
STA. 443+30.00 TO STA. 445+29.47
9.6"
STA. 445+29.47 TO STA. 454+14.59
VARIES 9.6" TO 9.0"
STA. 454+14.59 TO STA. 457+25.90

* **B** CONST RAMP C ENDS
STA. 445+29.62 (EX IR-71 NB)
** **B** CONST RAMP H BEGINS
STA. 453+13.50 (EX IR-71 NB)

▽ FOR EDGE COURSE DETAILS, SEE SHEET 5
FOR PROPOSED LEGEND, SEE SHEET 5
FOR EXISTING LEGEND, SEE SHEET 3

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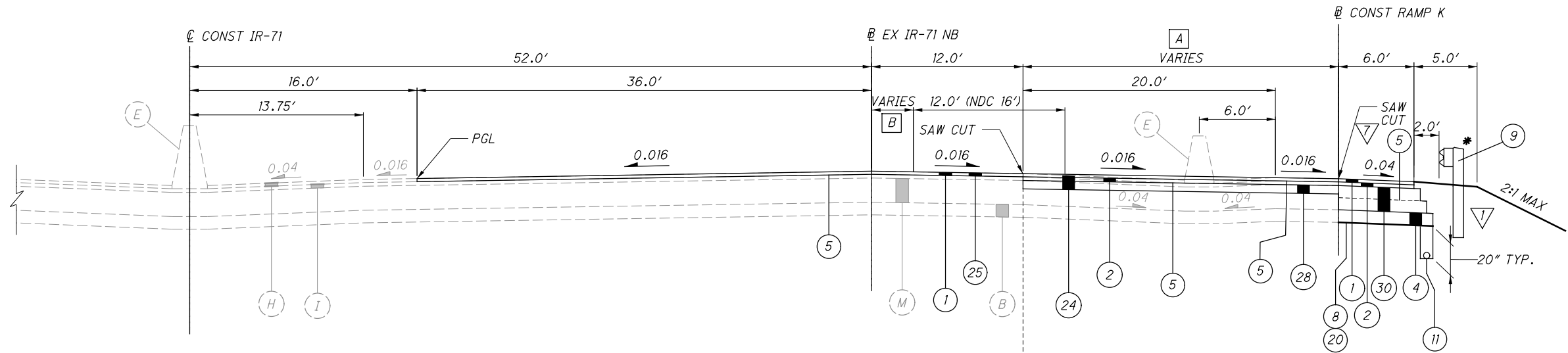


NORMAL SECTION - IR-71 NB
SECTION APPLIES:
STA 457+25.90 TO STA 464+02.01

- A** 54'
STA. 457+25.90 TO STA. 459+06.13
VARIES 54' TO 52'
STA. 459+06.13 TO STA. 460+65.65
52'
STA. 460+65.65 TO STA. 464+02.01
- B** 18'
STA. 457+25.90 TO STA. 459+06.13
VARIES 18' TO 16'
STA. 459+06.13 TO STA. 460+65.65
16'
STA. 460+65.65 TO STA. 464+02.01
- C** VARIES 40.9' TO 72'
STA. 457+25.90 TO STA. 464+02.01
- D** VARIES 18.6 TO 28.8'
STA. 457+25.90 TO STA. 459+45.25
VARIES 7.8' TO 9'
STA. 459+45.25 TO STA. 459+68.98
9'
STA. 459+68.98 TO STA. 461+45.41
24'
STA. 461+45.41 TO STA. 464+02.01
- E** VARIES 12' TO 24'
STA. 457+25.90 TO STA. 459+46.00
24'
STA. 459+46.00 TO STA. 464+45.25
- F** 9.0"
STA. 457+25.90 TO STA. 457+29.04
6.7"
STA. 457+29.04 TO STA. 464+00.00
VARIES 6.7" TO 6.0"
STA. 464+00.00 TO STA. 464+84.62

▽ FOR EDGE COURSE DETAILS, SEE SHEET 5
FOR PROPOSED LEGEND, SEE SHEET 5
FOR EXISTING LEGEND, SEE SHEET 3

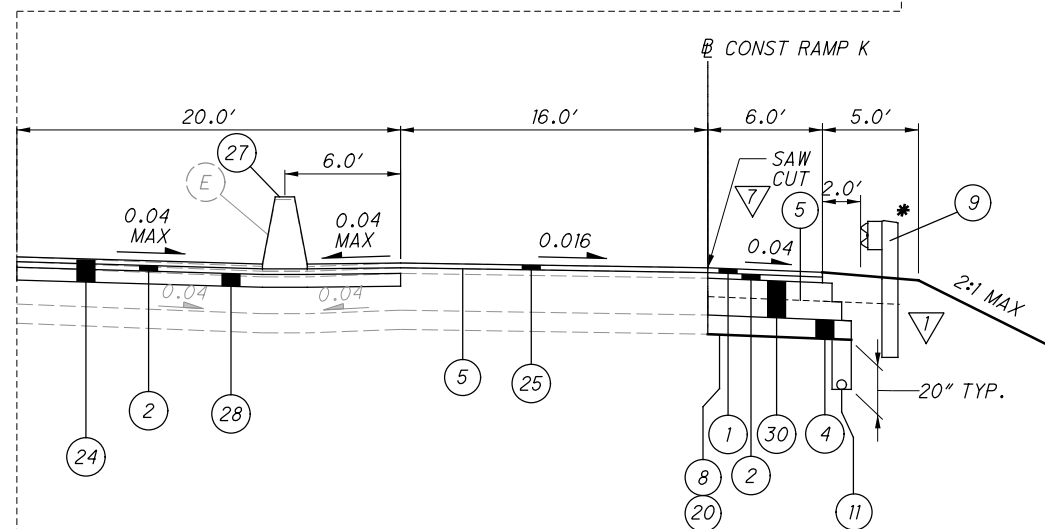
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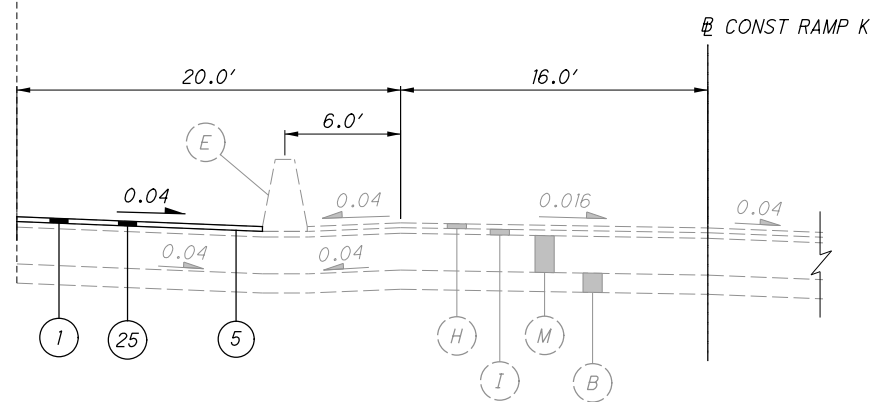
NORMAL SECTION - IR-71 NB

SECTION APPLIES:
STA 464+02.01 TO STA 476+49.82

- A** VARIES 25' TO 36'
STA. 464+02.01 TO STA. 474+76.19
- B** VARIES 13' TO 0'
STA. 464+02.01 TO STA. 474+76.19



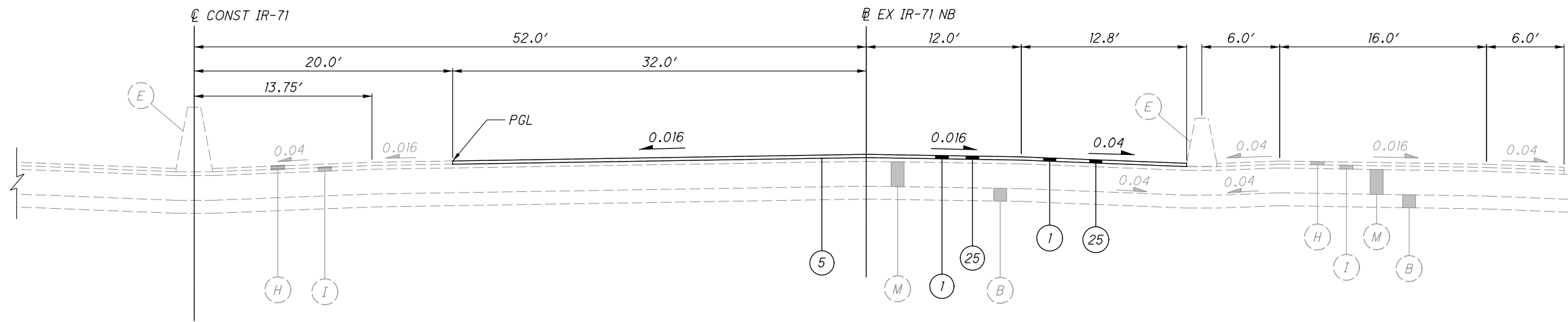
SECTION APPLIES:
STA 475+07.68 TO STA 476+18.91



SECTION APPLIES:
STA 476+18.91 TO STA 476+52.46

* GUARDRAIL, TYPE MGS BEGINS AT STA. 467+95.60
 ▽ FOR EDGE COURSE DETAILS, SEE SHEET 5
 FOR PROPOSED LEGEND, SEE SHEET 5
 FOR EXISTING LEGEND, SEE SHEET 3

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NORMAL SECTION - IR-71 NB

SECTION APPLIES:
STA 478+33.97 TO STA 483+39.25

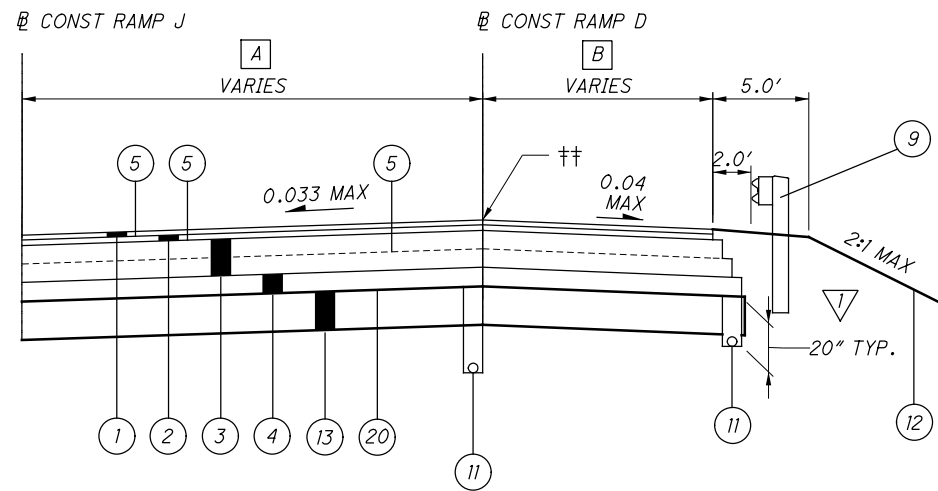
APPROACH SLAB SECTION - IR-71 NB

APPROACH SLAB AND BRIDGE LIMITS:
STA 476+52.47 TO STA 478+33.97
NO PAVEMENT WORK
STA 483+39.25 TO STA 484+00.00 (END WORK)
NO PAVEMENT WORK

▽ FOR EDGE COURSE DETAILS, SEE SHEET 5
FOR PROPOSED LEGEND, SEE SHEET 5
FOR EXISTING LEGEND, SEE SHEET 3

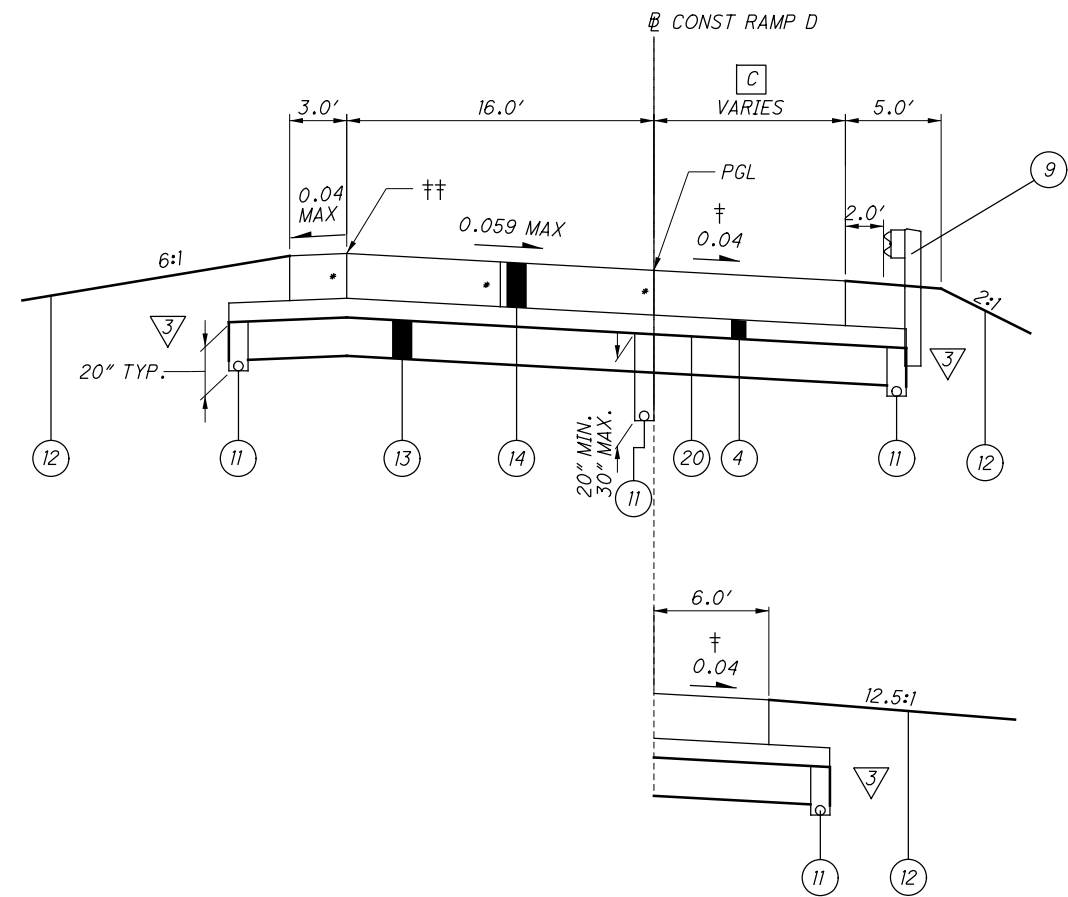
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- A** 24'
STA. 485+43.28 TO STA 488+23.95
VARIES 24' TO 48'
STA. 488+23.95 TO STA. 490+70.84
- B** 12'
STA. 485+43.28 TO STA 491+99.23
VARIES 12' TO 9.4'
STA. 491+99.23 TO STA. 492+70.84
- C** VARIES 9.4' TO 6'
STA. 492+70.84 TO STA 493+49.23
6'
STA. 493+46.23 TO STA. 495+64.67



SUPERELEVATED SECTION - IR-71 NB

SECTION APPLIES:
STA. 485+46.28 TO STA 492+70.84



SUPERELEVATED CONCRETE SECTION - RAMP D

SECTION APPLIES:
STA. 492+70.84 TO STA. 497+80.00

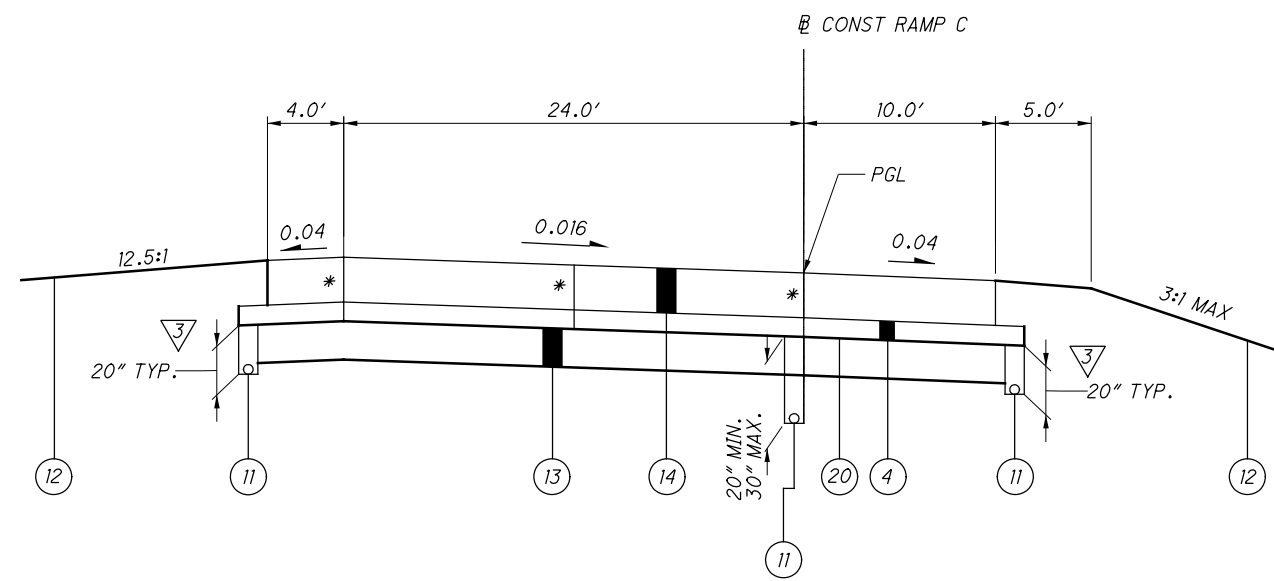
SECTION APPLIES:
STA. 495+64.67 TO STA. 497+80.00

▽ FOR EDGE COURSE DETAILS, SEE SHEET 5
FOR PROPOSED LEGEND, SEE SHEET 5

* LONGITUDINAL JOINT PER SCD BP-6.1

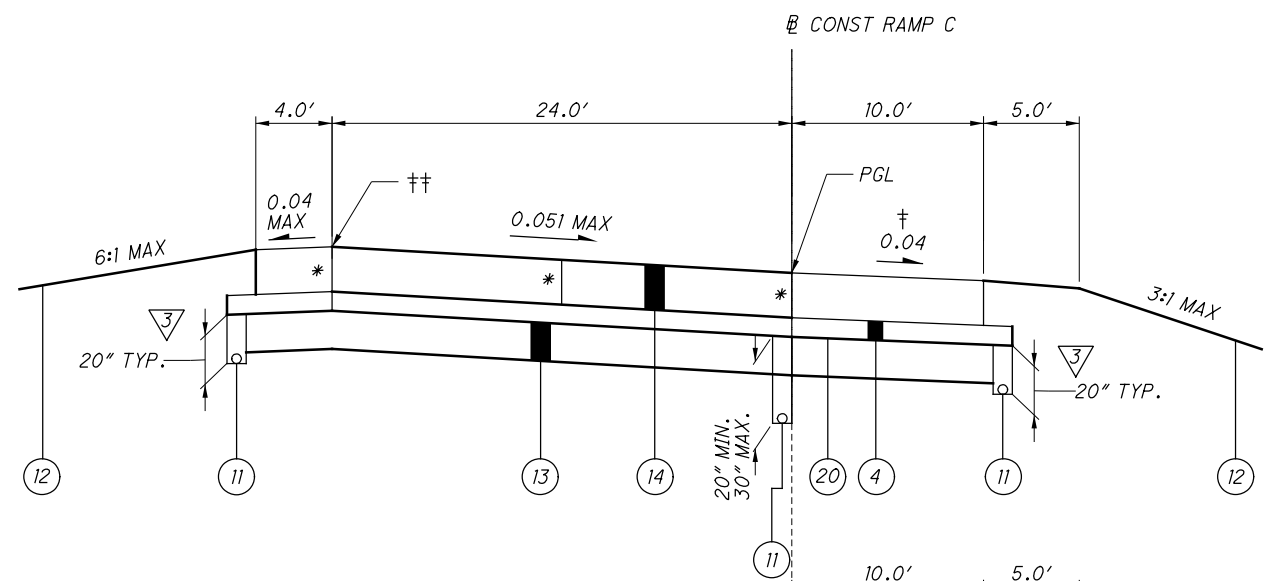
†† 7% MAX BREAK

† 0.04 OR RATE OF SUPERELEVATION, WHICHEVER IS GREATER



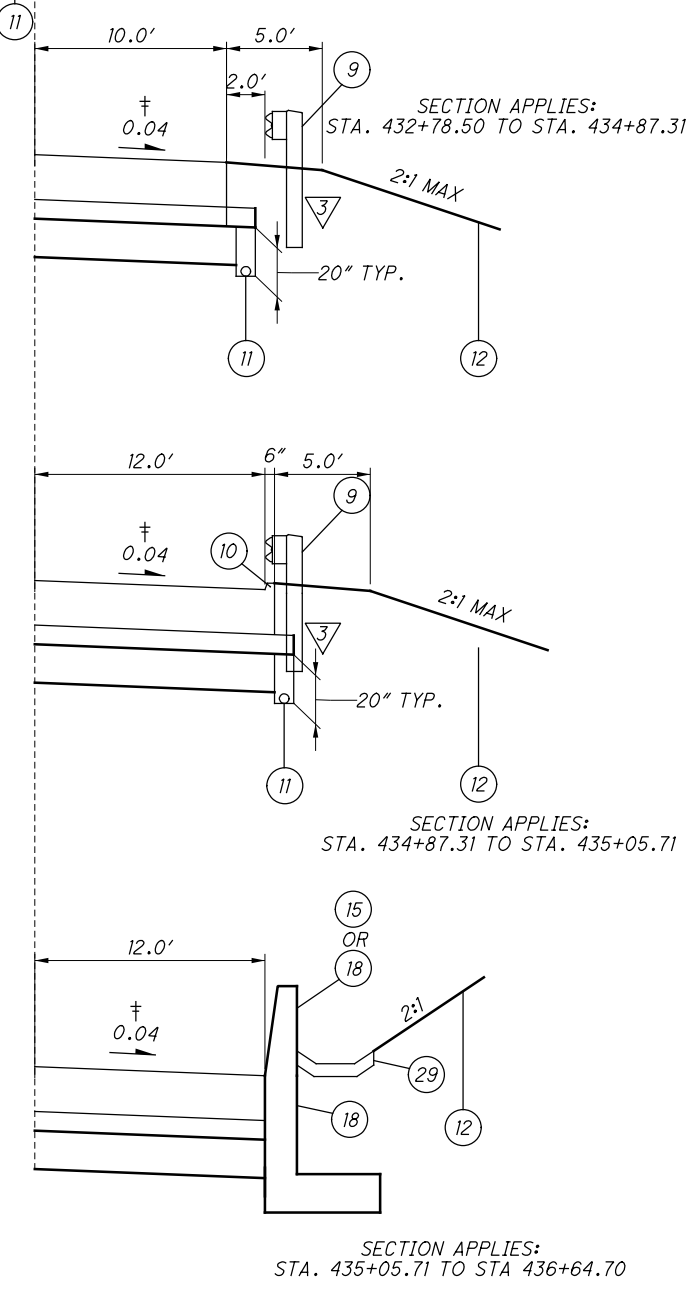
NORMAL CONCRETE SECTION - RAMP C

SECTION APPLIES:
STA. 430+80.00 TO STA. 431+14.67



SUPERELEVATED CONCRETE SECTION - RAMP C

SECTION APPLIES:
STA. 431+14.67 TO STA. 436+64.70



SECTION APPLIES:
STA. 432+78.50 TO STA. 434+87.31

SECTION APPLIES:
STA. 434+87.31 TO STA. 435+05.71

SECTION APPLIES:
STA. 435+05.71 TO STA. 436+64.70

▽ FOR EDGE COURSE DETAILS, SEE SHEET 5
FOR PROPOSED LEGEND, SEE SHEET 5

* LONGITUDINAL JOINT PER SCD BP-6.1

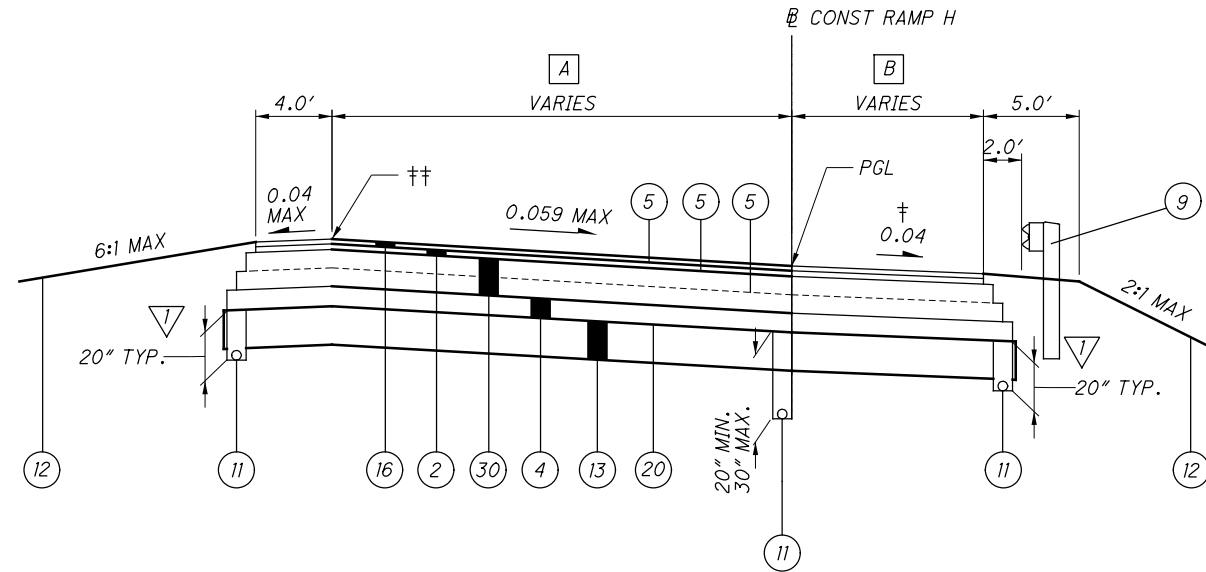
†† 7% MAX BREAK

† 0.04 OR RATE OF SUPERELEVATION, WHICHEVER IS GREATER

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A 24'
 STA. 463+99.08 TO STA 471+00.00
 VARIES 24' TO 16'
 STA. 471+00.00 TO STA. 475+00.00
 16'
 STA. 475+00.00 TO STA. 480+43.41

B 10'
 STA. 463+99.08 TO STA 471+00.00
 VARIES 10' TO 6'
 STA. 471+00.00 TO STA. 473+00.00
 6'
 STA. 473+00.00 TO STA. 479+43.41
 VARIES 6' TO 10'
 STA. 479+43.41 TO STA. 480+43.41



SUPERELEVATED SECTION - RAMP H

SECTION APPLIES:
 STA. 463+99.08 TO STA. 480+43.41

▽ FOR EDGE COURSE DETAILS, SEE SHEET 5
 FOR PROPOSED LEGEND, SEE SHEET 5

‡‡ 7% MAX BREAK

† 0.04 OR RATE OF SUPERELEVATION, WHICHEVER IS GREATER

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UTILITIES

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

AMERICAN ELECTRIC POWER (DISTRIBUTION)
850 TECH CENTER DRIVE
GAHANNA, OH 43230
CONTACT: PAUL PAXTON
PHONE: 614-883-6831
EMAIL: ptpaxton@aep.com

AMERICAN ELECTRIC POWER (TRANSMISSION)
700 MORRISON ROAD
GAHANNA, OH 43230
CONTACT: BARBARA DUNLAP
PHONE: 614-552-1893
EMAIL: bldunlap@aep.com

AT&T
111 N FOURTH STREET, ROOM 802
COLUMBUS, OH 43215
CONTACT: MIKE LEPLY
PHONE: 614-223-5872
EMAIL: TI9569@att.com

CHARTER COMMUNICATIONS
3760 INTERCHANGE DRIVE
COLUMBUS, OH 43227
CONTACT: RAY MAURER
PHONE: 614-481-5262
EMAIL: RAY.MAURER@CHARTER.COM

CITY OF GROVE CITY (WATER, STORM, SANITARY, TRAFFIC)
3262 VENTURA BLVD.
GROVE CITY, OHIO 43123
PHONE: 614-277-1101
CONTACT: CINDI FITZPATRICK
EMAIL: CFITZPATRICK@GROVECITYOHIO.GOV

CITY OF GROVE CITY (FIBEROPTICS)
4035 BROADWAY
GROVE CITY, OHIO 43123
PHONE: 614-277-1725
CONTACT: TODD HURLEY
EMAIL: THURLEY@GROVECITYOHIO.GOV

SWACO OPERATIONS OFFICE
4239 LONDON GROVEPORT RD
GROVE CITY, OH 43123
CONTACT: ERNIE BLANKENSHIP
PHONE: 614-801-6433
EMAIL: ERNIE.BLANKENSHIP@SWACO.ORG

COLUMBIA GAS OF OHIO
3550 JOHNNY APPLESEED CT
COLUMBUS, OH 43231
CONTACT: MARK CHRISTMAN
PHONE: 614-818-2109
614-230-1600
EMAIL: mchristman@nisource.com

ODOT-DISTRICT 6
HIGHWAY LIGHTING
400 E. WILLIAM ST.
DELAWARE, OH 43015
CONTACT: DISTRICT TRAFFIC ENGINEER
PHONE: 740-833-8198

UTILITIES (CONTINUED)

LEVEL 3
226 N 5TH ST STE 100
COLUMBUS, OHIO 43215
CONTACT: BOBB KURTO
PHONE: 614-322-4444
EMAIL: Bobb.kurto@level3.com

WINDSTREAM INC.
2165 SR 133 SOUTH
BLANCHESTER, OH 45107
CONTACT: LEON TAYLOR
PHONE: 330-650-7663
EMAIL: leon.taylor@windstream.com

WOWI
3675 CORPORATE DRIVE
COLUMBUS, OH 43231
CONTACT: STEVE CALLAHAN
PHONE: 614-948-4636
EMAIL: Steven.callahan@wowinc.com

XO COMMUNICATIONS
6900 SOUTHPOINTE PARKWAY
BRECKSVILLE, OH 44141
CONTACT: DALE FERGUSON
PHONE: 216-619-3492
EMAIL: Dale.ferguson@XO.COM

NORTHEAST OHIO NATURAL GAS
SPELMAN PIPELINE
5640 LANCASTER-NEWARK ROAD
PLEASANTVILLE, OH 43148
CONTACT: MARK CALLAHAN
PHONE: 740-400-4312
EMAIL: MCALLAHAN@EGAS.NET

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.

NON OHIO811 MEMBER UTILITIES

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS THAT ARE NOT MEMBERS OF OHIO811. THE CONTRACTOR MUST EMAIL OWNERS SEPARATELY TO HAVE FEATURES LOCATED.

ODOT-ITS LAB
1606 W. BROAD ST.
COLUMBUS, OH 43223
PHONE: 614-487-4113
email: cen.its.lab@dot.ohio.gov
NOTE: MAINTAIN ITS PER SS809 DOWNTIME REQUIREMENTS

CITY OF COLUMBUS UTILITIES

THE FOLLOWING CITY OF COLUMBUS UTILITIES MAY BE LOCATED WITHIN THE WORK LIMITS OF THIS PROJECT. ALL CITY OF COLUMBUS UTILITIES SHALL BE NOTIFIED 48 HOURS PRIOR TO CONSTRUCTION. ALL DR. E PLANS SHOULD BE REQUESTED THROUGH DPS BY EMAILING dpsplanrequests@columbus.gov.

CITY OF COLUMBUS
DEPARTMENT OF TECHNOLOGY
1355 MCKINLEY AVENUE
BUILDING C
COLUMBUS, OH 43222
CONTRACTOR LINE: 614-645-7756

CITY OF COLUMBUS
SUPPORT SERVICES DIVISION - COMMUNICATIONS
4211 GROVES ROAD
COLUMBUS, OH 43232
PHONE: 614-724-7047
RADIO ROOM: 614-724-4006

CITY OF COLUMBUS
DIVISION OF SEWERAGE & DRAINAGE
1250 FAIRWOOD AVENUE
COLUMBUS, OH 43206
CONTACT: SMOC DISPATCHER
PHONE: 614-645-7102

CITY OF COLUMBUS
DIVISION OF PUBLIC UTILITIES
GIS SECTION
910 DUBLIN ROAD
COLUMBUS, OHIO 43215
CONTACT: DPU ATLAS & PLAN REQUEST
PHONE: 614-645-5825
EMAIL: DPU_GIS_mapping@columbus.gov

CITY OF COLUMBUS
DIVISION OF WATER
910 DUBLIN ROAD
COLUMBUS, OH 43215
PHONE: 614-645-7788

CITY OF COLUMBUS
TRAFFIC MANAGEMENT
1820 E 17TH AVENUE
COLUMBUS, OH 43219
CONTACT: ANDREW VOLENIK
PHONE: 614-645-7799
FAX: 614-645-5967
EMAIL: amvolenik@columbus.gov

CITY OF COLUMBUS
DEPARTMENT OF PUBLIC SERVICE
TRAFFIC MANAGEMENT
1820 E 17TH AVENUE
COLUMBUS, OH
OFFICE: 614-645-7393

CITY OF COLUMBUS
DIVISION OF POWER
3500 INDIANOLA AVE
COLUMBUS, OH 43214
CONTACT: ROBERT SCHNEIDER
PHONE: 614-645-7534
EMAIL: rschneider@columbus.gov

SURVEYING PARAMETERS

PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITIONING ON ODOT PROJECTS. SEE SHEET 2 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: STATIC
MONUMENT TYPE: TYPE B

VERTICAL POSITIONING

ORTHOMETRIC HEIGHT DATUM: NAVD88
GEOID: GEOID12A (CONUS)

HORIZONTAL POSITIONING

REFERENCE FRAME: NAD83(2011)
ELLIPSOID: GRS80
MAP PROJECTION: LAMBERT CONFORMAL CONIC
COORDINATE SYSTEM: OHIO STATE PLANE - SOUTH ZONE
COMBINED SCALE FACTOR: NONE (GRID)
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.

EXISTING PLANS

EXISTING PLANS ENTITLED FRA-71-9.62 (PART 1 - 2017), FRA-71-9.71 (PART 2 - 2017), FRA-71-5.29 (2015), FRA-270-52.72 (2013), FRA-71-11.52 (2008), FRA-71-9.53 (1996) & FRA-62-7.29 (1959) MAY BE INSPECTED IN THE ODOT DISTRICT 6 OFFICE IN DELAWARE, OHIO.

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.

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ROUNDING

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

PART WIDTH CONSTRUCTION

BECAUSE OF THE NECESSITY TO BUILD THIS PROJECT UNDER TRAFFIC AND TO CONSTRUCT THE FULL PAVEMENT WIDTH IN STAGES, EXERCISE CARE TO PREVENT THE CONSTRUCTION OF A BUTT JOINT IN THE BASE COURSES. LAP LONGITUDINAL JOINTS AS SHOWN ON STANDARD DRAWING BP-3.1.

IRON PIN REFERENCES

THE CONTRACTOR SHALL REFERENCE ALL IRON PINS AND MONUMENTS BEFORE EXCAVATING AT OR NEAR SAID IRON PINS OR MONUMENTS. IF ANY PINS OR MONUMENTS ARE DESTROYED OR DAMAGED BY THE CONTRACTOR, THEY SHALL BE ACCURATELY REPLACED BY THE CONTRACTOR, THEY SHALL BE ACCURATELY REPLACED BY A LICENSED SURVEYOR AT THE COMPLETION OF THE PROJECT, OR AT THE DIRECTION OF THE ENGINEER AND AT NO EXPENSE TO THE OWNER. THE COST FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR VARIOUS ITEMS.

ITEM 204 - PROOF ROLLING

THE FOLLOWING QUANTITY IS PROVIDED IN THE GENERAL SUMMARY TO ADDRESS LOCATIONS REQUIRING PROOF ROLLING. SEE PLAN SHEET NO. 85 FOR ADDITIONAL INFORMATION.

ITEM 204 - PROOF ROLLING 20 HOUR.

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.

PROTECTION OF EXISTING FIBER OPTIC CABLES

EXISTING ODOT AND CTSS FIBER OPTIC CABLES AND CONDUIT FACILITIES MUST BE MAINTAINED DURING ALL PHASES OF CONSTRUCTION. WHERE EXCAVATION OR OTHER WORK MAY AFFECT AREAS IN CLOSE PROXIMITY (LESS THAN 3 FT HORIZONTAL DISTANCE) TO THESE FACILITIES, THE CONTRACTOR MUST EXPOSE, MAINTAIN AND PROTECT THESE FACILITIES USING CONSTRUCTION METHODS APPROVED BY THE ENGINEER. PAYMENT FOR THE ABOVE SHALL BE INCIDENTAL TO THE COST OF THE EXCAVATION OR OTHER WORK ITEM INVOLVED.

ANTI-SEGREGATION EQUIPMENT

PROVIDE ANTI-SEGREGATION EQUIPMENT FOR ALL COURSES OF UNIFORM THICKNESS IN ACCORDANCE WITH CMS 401.12.

100-YEAR FLOODPLAIN

THERE SHALL BE NO FILL ADDED TO THE 100-YEAR FLOODPLAIN AS SHOWN IN THE PLANS. SHOULD ANY FILL BE ADDED, AN EQUIVALENT STORAGE VOLUME MUST BE PROVIDED WITHIN THE SAME HYDRAULIC REACH.

ENVIRONMENTAL COMMITMENTS:

ANY UNAVOIDABLE CUTTING OF TREES WITH SUITABLE ROOSTING AND BROOD-REARING HABITAT FOR THE INDIANA BAT (LIVING OR STANDING DEAD TREES OR SNAGS WITH EXFOLIATING, PEELING OR LOOSE BARK, SPLIT TRUNKS AND/OR BRANCHES, OR CAVITIES) WILL BE PERFORMED ONLY BEFORE APRIL 1 OR AFTER SEPTEMBER 30 WHEN THE SPECIES WOULD NOT BE USING SUCH HABITATS. IF SUITABLE TREES MUST BE CUT DURING THE SUMMER MONTHS OF APRIL 2 THROUGH SEPTEMBER 29, A NET SURVEY MUST BE COMPLETED IN MAY OR JUNE PRIOR CUTTING.

ITEM 606 - ANCHOR ASSEMBLY, MGS TYPE E, MASH 2016

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.

SEEDING AND MULCHING

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

659, SOIL ANALYSIS TEST	2 EACH
659, TOPSOIL	5,580 CU. YD.
659, SEEDING AND MULCHING	50,273 SQ. YD.
659, REPAIR SEEDING AND MULCHING	2,514 SQ. YD.
659, INTER-SEEDING	2,514 SQ. YD.
659, COMMERCIAL FERTILIZER	7.01 TON
659, LIME	10.39 ACRES
659, WATER	278 GAL.
659, MOWING	113 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 606 - IMPACT ATTENUATOR, TYPE 2, (UNIDIRECTIONAL OR BIDIRECTIONAL)

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY OF THE TYPE 2 IMPACT ATTENUATORS AS LISTED ON THE OFFICE OF ROADWAY ENGINEERING'S WEB PAGE (REFER TO THE POSTED SHOP DRAWINGS FOR THE MOST CURRENT APPROVED PRODUCT MODELS). WHEN BI-DIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS. THE FACE OF THE IMPACT HEAD SHALL BE COVERED WITH TYPE G REFLECTIVE SHEETING, PER CMS 730.19.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, IMPACT ATTENUATOR, TYPE 2 [(70 MPH, 24 IN, (UNIDIRECTIONAL OR BIDIRECTIONAL)], EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS/BACKSTOPS, TRANSITIONS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

ITEM 606 - IMPACT ATTENUATOR, TYPE 3, (UNIDIRECTIONAL)

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY OF THE TYPE 3 IMPACT ATTENUATORS AS LISTED ON THE OFFICE OF ROADWAY ENGINEERING'S WEB PAGE (REFER TO THE POSTED SHOP DRAWINGS FOR THE MOST CURRENT APPROVED PRODUCT MODELS). WHEN BI-DIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS. THE FACE OF THE IMPACT HEAD SHALL BE COVERED WITH TYPE G REFLECTIVE SHEETING, PER CMS 730.19.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, IMPACT ATTENUATOR, TYPE 3 [(70 MPH, 24 IN (UNIDIRECTIONAL)], EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS/BACKSTOPS, TRANSITIONS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

GENERAL MAINTENANCE OF TRAFFIC DURING CONSTRUCTION

THE CONTRACTOR SHALL ADVISE THE ODOT DISTRICT 6 OFFICE A MINIMUM OF FOURTEEN (14) DAYS PRIOR TO THE FOLLOWING: THE START OF CONSTRUCTION ACTIVITIES, LANE CLOSURES, AND ROAD CLOSURES. THIS INFORMATION WILL BE PROVIDED TO THE DISTRICT 6 PUBLIC INFORMATION OFFICER (PIO) AT (740) 833-8063. THE PIO WILL, IN TURN, NOTIFY THE PUBLIC, THE LOCAL EMERGENCY SERVICES, AFFECTED SCHOOLS AND BUSINESSES, AND ANY OTHER IMPACTED LOCAL PUBLIC AGENCY OF ANY OF THE ABOVE MENTIONED ITEMS, VIA MEDIA SOURCES. DURING CONSTRUCTION, TRAFFIC ON I-71, I-270 AND STRINGTOWN ROAD SHALL BE NOTIFIED OF THE WORK ZONE VIA CHANGEABLE MESSAGE SIGNS AND FIXED SIGNS.

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.

CONSTRUCTION NOISE

THE CONTRACTOR SHALL ENSURE THAT ALL CONSTRUCTION EQUIPMENT SHALL BE OPERATED IN COMPLIANCE WITH ALL APPLICABLE CITY OF COLUMBUS ORDINANCES AND REGULATIONS PERTAINING TO CONSTRUCTION NOISE, INCLUDING SECTION 2329.11 OF THE COLUMBUS CITY CODE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL FINES ASSESSED DUE TO NON-COMPLIANCE WITH THE CITY NOISE ORDINANCE.

THE CONSTRUCTION NOISE MITIGATION IDENTIFIED AND LISTED BELOW SHALL BE USED TO MINIMIZE CONSTRUCTION NOISE. THE FOLLOWING SHALL APPLY TO CONSTRUCTION ACTIVITY DURING NIGHTTIME AND WEEKEND OPERATIONS.

A. DIESEL POWERED VEHICLES SHALL NOT IDLE LONGER THAN 3 MINUTES. IDLING TIMES FOR OTHER VEHICLES AND INTERNAL COMBUSTION ENGINE POWERED EQUIPMENT SHALL ALSO BE MINIMIZED.

B. ROUTING CONSTRUCTION EQUIPMENT THROUGH THE LOCAL STREET NETWORK SHALL BE AVOIDED OR MINIMIZED.

C. FLASHING ARROW PANELS (FAPS) AND PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) SHALL BE SOLAR POWERED.

D. JACKHAMMERS OR PAVEMENT BREAKERS SHALL BE OPERATED ELECTRICALLY OR HYDRAULICALLY. PNEUMATIC JACKHAMMERS SHALL ONLY BE USED IF EQUIPPED WITH PNEUMATIC DISCHARGE MUFFLERS, CERTIFIED BY THE MANUFACTURER.

E. EXHAUST MUFFLERS, CERTIFIED BY THE MANUFACTURER, SHALL BE USED ON ALL INTERNAL COMBUSTION ENGINES.

F. USE OF ELECTRIC SAWS RATHER THAN AIR OR GASOLINE-POWERED SAWS SHALL BE REQUIRED.

CONSTRUCTION NOISE AND VIBRATION SHALL BE MINIMIZED NEAR THE HISTORIC RESOURCES COVERED BY SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT.

NOTIFICATION OF CONSTRUCTION INITIATION

AT LEAST FOURTEEN DAYS PRIOR TO STARTING INITIAL CONSTRUCTION ACTIVITIES, LANE CLOSURES AND/OR ROAD CLOSURES, THE CONTRACTOR SHALL ADVISE THE DISTRICT OFFICE OF COMMUNICATIONS VIA EMAIL AT d06.pio@dot.state.oh.us. THE DISTRICT WORK ZONE TRAFFIC MANAGER VIA EMAIL AT d06.mo@dot.state.oh.us AND THE CENTRAL OFFICE SPECIAL HAUL PERMITS SECTION BY FAX AT (614) 728-4099 OF THE ANTICIPATED START DATE OF ANY CONSTRUCTION ACTIVITIES INCLUDING BUT NOT LIMITED TO THE PLACING OF WORK ZONE SIGNS. THE NOTIFICATION SHALL ALSO INCLUDE THE PROJECT NUMBER, PID, NAME AND PHONE NUMBER OF THE CONTRACTOR, A POINT OF CONTACT AND THE ANTICIPATED IMPACT ON TRAFFIC. THE CONTRACTOR WILL IMMEDIATELY INFORM THE DISTRICT OFFICE OF COMMUNICATIONS AND THE DISTRICT WORK ZONE TRAFFIC MANAGER OF ANY AND ALL DELAYS AND/OR CHANGES REGARDING THE CONSTRUCTION INITIATION DATE.

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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. FOR A CONDUIT THROUGH A CURB, REFER TO THE MISC. DETAIL SHEETS FOR THE (COC SCD 2320) PIPE ROOF DRAIN.

THE FOLLOWING CONDUIT TYPES MAY BE USED WITHIN ODOT RIGHT-OF-WAY: 707.33, 707.41, NON-PERFORATED, 707.42, 707.43, 707.45, 707.46, 707.47, 707.51, 707.52 SDR35.

PIPE WITHIN CITY OF COLUMBUS RIGHT-OF-WAY SHALL BE MADE OF APPROVED MATERIALS AS SPECIFIED IN ITEM 901 OF THE CMSC.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR THE WORK NOTED ABOVE:

- 611, 8" COND., TYPE B, FOR DRAINAGE CONNECTION 200 FT.
- 611, 8" COND., TYPE C, FOR DRAINAGE CONNECTION 200 FT.
- 611, 8" COND., TYPE E, FOR DRAINAGE CONNECTION 200 FT.
- 611, 8" COND., TYPE F, FOR DRAINAGE CONNECTION 200 FT.

TYING INTO EXISTING DRAINAGE STRUCTURES

WHEN A PROPOSED CONDUIT IS BEING TIED INTO AN EXISTING DRAINAGE STRUCTURE, THE HOLE BEING MADE IN THE EXISTING STRUCTURE TO RECEIVE THE PROPOSED CONDUIT SHALL BE A CORED HOLE. FOR CONDUITS OVER 24", THE HOLE CAN BE NEATLY SAWED INSTEAD OF CORED.

THE COST OF TYING INTO AN EXISTING DRAINAGE STRUCTURE SHALL BE INCLUDED IN THE COST OF INSTALLING ITEM 611 CONDUIT.

EXISTING UNDERDRAINS

PROVIDE UNOBSTRUCTED OUTLETS FOR ALL EXISTING UNDERDRAINS ENCOUNTERED DURING CONSTRUCTION. PROVIDE AN OUTLET PER STANDARD CONSTRUCTION DRAWING DM-1.1 FOR ALL UNDERDRAINS THAT OUTLET TO A SLOPE.

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

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

- 601, TIED CONCRETE BLOCK MAT, TYPE 1 20 SQ. YD.
- 611, 4" CONDUIT, TYPE F 100 FT.
- 611, PRECAST REINFORCED CONCRETE OUTLET 5 EACH
- 605, 6" UNCLASSIFIED PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC 250 FT.

POST CONSTRUCTION STORM WATER TREATMENT

THIS PLAN UTILIZES STRUCTURAL BEST MANAGEMENT PRACTICES (BMP'S) FOR POST CONSTRUCTION STORM WATER TREATMENT.

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.

IT IS 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 - CABLE BARRIER

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY ONE OF THE HIGH TENSION FOUR CABLE GUARDRAIL SYSTEMS AS LISTED ON THE OFFICE OF ROADWAY ENGINEERING'S WEB PAGE. PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM SPECIAL - CABLE BARRIER AND ITEM SPECIAL - CABLE BARRIER, ANCHOR ASSEMBLY AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL HIGH TENSION CABLE GUARDRAIL SYSTEM NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

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

SYSTEMS SHALL HAVE A MAXIMUM DEFLECTION OF 8 FEET AND THE MAXIMUM LONGITUDINAL DISTANCE BETWEEN POSTS SHALL BE 15 FEET.

INSTALLATION WILL BE A FOUR CABLE HIGH TENSION SYSTEM INSTALLED IN SOCKETED POST FOUNDATIONS.

CONTRACTOR SHALL PROVIDE DELINEATORS ON THE POSTS AT A MINIMUM INTERVAL OF 100 FEET AND ON ALL ANCHOR TERMINALS.

TRANSITIONS TO W-BEAM GUARDRAIL ARE NOT ALLOWED. REFER TO MANUFACTURER FOR MAXIMUM OFFSET FROM BREAK POINT.

TORPEDO OR BULLET SPLICES ARE NOT ALLOWED. ALL CABLE SPLICES SHALL BE A SWAGED OR OPEN BODY DESIGN THAT ALLOWS FOR ANNUAL INSPECTION BETWEEN THE WEDGE AND STRANDS OF CABLE.

POSTS ARE SET IN SOCKETED CONCRETE FOUNDATIONS AND SHALL NOT BE PERMANENTLY INSTALLED UNTIL THEIR RESPECTIVE RUNS OF TENSIONED CABLE GUARDRAIL ARE READY FOR FINAL CONNECTION TO THE END TERMINAL ASSEMBLY. THE CONTRACTOR SHALL REPLACE ANY POSTS DAMAGED DURING INSTALLATION AS DETERMINED BY THE ENGINEER AT NO ADDITIONAL COST TO THE STATE.

ITEM 618 - RUMBLE STRIPS

THE FOLLOWING QUANTITY IS PROVIDED IN THE GENERAL SUMMARY FOR THE INSTALLATION OF RUMBLE STRIPS IN ASPHALT SHOULDERS. FOR LOCATION AND INSTALLATION DETAILS, REFER TO SCD BP-9.1.

ITEM 618 - RUMBLE STRIPS, (ASPHALT CONCRETE) 2.33 MI.

PROTECTION OF RIGHT-OF-WAY LANDSCAPING

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

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

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

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

REVIEW OF DRAINAGE FACILITIES (ODOT) FREEWAY SYSTEM

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.

PAVEMENT CUTTING, SAWING AND EXCAVATION OPERATIONS

ALL PUBLIC AGENCIES AND PRIVATE CONTRACTORS PERFORMING PAVEMENT-CUTTING OPERATIONS ON CITY OF COLUMBUS STREETS AND ROADWAYS SHALL PROTECT THE ENVIRONMENT FROM DISCHARGES CREATED BY THEIR PAVEMENT CUTTING OPERATIONS. NOTE THAT COLUMBUS CITY CODE 1145 PROHIBITS NON-STORMWATER DISCHARGE INTO THE CITY OF COLUMBUS SEWER SYSTEM, CURB INLETS AND ANY PART OF ITS MS4 (MUNICIPAL SEPARATE STORM SEWER SYSTEM).

THE REQUIREMENT INCLUDES BUT IS NOT LIMITED TO WET OR DRY SAW-CUTTING, JACK HAMMERING, EXCAVATION EQUIPMENT USE, ETC. THE PUBLIC AGENCY AND/OR PRIVATE CONTRACTOR WORK CREWS SHALL RECOVER AND DISPOSE OF DETRITUS, POLLUTED WATERS, OR OTHER SUCH DISCHARGES RESULTING FROM THEIR PAVEMENT CUTTING OPERATIONS AND PROTECT ALL STORM SEWER INLETS FROM RECEIVING ANY DISCHARGES FROM THE CONSTRUCTION OPERATIONS. THE AGENCY OR CONTRACTOR RESPONSIBLE FOR EACH PAVEMENT CUTTING ACTIVITY SHALL BE SOLELY LIABLE FOR NOTICE OF VIOLATIONS (NOV/S) AND FINES ISSUED BY CITY OF COLUMBUS AND/OR STATE OF OHIO AUTHORITIES.

EQUIPMENT, MATERIALS AND METHODS SHALL BE PROVIDED BY THE RESPONSIBLE PUBLIC AGENCY AND/OR PRIVATE CONTRACTOR TO WORK CREWS PERFORMING THE PAVEMENT CUTTING ACTIVITY AND MADE AVAILABLE TO WORK CREWS FOR USE IN CLEANING UP DISCHARGES RESULTING FROM SUCH CUTTING ACTIVITIES AND PREVENTING RUNOFF. ALL WORK CREWS SHALL BE TRAINED TO EXERCISE AND EMPLOY EQUIPMENT, MATERIALS, AND ENVIRONMENTAL PROTECTIVE MEASURES TO PREVENT POLLUTED DISCHARGES FROM ENTERING THE CITY OF COLUMBUS STORM SEWER SYSTEM AND WATERS OF THE STATE OF OHIO.

THE PUBLIC AGENCY AND/OR PRIVATE CONTRACTOR IS SOLELY RESPONSIBLE FOR ENSURING THAT THE INLET PROTECTION IS ADEQUATE. THE MOST STRINGENT PROJECT PLANS, NOTES AND/OR DRAWINGS INCLUDING STORMWATER POLLUTION PREVENTION PLAN (SWP3) OR SPILL PREVENTION/REMEDICATION PLAN SHALL APPLY TO ALL PAVEMENT CUTTING, SAWING OR EXCAVATION OPERATIONS.

VEGETATED FILTER STRIP

THIS PLAN UTILIZES VEGETATED FILTER STRIP(S) FOR POST CONSTRUCTION STORM WATER TREATMENT. PLACE EITHER ITEM 660 SODDING OR ITEM 659 SEEING AND MULCHING WITH A 4-INCH LIFT OF TOPSOIL AND ITEM 670, SLOPE EROSION PROTECTION TO ALL DISTURBED AREAS DESIGNATED AS VEGETATED FILTER STRIPS, THE EDGE OF SHOULDER, AND THE FORESLOPE AS SPECIFIED IN THE PLANS.

ITEM 601 - PAVED GUTTER, TYPE 2, AS PER PLAN

THIS ITEM SHALL MEET ALL THE REQUIREMENTS OF ITEM 601, PAVED GUTTER, TYPE 2 EXCEPT AS MODIFIED HERE. THE GUTTER SHALL BE EXTENDED TO MEET THE LIMITS SHOWN ON THE PLANS AND THE FORE SLOPE VARIED AS NECESSARY TO MEET THE BACK OF THE BARRIER. A 1" PEJF SHALL BE INSTALLED BETWEEN THE PAVED GUTTER AND THE BACK OF THE BARRIER.

PAYMENT SHALL BE MADE AT THE CONTRACT UNIT PRICE PER FOOT FOR ITEM 601, PAVED GUTTER, TYPE 2 AS PER PLAN AND SHALL INCLUDE ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO COMPLETE THIS ITEM PER THE CMS AND THIS NOTE.

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GENERAL NOTES

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ITEM 690 SPECIAL - SUBGRADE ROCK REMOVAL

COBBLES AND BOULDERS ARE PRESENT WITHIN THE SUBGRADE MATERIAL OF AREAS RECEIVING CHEMICAL STABILIZATION. PRIOR TO CHEMICAL STABILIZATION, PERFORM ITEM 690 SPECIAL - SUBGRADE EXPLORATION TO CLEARLY IDENTIFY THE PROBABLE LIMITS OF BOULDERS AND COBBLES GREATER THAN 6 INCHES.

FOR SUBGRADE AREAS WITH COBBLES AND BOULDERS, PRIOR TO CHEMICAL STABILIZATION OPERATIONS, REMOVE ALL MATERIAL GREATER THAN 6 INCHES IN THE LARGEST DIMENSION TO THE DEPTHS AND LIMITS OF STABILIZATION AS DIRECTED BY THE ENGINEER.

PAYMENT FOR REMOVING COBBLES AND BOULDERS SHALL BE INCLUDED IN THE CONTRACT PRICE FOR ITEM 690 - SUBGRADE ROCK REMOVAL AND MEASURED ON THE SQUARE YARD BASIS.

AN ESTIMATED TOTAL OF 30% OF SUBGRADE RECEIVING STABILIZATION HAS BEEN PROVIDED AND CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER.

ITEM 690 SPECIAL - SUBGRADE ROCK REMOVAL 11,775 SY

ITEM 690 SPECIAL - SUBGRADE EXPLORATION

DESCRIPTION: THIS WORK CONSISTS OF IDENTIFYING AREAS WHERE HIGH CONCENTRATIONS OF COBBLES AND BOULDERS ARE PRESENT WITHIN THE SUBGRADE.

CONSTRUCTION: AS DIRECTED BY THE ENGINEER, EXPOSE THE SUBGRADE MATERIAL BY RIPPING TO THE DEPTHS AND LIMITS OF THE CHEMICAL STABILIZATION SHOWN IN THE PLANS. DO NOT DISTURB SOIL BELOW THESE DEPTHS. IDENTIFY AND MARK AREAS OF SUBGRADE WITH BOULDERS AND COBBLES GREATER THAN 6 INCHES IN THE LARGEST DIMENSION.

METHOD OF MEASUREMENT AND PAYMENT: THE DEPARTMENT WILL MEASURE SUBGRADE EXPLORATION BY THE NUMBER OF SQUARE YARDS PERFORMED AND ACCEPTED AS DIRECTED BY THE ENGINEER. THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 690 SPECIAL - SUBGRADE EXPLORATION, SQUARE YARD, AND INCLUDE ALL LABOR, EQUIPMENT, AND INCIDENTALS TO PERFORM THE WORK DESCRIBED ABOVE.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER:

ITEM 690 SPECIAL - SUBGRADE EXPLORATION 39,249 SY

ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A (447), AS PER PLAN

LOCATE LONGITUDINAL JOINTS IN THE SURFACE COURSE SUBJECT TO THE FOLLOWING REQUIREMENTS:

PLACE THE MAINLINE PAVEMENT SURFACE COURSE WITH A SINGLE COLD LONGITUDINAL JOINT LOCATED BETWEEN LANES 2 AND 3. A COLD LONGITUDINAL JOINT IS PERMITTED BETWEEN THE SHOULDER AND MAINLINE PAVEMENT. NO OTHER COLD JOINTS ARE PERMITTED IN THE SURFACE COURSE OF MAINLINE PAVEMENT

ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A (446), AS PER PLAN

THIS ITEM SHALL FOLLOW ALL SPECIFICATIONS OF ITEM 442 EXCEPT THAT A PG76-22M BINDER SHALL BE USED.

ITEM 206 - CEMENT STABILIZED SUBGRADE, 12" DEEP

ITEM 206 CEMENT STABILIZED SUBGRADE, 12" DEEP MAY BE NON-PERFORMED AT THE DIRECTION OF THE ENGINEER. AT THE DIRECTION OF THE ENGINEER GLOBAL STABILIZATION MAY BE NON-PERFORMED IN AREAS MEETING, BUT NOT LIMITED TO ONE OR MORE OF THE FOLLOWING CONDITIONS:

- I. SHORT DURATION MOT SUCH AS RAMPS
- II. AREA AROUND UTILITIES AND DRAINAGE THAT INHIBIT THE USE IF CHEMICAL STABILIZATION
- III. NARROW SECTIONS, TYPICALLY LESS THAN 8' IN WIDTH THAT INHIBIT THE USE OF TYPICAL CHEMICAL STABILIZATION EQUIPMENT FROM LOCALIZED AREAS NOT BEING CHEMICALLY STABILIZED SHALL BE TREATED ACCORDING TO ITEM 204 SUBGRADE COMPACTION AND PROOF ROLLING.

LOCALIZED AREAS NOT BEING CHEMICALLY STABILIZED SHALL BE TREATED ACCORDING TO ITEM 204 EXCAVATION, AS PER PLAN.

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER:

ITEM 206 - CEMENT STABILIZED SUBGRADE, 12" DEEP 38,180 SY

ITEM 619 FIELD OFFICE, TYPE C, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS PROVIDED IN CMS FOR THE TYPE OF FIELD OFFICE SPECIFIED, PROVIDE THE FOLLOWING ITEMS.

[1] FOR EACH TELEPHONE AND/OR COMPUTER STATION SPECIFIED, PROVIDE ALL ETHERNET WIRING NECESSARY TO CONNECT THE PHONE AND/OR COMPUTER AND MULTI-FUNCTION COPIER TO THE INTERNET COMPANY SYSTEM.

[5] PROVIDE A BROADBAND INTERNET CONNECTION CAPABLE OF MINIMUM DOWNLOAD SPEEDS AS FOLLOWS: 30 MBPS DOWNLOAD 5 MBPS UPLOAD - NETWORK LATENCY LESS THAN 50 MILLISECONDS. IF SPEEDS ARE NOT AVAILABLE THROUGH AN INDIVIDUAL OR SINGULAR CIRCUIT, PROVIDE THE HIGHEST SPEED AVAILABLE IN THE AREA AND INSTALL MULTIPLE CIRCUITS TO ACHIEVE THE SPECIFIED SPEEDS. WHEN MULTIPLE BROADBAND SERVICES ARE AVAILABLE, THE FOLLOWING IS THE DESCENDING ORDER OF PRECEDENCE: CABLE, DSL, CELLULAR, AND WIRELESS RADIO (SATELLITE COMMUNICATION IS NOT COMPATIBLE WITH ODOT VPN CONNECTION AND WILL NOT BE ACCEPTED). SUPPLY MODEMS CAPABLE OF BEING CONFIGURED IN BRIDGE MODE. IF A CELLULAR NETWORK IS USED, PROVIDE THE CELLULAR EQUIPMENT, INCLUDING SOFTWARE AND ROUTER EQUIPMENT TO CONNECT TO THE ODOT PROVIDED CISCO ASA 5505 FIREWALL. SUPPLY ODOT WITH ALL DOCUMENTATION FOR THE BROADBAND CIRCUIT INCLUDING ALL USERNAME/USER IDS, PASSWORDS AND ACCOUNT INFORMATION. VERIFY THAT THE BROADBAND INTERNET CONNECTION IS ACTIVE AND WORKING AS SPECIFIED. ODOT IT PERSONNEL WILL CONFIRM THAT BANDWIDTH AND NETWORK LATENCY ARE COMPLIANT WITH THE REQUIRED FIELD OFFICE SPECIFICATIONS. ALL FIELD OFFICE INTERNET CONNECTIONS ARE FOR ODOT USE ONLY.

ITEM 204 EXCAVATION OF SUBGRADE, AS PER PLAN (CY)

ALL PROVISIONS OF ITEM 204 APPLY EXCEPT AS SPECIFIED BY THE FOLLOWING NOTES. IF THE ENGINEER DETERMINES A LOCALIZED AREA IS UNTREATABLE FOR CHEMICAL STABILIZATION AND CHEMICAL STABILIZATION IS NON-PERFORMED WITHIN THIS AREA, THEN THE AREA SHALL BE PROOF ROLLED ACCORDING TO ITEM 204 PROOF ROLLING AND UNSTABLE SUBGRADE SHALL BE REMOVED TO A MINIMUM DEPTH DETERMINED BY THE ENGINEER AND REPLACED WITH MATERIAL CONFORMING TO ITEM 204 GRANULAR MATERIAL, TYPE C OR REPLACED WITH ITEM 304 AT THE ENGINEER'S DISCRETION. THE ENGINEER SHALL EVALUATE THE SUBGRADE CONDITIONS AND CONSULT WITH THE DISTRICT GEOTECHNICAL ENGINEER AS NEEDED ON THE USE OF GEOGRID WITHIN UNDERCUT AREAS. EXCAVATE UNSTABLE SUBGRADES TO 18 INCHES BEYOND THE EDGE OF THE SURFACE OF THE PAVEMENT, PAVED SHOULDERS, OR PAVED MEDIANS, INCLUDING UNDER NEW CURBS AND GUTTERS. COMPACT SUBGRADE MATERIALS ACCORDING TO ITEM 204 SUBGRADE COMPACTION. AFTER COMPACTION THE AREA SHALL BE PROOF ROLLED ONCE MORE TO DEMONSTRATE STABILITY OF THE NEWLY CONSTRUCTED SUBGRADE. PAYMENT FOR EXCAVATION SHALL FALL UNDER ITEM 204 EXCAVATION OF SUBGRADE, AS PER PLAN.

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER:

ITEM 204 - SUBGRADE COMPACTION	1857 SY
ITEM 204 - PROOF ROLLING	10 HR
ITEM 204 - EXCAVATION OF SUBGRADE, AS PER PLAN	196 CY
ITEM 204 - GRANULAR MATERIAL, TYPE C	196 CY
ITEM 204 - GEOTEXTILE FABRIC	1672 SY
ITEM 204 - GEOGRID	185 SY
ITEM 302 - ASPHALT CONCRETE BASE, PG64-22	103 CY

ITEM 875 - LONGITUDINAL JOINT ADHESIVE

THIS WORK CONSISTS OF FURNISHING AND INSTALLING A HOT APPLIED ASPHALTIC JOINT ADHESIVE ON COLD LONGITUDINAL CONSTRUCTION JOINTS IN ASPHALT CONCRETE SURFACE PAVEMENT. ITEM SHALL CONFORM TO SS875 AND SHOULD BE USED FOR SURFACE COURSES ONLY. AN APPLICATION RATE OF 1 POUND PER 4 FEET SHALL BE USED.

ITEM 875 - LONGITUDINAL JOINT ADHESIVE 10,830 LB

FEMA MAPS

39049C0318K, FLOOD ZONES A & X, 6-17-2008
39049C0406K, FLOOD ZONES AE & X, BFE = 758, 6-17-2018

ITEM 611 - CONDUIT BORED OR JACKED

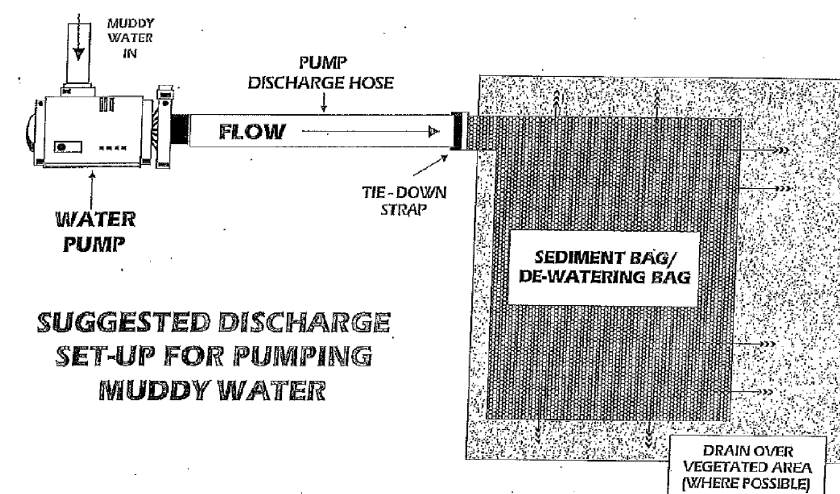
WHERE IT IS SPECIFIED THAT A CONDUIT BE INSTALLED BY THE METHOD OF BORING OR JACKING, NO TRENCH EXCAVATION SHALL BE CLOSER THAN 2 FEET TO THE EDGE OF PAVEMENT. PROVIDE A STEEL CASING PIPE CONFORMING TO 748.06 HAVING JOINTS WITH A CIRCUMFERENTIAL FULLY PENETRATING B-U4B WELD THAT IS PERFORMED BY AN ODOT APPROVED FIELD WELDER. THE INSTALLED CASING PIPE IS THE STORM WATER CONVEYANCE CARRIER UNLESS OTHERWISE SPECIFIED IN THE PLANS. HYDROSTATIC TESTING IS NOT REQUIRED FOR THE CASING PIPE.

PUMPING OF SEDIMENT-LADEN WATER

THE PUMPING OR DIRECT DISCHARGE OF SEDIMENT-LADEN (MUDDY) WATER TO THE CITY'S SEWER SYSTEM OR A RECEIVING STREAM IS A VIOLATION OF OHIO EPA AND CITY OF COLUMBUS REGULATIONS.

ALL INLETS RECEIVING FLOW FROM RUNOFF, PUMPING ACTIVITIES, OR OTHER DIRECT DISCHARGES SHALL BE FITTED WITH AN INLET PROTECTION DEVICE THAT IS PROPERLY SIZED AND SECURED TO REDUCE THE DISCHARGE OF SEDIMENT INTO THE STORM SEWER SYSTEM AND RECEIVING STREAM. INLET PROTECTION IS REQUIRED ON ALL INLETS RECEIVING DISCHARGE REGARDLESS OF WHETHER OR NOT THE INLET IS TRIBUTARY TO ANY DOWNSTREAM EROSION AND SEDIMENT CONTROLS.

DISCHARGE HOSES USED DURING PUMPING ACTIVITIES SHALL BE FITTED WITH SEDIMENT BAGS THAT ARE PROPERLY SIZED PER MANUFACTURER'S RECOMMENDATIONS REGARDLESS OF WHAT OTHER SEDIMENT CONTROLS ARE IN PLACE FURTHER DOWNSTREAM. SEDIMENT BAGS MUST BE PROPERLY SECURED TO THE DISCHARGE HOSE AND PLACED OVER VEGETATED AREAS, WHERE FEASIBLE, DURING DISCHARGE. SEE DETAIL BELOW OF A TYPICAL SEDIMENT BAG INSTALLATION.



ITEM 614. MAINTAINING TRAFFIC. AS PER PLAN

A MINIMUM OF 3 LANE(S) OF TRAFFIC ON I-71 NORTH SHALL BE MAINTAINED AT ALL TIMES BY USE OF THE EXISTING PAVEMENT, THE COMPLETED PAVEMENT, ITEM 502 STRUCTURE FOR MAINTAINING TRAFFIC, ITEM 615 PAVEMENT FOR MAINTAINING TRAFFIC, ITEM 615 ROADS FOR MAINTAINING TRAFFIC, AND TEMPORARY SURFACES USING ITEMS 410 AND 614.

THE EXISTING NUMBER OF LANES ON ALL RAMPS SHALL BE MAINTAINED, AT ALL TIMES, EXCEPT AS NOTED IN PLANS. A DISINCENTIVE SHALL BE ASSESSED IN THE AMOUNT OF \$5000 PER DAY FOR EACH CALENDAR DAY THE ROADWAY 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.

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, AS PER PLAN, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

MAINTENANCE OF TRAFFIC PHASING NOTES

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFE TRANSITION BETWEEN MOT PHASES.

PHASE 1

A. CONSTRUCT THE WIDENING ALONG THE INSIDE SHOULDER OF I-71 BETWEEN STA. 423+10 AND STA. 443+30. CLOSE THE SHOULDER ALONG SOUTHBOUND I-71 PER SCD MT-95.45.

B. CONSTRUCT THE TEMPORARY PAVEMENT ALONG THE INSIDE SHOULDER AS SHOWN ON THE MOT PHASE 3 PLAN SHEETS.

C. REMOVE THE BARRIER AND RECONSTRUCT THE SHOULDER BETWEEN I-71 NORTHBOUND AND THE C-D ROAD BETWEEN STA. 461+50 AND 476+20.

D. CONSTRUCT THE TEMPORARY RAMPS AS SHOWN ON THE MOT PHASE 2 PLAN SHEETS VIA A SHOULDER CLOSURE PER MT-95.45. DRUMS MAY BE USED INSTEAD OF PORTABLE BARRIER, WHEN MT-101.90 PERMITS.

PHASE 2

A. RECONSTRUCT THE RAMPS.

B. CONSTRUCT THE WIDENING ALONG THE OUTSIDE SHOULDER BETWEEN STRINGTOWN ROAD AND I-270.

MAINTENANCE OF TRAFFIC PHASING NOTES (CONT'D)

PHASE 3

A. CONSTRUCT THE WIDENING ALONG THE OUTSIDE SHOULDER BETWEEN THE STRINGTOWN ROAD EXIT AND ENTRANCE RAMPS.

B. RECONSTRUCT THE OUTSIDE SHOULDER ALONG I-71 BETWEEN STA. 464+00 AND STA. 476+10.

C. RECONSTRUCT RAMP K DURING A WEEKEND CLOSURE. DETOUR TRAFFIC AS SHOWN ON SHEET 30 .

IN ADDITION TO THE DRAINAGE ITEMS REPRESENTED ON THE MOT PLAN SHEETS, THE FOLLOWING DRAINAGE ITEMS WILL BE CONSTRUCTED DURING THIS PHASE:

CB-4, RAMP H STA. 479+00.00, 32.0' LT

15" CONDUIT TYPE C, RAMP H STA. 479+00.00, 32.0' LT TO STA. 479+83.07, 33.2' LT

CB-4, RAMP H STA. 479+96.82, 32.08' LT: REMOVE CAP, RECONSTRUCT CATCH BASIN TO PROP. GRADE

PHASE 4

A. CONSTRUCT THE BARRIER BETWEEN THE MAINLINE LANES AND THE C-D ROAD BETWEEN STA. 431+57 AND STA. 464+00. AND RECONSTRUCT THE SHOULDERS ON EITHER SIDE OF THIS BARRIER.

PHASE 5

A. COMPLETE THE FINAL SURFACE COURSE AND INSTALL FINAL PAVEMENT MARKINGS.

B. COMPLETE ALL REMAINING WORK.

ITEM 611. INLET, CATCH BASIN, OR MANHOLE ADJUSTED OR RECONSTRUCTED TO GRADE. AS PER PLAN

THIS WORK SHALL CONSIST OF CAPPING A PROPOSED BARRIER INLET, CATCH BASIN, OR MANHOLE BELOW GRADE AT THE PERMISSIBLE CONSTRUCTION JOINT (P.C.J.), PROVIDING AN APPROPRIATELY SIZED CONCRETE SLAB TOP AS PER CB-3.4. PAYMENT FOR THE INLET, CATCH BASIN, OR MANHOLE ITSELF SHALL BE PAID FOR UNDER THE APPROPRIATE DRAINAGE ITEM. THIS ITEM IS INTENDED TO PAY FOR THE CONCRETE SLAB TOP PER CB-3.4 AND THE ADDITIONAL LABOR AND MATERIALS INVOLVED TO CAP THE INLET, PLACE EMBANKMENT OVER IT, EXCAVATE THE INLET, CATCH BASIN, OR MANHOLE AT A LATER TIME AND REMOVE AND DISPOSE OF THE CONCRETE SLAB PREVIOUSLY INSTALLED.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID FOR EACH INLET, CATCH BASIN, OR MANHOLE CAPPED BELOW GRADE, AS PER PLAN AND SHALL INCLUDE ALL LABOR, MATERIALS, EMBANKMENT, EXCAVATION AND INCIDENTALS TO PLACE AND REMOVE A CONCRETE SLAB OVER A PROPOSED BARRIER INLET OR CATCH BASIN.

MOT DRAINAGE ITEMS. AS PER PLAN

WHERE DRAINAGE ITEMS ARE CALLED OUT IN THE PLANS FOR MOT, THEY SHALL MEET ALL THE REQUIREMENTS OF THAT ITEM AND SHALL ALSO INCLUDE REMOVAL OF THAT SAME ITEM WHEN IT IS NO LONGER NEEDED TO MAINTAIN POSITIVE DRAINAGE DURING MOT OPERATIONS, UNLESS OTHERWISE SPECIFIED IN THE PLANS.

ITEM 614. MAINTAINING TRAFFIC (NOTIFICATION OF CLOSURE SIGN)

NOTICE OF CLOSURE SIGNS, W20-H13, SHALL BE ERECTED BY THE CONTRACTOR PRIOR TO THE SCHEDULED ROAD OR RAMP CLOSURE IN ACCORDANCE WITH THE NOTICE OF CLOSURE TIME TABLE BELOW. AT THE APPROVAL OF THE ENGINEER, PORTABLE 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
ITEM	DURATION OF CLOSURE	NOTIFICATION DUE TO DISTRICT 6 COMMUNICATIONS OFFICE
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 MMM-DD FORMAT AND THE NUMBER OF DAYS OF THE CLOSURE. THE LAST LINE OF THE W20-H13 SIGN SHALL DISPLAY THE PHONE NUMBER OF THE DISTRICT 6 PUBLIC INFORMATION CONSTRUCTION LINE, (740)833-8268, WHICH A MOTORIST MAY CALL FOR ADDITIONAL INFORMATION.

ITEM 614. REPLACEMENT SIGN

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

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

AN ESTIMATED QUANTITY OF 50 EACH HAS BEEN PROVIDED IN THE SUBSUMMARY.

ITEM 614 WORK ZONE MARKING. MISC.: WORD ON PAVEMENT ITEM 614 WORK ZONE MARKING. MISC.: ROUTE SHIELDS

IN ADDITION TO THE SPECIFICATIONS OF ITEM 644 AND 740 THE FOLLOWING SHALL APPLY:

1. INTERSTATE WORDS AND ROUTE SHIELD PAVEMENT MARKINGS SHOULD BE DURABLE, HIGH SKID RESISTANT AND RETROREFLECTIVE.

2. THE MARKINGS MUST BE CAPABLE OF CONFORMING TO PAVEMENT CONTOURS, BREAKS AND FAULTS THROUGH THE ACTION OF TRAFFIC AT NORMAL PAVEMENT TEMPERATURES.

3. THE MARKING SHALL HAVE RESEALING CHARACTERISTICS, SUCH THAT IT IS CAPABLE OF FUSING WITH ITSELF.

4. THE MARKINGS SHALL NOT HAVE MINIMUM AMBIENT AND ROAD TEMPERATURE REQUIREMENTS FOR APPLICATION, STORAGE, OR HANDLING.

5. THE MATERIAL MUST BE ABLE TO BE APPLIED TO ASPHALT SURFACES WITHOUT PREHEATING THE APPLICATION SURFACE TO A SPECIFIC TEMPERATURE.

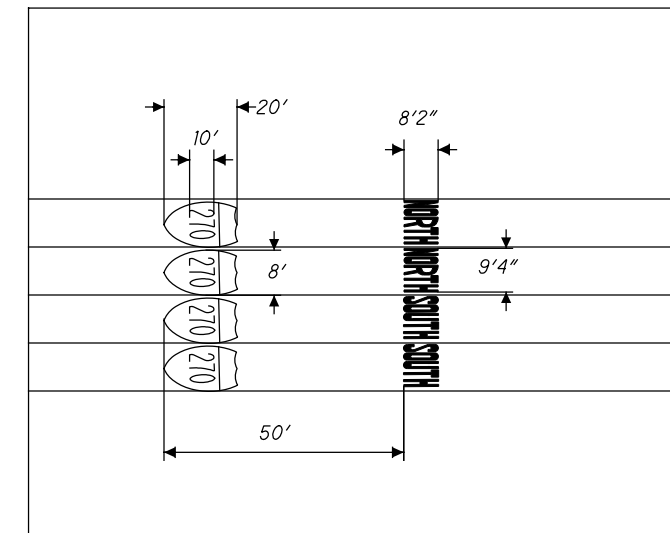
6. THE PAVEMENT SHALL BE CLEAN, DRY AND FREE OF DEBRIS BEFORE MATERIAL IS APPLIED.

7. THE MATERIAL MUST BE RESISTANT TO DETERIORATION DUE TO EXPOSURE TO SUNLIGHT, WATER, SALT OR ADVERSE WEATHER CONDITION AND IMPERVIOUS TO OIL AND GASOLINE.

8. THE TOP SURFACE OF THE MATERIAL SHALL HAVE REGULARLY SPACED INDENTS.

9. SIZE: PLEASE SEE DETAILS ON THIS SHEET FOR SIZE REQUIREMENTS OF THE ROUTE SHIELD.

PAYMENT FOR THIS ITEM SHALL BE AT THE CONTRACT UNIT PRICE BID FOR EACH FINISHED, INSTALLED, MAINTAINED AND REMOVED.



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

216 M. GAL

CALCULATED
BPT
CHECKED
EMW

MAINTENANCE OF TRAFFIC NOTES

FRA - 71 - 9.07

IRWM 614. REPLACEMENT DRUM

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

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

AN ESTIATED QUANTITY OF 100 EACH HAS BEEN PROVIDED IN THE SUBSUMMARY.

WORK ZONE SPEED ZONES (WZSZS)

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

WZSZ REVISION NUMBER(S)	COUNTY-ROUTE-SECTIONS(S)	DIRECTIONS(S)
WZ-35675	FRA-71-81.87-10.27	NB

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

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

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

WORK ZONE SPEED ZONES (WZSZS) CONT'D

ALL WZSZS FLUCTUATE BETWEEN TWO APPROVED REDUCED SPEED LIMITS OR BETWEEN AN APPROVED REDUCED SPEED LIMIT AND THE ORIGINAL POSTED SPEED LIMIT. ONLY ONE OF TWO SIGNING STRATEGIES SHALL BE USED TO IMPLEMENT A WZSZ.

WZSZS USING DSL SIGN ASSEMBLIES SHALL BE IN ACCORDANCE WITH THIS NOTE, APPROVED LIST, SUPPLEMENTAL SPECIFICATIONS (SS) 808 AND 908, AND TRAFFIC SCD MT-104.10.

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

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

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

THE FOLLOWING ESIMATED QUANTITY'S HAVE BEEN CARRIED TO THE SUBSUMMARY.

ITEM 808, DIGITAL SPEEL LIMIT (DSL) SIGN ASSEMBLY 165 SNMT ASSUMING 5 DSL SIGN ASSEMBLIES FOR 33 MONTHS

EARTHWORK FOR MAINTAINING TRAFFIC

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

EXCAVATION FOR MAINTAINING TRAFFIC	845 CU.YD.
EMBANKMENT FOR MAINTAINING TRAFFIC	1850 CU.YD.

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

PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE LUMP SUM CONTRACT CONTRACT PRICE FOR ITEM 615, ROADS FOR MAINTAINING TRAFFIC.

WORK ZONE INCREASED PENALTIES SIGN (R11-H5A)

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

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

THE R11-H5A-48 SIGNS SHALL BE MOUNTED ON 2 NO. 3 POSTS WHEN LOCATED WITHIN CLEAR ZONES.

THE CONTRACTOR MAY USE SIGNS AND SUPPORTS IN USED, BUT GOOD, CONDITION PROVIDED THE SIGNS MEET CURRENT ODOT SPECIFICATIONS. SIGN FACES SHALL BE RETROREFLECTORIZED WITH TYPE G SHEETING COMPLYING WITH THE REQUIREMENTS OF C&MS 730.19. WORK ZONE INCREASED PENALTIES SIGNS AND SUPPORTS WILL BE MEASURED AS THE NUMBER OF SIGN INSTALLATIONS, INCLUDING THE SIGN AND NECESSARY SUPPORTS. IF A SIGN AND SUPPORT COMBINATION IS REMOVED AND REERECTED AT ANOTHER LOCATION AS DIRECTED BY THE ENGINEER, IT SHALL BE CONSIDERED ANOTHER UNIT.

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

ITEM 614, WORK ZONE INCREASED PENALTIES SIGN 3 EACH

WORK ZONE INCREASED PENALTIES SIGNS WILL BE PLACED AT THE FOLLOWING LOCATIONS:

STA. 441+68	I-71 NB
STA. 441+68	I-71 NB
STA. 432+30	RAMP C

NOTIFICATION OF CONSTRUCTION INITIATION

AT LEAST FOURTEEN DAYS PRIOR TO STARTING INITIAL CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL ADVISE THE DISTRICT OFFICE OF COMMUNICATIONS VIA EMAIL AT D06.P10@DOT.OHIO.GOV, THE DISTRICT WORK ZONE TRAFFIC MANAGER VIA EMAIL AT D06.MOT@DOT.OHIO.GOV AND THE CENTRAL OFFICE SPECIAL HAUL PERMITS SECTION BY FAX AT (614)728-4099 OF THE ANTICIPATED START DATE OF ANY CONSTRUCTION ACTIVITIES INCLUDING BUT NOT LIMITED TO THE PLACING OF WORK ZONE SIGNS. THE NOTIFICATION SHALL ALSO INCLUDE THE PROJECT NUMBER, PID, NAME AND PHONE NUMBER OF THE CONTRACTOR, A POINT OF CONTACT AND THE ANTICIPATED IMPACT ON TRAFFIC. THE CONTRACTOR WILL IMMEDIATELY INFORM THE DISTRICT OFFICE OF COMMUNICATIONS AND THE DISTRICT WORK ZONE TRAFFIC MANAGER OF ANY AND ALL DELAYS AND/OR CHANGES REGARDING THE CONSTRUCTION INITIATION DATE.

FLOODLIGHTING

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

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

ITEM 614. WORK ZONE IMPACT ATTENUATOR FOR 24" WIDE HAZARDS (UNIDIRECTIONAL)

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

ITEM 614. PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN

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

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

PLACEMENT, OPERATION, MAINTENANCE AND ALL ACTIVATION OF THE SIGNS BY THE CONTRACTOR SHALL BE AS DIRECTED BY THE ENGINEER. THE PCMS SHALL BE LOCATED IN A HIGHLY VISIBLE POSITION YET PROTECTED FROM TRAFFIC. THE CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE VISIBILITY OR ACCOMMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS SHALL BE TURNED OFF. ADDITIONALLY, WHEN NOT IN USE FOR EXTENDED PERIODS OF TIME, THE PCMS SHALL BE TURNED AWAY FROM ALL TRAFFIC.

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

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

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

ITEM 614. PORTABLE CHANGEABLE MESSAGE SIGNS, AS PER PLAN (CONT'D)

THE PCMS SHALL CONTAIN A CELLULAR TELEPHONE DATA LINK WHICH WILL (IN ACTIVE CELLULAR PHONE AREAS) ALLOW REMOTE SIGN ACTIVATION, MESSAGE CHANGES, MESSAGE ADDITIONS AND REVISIONS TO TIME OF DAY PROGRAMS. THE SYSTEM SHALL ALSO PERMIT VERIFICATION OF CURRENT AND PROGRAMMED MESSAGES. ONE REMOTE DATA INPUT DEVICE (LAPTOP COMPUTER PLUS MODEM OR EQUIVALENT) SHALL BE FURNISHED FOR USE BY THE DISTRICT TRAFFIC ENGINEER, OR EQUIVALENT, AND SHALL BE INSURED AGAINST THEFT. THE PCMS UNIT SHALL BE MAINTAINED IN GOOD WORKING ORDER BY THE CONTRACTOR IN ACCORDANCE WITH THE PROVISIONS OF C&MS 614.07. THE CONTRACTOR SHALL, PRIOR TO ACTIVATING THE UNIT, MAKE ARRANGEMENTS, WITH AN AUTHORIZED SERVICE AGENT FOR THE PCMS, TO ASSURE PROMPT SERVICE IN THE EVENT OF FAILURE. ANY FAILURE SHALL NOT RESULT IN THE SIGN BEING OUT OF SERVICE FOR MORE THAN 12 HOURS, INCLUDING WEEKENDS. FAILURE TO COMPLY MAY RESULT IN AN ORDER TO STOP WORK AND OPEN ALL TRAFFIC LANES AND/OR IN THE DEPARTMENT TAKING APPROPRIATE ACTION TO SAFELY CONTROL TRAFFIC. THE ENTIRE COST TO CONTROL TRAFFIC, ACCRUED BY THE DEPARTMENT DUE TO THE CONTRACTOR'S NONCOMPLIANCE, WILL BE DEDUCTED FROM MONEYS DUE, OR TO BECOME DUE THE CONTRACTOR ON HIS CONTRACT.

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

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

ITEM 614, PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN 2 SNMT ASSUMING 1 PCMS SIGN(S) FOR 2 MONTH(S)

MATERIAL, DELIVERY AND INSTALLATION

BRIDGE BEAM, NOISE WALL PANELS AND OTHER LARGE MATERIALS THAT ARE TYPICALLY INSTALLED DIRECTLY FROM DELIVERY TRUCKS MAY ARRIVE UP TO 12 HOURS BEFORE INSTALLATION.

DELIVERY TRUCKS WILL BE PERMITTED TO PARK ON THE SHOULDER WITH A SHOULDER CLOSURES AS DETAILED IN MT-95.45. A TRUCK MOUNTED ATTENUATOR SHOULD BE USED IF VEHICLES WILL BE OCCUPYING THE SHOULDER FOR 2 HOURS OR MORE.

NOISE WALL PANELS SHALL NOT BE INTALLED DURING PEAK HOURS IF ANY EQUIPMENT/VECHILES WILL BE WITH IN 12 FEET OF A TRAVEL LANE UNLESS SEPARATED BY PORTABLE BARRIER.

PORTABLE BARRIER SHALL NOT BE DELIVERED OR INSTALLED DURING PEAK HOURS.

MATERIAL DELIVERY TRUCKS SHALL NOT EGRESS THE WORKSITE DURING PEAK HOURS

PEAK HOURS ARE CONSIDERED TO BE 5AM-9AM AND 3PM-6PM MONDAY-FRIDAY.

REFER TO CMS 614.035 FOR ALL OTHER STORAGE OF EQUIPMENT, VEHICLES AND MATERIALS.

WORKSITE TRAFFIC SUPERVISOR

SUBJECT TO APPROVAL OF THE ENGINEER, THE CONTRACTOR SHALL EMPLOY AND IDENTIFY (SOMEONE OTHER THAN THE SUPERINTENDENT) A PREQUALIFIED WORKSITE TRAFFIC SUPERVISOR (WTS) BEFORE STARTING WORK IN THE FIELD. THE WTS SHALL BE TRAINED IN ACCORDANCE WITH CMS 614.03, SHALL HAVE SUCCESSFULLY COMPLETED ODOT ADMINISTERED WTS TESTING (AND RE-TESTING WHEN APPLICABLE) AND BE LISTED ON THE ODOT PREQUALIFIED WTS ROSTER. PREQUALIFICATION EXPIRES EVERY 5 YEARS. RE-TESTING SHALL BE SUCCESSFULLY REPEATED EVERY 5 YEARS TO REMAIN PREQUALIFIED.

THE NAME OF THE PREQUALIFIED WTS AND RELATED 24-HOUR CONTACT INFORMATION SHALL BE PROVIDED TO THE ENGINEER AT THE PRECONSTRUCTION CONFERENCE. IF THE DESIGNATED WTS WILL NOT BE AVAILABLE FULL TIME (24/7), THE CONTRACTOR MAY DESIGNATE AN ALTERNATE (SECONDARY) WTS TO BE AVAILABLE WHEN THE PRIMARY IS OFF DUTY; HOWEVER THE PRIMARY WTS SHALL REMAIN THE POINT OF CONTACT AT ALL TIMES. ANY ALTERNATE (SECONDARY) WTS IS SUBJECT TO THE SAME TRAINING, PREQUALIFICATION AND OTHER REQUIREMENTS OUTLINED WITHIN THIS PLAN NOTE. AT ALL TIMES THE ENGINEER, OR ENGINEER'S REPRESENTATIVES, MUST BE INFORMED OF WHO THE PRIMARY WTS (AND SECONDARY WTS, IF APPLICABLE) IS AT THE CURRENT TIME.

THE WTS POSITION HAS THE PRIMARY RESPONSIBILITY OF IMPLEMENTING THE TRAFFIC MANAGEMENT PLAN (TMP), MONITORING THE SAFETY AND MOBILITY OF THE ENTIRE WORK ZONE, AND CORRECTING TEMPORARY TRAFFIC CONTROL (TTC) DEFICIENCIES FOR THE ENTIRE WORK ZONE. THE WTS, AND ALTERNATE WTS WHEN ON DUTY, SHALL HAVE SUFFICIENT AUTHORITY TO EFFECTIVELY CARRY OUT THE IDENTIFIED WTS RESPONSIBILITIES AND DUTIES. THE DUTIES OF THE WTS ARE AS FOLLOWS:

1. BE AVAILABLE ON A 24-HOUR PER DAY BASIS.
2. BE ON SITE FOR ALL EMERGENCY TTC NEEDS WITHIN ONE HOUR OF NOTIFICATION BY POLICE OR PROJECT STAFF, AND EFFECT CORRECTIVE MEASURES IMMEDIATELY ON EXISTING WORK ZONE TTC DEVICES.
3. ATTEND PRECONSTRUCTION MEETING AND ALL PROJECT MEETINGS WHERE TTC MANAGEMENT IS DISCUSSED.
4. BE AVAILABLE ON SITE FOR OTHER MEETINGS OR DISCUSSIONS WITH THE ENGINEER UPON REQUEST.
5. BE AWARE OF ALL EXISTING AND PROPOSED TTC OPERATIONS OF THE CONTRACTOR, SUBCONTRACTORS AND SUPPLIERS, AND ENSURE COORDINATION OCCURS BETWEEN THEM TO ELIMINATE CONFLICTING TEMPORARY AND/OR PERMANENT TRAFFIC CONTROL.
6. COORDINATE PROJECT ACTIVITIES WITH ALL LAW ENFORCEMENT OFFICERS (LEOS). THE WTS SHALL ALSO BE THE MAIN CONTACT PERSON WITH THE LEOS WHILE LEOS ARE ON THE PROJECT.
7. COORDINATE AND FACILITATE MEETINGS WITH ODOT PERSONNEL, LEOS AND OTHER APPLICABLE ENTITIES BEFORE EACH PLAN PHASE SWITCH TO DISCUSS THE WORK ZONE TTC FOR IMPLEMENTING THE PHASE SWITCH. SUBMIT A WRITTEN DETAIL OF MOT OPERATIONS AND SCHEDULE OF EVENTS TO IMPLEMENT THE SWITCH BETWEEN PHASE PLANS TO THE ENGINEER 5 CALENDAR DAYS PRIOR TO THIS MEETING.
8. BE PRESENT, ON SITE FOR, AND INVOLVED WITH, EACH TTC SET UP/TAKE DOWN AND EACH PHASE CHANGE IN ACCORDANCE WITH CMS 614.03.
9. ON A CONTINUAL BASIS ENSURE THAT THE TTC ZONE AND ALL RELATED DEVICES ARE INSTALLED, MAINTAINED AND REMOVED IN COMPLIANCE WITH THE CONTRACT DOCUMENTS.
10. ON A CONTINUAL BASIS FACILITATE CORRECTIVE ACTION(S) NECESSARY TO BRING DEFICIENT TTC ZONES AND ALL RELATED DEVICES INTO COMPLIANCE WITH CONTRACT DOCUMENTS IN THE TIMEFRAME DETERMINED BY THE ENGINEER.

WORKSITE TRAFFIC SUPERVISOR (CONT'D)

11. INSPECT, EVALUATE, PROPOSE NECESSARY MODIFICATIONS TO, AND DOCUMENT THE EFFECTIVENESS OF, THE TTC DEVICES AND TRAFFIC OPERATIONS ON A DAILY BASIS (7 DAYS A WEEK). IN ADDITION, PERFORM ONE WEEKLY NIGHT INSPECTION OF THE WORK ZONE SETUP FOR DAYTIME WORK OPERATIONS; AND ONE DAYTIME INSPECTION PER WEEK FOR NIGHTTIME PROJECTS. THIS SHALL INCLUDE (BUT NOT BE LIMITED TO) DOCUMENTATION ON THE FOLLOWING PROJECT EVENTS:

- A. INITIAL TTC SETUP (DAY AND NIGHT REVIEW).
- B. DAILY TTC SETUP AND REMOVAL.
- C. WHEN CONSTRUCTION STAGING CAUSES A CHANGE IN THE TTC SETUP.
- D. CRASH OCCURRENCES WITHIN THE CONSTRUCTION AREA AND WITHIN THE INFLUENCE AREA(S) APPROACHING THE WORK ZONE.
- E. REMOVAL OF TTC DEVICES AT THE END OF A PHASE OR PROJECT.
- F. ALL OTHER EMERGENCY TTC NEEDS.
12. COMPLETE THE DEPARTMENT APPROVED LONG TERM INSPECTION FORM (CA-D-8) AFTER EACH INSPECTION AS REQUIRED IN #11 AND SUBMIT IT TO THE ENGINEER THE FOLLOWING WORKDAY. THESE REPORTS SHALL INCLUDE A CHECKLIST OF ALL TTC MAINTENANCE ITEMS TO BE REVIEWED. A COPY OF THE FORM WILL BE PROVIDED AT THE PRE-CONSTRUCTION MEETING. ANY DEFICIENCIES OBSERVED SHALL BE NOTED, ALONG WITH RECOMMENDED OR COMPLETED CORRECTIVE ACTIONS AND THE DATES BY WHICH SUCH CORRECTIONS WERE, OR WILL BE, COMPLETED. A COPY OF THE CURRENT CA-D-8 DOCUMENT CAN BE FOUND ON THE OFFICE OF CONSTRUCTION ADMINISTRATION'S INSPECTION FORMS WEBSITE.
13. HAVE COPIES OF THE ODOT TEMPORARY TRAFFIC CONTROL MANUAL AND CONTRACT DOCUMENTS AVAILABLE AT ALL TIMES ON THE PROJECT.

THE DEPARTMENT WILL DEDUCT:

- A. THE PRORATED DAILY AMOUNT OF ITEM 614 MAINTAINING TRAFFIC FOR ANY DAY IN WHICH THE WTS FAILS TO PERFORM THE DUTIES SET FORTH ABOVE. THE PRORATED DAILY AMOUNT WILL BE EQUAL TO THE ORIGINAL BID AMOUNT FOR ITEM 614 MAINTAINING TRAFFIC DIVIDED BY THE DIFFERENCE BETWEEN THE ORIGINAL COMPLETION DATE AND THE FIRST DAY OF WORK, IN CALENDAR DAYS.
- B. 1% OF THE ORIGINAL BID AMOUNT FOR ITEM 614 MAINTAINING TRAFFIC FOR ANY DAY THAT A TTC ISSUE IS IDENTIFIED IN THE FIELD AND IS NOT CORRECTED IN THE GIVEN TIMEFRAME PER THE ENGINEER. DEDUCTION B SHALL NOT APPLY TO SITUATIONS COVERED BY DEDUCTION C.
- C. 1% OF THE ORIGINAL BID AMOUNT FOR ITEM 614 MAINTAINING TRAFFIC FOR ANY DAY THAT A LANE OR RAMP IS BLOCKED (FULLY OR PARTIALLY) WITHOUT TTC, AS DETERMINED BY THE ENGINEER. THIS DEDUCTION SHALL BE IN ADDITION TO ANY OTHER DISINCENTIVES ESTABLISHED FOR UNAUTHORIZED LANE USE.

FOR DAYS IN WHICH MORE THAN ONE DEDUCTION LISTED ABOVE OCCUR, THE HIGHEST DEDUCTION AMOUNT WILL APPLY.

IF THREE OR MORE TOTAL DAYS RESULT IN TTC ISSUES DESCRIBED IN DEDUCTION B OR C ABOVE, THE PRIMARY WTS SHALL BE IMMEDIATELY REMOVED FROM THE WORK IN ACCORDANCE WITH C&MS 108.05. UPON REMOVAL THE ENGINEER SHALL NOTIFY ODOT CENTRAL OFFICE (WTSPREQUALIFICATION@DOT.OHIO.GOV) TO REGISTER A REMOVAL AGAINST THE STATEWIDE PREQUALIFICATION FOR THE PRIMARY WTS. THREE REMOVALS SHALL CAUSE STATEWIDE DISQUALIFICATION FOR ANY PREVIOUSLY PREQUALIFIED WTS.

PAYMENT FOR THE ABOVE REQUIREMENTS, RESPONSIBILITIES AND DUTIES SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614, MAINTAINING TRAFFIC, AS PER PLAN

CALCULATED
BPT
CHECKED
EMW

MAINTENANCE OF TRAFFIC NOTES

FRA-71-9.07

24
264

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

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

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

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

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

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

RESURFACING OF THE TRANSITION AREAS SHALL BE PERFORMED AT THE TIME THAT THE SURFACE COURSE IS BEING APPLIED TO THE ENTIRE PROJECT. PRIOR TO APPLICATION OF THE SURFACE COURSE ON THE PROJECT, THE EXISTING PAVEMENT WITHIN THE TRANSITION AREA SHALL BE REMOVED TO A DEPTH NECESSARY TO REACH THE LEVEL OF THE INTERMEDIATE COURSE OF THE PAVEMENT, AS DETERMINED BY THE ENGINEER.

THE FOLLOWING BID ITEMS SHOULD BE INCLUDED IN THE PLANS:

ITEM 614 WORK ZONE RAISED PAVEMENT MARKER, AS PER PLAN
999 EACH

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

DELINEATION OF TEMPORARY AND PERMANENT GUARDRAIL

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

OBJECT MARKERS SHALL BE INSTALLED ON ALL TEMPORARY AND PERMANENT GUARDRAIL LOCATED WITHIN 5 FEET OF THE EDGE OF THE ADJACENT TRAVEL LANE. GUARDRAIL-MOUNTING OF OBJECT MARKERS SHALL BE MADE BY INSTALLING THE OBJECT MARKERS ON THE EXTENSION BLOCKS RATHER THAN DIRECTLY ONTO THE GUARDRAIL ITSELF. OBJECT MARKERS SHALL CONFORM TO C&MS 614.03 AND THE SPACING SHALL BE APPROXIMATELY 50 FEET WITH A 25 FOOT OFFSET FROM THE BARRIER REFLECTORS.

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

ITEM 614, BARRIER REFLECTOR, TYPE 2, ONE-WAY 74 EACH
ITEM 614, OBJECT MARKER, ONE-WAY 26 EACH

DELINEATION OF PORTABLE 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 MT101.70.

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 MT101.70.

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

ITEM 614, BARRIER REFLECTOR, TYPE 1, ONE-WAY 1517 EACH
ITEM 614, OBJECT MARKER, ONE-WAY 478 EACH
ITEM 614, INCREASED BARRIER DELINEATION 23,790 FEET

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

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

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

USE OF LAW ENFORCEMENT OFFICERS (LEOS) BY CONTRACTORS OTHER THAN THE USES SPECIFIED BELOW WILL NOT BE PERMITTED AT PROJECT COST. LEOS SHOULD NOT BE USED WHERE THE ODOT INTENDS THAT FLAGGERS BE USED.

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

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

-DURING A TRAFFIC SIGNAL INSTALLATION WHEN IMPACTING THE NORMAL FUNCTION OF THE SIGNAL OR THE FLOW OF TRAFFIC, OR WHEN TRAFFIC NEEDS TO BE DIRECTED THROUGH AN ENERGIZED TRAFFIC SIGNAL CONTRARY TO THE SIGNAL DISPLAY (E.G., DIRECTING MOTORISTS THROUGH A RED LIGHT).

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

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

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.

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 WHICH SHALL BE RETURNED TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT.

ITEM 614. LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS (CONT'D)

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 800 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 AN LEO ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE.

NOTIFICATION OF TRAFFIC RESTRICTIONS

THROUGHOUT THE DURATION OF THE PROJECT, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IN WRITING OF ALL TRAFFIC RESTRICTIONS AND UPCOMING MAINTENANCE OF TRAFFIC CHANGES. THE CONTRACTOR SHALL ENSURE THE WRITTEN NOTIFICATION IS SUBMITTED IN A TIMELY MANNER TO ALLOW THE PROJECT ENGINEER TO MEET THE REQUIRED TIME FRAMES SET FORTH IN THE TABLE BELOW TO INFORM SPECIAL HAULING PERMITS SECTION (HAULING.PERMITS@DOT.OHIO.GOV) AND THE DISTRICT PUBLIC INFORMATION OFFICE PIO (DO6.PIO@DOT.OHIO.GOV). THIS NOTIFICATION SHALL BE RECEIVED BY THE PROJECT ENGINEER PRIOR TO THE PHYSICAL SETUP OF ANY APPLICABLE SIGNS OR MESSAGE BOARDS.

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

ITEM	DURATION OF CLOSURE	NOTIFICATION DUE TO DISTRICT 6 COMMUNICATIONS OFFICE	SIGN DISPLAYED TO PUBLIC
RAMP & ROAD CLOSURES	>= 2 WEEKS	21 CALENDAR DAYS PRIOR TO CLOSURE	14 CALENDAR DAYS PRIOR TO CLOSURE
	> 12 HOURS & < 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE	7 CALENDAR DAYS PRIOR TO CLOSURE
	< 12 HOURS	4 CALENDAR DAYS PRIOR TO CLOSURE	2 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.

TRAFFIC INCIDENT MANAGEMENT (TIM) DURING MOT

OHIO TIM IS OHIO S TRAFFIC INCIDENT MANAGEMENT PROGRAM WHICH IS COMMITTED TO MAINTAINING THE SAFE AND EFFECTIVE FLOW OF TRAFFIC DURING EMERGENCIES AS TO PREVENT FURTHER DAMAGE, INJURY OR UNDUE DELAY OF THE MOTORING PUBLIC. IN ADDITION TO COMPLYING WITH THE PROVISION OF OMUTCD CHAPTER 6I, CONTROL OF TRAFFIC THROUGH TRAFFIC INCIDENT MANAGEMENT AREAS, THE CONTRACTOR SHALL ACTIVELY PARTICIPATE IN TIM PLANNING AND IMPLEMENTATION AS OUTLINED BELOW.

- 1. SUPERINTENDENT SHALL IDENTIFY THE INDIVIDUAL PERSONS ON THE PROJECT WHO WILL, OR MAY NEED TO, PERFORM THE DUTIES HEREIN. AT A MINIMUM, INCLUDE THE SUPERINTENDENT, FOREMEN AND SUPERVISORS (OR EQUIVALENT) AS WELL AS THE WORKSITE TRAFFIC SUPERVISOR (WTS; IF APPLICABLE TO THE PROJECT). THESE INDIVIDUALLY IDENTIFIED PERSONS SHALL COLLECTIVELY BE KNOWN AS CONTRACTOR TRAFFIC INCIDENT MANAGEMENT (TIM) CONTACTS. NOTIFY THE PROJECT ENGINEER OF THE CONTRACTOR TIM CONTACTS (ALONG WITH CONTACT INFORMATION FOR EACH) AT OR BEFORE THE PRECONSTRUCTION MEETING.
- 2. SUPERINTENDENT SHALL NOTIFY THE ENGINEER IMMEDIATELY IF ANY CONTRACTOR TIM CONTACT IS ADDED, REMOVED OR THE CONTACT INFORMATION CHANGES OVER THE COURSE OF THE PROJECT.
- 3. PRIOR THE FIRST DAY OF WORK IN THE FIELD, EACH CONTRACTOR TIM CONTACT ON THE PROJECT SHALL HAVE ATTENDED AND SUCCESSFULLY COMPLETED OHIO TIM TRAINING PROVIDED BY THE DEPARTMENT OR DESIGNEE. TRAINING INFORMATION CAN BE FOUND AT WWW.OHIOTIM.COM.
- 4. SUPERINTENDENT, AT A MINIMUM, SHALL ATTEND AND ACTIVELY PARTICIPATE IN A DEPARTMENT SCHEDULED TIM MEETING BEFORE CONSTRUCTION WORK BEGINS AND BEFORE EACH PHASE CHANGE. THESE MEETINGS WILL RESULT IN A DEPARTMENT ISSUED PROJECT SPECIFIC TRAFFIC INCIDENT MANAGEMENT PLAN (TIMP). AT THE TIM MEETINGS THE ATTENDING CONTRACTOR TIM CONTACTS SHALL:
 - A. COLLABORATE WITH ODOT AND SAFETY FORCES;
 - B. SHARE PROJECT SPECIFIC DETAILS THAT IMPACT TIM RESPONDERS; AND
 - C. RECOMMEND WAYS TO INCORPORATE NECESSARY EMERGENCY ACCESS AND OTHER TIM ELEMENTS FOR TIM RESPONDERS GIVEN PROJECT SPECIFIC WORK BEING COMPLETED AND PROJECT SPECIFIC PHASING.
- 5. CONTRACTOR TIM CONTACTS SHALL IMPLEMENT COMPONENTS OF THE RESULTING TIMP (SUCH AS APPROVED EMERGENCY INGRESS/EGRESS POINTS, ETC), AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH 109.05.
- 6. CONTRACTOR TIM CONTACTS SHALL PERFORM, AT A MINIMUM, THE FOLLOWING FUNCTIONS WHEN AN INCIDENT/CRASH OCCURS:
 - A. IF OBSERVED OR PRESENT WHEN OCCURS, CALL 911 AND THEN NOTIFY THE TRAFFIC MANAGEMENT CENTER (TMC) TO PROVIDE THE FOLLOWING:
 - I. LOCATION, INCLUDING MILEPOST NUMBER AND DIRECTION OF TRAVEL
 - II. NUMBER AND TYPE OF VEHICLES INVOLVED, IF KNOWN
 - III. ESTIMATED EXTENT OF DAMAGE OR INJURY, IF KNOWN
 - IV. ESTIMATED NUMBER OF PATIENTS INVOLVED, IF KNOWN
 - V. ANY POTENTIAL HAZARDOUS CONDITIONS, IF KNOWN
 - VI. THE PLACARD NUMBER ON ANY HAZARDOUS MATERIALS PLACARD FROM A SAFE DISTANCE, IF APPLICABLE AND VISIBLE

TRAFFIC INCIDENT MANAGEMENT (TIM) DURING MOT (CONT'D)

- B. FOLLOWING AN INCIDENT/CRASH:
 - I. INITIATE TRAFFIC MANAGEMENT/PROVIDE TEMPORARY TRAFFIC CONTROL AS INDICATED IN THE TIMP, AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH 109.05.
 - II. RECOMMEND ROADWAY REPAIR NEEDS.
 - III. PROVIDE REPAIR RESOURCES AND INITIATE REPAIRS, AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH 109.05.
 - IV. ATTEND AND PARTICIPATE IN AN AFTER ACTION REVIEW (AAR).

ALL COSTS, UNLESS OTHERWISE SPECIFIED, RESULTING FROM THE ABOVE REQUIREMENTS SHALL BE CONSIDERED TO BE INCLUDED IN THE LUMP SUM PRICE FOR ITEM 614, MAINTAINING TRAFFIC, AS PER PLAN. FAILURE TO PERFORM THE REQUIREMENTS OF THIS PLAN NOTE WILL RESULT IN A DAILY FINE OF 2% OF ITEM 614, MAINTAINING TRAFFIC, AS PER PLAN AND MAY RESULT IN ONE OR MORE CONTRACTOR TIM CONTACTS BEING REMOVED FROM THE LIST OF OHIO TIM TRAINED INDIVIDUALS (AT THE SOLE DISCRETION OF THE OHIO TIM EXECUTIVE COMMITTEE). IN THE EVENT AN INDIVIDUAL IS REMOVED FROM THE OHIO TIM TRAINED LIST, THE INDIVIDUAL WILL BE REMOVED FROM CONTRACTOR TIM CONTACT RESPONSIBILITIES ON ALL PROJECTS.

WEEKLY MAINTENANCE OF TRAFFIC MEETING

AFTER THE INITIAL PRE-MAINTENANCE OF TRAFFIC MEETING, THE CONTRACTOR SHALL MEET WITH THE PROJECT ENGINEER ON A WEEKLY BASIS TO GO OVER A DETAILED MAINTENANCE OF TRAFFIC REPORT OF AT LEAST 7 CALENDAR DAYS. THIS MEETING SHOULD BE HELD ON THE SAME DAY AND TIME OF EACH WEEK.

THE CONTRACTOR WILL PROVIDE TO THE PROJECT ENGINEER A WRITTEN DETAIL OF THE INFORMATION REQUIRED BY THE NOTIFICATION OF TRAFFIC RESTRICTIONS NOTE PRIOR TO THE MEETING.

IN ADDITION TO THE DETAILED MAINTENANCE OF TRAFFIC REPORT THE CONTRACTOR SHALL GIVE A GENERAL LOOK AHEAD OF AN ADDITIONAL 2 WEEKS OF UPCOMING WORK ACTIVITIES. THIS WILL INCLUDE ANY NOTIFICATION REQUIREMENTS FOR RESTRICTIONS THAT HAVE A DURATION GREATER THAN 12 HOURS.

PRE-MAINTENANCE OF TRAFFIC MEETING

A PRE-MAINTENANCE OF TRAFFIC MEETING SHALL BE HELD (MINIMUM 14 WORK DAYS) PRIOR TO WORK BEGINNING OR ANY CHANGE OF PHASING. THIS MEETING SHALL INCLUDE THE DISTRICT WORK ZONE TRAFFIC MANAGER (D06.MOT@DOT.OHIO.GOV) AS WELL AS THE CONTRACTOR AND ANY OF HIS SUB-CONTRACTORS INVOLVED WITH TEMPORARY TRAFFIC CONTROL. FOR COLUMBUS SECTIONS OF ROADWAY, ALSO INCLUDE THE TEMPORARY CONTROL COORDINATOR (614-645-6269 OR 614-645-5845) FROM THE CITY OF COLUMBUS TRANSPORTATION DIVISION.

COORDINATION WITH ADJACENT PROJECTS

THE CONTRACTOR SHALL COORDINATE WORK WITH ODOT AND THE CONTRACTORS ON THE ADJACENT PROJECTS.

- FRA-71-9.62/9.71 PID 104799
- FRA-104-7.57 PID 99885
- FRA SGNL PHASE D PID 82573

COORDINATION SHALL BE MADE TO PREVENT CONFLICTING ADVANCE WARNING SIGNS, CONFLICTING DETOUR ROUTES, OVERLAPING/CONFLICTING LANE CLOSURES, AND TO ENSURE THAT A MINIMUM DISTANCE OF 2 MILES BETWEEN ADJACENT LANE CLOSURES IS MAINTAINED. THIS IS NOT AN EXHAUSTIVE LIST OF COORDINATION ITEMS THAT MAY NEED TO BE RESOLVED BETWEEN PROJECTS. THE DEPARTMENT RESERVES THE RIGHT TO DECIDE WHICH PROJECT'S ACTIVITIES TAKE PRECEDENCE. PROJECTS THAT HAVE ACTIVITIES DELAYED DUE TO CONFLICTS WILL CONSIDER THIS AN EXCUSABLE, NON-COMPENSABLE DELAY PER 108.06.B. ON PROJECTS THAT HAVE ACTIVITIES DELAYED DUE TO CONFLICTS WHERE THE CONTRACTOR FAILED TO MEET THE NOTIFICATION REQUIREMENTS, THE DELAYS SHALL NOT BE CONSIDERED EXCUSABLE OR COMPENSABLE.

ATTENDANCE AT DEPARTMENT ORDERED TRAFFIC COORDINATION MEETINGS BETWEEN ADJACENT PROJECTS SHALL BE CONSIDERED MANDATORY FOR EACH PROJECT'S SUPERINTENDENT AND WORKSITE TRAFFIC SUPERVISOR (WTS), AND INCIDENTAL TO THE LUMP SUM MAINTENANCE OF TRAFFIC PAYMENT ITEM

ITEM 614. MAINTAINING TRAFFIC (LANES OPEN DURING HOLIDAYS)

NO WORK SHALL BE PERFORMED AND THE SAME NUMBER OF LANES AS WERE AVAILABLE AT THE START OF THE PROJECT SHALL BE OPEN TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS OR EVENTS:

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

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

DAY OF HOLIDAY OR EVENT	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00 NOON FRI. THROUGH 6:00 AM MON.
MONDAY	12:00 NOON FRI. THROUGH 6:00 AM TUE.
TUESDAY	12:00 NOON MON. THROUGH 6:00 AM WED.
WEDNESDAY	12:00 NOON TUE. THROUGH 6:00 AM THUR.
THURSDAY	12:00 NOON WED. THROUGH 6:00 AM FRI.
THANKSGIVING	5:00AM WED. THROUGH 6:00 AM MON.
FRIDAY	12:00 NOON THUR. THROUGH 6:00 AM MON.
SATURDAY	12:00 NOON FRI. THROUGH 6:00 AM MON.

NO EXTENSIONS OF TIME SHALL BE GRANTED FOR DELAYS IN MATERIAL DELIVERIES, UNLESS SUCH DELAYS ARE INDUSTRY WIDE, OR FOR LABOR STRIKES, UNLESS SUCH STRIKES ARE AREA WIDE.

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED A DISINCENTIVE PER THE LANE VALUE CONTRACT (PN 127).

ITEM 614 WORK ZONE ARROW, CLASS I, AS PER PLAN

IN ADDITION TO THE SPECIFICATIONS OF CMS 614 THE WORK ZONE ARROWS SHALL BE LANE REDUCTION ARROWS AND SHALL BE 642 PAINT.

PAYMENT FOR THIS ITEM SHALL BE AT THE CONTRACT UNIT PRICE BID FOR EACH FUNISHED, INSTALLED, MAINTAINED AND REMOVED.

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

THE CONTRACTOR SHALL MILL 2 INCHES BY 2 FEET WIDE OF THE EXISTING ASPHALT SHOULDER IN ORDER TO REMOVE THE EXISTING RUMBLE STRIPS ALONG I-71 NB IN THE AREA WHERE TRAFFIC IS SHIFTED. THE CONTRACTOR SHALL THEN COAT ALL MILLED SURFACES HORIZONTAL AND VERTICAL WITH APPROVED AC LIQUID. NEXT THE CONTRACTOR SHALL PLACE 2 INCHES OF ITEM 448 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, PG 64-28.

ALL COST ASSOCIATED WITH THE REMOVAL OF THE EXISTING PAVEMENT AND PLACEMENT OF THE SURFACE COURSE SHALL BE INCLUDED IN UNIT PRICE BID PER FOOT OF ITEM 618 - RUMBLE STRIPS (ASPHALT CONCRETE), AS PER PLAN.

AN ESTIMATED QUANTITY OF 2800 FEET HAS BEEN CARRIED TO THE MAINTENANCE OF TRAFFIC SUBSUMMARY.

MAINTENANCE OF TRAFFIC FOR MARKING PAVEMENT REPAIRS

PROVIDE LANE CLOSURES AS PER THE MAINTENANCE OF TRAFFIC NOTES IN THESE PLANS A MINIMUM OF 24 HOURS PRIOR TO PERFORMING PAVEMENT REPAIRS TO ALLOW THE ENGINEER TO IDENTIFY AND MARK THE AREAS OF THE PAVEMENT IN NEED OF REPAIRS.

ALL LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS TO COMPLETE ALL ITEMS DESCRIBED SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC.

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

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

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

- ITEM 614 WORK ZONE LANE LINE, CLASS I SPRAY THERMOPLASTIC, AS PER PLAN 4.5 MILE
- ITEM 614 WORK ZONE EDGE LINE, CLASS I SPRAY THERMOPLASTIC, AS PER PLAN 7.8 MILE
- ITEM 614 WORK ZONE CHANNELIZING LINE, CLASS I, SPRAY THERMOPLASTIC, AS PER PLAN 19811 FEET
- ITEM 614 WORK ZONE DOTTED LINE, CLASS I, SPRAY THERMOPLASTIC, AS PER PLAN 6106 FEET

SHORT DURATION RAMP CLOSURES

FOR THE PURPOSE OF PERFORMING THE REQUIRED WORK OR WHEN REQUIRED BY THE INTERSTATE ENTRANCE RAMP CLOSURE NOTE, RAMPS MAY BE CLOSED FOR SHORT DURATIONS AND DETOURED IN ACCORDANCE WITH THE RAMP CLOSURE TABLE IF APPROVED BY THE ENGINEER. RAMP CLOSURES ARE SUBJECT TO DISINCENTIVES.

FOR ALL SERVICE RAMP CLOSURES LASTING MORE THAN 12 HOURS BUT LESS THAN 60 HOURS AND/OR, FOR ALL SYSTEM RAMP CLOSURES LASTING MORE THAN 12 HOURS BUT LESS THAN 24 HOURS

THE CONTRACTOR SHALL PROVIDE THE FOLLOWING:

- A MINIMUM OF TWO PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) PLACED, AS DIRECTED BY THE ENGINEER, TO WARN DRIVERS OF THE CLOSURE AND TO PROVIDE THE DESIGNATED DETOUR ROUTE.
- POSITIVE GUIDANCE ALONG THE DETOUR ROUTE WITH DETOUR SIGNS (M4-9 SERIES) IN ACCORDANCE WITH THE DETOUR SIGNS NOTE.

FOR ALL RAMP CLOSURES LASTING LESS THAN 12 HOURS, THE CONTRACTOR SHALL PROVIDE THE FOLLOWING:

- A MINIMUM OF TWO PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) PLACED, AS DIRECTED BY THE ENGINEER, TO WARN DRIVERS OF THE CLOSURE AND TO PROVIDE THE DESIGNATED DETOUR ROUTE.

WHEN CLOSING ENTRANCE RAMPS, CORRESPONDING LEAD-IN LANES AND TURN LANES SHALL ALSO BE CLOSED.

IF A DESIGNATED DETOUR ROUTE IS NOT PROVIDED IN THE PLANS, TRAFFIC SHALL BE DIRECTED TO THE NEXT INTERCHANGE, IF AVAILABLE, TO TURN AROUND. IF THE USE OF THE NEXT INTERCHANGE IS NOT POSSIBLE, AN ALTERNATIVE DETOUR ROUTE SHALL BE PROVIDED BY THE ENGINEER.

SERVICE RAMP: INTERCHANGE RAMPS BETWEEN FREEWAYS (OR EXPRESSWAYS) AND NON-FREEWAYS (OR NONEXPRESSWAYS). THESE RAMPS PROVIDE ACCESS (CONNECTIONS) BETWEEN FREEWAYS/EXPRESSWAYS AND OTHER PRINCIPAL/MINOR ARTERIALS, COLLECTORS OR LOCAL ROADS.

SYSTEM RAMP: INTERCHANGE RAMPS (OR CONNECTORS) BETWEEN FREEWAYS (OR EXPRESSWAYS) AND FREEWAYS (OR EXPRESSWAYS).

LANE VALUE CONTRACT TABLE

THE CONTRACTOR SHALL BE ASSESSED A DISINCENTIVE AS DESIGNATED IN THE LANE VALUE CONTRACT TABLE FOR EACH UNIT OF TIME A LANE/SHOULDER/RAMP IS CLOSED BY THE CONTRACTOR'S ACTION WHILE NOT OTHERWISE PERMITTED BY THE LANE VALUE CONTRACT TABLE.

SECTION (SLM)	Existing Number of Lanes per Direction	Lane closures are NOT permitted:				Disincentive Amounts per minute per lane
		Lane Reduction	Mon to Fri	Sat	Sun	
<i>FRA-71</i>						
SR 665 (6.09) to Stringtown Road (9.53)	2	2 to 1	6AM-8PM	6AM-7PM	6AM-7PM	\$100
Stringtown Road (9.53) to Dyer Road (11.52)	2	2 to 1	5AM-10PM	6AM-8PM	6AM-8PM	\$200
Dyer Road (11.52) to Frank Road (12.79)	3	3 to 2	5AM-9AM & 2PM-7PM	No Restriction	No Restriction	\$200
		3 to 1	5AM-10PM	6AM-8PM	6AM-8PM	\$200
Frank Road (12.79) to I-70 (15.26)	3	3 to 2	5AM-7PM	7AM-9AM & 2PM-7PM	7AM-9AM & 2PM-7PM	\$200
		3 to 1	5AM-10PM	6AM-8PM	6AM-10PM	\$200
<i>Short term shoulder closures are NOT permitted 5AM-9AM and 3PM-6PM Monday-Friday.</i>						

SECTION (SLM)	Existing Number of Lanes per Direction	Lane closures are NOT permitted:				Disincentive Amounts per minute per lane
		Lane Reduction	Mon to Fri	Sat	Sun	
<i>FRA-270</i>						
US 23 (52.72) to I-71 southbound (0.00)	2	2 to 1	5AM-9PM	6AM-7PM	6AM-7PM	\$100
I-71 Southbound (0.00) to 1/2 mile west of I-71 (0.60)	2	2 to 1	5AM-9PM	6AM-7PM	6AM-7PM	\$100
1/2 mile west of I-71 (0.60) to US 40 - Broad Street (7.04)	3	3 to 2	5AM-9AM & 3PM-6PM	No Restriction	No Restriction	\$100
		3 to 1	5AM-9PM	6AM-7PM	6AM-7PM	\$100
<i>Short term shoulder closures are NOT permitted 5AM-9AM and 3PM-6PM Monday-Friday.</i>						

ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION	SEE SHEET
611	98631	1	EACH	CATCH BASIN ADJUSTED TO GRADE, AS PER PLAN	22
611	98635	2	EACH	CATCH BASIN RECONSTRUCTED TO GRADE, AS PER PLAN	22
611	99661	1	EACH	MANHOLE RECONSTRUCTED TO GRADE, AS PER PLAN	22
611	99655	1	EACH	MANHOLE ADJUSTED TO GRADE, AS PER PLAN	22
614	11001	LS		MAINTAINING TRAFFIC, AS PER PLAN	22
614	11110	800	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	25
614	12346	11	EACH	WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL), 32"	23
614	12420	LS		DETOUR SIGNING	
614	12484	3	EACH	WORK ZONE INCREASED PENALTIES SIGN	23
614	12500	50	EACH	REPLACEMENT SIGN	22
614	12600	100	EACH	REPLACEMENT DRUM	23
614	12801	999	EACH	WORK ZONE RAISED PAVEMENT MARKER, AS PER PLAN	25
614	13310	1517	EACH	BARRIER REFLECTOR, TYPE 1, ONE-WAY	25
614	13312	74	EACH	BARRIER REFLECTOR, TYPE 2, ONE-WAY	25
614	13350	504	EACH	OBJECT MARKER, ONE WAY	25
614	11630	23790	FT	INCREASED BARRIER DELINEATION	25
614	18601	2	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	24
614	20010	7.00	MILE	WORK ZONE LANE LINE, CLASS I, 6"	
614	20011	4.50	MILE	WORK ZONE LANE LINE, CLASS I, 6", AS PER PLAN, SPRAY THERMOPLASTIC	26
614	22010	14.40	MILE	WORK ZONE EDGE LINE, CLASS I, 6"	
614	22011	7.8	MILE	WORK ZONE EDGE LINE, CLASS I, 6", AS PER PLAN, SPRAY THERMOPLASTIC	26
614	23010	34518	FT	WORK ZONE CHANNELIZING LINE, CLASS I, 12"	
614	23011	19811	FT	WORK ZONE CHANNELIZING LINE, CLASS I, 12", AS PER PLAN, SPRAY THERMOPLASTIC	26
614	24200	1292	FT	WORK ZONE DOTTED LINE, CLASS I, 642 PAINT, 6"	
614	24001	1292	FT	WORK ZONE DOTTED LINE, CLASS I, AS PER PLAN, 6", SPRAY THERMOPLASTIC	26
614	24200	6987	FT	WORK ZONE DOTTED LINE, CLASS I, 642 PAINT, 12"	
614	24001	4814	FT	WORK ZONE DOTTED LINE, CLASS I, AS PER PLAN, 12", SPRAY THERMOPLASTIC	26
614	25200	833	FT	WORK ZONE TRANSVERSE/DIAGONAL LINE, CLASS I, 642 PAINT	
614	30001	3	EACH	WORK ZONE ARROW, CLASS I, AS PER PLAN	26
614	98200	4	EACH	WORK ZONE PAVEMENT MARKING, MISC.: WORD ON PAVEMENT	22
614	98200	6	EACH	WORK ZONE PAVEMENT MARKING, MISC.: ROUTE SHIELD	22
615	10000	LS		ROADS FOR MAINTAINING TRAFFIC	
615	25000	454	SY	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS B	
616	10000	216	MGAL	WATER	22
618	40100	2800	FT	RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE)	26
622	41000	23790	FT	PORTABLE BARRIER, 32"	
622	41050	2	EACH	PORTABLE BARRIER, "Y" CONNECTOR	
808	18700	165	SNMT	DIGITAL SPEED LIMIT (DSL) SIGN ASSEMBLY	23

MAINTENANCE OF TRAFFIC SUBSUMMARY

Phase	611	611	611	611	614	614	614	614	614	614	614	614	614	614	614	614	614	614	614	614	614	614	614	614	614	614	614	614	614	615	615	616	618	622	622	808			
	EACH	EACH	EACH	EACH	LS	HOUR	EACH	LS	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	FT	SNMT	MILE	MILE	MILE	MILE	FT	FT	FT	FT	FT	FT	FT	EACH	EACH	EACH	LS	SY	MGAL	FT	FT	EACH	SNMT
NOTES		1			1	800		1	3	50	100					26	2													1		216	2800					165	
PHASE 1								4					238	391		129	6410		1.7		3.3		9017				999		191								6410		
PHASE 2	1	1		1				2					295	337	13	110	5460		2.2	2.2	4.4	4.4	8907	8907	247	247	2784	2784		1							5460		
PHASE 3								3					327	307	35	100	5000		2.3	2.3	3.4	3.4	10904	10904	1045	1045	2030	2030	642	2			454			5000	1		
PHASE 4			1					2					139	482	26	139	6920		0.8		3.3		5690				1174			4	6					6920	1		
TOTALS	1	2	1	1	1	800		11	1	3	50	100	999	1517	74	504	23790	2	7.00	4.50	14.40	7.80	34518	19811	1292	1292	6987	4814	833.00	3.00	4.00	6.00	1.00	454.00	216.00	2800	23790	2.00	165.00

CALCULATED	29
	264
BPT	
CHECKED	
EMW	

MAINTENANCE OF TRAFFIC SUBSUMMARY

FRA -71-9.07



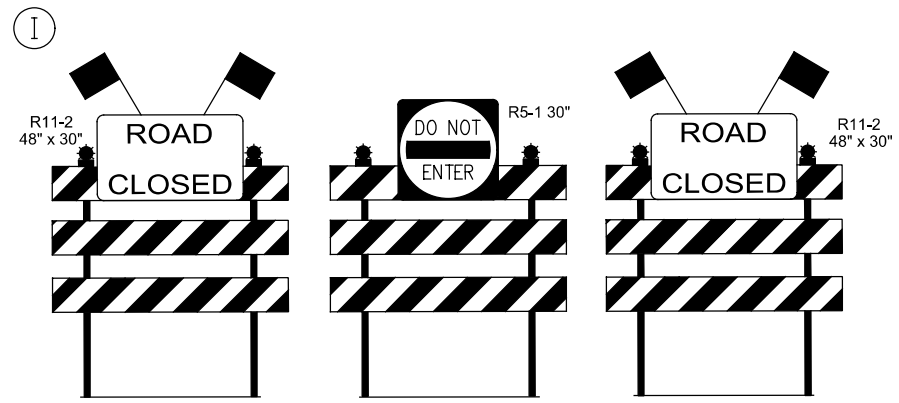
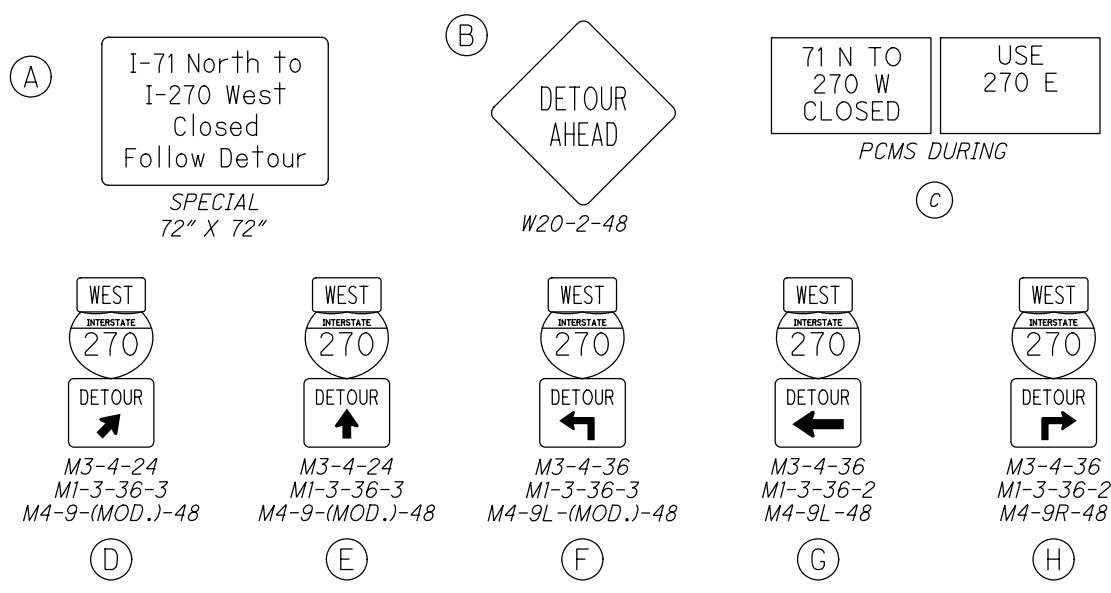
VERTICAL SCALE IN FEET
0 2000 4000
HORIZONTAL SCALE IN FEET
1000
CALCULATED BPT CHECKED EMW

**MAINTENANCE OF TRAFFIC DETOUR PLAN
71NB TO 270WB RAMP CLOSURE**

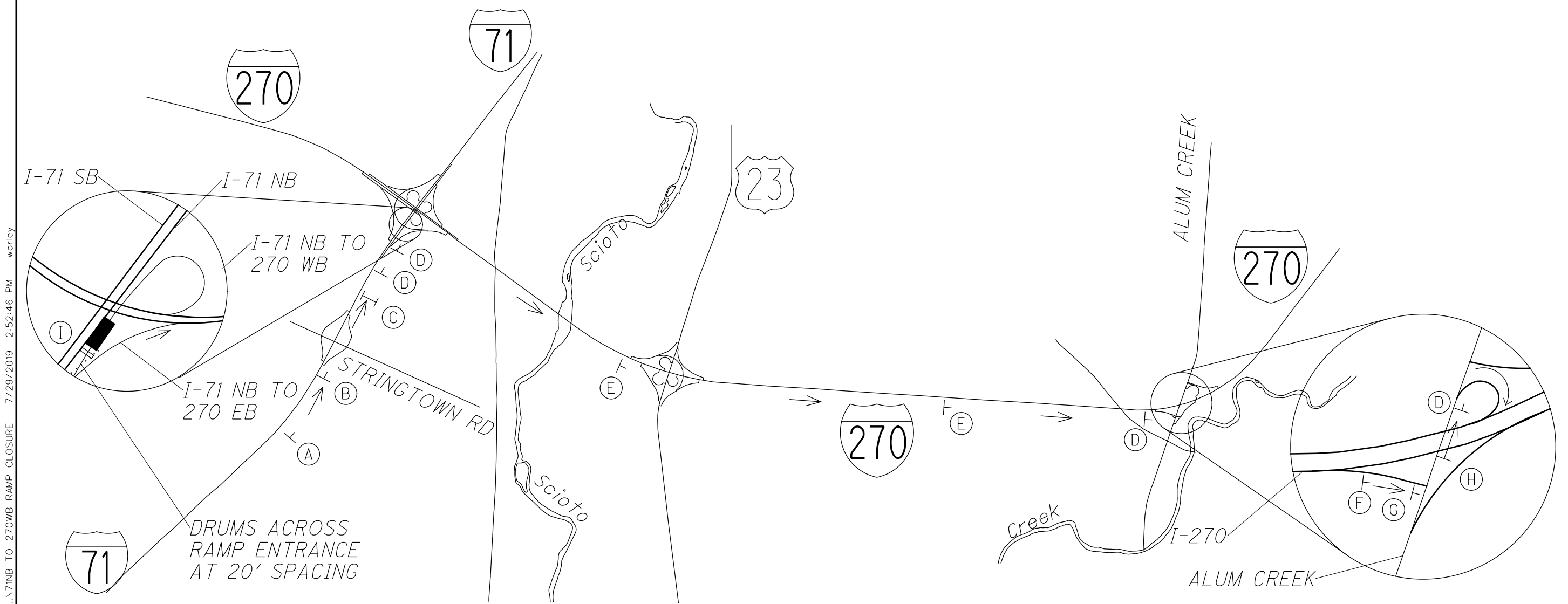
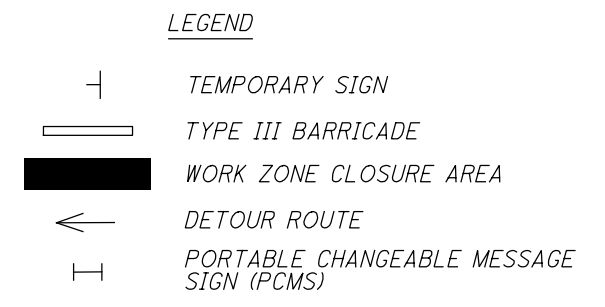
FRA-71-9.07

30
264

- NOTES:**
1. THIS DETOUR SHALL BE IN PLACE FOR THE DURATION OF THE RAMP CLOSURE.
 2. CONTRACTOR SHALL CONTACT THE LOCAL MAINTAINING AGENCY TO MAKE ANY ADJUSTMENTS TO EXISTING SIGNAL TIMINGS FOR ALL SIGNALS ALONG THE DETOUR ROUTE.
 3. ALL SIGNS ON THIS SHEET SHALL BE BLACK LETTERING ON AN ORANGE BACKGROUND EXCEPT THE R5-1 SIGN.
 4. RAMP CLOSURE SHALL BE LIMITED TO ONE WEEKEND 8 PM FRIDAY - 5 AM MONDAY, WHEN THROUGH TRAFFIC MAY BE DETOURD AS SHOWN. A DISINCENTIVE SHALL BE ASSESSED IN THE AMOUNT OF \$5000 PER DAY FOR EACH CALENDAR DAY THE ROADWAY REMAINS CLOSED TO TRAFFIC BEYOND THE SPECIFIED LIMIT.



10' TYPE III BARRICADES (SOLID ACROSS STREET)



...71NB TO 270WB RAMP CLOSURE 7/29/2019 2:52:46 PM worley

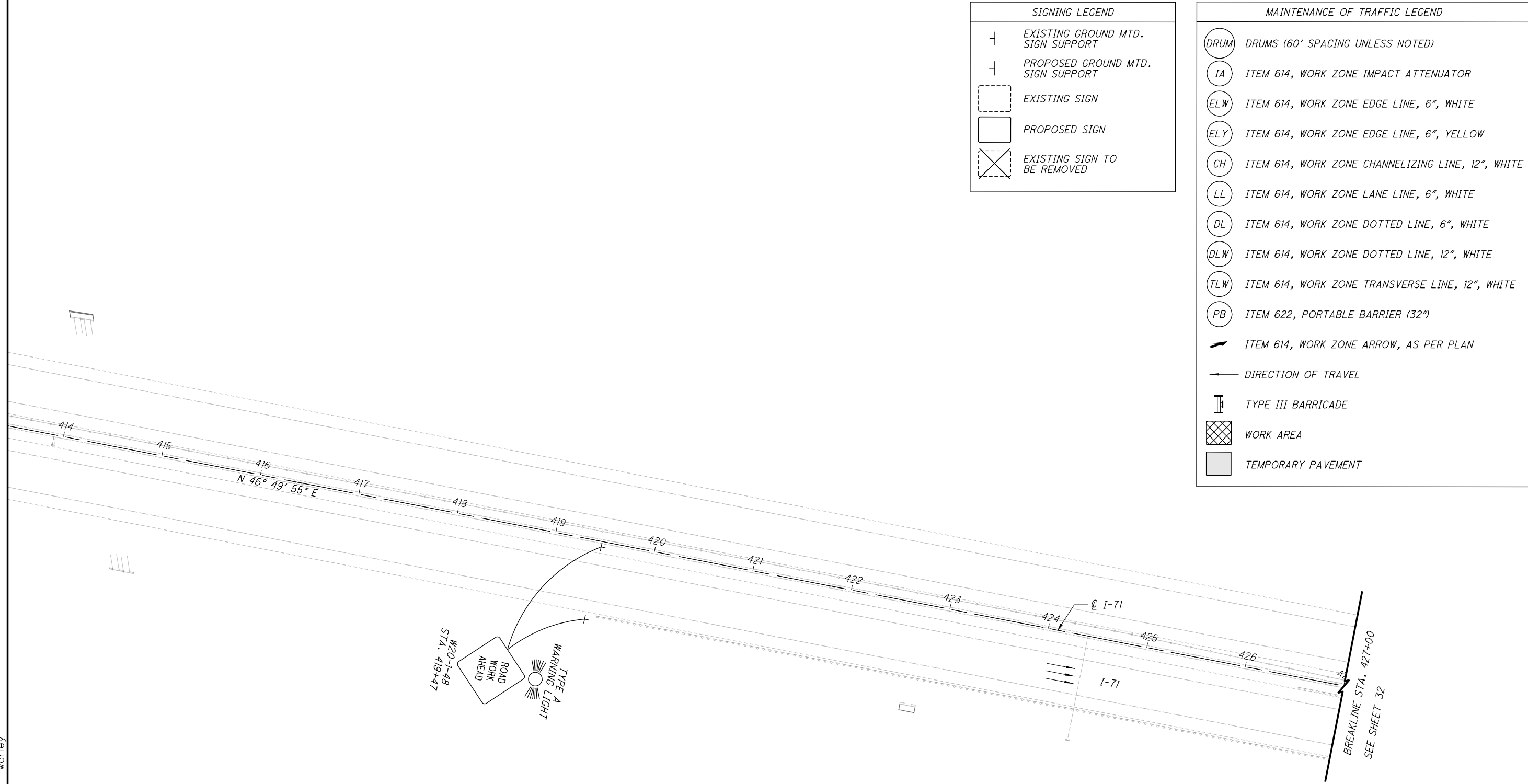
...\\Northbound\9265_MPI001 7/29/2019 2:53:06 PM worley

SIGNING LEGEND	
	EXISTING GROUND MTD. SIGN SUPPORT
	PROPOSED GROUND MTD. SIGN SUPPORT
	EXISTING SIGN
	PROPOSED SIGN
	EXISTING SIGN TO BE REMOVED

MAINTENANCE OF TRAFFIC LEGEND	
	DRUMS (60' SPACING UNLESS NOTED)
	ITEM 614, WORK ZONE IMPACT ATTENUATOR
	ITEM 614, WORK ZONE EDGE LINE, 6", WHITE
	ITEM 614, WORK ZONE EDGE LINE, 6", YELLOW
	ITEM 614, WORK ZONE CHANNELIZING LINE, 12", WHITE
	ITEM 614, WORK ZONE LANE LINE, 6", WHITE
	ITEM 614, WORK ZONE DOTTED LINE, 6", WHITE
	ITEM 614, WORK ZONE DOTTED LINE, 12", WHITE
	ITEM 614, WORK ZONE TRANSVERSE LINE, 12", WHITE
	ITEM 622, PORTABLE BARRIER (32")
	ITEM 614, WORK ZONE ARROW, AS PER PLAN
	DIRECTION OF TRAVEL
	TYPE III BARRICADE
	WORK AREA
	TEMPORARY PAVEMENT

CALCULATED BPT CHECKED EMW

HORIZONTAL SCALE IN FEET



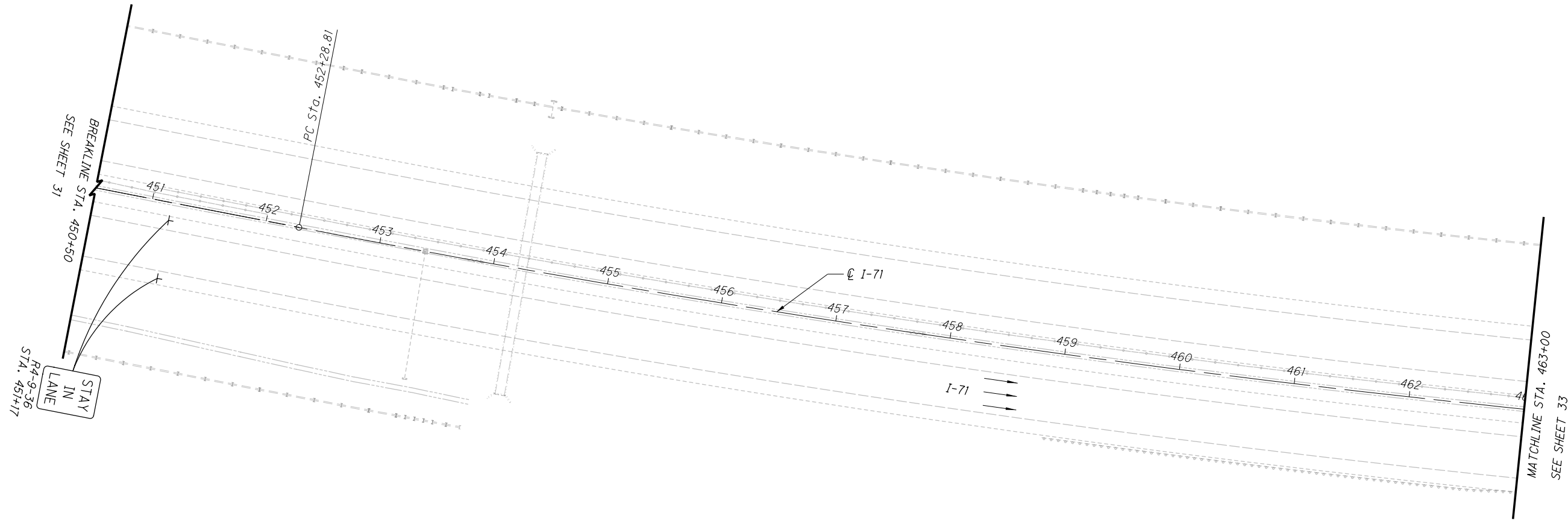
NOTES
 1. REFER TO MT-95.45 FOR SOUTHBOUND DETAILS.

**MAINTENANCE OF TRAFFIC
 PHASE 1**

FRA - 71 - 9.07

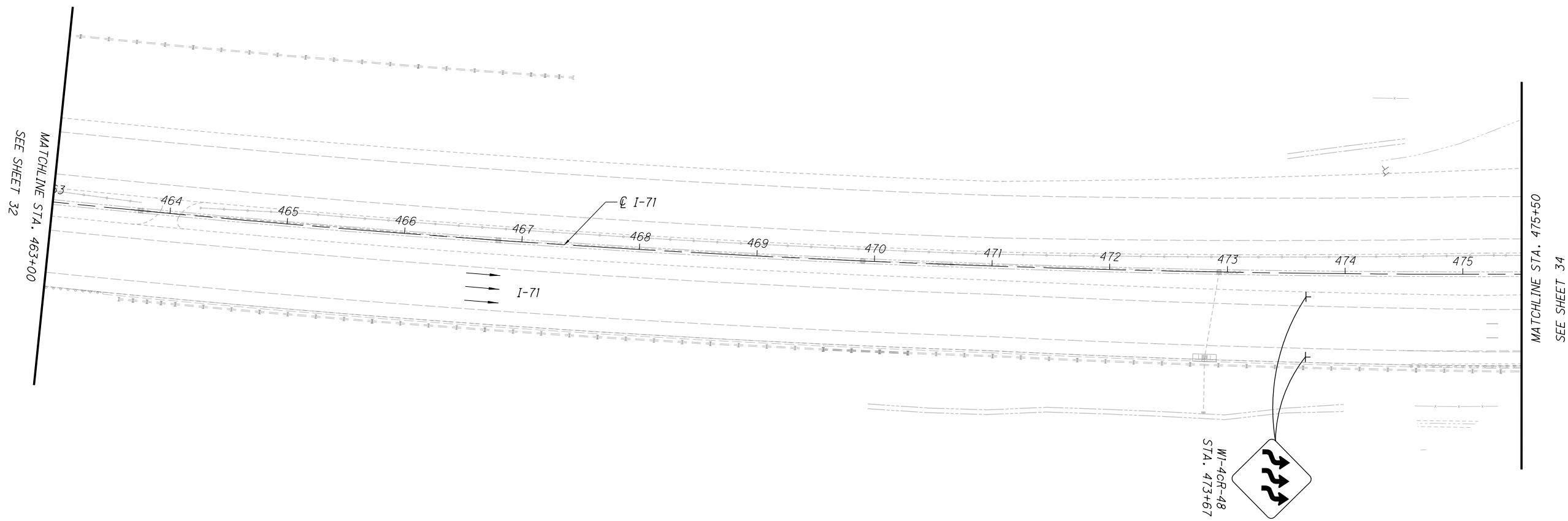
NOTES

- 1. FOR MOT LEGEND, SEE SHEET 31
- 2. REFER TO MT-95.45 FOR SOUTHBOUND DETAILS.



NOTES

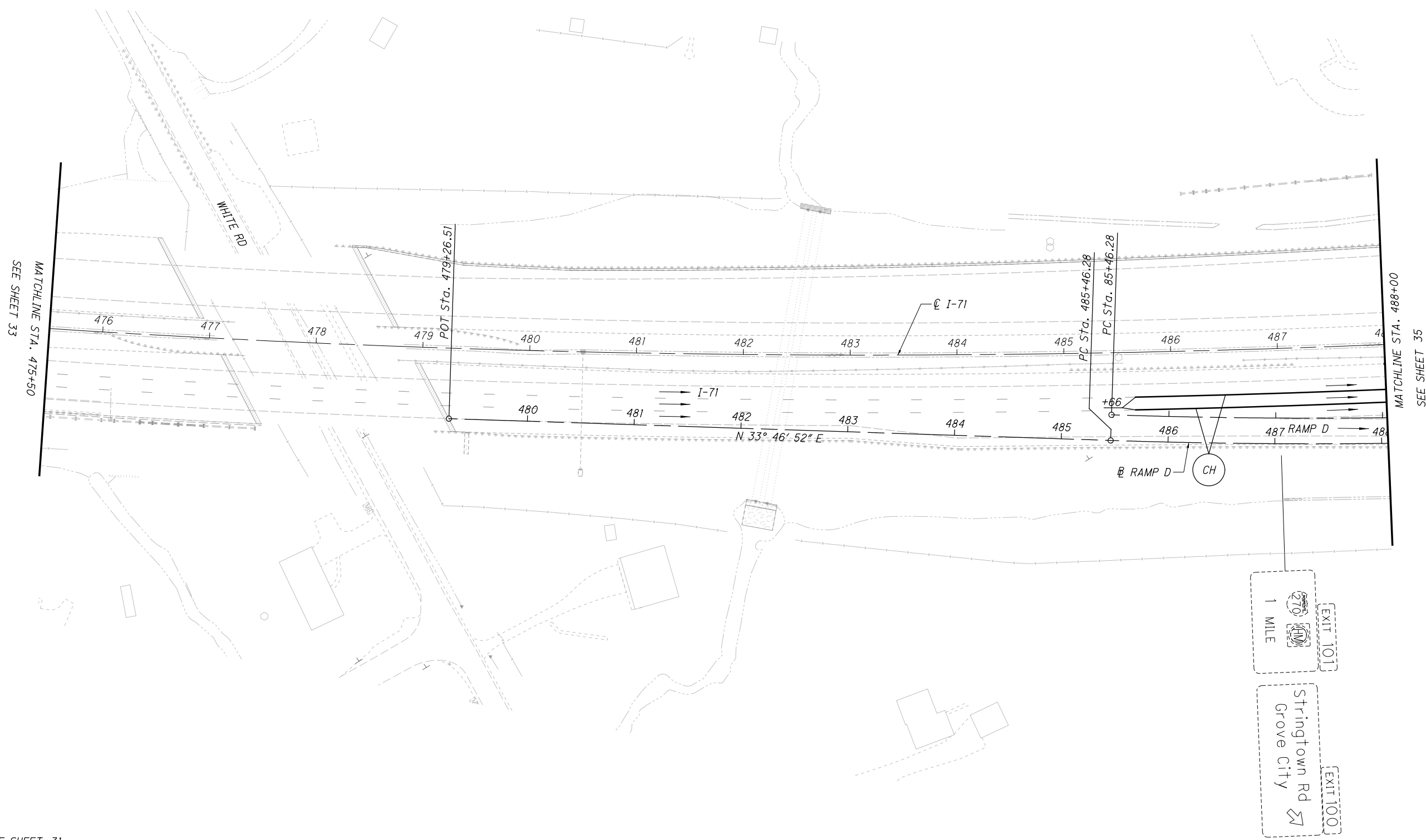
- 1. FOR MOT LEGEND, SEE SHEET 31
- 2. REFER TO MT-95.45 FOR SOUTHBOUND DETAILS.



...\\Northbound\92615_MPI004 7/29/2019 2:53:16 PM worley

NOTES

- 1. FOR MOT LEGEND, SEE SHEET 31
- 2. REFER TO MT-95.45 FOR SOUTHBOUND DETAILS.

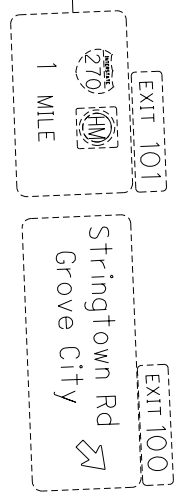


CALCULATED	BPT	CHECKED	EMW

0 50 100
HORIZONTAL SCALE IN FEET

**MAINTENANCE OF TRAFFIC
PHASE 1**

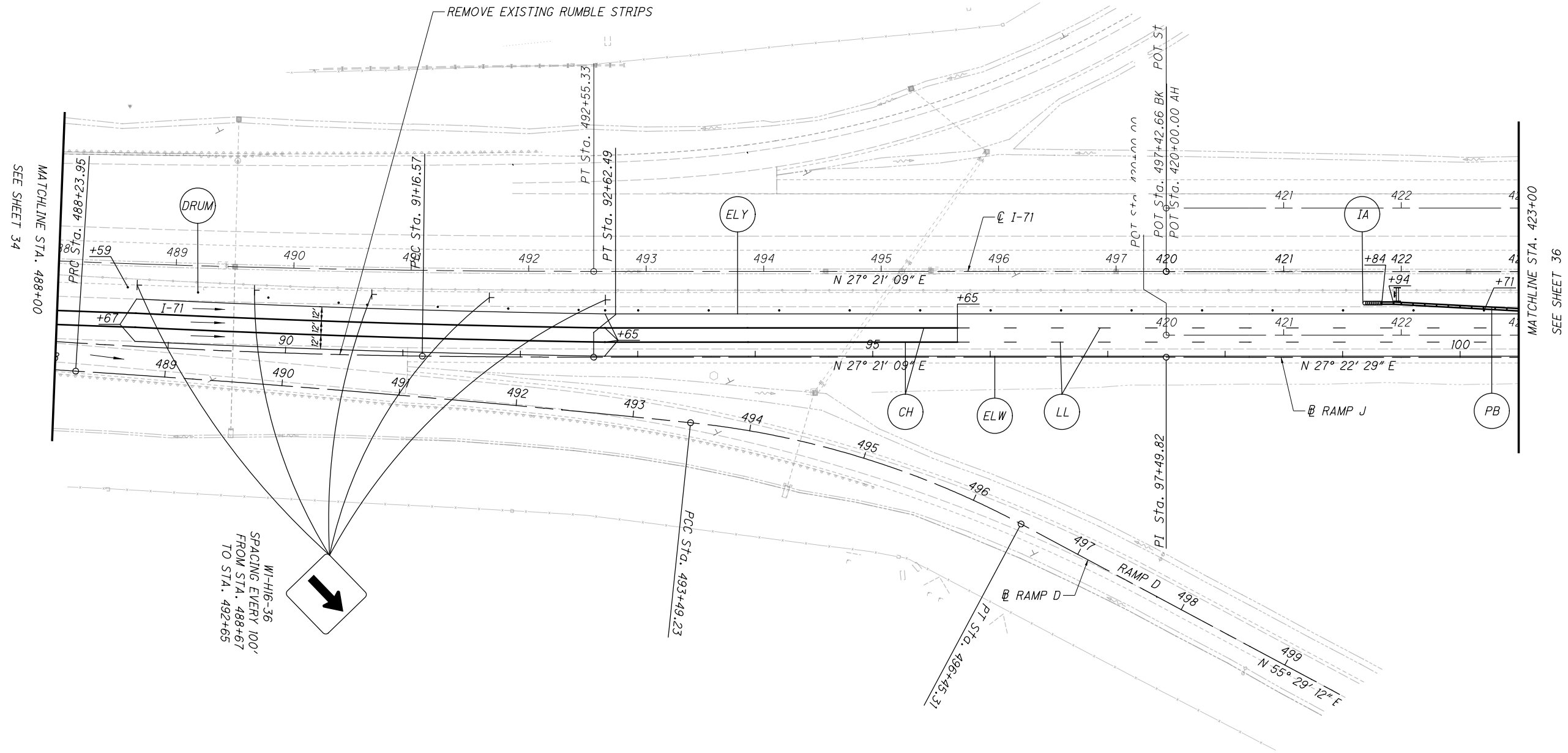
SEE SHEET 35



FRA-71-9.07

NOTES

- 1. FOR MOT LEGEND, SEE SHEET 31
- 2. REFER TO MT-95.45 FOR SOUTHBOUND DETAILS.



CALCULATED
BPT
CHECKED
EMW

0 50 100
HORIZONTAL
SCALE IN FEET

MAINTENANCE OF TRAFFIC
PHASE 1

FRA-71-9.07

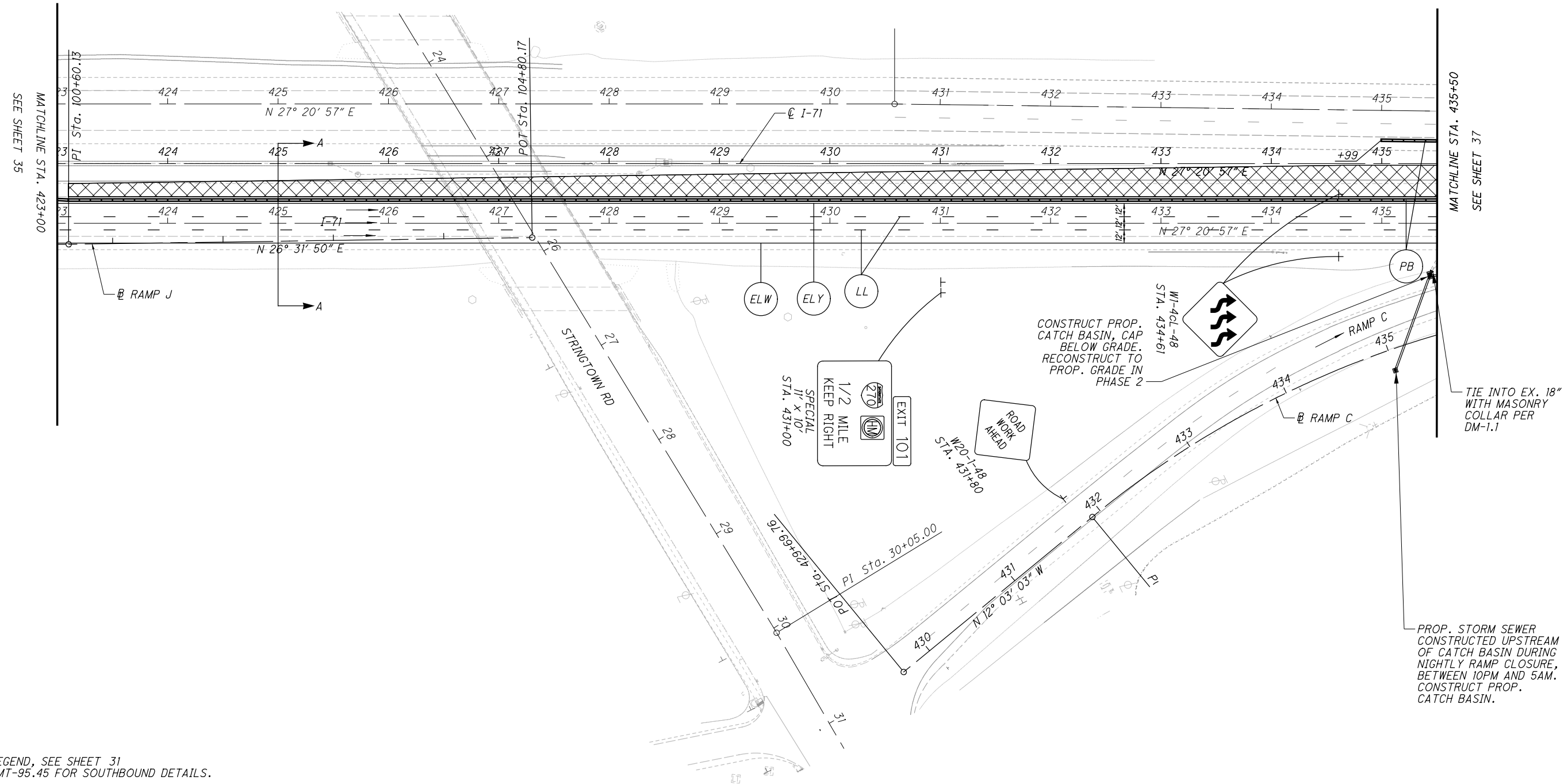
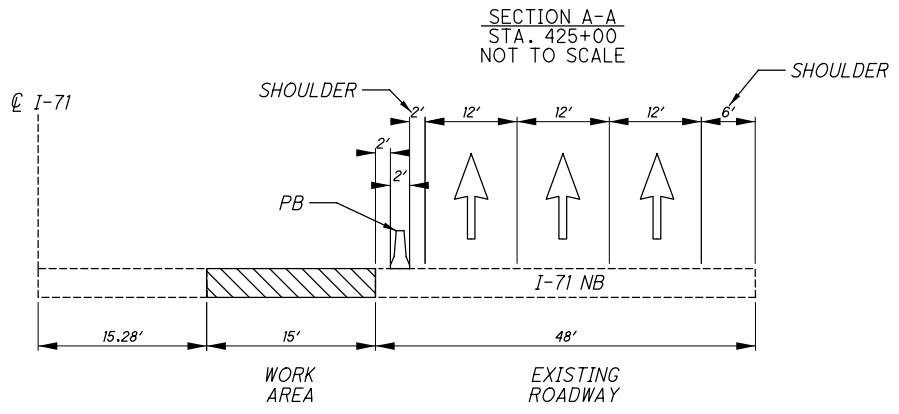


CALCULATED
BPT
CHECKED
EMW

**MAINTENANCE OF TRAFFIC
PHASE 1**

FRA-71-9.07

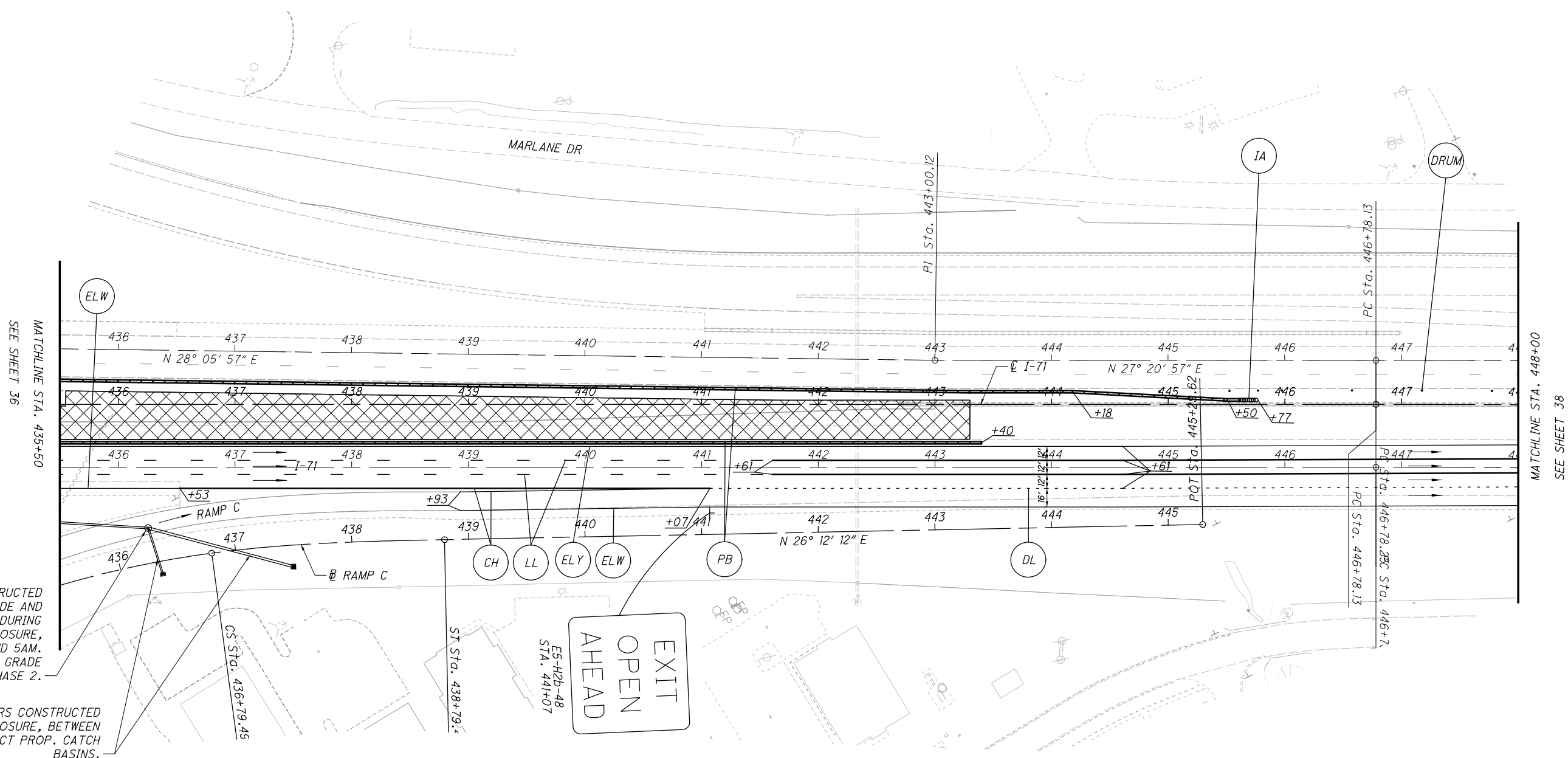
SECTION A-A
STA. 425+00
NOT TO SCALE



- NOTES**
1. FOR MOT LEGEND, SEE SHEET 31
 2. REFER TO MT-95.45 FOR SOUTHBOUND DETAILS.

...Northbound\92615_MPI006 7/29/2019 2:53:26 PM worley

...Northbound\92615_MPI007 7/29/2019 2:53:30 PM worley



PROP. MANHOLE CONSTRUCTED AT EXISTING GRADE AND COVERED WITH SLAB DURING NIGHTLY RAMP CLOSURE, BETWEEN 10PM AND 5AM. ADJUST TO PROPOSED GRADE IN PHASE 2.

PROP. STORM SEWERS CONSTRUCTED DURING NIGHTLY RAMP CLOSURE, BETWEEN 10PM AND 5AM. CONSTRUCT PROP. CATCH BASINS.

NOTES

1. FOR MOT LEGEND, SEE SHEET 31
2. REFER TO MT-95.45 FOR SOUTHBOUND DETAILS.

CALCULATED
BPT
CHECKED
EMW

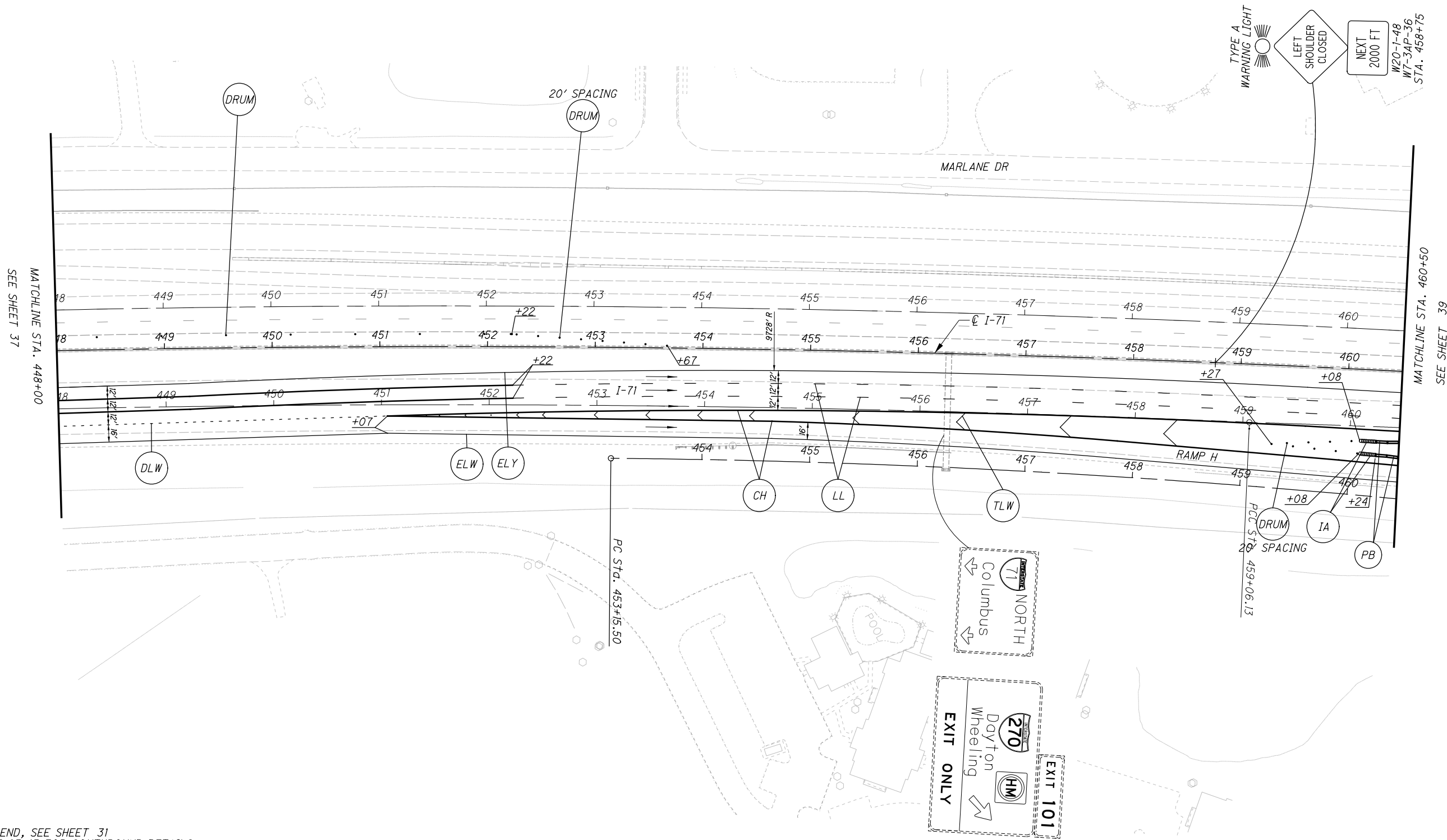
0 50 100
HORIZONTAL SCALE IN FEET

**MAINTENANCE OF TRAFFIC
PHASE 1**

FRA-71-9.07

NOTES

- 1. FOR MOT LEGEND, SEE SHEET 31
- 2. REFER TO MT-95.45 FOR SOUTHBOUND DETAILS.



CALCULATED
BPT
CHECKED
EMW

0 25 50 100
HORIZONTAL
SCALE IN FEET

**MAINTENANCE OF TRAFFIC
PHASE 1**

FRA-71-9.07

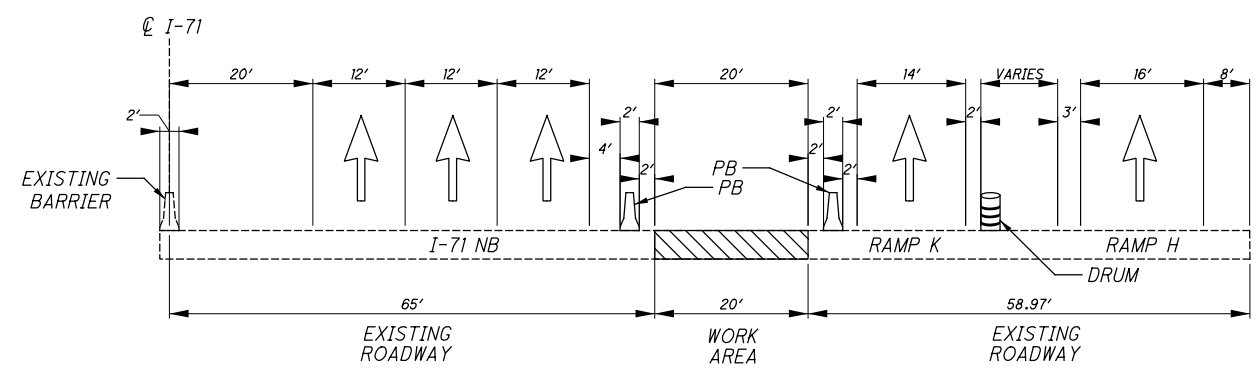


CALCULATED
BPT
CHECKED
EMW

MAINTENANCE OF TRAFFIC PHASE 1

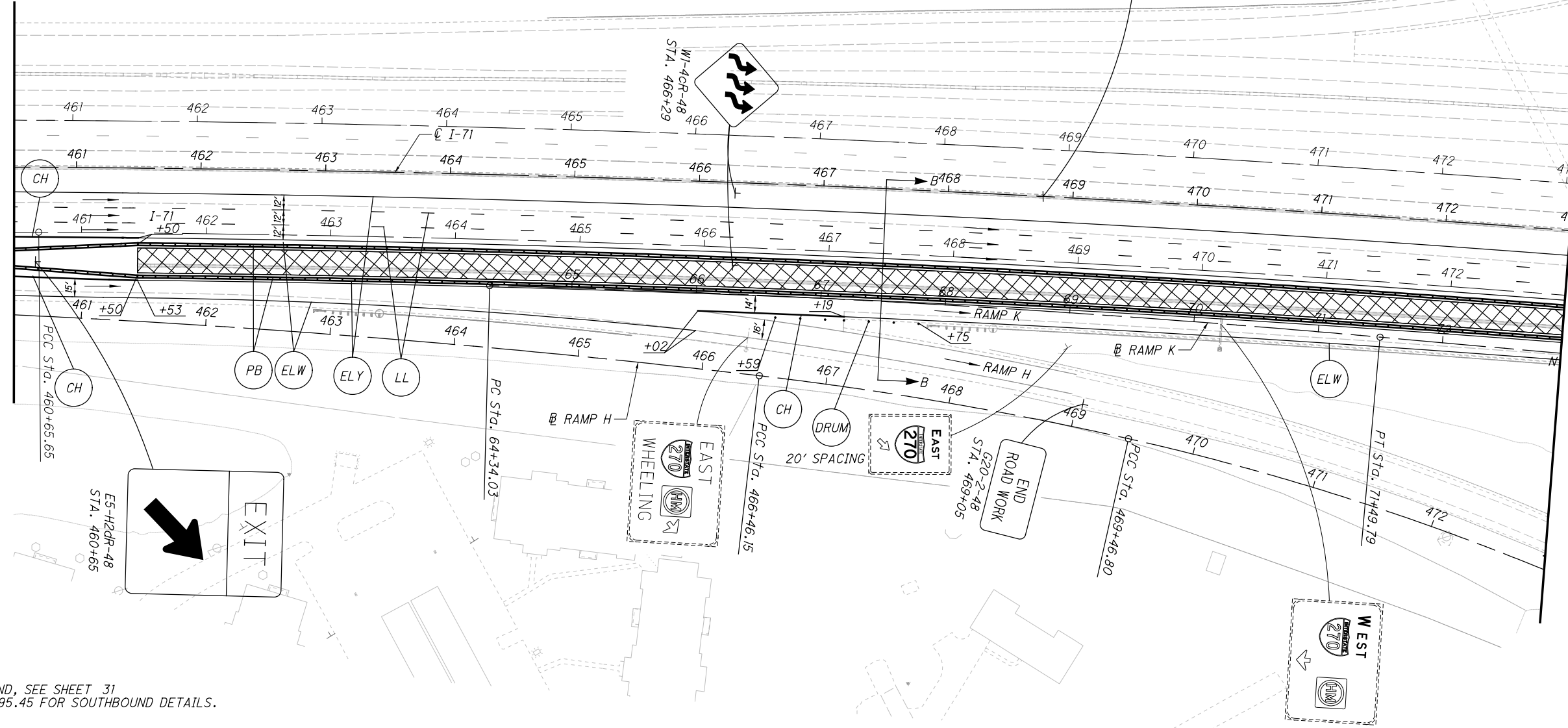
FRA-71-9.07

SECTION B-B STA. 467+50 NOT TO SCALE



MATCHLINE STA. 460+50
SEE SHEET 38

MATCHLINE STA. 473+00
SEE SHEET 40



- NOTES**
1. FOR MOT LEGEND, SEE SHEET 31
 2. REFER TO MT-95.45 FOR SOUTHBOUND DETAILS.

...\\Northbound\92615_MPI009_1/29/2019 2:53:41PM worley

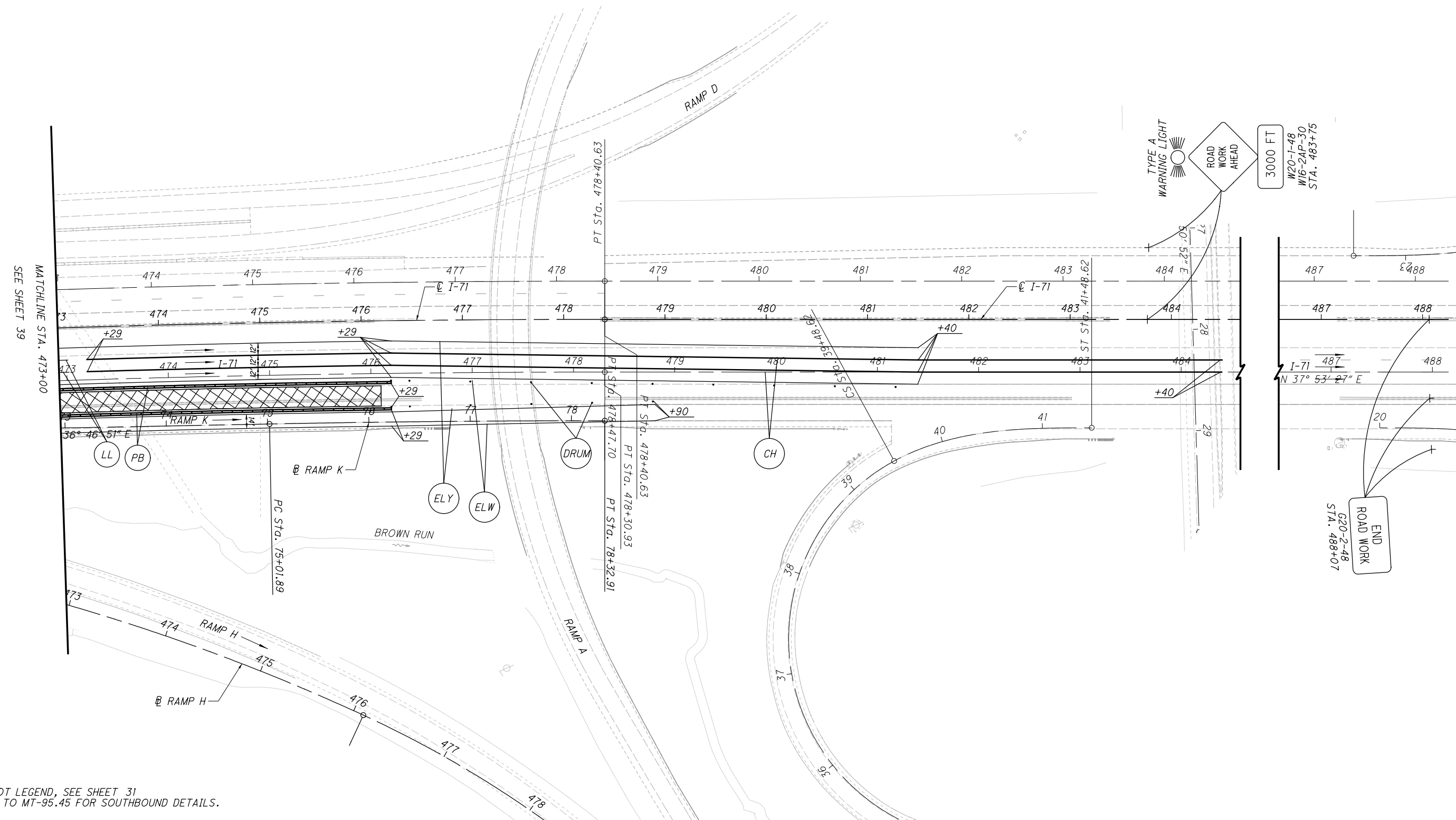


CALCULATED
BPT
CHECKED
EMW

**MAINTENANCE OF TRAFFIC
PHASE 1**

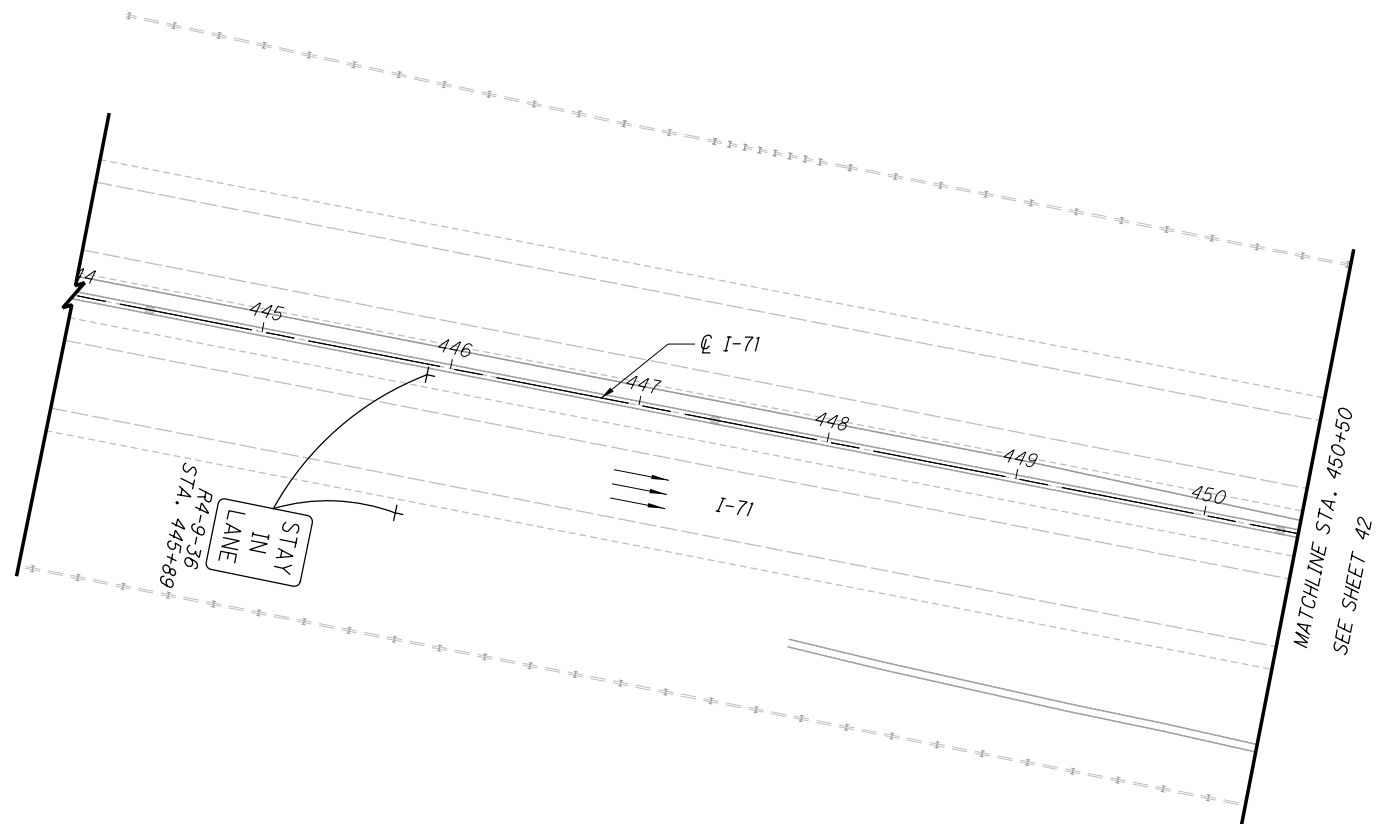
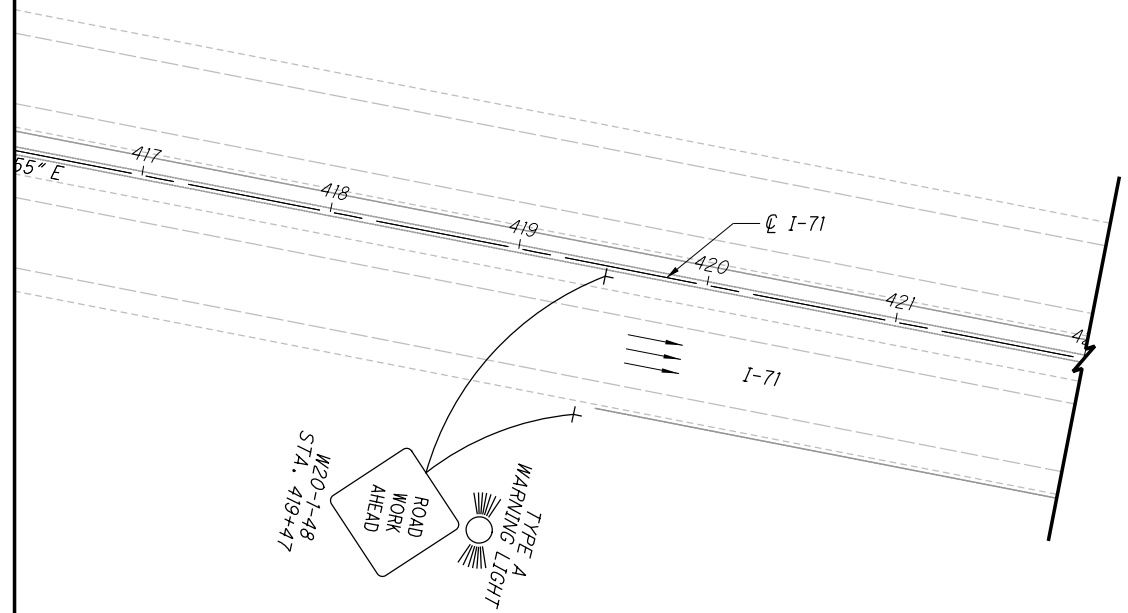
FRA-71-9.07

40
264



- NOTES**
1. FOR MOT LEGEND, SEE SHEET 31
 2. REFER TO MT-95.45 FOR SOUTHBOUND DETAILS.

...Northbound\92615_MPI010 7/29/2019 2:53:49 PM worley



NOTES

1. FOR MOT LEGEND, SEE SHEET 31



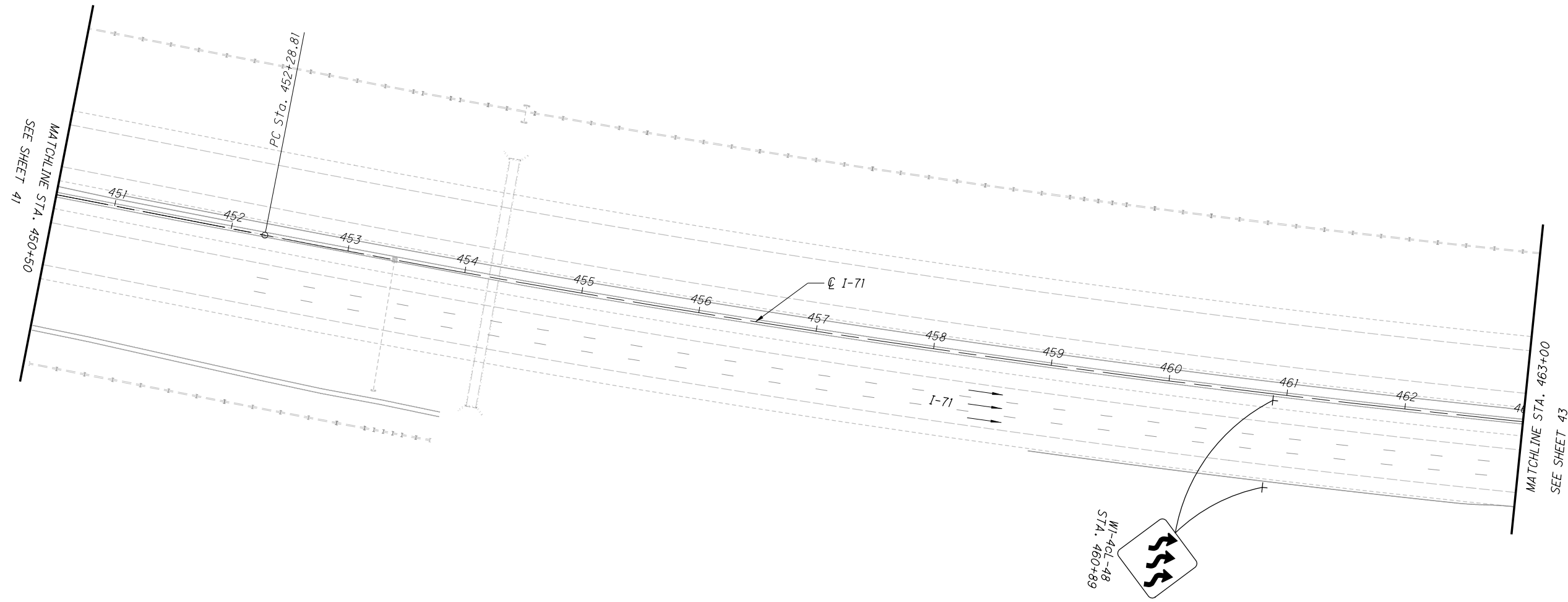
CALCULATED
BPT
CHECKED
EMW

**MAINTENANCE OF TRAFFIC
PHASE 2**

FRA - 71 - 9.07

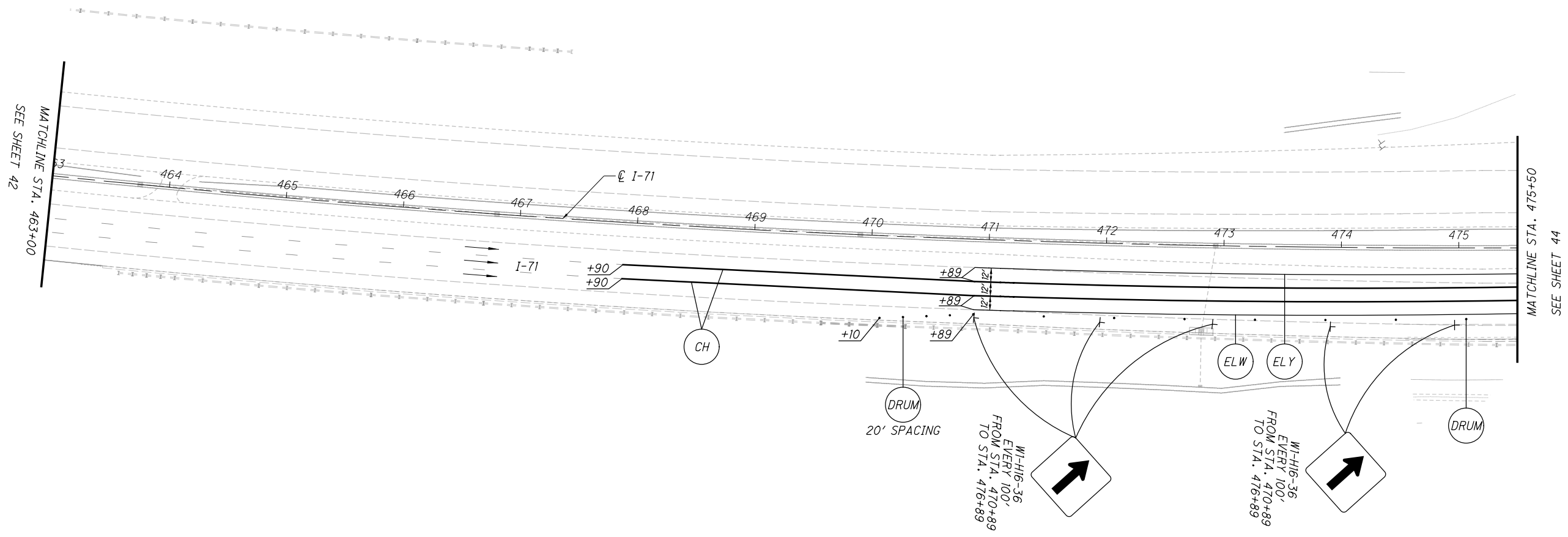
NOTES

1. FOR MOT LEGEND, SEE SHEET 31



NOTES

- 1. FOR MOT LEGEND, SEE SHEET 31
- 2. TAPER LANES FROM 12' AT STA. 470+89 TO 11' AT STA. 480+35



CALCULATED
BPT
CHECKED
EMW

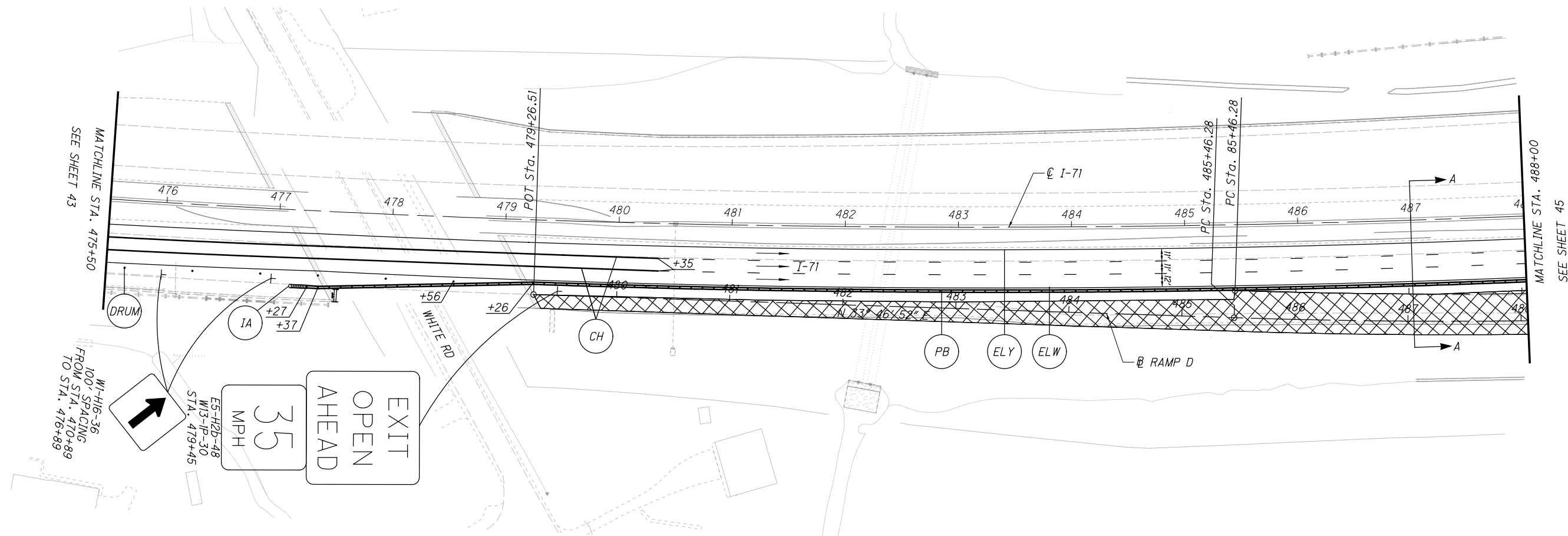
0 50 100
HORIZONTAL
SCALE IN FEET

**MAINTENANCE OF TRAFFIC
PHASE 2**

FRA - 71 - 9.07

NOTES

1. FOR MOT LEGEND, SEE SHEET 31



CALCULATED
BPT
CHECKED
EMW

0 50 100
25
HORIZONTAL
SCALE IN FEET

MAINTENANCE OF TRAFFIC
PHASE 2

FRA-71-9.07



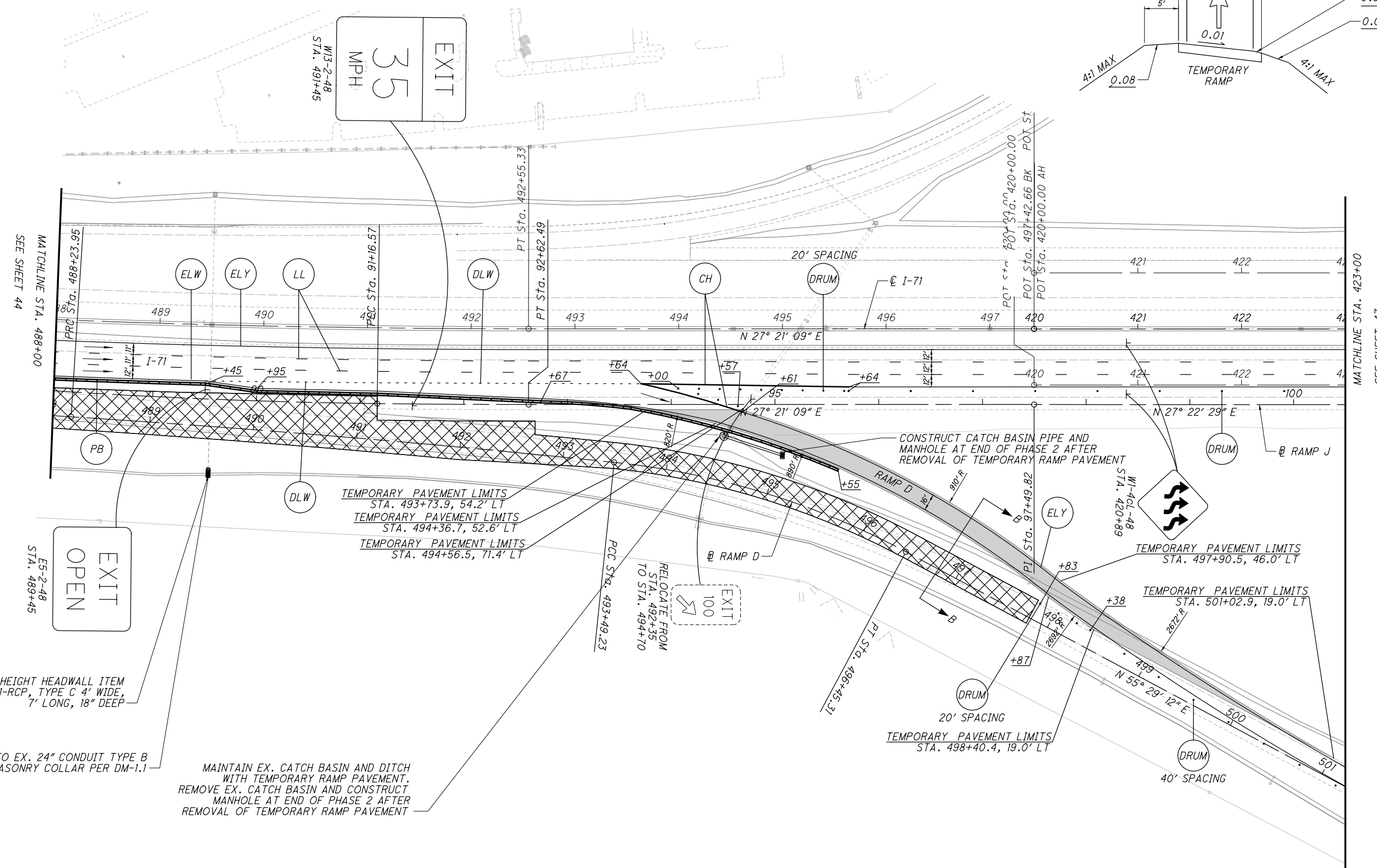
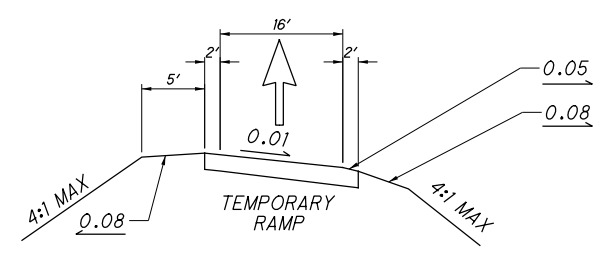
CALCULATED
BPT
CHECKED
EMW

0 50 100
25
HORIZONTAL
SCALE IN FEET

**MAINTENANCE OF TRAFFIC
PHASE 2**

FRA-71-9.07

SECTION B-B
RAMP D
NOT TO SCALE



HALF HEIGHT HEADWALL ITEM
601-RCP, TYPE C 4' WIDE,
7' LONG, 18" DEEP

TIE INTO EX. 24" CONDUIT TYPE B
WITH MASONRY COLLAR PER DM-1.1

MAINTAIN EX. CATCH BASIN AND DITCH
WITH TEMPORARY RAMP PAVEMENT.
REMOVE EX. CATCH BASIN AND CONSTRUCT
MANHOLE AT END OF PHASE 2 AFTER
REMOVAL OF TEMPORARY RAMP PAVEMENT

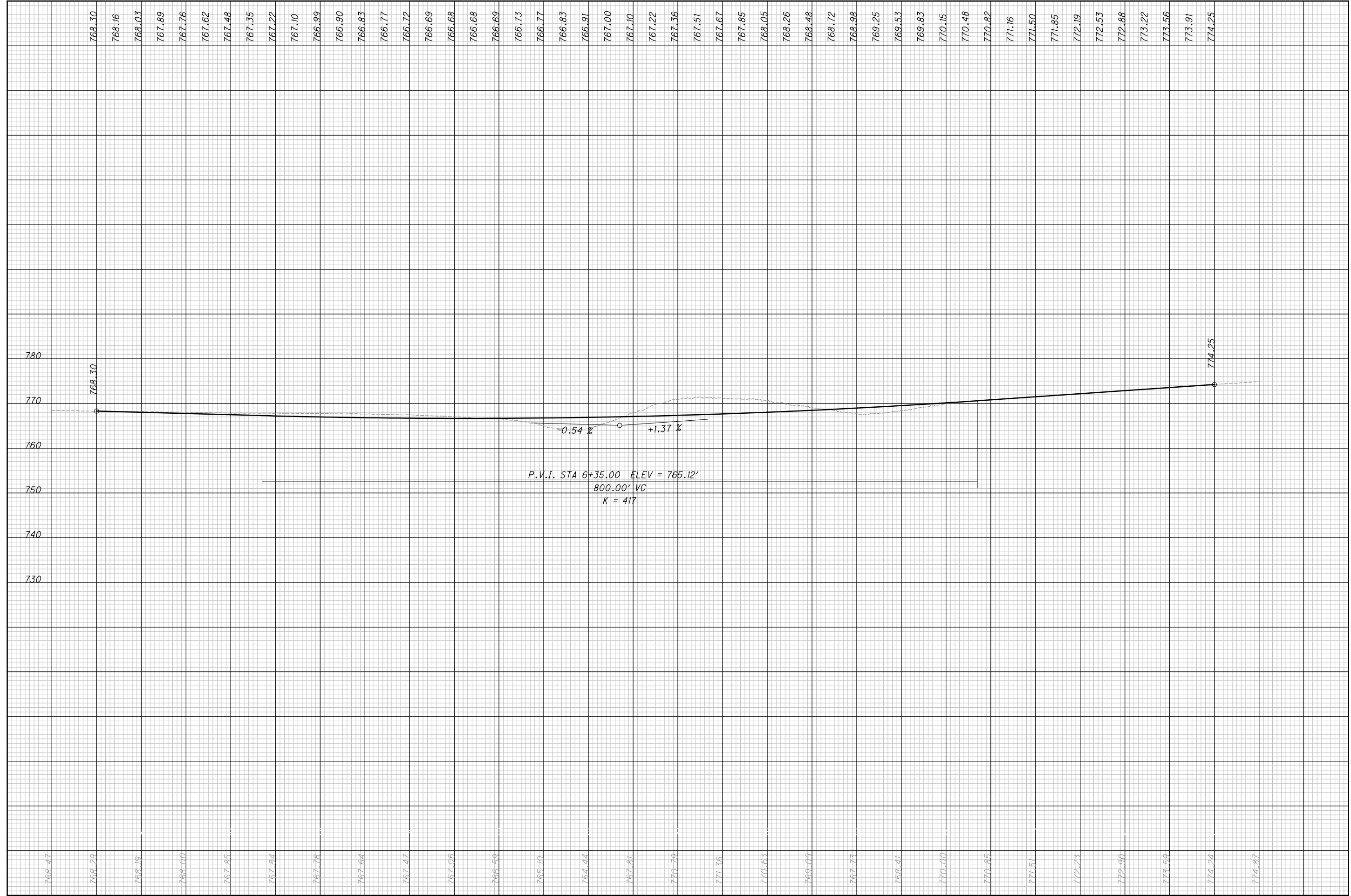
TEMPORARY PAVEMENT LIMITS
STA. 493+73.9, 54.2' LT
TEMPORARY PAVEMENT LIMITS
STA. 494+36.7, 52.6' LT
TEMPORARY PAVEMENT LIMITS
STA. 494+56.5, 71.4' LT

RELOCATE FROM
STA. 492+35
TO STA. 494+70

CONSTRUCT CATCH BASIN PIPE AND
MANHOLE AT END OF PHASE 2 AFTER
REMOVAL OF TEMPORARY RAMP PAVEMENT

- NOTES**
1. FOR MOT LEGEND, SEE SHEET 31
 2. TAPER LANES FROM 11' AT STA. 493+64 TO 12' AT STA. 495+64
 3. FOR THE PROFILE OF RAMP D SEE SHEET 46

...\\NorThbound\92615_MP2005 7/29/2019 2:54:20 PM worley



CALCULATED
NJL
CHECKED
EMW

**MAINTENANCE OF TRAFFIC - PHASE 2
RAMP D TEMPORARY RUNAROUND PROFILE**

FRA-71-9.71

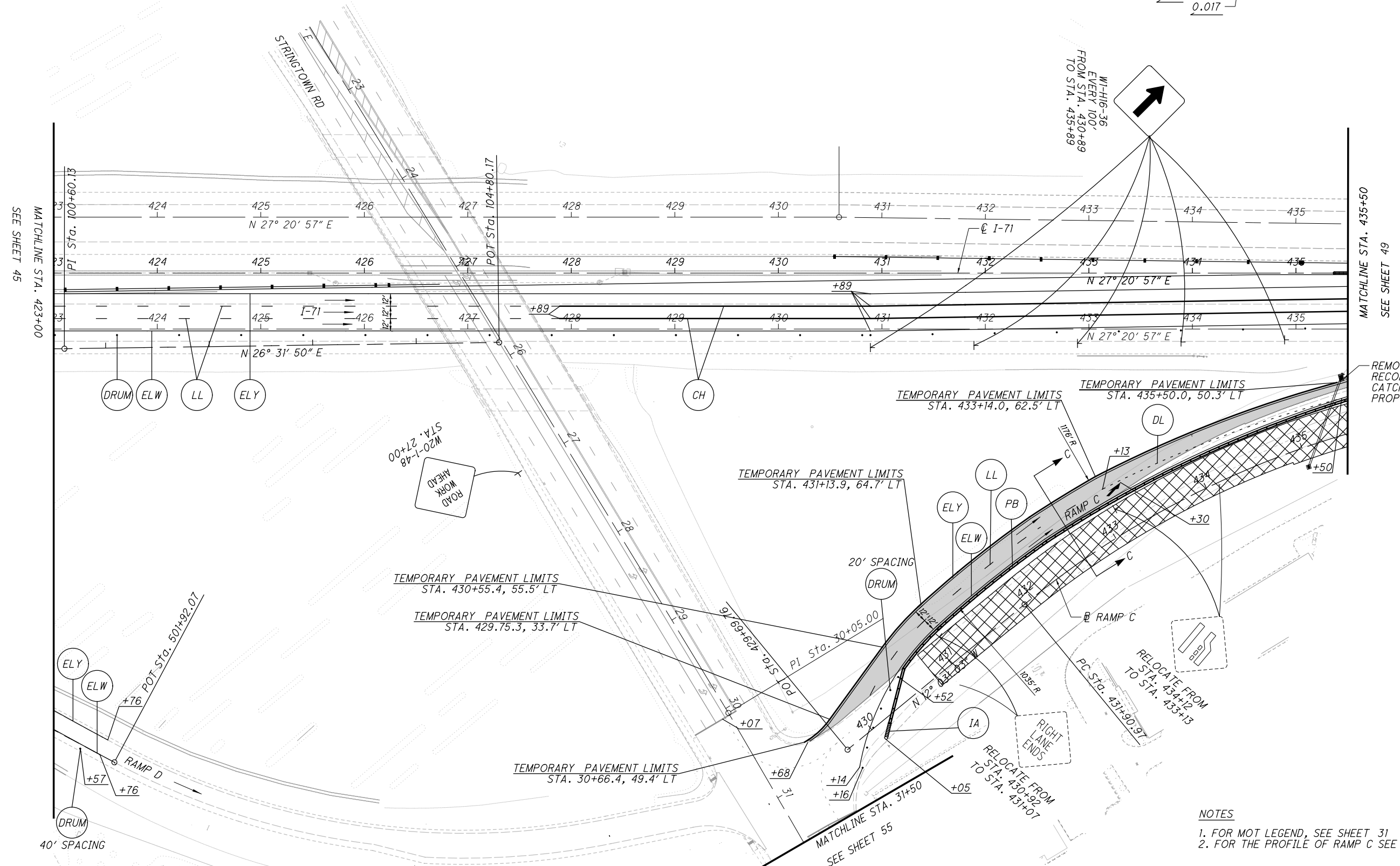
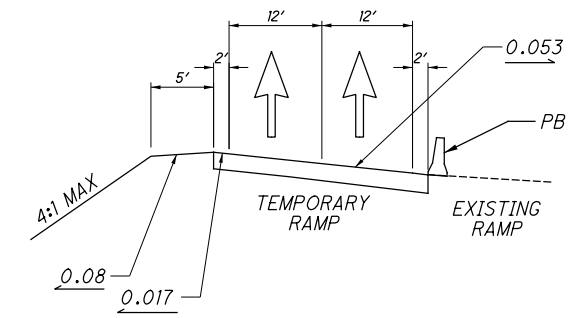


CALCULATED BPT CHECKED EMW

MAINTENANCE OF TRAFFIC PHASE 2

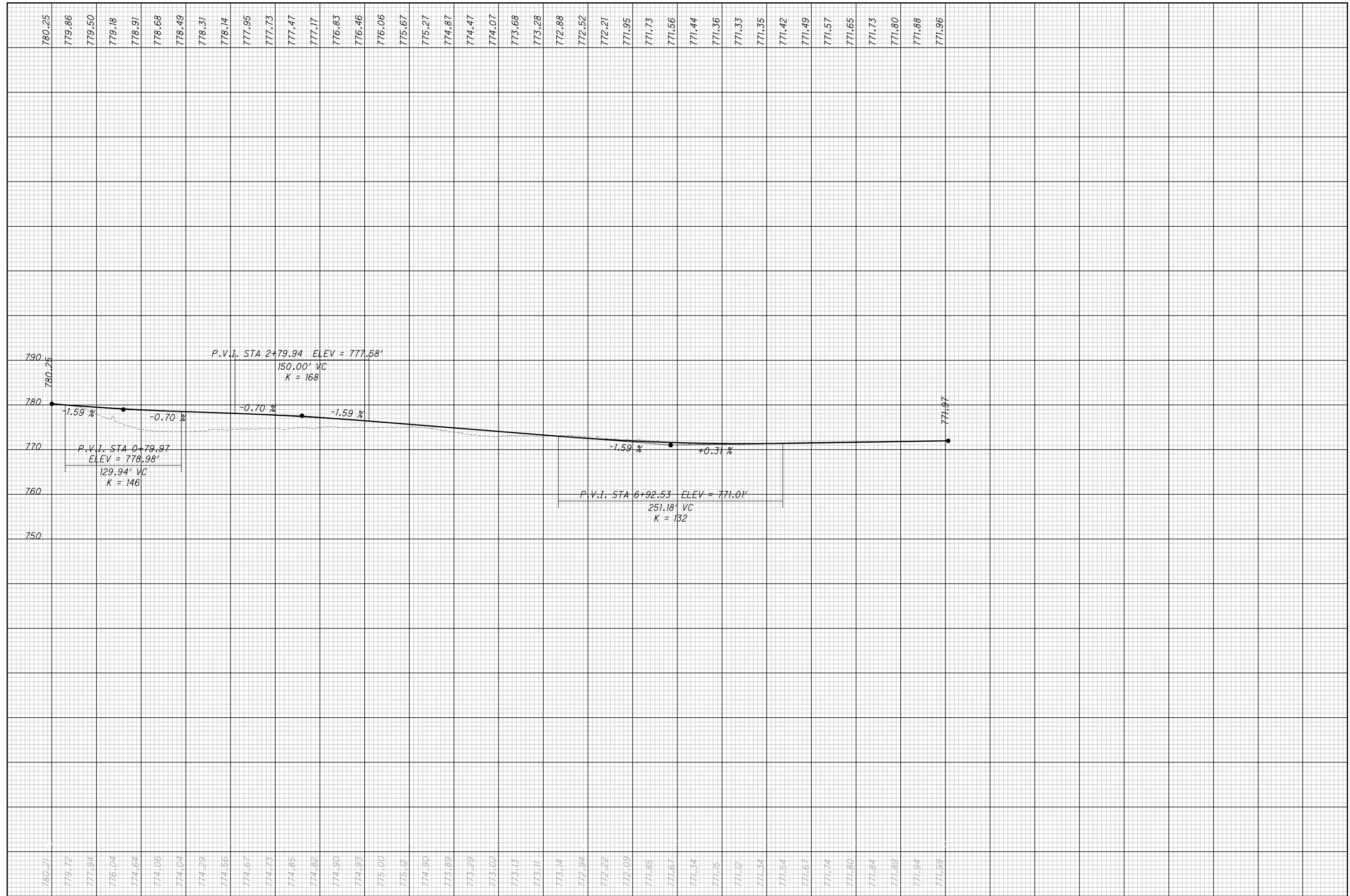
FRA-71-9.07

SECTION C-C
RAMP H
NOT TO SCALE



- NOTES
- FOR MOT LEGEND, SEE SHEET 31
 - FOR THE PROFILE OF RAMP C SEE SHEET 48

...\\Northbound_92615_MP2006 7/29/2019 2:54:44 PM worley



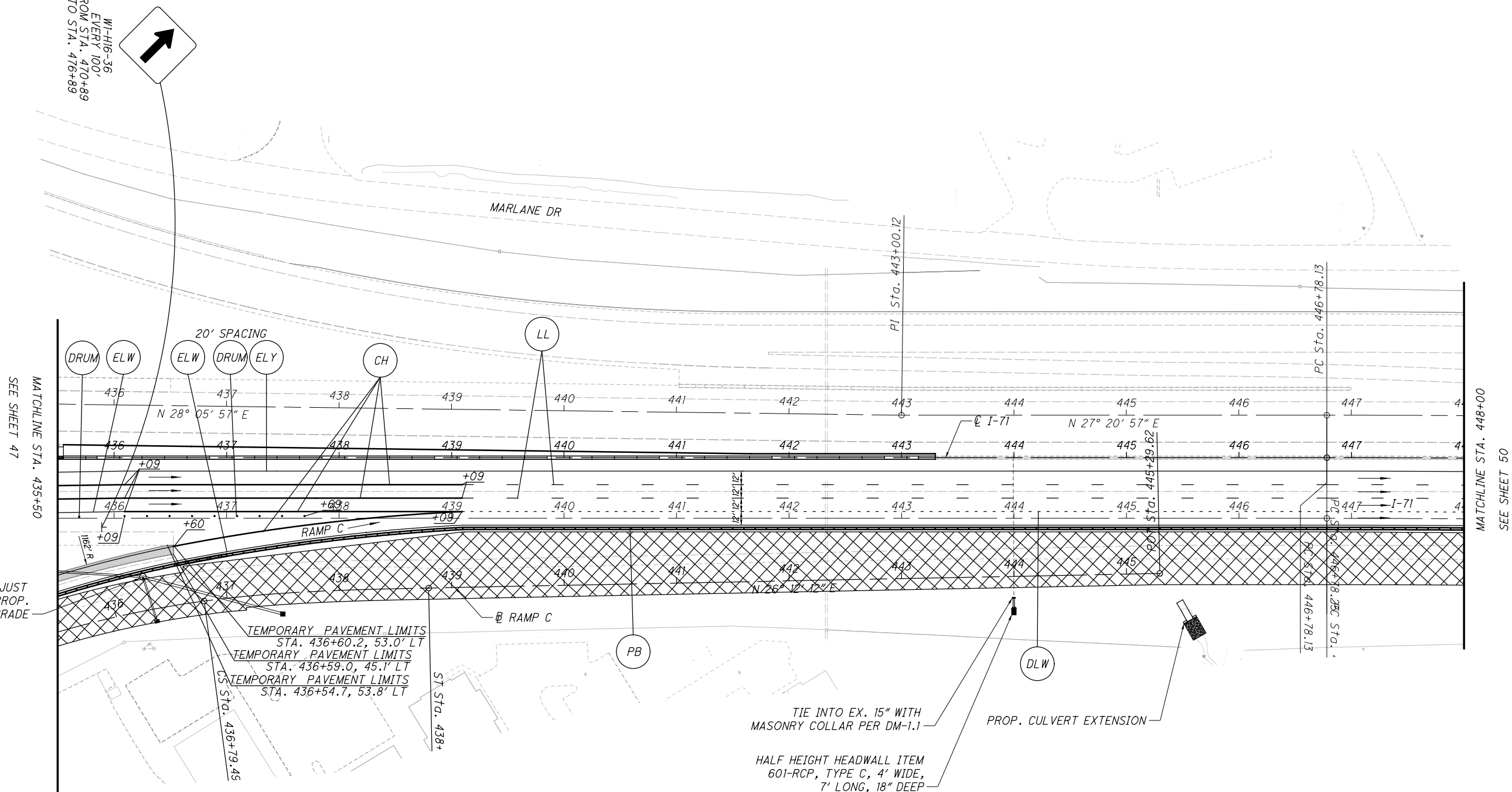
CALCULATED
NJL
CHECKED
EMW

MAINTENANCE OF TRAFFIC - PHASE 2
RAMP C TEMPORARY RUNAROUND PROFILE

FRA-71-9.71

...\\Northbound\92615_MP2007 7/29/2019 2:54:55 PM worley

WI-H16-36
EVERY 100'
FROM STA. 470+89
TO STA. 476+89



MATCHLINE STA. 435+50
SEE SHEET 47

MATCHLINE STA. 448+00
SEE SHEET 50

REMOVE SLAB, ADJUST
MANHOLE TO PROP.
GRADE

TEMPORARY PAVEMENT LIMITS
STA. 436+60.2, 53.0' LT
TEMPORARY PAVEMENT LIMITS
STA. 436+59.0, 45.1' LT
TEMPORARY PAVEMENT LIMITS
STA. 436+54.7, 53.8' LT

TIE INTO EX. 15" WITH
MASONRY COLLAR PER DM-1.1

HALF HEIGHT HEADWALL ITEM
601-RCP, TYPE C, 4' WIDE,
7' LONG, 18" DEEP

PROP. CULVERT EXTENSION

CALCULATED BPT CHECKED EMW

0 50 100
25
HORIZONTAL
SCALE IN FEET

MAINTENANCE OF TRAFFIC PHASE 2

FRA-71-9.07

NOTES

1. FOR MOT LEGEND, SEE SHEET 31



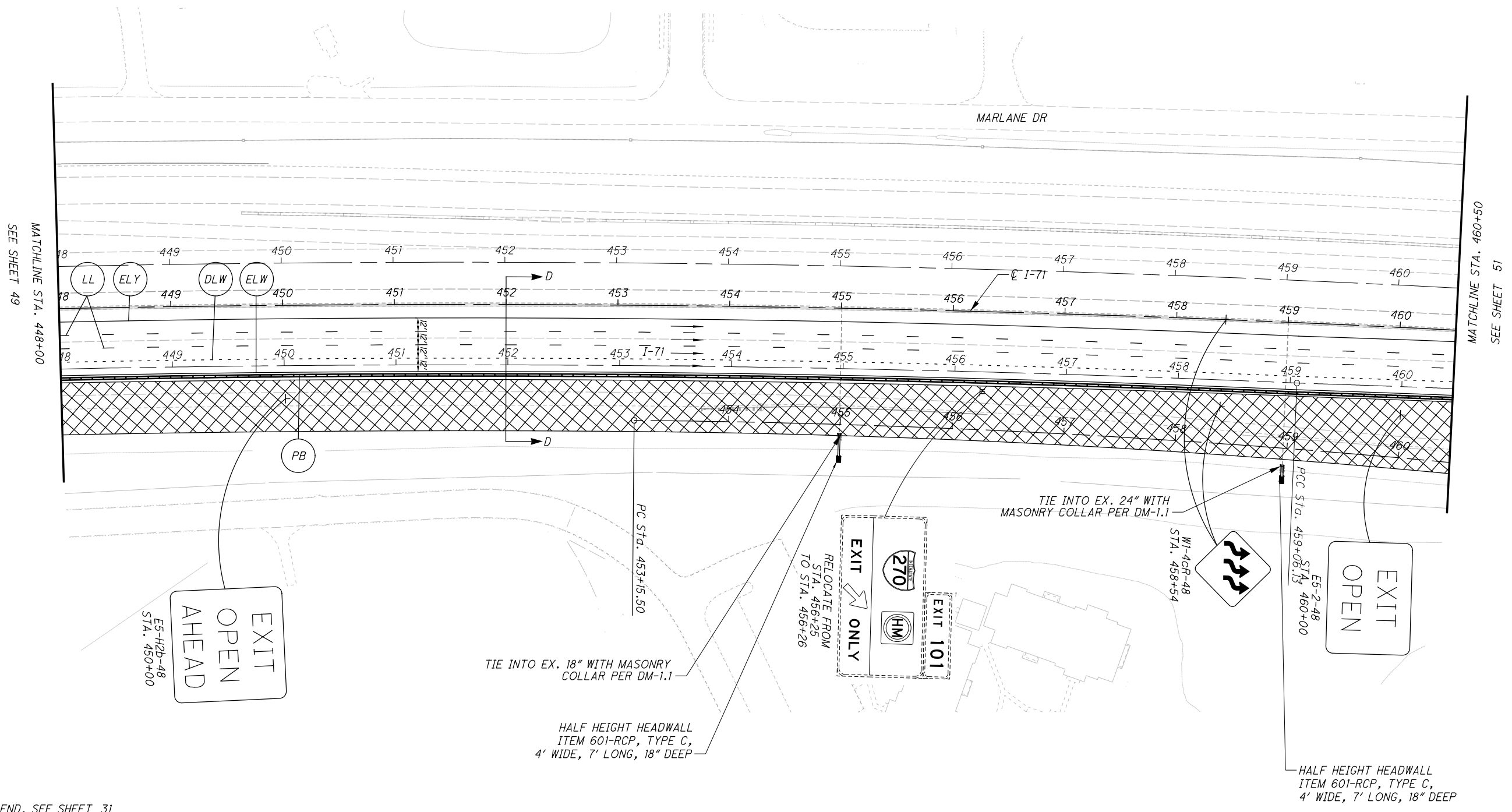
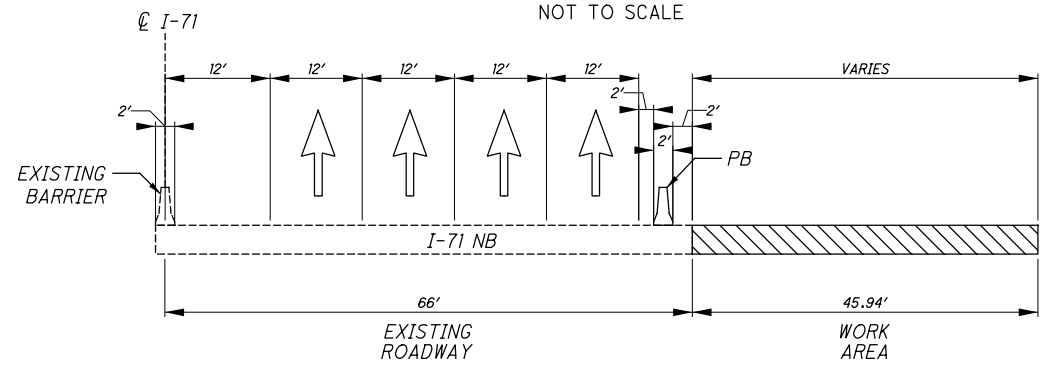
CALCULATED
BPT
CHECKED
EMW

**MAINTENANCE OF TRAFFIC
PHASE 2**

FRA-71-9.07

50
264

**SECTION D-D
STA. 452+00
NOT TO SCALE**



NOTES

1. FOR MOT LEGEND, SEE SHEET 31

...Northbound_92615_MP2008 7/29/2019 2:55:03 PM worley

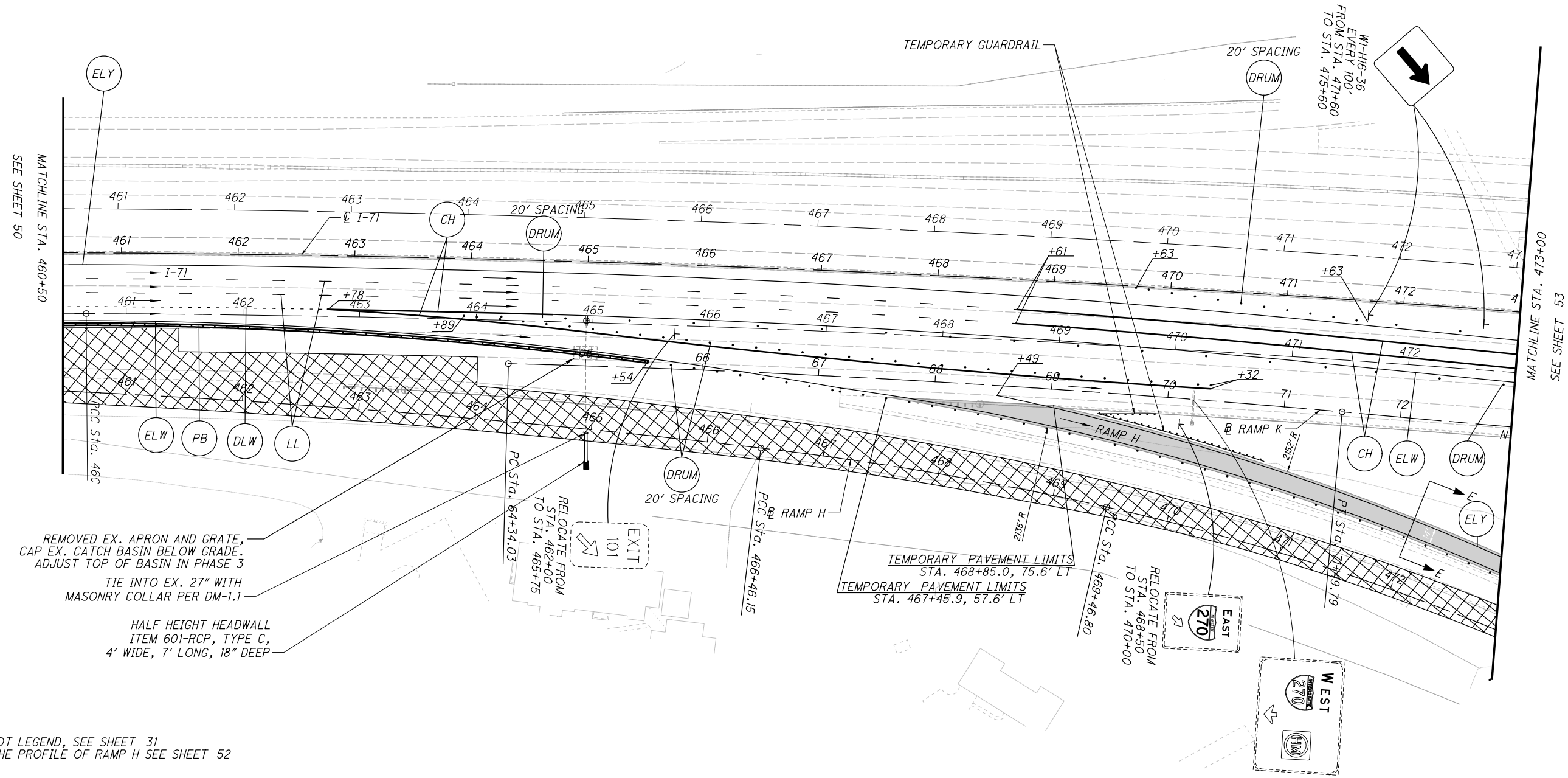
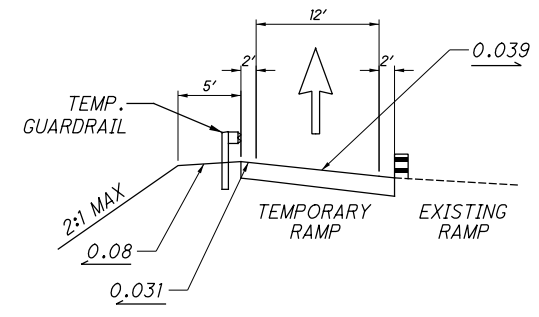


CALCULATED
BPT
CHECKED
EMW

MAINTENANCE OF TRAFFIC PHASE 2

FRA-71-9.07

SECTION E-E
RAMP H
NOT TO SCALE



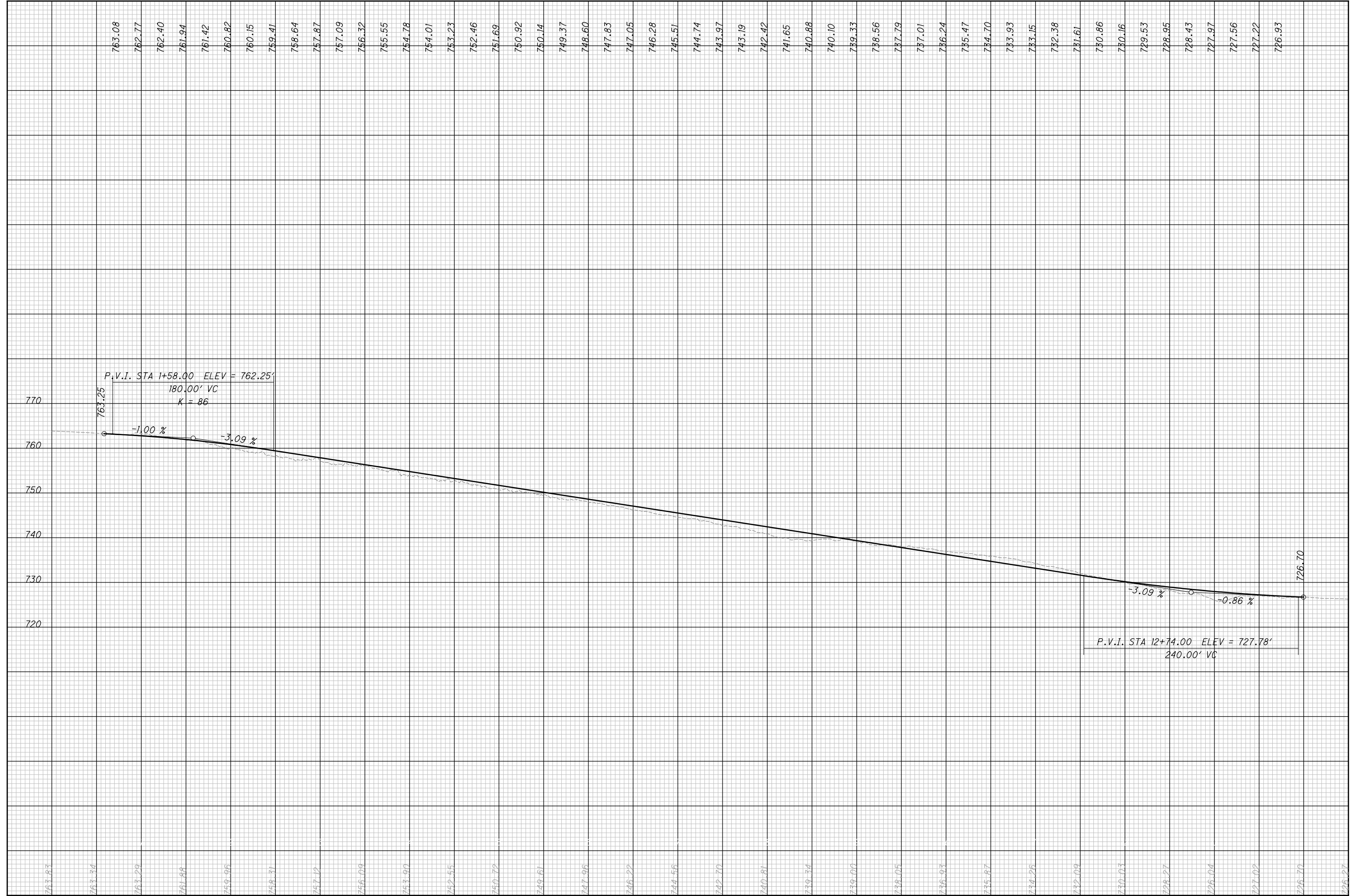
MATCHLINE STA. 460+50
SEE SHEET 50

MATCHLINE STA. 473+00
SEE SHEET 53

REMOVED EX. APRON AND GRATE,
CAP EX. CATCH BASIN BELOW GRADE.
ADJUST TOP OF BASIN IN PHASE 3
TIE INTO EX. 27" WITH
MASONRY COLLAR PER DM-1.1
HALF HEIGHT HEADWALL
ITEM 601-RCP, TYPE C,
4' WIDE, 7' LONG, 18" DEEP

- NOTES
- 1. FOR MOT LEGEND, SEE SHEET 31
 - 2. FOR THE PROFILE OF RAMP H SEE SHEET 52

...\\Northbound\92615_MP2009 7/29/2019 2:55:11 PM worley

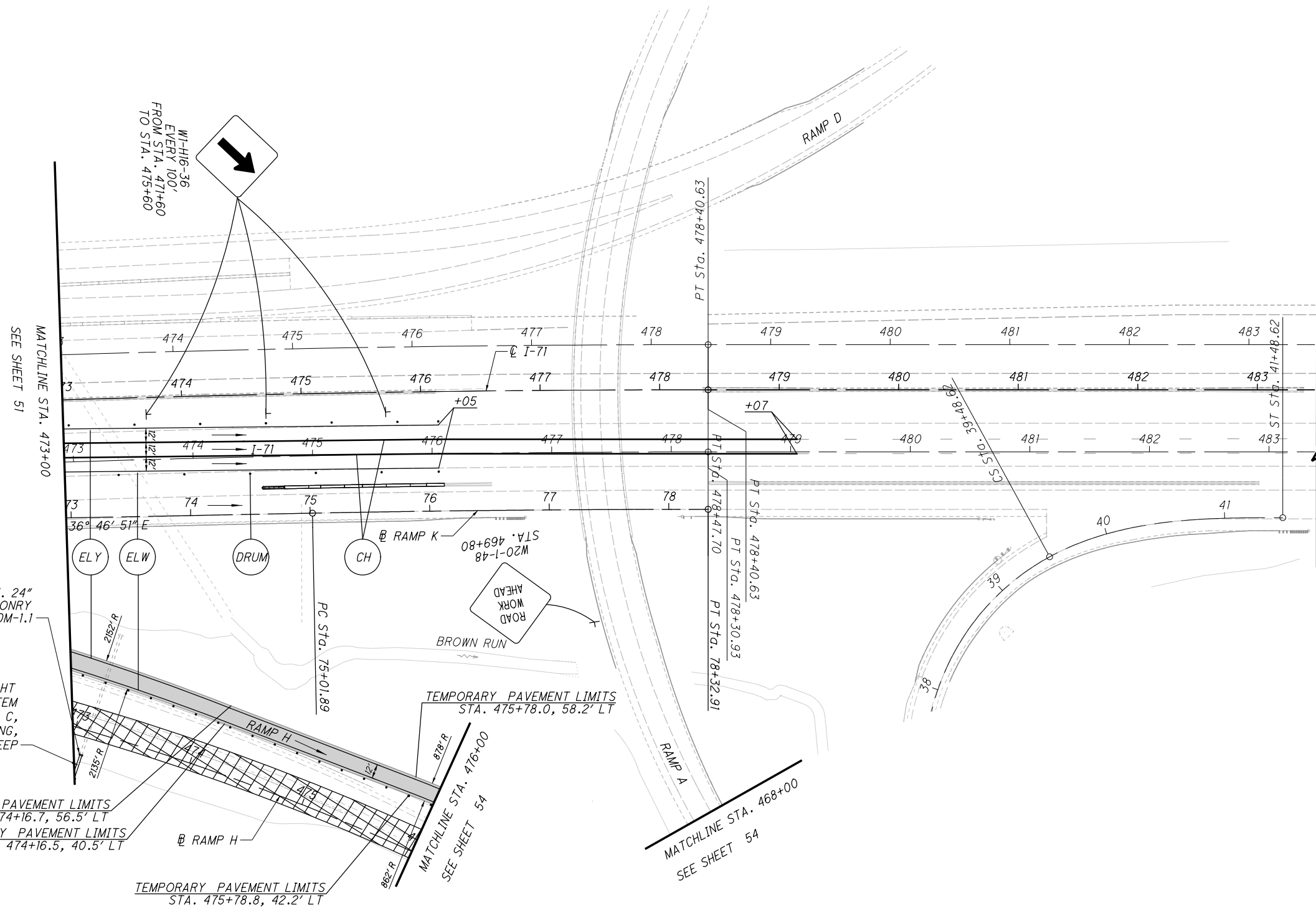


CALCULATED
NJL
CHECKED
EMW

**MAINTENANCE OF TRAFFIC - PHASE 2
RAMP H TEMPORARY RUNAROUND PROFILE**

FRA-71-9.71

...\\Northbound\92615_MP200 7/29/2019 2:55:25 PM worley



NOTES
1. FOR MOT LEGEND, SEE SHEET 31

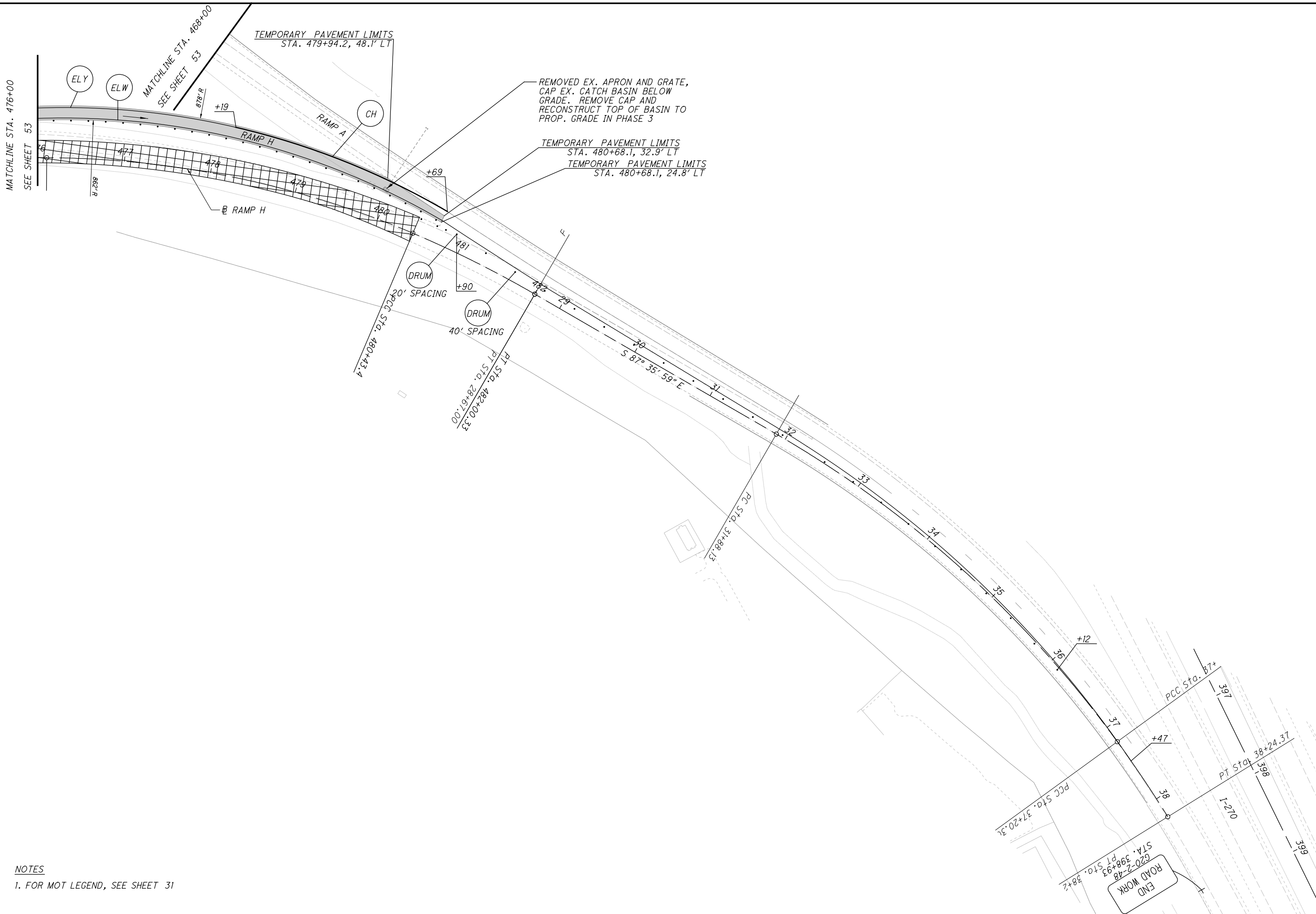
CALCULATED
BPT
CHECKED
EMW

0 50 100
HORIZONTAL
SCALE IN FEET

MAINTENANCE OF TRAFFIC
PHASE 2

FRA-71-9.07

...\\NorThbound\92615_MP2011_7/29/2019_2:55:35 PM worley



NOTES
 1. FOR MOT LEGEND, SEE SHEET 31

REMOVED EX. APRON AND GRATE,
 CAP EX. CATCH BASIN BELOW
 GRADE. REMOVE CAP AND
 RECONSTRUCT TOP OF BASIN TO
 PROP. GRADE IN PHASE 3

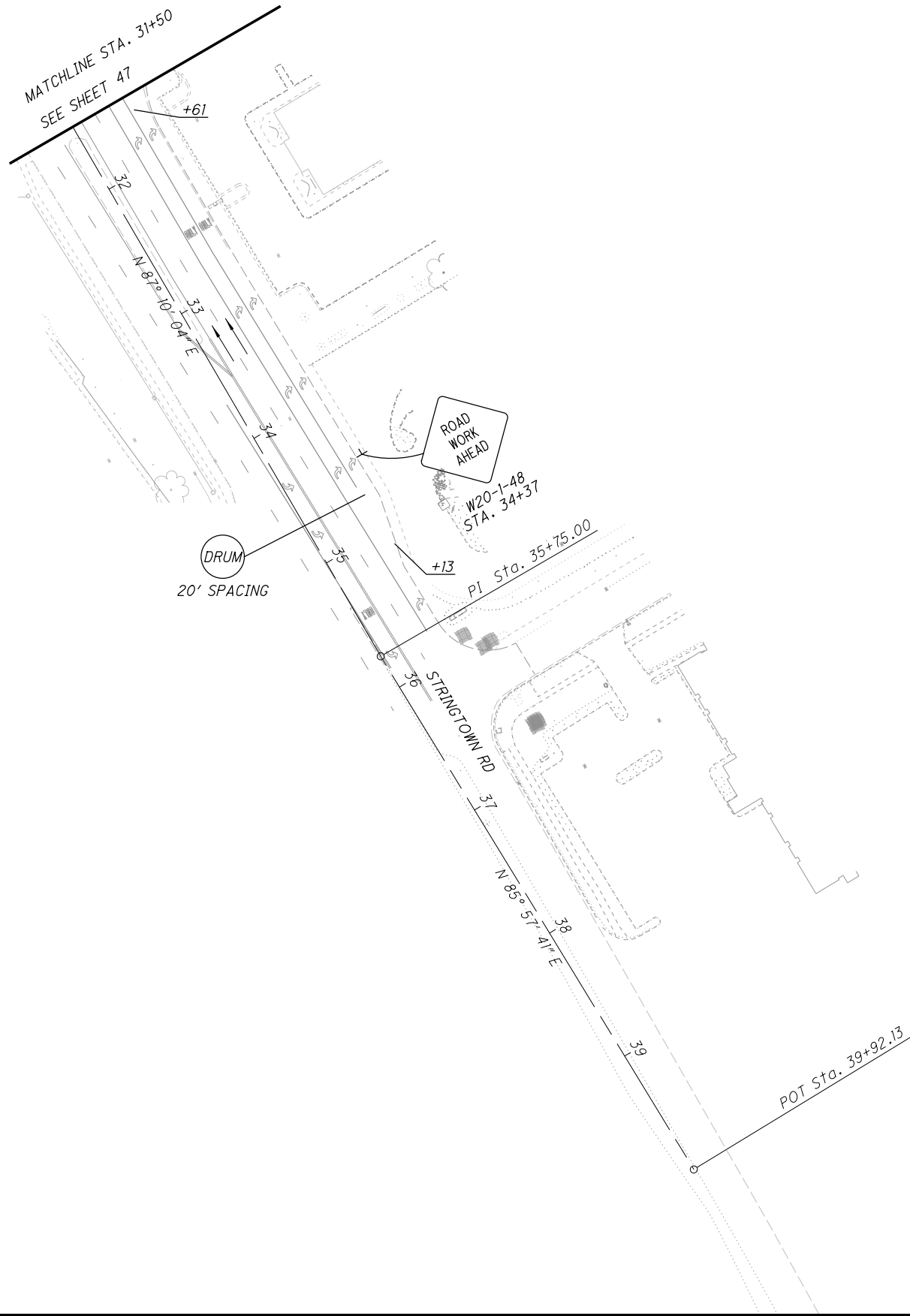
TEMPORARY PAVEMENT LIMITS
 STA. 480+68.1, 32.9' LT
 TEMPORARY PAVEMENT LIMITS
 STA. 480+68.1, 24.8' LT

CALCULATED
 BPT
 CHECKED
 EMW

0 50 100
 HORIZONTAL
 SCALE IN FEET

**MAINTENANCE OF TRAFFIC
 PHASE 2**

FRA - 71 - 9.07

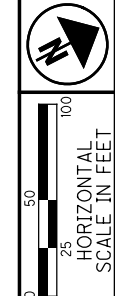


NOTES
 1. FOR MOT LEGEND, SEE SHEET 31

CALCULATED	BPT
	CHECKED
	EMW

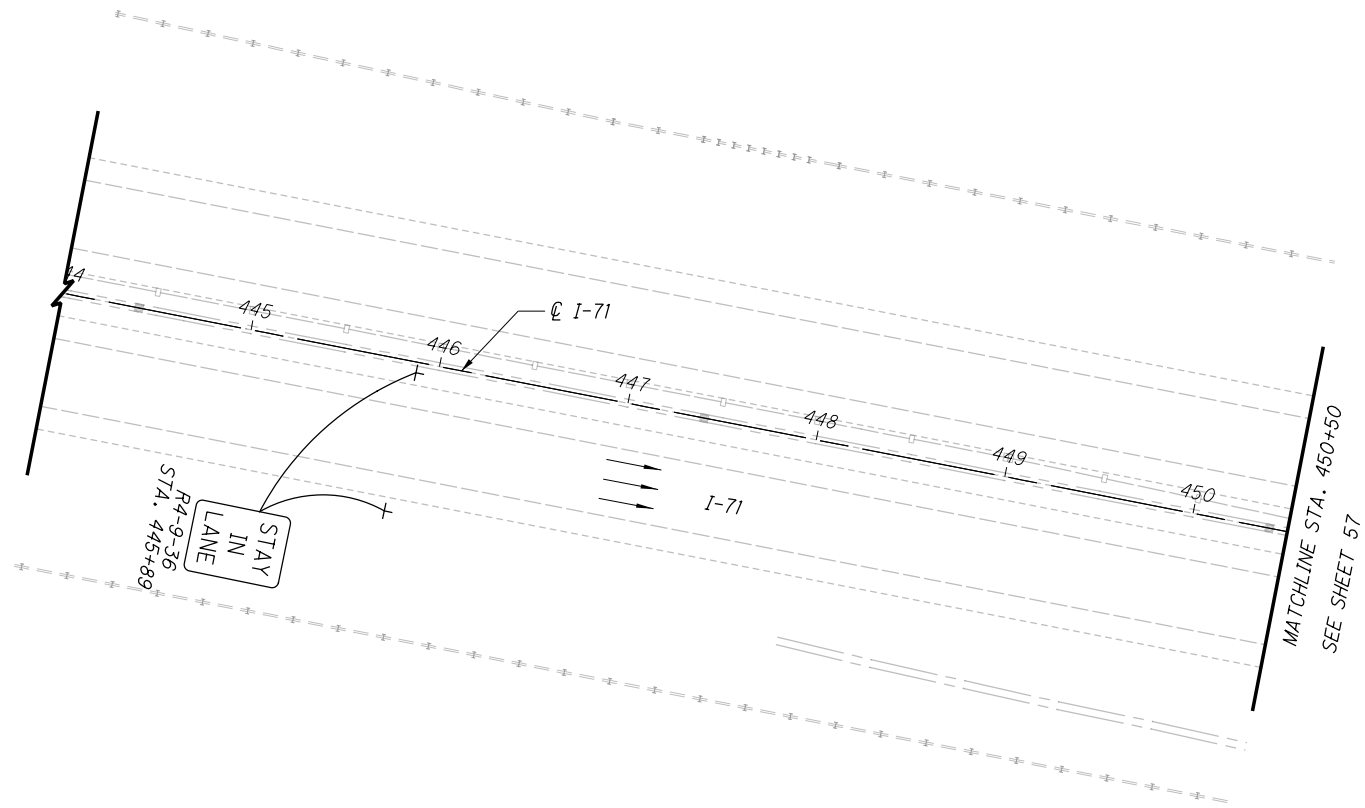
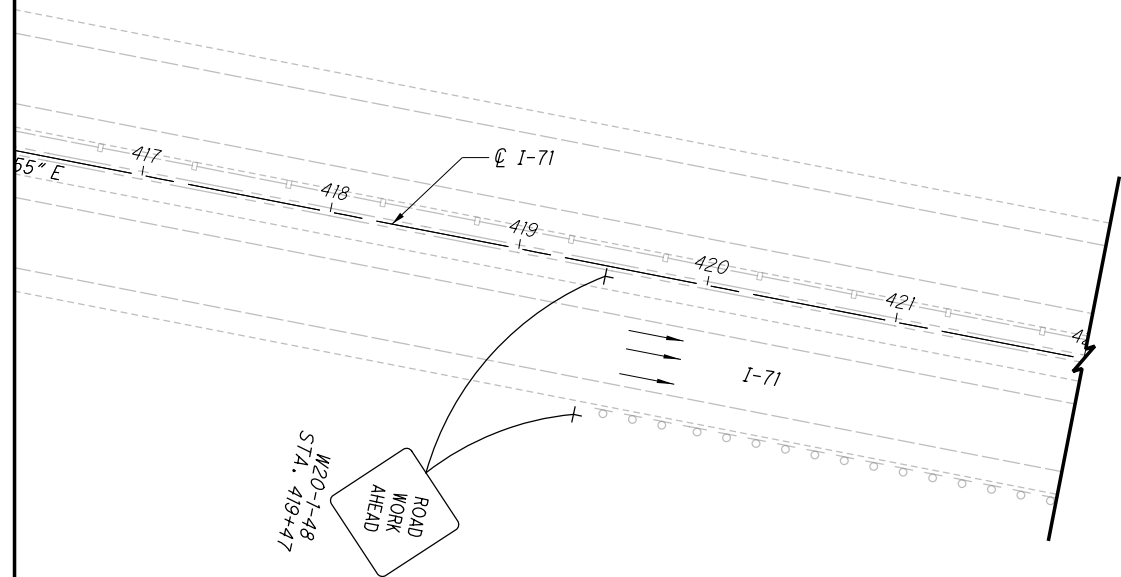
**MAINTENANCE OF TRAFFIC
 PHASE 2**

FRA-71-9.07



NOTES

1. FOR MOT LEGEND, SEE SHEET 31



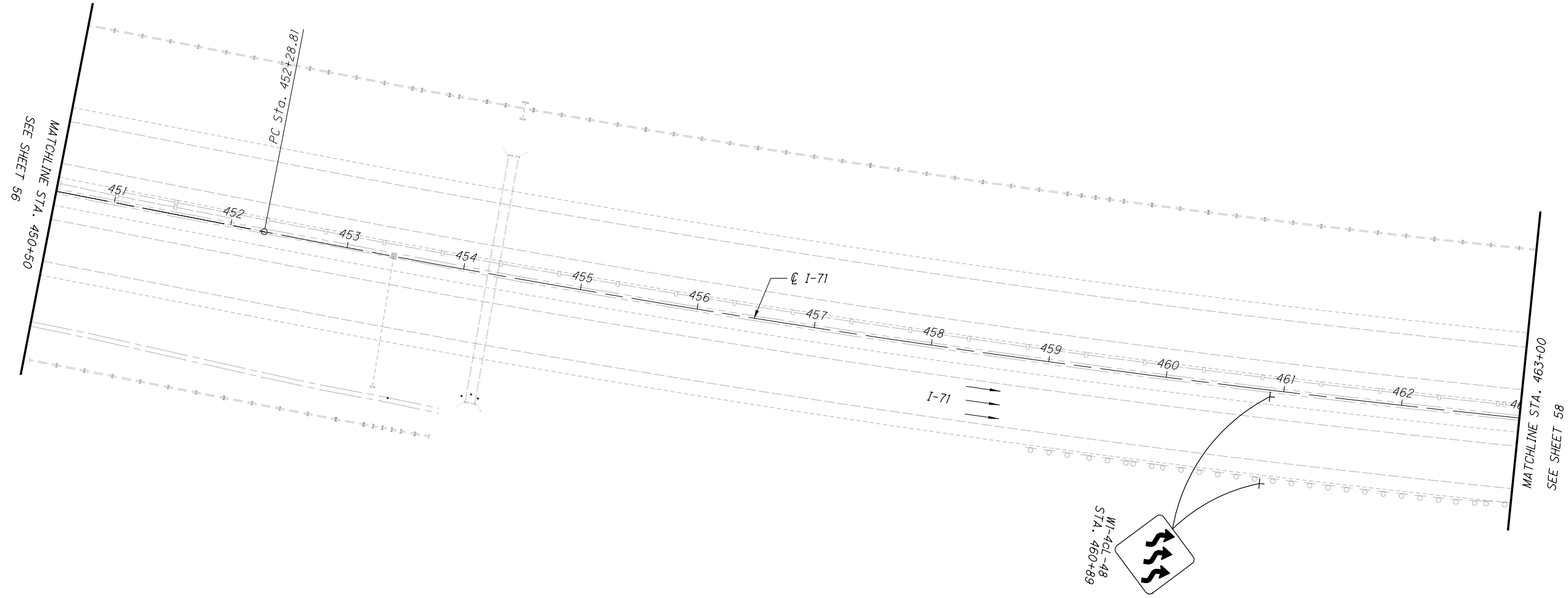
CALCULATED	BPT	CHECKED	EMW

**MAINTENANCE OF TRAFFIC
PHASE 3**

FRA - 71 - 9.07

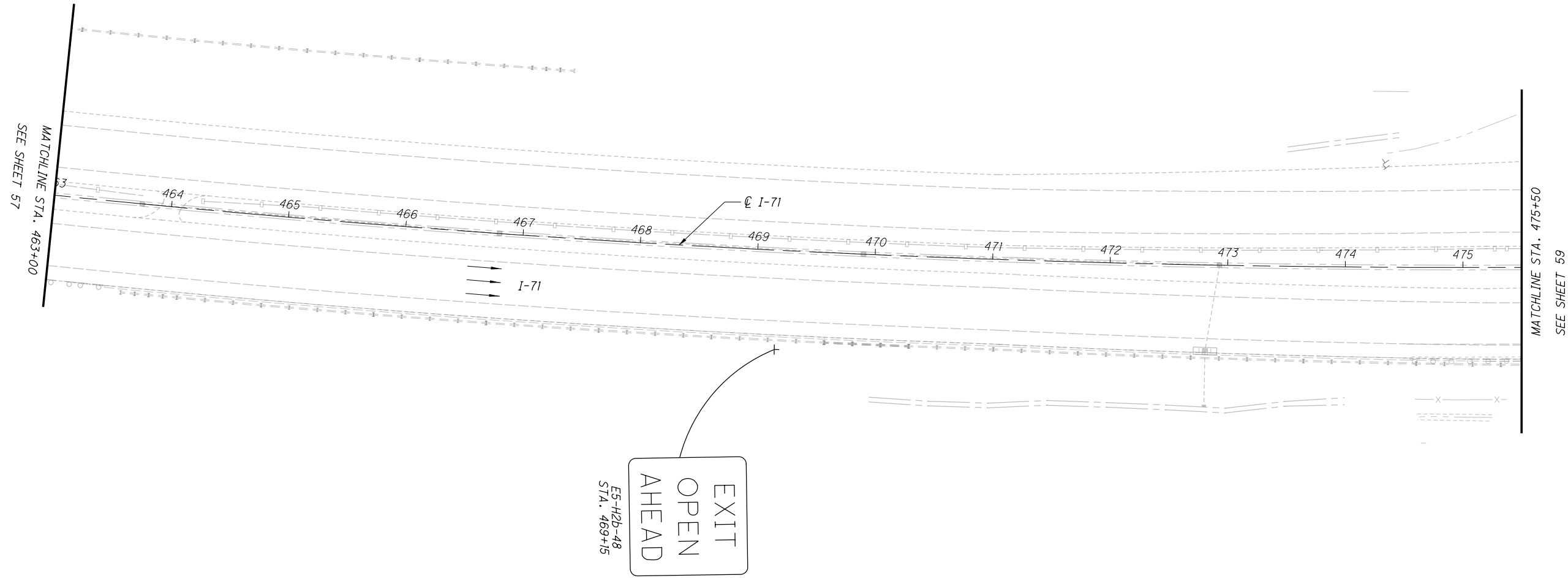
NOTES

1. FOR MOT LEGEND, SEE SHEET 31



NOTES

1. FOR MOT LEGEND, SEE SHEET 31



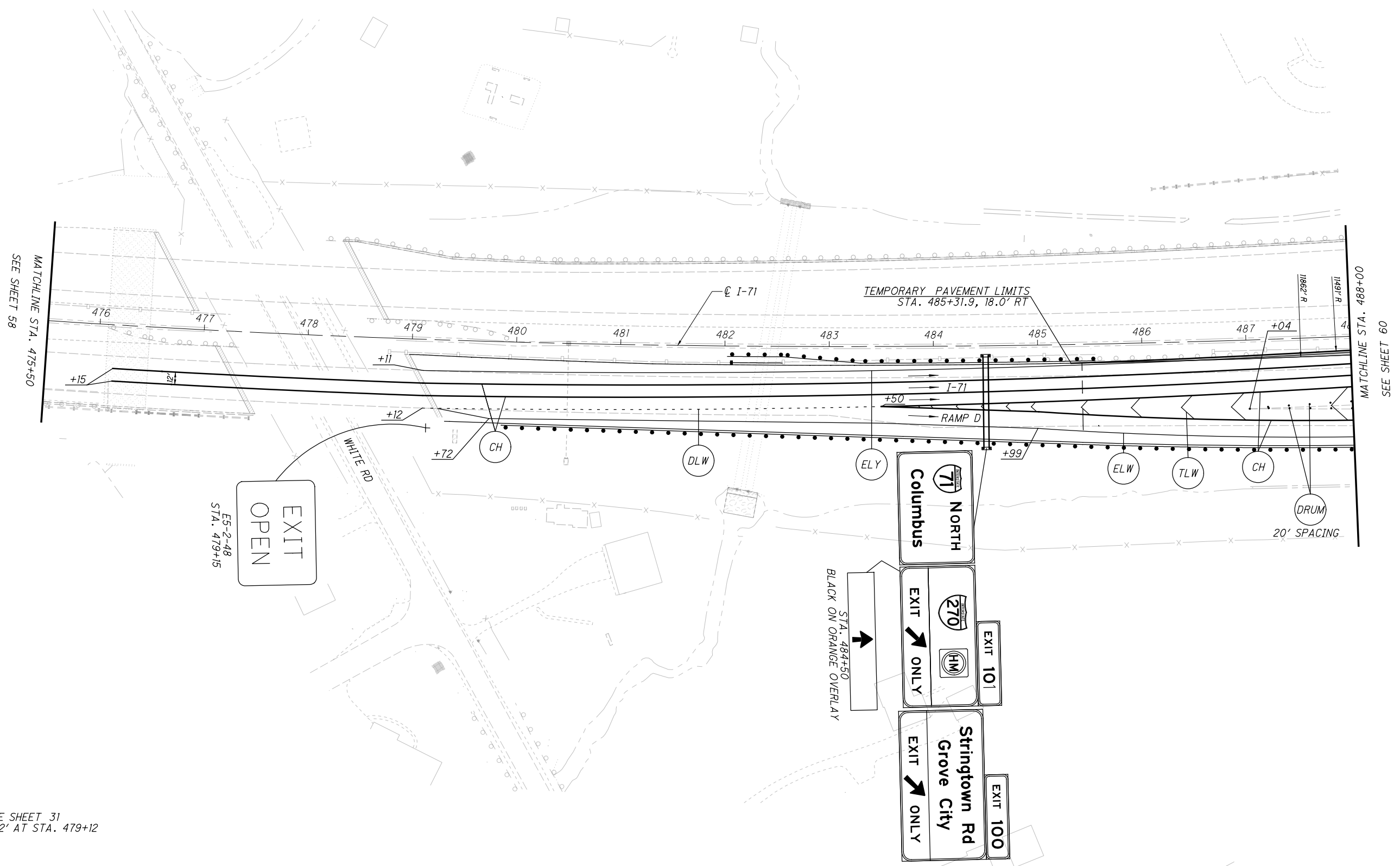


CALCULATED
BPT
CHECKED
EMW

MAINTENANCE OF TRAFFIC PHASE 3

FRA-71-1-9.07

59
264



- NOTES**
1. FOR MOT LEGEND, SEE SHEET 31
 2. TAPER LANES FROM 12' AT STA. 479+12 TO 11' AT STA. 488+20

...\\Nor-thbound\92615_MP3004 7/29/2019 2:56:07 PM worley

...Northbound\92615_MP3005 7/29/2019 2:56:14 PM worley



0 50 100
HORIZONTAL
SCALE IN FEET

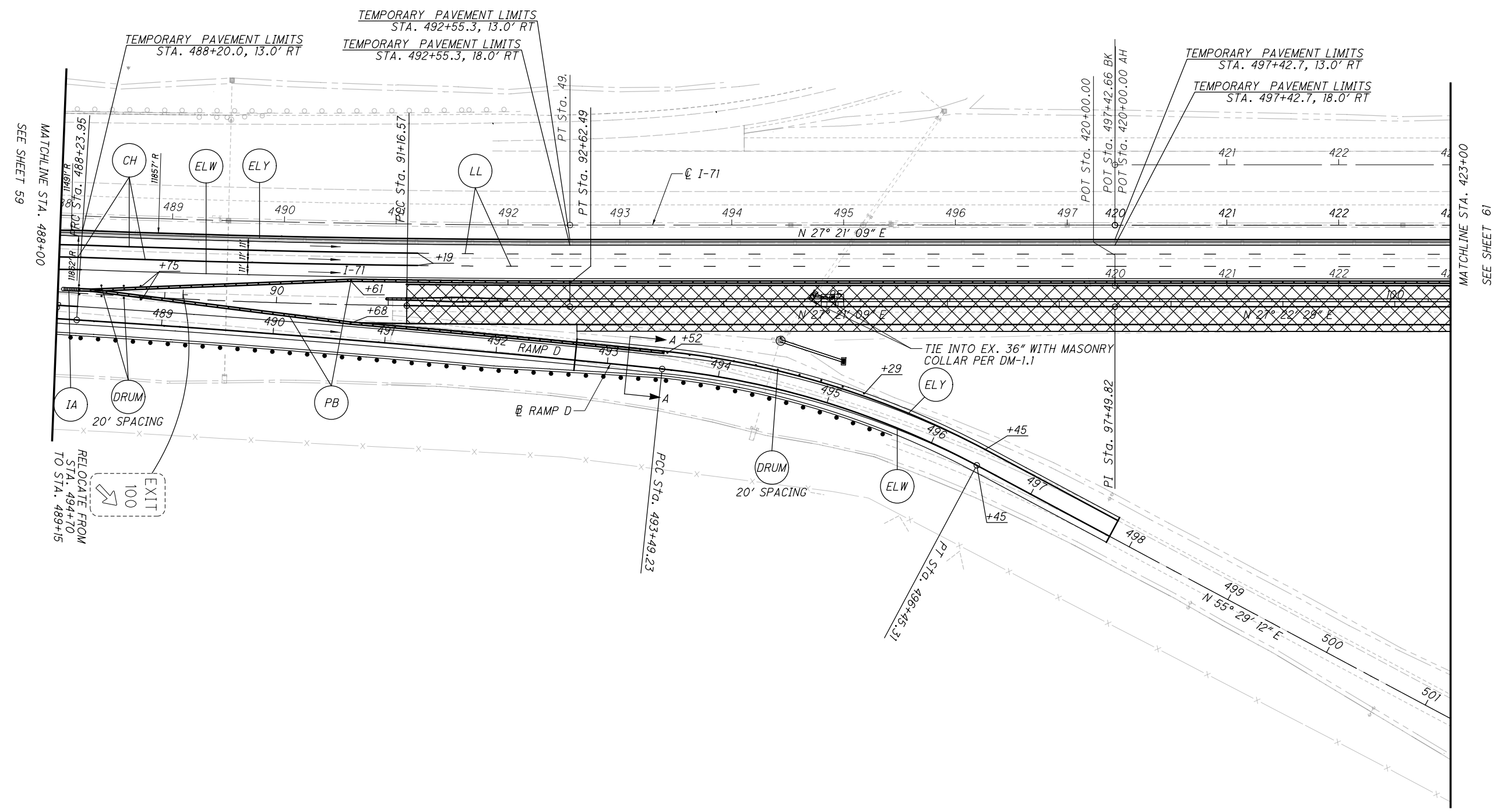
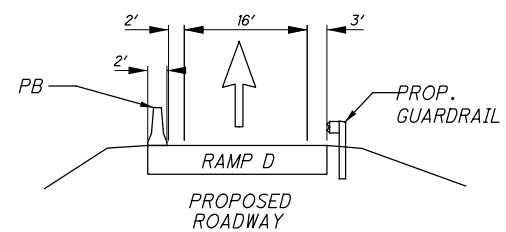
CALCULATED
BPT
CHECKED
EMW

**MAINTENANCE OF TRAFFIC
PHASE 3**

FRA-71-9.07

60
264

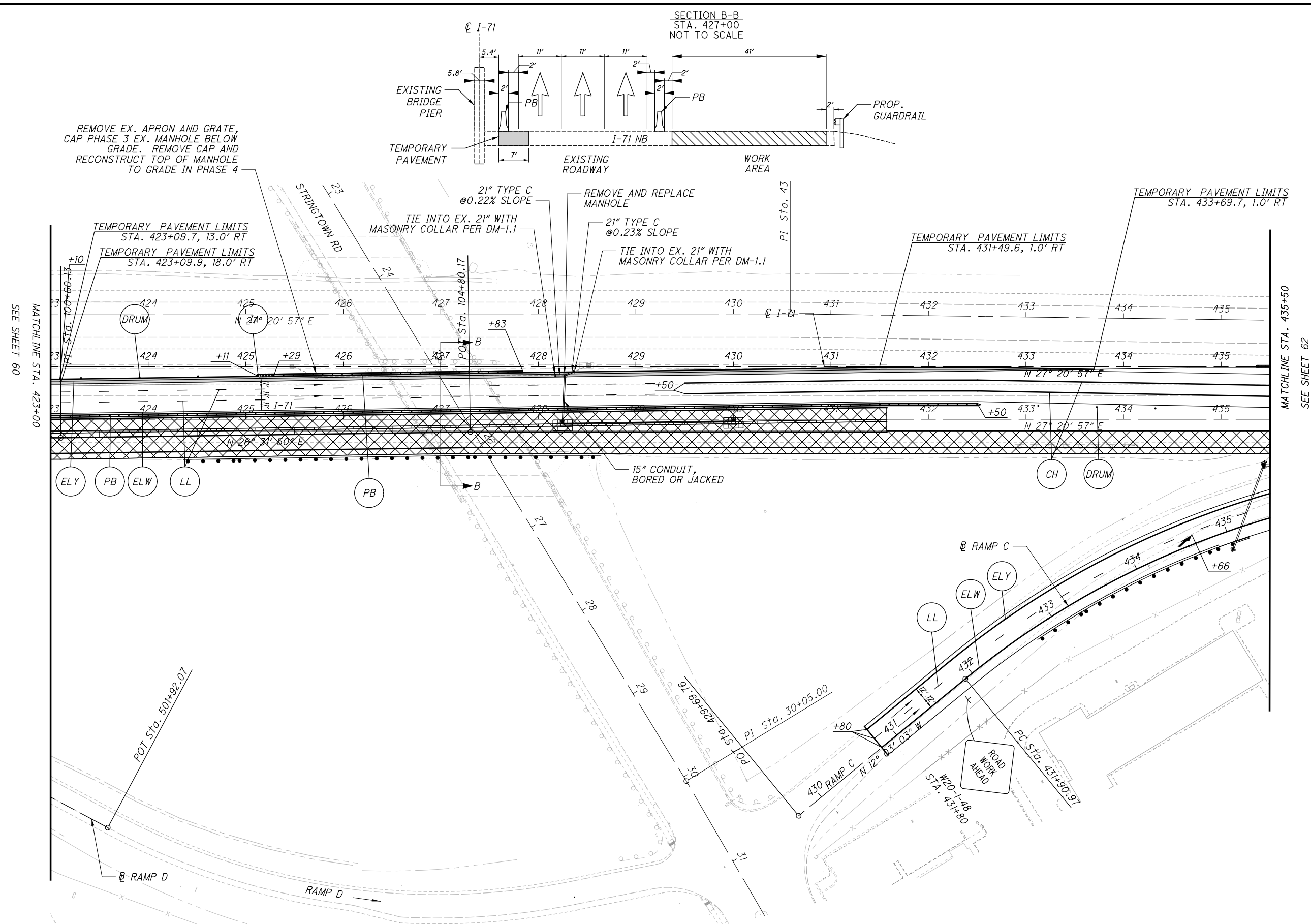
SECTION A-A
STA. 493+18
0 SCALE



NOTES

1. FOR MOT LEGEND, SEE SHEET 31

...NorThbound\92615_MP3006 7/29/2019 2:56:20 PM worley



SECTION B-B
STA. 427+00
NOT TO SCALE

CALCULATED BPT CHECKED EMW

0 50 100
25
HORIZONTAL SCALE IN FEET

REMOVE EX. APRON AND GRATE, CAP PHASE 3 EX. MANHOLE BELOW GRADE. REMOVE CAP AND RECONSTRUCT TOP OF MANHOLE TO GRADE IN PHASE 4

TEMPORARY PAVEMENT LIMITS STA. 423+09.7, 13.0' RT
TEMPORARY PAVEMENT LIMITS STA. 423+09.9, 18.0' RT

21" TYPE C @0.22% SLOPE
TIE INTO EX. 21" WITH MASONRY COLLAR PER DM-1.1
REMOVE AND REPLACE MANHOLE
21" TYPE C @0.23% SLOPE
TIE INTO EX. 21" WITH MASONRY COLLAR PER DM-1.1

TEMPORARY PAVEMENT LIMITS STA. 431+49.6, 1.0' RT

TEMPORARY PAVEMENT LIMITS STA. 433+69.7, 1.0' RT

MATCHLINE STA. 435+50
SEE SHEET 62

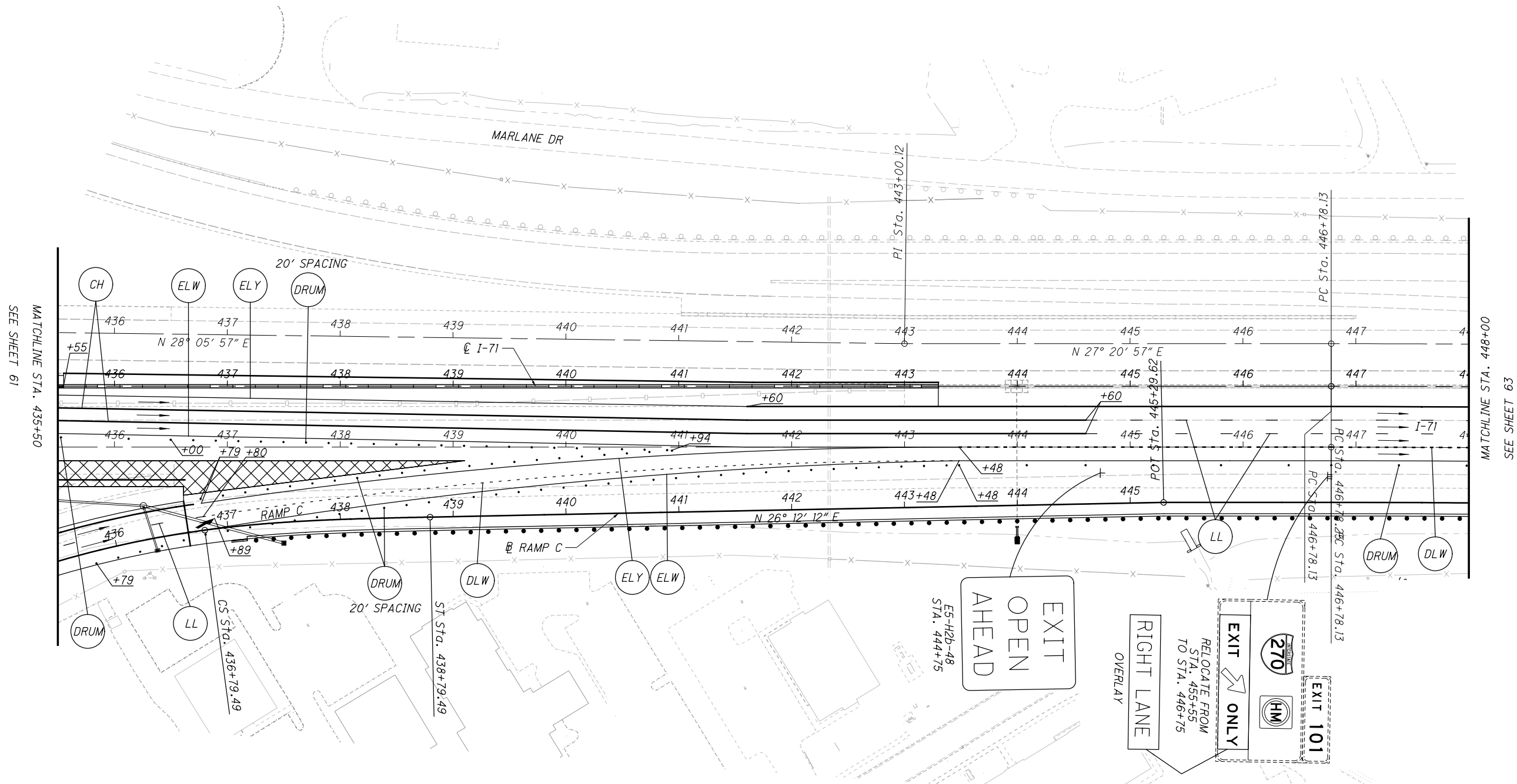
SEE SHEET 60
MATCHLINE STA. 423+00

MAINTENANCE OF TRAFFIC
PHASE 3

FRA-71-9.07

- NOTES
1. FOR MOT LEGEND, SEE SHEET 31
 2. TAPER LANES FROM 11' AT STA. 429+50 TO 12' AT STA. 441+60

...\\Northbound\92615_MP3007 7/29/2019 2:56:27 PM worley



NOTES

1. FOR MOT LEGEND, SEE SHEET 31



CALCULATED
BPT
CHECKED
EMW

MAINTENANCE OF TRAFFIC PHASE 3

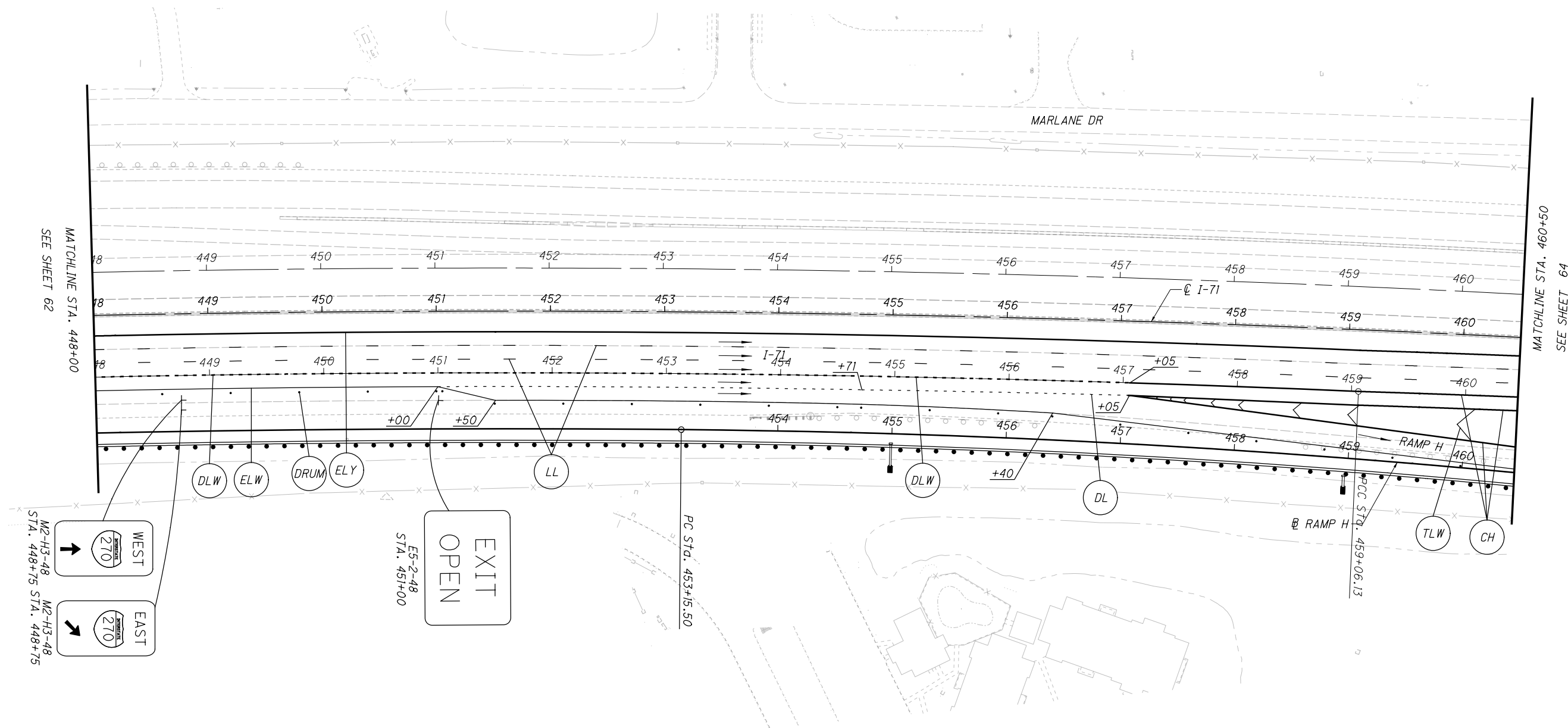
FRA-71-9-07

62

264

NOTES

1. FOR MOT LEGEND, SEE SHEET 31



CALCULATED
BPT
CHECKED
EMW

0 50 100
HORIZONTAL
SCALE IN FEET

MAINTENANCE OF TRAFFIC
PHASE 3

FRA-71-9.07

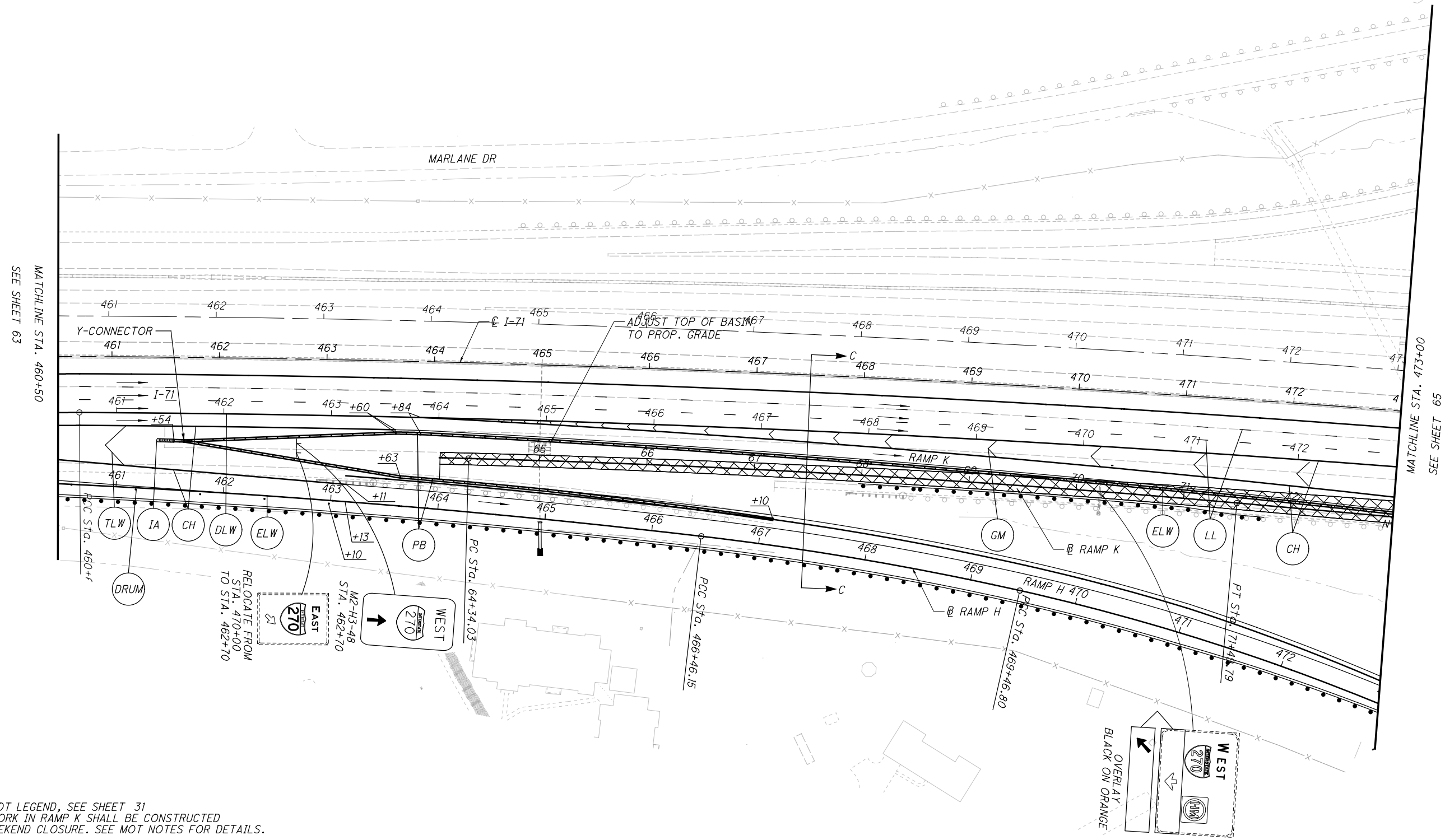
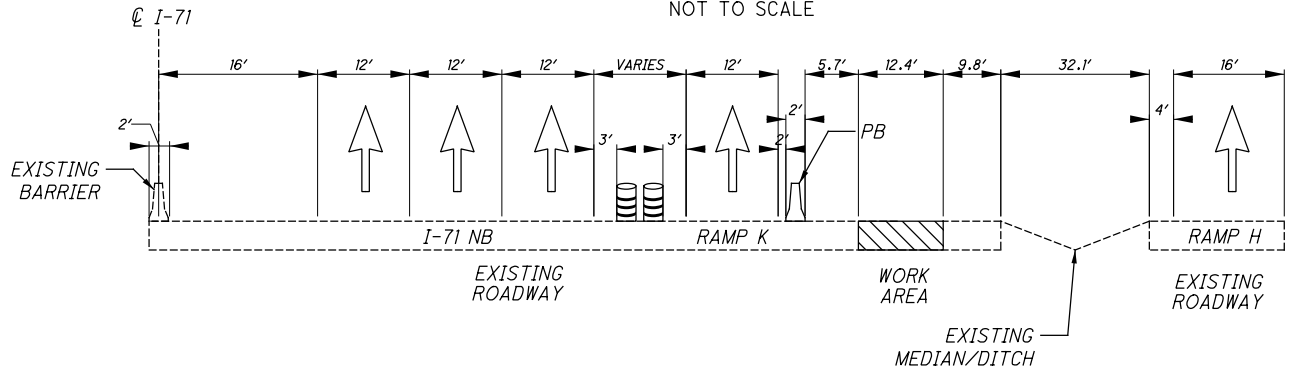


CALCULATED
BPT
CHECKED
EMW

**MAINTENANCE OF TRAFFIC
PHASE 3**

FRA-71-9.07

SECTION C-C
STA. 467+50
NOT TO SCALE



- NOTES**
1. FOR MOT LEGEND, SEE SHEET 31
 2. THE WORK IN RAMP K SHALL BE CONSTRUCTED VIA A WEEKEND CLOSURE. SEE MOT NOTES FOR DETAILS.

...\\Nor-thbound\92615_MP3009 7/29/2019 2:56:40 PM worley

MATCHLINE STA. 460+50
SEE SHEET 63

MATCHLINE STA. 473+00
SEE SHEET 65

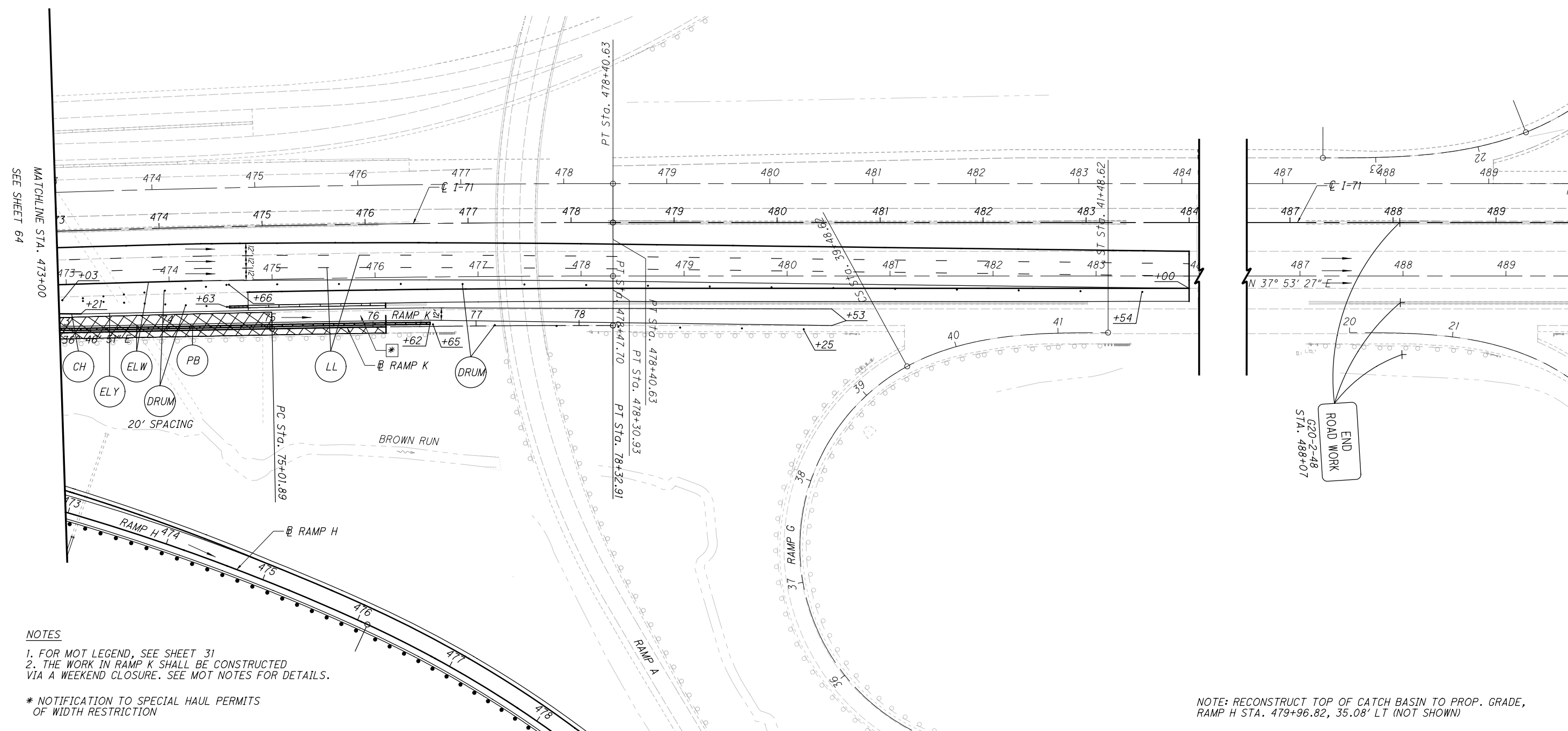


CALCULATED
BPT
CHECKED
EMW

**MAINTENANCE OF TRAFFIC
PHASE 3**

FRA-71-9.07

65
264



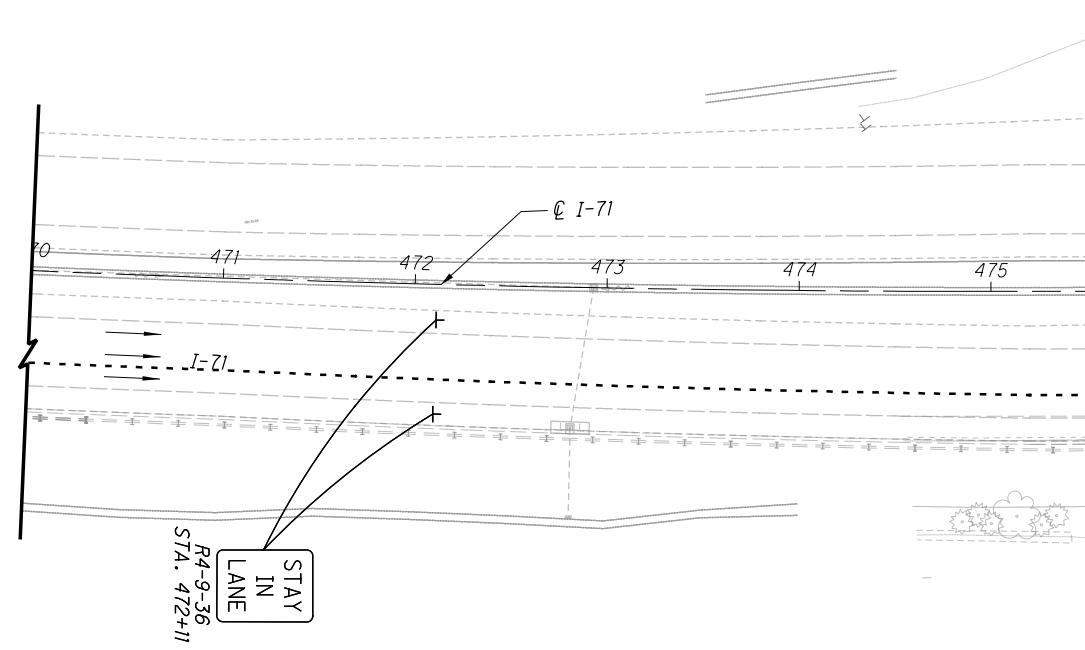
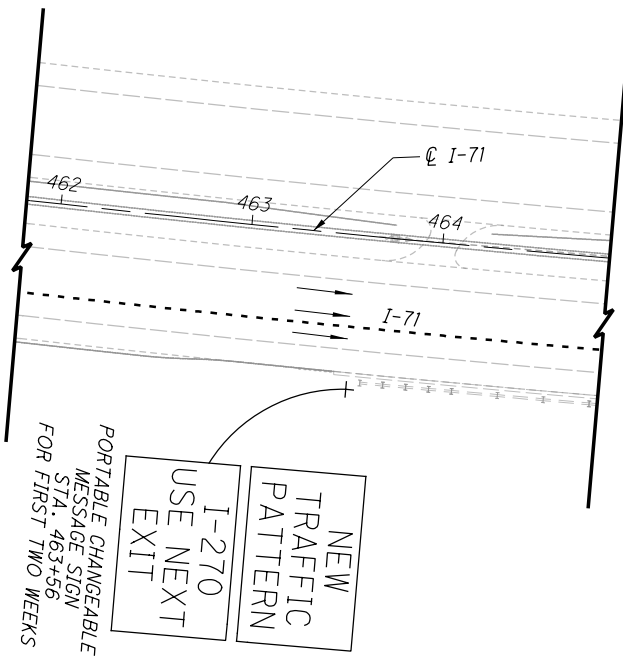
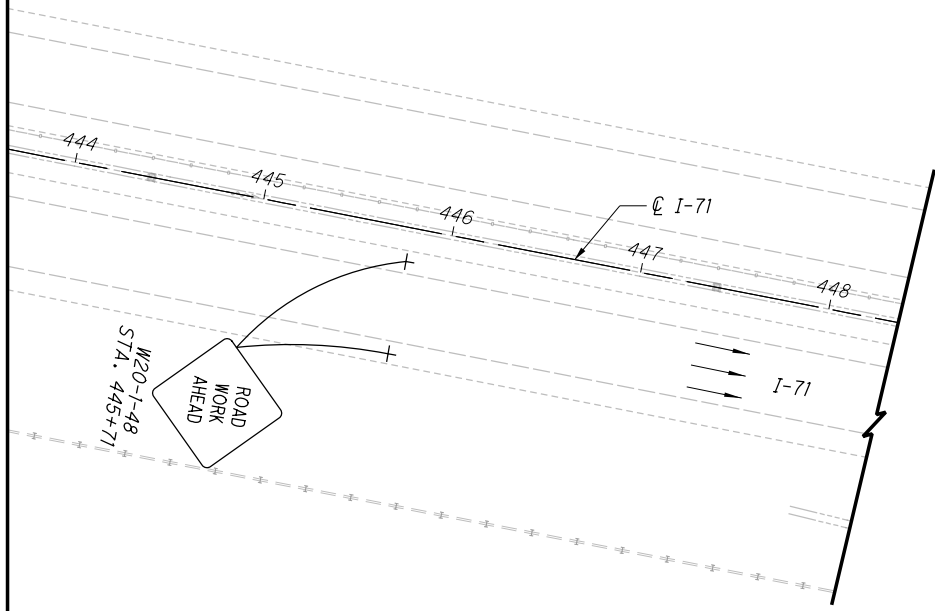
- NOTES**
1. FOR MOT LEGEND, SEE SHEET 31
 2. THE WORK IN RAMP K SHALL BE CONSTRUCTED VIA A WEEKEND CLOSURE. SEE MOT NOTES FOR DETAILS.
- * NOTIFICATION TO SPECIAL HAUL PERMITS OF WIDTH RESTRICTION

NOTE: RECONSTRUCT TOP OF CATCH BASIN TO PROP. GRADE, RAMP H STA. 479+96.82, 35.08' LT (NOT SHOWN)

...NorThbound\92615_MP3010 7/29/2019 2:56:47 PM worley

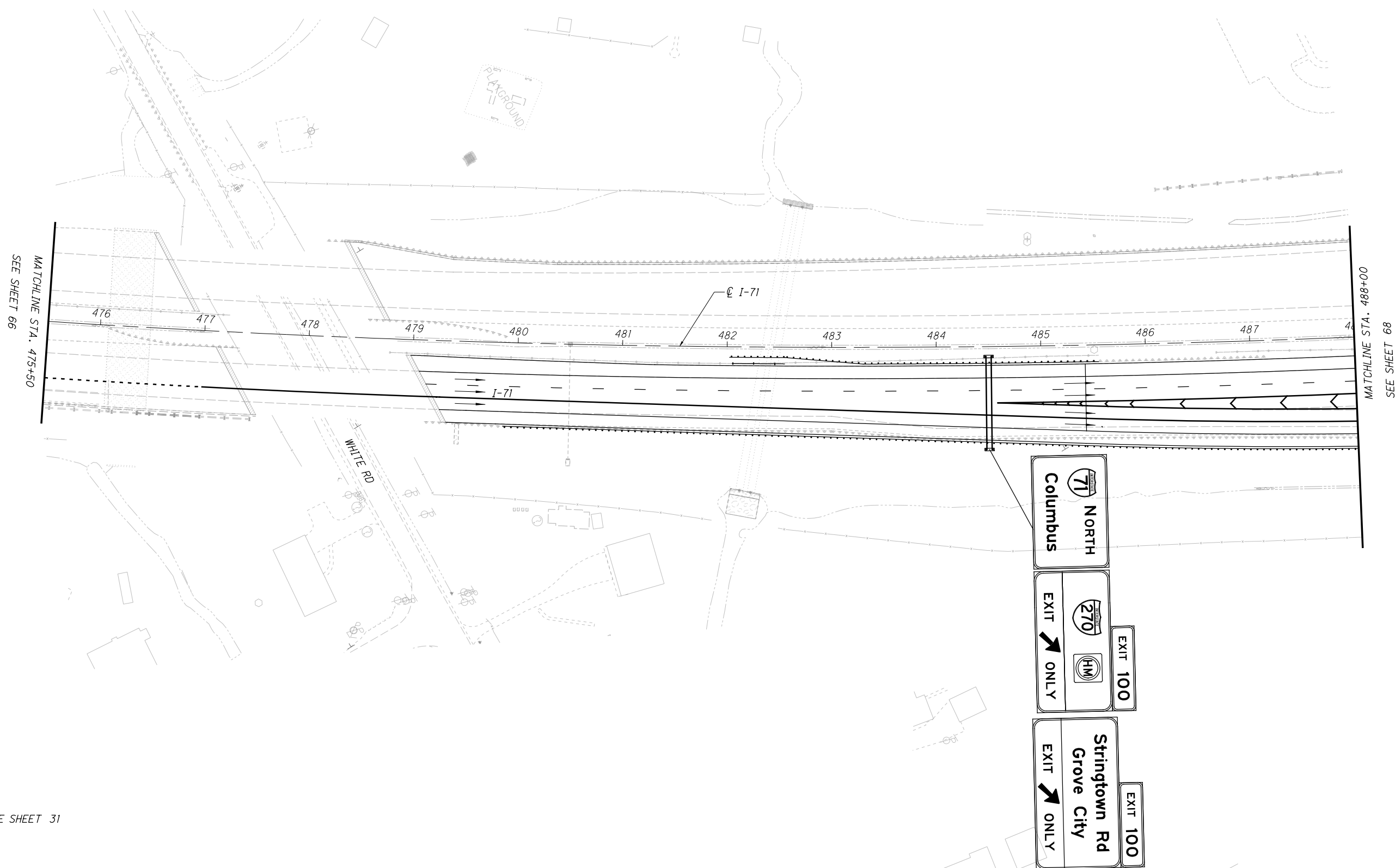
NOTES

1. FOR MOT LEGEND, SEE SHEET 31



NOTES

1. FOR MOT LEGEND, SEE SHEET 31



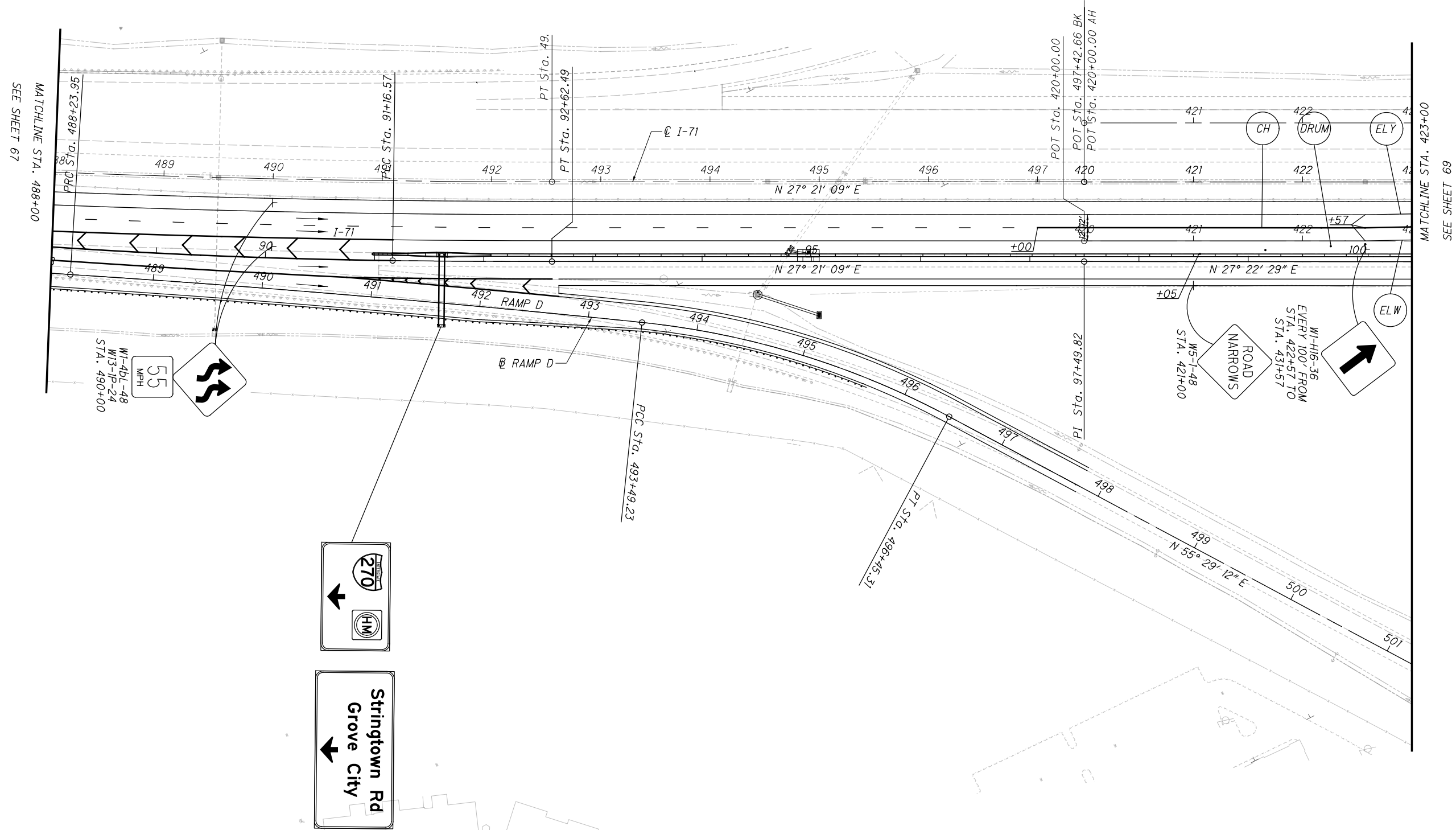
CALCULATED	
BPT	
CHECKED	
EMW	

0 25 50 100
HORIZONTAL SCALE IN FEET

MAINTENANCE OF TRAFFIC PHASE 4

FRA-71-9.07

NOTES
1. FOR MOT LEGEND, SEE SHEET 31

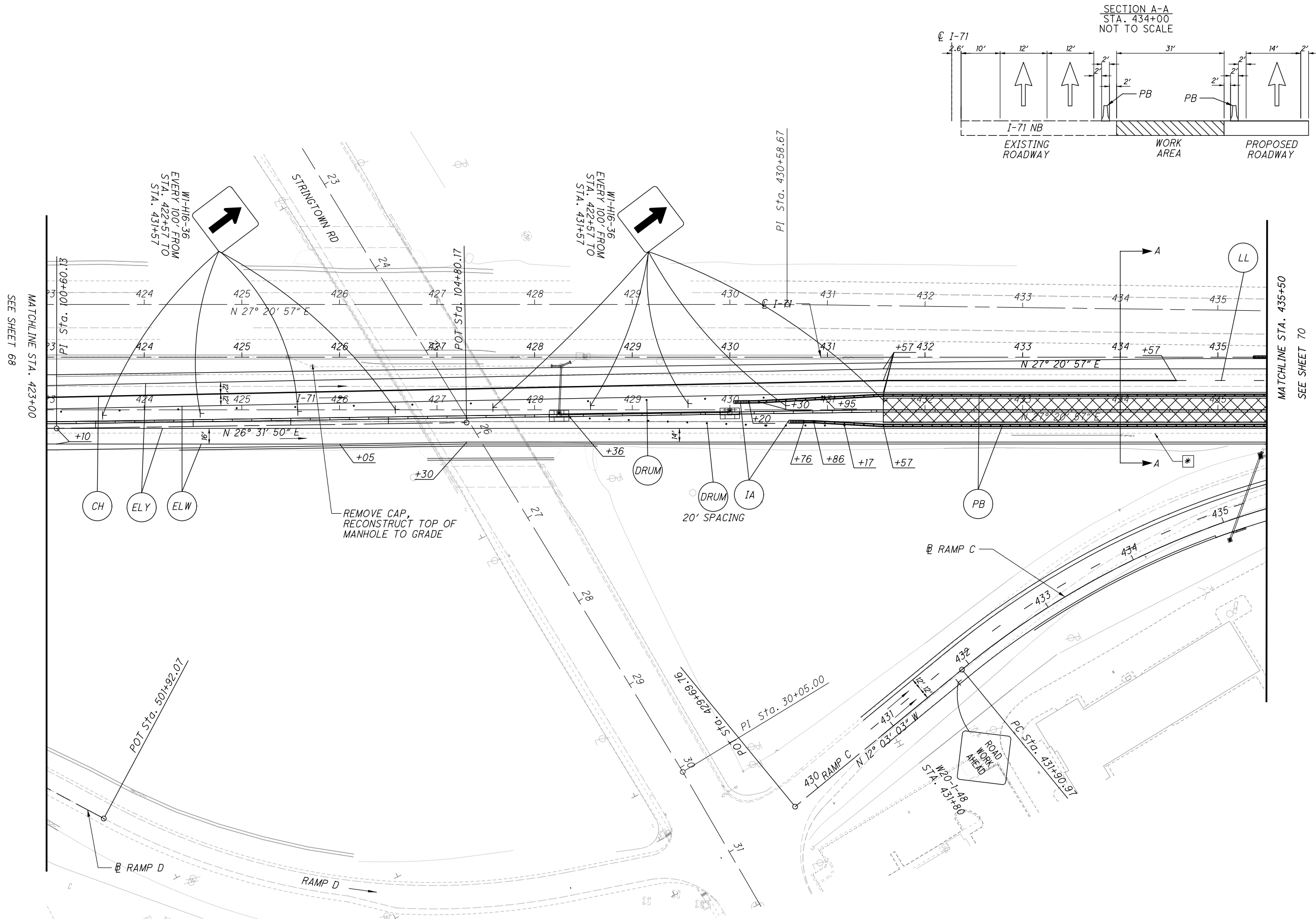


CALCULATED BPT CHECKED EMW

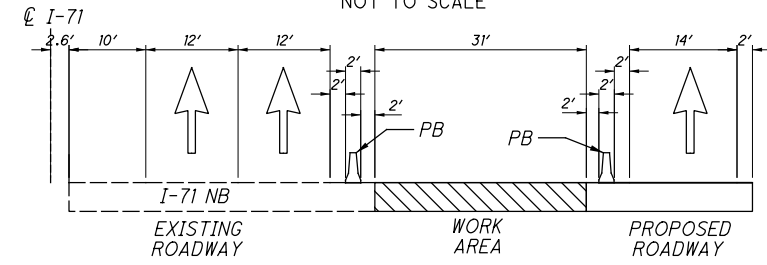
0 50 100
HORIZONTAL SCALE IN FEET

MAINTENANCE OF TRAFFIC PHASE 4

FRA-71-9.07



SECTION A-A
STA. 434+00
NOT TO SCALE



CALCULATED
BPT
CHECKED
EMW

0 50 100
25
HORIZONTAL
SCALE IN FEET

MAINTENANCE OF TRAFFIC
PHASE 4

FRA-71-9.07

- NOTES
- FOR MOT LEGEND, SEE SHEET 31
 - SINGLE LANE TAPERS FROM 16' AT STA. 426+05 TO 14' AT STA. 427+30
- * NOTIFICATION TO SPECIAL HAUL PERMITS OF WIDTH RESTRICTION

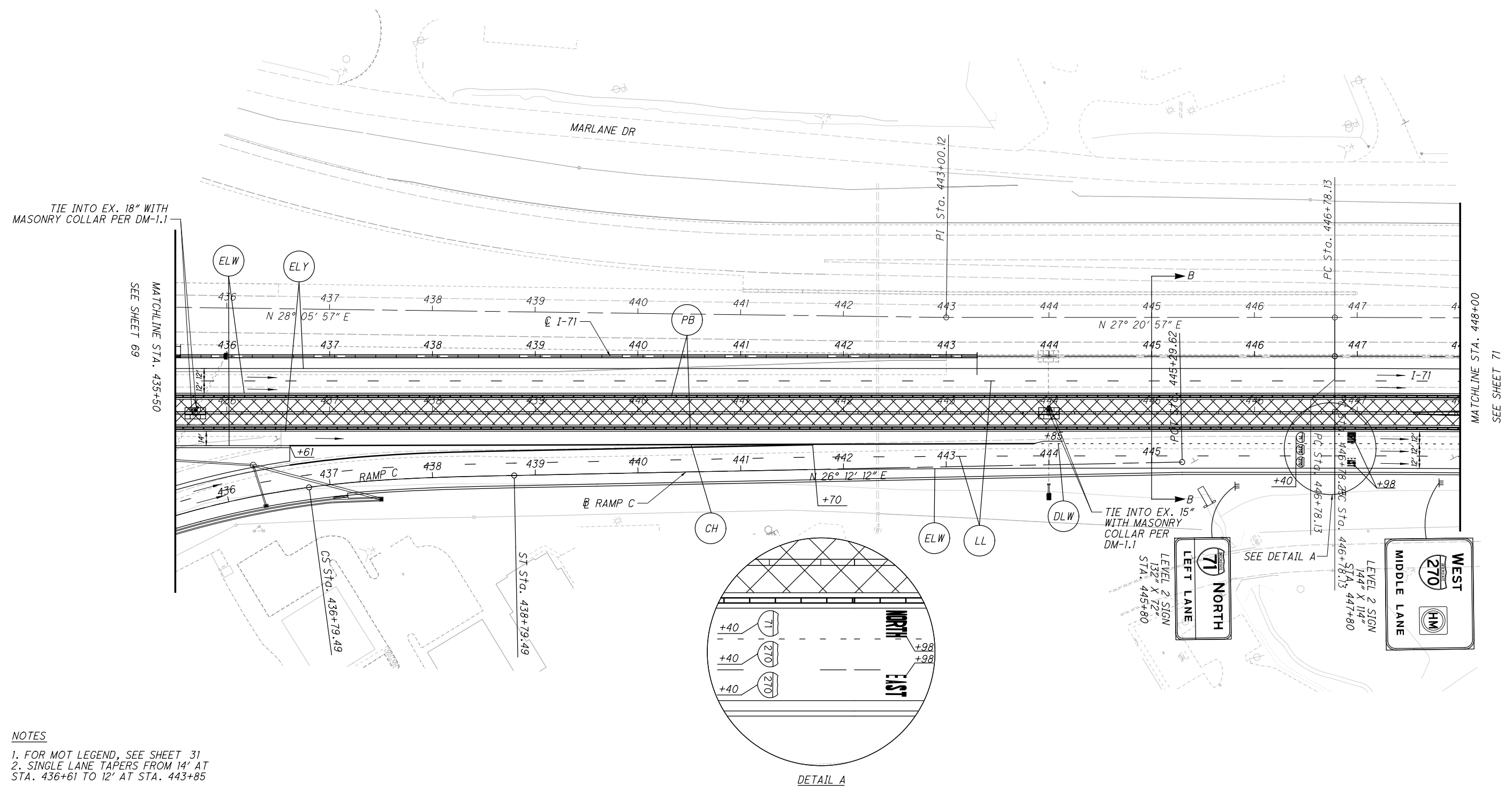
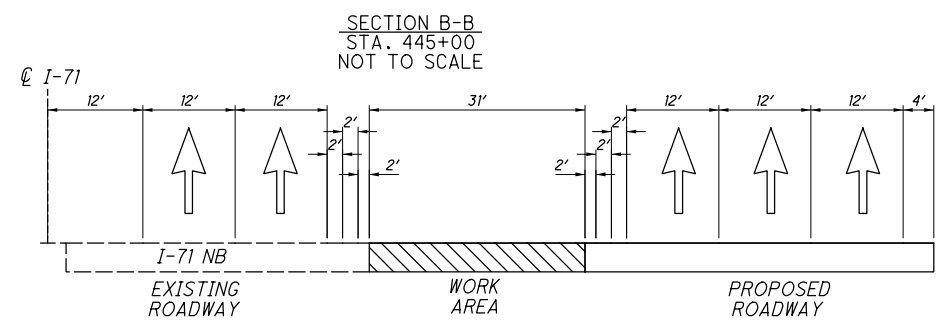


CALCULATED
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CHECKED
EMW

MAINTENANCE OF TRAFFIC PHASE 4

FRA-71-9.07

70
264



TIE INTO EX. 18" WITH MASONRY COLLAR PER DM-1.1

TIE INTO EX. 15" WITH MASONRY COLLAR PER DM-1.1

- NOTES
1. FOR MOT LEGEND, SEE SHEET 31
 2. SINGLE LANE TAPERS FROM 14' AT STA. 436+61 TO 12' AT STA. 443+85

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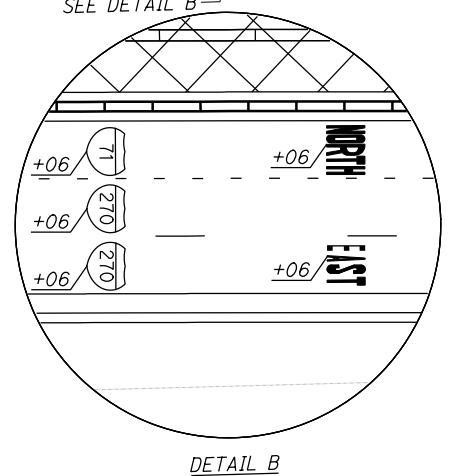
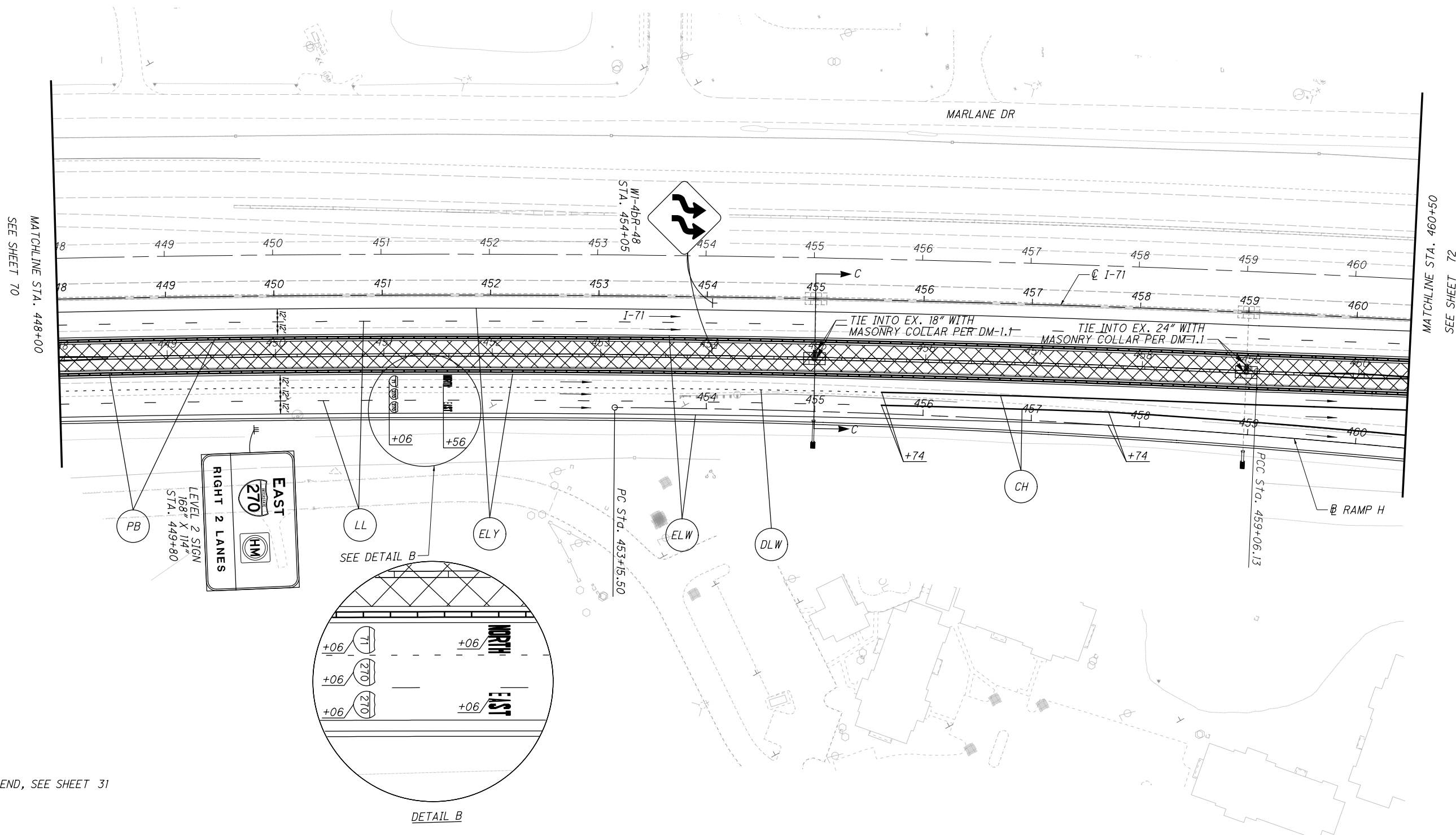
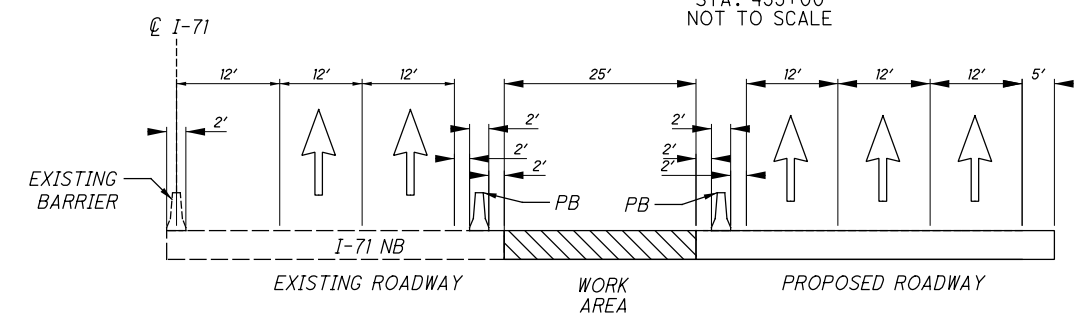
CALCULATED
BPT
CHECKED
EMW

MAINTENANCE OF TRAFFIC PHASE 4

FRA-71-9.07

71
264

SECTION C-C
STA. 455+00
NOT TO SCALE



NOTES
1. FOR MOT LEGEND, SEE SHEET 31

...Northbound\92615_MP4006 7/29/2019 2:57:30 PM worley

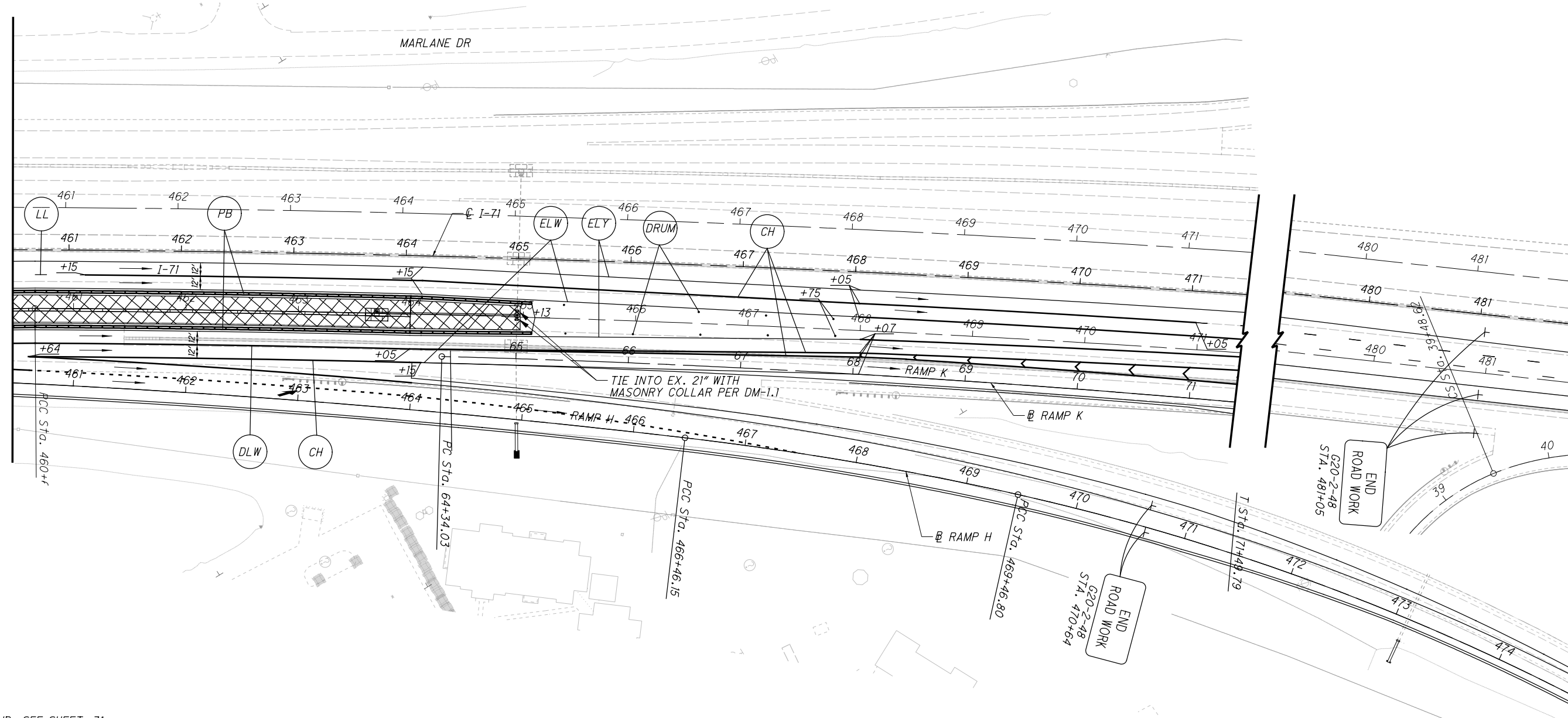


CALCULATED
BPT
CHECKED
EMW

**MAINTENANCE OF TRAFFIC
PHASE 4**

FRA-71-9.07

MATCHLINE STA. 460+50
SEE SHEET 71



NOTES

1. FOR MOT LEGEND, SEE SHEET 31

...Northbound_92615_MP4007 7/29/2019 2:57:38 PM worley

SHEET NUM.										PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
18	19	21	80	81	84	85	90	01/IMS/P V	02/IMS/P V								
															ROADWAY		
LS									LS		201	11000	LS		CLEARING AND GRUBBING		
			6						6		202	20010	6	EACH	HEADWALL REMOVED		
			4,085						4,085		202	23000	4,085	SY	PAVEMENT REMOVED		
			15,889						15,889		202	23010	15,889	SY	PAVEMENT REMOVED, ASPHALT		
			30,305						27,117	3,188	202	23500	30,305	SY	WEARING COURSE REMOVED		
									1,461		202	30700	1,461	FT	CONCRETE BARRIER REMOVED		
									77		202	35100	77	FT	PIPE REMOVED, 24" AND UNDER		
									16		202	35200	16	FT	PIPE REMOVED, OVER 24"		
									4,279		202	38000	4,279	FT	GUARDRAIL REMOVED		
									1		202	42010	1	EACH	ANCHOR ASSEMBLY REMOVED, TYPE E		
									2		202	47800	2	EACH	IMPACT ATTENUATOR REMOVED		
									2,291		202	48000	2,291	FT	CABLE BARRIER REMOVED		
					1				1		202	58000	1	EACH	MANHOLE REMOVED		
									3		202	58100	3	EACH	CATCH BASIN REMOVED		
									40,851		203	10000	40,851	CY	EXCAVATION		
									12,148		203	20000	12,148	CY	EMBANKMENT		
									1,857		204	10000	2,925	SY	SUBGRADE COMPACTION		
									1,068		204	13001	196	CY	EXCAVATION OF SUBGRADE, AS PER PLAN	21	
											204	30020	196	CY	GRANULAR MATERIAL, TYPE C		
											204	45000	30	HOUR	PROOF ROLLING		
20											204	50000	1,672	SY	GEOTEXTILE FABRIC		
											204	51000	185	SY	GEOGRID		
									988		206	10500	988	TON	CEMENT		
									38,180		206	11000	38,180	SY	CURING COAT		
									38,180		206	15010	38,180	SY	CEMENT STABILIZED SUBGRADE, 12 INCHES DEEP	21	
									LS		206	30000	LS		MIXTURE DESIGN FOR CHEMICALLY STABILIZED SOILS		
									7,075		606	15050	7,075	FT	GUARDRAIL, TYPE MGS		
									5		606	26150	5	EACH	ANCHOR ASSEMBLY, MGS TYPE E (MASH 2016)		
									4		606	26550	4	EACH	ANCHOR ASSEMBLY, MGS TYPE T		
									1		606	35002	1	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1		
									1		606	35102	1	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2		
									765		SPECIAL	60655000	765	FT	CABLE BARRIER	20	
									3		SPECIAL	60655150	3	EACH	CABLE BARRIER, ANCHOR ASSEMBLY	20	
									1		606	60022	1	EACH	IMPACT ATTENUATOR, TYPE 2 (UNIDIRECTIONAL) (70 MPH, 24")		
									1		606	60028	1	EACH	IMPACT ATTENUATOR, TYPE 2 (BIDIRECTIONAL) (70 MPH, 24")		
									1		606	60040	1	EACH	IMPACT ATTENUATOR, TYPE 3 UNIDIRECTIONAL (70 MPH, 24")		
									1,581		622	10060	1,581	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE B		
									2,956		622	10120	2,956	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE C		
									730		622	10140	730	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE C1		
									1		622	24841	1	EACH	CONCRETE BARRIER END SECTION, TYPE B, AS PER PLAN	209	
									2		622	24860	2	EACH	CONCRETE BARRIER END SECTION, TYPE C1		
									2		622	25000	2	EACH	CONCRETE BARRIER END SECTION, TYPE D		
									8		622	25004	8	EACH	CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE B		
									18		622	25008	18	EACH	CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE C		
									1		622	25009	1	EACH	CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE C, AS PER PLAN	209	
									1		622	25014	1	EACH	CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE C1		
									11,775		SPECIAL	69098300	11,775	SY	SUBGRADE ROCK REMOVAL	21	
									39,249		SPECIAL	69098300	39,249	SY	SUBGRADE EXPLORATION	21	

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SHEET NUM.							PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
20	21	28	81	85	242	249	01/IMS/P V	02/IMS/P V						
													PAVEMENT	
				23,174			20,736	2,438	254	01000	23,174	SY	PAVEMENT PLANING, ASPHALT CONCRETE (DEPTH VARIES)	
	103			11,572			10,447	1,228	302	46000	11,675	CY	ASPHALT CONCRETE BASE, PG64-22	
				7,506			7,506		304	20000	7,506	CY	AGGREGATE BASE	
				12,163			10,883	1,280	407	20000	12,163	GAL	NON-TRACKING TACK COAT	
				3,306			2,958	348	442	00100	3,306	CY	ANTI-SEGREGATION EQUIPMENT	
				248			248		442	10001	248	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (446), AS PER PLAN, PG76-22M	21
				2,729			2,442	287	442	10100	2,729	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (446)	
				3,265			2,922	343	442	10301	3,265	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (447), AS PER PLAN	21
				3,963			3,963		452	17010	3,963	SY	14" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC IP	
			18				18		609	24000	18	FT	CURB, TYPE 4-A	
		2,800					2,800		618	40101	2,800	FT	RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE), AS PER PLAN	26
2.33							2.33		618	40600	2.33	MILE	RUMBLE STRIPS, SHOULDER (ASPHALT CONCRETE)	
	10,830						10,830		875	10000	10,830	LB	LONGITUDINAL JOINT ADHESIVE	
													LIGHTING	
							22		625	00450	22	EACH	CONNECTION, FUSED PULL APART	
							15		625	00480	15	EACH	CONNECTION, UNFUSED PERMANENT	
							11		625	10490	11	EACH	LIGHT POLE, CONVENTIONAL, TRUSS ARM HIGH RISE, AT20B40	
							11		625	14100	11	EACH	LIGHT POLE FOUNDATION, 24" X 8' DEEP	
							44		625	23200	44	FT	NO. 4 AWG 2400 VOLT DISTRIBUTION CABLE	
							1,980		625	23400	1,980	FT	NO. 10 AWG POLE AND BRACKET CABLE	
							5,272		625	24100	5,272	FT	1-1/2" DUCT CABLE WITH TWO NO. 4 AWG 2400 VOLT CABLES	
							44		625	25500	44	FT	CONDUIT, 3", 725.04	
							1,175		625	25902	1,175	FT	CONDUIT, JACKED OR DRILLED, 725.04, 3"	
							11		625	26253	11	EACH	LUMINAIRE, CONVENTIONAL, SOLID STATE (LED), AS PER PLAN, ASYMMETRIC, 480V, HIGH OUTPUT	247
							5,316		625	29000	5,316	FT	TRENCH	
							5		625	30706	5	EACH	PULL BOX, 725.08, 24"	
							2		625	31510	2	EACH	PULL BOX REMOVED	
							11		625	32000	11	EACH	GROUND ROD	
							1		625	34001	1	EACH	POWER SERVICE, AS PER PLAN	247
							1		625	35010	1	EACH	REMOVE AND REERECT EXISTING LIGHT POLE	
							4,196		625	36000	4,196	FT	PLASTIC CAUTION TAPE	
							1		625	75510	1	EACH	POWER SERVICE REMOVED	
													TRAFFIC SURVEILLANCE	
							646		625	25408	646	FT	CONDUIT, 2", 725.051	
							166		625	25504	166	FT	CONDUIT, 3", 725.051	
							3,616		625	25750	3,616	FT	CONDUIT, 4", MULTICELL, 725.20, EPC-40, SCHEDULE 40	241
							63		625	25900	63	FT	CONDUIT, JACKED OR DRILLED, 3", 725.04	
							373		625	25900	373	FT	CONDUIT, JACKED OR DRILLED, 4" MULTICELL, 725.20, EPC-80	
							57		625	25920	57	FT	CONDUIT, MISC.: CONDUIT DUCT BANK; (2) 4" MULTICELL, 725.20, EPC-40	241
							527		625	25920	527	FT	CONDUIT, MISC.: CONDUIT DUCT BANK; (2) 4" MULTICELL, 725.20, EPC-40, (1) 1-1/2" 725.051	241
							4,427		625	29010	4,427	FT	TRENCH, 30" DEEP	
							2		625	29931	2	EACH	MEDIAN JUNCTION BOX, AS PER PLAN	241
							1		625	30700	1	EACH	PULL BOX, 725.08, 18"	
							8		625	30711	8	EACH	PULL BOX, 725.08, 32", AS PER PLAN, ROUND W/PAD	241
							12		625	31510	12	EACH	PULL BOX REMOVED	
							4		625	32000	4	EACH	GROUND ROD	
							1		625	34001	1	EACH	POWER SERVICE, AS PER PLAN	241
							4,427		625	36000	4,427	FT	PLASTIC CAUTION TAPE	
							6		632	26500	6	EACH	DETECTOR LOOP	
							549		632	40500	549	FT	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG	
							1,450		632	65300	1,450	FT	LOOP DETECTOR LEAD-IN CABLE, 2 CONDUCTOR, NO. 14 AWG	
							105		632	68200	105	FT	POWER CABLE, 2 CONDUCTOR, NO. 6 AWG	
							1		632	70400	1	EACH	CONDUIT RISER, 2" DIAMETER	

GENERAL SUMMARY

FRA - 71 - 9.07

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SHEET NUM.										PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
213	256	263								01/IMS/P V	02/IMS/P V						
RETAINING WALLS (WALL 1)																	
	LS									LS		503	11100	LS		COFFERDAMS AND EXCAVATION BRACING	
	270									270		503	21100	270	CY	UNCLASSIFIED EXCAVATION	
	12,152									12,152		509	10000	12,152	LB	EPOXY COATED REINFORCING STEEL	
	19									19		511	46010	19	CY	CLASS QC1 CONCRETE, RETAINING/WINGWALL NOT INCLUDING FOOTING	
	45									45		511	46510	45	CY	CLASS QC1 CONCRETE, FOOTING	
	108									108		512	10050	108	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)	
	9									9		512	33000	9	SY	TYPE 2 WATERPROOFING	
	14									14		516	13000	14	SF	1/4" PREFORMED EXPANSION JOINT FILLER	
	120									120		516	13600	120	SF	1" PREFORMED EXPANSION JOINT FILLER	
	5									5		516	31000	5	FT	JOINT SEALER	
	73									73		518	21200	73	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	
	180									180		518	40000	180	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	
	25									25		518	40010	25	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	
	180									180		622	10161	180	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN	256-258
NOISE BARRIERS																	
		366								366		202	75201	366	FT	FENCE REMOVED FOR REUSE, AS PER PLAN	264
		6								6		601	21050	6	SY	TIED CONCRETE BLOCK MAT, TYPE 1	
		500								500		605	13300	500	FT	6" UNCLASSIFIED PIPE UNDERDRAINS	
		9,504								9,504		SPECIAL	60610210	9,504	SF	NOISE BARRIER (REFLECTIVE)	262
		32								32		611	00510	32	FT	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	
		3								3		611	99710	3	EACH	PRECAST REINFORCED CONCRETE OUTLET	
STRUCTURE 20 FOOT SPAN AND UNDER (1812232)																	
	1									1		202	20010	1	EACH	HEADWALL REMOVED	
	8									8		202	35200	8	FT	PIPE REMOVED, OVER 24"	
	21									21		601	32100	21	CY	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER	
	2.8									2.8		602	20000	2.8	CY	CONCRETE MASONRY	
	19									19		611	26000	19	FT	72" CONDUIT, TYPE A	
	LS									LS		SPECIAL	69071000	LS		ASBESTOS ABATEMENT (CULVERT JOINT MATERIAL)	213

CALCULATED	MSW	CHECKED	WAA
GENERAL SUMMARY			
FRA - 71 - 9.07			
77			
264			

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SHEET NUM.										PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
										01/IMS/P V	02/IMS/P V						
28																	
																MAINTENANCE OF TRAFFIC	
800										800		614	11110	800	hour	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	25
23,790										23,790		614	11630	23,790	FT	INCREASED BARRIER DELINEATION	25
11										11		614	12346	11	EACH	WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL), 32"	23
LS										LS		614	12420	LS		DETOUR SIGNING	
3										3		614	12484	3	EACH	WORK ZONE INCREASED PENALTIES SIGN	23
50										50		614	12500	50	EACH	REPLACEMENT SIGN	22
100										100		614	12600	100	EACH	REPLACEMENT DRUM	23
999										999		614	12801	999	EACH	WORK ZONE RAISED PAVEMENT MARKER, AS PER PLAN	25
1,517										1,517		614	13310	1,517	EACH	BARRIER REFLECTOR, TYPE 1, ONE-WAY	25
74										74		614	13312	74	EACH	BARRIER REFLECTOR, TYPE 2, ONE-WAY	25
504										504		614	13350	504	EACH	OBJECT MARKER, ONE WAY	25
2										2		614	18601	2	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	24
7										7		614	20010	7	MILE	WORK ZONE LANE LINE, CLASS I, 6"	
4.5										4.5		614	20011	4.5	MILE	WORK ZONE LANE LINE, CLASS I, 6", AS PER PLAN, SPRAY THERMOPLASTIC	26
14.4										14.4		614	22010	14.4	MILE	WORK ZONE EDGE LINE, CLASS I, 6"	
7.8										7.8		614	22011	7.8	MILE	WORK ZONE EDGE LINE, CLASS I, 6", AS PER PLAN, SPRAY THERMOPLASTIC	26
34,518										34,518		614	23010	34,518	FT	WORK ZONE CHANNELIZING LINE, CLASS I, 12"	
19,811										19,811		614	23011	19,811	FT	WORK ZONE CHANNELIZING LINE, CLASS I, 12", AS PER PLAN, SPRAY THERMOPLASTIC	26
1,292										1,292		614	24001	1,292	FT	WORK ZONE DOTTED LINE, CLASS I, AS PER PLAN, 6", SPRAY THERMOPLASTIC	26
4,814										4,814		614	24001	4,814	FT	WORK ZONE DOTTED LINE, CLASS I, AS PER PLAN, 12", SPRAY THERMOPLASTIC	26
1,292										1,292		614	24200	1,292	FT	WORK ZONE DOTTED LINE, CLASS I, 642 PAINT, 6"	
6,987										6,987		614	24200	6,987	FT	WORK ZONE DOTTED LINE, CLASS I, 642 PAINT, 12"	
833										833		614	25200	833	FT	WORK ZONE TRANSVERSE/DIAGONAL LINE, CLASS I, 642 PAINT	
3										3		614	30001	3	EACH	WORK ZONE ARROW, CLASS I, AS PER PLAN	26
4										4		614	98200	4	EACH	WORK ZONE PAVEMENT MARKING, MISC.: WORD ON PAVEMENT	22
6										6		614	98200	6	EACH	WORK ZONE PAVEMENT MARKING, MISC.: ROUTE SHIELD	22
LS										LS		615	10000	LS		ROADS FOR MAINTAINING TRAFFIC	
454										454		615	25000	454	SY	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS B	
216										216		616	10000	216	MGAL	WATER	22
23,790										23,790		622	41000	23,790	FT	PORTABLE BARRIER, 32"	
2										2		622	41050	2	EACH	PORTABLE BARRIER, "Y" CONNECTOR	
165										165		808	18700	165	SNMT	DIGITAL SPEED LIMIT (DSL) SIGN ASSEMBLY	23
																INCIDENTALS	
										LS	LS	108	10000	LS		CPM PROGRESS SCHEDULE	
LS										LS	LS	614	11001	LS		MAINTAINING TRAFFIC, AS PER PLAN	22
										14	2	619	16021	16	MNTH	FIELD OFFICE, TYPE C, AS PER PLAN	21
										LS	LS	623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
										LS	LS	624	10000	LS		MOBILIZATION	

CALCULATED	MSW	CHECKED	WAA
GENERAL SUMMARY			
FRA - 71 - 9.07			
78			
264			

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SHEET NO.	REFERENCE NO.	ALIGNMENT	STATION		SIDE	202	202	202	202	202	202	202	202	202	202	202	202	202	202
						HEADWALL REMOVED	PAVEMENT REMOVED	PAVEMENT REMOVED, ASPHALT	WEARING COURSE REMOVED	CONCRETE BARRIER REMOVED	PIPE REMOVED, 24" AND UNDER	PIPE REMOVED, OVER 24"	GUARDRAIL REMOVED	ANCHOR ASSEMBLY REMOVED, TYPE E	IMPACT ATTENUATOR REMOVED	CABLE BARRIER REMOVED	CATCH BASIN REMOVED		
			EACH	SY		SY	SY	FT	FT	FT	FT	EACH	EACH	FT	EACH				
			FROM	TO															
93	R-1	IR-71 NB	478+50.00	491+00.00	RT				6,315.9										
93	R-2	IR-71 NB	479+26.51	491+00.00	RT			2,977.5											
93	R-3	IR-71 NB	482+05.01	485+54.94	RT													350	
93	R-4	IR-71 NB	485+05.01	485+54.94	RT									1					
94	R-5	IR-71 NB	491+00.00	426+00.00	RT				4,521.4										
94	R-6	IR-71 NB	423+09.91	424+57.66	RT			17.4											
94	R-7	IR-71 NB	491+00.00	426+00.00	RT			3,383.4											
94	R-8	IR-71 NB	423+10.33	427+47.44	RT													437	
94	R-9	IR-71 NB	494+70.52	494+75.14	RT							8.0							
95	R-15	IR-71 NB	426+00.00	438+50.00	RT				1,913.1										
95	R-16	IR-71 NB	426+00.00	431+57.34	RT			1,983.5											
95	R-18	IR-71 NB	429+01.59	443+00.00	RT													1,399	
95	R-19	IR-71 NB	432+88.75	434+13.75	RT								125.0						
95	R-20	IR-71 NB	435+67.46	435+71.44	RT						8.0								
95	R-21	IR-71 NB	430+52.78	431+57.34	LT													105	
96	R-25	IR-71 NB	442+68.00	443+00.00	CL														
96	R-26	IR-71 NB	443+00.00	443+30.00	CL					30.0									
96	R-27	IR-71 NB	438+50.00	451+00.00	RT				2,693.1										
96	R-28	IR-71 NB	445+42.22	445+58.47	RT	1						7.7							
96	R-29	IR-71 NB	443+98.53	444+01.03	RT	1													
97	R-33	IR-71 NB	451+00.00	463+50.00	RT				3,327.7										
97	R-34	IR-71 NB	461+49.45	461+81.59	RT														
97	R-35	IR-71 NB	461+81.59	476+18.91	RT					1,430.8									
97	R-36	IR-71 NB	455+00.00		RT						8.2								
97	R-37	IR-71 NB	453+78.00	456+33.00	RT								253.0						
98	R-43	IR-71 NB	463+50.00	476+00.00	RT				6,485.6										
98	R-44	IR-71 NB	464+86.65		RT						8.0								
99	R-51	IR-71 NB	476+00.00	476+58.98	RT				338.8										
99	R-52	IR-71 NB	478+35.96	483+41.58	RT				2,938.7										
100	R-60	RAMP D	479+26.51	495+16.06	RT								1,525.0						
102	R-64	RAMP D	489+57.33	489+61.33	RT	1													
103	R-69	RAMP D	494+46.90		LT														
103	R-70	RAMP D	491+05.14	495+00.00	LT/RT			1,091.8										1	
104	R-76	RAMP D	495+00.00	497+80.00	LT/RT			776.8											
110	R-83	RAMP C	430+80.00	433+00.00	LT/RT			908.5											
111	R-85	RAMP C	433+00.00	436+66.55	LT			1,307.4											
111	R-86	RAMP C	435+57.50		LT														
111	R-87	RAMP C	435+57.50	435+69.93	LT					52.5								1	
111	R-88	RAMP C	435+69.93		LT													1	
SUBTOTAL CARRIED TO SHEET 80						3	4,084.6	8,361.7	28,534.3	1,460.8	76.7	15.7	1,903	1	2	2,291		3	

REMOVAL ESTIMATED QUANTITIES

FRA - 71 - 9.07

CALCULATED
MSW
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SHEET NO.	REFERENCE NO.	ALIGNMENT	STATION		SIDE	202	202	202	202	202	202	202	202	202	202	202	202	202	202
						HEADWALL REMOVED	PAVEMENT REMOVED	PAVEMENT REMOVED, ASPHALT	WEARING COURSE REMOVED	CONCRETE BARRIER REMOVED	PIPE REMOVED, 24" AND UNDER	PIPE REMOVED, OVER 24"	GUARDRAIL REMOVED	ANCHOR ASSEMBLY REMOVED, TYPE E	IMPACT ATTENUATOR REMOVED	CABLE BARRIER REMOVED		CATCH BASIN REMOVED	
			EACH	SY		SY	SY	FT	FT	FT	FT	EACH	EACH	FT		EACH			
			FROM	TO															
114	R-105	RAMP H	454+97.76	455+00.76	RT	1													
114	R-106	RAMP H	457+26.20	458+00.00	LT			65.7											
115	R-115	RAMP H	458+00.00	463+00.00				1183.8											
115	R-116	RAMP H	458+57.63	460+33.31	LT							176							
115	R-117	RAMP H	458+94.99	458+98.99	RT	1													
115	R-118	RAMP H	462+85.57	466+69.40	LT							385							
116	R-125	RAMP H	463+00.00	468+00.00				1774.9											
116	R-126	RAMP H	464+93.28	464+97.86	RT	1													
117	R-133	RAMP H	468+00.00	473+00.00	LT/RT			1454.9											
117	R-134	RAMP H	468+50.10	475+34.73	RT							689							
117	R-135	RAMP H	468+23.97	475+49.48	LT							740							
118	R-142	RAMP H	473+00.00	478+00.00	LT/RT			1432.4											
118	R-143	RAMP H	473+10.78		RT	1													
119	R-147	RAMP H	478+00.00	480+43.41	LT/RT			696.0											
120	R-154	RAMP K	67+19.21	69+50.00	RT			374.8											
120	R-155	RAMP K	67+86.53	71+75.74	LT							386							
121	R-158	RAMP K	69+50.00	74+50.00	RT			502.4											
122	R-161	RAMP K	74+50.00	76+12.48	RT			108.4											
122	R-162	RAMP K	71+75.74	76+12.48	LT				1770.2										
SUBTOTAL THIS SHEET						3		7,527	1,770			2,376							
SUBTOTAL FROM SHEET 79						3	4,085	8,362	28,534	1,461	77	16	1,903	1	2	2,291		3	
TOTAL CARRIED TO GENERAL SUMMARY						6	4,085	15,889	30,305	1,461	77	16	4,279	1	2	2,291		3	

REMOVAL ESTIMATED QUANTITIES

FRA - 71 - 9.07

CALCULATED
MSW
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WAA

SHEET NO.	REFERENCE NO.	ALIGNMENT	STATION		SIDE	606	606	606	606	606	606	606	606	606	609	622	622	622	622	622	622	622	622	622		
			FROM	TO		GUARDRAIL, TYPE MGS	ANCHOR ASSEMBLY, MGS TYPE E (MASH 2016)	ANCHOR ASSEMBLY, MGS TYPE T	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2	SPECIAL - CABLE BARRIER	SPECIAL - CABLE BARRIER, ANCHOR ASSEMBLY	IMPACT ATTENUATOR, TYPE 2 (UNIDIRECTIONAL)	IMPACT ATTENUATOR, TYPE 2 (BIDIRECTIONAL)	IMPACT ATTENUATOR, TYPE 3 (UNIDIRECTIONAL)	CURB, TYPE 4-A	CONCRETE BARRIER, SINGLE SLOPE, TYPE B	CONCRETE BARRIER, SINGLE SLOPE, TYPE C	CONCRETE BARRIER, SINGLE SLOPE, TYPE C1	CONCRETE BARRIER, SINGLE SLOPE, END SECTION, TYPE B, AS PER PLAN	CONCRETE BARRIER, SINGLE SLOPE, END SECTION, TYPE C1	CONCRETE BARRIER, SINGLE SLOPE, END SECTION, TYPE D	CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE B	CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE C	CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE C, AS PER PLAN	CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE C1
			FT	EACH		EACH	EACH	EACH	FT	EACH	EACH	EACH	EACH	EACH	FT	FT	FT	FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
92	GR-1	IR-71 NB	381+48.38	383+14.00	RT	100.0	1	1																		
93	GR-2	IR-71 NB	482+02.49	485+54.94	RT	300	1																			
93	GR-3	IR-71 NB	482+05.01	482+54.94	RT																					
94	I-1	IR-71 NB	491+10.31		RT																					
94	B-1	IR-71 NB	491+10.31	497+42.66	RT																					
94	B-2	IR-71 NB	420+00.00		RT																					
94	CB-1	IR-71 NB	423+09.90	426+72.62	RT																					
94	GR-4	IR-71 NB	424+39.22	428+64.16	RT	362.5	1	1																		
95	CB-3	IR-71 NB	430+52.78	435+55.00	RT																					
95	B-4	IR-71 NB	426+00.00	431+57.34	RT																					
95	B-5	IR-71 NB	431+57.34	438+50.00	RT																					
95	B-6	IR-71 NB	435+54.90	443+30.00	CL																					
95	I-2	IR-71 NB	435+54.90		CL																					
96	B-8	IR-71 NB	438+50.00	451+00.00	RT																					
96	GR-5	IR-71 NB	445+29.86	453+15.50	RT	781.50																				
97	B-10	IR-71 NB	451+00.00	464+05.00	RT																					
98	I-3	IR-71 NB	474+84.82		RT																					
98	B-12	IR-71 NB	474+84.82	476+18.91	RT																					
100	GR-6	RAMP D	479+87.69	495+64.67	RT	1,562.5		1																		
110	GR-8	RAMP C	432+75.13	435+05.80	RT	150.0	1		1																	
111	B-14	RAMP C	435+05.80	435+19.99	RT																					
111	B-15	RAMP C	437+02.04	437+16.21	RT																					
111	GR-9	RAMP C	437+14.19	445+29.50	RT	814.38																				
114	GR-11	RAMP H	453+15.50	480+15.79	RT	2,679.12		1																		
120	GR-13	RAMP K	67+97.41	71+75.70	RT	325.0	1																			
TOTAL CARRIED TO GENERAL SUMMARY						7,075.0	5	4	1	1	765	3	1	1	1	18	1,581	2,956	730	1	2	2	8	18	1	1

REF NO.	SHEET NO.	STATION TO STATION		670	670	601	670	611	611	611	611	202																												
				DITCH EROSION PROTECTION	SLOPE EROSION PROTECTION	TIED CONCRETE BLOCK MAT, TYPE 2	DITCH EROSION PROTECTION MAT, TYPE G	CATCH BASIN ADJUSTED TO GRADE, AS PER PLAN	CATCH BASIN RECONSTRUCTED TO GRADE, AS PER PLAN	MANHOLE RECONSTRUCTED TO GRADE, AS PER PLAN	MANHOLE, NO. 3	MANHOLE REMOVED	SY	SY	SY	SY	EACH	EACH	EACH	EACH	EACH																			
E10	95	429+00.00, 115.86' RT	TO	435+00.00, 103.87' RT	1756																																			
E12	95	433+94.27, 168.34' RT	TO	435+39.16, 104.91' RT	133																																			
E13	95	435+58.48, 104.57' RT	TO	436+59.97, 91.99' RT	85																																			
E14	95	437+57.06, 142.46' RT	TO	438+50.00, 139.37' RT	78																																			
E15	96	438+50.00, 139.37' RT	TO	439+00.07, 138.48' RT	42																																			
E17	96	445+00.84, 144.01' RT	TO	445+59.41, 158.39' RT	69																																			
E18	98	463+98.22, 166.28' RT	TO	465+05.13, 179.68' RT			130																																	
E20	98	468+00.00, 140.18' RT	TO	471+00.00, 189.83' RT		477																																		
E21	98	468+00.00, 134.39' RT	TO	471+00.00, 173.79' RT	483																																			
E22	98	468+00.00, 125.89' RT	TO	471+00.00, 164.19' RT		1489																																		
E11	110	430+80.00, 51.16' LT	TO	432+50.00, 45.31' LT		379																																		
E23	117	468+01.15, 27.85' RT	TO	473+00.52, 37.74' RT			613																																	
E24	117	470+84.84, 33.14' LT	TO	473+00.00, 53.15' LT		807																																		
E25	118	472+99.98, 48.73' RT	TO	474+00.77, 36.28' RT	122																																			
E26	118	473+00.00, 20.00' LT	TO	475+50.00, 20.00' LT		834																																		
E27	118	477+50.00, 35.75' LT	TO	478+00.00, 35.75' LT	386																																			
E28	119	478+00.00, 35.75' LT	TO	478+93.22, 35.38' LT	80																																			
E29	119	479+06.78, 35.85' LT	TO	479+77.13, 37.44' LT	60																																			
D35	22	479+96.82, 32.08' LT							1																															
D38	47	435+43.66, 101.00' RT							1																															
D37	61	428+27.36, 9.00' LT									1	1																												
D34	64	465+00.09, 78.00' RT						1																																
D36	69	425+72.34, 9.90' RT								1																														
TOTALS CARRIED TO GENERAL SUMMARY					1538	5742	613	130	1	2	1	1	1																											

CALCULATED
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DRAINAGE SUBSUMMARY

FRA - 71 - 9 . 07

ESTIMATED QUANTITIES SHEET NO.	204	204	206	206	206	206	254	254	302	302	302	304	407	407	442	442	442	442	452
	PROOF ROLLING	SUBGRADE COMPACTION	CEMENT	CURING COAT	CEMENT STABILIZED SUBGRADE, 12" DEEP	MIXTURE DESIGN FOR CHEMICALLY STABILIZED SOILS	PAVEMENT PLANING, ASPHALT CONCRETE, PARTIAL	PAVEMENT PLANING, ASPHALT CONCRETE, VARIABLE	4" ASPHALT CONCRETE BASE	9.5" ASPHALT CONCRETE BASE	12" ASPHALT CONCRETE BASE	AGGREGATE BASE (DEPTH VARIES)	NON-TRACKING TACK COAT (@0.06 GAL/SY)	NON-TRACKING TACK COAT (@0.09 GAL/SY)	ANTI-SEGREGATION EQUIPMENT	1-1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A (446), AS PER PLAN, PG76-22M	1-3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446)	1-1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A (447), AS PER PLAN	14" NON-REINFORCED CONCRETE PAVEMENT, CLASS OC IP
	HR	SY	TON	SY	SY	LS	SY	SY	CY	CY	CY	CY	GAL	GAL	CY	CY	CY	CY	SY
86	4.82	265.27	243.98	9,429.13	9,429.13				237.03	330.92	2,814.57	1,783.24	1,877.45	1,454.32	702.45		623.92	1,030.33	
87	6.57	803.16	319.43	12,345.21	12,345.21				1,303.03	3,461.41		3,003.73	3,401.71	3,115.98	1,849.52		1,562.31	1,883.20	
88	8.19		424.50	16,405.95	16,405.95					1,640.74	1,784.79	2,719.48	2,026.84	287.16	753.54	247.59	543.04	350.82	3,963.18
89							14,527.00	8,647.00											
SUBTOTALS THIS SHEETS																			
	19.58	1,068.44	987.92	38,180.29	38,180.29		14,527.00	8,647.00	1,540.05	5,433.07	4,599.37	7,506.45	7,306.00	4,857.46	3,305.51	247.59	2,729.27	3,264.34	3,963.18
TOTALS CARRIED TO GENERAL NOTES																			
	20				38,180														
TOTALS CARRIED TO GENERAL SUMMARY																			
		1,068	988	38,180		LS	23,174		11,572		7,506	12,163	3,306	248	2,729	3,265	3,963		

PAVEMENT SUBSUMMARY	CALCULATED
	MSW CHECKED WAA
FRA - 71 - 9 . 07	(85 / 264)

...303.02\Northbound\92615_GQ501 12/5/2019 1:09:24 PM gchershey

PAV'T AREA	STATION		SIDE	LENGTH (ALONG CURB OR EDGE LINE) LF	AREA (FROM CADD) SQ FT	204	204	206	206	206	254	254	302	302	302	304	407	407	442	442	442	442	452	
	FROM	TO				PROOF ROLLING HR	SUBGRADE COMPACTION SY	CEMENT TON	CURING COAT SY	CEMENT STABILIZED SUBGRADE, 12" DEEP SY	PAVEMENT PLANING, ASPHALT CONCRETE, PARTIAL SY	PAVEMENT PLANING, ASPHALT CONCRETE, VARIABLE SY	4" ASPHALT CONCRETE BASE CY	9.5" ASPHALT CONCRETE BASE CY	12" ASPHALT CONCRETE BASE CY	AGGREGATE BASE (DEPTH VARIES) CY	NON-TRACKING TACK COAT (@0.06 GAL/SY) GAL	NON-TRACKING TACK COAT (@0.09 GAL/SY) GAL	ANTI-SEGREGATION EQUIPMENT CY	1-1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A (446), AS PER PLAN, PG76-22M CY	1-3/4" ASPHALT CONCRETE INTERMEDIATE COURSE, 19MM, TYPE A (446) CY	1-1/2" ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE A (447), AS PER PLAN CY	14" NON-REINFORCED CONCRETE PAVEMENT, CLASS OC IP SY	
IR-71 NB																								
FREEWAY SURFACE COURSE	475+07.68	476+52.46	RT		1,770.24													17.70	8.20				8.20	
SHOULDER SURFACE COURSE	476+18.92	476+52.46	RT		500.75													5.01					2.32	
FREEWAY SURFACE COURSE	478+33.97	483+39.25			12,089.64													120.90	55.97				55.97	
FREEWAY SURFACE COURSE	478+33.97	483+39.25	RT		6,017.92													60.18	27.86				27.86	
SHOULDER SURFACE COURSE	478+33.97	483+39.25			1,947.93													19.48					9.02	
SHOULDER SURFACE COURSE	478+33.97	483+39.25	RT		6,389.91													63.90					29.58	
RAMP J																								
FULL DEPTH FREEWAY	485+42.29	492+39.13	RT		18,894.64	1.05		54.32	2,099.40	2,099.40					699.80	349.90	377.89		189.53			102.05	87.48	
FULL DEPTH SHOULDER	485+42.29	492+39.13	RT		8,390.80	0.47		24.12	932.31	932.31					310.77	155.39	167.82					45.32	38.85	
+ASPH EDGE COURSE TYPE 1	485+42.29	492+39.13	RT	703.83		0.07		3.37	130.34	130.34					19.55	19.55	2.35							
FULL DEPTH SHOULDER	490+68.87	492+39.13	RT		1,106.50	0.06		3.18	122.94	122.94					40.98	20.49	22.13					5.98	5.12	
FULL DEPTH FREEWAY	492+39.13	423+10.00	RT		13,380.51	0.74		38.47	1,486.72	1,486.72					495.57	247.79	267.61		134.22			72.27	61.95	
FULL DEPTH SHOULDER	492+39.13	423+10.00	RT		5,288.23	0.29		15.20	587.58	587.58					195.86	97.93	105.76					28.56	24.48	
+ASPH EDGE COURSE TYPE 1	492+39.13	423+10.00	RT	801.21		0.07		3.84	148.37	148.37					22.26	22.26	2.67							
RAMP D																								
FULL DEPTH CONCRETE RAMP	492+70.84	497+80.00			12,915.82	0.72		37.13	1,435.09	1,435.09														1,435.09
+RAMP EDGE COURSE TYPE 3	492+70.84	497+80.00	RT	506.84		0.04		2.19	84.47	84.47								14.08						
+RAMP EDGE COURSE TYPE 3	492+70.84	497+80.00	LT	516.64		0.04		2.23	86.11	86.11								14.35						
RAMP C																								
FULL DEPTH CONCRETE RAMP	430+80.00	436+64.70			22,752.82	1.26		65.41	2,528.09	2,528.09														2,528.09
+RAMP EDGE COURSE TYPE 3	430+80.00	436+64.70	LT	599.80		0.05		2.59	99.97	99.97								16.66						
+RAMP EDGE COURSE TYPE 3	430+80.00	435+05.71	RT	424.00		0.04		1.83	70.67	70.67								11.78						
+RAMP EDGE COURSE TYPE 4	435+05.71	436+64.70	RT	113.36		0.01		1.03	39.89	39.89								6.65						
RAMP H																								
FULL DEPTH FREEWAY	463+99.08	480.43.41			33,672.81	1.87		96.81	3,741.42	3,741.42					987.32		623.57	673.46		337.77	155.89	181.87		
FULL DEPTH SHOULDER	463+99.08	480.43.41	RT		13,159.65	0.73		37.83	1,462.18	1,462.18					385.85		243.70	263.19				60.92	71.08	
+ASPH EDGE COURSE TYPE 1	463+99.08	480.43.41	RT	1,641.57		0.15		7.87	303.99	303.99					36.10		45.60	5.47						
FULL DEPTH SHOULDER	463+99.08	480.43.41	LT		6,647.63	0.37		19.11	738.63	738.63					194.92		123.10	132.95				30.78	35.91	
+ASPH EDGE COURSE TYPE 1	463+99.08	480.43.41	LT	1,661.96		0.15		7.96	307.77	307.77					36.55		46.17	5.54						
SUBTOTAL CARRIED TO SHEET 85						8.19		424.50	16,405.95	16,405.95				1,640.74	1,784.79	2,719.48	2,026.84	287.16	753.54	247.59	543.04	350.82	3,963.18	

CALCULATED MSW CHECKED WAA
PAVEMENT ESTIMATED QUANTITIES
FRA - 71 - 9.07

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PAV'T AREA	STATION		SIDE	LENGTH (ALONG CURB OR EDGE LINE) LF	AREA (FROM CADD) SQ FT	204	204	206	206	206	254	254	302	302	302	304	407	407	442	442	442	442	452	
	FROM	TO				HR	SY	TON	SY	CY	SY	SY	CY	CY	CY	CY	CY	CY	CY	CY	CY	CY	CY	CY
IR 71-NB																								
MAINLINE LEFT LANE/SHLDR	423+09.93	426+00.00	LT								373.00													
MAINLINE LEFT LANE/SHLDR	426+00.00	438+50.00	LT								1,672.00													
CD LANE	431+57.34	438+50.00	RT								1,416.00													
SHLDRS ALONG CD BARRIER	431+57.34	438+50.00	LT/RT									1,846.00												
MAINLINE LEFT LANE/SHLDR	438+50.00	443+29.97	LT								639.00													
CD LANE	438+50.00	451+00.00	RT								3,454.00													
SHLDRS ALONG CD BARRIER	438+50.00	451+00.00	LT/RT									3,330.00												
CD LANE	451+00.00	463+50.00	RT								2,946.00													
SHLDRS ALONG CD BARRIER	451+00.00	463+50.00	RT									3,324.00												
CD LANE	463+50.00	476+00.00	RT								3,985.00													
SHLDRS ALONG CD BARRIER	463+50.00	464+05.00	LT/RT									147.00												
CD LANE	476+00.00	476+18.92	RT								42.00													
SUBTOTAL CARRIED TO SHEET 85											14,527.00	8,647.00												

PAVEMENT ESTIMATED QUANTITIES

FRA - 71 - 9.07

CALCULATED
MSW
CHECKED
WAA

SHEET NO.	STATION		203	203	659
			EXCAVATION	EMBANKMENT	SEEDING AND MULCHING
	FROM	TO	CY	CY	SY
IR-71 NORTHBOUND					
124	478+89.27	480+00.00	62		13
125	480+50.00	481+50.00	132	6	121
126	482+00.00	483+00.00	143	35	218
127	483+50.00	485+00.00	244	40	277
128	485+50.00	487+00.00	432	209	428
129	487+50.00	488+50.00	1,027	753	1,347
130	489+00.00	490+50.00	1,135	673	1,869
131	491+00.00	492+50.00	1,113	876	1,663
132	493+00.00	494+50.00	480	286	531
133	495+00.00	496+50.00	1,112	84	1,008
134	497+00.00		503		340
135	420+00.00	421+50.00	2,306	25	1,459
136	422+00.00	423+50.00	2,341	30	1,557
137	424+00.00	425+50.00	2,314	94	1,877
138	426+00.00	427+50.00	1,759	15	1,158
139	428+00.00	429+50.00	1,471	70	1,180
140	430+00.00	431+50.00	1,988	157	1,666
141	432+00.00	433+50.00	1,517	149	1,557
142	434+00.00	435+50.00	863	115	1,357
143	436+00.00	437+50.00	544	18	659
144	438+00.00	439+50.00	558	26	501
145	440+00.00	441+50.00	504	38	484
146	442+00.00	443+50.00	439	162	531
147	444+00.00	445+50.00	172	389	642
148	446+00.00	447+50.00	220	398	771
149	448+00.00	449+50.00	260	387	812
150	450+00.00	451+50.00	257	352	869
151	452+00.00	453+50.00	246	341	739
152	454+00.00	455+50.00	285	470	791
153	456+00.00	457+50.00	315	466	793
154	458+00.00	459+50.00	422	447	762
155	460+00.00	461+50.00	794	385	694
156	462+00.00	463+50.00	548	605	706
157	464+00.00	465+50.00	294	234	492
158	466+00.00	467+50.00	426		725
159	468+00.00	469+50.00	937		1,219
160	470+00.00	471+50.00	553	378	1,678
161	472+00.00	473+00.00	76		116
162	473+50.00	474+50.00	72		94
163	475+00.00	475+50.00	46		47
164	476+00.00	476+50.00	47		28
IR-71 NB SUBTOTAL:			28,957	8,713	33,779

SHEET NO.	STATION		203	203	659
			EXCAVATION	EMBANKMENT	SEEDING AND MULCHING
	FROM	TO	CY	CY	SY
RAMP D					
165	492+70.84	493+50.00	132	304	289
166	494+00.00	495+00.00	70	157	376
167	495+50.00	496+50.00	302	127	880
168	497+00.00	498+00.00	120	15	245
RAMP D SUBTOTAL:			624	603	1,790
RAMP C					
169	430+50.00	431+00.00	45	1	146
170	431+50.00	432+50.00	234	39	869
171	433+00.00	433+50.00	304	24	668
172	434+00.00	434+50.00	516	4	672
173	435+00.00	435+50.00	496	18	580
174	436+00.00	436+64.70	393	36	424
RAMP C SUBTOTAL:			1,988	122	3,359
RAMP H					
175	463+99.08	465+00.00	133	349	342
176	465+50.00	466+50.00	482	439	645
177	467+00.00	468+00.00	556	156	542
178	468+50.00	469+50.00	397	1	799
179	470+00.00	470+50.00	1,941		930
180	471+00.00	472+00.00	1,933	253	1,457
181	472+50.00	473+00.00	605	577	955
182	473+50.00	474+00.00	356	618	802
183	474+50.00	475+00.00	291	253	643
184	475+50.00	476+00.00	861	12	828
185	476+50.00	477+00.00	746		937
186	477+50.00	478+00.00	455	1	856
187	478+50.00	479+00.00	275	36	847
188	479+50.00	480+00.00	200	15	532
189	480+50.00	481+00.00	51		230
RAMP H SUBTOTAL:			9,282	2,710	11,345
GRAND TOTALS CARRIED TO GENERAL NOTES					50,273
GRAND TOTALS CARRIED TO GENERAL SUMMARY			40,851	12,148	

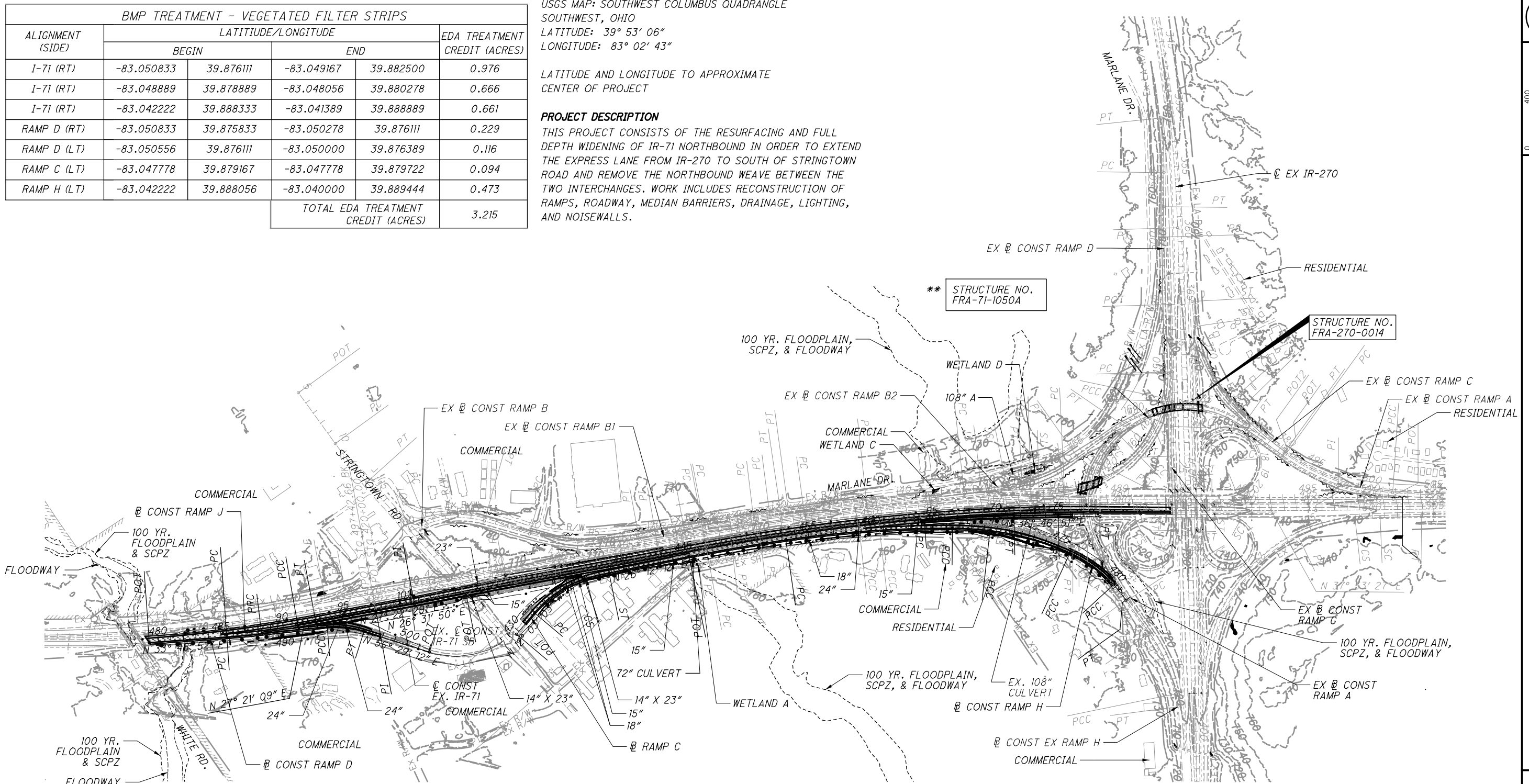
BMP TREATMENT - VEGETATED FILTER STRIPS					
ALIGNMENT (SIDE)	LATITUDE/LONGITUDE				EDA TREATMENT CREDIT (ACRES)
	BEGIN		END		
I-71 (RT)	-83.050833	39.876111	-83.049167	39.882500	0.976
I-71 (RT)	-83.048889	39.878889	-83.048056	39.880278	0.666
I-71 (RT)	-83.042222	39.888333	-83.041389	39.888889	0.661
RAMP D (RT)	-83.050833	39.875833	-83.050278	39.876111	0.229
RAMP D (LT)	-83.050556	39.876111	-83.050000	39.876389	0.116
RAMP C (LT)	-83.047778	39.879167	-83.047778	39.879722	0.094
RAMP H (LT)	-83.042222	39.888056	-83.040000	39.889444	0.473
TOTAL EDA TREATMENT CREDIT (ACRES)					3.215

USGS MAP: SOUTHWEST COLUMBUS QUADRANGLE
 SOUTHWEST, OHIO
 LATITUDE: 39° 53' 06"
 LONGITUDE: 83° 02' 43"

LATITUDE AND LONGITUDE TO APPROXIMATE CENTER OF PROJECT

PROJECT DESCRIPTION

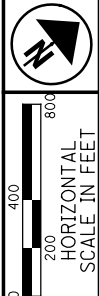
THIS PROJECT CONSISTS OF THE RESURFACING AND FULL DEPTH WIDENING OF I-71 NORTHBOUND IN ORDER TO EXTEND THE EXPRESS LANE FROM I-270 TO SOUTH OF STRINGTOWN ROAD AND REMOVE THE NORTHBOUND WEAVE BETWEEN THE TWO INTERCHANGES. WORK INCLUDES RECONSTRUCTION OF RAMPS, ROADWAY, MEDIAN BARRIERS, DRAINAGE, LIGHTING, AND NOISEWALLS.



PROJECT DATA	
TOTAL AREA (RIGHT-OF-WAY)	55.13 ACRES
PROJECT EARTH DISTURBED AREA (TOTAL)	15.55 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA	2.96 ACRES
NOI EARTH DISTURBED AREA	18.51 ACRES
RUNOFF COEFFICIENT FOR PRE-CONSTRUCTION SITE	0.81
RUNOFF COEFFICIENT FOR POST CONSTRUCTION SITE	0.82
IMPERVIOUS AREA FOR PRE-CONSTRUCTION SITE	16.94 ACRES
IMPERVIOUS AREA FOR POST-CONSTRUCTION SITE	18.54 ACRES
IMMEDIATE RECEIVING WATERS	UNNAMED TRIBUTARY
SUBSEQUENT RECEIVING WATERS	SCIOTO RIVER

NOTE:

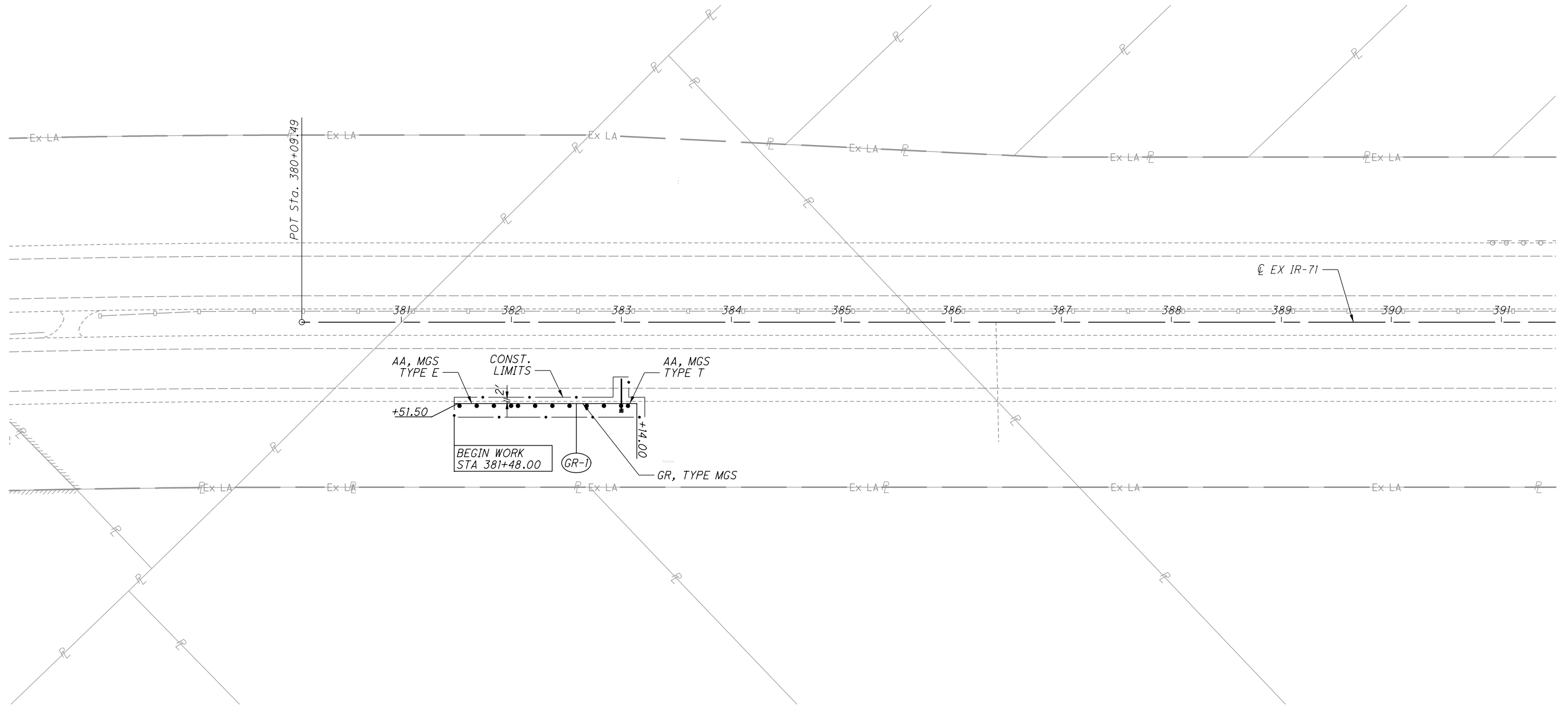
- THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR PAYMENT:
- ITEM 832 - STORM WATER POLLUTION PREVENTION PLAN, LUMP
 - ITEM 832 - STORM WATER POLLUTION PREVENTION INSPECTIONS, LUMP
 - ITEM 832 - STORM WATER POLLUTION PREVENTION INSPECTION SOFTWARE, LUMP
 - ITEM 832 - EROSION CONTROL, 158,540 EACH



PROJECT SITE PLAN

FRA-71-9.07

...Northbound\92615_DB501.dgn 5/29/2019 8:09:14 AM mswwhitt



CALCULATED GAH
CHECKED WAA

0 50 100
HORIZONTAL SCALE IN FEET

PLAN VIEW - IR-71
STA. 380+09.39 TO STA. 391+50.00

FRA-71-9.07

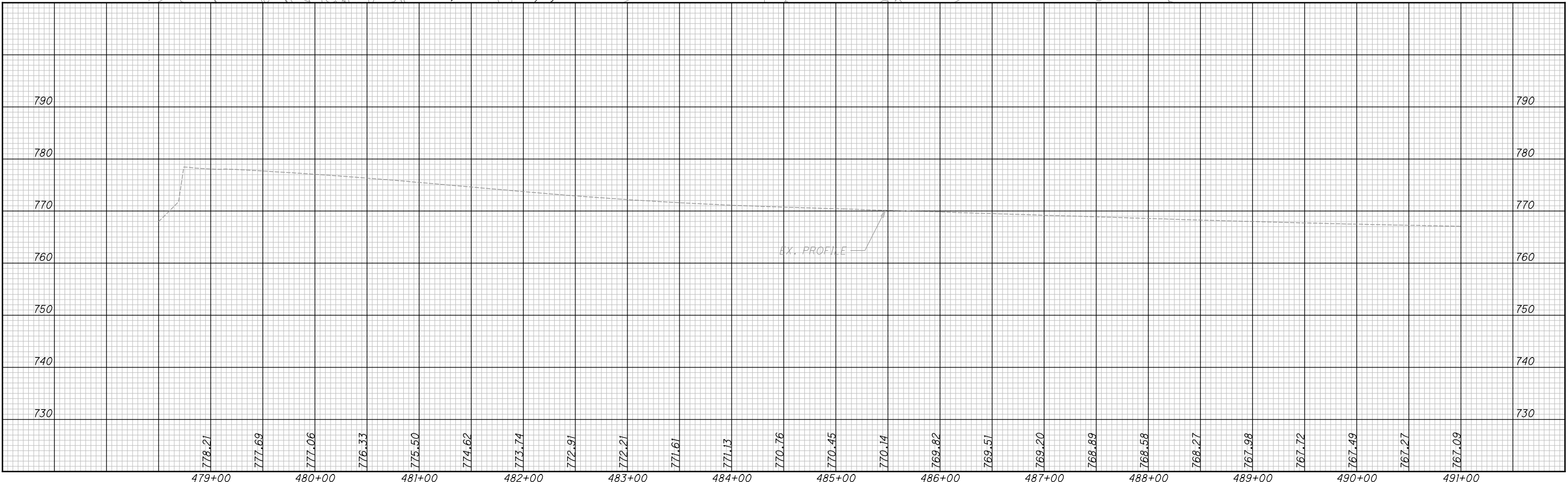
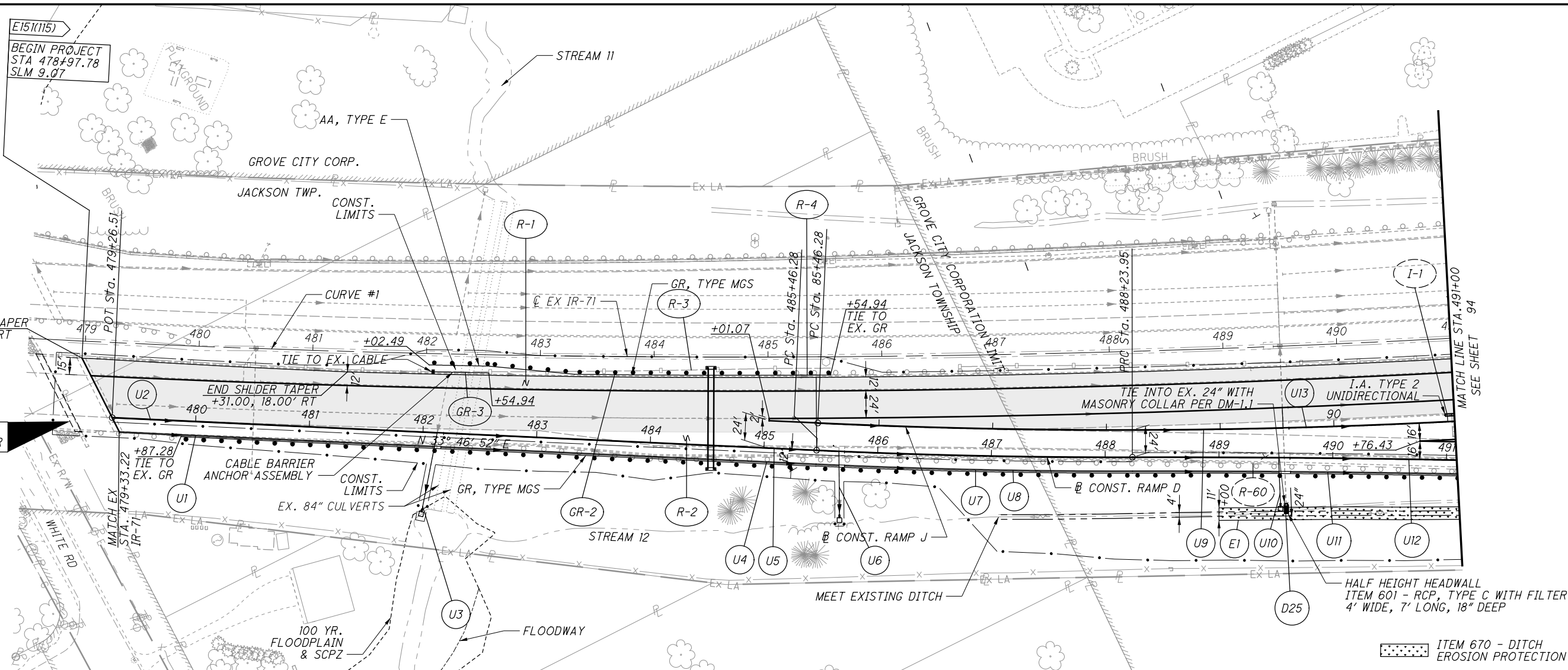
CURVE #1
 P.I. Sta. 472+61.69
 $\Delta = 19^\circ 28' 45''$ (LT)
 $D_c = 0^\circ 29' 02''$
 $R = 11,843.51'$
 $T = 2,032.88'$
 $L = 4,026.53'$
 $E = 173.20'$
 $e_{max} = 0.018$
 PC Sta. 452+28.81
 PT Sta. 492+55.33

E151(115)
 BEGIN PROJECT
 STA 478+97.78
 SLM 9.07

BEGIN SHLDER TAPER
 +97.78, 15.00' RT

STRUCTURE NO.
 FRA-71-0903L&R

MILL AND FILL
 SURFACE COURSE



CALCULATED MSW
 CHECKED WAA

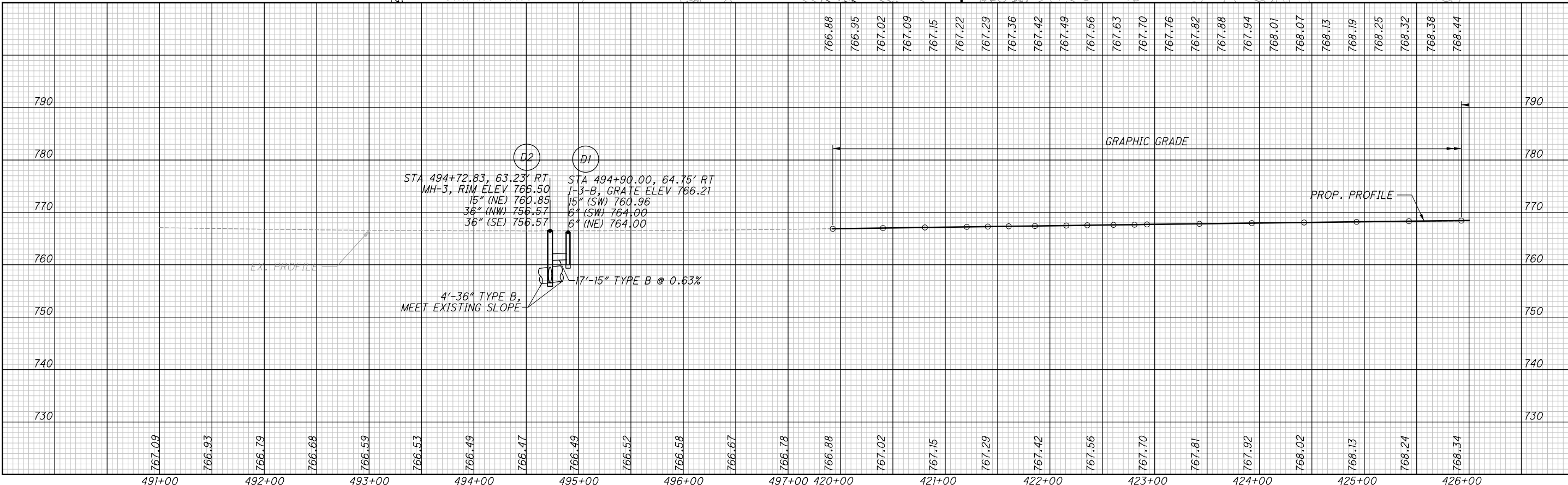
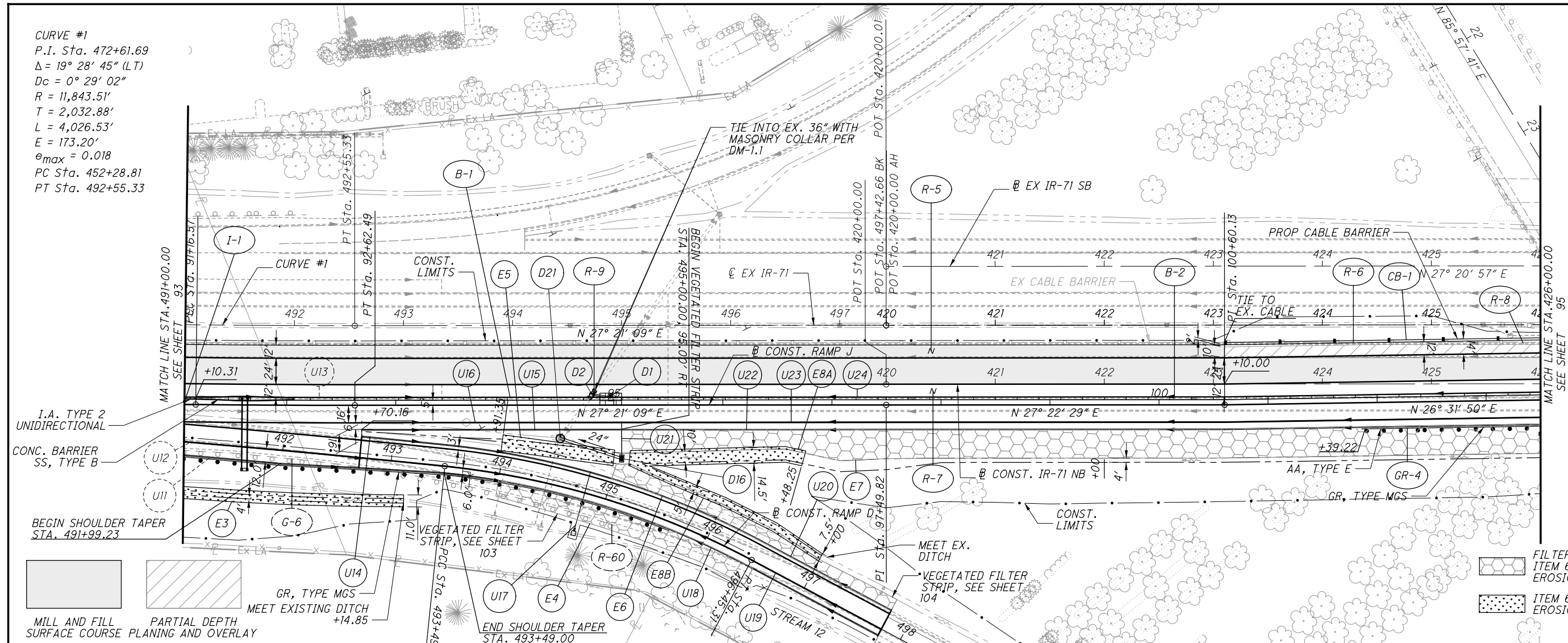
PLAN AND PROFILE - EX IR-71
 BEGIN PROJECT TO STA. 491+00.00

FRA-71-9.07

93
 264

...Northbound\92615_GP500.dgn 5/29/2019 8:09:36 AM mswwhitt

CURVE #1
 P.I. Sta. 472+61.69
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 $D_c = 0^\circ 29' 02''$
 $R = 11,843.51'$
 $T = 2,032.88'$
 $L = 4,026.53'$
 $E = 173.20'$
 $e_{max} = 0.018$
 PC Sta. 452+28.81
 PT Sta. 492+55.33



PLAN AND PROFILE - EX IR-71
 STA. 491+00.00 TO STA. 426+00.00

FRA-71-9.07

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ITEM 670 - DITCH EROSION PROTECTION
 FILTER STRIP
 ITEM 670 - DITCH EROSION PROTECTION

PROP CABLE BARRIER W/ANCHOR ASSEMBLY

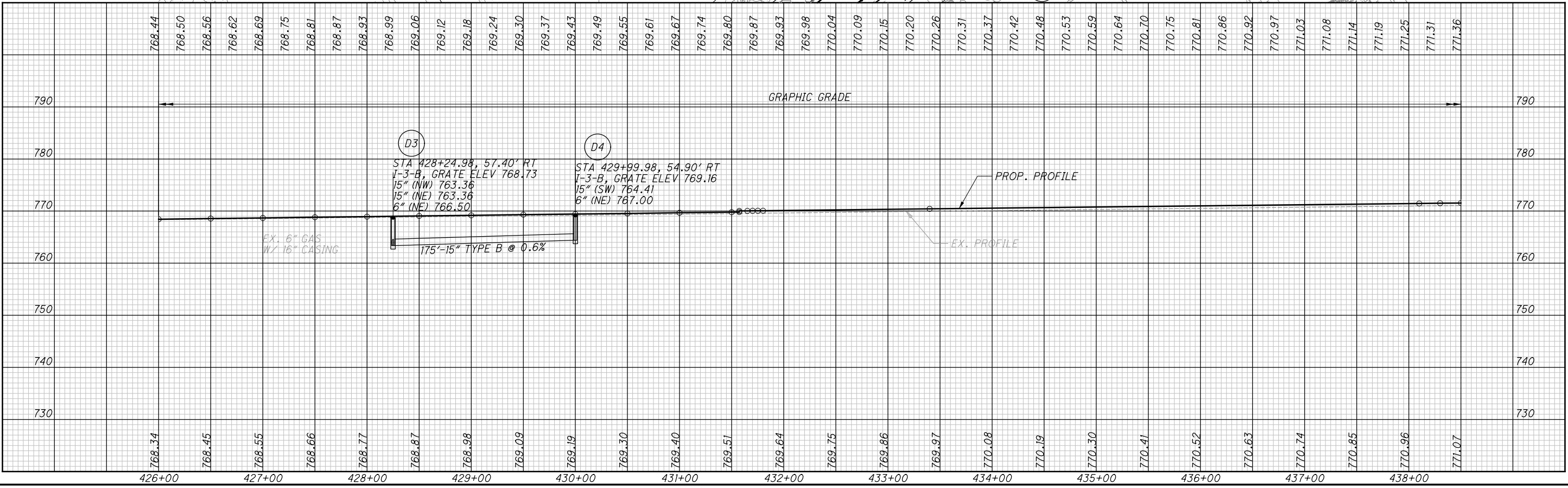
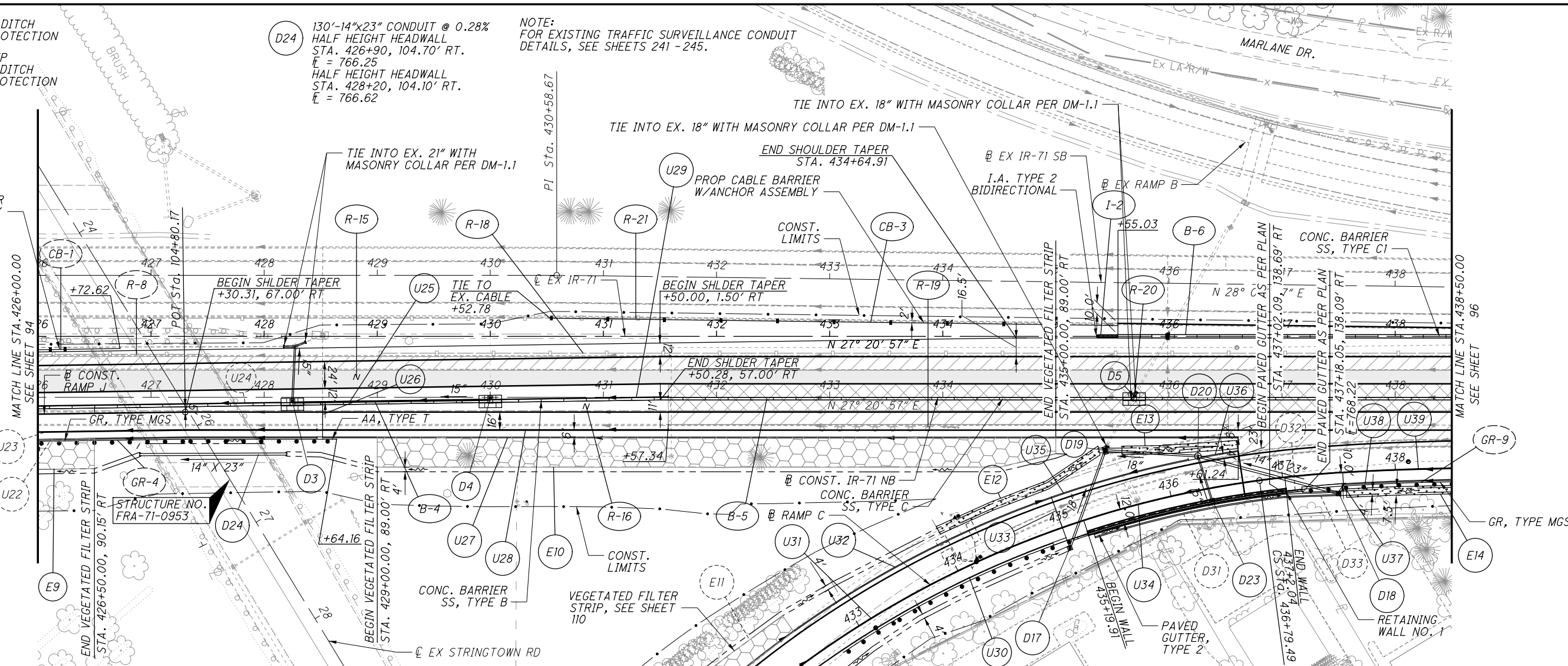
MILL AND FILL SURFACE COURSE

PARTIAL DEPTH PLANING AND OVERLAY

VARIABLE DEPTH PLANING AND OVERLAY

D24 130'-14"x23" CONDUIT @ 0.28%
 HALF HEIGHT HEADWALL
 STA. 426+90, 104.70' RT.
 E = 766.25
 HALF HEIGHT HEADWALL
 STA. 428+20, 104.10' RT.
 E = 766.62

NOTE:
 FOR EXISTING TRAFFIC SURVEILLANCE CONDUIT
 DETAILS, SEE SHEETS 241 - 245.




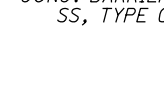
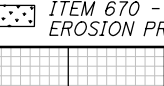


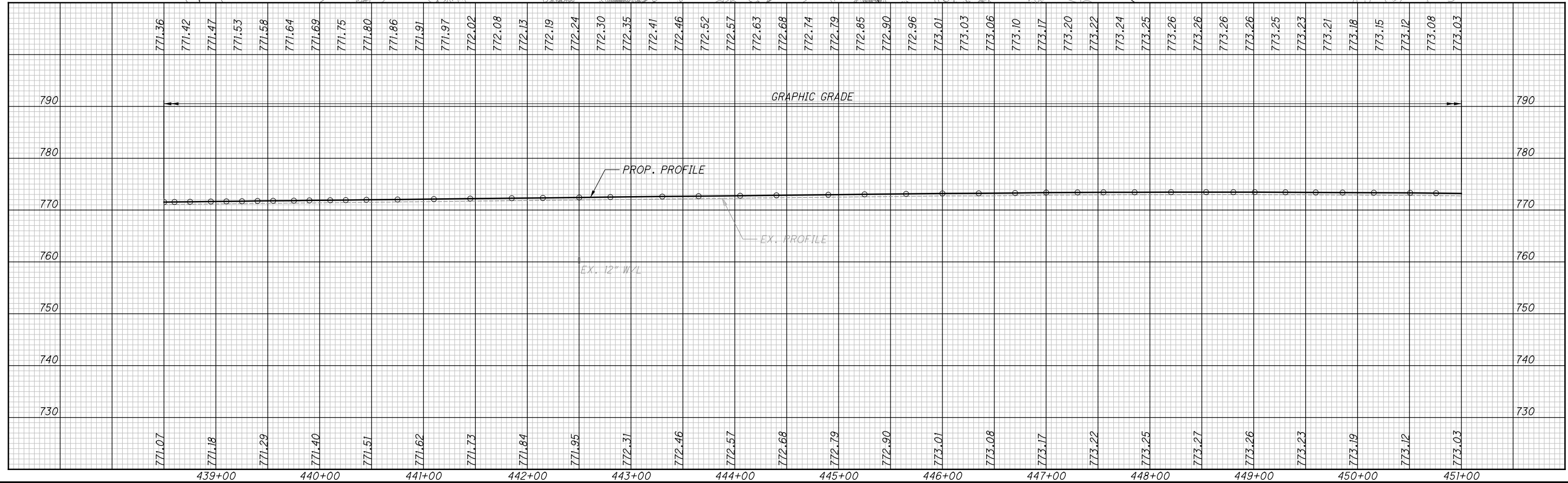
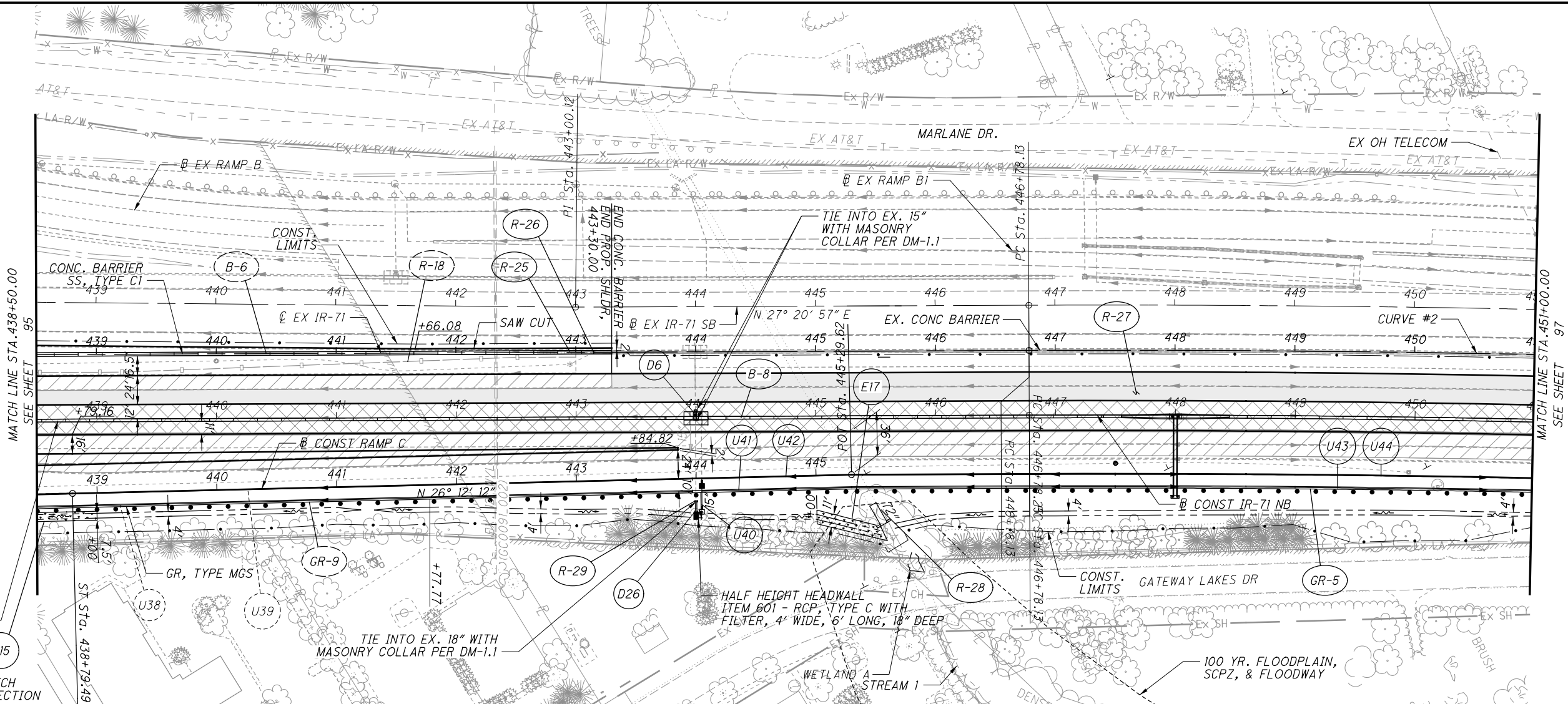
PLAN AND PROFILE - EX IR-71
 STA. 426+00.00 TO STA. 438+50.00

FRA-71-9.07
 95
 264

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CURVE #2
 P.I. Sta. 462+63.86
 $\Delta = 10^\circ 32' 30''$ (RT)
 $D_c = 0^\circ 20' 00''$
 $R = 17,188.74'$
 $T = 1,585.73'$
 $L = 3,162.50'$
 $E = 72.99'$
 $e_{max} = NC$
 PC Sta. 446+78.13
 PC Sta. 587+51.41

-  MILL AND FILL SURFACE COURSE
-  PARTIAL DEPTH PLANING AND OVERLAY
-  VARIABLE DEPTH PLANING AND OVERLAY
-  CONC. BARRIER SS, TYPE C
-  ITEM 670 - DITCH EROSION PROTECTION




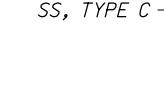
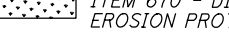


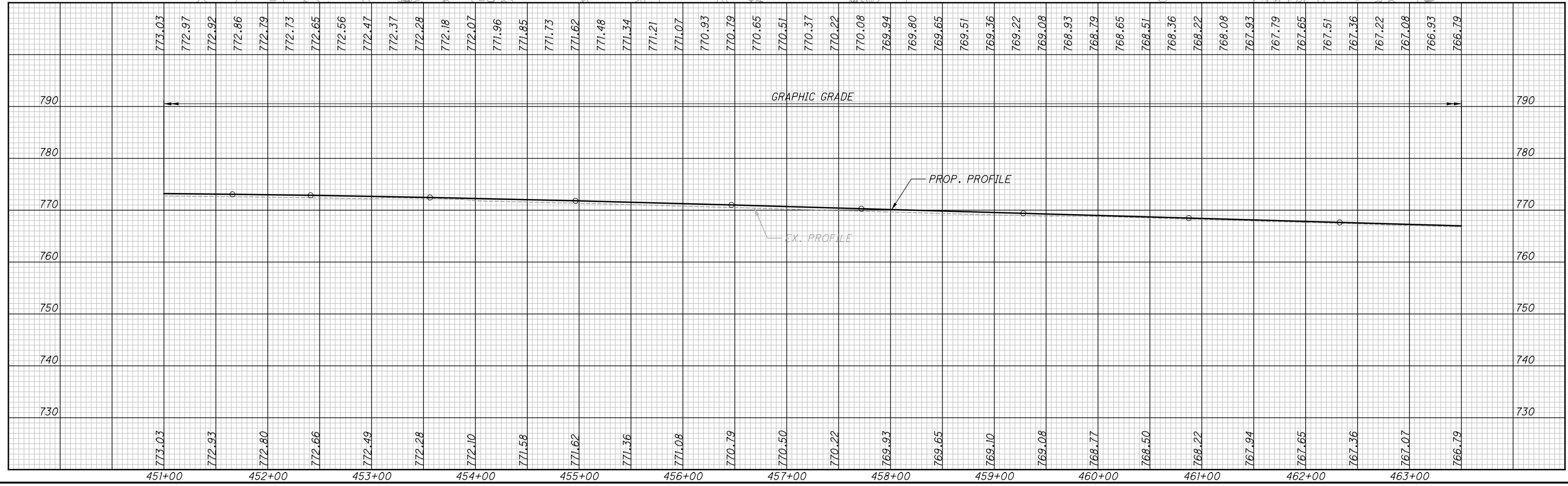
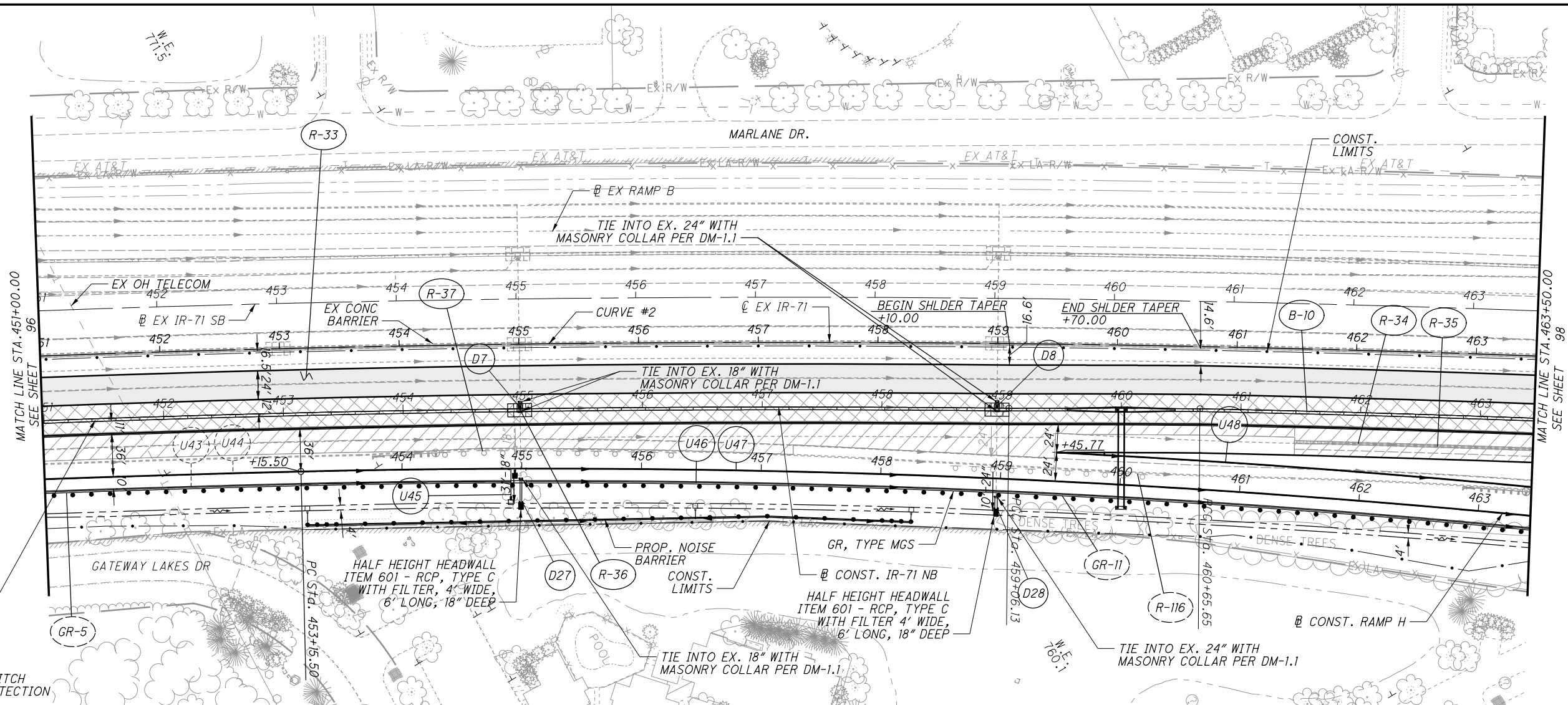
CALCULATED MSW
 CHECKED WAA

**PLAN AND PROFILE - EX IR-71
 STA. 438+50.00 TO STA. 451+00.00**

FRA-71-9.07

CURVE #2
 P.I. Sta. 462+63.86
 $\Delta = 10^\circ 32' 30''$ (RT)
 $D_c = 0^\circ 20' 00''$
 $R = 17,188.74'$
 $T = 1,585.73'$
 $L = 3,162.50'$
 $E = 72.99'$
 $\theta_{max} = NC$
 PC Sta. 446+78.13
 PO Sta. 587+51.41

-  MILL AND FILL SURFACE COURSE
-  PARTIAL DEPTH PLANING AND OVERLAY
-  VARIABLE DEPTH PLANING AND OVERLAY
-  CONC. BARRIER SS, TYPE C
-  ITEM 670 - DITCH EROSION PROTECTION

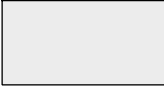


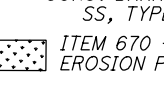
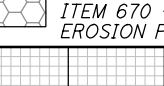
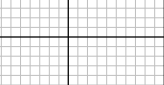
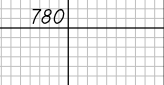


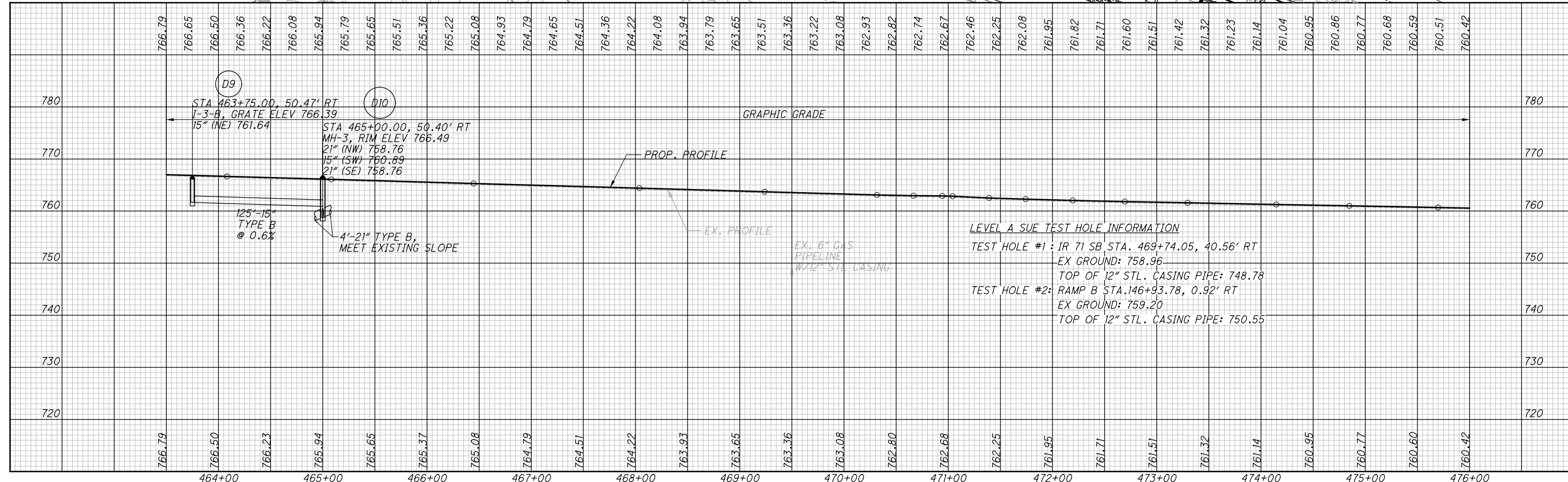
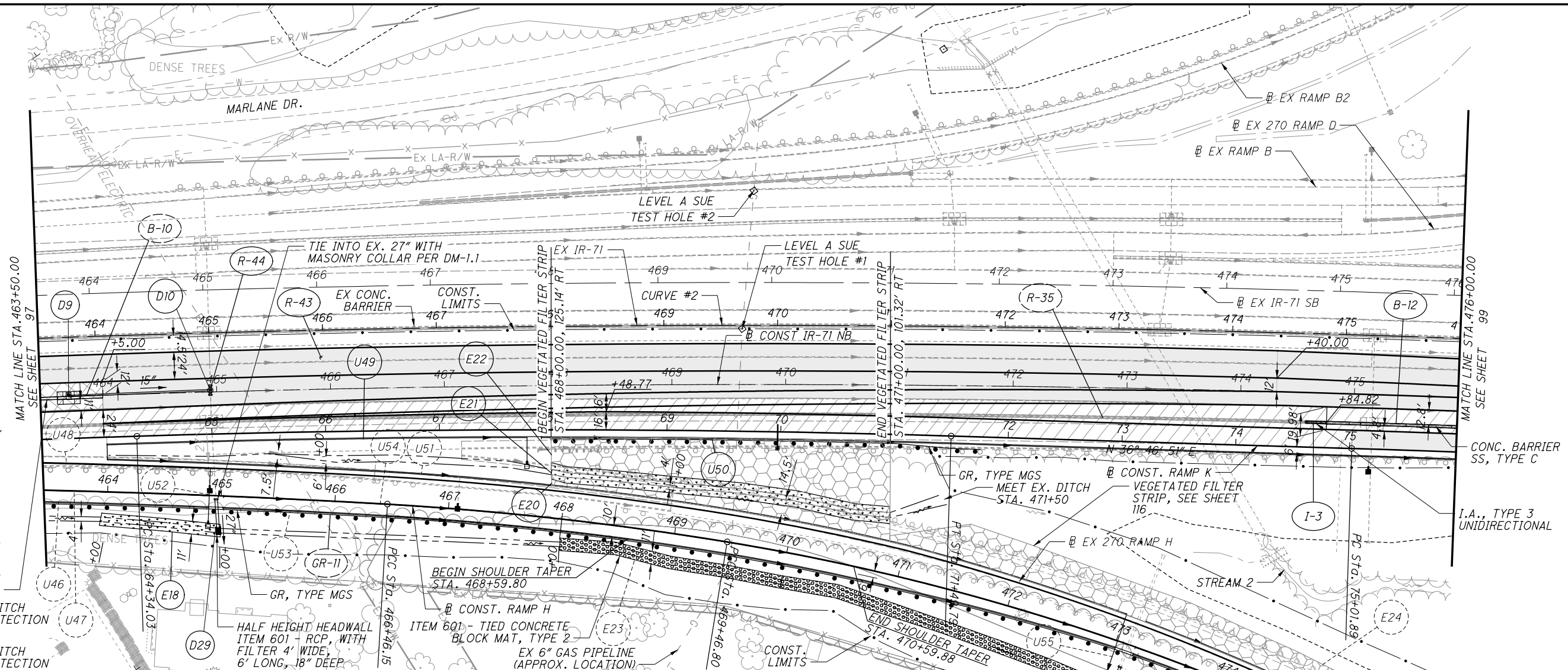
PLAN AND PROFILE - EX IR-71
 STA. 451+00.00 TO STA. 463+50.00

FRA-71-9.07
 97
 264

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CURVE #2
 P.I. Sta. 462+63.86
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 $D_c = 0^\circ 20' 00''$
 $R = 17,188.74'$
 $T = 1,585.73'$
 $L = 3,162.50'$
 $E = 72.99'$
 $\theta_{max} = NC$
 PC Sta. 446+78.13
 PC Sta. 587+51.41

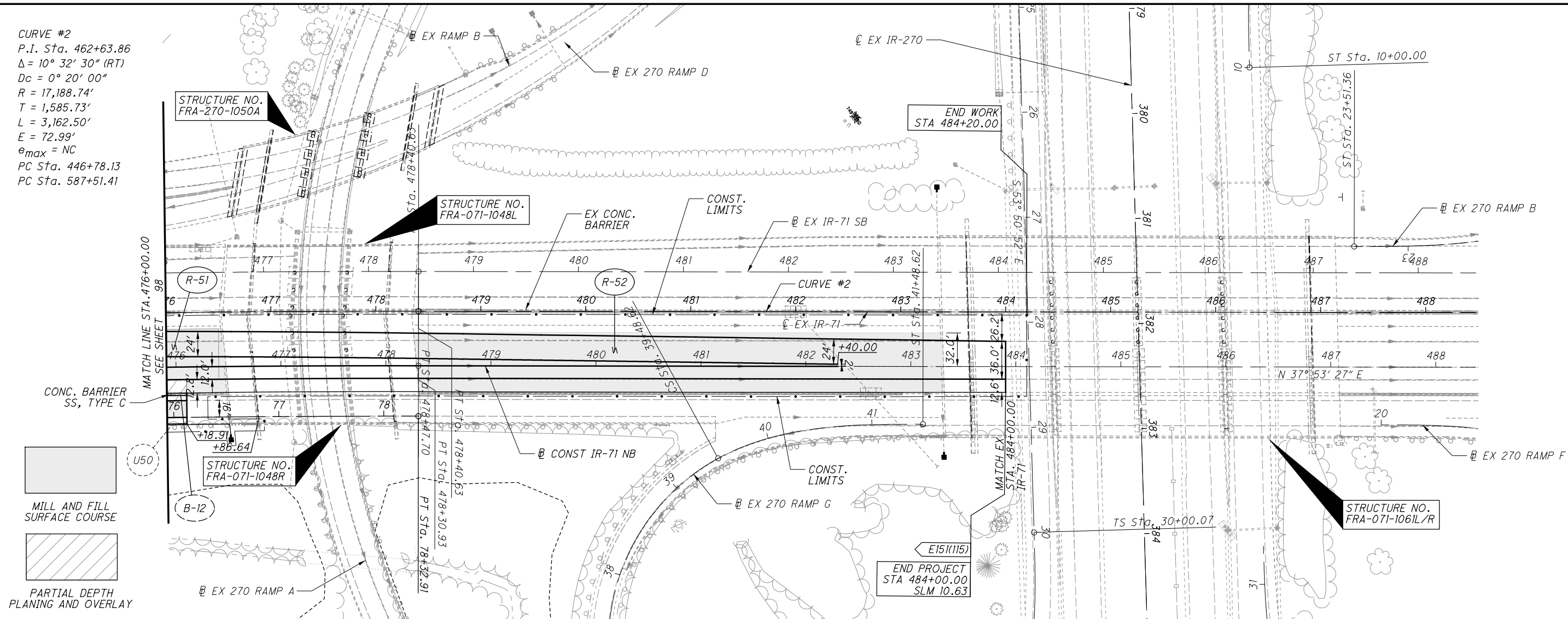
-  MILL AND FILL SURFACE COURSE
-  PARTIAL DEPTH PLANING AND OVERLAY
-  VARIABLE DEPTH PLANING AND OVERLAY
-  CONC. BARRIER SS, TYPE C
-  ITEM 670 - DITCH EROSION PROTECTION
-  FILTER STRIP
-  ITEM 601 - RCP, WITH FILTER 4' WIDE, 6' LONG, 18" DEEP



PLAN AND PROFILE - EX IR-71
 STA. 463+50.00 TO STA. 476+00.00

FRA-71-9.07

CURVE #2
 P.I. Sta. 462+63.86
 $\Delta = 10^\circ 32' 30''$ (RT)
 $D_c = 0^\circ 20' 00''$
 $R = 17,188.74'$
 $T = 1,585.73'$
 $L = 3,162.50'$
 $E = 72.99'$
 $e_{max} = NC$
 PC Sta. 446+78.13
 PC Sta. 587+51.41



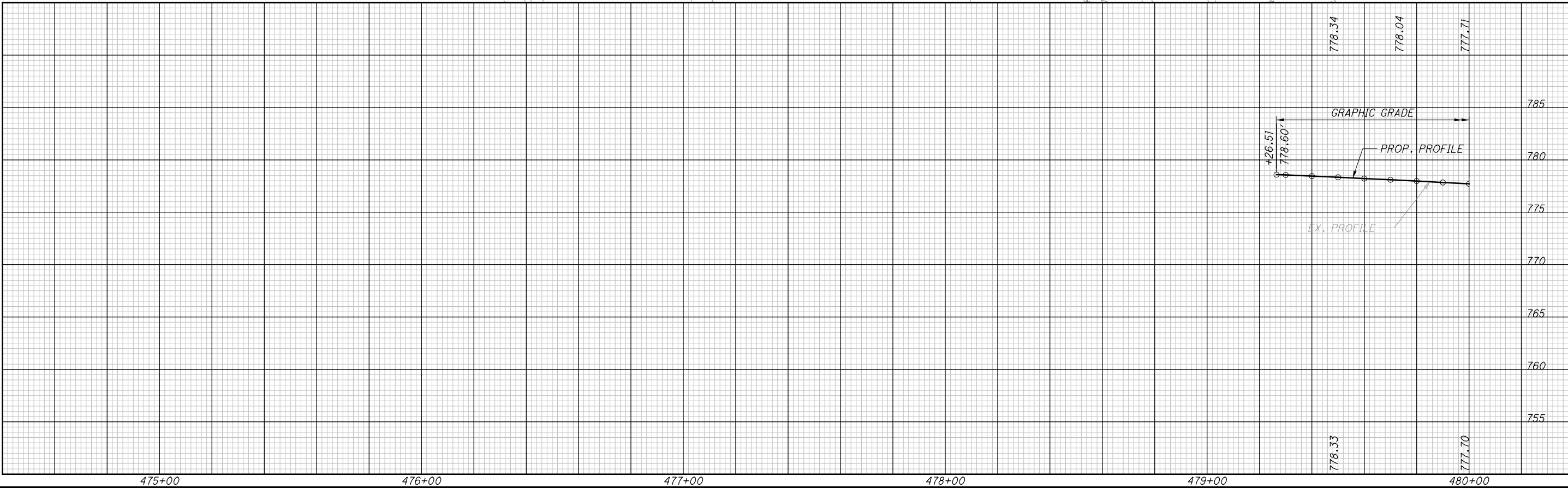
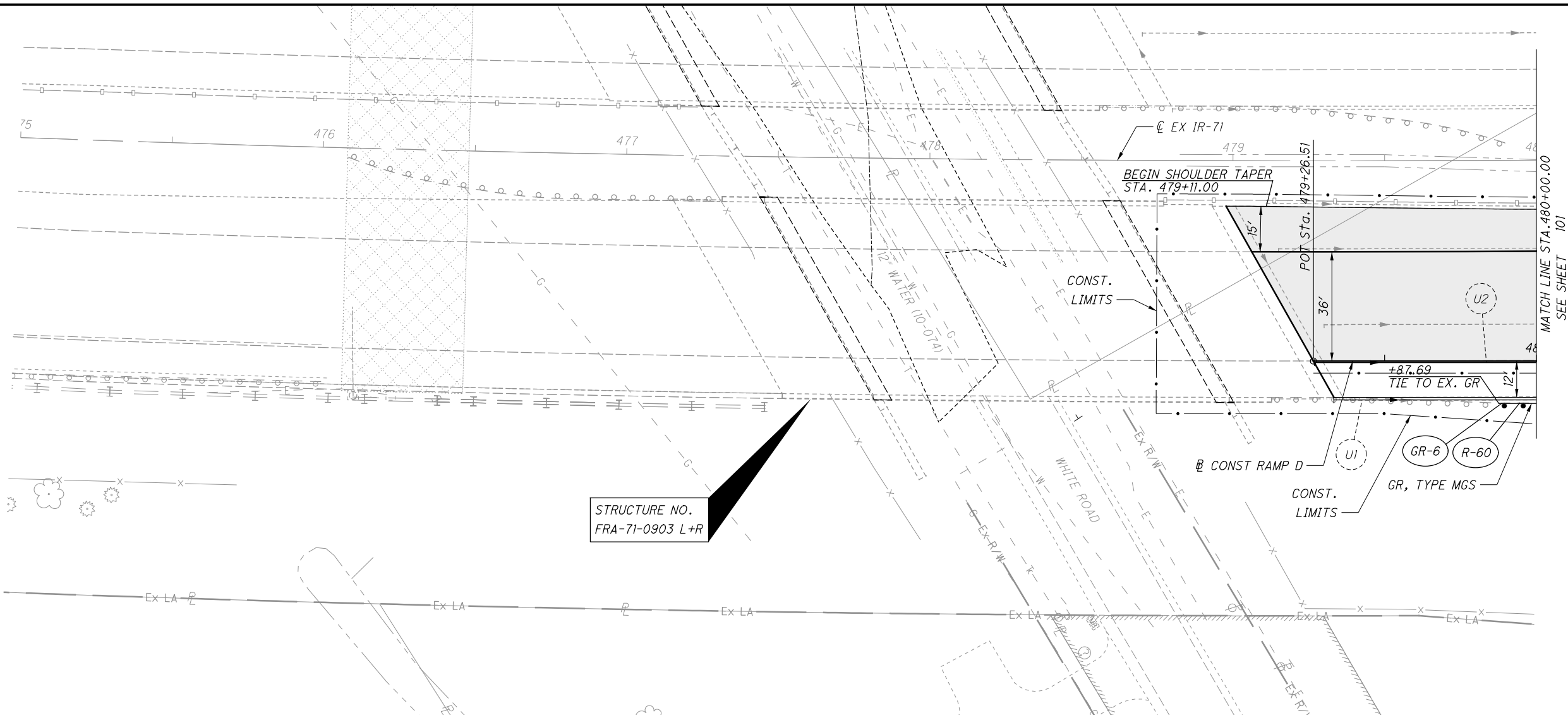
...Northbound\92615_GP506.dgn 5/29/2019 8:10:48 AM mswntt

CALCULATED MSW
 CHECKED WAA

PLAN AND PROFILE - EX IR-71
 STA. 476+00.00 TO END WORK

FRA-71-9.07
 99
 264

...Northbound\92615_GP550.dgn 5/29/2019 8:10:57 AM mswntt

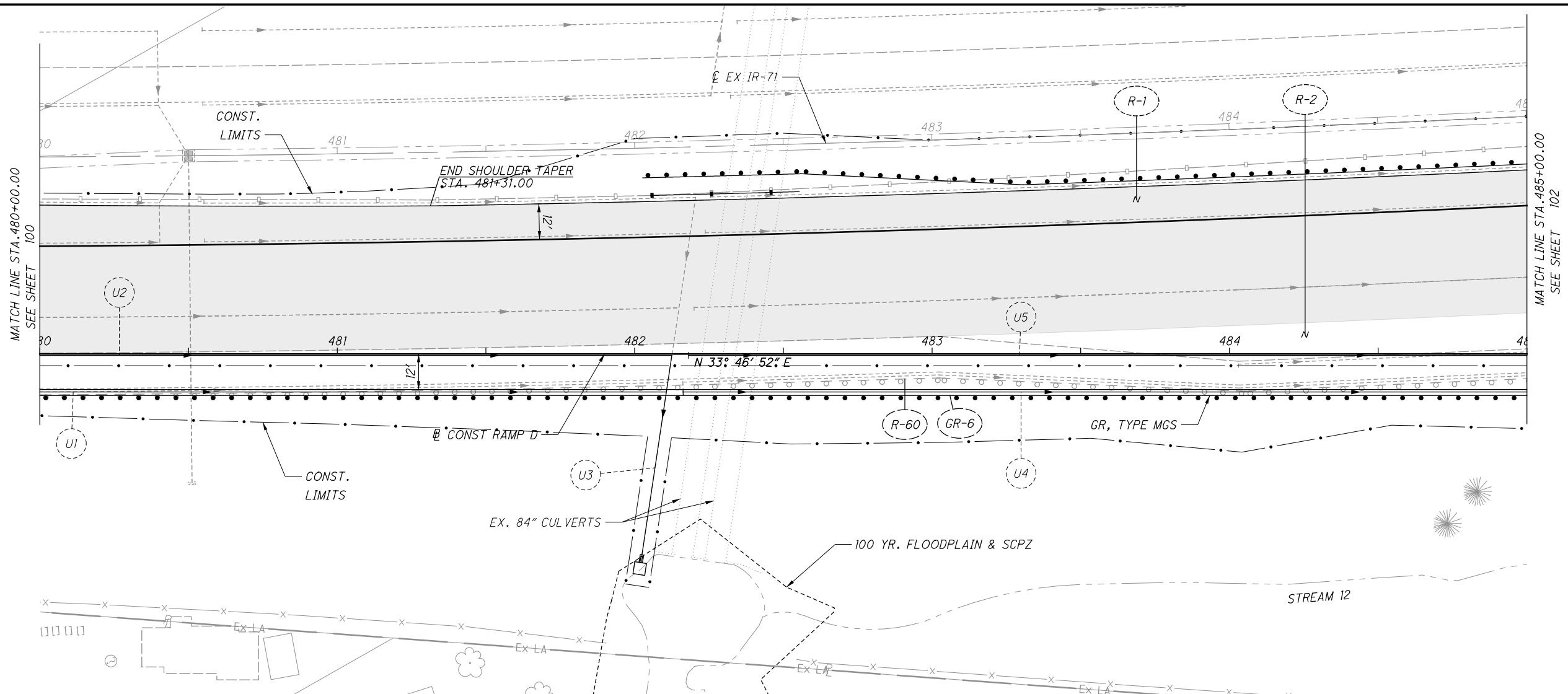


CALCULATED MSW
 CHECKED WAA
PLAN AND PROFILE - IR-71 RAMP D
STA. 475+00.00 TO STA. 480+00.00

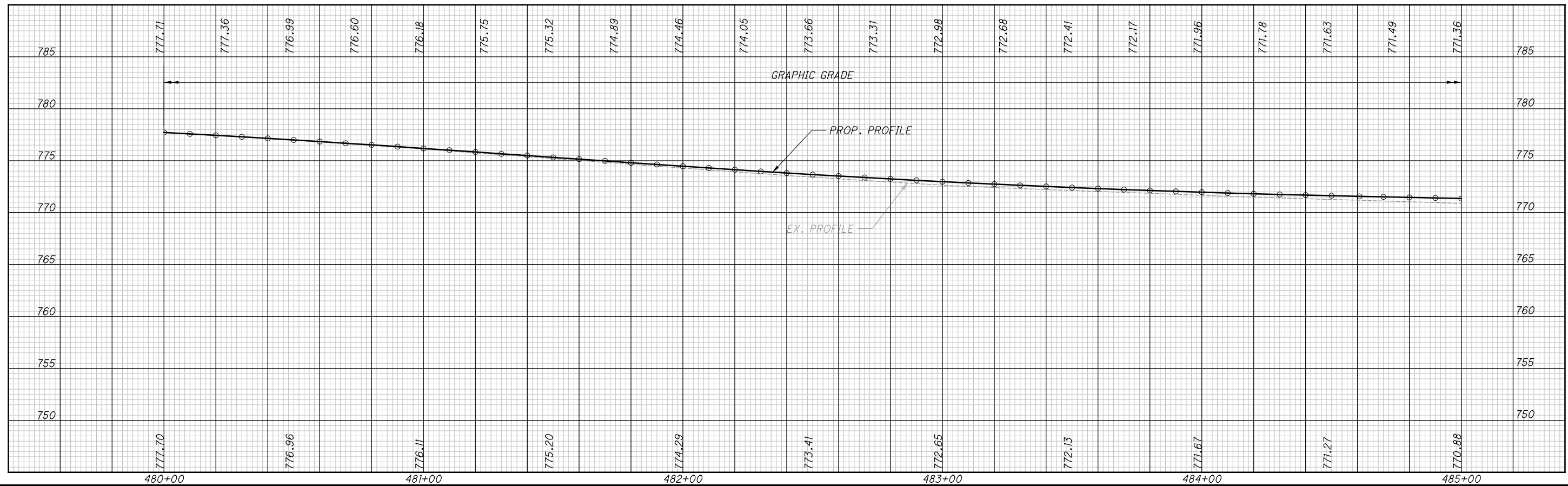
FRA-71-9.07

100
264

...Northbound\92615_GP551.dgn 5/29/2019 8:11:07 AM mswntt



MILL AND FILL
SURFACE COURSE



PLAN AND PROFILE - IR-71 RAMP D
STA. 480+00.00 TO STA. 485+00.00

FRA-71-9.07

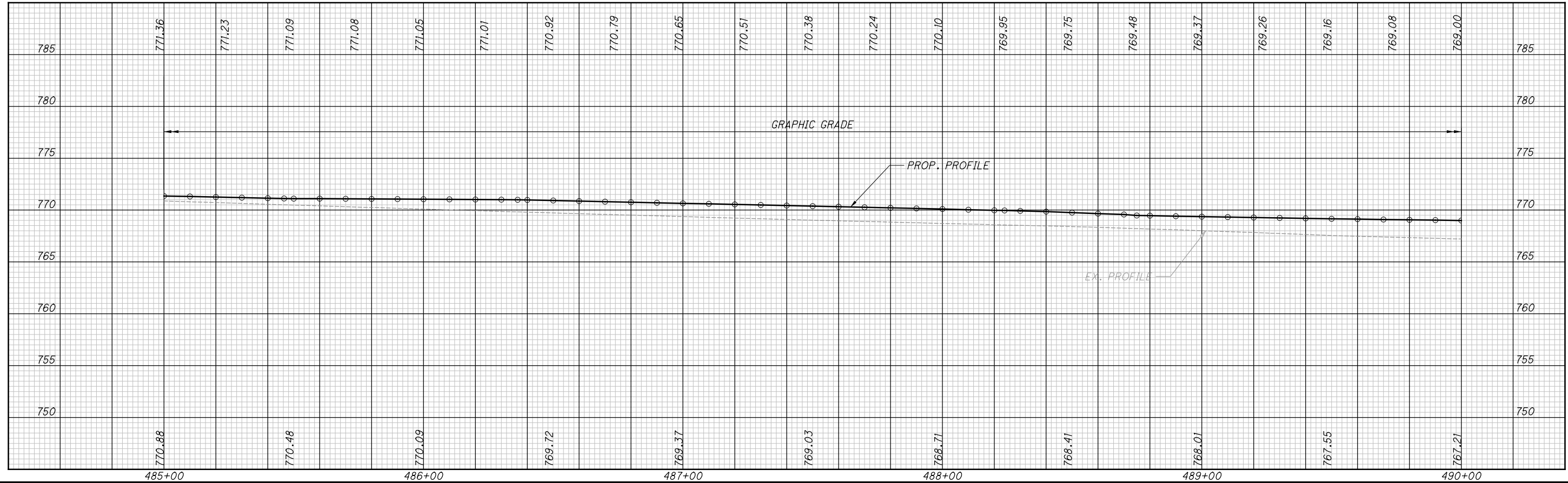
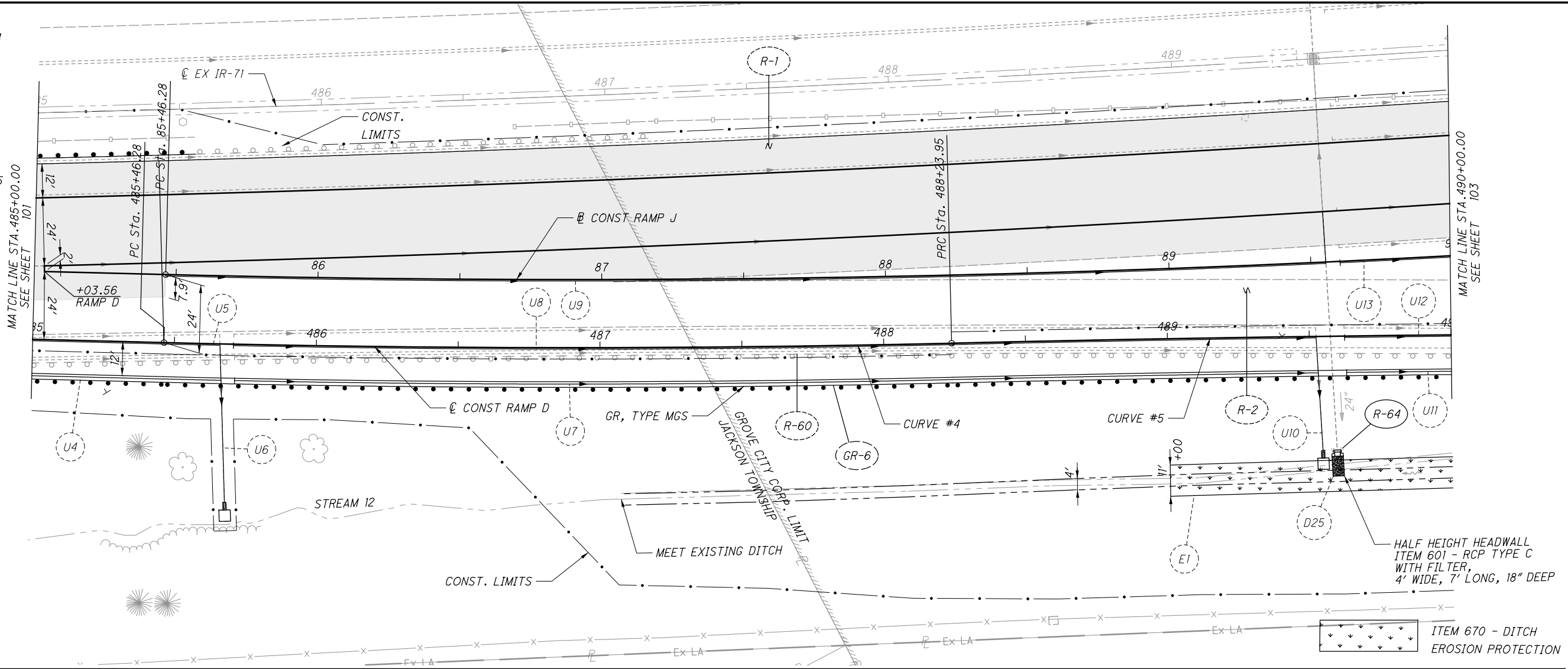
101
264

CALCULATED MSW
CHECKED WAA

CURVE #4
 P.I. Sta. 486+85.14
 $\Delta = 2^\circ 46' 36''$ (LT)
 $Dc = 1^\circ 00' 00''$
 $R = 5,729.58'$
 $T = 138.86'$
 $L = 277.67'$
 $E = 1.68'$
 $\theta_{max} = 0.033$
 PC Sta. 485+46.28
 PRC Sta. 488+23.95

MILL AND FILL
 SURFACE COURSE

CURVE #5
 P.I. Sta. 490+86.62
 $\Delta = 2^\circ 16' 34''$ (RT)
 $Dc = 0^\circ 26' 00''$
 $R = 13,222.11'$
 $T = 262.68'$
 $L = 525.29'$
 $E = 2.61'$
 $\theta_{max} = 0.016$
 PRC Sta. 488+23.95
 PCC Sta. 493+49.23



PLAN AND PROFILE - IR-71 RAMP D
 STA. 485+00.00 TO STA. 490+00.00

FRA-71-9.07

102
264

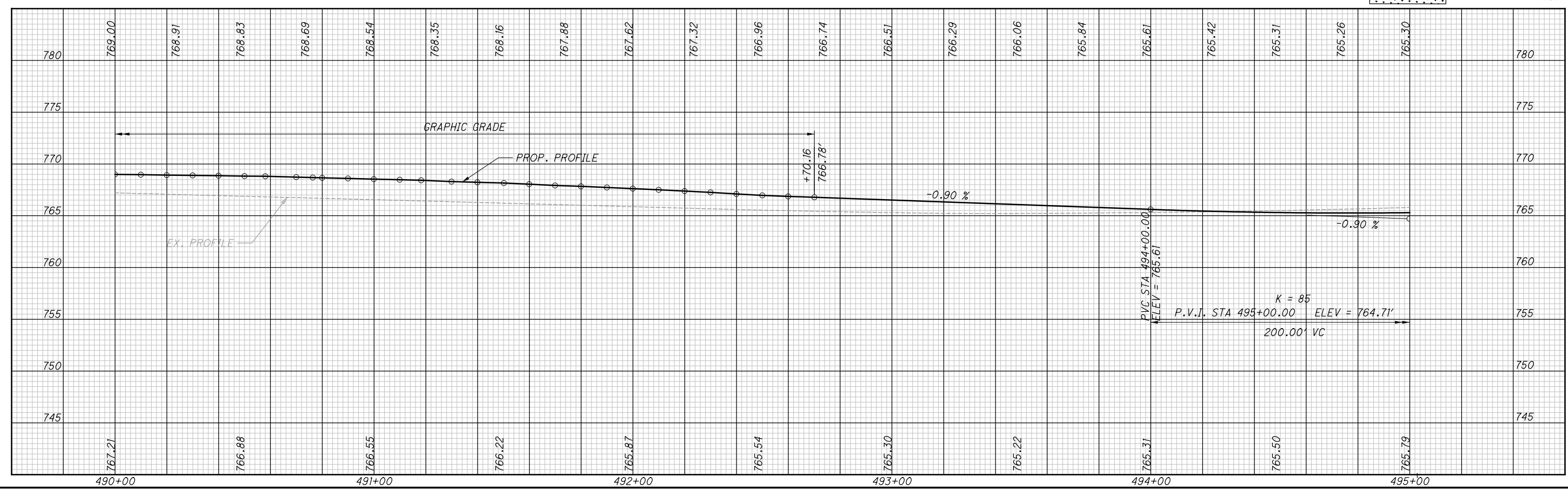
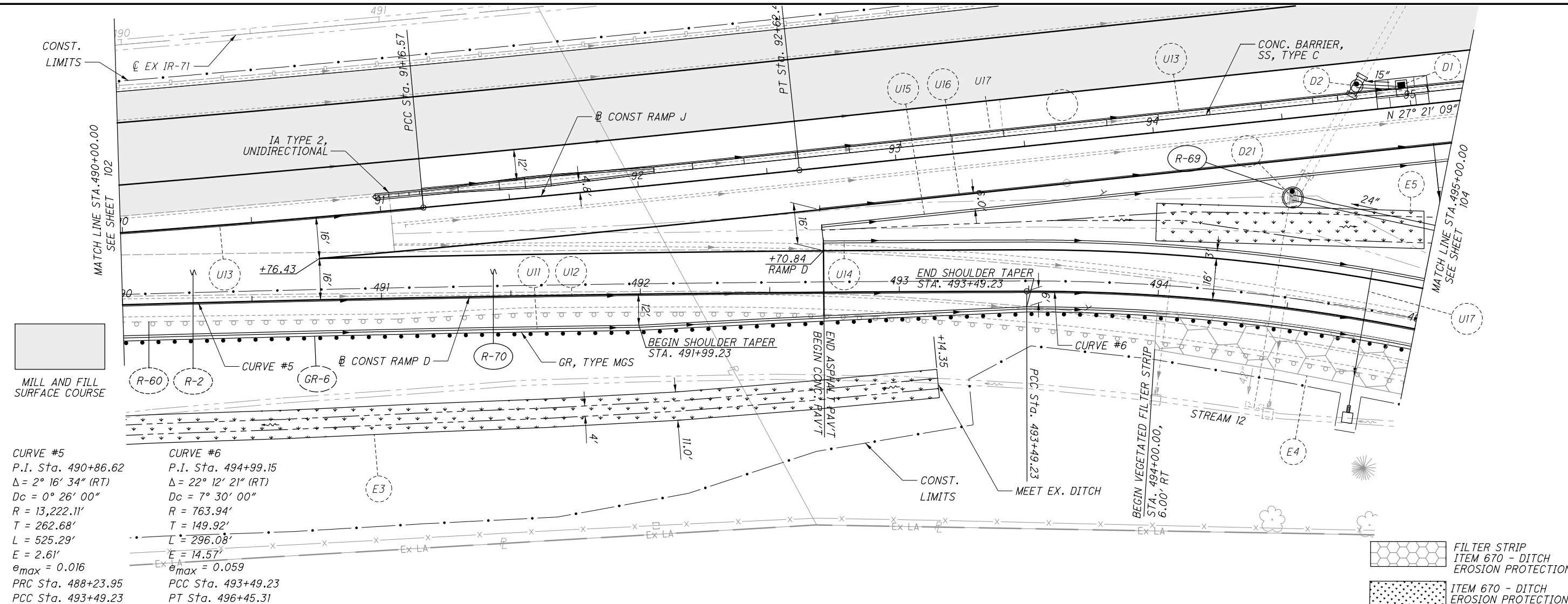


CALCULATED MSW
CHECKED WAA

PLAN AND PROFILE - IR-71 RAMP D
STA. 490+00.00 TO STA. 495+00.00

FRA-71-9.07

103
264



...Northbound\92615_GP553.dgn 5/29/2019 8:11:23 AM mswwhitt

...Northbound\92615_GP554.dgn 5/29/2019 8:11:27 AM mswwhitt

BEGIN VEGETATED FILTER STRIP
STA. 495+00.00, 19.00' LT

MATCH LINE STA. 495+00.00
SEE SHEET 103

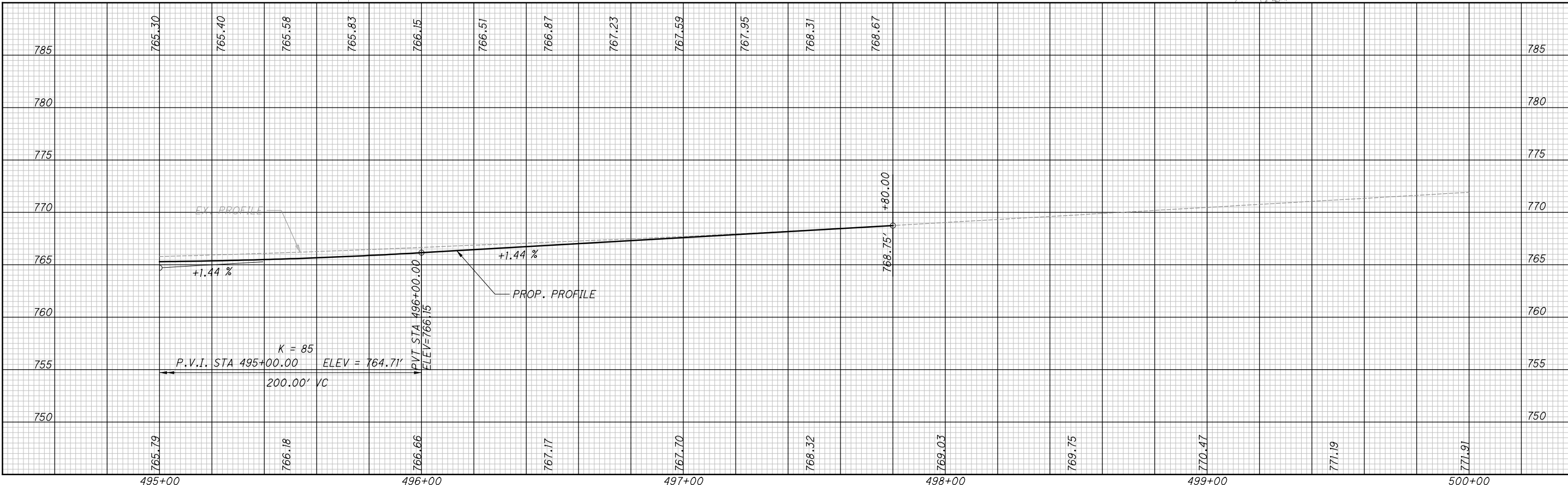
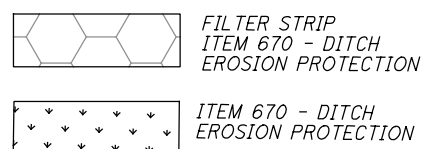
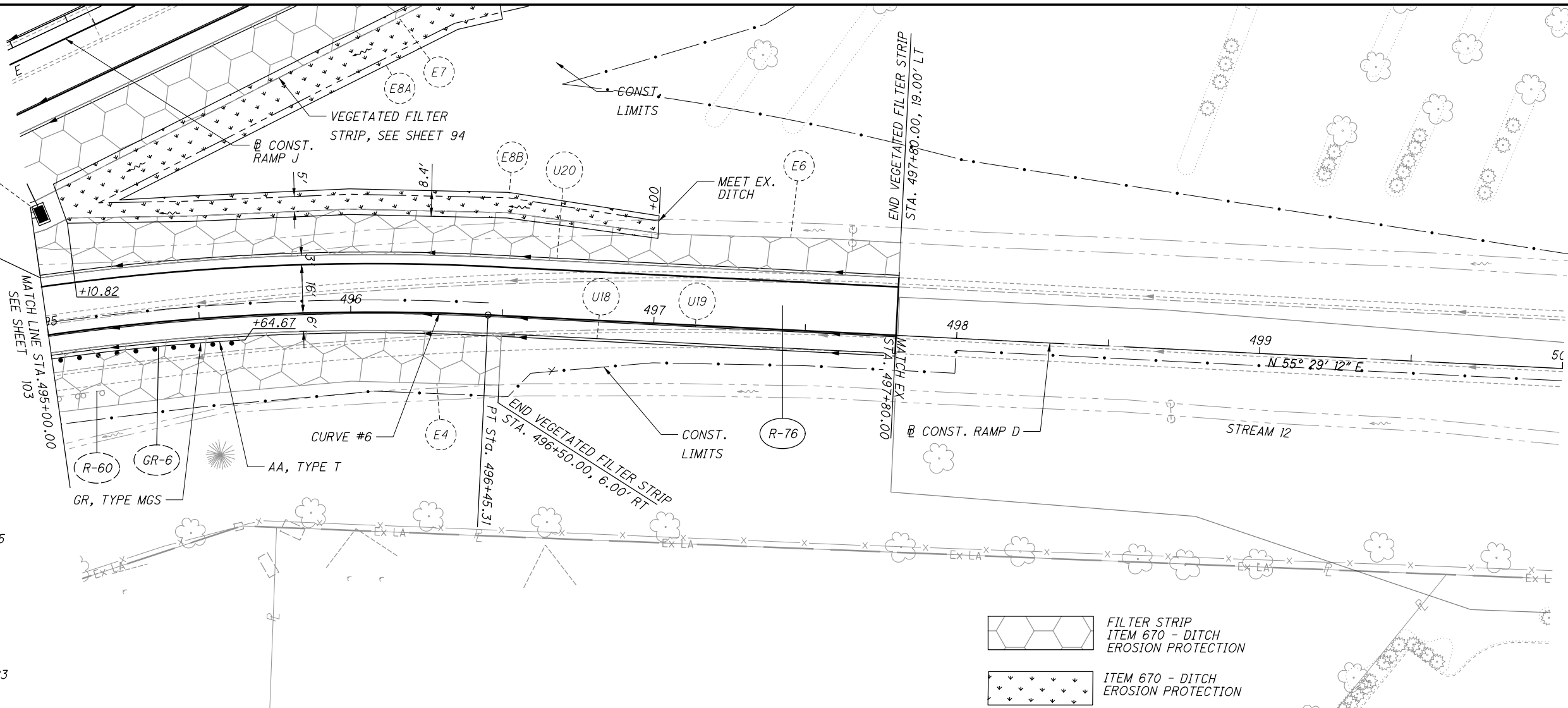
END VEGETATED FILTER STRIP
STA. 497+80.00, 19.00' LT

MATCH EX.
STA. 497+80.00

PT STA. 496+45.31

END VEGETATED FILTER STRIP
STA. 496+50.00, 6.00' RT

CURVE #6
P.I. Sta. 494+99.15
 $\Delta = 22^\circ 12' 21''$ (RT)
 $D_c = 7^\circ 30' 00''$
 $R = 763.94'$
 $T = 149.92'$
 $L = 296.08'$
 $E = 14.57'$
 $e_{max} = 0.059$
PCC Sta. 493+49.23
PT Sta. 496+45.31



PLAN AND PROFILE - IR-71 RAMP D
STA. 495+00.00 TO 500+00.00

FRA-71-9.07

104
264

CALCULATED MSW
CHECKED WAA



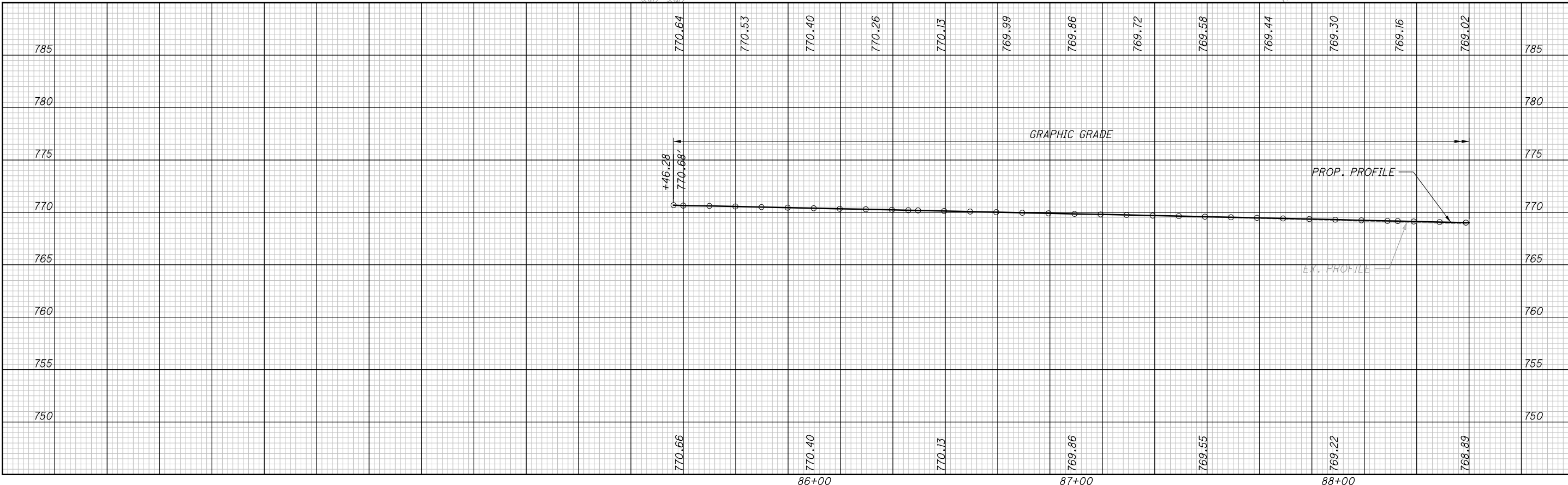
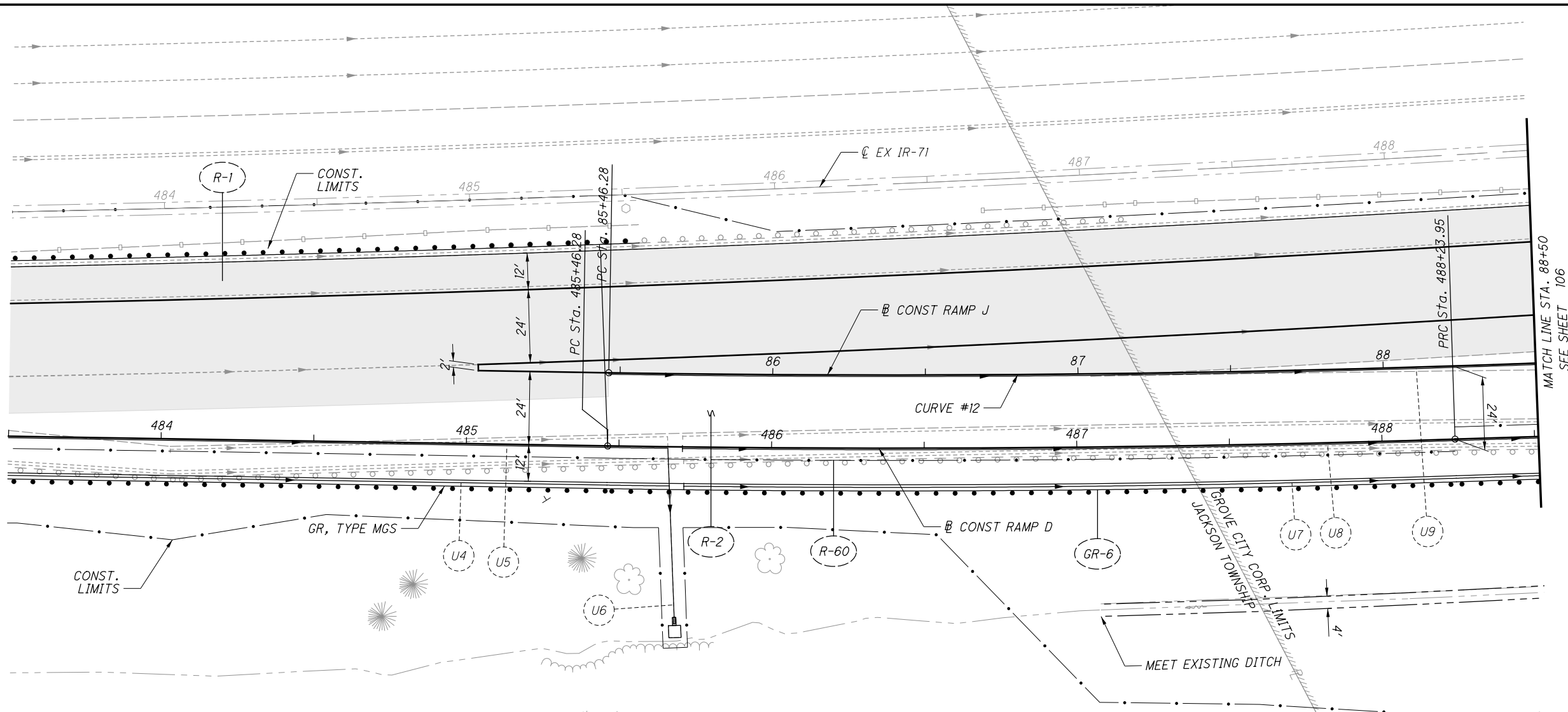
CALCULATED
MSW
CHECKED
WAA

**PLAN AND PROFILE - IR-71 RAMP J
STA. 85+46.28 TO STA. 88+50.00**

FRA-71-9.07

105
264

CURVE #12
 P.I. Sta. 88+31.66
 $\Delta = 5^{\circ} 43' 37''$ (LT)
 $Dc = 1^{\circ} 00' 15''$
 $R = 5,705.58'$
 $T = 285.38'$
 $L = 570.29'$
 $E = 7.13'$
 $e_{max} = 0.033$
 PC Sta. 85+46.28
 PCC Sta. 91+16.57



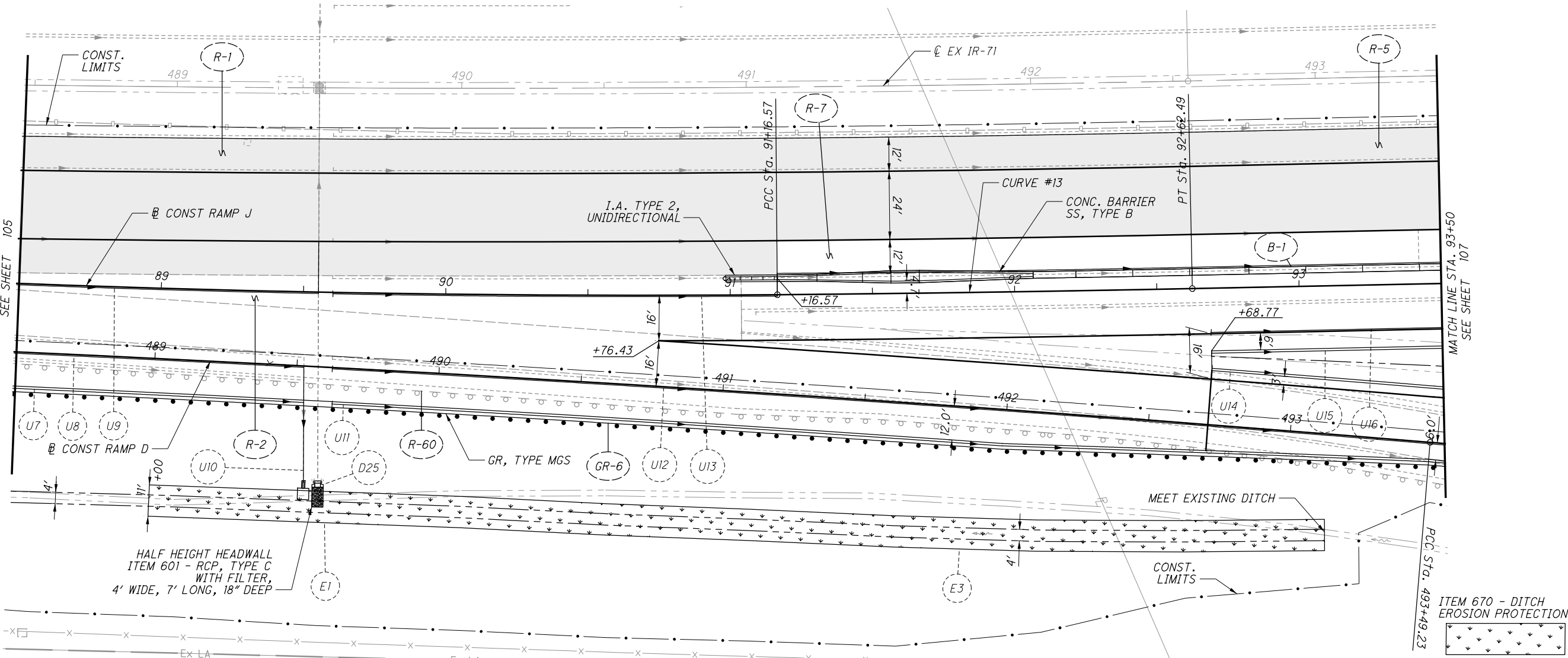
...Northbound\92615_GP572.dgn 5/29/2019 8:11:34 AM mswwhitt

CURVE #12
 P.I. Sta. 88+31.66
 $\Delta = 5^\circ 43' 37''$ (LT)
 $D_c = 1^\circ 00' 15''$
 $R = 5,705.58'$
 $T = 285.38'$
 $L = 570.29'$
 $E = 7.13'$
 $e_{max} = 0.033$
 PC Sta. 85+46.28
 PCC Sta. 91+16.57

CURVE #13
 P.I. Sta. 91+89.53
 $\Delta = 0^\circ 42' 06''$ (LT)
 $D_c = 0^\circ 28' 51''$
 $R = 11,916.51'$
 $T = 72.96'$
 $L = 145.92'$
 $E = 0.22'$
 $e_{max} = 0.018$
 PCC Sta. 91+16.57
 PT Sta. 92+62.49

MATCH LINE STA. 88+50
 SEE SHEET 105

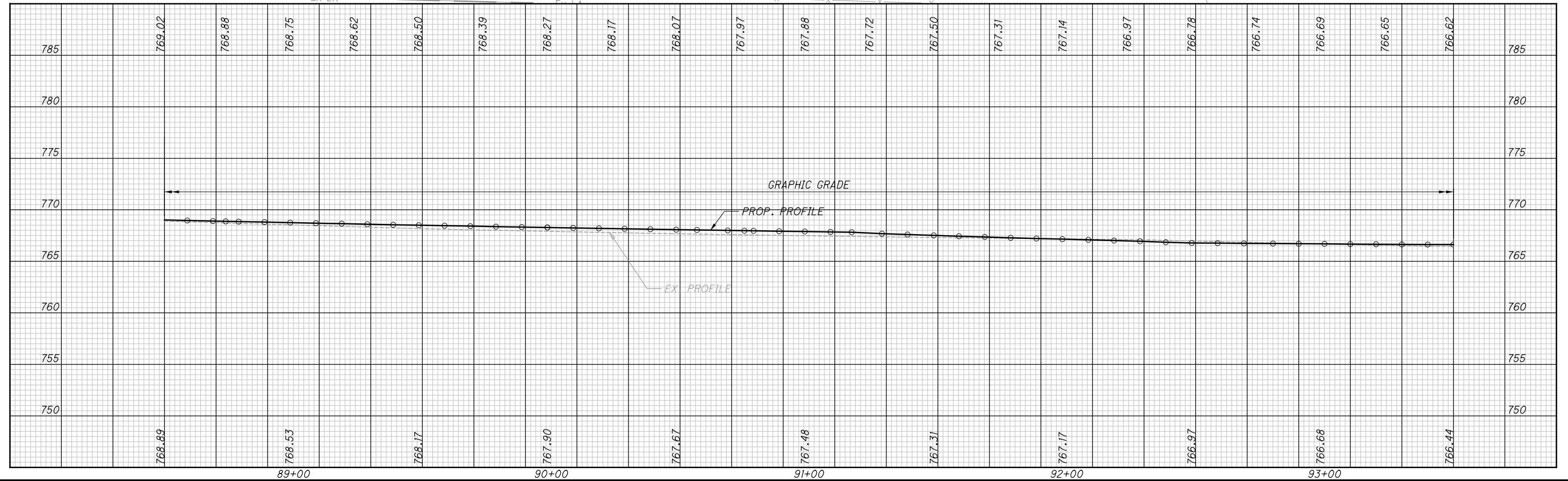
MATCH LINE STA. 93+50
 SEE SHEET 107



MILL AND FILL
 SURFACE COURSE

HALF HEIGHT HEADWALL
 ITEM 601 - RCP, TYPE C
 WITH FILTER,
 4' WIDE, 7' LONG, 18\"/>

ITEM 670 - DITCH
 EROSION PROTECTION

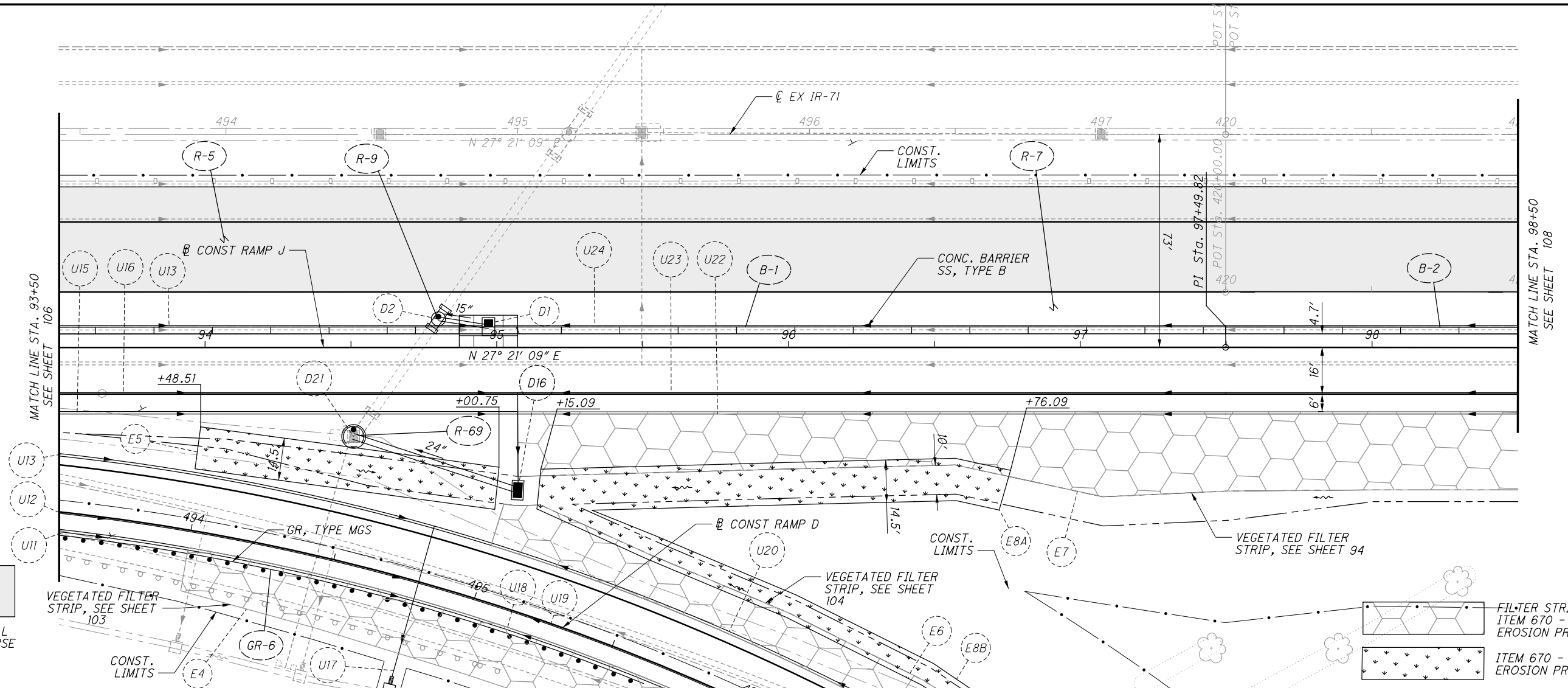


PLAN AND PROFILE - IR-71 RAMP J
 STA. 88+50.00 TO STA. 93+50.00

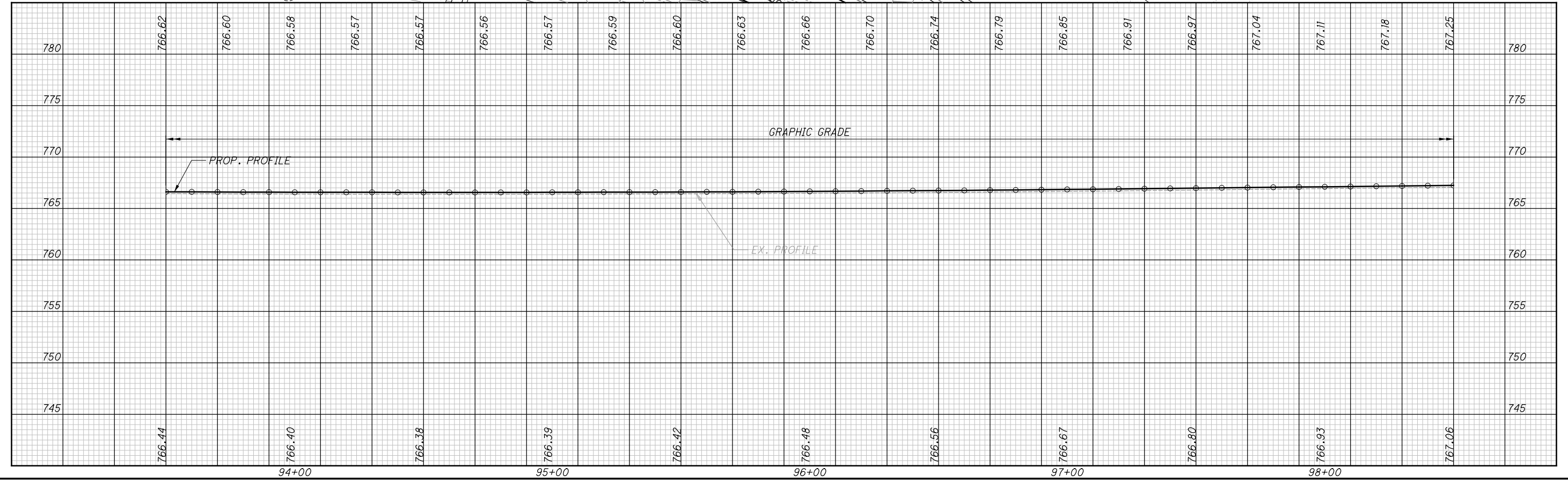
FRA-71-9.07

106
 264

...Northbound\92615_GP574.dgn 5/29/2019 8:11:45 AM msw



MILL AND FILL
SURFACE COURSE



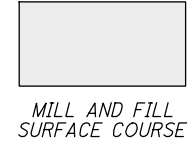
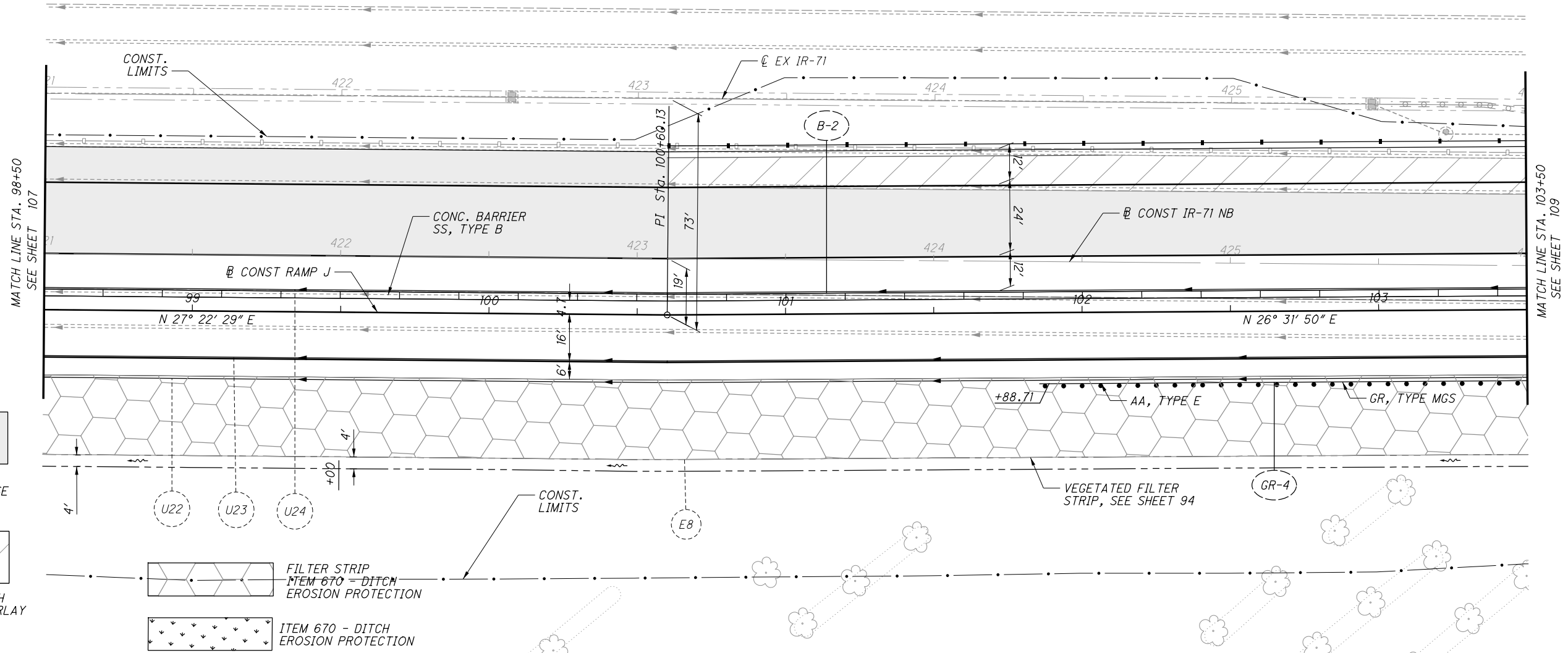
PLAN AND PROFILE - IR-71 RAMP J
STA. 93+50.00 TO STA. 98+50.00

CALCULATED MSW
CHECKED WAA

FRA-71-9.07

107
264

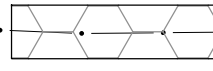
...Northbound\92615_GP575.dgn 5/29/2019 8:11:50 AM mswwhitt



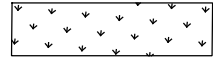
MILL AND FILL SURFACE COURSE



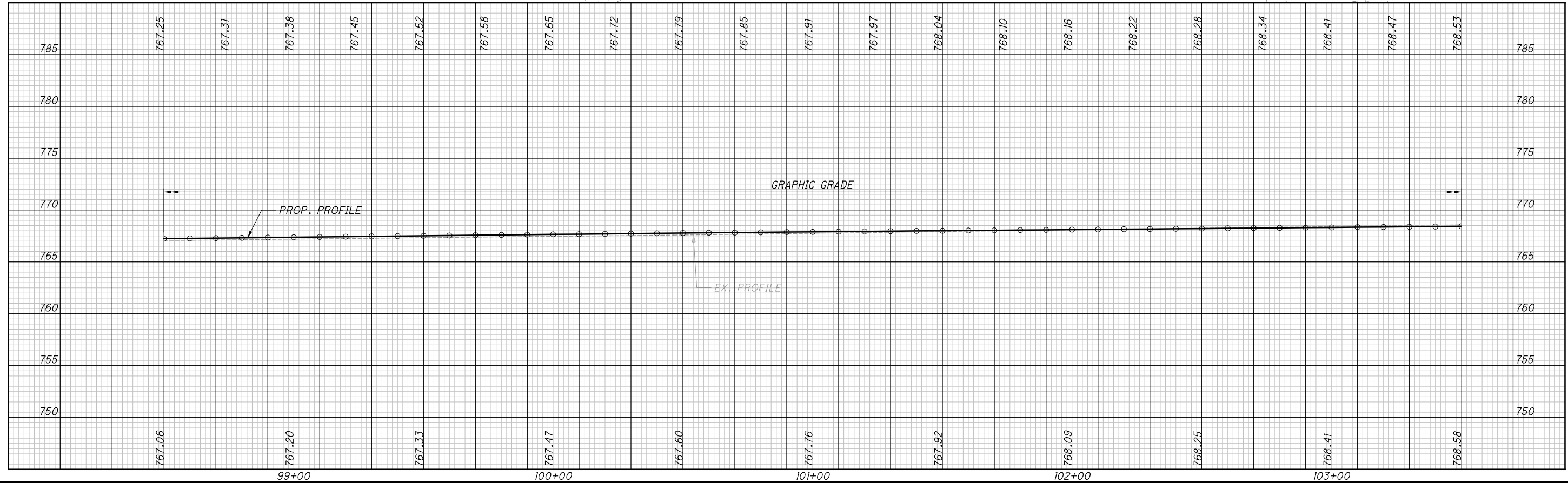
PARTIAL DEPTH PLANING AND OVERLAY



FILTER STRIP
ITEM 670 - DITCH
EROSION PROTECTION



ITEM 670 - DITCH
EROSION PROTECTION



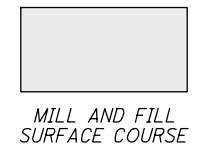
CALCULATED MSW
CHECKED WAA

PLAN AND PROFILE - IR-71 RAMP J
STA. 98+50.00 TO 103+50.00

FRA-71-9.07

...Northbound\92615_GP576.dgn 5/29/2019 8:11:59 AM mswwhitt

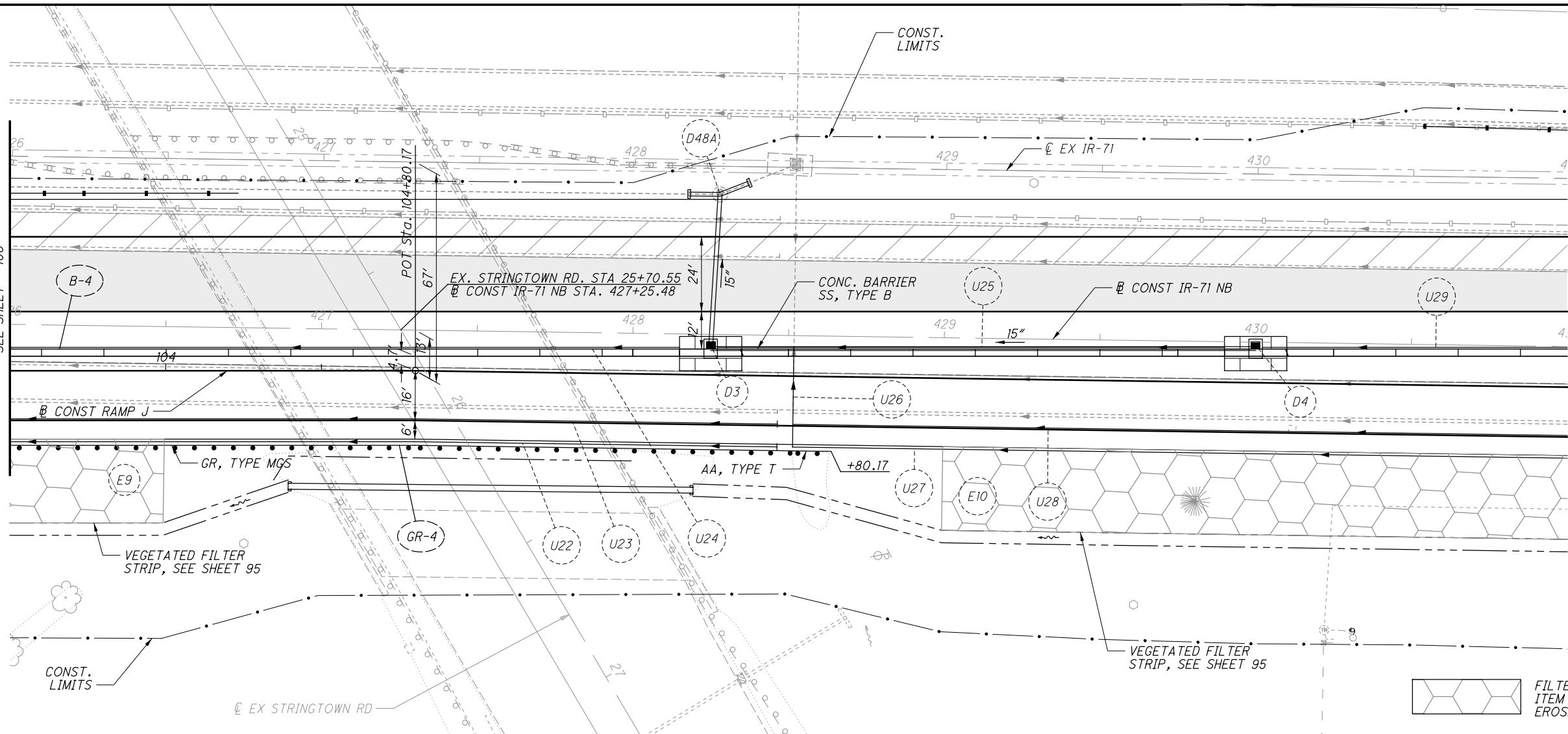
MATCH LINE STA. 103+50
SEE SHEET 108



MILL AND FILL SURFACE COURSE



PARTIAL DEPTH PLANING AND OVERLAY



FILTER STRIP
ITEM 670 - DITCH
EROSION PROTECTION

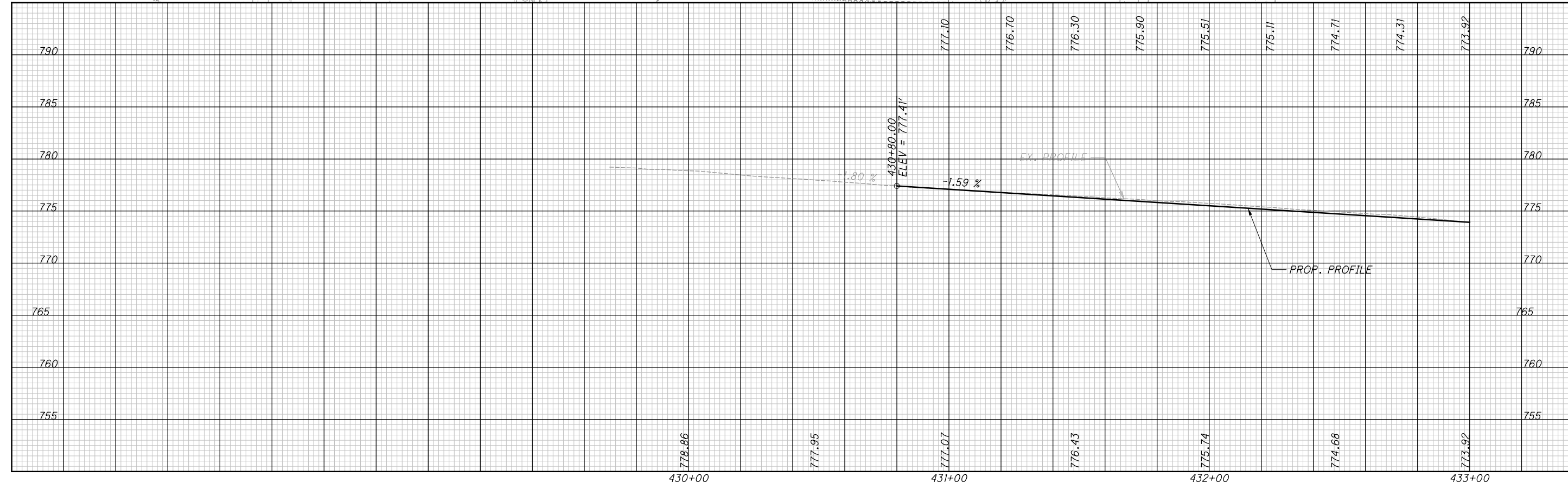
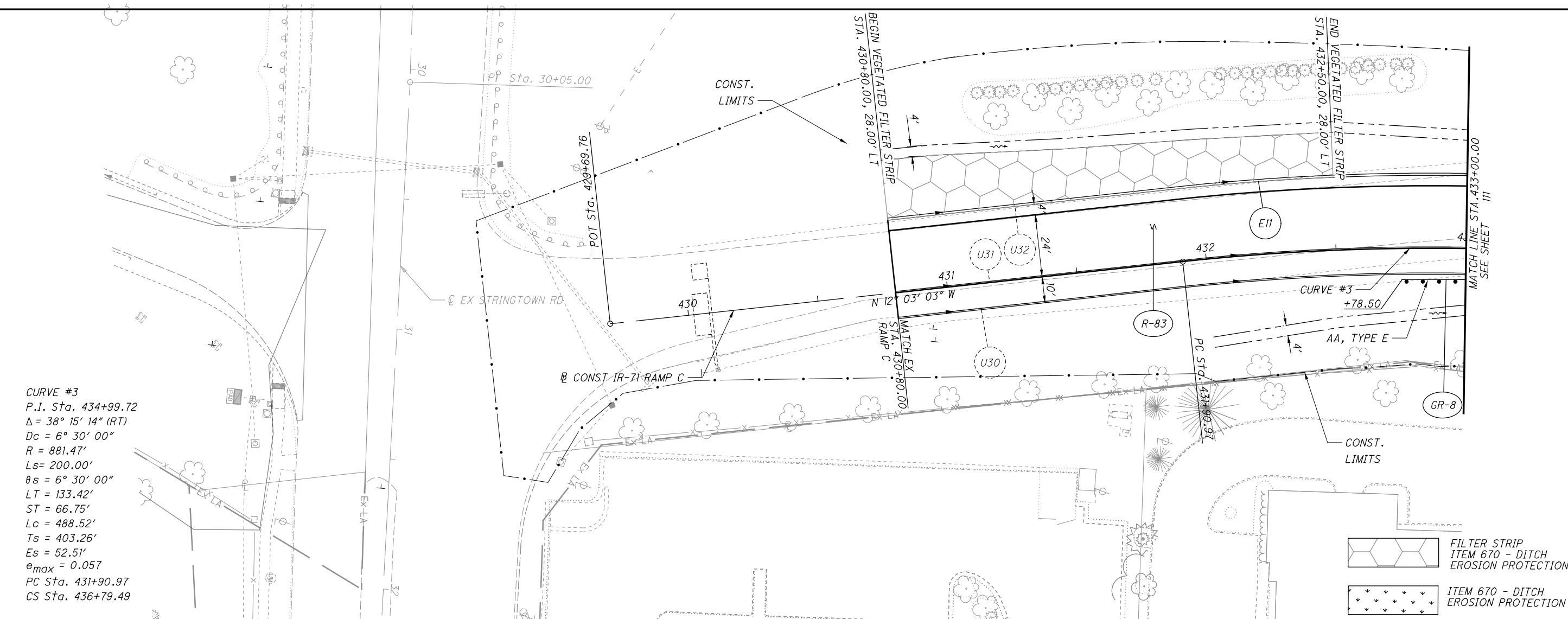


PLAN AND PROFILE - IR-71 RAMP J
STA. 103+50.00 TO STA. 104+80.17

FRA-71-9.07

109
264

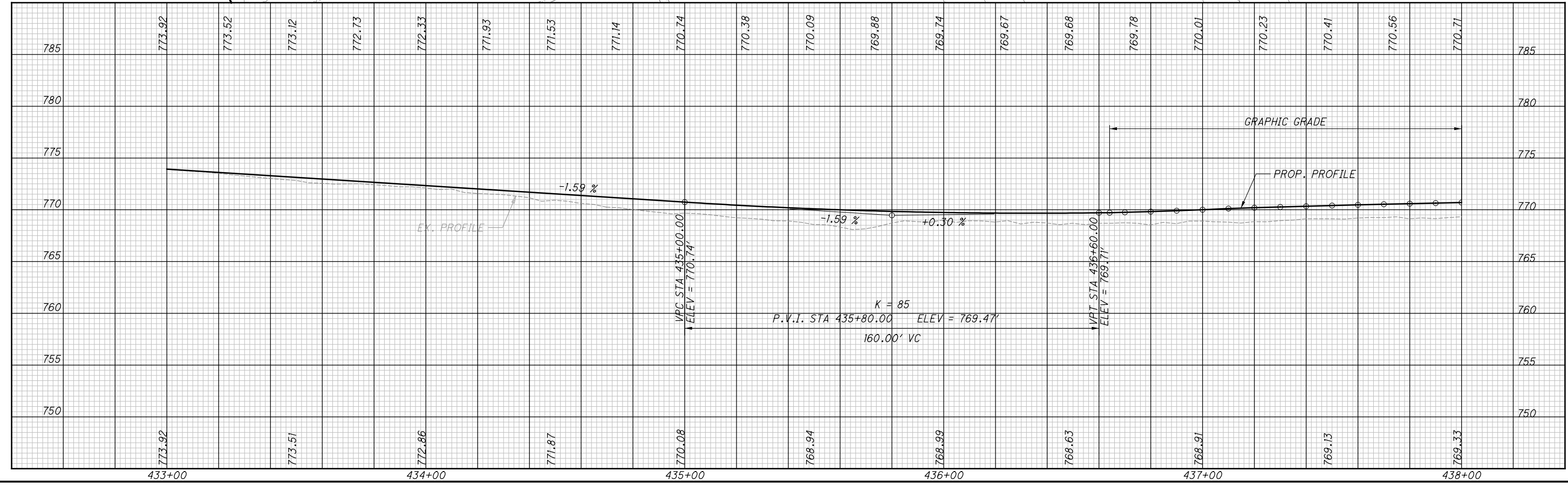
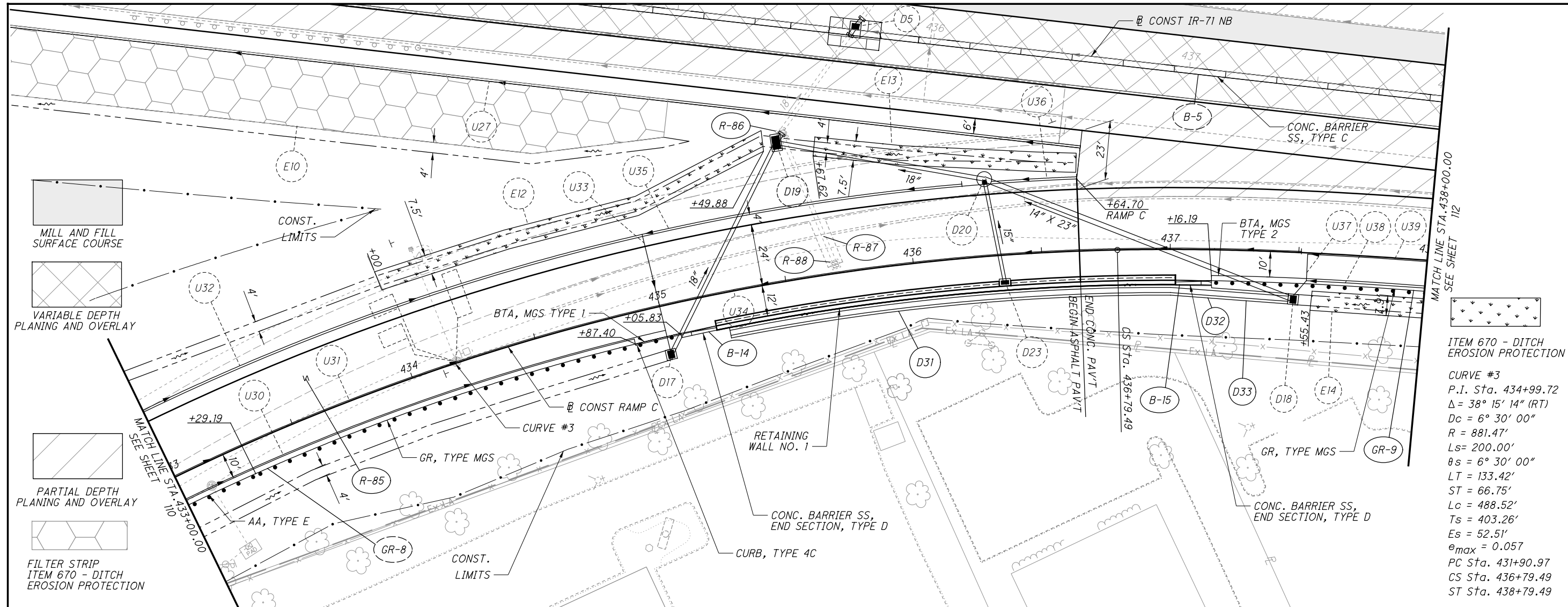
CALCULATED
MSW
CHECKED
WAA



FILTER STRIP
 ITEM 670 - DITCH
 EROSION PROTECTION

ITEM 670 - DITCH
 EROSION PROTECTION

...Northbound\92615_GP560.dgn 5/29/2019 8:12:13 AM mswwhitt

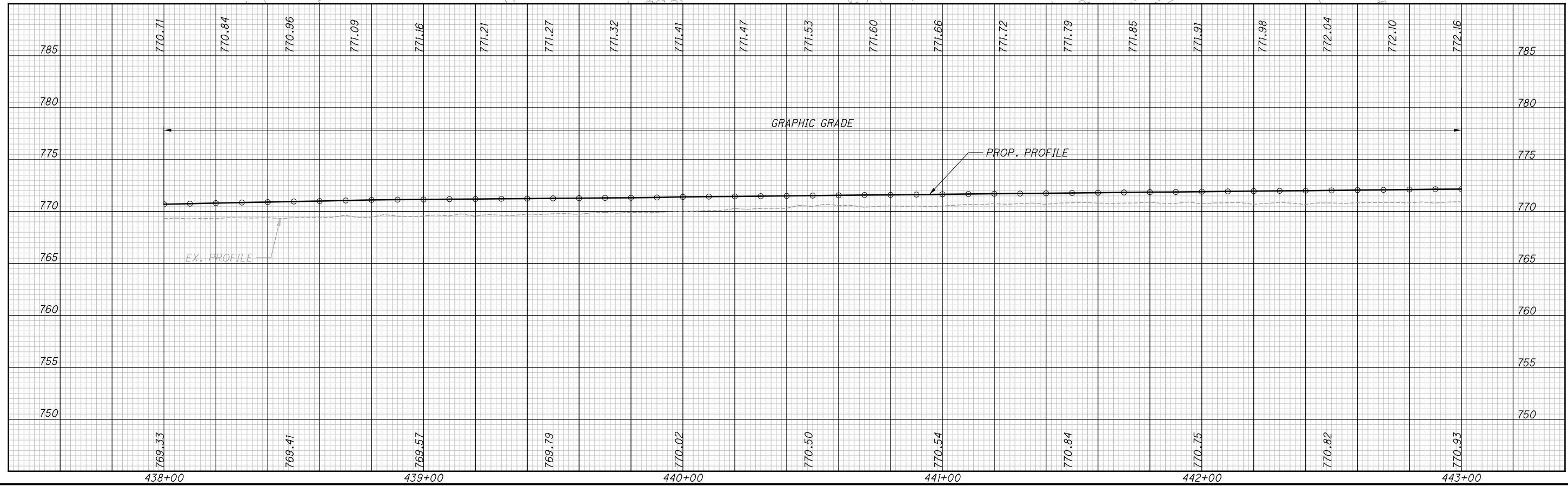
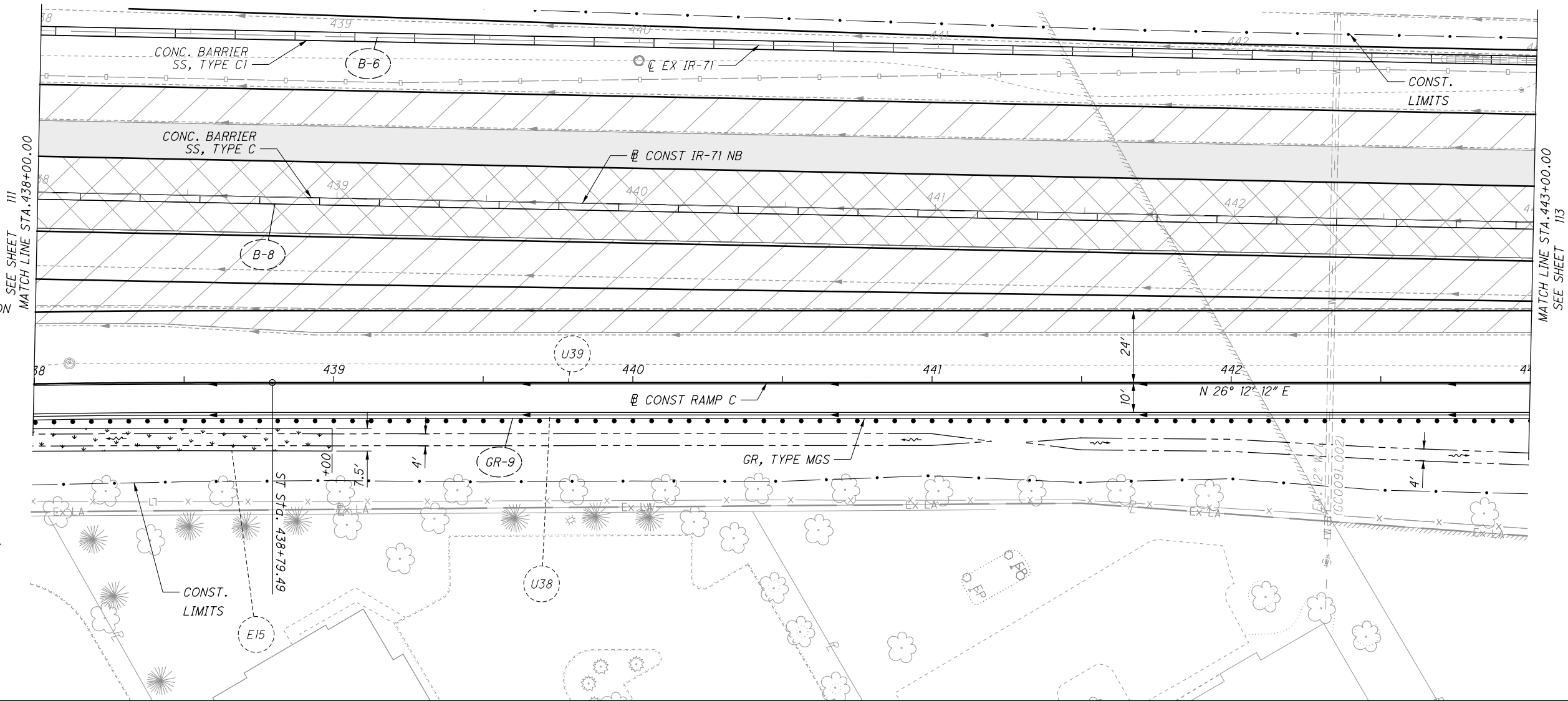


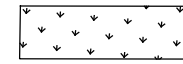
ITEM 670 - DITCH EROSION PROTECTION
 CURVE #3
 P.I. Sta. 434+99.72
 $\Delta = 38^\circ 15' 14''$ (RT)
 $D_c = 6^\circ 30' 00''$
 $R = 881.47'$
 $L_s = 200.00'$
 $\theta_s = 6^\circ 30' 00''$
 $L_T = 133.42'$
 $ST = 66.75'$
 $L_c = 488.52'$
 $T_s = 403.26'$
 $E_s = 52.51'$
 $e_{max} = 0.057$
 PC Sta. 431+90.97
 CS Sta. 436+79.49
 ST Sta. 438+79.49





PLAN AND PROFILE - IR-71 RAMP C
 STA. 433+00.00 TO STA. 438+00.00


FRA-71-9.07
 111
 264



- 

ITEM 670 - DITCH EROSION PROTECTION
- 

MILL AND FILL SURFACE COURSE
- 

PARTIAL DEPTH PLANING AND OVERLAY
- 

VARIABLE DEPTH PLANING AND OVERLAY

SEE SHEET III
MATCH LINE STA. 438+00.00

MATCH LINE STA. 443+00.00
SEE SHEET 113



PLAN AND PROFILE - IR-71 RAMP C
STA. 438+00.00 TO STA. 443+00.00

FRA-71-9.07

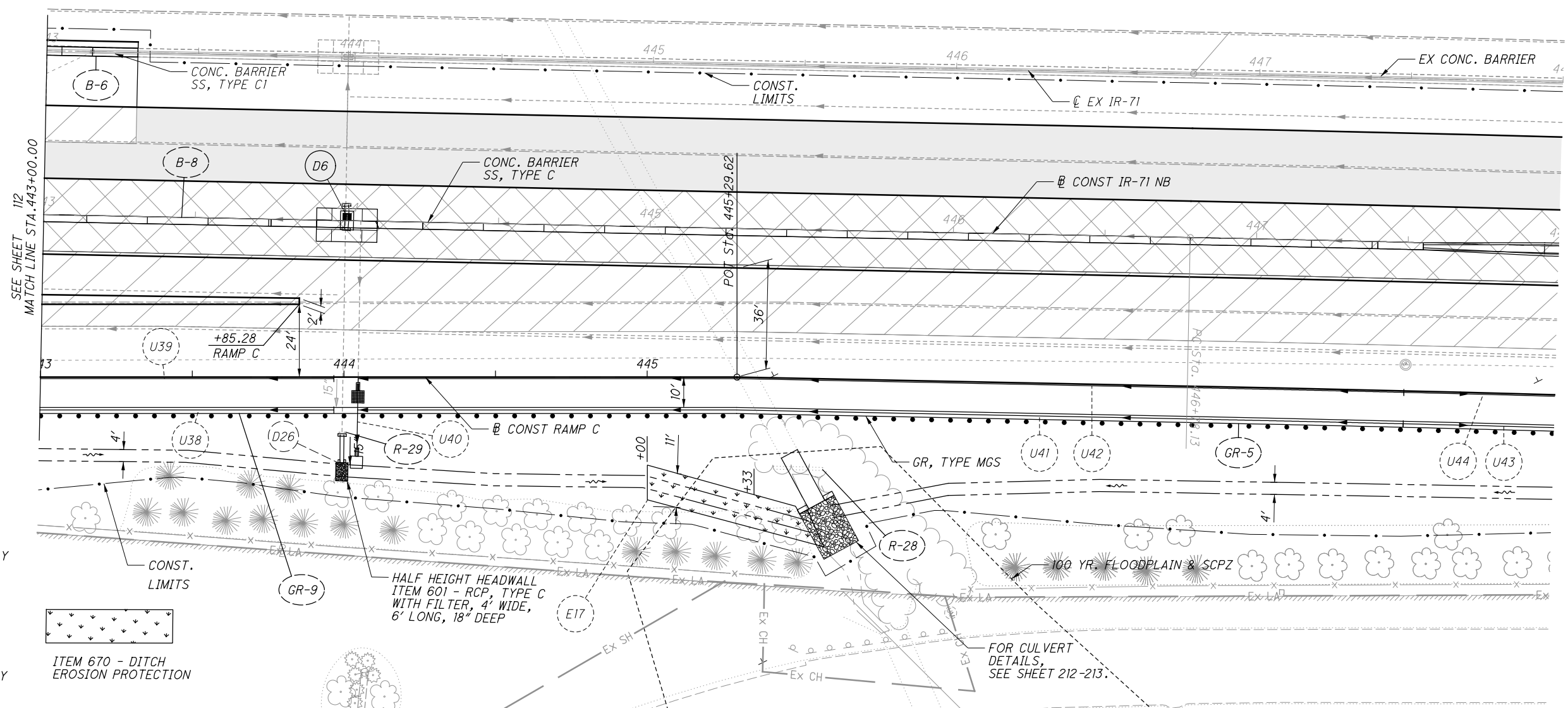
CALCULATED MSW
CHECKED WAA




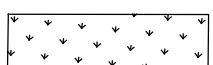


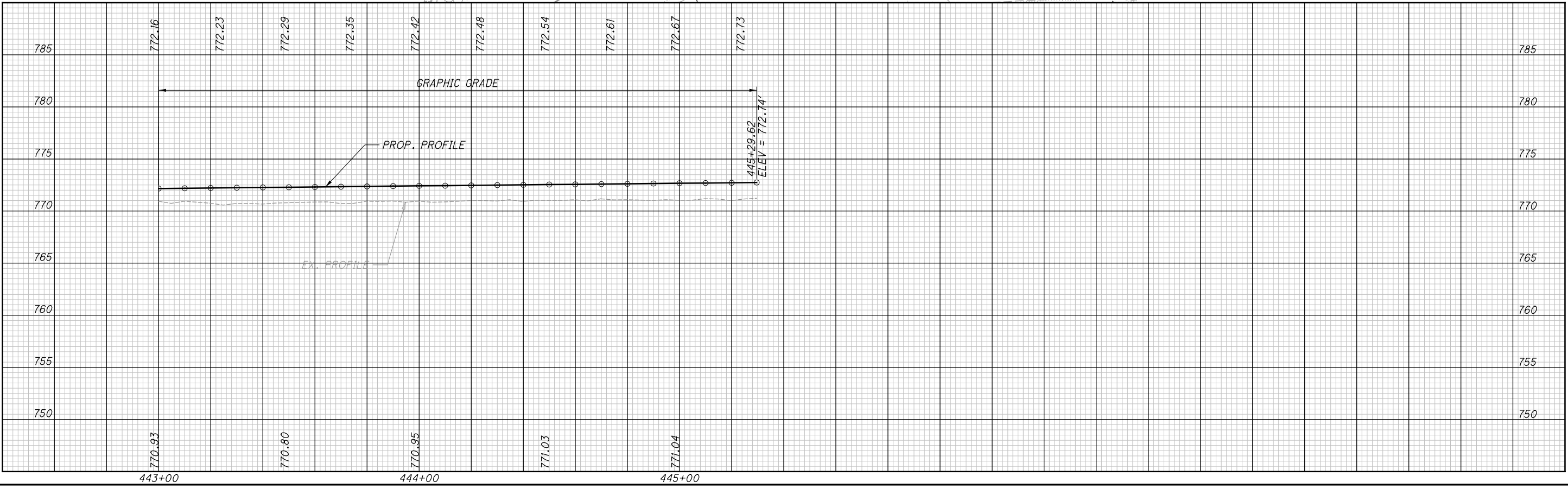
CALCULATED MSW
CHECKED WAA

**PLAN AND PROFILE - IR-71 RAMP C
STA. 443+00.00 TO STA. 448+00.00**

FRA-71-9.07






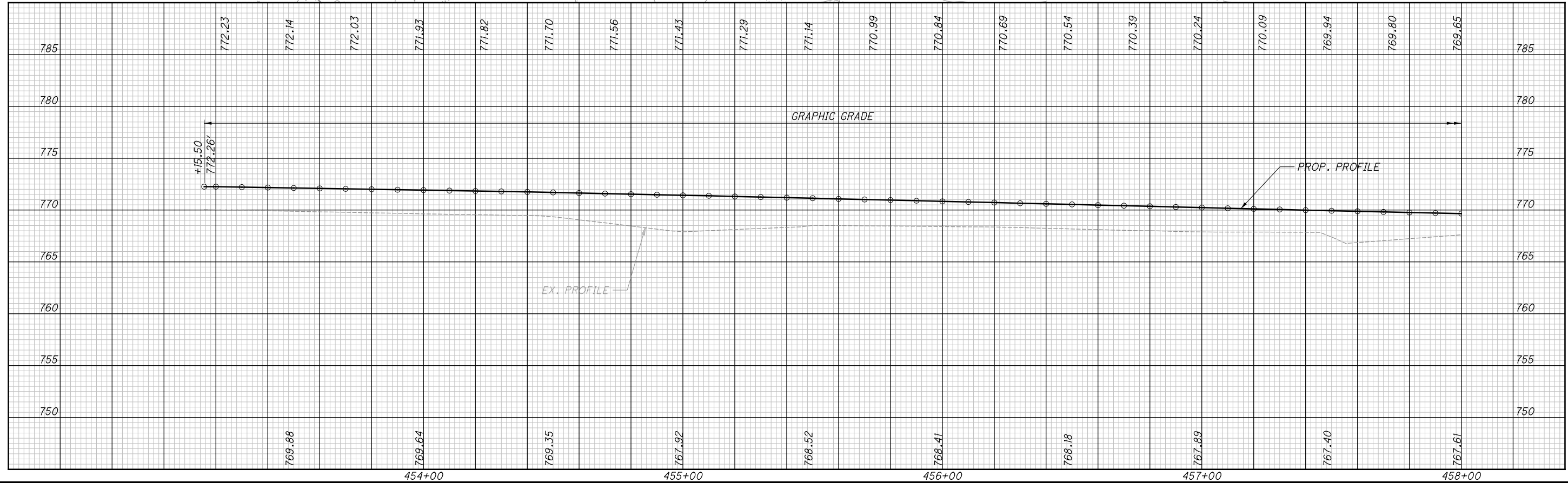
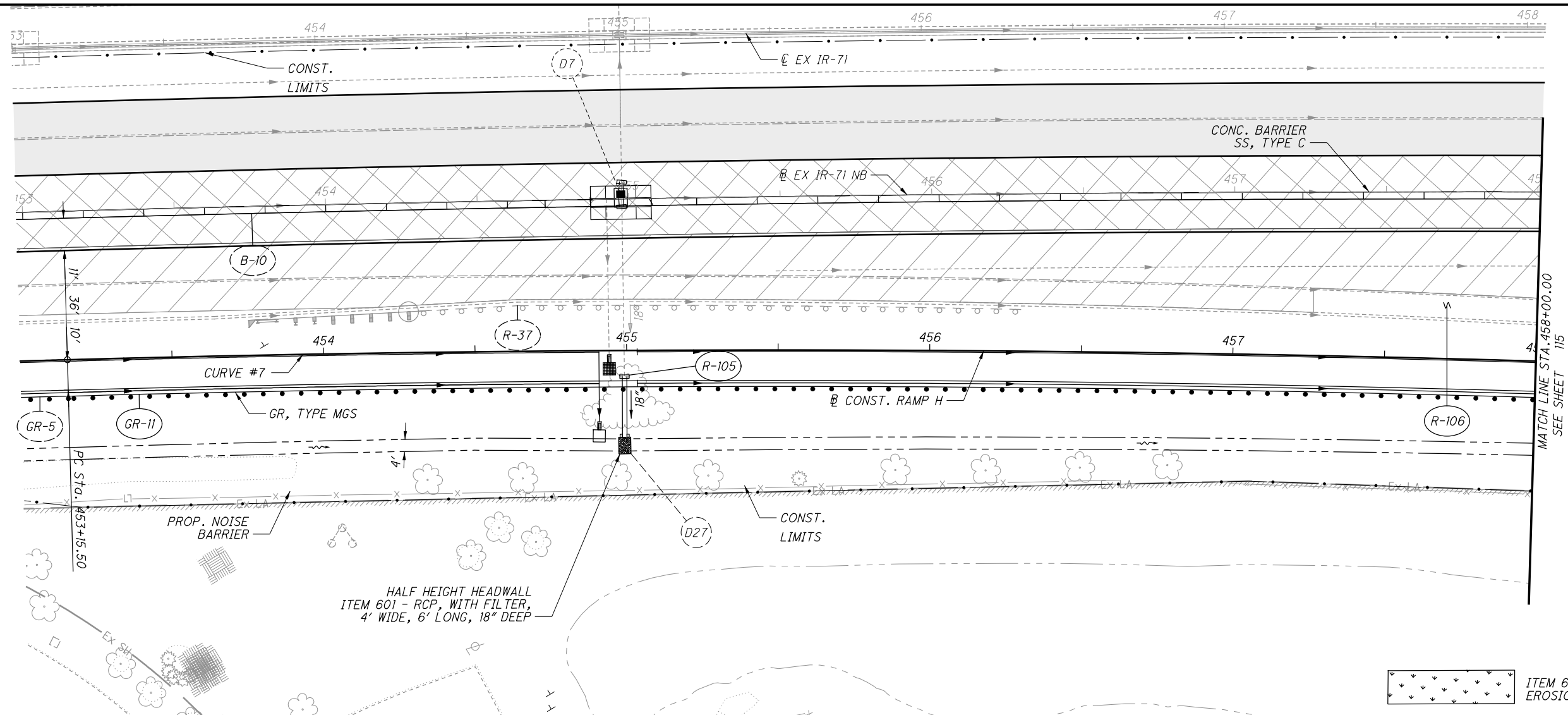
-  MILL AND FILL SURFACE COURSE
-  PARTIAL DEPTH PLANING AND OVERLAY
-  VARIABLE DEPTH PLANING AND OVERLAY
-  ITEM 670 - DITCH EROSION PROTECTION



...Northbound\92615_GP562.dgn 5/29/2019 8:12:25 AM mswwhitt

CURVE #7
 P.I. Sta. 459+82.16
 $\Delta = 8^\circ 52' 16''$ (RT)
 $D_c = 0^\circ 40' 00''$
 $R = 8,594.37'$
 $T = 666.66'$
 $L = 1,330.66'$
 $E = 25.82'$
 $e_{max} = 0.019$
 PC Sta. 453+15.50
 PCC Sta. 466+46.15

-  MILL AND FILL SURFACE COURSE
-  PARTIAL DEPTH PLANING AND OVERLAY
-  VARIABLE DEPTH PLANING AND OVERLAY






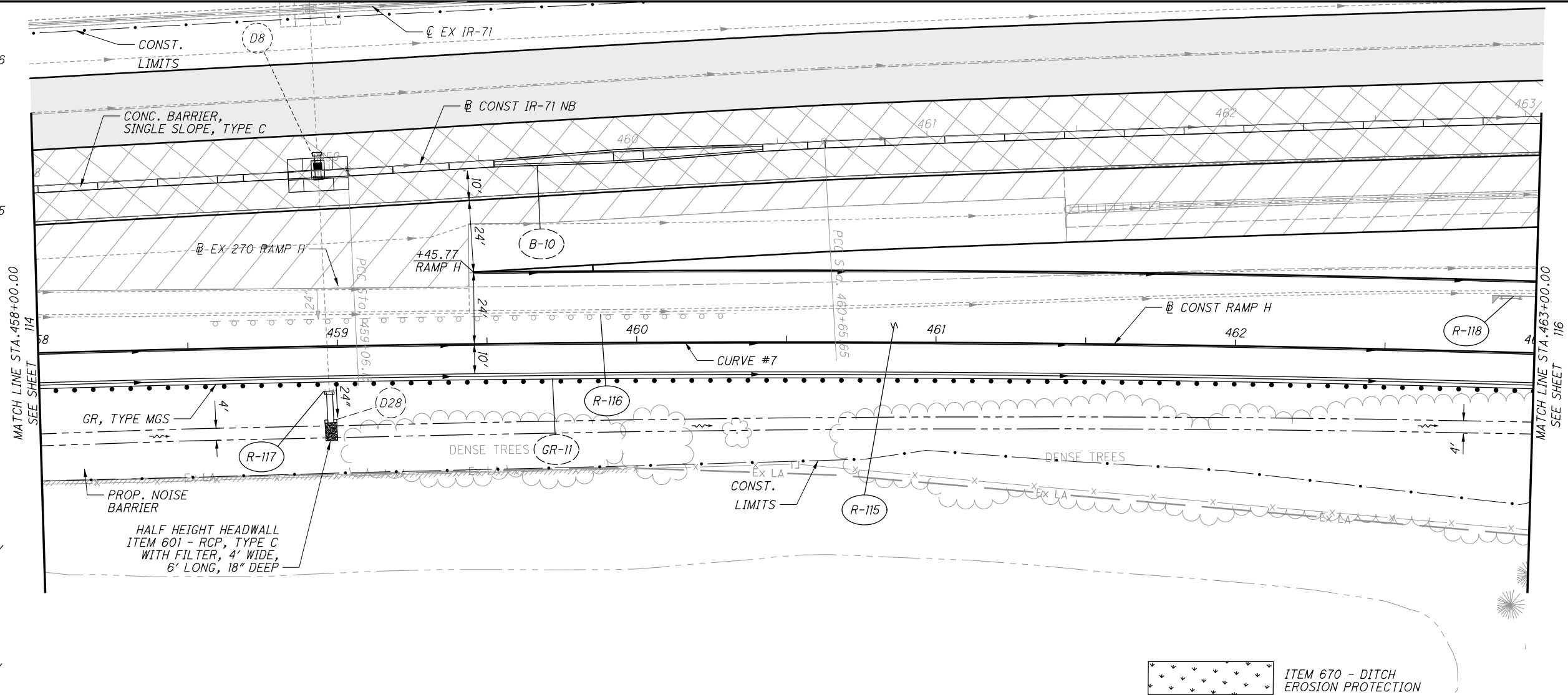
PLAN AND PROFILE - IR-270 RAMP H
STA. 453+00.00 TO STA. 458+00.00

FRA-71-9.07

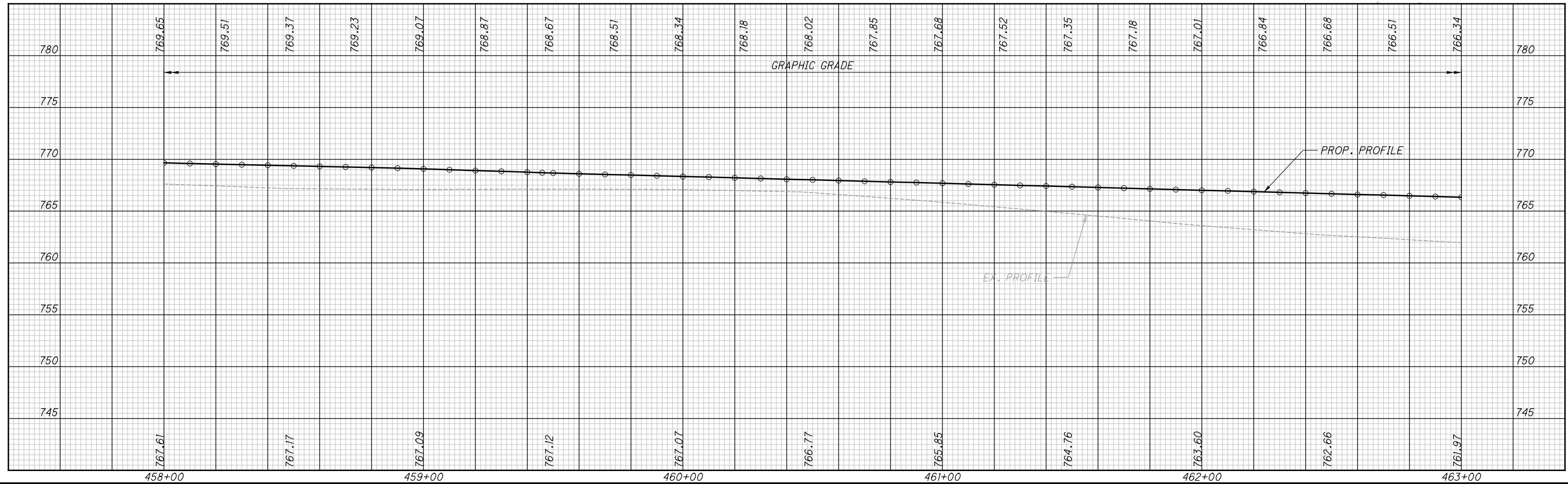
...Northbound\92615_GP563.dgn 5/29/2019 8:12:29 AM mswntt

CURVE #7
 P.I. Sta. 459+82.16
 $\Delta = 8^\circ 52' 16''$ (RT)
 $D_c = 0^\circ 40' 00''$
 $R = 8,594.37'$
 $T = 666.66'$
 $L = 1,330.66'$
 $E = 25.82'$
 $\theta_{max} = 0.019$
 PC Sta. 453+15.50
 PCC Sta. 466+46.15

-  MILL AND FILL SURFACE COURSE
-  PARTIAL DEPTH PLANING AND OVERLAY
-  VARIABLE DEPTH PLANING AND OVERLAY



 ITEM 670 - DITCH EROSION PROTECTION





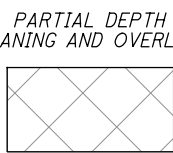
PLAN AND PROFILE - IR-270 RAMP H
 STA. 458+00.00 TO STA. 463+00.00

FRA-71-9.07

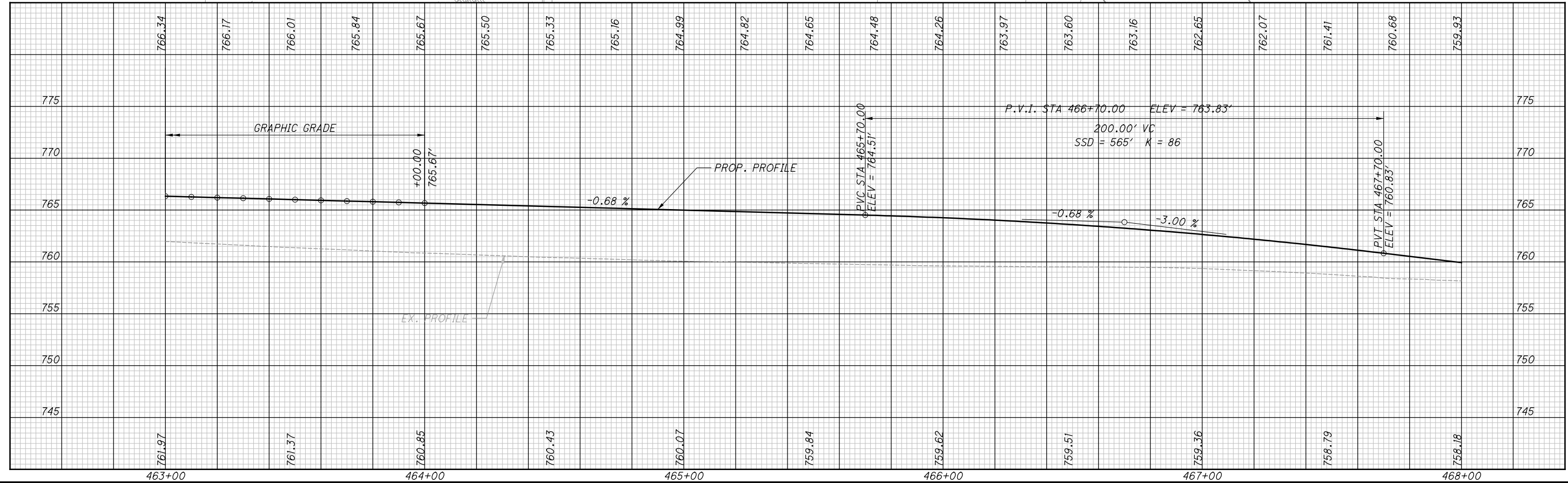
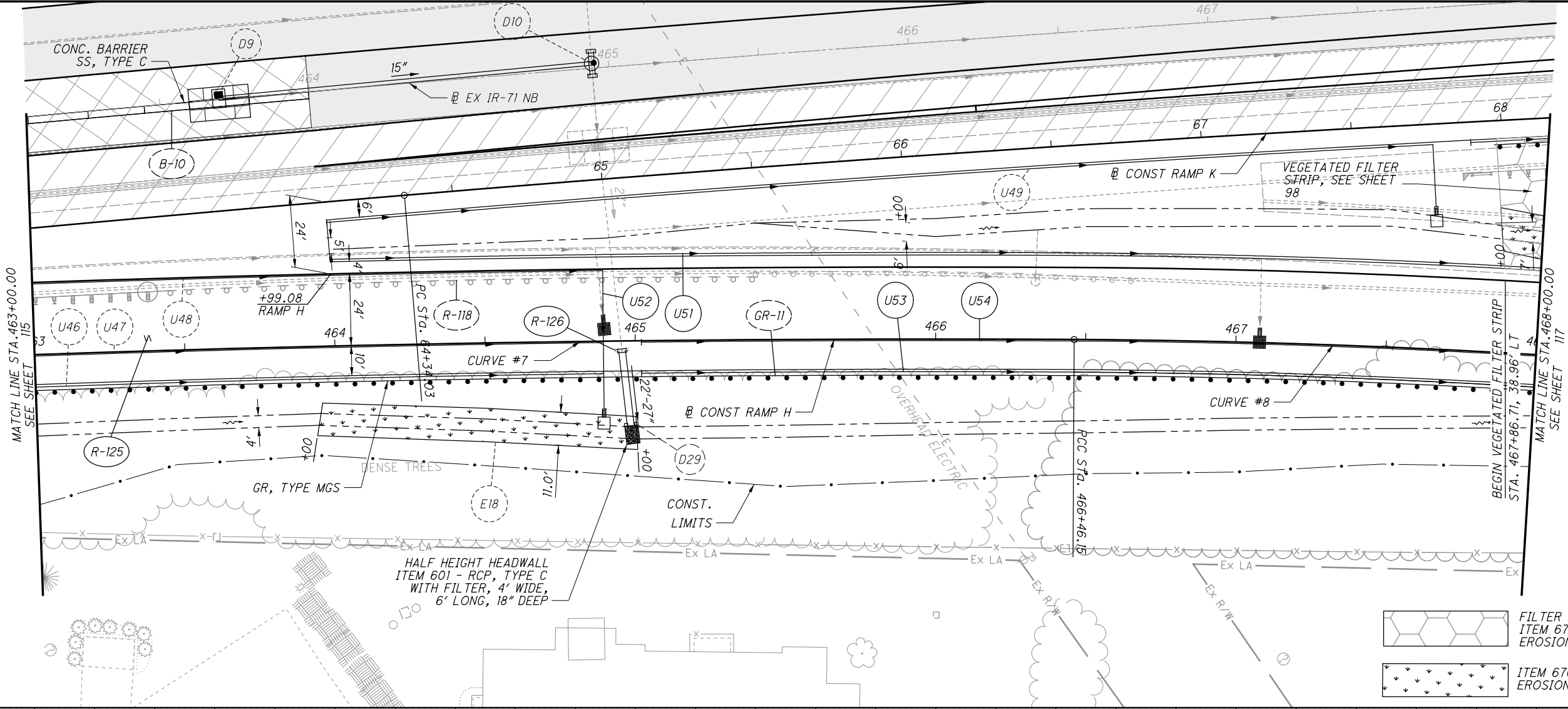
115
 264

...Northbound\92615_GP564.dgn 5/29/2019 8:12:33 AM mswntt

CURVE #7
 P.I. Sta. 459+82.16
 $\Delta = 8^\circ 52' 16''$ (RT)
 $D_c = 0^\circ 40' 00''$
 $R = 8,594.37'$
 $T = 666.66'$
 $L = 1,330.66'$
 $E = 25.82'$
 $e_{max} = 0.019$
 PC Sta. 453+15.50
 PCC Sta. 466+46.15

-  MILL AND FILL SURFACE COURSE
-  PARTIAL DEPTH PLANING AND OVERLAY
-  VARIABLE DEPTH PLANING AND OVERLAY

CURVE #8
 P.I. Sta. 467+96.62
 $\Delta = 6^\circ 00' 46''$ (RT)
 $D_c = 2^\circ 00' 00''$
 $R = 2,864.79'$
 $T = 150.46'$
 $L = 300.64'$
 $E = 3.95'$
 $e_{max} = 0.035$
 PCC Sta. 466+46.15
 PCC Sta. 469+46.80



CALCULATED MSW
 CHECKED WAA
PLAN AND PROFILE - IR-270 RAMP H
STA. 463+00.00 TO STA. 468+00.00

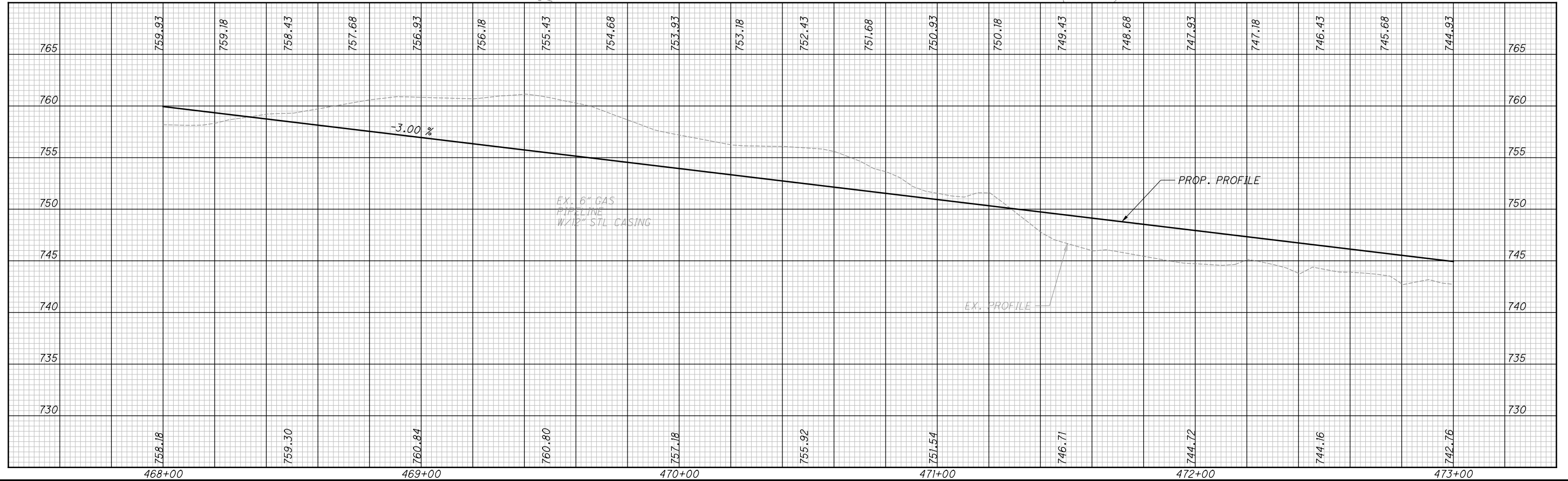
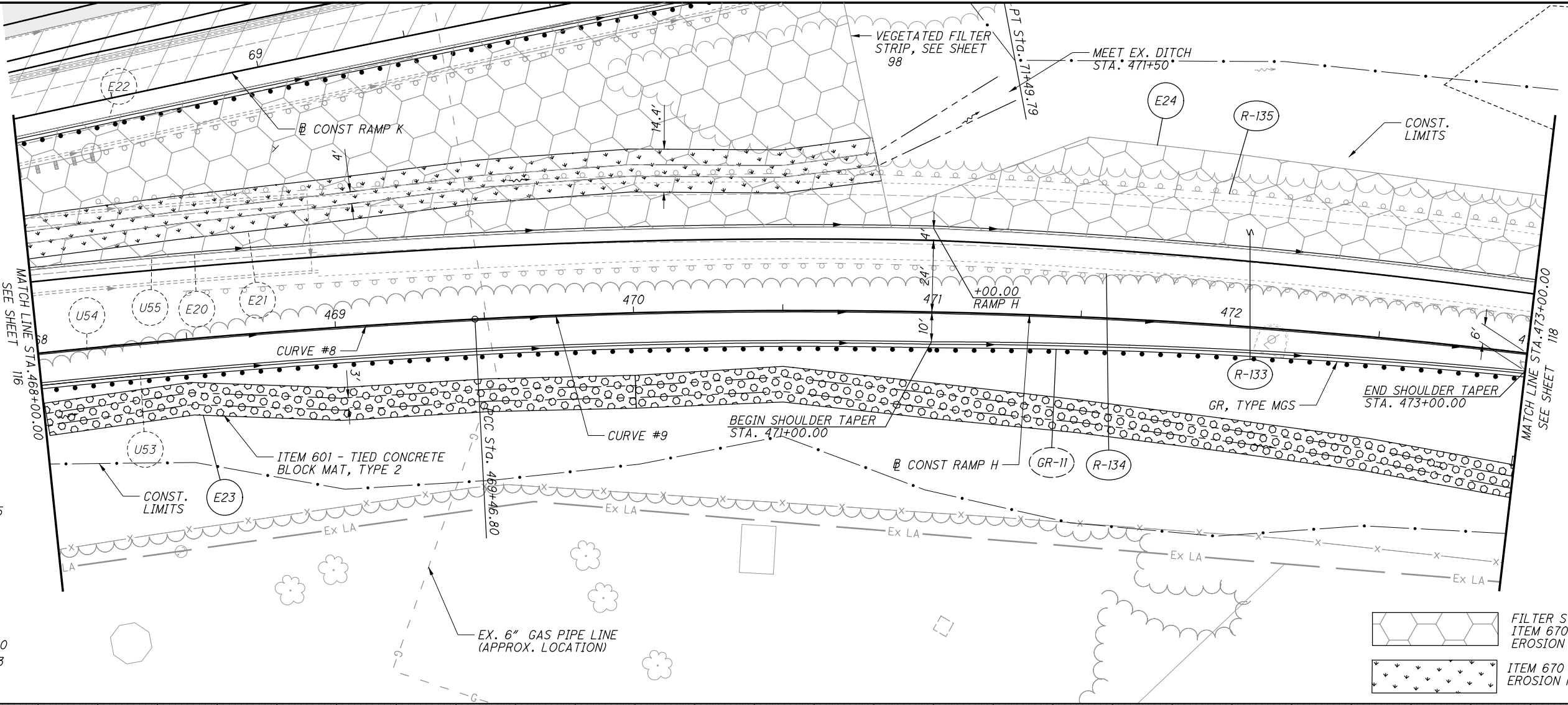
FRA-71-9.07

CURVE #8
 P.I. Sta. 467+96.62
 $\Delta = 6^{\circ} 00' 46''$ (RT)
 $Dc = 2^{\circ} 00' 00''$
 $R = 2,864.79'$
 $T = 150.46'$
 $L = 300.64'$
 $E = 3.95'$
 $e_{max} = 0.035$
 PCC Sta. 466+46.15
 PCC Sta. 469+46.80

MILL AND FILL
 SURFACE COURSE

PARTIAL DEPTH
 PLANING AND OVERLAY

CURVE #9
 P.I. Sta. 472+81.45
 $\Delta = 18^{\circ} 15' 00''$ (RT)
 $Dc = 2^{\circ} 45' 00''$
 $R = 2,083.48'$
 $T = 334.65'$
 $L = 663.63'$
 $E = 26.70'$
 $e_{max} = 0.042$
 PCC Sta. 469+46.80
 PCC Sta. 476+10.43



CALCULATED MSW CHECKED WAA
 HORIZONTAL SCALE IN FEET
 0 20 40

PLAN AND PROFILE - IR-270 RAMP H
STA. 468+00.00 TO STA. 473+00.00

FRA-71-9.07

117
 264

...Northbound\92615_GP566.dgn 5/29/2019 8:12:42 AM mswwhitt



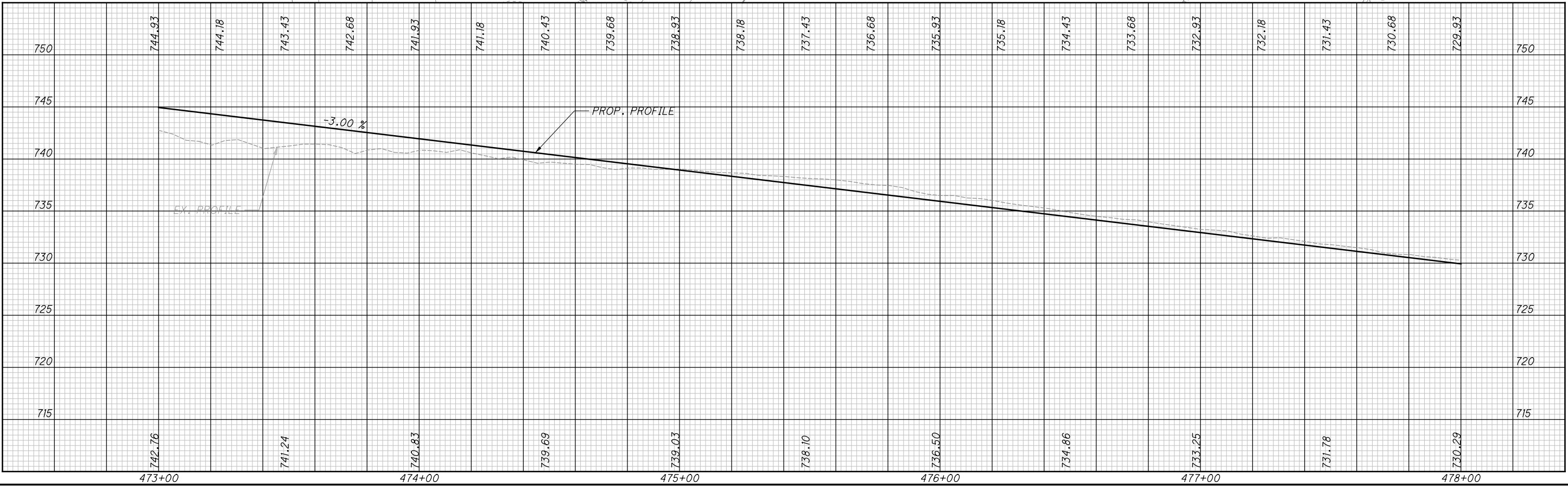
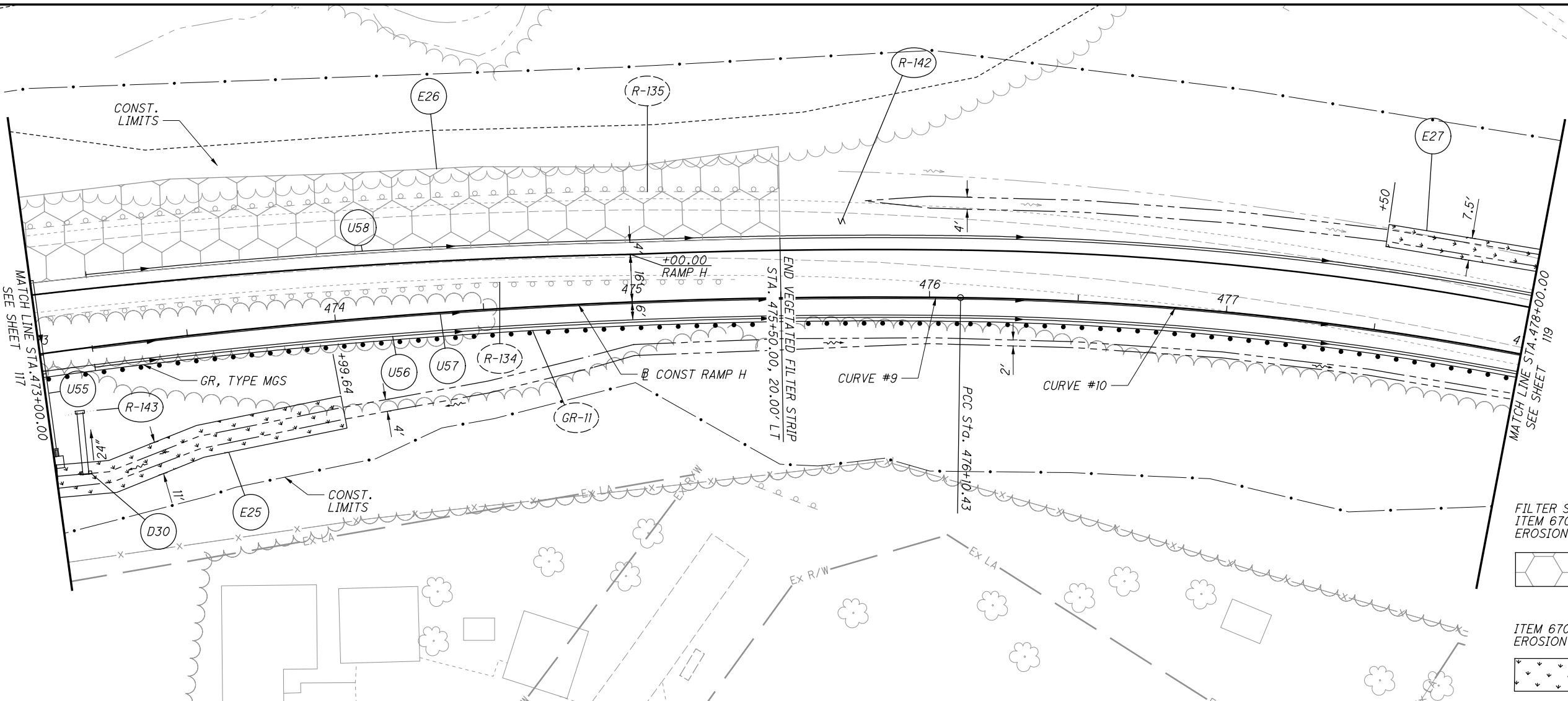
CALCULATED MSW
CHECKED WAA

**PLAN AND PROFILE - IR-270 RAMP H
STA. 473+00.00 TO STA 478+00.00**

FRA-71-9.07

CURVE #10
 P.I. Sta. 478+29.80
 $\Delta = 22^\circ 43' 52''$ (RT)
 $D_c = 5^\circ 15' 00''$
 $R = 1,091.35'$
 $T = 219.37'$
 $L = 432.97'$
 $E = 21.83'$
 $e_{max} = 0.057$
 PCC Sta. 476+10.43
 PCC Sta. 480+43.41

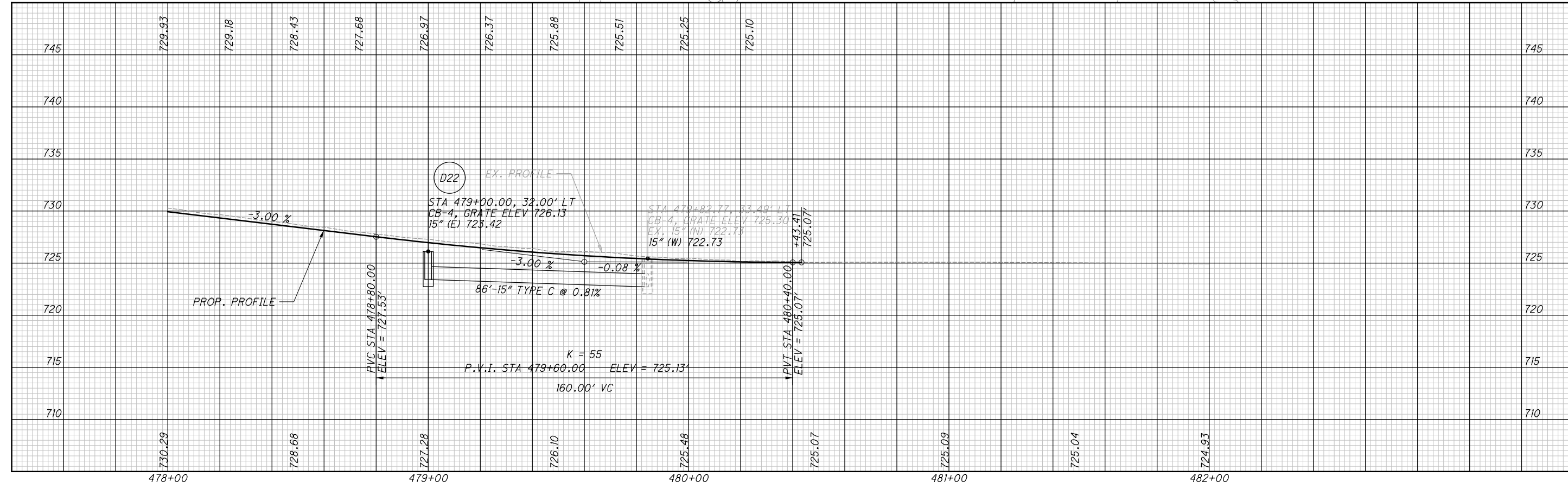
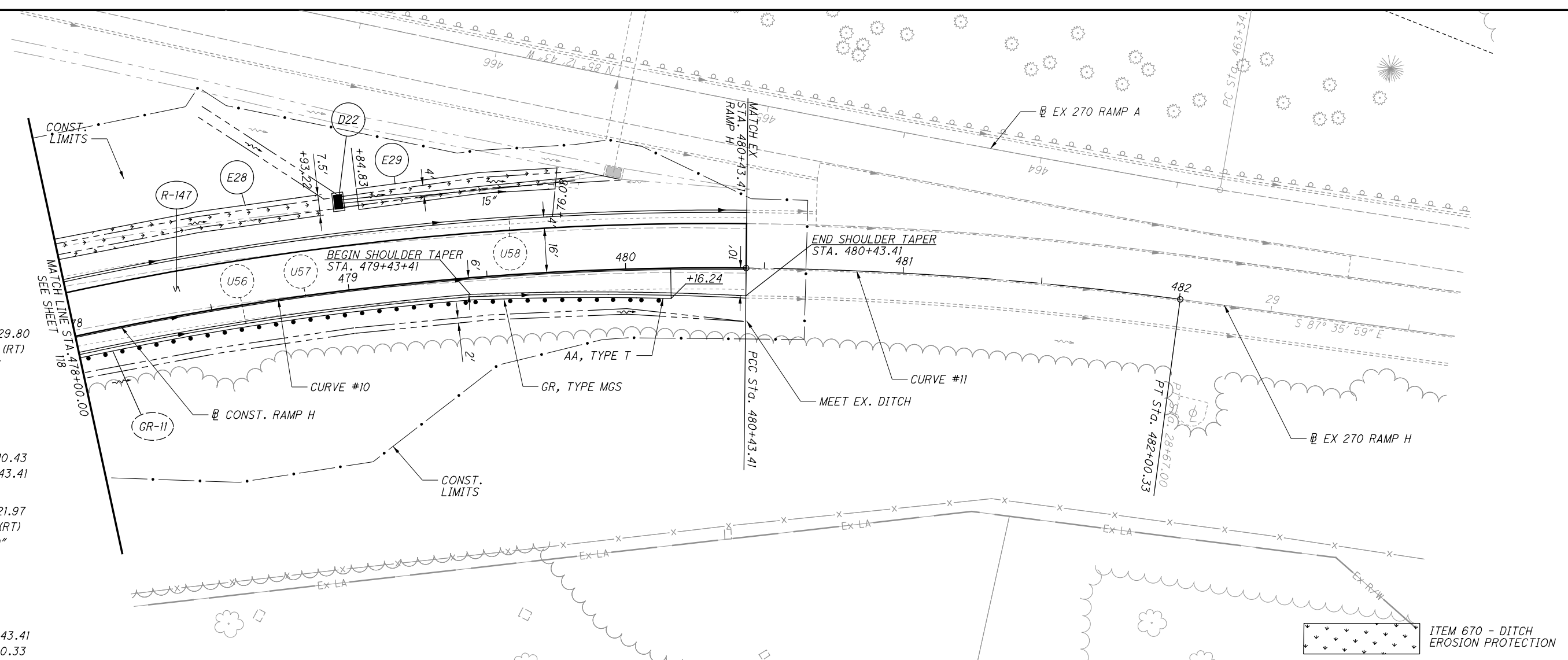
CURVE #9
 P.I. Sta. 472+81.45
 $\Delta = 18^\circ 15' 00''$ (RT)
 $D_c = 2^\circ 45' 00''$
 $R = 2,083.48'$
 $T = 334.65'$
 $L = 663.63'$
 $E = 26.70'$
 $e_{max} = 0.042$
 PCC Sta. 469+46.80
 PCC Sta. 476+10.43



...Northbound\92615_GP567.dgn 5/29/2019 8:12:46 AM mswwhitt

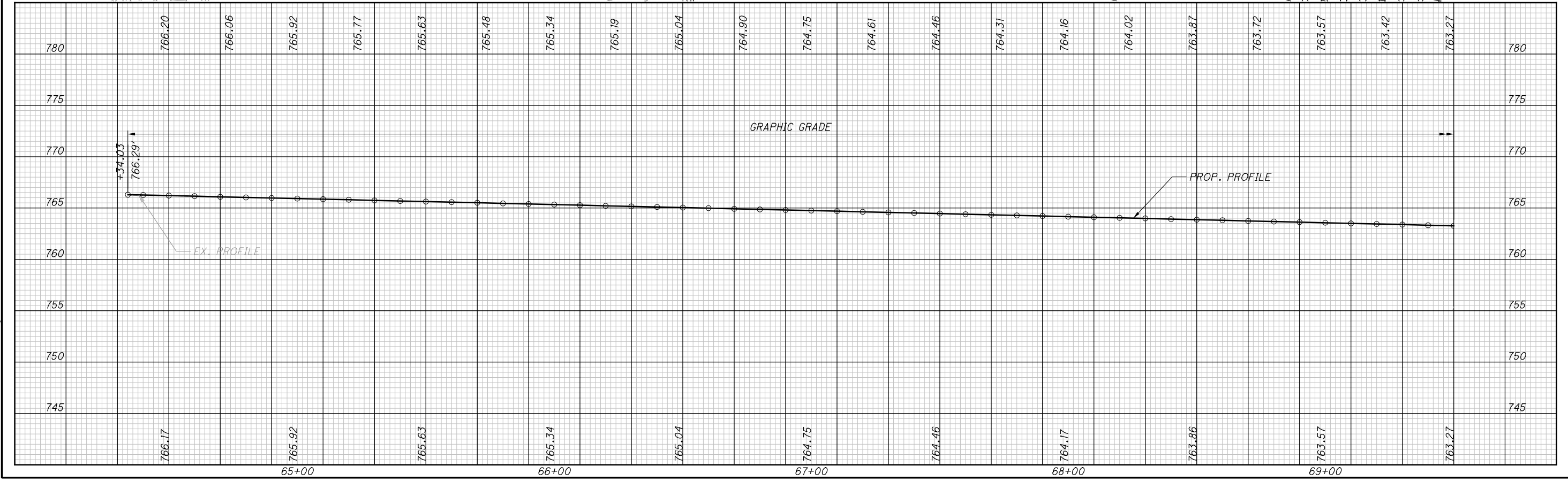
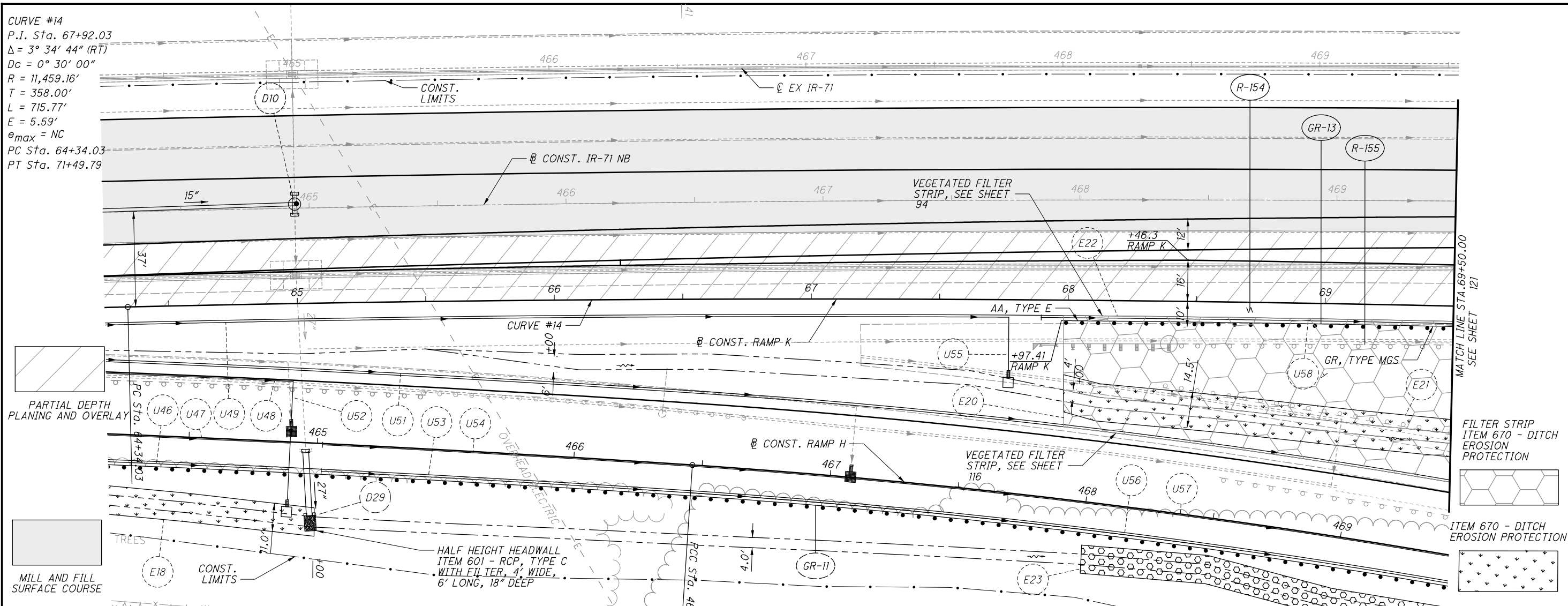
CURVE #10
 P.I. Sta. 478+29.80
 $\Delta = 22^\circ 43' 52''$ (RT)
 $D_c = 5^\circ 15' 00''$
 $R = 1,091.35'$
 $T = 219.37'$
 $L = 432.97'$
 $E = 21.83'$
 $\theta_{max} = 0.057$
 PCC Sta. 476+10.43
 PCC Sta. 480+43.41

CURVE #11
 P.I. Sta. 481+21.97
 $\Delta = 7^\circ 03' 42''$ (RT)
 $D_c = 4^\circ 30' 00''$
 $R = 1,273.24'$
 $T = 78.56'$
 $L = 156.93'$
 $E = 2.42'$
 $\theta_{max} = X$
 PCC Sta. 480+43.41
 PT Sta. 482+00.33



...Northbound\92615_GP568.dgn 5/29/2019 8:12:50 AM mswwhitt

CURVE #14
 P.I. Sta. 67+92.03
 $\Delta = 3^\circ 34' 44''$ (RT)
 $D_c = 0^\circ 30' 00''$
 $R = 11,459.16'$
 $T = 358.00'$
 $L = 715.77'$
 $E = 5.59'$
 $\theta_{max} = NC$
 PC Sta. 64+34.03
 PT Sta. 71+49.79



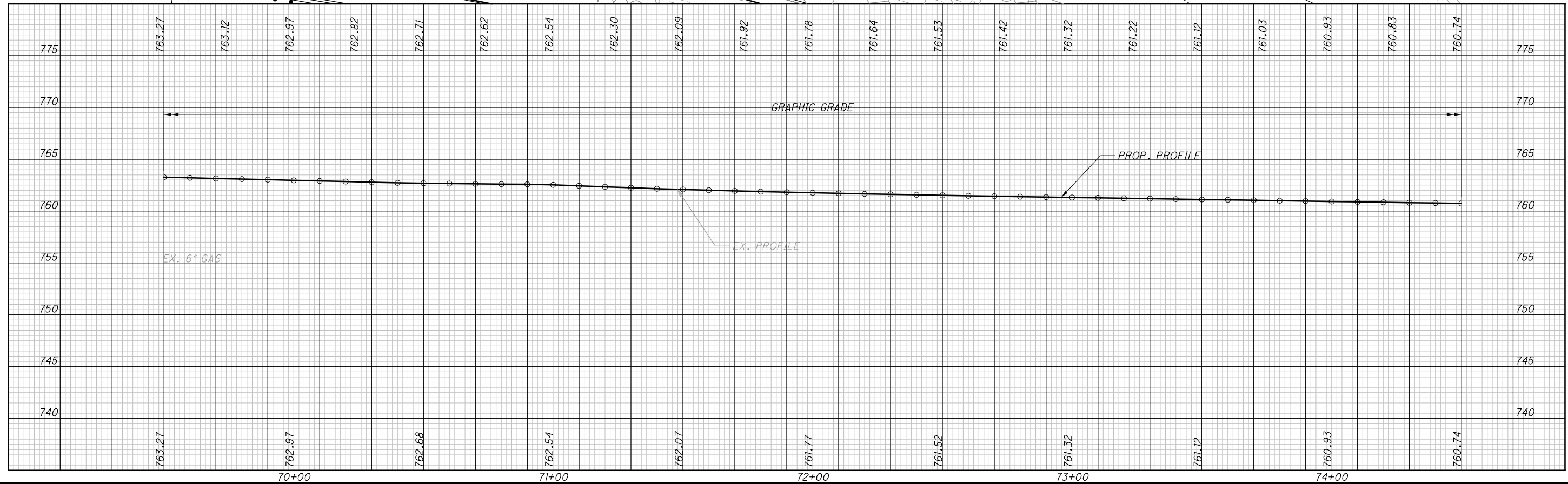
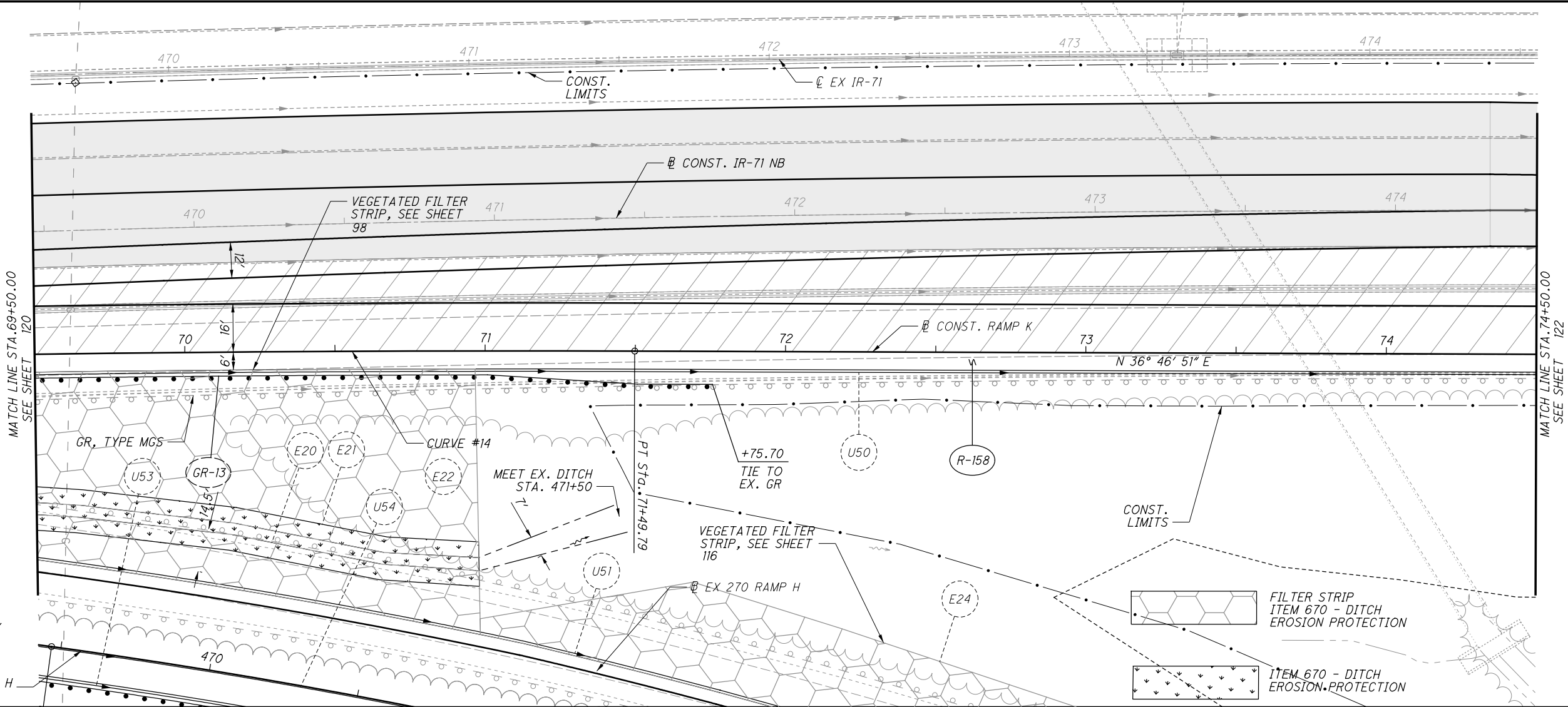
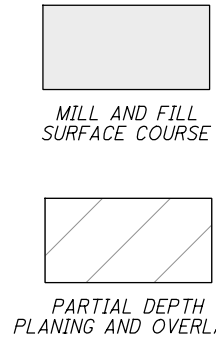
PLAN AND PROFILE - IR-71 RAMP K
 STA. 64+34.03 TO STA. 69+50.00

FRA-71-9.07

120
 264

...Northbound\92615_GP569.dgn 5/29/2019 8:12:55 AM mswntt

CURVE #14
 P.I. Sta. 67+92.03
 $\Delta = 3^\circ 34' 44''$ (RT)
 $D_c = 0^\circ 30' 00''$
 $R = 11,459.16'$
 $T = 358.00'$
 $L = 715.77'$
 $E = 5.59'$
 $\theta_{max} = NC$
 PC Sta. 64+34.03
 PT Sta. 71+49.79



CALCULATED MSW
 CHECKED WAA
PLAN AND PROFILE - IR-71 RAMP K
STA. 69+50.00 TO STA. 74+50.00

FRA-71-9.07

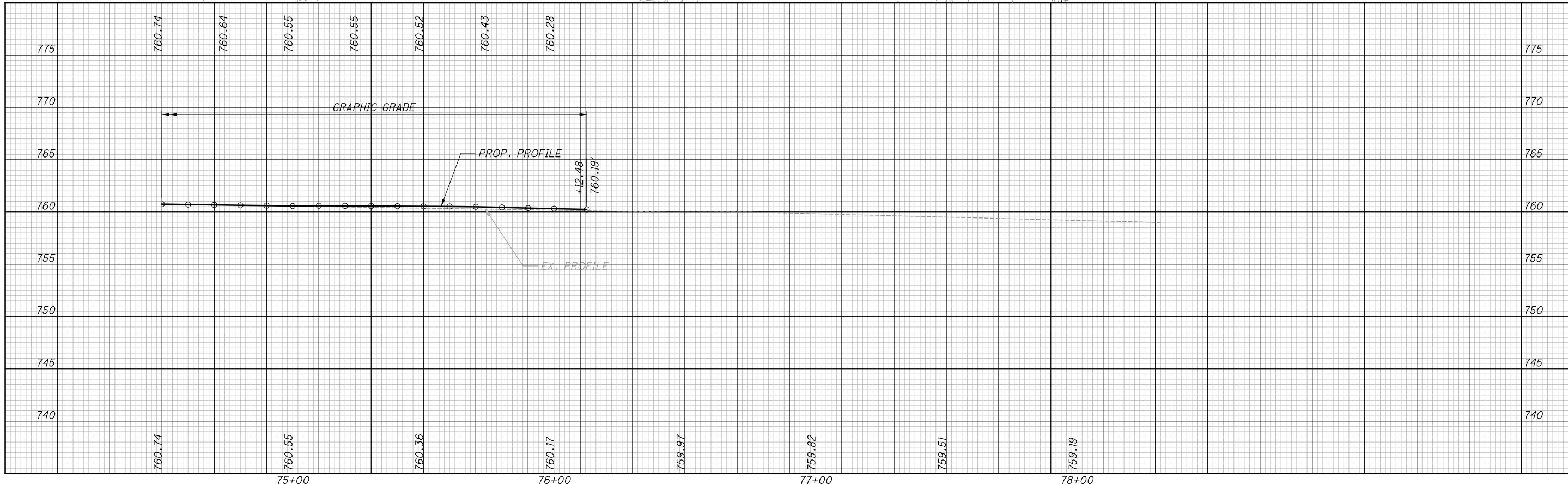
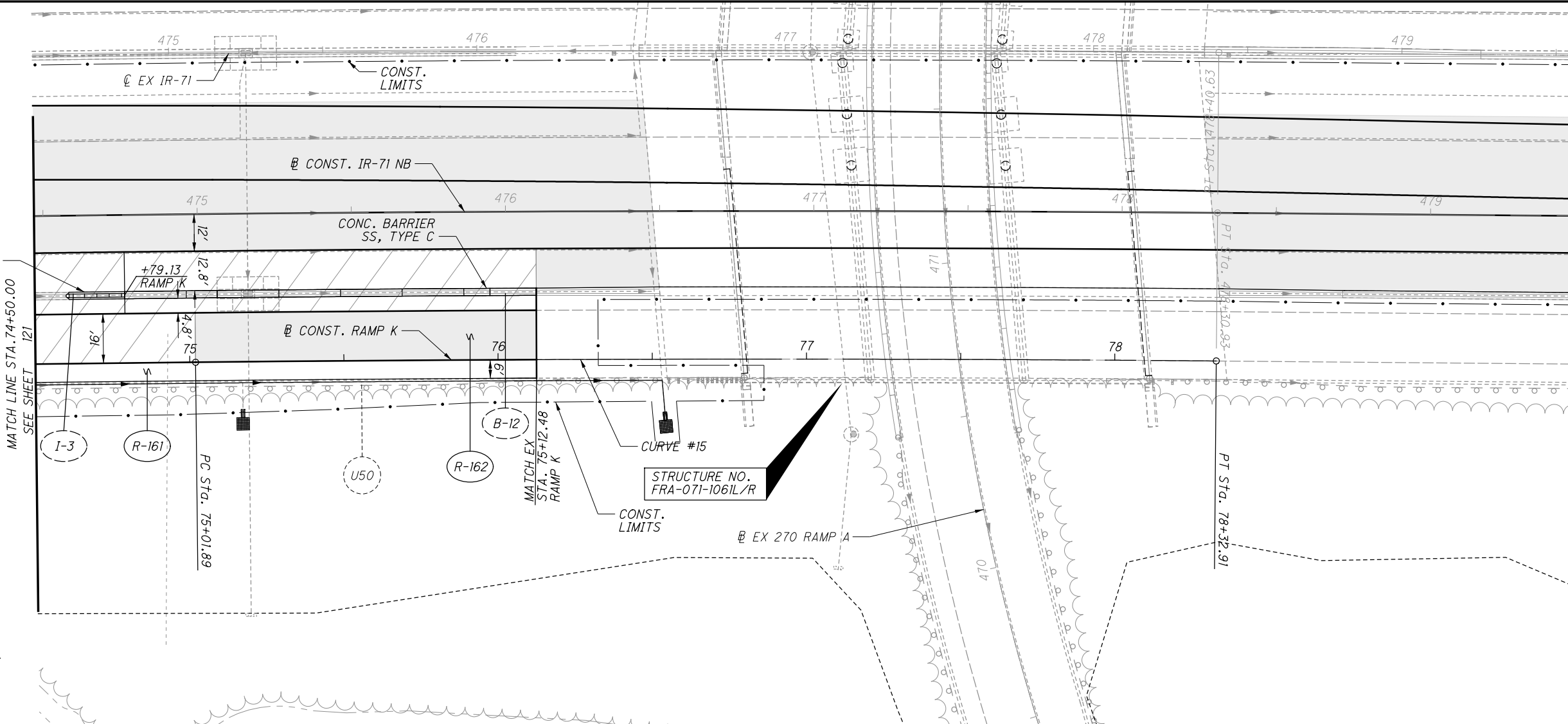
121
 264

CURVE #15
 P.I. Sta. 76+67.41
 $\Delta = 1^\circ 06' 35''$ (RT)
 $D_c = 0^\circ 20' 07''$
 $R = 17,088.74'$
 $T = 165.51'$
 $L = 331.02'$
 $E = 0.80'$
 $e_{max} = NC$
 PC Sta. 75+01.89
 PT Sta. 78+32.91

I.A. TYPE 3
 UNIDIRECTIONAL

MILL AND FILL
 SURFACE COURSE

PARTIAL DEPTH
 PLANING AND OVERLAY



PLAN AND PROFILE - IR-71 RAMP K
 STA. 74+50.00 TO STA 78+32.91

FRA-71-9.07

122
 264

...Northbound\92615_GP571.dgn 5/29/2019 8:13:03 AM mswwhitt

CROSS SECTION SHEET INDEX

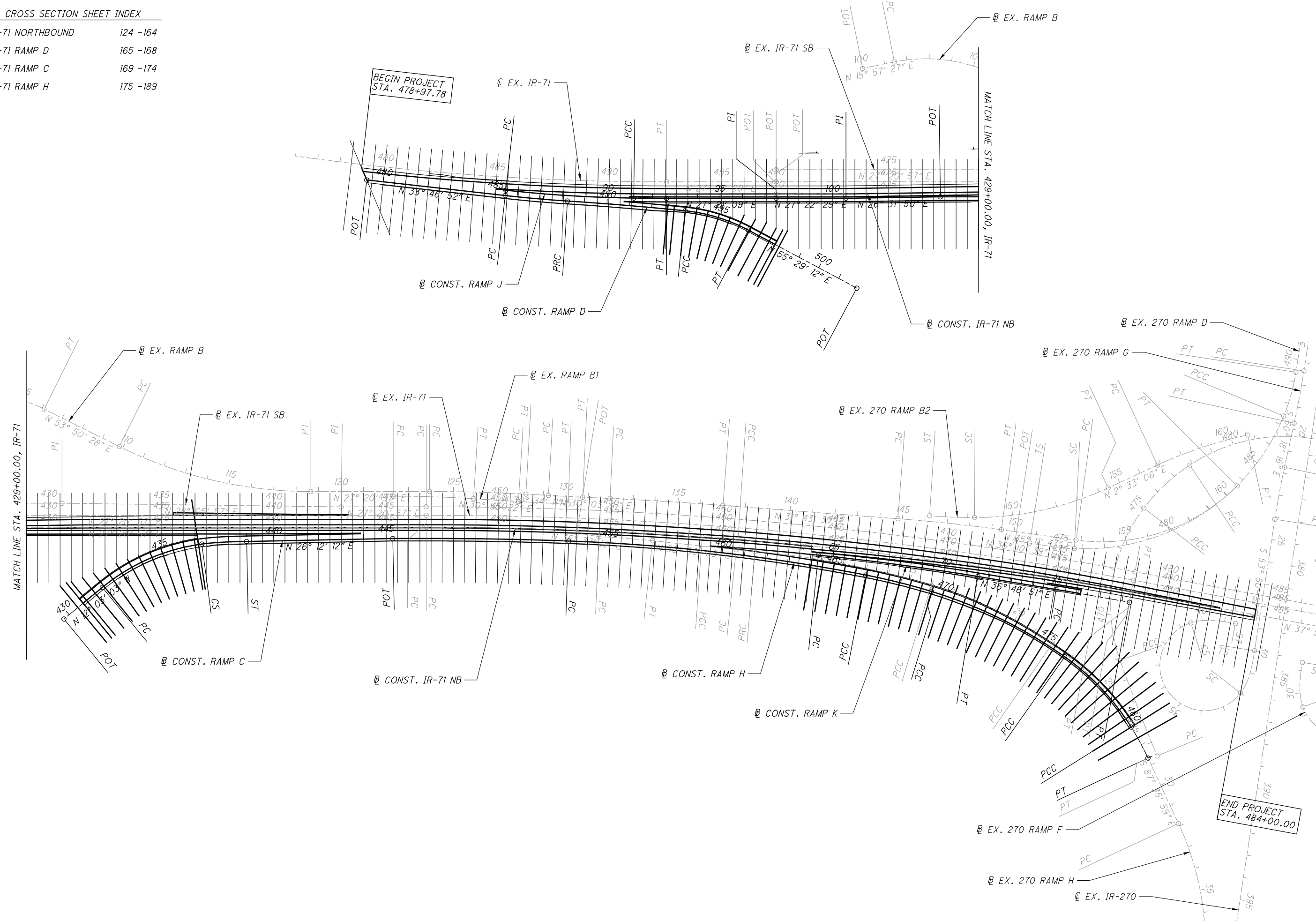
IR-71 NORTHBOUND	124 -164
IR-71 RAMP D	165 -168
IR-71 RAMP C	169 -174
IR-71 RAMP H	175 -189



CROSS SECTION LAYOUT

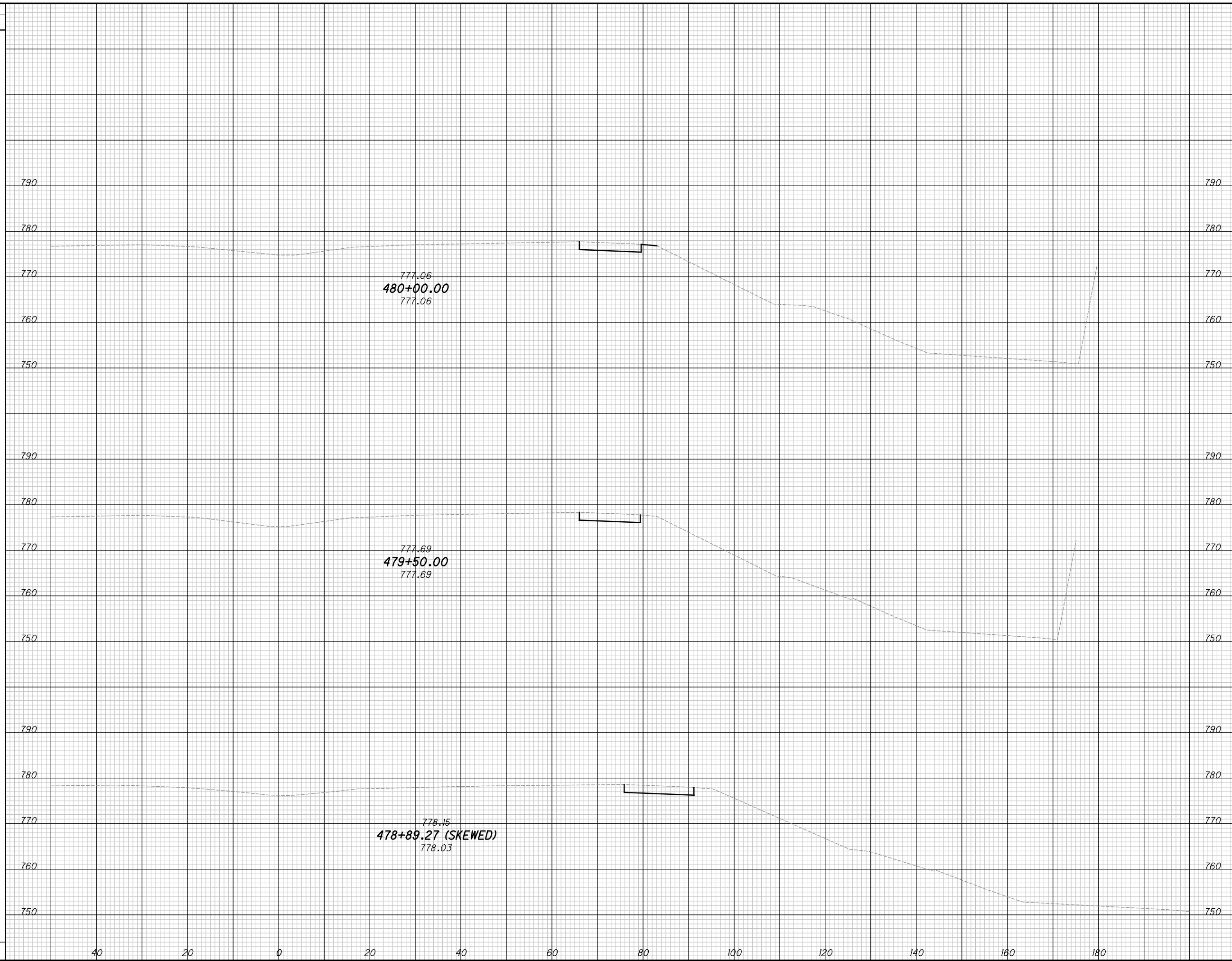
FRA-71-9.07

...Northbound\92615_XL501.dgn 5/29/2019 8:13:07 AM mswwhitt



...Northbound\92615_XS501.dgn 5/29/2019 8:13:13 AM mswmitt

SEEDING	
END WIDTH	SO. YDS.
13	
0	
0	
13	
5	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
23	0	43	0
23	0	19	0
26	0	62	0

CALCULATED	
MSW	WAA

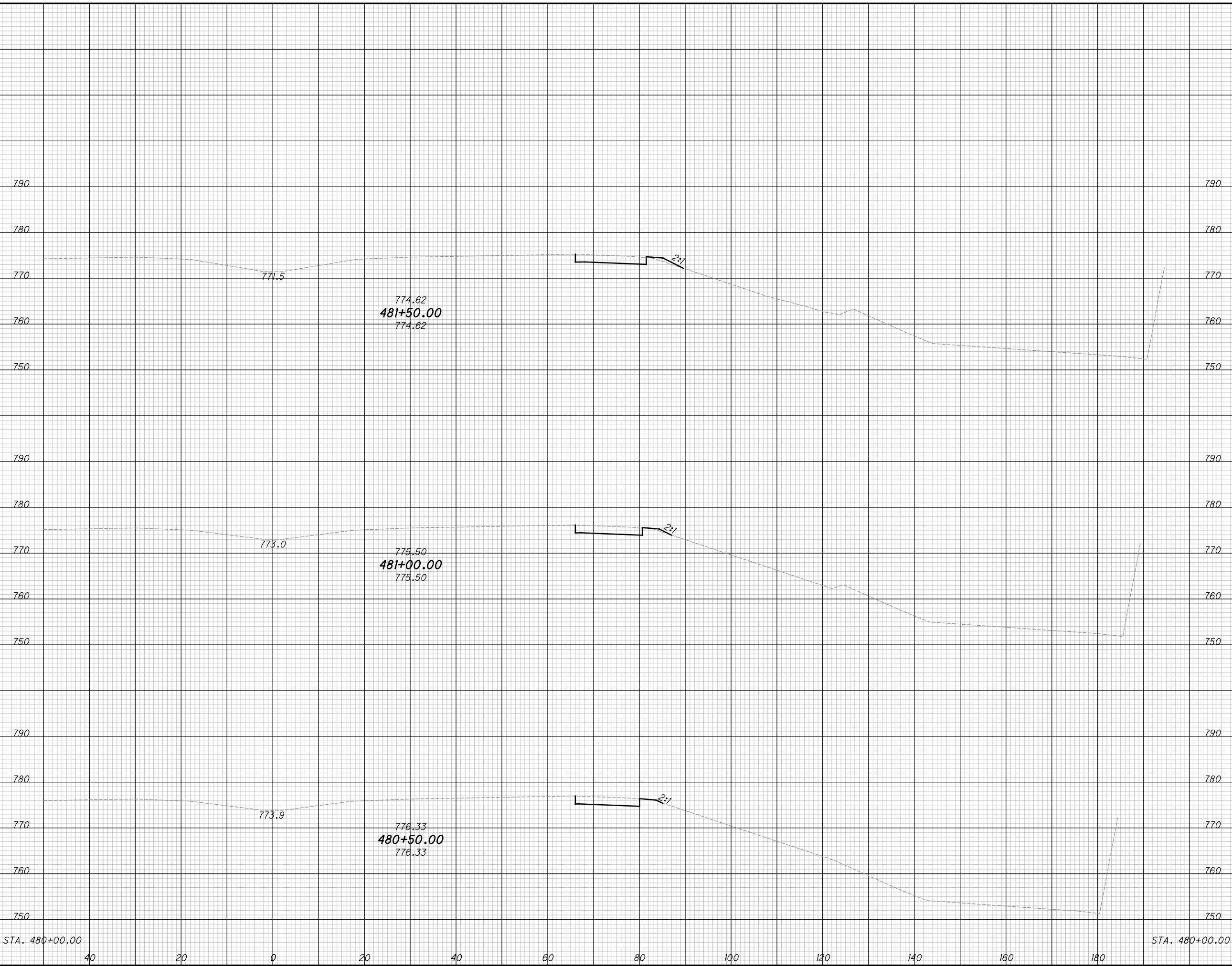
CROSS SECTIONS - IR-71 NB
STA. 478+89.27 TO STA. 480+00.00

FRA-71-9.07

124
264

...Northbound\92615_XS501.dgn 5/29/2019 8:13:13 AM msw:whitt

SEEDING	
END WIDTH	SO. YDS.
121	5
40	31
20	7
0	40
20	8
40	50
60	10



END AREA		VOLUME	
CUT	FILL	CUT	FILL
23	0	132	6
24	0	44	2
24	1	45	4
25	3		

FRA - 71 - 9.07

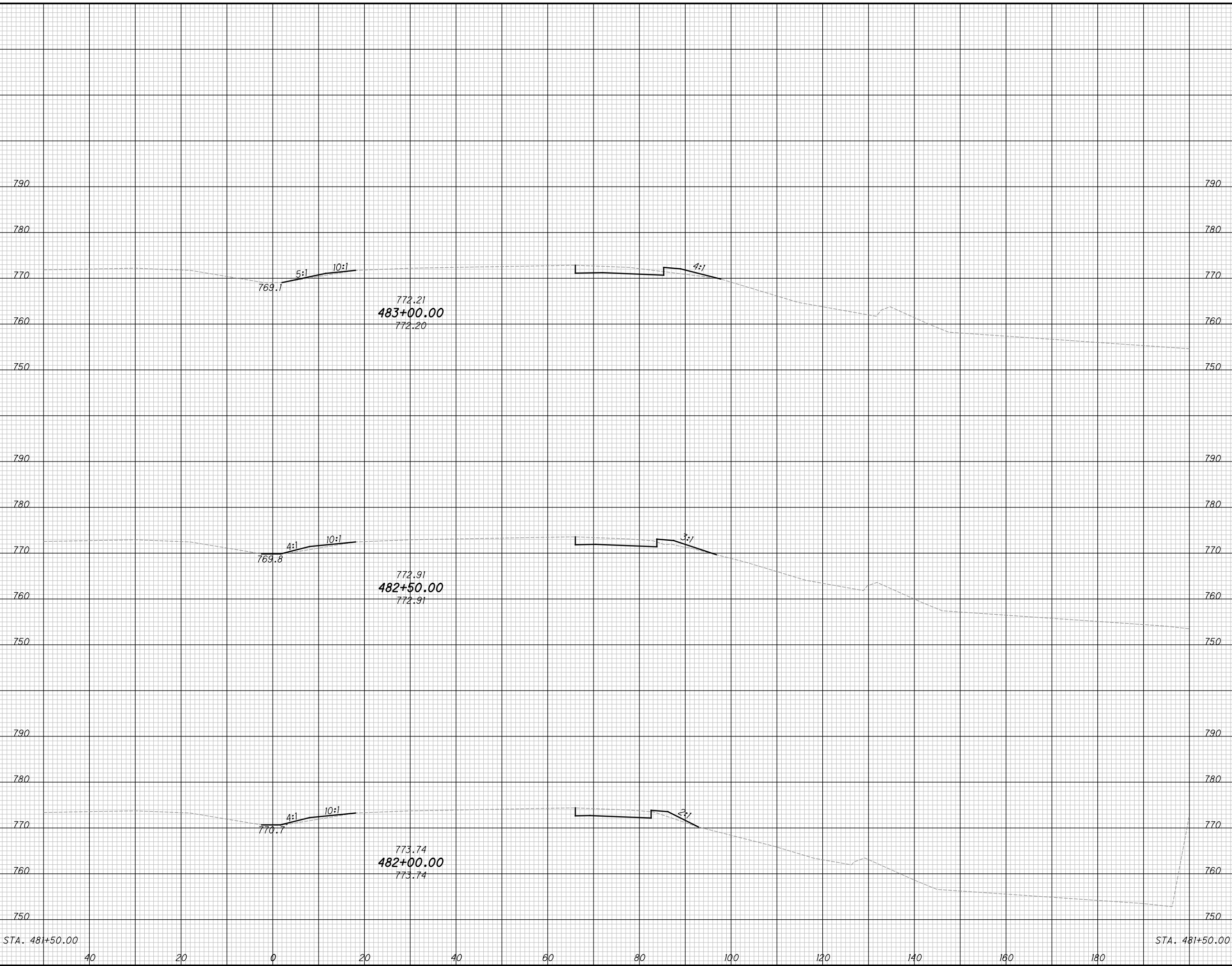
CROSS SECTIONS - IR-71 NB
STA. 480+50.00 TO STA. 481+50.00

CALCULATED MSW
 CHECKED WAA

125
264

...Northbound\92615_XS501.dgn 5/29/2019 8:13:13 AM mswmitt

SEEDING	END AREA		VOLUME		CALCULATED MSW	CHECKED WAA
	CUT	FILL	CUT	FILL		
14	26	8	26	8		
80	26	7	26	7		
15	26	6	26	6		
76	26	3	25	3		
12	25	3	25	3		
62	143	35	143	35		
10	218		218			



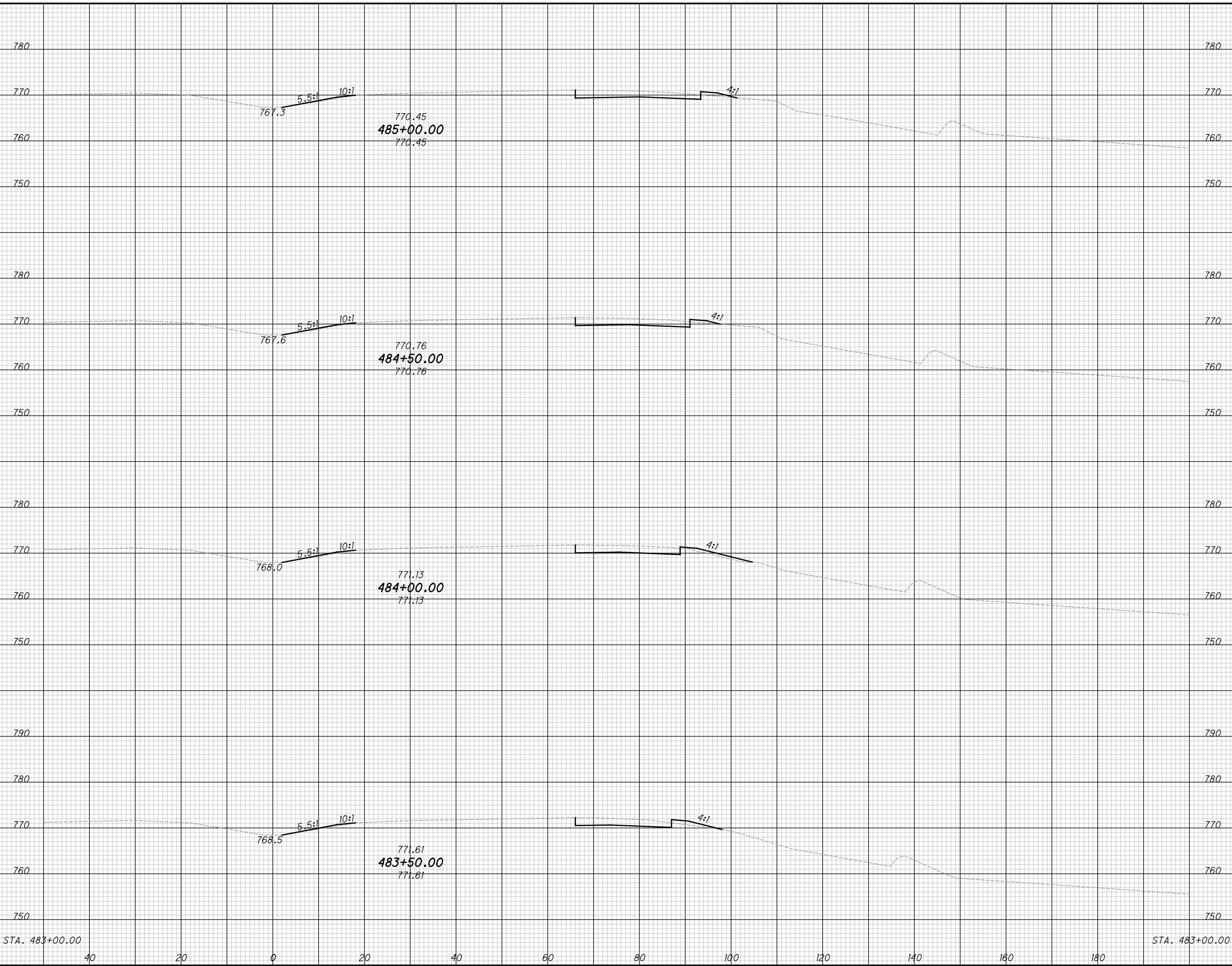
CROSS SECTIONS - IR-71 NB
STA. 482+00.00 TO STA. 483+00.00

FRA-71-9.07

126
264

...Northbound\92615_XS501.dgn 5/29/2019 8:13:14 AM mswmitt

SEEDING	END		SO.
	WIDTH	YDS.	
9			
49			
8			
71			
17			
83			
13			
74			
14			
277			



END	AREA		VOLUME	
	CUT	FILL	CUT	FILL
9	37	4		
49			67	6
8	36	3		
71			65	9
17	35	8		
83			60	12
13	30	6		
74			52	13
14	26	8		
277			244	40

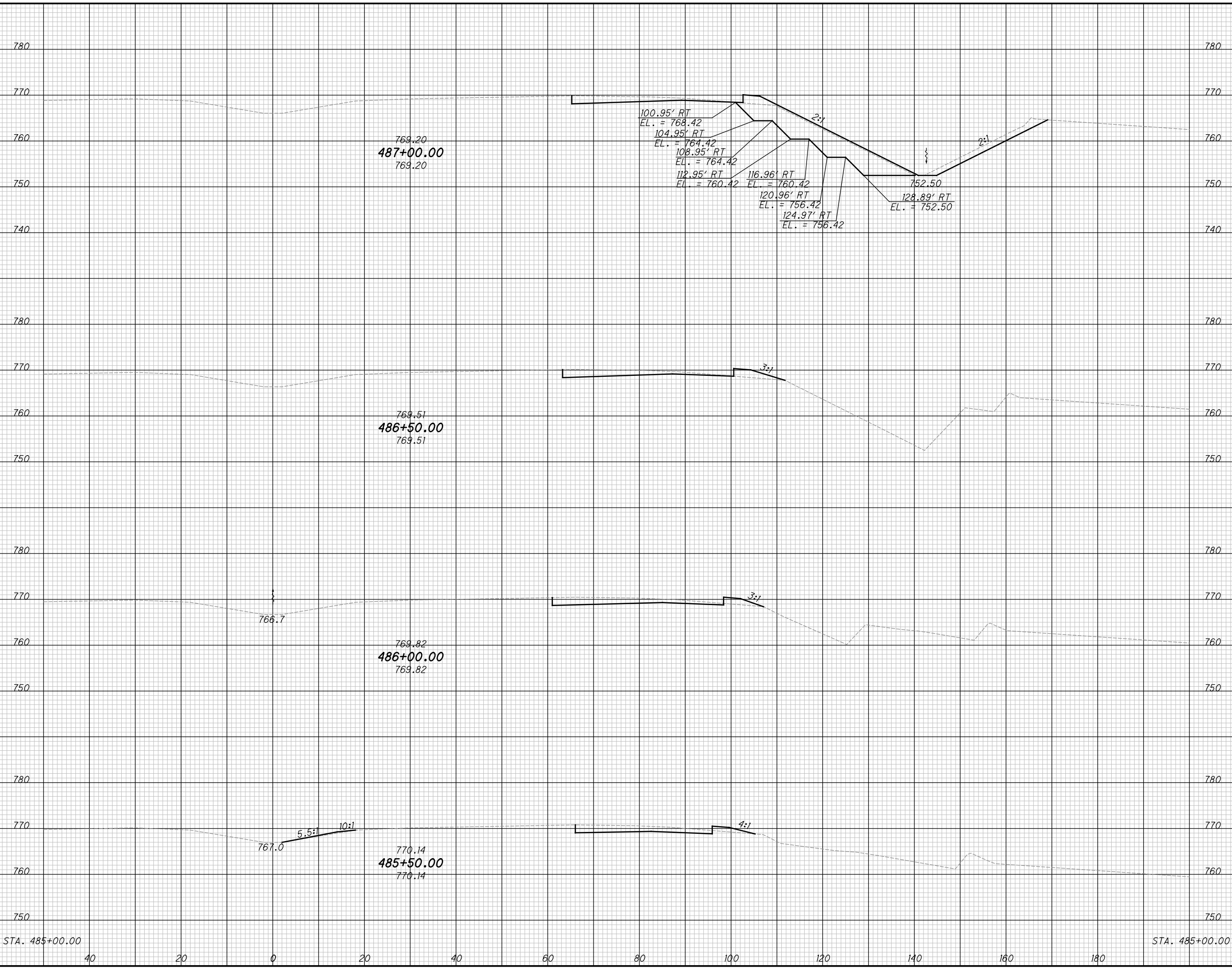
CROSS SECTIONS - IR-71 NB
 STA. 483+50.00 TO STA. 485+00.00

FRA-71-9.07

127
264

...Northbound\92615_XS501.dgn 5/29/2019 8:13:14 AM mswmitt

SEEDING	END	
	WIDTH	SO. YDS.
	428	9
	56	11
	59	10
	64	13
	249	77

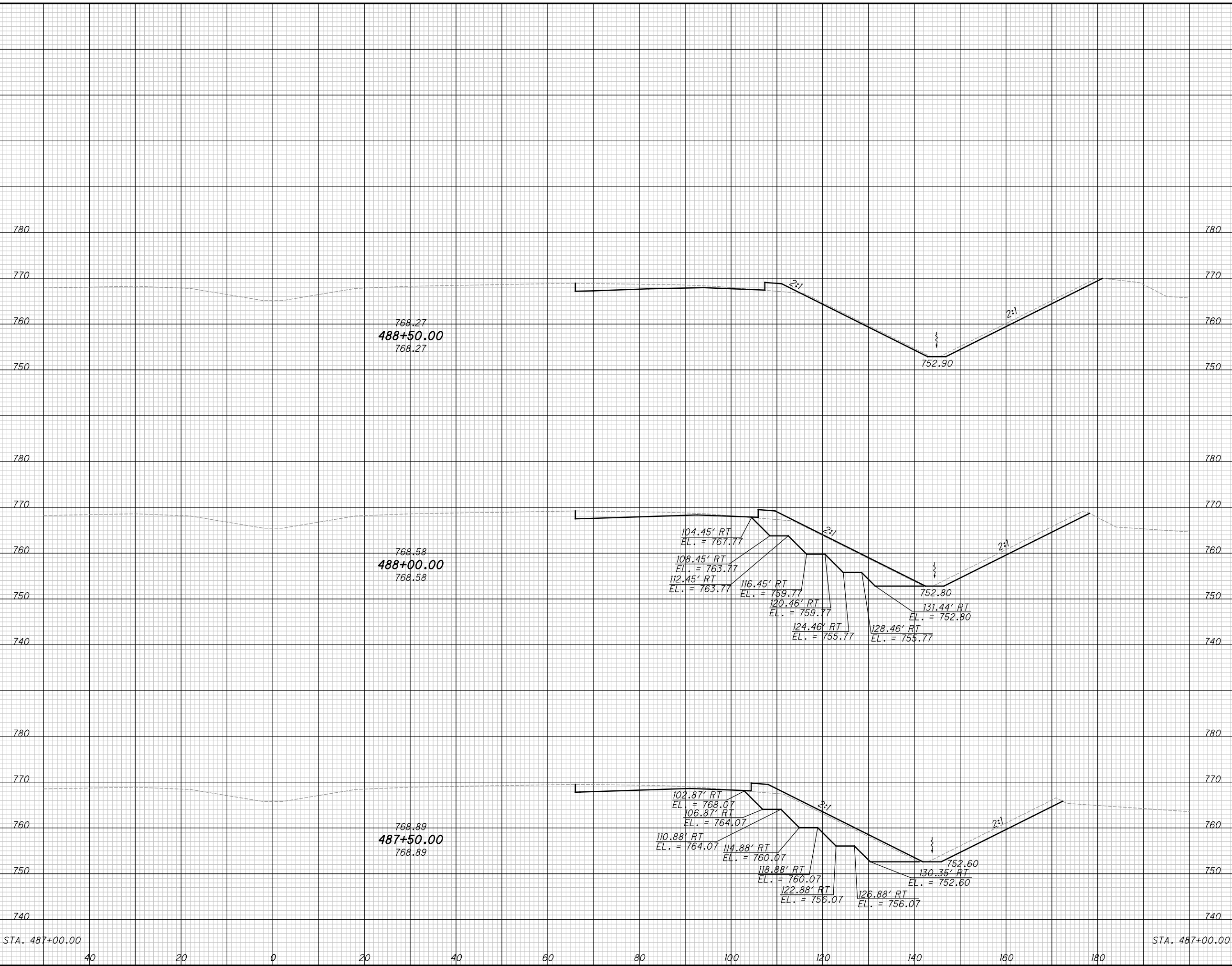


END AREA	VOLUME		CALCULATED MSW	CHECKED WAA
	CUT	FILL		
210	167	225	166	
33	12	68	19	
40	9	71	14	
37	6	68	10	
37	4	432	209	

CROSS SECTIONS - IR-71 NB
STA. 485+50.00 TO STA. 487+00.00
FRA-71-9.07
 128
 264

...Northbound\92615_XS501.dgn 5/29/2019 8:13:14 AM mswmitt

SEEDING	END AREA		VOLUME		CALCULATED	CHECKED
	CUT	FILL	CUT	FILL		
85	66	10	255	154		
83	210	156	386	295		
78	207	162	386	304		
77	210	167	1027	753		



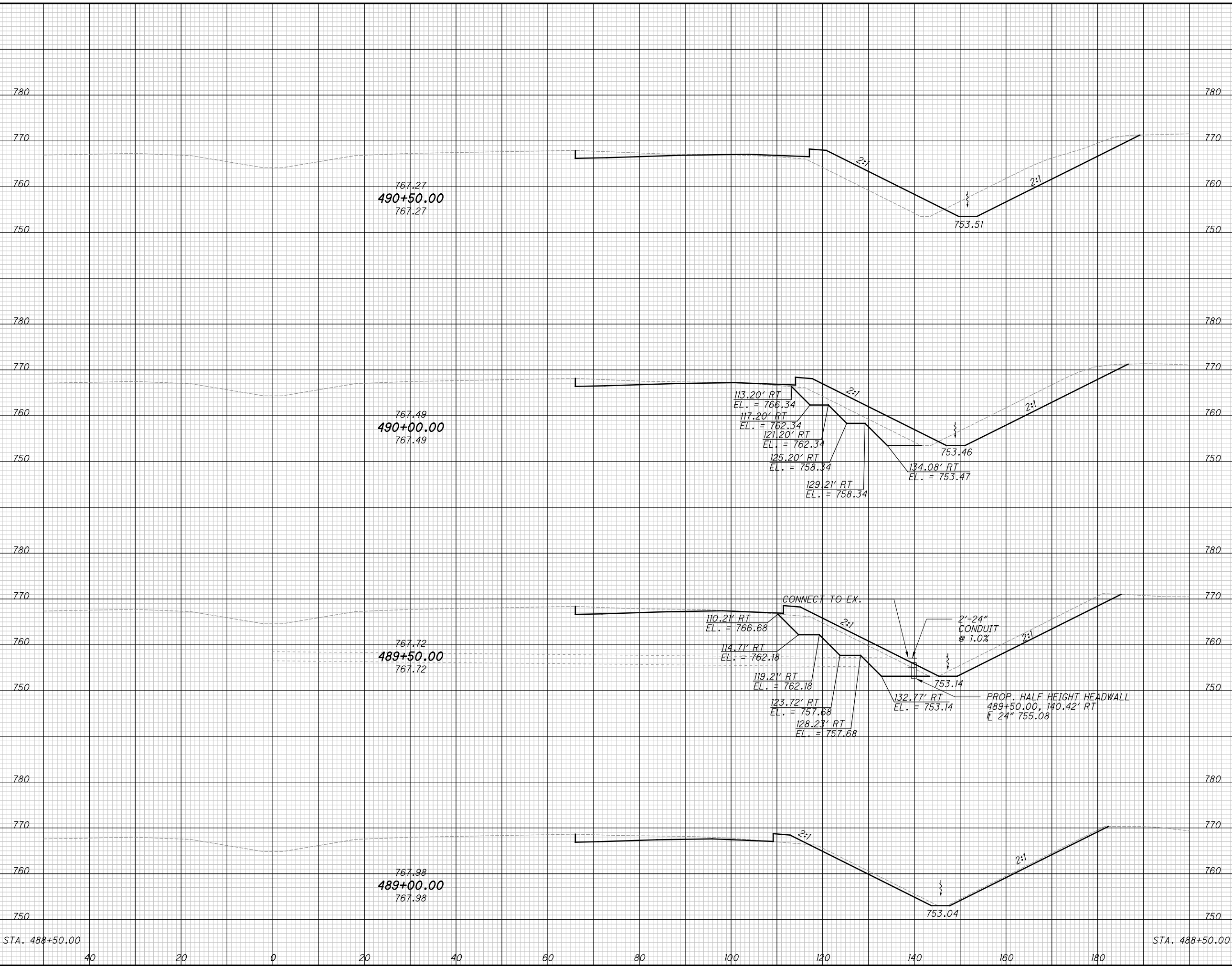
CROSS SECTIONS - IR-71 NB
STA. 487+50.00 TO STA. 488+50.00

FRA-71-9.07

129
264

...Northbound\92615_XS501.dgn 5/29/2019 8:13:15 AM mswjnt

STATION	SEEDING	
	END WIDTH	SO. YDS.
83		
463		
84		
468		
85		
469		
84		
469		
85		

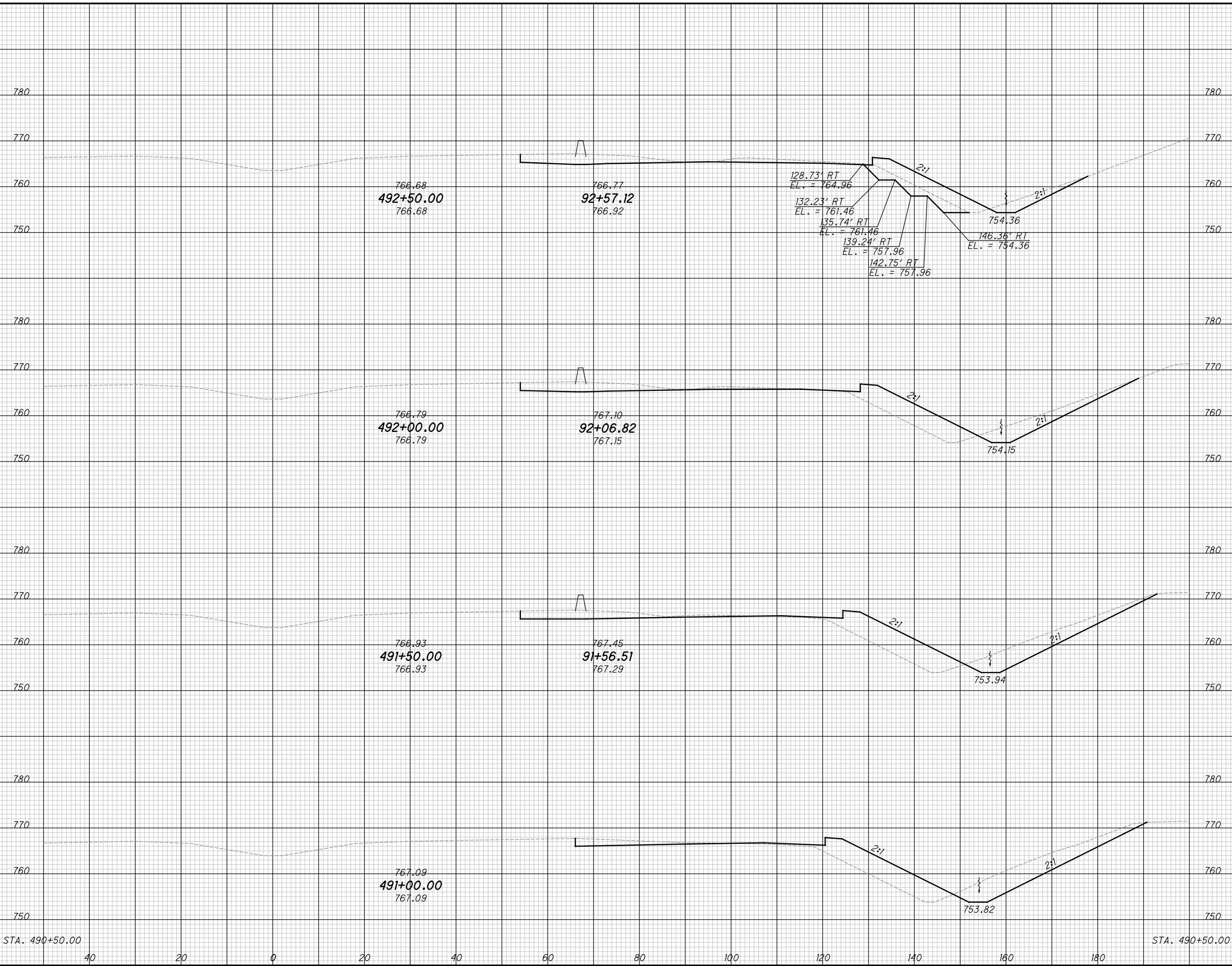


STATION	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
83	180	115		
463			366	238
84	215	142		
468			395	269
85	211	149		
469			254	147
84	63	10		
469			120	19
85	66	10		
STA. 488+50.00			1135	673

CROSS SECTIONS - IR-71 NB
STA. 489+00.00 TO STA. 490+50.00
FRA-71-9.07
 CALCULATED MSW
 CHECKED WAA
 130
 264

...Northbound\92615_XS501.dgn 5/29/2019 8:13:15 AM mswmitt

SEEDING	END		SO.
	WIDTH	YDS.	
	1663	40	780
		20	770
		0	760
		20	750
		40	740
		60	730
		80	720
		100	710
		120	700
		140	690
		160	680
		180	670
		190	660

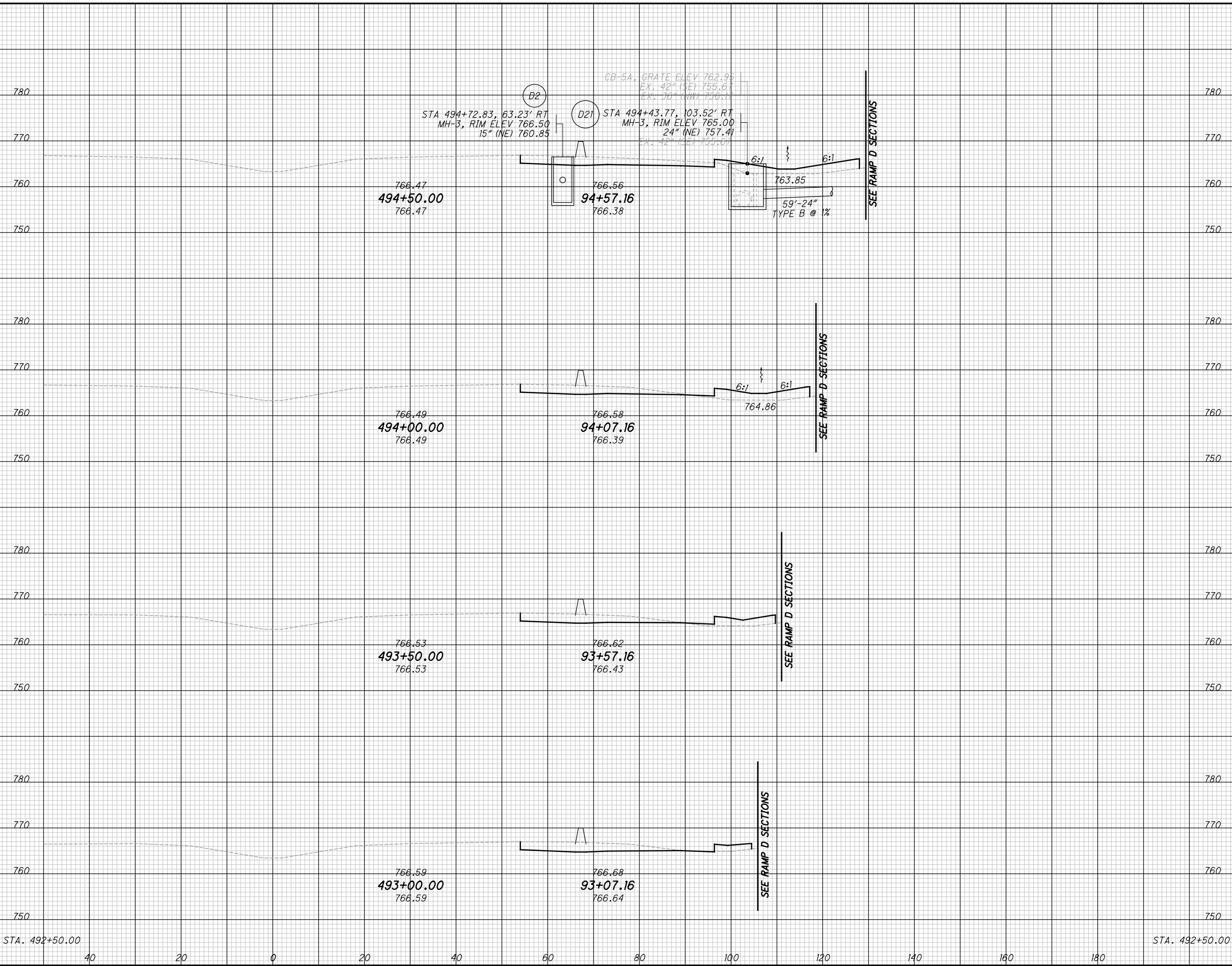


END AREA	VOLUME		CALCULATED MSW	CHECKED WAA
	CUT	FILL		
145	108	253	200	
129	108	263	220	
155	130	287	235	
155	124	310	221	
180	115	1113	876	

CROSS SECTIONS - IR-71 NB
STA. 491+00.00 TO STA. 492+50.00
FRA-71-9.07
 131
 264

...Northbound\92615_XS501.dgn 5/29/2019 8:13:15 AM msw:whitt

SEEDING	END WIDTH	SO. YDS.	END AREA		VOLUME		CALCULATED MSW	CHECKED WAA
			CUT	FILL	CUT	FILL		
	35		63	49				
	162		52	41	107	83		
	111		50	24	94	60		
	75		53	11	96	33		
	183		145	108	480	286		



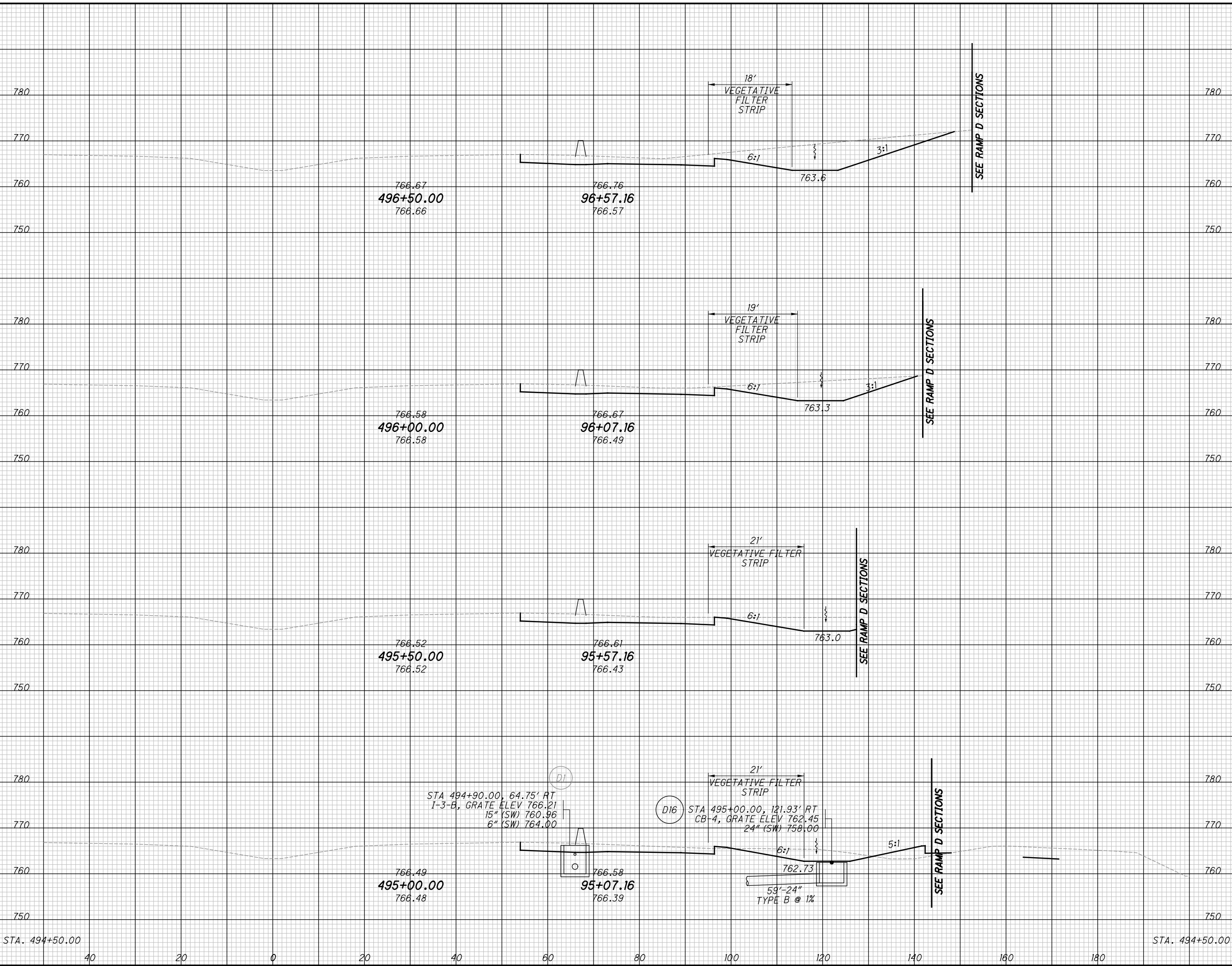
**CROSS SECTIONS - IR-71 NB
STA. 493+00.00 TO STA. 494+50.00**

FRA - 71 - 9.07

132
264

...Northbound\92615_XS501.dgn 5/29/2019 8:13:16 AM mswwhitt

SEEDING	END	
	WIDTH	SO. YDS.
	1008	
	40	
	20	
	0	
	20	
	40	
	60	
	80	
	100	
	120	
	140	
	160	
	180	
	234	
	246	
	39	
	239	
	47	
	289	
	57	



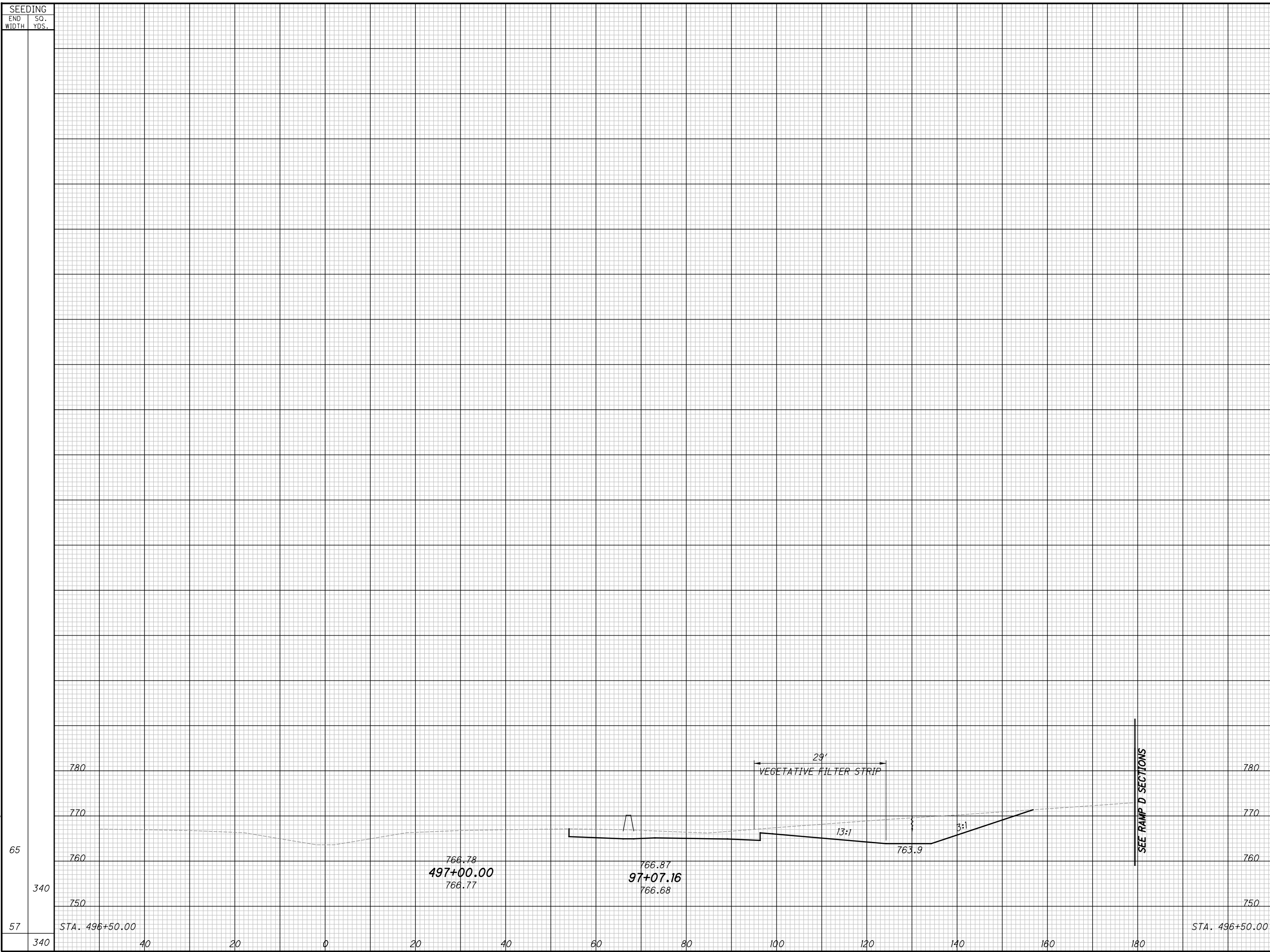
END	AREA		VOLUME		CALCULATED	CHECKED
	CUT	FILL	CUT	FILL		
780						
770						
760	260	0				
750						
780			411	0		
770						
760	184	0				
750						
780			301	0		
770						
760	141	0				
750						
780			236	19		
770						
760	114	21				
750			164	65		
780						
770						
760	63	49				
750			1112	84		

CROSS SECTIONS - IR-71 NB
STA. 495+00.00 TO STA. 496+50.00

FRA-71-9.07

(133)
264

...Northbound\92615_XS501.dgn 5/29/2019 8:13:16 AM mswhtt



SEEDING		END AREA		VOLUME		CALCULATED	
END WIDTH	SO. YDS.	CUT	FILL	CUT	FILL	MSW	CHECKED
340	0	284	0	503	0		
340	40	260	0	503	0		

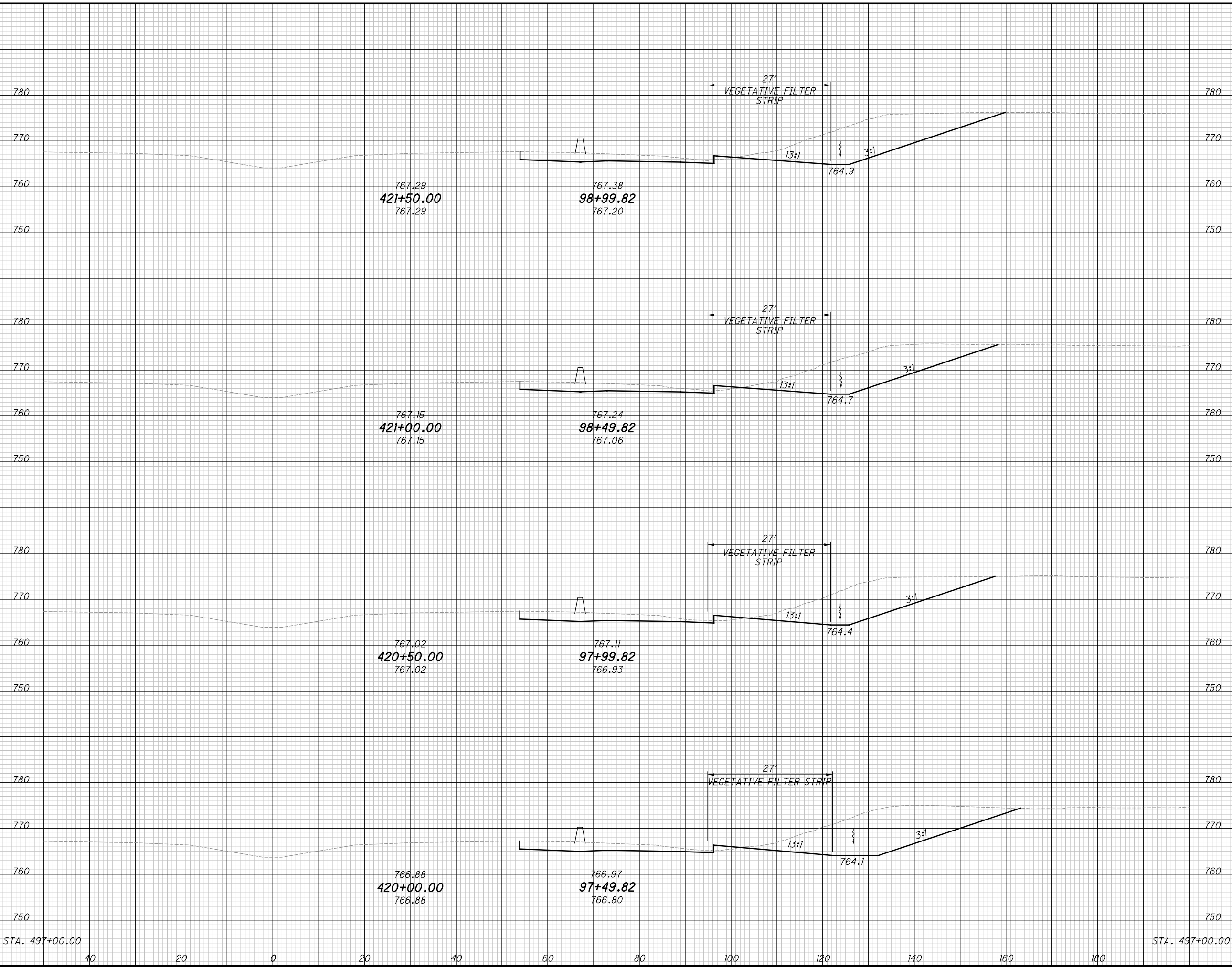
CROSS SECTIONS - IR-71 NB
STA. 497+00.00

FRA-71-9.07

134
264

...Northbound\92615_XS501.dgn 5/29/2019 8:13:16 AM mshwhitt

SEEDING	END	
	WIDTH	SO. YDS.
	1459	
	325	
	72	
	385	
	67	
	371	
	67	
	378	
	69	

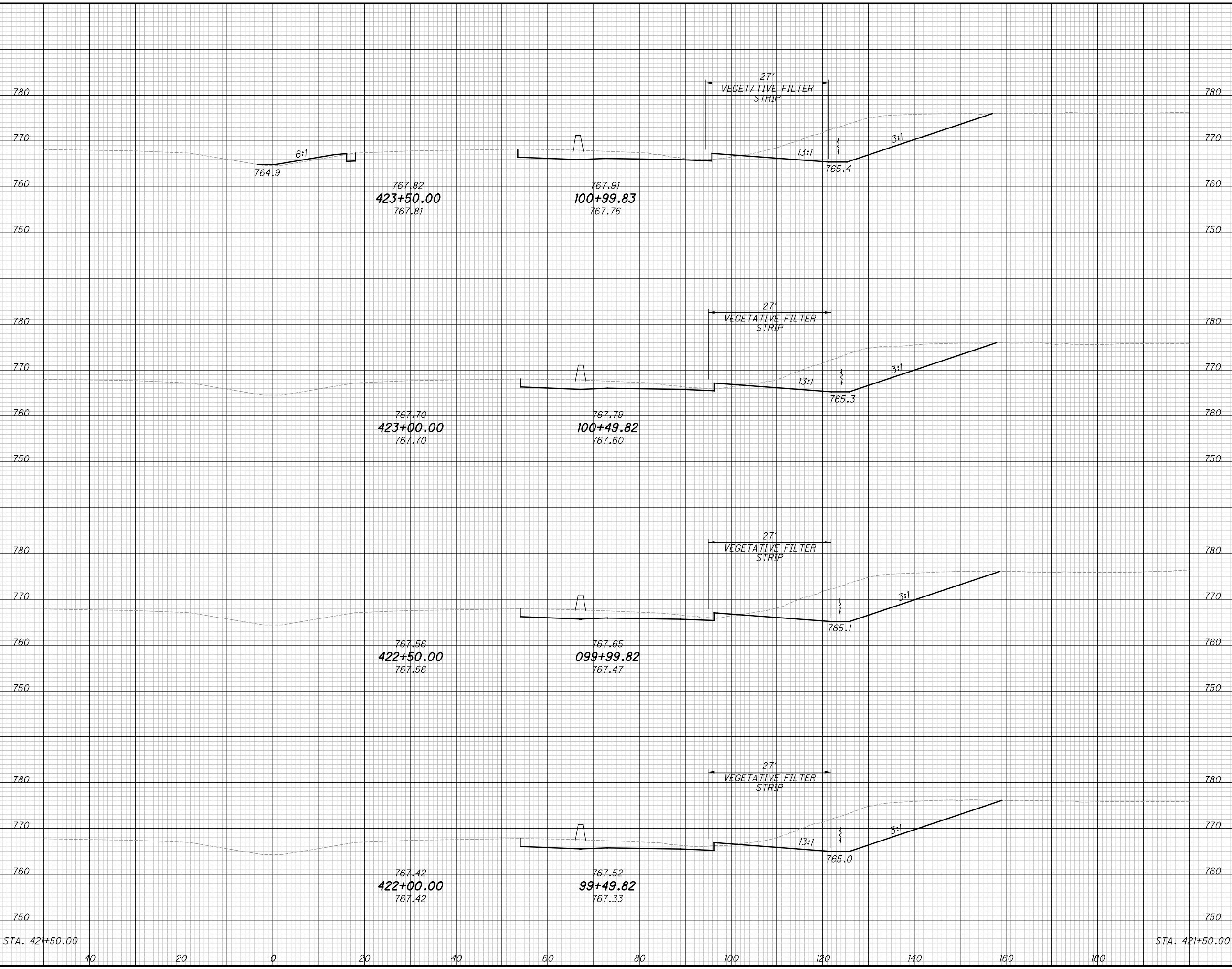


END	AREA		VOLUME	
	CUT	FILL	CUT	FILL
69	333	2		
378			599	6
67	315	4		
371			566	8
67	297	5		
385			621	8
72	374	4		
325			520	3
65	284	0		
1459			2306	25

CROSS SECTIONS - IR-71 NB
STA. 420+00.00 TO STA. 421+50.00
FRA-71-9.07
 CALCULATED MSW
 CHECKED WAA
 135
 264

...Northbound\92615_XS501.dgn 5/29/2019 8:13:17 AM mswmitt

SEEDING	END	
	WIDTH	SO. YDS.
	1557	
	380	
	68	
	376	
	68	
	373	
	67	
	428	
	87	

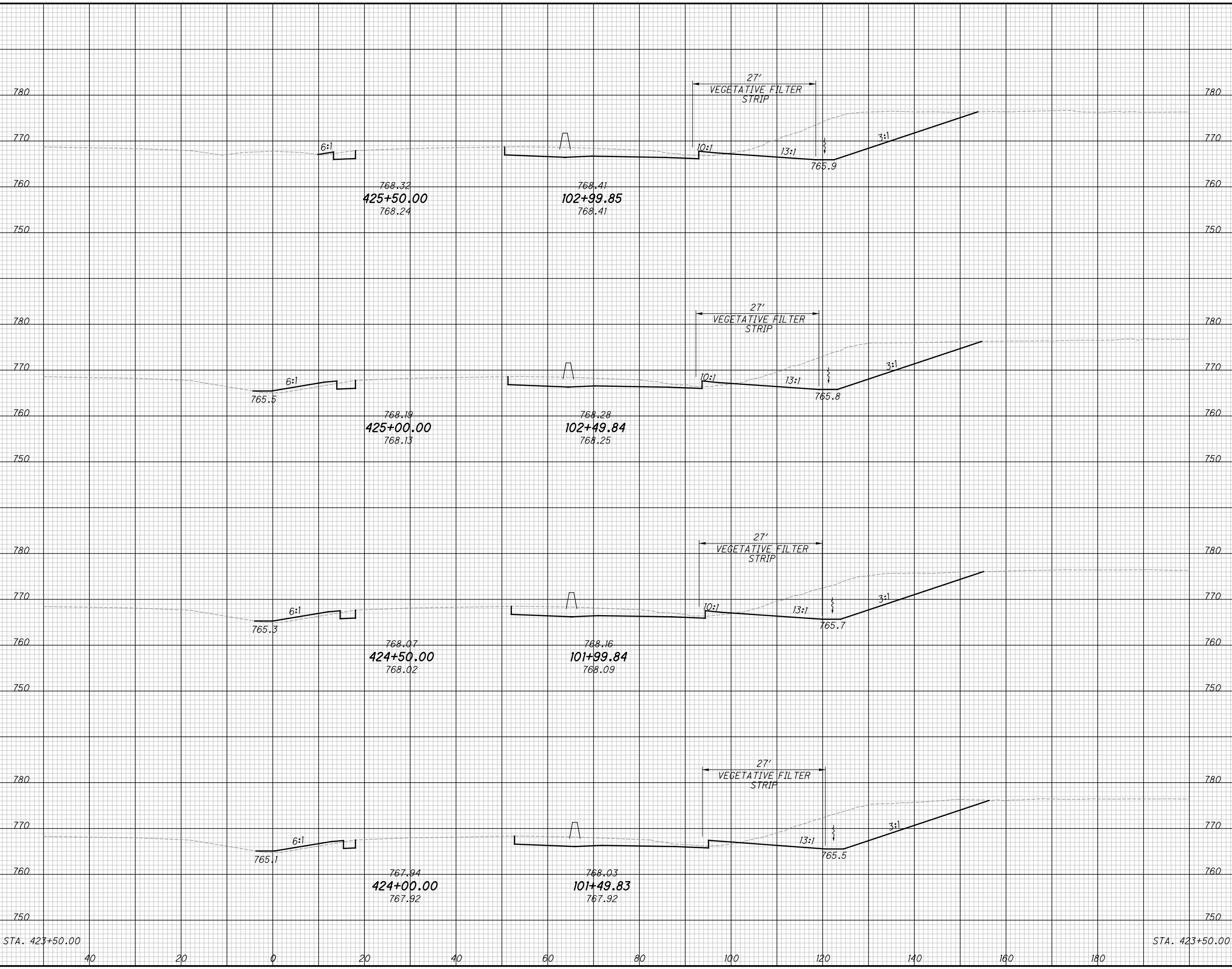


END	AREA		VOLUME	
	CUT	FILL	CUT	FILL
87	305	11		
428			562	14
67	301	4		
373			574	7
68	318	4		
376			596	5
68	326	2		
380			609	4
69	333	2		
			2341	30

CALCULATED MSW
 CHECKED WAA
CROSS SECTIONS - IR-71 NB
STA. 422+00.00 TO STA. 423+50.00
FRA-71-9.07
 136
 264

...Northbound\92615_XS501.dgn 5/29/2019 8:13:17 AM mswmitt

SEEDING	END	
	WIDTH	SO. YDS.
	71	
	435	
	478	
	480	
	484	
	87	
	1877	

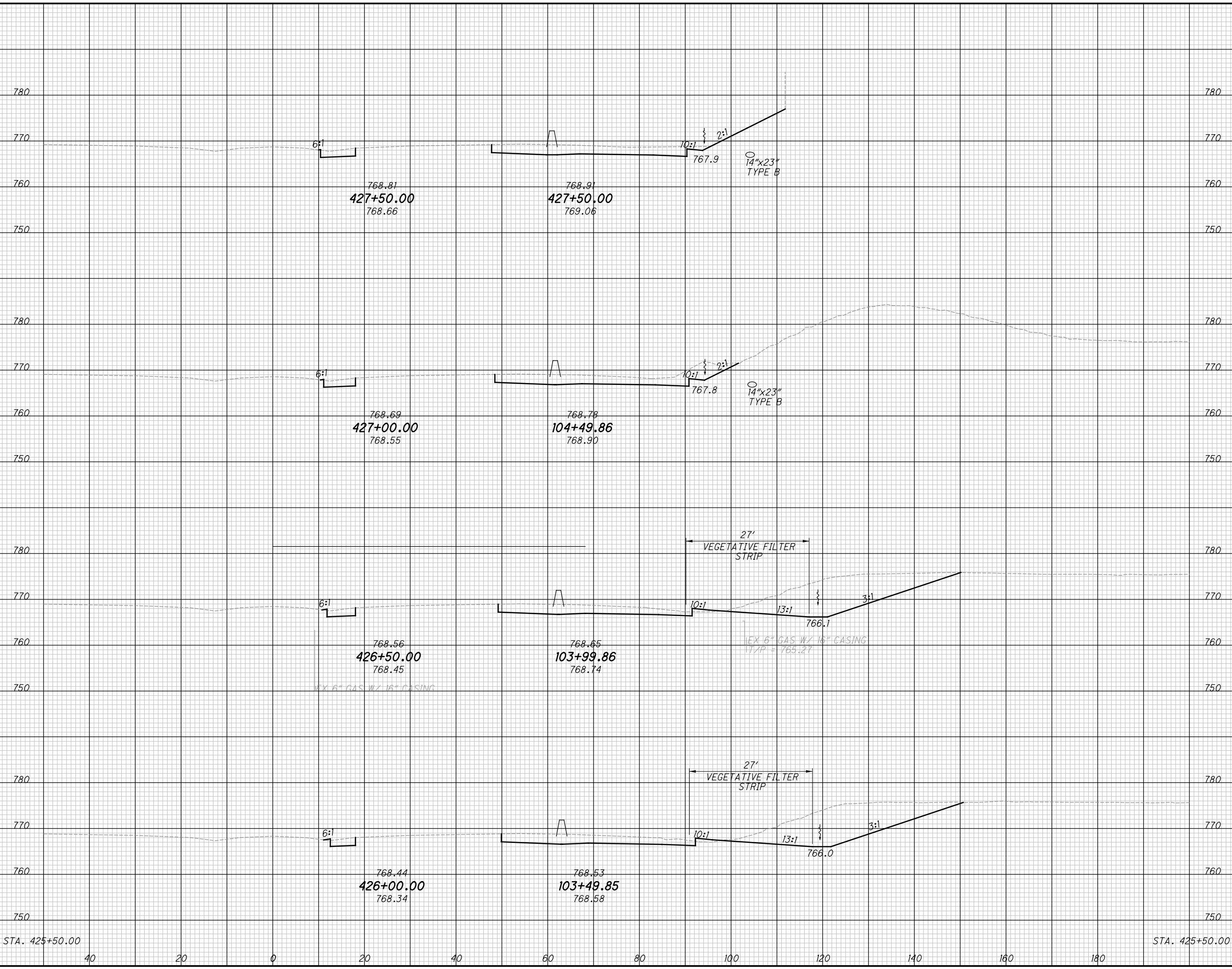


END	AREA		VOLUME	
	CUT	FILL	CUT	FILL
71	336	5		
435			601	19
86	313	16		
478			573	27
86	305	14		
480			570	25
87	310	13		
484			570	23
87	305	11		
1877			2314	94

CROSS SECTIONS - IR-71 NB
STA. 424+00.00 TO STA. 425+50.00
FRA-71-9.07
 CALCULATED MSW
 CHECKED WAA
 137
 264

...Northbound\92615_XS501.dgn 5/29/2019 8:13:17 AM msw:ntt

SEEDING	END AREA		VOLUME		CALCULATED	CHECKED
	CUT	FILL	CUT	FILL		
47		96	0			
178		114	0			
17		308	3			
231		574	5			
66		312	3			
368		600	7			
66		336	5			
381						
71						
1158						

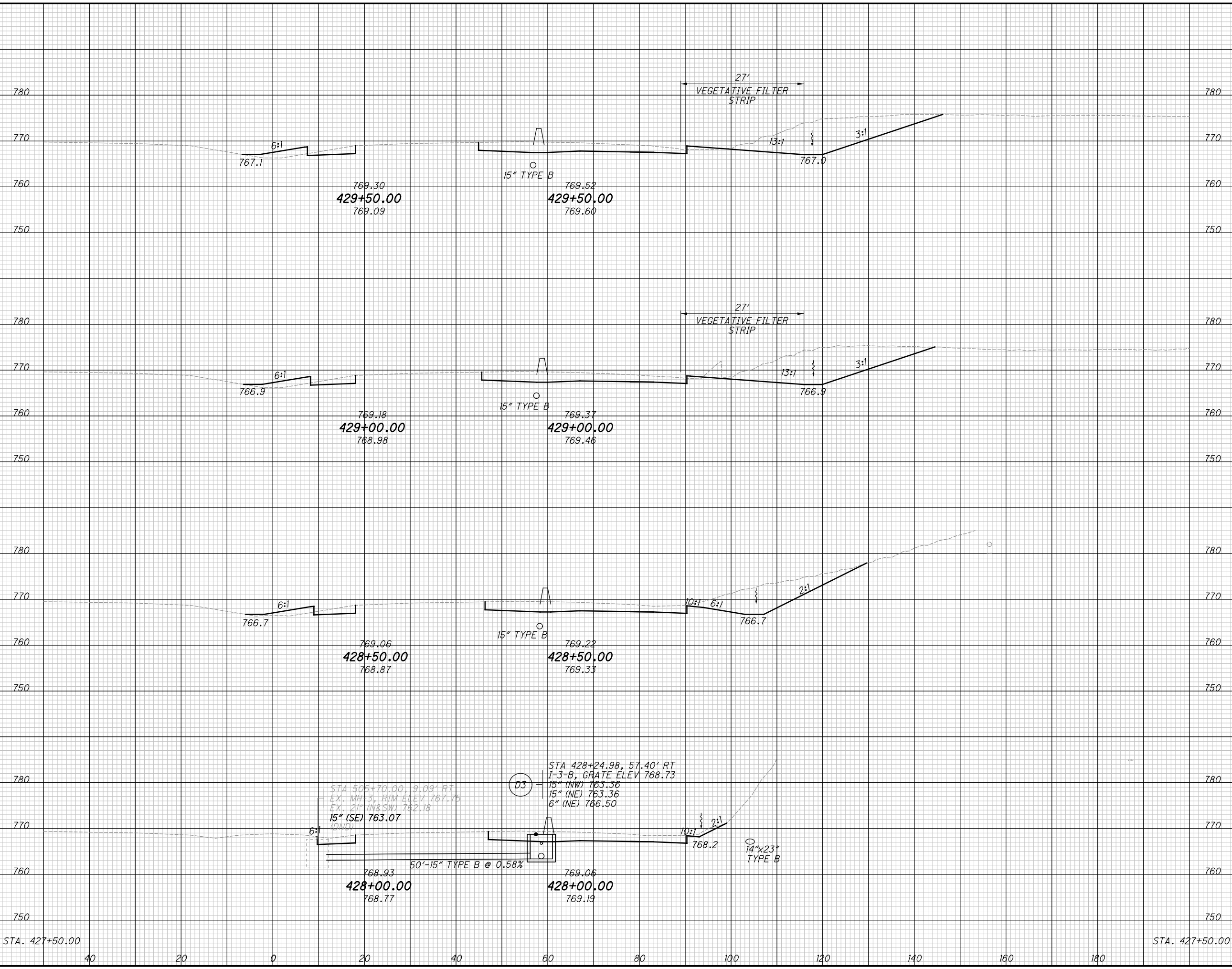


END AREA	VOLUME		CALCULATED	CHECKED
	CUT	FILL		
96	0			
114	0			
308	3			
574	5			
312	3			
600	7			
336	5			
1759	15			

CROSS SECTIONS - IR-71 NB
STA. 426+00.00 TO STA. 427+50.00
FRA-71-9.07
138
264

...Northbound\92615_XS501.dgn 5/29/2019 8:13:18 AM msw:hit

SEEDING	END	
	WIDTH	SO. YDS.
	1180	
	40	
	20	
	0	
	20	
	40	
	60	
	80	
	100	
	120	
	140	
	160	
	180	
	47	

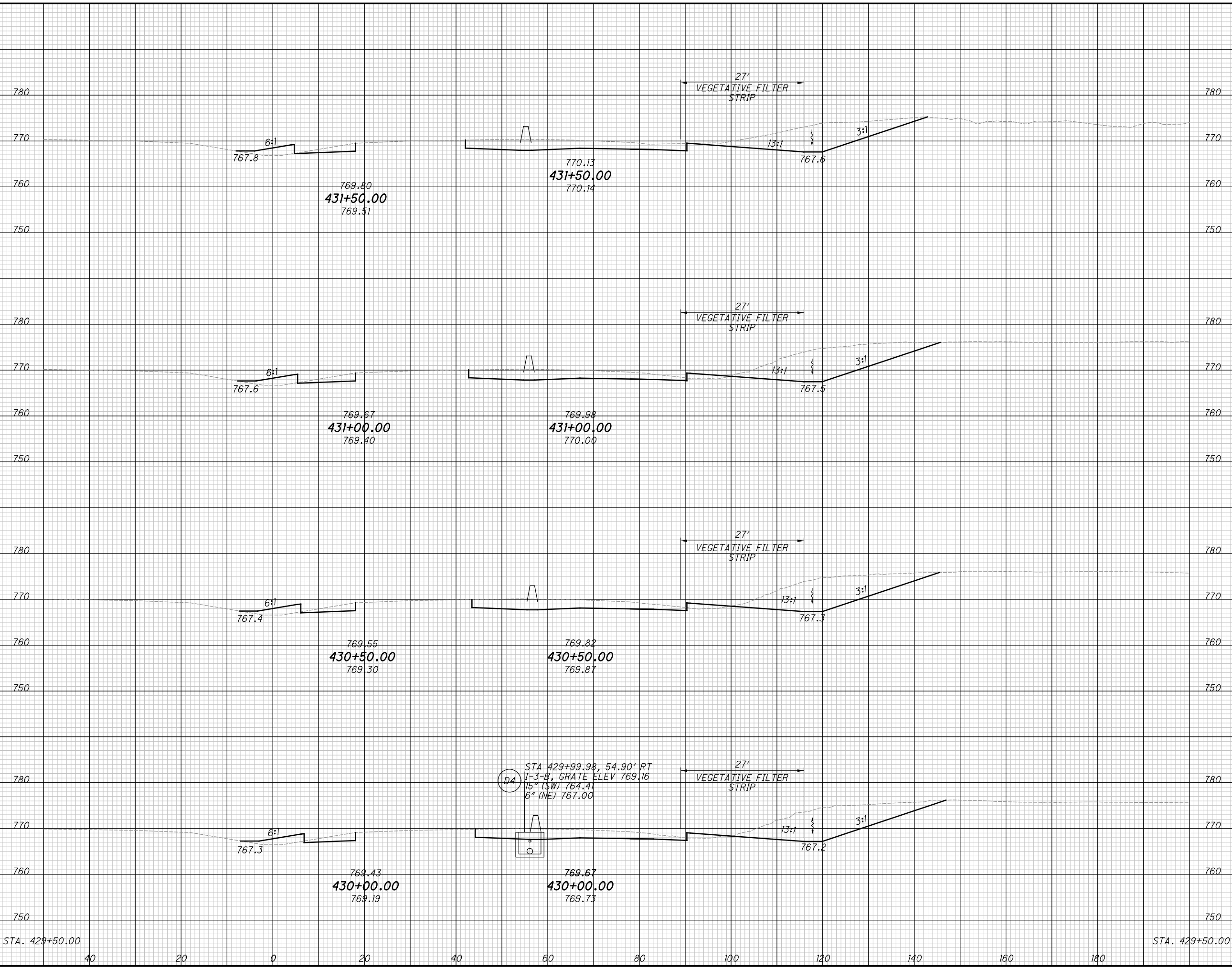


END	AREA		VOLUME	
	CUT	FILL	CUT	FILL
76	280	19		
420			535	33
75	298	17		
380			474	26
62	214	12		
211			286	11
14	95	0		
169			176	0
47	96	0		
1180			1471	70

CROSS SECTIONS - IR-71 NB
 STA. 428+00.00 TO STA. 429+50.00
 FRA-71-9.07
 CALCULATED MSW
 CHECKED WAA
 139
 264

...Northbound\92615_XS501.dgn 5/29/2019 8:13:18 AM msw:nhit

SEEDING	END	
	WIDTH	SO. YDS.
	1666	
	40	
	20	
	0	
	20	
	40	
	60	
	80	
	100	
	120	
	140	
	160	
	180	
	280	STA. 429+50.00



END	AREA		VOLUME	
	CUT	FILL	CUT	FILL
71	247	15		
405	274	23	482	35
415	268	23	501	43
421	269	22	497	41
425	280	19	508	38
76	1988	157		

CALCULATED	CHECKED	MSW	WAA

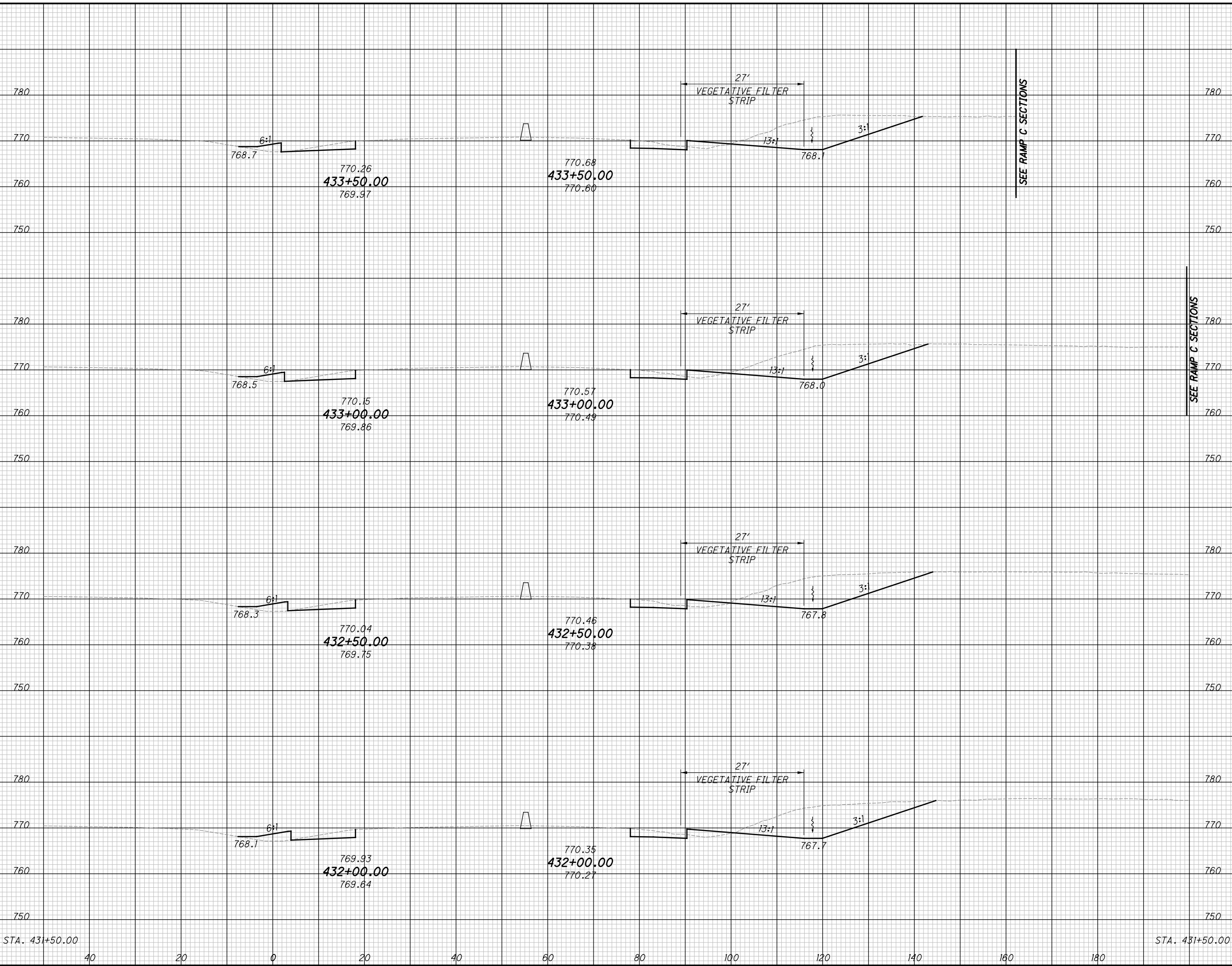
**CROSS SECTIONS - IR-71 NB
STA. 430+00.00 TO STA. 431+50.00**

FRA-71-9.07

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...Northbound\92615_XS501.dgn 5/29/2019 8:13:18 AM msw:hit

SEEDING	
END WIDTH	SO. YDS.
67	1557
376	40
69	20
387	0
71	20
396	40
72	20
398	40
71	1557



END CUT	AREA FILL	VOLUME	
		CUT	FILL
191	18	362	35
200	19	371	37
201	21	371	41
200	23	413	36
247	15	1517	149

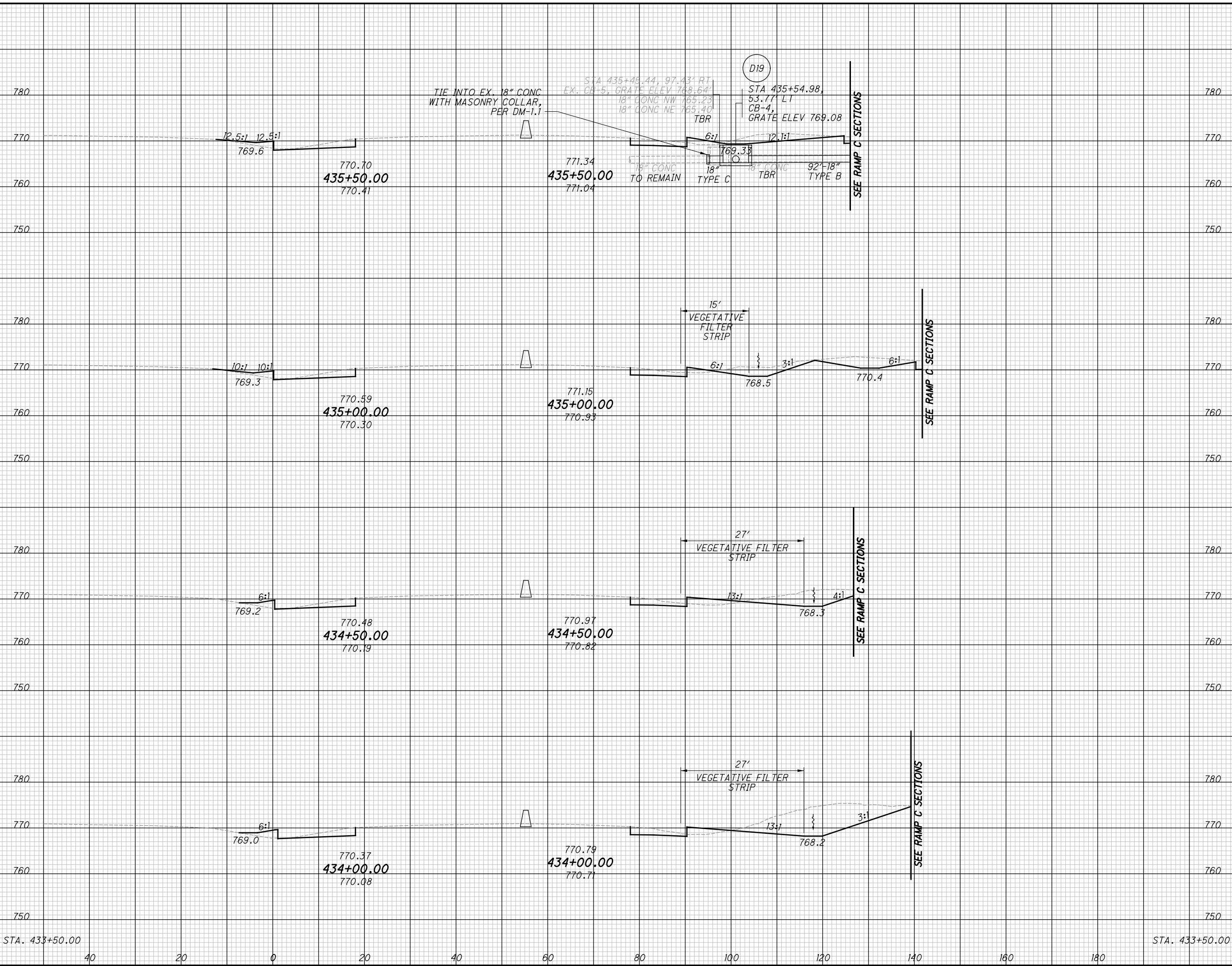
CROSS SECTIONS - IR-71 NB
 STA. 432+00.00 TO STA. 433+50.00

FRA-71-9.07

141
264

...Northbound\92615_XS501.dgn 5/29/2019 8:13:18 AM msw:whitt

SEEDING	END	
	WIDTH	SO. YDS.
51		
332		
68		
338		
53		
325		
64		
362		
67		
1357		



END	AREA		VOLUME	
	CUT	FILL	CUT	FILL
51				
68				
53				
64				
67				
1357				

CALCULATED	CHECKED	MSW	WAA
91	11	231	33
79	19	335	33
170	17	863	115

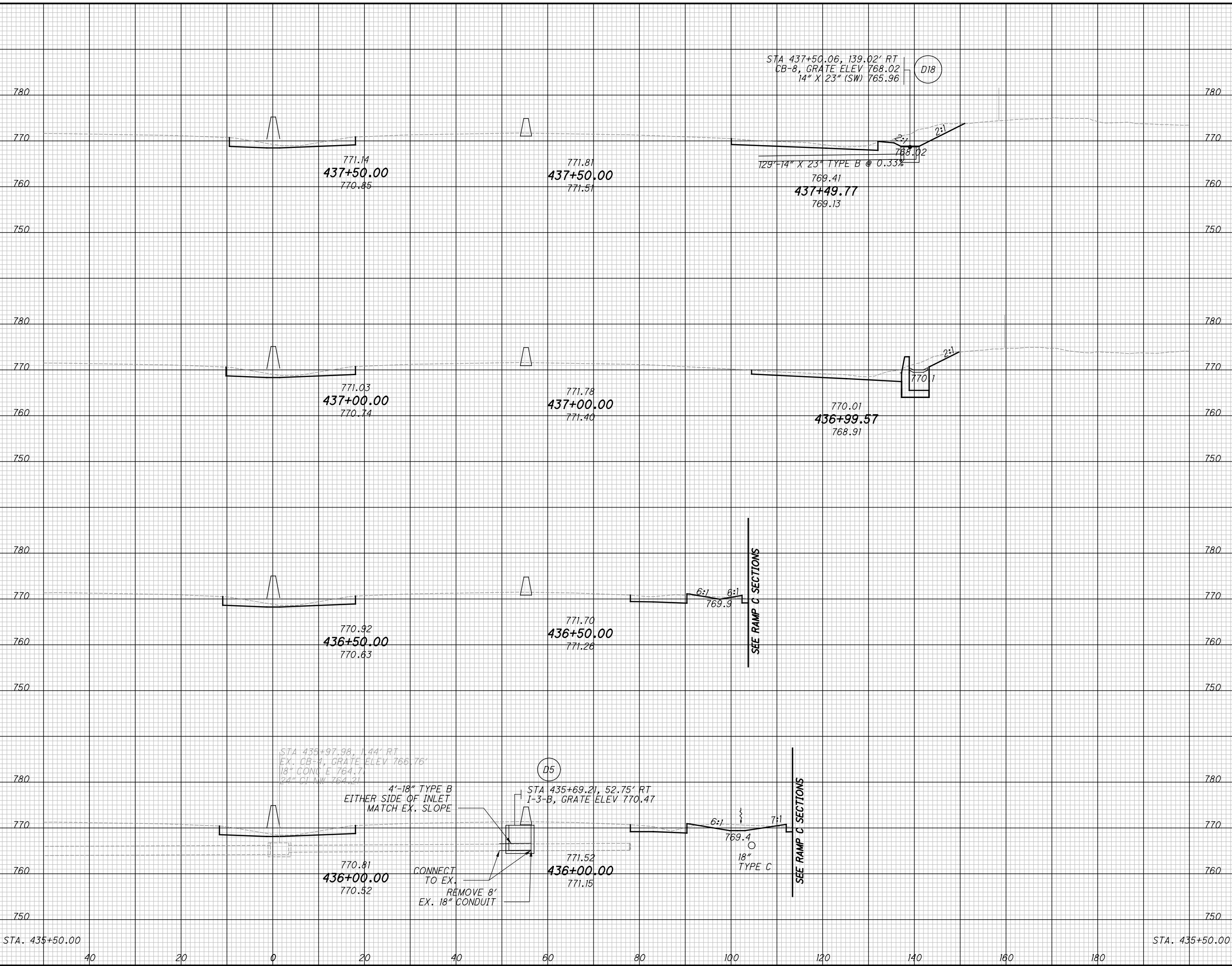
**CROSS SECTIONS - IR-71 NB
STA. 434+00.00 TO STA. 435+50.00**

FRA-71-9.07

142
264

...Northbound\92615_XS501.dgn 5/29/2019 8:13:19 AM mswwhitt

SEEDING	
END WIDTH	SO. YDS.
24	
92	
10	
158	
47	
199	
25	
210	
51	
659	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
95	0	191	0
112	0	150	1
49	1	97	3
56	2	106	14
58	13	544	18

CALCULATED	
MSW	WAA

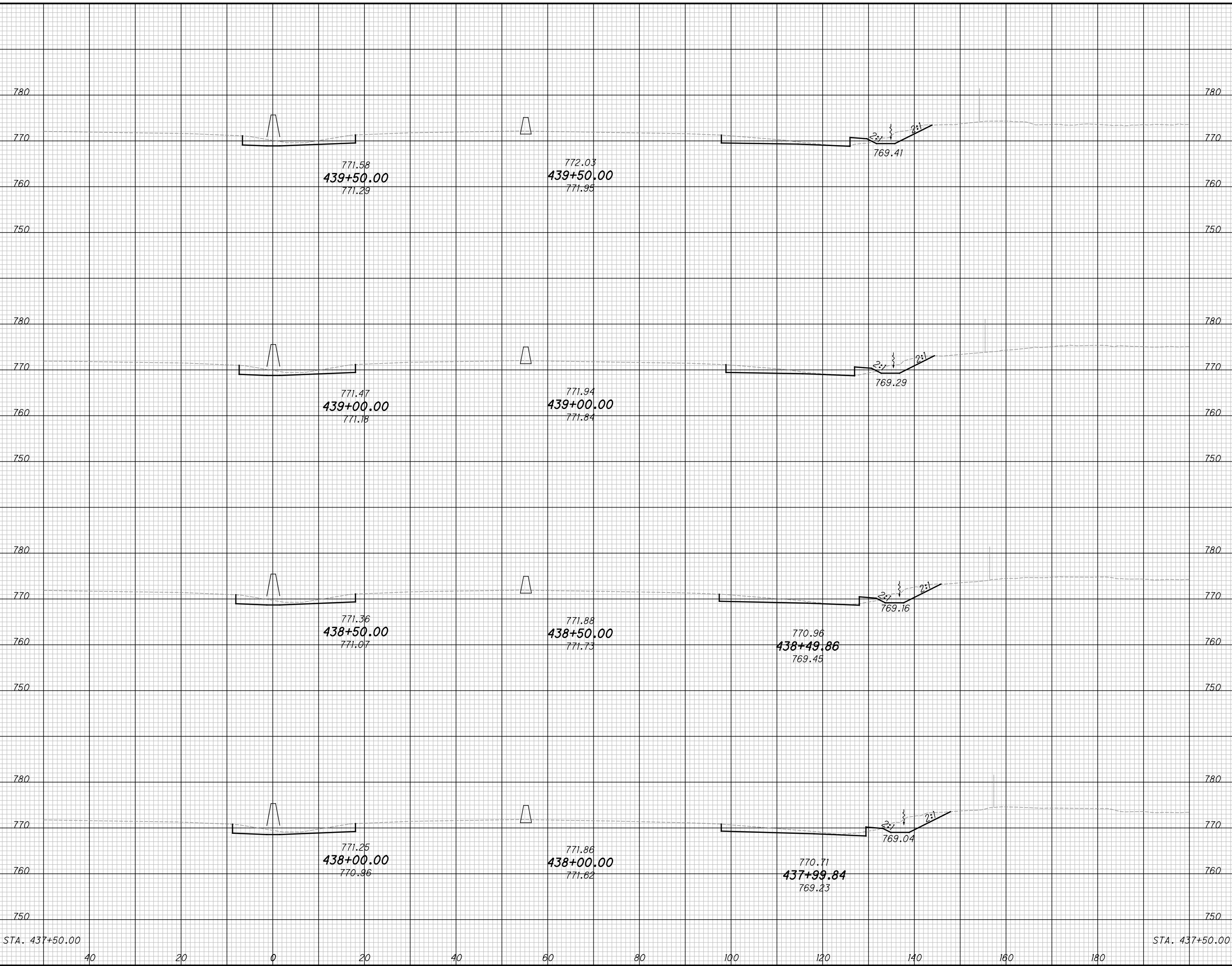
CROSS SECTIONS - IR-71 NB
STA. 436+00.00 TO STA. 437+50.00

FRA-71-9.07

143
264

...Northbound\92615_XS501.dgn 5/29/2019 8:13:19 AM mswwhitt

SEEDING	
END WIDTH	SO. YDS.
22	123
22	123
22	123
22	126
23	129
24	501



END CUT	AREA FILL	VOLUME	
		CUT	FILL
67	5	123	10
66	6	128	9
72	4	143	5
83	2	164	2
95	0	558	26

CROSS SECTIONS - IR-71 NB
STA. 438+00.00 TO STA. 439+50.00

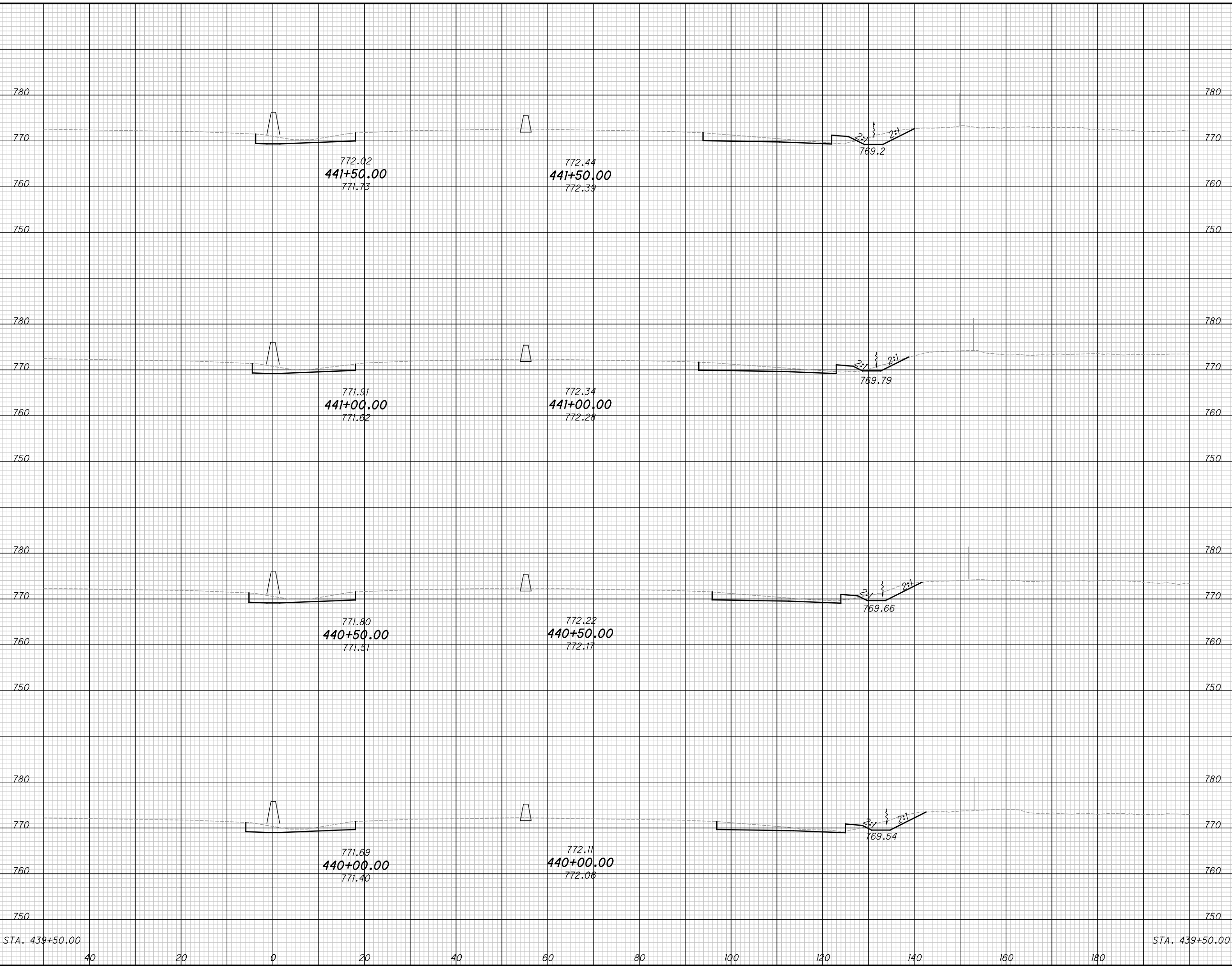
FRA-71-9.07

CALCULATED MSW
 CHECKED WAA

144
264

...Northbound\92615_XS501.dgn 5/29/2019 8:13:19 AM mswwhitt

SEEDING	
END WIDTH	SO. YDS.
484	40
22	20
123	0
22	20
118	40
20	60
119	80
23	100

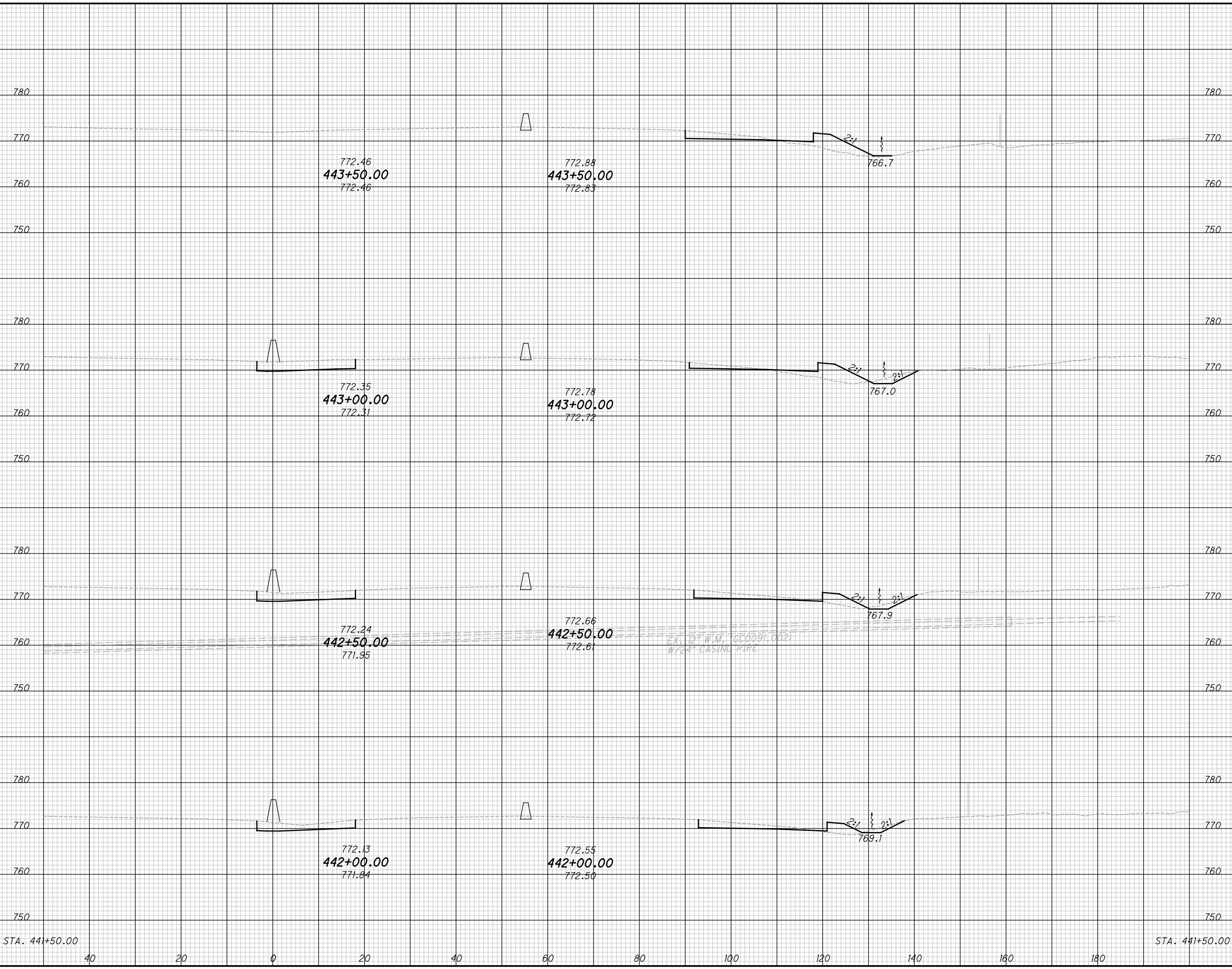


END AREA	VOLUME		
		CUT	FILL
70	7	122	13
63	6	124	9
71	3	131	7
71	4	127	9
67	5	504	38

CROSS SECTIONS - IR-71 NB
 STA. 440+00.00 TO STA. 441+50.00
 FRA-71-9.07
 145
 264

...Northbound\92615_XS501.dgn 5/29/2019 8:13:20 AM mswwhitt

SEEDING	SO. YDS.	END AREA		VOLUME	
		CUT	FILL	CUT	FILL
22	134	20	34	77	65
27	145	63	37	121	49
26	130	68	17	120	28
21	122	61	14	121	20
23	531	70	7	439	162

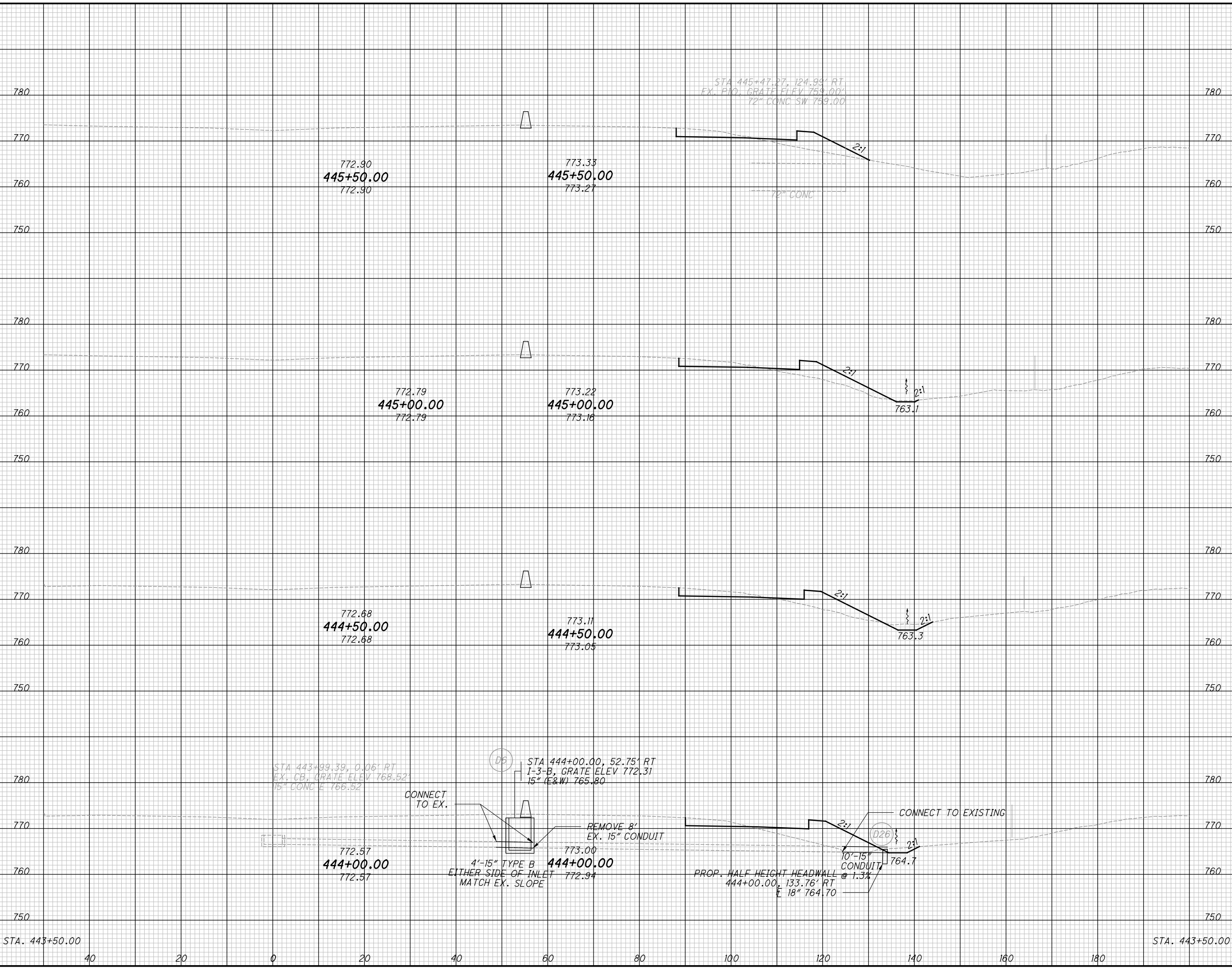


END AREA		VOLUME	
CUT	FILL	CUT	FILL
20	34	77	65
63	37	121	49
68	17	120	28
61	14	121	20
70	7	439	162

CROSS SECTIONS - IR-71 NB
 STA. 442+00.00 TO STA. 443+50.00
 FRA-71-9.07
 146
 264

...Northbound\92615_XS501.dgn 5/29/2019 8:13:20 AM mswwhitt

SEEDING	END WIDTH	SO. YDS.		
			CUT	FILL
21			20	45
145			38	87
31			21	48
181			47	86
34			30	44
175			48	113
29			22	77
141			39	103
22			20	34
642			172	389

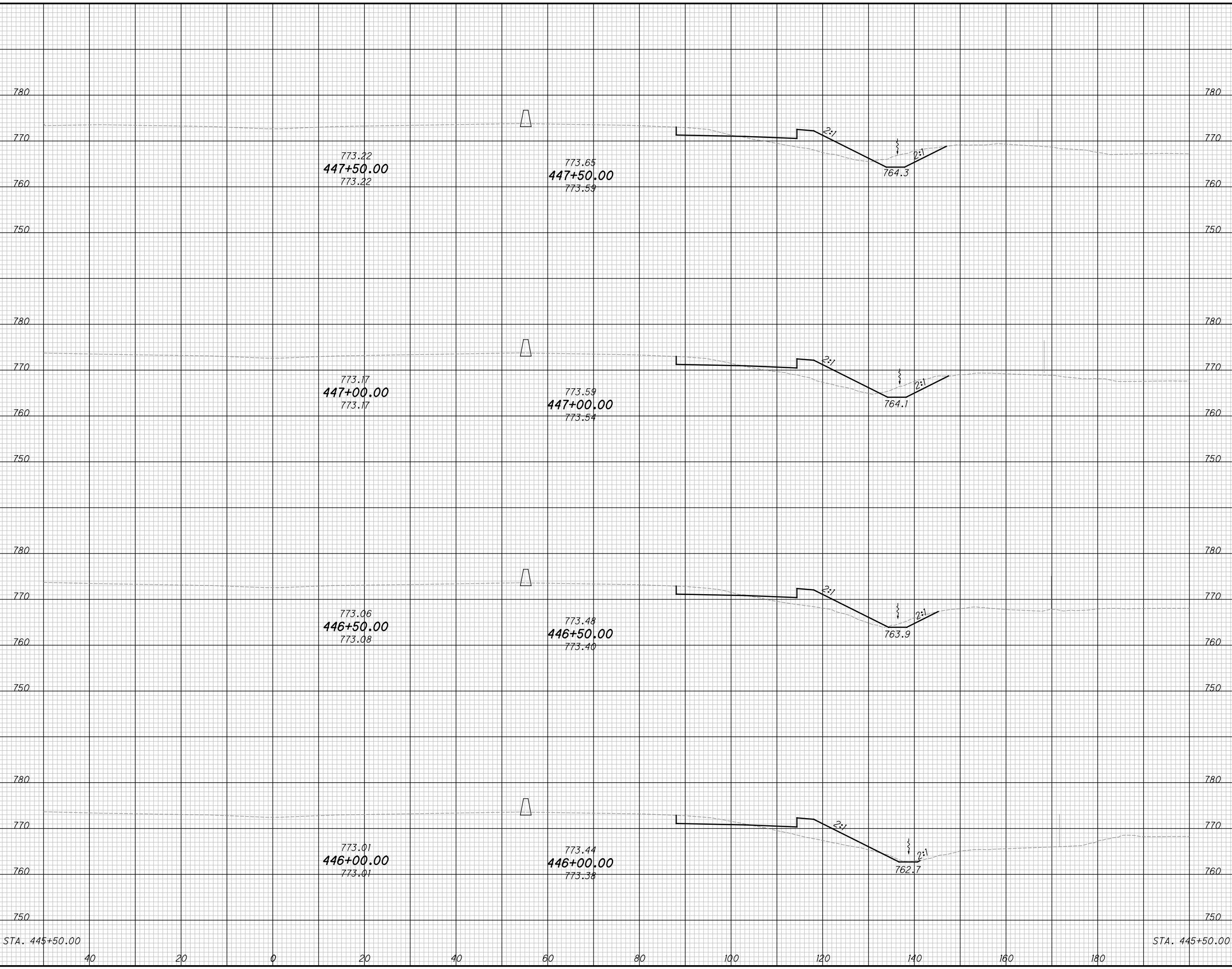


END AREA	VOLUME	CALCULATED	CHECKED
20	45		
38	87		
21	48		
47	86		
30	44		
48	113		
22	77		
39	103		
20	34		
172	389		

CROSS SECTIONS - IR-71 NB
STA. 444+00.00 TO STA. 445+50.00
FRA-71-9.07
 (147/264)

...Northbound\92615_XS501.dgn 5/29/2019 8:13:20 AM mswwhitt

SEEDING	
END WIDTH	SO. YDS.
39	218
39	212
37	193
33	148
21	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
42	58	77	108
41	59	62	102
26	51	43	97
21	54	38	91
20	45	220	398

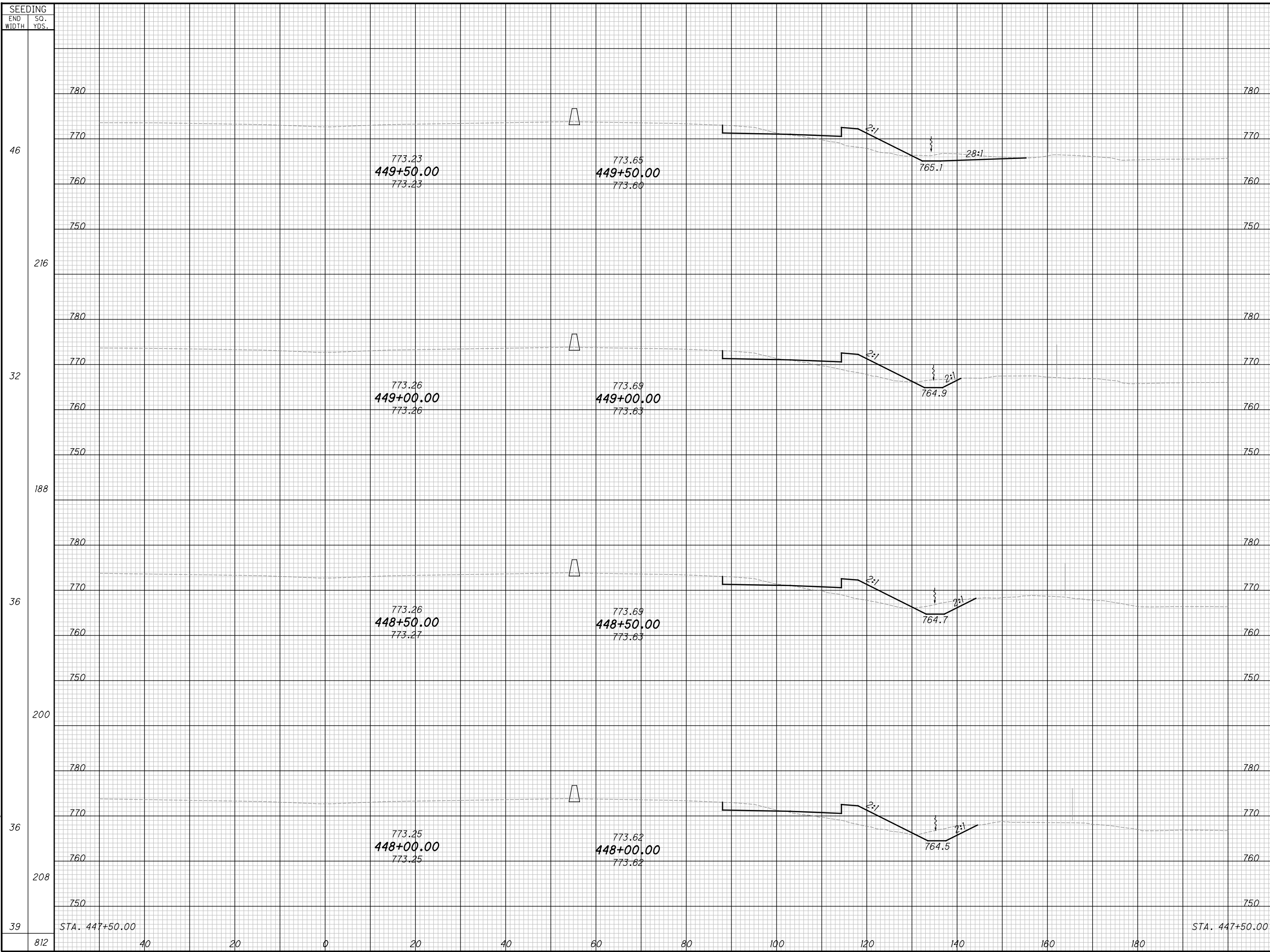
CROSS SECTIONS - IR-71 NB
STA. 446+00.00 TO STA. 447+50.00

FRA-71-9.07

CALCULATED	MSW
CHECKED	WAA

148
264

...Northbound\92615_XS501.dgn 5/29/2019 8:13:21 AM msw:whitt



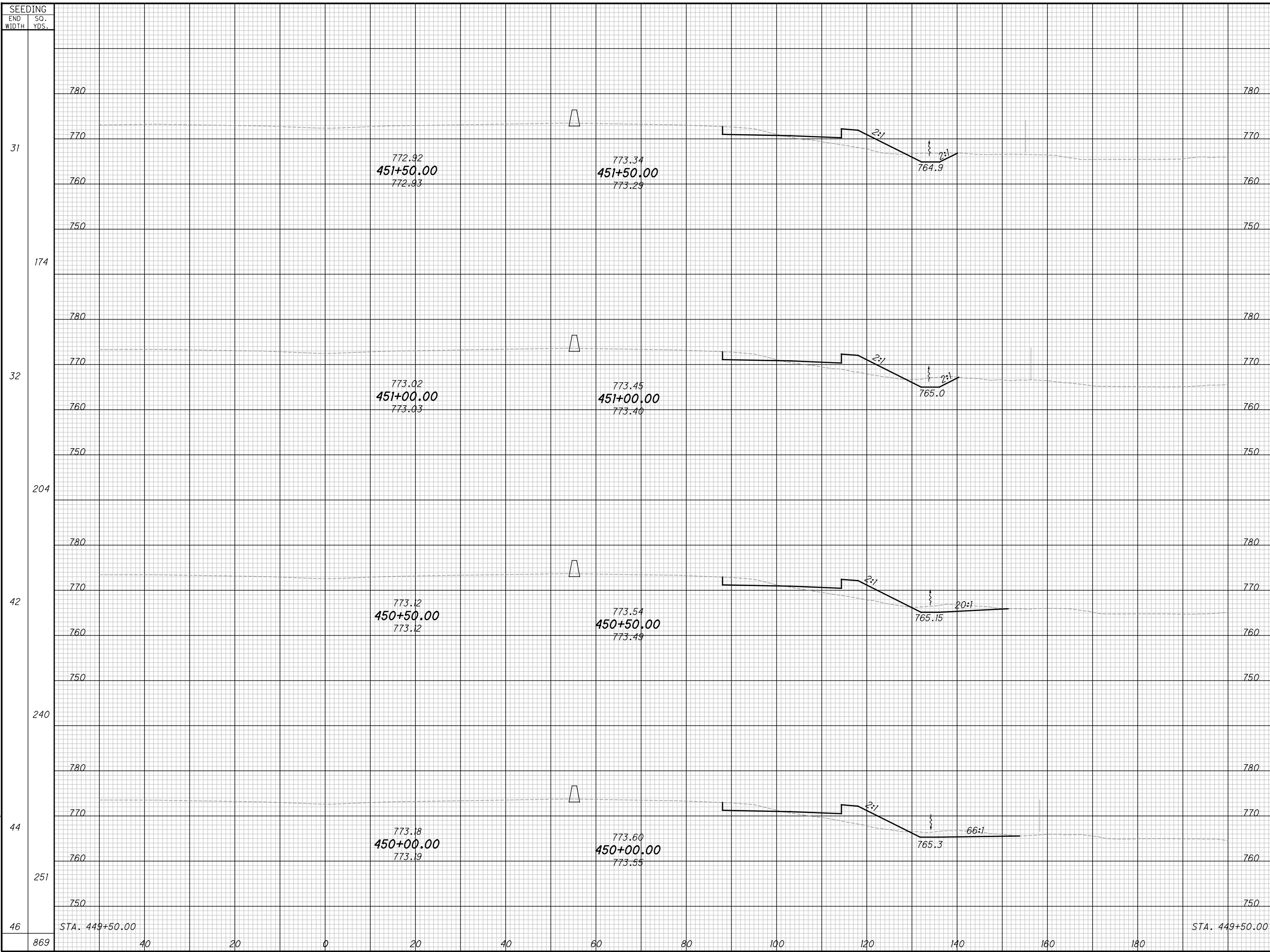
SEEDING		END AREA		VOLUME		CALCULATED	
END WIDTH	SO. YDS.	CUT	FILL	CUT	FILL	MSW	WAA
46		38	50				
216				60	94		
32		27	51				
188				58	95		
36		36	51				
200				68	96		
36		38	52				
208				74	102		
39	STA. 447+50.00	42	58				
812				260	387		

CROSS SECTIONS - IR-71 NB
STA. 448+00.00 TO STA. 449+50.00

FRA-71-9.07

(149 / 264)

...Northbound\92615_XS501.dgn 5/29/2019 8:13:21 AM mswmitt



SEEDING	END AREA		VOLUME	
	CUT	FILL	CUT	FILL
31	30	47		
174			57	85
32	31	45		
204			63	85
42	36	48		
240			68	90
44	37	49		
251			69	92
46	38	50		
869			257	352

CALCULATED
 CHECKED
 MSW
 WAA

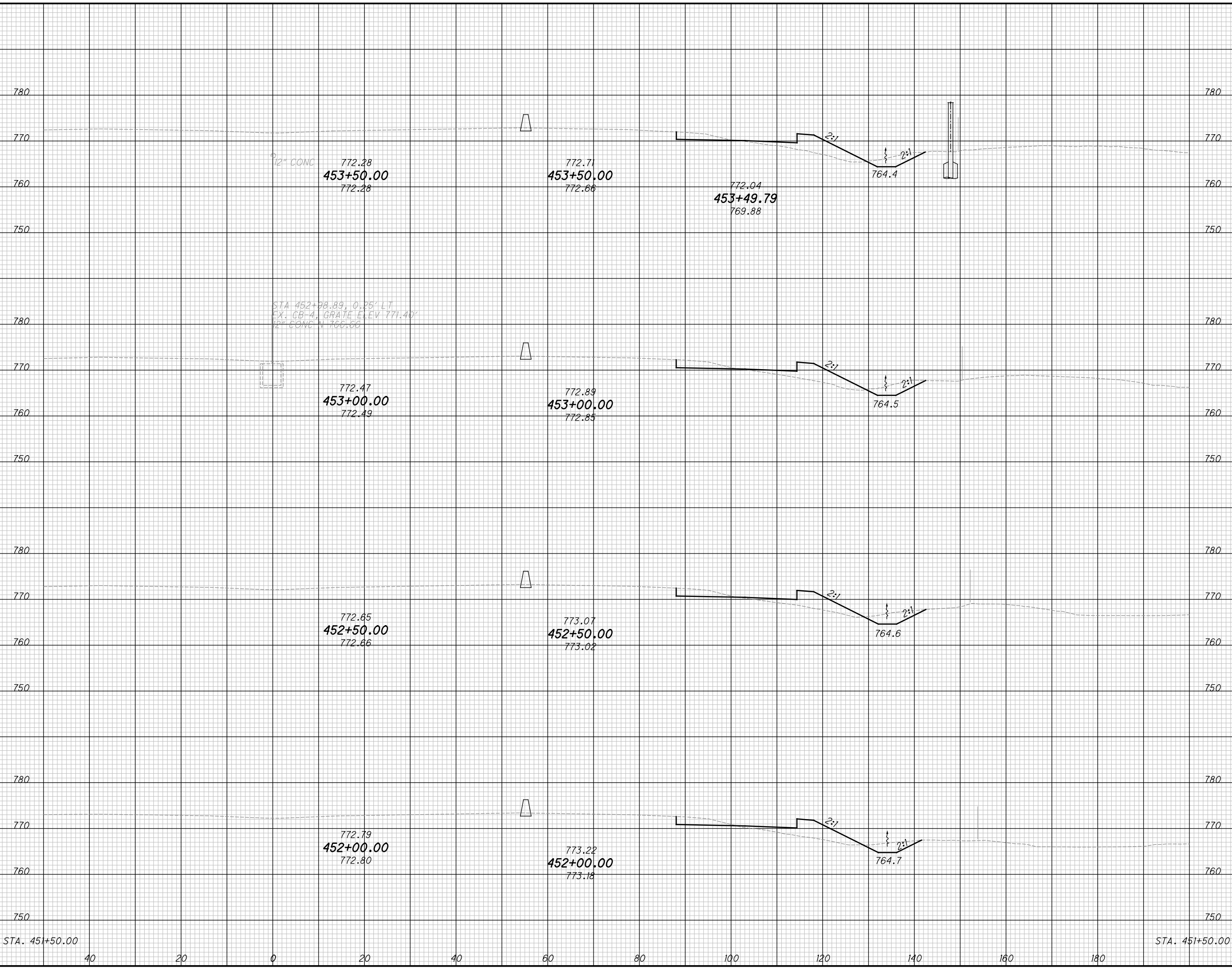
CROSS SECTIONS - IR-71 NB
STA. 450+00.00 TO STA. 451+50.00

FRA-71-9.07

150
264

...Northbound\92615_XS501.dgn 5/29/2019 8:13:21 AM msw:whitt

SEEDING	
END WIDTH	SO. YDS.
34	188
34	188
34	185
33	178
31	739



END AREA	VOLUME	CALCULATED		CHECKED	
		CUT	FILL	MSW	WAA
31	48	60	87		
35	46	65	82		
36	42	63	84		
33	48	58	88		
30	47	246	341		

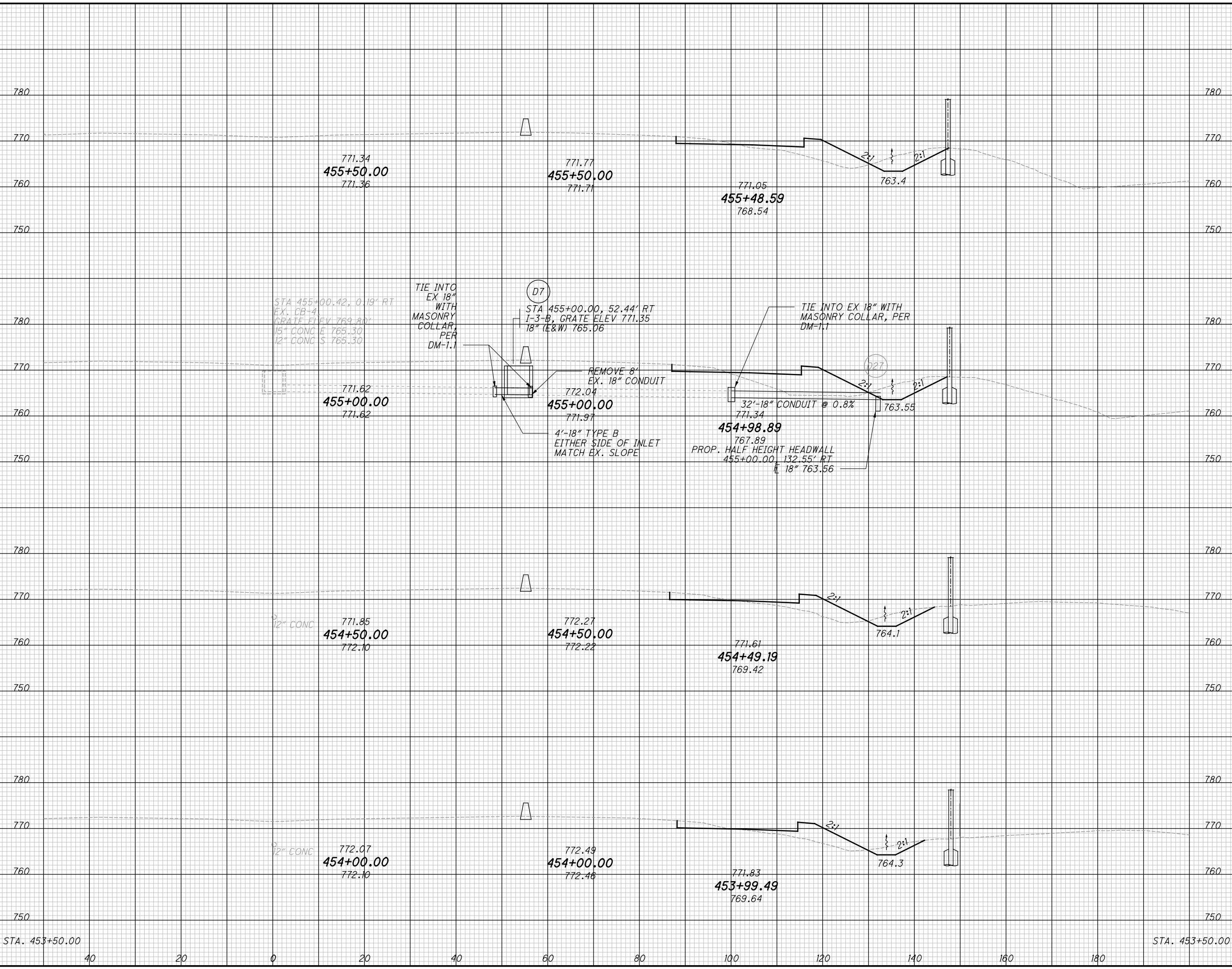
**CROSS SECTIONS - IR-71 NB
STA. 452+00.00 TO STA. 453+50.00**

FRA-71-9.07

(151 / 264)

...Northbound\92615_XS501.dgn 5/29/2019 8:13:22 AM mswwhitt

SEEDING	END	
	WIDTH	SO. YDS.
	791	40
	186	20
	191	0
	33	20
	35	40
	38	60
	210	80
	38	100
	38	120
	38	140
	34	160
	791	180



END AREA	VOLUME		CALCULATED MSW	CHECKED WAA
	CUT	FILL		
50	60	92	148	
50	100	81	140	
37	51	59	93	
27	49	53	89	
31	48	285	470	

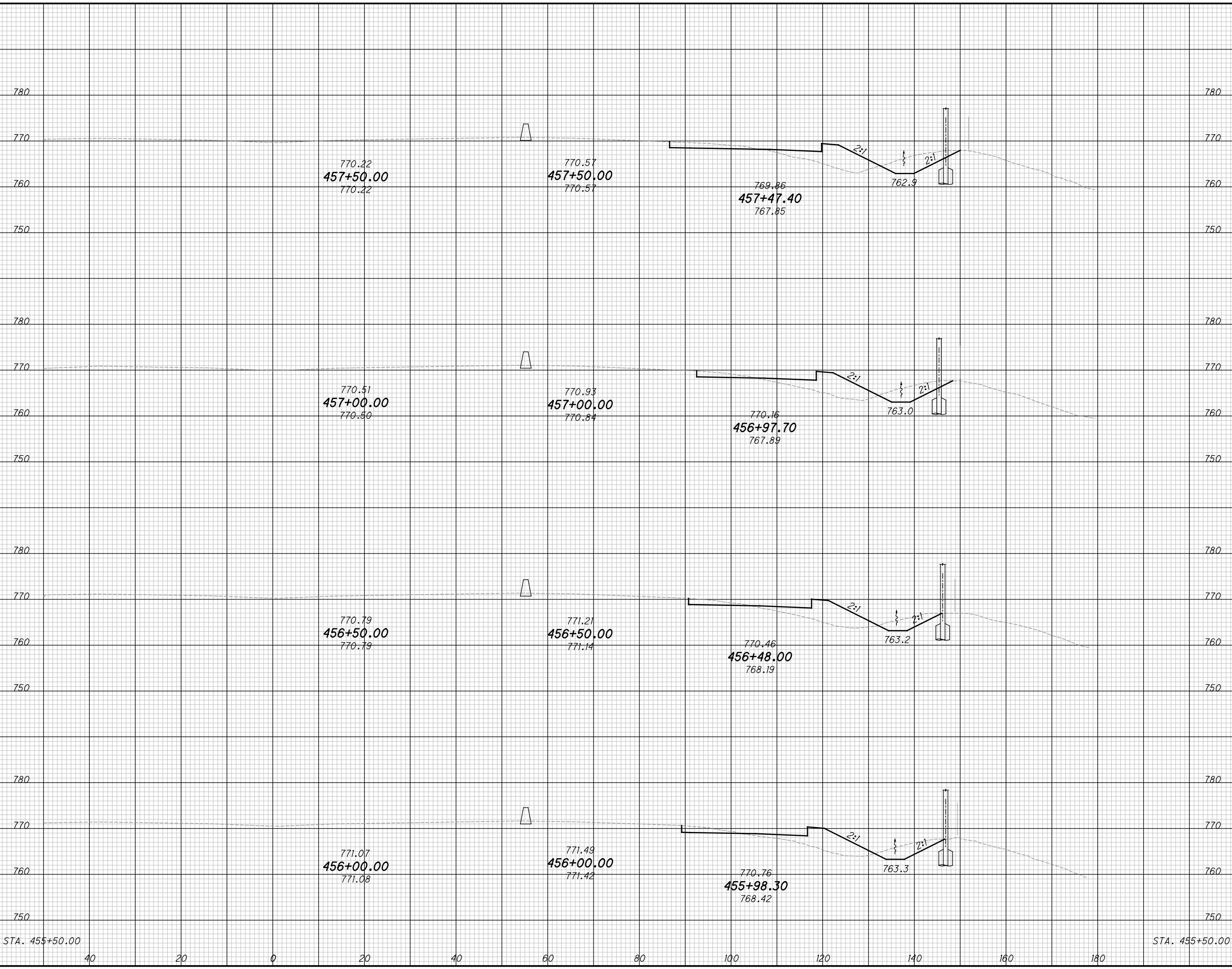
CROSS SECTIONS - IR-71 NB
STA. 454+00.00 TO STA. 455+50.00

FRA-71-9.07

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264

...Northbound\92615_XS501.dgn 5/29/2019 8:13:22 AM mswwhitt

SEEDING	
END WIDTH	SO. YDS.
36	36
200	200
36	36
194	194
34	34
195	195
36	36
204	204
38	38
793	793

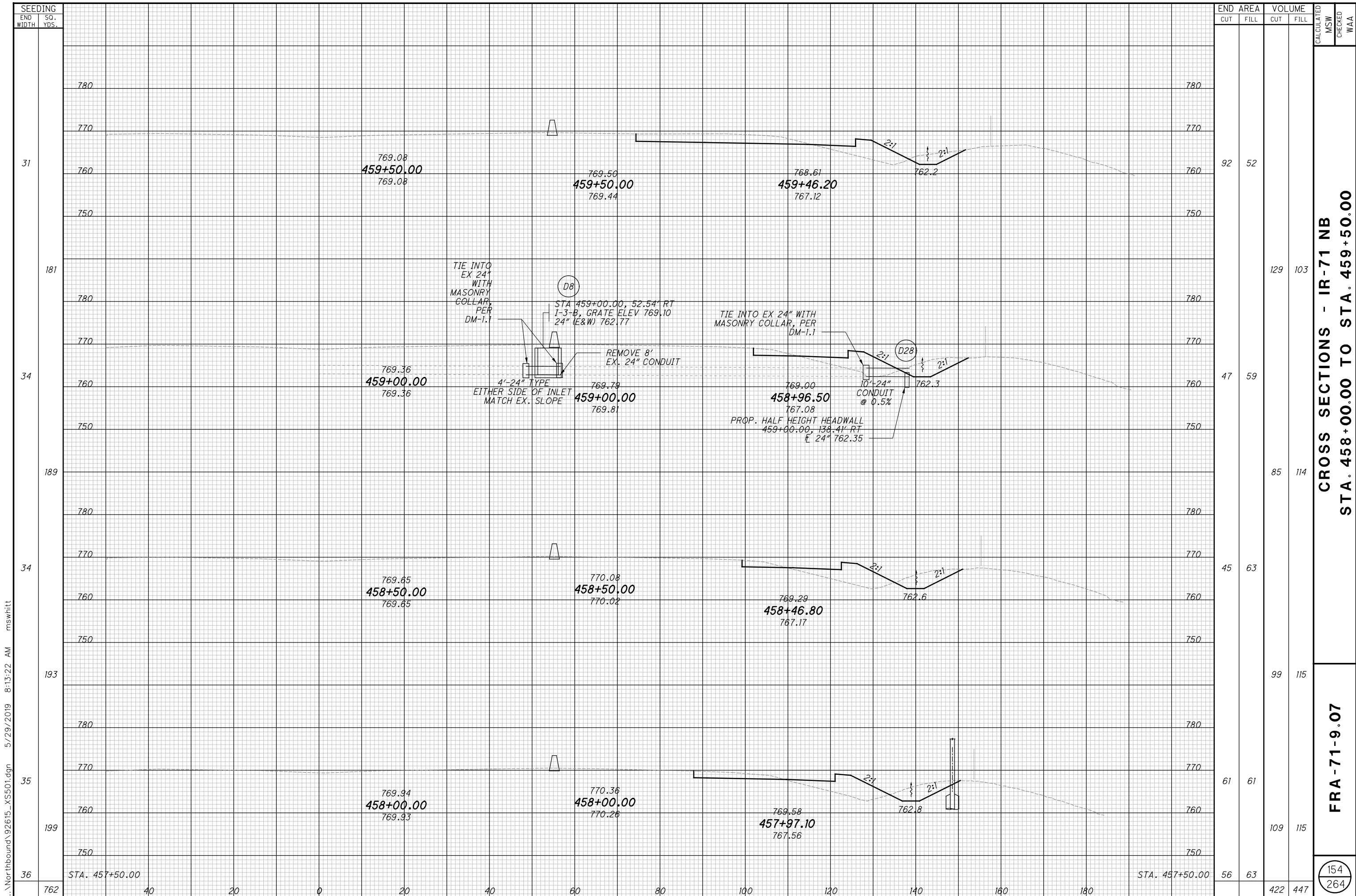


END AREA		VOLUME		CALCULATED	
CUT	FILL	CUT	FILL	MSW	WAA
56	63	93	117		
44	63	72	119		
34	65	67	117		
39	62	83	113		
50	60	315	466		

CROSS SECTIONS - IR-71 NB
STA. 456+00.00 TO STA. 457+50.00

FRA-71-9.07

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264



SEEDING	
END WIDTH	SO. YDS.
31	181
34	189
34	193
35	199
36	

END AREA		VOLUME		CALCULATED	
CUT	FILL	CUT	FILL	MSW	WAA
92	52	129	103		
47	59	85	114		
45	63	99	115		
61	61	109	115		
56	63	422	447	154	264

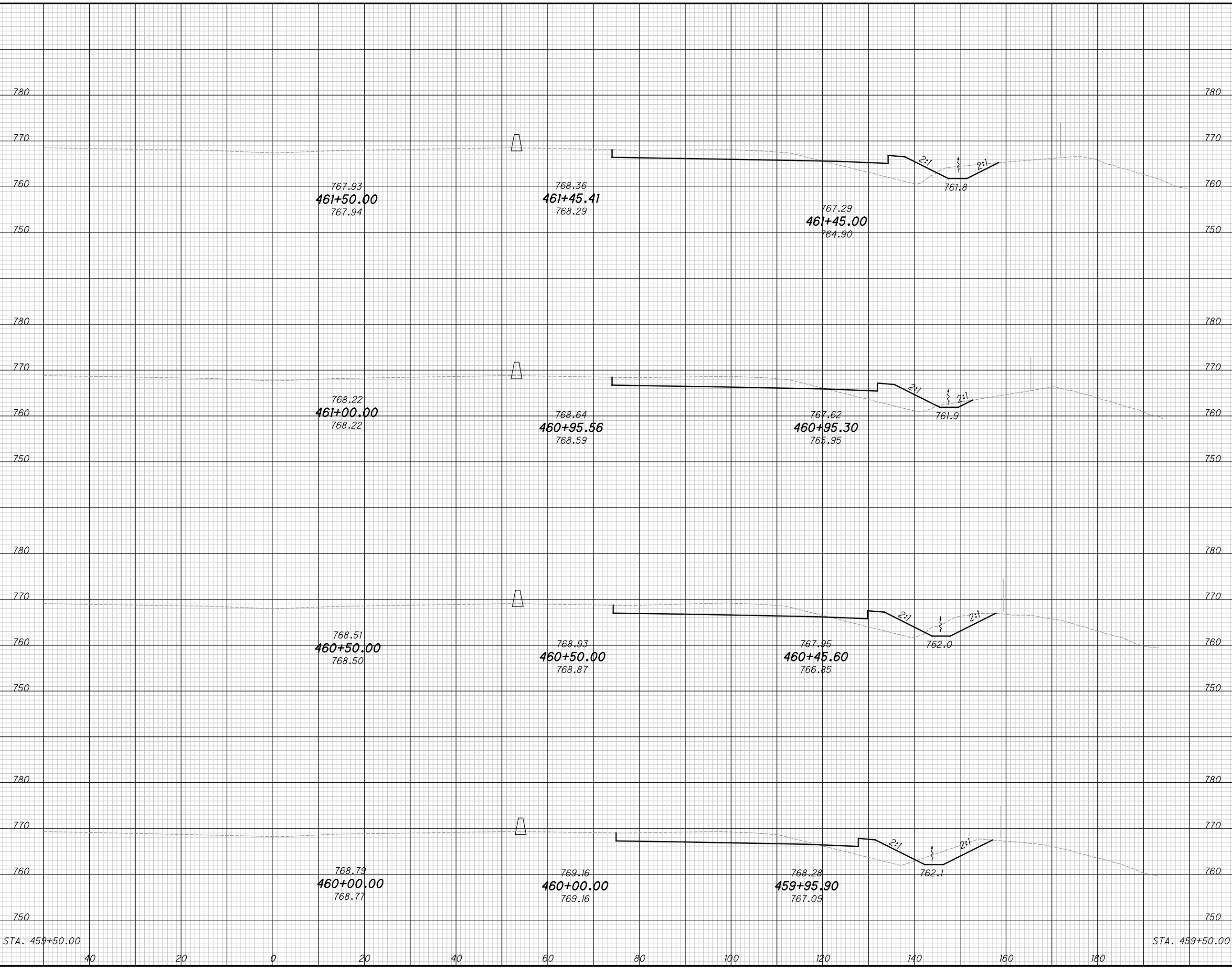
CROSS SECTIONS - IR-71 NB
STA. 458+00.00 TO STA. 459+50.00

FRA-71-9.07

...Northbound\92615_XS501.dgn 5/29/2019 8:13:22 AM mswwhitt

...Northbound\92615_XS501.dgn 5/29/2019 8:13:23 AM mswwhitt

SEEDING	
END WIDTH	SO. YDS.
694	31
185	35
191	34
165	26
153	29



END AREA		VOLUME		CALCULATED	
CUT	FILL	CUT	FILL	MSW	WAA
101	64	178	112		
92	57	202	95		
127	46	223	86		
114	47	191	92		
92	52	794	385	155	264

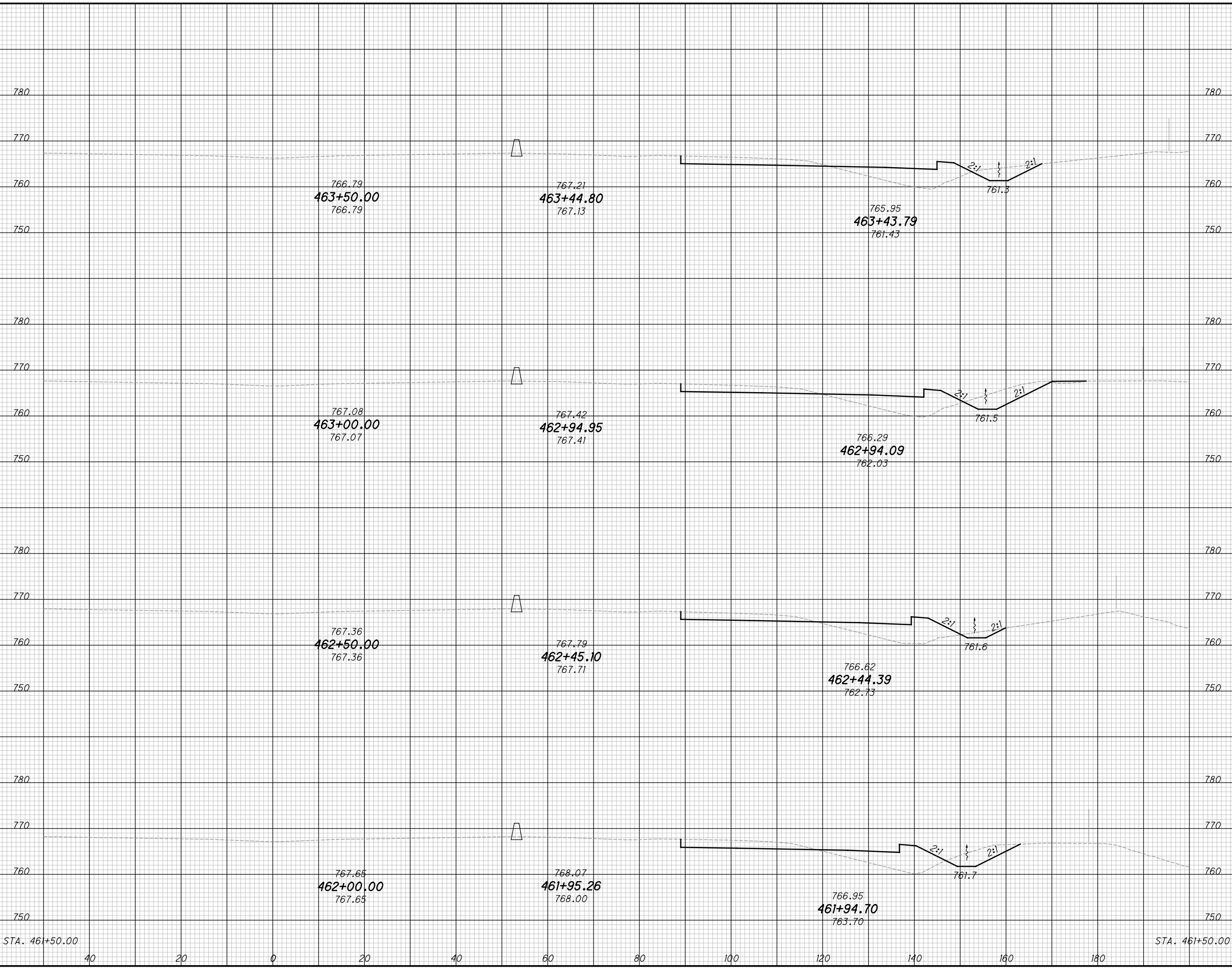
CROSS SECTIONS - IR-71 NB
STA. 460+00.00 TO STA. 461+50.00

FRA-71-9.07

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264

...Northbound\92615_XS501.dgn 5/29/2019 8:13:23 AM mswwhitt

SEEDING	END		SO. YDS.
	WIDTH		
	706	40	28
		20	192
		0	41
		20	185
		40	25
		60	159
		80	32
		100	170
		120	29
		140	706



END AREA	VOLUME	CALCULATED	CHECKED
71	84		
85	88	144	159
48	86	123	161
77	79	116	153
101	64	165	132
		548	605

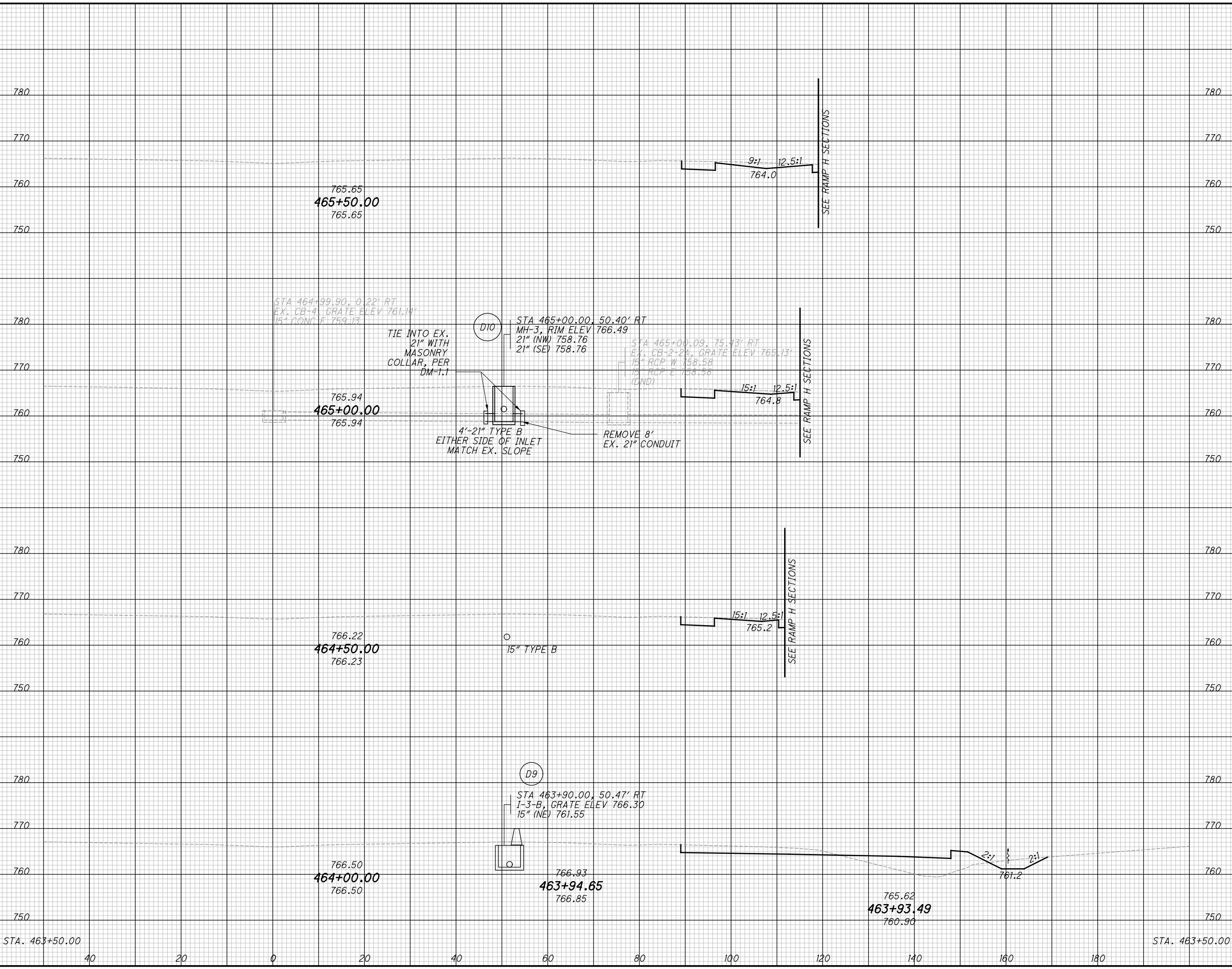
CROSS SECTIONS - IR-71 NB
STA. 462+00.00 TO STA. 463+50.00

FRA-71-9.07

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264

...Northbound\92615_XS501.dgn 5/29/2019 8:13:23 AM mswwhitt

SEEDING	END WIDTH	SO. YDS.		
			CUT	FILL
24			31	0
122			23	0
20			40	0
102			20	0
17			78	78
118			64	85
26			71	84
150			294	234
28				

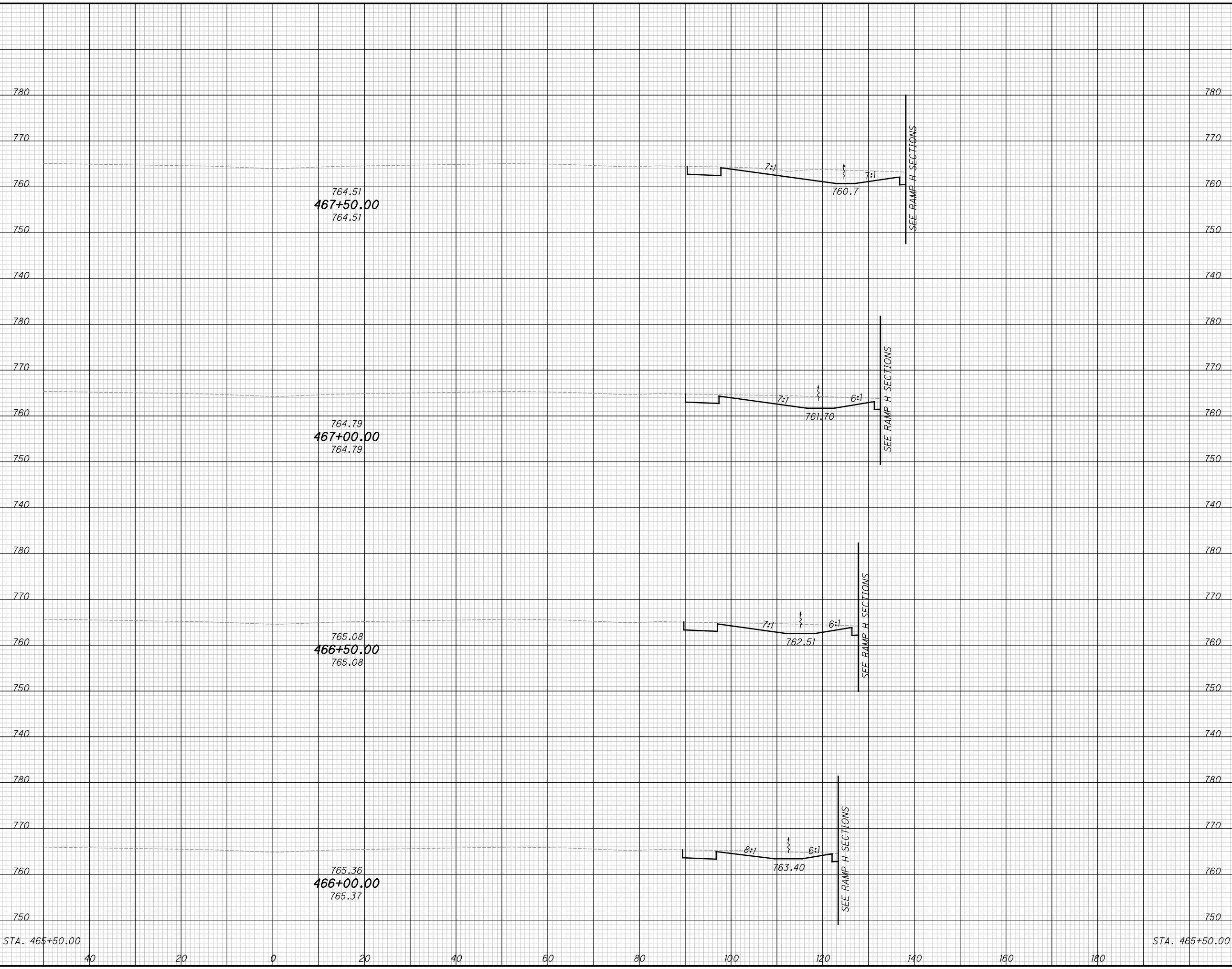


END AREA	VOLUME	CALCULATED	CHECKED
31	0		
23	0		
40	0		
20	0		
78	78		
64	85		
71	84		
294	234		

CROSS SECTIONS - IR-71 NB
STA. 464+00.00 TO STA. 465+50.00
FRA-71-9.07
 157
 264

...Northbound\92615_XS501.dgn 5/29/2019 8:13:24 AM mswwhitt

SEEDING	END AREA		VOLUME		CALCULATED MSW	CHECKED WAA
	CUT	FILL	CUT	FILL		
42		85	0			
219		74	0	147	0	
37		57	0	121	0	
193		41	0	91	0	
32		31	0	67	0	
168		31	0	426	0	
28						
145						
24						



SEEDING	END AREA		VOLUME		CALCULATED MSW	CHECKED WAA
	CUT	FILL	CUT	FILL		
42		85	0			
219		74	0	147	0	
37		57	0	121	0	
193		41	0	91	0	
32		31	0	67	0	
168		31	0	426	0	
28						
145						
24						

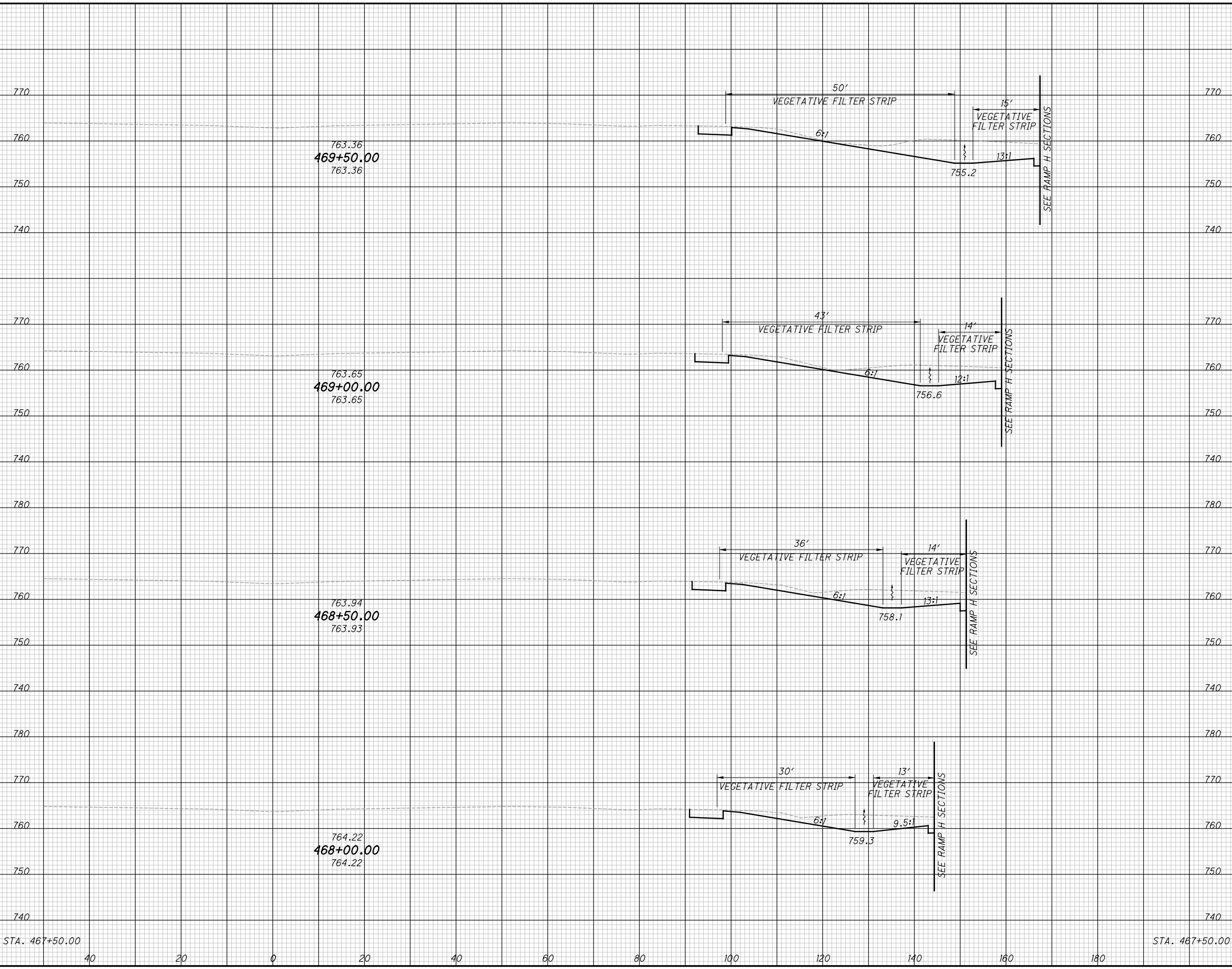
CROSS SECTIONS - IR-71 NB
STA. 466+00.00 TO STA. 467+50.00

FRA-71-9.07

158
264

...Northbound\92615_XS501.dgn 5/29/2019 8:13:24 AM mswwhitt

SEEDING	END AREA		VOLUME		CALCULATED MSW	CHECKED WAA
	CUT	FILL	CUT	FILL		
69		166	0			
363		288	0			
62		145	0			
322		252	0			
54		127	0			
284		218	0			
48		109	0			
250		179	0			
42	85	0				
1219	937	0				



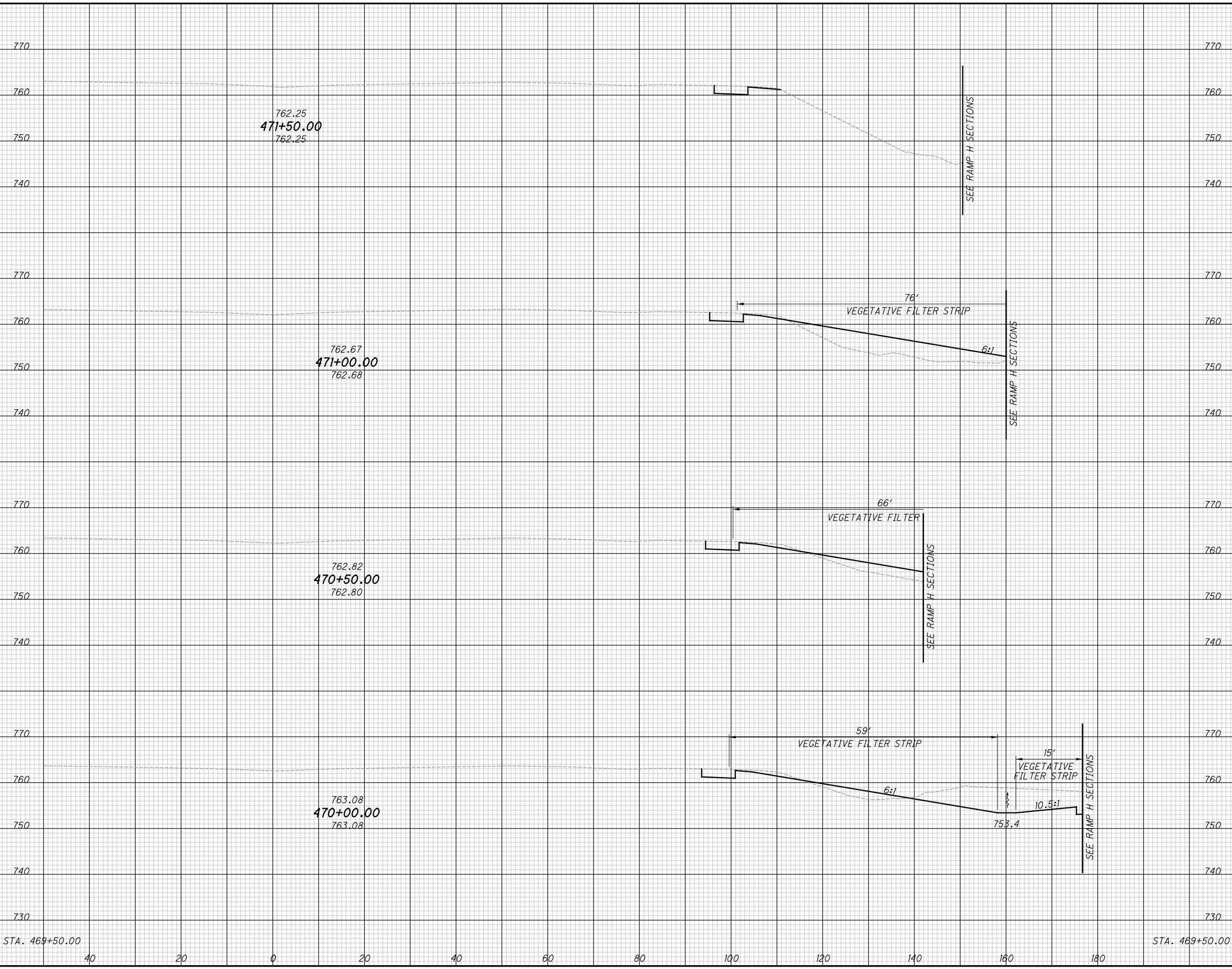
CROSS SECTIONS - IR-71 NB
STA. 468+00.00 TO STA. 469+50.00

FRA-71-9.07

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...Northbound\92615_XS501.dgn 5/29/2019 8:13:24 AM mswwhitt

SEEDING	END	
	WIDTH	SO. YDS.
8		
295		
98		
515		
88		
459		
78		
409		
69		



END	AREA		VOLUME		CALCULATED	CHECKED
	CUT	FILL	CUT	FILL		
8	14	0				
295			29	129		
98	71	139				
515			33	167		
88	19	41				
459			177	60		
78	172	24				
409			314	22		
69	166	0	553	378		

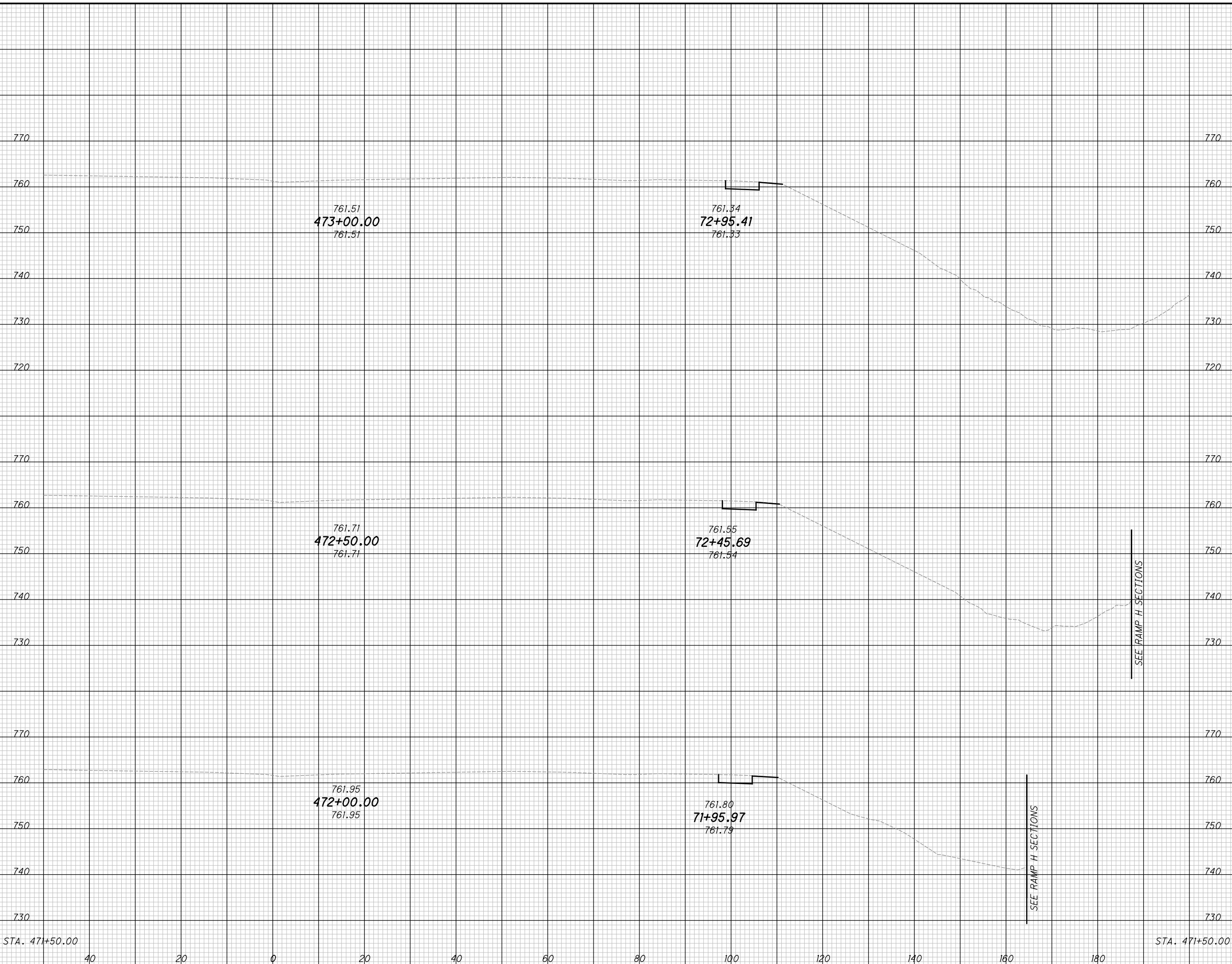
**CROSS SECTIONS - IR-71 NB
 STA. 470+00.00 TO STA. 471+50.00**

FRA-71-9.07

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264

...Northbound\92615_XS501.dgn 5/29/2019 8:13:25 AM mswwhitt

SEEDING	END	
	WIDTH	SO. YDS.
7		
36		
6		
37		
7		
43		
8		
116		



END AREA	VOLUME	
	CUT	FILL
13	0	0
25	0	0
13	0	0
25	0	0
13	0	0
26	0	0
14	0	0
76	0	0

CALCULATED	MSW	CHECKED	WAA

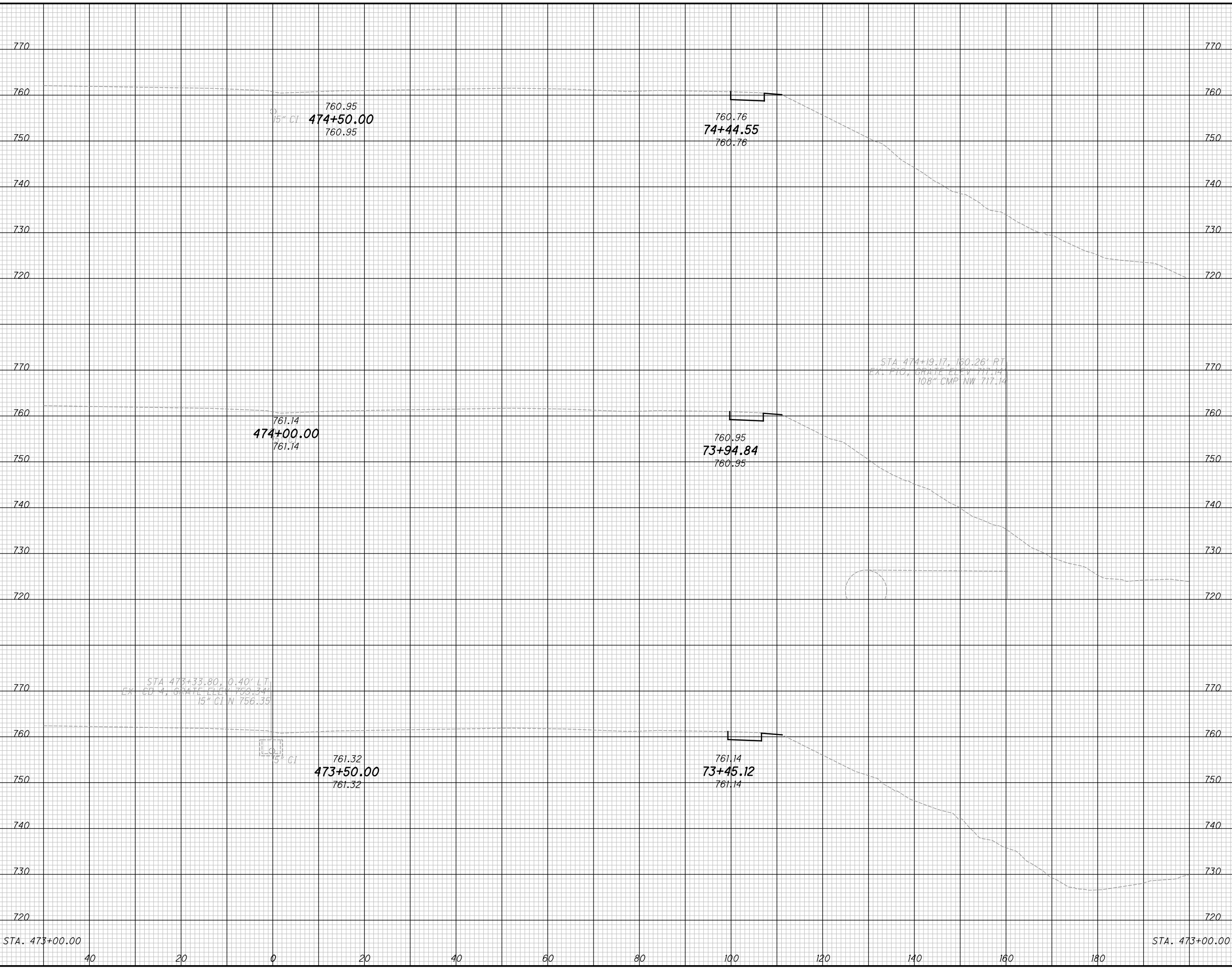
CROSS SECTIONS - IR-71 NB
STA. 472+00.00 TO STA. 473+00.00

FRA-71-9.07

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264

...Northbound\92615_XS501.dgn 5/29/2019 8:13:25 AM mswwhitt

SEEDING	END	
	WIDTH	SO. YDS.
5		
29		
5		
31		
6		
34		
7		
94		

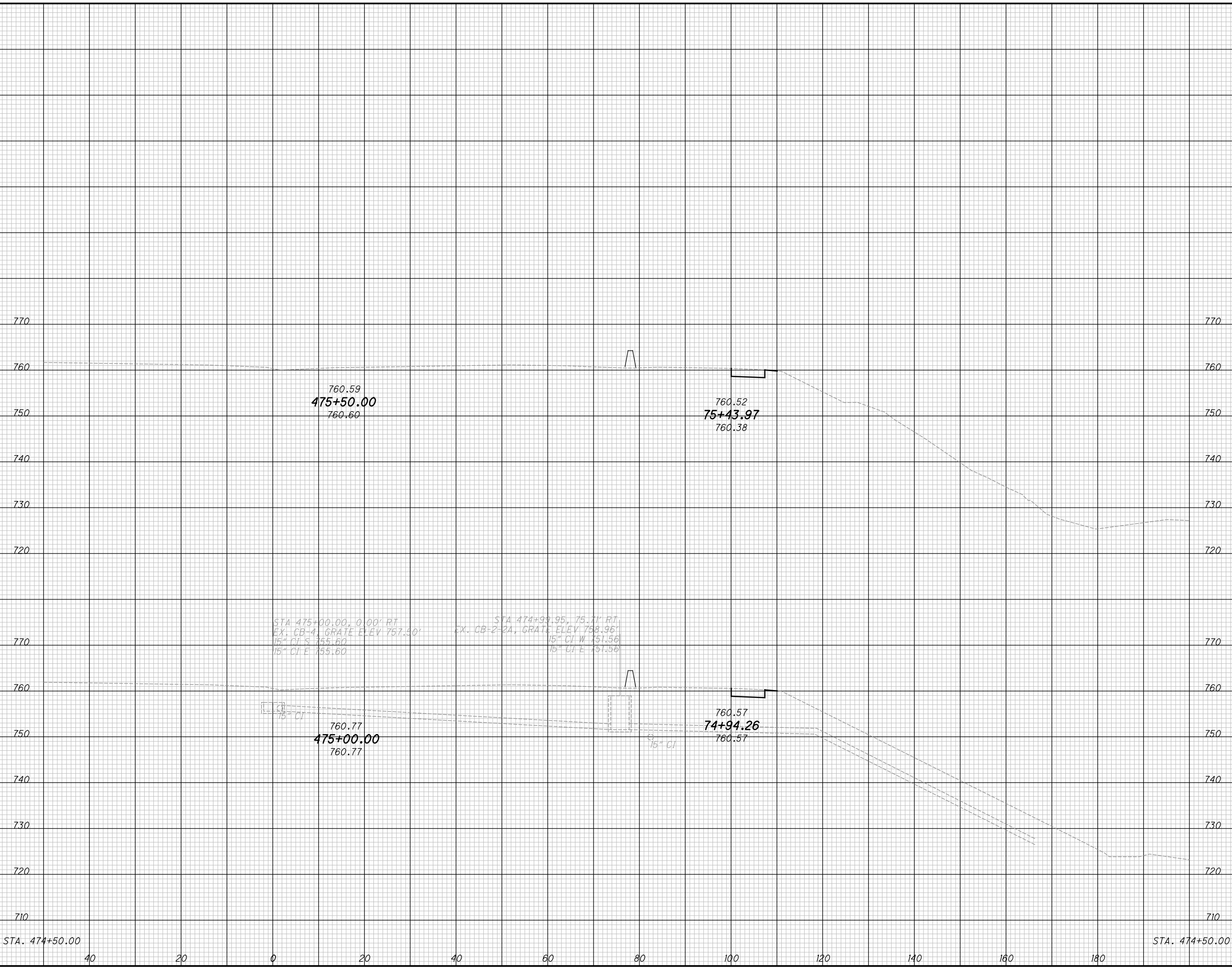


END	AREA		VOLUME	
	CUT	FILL	CUT	FILL
5	13	0		
29			24	0
5	13	0		
31			24	0
6	13	0		
34			24	0
7	13	0		
94			72	0

CALCULATED	CHECKED
CROSS SECTIONS - IR-71 NB STA. 473+50.00 TO STA. 474+50.00	
FRA-71-9.07	
162 264	

...Northbound\92615_XS501.dgn 5/29/2019 8:13:25 AM mswwhitt

SEEDING	END AREA		VOLUME		CALCULATED	CHECKED
	CUT	FILL	CUT	FILL		
4	13	0	23	0		
22	13	0	23	0		
4	13	0	23	0		
25	13	0	23	0		
5	13	0	46	0		



STA 475+00.00, 0+00' RT
EX. CB-41 GRATE ELEV 757.30'
15" CI S 755.60
15" CI E 755.60

STA 474+94.95, 75+71' RT
EX. CB-2-2A, GRATE ELEV 738.96'
15" CI W 751.56
15" CI E 751.56

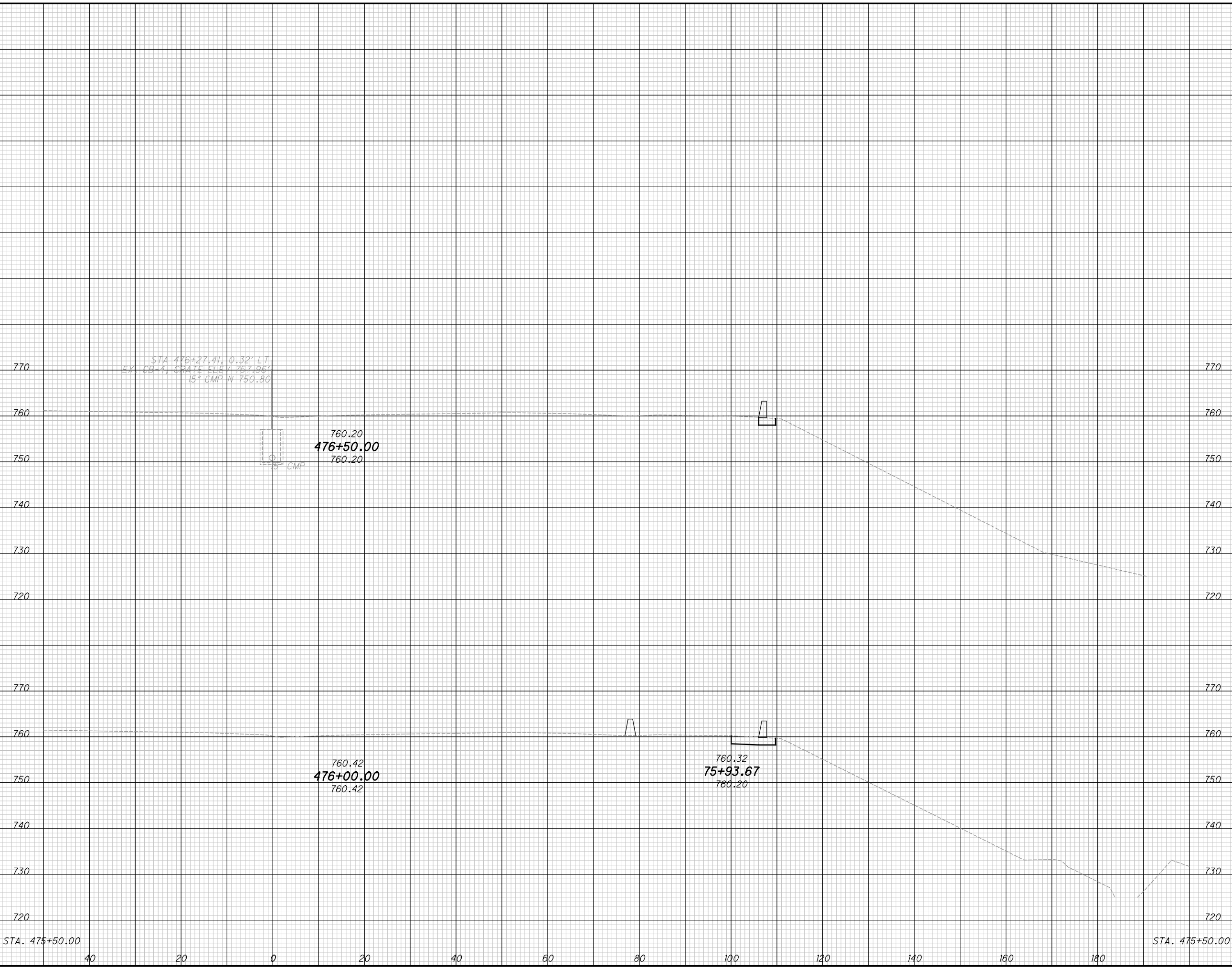
CROSS SECTIONS - IR-71 NB
STA. 475+00.00 TO STA. 475+50.00

FRA-71-9.07

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264

...Northbound\92615_XS501.dgn 5/29/2019 8:13:26 AM mswwhitt

SEEDING	
END WIDTH	SO. YDS.
2	11
2	17
4	28

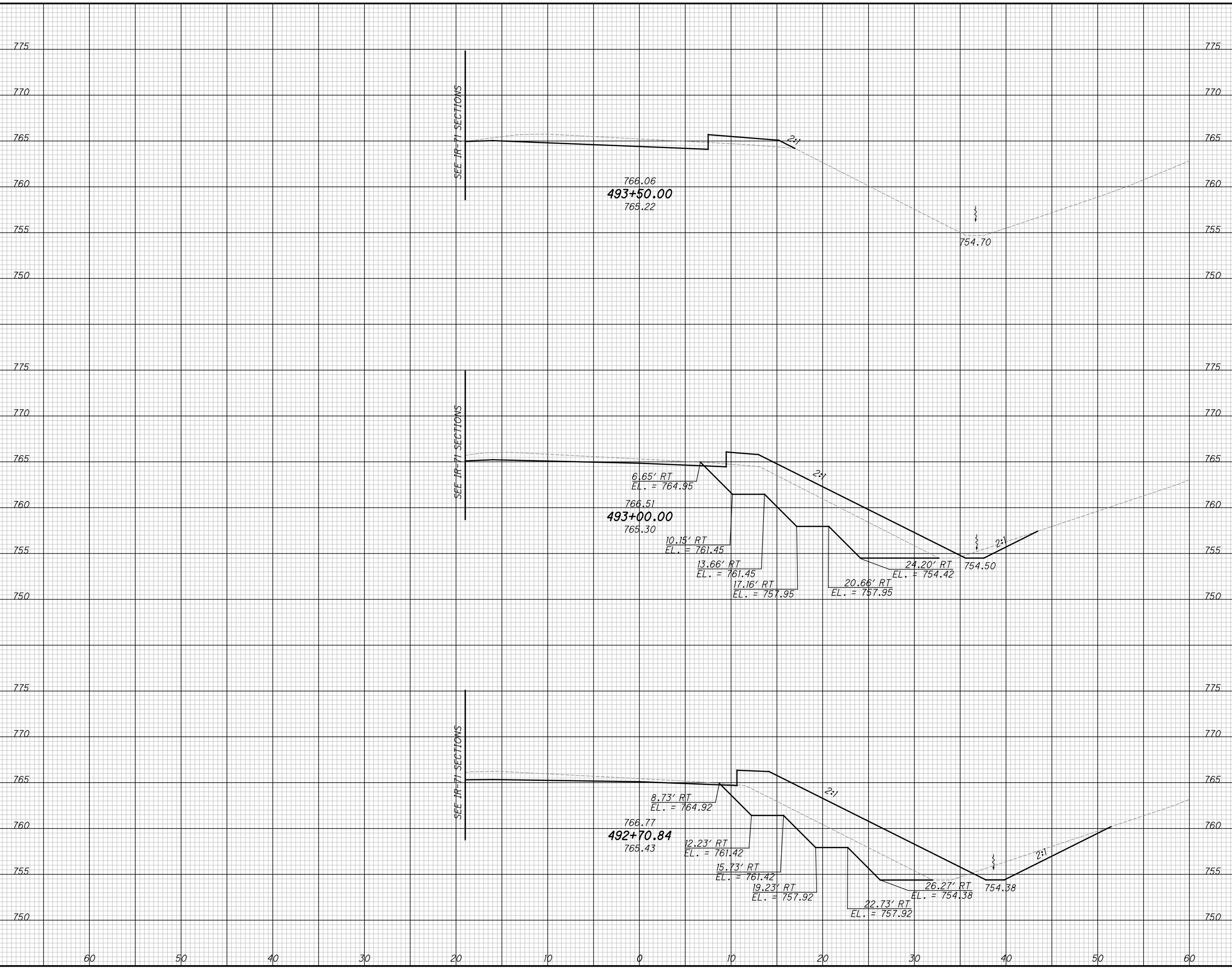


END AREA		VOLUME	
CUT	FILL	CUT	FILL
6	0	20	0
16	0	27	0
13	0	47	0

CALCULATED	
MSW	CHECKED
CROSS SECTIONS - IR-71 NB	
STA. 476+00.00 TO STA. 476+50.00	
FRA-71-9.07	
164	264

...Northbound\92615_XS502.dgn 5/29/2019 8:13:28 AM mswmitt

SEEDING	END AREA		VOLUME		CALCULATED	CHECKED
	CUT	FILL	CUT	FILL		
11	2	40				
144	65	158				
41	69	131				
145	67	146				
49	55	140				
289	132	304				



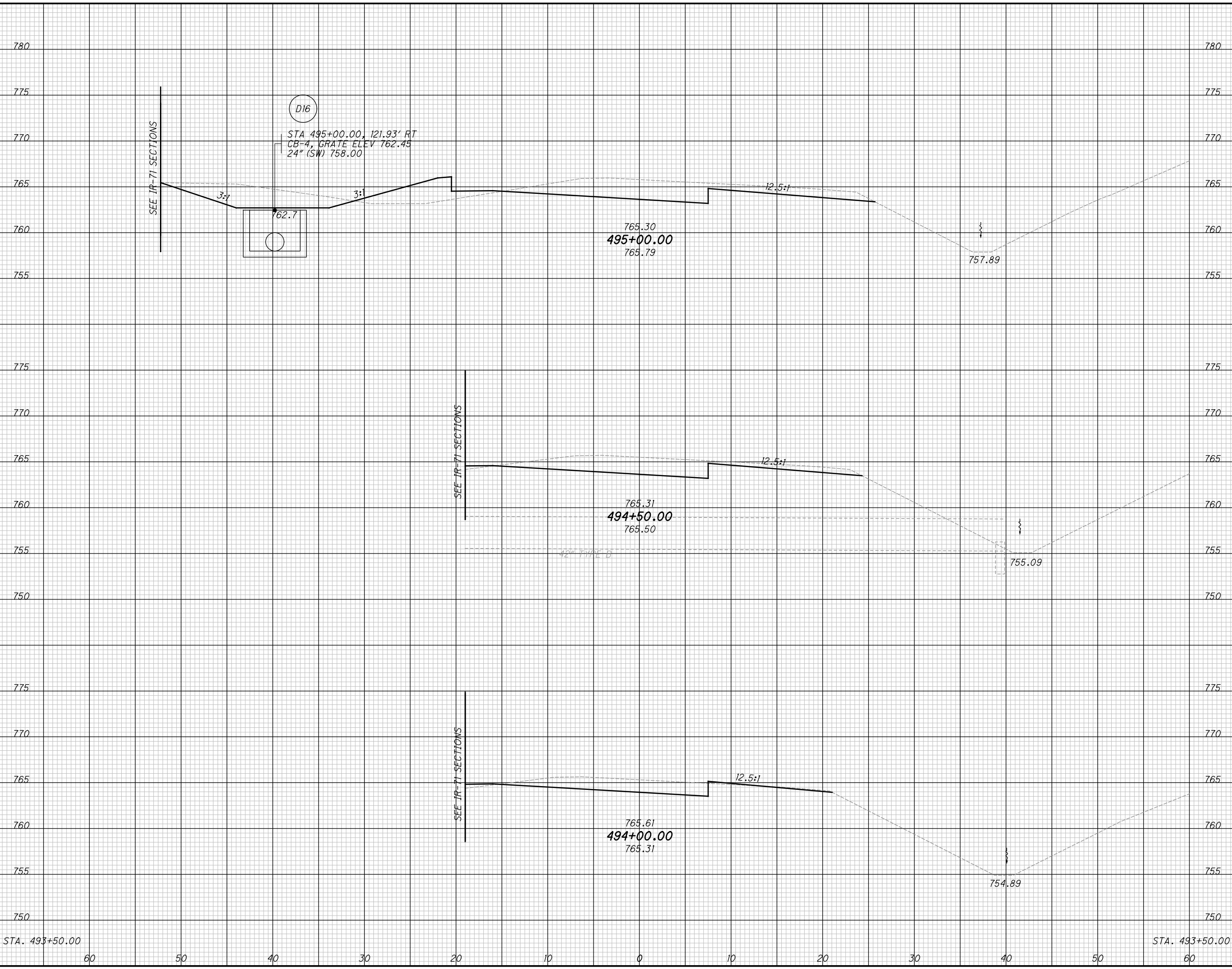
END AREA	VOLUME		CALCULATED	CHECKED
	CUT	FILL		
2	40			
65	158			
69	131			
67	146			
55	140			
132	304			

CROSS SECTIONS - RAMP D
STA. 492+70.84 TO STA. 493+50.00
FRA-71-9.07

165
264

...Northbound\92615_XS502.dgn 5/29/2019 8:13:28 AM mswwhitt

SEEDING	END AREA		VOLUME		CALCULATED	CHECKED
	CUT	FILL	CUT	FILL		
57	47	34				
210	10	19	53	50		
18						
93	12	44				
15	3	28				
73	5	63				
11	2	40				
376	70	157				



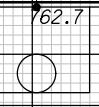
SEE IR-71 SECTIONS

SEE IR-71 SECTIONS

SEE IR-71 SECTIONS

D16

STA 495+00.00, 121.93' RT
CB-4, GRATE ELEV 762.45
24" (SW) 758.00



765.30
495+00.00
765.79

765.31
494+50.00
765.50

765.61
494+00.00
765.31

757.89

755.09

754.89

STA. 493+50.00

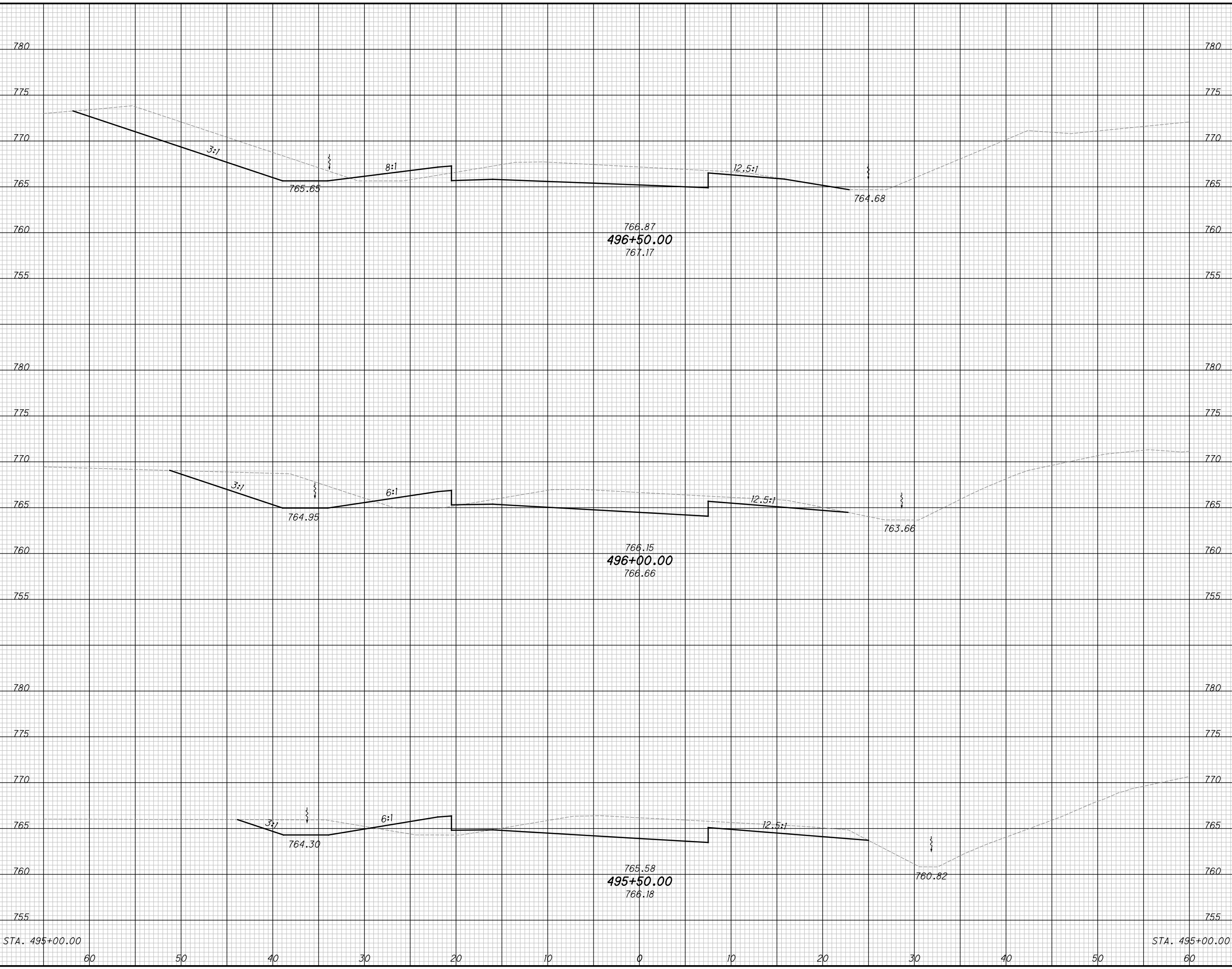
CROSS SECTIONS - RAMP D
STA. 494+00.00 TO STA. 495+00.00

FRA-71-9.07

166
264

...Northbound\92615_XS502.dgn 5/29/2019 8:13:29 AM mswmitt

SEEDING	END	
	WIDTH	SO. YDS.
	63	
	319	
	52	
	273	
	46	
	288	
	57	
	880	



END AREA	VOLUME	CALCULATED	
		CUT	FILL
81	14		
64	19	135	31
34	25	91	41
47	34	76	55
47	34	302	127

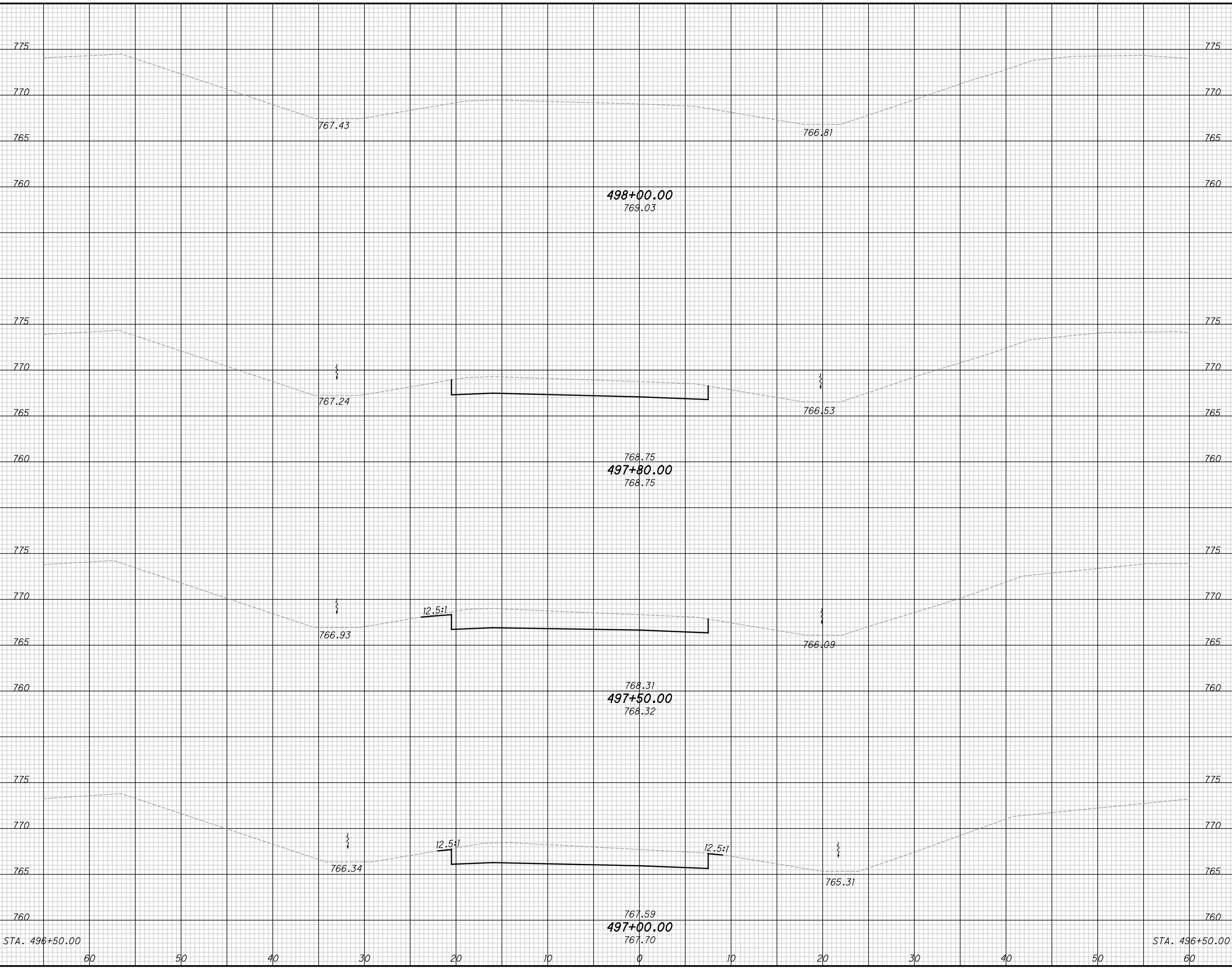
CROSS SECTIONS - RAMP D
STA. 495+50.00 TO STA. 496+50.00

FRA-71-9.07

(167)
264

...Northbound\92615_XS502.dgn 5/29/2019 8:13:29 AM mswntt

SEEDING	
END WIDTH	SO. YDS.
240	63
192	6
6	34
6	6
16	16
3	3
3	3
0	0



END AREA		VOLUME	
CUT	FILL	CUT	FILL
81	14	88	14
13	1	120	15
11	0	10	0
7	0	3	0

CALCULATED MSW CHECKED WAA

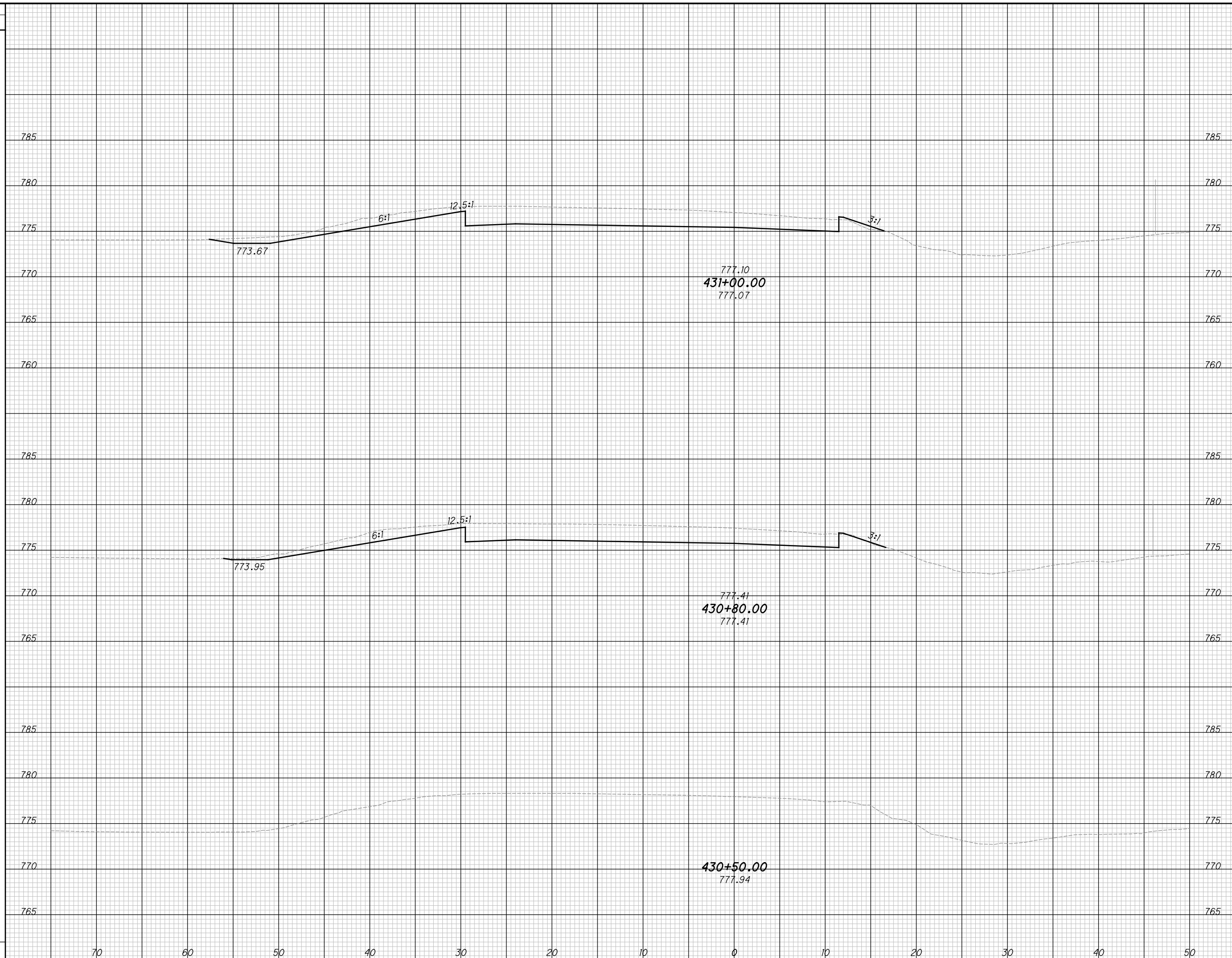
CROSS SECTIONS - RAMP D
STA. 497+00.00 TO STA. 498+00.00

FRA-71-9.07

168
264

...Northbound\92615_XS503.dgn 5/29/2019 8:13:31 AM mswwhitt

SEEDING	
END WIDTH	SO. YDS.
39	
84	
37	
62	
0	
146	

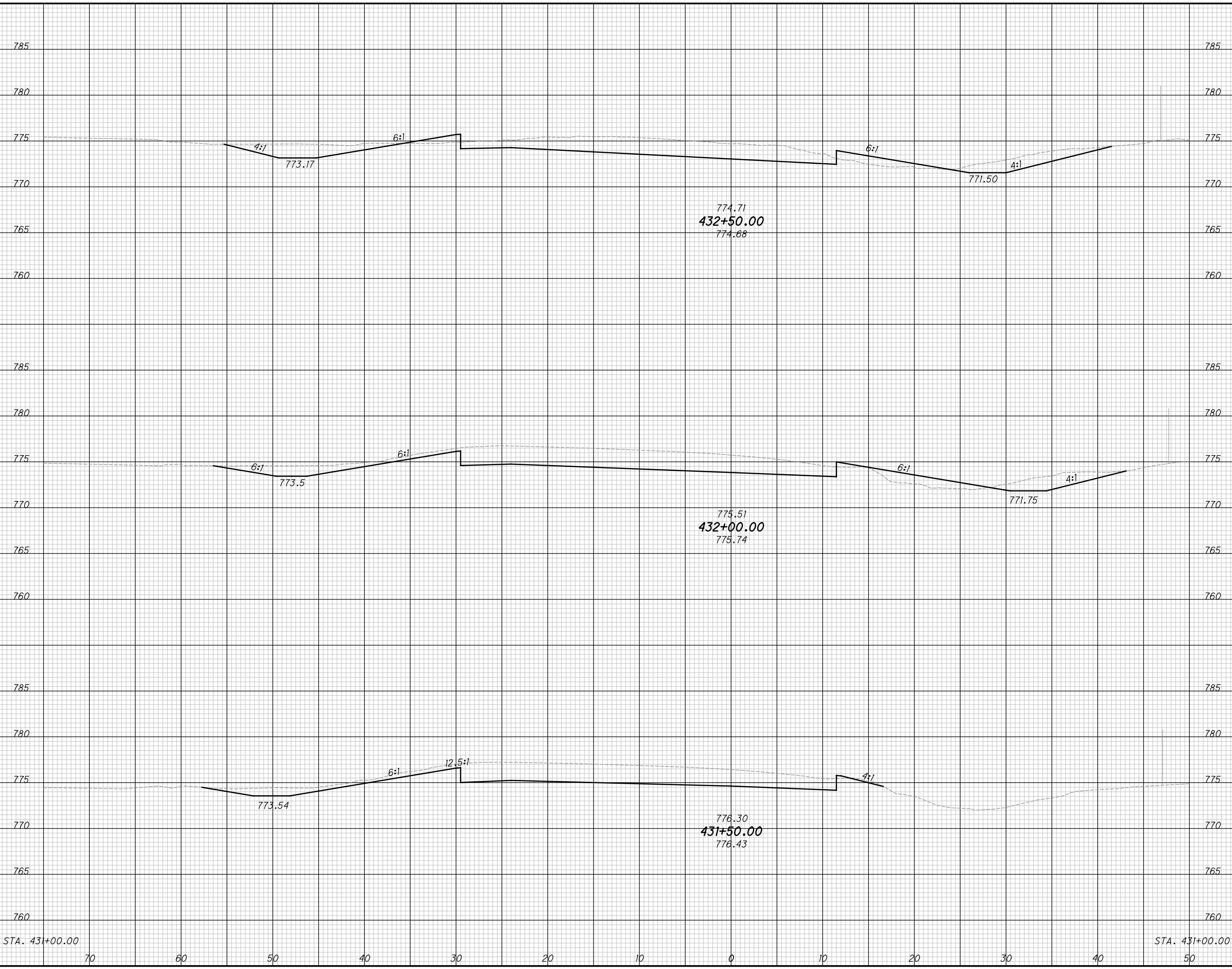


END AREA		VOLUME	
CUT	FILL	CUT	FILL
37	2		
		26	1
34	0		
		19	0
0	0		
		45	1

CROSS SECTIONS - RAMP C
 STA. 430+50.00 TO STA. 431+00.00
 FRA-71-9.07
 169
 264

...Northbound\92615_XS503.dgn 5/29/2019 8:13:49 AM msw/whitt

SEEDING	END AREA		VOLUME		CALCULATED	CHECKED
	CUT	FILL	CUT	FILL		
64	42	16				
362	52	11	87	26		
66	52	11				
292	35	1	80	11		
39	37	2				
215			67	2		
39	37	2				
869			234	39		

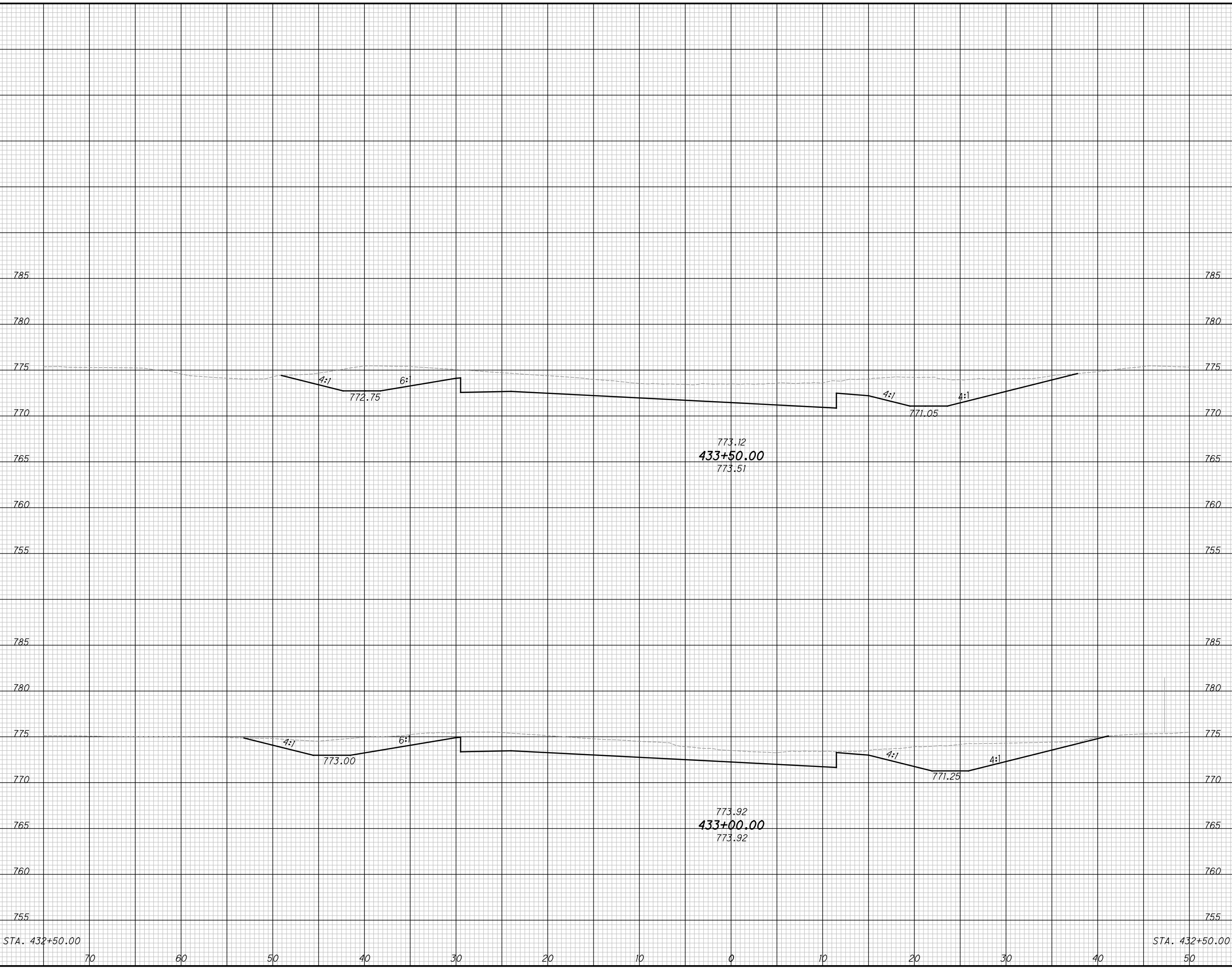


SEEDING	END AREA		VOLUME		CALCULATED	CHECKED
	CUT	FILL	CUT	FILL		
64	42	16				
362	52	11	87	26		
66	52	11				
292	35	1	80	11		
39	37	2				
215			67	2		
39	37	2				
869			234	39		

CROSS SECTIONS - RAMP C
STA. 431+50.00 TO STA. 432+50.00
FRA-71-9.07
 (170 / 264)

...Northbound\92615_XS503.dgn 5/29/2019 8:13:49 AM msw/whitt

SEEDING	
END WIDTH	SO. YDS.
668	70
64	50
348	50
61	50
320	50
54	50



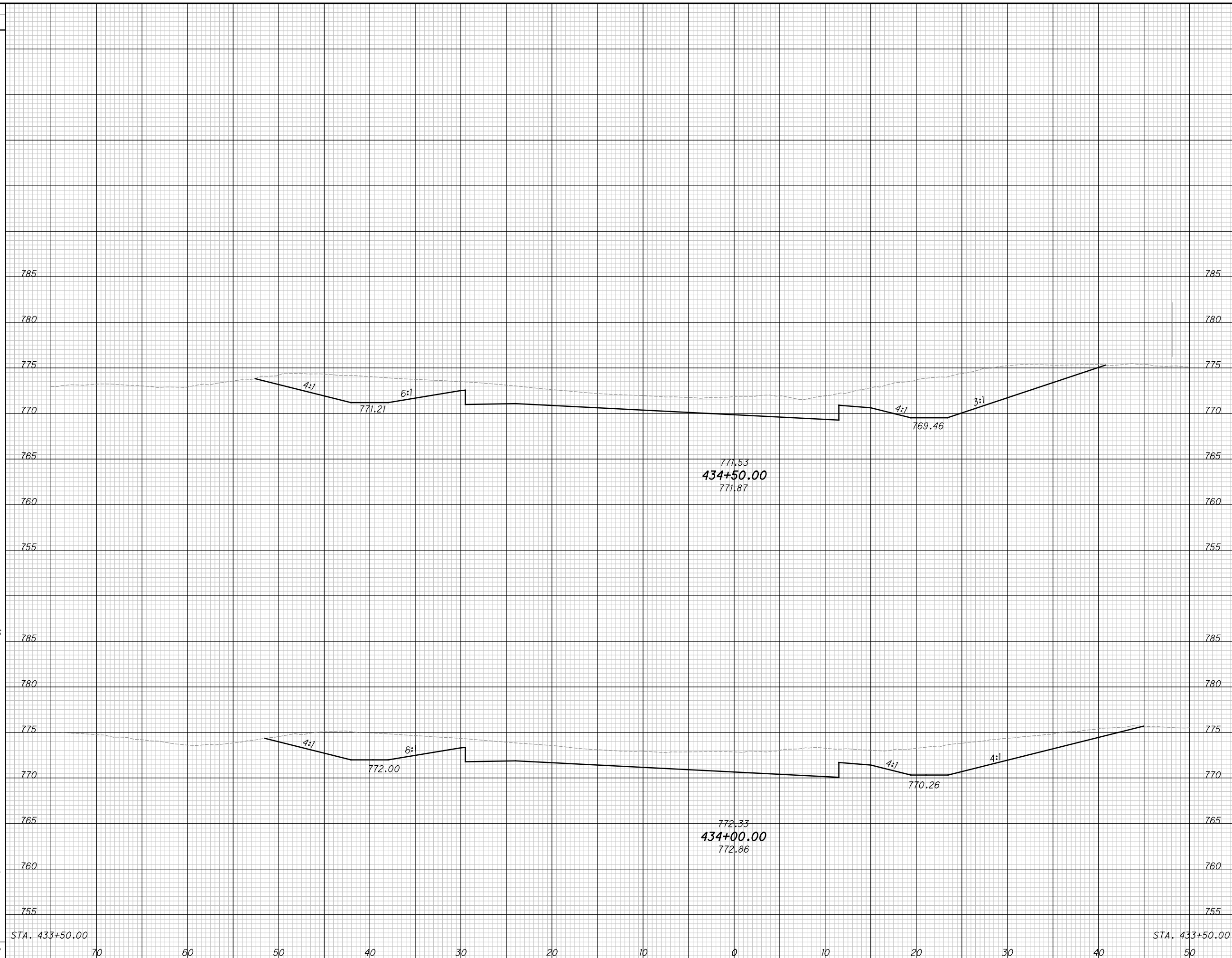
END AREA		VOLUME		CALCULATED	
CUT	FILL	CUT	FILL	MSW	WAA
42	16	304	24	171	264
88	5	120	19		
111	1	184	5		

CROSS SECTIONS - RAMP C
STA. 433+00.00 TO STA. 433+50.00

FRA-71-9.07

171
264

SEEDING
 END SO.
 WIDTH YDS.
 61
 346
 64
 326
 54
 672
 70 60 50 40 30 20 10 0 10 20 30 40 50
 STA. 433+50.00



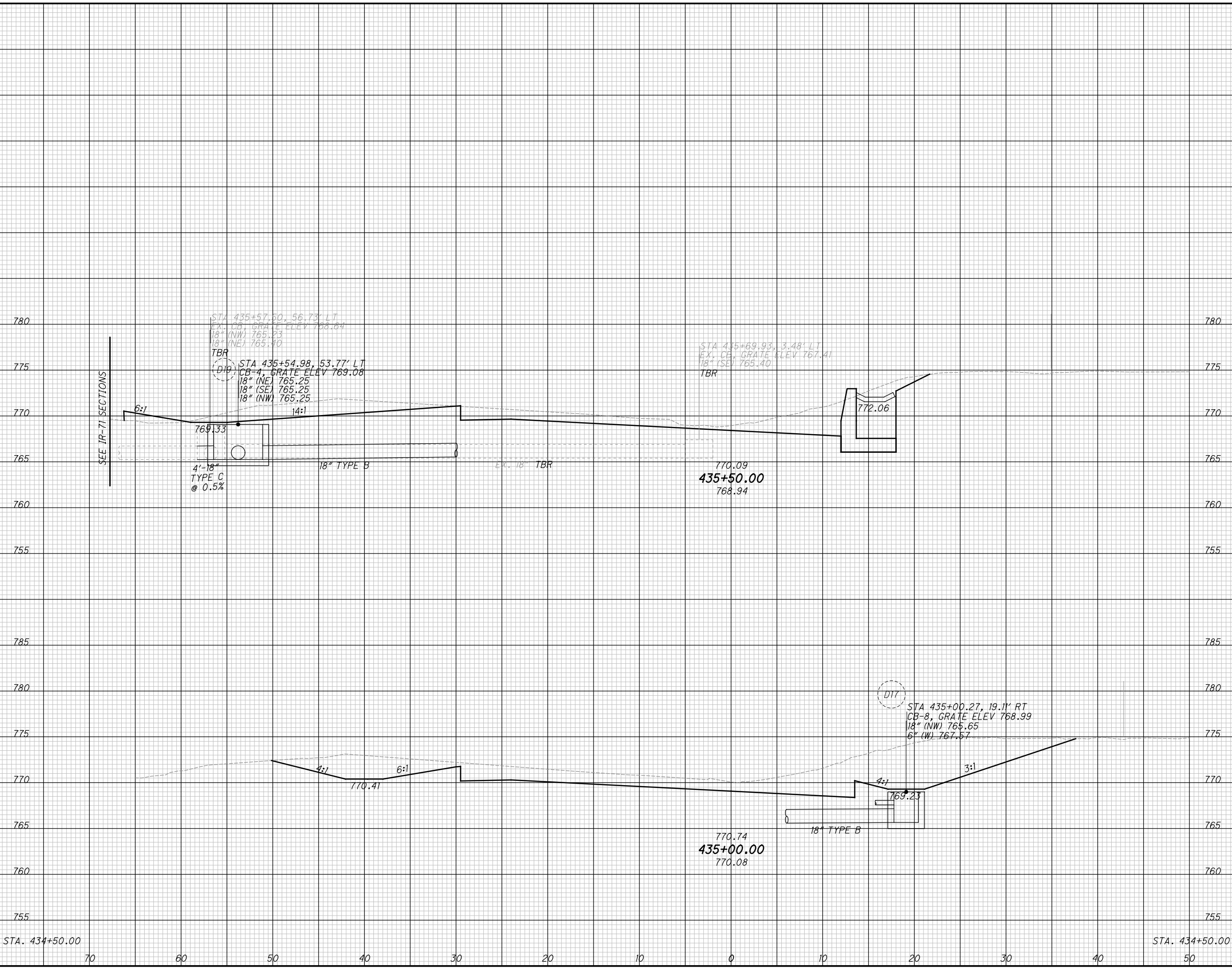
END AREA		VOLUME	
CUT	FILL	CUT	FILL
157	1	279	2
145	1	237	2
111	1	516	4

CALCULATED
 MSW
 CHECKED
 WAA
CROSS SECTIONS - RAMP C
STA. 434+00.00 TO STA. 434+50.00
FRA - 71 - 9.07
 172
 264

...Northbound\92615_XS503.dgn 5/29/2019 8:13:49 AM mswmitt

...Northbound\92615_XS503.dgn 5/29/2019 8:13:50 AM mswwhitt

SEEDING	END AREA		VOLUME		CALCULATED	CHECKED
	CUT	FILL	CUT	FILL		
END WIDTH						
SO. YDS.						
46			96	10		
270			220	13		
51			141	5		
310			276	5		
61			157	1		
580			496	18		



SEEDING	END AREA		VOLUME		CALCULATED	CHECKED
	CUT	FILL	CUT	FILL		
END WIDTH						
SO. YDS.						
46			96	10		
270			220	13		
51			141	5		
310			276	5		
61			157	1		
580			496	18		

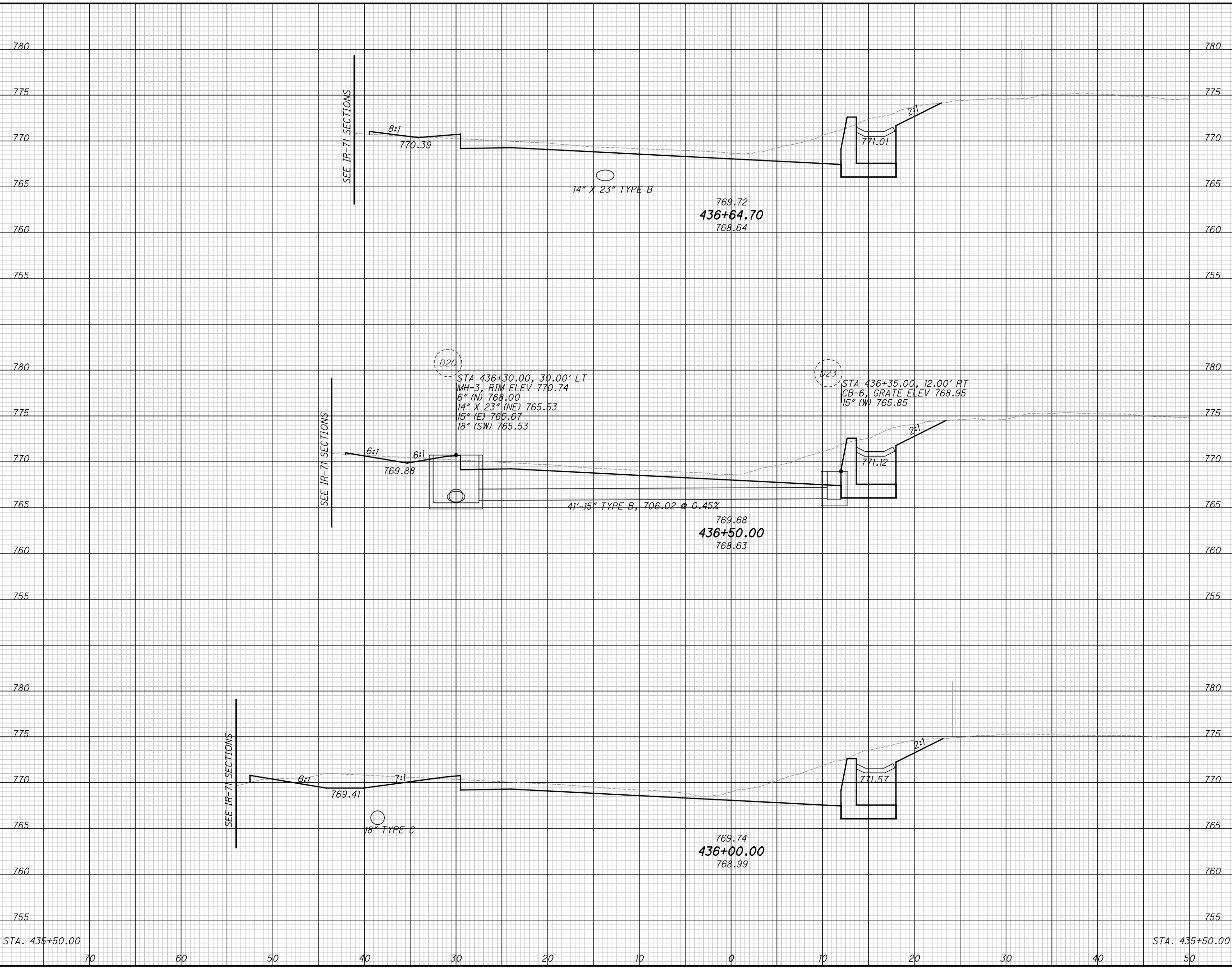
CROSS SECTIONS - RAMP C
STA. 435+00.00 TO STA. 435+50.00

FRA-71-9.07

173
264

...Northbound\92615_XS503.dgn 5/29/2019 8:13:50 AM mswwhitt

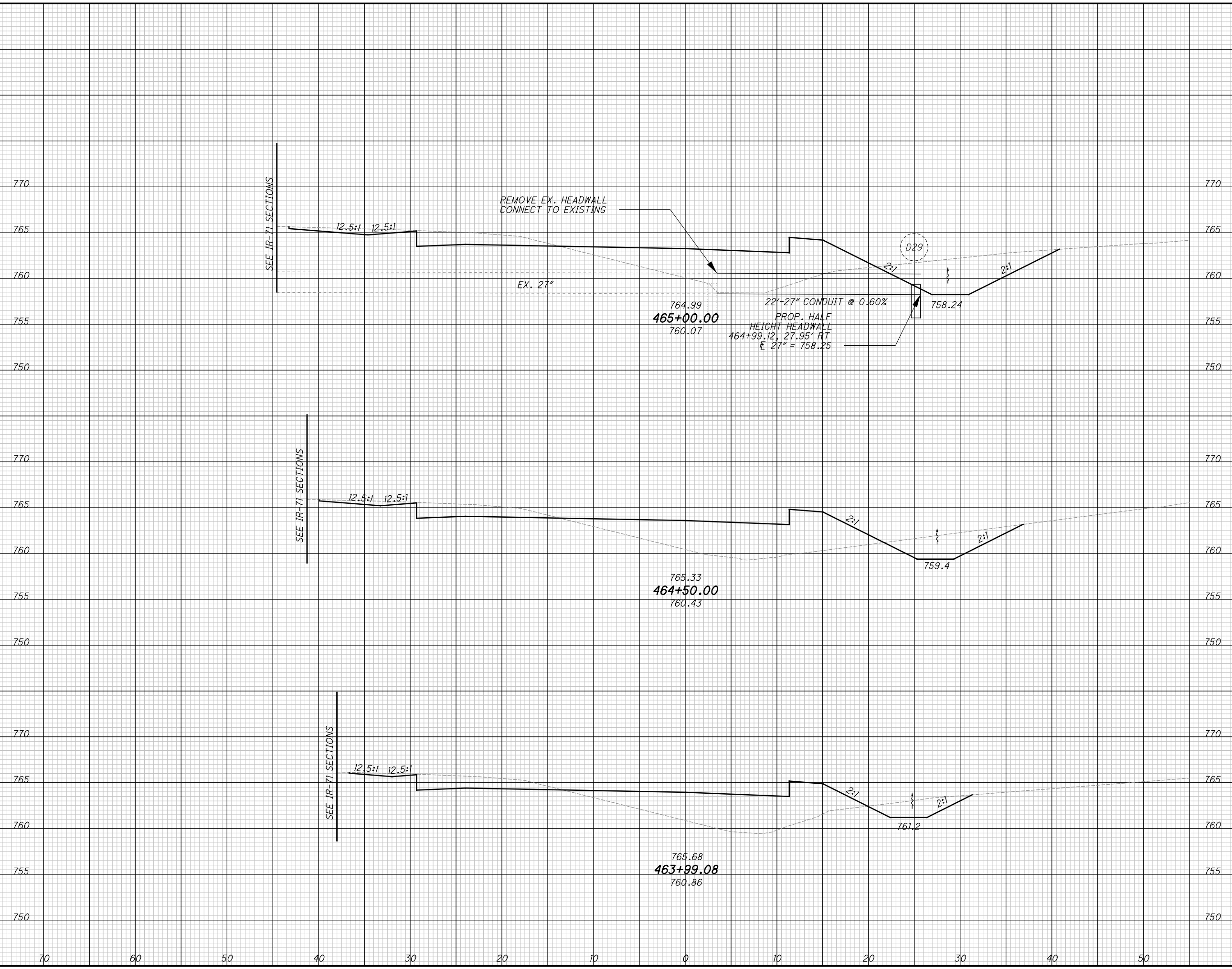
SEEDING	END WIDTH	SO. YDS.	END AREA		VOLUME		CALCULATED MSW	CHECKED WAA
			CUT	FILL	CUT	FILL		
21					76	7		
37					84	8		
163					98	9		
34					96	10		
224					393	36		
46							174	264
424								



CROSS SECTIONS - RAMP C
STA. 436+00.00 TO STA. 436+64.70
FRA - 71 - 9.07

...Northbound\92615_XS504.dgn 5/29/2019 8:13:52 AM mswntt

SEEDING	END AREA		VOLUME		CALCULATED MSW	CHECKED WAA
	END WIDTH	SO. YDS.	CUT	FILL		
35	55	96	55	96		
184	33	95	33	95		
158	52	172	52	172		
25	22	87	22	87		
342	133	349	133	349		



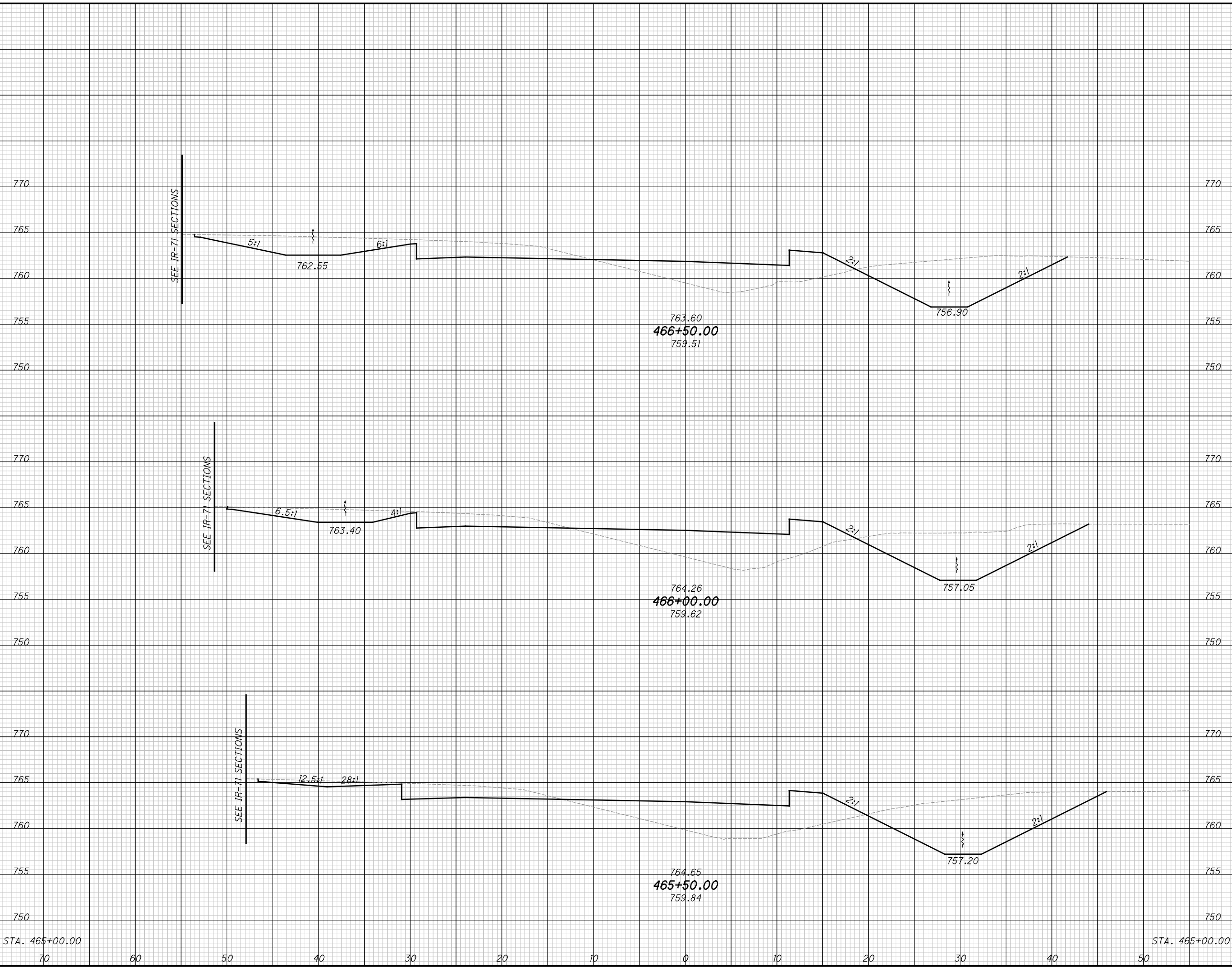
CROSS SECTIONS - RAMP H
STA. 463+99.08 TO STA. 465+00.00

FRA-71-9.07

(175 / 264)

...Northbound\92615_XS504.dgn 5/29/2019 8:13:52 AM mswmitt

SEEDING	
END WIDTH	SO. YDS.
36	
209	
39	
223	
41	
213	
35	



END AREA		VOLUME		CALCULATED	
CUT	FILL	CUT	FILL	MSW	WAA
85	58	161	125		
88	76	176	148		
102	83	145	166		
55	96	482	439	176	264

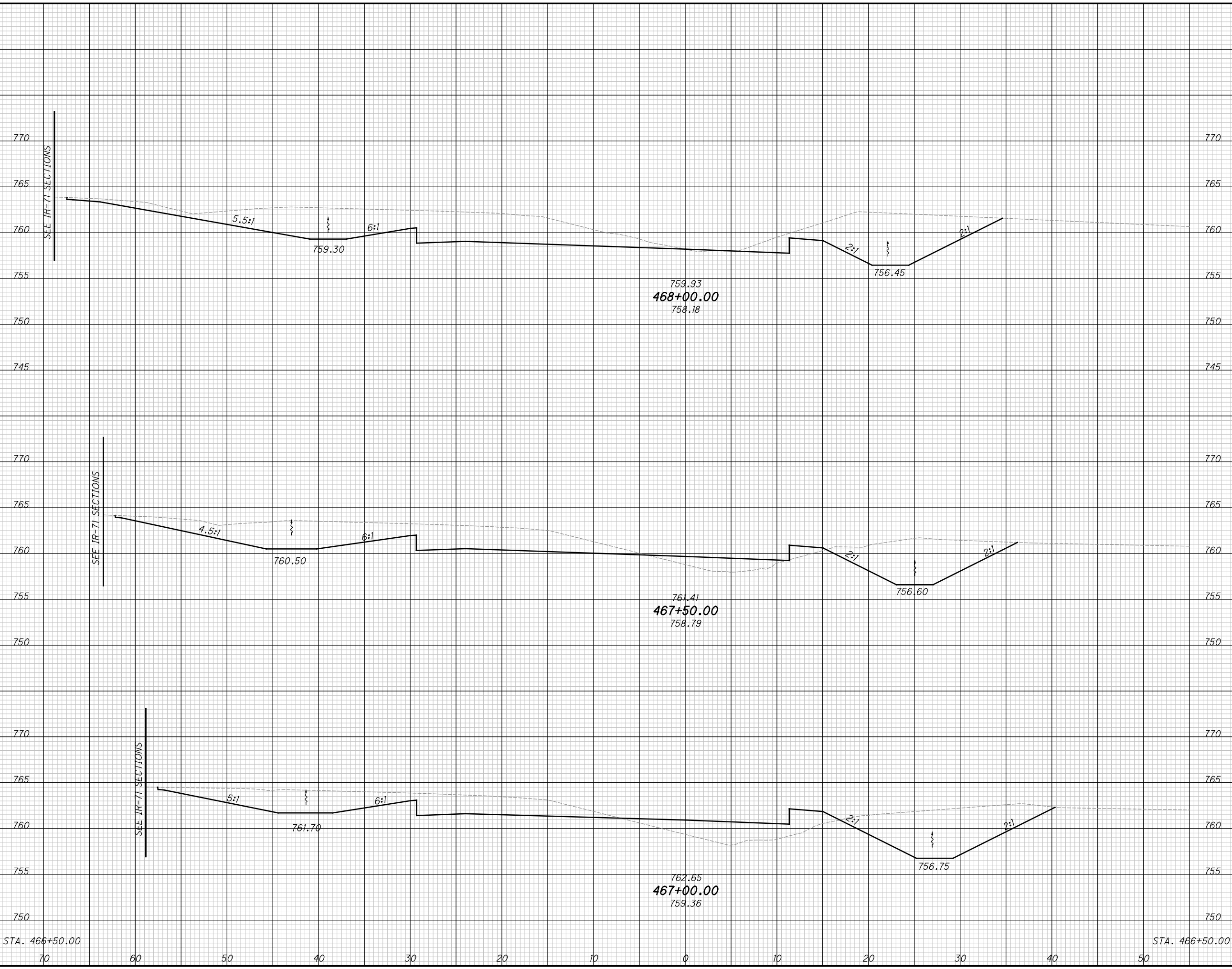
CROSS SECTIONS - RAMP H
STA. 465+50.00 TO STA. 466+50.00

FRA-71-9.07

176
264

...Northbound\92615_XS504.dgn 5/29/2019 8:13:52 AM mswntt

SEEDING	END	
	WIDTH	SO. YDS.
	70	60
	50	40
	30	20
	10	0
	10	20
	30	40
	50	60
	70	80
	90	100
	110	120
	130	140
	150	160
	170	180
	190	200
	210	220
	230	240
	250	260
	270	280
	290	300
	310	320
	330	340
	350	360
	370	380
	390	400
	410	420
	430	440
	450	460
	470	480
	490	500
	510	520
	530	540
	550	560
	570	580
	590	600
	610	620
	630	640
	650	660
	670	680
	690	700
	710	720
	730	740
	750	760
	770	780
	790	800
	810	820
	830	840
	850	860
	870	880
	890	900
	910	920
	930	940
	950	960
	970	980
	990	1000



END AREA	VOLUME		CALCULATED MSW	CHECKED WAA
	CUT	FILL		
134	1			
94	18			
97	37			
85	58			
176	51			
198	88			
211	17			
556	156			

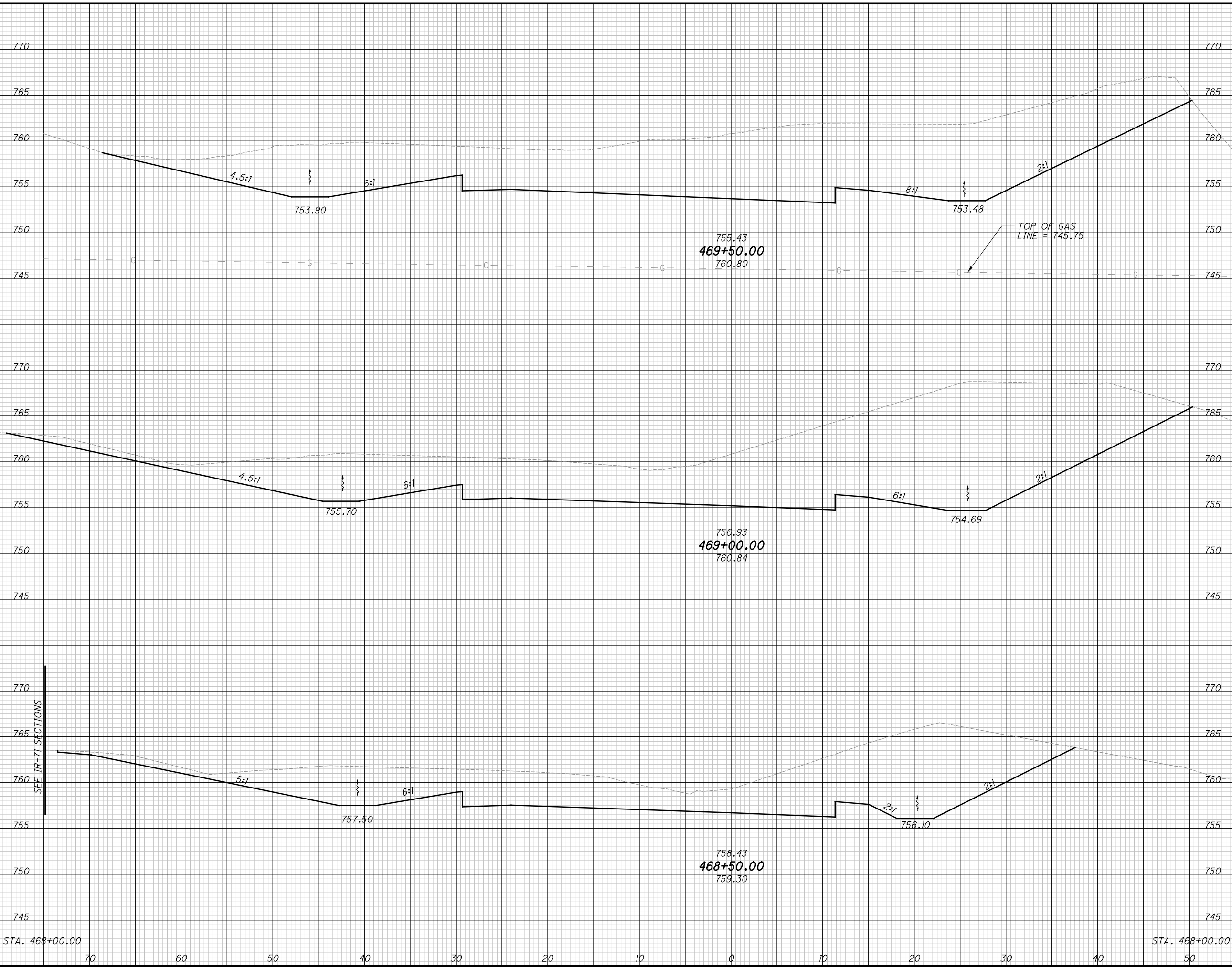
CROSS SECTIONS - RAMP H
STA. 467+00.00 TO STA. 468+00.00

FRA-71-9.07

177
264

...Northbound\92615_XS504.dgn 5/29/2019 8:13:52 AM mswmitt

SEEDING	END AREA		VOLUME		CALCULATED	CHECKED
	CUT	FILL	CUT	FILL		
105	606	0	1166	0		
45	654	0	879	0		
214	295	0	397	1		
32	134	1	2442	1		
167						
29						
799						



SEEDING	END AREA		VOLUME		CALCULATED	CHECKED
	CUT	FILL	CUT	FILL		
105	606	0	1166	0		
45	654	0	879	0		
214	295	0	397	1		
32	134	1	2442	1		
167						
29						
799						

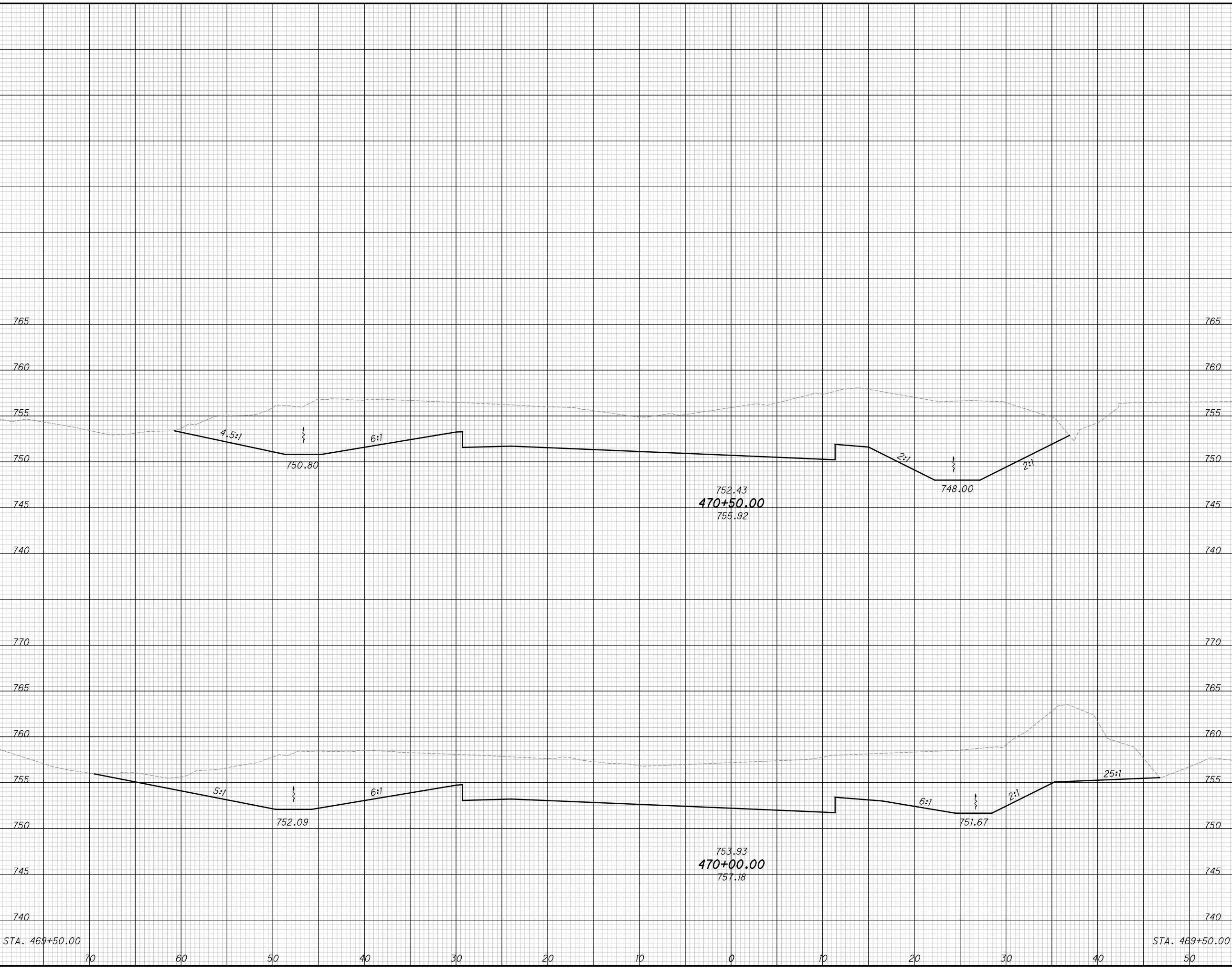
CROSS SECTIONS - RAMP H
STA. 468+50.00 TO STA. 469+50.00

FRA-71-9.07

178
264

...Northbound\92615_XS504.dgn 5/29/2019 8:13:53 AM mswmitt

SEEDING	
END WIDTH	SO. YDS.
930	
70	
60	
50	
40	
30	
20	
10	
0	
10	
20	
30	
40	
50	
606	



END AREA		VOLUME	
CUT	FILL	CUT	FILL
458	0	902	0
516	0	1039	0
606	0	1941	0

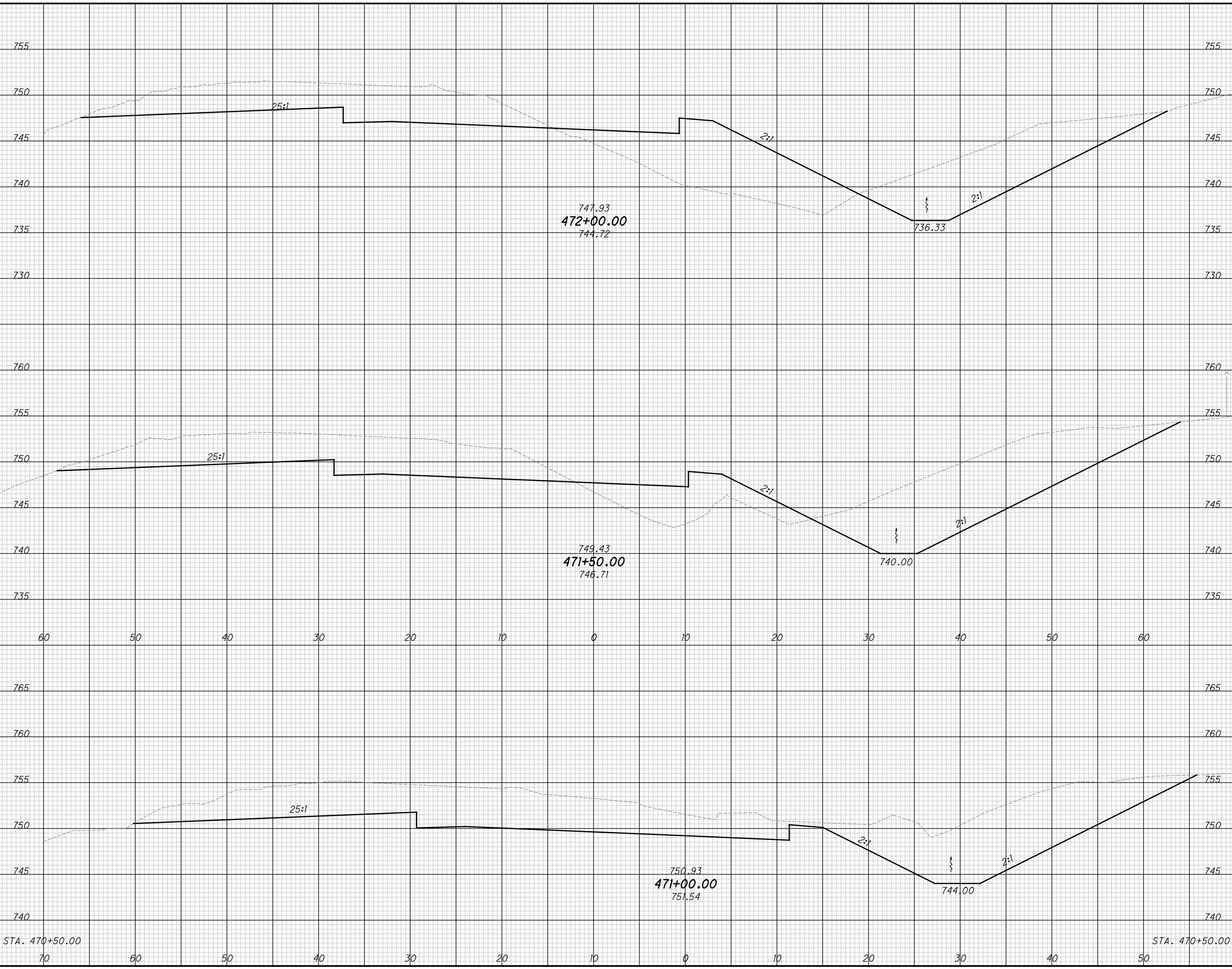
CROSS SECTIONS - RAMP H
STA. 470+00.00 TO STA. 470+50.00

FRA - 71 - 9.07

179
264

...Northbound\92615_XS504.dgn 5/29/2019 8:13:53 AM mswjnit

SEEDING	END		SO. YDS.
	WIDTH		
	1457	70	423
	86	70	423
	66	70	423
	506	60	528
	96	60	528
	94	60	528



END STA.	AREA		VOLUME		CALCULATED MSW	CHECKED WAA
	CUT	FILL	CUT	FILL		
472+00.00	237	141	519	192		
471+50.00	324	66	645	61		
470+50.00	373	0	769	0		
470+50.00	458	0	1933	253		

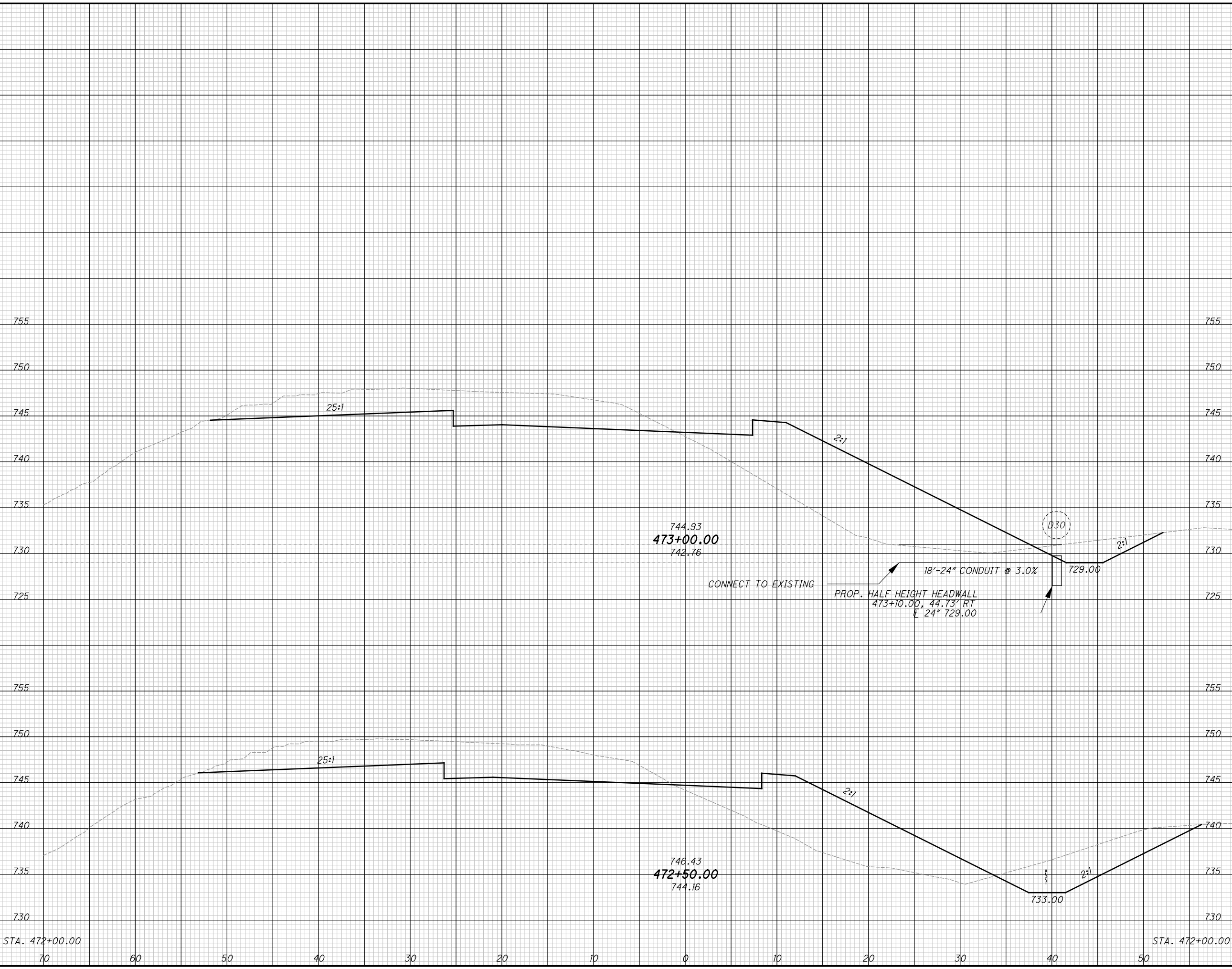
CROSS SECTIONS - RAMP H
STA. 471+00.00 TO STA. 472+00.00

FRA - 71 - 9.07

180
264

...Northbound\92615_XS504.dgn 5/29/2019 8:13:53 AM mswntt

SEEDING	
END WIDTH	SO. YDS.
94	501
86	501
77	501

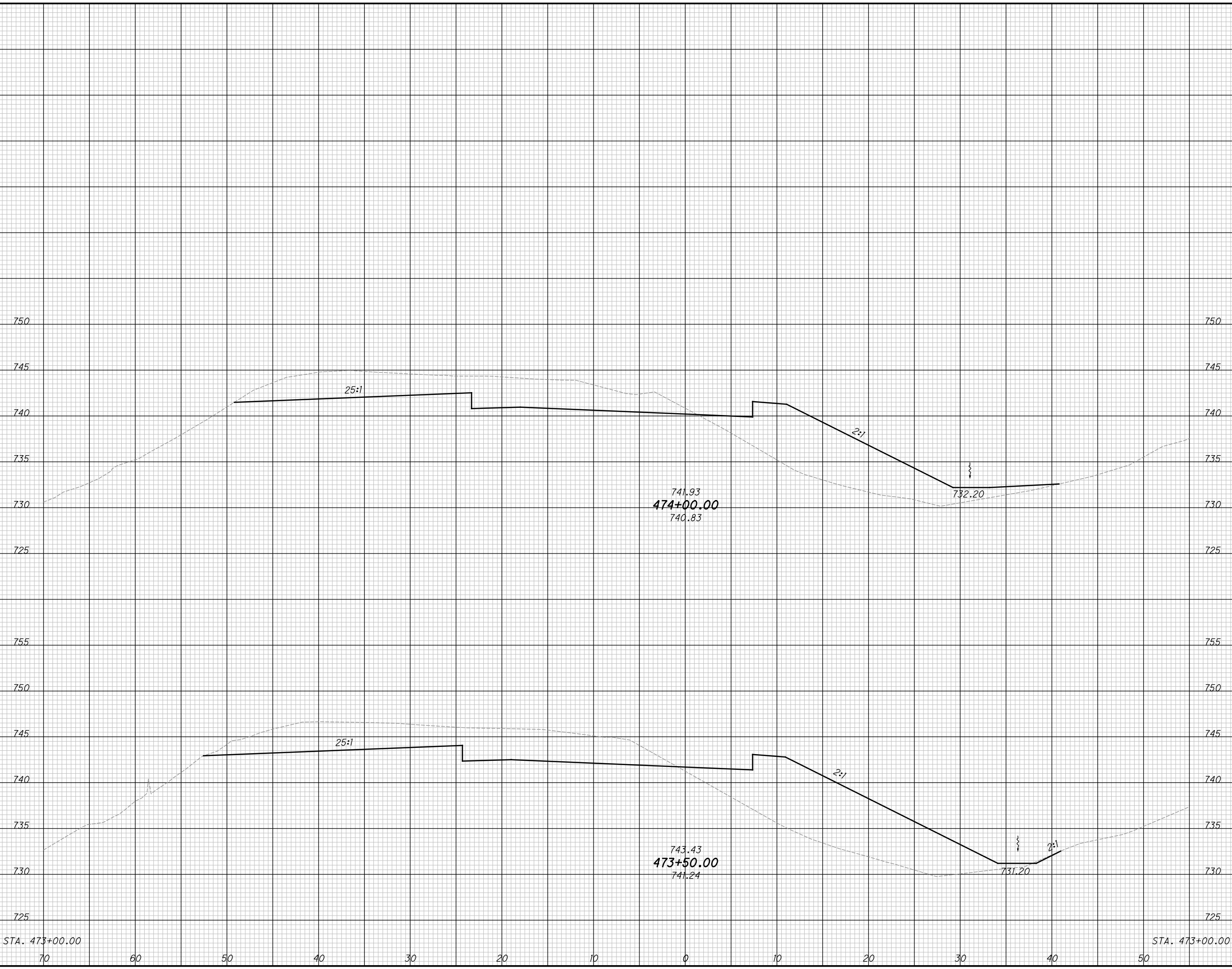


END AREA		VOLUME	
CUT	FILL	CUT	FILL
108	201	243	316
155	141	362	261
237	141	605	577

CROSS SECTIONS - RAMP H
 STA. 472+50.00 TO STA. 473+00.00
 FRA-71-9.07
 181
 264

...Northbound\92615_XS504.dgn 5/29/2019 8:13:53 AM mswntt

SEEDING	
END WIDTH	SO. YDS.
802	70
414	72
388	77
68	77



END AREA		VOLUME	
CUT	FILL	CUT	FILL
84	129	84	129
96	169	96	169
108	201	108	201
167	276	167	276
189	342	189	342
356	618	356	618

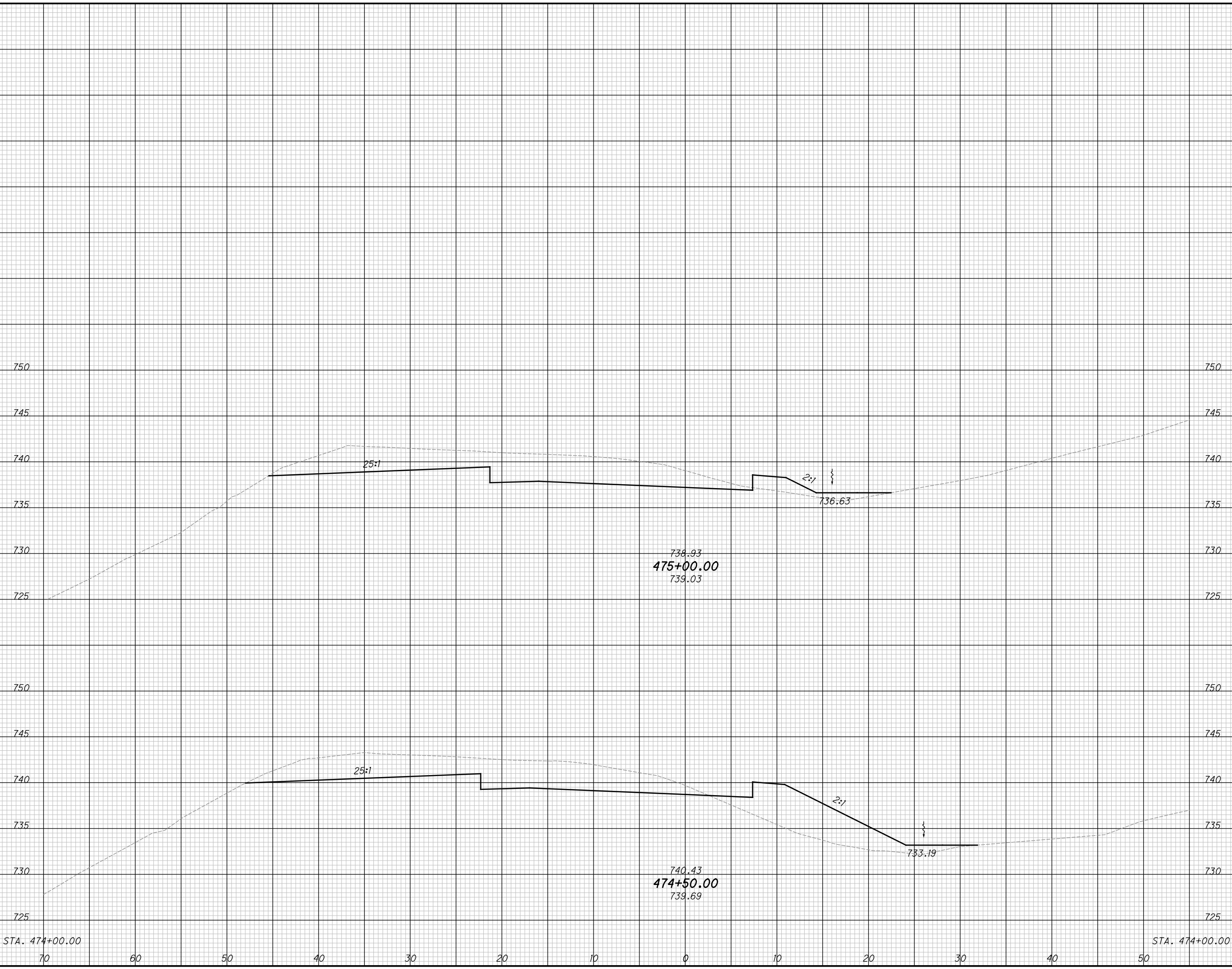
CALCULATED	
MSW	CHECKED
182	264

CROSS SECTIONS - RAMP H
STA. 473+50.00 TO STA. 474+00.00

FRA-71-9.07

...Northbound\92615_XS504.dgn 5/29/2019 8:13:53 AM mswmitt

SEEDING	
END WIDTH	SO. YDS.
643	70
352	58
291	46
68	643



END AREA		VOLUME	
CUT	FILL	CUT	FILL
79	13	143	73
76	65	148	180
84	129	291	253

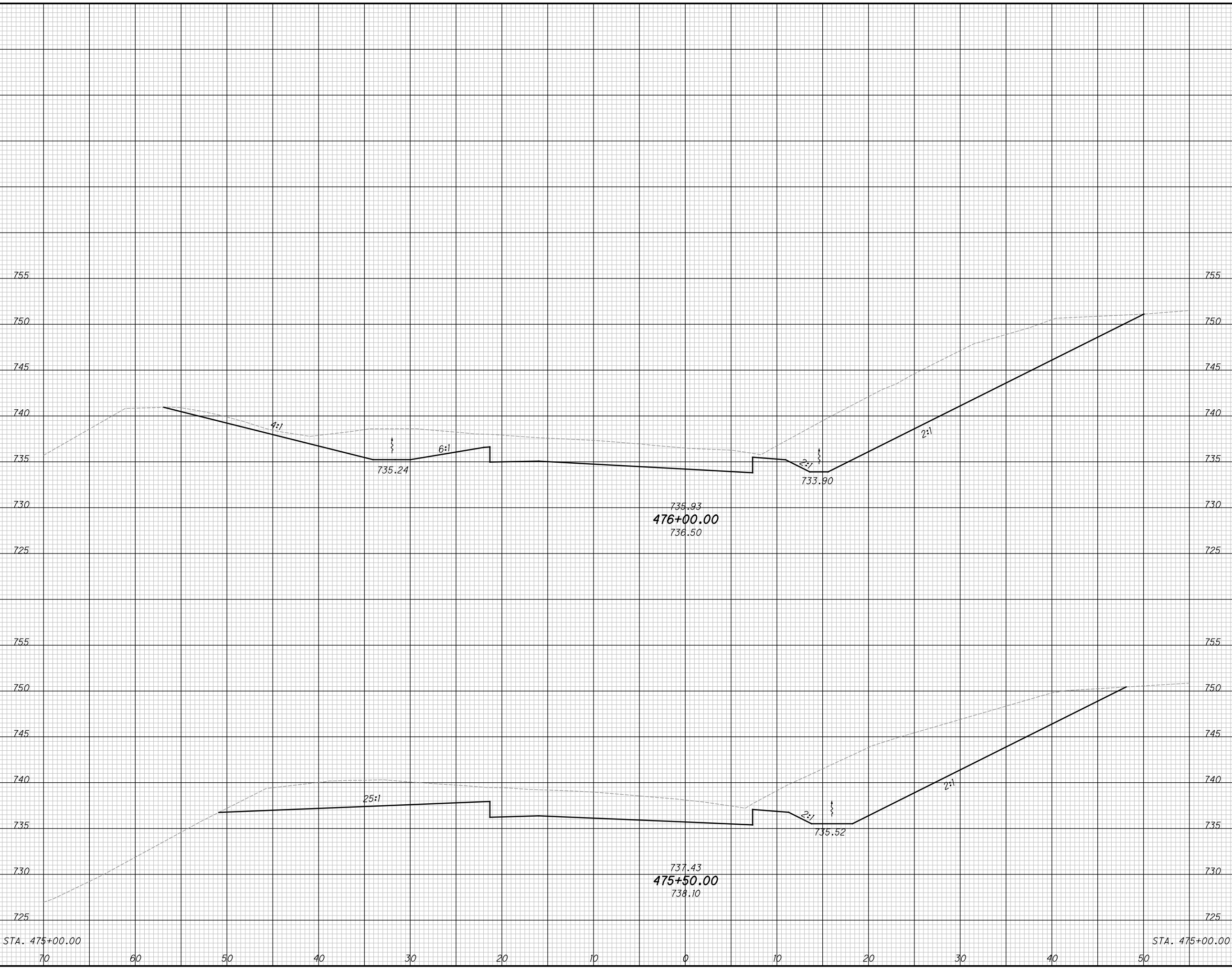
CALCULATED	
MSW	WAA
183	264

CROSS SECTIONS - RAMP H
STA. 474+50.00 TO STA. 475+00.00

FRA-71-9.07

...Northbound\92615_XS504.dgn 5/29/2019 8:13:54 AM msw/whit

SEEDING	
END WIDTH	SO. YDS.
828	70
353	60
81	50
475	40
90	30
90	20
90	10
90	0
90	10
90	20
90	30
90	40
90	50
90	60
90	70



END AREA		VOLUME	
CUT	FILL	CUT	FILL
79	13	861	12
288	0	339	12
276	0	522	0

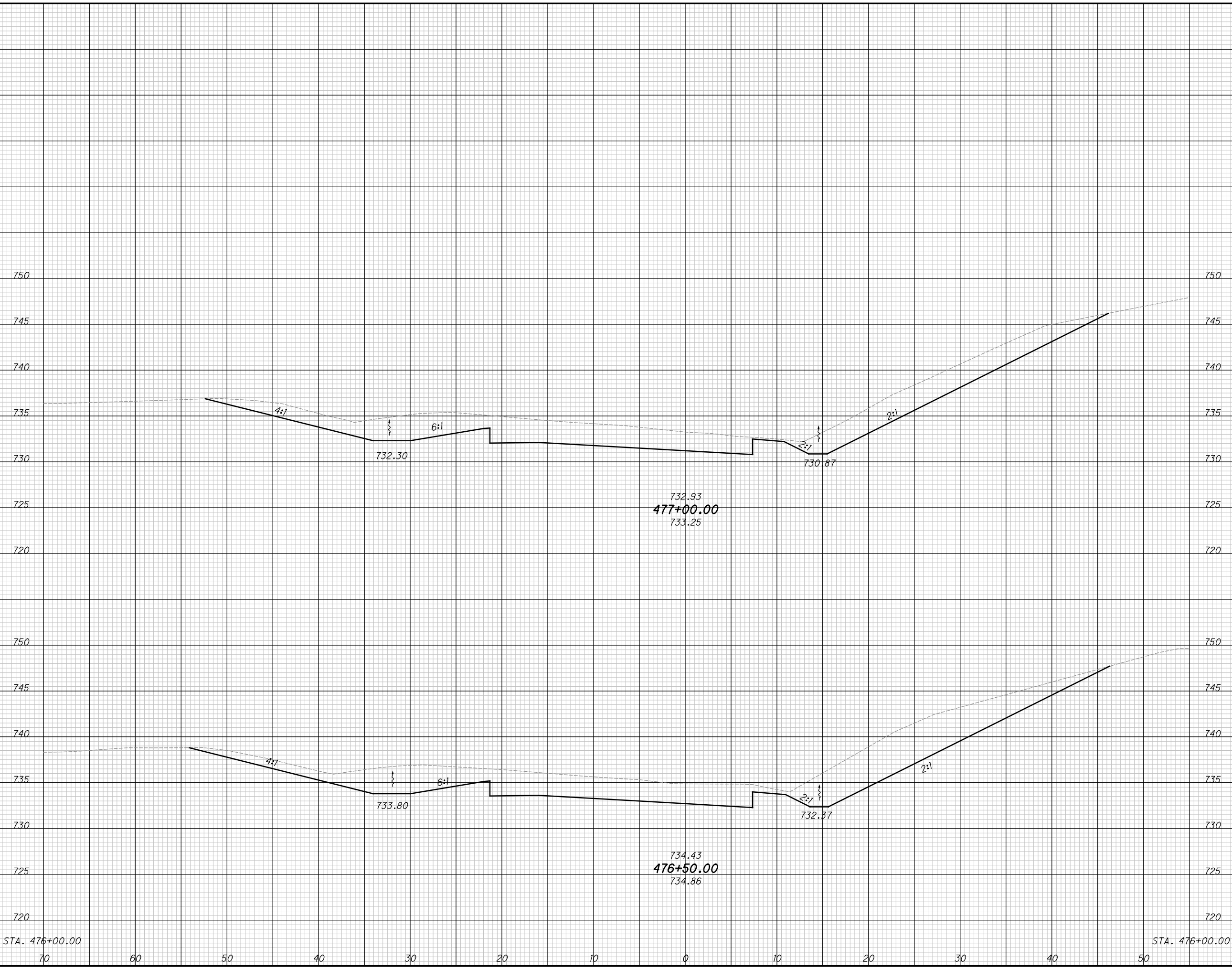
CALCULATED	
MSW	CHECKED
184	264

CROSS SECTIONS - RAMP H
STA. 475+50.00 TO STA. 476+00.00

FRA-71-9.07

...Northbound\92615_XS504.dgn 5/29/2019 8:13:54 AM msw/whitt

SEEDING	
END WIDTH	SO. YDS.
937	70
90	70
481	70
83	70
456	70
81	70



END AREA		VOLUME		CALCULATED	
CUT	FILL	CUT	FILL	MSW	WAA
276	0	746	0		
187	0	428	0		
156	0	318	0		

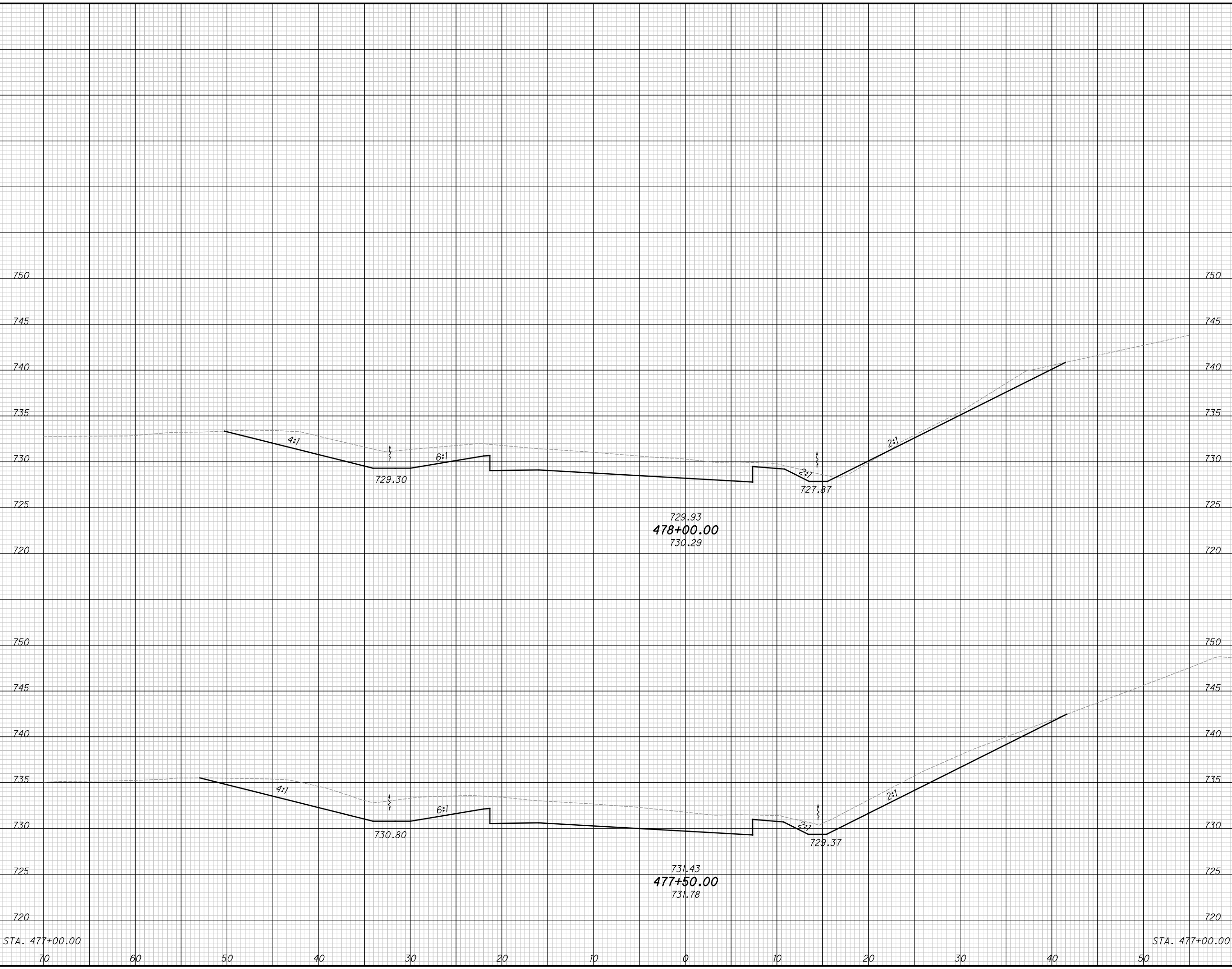
CROSS SECTIONS - RAMP H
STA. 476+50.00 TO STA. 477+00.00

FRA - 71 - 9.07

185
264

...Northbound\92615_XS504.dgn 5/29/2019 8:13:54 AM msw/whitt

SEEDING	
END WIDTH	SO. YDS.
81	77
438	418
74	74
856	74



END AREA		VOLUME	
CUT	FILL	CUT	FILL
156	0	455	1
123	0	259	0
89	1	196	1

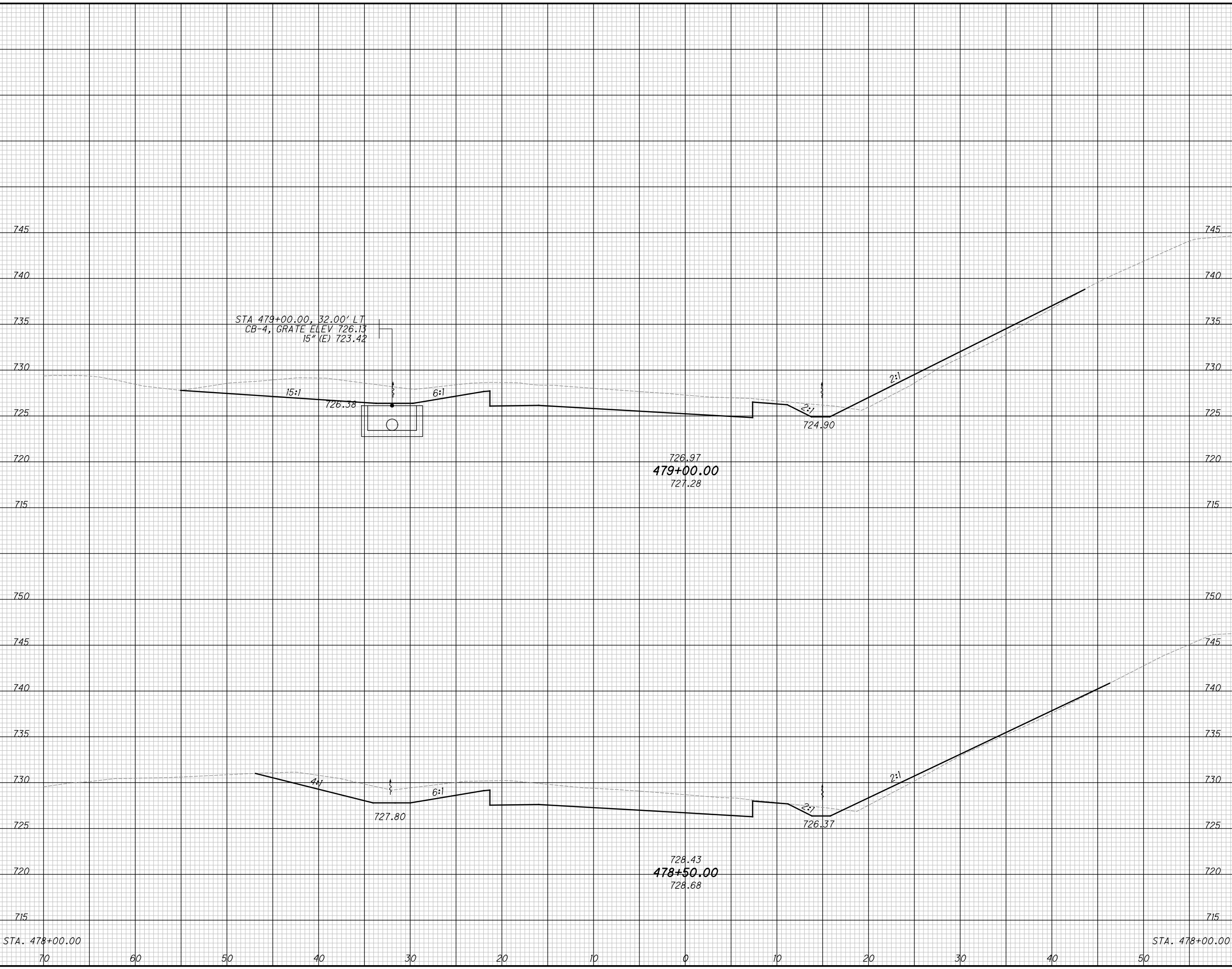
CALCULATED	
MSW	WAA
186	264

CROSS SECTIONS - RAMP H
STA. 477+50.00 TO STA. 478+00.00

FRA-71-9.07

...Northbound\92615_XS504.dgn 5/29/2019 8:13:54 AM msw/whit

SEEDING	END	
	WIDTH	SO. YDS.
	847	70
	75	60
	433	50
	75	40
	414	30
	74	20
		10
		0
		10
		20
		30
		40
		50
		60
		70



END AREA	VOLUME	
	CUT	FILL
84	16	
135	25	
62	10	
140	11	
89	1	
275	36	

CALCULATED	MSW	CHECKED	WAA

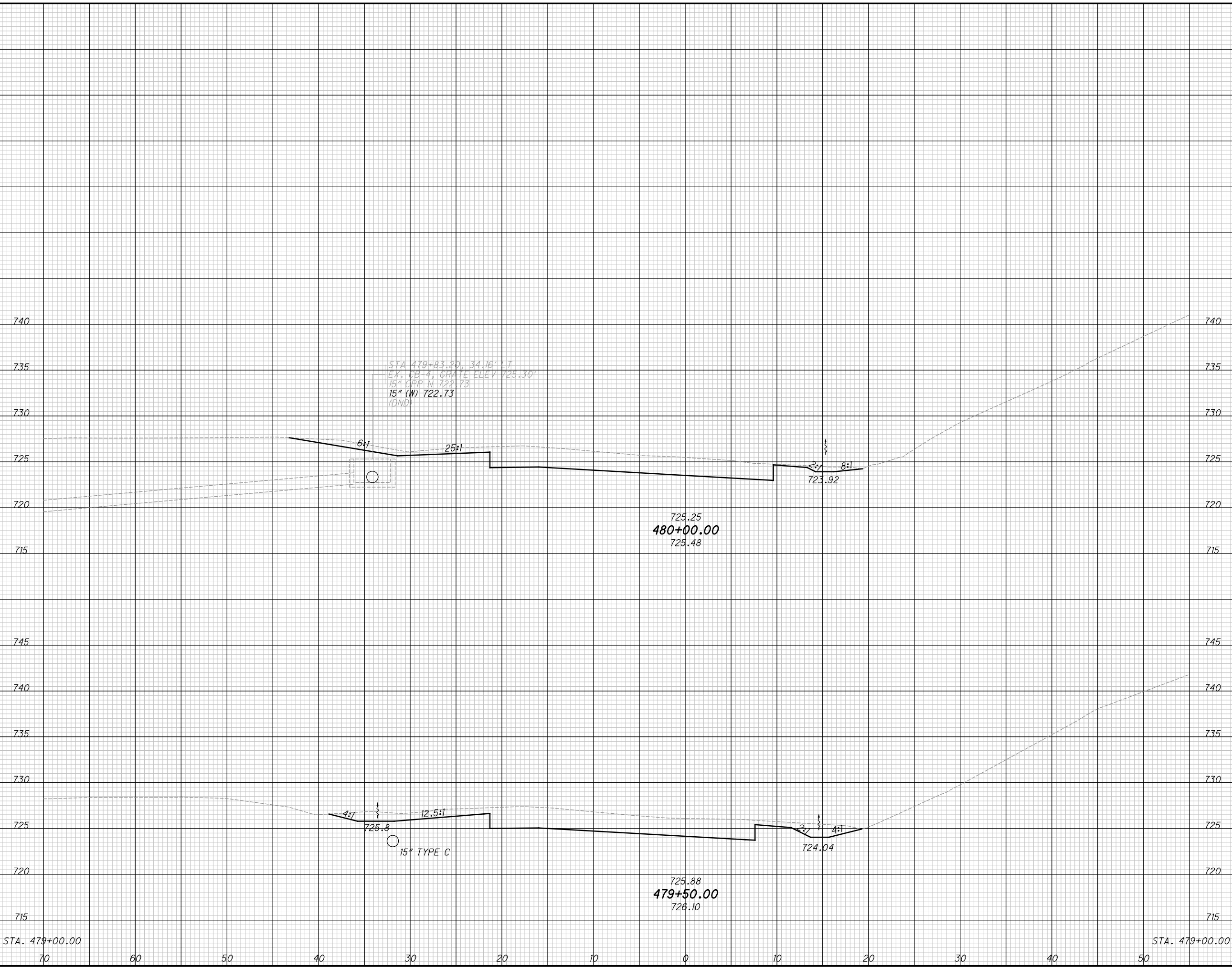
CROSS SECTIONS - RAMP H
STA. 478+50.00 TO STA. 479+00.00

FRA-71-9.07

187
264

...Northbound\92615_XS504.dgn 5/29/2019 8:13:54 AM msw/whitt

SEEDING	
END WIDTH	SO. YDS.
70	39
60	208
50	36
40	324
30	80
20	532



END AREA		VOLUME	
CUT	FILL	CUT	FILL
38	0	79	0
46	0	121	15
84	16	200	15

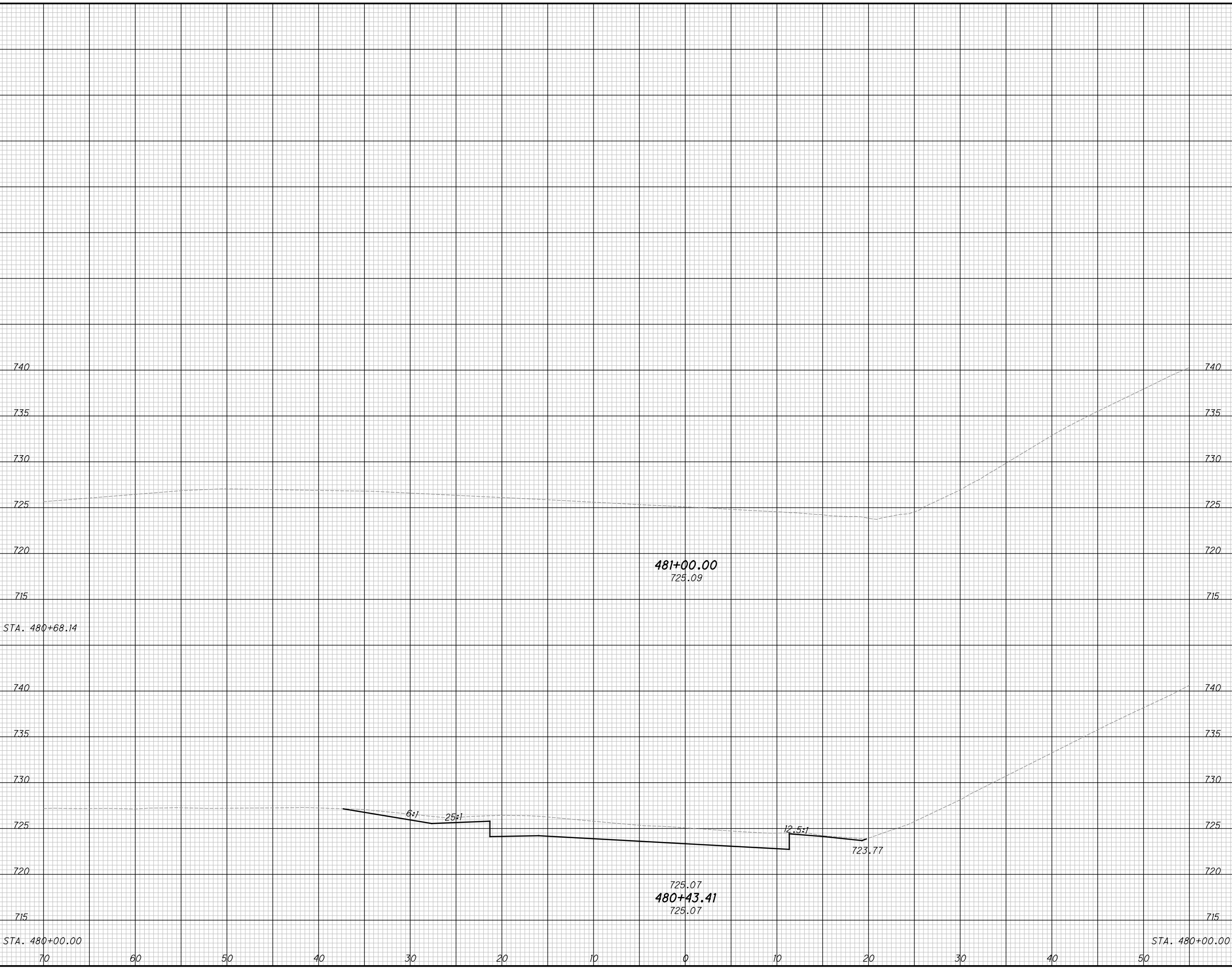
CALCULATED	
MSW	CHECKED
188	264

CROSS SECTIONS - RAMP H
STA. 479+50.00 TO STA. 480+00.00

FRA-71-9.07

...Northbound\92615_XS504.dgn 5/29/2019 8:13:55 AM mswmitt

SEEDING	
END WIDTH	SO. YDS.
230	70
39	169
31	61
13	



END AREA		VOLUME		CALCULATED	
CUT	FILL	CUT	FILL	MSW	WAA
38	0	51	0		
25	0				

CROSS SECTIONS - RAMP H
STA. 480+43.41 TO STA. 481+00.00

FRA - 71 - 9.07

189
264

SUPERELEVATION TABLE

P.I. =434+99.72

Dc = 6°30'00" CURVE NO. 3

LEFT SIDE										CENTERLINE CONTROL	RIGHT SIDE										REMARKS				
LEFT EDGE ELEVATION	TRANSITION RATE	ELEVATION CORRECTION	CROSS SLOPE	WIDTH	16' LEFT ELEVATION	TRANSITION RATE	ELEVATION CORRECTION	CROSS SLOPE	WIDTH	PROFILE GRADE	STATION	PROFILE GRADE-RIGHT	WIDTH	CROSS SLOPE	ELEVATION CORRECTION	TRANSITION RATE	12' RIGHT ELEVATION	WIDTH	CROSS SLOPE	ELEVATION CORRECTION		TRANSITION RATE	RIGHT EDGE ELEVATION		
					777.80	16:1	0.38	0.0160	24.00	777.41	430+80.00													MATCH EX	
					777.48		0.38	0.0160	24.00	777.10	431+00.00														END NC
					777.25		0.38	0.0160	24.00	776.86	431+14.67														
					777.15		0.45	0.0187	24.00	776.70	431+25.00														
					776.90		0.60	0.0251	24.00	776.30	431+50.00														
					776.66		0.76	0.0316	24.00	775.90	431+75.00														
					776.51		0.86	0.0357	24.00	775.65	431+90.97														PC
					776.42		0.91	0.0381	24.00	775.51	432+00.00														
					776.18		1.07	0.0446	24.00	775.11	432+25.00														
					775.94		1.22	0.0510	24.00	774.71	432+49.91														BEGIN FS
					775.94	1.22	0.0510	24.00	774.71	432+50.00															
					775.54	1.22	0.0510	24.00	774.31	432+75.00															
					775.14	1.22	0.0510	24.00	773.92	433+00.00															
					774.74	1.22	0.0510	24.00	773.52	433+25.00															
					774.35	1.22	0.0510	24.00	773.12	433+50.00															
					773.95	1.22	0.0510	24.00	772.73	433+75.00															
					773.55	1.22	0.0510	24.00	772.33	434+00.00															
					773.15	1.22	0.0510	24.00	771.93	434+25.00															
					772.76	1.22	0.0510	24.00	771.53	434+50.00															
					772.36	1.22	0.0510	24.00	771.14	434+75.00															
					771.96	1.22	0.0510	24.00	770.74	435+00.00															
					771.60	1.22	0.0510	24.00	770.38	435+25.00															
					771.32	1.22	0.0510	24.00	770.09	435+50.00															
					771.10	1.22	0.0510	24.00	769.88	435+75.00															
					770.96	1.22	0.0510	24.00	769.74	436+00.00															
					770.90	1.22	0.0510	24.00	769.67	436+25.00															
					770.91	1.22	0.0510	24.00	769.68	436+50.00															
					771.01	1.22	0.0510	24.00	769.78	436+75.00															
					771.04	1.22	0.0510	24.00	769.82	436+79.49														CS	
					771.15	1.14	0.0474	24.00	770.01	437+00.00															
					771.26	1.03	0.0430	24.00	770.23	437+25.00															
					771.34	0.93	0.0387	24.00	770.41	437+50.00															
					771.39	0.82	0.0343	24.00	770.56	437+75.00															
					771.42	0.72	0.0299	24.00	770.71	438+00.00															
					771.45	0.61	0.0255	24.00	770.84	438+25.00															
					771.47	0.51	0.0212	24.00	770.96	438+50.00															
					771.49	0.40	0.0168	24.00	771.09	438+75.00															
					771.50	0.38	0.0160	24.00	771.12	438+79.49														ST	

...Northbound\92615_GE501.dgn 5/29/2019 8:13:57 AM mswwhitt

CALCULATED
NLD
CHECKED
WAA

SUPERELEVATION TABLE
RAMP C CURVE 3

FRA - 71 - 9.07

SUPERELEVATION TABLE

P.I. = 486+85.14

Dc = 1°00'00" CURVE NO. 4

LEFT SIDE											CENTERLINE CONTROL	RIGHT SIDE											REMARKS		
LEFT EDGE ELEVATION	TRANSITION RATE	ELEVATION CORRECTION	CROSS SLOPE	WIDTH	24' LEFT ELEVATION	TRANSITION RATE	ELEVATION CORRECTION	CROSS SLOPE	WIDTH	PROFILE GRADE	STATION	PROFILE GRADE-RIGHT	WIDTH	CROSS SLOPE	ELEVATION CORRECTION	TRANSITION RATE	12' RIGHT ELEVATION	WIDTH	CROSS SLOPE	ELEVATION CORRECTION	TRANSITION RATE	RIGHT EDGE ELEVATION			
					770.68	250:1	-0.43	-0.0180	24.00	771.11	485+46.28													PC	
					770.66		-0.45	-0.0186	24.00	771.11	485+50.00														
					770.53		-0.55	-0.0228	24.00	771.08	485+75.00														
					770.40		-0.65	-0.0270	24.00	771.05	486+00.00														
					770.27		-0.75	-0.0311	24.00	771.01	486+25.00														
					770.21		-0.79	-0.0330	24.00	771.00	486+36.28														
					770.13		-0.79	-0.0330	24.00	770.92	486+50.00														BEGIN FS
					770.00		-0.79	-0.0330	24.00	770.79	486+75.00														
					769.86		-0.79	-0.0330	24.00	770.65	487+00.00														
					769.72		-0.79	-0.0330	24.00	770.51	487+25.00														
					769.58		-0.79	-0.0330	24.00	770.38	487+50.00														
					769.44		-0.79	-0.0330	24.00	770.24	487+75.00														
					769.30		-0.79	-0.0330	24.00	770.10	488+00.00														
					769.17		-0.79	-0.0330	24.00	769.96	488+23.95														PRC

CALCULATED
NLD
CHECKED
WAA

**SUPERELEVATION TABLE
RAMP D CURVE 4**

FRA - 71 - 9.07

...Northbound\92615_GE502.dgn 5/29/2019 8:13:58 AM mswntt

SUPERELEVATION TABLE

P.I. =490+86.62

Dc =0°26'00" CURVE NO. 5

LEFT SIDE											CENTERLINE CONTROL	RIGHT SIDE											REMARKS		
LEFT EDGE ELEVATION	TRANSITION RATE	ELEVATION CORRECTION	CROSS SLOPE	WIDTH	LEFT EDGE ELEVATION	TRANSITION RATE	ELEVATION CORRECTION	CROSS SLOPE	WIDTH	PROFILE GRADE	STATION	PROFILE GRADE-RIGHT	WIDTH	CROSS SLOPE	ELEVATION CORRECTION	TRANSITION RATE	12' RIGHT ELEVATION	WIDTH	CROSS SLOPE	ELEVATION CORRECTION	TRANSITION RATE	RIGHT EDGE ELEVATION			
					769.57	253:1	-0.40	-0.0330	12.00	769.96	488+23.49													PRC	
					769.56		-0.39	-0.0325	12.00	769.95	488+25.00														
					769.46		-0.29	-0.0242	12.00	769.75	488+50.00														
					769.29		-0.19	-0.0160	12.00	769.48	488+74.95														RC
					769.29		-0.19	-0.0160	12.00	769.48	488+75.00														
					769.17		-0.19	-0.0160	12.00	769.37	489+00.00														
					769.07		-0.19	-0.0160	12.00	769.26	489+25.00														
					768.97		-0.19	-0.0160	12.00	769.16	489+50.00														
					768.88		-0.19	-0.0160	12.00	769.08	489+75.00														
					768.81		-0.19	-0.0160	12.00	769.00	490+00.00														
					768.70	-0.21	-0.0160	13.07	768.91	490+25.00															
					768.60	-0.23	-0.0160	14.41	768.83	490+50.00															
					768.44	-0.25	-0.0160	15.91	768.70	490+75.00															
					768.43	-0.26	-0.0160	16.00	768.69	490+76.40															
					768.28	-0.26	-0.0160	16.00	768.54	491+00.00															
					768.09	-0.26	-0.0160	16.00	768.35	491+25.00															
					767.90	-0.26	-0.0160	16.00	768.16	491+50.00															
					767.90	-0.26	-0.0160	16.00	768.15	491+50.19														END NC	
					767.72	-0.16	-0.0098	16.00	767.88	491+75.00															
					767.56	-0.06	-0.0035	16.00	767.62	492+00.00															
					767.45	0.00	0.0000	16.00	767.45	492+14.19														ZERO	
					767.36	0.04	0.0027	16.00	767.32	492+25.00															
					767.10	0.14	0.0090	16.00	766.96	492+50.00															
					766.98	0.24	0.0152	16.00	766.74	492+75.00															
					766.96	0.26	0.0160	16.00	766.71	492+78.19														NC	
					766.95	0.44	0.0275	16.00	766.51	493+00.00															
					766.85	0.56	0.0350	16.00	766.29	493+25.00															
					766.74	0.68	0.0422	16.00	766.07	493+49.23														PCC	

...Northbound\92615_GE502.dgn 5/29/2019 8:13:59 AM mswwhitt

SUPERELEVATION TABLE
RAMP D CURVE 5

FRA -71-9.07

CALCULATED
NLD
CHECKED
WAA

SUPERELEVATION TABLE

P.I. = 494+99.15

Dc = 7°30'00" CURVE NO. 6

LEFT SIDE											CENTERLINE CONTROL	RIGHT SIDE											REMARKS		
LEFT EDGE ELEVATION	TRANSITION RATE	ELEVATION CORRECTION	CROSS SLOPE	WIDTH	16' LEFT ELEVATION	TRANSITION RATE	ELEVATION CORRECTION	CROSS SLOPE	WIDTH	PROFILE GRADE	STATION	PROFILE GRADE-RIGHT	WIDTH	CROSS SLOPE	ELEVATION CORRECTION	TRANSITION RATE	RIGHT EDGE ELEVATION	WIDTH	CROSS SLOPE	ELEVATION CORRECTION	TRANSITION RATE	RIGHT EDGE ELEVATION			
					766.74	2/3:1	0.68	0.0422	16.00	766.07	493+49.23													PCC	
					766.74		0.68	0.0424	16.00	766.06	493+50.00														
					766.63		0.80	0.0499	16.00	765.84	493+75.00														
					766.53		0.92	0.0574	16.00	765.61	494+00.00														
					766.51		0.94	0.0590	16.00	765.57	494+05.47														
					766.37		0.94	0.0590	16.00	765.42	494+25.00														
					766.25		0.94	0.0590	16.00	765.31	494+50.00														
					766.21		0.94	0.0590	16.00	765.26	494+75.00														
					766.24		0.94	0.0590	16.00	765.30	495+00.00														
					766.34		0.94	0.0590	16.00	765.40	495+25.00														
					766.52	0.94	0.0590	16.00	765.58	495+50.00															
					766.77	0.94	0.0590	16.00	765.83	495+75.00															
					766.95	1/85:1	0.94	0.0590	16.00	766.00	495+89.07													END FS	
					767.04		0.88	0.0553	16.00	766.15	496+00.00														
					767.26		0.75	0.0469	16.00	766.51	496+25.00														
					767.44		0.64	0.0400	16.00	766.80	496+45.31														PT
					767.49		0.61	0.0384	16.00	766.87	496+50.00														
					767.71		0.48	0.0300	16.00	767.23	496+75.00														
					767.94		0.34	0.0215	16.00	767.59	497+00.00														
					768.08		0.26	0.0160	16.00	767.83	497+16.35														NC
					768.21		0.26	0.0160	16.00	767.95	497+25.00														
					768.57		0.26	0.0160	16.00	768.31	497+50.00														
					768.62	0.26	0.0160	16.00	768.36	497+53.35														END NC	
					769.05	0.37	0.0233	16.00	768.67	497+75.00															
					769.15	0.40	0.0250	16.00	768.75	497+80.00														MATCH EX	

CALCULATED
NLD
CHECKED
WAA

SUPERELEVATION TABLE
RAMP D CURVE 6

FRA - 71 - 9.07

...Northbound\92615_GE502.dgn 5/29/2019 8:13:59 AM mswntt

SUPERELEVATION TABLE

P.I. =472+81.45

Dc =2°45'00" CURVE NO. 9

LEFT SIDE					CENTERLINE CONTROL	RIGHT SIDE											REMARKS							
LEFT EDGE ELEVATION	TRANSITION RATE	ELEVATION CORRECTION	CROSS SLOPE	WIDTH	LEFT EDGE ELEVATION	TRANSITION RATE	ELEVATION CORRECTION	CROSS SLOPE	WIDTH	PROFILE GRADE	STATION	PROFILE GRADE-RIGHT	WIDTH	CROSS SLOPE	ELEVATION CORRECTION	TRANSITION RATE		12' RIGHT ELEVATION	WIDTH	CROSS SLOPE	ELEVATION CORRECTION	TRANSITION RATE	RIGHT EDGE ELEVATION	
					756.54		1.01	0.0420	24.00	755.53	469+46.80													PCC
					756.44		1.01	0.0420	24.00	755.43	469+50.00													
					755.69		1.01	0.0420	24.00	754.68	469+75.00													
					754.94		1.01	0.0420	24.00	753.93	470+00.00													
					754.19		1.01	0.0420	24.00	753.18	470+25.00													
					753.44		1.01	0.0420	24.00	752.43	470+50.00													
					752.69		1.01	0.0420	24.00	751.68	470+75.00													
					751.94		1.01	0.0420	24.00	750.93	471+00.00													
					751.17		0.99	0.0420	23.50	750.18	471+25.00													
					750.40		0.97	0.0420	23.00	749.43	471+50.00													
					749.63		0.95	0.0420	22.50	748.68	471+75.00													
					748.86		0.92	0.0420	22.00	747.93	472+00.00													
					748.09		0.90	0.0420	21.50	747.18	472+25.00													
					747.32		0.88	0.0420	21.00	746.43	472+50.00													
					746.55		0.86	0.0420	20.50	745.68	472+75.00													
					745.77		0.84	0.0420	20.00	744.93	473+00.00													
					745.00		0.82	0.0420	19.50	744.18	473+25.00													
					744.23		0.80	0.0420	19.00	743.43	473+50.00													
					743.46		0.78	0.0420	18.50	742.68	473+75.00													
					742.69		0.76	0.0420	18.00	741.93	474+00.00													
					741.92		0.74	0.0420	17.50	741.18	474+25.00													
					741.15		0.71	0.0420	17.00	740.43	474+50.00													
					740.38		0.69	0.0420	16.50	739.68	474+75.00													
					739.61		0.67	0.0420	16.00	738.93	475+00.00													
					738.86		0.67	0.0420	16.00	738.18	475+25.00													
					738.11		0.67	0.0420	16.00	737.43	475+50.00													
					737.73		0.67	0.0420	16.00	737.06	475+62.43													
					737.42		0.73	0.0459	16.00	736.68	475+75.00													END FS
					736.79		0.86	0.0537	16.00	735.93	476+00.00													
					736.53		0.91	0.0570	16.00	735.62	476+10.43													PCC

200:1
↕

CALCULATED
NLD
CHECKED
WAA

SUPERELEVATION TABLE
RAMP H CURVE 9

FRA -71-9.07

196
264

SUPERELEVATION TABLE

P.I. =478+29.80

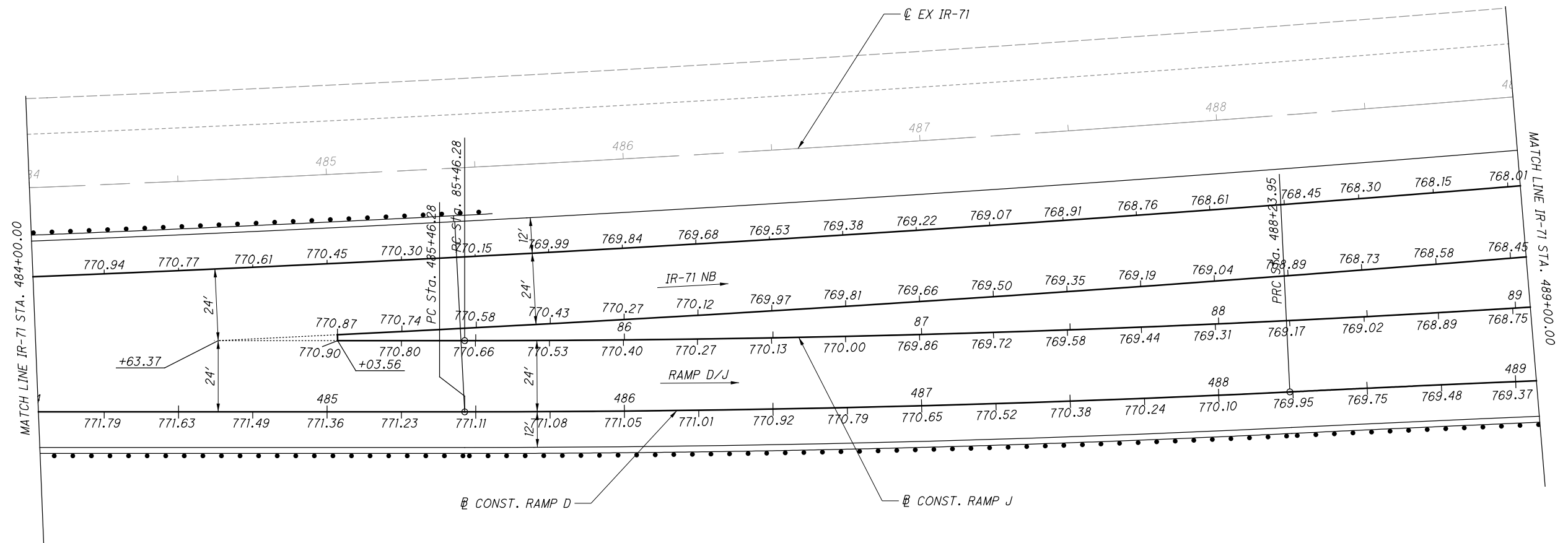
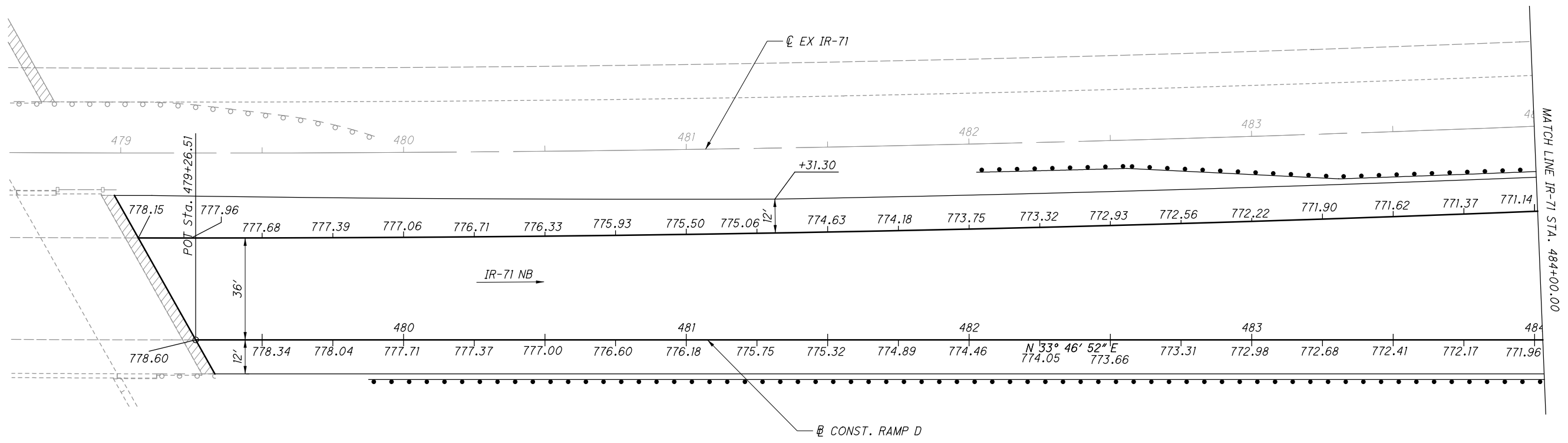
Dc =5°15'00" CURVE NO. 10

LEFT SIDE											CENTERLINE CONTROL	RIGHT SIDE											REMARKS	
LEFT EDGE ELEVATION	TRANSITION RATE	ELEVATION CORRECTION	CROSS SLOPE	WIDTH	16' LEFT ELEVATION	TRANSITION RATE	ELEVATION CORRECTION	CROSS SLOPE	WIDTH	PROFILE GRADE	STATION	PROFILE GRADE-RIGHT	WIDTH	CROSS SLOPE	ELEVATION CORRECTION	TRANSITION RATE	12' RIGHT ELEVATION	WIDTH	CROSS SLOPE	ELEVATION CORRECTION	TRANSITION RATE	RIGHT EDGE ELEVATION		
					736.53		0.91	0.0570	16.00	735.62	476+10.43													PCC
					736.10		0.91	0.0570	16.00	735.18	476+25.00													
					735.35		0.91	0.0570	16.00	734.43	476+50.00													
					734.60		0.91	0.0570	16.00	733.68	476+75.00													
					733.85		0.91	0.0570	16.00	732.93	477+00.00													
					733.10		0.91	0.0570	16.00	732.18	477+25.00													
					732.35		0.91	0.0570	16.00	731.43	477+50.00													
					731.60		0.91	0.0570	16.00	730.68	477+75.00													
					730.85		0.91	0.0570	16.00	729.93	478+00.00													
					730.10		0.91	0.0570	16.00	729.18	478+25.00													
					729.35		0.91	0.0570	16.00	728.43	478+50.00													
					728.60		0.91	0.0570	16.00	727.68	478+75.00													
					727.88		0.91	0.0570	16.00	726.97	479+00.00													
					727.28		0.91	0.0570	16.00	726.37	479+25.00													
					726.79		0.91	0.0570	16.00	725.88	479+50.00													
					726.42		0.91	0.0570	16.00	725.51	479+75.00													
					726.16		0.91	0.0570	16.00	725.25	480+00.00													
					726.02		0.91	0.0570	16.00	725.10	480+25.00													
					725.99		0.91	0.0570	16.00	725.08	480+33.36													END FS
					773.12	210:1 ↕	0.86	0.0540	16.00	772.26	480+43.41													PCC

CALCULATED
NLD
CHECKED
WAA

SUPERELEVATION TABLE
RAMP H CURVE 10

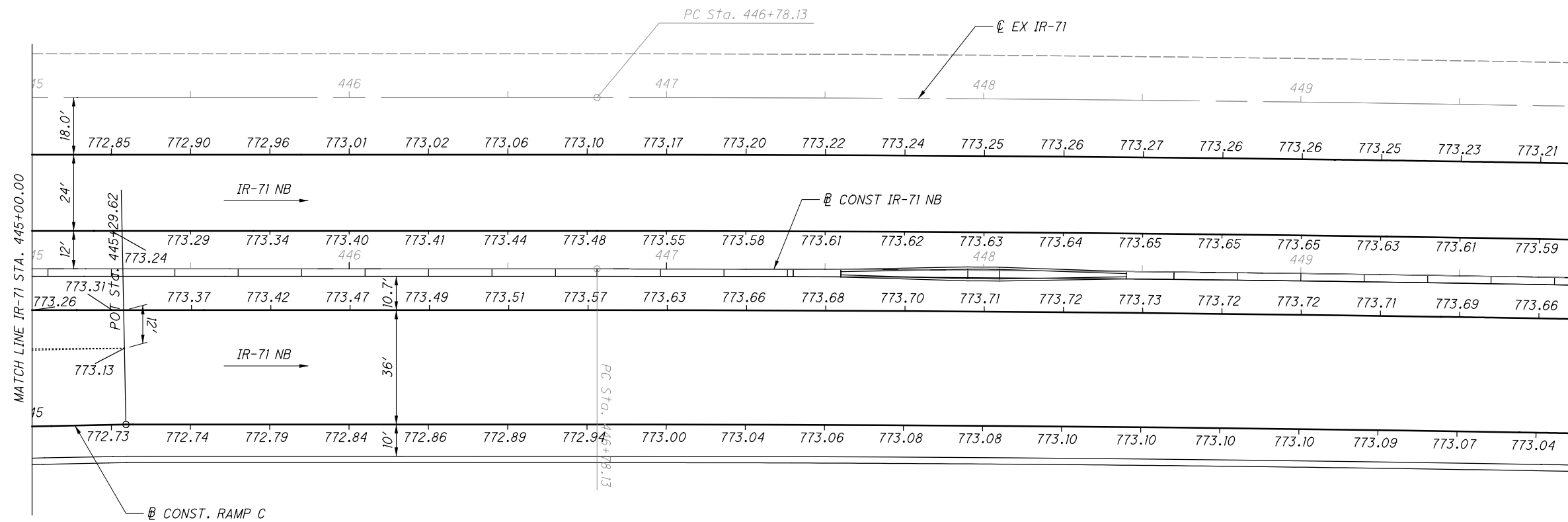
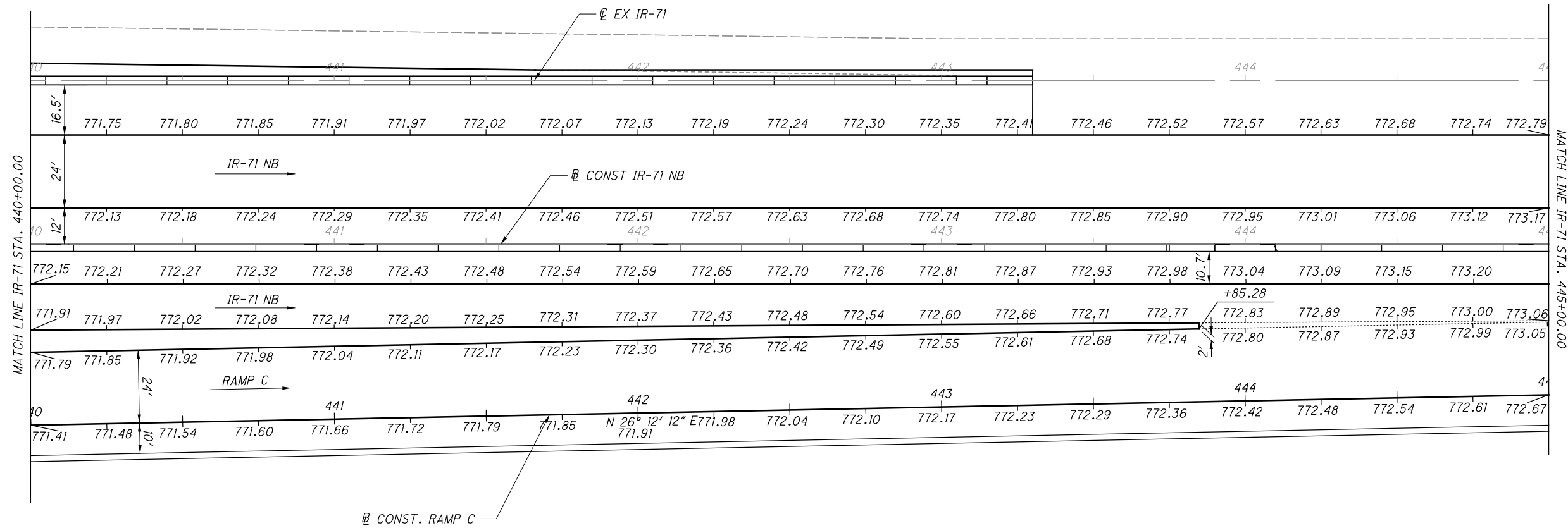
FRA -71-9.07



CALCULATED	MSW
CHECKED	WAA

INTERCHANGE DETAIL
RAMP D

FRA-71-9.07



INTERCHANGE DETAIL
RAMP C



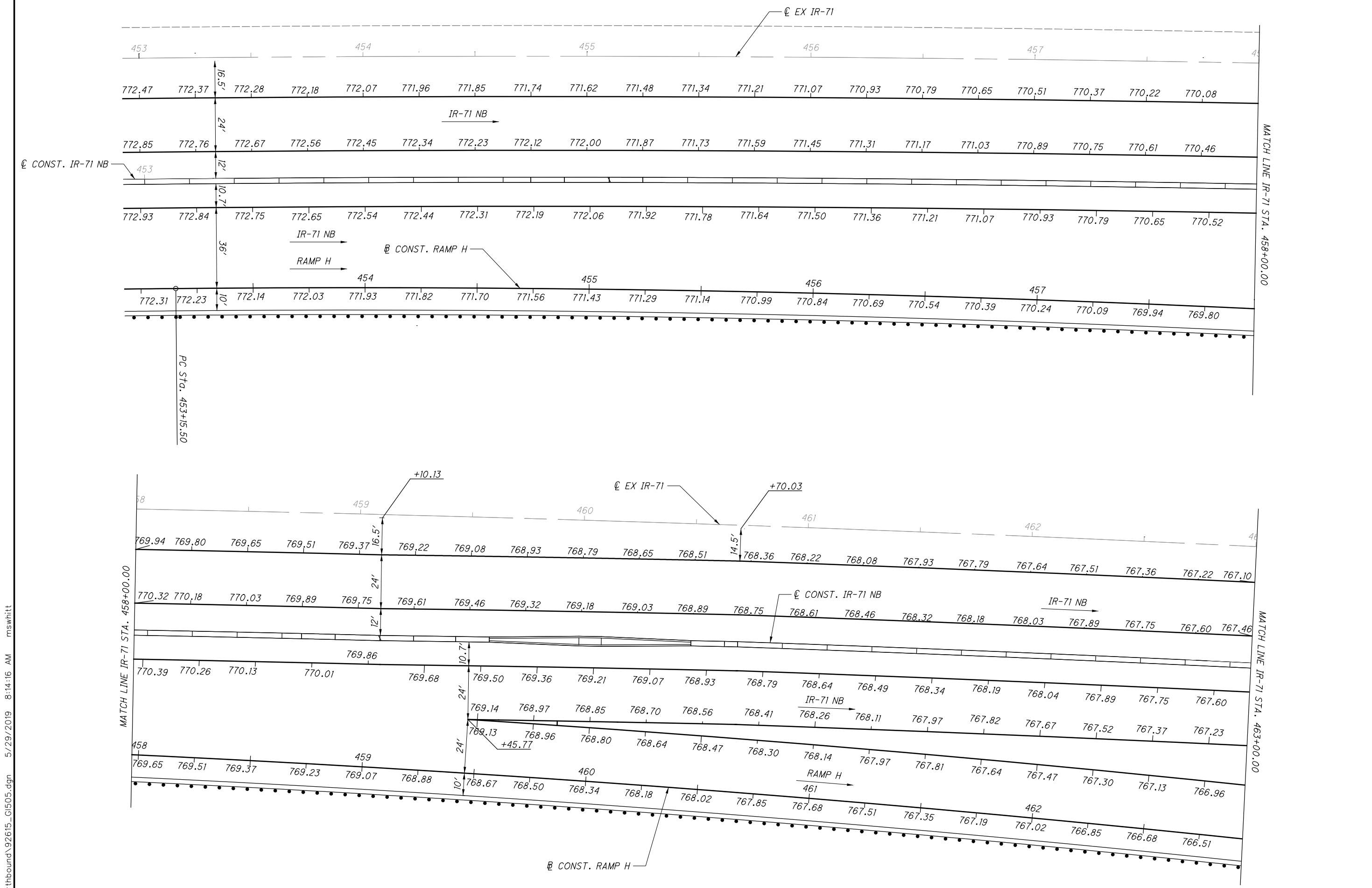
0 20 40
 HORIZONTAL SCALE IN FEET

CALCULATED MSW
 CHECKED WAA

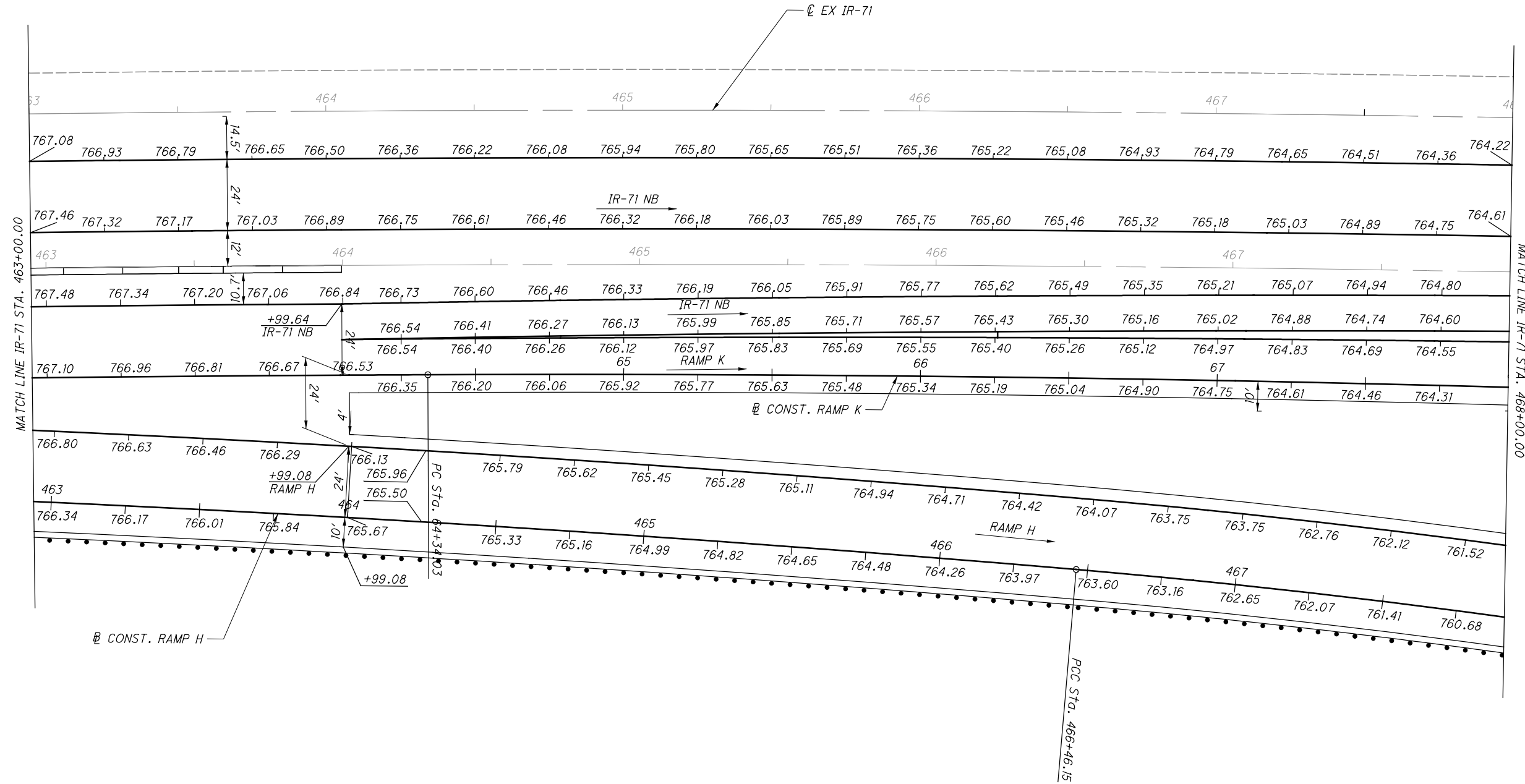
**INTERCHANGE DETAIL
 RAMP H**

FRA-71-9.07

202
 264



...Northbound\92615_GI505.dgn 5/29/2019 8:14:16 AM mswwhitt



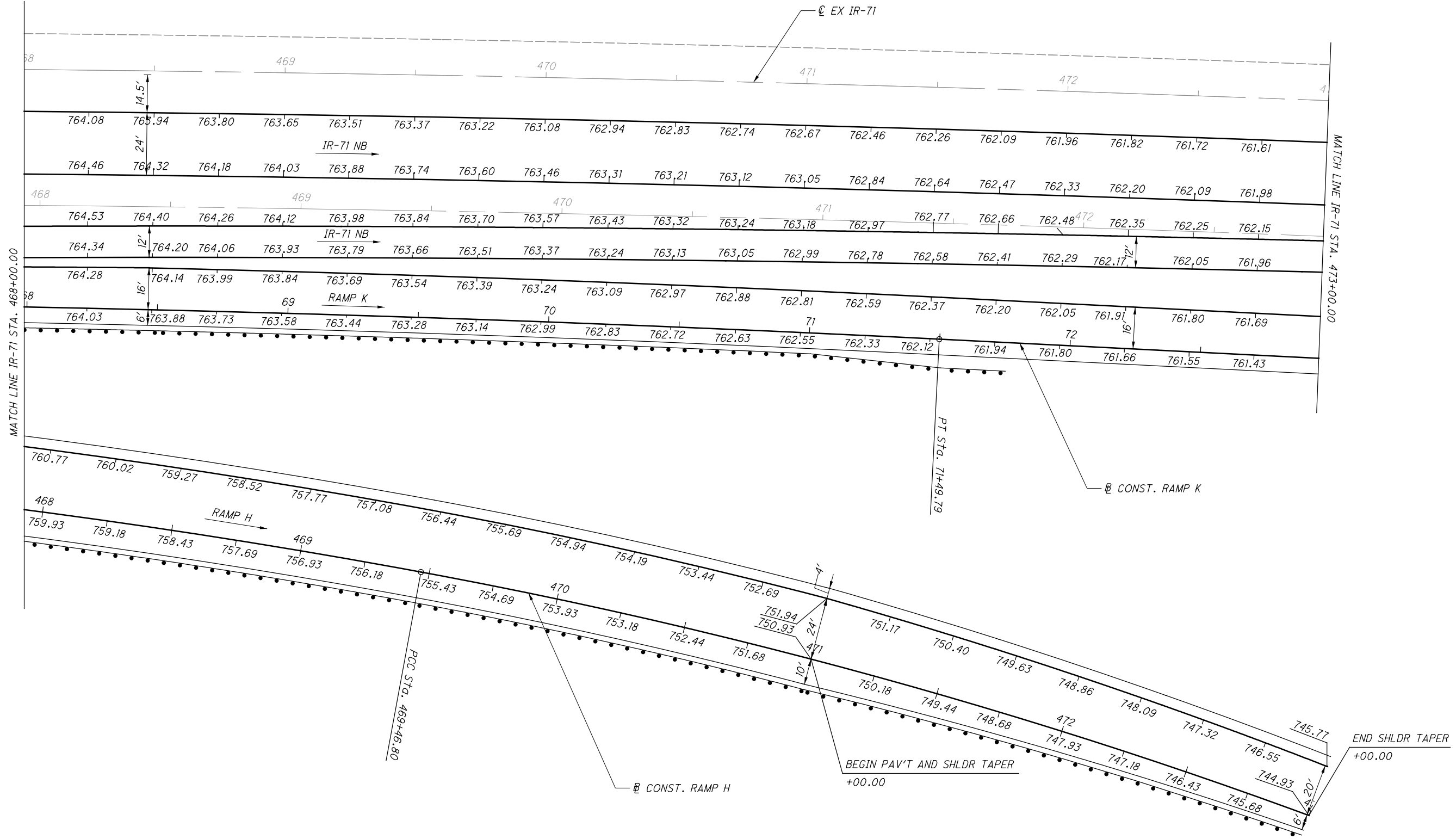
CALCULATED MSW
 CHECKED WAA

0 20 40
 1" = 40'
 HORIZONTAL SCALE IN FEET

**INTERCHANGE DETAIL
 RAMP H & K**

FRA-71-9.07

...Northbound\92615_GI507.dgn 5/29/2019 8:14:22 AM mswhitt

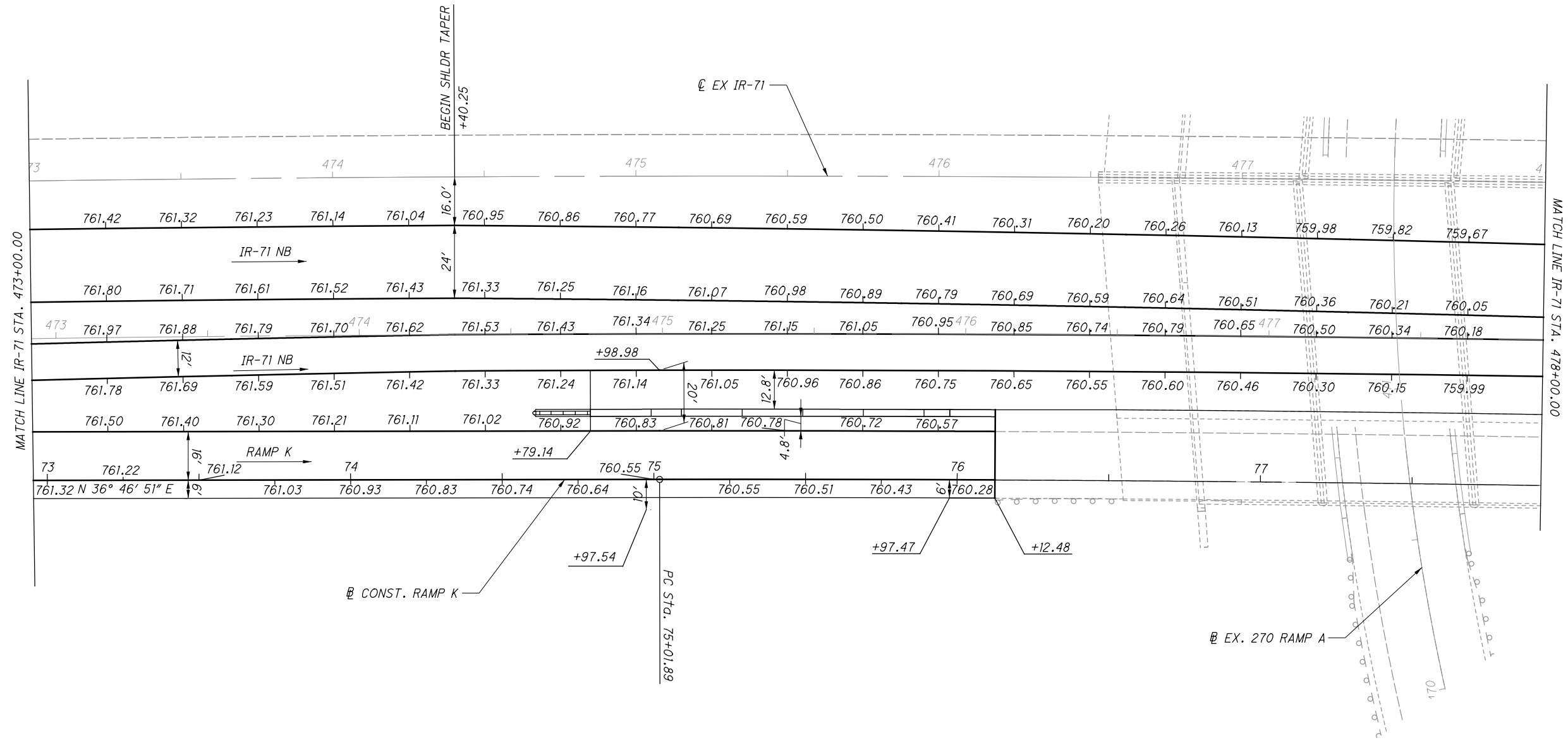


CALCULATED
MSW
CHECKED
WAA

0 20 40
HORIZONTAL
SCALE IN FEET

INTERCHANGE DETAIL
RAMP H & K

FRA-71-9.07



CALCULATED
MSW
CHECKED
WAA

0 20 40
1" = 40'
HORIZONTAL
SCALE IN FEET

INTERCHANGE DETAIL
RAMP K / IR-71 NB

FRA-71-9.07



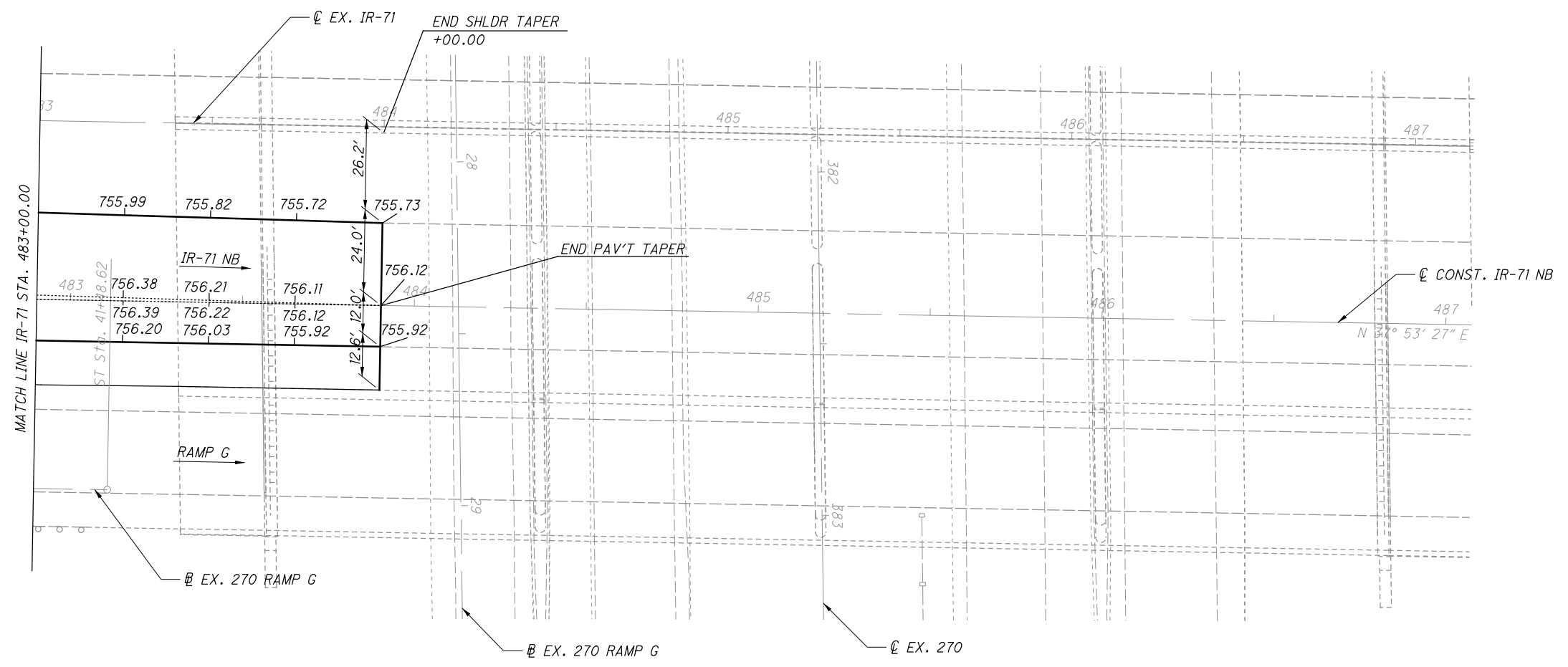
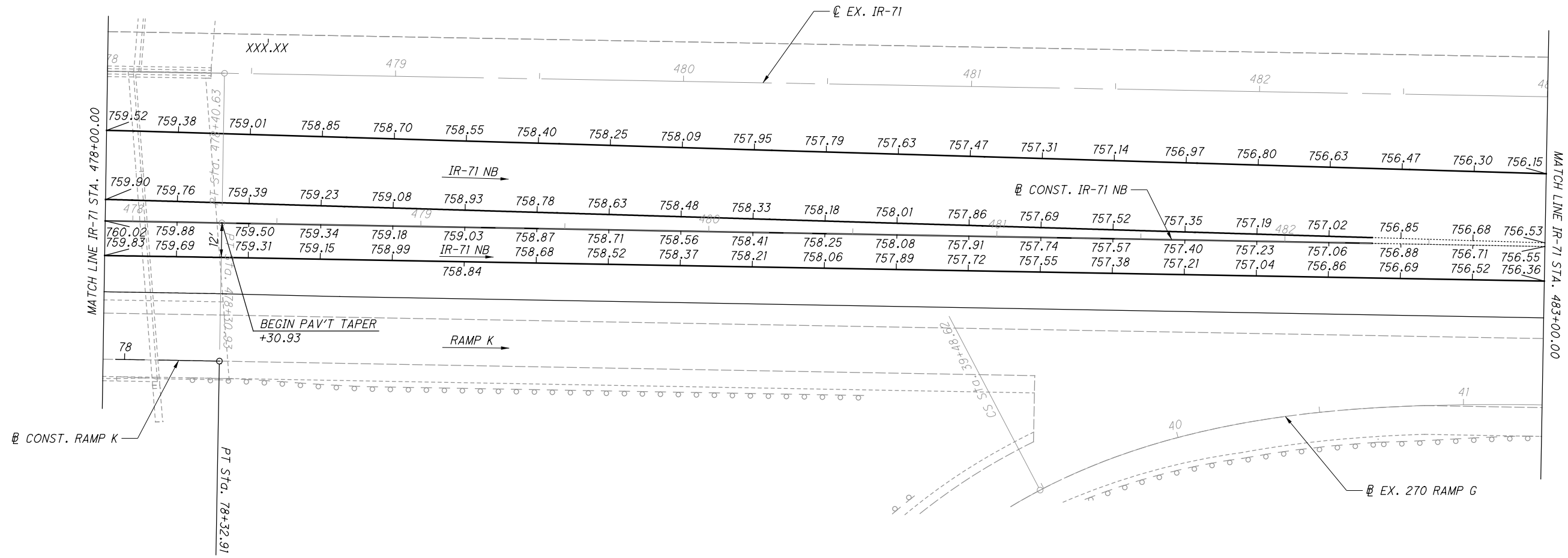
0 20 40
 HORIZONTAL
 SCALE IN FEET

CALCULATED MSW
 CHECKED WAA

INTERCHANGE DETAIL
 IR-71 NB

FRA-71-9.07

206
 264



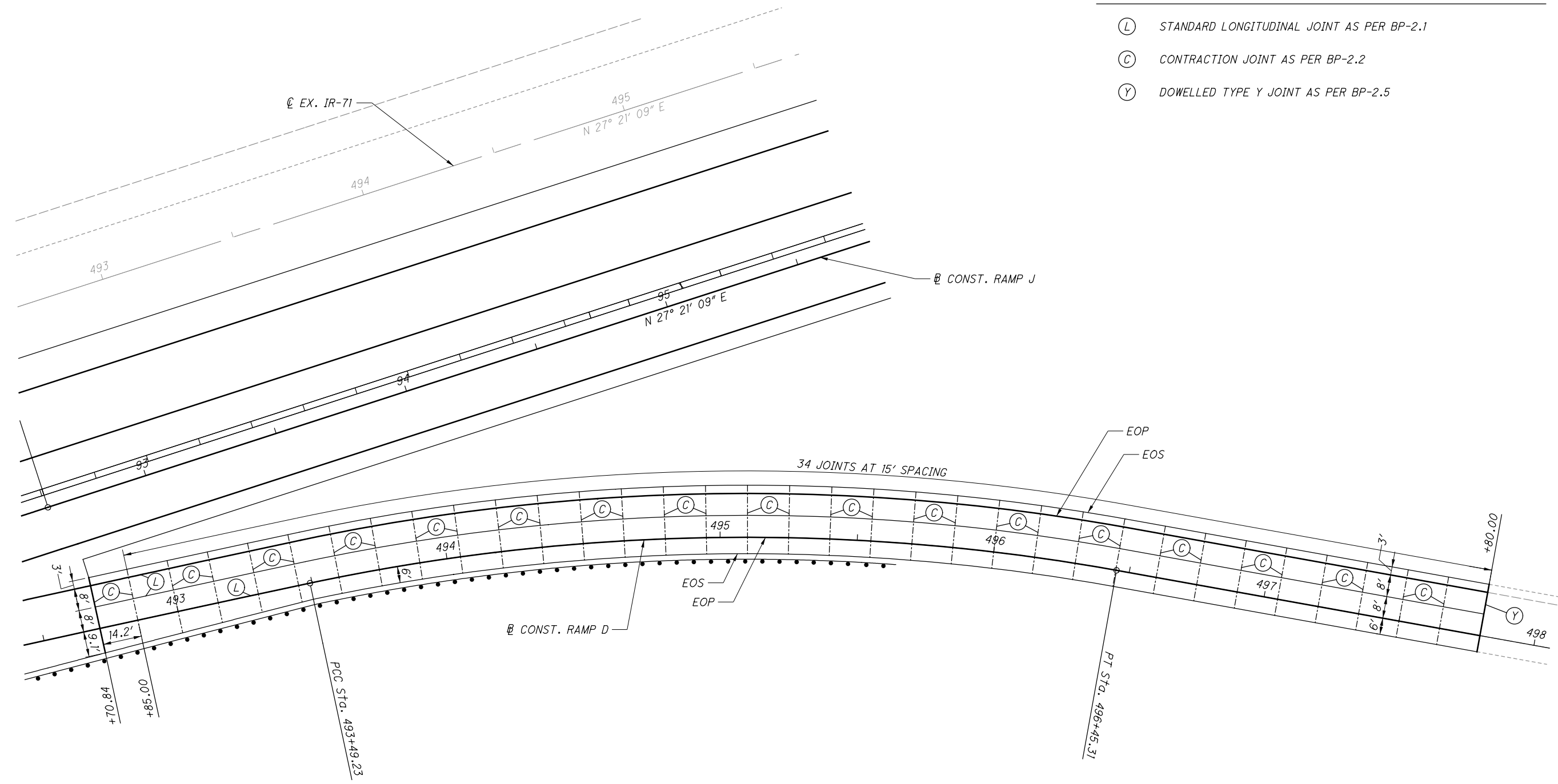
...Northbound\92615_GI509.dgn 5/29/2019 8:14:28 AM mswwhitt

LEGEND

- (L) STANDARD LONGITUDINAL JOINT AS PER BP-2.1
- (C) CONTRACTION JOINT AS PER BP-2.2
- (Y) DOWELLED TYPE Y JOINT AS PER BP-2.5

CALCULATED MSW
CHECKED WAA

HORIZONTAL SCALE IN FEET



PAVEMENT JOINT DETAIL RAMP D

FRA - 71 - 9.07



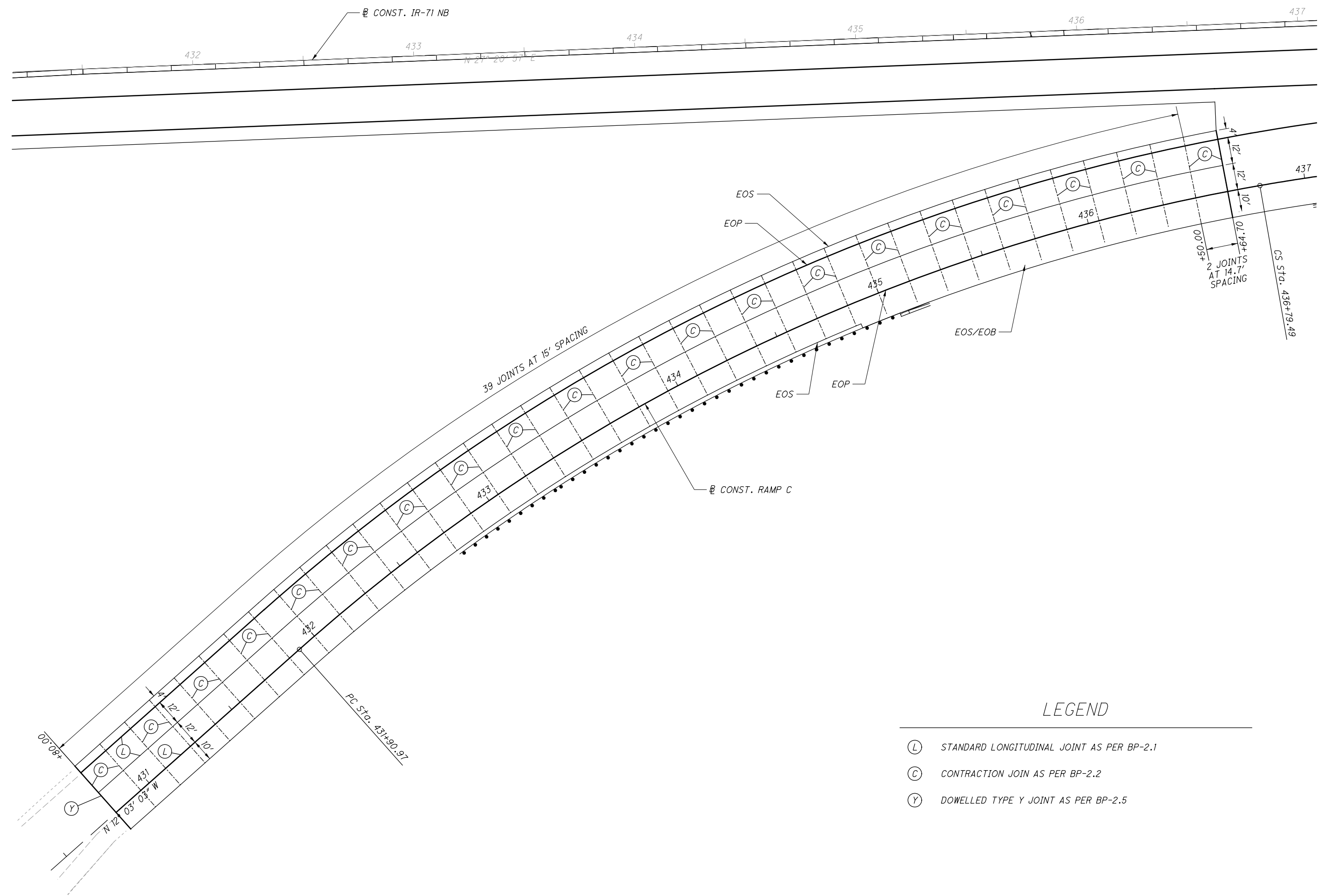
0 10 20 40
HORIZONTAL SCALE IN FEET

CALCULATED MSW
CHECKED WAA

PAVEMENT JOINT DETAIL
RAMP C

FRA-71-9.07

208
264



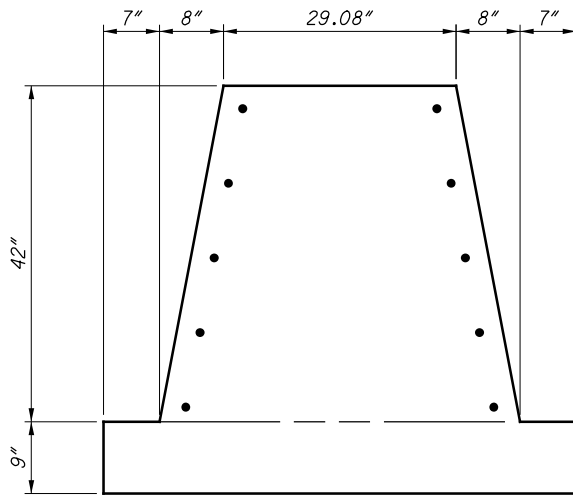
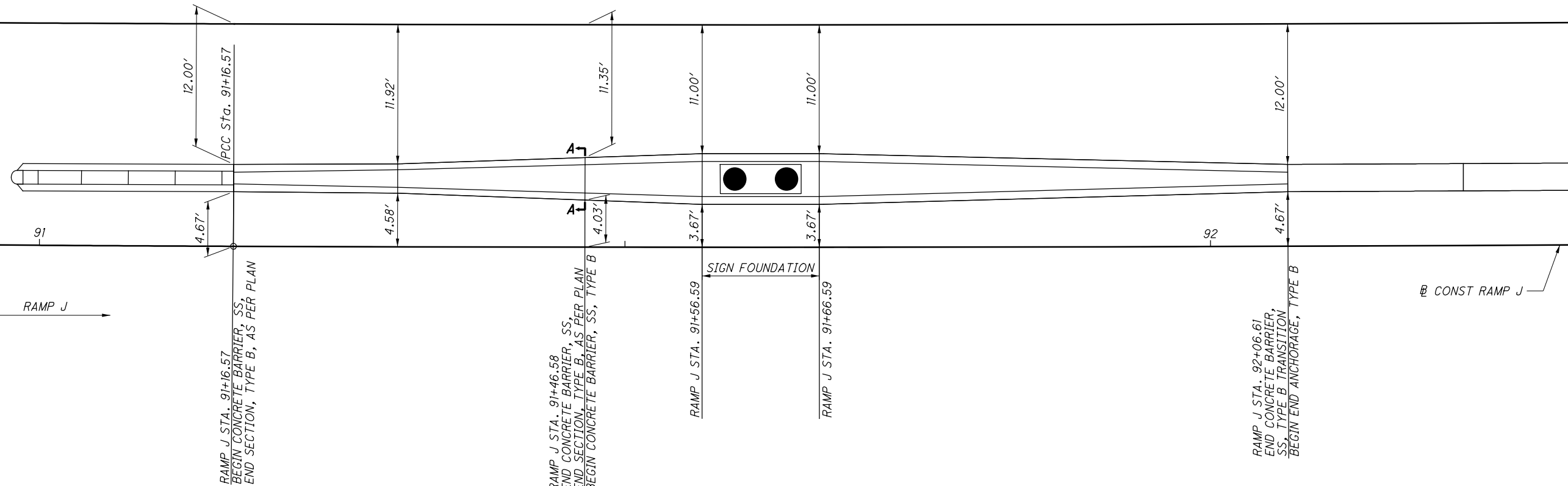
LEGEND

- (L) STANDARD LONGITUDINAL JOINT AS PER BP-2.1
- (C) CONTRACTION JOIN AS PER BP-2.2
- (Y) DOWELLED TYPE Y JOINT AS PER BP-2.5

...Northbound\92615_GM501.dgn 5/29/2019 8:14:37 AM mswwhitt

IR-71 NB

RAMP J



SECTION A-A

CONCRETE BARRIER, SINGLE SLOPE, END SECTION, TYPE B, AS PER PLAN

THIS BARRIER SHALL FOLLOW RM-4.6 EXCEPT THAT THE 30' LENGTH SHALL FIT WITHIN THE 40' BARRIER TRANSITION REQUIRED FOR THE SIGN FOUNDATION. SECTION A-A SHALL HAVE A TOP WIDTH OF 29.08' AS SHOWN.

CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE C, AS PER PLAN

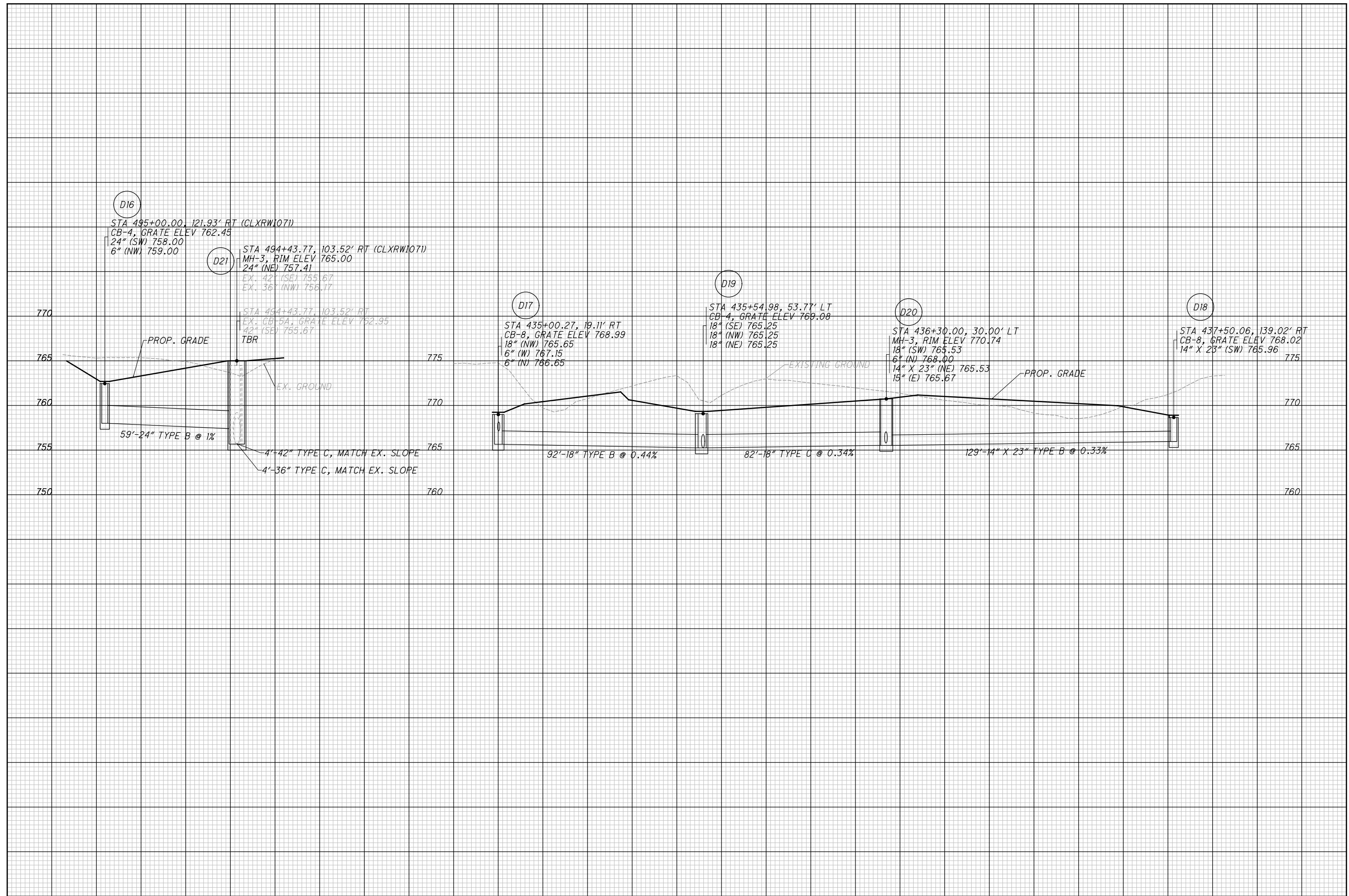
THIS BARRIER (LOCATED ALONG THE BASELINE OF IR-71 NB BETWEEN STA. 463+79.73 TO STA. 463+99.64) SHALL FOLLOW RM-4.3 EXCEPT THAT THE OVERALL LENGTH SHALL BE 19.91'. ADDITIONAL REINFORCEMENT REQUIRED FOR THE LONGER LENGTH SHALL FOLLOW THE SAME PATTERN ILLUSTRATED IN THE SCD.



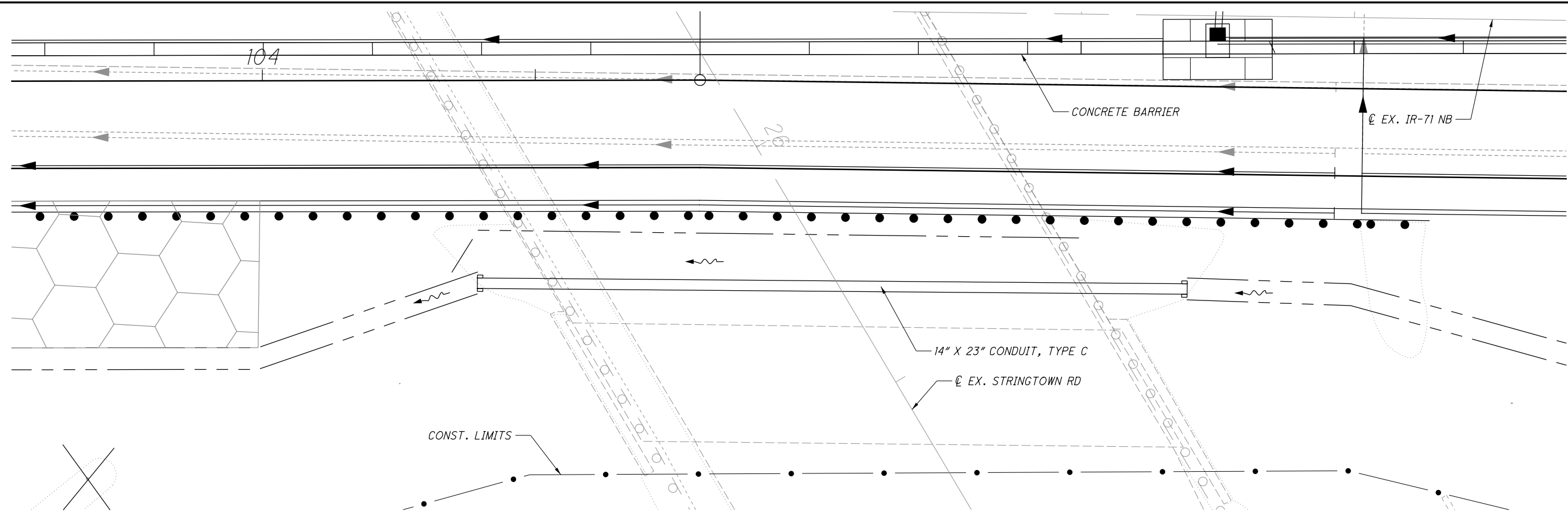
CALCULATED MSW
CHECKED WAA

**CONCRETE BARRIER DETAILS
RAMP J AND IR-71 NB**

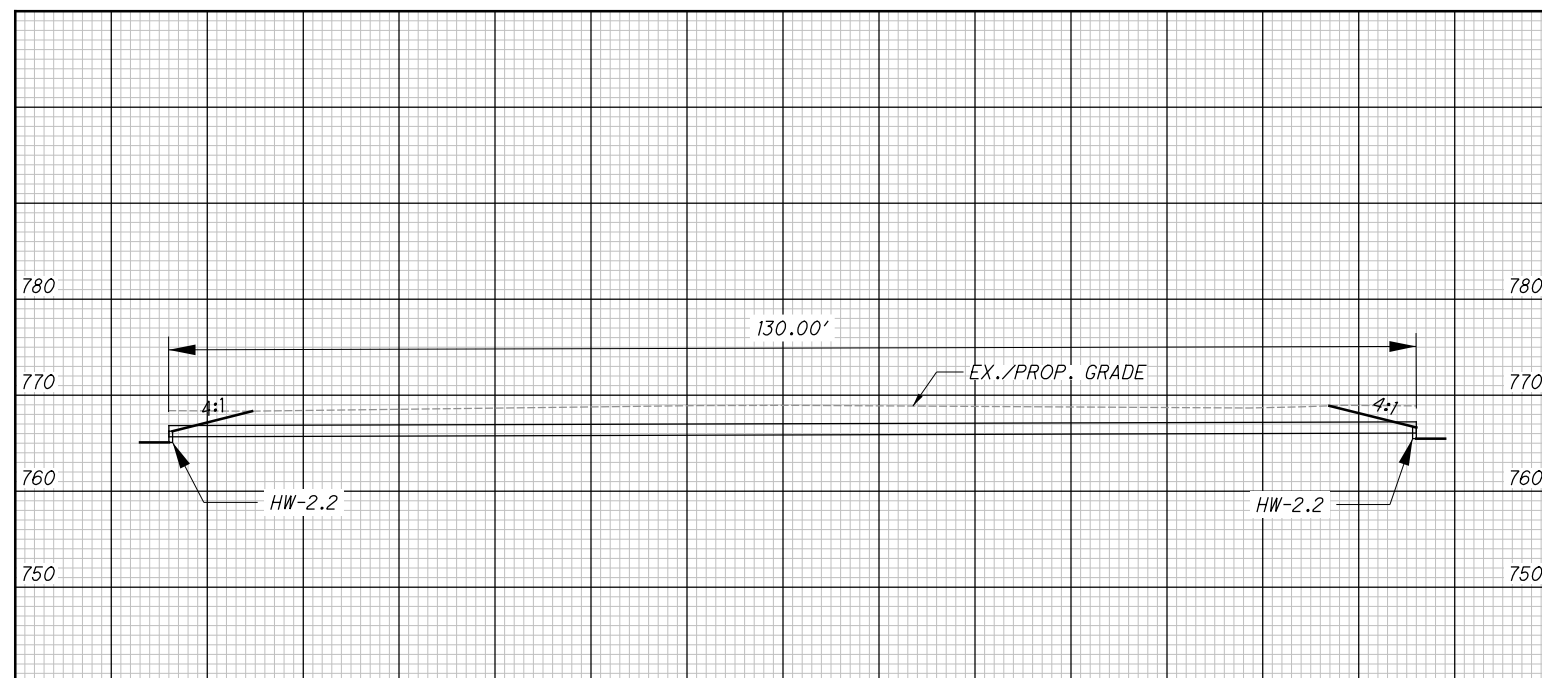
FRA-71-9.07



...\\Northbound\92615_DD001.dgn 5/28/2019 9:20:30 AM lang



PLAN



PROFILE ALONG $\text{\textcircled{C}}$ CULVERT

EXISTING IR-71 CULVERT
N/A

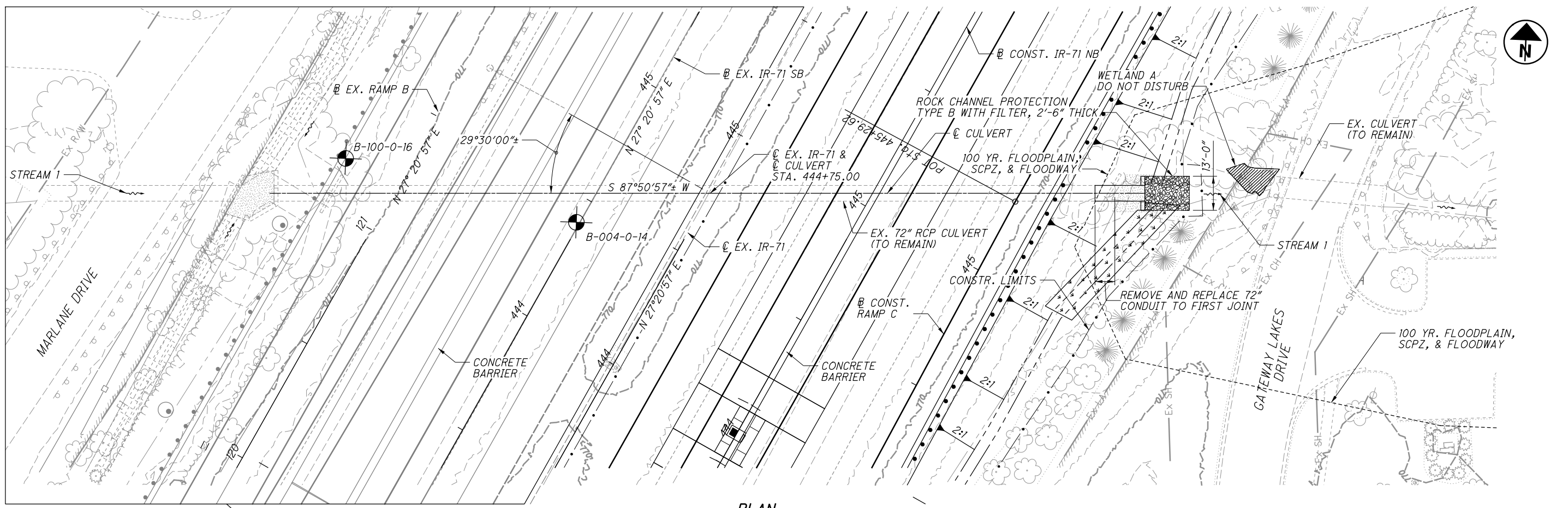
HYDRAULIC DATA
DRAINAGE AREA = 1.93 SQ. MILES
Q (10) = 4.88 CFS
V (10) = 4.36 FT/S
HW (10) = 767.63

LEGEND:
 * = DIMENSION MAY VARY AS DEPENDENT UPON FIRST JOINT LOCATION
 SCPZ = STREAM CORRIDOR PROTECTION ZONE

CALCULATED
 NJL
 CHECKED
 KEH

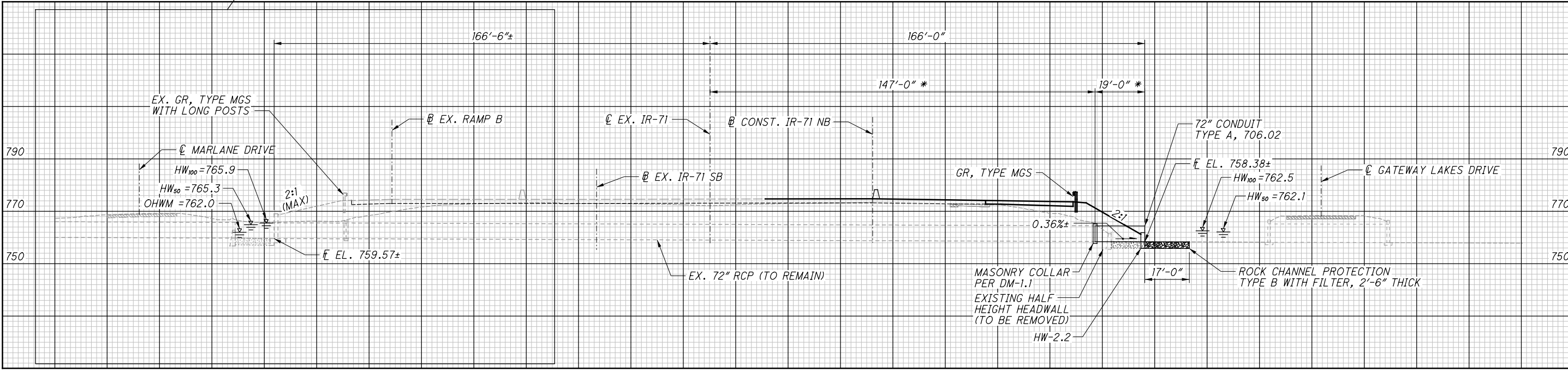
426+90.00 TO 428+20.00
 CULVERT DETAIL

FRA-71-9.07



PLAN

WORK THAT IS ASSOCIATED WITH FRA-71-9.71 (PART 2)



PROFILE ALONG CULVERT

EXISTING IR-71 CULVERT

TYPE: 72" DIA. REINFORCED CONCRETE PIPE
 LENGTH: ORIGINAL 298'-0"±
 313'-6"± AFTER 2018 WEST EXTENSION
 SKEW: 29°30'00"± (RIGHT FORWARD)
 CULVERT FILE NUMBER: 1812232 (NEW CFN)
 250712104 (OLD CFN)
 DATE BUILT: 1959 (WEST EXTENSION 2018)
 DISPOSITION: TO BE EXTENDED

HYDRAULIC DATA

DRAINAGE AREA = 0.33 SQ. MILES	
Q (50) = 184 CFS	Q (100) = 214 CFS
V (50) = 9.4 FT/S	V (100) = 9.8 FT/S
HW (50) = 765.3	HW (100) = 765.9

PROPOSED WORK

1. REMOVE EXISTING OUTLET HEADWALL AND CONDUIT TO FIRST JOINT FROM OUTLET.
2. EXTEND OUTLET WITH NEW 72" DIA. RCP.
3. CONSTRUCT NEW OUTLET HEADWALL AND CHANNEL PROTECTION

BORING DATA

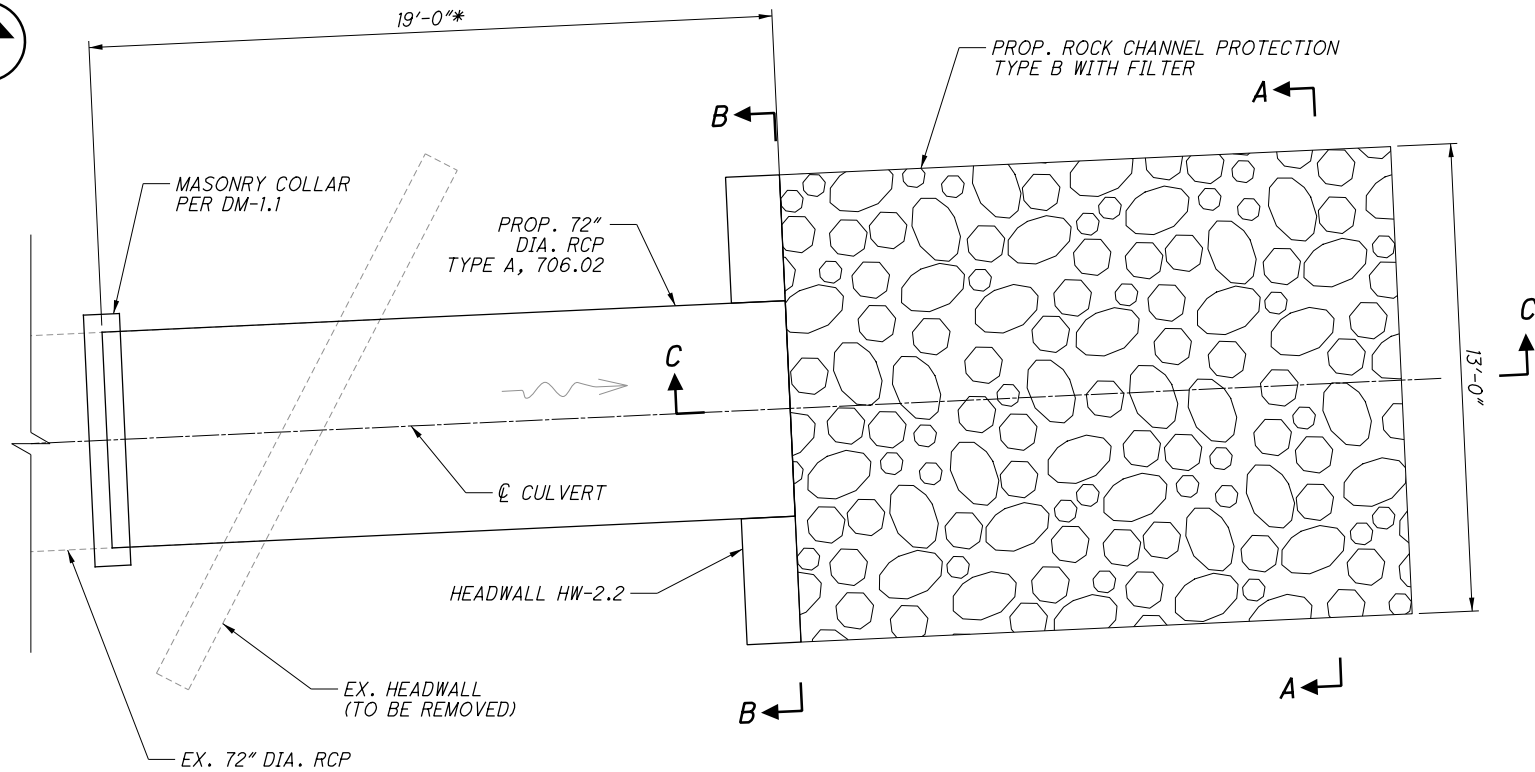
BORING	STATION	OFFSET	TOP OF ROCK
B-100-0-16	444+18.05	-127.68	N/A
B-004-0-14	444+40.21	-38.99	N/A

STATIONS AND OFFSETS GIVEN WITH REFERENCE TO C EX. IR-71

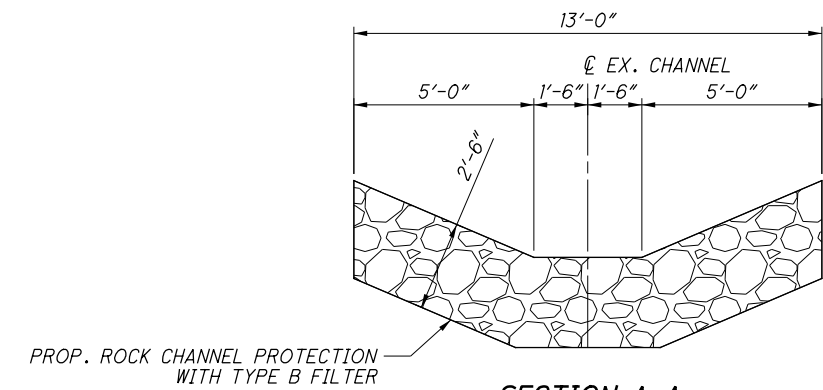
LEGEND:

- * = DIMENSION MAY VARY AS DEPENDENT UPON FIRST JOINT LOCATION
- SCPZ = STREAM CORRIDOR PROTECTION ZONE
- = BORING LOCATION

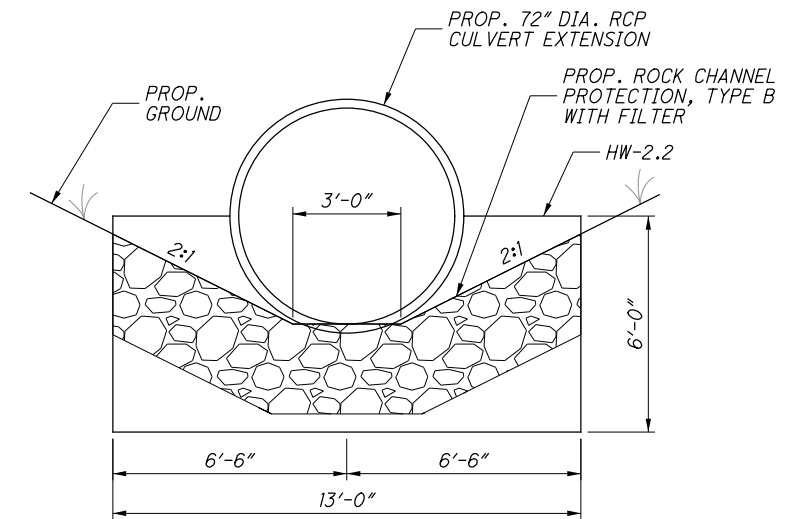
...\\Culverts\92615_DC002.dgn 5/28/2019 9:20:55 AM long



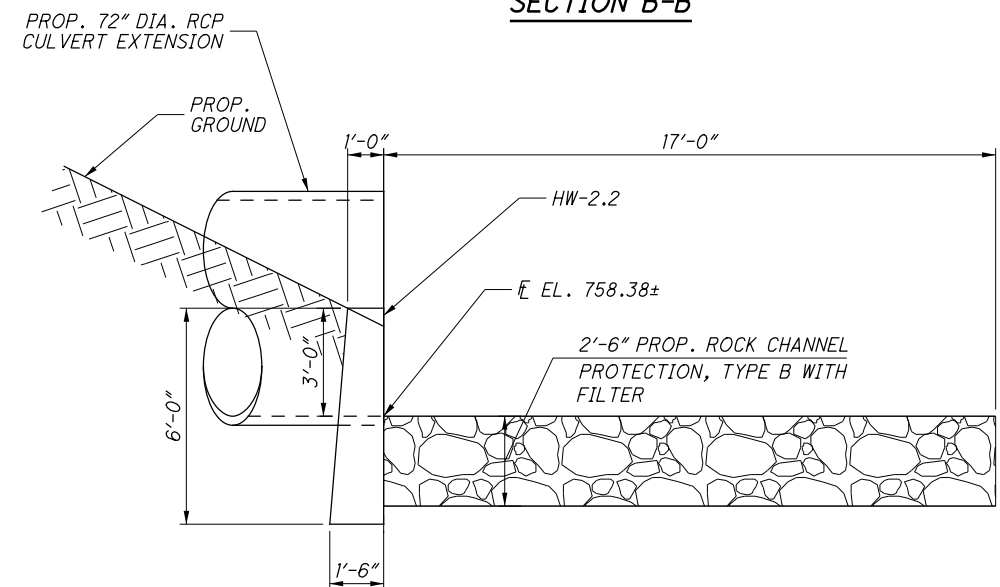
OUTLET PLAN



SECTION A-A



SECTION B-B



SECTION C-C

ESTIMATED QUANTITIES				CALC.	DATE
				BFK	8/22/18
				CHK'D	DATE
				JDH	8/22/18
ITEM	ITEM EXT.	UNIT	DESCRIPTION	TOTAL	SHT. REF.
202	20010	EACH	HEADWALL REMOVED	1	
202	35200	FT	PIPE REMOVED, OVER 24"	8	
601	32100	CY	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER	21	
602	20000	CY	CONCRETE MASONRY	2.8	
611	26000	FT	72" CONDUIT, TYPE A (706.02)	19	
SPECIAL	69071000		ASBESTOS ABATEMENT (CULVERT JOINT MATERIAL)	LS	213 / 264

ITEM SPECIAL - ASBESTOS ABATEMENT (CULVERT JOINT MATERIAL):

AN ASBESTOS SURVEY OF THE BRIDGE AND CULVERT STRUCTURES SCHEDULED FOR DEMOLITION WAS COMPLETED IN NOVEMBER 2016 BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST (CAHES). THE SURVEY IDENTIFIED THE POTENTIAL/PRESUMED ASBESTOS CONTAINING MATERIALS AT THE LOCATIONS LISTED BELOW:

CULVERT FILE NUMBER	ASBESTOS CONTAINING MATERIAL	LOCATION	ESTIMATED QUANTITY
1812232	BLACK-JOINT SEALANT	JOINT BETWEEN PIPE SEGMENTS	4 S.F.

THE QUANTITY OF 4 S.F. INCLUDES AN ESTIMATED 4 S.F. PER JOINT LOCATED ON THE INSIDE AND OUTSIDE OF THE PIPE FOR A TOTAL OF 1 JOINT.

A COPY OF THE OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA) NOTIFICATION OF DEMOLITION AND RENOVATION FORM WITH SECTIONS I-VII AND XVI COMPLETED IS AVAILABLE AT THE ODOT DISTRICT 6 OFFICE (PLANNING DEPARTMENT). THE FORM MUST BE SUBMITTED TO OEPA AT LEAST 10 DAYS PRIOR TO DEMOLITION/RENOVATION ACTIVITIES.

A LICENSED CONTRACTOR SHALL TAKE WHATEVER PRECAUTIONS ARE POSSIBLE TO ENSURE THAT THE ASBESTOS CONTAINING MATERIAL (ACM) DOES NOT BECOME FRIABLE. TO ASSURE THAT THE NONFRIABLE ASBESTOS MATERIAL DOES NOT BECOME FRIABLE OR IN THE EVENT THAT THE NONFRIABLE MATERIAL BECOMES FRIABLE, THE CONTRACTOR SHALL PROVIDE AN INDIVIDUAL TRAINED IN THE PROVISIONS OF NESHAP THAT WILL BE ON-SITE DURING THE DEMOLITION AND/OR REMOVAL OF THE ACM. ALL ACMs SHALL BE PROPERLY CONTAINERIZED, TRANSPORTED, AND DISPOSED OF IN ACCORDANCE WITH STATE AND FEDERAL REGULATIONS.

BASIS OF PAYMENT: THE CONTRACTOR SHALL FURNISH ALL THE LABOR (INCLUDING CAHES), EQUIPMENT, AND MATERIALS NECESSARY TO COMPLETE, SUBMIT, AND COMPLY WITH THE OEPA NOTIFICATION FOR AND TO REMOVE, TRANSPORT AND DISPOSE OF ASBESTOS CONTAINING MATERIALS IN A LICENSED (BY THE LOCAL HEALTH DEPARTMENT) AND PERMITTED (BY THE OEPA) SOLID WASTE FACILITY. PAYMENT FOR THIS WORK SHALL BE MADE AT THE CONTRACT PRICES BID LUMP SUM. THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED IN THE RESPECTIVE CULVERT ESTIMATED QUANTITIES FOR THE WORK NOTED ABOVE: 690E71000 ITEM SPECIAL - ASBESTOS ABATEMENT (CULVERT JOINT MATERIAL), LUMP SUM

FOR ADDITIONAL INFORMATION SEE PROJECT ASBESTOS REPORT DATED 11/10/2016.

LEGEND:

* = DIMENSION MAY VARY AS DEPENDENT UPON FIRST JOINT LOCATION

... \Culverts\92615_DC002A.dgn 5/28/2019 9:21:21 AM long

**ITEM 630 - TRIANGULAR SLIP BASE CONNECTION,
AS PER PLAN**

IN ADDITION TO THE WORK DETAILED IN THE CMS 630 AND THE STANDARD CONSTRUCTION DRAWING TC-41.15, THIS ITEM OF WORK SHALL INCLUDE FIELD WELDING THREE 1" LENGTH WELDS WITH 1/4" WIDTH EVENLY SPACED AROUND THE PERIMETER OF THE STRUCTURAL PIPE WHERE IT MEETS THE SLIP BASE CASTING. THE WELDING SHALL OCCUR AFTER THE SIGN HAS BE ATTACHED AND PROPERLY ALIGNED WITH THE ROADWAY. A SPRAY GALVANIZATION SHALL BE APPLIED TO THE WELD.

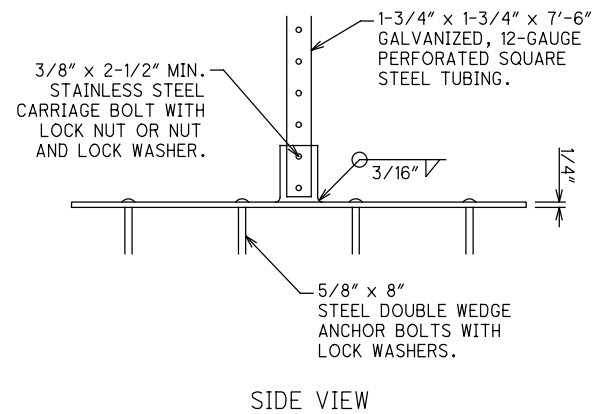
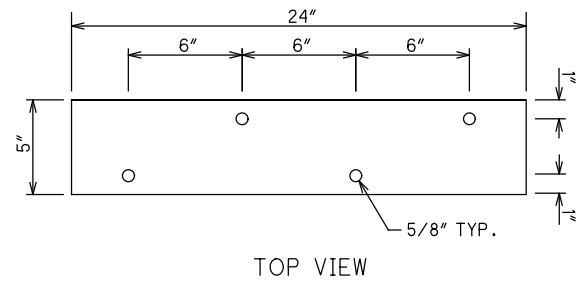
PAYMENT SHALL BE FOR EACH TRIANGULAR SLIP BASE CONNECTION, AS PER PLAN IN PLACE PER THE PLANS.

**ITEM 630 - CONCRETE MEDIAN BARRIER SIGN BRACKET,
AS PER PLAN**

EACH SIGN SUPPORT ASSEMBLY AND BRACKET SHALL MEET THE REQUIREMENTS OF 630 AND CONFORM TO THE DIMENSIONS IN THE DETAILS BELOW.

ALL HARDWARE SHALL BE GALVANIZED STEEL OR STAINLESS STEEL AS SPECIFIED IN THE DETAILS BELOW.

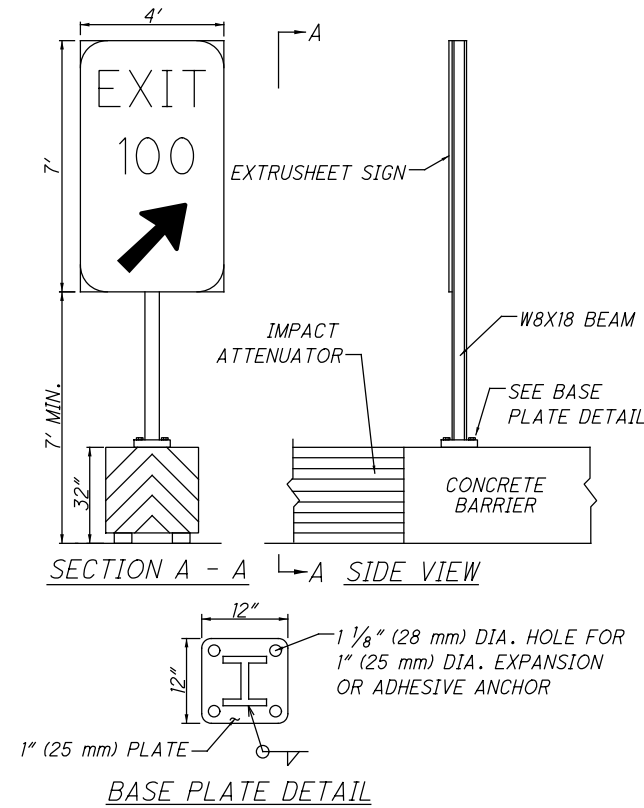
ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATION. PAYMENT FOR THIS ITEM SHALL BE MADE AT THE CONTRACT PRICE BID PER EACH CONCRETE MEDIAN BARRIER SIGN BRACKET, AS PER PLAN.



**ITEM 630 - SIGN SUPPORT ASSEMBLY, BARRIER MOUNTED,
AS PER PLAN**

EACH SIGN SUPPORT ASSEMBLY SHALL MEET THE REQUIREMENTS OF 630 AND CONFORM TO THE DIMENSIONS IN THE DETAILS BELOW.

ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATION. PAYMENT FOR THIS ITEM SHALL BE MADE AT THE CONTRACT PRICE BID PER EACH SIGN SUPPORT ASSEMBLY, BARRIER MOUNTED, AS PER PLAN.



DELINEATORS

INSTALL DELINEATORS ACCORDING TO STANDARD CONSTRUCTION DRAWING TC-61.10.

DELINEATORS SHALL BE FROM ODOT'S QPL.

RAISED PAVEMENT MARKERS

INSTALL RAISED PAVEMENT MARKERS ACCORDING TO STANDARD CONSTRUCTION DRAWINGS TC-65.10 AND TC-65.11.

RAISED PAVEMENT MARKERS SHALL BE FROM ODOT'S QPL.

...Northbound\92615TQ531.dgn 5/29/2019 8:14:42 AM mswmitt

SHEET NO.	REFERENCE NO.	LOCATION	STATION		SIDE	DELINEATOR SPACING	620														
			FROM	TO			DELINEATOR, POST GROUND MOUNTED (TYPE C WHITE) EACH	DELINEATOR, POST GROUND MOUNTED (TYPE D YELLOW) EACH	DELINEATOR, BRACKET MOUNTED (TYPE C WHITE) EACH												
		RAMP D	492+71 496+45	496+45 501+77	LT LT	200 80		2 7													
		RAMP J (NB CD)	92+69	436+61	RT	200	11														
		RAMP C	429+70	436+65	LT	90		8													
		RAMP C	435+06	437+16	RT	200				2											
		RAMP C/NB CD/RAMP H	437+16	464+00	RT	200	14														
		RAMP H	464+00 476+10	476+10 480+68	LT LT	200 100		7 5													
		RAMP K	64+34	480+54	RT	200	9			2											
TOTALS THIS SHEET								34	29	4											
TOTALS CARRIED TO GENERAL SUMMARY									63	4											

DELINEATOR ESTIMATED QUANTITIES	FRA - 71 - 9 . 07
<small>CALCULATED HJF</small>	<small>CHECKED DSS</small>

SHEET NO.	REFERENCE NO.	LOCATION	STATION	SIDE	CODE	SIZE (INCHES)	625	630	630	630	630	630	630	630	630	630	630	630	630	630	630	630	630	630	630	630	630	630	630		
							GROUND ROD	GROUND MOUNTED SUPPORT, NO. 3 POST	GROUND MOUNTED SUPPORT, PIPE	SIGN POST REFLECTOR	TRIANGULAR SLIP BASE CONNECTOR, AS PER PLAN	OVERHEAD SIGN SUPPORT, TYPE TC-12.30, DESIGN 5	OVERHEAD SIGN SUPPORT, TYPE TC-12.30, DESIGN 8	OVERHEAD SIGN SUPPORT, TYPE TC-12.30, DESIGN 10	OVERHEAD SIGN SUPPORT, TYPE TC-7.65, DESIGN 6	OVERHEAD SIGN SUPPORT, TYPE TC-7.65, DESIGN 8	SIGN ATTACHMENT ASSEMBLY	SIGN SUPPORT ASSEMBLY, BARRIER MOUNTED, AS PER PLAN	SIGN, FLAT SHEET	SIGN, GROUND MOUNTED EXTRUSHEET	SIGN, OVERHEAD EXTRUSHEET	CONCRETE MEDIAN BARRIER SIGN BRACKET, AS PER PLAN	CONCRETE BARRIER MEDIAN OVERHEAD SIGN SUPPORT FOUNDATION, TC-21.50	RIGID OVERHEAD SIGN SUPPORT FOUNDATION	GROUND MOUNTED PIPE SUPPORT FOUNDATION	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	REMOVAL OF GROUND MOUNTED PIPE SUPPORT AND DISPOSAL	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TYPE TC-12.30	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, TYPE TC-7.65
							EACH	FT	FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH		
227	R-10	IR-71	445+45	RT																											
	S-7	IR-71	445+45	RT	I-H2C	36 X 24		26																							
	OS-7	IR-71	448+00	RT	PULL THRU	144 X 84	2						1							6		84		1	1						
					ADV. OVHD.	156 X 108																117									
					R14-2	36 X 36																									
					ADV. OVHD.	132 X 108																99									
	R-11	IR-71	448+00	RT																				1	2						
	R-12	IR-71	450+06	RT																			1	1							
	S-8	IR-71	450+06	RT	D10-3	12 X 48														4		1									
	R-13	IR-71	452+00	RT																			1	2							
	R-14	IR-71	456+29	RT	OVHD.																					3		1			
228	OS-8	IR-71	460+00	RT	PULL THRU	144 X 84	2						1									84		1	1						
					ADV. OVHD.	144 X 108																108									
					EXIT GORE	192 X 108																144									
	S-9	RAMP H	461+15	RT	W4-2L	48 X 48		32																							
	R-15	IR-71	462+00	RT																				1	1						
	S-10	IR-71	463+90	RT	W4-3R	48 X 48									1	16															
	S-11	IR-71	464+40	RT	M2-H3	48 X 60			1		1						20						1								
	R-16	IR-71	465+48	RT	OVHD.																						2	1			
	R-17	IR-71	468+50	RT																			1		1						
229	OS-9	IR-71	470+00	RT	ADV. OVHD.	144 X 96	1					1										96		1							
	R-18	IR-71	470+25	RT	OVHD.																						1	1			
	R-19	RAMP H	471+05	RT																			1	1							
	S-12	RAMP H	472+00	RT	D10-H5A	30 X 30																									
	S-13	RAMP K	72+00	RT	D10-H5A	30 X 30																									
	S-14	IR-71	474+85	RT	M2-H3	48 X 60																									
	S-15	RAMP K	76+00	RT	W4-1R	48 X 48																									
	R-20	RAMP K	75+96	RT																											
230	R-21	RAMP G	40+13	RT																											
231	NO ASSOCIATED SIGNING QUANTITIES																														
SUBTOTALS THIS SHEET							5	116	1	0	1	1	0	0	2	0	0	2	79.5	40	732	1	2	3	1	8	10	1	6	2	1
SUBTOTALS PREVIOUS SHEET							7	125.5	0	4	0	1	1	1	1	1	5	1	77.75	28	1174	1	1	6	0	7	8	0	13	2	1
TOTALS CARRIED TO GENERAL SUMMARY							12	241.5	1	4	1	2	1	1	3	1	5	3	157.25	68	1906	2	3	9	1	15	18	1	19	4	2

SIGNING ESTIMATED QUANTITIES

CALCULATED
HJF
CHECKED
DSS

FRA - 71 - 9.07

217
264

...Northbound\92615TO521.dgn 8/11/2019 2:23:23 PM hifoucher

SHEET NO.	REFERENCE NO.	LOCATION	STATION		SIDE	621	621	621	621		626	626	644	644	644	644	644	644	644	646	646	646	646	646	
			FROM	TO		RPM (1-WAY, WHITE) EACH	RPM (2-WAY, WHITE-RED) EACH	RPM (2-WAY, YELLOW RED) EACH	RAISED PAVEMENT MARKER REMOVED EACH	RPM SPACING	BARRIER REFLECTOR, TYPE 1 (1 WAY) EACH	BARRIER REFLECTOR, TYPE 2 (1 WAY) EACH	EDGE LINE, 6" (WHITE) MILE	EDGE LINE, 6" (YELLOW) MILE	LANE LINE, 6" MILE	CHANNELIZING LINE, 12" FT	CHEVRON MARKING FT	LANE REDUCTION ARROW EACH	DOTTED LINE, 6" FT	REMOVAL OF PAVEMENT MARKING FT	EDGE LINE, 6" (WHITE) MILE	EDGE LINE, 6" (YELLOW) MILE	LANE LINE, 6" MILE	CHANNELIZING LINE, 12" FT	STOP LINE FT
226	ELY-4*	RAMP C	429+40	436+65	LT			10		80															
	LL-2*	RAMP C	429+40	436+65	LT	10				80											0.14				
	ELW-5*	RAMP C	429+40	436+65	Ø															0.14		0.14			
	BRG-4	RAMP C	432+75	435+06	RT						4														
	SL-1*	RAMP C	434+74		LT																			24	
	BRB-5	RAMP C	435+06	437+16	RT					4															
	BRB-3	IR-71	435+36	443+30	LT					9															
	BRB-4	IR-71	435+36	443+30	RT					9															
	BRG-5	RAMP C/RAMP H	437+16	480+43	RT						45														
	CH-7	IR-71	436+61	443+85	RT		20			40						724									
	CH-8	RAMP C	436+65	443+85	LT		19			40						720									
	LL-3	RAMP C	436+65	455+00	LT	23				80			0.35												
	ELW-6	RAMP C/RAMP H	436+65	37+48	Ø						1.03														
	LL-4	IR-71	443+85	464+00	RT	26				80			0.38												
227	CH-9	RAMP H	455+00	464+00	LT		24			40					900										
228	CH-10	IR-71	459+50	464+07	RT		13			40					457										
	CH-11	RAMP H	459+46	463+99	LT		13			40					453										
	CM-2	IR-71	459+50	464+07	RT										160										
	LA-1	RAMP H	463+36		LT										1										
	ELY-5	RAMP H	463+99	480+68	RT			21		80		0.32													
	DTD-2	RAMP H	464+00	474+97	RT	10				120						1097									
	ELW-7	RAMP K	64+08	76+54	Ø						0.24														
	CH-12	IR-71	464+05	476+00	RT		31			40						1195									
	CH-13	IR-71 NB ONRAMP	464+00	476+00	RT		31			40						1200									
	CH-14	IR-71 NB ONRAMP	464+00	474+76	RT		28			40						1076									
	CH-15	RAMP K	64+06	74+79	LT		28			40						1073									
	CM-3	IR-71 NB ONRAMP	464+00	474+76	RT										255										
	BRG-6	RAMP K	67+99	71+76	RT						5														
* INDICATES ITEM 646																									
SUBTOTALS THIS SHEET						69	207	31			22	54	1.27	0.32	0.73	7798	415	1	1097	0	0.14	0.14	0.14	0	24
SUBTOTALS PREVIOUS SHEET						94	77	75			104	23	1.77	2.55	1.60	2684	242	0	2420	2420	0.21	0.21	0.04	186	0
TOTALS CARRIED TO NEXT SHEET						163	284	106			126	77	3.03	2.86	2.32	10482	657	1	3517	2420	0.34	0.34	0.17	186	24

PAVEMENT MARKING ESTIMATED QUANTITIES

FRA - 71 - 9.07

CALCULATED
HJF
CHECKED
DSS

219
264

...Northbound\92615T0521.dgn 5/29/2019 8:14:49 AM mswrntt

SHEET NO.	REFERENCE NO.	LOCATION	STATION		SIDE	621	621	621	621		626	626	644	644	644	644	644	644	644	646	646	646	646	646	
			FROM	TO		RPM (1-WAY, WHITE) EACH	RPM (2-WAY, WHITE-RED) EACH	RPM (2-WAY, YELLOW RED) EACH	RAISED PAVEMENT MARKER REMOVED EACH	RPM SPACING	BARRIER REFLECTOR, TYPE 1 (1 WAY) EACH	BARRIER REFLECTOR, TYPE 2 (1 WAY) EACH	EDGE LINE, 6" (WHITE) MILE	EDGE LINE, 6" (YELLOW) MILE	LANE LINE, 6" MILE	CHANNELIZING LINE, 12" FT	CHEVRON MARKING FT	LANE REDUCTION ARROW EACH	DOTTED LINE, 6" FT	REMOVAL OF PAVEMENT MARKING FT	EDGE LINE, 6" (WHITE) MILE	EDGE LINE, 6" (YELLOW) MILE	LANE LINE, 6" MILE	CHANNELIZING LINE, 12" FT	STOP LINE FT
229	LA-2	RAMP H	470+00		LT																				
	ELY-6	RAMP K	74+79	76+53	LT			3	80				0.03				1								
	ELW-8	IR-71	474+76	476+58	RT							0.03													
	BRB-5	IR-71	474+66	476+19	RT						3														
	BRB-6	RAMP K	74+60	76+12	LT						3														
	LL-5	IR-71	476+00	476+56	RT	1				120				0.01											
	ELY-7*	IR-71	476+54	478+36	RT																	0.03			
	LL-6*	IR-71	476+55	478+37	RT	2				120													0.03		
	LL-7*	IR-71	476+56	478+38	RT	2				120													0.03		
	ELW-9*	IR-71	476+58	478+40	RT																0.03				
	ELY-8*	RAMP K	76+53	78+33	LT			3	80													0.03		0.03	
	ELW-10*	RAMP K	76+54	78+34	LT																0.03				
ELY-9	IR-71	478+36	483+40	RT																					
LL-8	IR-71	478+37	483+40	RT	5				120																
LL-9	IR-71	478+38	483+41	RT	5				120																
ELW-11	IR-71	478+40	483+41	RT								0.09													
ELY-10	RAMP K/IR-71	78+33	480+54	LT/RT			3	80																	
ELW-12	RAMP K/IR-71	78+34	480+54	LT/RT								0.04													
230	ELY-11*	IR-71	483+40	484+00	RT																	0.01			
	LL-10*	IR-71	483+40	484+00	RT	1				120													0.01		
	LL-11*	IR-71	483+41	484+00	RT	1				120													0.01		
	ELW-13*	IR-71	483+41	484+00	RT															0.01					
231	CH-16	RAMP H	480+68	33+26	LT		16		40															597	
	CH-17	RAMP H	480+68	33+26	LT		16		40															597	
ESTIMATED NUMBER OF RPM REMOVALS									400																
* INDICATES ITEM 646																									
SUBTOTALS THIS SHEET						17	32	9	400		6	0	0.17	0.17	0.20	1194	0	1	0	0	0.08	0.08	0.09	0	0
SUBTOTALS PREVIOUS SHEET						163	284	106			126	77	3.03	2.86	2.32	10482	657	1	3517	2420	0.34	0.34	0.17	186	24
TOTALS CARRIED TO GENERAL SUMMARY							611		400		132	77	6.23	2.53	11676	657	2	3517	2420	0.85	0.26	186	24		

PAVEMENT MARKING ESTIMATED QUANTITIES

FRA - 71 - 9.07

CALCULATED
HJF
CHECKED
DSS

220
264

NOTES:

1. REMOVE CONFLICTING PAVEMENT MARKINGS.
2. INSTALL RAISED PAVEMENT MARKERS PER ODOT SCD TC-65.10 AND TC-65.11.
3. FOR SIGN ELEVATION VIEW OF CANTILEVER SIGN, SEE SHEET 232.
4. FOR SIGN ELEVATION VIEW OF EXISTING TRUSS, SEE SHEET 233.

PAVEMENT MARKING LEGEND

- | | | | |
|---------|--|--------|--|
| (CH) | ITEM 644 - CHANNELIZING LINE, 12" | (LA) | LANE ARROW |
| (LL) | ITEM 644 - LANE LINE, 6" | (BRB) | BARRIER REFLECTOR, TYPE 1, ONE WAY |
| (ELW) | ITEM 644 - EDGE LINE, 6" (WHITE) | (BRG) | BARRIER REFLECTOR, TYPE 2, ONE WAY |
| (ELY) | ITEM 644 - EDGE LINE, 6" (YELLOW) | (RPM) | RAISED PAVEMENT MARKER |
| (DTD) | ITEM 644 - DOTTED LINE, 12", 3' LINE 9' GAP, WHITE (LANE DROP) | (REM) | REMOVAL OF PAVEMENT MARKING REQUIRED (BY TYPE) |
| (CM) | ITEM 644 - CHEVRON MARKING, WHITE, 24" | (XX-#) | PAVEMENT MARKING, QUANTIFIED |
| (SL-1*) | ITEM 646 - STOP LINE | (XX-#) | PAVEMENT MARKING, PREVIOUSLY QUANTIFIED |
| | | (*) | ITEM 646 PAVEMENT MARKING |

SIGNING LEGEND

- | | |
|--------|-------------------------------|
| | EXISTING SIGN (NO WORK) |
| | PROPOSED SIGN |
| | EXISTING SIGN TO BE REMOVED |
| + | EXISTING SIGN POST |
| + | PROPOSED SIGN POST |
| (S-#) | GROUND MOUNTED SIGN |
| (OS-#) | OVERHEAD SUPPORT MOUNTED SIGN |
| (R-#) | REMOVED SIGN |

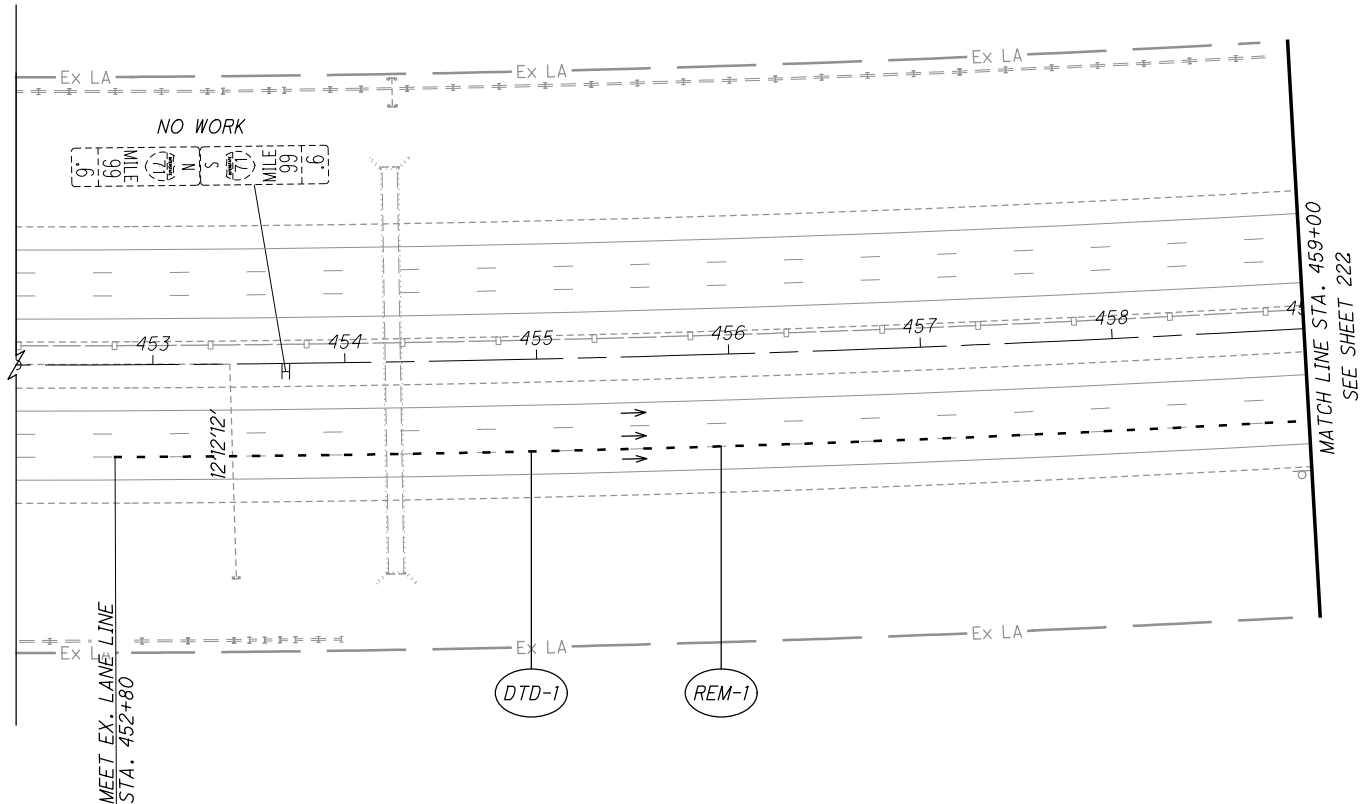
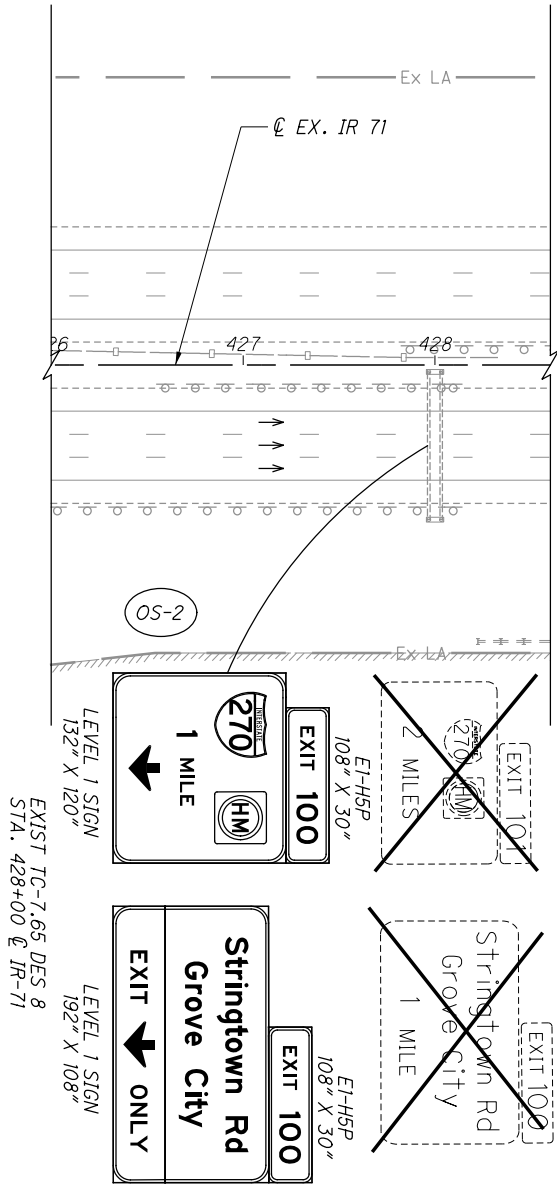
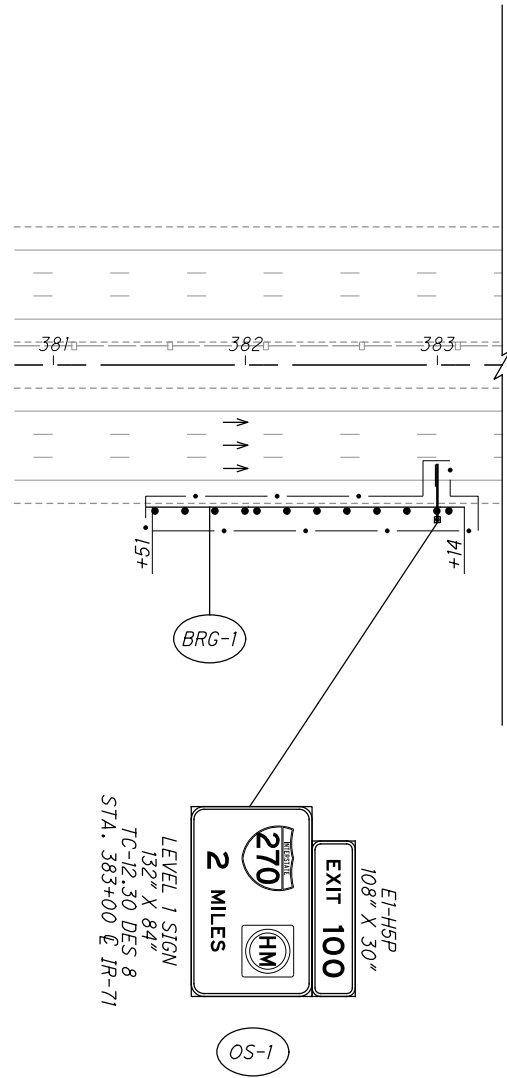


CALCULATED ACW
CHECKED WAA

TRAFFIC CONTROL PLAN
STA. 381+00 TO STA. 459+00

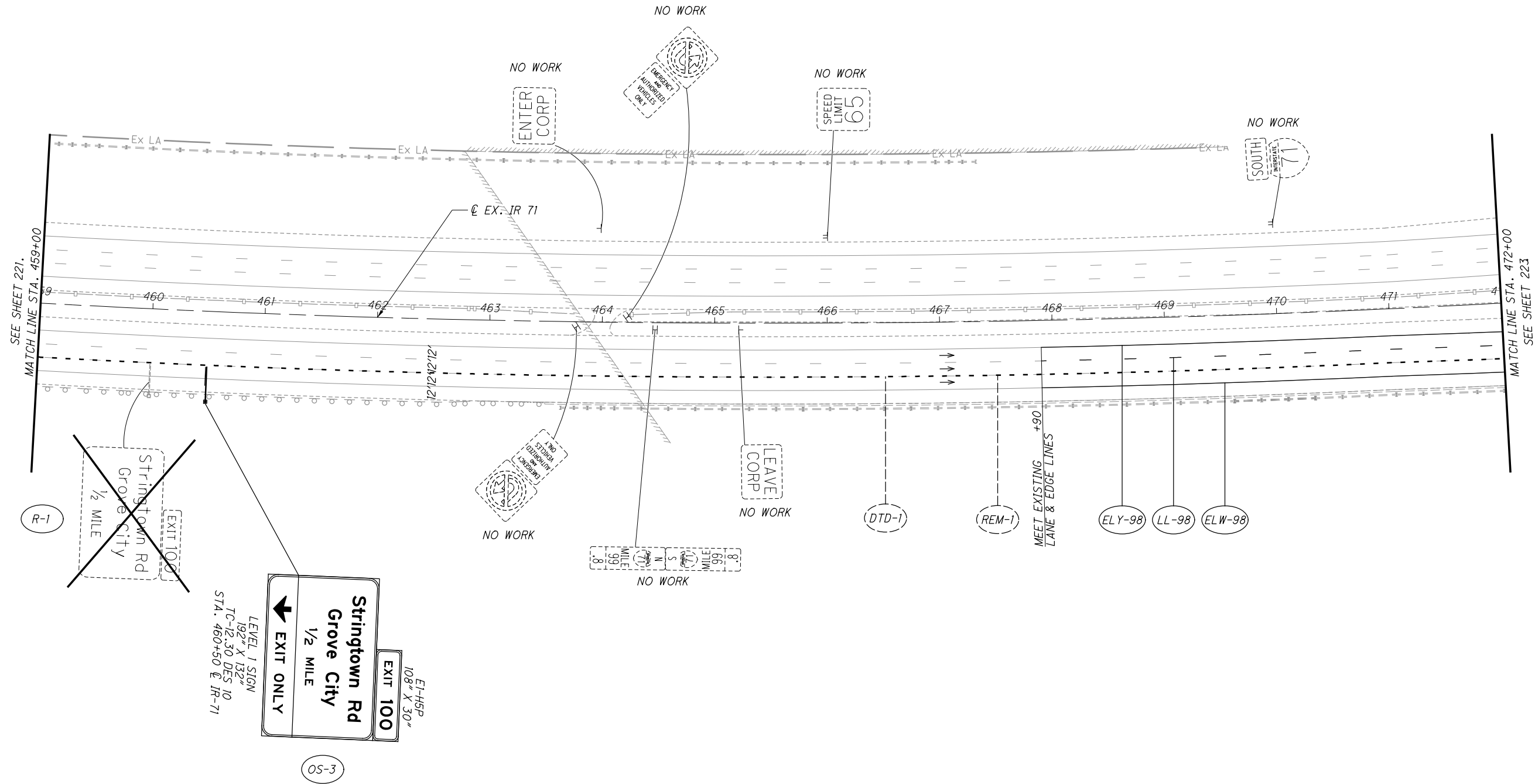
FRA-71-9.07

221
264



NOTES:

1. FOR TRAFFIC CONTROL LEGEND, SEE SHEET 221.
2. REMOVE CONFLICTING PAVEMENT MARKINGS.
3. INSTALL RAISED PAVEMENT MARKERS PER ODOT SCD TC-65.10 AND TC-65.11.
4. FOR SIGN ELEVATION VIEW OF CANTILEVER SIGN, SEE SHEET 234.



...Northbound\92615TP502.dgn 5/29/2019 8:15:00 AM mswwhitt

CALCULATED ACW
CHECKED WAA

0 50 100
25
HORIZONTAL SCALE IN FEET

TRAFFIC CONTROL PLAN
STA. 459+00 TO STA. 472+00

FRA-71-9.07

NOTES:

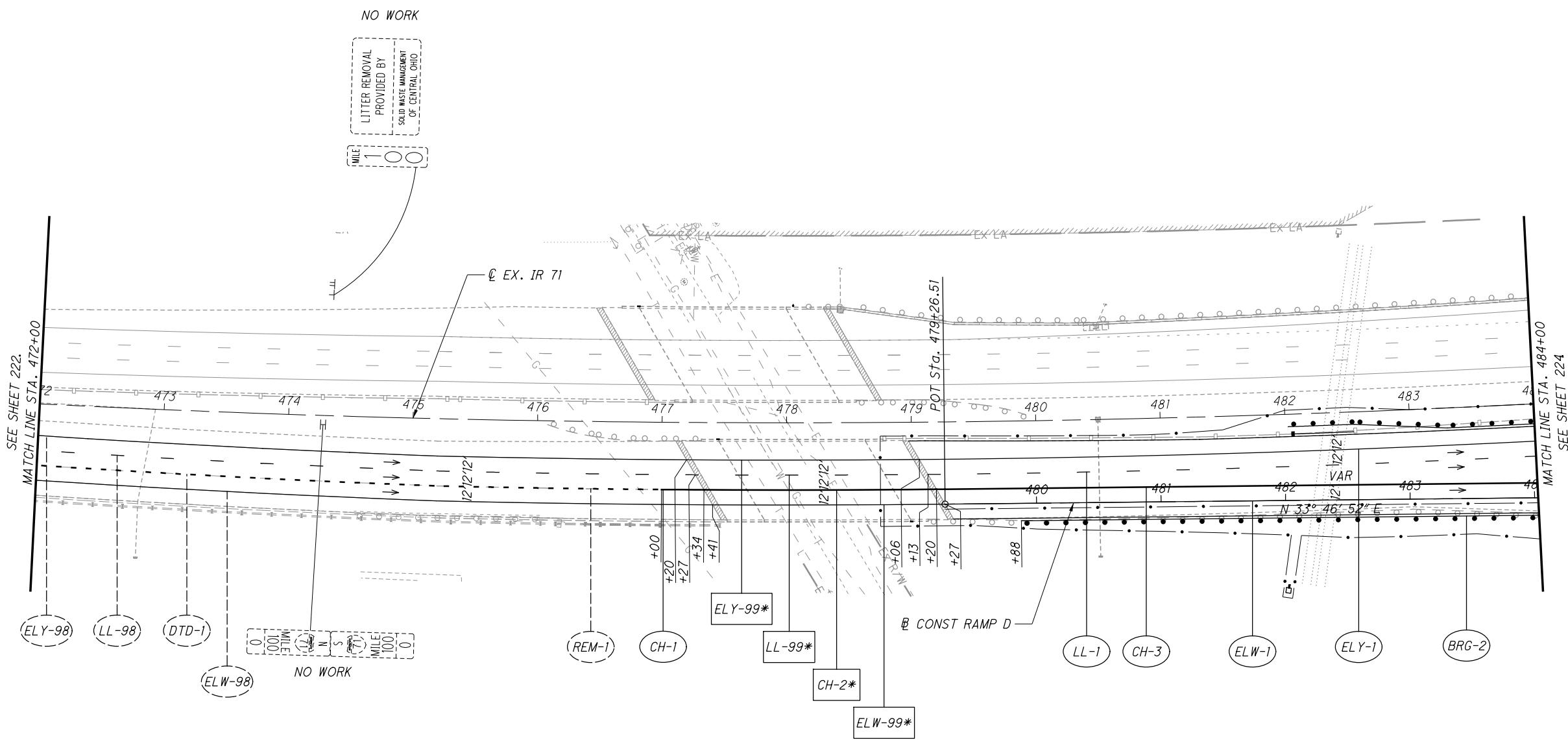
1. FOR TRAFFIC CONTROL LEGEND, SEE SHEET 221
2. REMOVE CONFLICTING PAVEMENT MARKINGS.
3. INSTALL RAISED PAVEMENT MARKERS PER ODOT SCD TC-65.10 AND TC-65.11.
4. INSTALL ITEM 646 MARKINGS ON BRIDGE DECKS.



CALCULATED
ACW
CHECKED
WAA

TRAFFIC CONTROL PLAN
STA. 472+00 TO STA. 484+00

FRA-71-9.07

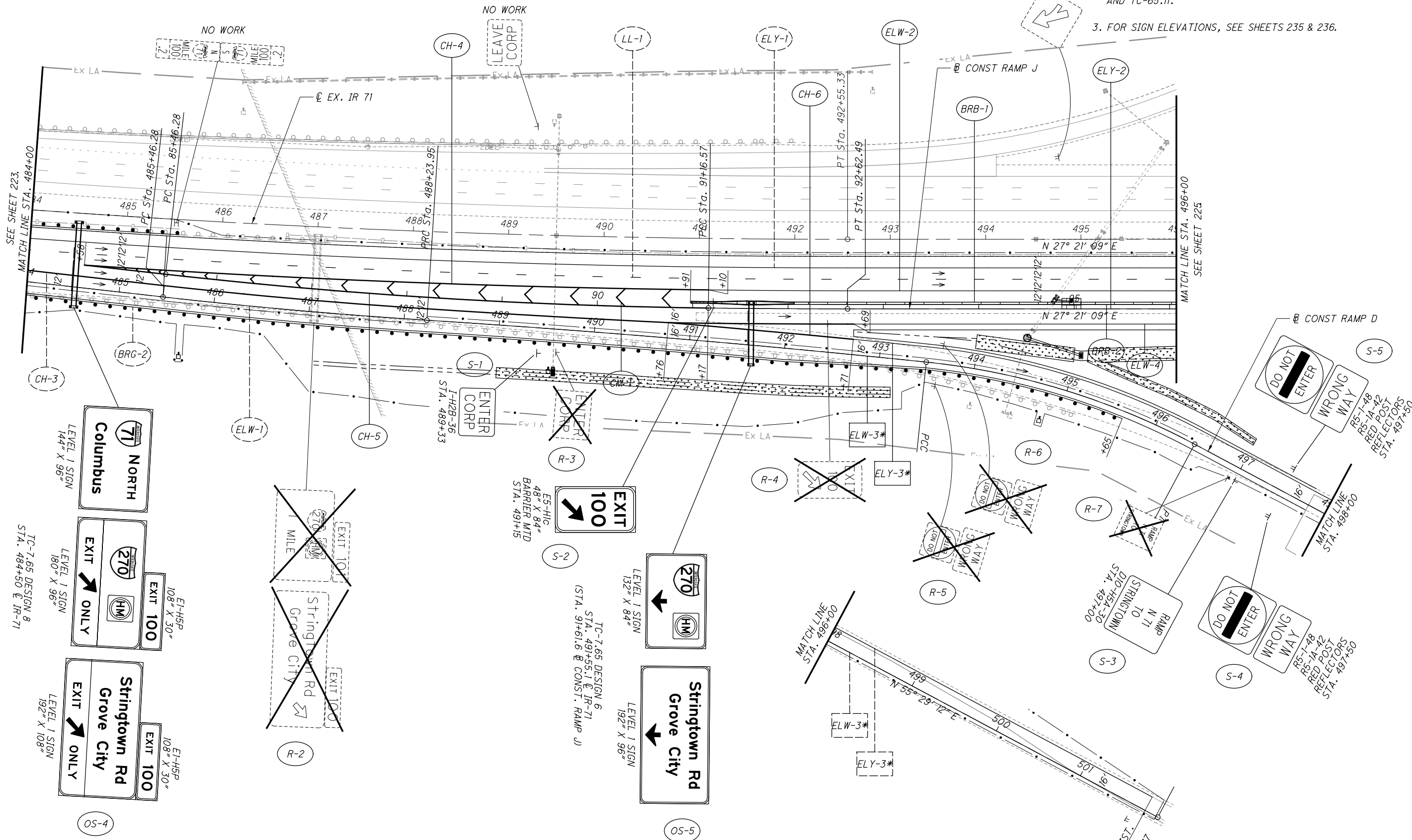


...Northbound\92615TP503.dgn 5/29/2019 8:15:05 AM mswwhitt

- NOTES:
1. FOR TRAFFIC CONTROL LEGEND, SEE SHEET 221
 2. INSTALL RAISED PAVEMENT MARKERS PER ODOT SCD TC-65.10 AND TC-65.11.
 3. FOR SIGN ELEVATIONS, SEE SHEETS 235 & 236.

CALCULATED ACW
CHECKED WAA

0 50 100
25
HORIZONTAL SCALE IN FEET



TRAFFIC CONTROL PLAN
STA. 484+00 TO STA. 496+00

FRA-71-9.07

NOTES:

1. FOR TRAFFIC CONTROL LEGEND, SEE SHEET 221.
2. INSTALL RAISED PAVEMENT MARKERS PER ODOT SCD TC-65.10 AND TC-65.11.
3. FOR SIGN ELEVATION VIEW, SEE SHEET 237.

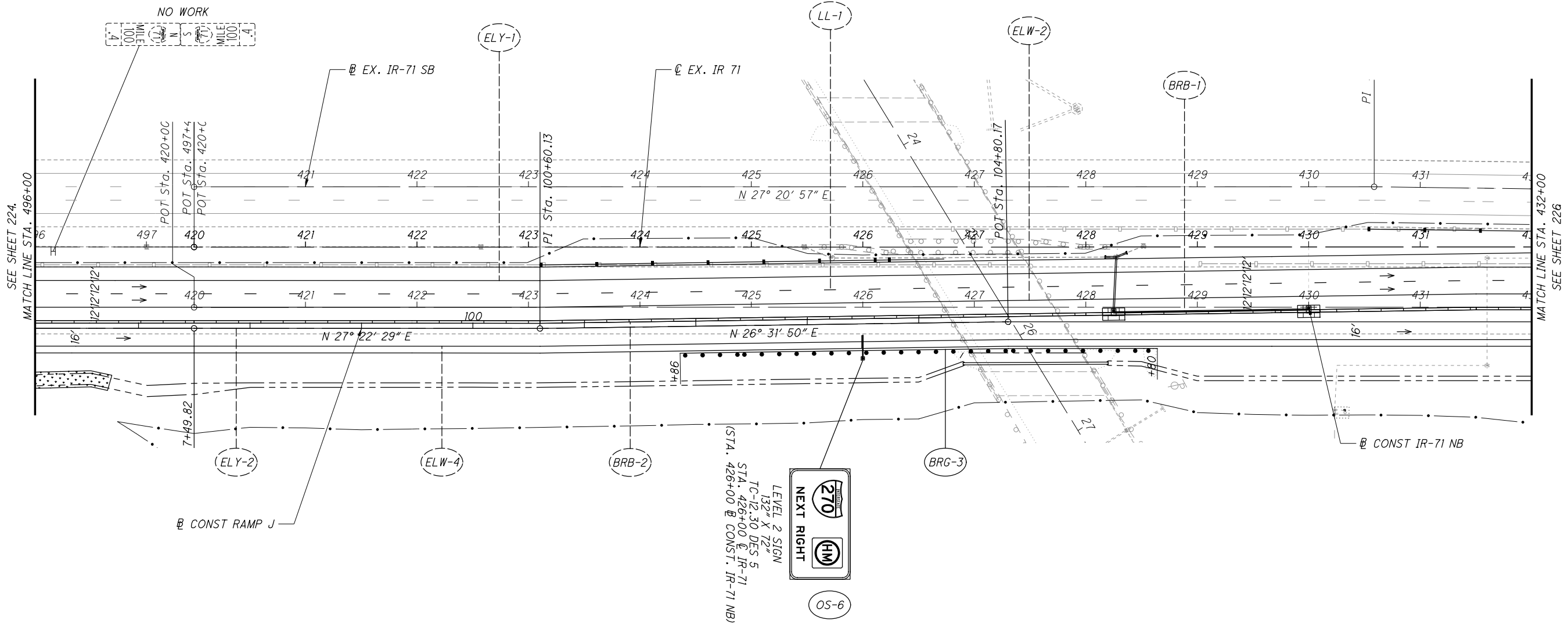


CALCULATED ACW
CHECKED WAA

TRAFFIC CONTROL PLAN
STA. 496+00 TO STA. 432+00

FRA-71-9.07

225
264



NOTES:

1. FOR TRAFFIC CONTROL LEGEND, SEE SHEET 221
2. INSTALL RAISED PAVEMENT MARKERS PER ODOT SCD TC-65.10 AND TC-65.11.

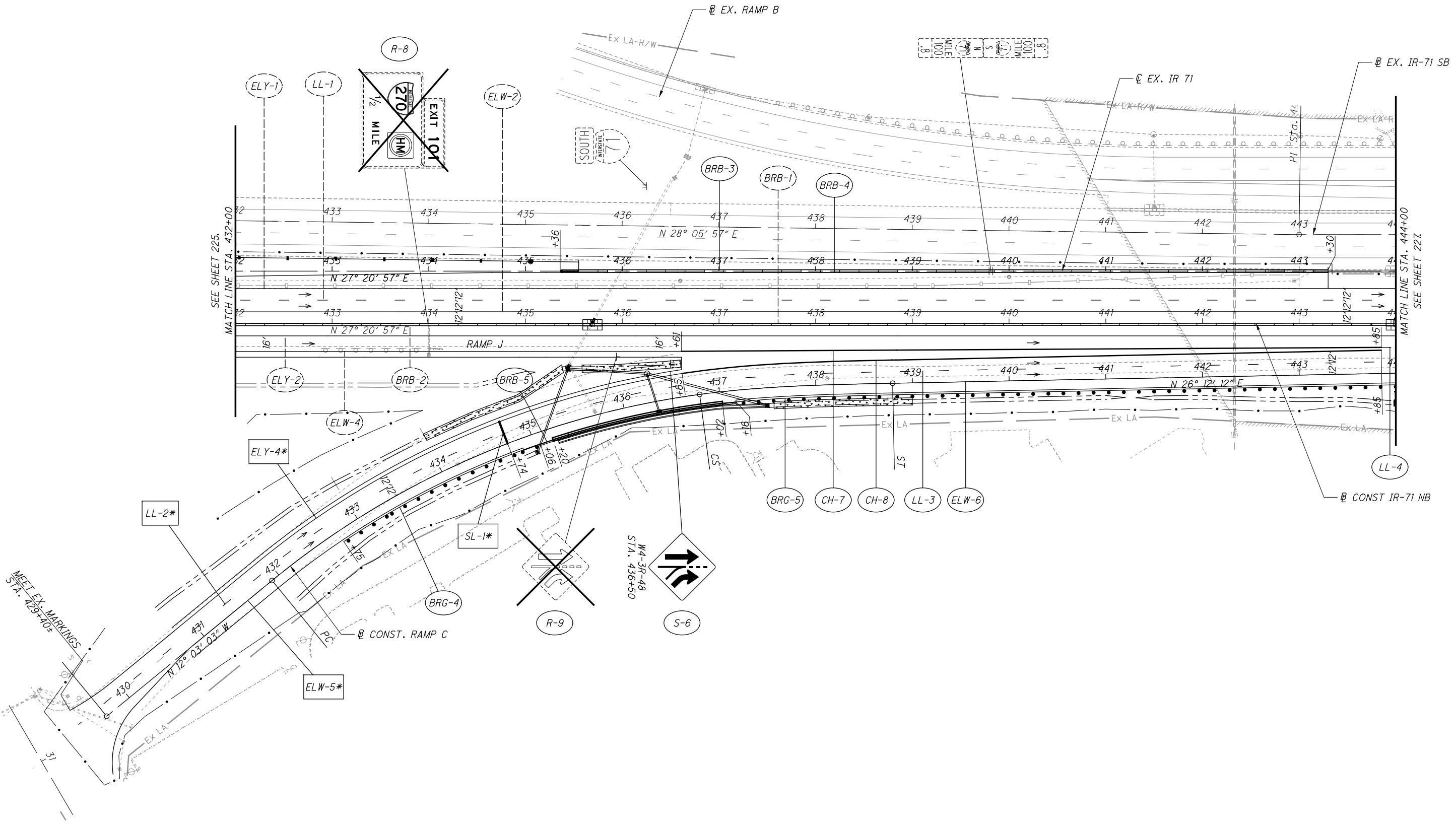


CALCULATED ACW
CHECKED WAA

TRAFFIC CONTROL PLAN
STA. 432+00 TO STA. 444+00

FRA-71-9.07

...Northbound\92615TP506.dgn 8/11/2019 2:24:15 PM hijoucher



NOTES:

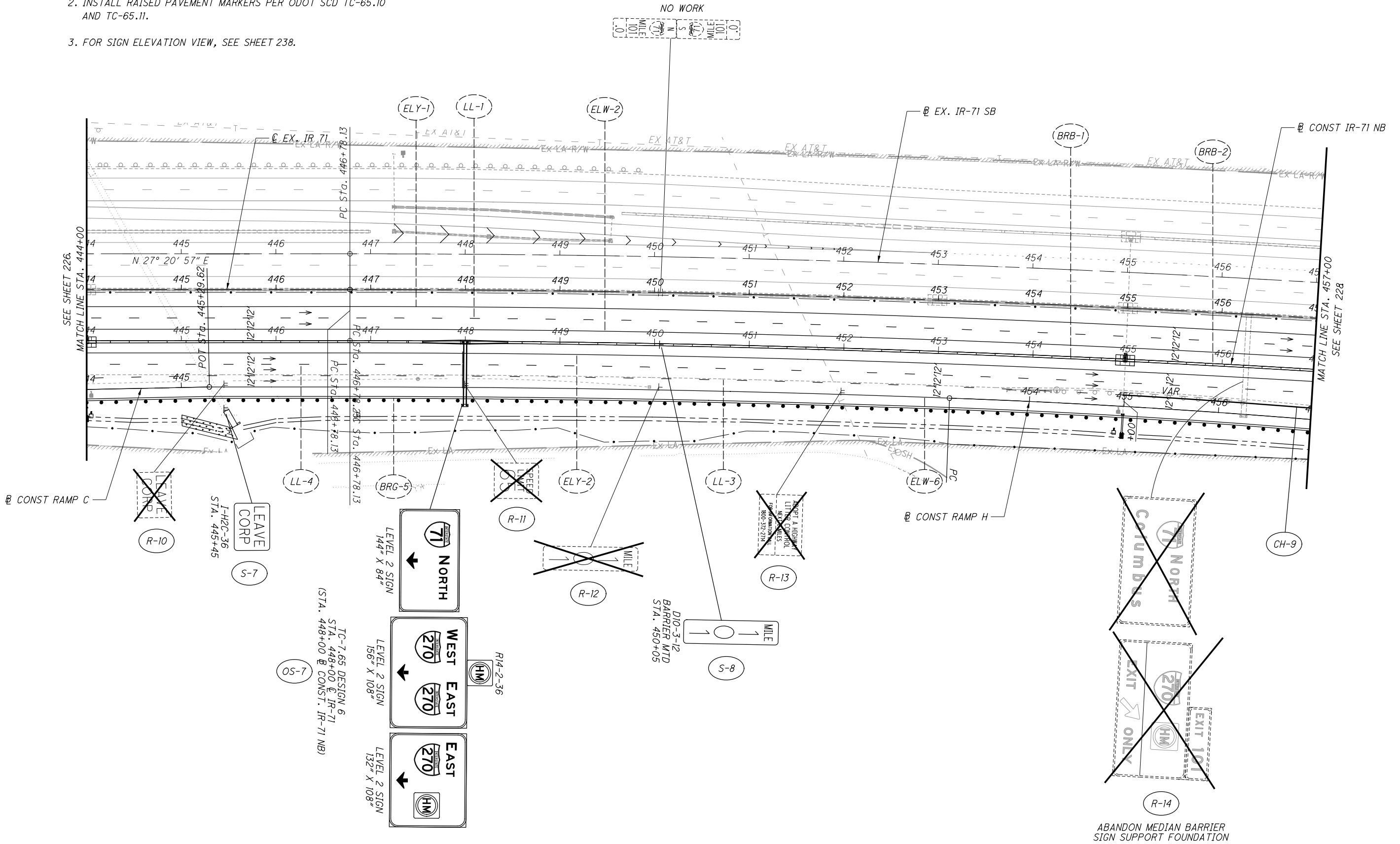
1. FOR TRAFFIC CONTROL LEGEND, SEE SHEET 221
2. INSTALL RAISED PAVEMENT MARKERS PER ODOT SCD TC-65.10 AND TC-65.11.
3. FOR SIGN ELEVATION VIEW, SEE SHEET 238.

0 50 100
25
HORIZONTAL
SCALE IN FEET

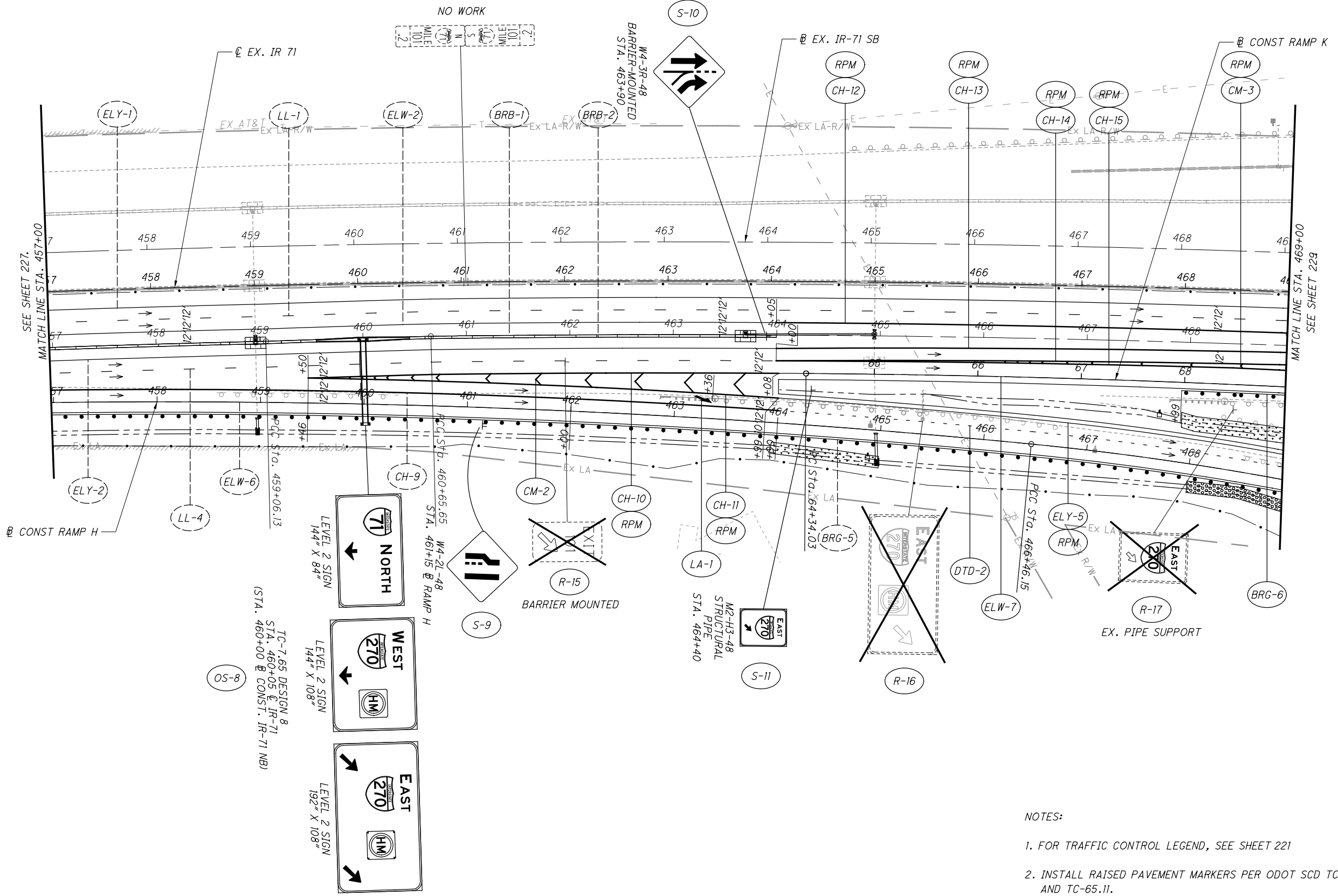
CALCULATED
ACW
CHECKED
WAA

TRAFFIC CONTROL PLAN
STA. 444+00 TO STA. 457+00

FRA-71-9.07



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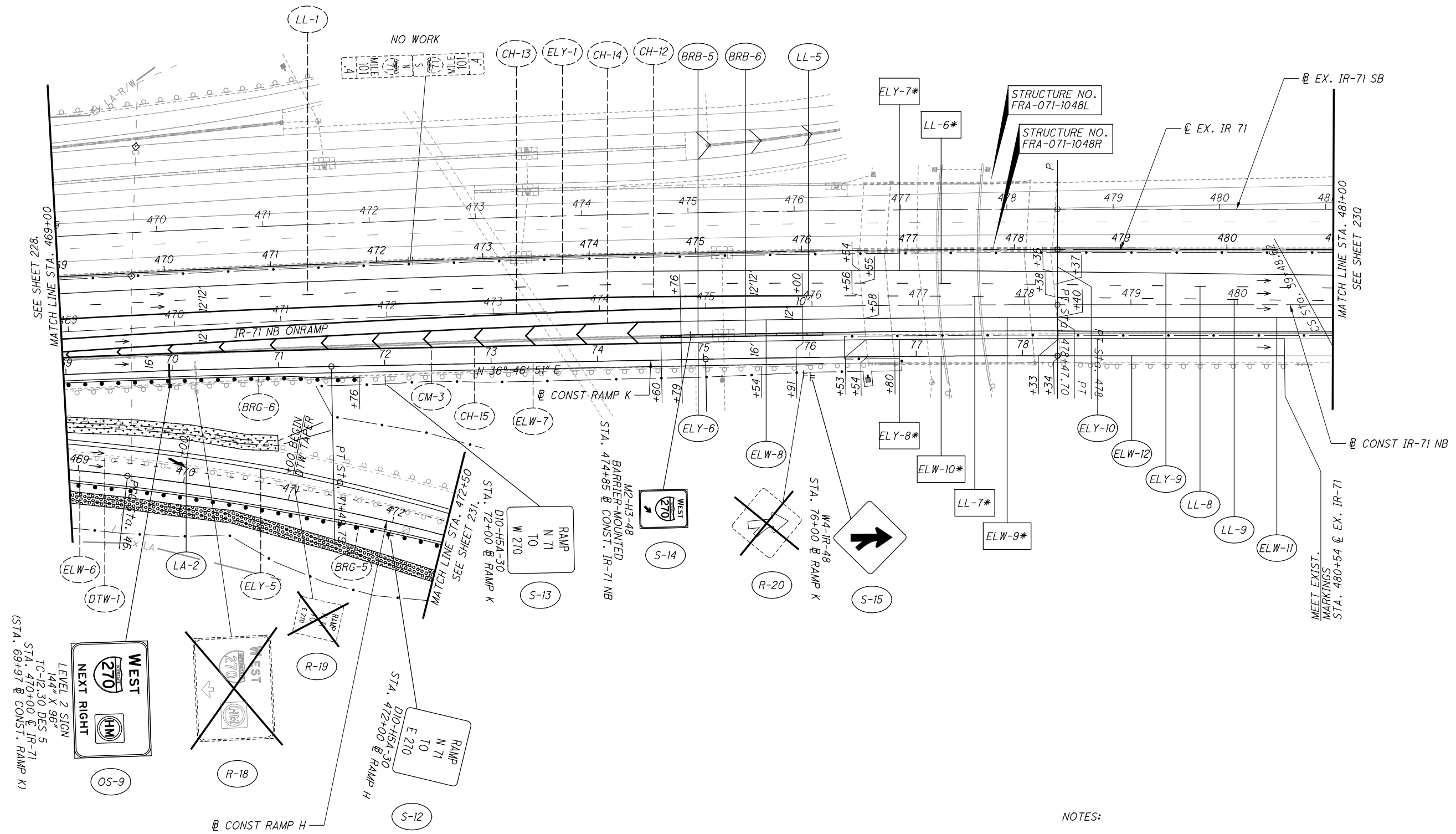
- NOTES:
1. FOR TRAFFIC CONTROL LEGEND, SEE SHEET 221
 2. INSTALL RAISED PAVEMENT MARKERS PER ODOT SCD TC-65.10 AND TC-65.11.
 3. FOR SIGN ELEVATION VIEW, SEE SHEET 239.

CALCULATED
ACW
CHECKED
WAA

0 50 100
25
HORIZONTAL
SCALE IN FEET

TRAFFIC CONTROL PLAN
STA. 457+00 TO STA. 469+00

FRA-71-9.07



- NOTES:
1. FOR TRAFFIC CONTROL LEGEND, SEE SHEET 221
 2. INSTALL RAISED PAVEMENT MARKERS PER ODOT SCD TC-65.10 AND TC-65.11.
 3. FOR SIGN ELEVATION VIEW, SEE SHEET 240.

CALCULATED ACW CHECKED WAA

0 50 100
25
HORIZONTAL SCALE IN FEET

TRAFFIC CONTROL PLAN
STA. 469+00 TO STA. 481+00

FRA-71-9.07

NOTES:

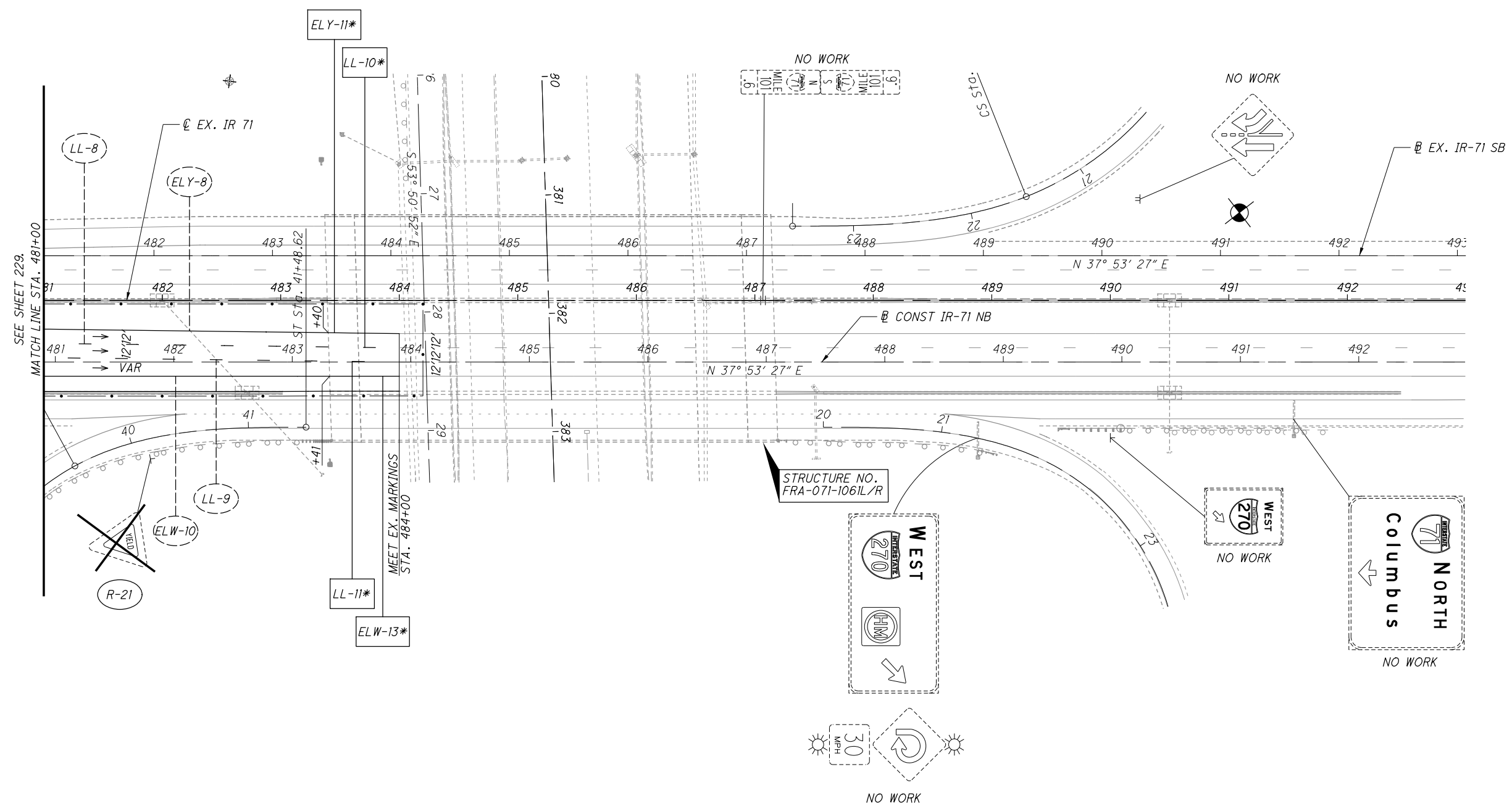
1. FOR TRAFFIC CONTROL LEGEND, SEE SHEET 221
2. INSTALL RAISED PAVEMENT MARKERS PER ODOT SCD TC-65.10 AND TC-65.11.
3. INSTALL ITEM 646 PAVEMENT MARKINGS ON BRIDGE DECK.

0 25 50 100
HORIZONTAL SCALE IN FEET

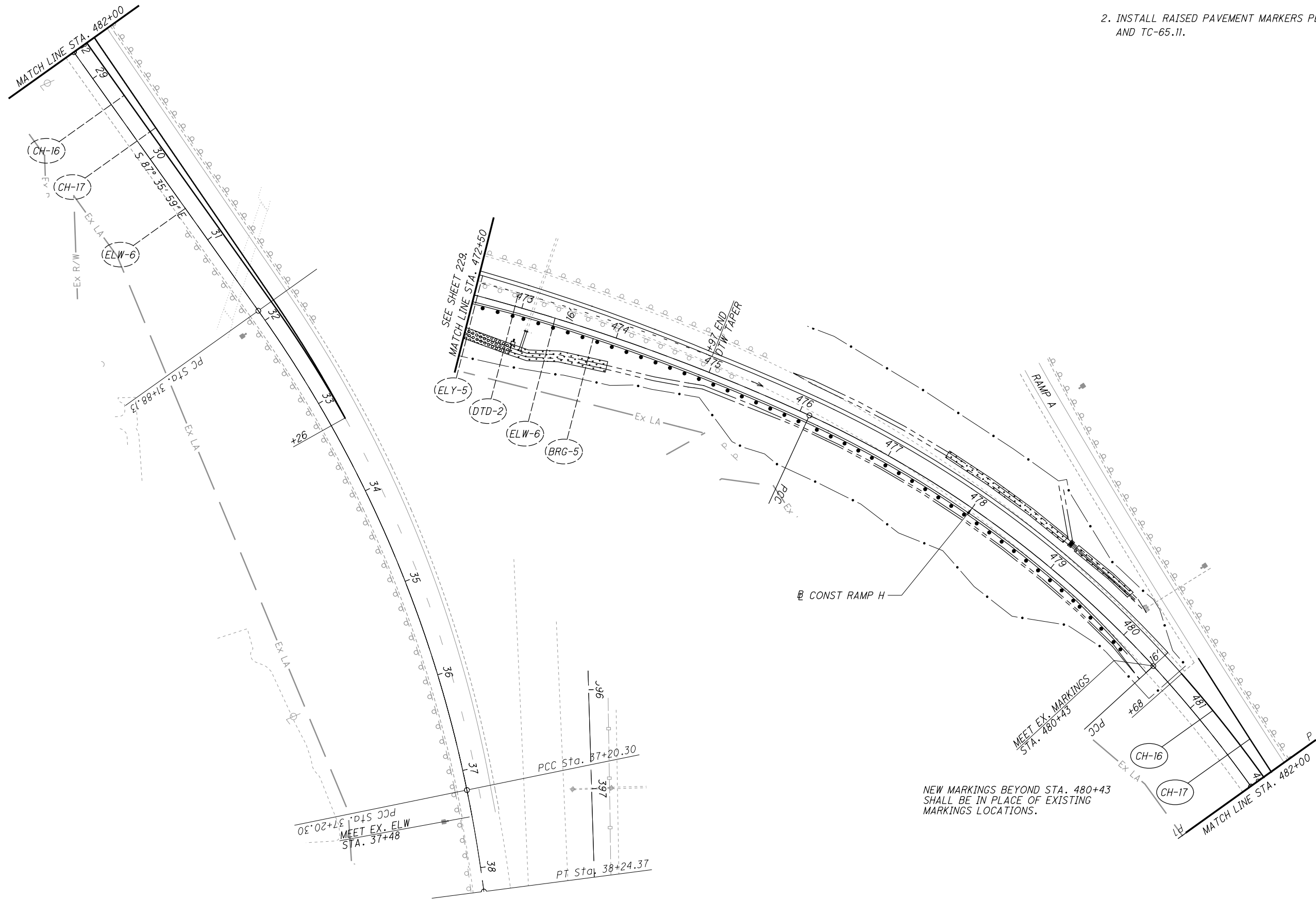
CALCULATED
ACW
CHECKED
WAA

TRAFFIC CONTROL PLAN
STA. 481+00 TO STA. 493+00

FRA-71-9.07



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NOTES:

1. FOR TRAFFIC CONTROL LEGEND, SEE SHEET 221
2. INSTALL RAISED PAVEMENT MARKERS PER ODOT SCD TC-65.10 AND TC-65.11.

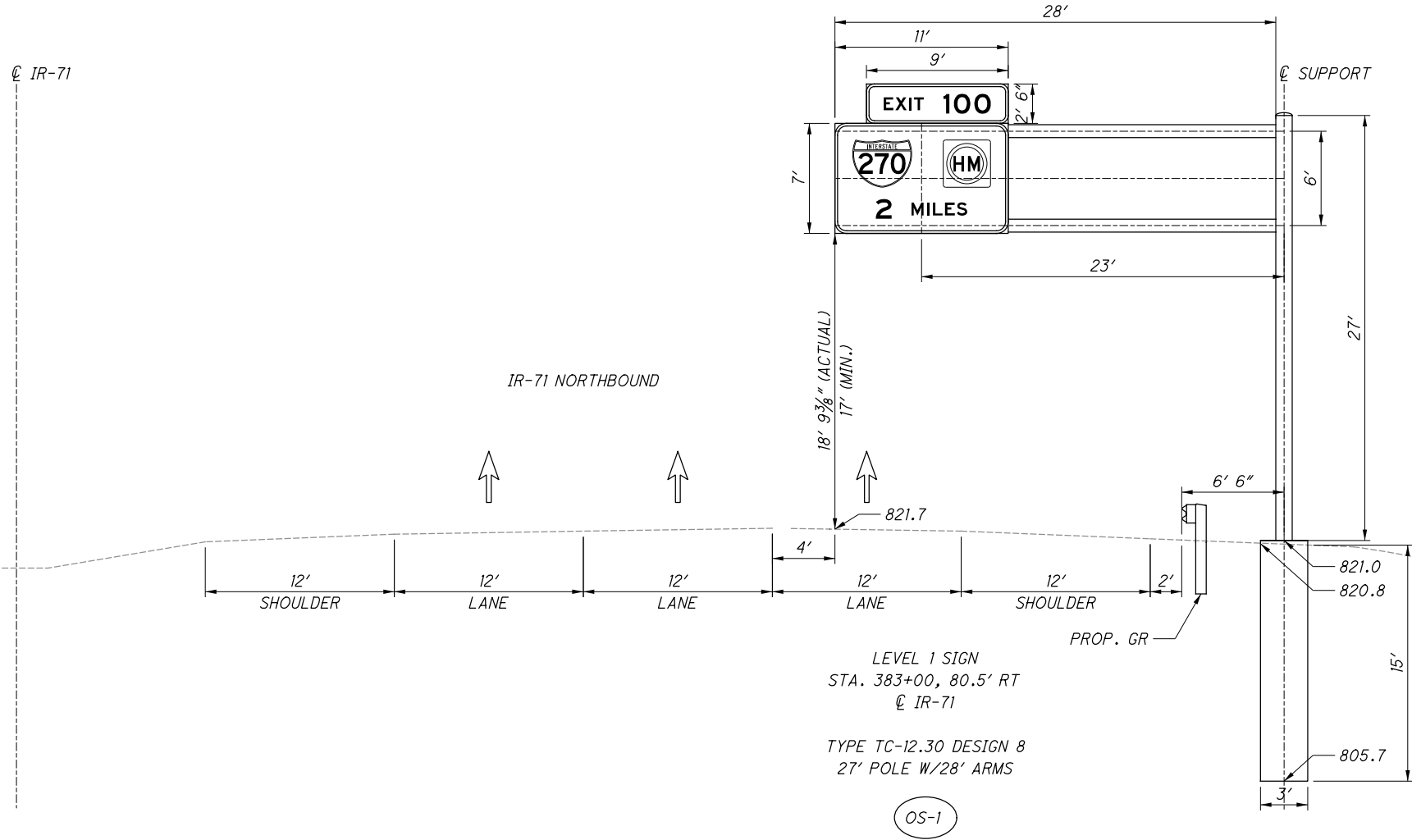
NEW MARKINGS BEYOND STA. 480+43 SHALL BE IN PLACE OF EXISTING MARKINGS LOCATIONS.

CALCULATED ACW
CHECKED WAA

0 50 100
HORIZONTAL SCALE IN FEET

TRAFFIC CONTROL PLAN - RAMP H
STA. 472+50 TO STA. 481+00

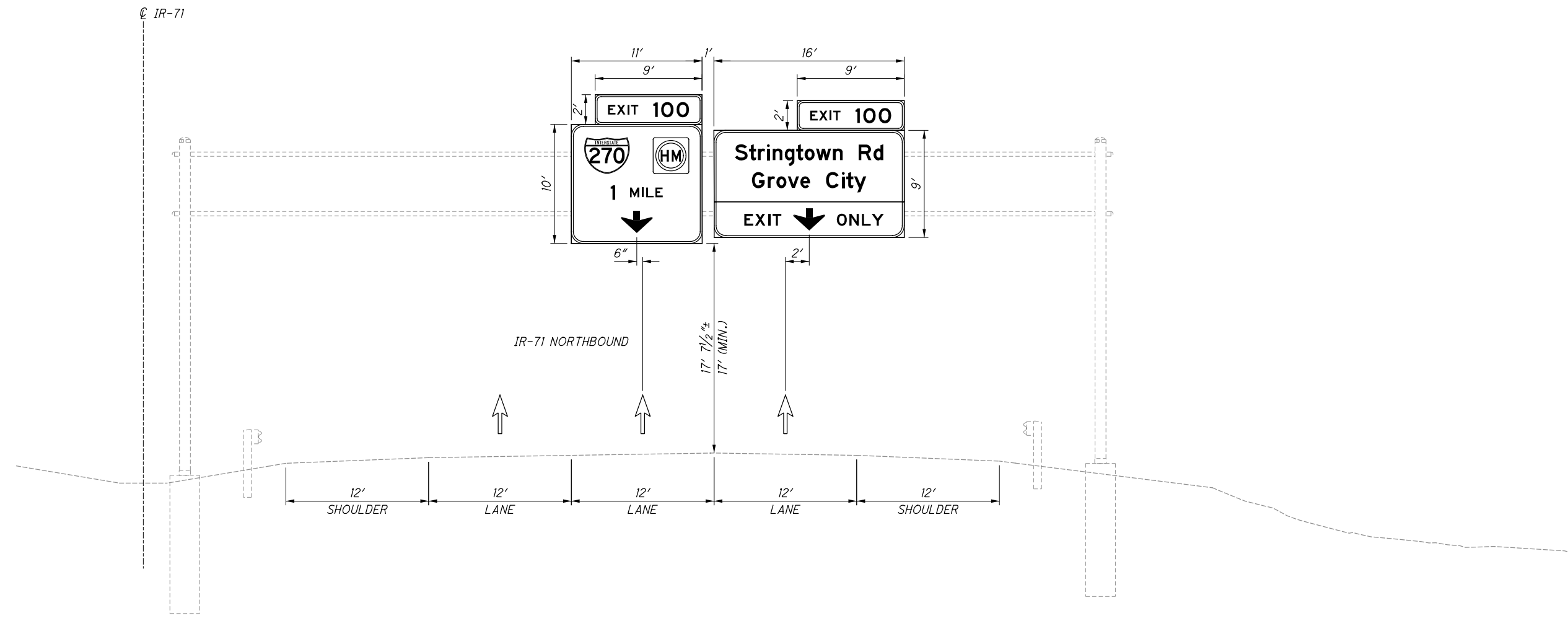
FRA-71-9.07



CALCULATED	HJF
CHECKED	WAA

OVERHEAD SIGN ELEVATION VIEW
OS-1 TC-12.30, DES. 8, STA 383+00 RT

FRA-71-9.07



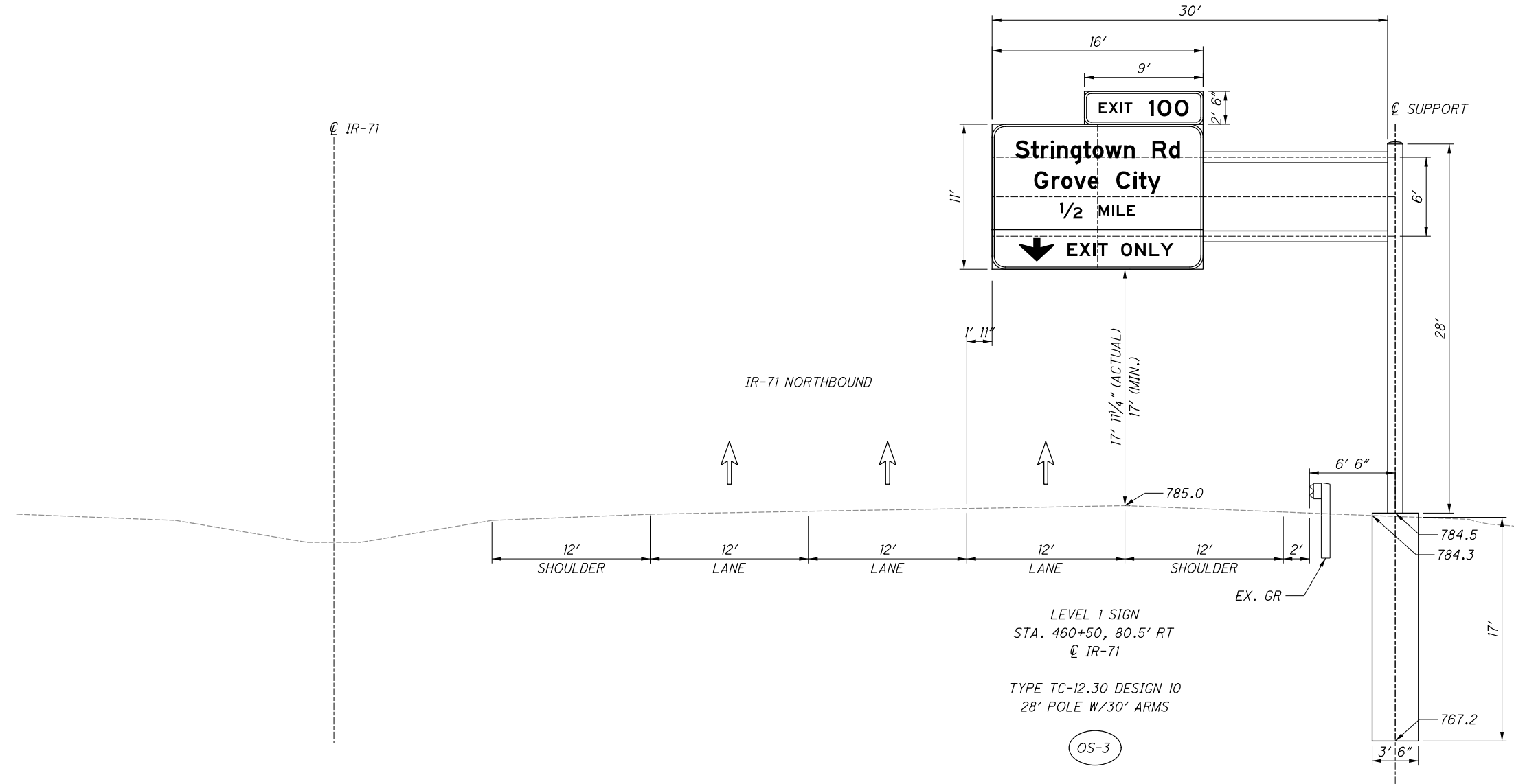
LEVEL 1 SIGN
 STA. 428+00 @ IR-71
 EXISTING TYPE TC-7.65 DESIGN 8

OS-2

CALCULATED	HJF
CHECKED	WAA

OVERHEAD SIGN ELEVATION VIEW, OS-2
EXISTING TC-7.65, DES. 8, STA 428+00 RT

FRA-71-9.07

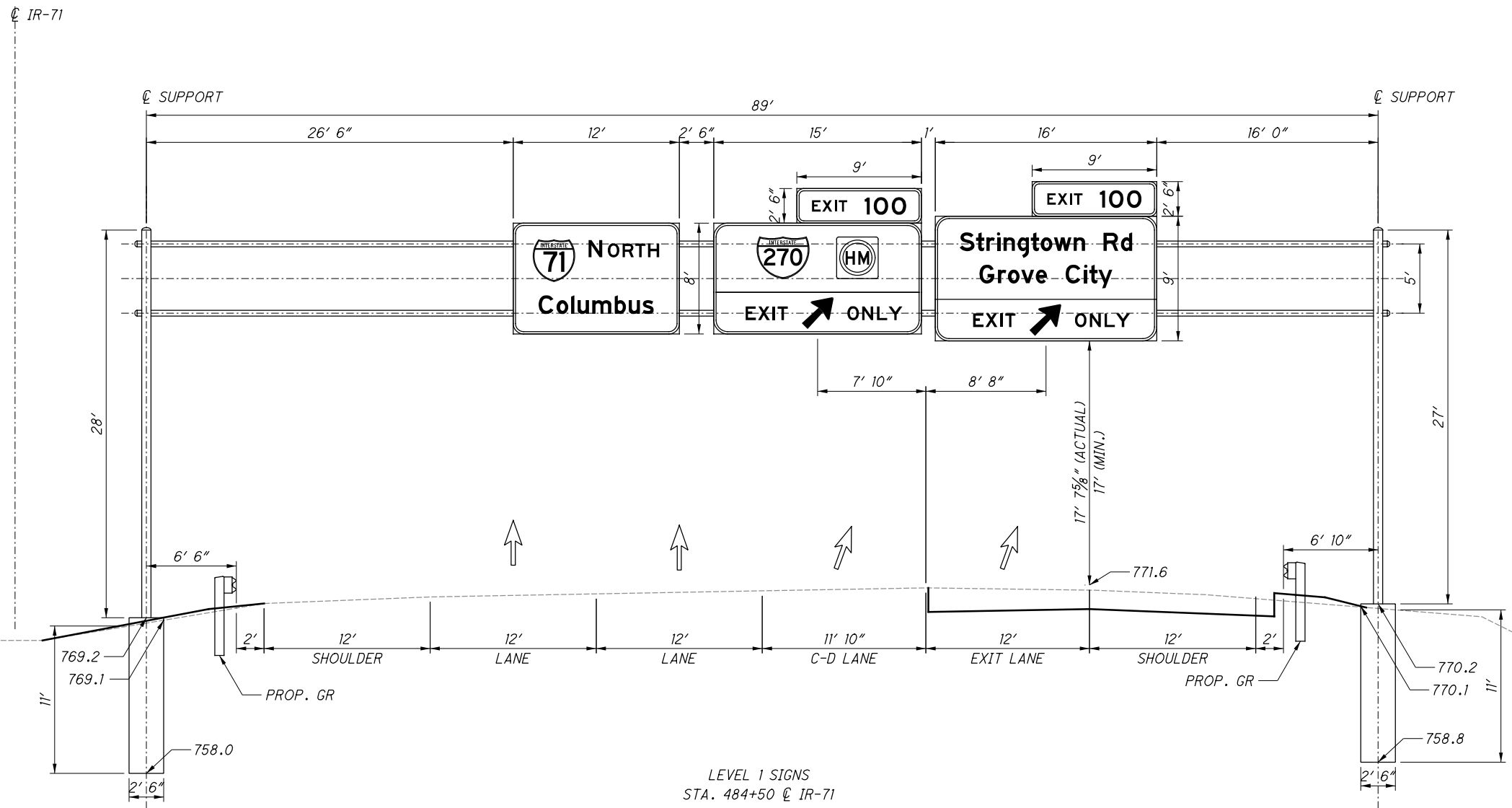


CALCULATED	HJF
CHECKED	WAA

OVERHEAD SIGN ELEVATION VIEW, OS-3
 TC-12.30, DES. 10, STA 460+50 RT

FRA-71-9.07

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LEVEL 1 SIGNS
 STA. 484+50 @ IR-71
 TYPE TC-7.65 DESIGN 8
 89' SPAN

OS-4

CALCULATED	HJF
CHECKED	WAA

OVERHEAD SIGN ELEVATION VIEW, OS-4
 TC-7.65, DES. 8, STA 484+50 RT

FRA-71-9.07

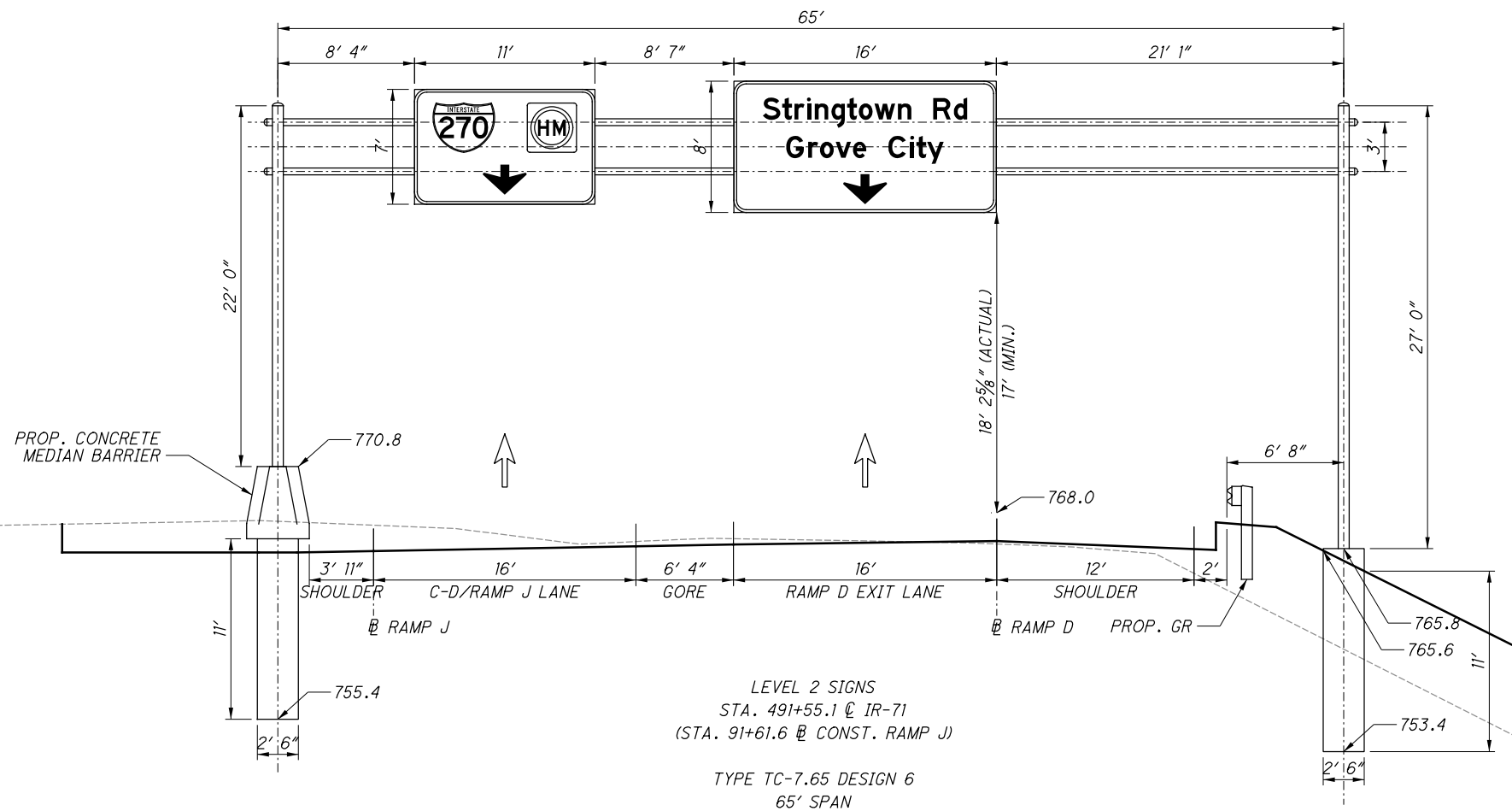
235
 264

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℄ IR-71

IR-71 NORTHBOUND

℄ SUPPORT



LEVEL 2 SIGNS
 STA. 491+55.1 ℄ IR-71
 (STA. 91+61.6 ℄ CONST. RAMP J)

TYPE TC-7.65 DESIGN 6
 65' SPAN

OS-5

CALCULATED	HJF
CHECKED	WAA

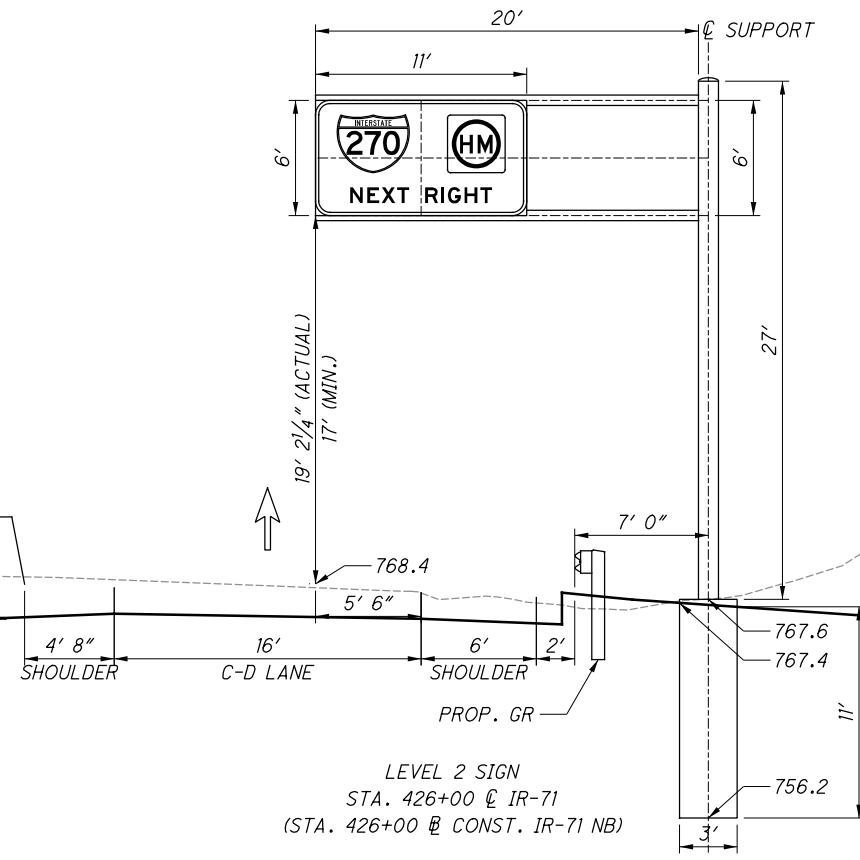
OVERHEAD SIGN ELEVATION VIEW, OS-5
TC-7.65, DES. 6, STA 491+55.1 RT

FRA-71-9.07

236
264

CL IR-71

IR-71 NORTHBOUND



LEVEL 2 SIGN
 STA. 426+00 CL IR-71
 (STA. 426+00 CONST. IR-71 NB)

TYPE TC-12.30 DESIGN 5
 27' POLE W/20' ARMS

OS-6

CALCULATED	HJF
CHECKED	WAA

OVERHEAD SIGN ELEVATION VIEW, OS-6
 TC-12.30, DES. 5, STA 426+00 RT

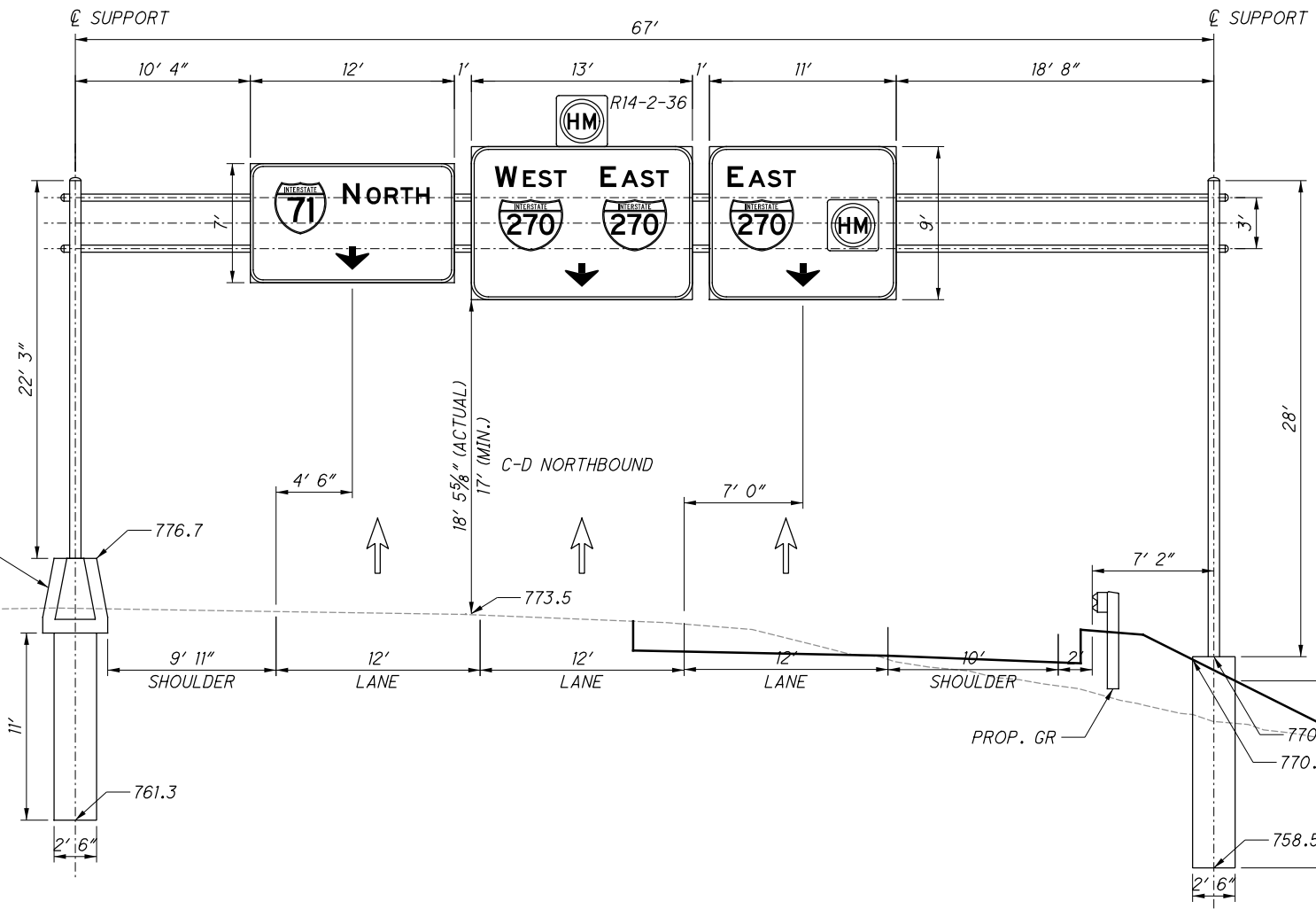
FRA-71-9.07

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IR-71

IR-71 NORTHBOUND

PROP. CONCRETE
MEDIAN BARRIER



LEVEL 2 SIGNS
 STA. 448+00 @ IR-71
 (STA. 448+00 @ CONST. IR-71 NB)

TYPE TC-7.65 DESIGN 6
 67' SPAN

OS-7

CALCULATED	HJF
CHECKED	WAA

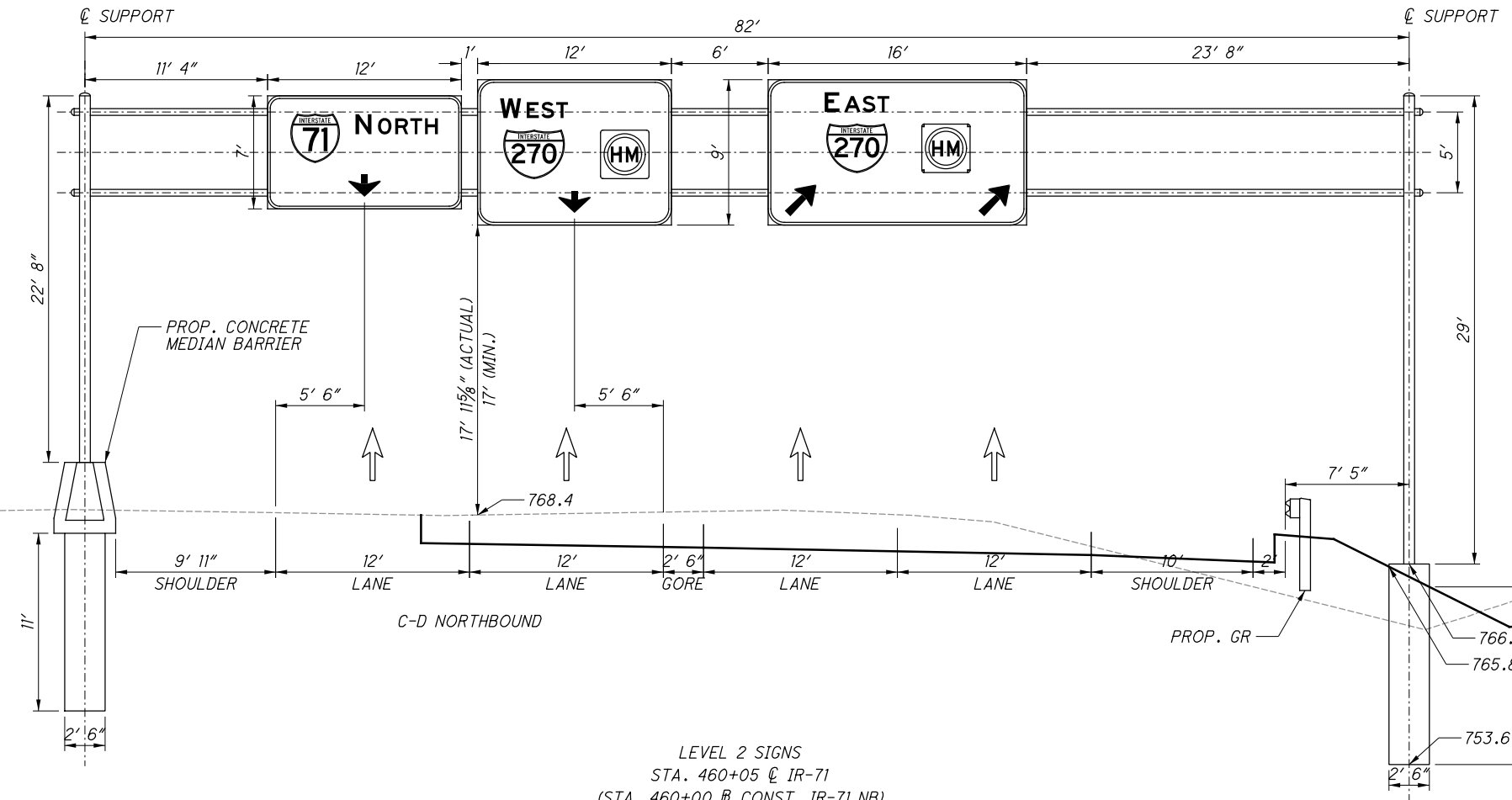
OVERHEAD SIGN ELEVATION VIEW, OS-7
 TC-7.65, DES. 6, STA 448+00 RT

FRA-71-9.07

238
264

IR-71

IR-71 NORTHBOUND



LEVEL 2 SIGNS
 STA. 460+05 @ IR-71
 (STA. 460+00 @ CONST. IR-71 NB)

TYPE TC-7.65 DESIGN 8
 82' SPAN

OS-8

CALCULATED	HJF
CHECKED	WAA

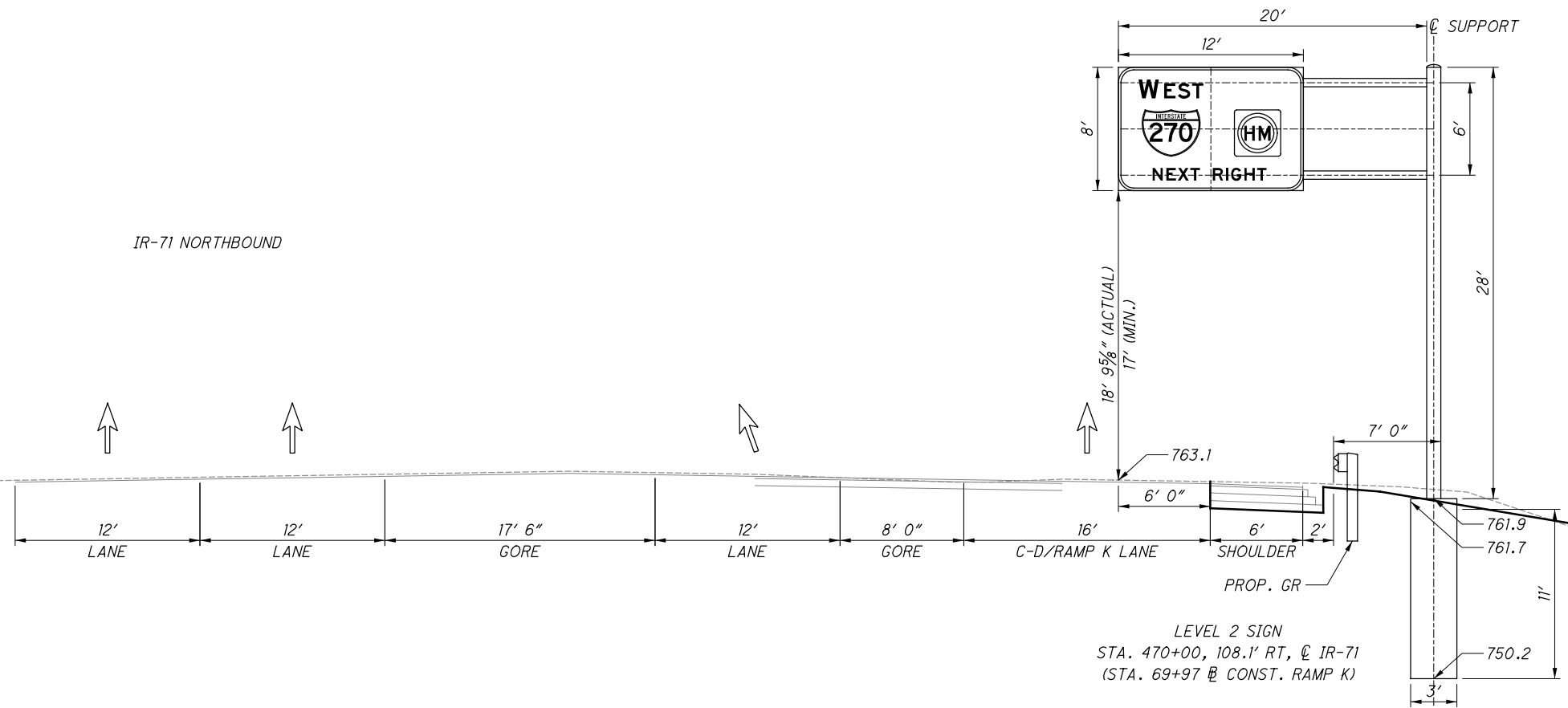
OVERHEAD SIGN ELEVATION VIEW, OS-8
 TC-7.65, DES. 8, STA 460+00 RT

FRA-71-9.07

239
 264

℄ IR-71

IR-71 NORTHBOUND



LEVEL 2 SIGN
STA. 470+00, 108.1' RT, ℄ IR-71
(STA. 69+97 @ CONST. RAMP K)

TYPE TC-12.30 DESIGN 5
28' POLE W/20' ARMS

OS-9

CALCULATED	HJF
CHECKED	WAA

OVERHEAD SIGN ELEVATION VIEW, OS-9
TC-12.30, DES. 5, STA 70+00 RT RAMP K

FRA-71-9.07

240
264

ITEMS 625: CONDUIT, 4" MULTICELL, 725.20 EPC-40
ITEMS 625: CONDUIT, 4" MULTICELL, 725.20 EPC-80

MATERIALS:

THE TRAFFIC SURVEILLANCE RACEWAY SHALL CONSIST OF A FACTORY-ASSEMBLED SYSTEM OF FOUR (4) INNERDUCTS ASSEMBLED WITHIN A PROTECTIVE OUTER DUCT. THE INNERDUCTS SHALL BE NOMINAL 1.25 INCH INSIDE DIAMETER, TYPE DB PVC PER NEMA TC-8 WITH A BELL INSERTION DEPTH OF 1.75 INCHES MINIMUM. THE OUTER DUCT SHALL BE NOMINAL 4 INCH (INSIDE DIAMETER), SCHEDULE 40 PVC. CARLON TYPE SCHEDULE 40 AND 80 OR APPROVED EQUIVALENT.

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 1/4-INCH NYLON ROPE SHALL BE INSTALLED IN EACH OF THE OPEN INNERDUCTS, THE ROPE WILL REMAIN TO BE USED FOR A FUTURE CABLE INSTALLATION. ALSO, EACH INNERDUCT SHALL BE PLUGGED TO MAINTAIN THE AIR AND WATER INTEGRITY. IN ADDITION, THE OUTER DUCT SHALL BE CAPPED TO MAINTAIN THE AIR AND WATER INTEGRITY OF THE ENTIRE SYSTEM. FOR MULTI-CELL DUCT INSTALLED IN MEDIAN WALLS, ALL ROPES AND PLUGS SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT.

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 MULTI-CELL CONDUIT INSTALLED OUTSIDE OF THE ROADWAY IN TRENCH SHALL BE SCHEDULE 40 UNLESS DIRECTED BY THE ODOT ENGINEER TO USE SCHEDULE 80 FOR USE IN WELL-TRAVELED VEHICULAR AREAS.

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.

IN TRENCH:

PAYMENT SHALL BE MADE UNDER SEPARATE ITEM, "ITEM 625: CONDUIT, MISC.: CONDUIT DUCT BANK; (2) 4" MULTICELL, 725.20, EPC-40". ADD "(1) 1-1/2", 725.051" WHEN INDICATED IN THE PLANS.

INSTALLED UNDER ROADWAY:

EPC-80 CONDUIT SHALL BE USED. INSTALLATION WILL BE AT LEAST 30 INCHES DEEP JACKED OR DRILLED UNDER PAVEMENT, EXCEPT AS NOTED ON THE PLANS. PAYMENT SHALL BE MADE UNDER SEPARATE ITEM, "ITEM 625: CONDUIT, JACKED OR DRILLED, 4" MULTICELL, 725.20, EPC-80".

ITEMS 625: CONDUIT, MISC.: CONDUIT DUCT BANK; (2) 4" MULTICELL, 725.20, EPC-40

ITEMS 625: CONDUIT, MISC.: CONDUIT DUCT BANK; (2) 4" MULTICELL, 725.20, EPC-40, (1) 1-1/2", 725.051

DESCRIPTION:

THIS CONDUIT DUCT BANK IS INTENDED FOR THE USE IN UNDERGROUND SITUATIONS REQUIRING MORE THAN ONE SINGLE CONDUIT. THIS INCLUDES THE MAIN CONDUIT RACEWAY ALONG THE FREEWAY, CONNECTION BETWEEN PULL BOXES AND FROM PULL BOXES TO THE ROAD SIDE. THE CONTRACTOR SHALL PLUG ALL UNUSED CELLS WITH CONDUIT CAPS TO ASSURE AIR AND WATER INTEGRITY OF EACH INDIVIDUAL INNERDUCT.

MATERIALS:

MATERIALS SHALL BE IN CONFORMANCE WITH ITEM 625: CONDUIT, 4" MULTICELL, 725.20, EPC-40. 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 MULTICELL CONDUIT INSTALLED OUTSIDE OF THE ROADWAY IN TRENCH SHALL BE SCHEDULE 40.

METHOD OF MEASUREMENT:

THE CONDUIT WILL BE MEASURED BY THE AMOUNT OF CONDUIT IN FEET FURNISHED AND INSTALLED OF EACH DUCT BANK CENTER-TO-CENTER OF PULL BOXES, FOUNDATION, ETC., AND WILL INCLUDE ALL FITTINGS AND APPURTENANCES, JOINTS, BENDS, GROUNDS AND CONCRETE ENCASEMENT.

BASIS OF PAYMENT:

THE PAYMENT FOR THESE ITEMS WILL BE MADE FOR THE ACCEPTED LINER FOOT QUANTITIES AT THE CONTRACT UNIT BID PRICE.

ITEM 625: MEDIAN 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.

ITEM 625: POWER SERVICE, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF THE SPECIFICATIONS, THE FOLLOWING IS ADDED.

POWER SERVICE TO THE CCTV IS EXISTING AND TO BE REUSED TO THE EXTENT POSSIBLE. THE POWER SUPPLYING AGENCY FOR THIS PROJECT IS AMERICAN ELECTRIC POWER (AEP). THE CONTRACTOR SHALL COORDINATE WITH A REPRESENTATIVE OF AEP TO CONFIRM THE REUSE OF LOCATION AND THAT NO NEW EQUIPMENT IS REQUIRED.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH C&MS ITEM 625, "POWER SERVICE, AS PER PLAN" WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

ITEM 625: PULL BOX, 725.08, 32", AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF PROVIDING A 32" ROUND PUL BOX PER SCD ITS-14.11. A PULL BOX PAD AS ILLUSTRATED SHALL ALSO BE PROVIDED WHERE INDICATED IN THE PLANS.

ITEM 809: RAMP METER SYSTEM

THE CONTRACTOR SHALL FURNISH AND INSTALL THIS ITEM ACCORDING TO ODOT SUPPLEMENTAL SPECIFICATION 809, AS WELL AS ANY STANDARD CONSTRUCTION DRAWINGS NOTED ON THE PLANS OR HEREIN.

FURNISH AND INSTALL THE FOLLOWING UNDER THIS ITEM:

- ITEMS LISTED IN SCD ITS-76.10 TO INCLUDE ITEM 632 RAMP METER SIGNAL DISPLAY, ITEM 632 RAMP METER SIGN AND ITEM 809 RAMP METER CONTROLLER
- ITS CABINET - RAMP METER, FOUNDATION AND WORK PAD
- CONTROLLER INCLUDING SOFTWARE
- 2-SECTION 12" LED VEHICULAR SIGNAL HEADS (4 EACH) MOUNTED BACK TO BACK, CENTER HEADS VERTICALLY ON MAST ARM
- RAMP METER SIGNAL SUPPORT AND FOUNDATION (TYPE TC-81.21, DESIGN 11, WITH 44 FOOT MAST ARM)
- SIGNAGE AND MOUNTING HARDWARE FOR MAST ARM, SIGN SUPPORT POSTS AND SIGN PEDESTALS.
- CONDUITS IN FOUNDATION

THE FOLLOWING ARE COVERED UNDER SEPARATE PAY ITEM:

- 5 CONDUCTOR SIGNAL CABLE
- DETECTOR LOOPS AND LOOP DETECTOR LEAD-IN CABLE
- GROUND RODS
- PULL BOXES

PAYMENT SHALL BE PER 809.

ITEM 809: SIDE-FIRED RADAR DETECTOR

THE CONTRACTOR SHALL FURNISH AND INSTALL THIS ITEM ACCORDING TO ODOT SUPPLEMENTAL SPECIFICATION 809, AS WELL AS ANY STANDARD CONSTRUCTION DRAWINGS NOTED ON THE PLANS.

FURNISH AND INSTALL THE FOLLOWING UNDER THIS ITEM:

- POLE, FOUNDATION, AND ANCHOR BOLTS
- RADAR DETECTOR
- RADAR DETECTOR CABLE
- ITS CABINET - DETECTION, FOUNDATION AND WORK PAD
- ALL MOUNTING HARDWARE AND MISCELLANEOUS MATERIALS

A MANUFACTURER'S REPRESENTATIVE SHALL BE ON SITE DURING INSTALLATION, SETUP AND INTIAL OPERATION TO ENSURE THE SYSTEM IS COMPLETE AND FULLY FUNCTIONING.

PAYMENT SHALL BE PER 809.

809, ITS DEVICE, MISC.: REMOVAL OF ITS ATR LOCATION ID=39625

REMOVE ATR, odot.ms2soft.com, LOCATION ID=39625, COMPLETE, INCLUDING CABINET, POLE, PULL BOXES, ETC. NOTIFY SANDRA MAPEL (sandra.mapel@odot.ohio.gov, 614-644-0291) PRIOR TO REMOVAL SO ODOT FIELD STAFF CAN SHUT DOWN STATION AND REMOVE CONTENTS OF CABINET.

809, MAINTAIN ITS DURING CONSTRUCTION

MAXIMUM DOWNTIME FOR THE RESPECTIVE ITS DEVICES SHALL BE PER ODOT SUPPLEMENTAL SPECIFICATION 809.

CALCULATED

CHECKED

ITS GENERAL NOTES

FRA - 71 - 9.07

241
264

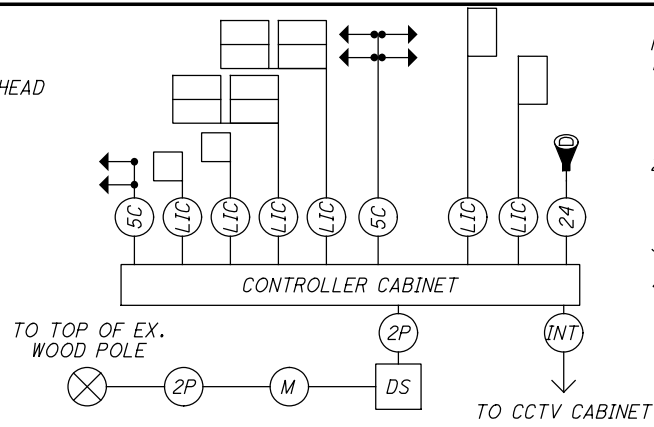
ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.	CALCULATED	CHECKED
TRAFFIC SURVEILLANCE							
625	25408	646	FT	CONDUIT, 2", 725.051			
625	25504	166	FT	CONDUIT, 3", 725.051			
625	25750	3,616	FT	CONDUIT, 4", MULTICELL, 725.20, EPC-40	241		
625	25900	63	FT	CONDUIT, JACKED OR DRILLED, 3", 725.04			
625	25900	373	FT	CONDUIT, JACKED OR DRILLED, 4" MULTICELL, 725.20, EPC-80			
625	25920	57	FT	CONDUIT, MISC.: CONDUIT DUCT BANK; (2) 4" MULTICELL, 725.20, EPC-40	241		
625	25920	527	FT	CONDUIT, MISC.: CONDUIT DUCT BANK; (2) 4" MULTICELL, 725.20, EPC-40, (1) 1-1/2" 725.051	241		
625	29010	4,427	FT	TRENCH, 30" DEEP			
625	29931	2	EACH	MEDIAN JUNCTION BOX, AS PER PLAN	241		
625	30700	1	EACH	PULL BOX, 725.08, 18"			
625	30711	8	EACH	PULL BOX, 725.08, 32", AS PER PLAN, ROUND W/PAD	241		
625	31510	12	EACH	PULL BOX REMOVED			
625	32000	4	EACH	GROUND ROD			
625	34001	1	EACH	POWER SERVICE, AS PER PLAN	241		
625	36000	4,427	FT	PLASTIC CAUTION TAPE			
632	26500	6	EACH	DETECTOR LOOP			
632	40500	549	FT	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG			
632	65300	1,450	FT	LOOP DETECTOR LEAD-IN CABLE, 2 CONDUCTOR, NO. 14 AWG			
632	68200	105	FT	POWER CABLE, 2 CONDUCTOR, NO. 6 AWG			
632	70400	1	EACH	CONDUIT RISER, 2" DIAMETER			
804	15010	2,150	FT	FIBER OPTIC CABLE, 24 FIBER			
804	15050	6,388	FT	FIBER OPTIC CABLE, 288 FIBER			
809	65990	1	EACH	ITS DEVICE, MISC.: REMOVAL OF ITS ATR LOCATION ID=39625	241		
809	67000	2	EACH	RAMP METER SYSTEM	241		
809	68900	1	EACH	SIDE-FIRED RADAR DETECTOR	241		
809	70000	LS		MAINTAINING ITS DURING CONSTRUCTION	241		
TOTALS ON THIS SHEET ARE CARRIED TO GENERAL SUMMARY							

ITS ESTIMATED QUANTITIES

FRA -71-9.07

WIRING DIAGRAM LEGEND

- FY ← 1-SECTION BEACON, RAMP METER SIGN
- RG ← 2-SECTION, BACK-TO-BACK, VEHICULAR SIGNAL HEAD
- SIDE-FIRED RADAR DETECTOR
- VEHICULAR LOOP DETECTOR
- POWER SOURCE
- POWER CABLE, 2/C NO. 14 AWG
- SIGNAL CABLE, 5/C NO. 14 AWG
- 2/C NO. 14 AWG, LEAD-IN CABLE
- 24 FIBER, SINGLE MODE
- DISCONNECT SWITCH
- METER

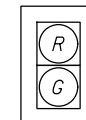


RAMP METER WIRING DIAGRAM
(NOT TO SCALE)

NOTES:

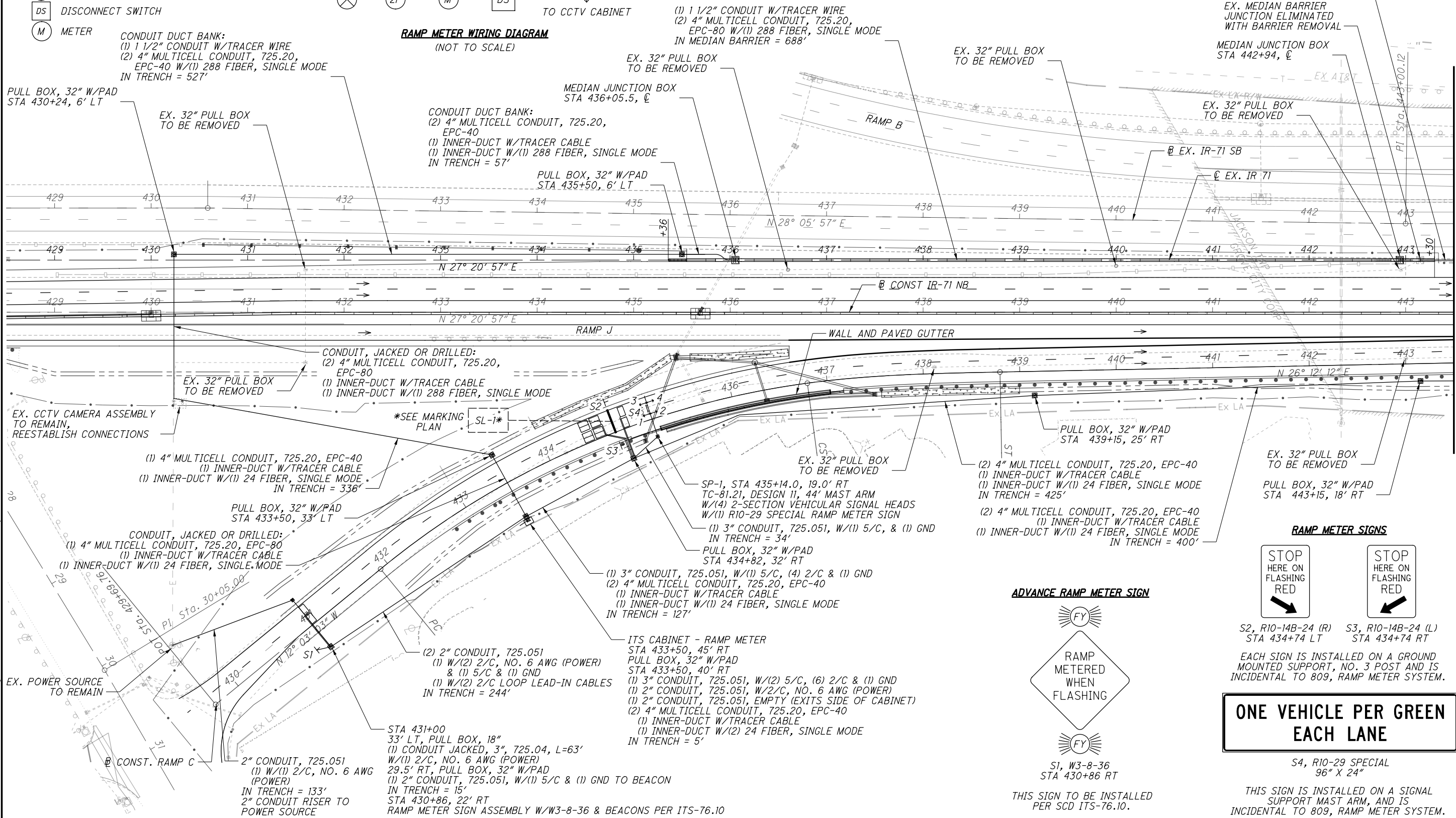
1. EXISTING ITS EQUIPMENT LOCATIONS ARE APPROXIMATE AND ARE BASED UPON INFORMATION OBTAINED FROM FRA-71-9.62, PART 1, PID #104799, AND CITY OF GROVE CITY STRINGTOWN ROAD STREET IMPROVEMENTS.
2. EXISTING ITS SYSTEM SHALL BE KEPT FULLY FUNCTIONAL THROUGHOUT CONSTRUCTION. TEMPORARY FACILITIES MAY BE DEEMED NECESSARY AS DIRECTED BY THE ENGINEER.
3. DOWNTIME SHALL BE PER SUPPLEMENT 809.
4. CONDUIT PLACED IN THE MEDIAN BARRIER SHALL BE CONSIDERED INCIDENTAL TO THE BARRIER PER C&MS ITEM 622 - CONCRETE BARRIER AND ASSOCIATED SCD'S. NO SEPARATE PAYMENT FOR CONDUIT SHALL BE MADE.

VEHICULAR TRAFFIC SIGNAL HEAD
(2-SECTION, 2-WAY)



1-4
12" LED LENS,
POLYCARBONATE,
SIGNAL HEAD
W/BACKPLATE

- (1) 1 1/2" CONDUIT W/TRACER WIRE
- (2) 4" MULTICELL CONDUIT, 725.20, EPC-80
IN MEDIAN BARRIER = 36'
- (1) 288 FIBER, SINGLE MODE TO EX. CCTV
CAMERA ASSEMBLY AT STA 487+50 RT
(NORTH OF STRUCTURE FRA-071-106IL/R)



MATCH LINE STA. 443+50 SEE SHEET 244



ITS PLAN
STA. 428+50 TO STA. 443+50

FRA-71-9.07

243
264

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(1) 1 1/2" CONDUIT W/TRACER WIRE
(2) 4" MULTICELL CONDUIT, 725.20,
EPC-80 W/(1) 288 FIBER, SINGLE MODE
IN MEDIAN BARRIER = 688'

CONDUIT DUCT BANK:
(2) 4" MULTICELL CONDUIT, 725.20,
EPC-40
(1) INNER-DUCT W/TRACER CABLE
(1) INNER-DUCT W/(1) 288 FIBER, SINGLE MODE
IN TRENCH = 57'

CONDUIT, JACKED OR DRILLED:
(2) 4" MULTICELL CONDUIT, 725.20,
EPC-80
(1) INNER-DUCT W/TRACER CABLE
(1) INNER-DUCT W/(1) 288 FIBER, SINGLE MODE

(1) 4" MULTICELL CONDUIT, 725.20, EPC-40
(1) INNER-DUCT W/TRACER CABLE
(1) INNER-DUCT W/(1) 24 FIBER, SINGLE MODE
IN TRENCH = 336'

CONDUIT, JACKED OR DRILLED:
(1) 4" MULTICELL CONDUIT, 725.20, EPC-80
(1) INNER-DUCT W/TRACER CABLE
(1) INNER-DUCT W/(1) 24 FIBER, SINGLE MODE

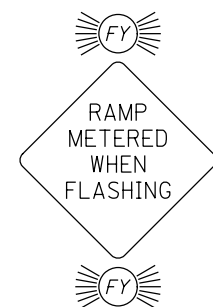
(1) 3" CONDUIT, 725.051, W/(1) 5/C, (4) 2/C & (1) GND
(2) 4" MULTICELL CONDUIT, 725.20, EPC-40
(1) INNER-DUCT W/TRACER CABLE
(1) INNER-DUCT W/(1) 24 FIBER, SINGLE MODE
IN TRENCH = 127'

(2) 2" CONDUIT, 725.051
(1) W/(2) 2/C, NO. 6 AWG (POWER)
& (1) 5/C & (1) GND
(1) W/(2) 2/C LOOP LEAD-IN CABLES
IN TRENCH = 244'

STA 431+00
33' LT, PULL BOX, 18"
(1) CONDUIT JACKED, 3", 725.04, L=63'
W/(1) 2/C, NO. 6 AWG (POWER)
29.5' RT, PULL BOX, 32" W/PAD
(1) 2" CONDUIT, 725.051, W/(1) 5/C & (1) GND TO BEACON
IN TRENCH = 15'
STA 430+86, 22' RT
RAMP METER SIGN ASSEMBLY W/W3-8-36 & BEACONS PER ITS-76.10

ITS CABINET - RAMP METER
STA 433+50, 45' RT
PULL BOX, 32" W/PAD
STA 433+50, 40' RT
(1) 3" CONDUIT, 725.051, W/(2) 5/C, (6) 2/C & (1) GND
(1) 2" CONDUIT, 725.051, W/2/C, NO. 6 AWG (POWER)
(1) 2" CONDUIT, 725.051, EMPTY (EXITS SIDE OF CABINET)
(2) 4" MULTICELL CONDUIT, 725.20, EPC-40
(1) INNER-DUCT W/TRACER CABLE
(1) INNER-DUCT W/(2) 24 FIBER, SINGLE MODE
IN TRENCH = 5'

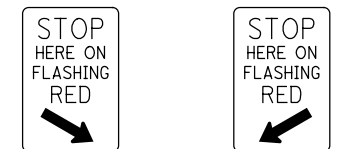
ADVANCE RAMP METER SIGN



S1, W3-8-36
STA 430+86 RT

THIS SIGN TO BE INSTALLED
PER SCD ITS-76.10.

RAMP METER SIGNS



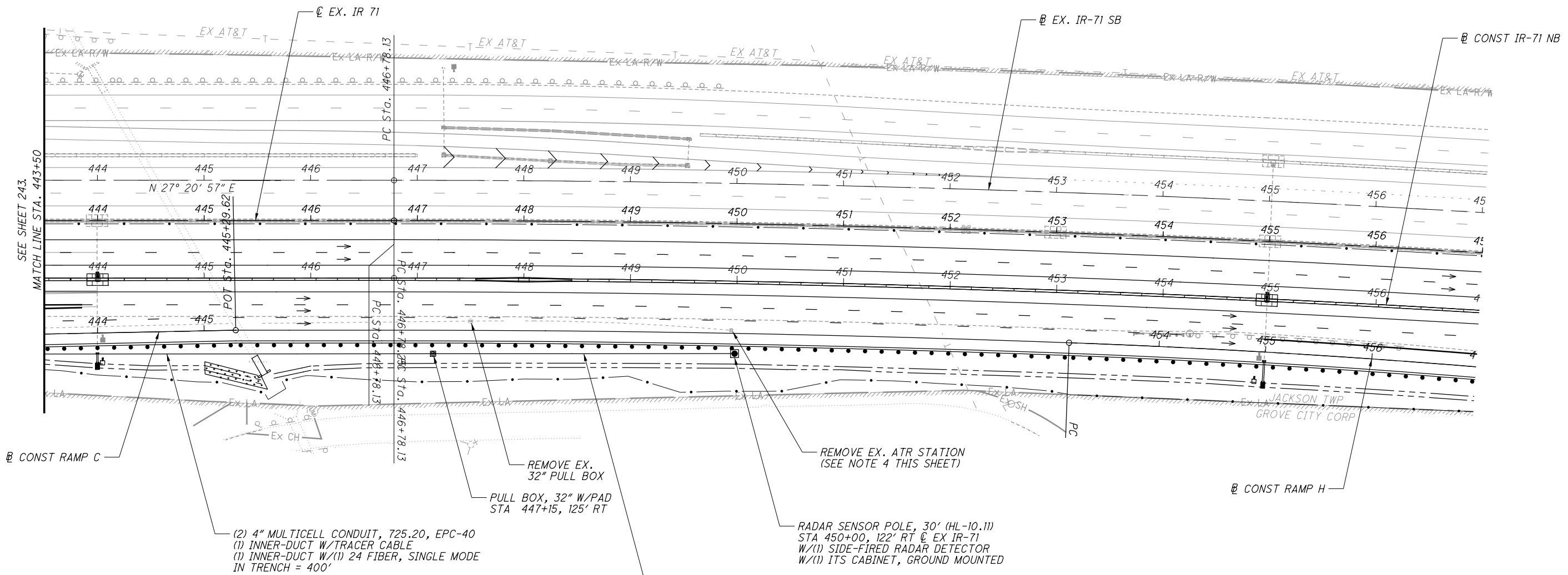
S2, R10-14B-24 (R) STA 434+74 LT
S3, R10-14B-24 (L) STA 434+74 RT

EACH SIGN IS INSTALLED ON A GROUND MOUNTED SUPPORT, NO. 3 POST AND IS INCIDENTAL TO 809, RAMP METER SYSTEM.

ONE VEHICLE PER GREEN EACH LANE

S4, R10-29 SPECIAL
96" X 24"

THIS SIGN IS INSTALLED ON A SIGNAL SUPPORT MAST ARM, AND IS INCIDENTAL TO 809, RAMP METER SYSTEM.



(2) 4" MULTICELL CONDUIT, 725.20, EPC-40
 (1) INNER-DUCT W/TRACER CABLE
 (1) INNER-DUCT W/(1) 24 FIBER, SINGLE MODE
 IN TRENCH = 400'

PULL BOX, 32" W/PAD
 STA 447+15, 125' RT

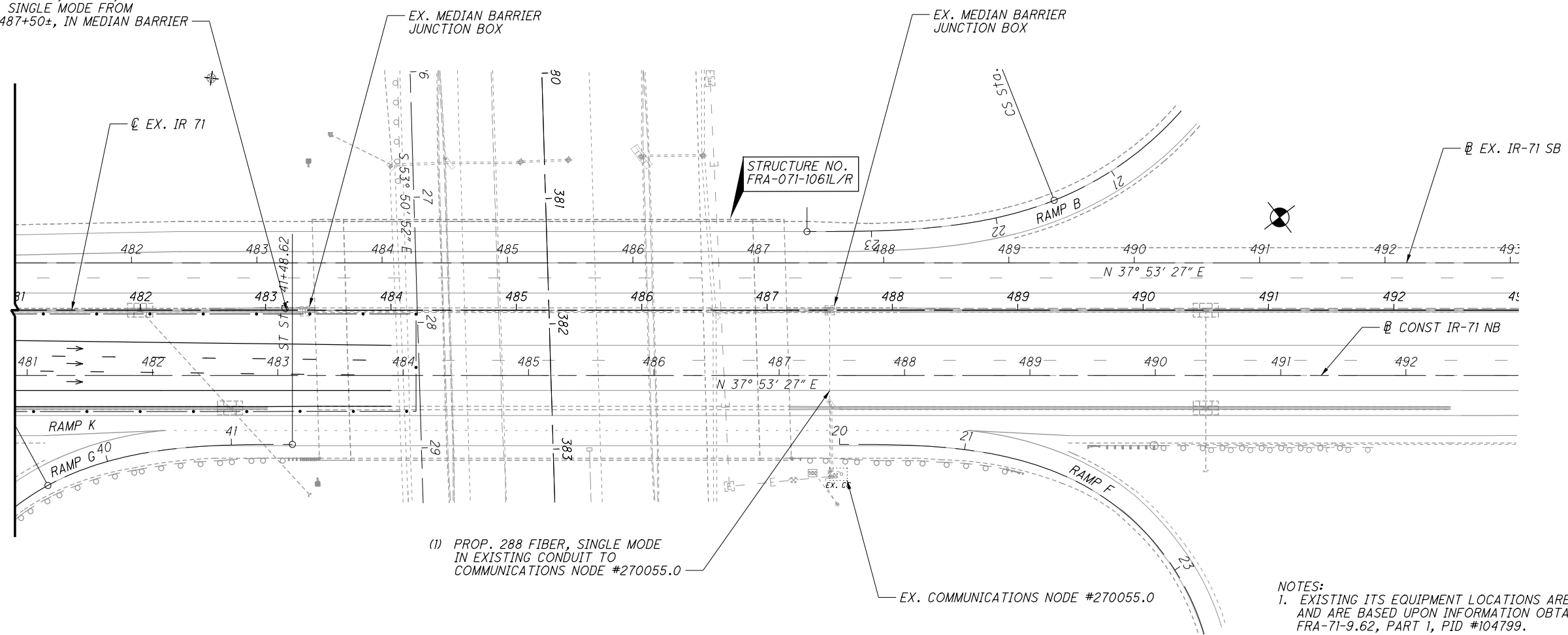
(2) 4" MULTICELL CONDUIT, 725.20, EPC-40
 (1) INNER-DUCT W/TRACER CABLE
 (1) INNER-DUCT W/(1) 24 FIBER, SINGLE MODE
 IN TRENCH = 283'

RADAR SENSOR POLE, 30' (HL-10.11)
 STA 450+00, 122' RT @ EX IR-71
 W/(1) SIDE-FIRED RADAR DETECTOR
 W/(1) ITS CABINET, GROUND MOUNTED

- NOTES:
- EXISTING ITS EQUIPMENT LOCATIONS ARE APPROXIMATE AND ARE BASED UPON INFORMATION OBTAINED FROM FRA-71-9.62, PART 1, PID #104799, AND CITY OF GROVE CITY STRINGTOWN ROAD STREET IMPROVEMENTS.
 - EXISTING ITS SYSTEM SHALL BE KEPT FULLY FUNCTIONAL THROUGHOUT CONSTRUCTION. TEMPORARY FACILITIES MAY BE DEEMED NECESSARY AS DIRECTED BY THE ENGINEER.
 - DOWNTIME SHALL BE PER SUPPLEMENT 809.
 - REMOVE ATR, odot.ms2soft.com, LOCATION ID=39625, COMPLETE, INCLUDING CABINET, POLE, PULL BOXES, ETC. NOTIFY SANDRA MAPEL (sandra.mapel@odot.ohio.gov, 614-644-0291) PRIOR TO REMOVAL SO ODOT FIELD STAFF CAN SHUT DOWN STATION AND REMOVE CONTENTS OF CABINET.

ITS PLAN
 STA. 443+50 TO STA. 450+00

- (1) EX. 1 1/2" CONDUIT W/TRACER WIRE
- (2) EX. 4" MULTICELL CONDUIT, 725.20, EPC-80
- (1) PROP. 288 FIBER, SINGLE MODE FROM STA. 442+94 TO 487+50±, IN MEDIAN BARRIER



- (1) PROP. 288 FIBER, SINGLE MODE IN EXISTING CONDUIT TO COMMUNICATIONS NODE #270055.0

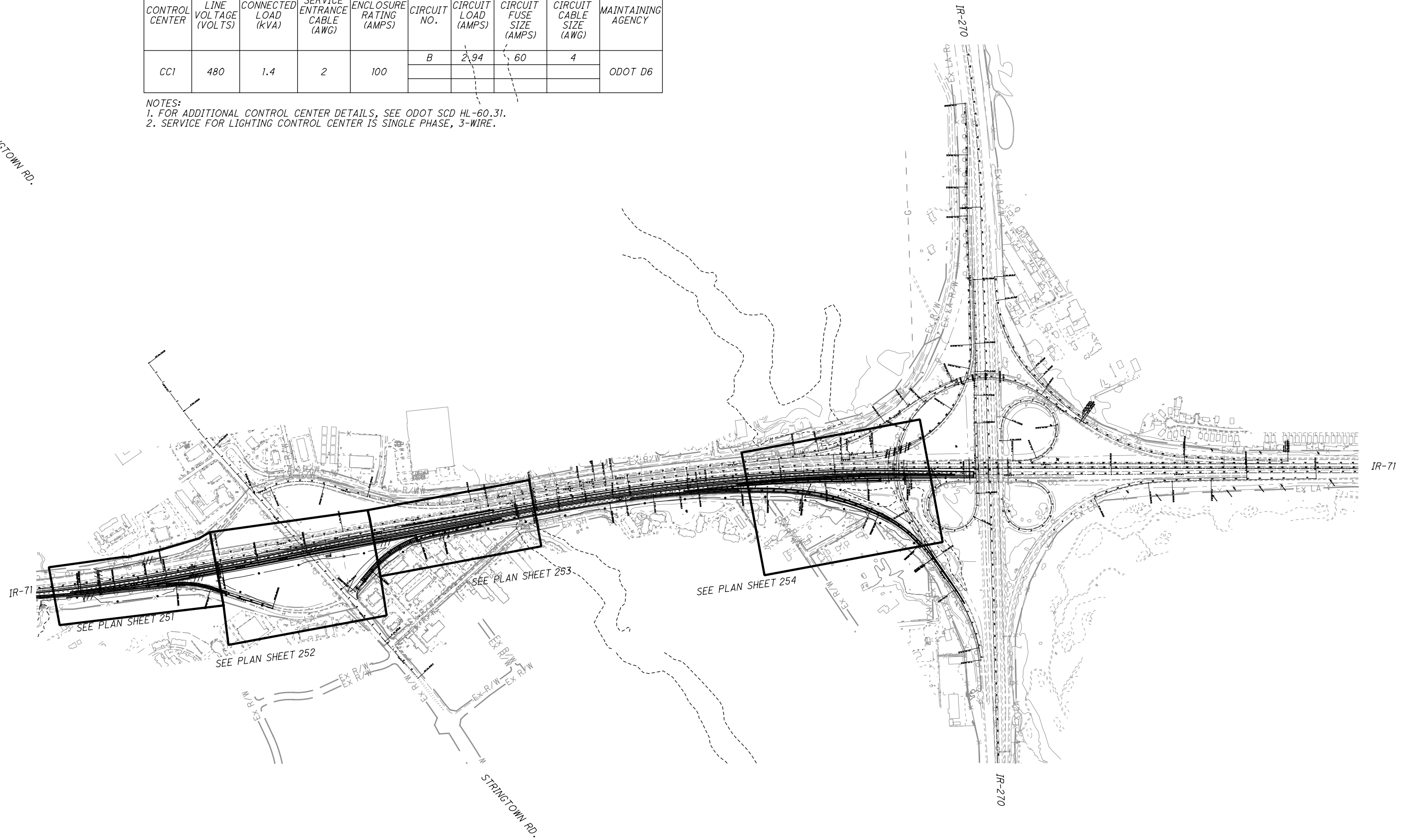
- NOTES:
1. EXISTING ITS EQUIPMENT LOCATIONS ARE APPROXIMATE AND ARE BASED UPON INFORMATION OBTAINED FROM FRA-71-9.62, PART 1, PID #104799.
 2. EXISTING ITS SYSTEM SHALL BE KEPT FULLY FUNCTIONAL THROUGHOUT CONSTRUCTION. TEMPORARY FACILITIES MAY BE DEEMED NECESSARY AS DIRECTED BY THE ENGINEER. DOWNTIME SHALL BE PER SUPPLEMENT 809.
 3. THE CONTRACTOR SHALL COORDINATE WORK ACTIVITIES WITH ADJACENT COMPLETED AND ACTIVE PROJECTS. FRA-71-9.62, PART 1, PID 104799. CTSS PHASE D (3150-E) PID 82573. CTSS PHASE E (3378-E) PID 99733.

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STRINGTOWN RD.

CONTROL CENTER	LINE VOLTAGE (VOLTS)	CONNECTED LOAD (kVA)	SERVICE ENTRANCE CABLE (AWG)	ENCLOSURE RATING (AMPS)	CIRCUIT NO.	CIRCUIT LOAD (AMPS)	PROP. CIRCUIT FUSE SIZE (AMPS)	PROP. CIRCUIT CABLE SIZE (AWG)	MAINTAINING AGENCY
CC1	480	1.4	2	100	B	2,94	60	4	ODOT D6

NOTES:
 1. FOR ADDITIONAL CONTROL CENTER DETAILS, SEE ODOT SCD HL-60.31.
 2. SERVICE FOR LIGHTING CONTROL CENTER IS SINGLE PHASE, 3-WIRE.



CALCULATED 0 400 800
 CHECKED
 HORIZONTAL SCALE IN FEET

LIGHTING SHEET SCHEMATIC

FRA-71-9.07

UTILITY NOTIFICATION

THE OHIO DEPARTMENT OF TRANSPORTATION HAS UTILITY FACILITIES (HIGHWAY LIGHTING, TRAFFIC SIGNALS, ITS) WITHIN THE LIMITS OF THIS PROJECT.

IN ADDITION TO THE INFORMATION OUTLINED IN THE UTILITY NOTE OF THIS CONTRACT, AND EVEN THOUGH ODOT IS LISTED AS A MEMBER OF OHIO811, THE CONTRACTOR ON THIS PROJECT IS REQUIRED TO CONTACT ODOT, DISTRICT 6, TRAFFIC DEPARTMENT, AND ITS DIRECTLY SO THAT THE ODOT UTILITIES, LOCATED WITHIN THIS PROJECT, ARE MARKED.

THE CONTRACTOR SHALL NOTIFY DISTRICT 6, TRAFFIC AT 740-833-8198, ODOT ITS LAB AT 614-387-4113, AND THE PROJECT ENGINEER, FOURTEEN (14) CALENDAR DAYS IN ADVANCE OF ANY WORK, FOR THE NEED TO MARK ODOT OWNED UTILITIES.

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

THE CONTRACTOR SHALL NOTIFY OTHER UTILITIES THROUGH OHIO811 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.

HIGH VOLTAGE TEST WAIVED

THE HIGH VOLTAGE TEST SHALL NOT BE PERFORMED ON THE CIRCUITS CONSTRUCTED BY THIS PROJECT THAT TIE INTO AN EXISTING LIGHTING CIRCUIT, SINCE THE TEST COULD DAMAGE THE PORTION OF THE COMPLETED CIRCUIT WHICH HAS BEEN IN SERVICE PRIOR TO THIS PROJECT.

LIGHT TOWER DECALS

NEW LIGHT TOWER DECALS SHALL BE PLACED ON ALL PROPOSED LIGHT TOWERS TO MATCH THE ALPHA NUMERIC IDENTIFIER AS DETAILED WITHIN THE PLANS TO CONFORM WITH THE ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS. THE CONTRACTOR IS ALSO REQUIRED TO REMOVE AND DISPOSE OF EXISTING DECALS AND HAVE NEW ONES INSTALLED ON ALL EXISTING TOWERS TO REMAIN AND WHOSE IDENTIFICATION CALLOUTS ARE TO BE REASSIGNED PER THE PLANS. IDENTIFICATION OF THE LIGHT TOWERS AND THE REMOVAL OF ANY PREVIOUS IDENTIFIER SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.

625. CONDUIT, 4", 725.05, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ODOT'S CONSTRUCTION AND MATERIAL SPECIFICATIONS, CONDUIT, 4", 725.05, AS PER PLAN SHALL INCLUDE ALL EXPANSION FITTINGS AS INCIDENTAL TO THIS ITEM OF WORK.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR FEET FOR CMS ITEM "625, CONDUIT, 4", 725.05, AS PER PLAN" WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

625. POWER SERVICE, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF THE SPECIFICATIONS, THE FOLLOWING IS ADDED.

THE POWER SUPPLYING AGENCY FOR THIS PROJECT IS: AMERICAN ELECTRIC POWER (DISTRIBUTION) 850 TECH CENTER DRIVE GAHANNA, OH 43230 CONTACT: PAUL PAXTON PHONE: 614-883-6831 EMAIL: ptpaxton@aep.com

COORDINATION WITH ODOT DISTRICT 6: HIGHWAY LIGHTING 400 E. WILLIAM ST. DELWARE, OH 43015 PHONE: 740-833-8024

A UNIQUE POWER SERVICE ADDRESS IS ASSIGNED TO EACH LOCATION. THE CONTACT PERSON FOR THE OHIO DEPARTMENT OF TRANSPORTATION IS LISTED BELOW:

KEN GREEN ODOT DISTRICT 6 TRAFFIC ENGINEER 614-833-8198

THE CONTRACTOR SHALL ENSURE THAT EACH POWER SERVICE ELECTRICAL ENERGY ACCOUNT IS IN THE NAME OF AND THAT THE BILLING ADDRESS IS TO THE MAINTAINING AGENCY NOTED IN THE PLANS. THIS SHALL BE DONE NOT ONLY FOR EACH NEW POWER SERVICE ESTABLISHED BY THIS PROJECT BUT ALSO FOR EACH EXISTING POWER SERVICE, SINCE THERE MAY BE A REASSIGNMENT OF THE RESPONSIBILITY FOR AN EXISTING SERVICE AS A RESULT OF THE WORK PERFORMED BY THIS PROJECT.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH C&MS ITEM "625, POWER SERVICE, AS PER PLAN" WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

LUMINAIRE, CONVENTIONAL, SOLID STATE (LED), AS PER PLAN, ASYMMETRIC, 480V, HIGH OUTPUT

IN ADDITION TO THE REQUIREMENTS OF ODOT'S CONSTRUCTION AND MATERIALS SPECIFICATIONS, CONVENTIONAL LED LUMINAIRES SHALL BE AS FOLLOWS:

LUMINAIRES SHALL BE FROM ODOT'S QUALIFIED PRODUCT LIST OF MANUFACTURERS OR EQUAL AS APPROVED BY THE ENGINEER.

THE MANUFACTURER/MODEL PROPOSED SHALL BE INDICATED AT THE TIME OF BID.

IES DISTRIBUTION(S) OF THE LUMINAIRE SHALL BE AS SHOWN IN THE PLANS.

TYPICAL LUMEN OUTPUT SHALL BE 22,000 MINIMUM OR AS APPROVED BY THE ENGINEER.

LUMINAIRE LED DRIVER(S) SHALL BE COMPATIBLE WITH 480VAC INPUT AS SHOWN IN THE PLANS, MODULAR, HAVE THE MANUFACTURER NAME AND PART NUMBER CLEARLY MARKED ON THE DRIVER ENCLOSURE, AND SHALL CARRY A MINIMUM 5-YEAR REPLACEMENT WARRANTY.

THE LED EMITTER ASSEMBLY SHALL CARRY A MINIMUM 5-YEAR REPLACEMENT WARRANTY, 10-YEAR STANDARD MANUFACTURER LIMITED WARRANTY.

LUMINAIRE, CONVENTIONAL, SOLID STATE (LED), AS PER PLAN, ASYMMETRIC, 480V, HIGH OUTPUT (CONTINUED)

THE LUMINAIRE ENCLOSURE SHALL BE RATED IP65, MINIMUM, AS PER IEC 60529, AND SHALL CARRY THE MINIMUM 5-YEAR REPLACEMENT WARRANTY WITH 10-YEAR STANDARD MANUFACTURER LIMITED WARRANTY.

A WRITTEN WARRANTY STATEMENT, SPARE PARTS LIST, AND MANUAL FROM THE LED SUPPLIER SHALL BE SUPPLIED TO THE ENGINEER BEFORE LUMINAIRES SHALL BE ACCEPTED BY ODOT.

SURGE PROTECTION SHALL BE 10KV/4KA MINIMUM, PER ANSI C62.41.2, AND THE MODULAR PACKAGE SHALL BE CLEARLY MARKED WITH THE MANUFACTURER AND PART NUMBER.

PAYMENT SHALL BE MADE AT THE UNIT BID PRICE, UNDER CMS ITEM "625, LUMINAIRE, CONVENTIONAL, SOLID STATE (LED), AS PER PLAN, ASYMMETRIC, 480V, HIGH OUTPUT", FOR EACH LUMINAIRE WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIAL AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

SPECIAL, MAINTAIN EXISTING LIGHTING

EXISTING ROADWAYS WHICH ARE TO REMAIN OPEN TO TRAFFIC DURING CONSTRUCTION OF THIS PROJECT AND WHICH ARE LIGHTED SHALL HAVE THE LIGHTING MAINTAINED AS DESCRIBED HEREIN.

BEFORE ANY WORK IS STARTED IN THE IMMEDIATE VICINITY OF THE EXISTING LIGHTING CIRCUITS, REPRESENTATIVES OF ODOT, THE MAINTAINING AGENCY AND THE CONTRACTOR SHALL MAKE A VISUAL INSPECTION OF THE EXISTING ROADWAY LIGHTING CIRCUITS TO BE MAINTAINED. DURING THIS INSPECTION, A WRITTEN RECORD OF THE CONDITION OF EXISTING LIGHTING SHALL BE MADE BY ODOT'S REPRESENTATIVE. THIS WRITTEN REPORT SHALL NOTE INDIVIDUAL LUMINAIRES WHICH ARE NOT IN WORKING ORDER, INDIVIDUAL POLES WHICH ARE NOT STANDING, AND INDIVIDUAL CIRCUITS WHICH ARE NOT IN WORKING ORDER. THE COMPLETED REPORT SHALL BE SIGNED BY THE REPRESENTATIVES OF ODOT, THE MAINTAINING AGENCY AND THE CONTRACTOR.

IF, AS A RESULT OF THIS INSPECTION, IT IS DETERMINED THAT THE CONDITION OF THE EXISTING SYSTEM IS BELOW THAT REQUIRED FOR THE SAFETY OF THE TRAVELING PUBLIC, THEN THE MAINTAINING AGENCY SHALL MAKE THE REPAIRS NECESSARY TO RETURN THE SYSTEM TO AN ACCEPTABLE CONDITION. FOLLOWING THESE REPAIRS, THE SYSTEM SHALL AGAIN BE INSPECTED AND A REPORT SHALL BE MADE AND SIGNED AS OUTLINED HEREIN.

WHEN THE EXISTING SYSTEM IS IN AN ACCEPTABLE CONDITION, IT SHALL BE TURNED OVER TO THE CONTRACTOR WHO SHALL THEN BE REQUIRED TO MAINTAIN THE EXISTING LIGHTING TO THE CONDITION OUTLINED IN THIS REPORT WITH THE EXCEPTION OF KNOCKDOWNS DUE TO TRAFFIC ACCIDENTS.

REPLACEMENT OF KNOCKED 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.

SPECIAL, MAINTAIN EXISTING LIGHTING (CONTINUED)

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.

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.

WHEN THE PROJECT BEGINS AND THE CONTRACTOR HAS TAKEN OVER THE MAINTENANCE OF THE EXISTING SYSTEM, THE CONTRACTOR SHALL PROVIDE ALL REQUIRED LAYOUTS AND LOCATIONS OF THE EXISTING AND PROPOSED LIGHTING CIRCUITS WITHIN THE PROJECT LIMITS.

THE LUMP SUM PRICE BID FOR ITEM "SPECIAL, MAINTAIN EXISTING LIGHTING" HAS BEEN CARRIED TO THE LIGHTING SUMMARY AND SHALL INCLUDE PAYMENT FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO MAINTAIN THE EXISTING LIGHTING AS SPECIFIED HEREIN.

THE UNIT PRICE BID FOR ITEM "SPECIAL, REPLACEMENT OF EXISTING LIGHTING UNIT" PER EACH HAS BEEN CARRIED TO THE LIGHTING SUMMARY AND SHALL BE FULL PAYMENT FOR THE REPLACEMENT OF AN EXISTING LIGHTING UNIT WHICH HAS BEEN KNOCKED DOWN AFTER THE AFOREMENTIONED INSPECTION AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO PROVIDE A REPLACEMENT FOR SUCH UNIT.

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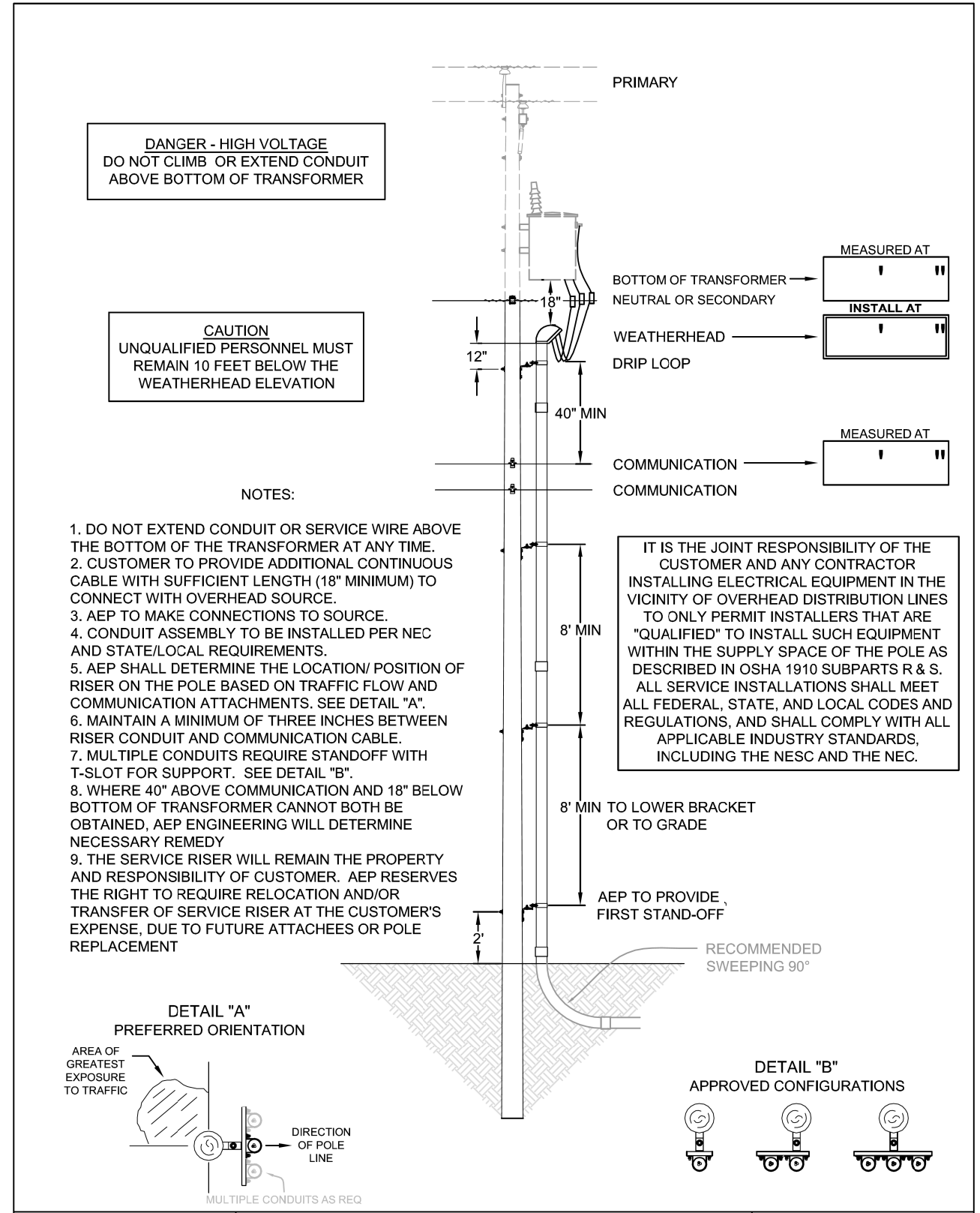
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LIGHTING GENERAL NOTES

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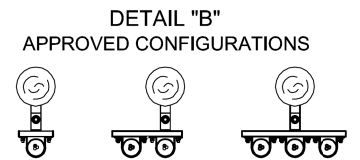
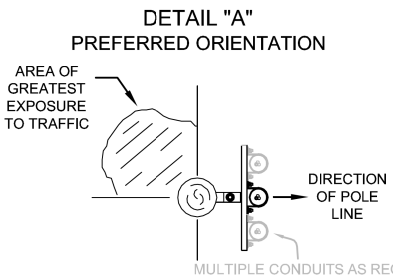
DANGER - HIGH VOLTAGE
DO NOT CLIMB OR EXTEND CONDUIT
ABOVE BOTTOM OF TRANSFORMER

CAUTION
UNQUALIFIED PERSONNEL MUST
REMAIN 10 FEET BELOW THE
WEATHERHEAD ELEVATION

NOTES:

1. DO NOT EXTEND CONDUIT OR SERVICE WIRE ABOVE THE BOTTOM OF THE TRANSFORMER AT ANY TIME.
2. CUSTOMER TO PROVIDE ADDITIONAL CONTINUOUS CABLE WITH SUFFICIENT LENGTH (18" MINIMUM) TO CONNECT WITH OVERHEAD SOURCE.
3. AEP TO MAKE CONNECTIONS TO SOURCE.
4. CONDUIT ASSEMBLY TO BE INSTALLED PER NEC AND STATE/LOCAL REQUIREMENTS.
5. AEP SHALL DETERMINE THE LOCATION/ POSITION OF RISER ON THE POLE BASED ON TRAFFIC FLOW AND COMMUNICATION ATTACHMENTS. SEE DETAIL "A".
6. MAINTAIN A MINIMUM OF THREE INCHES BETWEEN RISER CONDUIT AND COMMUNICATION CABLE.
7. MULTIPLE CONDUITS REQUIRE STANDOFF WITH T-SLOT FOR SUPPORT. SEE DETAIL "B".
8. WHERE 40" ABOVE COMMUNICATION AND 18" BELOW BOTTOM OF TRANSFORMER CANNOT BOTH BE OBTAINED, AEP ENGINEERING WILL DETERMINE NECESSARY REMEDY
9. THE SERVICE RISER WILL REMAIN THE PROPERTY AND RESPONSIBILITY OF CUSTOMER. AEP RESERVES THE RIGHT TO REQUIRE RELOCATION AND/OR TRANSFER OF SERVICE RISER AT THE CUSTOMER'S EXPENSE, DUE TO FUTURE ATTACHEES OR POLE REPLACEMENT

IT IS THE JOINT RESPONSIBILITY OF THE CUSTOMER AND ANY CONTRACTOR INSTALLING ELECTRICAL EQUIPMENT IN THE VICINITY OF OVERHEAD DISTRIBUTION LINES TO ONLY PERMIT INSTALLERS THAT ARE "QUALIFIED" TO INSTALL SUCH EQUIPMENT WITHIN THE SUPPLY SPACE OF THE POLE AS DESCRIBED IN OSHA 1910 SUBPARTS R & S. ALL SERVICE INSTALLATIONS SHALL MEET ALL FEDERAL, STATE, AND LOCAL CODES AND REGULATIONS, AND SHALL COMPLY WITH ALL APPLICABLE INDUSTRY STANDARDS, INCLUDING THE NESC AND THE NEC.



**SPECIFICATION FOR PRIVATE
RISER INSTALLED ON AEP POLE**

CREATED: 6/11/12
REF: DS2007-B, DS2007-C

REFERENCE NO.	SHEET NO.	SIDE	ROADWAY	STATION TO STATION	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625	625		
					CONNECTION, FUSED PULL APART	CONNECTION, UNFUSED PERMANENT	LIGHT POLE, CONVENTIONAL, TRUSS ARM HIGH RISE, AT20B40	LIGHT POLE FOUNDATION, 24" X 8' DEEP	NO. 4 AWG 2400 VOLT DISTRIBUTION CABLE	NO. 10 AWG POLE AND BRACKET CABLE	1-1/2" DUCT CABLE WITH THREE NO. 4 AWG 2400 VOLT CABLES	CONDUIT, 3", 725.04	CONDUIT, JACKED OR DRILLED, 725.04, 3"	LUMINAIRE, CONVENTIONAL, SOLID STATE (LED), AS PER PLAN, ASYMMETRIC, 480V, HIGH OUTPUT	TRENCH	PULL BOX, 725.08, 24"	GROUND ROD	POWER SERVICE, AS PER PLAN	PLASTIC CAUTION TAPE		PULL BOX REMOVED	REMOVE AND REERECT EXISTING LIGHT POLE	POWER SERVICE REMOVED					
					EACH	EACH	EACH	EACH	FT	FT	FT	FT	FT	FT	EACH	FT	EACH	EACH	EACH	FT		EACH	EACH	EACH				
1	251	LT	IR-71	493+12	2		1	1		180				1			1											
2		LT	IR-71	491+11	493+12									200			200			200								
3		LT	IR-71	491+11						180				1			1											
4		LT	IR-71	489+09	491+11									200			200			200								
5		LT	IR-71	489+09						180				1			1											
6		LT	IR-71	487+08	489+09									200			200			200								
7		LT	IR-71	487+08						180				1			1											
8		LT/RT	IR-71	487+07	487+08									204		204												
9		RT	IR-71	487+07													1											
10		RT	IR-71	484+31	487+07									279			279			279								
11		RT	IR-71	484+31						180				1			1											
12		RT	IR-71	487+07	492+23									521			521			521								
13		RT	IR-71	492+23						180				1			1											
14		RT	IR-71	492+23	493+64									143			143			143								
15		RT	IR-71	493+64													1											
16		RT	IR-71	493+64	494+13									48			48			48								
17		RT	IR-71	494+13						180				1			1											
18		RT	IR-71	493+64	493+67									47		47												
19		RT	IR-71	493+67						180				1			1											
20		RT	IR-71	493+67	497+00									333			333			333								
20	252		IR-71	497+00	429+24									967			967			967								
21			IR-71	429+24													1											
22			IR-71	429+23	429+24									23			23			23								
23			IR-71	428+80	429+23				44					44			1			44								
24			IR-71	429+62																								
25			IR-71	429+24	433+00									376			376			376								
25	253		IR-71	433+00	437+21									462		55	462			462								
26			IR-71	437+21						180				1			1											
27			IR-71	437+21	439+20									200			200			200								
28			IR-71	439+20						180				1			1											
29			IR-71	439+20	441+20									200			200			200								
30			IR-71	441+20						180				1			1											
31	254		IR-71	470+30													1											
32			IR-71	470+25																								
33			IR71/RMP H	470+30	16+29									118		118			118									
34			RAMP H	16+27																								
35			RAMP H	16+29													1											
36			RAMP H	16+29	18+76									247		247			247									
37			RAMP H	18+76																								
38			RAMP H	18+76	23+80									504		504			504									
TOTALS TO GENERAL SUMMARY					22	15	11	11	44	1,980	5,272	44	1,175	11	5,316	5	11	1	4,196		2	1	1					

CALCULATED

CHECKED


LIGHTING ESTIMATED QUANTITIES

FRA - 71 - 9.07

249
264

SYMBOLS

PROPOSED CONVENTIONAL LIGHT POLE AND LUMINAIRE, AT20B40 (T-BASE)

 PROPOSED PULL BOX OR JUNCTION BOX OF TYPE AND SIZE NOTED ON THE PLANS.


 EXISTING POWER SERVICE


 QUANTITY REFERENCE NUMBER


 CODED NOTE REFERENCE

EX LIGHT POLE

 EXISTING TOWER LIGHT

 EXISTING LUMINAIRES, SUPPORT RING, TOWER AND FOUNDATION TO BE REMOVED.

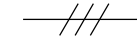
 EXISTING LUMINAIRE, BRACKET ARM, POLE AND FOUNDATION TO BE REMOVED.

 PROPOSED GROUND MOUNTED 6-400 WATT HPS SYMMETRIC MEDIUM CUT-OFF HIGH MAST LUMINAIRES ON 100' LIGHT TOWER, ANCHOR BOLTS, AND FOUNDATION, PER HL-10.31, AND HL-20.21, WITH WIRING PER HL-60.21.

 CONDUIT JACKED OR DRILLED, 725.04, 3"

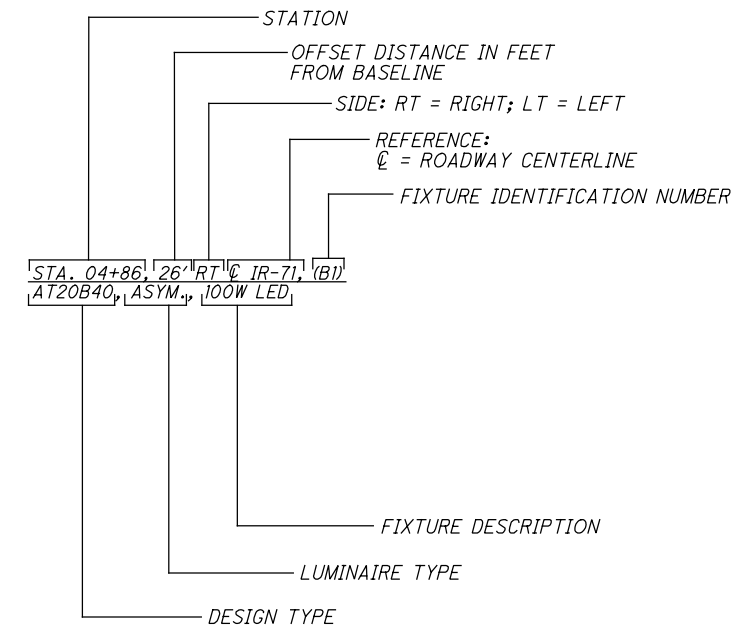
 EXISTING UTILITY POLE

 WOOD POLE FOR POWER SERVICE

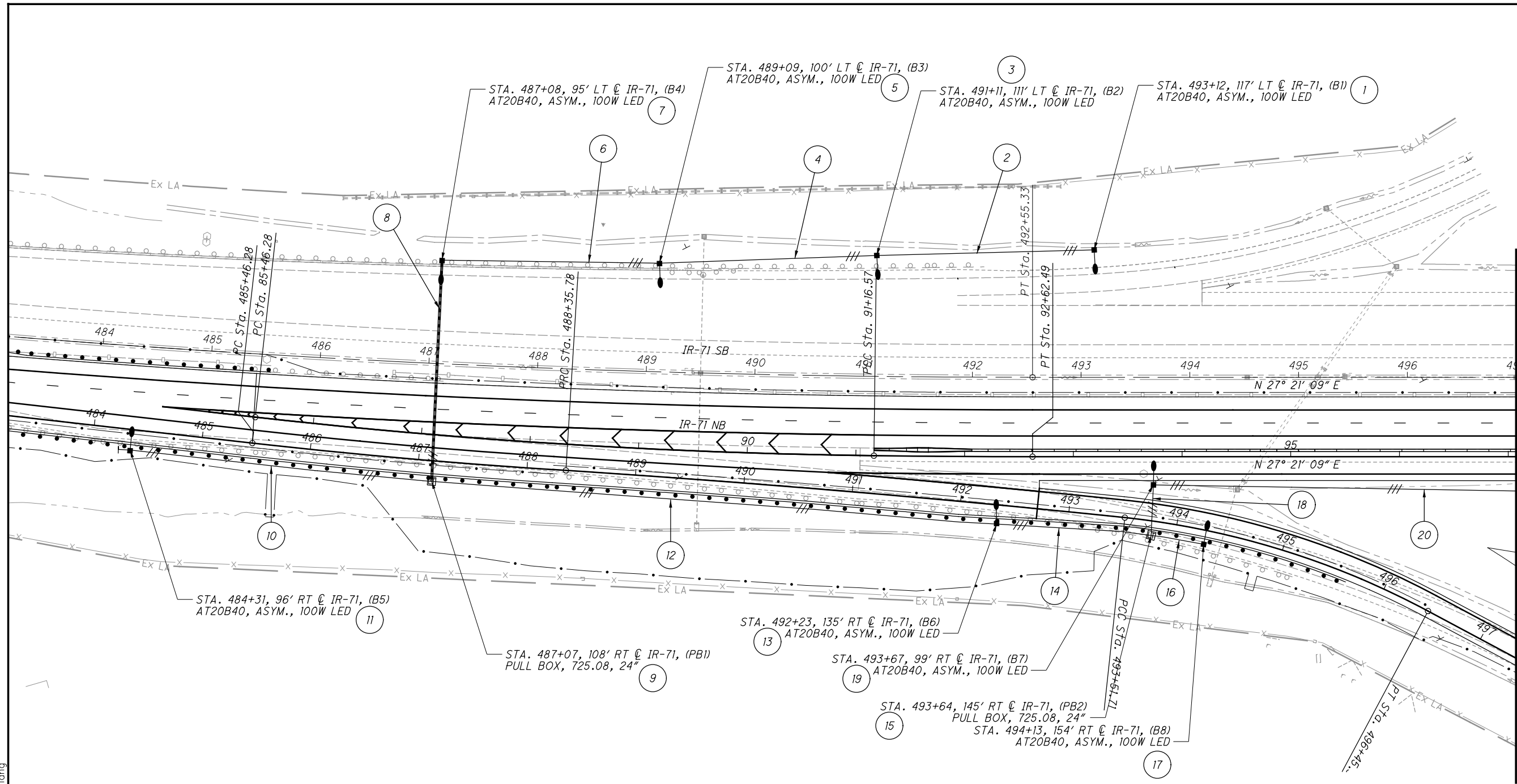
 DUCT CABLE (NO. AND SIZE AS INDICATED)

ABBREVIATIONS

#	NUMBER
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
AWG	AMERICAN WIRE GAUGE
BFG	BELOW FINISHED GRADE
C	CONDUIT
CONC	CONCRETE
DIA	DIAMETER
EX	EXISTING
IES	ILLUMINATING ENGINEERING SOCIETY
KV	KILOVOLT
5 KV	5000 VOLT
NEMA	NATIONAL ELECTRIC MANUFACTURERS ASSOCIATION
NO	NUMBER
PVC	POLYVINYL CHLORIDE
RGS	RIGID GALVANIZED STEEL
SQ	SQUARE
STA	STATION
TYP	TYPICAL
V	VOLT



...\\313.00\313.40\92615_LP1001.dgn 5/28/2019 11:41:30 AM lang



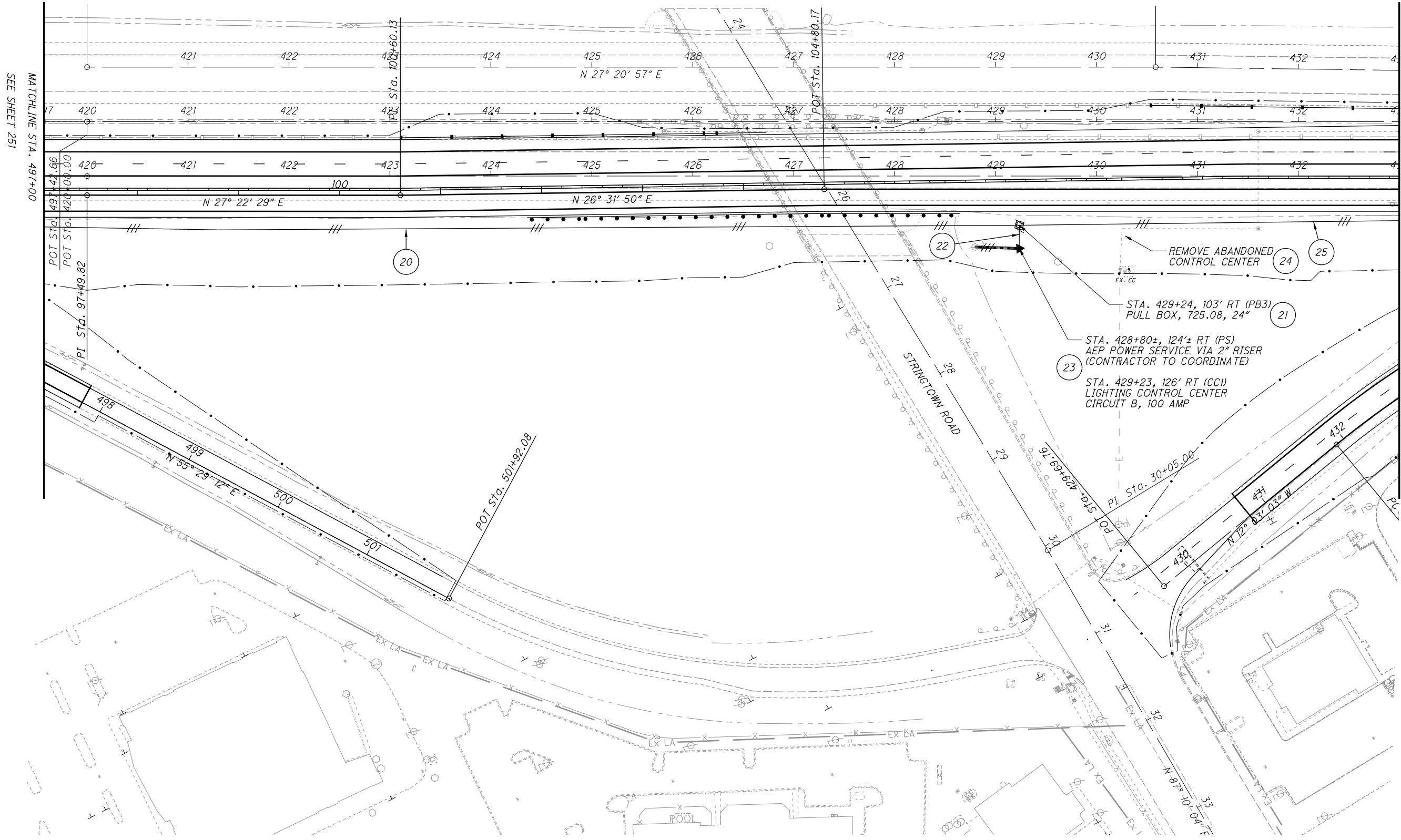
MATCHLINE STA. 497+00
SEE SHEET 252



PARTIAL INTERCHANGE LIGHTING PLAN
IR-71 NB EXIT GORE TO STRINGTOWN ROAD

FRA-71-9.07

CALCULATED
CHECKED



SEE SHEET 251

MATCHLINE STA. 497+00

MATCHLINE STA. 433+00

SEE SHEET 253



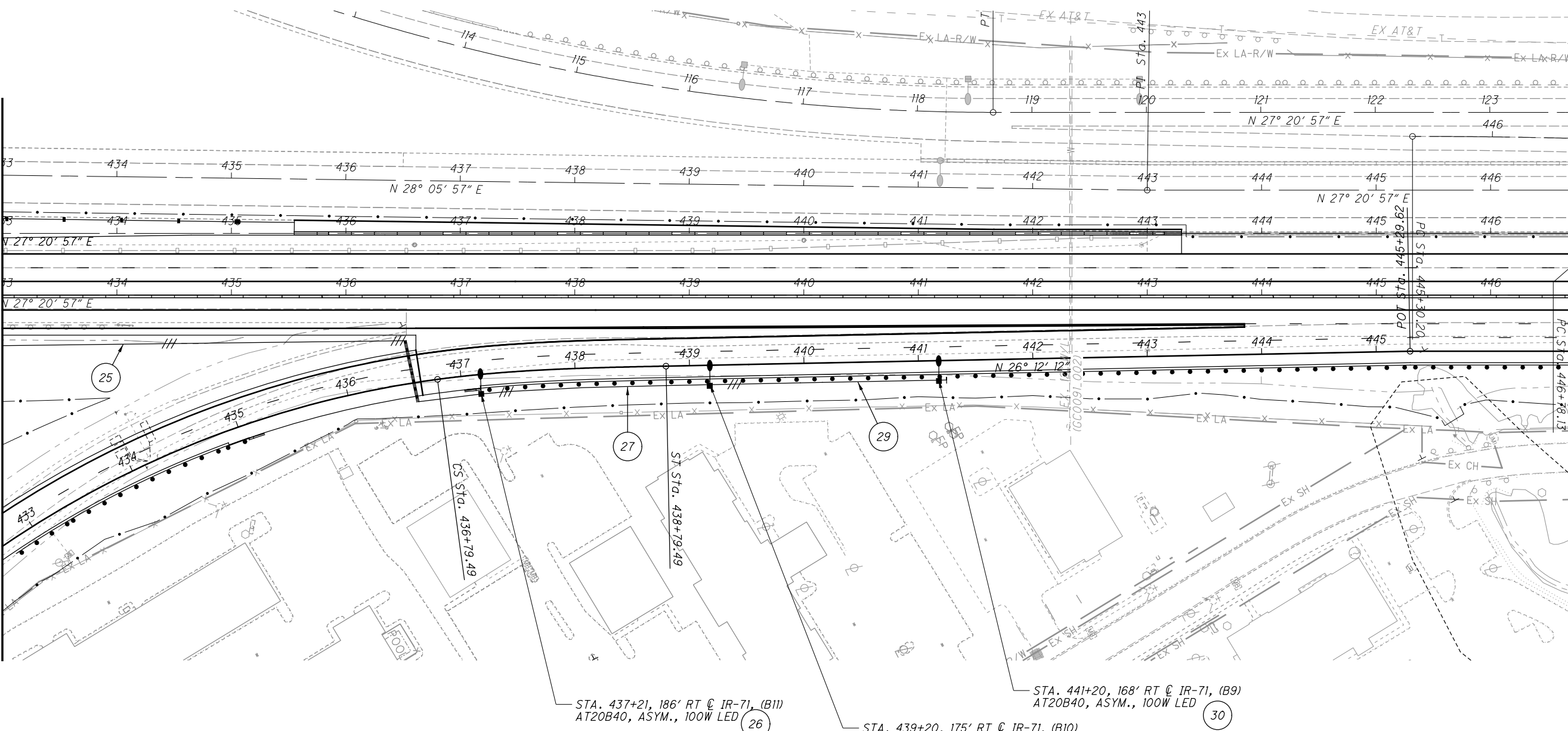
CALCULATED

CHECKED

PARTIAL INTERCHANGE LIGHTING PLAN
IR-71 NB EXIT TO IR-71 NB ENTRANCE

FRA-71-9.07

SEE SHEET 252
MATCHLINE STA. 433+00



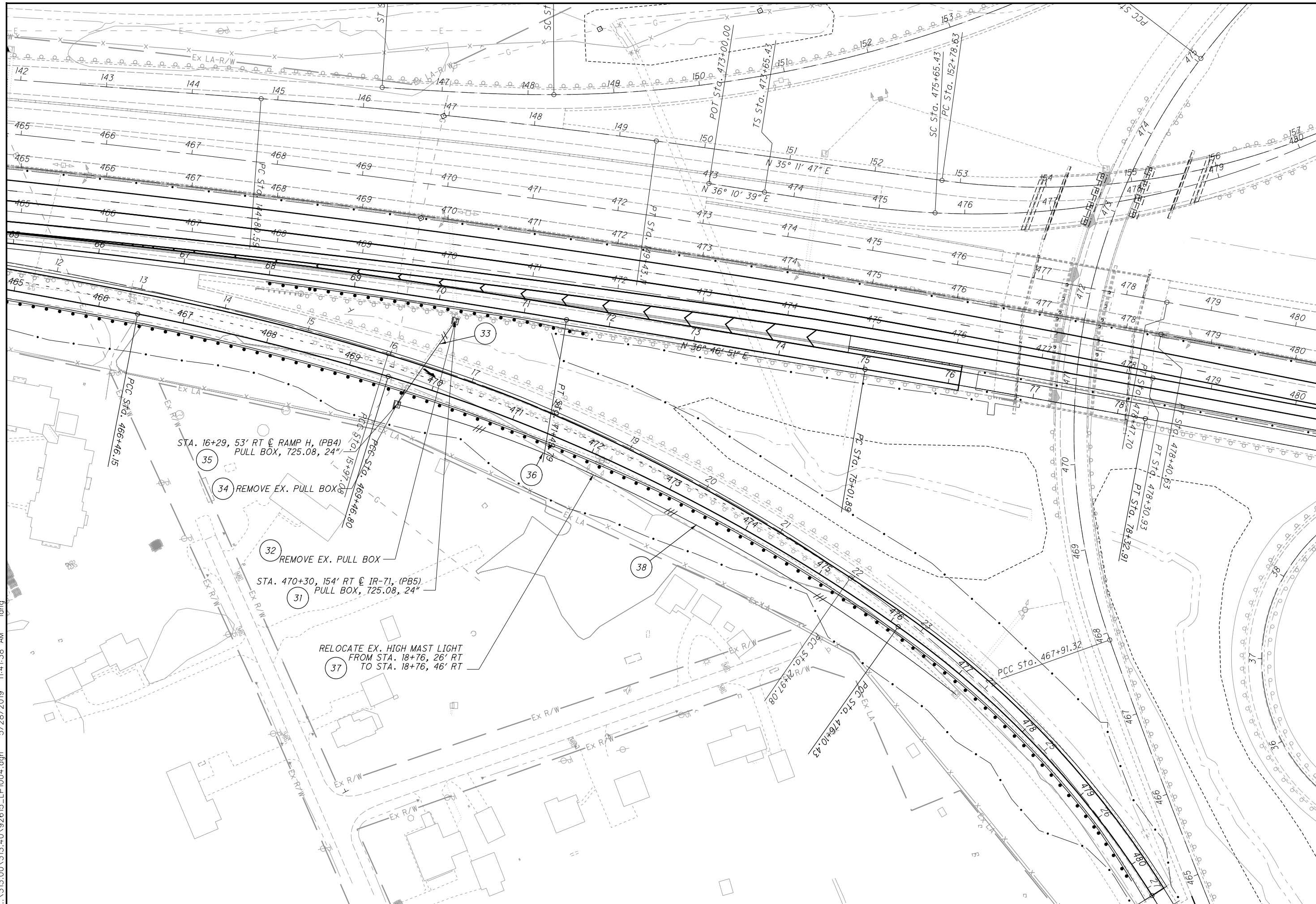
CALCULATED
CHECKED

0 50 100
25
HORIZONTAL
SCALE IN FEET

**PARTIAL INTERCHANGE LIGHTING PLAN
STRINGTOWN ROAD TO IR-71 NB**

FRA-71-9.07

...313.00\313.40\92615_LP1004.dgn 5/28/2019 11:41:38 AM long



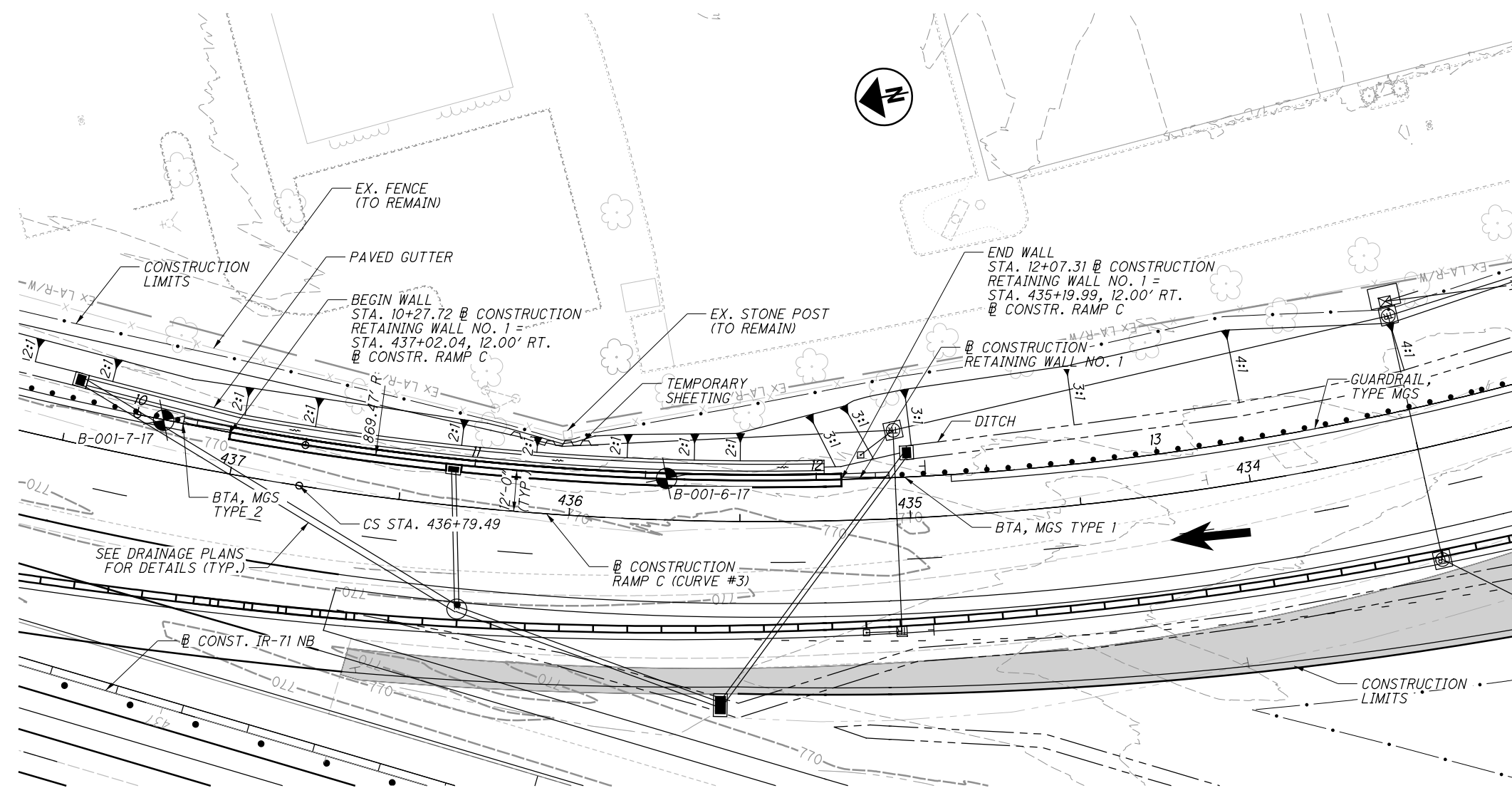
CALCULATED
CHECKED

0 50 100
25
HORIZONTAL
SCALE IN FEET

LIGHTING PLAN
IR-71 NB TO I-270 EB

FRA-71-9.07

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CONTROL POINT DATA				
	NORTHING	EASTING	ELEV.	DESCRIPTION
CP2	685958.4642	1815048.0823	771.1420	CONCRETE MONUMENT WITH ALUMINUM DISK STAMPED "PRIMARY PROJECT CONTROL"
CP3	690217.0867	1817896.8898	744.2770	CONCRETE MONUMENT WITH ALUMINUM DISK STAMPED "PRIMARY PROJECT CONTROL"

FOR ADDITIONAL BENCHMARK INFORMATION, SEE ROADWAY PLAN SHEET 284

BORING LOCATIONS			
BORING	STATION	OFFSET	APPROX. TOP OF ROCK EL.
B-001-6-17	435+77.57	106.13' RT.	N/A
B-001-7-17	437+23.51	80.64' RT.	N/A

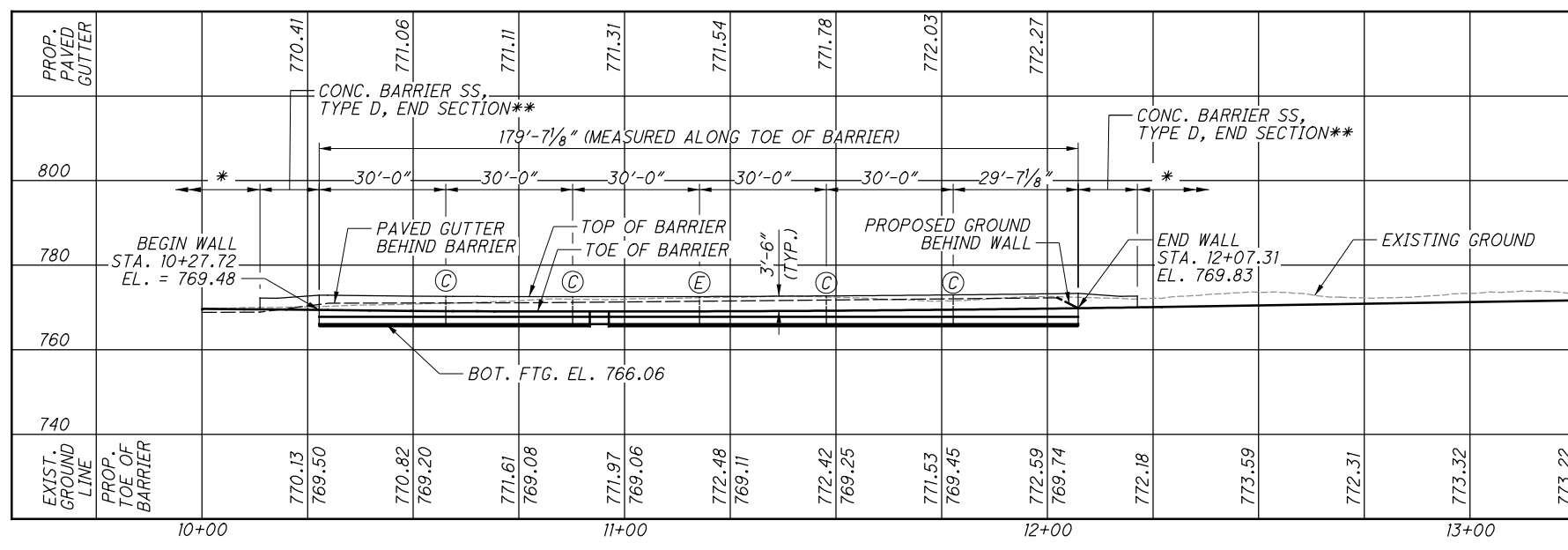
(STATIONS AND OFFSETS GIVEN ABOUT @ CONST. IR-71 NB)

NOTES:

- EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.
- WALL ALIGNMENT IS DEFINED ALONG THE TOE OF BARRIER.
- SEE ROADWAY PLANS FOR ROADWAY ALIGNMENT AND HORIZONTAL CURVE DATA.
- SEE THE SCHEMATIC PLAN ON SHEET 2 / 5 FOR @ WALL 1 ALIGNMENT DATA.

LEGEND:

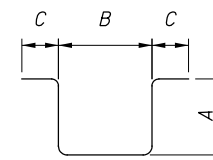
- = PROJECT BORING LOCATION
- = CONTRACTION JOINT
- = EXPANSION JOINT
- * = GUARDRAIL (SEE ROADWAY SHEETS)
- ** = SEE ROADWAY SHEETS



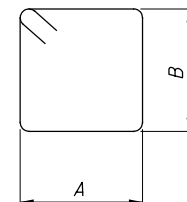
...Stage 3\92615_001W0001.dgn 5/28/2019 5:07:00 PM lang

ESTIMATED QUANTITIES				CALC.	DATE
				JFM	1/11/19
				CHK'D	DATE
				JDH	1/15/19
ITEM	ITEM EXT.	UNIT	DESCRIPTION	TOTAL	SHT. REF.
503	11100	LS	COFFERDAMS AND EXCAVATION BRACING	1	
503	21100	CY	UNCLASSIFIED EXCAVATION	270	
509	10000	LB	EPOXY COATED REINFORCING STEEL	12152	
511	46010	CY	CLASS QC1 CONCRETE, RETAINING/WINGWALL NOT INCLUDING FOOTING	19	
511	46510	CY	CLASS QC1 CONCRETE, FOOTING	45	
512	10050	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)	108	
512	33000	SY	TYPE 2 WATERPROOFING	9	
516	13000	SF	1/4" PREFORMED EXPANSION JOINT FILLER	14	
516	13600	SF	1" PREFORMED EXPANSION JOINT FILLER	120	
516	31000	FT	JOINT SEALER	5	
518	21200	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC	73	
518	40000	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	180	
518	40010	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	25	
622	10161	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE D, AS PER PLAN	180	3, 4 & 5 / 5

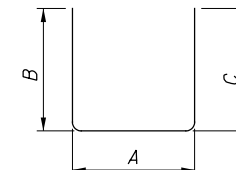
MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS						
					A	B	C	D	E	R	INC
W501	182	3'-2"	601	13	0'-6"	0'-8"	1'-0"				
W502	182	9'-5"	1788	16	3'-4"	1'-1"					
W503	302	6'-3"	1969	18	1'-4"	2'-7"	2'-7"				
W504	62	6'-11"	447	18	1'-4"	2'-11"	2'-11"				
W505	24	30'-0"	751	STR							
W506	4	13'-9"	57	STR							
W507	107	29'-6"	3292	STR							
W508	190	11'-0"	2180	37	0'-9"	3'-4"	1'-4"	1'-4"	0'-5"		
W509	16	33'-6"	559	STR							
W510	15	29'-1"	455	STR							
W511	6	8'-5"	53	16	1'-4"	2'-7"					
SUB-TOTAL			12,152	LBS							



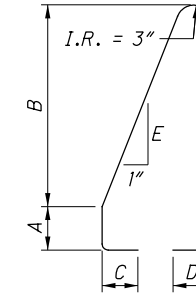
TYPE 13



TYPE 16



TYPE 18



TYPE 37



GENERAL NOTES:

DESIGN SPECIFICATIONS:
THIS STRUCTURE CONFORMS TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 7th EDITION 2014, INCLUDING THE 2015 AND 2016 INTERIM SPECIFICATIONS, AND THE ODOT BRIDGE DESIGN MANUAL, 2007 EDITION, INCLUDING REVISIONS THROUGH JANUARY 2018.

DESIGN PARAMETERS:

EMBANKMENT:
SOIL UNIT WEIGHT = 120 PCF
ANGLE OF INTERNAL FRICTION, $\phi = 32^\circ$.

BEARING SOIL:
SOIL UNIT WEIGHT, (SOIL) = 112 PCF
ANGLE OF INTERNAL FRICTION, $\phi = 26^\circ$.

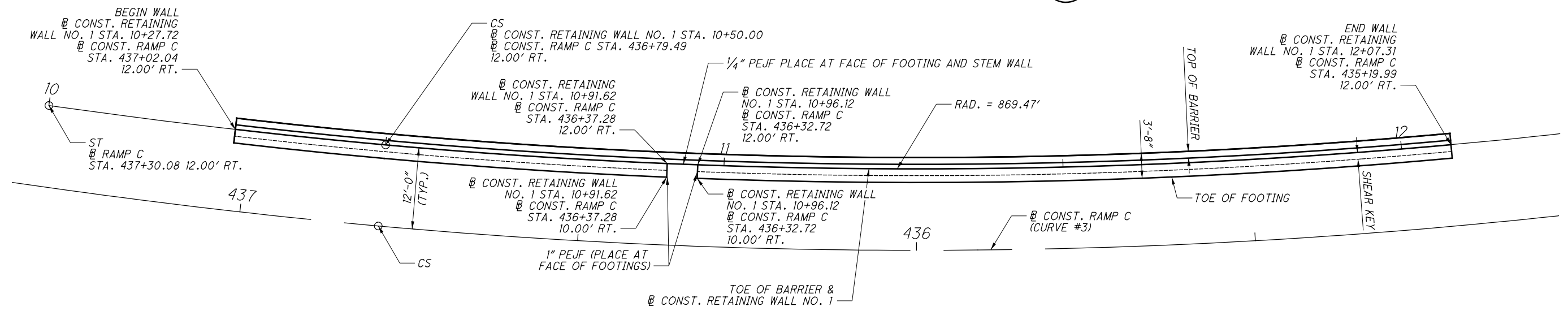
DESIGN DATA:
CLASS QC1 CONCRETE - COMPRESSIVE STRENGTH 4.0 KSI (SUBSTRUCTURE)
CLASS QC2 CONCRETE - COMPRESSIVE STRENGTH 4.5 KSI (BARRIER)
REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI

FOUNDATION BEARING RESISTANCE:
WALL FOOTING, AS DESIGNED, PRODUCES A MAXIMUM SERVICE LOAD PRESSURE OF 0.85 KIPS PER SQUARE FOOT AND A MAXIMUM STRENGTH LOAD PRESSURE OF 1.14 KIPS PER SQUARE FOOT.

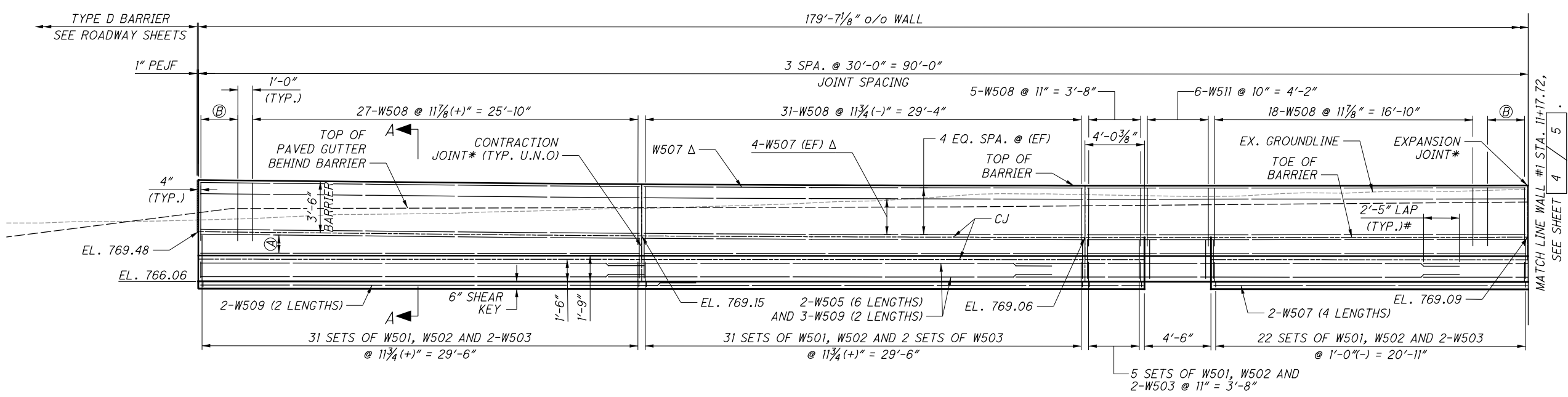
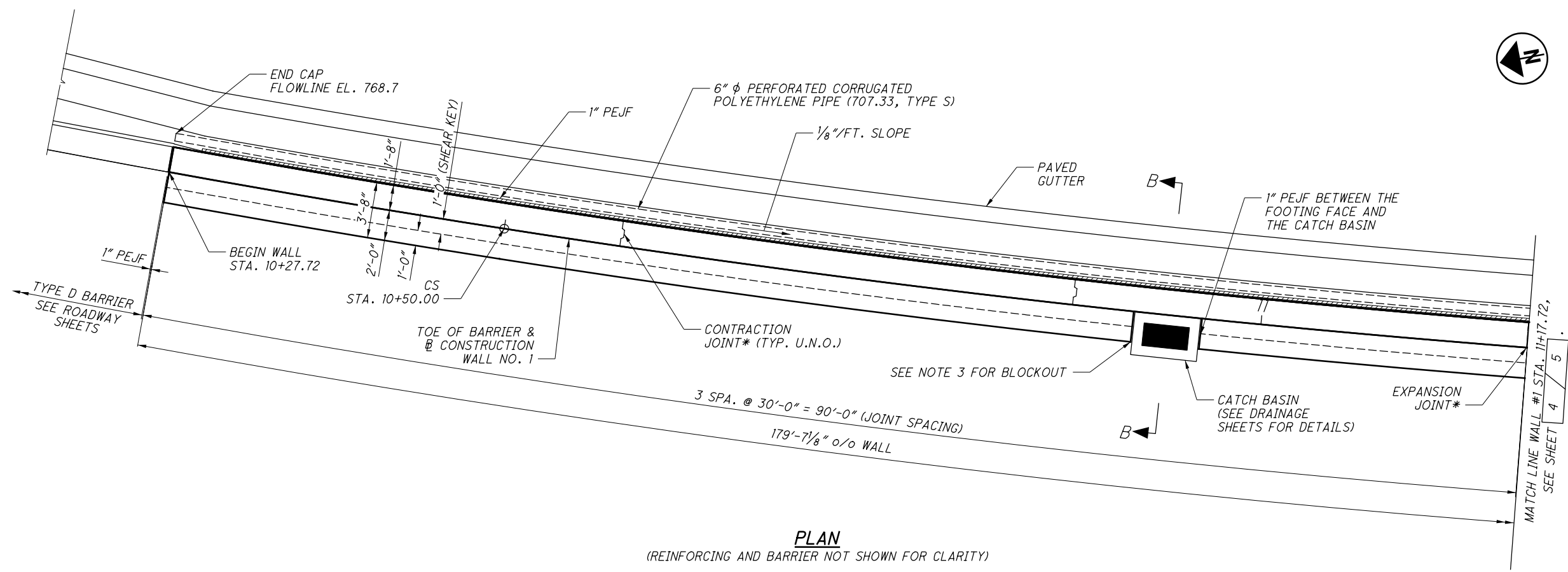
THE FACTORED BEARING RESISTANCE FOR THE WALL IS 5.2 KIPS PER SQUARE FOOT.

BACKFILL REQUIREMENT:
RETAINING WALL SHALL NOT BE BACKFILLED TO ABOVE THE BOTTOM OF THE PARAPET UNTIL AFTER THE PAVEMENT BASE IN FRONT OF THE PARAPET HAS BEEN PLACED.

CURVE DATA @ RAMP C (CURVE #3)	
P.I. STA 434+99.72	Lc = 488.52'
$\Delta = 38^\circ 15' 14''$ (RT)	Ts = 403.26'
Dc = 6°30'00"	Es = 52.51
R = 881.47'	$e_{max} = 0.057$
Ls = 200.00'	PC STA. 431+90.97
bs = 6°30'00"	CS STA. 436+79.49
LT = 133.42'	ST STA. 438+79.49
ST = 66.75'	



WALL 1 SCHEMATIC PLAN



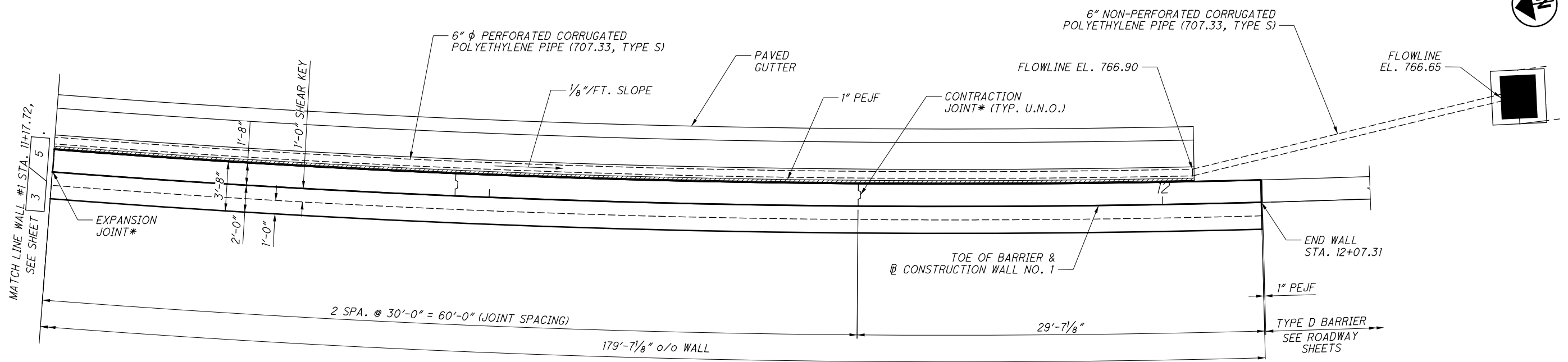
NOTES:

- SEE SHEET 5 / 5 FOR SECTION A-A, SECTION B-B AND NOTES.
- ALL LONGITUDINAL DIMENSIONS MEASURED ALONG TOE OF BARRIER & CONSTRUCTION WALL NO. 1.
- SEE SHEET 2 / 5 FOR STATIONS OF THE BLOCKOUT FOR THE CATCH BASIN.

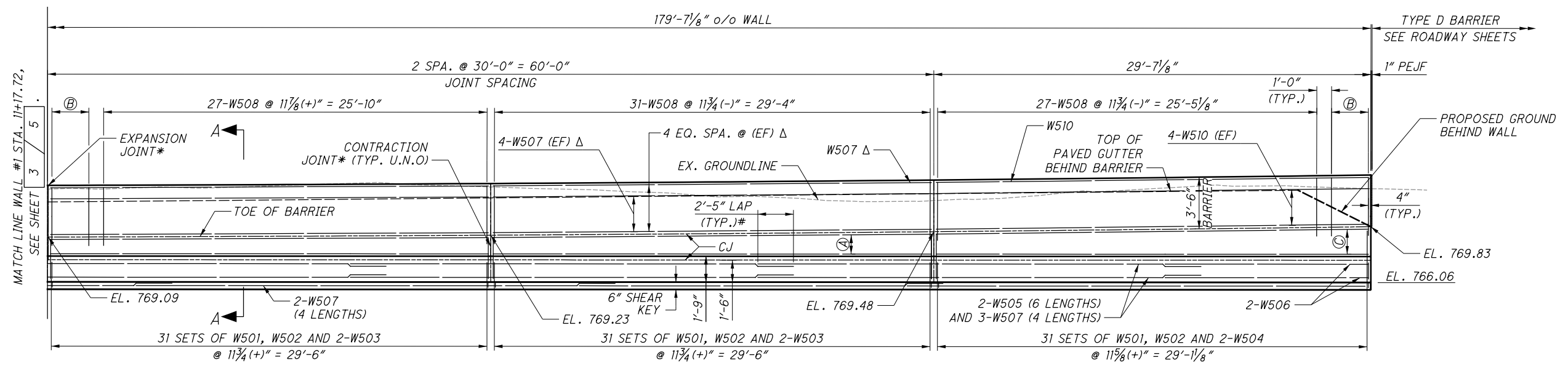
LEGEND:

- CJ = CONSTRUCTION JOINT
- EF = EACH FACE
- PEJF = PREFORMED EXPANSION JOINT FILLER
- U.N.O. = UNLESS NOTED OTHERWISE
- Ⓐ = 3-W507 @ 12" MAX SPA. (EF) Δ
- Ⓑ = 6-W508 @ 6" = 2'-6" (TYP. @ EACH SIDE OF EXPANSION JOINT)
- Δ = TYP. EACH PANEL U.N.O.
- * = SEE SHEET 5 / 5 FOR CONTRACTION JOINT AND EXPANSION JOINT DETAILS
- # = LAP IS FOR THE HORIZONTAL BARS

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PLAN
 (REINFORCING AND BARRIER NOT SHOWN FOR CLARITY)



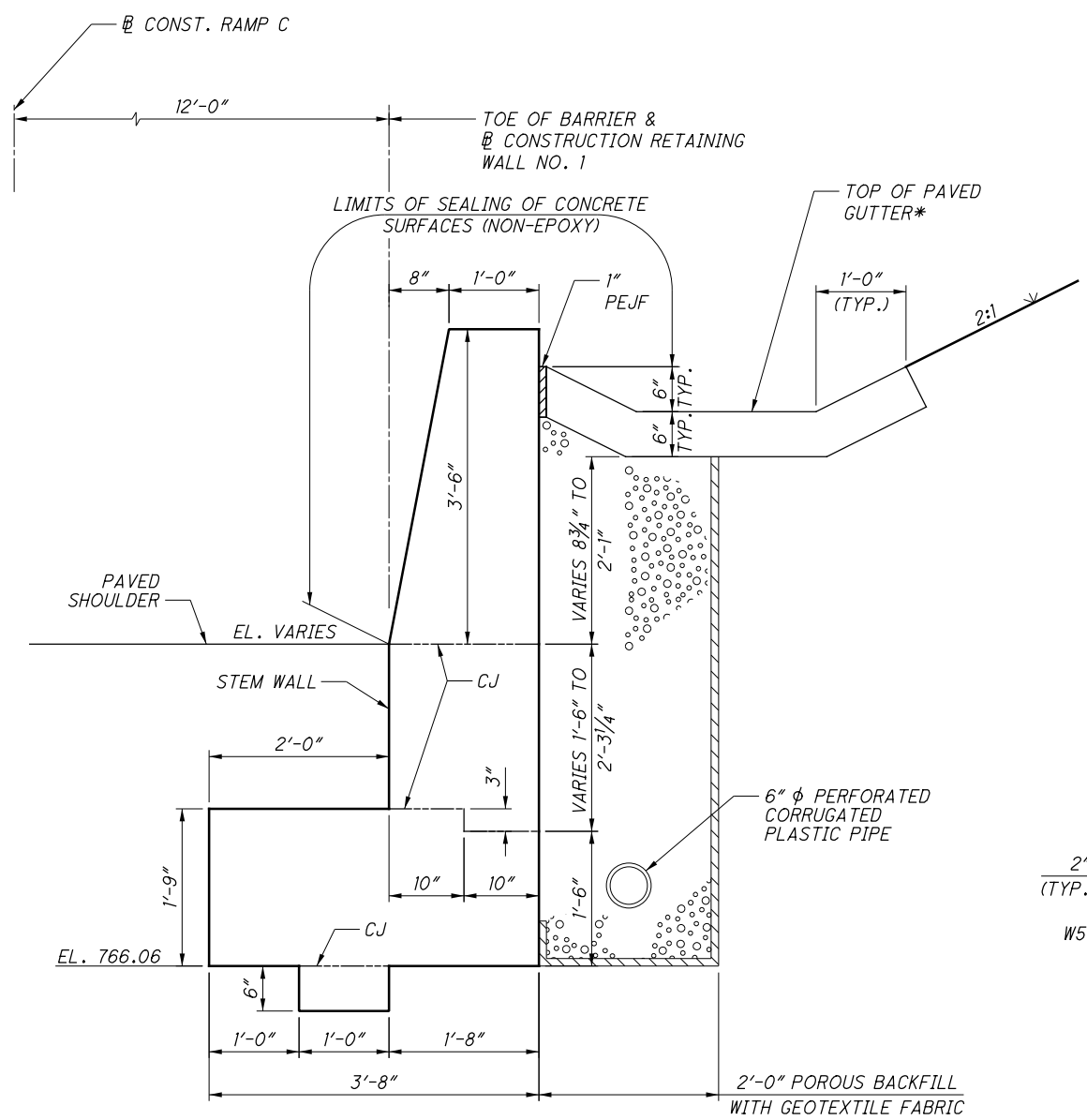
ELEVATION
 (6" φ PIPE NOT SHOWN FOR CLARITY)

- LEGEND:**
- CJ = CONSTRUCTION JOINT
 - EF = EACH FACE
 - PEJF = PREFORMED EXPANSION JOINT FILLER
 - U.N.O. = UNLESS NOTED OTHERWISE
 - (A) = 3-W507 @ 12" MAX SPA. (EF) Δ
 - (B) = 6-W508 @ 6" = 2'-6" (TYP. @ EACH EXPANSION JOINT)
 - (C) = 3-W510 @ 12" MAX SPA. (EF)
 - Δ = TYP. EACH PANEL U.N.O.
 - * = SEE SHEET 5 / 5 FOR CONTRACTION JOINT AND EXPANSION JOINT DETAILS.
 - # = LAP IS FOR THE HORIZONTAL BARS

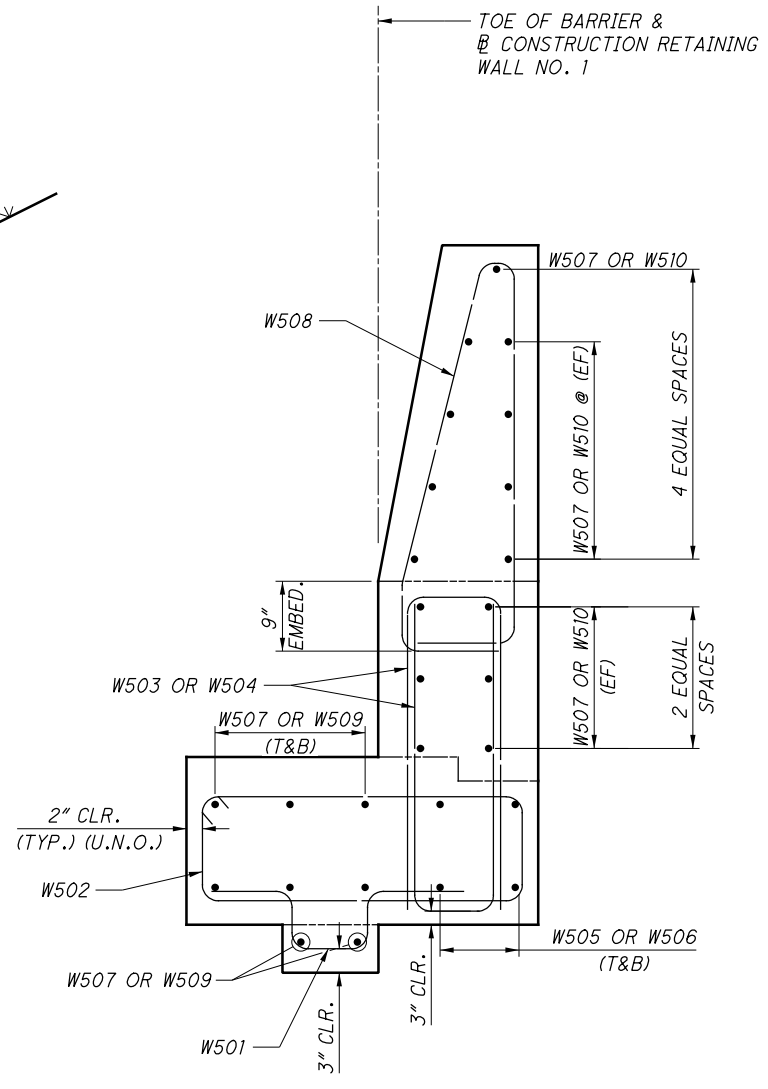
- NOTES:**
1. SEE SHEET 5 / 5 FOR SECTION A-A, SECTION B-B, AND NOTES.
 2. ALL LONGITUDINAL DIMENSIONS MEASURED ALONG TOE OF BARRIER & CONSTRUCTION WALL NO. 1

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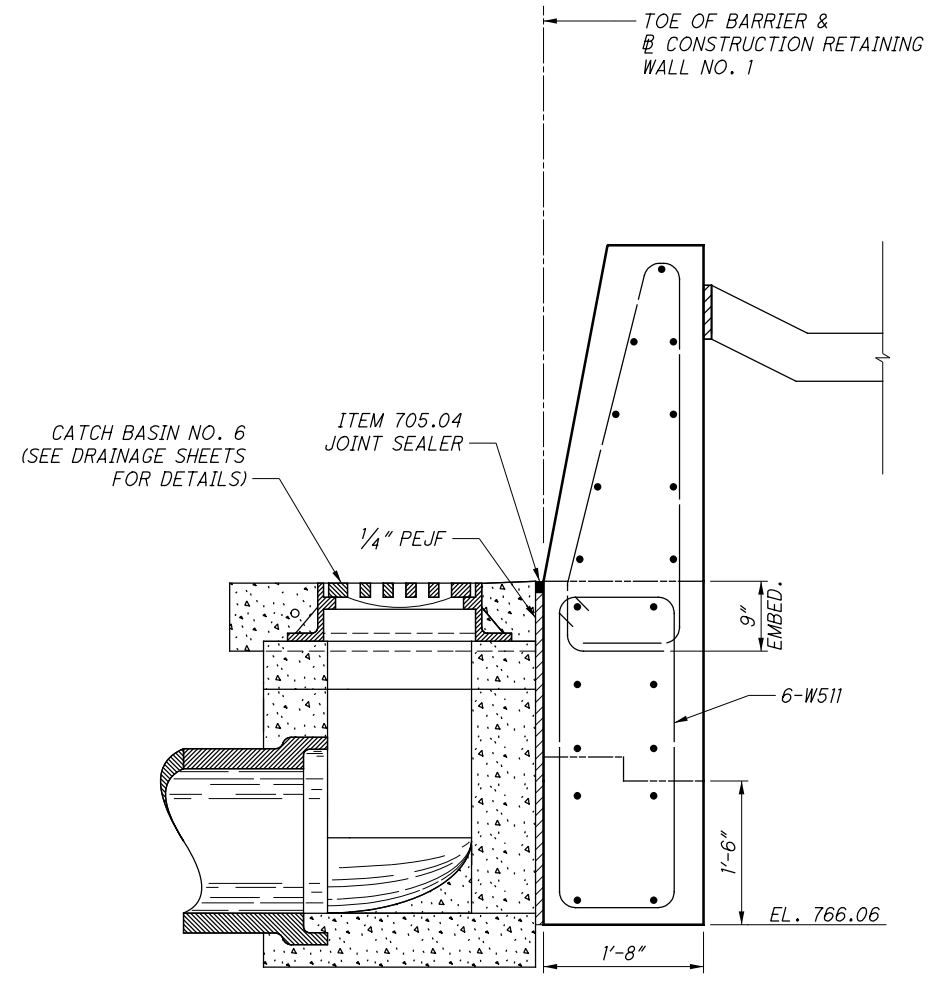
...Stage_3\92615_001WY001.dgn 5/28/2019 5:07:22 PM lang



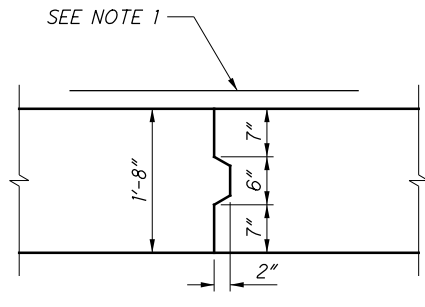
SECTION A-A
(FOR REINFORCING STEEL DETAILS, SEE REINFORCING SECTION A-A)



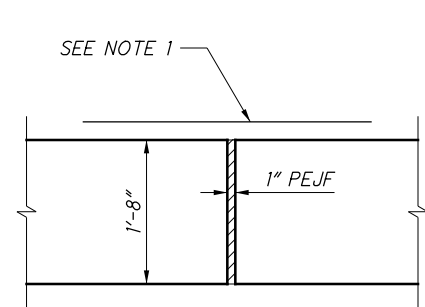
REINFORCING SECTION A-A
(PAVED GUTTER AND POROUS BACKFILL NOT SHOWN)
(FOR DIMENSIONS, SEE SECTION A-A)



SECTION B-B
(FOR DIMENSIONS AND DETAILS NOT SHOWN, SEE SECTION A-A)



CONTRACTION JOINT DETAIL
(IN STEM WALL)



EXPANSION JOINT DETAIL
(IN STEM WALL AND BARRIER)
(FOOTING IS TO BE CONTINUOUS)

- LEGEND:**
- EF = EACH FACE
 - EMBED. = EMBEDMENT
 - EQ. SPA. = EQUAL SPACING
 - CJ = CONSTRUCTION JOINT
 - PEJF = PREFORMED EXPANSION JOINT FILLER
 - T&B = TOP AND BOTTOM
 - U.N.O. = UNLESS NOTED OTHERWISE

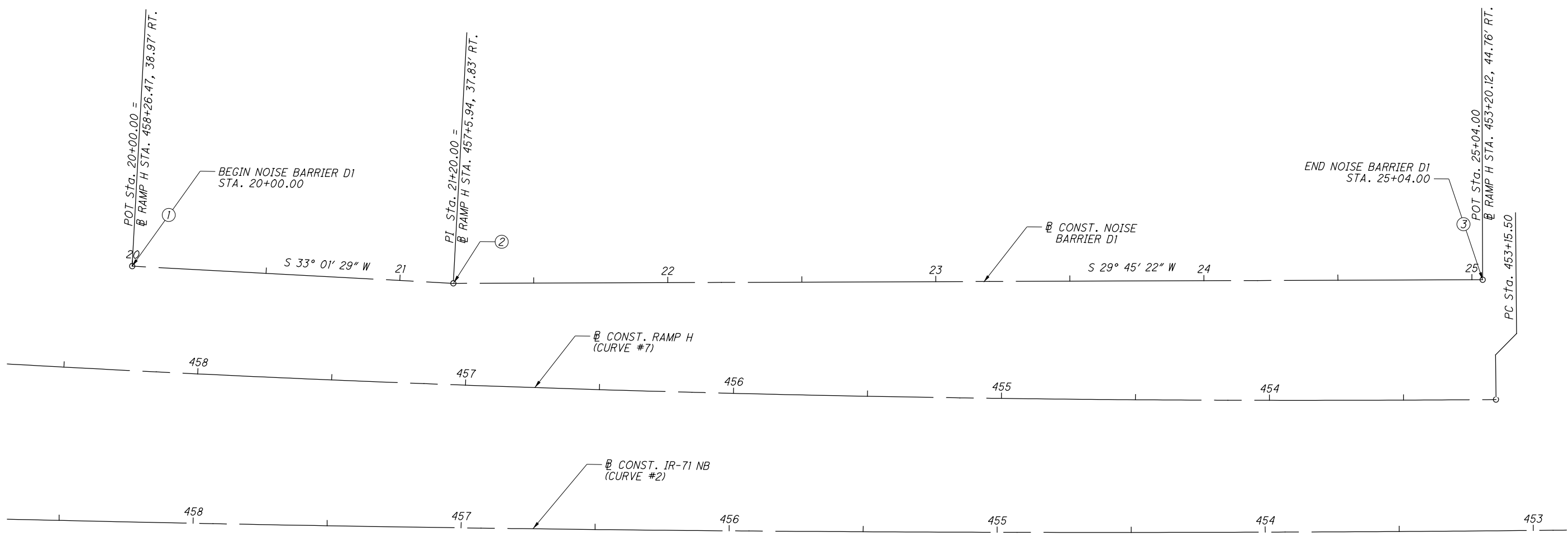
- NOTES:**
1. PLACE TYPE 2 WATERPROOFING, 3'-0" WIDE, CENTERED ON CONTRACTION AND EXPANSION JOINTS FROM THE CONSTRUCTION JOINT OF THE FOOTING AND WALL STEM TO THE TOP OF PAVED GUTTER.
 2. SEE ROADWAY AND DRAINAGE PLANS FOR ADDITIONAL TYPE D BARRIER, DRAINAGE, AND PAVED GUTTER DETAILS.



CALCULATED
BKF
CHECKED
JMK

**NOISE BARRIER SCHEMATIC PLAN
NOISE WALL D1**

FRA-71-9.07



CURVE DATA
RAMP H (CURVE #7)

P.I. STA 459+82.16	E = 25.82'
$\Delta = 8^{\circ}52'16''$ (RT)	$e_{max} = 0.019$
Dc = 0°40'00"	PC STA. 453+15.50
R = 8,594.37'	PCC STA. 466+46.15
T = 666.66'	
L = 1,330.66'	

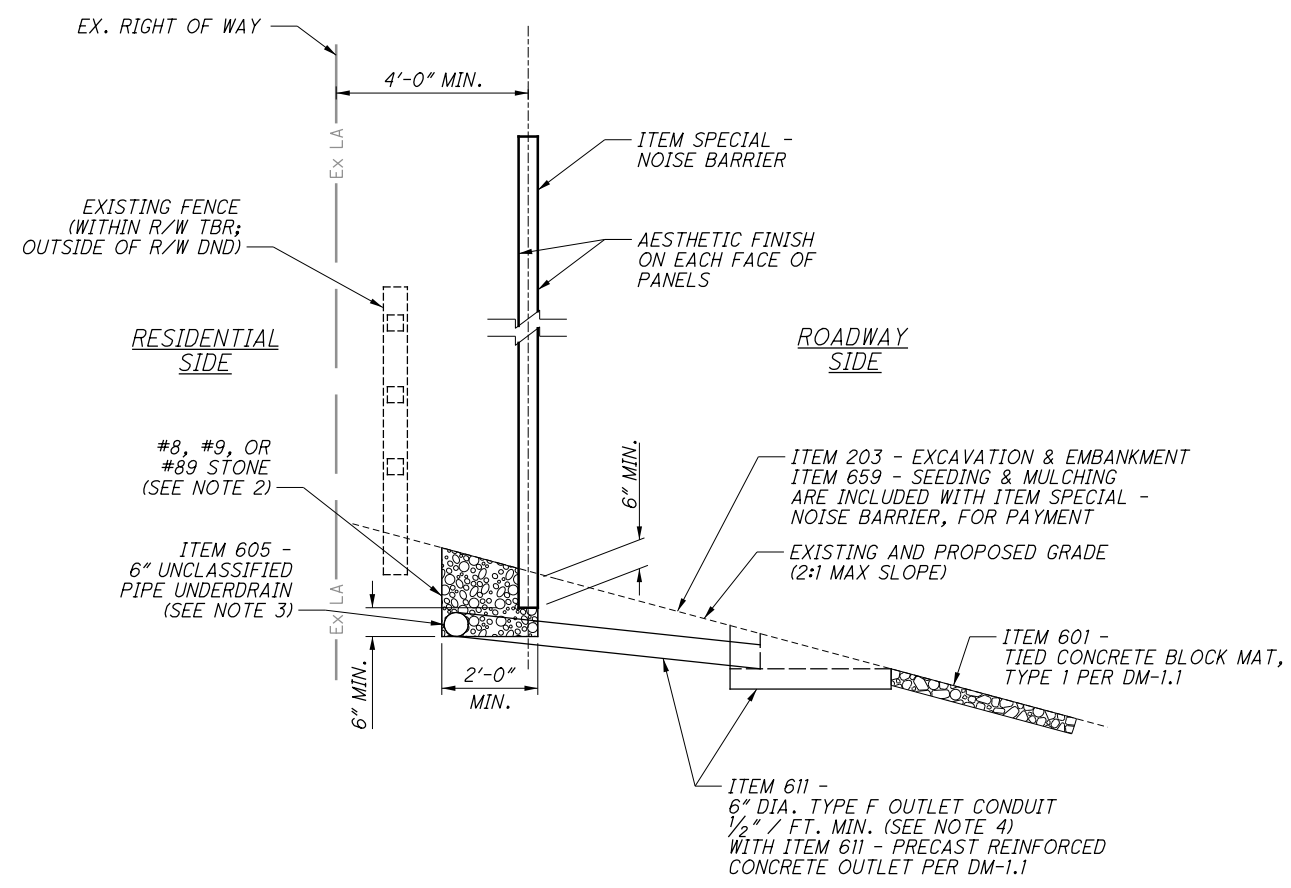
CURVE DATA
IR-71 (CURVE #2)

P.I. STA 462+63.86	E = 72.99'
$\Delta = 10^{\circ}32'30''$ (RT)	$e_{max} = NC$
Dc = 0°20'00"	PC STA. 446+78.13
R = 17,188.74'	PC STA. 587+51.41
T = 1,585.73'	
L = 3,162.50'	

NOISE BARRIER BASELINE GEOMETRY

P.I. NO.	NOISE WALL STATION	ALIGNMENT	STATION	OFFSET	NORTHING	EASTING	BEARING CONST. BARRIER D1	LENGTH
D1								
①	20+00.00	RAMP H	458+26.47	38.97' RT.	687,360.40	1,815,861.96	S 33° 01' 29" W	120.00'
②	21+20.00	RAMP H	457+5.94	37.83' RT.	687,259.78	1,815,796.56	S 29° 45' 22" W	384.00'
③	25+04.00	RAMP H	453+20.12	44.76' RT.	686,926.42	1,815,605.98		

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GROUND MOUNTED NOISE BARRIER

DATA TABLE - NOISE BARRIER D1

DRILLED SHAFT NUMBER	WORKPOINT STATION	TOP OF DRILLED SHAFT ELEVATION	SHAFT LENGTH (FEET)	POST TYPE	POST SIZE (INCHES)
1	20+00	765.85	6.0	B	16
2	20+08	765.80	6.0	A	16
3	20+16	765.80	6.0	A	16
4	20+24	765.63	9.0	A	20
5	20+48	766.63	9.0	A	20
6	20+72	766.63	11.0	A	20
7	20+96	766.63	11.0	A	20
8	21+20	765.63	11.0	A	20
9	21+44	765.63	14.0	A	20
10	21+68	765.63	14.0	A	20
11	21+92	765.63	14.0	A	20
12	22+16	765.63	14.0	A	20
13	22+40	766.63	14.0	A	20
14	22+64	766.63	14.0	A	20
15	22+88	766.63	14.0	A	20
16	23+12	766.63	14.0	A	20
17	23+36	766.63	11.0	A	20
18	23+60	766.63	11.0	A	20
19	23+84	766.63	9.0	A	20
20	24+08	766.63	9.0	A	20
21	24+32	765.63	9.0	A	20
22	24+56	765.63	9.0	A	20
23	24+80	765.63	9.0	A	20
24	24+88	765.80	6.0	A	16
25	24+96	765.80	6.0	A	16
26	25+04	765.85	6.0	B	16

NOTES:

1. NOISE BARRIERS SHALL BE FABRICATED AND INSTALLED PER NOISE BARRIER STANDARD DRAWING NBS-1-09 (REV. 01-19-18).
2. CONSTRUCT A TRENCH UNDER THE NOISE BARRIER PANELS AS SHOWN. THE BOTTOM OF THE TRENCH SHALL COINCIDE WITH THE UNDERDRAIN INVERT ELEVATION AS SHOWN IN THE NOISE BARRIER PROFILES. TRENCH EXCAVATION AND AGGREGATE BACKFILL ARE INCLUDED WITH ITEM 605 - 6" UNCLASSIFIED PIPE UNDERDRAINS FOR PAYMENT.
3. PROVIDE UNDERDRAIN AS SPECIFIED IN THE NOISE BARRIER PROFILE DRAWINGS. INSTALL IN ACCORDANCE WITH ITEM 605.
4. INSTALL OUTLET CONDUIT IN ACCORDANCE WITH ITEM 605 AND THESE PLANS.
5. DRILLED SHAFTS TO BE INCLUDED WITH ITEM SPECIAL - NOISE BARRIER FOR PAYMENT.

ITEM SPECIAL: NOISE BARRIER - REFLECTIVE 10' HEIGHT AND UNDER
ITEM SPECIAL: NOISE BARRIER - REFLECTIVE OVER 10' TO 14' HEIGHT
ITEM SPECIAL: NOISE BARRIER - REFLECTIVE OVER 14' TO 20' HEIGHT

1. NOISE BARRIER PANELS, POSTS, AND CAPS SHALL BE CONCRETE.
2. ALL TOP PANELS AND POSTS SHALL HAVE 6" TALL INTEGRAL CAPS AND NO OVERHANG. TOP OF POST SHALL BE 6" TALLER THAN TALLEST ADJACENT PANEL. SEE STANDARD DRAWING NBS-1-09 FOR ADDITIONAL DETAILS.
3. NOISE BARRIER POSTS AND CAPS SHALL HAVE A SMOOTH FINISH.
4. ALL POSTS SHALL HAVE A 3/4" RUSTICATION GROOVE, NOT THE 1/2" GROOVE PER STANDARD CONSTRUCTION DRAWING NBS-1-09, 6" BELOW THE TOP OF POST.
5. ALL NOISE BARRIER PANELS SHALL BE REFLECTIVE ON BOTH SIDES.
6. ALL NOISE BARRIER PANELS SHALL BE SEALED ON BOTH SIDES WITH THE FOLLOWING COLORS:
RESIDENTIAL SIDE - DARK NEUTRAL (TAN) #595B-10324
ROADWAY SIDE - LIGHT GRAY #595B-16515
7. THERE WILL BE NO EXTERIOR SEALER ON ALL CONCRETE POSTS. USE A CONCRETE WATERPROOFING ADMIXTURE FOR ALL CONCRETE POSTS. PENETRON AND BASE MASTERLIFE 300D ARE ODOT APPROVED SUPPLIERS.
8. NOISE BARRIER PANEL TEXTURE SHALL BE DRY STACK, ARCHITECTURAL POLYMER ID 9110 LARGE STONE OHIO DRY STACK OR ENGINEER APPROVED EQUAL, ON BOTH SIDES.
9. THE NOISE BARRIER SHOP DRAWING SUBMITTAL MUST INCLUDE THE ACOUSTICAL PROFILE SHOWN IN THESE PLANS ON EACH PROFILE VIEW.
10. PANEL LENGTH DEDUCTIONS FOR NOISE BARRIER POSTS SHALL BE PER STANDARD CONSTRUCTION DRAWING NBS-1-09.
11. SEE ODOT STD. DWG. NBS-1-09 FOR ADDITIONAL DETAILS NOT SHOWN IN THE PLANS.
12. ITEM 203 - EXCAVATION & EMBANKMENT AND ITEM 659 - SEEDING & MULCHING ARE INCLUDED WITH ITEM SPECIAL - NOISE BARRIER FOR PAYMENT.

SAMPLE BARRIER PANEL:

ONE SAMPLE OF A CONCRETE BARRIER PANEL AND POST WITH CAPS SHALL BE DELIVERED TO A LOCATION DESIGNATED BY THE ENGINEER FOR EVALUATION BY THE ENGINEER IN ACCORDANCE WITH THE ACCEPTANCE REQUIREMENTS OF THE NOISE BARRIER AS OUTLINED ON SHEET 2/13 IN THE STANDARD CONSTRUCTION DRAWING NBS-1-09.

SITE GRADING:

THE CONTRACTOR SHALL PROVIDE THE FINISHED GRADES AS SHOWN IN THE PLANS. SPOILS GENERATED FROM THE DRILLED SHAFT CONSTRUCTION MAY BE WASTED ON SITE ONLY AS DIRECTED BY THE ENGINEER.

PAYMENT:

IN ADDITION TO THE REQUIREMENTS OF STANDARD CONSTRUCTION DRAWING NBS-1-09, ALL OF THE ABOVE REQUIREMENTS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM SPECIAL: NOISE BARRIER.

ITEM 202 - FENCE REMOVED FOR REUSE, AS PER PLAN

THE CONTRACTOR SHALL CAREFULLY REMOVE THE EXISTING LANDSCAPE FENCE WITHIN ODOT RIGHT-OF-WAY (FROM STA. 20+00 TO STA. 25+04) PER ODOT CMS 202 WITH THE FOLLOWING PROVISIONS. THE CONTRACTOR SHALL CLEAN AND PAINT ANY DAMAGED SPOTS ON THE FENCE AFTER REMOVAL AND STORE THE FENCE FOR REUSE DURING CONSTRUCTION OF THE NOISE WALL. ONCE THE NOISE WALL IS COMPLETE, THE CONTRACTOR SHALL REINSTALL THE FENCE ALONG THE LIMITED ACCESS RIGHT OF WAY LIMITS AS DIRECTED BY THE PROJECT ENGINEER. ANY DAMAGED FENCE POSTS OR RAILS THAT CANNOT BE REPAIRED SHALL BE REPLACED IN KIND AS DIRECTED BY THE PROJECT ENGINEER AT NO COST TO THE AGENCY.

PAYMENT FOR THIS WORK SHALL INCLUDE ALL MATERIALS, LABOR, AND APPURTENANCES, AND SHALL BE PAID FOR WITH ITEM 202 FENCE REMOVED FOR REUSE, AS PER PLAN, PER LINEAR FOOT.

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REF. NO.	SHEET NO.	STATION		SIDE	202	601	605	SPECIAL	SPECIAL	SPECIAL	611	611				
		FROM	TO		FENCE REMOVED FOR REUSE, AS PER PLAN	TIED CONCRETE BLOCK MAT, TYPE 1	6" UNCLASSIFIED PIPE UNDERDRAINS	NOISE BARRIER (REFLECTIVE) 10' HEIGHT AND UNDER	NOISE BARRIER (REFLECTIVE) OVER 10' TO 14' HEIGHT	NOISE BARRIER (REFLECTIVE) OVER 14' TO 20' HEIGHT	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	PRECAST REINFORCED CONCRETE OUTLET	FT	EACH		
		NOISE BARRIER D1														
	264	20+00.00	25+04.00	℄												
RF1	264	21+37.90	25+04.00	LT	366				120	184	9200					
UD1	264	20+00.00	20+98.00	LT & RT		2	98					10	1			
UD2	264	21+00.00	21+80.00	LT & RT		2	80					9	1			
UD3	264	21+80.00	23+33.00	LT & RT			153									
UD4	264	23+35.00	25+04.00	LT & RT		2	169					13	1			
TOTALS CARRIED TO GENERAL SUMMARY					366	6	500	120	184	9200	32	3				

NOISE BARRIER SUBSUMMARY	CALCULATED
	BKF
	CHECKED
	JMK

PROJECT DESCRIPTION

THE FRA-71-8.87 NORTH PROJECT CONSISTS OF THE RESURFACING AND FULL DEPTH WIDENING OF IR-71 NB FROM IR-270 TO SOUTH OF STRINGTOWN ROAD. WORK ALSO INCLUDES RECONSTRUCTION OF SEVERAL RAMPS, CONSTRUCTING RW 1, AND NOISE BARRIER.

HISTORIC RECORDS

THE HISTORICAL GEOTECHNICAL INFORMATION AVAILABLE FOR THE FOLLOWING PROJECTS WAS REVIEWED AND EVALUATED DURING THE DEVELOPMENT OF THIS REPORT:

- FRA-270-52.16 2010
- FRA-71-5.29 2012

THE 2010 SUBSURFACE EXPLORATION WAS CONDUCTED BY RESOURCE INTERNATIONAL, INC. AND INCLUDED 8 BORINGS THAT ARE WITHIN THE PROJECT LIMITS, DRILLED BETWEEN 7.0 AND 7.8 FT BELOW THE PAVEMENT MATERIAL.

THE 2012 SUBSURFACE EXPLORATION WAS CONDUCTED BY STANTEC CONSULTING SERVICES INC AND INCLUDED 5 BORINGS WITHIN THE PROJECT LIMITS, DRILLED BETWEEN 6.5 AND 7.0 FT BELOW THE PAVEMENT MATERIAL.

GEOLOGY

THE PROJECT IS LOCATED IN A RELATIVELY FLAT AREA WITHIN THE COLUMBUS LOWLAND PORTION OF THE SOUTHERN OHIO LOAMY TILL PLAIN, PART OF THE CENTRAL LOWLANDS (BROCKMAN, 1998). THE LOWLAND IS SURROUNDED IN ALL DIRECTIONS BY RELATIVE UPLANDS, WHICH HAVE A REGIONAL SLOPE TOWARDS THE SCIOTO VALLEY. OVER 150 FT OF SURFICIAL UNCONSOLIDATED MATERIAL IS MAPPED AT THE PROJECT SITE, REPORTEDLY CONSISTING OF LOAM TILL (APPROX. 40 FT), TILL (APPROX. 70 FT) AND SAND AND GRAVEL, (UP TO 40 FT) OVERLYING DEVONIAN-AGE LIMESTONE AND DOLOMITE (BROCKMAN ET. AL., 2005 AND SLUCHER, 1998(1)). THE PROJECT SITE IS AT ABOUT ELEVATION 725 FT. THE SURROUNDING TERRAIN SLOPES FROM WEST (AT HIGH OF 800 FT AT GROVE CITY) TO THE EAST TOWARDS THE SOUTH TRENDING SCIOTO RIVER WHICH IS AT ABOUT ELEVATION 680 FT (US DEPARTMENT OF THE INTERIOR, 1995). TRIBUTARIES OF THE SCIOTO RIVER DISSECT THE TERRAIN NORTH TO SOUTH. SOILS AT THE PROJECT SITE HAVE BEEN MAPPED BY THE NATURAL RESOURCES CONSERVATION SERVICE (U.S. DEPARTMENT OF AGRICULTURE, 2013) AS UDORTHENTS, URBAN LAND COMPLEX, (GENTLY ROLLING) WHICH ARE NOT RATED FOR LOCAL ROAD AND STREET CONSTRUCTION. BEDROCK IS MAPPED AS COLUMBUS LIMESTONE PRESENT BELOW ELEVATION 600 FT IN THE VICINITY OF THE PROJECT SITE (ODNR, SLUCHER, 1998(2)).

THE SOIL SURVEY FOR FRANKLIN COUNTY INDICATES THAT THE NATURAL SOILS PRESENT WITHIN THE PROJECT AREA ARE COMPRISED PREDOMINATELY FROM THE CROSBY AND KOKOMO SOIL SERIES. THE SOILS SURVEY INDICATE THAT COBBLES AND BOULDERS ARE PRESENT WITHIN THESE SOIL SERIES, AND ODOT HAS SEEN THIS SITUATION ON PREVIOUS PROJECTS WITHIN FRANKLIN COUNTY LOCATED IN THESE SAME MAPPED SOILS.

RECONNAISSANCE

A SITE RECONNAISSANCE OF THE IR-71 NORTHBOUND BETWEEN THE IR-71 / IR-270 INTERCHANGE AND IR-71 / SPRINGTOWN ROAD INTERCHANGE WAS CONDUCTED ON DECEMBER 6, 2017. THE LOCATION IS IN GROVE CITY APPROXIMATELY 4 MILES SOUTHWEST OF COLUMBUS, IN FRANKLIN COUNTY, OHIO. LAND USE AT THE PROJECT SITE CAN BE DESCRIBED AS COMMERCIAL AND RESIDENTIAL. DURING OUR FIELD RECONNAISSANCE, NO GEOHAZARDS WERE OBSERVED WITHIN PROPOSED PROJECT LIMIT.

IR-71 AND RAMPS

THE EXISTING EMBANKMENT SLOPE ALONG THE IR-71 NORTHBOUND, IR-71 RAMP C AND IR-71 RAMP D WAS OBSERVED TO BE AT AN APPROXIMATE 3 HORIZONTAL:1 VERTICAL (3H:1V) SLOPE, AND THE SLOPES APPEARED TO BE STABLE WITH NO SIGNS OF INSTABILITY. ONE CULVERT AND ONE DRAINAGE PIPE WITH STANDING WATER WERE OBSERVED ALONG EXISTING IR-71 AT THE PROJECT SITE. ADDITIONALLY, STANDING WATER WAS ALSO OBSERVED AT THE BOTTOM OF THE EMBANKMENT SLOPE ALONG EXISTING IR-71 AND THE SURROUNDING AREAS WITHIN THE PROJECT LIMITS. NEARBY BUILDINGS, SIGNS, LIGHT POLES AND BRIDGES APPEARED TO BE IN GOOD CONDITION WITHOUT SIGNS OF DISTRESS, FAILURE OR PROBLEMS WITH SOIL CONDITIONS.

THE EMBANKMENT SLOPE CONDITIONS ALONG THE IR-270 RAMP H WITHIN THE PROJECT SITE WERE RELATIVELY CONSISTENT. THE EXISTING EMBANKMENT SLOPE WAS OBSERVED TO BE VEGETATED MAINLY WITH TREES AND SHRUBS AND TO BE AT AN APPROXIMATE 1 HORIZONTAL:1 VERTICAL (1H:1V) SLOPE. FURTHERMORE, THE SLOPES APPEARED TO BE STABLE WITH NO SIGNS OF INSTABILITY. THE ROADWAY AND EMBANKMENT AND SURROUNDING AREAS APPEARED TO BE WELL DRAINED.

THE EXISTING EMBANKMENT SLOPE ALONG IR-270 RAMP K WAS OBSERVED TO BE VERY STEEP WITH THE SLOPE RATIO OF BEING MUCH STEEPER THAN 1 HORIZONTAL:1 VERTICAL (1H:1V). THE MAXIMUM SLOPE HEIGHT DROP ALONG IR-270 RAMP K WAS ESTIMATED MORE THAN 30 FEET. THE EXISTING EMBANKMENT SLOPE WAS OBSERVED TO BE VEGETATED MAINLY WITH TREES AND SHRUBS, WHICH APPEARED TO BE STRAIGHT. THE EMBANKMENT SLOPE APPEARED TO BE STABLE WITH NO SIGNS OF INSTABILITY. THE EMBANKMENT AND SURROUNDING AREAS APPEARED TO BE WELL DRAINED.

THE PAVEMENT OF EXISTING IR-71 NORTHBOUND AND ASSOCIATED RAMPS AT THE PROJECT SITE WAS OBSERVED TO BE IN GOOD TO VERY GOOD CONDITION. SOME PORTIONS OF IR-71 AND RAMPS WERE OBSERVED WITH SIGNS OF LOW SEVERITY WEATHERING OBSERVED.

LEGEND

Symbol	Description	ODOT CLASS	CLASSIFIED MECH./VISUAL
	GRAVEL AND/OR STONE FRAGMENTS	A-1-a	3 3
	GRAVEL AND/OR STONE FRAGMENTS WITH SAND	A-1-b	0 3
	GRAVEL AND/OR STONE FRAG. WITH SAND AND SILT	A-2-4	1 0
	COARSE AND FINE SAND	A-3a	0 1
	SANDY SILT	A-4a	47 110
	SILT	A-4b	1 0
	SILT AND CLAY	A-6a	16 31
	SILTY CLAY	A-6b	17 13
	CLAY	A-7-6	7 6
	TOTAL	92	167
	SOD AND TOPSOIL = X = APPROXIMATE THICKNESS	VISUAL	
	PAVEMENT OR BASE = X = APPROXIMATE THICKNESS	VISUAL	
	PROJECT BORING LOCATION - PLAN VIEW		
	HISTORIC BORING LOCATION - PLAN VIEW		
	DRIVE SAMPLE AND/OR ROCK CORE BORING PLOTTED TO VERTICAL SCALE ONLY. HORIZONTAL BAR INDICATES A CHANGE IN STRATIGRAPHY.		
WC	INDICATES WATER CONTENT IN PERCENT.		
W	INDICATES FREE WATER ELEVATION.		
N ₆₀	INDICATES STANDARD PENETRATION RESISTANCE NORMALIZED TO 60% DRILL ROD ENERGY RATIO.		
X/Y/D"	NUMBER OF BLOWS FOR STANDARD PENETRATION TEST (SPT): X= NUMBER OF BLOWS FOR 6 INCHES (UNCORRECTED). Y/D"= NUMBER OF BLOWS (UNCORRECTED) FOR D" OF PENETRATION AT REFUSAL.		
*	INDICATES A SAMPLE TAKEN WITHIN 3 FT OF PROPOSED GRADE.		
SS	INDICATES A SPLIT-SPOON SAMPLE.		
NP	INDICATES A NON-PLASTIC SAMPLE.		

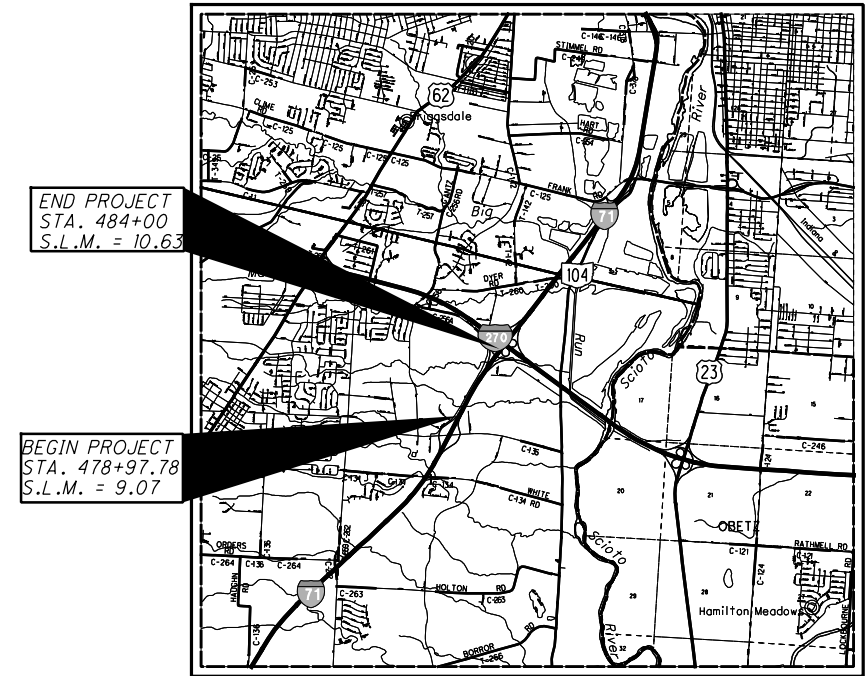
RECONNAISSANCE (CONTINUED)

RETAINING WALL 001

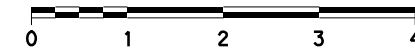
THE PROPOSED RETAINING WALL 001 (RW 001) ALIGNMENT WILL BE ALONG THE EAST SIDE OF IR-71 RAMP C JUST NORTH OF THE IR-71/STRINGTOWN ROAD INTERCHANGE. THE EXISTING EMBANKMENT SLOPE WAS OBSERVED TO BE AT AN APPROXIMATE 3 HORIZONTAL TO 1 VERTICAL (3H:1V) SLOPE, AND THE SLOPES APPEARED TO BE STABLE WITH NO SIGNS OF INSTABILITY. ONE CULVERT AND ONE DRAINAGE PIPE WITH STANDING WATER WERE OBSERVED ALONG IR-71 AT THE PROJECT SITE CLOSE TO RW 001. ADDITIONALLY, STANDING WATER WAS ALSO OBSERVED AT THE BOTTOM OF THE EMBANKMENT SLOPE ALONG IR-71 AND THE SURROUNDING AREAS WITHIN THE PROJECT LIMITS.

RETAINING WALL 003

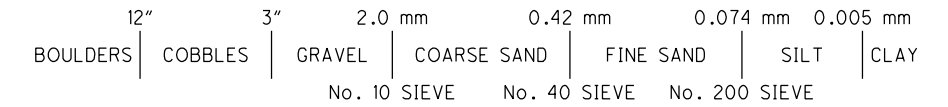
THE PROPOSED RETAINING WALL 003 (RW 003) ALIGNMENT WILL BE ALONG THE EAST SIDE OF IR-71 JUST SOUTH OF THE IR-71/ IR-270 INTERCHANGE. THE EXISTING EMBANKMENT SLOPE WAS OBSERVED TO BE STEEP WITH THE SLOPE RATIO OF 2 HORIZONTAL TO 1 VERTICAL (2H:1V). THE MAXIMUM SLOPE HEIGHT DROP AT THE SITE OF RW 003 WAS ESTIMATED MORE THAN 30 FEET. THE EXISTING EMBANKMENT SLOPE WAS OBSERVED TO BE VEGETATED MAINLY WITH TREES AND SHRUBS, WHICH APPEARED TO BE STRAIGHT. THE EMBANKMENT SLOPE APPEARED TO BE STABLE WITH NO SIGNS OF INSTABILITY. THE EMBANKMENT AND SURROUNDING AREAS APPEARED TO BE WELL DRAINED.



LOCATION MAP
SCALE IN MILES



PARTICLE SIZE DEFINITIONS



HISTORIC LEGEND

Symbol	Description	ODOT CLASS	CLASSIFIED MECH./VISUAL
	SANDY SILT	A-4a	20 12
	SILT AND CLAY	A-6a	3 5
	SILTY CLAY	A-6b	2 3
	CLAY	A-7-6	4 2
	TOTAL	29	22

- RECON. - ZM 12/06/17
- DRILLING - JH 10/11/17-10/16/17
- DRAWN - GL, ZM 01/19/18-08/24/18
- REVIEWED - CH 08/27/18



RECONAISSANCE (CONTNIUED)

NOISE BARRIER:

THE PROPOSED NOISE WALL (NW) ALIGNMENT WILL BE ALONG THE EAST SIDE OF IR-71 RAMP H BY THE SIDE OF THE GATEWAY LAKE. THE ALIGNMENT SITS IN A GRASSY AREA WHICH SLOPES FROM BOTH DIRECTIONS. THE EXISTING EMBANKMENT SLOPE WAS OBSERVED TO BE CONSISTENT AT AN APPROXIMATE 2 HORIZONTAL TO 1 VERTICAL (2H:1V) SLOPE, AND THE SLOPES APPEARED TO BE STABLE WITH NO SIGNS OF INSTABILITY. HOWEVER, STANDING WATER WAS OBSERVED AT THE BOTTOM OF THE EMBANKMENT SLOPE ALONG IR-71 AND THE SURROUNDING AREAS WITHIN THE PROJECT LIMITS. NEARBY BUILDINGS, SIGNS, LIGHT POLES AND BRIDGES APPEARED TO BE IN GOOD CONDITION WITHOUT SIGNS OF DISTRESS, FAILURE OR PROBLEMS WITH SOIL CONDITIONS.

OVERALL, NO APPARENT SIGNS OF SIGNIFICANT EROSION OR SCOUR, OR GEOTECHNICAL HAZARDS WERE OBSERVED NEAR THE SITE DURING OUR RECONNAISSANCE VISIT.

SUBSURFACE EXPLORATION

THE GEOTECHNICAL EXPLORATION FOR THIS PROJECT WAS CONDUCTED BY NEAS BETWEEN OCTOBER 11, 2017 AND OCTOBER 16, 2017 AND INCLUDED 12 STRUCTURE (LIGHT TOWER, NOISE WALL AND RETAINING WALL) BORINGS DRILLED TO DEPTHS BETWEEN 21.5 AND 31.5 FT BGS. THE PROJECT BORINGS FROM 2016 CONSIST OF 17 BORINGS WITHIN THE PROJECT LIMITS, DRILLED BETWEEN 6.8 AND 26.5 FT BELOW THE PAVEMENT MATERIAL. THE PROJECT BORINGS FROM 2014 CONSIST OF 11 BORINGS WITHIN THE PROJECT LIMITS, DRILLED BETWEEN 6.6 AND 11.0 FT BELOW THE PAVEMENT MATERIAL.

BORINGS WERE DRILLED USING CME 45B, CME 55X, CME 55, MOBILE B-58 TRACK MOUNTED DRILLING RIG UTILIZING 3.25-INCH DIAMETER HOLLOW STEM AUGERS. SOIL SAMPLES FROM ROADWAY BORINGS WERE RECOVERED CONTINUOUSLY AT INTERVALS OF 1.5 FEET; SAMPLES FROM JOINT ROADWAY / STRUCTURE BORINGS WERE RECOVERED AT 2.5 FT INTERVALS TO A DEPTH OF 30 FT BGS, AND AT 5.0-FT INTERVALS BELOW 30 FT BGS USING A SPLIT SPOON SAMPLER (AASHTO T-206 "STANDARD METHOD FOR PENETRATION TEST AND SPLIT BARREL SAMPLING OF SOILS."). STANDARD PENETRATION TESTS (SPT) WERE CONDUCTED USING CME OR MOBILE AUTO HAMMERS THAT HAVE BEEN CALIBRATED TO BE AT 77.4 %, 78.8%, 81.8%, 84.8%, 88.1% AND 88.7% EFFICIENT AS INDICATED ON THE BORING LOGS.

GROUNDWATER LEVEL OBSERVATIONS WERE RECORDED BOTH DURING AND AFTER THE COMPLETION OF DRILLING. AFTER COMPLETING THE BORINGS, THE BOREHOLES WERE BACKFILLED WITH SOIL CUTTINGS AND PATCHED WITH ASPHALT.

EXPLORATION FINDINGS

SUBGRADE:

THE SUBSURFACE PROFILE WITHIN THE PROPOSED PROJECT AREA CONSISTS OF SURFICIAL MATERIALS COMPRISED OF EITHER ASPHALT OR TOPSOIL. IN GENERAL, THE ENCOUNTERED ASPHALT PAVEMENT WAS UNDERLAIN BY GRANULAR BASE FOLLOWED BY MEDIUM STIFF TO HARD SANDY SILT (A-4a) AND COHESIVE FILL SOIL CONSISTING OF STIFF TO HARD SILT AND CLAY (A-6a). AS INDICATED BY THE FILL, THE SHALLOW SOILS WITHIN THE RIGHT OF WAY AREA ARE LIKELY TO HAVE BEEN REWORKED AND WHILE NOT ALWAYS SPECIFICALLY DETERMINED, MAY INCLUDE EMBANKMENT FILL OF VARIOUS AMOUNTS.

IR-71

ALONG THE PROPOSED IR-71 ALIGNMENT UTILIZING 13 PROJECT BORINGS PERFORMED BY NEAS AND THE REFERENCED 8 HISTORICAL BORINGS, 63 PERCENT OF THE SAMPLES WERE TAKEN ALONG THE IR-71 WERE CLASSIFIED AS GRANULAR SOILS AND WERE COMPRISED OF: 1) SANDY SILT (A-4a, 61% OF SAMPLES), AND 2) GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT (A-2-4, 1% OF SAMPLES). THE RELATIVE DENSITY OF THE COARSE-GRAINED SOILS RANGED FROM LOOSE TO VERY DENSE WITH CORRESPONDING N60 VALUES BETWEEN 15 AND 129 BPF. NATURAL MOISTURE CONTENTS RANGED FROM 7 TO 17 PERCENT.

THE REMAINING 37 PERCENT OF THE SAMPLES TAKEN WERE CLASSIFIED AS FINE-GRAINED, COHESIVE SOILS. THESE FINE-GRAINED SOILS WERE COMPRISED OF: 1) SILT AND CLAY (A-6a, 18% OF SAMPLES); 2) CLAY (A-7-6, 11% OF SAMPLES); AND 3) SILTY CLAY (A 6b, 8% OF SAMPLES). WITH RESPECTS TO THE CONSISTENCY OF THE FINE-GRAINED SOILS, THE DESCRIPTIONS VARIED FROM MEDIUM STIFF TO VERY HARD, CORRELATING TO CONVERTED SPT-N VALUES (N60) THAT RANGED FROM 7 BPF TO 96 BPF. NATURAL MOISTURE CONTENTS OF THE FINE-GRAINED SOILS RANGED FROM 7 TO 24 PERCENT. BASED ON ATTERBERG LIMITS TEST PERFORMED ON REPRESENTATIVE SAMPLES OF THE FINE-GRAINED SUBGRADE SOILS OBTAINED ALONG THE PROJECT, THE LIQUID AND PLASTIC LIMITS RANGED FROM 27 TO 55 PERCENT AND FROM 14 TO 22 PERCENT, RESPECTIVELY.

IR-71 EXISTING

ALONG THE PROPOSED IR-71 EXISTING ALIGNMENT INCLUDES 5 BORINGS PERFORMED BY NEAS, 80 PERCENT OF THE SAMPLES WERE TAKEN ALONG THE IR-71 EXISTING WERE CLASSIFIED AS GRANULAR SOILS AND WERE COMPRISED OF: 1) SANDY SILT (A-4a, 75% OF SAMPLES), AND 2) GRAVEL AND/OR STONE FRAGMENTS WITH SAND (A-1-b, 5% OF SAMPLES). THE RELATIVE DENSITY OF THE COARSE-GRAINED SOILS RANGED FROM LOOSE TO VERY DENSE WITH CORRESPONDING N60 VALUES BETWEEN 12 AND 141 BPF. NATURAL MOISTURE CONTENTS RANGED FROM 4 TO 19 PERCENT.

THE REMAINING 20 PERCENT OF THE SAMPLES TAKEN WERE CLASSIFIED AS FINE-GRAINED, COHESIVE SOILS ENCOUNTERED ON THE BORING B-053-3-16. THESE FINE-GRAINED SOILS WERE COMPRISED OF: SILT AND CLAY (A-6a, 18% OF SAMPLES). THE CONSISTENCY OF THE FINE-GRAINED SOILS WAS DESCRIBED AS HARD CORRELATING TO CONVERTED SPT-N VALUES (N60) THAT RANGED FROM 35 BPF TO 45 BPF. NATURAL MOISTURE CONTENTS OF THE FINE-GRAINED SOILS RANGED FROM 13 TO 15 PERCENT. BASED ON ATTERBERG LIMITS TEST PERFORMED ON REPRESENTATIVE SAMPLES OF THE FINE-GRAINED SUBGRADE SOILS OBTAINED ON B-053-3-16, THE LIQUID AND PLASTIC LIMITS WERE 30 PERCENT AND 18 PERCENT, RESPECTIVELY.

EXPLORATION FINDINGS (CONTINUED)

SUBGRADE (CONTINUED)

IR-71 RAMP C

ALONG THE PROPOSED IR-71 RAMP C ALIGNMENT UTILIZING 8 PROJECT BORINGS PERFORMED BY NEAS AND THE REFERENCED 2 HISTORICAL BORINGS, 76 PERCENT OF THE SAMPLES WERE TAKEN ALONG THE IR-71 RAMP C WERE CLASSIFIED AS GRANULAR SOILS AND WERE COMPRISED OF: 1) SANDY SILT (A-4a, 61% OF SAMPLES), AND 2) GRAVEL AND/OR STONE FRAGMENTS (A-1-a, 8% OF SAMPLES). THE RELATIVE DENSITY OF THE COARSE-GRAINED SOILS RANGED FROM LOOSE TO VERY DENSE WITH CORRESPONDING N60 VALUES BETWEEN 3 AND 137 BPF. NATURAL MOISTURE CONTENTS RANGED FROM 3 TO 16 PERCENT.

THE REMAINING 24 PERCENT OF THE SAMPLES TAKEN WERE CLASSIFIED AS FINE-GRAINED, COHESIVE SOILS. THESE FINE-GRAINED SOILS WERE COMPRISED OF: 1) SILTY CLAY (A-6b, 19% OF SAMPLES); 2) SILT AND CLAY (A-6a, 3% OF SAMPLES); AND 3) CLAY (A-7-6, 3% OF SAMPLES). WITH RESPECTS TO THE CONSISTENCY OF THE FINE-GRAINED SOILS, THE DESCRIPTIONS VARIED FROM STIFF TO HARD, CORRELATING TO CONVERTED SPT-N VALUES (N60) THAT RANGED FROM 3 BPF TO 28 BPF. NATURAL MOISTURE CONTENTS OF THE FINE-GRAINED SOILS RANGED FROM 14 TO 27 PERCENT. BASED ON ATTERBERG LIMITS TEST PERFORMED ON REPRESENTATIVE SAMPLES OF THE FINE-GRAINED SUBGRADE SOILS OBTAINED ALONG THE PROJECT, THE LIQUID AND PLASTIC LIMITS RANGED FROM 27 TO 42 PERCENT AND FROM 15 TO 28 PERCENT, RESPECTIVELY.

IR-71 RAMP D

ALONG THE PROPOSED IR-71 RAMP D ALIGNMENT UTILIZING 5 PROJECT BORINGS PERFORMED BY NEAS, 74 PERCENT OF THE SAMPLES WERE TAKEN ALONG THE IR-71 EXISTING WERE CLASSIFIED AS GRANULAR SOILS AND WERE COMPRISED OF: 1) SANDY SILT (A-4a, 75% OF SAMPLES), AND 2) GRAVEL AND/OR STONE FRAGMENTS WITH SAND (A-1-b, 5% OF SAMPLES). THE RELATIVE DENSITY OF THE COARSE-GRAINED SOILS RANGED FROM LOOSE TO VERY DENSE WITH CORRESPONDING N60 VALUES BETWEEN 12 AND 58 BPF. NATURAL MOISTURE CONTENTS RANGED FROM 9 TO 19 PERCENT.

THE REMAINING 26 OF THE SAMPLES TAKEN WERE CLASSIFIED AS FINE-GRAINED, COHESIVE SOILS ENCOUNTERED ON THE BORING B-053-3-16. THESE FINE-GRAINED SOILS WERE COMPRISED OF: SILT AND CLAY (A-6a, 18% OF SAMPLES). THE CONSISTENCY OF THE FINE-GRAINED SOILS WAS DESCRIBED AS HARD CORRELATING TO CONVERTED SPT-N VALUES (N60) THAT RANGED FROM 35 BPF TO 45 BPF. NATURAL MOISTURE CONTENTS OF THE FINE-GRAINED SOILS RANGED FROM 13 TO 15 PERCENT. BASED ON ATTERBERG LIMITS TEST PERFORMED ON REPRESENTATIVE SAMPLES OF THE FINE-GRAINED SUBGRADE SOILS OBTAINED ON B-053-3-16, THE LIQUID AND PLASTIC LIMITS WERE 30 PERCENT AND 18 PERCENT, RESPECTIVELY.

IR-270 RAMP H

ALONG THE PROPOSED IR-270 RAMP H ALIGNMENT UTILIZING 9 PROJECT BORINGS PERFORMED BY NEAS AND THE REFERENCED 8 HISTORICAL BORINGS, 50 PERCENT OF THE SAMPLES WERE TAKEN ALONG THE IR-270 RAMP H WERE CLASSIFIED AS GRANULAR SOILS AND WERE COMPRISED OF: 1) SANDY SILT (A-4a, 47% OF SAMPLES), 2) GRAVEL AND/OR STONE FRAGMENTS (A-1-a, 2% OF SAMPLES), AND 3) GRAVEL AND/OR STONE FRAGMENTS WITH SAND (A-1-b, 2% OF SAMPLES). THE RELATIVE DENSITY OF THE COARSE-GRAINED SOILS RANGED FROM LOOSE TO VERY DENSE WITH CORRESPONDING N60 VALUES BETWEEN 4 AND 75 BPF. NATURAL MOISTURE CONTENTS RANGED FROM 5 TO 17 PERCENT.

THE REMAINING 50 PERCENT OF THE SAMPLES TAKEN WERE CLASSIFIED AS FINE-GRAINED, COHESIVE SOILS. THESE FINE-GRAINED SOILS WERE COMPRISED OF: 1) SILT AND CLAY (A-6a, 21% OF SAMPLES); 2) SILTY CLAY (A-6b, 17% OF SAMPLES); AND 3) CLAY (A-7-6, 12% OF SAMPLES). WITH RESPECTS TO THE CONSISTENCY OF THE FINE-GRAINED SOILS, THE DESCRIPTIONS VARIED FROM STIFF TO HARD, CORRELATING TO CONVERTED SPT-N VALUES (N60) THAT RANGED FROM 7 BPF TO 44 BPF. NATURAL MOISTURE CONTENTS OF THE FINE-GRAINED SOILS RANGED FROM 9 TO 26 PERCENT. BASED ON ATTERBERG LIMITS TEST PERFORMED ON REPRESENTATIVE SAMPLES OF THE FINE-GRAINED SUBGRADE SOILS OBTAINED ALONG THE PROJECT, THE LIQUID AND PLASTIC LIMITS RANGED FROM 26 TO 55 PERCENT AND FROM 15 TO 22 PERCENT, RESPECTIVELY.

IR-270 RAMP K

ALONG THE PROPOSED IR-270 RAMP K ALIGNMENT UTILIZING 9 PROJECT BORINGS PERFORMED BY NEAS AND THE REFERENCED 2 HISTORICAL BORINGS, 42 PERCENT OF THE SAMPLES WERE TAKEN ALONG THE IR-270 RAMP K WERE CLASSIFIED AS GRANULAR SOILS AND WERE COMPRISED OF: 1) SANDY SILT (A-4a, 33% OF SAMPLES), 2) GRAVEL AND/OR STONE FRAGMENTS (A-1-a, 5% OF SAMPLES), AND 3) GRAVEL AND/OR STONE FRAGMENTS WITH SAND (A-1-b, 5% OF SAMPLES). THE RELATIVE DENSITY OF THE COARSE-GRAINED SOILS RANGED FROM LOOSE TO VERY DENSE WITH CORRESPONDING N60 VALUES BETWEEN 4 AND 34 BPF. NATURAL MOISTURE CONTENTS RANGED FROM 5 TO 18 PERCENT.

THE REMAINING 58 PERCENT OF THE SAMPLES TAKEN WERE CLASSIFIED AS FINE-GRAINED, COHESIVE SOILS. THESE FINE-GRAINED SOILS WERE COMPRISED OF: 1) SILT AND CLAY (A-6a, 35% OF SAMPLES); 2) SILTY CLAY (A-6b, 16% OF SAMPLES); AND 3) CLAY (A-7-6, 7% OF SAMPLES). WITH RESPECTS TO THE CONSISTENCY OF THE FINE-GRAINED SOILS, THE DESCRIPTIONS VARIED FROM STIFF TO HARD, CORRELATING TO CONVERTED SPT-N VALUES (N60) THAT RANGED FROM 12 BPF TO 36 BPF. NATURAL MOISTURE CONTENTS OF THE FINE-GRAINED SOILS RANGED FROM 11 TO 21 PERCENT. BASED ON ATTERBERG LIMITS TEST PERFORMED ON REPRESENTATIVE SAMPLES OF THE FINE-GRAINED SUBGRADE SOILS OBTAINED ALONG THE PROJECT, THE LIQUID AND PLASTIC LIMITS RANGED FROM 26 TO 46 PERCENT AND FROM 15 TO 18 PERCENT, RESPECTIVELY.

BEDROCK WAS NOT ENCOUNTERED IN ANY OF THE PROJECT OR HISTORICAL BORINGS.

RW 001:

AT THE PROPOSED RW 001 SITE, THE SOIL STRATA IDENTIFIED BELOW THE TOPSOIL WERE CONSISTENT, COMPRISED OF COHESIVE EMBANKMENT "MAN-MADE" FILL SOILS AND NATURAL SOILS (CLASSIFIED AS SANDY SILT A-4a). THE FILL SOILS WERE OBSERVED IN BOTH TWO BORINGS AT THE RW 001 SITE AND EXTENDED TO DEPTHS BETWEEN ABOUT 4.5 FT TO 7 FT BGS. BASED ON LABORATORY TESTING RESULTS AND A VISUAL REVIEW OF THE SOIL SAMPLES OBTAINED, THE FILL AT THE SITE IS MODERATELY PLASTIC, COHESIVE

EXPLORATION FINDINGS (CONTINUED)

RW 001 (CONTINUED)

MATERIAL COMPRISED OF SOIL CLASSIFIED AS EITHER CLAY (A-7-6) OR SANDY SILT (A-4a). WITH RESPECT TO THE SOIL STRENGTH, THE SOILS CAN BE DESCRIBED AS HAVING A VERY STIFF TO HARD CONSISTENCY CORRELATING TO CONVERTED SPT-N VALUES (N60) BETWEEN 15 AND 82 BLOWS PER FOOT (BPF) AND UNCONFINED COMPRESSIVE STRENGTHS BETWEEN APPROXIMATELY 2.25 AND IN EXCESS OF 4.5 TON PER SQUARE FOOT (TSF). NATURAL MOISTURE CONTENTS OF THE COHESIVE FILL RANGED FROM 9 TO 27 PERCENT IN MOISTURE. THE NATURAL SOILS SANDY SILT A-4a JUST BELOW THE FILLS CAN BE DESCRIBED AS HAVING A VERY STIFF TO HARD CONSISTENCY CORRELATING TO CONVERTED SPT-N VALUES (N60) BETWEEN 32 BLOWS PER FOOT (BPF) AND REFUSAL, AND UNCONFINED COMPRESSIVE STRENGTHS BETWEEN APPROXIMATELY 3.0 AND IN EXCESS OF 4.5 TON PER SQUARE FOOT (TSF). NATURAL MOISTURE CONTENTS RANGED FROM 7 TO 14 PERCENT IN MOISTURE.

RW 003:

RW 003 WAS DETERMINED TO BE UNNECESSARY AND REMOVED FROM THE FINAL DESIGN.

AT THE PROPOSED RW 003 SITE, THE SOIL STRATA IDENTIFIED BELOW THE PAVEMENT SECTION COMPRISE OF EMBANKMENT "MAN-MADE" FILL SOILS AND NATURAL SOILS. THE FILL SOILS WERE OBSERVED IN ALL THREE BORINGS AT THE RW 003 SITE AND EXTENDED TO DEPTHS BETWEEN ABOUT 4.5 FT TO 7 FT BGS. BASED ON LABORATORY TESTING RESULTS AND A VISUAL REVIEW OF THE SOIL SAMPLES OBTAINED, THE FILL AT THE SITE CONSISTS OF COHESIVE SANDY SILT (A-4a) AND SILT AND CLAY (A-6a), AND GRANULAR GRAVEL WITH SAND (A-1-b). NATURAL MOISTURE CONTENTS OF THE FILL SOILS RANGED FROM 12 TO 14 PERCENT IN MOISTURE. THE NATURAL SOILS SANDY SILT A-4a AND SILT AND CLAY (A-6a) JUST BELOW THE FILLS CAN BE DESCRIBED AS HAVING A STIFF TO HARD CONSISTENCY CORRELATING TO CONVERTED SPT-N VALUES (N60) BETWEEN 11 AND 29 BLOWS PER FOOT (BPF), AND UNCONFINED COMPRESSIVE STRENGTHS BETWEEN APPROXIMATELY 1.5 AND IN EXCESS OF 4.5 TON PER SQUARE FOOT (TSF). NATURAL MOISTURE CONTENTS RANGED FROM 10 TO 20 PERCENT IN MOISTURE.

NOISE BARRIER:

AT THE PROPOSED NOISE WALL SITE, THE SOIL STRATA IDENTIFIED BELOW THE SURFICIAL MATERIAL (TOPSOIL OR PAVEMENT SECTION) WERE CONSISTENT, COMPRISED OF COHESIVE EMBANKMENT "MAN-MADE" FILL SOILS AND NATURAL SOILS. THE FILL SOILS WERE OBSERVED IN ALL THE THREE BORINGS AT THE NOISE WALL SITE AND EXTENDED TO DEPTHS BETWEEN ABOUT 4.5 FT TO 9.5 FT BGS. BASED ON LABORATORY TESTING RESULTS AND A VISUAL REVIEW OF THE SOIL SAMPLES OBTAINED, THE FILL AT THE SITE IS MODERATELY PLASTIC, COHESIVE MATERIAL COMPRISED OF SOIL CLASSIFIED AS EITHER CLAY (A-7-6) OR SILTY CLAY (A-6b). WITH RESPECT TO THE SOIL STRENGTH, THE SOILS CAN BE DESCRIBED AS HAVING A VERY STIFF TO HARD CONSISTENCY CORRELATING TO CONVERTED SPT-N VALUES (N60) BETWEEN 7 AND 44 BLOWS PER FOOT (BPF) AND UNCONFINED COMPRESSIVE STRENGTHS (ESTIMATED BY MEANS OF HAND PENETROMETER) BETWEEN APPROXIMATELY 2.25 AND IN EXCESS OF 4.5 TON PER SQUARE FOOT (TSF). NATURAL MOISTURE CONTENTS OF THE COHESIVE FILL RANGED FROM 16 TO 26 PERCENT IN MOISTURE. THE NATURAL SOILS BELOW THE FILLS ARE CLASSIFIED AS SANDY SILT (A-4a) AND SILTY CLAY (A-6b), WHICH CAN BE DESCRIBED AS HAVING A VERY STIFF TO HARD CONSISTENCY CORRELATING TO CONVERTED SPT-N VALUES (N60) BETWEEN 23 BLOWS PER FOOT (BPF) AND REFUSAL, AND UNCONFINED COMPRESSIVE STRENGTHS BETWEEN APPROXIMATELY 3.5 AND IN EXCESS OF 4.5 TON PER SQUARE FOOT (TSF). NATURAL MOISTURE CONTENTS RANGED FROM 7 TO 15 PERCENT IN MOISTURE.

THIS GEOTECHNICAL EXPLORATION WAS PERFORMED IN ACCORDANCE WITH THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, OFFICE OF GEOTECHNICAL ENGINEERING, SPECIFICATIONS FOR GEOTECHNICAL EXPLORATIONS, DATED JULY 2017.

AVAILABLE INFORMATION

ALL AVAILABLE SOIL AND BEDROCK INFORMATION THAT CAN BE CONVENIENTLY SHOWN ON THE GEOTECHNICAL EXPLORATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL EXPLORATIONS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECT OF THE PROJECT. COPIES OF THIS DATA, IF ANY, MAY BE INSPECTED IN THE DISTRICT DEPUTY DIRECTOR'S OFFICE, THE OFFICE OF GEOTECHNICAL ENGINEERING AT 1980 WEST BROAD STREET.

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DESIGN AGENCY
NATIONAL ENGINEERING AND ARCHITECTURAL SERVICES, INC.
2800 CORPORATE EXCHANGE DRIVE
COLUMBUS, OH 43231 (614) 714-0299

PID NO.
92615

SOIL PROFILE

FRA - 71 - 9 . 07

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FRA-71-8.87		
BORING ID	PLAN VIEW	PROFILE VIEW SHEET
B-001-5-17	14	24
B-001-6-17	11, 14, 26	14, 27
B-001-7-17	11, 15, 26	25, 27
B-006-2-17	12, 18, 30	18, 30
B-007-1-17	12, 18, 30	18, 30
B-007-2-17	13, 18, 30	18, 30
B-011-2-17	21, 28	21, 29
B-011-3-17	21, 28	21, 29
B-011-4-17	21, 28	21, 29
B-053-5-17	9, 17	9, 17
B-132-1-17	19, 21, 28	19
B-133-1-17	19, 21	19
B-001-1-16	10	NOT ON ALIGNMENT
B-001-2-16	10	10
B-001-3-16	14	14, 24
B-001-4-16	11, 14, 26	14
B-002-2-16	11, 14	NOT ON ALIGNMENT
B-002-3-16	11, 15, 26	11, 15, 22, 25
B-003-1-16	11, 15	11, 15, 24
B-004-2-16	12, 15	NOT ON ALIGNMENT
B-004-3-16	12, 15	12
B-006-1-16	12, 18	NOT ON ALIGNMENT
B-008-1-16	13, 18	NOT ON ALIGNMENT
B-011-1-16	21, 28	21
B-012-1-16	21, 28	21
B-051-2-16	8, 16	16
B-053-3-16	9	9
B-053-4-16	9	9
B-054-2-16	9, 17	17
B-054-3-16	9, 16	9
B-054-4-16	10, 11, 17	17
B-054-5-16	10, 11	NOT ON ALIGNMENT
B-098-0-16	11, 15	NOT ON ALIGNMENT
B-099-0-16	11, 15	NOT ON ALIGNMENT
B-100-0-16	12, 15	NOT ON ALIGNMENT
B-101-0-16	13	NOT ON ALIGNMENT
B-131-0-16	13, 19, 21	19, 21

FRA-71-8.87		
BORING ID	PLAN VIEW	PROFILE VIEW SHEET
B-132-0-16	13, 19, 21	19, 21
B-133-0-16	19, 21, 28	19
B-134-0-16	20	NOT ON ALIGNMENT
B-001-0-14	11	11
B-002-0-14	11, 14	11
B-002-1-14	11, 14, 26	11
B-003-0-14	11, 15	11
B-004-0-14	12	12
B-004-1-14	12, 15	NOT ON ALIGNMENT
B-005-0-14	12	12
B-006-0-14	12, 18	12
B-007-0-14	12, 18, 30	12, 18
B-008-0-14	13, 18	NOT ON ALIGNMENT
B-009-0-14	13, 18	23
B-010-0-14	13, 19, 21	21
B-010-1-14	13, 19, 21	21
B-011-0-14	21, 28	NOT ON ALIGNMENT
B-012-0-14	21, 28	NOT ON ALIGNMENT
B-013-0-14	21, 28	NOT ON ALIGNMENT
B-014-0-14	21	NOT ON ALIGNMENT
B-015-0-14	21	NOT ON ALIGNMENT
B-109-0-14	19	NOT ON ALIGNMENT
B-056-0-12	10	10
B-057-0-12	10	10
B-058-0-12	10	NOT ON ALIGNMENT
B-059-0-12	11, 14	11
B-060-0-12	11, 15, 26	22, 25
B-061-0-12	11, 15	11, 15
B-038-0-10	12, 18, 30	12, 18
B-039-0-10	13, 18	13, 18
B-040-0-10	13, 18	13, 19, 23
B-045-0-10	13, 19, 21	19, 21
B-048-0-10	19, 21	19, 21
B-051-0-10	20	20
B-058-0-10	20	20
B-059-0-10	20	20
B-062-0-10	20	NOT ON ALIGNMENT

INDEX OF SHEETS						
SUMMARY OF SOIL TEST DATA, SHEETS 4 THROUGH 7						
LOCATION		PLAN VIEW SHEET	PROFILE SHEET	CROSS-SECTION SHEET	CUT MAX.	FILL EMB. MAX.
FROM STA.	TO STA.					
EXISTING IR-71						
471+00	483+50	8	-	-	0.0 FT	0.0 FT
483+50	496+00	9	9	-	0.0 FT	0.0 FT
IR -71 NB						
420+00	431+00	10	10	-	0.0 FT	0.0 FT
431+00	443+50	11	11	22	0.0 FT	0.0 FT
443+50	456+00	12	12	-	0.0 FT	0.0 FT
456+00	END	13	13	23	0.0 FT	0.0 FT
IR-71 RAMP C						
BEGIN	437+00	14	14	24	2.2 FT	0.4 FT
437+00	END	15	15	25	0.0 FT	1.7 FT
IR-71 RAMP D						
BEGIN	491+00	16	16	-	0.0 FT	2.0 FT
491+00	END	17	17	-	0.6 FT	2.0 FT
IR-270 RAMP H						
BEGIN	462+00	18	18	-	0.0 FT	3.2 FT
462+00	474+50	19	19	-	6.2 FT	5.1 FT
474+50	END	20	20	-	0.9 FT	0.7 FT
IR-270 RAMP K						
BEGIN	END	21	21	-	0.0 FT	0.2 FT
RW NO. 1						
BEGIN	END	26	27	-	- FT	- FT
RW NO. 3 (REMOVED FROM THE FINAL DESIGN)						
BEGIN	END	28	29	-	- FT	- FT
NOISE WALL						
BEGIN	END	30	30	-	- FT	- FT

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SOIL PROFILE

FRA-71-9.07



SUMMARY OF SOIL TEST DATA
PROJECT BORINGS - EXISTING IR-71

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	N60	REC	HP tsf	GR	CS	FS	SILT	CLAY	LL	PL	PI	WC	ODOT CLASS (GI)	ppm SO4
B-053-3-16 STA. 489+79, 86' RT LATITUDE = 39.874851 LONGITUDE = -83.051679	2.00 - 3.50	3.50 - 5.00	SS-1	45	100	4.5+	10	7	10	34	39	30	18	12	15	A-6a (8)	553
			SS-2	35	78	4.5+				SAME AS SS-1					15	A-6a (VISUAL)	
			SS-3	41	67	4.5+				SAME AS SS-1					13	A-6a (VISUAL)	
			SS-4	31	56	4.5+				SAME AS SS-1					13	A-6a (VISUAL)	
B-053-4-16 STA. 490+36, 91' LT LATITUDE = 39.875220 LONGITUDE = -83.052140	2.00 - 3.50	3.50 - 5.00	SS-1	57	100	4.5+	8	12	19	36	25	23	15	8	10	A-4a (5)	613
			SS-2	25	100	4.5+				SAME AS SS-1					10	A-4a (VISUAL)	
			SS-3	141	50	4.5+				SAME AS SS-1					10	A-4a (VISUAL)	
			SS-4	50/4"	100	-				GRAVEL & STONE FRAG. W/ SAND, VERY DENSE				4	A-1-b (VISUAL)		
B-054-3-16 STA. 494+66, 82' LT LATITUDE = 39.876254 LONGITUDE = -83.051413	2.00 - 3.50	3.50 - 5.00	SS-1	52	100	4.5+	8	9	16	38	29	25	15	10	11	A-4a (6)	993
			SS-2	23	89	4.5+				SAME AS SS-1					11	A-4a (VISUAL)	
			SS-3	20	100	4.5+				SAME AS SS-1					11	A-4a (VISUAL)	
			SS-4	31	100	4.5+				SAME AS SS-1					10	A-4a (VISUAL)	

SUMMARY OF SOIL TEST DATA
PROJECT BORINGS - IR-71 NB

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	N60	REC	HP tsf	GR	CS	FS	SILT	CLAY	LL	PL	PI	WC	ODOT CLASS (GI)	ppm SO4	
B-001-2-16 STA. 428+94, 21' LT LATITUDE = 39.878921 LONGITUDE = -83.049021	2.00 - 3.50	3.50 - 5.00	SS-1	78	100	4.5+	12	7	18	41	22	22	15	7	9	A-4a (6)*	780	
			SS-2	90	100	4.5+	5	7	21	41	26	23	14	9	8	A-4a (6)		
			SS-3	65	89	4.5+				SAME AS SS-2					8	A-4a (VISUAL)		
			SS-4	75	89	4.5+				SAME AS SS-2					8	A-4a (VISUAL)		
B-001-0-14 STA. 431+69, 38' LT LATITUDE = 39.879667 LONGITUDE = -83.048764	0.00 - 1.50	1.50 - 3.00	SS-1	21	100	4.5+	6	8	20	40	26	22	13	9	9	A-4a (6)*	129	
			SS-2	37	100	4.5+	5	8	21	40	26	23	13	10	8	A-4a (6)		
			SS-3	43	100	4.5+				SAME AS SS-2					9	A-4a (VISUAL)		
			SS-4	50/2"	100	4.5+				SAME AS SS-2					7	A-4a (VISUAL)		
			SS-5	39	100	4.5+				SAME AS SS-2					9	A-4a (VISUAL)		
			SS-6A	64	100	4.5+				SAME AS SS-2					11	A-4a (VISUAL)		
			SS-6B	64	100	-				VERY DENSE, BROWN, COARSE & FINE SAND				13	A-3a (VISUAL)			
B-002-0-14 STA. 435+77, 19' LT LATITUDE = 39.880641 LONGITUDE = -83.048041	1.50 - 3.00	3.00 - 4.50	SS-1	38	100	-				40	12	13	12	19	14	5	7	A-2-4 (0)*
			SS-2	81	100	4.5+				18	15	26	30	11	NP	NP	8	A-4a (1)*
			SS-3	85	89	4.5+				SAME AS SS-2					8	A-4a (VISUAL)		
			SS-4	96	100	4.5+				HARD, GRAY, SILT AND CLAY					7	A-6a (VISUAL)		
B-002-1-14 STA. 436+00, 8' LT LATITUDE = 39.880685 LONGITUDE = -83.047970	2.00 - 3.50	3.50 - 5.00	SS-1	37	100	4.5+	10	14	20	37	19	21	14	7	9	A-4a (4)*		
			SS-2	101	100	-	8	15	31	37	9	NP	NP	NP	11	A-4a (2)		
			SS-3	52	100	4.5+				HARD, GRAY, SILT AND CLAY					8	A-6a (VISUAL)		
			SS-4	50	100	4.5+				HARD, GRAY, SILT AND CLAY					8	A-6a (VISUAL)		
			SS-5	53	100	4.5+				HARD, GRAY, SILT AND CLAY					8	A-6a (VISUAL)		
			SS-6A	64	100	4.5+				HARD, GRAY, SILT AND CLAY					8	A-6a (VISUAL)		
			SS-6B	64	100	4.5+				HARD, GRAY, SILT AND CLAY					7	A-6a (VISUAL)		
B-002-3-16 STA. 437+41, 51' RT LATITUDE = 39.880955 LONGITUDE = -83.047556	2.00 - 3.50	3.50 - 4.40	SS-1	129	89	-	7	10	25	45	13	NP	NP	NP	10	A-4a (5)	547	
			SS-2	71	91	-				SAME AS SS-1					10	A-4a (VISUAL)		
			SS-3	78	89	-				SAME AS SS-1					7	A-4a (VISUAL)		
			SS-4	93	100	-				SAME AS SS-1					17	A-4a (VISUAL)		
B-003-0-14 STA. 439+67, 74' LT LATITUDE = 39.881664 LONGITUDE = -83.047586	0.50 - 1.50	1.50 - 2.00	SS-1A	14	100	3.25 - 4.5+	2	5	19	47	27	28	16	12	14	A-6a (9)	178	
			SS-1B	14	100	1.5	3	3	23	38	33	35	16	19	20	A-6b (11)		
			SS-2	32	100	2.0 - 2.75	8	10	23	42	17	18	14	4	10	A-4a (5)		
			SS-3	58	100	4.5+				SAME AS SS-3					8	A-4a (VISUAL)		
			SS-4	64	100	4.5+				SAME AS SS-3					9	A-4a (VISUAL)		
			SS-5	59	83	4.5+				SAME AS SS-3					8	A-4a (VISUAL)		
B-003-1-16 STA. 442+84, 39' RT LATITUDE = 39.882300 LONGITUDE = -83.046715	2.00 - 3.50	3.50 - 5.00	SS-1	28	100	2.0 - 4.5+	5	7	18	37	33	38	17	21	17	A-6b (11)*	547	
			SS-2	24	67	-	6	13	27	38	16	20	14	6	12	A-4a (4)		
			SS-3	27	83	-				SAME AS SS-2					15	A-4a (VISUAL)		
			SS-4	47	83	-				SAME AS SS-2					10	A-4a (VISUAL)		
B-004-0-14 STA. 444+40, 93' LT LATITUDE = 39.882846 LONGITUDE = -83.046880	2.00 - 3.50	3.50 - 5.00	SS-1	7	100	1.0 - 1.25	8	10	16	35	31	35	15	20	18	A-6b (10)*	<100	
			SS-2	13	100	0.75 - 1.0				SAME AS SS-1					18	A-6b (VISUAL)		
			SS-3	11	100	0.5 - 1.5	13	13	18	34	22	27	16	11	16	A-6a (5)		
			SS-4	66	100	-				VERY DENSE, SANDY SILT					8	A-4a (VISUAL)		
B-004-3-16 STA. 447+26, 29' RT LATITUDE = 39.883391 LONGITUDE = -83.046030	2.00 - 3.50	3.50 - 5.00	SS-1	25	100	3.25 - 4.5+	9	8	18	39	26	27	16	11	14	A-6a (6)*	827	
			SS-2	20	67	2.25 - 4.0	8	7	15	34	36	37	17	20	18	A-6b (11)		
			SS-3	27	89	2.0 - 4.5+	7	10	19	40	24	25	15	10	14	A-4a (6)		
			SS-4	28	89	4.25 - 4.5+				SAME AS SS-3					12	A-4a (VISUAL)		
B-005-0-14 STA. 448+63, 40' LT LATITUDE = 39.883810 LONGITUDE = -83.046014	0.50 - 2.00	2.00 - 3.50	SS-1	27	100	4.5+	6	9	18	37	30	30	15	15	10	A-6a (8)	209	
			SS-2	17	83	1.5 - 3.5				SAME AS SS-1					20	A-6a (VISUAL)		
			SS-3	12	100	2.0 - 2.5	2	5	14	33	46	43	19	24	21	A-7-6 (14)		
			SS-4	12	100	1.5 - 2.7				SAME AS SS-3					20	A-7-6 (VISUAL)		
			SS-5	17	100	1.5 - 2.5				VERY STIFF. BROWN, SILT & CLAY					13	A-6a (VISUAL)		

SUMMARY OF SOIL TEST DATA
PROJECT BORINGS - IR-71 MB

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	N60	% REC	HP tsf	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	ODOT CLASS (GI)	ppm SO4
B-006-0-14	0.50 - 2.00	SS-1	14	100	4.5+	9	8	19	35	29	27	14	13	20	13	A-6a (7)*	222
STA. 452+16, 33' LT	2.00 - 3.50	SS-2	19	100	3.5 - 4.5+	4	6	16	47	27	25	16	9	16	16	A-4a (8)*	
LATITUDE = 39.884573	3.50 - 5.00	SS-3	15	100	3.1 - 4.5+										16	A-6a (VISUAL)	
LONGITUDE = -83.045200	5.00 - 6.50	SS-4	30	100	4.5+										13	A-6a (VISUAL)	
	6.50 - 8.00	SS-5	34	100	4.5+										13	A-6a (VISUAL)	
B-007-0-14	0.50 - 2.00	SS-1	14	100	3.0	1	4	11	36	48	48	21	27	20	16	A-7-6 (16)*	147
STA. 455+03, 33' LT	2.00 - 3.50	SS-2	18	67	2.25 - 3.0	5	7	14	36	38	35	16	19	17	17	A-6b (11)	
LATITUDE = 39.885350	3.50 - 5.00	SS-3	22	100	3.75 - 4.5										13	A-6a (VISUAL)	
LONGITUDE = -83.044905	5.00 - 6.50	SS-4	21	50	2.25 - 3.25										11	A-6a (VISUAL)	
	6.50 - 8.00	SS-5	31	100	3.0 - 3.75										11	A-4a (VISUAL)	
B-009-0-14	0.50 - 2.00	SS-1	19	94	2.5 - 4.0	6	7	14	36	37	34	18	16	16	16	A-6b (10)	187
STA. 463+03, 29' LT	2.00 - 3.50	SS-2	19	100	2.25 - 4.0	4	9	21	43	23	22	15	7	12	12	A-4a (6)	
LATITUDE = 39.887231	3.50 - 5.00	SS-3	21	94	1.0 - 4.5+										14	A-4a (VISUAL)	
LONGITUDE = -83.043423	5.00 - 6.50	SS-4	24	100	3.25 - 4.5+										10	A-4a (VISUAL)	
	6.50 - 7.25	SS-5A	50	100	0.25										15	A-4a (VISUAL)	
	7.25 - 8.00	SS-5B	50	100	-										10	A-4a (VISUAL)	

SUMMARY OF SOIL TEST DATA
PROJECT BORINGS - IR-71 RAMP C

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	N60	% REC	HP tsf	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	ODOT CLASS (GI)	ppm SO4
B-001-3-16	2.00 - 3.50	SS-1	28	56	1.25 - 2.0	19	11	15	29	26	39	18	21	18	18	A-6b (8)	1540
STA. 429+72, 7' RT	3.50 - 5.00	SS-2	7	17	-	82	8	5	5		NP	NP	NP	3	A-1-a (10)		
LATITUDE = 39.878874	5.00 - 6.50	SS-3	3	11	-									8	A-1-a (VISUAL)		
LONGITUDE = -83.047495	6.50 - 8.00	SS-4	7	44	-									14	A-1-a (VISUAL)		
B-001-4-16	2.00 - 3.50	SS-1	34	83	4.5+	8	10	21	37	24	23	16	7	11	A-4a (5)*	500	
STA. 433+57, 4' LT	3.50 - 5.00	SS-2	14	8	-									10	A-4a (VISUAL)*		
LATITUDE = 39.879910	5.00 - 6.50	SS-3	59	100	4.5+									8	A-4a (VISUAL)		
LONGITUDE = -83.047770	6.50 - 8.00	SS-4	72	100	4.5+									10	A-4a (VISUAL)		

SUMMARY OF SOIL TEST DATA
PROJECT BORINGS - IR-71 RAMP D

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	N60	% REC	HP tsf	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	ODOT CLASS (GI)	ppm SO4
B-054-2-16	2.00 - 3.50	SS-1	41	100	-	12	11	19	35	23	20	15	5	10	A-4a (5)*	740	
STA. 493+58, 10' LT	3.50 - 5.00	SS-2	44	94	-									10	A-4a (VISUAL)*		
LATITUDE = 39.875713	5.00 - 6.50	SS-3	38	100	-									9	A-4a (VISUAL)		
LONGITUDE = -83.050962	6.50 - 8.00	SS-4	58	56	-									10	A-4a (VISUAL)		
B-054-4-16	0.00 - 0.50	SS-1A	13	72	3.75 - 4.25	14	11	19	36	20	24	15	9	12	A-4a (4)*		
STA. 496+44, 33' LT	0.50 - 1.50	SS-1B	13	72	2.0 - 2.25	10	10	17	36	27	33	18	15	17	A-6a (8)*	633	
LATITUDE = 39.876331	1.50 - 3.00	SS-2	11	67	3.5 - 4.25	7	11	20	39	23	23	15	8	13	A-4a (5)*		
LONGITUDE = -83.050294	3.00 - 4.50	SS-3	44	17	4.25									12	A-4a (VISUAL)*		
	4.50 - 6.00	SS-4	37	67	4.5+									12	A-4a (VISUAL)		
	6.00 - 7.50	SS-5	49	11	4.5+									13	A-4a (VISUAL)		

SUMMARY OF SOIL TEST DATA
PROJECT BORINGS - IR-270 RAMP H

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	N60	% REC	HP tsf	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	ODOT CLASS (GI)	ppm SO4
B-131-0-16	2.00 - 3.50	SS-1	20	89	3.25 - 4.5+	14	13	19	31	23	23	14	9	6	A-4a (4)*	1933	
STA. 464+89, 29' LT	3.50 - 5.00	SS-2	16	67	3.25 - 3.75	26	16	14	27	17	27	15	12	11	A-6a (2)		
LATITUDE = 39.887533	5.00 - 6.50	SS-3	4	11	-									14	A-4a (VISUAL)		
LONGITUDE = -83.042788	6.50 - 8.00	SS-4	18	67	-	5	12	25	43	15	18	15	3	11	A-4a (5)		
B-132-0-16	2.00 - 3.50	SS-1	30	100	4.5+	14	9	19	34	24	24	15	9	10	A-4a (5)*		
STA. 468+47, 21' LT	3.50 - 5.00	SS-2	16	6	-									10	A-1-b (VISUAL)*		
LATITUDE = 39.888288	5.00 - 6.50	SS-3	27	72	3.5 - 4.5+	17	11	19	40	13	23	15	8	11	A-4a (4)*		
LONGITUDE = -83.041959	6.50 - 8.00	SS-4	33	100	-									10	A-4a (VISUAL)*		
	9.00 - 10.50	SS-5	68	100	-	7	14	23	38	18	19	15	4	9	A-4a (4)		
	11.50 - 13.00	SS-6	48	89	-									8	A-4a (VISUAL)		
	14.00 - 15.50	SS-7	37	94	-									9	A-4a (VISUAL)		
	16.50 - 18.00	SS-8	40	78	-									10	A-4a (VISUAL)		
	19.00 - 20.50	SS-9	40	100	-									10	A-4a (VISUAL)		
B-133-0-16	2.00 - 3.00	SS-1A	31	56	-	68	14	6	9	3	NP	NP	NP	5	A-1-a (10)*		
STA. 472+69, 18' LT	3.00 - 3.50	SS-1B	31	56	4.5+									9	A-6a (VISUAL)*		
LATITUDE = 39.889075	3.50 - 5.00	SS-2	8	50	2.5 - 4.5+	13	9	15	32	31	30	16	14	12	A-6a (7)*		
LONGITUDE = -83.040841	5.00 - 6.50	SS-3	7	56	2.5 - 4.5+									14	A-6a (VISUAL)*		
	6.50 - 8.00	SS-4	16	67	4.5+	4	9	20	36	31	27	16	11	10	A-6a (7)		
	10.00 - 11.50	SS-5	24	78	2.5 - 2.75									15	A-6b (VISUAL)		
	12.50 - 14.00	SS-6	16	56	4.5+									16	A-6a (VISUAL)		
	15.00 - 16.50	SS-7	16	100	3.25 - 4.5+	3	6	24	32	35	32	15	17	15	A-6b (9)		
	17.50 - 19.00	SS-8	14	78	2.75 - 4.5+									18	A-6b (VISUAL)		
	20.00 - 21.50	SS-9	25	67	4.5+									12	A-6a (VISUAL)		

SUMMARY OF SOIL TEST DATA
PROJECT BORINGS - IR-270 RAMP K

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	N60	% REC	HP tsf	GR %	CS %	FS %	SILT %	CLAY %	LL	PL	PI	% WC	ODOT CLASS (GI)	ppm SO4
B-010-0-14	2.00 - 3.50	SS-1	14	100	2.0 - 3.0	4	4	10	44	38	39	16	23	21	A-6b (13)*	<100	
STA. 67+80, 20' LT	3.50 - 5.00	SS-2	20	100	2.0 - 4.0	4	4	15	34	43	44	17	27	20	A-7-6 (16)		
LATITUDE = 39.888244	5.00 - 6.50	SS-3	24	100	2.0 - 4.5+									15	A-4a (VISUAL)		
LONGITUDE = -83.042360	6.50 - 8.00	SS-4	34	100	2.0 - 4.5+									11	A-4a (VISUAL)		
B-010-1-14	1.50 - 3.00	SS-1	35	89	4.5+	15	9	19	34	23	27	15	12	11	A-6a (5)*		
STA. 68+29, 34' LT	3.00 - 4.50	SS-2	23	89	4.5+	14	6	13	30	37	46	18	28	17	A-7-6 (15)		
LATITUDE = 39.888377	4.50 - 6.00	SS-3	36	100	3.75									18	A-7-6 (VISUAL)		
LONGITUDE = -83.042300	6.00 - 6.40	SS-4	50/5"	100	4.5+									12	A-6a (VISUAL)		
B-010-1-16	2.00 - 3.50	SS-1	16	56	-	88	5	2	4	1	NP	NP	NP	5	A-1-a (10)	533	
STA. 72+47, 3' RT	3.50 - 5.00	SS-2	7	11	-									6	A-1-a (VISUAL)		
LATITUDE = 39.889248	5.00 - 6.50	SS-3	17	67	2.0 - 4.5+	9	7	15	37	32	32	16	16	15	A-6b (9)		
LONGITUDE = -83.041319	6.50 - 8.00	SS-4	20	44	3.5 - 4.5+									13	A-6b (VISUAL)		
B-012-1-16	2.00 - 3.50	SS-1	23	72	2.25 - 4.5+	4	8	16	38	34	35	17	18	18	A-6b (11)	573	
STA. 75+92, 2' RT	3.50 - 5.00	SS-2	13	100	2.25 - 4.5+									17	A-6b (VISUAL)		
LATITUDE = 39.890011	5.00 - 6.50	SS-3	17	50	4.0 - 4.5+	6	11	20	39	24	25	15	10	12	A-4a (6)		
LONGITUDE = -83.040592	6.50 - 8.00	SS-4	27	89	3.5 - 4.5+									18	A-4a (VISUAL)		

SUMMARY OF SOIL TEST DATA
HISTORIC BORINGS - IR-71 NB

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	N60	% REC	HP tsf	GR %	CS %	FS %	SILT %	CLAY %	LL	PL	PI	% WC	ODOT CLASS (GI)	ppm SO4
B-056-0-12	2.00 - 3.50	SS-1	33	83	4.5+	14	8	15	34	29	24	15	9	12	A-4a (6)		
STA. 421+66, 8' LT	3.50 - 5.00	SS-2	25	100	4.5+	14	7	15	34	30	24	14	10	11	A-4a (6)		
LATITUDE = 39.877178	5.00 - 6.50	SS-3	24	100	4.5+									11	A-4a (VISUAL)		
LONGITUDE = -83.050289																	
B-057-0-12	0.50 - 2.00	SS-1	47	100	4.5+	11	9	19	36	25	22	14	8	9	A-4a (5)	413	
STA. 425+60, 21' LT	2.00 - 3.50	SS-2	53	100	3.5 - 4.5	7	8	20	36	29	22	13	9	9	A-4a (6)		
LATITUDE = 39.878157	3.50 - 5.00	SS-3	41	100	4.5+									9	A-4a (VISUAL)		
LONGITUDE = -83.049694	5.00 - 6.50	SS-4	46	100	4.5+									9	A-4a (VISUAL)		
B-059-0-12	0.50 - 2.00	SS-1	45	100	4.5+	11	9	19	37	24	25	16	9	9	A-4a (5)*	207	
STA. 433+44, 85' LT	2.00 - 3.50	SS-2	66	39	-	24	8	17	34	17	17	13	4	8	A-4a (3)*		
LATITUDE = 39.880155	3.50 - 5.00	SS-3	60	100	4.5+	8	8	20	39	25	21	12	9	7	A-4a (6)		
LONGITUDE = -83.048630	5.00 - 6.50	SS-4	50	100	4.5+									8	A-4a (VISUAL)		
B-060-0-12	1.50 - 3.00	SS-1	35	78	4.5+	5	7	18	43	27	23	15	8	12	A-4a (7)	<100	
STA. 437+34, 9' RT	3.00 - 4.50	SS-2	59	100	4.5+	13	12	22	39	14	NP	NP	NP	10	A-4a (4)		
LATITUDE = 39.880992	4.50 - 6.00	SS-3	137	100	-	17	14	23	24	12	NP	NP	NP	8	A-4a (2)		
LONGITUDE = -83.047698	6.00 - 7.00	SS-4	74	100	-									9	A-4a (VISUAL)		
B-061-0-12	0.50 - 2.00	SS-1	22	78	4.5+	3	5	13	35	44	42	17	25	18	A-7-6 (11)*	2240	
STA. 441+25, 24' LT	2.00 - 3.50	SS-2	24	83	-	17	8	18	36	21	21	16	5	11	A-4a (4)		
LATITUDE = 39.881989	3.50 - 5.00	SS-3	24	100	3.0 - 4.5	6	6	27	45	16	19	15	4	16	A-4a (5)		
LONGITUDE = -83.047169	5.00 - 6.50	SS-4	28	78	2.5 - 3.0									13	A-4a (VISUAL)		
B-038-0-10	1.70 - 3.20	SS-1	17	83	3.0	4	4	18	11	26	24	16	8	13	A-4a (10)*		
STA. 454+61, 21' RT	3.20 - 4.70	SS-2	12	100	3.0	3	4	11	25	57	55	21	34	24	A-7-6 (19)		
LATITUDE = 39.885174	4.70 - 6.20	SS-3	19	100	4.5									14	A-6a (VISUAL)		
LONGITUDE = -83.044813	6.20 - 7.70	SS-4	31	100	4.5									13	A-6a (VISUAL)		
B-039-0-10	1.80 - 3.30	SS-1	13	100	3.0	1	3	9	29	48	42	22	24	24	A-7-6 (12)*		
STA. 458+80, 36' RT	3.30 - 4.80	SS-2	10	100	3.25	1	3	8	33	55	52	21	31	24	A-7-6 (18)		
LATITUDE = 39.886146	4.80 - 6.30	SS-3	18	100	3.5									21	A-7-6 (VISUAL)		
LONGITUDE = -83.044013	6.30 - 7.80	SS-4	13	100	0.5									23	A-7-6 (VISUAL)		
B-040-0-10	1.60 - 3.10	SS-1	15	100	4.5	9	12	15	35	29	23	15	8	12	A-4a (6)*		
STA. 462+85, 52' RT	3.10 - 4.60	SS-2	18	100	3.25	28	13	13	26	20	24	17	7	13	A-4a (2)		
LATITUDE = 39.887067	4.60 - 6.10	SS-3	23	100	4.25									15	A-4a (VISUAL)		
LONGITUDE = -83.043214	6.10 - 7.60	SS-4	28	100	2.0									13	A-4a (VISUAL)		

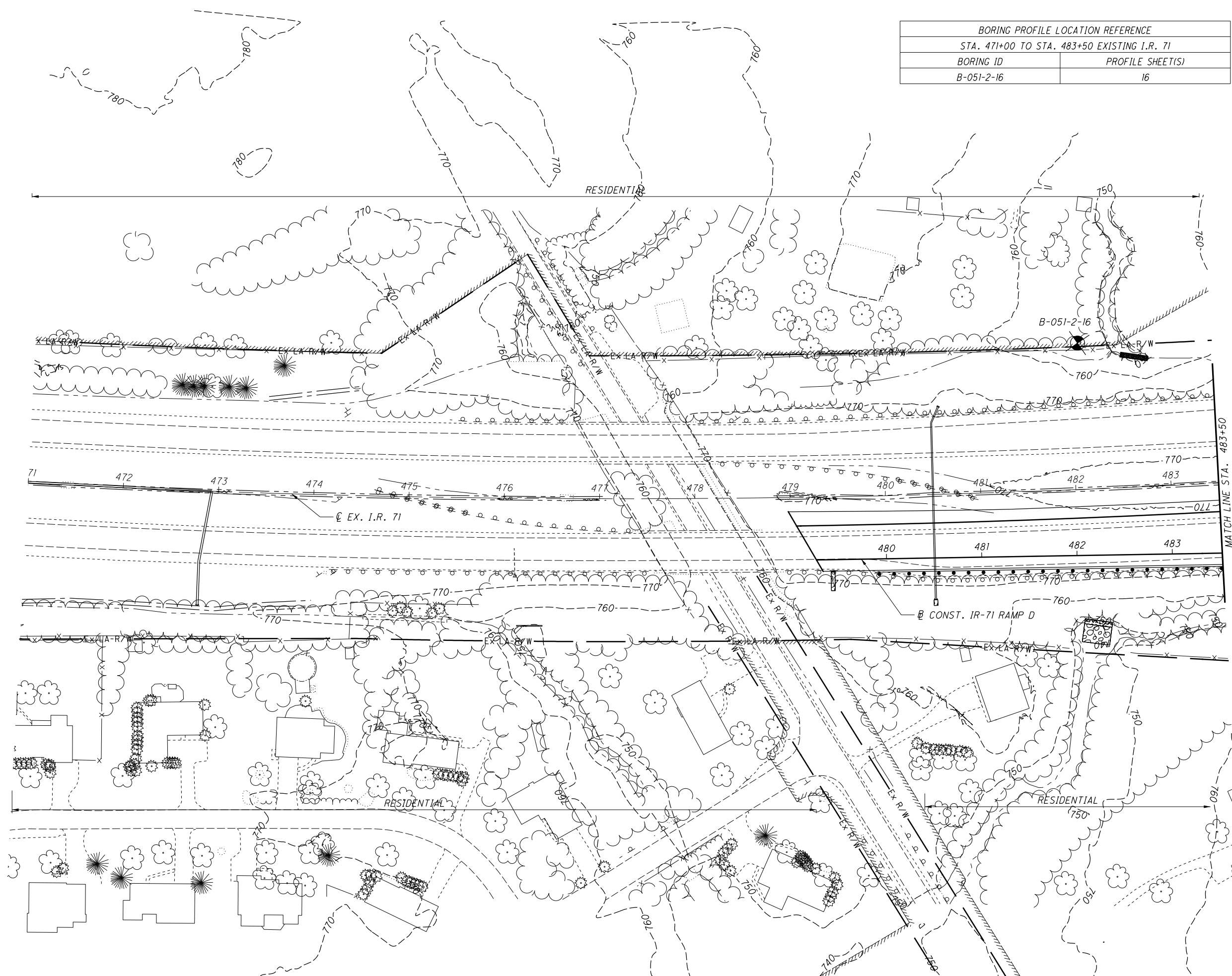
SUMMARY OF SOIL TEST DATA
HISTORIC BORINGS - IR-270 RAMP H

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	N60	% REC	HP tsf	GR %	CS %	FS %	SILT %	CLAY %	LL	PL	PI	% WC	ODOT CLASS (GI)	ppm SO4
B-045-0-10	1.80 - 3.30	SS-1	14	100	4.5	9	7	14	33	37	31	15	16	14	A-6b (9)*		
STA. 466+75, 30' LT	3.30 - 4.80	SS-2	12	100	4.5+									14	A-6b (VISUAL)*		
LATITUDE = 39.887939	4.80 - 6.30	SS-3	19	100	3.75	13	12	18	29	28	26	15	11	11	A-6a (5)		
LONGITUDE = -83.042385	6.30 - 7.80	SS-4	14	83	4.5									13	A-6a (VISUAL)		

SUMMARY OF SOIL TEST DATA
 HISTORIC BORINGS - IR-270 RAMP H

EXPLORATION NO., STATION & OFFSET	FROM	TO	SAMPLE ID	N60	% REC	HP tsf	GR %	CS %	FS %	SILT %	CLAY %	LL	PL	PI	% WC	ODOT CLASS (GI)	ppm SO4
B-048-0-10	1.00	- 2.50	SS-1	17	89	4.5+	10	12	20	31	27	24	14	10	9	A-4a (5)	
STA. 470+71, 27' LT	2.50	- 4.00	SS-2	9	94	4.25	6	9	17	37	31	26	15	11	13	A-6a (7)*	
LATITUDE = 39.888741	4.00	- 5.50	SS-3	14	100	2.0				SAME AS SS-2					15	A-6a (VISUAL)*	
LONGITUDE = -83.041408	5.50	- 7.00	SS-4	24	100	3.25				SAME AS SS-2					12	A-6a (VISUAL)*	
B-051-0-10	1.50	- 3.00	SS-1	15	100	4.5	4	8	17	36	35	30	15	15	14	A-6a (9)*	
STA. 474+67, 19' LT	3.00	- 4.50	SS-2	14	100	4.5+	4	6	14	37	39	32	16	16	13	A-6b (10)*	
LATITUDE = 39.889387	4.50	- 6.00	SS-3	21	100	4.5+				SAME AS SS-2					13	A-6b (VISUAL)*	
LONGITUDE = -83.040256	6.00	- 7.50	SS-4	36	89	4.5+				HARD, DARK BROWN SILTY CLAY					11	A-6b (VISUAL)*	
B-058-0-10	1.60	- 3.10	SS-1	14	100	4.0	3	12	12	39	34	27	17	10	13	A-4a (8)*	
STA. 478+56, 4' LT	3.10	- 4.60	SS-2	14	100	4.5+	12	20	18	31	19	21	14	7	13	A-4a (3)*	
LATITUDE = 39.889792	4.60	- 6.10	SS-3	19	100	4.5				SAME AS SS-2					14	A-4a (VISUAL)	
LONGITUDE = -83.038966	6.10	- 7.60	SS-4	26	100	4.0				SAME AS SS-2					17	A-4a (VISUAL)	
B-059-0-10	1.00	- 2.50	SS-1	19	100	4.5+	12	19	17	30	22	21	14	7	8	A-4a (3)	
STA. 481+17, 34' LT	2.50	- 4.00	SS-2	27	100	4.5+	12	20	18	31	19	21	14	7	8	A-4a (3)	
LATITUDE = 39.889975	4.00	- 5.50	SS-3	42	100	4.0				SAME AS SS-2					8	A-4a (VISUAL)	
LONGITUDE = -83.038046	5.50	- 7.00	SS-4	42	89	4.0				SAME AS SS-2					8	A-4a (VISUAL)	

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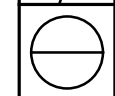
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25
HORIZONTAL
SCALE IN FEET

DRAWN: GL
CHECKED: CH

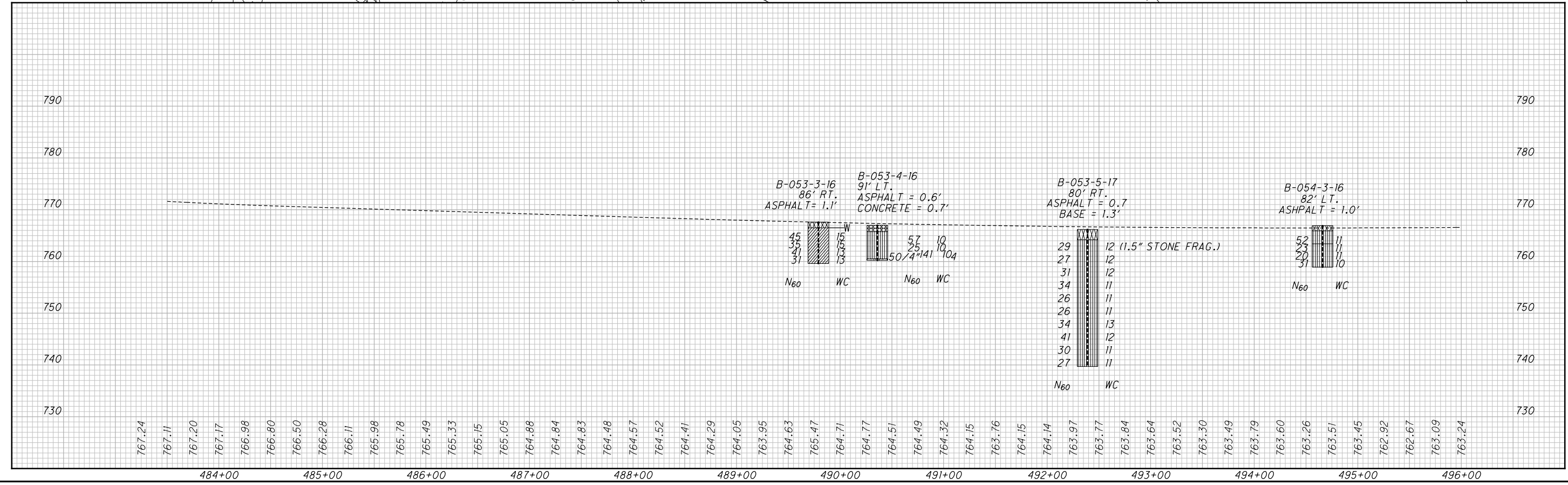
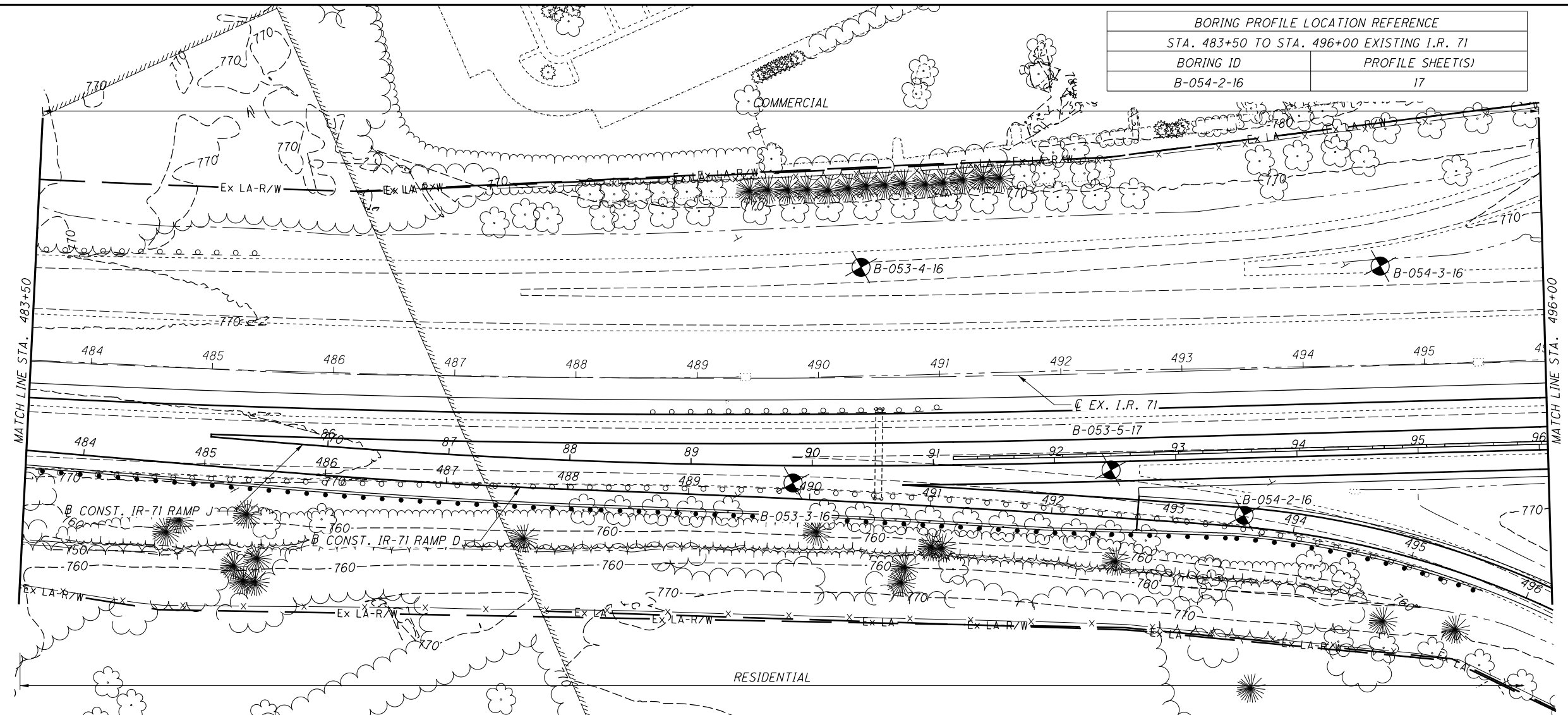
SOIL PROFILE
STA. 471+00 TO STA. 483+50 EXT. I.R. 71

FRA-71-9.07



P:\15-0190 (92615 - FRA-71-8.87 Stringtown)\92615\geotechnical\sheets\North\92615\PO02.dgn Sheet 1/30/2019 3:18:07 PM mjosiewicz

BORING PROFILE LOCATION REFERENCE	
STA. 483+50 TO STA. 496+00 EXISTING I.R. 71	
BORING ID	PROFILE SHEET(S)
B-054-2-16	17

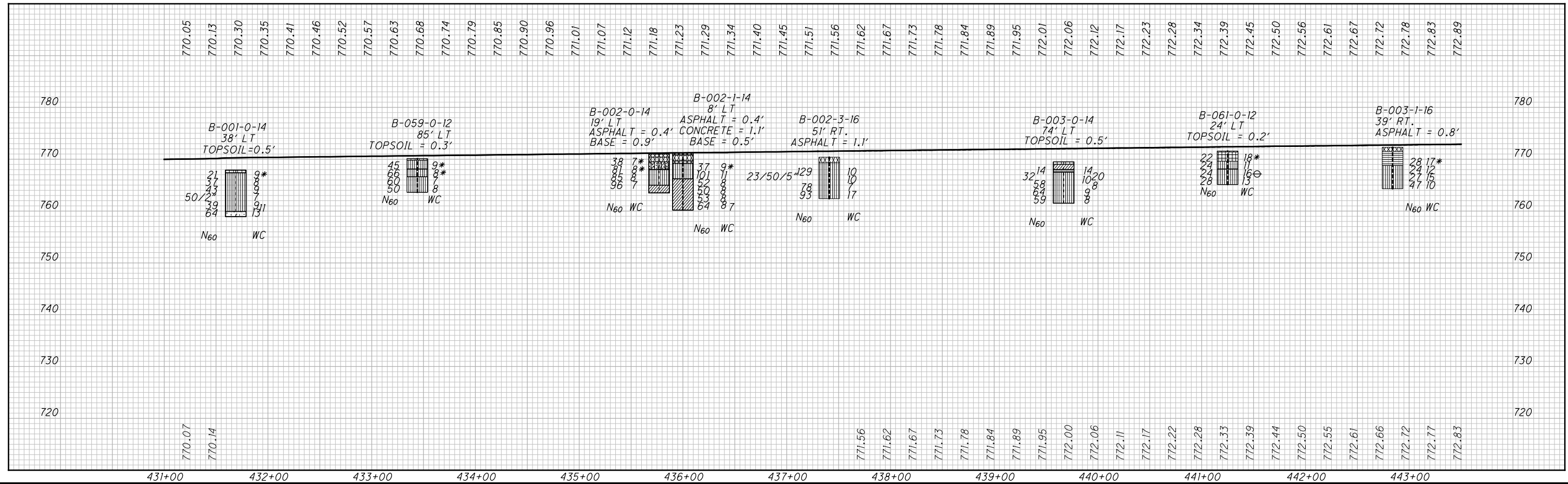
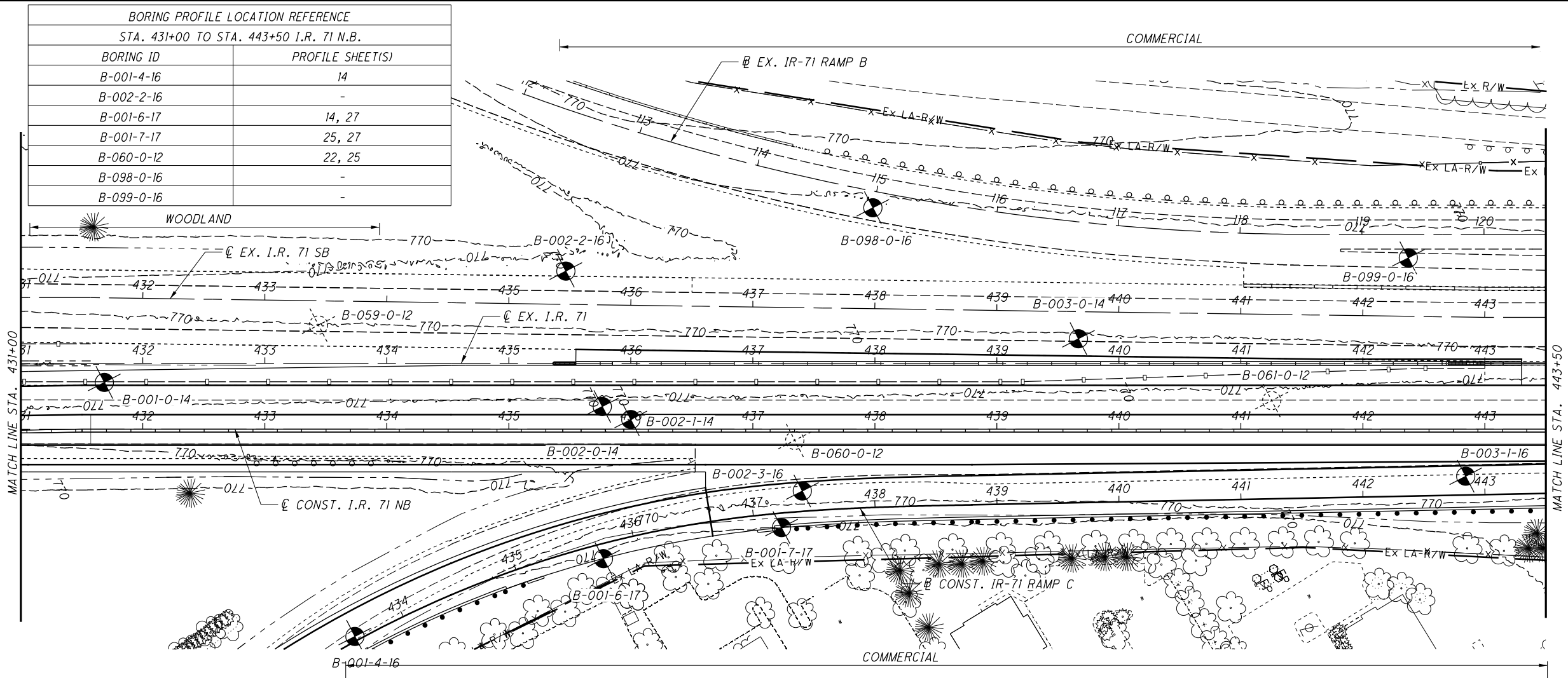


SOIL PROFILE
STA. 483+50 TO STA. 496+00 EXIST. I.R. 71

FRA-71-9.07



BORING PROFILE LOCATION REFERENCE	
STA. 431+00 TO STA. 443+50 I.R. 71 N.B.	
BORING ID	PROFILE SHEET(S)
B-001-4-16	14
B-002-2-16	-
B-001-6-17	14, 27
B-001-7-17	25, 27
B-060-0-12	22, 25
B-098-0-16	-
B-099-0-16	-

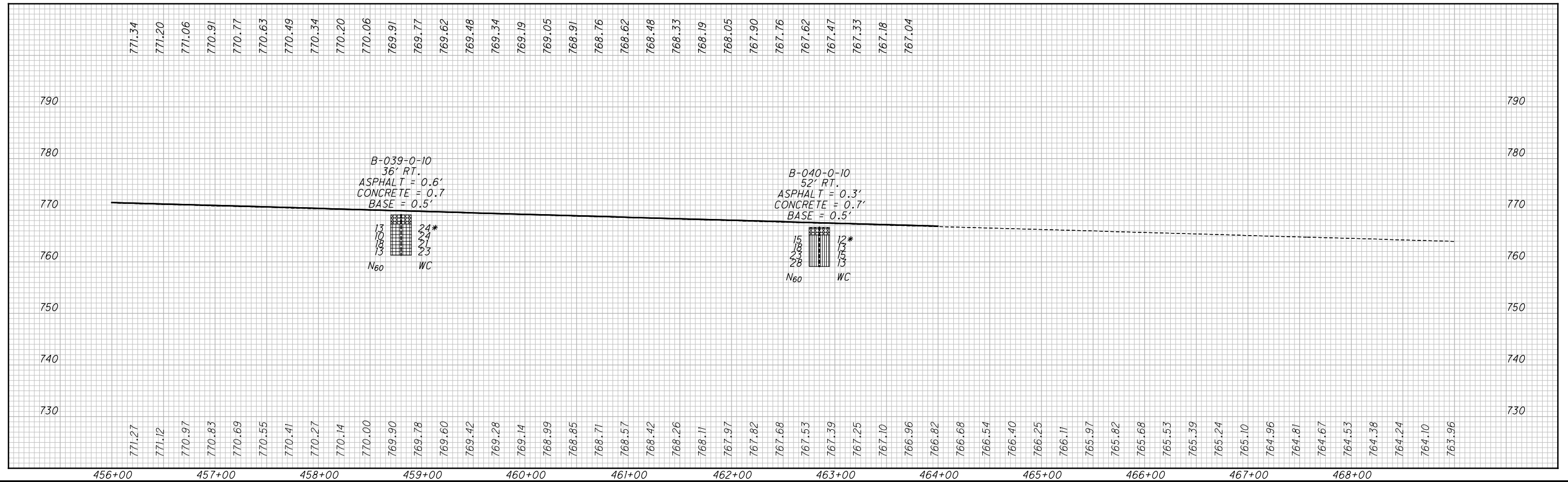
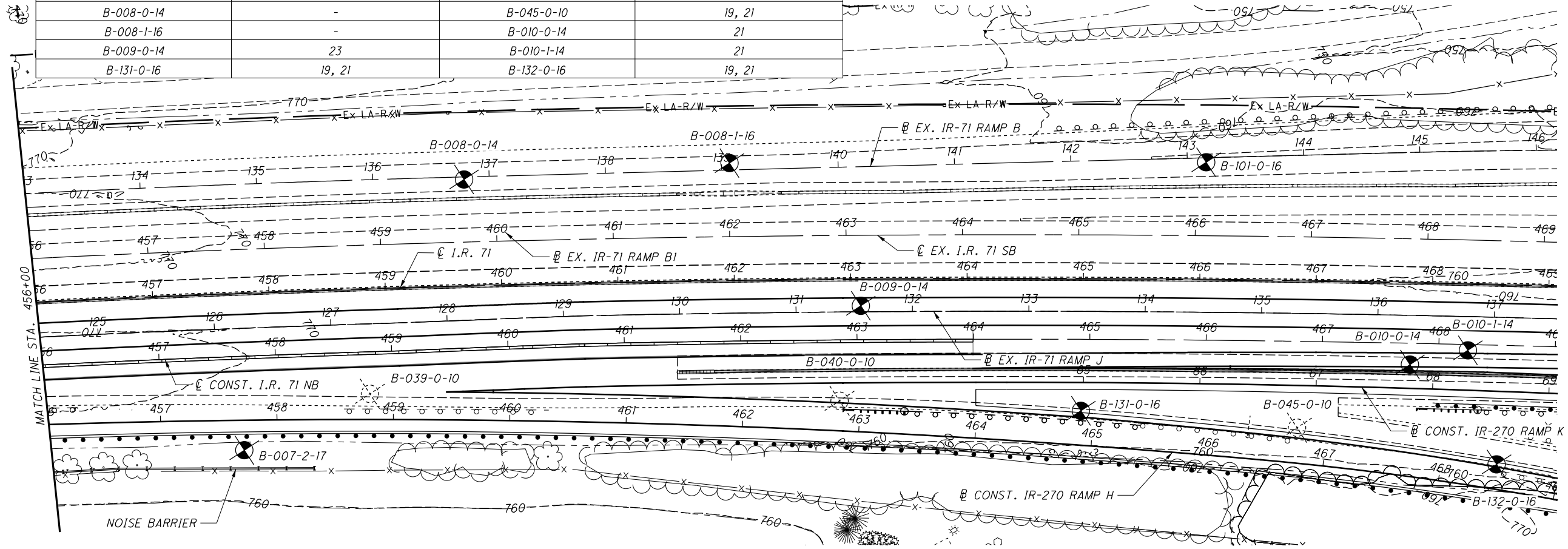


DRAWN: GL
CHECKED: CH

SOIL PROFILE
STA. 431+00 to sta. 443+50 I.R.-71 NB

P:\15-0190 (92615 - FRA-71-8.87 Stringtown)\92615\geotechnical\sheets\North\92615\PO04.dgn Sheet 1/30/2019 3:18:11 PM mjasiewicz

BORING PROFILE LOCATION REFERENCE			
STA. 456+00 TO END I.R. 71 N.B.			
BORING ID	PROFILE SHEET(S)	BORING ID	PROFILE SHEET(S)
B-007-2-17	18, 30	B-101-0-16	-
B-008-0-14	-	B-045-0-10	19, 21
B-008-1-16	-	B-010-0-14	21
B-009-0-14	23	B-010-1-14	21
B-131-0-16	19, 21	B-132-0-16	19, 21

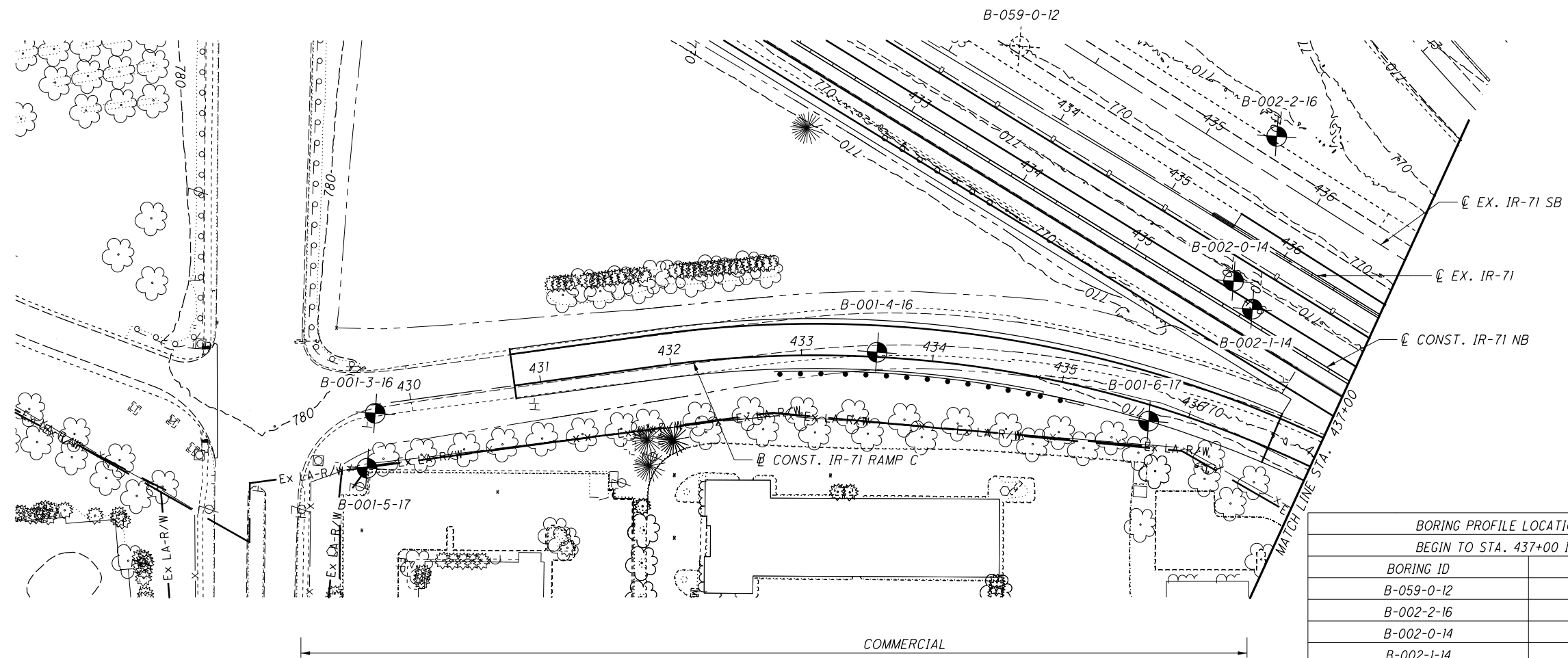


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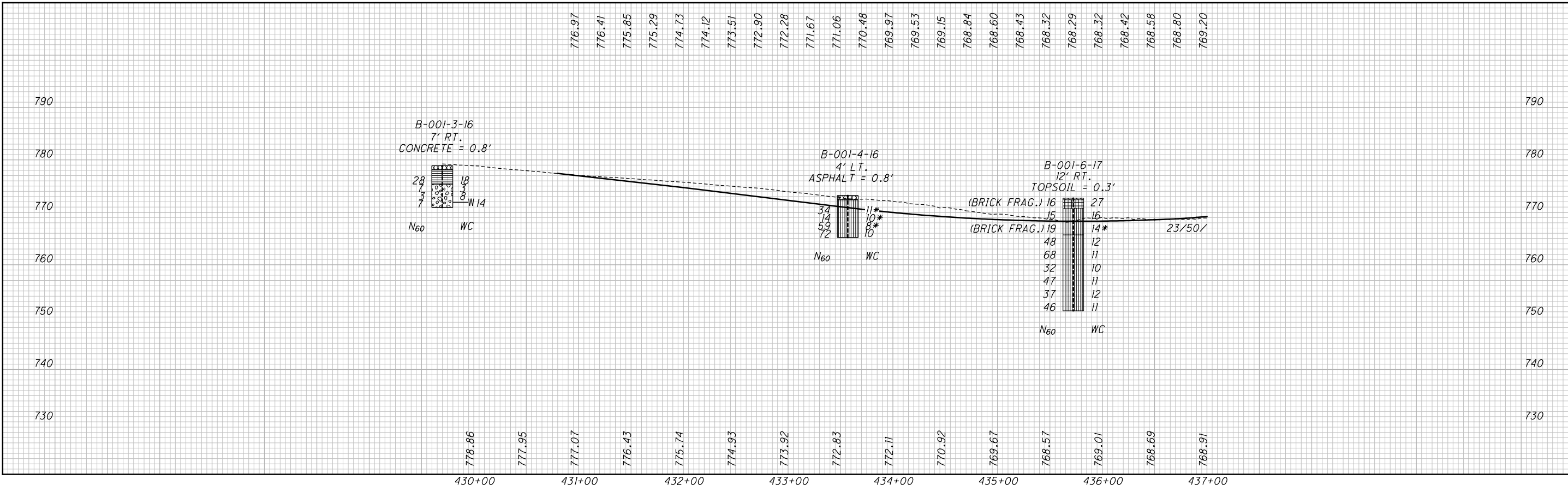
SOIL PROFILE
STA. 456+00 TO END I.R.-71 NB

FRA-71-9.07

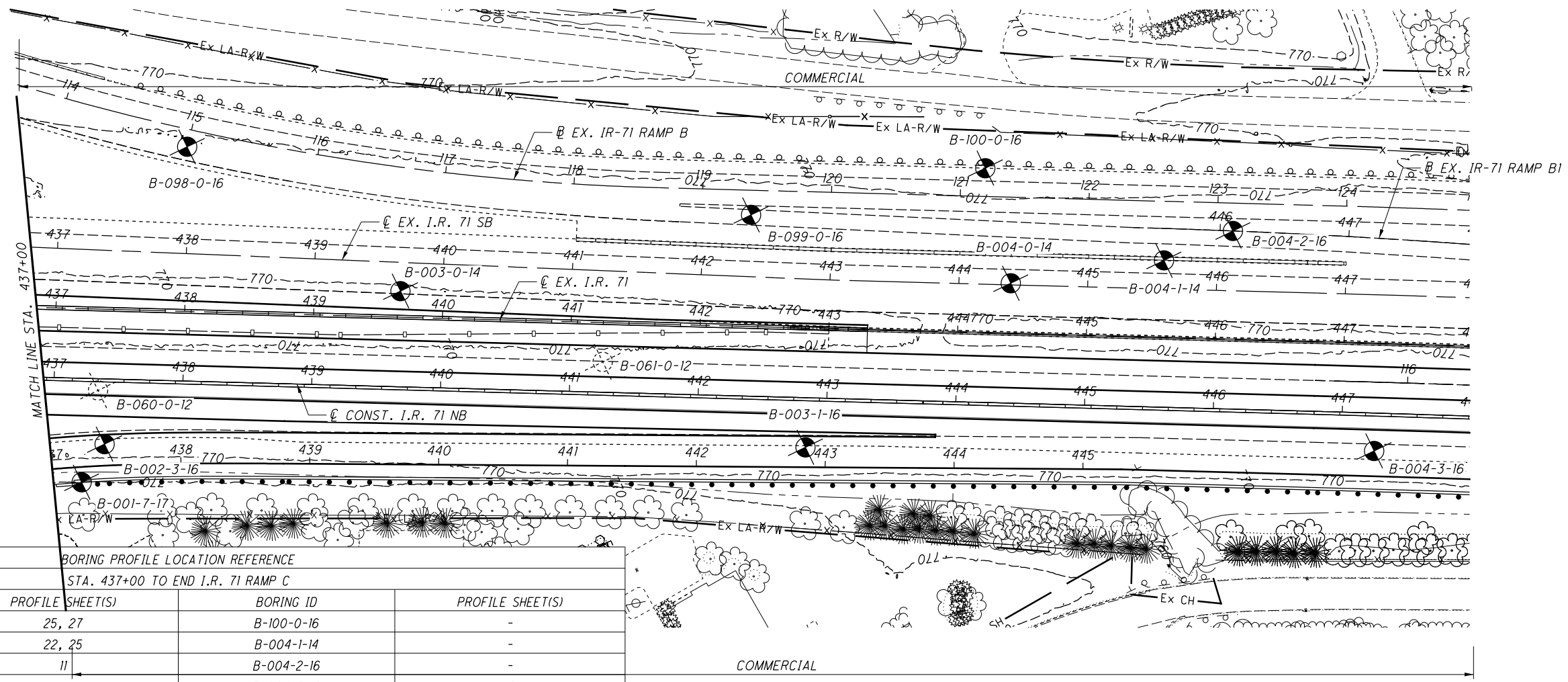




BORING PROFILE LOCATION REFERENCE	
BEGIN TO STA. 437+00 I.R. 71 RAMP C	
BORING ID	PROFILE SHEET(S)
B-059-0-12	11
B-002-2-16	-
B-002-0-14	11
B-002-1-14	11
B-001-5-17	24

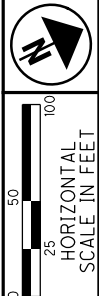
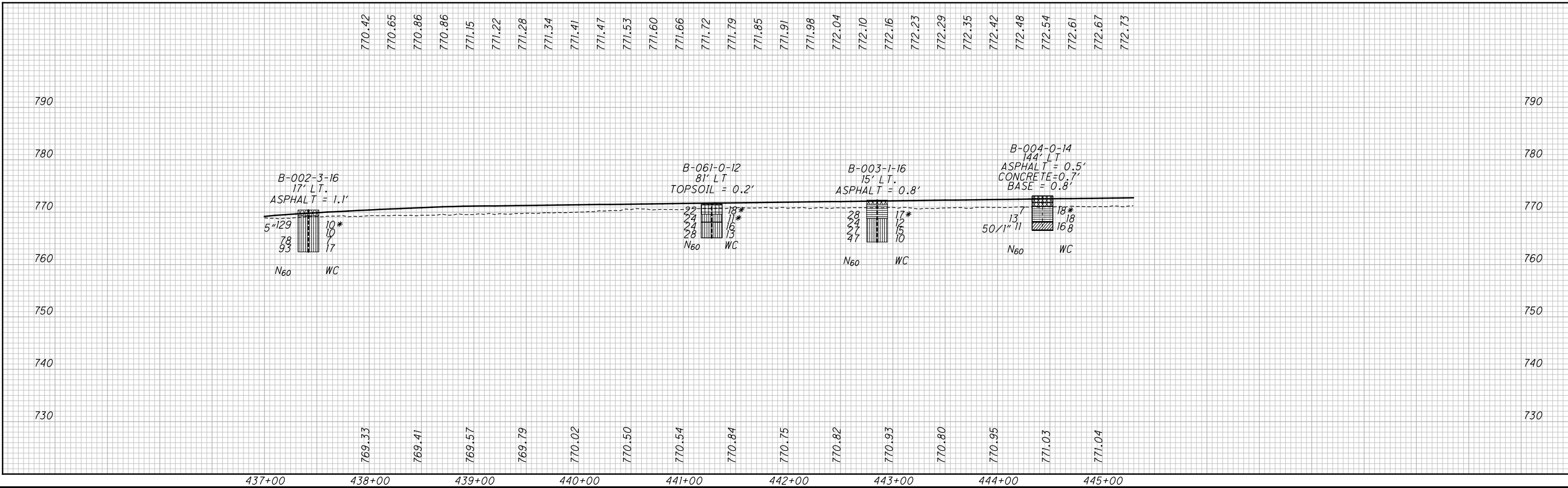


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BORING PROFILE LOCATION REFERENCE
STA. 437+00 TO END I.R. 71 RAMP C

BORING ID	PROFILE SHEET(S)	BORING ID	PROFILE SHEET(S)
B-001-7-17	25, 27	B-100-0-16	-
B-060-0-12	22, 25	B-004-1-14	-
B-003-0-14	11	B-004-2-16	-
B-098-0-16	-	B-004-3-16	12
B-099-0-16	-		

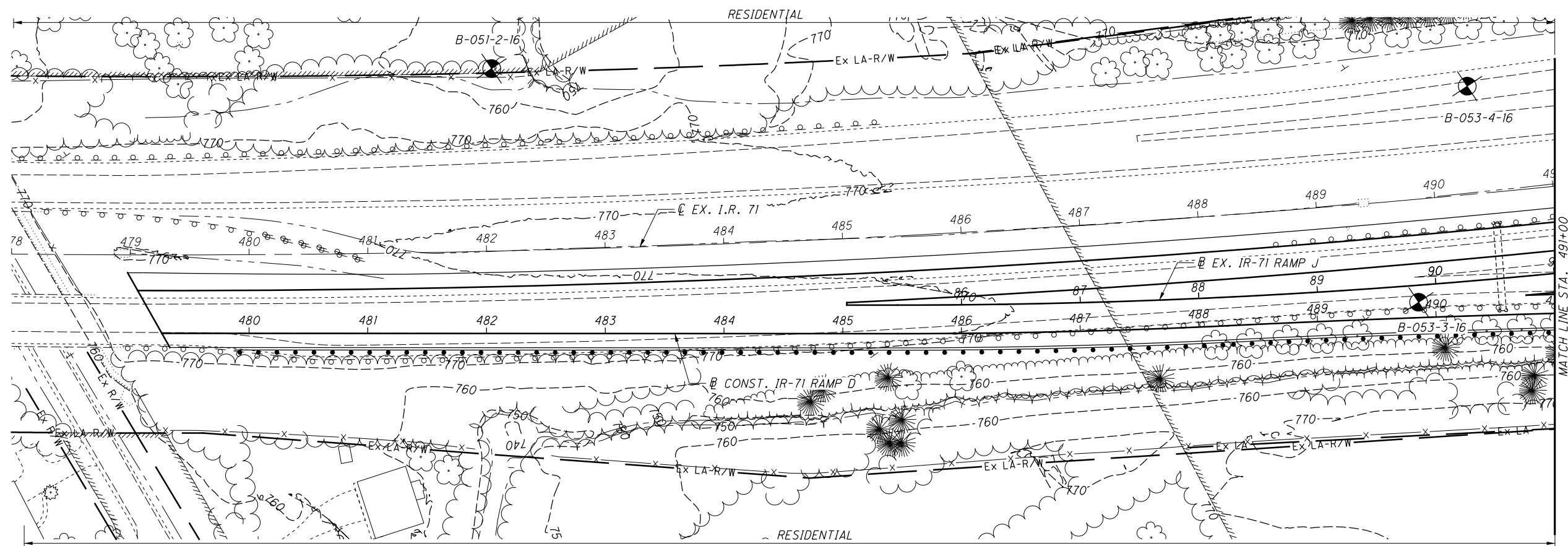


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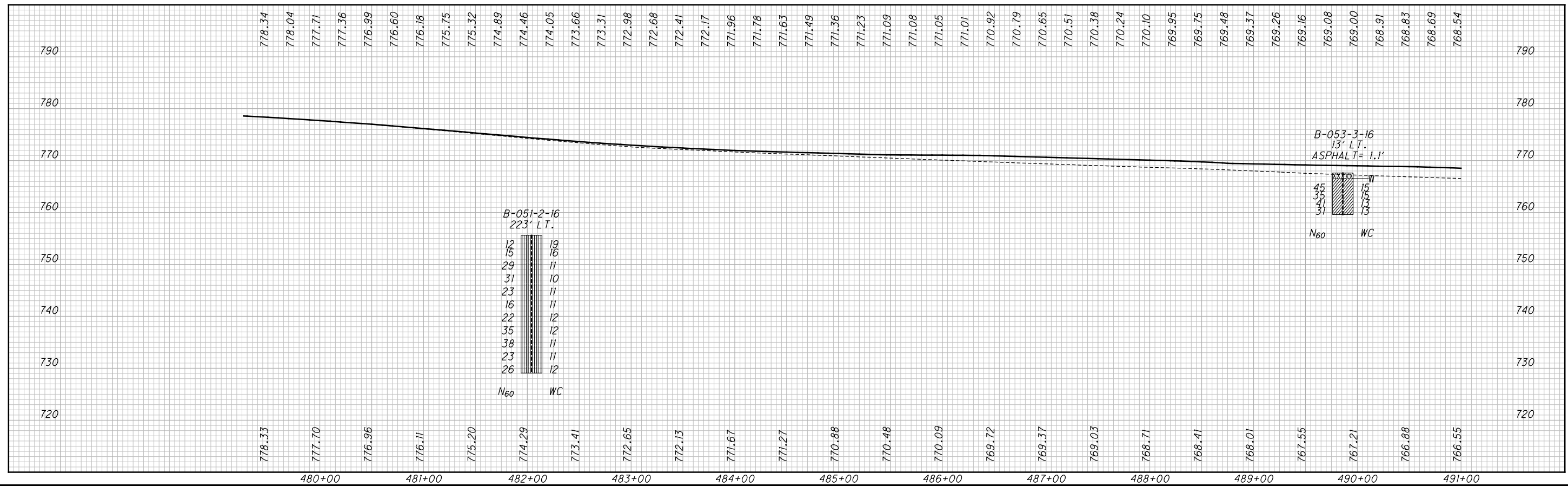
SOIL PROFILE
STA. 437+00 TO END I.R. 71 RAMP C

FRA-71-9.07





BORING PROFILE LOCATION REFERENCE	
BEGIN TO STA. 491+00 EXISTING I.R. 71	
BORING ID	PROFILE SHEET(S)
B-053-4-16	9



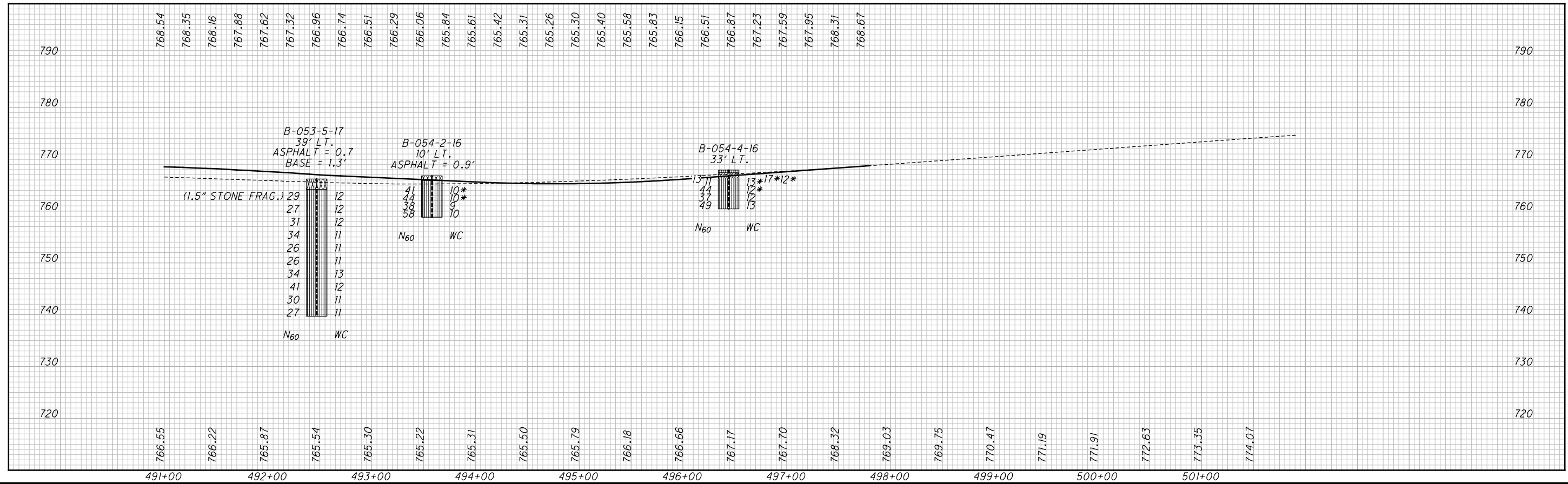
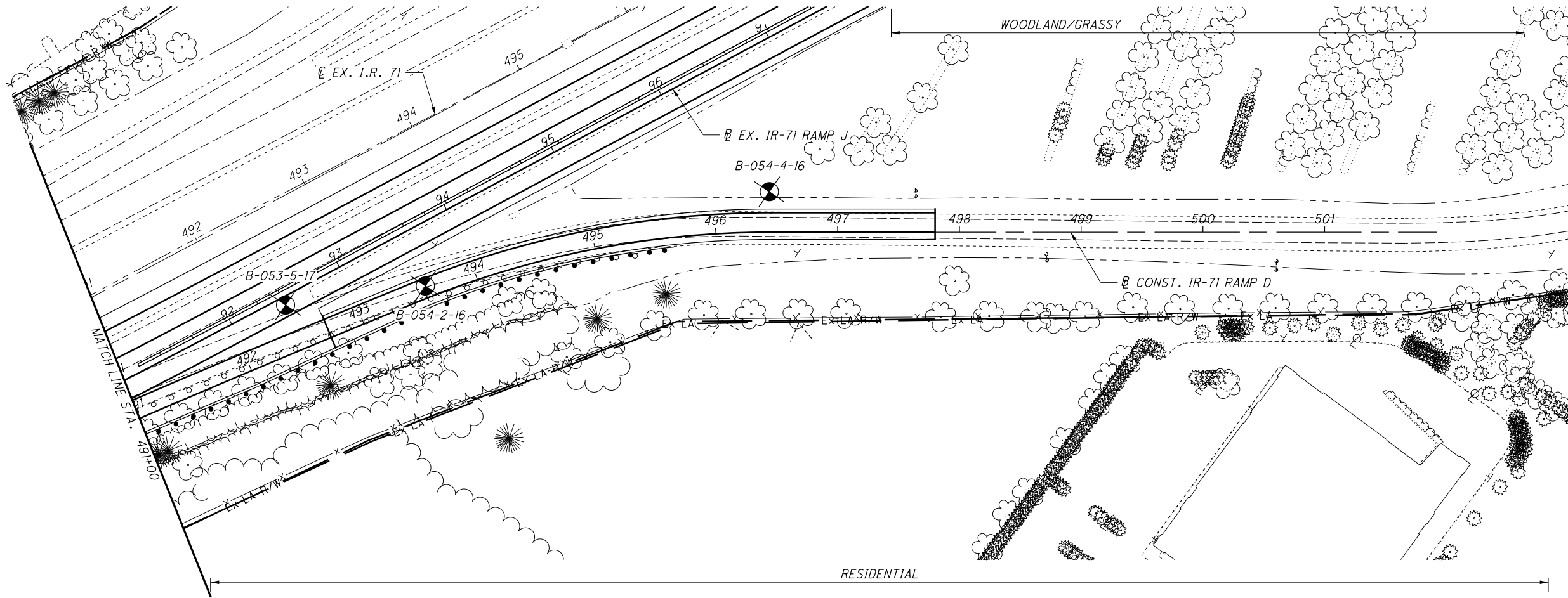
DRAWN
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**SOIL PROFILE
BEGIN TO STA. 491+00 I.R.-71 RAMP D**

FRA-71-9.07



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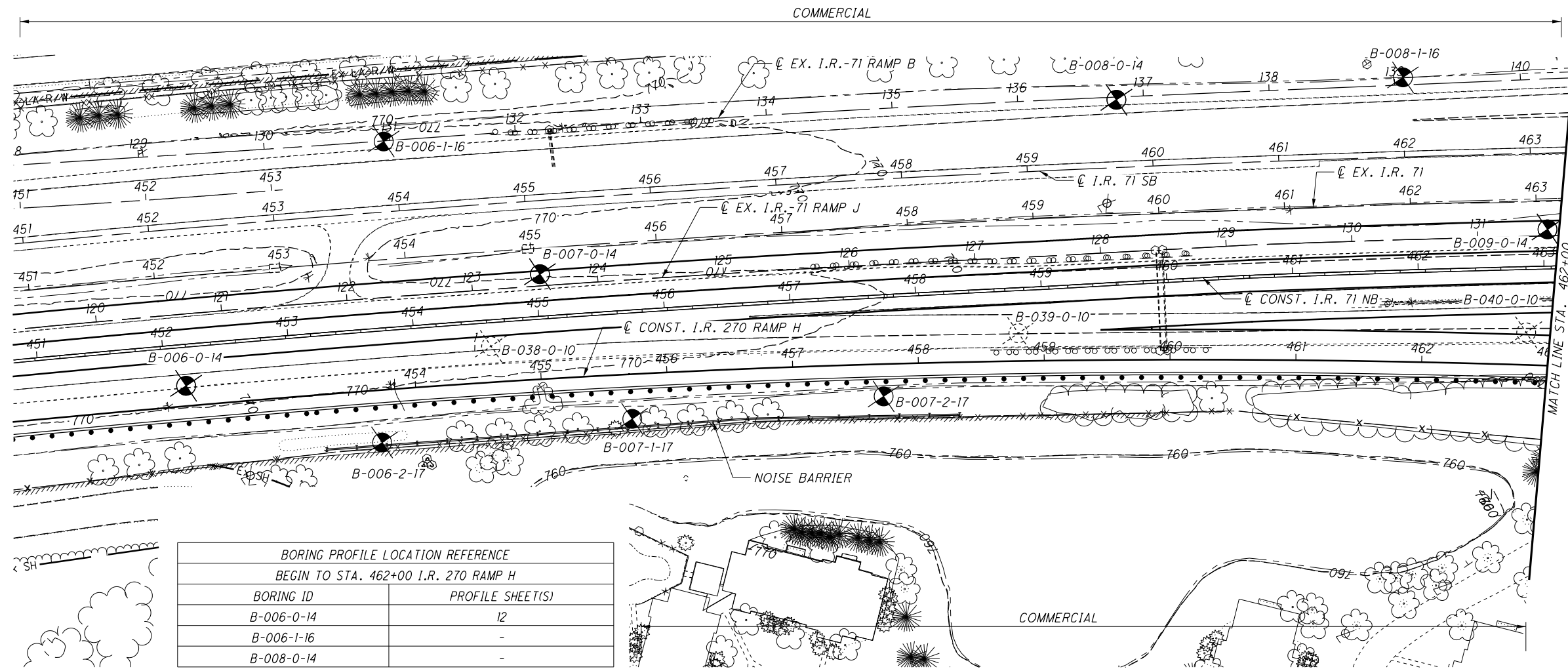
DRAWN
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SOIL PROFILE
STA. 491+00 TO END I.R.-71 RAMP D

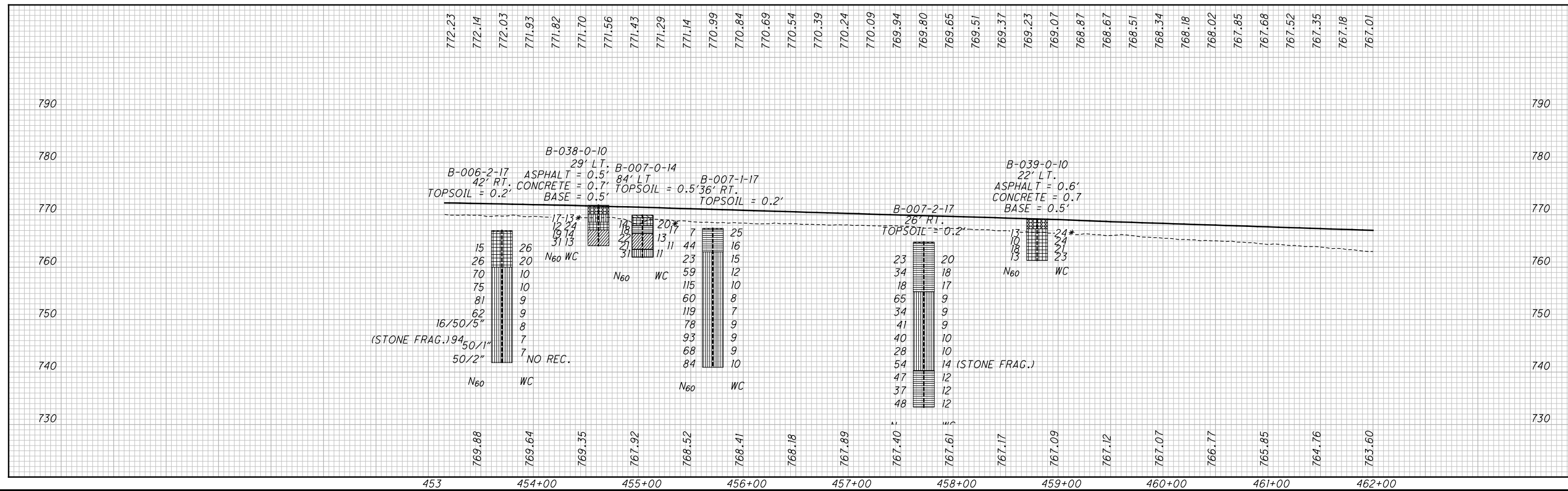
FRA-71-9.07



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BORING PROFILE LOCATION REFERENCE	
BEGIN TO STA. 462+00 I.R. 270 RAMP H	
BORING ID	PROFILE SHEET(S)
B-006-0-14	12
B-006-1-16	-
B-008-0-14	-



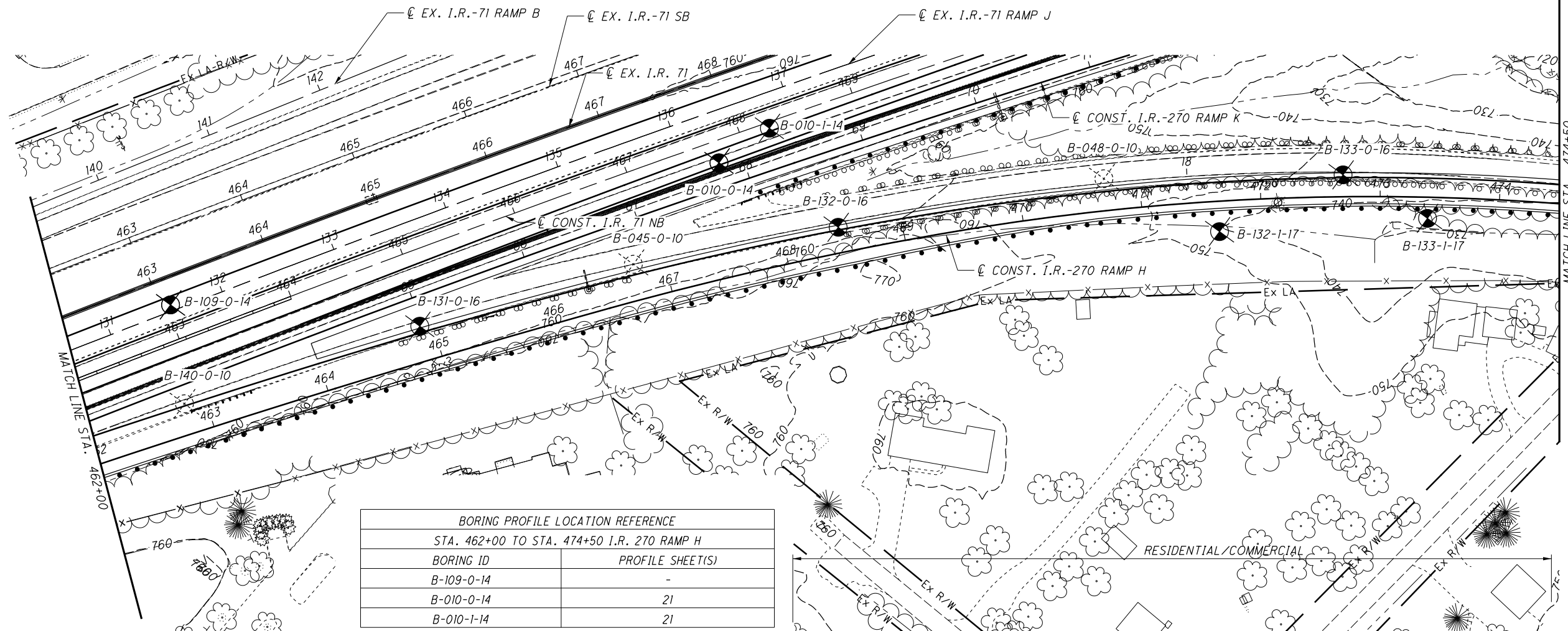
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HORIZONTAL SCALE IN FEET

DRAWN: GL
CHECKED: CH

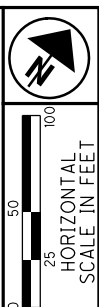
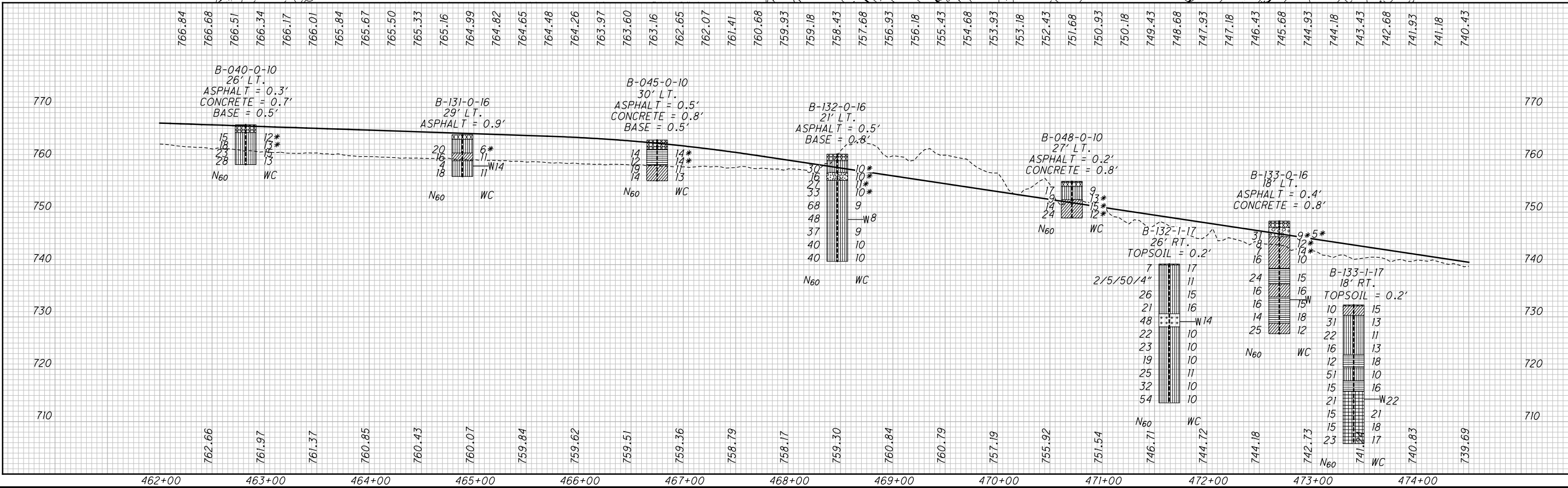
SOIL PROFILE
BEGIN TO STA. 462+00 I.R.-270 RAMP H

FRA-71-9.07

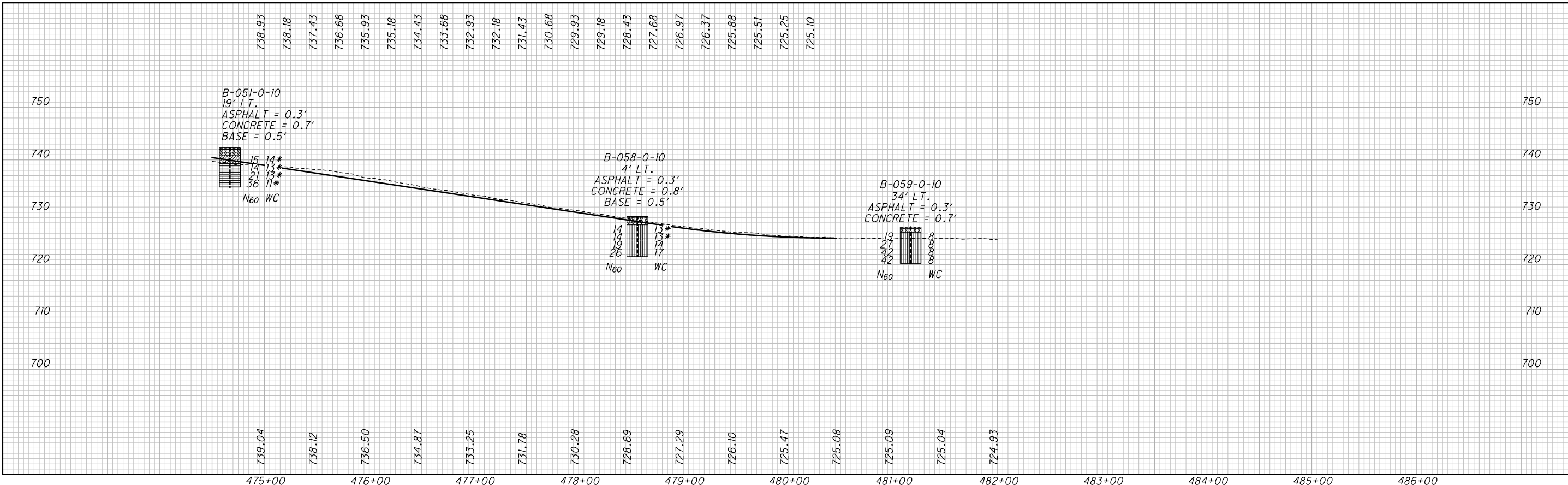
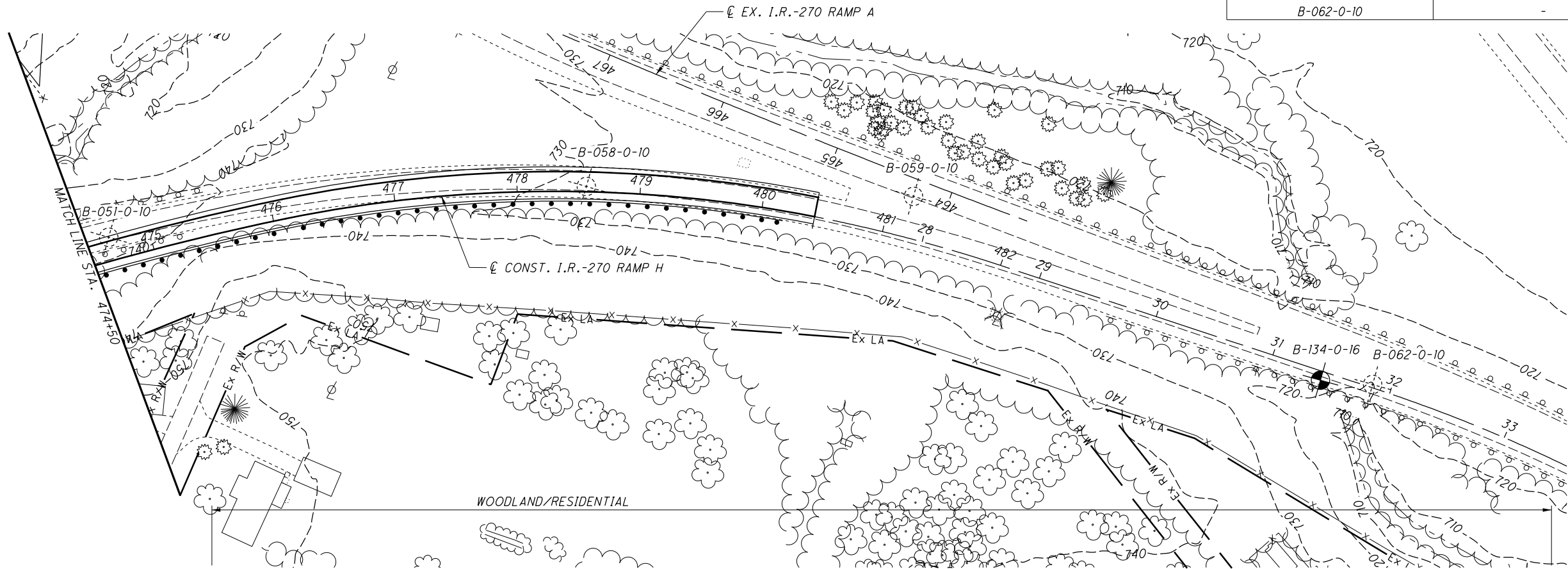
18 / 37



BORING PROFILE LOCATION REFERENCE	
STA. 462+00 TO STA. 474+50 I.R. 270 RAMP H	
BORING ID	PROFILE SHEET(S)
B-109-0-14	-
B-010-0-14	21
B-010-1-14	21



BORING PROFILE LOCATION REFERENCE	
STA. 474+50 TO END I.R. 270 RAMP H	
BORING ID	PROFILE SHEET(S)
B-134-0-16	-
B-062-0-10	-



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SOIL PROFILE
STA. 474+50 TO END I.R.-270 RAMP H

FRA-71-9.07



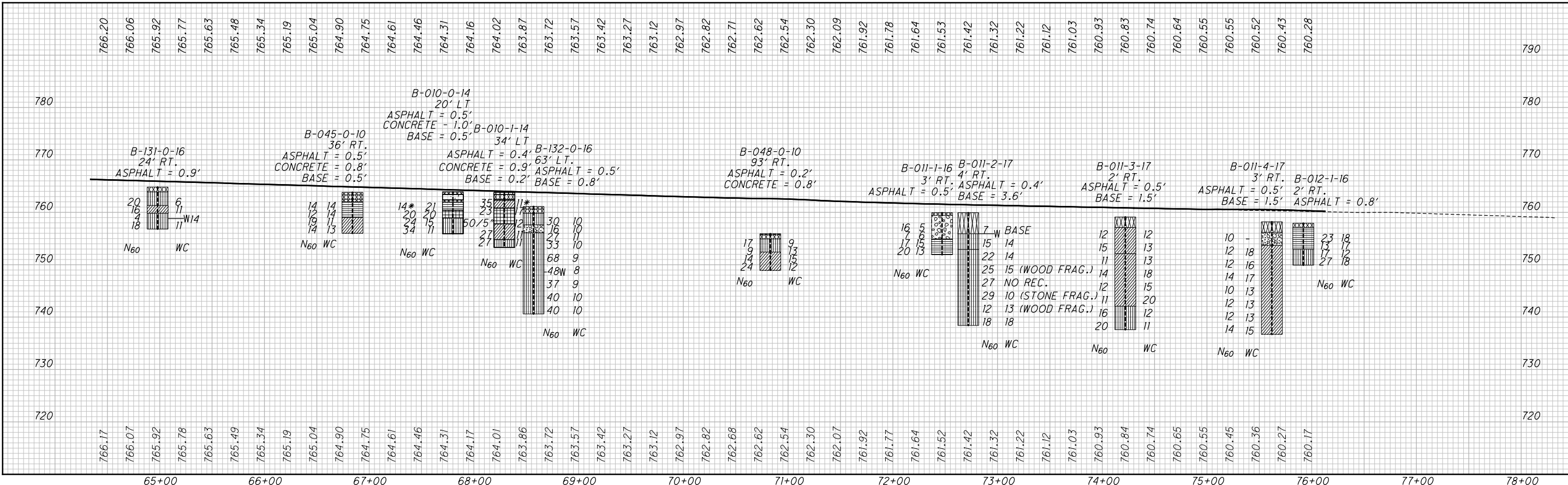
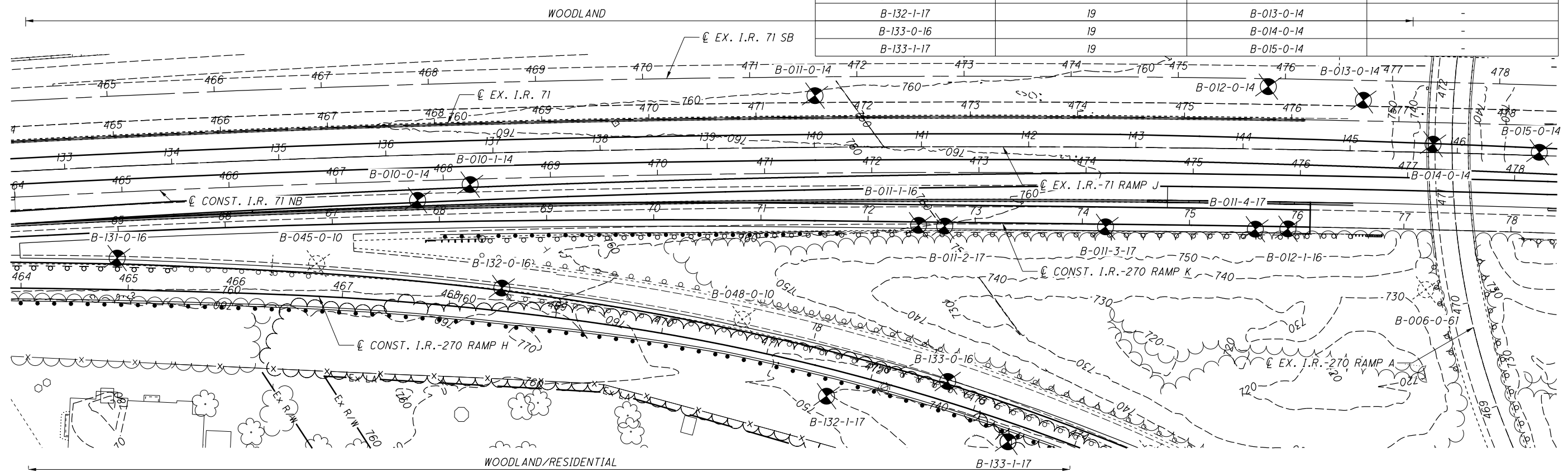
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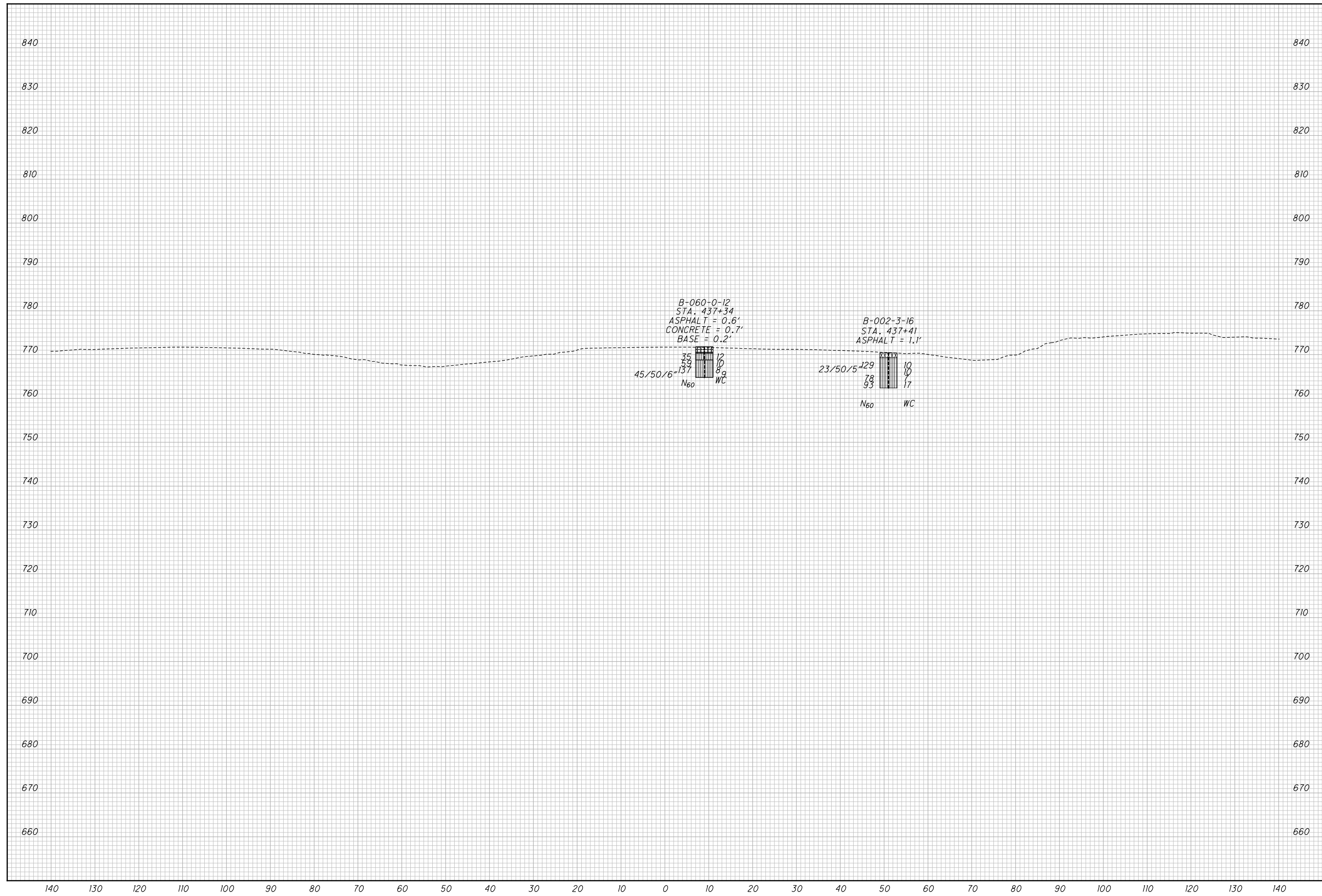
BORING PROFILE LOCATION REFERENCE			
BEGIN TO END I.R. 270 RAMP K			
BORING ID	PROFILE SHEET(S)	BORING ID	PROFILE SHEET(S)
B-011-0-14	-	B-012-0-14	-
B-132-1-17	19	B-013-0-14	-
B-133-0-16	19	B-014-0-14	-
B-133-1-17	19	B-015-0-14	-



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CHECKED: CH
SOIL PROFILE
BEGIN TO END I.R.-270 RAMP K

FRA-71-9.07
21/37



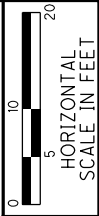
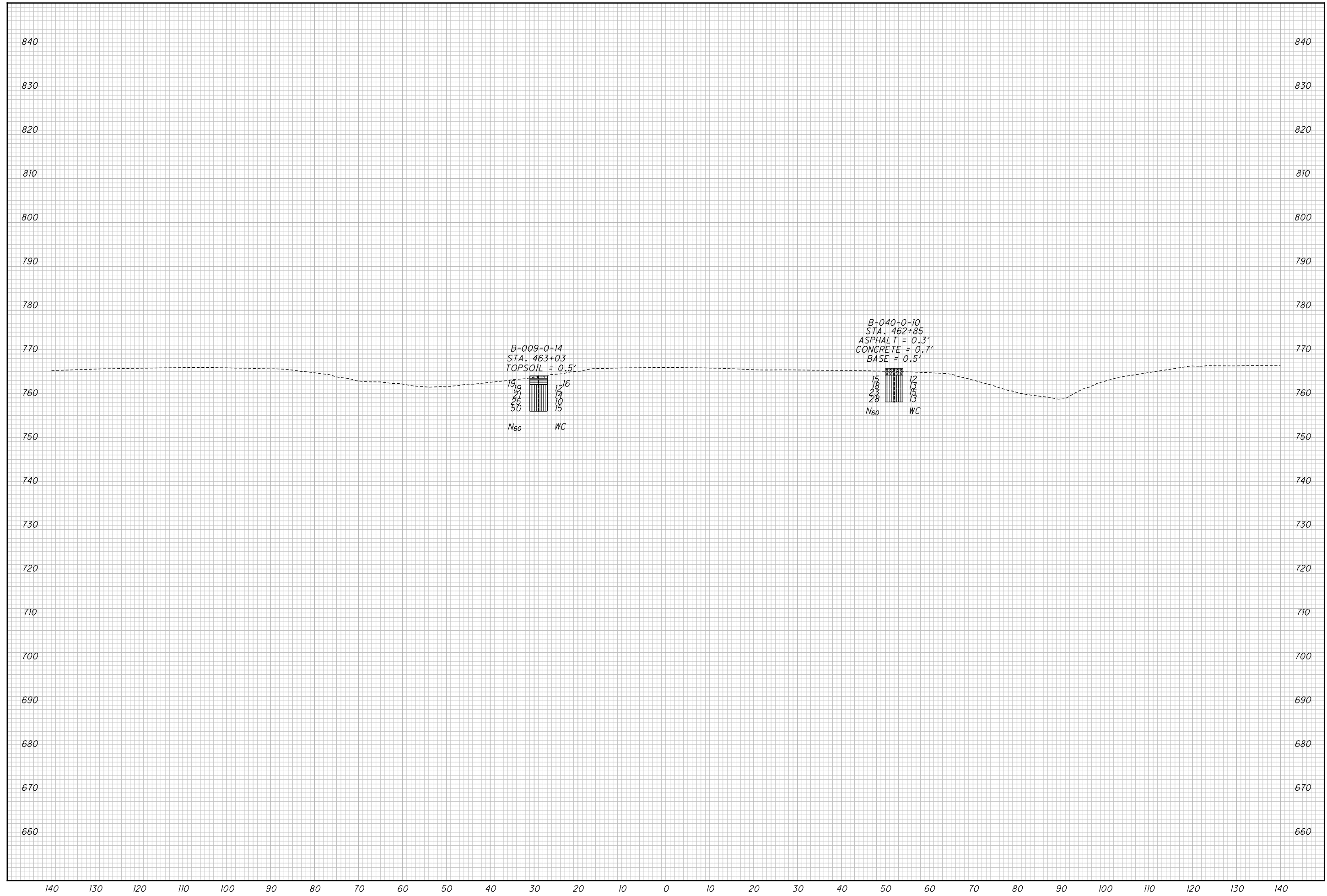


DRANN
GL
CHECKED
CH

SOIL PROFILE
I.R.-71 NB CROSS SECTION STA. 437 + 50

FRA-71-9.07



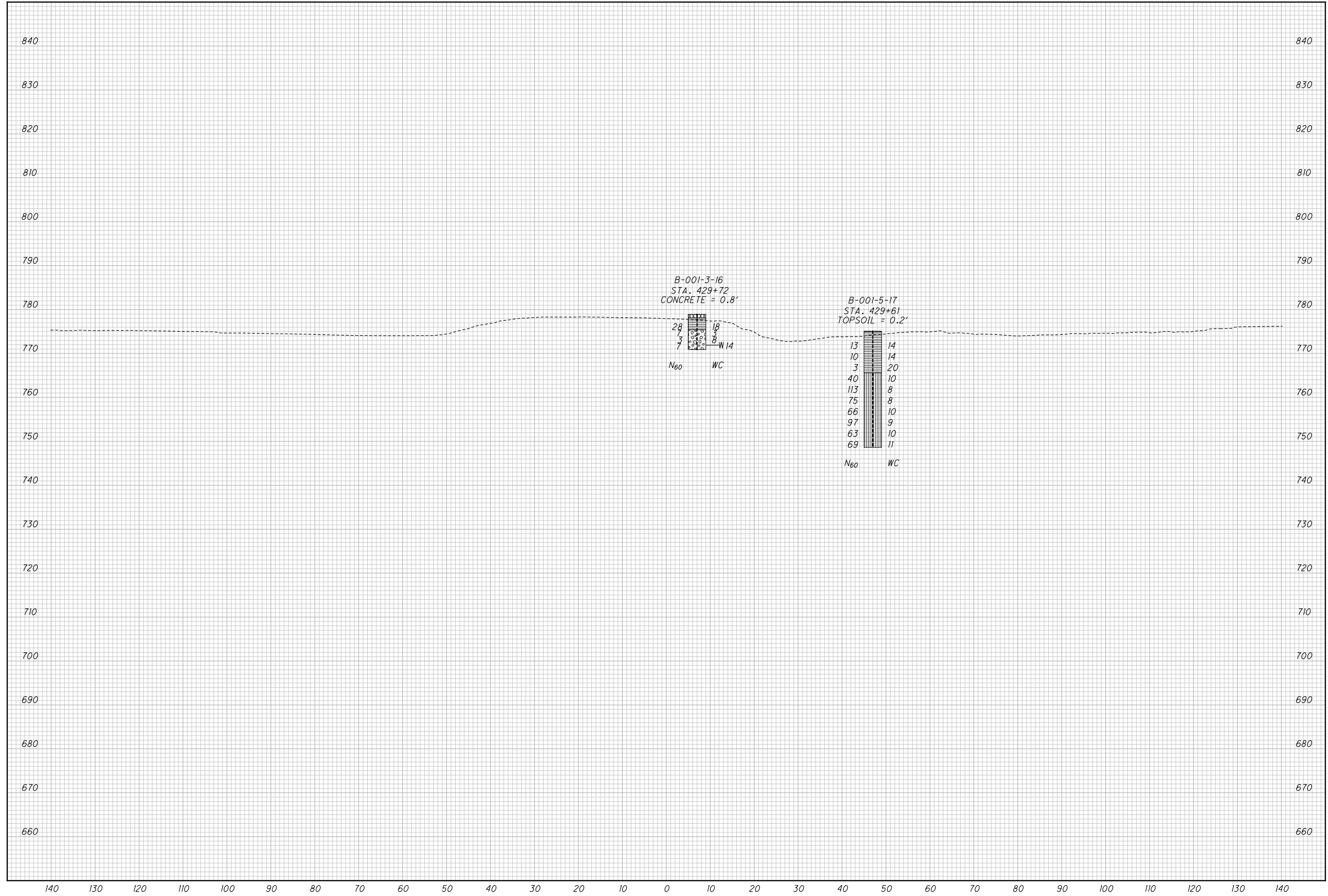


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SOIL PROFILE
I.R.-71 NB CROSS SECTION STA. 463+00

FRA-71-9.07



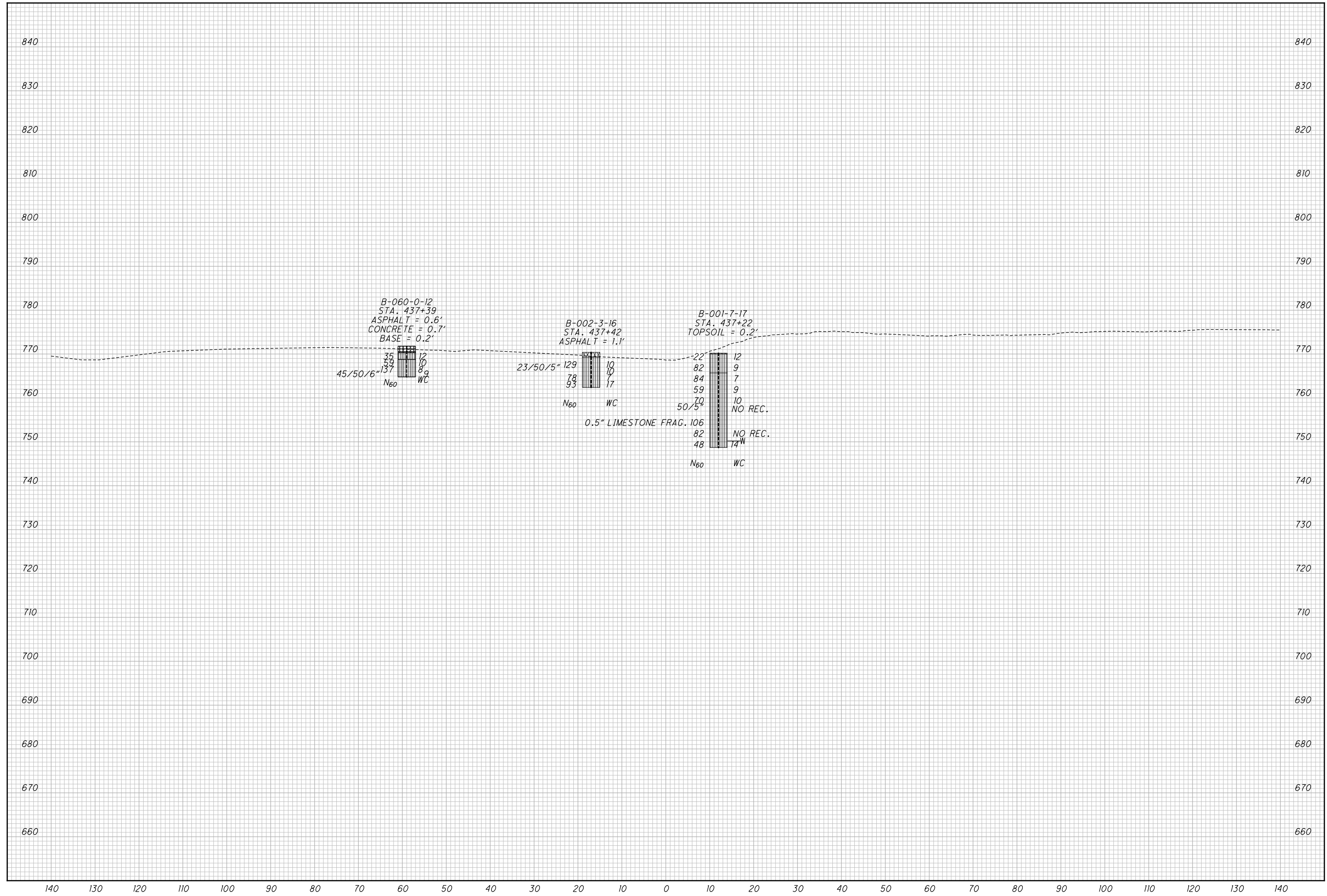


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CHECKED: CH

I.R.-71 RAMP C CROSS SECTION STA. 430+00

FRA-71-9.07

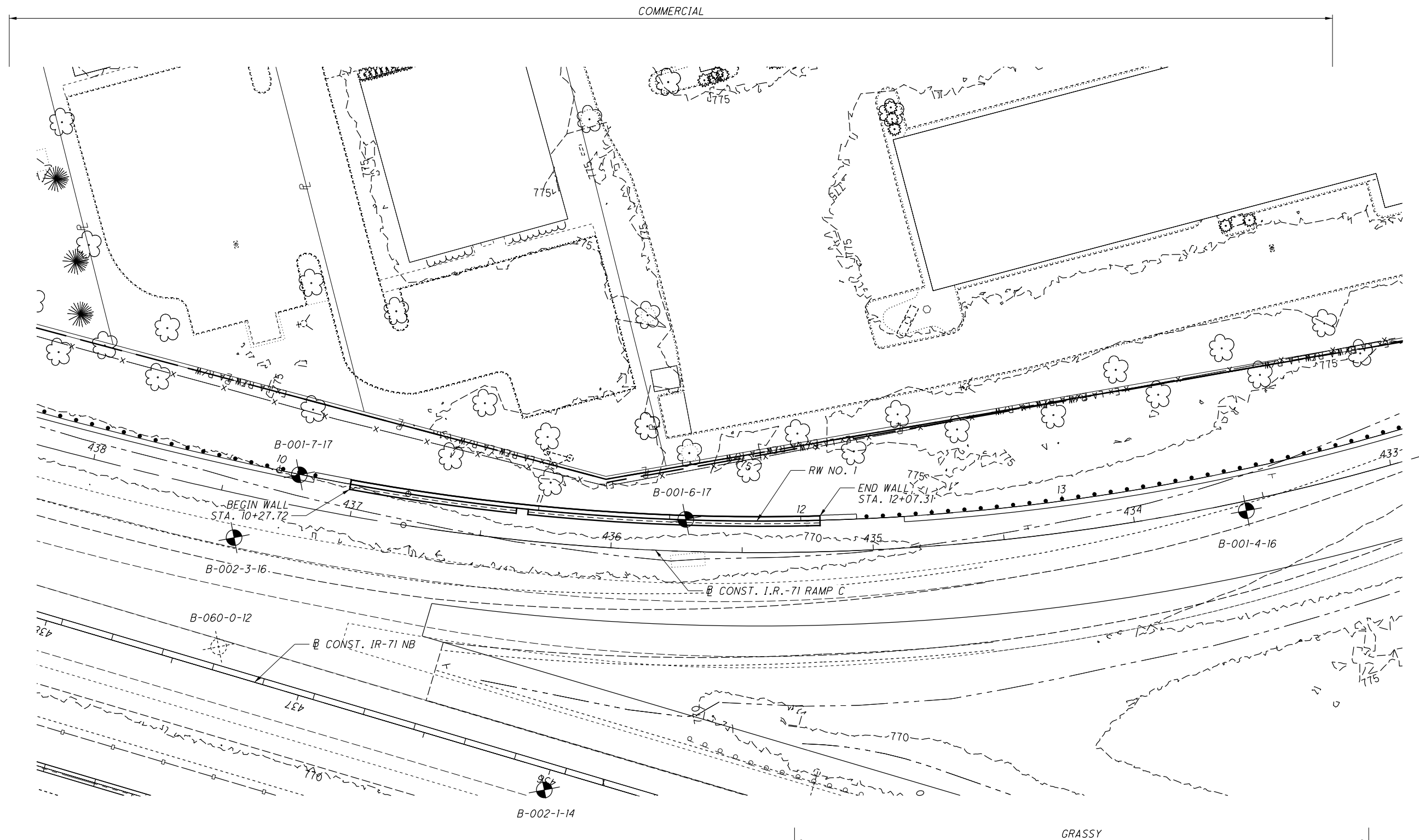




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 CHECKED: CH

SOIL PROFILE
I.R.-71 RAMP C CROSS SECTION STA. 437+00

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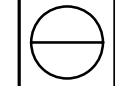
BORING PROFILE LOCATION REFERENCE			
RETAINING WALL NO. 1			
BORING ID	PROFILE SHEET(S)	BORING ID	PROFILE SHEET(S)
B-060-0-12	22, 25	B-002-1-14	11
B-002-3-16	22, 25	B-001-6-17	14, 27
B-001-7-17	25, 27	B-001-4-16	14

0 10 20 40
HORIZONTAL SCALE IN FEET

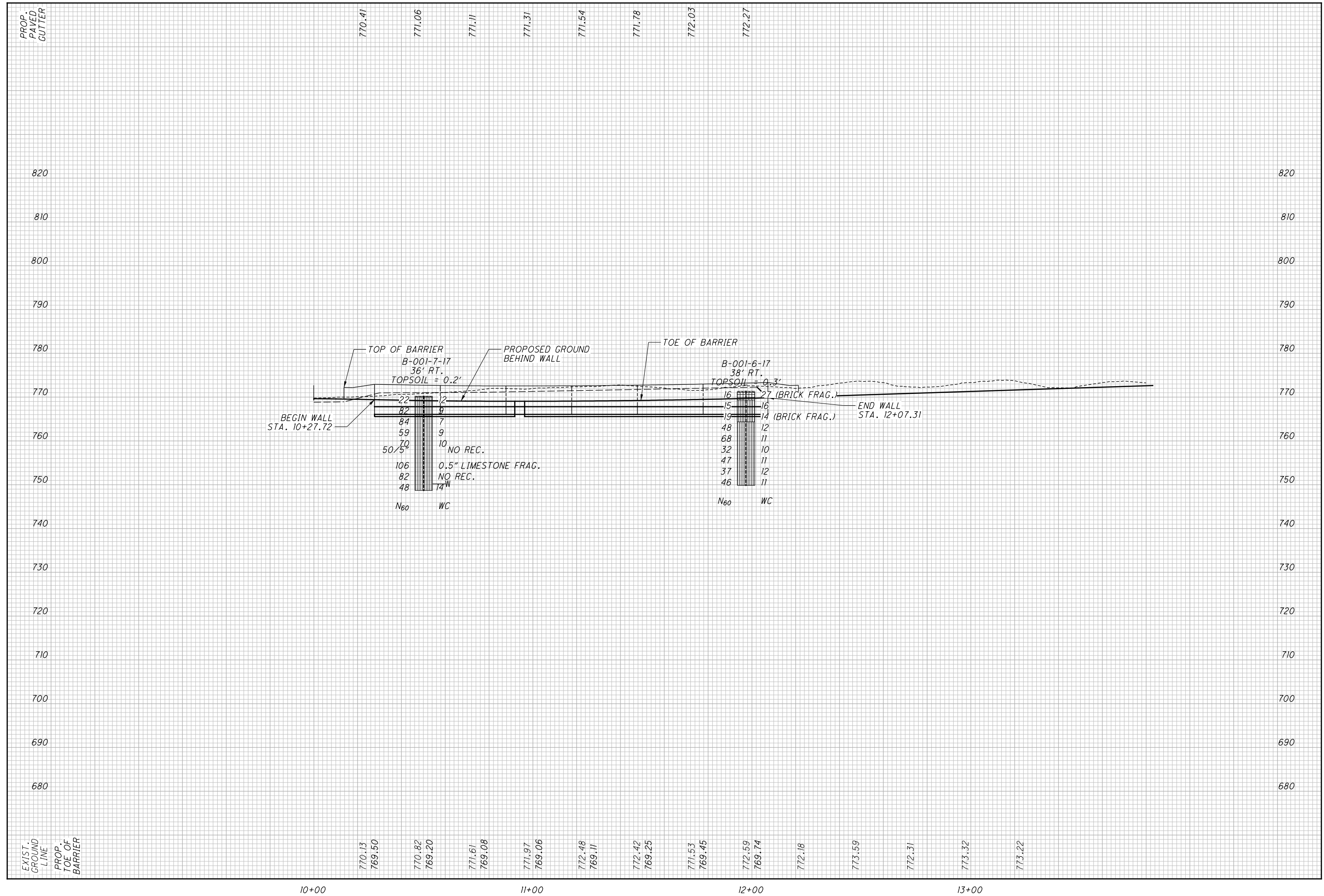
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CHECKED: CH

**STRUCTURE FOUNDATION EXPLORATION
RETAINING WALL NO. 1**

FRA-71-9.07



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DRAWN
GL
CHECKED
CH

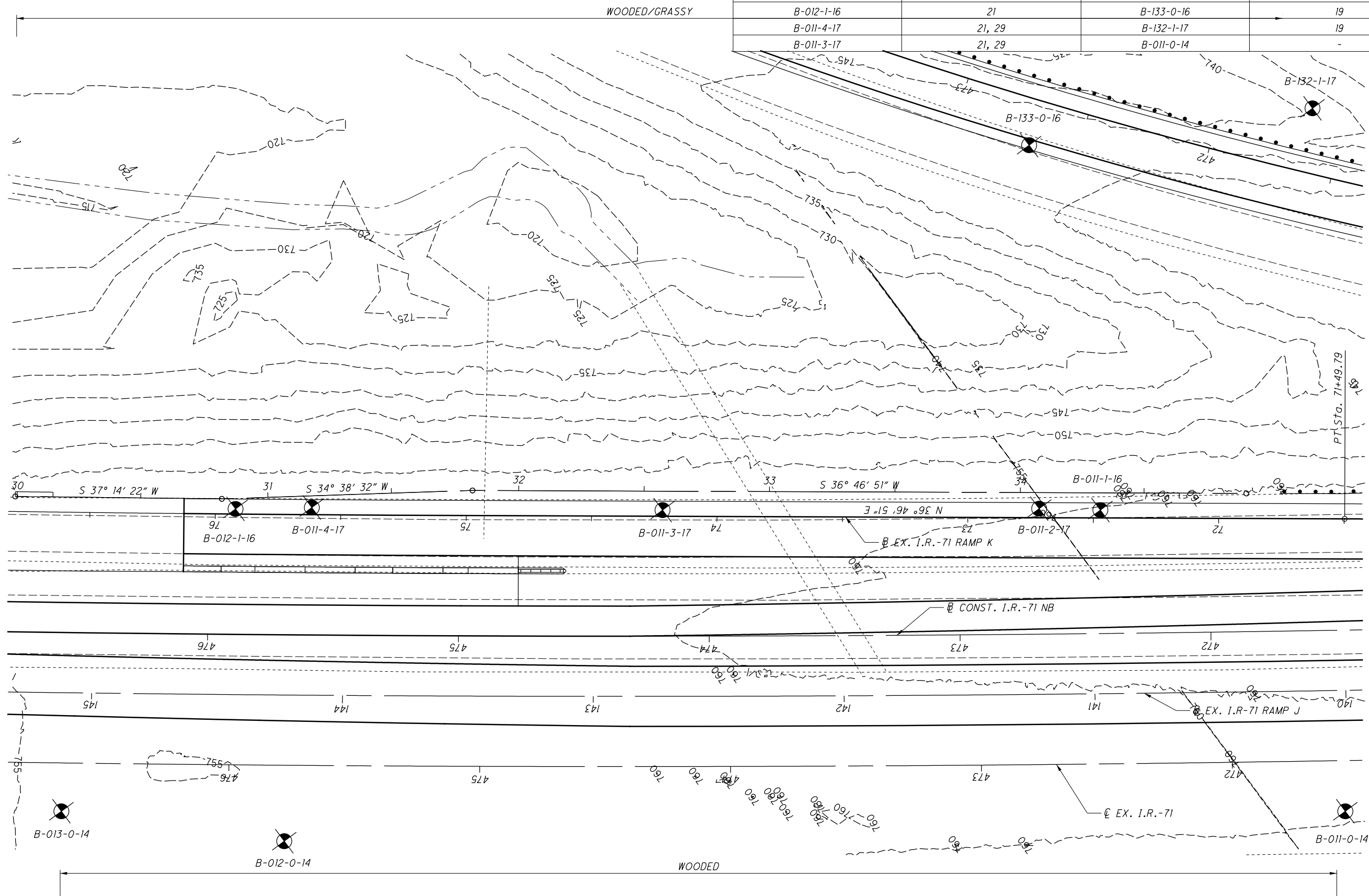
**STRUCTURE FOUNDATION EXPLORATION
RETAINING WALL NO. 1**

FRA-71-9.07



RW NO. 3 WAS DETERMINED TO BE UNNECESSARY AND REMOVED FROM THE FINAL DESIGN

BORING PROFILE LOCATION REFERENCE			
RETAINING WALL NO. 3			
BORING ID	PROFILE SHEET(S)	BORING ID	PROFILE SHEET(S)
B-013-0-14	-	B-011-2-17	21, 29
B-012-0-14	-	B-011-1-16	21
B-012-1-16	21	B-133-0-16	19
B-011-4-17	21, 29	B-132-1-17	19
B-011-3-17	21, 29	B-011-0-14	-



NOTE: RETAINING WALL NO. 3 WAS DETERMINED TO BE UNNECESSARY AND REMOVED FROM THE FINAL DESIGN.

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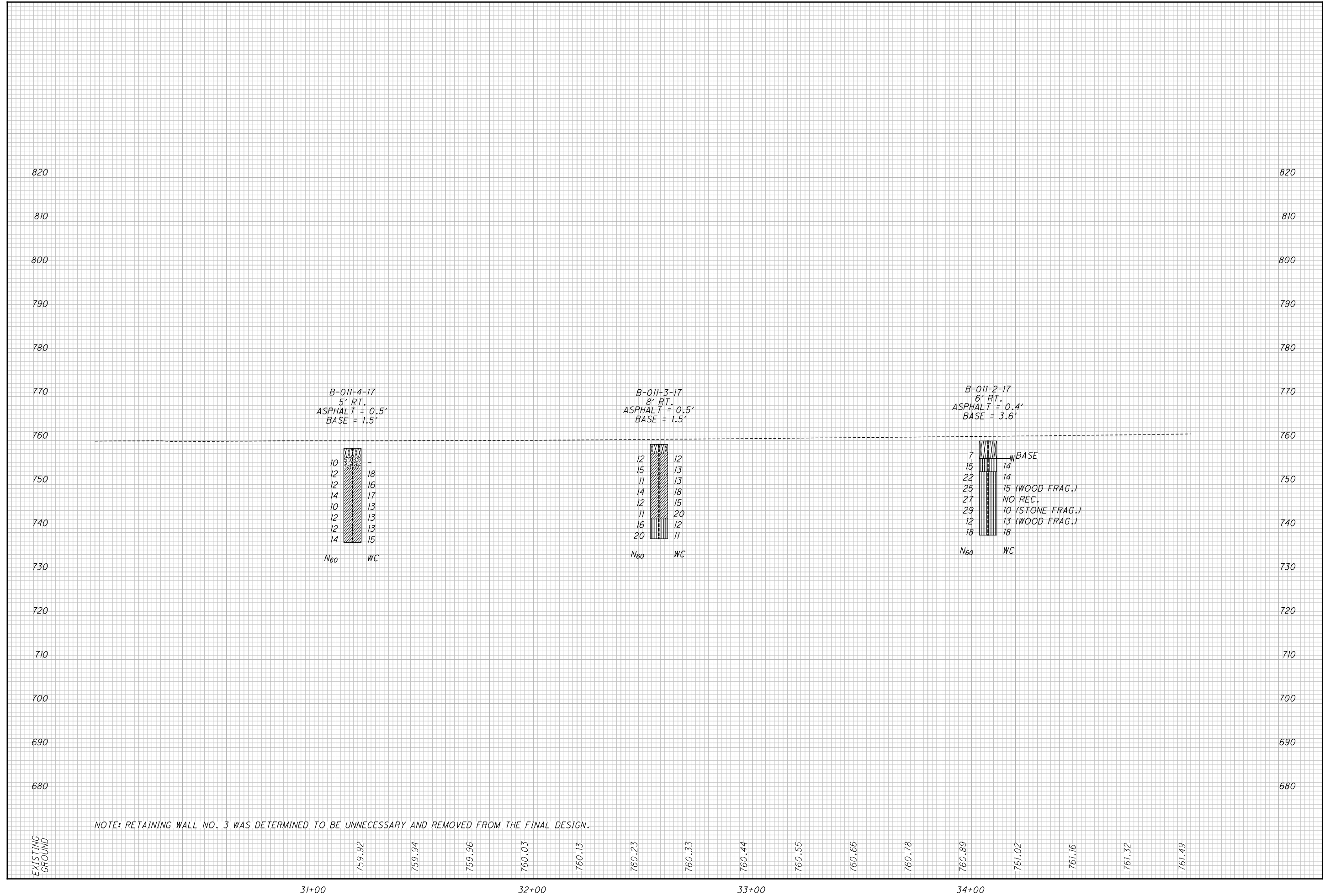
0 20 40
HORIZONTAL
SCALE IN FEET

DRAWN: GL
CHECKED: CH

**STRUCTURE FOUNDATION EXPLORATION
RETAINING WALL NO. 3 (REMOVED)**

FRA-71-9.07



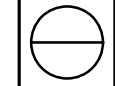


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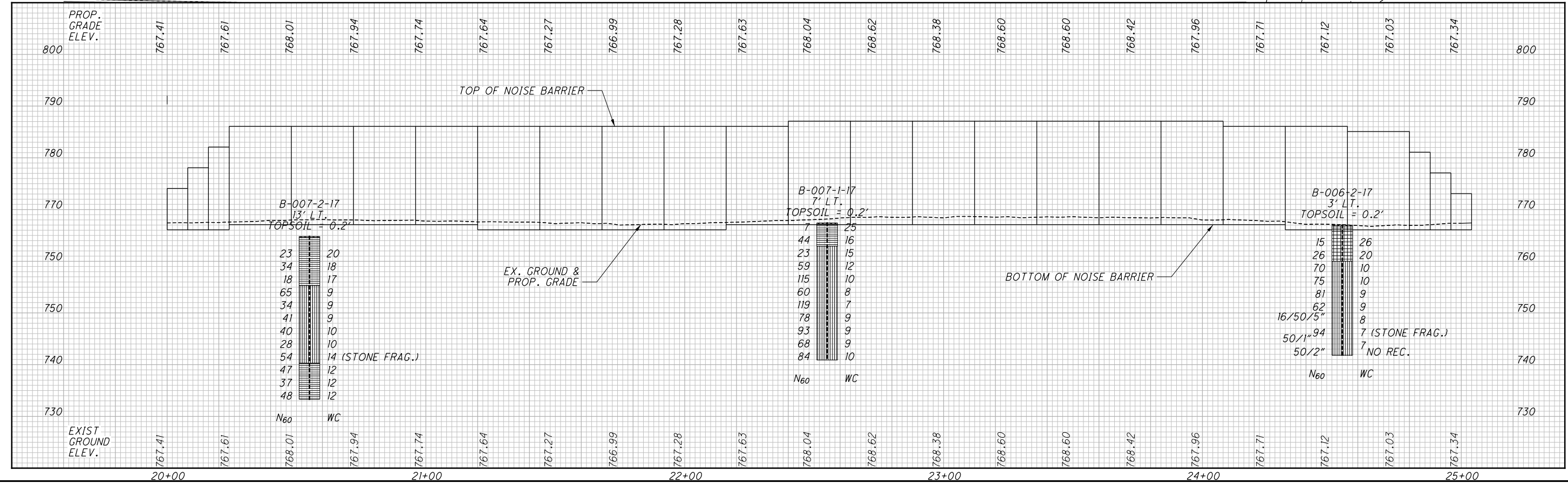
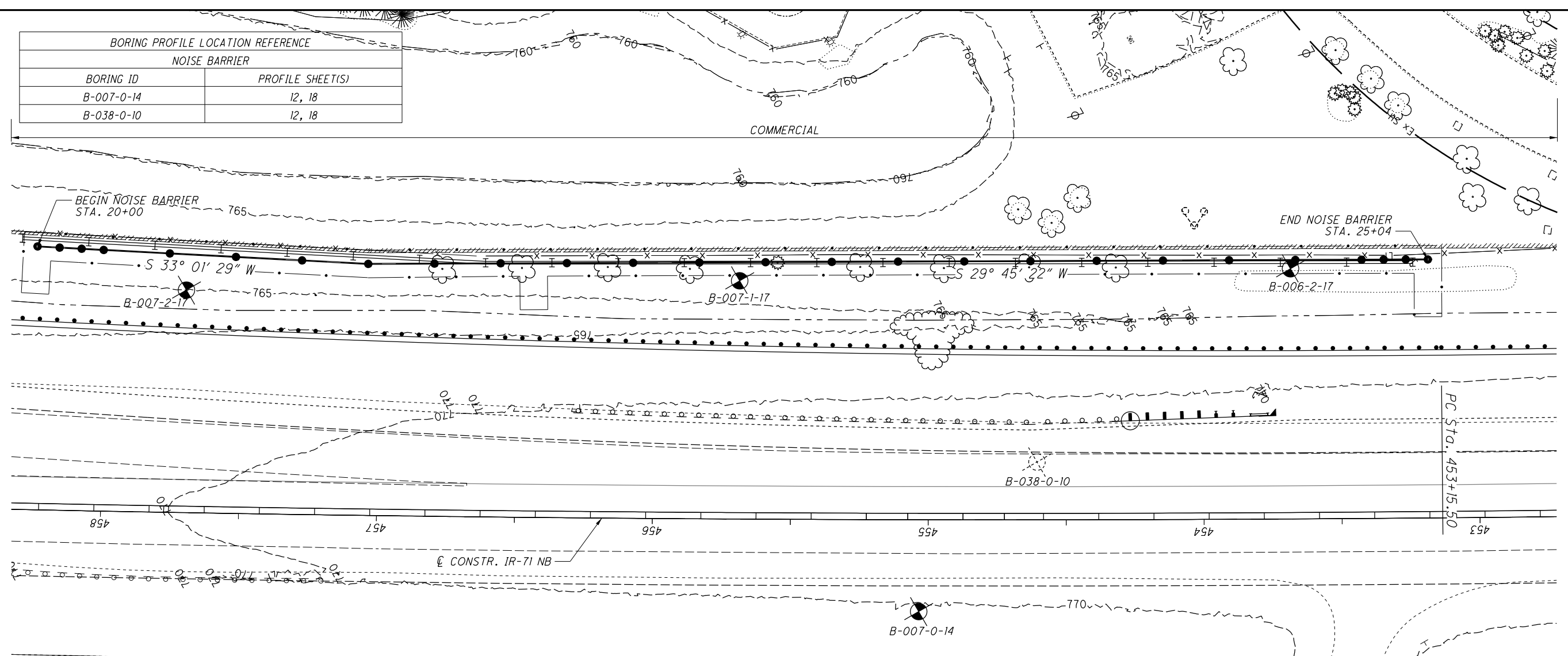
**STRUCTURE FOUNDATION EXPLORATION
 RETAINING WALL NO. 3 (REMOVED)**

FRA-71-9.07





BORING PROFILE LOCATION REFERENCE	
NOISE BARRIER	
BORING ID	PROFILE SHEET(S)
B-007-0-14	12, 18
B-038-0-10	12, 18



P:\15-0190 (92615 - FRA-71-8.87 Stringtown)\92615\geotechnical\sheets\North\92615ZP003.dgn Sheet 1/30/2019 3:18:51 PM mjosiewicz

PROJECT: FRA-71-09.07	DRILLING FIRM / OPERATOR: NEAS / J. HODGES	DRILL RIG: CME 55X	STATION / OFFSET: 429+13.47 RT.	EXPLORATION ID
TYPE: LIGHT TOWER	SAMPLING FIRM / LOGGER: NEAS / J. HODGES	HAMMER: CME AUTOMATIC	ALIGNMENT: IR-71 RAMP C	B-001-5-17
PID: 92615 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 12/3/15	ELEVATION: 775.1 (MSL) EOB: 26.5 ft.	PAGE
START: 10/12/17 END: 10/12/17	SAMPLING METHOD: SPT	ENERGY RATIO (%): 88.1	LAT / LONG: 39.878866, -83.047344	1 OF 1
MATERIAL DESCRIPTION AND NOTES		SPT/ RQD	GRADATION (%)	BACK FILL
TOPSOIL (2.0')		N ₆₀	GR CS FS SI CL LL PL PI WC	ODOT CLASS (GI)
VERY STIFF, BROWN AND GRAY BECOMING BROWN MOTTLED WITH GRAY AND ORANGISH BROWN, SILTY CLAY, SOME SAND. TRACE TO LITTLE GRAVEL, CONTAINS TRACE ROOTS AND IRON STAINING, DAMP TO MOIST (FILL)				
@7.5 TO 9.0'; SS-3 CONTAINS A 0.25" COARSE AND FINE SAND LENSE				
HARD, BROWN BECOMING GRAY, SANDY SILT, SOME CLAY, TRACE TO LITTLE GRAVEL, SS-4 AND SS-5 CONTAIN TRACE IRON STAINING, DAMP				

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE-IN DEPTH 12.6'.
ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS

PROJECT: FRA-71-09.07	DRILLING FIRM / OPERATOR: NEAS / J. HODGES	DRILL RIG: CME 55X	STATION / OFFSET: 11+56.0' RT.	EXPLORATION ID
TYPE: RETAINING WALL	SAMPLING FIRM / LOGGER: NEAS / J. HODGES	HAMMER: CME AUTOMATIC	ALIGNMENT: RETAINING WALL 1	B-001-6-17
PID: 92615 SFN:	DRILLING METHOD: 3.25" HSA	CALIBRATION DATE: 12/3/15	ELEVATION: 772.7 (MSL) EOB: 21.5 ft.	PAGE
START: 10/11/17 END: 10/11/17	SAMPLING METHOD: SPT	ENERGY RATIO (%): 88.1	LAT / LONG: 39.880487, -83.047643	1 OF 1
MATERIAL DESCRIPTION AND NOTES		SPT/ RQD	GRADATION (%)	BACK FILL
TOPSOIL (3.0')		N ₆₀	GR CS FS SI CL LL PL PI WC	ODOT CLASS (GI)
VERY STIFF, BROWN, CLAY, "AND" SILT, LITTLE SAND, TRACE GRAVEL, CONTAINS TRACE ROOTS AND BRICK FRAGMENTS, DAMP (FILL)				
VERY STIFF TO HARD, BROWN MOTTLED WITH GRAY AND ORANGISH BROWN, SANDY SILT, SOME CLAY, LITTLE GRAVEL, CONTAINS TRACE ROOTS, IRON STAINING, AND BRICK FRAGMENTS, DAMP (FILL)				
VERY STIFF TO HARD, BROWN AND GRAY BECOMING GRAYISH BROWN, SANDY SILT, SOME CLAY, TRACE TO LITTLE GRAVEL, SS-4 AND SS-5 CONTAIN TRACE ROOTS AND IRON STAINING, DAMP				

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE-IN DEPTH 21.5'.
ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS



PROJECT: FRA-71-09.07 TYPE: RETAINING WALL	DRILLING FIRM / OPERATOR: NEAS / J. HODGES SAMPLING FIRM / LOGGER: NEAS / J. HODGES	DRILL RIG: CME 55X HAMMER: CME AUTOMATIC	STATION / OFFSET: 10+08.0' RT. ALIGNMENT: RETAINING WALL 1	EXPLORATION ID B-001-7-17
PID: 92615 SFN: 10/11/17 START: 10/11/17 END: 10/11/17	DRILLING METHOD: 3.25" HSA SAMPLING METHOD: SPT	CALIBRATION DATE: 12/3/15 ENERGY RATIO (%): 88.1	ELEVATION: 770.2 (MSL) EOB: 21.5 ft. LAT / LONG: 39.880876, -83.047488	PAGE 1 OF 1
MATERIAL DESCRIPTION AND NOTES				
TOPSOIL (2.0') VERY STIFF TO HARD, BROWN AND GRAY, SANDY SILT, SOME CLAY, TRACE GRAVEL, CONTAINS TRACE ROOTS AND IRON STAINING, DAMP (FILL)	ELEV.: 770.2 770.0	SPT / RQD 1 4 11	GRADATION (%) GR CS FS SI CL LL PL PI WC	ODOT CLASS (GI) A-4a (V)
VERY STIFF TO HARD, GRAY, SANDY SILT, TRACE TO LITTLE CLAY, LITTLE GRAVEL, DAMP TO MOIST	ELEV.: 765.7	11 21 35	9 21 40 25 22 14 8	A-4a (6)
@10.0' TO 11.5': BECOMES VERY DENSE, SOME GRAVEL, CONTAINS IRON STAINING		3 22 35	- - - - - - -	A-4a (V)
@12.5' TO 14.0': SS-6 NO RECOVERY		10 19 21	- - - - - - -	A-4a (V)
@15.0' TO 16.5': SS-7 CONTAINS ONLY A 0.5" LIMESTONE FRAGMENT		7 21 27	16 19 25 11 NP NP NP 10	A-4a (0)
@17.5' TO 19.0': SS-8 NO RECOVERY		50/5"	- - - - - - -	
		21 40 32	- - - - - - -	
		20 32 24	- - - - - - -	
		9 18 15	- - - - - - -	A-4a (V)
	ELEV.: 748.7 EOB			

NOTES: GROUNDWATER ENCOUNTERED AT 20.0' DURING DRILLING. CAVE-IN DEPTH 19.0'.
ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS

PROJECT: FRA-71-09.07 TYPE: NOISE WALL	DRILLING FIRM / OPERATOR: NEAS / J. HODGES SAMPLING FIRM / LOGGER: NEAS / J. HODGES	DRILL RIG: CME 55X HAMMER: CME AUTOMATIC	STATION / OFFSET: 0+30.76' RT. ALIGNMENT: IR 270 RAMPH H	EXPLORATION ID B-006-2-17
PID: 92615 SFN: 10/12/17 START: 10/12/17 END: 10/12/17	DRILLING METHOD: 3.25" HSA SAMPLING METHOD: SPT	CALIBRATION DATE: 12/3/15 ENERGY RATIO (%): 88.1	ELEVATION: 767.0 (MSL) EOB: 25.2 ft. LAT / LONG: 39.884860, -83.044758	PAGE 1 OF 1
MATERIAL DESCRIPTION AND NOTES				
TOPSOIL (2.0') VERY STIFF, BROWN MOTTLED WITH GRAY, ORANGISH BROWN, AND DARK BROWN, CLAY, "AND" SILT, LITTLE TO SOME SAND, TRACE GRAVEL, CONTAINS TRACE IRON STAINING AND ROOT HAIRS, MOIST (FILL)	ELEV.: 767.0 766.8	SPT / RQD 2 4 6	GRADATION (%) GR CS FS SI CL LL PL PI WC	ODOT CLASS (GI) A-7-6 (V)
HARD, BROWN AND ORANGISH BROWN BECOMING BROWNISH GRAY, SANDY SILT, SOME CLAY, TRACE TO LITTLE GRAVEL, SS-3 TO SS-5 CONTAIN IRON STAINING, DAMP	ELEV.: 760.0	2 8 10	7 14 41 35 42 19 23 20	A-7-6 (14)
		6 21 27	- - - - - - -	A-4a (V)
		3 21 30	- - - - - - -	A-4a (V)
		3 25 30	- - - - - - -	A-4a (V)
		2 15 27	8 14 44 26 25 15 10 9	A-4a (7)
		16 50/5"	- - - - - - -	A-4a (V)
		10 26 38	- - - - - - -	A-4a (V)
		50/1"	- - - - - - -	A-4a (V)
		60/2"	- - - - - - -	
	ELEV.: 741.8 EOB			

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE-IN DEPTH 20.0'.
ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS



PROJECT: FRA-71-09.07 NOISE WALL		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 55X		STATION / OFFSET: 2+23.61' RT.		EXPLORATION ID												
TYPE: NOISE WALL		SAMPLING FIRM / LOGGER: NEAS / J. HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: IR 270 RAMP H		B-007-1-17												
PID: 92615 SFN: 10/12/17		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 12/3/15		ELEVATION: 767.4 (MSL) EOB: 26.5 ft.		PAGE												
START: 10/12/17 END: 10/12/17		SAMPLING METHOD: SPT		ENERGY RATIO (%): 88.1		LAT / LONG: 39.885342, -83.044419		1 OF 1												
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC (%)	SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL	
TOPSOIL (2.0')		767.4	1	1	7	100	SS-1	1.80	-	-	-	-	-	-	-	-	25	A-6b (V)	5	
STIFF TO VERY STIFF, BROWN, SILTY CLAY, LITTLE TO SOME SAND, TRACE GRAVEL, CONTAINS TRACE IRON STAINING AND ROOT HAIRS, DAMP TO MOIST (FILL)		767.2	2	3															5	
@2.5' TO 4.0'; SS-2 CONTAINS A 0.5" MAROON SILT SEAM			3	15	44	100	SS-2	3.00	10	12	14	30	34	36	19	17	16	A-6b (9)	5	
HARD, BROWN AND MAROON BECOMING BROWNISH GRAY WITH ORANGISH BROWN, SANDY SILT, LITTLE CLAY, TRACE TO LITTLE GRAVEL, SS-3 AND SS-4 CONTAIN TRACE IRON STAINING, DAMP TO MOIST		762.9	4	15																5
@10.0' TO 11.5'; SS-5 CONTAINS A 0.5" LIGHT BROWN SILT SEAM			5	7	23	100	SS-3	4.5+	-	-	-	-	-	-	-	-	15	A-4a (V)	5	
@12.5' TO 19.0'; BECOMES GRAY			6	7															5	
			7	9															5	
			8	12	59	100	SS-4	4.5+	-	-	-	-	-	-	-	-	12	A-4a (V)	5	
			9	28															5	
			10	36	115	100	SS-5	4.5+	10	9	23	42	16	19	14	5	10	A-4a (5)	5	
			11	42															5	
			12																5	
			13	14	60	100	SS-6	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	5	
			14	27															5	
			15	39	119	100	SS-7	4.5+	-	-	-	-	-	-	-	-	7	A-4a (V)	5	
			16	41															5	
			17																5	
			18	20	78	100	SS-8	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	5	
			19	25															5	
			20	10	93	100	SS-9	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	5	
			21	38															5	
			22																5	
			23	10	68	100	SS-10	4.5+	-	-	-	-	-	-	-	-	9	A-4a (V)	5	
			24	26															5	
			25	15	84	100	SS-11	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	5	
			26	33															5	
		740.9	EOB	24															5	

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE-IN DEPTH 15.0'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS



PROJECT: FRA-71-09.07		DRILLING FIRM / OPERATOR: NEAS / J. HODGES		DRILL RIG: CME 55X		STATION / OFFSET: 4+25.47 RT.		EXPLORATION ID		
TYPE: NOISE WALL		SAMPLING FIRM / LOGGER: NEAS / J.HODGES		HAMMER: CME AUTOMATIC		ALIGNMENT: IR 270 RAMP H		B-007-2-17		
PID: 92615 SFN: 10/13/17		DRILLING METHOD: 3.25" HSA		CALIBRATION DATE: 12/3/15		ELEVATION: 764.8 (MSL) EOB: 31.5 ft.		PAGE		
START: 10/13/17 END: 10/13/17		SAMPLING METHOD: SPT		ENERGY RATIO (%): 88.1		LAT / LONG: 39.885825, -83.044076		1 OF 1		
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	N ₆₀	REC SAMPLE (%)	HP ID	GRADATION (%)	ATTERBERG	BACK FILL
		764.8	1-31					GR CS FS SI CL LL PL PI WC	ODOT CLASS (GI)	
TOPSOIL (2.0')			1							
VERY STIFF TO HARD, BROWN WITH TRACE GRAY MOTTLES. SILTY CLAY LITTLE TO SOME SAND, TRACE TO LITTLE GRAVEL, CONTAINS TRACE IRON STAINING AND ROOT HAIRS, DAMP TO MOIST (FILL)			2							
			3	7	23	100	SS-1			
			4	9						20 A-6b (V)
			5							
			6	11	34	100	SS-2	6 14 34 31	35 17 18	
			7	12						
			8	2	18	100	SS-3			
			9	4						
		755.3	10							
VERY STIFF TO HARD, GRAYISH BROWN AND ORANGISH BROWN, SANDY SILT, LITTLE TO SOME CLAY, TRACE GRAVEL, SS-4 CONTAINS IRON STAINING, DAMP			11	15	65	100	SS-4			
			12	29						
			13	3	34	100	SS-5			
			14	10						
			15	13	41	100	SS-6			
			16	15						
			17							
			18	4	40	100	SS-7			
			19	13						
			20	7	28	100	SS-8	8 21 39 24	20 12 8	
			21	12						
			22							
			23	8	54	100	SS-9			
			24	16						
		740.3	25	21						
@22.5' TO 24.0': BECOMES LITTLE GRAVEL AND STONE FRAGMENTS, CONTAINS TRACE IRON STAINING, MOIST			26	3	47	100	SS-10			
			27	12						
			28	9	37	100	SS-11	6 15 37 39	31 15 16	
			29	16						
			30	3	48	100	SS-12			
			31	12						
		733.3	EOB	21						

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. CAVE-IN DEPTH 19.0'.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED, SOIL CUTTINGS

PROJECT:	FRA-71-09.07	DRILLING FIRM / OPERATOR:	NEAS / ASHBAUGH	DRILL RIG:	CME 55	STATION / OFFSET:	472+76.102 RT.	EXPLORATION ID	B-011-2-17
TYPE:	RETAINING WALL	SAMPLING FIRM / LOGGER:	NEAS / ASHBAUGH	HAMMER:	CME AUTOMATIC	ALIGNMENT:	PROPOSED IR-71		
PID:	92615	DRILLING METHOD:	3.25' HSA	CALIBRATION DATE:	12/3/15	ELEVATION:	759.9 (MSL) EOB:	21.5 ft.	PAGE
START:	10/11/17	SAMPLING METHOD:	SPT	ENERGY RATIO (%):	81.8	LAT / LONG:	39.889301, -83.041266		1 OF 1
MATERIAL DESCRIPTION AND NOTES									
5.0" ASPHALT AND 43.0" GRANULAR BASE (DRILLERS DESCRIPTION)									
@2.5' TO 4.0'; SS-1 IS GRANULAR BASE									
VERY STIFF TO HARD, BROWN MOTTLED WITH GRAY SANDY SILT, SOME CLAY, TRACE GRAVEL, CONTAINS IRON STAINING, DAMP									
STIFF TO HARD, BROWN MOTTLED WITH GRAY BECOMING BROWNISH GRAY, SANDY SILT, LITTLE TO SOME CLAY, TRACE TO LITTLE GRAVEL, CONTAINS IRON STAINING, SS-4 AND SS-7 CONTAIN WOOD FRAGMENTS, DAMP TO MOIST									
@12.5' TO 14.0'; SS-5 NO RECOVERY									
@15.0' TO 16.5'; CONTAINS A 1.5" LIMESTONE FRAGMENT (NOT INCLUDED IN TESTING)									
ELEV. 759.9									
ELEV. 755.9									
ELEV. 752.9									
ELEV. 738.4									
ELEV. 737.6									
ELEV. 737.6									

NOTES: GROUNDWATER ENCOUNTERED AT 4.0' DURING DRILLING. HOLE DID NOT CAVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

PROJECT:	FRA-71-09.07	DRILLING FIRM / OPERATOR:	NEAS / ASHBAUGH	DRILL RIG:	CME 55	STATION / OFFSET:	474+27.102 RT.	EXPLORATION ID	B-011-3-17
TYPE:	RETAINING WALL	SAMPLING FIRM / LOGGER:	NEAS / ASHBAUGH	HAMMER:	CME AUTOMATIC	ALIGNMENT:	PROPOSED IR-71		
PID:	92615	DRILLING METHOD:	3.25' HSA	CALIBRATION DATE:	12/3/15	ELEVATION:	759.1 (MSL) EOB:	21.5 ft.	PAGE
START:	10/11/17	SAMPLING METHOD:	SPT	ENERGY RATIO (%):	81.8	LAT / LONG:	39.889635, -83.040952		1 OF 1
MATERIAL DESCRIPTION AND NOTES									
6.0" ASPHALT AND 18.0" GRANULAR BASE									
VERY STIFF TO HARD, BROWN WITH TRACE GRAY MOTTLES, SILT AND CLAY, SOME SAND, TRACE GRAVEL, CONTAINS TRACE IRON STAINING, DAMP (FILL)									
VERY STIFF TO HARD, GRAY AND BROWN BECOMING BROWNISH GRAY, SILT AND CLAY, SOME SAND, TRACE TO LITTLE GRAVEL, SS-3 AND SS-4 CONTAIN TRACE ROOTS AND IRON STAINING, DAMP TO MOIST									
HARD, BROWNISH GRAY, SANDY SILT, SOME CLAY, TRACE GRAVEL, DAMP									

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

PROJECT:	FRA-71-09.07	DRILLING FIRM / OPERATOR:	NEAS / ASHBAUGH	STATION / OFFSET:	475+68. 103' RT.	EXPLORATION ID
TYPE:	RETAINING WALL	SAMPLING FIRM / LOGGER:	NEAS / ASHBAUGH	ALIGNMENT:	PROPOSED IR-71	B-011-4-17
PID:	92615 SFN:	DRILLING METHOD:	3.25' HSA	ELEVATION:	758.2 (MSL) EOB:	21.5 ft.
START:	10/11/17	SAMPLING METHOD:	SPT	LAT / LONG:	39.889943, -83.040654	PAGE
END:	10/11/17					1 OF 1
MATERIAL DESCRIPTION AND NOTES						
6.0" ASPHALT AND 18.0" GRANULAR BASE						
ELEV. 758.2						
DEPTHS						
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
EOB						
736.7						
<p>LOOSE, BROWN, GRAVEL WITH SAND, LITTLE SILT, TRACE CLAY, CONTAINS TRACE IRON STAINING, MOIST (FILL)</p> <p>VERY STIFF TO HARD, BROWNISH GRAY BECOMING GRAYISH BROWN MOTTLED WITH GRAY, SILT AND CLAY, SOME SAND, TRACE GRAVEL, CONTAINS TRACE IRON STAINING, SS-2 AND SS-3 CONTAIN TRACE ROOT HAIRS, DAMP TO MOIST</p> <p>@15.0' TO 21.5'; BECOMES BROWN AND BROWNISH GRAY</p>						
<p>SPT/ RQD</p> <p>REC (%)</p> <p>HP (tsf)</p> <p>GR</p> <p>CS</p> <p>FS</p> <p>SI</p> <p>CL</p> <p>LL</p> <p>PL</p> <p>PI</p> <p>WC</p> <p>ODOT CLASS (GI)</p> <p>BACK FILL</p>						

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

PROJECT:	FRA-71-09.07	DRILLING FIRM / OPERATOR:	NEAS / ASHBAUGH	STATION / OFFSET:	492+39. 80' RT.	EXPLORATION ID
TYPE:	LIGHT TOWER	SAMPLING FIRM / LOGGER:	NEAS / ASHBAUGH	ALIGNMENT:	EXISTING IR-71	B-053-5-17
PID:	92615 SFN:	DRILLING METHOD:	3.25' HSA	ELEVATION:	766.2 (MSL) EOB:	26.5 ft.
START:	10/11/17	SAMPLING METHOD:	SPT	LAT / LONG:	39.875498, -83.051285	PAGE
END:	10/11/17					1 OF 1
MATERIAL DESCRIPTION AND NOTES						
9.0" ASPHALT AND 15.0" GRANULAR BASE						
ELEV. 766.2						
DEPTHS						
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
EOB						
764.2						
<p>VERY STIFF TO HARD, BROWN BECOMING BROWN AND BROWNISH GRAY, SANDY SILT, SOME CLAY, TRACE GRAVEL, CONTAINS TRACE IRON STAINING, SS-1 CONTAINS A 1.5" LIMESTONE FRAGMENT, DAMP</p> <p>@15.0' TO 19.0'; BECOMES BROWNISH GRAY, LITTLE GRAVEL</p> <p>@20.0' TO 26.5'; BECOMES BROWN AND ORANGISH BROWN, LITTLE CLAY, SS-8 CONTAINS A 1.0" LIGHT BROWN SILT SEAM</p>						
<p>SPT/ RQD</p> <p>REC (%)</p> <p>HP (tsf)</p> <p>GR</p> <p>CS</p> <p>FS</p> <p>SI</p> <p>CL</p> <p>LL</p> <p>PL</p> <p>PI</p> <p>WC</p> <p>ODOT CLASS (GI)</p> <p>BACK FILL</p>						

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS



FRA-71-9.07

STRUCTURE FOUNDATION EXPLORATION
BORING LOG B-011-4-17 & B-053-5-17

DRAWN
GL
CHECKED
CH

PROJECT:	FRA-71-09.07	DRILLING FIRM / OPERATOR:	NEAS / J. HODGES	DRILL RIG:	CME 55X	STATION / OFFSET:	18+25.49' RT.	EXPLORATION ID				
TYPE:	RETAINING WALL	SAMPLING FIRM / LOGGER:	NEAS / J. HODGES	HAMMER:	CME AUTOMATIC	ALIGNMENT:	IR 270 RAMIP H	B-132-1-17				
PID:	92615	DRILLING METHOD:	3.25" HSA	CALIBRATION DATE:	12/3/15	ELEVATION:	740.1 (MSL) EOB:	26.5 ft.				
START:	10/16/17	SAMPLING METHOD:	SPT	ENERGY RATIO (%):	88.1	LAT / LONG:	39.888801, -83.041037	PAGE				
								1 OF 1				
								BACK				
								FILL				
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	REC SAMPLE (%)	HP (tsf)	GRADATION (%)	ATTERBERG	ODOT CLASS (GI)			
<p>TOPSOIL (2.0') VERY STIFF TO HARD, BROWN, SANDY SILT, SOME CLAY, TRACE GRAVEL, SS-1 AND SS-2 CONTAIN TRACE ROOT HAIRS, CONTAINS TRACE IRON STAINING, DAMP (FILL)</p> <p>@7.5 TO 9.0'; CONTAINS ROOTS</p> <p>HARD, BROWN WITH BROWNISH GRAY AND ORANGISH BROWN, SILT, SOME SAND, LITTLE CLAY, TRACE GRAVEL, DAMP</p> <p>HARD, GRAY, SANDY SILT, LITTLE TO SOME CLAY, TRACE TO LITTLE GRAVEL, DAMP</p>		740.1	1	1	100	2.60	-	-	-	17	A-4a (V)	
		739.9	2	2	100	4.5+	-	-	-	-	11	A-4a (V)
		730.6	3	3	100	4.5+	-	-	-	-	15	A-4a (V)
		729.1	4	4	100	4.5+	-	-	-	-	16	A-4a (6)
		728.1	5	5	100	4.5+	-	-	-	-	10	A-4a (V)
		713.6	6	6	100	4.5+	-	-	-	-	10	A-4a (V)
		711.8	7	7	100	4.5+	-	-	-	-	10	A-4a (V)
		705.8	8	8	100	4.5+	-	-	-	-	10	A-4a (V)
		705.8	9	9	100	4.5+	-	-	-	-	10	A-4a (V)
		705.8	10	10	100	4.5+	-	-	-	-	10	A-4a (V)
		705.8	11	11	100	4.5+	-	-	-	-	10	A-4a (V)
		705.8	12	12	100	4.5+	-	-	-	-	10	A-4a (V)
		705.8	13	13	100	4.5+	-	-	-	-	10	A-4a (V)
		705.8	14	14	100	4.5+	-	-	-	-	10	A-4a (V)
		705.8	15	15	100	4.5+	-	-	-	-	10	A-4a (V)
		705.8	16	16	100	4.5+	-	-	-	-	10	A-4a (V)
		705.8	17	17	100	4.5+	-	-	-	-	10	A-4a (V)
		705.8	18	18	100	4.5+	-	-	-	-	10	A-4a (V)
		705.8	19	19	100	4.5+	-	-	-	-	10	A-4a (V)
		705.8	20	20	100	4.5+	-	-	-	-	10	A-4a (V)
		705.8	21	21	100	4.5+	-	-	-	-	10	A-4a (V)
		705.8	22	22	100	4.5+	-	-	-	-	10	A-4a (V)
		705.8	23	23	100	4.5+	-	-	-	-	10	A-4a (V)
		705.8	24	24	100	4.5+	-	-	-	-	10	A-4a (V)
		705.8	25	25	100	4.5+	-	-	-	-	10	A-4a (V)
		705.8	26	26	100	4.5+	-	-	-	-	10	A-4a (V)

NOTES: GROUNDWATER ENCOUNTERED AT 11.0' DURING DRILLING. CAVE-IN DEPTH 6.0'.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS

PROJECT:	FRA-71-09.07	DRILLING FIRM / OPERATOR:	NEAS / J. HODGES	DRILL RIG:	CME 55X	STATION / OFFSET:	20+03.38' RT.	EXPLORATION ID				
TYPE:	RETAINING WALL	SAMPLING FIRM / LOGGER:	NEAS / J. HODGES	HAMMER:	CME AUTOMATIC	ALIGNMENT:	IR 270 RAMIP H	B-133-1-17				
PID:	92615	DRILLING METHOD:	3.25" HSA	CALIBRATION DATE:	12/3/15	ELEVATION:	732.3 (MSL) EOB:	26.5 ft.				
START:	10/16/17	SAMPLING METHOD:	SPT	ENERGY RATIO (%):	88.1	LAT / LONG:	39.889110, -83.040561	PAGE				
								1 OF 1				
								BACK				
								FILL				
MATERIAL DESCRIPTION AND NOTES		ELEV.	DEPTHS	SPT/ RQD	REC SAMPLE (%)	HP (tsf)	GRADATION (%)	ATTERBERG	ODOT CLASS (GI)			
<p>TOPSOIL (2.0') HARD, BROWN, SILT AND CLAY, SOME SAND, TRACE GRAVEL, CONTAINS TRACE ROOTS AND IRON STAINING, DAMP (FILL)</p> <p>HARD, BROWN WITH TRACE GRAY MOTTLES, SANDY SILT, SOME CLAY, TRACE TO LITTLE GRAVEL, CONTAINS TRACE IRON STAINING, DAMP</p> <p>VERY STIFF, BROWN AND BROWNISH GRAY, SILTY CLAY, SOME SAND, TRACE GRAVEL, CONTAINS TRACE IRON STAINING, DAMP</p> <p>HARD, BROWN MOTTLED WITH GRAY, SANDY SILT, SOME CLAY, TRACE GRAVEL, CONTAINS TRACE IRON STAINING, DAMP</p> <p>HARD, BROWN WITH TRACE GRAY MOTTLES, SILTY CLAY, SOME SAND, TRACE GRAVEL, CONTAINS TRACE IRON STAINING, DAMP</p> <p>VERY STIFF TO HARD, BROWN MOTTLED WITH GRAY AND ORANGISH BROWN, CLAY, "AND" SILT, LITTLE SAND, TRACE GRAVEL, SS-8 CONTAINS IRON STAINING, DAMP TO MOIST</p> <p>@20.0' TO 21.5'; BECOMES BROWNISH GRAY, CONTAINS 45" IRON STAINED DISCONTINUITIES</p> <p>@22.5' TO 24.0'; BECOMES BROWN AND GRAY MOTTLED WITH LIGHT BLUEISH GREEN</p> <p>@25.0' TO 26.5'; BECOMES GRAY</p>		732.3	1	1	100	4.5+	-	-	-	15	A-6a (V)	
		732.1	2	2	100	4.5+	-	-	-	-	13	A-4a (V)
		730.3	3	3	100	4.5+	-	-	-	-	13	A-4a (V)
		722.8	4	4	100	4.5+	-	-	-	-	13	A-4a (V)
		720.3	5	5	100	4.5+	-	-	-	-	13	A-4a (V)
		717.8	6	6	100	4.5+	-	-	-	-	13	A-4a (V)
		715.8	7	7	100	4.5+	-	-	-	-	13	A-4a (V)
		715.8	8	8	100	4.5+	-	-	-	-	13	A-4a (V)
		715.8	9	9	100	4.5+	-	-	-	-	13	A-4a (V)
		715.8	10	10	100	4.5+	-	-	-	-	13	A-4a (V)
		715.8	11	11	100	4.5+	-	-	-	-	13	A-4a (V)
		715.8	12	12	100	4.5+	-	-	-	-	13	A-4a (V)
		715.8	13	13	100	4.5+	-	-	-	-	13	A-4a (V)
		715.8	14	14	100	4.5+	-	-	-	-	13	A-4a (V)
		715.8	15	15	100	4.5+	-	-	-	-	13	A-4a (V)
		715.8	16	16	100	4.5+	-	-	-	-	13	A-4a (V)
		715.8	17	17	100	4.5+	-	-	-	-	13	A-4a (V)
		715.8	18	18	100	4.5+	-	-	-	-	13	A-4a (V)
		715.8	19	19	100	4.5+	-	-	-	-	13	A-4a (V)
		715.8	20	20	100	4.5+	-	-	-	-	13	A-4a (V)
		715.8	21	21	100	4.5+	-	-	-	-	13	A-4a (V)
		715.8	22	22	100	4.5+	-	-	-	-	13	A-4a (V)
		715.8	23	23	100	4.5+	-	-	-	-	13	A-4a (V)
		715.8	24	24	100	4.5+	-	-	-	-	13	A-4a (V)
		715.8	25	25	100	4.5+	-	-	-	-	13	A-4a (V)
		715.8	26	26	100	4.5+	-	-	-	-	13	A-4a (V)

NOTES: GROUNDWATER ENCOUNTERED AT 18.0' DURING DRILLING. CAVE-IN DEPTH 4.0'.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS