

EAU MAY 2019
PROJECT ID: 7120-02-73, 7120-02-76
COUNTY: PEPIN

ORDER OF SHEETS

Section No. 1	Title
Section No. 2	Typical Sections and Details
Section No. 3	Estimate of Quantities
Section No. 3	Miscellaneous Quantities
Section No. 4	Right of Way Plan
Section No. 5	Plan and Profile
Section No. 6	Standard Detail Drawings
Section No. 7	Sign Plates
Section No. 8	Structure Plans
Section No. 9	Computer Earthwork Data
Section No. 9	Cross Sections

TOTAL SHEETS = 204

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PLAN OF PROPOSED IMPROVEMENT

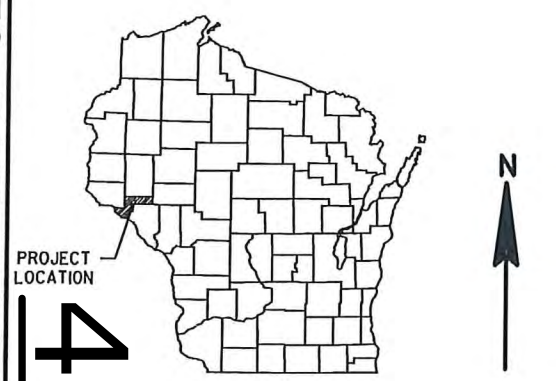
STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
7120-02-73	WISC 2019326	1
7120-02-76	WISC 2019327	1

DURAND - EAU CLAIRE
USH 10 TO NORTH COUNTY LINE
STH 85
PEPIN COUNTY

DURAND - EAU CLAIRE
USH 10 TO NORTH COUNTY LINE
STH 85
PEPIN COUNTY

STATE PROJECT NUMBER
7120-02-73

STATE PROJECT NUMBER
7120-02-76



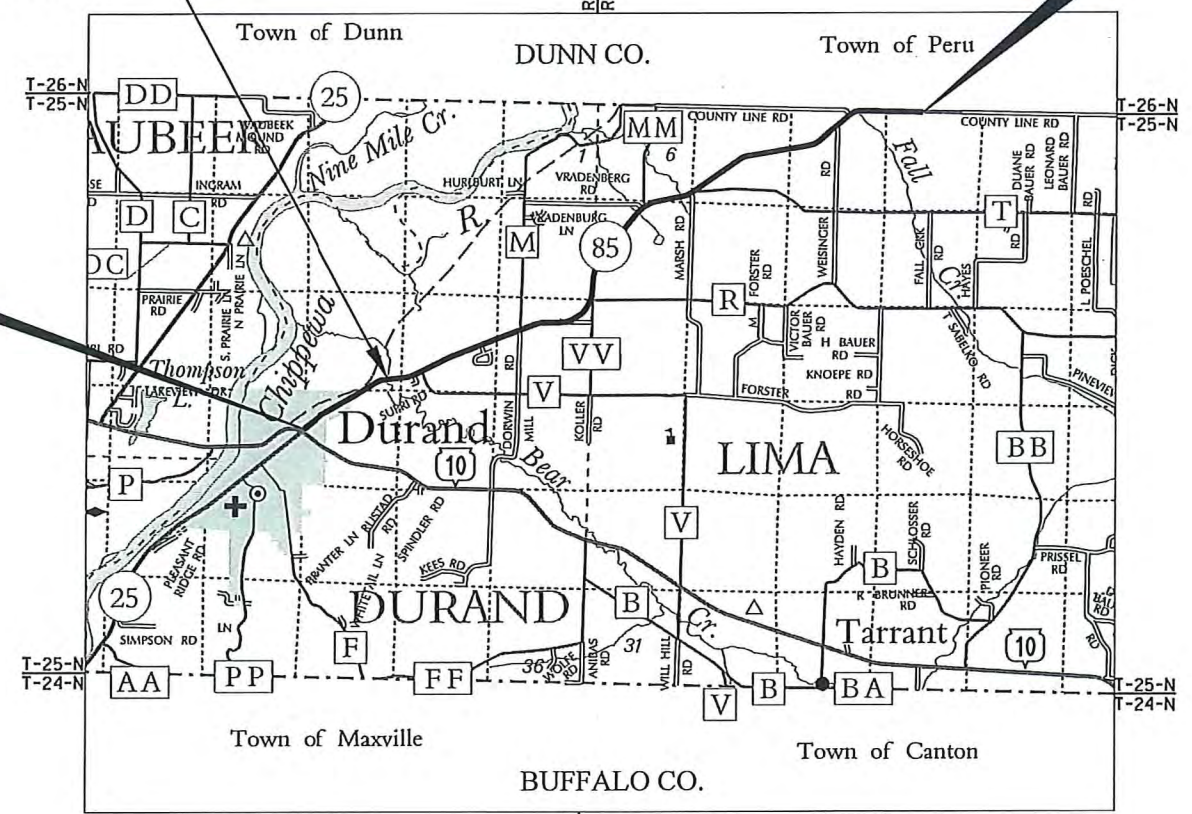
DESIGN DESIGNATION	STA. 2+57-76+50	STA. 76+50-181+30	STA. 181+30-407+65
A.A.D.T. (2017)	= 6,900	3,900	3,300
A.A.D.T. (2037)	= 7,700	4,600	4,100
D.H.V.	= 11.8%		
D.D.	= 62/38		
T.	= 14.7%		
DESIGN SPEED	= 30/40/55		
ESALS	= 1,000,000		

CONVENTIONAL SYMBOLS	
PLAN	
CORPORATE LIMITS	////
PROPERTY LINE	----
LOT LINE	----
LIMITED HIGHWAY EASEMENT	----
EXISTING RIGHT OF WAY	----
PROPOSED OR NEW R/W LINE	----
SLOPE INTERCEPT	----
REFERENCE LINE	----
EXISTING CULVERT	----
PROPOSED CULVERT (Box or Pipe)	----
COMBUSTIBLE FLUIDS	CAUTION
MARSH AREA	----
WOODED OR SHRUB AREA	----
PROFILE	
GRADE LINE	----
ORIGINAL GROUND	----
MARSH OR ROCK PROFILE (To be noted as such)	----
SPECIAL DITCH	----
GRADE ELEVATION	----
CULVERT (Profile View)	----
UTILITIES	
ELECTRIC	----
FIBER OPTIC	----
GAS	----
SANITARY SEWER	----
STORM SEWER	----
TELEPHONE	----
WATER	----
UTILITY PEDESTAL	----
POWER POLE	----
TELEPHONE POLE	----

EXCEPTION TO NET & LENGTH
STA. 56+92.8 - 58+31.8
STRUCTURE B-46-055

BEGIN PROJECT
STA. 2+57.40
X = 621,359.57
Y = 281,489.73

END PROJECT
STA. 407+65.00



LAYOUT
SCALE 0 2 MILES
TOTAL NET LENGTH OF CENTERLINE = 7.646

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, PEPIN COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ORIGINAL PLANS PREPARED BY

N.W.B.E.
NORTHERN WISCONSIN-BASED ENGINEERS, INC.

WISCONSIN
GARY T. COLBERT
E-31552
SPOONER, WIS.
PROFESSIONAL ENGINEER

DATE: Feb. 1, 2019

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	NWBE, INC.
Designer	NWBE, INC.
Project Manager	DAVE KOEPP, PE
Regional Examiner	TOU YANG, PE
Regional Supervisor	JAMES KOENIG, PE

APPROVED FOR THE DEPARTMENT

DATE: 2/12/2019 [Signature]

E

GENERAL NOTES

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE.THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

WHEN THE QUANTITY OF BASE AGGREGATE DENSE AND HMA PAVEMENT ARE MEASURED FOR PAYMENT BY THE TON, THE THICKNESS AS SHOWN ON THE PLAN IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND UPON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

THE LAYER THICKNESS FOR HMA PAVEMENT LAYERS SHALL BE 1.75" UPPER LAYER AND 1.5" LOWER LAYER.

RESTORE SIDE ROAD INTERSECTIONS, DRIVEWAY AND OTHER ENTRANCES TO EXISTING SURFACE CONDITIONS UNLESS SHOWN OTHERWISE.

ALL DISTURBED AREAS WITHIN THE RIGHT OF WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE FERTILIZED, SEEDED AND COVERED WITH EROSION MAT OR MULCH.

NO TREES OR SHRUBS ARE TO BE REMOVED UNLESS INDICATED FOR REMOVAL BY THE ENGINEER.

SILT FENCE SHALL BE PLACED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER, AND IT SHALL BE INSTALLED PRIOR TO CONSTRUCTION.

STATIONING, DISTANCES AND OFFSETS FOR PERMANENT SIGNS SHOWN ON THE PLAN ARE APPROXIMATE. ACTUAL LOCATIONS OF SIGNS ARE TO BE COORDINATED IN THE FIELD BY THE ENGINEER.



Dial  or (800)242-8511

www.DiggersHotline.com

LIST OF STANDARD ABBREVIATIONS

ABUT.	ABUTMENT	LT.	LEFT
AGG.	AGGREGATE	L.H.F.	LEFT-HAND FORWARD
AH.	AHEAD	LIN. FT.	LINEAR FOOT
AADT	ANNUAL AVERAGE DAILY TRAFFIC	L.S.	LUMP SUM
APPROX.	APPROXIMATE	MAX.	MAXIMUM
A.E.W.	APRON END WALL	MISC.	MISCELLANEOUS
ASPH.	ASPHALTIC	N.	NORTH
BK.	BACK	YNORTH	GRID COORDINATE
BEG.	BEGIN	N.E.	NORTHEAST
B.M.	BENCH MARK	N.W.	NORTHWEST
C/L	CENTER LINE	PAVT.	PAVEMENT
C.E.	COMMERCIAL ENTRANCE	P.C.	POINT OF CURVATURE
CONC.	CONCRETE	P.I.	POINT OF INTERSECTION
CONSTR.	CONSTRUCTION	P.T.	POINT OF TANGENCY
CO.	COUNTY	P.O.T.	POINT ON TANGENT
C.T.H.	COUNTY TRUNK HIGHWAY	P.E.	PRIVATE ENTRANCE
X-SEC.	CROSS SECTION	PROJ.	PROJECT
CR.	CRUSHED	R.	RANGE
CULV.	CULVERT	REQD.	REQUIRED
C.P.	CULVERT PIPE	R/L	REFERENCE LINE
D.O.T.	DEPARTMENT OF TRANSPORTATION	RT.	RIGHT
D.H.V.	DESIGN HOUR VOLUME	R.H.F.	RIGHT-HAND FORWARD
DIA.	DIAMETER	R/W	RIGHT-OF-WAY
DISCH.	DISCHARGE	RD.	ROAD
E.	EAST	SHLD.	SHOULDER
XEAST	GRID COORDINATE	S.	SOUTH
EB	EASTBOUND	S.D.D.	STANDARD DETAIL DRAWINGS
EA.	EACH	S.T.H.	STATE TRUNK HIGHWAYS
ELEC.	ELECTRIC	STA.	STATION
EL./ELEV.	ELEVATION	STRUCT.	STRUCTURE
ESALS	EQUIVALENT SINGLE AXLE LOADS	TEL.	TELEPHONE
E.B.S.	EXCAVATION BELOW SUBGRADE	TEMP.	TEMPORARY
EXIST	EXISTING	TN.	TOWN
FERT.	FERTILIZE	T.	TRUCKS (PERCENT OF)
F.E.	FIELD ENTRANCE	TYP.	TYPICAL
FIN.	FINISHED	U.G.	UNDERGROUND
F.L./F/L	FLOW LINE	VAR.	VARIABLE
HORIZ.	HORIZONTAL	V.	VELOCITY OR DESIGN SPEED
INL.	INLET	V.C.	VERTICAL CURVE
INT.	INTERSECTION	W.	WEST
INV.	INVERT	WB	WESTBOUND
		W.A.	WORKING DAY
		WZ	WORK ZONE

CITY CONTACT

CITY OF DURAND
ATTN: MATT GILLES, PW DIRECTOR
104 E. MAIN ST.
DURAND, WI 54736
PHONE: (715) 672-8770 EXT. 4
EMAIL: DWWTP@NELSON-TEL.NET

UTILITIES

CHIPPEWA VALLEY CABLE, INC - COMM. LINE
ATTN: MATT HOYT
318 3RD AVE W
DURAND, WI 54736
PHONE: (715) 495-7440 (CELL)
EMAIL: MATT@NTEC.NET

DUNN ENERGY COOPERATIVE - ELECTRICITY
ATTN: MIKE ANDRASCHKO
P.O. BOX 220
MENOMONIE, WI 54751
PHONE: (715) 231-0214 (CELL)
EMAIL: MANDRA@DUNNENERGY.COM

XCEL ENERGY - ELECTRIC DISTRIBUTION
ATTN: MEGAN BOLDIG
320 HELLER RD
MENOMONIE, WI 54751
PHONE: (715) 232-7412
EMAIL: MEGAN.M.BOLDIG@XCELENERGY.COM

UTILITIES

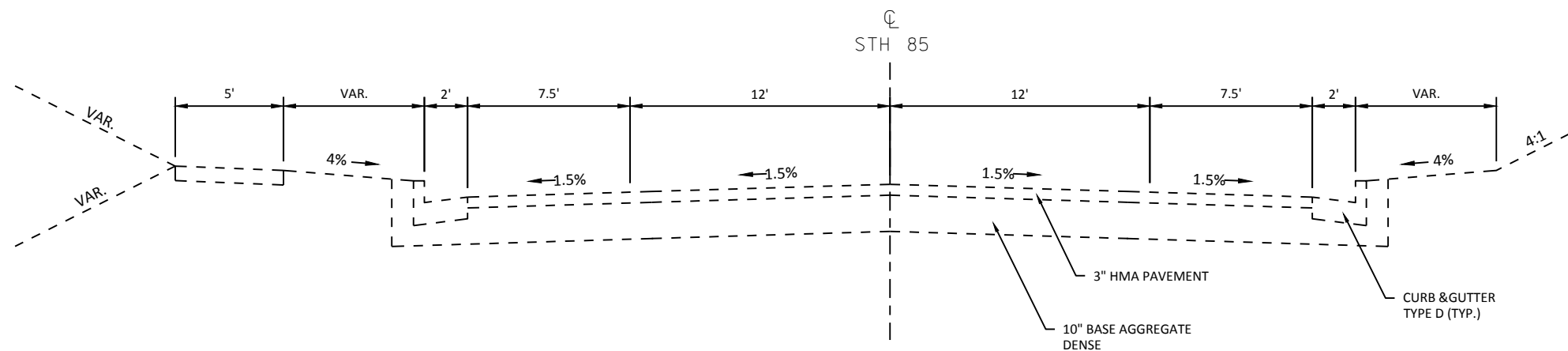
NELSON TELEPHONE COOPERATIVE - COMM. LINE
ATTN: MATT HOYT
P.O. BOX 228
DURAND, WI 54736
PHONE: (715) 672-4204
EMAIL: MATT@NTEC.NET

FLINT HILLS RESOURCES, LLC - PIPELINE
ATTN: TIM SNYDER
P.O. BOX 64596
ST. PAUL, MN 55164
PHONE: (612) 655-2554
EMAIL: TIMOTHY.SNYDER@FHR.COM
24-HR EMERGENCY NUMBER: 1-800-688-7594

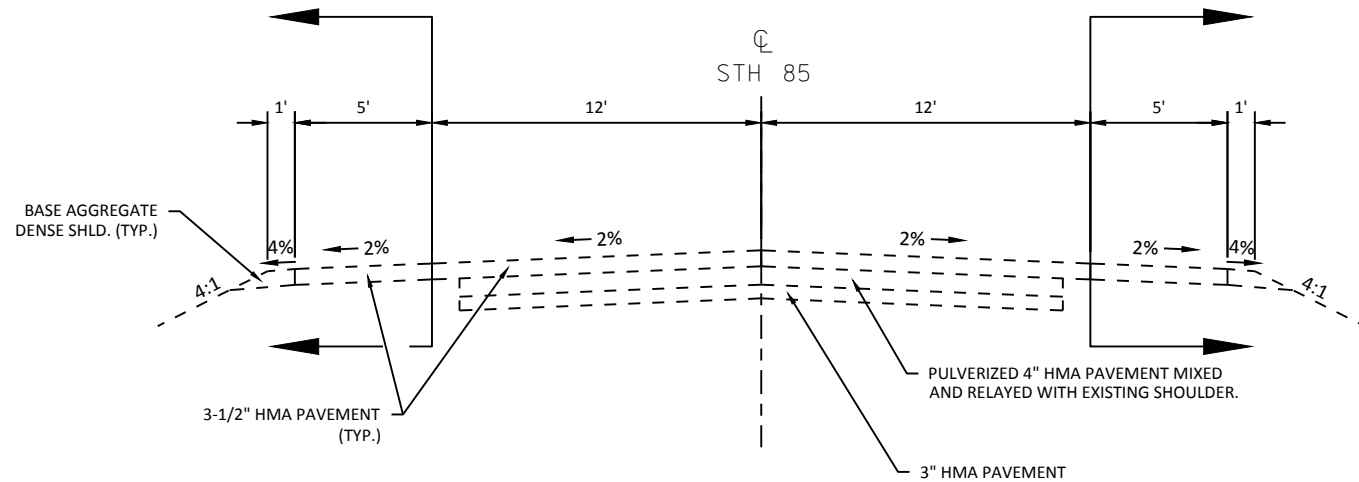
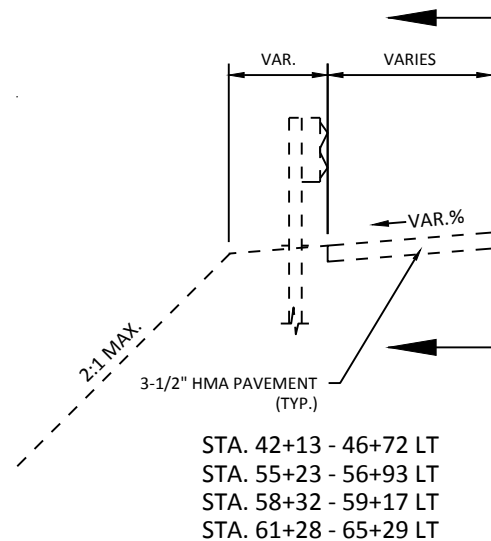
UTILITIES

CITY OF DURAND - PUBLIC WORKS
ATTN: MATT GILLES, PW DIRECTOR
104 E. MAIN ST.
P.O. BOX 202
DURAND, WI 54736
PHONE: (715) 672-8770 EXT. 4
EMAIL: DWWTP@NELSON-TEL.NET

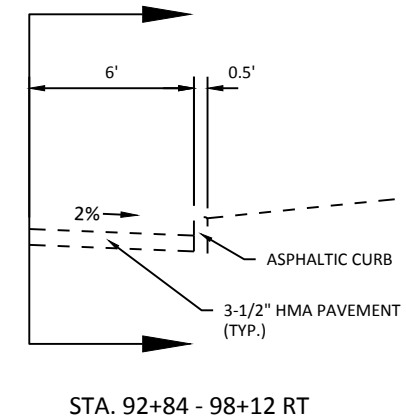
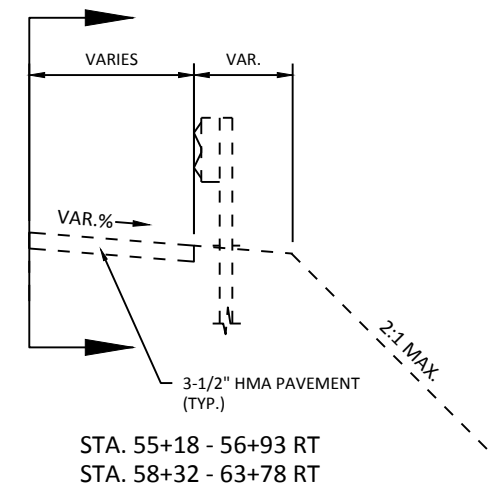
WE ENERGIES - GAS/PETROLEUM
ATTN: STEVEN CHAVERS
104 W. SOUTH ST.
RICE LAKE, WI 54868
PHONE: (715) 234-9605
(715) 213-4327 (CELL)
EMAIL:STEVEN.CHAVERS@WE-ENERGIES.COM
24-HR EMERGENCY NUMBER: 1-800-261-5325

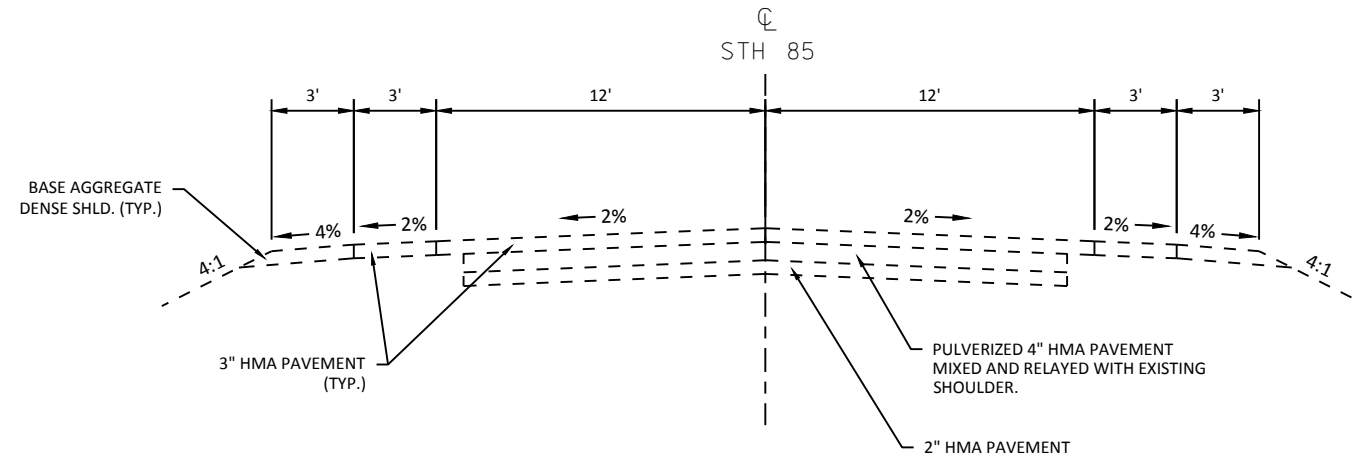


EXISTING TYPICAL SECTION
STA. 2+57.4 - 17+67

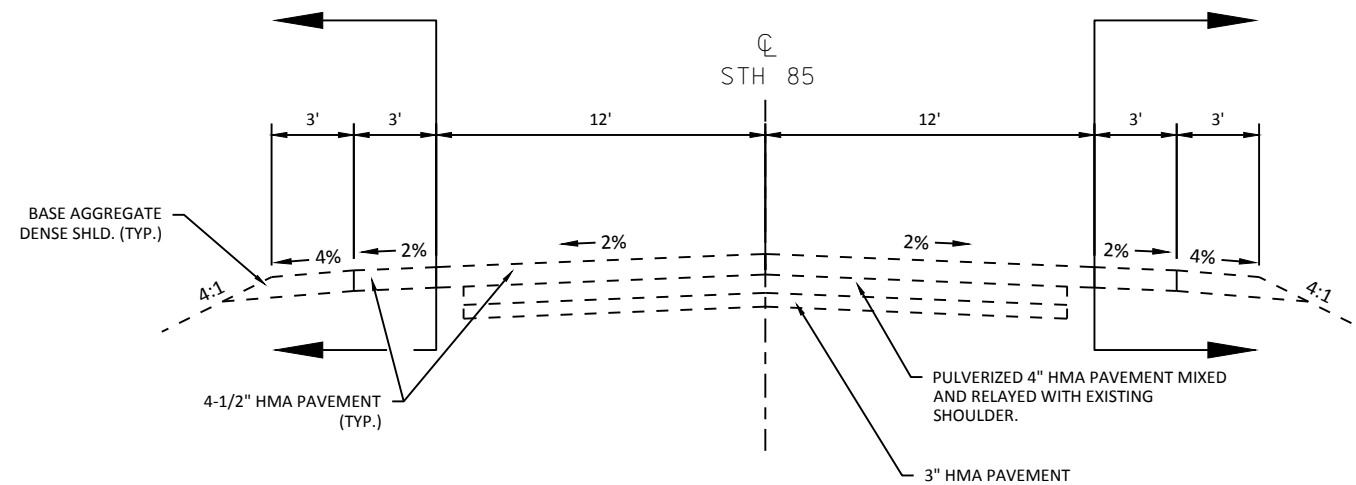
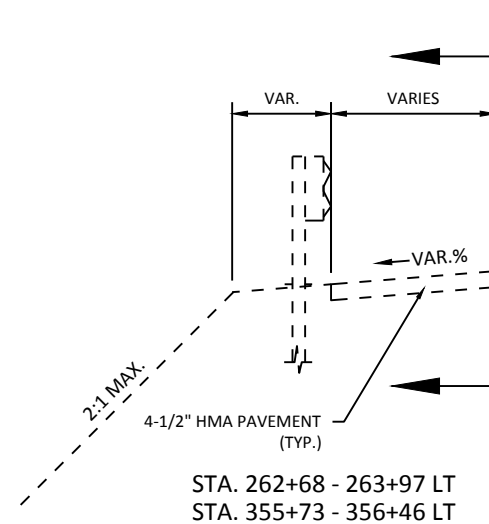


EXISTING TYPICAL SECTION
STA. 17+67 - 136+24

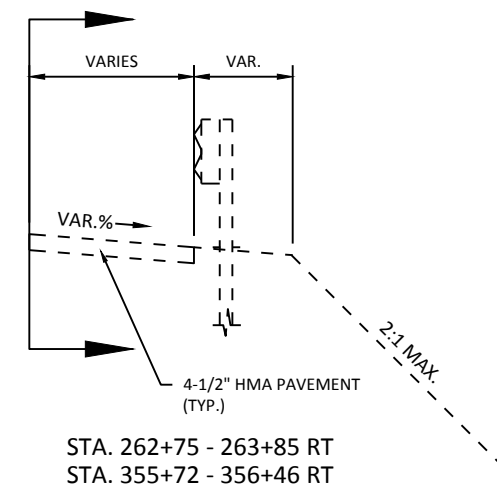


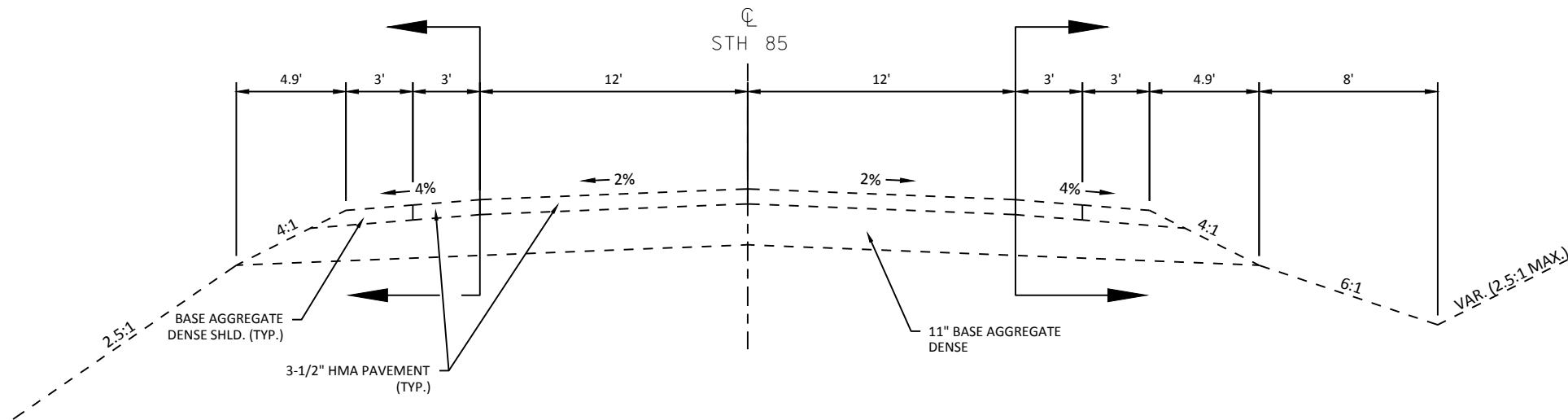
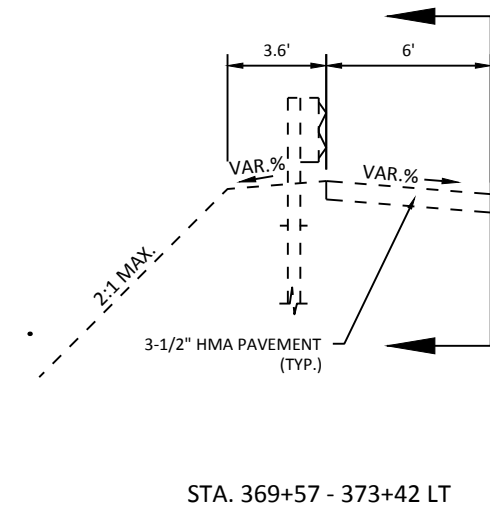
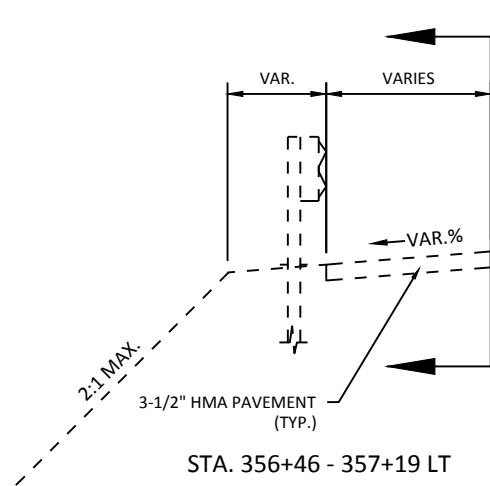


EXISTING TYPICAL SECTION
STA. 136+24 - 253+32

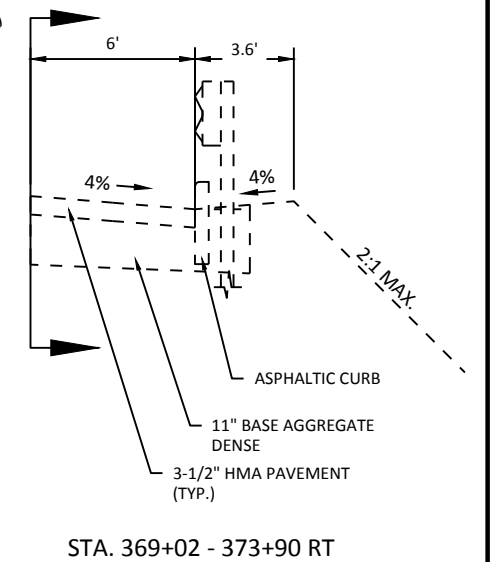
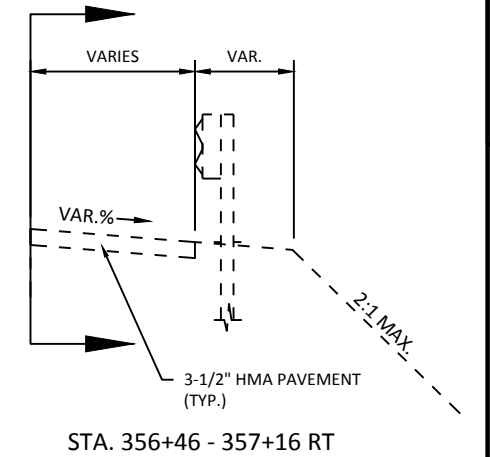


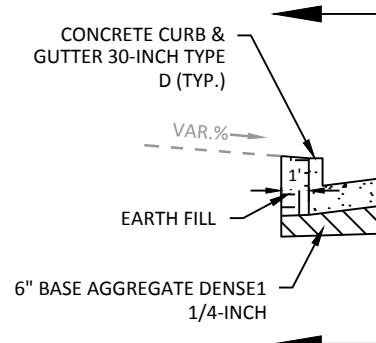
EXISTING TYPICAL SECTION
STA. 253+32 - 356+46





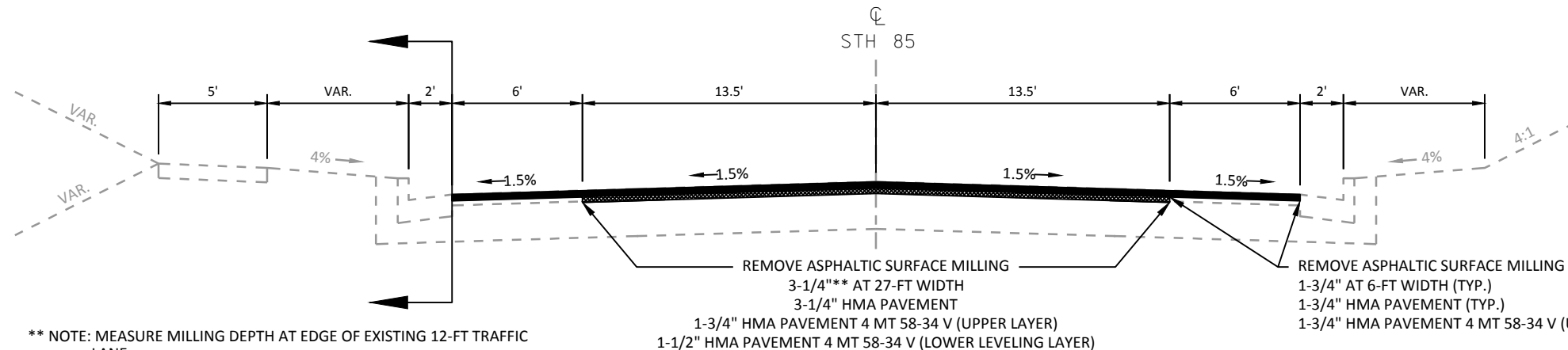
EXISTING TYPICAL SECTION
STA. 356+46 - 407+65.0



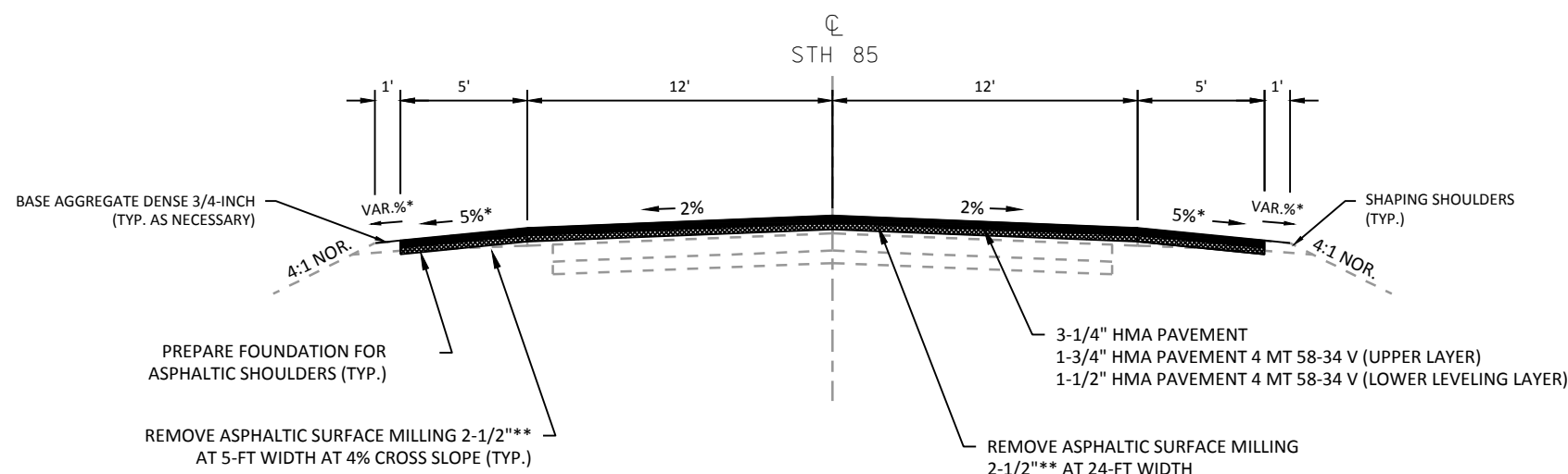


STA. 7+65 - 7+73 RT
STA. 8+18 RT AT 12TH AVE.
STA. 8+34 - 8+44 RT
STA. 8+34 - 9+27 LT
STA. 11+76 - 12+06 LT
STA. 17+24 - 17+32 RT
STA. 17+84 - 18+00 LT
STA. 17+89 - 18+00 RT

** NOTE: MEASURE MILLING DEPTH AT EDGE OF EXISTING 12-FT TRAFFIC LANE.
*NOTE: NO CURB AND GUTTER STA. 17+67 - 18+35. MATCH FINISHED PAVEMENT ELEVATION AT MH STA. 18+33 LT.

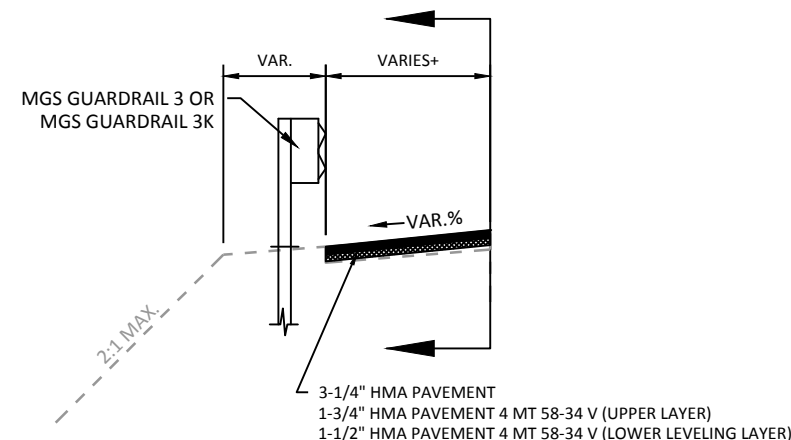


TYPICAL FINISHED SECTION
STA. 2+57.4 - 18+35*

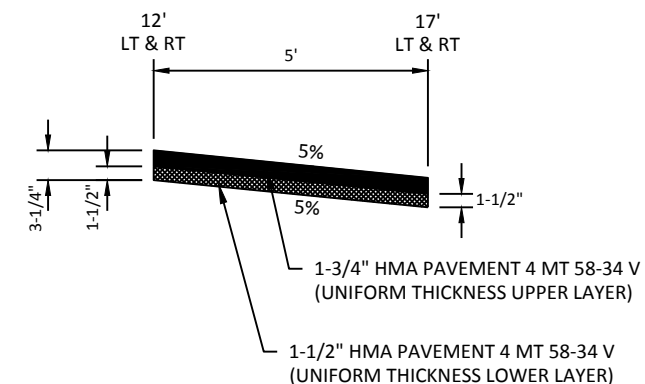


TYPICAL FINISHED SECTION
STA. 17+67 - 136+24

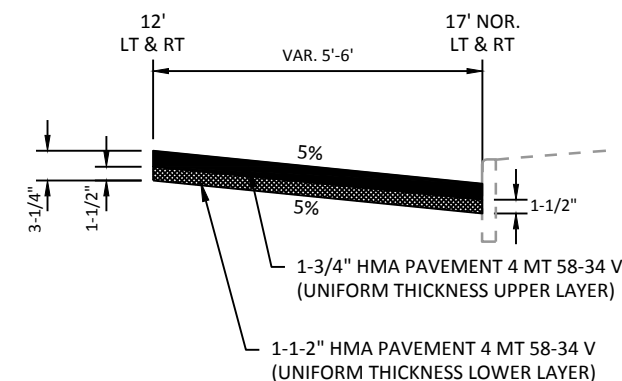
* NOTE: VARY FINISHED BASE AGGREGATE DENSE SHOULDER SLOPE AND PAVED SHOULDER SLOPE AS NEEDED TO MATCH EXISTING SHOULDER POINT (6% MAX.).
** NOTE: MEASURE MILLING DEPTH AT EDGE OF EXISTING 12-FT TRAFFIC LANE.



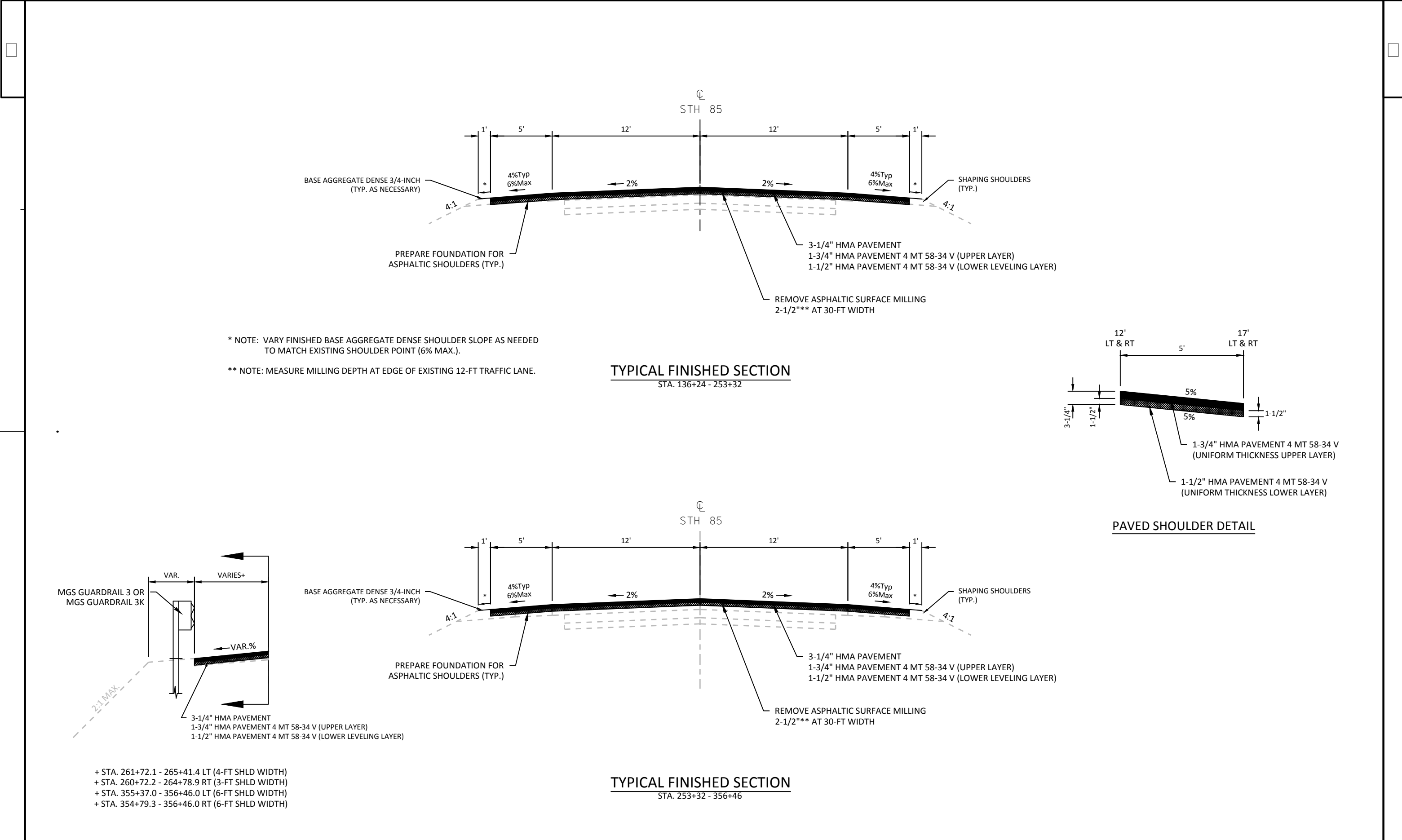
+ STA. 41+36.2 - 47+29.9 LT (5-FT SHLD WIDTH)
+ STA. 59+71.7 - 68+77.9 LT (4-FT SHLD WIDTH)
+ STA. 60+56.6 - 63+87.1 RT (3.5-FT SHLD WIDTH)
+ STA. 64+34.0 - 65+90.2 RT (3-FT SHLD WIDTH)



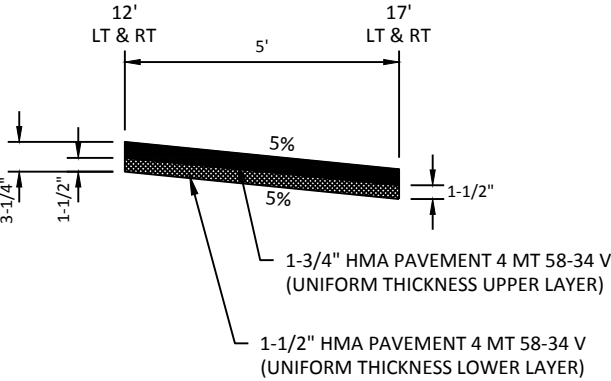
PAVED SHOULDER DETAIL



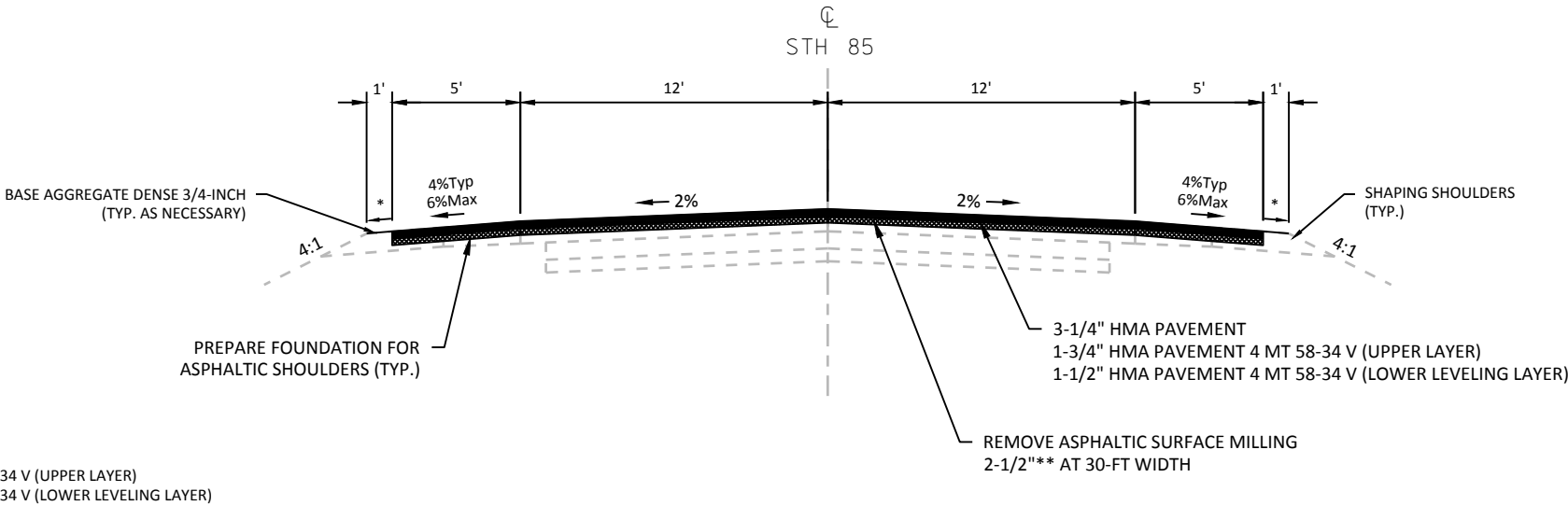
PAVED SHOULDER DETAIL
STA. 92+84 - 98+12 RT (MILL TO FACE OF ASPHALTIC CURB)



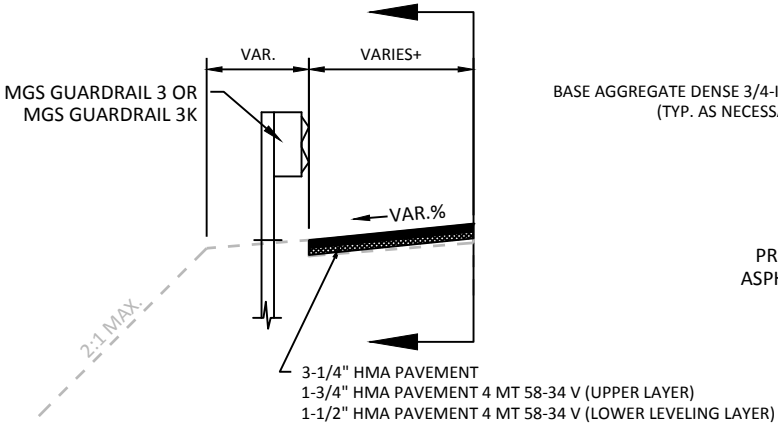
TYPICAL FINISHED SECTION
STA. 136+24 - 253+32



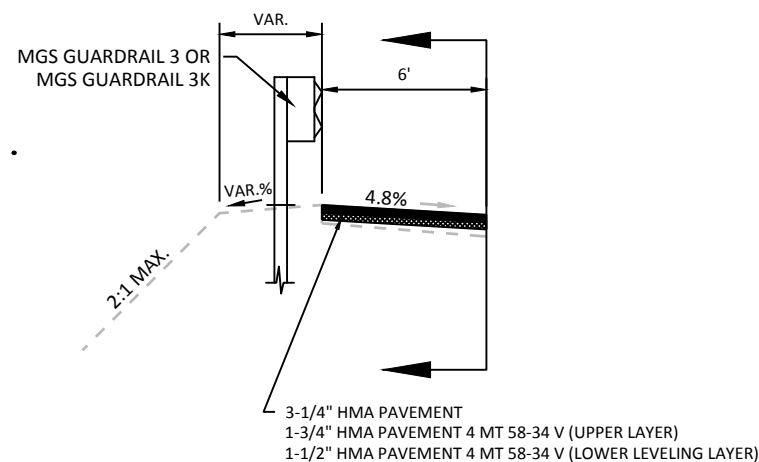
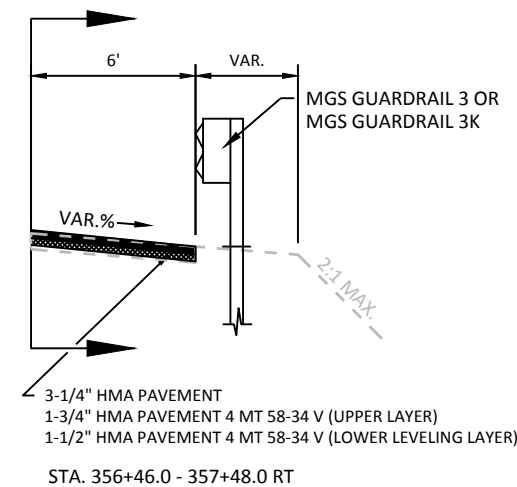
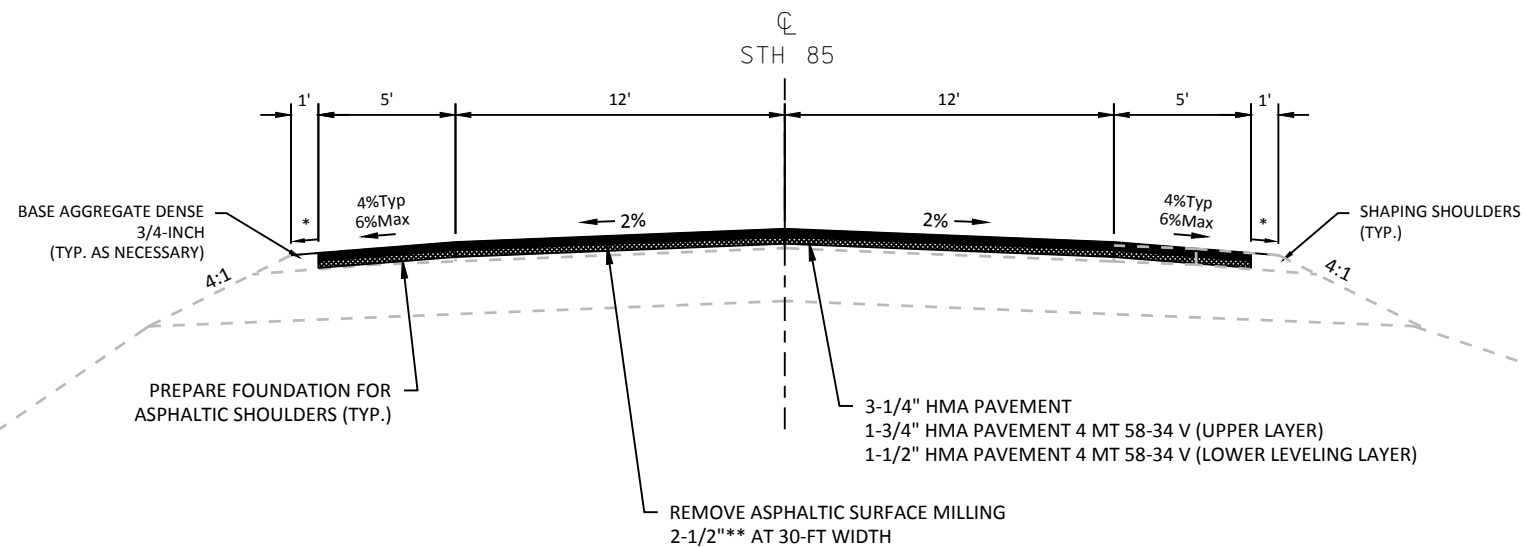
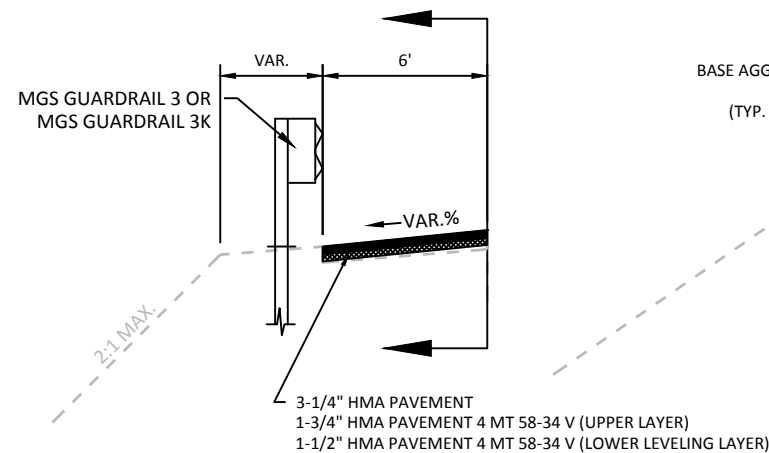
PAVED SHOULDER DETAIL



TYPICAL FINISHED SECTION
STA. 253+32 - 356+46



- + STA. 261+72.1 - 265+41.4 LT (4-FT SHLD WIDTH)
- + STA. 260+72.2 - 264+78.9 RT (3-FT SHLD WIDTH)
- + STA. 355+37.0 - 356+46.0 LT (6-FT SHLD WIDTH)
- + STA. 354+79.3 - 356+46.0 RT (6-FT SHLD WIDTH)

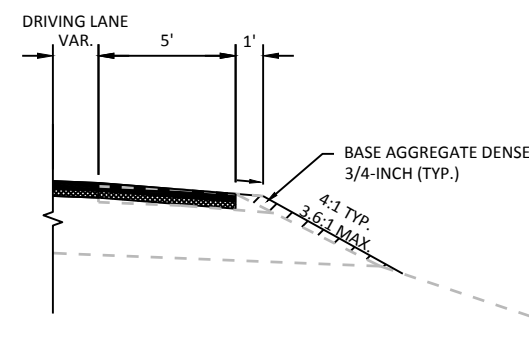


* NOTE: VARY FINISHED BASE AGGREGATE DENSE SHOULDER SLOPE AND PAVED SHOULDER SLOPE AS NEEDED TO MATCH EXISTING SHOULDER POINT (6% MAX.).

** NOTE: MEASURE MILLING DEPTH AT EDGE OF EXISTING 12-FT TRAFFIC LANE.

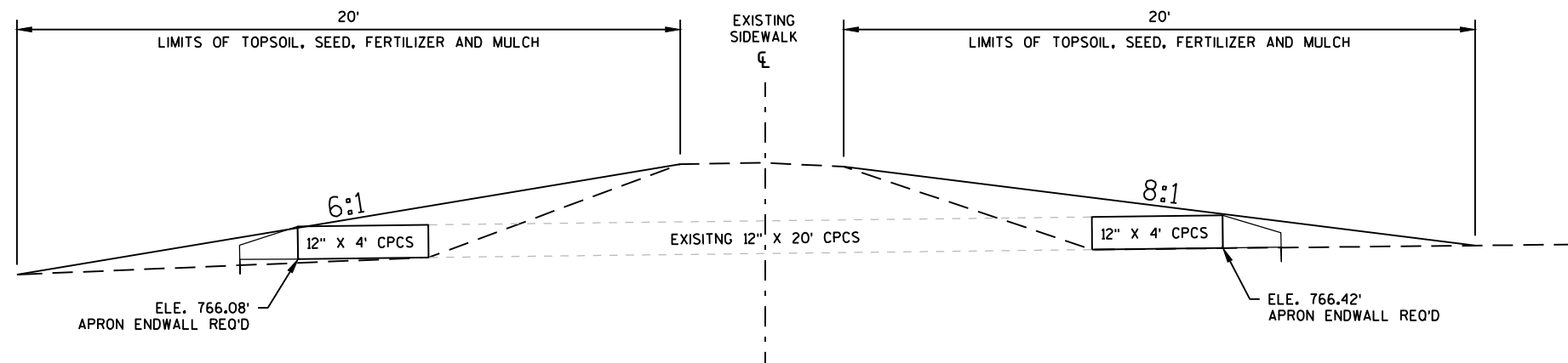
3-1/4" HMA PAVEMENT
1-3/4" HMA PAVEMENT 4 MT 58-34 V (UPPER LAYER)
1-1/2" HMA PAVEMENT 4 MT 58-34 V (LOWER LEVELING LAYER)

STA. 367+77.1 - 374+63.2 RT
(MILL TO FACE OF CURB)



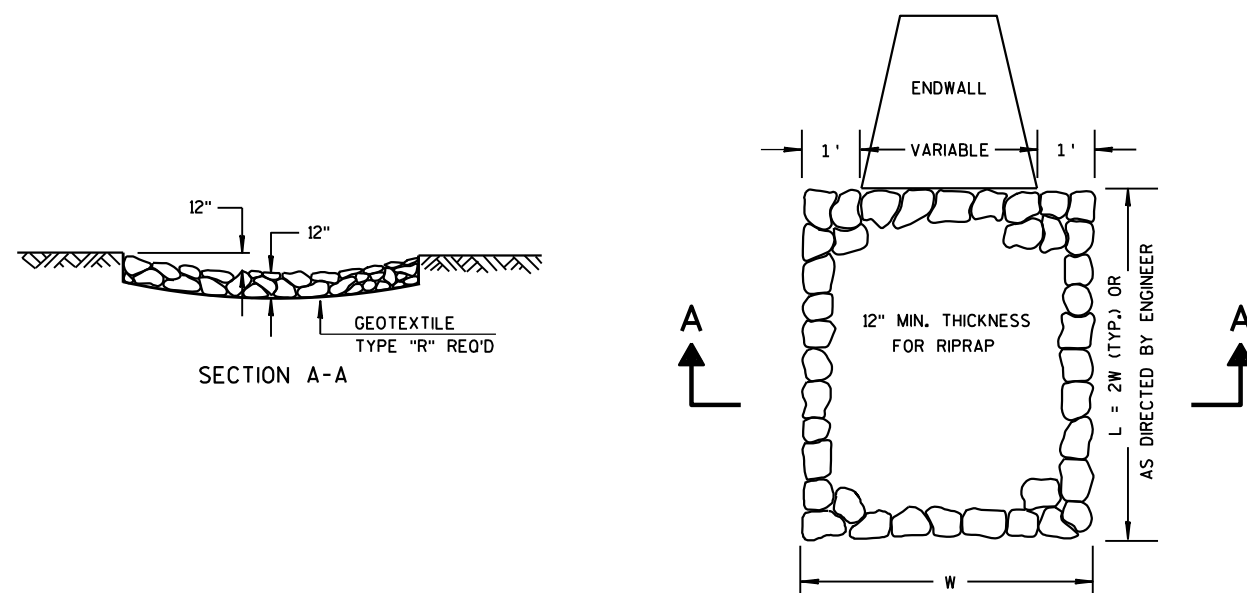
WIDEN GRAVEL SHOULDER DETAIL

STA. 67+00 - 69+50 RT
STA. 384+00 - 386+00 LT & RT

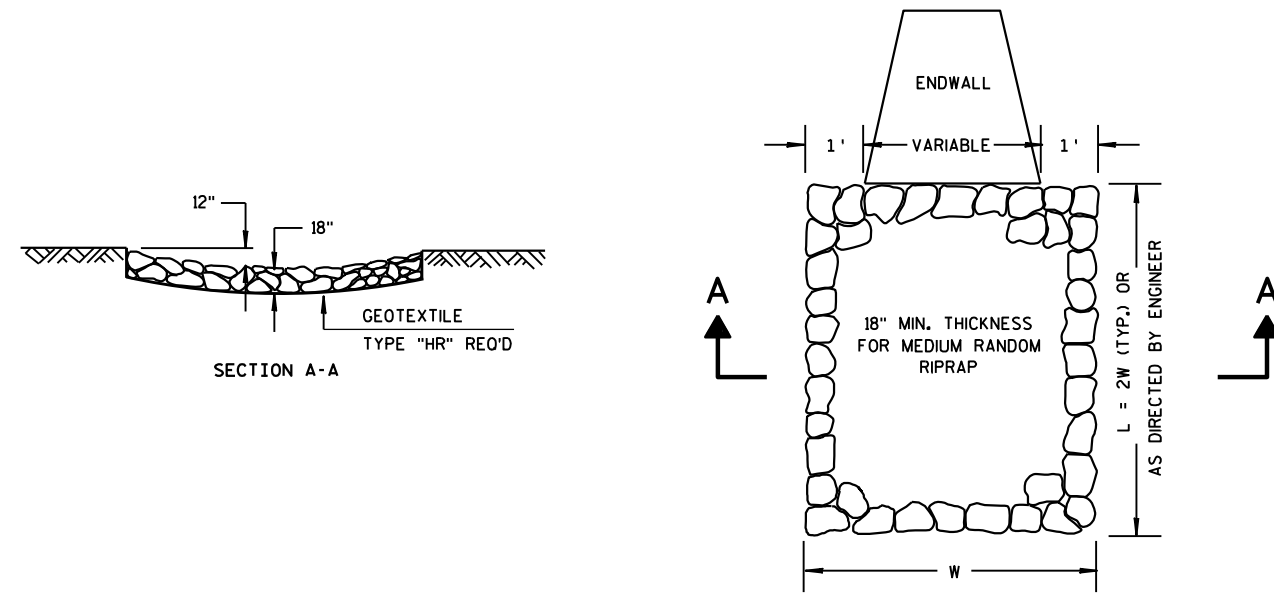


NOTE:
FILL SLOPES ARE INCIDENTAL TO
PIPE EXTENSION INSTALLATION.

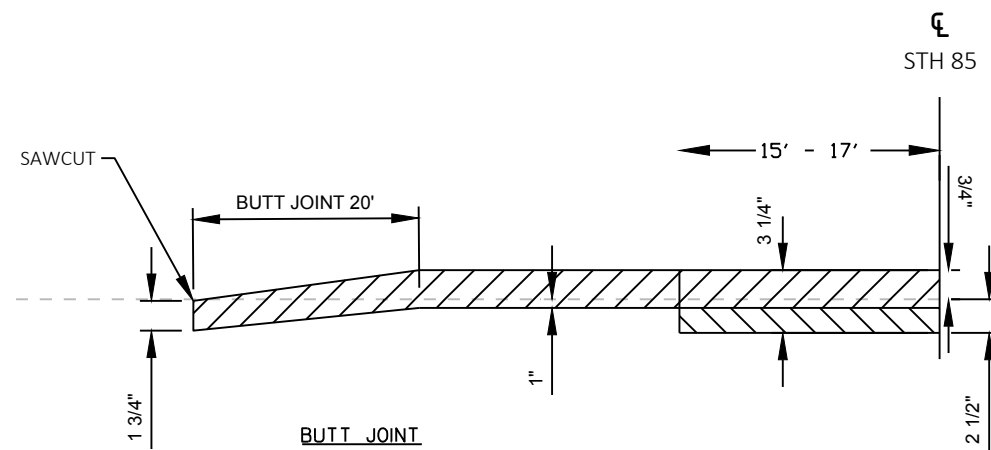
PIPE EXTENSION DETAIL - EXISTING SIDEWALK STA. 21+07 RT



RIPRAP TREATMENT AT CULVERTS

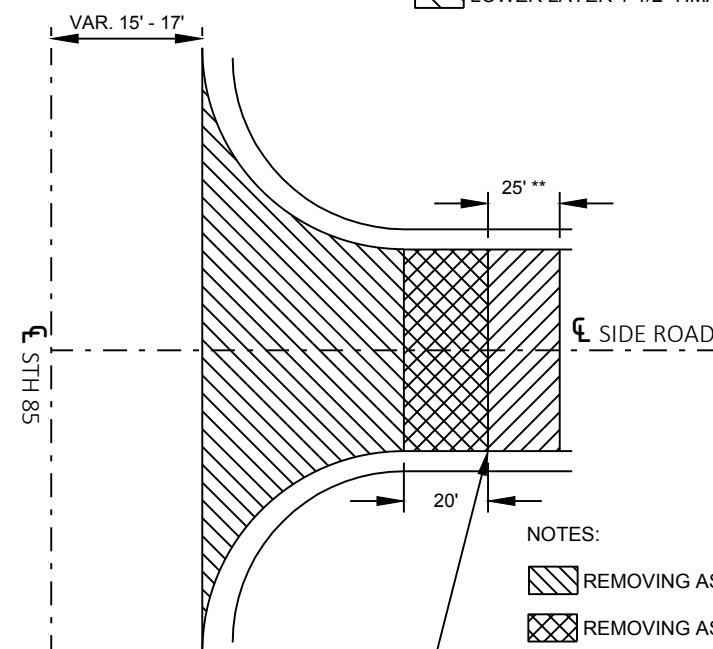


MEDIUM RANDOM RIPRAP TREATMENT AT CULVERTS



NOTES:

-  UPPER LAYER 1-3/4" HMA PAVEMENT
-  LOWER LAYER 1-1/2" HMA PAVEMENT



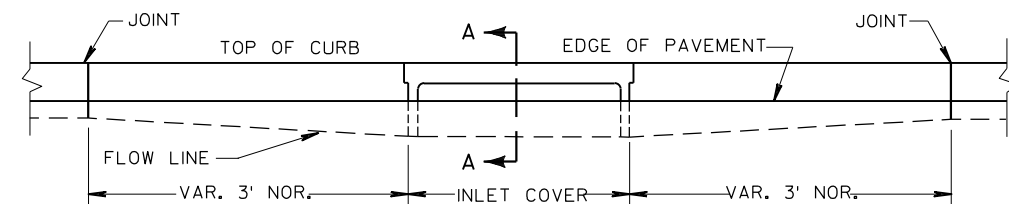
NOTES:

-  REMOVING ASPHALTIC SURFACE MILLING (SIDE ROADS)
-  REMOVING ASPHALTIC SURFACE BUTT JOINT
-  3/4-INCH BASE AGGREGATE DENSE,** FEATHER TO MATCH PAVED SIDE ROAD APRONS.

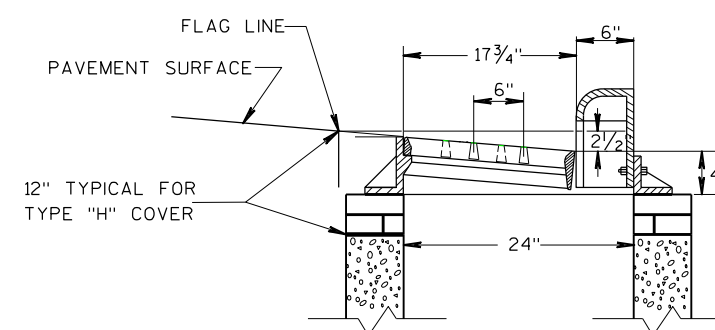
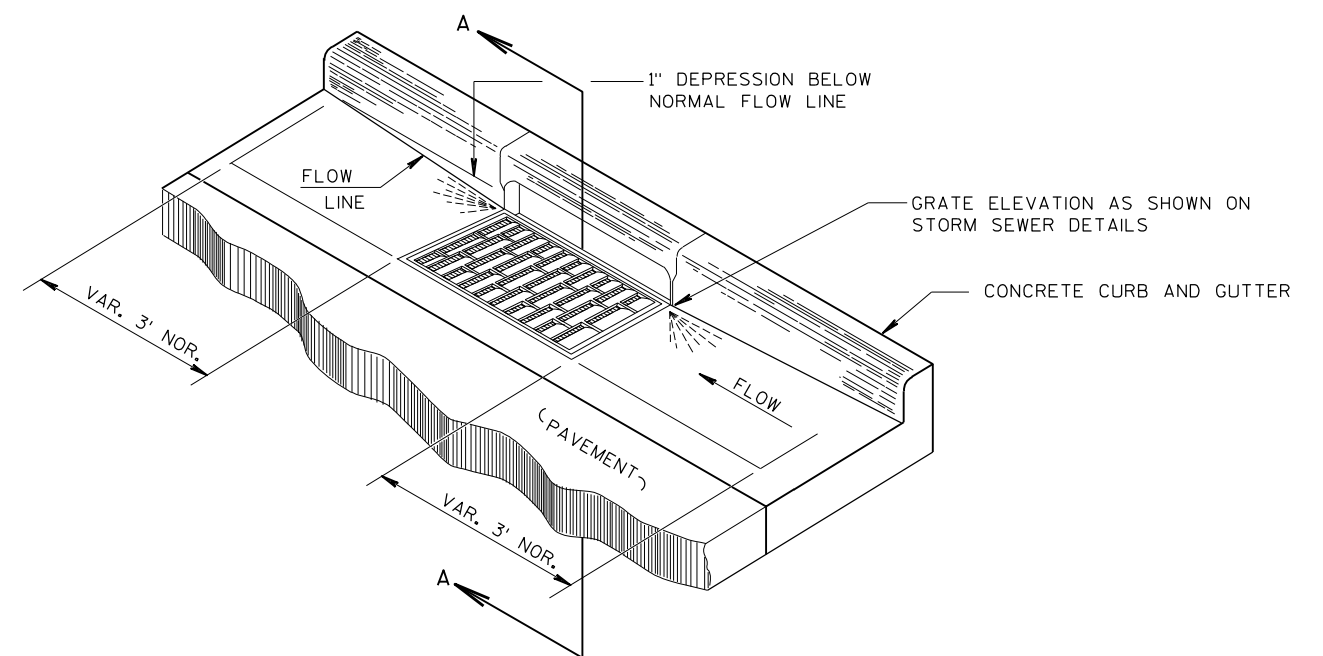
MATCH EXISTING PAVED SURFACE RADII AND TAPERS.
 * REQUIRED ON PAVED SIDE ROADS ONLY.
 **REQUIRED ON UN-PAVED SIDE ROADS ONLY.

SAWCUT REQUIRED *
 'SAWING ASPHALT' ITEM

PAVED AND UN-PAVED SIDE ROADS AND PAVED DRIVEWAY DETAIL

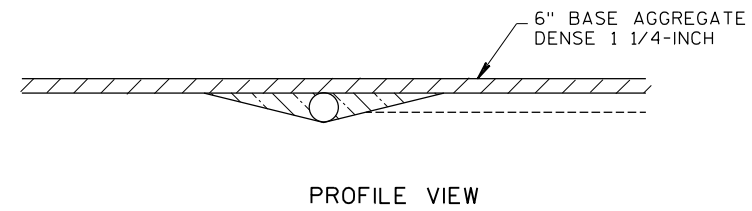
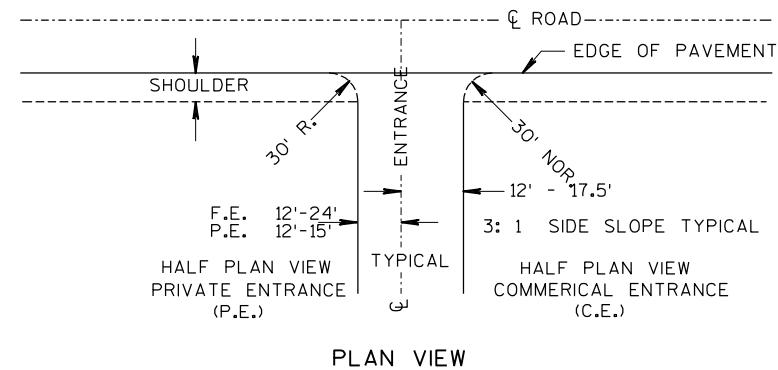


ELEVATION

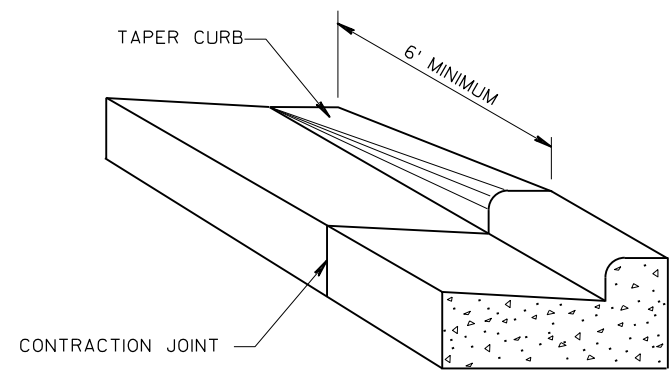


SECTION A-A

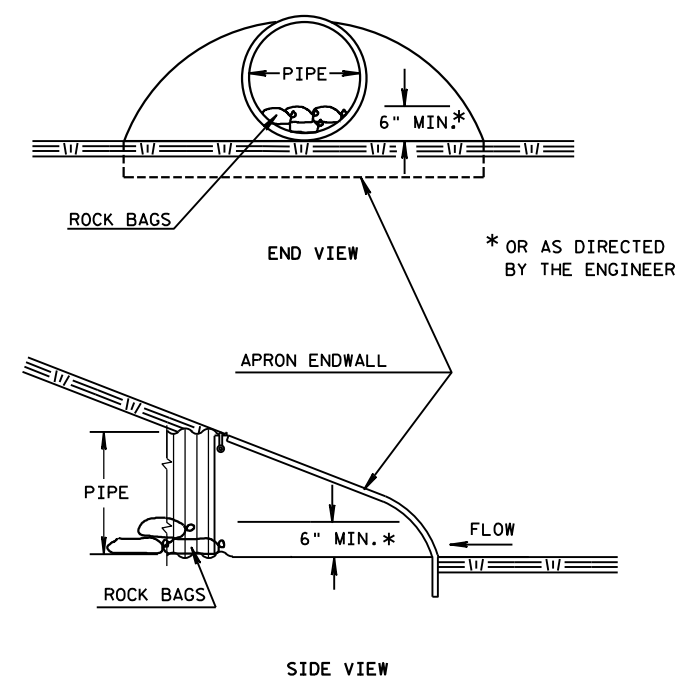
DETAIL OF CURB AND GUTTER AT INLETS
 (TYPE 3-H INLET SHOWN)



RURAL DRIVEWAY DETAIL



DETAIL OF CURB & GUTTER TERMINI

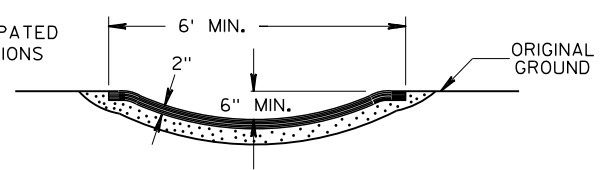
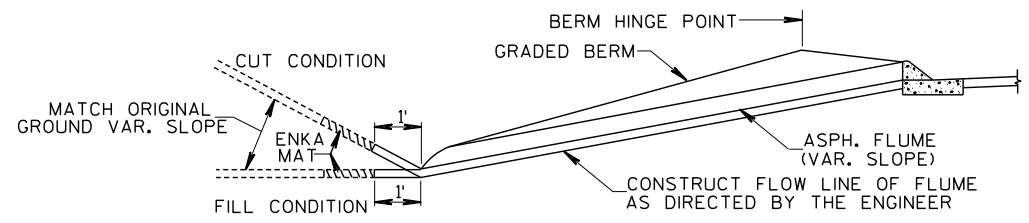
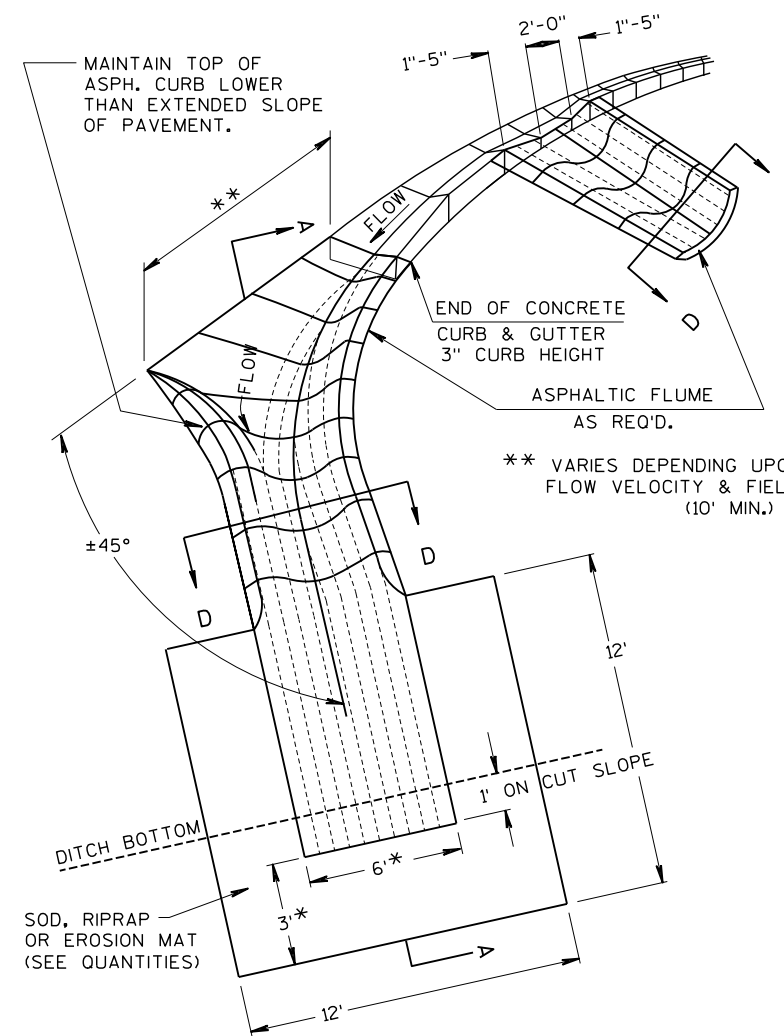


CULVERT PIPE CHECK

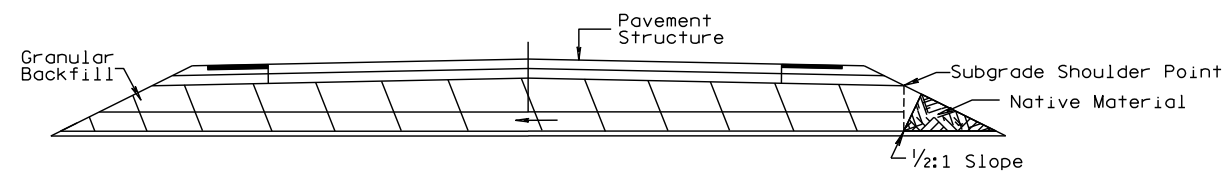
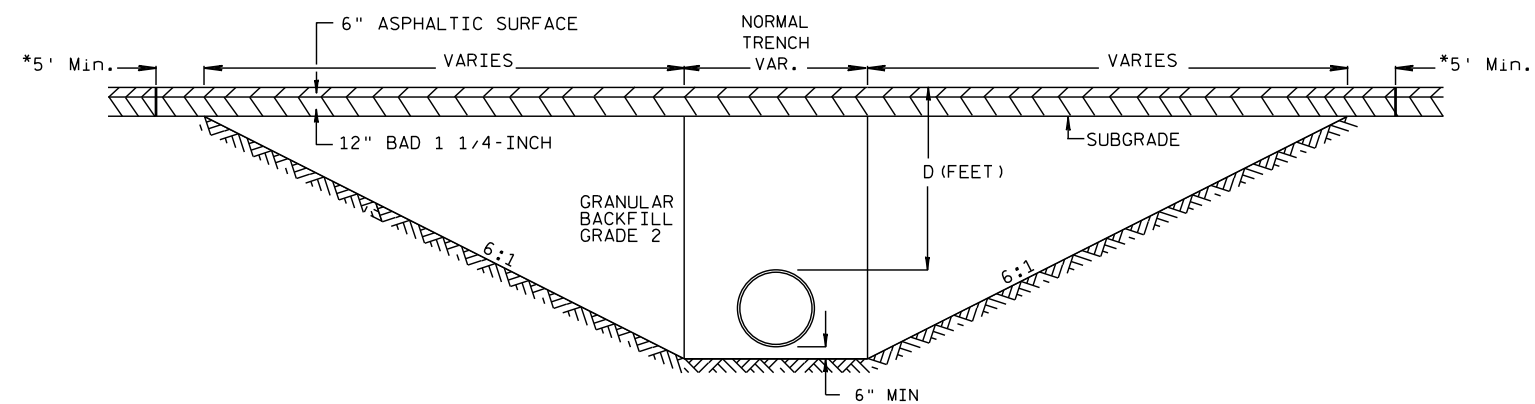
RUNOFF COEFFICIENT TABLE

	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33 .50	.19 .34	.28 .41	.38 .56
MEDIAN STRIP-TURF	.19 .24	.20 .26	.24 .30	.19 .25	.22 .28	.26 .33	.20 .26	.23 .30	.30 .37	.20 .27	.25 .32	.30 .40
SIDE SLOPE-TURF			.25 .32			.27 .34			.28 .36			.30 .38
PAVEMENT:												
ASPHALT	.70 - .95											
CONCRETE	.80 - .95											
BRICK	.70 - .80											
DRIVES, WALKS	.75 - .85											
ROOFS	.75 - .95											
GRAVEL ROADS, SHOULDERS	.40 - .60											

TOTAL PROJECT AREA = 93 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 17.7 ACRES

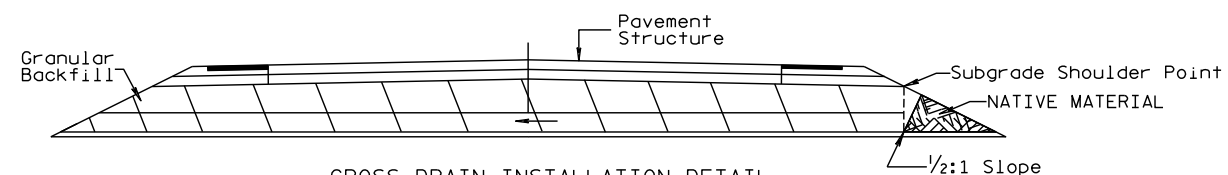
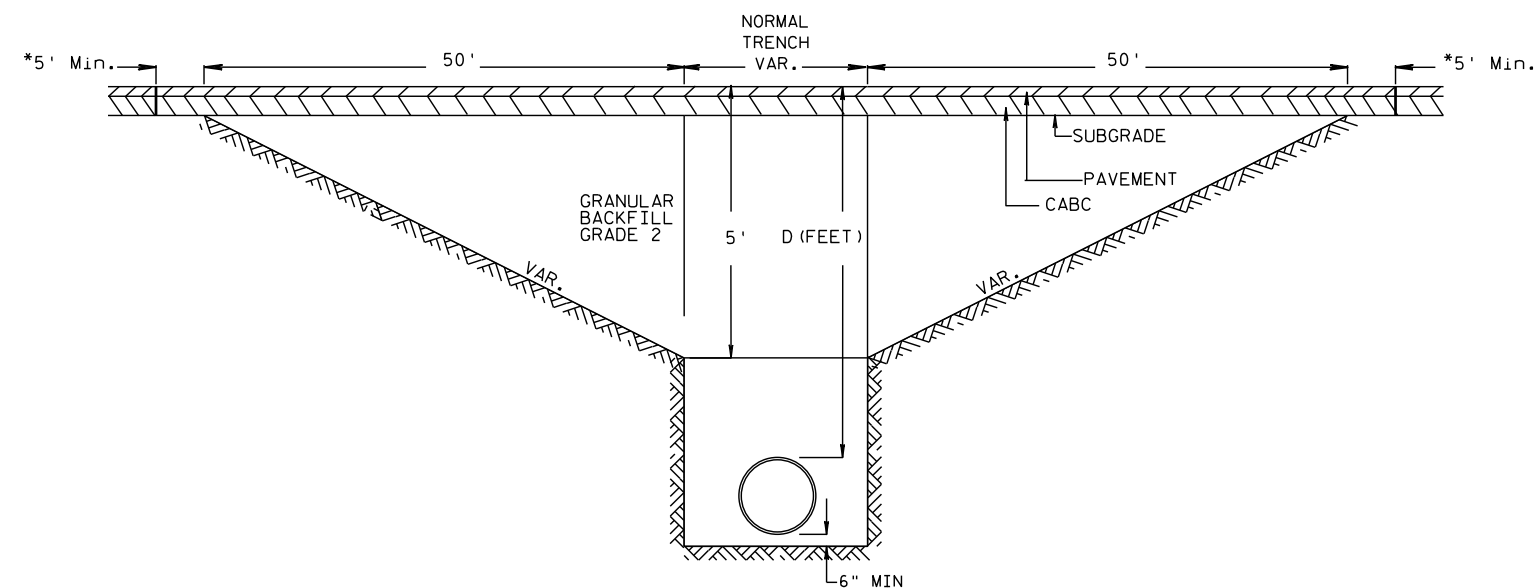


ASPHALTIC FLUME DETAIL
AT RURAL INTERSECTIONS

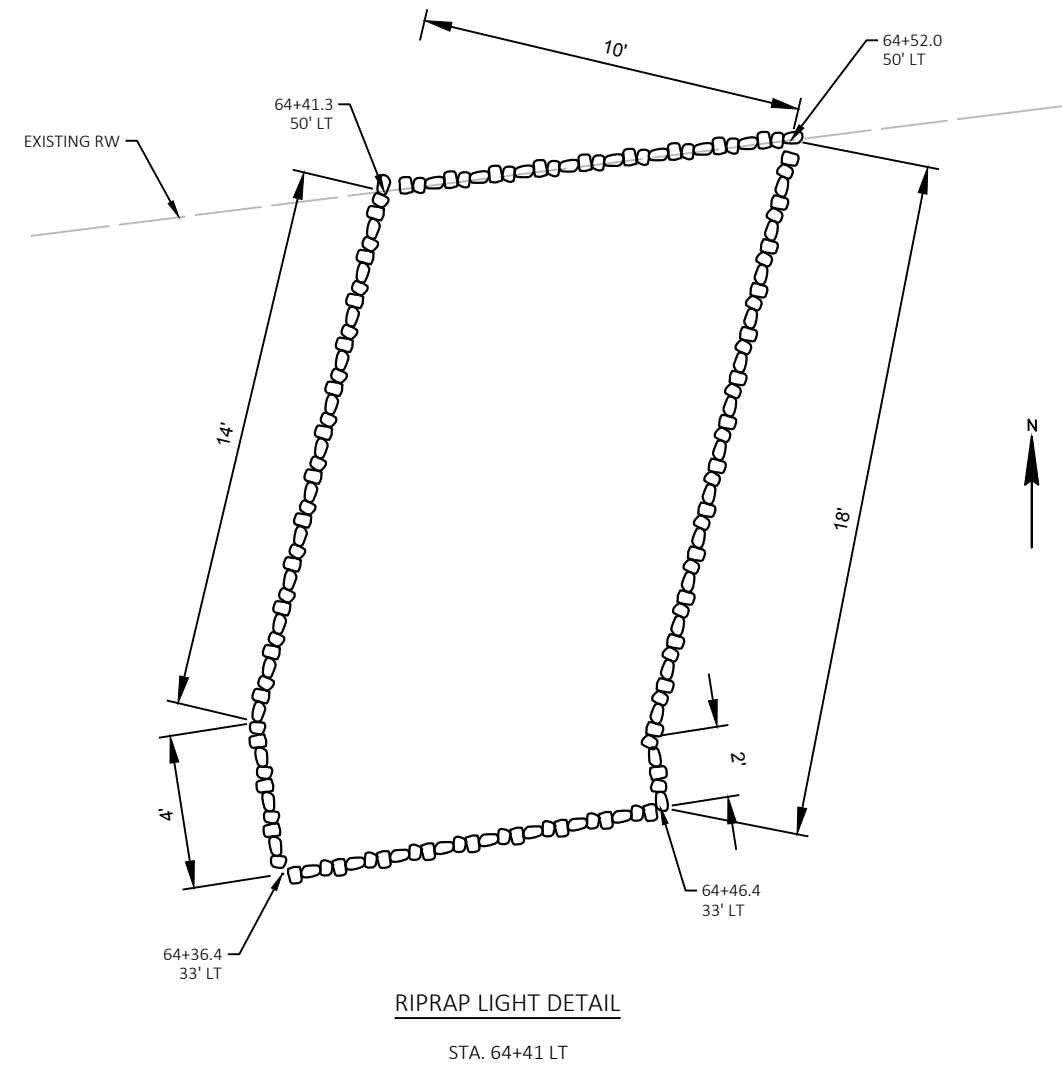
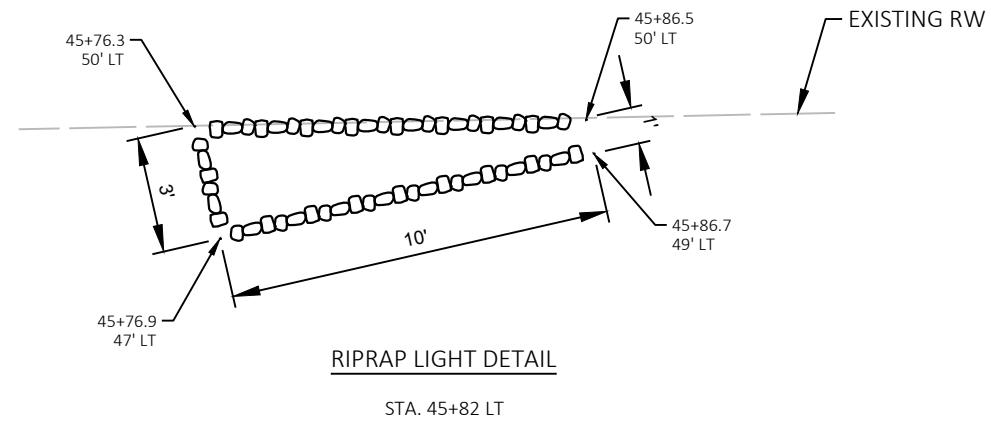


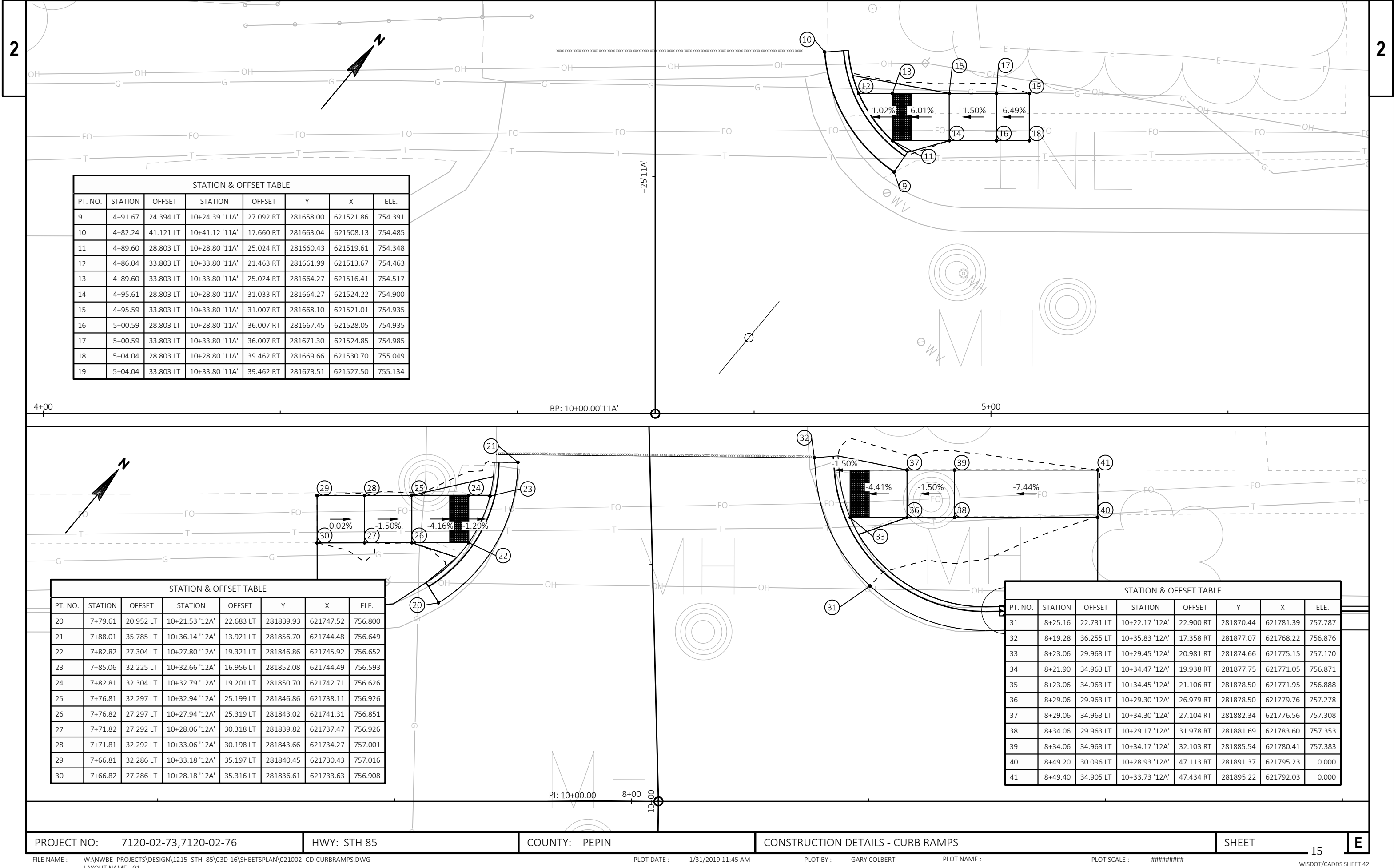
CROSS DRAIN INSTALLATION DETAIL
FOR $D \leq 5'$

* Pavement Removal Limits (Typical)



CROSS DRAIN INSTALLATION DETAIL
FOR $D \geq 5'$

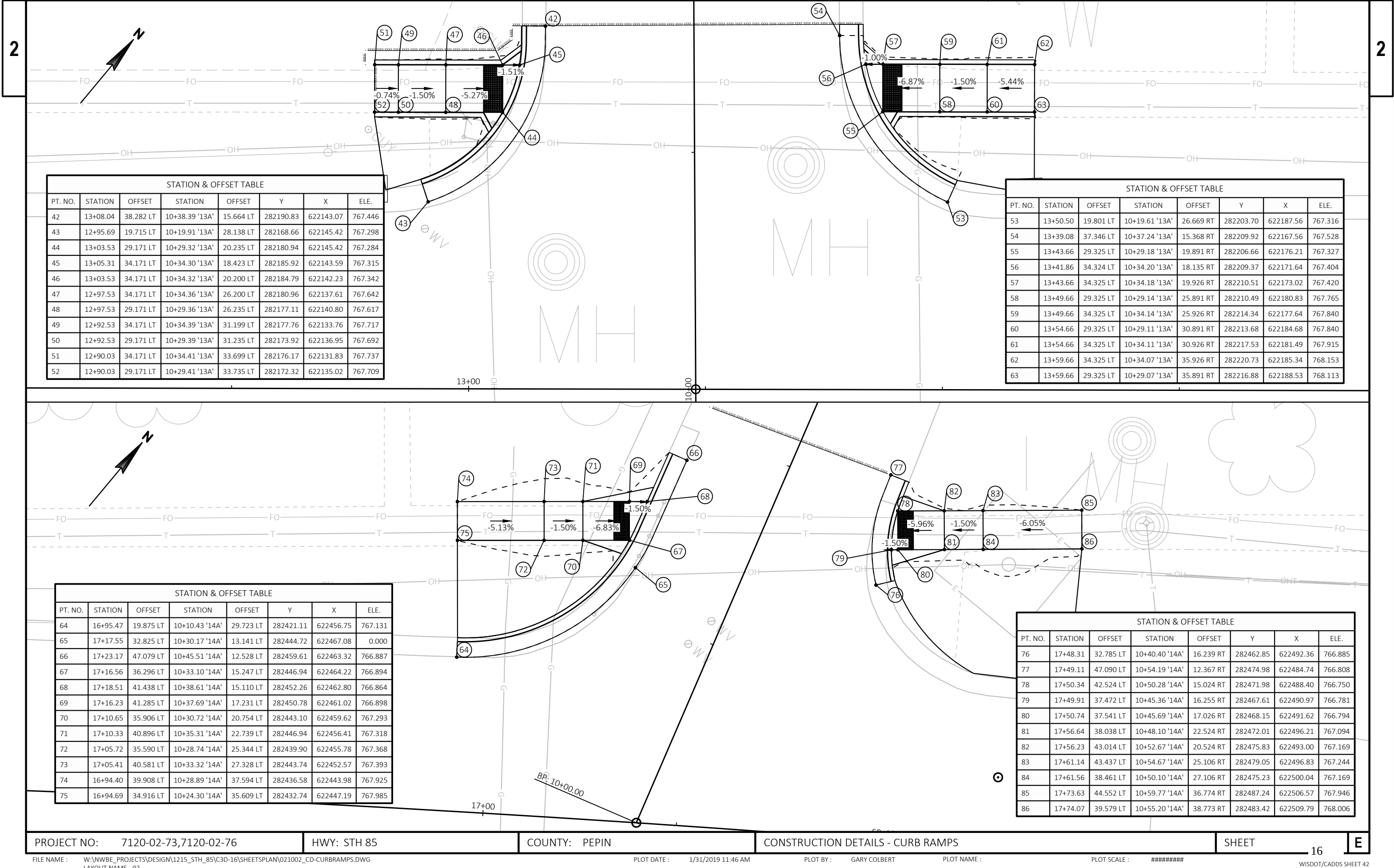




STATION & OFFSET TABLE							
PT. NO.	STATION	OFFSET	STATION	OFFSET	Y	X	ELE.
9	4+91.67	24.394 LT	10+24.39 '11A'	27.092 RT	281658.00	621521.86	754.391
10	4+82.24	41.121 LT	10+41.12 '11A'	17.660 RT	281663.04	621508.13	754.485
11	4+89.60	28.803 LT	10+28.80 '11A'	25.024 RT	281660.43	621519.61	754.348
12	4+86.04	33.803 LT	10+33.80 '11A'	21.463 RT	281661.99	621513.67	754.463
13	4+89.60	33.803 LT	10+33.80 '11A'	25.024 RT	281664.27	621516.41	754.517
14	4+95.61	28.803 LT	10+28.80 '11A'	31.033 RT	281664.27	621524.22	754.900
15	4+95.59	33.803 LT	10+33.80 '11A'	31.007 RT	281668.10	621521.01	754.935
16	5+00.59	28.803 LT	10+28.80 '11A'	36.007 RT	281667.45	621528.05	754.935
17	5+00.59	33.803 LT	10+33.80 '11A'	36.007 RT	281671.30	621524.85	754.985
18	5+04.04	28.803 LT	10+28.80 '11A'	39.462 RT	281669.66	621530.70	755.049
19	5+04.04	33.803 LT	10+33.80 '11A'	39.462 RT	281673.51	621527.50	755.134

STATION & OFFSET TABLE							
PT. NO.	STATION	OFFSET	STATION	OFFSET	Y	X	ELE.
20	7+79.61	20.952 LT	10+21.53 '12A'	22.683 LT	281839.93	621747.52	756.800
21	7+88.01	35.785 LT	10+36.14 '12A'	13.921 LT	281856.70	621744.48	756.649
22	7+82.82	27.304 LT	10+27.80 '12A'	19.321 LT	281846.86	621745.92	756.652
23	7+85.06	32.225 LT	10+32.66 '12A'	16.956 LT	281852.08	621744.49	756.593
24	7+82.81	32.304 LT	10+32.79 '12A'	19.201 LT	281850.70	621742.71	756.626
25	7+76.81	32.297 LT	10+32.94 '12A'	25.199 LT	281846.86	621738.11	756.926
26	7+76.82	27.297 LT	10+27.94 '12A'	25.319 LT	281843.02	621741.31	756.851
27	7+71.82	27.292 LT	10+28.06 '12A'	30.318 LT	281839.82	621737.47	756.926
28	7+71.81	32.292 LT	10+33.06 '12A'	30.198 LT	281843.66	621734.27	757.001
29	7+66.81	32.286 LT	10+33.18 '12A'	35.197 LT	281840.45	621730.43	757.016
30	7+66.82	27.286 LT	10+28.18 '12A'	35.316 LT	281836.61	621733.63	756.908

STATION & OFFSET TABLE							
PT. NO.	STATION	OFFSET	STATION	OFFSET	Y	X	ELE.
31	8+25.16	22.731 LT	10+22.17 '12A'	22.900 RT	281870.44	621781.39	757.787
32	8+19.28	36.255 LT	10+35.83 '12A'	17.358 RT	281877.07	621768.22	756.876
33	8+23.06	29.963 LT	10+29.45 '12A'	20.981 RT	281874.66	621775.15	757.170
34	8+21.90	34.963 LT	10+34.47 '12A'	19.938 RT	281877.75	621771.05	756.871
35	8+23.06	34.963 LT	10+34.45 '12A'	21.106 RT	281878.50	621771.95	756.888
36	8+29.06	29.963 LT	10+29.30 '12A'	26.979 RT	281878.50	621779.76	757.278
37	8+29.06	34.963 LT	10+34.30 '12A'	27.104 RT	281882.34	621776.56	757.308
38	8+34.06	29.963 LT	10+29.17 '12A'	31.978 RT	281881.69	621783.60	757.353
39	8+34.06	34.963 LT	10+34.17 '12A'	32.103 RT	281885.54	621780.41	757.383
40	8+49.20	30.096 LT	10+28.93 '12A'	47.113 RT	281891.37	621795.23	0.000
41	8+49.40	34.905 LT	10+33.73 '12A'	47.434 RT	281895.22	621792.03	0.000

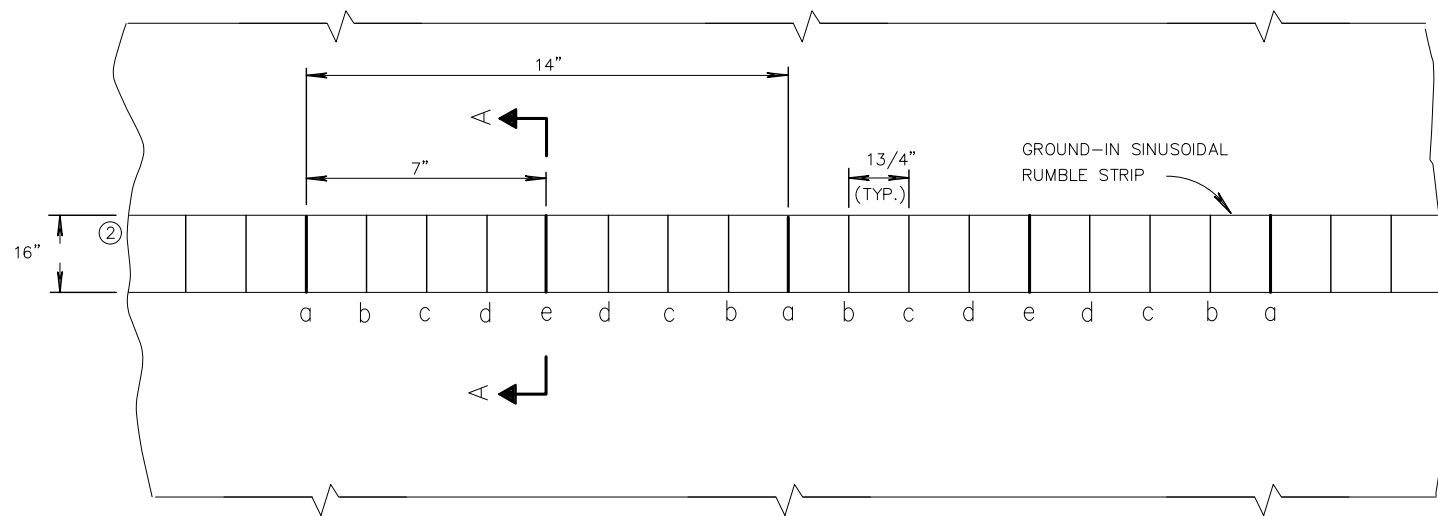


STATION & OFFSET TABLE							
PT. NO.	STATION	OFFSET	STATION	OFFSET	Y	X	ELE.
42	13+08.04	38.282 LT	10+38.39 '13A'	15.664 LT	282190.83	622143.07	767.446
43	12+95.69	19.715 LT	10+19.91 '13A'	28.138 LT	282168.66	622145.42	767.298
44	13+03.53	29.171 LT	10+29.32 '13A'	20.235 LT	282180.94	622145.42	767.284
45	13+05.31	34.171 LT	10+34.30 '13A'	18.423 LT	282185.92	622143.59	767.315
46	13+03.53	34.171 LT	10+34.32 '13A'	20.200 LT	282184.79	622142.23	767.342
47	12+97.53	34.171 LT	10+34.36 '13A'	26.200 LT	282180.96	622137.61	767.642
48	12+97.53	29.171 LT	10+29.36 '13A'	26.235 LT	282177.11	622140.80	767.617
49	12+92.53	34.171 LT	10+34.39 '13A'	31.199 LT	282177.76	622133.76	767.717
50	12+92.53	29.171 LT	10+29.39 '13A'	31.235 LT	282173.92	622136.95	767.692
51	12+90.03	34.171 LT	10+34.41 '13A'	33.699 LT	282176.17	622131.83	767.737
52	12+90.03	29.171 LT	10+29.41 '13A'	33.735 LT	282172.32	622135.02	767.709

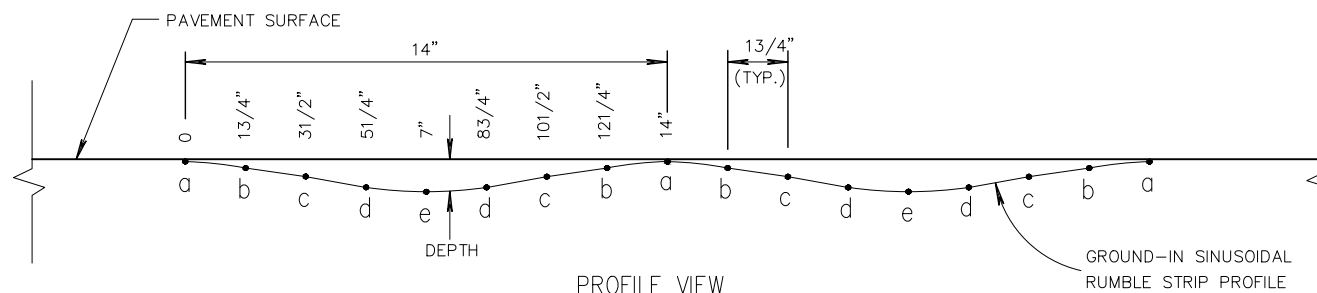
STATION & OFFSET TABLE							
PT. NO.	STATION	OFFSET	STATION	OFFSET	Y	X	ELE.
53	13+50.50	19.801 LT	10+19.61 '13A'	26.669 RT	282203.70	622187.56	767.316
54	13+39.08	37.346 LT	10+37.24 '13A'	15.368 RT	282209.92	622167.56	767.528
55	13+43.66	29.325 LT	10+29.18 '13A'	19.891 RT	282206.66	622176.21	767.327
56	13+41.86	34.324 LT	10+34.20 '13A'	18.135 RT	282209.37	622171.64	767.404
57	13+43.66	34.325 LT	10+34.18 '13A'	19.926 RT	282210.51	622173.02	767.420
58	13+49.66	29.325 LT	10+29.14 '13A'	25.891 RT	282210.49	622180.83	767.765
59	13+49.66	34.325 LT	10+34.14 '13A'	25.926 RT	282214.34	622177.64	767.840
60	13+54.66	29.325 LT	10+29.11 '13A'	30.891 RT	282213.68	622184.68	767.840
61	13+54.66	34.325 LT	10+34.11 '13A'	30.926 RT	282217.53	622181.49	767.915
62	13+59.66	34.325 LT	10+34.07 '13A'	35.926 RT	282220.73	622185.34	768.153
63	13+59.66	29.325 LT	10+29.07 '13A'	35.891 RT	282216.88	622188.53	768.113

STATION & OFFSET TABLE							
PT. NO.	STATION	OFFSET	STATION	OFFSET	Y	X	ELE.
64	16+95.47	19.875 LT	10+10.43 '14A'	29.723 LT	282421.11	622456.75	767.131
65	17+17.55	32.825 LT	10+30.17 '14A'	13.141 LT	282444.72	622467.08	0.000
66	17+23.17	47.079 LT	10+45.51 '14A'	12.528 LT	282459.61	622463.32	766.887
67	17+16.56	36.296 LT	10+33.10 '14A'	15.247 LT	282446.94	622464.22	766.894
68	17+18.51	41.438 LT	10+38.61 '14A'	15.110 LT	282452.26	622462.80	766.864
69	17+16.23	41.285 LT	10+37.69 '14A'	17.231 LT	282450.78	622461.02	766.898
70	17+10.65	35.906 LT	10+30.72 '14A'	20.754 LT	282443.10	622459.62	767.293
71	17+10.33	40.896 LT	10+35.31 '14A'	22.739 LT	282446.94	622456.41	767.318
72	17+05.72	35.590 LT	10+28.74 '14A'	25.344 LT	282439.90	622455.78	767.368
73	17+05.41	40.581 LT	10+33.32 '14A'	27.328 LT	282443.74	622452.57	767.393
74	16+94.40	39.908 LT	10+28.89 '14A'	37.594 LT	282436.58	622443.98	767.925
75	16+94.69	34.916 LT	10+24.30 '14A'	35.609 LT	282432.74	622447.19	767.985

STATION & OFFSET TABLE							
PT. NO.	STATION	OFFSET	STATION	OFFSET	Y	X	ELE.
76	17+48.31	32.785 LT	10+40.40 '14A'	16.239 RT	282462.85	622492.36	766.885
77	17+49.11	47.090 LT	10+54.19 '14A'	12.367 RT	282474.98	622484.74	766.808
78	17+50.34	42.524 LT	10+50.28 '14A'	15.024 RT	282471.98	622488.40	766.750
79	17+49.91	37.472 LT	10+45.36 '14A'	16.255 RT	282467.61	622490.97	766.781
80	17+50.74	37.541 LT	10+45.69 '14A'	17.026 RT	282468.15	622491.62	766.794
81	17+56.64	38.038 LT	10+48.10 '14A'	22.524 RT	282472.01	622496.21	767.094
82	17+56.23	43.014 LT	10+52.67 '14A'	20.524 RT	282475.83	622493.00	767.169
83	17+61.14	43.437 LT	10+54.67 '14A'	25.106 RT	282479.05	622496.83	767.244
84	17+61.56	38.461 LT	10+50.10 '14A'	27.106 RT	282475.23	622500.04	767.169
85	17+73.63	44.552 LT	10+59.77 '14A'	36.774 RT	282487.24	622506.57	767.946
86	17+74.07	39.579 LT	10+55.20 '14A'	38.773 RT	282483.42	622509.79	768.006

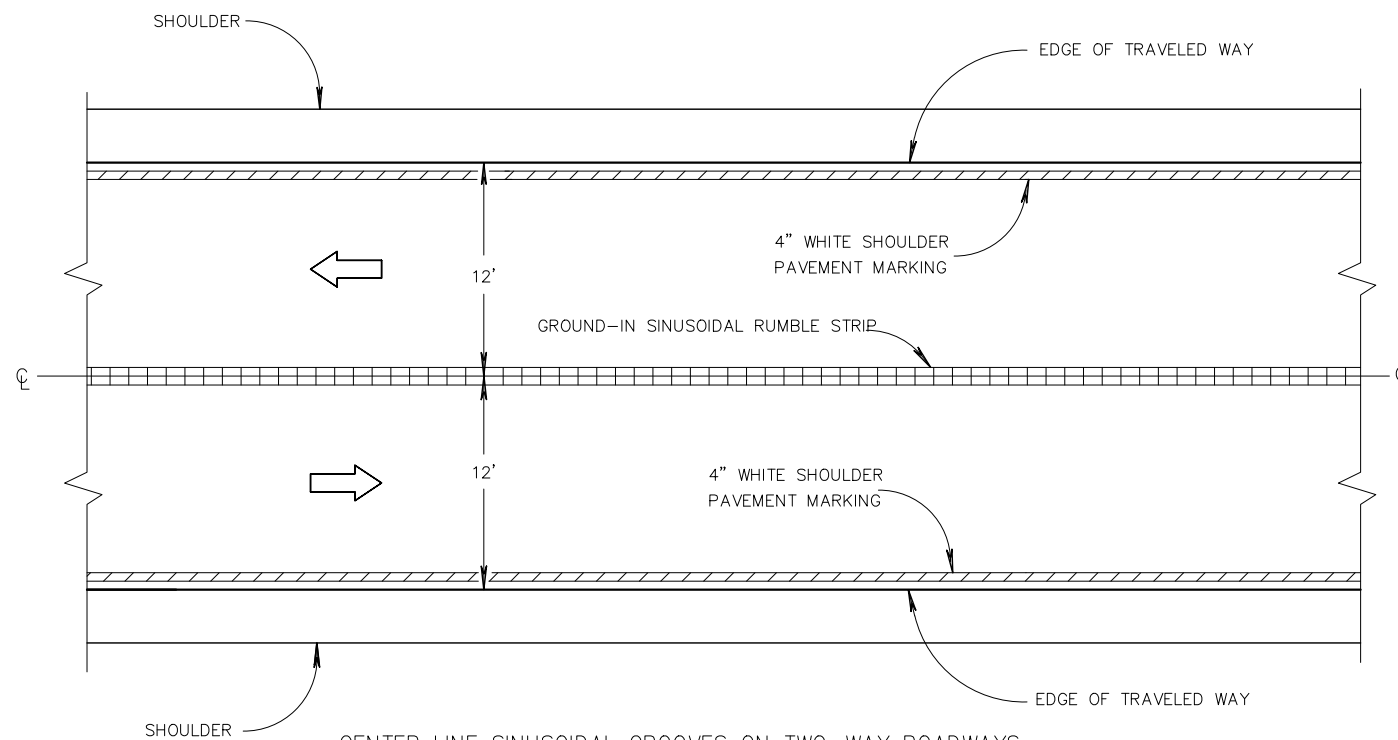


PLAN VIEW
CENTER LINE WITH GROUND-IN SINUSOIDAL RUMBLE STRIP



PROFILE VIEW
GROUND-IN SINUSOIDAL RUMBLE STRIP

LOCATION	DEPTH INCHES
a	1/16"
b	5/32"
c	9/32"
d	7/16"
e	1/2"



CENTER LINE SINUSOIDAL GROOVES ON TWO-WAY ROADWAYS

TWO-LANE RURAL CENTER LINE SINUSOIDAL RUMBLE STRIP, MILLING ALONG ASPHALTIC ROADWAYS

GENERAL NOTES

DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS. DO NOT MILL CENTER LINE GROOVES THROUGH ANY INTERSECTION, MARKED CROSSWALK, NON-MOTORIZED PATH CROSSING, OR SNOWMOBILE CROSSING.

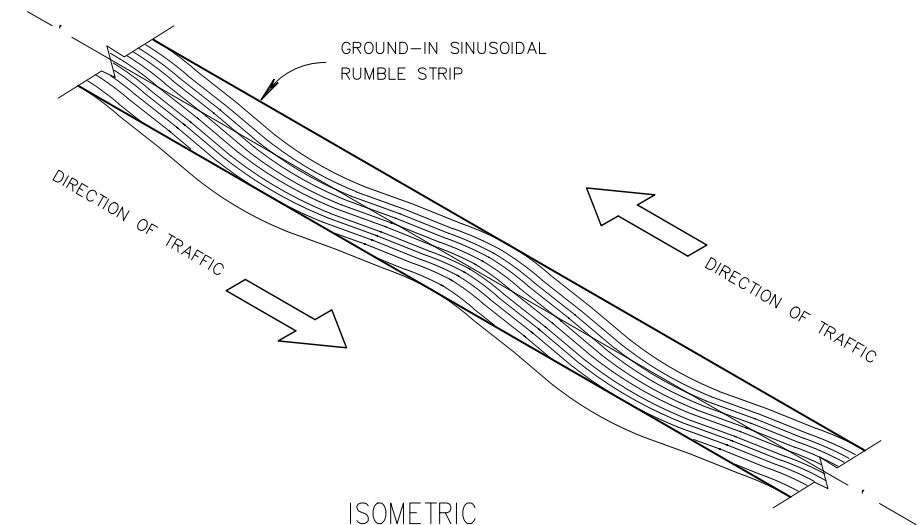
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

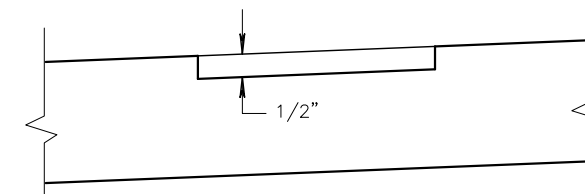
THE WIDTH OF THE GROOVE WILL BE 16 INCHES.

THE PAVEMENT MARKINGS WILL BE ENTIRELY INSIDE THE RUMBLE STRIP.

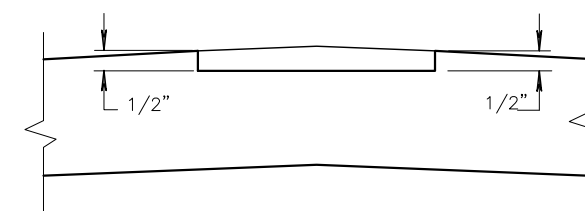
- CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.
- SEE CONTRACT PLANS FOR SINUSOIDAL STRIP WIDTH.



ISOMETRIC



SECTION A-A
SUPERELEVATED ROADWAY



SECTION A-A
CROWNED ROADWAY

Revision Date: 11/15/2017

PROJECT NO: 7120-02-73,7120-02-76

HWY: STH 85

COUNTY: PEPIN

PLAN: CONSTRUCTION DETAILS - SINUSOIDAL RUMBLE STRIPS

SHEET

17

E

FILE NAME : W:\NWBE_PROJECTS\DESIGN\1215_STH_85\C3D-16\SHEETSP\021003_CD-RUMBLESTRIPS.DWG
LAYOUT NAME - 01

PLOT DATE : 1/31/2019 11:50 AM

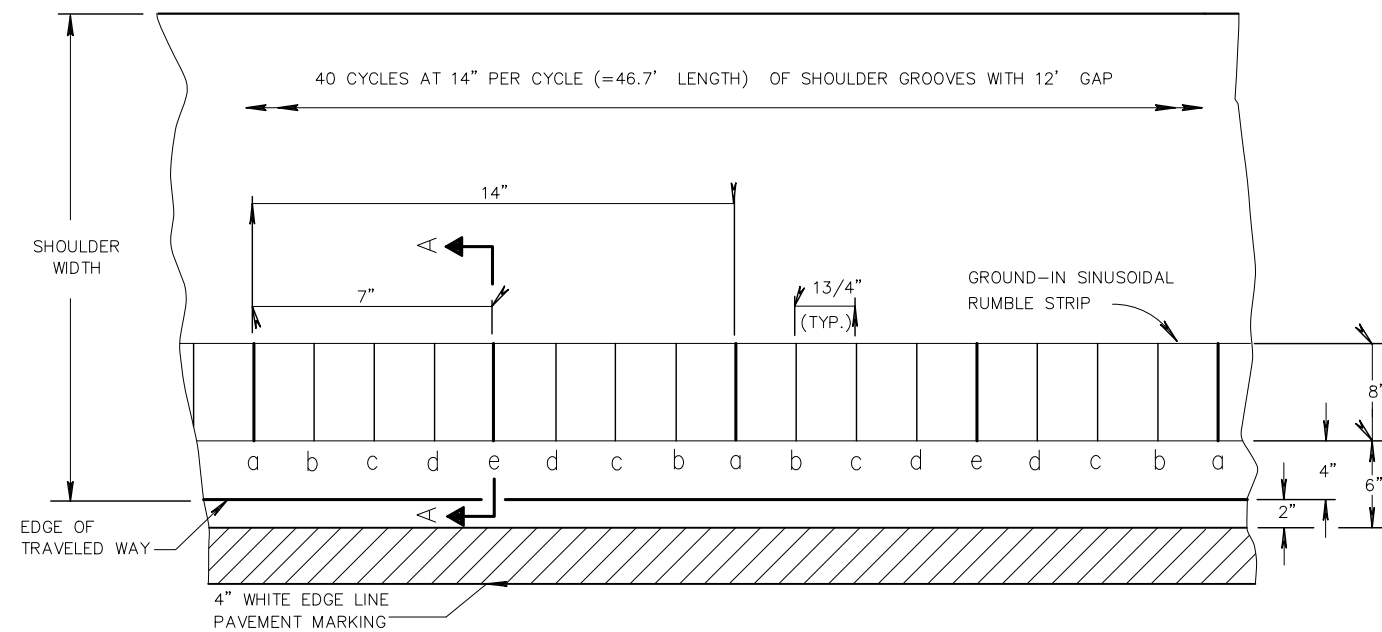
PLOT BY : GARY COLBERT

PLOT NAME :

PLOT SCALE : 1 IN:10 FT

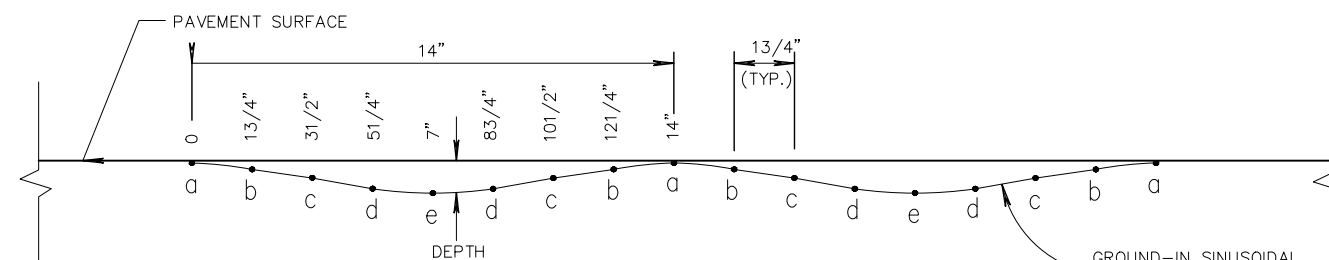
WISDOT/CADD5 SHEET 42

2

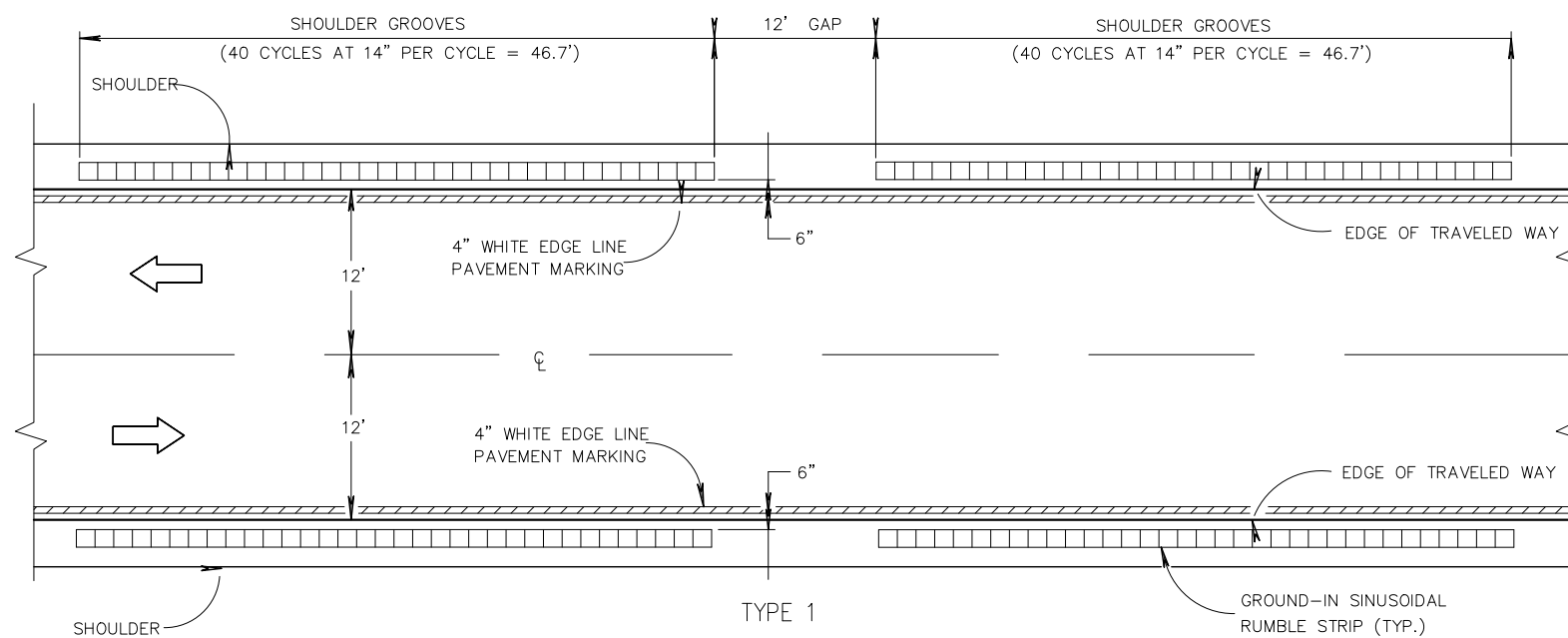


PLAN VIEW

SHOULDER WITH GROUND-IN SINUSOIDAL RUMBLE STRIP



PROFILE VIEW
GROUND-IN SINUSOIDAL RUMBLE STRIP



TYPE 1
TWO-LANE SHOULDER SINUSOIDAL RUMBLE STRIP

TWO-LANE RURAL SHOULDER SINUSOIDAL RUMBLE STRIP, MILLING ALONG ASPHALTIC ROADWAYS

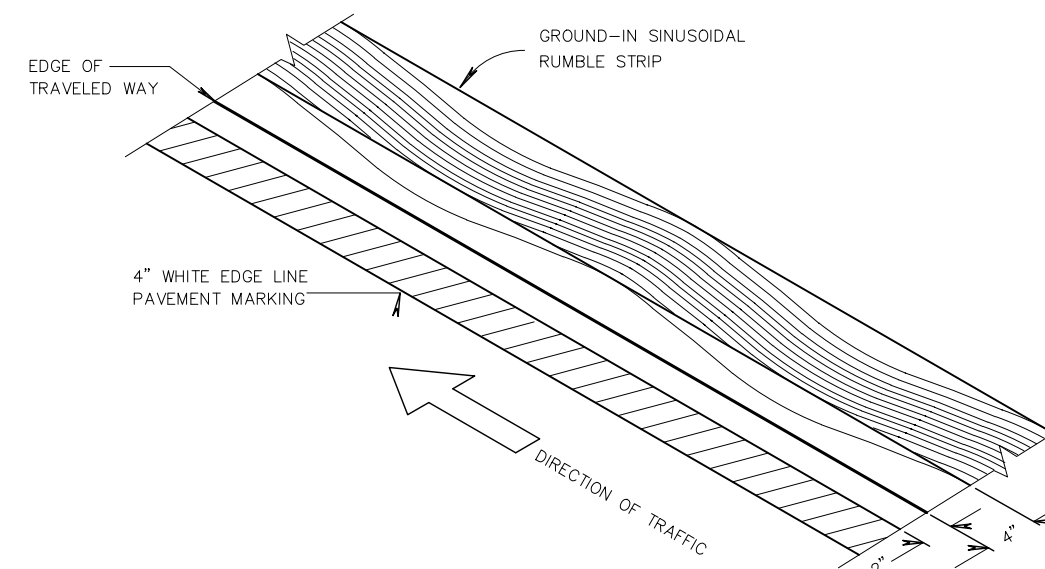
LOCATION	DEPTH INCHES
a	1/16"
b	5/32"
c	9/32"
d	7/16"
e	1/2"

GENERAL NOTES

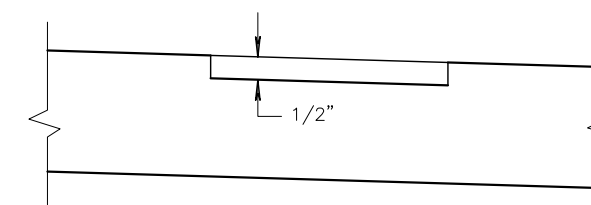
DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

DO NOT MILL SHOULDER GROOVES THROUGH ANY INTERSECTION, MARKED CROSSWALK, NON-MOTORIZED PATH CROSSING, OR SNOWMOBILE CROSSING.

- ① SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.



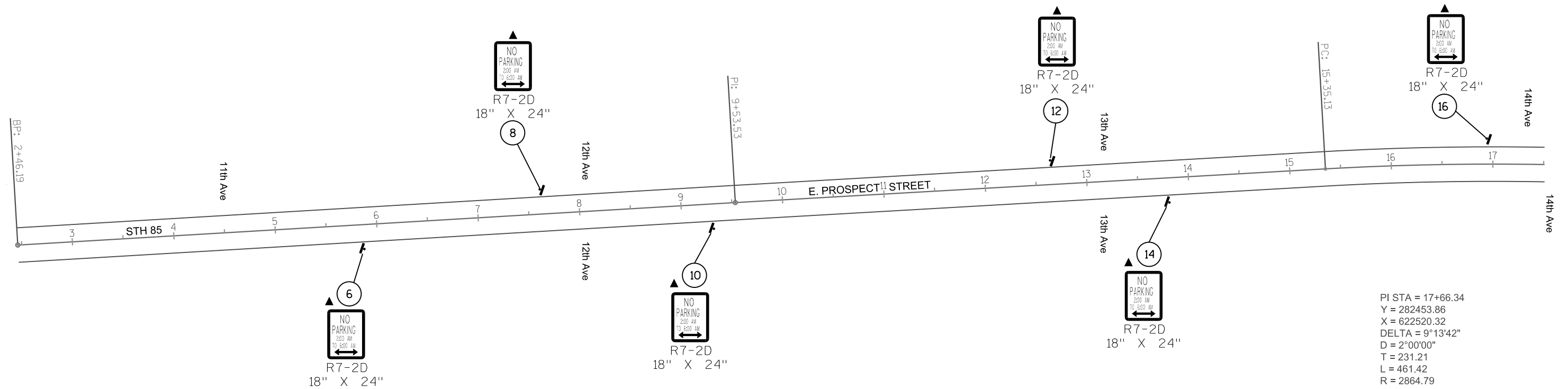
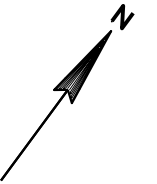
ISOMETRIC



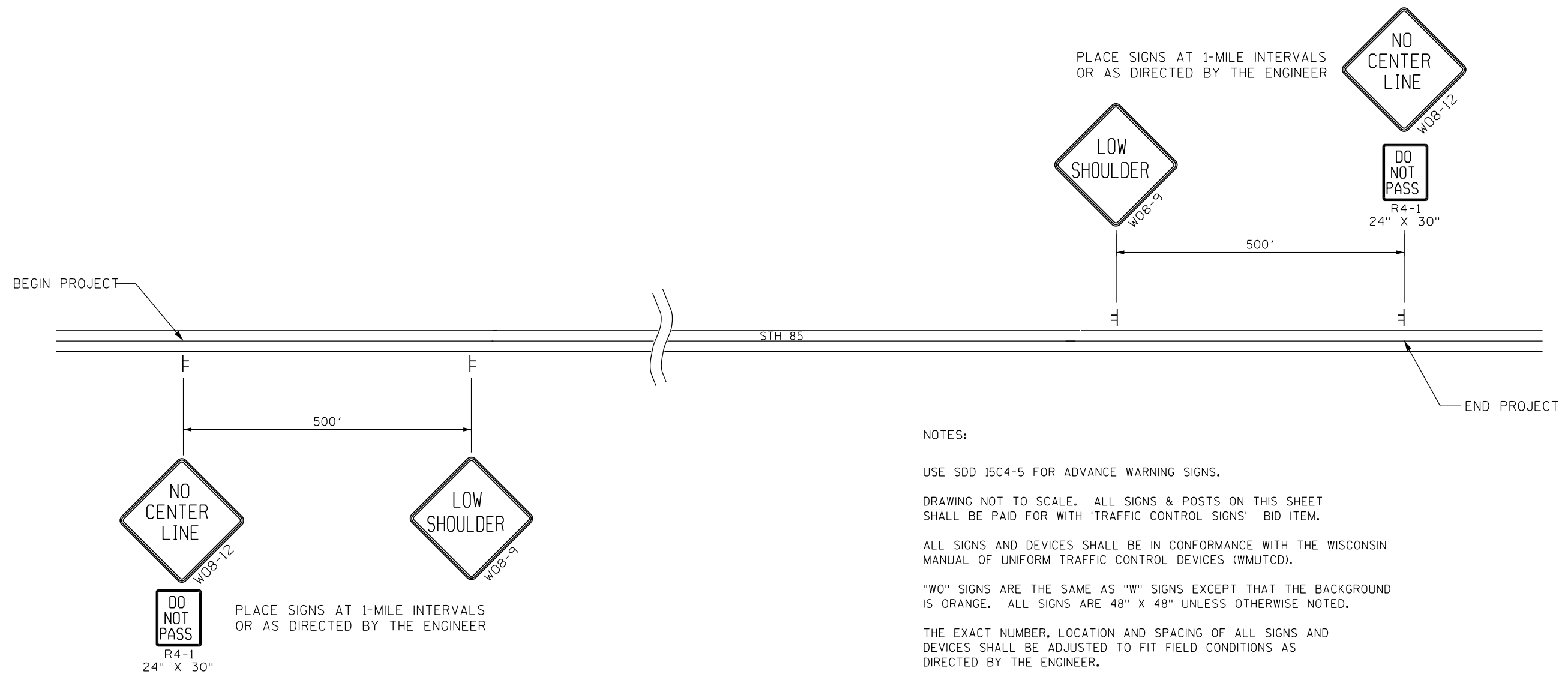
SECTION A-A

SIGN LEGEND

- ▲ SIGNS TYPE II REFLECTIVE
┆ SIGN ON SINGLE POST



PI STA = 17+66.34
Y = 282453.86
X = 622520.32
DELTA = 9°13'42"
D = 2°00'00"
T = 231.21
L = 461.42
R = 2864.79
PC STA = 15+35.13
PT STA = 19+96.54
NORMAL CROWN



NOTES:

USE SDD 15C4-5 FOR ADVANCE WARNING SIGNS.

DRAWING NOT TO SCALE. ALL SIGNS & POSTS ON THIS SHEET SHALL BE PAID FOR WITH 'TRAFFIC CONTROL SIGNS' BID ITEM.

ALL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE WISCONSIN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (WMUTCD).

"W0" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THAT THE BACKGROUND IS ORANGE. ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

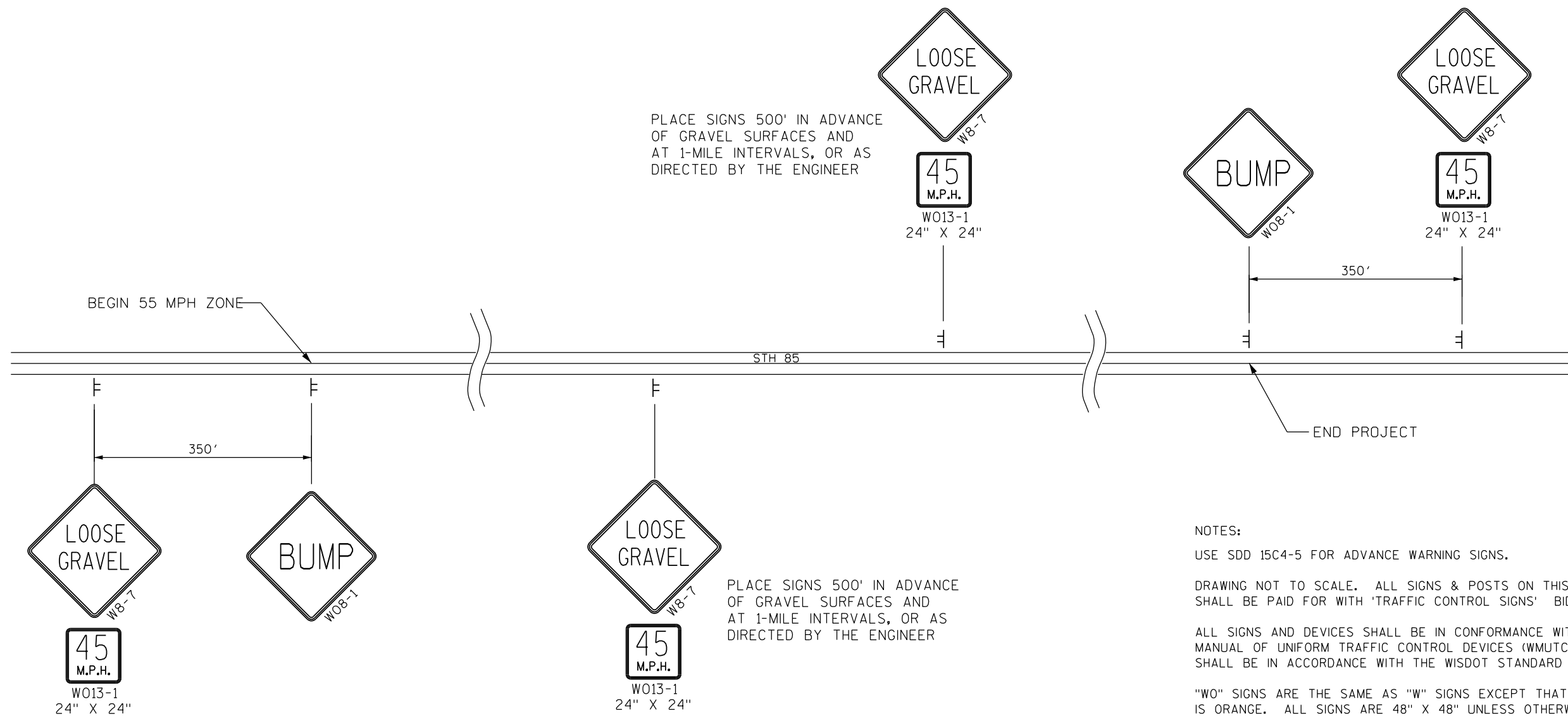
THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

ALL SIGNS INAPPROPRIATE TO THE STATUS OF THE CONTROL ZONE, INCLUDING PRE-EXISTING SIGNING IN THE VICINITY, SHALL BE REMOVED AS DIRECTED BY THE ENGINEER.

INSTALL W08-12 AND R4-1 SIGNS ON THE SAME DAY AS MILLING OPERATIONS. REMOVE THESE SIGNS IMMEDIATELY FOLLOWING PLACEMENT OF TEMPORARY OR SAME-DAY PAVEMENT MARKINGS.

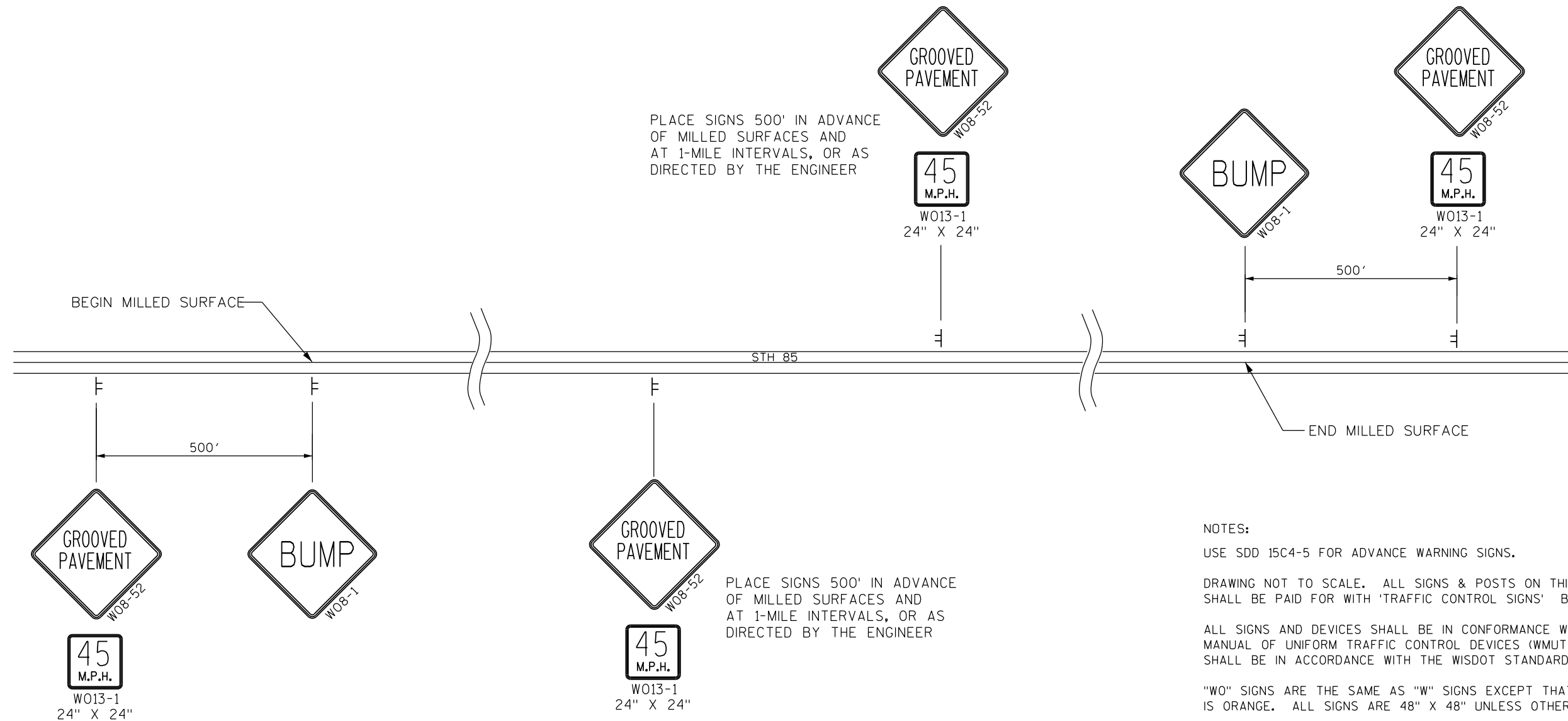
LOW SHOULDER SIGNS TO REMAIN INPLACE UNTIL AGGREGATE SHOULDER IS CONSTRUCTED AND COMPACTED TO CROSS SLOPE SHOWN ON TYPICAL SECTION.

DETAIL FOR SIGNING ON HMA PAVEMENT SURFACES



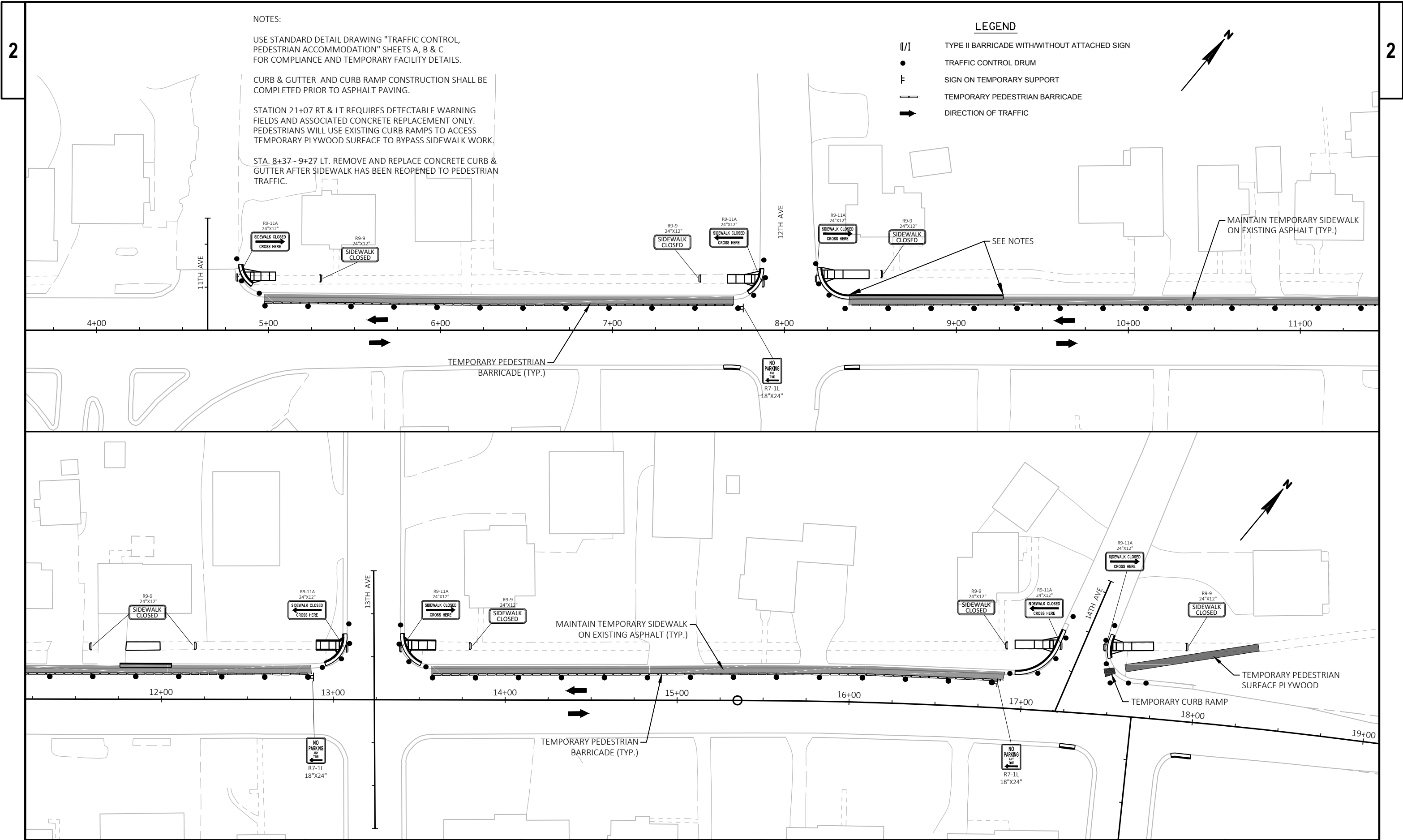
DETAIL FOR SIGNING ON MAINLINE MILLED TO BASE LAYER

STA. 34+70 - 253+32
STA. 356+46 - 407+65



DETAIL FOR SIGNING ON MAINLINE MILLED SURFACE

STA. 253+32 - 356+46



Estimate Of Quantities

		7120-02-73		7120-02-76	
Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	1.000	1.000
0004	201.0120	Clearing	ID	32.000	32.000
0006	201.0205	Grubbing	STA	1.000	1.000
0008	201.0220	Grubbing	ID	72.000	72.000
0010	203.0100	Removing Small Pipe Culverts	EACH	3.000	3.000
0012	204.0110	Removing Asphaltic Surface	SY	933.000	933.000
0014	204.0115	Removing Asphaltic Surface Butt Joints	SY	1,984.000	1,984.000
0016	204.0120	Removing Asphaltic Surface Milling	SY	145,813.000	145,813.000
0018	204.0150	Removing Curb & Gutter	LF	313.000	313.000
0020	204.0155	Removing Concrete Sidewalk	SY	123.000	123.000
0022	204.0170	Removing Fence	LF	155.000	155.000
0024	204.9090.S	Removing (item description) 01. Culvert Pipe End	LF	18.000	18.000
0026	205.0100	Excavation Common	CY	1,124.000	1,124.000
0028	208.0100	Borrow	CY	214.000	214.000
0030	209.2100	Backfill Granular Grade 2	CY	233.000	233.000
0032	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	526.000	526.000
0034	213.0100	Finishing Roadway (project) 01. 7120-02-73	EACH	1.000	1.000
0036	305.0110	Base Aggregate Dense 3/4-Inch	TON	3,425.000	3,425.000
0038	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,327.000	1,327.000
0040	305.0500	Shaping Shoulders	STA	773.000	773.000
0042	455.0605	Tack Coat	GAL	17,273.000	16,407.000
0044	460.0105.S	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH	1.000	1.000
0046	460.0110.S	HMA Percent Within Limits (PWL) Test Strip Density	EACH	2.000	2.000
0048	460.2005	Incentive Density PWL HMA Pavement	DOL	10,610.000	10,610.000
0050	460.2010	Incentive Air Voids HMA Pavement	DOL	28,780.000	28,780.000
0052	460.6644	HMA Pavement 4 MT 58-34 V	TON	28,745.000	25,602.000
0054	465.0105	Asphaltic Surface	TON	448.000	448.000
0056	465.0110	Asphaltic Surface Patching	TON	100.000	100.000
0058	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	107.000	107.000
0060	465.0315	Asphaltic Flumes	SY	29.000	29.000
0062	520.8000	Concrete Collars for Pipe	EACH	6.000	6.000
0064	520.8700	Cleaning Culvert Pipes	EACH	3.000	3.000
0066	520.9700.S	Culvert Pipe Liners (size) 03. 48-Inch	LF	160.000	160.000
0068	520.9750.S	Cleaning Culvert Pipes for Liner Verification	EACH	2.000	2.000
0070	521.1012	Apron Endwalls for Culvert Pipe Steel 12-Inch	EACH	4.000	4.000
0072	521.1018	Apron Endwalls for Culvert Pipe Steel 18-Inch	EACH	4.000	4.000
0074	521.3112	Culvert Pipe Corrugated Steel 12-Inch	LF	56.000	56.000
0076	521.3118	Culvert Pipe Corrugated Steel 18-Inch	LF	24.000	24.000
0078	522.0424	Culvert Pipe Reinforced Concrete Class IV 24-Inch	LF	48.000	48.000
0080	522.0436	Culvert Pipe Reinforced Concrete Class IV 36-Inch	LF	56.000	56.000

Estimate Of Quantities

		7120-02-73		7120-02-76		
Line	Item	Item Description	Unit	Total	Qty	Qty
0082	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	6.000	6.000	
0084	522.1036	Apron Endwalls for Culvert Pipe Reinforced Concrete 36-Inch	EACH	4.000	4.000	
0086	522.2419	Culvert Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 19x30-Inch	LF	52.000	52.000	
0088	522.2619	Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 19x30-Inch	EACH	2.000	2.000	
0090	601.0411	Concrete Curb & Gutter 30-Inch Type D	LF	313.000	313.000	
0092	601.0557	Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D	LF	350.000	350.000	
0094	602.0405	Concrete Sidewalk 4-Inch	SF	925.000	925.000	
0096	602.0505	Curb Ramp Detectable Warning Field Yellow	SF	90.000	90.000	
0098	606.0100	Riprap Light	CY	29.000	29.000	
0100	606.0200	Riprap Medium	CY	13.000	13.000	
0102	611.0600	Inlet Covers Type A	EACH	3.000	3.000	
0104	611.0624	Inlet Covers Type H	EACH	2.000	2.000	
0106	611.8115	Adjusting Inlet Covers	EACH	1.000	1.000	
0108	614.0010	Barrier System Grading Shaping Finishing	EACH	11.000	11.000	
0110	614.0305	Steel Plate Beam Guard Class A	LF	50.000	50.000	
0112	614.0370	Steel Plate Beam Guard Energy Absorbing Terminal	EACH	1.000	1.000	
0114	614.0515	Guardrail Stifened LHW	LF	225.000	225.000	
0116	614.0920	Salvaged Rail	LF	2,603.000	2,603.000	
0118	614.2300	MGS Guardrail 3	LF	875.000	875.000	
0120	614.2330	MGS Guardrail 3 K	LF	2,012.500	2,012.500	
0122	614.2340	MGS Guardrail 3 L	LF	225.000	225.000	
0124	614.2610	MGS Guardrail Terminal EAT	EACH	16.000	16.000	
0126	618.0100	Maintenance And Repair of Haul Roads (project) 01. 7120-02-73	EACH	1.000	1.000	
0128	619.1000	Mobilization	EACH	1.000	0.900	0.100
0130	624.0100	Water	MGAL	19.000	19.000	
0132	625.0500	Salvaged Topsoil	SY	4,486.000	4,486.000	
0134	627.0200	Mulching	SY	4,185.000	4,185.000	
0136	628.1504	Silt Fence	LF	7,354.000	7,354.000	
0138	628.1520	Silt Fence Maintenance	LF	7,354.000	7,354.000	
0140	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000	
0142	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000	
0144	628.2004	Erosion Mat Class I Type B	SY	5,041.000	5,041.000	
0146	628.7015	Inlet Protection Type C	EACH	9.000	9.000	
0148	628.7504	Temporary Ditch Checks	LF	96.000	96.000	
0150	628.7555	Culvert Pipe Checks	EACH	41.000	41.000	
0152	629.0210	Fertilizer Type B	CWT	4.800	4.800	

Estimate Of Quantities

7120-02-73 7120-02-76

Line	Item	Item Description	Unit	Total	Qty	Qty
0154	630.0110	Seeding Mixture No. 10	LB	91.000	91.000	
0156	630.0200	Seeding Temporary	LB	182.000	182.000	
0158	633.0100	Delineator Posts Steel	EACH	4.000	4.000	
0160	633.5200	Markers Culvert End	EACH	34.000	34.000	
0162	634.0809	Posts Tubular Steel 2x2-Inch X 9.5-FT	EACH	6.000	6.000	
0164	637.2210	Signs Type II Reflective H	SF	18.000	18.000	
0166	637.2230	Signs Type II Reflective F	SF	2.000	2.000	
0168	642.5001	Field Office Type B	EACH	1.000	1.000	
0170	643.0300	Traffic Control Drums	DAY	820.000	820.000	
0172	643.0310.S	Temporary Portable Rumble Strips	LS	1.000	1.000	
0174	643.0410	Traffic Control Barricades Type II	DAY	111.000	111.000	
0176	643.0705	Traffic Control Warning Lights Type A	DAY	132.000	132.000	
0178	643.0900	Traffic Control Signs	DAY	2,960.000	2,960.000	
0180	643.5000	Traffic Control	EACH	1.000	1.000	
0182	644.1420.S	Temporary Pedestrian Surface Plywood	SF	448.000	448.000	
0184	644.1601.S	Temporary Curb Ramp	EACH	1.000	1.000	
0186	644.1810.S	Temporary Pedestrian Barricade	LF	1,060.000	1,060.000	
0188	645.0120	Geotextile Type HR	SY	44.000	44.000	
0190	645.0130	Geotextile Type R	SY	116.000	116.000	
0192	646.1040	Marking Line Grooved Wet Ref Epoxy 4-Inch	LF	77,970.000	77,970.000	
0194	646.3020	Marking Line Epoxy 8-Inch	LF	370.000	370.000	
0196	646.4520	Marking Line Same Day Epoxy 4-Inch	LF	42,722.000	42,722.000	
0198	646.5020	Marking Arrow Epoxy	EACH	2.000	2.000	
0200	646.7420	Marking Crosswalk Epoxy Transverse Line 6-Inch	LF	60.000	60.000	
0202	646.8120	Marking Curb Epoxy	LF	165.000	165.000	
0204	648.0100	Locating No-Passing Zones	MI	7.063	7.063	
0206	649.0105	Temporary Marking Line Paint 4-Inch	LF	40,884.000	40,884.000	
0208	650.4500	Construction Staking Subgrade	LF	800.000	800.000	
0210	650.5000	Construction Staking Base	LF	800.000	800.000	
0212	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	663.000	663.000	
0214	650.6000	Construction Staking Pipe Culverts	EACH	3.000	3.000	
0216	650.8000	Construction Staking Resurfacing Reference	LF	40,369.000	40,369.000	
0218	650.9000	Construction Staking Curb Ramps	EACH	7.000	7.000	
0220	650.9910	Construction Staking Supplemental Control (project) 01. 7120-02-73	LS	1.000	1.000	
0222	650.9920	Construction Staking Slope Stakes	LF	1,343.000	1,343.000	
0224	690.0150	Sawing Asphalt	LF	1,423.000	1,423.000	
0226	690.0250	Sawing Concrete	LF	117.000	117.000	
0228	740.0440	Incentive IRI Ride	DOL	30,700.000	30,700.000	
0230	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	2,000.000	2,000.000	

Estimate Of Quantities

				7120-02-73	7120-02-76	
Line	Item	Item Description	Unit	Total	Qty	Qty
0232	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	630.000	630.000	
0234	SPV.0060	Special 01. Cleaning Culvert Pipes Minimal	EACH	2.000	2.000	
0236	SPV.0060	Special 02. Slope Repair Culvert End	EACH	12.000	12.000	
0238	SPV.0090	Special 01. Cure and Seal Treatment Concrete Curb and Gutter	LF	663.000	663.000	
0240	SPV.0090	Special 02. Regrade Ditch	LF	40.000	40.000	
0242	SPV.0090	Special 04. Asphaltic Center Line Rumble Strips Sinusoidal 2-Lane Rural	LF	32,415.000	32,415.000	
0244	SPV.0090	Special 05. Asphaltic Shoulder Rumble Strips Sinusoidal 2-Lane Rural	LF	70,028.000		70,028.000
0246	SPV.0090	Special 06. Marking Line Wet Reflective Epoxy 4-Inch	LF	38,935.000	38,935.000	
0248	SPV.0105	Special 01. Preparation of Foundation for Asphaltic Paving	LS	1.000	1.000	
0250	SPV.0105	Special 02. Material Transfer Vehicle	LS	1.000	1.000	
0252	SPV.0105	Special 03. Milling and Removing Temporary Joint	LS	1.000	1.000	
0254	SPV.0165	Special 01. Concrete Sidewalk Cure and Seal Treatment	SF	925.000	925.000	
0256	SPV.0170	Special 01. Reheating HMA Pavement Longitudinal Joints	STA	403.000	403.000	

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CLEARING AND GRUBBING ITEMS

				201.0105	201.0120	201.0205	201.0220	COMMENTS
				CLEARING	CLEARING	GRUBBING	GRUBBING	
STATION	- STATION	LOCATION		STA	ID	STA	ID	
11+86		STH 85	23' LT	-	-	-	48	STUMP
62+00	- 63+00	STH 85	RT	1	-	1	-	BARRIER SYS. GRADING
78+47		STH 85	32' RT	-	12	-	12	MAPLE
78+62		STH 85	32' RT	-	12	-	12	MAPLE
373+44		STH 85	57' RT	-	8	-	-	BASSWOOD
PROJECT TOTALS				1	32	1	72	

REMOVING FENCE

				204.0170	
				REMOVING FENCE	
STATION	-	STATION	LOCATION	LF	COMMENTS
62+20	-	63+75	STH 85 RT	155	BARRIER SYS. GRADING
PROJECT TOTALS				155	

REMOVING SMALL PIPE CULVERTS

				203.0100	204.9090.S
				REMOVING SMALL	REMOVING CULVERT
				PIPE CULVERTS	PIPE END
STATION	LOCATION			EACH	LF
87+03	STH 85			1	-
155+77	STH 85	LT		-	6
178+92	STH 85			1	-
182+90	STH 85			1	-
206+02	STH 85	LT		-	3
206+02	STH 85	RT		-	6
246+90	STH 85	RT		-	3
PROJECT TOTALS				3	18

REMOVING ASPHALTIC SURFACE

204.0110				
REMOVING ASPHALTIC				
SURFACE				
STATION	ALIGNMENT	SY	COMMENTS	
20+03	STH 85	33	RT, TRACK ENTRANCE	
28+90	STH 85	39	RT, BALL FIELD ENTRANCE	
30+47	STH 85	96	LT, TARRANT PARK ENT.	
33+27	STH 85	85	RT, PE	
41+30	STH 85	42	RT, PE	
42+20	STH 85	41	RT, PE	
103+06	STH 85	40	LT, PE	
108+23	STH 85	14	RT, PE	
109+97	STH 85	21	RT, PE	
115+98	STH 85	14	LT, PE	
117+33	STH 85	19	LT, PE	
117+54	STH 85	37	RT, PE	
119+15	STH 85	23	RT, PE	
226+48	STH 85	150	LT, CE	
316+85	STH 85	47	LT, PE	
320+04	STH 85	46	RT, PE	
348+12	STH 85	52	RT, PE	
389+80	STH 85	134	LT, CE	
PROJECT TOTAL		933		

ALL ITEMS ARE PROJECT 7120-02-73, CAT. 0010, UNLESS OTHERWISE NOTED.

REMOVING ASPHALTIC SURFACE BUTT JOINTS

				204.0115	
				REMOVING ASPHALTIC	
				SURFACE BUTT JOINTS	
STATION	- STATION	AVG. WIDTH	ALIGNMENT	SY	COMMENTS
2+57	- 2+77	39.0	STH 85	85	BEGIN PROJECT
56+43	- 56+93	34.0	STH 85	189	B-46-055
58+32	- 58+82	34.0	STH 85	189	B-46-055
407+15	- 407+65	30.0	STH 85	167	END PROJECT
10+24	- 10+38	-	'11A'	55	11TH AVE
9+75.5	- 9+80.5	-	'12A'	27	12TH AVE
10+18.0	- 10+36.4	-	'12A'	70	12TH AVE
9+75.5	- 9+80.5	-	'13A'	27	13TH AVE
10+19.8	- 10+38.4	-	'13A'	70	13TH AVE
9+76.0	- 9+81.0	-	'14AS'	26	14TH AVE
10+21.1	- 10+53.6	-	'14AN'	70	14TH AVE
9+42	- 9+62	-	'SL'	60	SUPRI LANE
8+83	- 9+03	-	'V'	65	CTH V
9+45	- 9+60	-	'CC'	34	CEDAR COURT
9+09	- 9+29	-	'DM'	53	DORWIN'S MILL RD
10+90	- 11+10	-	'M'	56	CTH M
12+27	- 12+47	-	'RR'	49	RA-DAR RD
10+83	- 11+21	-	'R'	348	CTH R
9+77	- 9+85	-	'KD'	43	KOMRO DRIVE
9+29	- 9+49	-	'VR'	49	VRADENBURG RD
10+48	- 10+69	-	'MM'	50	CTH MM
9+22	- 9+42	-	'MR'	52	MARSH RD
11+06	- 11+26	-	'T'	52	CTH T
9+00	- 9+20	-	'WR'	48	WEISSINGER RD
10+49	- 10+69	-	'10A'	50	10TH AVE.
PROJECT TOTAL				1,984	

CONCRETE SIDEWALK

				204.0155	602.0405	602.0505	650.9000	SPV.0165.01	COMMENT
				REMOVING	CONCRETE	CURB RAMP	CONSTRUCTION	CONCRETE SIDEWALK	
				CONCRETE	SIDEWALK	DETECTABLE WARNING	STAKING	CURE AND SEAL	
STATION	- STATION	LOCATION	SY	SF	SF	FIELD YELLOW	CURB RAMPS	TREATMENT	
4+85	- 5+04	STH 85 LT	11	96	10		1	96	11TH AVE. NW QUADRANT. CURB RAMP TYPE - 4B1
7+67	- 7+85	STH 85 LT	11	99	10		1	99	12TH AVE. SW QUADRANT. CURB RAMP TYPE - 4B1
8+22	- 8+45	STH 85 LT	15	145	10		1	145	12TH AVE. NW QUADRANT. CURB RAMP TYPE - 4B1
11+80	- 11+99	STH 85 LT	11	98	-		-	98	
12+90	- 13+05	STH 85 LT	13	76	10		1	76	13TH AVE. SW QUADRANT. CURB RAMP TYPE - 4B
13+42	- 13+60	STH 85 LT	15	87	10		1	87	13TH AVE. NW QUADRANT. CURB RAMP TYPE - 4B
16+94	- 17+19	STH 85 LT	14	130	10		1	130	14TH AVE. SW QUANDRANT CURB RAMP TYPE - 4B1
17+50	- 17+74	STH 85 LT	25	134	10		1	134	14TH AVE. NW QUANDRANT CURB RAMP TYPE - 4B1
21+04	- 21+09	STH 85 LT	4	30	10		-	30	TARRANT PARK - NO CURB RAMP REQUIRED
21+04	- 21+09	STH 85 RT	4	30	10		-	30	TARRANT PARK - NO CURB RAMP REQUIRED
PROJECT TOTALS				123	925	90	7	925	

REMOVING ASPHALTIC SURFACE MILLING

				204.0120	
				REMOVING ASPHALTIC	
				SURFACE MILLING	
STATION	- STATION	AVG. WIDTH (FT)	LOCATION	SY	COMMENTS
CAT. 0010					
2+57	- 17+67	24/38	STH 85	5,446	MAINLINE/NON-PARKING
17+67	- 56+93	34	STH 85	14,831	END B-46-055
58+32	- 136+67	34	STH 85	29,600	BEGIN B-46-055
136+67	- 407+65	30	STH 85	90,327	MAINLINE
368+50	- 374+50	-	STH 85	222	MAINLINE BG LT
368+50	- 374+50	-	STH 85	280	MAINLINE BG RT
9+62	- 9+86	-	'SL'	118	SUPRI LANE
73+36	- 77+84	-	STH 85	243	CTH V TURN LANE
9+10	- 9+80	-	'V'	416	CTH V
9+60	- 9+84	-	'CC'	97	CEDAR COURT
9+29	- 9+84	-	'DM'	241	DORWIN'S MILL RD
10+18	- 10+90	-	'M'	526	CTH M
10+87	- 12+27	-	'RR'	388	RA-DAR RD
10+16	- 10+83	-	'R'	569	CTH R
9+77	- 9+85	-	'KD'	48	KOMRO DRIVE
9+49	- 9+82	-	'VR'	144	VRADENBURG RD
10+16	- 10+48	-	'MM'	175	CTH MM
9+42	- 9+82	-	'MR'	154	MARSH RD
10+29	- 11+06	-	'T'	332	CTH T
9+20	- 9+81	-	'WR'	247	WEISSINGER RD
10+15	- 10+49	-	'10A'	190	10TH AVE.
CAT. 0010 TOTAL				144,594	
CAT. 0020					
5+65.0	- 7+51.5	6	STH 85 LT	125	PARKING LANES
8+55.1	- 12+70.9	6	STH 85 LT	278	PARKING LANES
13+75.9	- 16+80.1	6	STH 85 LT	203	PARKING LANES
5+79.0	- 7+51.5	6	STH 85 RT	115	PARKING LANES
8+55.1	- 12+72.7	6	STH 85 RT	279	PARKING LANES
13+74.7	- 17+03.1	6	STH 85 RT	219	PARKING LANES
CAT. 0020 TOTAL				1,219	
PROJECT TOTAL				145,813	

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CONCRETE CURB AND GUTTER ITEMS

				204.0150	601.0411	601.0557	650.5500	SPV.0090.01
				REMOVING	CONCRETE CURB &	CONCRETE CURB &	CONSTRUCTION	CURE AND SEAL
				CURB & GUTTER	GUTTER 30-INCH	GUTTER 6-INCH	STAKING CURB GUTTER	TREATMENT CONCRETE
					TYPE D	SLOPED 36-INCH	AND CURB & GUTTER	CURB AND GUTTER
				LF	LF	LF	LF	LF
STATION	-	STATION	LOCATION					
10+24	-	10+38	11TH AVE RT	15	15	-	15	15
10+22	-	10+36	12TH AVE LT	16	16	-	16	16
10+15	-	10+36	12TH AVE RT	26	26	-	26	26
7+65	-	7+74	STH 85 RT	9	9	-	9	9
8+35	-	8+44	STH 85 RT	9	9	-	9	9
8+37	-	9+27	STH 85 LT	90	90	-	90	90
11+76	-	12+06	STH 85 LT	30	30	-	30	30
10+20	-	10+38	13TH AVE LT	22	22	-	22	22
10+20	-	10+38	13TH AVE RT	21	21	-	21	21
10+10	-	10+45	14TH AVE LT	42	42	-	42	42
10+40	-	10+54	14TH AVE RT	13	13	-	13	13
17+23	-	17+33	STH 85 RT	9	9	-	9	9
17+88	-	18+01	STH 85 RT	11	11	-	11	11
342+00	-	345+50	STH 85 RT	-	-	350	350	350
PROJECT TOTALS				313	313	350	663	663

CULVERT PIPE CORRUGATED STEEL

		521.3112	521.3118	521.1012	521.1018	COMMENTS
		CULVERT PIPE	CULVERT PIPE	APRON ENDWALLS	APRON ENDWALLS	
		CORRUGATED	CORRUGATED	FOR CULVERT PIPE	FOR CULVERT PIPE	
		STEEL 12-INCH	STEEL 18-INCH	STEEL 12-INCH	STEEL 18-INCH	
STATION	LOCATION	LF	LF	EACH	EACH	
21+07	STH 85 RT	8	-	2	-	2 - 4 LF EXTENSIONS
8+50	DORWIN'S MILL RD RT	48	-	2	-	CONSTRUCT NEW FE
9+60	VRADENBURG RD LT & RT	-	12	-	2	2 - 6 LF EXTENSIONS
10+39	CTH MM LT & RT	-	12	-	2	2 - 6 LF EXTENSIONS
PROJECT TOTALS		56	24	4	4	

NOTE: ALL CULVERT PIPE CORRUGATED STEEL PIPE THICKNESS TO BE MINIMUM .064 INCHES

CULVERT PIPE REINFORCED CONCRETE

		209.2100	520.8000	522.0424	522.0436	522.1024	522.1036	522.2419	522.2619	650.6000
		BACKFILL	CONCRETE	CULVERT PIPE	CULVERT PIPE	APRON ENDWALLS FOR	APRON ENDWALLS FOR	CULVERT PIPE REINFORCED	APRON ENDWALLS FOR CULVERT PIPE	CONSTRUCTION STAKING
		GRANULAR	COLLARS	REINFORCED CONCRETE	REINFORCED CONCRETE	CULVERT PIPE REINFORCED	CULVERT PIPE REINFORCED	CONCRETE HORIZONTAL ELLIPTICAL	REINFORCED CONCRETE HORIZONTAL	PIPE CULVERTS
		GRADE 2	FOR PIPE	CLASS IV 24-INCH	CLASS IV 36-INCH	CONCRETE CLASS IV 24-INCH	CONCRETE CLASS IV 36-INCH	CLASS HE-IV 19X30-INCH	ELLIPTICAL 19X30-INCH	
STATION	LOCATION	CY	EACH	LF	LF	EACH	EACH	LF	EACH	EACH
87+03	STH 85	75	-	44	-	2	-	-	-	1
155+77	STH 85	-	2	4	-	2	-	-	-	-
178+92	STH 85	64	-	-	-	-	-	52	2	1
182+90	STH 85	94	-	-	56	-	2	-	-	1
206+02	STH 85	-	2	-	-	2	-	-	-	-
246+90	STH 85	-	2	-	-	-	2	-	-	-
PROJECT TOTALS		233	6	48	56	6	4	52	2	3

ALL ITEMS ARE PROJECT 7120-02-73, CAT. 0010, UNLESS OTHERWISE NOTED.

BASE AGGREGATE DENSE 3/4-INCH

				305.0110	COMMENTS
				BASE AGGREGATE	
				DENSE 3/4-INCH	
				TON	
STATION	-	STATION	LOCATION		
17+67	-	56+93	STH 85 LT	111	SHOULDERS - END B-46-055
58+32	-	407+65	STH 85 LT	972	SHOULDERS - BEGIN B-46-055
17+67	-	56+93	STH 85 RT	111	SHOULDERS - END B-46-055
58+32	-	407+65	STH 85 RT	972	SHOULDERS - BEGIN B-46-055
86+75	-	87+31	STH 85 LT & RT	12	CULVERT REPLACEMENT PATCH
178+68	-	179+16	STH 85 LT & RT	9	CULVERT REPLACEMENT PATCH
182+58	-	183+22	STH 85 LT & RT	12	CULVERT REPLACEMENT PATCH
86+75	-	87+31	STH 85 LT & RT	80	CULVERT REPLACEMENT TC SHOULDER MAINTENANCE
178+68	-	179+16	STH 85 LT & RT	80	CULVERT REPLACEMENT TC SHOULDER MAINTENANCE
182+58	-	183+22	STH 85 LT & RT	80	CULVERT REPLACEMENT TC SHOULDER MAINTENANCE
67+00	-	69+50	STH 85 RT	27	WIDENING SHOULDER FROM 5' TO 6'
384+00	-	386+00	STH 85 LT	21	WIDENING SHOULDER FROM 5' TO 6'
384+00	-	386+00	STH 85 RT	21	WIDENING SHOULDER FROM 5' TO 6'
MGS TERMINALS				246	MISC. LOCATIONS
8+50	-		'DM'	41	DORWIN'S MILL RD-CONSTRUCT NEW FE
RESTORE AGG. DRIVEWAYS				430	43 DRIVEWAYS @ 10 TONS EACH
UNDISTRIBUTED				200	
PROJECT TOTAL				3,425	

BASE AGGREGATE DENSE 1 1/4-INCH

		305.0120	624.0100	COMMENTS
		BASE AGGREGATE DENSE	WATER	
		1 1/4-INCH	MGAL	
		TON		
STATION	-	STATION	LOCATION	
41+37	-	48+42	STH 85 LT	34
59+27	-	70+02	STH 85 LT & RT	51
259+56	-	266+58	STH 85 LT & RT	106
354+38	-	359+23	STH 85 LT & RT	65
366+60	-	375+75	STH 85 LT & RT	71
86+75	-	87+31	STH 85	177
178+68	-	179+16	STH 85	152
182+58	-	183+22	STH 85	202
338+25	-	346+25	STH 85 RT	197
SIDEWALK REPLACEMENT			LT & RT	25
CONCRETE CURB & GUTTER			LT & RT	47
UNDISTRIBUTED				200
PROJECT TOTALS			1,327	19

3

Division	From/To Station	Location	205.0100 Common Excavation (1)		Salvaged/ Unusable Pavt Material (4)	Available Material (5)	Unexpanded Fill	Expanded Fill (13)	Mass Ordinate +/- (14)	Waste	208.0100 Borrow	Comment:
			Cut (2)	EBS Excavation (3)				Factor 1.25				
Division 1												
EWKDetail-85-SlpFlat-329-330-L	329+75/330+85	STH 85	0	0	0	0	42	52	-52	0	52	
EWKDetail-85-SlpFlat-332-336-R	332+80/336+25	STH 85	1	0	0	1	113	142	-141	0	141	
EWKDetail-85-SlpFlat-338-346-R	338+25/346+25	STH 85	1,121	0	0	1,121	209	261	861	861	0	
EWKDetail-85-SlpFlat-353-356-L	353+50/354+38	STH 85	1	0	0	1	18	23	-22	0	22	
Division 1 Subtotal			1,124	0	0	1,124	382	478	646	861	214	SEE NOTE 15
Grand Total			1,124	0	0	1,124	382	478	646	861	214	
Total Common Exc			1,124									

Notes:
(1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
(2) Salvaged/Unsuable Pavement Material is included in Cut.
(3) EBS Excavation to be backfilled with Select Borrow material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well.
(4) Salvaged/Unusable Pavement Material
(5) Available Material = Cut - Salvaged/Unusuable Pavement Material
(6) Marsh Excavation - to be backfilled with Select Borrow Material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well. Item number 205.0500
(7) Rock Excavation item number 205.0200
(8) Reduced Marsh in Fill - Excavated Marsh material is usable in Fills outside the 1:1 slope. Marsh in Fill Reduction factor = 0.6
(9) Reduced EBS in Fill - Excavated EBS material is usable in Fills outside the 1:1 slope. EBS in Fill Reduction factor = 0.8
(10) Expanded Marsh Backfill - This is to be filled with Select Borrow material. Marsh Backfill Factor = 1.5. Item number 208.1100
(11) Expanded EBS Backfill - This is to be filled with Select Borrow material. EBS Backfill Factor = 1.3. Item number 208.1100
(12) Expanded Rock Factor = 1.1
(13) Expanded Fill Factor = 1.25
Depending on selections: **Expanded Fill = (Unexpanded Fill - Expanded Rock - Reduced Marsh - Reduced EBS) * Fill Factor**
 Or Expanded Fill = (Unexpanded Fill - Expanded Rock - Reduced EBS) * Fill Factor
 Or Expanded Fill = (Unexpanded Fill - Expanded Rock - Reduced Marsh) * Fill Factor
 Or Expanded Fill = (Unexpanded Fill - Expanded Rock) * Fill Factor
(14) The Mass Ordinate + or - Qtycalculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.
(15) Use 646 CY of material from Division 1. Borrow Excavation item number 208.0100

ALL ITEMS ARE PROJECT 7120-02-73, CAT. 0010,
UNLESS OTHERWISE NOTED.

HMA PAVEMENT ITEMS

					LOWER LAYER	UPPER LAYER		
					460.6644	460.6644	455.0605	
					HMA PAVEMENT	HMA PAVEMENT	TACK COAT	
					4 MT 58-34 V	4 MT 58-34 V		
STATION	-	STATION	AVG. WIDTH (FT)	LOCATION	TON	TON	GAL	COMMENTS
CAT. 0010								
2+57.0	-	17+67.0	27	STH 85	381	534	400	MAINLINE WITH NON-PARKING AREAS
17+67.0	-	56+92.8	30	STH 85	1,128	1,316	1,611	MAINLINE-INCLUDES WIDENINGS FOR INTERSECTIONS & GUARDRAIL
58+31.8	-	407+65.0	30	STH 85	9,819	11,455	14,026	MAINLINE-INCLUDES WIDENINGS FOR INTERSECTIONS & GUARDRAIL
10+19	-	10+35	-	'11A'	-	6	4	11TH AVE
10+18	-	10+35	-	'12A'	-	7	5	12TH AVE
9+75.5	-	9+80.5	-	'12A'	-	3	2	12TH AVE
10+18	-	10+36	-	'13A'	-	7	5	13TH AVE
9+76	-	9+81	-	'13A'	-	3	2	13TH AVE
10+21	-	10+50	-	'14AN'	-	7	5	14TH AVE NORTH
9+76	-	09+81	-	'14AS'	-	3	2	14TH AVE SOUTH
9+42	-	09+62	-	'SL'	15	18	11	SUPRI LANE
8+83	-	9+03	-	'V'	41	48	29	CTH V
9+45	-	9+60	-	'CC'	11	13	8	CEDAR COURT
9+09	-	9+29	-	'DM'	23	27	17	DORWIN'S MILL RD
10+90	-	11+10	-	'M'	49	57	35	CTH M
12+27	-	12+47	-	'RR'	34	40	24	RA-DAR RD
10+83	-	11+21	-	'R'	73	85	52	CTH R
9+77	-	9+87	-	'KD'	3	4	3	KOMRO DRIVE
9+29	-	9+49	-	'VR'	17	20	12	VRADENBURG RD
10+48	-	10+69	-	'MM'	19	22	14	CTH MM
9+22	-	9+42	-	'MR'	15	19	12	MARSH RD
11+06	-	11+26	-	'T'	30	35	21	CTH T
9+00	-	9+20	-	'WR'	23	27	17	WEISSINGER RD
10+49	-	10+69.3	-	'10A'	19	22	14	10TH AVE.
CAT. 0010 TOTALS					11,701	13,778	16,331	
CAT. 0020								
5+65.0	-	7+51.5	6	STH 85 LT	-	13	8	PARKING LANES
8+55.1	-	12+70.9	6	STH 85 LT	-	28	17	PARKING LANES
13+75.9	-	16+80.1	6	STH 85 LT	-	20	13	PARKING LANES
5+79.0	-	7+51.5	6	STH 85 RT	-	12	7	PARKING LANES
8+55.1	-	12+72.7	6	STH 85 RT	-	28	17	PARKING LANES
13+74.7	-	17+03.1	6	STH 85 RT	-	22	14	PARKING LANES
CAT. 0020 TOTALS					-	123	76	
PROJECT TOTALS					11,701	13,901	16,407	

PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS

7120-02-76 - HSIP FUNDING
CATERGORY 0010

				211.0400	
				PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS	
STATION	- STATION	LOCATION	STA		
136+24	- 262+31	STH 85 LT	127		
264+88	- 355+45	STH 85 LT	91		
358+01	- 369+41	STH 85 LT	12		
373+72	- 407+65	STH 85 LT	34		
136+24	- 261+69	STH 85 RT	126		
264+38	- 354+89	STH 85 RT	91		
357+45	- 367+82	STH 85 RT	11		
374+63	- 407+65	STH 85 RT	34		
PROJECT TOTAL			526		

ALL ITEMS ARE PROJECT 7120-02-73, CAT. 0010,
UNLESS OTHERWISE NOTED.

ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES

465.0120			
ASPHALTIC SURFACE			
STATION	ALIGNMENT	TON	COMMENT
20+03	STH 85	5	RT, TRACK ENTRANCE
28+90	STH 85	7	RT, BALL FIELD ENTRANCE
30+47	STH 85	12	LT, TARRANT PARK ENT.
33+27	STH 85	12	RT, PE
41+30	STH 85	5	RT, PE
42+20	STH 85	5	RT, PE
103+06	STH 85	6	LT, PE
108+23	STH 85	2	RT, PE
109+97	STH 85	4	RT, PE
115+98	STH 85	2	LT, PE
117+33	STH 85	3	LT, PE
117+54	STH 85	6	RT, PE
119+15	STH 85	4	RT, PE
316+85	STH 85	6	LT, PE
320+04	STH 85	6	RT, PE
348+12	STH 85	7	RT, PE
389+80	STH 85	15	LT, CE
PROJECT TOTAL		107	

HMA PAVEMENT ITEMS

7120-02-76 - HSIP FUNDING
CATEGORY 0010

CATEGORY 0010				460.6644	455.0605	
				HMA PAVEMENT 4 MT 58-34 V	TACK COAT	COMMENTS
STATION	-	STATION	LOCATION	TON	GAL	
17+67	-	56+93	STH 85	159	44	SHOULDER LT TO B-46-055
58+32	-	407+65	STH 85	1,413	389	SHOULDER LT FROM B-46-055
17+67	-	56+93	STH 85	159	44	SHOULDER RT TO B-46-055
58+32	-	407+65	STH 85	1,413	389	SHOULDER RT FROM B-46-055
PROJECT 7120-02-76 TOTALS				3,143	866	

ASPHALTIC SHOULDER RUMBLE STRIPS SINUSOIDAL 2-LANE RURAL

7120-02-76 - HSIP FUNDING
CATEGORY 0010

				SPV.0090.05	
				ASPHALTIC SHOULDER	
				RUMBLE STRIPS SINUSOIDAL	
				2-LANE RURAL	
STATION	- STATION	LOCATION	LF	COMMENTS	
34+70	- 38+31	STH 85 LT	361	54 MPH SPEED ZONE TO CE	
42+39	- 56+68	STH 85 LT	1,429	CE TO BEAR CREEK BRIDGE	
58+57	- 134+73	STH 85 LT	7,616	BEAR CREEK BRIDGE TO CTH M	
138+61	- 225+65	STH 85 LT	8,704	CTH M TO KOMRO DRIVE	
226+82	- 239+18	STH 85 LT	1,236	KOMRO DRIVE TO VRANDENBURG ROAD/CTH MM	
243+13	- 366+32	STH 85 LT	12,319	VRANDENBERG ROAD/CTH MM TO 10TH AVE	
368+15	- 407+65	STH 85 LT	3,950	10 AVE TO END OF PROJECT	
34+70	- 56+68	STH 85 RT	2,198	55 MPH SPEED ZONE TO BEAR CREEK BRIDGE	
58+57	- 69+47	STH 85 RT	1,090	BEAR CREEK BRIDGE TO SUPRI LANE	
71+93	- 72+47	STH 85 RT	54	SUPRI LANE TO CTH V	
78+34	- 111+56	STH 85 RT	3,322	CTH V TO CEDAR COURT	
113+83	- 134+53	STH 85 RT	2,070	CEDAR COURT TO DORWIN'S MILL ROAD	
137+20	- 158+90	STH 85 RT	2,170	DORWIN'S MIL ROAD TO RA-DAR ROAD	
162+28	- 179+34	STH 85 RT	1,706	RA-DAR ROAD TO CTH R	
183+12	- 267+77	STH 85 RT	8,465	CTH R TO MARSH ROAD/CTH T	
271+63	- 356+63	STH 85 RT	8,500	MARSH ROAD/CTHT TO WEISSINGER ROAD	
359+27	- 407+65	STH 85 RT	4,838	WEISSINGER ROAD TO END OF PROJECT	
PROJECT TOTAL			70,028		

INCENTIVE DENSITY PWL & AIR VOIDS HMA PAVEMENT

				460.2005 INCENTIVE DENSITY PWL HMA PAVEMENT	460.2010 INCENTIVE AIR VOIDS HMA PAVEMENT	COMMENTS
STATION	- STATION	LOCATION	WIDTH FOR PWL DENSITY (FT)	DOL	DOL	
2+57	- 17+67	STH 85	27	450	920	ITEM 460.2005 DOES NOT INCLUDE LOWER LEVELING LAYER
17+67	- 56+93	STH 85	24	1,030	2,450	ITEM 460.2005 DOES NOT INCLUDE LOWER LEVELING LAYER
58+32	- 407+65	STH 85	24	9,130	21,280	ITEM 460.2005 DOES NOT INCLUDE LOWER LEVELING LAYER
17+67	- 407+65	STH 85	-	-	3,150	HSIP FUNDED SHOULDERS LESS BRIDGE
2+57	- 17+67	STH 85	-	-	130	CITY PARKING LANES
SIDE ROADS			-	-	850	
PROJECT TOTALS			-	10,610	28,780	

CULVERT PIPE LINERS

		520.9700.S.03 CULVERT PIPE LINERS 48-INCH	520.9750.S CLEANING CULVERT PIPES FOR LINER VERIFICATION
STATION	LOCATION	LF	EACH
236+56	STH 85	160	2
PROJECT TOTALS		160	2

ASPHALTIC SURFACE

		465.0105 ASPHALTIC SURFACE	COMMENT
STATION	- STATION	TONS	
86+75	- 87+31	72	CULVERT REPLACEMENT
178+68	- 179+16	54	CULVERT REPLACEMENT
182+58	- 183+22	72	CULVERT REPLACEMENT
UNDISTRIBUTED		250	
PROJECT TOTAL		448	

ASPHALTIC SURFACE PATCHING

		465.0110 ASPHALTIC SURFACE PATCHING
STATION	LOCATION	TONS
UNDISTRIBUTED	STH 85	100
PROJECT TOTAL		100

ALL ITEMS ARE PROJECT 7120-02-73, CAT. 0010,
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CLEANING CULVERT PIPES

		520.7000 CLEANING CULVERT PIPES	SPV.0060.01 CLEANING CULVERT PIPES MINIMAL
STATION	LOCATION	EACH	EACH
64+55	STH 85	RT	-
155+77	STH 85	LT	-
9+60	VRADENBURG RD		1
10+39	CTH MM		-
246+90	STH 85		-
PROJECT TOTALS		3	2

HMA PAVEMENT PWL TEST STRIPS

				460.0105.S	460.0110.S	
				HMA PAVEMENT	HMA PAVEMENT	
				PWL TEST STRIP	PWL TEST STRIP	
				VOLUMETRICS	DENSITY	
STATION	-	STATION	LOCATION	EACH	EACH	COMMENTS
2+57	-	407+65	STH 85	1	---	PROJECT LOWER & UPPER LAYERS SAME MIX TYPE
2+57	-	18+35	STH 85	---	1	MILL FULL DEPTH TO BASE COURSE
18+35		407+65	STH 85	---	1	MILL PARTIAL DEPTH
PROJECT TOTALS				1	2	

INCENTIVE IRI RIDE

		740.0440 INCENTIVE IRI RIDE	COMMENTS
STATION	- STATION	DOL	
2+57	- 34+70	STH 85	2,440
34+70	- 407+65	STH 85	28,260
PROJECT TOTAL			30,700

POSTED SPEED VARIES FROM 30-40 MPH
POSTED SPEED=55 MPH, ADVISORY CURVE SPEEDS=45-50 MPH

ASPHALTIC CENTER LINE RUMBLE STRIPS SINUSOIDAL 2-LANE RURAL

		SPV.0090.04 ASPHALTIC CENTER LINE RUMBLE STRIPS SINUSOIDAL 2-LANE RURAL	COMMENTS
STATION	- STATION	LF	
34+70	- 40+00	530	55 MPH SPEED ZONE TO CE
42+00	- 56+68	1,468	CE TO BEAR CREEK BRIDGE
58+57	- 68+84	1,027	BEAR CREEK BRIDGE TO SUPRI LANE
72+84	- 75+10	226	SUPRI LANE TO CTH V
79+10	- 111+00	3,190	CTH V TO CEDAR COURT
115+00	- 134+05	1,905	CEDAR COURT TO CTHM/DORWIN'S MILL ROAD
138+17	- 159+00	2,083	CTHM/DORWIN'S MIL ROAD TO RA-DAR ROAD
163+00	- 179+09	1,609	RA-DAR ROAD TO CTH R
183+09	- 225+52	4,243	CTH R TO KOMRO DRIVE
227+52	- 238+56	1,104	KOMRO DRIVE TO VRANDENBURG ROAD/CTH MM
244+58	- 266+88	2,230	VRANDENBURG ROAD/CTH MM TO MARSH ROAD/CTH T
271+65	- 356+48	8,483	MARSH ROAD/CTHT TO WEISSINGER ROAD
360+48	- 365+43	495	WEISSINGER ROAD TO 10TH AVE
369+43	- 407+65	3,822	10TH AVE TO END OF PROJECT
PROJECT TOTAL		32,415	

SHAPING SHOULDERS

				305.0500
				SHAPING
				SHOULDERS
STATION	-	STATION	LOCATION	STA
17+67	-	55+22	STH 85 LT	38
59+17	-	407+65	STH 85 LT	349
17+67	-	55+17	STH 85 RT	38
60+57	-	407+65	STH 85 RT	348
PROJECT TOTAL				773

ASPHALTIC FLUMES

				465.0315
				ASPHALTIC
				FLUMES
STATION	LOCATION	SY	COMMENTS	
60+57	STH 85 RT	9	EXACT LOCATION DETERMINED BY ENGINEER IN THE FILED	
345+50	STH 85 RT	20		
PROJECT TOTAL			29	

FINISHING ROADWAY

		213.0100
		FINISHING ROADWAY
		01. 7120-02-73
		EACH
LOCATION		
PROJECT LIMITS		1
PROJECT TOTAL		1

ALL ITEMS ARE PROJECT 7120-02-73, CAT. 0010, UNLESS OTHERWISE NOTED.

GUARDRAIL AND ENERGY ABSORBING TERMINALS

				614.0305	614.0515	614.0370	614.2300	614.2330	614.2340	614.2610
				SPBG	GUARDRAIL	SPBG ENERGY	MGS	MGS	MGS	MGS GUARDRAIL
				CLASS A	STIFFENED LHW	ABSORBING TERMINAL	GUARDRAIL 3	GUARDRAIL 3K	GUARDRAIL 3L	EAT TERMINAL
STATION	-	STATION	LOCATION	LF	LF	LF	LF	LF	LF	EACH
41+46.3	-	41+99.4	STH 85 LT	-	-	-	-	-	-	1
41+99.4	-	45+99.4	STH 85 LT	-	-	-	-	400.0	-	-
45+99.4	-	46+86.9	STH 85 LT	-	-	-	87.5	-	-	-
46+86.9	-	47+40.0	STH 85 LT	-	-	-	-	-	-	1
59+71.7	-	50+24.8	STH 85 LT	-	-	-	-	-	-	1
60+24.8	-	50+74.8	STH 85 LT	-	-	-	50.0	-	-	-
60+74.8	-	54+74.8	STH 85 LT	-	-	-	-	400.0	-	-
64+74.8	-	58+62.3	STH 85 LT	-	-	-	387.5	-	-	-
68+62.3	-	59+15.4	STH 85 LT	-	-	-	-	-	-	1
60+56.6	-	51+06.6	STH 85 RT	50	-	-	-	-	-	-
61+06.6	-	53+31.6	STH 85 RT	-	225	-	-	-	-	-
63+31.6	-	53+81.6	STH 85 RT	-	-	1	-	-	-	-
261+72.7	-	262+25.8	STH 85 LT	-	-	-	-	-	-	1
262+25.8	-	262+75.8	STH 85 LT	-	-	-	-	50.0	-	-
262+75.8	-	263+88.3	STH 85 LT	-	-	-	-	-	112.5	-
263+88.3	-	264+88.3	STH 85 LT	-	-	-	-	100.0	-	-
264+88.3	-	265+41.4	STH 86 LT	-	-	-	-	-	-	1
260+72.7	-	261+25.8	STH 85 RT	-	-	-	-	-	-	1
261+25.8	-	262+75.8	STH 85 RT	-	-	-	-	150.0	-	-
262+75.8	-	263+88.3	STH 85 RT	-	-	-	-	-	112.5	-
263+88.3	-	264+25.8	STH 85 RT	-	-	-	-	37.5	-	-
264+25.8	-	264+78.9	STH 85 RT	-	-	-	-	-	-	1
355+37.0	-	355+90.1	STH 85 LT	-	-	-	-	-	-	1
355+90.1	-	356+65.1	STH 85 LT	-	-	-	-	75.0	-	-
356+65.1	-	357+52.6	STH 85 LT	-	-	-	87.5	-	-	-
357+52.6	-	358+05.7	STH 85 LT	-	-	-	-	-	-	1
354+79.3	-	355+32.4	STH 85 RT	-	-	-	-	-	-	1
355+32.4	-	356+94.9	STH 85 RT	-	-	-	162.5	-	-	-
356+94.9	-	357+48.0	STH 85 RT	-	-	-	-	-	-	1
369+33.7	-	369+86.8	STH 85 LT	-	-	-	-	-	-	1
369+86.8	-	370+11.8	STH 85 LT	-	-	-	25.0	-	-	-
370+11.8	-	372+86.8	STH 85 LT	-	-	-	-	275.0	-	-
372+86.8	-	373+11.8	STH 84 LT	-	-	-	25.0	-	-	-
373+11.8	-	373+64.9	STH 85 LT	-	-	-	-	-	-	1
367+77.1	-	368+30.2	STH 85 RT	-	-	-	-	-	-	1
368+30.2	-	373+55.2	STH 85 RT	-	-	-	-	525.0	-	-
373+55.2	-	374+05.2	STH 85 RT	-	-	-	50.0	-	-	-
374+05.2	-	374+58.3	STH 85 RT	-	-	-	-	-	-	1
PROJECT TOTALS				50	225	1	875	2,012.5	225	16

MOBILIZATION

619.1000					
MOBILIZATION					
STATION	-	STATION	LOCATION	EACH	COMMENTS
PROJECT 7120-02-73					
2+57	-	407+65	STH 85	0.9	PROJ 7120-02-73
PROJECT TOAL				0.9	
PROJECT 7120-03-76 - HSIP FUNDING					
2+57	-	407+65	STH 85	0.1	PROJ 7120-02-76 - HSIP FUNDING
PROJECT TOTAL				0.1	
TOTAL				1.0	

RIPRAP ITEMS

STATION	LOCATION		606.0100	606.0200	645.0130	645.0120
			RIPRAP LIGHT CY	RIPRAP MEDIUM CY	GEOTEXTILE TYPE R SY	GEOTEXTILE TYPE H R SY
45+82	STH 85	LT	1	-	5	-
64+41	STH 85	LT	7	-	23	-
87+03	STH 85	LT	2	-	9	-
87+03	STH 85	RT	2	-	9	-
155+77	STH 85	LT	3	-	14	-
155+77	STH 85	RT	2	-	8	-
178+92	STH 85	LT	3	-	12	-
178+92	STH 85	RT	3	-	12	-
182+90	STH 85	LT	-	4	-	14
182+90	STH 85	RT	-	4	-	14
206+02	STH 85	LT	2	-	8	-
206+02	STH 85	RT	2	-	8	-
236+56	STH 85	LT	-	5	-	16
246+90	STH 85	RT	2	-	8	-
PROJECT TOTALS			29	13	116	44

INLET COVERS

STATION	LOCATION		611.0600	611.0624	611.8115
			INLET COVERS TYPE A EACH	INLET COVERS TYPE H EACH	ADJUSTING INLET COVERS EACH
7+69	STH 85	RT	1	-	-
8+39	STH 85	RT	-	1	-
8+39	STH 85	LT	-	1	-
17+28	STH 85	RT	1	-	-
17+95	STH 85	RT	1	-	-
372+18	STH 85	RT	-	-	1
PROJECT TOTALS			3	2	1

SALVAGED RAIL

614.0920					
SALVAGED RAIL					
STATION	-	STATION	LOCATION	LF	
42+13	-	46+72	STH 85 LT	459	
61+30	-	65+31	STH 85 LT	401	
60+57	-	63+79	STH 85 RT	322	
262+68	-	263+97	STH 85 LT	129	
262+74	-	263+89	STH 85 RT	115	
355+70	-	357+20	STH 85 LT	150	
355+72	-	357+18	STH 85 RT	146	
369+57	-	373+44	STH 85 LT	387	
368+98	-	373+92	STH 85 RT	494	
PROJECT TOTALS				2,603	

ALL ITEMS ARE PROJECT 7120-02-73, CAT. 0010,
UNLESS OTHERWISE NOTED.

BARRIER SYSTEM GRADING SHAPING FINISHING

			614.0010		EXCAVATION COMMON*	FILL ADJUSTED (X1.25)*	BORROW*	SALVAGED TOPSOIL*	FERTILIZER TYPE B* CWT	SEEDING MIX. NO. 10* LB	TEMP SEED* LB	MULCH* SY	COMMENTS
STATION	-	STATION	LOCATION	SHAPING FINISHING EACH									
41+46.3	-	47+40.0	LT	1	30	173	143	1,060	0.7	15	29	860	POST #1 TO POST #1
59+71.7	-	69+15.4	LT	1	154	42	(112)	1,341	0.9	19	37	810	POST #1 TO POST #1
60+56.6	-	63+84.7	RT	1	39	160	121	819	0.6	12	23	340	GUARDRAIL TO POST #1
261+72.7	-	265+41.4	LT	1	9	122	113	729	0.5	10	20	480	POST #1 TO POST #1
260+72.7	-	264+78.9	RT	1	15	225	210	722	0.5	10	20	490	POST #1 TO POST #1
354+38.0	-	359+22.7	LT	1	5	289	284	869	0.6	12	24	510	POST #1 TO POST #1
353+62.3	-	358+64.8	RT	1	7	104	97	629	0.4	9	17	360	POST #1 TO POST #1
369+33.7	-	373+64.9	LT	2	6	128	122	819	0.6	12	23	610	POST #1 TO POST #1
367+77.1	-	374+58.3	RT	2	27	130	103	1,058	0.7	15	29	600	POST #1 TO POST #1
PROJECT TOTALS				11	292	1,373	1,081	8,046	5.5	114	222	5,060	

* FOR INFORMATION ONLY

MAINTENANCE AND REPAIR OF HAUL ROADS

			618.0100
			MAINTENANCE AND REPAIR OF HAUL ROADS EACH
LOCATION			
PROJECT	STH 85		1
PROJECT TOTAL			1

FIELD OFFICE

			642.5001
			FIELD OFFICE TYPE B EACH
LOCATION			
PROJECT	STH 85		1
PROJECT TOTAL			1

LANDSCAPING ITEMS

				625.0500	627.0200	629.0210	630.0110	630.0200	
				SALVAGED TOPSOIL	MULCHING	FERTILIZER TYPE B	SEEDING MIXTURE NO. 10	SEEDING TEMPORARY	
STATION	-	STATION	LOCATION	SY	SY	CWT	LB	LB	COMMENTS
329+75	-	330+85	STH 85 LT	206	329	0.3	5	10	SLOPE FLATTENING
332+80	-	336+25	STH 85 RT	580	964	0.7	14	28	SLOPE FLATTENING
338+25	-	346+25	STH 85 RT	2,182	1,705	2.0	42	84	SLOPE FLATTENING
353+50	-	354+38	STH 85 LT	118	216	0.2	3	6	SLOPE FLATTENING
87+03			STH 85	45	-	0.1	1	2	CULVERT REPLACEMENT
178+92			STH 85	56	-	0.1	1	2	CULVERT REPLACEMENT
182+90			STH 85	80	-	0.1	2	4	CULVERT REPLACEMENT
8+50			'DM'	134	134	0.1	2	4	CONSTRUCT NEW FE
INTERSECTIONS				188	-	0.2	3	6	11TH AVE., 12TH AVE., 13TH AVE., 14TH AVE., TARRANT PARK
UNDISTRIBUTED				897	837	1.0	18	36	
PROJECT TOTALS				4,486	4,185	4.8	91	182	

EROSION MAT CLASS I TYPE B

628.2004 EROSION MAT CLASS I TYPE B						COMMENTS
STATION	-	STATION	LOCATION	SY		
4+85	-	5+04	STH 85	LT	8	11TH AVE. NW QUADRANT
7+67	-	7+85	STH 85	LT	9	12TH AVE. SW QUADRANT
8+22	-	8+45	STH 85	LT	23	12TH AVE. NW QUADRANT
11+80	-	11+99	STH 85	LT	23	SIDEWALK REPLACEMENT
12+90	-	13+05	STH 85	LT	7	13TH AVE. SW QUADRANT
13+42	-	13+60	STH 85	LT	12	13TH AVE. NW QUADRANT
16+94	-	17+19	STH 85	LT	23	14TH AVE. SW QUANDRANT
17+50	-	17+74	STH 85	LT	37	14TH AVE. NW QUANDRANT
21+04	-	21+09	STH 85	LT	6	TARRANT PARK
21+04	-	21+09	STH 85	RT	45	TARRANT PARK
46+75	-	48+50	STH 85	LT	217	BARRIER SYSTEM GRADING SHAPING FINISHING
59+60	-	60+25	STH 85	LT	60	BARRIER SYSTEM GRADING SHAPING FINISHING
65+00	-	70+00	STH 85	LT	492	BARRIER SYSTEM GRADING SHAPING FINISHING
60+60	-	64+05	STH 85	RT	472	BARRIER SYSTEM GRADING SHAPING FINISHING
87+03	-		STH 85	LT & RT	45	CULVERT REPLACEMENT
155+77	-		STH 85	LT & RT	62	CULVERT EXTENSION
178+92	-		STH 85	LT & RT	56	CULVERT REPLACEMENT
182+90	-		STH 85	LT & RT	80	CULVERT REPLACEMENT
206+02	-		STH 85	LT & RT	45	CULVERT EXTENSION
246+90	-		STH 85	LT & RT	45	CULVERT EXTENSION
261+00	-	262+22	STH 85	LT	78	BARRIER SYSTEM GRADING SHAPING FINISHING
264+25	-	265+95	STH 85	RT	200	BARRIER SYSTEM GRADING SHAPING FINISHING
325+80	-	326+20	STH 85	RT	36	REGRADE DITCH
338+50	-	346+20	STH 85	RT	1,600	SLOPE FLATTENING
353+50	-	355+90	STH 85	LT	245	BARRIER SYSTEM GRADING SHAPING FINISHING
354+00	-	355+25	STH 85	RT	123	BARRIER SYSTEM GRADING SHAPING FINISHING
369+10	-	372+25	STH 85	LT	334	BARRIER SYSTEM GRADING SHAPING FINISHING
373+15	-	374+25	STH 85	LT	100	BARRIER SYSTEM GRADING SHAPING FINISHING
367+50	-	370+00	STH 85	RT	167	BARRIER SYSTEM GRADING SHAPING FINISHING
371+75	-	375+75	STH 85	RT	345	BARRIER SYSTEM GRADING SHAPING FINISHING
9+60	-		VRADENBURG RD	LT & RT	23	CULVERT EXTENSION
10+39	-		CTH MM	LT & RT	23	CULVERT EXTENSION
PROJECT TOTAL					5,041	

TEMPORARY DITCH CHECKS

628.7504						TEMPORARY DITCH CHECKS
STATION	-	STATION	LOCATION	NO. OF DITCH CHECKS	ESTIMATED LENGTH PER DITCH CHECK	
				EACH	FT	LF
325+80	-	326+20	STH 85 LT	2	12	24
338+50	-	342+00	STH 85 LT	4	12	48
345+50	-	346+20	STH 85 LT	2	12	24
PROJECT TOTAL						96

ALL ITEMS ARE PROJECT 7120-02-73, CAT. 0010,
UNLESS OTHERWISE NOTED.

TEMPORARY PEDESTRIAN ACCOMMODATION

644.1420.S TEMPORARY PEDESTRIAN SURFACE PLYWOOD						644.1601.S TEMPORARY CURB RAMP	644.1810.S TEMPORARY PEDESTRIAN BARRICADE	COMMENT
STATION	-	STATION	LOCATION	SF		EACH	LF	
4+95	-	7+70	STH 85 LT	-		-	275	SAFETY FENCE ON PAVEMENT 5 FEET FROM GUTTER
8+35	-	12+85	STH 85 LT	-		-	450	SAFETY FENCE ON PAVEMENT 5 FEET FROM GUTTER
13+55	-	16+90	STH 85 LT	-		-	335	SAFETY FENCE ON PAVEMENT 5 FEET FROM GUTTER
17+47	-	17+54	STH 85 LT	-		1	-	14TH AVE NE QUAD - PERPENDICULAR TO CURB
17+58	-	18+35	STH 85 LT	320		-	-	FROM TEMP CURB RAMP TO EXISTING SIDEWALK
21+10	-	21+15	STH 85 LT	64		-	-	TARRANT PARK CROSSING - NO TEMP RAMP REQUIRED
21+10	-	21+15	STH 85 RT	64		-	-	TARRANT PARK CROSSING - NO TEMP RAMP REQUIRED
PROJECT TOTALS				448		1	1,060	

SILT FENCE ITEMS

628.1504 SILT FENCE						628.1905 SILT FENCE MAINTENANCE
STATION	-	STATION	LOCATION	LF		LF
41+50	-	48+50	STH 85 LT	700		700
59+50	-	64+85	STH 85 LT	535		535
60+50	-	64+10	STH 85 RT	360		360
260+60	-	263+25	STH 85 LT	265		265
263+35	-	266+50	STH 85 LT	315		315
259+50	-	263+25	STH 85 RT	375		375
263+35	-	266+10	STH 85 RT	275		275
329+50	-	331+00	STH 85 LT	150		150
332+75	-	336+50	STH 85 RT	375		375
353+50	-	356+38	STH 85 LT	288		288
356+44	-	358+75	STH 85 LT	231		231
353+50	-	356+38	STH 85 RT	288		288
356+44	-	357+85	STH 85 RT	141		141
368+15	-	374+50	STH 85 LT	635		635
366+50	-	376+00	STH 85 RT	950		950
UNDISTRIBUTED				1,471		1,471
PROJECT TOTALS				7,354		7,354

INLET PROTECTION

628.7015 INLET PROTECTION			
STATION	LOCATION	TYPE	EACH
5+00	STH 85	LT	1
7+69	STH 85	RT	1
8+39	STH 85	RT	1
8+39	STH 85	LT	1
12+89	STH 85	LT	1
13+59	STH 85	LT	1
17+28	STH 85	RT	1
17+95	STH 85	RT	1
372+18	STH 85	RT	1
PROJECT TOTAL			9

PERMANENT SIGNING ITEMS

637.2210 SIGNS				634.0309 POSTS TUBULAR STEEL 2X2-INCH			
STATION (APPROX.)	LOCATION	SIGN NO.	SIGN CODE	SIGN MESSAGE	SIGN SIZE W X H (INCHES)	TYPE II REFLECTIVE H SF	X 9.5-FT EACH
CAT. 0020							
5+90	RT	6	R7-2D	NO PARKING 2:00 AM TO 6:00 AM	18 X 24	3.00	1
7+60	LT	8	R7-2D	NO PARKING 2:00 AM TO 6:00 AM	18 X 24	3.00	1
9+35	RT	10	R7-2D	NO PARKING 2:00 AM TO 6:00 AM	18 X 24	3.00	1
12+65	LT	12	R7-2D	NO PARKING 2:00 AM TO 6:00 AM	18 X 24	3.00	1
13+80	RT	14	R7-2D	NO PARKING 2:00 AM TO 6:00 AM	18 X 24	3.00	1
16+95	LT	16	R7-2D	NO PARKING 2:00 AM TO 6:00 AM	18 X 24	3.00	1
CAT. 0020 TOTALS						18.00	6
PROJECT TOTALS						18.00	6

CULVERT PIPE CHECKS

628.7555 CULVERT PIPE CHECKS		
STATION	LOCATION	EACH
21+07	STH 85	1
87+02	STH 85	5
155+77	STH 85	5
178+92	STH 85	5
182+90	STH 85	7
206+02	STH 85	5
246+90	STH 85	5
UNDISTRIBUTED		8
PROJECT TOTAL		41

MOBILIZATIONS EROSION CONTROL

628.1905 MOBILIZATION EROSION CONTROL			628.1910 MOBILIZATION EMERGENCY EROSION CONTROL		
LOCATION		EACH			EACH
PROJECT LIMITS	STH 85	4			2
PROJECT TOTALS		4			2

TEMPORARY RUMBLE STRIPS

643.0310.S TEMPORARY PORTABLE RUMBLE STRIPS		
LOCATION		LS
PROJECT	STH 85	1
PROJECT TOTAL		1

TRAFFIC CONTROL ITEMS

		643.0300 TRAFFIC CONTROL		643.0900 TRAFFIC CONTROL		643.0410 TRAFFIC CONTROL BARRICADES		643.0705 TRAFFIC CONTROL WARNING LIGHTS		643.5000 TRAFFIC CONTROL		COMMENTS
LOCATION	DAYS (CALENDAR)	DRUMS (COUNT)	DRUMS DAY	SIGNS (COUNT)	SIGNS DAY	BARRI- CADES (COUNT)	TYPE II DAY	LIGHTS (COUNT)	TYPE A DAY	EACH		
PROJECT	-	-	-	-	-	-	-	-	-	1		
PROJECT, ADVANCE WARNING	75	-	-	10	750	-	-	-	-	-	SEE SDD 15C4-5 FOR 5 SIGNS ON EACH END.	
PROJECT, SIDE ROAD WARNING	75	-	-	20	1,500	-	-	-	-	-	SEE SDD 15C4-5 FOR ROAD WORK AHEAD ON EACH SIDEROAD.	
PROJECT, GRAVEL SURFACE	6	-	-	34	204	-	-	-	-	-	SEE TC DETAIL FOR LOOSE GRAVEL & 45 MPH SIGNS.	
PROJECT AS NEEDED	6	-	-	26	156	-	-	-	-	-	SEE TC DETAIL FOR NO CENTER LINE & DO NOT PASS SIGNS.	
PROJECT, MILLED SURFACE	2	-	-	14	28	-	-	-	-	-	SEE TC DETAIL FOR GROOVED PAVEMENT & SDD 15D39-2 SIGNS	
PROJECT AS NEEDED	10	-	-	13	130	-	-	-	-	-	SEE TC DETAIL FOR LOW SHOULDER SIGNS.	
GUARDRAIL REMOVAL	5	32	160	-	-	-	-	-	-	-	---	
CURB REPAIR & RAMPS / SIDEWALK	6	75	450	18	108	15	90	15	90	-	SEE TC DETAIL FOR PEDESTRIAN ACCOMMODATION.	
UNDISTRIBUTED	21	10	210	4	84	1	21	2	42	-	---	
PROJECT TOTALS			820		2,960		111		132	1		

ALL ITEMS ARE PROJECT 7120-02-73, CAT. 0010,
UNLESS OTHERWISE NOTED.

LOCATING NO-PASSING ZONES

648.0100 LOCATING NO-PASSING ZONES				
STATION	-	STATION	LOCATION	MI
34+70	-	407+65	STH 85	7.063
PROJECT TOTAL				7.063

OBJECT MARKER SIGNS AND POSTS

		633.0100 TYPE 2 MARKER SIGN CODE		637.2230 SIGNS TYPE II REFLECTIVE F SF
STATION	LOCATION	DELINATOR POSTS STEEL EACH		
60+55	17.5' RT	W5-53	1	0.5
64+88	18' LT	W5-53	1	0.5
261+75	17' RT	W5-53	1	0.5
264+38	18' LT	W5-53	1	0.5
PROJECT TOTALS			4	2.0

CULVERT END MARKERS

633.5200 MARKERS CULVERT END EACH		
STATION	LOCATION	
33+03	RT & LT	2
45+92	RT & LT	2
64+44	RT & LT	2
87+02	RT & LT	2
122+19	RT & LT	2
141+58	RT & LT	2
155+77	RT & LT	2
178+92	RT & LT	2
182+90	RT & LT	2
206+02	RT & LT	2
236+56	RT & LT	2
246+90	RT & LT	2
263+32	RT & LT	2
311+22	RT & LT	2
326+01	RT & LT	2
356+42	RT & LT	2
371+29	RT & LT	2
PROJECT TOTAL		34

ALL ITEMS ARE PROJECT 7120-02-73, CAT. 0010,
UNLESS OTHERWISE NOTED.

MARKING LINES

			SPV.0090.06 MARKING LINE WET REFLECTIVE EPOXY 4-INCH	LF	646.1040 MARKING LINE GROOVED WET REFLECTIVE EPOXY 4-INCH	LF	646.3020 MARKING LINE EPOXY 8-INCH	LF	646.4520 MARKING LINE SAME DAY EPOXY 4-INCH	LF	646.5020 MARKING ARROW EPOXY EACH	646.7420 MARKING CROSSWALK EPOXY TRANSVERSE LINE LF	646.8120 MARKING CURB EPOXY LF
STATION	-	STATION	LOCATION										
2+50	-	407+75	STH 85 CENTERLINE	---	---	---	---	42,722	---	---	---	---	---
34+70	-	407+75	STH 85 CENTERLINE	38,935	---	---	---	---	---	---	---	---	---
17+90	-	407+75	STH 85 EDGELINES	---	77,970	---	---	---	---	---	---	---	---
2+55	-	4+40	STH 85 WB TURN LANES	---	---	370	---	---	2	---	---	---	---
4+85			LT, 11TH AVE CURB	---	---	---	---	---	---	---	---	---	15
7+84			LT, 12TH AVE CURB	---	---	---	---	---	---	---	---	---	16
8+23			LT, 12TH AVE CURB	---	---	---	---	---	---	---	---	---	25
13+05			LT, 13TH AVE CURB	---	---	---	---	---	---	---	---	---	22
13+44			LT, 13TH AVE CURB	---	---	---	---	---	---	---	---	---	21
17+15			LT, 14TH AVE CURB	---	---	---	---	---	---	---	---	---	40
17+49			LT, 14TH AVE CURB	---	---	---	---	---	---	---	---	---	26
21+07			STH 85 CROSSWALK	---	---	---	---	---	---	60	---	---	---
PROJECT TOTALS				38,935	77,970	370	42,722	2	60	165			

TEMPORARY MARKING LINE PAINT 4-INCH

649.0105 TEMPORARY MARKING LINE PAINT 4-INCH			
STATION	-	STATION	LOCATION
253+32	-	356+46	STH 85 MILLED SURFACE
17+67	-	407+65	STH 85 LEVELLING SURFACE
PROJECT TOTAL			40,884

SLOPE REPAIR CULVERT END

			SPV.0060.02							
			SLOPE REPAIR	EXCAVATION	FILL ADJUSTED	BORROW*	SALVAGED	FERTILIZER	SEEDING MIX.	
			CULVERT END	COMMON*	(X1.25)*		TOPSOIL*	TYPE B*	NO. 10*	TEMP SEED*
STATION	LOCATION		EACH	CY	CY	CY	SY	CWT	LB	LB
21+07	STH 85	RT	2	-	38	38	45	0.1	1	2
155+77	STH 85	LT & RT	2	-	51	51	62	0.1	1	2
206+02	STH 85	LT & RT	2	-	38	38	45	0.1	1	2
246+90	STH 85	LT & RT	2	-	38	38	45	0.1	1	2
9+60	'VR'	LT & RT	2	-	19	19	23	0.1	1	1
10+39	'MM'	LT & RT	2	-	19	19	23	0.1	1	1
PROJECT TOTAL			12	0	203	203	243	1	6	10

*FOR INFORMATION ONLY. INCLUDES BOTH INLET AND DISCHARGE ENDS OF CULVERT PIPE.

REGRADE DITCH

			SPV.0090.02 REGRADE DITCH	EXCAVATION COMMON*	FILL ADJUSTED (X1.25)*	BORROW*	SALVAGED TOPSOIL*	FERTILIZER TYPE B*	SEEDING MIX. NO. 10*	TEMP SEED*	MULCH*
STATION	-	STATION	LOCATION	LF	CY	CY	SY	CWT	LB	LB	SY
325+80	-	326+20	STH 85 RT	40	74	-	-	112	0.1	2	3
PROJECT TOTAL				40	74	0	0	112	0.1	2	3

*FOR INFORMATION ONLY.

CONSTRUCTION STAKING ROADWAY ITEMS

				650.4500	650.5000	650.9920	COMMENTS
				CONSTRUCTION STAKING	CONSTRUCTION STAKING	CONSTRUCTION STAKING	
STATION	- STATION	LOCATION		SUBGRADE	BASE	SLOPE STAKES	
				LF	LF	LF	
329+75	- 330+85	STH 85	LT	-	-	110	SLOPE FLATTENING
332+80	- 336+25	STH 85	RT	-	-	345	SLOPE FLATTENING
338+25	- 346+25	STH 85	RT	800	800	800	SLOPE FLATTENING
353+50	- 354+38	STH 85	LT	-	-	88	SLOPE FLATTENING
PROJECT TOTAL				800	800	1,343	

CONSTRUCTION STAKING SUPPLEMENTAL CONTROL

		650.9910
		CONSTRUCTION STAKING
		SUPPLEMENTAL CONTROL
		(PROJECT) 01. 7120-02-73
LOCATION		LS
PROJECT	STH 85	1
PROJECT TOTAL		1

CONSTRUCTION STAKING REFERENCE

				650.8000
				CONSTRUCTION STAKING
				RESURFACING REFERENCE
STATION	- STATION	LOCATION		LF
2+57	- 56+93	STH 85		5,435
58+32	- 407+65	STH 85		34,933
PROJECT TOAL				40,369

PREPARATION OF FOUNDATION FOR ASPHALTIC PAVING

		SPV.0105.01
		PREPARATION OF FOUNDATION FOR
		ASPHALTIC PAVING
LOCATION		LS
PROJECT	STH 85	1
PROJECT TOTAL		1

MILLING AND REMOVING TEMPORARY JOINT

		SPV.0105.03
		MILL AND REMOVING
		TEMPORARY JOINT
LOCATION		LS
PROJECT	STH 85	1
PROJECT TOTAL		1

MATERIAL TRANSFER VEHICLE

		SPV.0105.02
		MATERIAL TRANSFER
		VEHICLE
LOCATION		LS
PROJECT	STH 85	1
PROJECT TOTAL		1

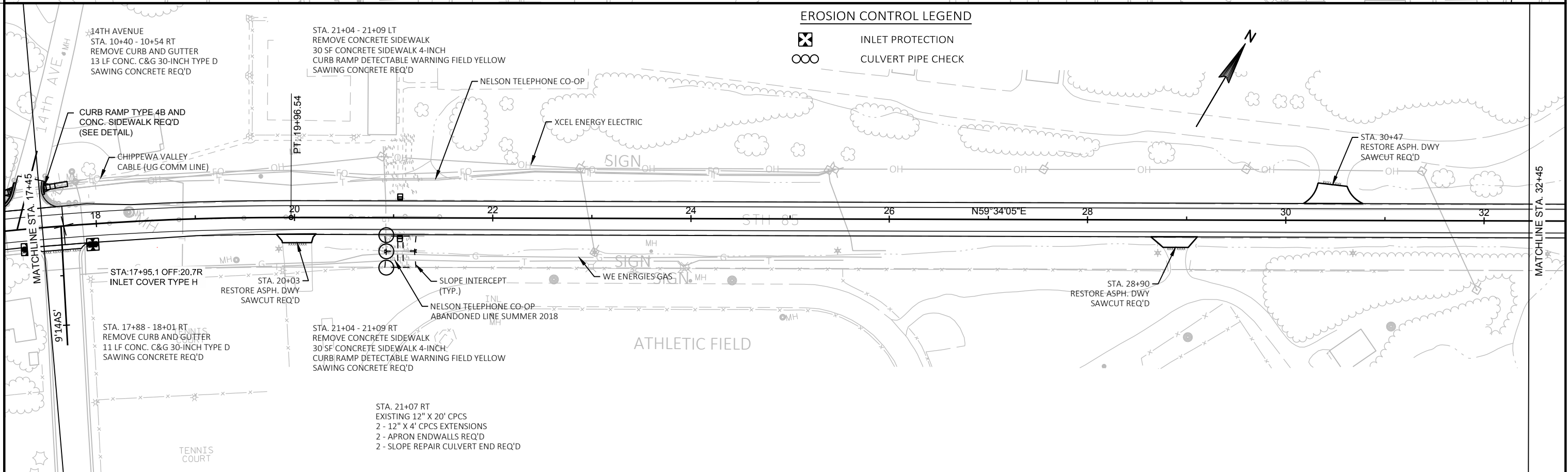
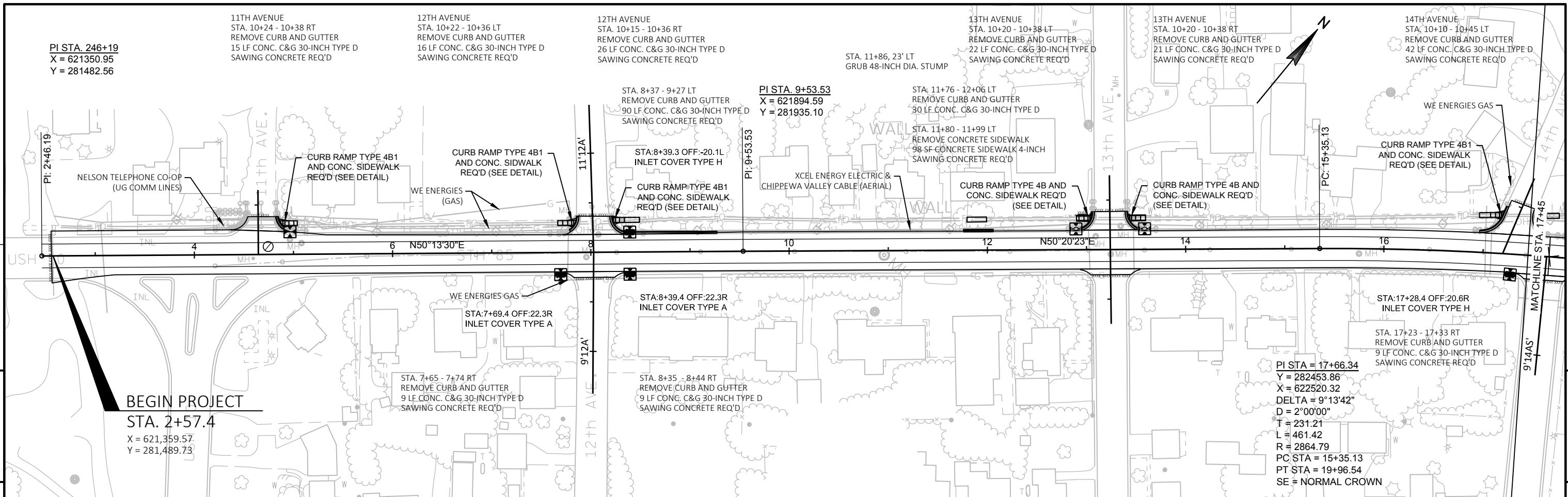
REHEATING HMA PAVEMENT LONGITUDINAL JOINTS

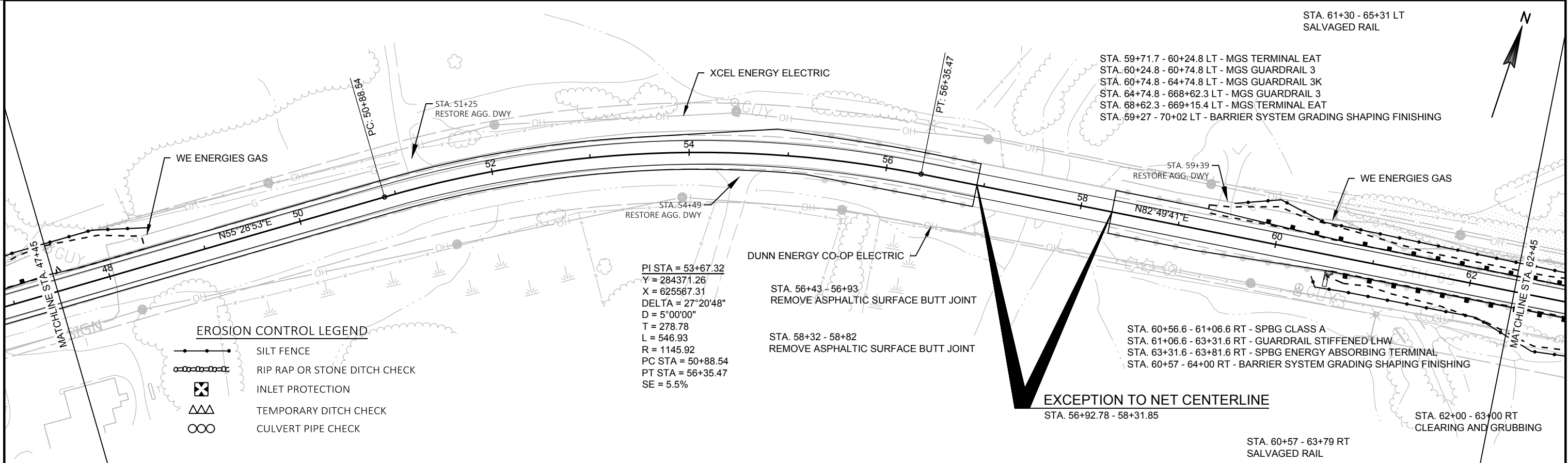
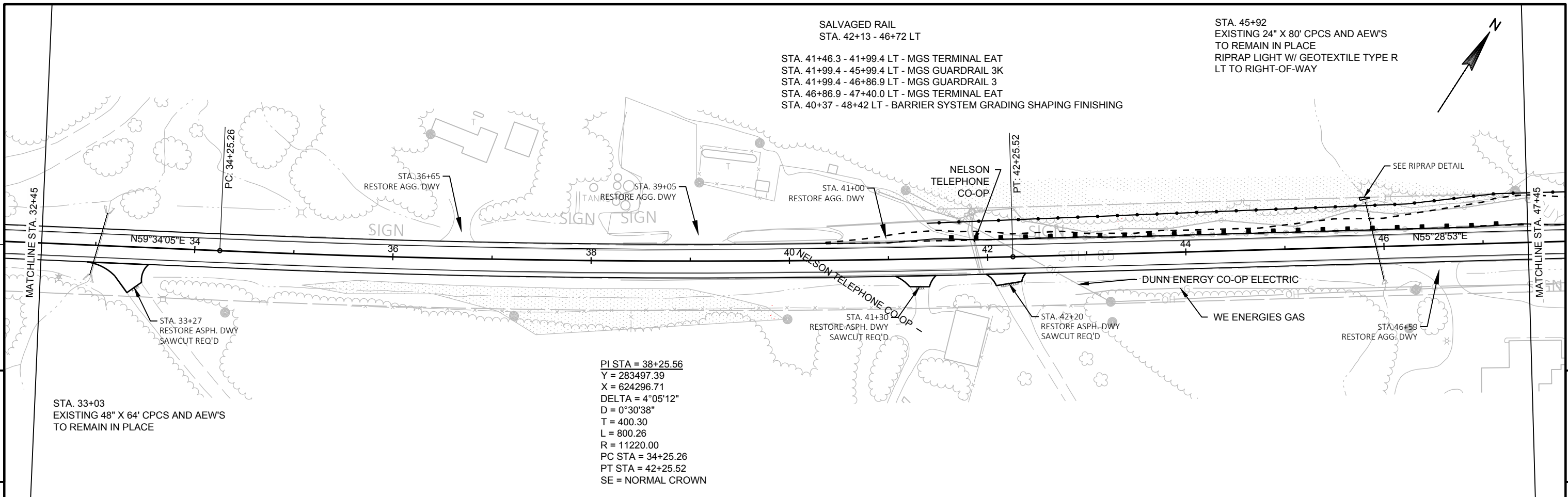
				SPV.0170.01.
				REHEATING HMA PAVEMENT
				LONGITUDINAL JOINTS
STATION	- STATION	LOCATION		STA
2+57	- 56+93	STH 85		54
58+32	- 407+65	STH 85		349
PROJECT TOAL				403

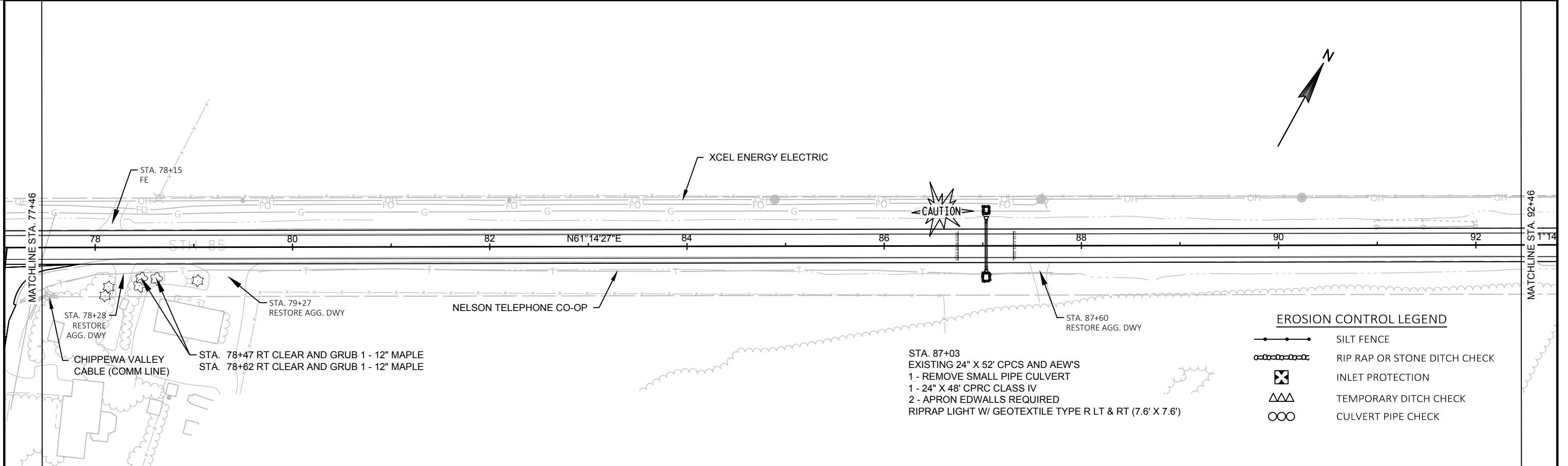
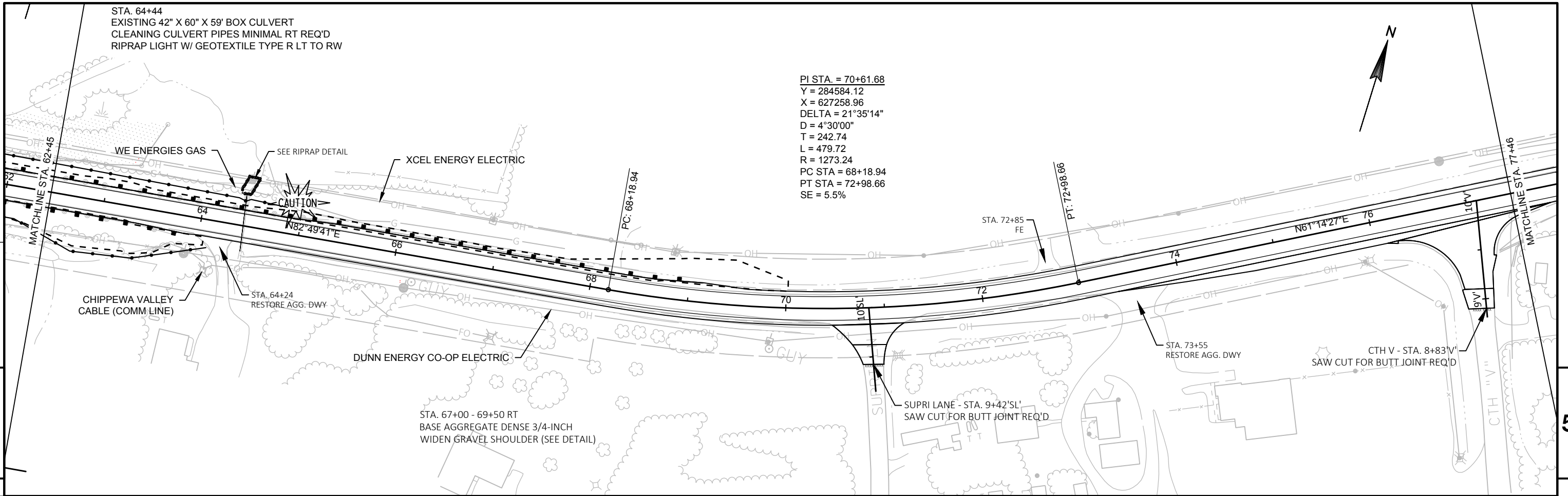
SAWING ITEMS

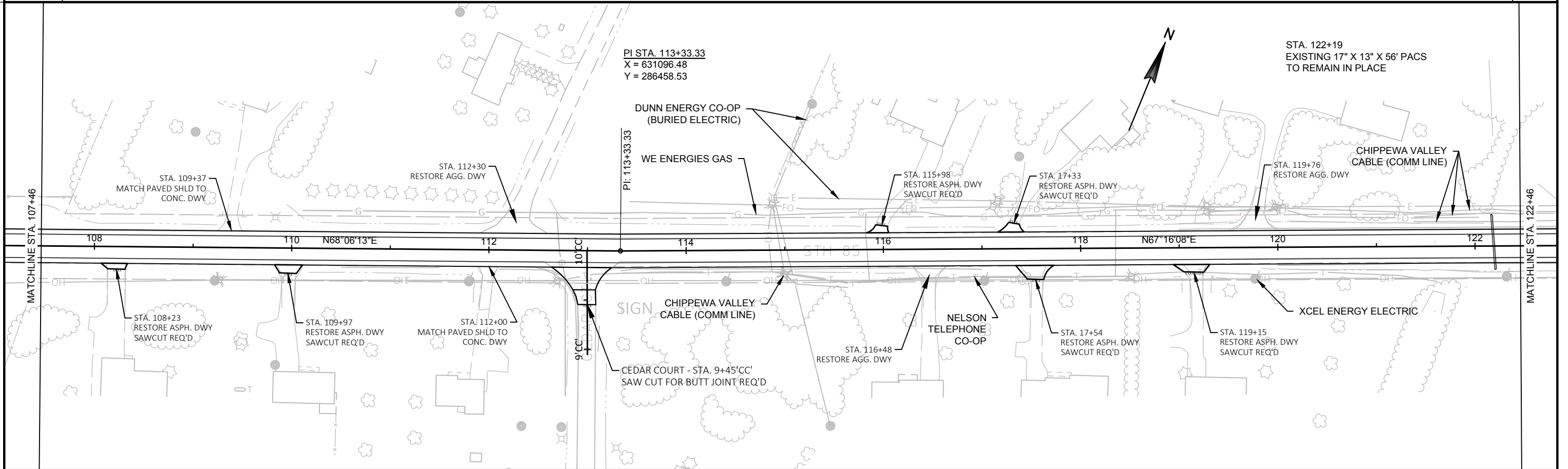
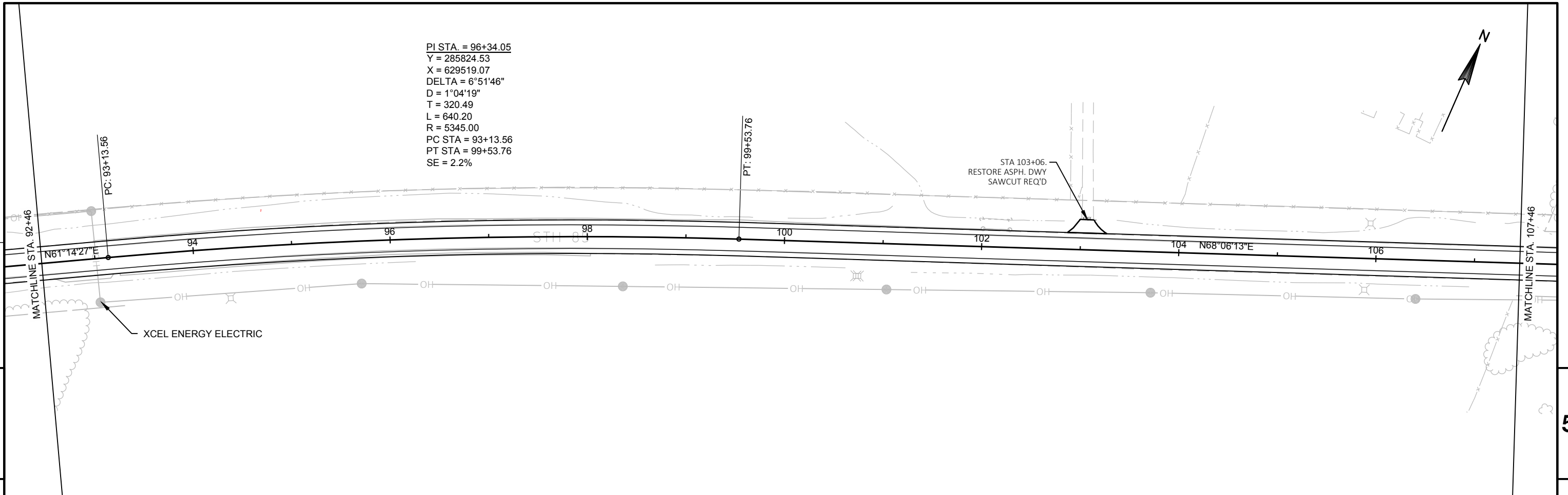
				690.0150	690.0250	COMMENTS
				SAWING	SAWING	
				ASPHALT	CONCRETE	
STATION	LOCATION			LF	LF	
2+57	STH 85			63	-	BUTT JOINT
4+64	STH 85	LT		36	25	11TH AVE. BUTT JOINT, SIDEWALK AND C&G.
8+03	STH 85	LT		88	13	12TH AVE. BUTT JOINT, SIDEWALK AND C&G.
8+03	STH 85	RT		41	10	12TH AVE. BUTT JOINT AND C&G.
9+27	STH 85	LT		-	3	C&G
11+76	STH 85	LT		-	3	C&G
11+79	STH 85	LT		-	5	SIDEWALK
12+00	STH 85	LT		-	5	SIDEWALK
12+06	STH 85	LT		-	3	C&G
13+24	STH 85	LT		112	20	13TH AVE. BUTT JOINT, PARKING LOT, SIDEWALK AND C&G.
13+24	STH 85	RT		25	-	13TH AVE. BUTT JOINT AND C&G.
17+20	STH 85	LT		93	20	14TH AVE. BUTT JOINT. SIDEWALK, C&G.
17+64	STH 85	RT		40	10	14TH AVE. BUTT JOINT. C&G.
20+03	STH 85	RT		29	-	TRACK ENTRANCE
21+04	STH 85	LT & RT		10	-	SIDEWALK
28+90	STH 85	RT		25	-	BALL FIELD ENTRANCE
30+47	STH 85	LT		30	-	TARRANT PARK ROAD
33+27	STH 85	LT		18	-	PE
41+30	STH 85	RT		20	-	PE
42+20	STH 85	RT		26	-	PE
86+75	STH 85			34	-	CULVERT REPLACEMENT
87+31	STH 85			34	-	CULVERT REPLACEMENT
103+06	STH 85	LT		20	-	PE
108+23	STH 85	RT		18	-	PE
109+97	STH 85	RT		17	-	PE
115+98	STH 85	LT		12	-	PE
117+33	STH 85	LT		11	-	PE
117+54	STH 85	RT		17	-	PE
119+15	STH 85	RT		20	-	PE
178+68	STH 85			30	-	CULVERT REPLACEMENT
179+16	STH 85			30	-	CULVERT REPLACEMENT
182+58	STH 85			30	-	CULVERT REPLACEMENT
183+22	STH 85			30	-	CULVERT REPLACEMENT
316+85	STH 85	LT		16	-	PE
320+04	STH 85	RT		16	-	PE
348+12	STH 85	RT		14	-	PE
387+80	STH 85	LT		24	-	PE
9+42	'SL'			21	-	BUTT JOINT - SUPRI LANE
8+83	'V'			26	-	BUTT JOINT - CTH V
9+45	'CC'			18	-	BUTT JOINT - CEDAR COURT
9+09	'DM'			24	-	BUTT JOINT - DORWIN'S MILL RD
11+10	'M'			24	-	BUTT JOINT - CTH M
12+47	'RR'			22	-	BUTT JOINT - RADAR RD
11+21	'R'			89	-	BUTT JOINT - CTH R (INCLUDES CTH VV)
9+77	'KD'			40	-	BUTT JOINT - KOMRO DRIVE
9+29	'VR'			22	-	BUTT JOINT - VRADENBURG RD
10+69	'MM'			22	-	BUTT JOINT - CTH MM
9+22	'MR'			22	-	BUTT JOINT - MARSH RD
11+26	'T'			23	-	BUTT JOINT - CTH T
9+00	'WR'			21	-	BUTT JOINT - WEISSINGER RD
10+69	'10A'			21	-	BUTT JOINT - 10TH AVE
PROJECT TOTALS				1,423	117	

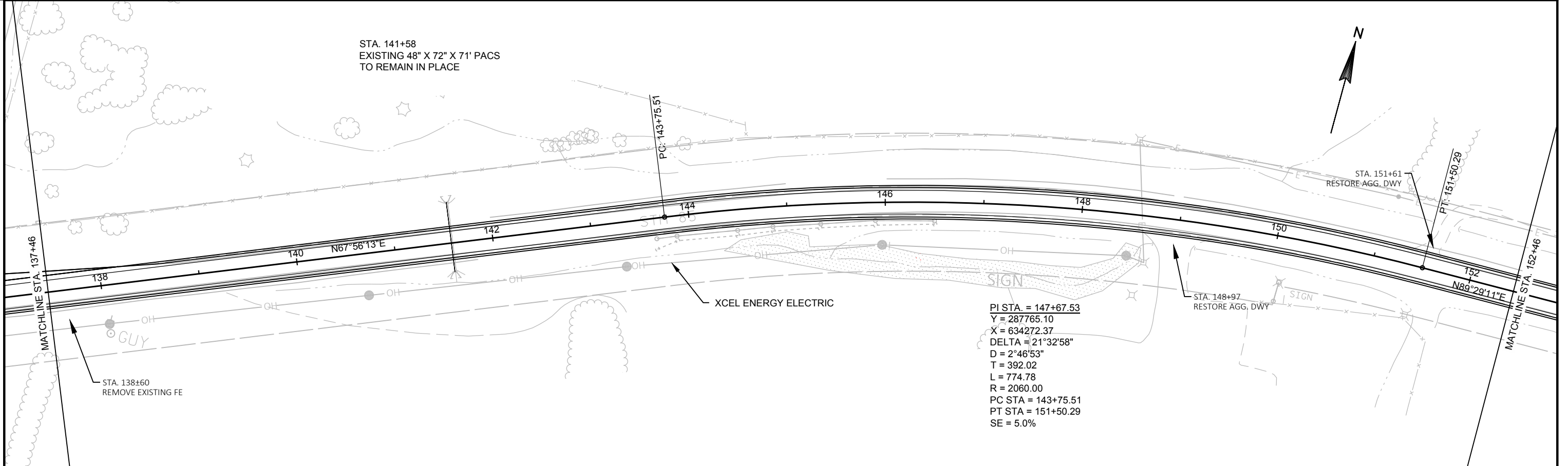
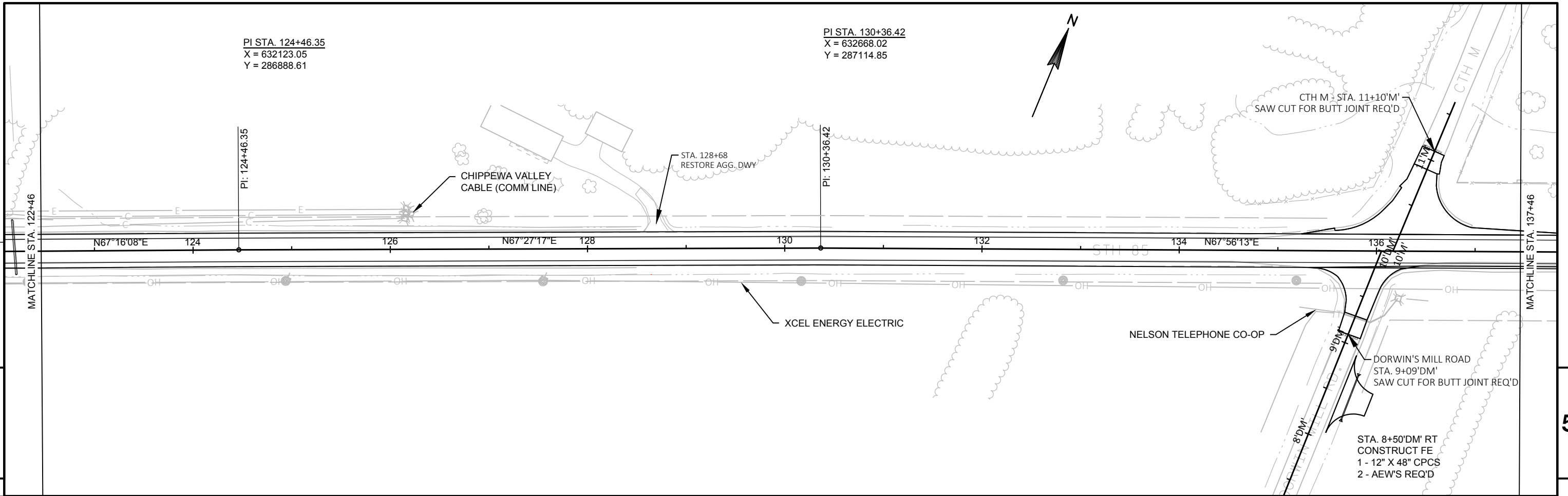
ALL ITEMS ARE PROJECT 7120-02-73, CAT. 0010,
UNLESS OTHERWISE NOTED.



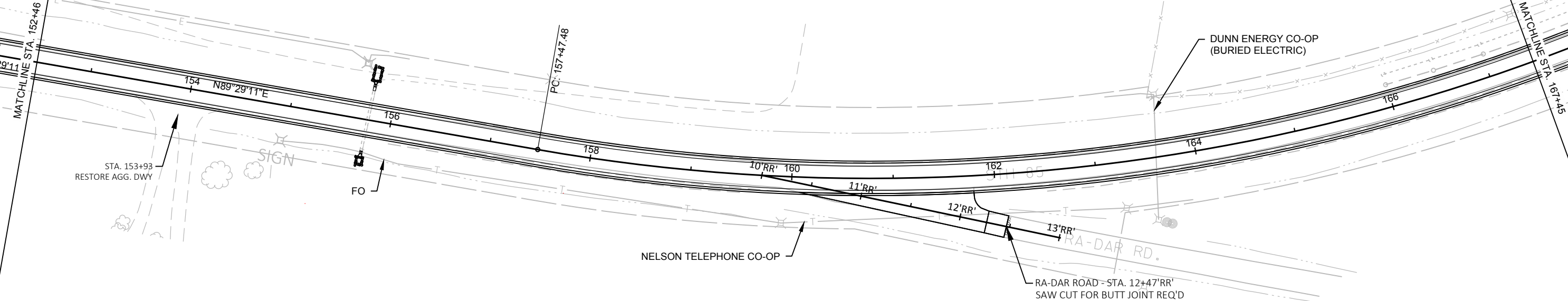








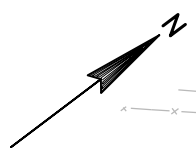
STA. 155+77
EXISTING 24" X 67' CPRC
REMOVE CULVERT PIPE END 6 LF LT
1 - 24" X 4' CPRC CLASS III LT, 1 - APRON ENDWALL LT, 1 - CONCRETE COLLAR LT
CLEANING CULVERT PIPES MINIMAL LT
1 - APRON ENDWALL RT, 1 - CONCRETE COLLAR RT
RIPRAP LIGHT W/ GEOTEXTILE TYPE R (7.6' X 13.3' LT, 7.6' X 7.6' RT)



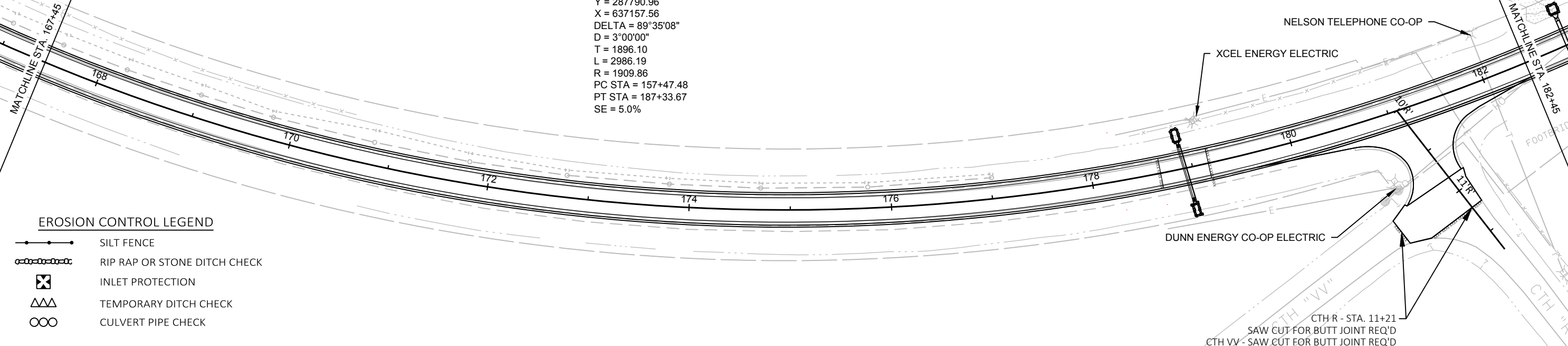
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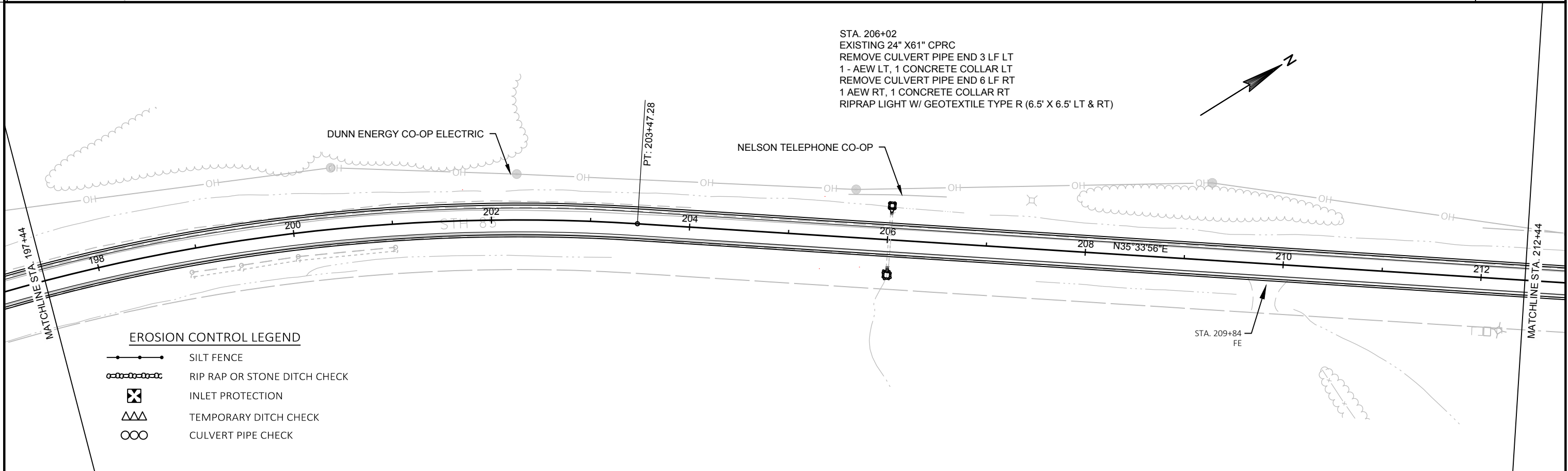
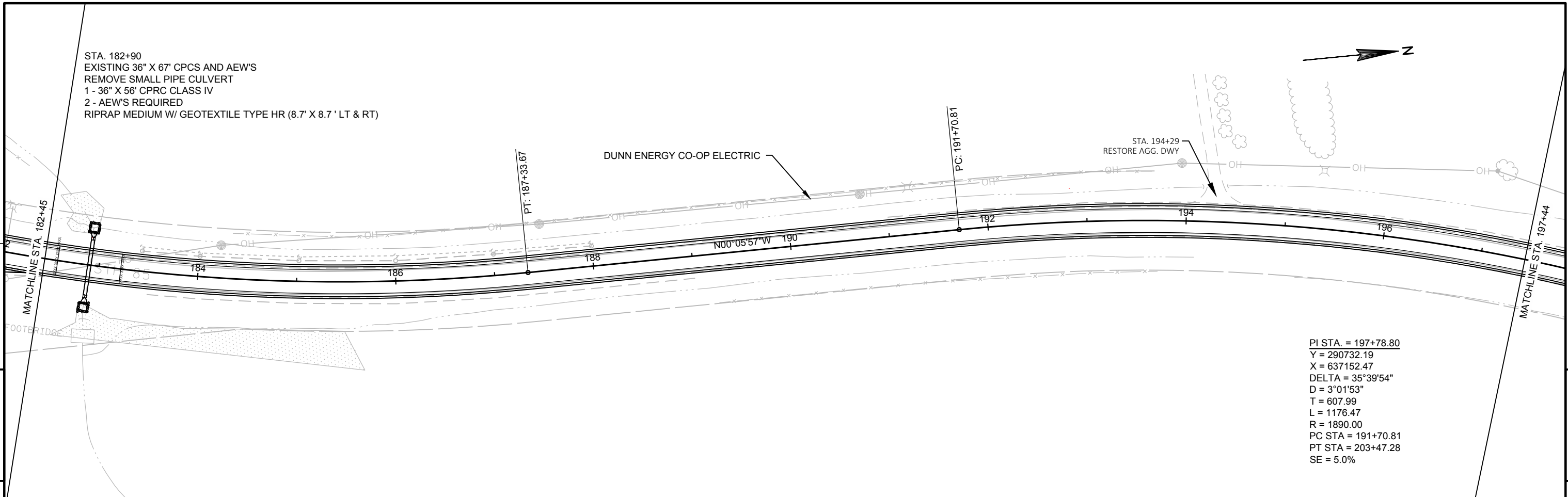
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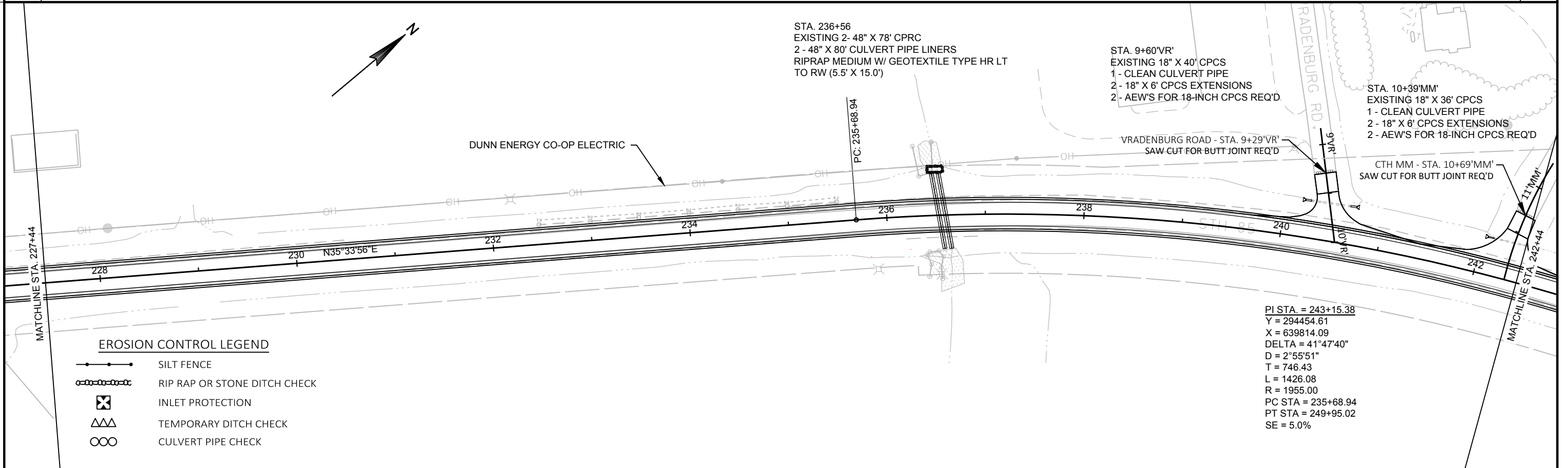
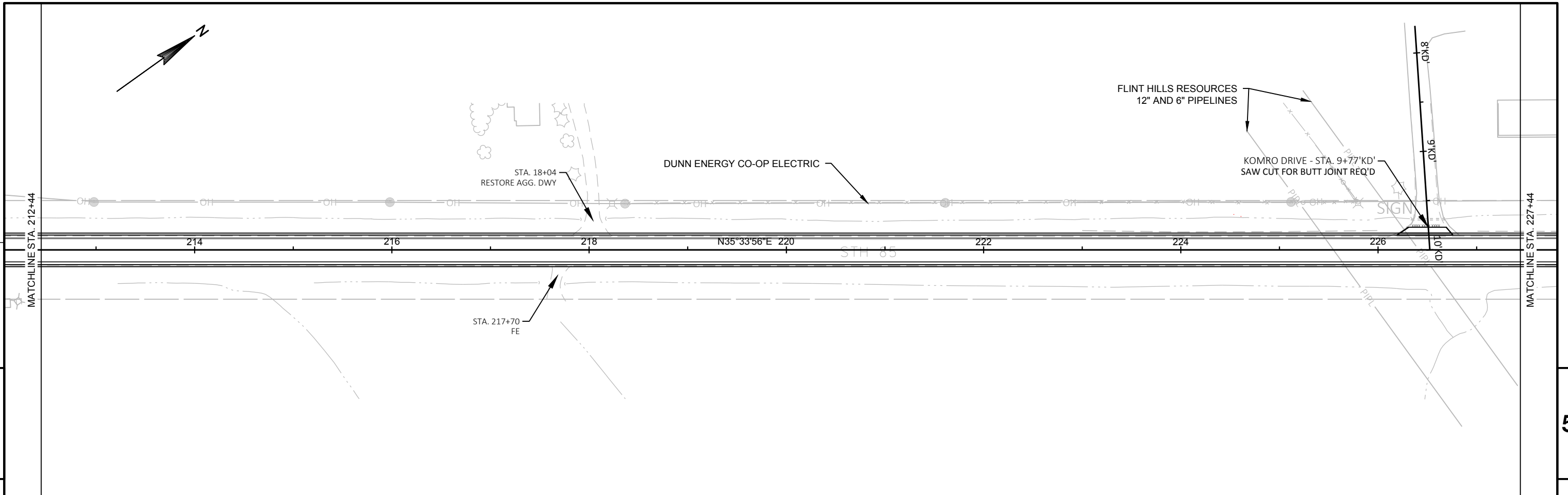
STA. 178+92
EXISTING 28" X 20" X 58' PACS
REMOVE SMALL PIPE CULVERT
1 - 19" X 30" X 52' CPRC HE-IV
2- AEW'S REQ'D
SKEW 5° RHF
RIPRAP LIGHT W/ GEOTEXTILE TYPE R (7.6' X 13.3' LT & RT)

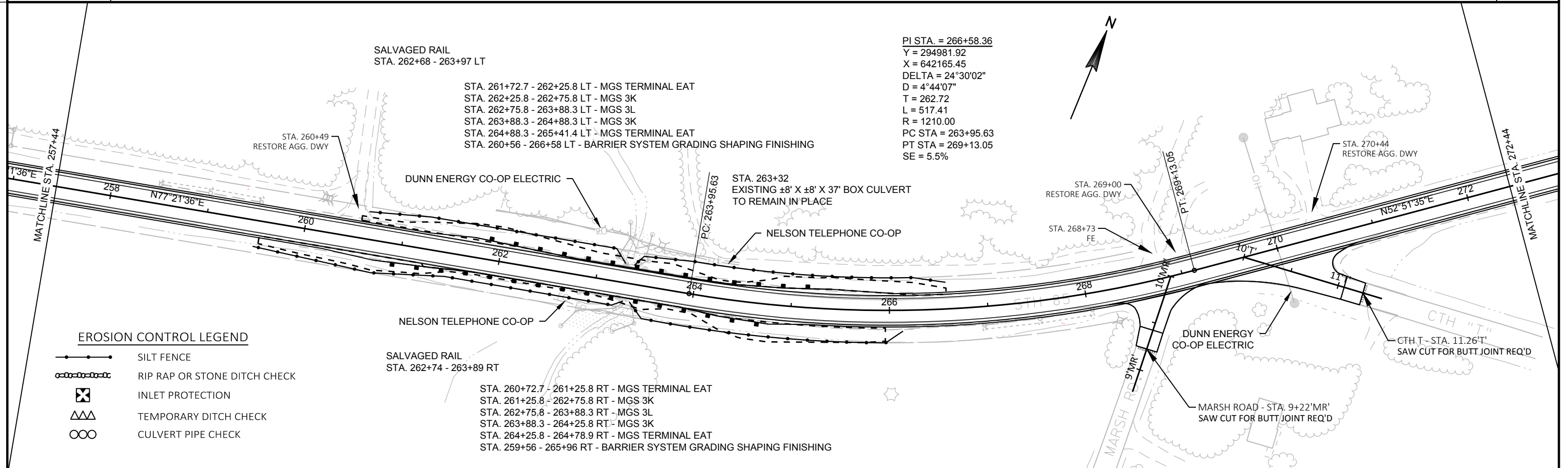
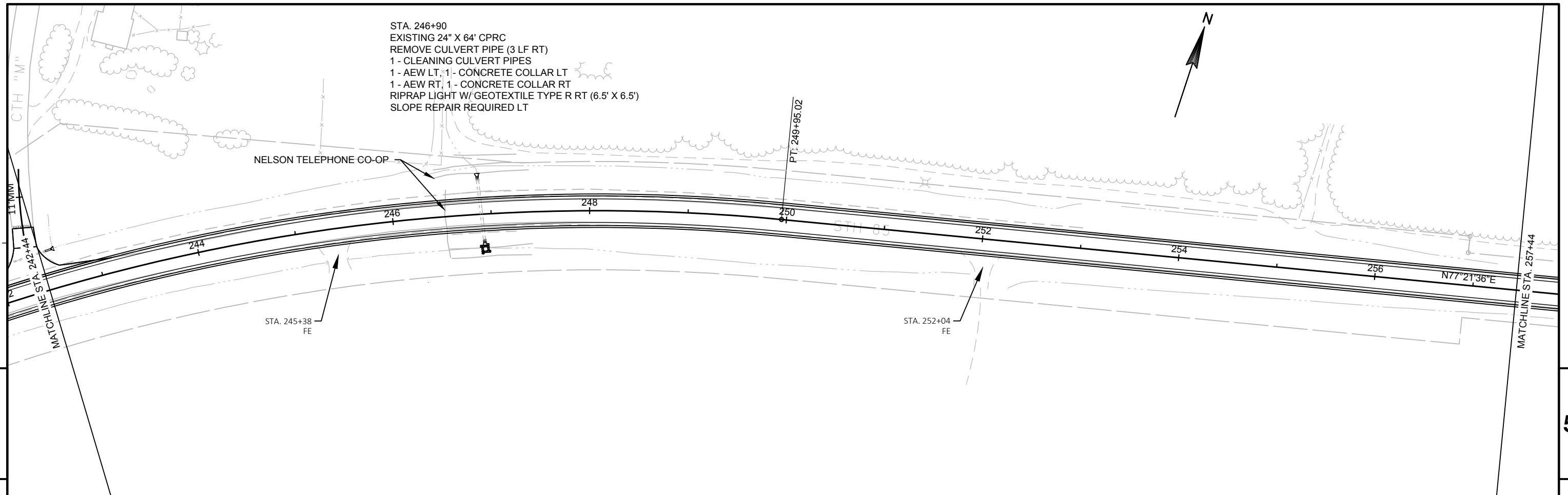


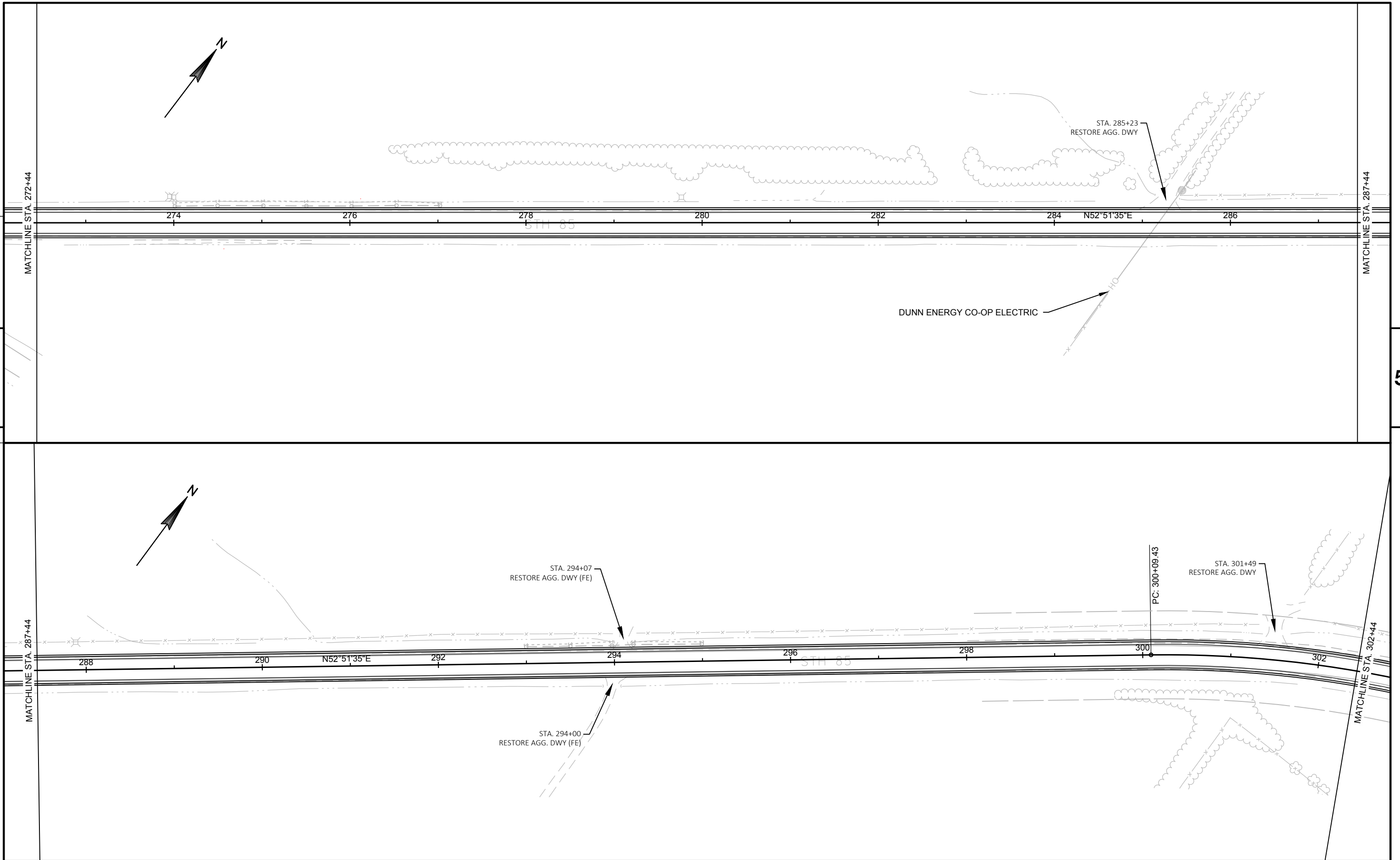
PI STA. = 176+43.58
Y = 287790.96
X = 637157.56
DELTA = 89°35'08"
D = 3°00'00"
T = 1896.10
L = 2986.19
R = 1909.86
PC STA = 157+47.48
PT STA = 187+33.67
SE = 5.0%

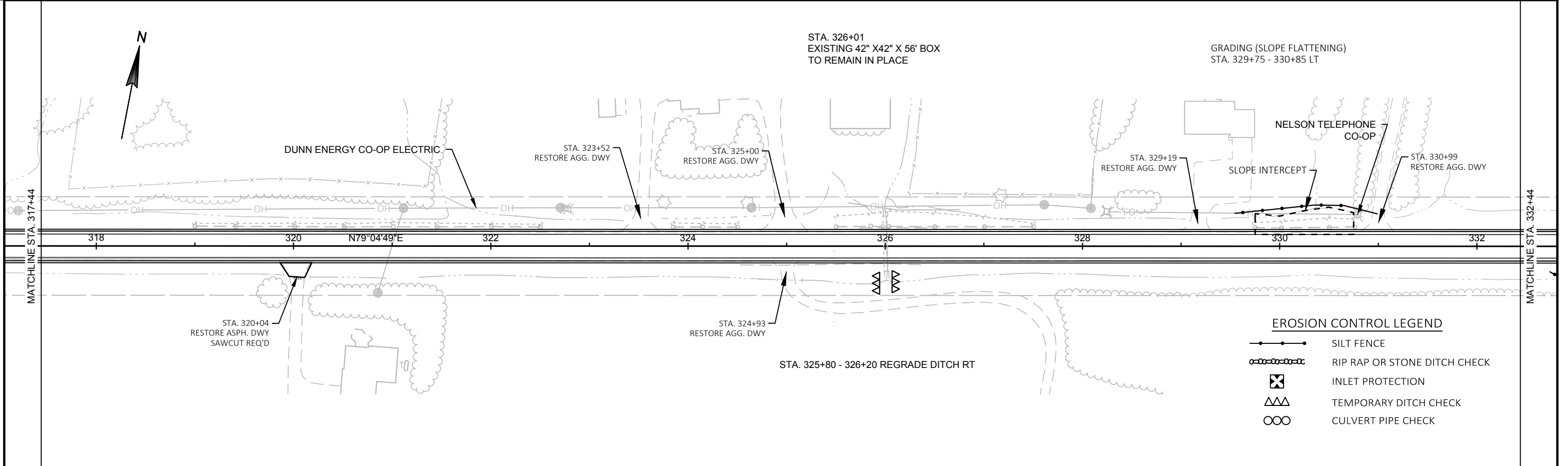
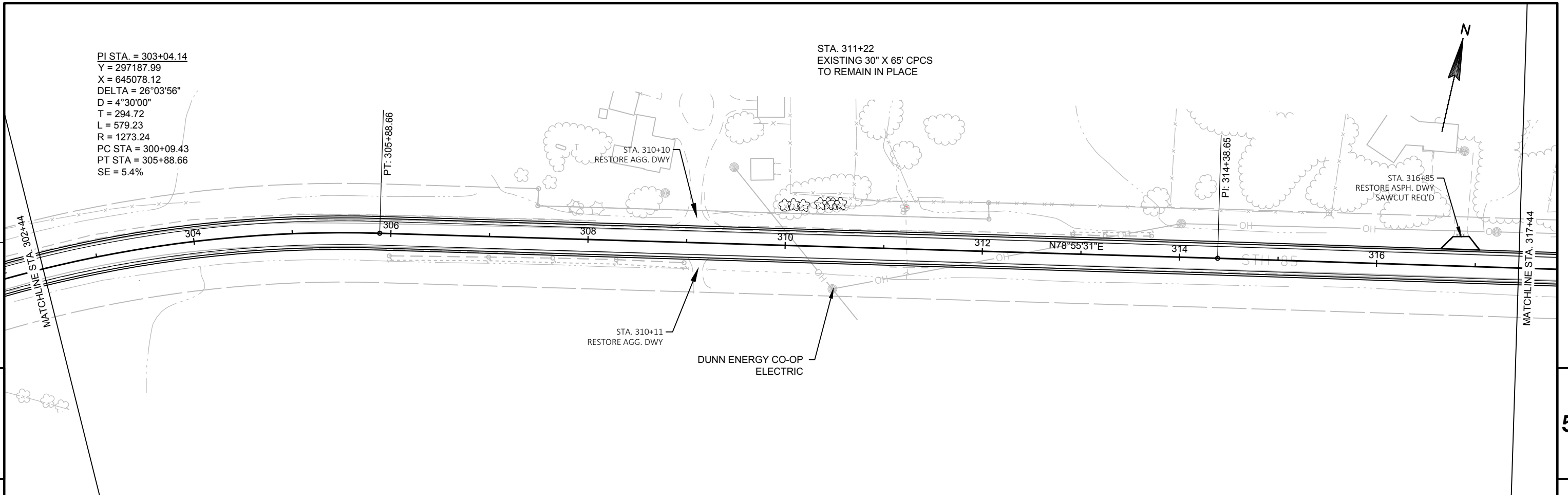




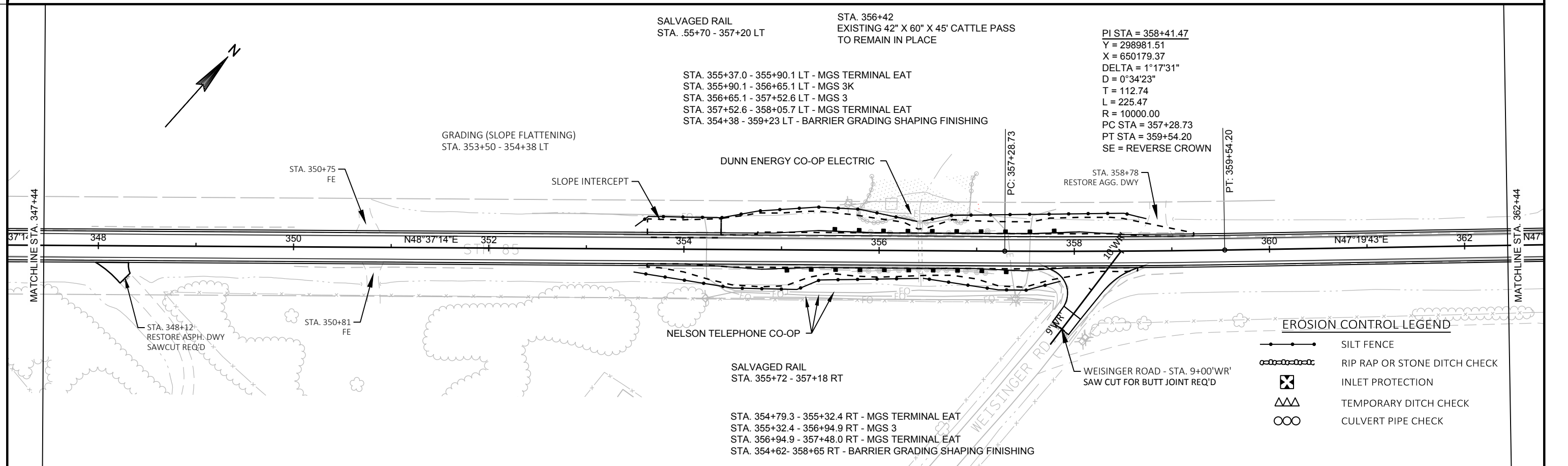
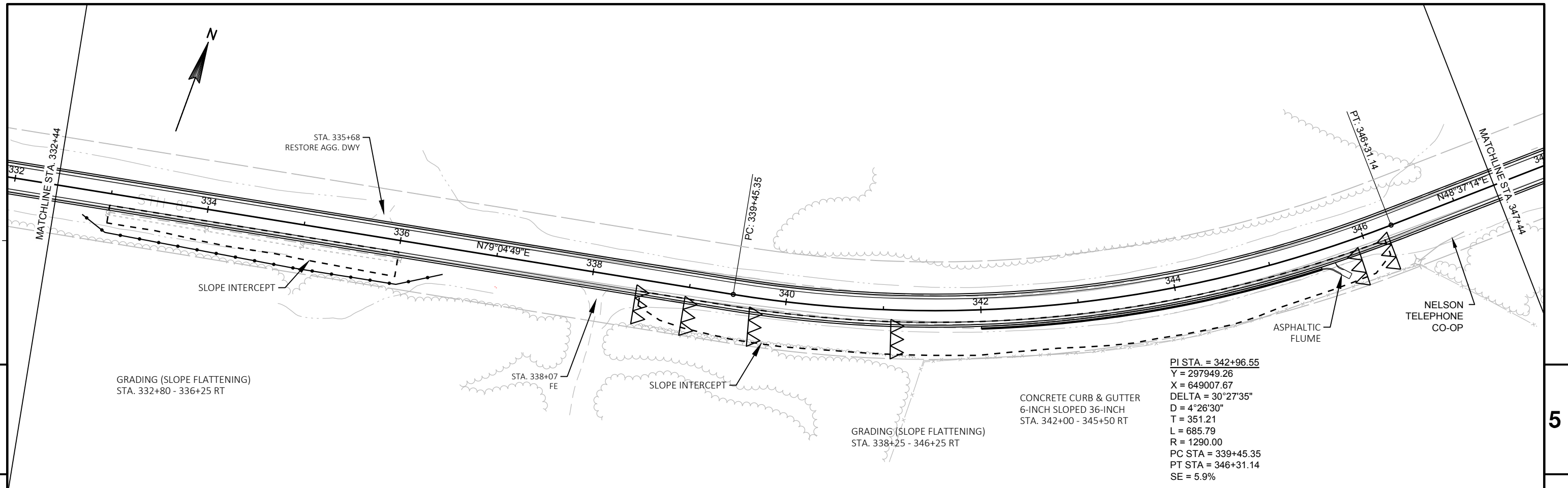


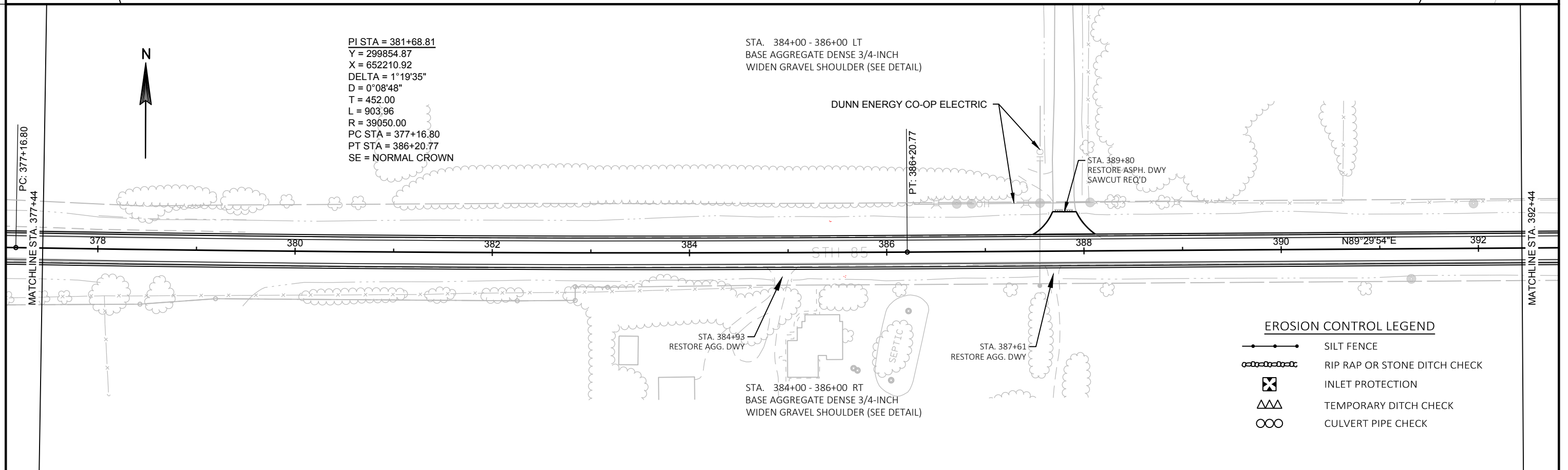
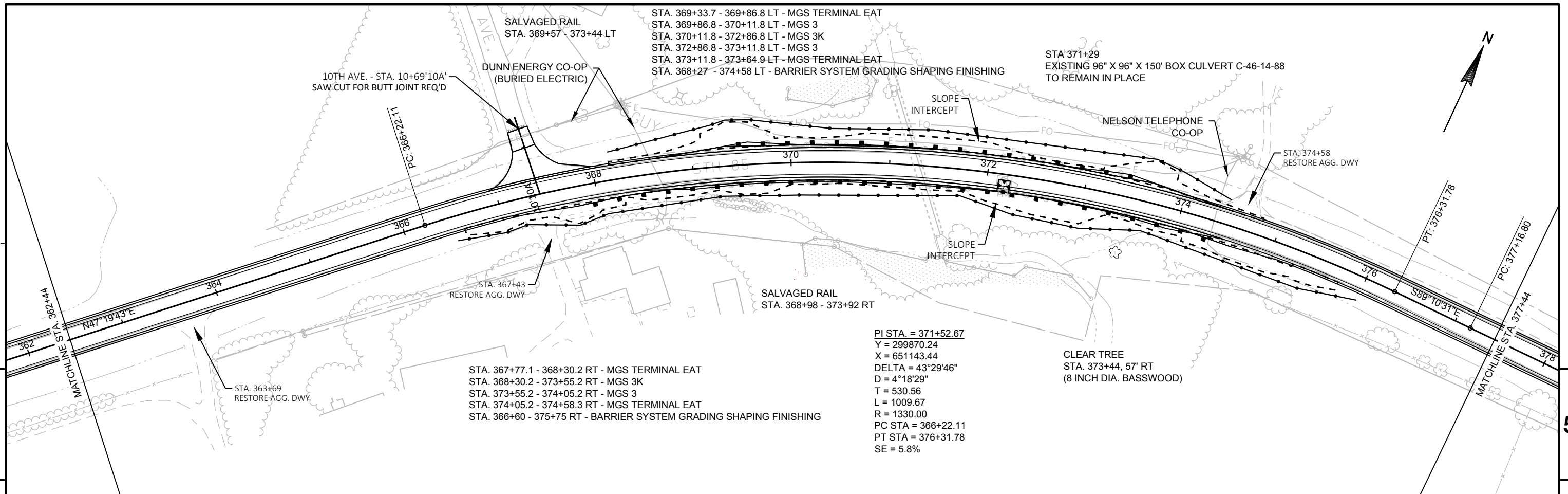


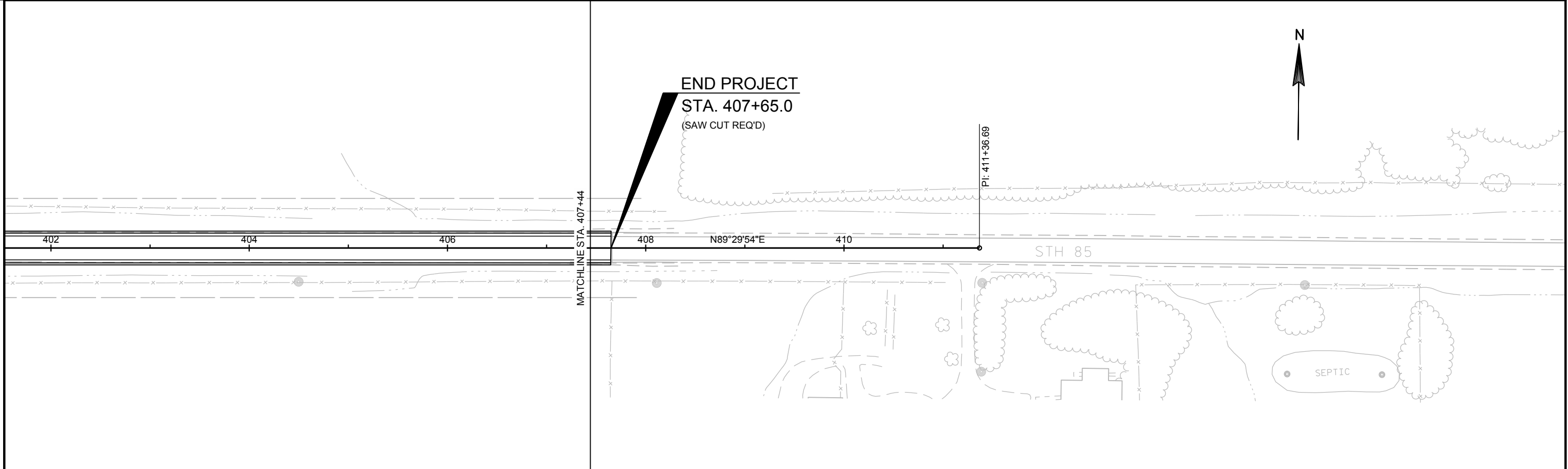
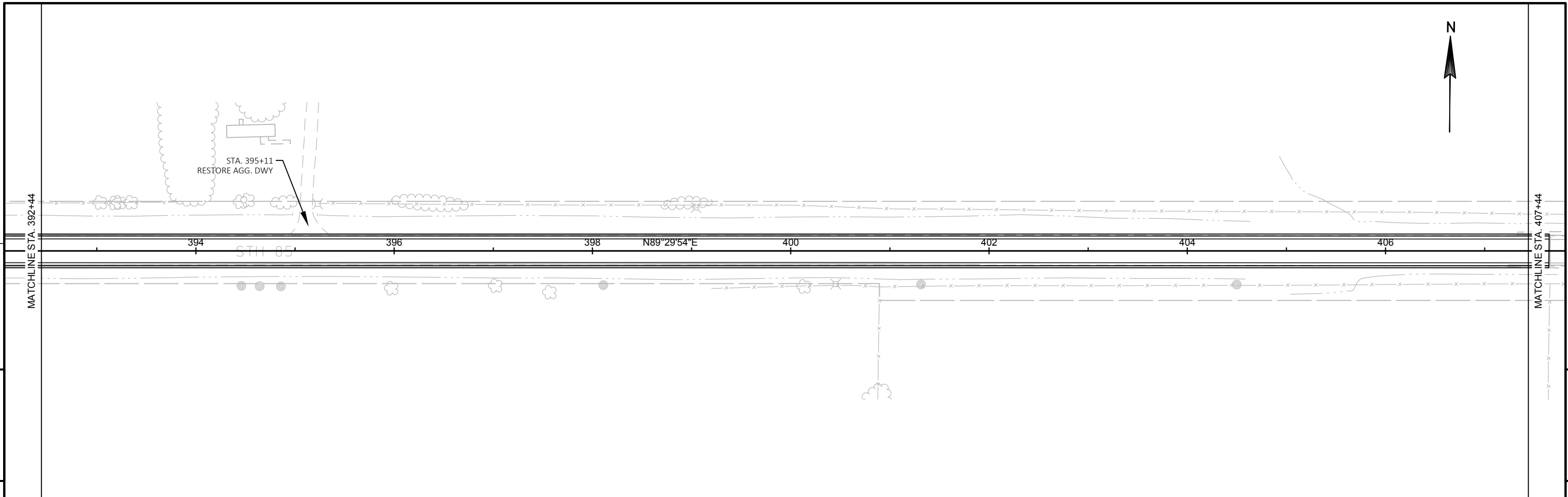




EROSION CONTROL LEGEND	
	SILT FENCE
	RIP RAP OR STONE DITCH CHECK
	INLET PROTECTION
	TEMPORARY DITCH CHECK
	CULVERT PIPE CHECK



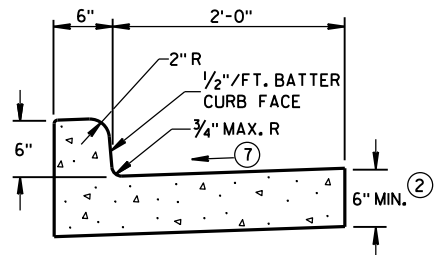




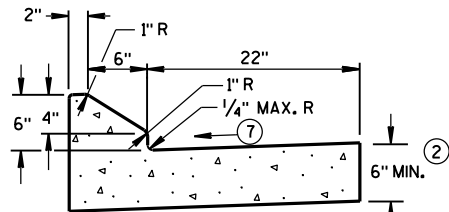
PROJECT NO: 7120-02-73,7120-02-76	HWY: STH 85	COUNTY: PEPIN	PLAN: STH 85	SHEET 52	E
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Standard Detail Drawing List

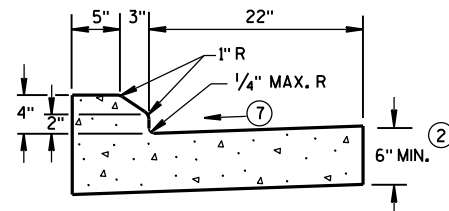
08D01-20A	CONCRETE CURB & GUTTER
08D01-20B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D05-19A	CURB RAMPS TYPES 1 AND 1-A
08D05-19B	CURB RAMPS TYPES 2 AND 3
08D05-19C	CURB RAMPS TYPES 4A AND 4A1
08D05-19D	CURB RAMPS TYPE 4B AND 4B1
08D05-19E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08D05-19F	CURB RAMPS RADIAL DETECTABLE WARNING FIELD APPLICATIONS
08D05-19G	CURB RAMPS RECTANGULAR AND RADIAL DETECTABLE WARNING PLATES
08D21-01	DRIVEWAYS WITHOUT CURB & GUTTER
08D22-01	DRIVEWAYS WITHOUT CURB & GUTTER RESURFACING PROJECTS RURAL
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F02-01	APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
14B15-11A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B24-09A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-09C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B42-06A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B43-04A	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
14B43-04B	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
14B43-04C	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15A07-02	OBJECT MARKER FOR HAZARDOUS CULVERT
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C05-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
15C07-14C	PAVEMENT MARKING ARROWS
15C08-19A	LONGITUDINAL MARKING (MAINLINE)
15C08-19C	PAVEMENT MARKING (TURN LANES)
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-06	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C19-05A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C35-03A	PAVEMENT MARKING (INTERSECTIONS)
15D28-03	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D30-04A	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-04B	TRAFFIC CONTROL, TEMPORARY ADA COMPLIANT PEDESTRIAN ACCOMMODATION
15D30-04C	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS
15D39-02	TRAFFIC CONTROL, DROP-OFF SIGNING



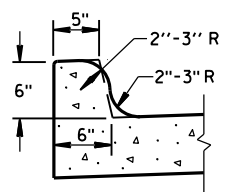
TYPES A^① & D



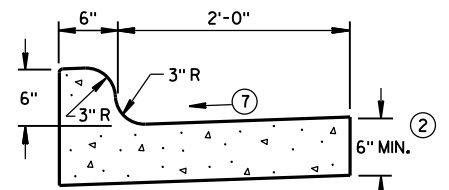
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

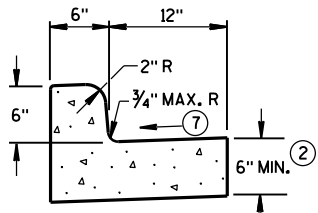


TYPES K^① & L
(OPTIONAL CURB SHAPE)



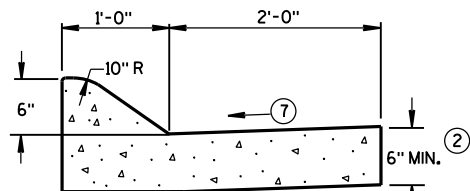
TYPES K^① & L

CONCRETE CURB & GUTTER 30"

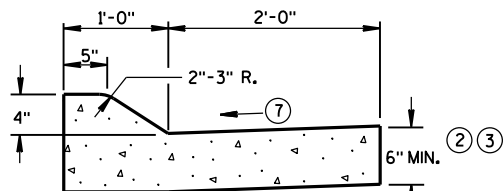


TYPES A^① & D

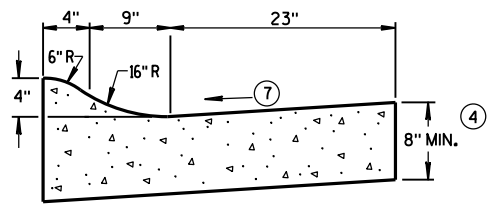
CONCRETE CURB & GUTTER 18"



6" SLOPED CURB TYPES A^① & D

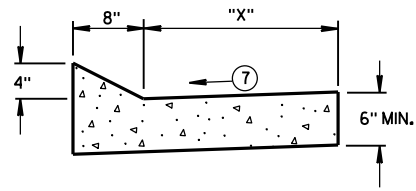


4" SLOPED CURB TYPES A^① & D



4" SLOPED CURB TYPES R^① & T^⑤

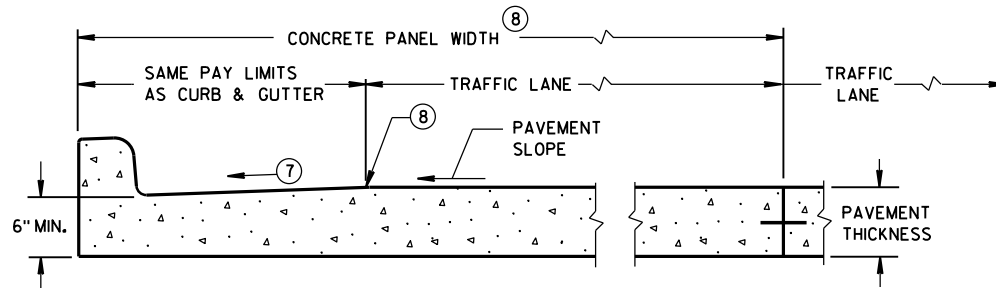
CONCRETE CURB & GUTTER 36"



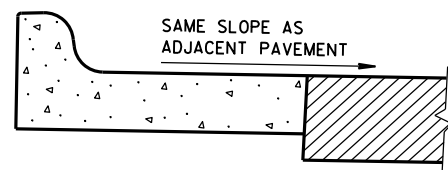
TYPES TBT & TBTT^①

CONCRETE CURB & GUTTER

TBT & TBTT	"X"
30"	22"
36"	28"



PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB & GUTTER



REVERSE SLOPE GUTTER^⑥
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.
- ④ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑤ THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- ⑥ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.
- ⑦ USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.
- ⑧ INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.

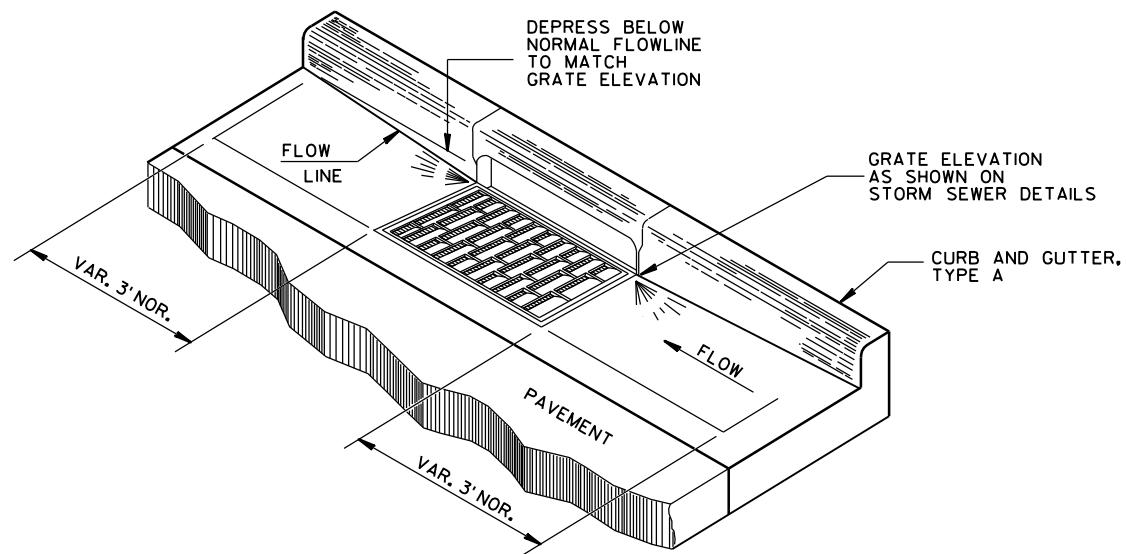
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

PAVEMENT THICKNESS	MAXIMUM PANEL WIDTH
LESS THAN 10"	12'
10" & ABOVE	15'

* BIKE LANE IS NOT SHOWN.

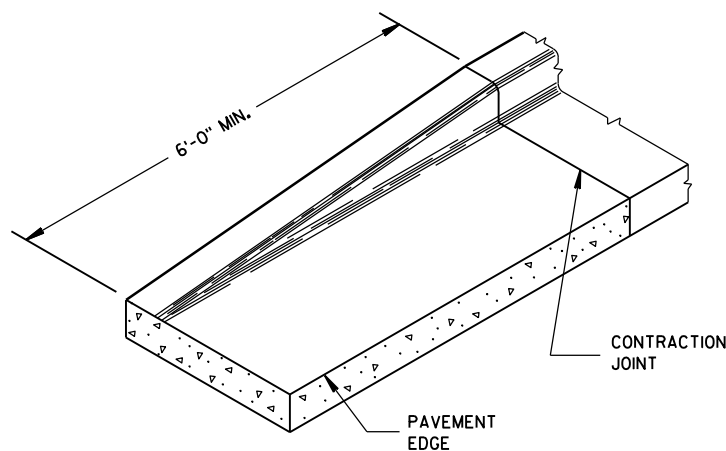
CONCRETE CURB & GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

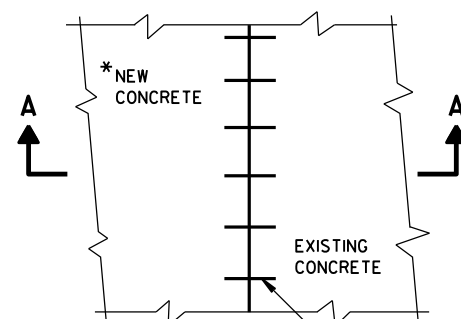


DETAIL OF CURB AND GUTTER AT INLETS

(TYPE H INLET COVER SHOWN)

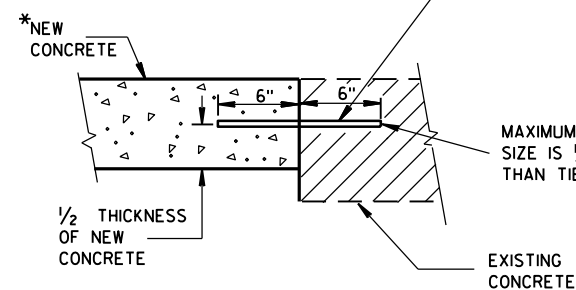


END SECTION CURB & GUTTER



PLAN VIEW

*NEW CURB & GUTTER, SURFACE DRAINS, CONCRETE PAVEMENT OR OTHER NEW CONCRETE.



TIE BARS DRILLED INTO EXISTING PAVEMENT

NO. 6 TIE BARS SPACED 2'-6" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT.

MAXIMUM DRILL HOLE SIZE IS 1/8" GREATER THAN TIE BAR DIAMETER

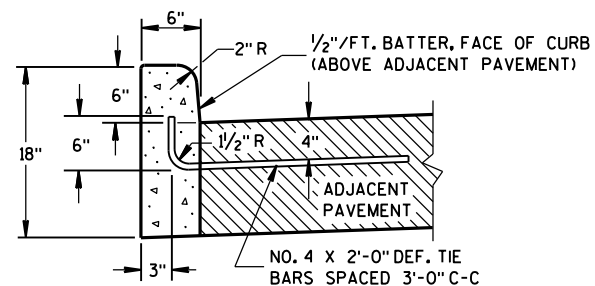
GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

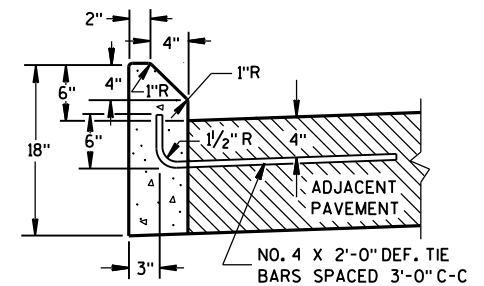
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑨ REFER TO SDD 8D18 AND SDD 8D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.

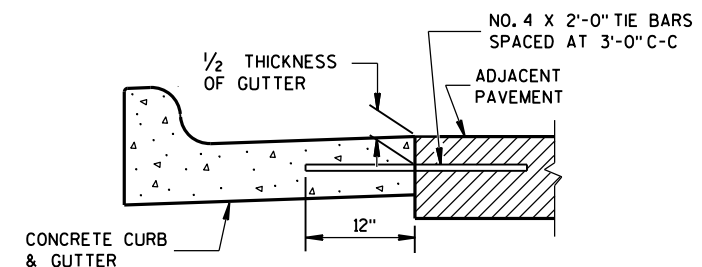


TYPES A^① & D

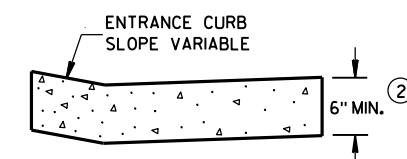


TYPES G^① & J

CONCRETE CURB



TYPICAL TIE BAR LOCATION^①



DRIVEWAY ENTRANCE CURB^⑨

(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June, 2017

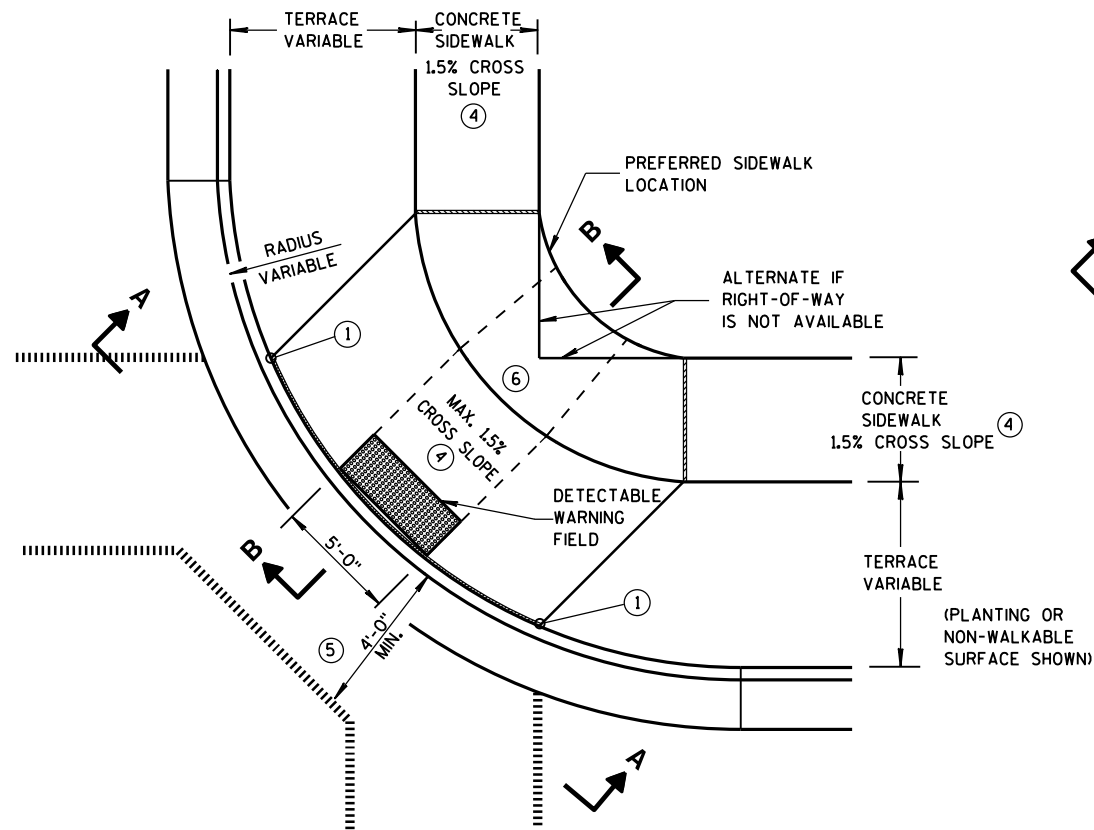
DATE

FHWA

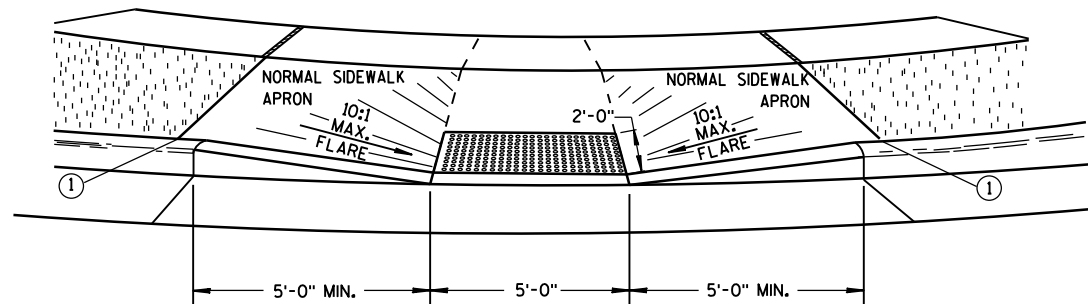
/S/ Rodney Taylor

ROADWAY STANDARDS 55 ENT

UNIT SUPERVISOR

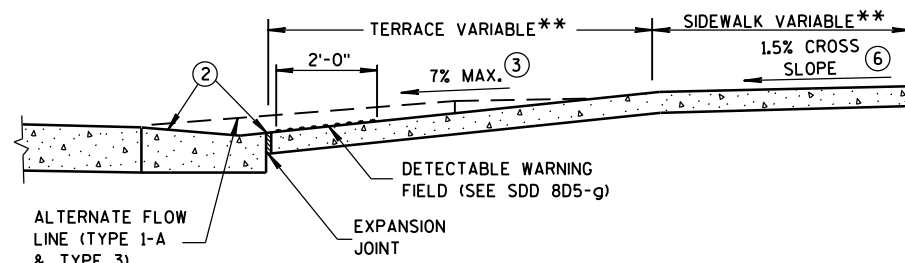


**PLAN VIEW
TYPE 1 RAMP**
(CENTER OF CORNER RADIUS)

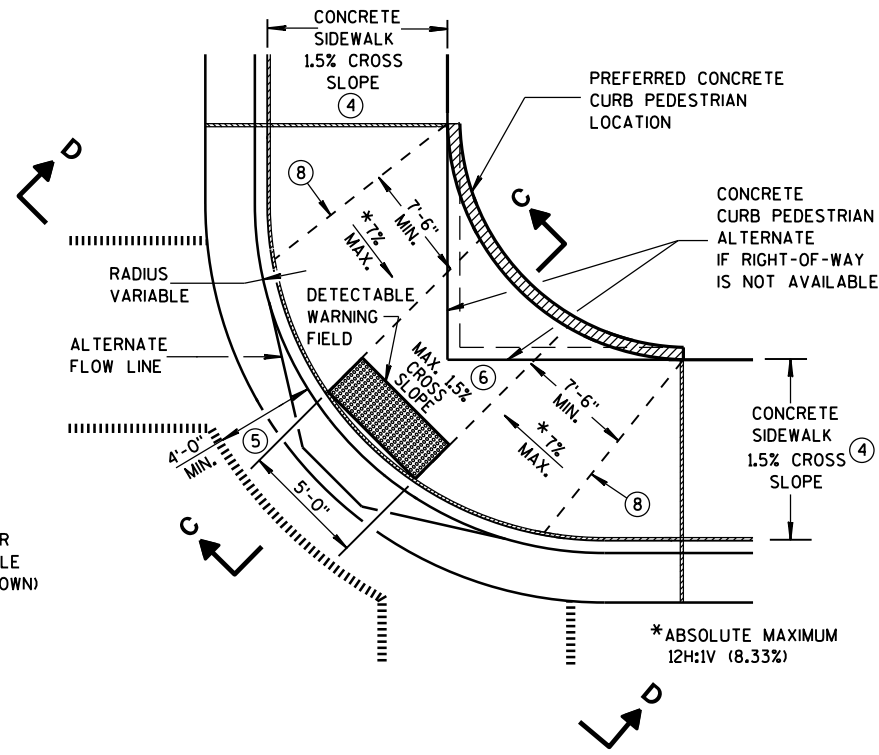


VIEW A-A

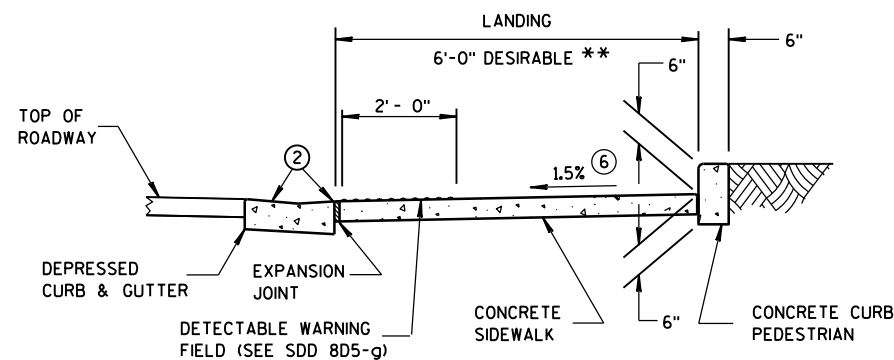
** WIDTH SHOWN ELSEWHERE
IN THE PLANS



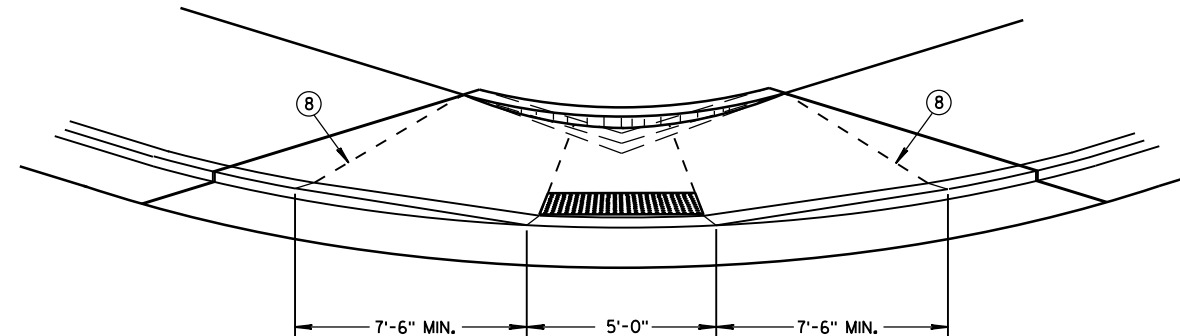
SECTION B-B



**PLAN VIEW
TYPE 1-A RAMP**
(NO TERRACE)



SECTION C-C



VIEW D-D

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

WHEN NECESSARY, THE SIDEWALK ELEVATION MAY BE LOWERED TO MEET THE HIGH POINT ON THE RAMP.

TYPE 1 RAMPS SHALL HAVE A NORMAL SIDEWALK APRON AND CURB ON BOTH SIDES OF RAMP.

DETECTABLE WARNING FIELD SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS "CURB RAMP DETECTABLE WARNING FIELD". THE CONCRETE PEDESTRIAN CURB, IF NEEDED, SHALL BE MEASURED AND PAID BY THE LINEAL FOOT AS "CONCRETE CURB PEDESTRIAN". CONCRETE SIDEWALK IN THE CURB RAMP AREA SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS CONCRETE SIDEWALK, INCLUDING THE AREA UNDER THE DETECTABLE WARNING FIELD.

SELECT CURB RAMP DETECTABLE WARNING FIELD MATERIALS AND DEVICES FROM THE DEPARTMENT'S APPROVED MATERIALS LIST. THE COLOR OF THE DETECTABLE WARNING FIELD IS SPECIFIED ELSEWHERE AND IS INCIDENTAL TO THE BID ITEM OF "CURB RAMP DETECTABLE WARNING FIELD".

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

SURFACE TEXTURE OF THE RAMP SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP.

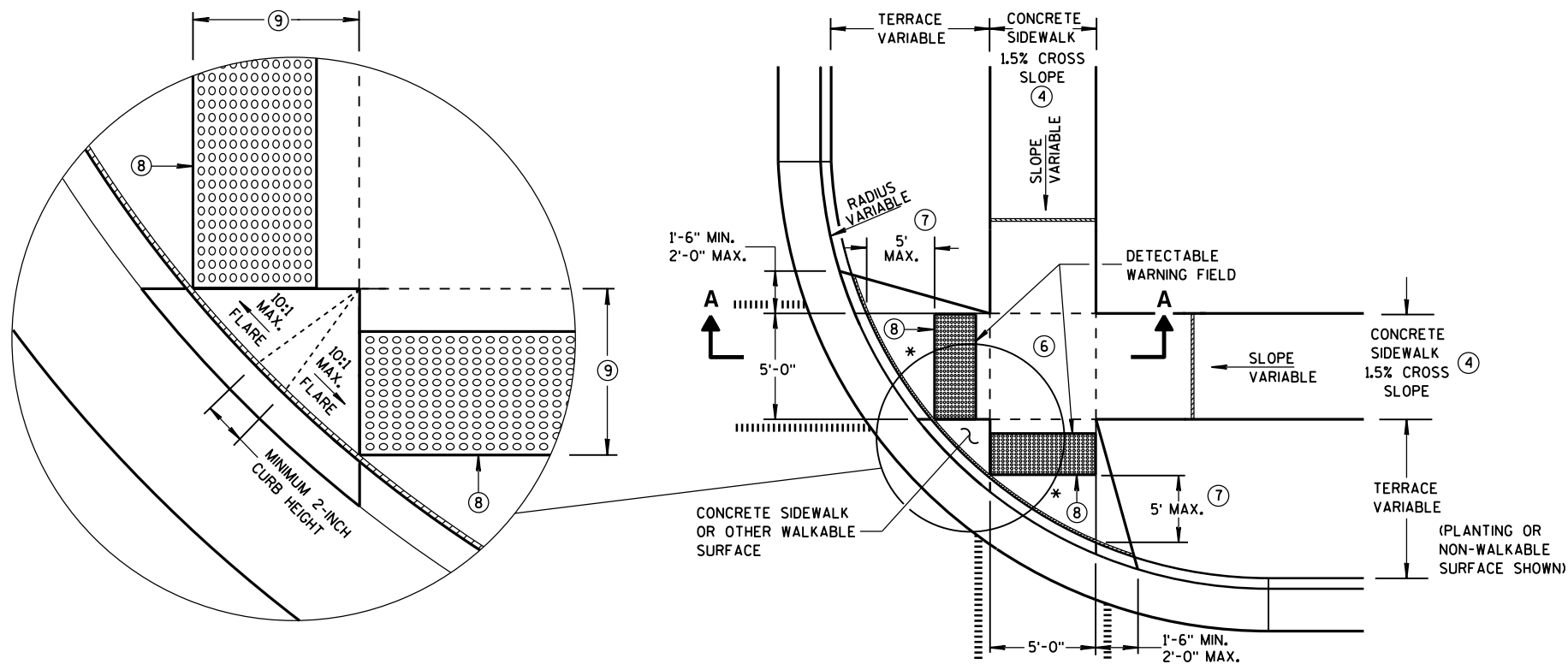
- ① THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB. POINT LOCATION MAY BE ADJUSTED TO ALIGN WITH BEGINNING OF FULL-HEIGHT CURB IF THIS DISTANCE IS SHORT.
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ③ ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ④ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑤ PROVIDE A LEVEL LANDING IN THE STREET AND GUTTER AREA. (2% MAXIMUM SLOPE IN ANY DIRECTION). WHEN THE GUTTER SLOPE EXCEEDS 2%, CONSTRUCT THE LEVEL LANDING IN THE STREET AREA.
- ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.
- ⑧ PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

LEGEND

- 1/2" EXPANSION JOINT-SIDEWALK
- - - - CONTRACTION JOINT FIELD LOCATED
- ||||| PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT

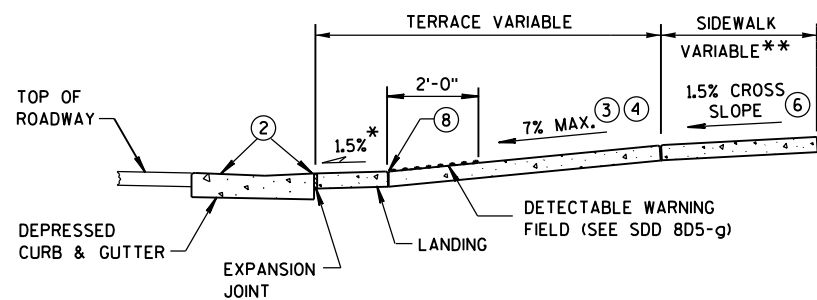
**CURB RAMPS
TYPES 1 AND 1-A**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



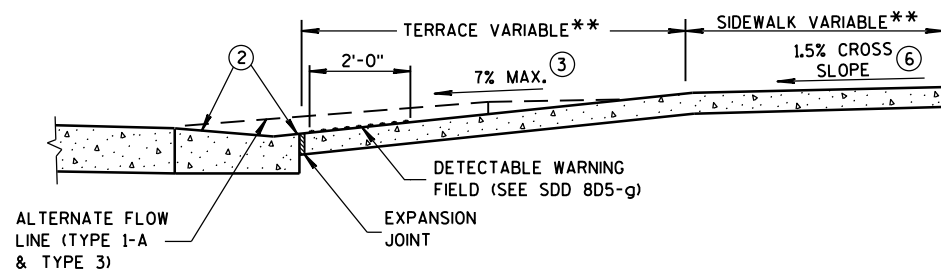
**PLAN VIEW
TYPE 2 RAMP**
(ON LINE WITH SIDEWALK)

* MAXIMUM 2.0% SLOPE
IN ALL DIRECTIONS IN
FRONT OF GRADE BREAK



SECTION A-A

** WIDTH SHOWN ELSEWHERE
IN THE PLANS



SECTION B-B

GENERAL NOTES

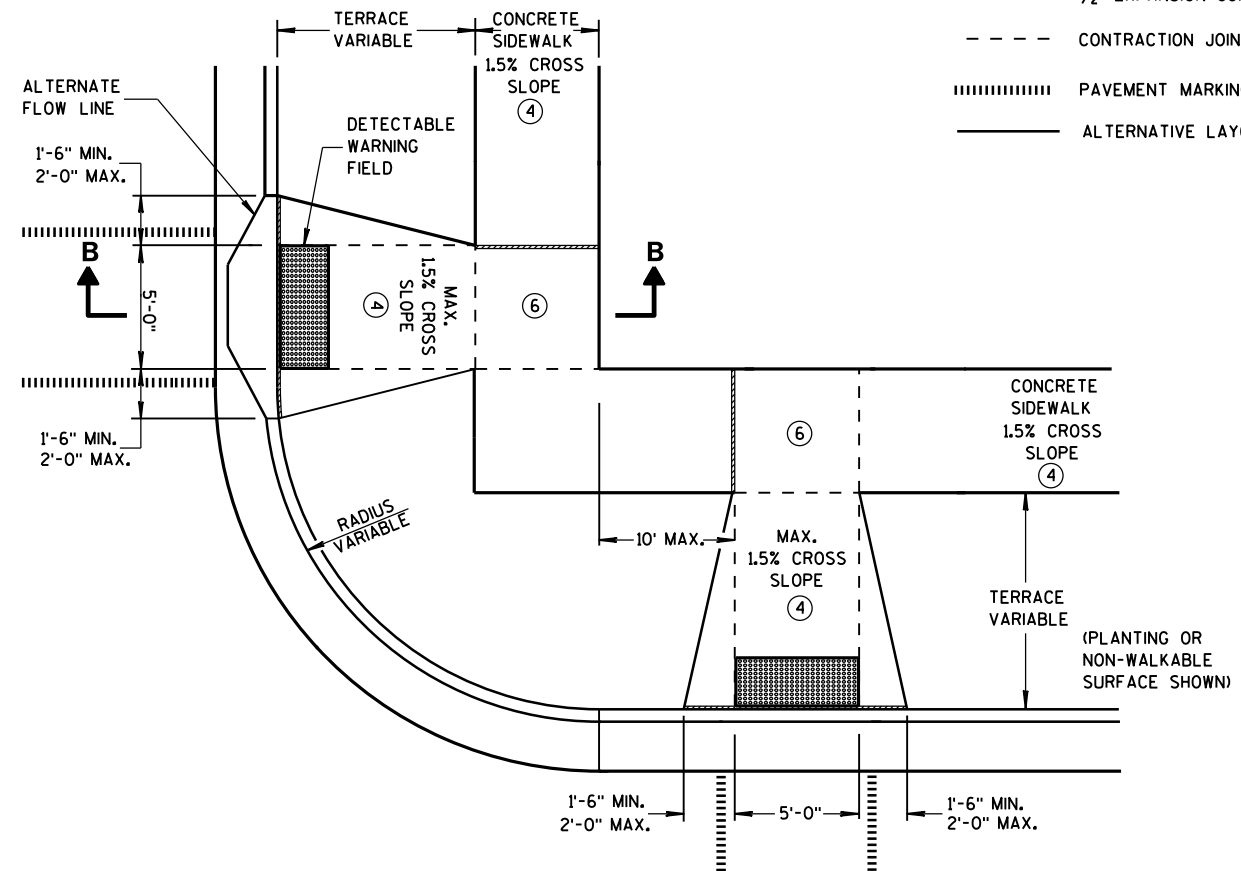
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ③ ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ④ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.
- ⑦ WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.
- ⑧ PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- ⑨ WHEN THIS DISTANCE IS LESS THAN 6'-0", IT MAY BE DIFFICULT TO ACHIEVE A 7% SLOPE OR FLATTER ALONG THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 7% SLOPE OR FLATTER ON RAMP. CONSTRUCT 2-INCH MINIMUM CURB HEIGHT BETWEEN 10:1 FLARES.

LEGEND

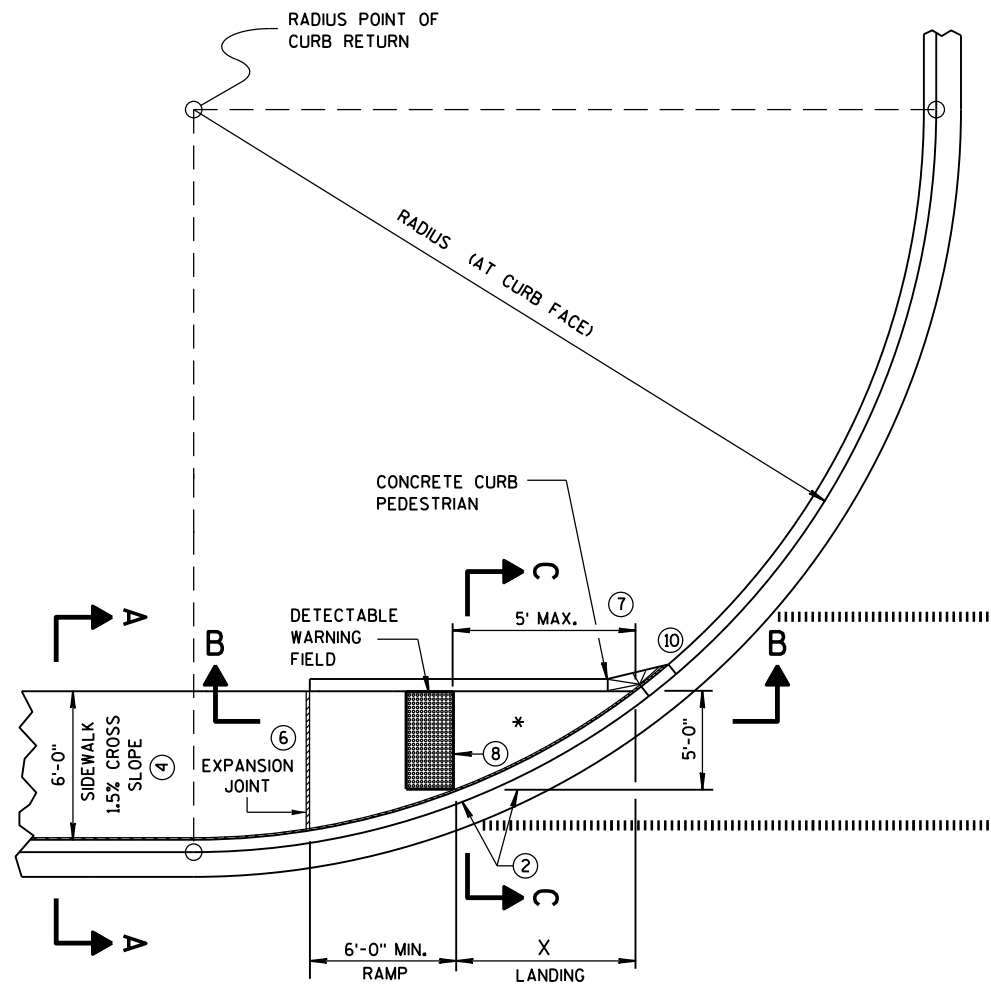
- 1/2" EXPANSION JOINT-SIDEWALK
- - - - CONTRACTION JOINT FIELD LOCATED
- ||||| PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT



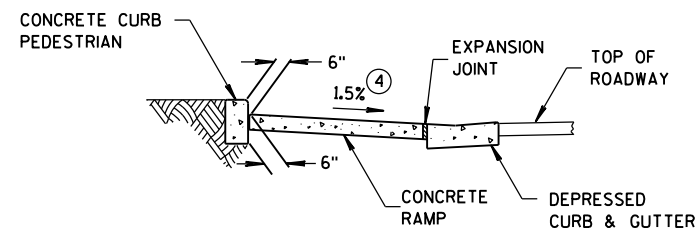
**PLAN VIEW
TYPE 3 RAMP**
(OUTSIDE OF CROSSWALK AREA)

**CURB RAMPS
TYPES 2 AND 3**

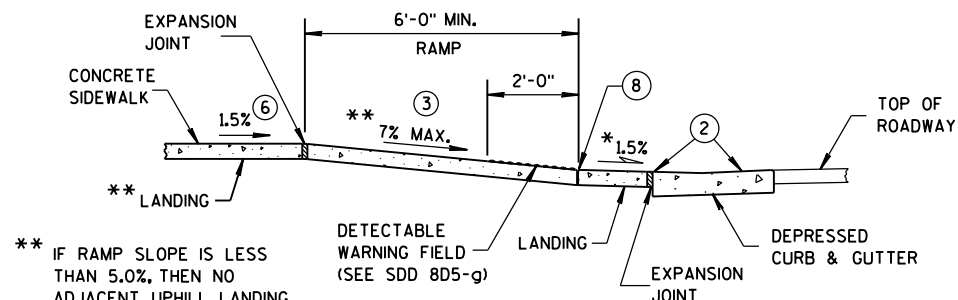
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



CURB RAMP TYPE 4A
PLAN VIEW



SECTION C-C FOR TYPE 4A

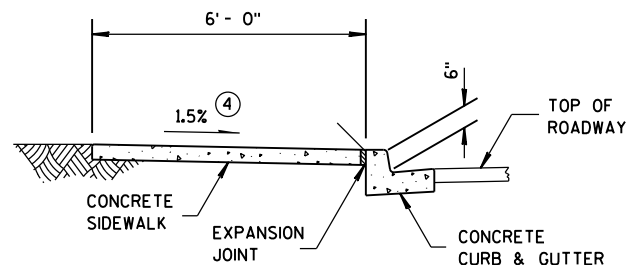


SECTION B-B FOR TYPE 4A

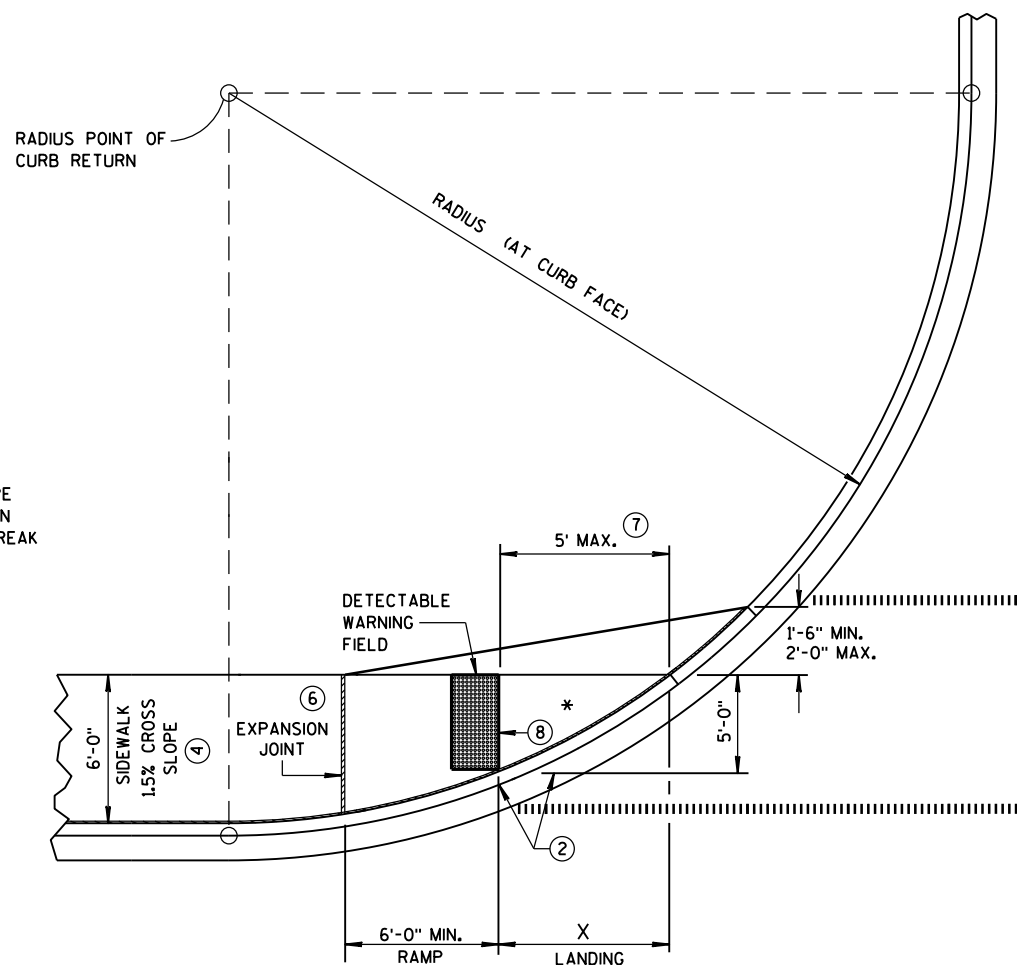
** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

RADIUS (AT CURB FACE)	X
10 FEET	4'-7"
15 FEET	6'-5½"

INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION A-A FOR TYPE 4A



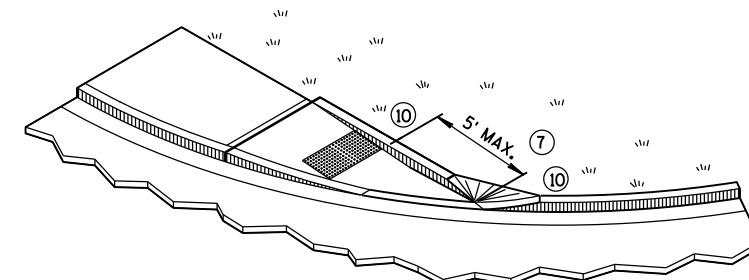
CURB RAMP TYPE 4A1
PLAN VIEW

GENERAL NOTES

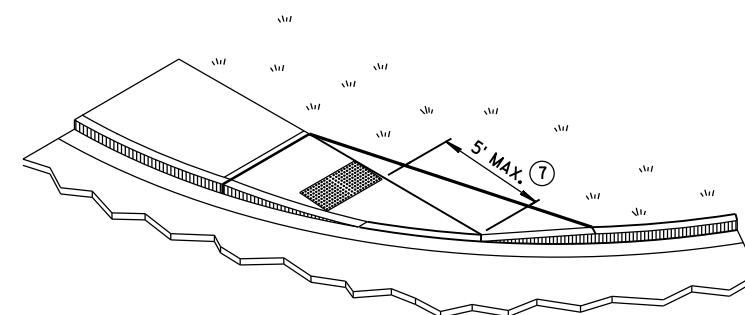
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

- GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.
- WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.
- PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



ISOMETRIC VIEW FOR TYPE 4A



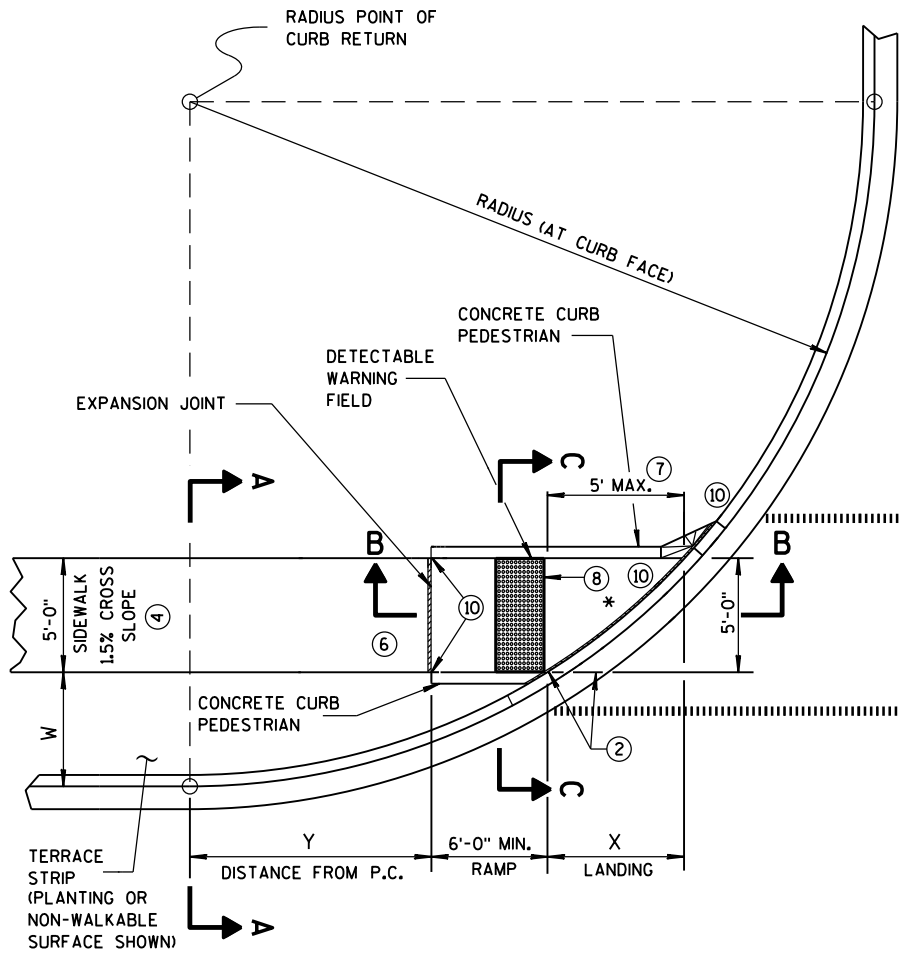
ISOMETRIC VIEW FOR TYPE 4A1

LEGEND

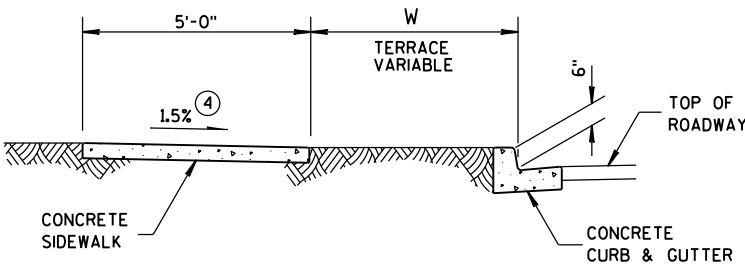
- 1/2" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS
TYPES 4A AND 4A1

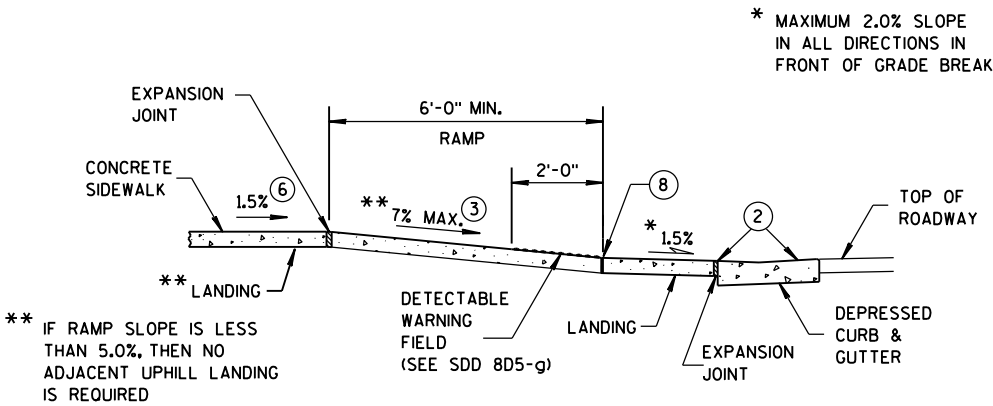
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



**CURB RAMP TYPE 4B
PLAN VIEW**



SECTION A-A FOR TYPE 4B



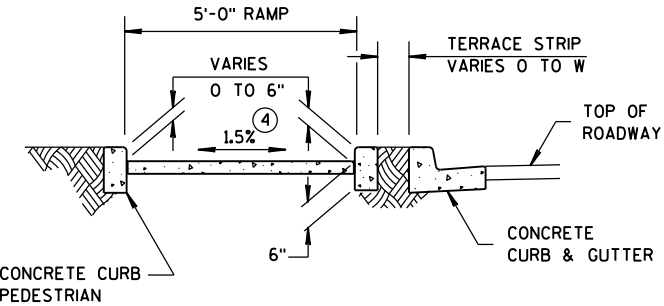
SECTION B-B FOR TYPE 4B

RADIUS (AT CURB FACE)	W = 3' - 0"		W = 4' - 0"		W = 5' - 0"		W = 6' - 0"		W = 7' - 0"		W = 8' - 0"		W = 9' - 0"		W = 10' - 0"	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
10 FEET	2'-10 1/4"	0'-5"	2'-1"	1'-4 1/2"	1'-5"	2'-1"	0'-10"	2'-7 1/2"	0'-3 1/4"	3'-0 1/4"						
15 FEET	4'-6 3/4"	2'-1 3/4"	3'-9"	3'-5 1/4"	3'-1 1/4"	4'-6"	2'-6 3/4"	5'-4 1/2"	2'-1"	6'-1"	1'-8"	6'-8 1/2"	1'-3 1/4"	7'-2 1/2"	0'-10 3/4"	7'-7 1/4"
20 FEET	5'-9 3/4"	3'-6 1/2"	4'-11 1/2"	5'-1 3/4"	4'-3 1/4"	6'-5 1/2"	3'-8 3/4"	7'-7"	3'-3"	8'-6 1/2"	2'-10"	9'-4 1/2"	2'-5 1/2"	10'-1 1/4"	2'-1 1/4"	10'-9"
30 FEET			6'-9 1/4"	7'-11 1/4"	6'-0 1/4"	9'-8"	5'-5"	11'-1 3/4"	4'-10 3/4"	12'-5 3/4"	4'-5 1/2"	13'-7 3/4"	4'-0 3/4"	14'-8 1/2"	3'-8 1/2"	15'-8 1/4"
40 FEET									6'-1 3/4"	15'-8 1/2"	5'-8"	17'-2"	5'-3"	18'-5 3/4"	4'-10 3/4"	19'-8 1/4"
50 FEET															5'-10 1/4"	23'-2"

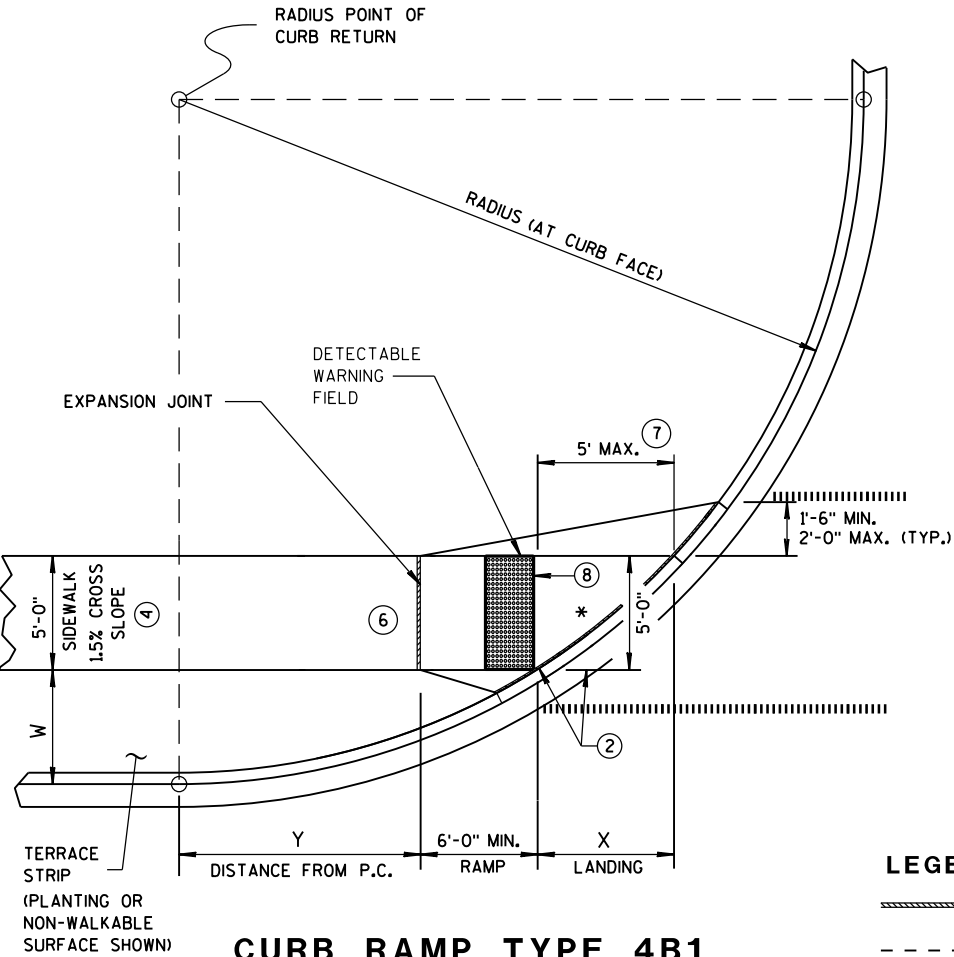
INTERMEDIATE RADII CAN BE INTERPOLATED
DIMENSION "Y" IS CALCULATED BASED ON 6'-0" RAMP LENGTH
DIMENSION "X" IS CALCULATED BASED ON 5'-0" SIDEWALK WIDTH

GENERAL NOTES

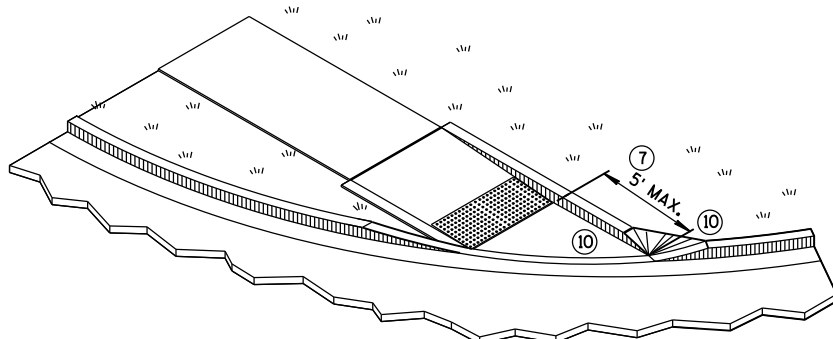
- AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.
- DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.
- GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.
- WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.
- PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



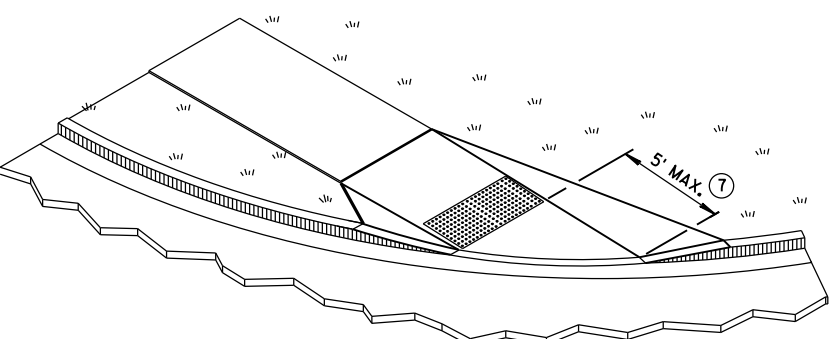
SECTION C-C FOR TYPE 4B



**CURB RAMP TYPE 4B1
PLAN VIEW**



ISOMETRIC VIEW FOR TYPE 4B



ISOMETRIC VIEW FOR TYPE 4B1

LEGEND

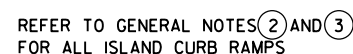
- 1/2" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

**CURB RAMPS
TYPE 4B AND 4B1**

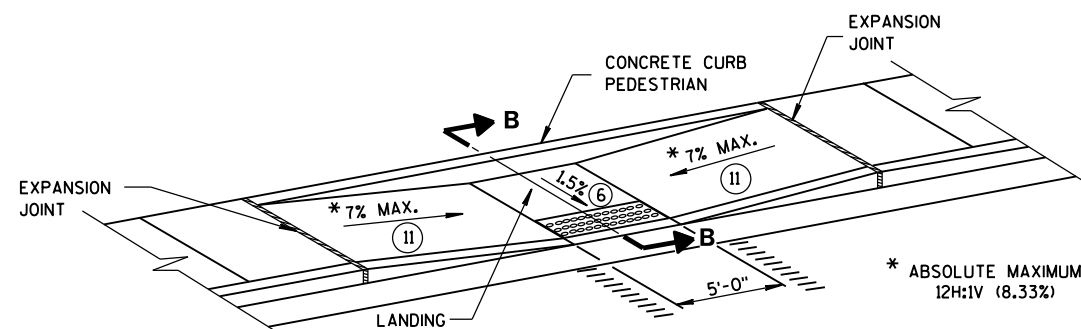
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



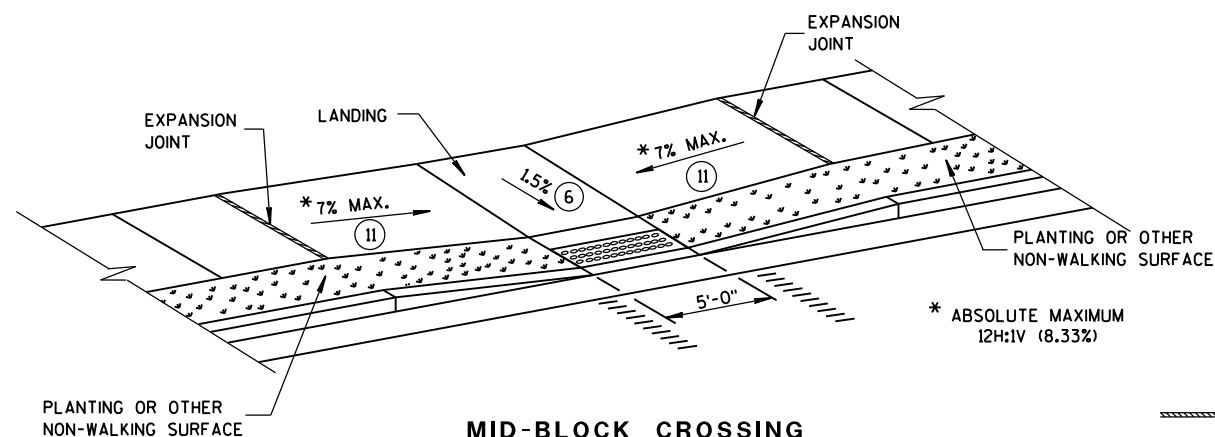
*** DETAILS TO BE DETERMINED
BY DESIGNER



DETECTABLE WARNING AT ISLANDS



MID-BLOCK CROSSING TYPE 7A



**MID-BLOCK CROSSING
TYPE 7B**

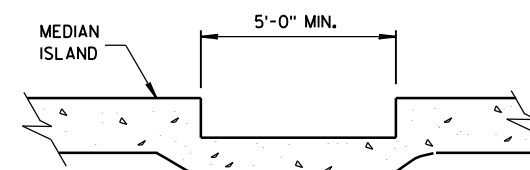
NOTE: THESE PARALLEL AND PARALLEL/PERPENDICULAR CURB RAMPS
MAY BE USED AT INTERSECTIONS AND MID BLOCK LOCATIONS.

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

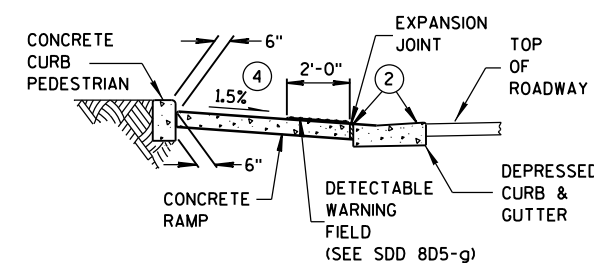
SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ③ ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ④ $\pm 0.5\%$ CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.
- ⑩ INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.
- ⑪ SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.
- ⑫ THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET $\pm$ 0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET FROM THE NEAREST RAIL.
- ⑬ DO NOT INSTALL DETECTABLE WARNING FIELDS AT THE EDGES OF STREET-LEVEL PEDESTRIAN REFUGE ISLANDS IF A MINIMUM 2'-FOOT CONCRETE SURFACE WITHOUT DETECTABLE WARNINGS (MEASURED IN THE DIRECTION OF PEDESTRIAN TRAVEL) CANNOT BE ACHIEVED.



SECTION A-A



SECTION B-B

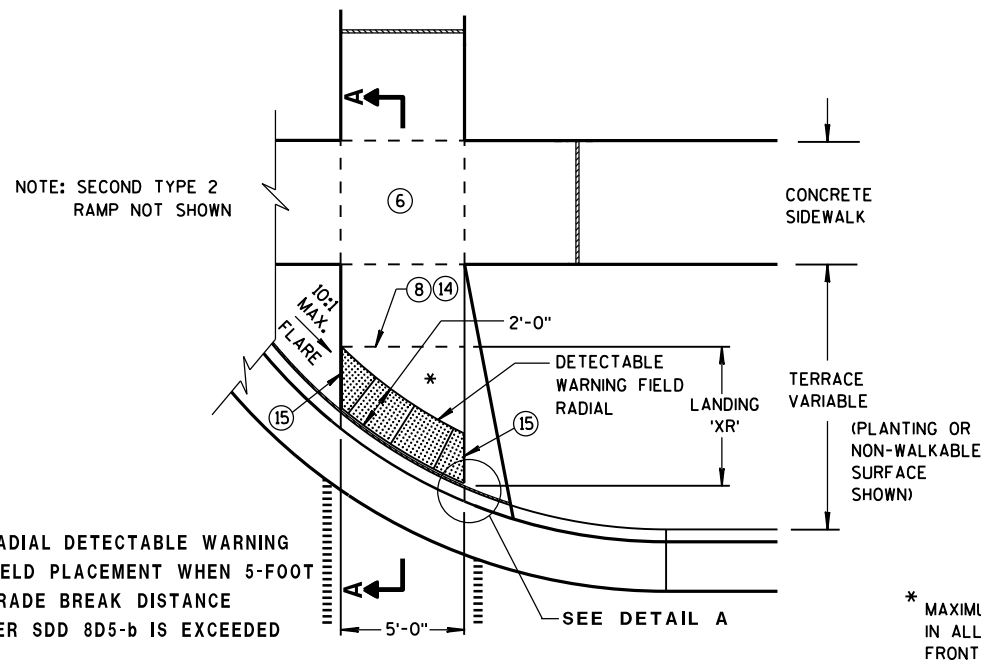
LEGEND

- | | |
|---|------------------------------------|
|  | 1/2" EXPANSION JOINT-SIDEWALK |
|  | CONTRACTION JOINT FIELD LOCATED |
|  | PAVEMENT MARKING CROSSWALK (WHITE) |

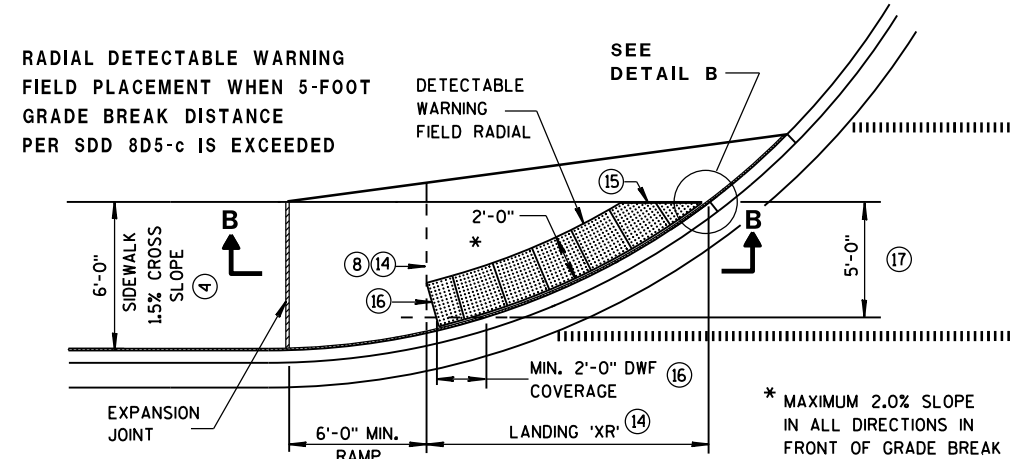
CURB RAMPS

TYPES 5, 6, 7A, 7B & 8

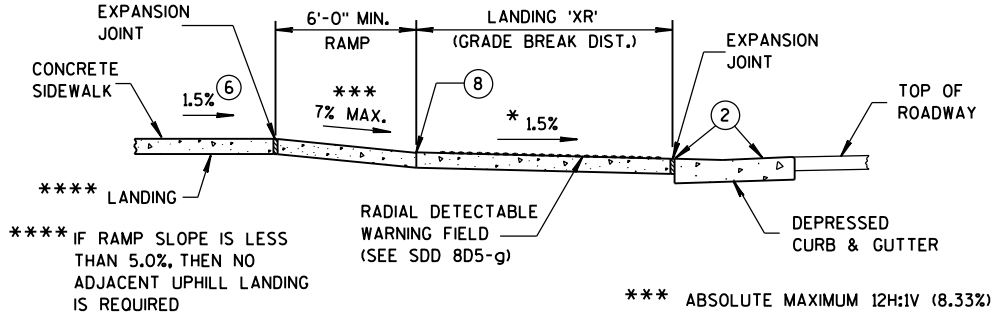
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 60



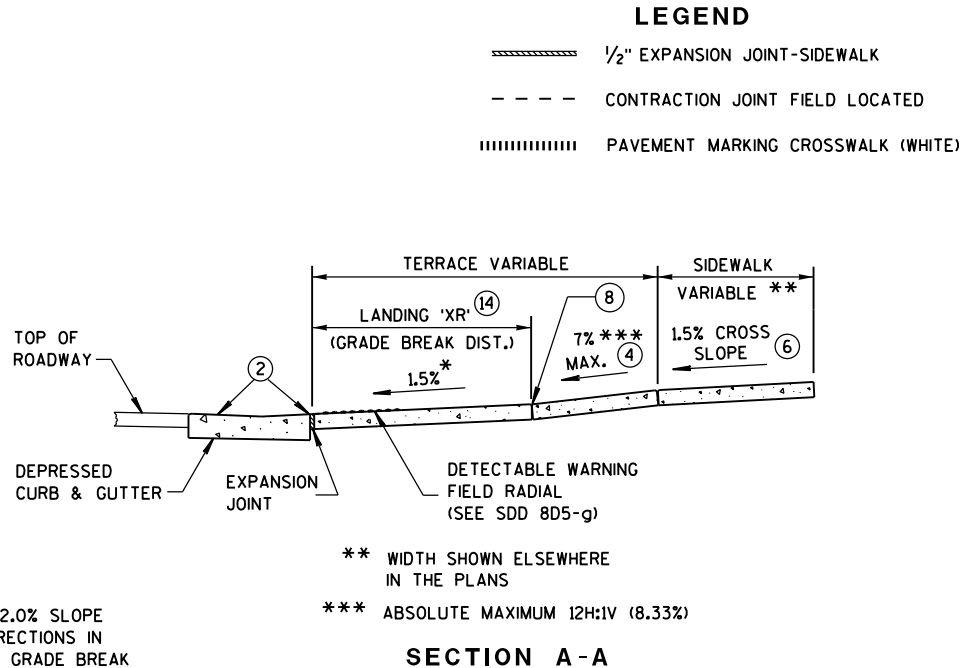
TYPE 2 RAMP
PLAN VIEW
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)
(ON LINE WITH SIDEWALK)



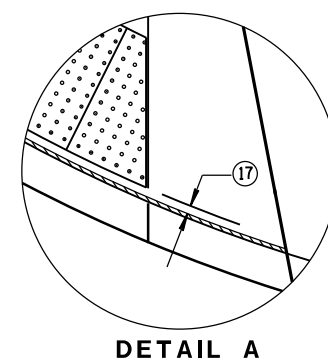
CURB RAMP TYPE 4A1
PLAN VIEW
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)



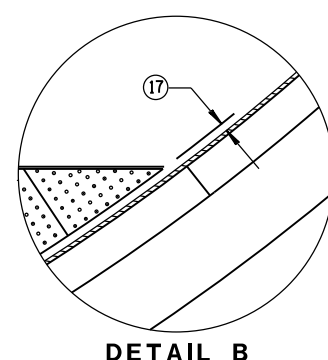
SECTION B-B FOR TYPE 4A1



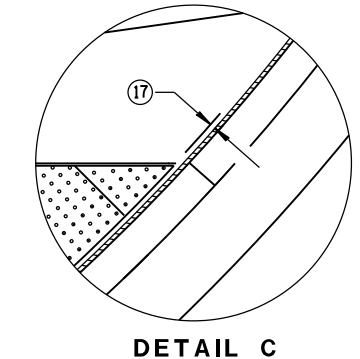
SECTION A-A



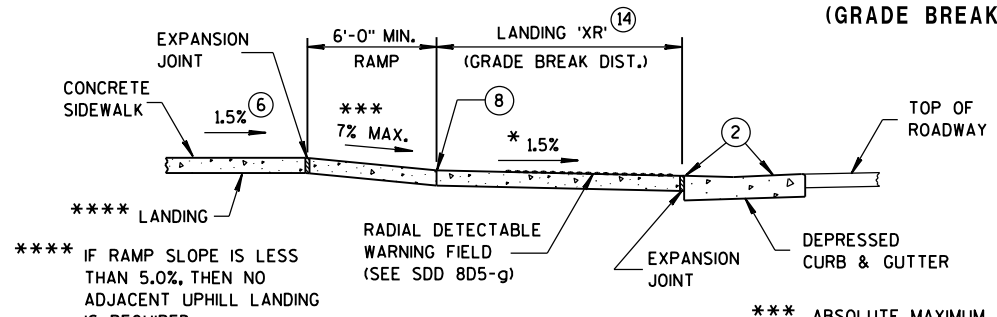
DETAIL A



DETAIL B



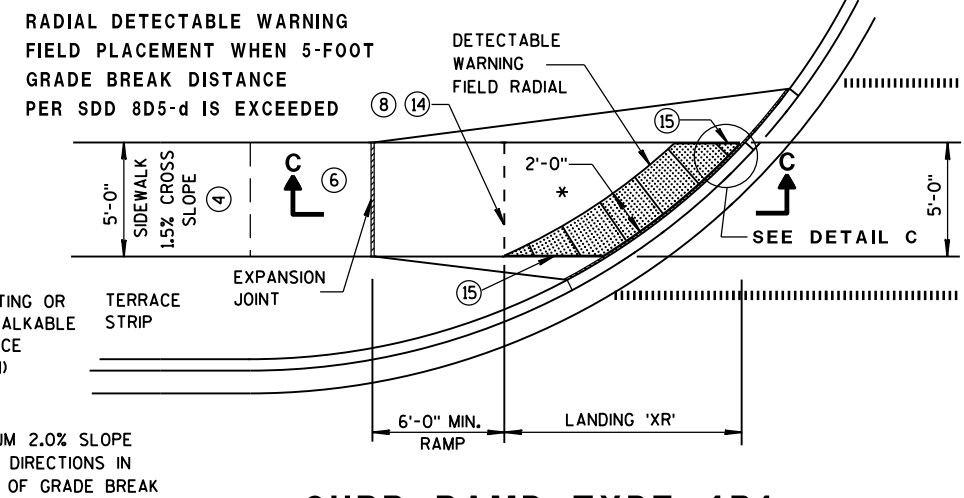
DETAIL C



SECTION C-C FOR TYPE 4B1

GENERAL NOTES

- AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.
- DETECTABLE WARNING FIELDS (DWFs) THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.
- APPLY RADIAL DETECTABLE WARNING PLACEMENT SIMILARLY FOR TYPE 4A AND 4A1 CURB RAMPS AND SIMILARLY FOR TYPE 4B AND 4B1 CURB RAMPS. TYPE 4A AND 4B CURB RAMPS ARE NOT SHOWN.
- REFER TO SDD 8D5-g FOR ADDITIONAL RADIAL PLATE REQUIREMENTS.
- FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FIELD ARE PROHIBITED.
- DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.
- 2 GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- 3 ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- 4 ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- 6 PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.
- 8 PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- 14 CONSULT ENGINEER IF GRADE BREAK LOCATION (END OF LANDING DIMENSION 'XR') REQUIRES FIELD ADJUSTMENT WHEN ESTABLISHING FINAL RADIAL DETECTABLE WARNING FIELD LOCATION.
- 15 FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN 1/8" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.
- 16 USE 1'X 2' RECTANGULAR END PLATE AT END OF TYPE 4A1 RAMP AND PROVIDE MINIMUM 2'-0" DETECTABLE WARNING FIELD COVERAGE (IN DIRECTION OF PEDESTRIAN TRAVEL) ALONG THE ENTIRE CURB RAMP WIDTH.
- 17 A MAXIMUM 3-INCH CONCRETE BORDER WIDTH IS ALLOWABLE IN FRONT OF RADIAL DETECTABLE WARNING FIELD FOR CONSTRUCTABILITY PURPOSES. CONCRETE BORDER WIDTH MAY VARY UP TO 1 INCH.



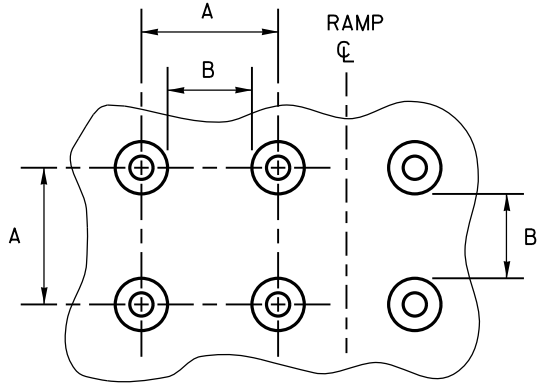
CURB RAMP TYPE 4B1
PLAN VIEW
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)

CURB RAMPS
RADIAL DETECTABLE WARNING
FIELD APPLICATIONS

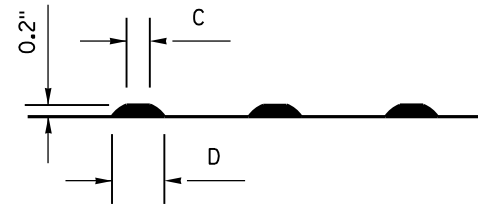
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

	MIN.	MAX.
A	1.6"	2.4"
B	0.65"	1.5"
C	*	*
D	0.9"	1.4"

* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.

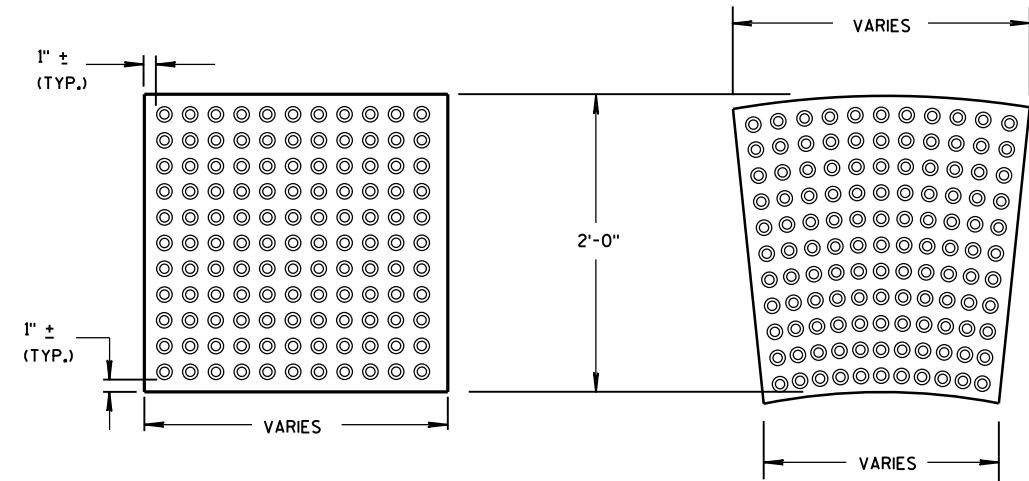


PLAN VIEW



ELEVATION VIEW

TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL



RECTANGULAR PLATES
RADIAL PLATES
DETECTABLE WARNING FIELDS (TYPICAL)

PLAN VIEW

GENERAL NOTES

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

PLACE ALL DETECTABLE WARNING FIELD SYSTEMS IN ACCORDANCE TO THE MANUFACTURER'S RECOMMENDATION.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FIELD ARE PROHIBITED.

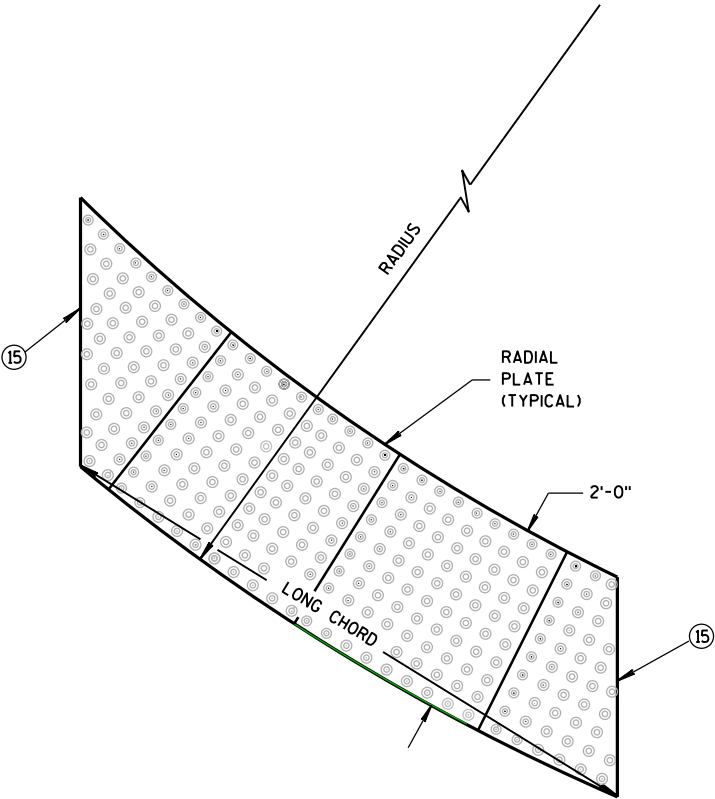
DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

FOR RADIAL DETECTABLE WARNING FIELD APPLICATIONS WHERE STANDARD RADIAL PLATES ARE NOT AVAILABLE AT AN INTERSECTION CURB RADIUS, A COMBINATION OF SQUARE OR RECTANGULAR PLATES AND RADIAL PLATES MAY BE USED TO FORM RADIAL CONFIGURATION. RADIAL WEDGES IN COMBINATION WITH SQUARE PANELS ARE ALSO ACCEPTABLE. FOLLOW MANUFACTURER'S RECOMMENDATIONS.

REFER TO CONTRACT AND STANDARD SPECIFICATIONS FOR FIELD CUTTING REQUIREMENTS.

DO NOT EMBED IN CONCRETE ANY FIELD-CUT PLATES WITH CUT EDGES SHORTER THAN 6 INCHES. CONSULT WITH MANUFACTURER FOR RE-DRILLING AND ANCHORING REQUIREMENTS OF FIELD-CUT PLATES.

15 FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN 1/8" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.

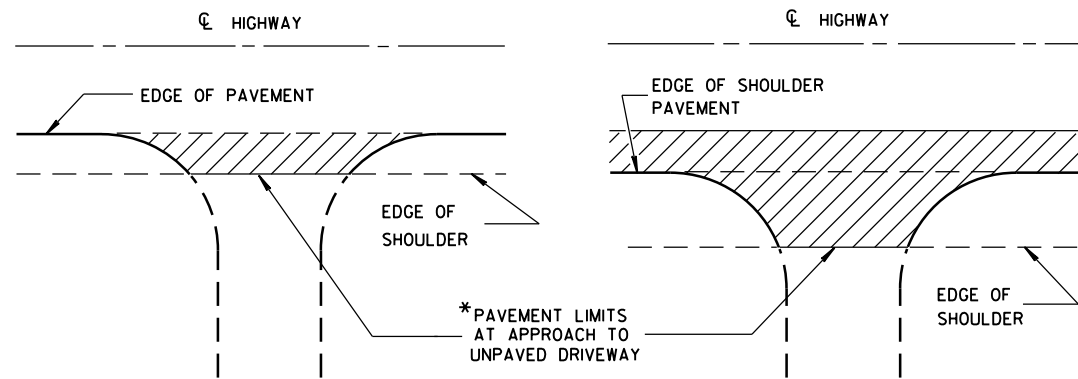


RADIAL DETECTABLE
WARNING FIELD ATTRIBUTES

CURB RAMPS
RECTANGULAR AND RADIAL
DETECTABLE WARNING PLATES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2017 /S/ Rodney Taylor
DATE ROADWAY STANDARDS UNIT SUPERV 62 ENT
FHWA

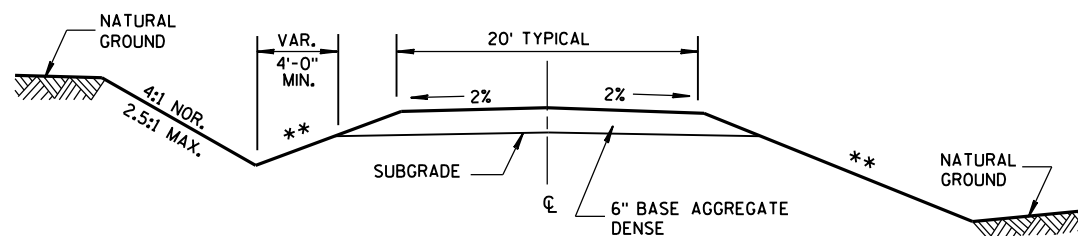


*WHERE DRIVEWAY IS PAVED, APPROACH PAVEMENT SHOULD BE EXTENDED TO MATCH DRIVEWAY PAVEMENT.

PLAN VIEW
(UNPAVED SHOULDER ON HIGHWAY)

PLAN VIEW
(PAVED SHOULDER ON HIGHWAY)

RURAL DRIVEWAY INTERSECTION DETAIL
(NO CURB & GUTTER OR SIDEWALK)



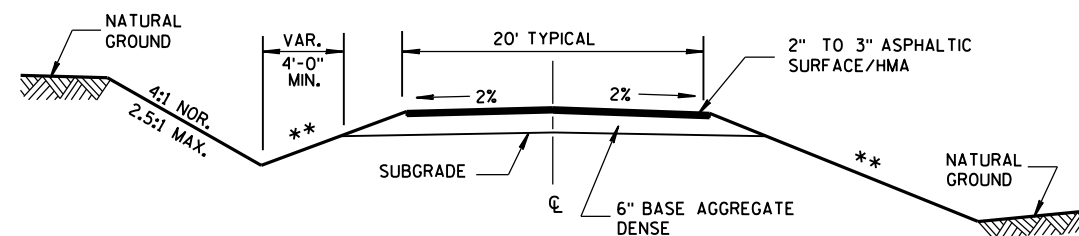
IN CUT

IN FILL

**TYPICAL CROSS SECTION FOR
PRIVATE DRIVE OR FIELD ENTRANCE
AGGREGATE SURFACE**

** SLOPE CAN VARY WITH SPEED. SEE 11-45-2.6.2.

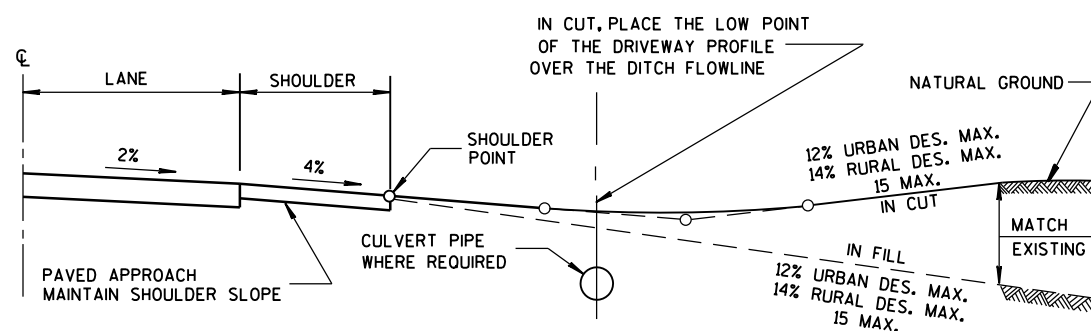
POSTED SPEED MPH	MAX. SLOPE
<35	4:1
≥35 TO <60	6:1
≥60	10:1



IN CUT

IN FILL

**TYPICAL CROSS SECTION FOR
PRIVATE DRIVE OR FIELD ENTRANCE
ASPHALTIC SURFACE**



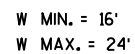
TYPICAL DRIVEWAY PROFILES

**DRIVEWAYS
WITHOUT CURB & GUTTER**

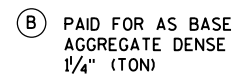
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
December, 2016 /S/ Rodney Taylor
DATE ROADWAY STANDARDS UNIT SUPERV ENT
FHWA

① DESIGN WILL DETERMINE FINAL DRIVEWAY ASPHALTIC THICKNESS BASED ON TYPE OF USAGE AND LOADINGS.



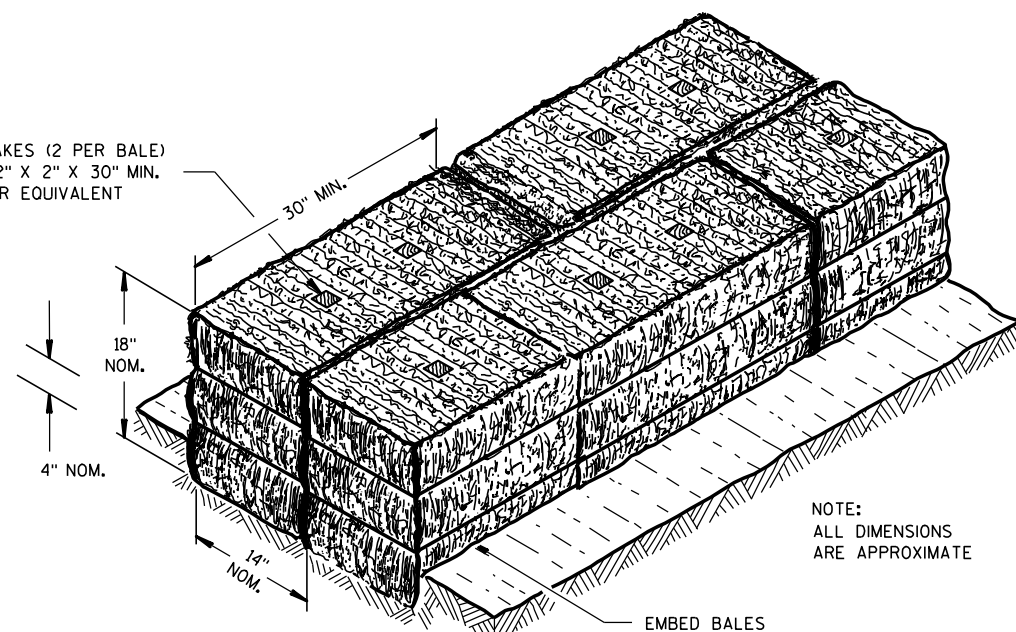
PLAN VIEW
HALF SECTION



PLAN VIEW
HALF SECTION

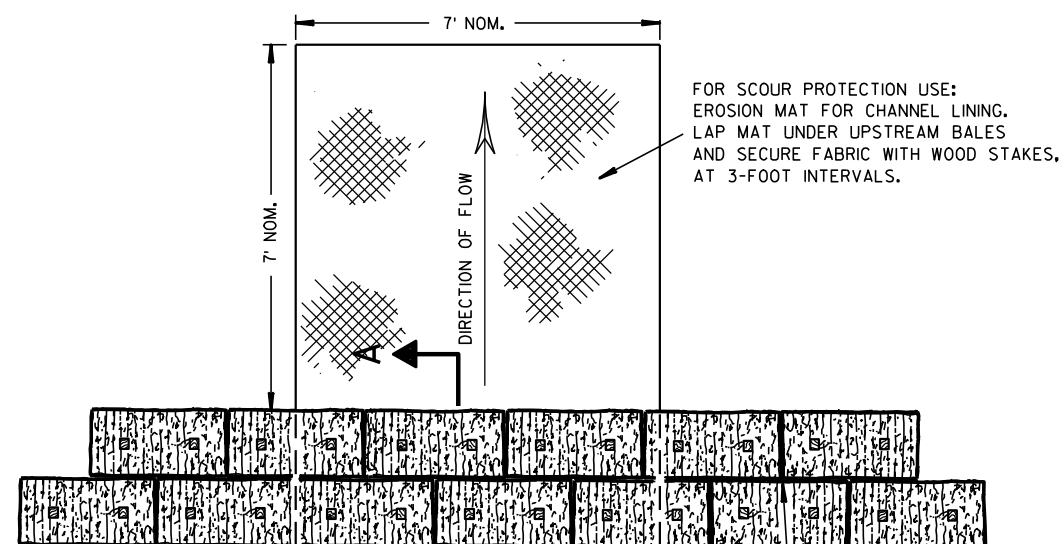


WOOD STAKES (2 PER BALE)
NOMINAL 2" X 2" X 30" MIN.
LENGTH OR EQUIVALENT



NOTE:
ALL DIMENSIONS
ARE APPROXIMATE

SECTION A-A

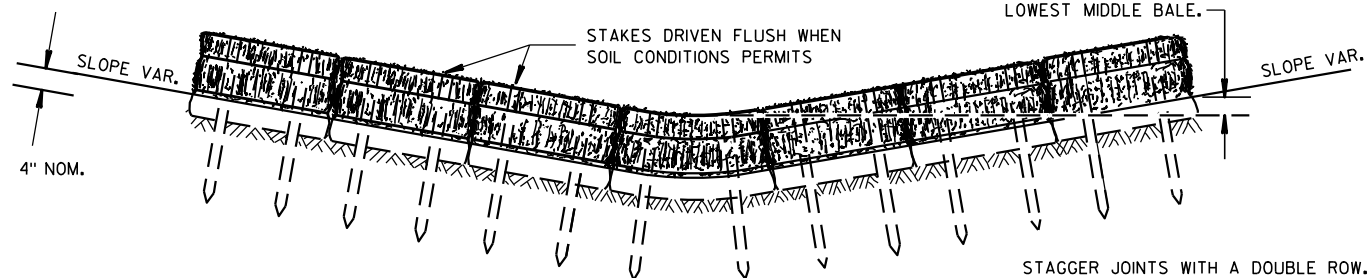


FOR SCOUR PROTECTION USE:
EROSION MAT FOR CHANNEL LINING.
LAP MAT UNDER UPSTREAM BALES
AND SECURE FABRIC WITH WOOD STAKES,
AT 3-FOOT INTERVALS.

PLAN VIEW

STAGGER JOINTS BETWEEN ADJACENT
ROWS OF BALES.

BOTTOM ELEVATION OF END BALE SHALL
BE EQUAL TO OR GREATER THAN TOP OF
LOWEST MIDDLE BALE.



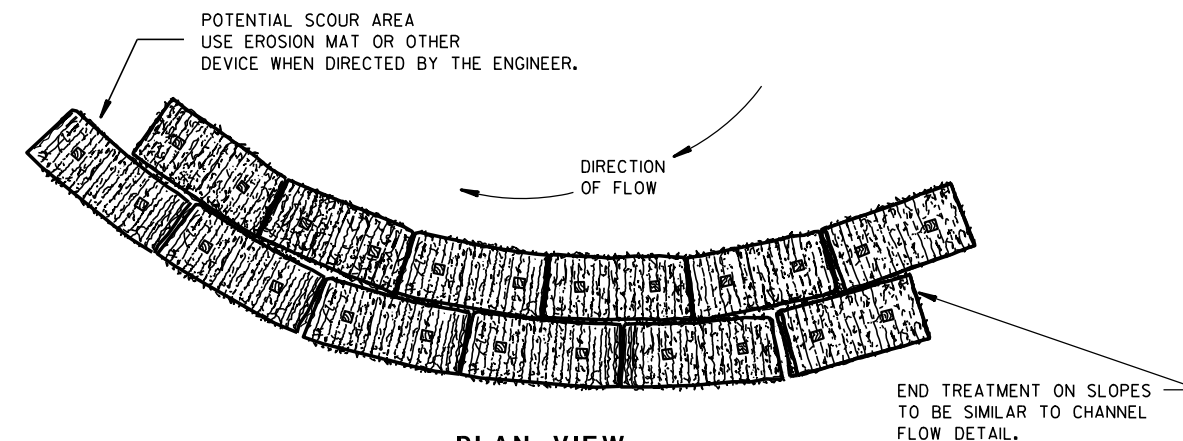
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

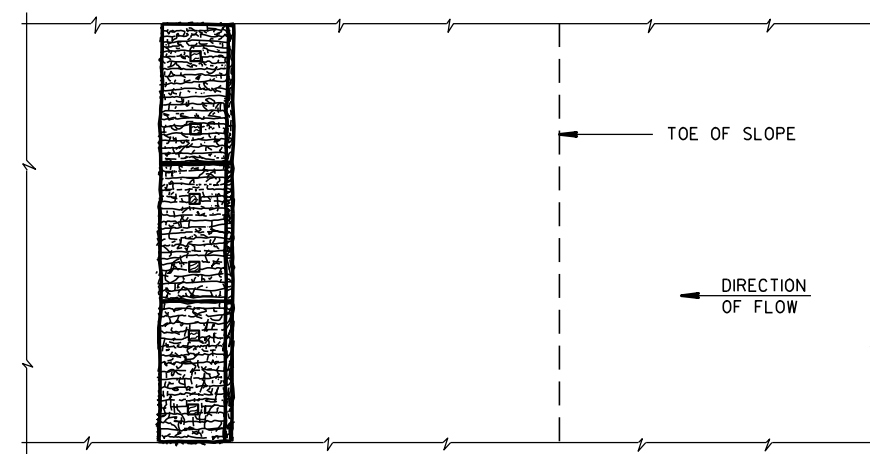
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- ① TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.

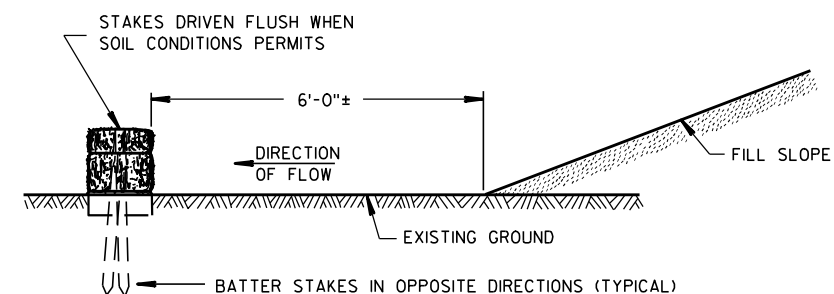


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

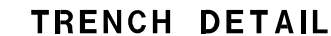
6/04/02
DATE

/S/ Beth Conn-----
CHIEF ROADWAY DEVELOPER 65 ENGINEER

FHWA



- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1½" X 1½" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.

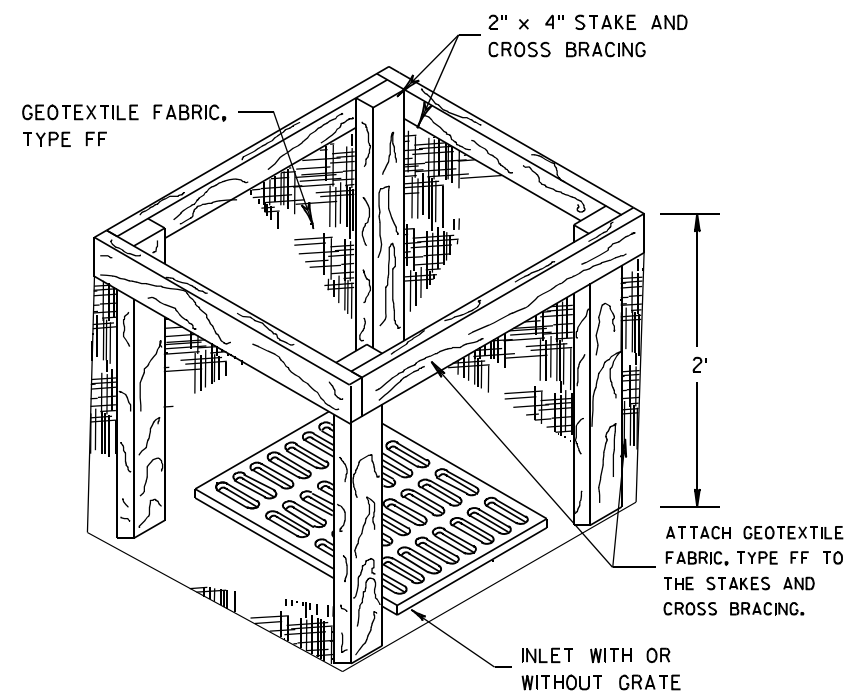
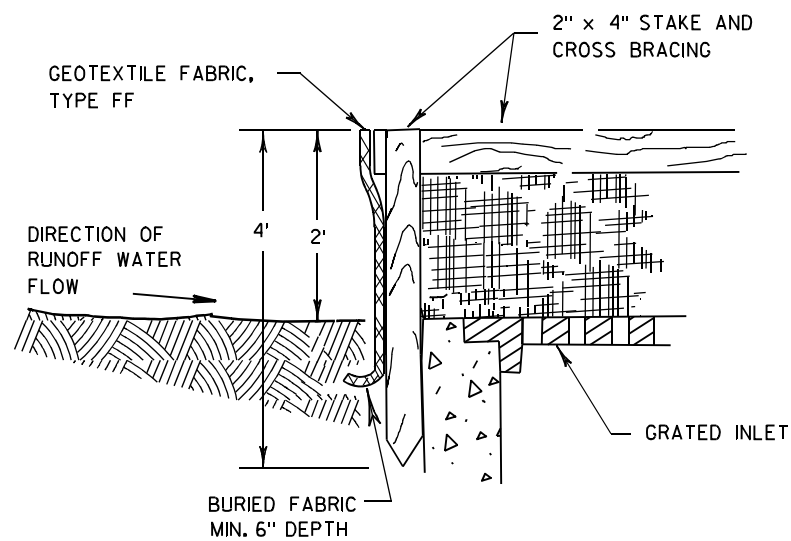


SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05 /S/ Beth Connolly
DATE CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA



INLET PROTECTION, TYPE A

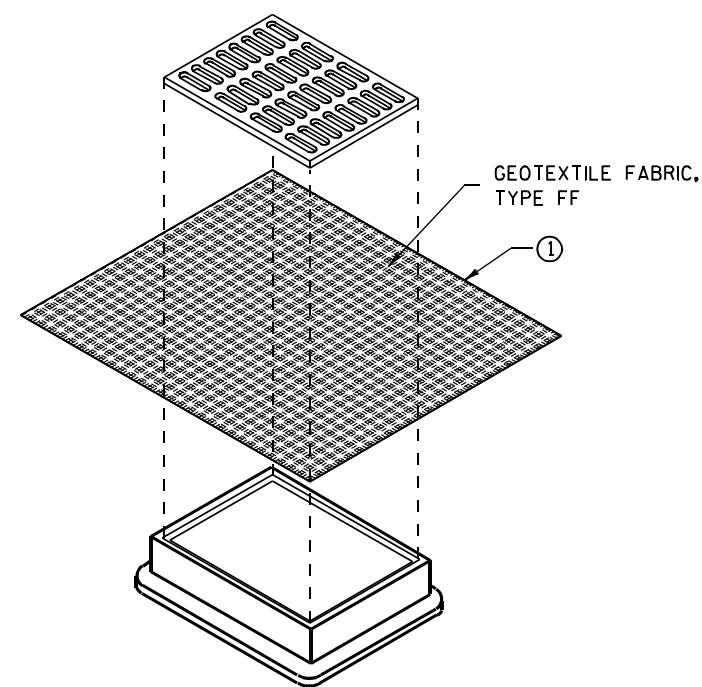
GENERAL NOTES

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

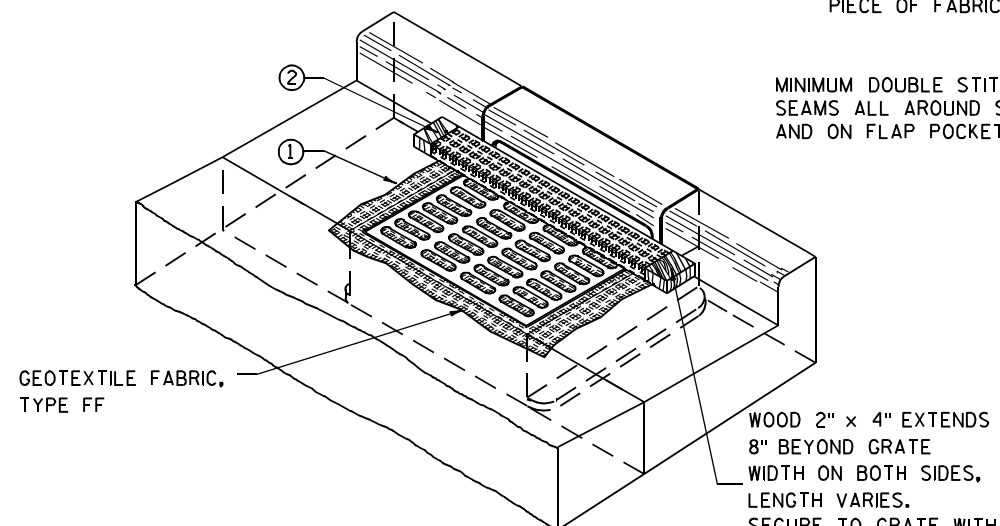
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- ① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
- ③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.



**INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)**

(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

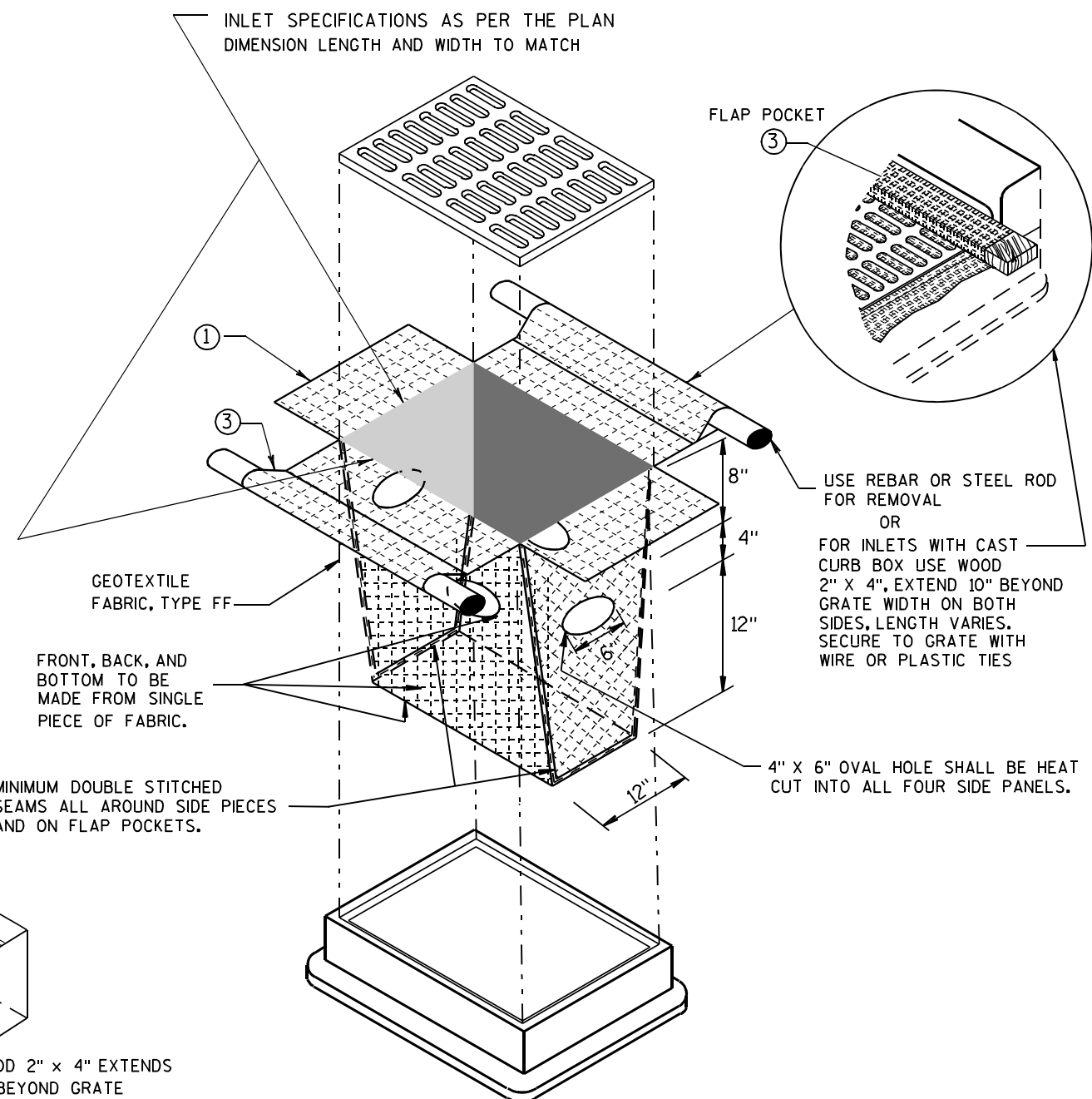
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.



INLET PROTECTION, TYPE D

(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX AS PER NOTE ②)

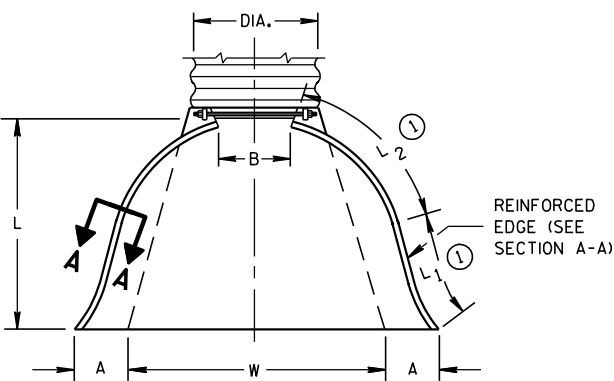
**INLET PROTECTION
TYPE A, B, C, AND D**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02 /S/ Beth Connolly
DATE 67
FHWA CHIEF ROADWAY DEVELOPMENT ENGINEER

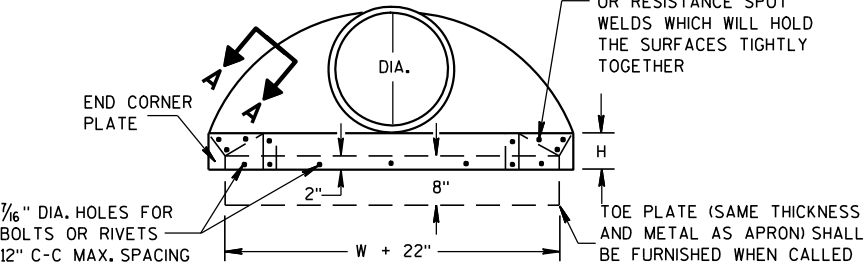
METAL APRON ENDWALLS												
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY	
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L ₁ ①	L ₂ ①	W (±2")			
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.	
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.	
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.	
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1 Pc.	
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.	
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1 Pc.	
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2 Pc.	
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2 Pc.	
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3 Pc.	
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3 Pc.	
60	.109x	.105x	18	33	12	87	—	—	114	2 to 1	3 Pc.	
66	.109x	.105x	18	36	12	87	—	—	120	2 to 1	3 Pc.	
72	.109x	.105x	18	39	12	87	—	—	126	2 to 1	3 Pc.	
78	.109x	.105x	18	42	12	87	—	—	132	1 1/2 to 1	3 Pc.	
84	.109x	.105x	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.	
90	.109x	.105x	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.	
96	.109x	.105x	18	35	12	87	—	—	150	1 1/2 to 1	3 Pc.	

* EXCEPT CENTER PANEL
SEE GENERAL NOTES



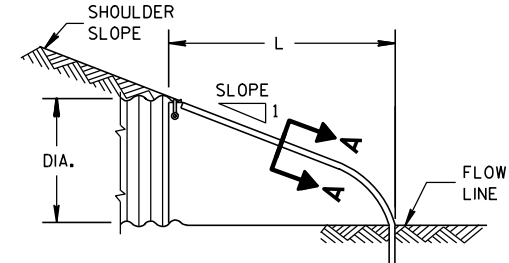
PLAN VIEW

END CORNER PLATES MAY
BE FASTENED TO APRON
PROPER BY BOLTS, RIVETS,
OR RESISTANCE SPOT
WELDS WHICH WILL HOLD
THE SURFACES TIGHTLY
TOGETHER



END VIEW

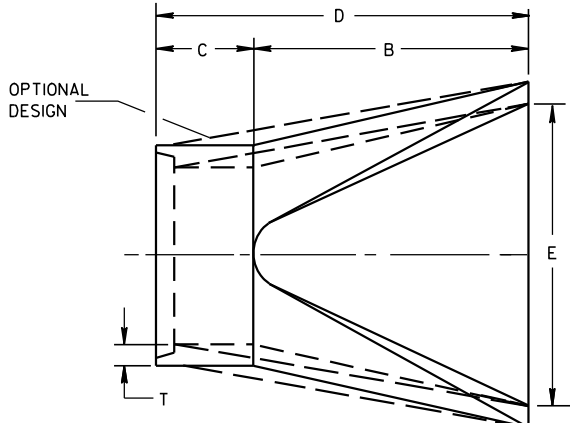
TOE PLATE (SAME THICKNESS
AND METAL AS APRON) SHALL
BE FURNISHED WHEN CALLED
FOR ON THE PLANS



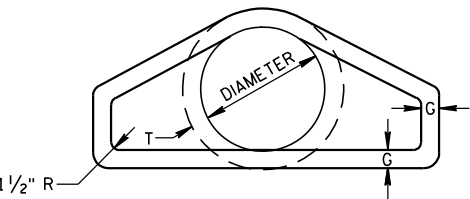
SIDE ELEVATION
METAL ENDWALLS

REINFORCED CONCRETE APRON ENDWALLS								
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE
	T	A	B	C	D	E	G	
12	2	4	24	48 ⁷ / ₈	72 ¹ / ₈	24	2	3 to 1
15	2 ¹ / ₄	6	27	46	73	30	2 ¹ / ₄	3 to 1
18	2 ¹ / ₂	9	27	46	73	36	2 ¹ / ₂	3 to 1
21	2 ³ / ₄	9	36	37 ¹ / ₂	73 ¹ / ₂	42	2 ³ / ₄	3 to 1
24	3	9 ¹ / ₂	43 ¹ / ₂	30	73 ¹ / ₂	48	3	3 to 1
27	3 ¹ / ₄	10 ¹ / ₂	49 ¹ / ₂	24	73 ¹ / ₂	54	3 ¹ / ₄	3 to 1
30	3 ¹ / ₂	12	54	19 ³ / ₄	73 ¹ / ₂	60	3 ¹ / ₂	3 to 1
36	4	15	63	34 ³ / ₄	97 ³ / ₄	72	4	3 to 1
42	4 ¹ / ₂	21	63	35	98	78	4 ¹ / ₂	3 to 1
48	5	24	72	26	98	84	5	3 to 1
54	5 ¹ / ₂	27	65	33 ¹ / ₄ -35	98 ¹ / ₄ -100	90	5 ¹ / ₂	2 ¹ / ₂ to 1
60	6	30-35	60	39	99	96	5	2 to 1
66	6 ¹ / ₂	24-30	72-78	21-27	99	102	5 ¹ / ₂	2 to 1
72	7	24-36	78	21	99	108	6	2 to 1
78	7 ¹ / ₂	24-36	78	21	99	114	6 ¹ / ₂	2 to 1
84	8	36	90 ¹ / ₂	21	111 ¹ / ₂	120	6 ¹ / ₂	1 ¹ / ₂ to 1
90	8 ¹ / ₂	41	87 ¹ / ₂	24	111 ¹ / ₂	132	6 ¹ / ₂	1 ¹ / ₂ to 1

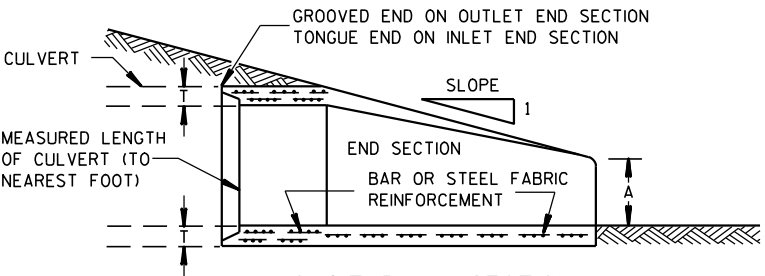
* MINIMUM
** MAXIMUM



PLAN

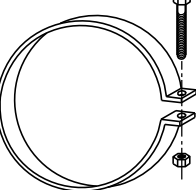


END VIEW

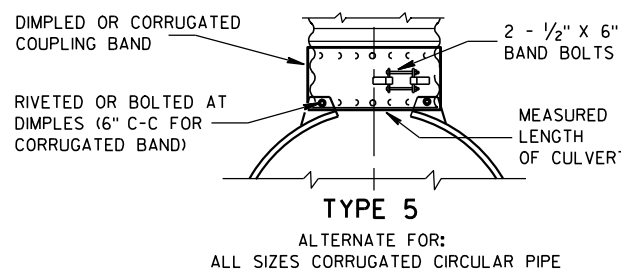
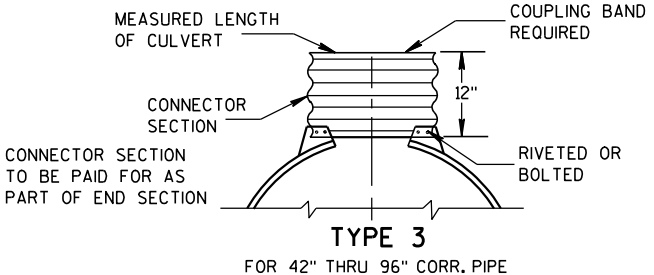
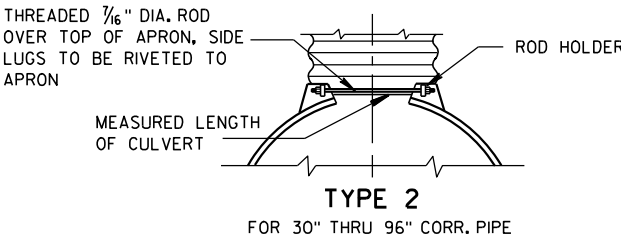
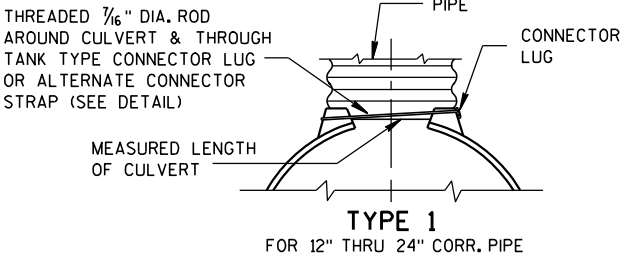


LONGITUDINAL SECTION
CONCRETE ENDWALLS

1" WIDE, 12 GA. (0.109"
THICK) GALVANIZED STRAP
WITH STANDARD 6" X 1/2"
BAND BOLT AND NUT



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



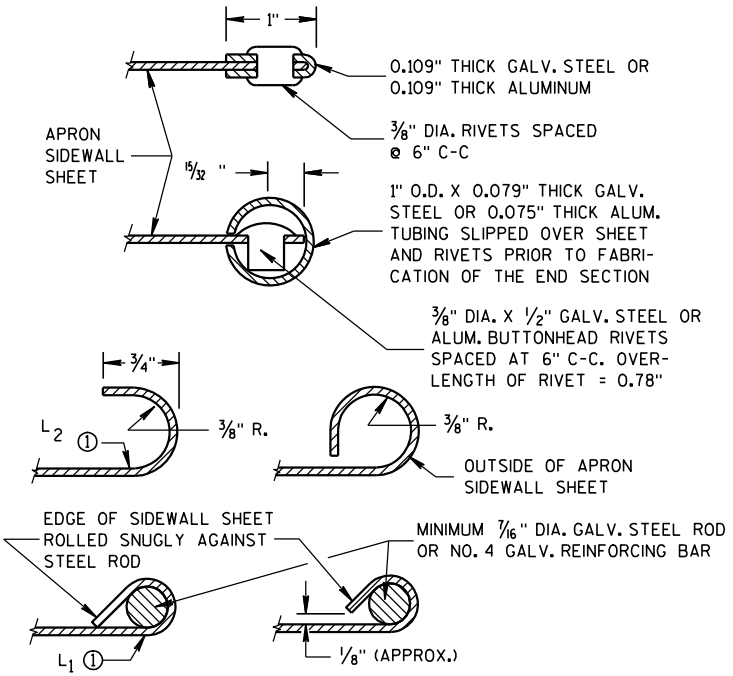
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL,
AND CORRUGATED BAND FITS INSIDE ENDWALL.
DIMPLED BAND MAY BE USED WITH HELICALLY
CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE
ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5
AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL
CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO
CIRCUMFERENTIAL CORRUGATIONS AT EACH END
USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON
THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE
STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL
OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR
ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE
OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND
LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL
THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND
LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH
OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE
PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS
FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS.
FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED
EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH
GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE
ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM
NUTS AND BOLTS FOR ALUMINUM UNITS.

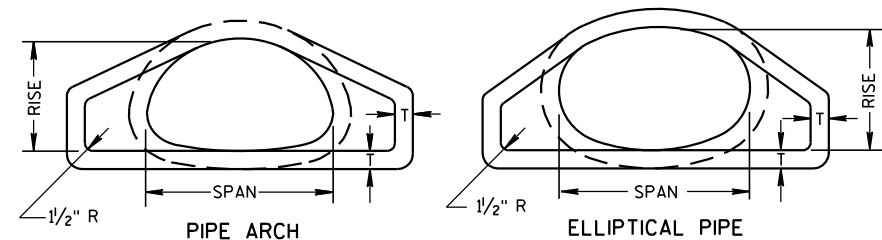
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT
TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT
TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED
INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

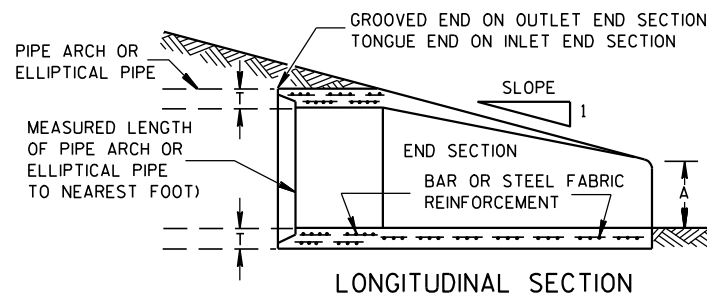
APRON ENDWALLS FOR
CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94
DATE
/S/ Rory L. Rhin...
CHIEF ROADWAY DEVELOP 68
NEER
FHWA

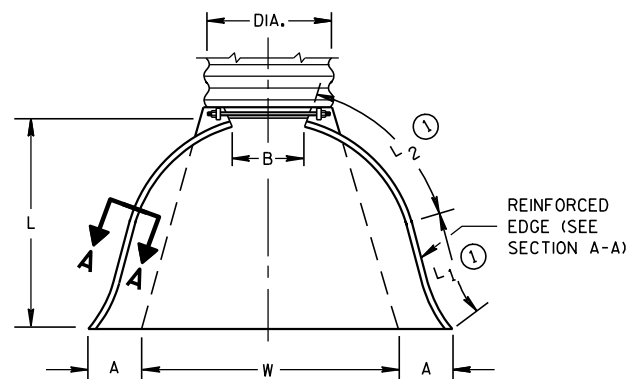


END VIEW



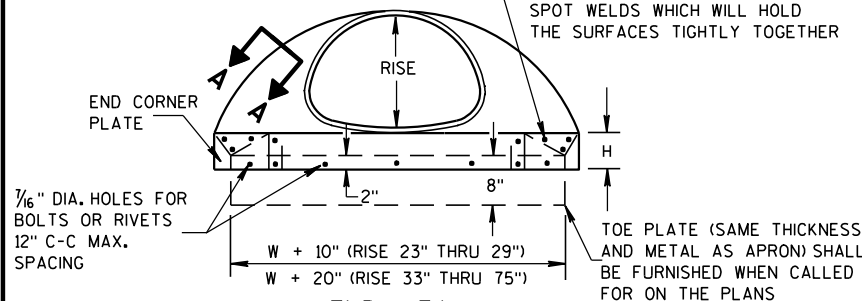
LONGITUDINAL SECTION

CONCRETE ENDWALLS

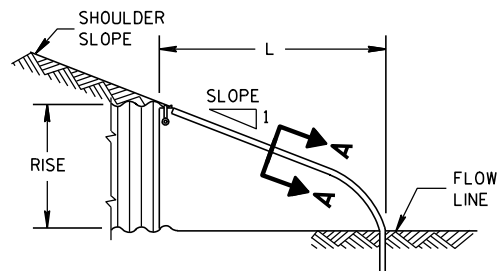


PLAN VIEW

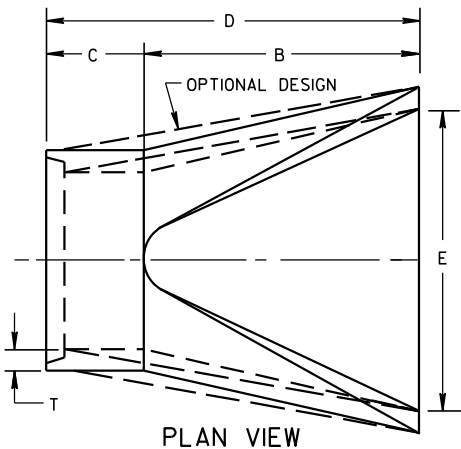
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



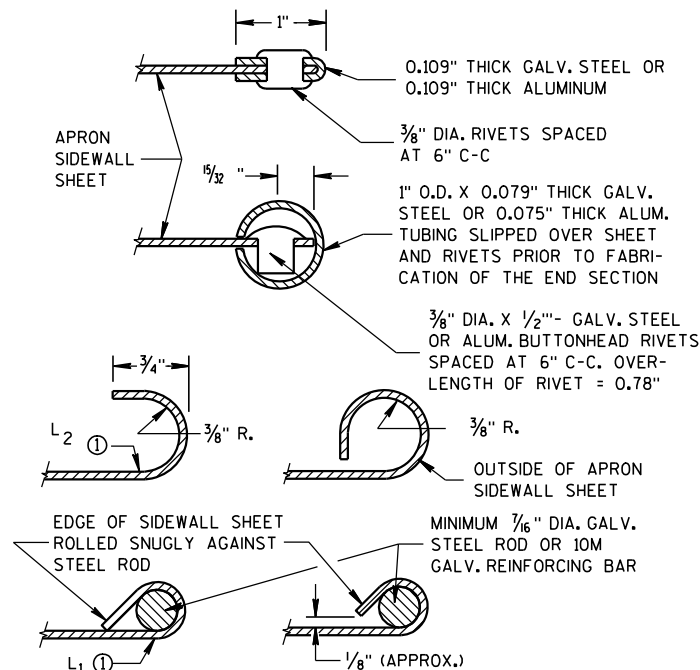
END VIEW



METAL ENDWALLS



PLAN VIEW



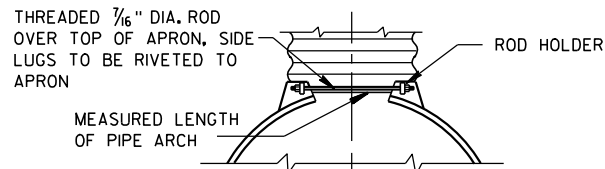
SECTION A-A

2- 2/3" X 1/2" CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
15	17	13	.064	.060	7	9	6	19	14	16	30	2 1/2 to 1	1 Pc.
18	21	15	.064	.060	7	10	6	23	14	19 3/8	36	2 1/2 to 1	1 Pc.
21	24	18	.064	.060	8	12	6	28	18	21 3/4	42	2 1/2 to 1	1 Pc.
24	28	20	.064	.060	9	14	6	32	18	27 1/2	48	2 1/2 to 1	1 Pc.
30	35	24	.079	.075	10	16	6	39	18	37 5/8	60	2 1/2 to 1	1 Pc.
36	42	29	.079	.075	12	18	8	46	24	45 3/8	75	2 1/2 to 1	1 Pc.
42	49	33	.109	.105	13	21	9	53	24	54 3/4	85	2 1/2 to 1	2 Pc.
48	57	38	.109	.105	18	26	12	63	24	68	90	2 1/2 to 1	3 Pc.
54	64	43	.109	.105	18	30	12	70	24	72 3/4	102	2 1/4 to 1	3 Pc.
60	71	47	.109*	.105*	18	33	12	77	30	82 1/4	114	2 1/4 to 1	3 Pc.
66	77	52	.109*	.105*	18	36	12	77	—	—	126	2 to 1	3 Pc.
72	83	57	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.

3" X 1" CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A	B	H	L	L ₁	L ₂	W		
					(±1")	(MAX.)	(±1")	(±1 1/2")	①	①	(±2")		
48	53	41	.109	.105	18	26	12	63	24	72¾	90	2½to 1	2 Pc.
54	60	46	.109	.105	18	30	12	70	30	82¼	102	2 to 1	2 Pc.
60	66	51	.109*	.105*	18	33	12	77	—	—	114	1½to 1	3 Pc.
66	73	55	.109*	.105*	18	36	12	77	—	—	126	1½to 1	3 Pc.
72	81	59	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.
78	87	63	.109*	.105*	22	38	12	77	—	—	148	1½to 1	3 Pc.
84	95	67	.109*	.105*	22	34	12	77	—	—	162	1½to 1	3 Pc.
90	103	71	.109*	.105*	22	38	12	77	—	—	174	1½to 1	3 Pc.
96	112	75	.109*	.105*	24	40	12	77	—	—	174	1½to 1	3 Pc.

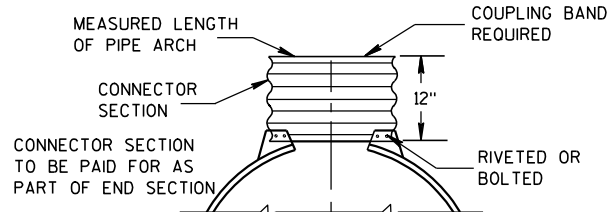
NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED.

* EXCEPT CENTER PANEL SEE GENERAL NOTES



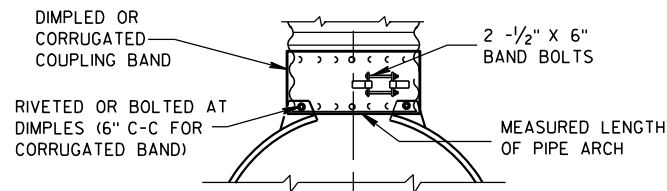
TYPE 2

FOR 17" X 13" THRU 112" X 75" PIPE ARCH



TYPE 3

FOR 64" X 43" THRU 112" X 75" PIPE ARCH



TYPE 5

ALTERNATE FOR: ALL SIZES CORRUGATED PIPE ARCHES

NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL.

CONNECTION DETAILS

REINFORCED CONCRETE PIPE ARCH										
EQUIV. DIA. (Inches)	DIMENSIONS (Inches)								APPROX. SLOPE	
	** SPAN	** RISE	T	A	B	C	D	E		
24	29	18	3	8 1/2	39	33	72	48	3 to 1	
30	36	22	3 1/2	9 1/2	50	46	96	60	3 to 1	
36	44	27	4	11 1/8	60	36	96	72	3 to 1	
42	51	31	4 1/2	15 1/8	60	36	96	78	3 to 1	
48	58	36	5	21	60	36	96	84	3 to 1	
54	65	40	5 1/2	25 1/2	60	36	96	90	3 to 1	
60	73	45	6	31	60	36	96	96	3 to 1	
72	88	54	7	31	60	39	99	120	2 to 1	
84	102	62	8	28 1/2	83	19	102	144	2 to 1	

REINFORCED CONCRETE ELLIPTICAL PIPE										
EQUIV. DIA. (Inches)	DIMENSIONS (Inches)								APPROX. SLOPE	
	** SPAN	** RISE	T	A	B	C	D	E		
24	30	19	3 1/4	8 1/2	39	33	72	48	3 to 1	
30	38	24	3 3/4	9 1/2	54	18	72	60	3 to 1	
36	45	29	4 1/2	11 1/8	60	24	84	72	2 1/2 to 1	
42	53	34	5	15 1/4	60	36	96	78	2 1/2 to 1	
48	60	38	5 1/2	21	60	36	96	84	2 1/2 to 1	
54	68	43	6	25 1/2	60	36	96	90	2 1/2 to 1	
60	76	48	6 1/2	30	60	36	96	96	2 1/2 to 1	

**NOMINAL SIZE

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

CONCRETE APRON ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM APRON ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE ARCH PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 77" X 52" THROUGH 112" X 75" APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

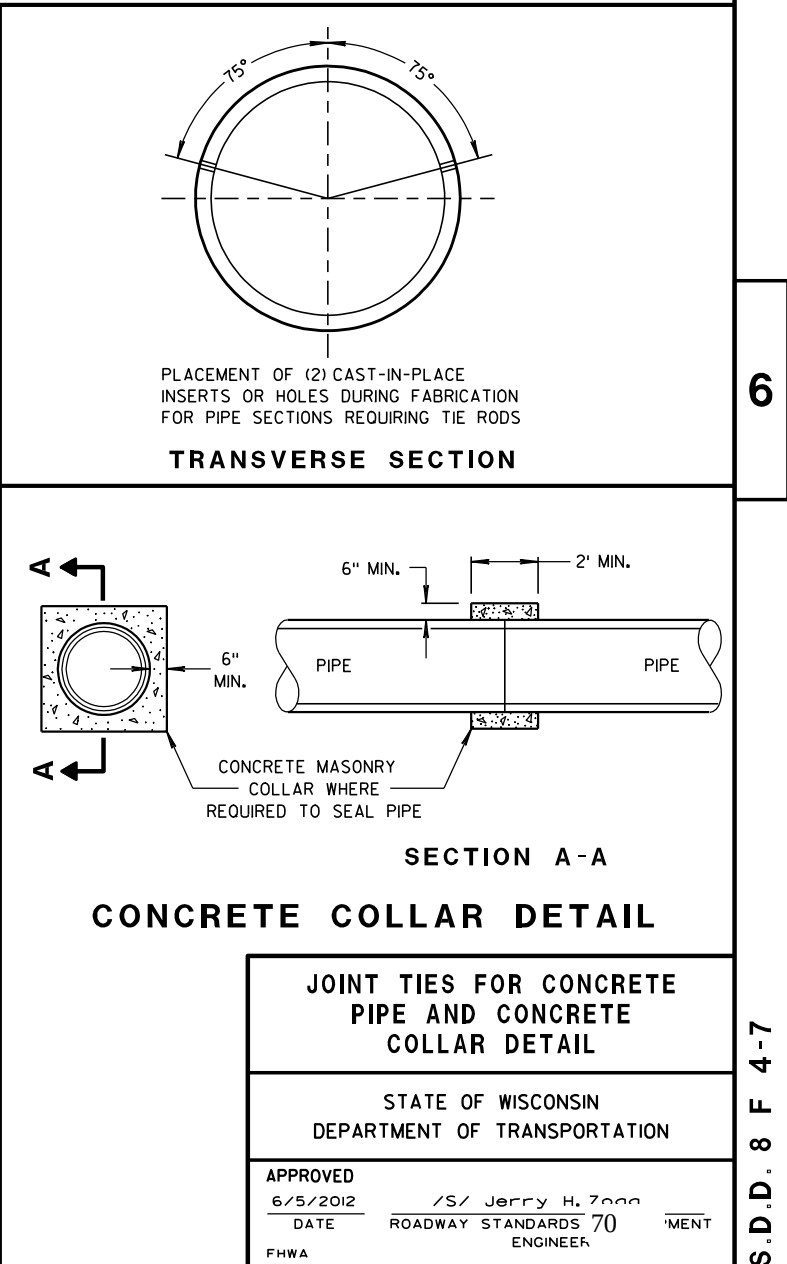
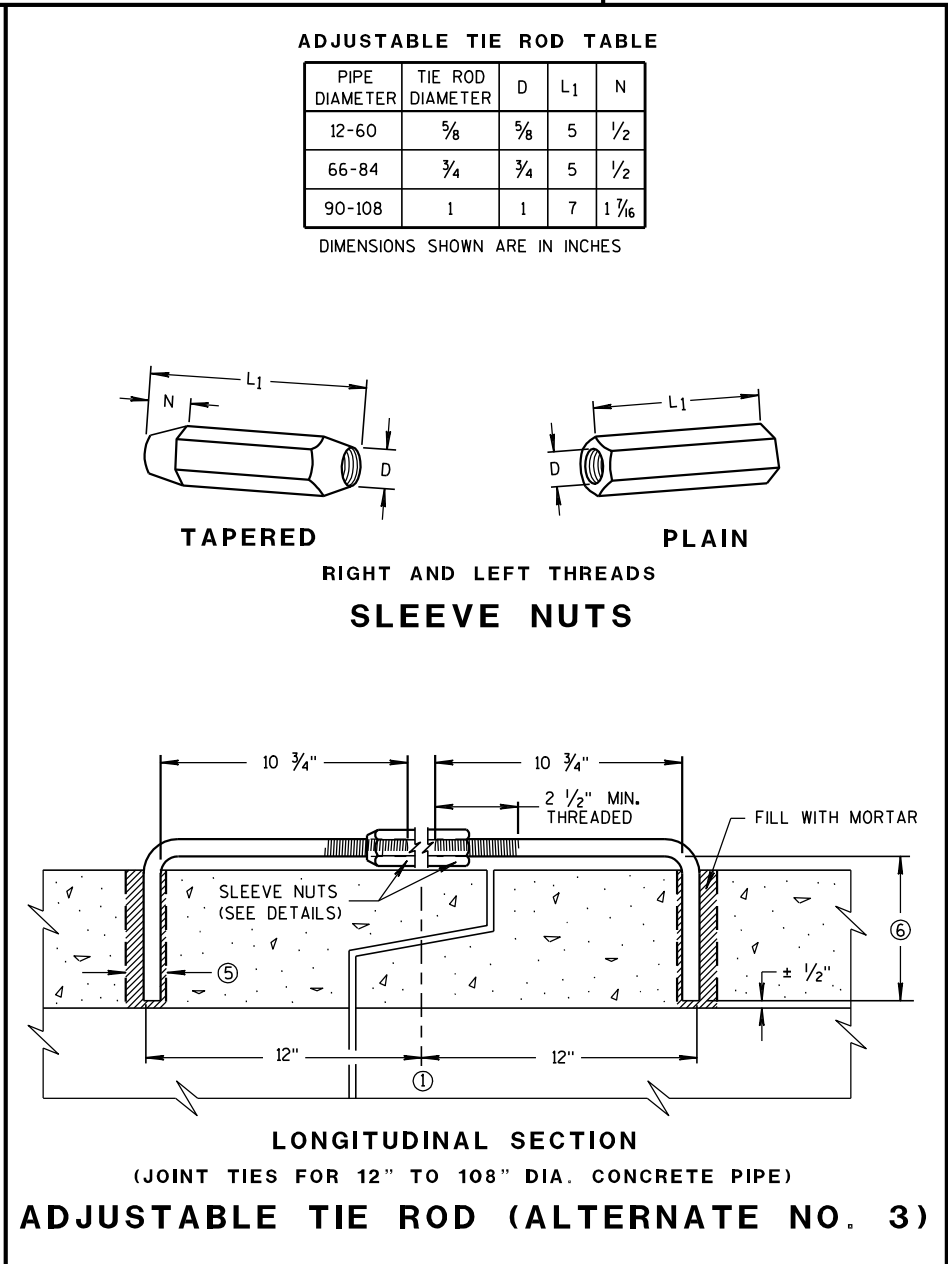
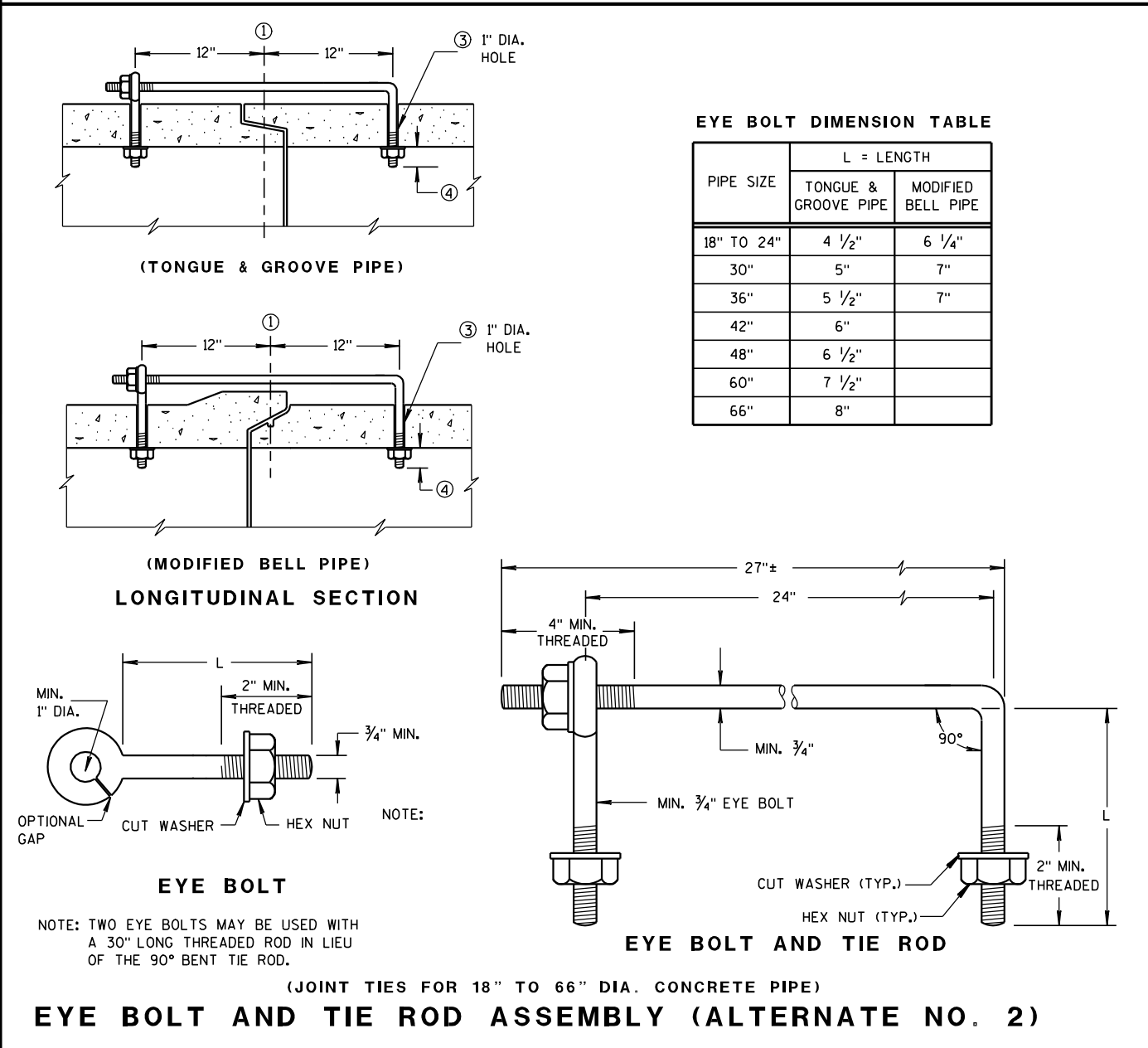
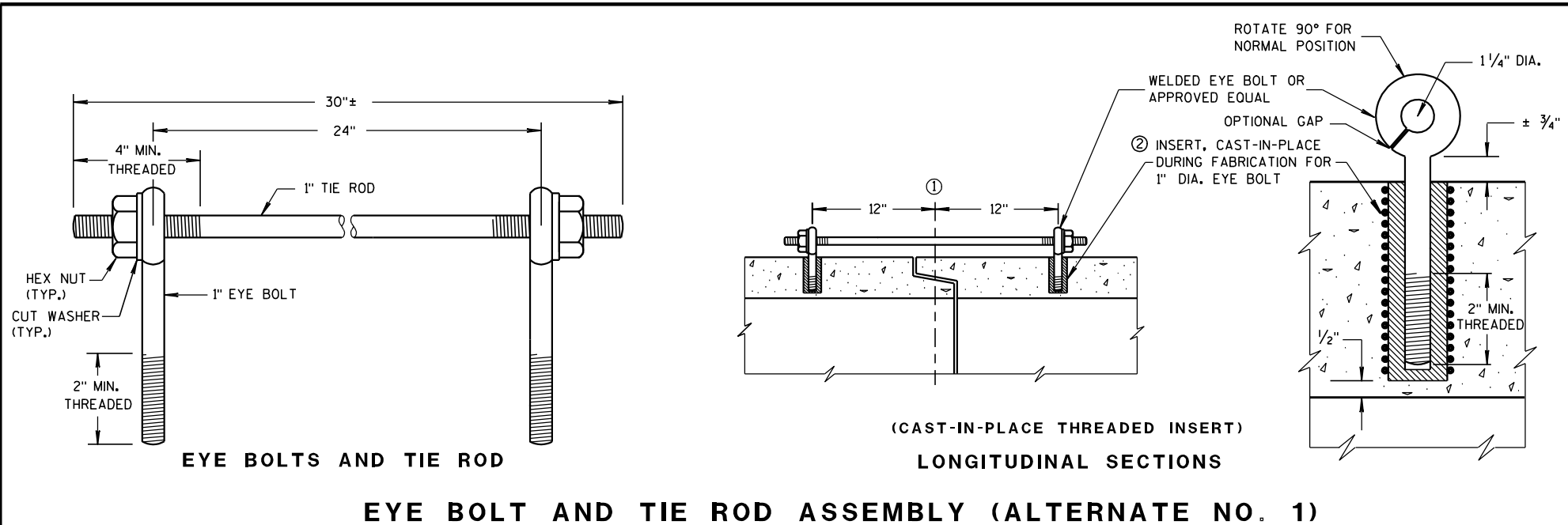
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE ARCH SIZES UP TO 73" X 55" A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE

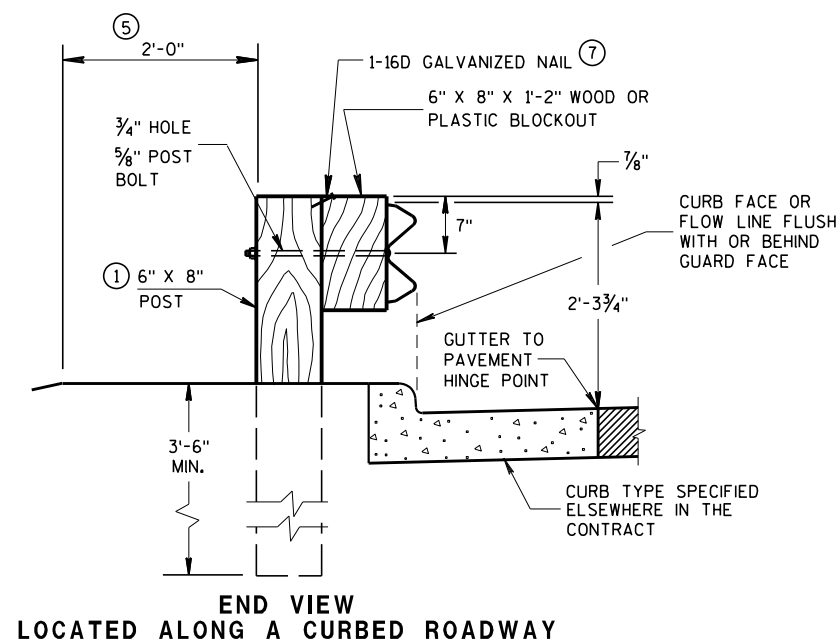
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94 /S/ Rory L. Rhin...
DATE CHIEF ROADWAY DEVELOPER
FHWA



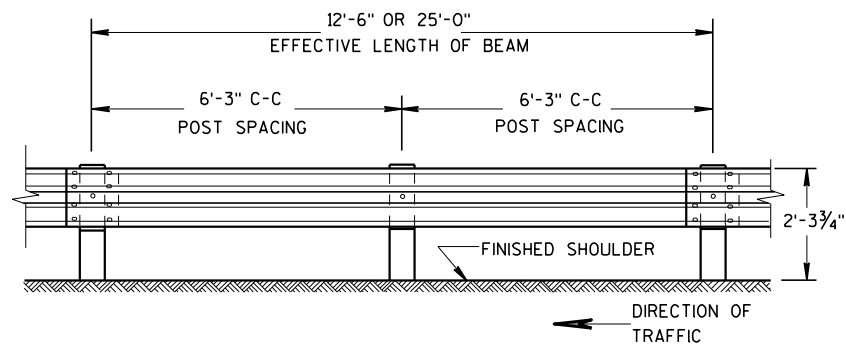
6

- S.D.D. 14 B 15-11a**



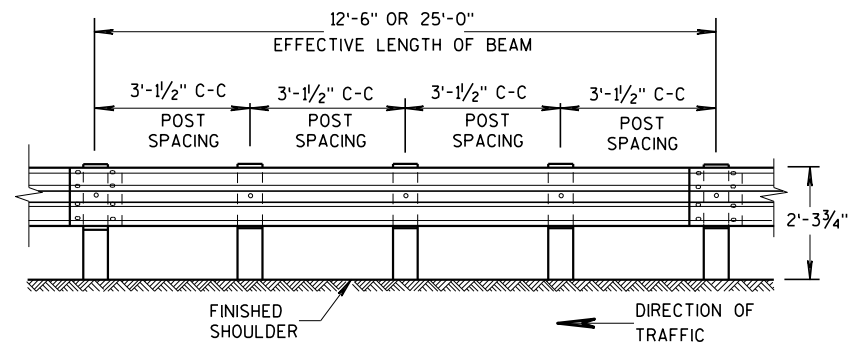
STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



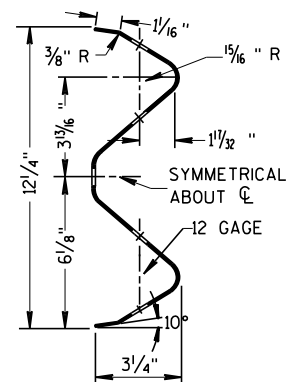
FRONT VIEW

POST SPACING STANDARD INSTALLATION

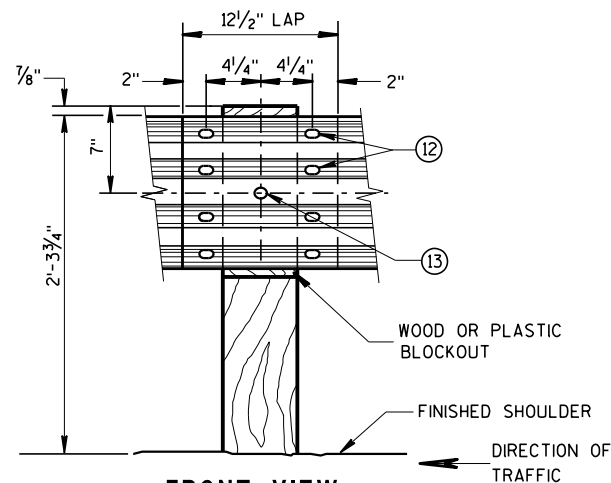


FRONT VIEW

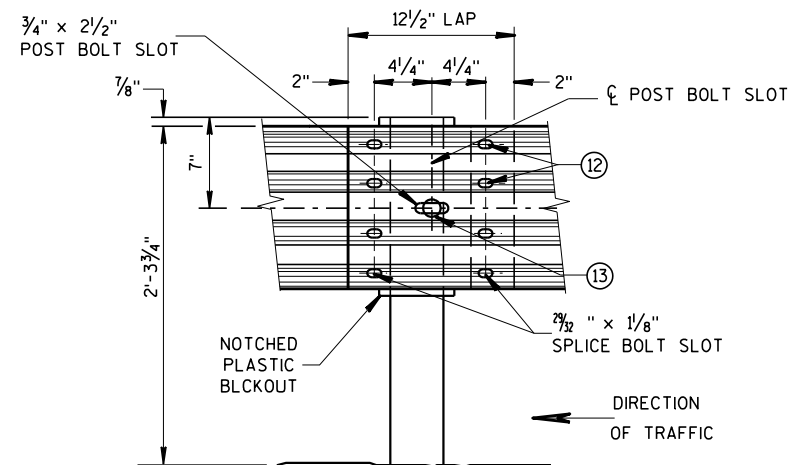
POST SPACING FOR LONGER POST
AT HALF POST SPACING W BEAM (LHW)



SECTION THRU W BEAM



FRONT VIEW
BEAM SPLICE AT WOOD POST
AND POST MOUNTING DETAIL

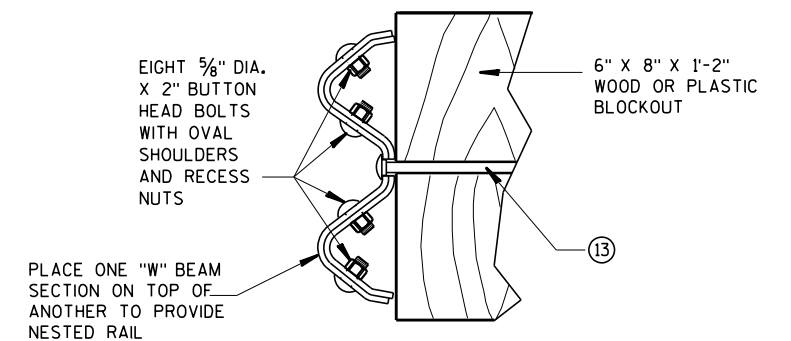


FRONT VIEW
BEAM SPLICE AT STEEL POST
TYPICAL SPlicing DETAILS
OF STEEL PLATE BEAM GUARD

GENERAL NOTES

FURNISH GUARDRAIL DEFLECTORS FROM APPROVED PRODUCTS LIST.

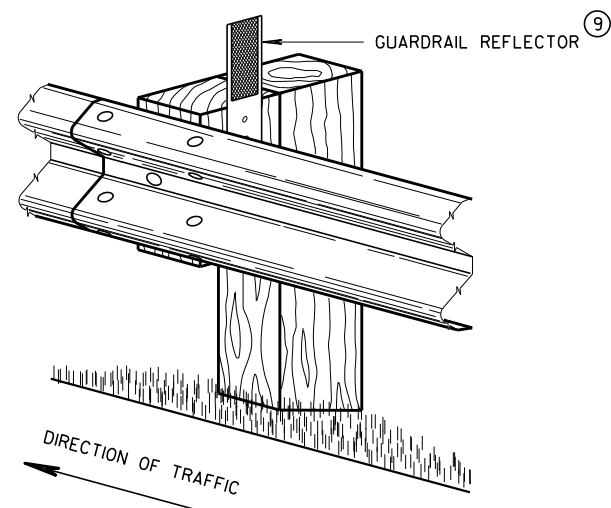
- ⑨ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINA. START REFLECTORS AT POST #9 AND SPACE EVENLY EVERY 100 FEET (MAX.) TO THE END OF GUARDRAIL RUN, USING A MINIMUM OF 3 REFLECTORS.
- ⑫ 8 - 5/8" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
- ⑬ 5/8" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH 5/8" DIA. F844 FLAT WASHER UNDER NUT.



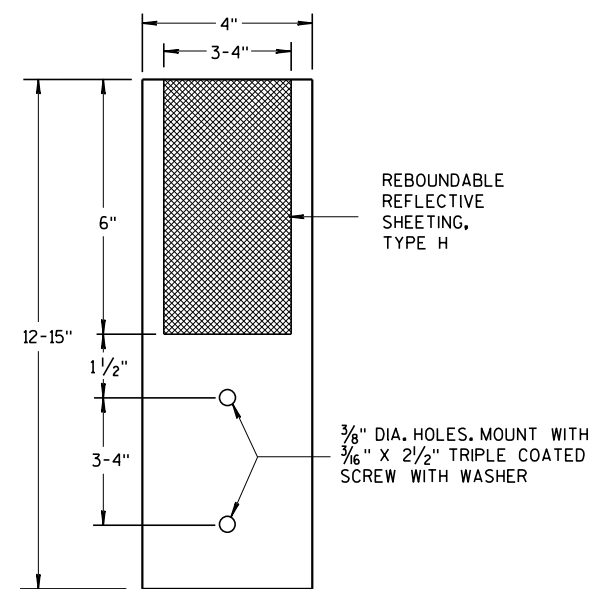
NESTED W BEAM (NW)

USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR
CONSTRUCTING NESTED W BEAM (NW)

* USE DOUBLE SIDED WHITE GUARDRAIL REFLECTORS ON ROADWAYS WITH BI-DIRECTIONAL TRAFFIC (NO MEDIAN). USE SINGLE SIDED WHITE (RIGHT SIDE) AND SINGLE SIDED YELLOW (LEFT SIDE) ON ROADWAYS WITH MEDIAN SEPARATION.



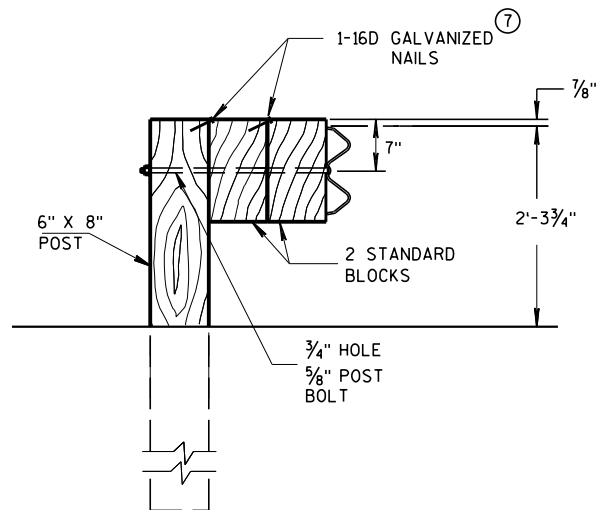
4" X 12" GUARDRAIL REFLECTOR DETAIL
AND TYPICAL INSTALLATION *



4"x 12" GUARDRAIL REFLECTOR

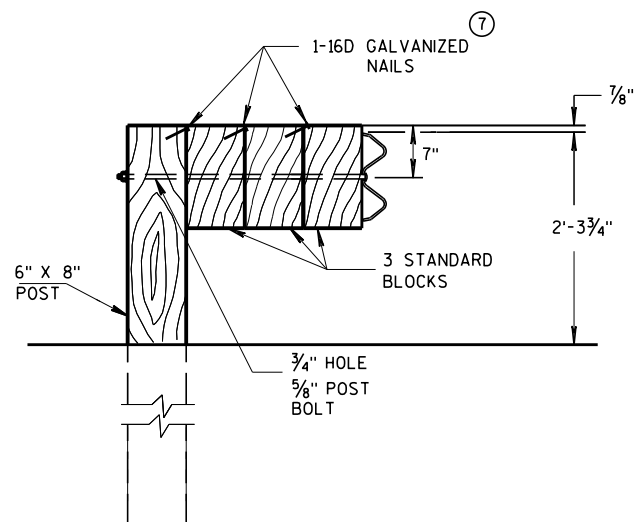
STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

STATE OF WISCO⁷²
DEPARTMENT OF TRANSPORTATION



DETAIL FOR DOUBLE BLOCKS

THE NUMBER OF DOUBLE BLOCK POSTS
WITHIN A BARRIER RUN IS UNLIMITED

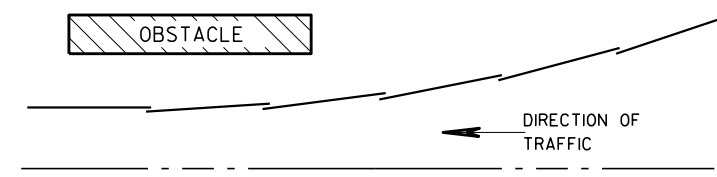


DETAIL FOR TRIPLE BLOCKS

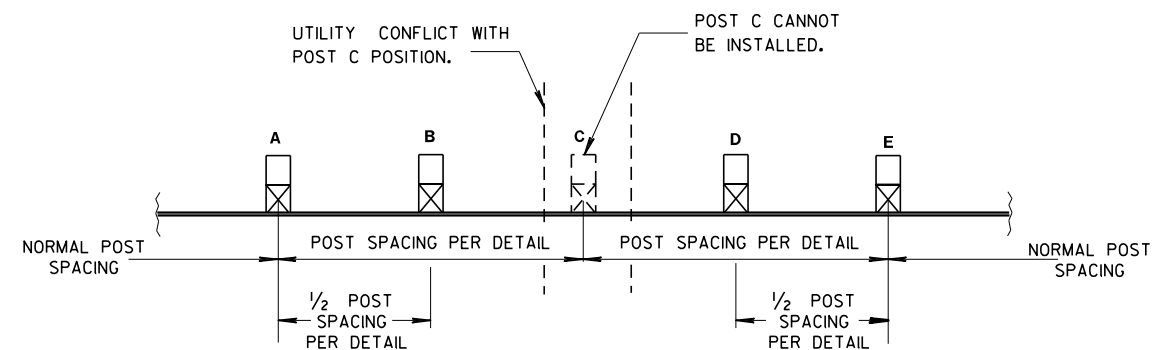
TRIPLE BLOCK DETAIL IS LIMITED TO ONE
LOCATION WITHIN A BEAM GUARD RUN.

NOTES: USE DOUBLE OR TRIPLE BLOCKS WHEN UNDERGROUND OBSTACLES
PREVENT THE POST FROM BEING INSTALLED.

DO NOT USE EXTRA BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND
SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION
DISTANCE OF THE BARRIER.



PLAN VIEW BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Rodney Taylor
DATE ROADWAY STANDARDS 73 UNIT SUPERVISOR
FHWA

BILL OF MATERIALS

NOTE NO.	DESCRIPTION
①	WOOD BREAKAWAY TERMINAL POST: 5 1/2" X 7 1/2" X 3'-9"
②	STEEL TUBE TS 8" X 6" X 0.188", 6'-0"
④	WOOD BREAKAWAY CRT POST: 6" X 8" X 6'-0"
⑤	WOOD OFFSET BLOCKS: 6' X 8" X 1'-2"
⑥	PIPE SLEEVE: 2" X 5 1/2" STANDARD PIPE
⑦	BEARING PLATE
⑧	BCT CABLE ASSEMBLY
⑨	CABLE ANCHOR BOX
⑩	STRUT & YOKE
⑪	STEEL PLATE BEAM, END PANEL 12 GA.
⑫	STEEL PLATE BEAM: 12 GA. 13'-6 1/2"
⑬	IMPACT HEAD
⑭	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS

GENERAL NOTES

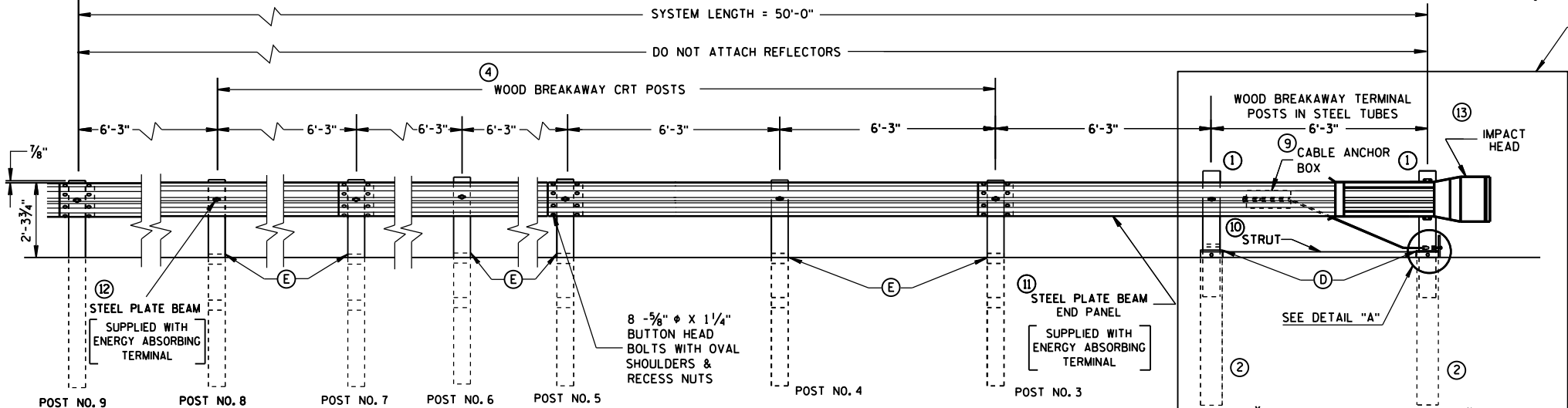
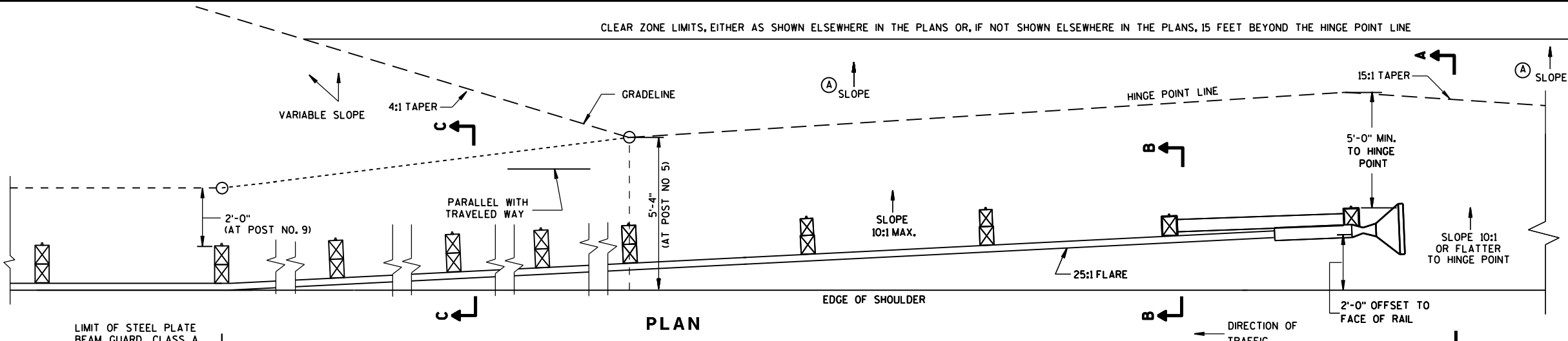
FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS.

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.
- (D) THE TOP OF THE STEEL TUBE ON POSTS 1 AND 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.
- (E) THE CENTER OF THE UPPER 3/2" DIAMETER HOLE ON POST 3 THROUGH 8 SHALL BE 3/4" ABOVE THE FINISHED GROUND LINE.
- (F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER.

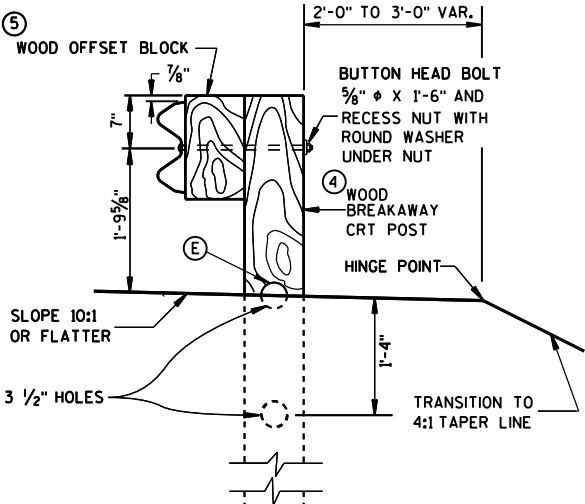
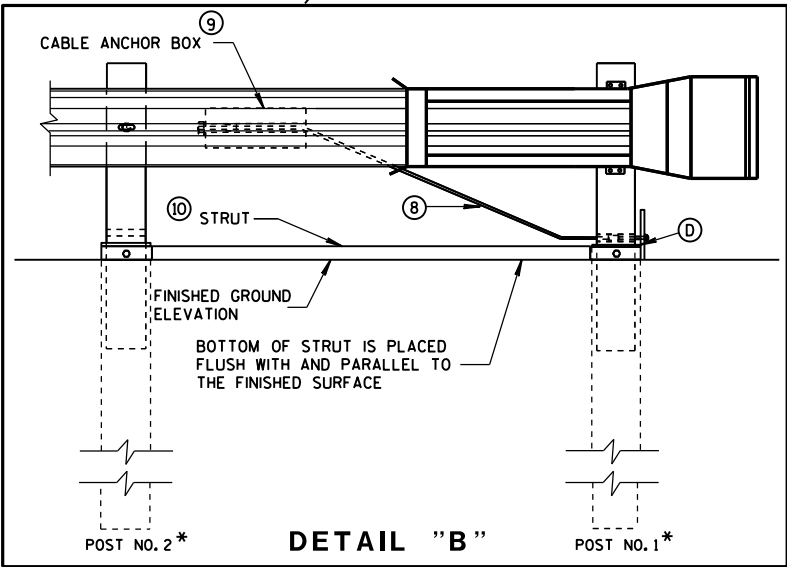
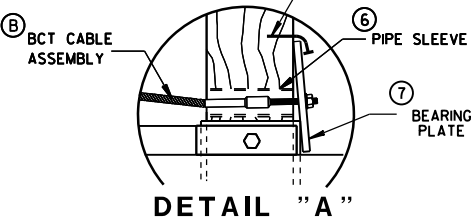
STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.

DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

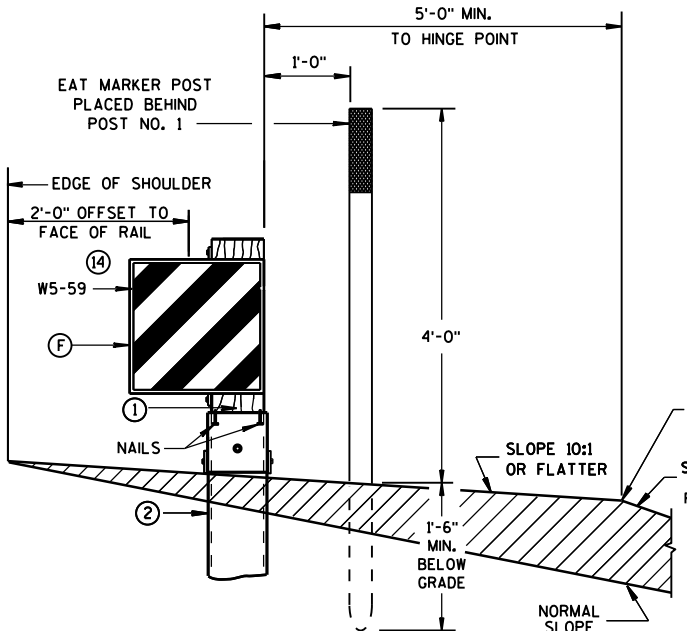
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.



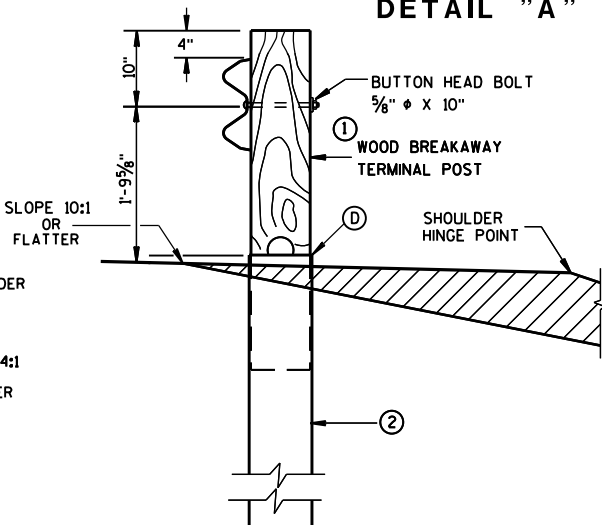
ELEVATION



SECTION C-C
TYPICAL AT POST NOS. 6, 8



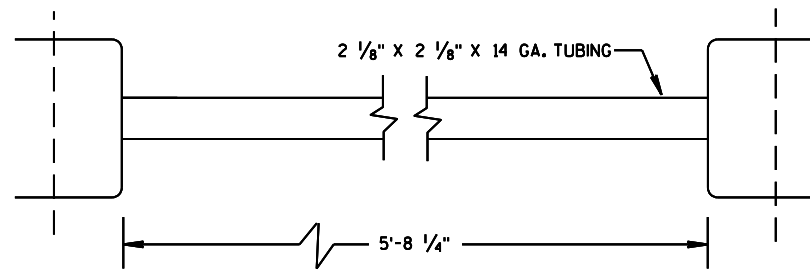
SECTION A-A
TYPICAL AT POST NO. 1*



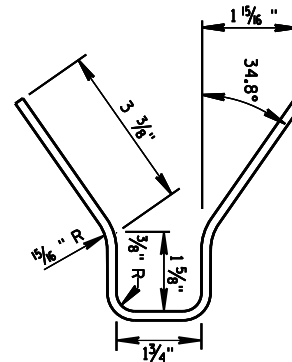
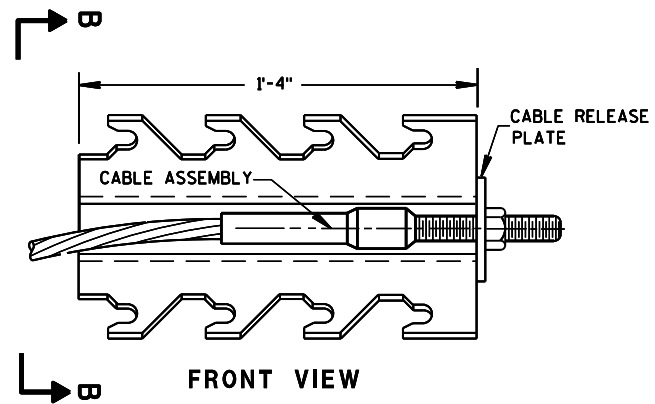
SECTION B-B
TYPICAL AT POST NO. 2*

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

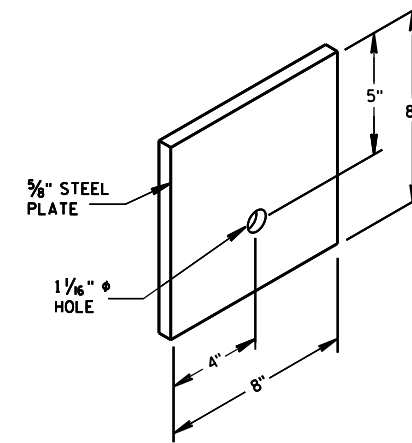
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



⑩ STRUT DETAIL



⑨ CABLE ANCHOR BOX

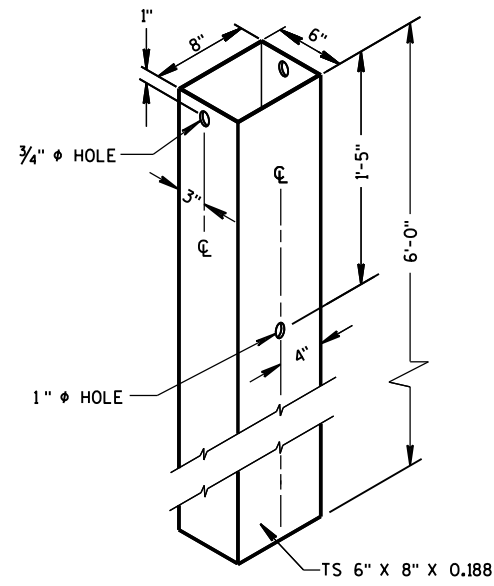


⑦ STEEL BEARING PLATE

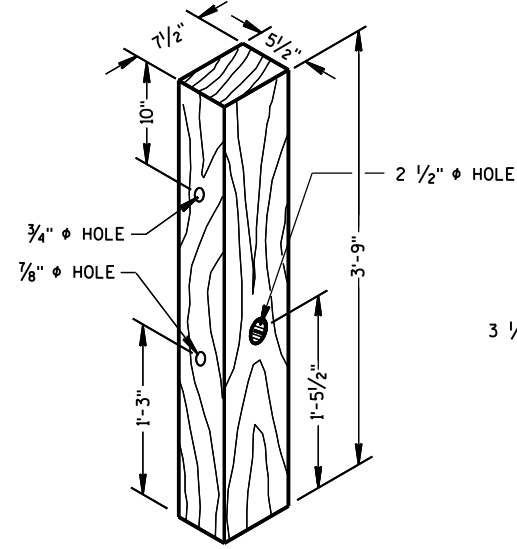
STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

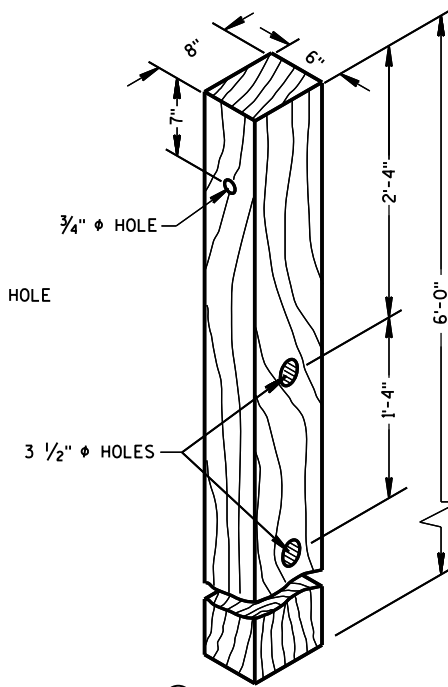
75



② **72" STEEL TUBE**
(POSTS NO. 1-4)



① **TERMINAL POST**

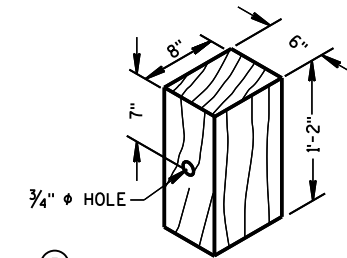


④ **CRT POST**
(POSTS NO'S 5-8)

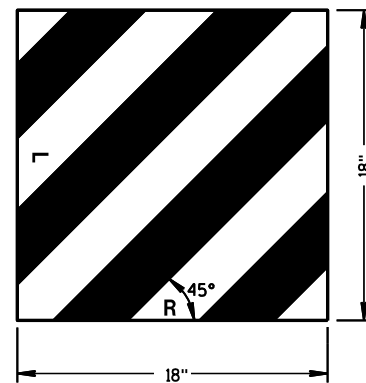
WOOD BREAKAWAY POSTS

GENERAL NOTES

WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 1/2" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH, PLACED IN THE HOLE AND BACKFILLED WITH ADEQUATELY COMPACTED MATERIAL EXCAVATED FROM THE HOLE.



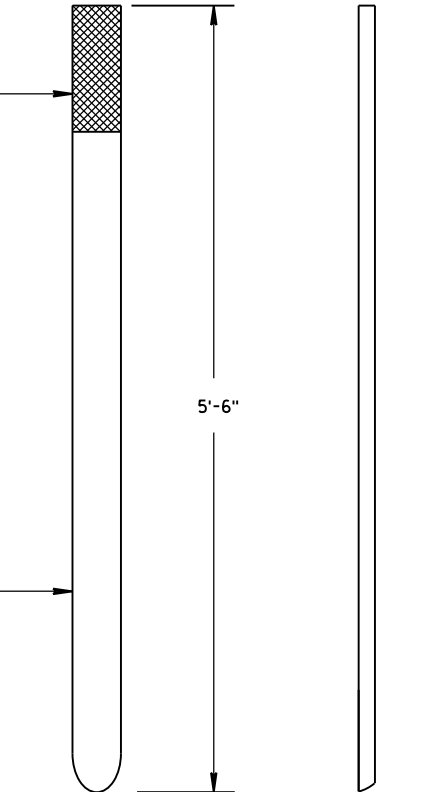
⑤ **WOOD OFFSET BLOCK**
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



⑭ **REFLECTIVE SHEETING DETAILS**

TYPE H
YELLOW REFLECTIVE
SHEETING 3" X 9".
SEE STANDARD
SPECIFICATION 637.

E.A.T. MARKER
POST (YELLOW)
SEE APPROVED
PRODUCTS LIST



FRONT VIEW SIDE VIEW

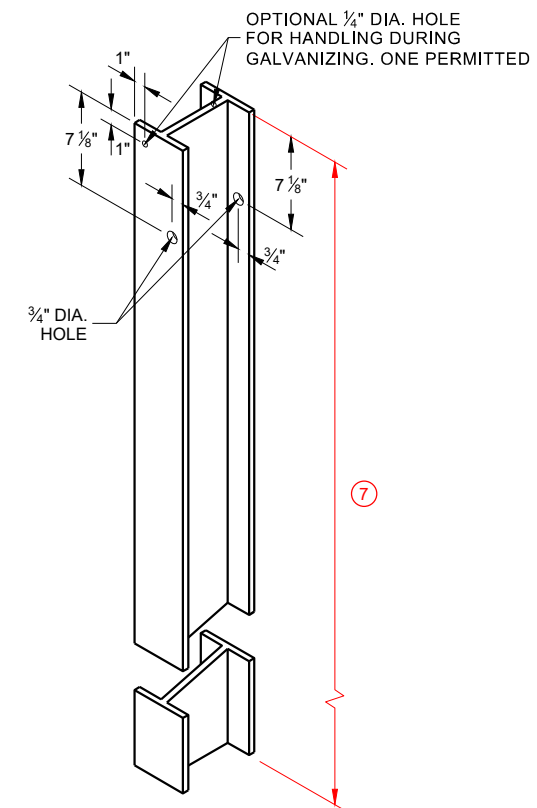
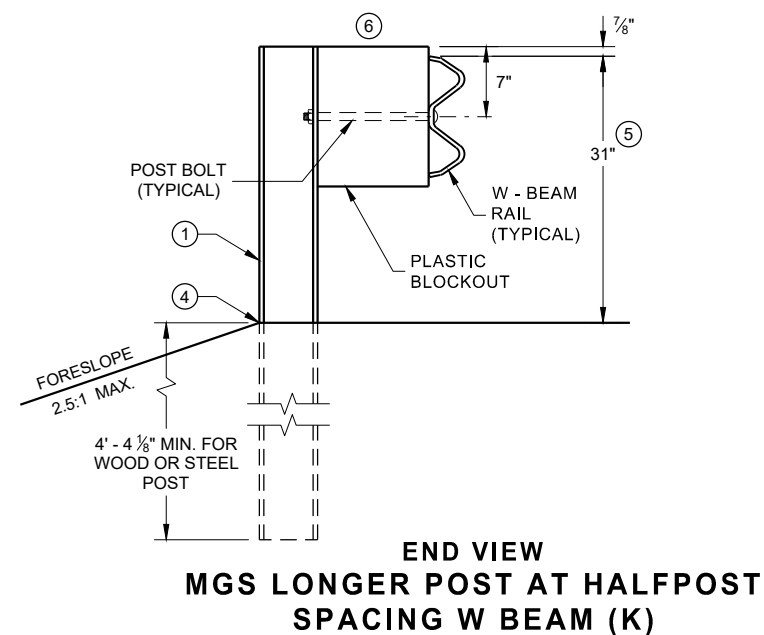
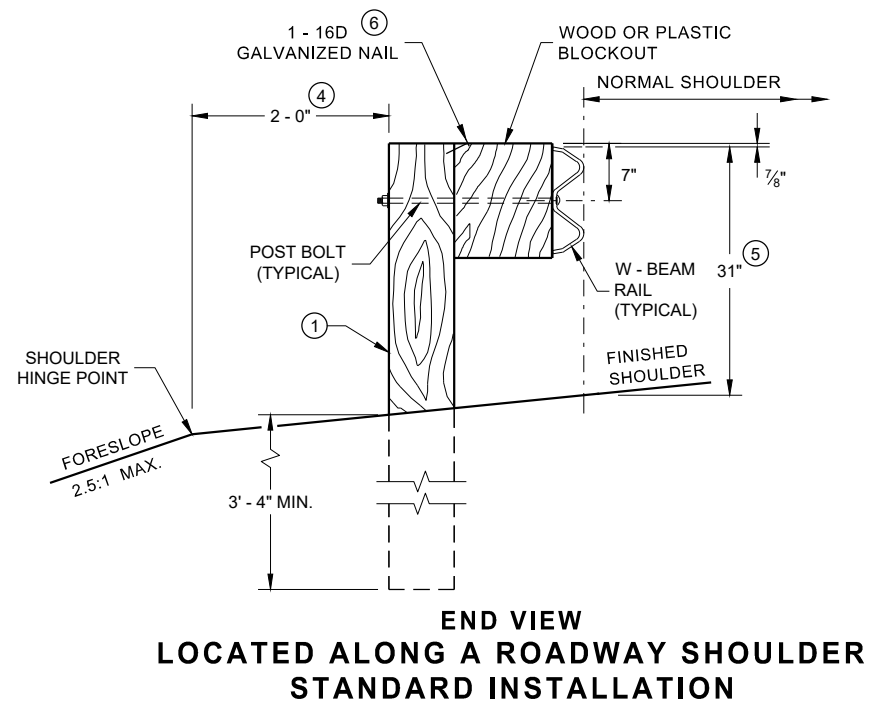
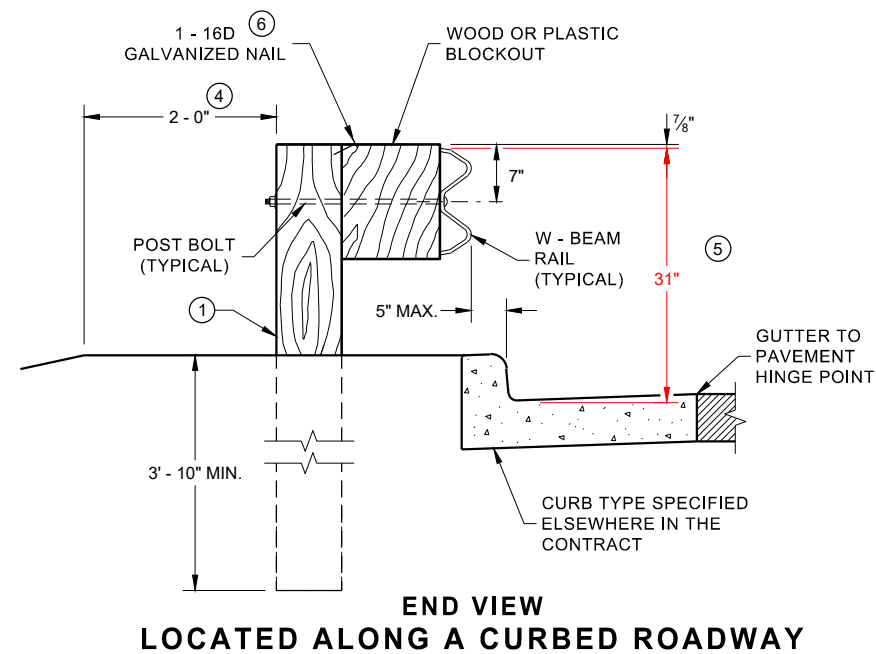
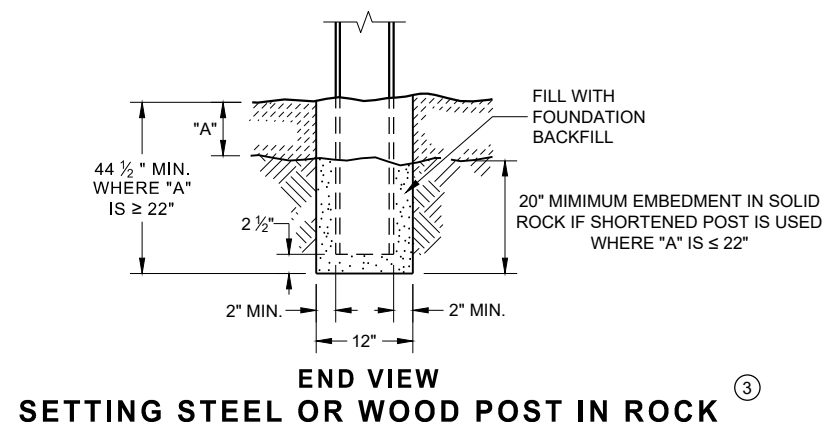
E.A.T. MARKER POST

**STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL**

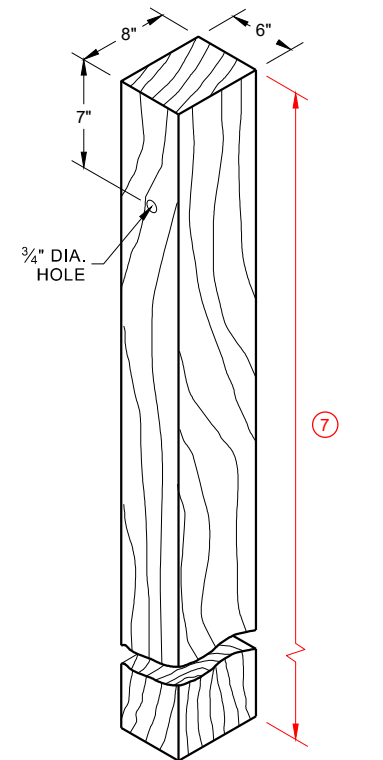
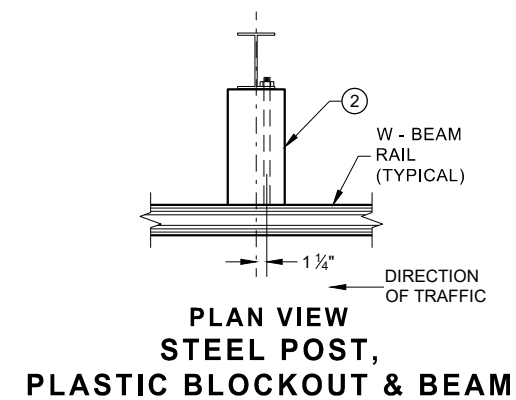
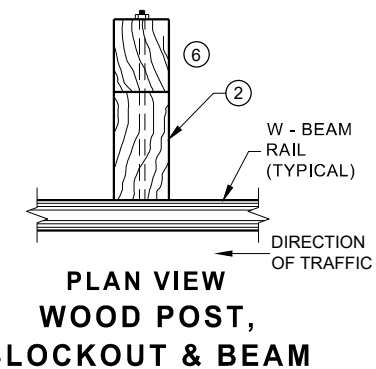
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Rodney Taylor
DATE ROADWAY STANDARDS 76 ENT
FHWA UNIT SUPERVISOR

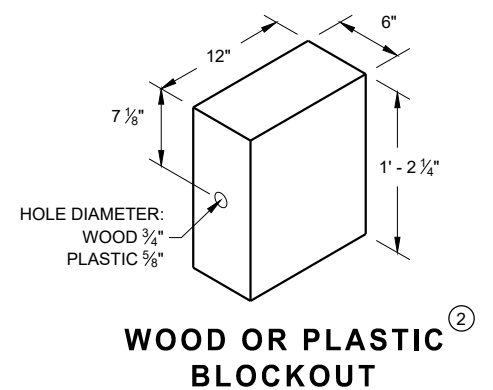
- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- ③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AND INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- ④ WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- ⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS $\pm 1"$. FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 3/4" TO 32".
- ⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ⑦ TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".

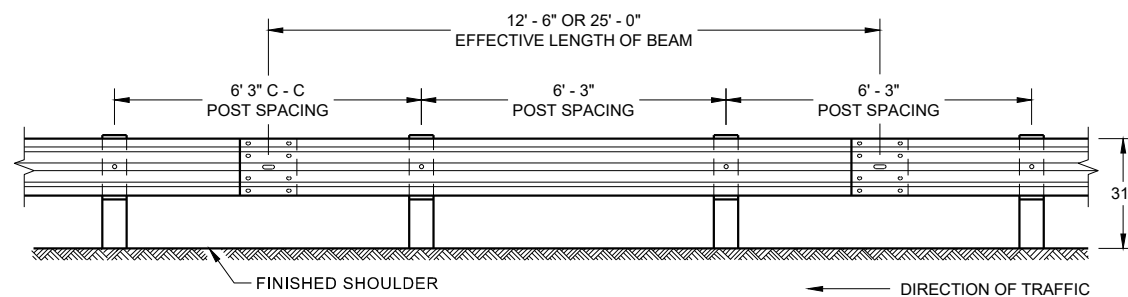


**STEEL POST & HOLE
PUNCHING DETAIL
(W 6 X 9) ①**

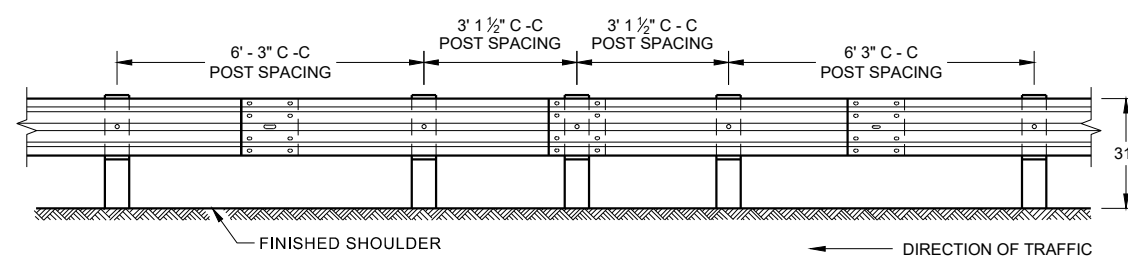


WOOD POST (6" X 8") NOMINAL ⁽¹⁾

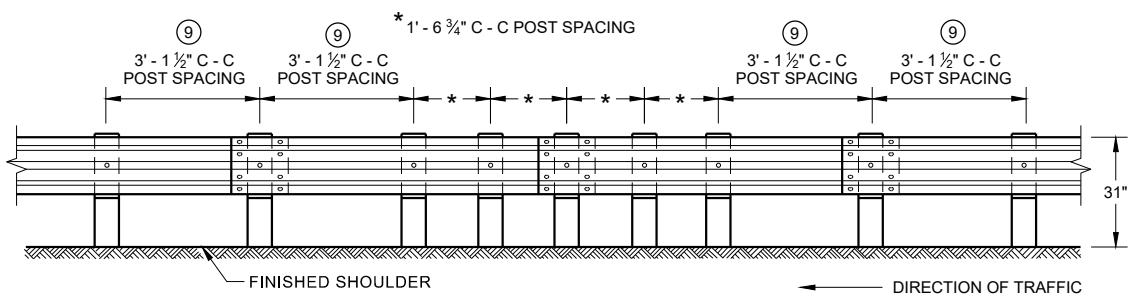




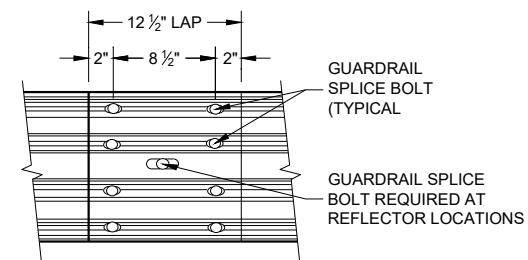
FRONT VIEW
POST SPACING STANDARD INSTALLATION



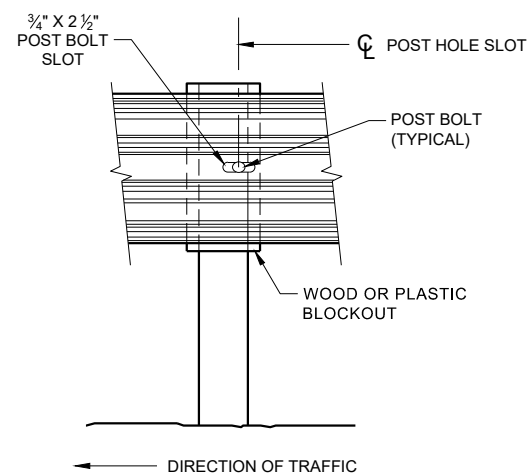
FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)



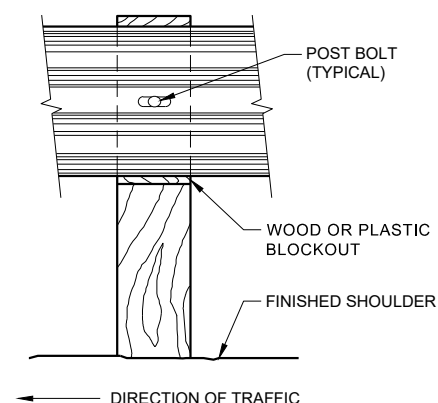
FRONT VIEW
QUARTER POST SPACING (QS)



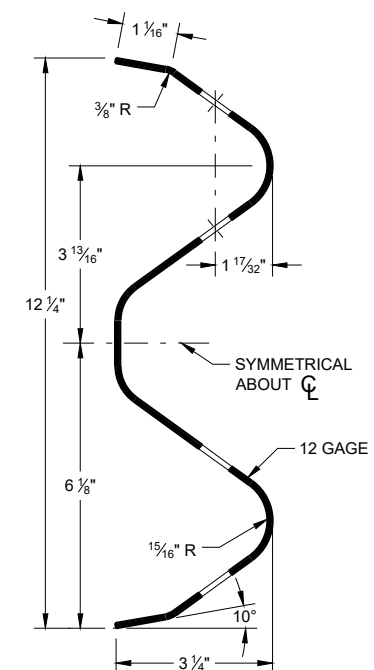
**FRONT VIEW
MID-SPAN BEAM SPLICE**



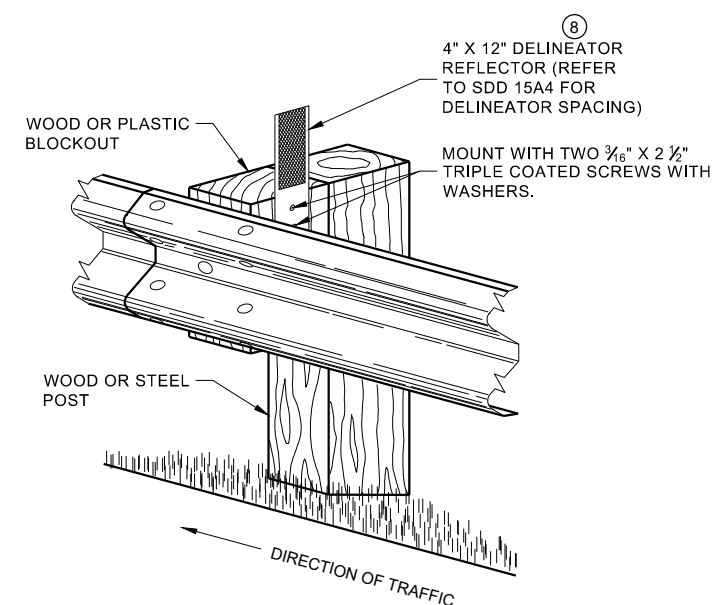
FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

GENERAL NOTES

- 8 DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
- 9 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A ¾" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES ¾" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND ¾" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

GUARD RAIL SPLICE BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.

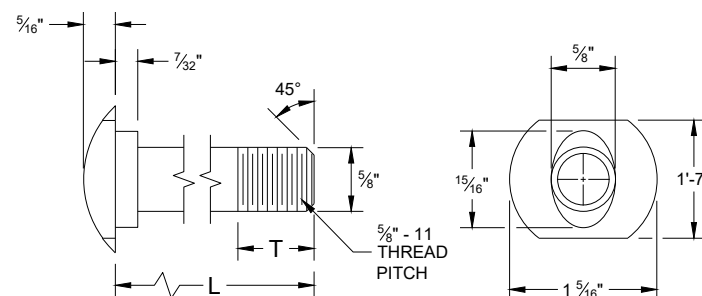


NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

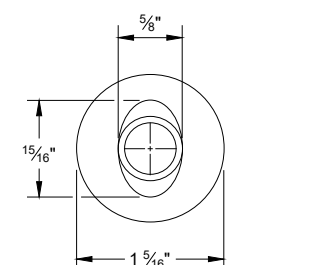
NOTE:

1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF $\frac{3}{16}$ ".
2. IF THE BOLT EXTENDS MORE THAN $\frac{1}{4}$ " FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

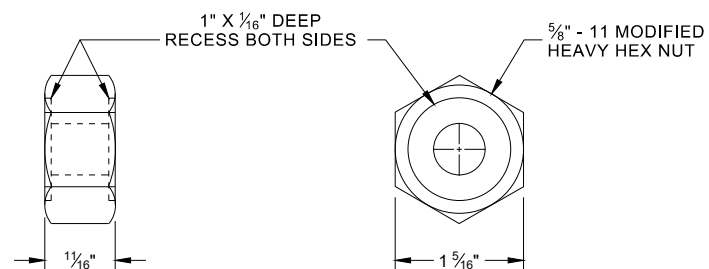


POST BOLT TABLE

L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"

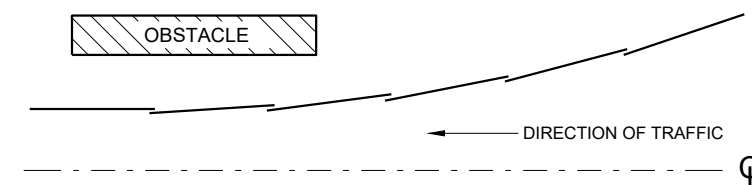


ALTERNATE BOLT HEAD

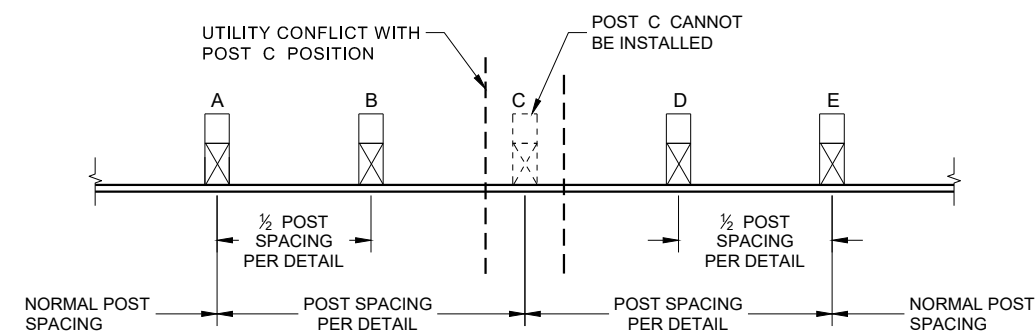


POST BOLT, SPLICE BOLT AND RECESS NUT

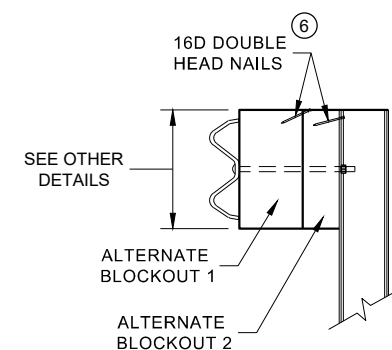
⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



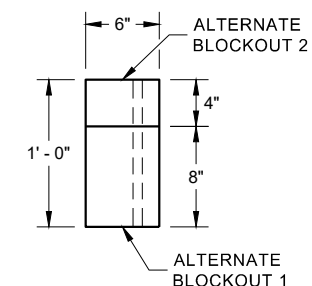
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW

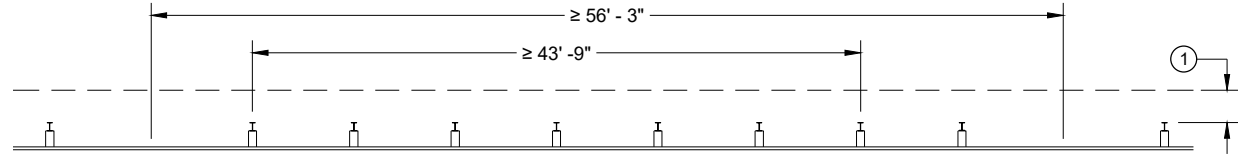


PLAN VIEW

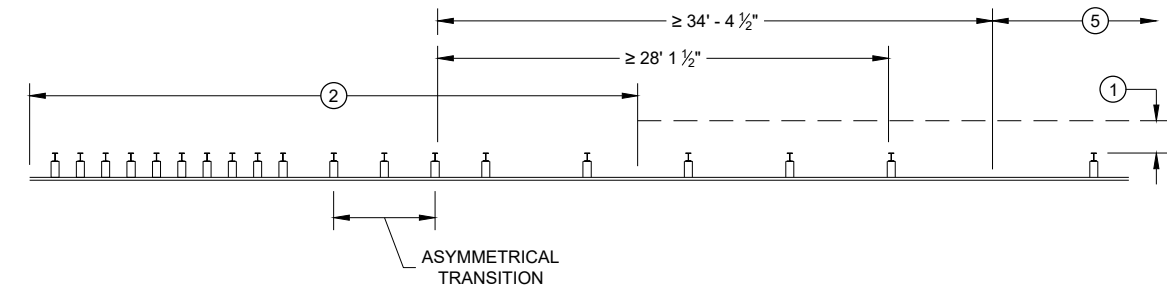
ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

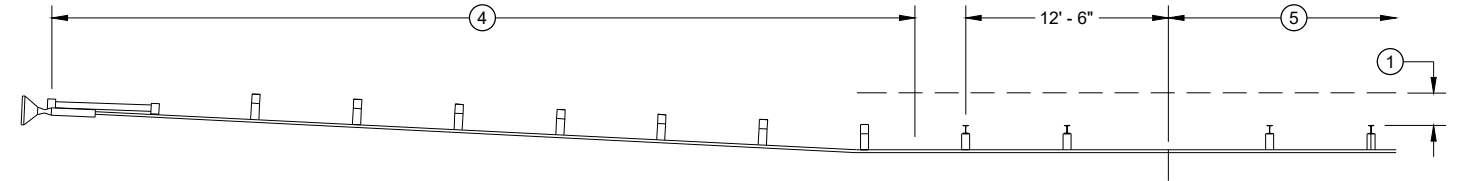
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 79



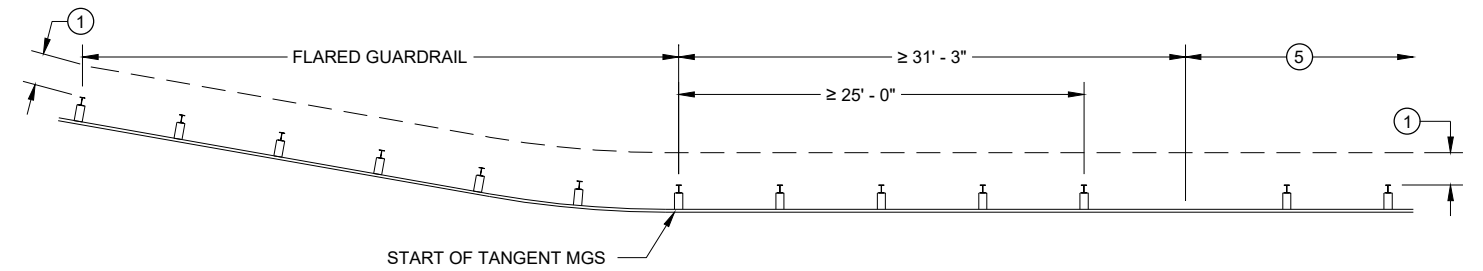
MISSING POST IN NORMAL BEAM GUARD RUN



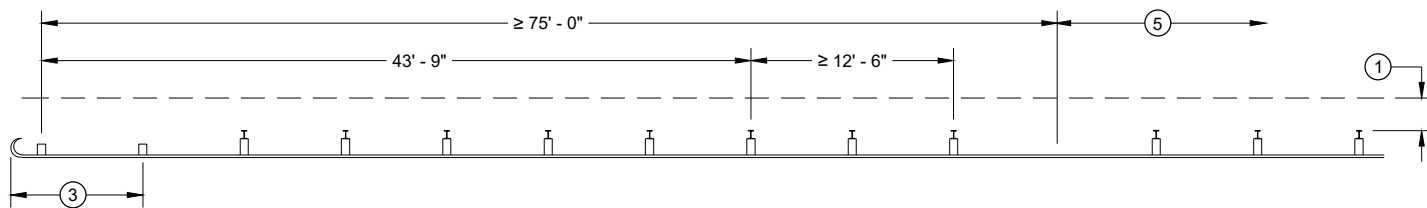
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



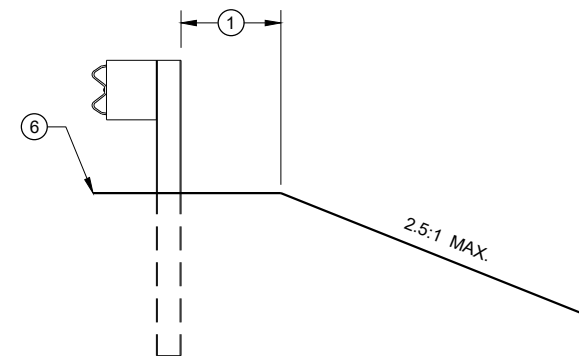
MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



MISSING POST IN NORMAL BEAM GUARD RUN
NEAR FLARED BEAM GUARD



MISSING POST IN NORMAL BEAM GUARD RUN
NEAR TYPE 2 TERMINAL



CROSS SECTION VIEW

- (1) MINIMUM OF 2 FEET OF GRADING BEHIND POST.
- (2) SEE SDD 14B45 FOR MORE DETAILS.
- (3) SEE SDD 14B47 FOR MORE DETAILS.
- (4) SEE SDD 14B44 FOR MORE DETAILS.
- (5) SEE MISSING POST IN NORMAL BEAM GUARD RUN FOR DISTANCE TO NEXT MISSING POST AND AREA FOR WELL DRAINED, COMPACTED SOILS.
- (6) SEE PLAN FOR SHOULDER DESIGN.

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
80
FHWA

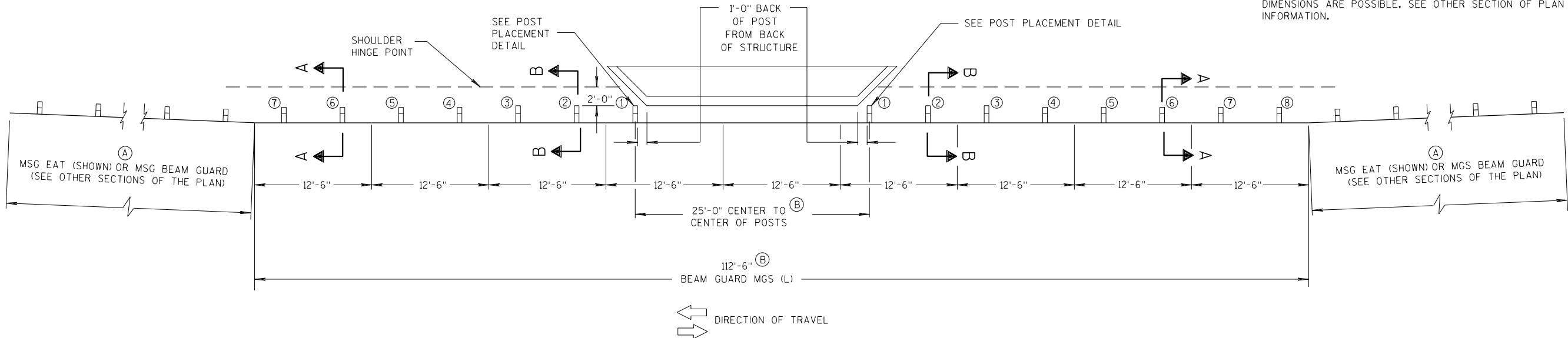
GENERAL NOTES

POSTS 1 THROUGH 3 ARE CRT POSTS.
ALL OTHER POSTS SHALL BE WOOD OR STEEL.

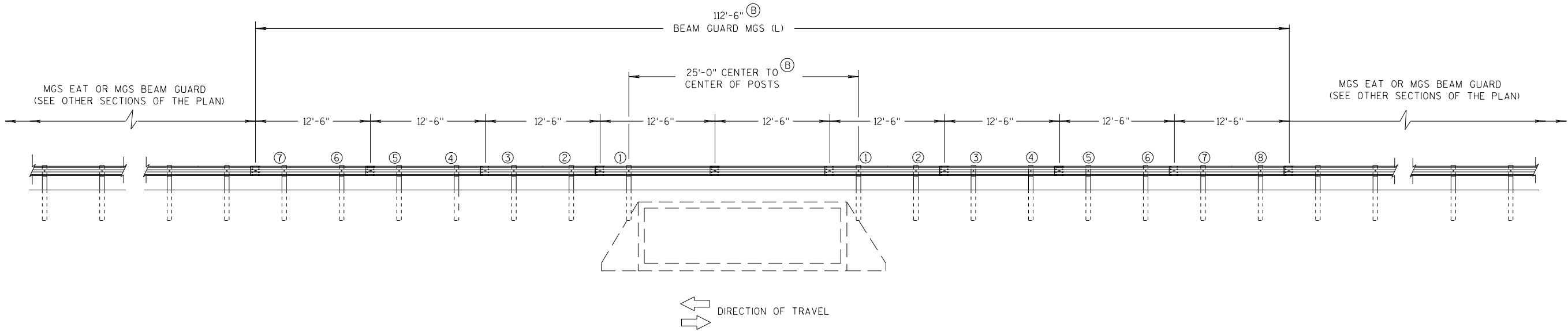
SEE SDD 14 B 42 FOR MORE DETAILS.

(A) FLARE FOR MGS EAT SHOWN, IF INSTALLING MGS NO FLARE NEEDED.

(B) VALUES SHOWN ON DRAWING REPRESENT THE MAXIMUM LENGTH. SHORTER DIMENSIONS ARE POSSIBLE. SEE OTHER SECTION OF PLAN FOR MORE INFORMATION.



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L) TWO-WAY TRAFFIC

MIDWEST GUARDRAIL SYSTEM
LONG SPAN MGS (L)

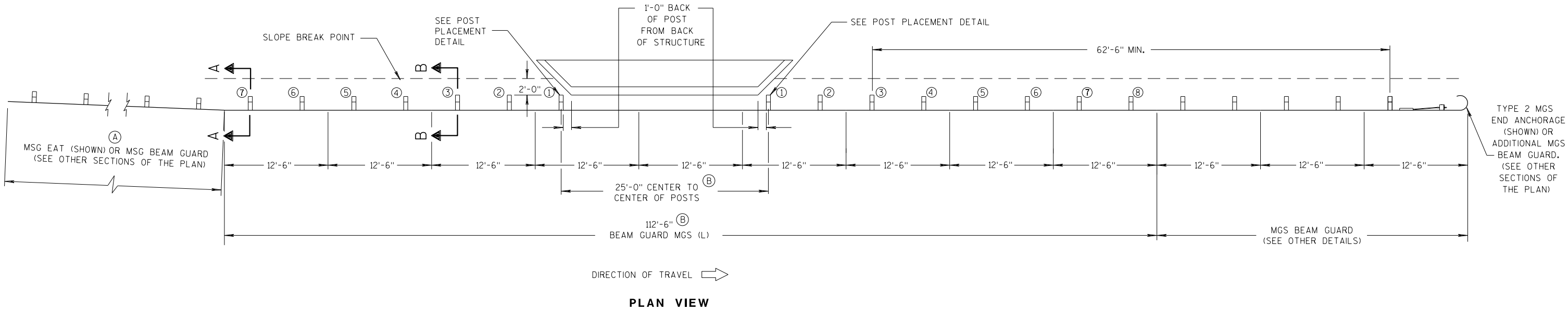
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

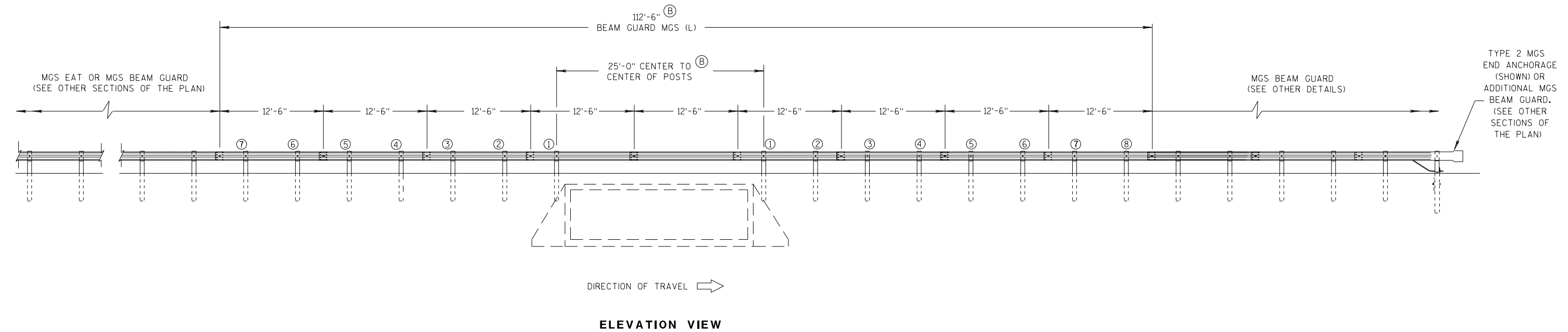
POSTS 1 THROUGH 3 ARE CRT POSTS.
ALL OTHER POSTS SHALL BE WOOD OR STEEL.

SEE SDD 14 B 42 FOR MORE DETAILS.

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PLAN VIEW

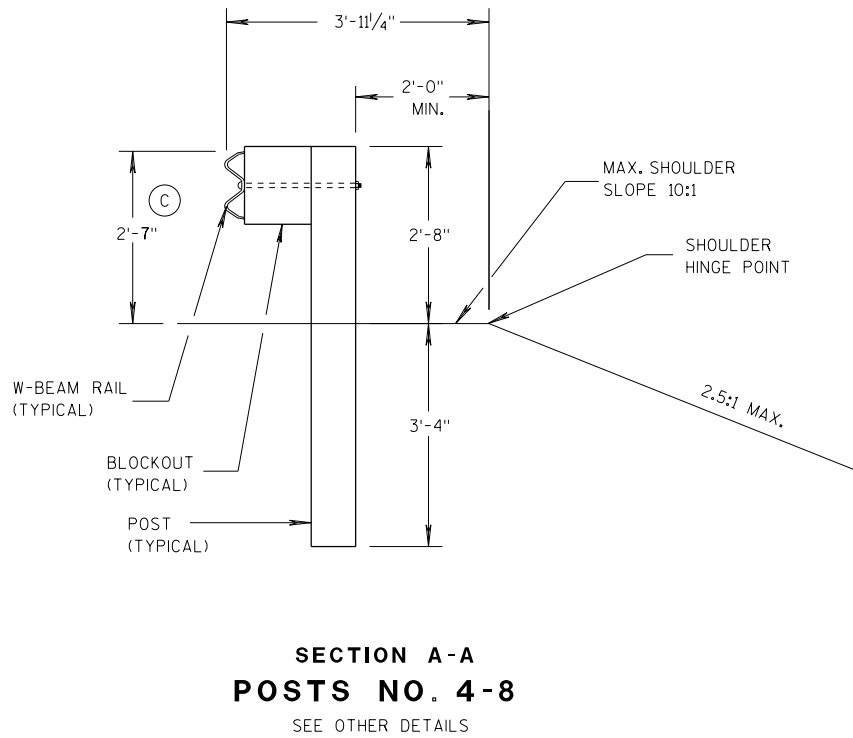
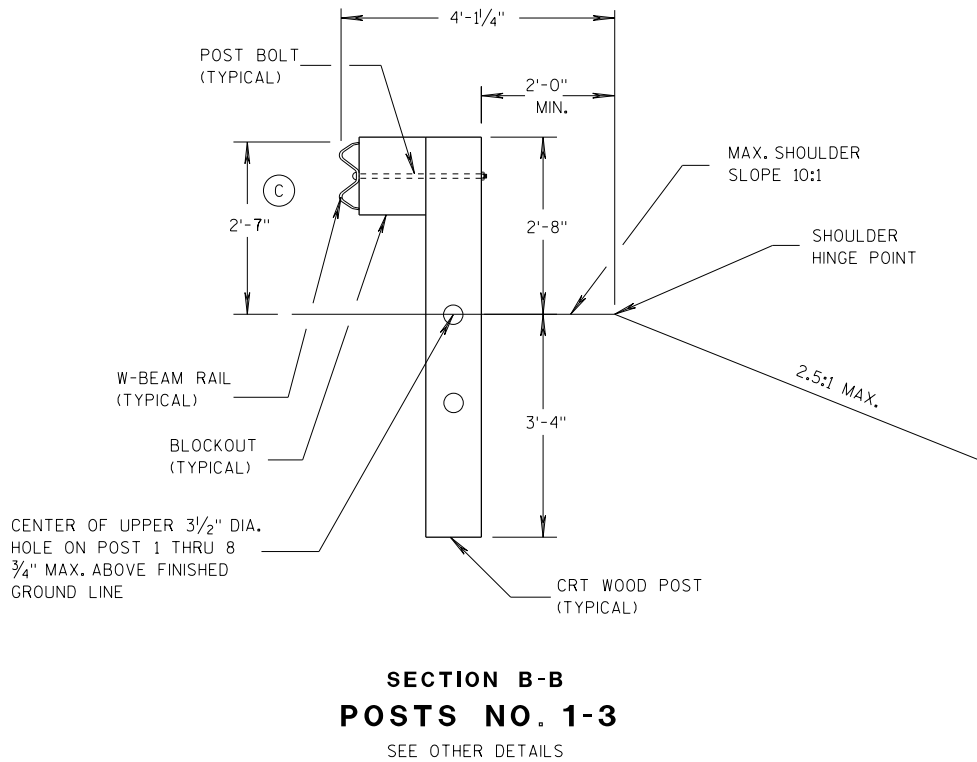
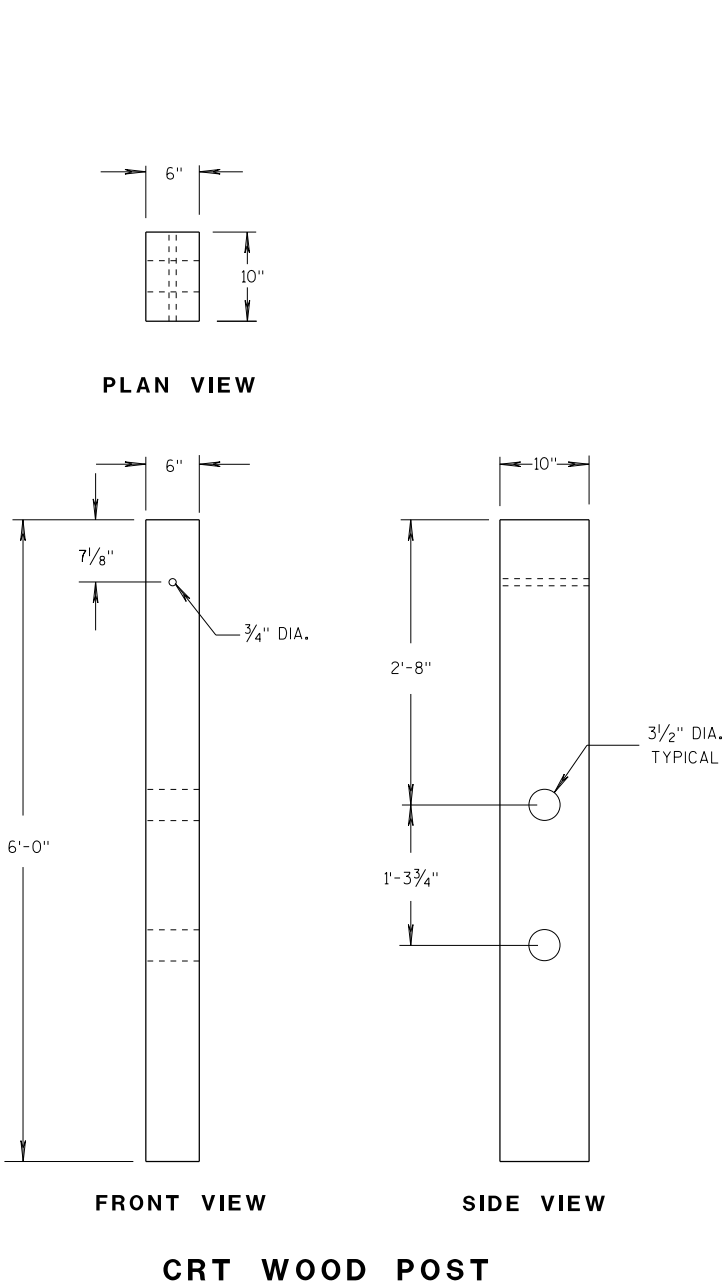


ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L) ONE-WAY TRAFFIC

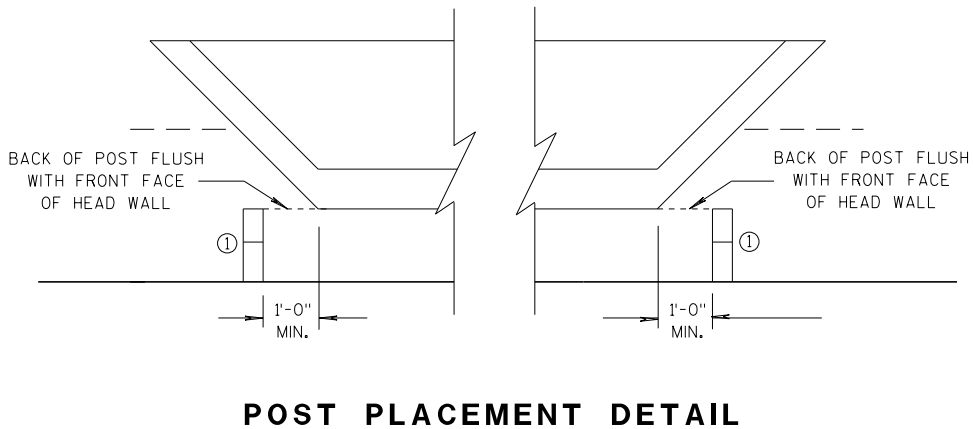
MIDWEST GUARDRAIL SYSTEM
LONG SPAN MGS (L)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



GENERAL NOTES

(C) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



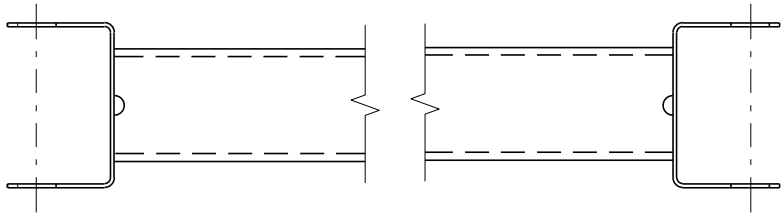
MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED DATE 07/2018	/S/ Rodney Taylor ROADWAY STANDARDS ENGINEER	83 NT
FHWA		

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED
- (C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS. SEE MANUFACTURER'S INFORMATION.
- (D) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF - TAPPING SCREWS. ONE SCREW PER CORNER.
- (E) HARDWARE MAY VARY BETWEEN MANUFACTURER. SEE MANUFACTURER'S DRAWING FOR INFORMATION.

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

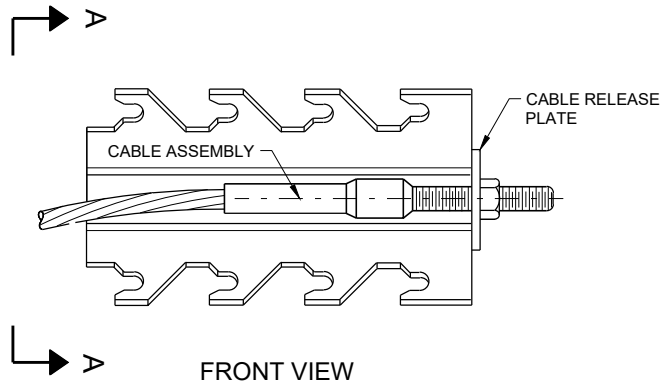
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 84

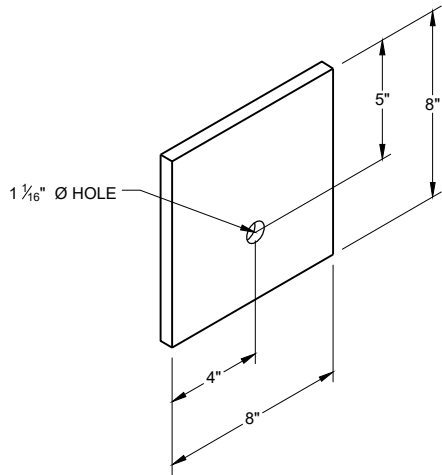
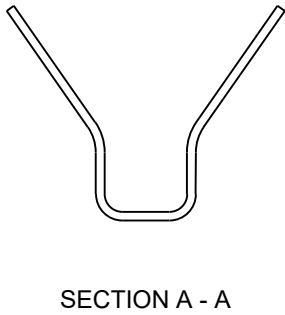


GENERIC GROUND STRUT 9 E

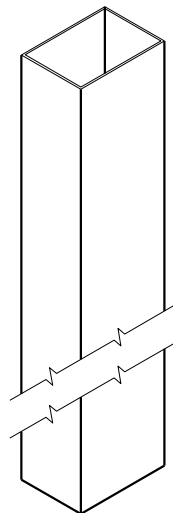
BILL OF MATERIALS	
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
1	UPPER POST NO. 1 6" X 6" TUBE
2	LOWER POST NO. 1
3	WOOD CRT
4	WOOD BLOCKOUT
5	PIPE SLEEVE
6	BEARING PLATE
7	BCT CABLE ASSEMBLY
8	ANCHOR CABLE BOX
9	GROUND STRUT
10	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
11	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
12	IMPACT HEAD
13	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)
14	SOIL PLATE
15	UPPER POST NO. 2
16	LOWER POST NO. 2



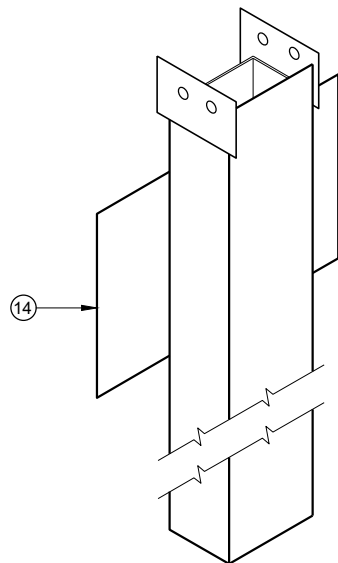
GENERIC ANCHOR CABLE BOX 9 E



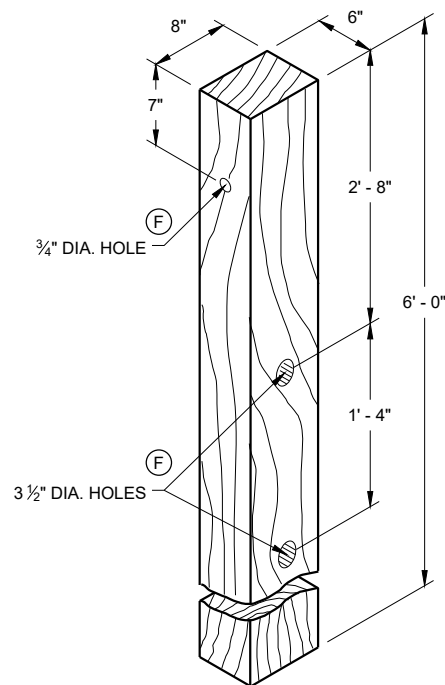
BEARING PLATE 6 E



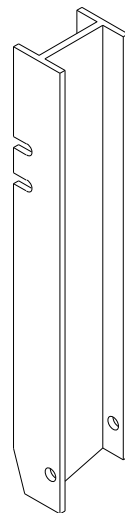
UPPER POST NO. 1 ⁽¹⁾ (E)



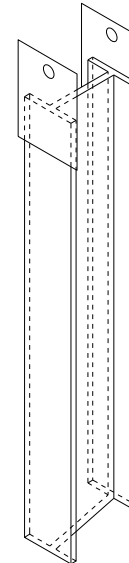
LOWER POST NO. 1 ⁽²⁾ (E)



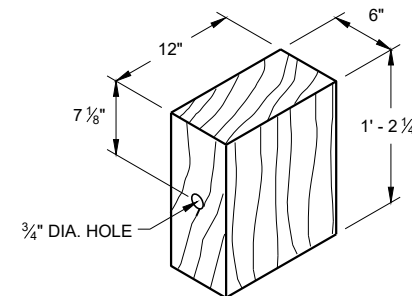
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



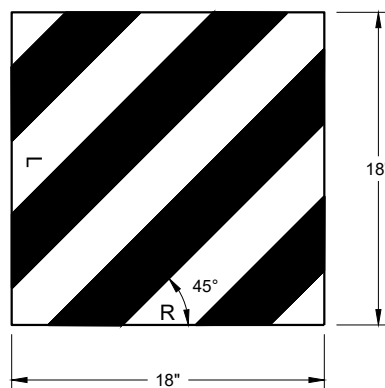
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



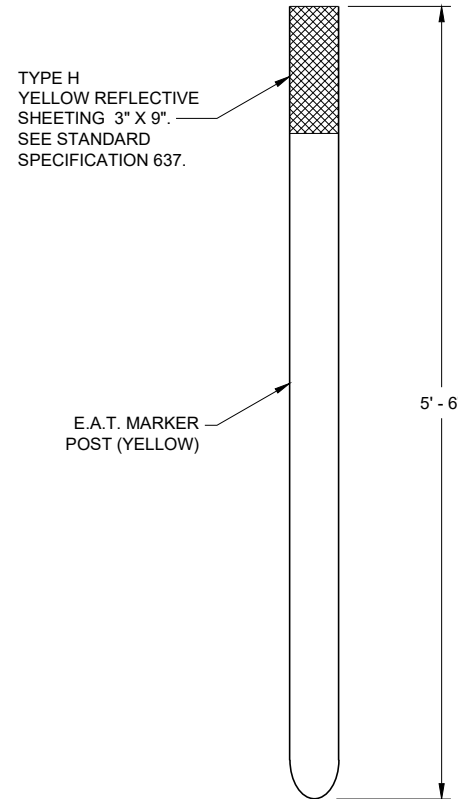
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



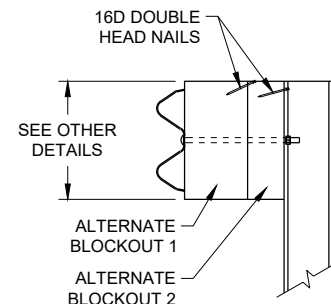
WOOD BLOCKOUT ⁽⁴⁾
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



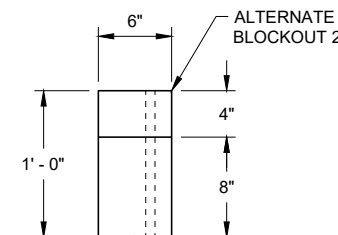
W5 - 59
REFLECTIVE SHEETING DETAIL ^(E)



FRONT VIEW
SIDE VIEW
E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW



TOP VIEW

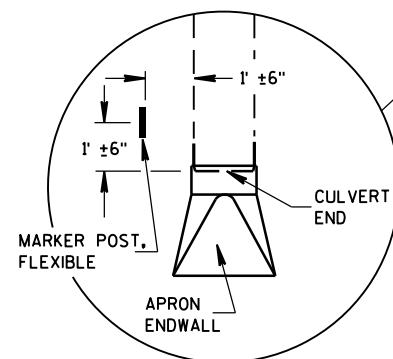
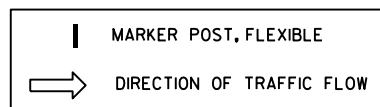
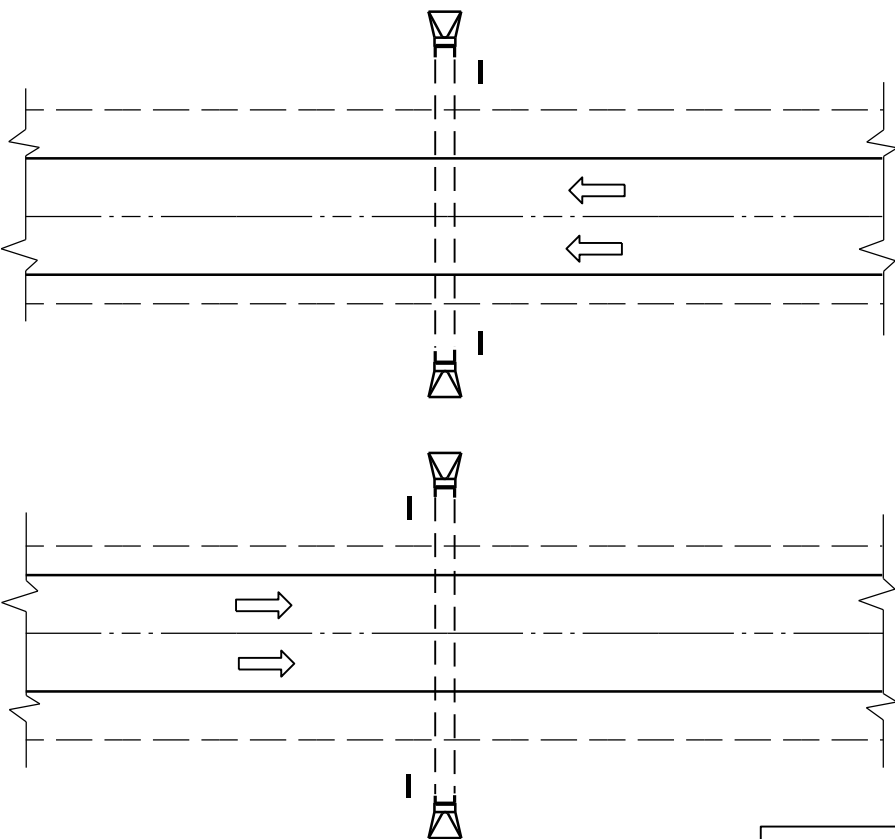
ALTERNATE WOOD
BLOCKOUT DETAIL

**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

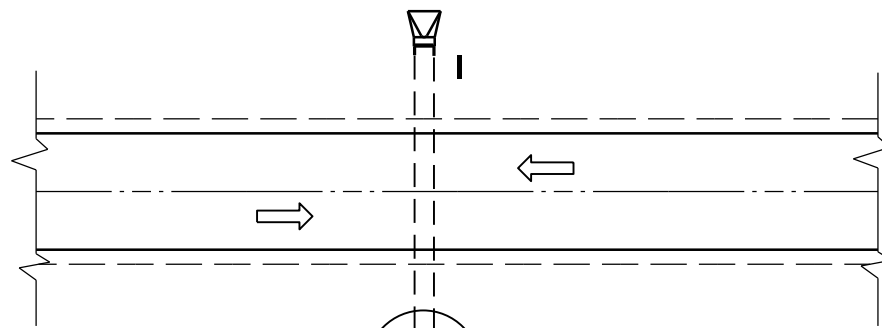
APPROVED
7/2018 DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA 86

PLAN VIEW
DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

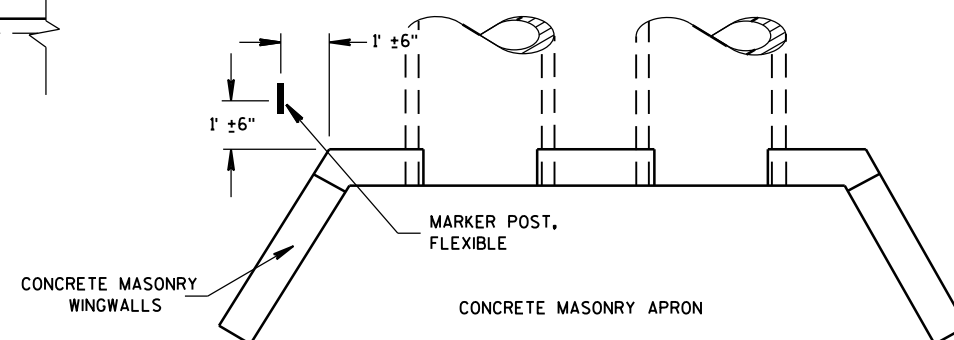
PLAN VIEW
UNDIVIDED HIGHWAY



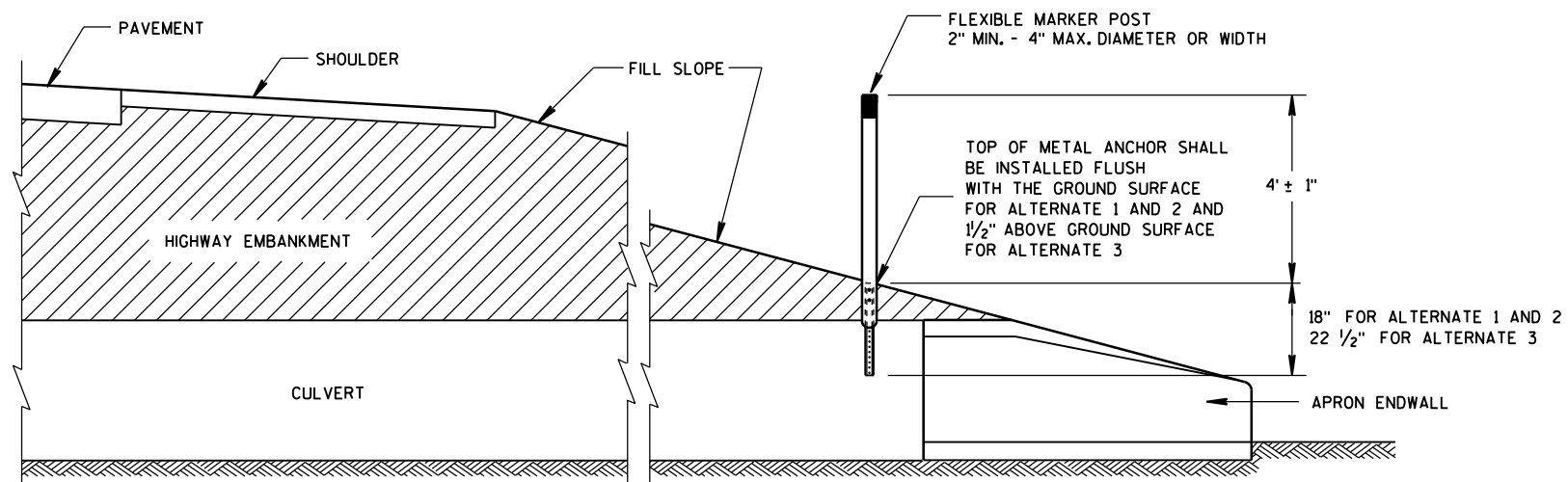
FLEXIBLE MARKER POST LOCATION

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



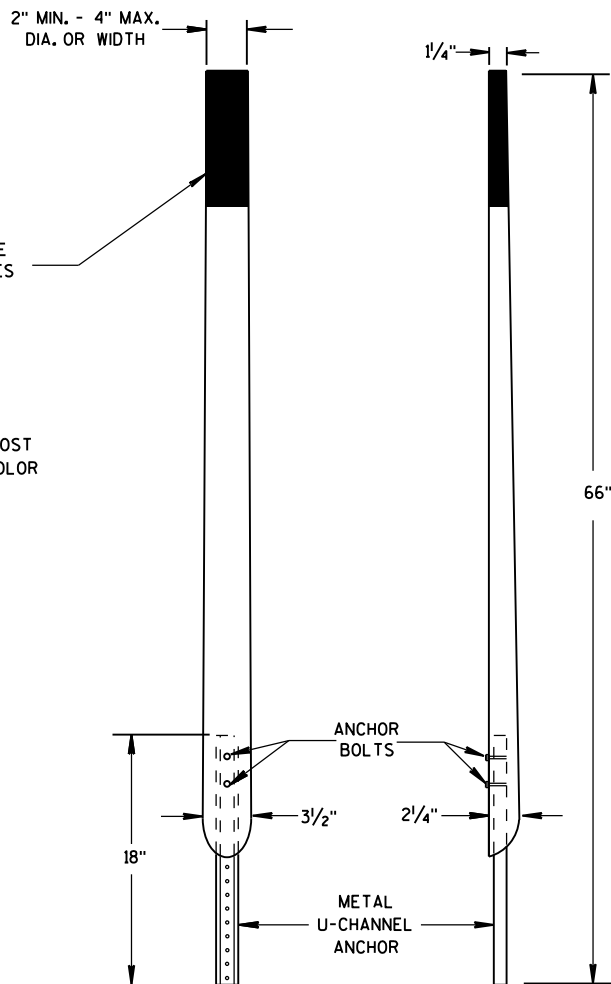
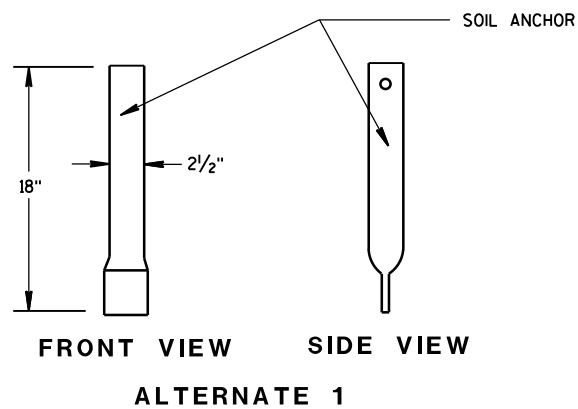
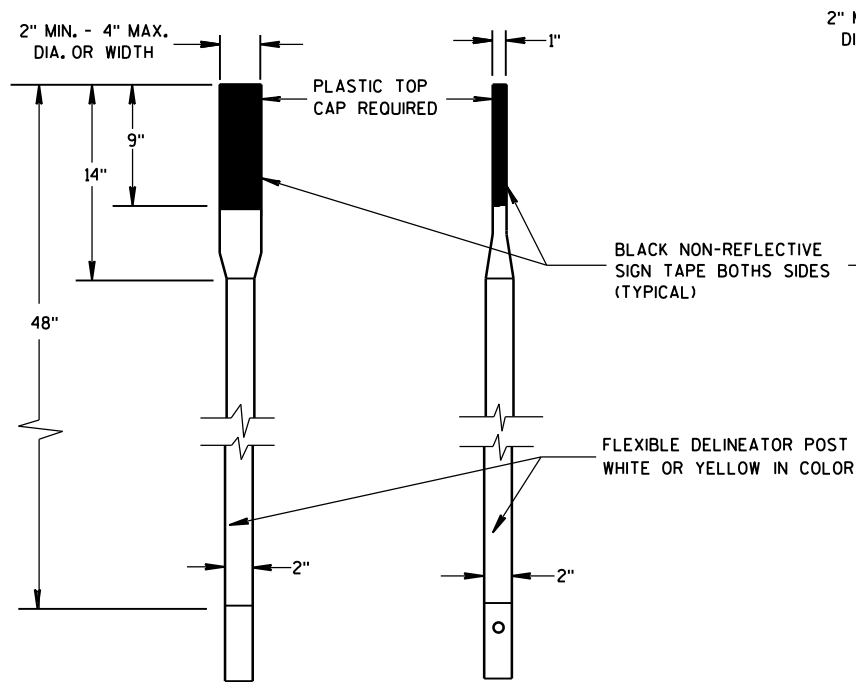
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



CROSS SECTION
FLEXIBLE MARKER POST

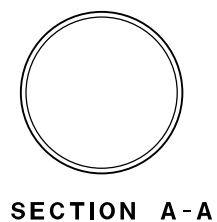
FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

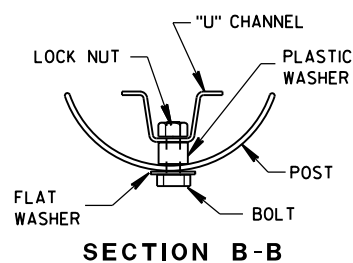
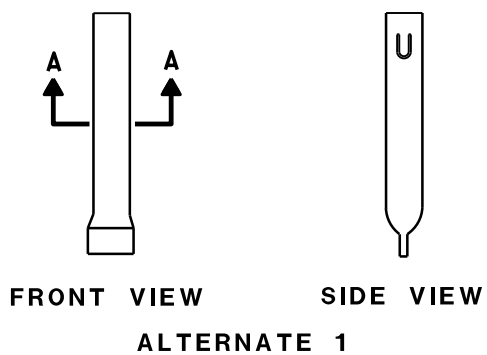


FRONT VIEW SIDE VIEW
ALTERNATE 2

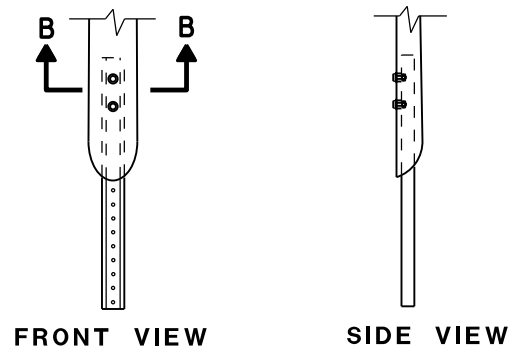
FLEXIBLE MARKER POSTS



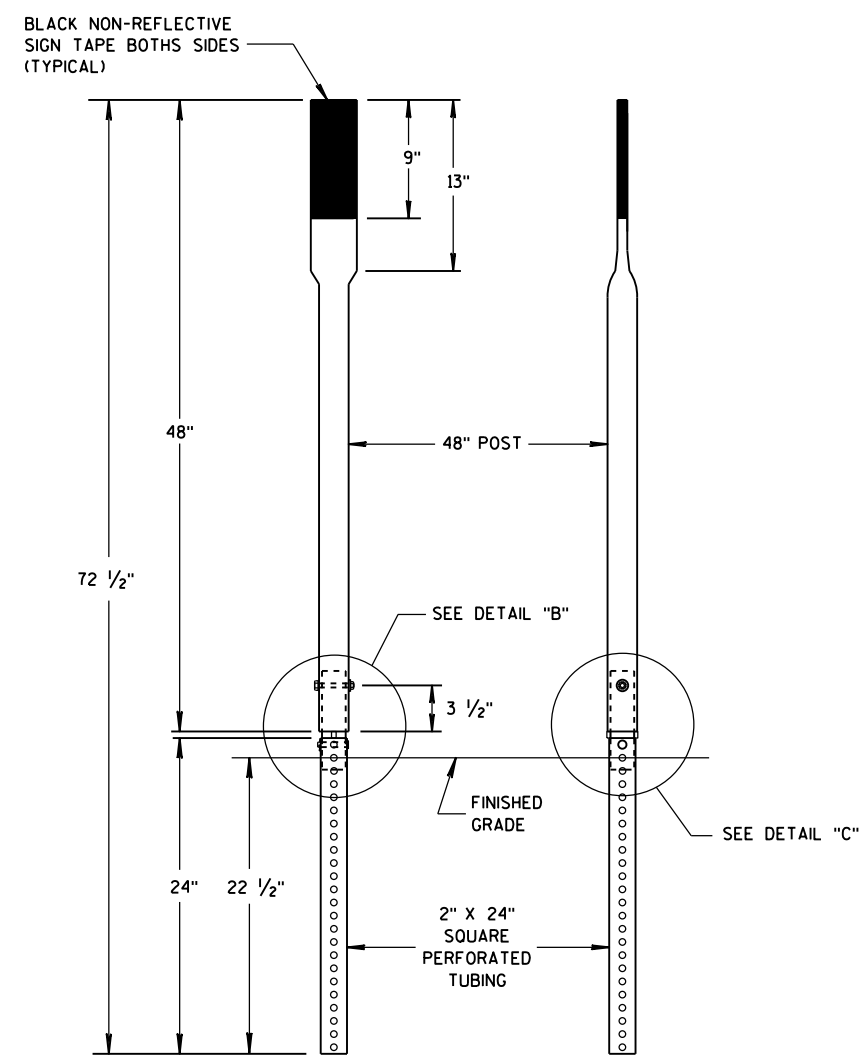
SECTION A-A



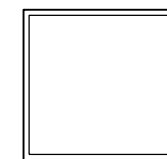
SECTION B-B



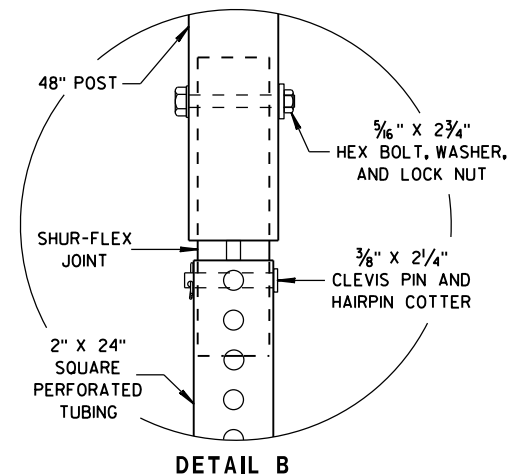
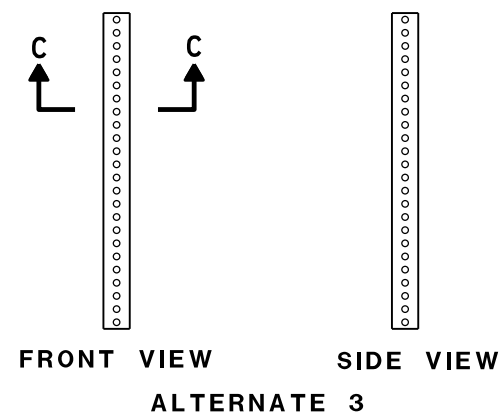
FRONT VIEW SIDE VIEW
ALTERNATE 2
FLEXIBLE MARKER POST ANCHORS



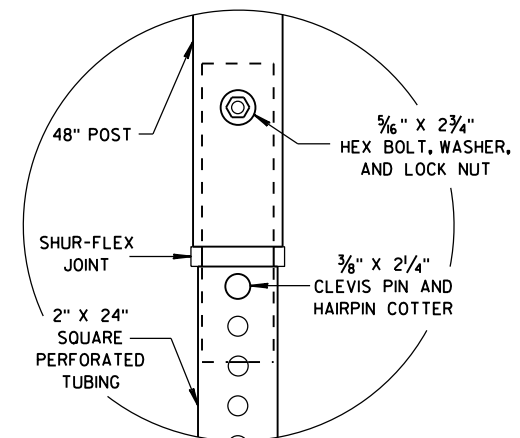
FRONT VIEW SIDE VIEW
ALTERNATE 3



SECTION C-C



DETAIL B



DETAIL C

FLEXIBLE MARKER POST FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

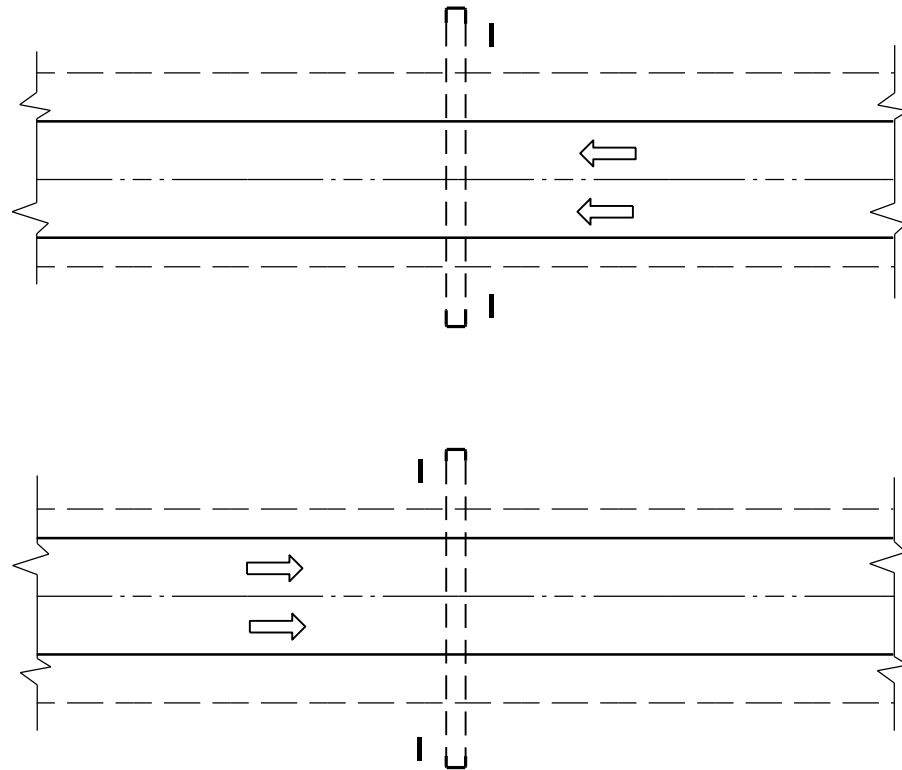
APPROVED

10/1/2012
DATE

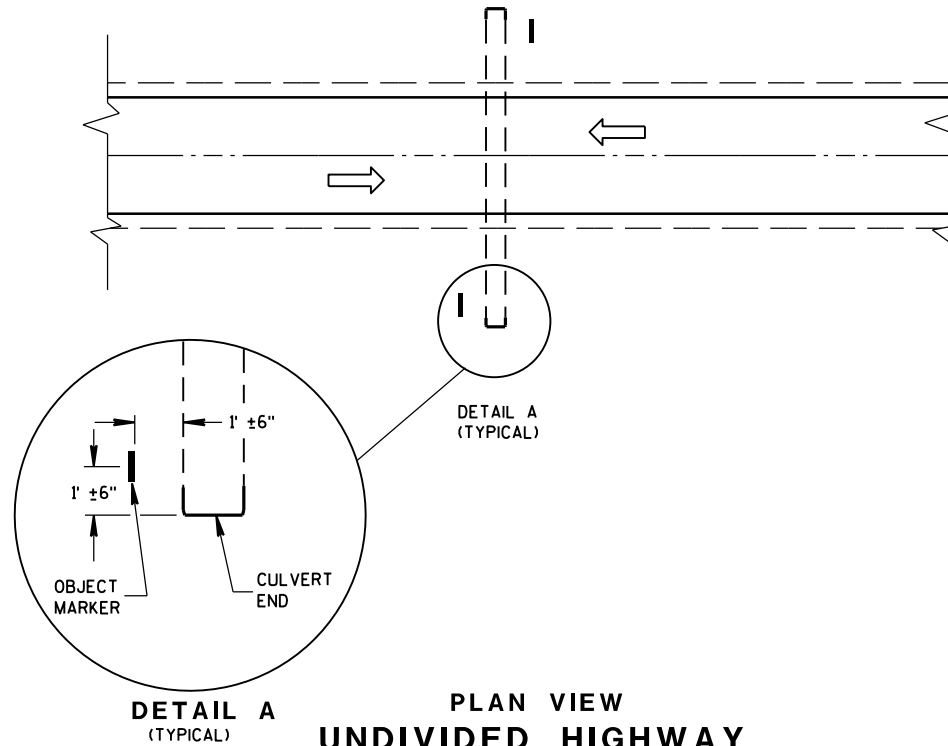
FHWA

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

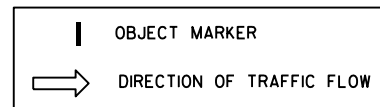
IGN



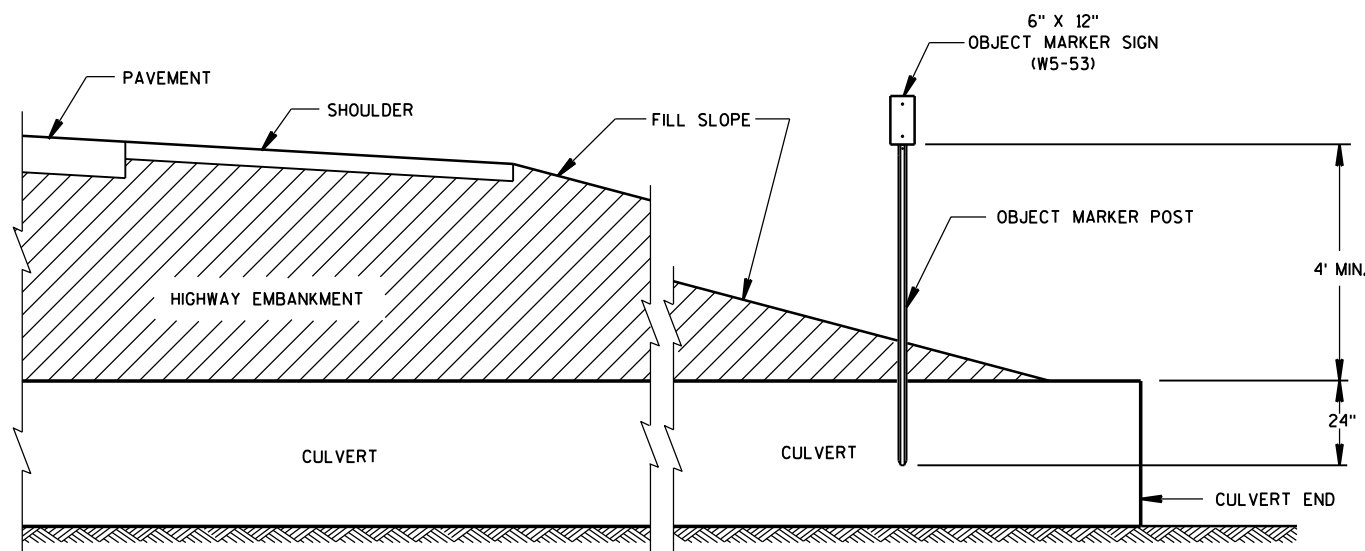
PLAN VIEW
DIVIDED HIGHWAY



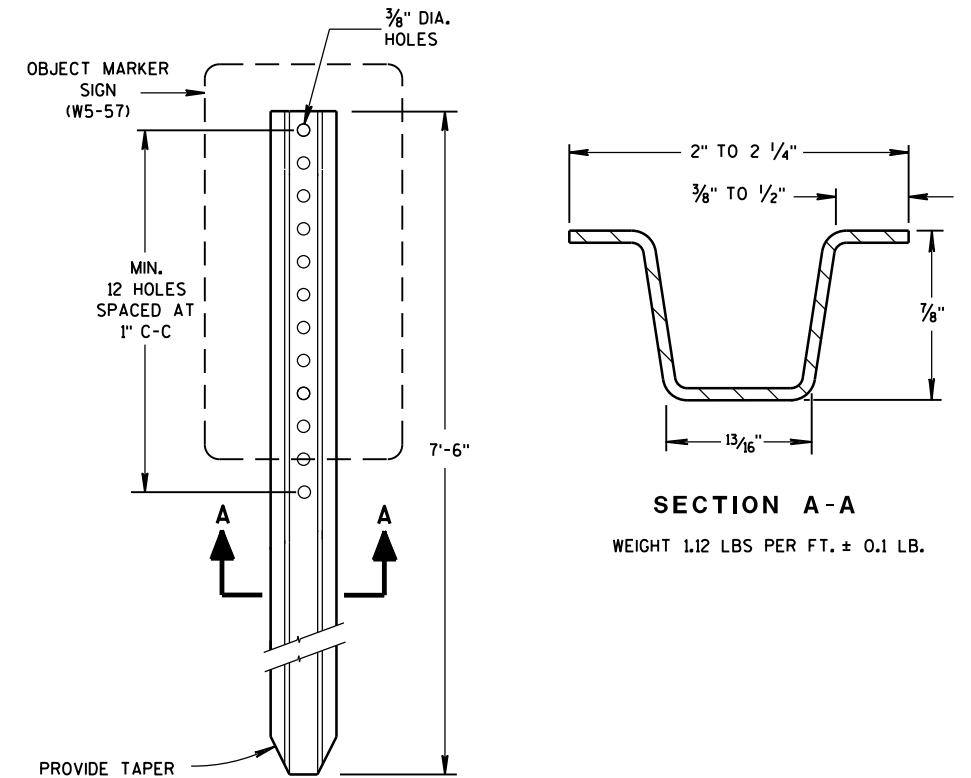
PLAN VIEW
UNDIVIDED HIGHWAY



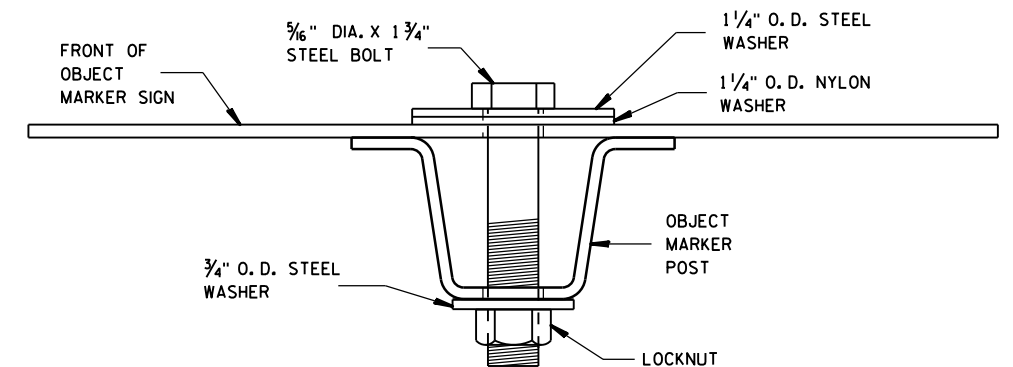
OBJECT MARKER LOCATION



CROSS SECTION
OBJECT MARKER PLACEMENT



OBJECT MARKER POST

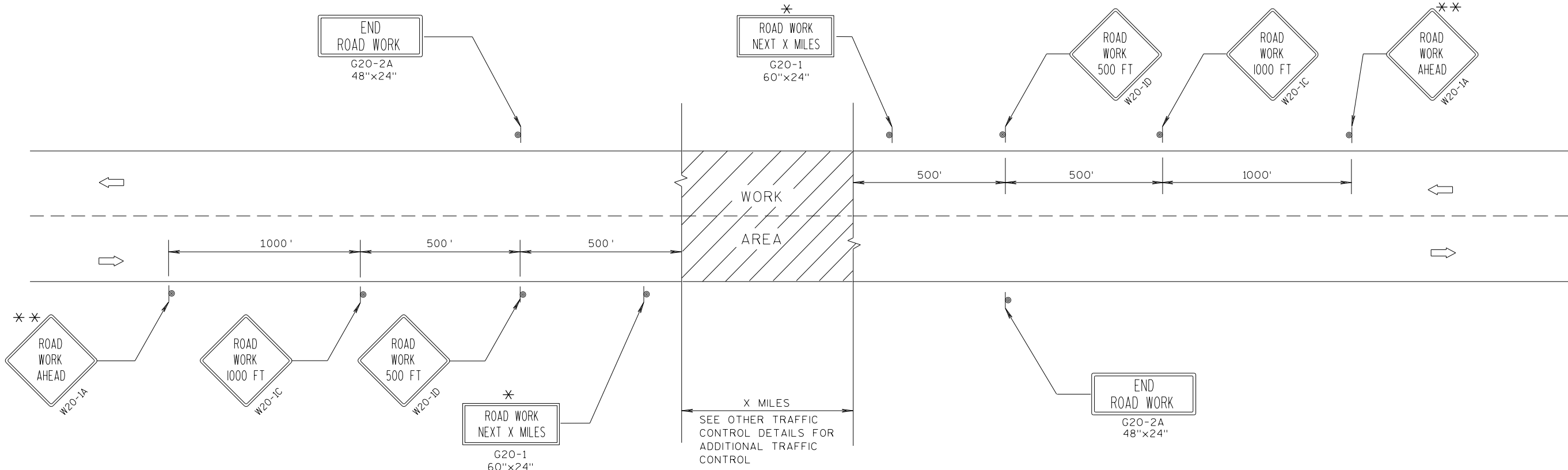


MOUNTING DETAIL FOR
OBJECT MARKER SIGN

OBJECT MARKER
FOR HAZARDOUS CULVERT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Matthew Rauch
DATE STATE SIGNING AND MARK 89 EER
FHWA



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.

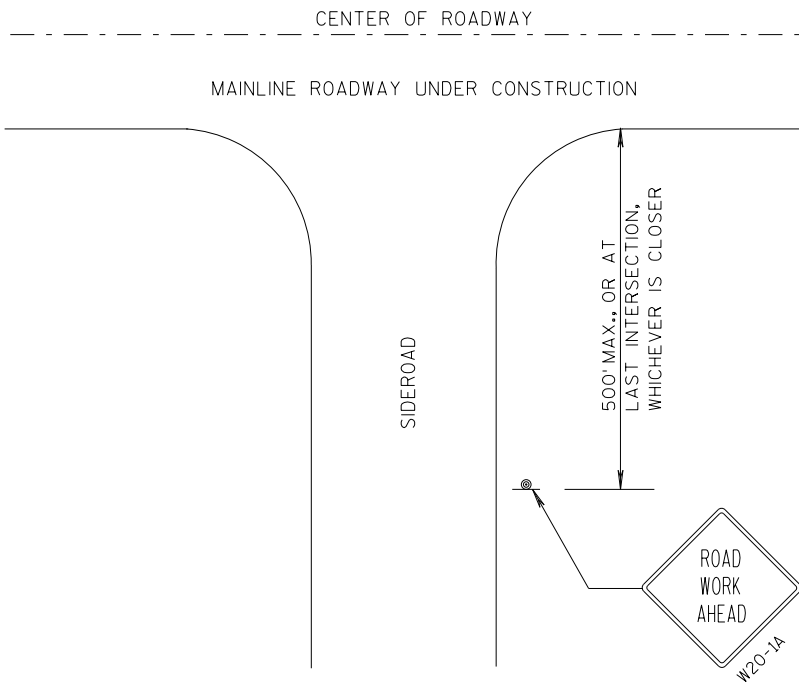
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS RE-ESTABLISHED.

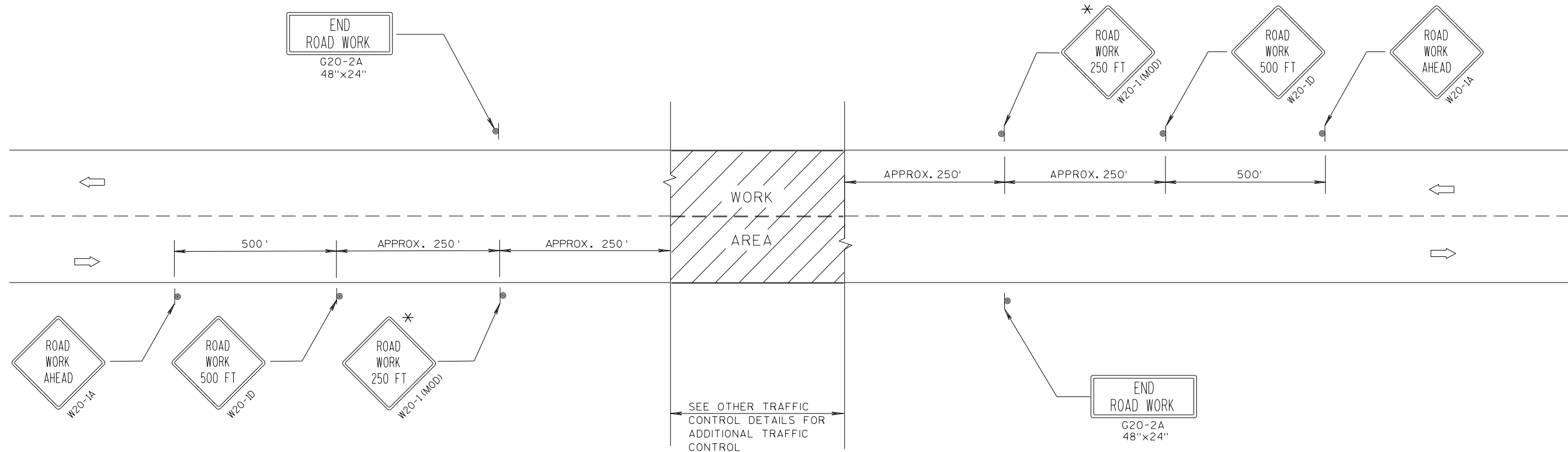
- * OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.
- * * PLACE ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.



LEGEND

- ⊙ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA

TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 7/2018 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	90



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.

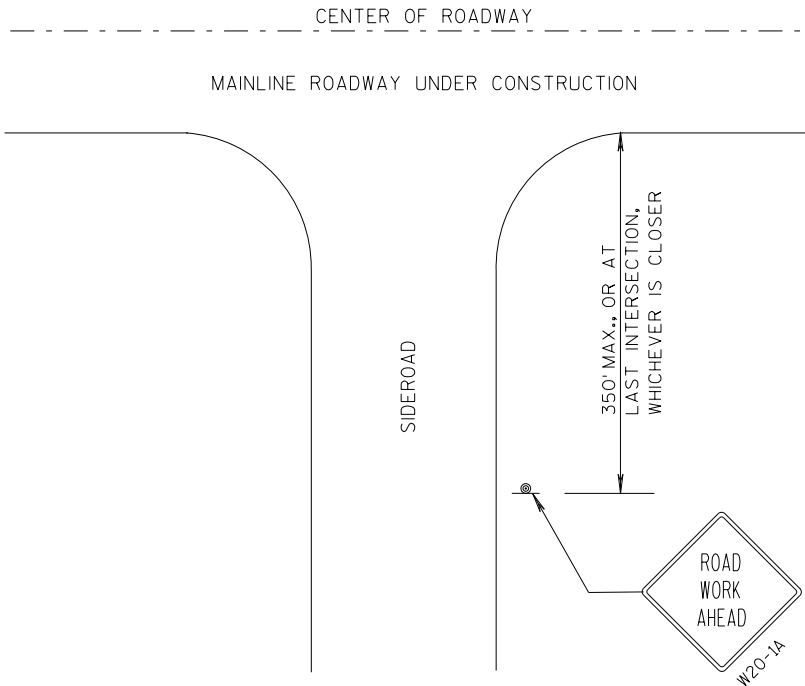
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"x36" SIGNS MAY BE USED INSTEAD OF 48"x48" SIGNS.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS RE-ESTABLISHED.

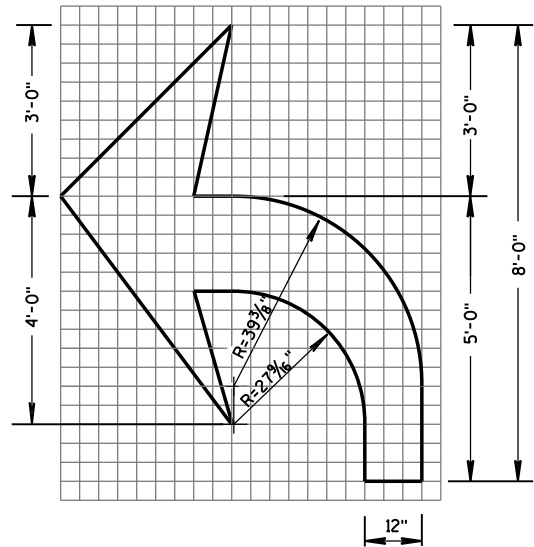
* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FT" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.



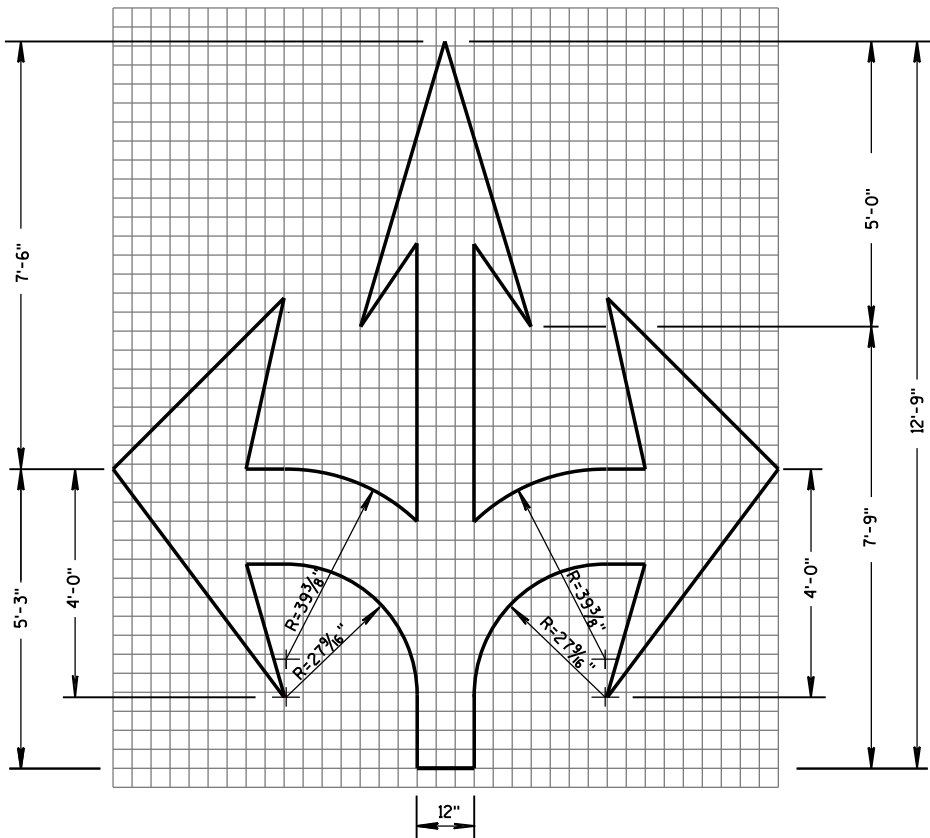
LEGEND

- ⊙ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA

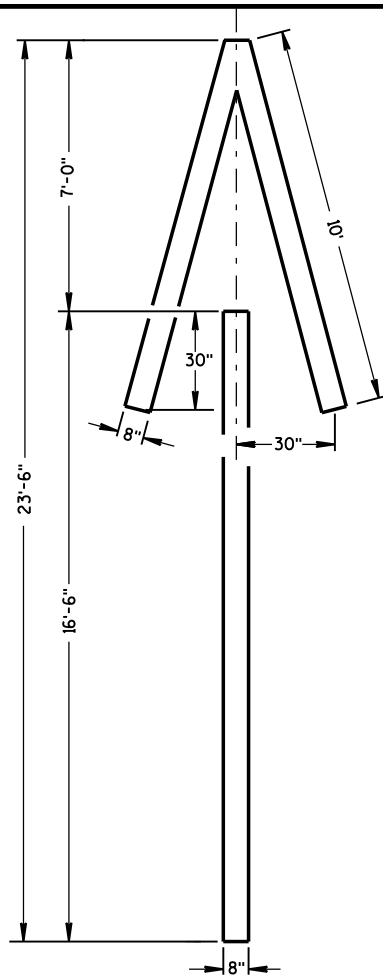
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 7/2018 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	



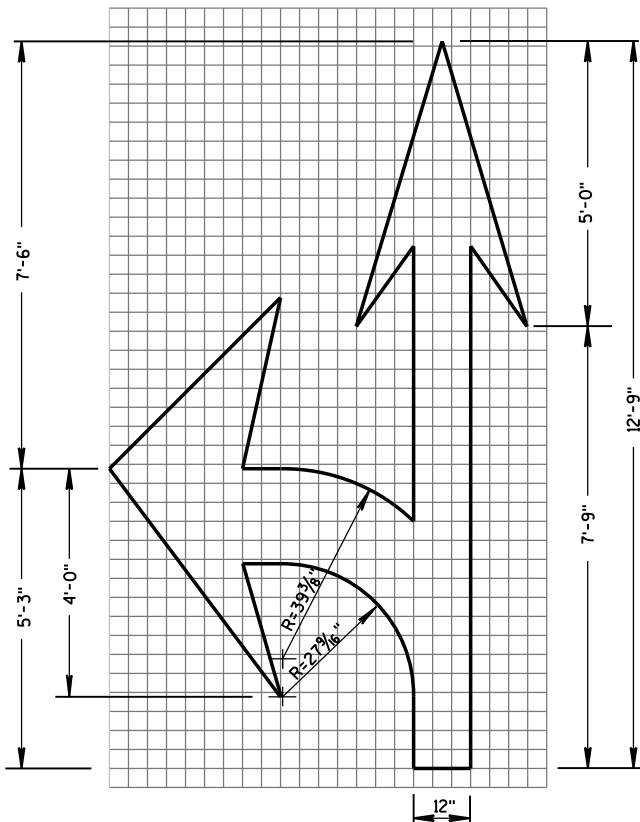
TYPE 2



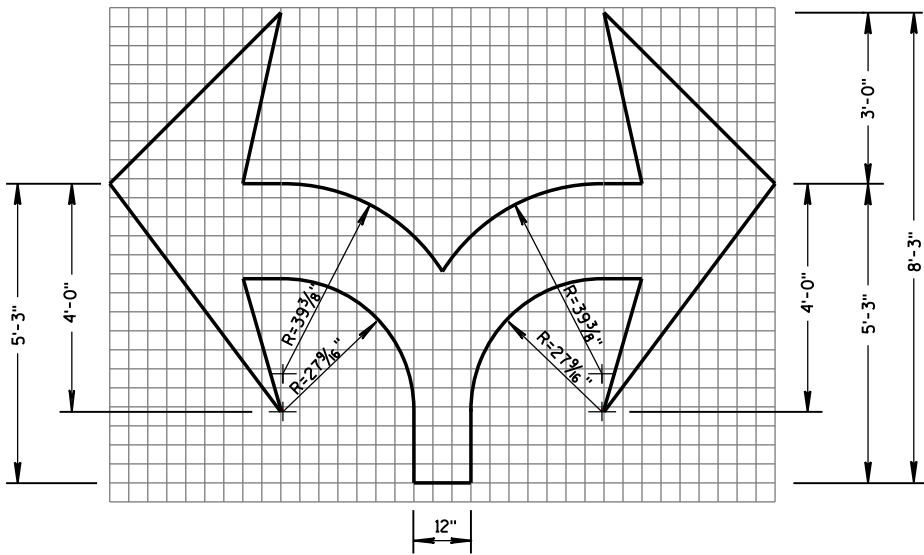
TYPE 6



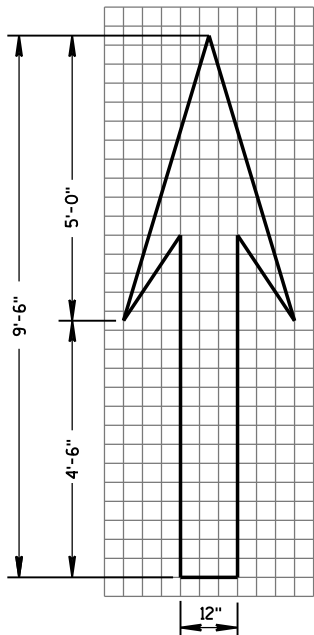
TYPE 4



TYPE 3



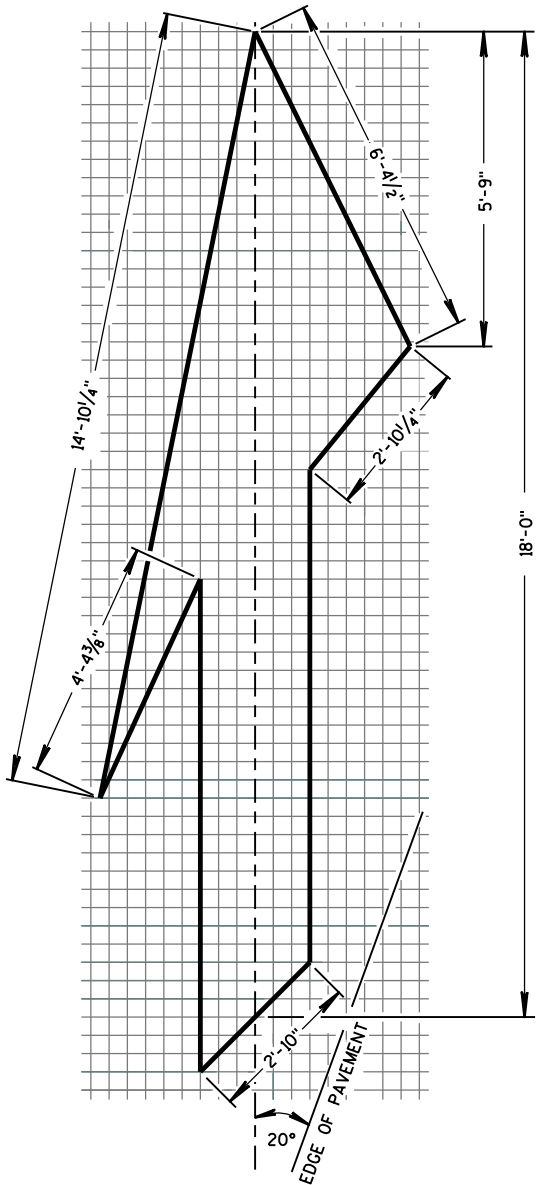
TYPE 7



TYPE 1

GENERAL NOTES

DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

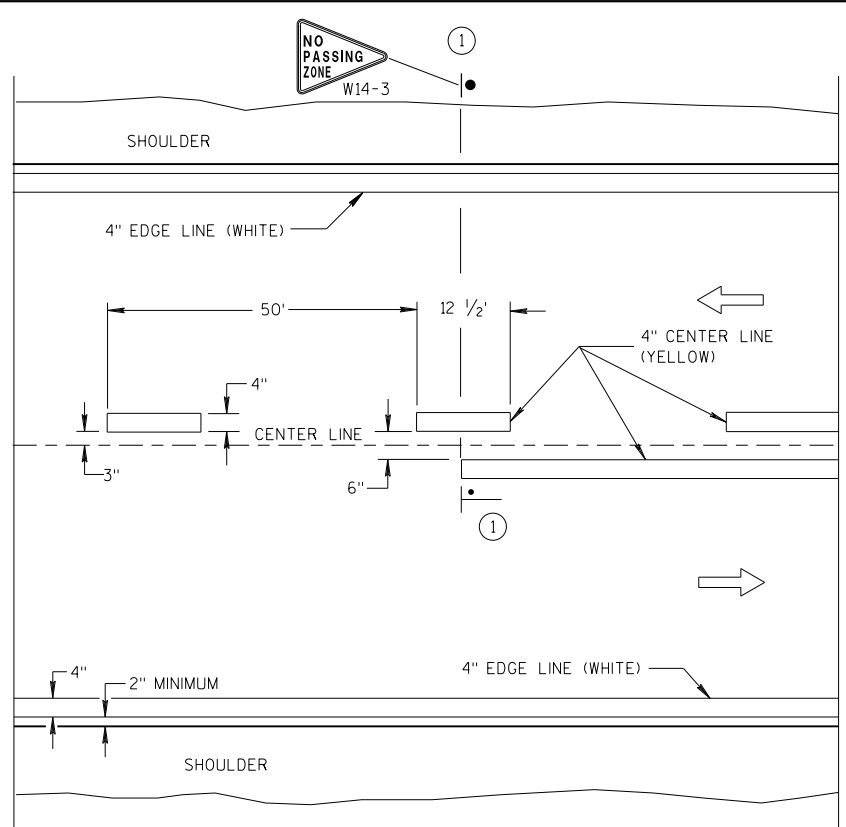


TYPE 5 LANE DROP ARROW

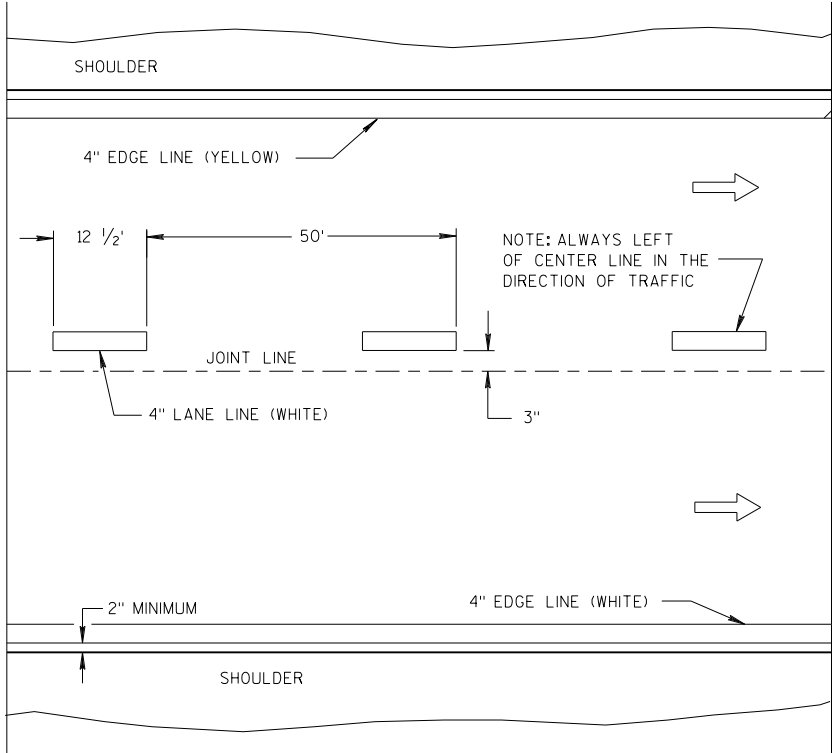
PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MAR 92
FHWA

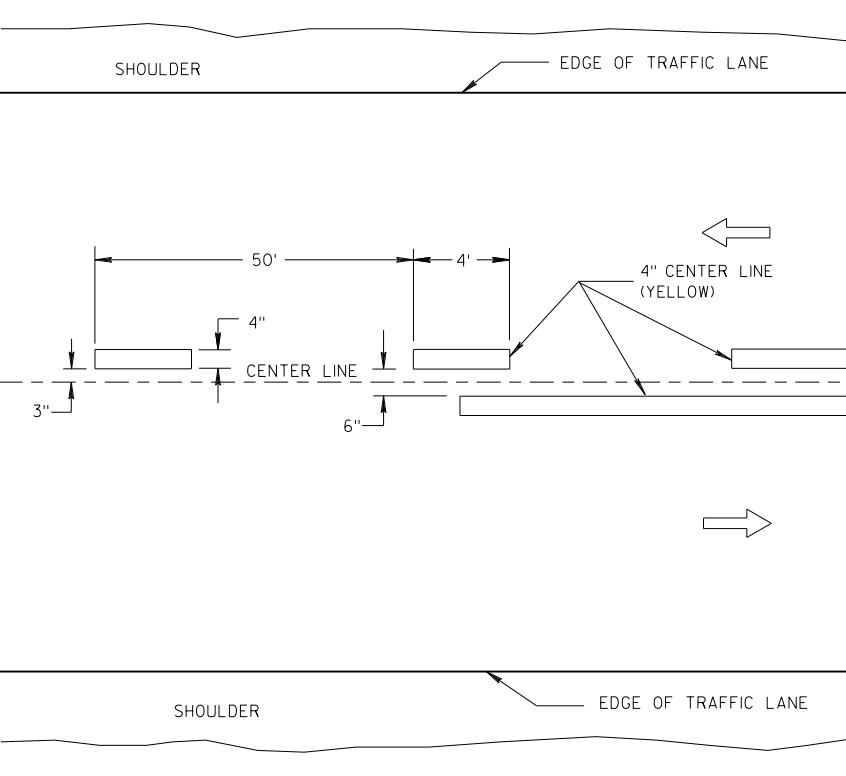


TWO WAY TRAFFIC

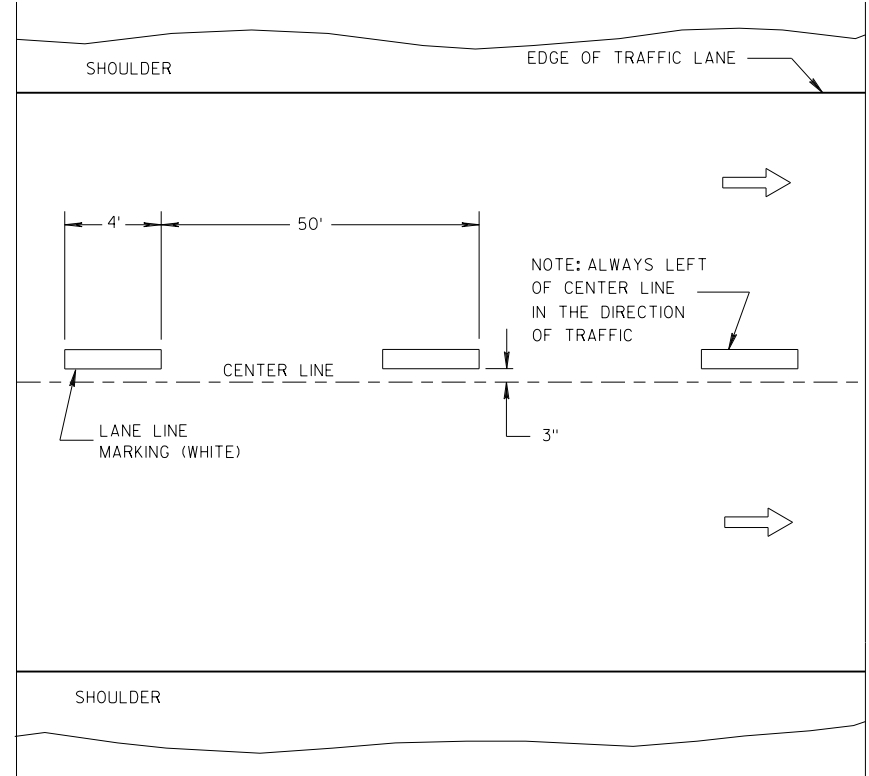


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

1 LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING.

NOTE

ARROW SYMBOL (➡) SHOWS DIRECTION OF TRAVEL

LEGEND

- "T" MARKING
- POST MOUNTED SIGN

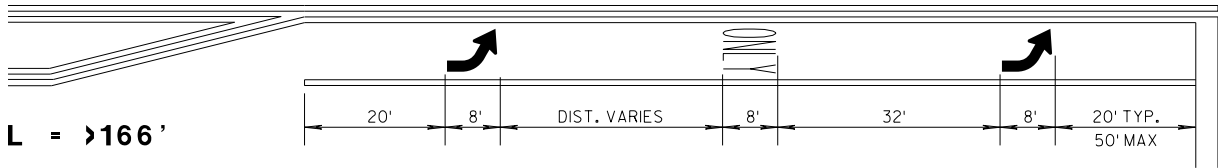
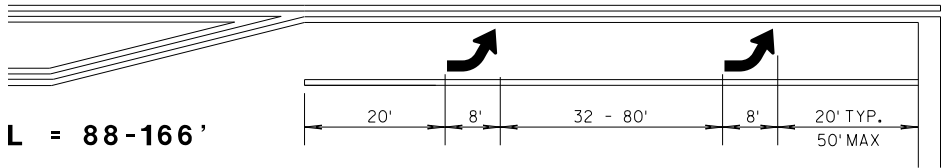
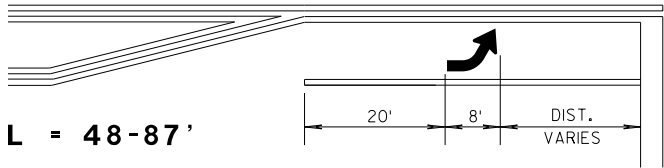
LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MAR 93 INEER
FHWA

TURN LANE OPTIONS

LENGTH OF TURN BAY (L) OF 0-47' DOES NOT REQUIRE PAVEMENT MARKING ARROWS OR WORDS



*(SEE TURN LANE OPTIONS FOR PLACEMENT OF PAVEMENT MARKING ARROWS AND WORDS)

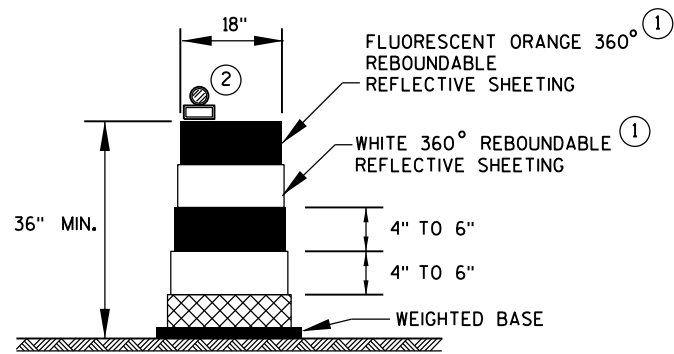
GENERAL NOTES

- ① 8" WHITE
- ② QUANTITY AND LOCATION OF TYPE 3 ARROW ARE THE SAME AS THE TYPE II ARROWS IN THE ADJACENT TURN LANE. FOR TURN LANES WITH A PHYSICAL SEPARATION, THE ARROWS AND ONLY MARKING ARE ELIMINATED.

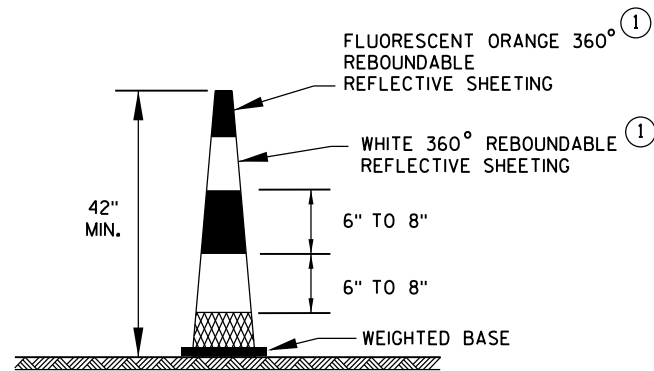
→ DIRECTION OF TRAFFIC
L = LENGTH OF TURN BAY

PAVEMENT MARKING
(TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORT 94



DRUM

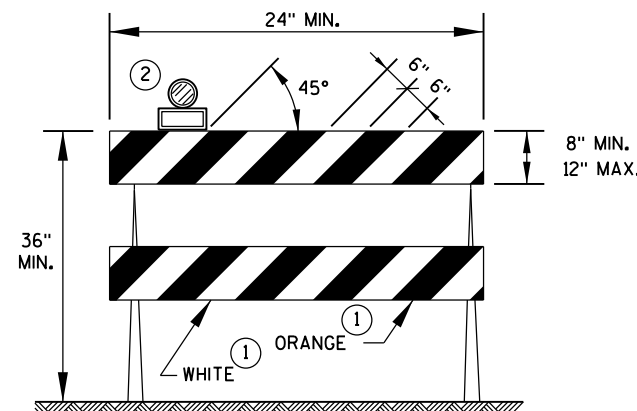


42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

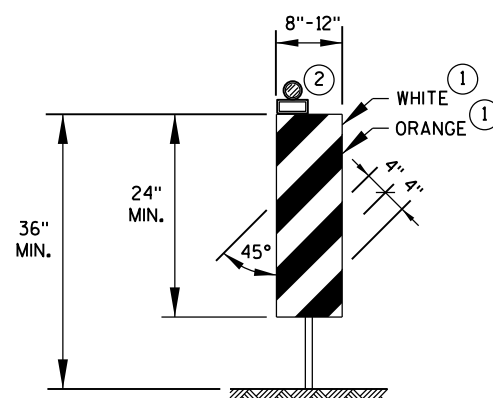
GENERAL NOTES

- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
- ② LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.



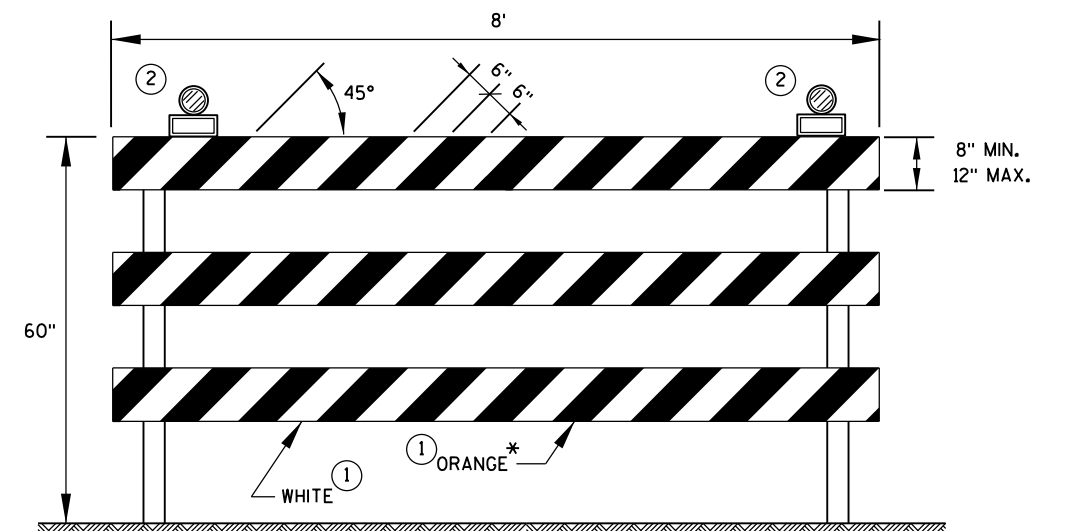
TYPE 2 BARRICADE

FOR RAILS LESS THAN 36" LONG, 4" WIDE STRIPES MAY BE USED.
ALL STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.



VERTICAL PANEL

THE STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.



TYPE 3 BARRICADE

IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

* IF USED FOR A PERMANENT APPLICATION, USE RED SHEETING.

CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heidtke WORK ZONE ENG 95
FHWA	

LEGEND

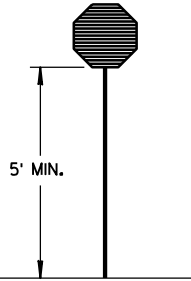
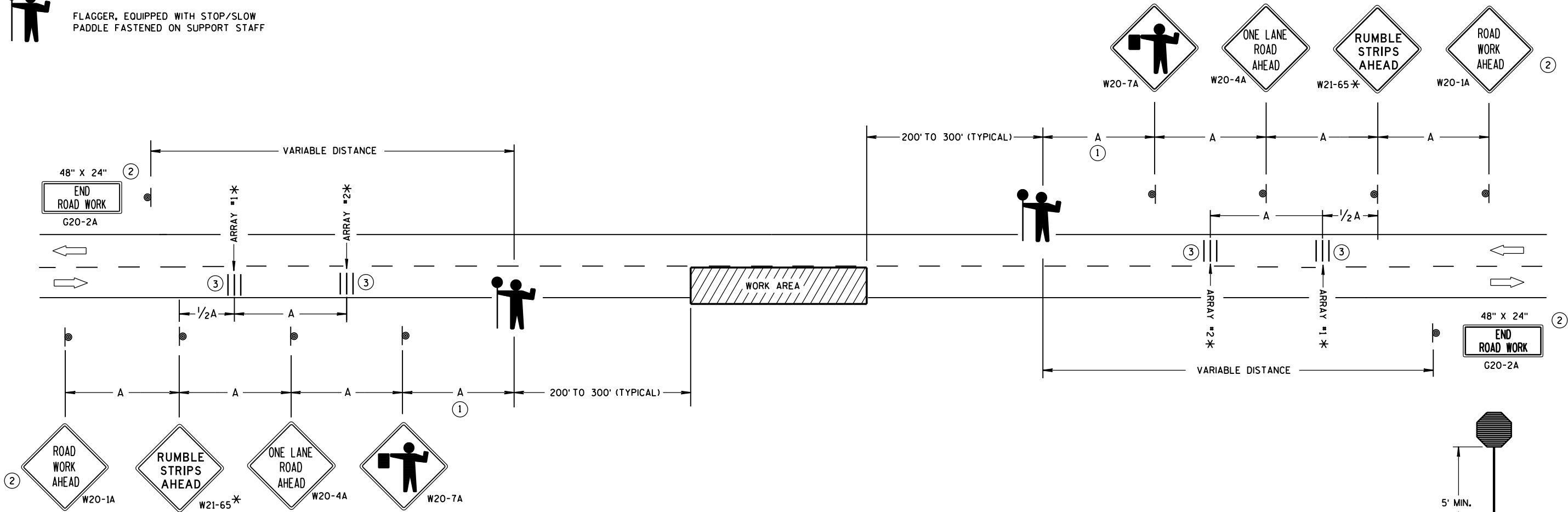
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

SPEED LIMIT	SPACING A
25-35 MPH	200'
35-40 MPH	350'
45-55 MPH	500'



USE OF THE "BE PREPARED TO STOP" SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7A AND W20-4A SIGNS, USING SPACING A.



STOP/SLOW PADDLE ON SUPPORT STAFF

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

GENERAL NOTES

DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES (AND THE LOCATION OF ALL FLAGGERS) SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

"W0" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS. PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, REMOVE TEMPORARY RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

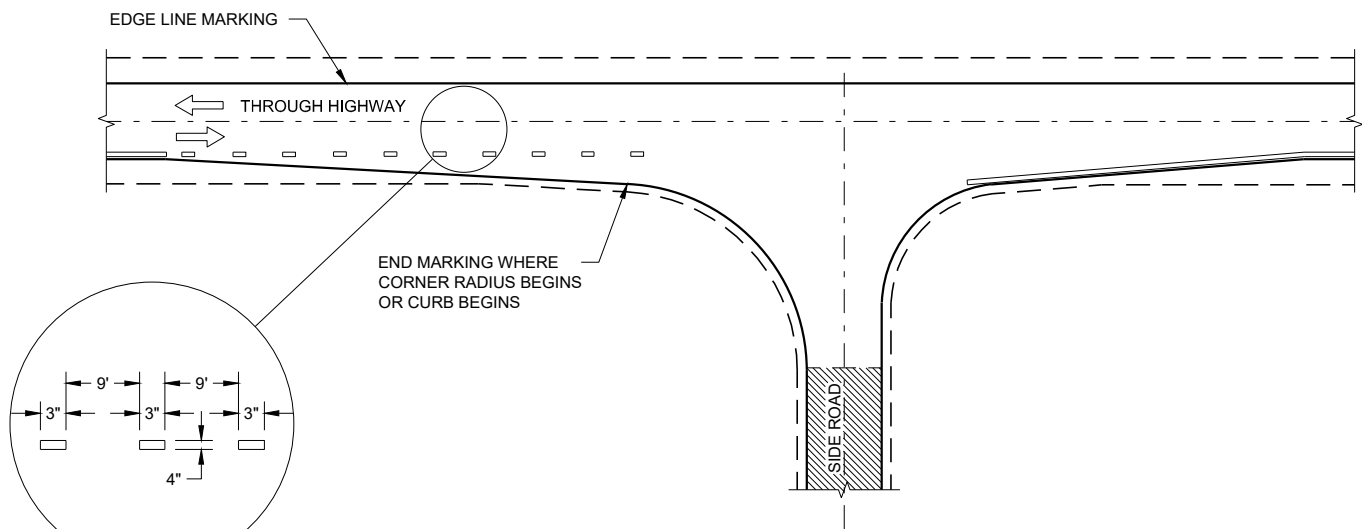
- * UTILIZE TEMPORARY RUMBLE STRIPS WHEN FLAGGING OPERATION IS ANTICIPATED TO BE STATIONARY IN EXCESS OF TWO HOURS.
- ① FOR A MOVING WORK OPERATION, SIGNING AND TEMPORARY RUMBLE STRIPS (IF USED) SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3,500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
- ② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.
- ③ EACH TEMPORARY RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

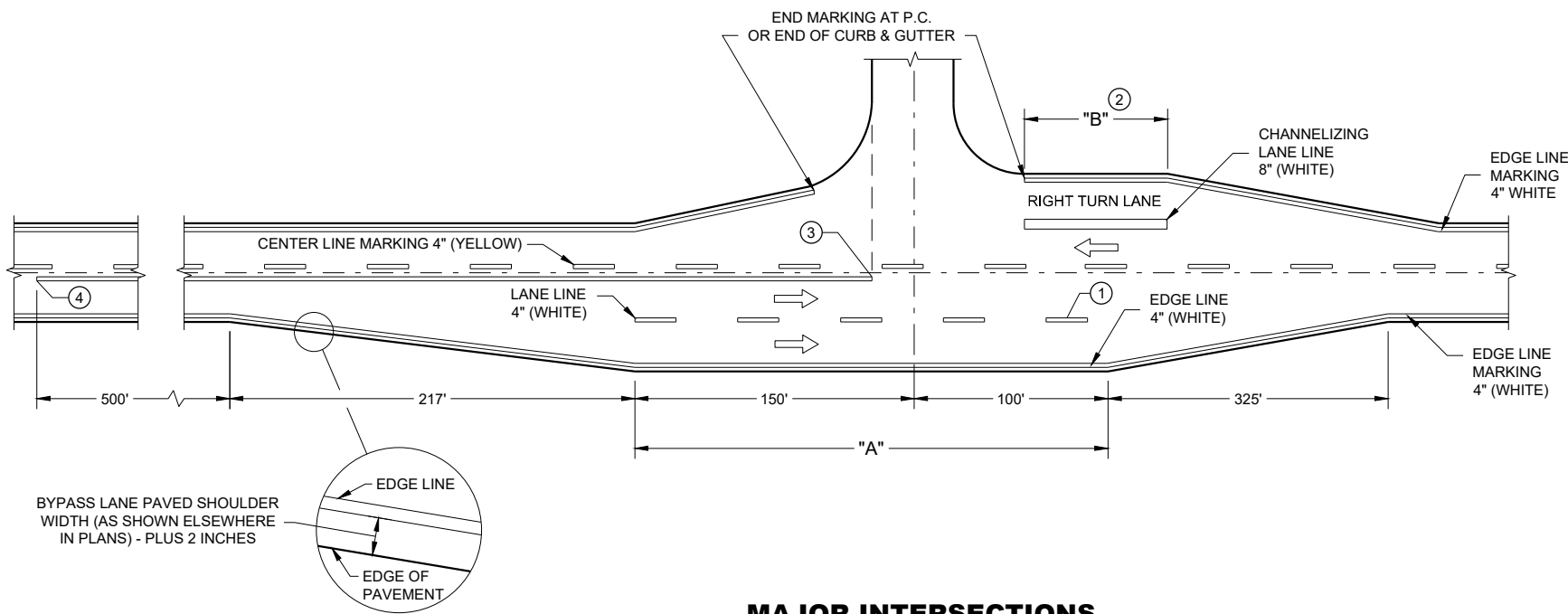
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Andrew Heldtke
DATE WORK ZONE ENC 96
FHWA

S.D.D. 15 C 19-5a



MINOR INTERSECTION



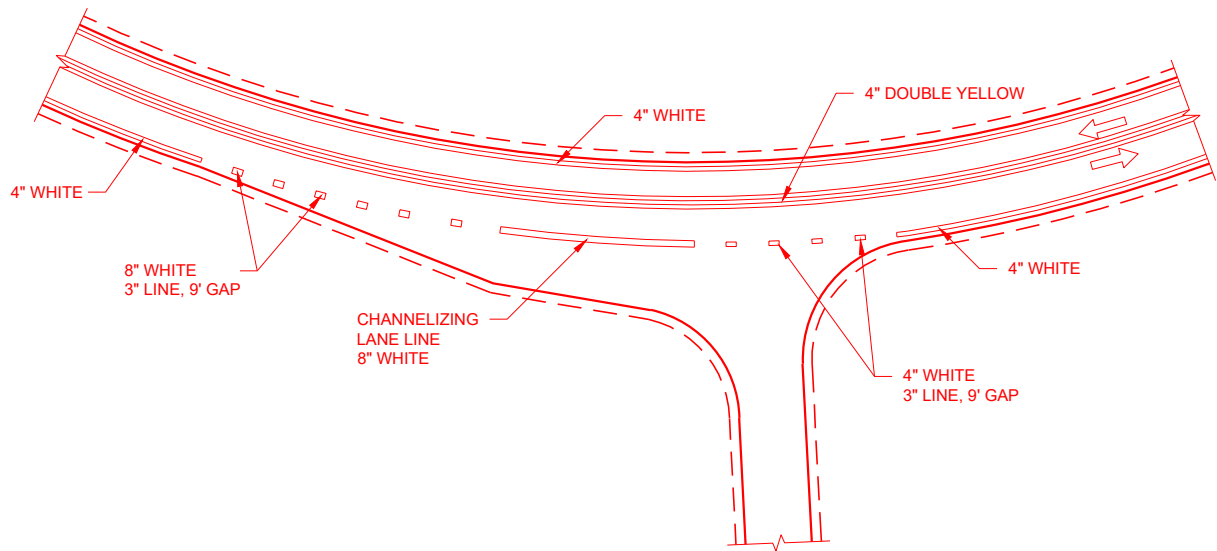
MAJOR INTERSECTIONS
(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)

GENERAL NOTES

OMIT EDGE LINES THROUGH INTERSECTIONS. CONTINUE EDGE LINES THROUGH DRIVEWAYS.

- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
- ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
- ③ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
- ④ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER

ARROW SYMBOL (➡) SHOWS DIRECTION OF TRAVEL



INTERSECTION ON OUTSIDE OF CURVE

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

W20-1A AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.

CHANNELIZING DEVICES PLACED ADJACENT TO THE WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

TABLE A

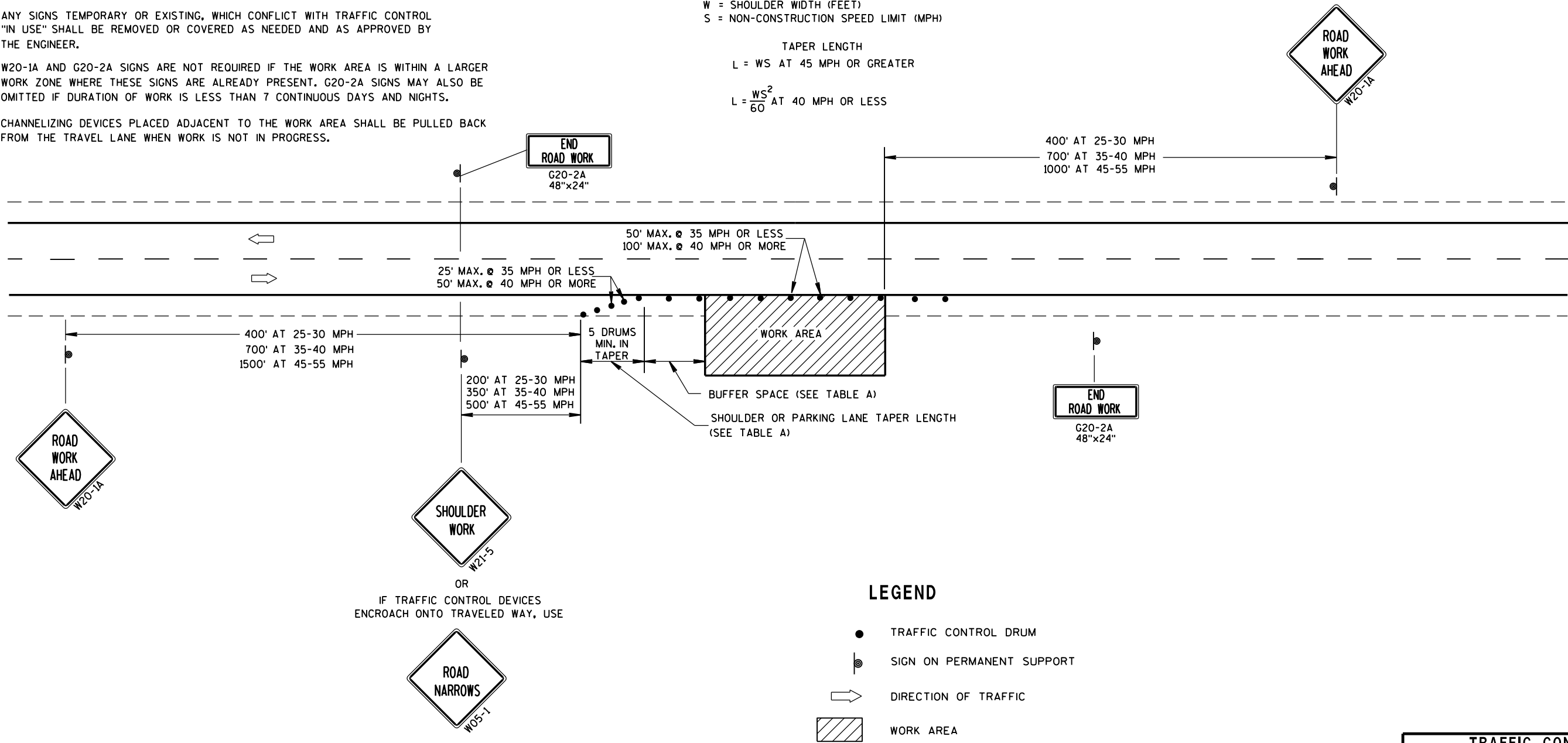
SHOULDER TAPER LENGTH (FEET)					BUFFER SPACE (FEET)
S \ W	4	6	8	10	
30	20	30	40	50	200
35	30	45	55	70	250
40	40	55	75	90	305
45	60	90	120	150	360
50	70	100	135	170	425
55	75	110	150	185	495

W = SHOULDER WIDTH (FEET)
S = NON-CONSTRUCTION SPEED LIMIT (MPH)

TAPER LENGTH
L = WS AT 45 MPH OR GREATER

$L = \frac{WS^2}{60}$ AT 40 MPH OR LESS

SHOULDER TAPER LENGTH = $\frac{1}{3}L$



LEGEND

- TRAFFIC CONTROL DRUM
- ⦿ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA

TRAFFIC CONTROL,
WORK ON SHOULDER OR
PARKING LANE,
UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 14, 2015 /S/ Peter Amakobe Atepe
DATE STATEWIDE WORK ZONE SAFETY ENGINEER
FHWA

[illegible]

6

4' MINIMUM
5' DESIRABLE

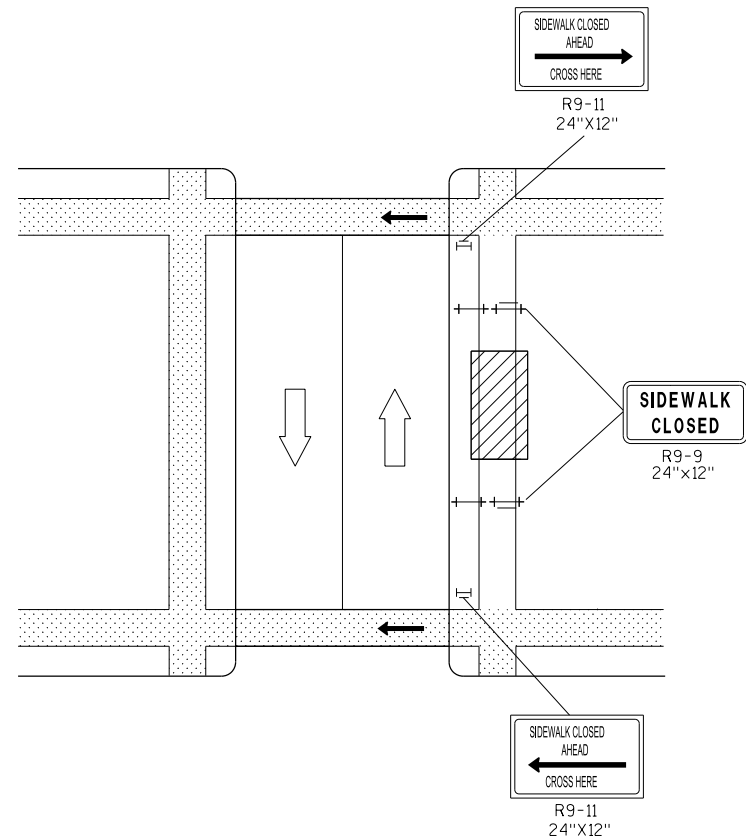
**SIDEWALK
CLOSED**

R9-9
24" x 12"

①

TEMPORARY
PEDESTRIAN
ACCESS. SEE
SDD 15 D 30
SHEET "C".

S.D.D. 15 D 30-4a



The diagram illustrates a four-way intersection with a central road work area. The following table summarizes the signs and their dimensions as shown in the diagram:

Sign Description	Sign Number	Dimensions
ROAD WORK AHEAD	W20-1	24" x 36"
SIDEWALK CLOSED AHEAD	R9-11	24" x 12"
PEDESTRIAN CROSSWALK	R9-8	36" x 18"
SIDEWALK CLOSED	R9-9	24" x 12"
SIDEWALK CLOSED AHEAD	R9-11A	24" x 12"
Pedestrian Crossing Sign	W011-2	30" x 36"
Plaque Sign	W016-7L	18" x 24"

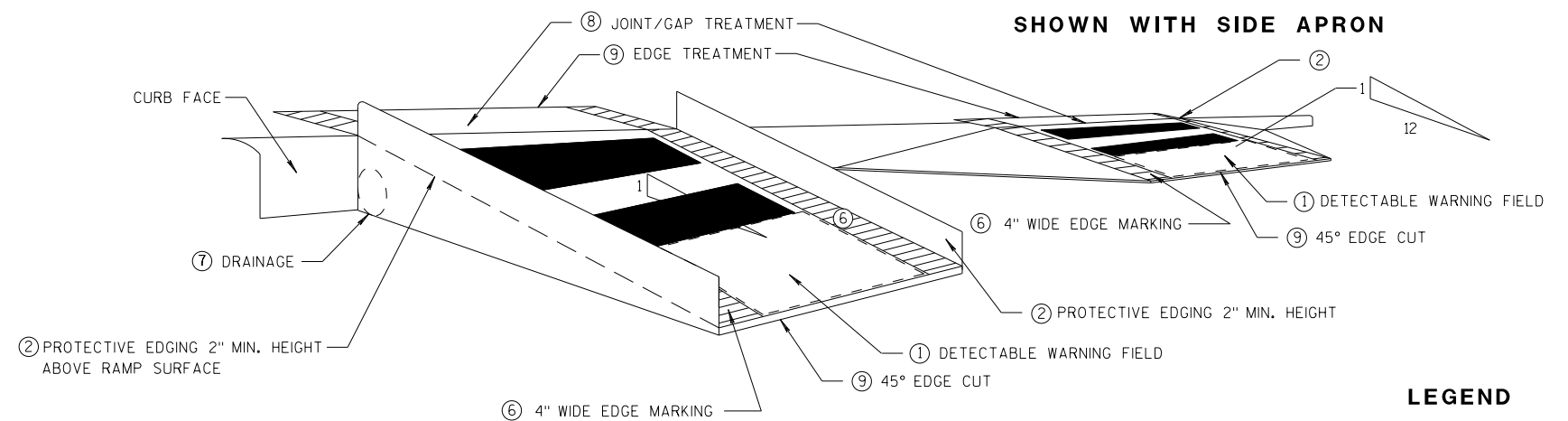
6

S.D.D. 15 D 30-4a

NOTIFY THE BUS COMPANY 7 DAYS IN ADVANCE OF THE BUS STOP RELOCATION.
ALTERNATE SIDEWALK WORK BETWEEN LEFT AND RIGHT SIDE OF ROADWAY
TO MAINTAIN PEDESTRIAN ACCESS.

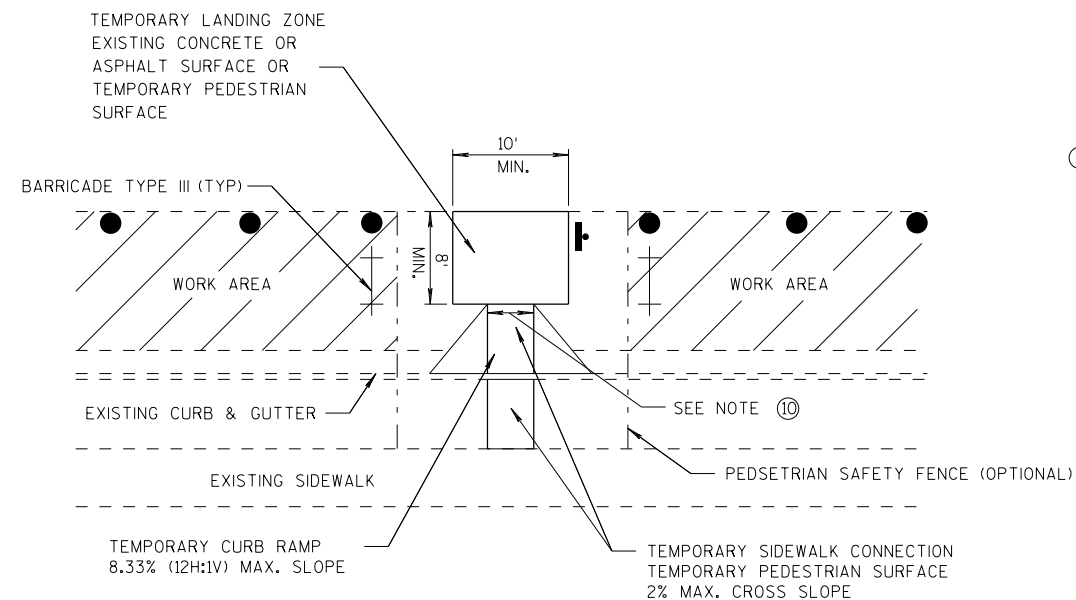
-
- Technical drawing of a ramp cross-section showing various safety and construction details. The drawing includes the following labeled components:
- ① DETECTABLE WARNING FIELD
 - ② PROTECTIVE EDGING 2" MIN. HEIGHT ABOVE RAMP SURFACE
 - ③ DETECTABLE EDGING 6" MIN. HEIGHT
 - ④ CROSS SLOPE 2% MAX.
 - ⑤ CLEAR SPACE
 - ⑥ 4" WIDE EDGE MARKING
 - ⑦ DRAINAGE
 - ⑧ JOINT/GAP TREATMENT
 - ⑨ EDGE TREATMENT
 - 48"x48" MIN. LANDING AREA
 - CURB FACE

TEMPORARY CURB RAMP PARALLEL TO CURB



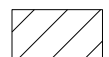
SHOWN WITH PROTECTIVE EDGE

TEMPORARY CURB RAMP PERPENDICULAR TO CURB



TEMPORARY BUS STOP PAD

LEGEND



WORK AREA



TYPE III BARRICADE



TRAFFIC CONTROL DRUM

TRAFFIC CONTROL,
TEMPORARY ADA COMPLIANT
PEDESTRIAN ACCOMMODATION

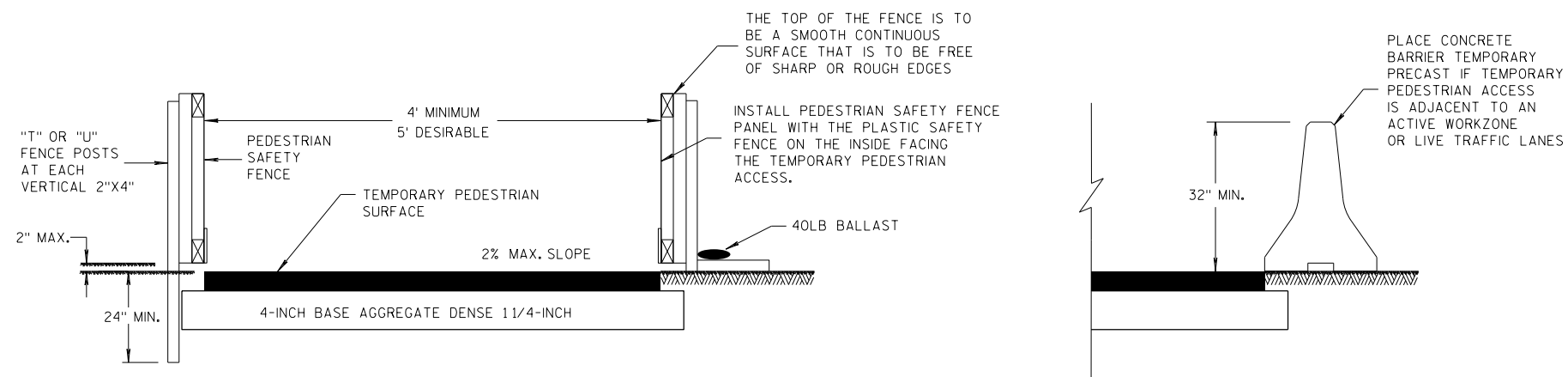
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

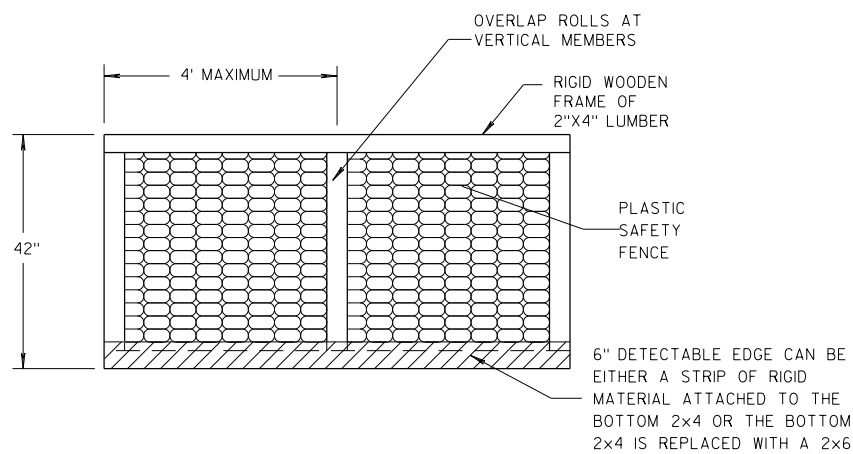
7/2018
DATE

/S/ Andrew Heidtke
WORK ZONE ENG 101

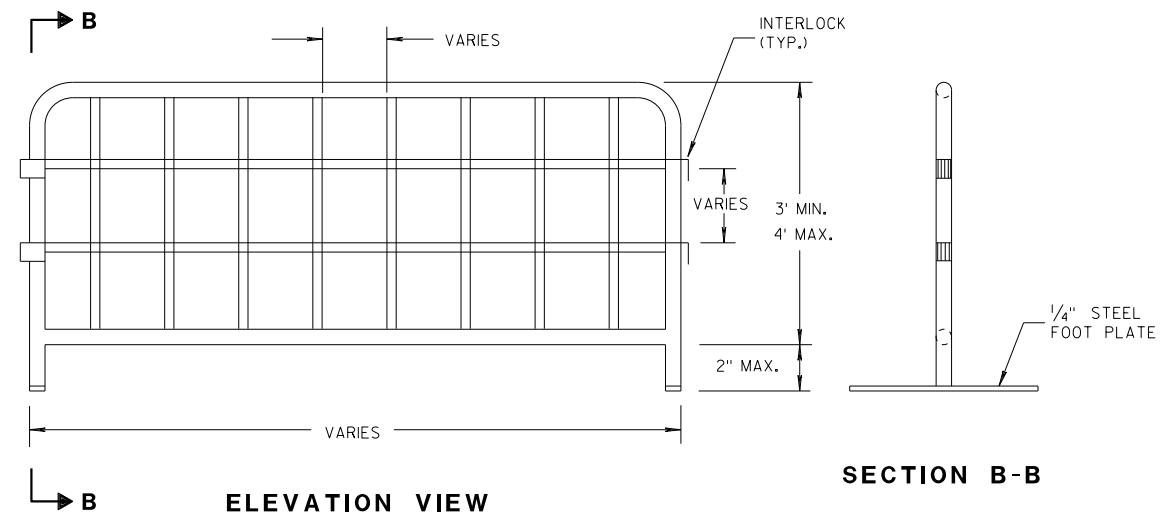
FHWA



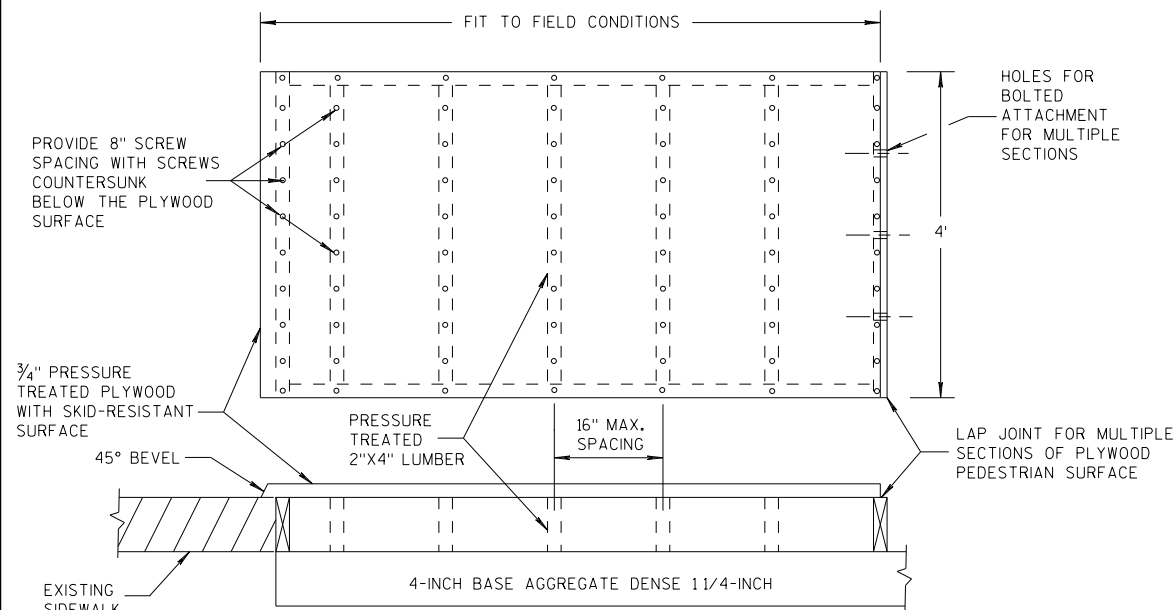
TEMPORARY PEDESTRIAN ACCESS



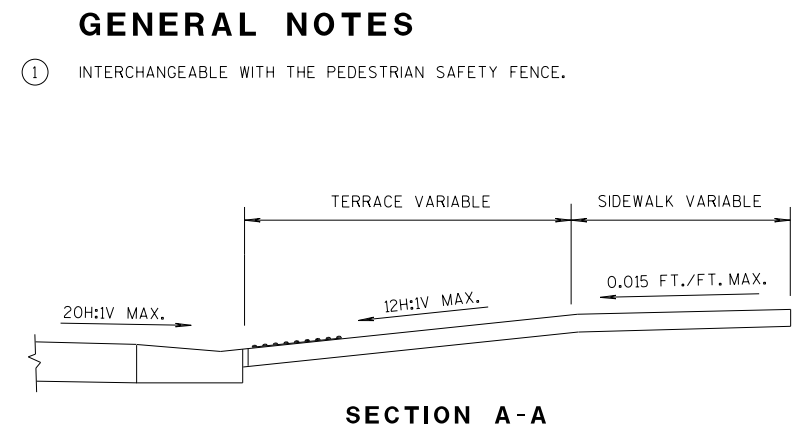
PEDESTRIAN SAFETY FENCE



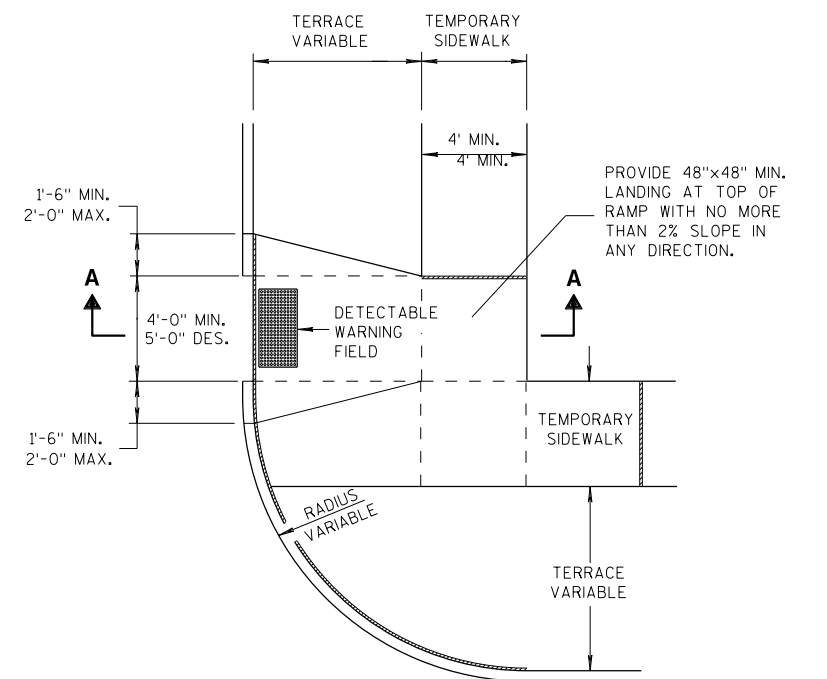
TEMPORARY PEDESTRIAN STEEL BARRICADE



TEMPORARY PEDESTRIAN SURFACE PLYWOOD



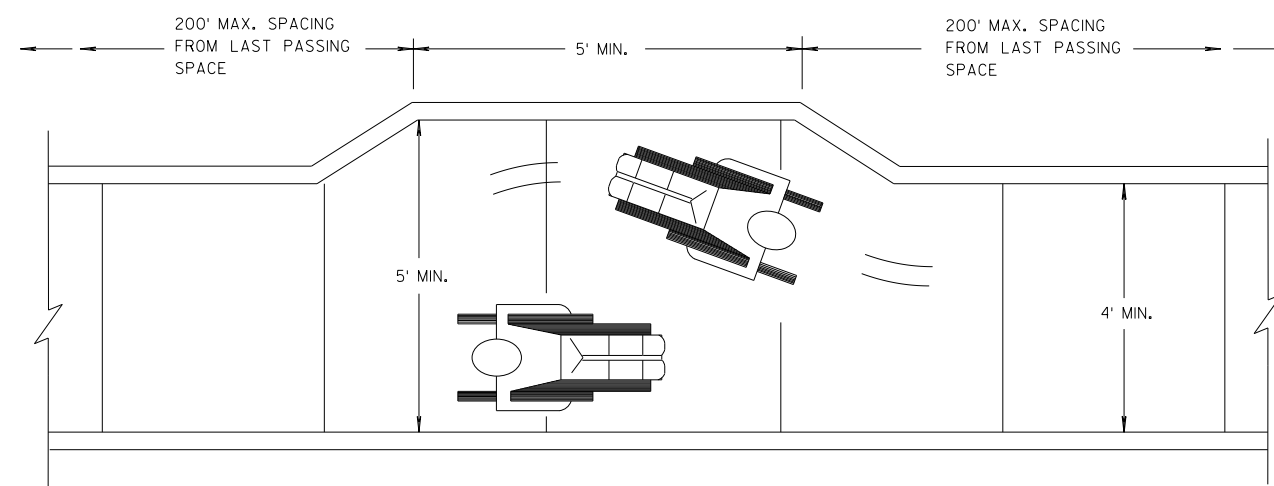
SECTION A-A



PLAN VIEW

TEMPORARY TYPE 3 RAMP

(OUTSIDE OF CROSSWALK AREA)



NARROW SIDEWALK PASSING DETAIL

**TRAFFIC CONTROL,
PEDESTRIAN ACCOMMODATION**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 /S/ Andrew Heidtke
DATE WORK ZONE ENG 102

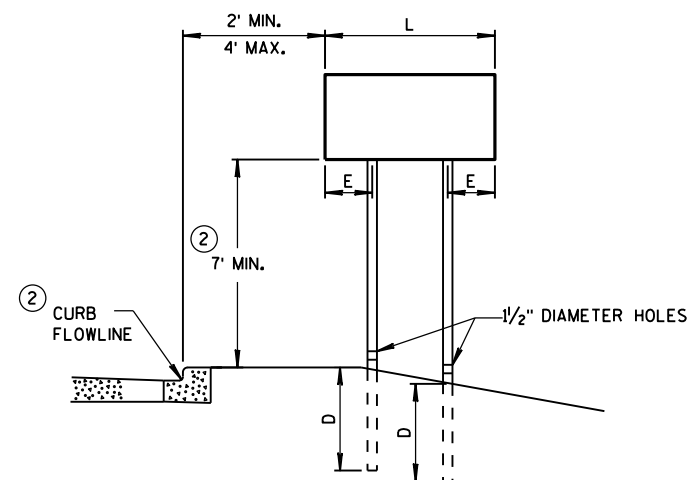
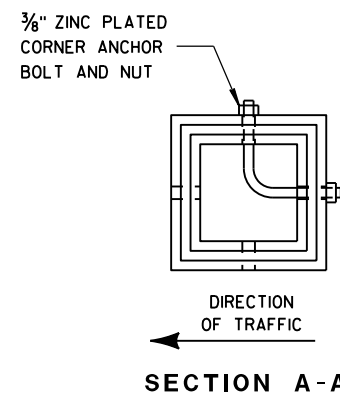
FHWA



TUBULAR STEEL POSTS

AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

SIGNS LARGER THAN 27 SQ.FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.

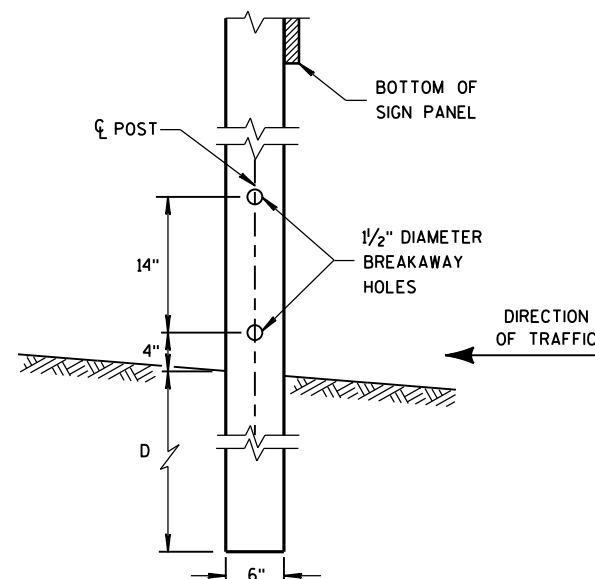


URBAN AREA

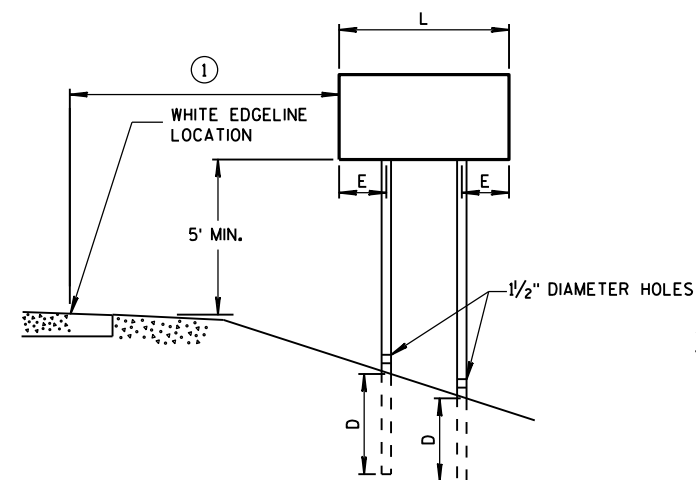
POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST
EMBEDMENT DEPTH

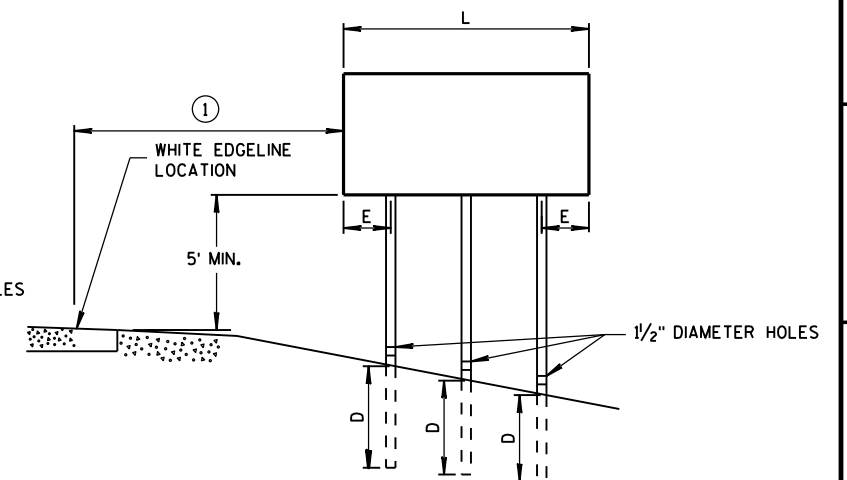
AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'



4" x 6" WOOD POST MODIFICATION



RURAL AREA



GENERAL NOTES

- ① 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.
- ② THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.
- ③ FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.

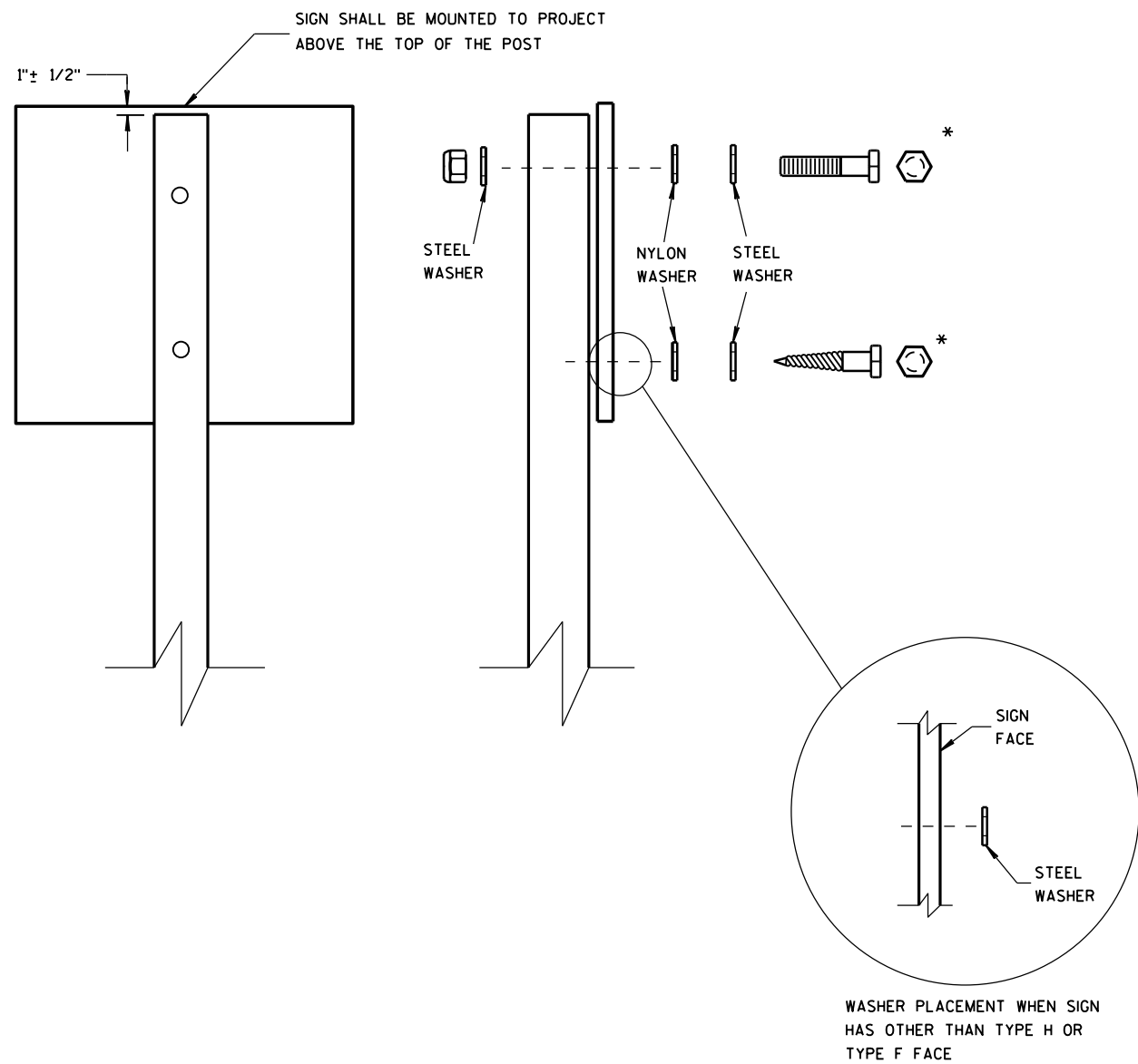
4" X 6" WOOD POST

POST SPACING REQUIREMENTS		NUMBER OF WOOD POSTS REQUIRED
L	E	
48" OR LESS AND LESS THAN 20 SQ. FT.	-	1
LESS THAN 60"	12"	2
60" TO 120"	L/5	2
GREATER THAN 120" LESS THAN 168"	12"	3
168" AND GREATER	12"	4

SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 103



NUTS, BOLTS AND LAGS USED FOR MOUNTING SIGNS SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

- A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3
- B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

THREADS ON BOLTS AND NUTS SHALL BE MANUFACTURED WITH SUFFICIENT ALLOWANCE FOR THE CADMIUM PLATE OR GALVANIZED COATING TO PERMIT THE NUTS TO RUN FREELY ON THE BOLTS.

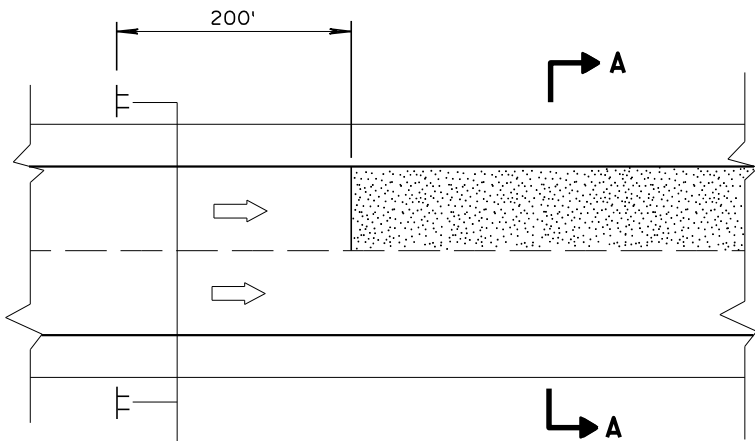
- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" x 3"
 - MACHINE BOLTS - 5/16" x 6-1/2" OR 7" LENGTH W/ NUTS

- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" x 3-1/4" LENGTH W/ NUTS
 - RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

- WASHERS (ALL POSTS) -
- 1-1/4" O.D. x 3/8" I.D. x 1/16" STEEL
 - 1-1/4" O.D. x 3/8" I.D. x .080 NYLON FOR ALL TYPE H SIGNS

* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

ATTACHMENT OF SIGNS TO POSTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heidtke WORK ZONE EN 104
FHWA	



MULTI-LANE

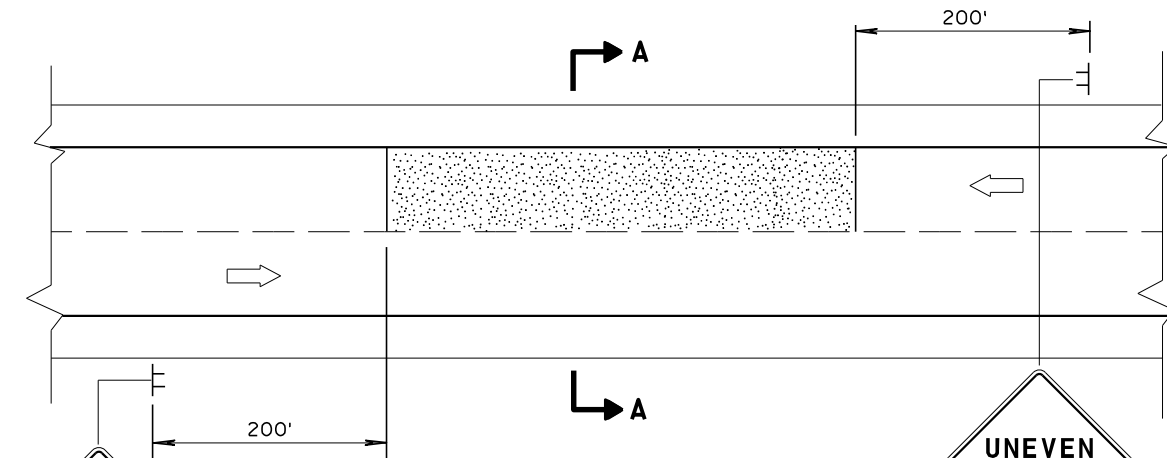


SECTION A-A

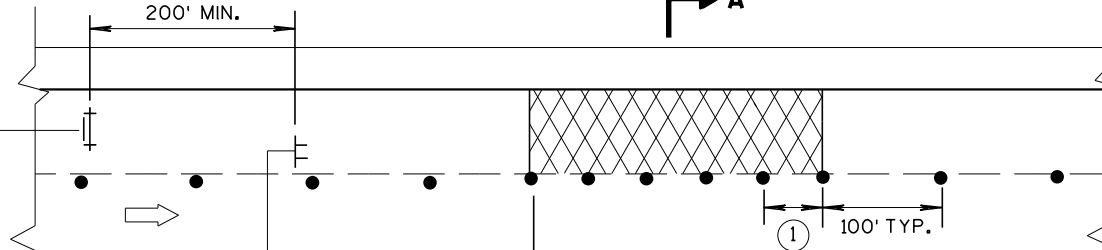
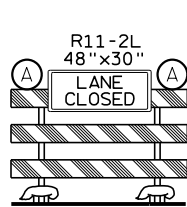
OR



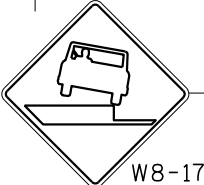
SECTION A-A



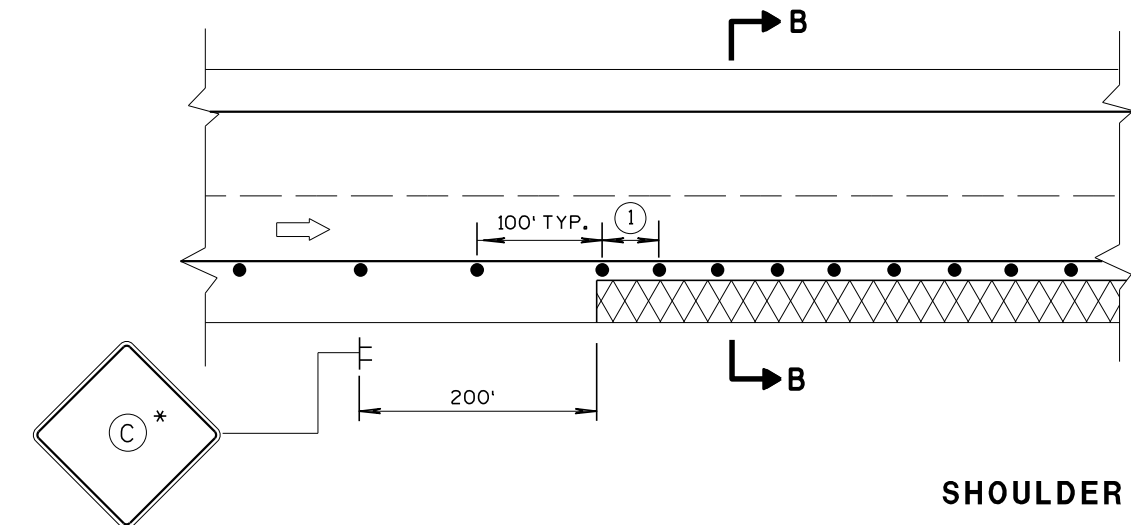
TWO-WAY TWO LANE



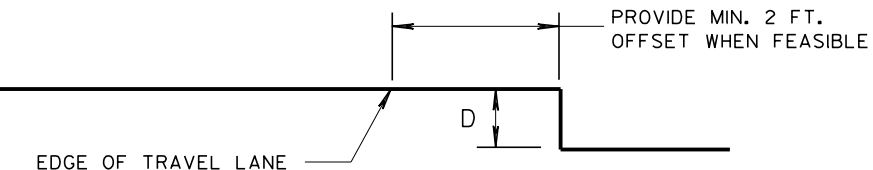
MULTI-LANE BASE PATCHING



ADJACENT LANE DROP-OFFS



SHOULDER DROP-OFFS



SECTION B-B

GENERAL NOTES

FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

* IF THE DROP-OFF IS CONTINUOUS ALONG THE PROJECT, PLACE ADDITIONAL SIGNS EVERY 1 MILE AND AFTER EACH ENTRANCE RAMP.

① USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- WORK AREA WITH DROP-OFF
- MILLED SURFACE

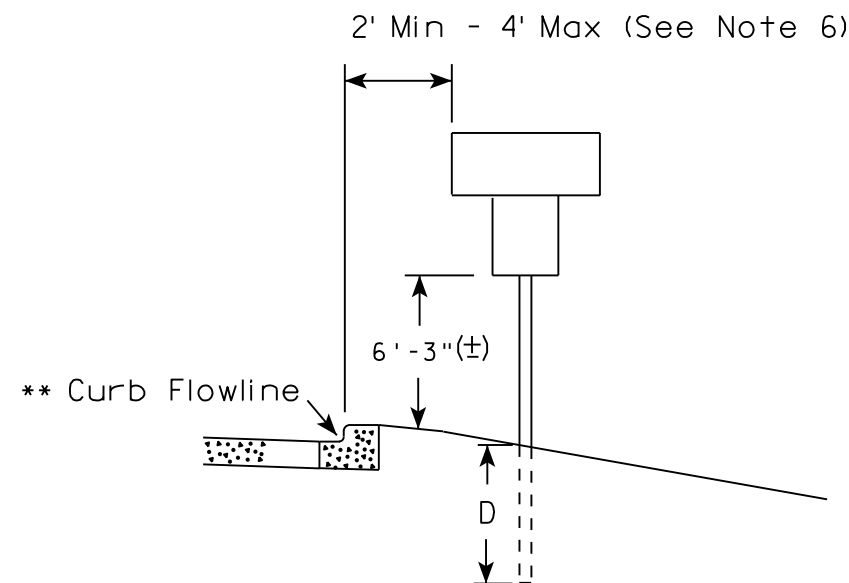
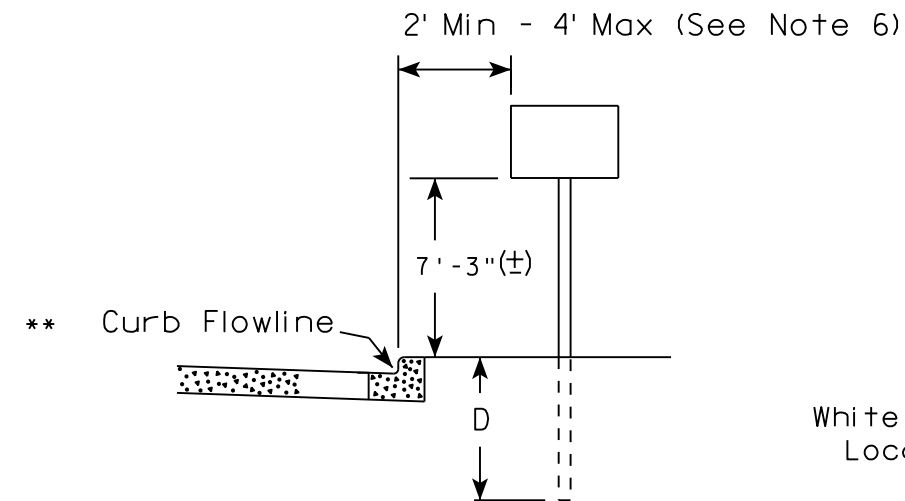
D	SIGN (C)
< 2" WITH A SLOPE STEEPER THAN 3:1	LOW SHOULDER W08-9
2" < 6" WITH A SLOPE STEEPER THAN 3:1	SHOULDER DROP-OFF W8-9A PROVIDE A 3:1 OR FLATTER SLOPE OF MATERIAL ADJACENT TO THE PAVEMENT

TRAFFIC CONTROL,
DROP-OFF SIGNING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

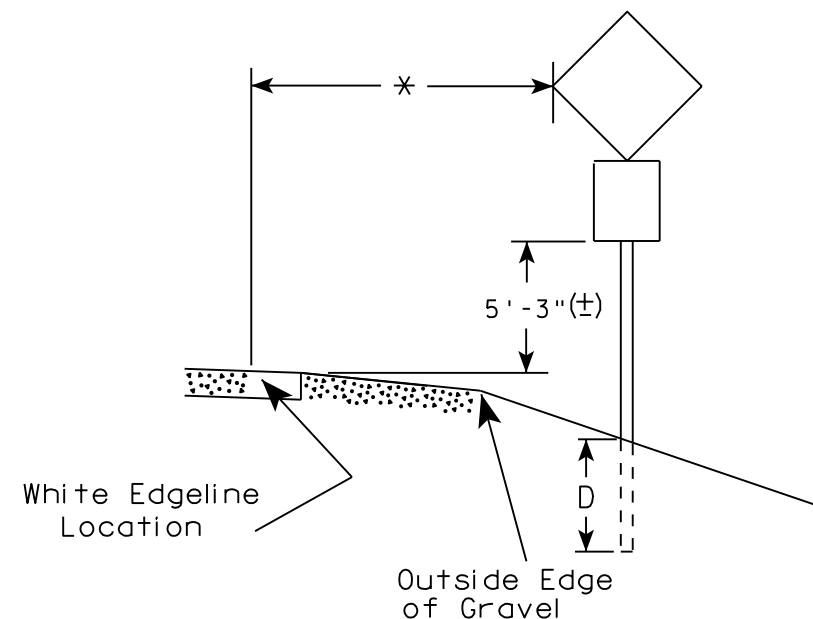
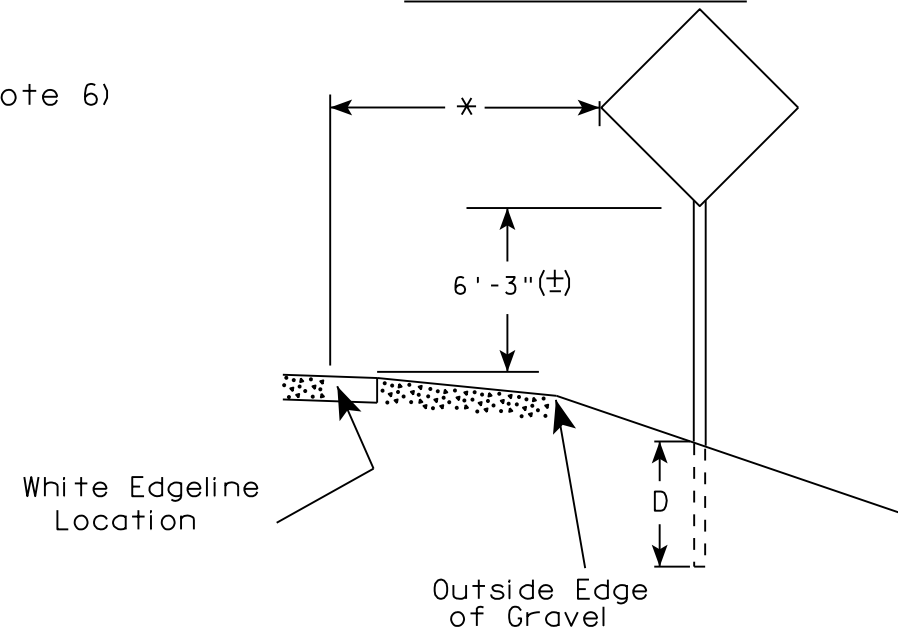
APPROVED
March 2018 /S/ Andrew H
DATE WORK ZONE EN 105
FHWA

URBAN AREA



✱✱ The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

RURAL AREA (See Note 2)



✱ 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

POST EMBEDMENT DEPTH

Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

GENERAL NOTES

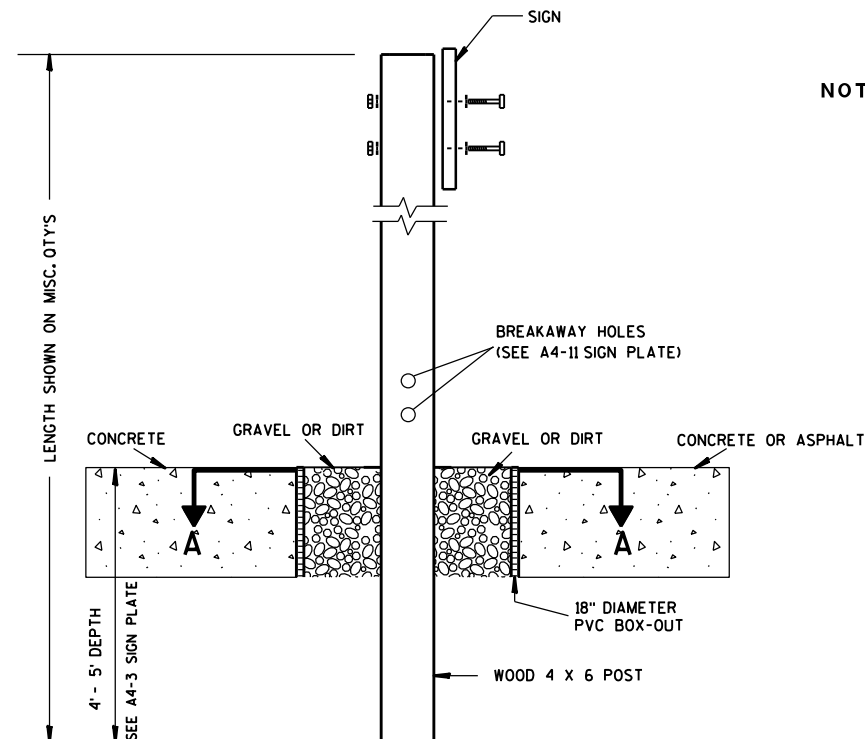
1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. J-Assemblies are considered to be one sign for mounting height.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'-3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

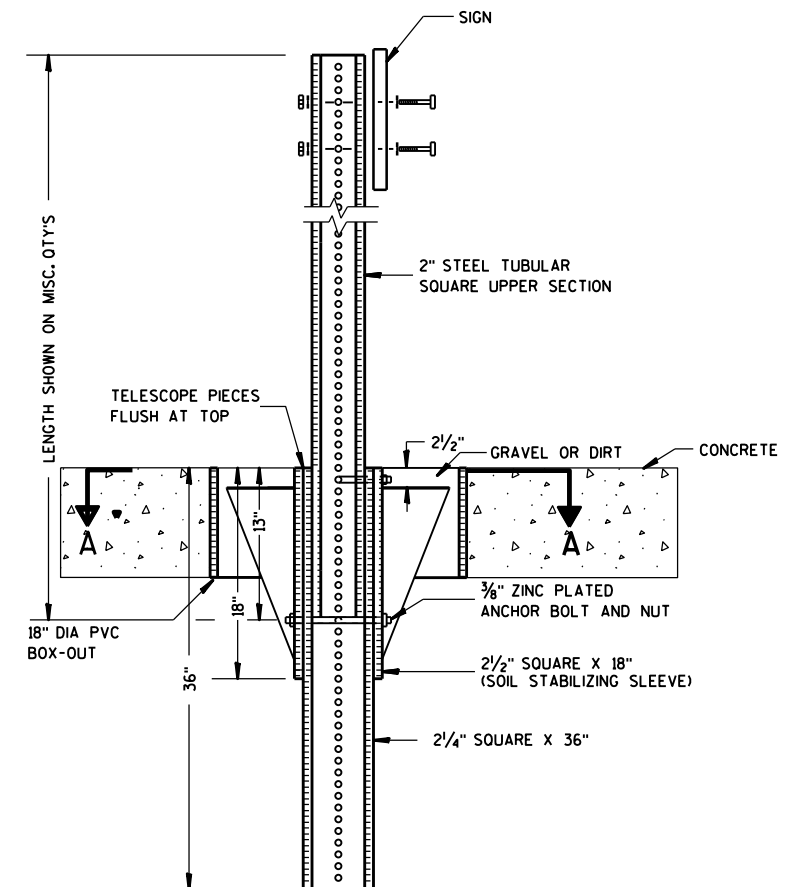
DATE 8/21/17 PLATE NO. A4-3.21



ELEVATION VIEW

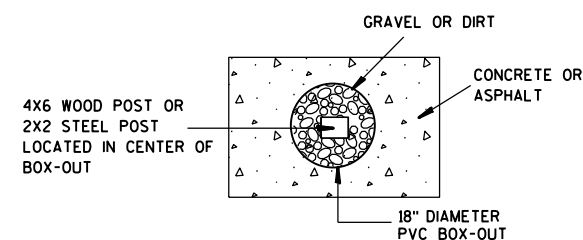
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- NOTES: 1. ALL MATERIAL TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION
2. SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS
3. 18 INCH X 18 INCH SQUARE BOX-OUTS MAY BE USED FOR INSTALLATIONS IN EXISTING CONCRETE OR ASPHALT LOCATIONS.



ELEVATION VIEW

DETAIL OF STEEL 2 X 2 SIGN POST IN BOX-OUT



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLAT 107 A4-3B.1

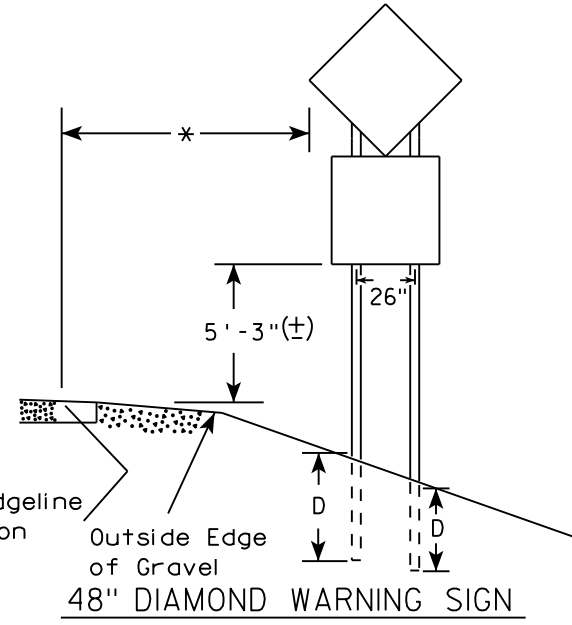
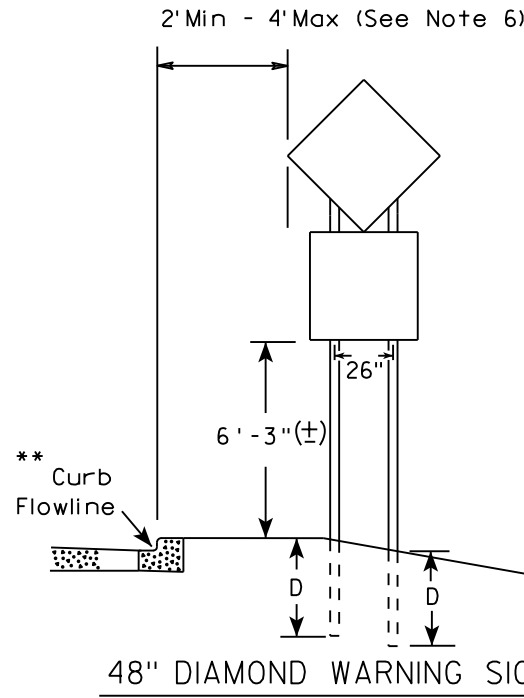
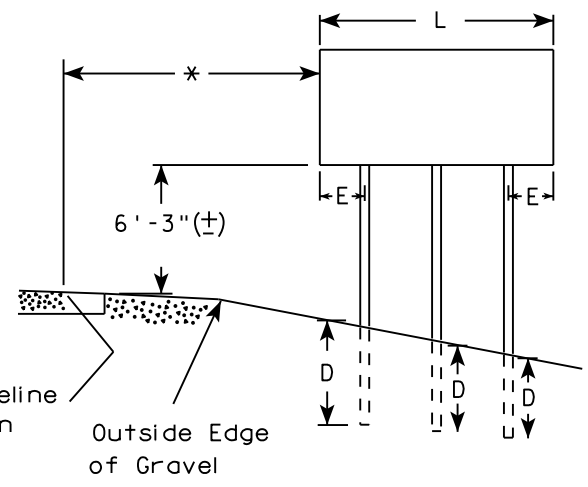
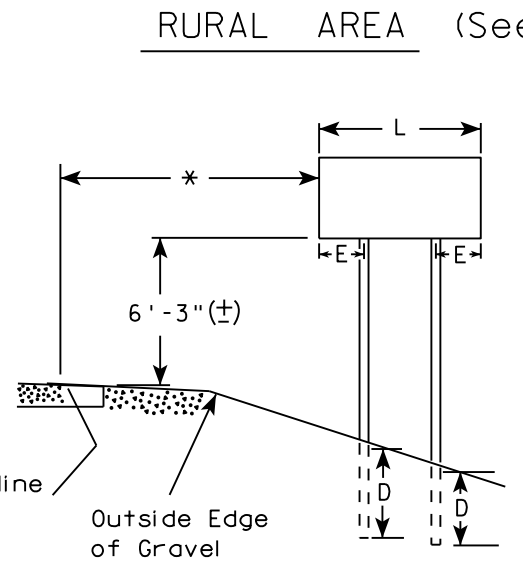
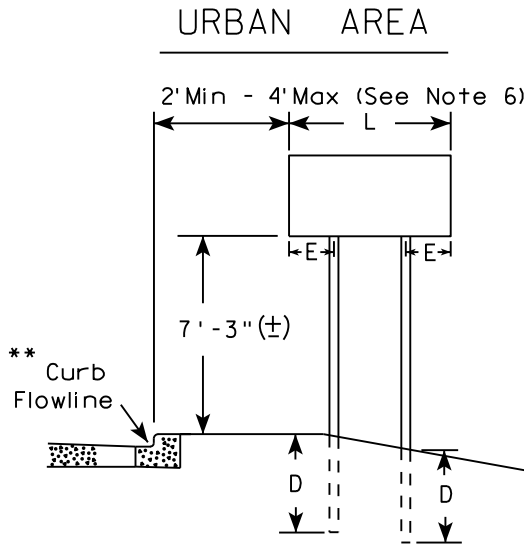
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 108"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

POST EMBEDMENT DEPTH

Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

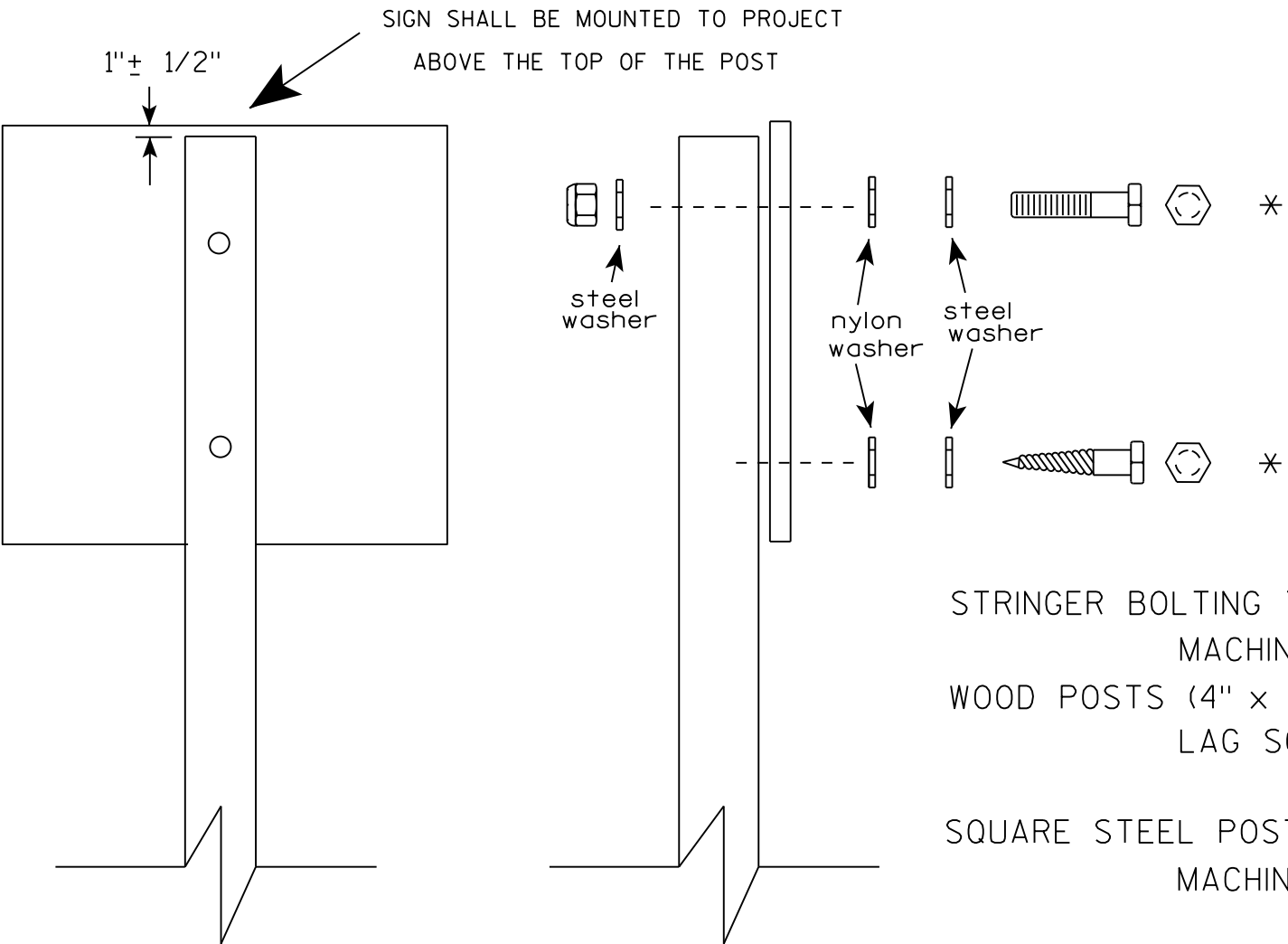
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-4.15

- GENERAL NOTES
1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
 2. See tables below for required number of posts.
 3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
 4. The (±) tolerance for mounting height is 3 inches.
 5. J-Assemblies are considered to be one sign for mounting height.
 6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
 7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
 8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

- * 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.
- ** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.
- *** See A4-3 sign plate for signs 4' or less in width and less than 20 S.F. in area.



Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

- a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

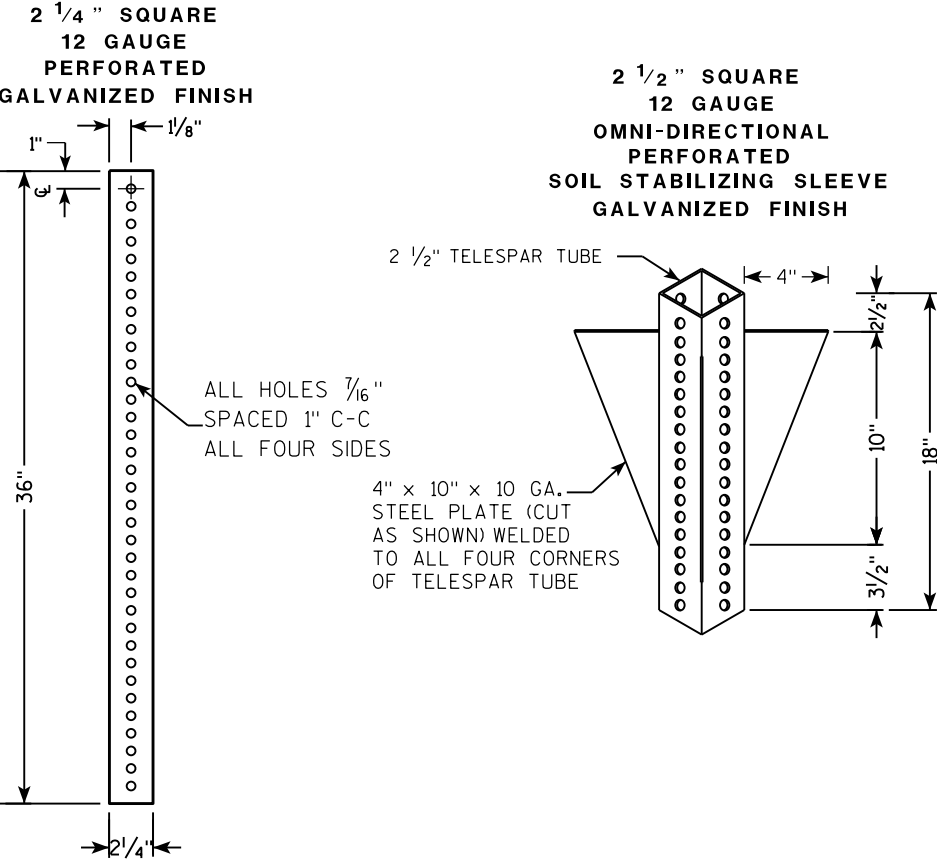
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)
 - $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - $\frac{3}{8}$ " X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
 - $\frac{3}{8}$ " X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS - $\frac{9}{32}$ " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
- O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
 - 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON

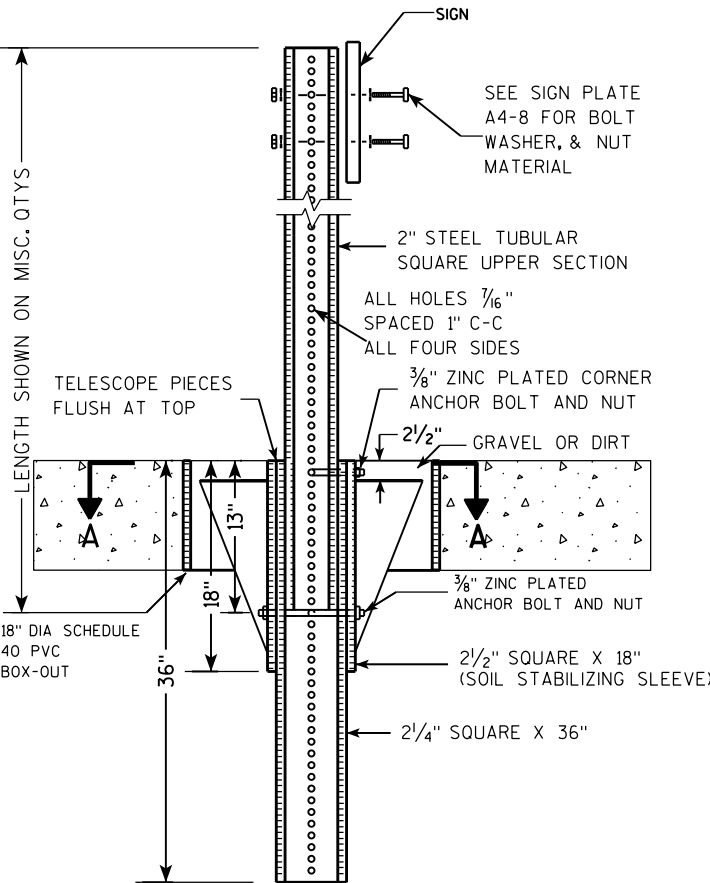
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require the use of 3 fasteners.

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE <u>8/11/16</u>	PLATE NO. <u>A4-8.8</u> 109

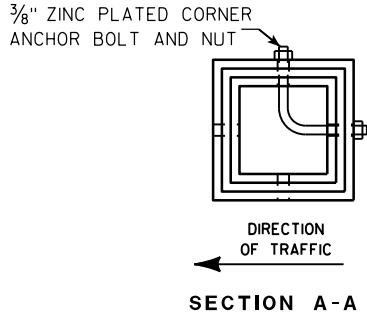
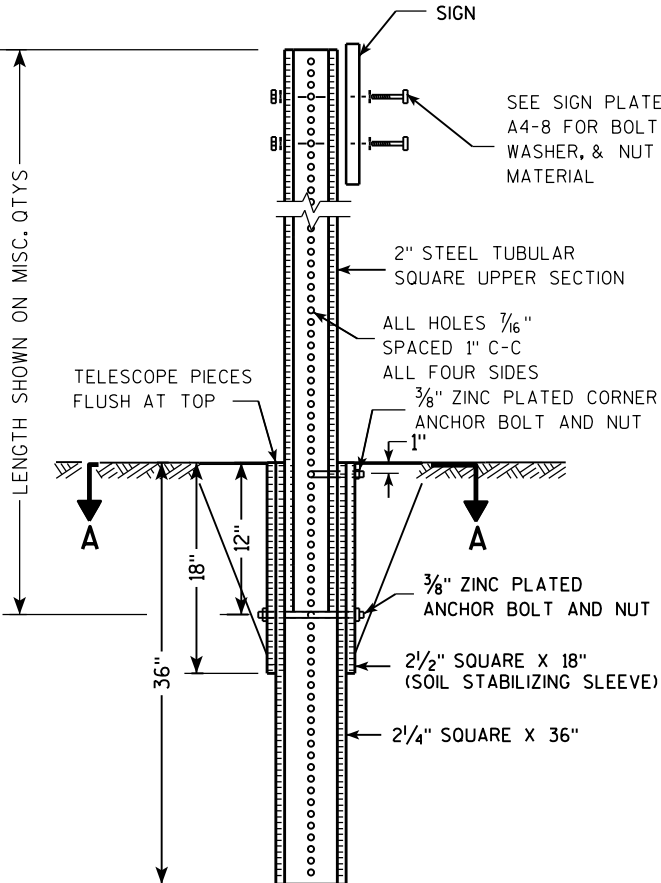
TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM



DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



DETAIL OF TUBULAR STEEL SIGN POST
(IN LOCATIONS OTHER THAN POURED CONCRETE OR ASPHALT)



Area of Sign Installation (Sq. Ft.)	Number of Required Posts
9 or less	1
Greater than 9 less than or equal to 18	2
Greater than 18 less than or equal to 27	3

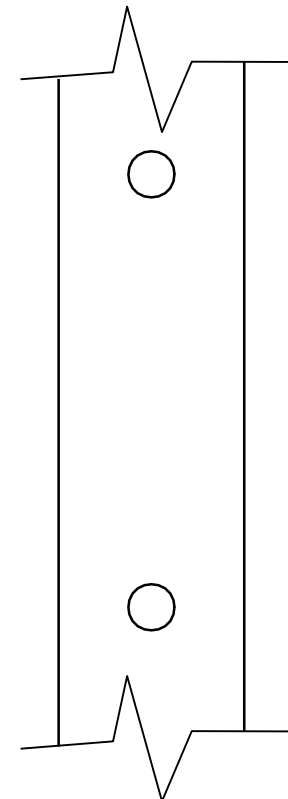
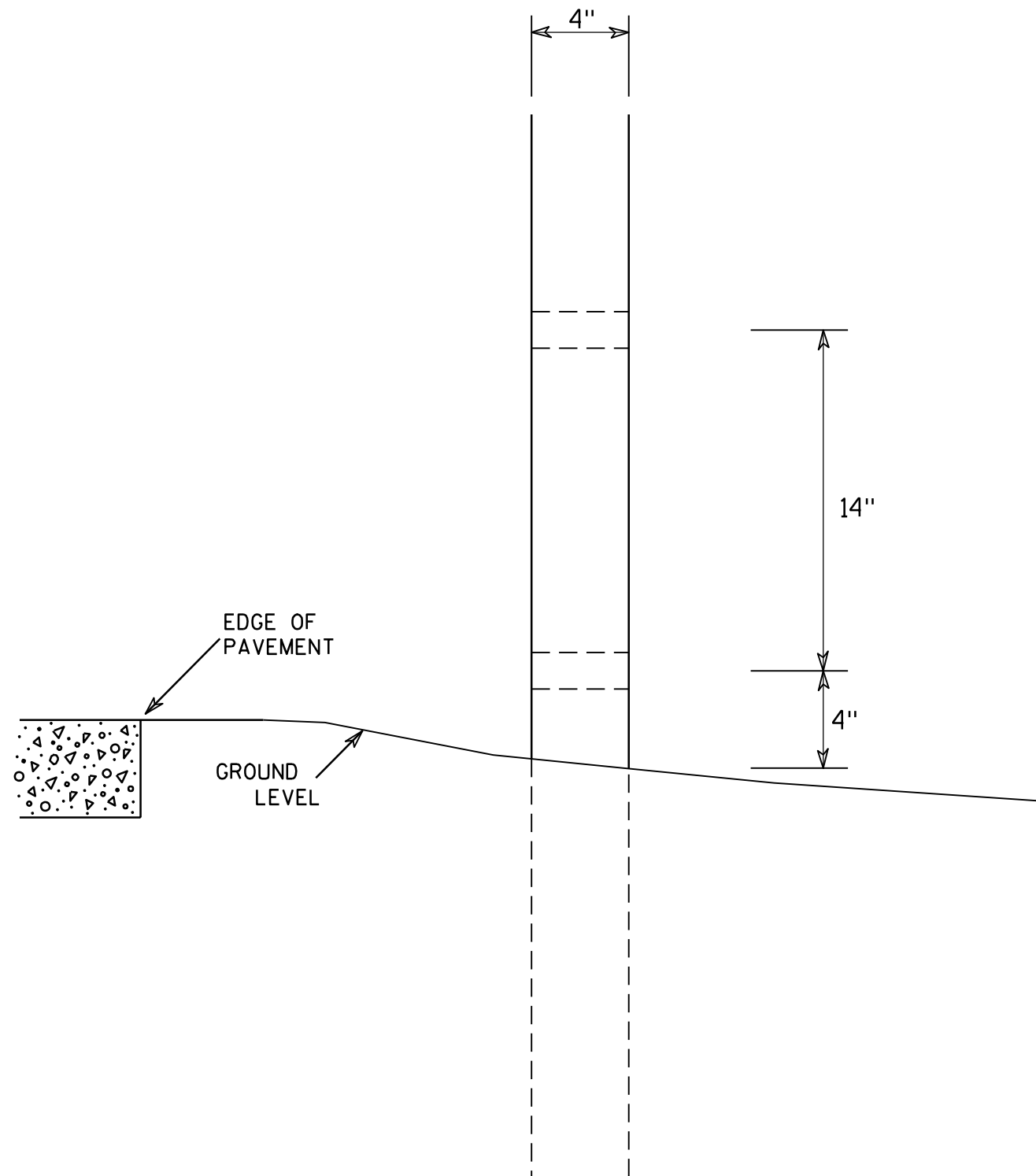
Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/05/15 PLAT 110 14-9.9



SIDE VIEW

GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1½" diameter holes drilled perpendicular to the roadway centerline.

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

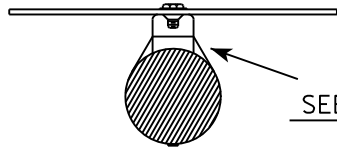
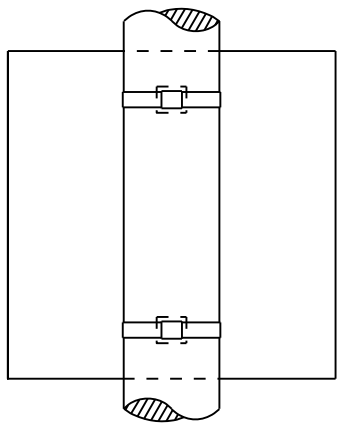
COUNTY:

SHEET NO: 111

E

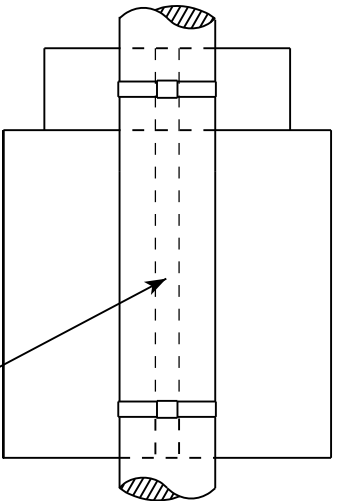
BANDING

SINGLE SIGN

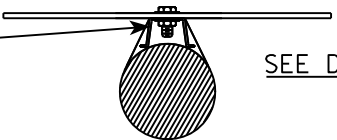


SEE DETAIL A

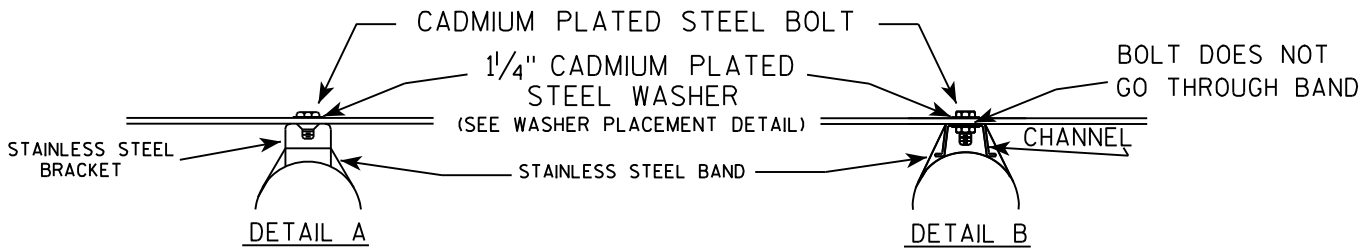
"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



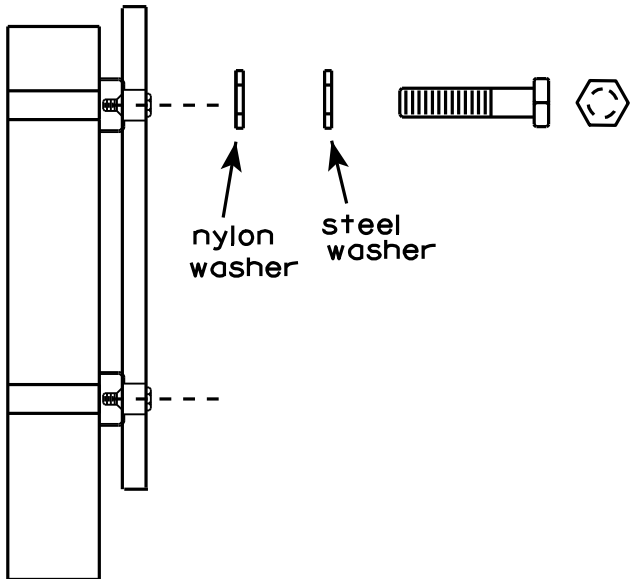
SEE DETAIL B



GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be $\frac{3}{4}$ " in width and 0.025" thickness.

WASHER PLACEMENT



nylon washer

steel washer

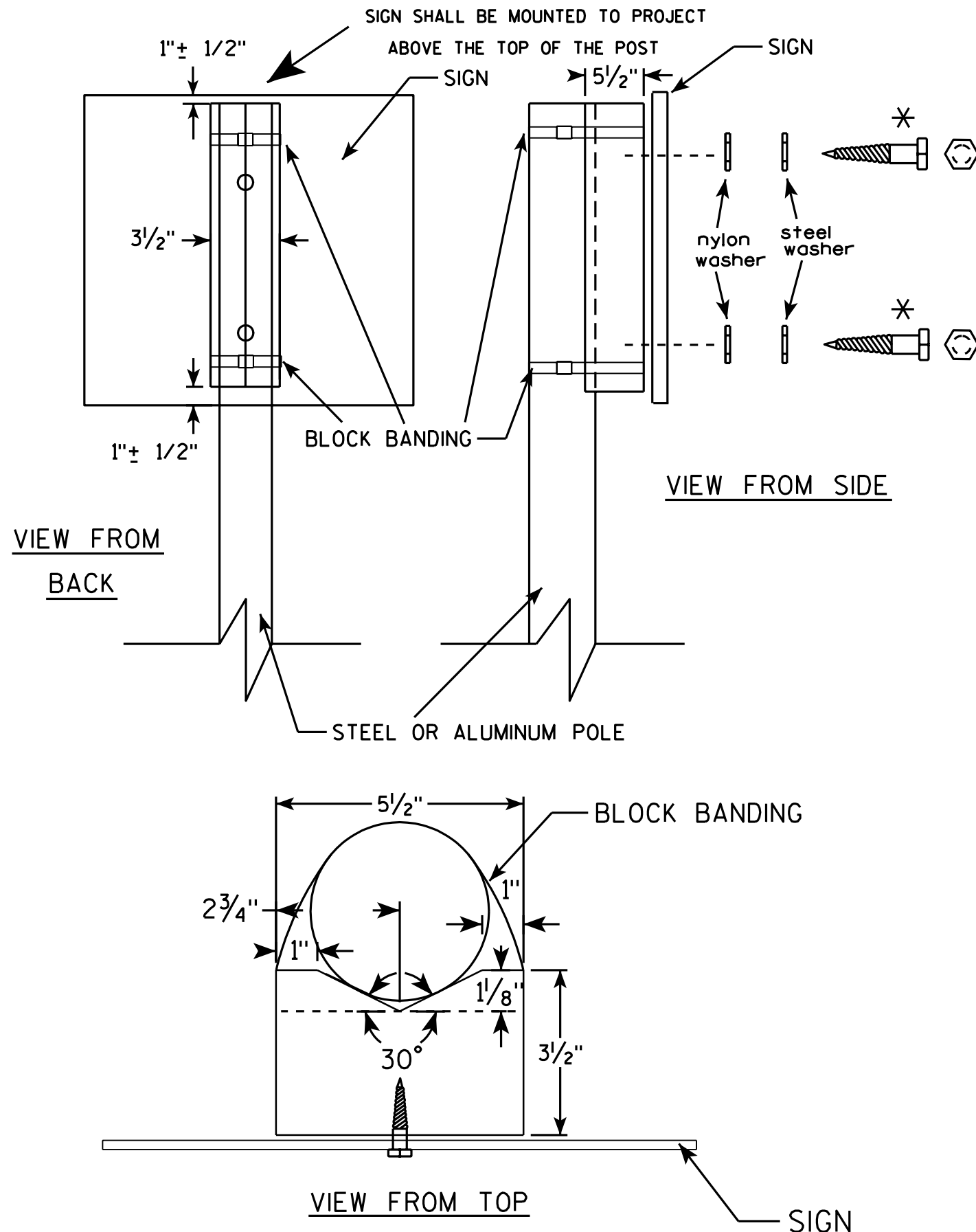
WASHERS (ALL POSTS) -
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 8/16/13 PLATE NO. A5-9.3



GENERAL NOTES

1. WOOD 4"x6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WISDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, 3/4" WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORMALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D, or
 - b. Cadmium plated in accordance with ASTM Designation : B 766 TYPE 3, Class 12, or
 - c. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE 1 1/4" O.D. X 3/8" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1 1/4" O.D. X 3/8" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✱ LAG BOLTS SHALL BE 3/8" X 2 1/2"

BLOCK BANDING DETAIL
(V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

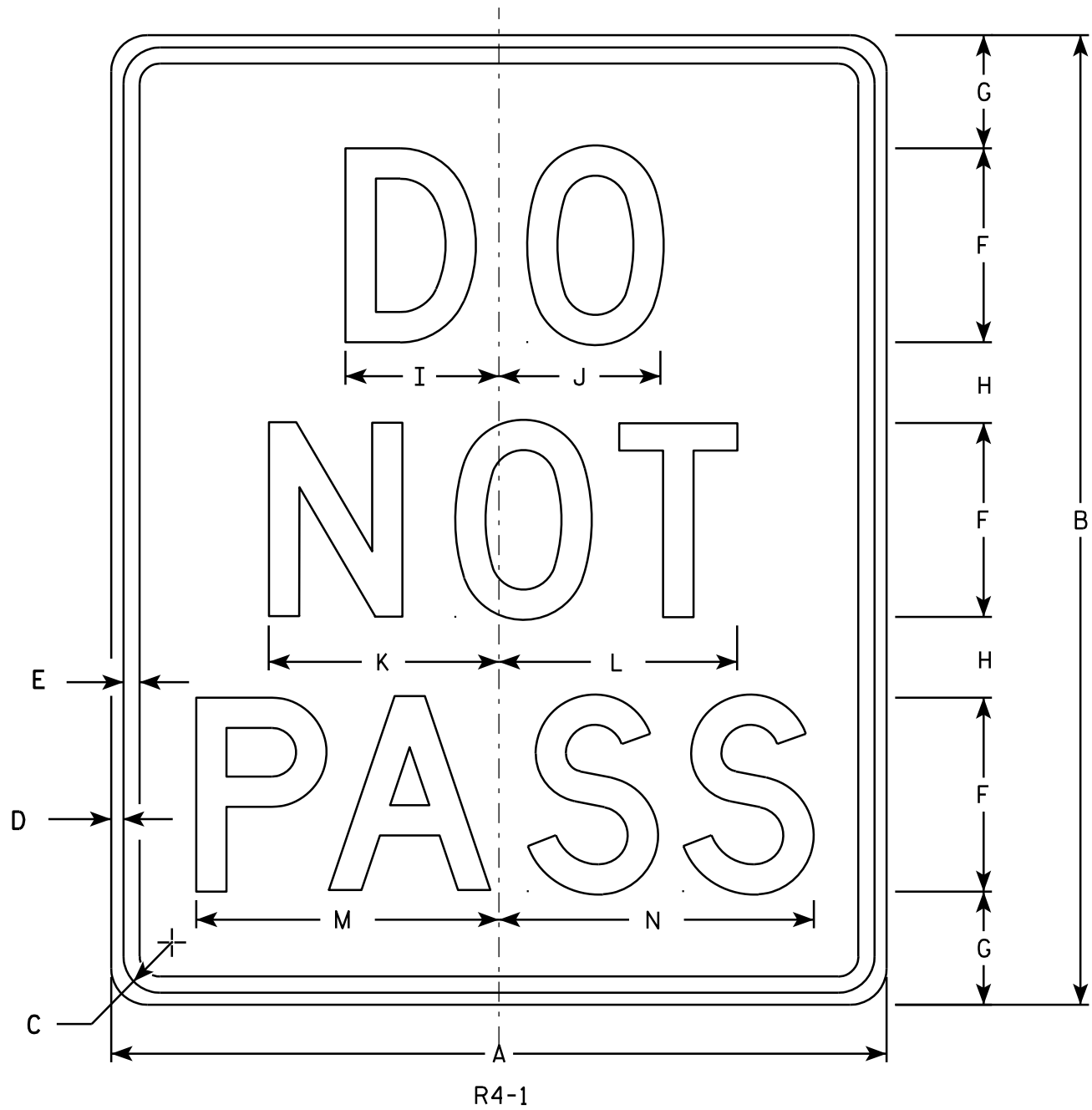
DATE 7/12/07 PLATE NO. A5-10.1

PROJECT NO:

SHEET NO: 113

E

7



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	4	3 1/2	2 1/2	3 1/8	3 1/4	4 3/4	4 7/8	6 1/4	6 1/2													3.0
2S	24	30	1 1/8	3/8	1/2	6	3 1/2	2 1/2	4 3/4	5	7 1/8	7 3/8	9 3/8	9 3/4													5.0
2M	24	30	1 1/8	3/8	1/2	6	3 1/2	2 1/2	4 3/4	5	7 1/8	7 3/8	9 3/8	9 3/4													5.0
3																											
4	36	48	1 5/8	5/8	3/4	8	7	5	6 1/4	6 5/8	9 1/2	9 3/4	12 1/2	13													12.0
5	48	60	2 1/4	3/4	1	10	8	7	7 3/4	8 3/8	11 7/8	12 1/4	15 5/8	16 1/4													20.0

STANDARD SIGN R4-1	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 3/25/2011	PLATE NO. R4-1.7

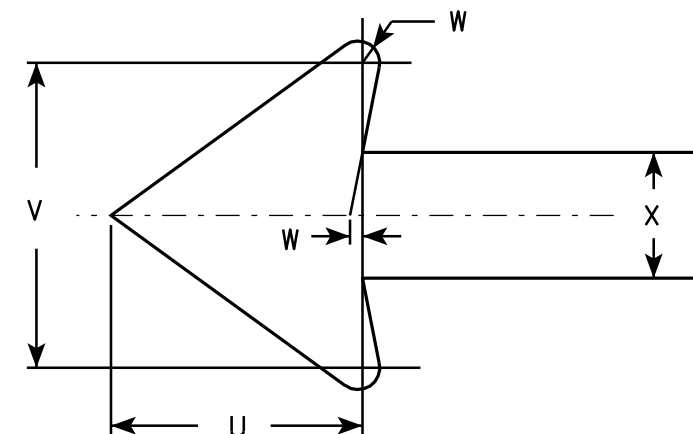
PROJECT NO:	HWY:	COUNTY:	SHEET NO: 114	E
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R7-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Red
3. Message Series - See Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1, 3 and 4 are series C, line 2 is series B.
6. R7-1D (double arrow)
R7-1L (left arrow)
R7-1R (right arrow)



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	12	18	1 1/8	3/8	3/8	3	1 7/8	2	7/8	5/8	1 1/2	2 1/2	2	2	4 7/8	4 7/8	2 1/4	2 1/8	2 1/2	3 7/8	1 1/2	1 3/4	1/8	3/4			1.5
2S	18	24	1 1/8	3/8	1/2	4	2 1/2	2 1/2	1 1/4	1	2	3 1/4	2 3/4	2 5/8	7 1/8	7	2 3/4	2 5/8	3 1/8	5 7/8	2 1/4	2 5/8	1/4	1 1/8			3.0
2M	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
3	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
4																											
5																											

STANDARD SIGN

R7-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 3/31/2011

PLATE NO. R7-1.9

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 115

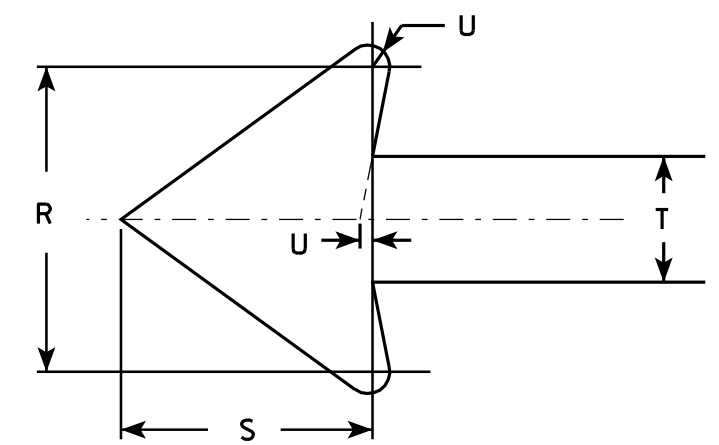
E



R7-2 *- See Note 5

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Red
3. Message Series - See Note 7
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals as required & adjust spacing to achieve proper balance.
6. R7-2D (double arrow)
R7-2L (left arrow)
R7-2R (right arrow)
7. Lines 1, 3 and 4 are series C, line 2 is series B.



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	12	18	1 1/8	3/8	3/8	3	1 7/8	1 1/2	7/8	7/8	2	2 1/2	2	2	4 7/8	4 7/8	3 7/8	1 3/4	1 1/2	3/4	1/8						1.5
2S	18	24	1 1/8	3/8	1/2	4	2 1/2	2 1/2	1 1/4	1	2	3 1/4	2 3/4	2 5/8	7 1/8	7	5 7/8	2 5/8	2 1/4	1 1/8	1/4						3.0
2M	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	7 3/4	3 1/2	3	1 1/2	1/4						5.0
3	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	7 3/4	3 1/2	3	1 1/2	1/4						5.0
4																											
5																											

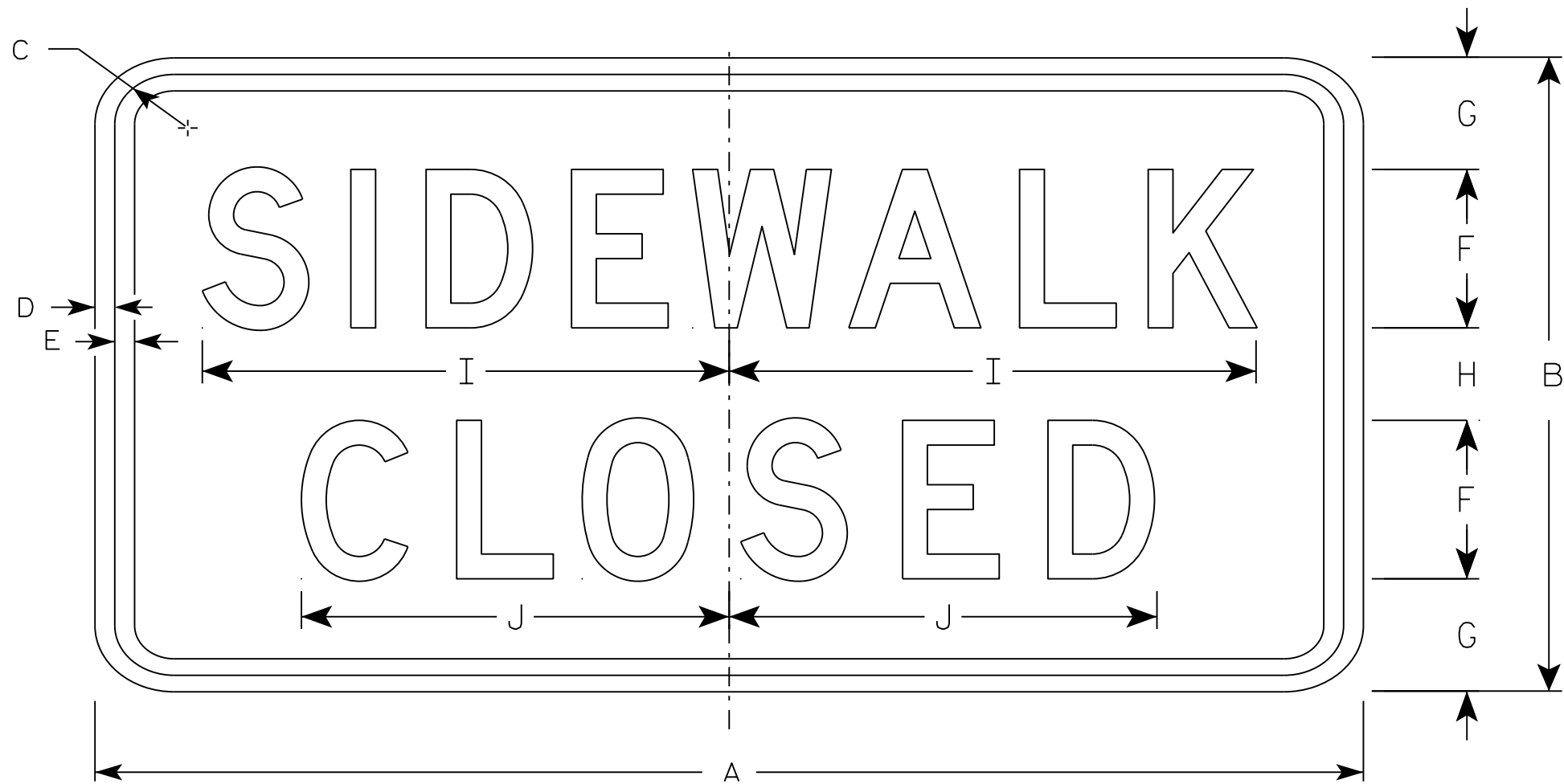
STANDARD SIGN

R7-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/31/2011 PLATE NO. R7-2.9



R9-9

NOTES

- 1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
Background - White
Message - Black
- 3. Message Series - C
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 5. Use Size 2 for Sidewalks. Use Size 3 for Paths and Trails.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 3/4	1/2	1/2	3	2 1/8	1 3/4	10	8 1/8																	2.0
2M	24	12	1 3/4	1/2	1/2	3	2 1/8	1 3/4	10	8 1/8																	2.0
3	30	18	1 3/4	1/2	1/2	4	3 1/2	3	12 1/2	10 1/4																	3.75
4																											
5																											

STANDARD SIGN
R9-9

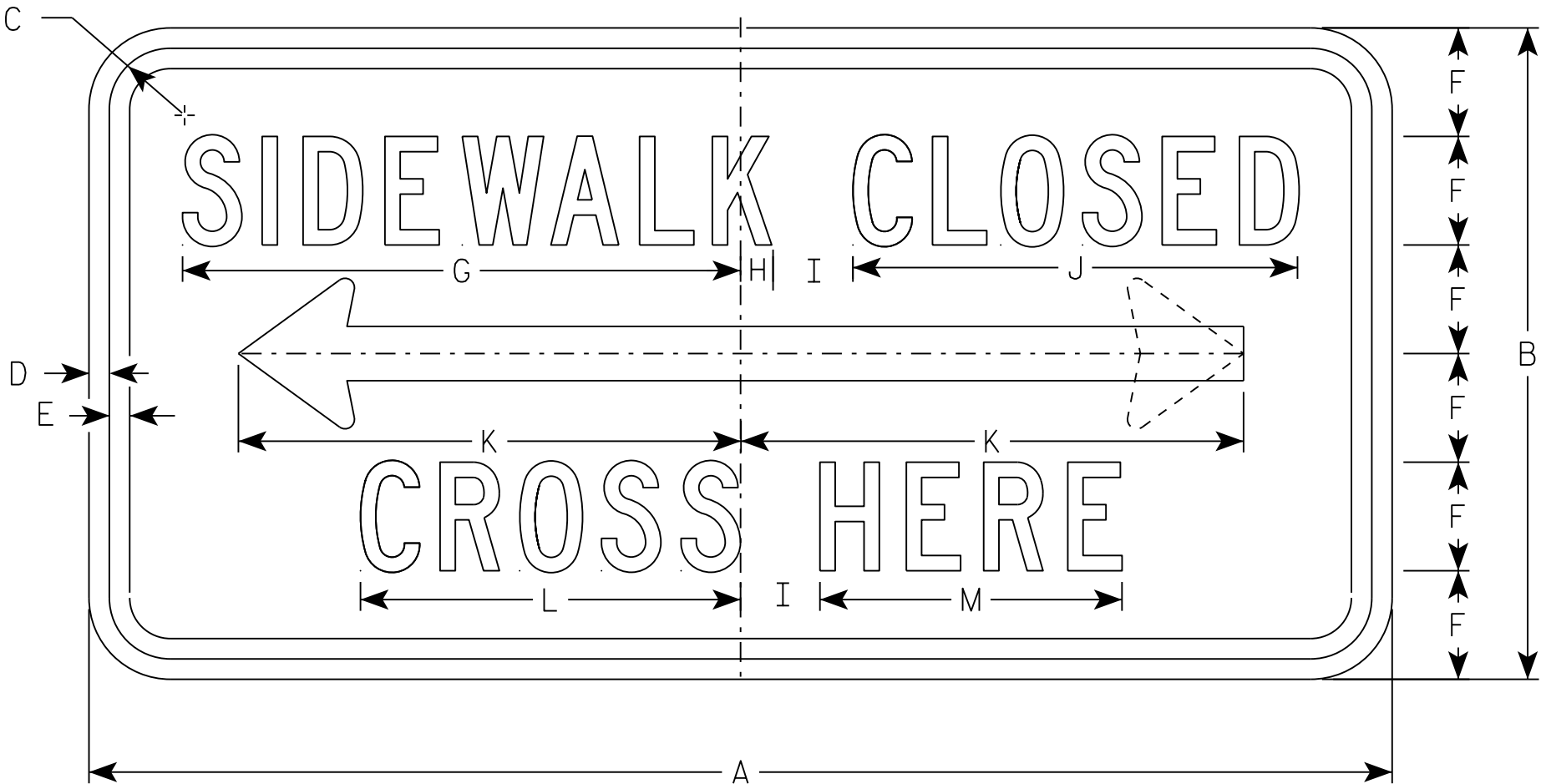
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 8/11/16 PLATE 117 R9-9.6

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - White
Message - Black
- 3. Message Series - C
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 5. Use Size 2 for Sidewalks. Use Size 3 for paths and Trails.



R9-11A

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 1/8	3/8	3/8	2	10 1/4	5/8	1 1/2	8 1/4	9 1/4	7	5 5/8	1	2 3/4	1/8											2.0
2M	24	12	1 1/8	3/8	3/8	2	10 1/4	5/8	1 1/2	8 1/4	9 1/4	7	5 5/8	1	2 3/4	1/8											2.0
3	30	15	1 1/8	3/8	1/2	2	13	3/4	2	10 1/4	12 3/8	8 7/8	6 7/8	1 1/4	3 5/8	1/4											3.125
4																											
5																											

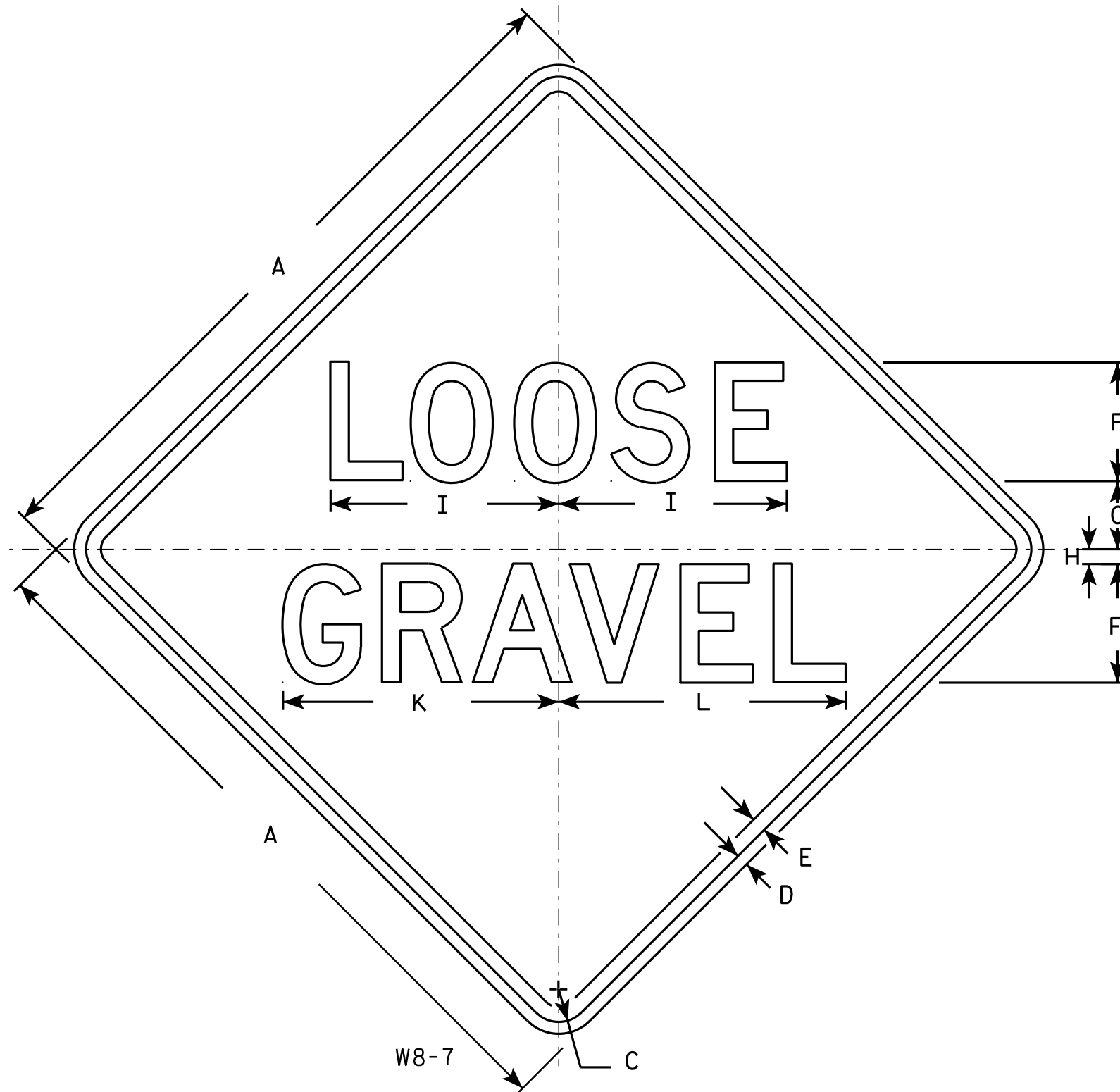
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 118

E



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	4	2 3/4	1/2	7 3/4		9 1/4	9 3/4															4.0
2S	36		1 5/8	5/8	3/4	6	4 1/8	3/4	11 5/8		14	14 1/2															9.0
2M	36		1 5/8	5/8	3/4	6	4 1/8	3/4	11 5/8		14	14 1/2															9.0
3	36		1 5/8	5/8	3/4	6	4 1/8	3/4	11 5/8		14	14 1/2															9.0
4	36		1 5/8	5/8	3/4	6	4 1/8	3/4	11 5/8		14	14 1/2															9.0
5	48		2 1/4	3/4	1	8	5 1/2	1	15 1/2		18 5/8	19 3/8															16.0

STANDARD SIGN

W8-7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 5/30/12 PLATE NO. W8-7.7

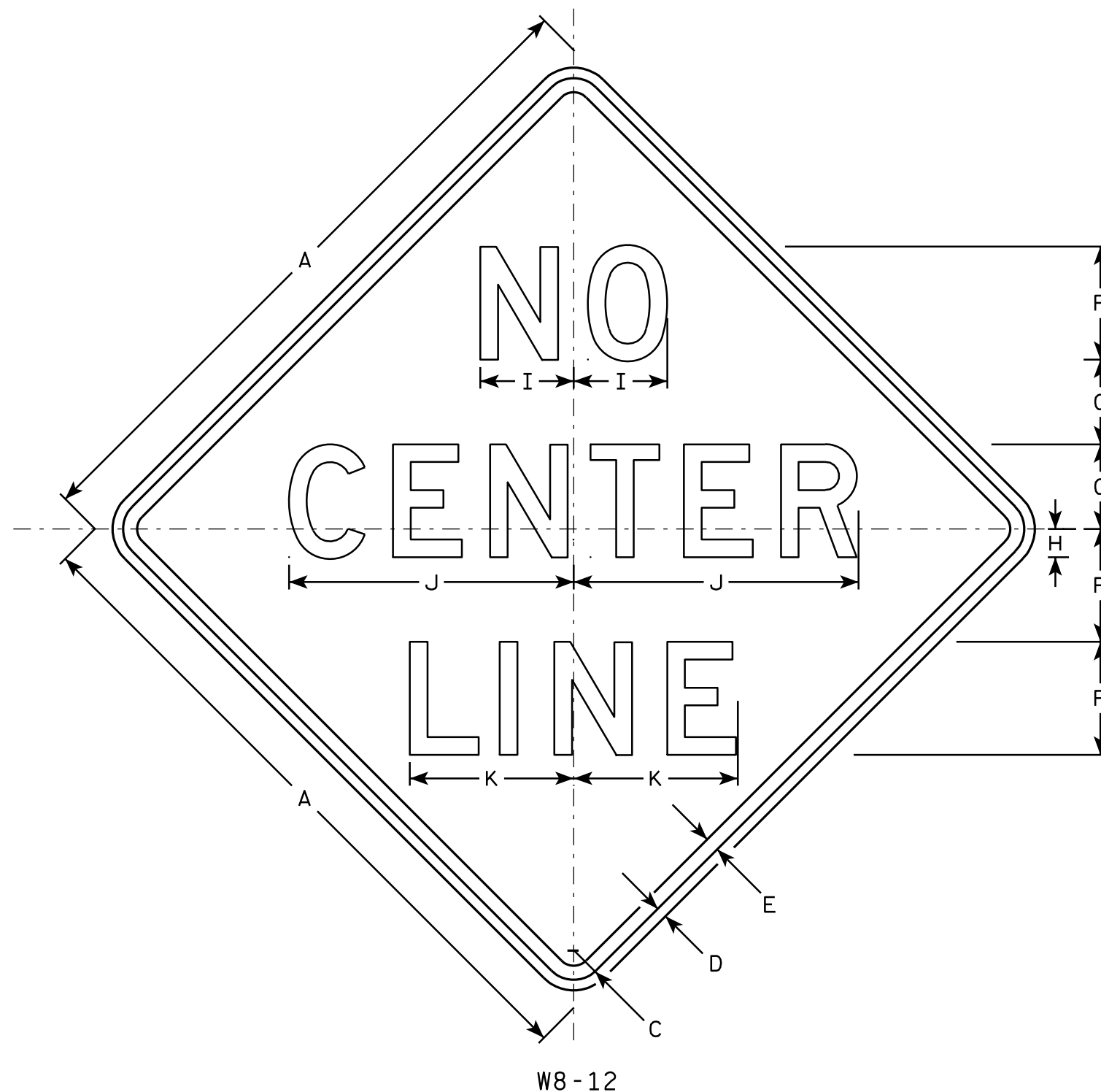
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 119

E



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	36		1 5/8	5/8	3/4	6	4 1/2	1 1/2	5 1/8	16	9															9.0	
2M	36		1 5/8	5/8	3/4	6	4 1/2	1 1/2	5 1/8	16	9															9.0	
3	48		2 1/4	3/4	1	8	6	2	6 5/8	20 1/4	11 5/8															16.0	
4	48		2 1/4	3/4	1	8	6	2	6 5/8	20 1/4	11 5/8															16.0	
5	48		2 1/4	3/4	1	8	6	2	6 5/8	20 1/4	11 5/8															16.0	

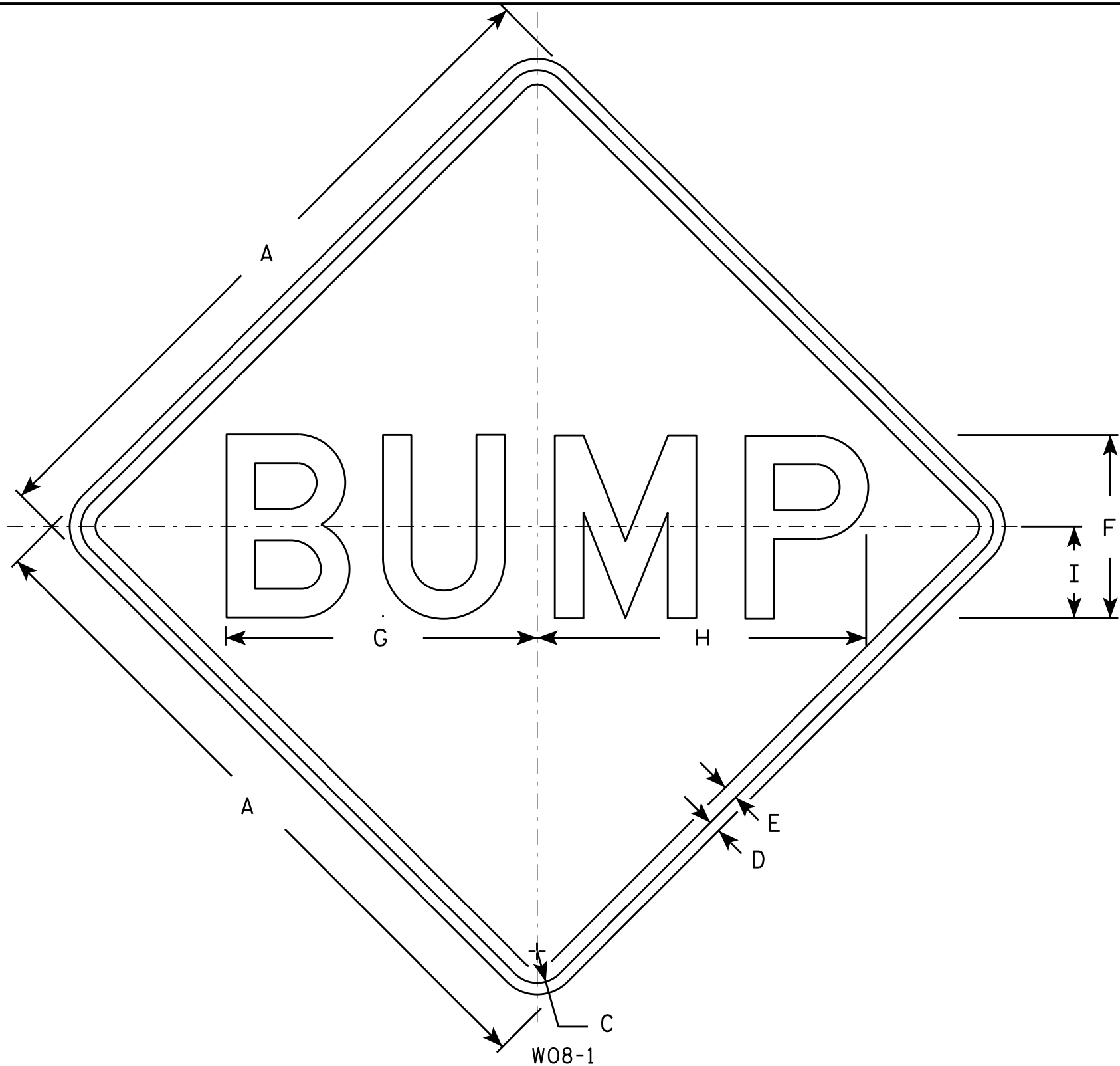
STANDARD SIGN W8-12

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 8/24/10 PLATE NO. W8-12.3

PROJECT NO: HWY: COUNTY: SHEET NO: 120 E



NOTES

- 1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
Background - Orange
Message - Black
- 3. Message Series - D
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

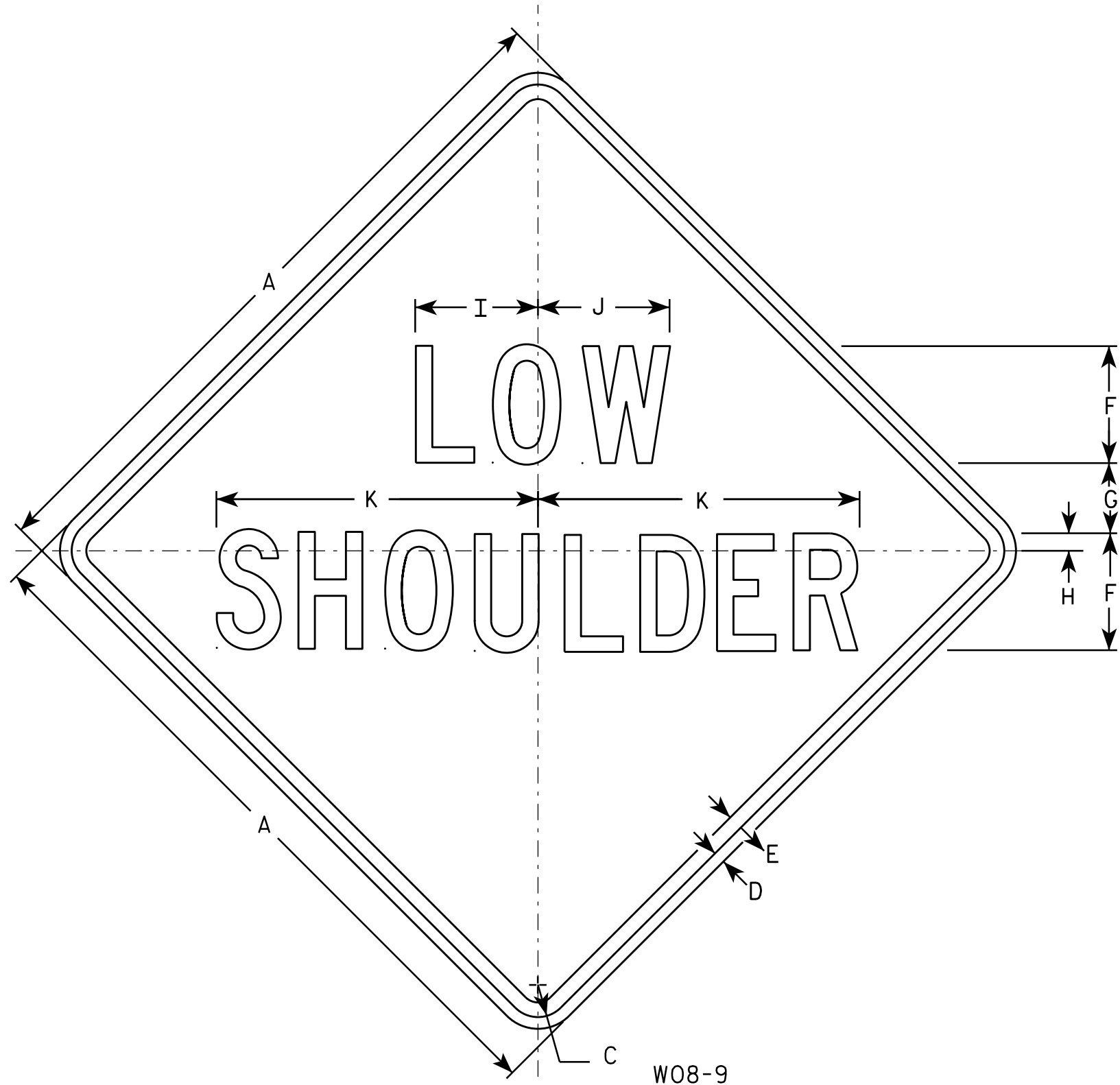
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	10	16 7/8	17 7/8	5																		9.0
2S	48		2 1/4	3/4	1	12	20 3/8	21 5/8	6																		16.0
2M	48		2 1/4	3/4	1	12	20 3/8	21 5/8	6																		16.0
3	48		2 1/4	3/4	1	12	20 3/8	21 5/8	6																		16.0
4	48		2 1/4	3/4	1	12	20 3/8	21 5/8	6																		16.0
5	48		2 1/4	3/4	1	12	20 3/8	21 5/8	6																		16.0

STANDARD SIGN
W08 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/20/13 PLATE 121 W08-1.1



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	6	3 1/2	1	6 1/4	6 3/4	16 1/2																9.0
2S	48		2 1/4	3/4	1	8	5	1 1/4	8 1/4	9	21 7/8																16.0
2M	48		2 1/4	3/4	1	8	5	1 1/4	8 1/4	9	21 7/8																16.0
3	48		2 1/4	3/4	1	8	5	1 1/4	8 1/4	9	21 7/8																16.0
4	48		2 1/4	3/4	1	8	5	1 1/4	8 1/4	9	21 7/8																16.0
5	48		2 1/4	3/4	1	8	5	1 1/4	8 1/4	9	21 7/8																16.0

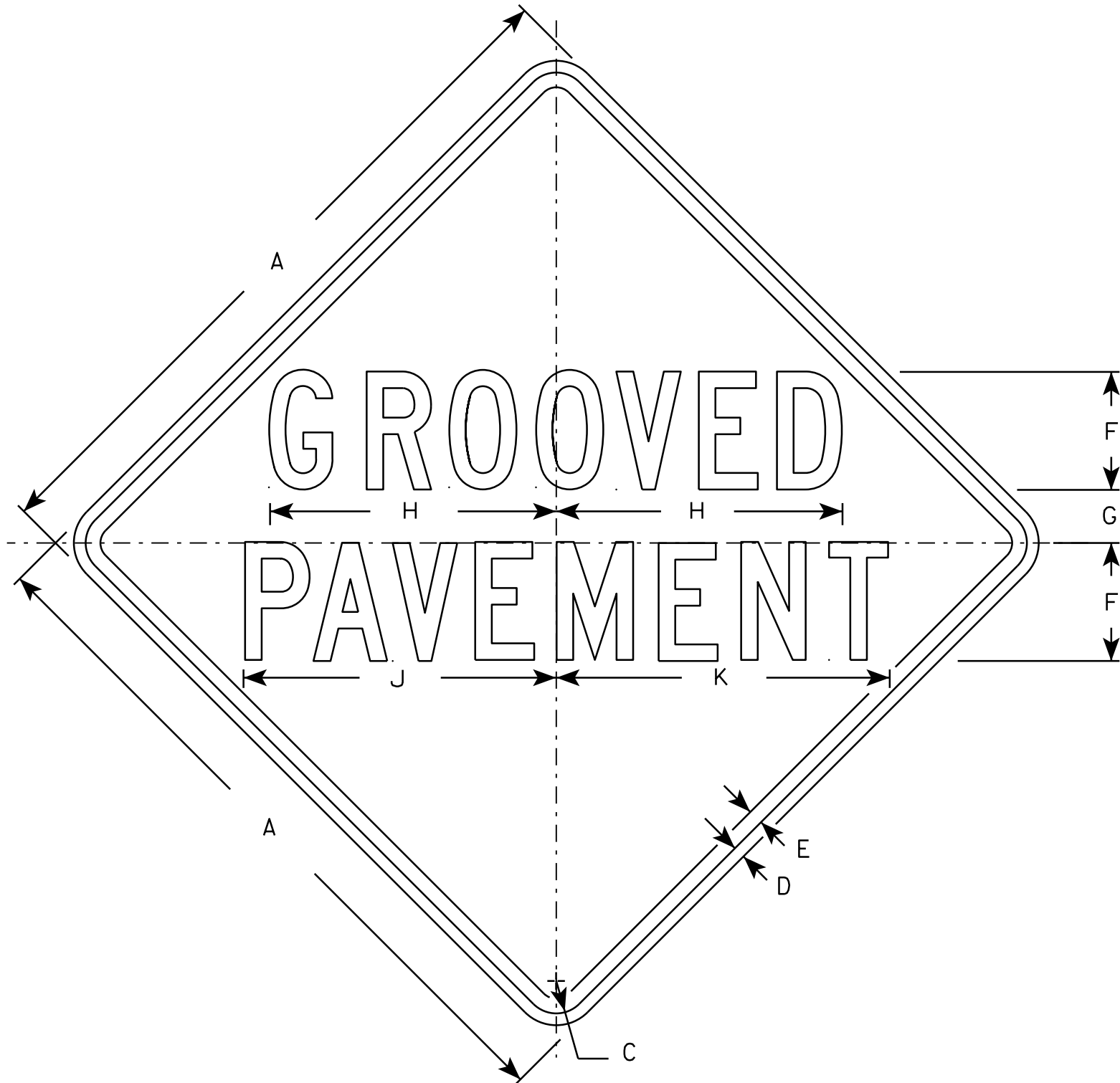
STANDARD SIGN W08-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 11/20/13 PLATE 122 W08-9.1

PROJECT NO: HWY: COUNTY: SHEET NO: E



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

W08-52

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	6	2 5/8	14 1/2		15 7/8	17																9.0
2S	48		2 1/4	3/4	1	8	3 1/2	19 3/8		21 1/4	22 5/8																16.0
2M	48		2 1/4	3/4	1	8	3 1/2	19 3/8		21 1/4	22 5/8																16.0
3	48		2 1/4	3/4	1	8	3 1/2	19 3/8		21 1/4	22 5/8																16.0
4	48		2 1/4	3/4	1	8	3 1/2	19 3/8		21 1/4	22 5/8																16.0
5	48		2 1/4	3/4	1	8	3 1/2	19 3/8		21 1/4	22 5/8																16.0

STANDARD SIGN W08-52

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/20/13 PLATE NO. W08-52.1
123

PROJECT NO: HWY: COUNTY: SHEET NO: E

Division 1 - 85											
STATION	Real Station	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)			
		Cut	Salvaged/Unusable Pavement Material	Fill	Cut	Salvaged/Unusable Pavement Material	Fill	Cut 1.00	Expanded Fill 1.25	Mass Ordinate	
											Note 1
329+75	32975.00	0.00	0.00	0.00	0	0	0	0	0	0	
330+00	33000.00	0.18	0.00	5.85	0	0	3	0	3	-3	
330+25	33025.00	0.07	0.00	12.34	0	0	8	0	14	-14	
330+50	33050.00	0.01	0.00	22.30	0	0	16	0	34	-34	
330+75	33075.00	0.08	0.00	6.55	0	0	13	0	51	-50	
330+85	33085.00	0.00	0.00	0.00	0	0	1	0	52	-52	
					0	0	42				

Division 1 - 85

STATION	Real Station	AREA (SF)		Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		
		Cut	Salvaged/Unusable Pavement Material	Cut	Salvaged/Unusable Pavement Material	Fill	Cut 1.00	Expanded Fill 1.25	Mass Ordinate
				Note 1	Note 2	Note 3	Note 1		Note 8
332+80	33280.00	0.00	0.00	0	0	0	0	0	0
333+00	33300.00	0.00	0.00	0	0	2	0	2	-2
333+50	33350.00	0.00	0.00	0	0	10	0	14	-14
334+00	33400.00	0.66	0.00	1	0	6	1	22	-21
334+50	33450.00	0.00	0.00	1	0	12	1	37	-36
335+00	33500.00	0.00	0.00	0	0	24	1	67	-66
335+50	33550.00	0.00	0.00	0	0	26	1	100	-99
336+00	33600.00	0.00	0.00	0	0	27	1	133	-132
336+25	33625.00	0.00	0.00	0	0	7	1	142	-141
				1	0	113			

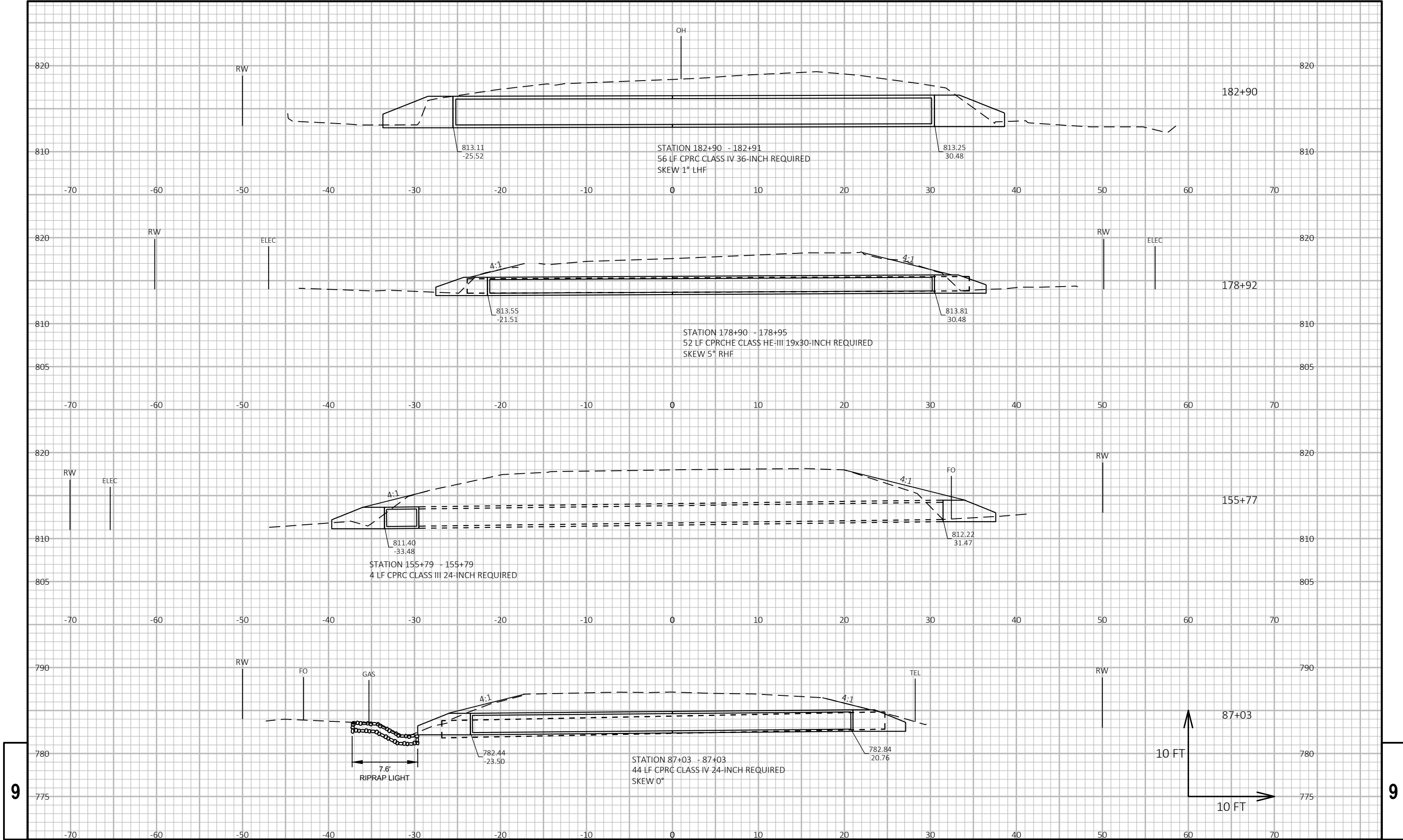
9

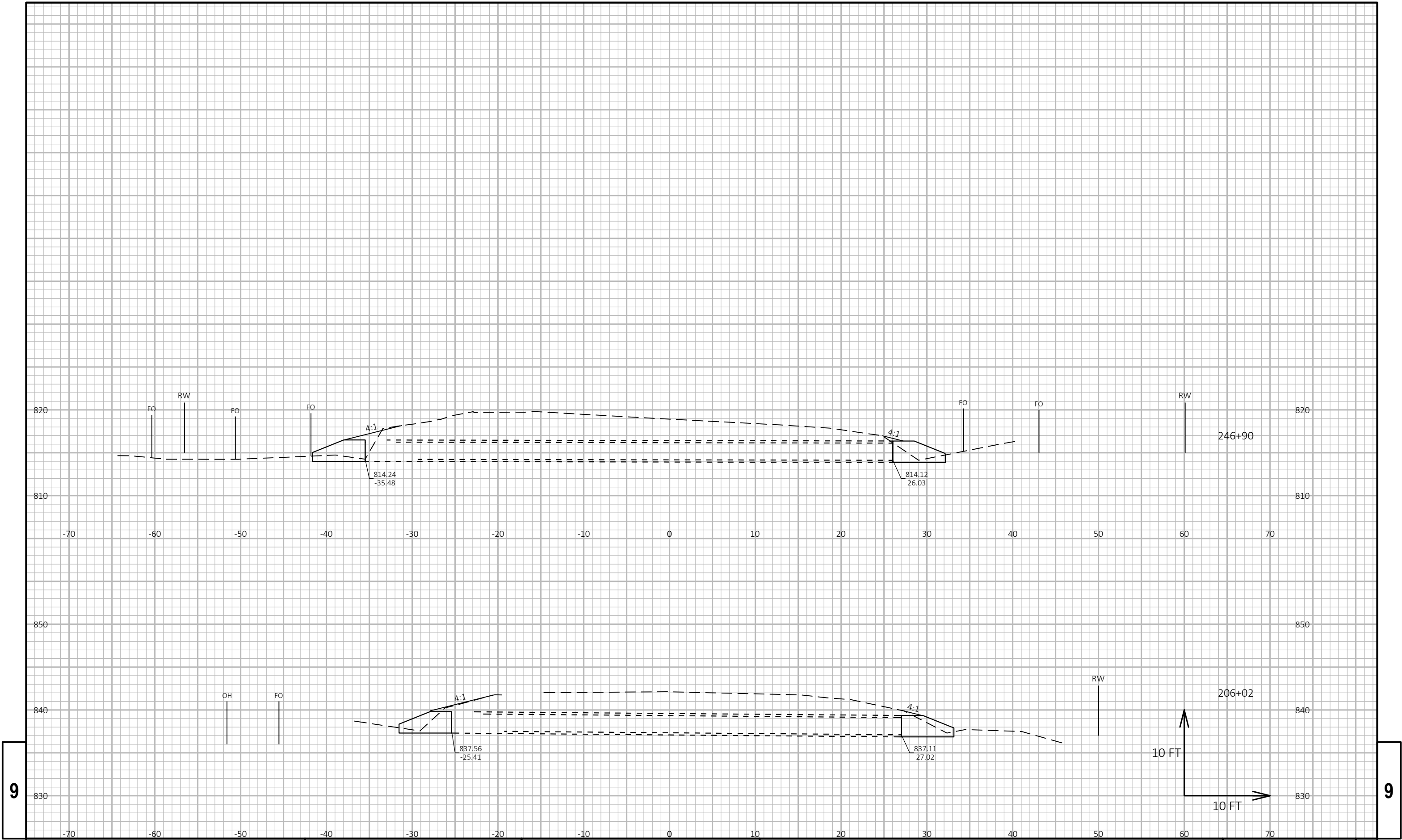
Division 1 - 85

STATION	Real Station	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		
		Cut	Salvaged/Unusable Pavement Material	Fill	Cut	Salvaged/Unusable Pavement Material	Fill	Cut 1.00	Expanded Fill 1.25	Mass Ordinate
					Note 1	Note 2	Note 3	Note 1		Note 8
338+25	33825.00	0.00	0.00	0.00	0	0	0	0	0	0
338+50.89	33850.89	2.36	0.00	1.84	1	0	1	1	1	0
339+00	33900.00	28.60	0.00	5.75	28	0	7	29	10	20
339+50	33950.00	66.21	0.00	4.18	88	0	9	117	21	96
340+00	34000.00	84.01	0.00	4.06	139	0	8	256	31	225
340+50	34050.00	73.84	0.00	4.76	146	0	8	402	41	361
341+00	34100.00	70.24	0.00	2.12	133	0	6	536	49	487
341+50	34150.00	75.77	0.00	1.64	135	0	3	671	53	618
341+75	34175.00	74.01	0.00	1.21	69	0	1	740	55	685
342+00	34200.00	58.57	0.00	0.87	61	0	1	802	56	745
342+50	34250.00	19.95	0.00	5.02	73	0	5	874	63	811
343+00	34300.00	12.94	0.00	14.77	30	0	18	905	86	819
343+50	34350.00	7.14	0.00	26.42	19	0	38	923	134	790
344+00	34400.00	19.08	0.00	15.79	24	0	39	948	182	765
344+50	34450.00	24.64	0.00	11.29	40	0	25	988	214	774
345+00	34500.00	21.49	0.00	7.75	43	0	18	1,031	236	795
345+50	34550.00	13.87	0.00	5.92	33	0	13	1,064	252	812
345+75	34575.00	30.19	0.00	3.10	20	0	4	1,084	257	827
346+00	34600.00	26.12	0.00	1.69	26	0	2	1,110	260	850
346+20	34620.00	3.43	0.00	0.65	11	0	1	1,121	261	860
346+25	34625.00	0.00	0.00	0.00	0	0	0	1,121	261	861
					1,121	0	209			

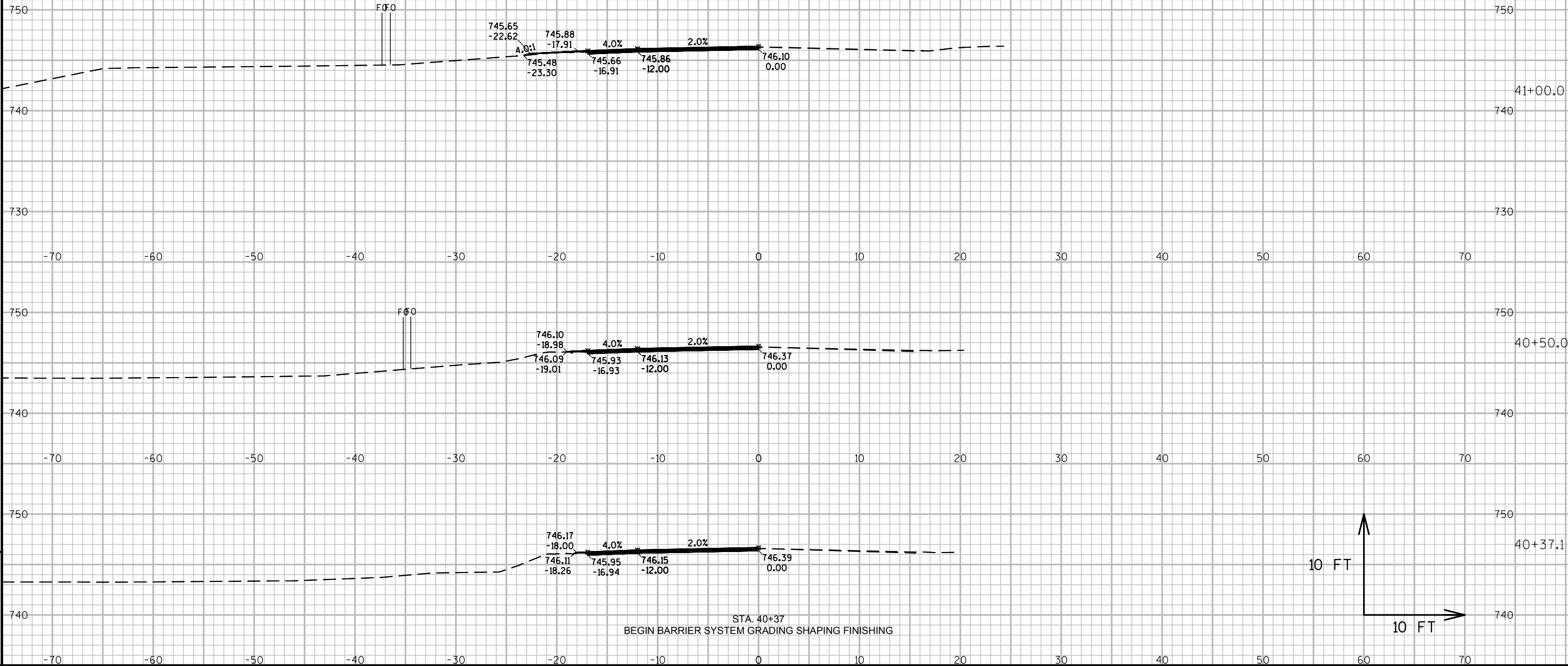
Division 1 - 85										
STATION	Real Station	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		
		Cut	Salvaged/Unusable Pavement Material	Fill	Cut	Salvaged/Unusable Pavement Material	Fill	Cut 1.00	Expanded Fill 1.25	Mass Ordinate
Note 1	Note 2	Note 3	Note 1	Note 8						
353+50	35350.00	0.00	0.00	0.00	0	0	0	0	0	0
353+75	35375.00	0.32	0.00	4.67	0	0	2	0	3	-3
354+00	35400.00	0.40	0.00	6.96	0	0	5	0	9	-9
354+37.5	35437.50	0.33	0.00	8.72	1	0	11	1	23	-22
					1	0	18			

9





NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



PROJECT NO: 7120-02-73,7120-02-76

HWY: STH 85

COUNTY: PEPIN

CROSS SECTIONS: STH 85 (MIDWEST GUARDRAIL SYSTEM - STA. 40+37 - 48+42 LT)

SHEET

128

E

FILE NAME : W:\NWBE_PROJECTS\DESIGN\1215_STH_85\C3D-16\SHEETS\PLAN\090202_XS-85-L-4037-4820-MGSINFOONLY.DWG
LAYOUT NAME - 01

PLOT DATE : 1/24/2019 9:39 AM

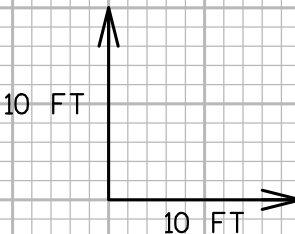
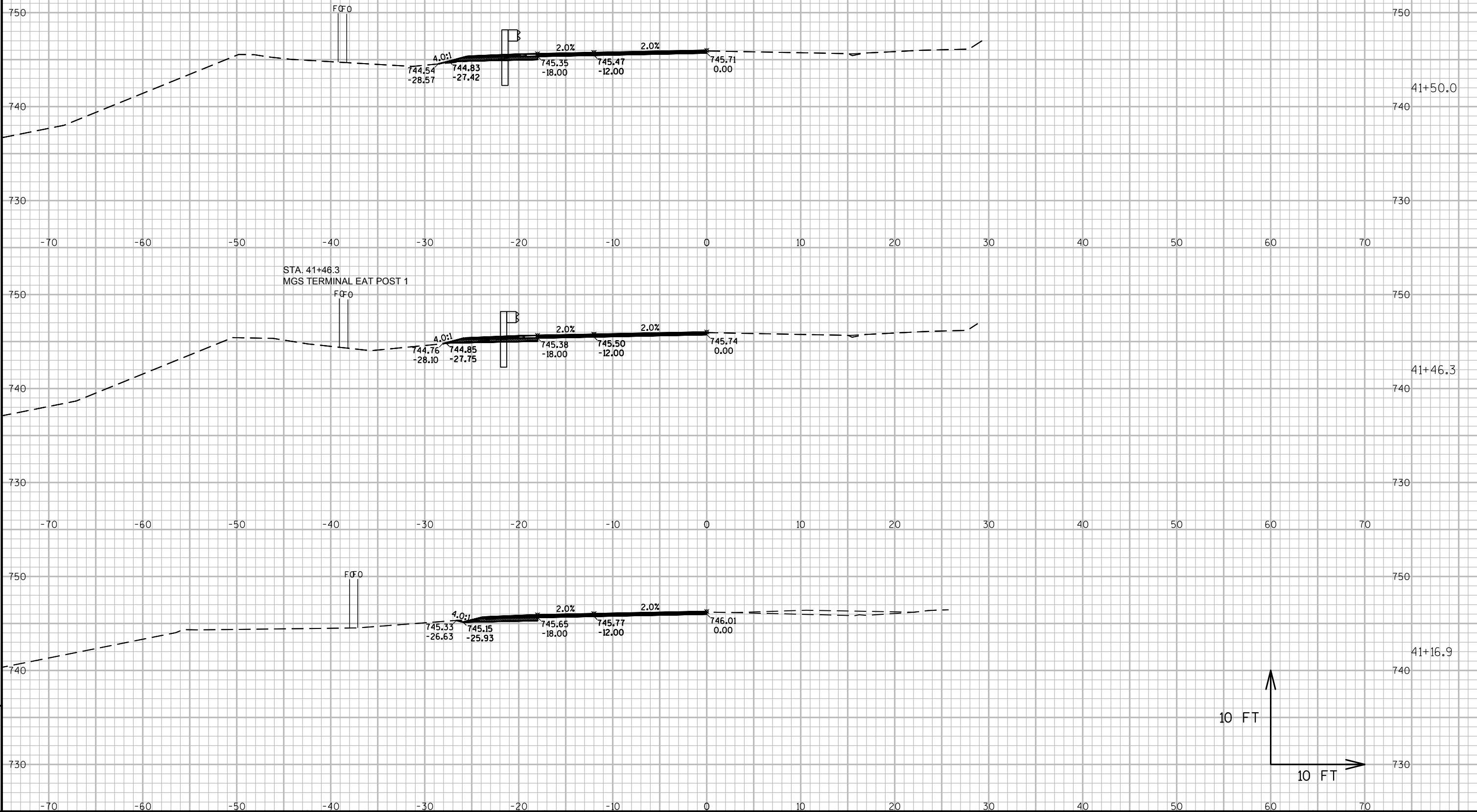
PLOT BY : USER

PLOT NAME :

PLOT SCALE : 1 IN:10 FT

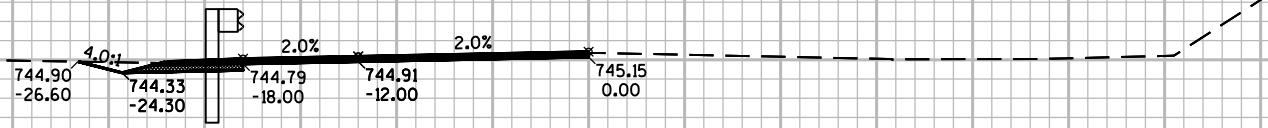
WISDOT/CADDs SHEET 49

NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING

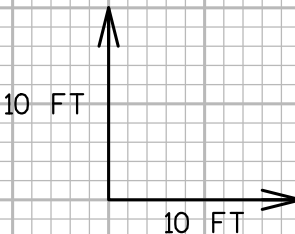
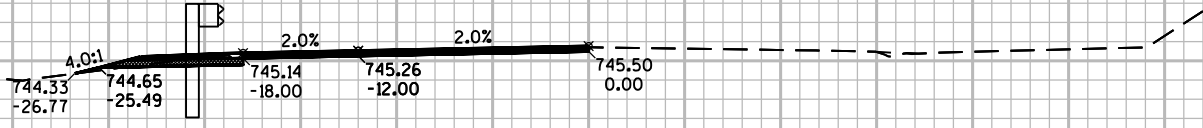


NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING

STA. 41+96.3
MGS TERMINAL EAT POST 9



STA. 41+71.3
MGS TERMINAL EAT POST 5



PROJECT NO: 7120-02-73, 7120-02-76

HWY: STH 85

COUNTY: PEPIN

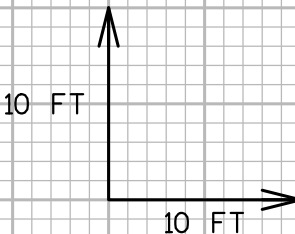
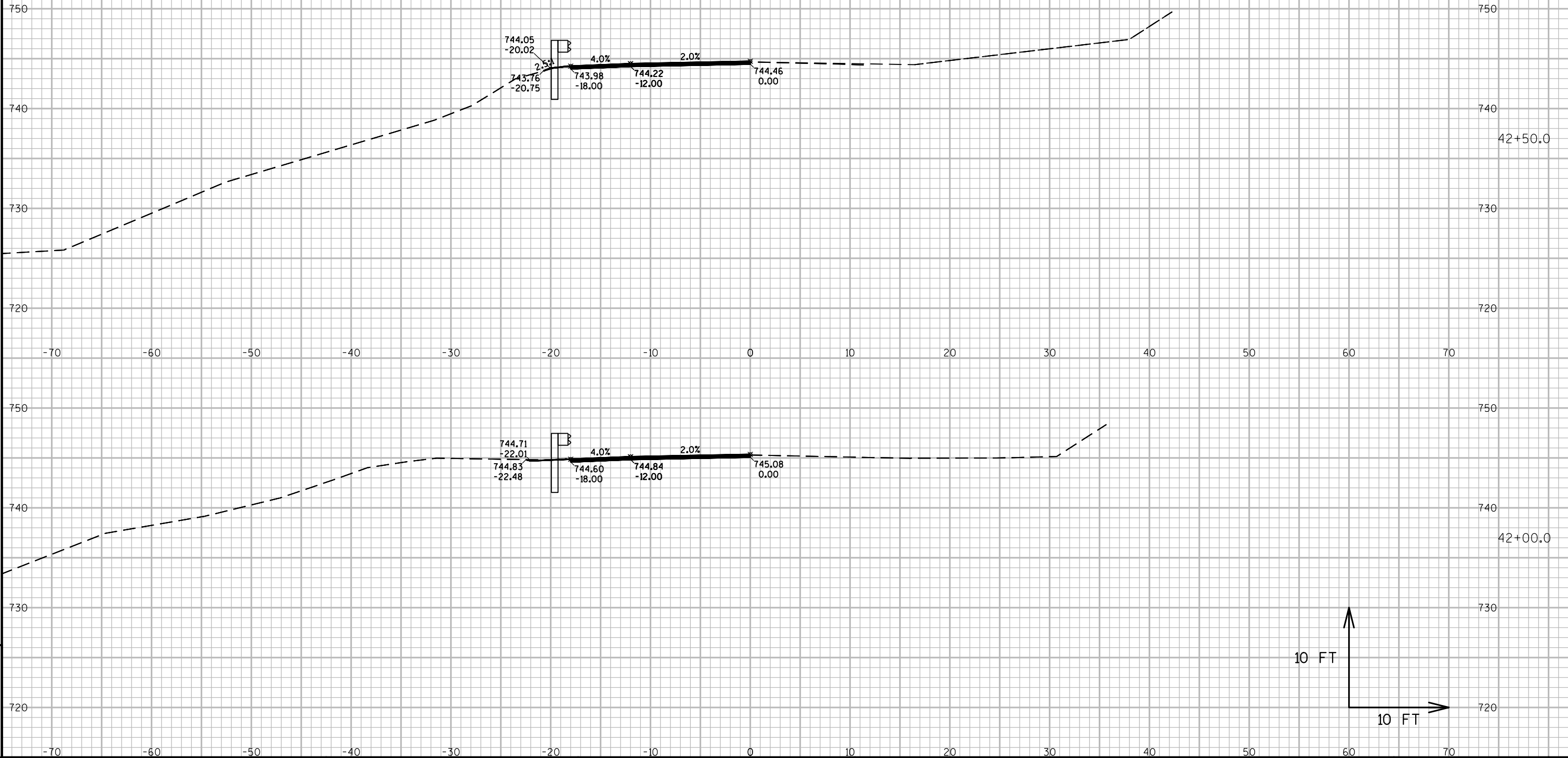
CROSS SECTIONS: STH 85 (MIDWEST GUARDRAIL SYSTEM - STA. 40+37 - 48+42 LT)

SHEET

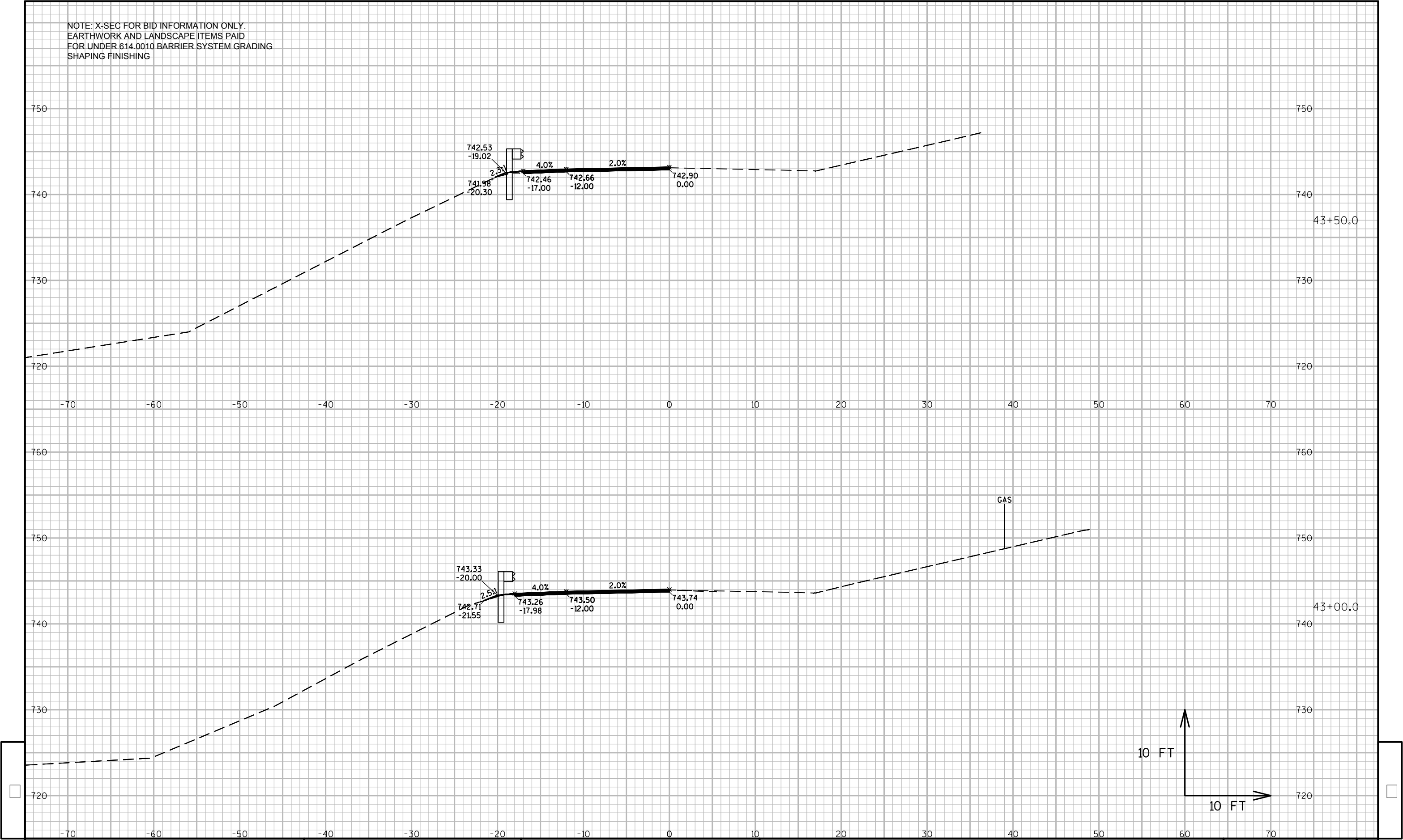
130

E

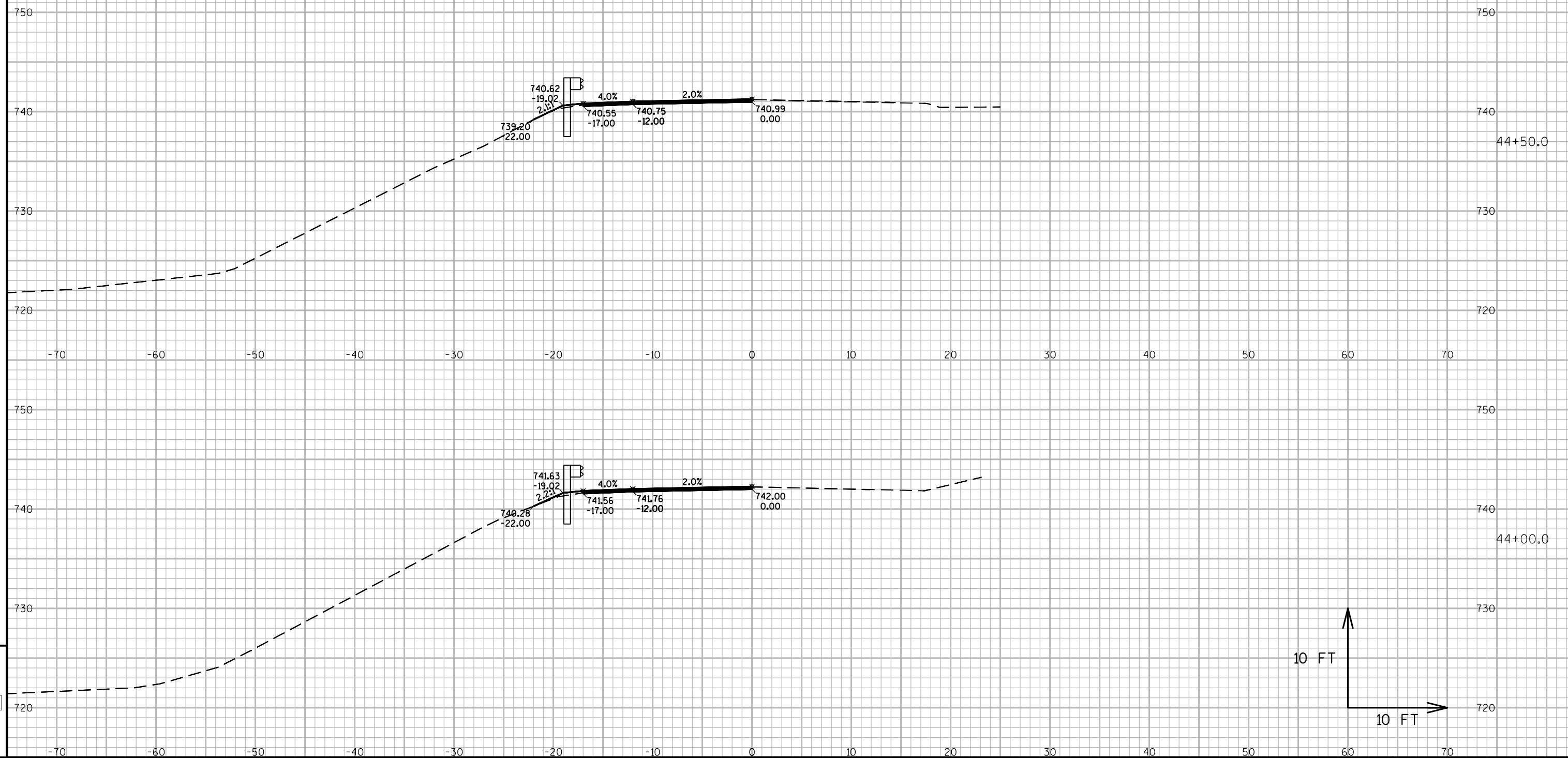
NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



PROJECT NO: 7120-02-73, 7120-02-76

HWY: STH 85

COUNTY: PEPIN

CROSS SECTIONS: STH 85 (MIDWEST GUARDRAIL SYSTEM - STA. 40+37 - 48+42 LT)

SHEET 133

E	
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FILE NAME : W:\NWBE_PROJECTS\DESIGN\1215_STH_85\C3D-16\SHEETSP\AN\090202_XS-85-L-4037-4820-MGSINFOONLY.DWG
LAYOUT NAME - 06

PLOT DATE : 1/24/2019 9:39 AM

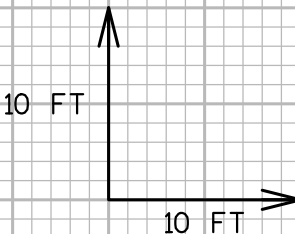
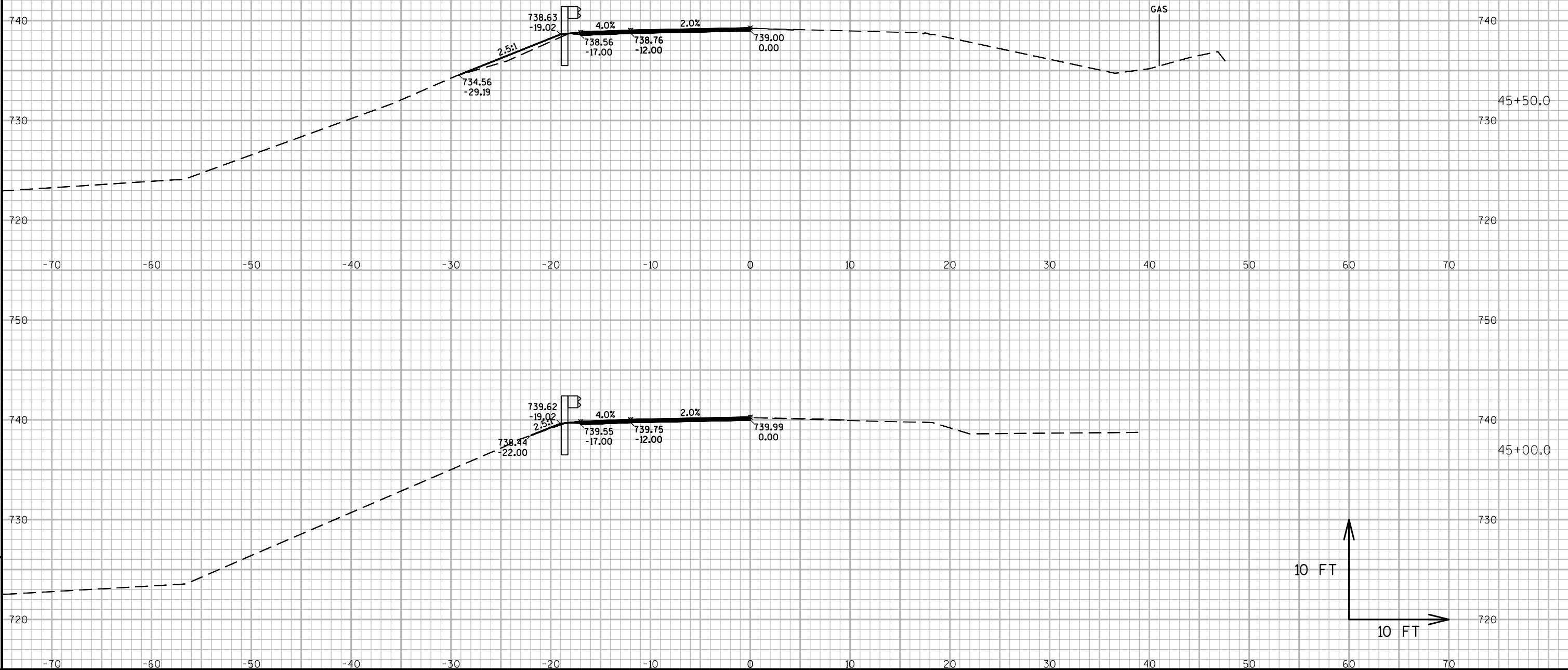
PLOT BY : USER

PLOT NAME :

PLOT SCALE : 1 IN:10 FT

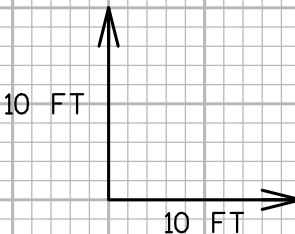
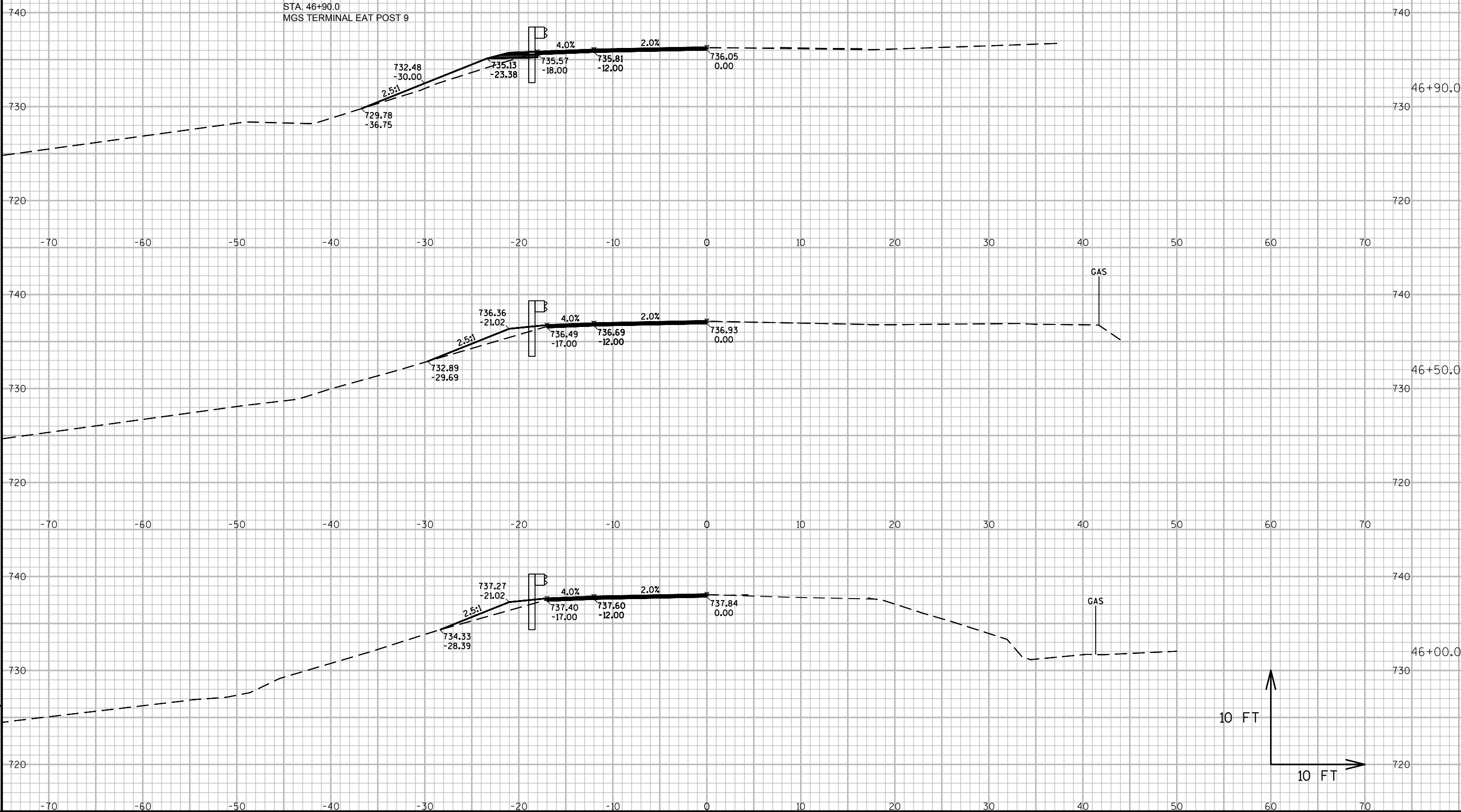
WISDOT/CADDS SHEET 49

NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



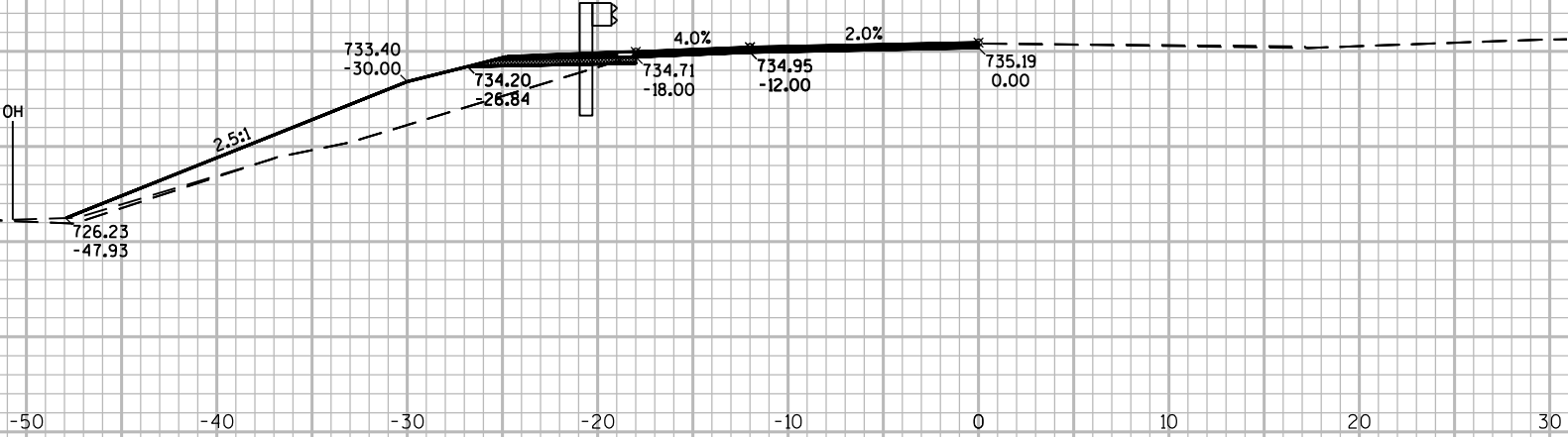
NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING

STA. 46+90.0
MGS TERMINAL EAT POST 9

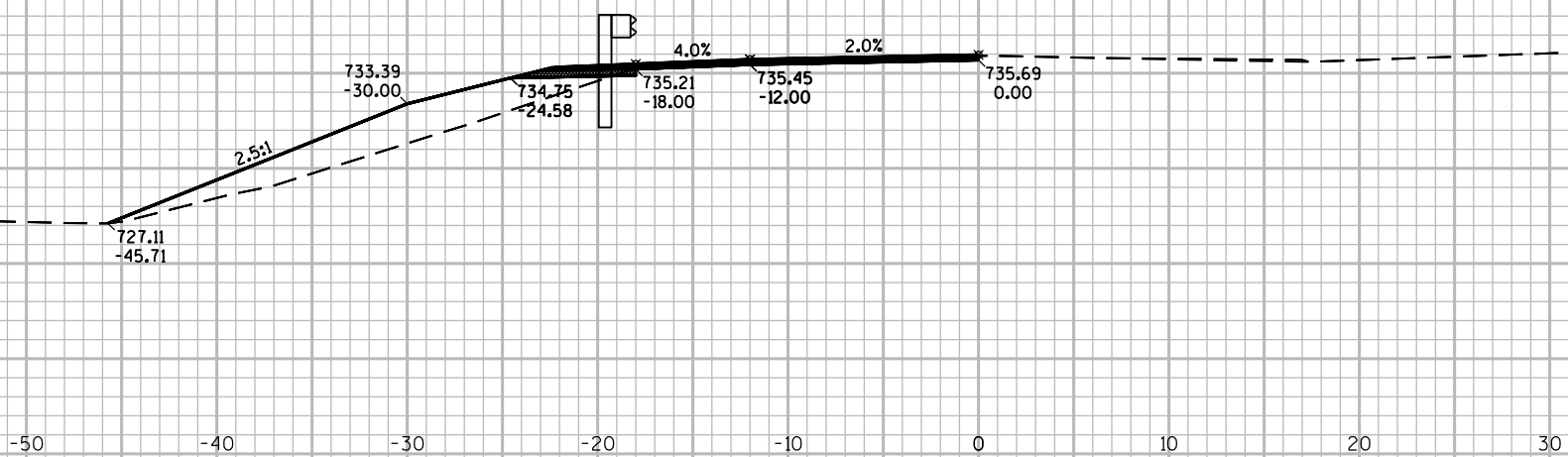


NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING

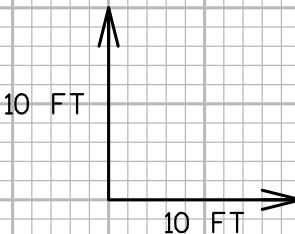
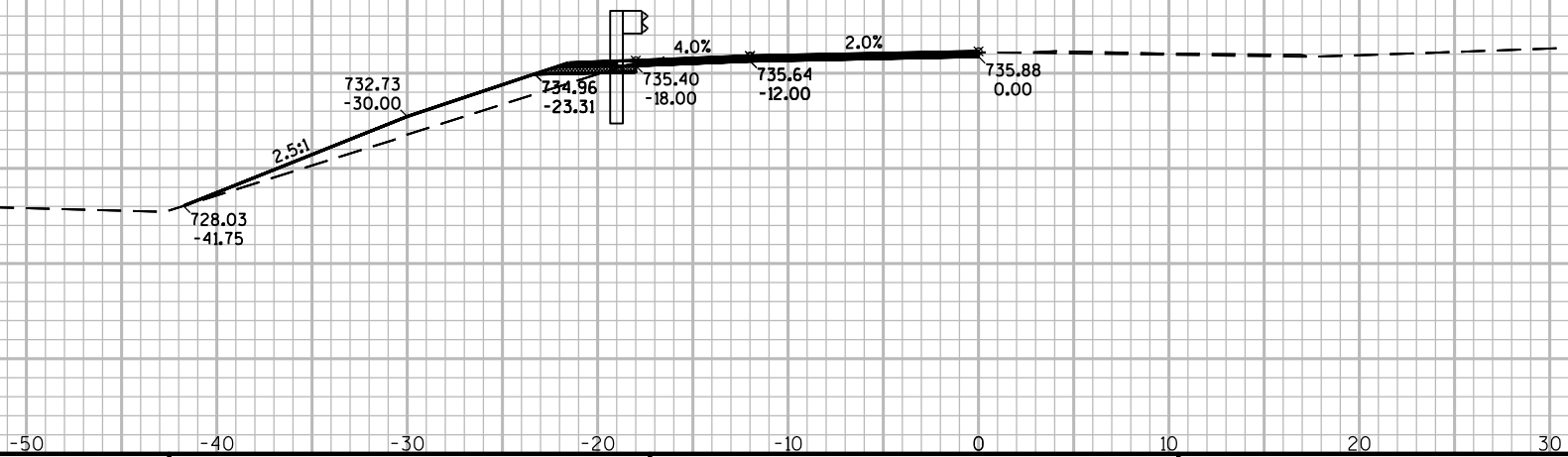
STA. 47+40.0
MGS TERMINAL EAT POST 1



STA. 47+15.0
MGS TERMINAL EAT POST 5



STA. 47+00.0
MGS TERMINAL EAT POST 1



PROJECT NO: 7120-02-73,7120-02-76

HWY: STH 85

COUNTY: PEPIN

CROSS SECTIONS: STH 85 (MIDWEST GUARDRAIL SYSTEM - STA. 40+37 - 48+42 LT)

SHEET

136

E

FILE NAME : W:\NWBE_PROJECTS\DESIGN\1215_STH_85\C3D-16\SHEETS\PLAN\090202_XS-85-L-4037-4820-MGSINFOONLY.DWG
LAYOUT NAME - 09

PLOT DATE : 1/24/2019 9:39 AM

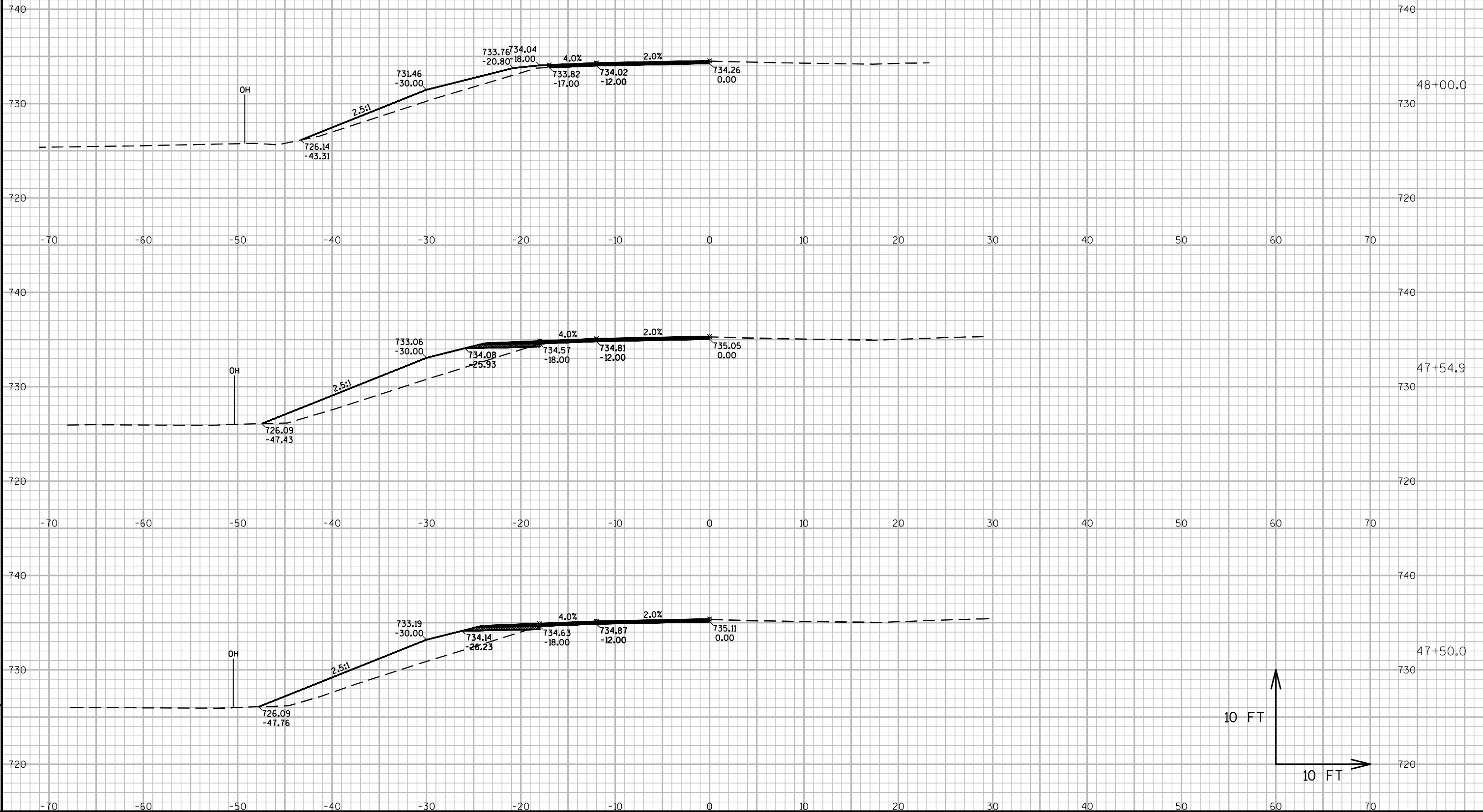
PLOT BY : USER

PLOT NAME :

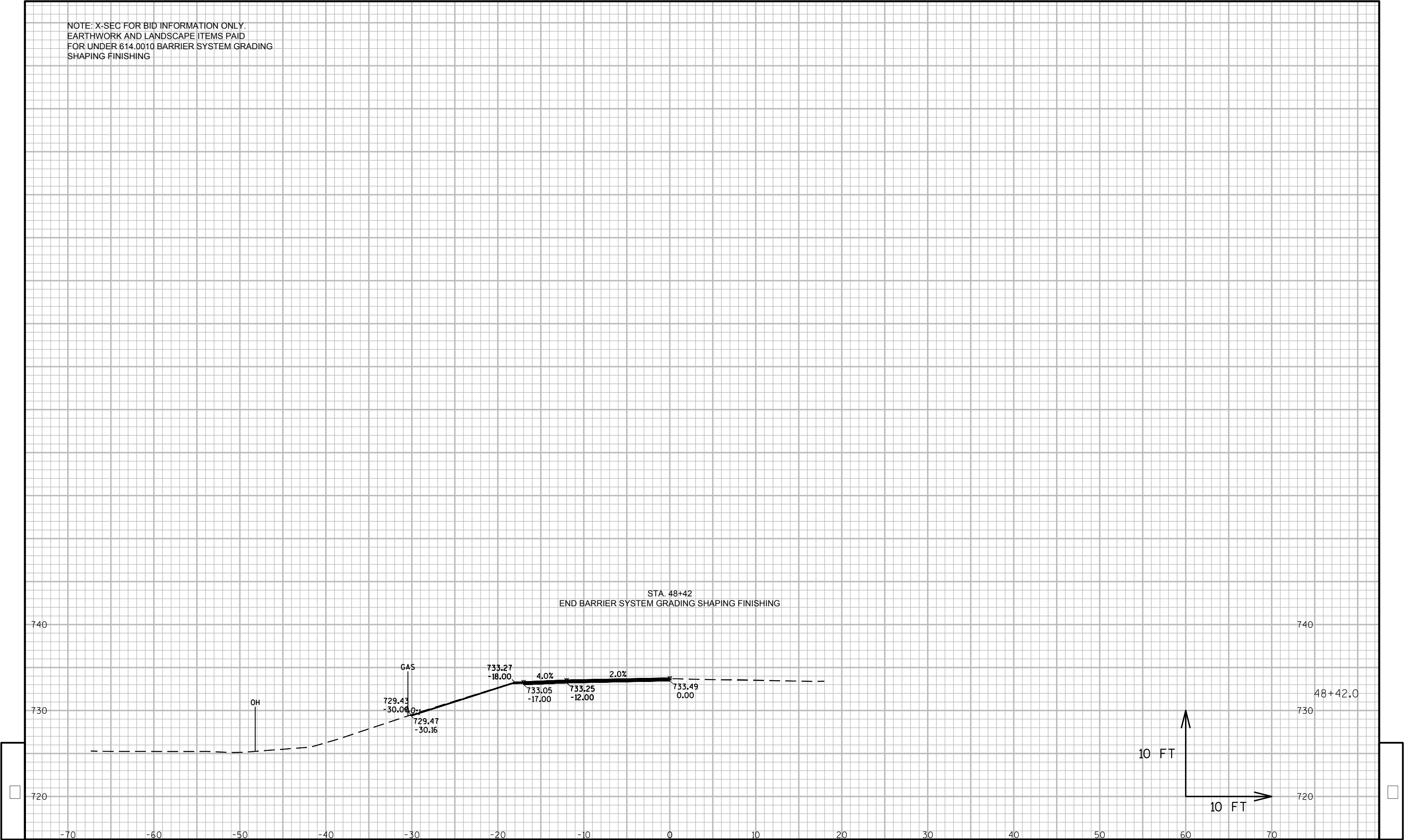
PLOT SCALE : 1 IN:10 FT

WISDOT/CADDs SHEET 49

NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING

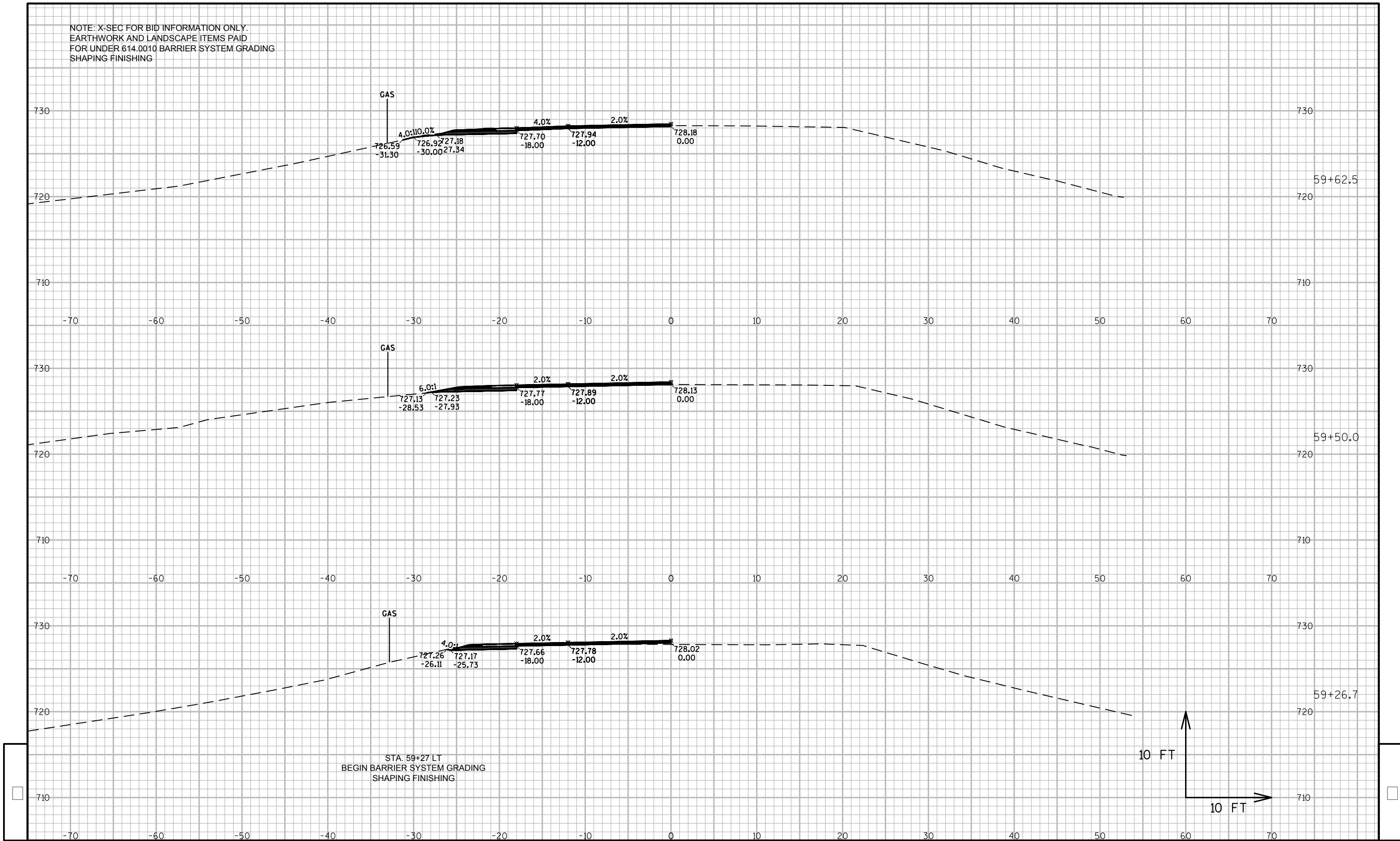


NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



STA. 48+42
END BARRIER SYSTEM GRADING SHAPING FINISHING

NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



PROJECT NO: 7120-02-73, 7120-02-76

HWY: STH 85

COUNTY: PEPIN

CROSS SECTIONS: STH 85 (MIDWEST GUARDRAIL SYSTEM - STA. 59+27 - 70+02 LT & RT)

SHEET

139

E

FILE NAME : W:\NWBE_PROJECTS\DESIGN\1215_STH_85\C3D-16\SHEETS\PLAN\090203_XS-85-L-R-5927-7002-MGSINFOONLY.DWG
LAYOUT NAME - 01

PLOT DATE : 1/24/2019 10:00 AM

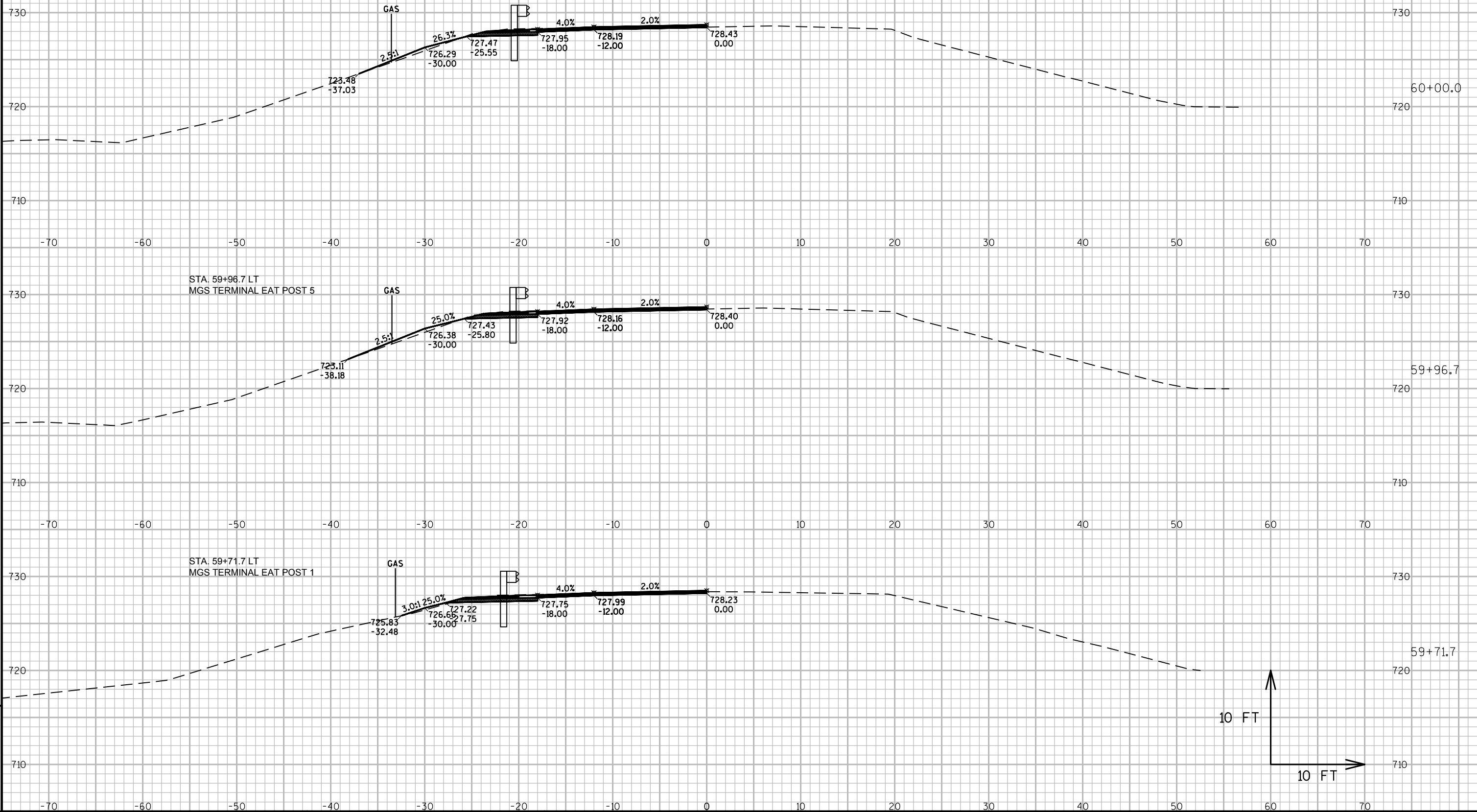
PLOT BY : USER

PLOT NAME :

PLOT SCALE : 1 IN:10 FT

WISDOT/CADDs SHEET 49

NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING

STA. 60+56.6 RT
CONNECT SPBG CLASS A TO
EXISTING BEAM GUARD

STA. 60+57 RT
BEGIN BARRIER SYSTEM GRADING SHAPING FINISHING

STA. 60+21.7
MGS TERMINAL EAT POST 9

10 FT

10 FT

PROJECT NO: 7120-02-73,7120-02-76

HWY: STH 85

COUNTY: PEPIN

CROSS SECTIONS: STH 85 (MIDWEST GUARDRAIL SYSTEM - STA. 59+27 - 70+02 LT & RT)

SHEET

141

E

FILE NAME : W:\NWBE_PROJECTS\DESIGN\1215_STH_85\C3D-16\SHEETS\PLAN\090203_XS-85-L-R-5927-7002-MGSINFOONLY.DWG
LAYOUT NAME - 03

PLOT DATE : 1/24/2019 10:00 AM

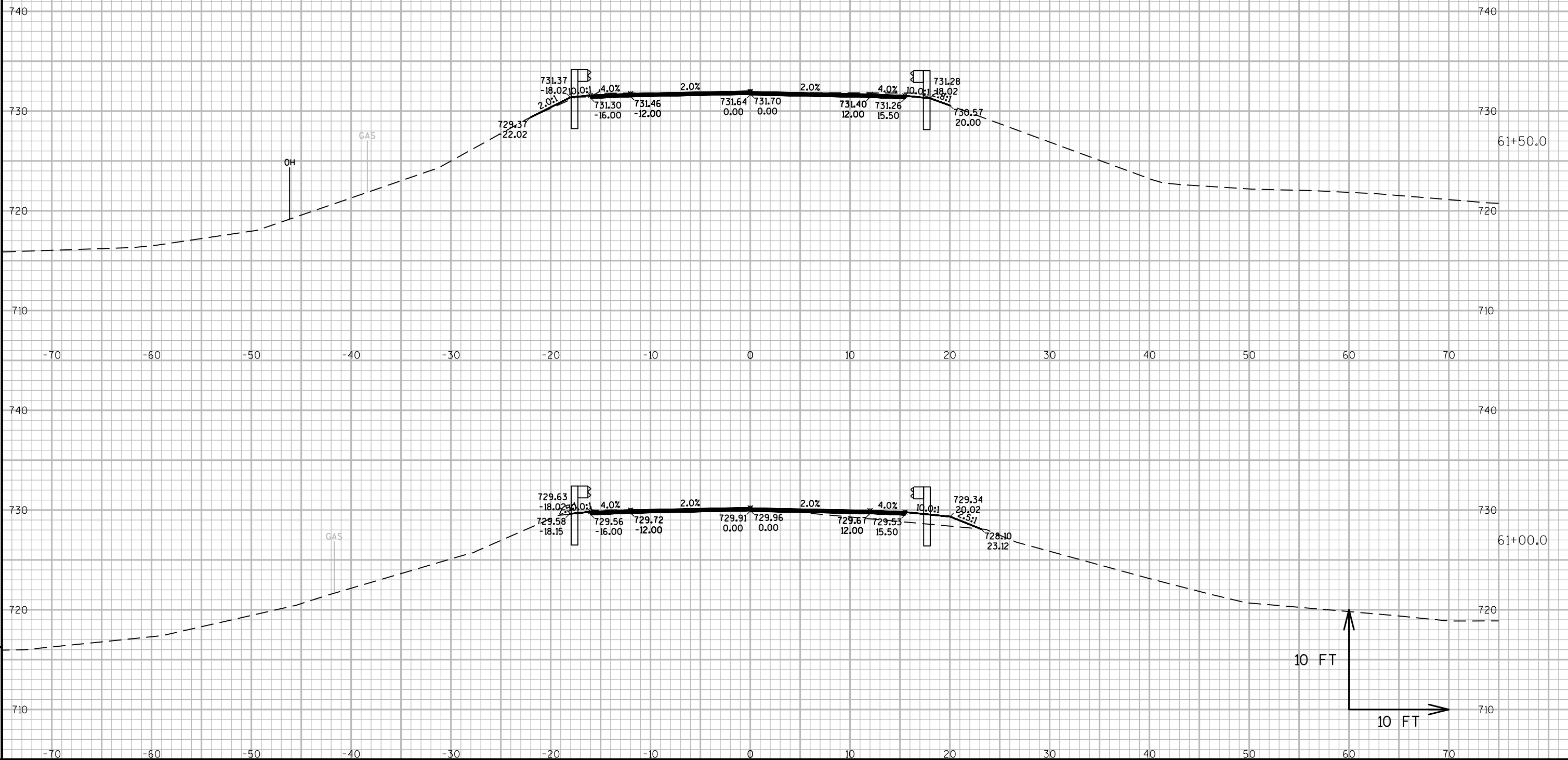
PLOT BY : USER

PLOT NAME :

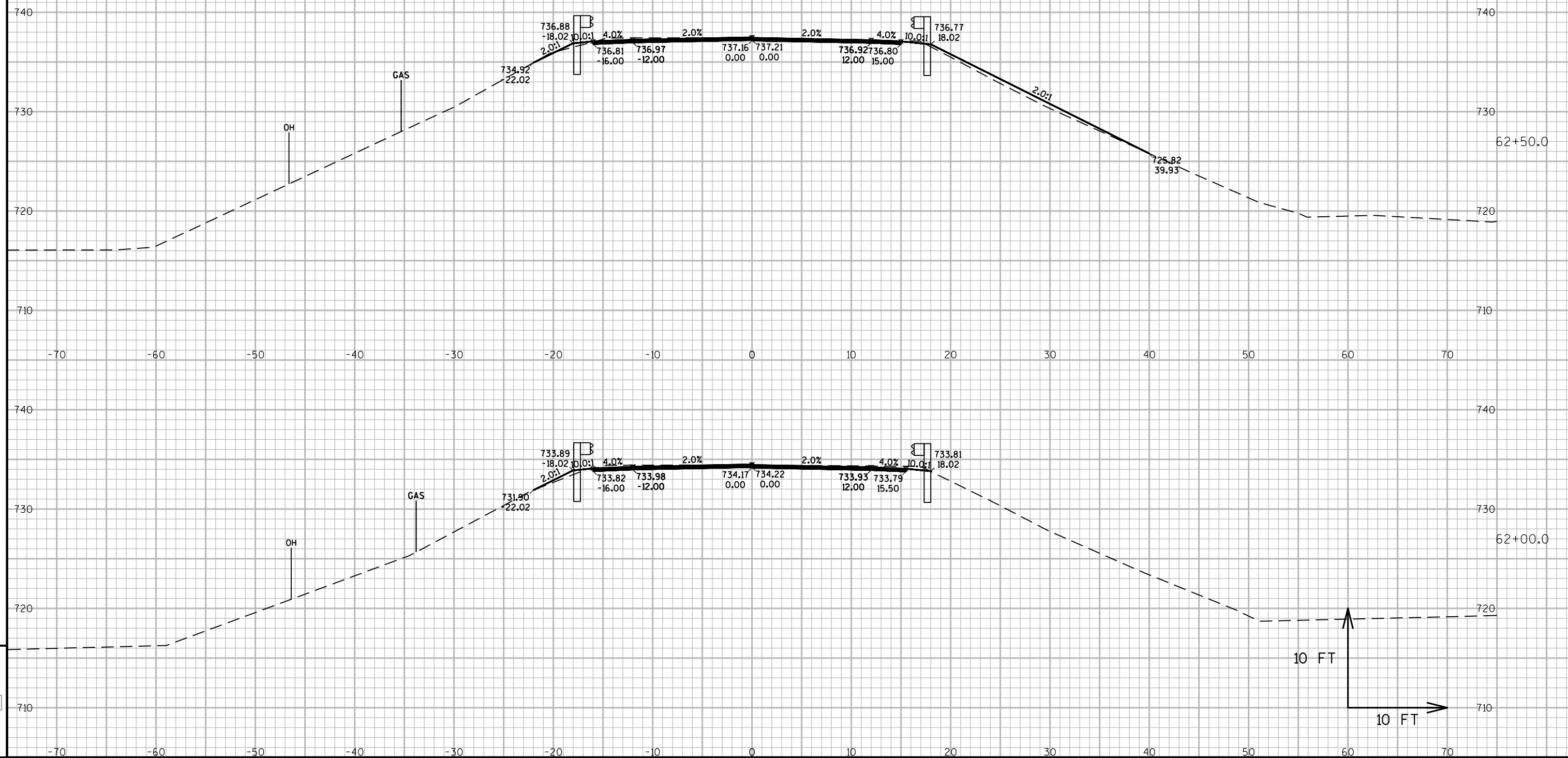
PLOT SCALE : 1 IN:10 FT

WISDOT/CADDs SHEET 49

NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



PROJECT NO: 7120-02-73, 7120-02-76

HWY:STH 85

COUNTY: PEPIN

CROSS SECTIONS: STH 85 (MIDWEST GUARDRAIL SYSTEM - STA. 59+27 - 70+02 LT & RT)

SHEET

43

三	
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FILE NAME : W:\NWBE_PROJECTS\DESIGN\1215_STH_85\C3D-16\SHEETSP\AN\090203_XS-85-L-R-5927-7002-MGSINFOONLY.DWG
LAYOUT NAME - 05

PLOT DATE : 1/24/2019 10:00 AM

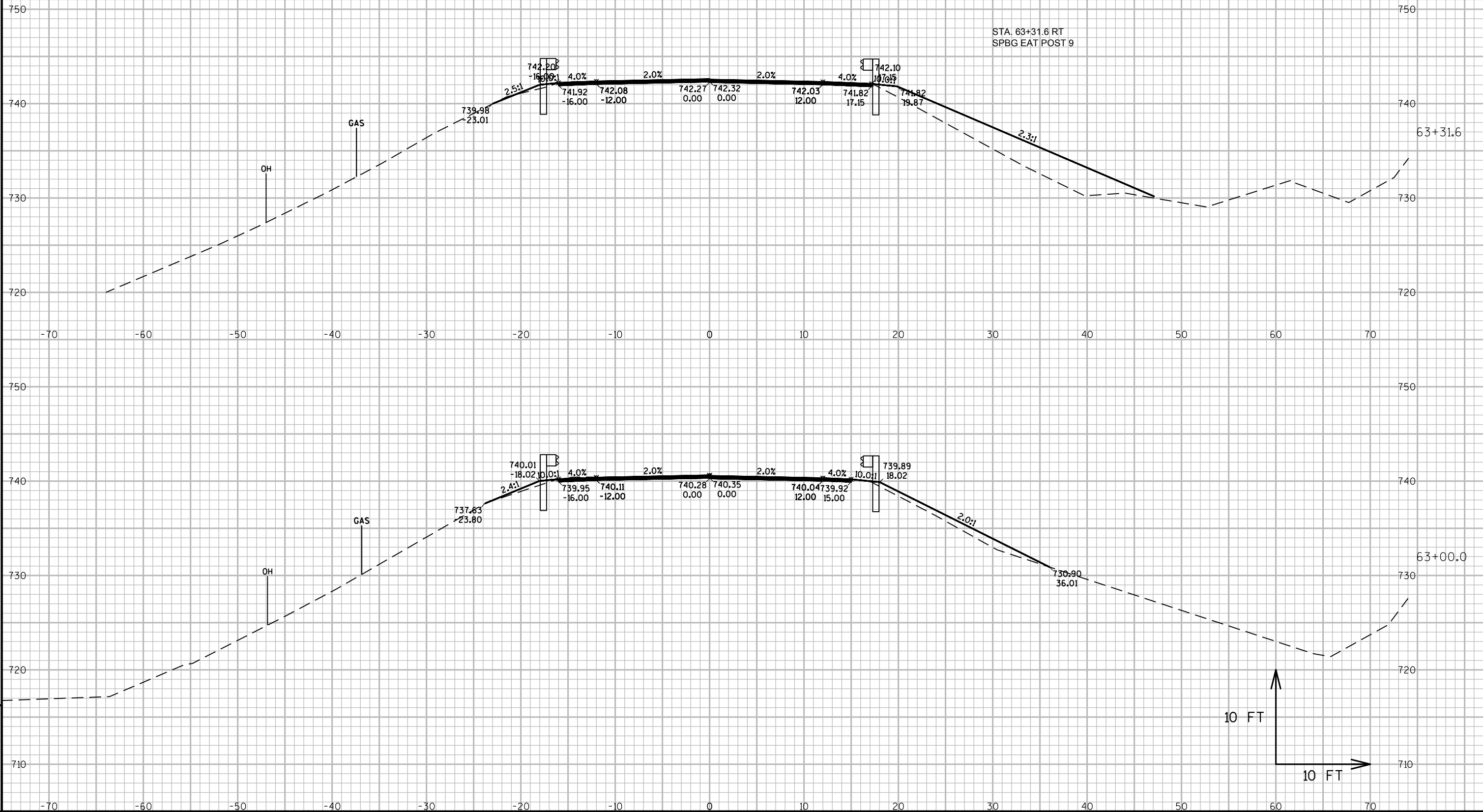
PLOT BY : USER

PLOT NAME :

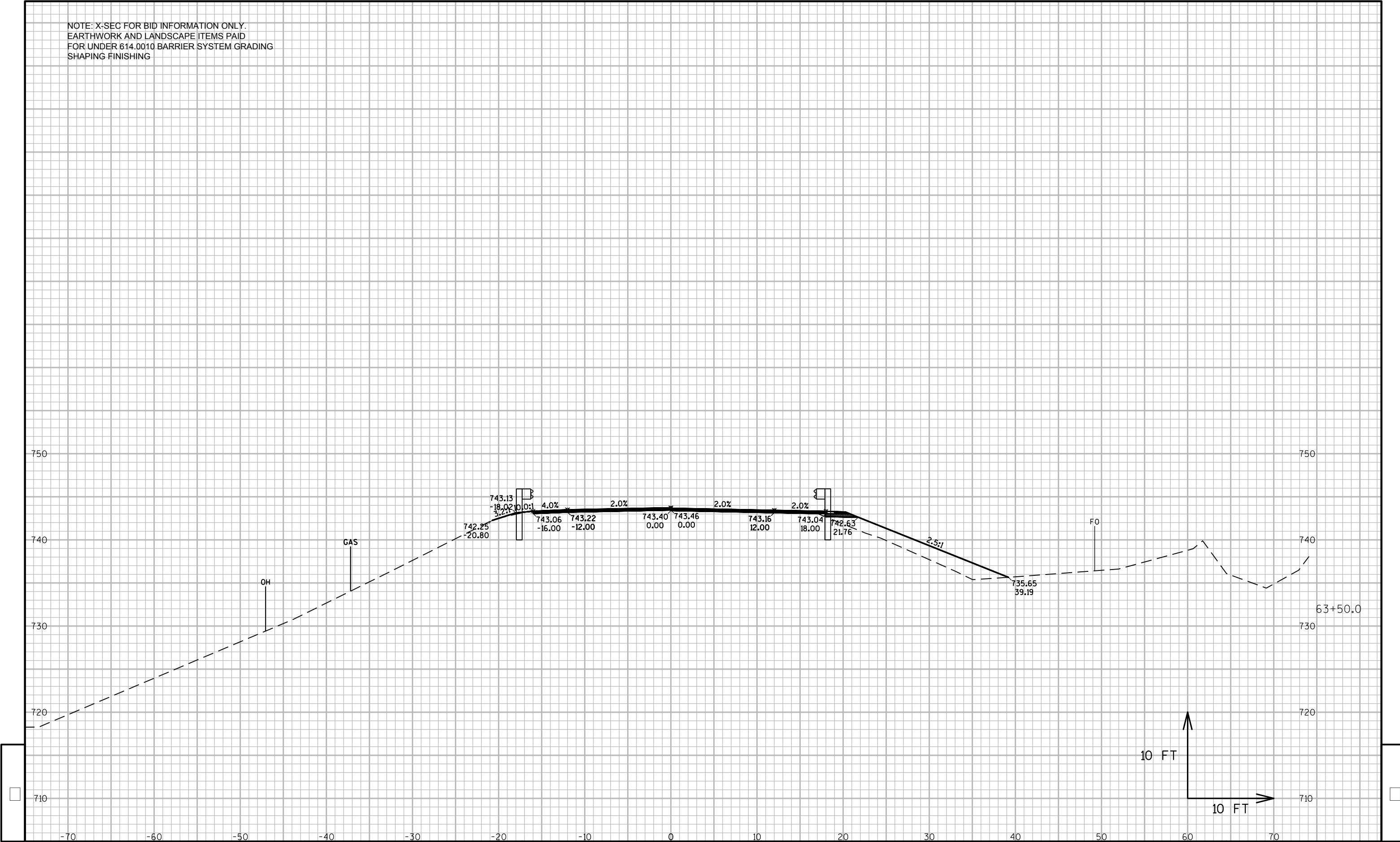
PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

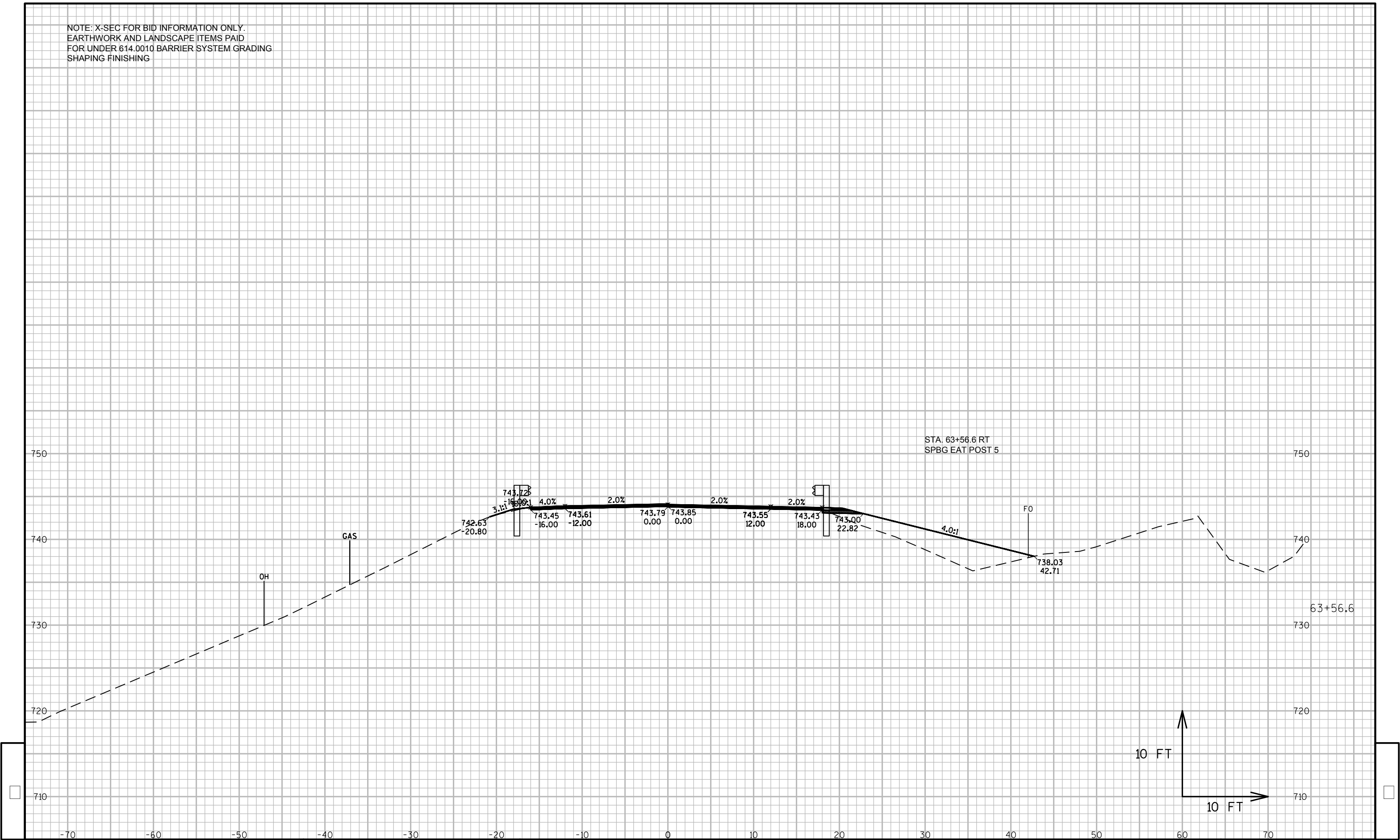
NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



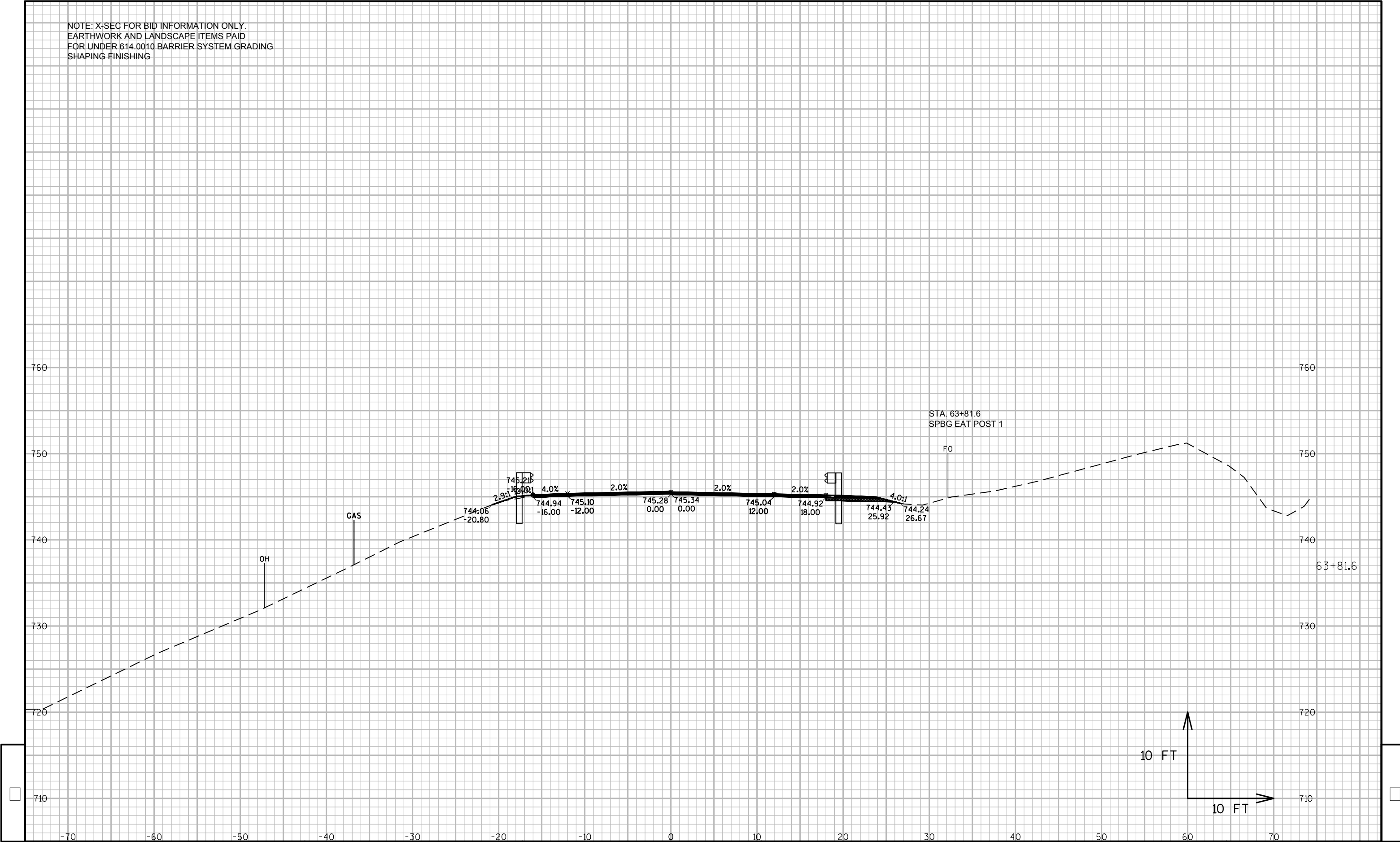
NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



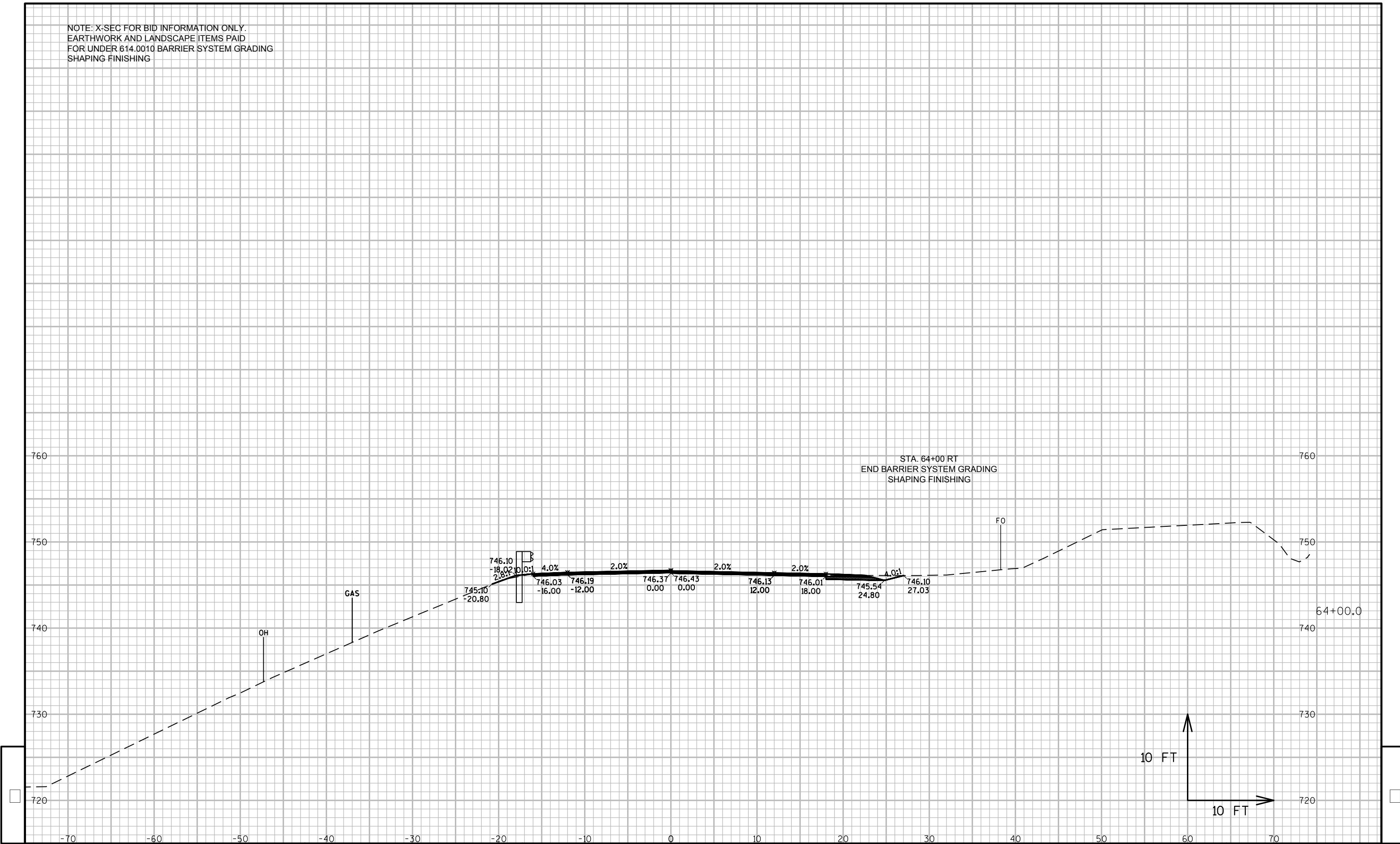
NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



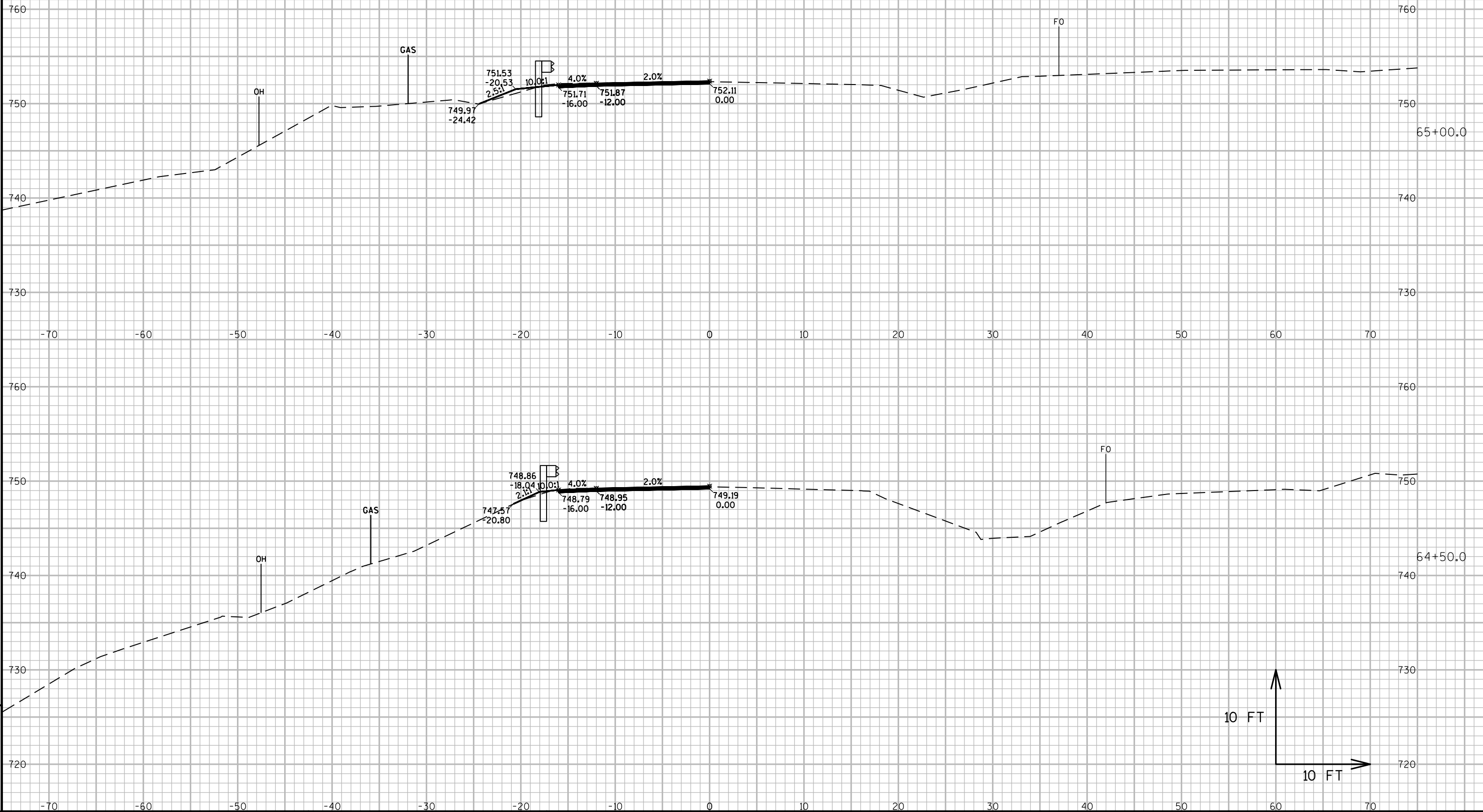
NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



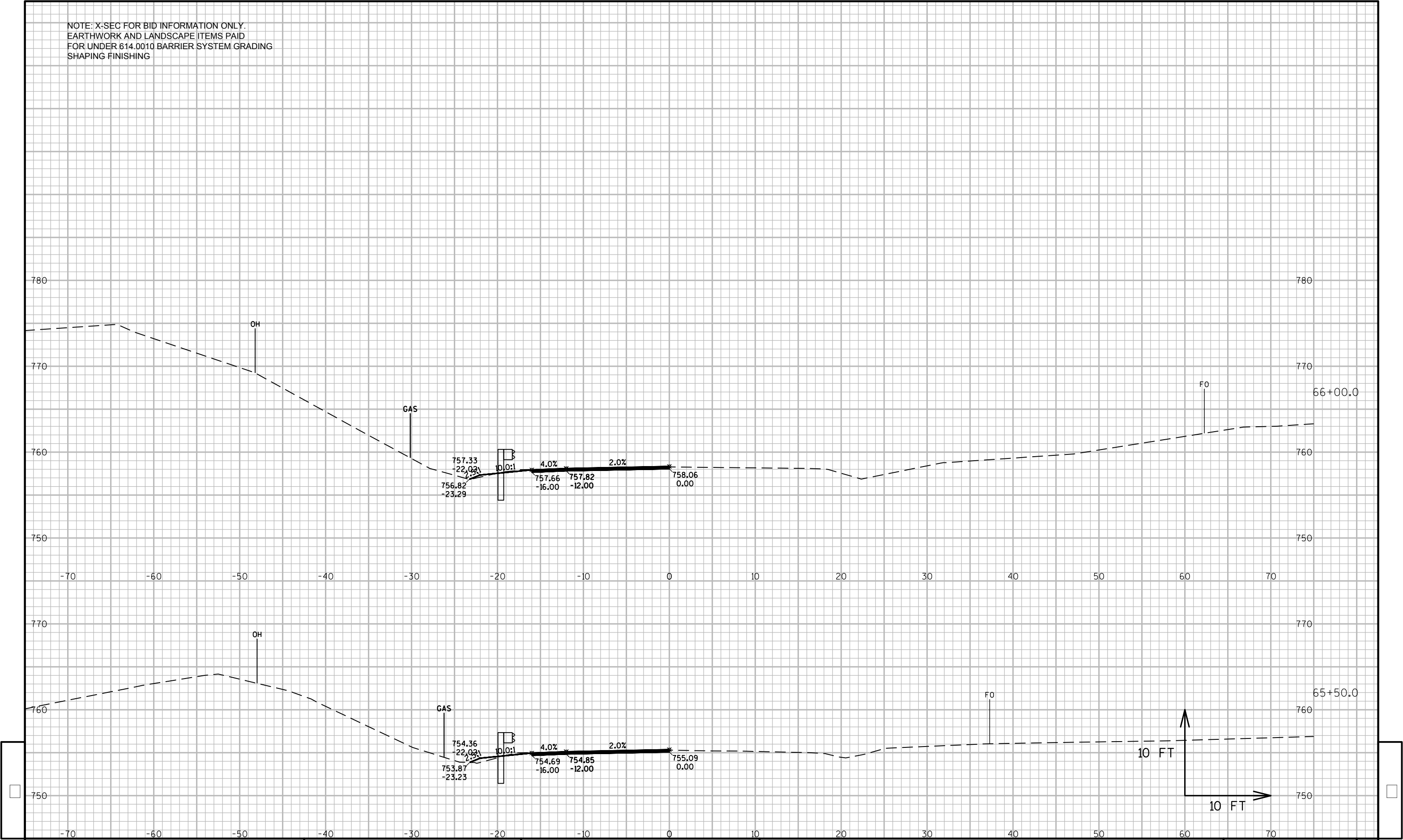
NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



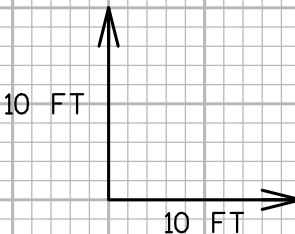
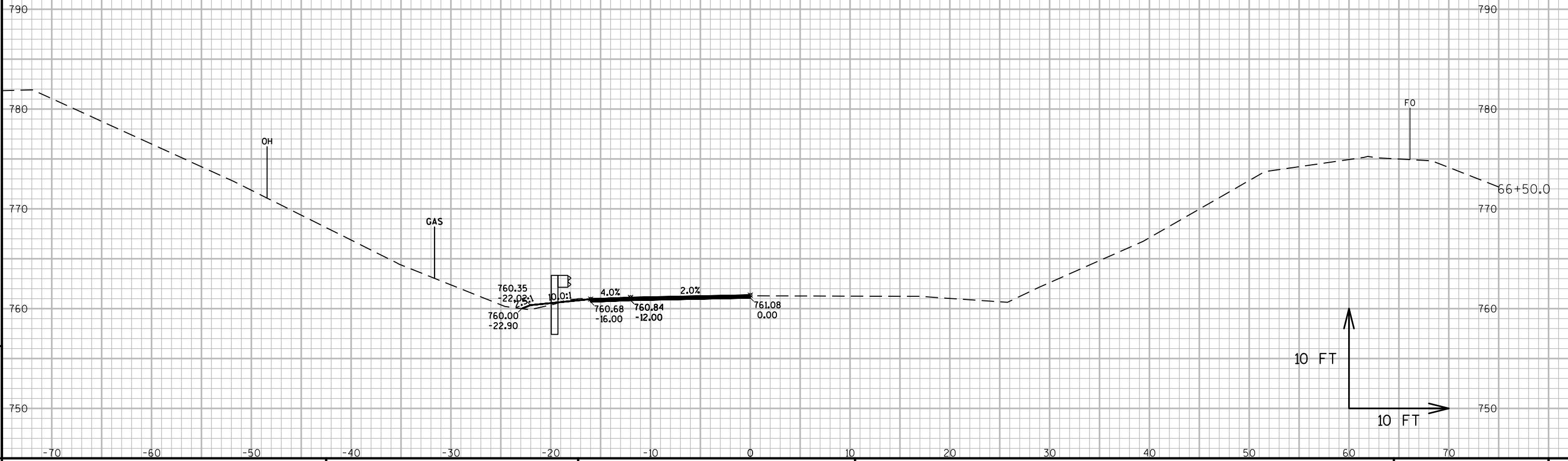
NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



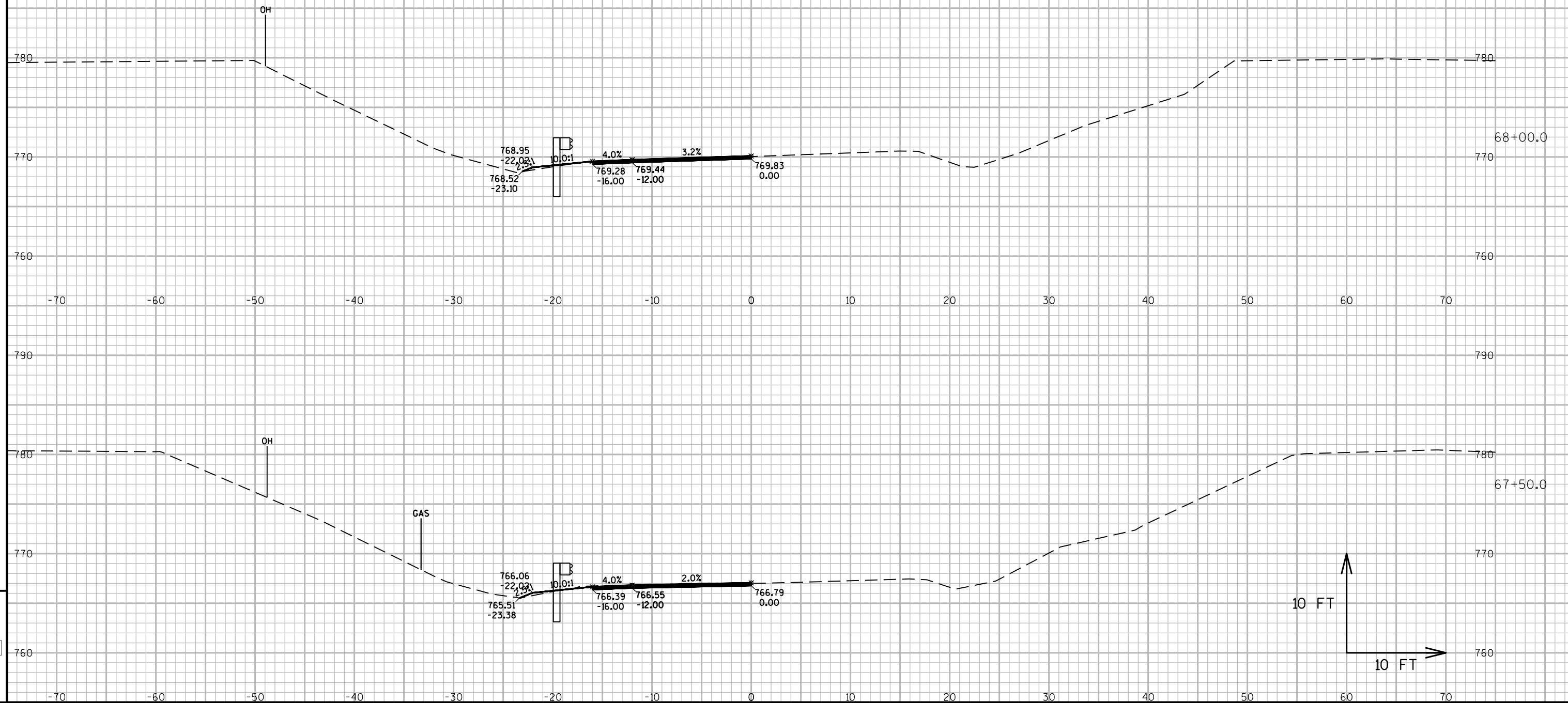
NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



PROJECT NO: 7120-02-73, 7120-02-76

HWY:STH 85

COUNTY: PEPIN

CROSS SECTIONS: STH 85 (MIDWEST GUARDRAIL SYSTEM - STA. 59+27 - 70+02 LT & RT)

SHEET

52

E

FILE NAME : W:\NWBE_PROJECTS\DESIGN\1215_STH_85\C3D-16\SHEETSP\AN\090203_XS-85-L-R-5927-7002-MGSINFOONLY.DWG
LAYOUT NAME - 14

PLOT DATE : 1/24/2019 10:02 AM

PLOT BY : USER

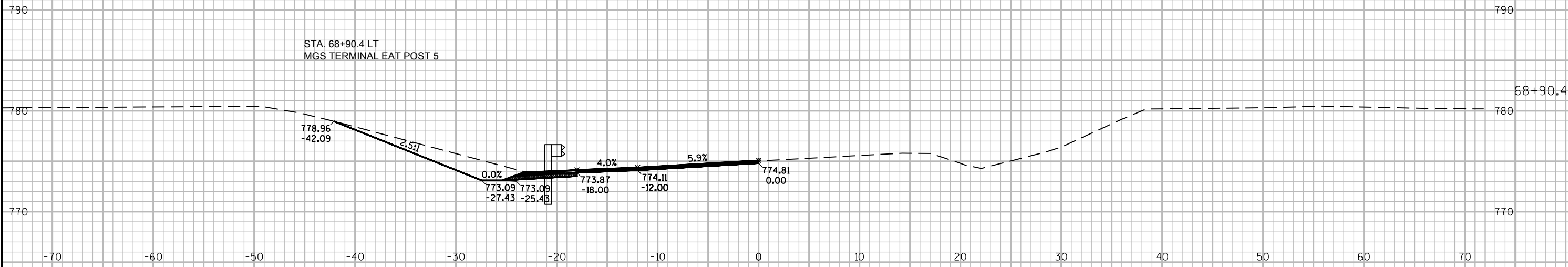
PLOT NAME :

PLOT SCALE : 1 IN:10 FT

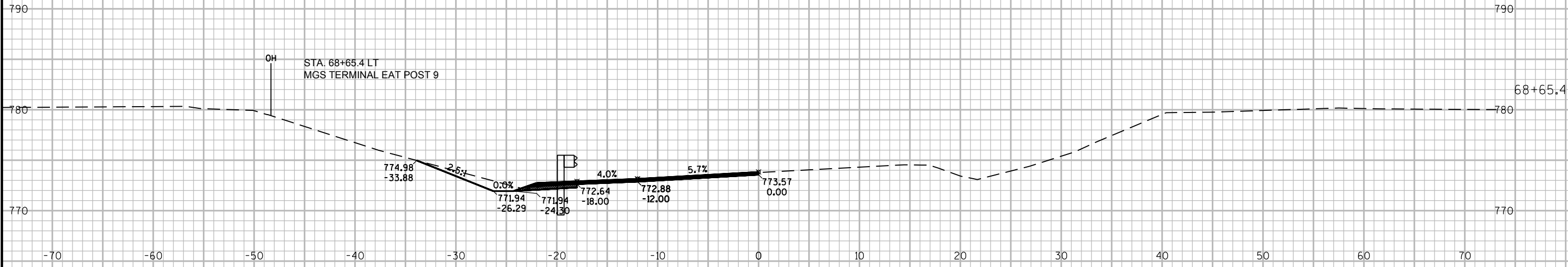
WISDOT/CADDS SHEET 49

NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING

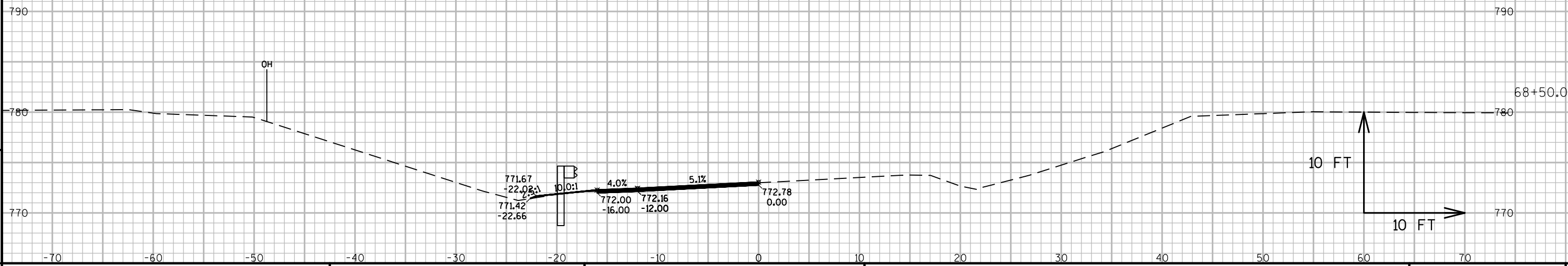
STA. 68+90.4 LT
MGS TERMINAL EAT POST 5



STA. 68+65.4 LT
MGS TERMINAL EAT POST 9

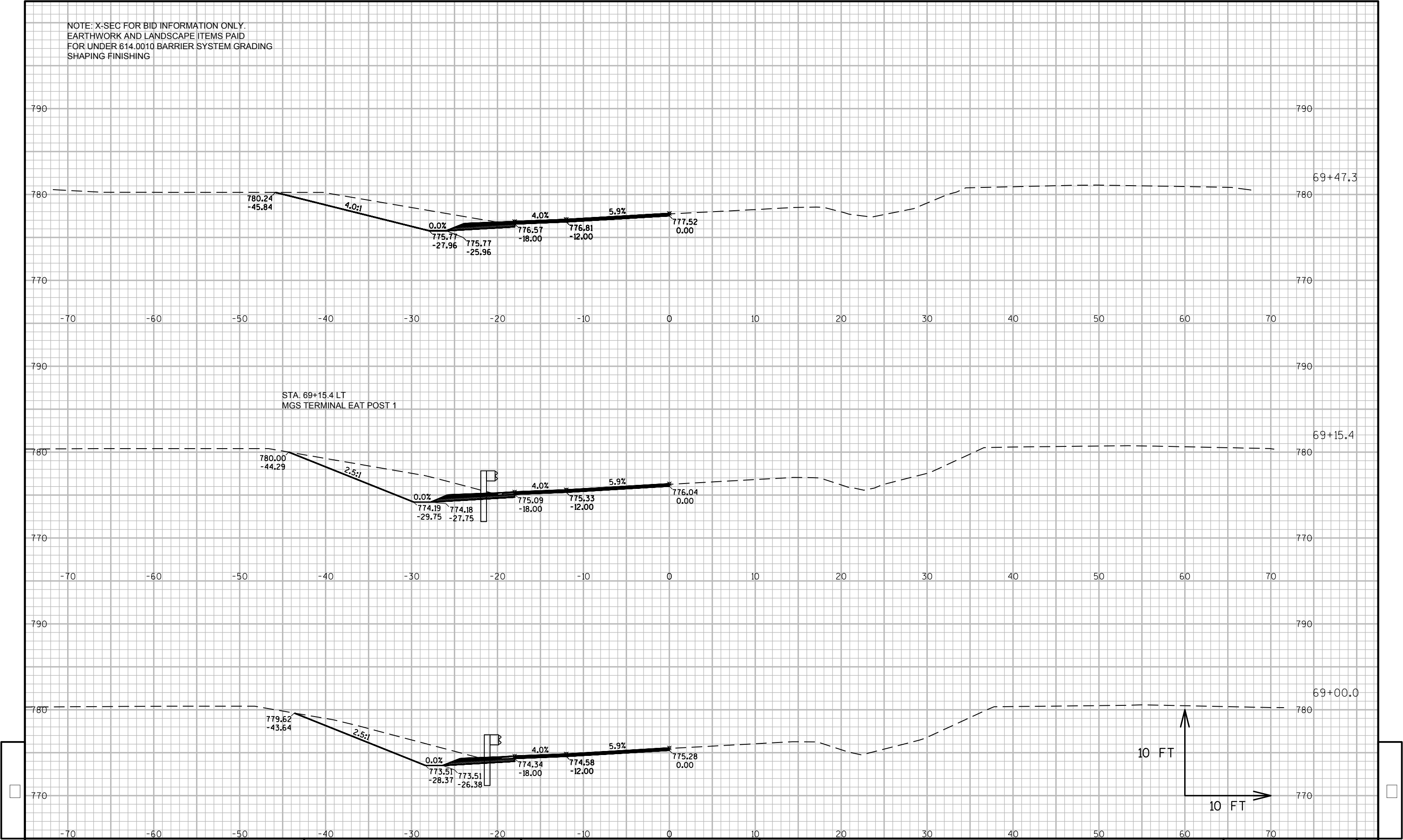


STA. 68+50.0 LT
MGS TERMINAL EAT POST 13



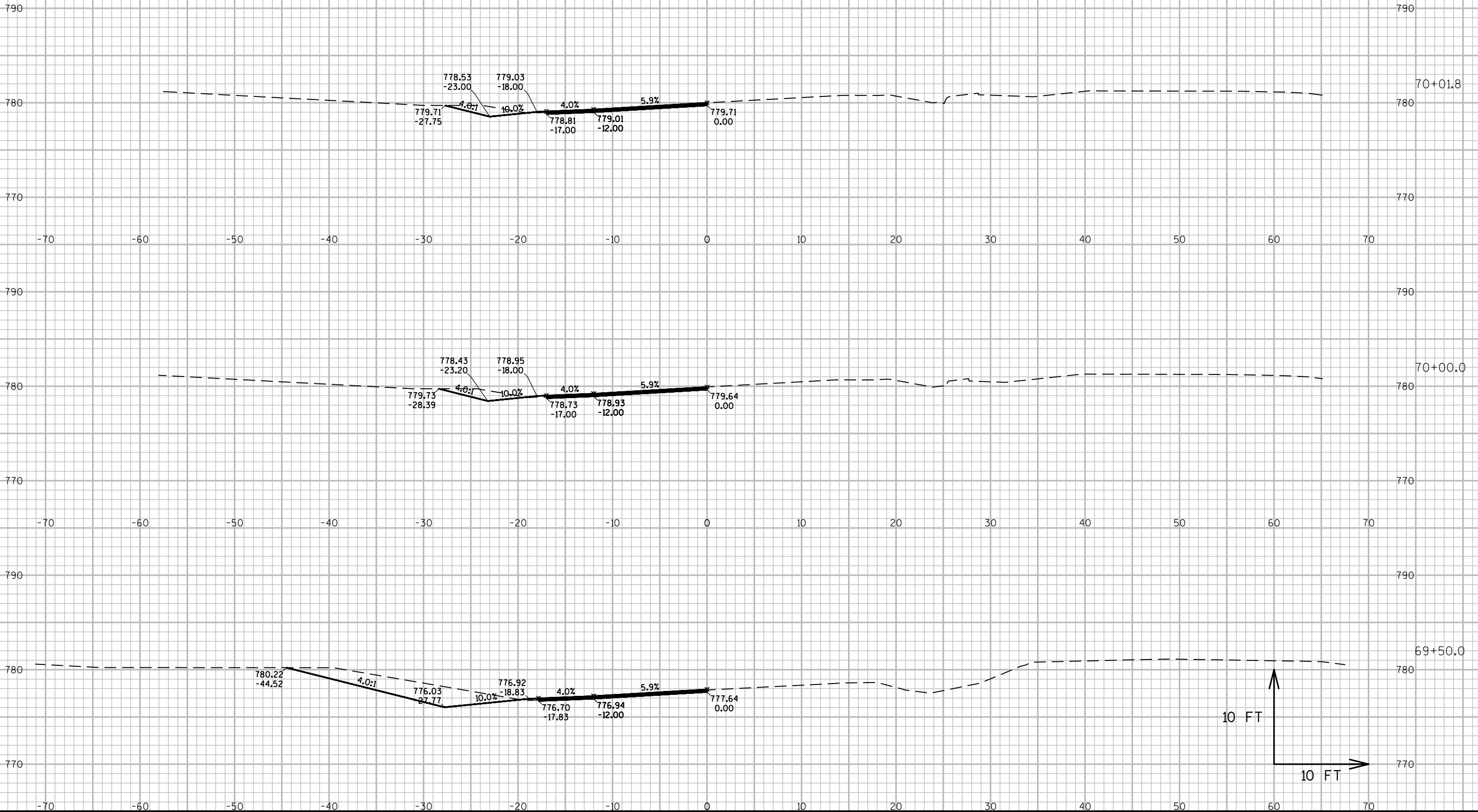
10 FT
10 FT

NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING

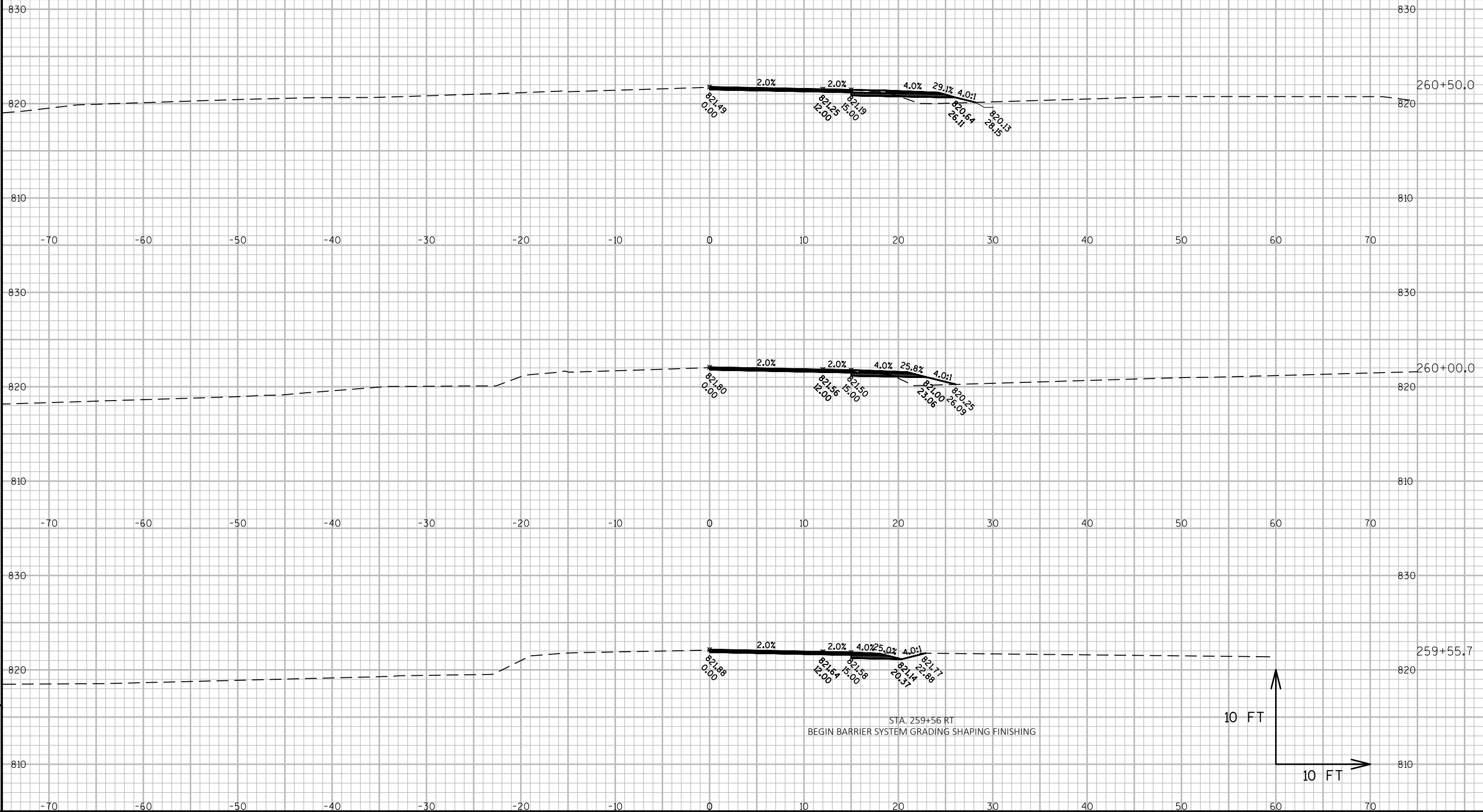


NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING

STA. 70+02 LT
END BARRIER SYSTEM GRADING
SHAPING FINISHING



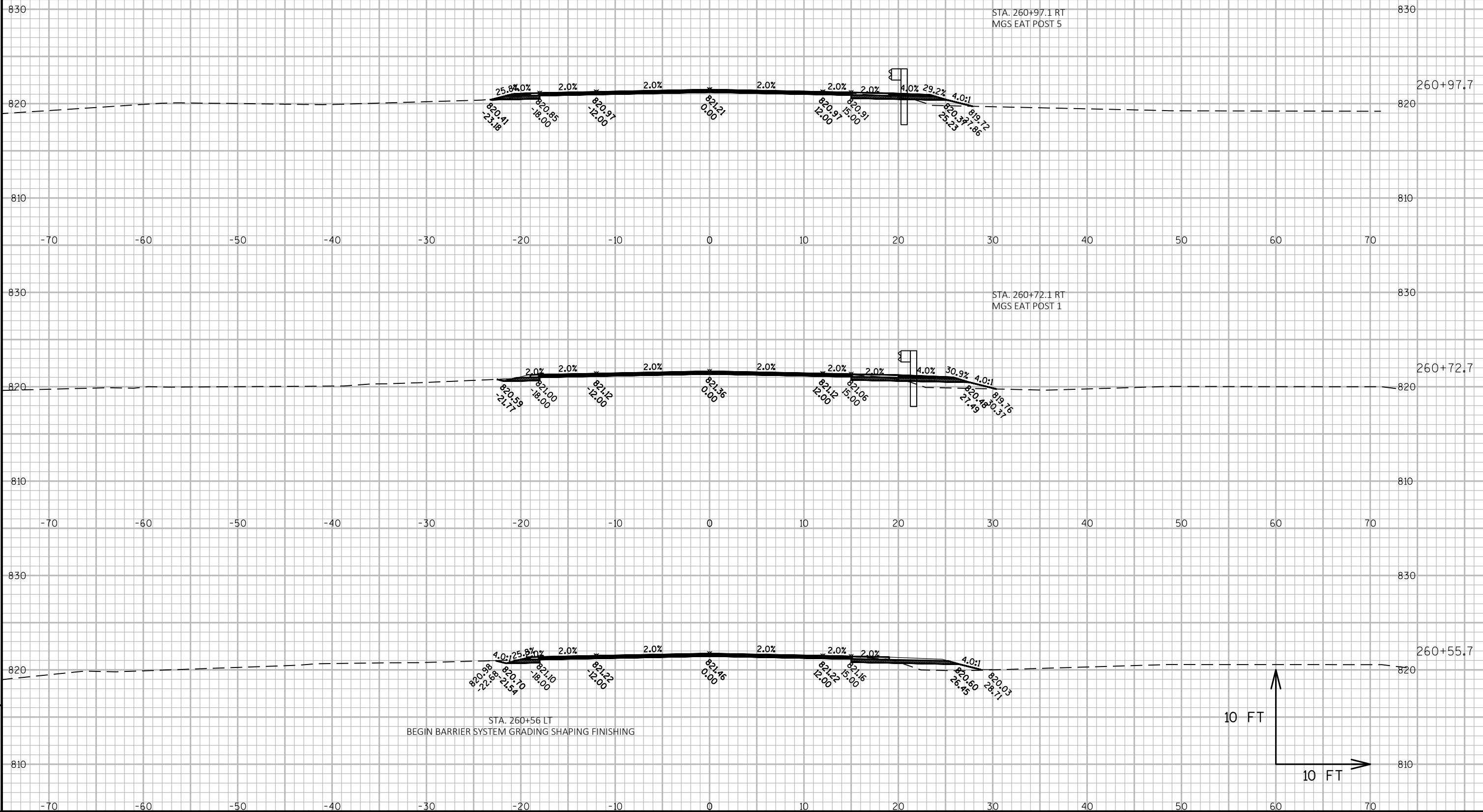
NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



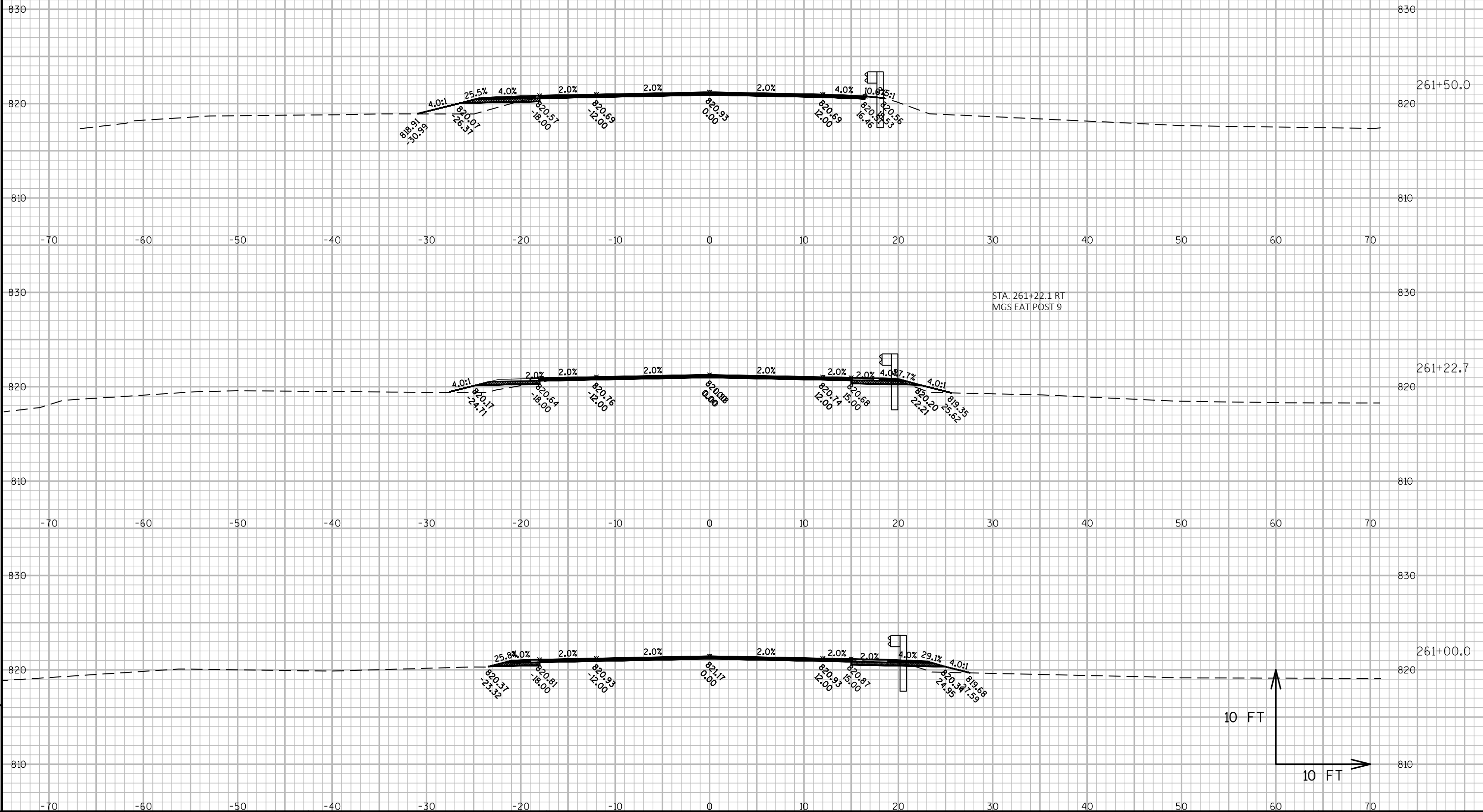
STA. 259+56 RT
BEGIN BARRIER SYSTEM GRADING SHAPING FINISHING

10 FT
10 FT

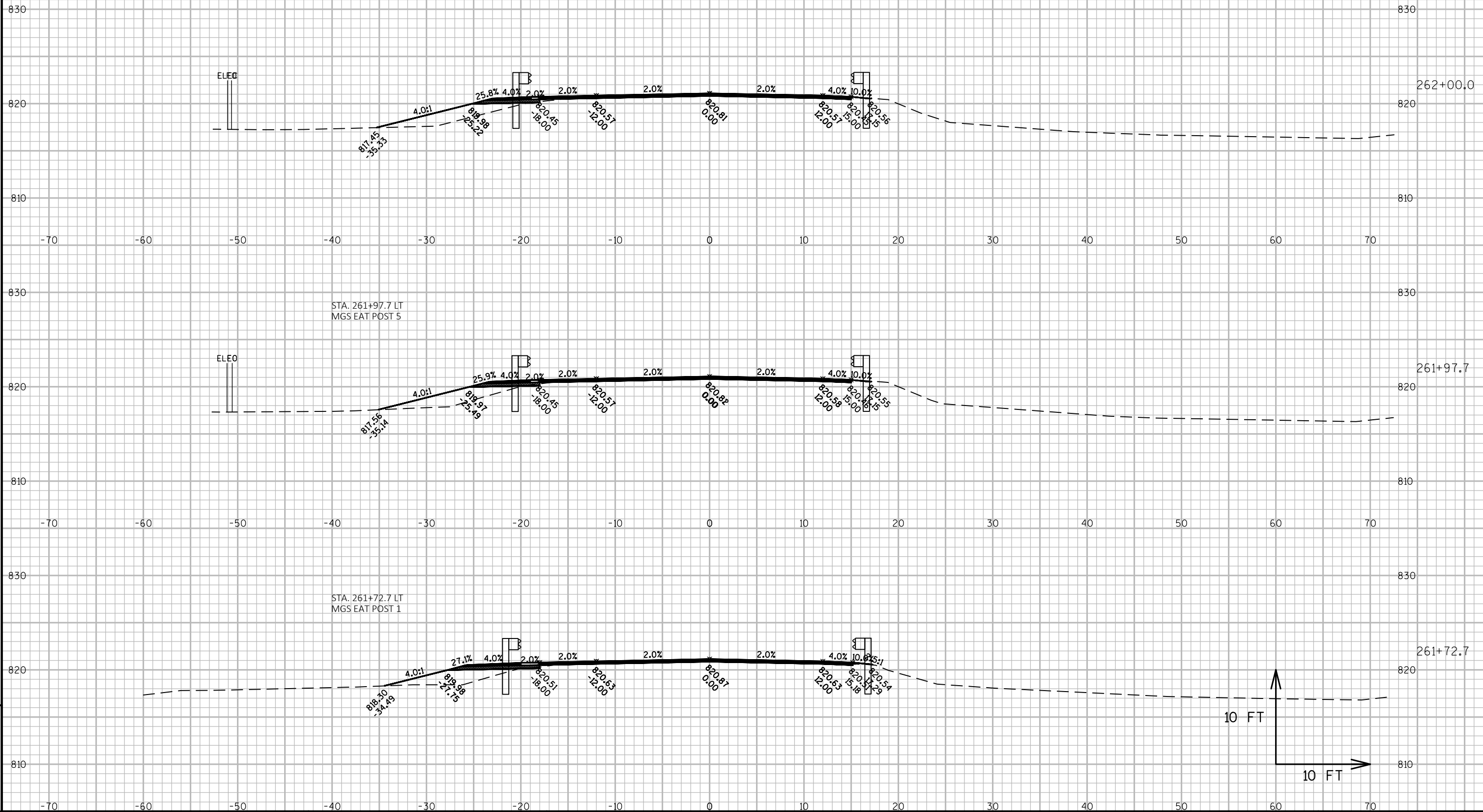
NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



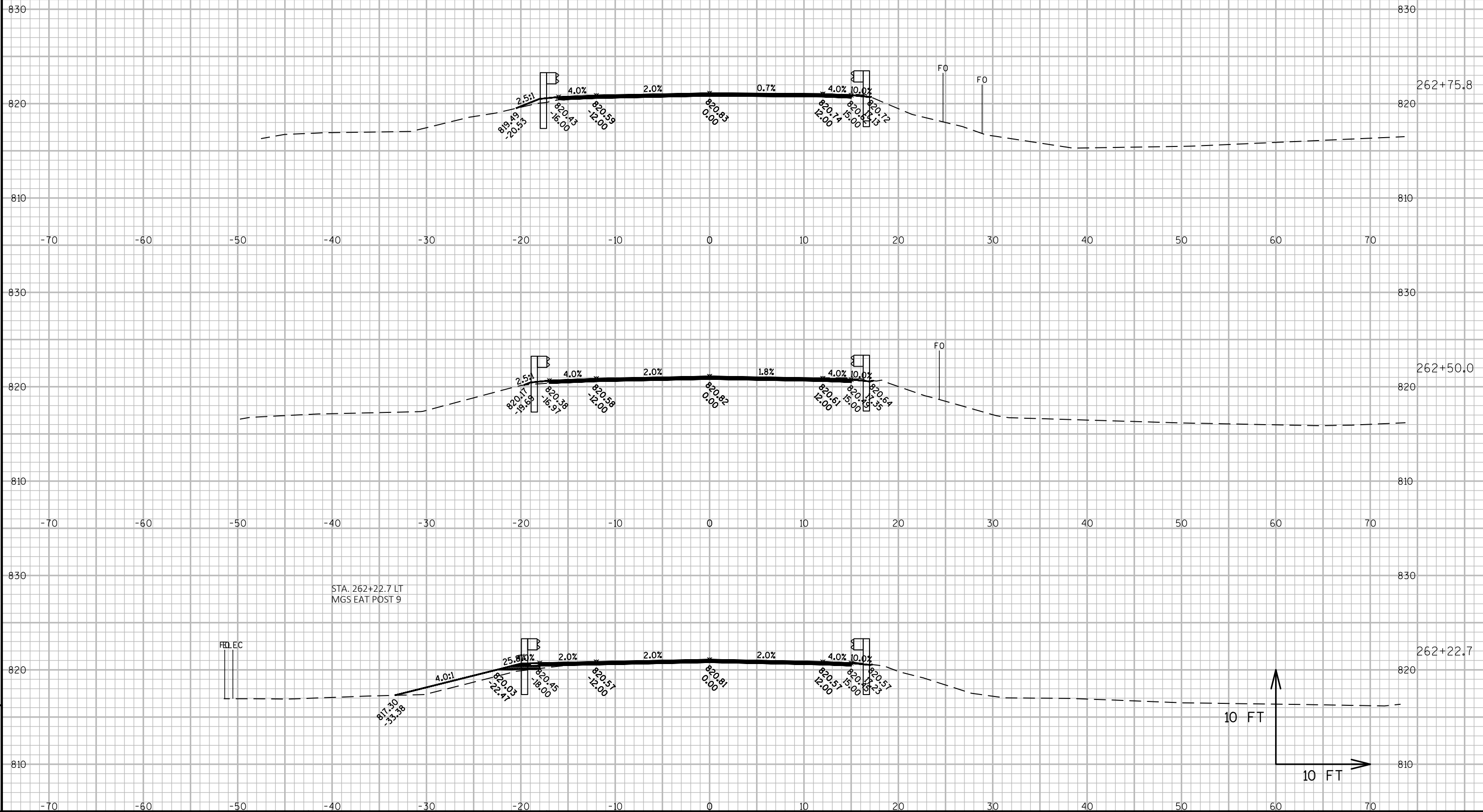
NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



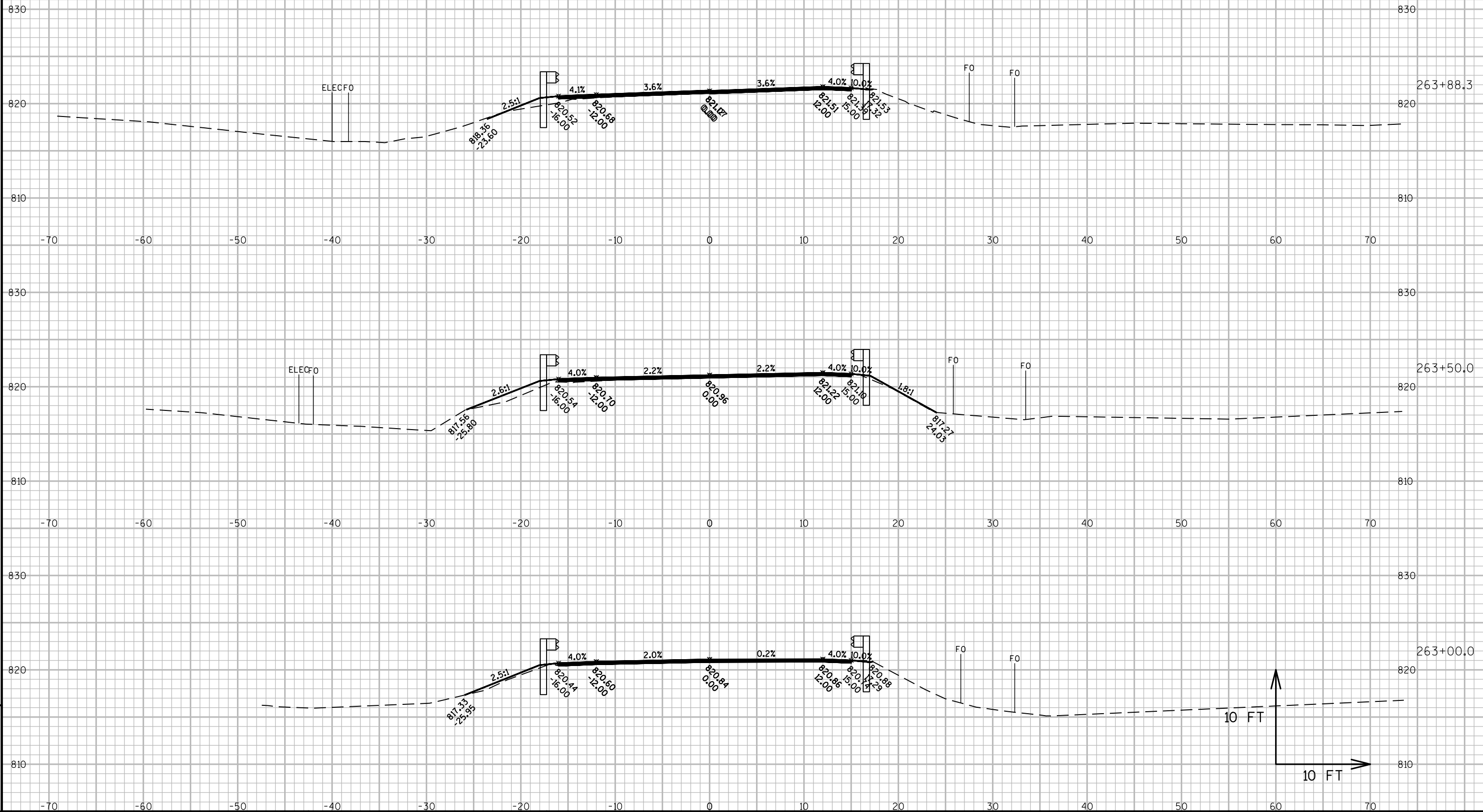
NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



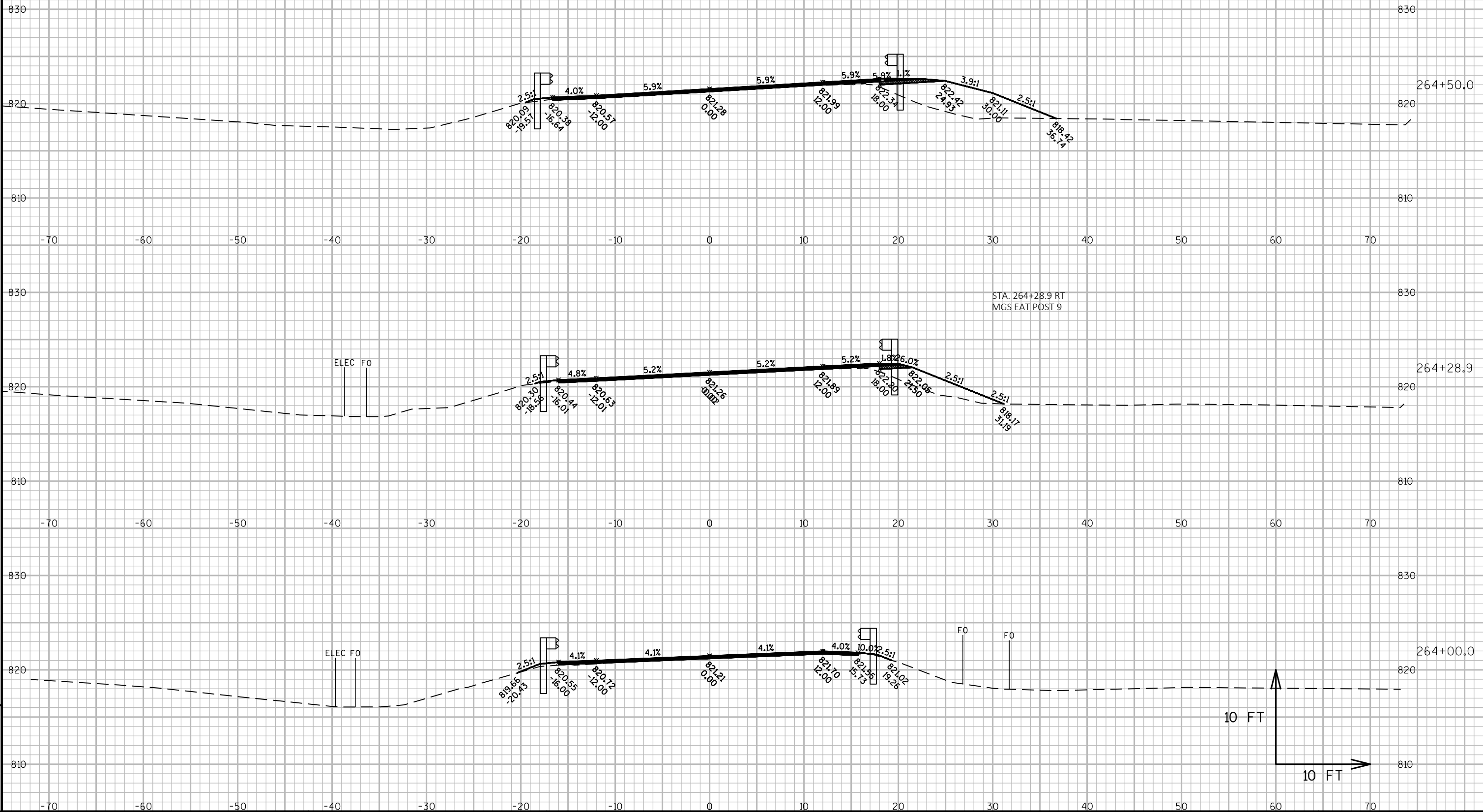
NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING

STA. 264+91.4 LT
MGS EAT POST 9

264+91.4

STA. 264+78.9 RT
MGS EAT POST 1

264+78.9

STA. 264+53.9 RT
MGS EAT POST 5

264+53.9

10 FT

10 FT

PROJECT NO: 7120-02-73,7120-02-76

HWY: STH 85

COUNTY: PEPIN

CROSS SECTIONS: STH 85 (MIDWEST GUARDRAIL SYS. - STA. 259+56 - 266+58 LT & RT)

SHEET

163

E

FILE NAME : W:\NWBE_PROJECTS\DESIGN\1215_STH_85\C3D-16\SHEETSPLAN\090204_XS-85-L-R-25956-26658-MGSINFOONLY.DWG
LAYOUT NAME - 08

PLOT DATE : 1/24/2019 10:20 AM

PLOT BY : USER

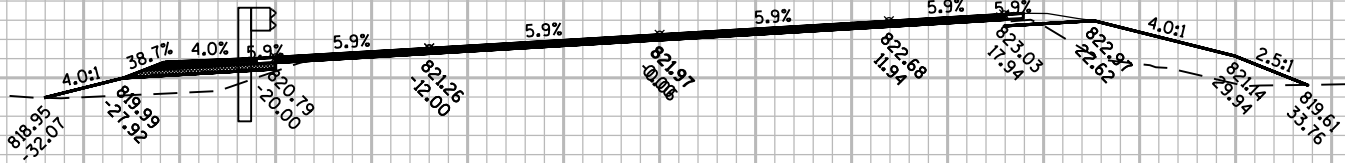
PLOT NAME :

PLOT SCALE : 1 IN:10 FT

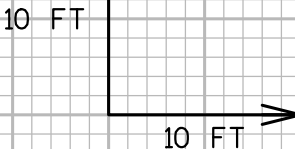
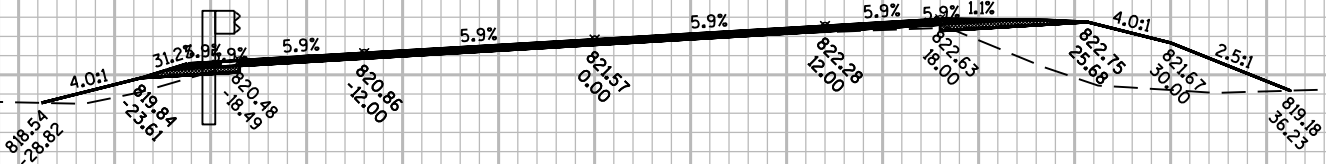
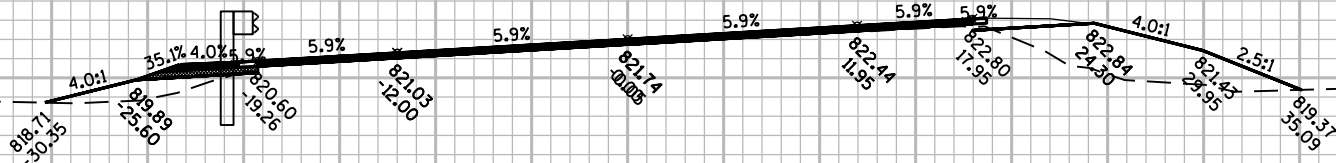
WISDOT/CADDs SHEET 49

NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING

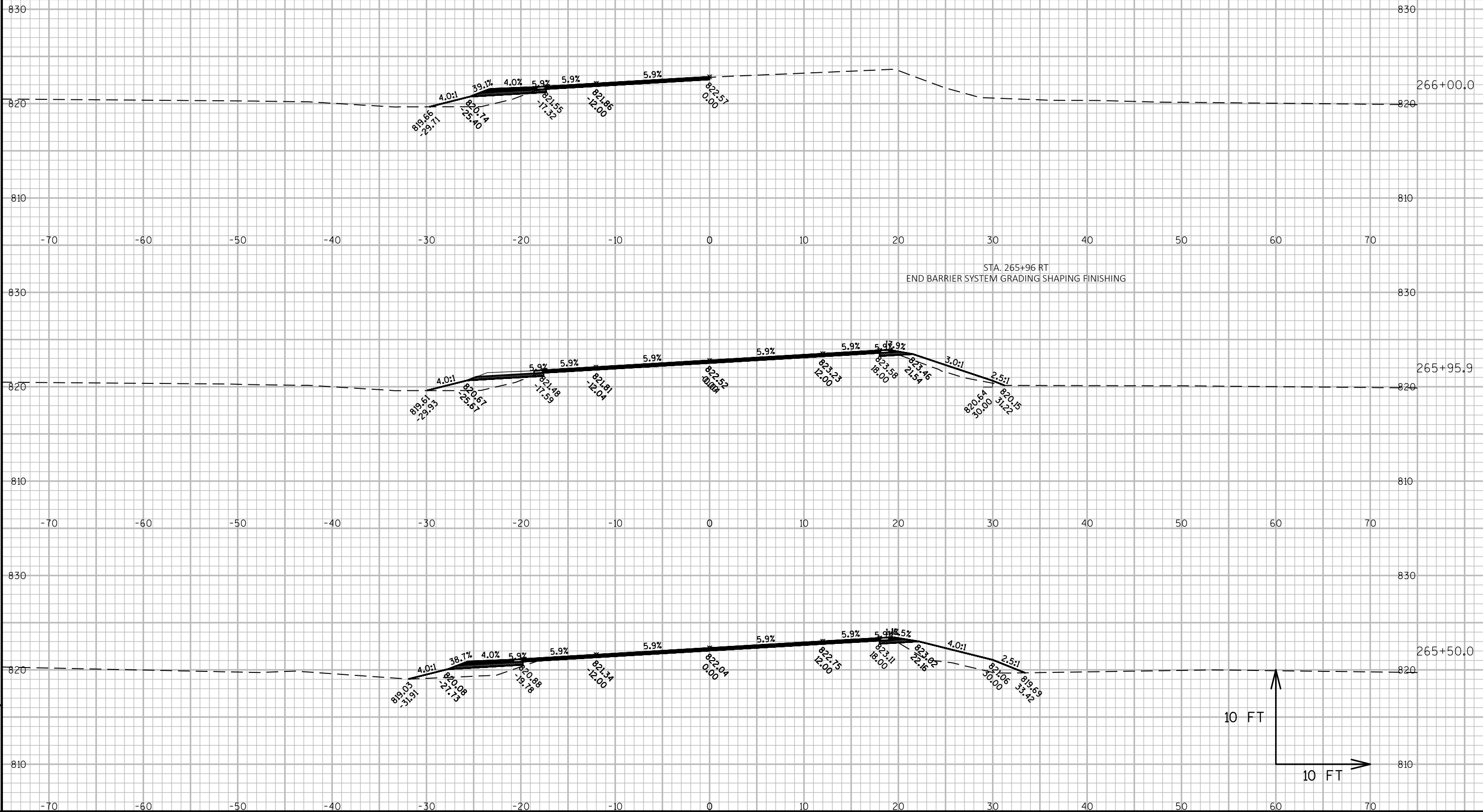
STA. 265+41.4 LT
MGS EAT POST 1



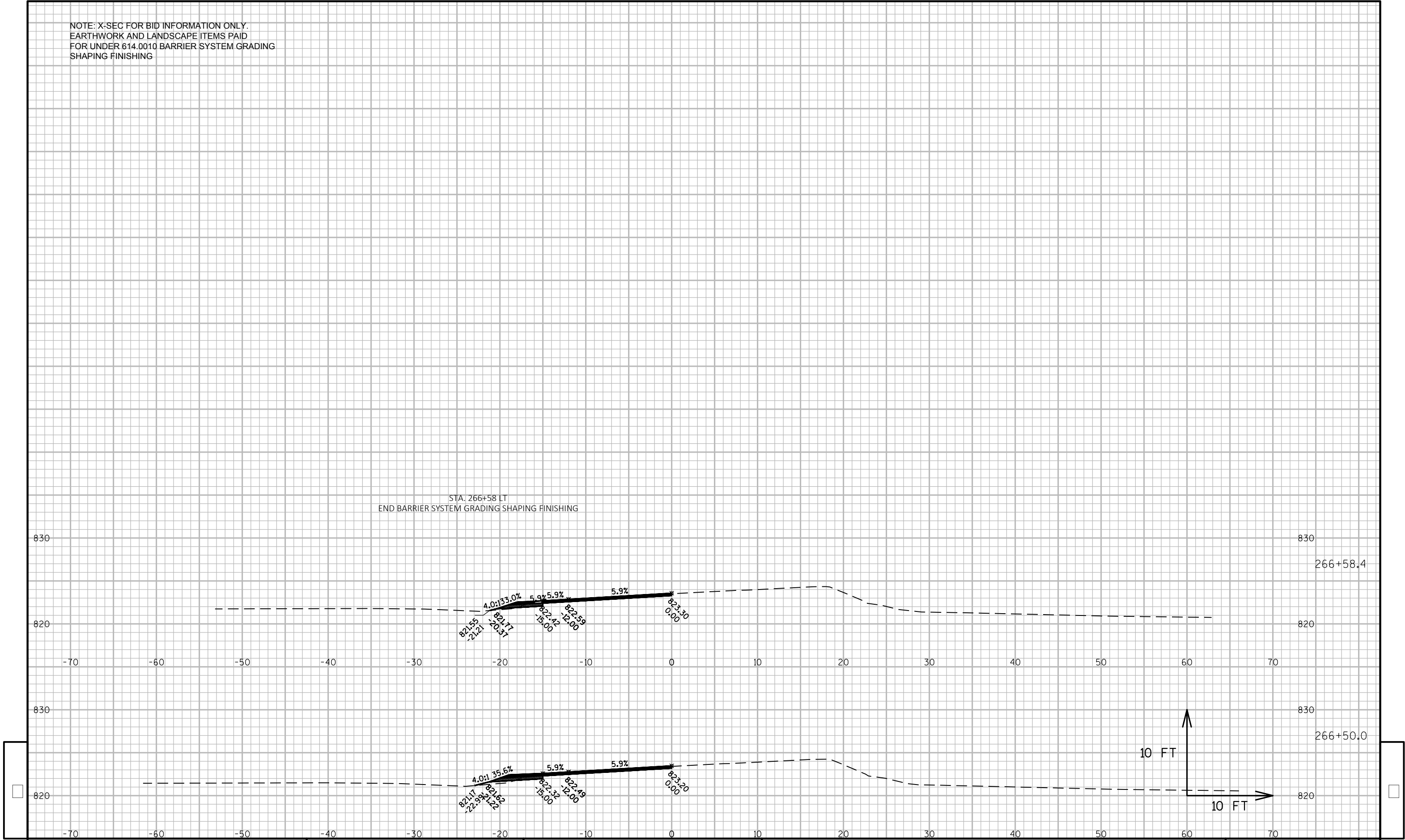
STA. 265+16.4 LT
MGS EAT POST 5



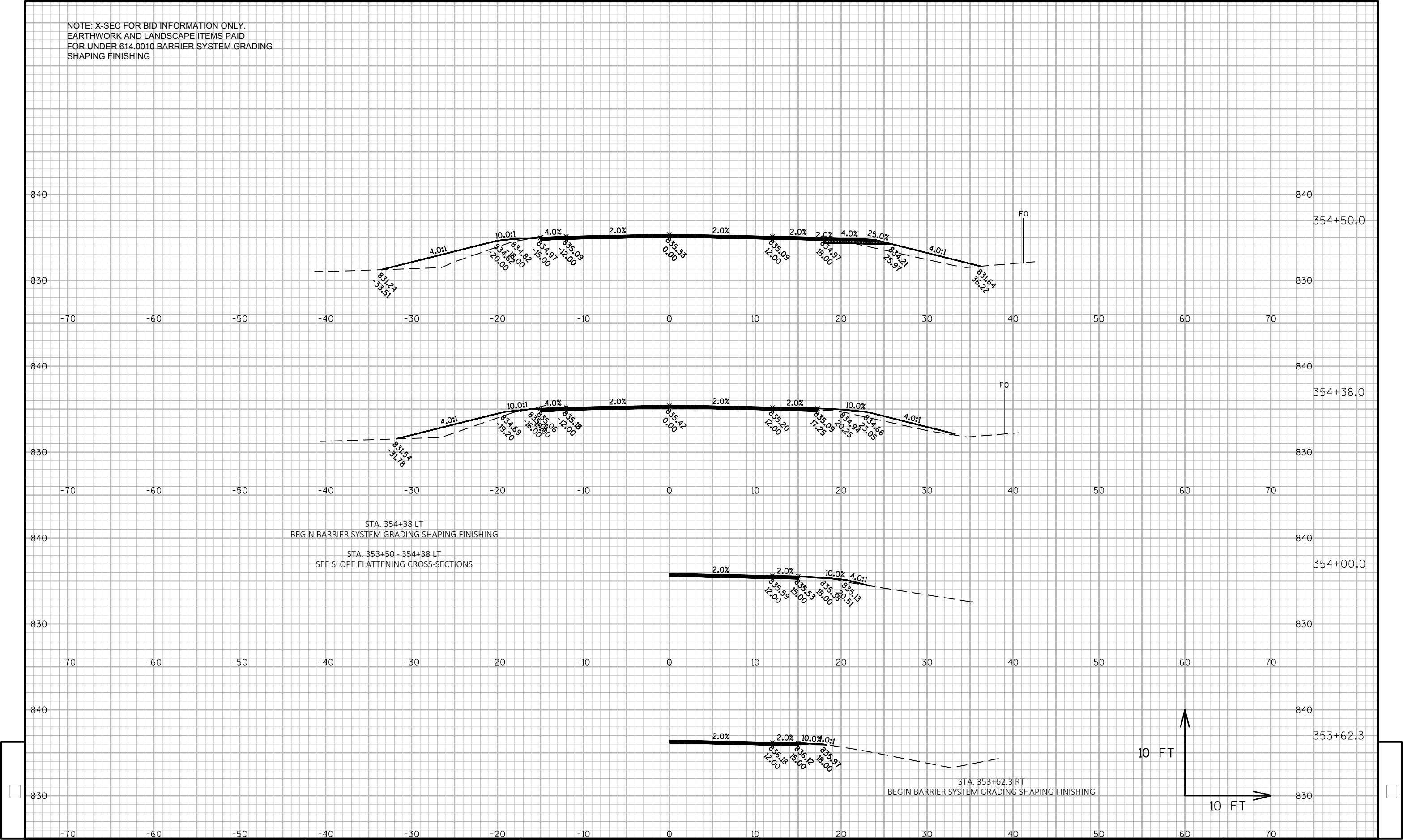
NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



PROJECT NO: 7120-02-73, 7120-02-76

HWY: STH 85

COUNTY: PEPIN

CROSS SECTIONS: STH 85 (MIDWEST GUARDRAIL SYS. - STA. 353+62- 359+23 LT & RT)

SHEET

167

E

FILE NAME : W:\NWBE_PROJECTS\DESIGN\1215_STH_85\C3D-16\SHEETS\PLAN\090205_XS-85-L-R-35362-35923-MGSINFOONLY.DWG
LAYOUT NAME - 01

PLOT DATE : 1/24/2019 10:32 AM

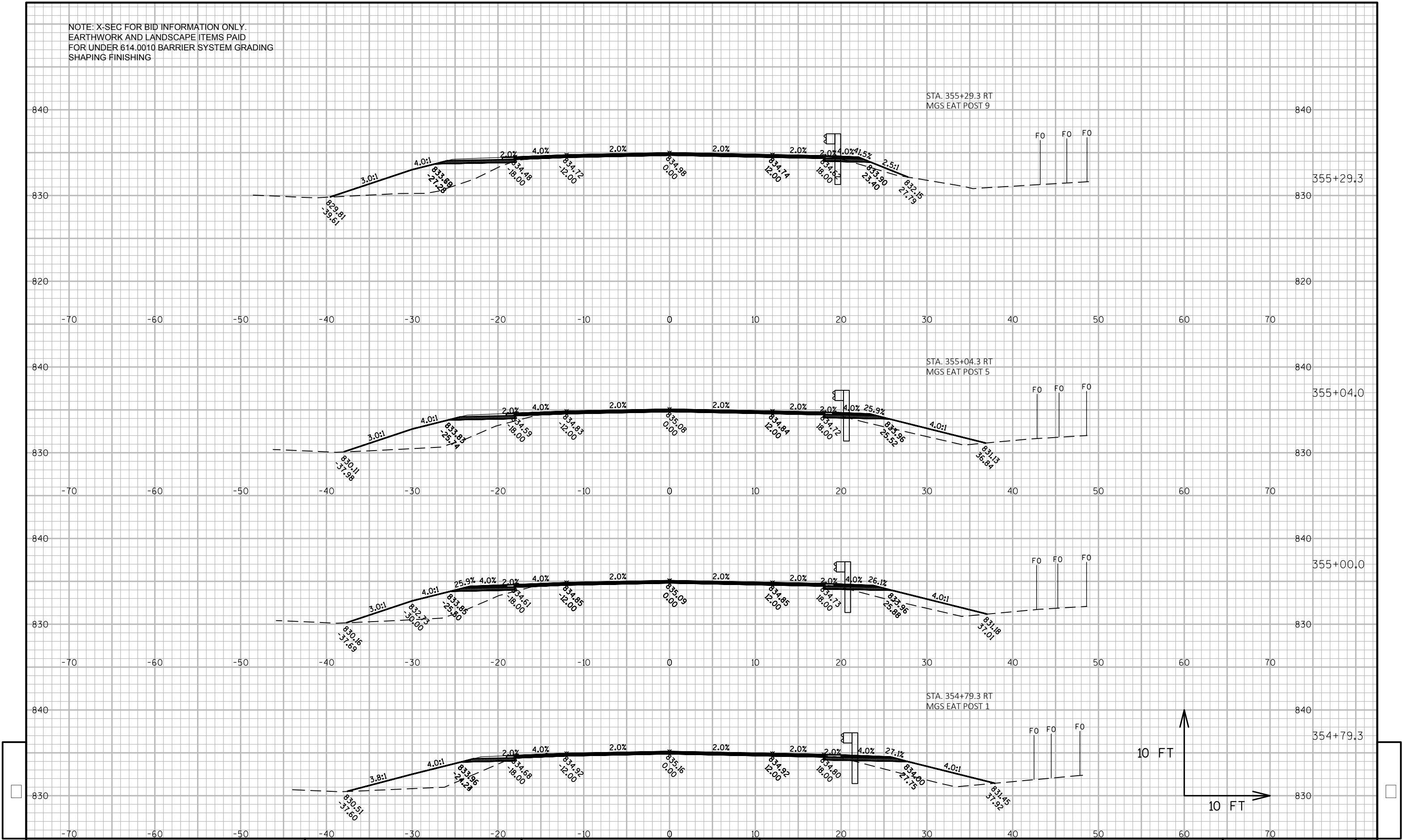
PLOT BY : USER

PLOT NAME :

PLOT SCALE : 1 IN:10 FT

WISDOT/CADDs SHEET 49

NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



PROJECT NO: 7120-02-73, 7120-02-76

HWY: STH 85

COUNTY: PEPIN

CROSS SECTIONS: STH 85 (MIDWEST GUARDRAIL SYS. - STA. 353+62- 359+23 LT & RT)

SHEET

168

E

FILE NAME : W:\NWBE_PROJECTS\DESIGN\1215_STH_85\C3D-16\SHEETS\PLAN\090205_XS-85-L-R-35362-35923-MGSINFOONLY.DWG
LAYOUT NAME - 02

PLOT DATE : 1/24/2019 10:32 AM

PLOT BY : USER

PLOT NAME :

PLOT SCALE : 1 IN:10 FT

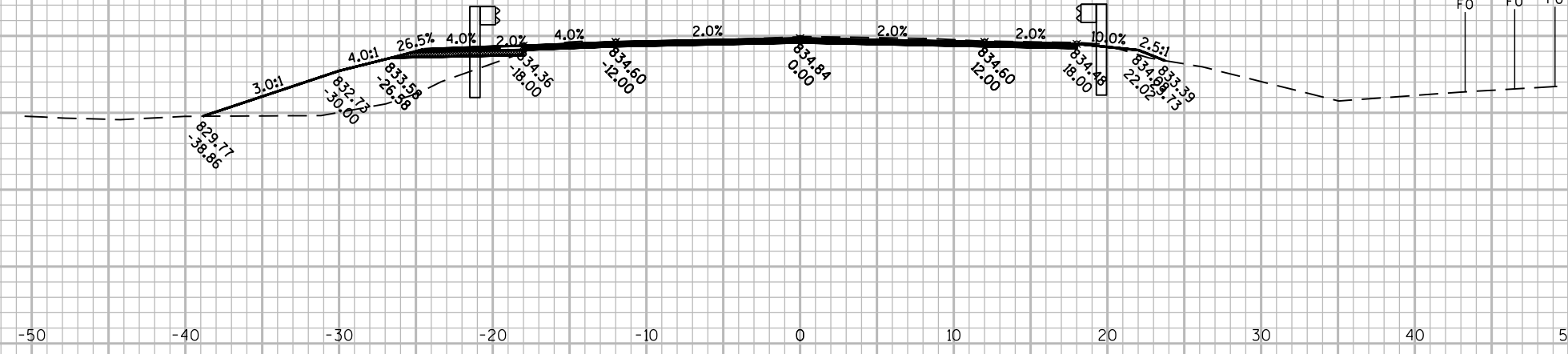
WISDOT/CADDs SHEET 49

NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING

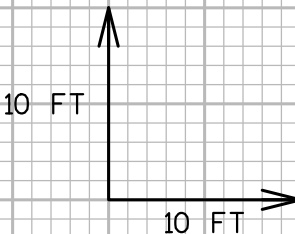
STA. 355+62.0 LT
MGS EAT POST 5



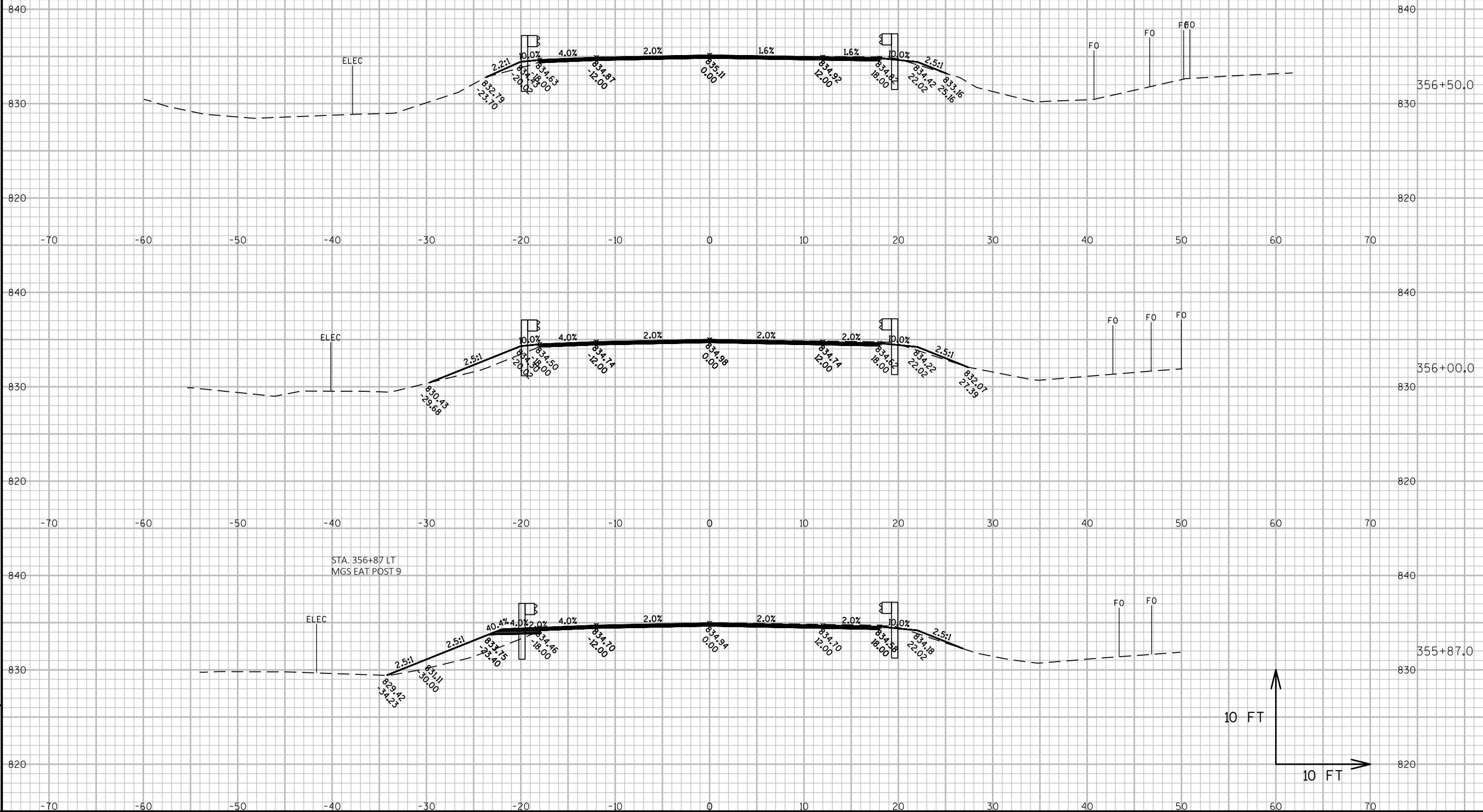
STA. 355+50.0 LT
MGS EAT POST 4



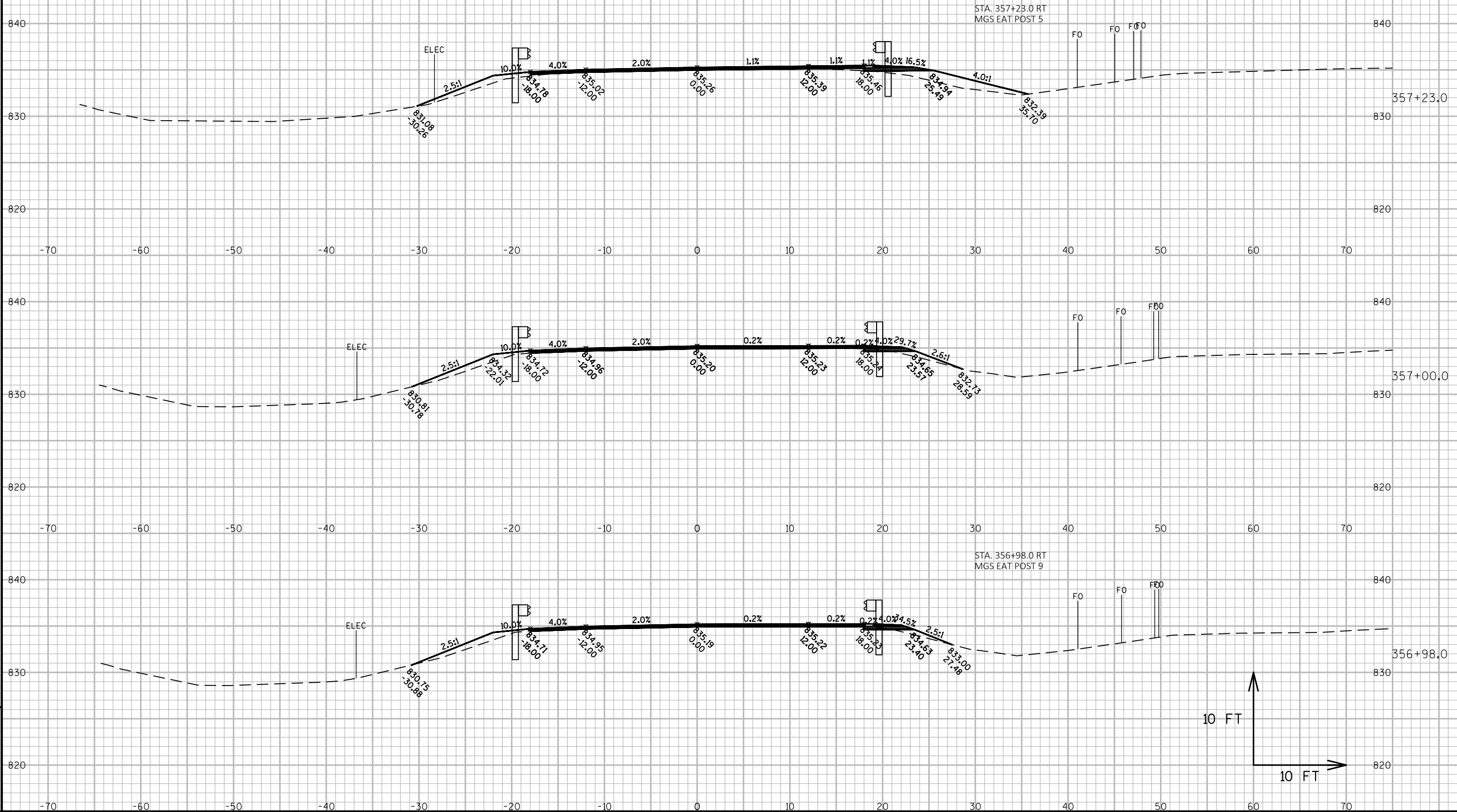
STA. 355+37.0 LT
MGS EAT POST 1



NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING

STA. 357+80.7 LT
MGS EAT POST 5

ELEC

ELEC

FO

840

357+80.7

830

-70

-60

-50

-40

-30

-20

-10

0

10

20

30

40

50

60

70

STA. 357+55.7 LT
MGS EAT POST 9

ELEC

ELEC

FO

FO

FO

840

357+55.7

830

-70

-60

-50

-40

-30

-20

-10

0

10

20

30

40

50

60

70

STA. 357+50.0

ELEC

ELEC

FO

FO

FO

840

357+50.0

830

-70

-60

-50

-40

-30

-20

-10

0

10

20

30

40

50

60

70

STA. 357+48.0 RT
MGS EAT POST 1

ELEC

ELEC

FO

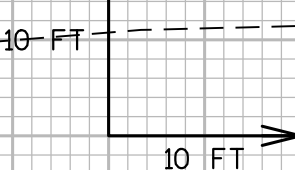
FO

FO

840

357+48.0

830



PROJECT NO: 7120-02-73,7120-02-76

HWY: STH 85

COUNTY: PEPIN

CROSS SECTIONS: STH 85 (MIDWEST GUARDRAIL SYS. - STA. 353+62- 359+23 LT & RT)

SHEET

172

E

FILE NAME : W:\NWBE_PROJECTS\DESIGN\1215_STH_85\C3D-16\SHEETS\PLAN\090205_XS-85-L-R-35362-35923-MGSINFOONLY.DWG
LAYOUT NAME - 06

PLOT DATE : 1/24/2019 10:33 AM

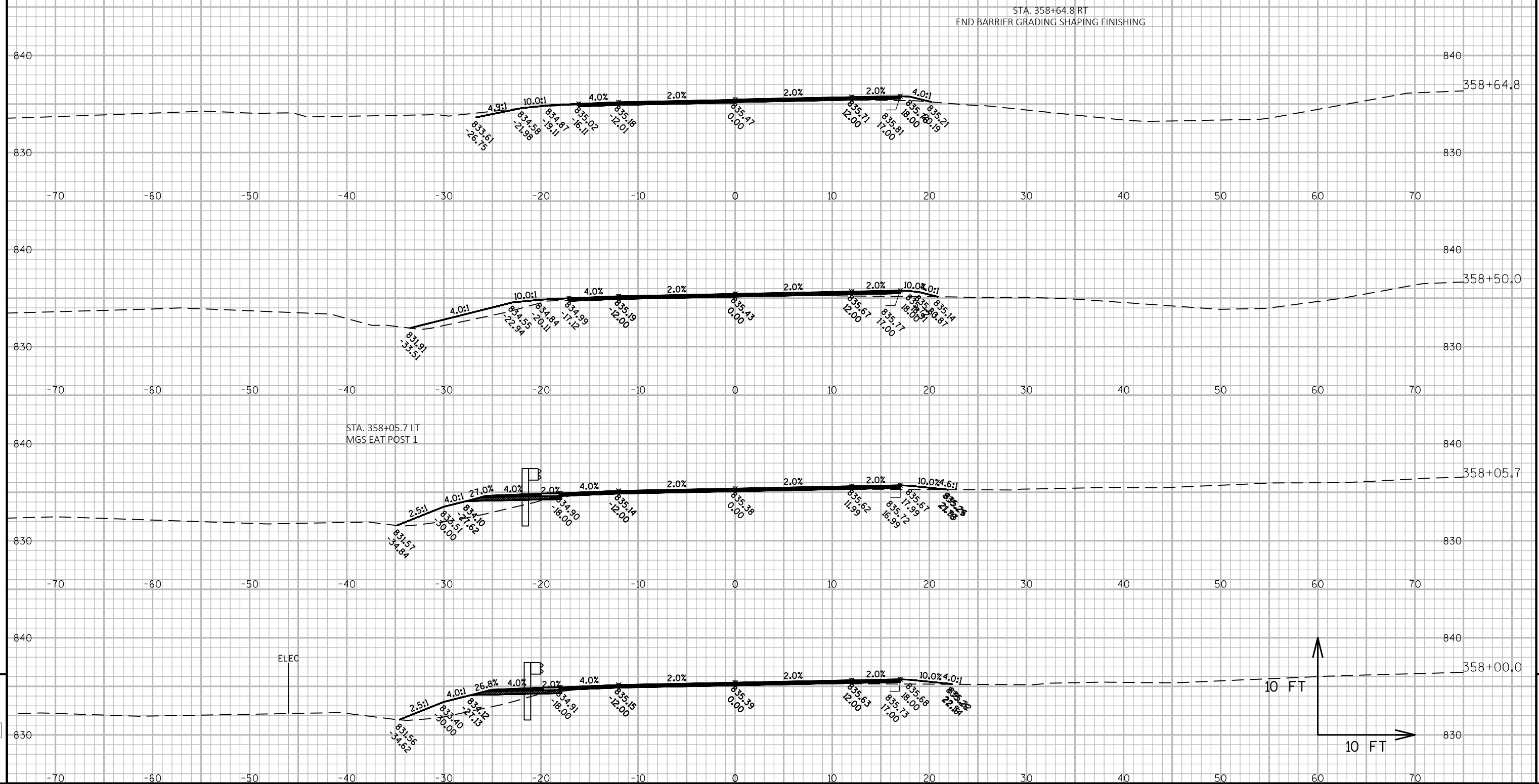
PLOT BY : USER

PLOT NAME :

PLOT SCALE : 1 IN:10 FT

WISDOT/CADDs SHEET 49

NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



PROJECT NO: 7120-02-73, 7120-02-76

HWY:STH 85

COUNTY: PEPIN

CROSS SECTIONS:

SHEET 173

FILE NAME : W:\NWBE_PROJECTS\DESIGN\1215_STH_85\C3D-16\SHEETSPLAN\090205_XS-85-L-R-35362-35923-MGSINFOONLY.DWG
LAYOUT NAME - 07

PLOT DATE : 1/24/2019 10:33 AM

PLOT BY : USER

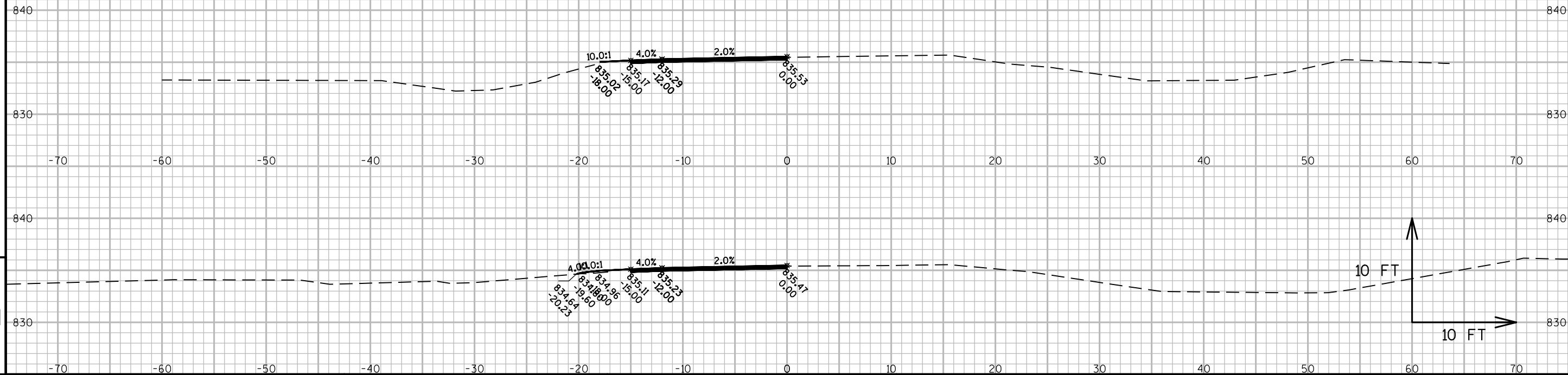
PLOT NAME :

PLOT SCALE : 1 IN:10 FT

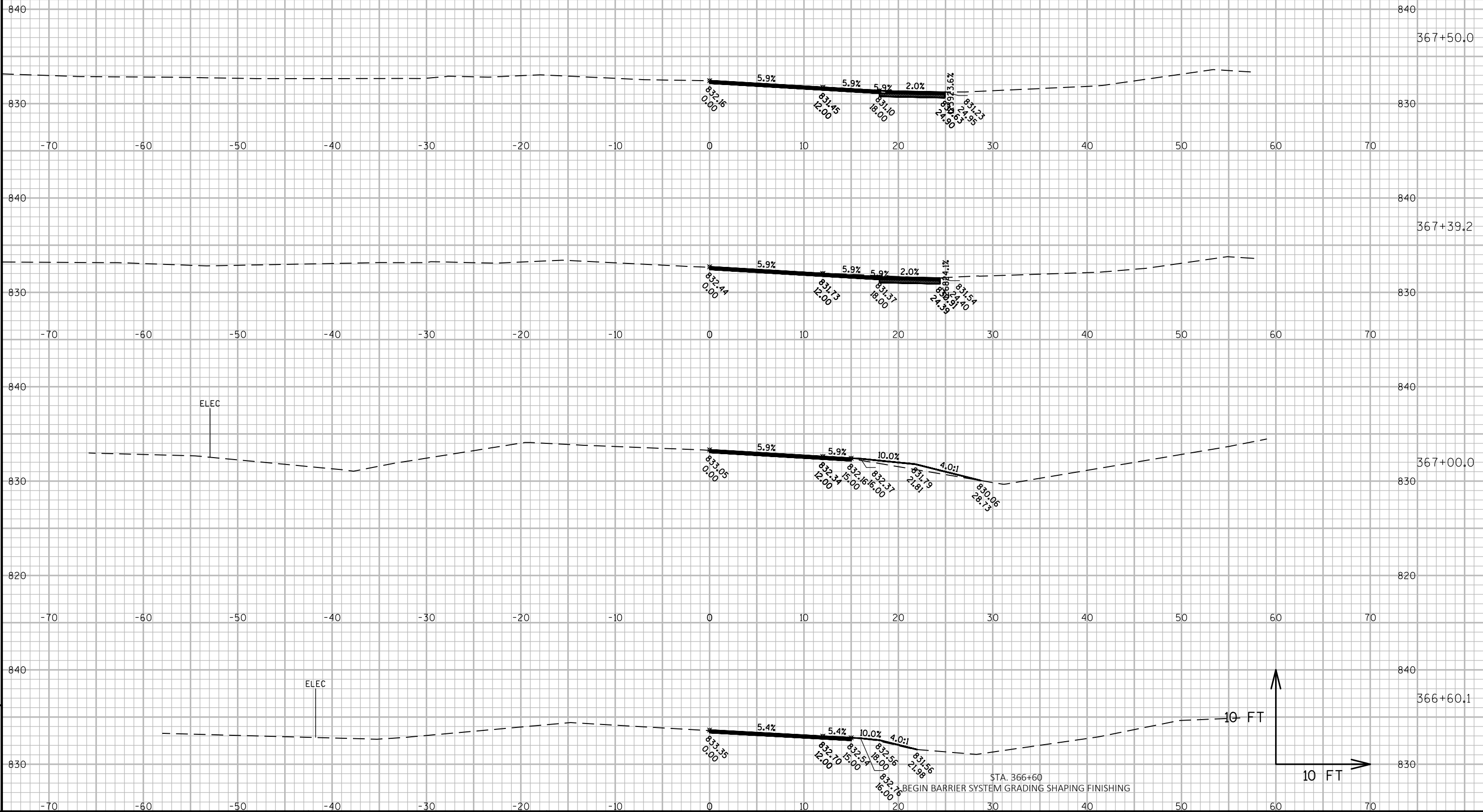
WISDOT/CADDS SHEET 49

NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING

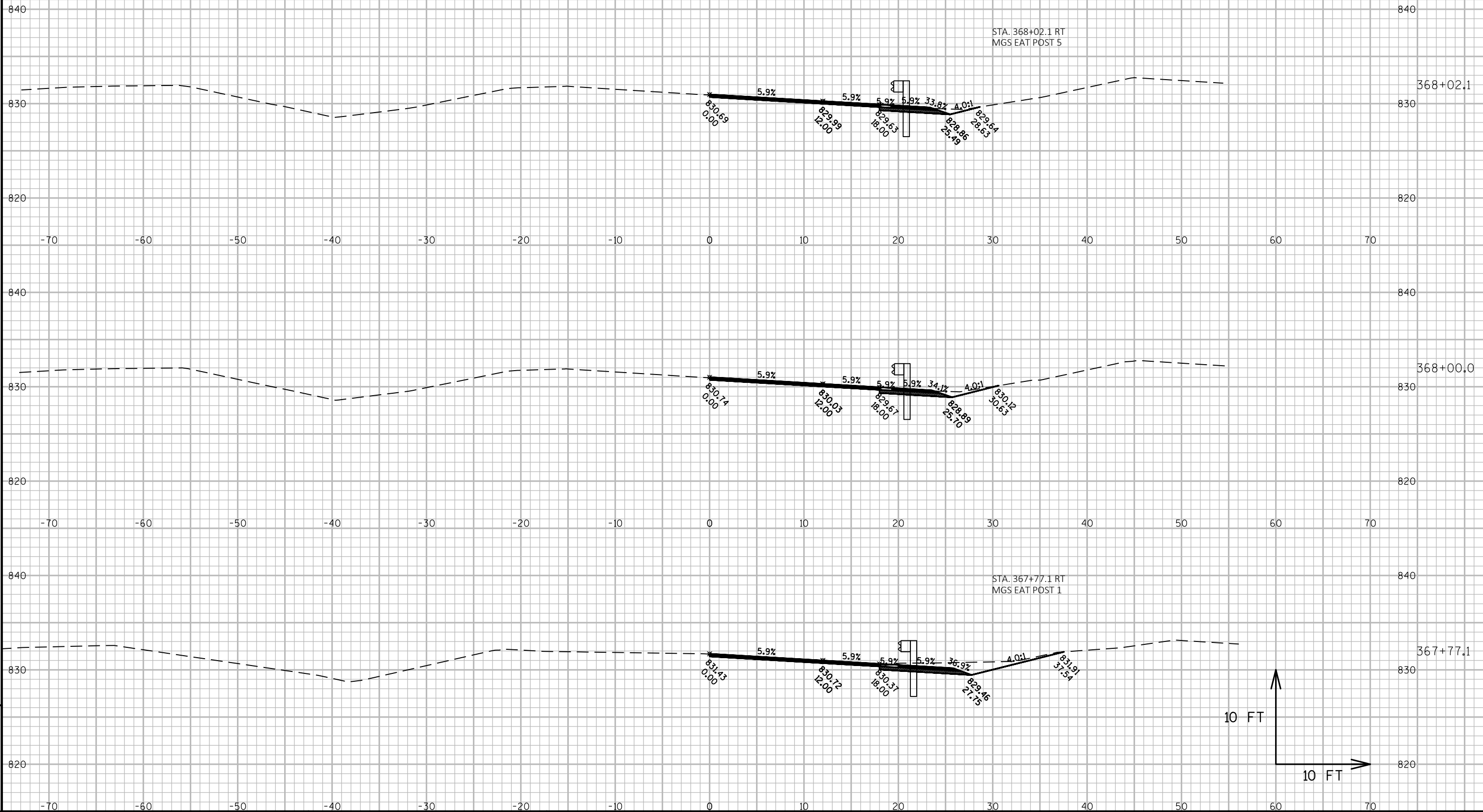
STA. 359+22.7
END BARRIER SYSTEM GRADING SHAPING FINISHING



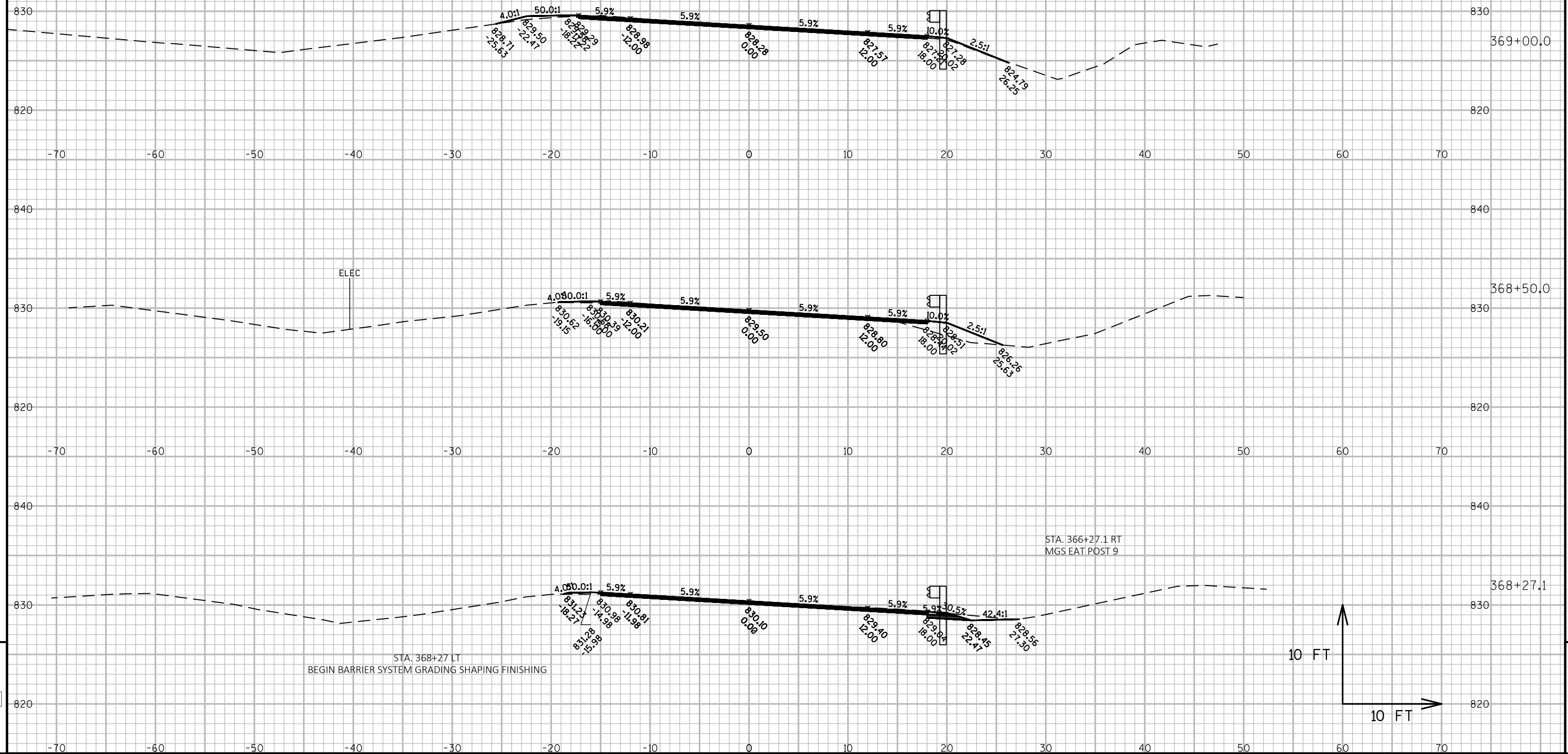
NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



PROJECT NO: 7120-02-73, 7120-02-76

HWY: STH 85

COUNTY: PEPIN

CROSS SECTIONS: STH 85 (MIDWEST GUARDRAIL SYS. - STA. 366+60- 375+75 LT & RT)

SHEET

77

E

FILE NAME : W:\NWBE_PROJECTS\DESIGN\1215_STH_85\C3D-16\SHEETSPLAN\090206_XS-85-L-R-36660-37575-MGSINFOONLY.DWG
LAYOUT NAME - 03

PLOT DATE : 1/24/2019 10:37 AM

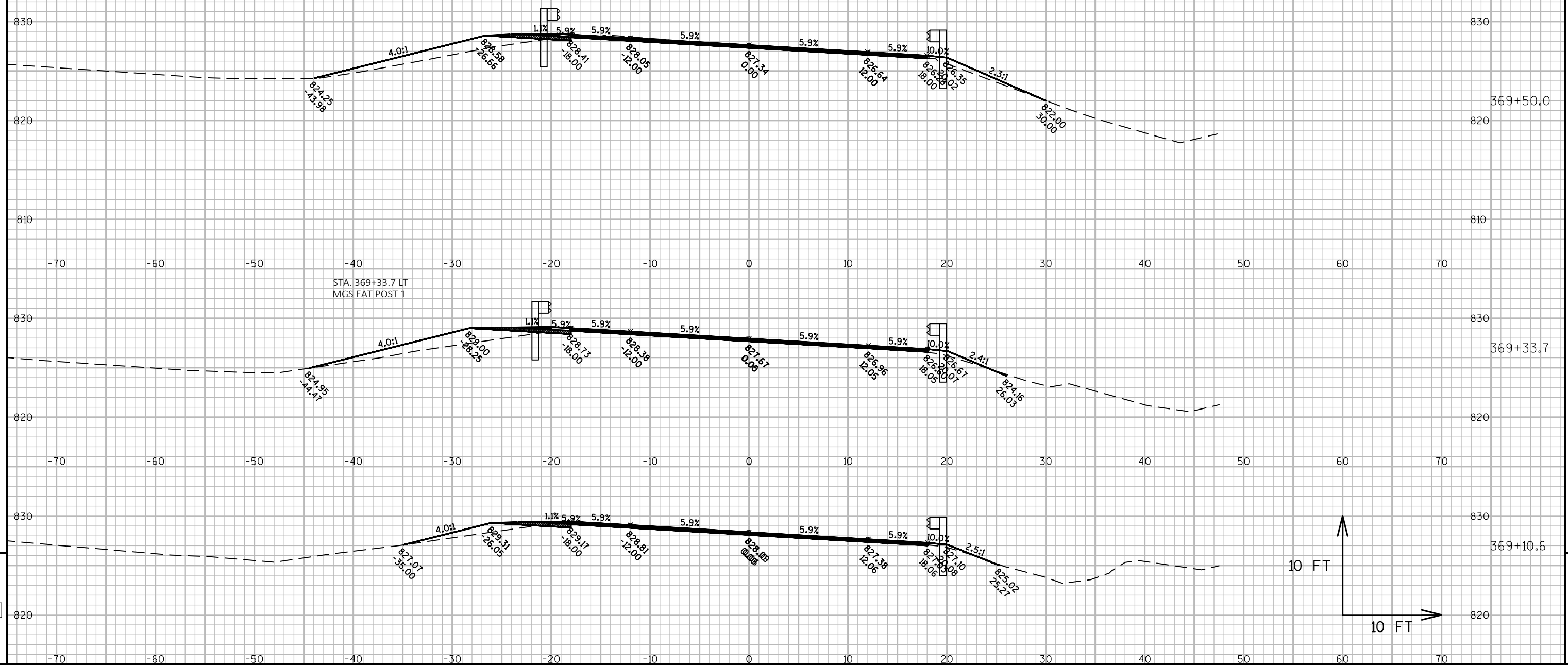
PLOT BY : USER

PLOT NAME :

PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



PROJECT NO: 7120-02-73, 7120-02-76

HWY:STH 85

COUNTY: PEPIN

CROSS SECTIONS: STH 85 (MIDWEST GUARDRAIL SYS. - STA. 366+60- 375+75 LT & RT)

SHEET

78

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FILE NAME : W:\NWBE_PROJECTS\DESIGN\1215_STH_85\C3D-16\SHEETSPLAN\090206_XS-85-L-R-36660-37575-MGSINFOONLY.DWG
LAYOUT NAME - 04

PLOT DATE : 1/24/2019 10:37 AM

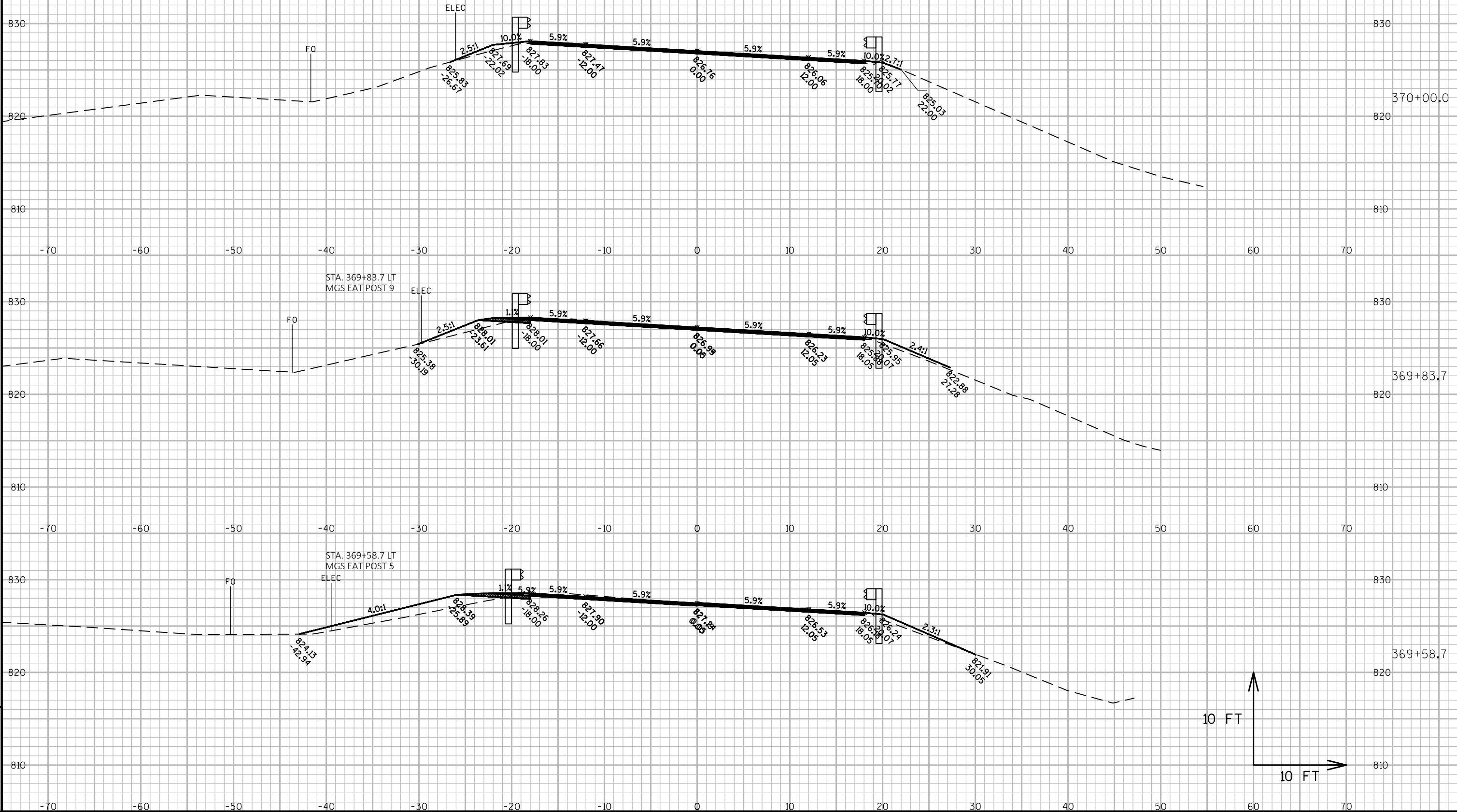
PLOT BY : USER

PLOT NAME :

PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



PROJECT NO: 7120-02-73, 7120-02-76

HWY: STH 85

COUNTY: PEPIN

CROSS SECTIONS: STH 85 (MIDWEST GUARDRAIL SYS. - STA. 366+60- 375+75 LT & RT)

SHEET

179

E

FILE NAME : W:\NWBE_PROJECTS\DESIGN\1215_STH_85\C3D-16\SHEETS\PLAN\090206_XS-85-L-R-36660-37575-MGSINFOONLY.DWG
LAYOUT NAME - 05

PLOT DATE : 1/24/2019 10:37 AM

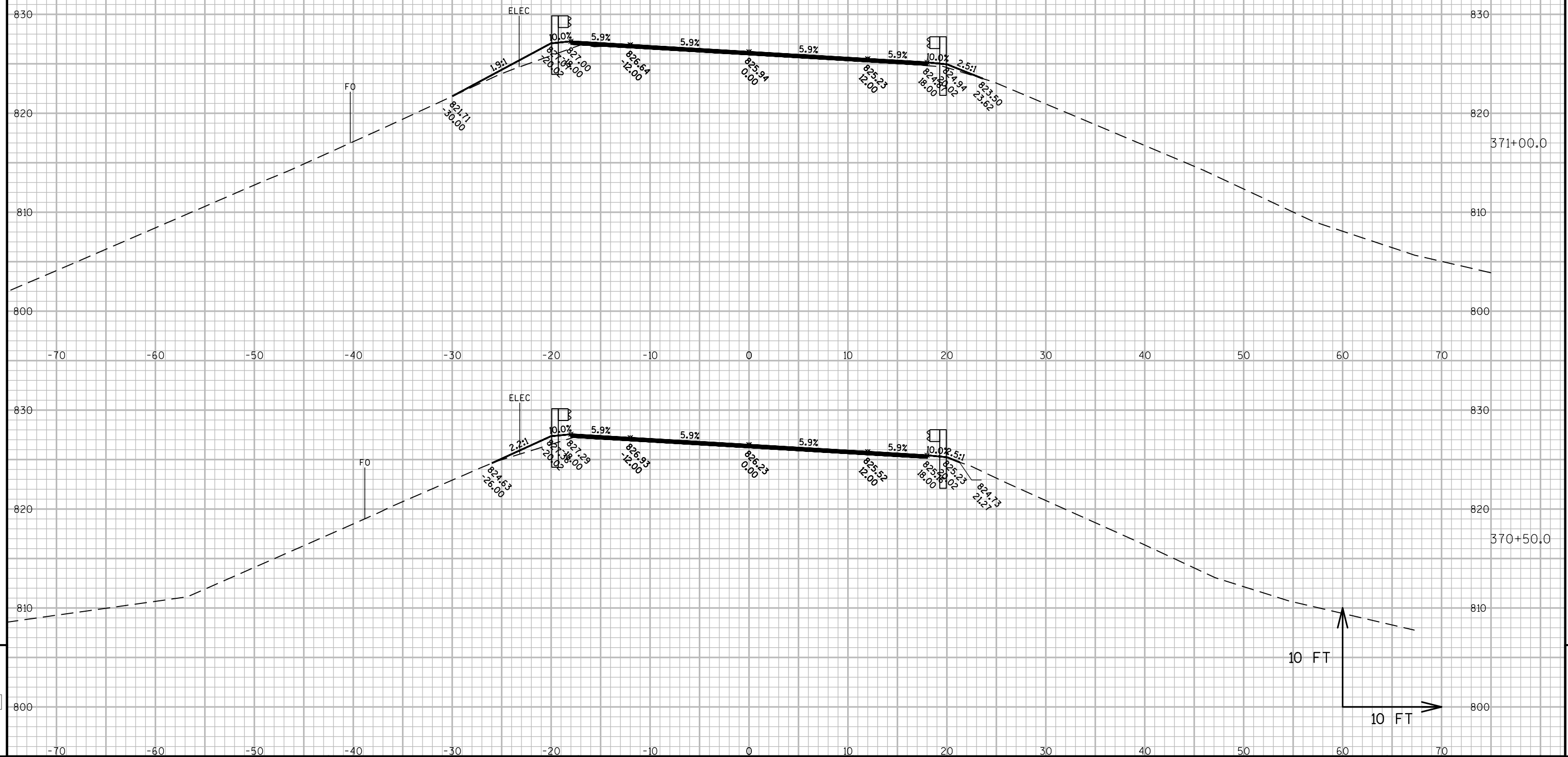
PLOT BY : USER

PLOT NAME :

PLOT SCALE : 1 IN:10 FT

WISDOT/CADDs SHEET 49

NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



PROJECT NO: 7120-02-73, 7120-02-76

HWY:STH 85

COUNTY: PEPIN

CROSS SECTIONS: STH 85 (MIDWEST GUARDRAIL SYS. - STA. 366+60- 375+75 LT & RT)

SHEET 100

FILE NAME : W:\NWBE_PROJECTS\DESIGN\1215_STH_85\C3D-16\SHEETSPLAN\090206_XS-85-L-R-36660-37575-MGSINF00ONLY.DWG
LAYOUT NAME - 06

PLOT DATE : 1/24/2019 10:37 AM

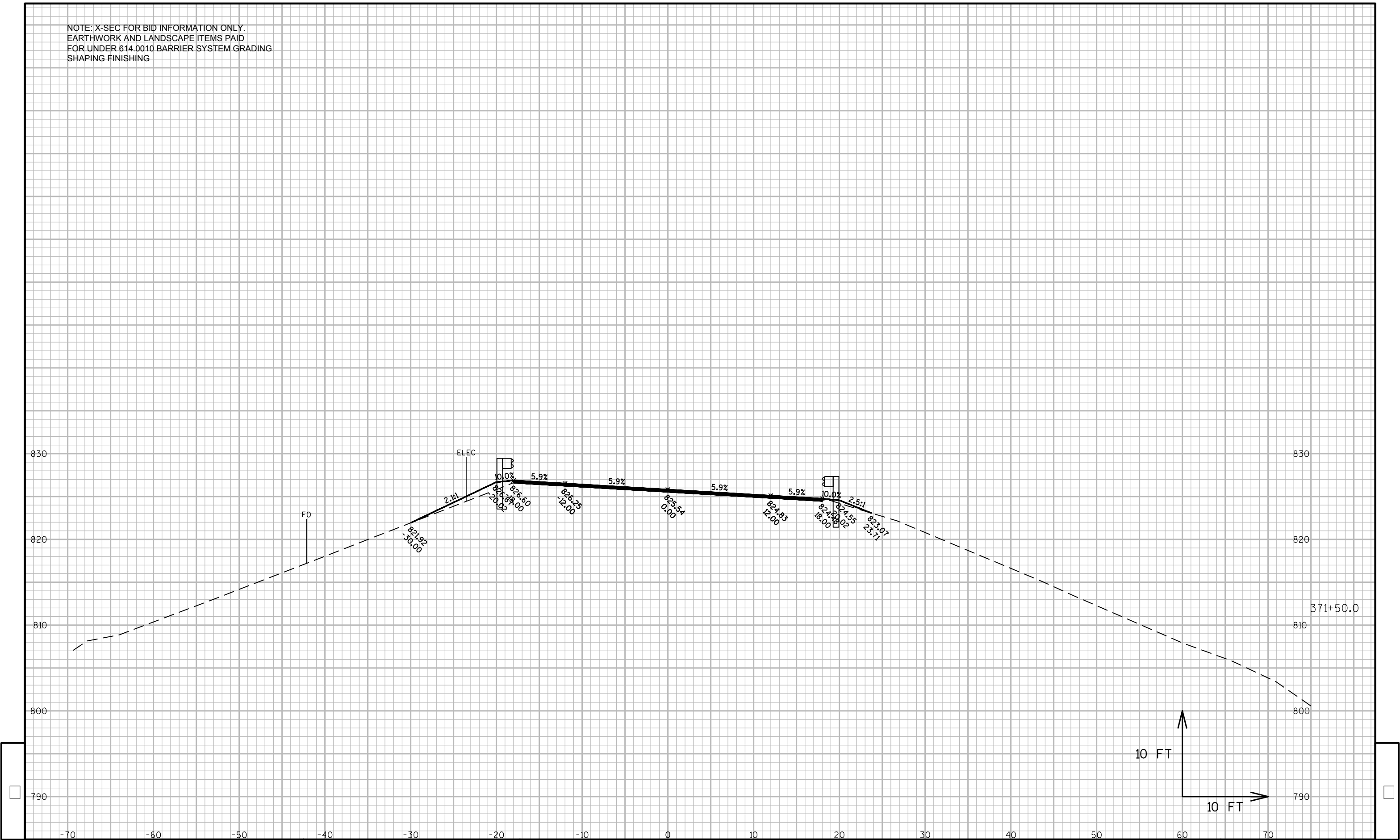
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PLOT NAME :

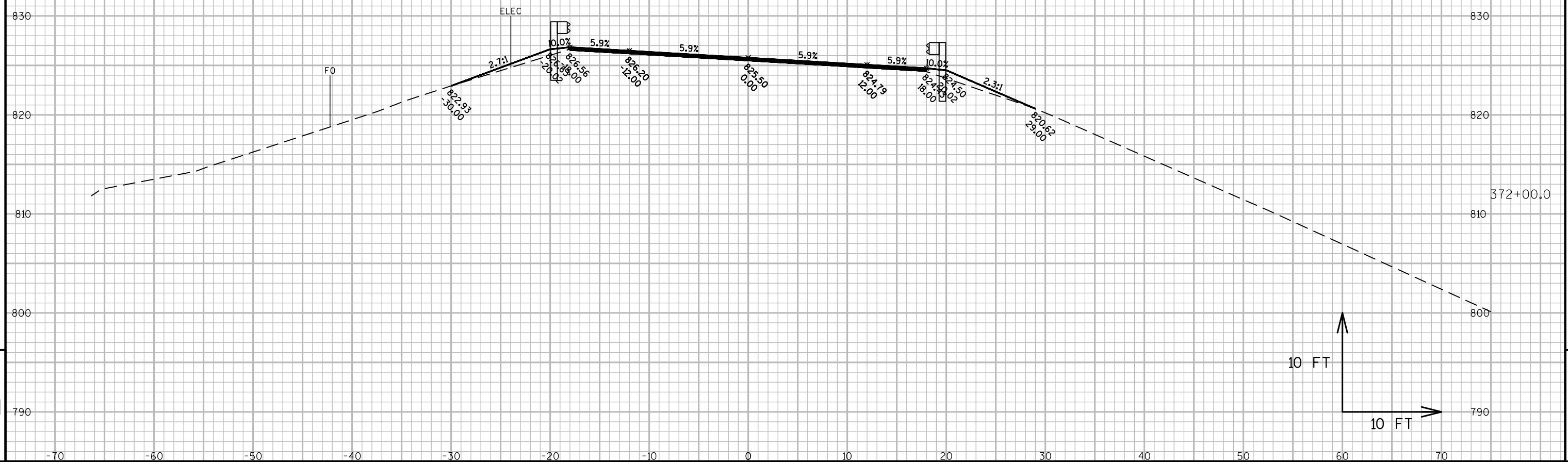
PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



PROJECT NO: 7120-02-73, 7120-02-76

HWY: STH 85

COUNTY: PEPIN

CROSS SECTIONS: STH 85 (MIDWEST GUARDRAIL SYS. - STA. 366+60- 375+75 LT & RT)

SHEET 103

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FILE NAME : W:\NWBE_PROJECTS\DESIGN\1215_STH_85\C3D-16\SHEETSPLAN\090206_XS-85-L-R-36660-37575-MGSINFOONLY.DWG
LAYOUT NAME - 08

PLOT DATE : 1/24/2019 10:38 AM

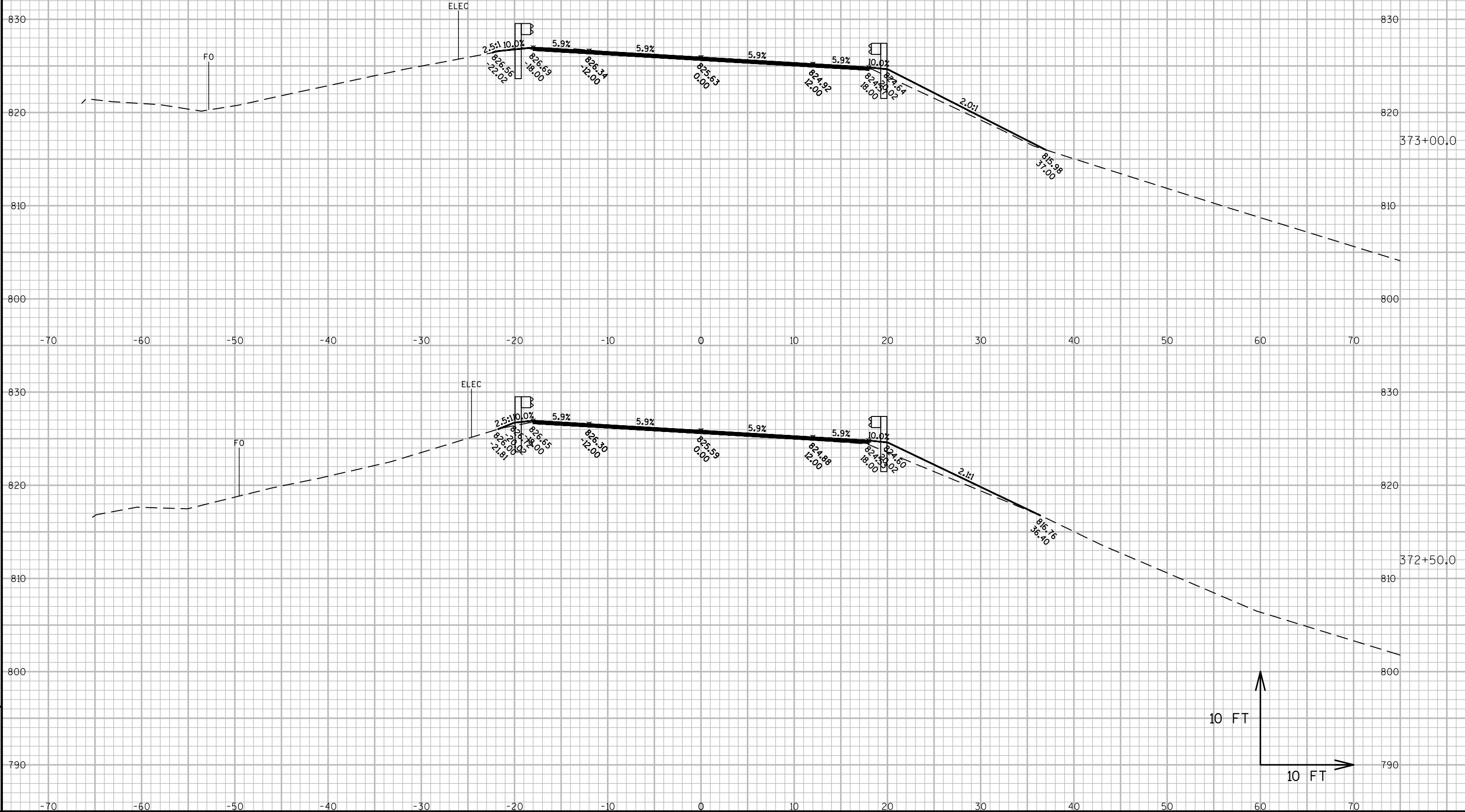
PLOT BY : USER

PLOT NAME :

PLOT SCALE : 1 IN:10 FT

WISDOT/CADDS SHEET 49

NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING

STA. 373+39.97 LT
MGS EAT POST 5

ELEC

FO

1.1%

5.9%

5.9%

5.9%

5.9%

5.9%

10.0%

2.5:1

STA. 373+14.9 LT
MGS EAT POST 9

ELEC

FO

2.5:1

22.6%

1.1%

5.9%

5.9%

5.9%

5.9%

5.9%

10.0%

2.5:1

830

820

810

800

-70

-60

-50

-40

-30

-20

-10

0

10

20

30

40

50

60

70

830

820

810

800

373+39.9

830

820

810

800

-70

-60

-50

-40

-30

-20

-10

0

10

20

30

40

50

60

70

830

820

810

800

373+14.9

10 FT

10 FT

PROJECT NO: 7120-02-73, 7120-02-76

HWY: STH 85

COUNTY: PEPIN

CROSS SECTIONS: STH 85 (MIDWEST GUARDRAIL SYS. - STA. 366+60- 375+75 LT & RT)

SHEET

184

E

FILE NAME : W:\NWBE_PROJECTS\DESIGN\1215_STH_85\C3D-16\SHEETS\PLAN\090206_XS-85-L-R-36660-37575-MGSINFOONLY.DWG
LAYOUT NAME - 10

PLOT DATE : 1/24/2019 10:38 AM

PLOT BY : USER

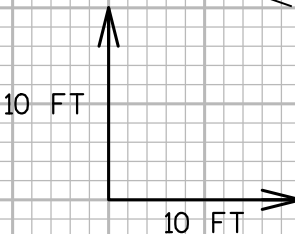
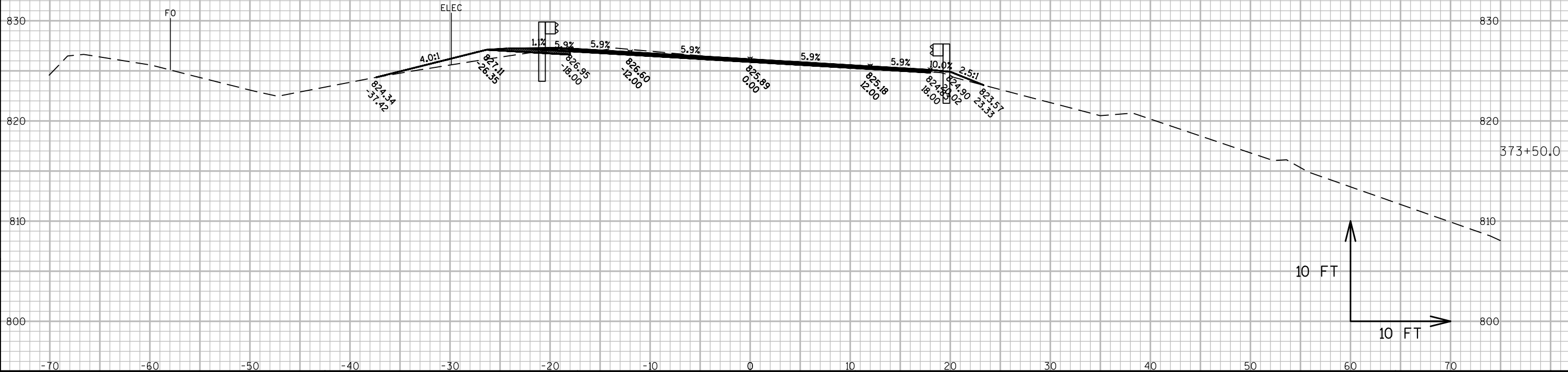
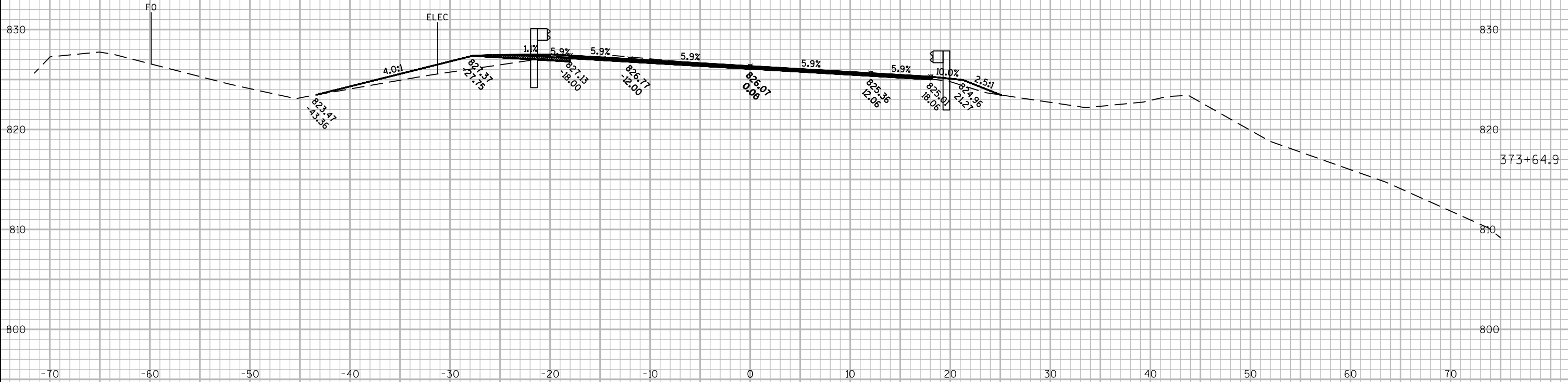
PLOT NAME :

PLOT SCALE : 1 IN:10 FT

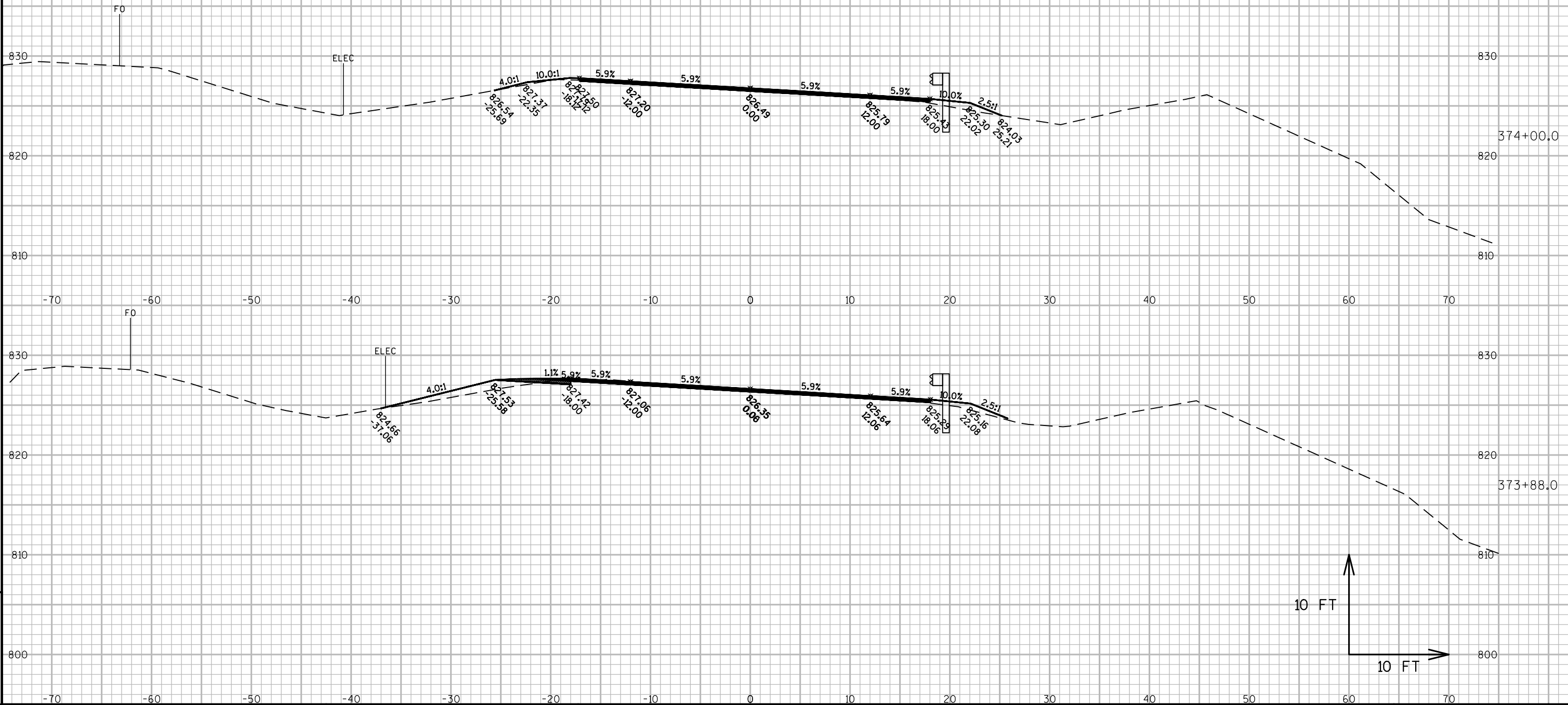
WISDOT/CADDs SHEET 49

NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING

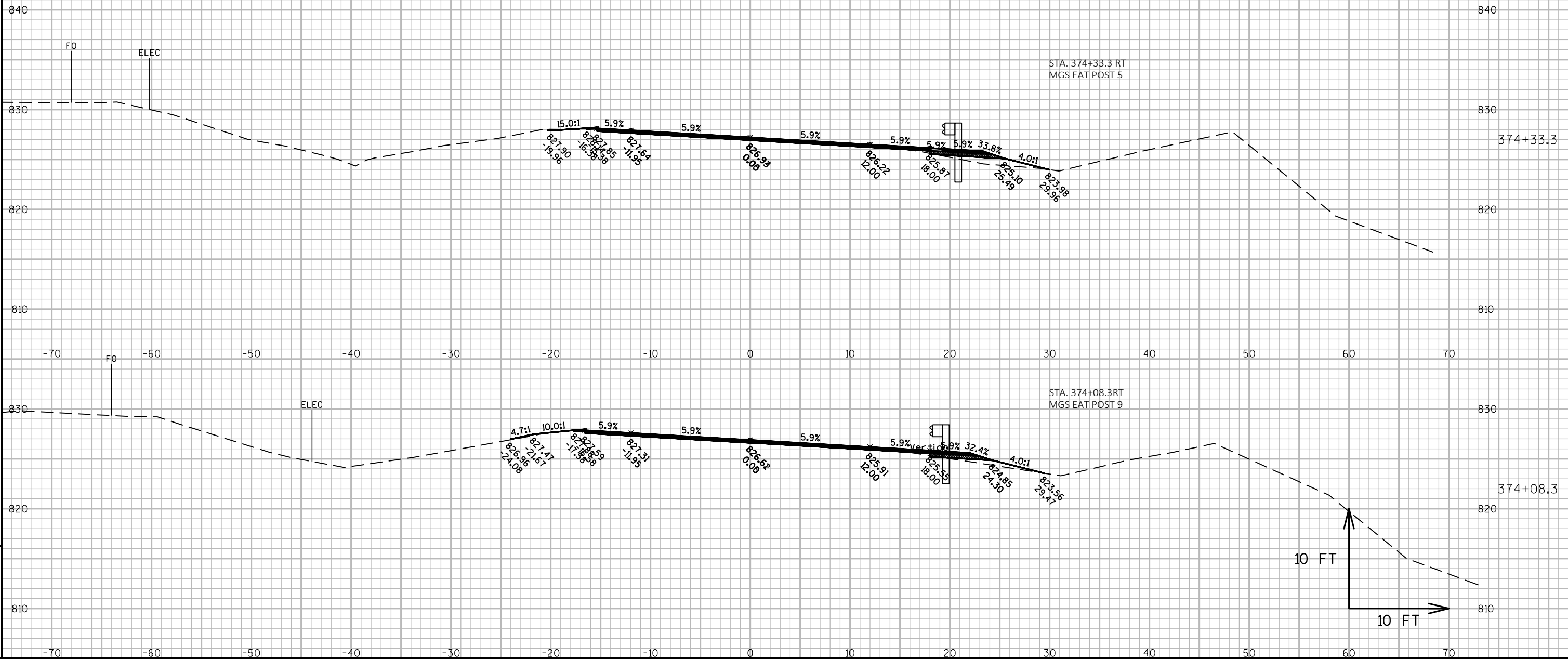
STA. 373+64.9 LT
MGS EAT POST 1



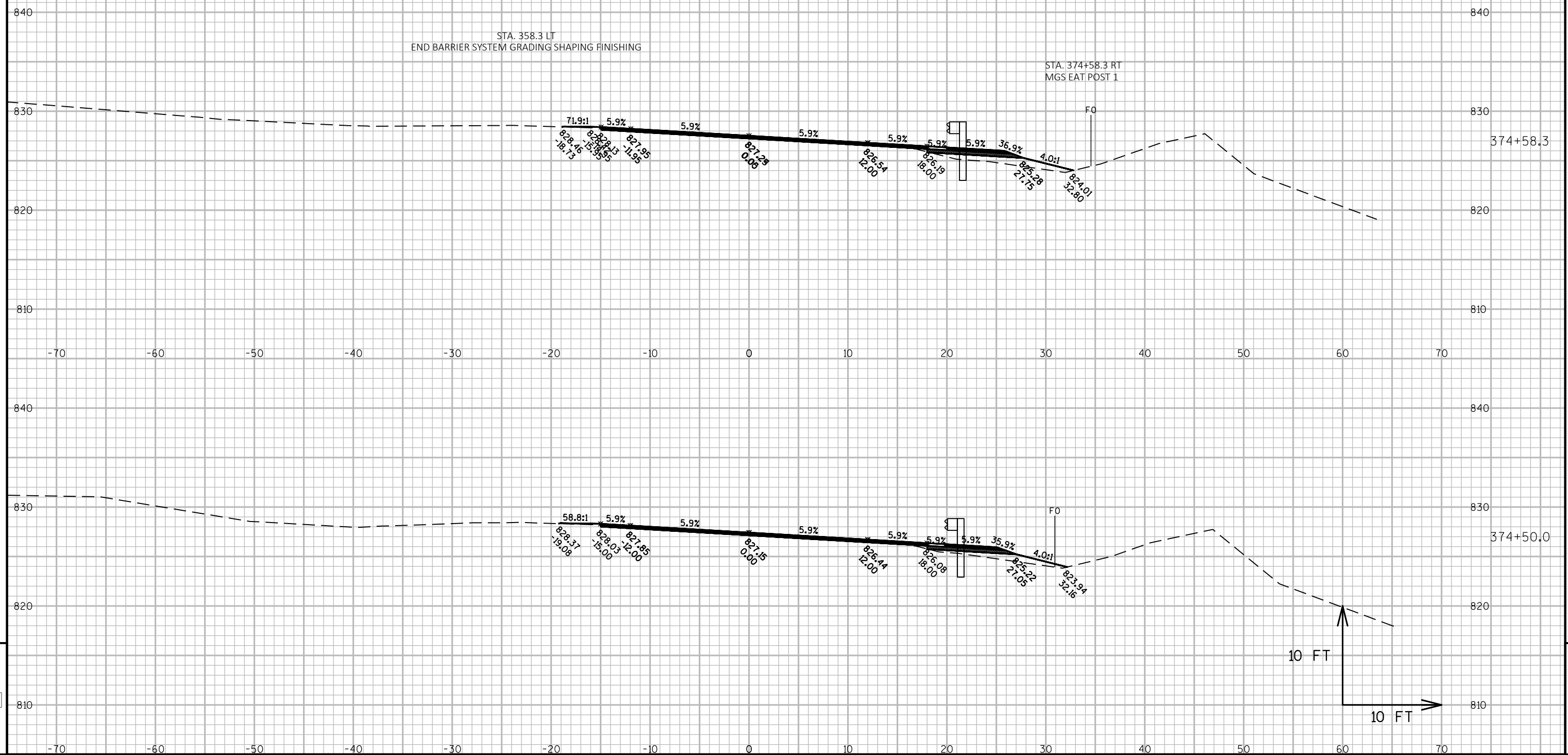
NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING



PROJECT NO: 7120-02-73, 7120-02-76

HWY:STH 85

COUNTY: PEPIN

CROSS SECTIONS: STH 85 (MIDWEST GUARDRAIL SYS. - STA. 366+60- 375+75 LT & RT)

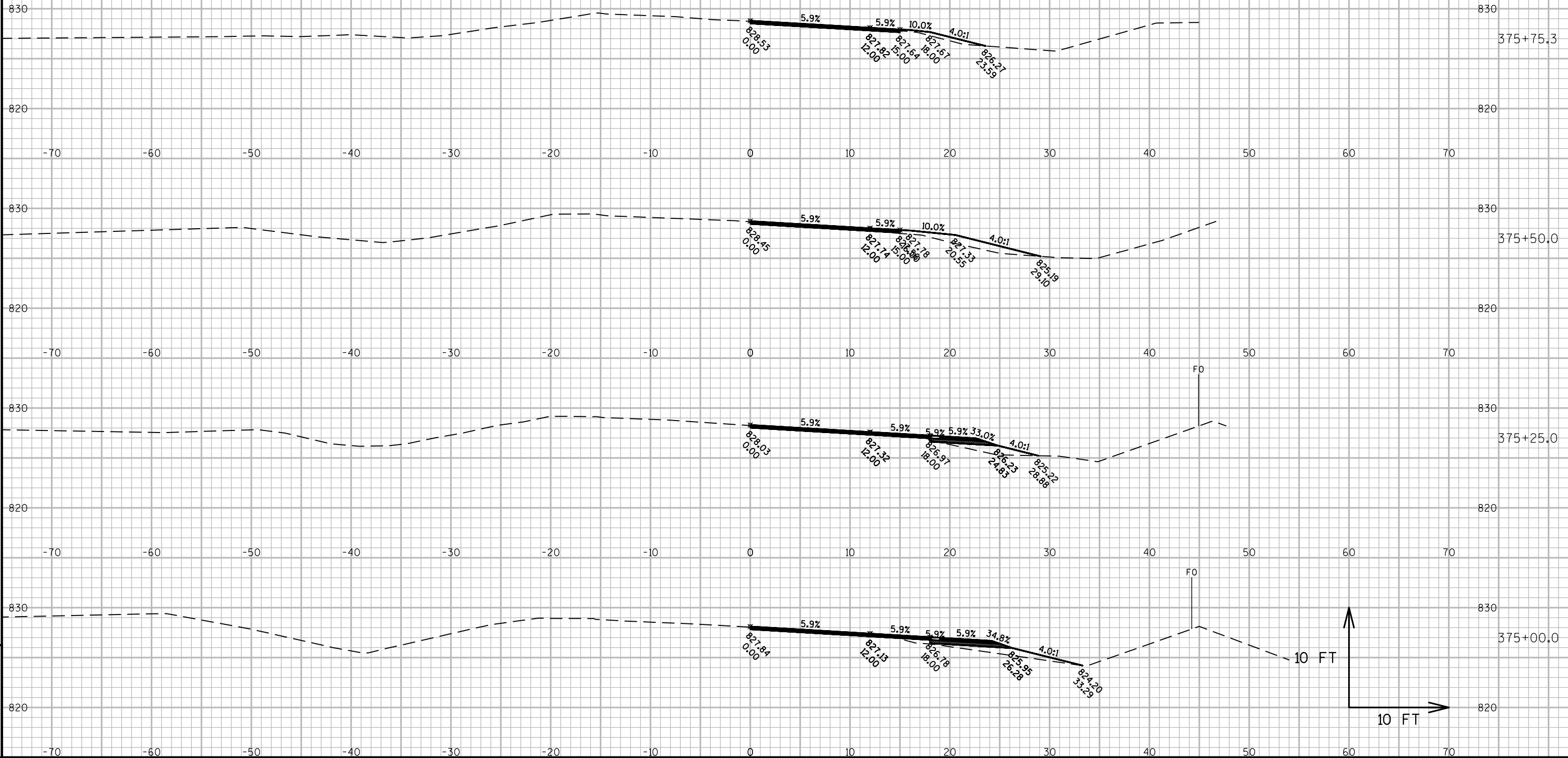
SHEET

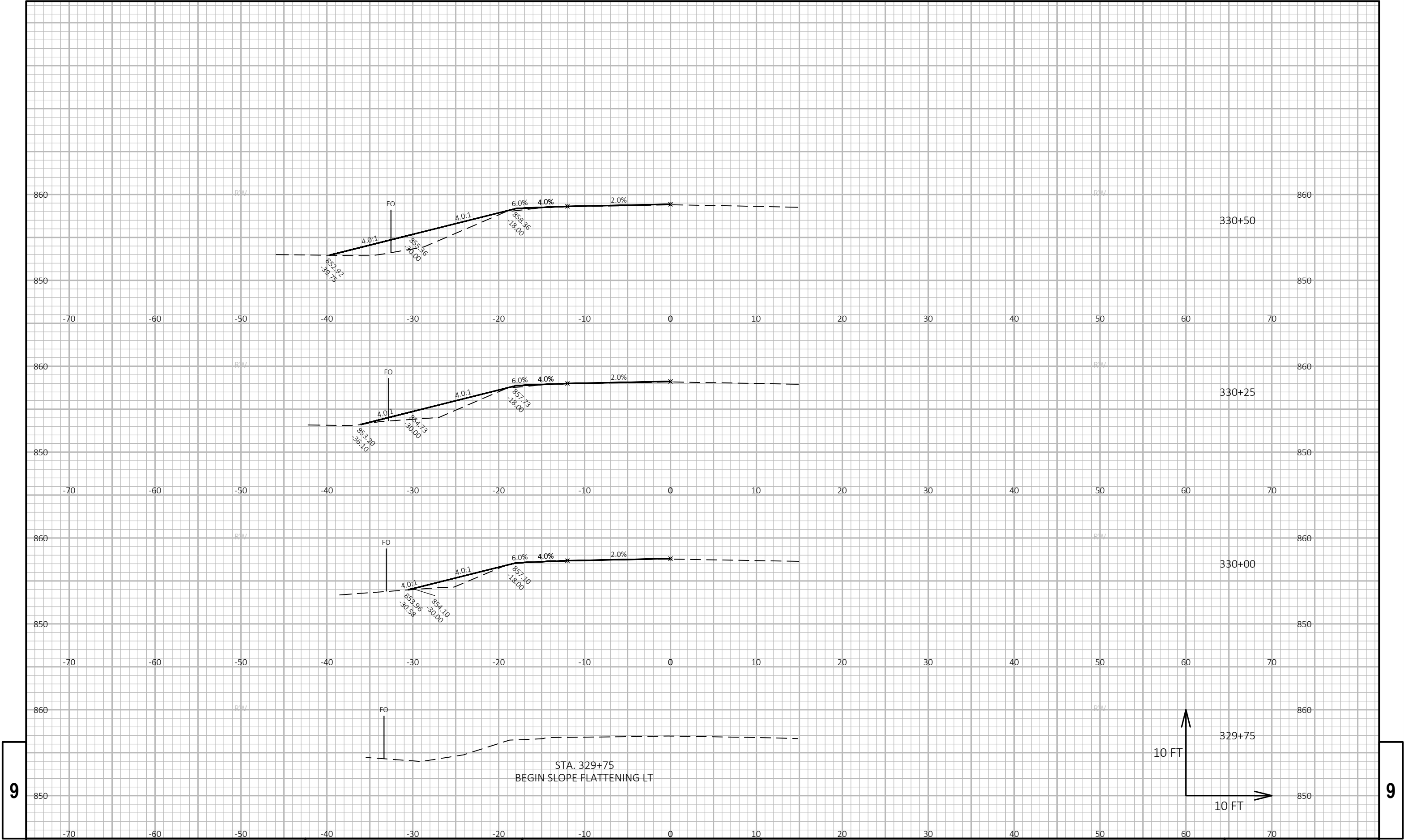
88

E

NOTE: X-SEC FOR BID INFORMATION ONLY.
EARTHWORK AND LANDSCAPE ITEMS PAID
FOR UNDER 614.0010 BARRIER SYSTEM GRADING
SHAPING FINISHING

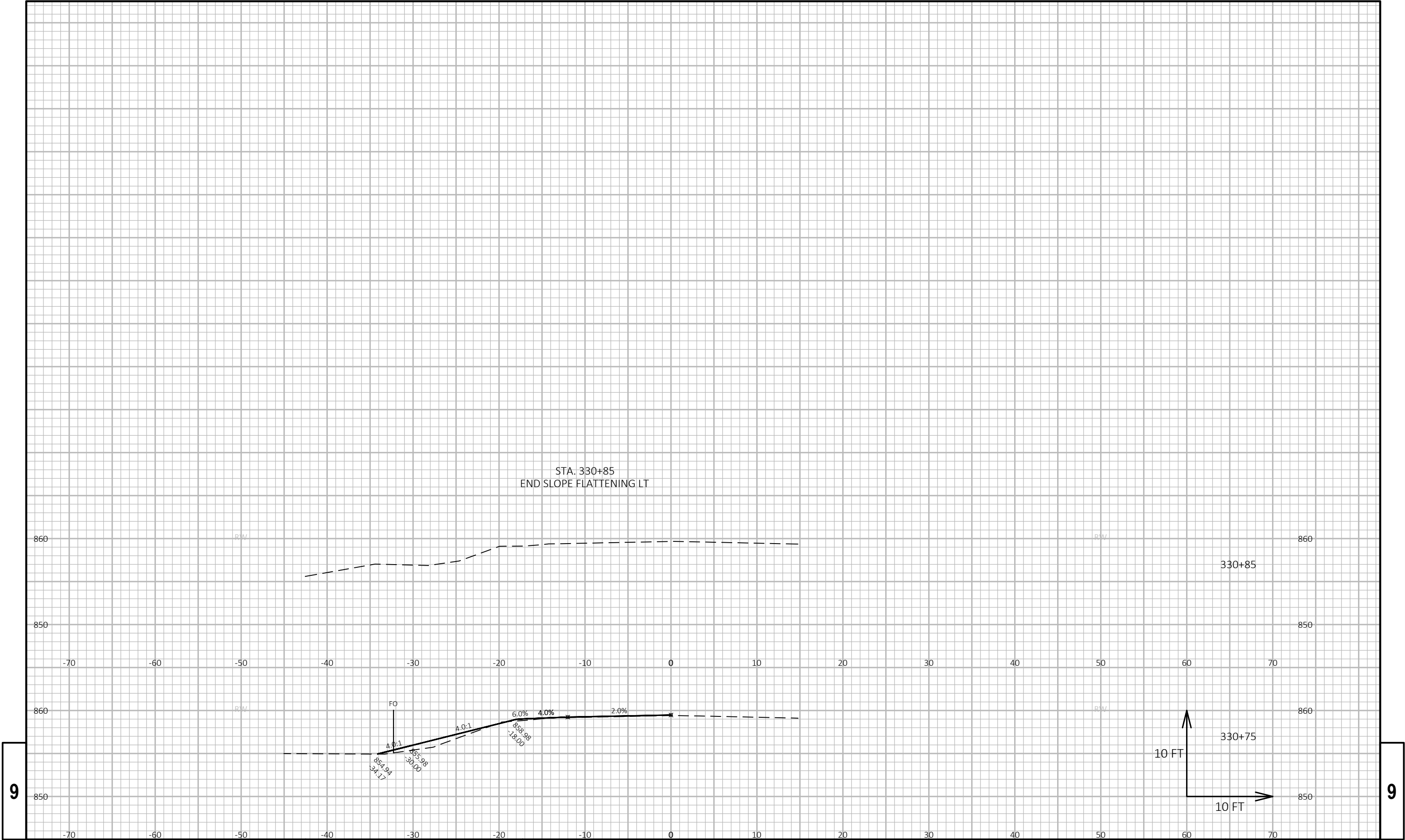
STA. 375+75 RT
END BARRIER SYSTEM GRADING SHAPING FINISHING

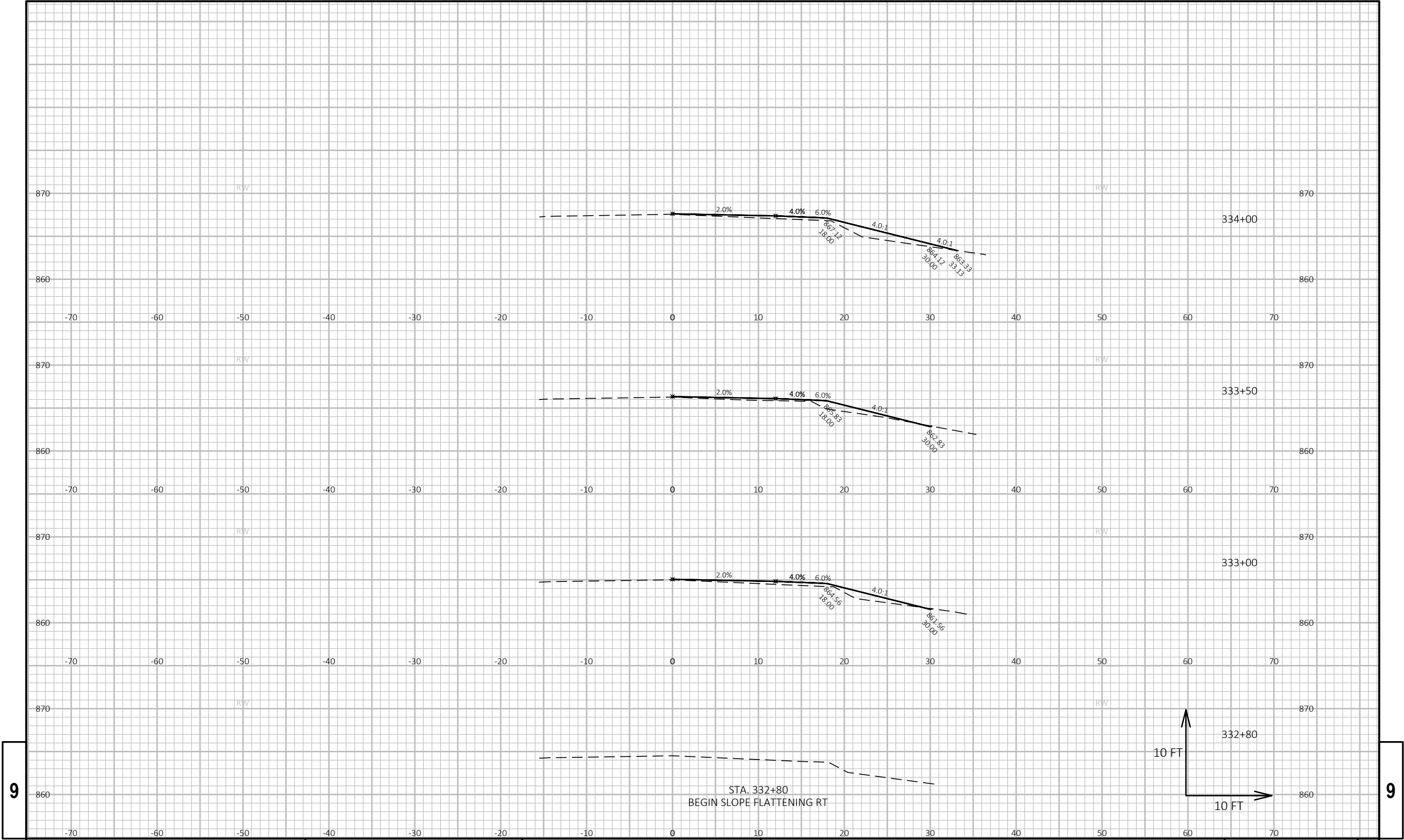


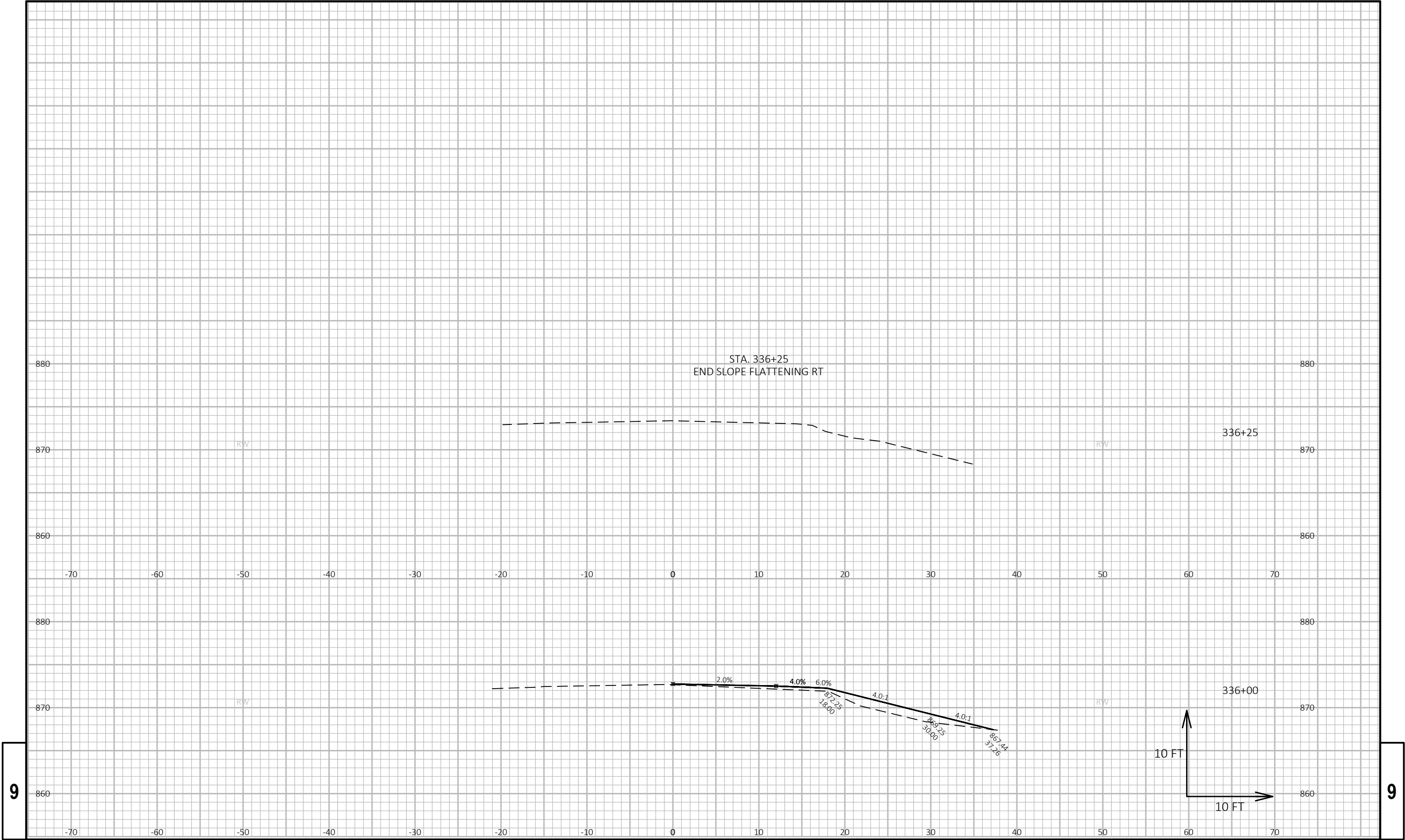


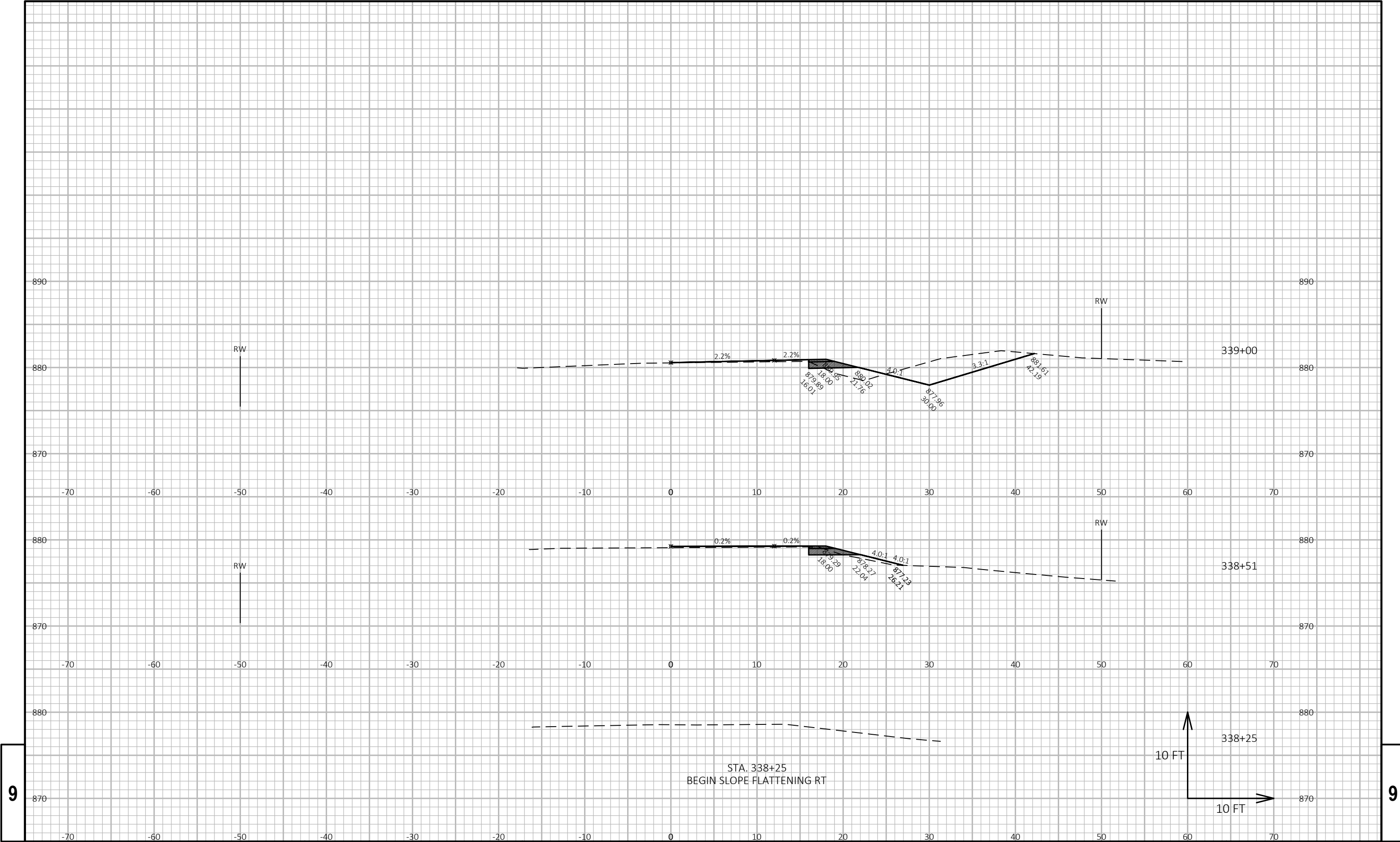
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9



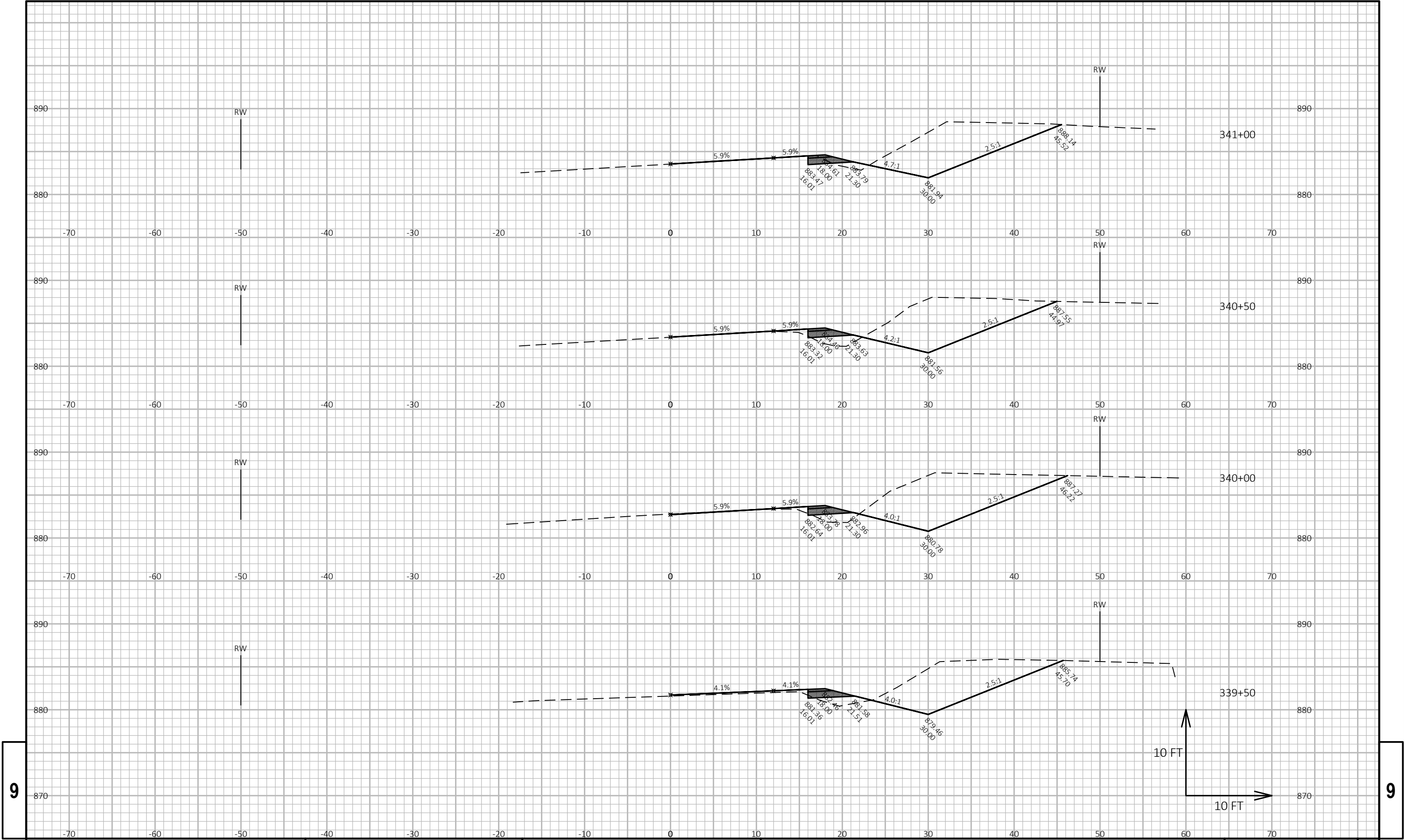






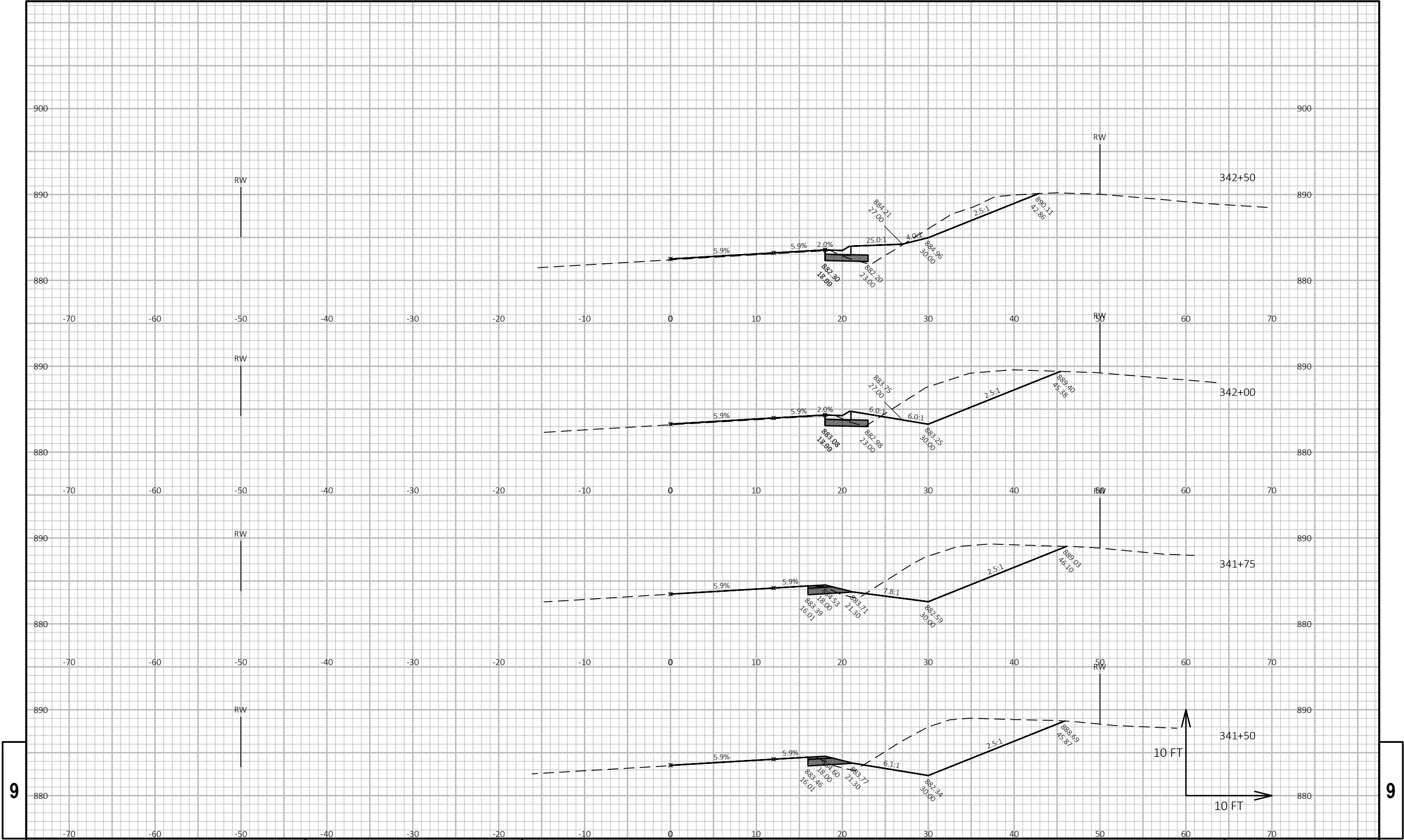
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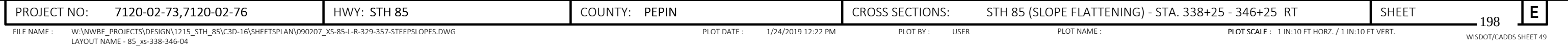
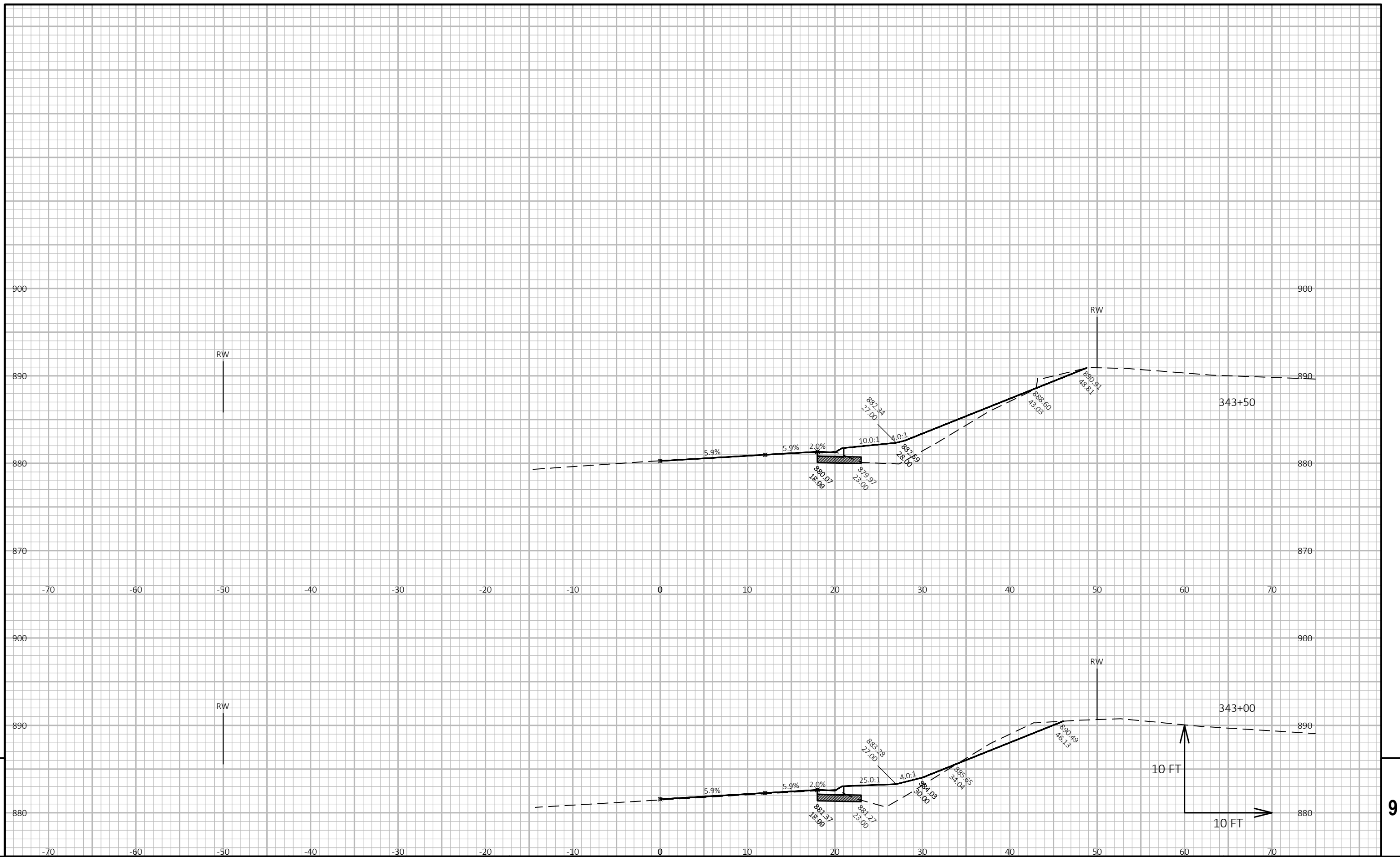
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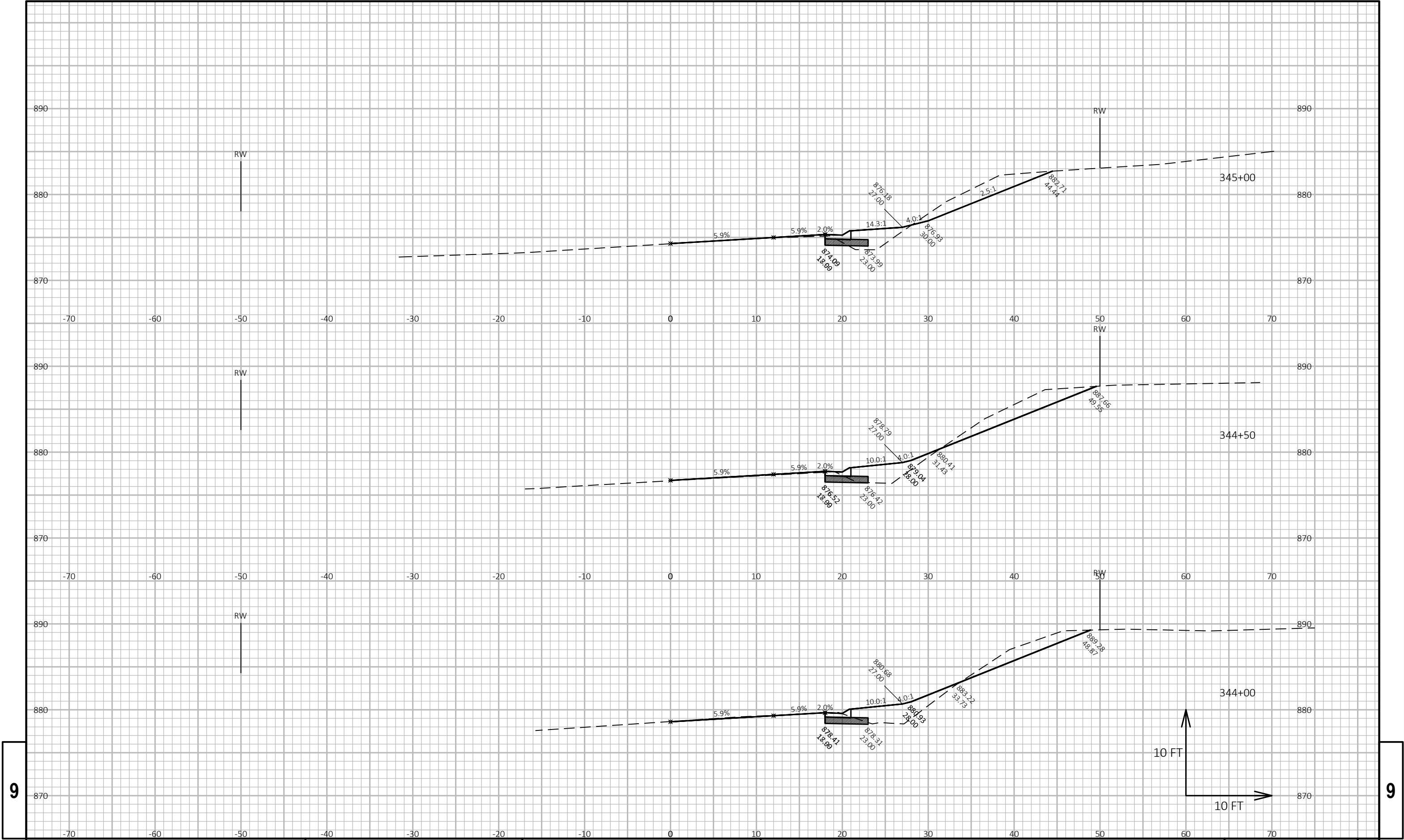


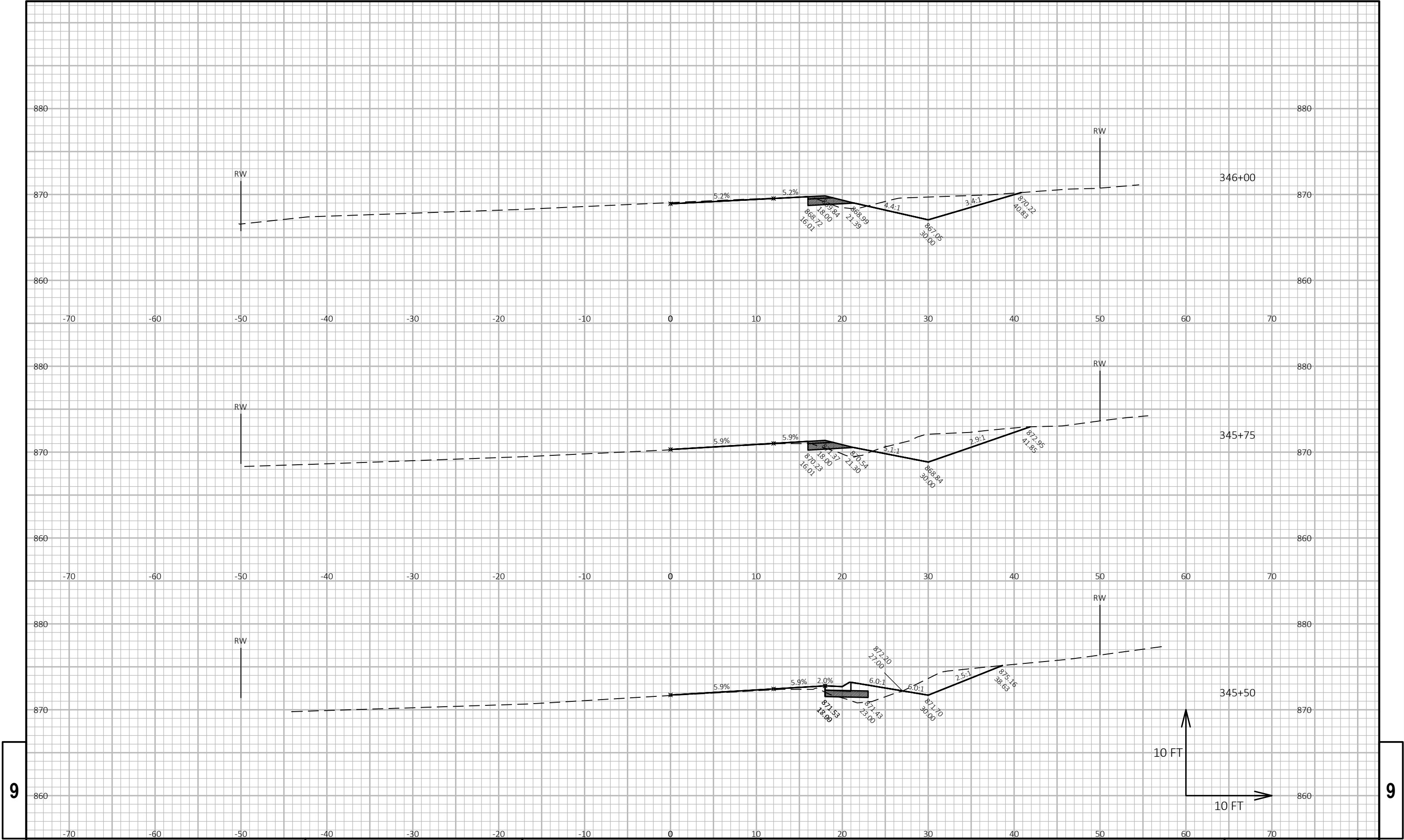
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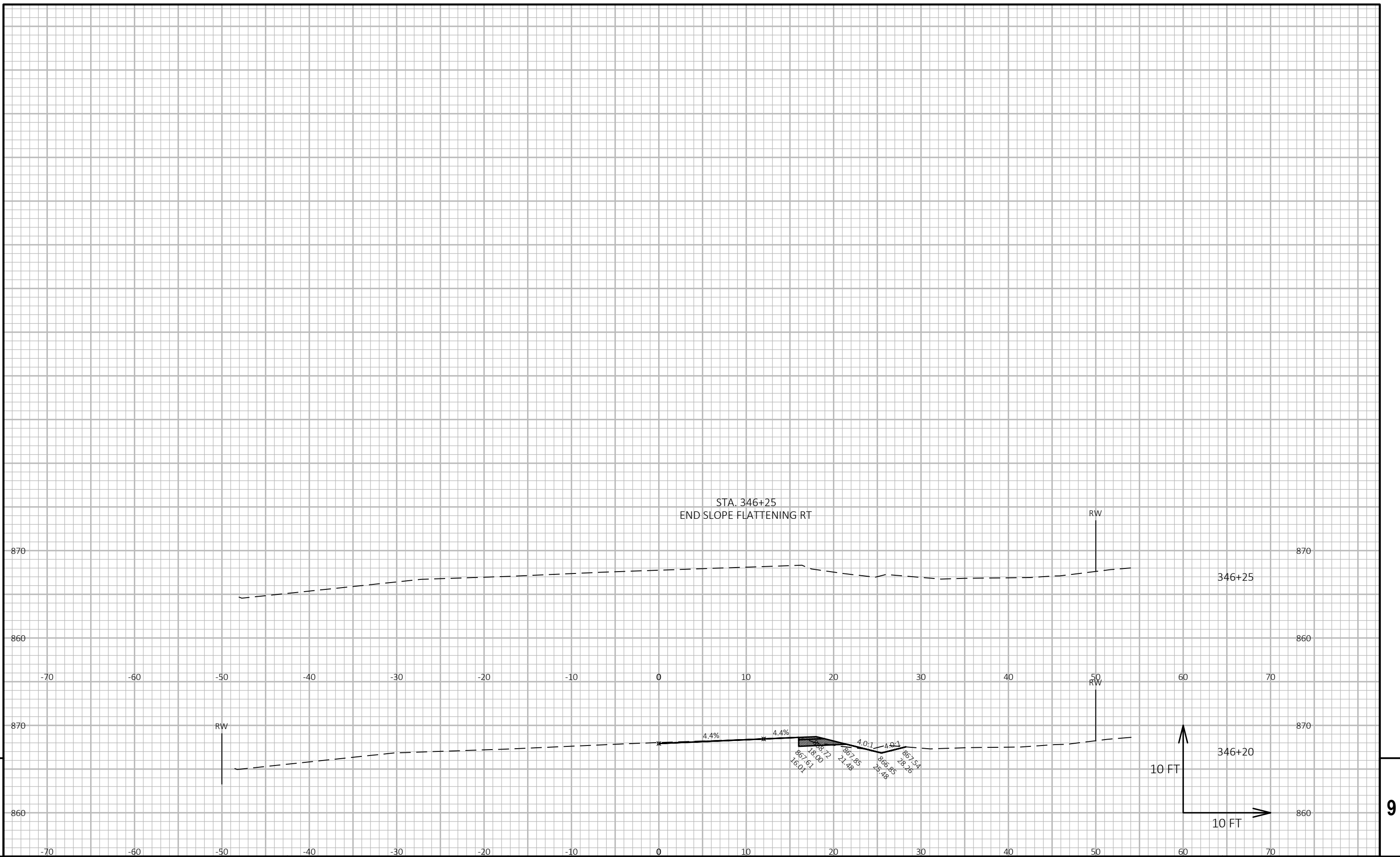
9











PROJECT NO:	7120-02-73,7120-02-76
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HWY: STH 85

COUNTY: PEPIN

CROSS SECTIONS: STH 85 (SLOPE FLATTENING) - STA. 338+25 - 346+25 RT

SHEET

01

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FILE NAME : W:\NWBE_PROJECTS\DESIGN\1215_STH_85\C3D-16\SHEETS\PLAN\090207_XS-85-L-R-329-357-STEEPSLOPES.DWG
LAYOUT NAME - 85_xs-338-346-07

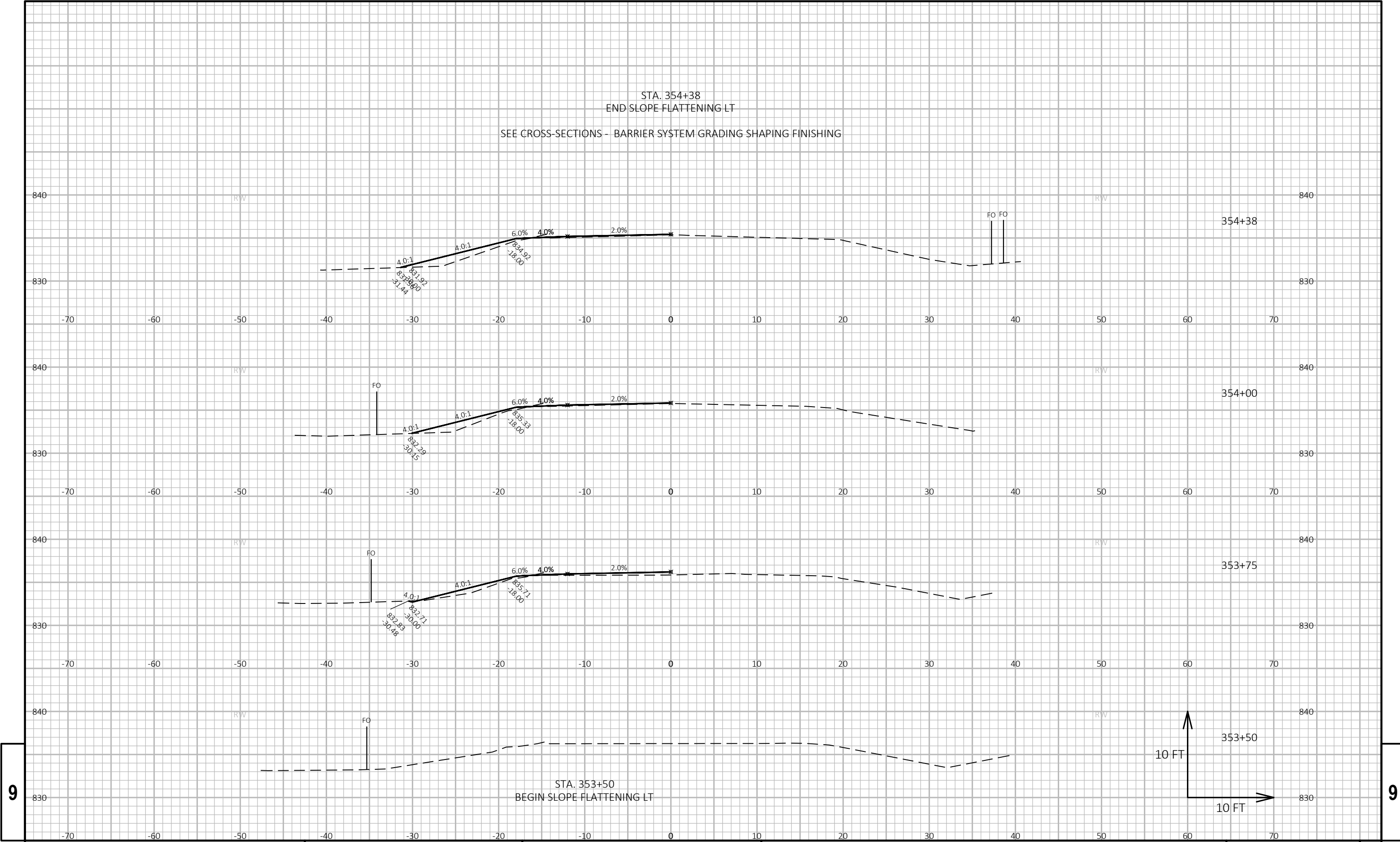
PLOT DATE : 1/24/2019 12:23 PM

PLOT BY : USER

PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

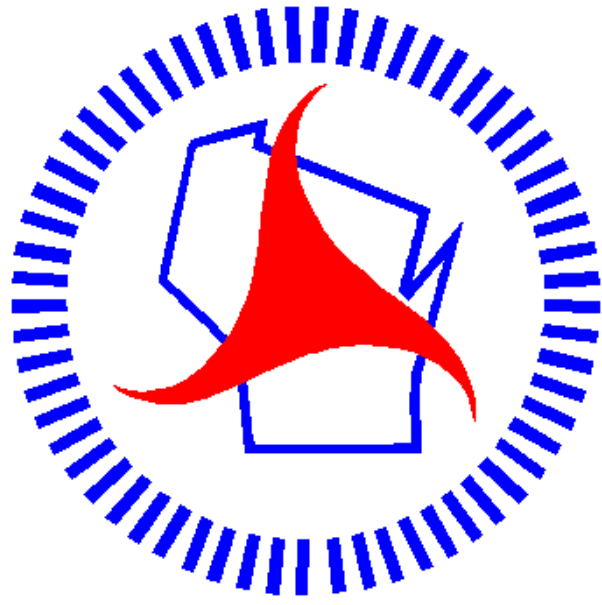
WISDOT/CADDS SHEET 49



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Notes



Wisconsin Department of Transportation

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<http://www.dot.wisconsin.gov>