

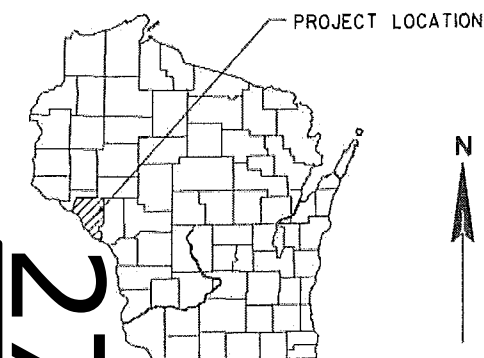
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PLAN OF PROPOSED IMPROVEMENT
CZECHVILLE - MONDOVI
CTH E TO CTH U
STH 88
BUFFALO COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
7730-01-60		

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 Plat
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 = 88



STRUCTURE B-6-40
STA. 599+00

EXCEPTION TO
NET CENTERLINE LENGTH
STA. 390+46.45 - 391+85.47

DESIGN DESIGNATION

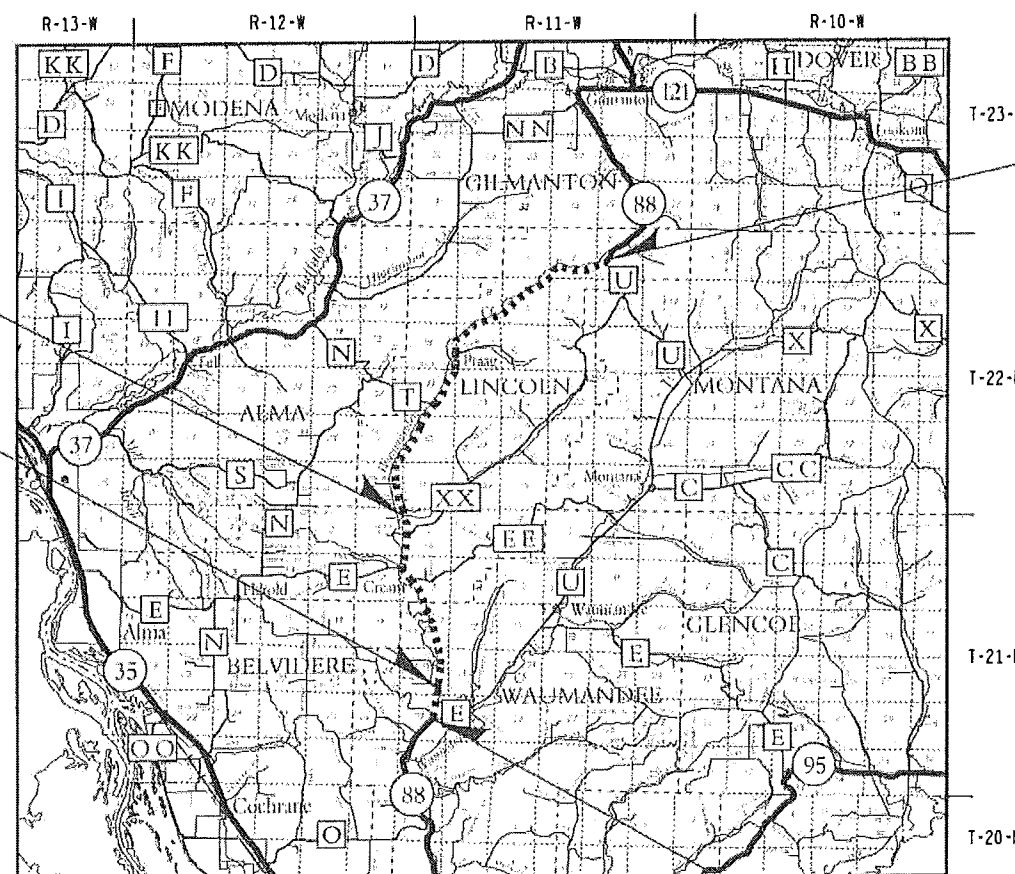
A.A.D.T. (2015)	= 430
A.A.D.T. (2035)	= 490
D.H.V.	= 72
D.D.	= 62/38
T.	= 8.0
DESIGN SPEED	= 55 MPH
ESALS	= 13,000

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	
OVERHEAD UTILITIES	
ELECTRIC	
FIBER OPTIC	
GAS	
SANITARY SEWER	
STORM SEWER	
TELEPHONE	
WATER	
UTILITY PEDESTAL	
POWER POLE	
TELEPHONE POLE	



END PROJECT 7730-01-60
STA. 1027+00.00

BEGIN PROJECT 7730-01-60
STA. 357+00.00
Y=287,269.616
X=585,620.911

LAYOUT
SCALE 0 2 MI.
TOTAL NET LENGTH OF CENTERLINE = 12.663 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE
BUFFALO COUNTY COORDINATE SYSTEM.
ELEVATIONS ON THIS PLAN ARE REFERENCED TO THE
NORTH AMERICAN VERTICAL DATUM 1988.

ORIGINAL PLANS PREPARED BY

AECOM

WISCONSIN
SEAN M.
HADFIELD
E - 34941
MADISON,
WI
PROFESSIONAL ENGINEER

7-30-15

(Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	AECOM
Designer	AECOM
Project Manager	NICOLE PASSUELLO
Regional Examiner	CHRISTINE KOSKI
Regional Supervisor	TIM MASON

APPROVED FOR THE DEPARTMENT

DATE: 7/30/15 Nicole Passuello
(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. IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAVE ALL UTILITIES LOCATED BEFORE EXCAVATION.

NO TREES OR SHRUBS ARE TO BE REMOVED UNLESS SUCH TREES OR SHRUBS HAVE FIRST BEEN INDICATED FOR REMOVAL BY THE ENGINEER IN THE FIELD.

EXACT LOCATION OF ALL DRIVEWAY ENTRANCES TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

A VERTICAL SAWCUT SHALL BE MADE THROUGH EXISTING DRIVEWAYS AT THE REMOVAL LIMITS.

EROSION CONTROL FEATURES AS SHOWN ON THE PLANS ARE SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

WHEN THE QUANTITY OF THE ITEM OF BASE OR HMA PAVEMENT IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE COURSE SHOWN ON THE PLANS IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF MATERIAL AS DIRECTED BY THE ENGINEER.

2-INCH HMA PAVEMENT TYPE E-3 SPECIAL SHALL BE CONSTRUCTED IN ONE (1) LAYER. A 12.5 MM GRADATION SHALL BE USED WITH ASPHALTIC MATERIAL PG58-34P.

EXACT LOCATION OF FULL DEPTH HMA REPAIR TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

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 = 43.0 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 43.0 ACRES

UTILITY OWNERS

UTILITY CONTACTS

COMMUNICATION LINE:

MATT BIESTERVELD
COCHRANE COOPERATIVE TELEPHONE CO
103 W 5TH ST
P.O. BOX 189
COCHRANE, WI 54622-0189
(608) 248-2323
mbeast1e@mw1.net

DALE GOSS
NELSON TELEPHONE COOPERATIVE
318 3RD AVE W
P.O. BOX 228
DURAND, WI 54736
(715) 672-4204
dale@ntec.net

STEVE JAKUBIEC
TDS TELECOM
APPLETON, WI 54911
(920) 882-4166 (OFFICE)
(920) 562-7221 (MOBILE)
steve.jakubiec@tdstelecom.com

ELECTRIC:

KURT CHILDS
DAIRYLAND POWER COOPERATIVE
3200 EAST AVE S
P.O. BOX 817
LA CROSSE, WI 54602
(608) 788-4000
kdc@dairy.net.com

TIM HOLTAN
RIVERLAND ENERGY COOPERATIVE
N28988 STATE ROAD 93
P.O. BOX 277
ARCADIA WI 54612-0277
(608) 323-3381 (OFFICE)
(608) 797-0102 (MOBILE)
tholtan@riverlandenergy.com

MEGAN BOLDIG
XCEL ENERGY
320 HELLER RD
MENOMINIE, WI 54751
(715) 232-7412
megan.m.boldig@xcelenergy.com

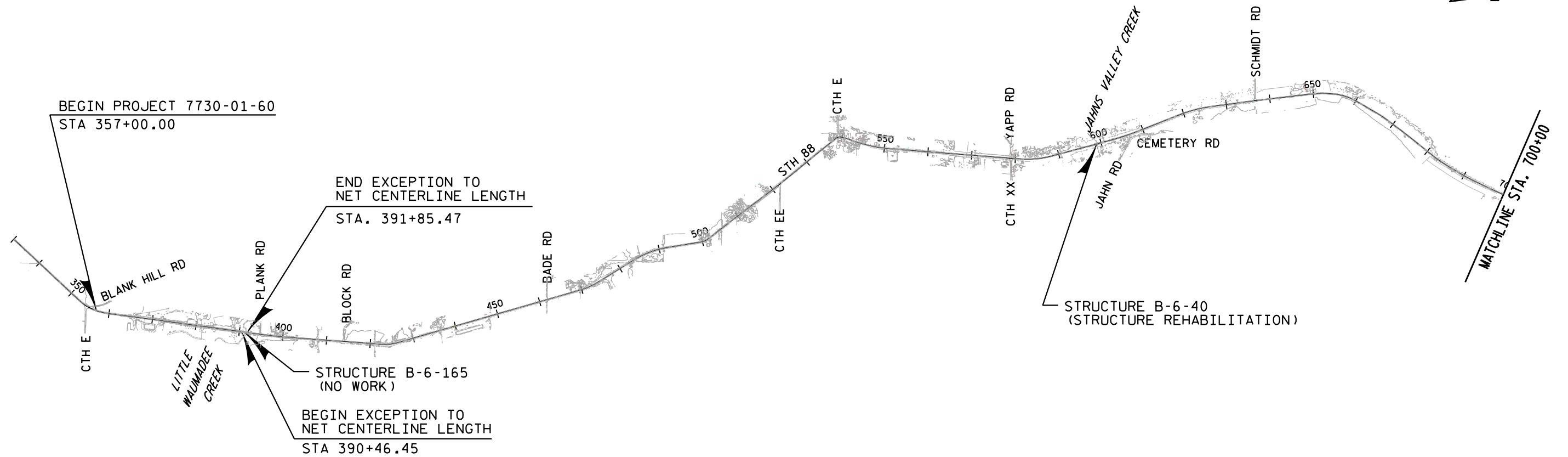


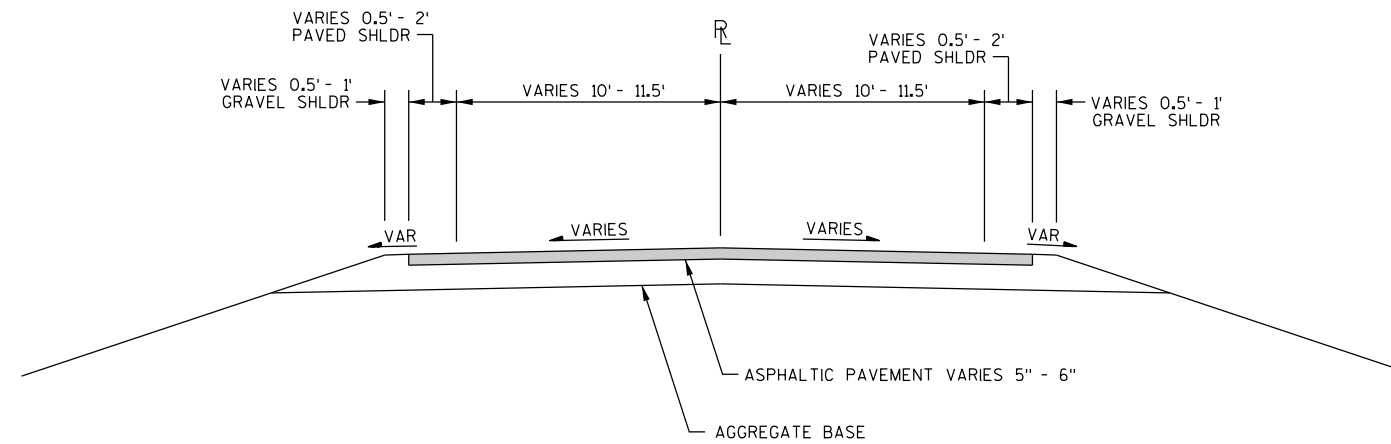
DNR LIAISON

KAREN KALVELAGE
DEPARTMENT OF NATURAL RESOURCES
LA CROSSE SERVICE CENTER
3550 MORMON COULEE ROAD
LA CROSSE, WI 54601
608-785-9115
karen.kalvelage@wisconsin.gov

DESIGN CONTACT

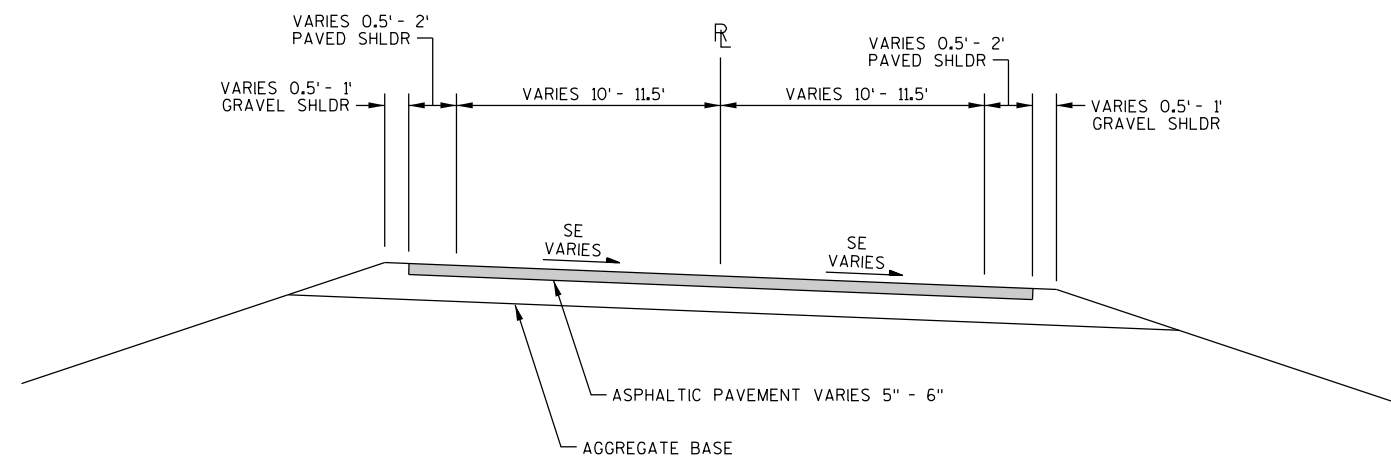
MR. SEAN HADFIELD, PE
AECOM
1350 DEMING WAY, SUITE 100
MIDDLETON, WI 53562
608-828-8141
EMAIL: sean.hadfield@aecom.com



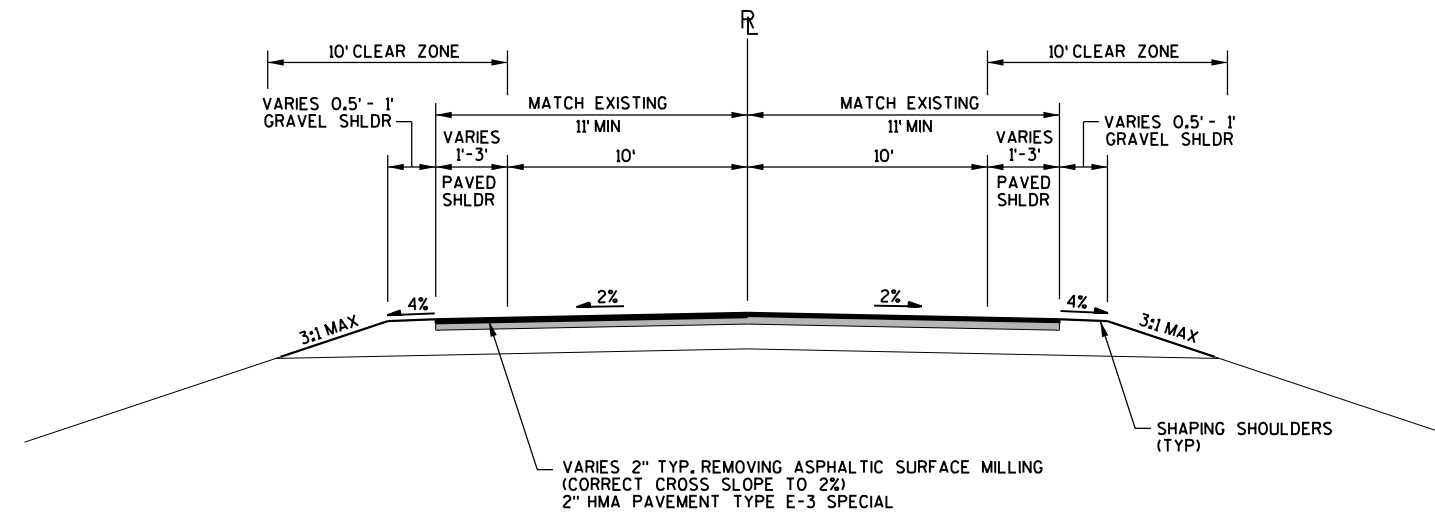


TYPICAL EXISTING SECTION - STH 88

STA 357+00.00 - STA 390+46.45
STA 391+85.47 - STA 1027+00.00



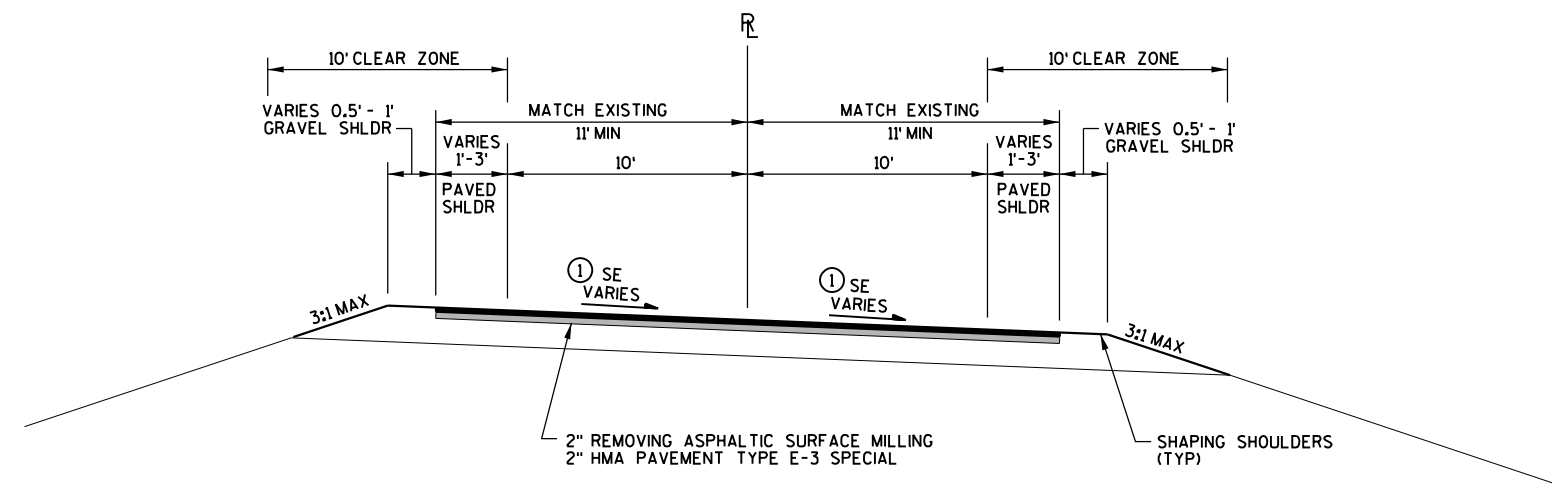
TYPICAL SUPERELEVATED EXISTING SECTION - STH 88



TYPICAL FINISHED SECTION - STH 88

① STA 357+00.00 - STA 390+46.45
STA 391+85.47 - STA 1027+00.00

① NOTE: SEE SUPERELEVATION TABLE FOR SUPERELEVATION LOCATIONS.



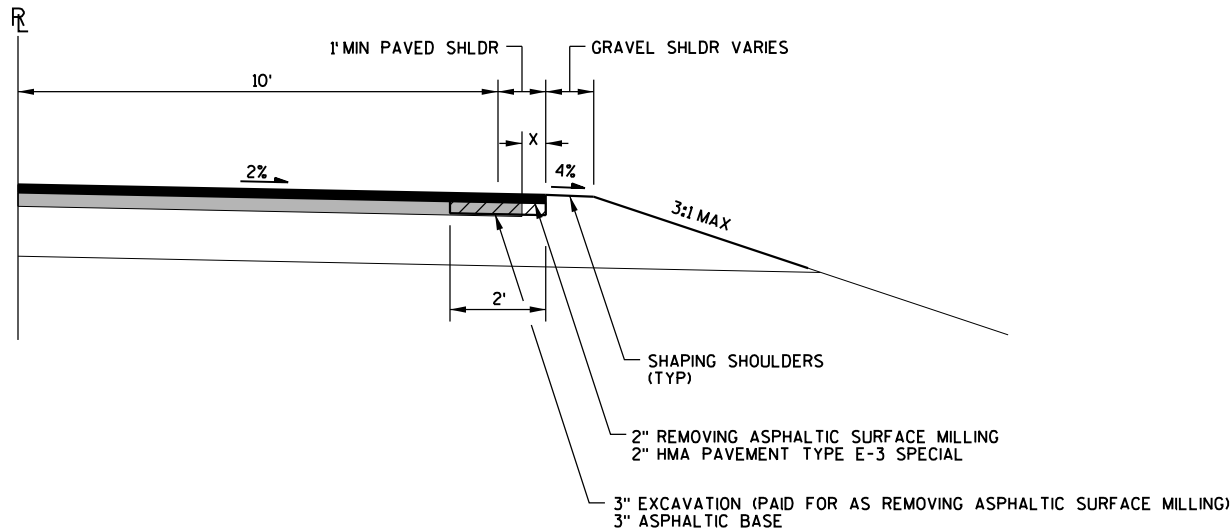
TYPICAL SUPERELEVATED FINISHED SECTION - STH 88

SEE SUPERELEVATION TABLE FOR LOCATIONS

① NOTE: SEE SUPERELEVATION TABLE FOR MORE INFORMATION.

LEFT SHOULDER		
STA - STA		X WIDTH OF SHOULDER WIDENING (FEET)
357+19	- 357+46	0.50
393+88	- 394+32	0.25
399+47	- 405+23	2.00
421+58	- 421+99	0.10
423+86	- 424+71	0.25
426+50	- 428+58	2.00
443+49	- 446+68	0.50
452+75	- 467+41	1.50
470+99	- 471+98	0.25
474+24	- 487+77	2.00
494+15	- 494+90	0.50
498+26	- 499+16	0.25
501+69	- 503+98	0.50
505+70	- 509+21	0.50
509+48	- 510+30	0.10
510+94	- 514+19	1.00
514+50	- 519+14	0.50
536+74	- 537+88	0.50
540+72	- 541+56	0.75
543+01	- 544+83	1.50
547+57	- 548+53	0.25
553+64	- 556+11	0.75
558+01	- 566+32	1.00
566+91	- 567+08	0.25
568+81	- 570+72	0.50
572+29	- 573+21	0.40
611+10	- 613+40	0.50
613+93	- 614+18	0.20
618+97	- 621+06	0.60
622+05	- 622+37	0.15
625+32	- 626+42	0.70
639+32	- 644+98	0.90
648+79	- 650+53	1.50
653+65	- 654+23	0.20
667+39	- 668+69	0.20
693+23	- 695+30	0.50
702+55	- 704+05	0.60
716+48	- 717+08	0.20
763+08	- 763+40	0.25
766+21	- 767+23	1.00
782+14	- 782+73	1.00
785+92	- 787+38	0.50
789+01	- 790+06	0.30
802+55	- 802+95	0.20
822+13	- 823+28	1.00
830+17	- 844+14	1.50
846+20	- 849+00	0.50
873+16	- 874+04	0.25
880+80	- 882+81	1.00
886+48	- 888+01	0.20
891+70	- 893+21	0.25
897+73	- 899+88	0.75
906+72	- 910+52	1.00
919+29	- 920+12	0.50
924+28	- 924+82	0.65
929+28	- 930+35	0.40
950+52	- 952+62	2.20
953+36	- 954+09	0.50
956+64	- 957+62	1.00
963+37	- 964+38	0.50
965+33	- 966+21	0.50
977+17	- 978+49	0.30
983+29	- 983+58	0.25
998+89	- 1000+46	0.40
1008+72	- 1009+92	0.60
1019+03	- 1021+93	0.90
1025+54	- 1026+01	0.50

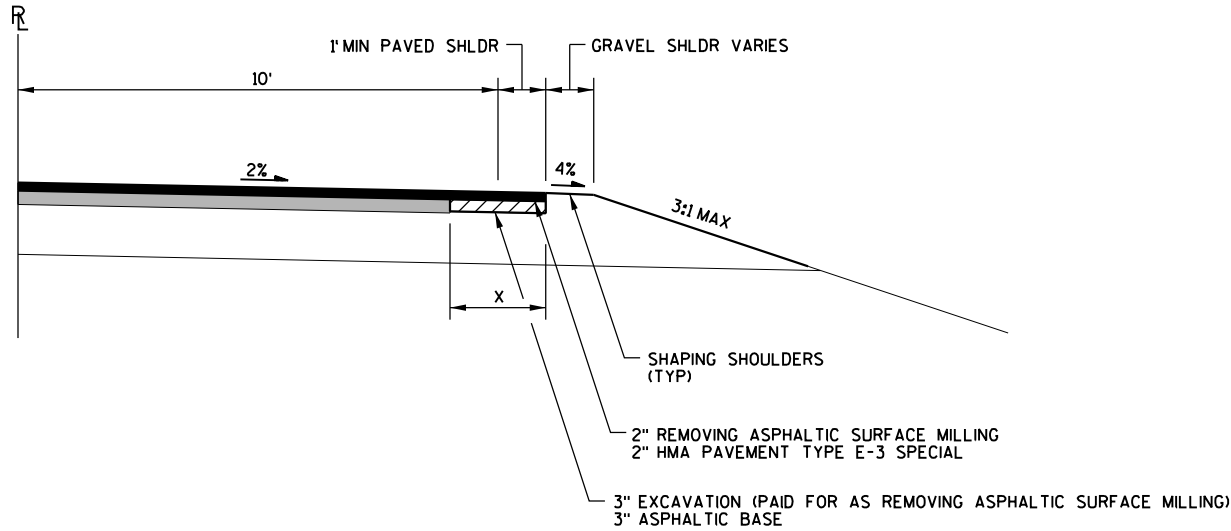
SHOULDER WIDENING TABLE



X SEE SHOULDER WIDENING TABLE
FOR LOCATIONS AND WIDTHS

TYPICAL SHOULDER WIDENING SECTION - STH 88

WHEN WIDENING IS LESS THAN 2'



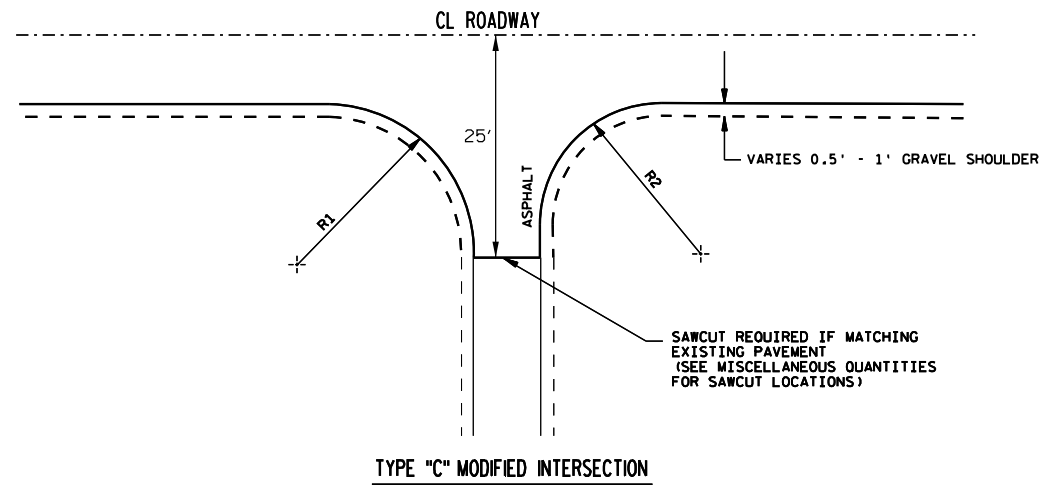
X SEE SHOULDER WIDENING TABLE
FOR LOCATIONS AND WIDTHS

TYPICAL SHOULDER WIDENING SECTION - STH 88

WHEN WIDENING IS 2' OR GREATER

RIGHT SHOULDER		
STA - STA		X WIDTH OF SHOULDER WIDENING (FEET)
358+97	- 360+24	0.50
383+40	- 388+06	0.50
389+01	- 390+46	1.00
396+07	- 399+17	1.00
406+37	- 406+97	0.50
412+48	- 420+48	2.50
422+83	- 423+44	0.25
432+50	- 440+25	0.60
466+15	- 471+08	1.00
472+01	- 474+55	1.00
481+48	- 483+09	0.40
488+03	- 491+68	1.00
499+51	- 500+06	0.50
502+68	- 503+68	0.30
508+20	- 509+23	0.25
522+69	- 525+53	0.40
535+10	- 535+61	0.10
538+74	- 540+05	0.50
545+74	- 546+28	0.20
549+97	- 551+72	1.00
586+41	- 588+38	0.75
602+03	- 604+49	0.25
623+50	- 624+28	0.50
632+88	- 636+11	0.25
651+27	- 652+20	0.30
670+37	- 674+91	1.00
677+92	- 679+06	0.10
681+41	- 682+04	0.20
699+41	- 700+83	0.50
731+87	- 732+71	0.40
732+92	- 735+19	1.00
735+47	- 736+62	0.30
743+85	- 745+18	1.00
764+97	- 765+38	0.40
795+31	- 804+24	2.75
806+00	- 818+51	1.00
823+68	- 824+45	0.25
826+46	- 827+55	0.25
832+38	- 833+25	0.40
836+03	- 836+84	0.30
840+21	- 840+89	0.20
844+57	- 845+80	0.50
847+01	- 847+84	0.60
848+47	- 848+92	0.10
849+63	- 871+00	1.50
874+82	- 880+48	1.00
883+86	- 885+51	1.00
887+71	- 892+00	1.00
893+77	- 897+71	0.65
899+59	- 905+90	2.40
907+68	- 914+04	1.00
914+58	- 918+68	1.00
919+86	- 921+91	1.00
926+29	- 929+69	0.75
930+80	- 932+95	0.50
937+69	- 941+88	0.50
952+47	- 953+21	1.00
954+50	- 956+60	2.00
957+21	- 959+47	1.25
974+08	- 974+42	0.40
987+55	- 993+00	1.00
1001+35	- 1009+06	1.50
1010+10	- 1011+95	0.75
1013+70	- 1015+82	0.70
1016+53	- 1018+12	0.60
1018+85	- 1020+49	0.50
1021+20	- 1024+86	1.00
1026+57	- 1026+95	0.60

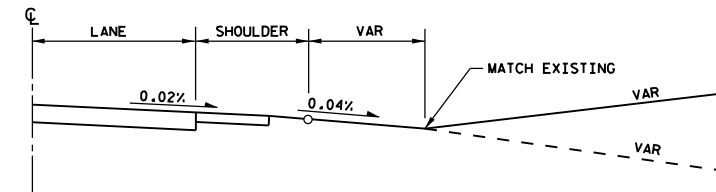
SHOULDER WIDENING TABLE



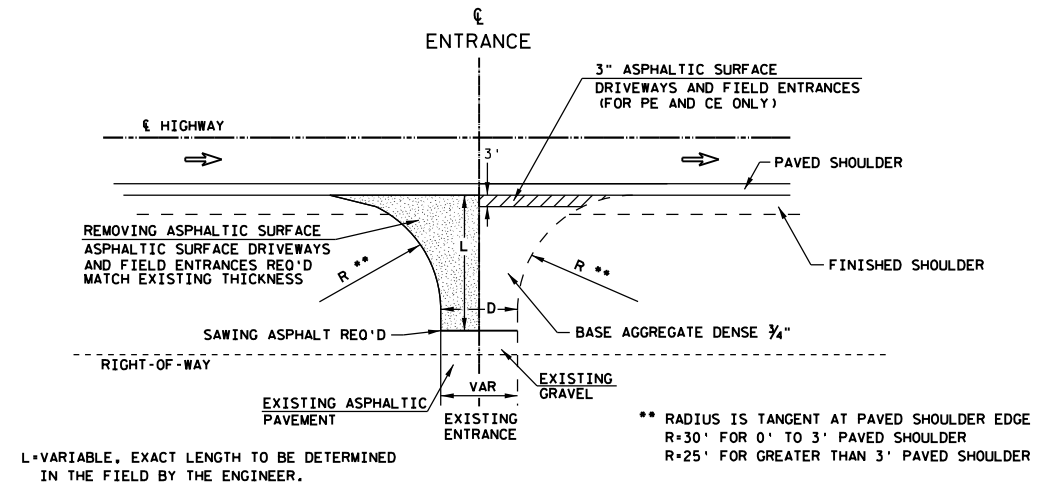
SIDE ROAD	R1 DISTANCE (FT)	STATION	OFFSET (FT)	R2 DISTANCE (FT)	STATION	OFFSET (FT)
PLANK RD*	38	395+23	50.2 LT	34	394+31	44.4 LT
BLOCK RD*	41	414+44	54.2 LT	47	413+31	59.9 LT
BADE RD*	38	462+26	48.0 LT	48	461+24	57.7 LT
CTH EE	28	521+21	39.7 RT	93	522+55	107.5 RT
CTH E	67	539+89	84.7 LT	106	538+65	122.5 LT
YAPP RD*	63	579+60	75.0 LT	63	578+18	74.1 LT
CTH XX	81	578+12	94.1 RT	71	579+88	82.4 RT
JAHN RD *	72	605+45	84.6 RT	34	606+90	46.6 RT
SCHMIDT RD	69	637+47	80.8 LT	77	635+82	89.3 LT
CTH T	101	740+09	112.9 LT	45	738+60	56.7 LT
SCHAUB RD*	23	787+16	33.7 LT	22	786+58	32.9 LT
HELLER VALLEY RD*	56	803+96	65.6 RT	27	804+95	38.4 RT
BALK RD*	8	974+83	20.4 LT	61	974+06	72.5 LT
CTH U	18	1025+11	30.9 RT	124	1026+32	137.2 RT

* DENOTES SIDEROADS THAT ARE GRAVEL

NOTE: CONTRACTOR TO FIELD VERIFY PRIOR TO REMOVING EXISTING ASPHALT



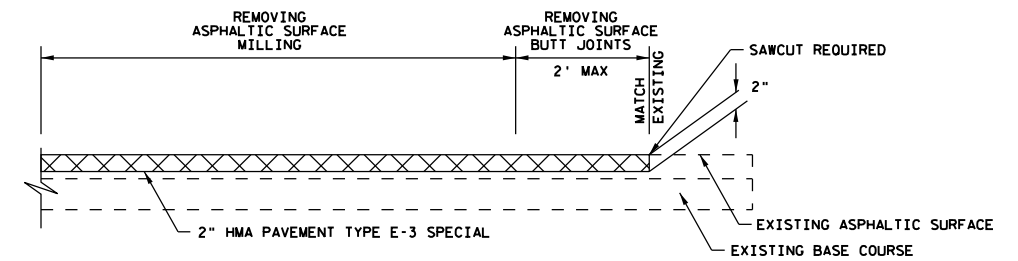
TYPICAL PROFILE VIEW



D=DRIVEWAY WIDTH
D=20' TYP (PE & FE) (16' MIN - 24' MAX)
D=28' TYP (CE & FARM ENT) (24' MIN - 35' MAX)

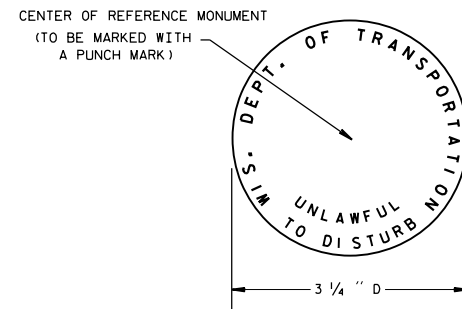
PLAN VIEW

RURAL DRIVEWAY INTERSECTION
(PE, FE & CE)
(FOR RESURFACING PROJECTS)

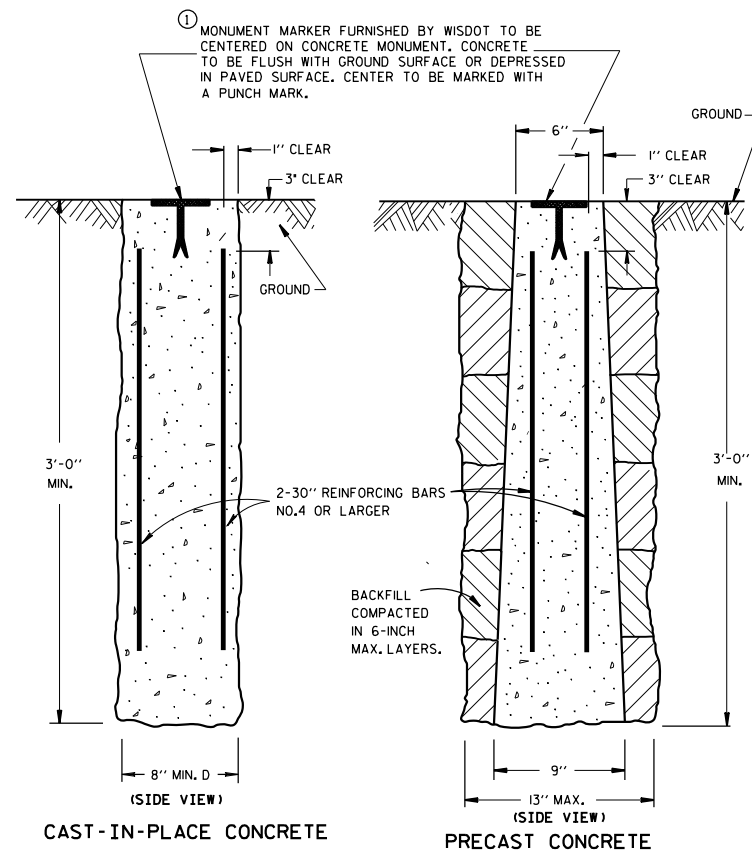


REMOVING ASPHALTIC SURFACE BUTT JOINTS

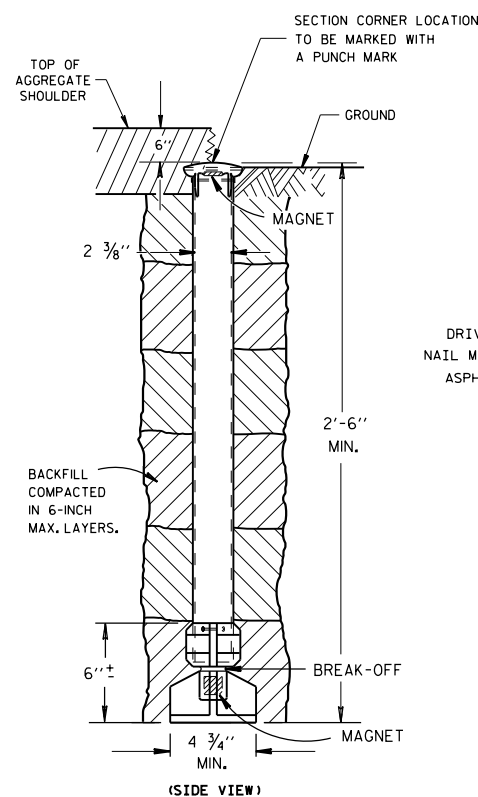
STA 357+00
STA 390+46
STA 391+85
STA 521+80 (CTH EE)
STA 539+33 (CTH E)
STA 579+00 (CTH XX)
STA 636+62 (SCHMIDT RD)
STA 739+21 (CTH T)
STA 1025+58 (CTH U)
STA 1027+00



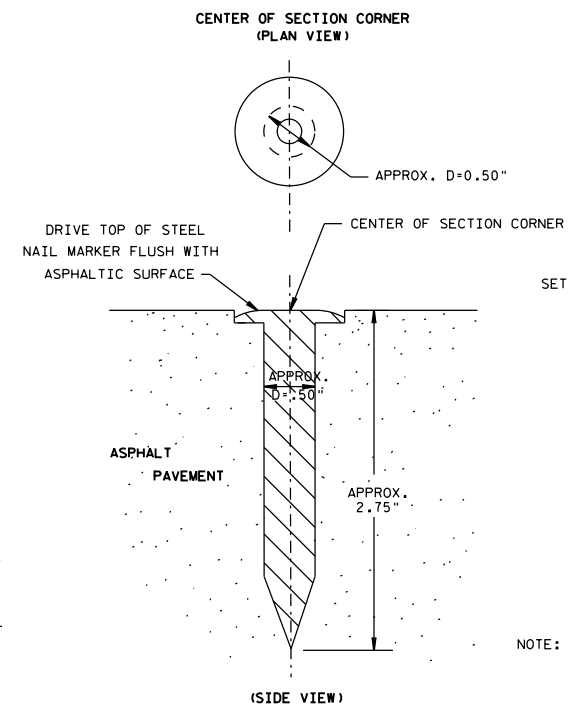
① WIS DOT MONUMENT MARKER LOGO



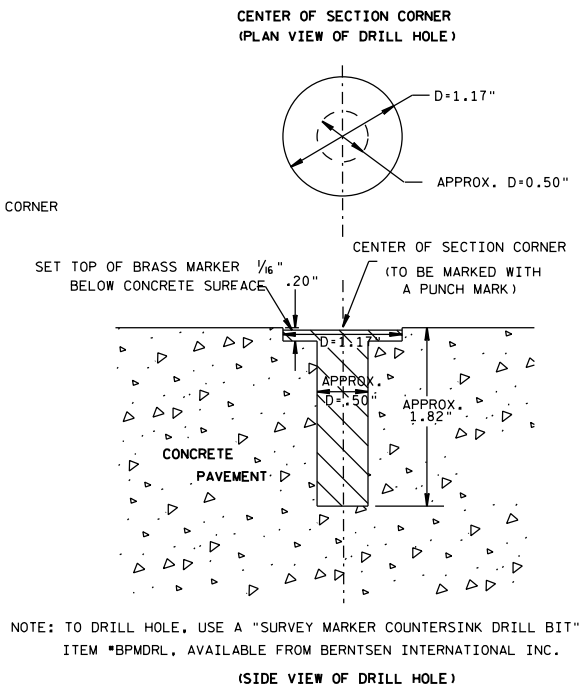
LANDMARK REFERENCE MONUMENTS (TIES ONLY)



① BERNSTEN A1BR30 ALUMINUM BREAK-OFF MONUMENT



① BERNSTEN SNM1 STEEL NAIL MARKER



① BERNSTEN BP -1 BRASS MARKER WITH ANCHOR PLUG

SECTION CORNER MONUMENTS

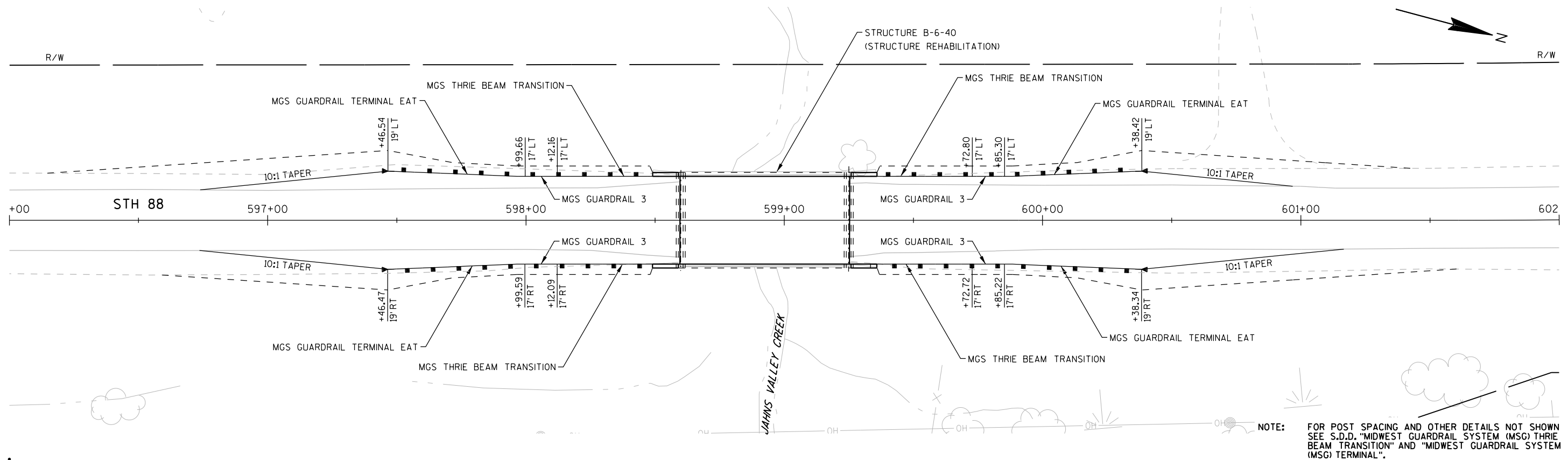
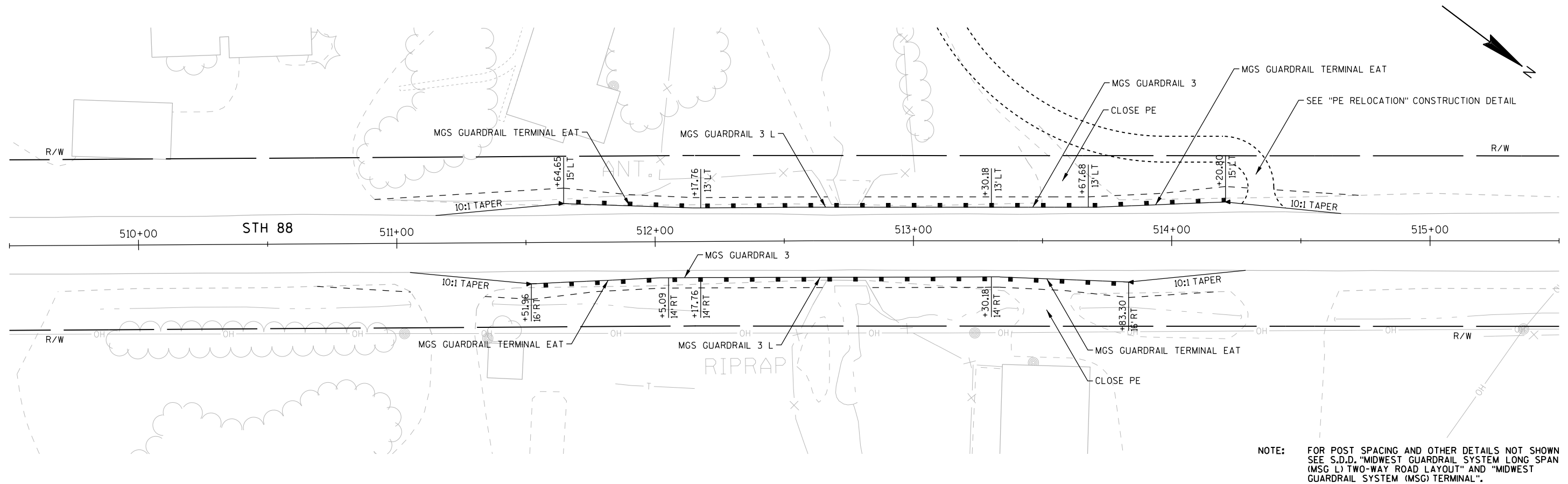
GENERAL NOTES

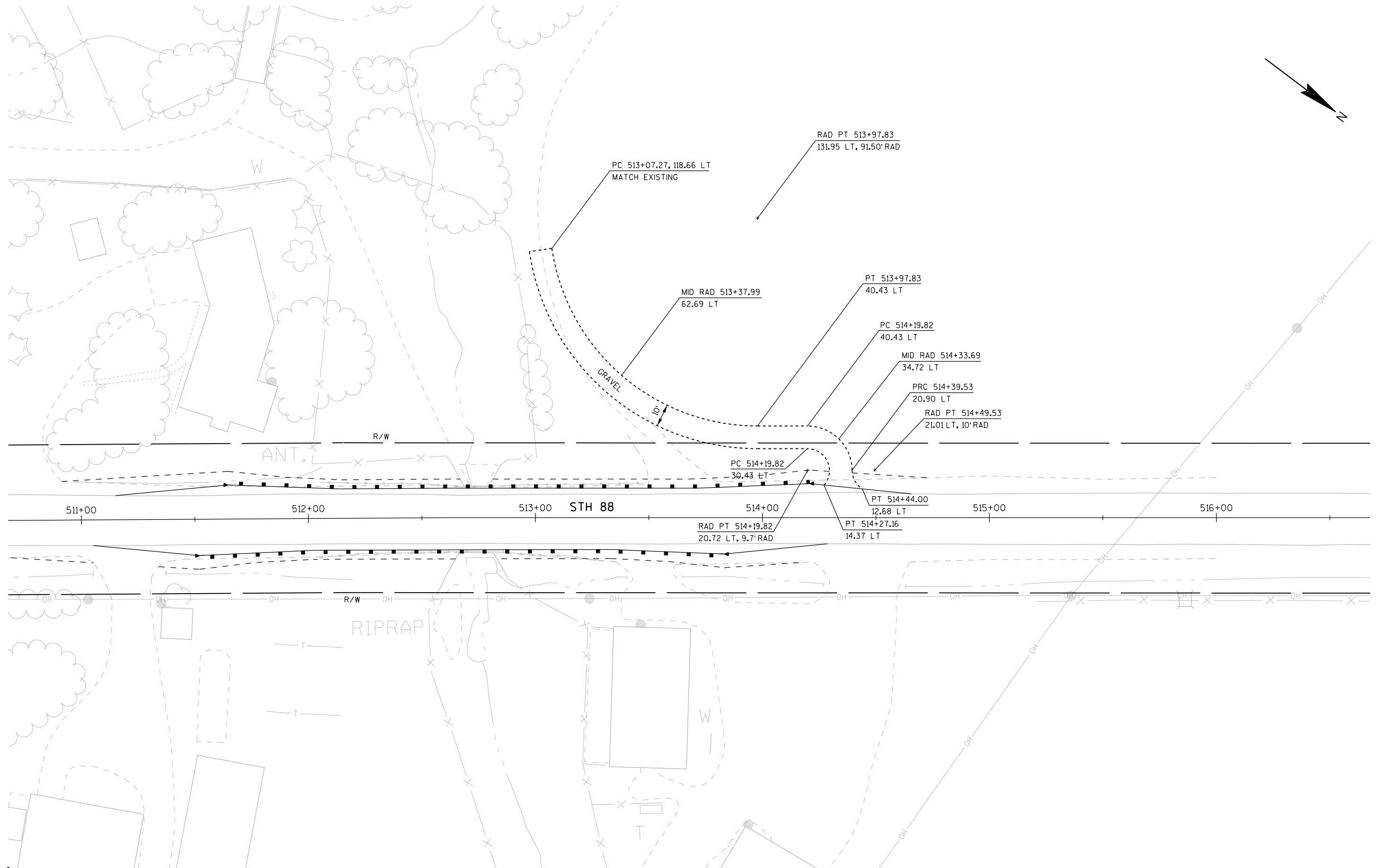
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

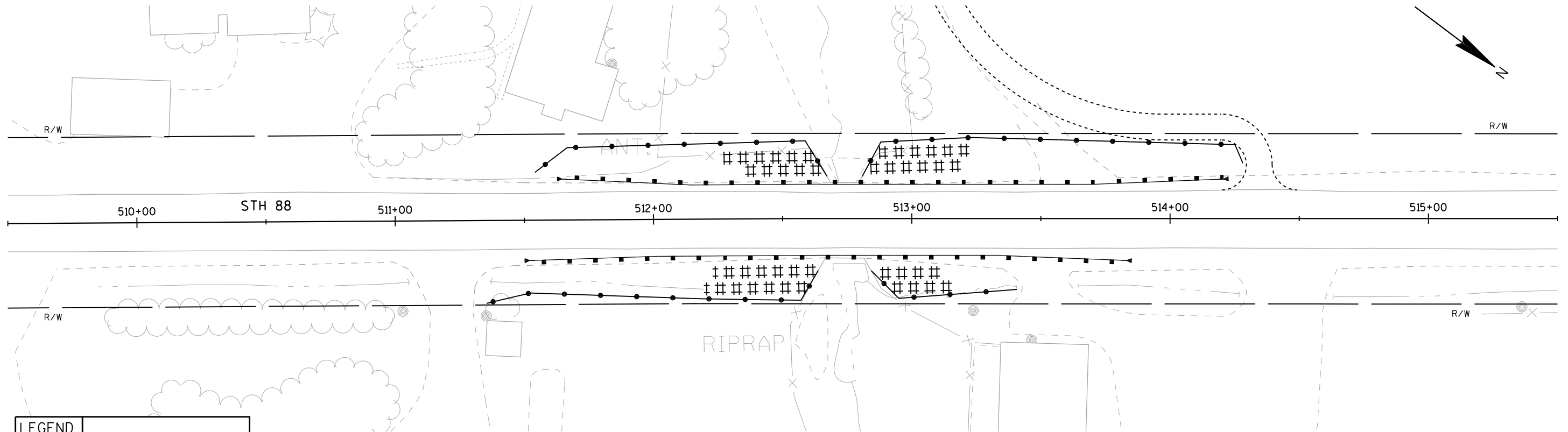
LOCATE LANDMARK REFERENCE MONUMENTS OUTSIDE THE CONSTRUCTION LIMITS AND WITHIN WISDOT RIGHT OF WAY. LOCATION TO BE APPROVED BY THE ENGINEER.

① THE REGION SURVEY COORDINATOR WILL SUPPLY.

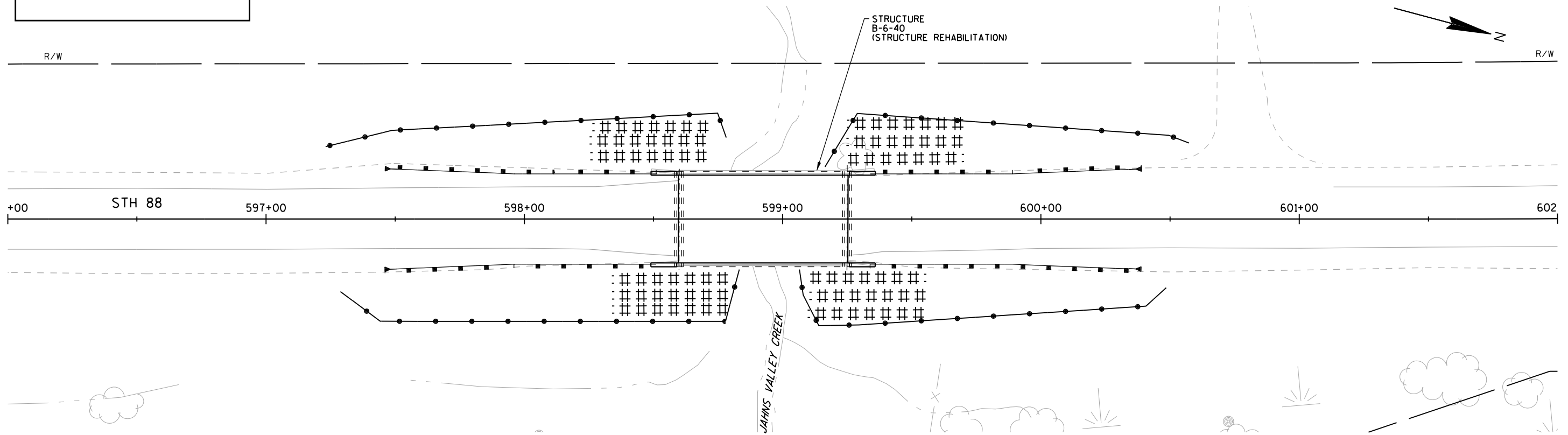
SECTION CORNER MONUMENT AND LANDMARK REFERENCE MONUMENT DETAIL

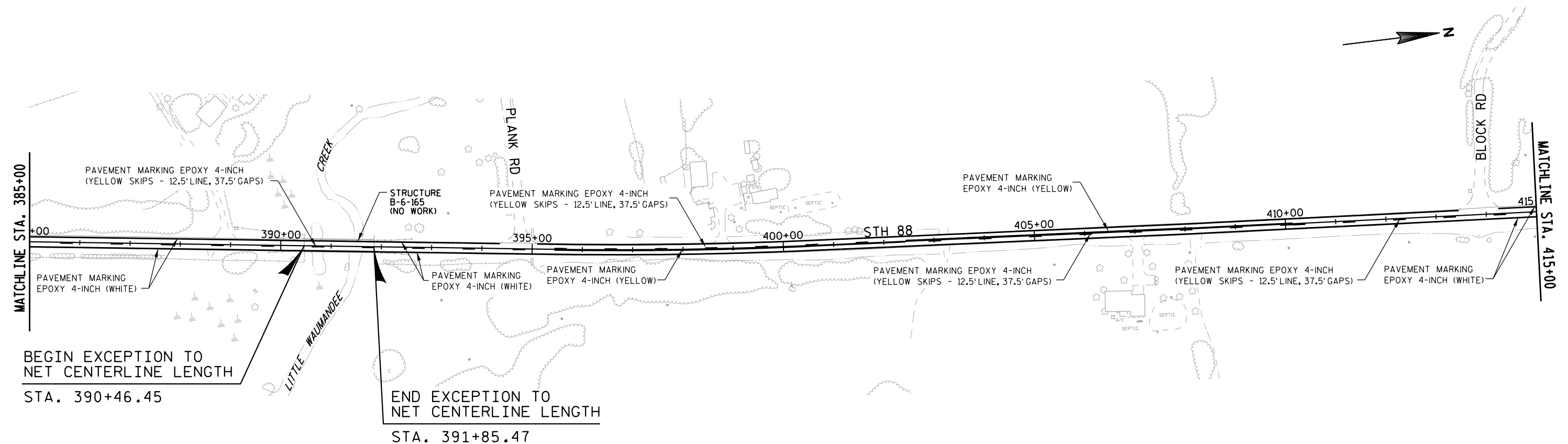
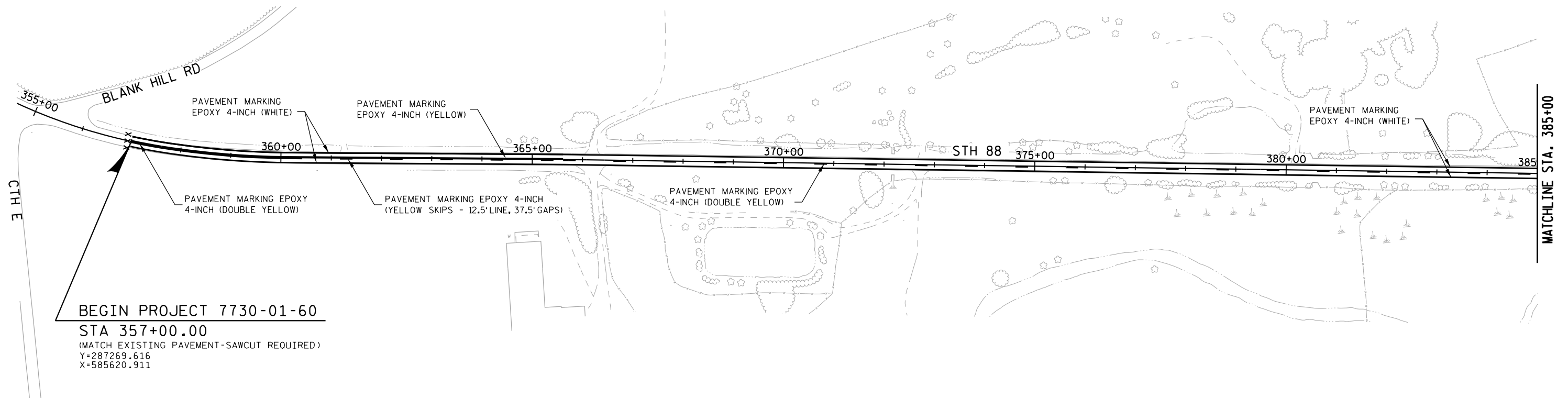






LEGEND	
	SILT FENCE
	EROSION MAT CLASS I, TYPE B





NOTE: PAVEMENT MARKING LOCATIONS ARE APPROXIMATE AND WILL BE BASED ON RESULTS OF LOCATING NO PASSING ZONES

PROJECT NUMBER: 7730-01-60

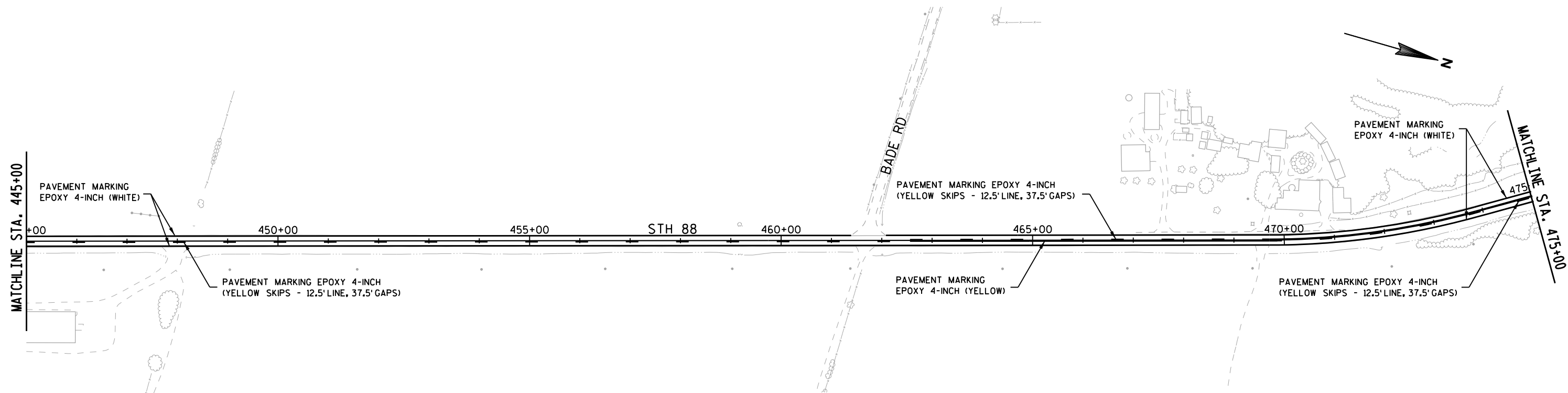
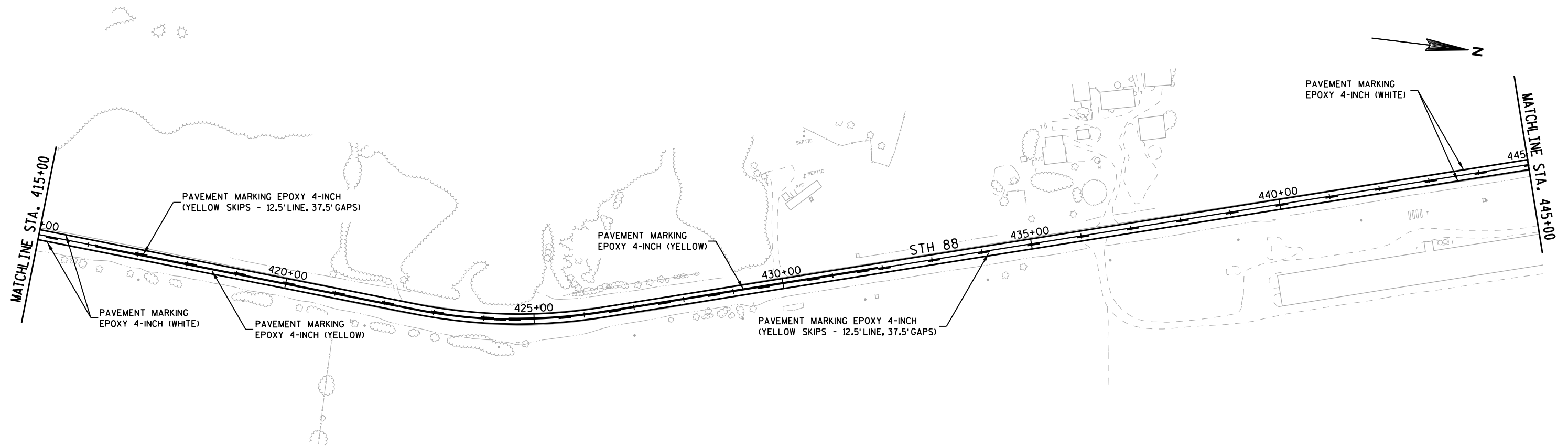
HWY: STH 88

COUNTY: BUFFALO

PAVEMENT MARKINGS

SHEET

E



NOTE: PAVEMENT MARKING LOCATIONS ARE APPROXIMATE AND
WILL BE BASED ON RESULTS OF LOCATING NO PASSING ZONES

PROJECT NUMBER: 7730-01-60

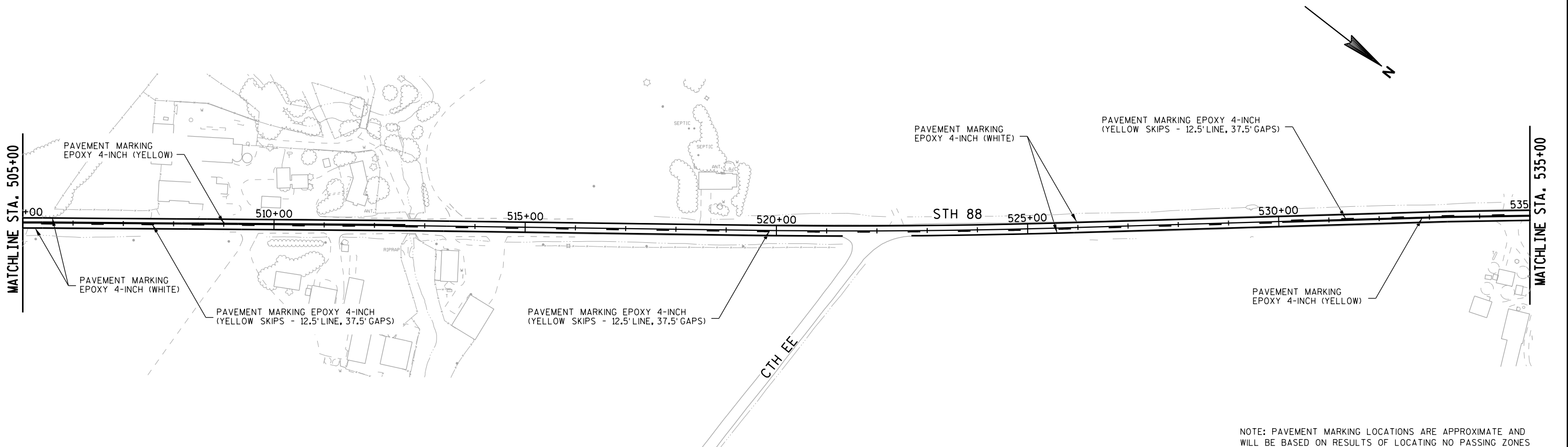
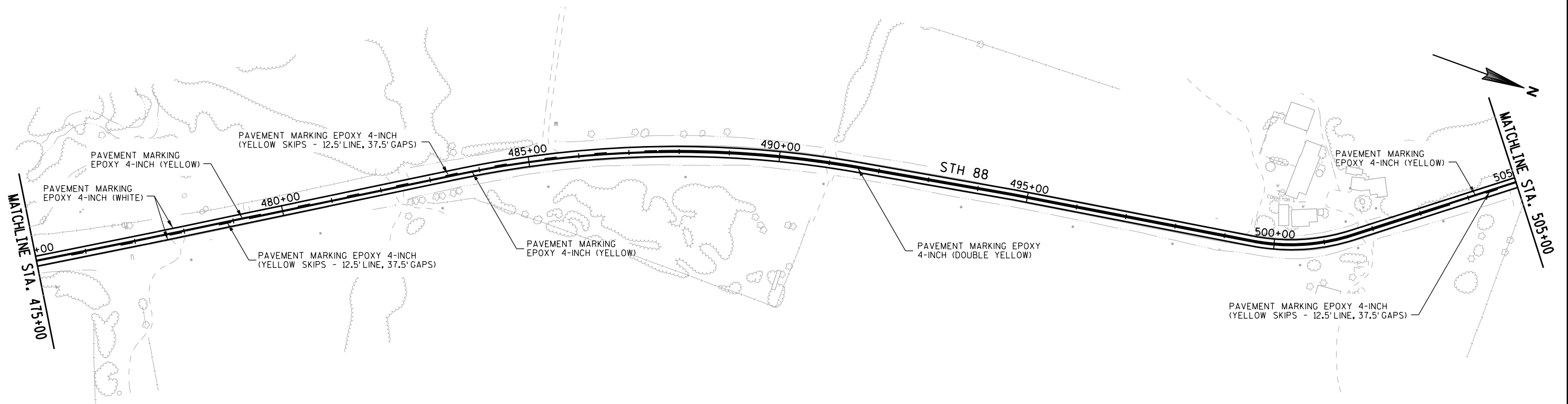
HWY: STH 88

COUNTY: BUFFALO

PAVEMENT MARKINGS

SHEET

E



NOTE: PAVEMENT MARKING LOCATIONS ARE APPROXIMATE AND
WILL BE BASED ON RESULTS OF LOCATING NO PASSING ZONES

PROJECT NUMBER: 7730-01-60

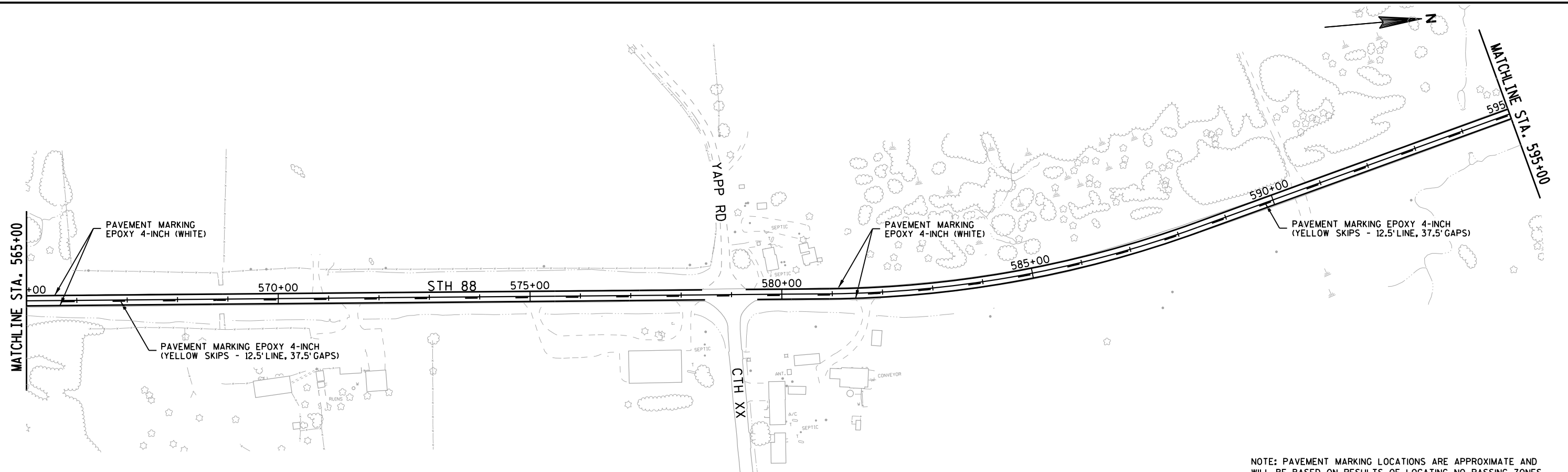
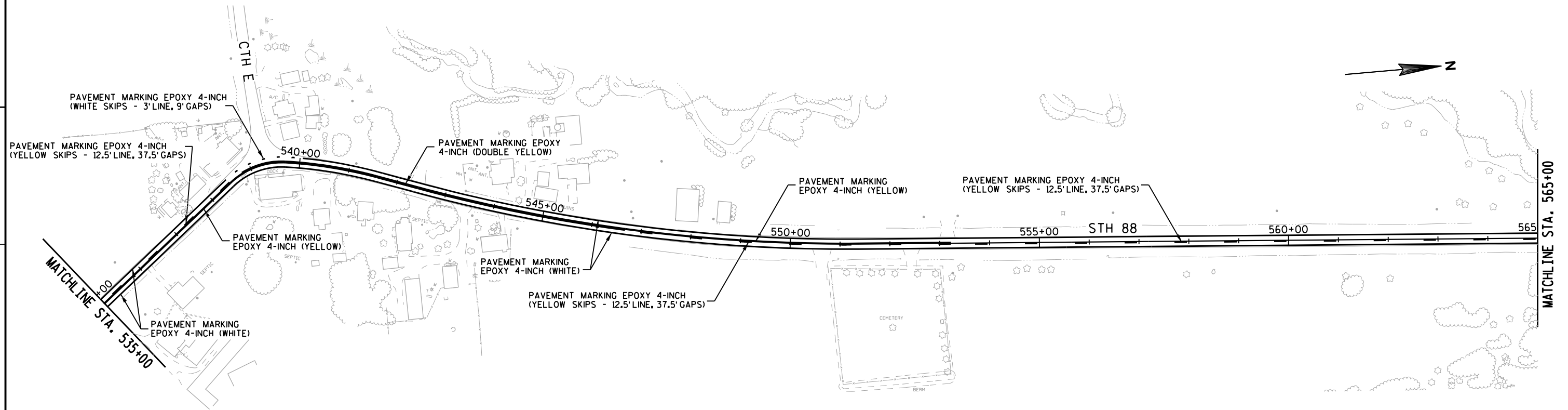
HWY: STH 88

COUNTY: BUFFALO

PAVEMENT MARKINGS

SHEET

E



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PROJECT NUMBER: 7730-01-60

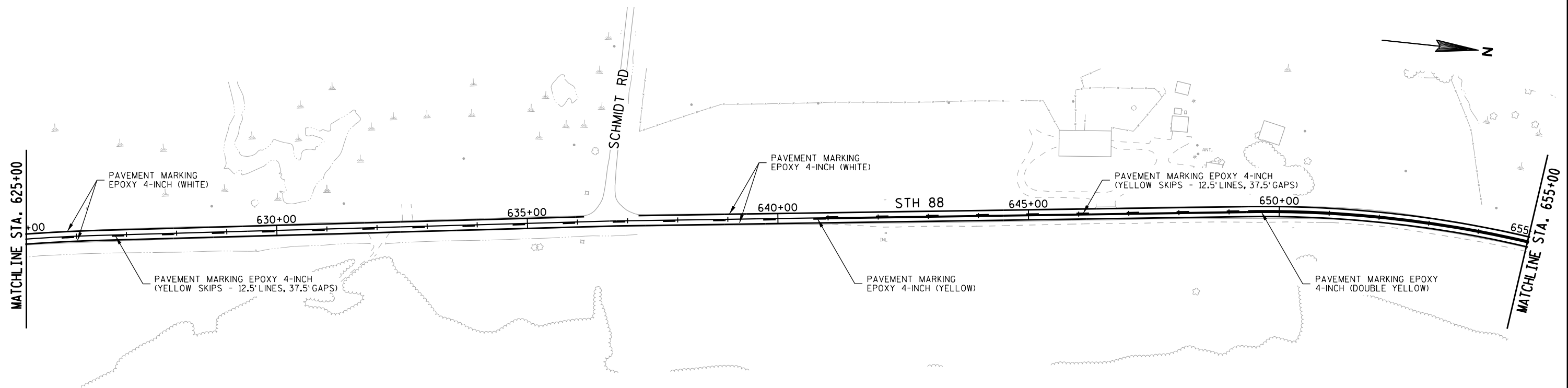
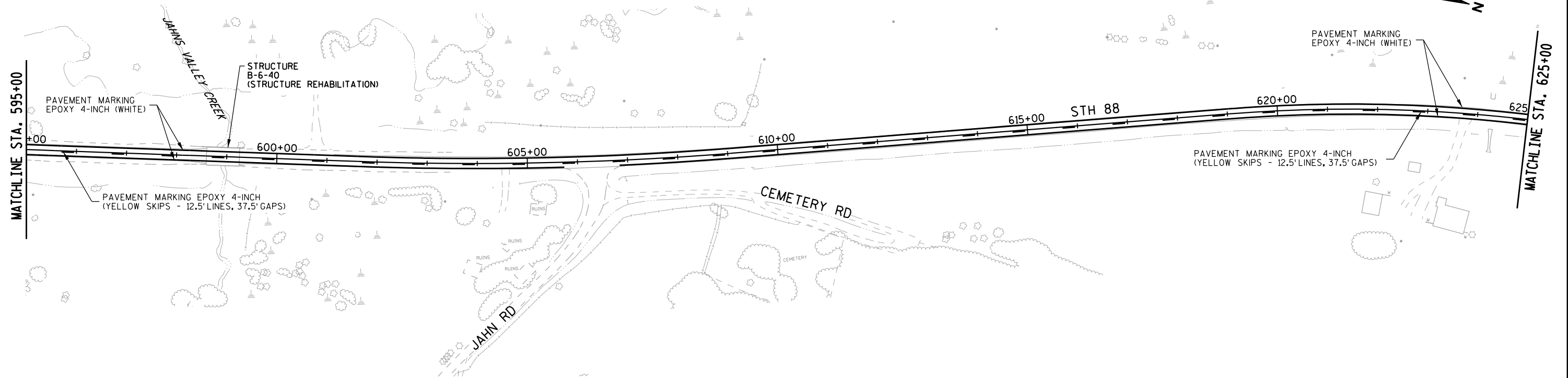
HWY: STH 88

COUNTY: BUFFALO

PAVEMENT MARKINGS

SHEET

E



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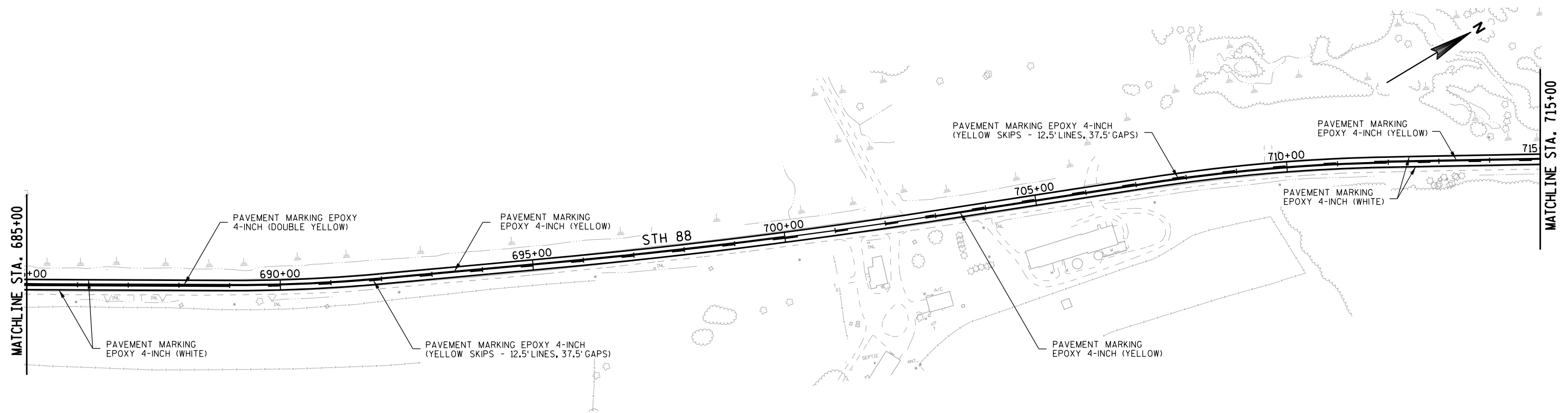
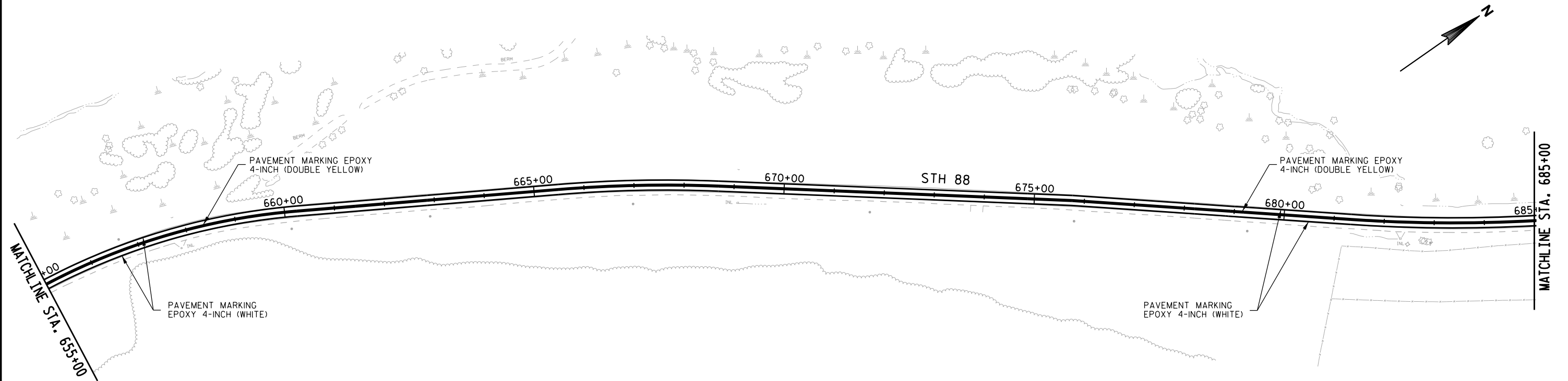
HWY: STH 88

COUNTY: BUFFALO

PAVEMENT MARKINGS

SHEET

E



NOTE: PAVEMENT MARKING LOCATIONS ARE APPROXIMATE AND
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PROJECT NUMBER: 7730-01-60

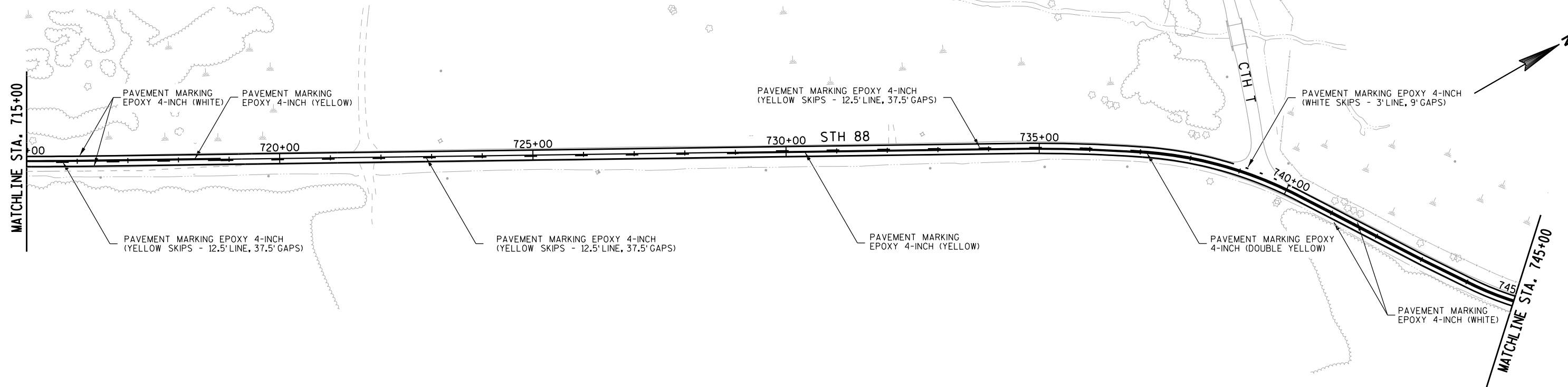
HWY: STH 88

COUNTY: BUFFALO

PAVEMENT MARKINGS

SHEET

E



NOTE: PAVEMENT MARKING LOCATIONS ARE APPROXIMATE AND
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PROJECT NUMBER: 7730-01-60

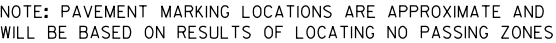
HWY: STH 88

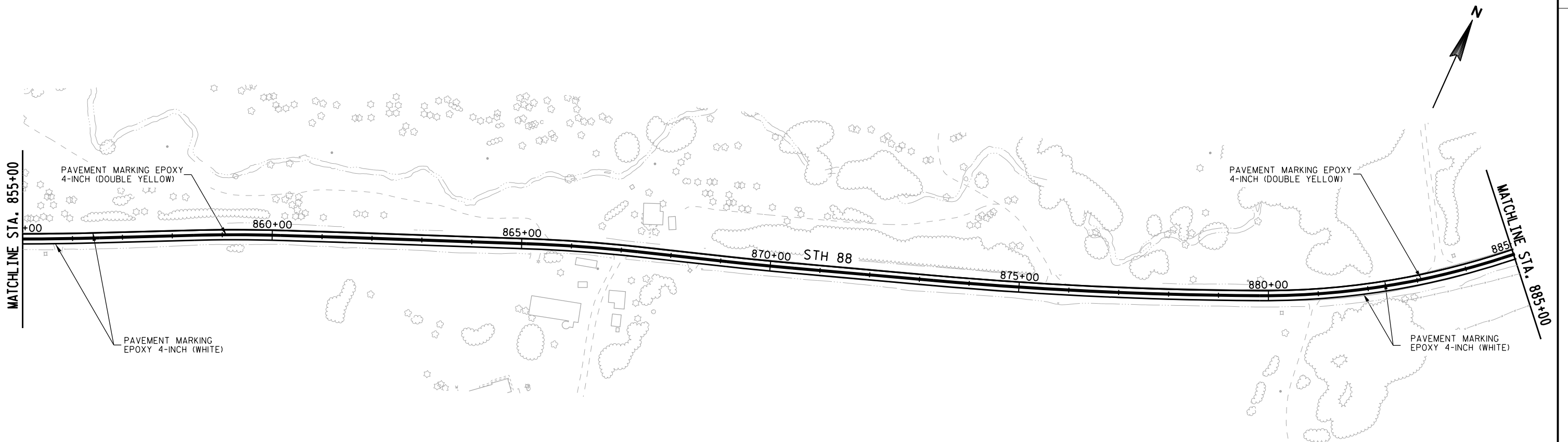
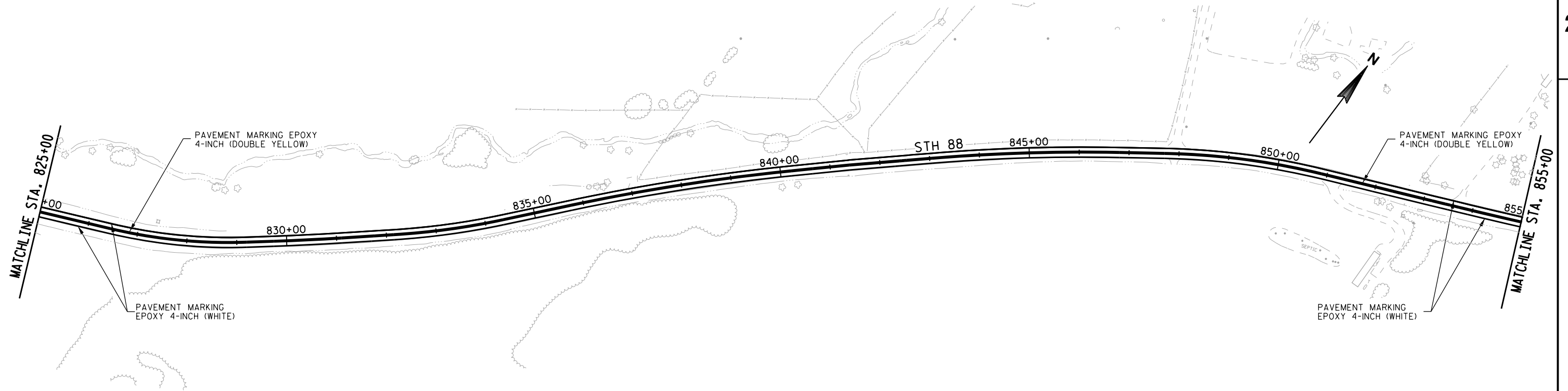
COUNTY: BUFFALO

PAVEMENT MARKINGS

SHEET

E





NOTE: PAVEMENT MARKING LOCATIONS ARE APPROXIMATE AND
WILL BE BASED ON RESULTS OF LOCATING NO PASSING ZONES

PROJECT NUMBER: 7730-01-60

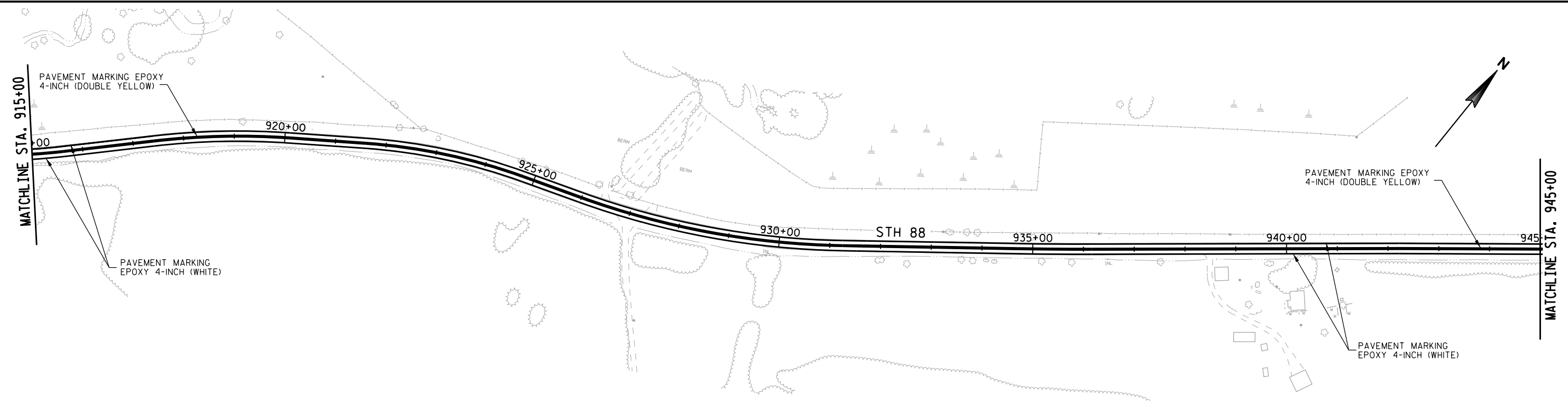
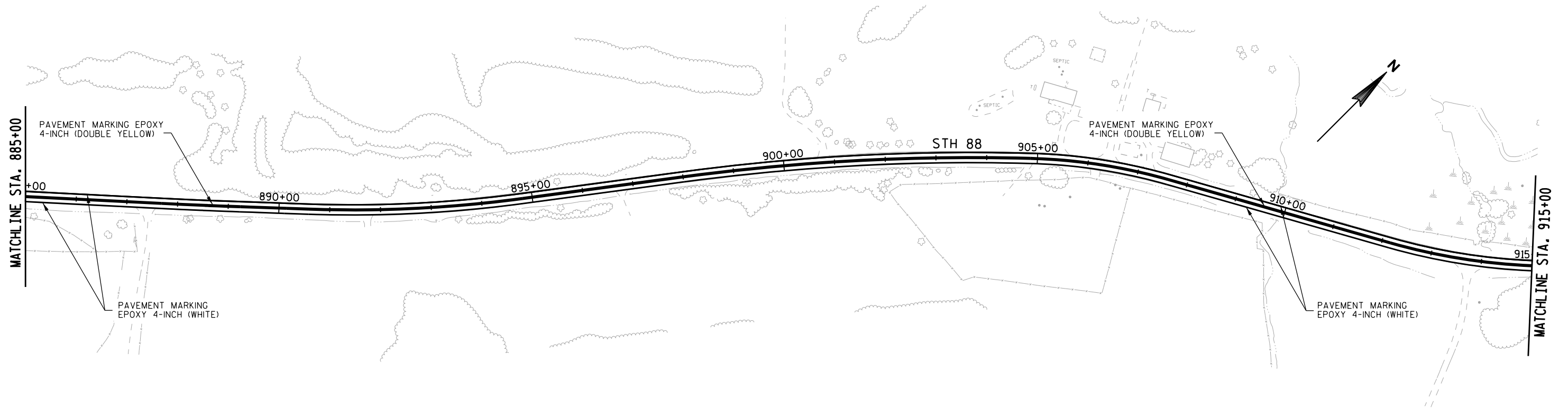
HWY: STH 88

COUNTY: BUFFALO

PAVEMENT MARKINGS

SHEET

E



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PROJECT NUMBER: 7730-01-60

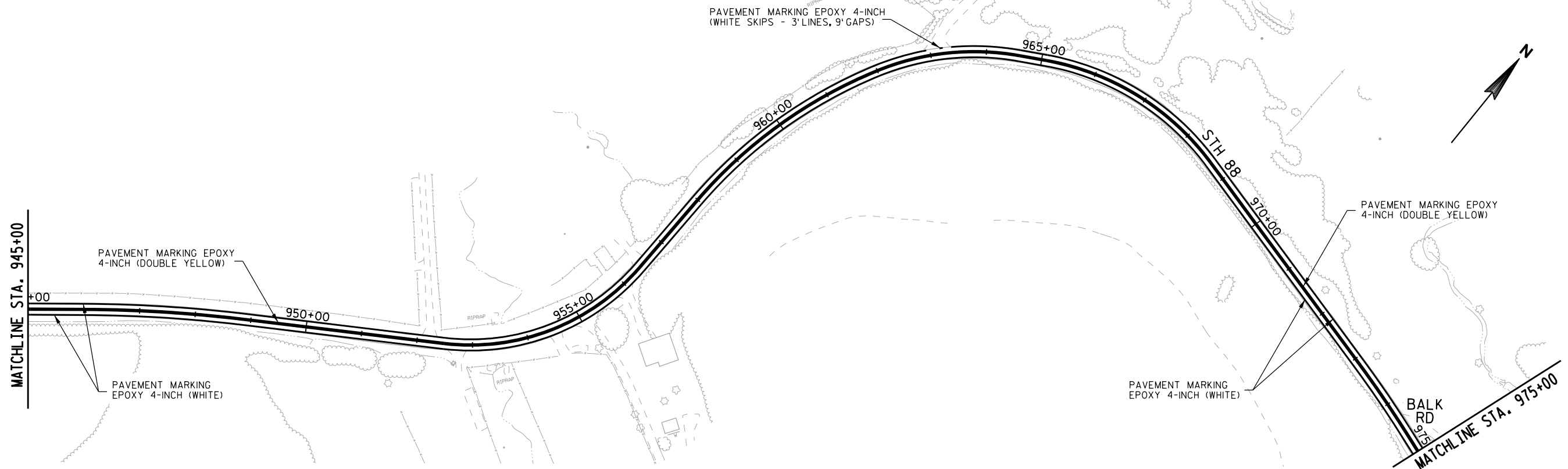
HWY: STH 88

COUNTY: BUFFALO

PAVEMENT MARKINGS

SHEET

E



PROJECT NUMBER: 7730-01-60

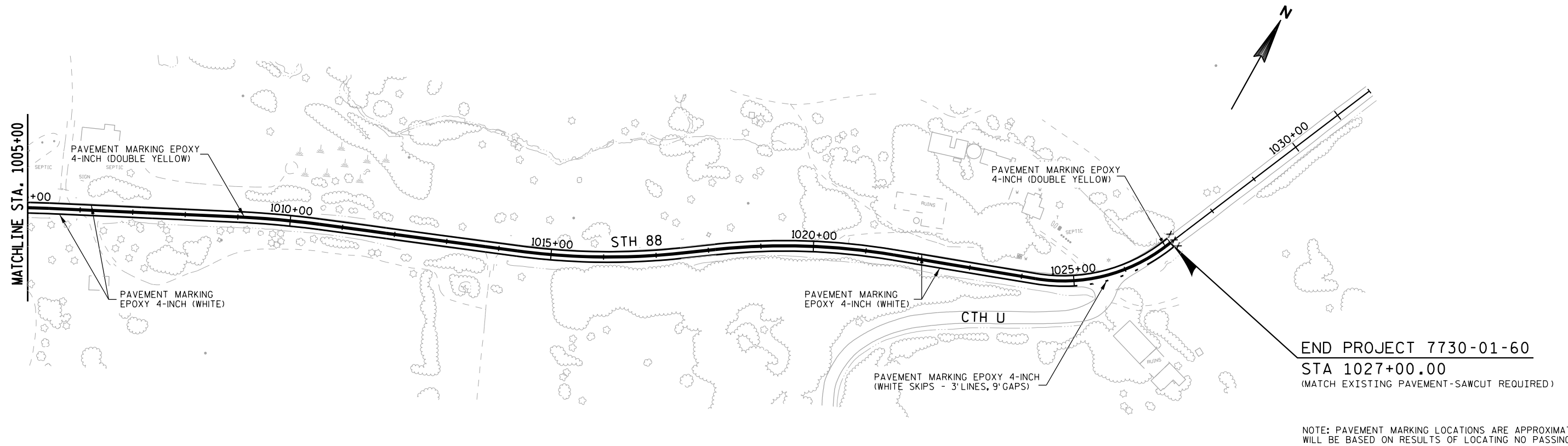
HWY: STH 88

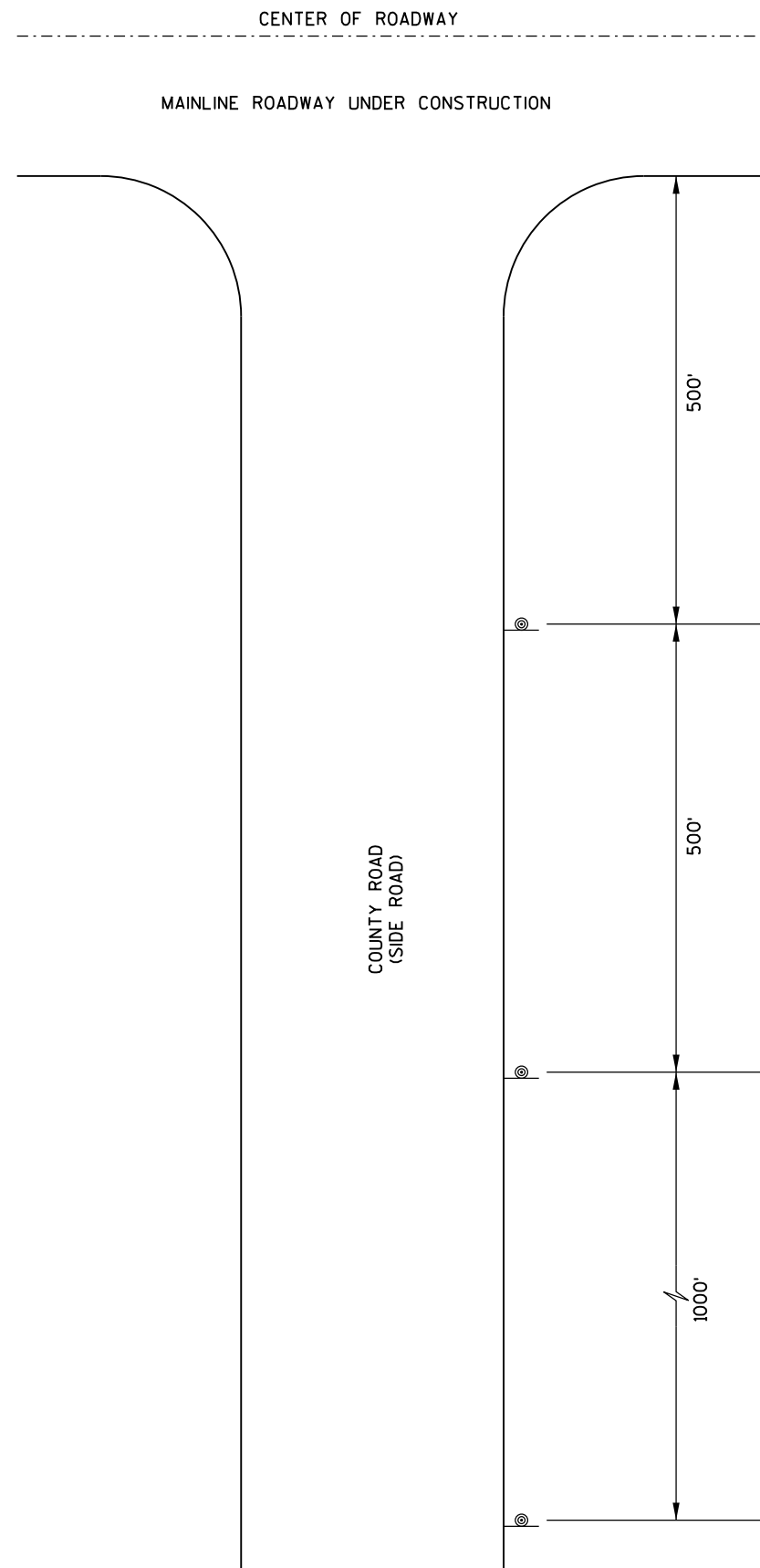
COUNTY: BUFFALO

PAVEMENT MARKINGS

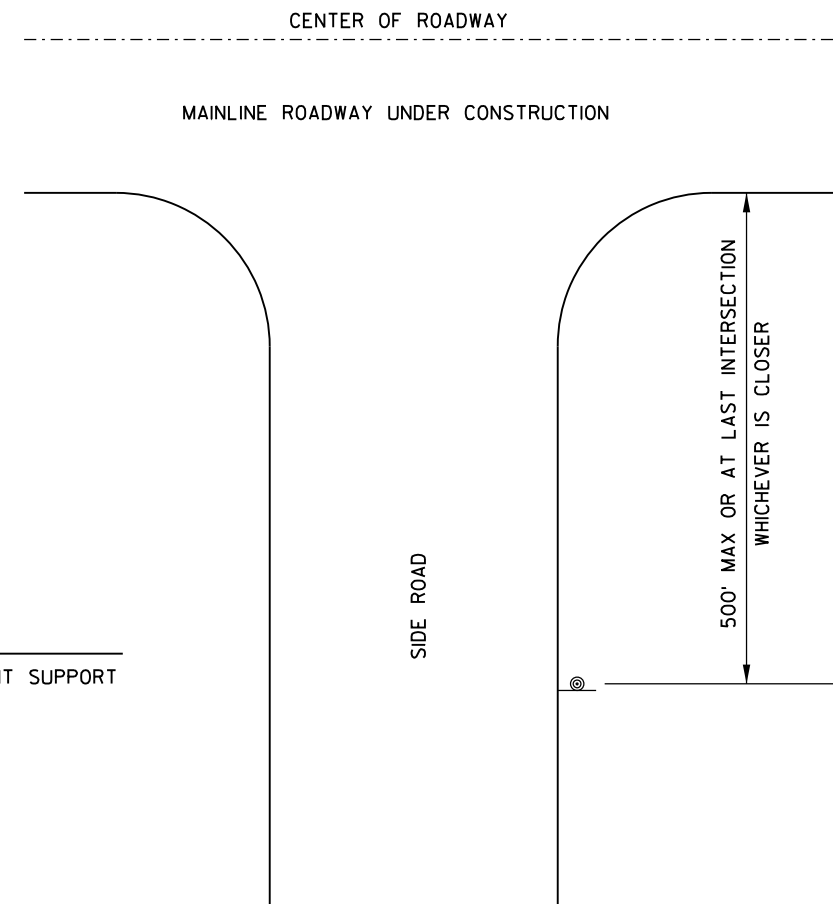
SHEET

E





TYPICAL COUNTY SIDEROAD APPROACH WARNING SIGN DETAIL



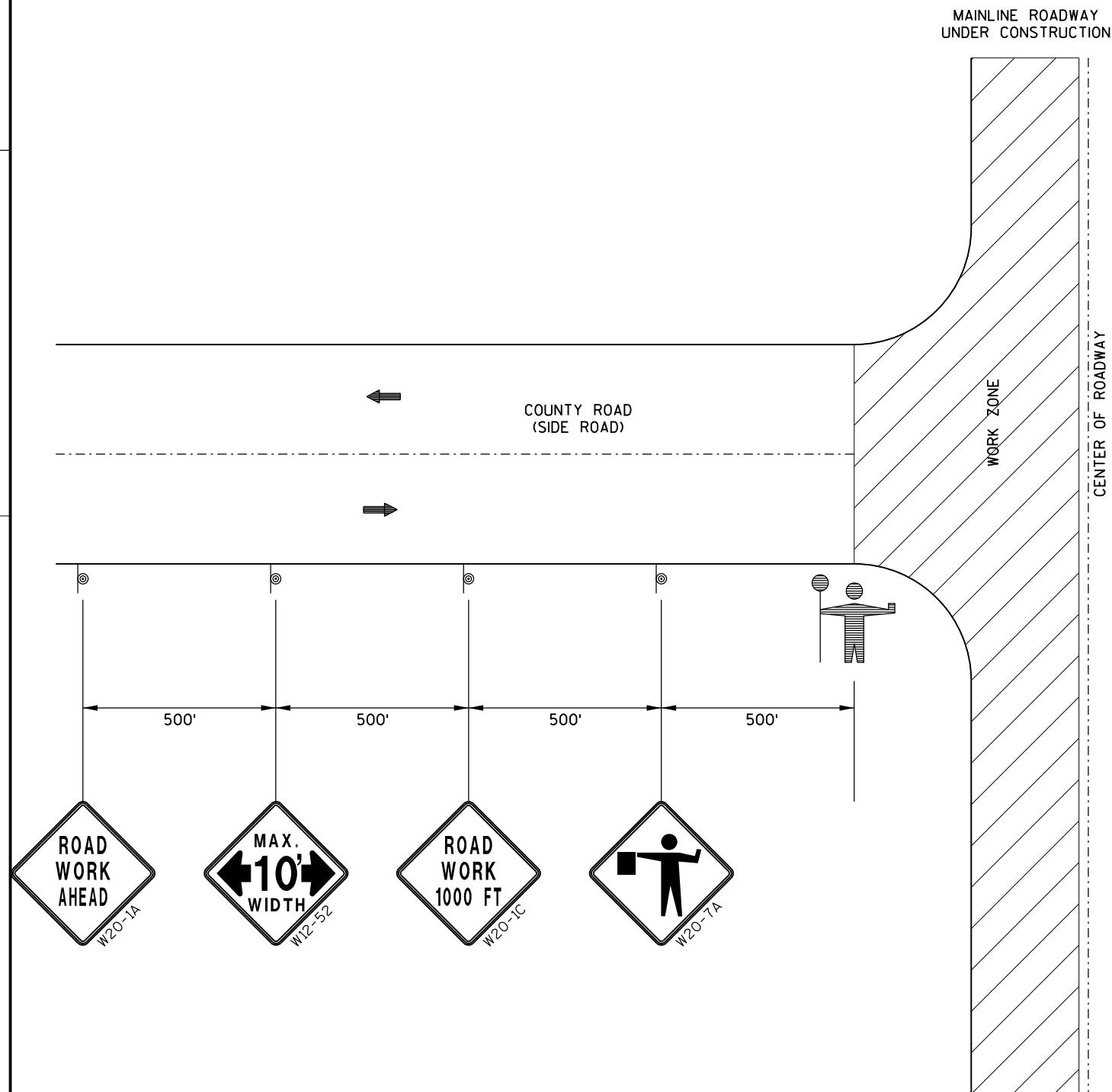
TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

LEGEND

⊙ SIGN ON PERMANENT SUPPORT



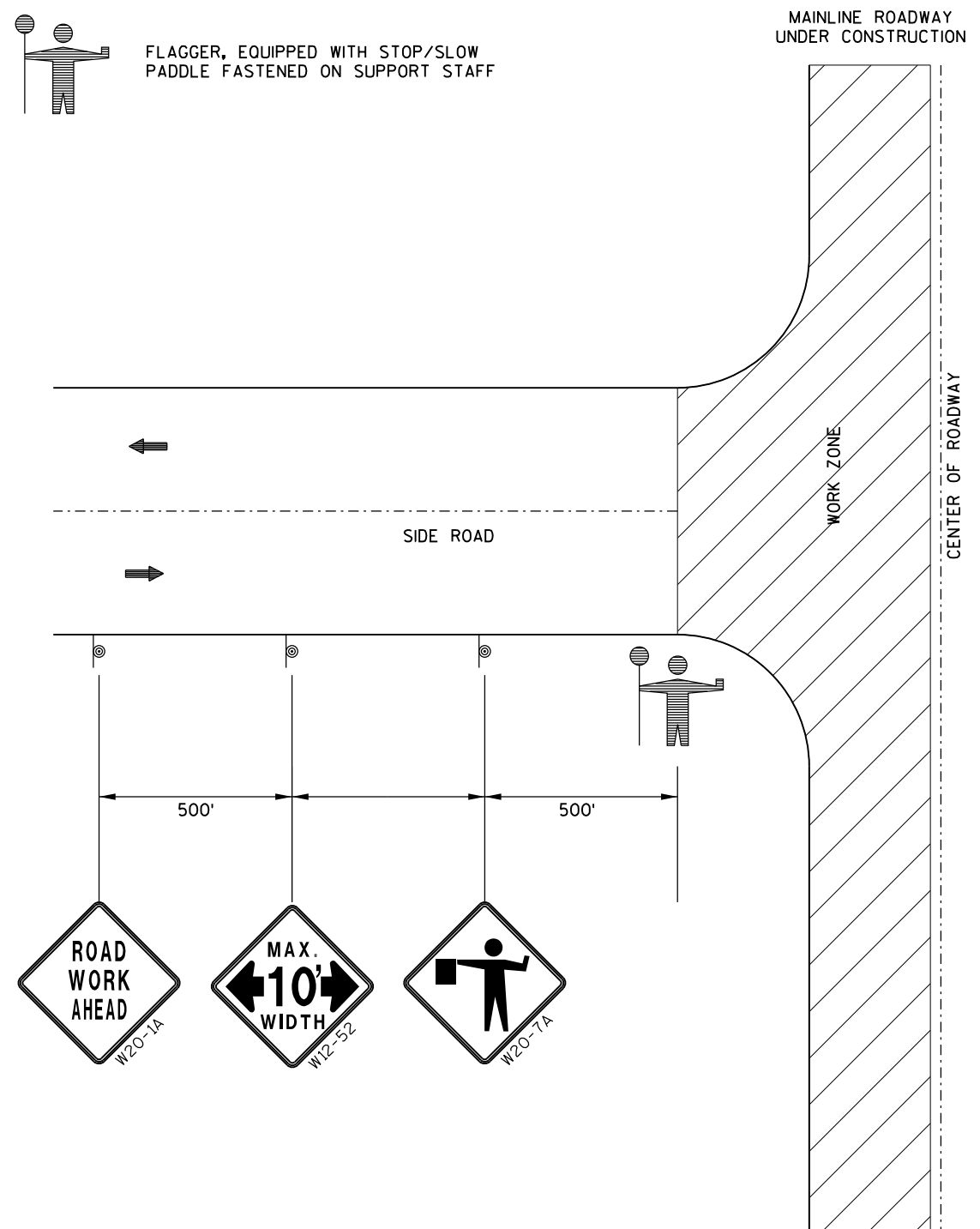
NOTE: PLACE MAX WIDTH 10' SIGN W12-52 ON STH 88 MAINLINE DURING FLAGGING OPERATIONS. USE IN CONJUNCTION WITH STANDARD DETAIL DRAWING "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)". SEE DETAILS BELOW FOR USE ON SIDE ROADS.



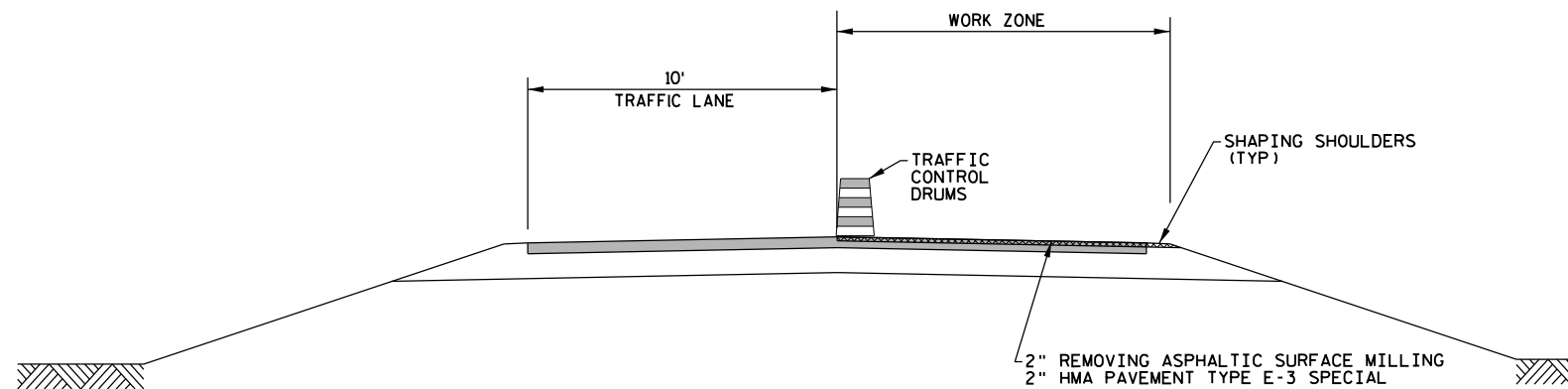
SIGNS FOR COUNTY SIDE ROADS DURING FLAGGING OPERATIONS

LEGEND

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

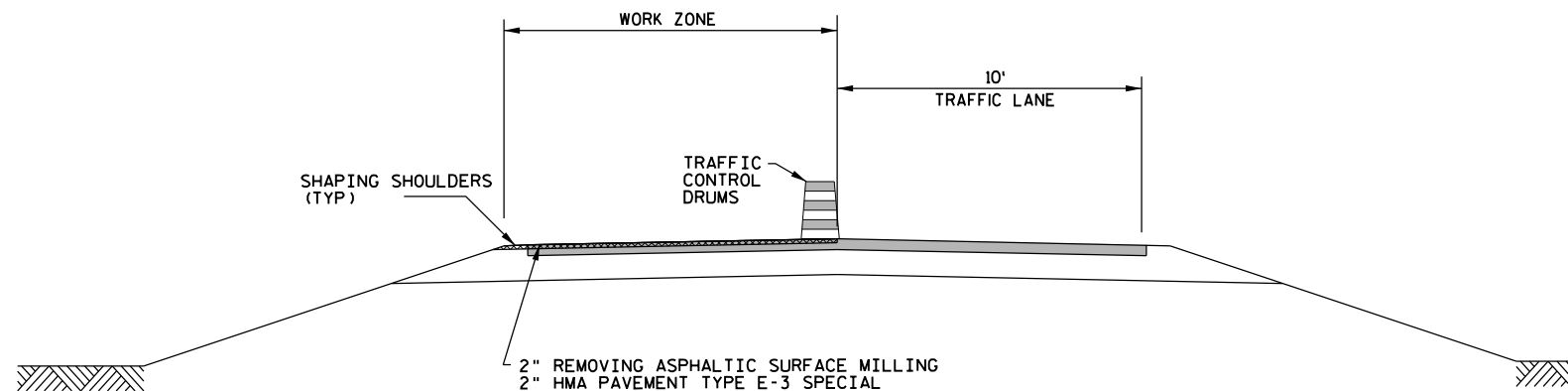


SIGNS FOR SIDE ROADS DURING FLAGGING OPERATIONS



TRAFFIC CONTROL STAGING TYPICAL SECTION

STAGE 3



TRAFFIC CONTROL STAGING TYPICAL SECTION

STAGE 4

STAGE 1TRAFFIC

STH 88 REDUCED TO 1-LANE OF TRAFFIC AT THE JAHNS VALLEY CREEK BRIDGE USING THE EXISTING SB LANE. TRAFFIC OPERATIONS WILL BE CONTROLLED WITH THE USE OF STOP SIGNS BY ADHERING TO WISDOT STANDARD DETAIL, "TRAFFIC CONTROL, ONE LANE ROAD STOP CONDITION."

CONSTRUCTION

RESURFACE THE NB LANE ON THE JAHNS VALLEY CREEK BRIDGE AS WELL AS REPAIR THE WING WALLS ON THE WEST SIDE OF THE BRIDGE. CONSTRUCT LANE SHIFT ACCORDING TO "ONE LANE ROAD STOP CONDITION."

STAGE 2TRAFFIC

STH 88 REDUCED TO 1-LANE OF TRAFFIC AT THE JAHNS VALLEY CREEK BRIDGE USING THE RESURFACED NB LANE. TRAFFIC OPERATIONS WILL BE CONTROLLED WITH THE USE OF STOP SIGNS BY ADHERING TO WISDOT STANDARD DETAIL, "TRAFFIC CONTROL, ONE LANE ROAD STOP CONDITION."

CONSTRUCTION

RESURFACE THE SB LANE ON THE JAHNS VALLEY CREEK BRIDGE AS WELL AS REPAIR THE WING WALLS ON THE EAST SIDE OF THE BRIDGE. CONSTRUCT LANE SHIFT ACCORDING TO "ONE LANE ROAD STOP CONDITION."

STAGE 3TRAFFIC

STH 88 REDUCED TO 1-LANE OF TRAFFIC USING THE EXISTING SB LANE. STH 88 TO BE KEPT OPEN TO TRAFFIC WITH THE USE OF FLAGGERS USING WISDOT STANDARD DETAIL, "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)."

CONSTRUCTION

REMOVING ASPHALTIC SURFACE MILLING, REPAIR FOUNDATION WHERE NECESSARY, WIDEN SHOULDERS, AND INSTALL PAVEMENT MARKING ON THE OUTSIDE EDGE OF THE NB LANE. PLACE TEMPORARY PAVEMENT MARKING ALONG THE CENTERLINE.

STAGE 4TRAFFIC

STH 88 REDUCED TO 1-LANE OF TRAFFIC USING THE RESURFACED NB LANE. STH 88 TO BE KEPT OPEN TO TRAFFIC WITH THE USE OF FLAGGERS USING WISDOT STANDARD DETAIL, "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)."

CONSTRUCTION

REMOVING ASPHALTIC SURFACE MILLING, REPAIR FOUNDATION WHERE NECESSARY, WIDEN SHOULDERS, AND INSTALL PAVEMENT MARKING ON THE OUTSIDE EDGE OF THE SB LANE. PLACE TEMPORARY PAVEMENT MARKING ALONG THE CENTERLINE.

STAGE 5TRAFFIC

STH 88 WILL BE KEPT OPEN TO TRAFFIC IN BOTH DIRECTIONS USING WISDOT STANDARD DETAIL, "MOVING PAVEMENT MARKING OPERATIONS - TWO-LANE TWO-WAY ROADWAY."

CONSTRUCTION

PLACE PAVEMENT MARKING ALONG THE CENTERLINE.

DATE 07DEC15		E S T I M A T E O F Q U A N T I T I E S			
LINE					7730-01-60
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	203.0200	Removing Old Structure (station) 01. 598+92.44	LS	1.000	1.000
0020	204.0115	Removing Asphaltic Surface Butt Joints	SY	57.000	57.000
0030	204.0120	Removing Asphaltic Surface Milling	SY	186,100.000	186,100.000
0040	204.0165	Removing Guardrail	LF	660.000	660.000
0050	206.1000	Excavation for Structures Bridges (structure) 01. B-6-40	LS	1.000	1.000
0060	210.0100	Backfill Structure	CY	180.000	180.000
0070	211.0100	Prepare Foundation for Asphaltic Paving (project) 01. 7730-01-60	LS	1.000	1.000
0080	213.0100	Finishing Roadway (project) 01. 7730-01-60	EACH	1.000	1.000
0090	305.0110	Base Aggregate Dense 3/4-Inch	TON	180.000	180.000
0100	305.0500	Shaping Shoulders	STA	1,338.000	1,338.000
0110	315.0100	Asphaltic Base	TON	720.000	720.000
0120	440.4410	Incentive IRI Ride	DOL	50,610.000	50,610.000
0130	455.0605	Tack Coat	GAL	9,150.000	9,150.000
0140	460.4110.S	Reheating HMA Pavement Longitudinal Joints	LF	66,810.000	66,810.000
0150	465.0105	Asphaltic Surface	TON	1,000.000	1,000.000
0160	502.0100	Concrete Masonry Bridges	CY	46.000	46.000
0170	502.5010	Masonry Anchors Type L No. 6 Bars	EACH	64.000	64.000
0180	502.6115	Masonry Anchors Type S 7/8-Inch	EACH	32.000	32.000
0190	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	3,440.000	3,440.000
0200	509.0301	Preparation Decks Type 1	SY	38.000	38.000
0210	509.0302	Preparation Decks Type 2	SY	13.000	13.000
0220	509.0500	Cleaning Decks	SY	249.000	249.000
0230	509.1500	Concrete Surface Repair	SF	15.000	15.000
0240	509.2500	Concrete Masonry Overlay Decks	CY	18.000	18.000
0250	509.9020.S	Epoxy Crack Sealing	LF	20.000	20.000
0260	511.1200	Temporary Shoring (structure) 01. B-6-40	SF	1,080.000	1,080.000
0270	513.9005.S	Removing and Resetting Tubular Railing (structure) 01. B-6-40	LS	1.000	1.000
0280	516.0500	Rubberized Membrane Waterproofing	SY	16.000	16.000
0290	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	100.000	100.000
0300	614.0010	Barrier System Grading Shaping Finishing	EACH	8.000	8.000
0310	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0320	614.2300	MGS Guardrail 3	LF	100.000	100.000
0330	614.2340	MGS Guardrail 3 L	LF	225.000	225.000
0340	614.2500	MGS Thrie Beam Transition	LF	150.000	150.000
0350	614.2610	MGS Guardrail Terminal EAT	EACH	8.000	8.000
0360	618.0100	Maintenance And Repair of Haul Roads (project) 01. 7730-01-60	EACH	1.000	1.000
0370	619.1000	Mobilization	EACH	1.000	1.000
0380	628.1504	Silt Fence	LF	1,130.000	1,130.000
0390	628.1520	Silt Fence Maintenance	LF	115.000	115.000
0400	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0410	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0420	628.2004	Erosion Mat Class I Type B	SY	630.000	630.000
0430	642.5001	Field Office Type B	EACH	1.000	1.000
0440	643.0100	Traffic Control (project) 01. 7730-01-60	EACH	1.000	1.000
0450	643.0300	Traffic Control Drums	DAY	880.000	880.000
0460	643.0420	Traffic Control Barricades Type III	DAY	40.000	40.000

DATE 07DEC15		E S T I M A T E O F Q U A N T I T I E S			
LINE					7730-01-60
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0470	643.0715	Traffic Control Warning Lights Type C	DAY	400.000	400.000
0480	643.0900	Traffic Control Signs	DAY	2,500.000	2,500.000
0490	646.0106	Pavement Marking Epoxy 4-Inch	LF	221,010.000	221,010.000
0500	646.0600	Removing Pavement Markings	LF	200.000	200.000
0510	648.0100	Locating No-Passing Zones	MI	12.000	12.000
0520	649.0402	Temporary Pavement Marking Paint 4-Inch	LF	33,820.000	33,820.000
0530	650.8000	Construction Staking Resurfacing Reference	LF	133,620.000	133,620.000
0540	650.9910	Construction Staking Supplemental Control (project) 01. 7730-01-60	LS	1.000	1.000
0550	690.0150	Sawing Asphalt	LF	192.000	192.000
0560	SPV.0060	Special 01. Reestablish Section Corner Monuments	EACH	2.000	2.000
0570	SPV.0180	Special 01. Full Depth HMA Repair	SY	1,000.000	1,000.000
0580	SPV.0195	Special 01. HMA Pavement Type E-3 Special	TON	29,150.000	29,150.000

3

FINISHING ROADWAY

213.0100 FINISHING ROADWAY EACH	
PROJECT	
7730-01-60	1
PROJECT 7730-01-60 TOTAL	
1	

PREPARE FOUNDATION FOR ASPHALTIC PAVING

211.0100 PREPARE FOUNDATION FOR ASPHALTIC PAVING EACH	
PROJECT	
7730-01-60	1
PROJECT 7730-01-60 TOTAL	
1	

BASE AGGREGATE

305.0115					
STAGE	STATION	-	STATION	LOCATION	3/4-INCH TONS
3	511+50	-	513+80	RT	20
3	597+46	-	600+41	RT	20
3	UNDISTRIBUTED			DRIVEWAYS	10
STAGE 3 SUB-TOTALS					50
4	511+55	-	514+25	LT	20
4	514+40			LT	80
4	597+45	-	600+40	LT	20
4	UNDISTRIBUTED			DRIVEWAYS	10
STAGE 4 SUB-TOTALS					130
PROJECT 7730-01-60 TOTAL					180

SHAPING SHOULDERS

305.0500 SHAPING SHOULDERS					
STAGE	STATION	-	STATION	LOCATION	STA
3	357+00	-	390+47	STH 88	34
3	391+85	-	598+60	STH 88	207
3	599+25	-	1027+00	STH 88	428
STAGE 3 SUB-TOTALS					669
4	357+00	-	390+47	STH 88	34
4	391+85	-	598+60	STH 88	207
4	599+25	-	1027+00	STH 88	428
STAGE 4 SUB-TOTALS					669
PROJECT 7730-01-60 TOTAL					1,338

REMOVE ASPHALTIC SURFACE MILLING

204.0120						
REMOVE ASPHALTIC SURFACE MILLING						
STAGE	STATION	-	STATION	LOCATION	THICKNESS (IN)	SY
3	357+00	-	390+47	STH 88	2	4,500
3	391+85	-	598+60	STH 88	2	27,600
3	599+25	-	1027+00	STH 88	2	57,100
3	VARIOUS			SHDLR WIDENING	3	4,400
STAGE 3 SUB-TOTAL						93,600
4	357+00	-	390+47	STH 88	2	4,500
4	391+85	-	598+60	STH 88	2	27,600
4	599+25	-	1027+00	STH 88	2	57,100
4	VARIOUS			SHDLR WIDENING	3	3,300
STAGE 4 SUB-TOTAL						92,500
PROJECT 7730-01-60 TOTAL						186,100

ASPHALT PAVEMENT ITEMS

					315.0100	455.0605	460.4110.S	465.0105	SPV.0180.01	SPV.0195.01
					ASPHATIC BASE TONS	TACK COAT GAL	REHEATING HMA PAVEMENT LONGITUDINAL JOINTS LF	ASPHALTIC SURFACE TON	FULL DEPTH HMA REPAIR SY	HMA PAVEMENT TYPE E-3 SPECIAL TONS
STAGE	STATION	-	STATION	LOCATION						
3	357+00	-	390+47	STH 88	--	230	--	--	--	550
3	391+85	-	598+60	STH 88	--	1,380	--	--	--	3,350
3	599+25	-	1027+00	STH 88	--	2,860	--	--	--	10,400
3	VARIOUS			STH 88	--	--	--	500	--	--
3	VARIOUS			SHLDR WIDENING	--	120	--	--	--	300
3	VARIOUS			SHLDR WIDENING	420	--	--	--	--	--
3	UNDISTRIBUTED			STH 88 *	--	--	--	--	500	--
STAGE 3 SUB-TOTALS					420	4,590	0	500	500	14,600
4	357+00	-	390+47	STH 88	--	230	3,350	--	--	550
4	391+85	-	598+60	STH 88	--	1,380	20,680	--	--	3,350
4	599+25	-	1027+00	STH 88	--	2,860	42,780	--	--	10,400
4	VARIOUS			STH 88	--	--	--	500	--	--
4	VARIOUS			SHLDR WIDENING	--	90	--	--	--	250
4	VARIOUS			SHLDR WIDENING	300	--	--	--	--	--
	UNDISTRIBUTED			STH 88 *	--	--	--	--	500	--
STAGE 4 SUB-TOTALS					300	4,560	66,810	500	500	14,550
PROJECT 7730-01-60 TOTAL					720	9,150	66,810	1,000	1,000	29,150

* NOTE: LOCATION TO BE DETERMINED BY THE FIELD ENGINEER

BEAM GUARD

					204.0165	614.0010	614.2300	614.2340	614.2500	614.2610
					REMOVING GUARDRAIL	BARRIER SYSTEM GRADING SHAPING FINISHING	MGS GUARDRAIL 3	MGS GUARDRAIL 3 L	MGS THRIE BEAM TRANSITION	MGS GUARDRAIL TERMINAL EAT
STAGE	STATION	-	STATION	LOCATION	LF	EACH	LF	LF	LF	EACH
3	511+52	-	513+83	RT	125	2	12.5	112.5	--	2
3	597+50	-	598+50	RT	95	1	12.5	--	37.5	1
3	599+34	-	600+35	RT	100	1	12.5	--	37.5	1
STAGE 3 SUB TOTAL					320	4	37.5	112.5	75	4
4	511+65	-	514+21	LT	145	2	38	112.5	--	2
4	597+50	-	598+50	LT	95	1	12.5	--	37.5	1
4	599+34	-	600+35	LT	100	1	12.5	--	37.5	1
STAGE 4 SUB TOTAL					340	4	62.5	112.5	75	4
PROJECT 7730-01-60 TOTAL					660	8	100	225	150	8

REMOVING ASPHALTIC SURFACE BUTT JOINTS

204.0120 REMOVING ASPHALTIC SURFACE BUTT JOINTS			
STATION	LOCATION	LF	REMARKS
357+00	-	5	-
390+46	-	7	-
391+85	-	7	-
521+80	RT	5	CTH EE
539+33	LT	6	CTH E
579+00	RT	5	CTH XX
636+62	LT	5	SCHMIDT RD
739+31	LT	5	CTH T
1025+58	RT	5	CTH U
1027+00	-	7	-
PROJECT 7730-01-60 TOTAL		57	

3

EROSION CONTROL

					628.1504	628.1520	628.1905	628.1910	628.2004
								MOBILIZATIONS	
					SILT FENCE	SILT FENCE MAINTENANCE	MOBILIZATIONS EROSION CONTROL	EMERGENCY EROSION CONTROL	EROSION MAT CLASS I, TYPE B
STAGE	STATION	-	STATION	LOCATION	LF	LF	(EACH)	(EACH)	SY
3	511+40	-	512+65	RT	135	15	---	---	60
3	512+85	-	513+45	RT	60	10	---	---	35
3	597+25	-	598+85	RT	175	15	---	---	105
3	599+05	-	600+50	RT	160	15	---	---	110
3	UNDISTRIBUTED			RT	---	---	1	1	---
STAGE 3 SUB-TOTAL					530	55	1	1	310
4	511+50	-	512+65	LT	125	15	---	---	55
4	512+75	-	514+25	LT	160	15	---	---	55
4	597+20	-	598+80	LT	160	15	---	---	105
4	599+15	-	600+55	LT	155	15	---	---	105
4	UNDISTRIBUTED				---	---	1	1	---
STAGE 4 SUB-TOTAL					600	60	1	1	320
PROJECT 7730-01-60 TOTAL					1,130	115	2	2	630

TRAFFIC CONTROL

STAGE/LOCATION	DAYS IN SERVICE	643.0100	643.0300	643.0420		643.0715		643.0900	
		TRAFFIC CONTROL PROJECT EACH	TRAFFIC CONTROL DRUMS NO.	TRAFFIC CONTROL BARRICADES TYPE III NO.	TRAFFIC CONTROL TYPE III DAYS	TRAFFIC CONTROL WARNING LIGHTS TYPE C NO.	TRAFFIC CONTROL TYPE C DAYS	TRAFFIC CONTROL SIGNS NO.	TRAFFIC CONTROL SIGNS DAYS
STAGE 1	20	----	22	440	1	20	200	20	400
STAGE 2	20	----	22	440	1	20	200	20	400
STAGE 3	23	----	----	----	----	----	----	37	850
STAGE 4	23	----	----	----	----	----	----	37	850
STAGE 5	9	----	----	----	----	----	----	37	330
UNDISTRIBUTED	----	1	----	----	----	----	----	----	----
PROJECT 7730-01-60 TOTAL		1		880	40		400		2,500

LOCATING NO-PASSING ZONES

		648.0100 LOCATING NO-PASSING ZONES MILES
PROJECT		
7730-01-60		12
PROJECT 7730-01-60 TOTAL		12

PAVEMENT MARKING ITEMS

					646.0106 PAVEMENT MARKING EPOXY 4-INCH		646.0600 REMOVING PAVEMENT MARKINGS	649.0402 TEMPORARY PAVEMENT MARKING PAINT 4-INCH	
STAGE	STATION	-	STATION	LOCATION	TYPE	WHITE LF	YELLOW LF	LF	LF
1	598+00	-	600+00	STH 88	TEMPORARY PAVEMENT MARKING	--	--	100	200
2	598+00	-	600+00	STH 88	TEMPORARY PAVEMENT MARKING	--	--	100	200
3	357+00	-	390+47	STH 88	EDGE LINE RT	3,350	--	--	840
3	391+85	-	598+60	STH 88	EDGE LINE RT	20,680	--	--	5,170
3	599+25	-	1027+00	STH 88	EDGE LINE RT	42,780	--	--	10,700
STAGE 3 SUBTOTAL						66,810	0	0	16,710
4	357+00	-	390+47	STH 88	EDGE LINE LT	3,350	--	--	840
4	391+85	-	598+60	STH 88	EDGE LINE LT	20,680	--	--	5,170
4	599+25	-	1027+00	STH 88	EDGE LINE LT	42,780	--	--	10,700
STAGE 4 SUBTOTAL						66,810	0	0	16,710
5	357+00	-	360+50	STH 88	CENTERLINE (DOUBLE YELLOW)	--	700	--	--
5	360+50	-	365+50	STH 88	CENTERLINE (SOLID & SKIP)	--	630	--	--
5	365+50	-	395+50	STH 88	CENTERLINE (SKIP)	--	750	--	--
5	395+50	-	410+00	STH 88	CENTERLINE (SOLID & SKIP)	--	1,820	--	--
5	410+00	-	416+00	STH 88	CENTERLINE (SKIP)	--	150	--	--
5	416+00	-	432+00	STH 88	CENTERLINE (SOLID & SKIP)	--	2,000	--	--
5	432+00	-	462+50	STH 88	CENTERLINE (SKIP)	--	770	--	--
5	462+50	-	487+50	STH 88	CENTERLINE (SOLID & SKIP)	--	3,130	--	--
5	487+50	-	503+50	STH 88	CENTERLINE (DOUBLE YELLOW)	--	3,200	--	--
5	503+50	-	512+50	STH 88	CENTERLINE (SOLID & SKIP)	--	1,130	--	--
5	512+50	-	530+00	STH 88	CENTERLINE (SKIP)	--	440	--	--
5	530+00	-	539+00	STH 88	CENTERLINE (SOLID & SKIP)	--	1,130	--	--
5	539+00	-	546+50	STH 88	CENTERLINE (DOUBLE YELLOW)	--	1,500	--	--
5	546+50	-	553+25	STH 88	CENTERLINE (SOLID & SKIP)	--	850	--	--
5	553+25	-	641+00	STH 88	CENTERLINE (SKIP)	--	2,200	--	--
5	641+00	-	649+50	STH 88	CENTERLINE (SOLID & SKIP)	--	1,070	--	--
5	649+50	-	689+00	STH 88	CENTERLINE (DOUBLE YELLOW)	--	7,900	--	--
5	689+00	-	700+00	STH 88	CENTERLINE (SOLID & SKIP)	--	1,380	--	--
5	700+00	-	702+75	STH 88	CENTERLINE (SKIP)	--	70	--	--
5	702+75	-	719+00	STH 88	CENTERLINE (SOLID & SKIP)	--	2,040	--	--
5	719+00	-	729+00	STH 88	CENTERLINE (SKIP)	--	250	--	--
5	729+00	-	737+00	STH 88	CENTERLINE (SOLID & SKIP)	--	1,000	--	--
5	737+00	-	765+00	STH 88	CENTERLINE (DOUBLE YELLOW)	--	5,600	--	--
5	765+00	-	789+50	STH 88	CENTERLINE (SOLID & SKIP)	--	3,070	--	--
5	789+50	-	795+50	STH 88	CENTERLINE (DOUBLE YELLOW)	--	1,200	--	--
5	795+50	-	798+00	STH 88	CENTERLINE (SKIP)	--	70	--	--
5	798+00	-	802+50	STH 88	CENTERLINE (SOLID & SKIP)	--	570	--	--
5	802+50	-	811+50	STH 88	CENTERLINE (SKIP)	--	230	--	--
5	811+50	-	819+00	STH 88	CENTERLINE (SOLID & SKIP)	--	940	--	--
5	819+00	-	1027+00	STH 88	CENTERLINE (DOUBLE YELLOW)	--	41,600	--	--
STAGE 5 SUBTOTAL						0	87,390		
PROJECT 7730-01-60 TOTAL						221,010		200	33,820

NOTE: PAVEMENT MARKING LOCATIONS ARE APPROXIMATE AND WILL BE BASED ON THE RESULTS OF LOCATING NO-PASSING ZONES.

SAWING PAVEMENT

		690.0150 SAWING ASPHALT		REMARKS
STATION	LOCATION	LF		
357+00	STH 88	24		
521+80	RT	22		CTH EE
539+33	LT	24		CTH E
579+00	RT	24		CTH XX
636+62	LT	20		SCHMIDT RD
739+31	LT	24		CTH T
1025+58	RT	30		CTH U
1027+00	STH 88	24		
PROJECT 8829-00-70 TOTAL		192		

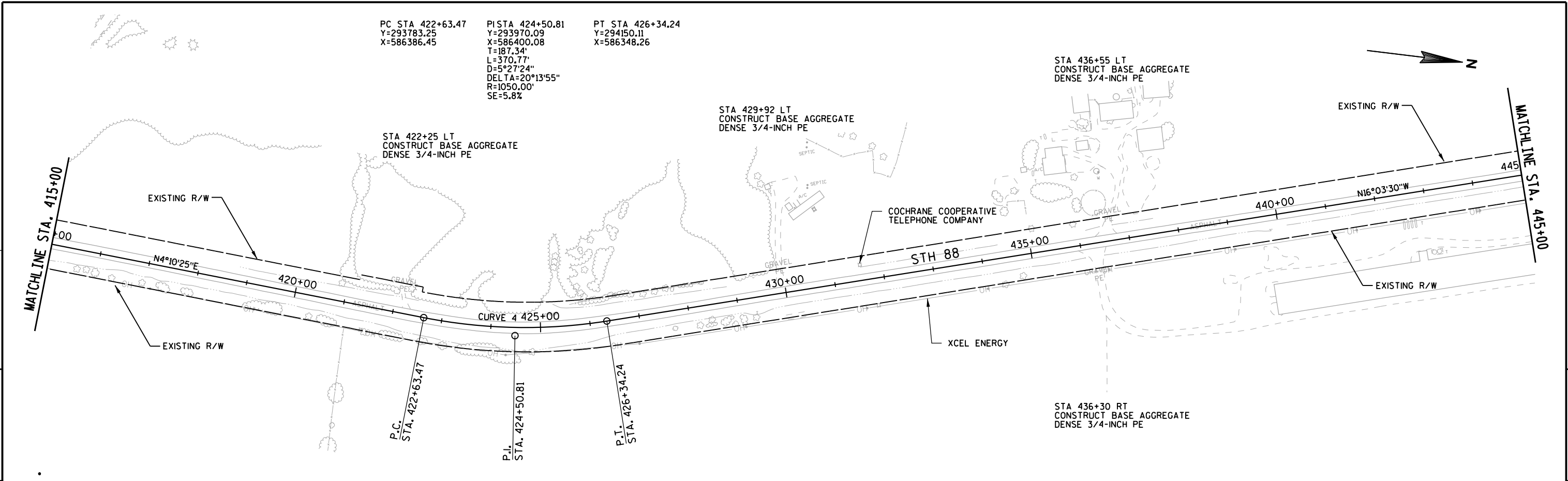
CONSTRUCTION STAKING

					650.8000	650.9910
					RESURFACING REFERENCE	SUPPLEMENTAL CONTROL
STAGE	STATION	-	STATION	LOCATION	LF	LS
3	357+00	-	390+47	STH 88	3,350	---
3	391+85	-	598+60	STH 88	20,680	---
3	599+25	-	1027+00	STH 88	42,780	---
3	UNDISTRIBUTED			STH 88	---	0.5
STAGE 3 SUBTOTAL					66,810	0.5
4	357+00	-	390+47	STH 88	3,350	---
4	391+85	-	598+60	STH 88	20,680	---
4	599+25	-	1027+00	STH 88	42,780	---
4	UNDISTRIBUTED			STH 88	---	0.5
STAGE 4 SUBTOTAL					66,810	0.5
PROJECT 7730-01-60 TOTAL					133,620	1

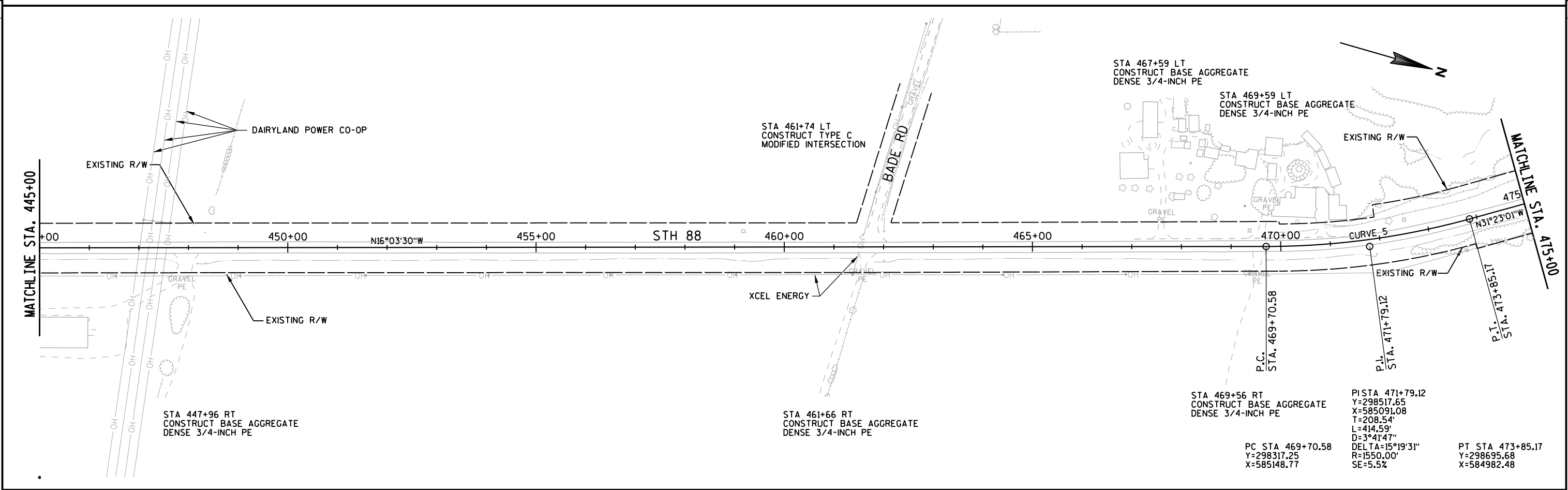
REESTABLISH SECTION CORNER MONUMENTS

				SPV.0060.01 REESTABLISH SECTION CORNER MONUMENTS
STAGE	STATION	LOCATION		EACH
3	786+98	3.5' RT		1
4	813+12	8.2' LT		1
PROJECT 7730-01-60 TOTAL				2

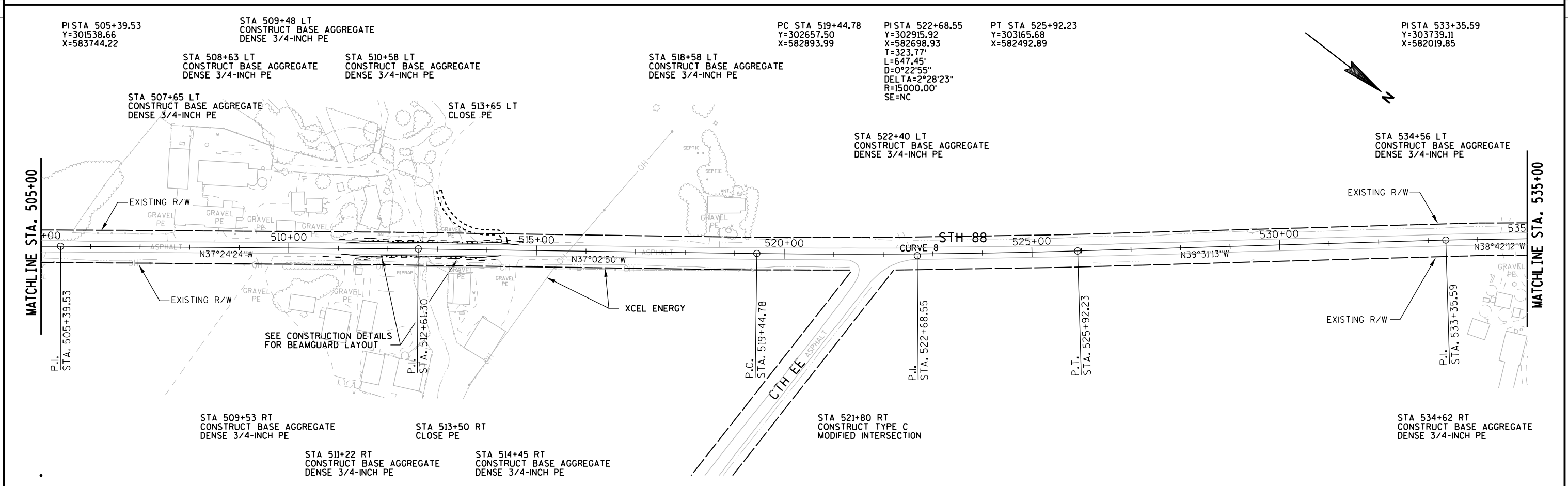
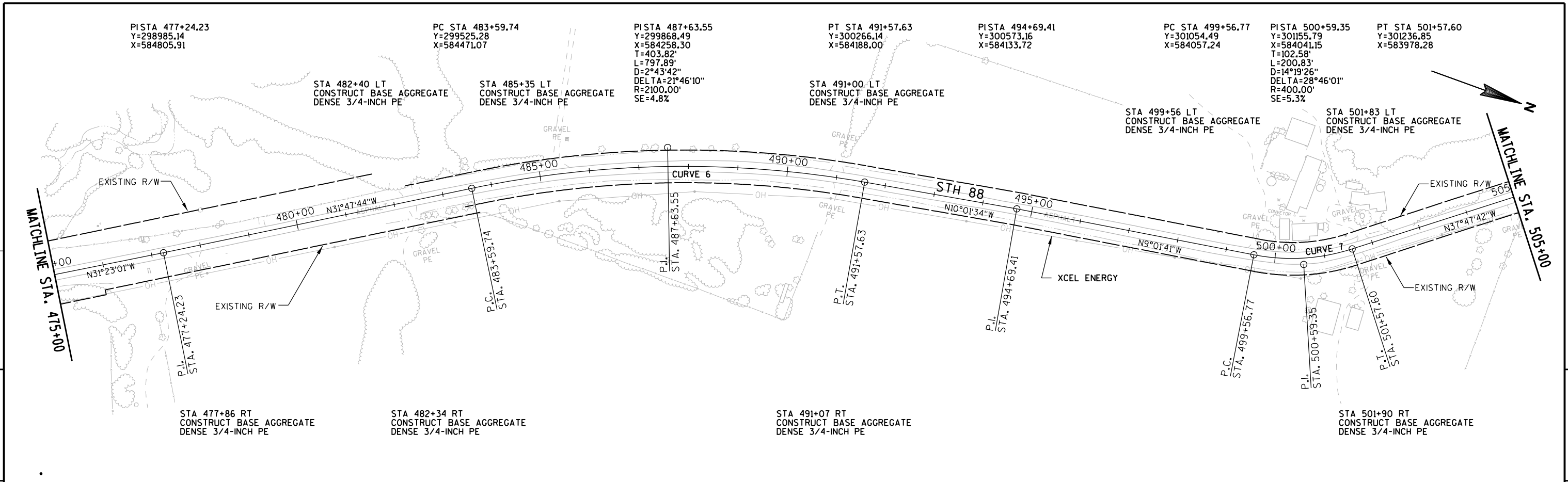
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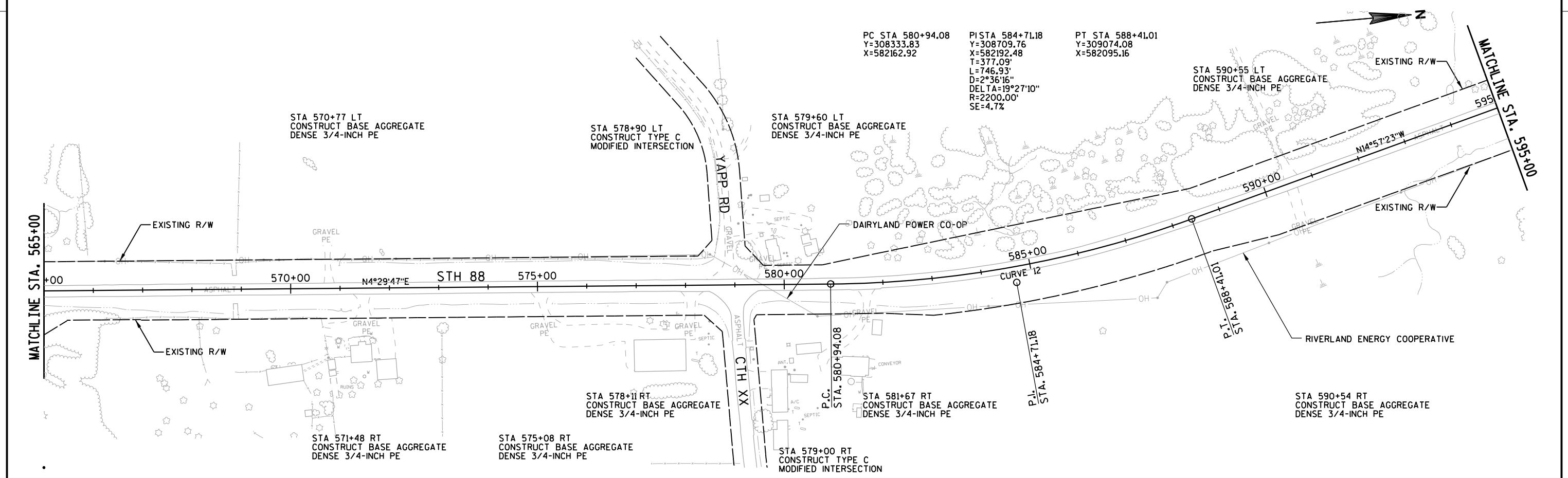
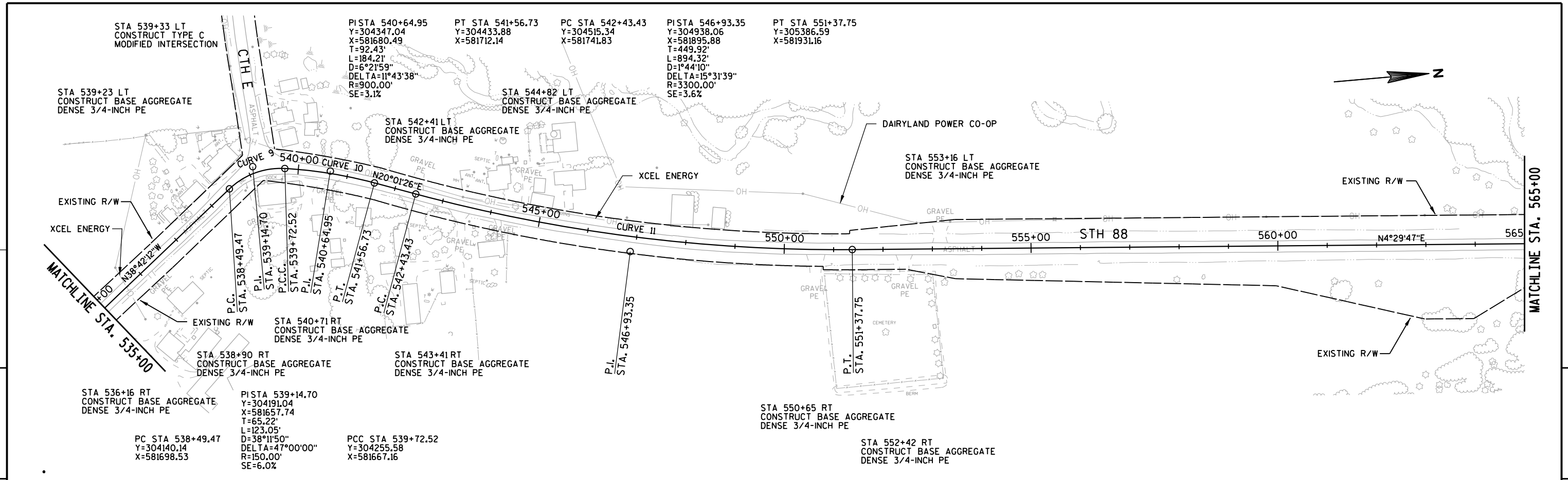
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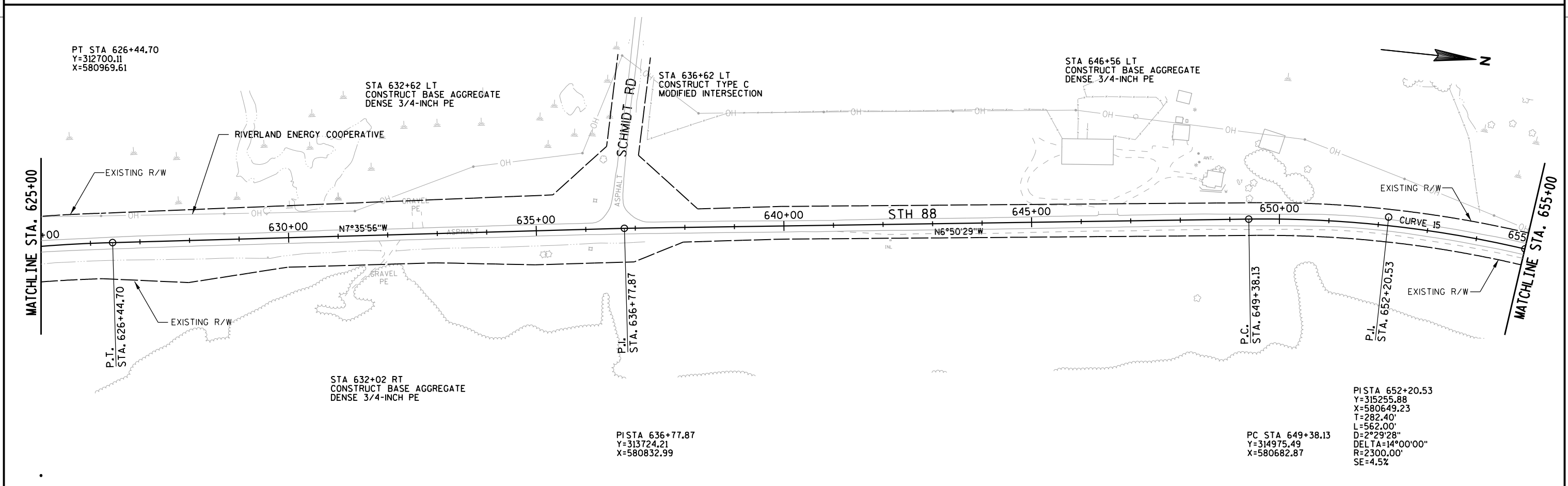
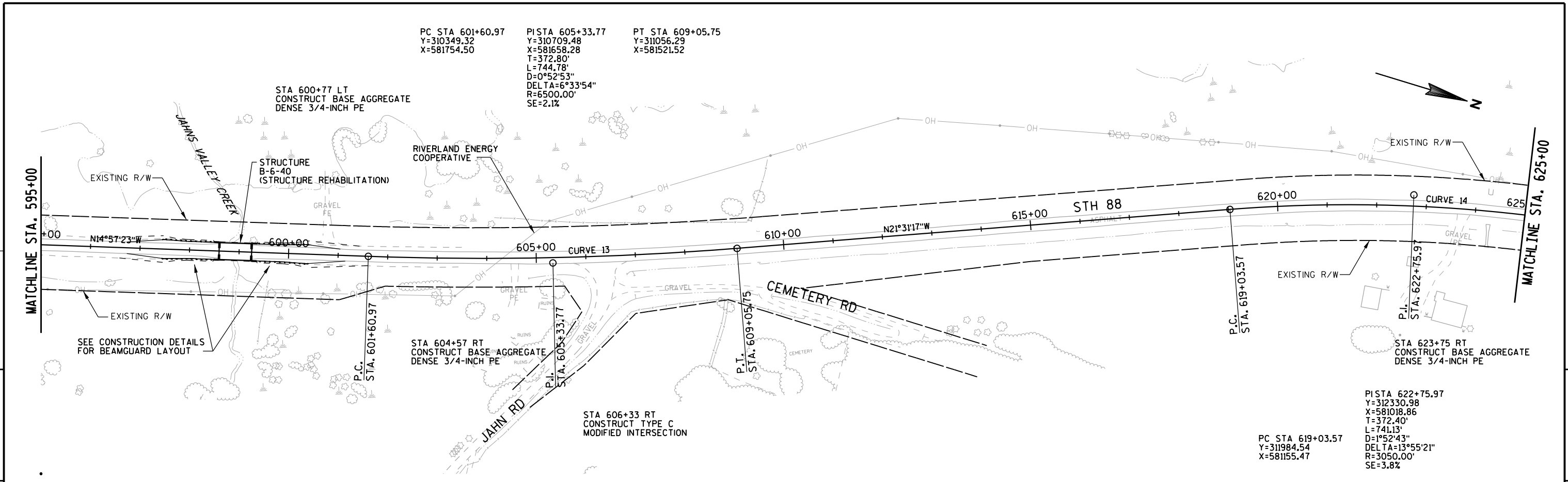


PROJECT NUMBER: 7730-01-60	HWY: STH 88	COUNTY: BUFFALO	PLAN SHEET	SHEET	E
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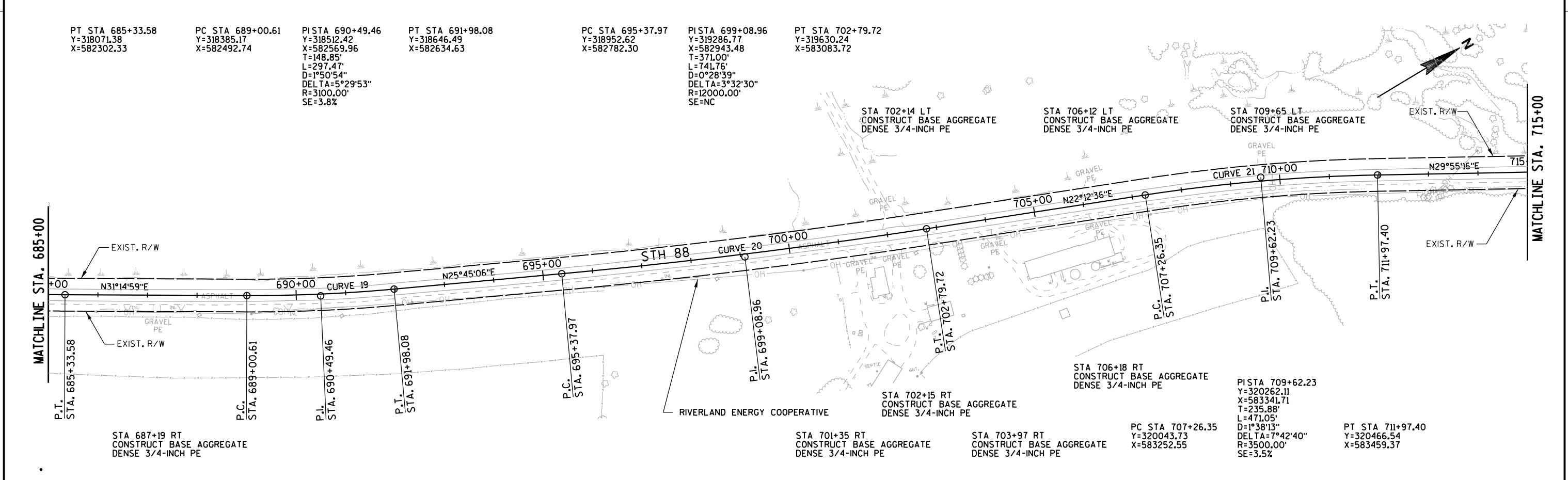
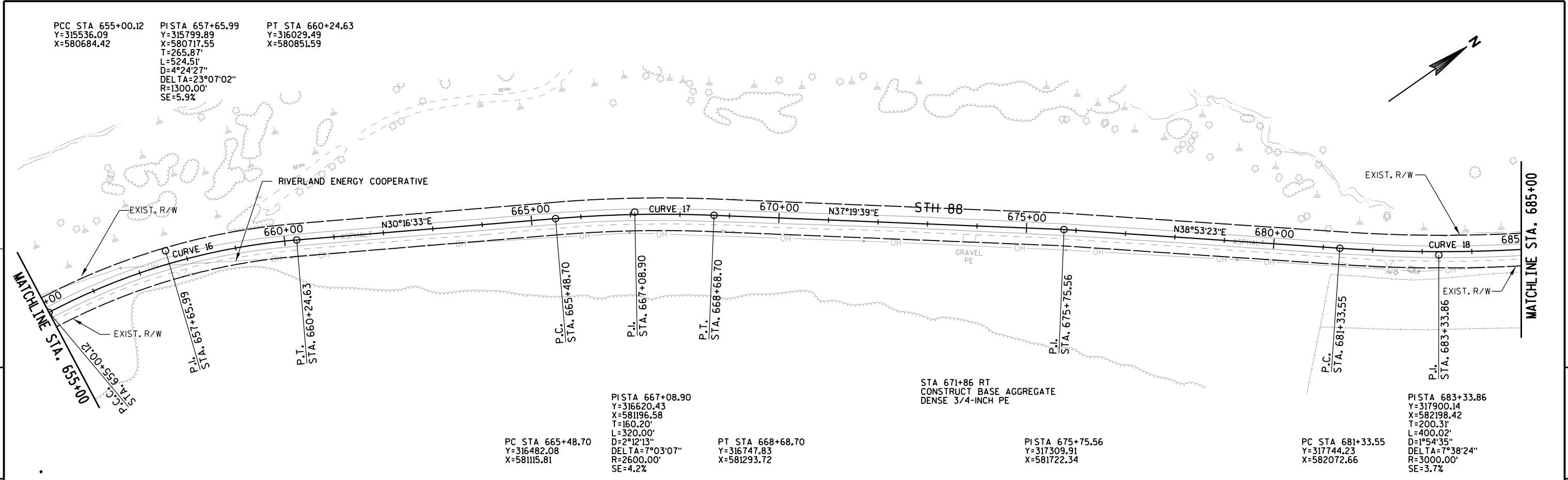


PROJECT NUMBER: 7730-01-60	HWY: STH 88	COUNTY: BUFFALO	PLAN SHEET	SHEET	E
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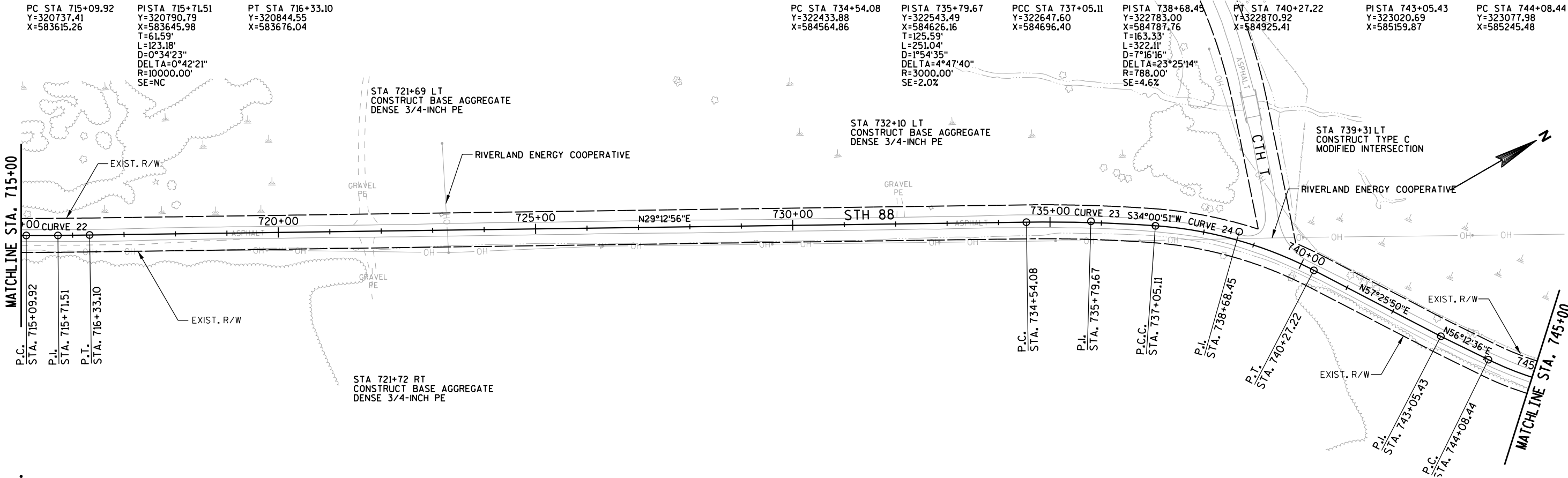


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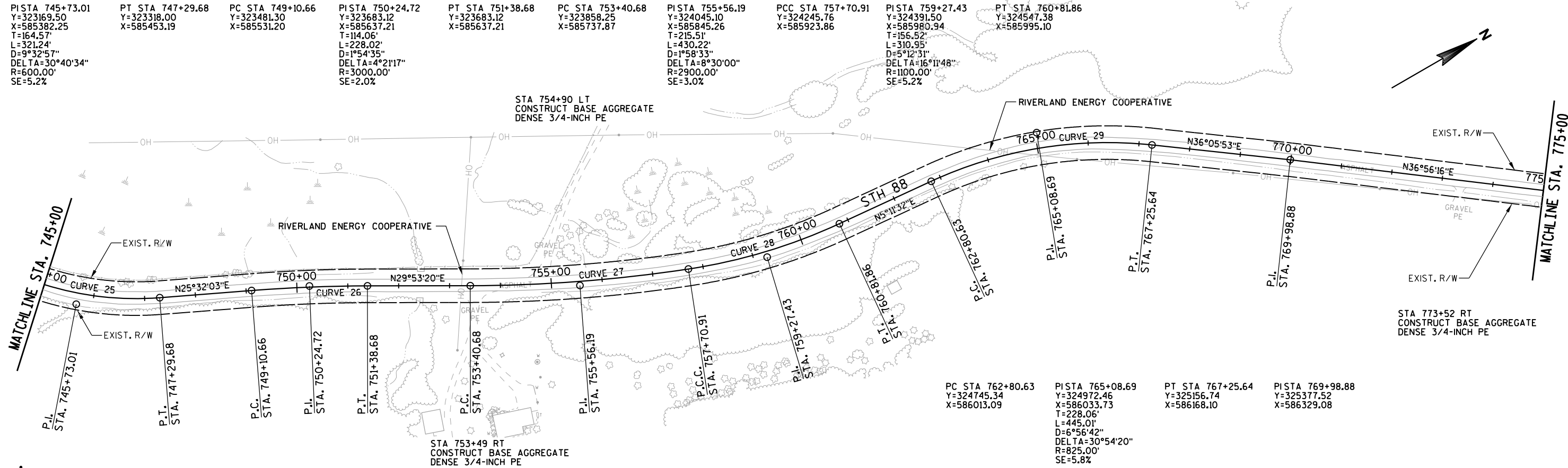


PROJECT NUMBER: 7730-01-60	HWY: STH 88	COUNTY: BUFFALO	PLAN SHEET	SHEET	E
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5



5



PROJECT NUMBER: 7730-01-60

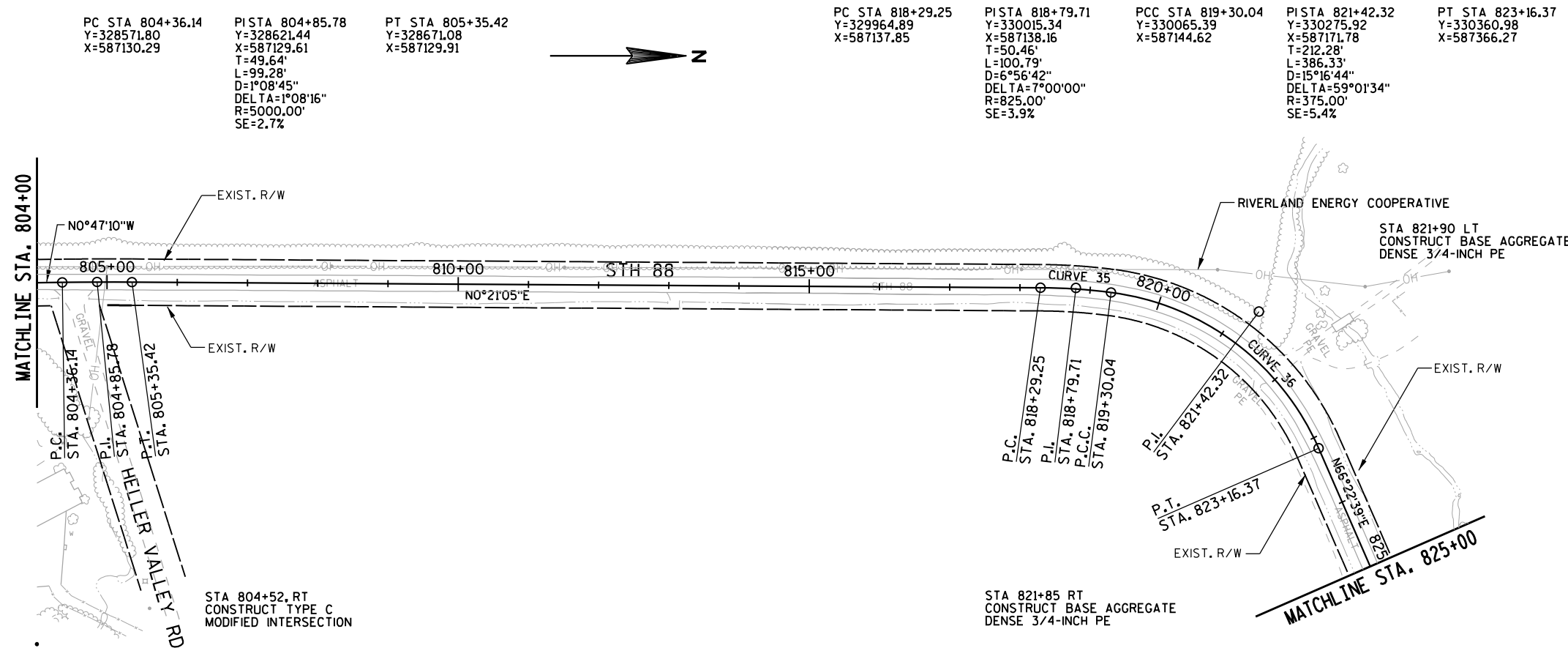
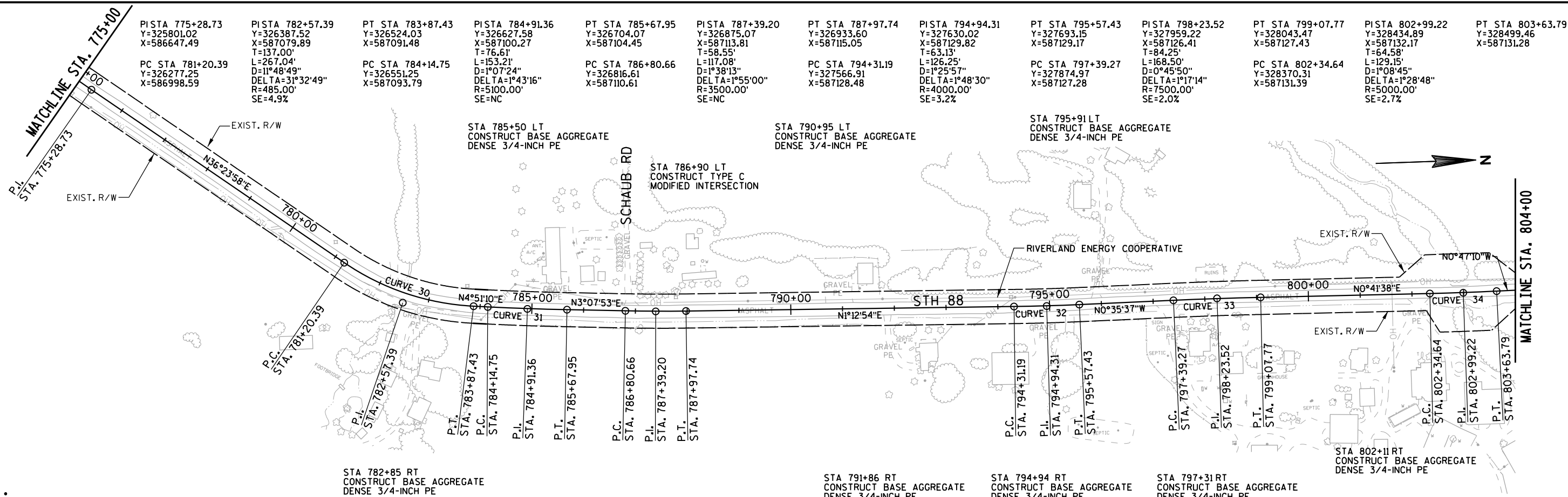
HWY: STH 88

COUNTY: BUFFALO

PLAN SHEET

SHEET

E



PC STA 826+44.77
Y=330492.58
X=587667.16

PISTA 827+83.28
Y=330548.08
X=587794.06
T=138.50'
L=275.34'
D=5°35'23"
DELTA=15°23'27"
R=1025.00'
SE=5.9%

PT STA 829+20.11
Y=330635.26
X=587901.67

PC STA 829+74.46
Y=330669.48
X=587943.91

PISTA 830+42.23
Y=330712.14
X=587996.56
T=67.77'
L=135.52'
D=1°08'45"
DELTA=1°33'11"
R=5000.00'
SE=2.3%

PT STA 831+09.99
Y=330756.21
X=588048.04

PC STA 832+14.73
Y=330824.33
X=588127.61

PISTA 833+25.44
Y=330896.32
X=588211.70
T=110.71'
L=221.01'
D=3°49'11"
DELTA=8°26'31"
R=1500.00'
SE=5.1%

PT STA 834+35.74
Y=330979.88
X=588284.32

PC STA 835+75.06
Y=331085.04
X=588375.71

PISTA 837+98.68
Y=331253.83
X=588522.39
T=223.62'
L=446.80'
D=1°23'51"
DELTA=6°14'38"
R=4100.00'
SE=2.7%

PT STA 840+21.86
Y=331405.67
X=588686.56

PISTA 841+38.47
Y=331484.84
X=588772.17

PC STA 843+04.65
Y=331595.35
X=588896.28

PISTA 844+92.86
Y=331720.51
X=589036.85
T=188.22'
L=376.11'
D=1°32'55"
DELTA=5°49'27"
R=3700.00'
SE=2.9%

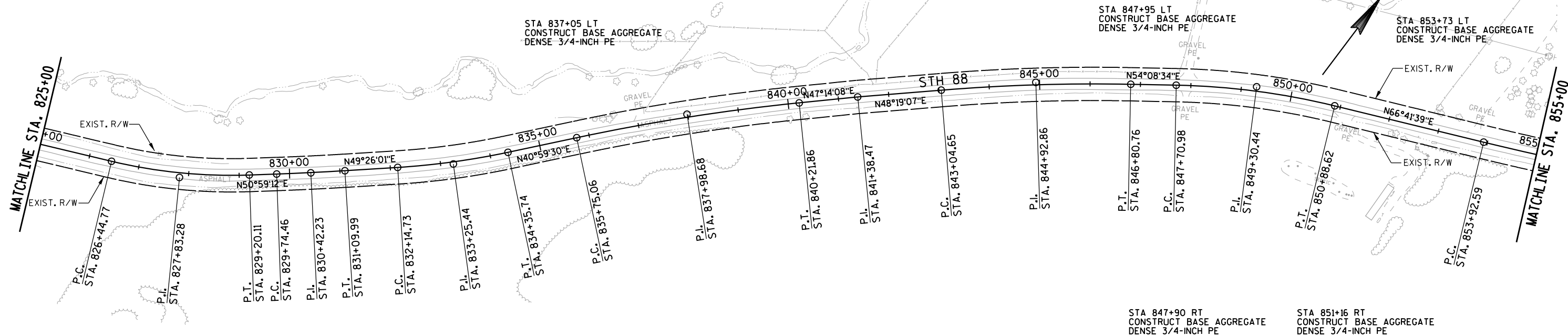
PT STA 846+80.76
Y=331830.76
X=589189.40

PC STA 847+70.98
Y=331883.61
X=589262.52

PISTA 849+30.44
Y=331977.02
X=589391.76
T=159.46'
L=317.64'
D=3°57'05"
DELTA=12°33'05"
R=1450.00'
SE=5.1%

PT STA 850+88.62
Y=332040.11
X=589538.21

PC STA 853+92.59
Y=332160.37
X=589817.38



PISTA 855+23.44
Y=332212.14
X=589937.55
T=130.85'
L=261.66'
D=0°57'18"
DELTA=2°29'55"
R=6000.00'
SE=2.2%

PT STA 856+54.25
Y=332269.10
X=590055.36

PC STA 858+43.38
Y=332351.43
X=590225.63

PISTA 859+30.07
Y=332389.16
X=590303.67
T=86.69'
L=173.33'
D=1°54'35"
DELTA=3°18'37"
R=3000.00'
SE=3.7%

PT STA 860+16.71
Y=332422.33
X=590383.77

PC STA 861+50.85
Y=332473.65
X=590507.70

PISTA 866+21.08
Y=332651.68
X=590942.93
T=112.07'
L=224.04'
D=1°54'35"
DELTA=4°16'44"
R=3000.00'
SE=3.9%

PT STA 867+33.05
Y=332686.26
X=591049.53

PC STA 869+12.50
Y=332741.62
X=591220.23

PISTA 869+77.31
Y=332761.61
X=591281.87
T=64.81'
L=129.62'
D=0°57'18"
DELTA=1°14'16"
R=6000.00'
SE=2.3%

PT STA 870+42.11
Y=332782.93
X=591343.08

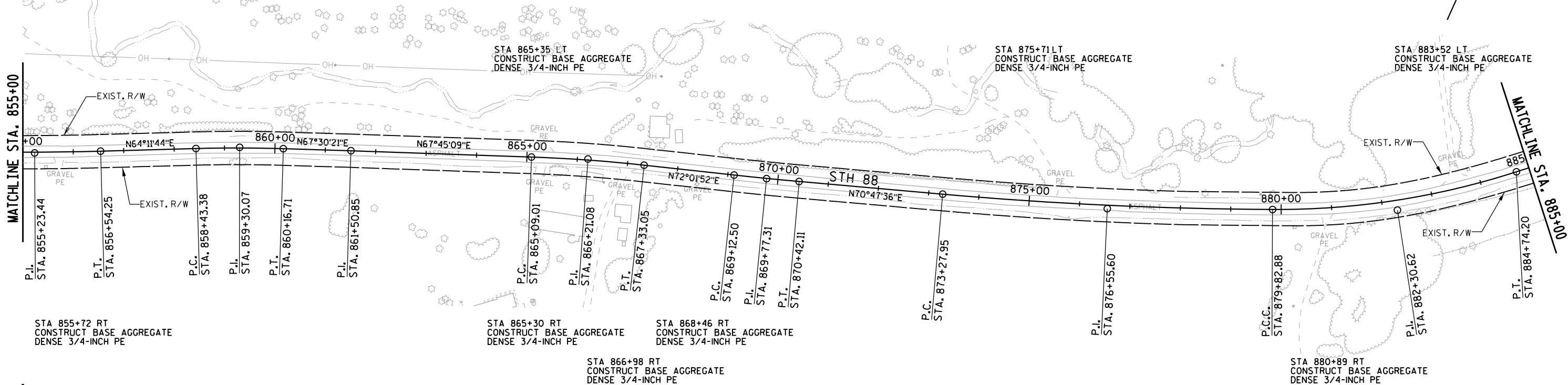
PC STA 873+27.95
Y=332876.96
X=591613.00

PISTA 876+55.60
Y=332984.75
X=591922.42
T=327.66'
L=654.93'
D=0°43'31"
DELTA=4°45'00"
R=7900.00'
SE=2.0%

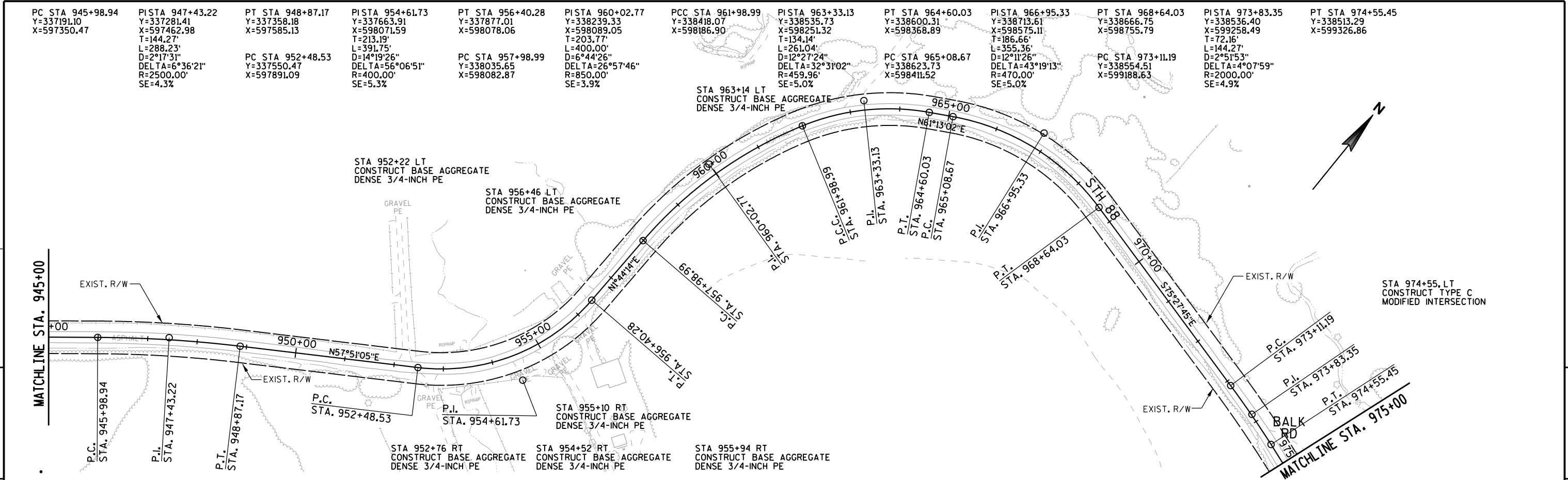
PCC STA 879+82.88
Y=333117.80
X=592221.85

PISTA 882+30.62
Y=333218.39
X=592448.24
T=247.74'
L=491.32'
D=3°41'47"
DELTA=18°09'42"
R=1550.00'
SE=5.0%

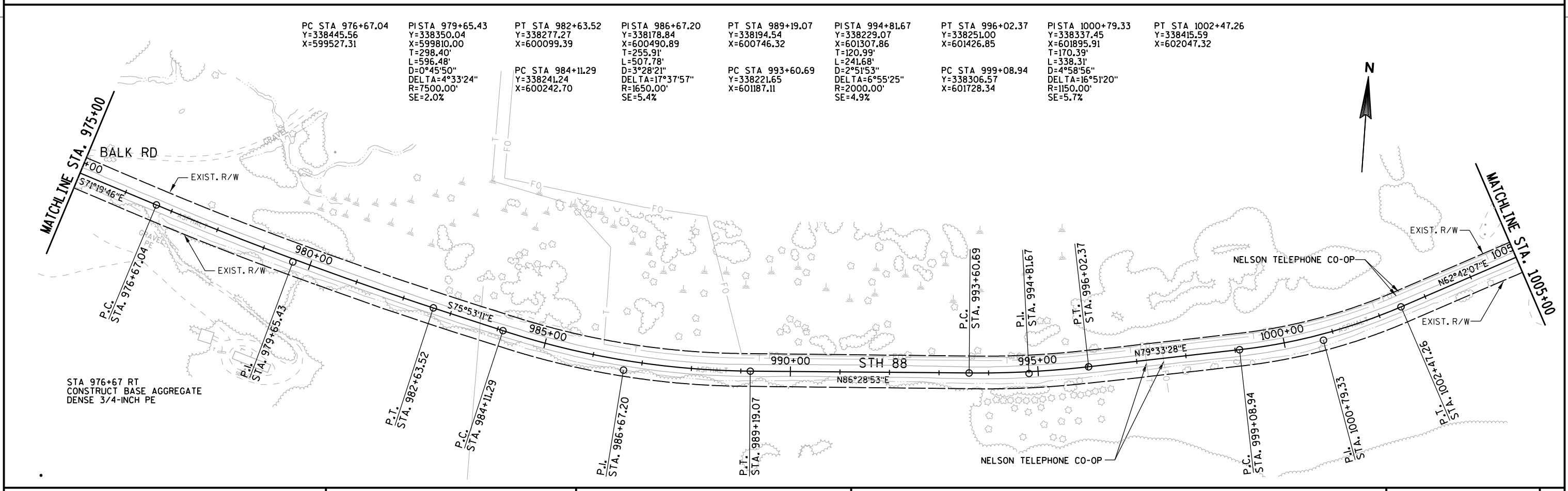
PT STA 884+74.20
Y=333384.54
X=592632.01



5

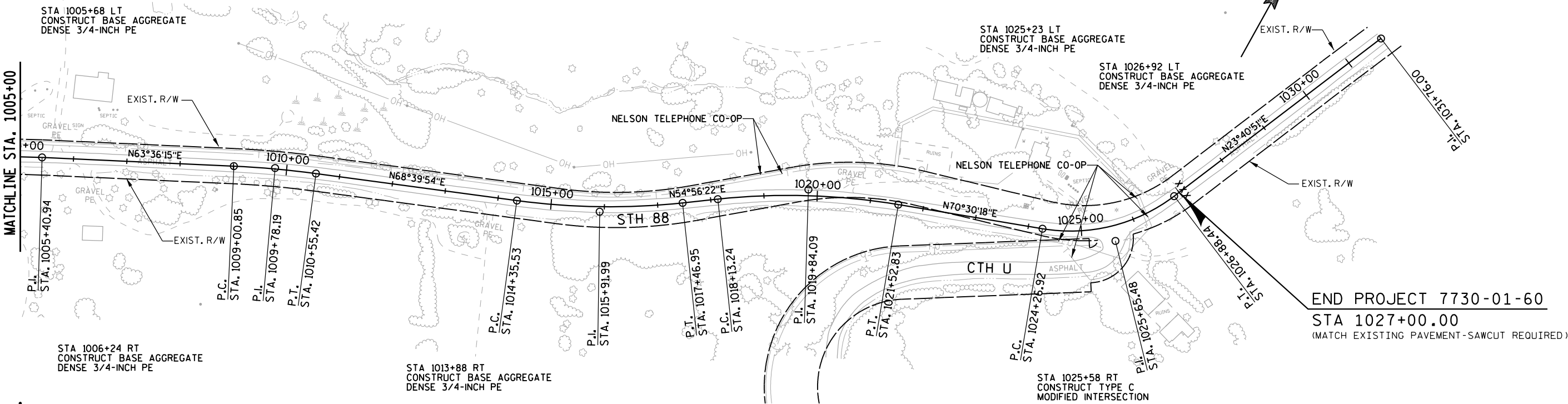


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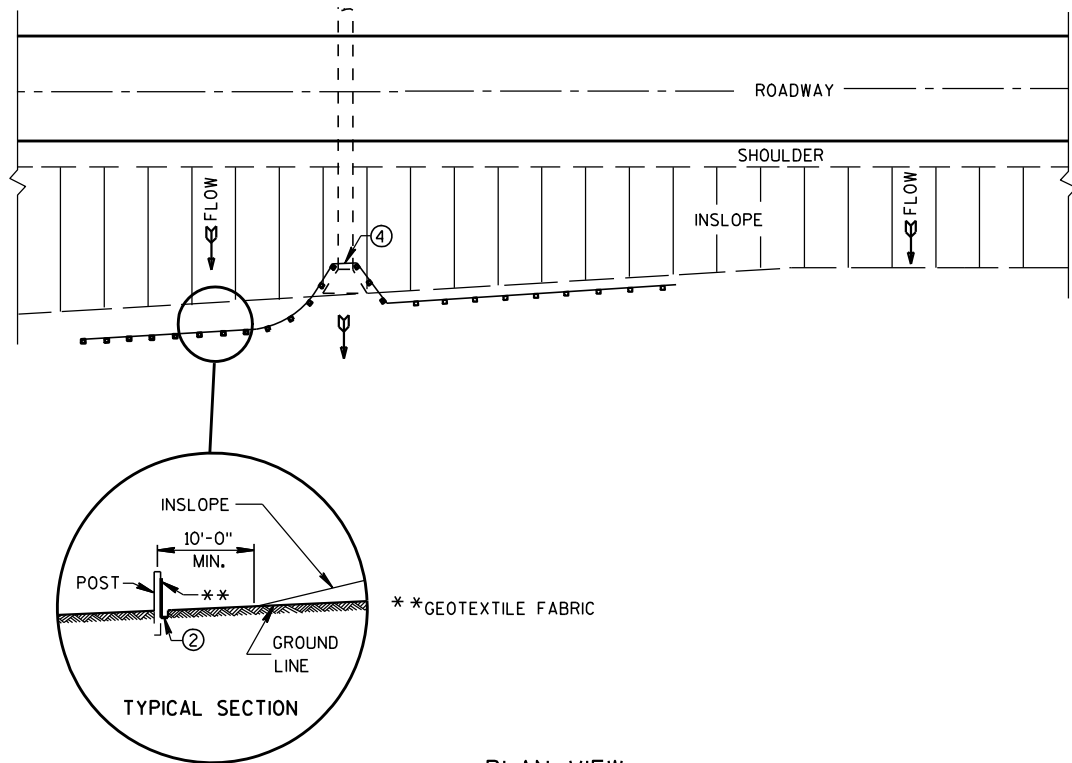
PISTA 1005+40.94 Y=338550.28 X=602308.30	PC STA 1009+00.85 Y=338710.29 X=602630.69	PISTA 1009+78.19 Y=338744.67 X=602699.96 T=77.34' L=154.57' D=3°16'27" DELTA=5°03'39" R=1750.00' SE=5.2%	PT STA 1010+55.42 Y=338772.80 X=602772.00	PISTA 1015+91.99 Y=338968.02 X=603271.80 T=156.46' L=311.43' D=4°24'27" DELTA=13°43'32" R=1300.00' SE=4.3%	PT STA 1017+46.95 Y=339057.90 X=603399.87	PC STA 1018+13.24 Y=339095.97 X=603454.12	PISTA 1019+84.09 Y=339194.12 X=603593.97 T=170.85' L=339.59' D=4°35'01" DELTA=15°33'57" R=1250.00' SE=4.3%	PT STA 1021+52.83 Y=339251.13 X=603755.02	PC STA 1024+26.92 Y=339342.60 X=604013.40	PISTA 1025+65.48 Y=339388.84 X=604144.01 T=138.56' L=261.52' D=17°54'18" DELTA=46°49'27" R=320.00' SE=4.9%	PT STA 1026+88.44 Y=339515.73 X=604199.66	PISTA 1031+76.00 Y=339962.24 X=604395.49
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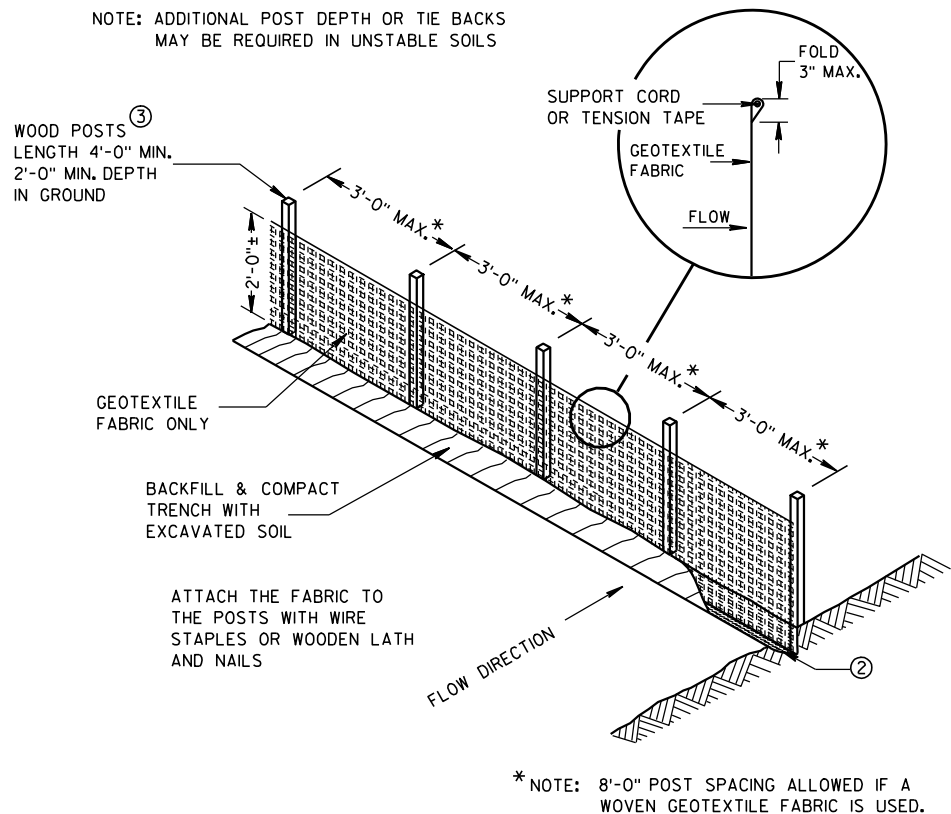
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Standard Detail Drawing List

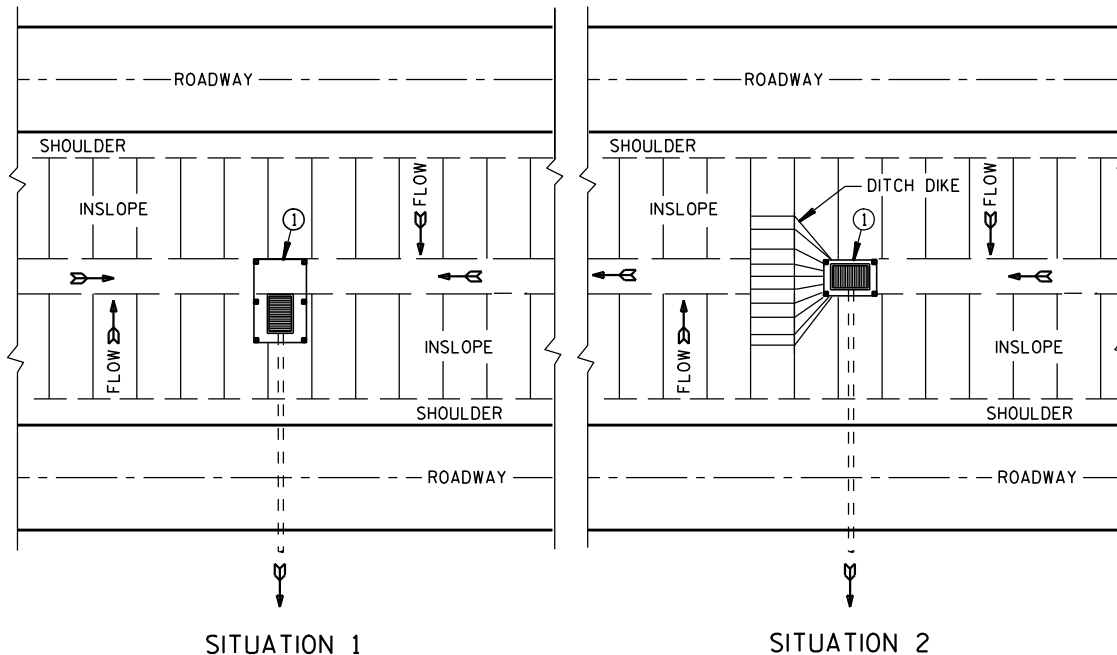
08E09-06	SILT FENCE
09A01-13A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE
14B24-08A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-08B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-08C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B42-03A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B43-03A	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
14B43-03B	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
14B43-03C	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
14B44-02A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-03A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C04-02	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C12-04	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)
15C19-02A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15D32-03	TRAFFIC CONTROL, ONE LANE ROAD STOP CONDITION



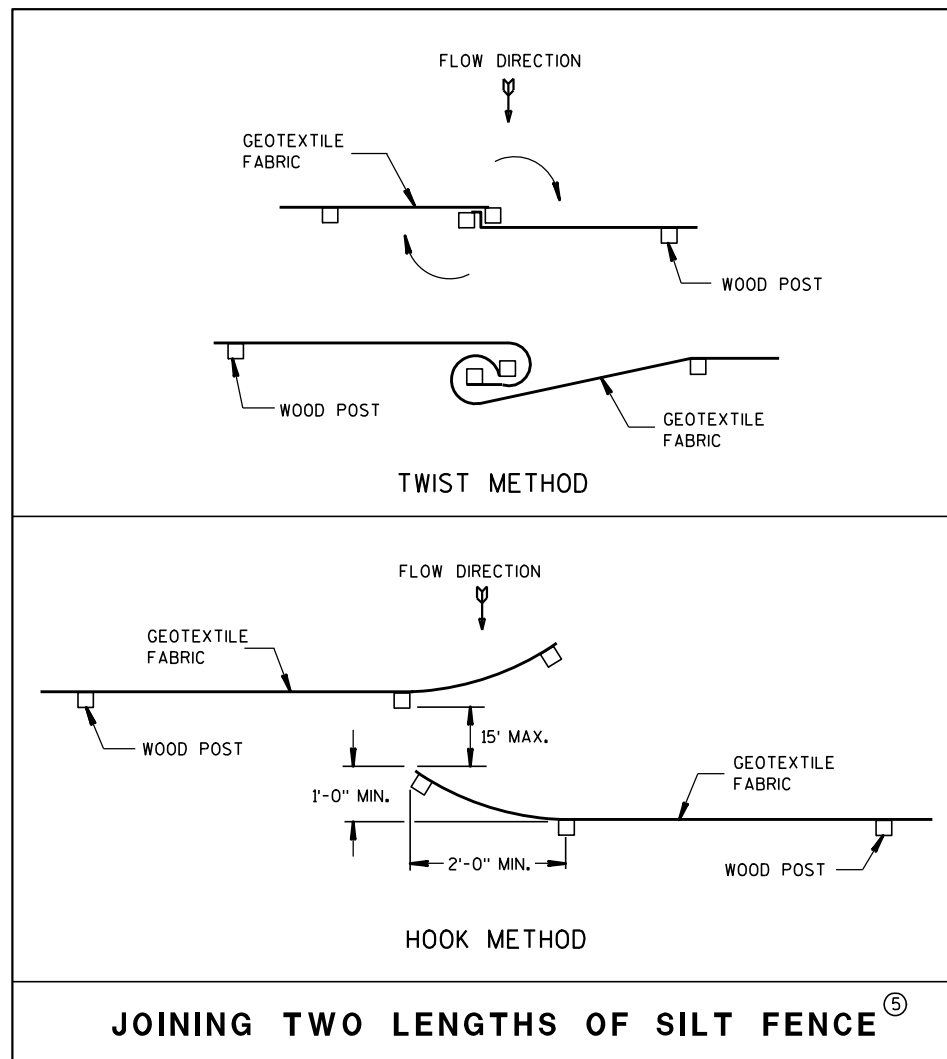
PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE



SILT FENCE



PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

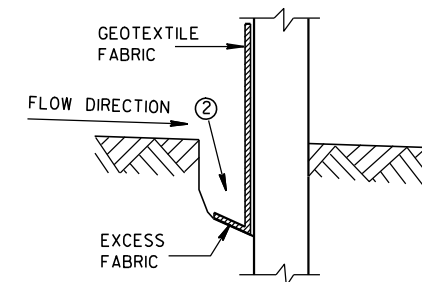


JOINING TWO LENGTHS OF SILT FENCE^⑤

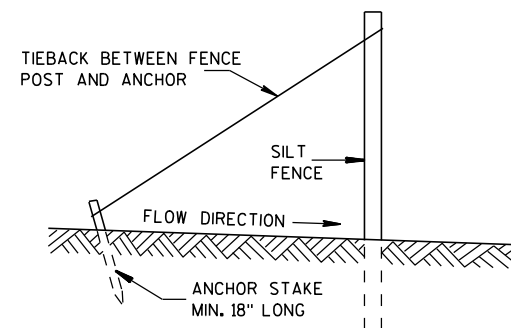
GENERAL NOTES

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

- 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 1 1/8" X 1 1/8" 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.

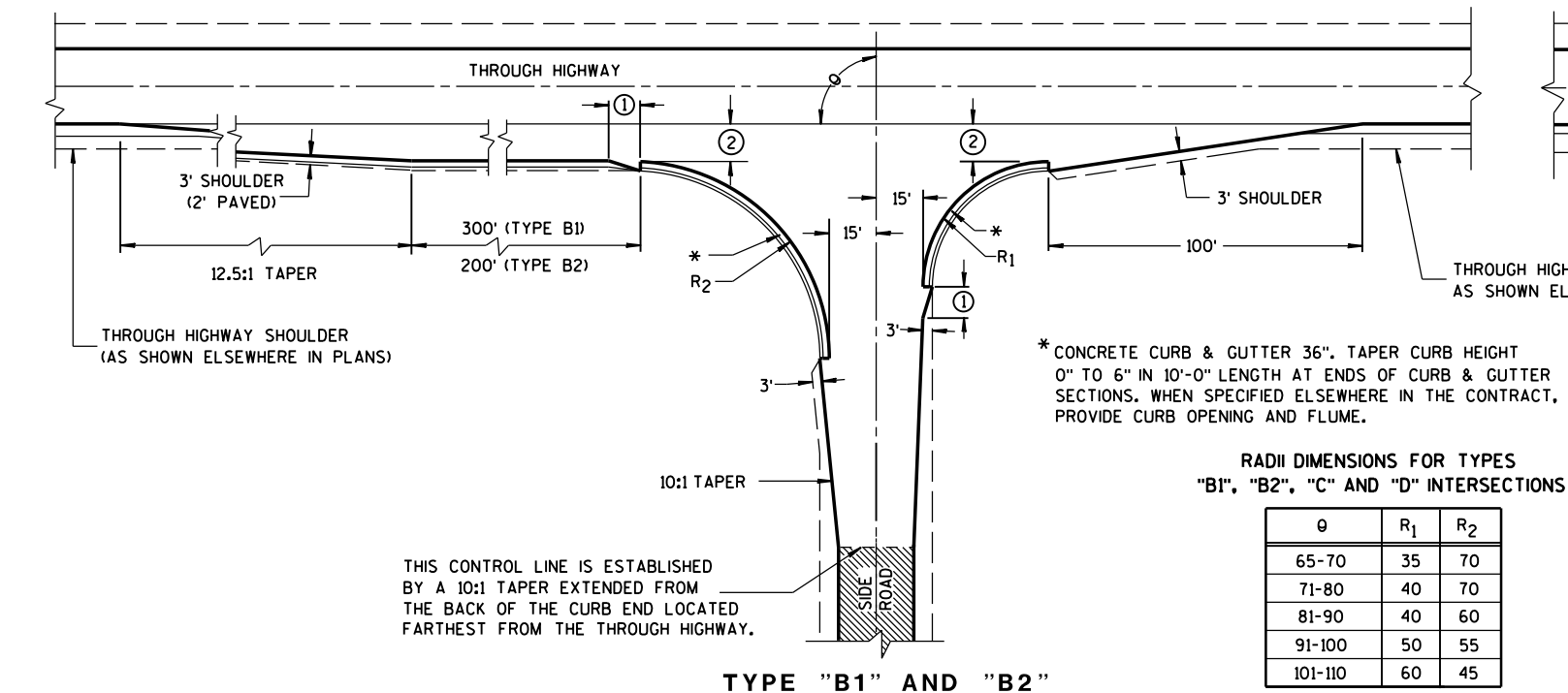


TRENCH DETAIL



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 DATE	/S/ Beth Canestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	



GENERAL NOTES

DESIGNS MAY BE USED INTERCHANGEABLY IN COMBINATION OR SEPARATELY FOR ANY ONE COMPLETE INTERSECTION DEPENDING UPON INTERSECTION ANGLE AND SURFACING OF EACH APPROACH ROADWAY.

SIDE ROAD SURFACING NOTE

WHEN THE SIDE ROAD IS NOT PRESENTLY PAVED, PAVEMENT SHALL BE PLACED TO THE LIMITS SHOWN UNLESS OTHERWISE PROVIDED IN THE CONTRACT. WHERE THE CONSTRUCTION LIMITS ARE BEYOND THE PAVING LIMITS, CRUSHED AGGREGATE SURFACING SHALL BE PLACED BETWEEN THE PAVING LIMITS AND CONSTRUCTION LIMITS.

WHEN THE SIDE ROAD IS PRESENTLY PAVED, NEW PAVEMENT SHALL BE PLACED TO THE LIMITS OF DESIGN AS SHOWN AND BEYOND, IF NECESSARY, TO MEET EXISTING PAVEMENT.

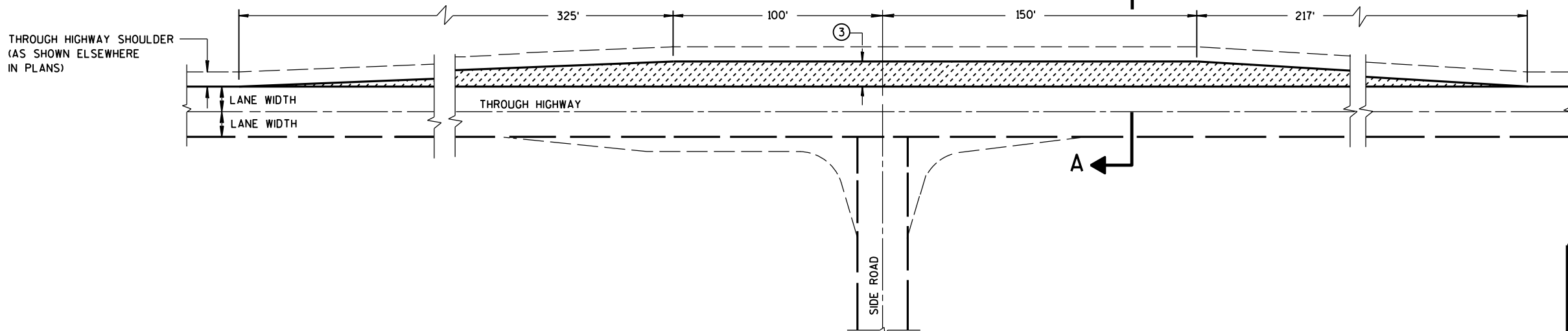
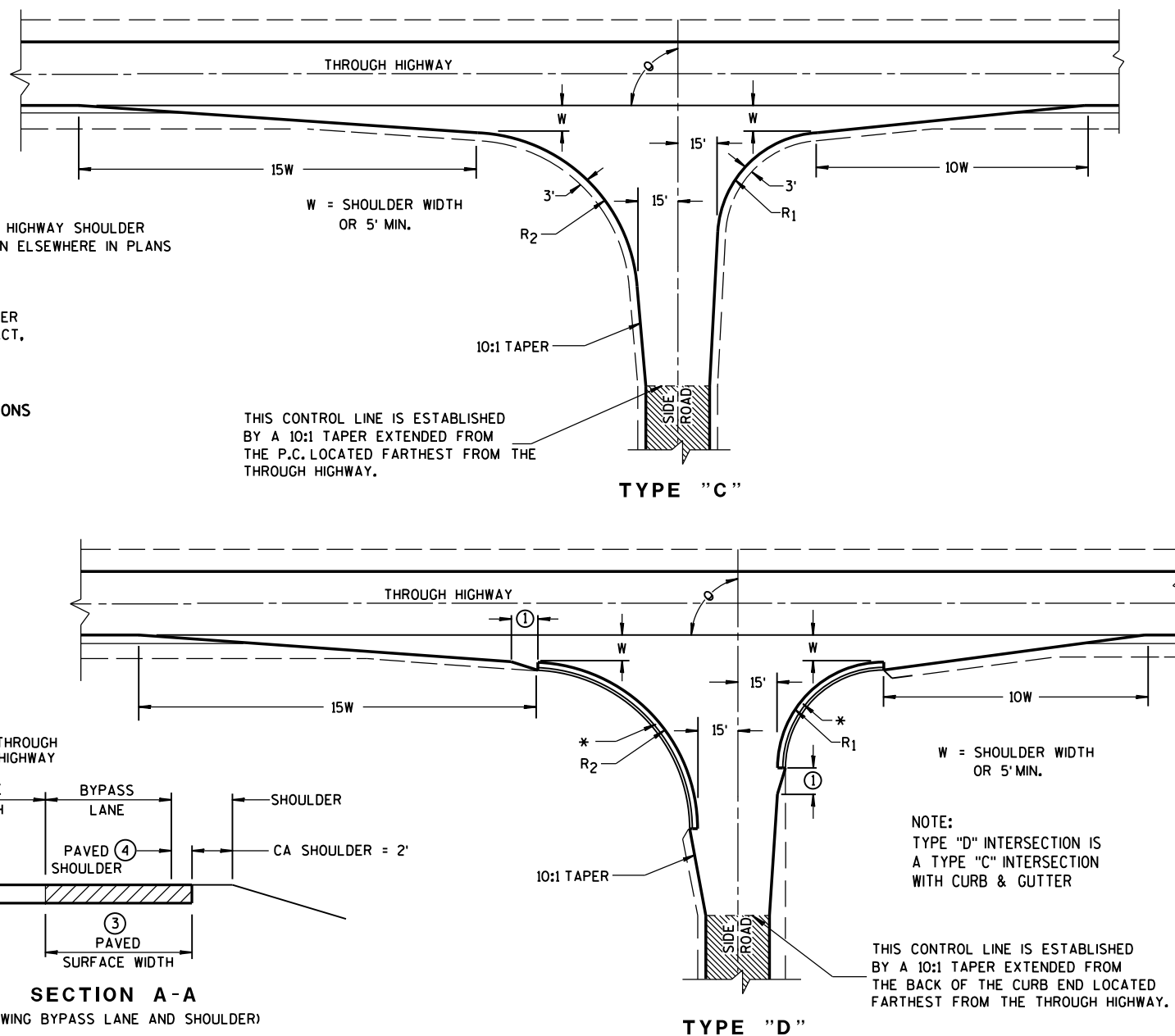
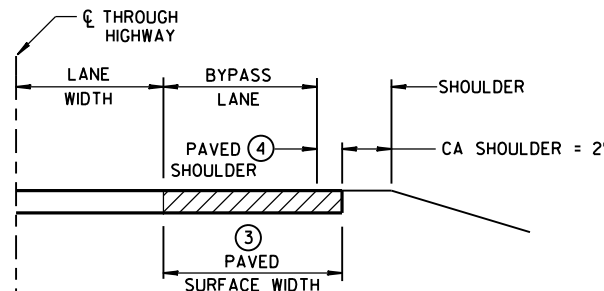
WHEN THE SIDE ROAD IS THE CONSTRUCTION PROJECT, THE INTERSECTION SURFACING SHALL BE THE SAME AS FOR THE PROJECT.

EXISTING PAVED SURFACE

BYPASS LANE

- ① 10-FT TYPICAL.
- ② 12-FT** PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLAN.

**10-FT MAY BE USED ON TYPE B2 ON RESURFACING PROJECTS IF SPECIFIED IN THE CONTRACT.
- ③ BYPASS LANE PAVED SURFACE WIDTH OUTSIDE OF TRAVEL LANE
-ASPHALT = 12-FT PLUS PAVED SHOULDER WIDTH.
-PC CPNCRETE = 13-FT PLUS PAVED SHOULDER WIDTH.
- ④ BYPASS LANE PAVED SHOULDER WIDTH = THE GREATER OF 1-FT OR THE PAVED SHOULDER WIDTH OF THE THROUGH HIGHWAY.



TEE INTERSECTION BYPASS LANE DETAIL

AT-GRADE SIDE ROAD
INTERSECTION, TYPES "B1", "B2",
"C" AND "D" AND TEE
INTERSECTION BYPASS LANE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

BILL OF MATERIALS

NOTE NO.	QTY.	DESCRIPTION
①	4	WOOD BREAKAWAY TERMINAL POST: 5 1/2" X 7 1/2" X 3'-9"
②	**	STEEL TUBE: OPTION 1 - QUANTITY OF 4 TS 8" X 6" X 0.188", 4'-6" LONG OR OPTION 2 - QUANTITY OF 2 TS 8" X 6" X 0.188", 6'-0" AND 2 TS 8" X 6" X 0.188", 4'-6" LONG
③	2	SOIL PLATE: 2'-0" X 1'-6" X 1/4" **
④	4	WOOD BREAKAWAY CRT POST: 6" X 8" X 6'-0"
⑤	6	WOOD OFFSET BLOCKS: 6' X 8" X 1'-2"
⑥	1	PIPE SLEEVE: 2" X 5 1/2" STANDARD PIPE
⑦	1	BEARING PLATE
⑧	1	BCT CABLE ASSEMBLY
⑨	1	CABLE ANCHOR BOX
⑩	1	STRUT & YOKE
⑪	1	STEEL PLATE BEAM, END PANEL 12 GA. 13'-6 1/2" LONG FOR SKT-350, ET-2000 AND ET-2000 PLUS
⑫	3	STEEL PLATE BEAM: 12 GA. 13'-6 1/2"
⑬	1	ET-2000/ET-2000 PLUS GUARDRAIL EXTRUDER OR SKT-350 IMPACT HEAD: AS FURNISHED BY MANUFACTURER
⑭	1	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS
⑮	1	E.A.T. MARKER POST

GENERAL NOTES

FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS, IF NONE ARE AVAILABLE, INSTALL 3/8" ϕ X 1'-6" BUTTON HEAD BOLTS AT ALL POSTS EXCEPT FOR POST 1.

(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) THE 13 SLOT FIRST RAIL PANEL MAY BE USED IN LIEU OF THE 3 SLOT RAIL PANEL ON SKT-350 ONLY.

(D) THE TOP OF THE STEEL TUBE ON POSTS 1 THROUGH 4 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.

(E) THE CENTER OF THE UPPER 3/2" DIAMETER HOLE ON POST 5 THROUGH 8 SHALL BE 3/4" ABOVE THE FINISHED GROUND LINE.

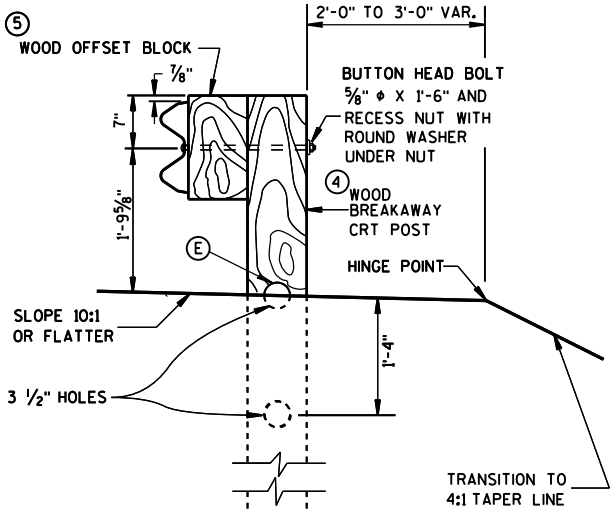
(F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER.

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

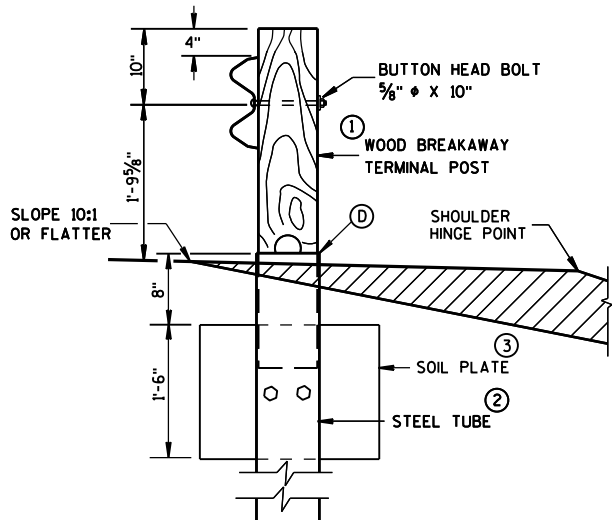
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

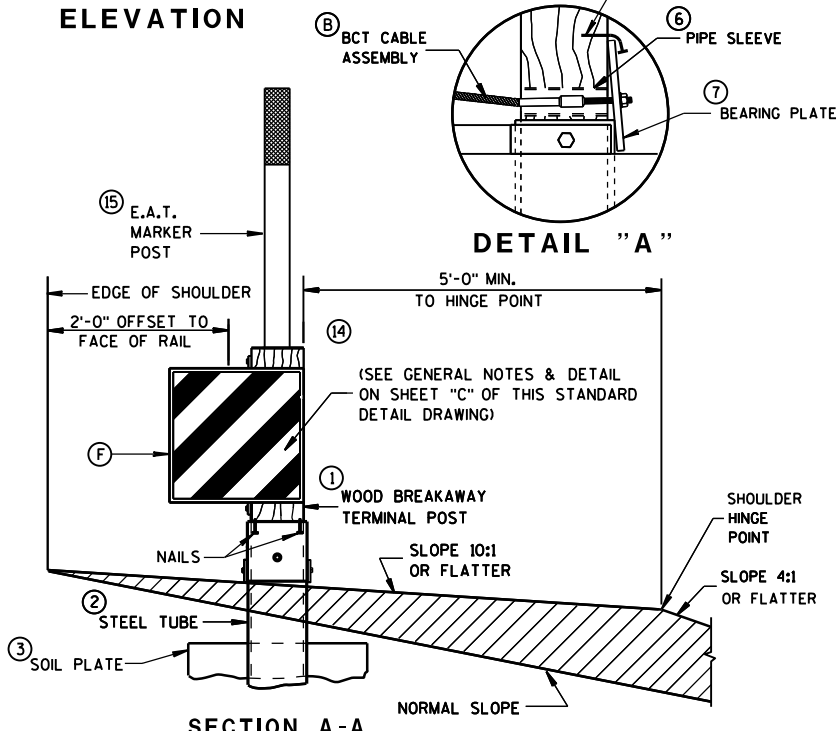
** SDD SHOWS 4 - 54 INCH STEEL TUBES WITH SOIL PLATES INSTALLED ON POST 1 AND POST 2. POST 3 AND 4 DO NOT NEED SOIL PLATES. AN ALTERNATIVE INSTALLATION WOULD CONSIST OF 2 - 72 INCH STEEL TUBES ON POST 1 AND POST 2 AND 54 INCH SOIL TUBES ON POSTS 3 AND 4. THE ALTERNATIVE INSTALLATION DOES NOT REQUIRE SOIL PLATES.



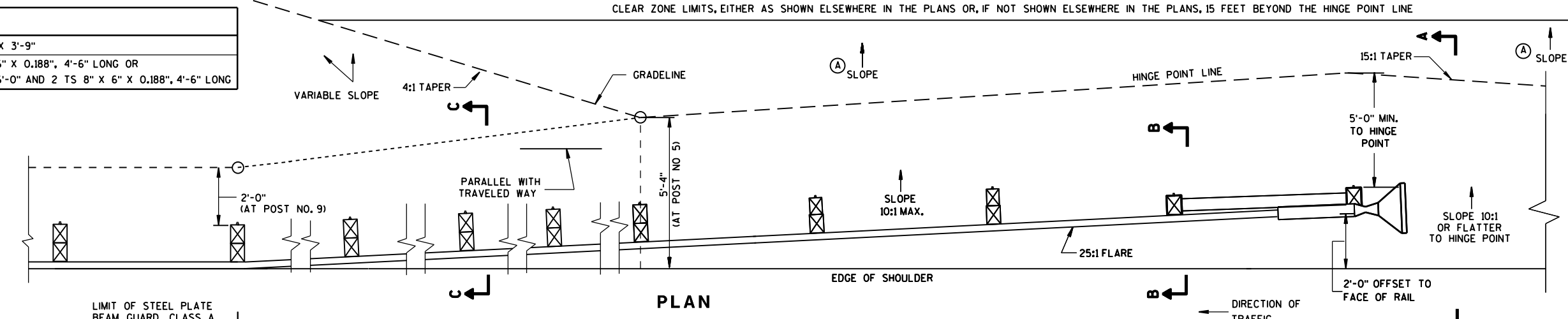
SECTION C-C
TYPICAL AT POST NOS. 6, 8



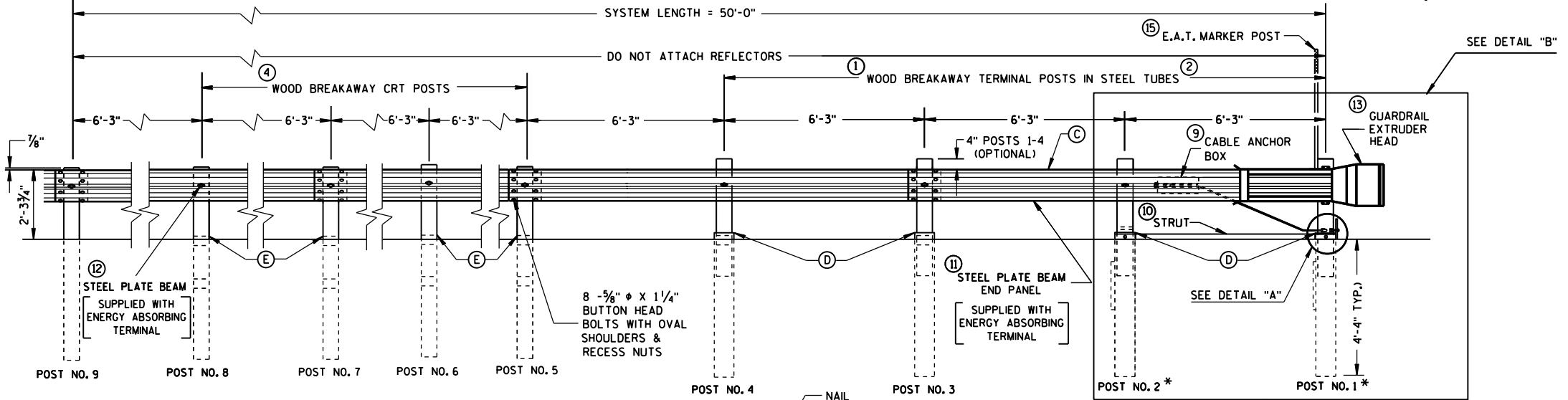
SECTION B-B
TYPICAL AT POST NO. 2 *



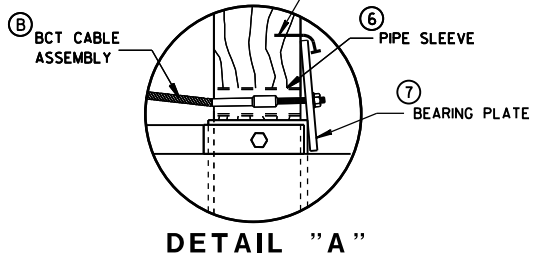
SECTION A-A
TYPICAL AT POST NO. 1 *



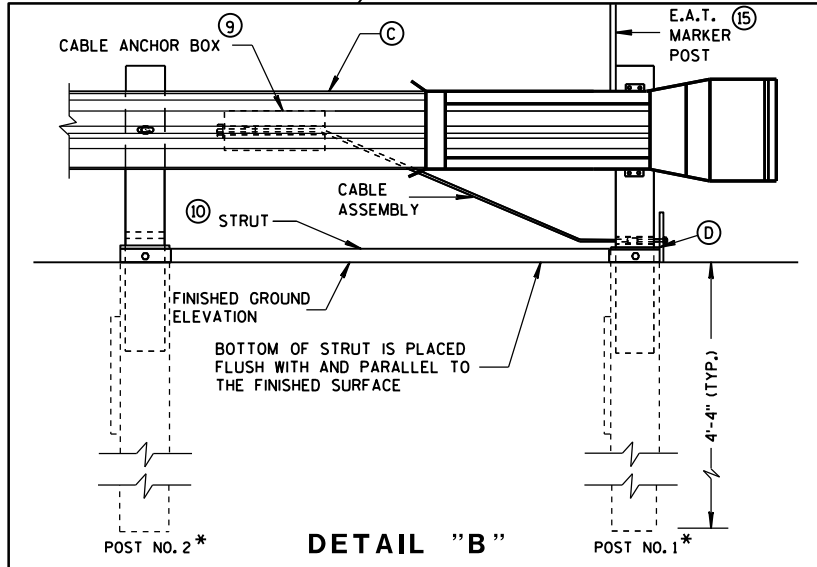
PLAN



ELEVATION



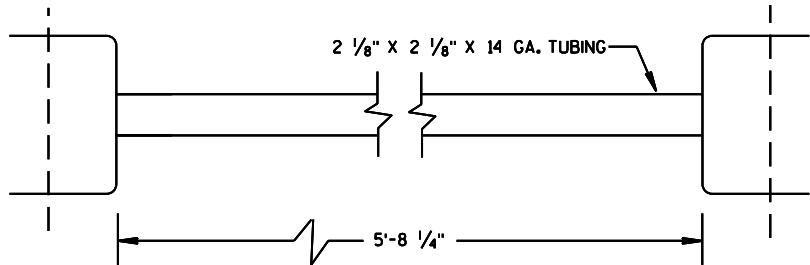
DETAIL "A"



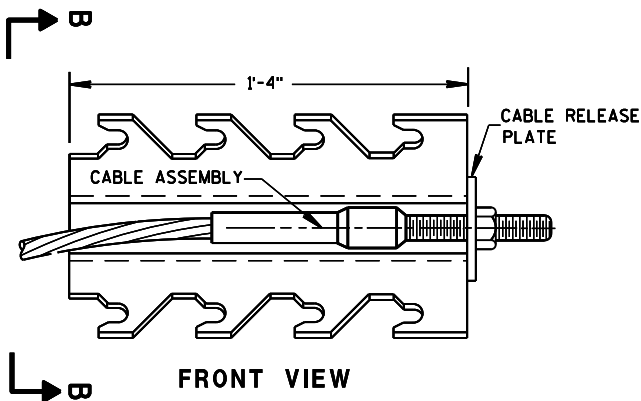
DETAIL "B"

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

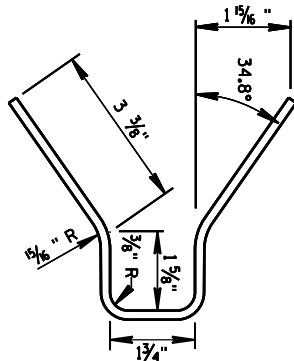
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



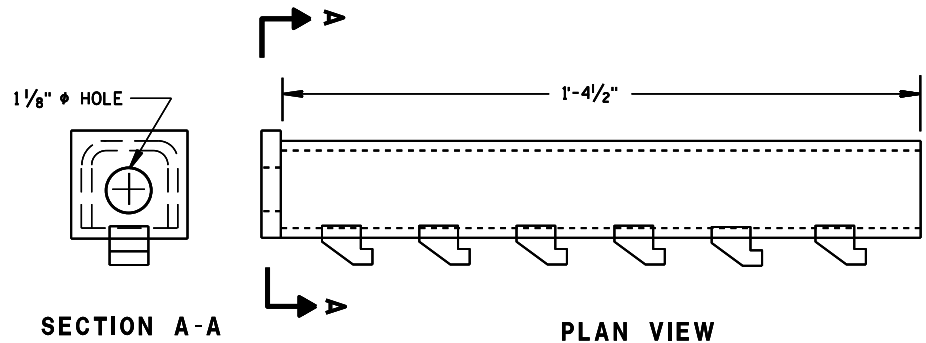
⑩ STRUT DETAIL (SKT-350)



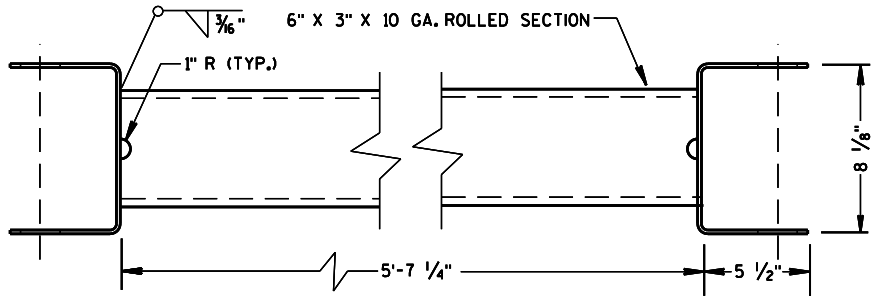
⑨ CABLE ANCHOR BOX (SKT-350)
(SKT-350)



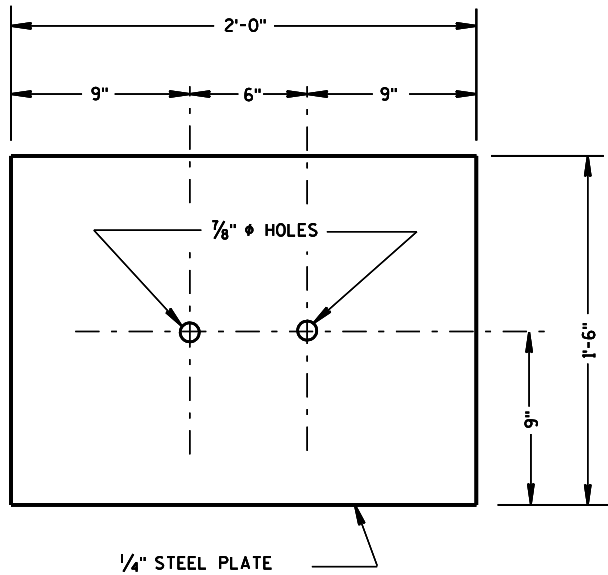
SECTION B-B



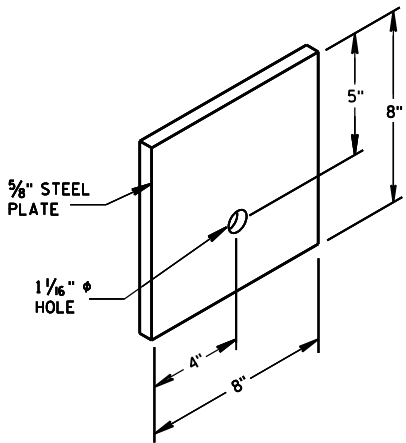
⑨ CABLE ANCHOR BOX (ET-2000/ET-2000 PLUS)



⑩ STRUT DETAIL (ET-2000/ET-2000 PLUS)
(ET-2000/ET-2000 PLUS)



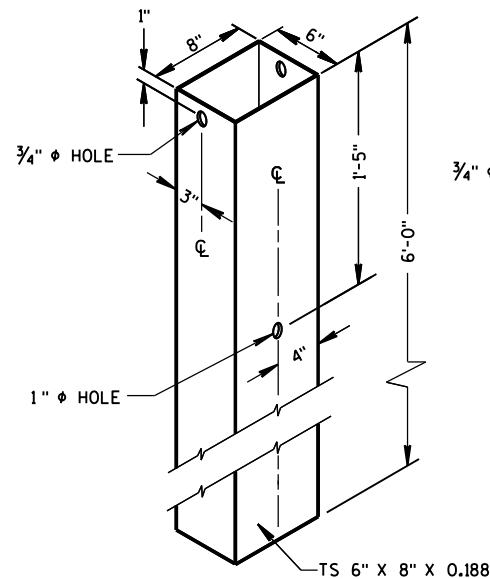
③ SOIL PLATE
(SKT-350, ET-2000/ET-2000 PLUS)



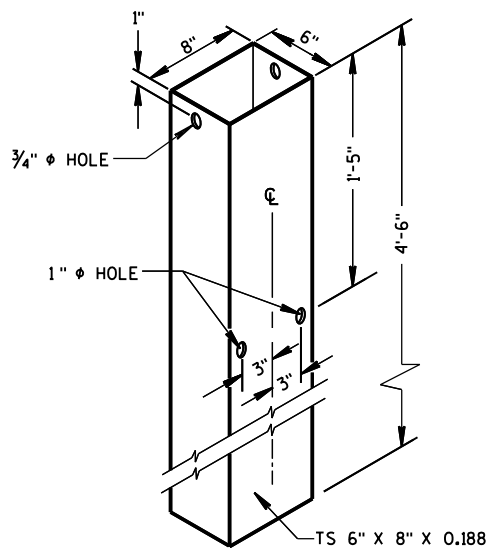
⑦ STEEL BEARING PLATE
(SKT-350, ET-2000/ET-2000 PLUS)

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

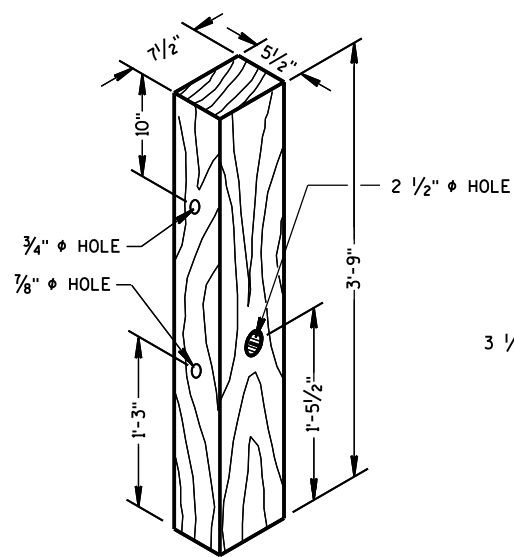
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



② **72" STEEL TUBE**
(POSTS NO. 1-4)

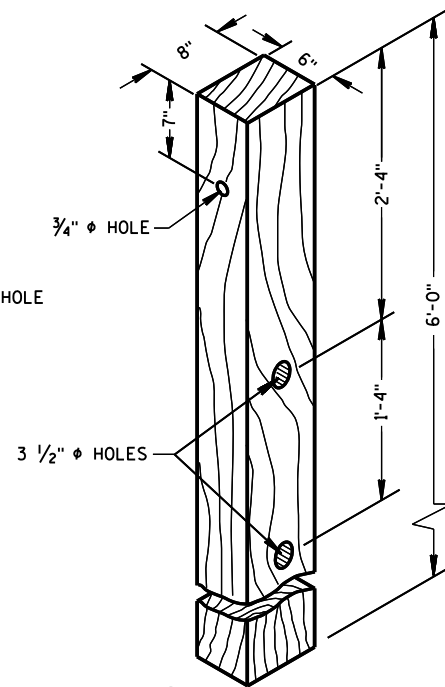


② **54" STEEL TUBE**
(POSTS NO. 1-4)



① **TERMINAL POST**
(POSTS NO. 1-4)

WOOD BREAKAWAY POSTS



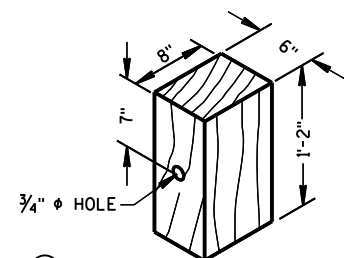
④ **CRT POST**
(POSTS NO'S 5-8)

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.

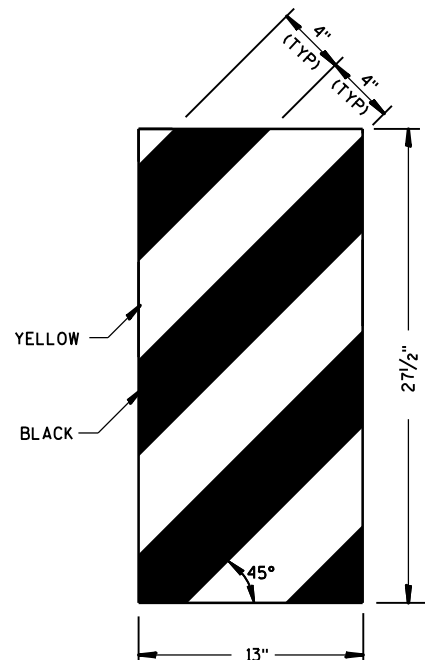
SEE APPROVED PRODUCTS LIST FOR ACCEPTABLE E. A. T. MARKER POST.

ⓐ 1/2" DIA. X 3" LAG BOLT WITH WASHER.

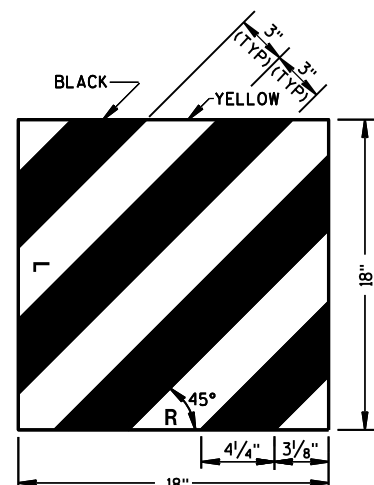


⑤ **WOOD OFFSET BLOCK**
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2

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

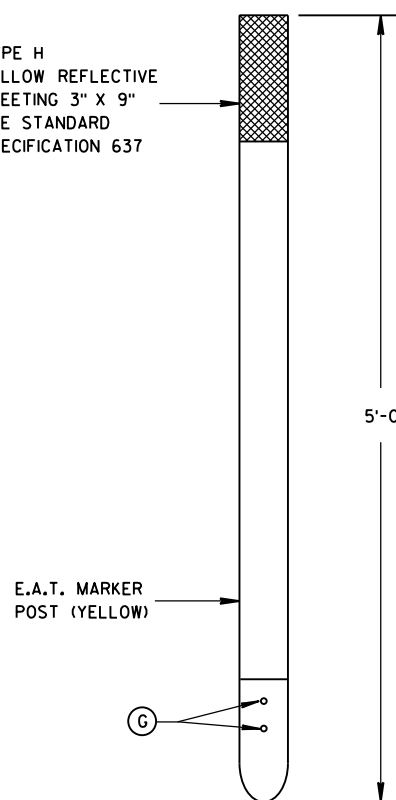


ET-2000 PLUS ONLY

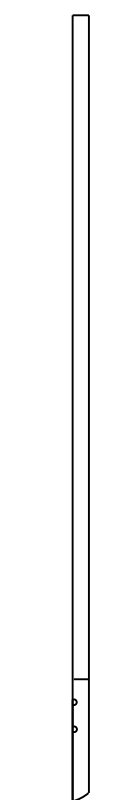


ET-2000 AND SKT-350

⑭ **REFLECTIVE SHEETING DETAILS**

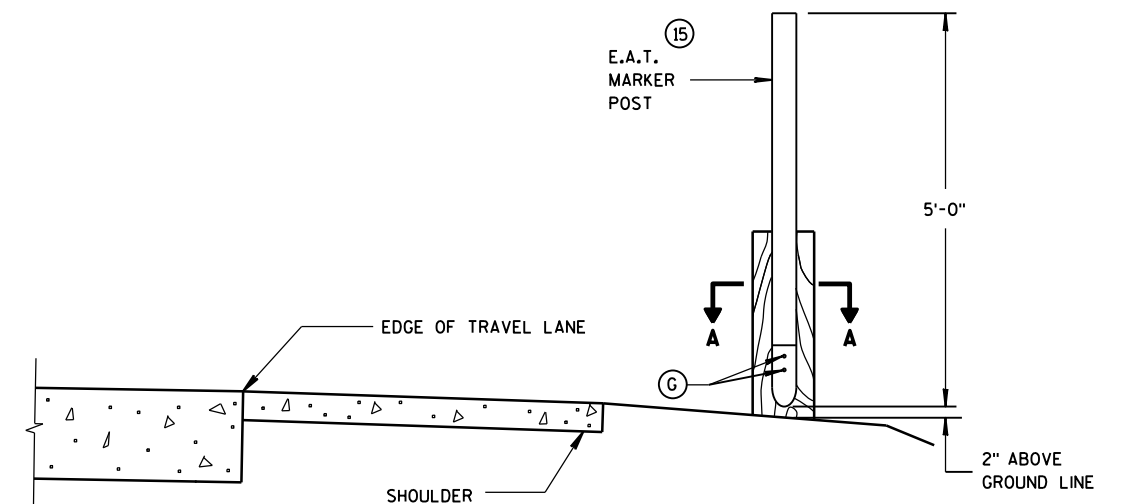


FRONT VIEW

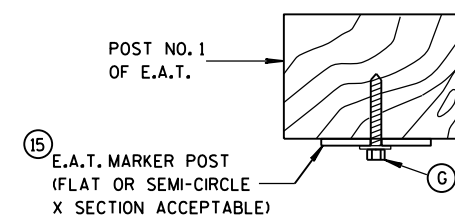


SIDE VIEW

⑮ **E.A.T. MARKER POST**



TYPICAL INSTALLATION OF E.A.T. MARKER POST BACKSIDE OF POST NO. 1
(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A

**STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL**

**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION**

APPROVED
June 2014
DATE
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

6

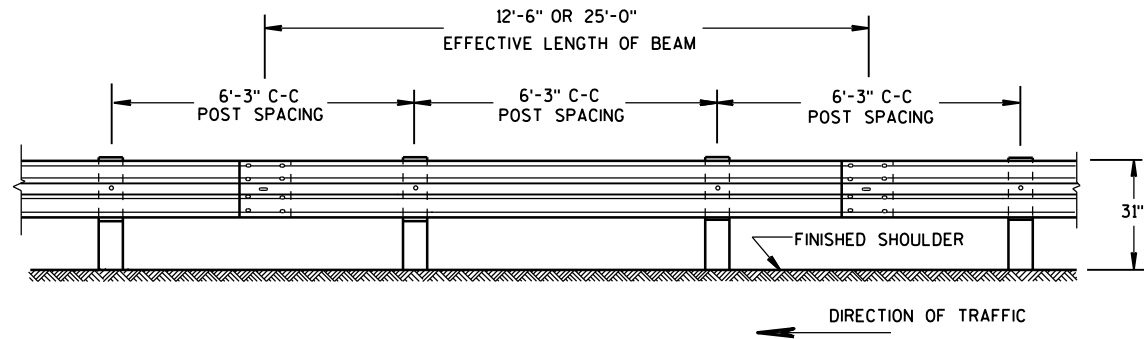
- S.D.D. 14 B 42-3a**



S.D.D. 14 B 42-3a

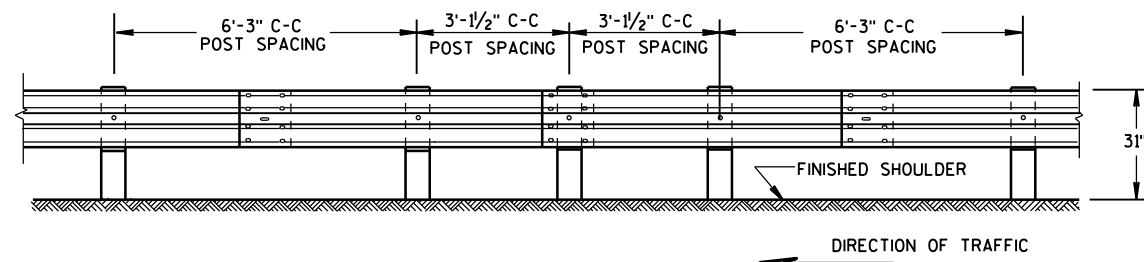


S.D.D. 14 B 42-3a



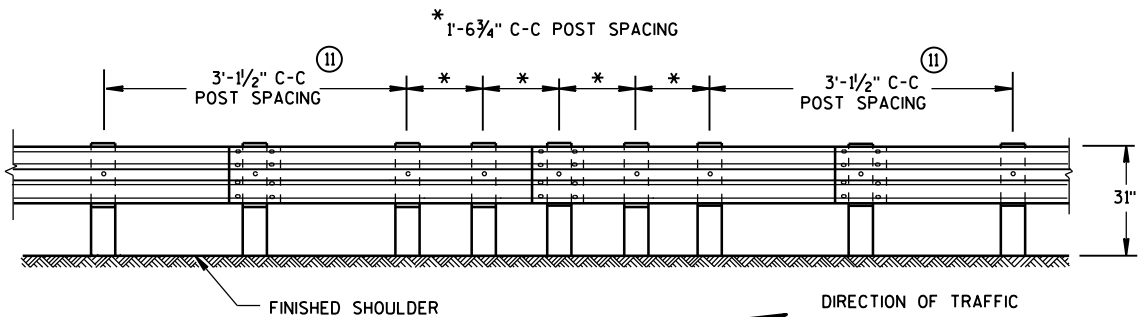
FRONT VIEW

POST SPACING STANDARD INSTALLATION



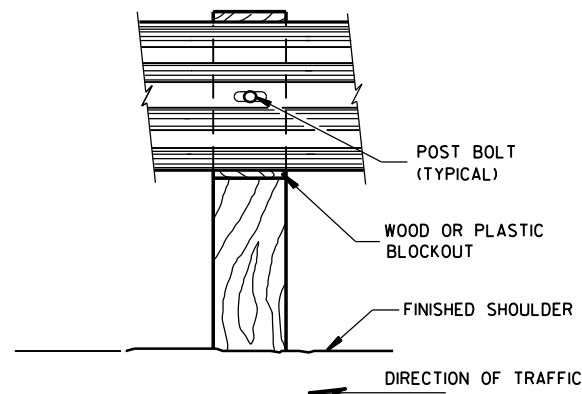
FRONT VIEW

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

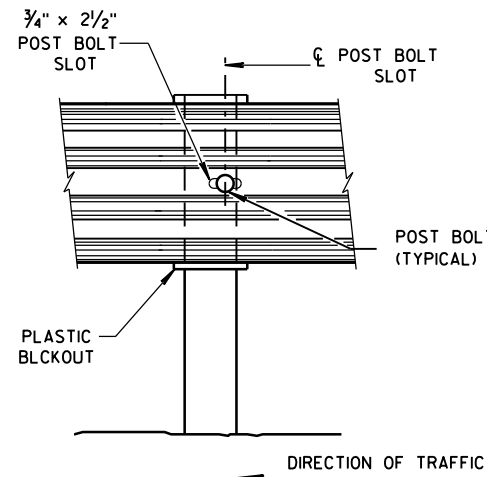


FRONT VIEW

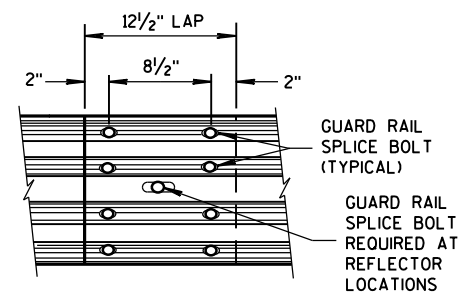
QUARTER POST SPACING (QS)



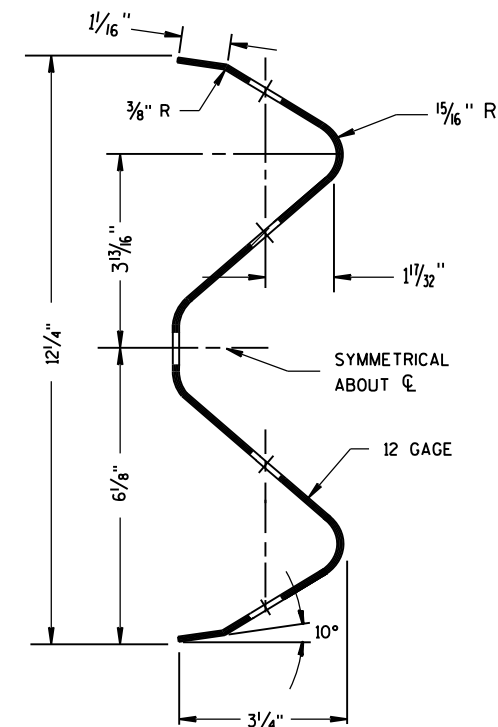
FRONT VIEW AT WOOD POST



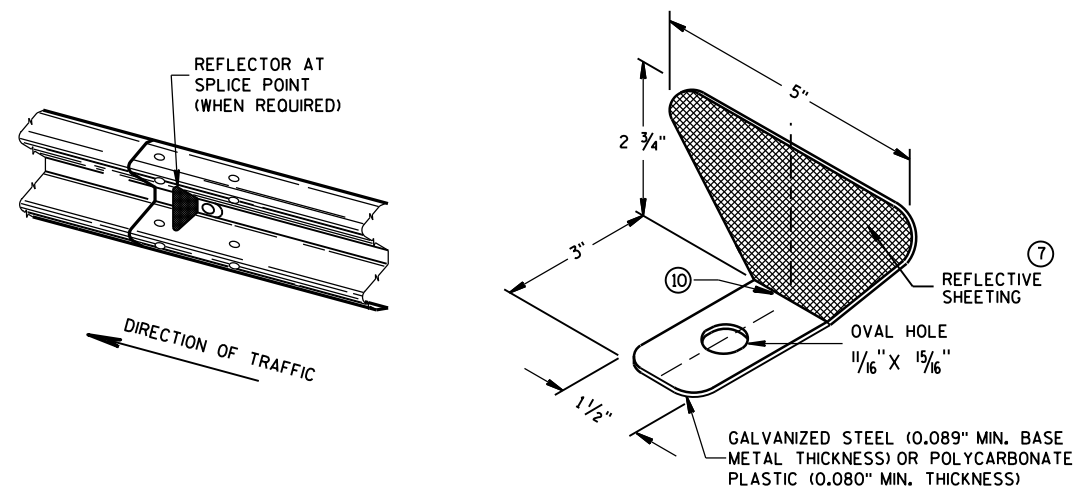
FRONT VIEW AT STEEL POST



FRONT VIEW
MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

GENERAL NOTES

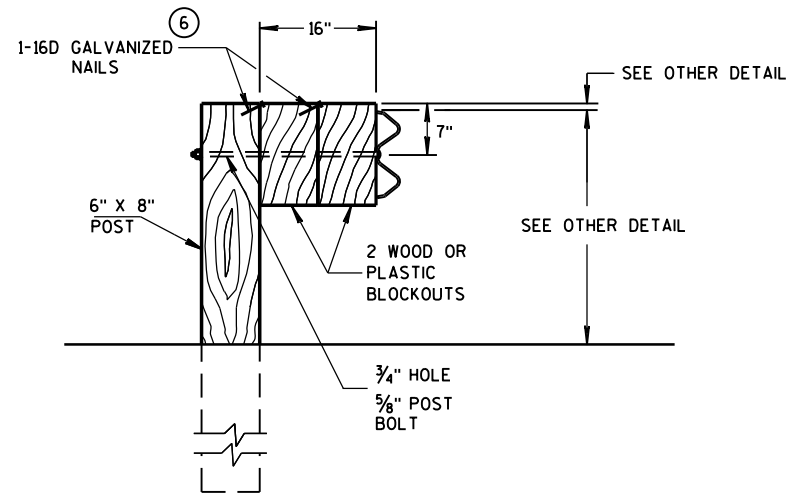
- ⑦ PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.
 - ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
 - ⑨ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
 - ⑩ PROVIDE AN ANGLE OF BEND OF $90^\circ \pm 1^\circ$ FOR TWO-SIDED REFLECTORS.
 - ⑪ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND $\frac{5}{8}$ " DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.
- GUARD RAIL SPLICE BOLTS ARE A $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

REFLECTOR SPACING

	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1 ⑨	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2 ⑩	3
	> 200'	100' C-C	2	

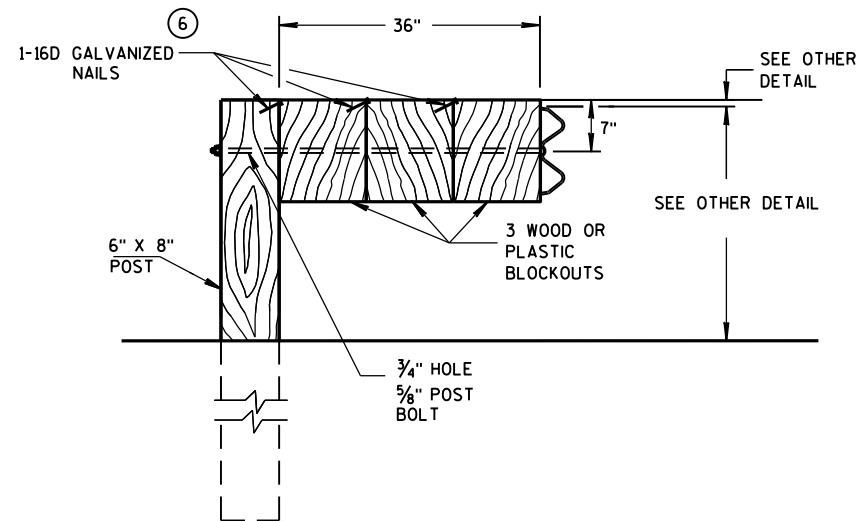
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR 16" BLOCKOUT DEPTH

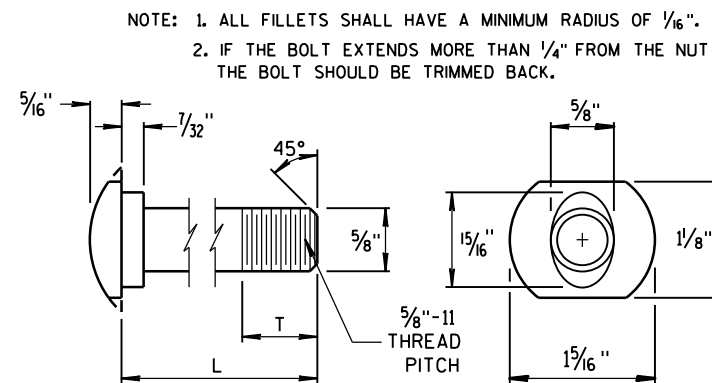
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



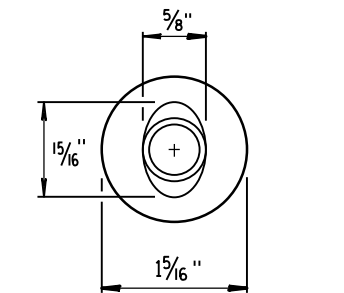
DETAIL FOR 36" BLOCKOUT DEPTH

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.

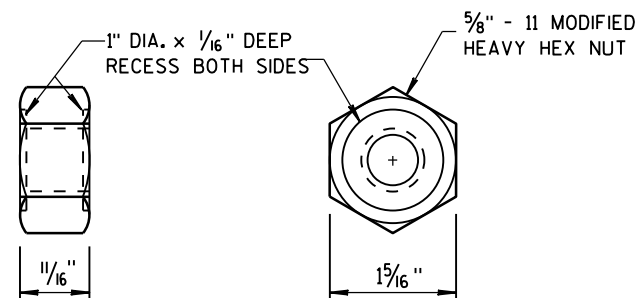
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.



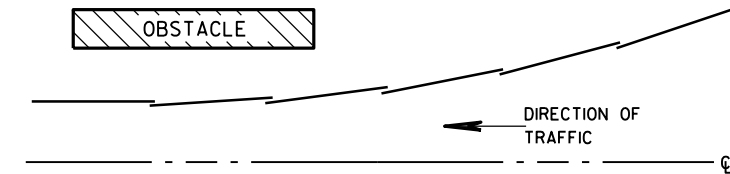
POST BOLT TABLE



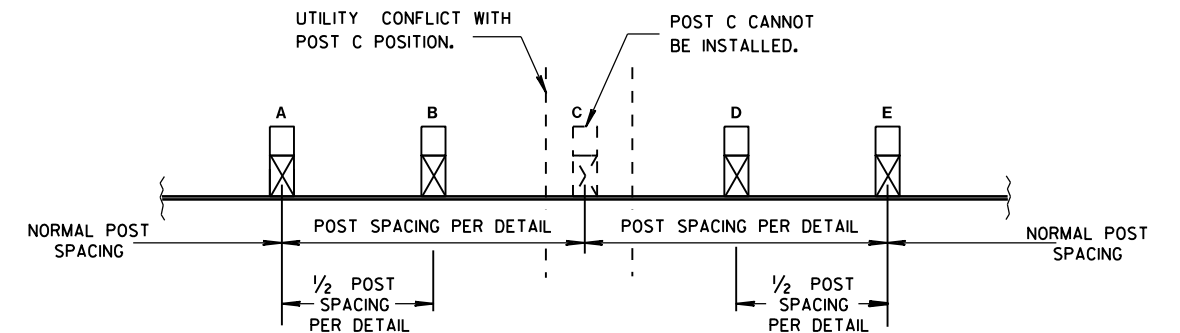
ALTERNATE BOLT HEAD



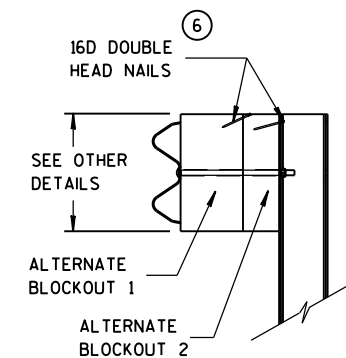
POST BOLT AND RECESS NUT



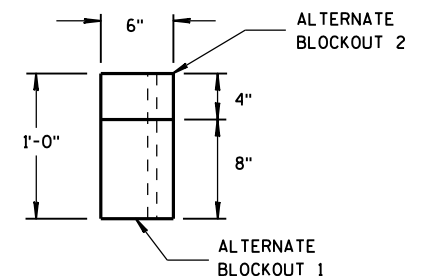
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014
DATE
FHWA

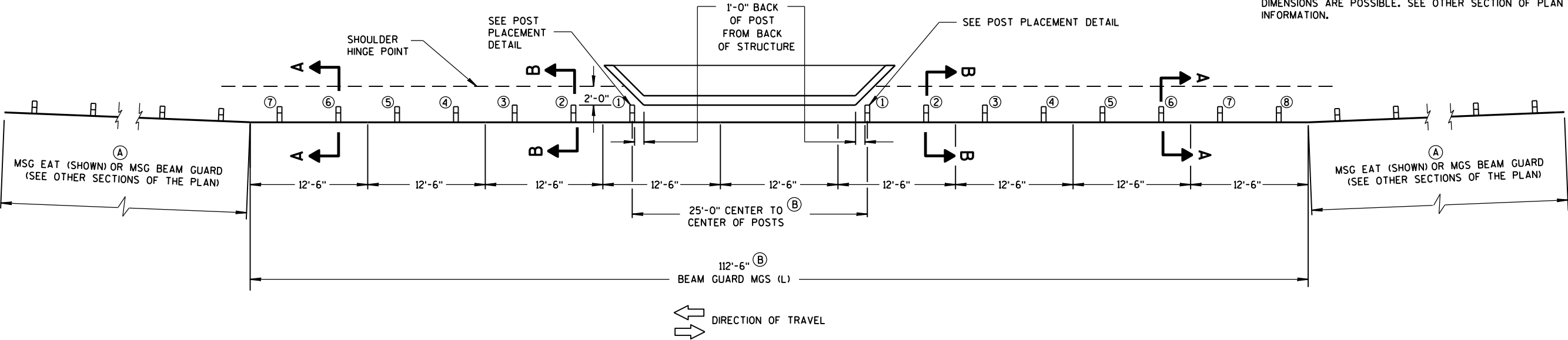
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

GENERAL NOTES

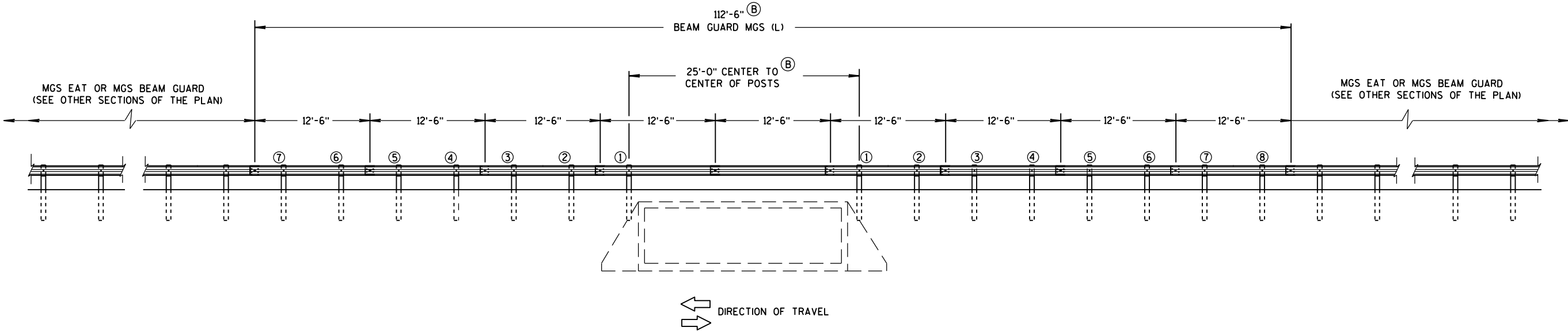
POSTS 1 THROUGH 3 ARE CRT POSTS.
ALL OTHER POSTS SHALL BE WOOD OR STEEL.

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)

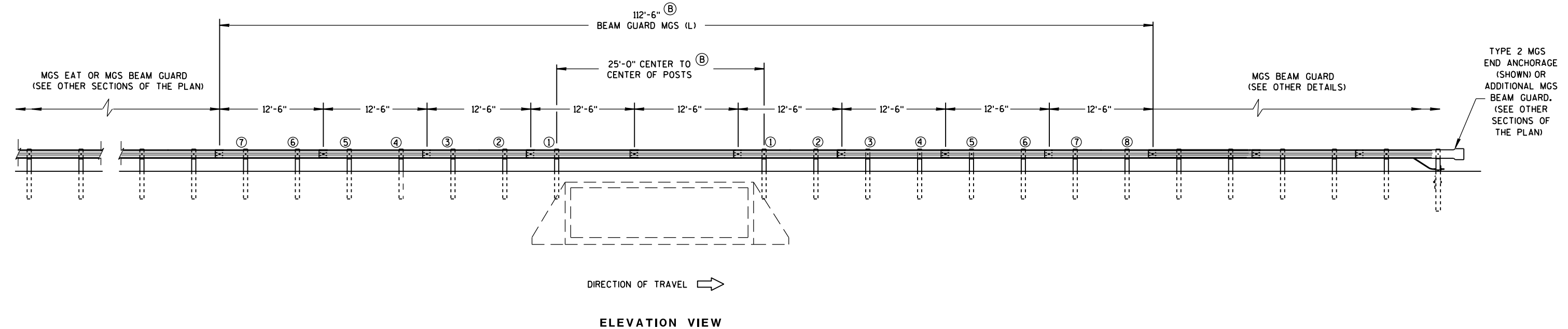
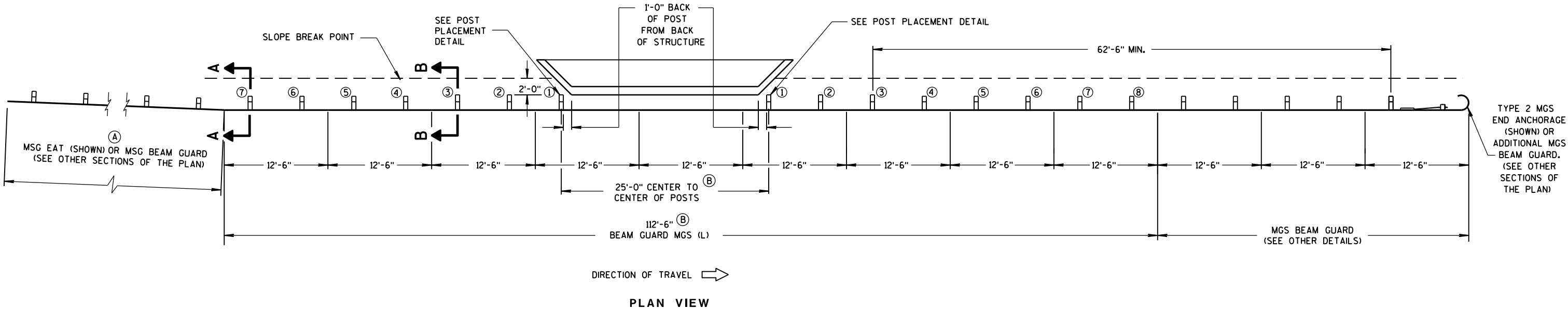
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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.

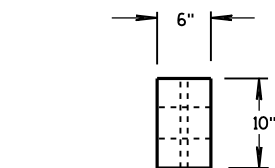
- (A) FLARE FOR MGS EAT SHOWN. IF INSTALLING MGS NO FLARE NEEDED.
- (B) VALUES SHOWN ON DRAWING REPRESENT THE MAXIMUM LENGTH. SHORTER DIMENSIONS ARE POSSIBLE. SEE OTHER SECTION OF PLAN FOR MORE INFORMATION.



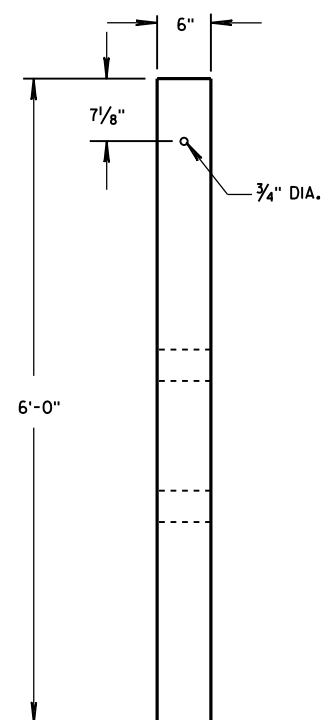
MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L) ONE-WAY TRAFFIC

MIDWEST GUARDRAIL SYSTEM
LONG SPAN MGS (L)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

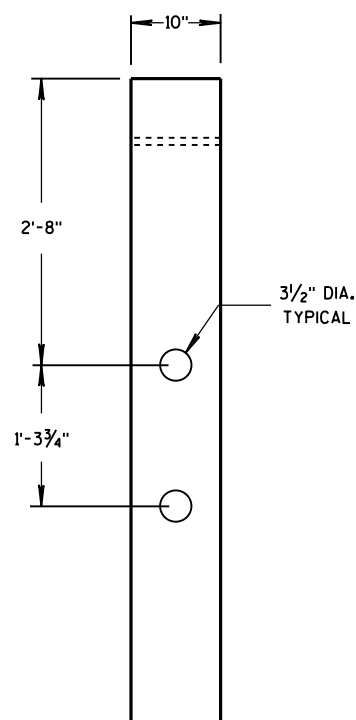


PLAN VIEW

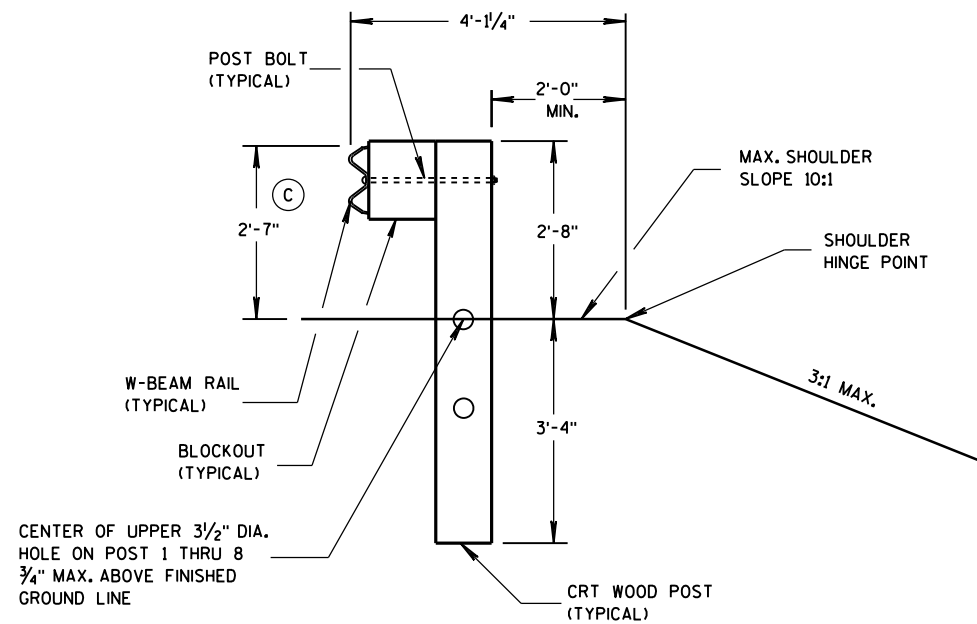


FRONT VIEW

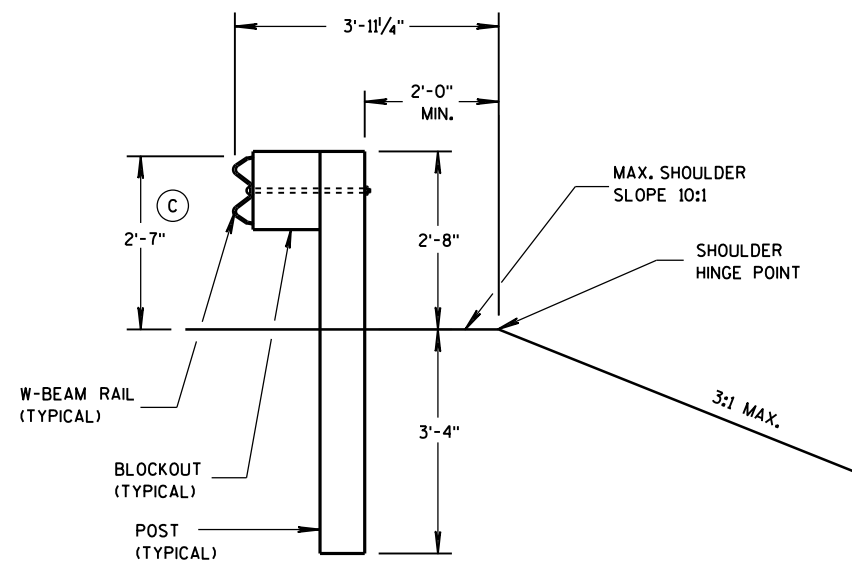
CRT WOOD POST



SIDE VIEW

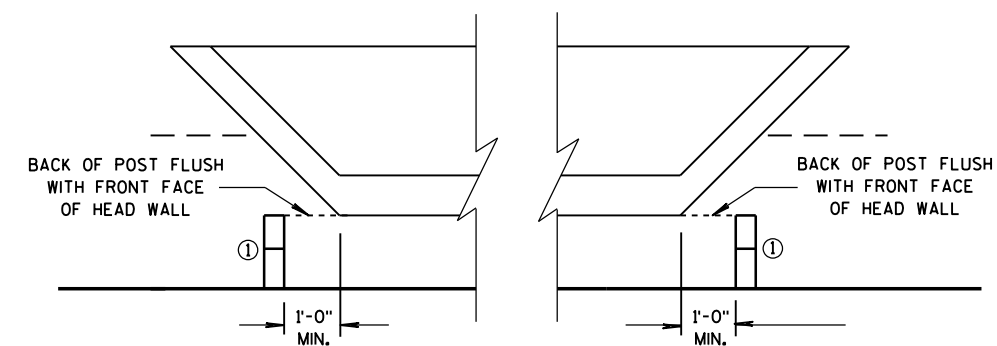
SECTION B-B
POSTS NO. 1-3

SEE OTHER DETAILS

SECTION A-A
POSTS NO. 4-8

SEE OTHER DETAILS

GENERAL NOTES

(C) TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.

POST PLACEMENT DETAIL

MIDWEST GUARDRAIL SYSTEM
LONG SPAN MGS (L)STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATIONAPPROVED
5/10/2013
DATE
FHWA/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

GENERAL NOTES

- (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 MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.
- (D) THE TOP OF THE STEEL TUBE ON POST 1 AND POST 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.
- (E) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER.
- (G) 1/2" DIAMETER X 3" LONG LAG BOLT AND WASHER.
- (H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.
- (I) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

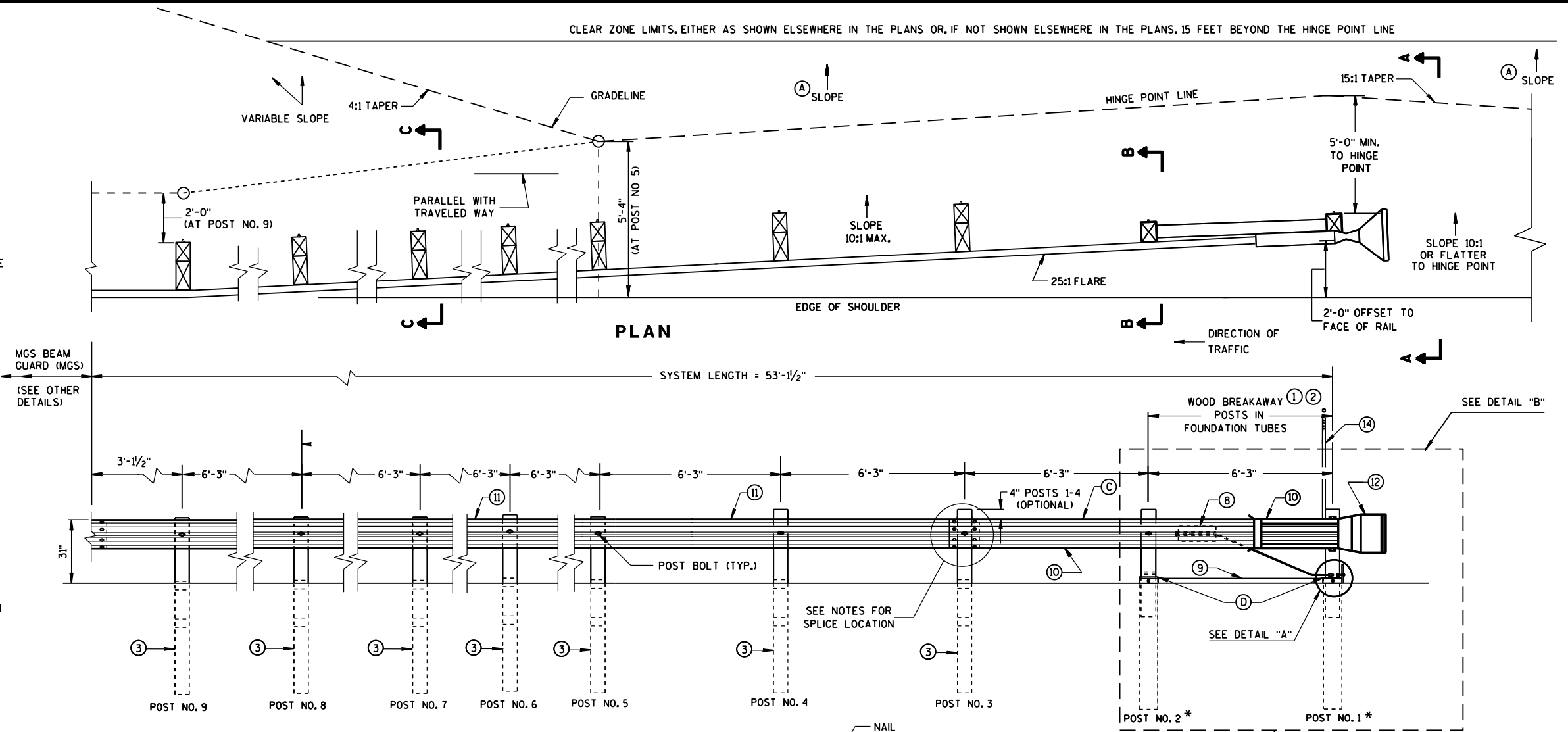
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

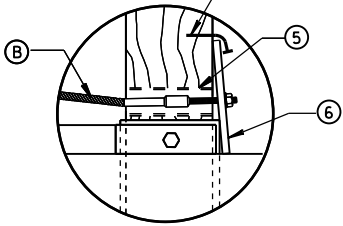
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

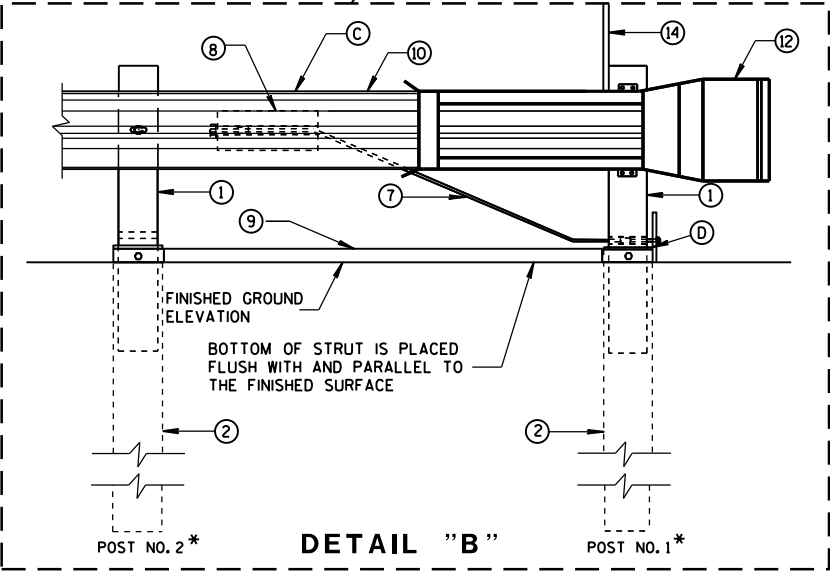
THE CENTER OF THE UPPER 3/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.



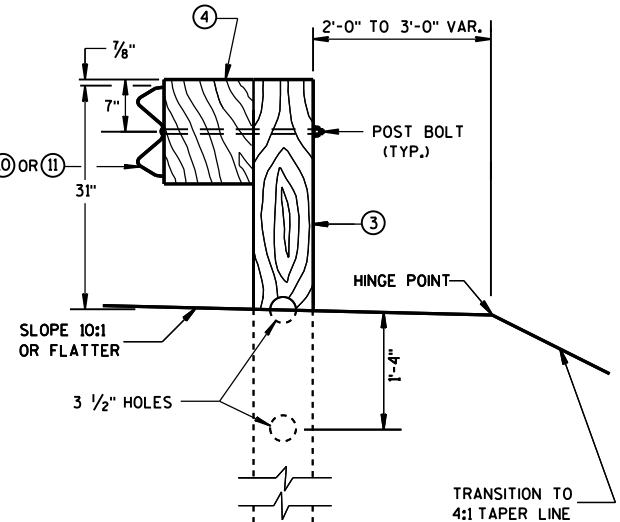
ELEVATION



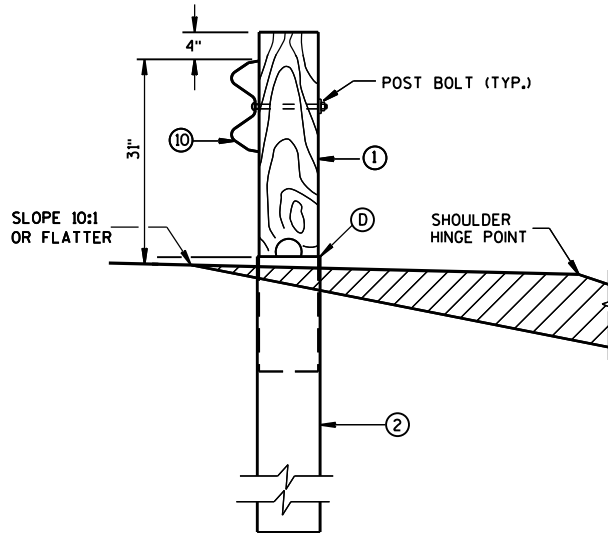
DETAIL "A"



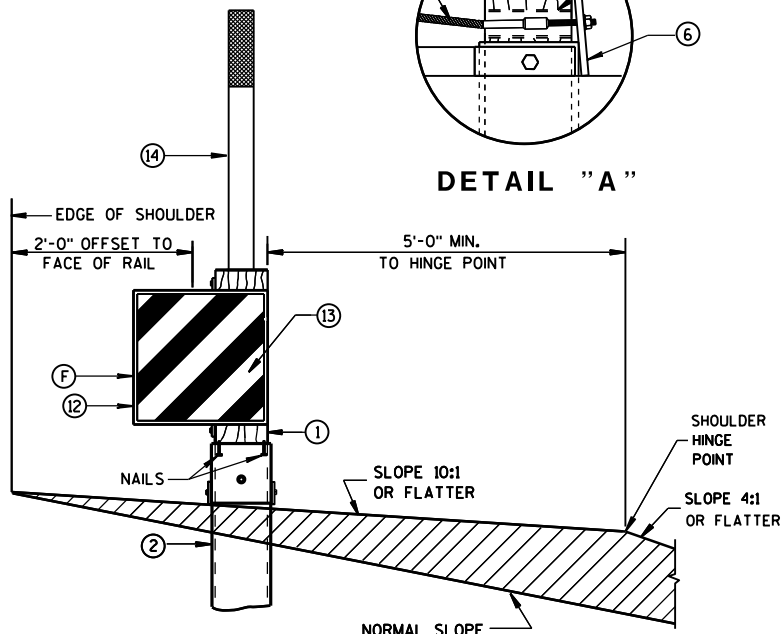
DETAIL "B"



SECTION C-C
TYPICAL AT POST NOS. 3-9



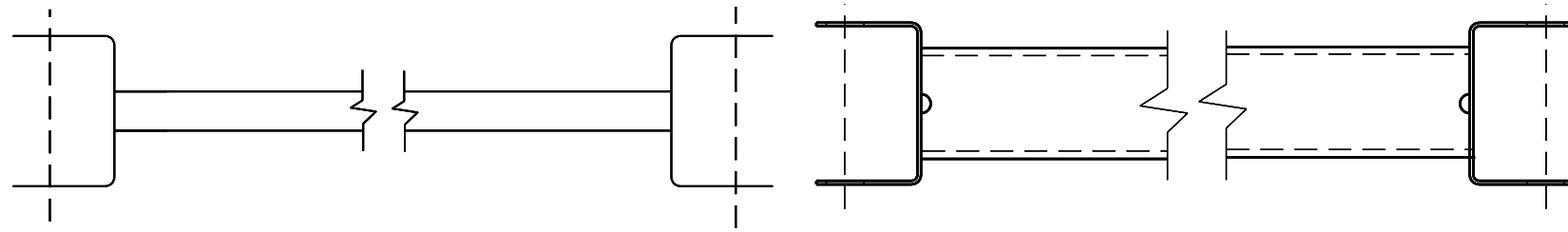
SECTION B-B
TYPICAL AT POST NO. 2*



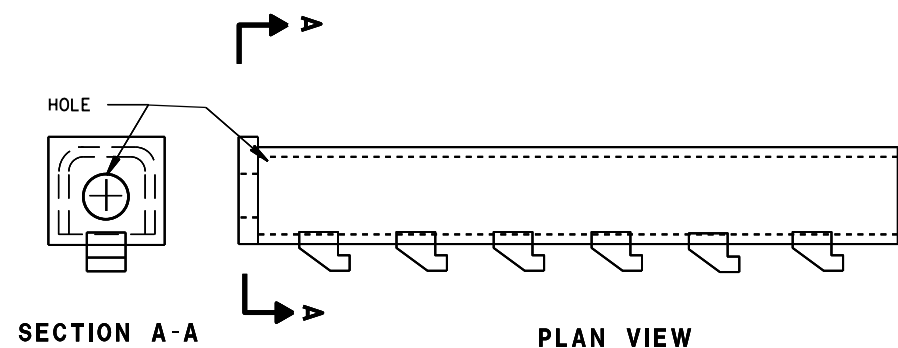
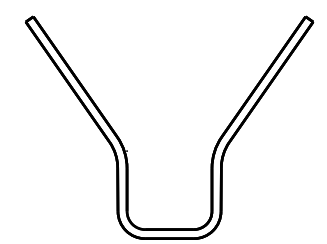
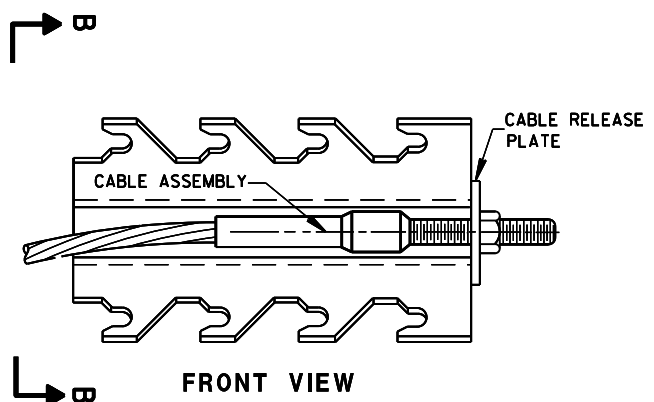
SECTION A-A
TYPICAL AT POST NO. 1*

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



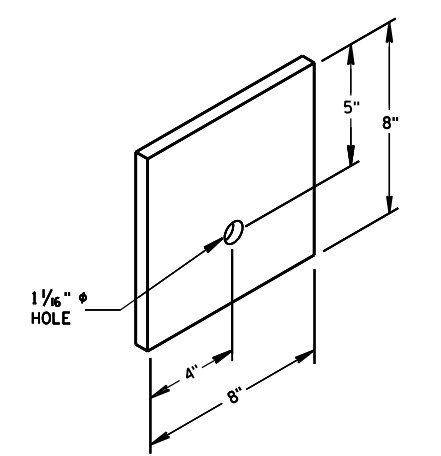
9 H
GENERIC GROUND STRUT



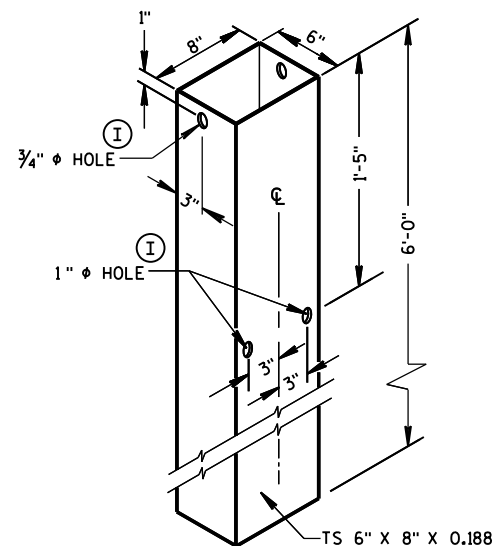
8 H
GENERIC ANCHOR CABLE BOX

BILL OF MATERIALS

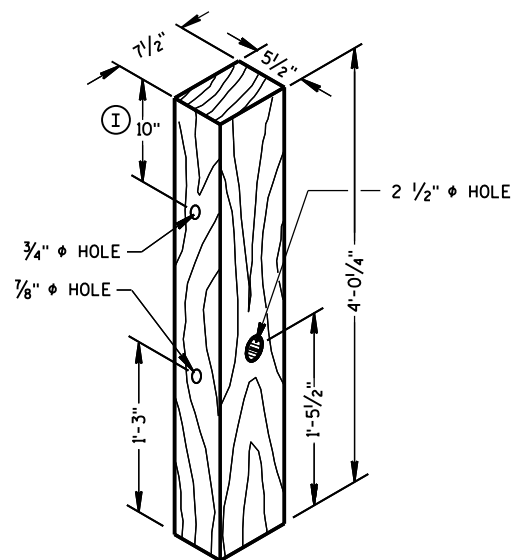
PART NO.	DESCRIPTION
MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.	
①	WOOD BREAKAWAY POST
②	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
⑪	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
⑫	END SECTION EAT
⑬	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS
⑭	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



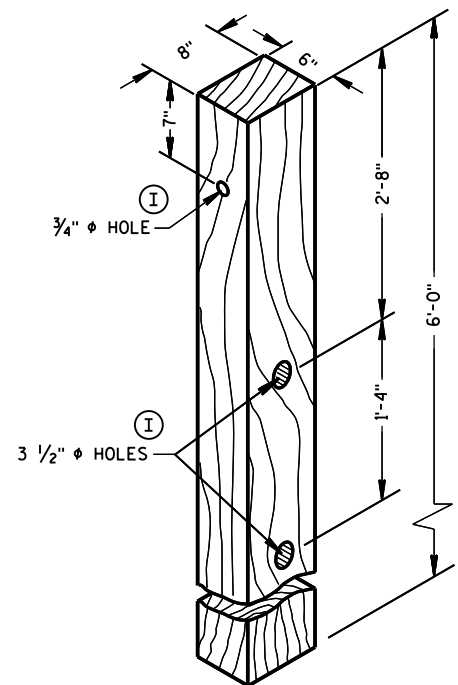
6
BEARING PLATE



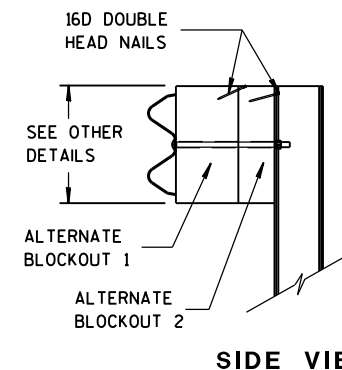
FOUNDATION TUBE ②



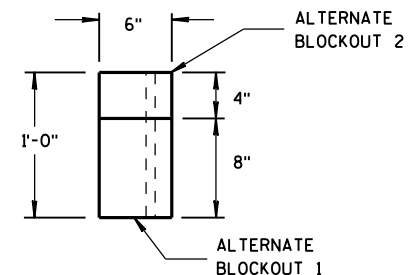
POSTS NUMBER 1 AND 2
WOOD BREAKAWAY POST ①



POSTS NUMBER 3-9
WOOD CRT POST ③

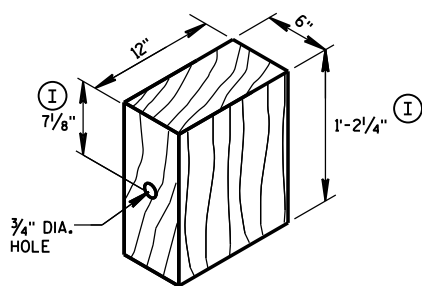


SIDE VIEW



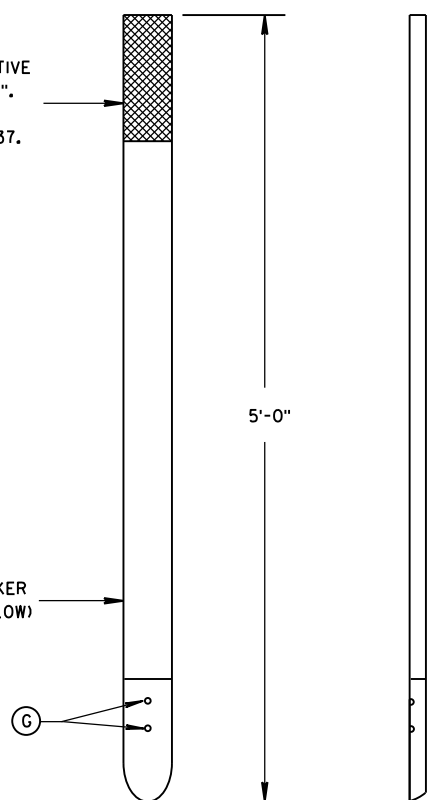
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL



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

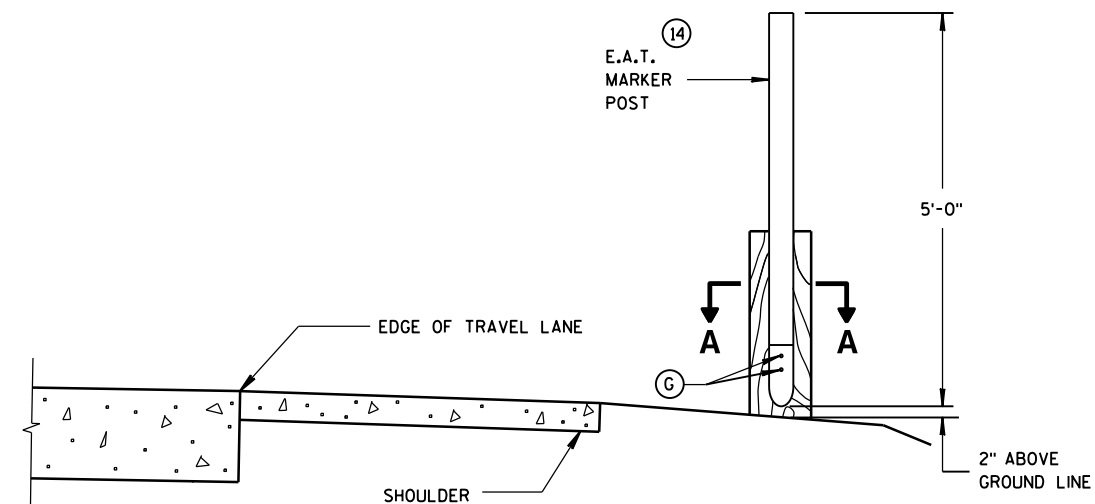
TYPE H
YELLOW REFLECTIVE
SHEETING 3" X 9".
SEE STANDARD
SPECIFICATION 637.



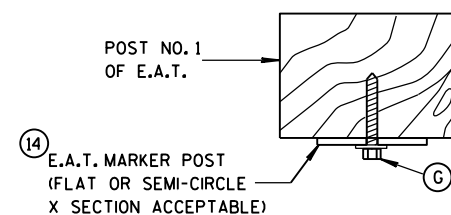
FRONT VIEW

SIDE VIEW

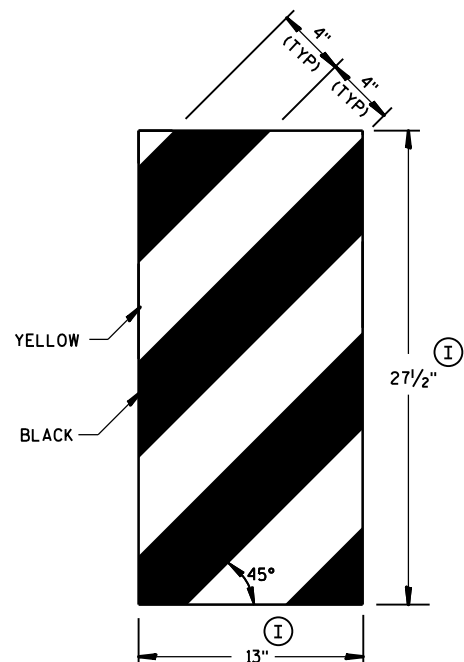
E.A.T. MARKER POST ⑭



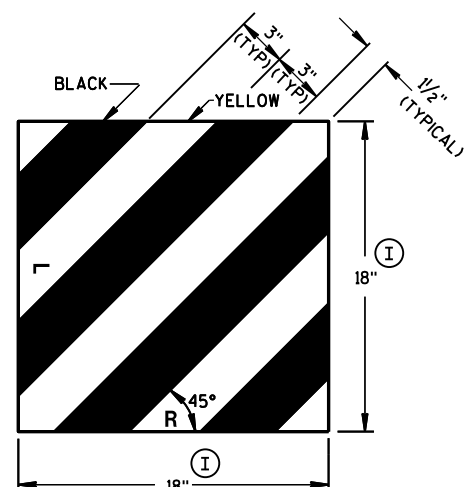
TYPICAL INSTALLATION OF E.A.T.
MARKER POST BACKSIDE OF POST NO. 1
(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A



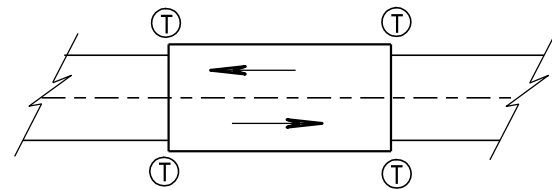
GENERIC REFLECTIVE SHEETING ⑬ ①



MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

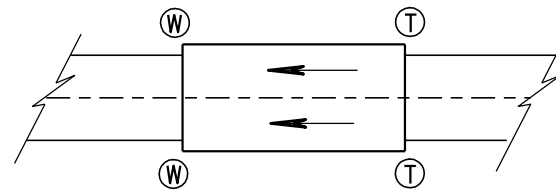
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



TWO WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION



ONE WAY TRAFFIC

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

GENERAL NOTES

BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3".

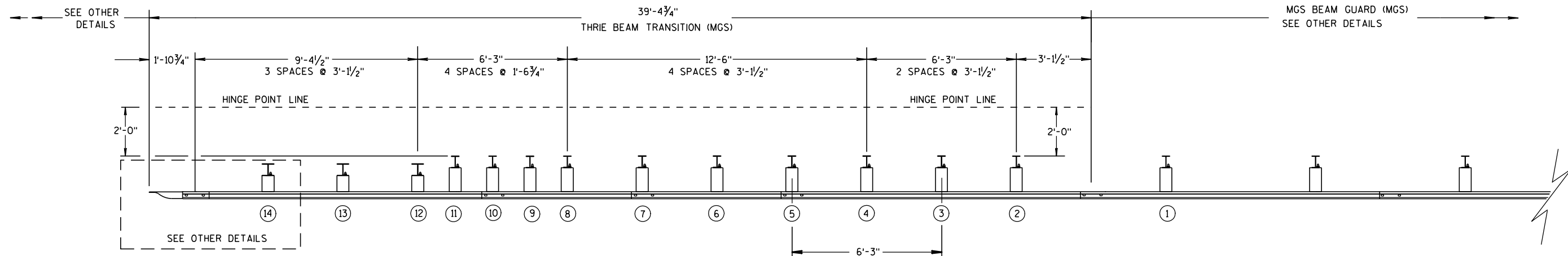
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

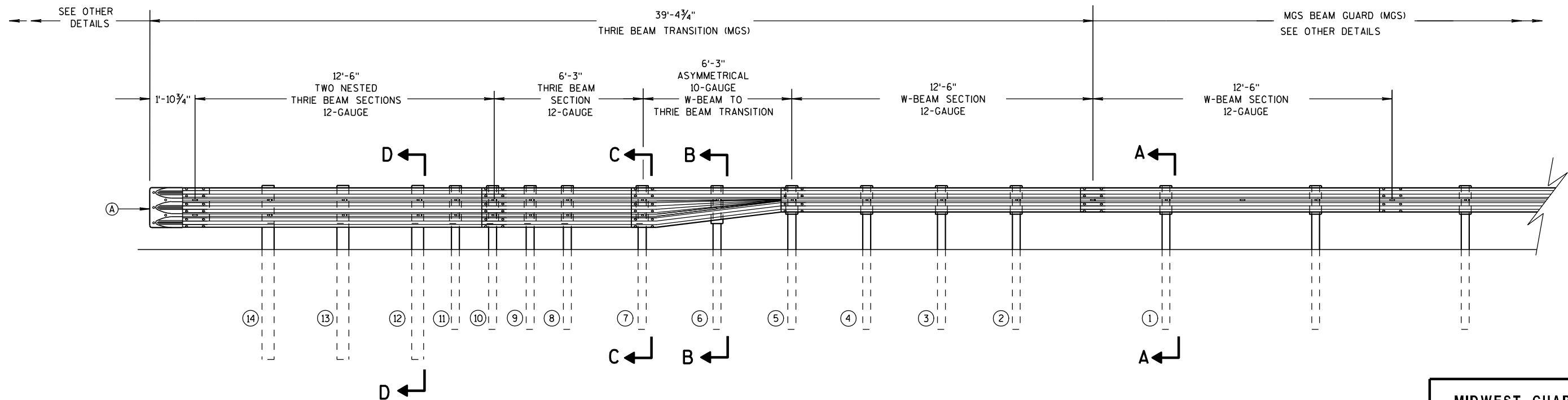
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

Ⓐ BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

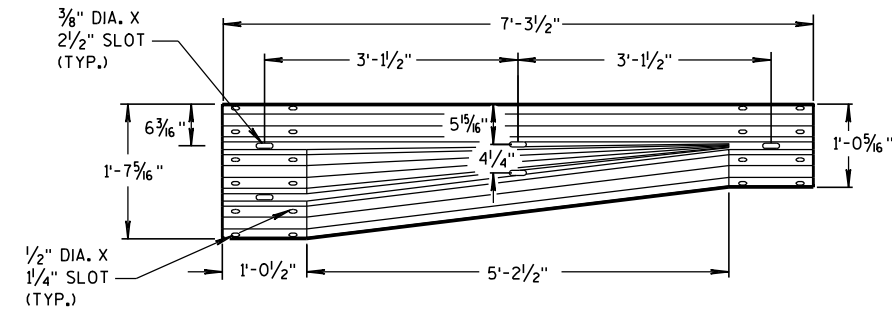
6

S.D.D. 14 B 45-3b

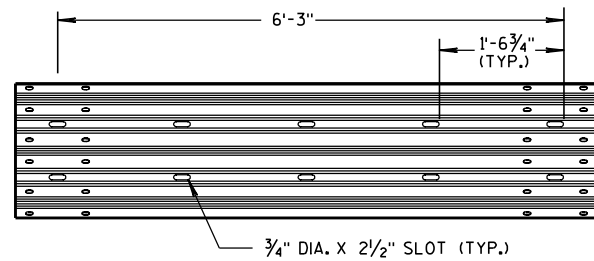


STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

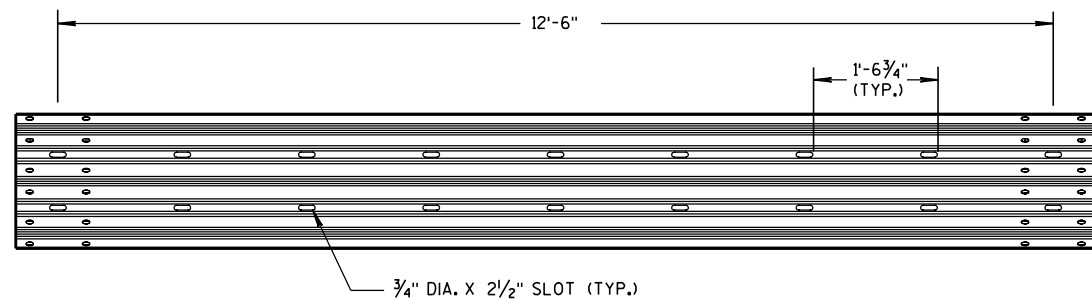
S.D.D. 14 B 45-3b



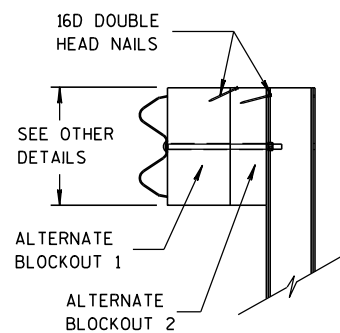
W-BEAM TO THRIE BEAM TRANSITION SECTION



6'-3" THRIE BEAM SECTION

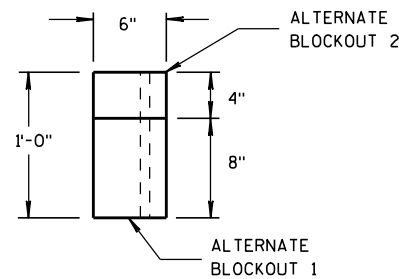


12'-6" THRIE BEAM SECTION

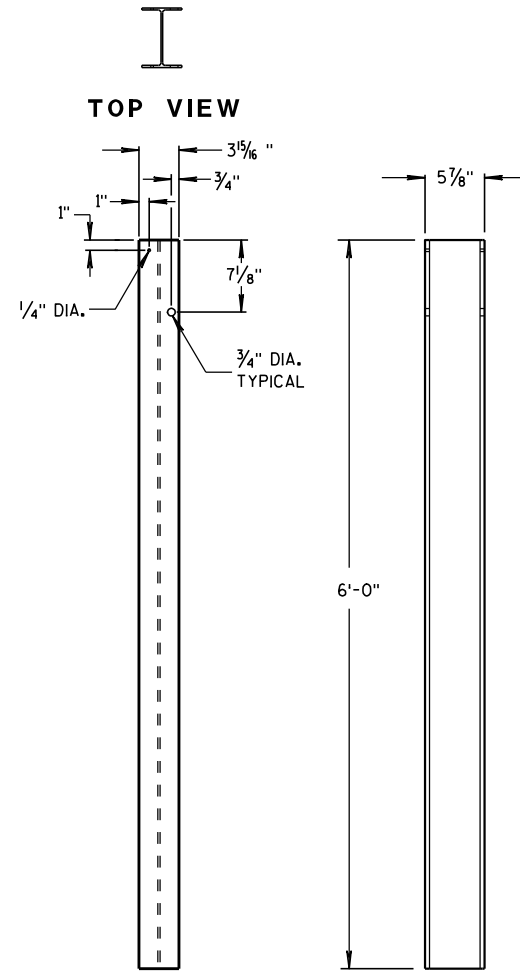


SIDE VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



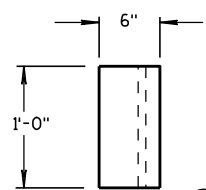
TOP VIEW



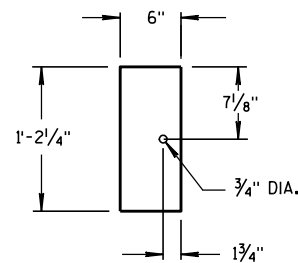
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

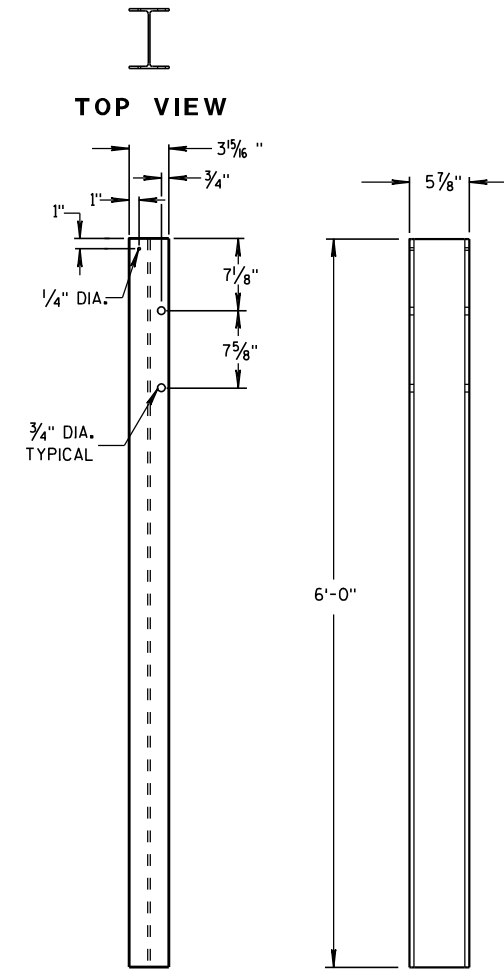


TOP VIEW



FRONT VIEW

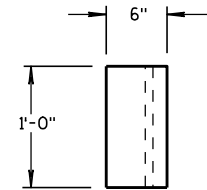
BLOCKOUT POSTS 1-5



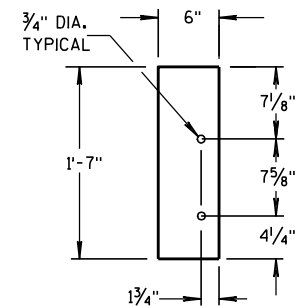
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-11

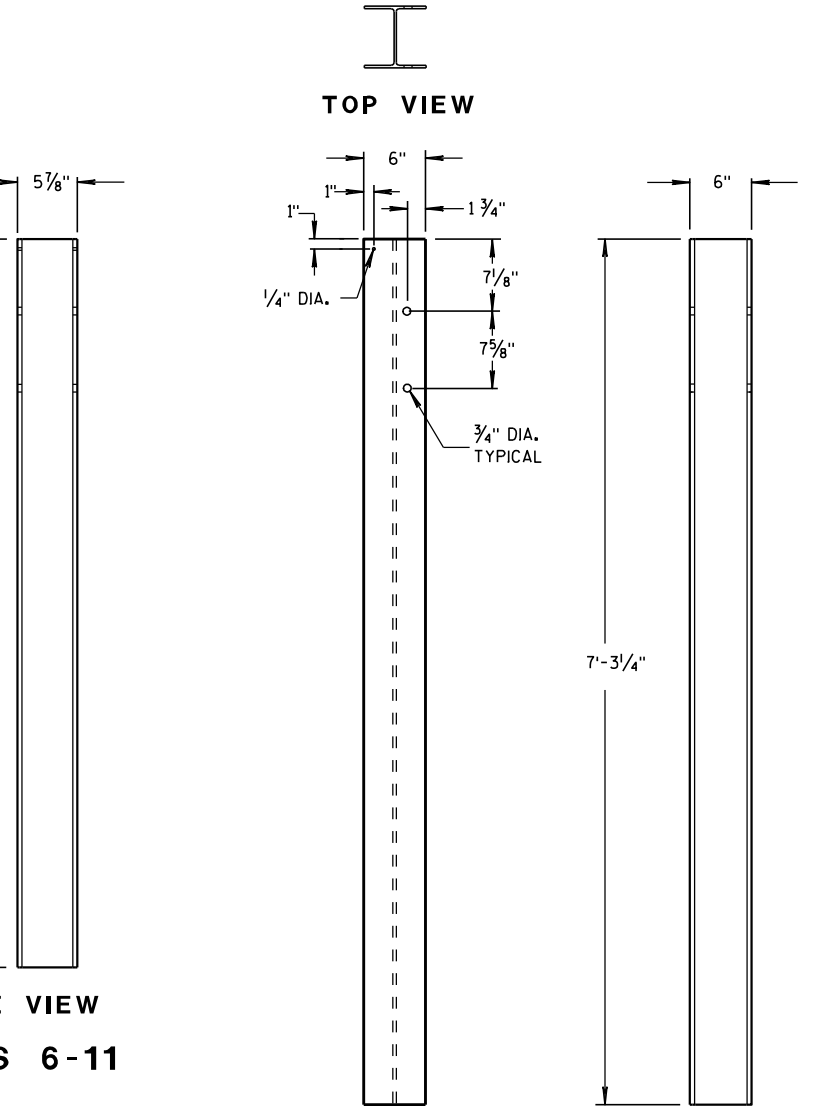


TOP VIEW



FRONT VIEW

BLOCKOUT POSTS 6-11



FRONT VIEW

SIDE VIEW

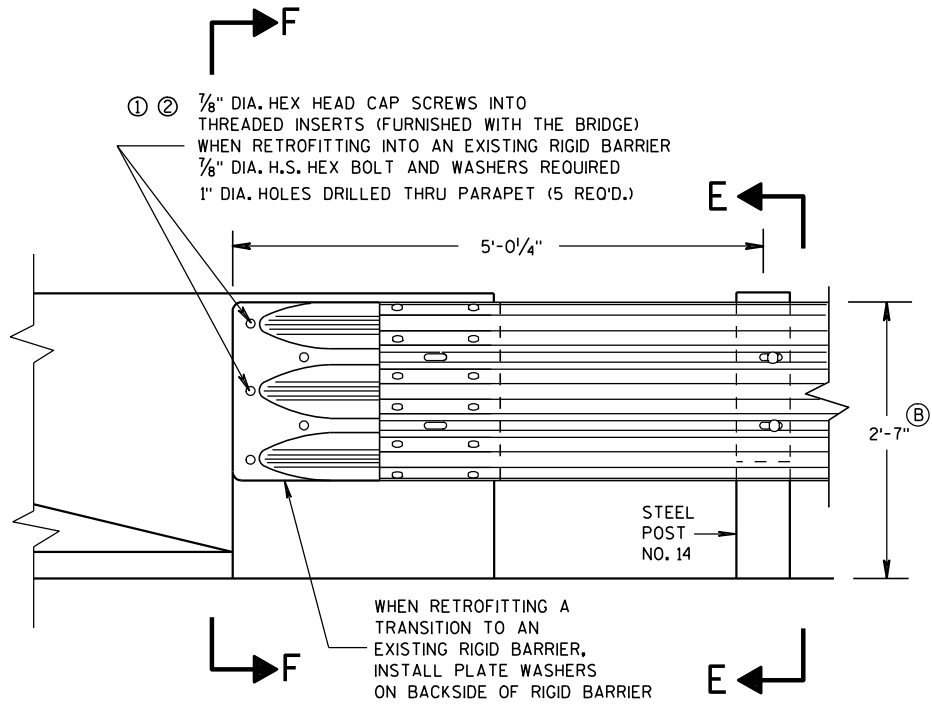
STEEL POSTS 12-14

STEEL POST SIZES

POST NUMBER	SECTION TYPE	LENGTH
①	W6x9	72"
②	W6x9	72"
③	W6x9	72"
④	W6x9	72"
⑤	W6x9	72"
⑥	W6x9	72"
⑦	W6x9	72"
⑧	W6x9	72"
⑨	W6x9	72"
⑩	W6x9	72"
⑪	W6x9	72"
⑫	W6x15	87 1/8"
⑬	W6x15	87 1/8"
⑭	W6x15	87 1/8"

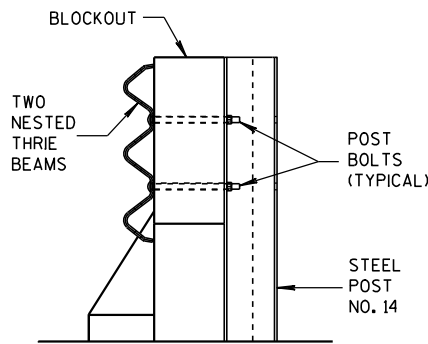
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION



FRONT VIEW

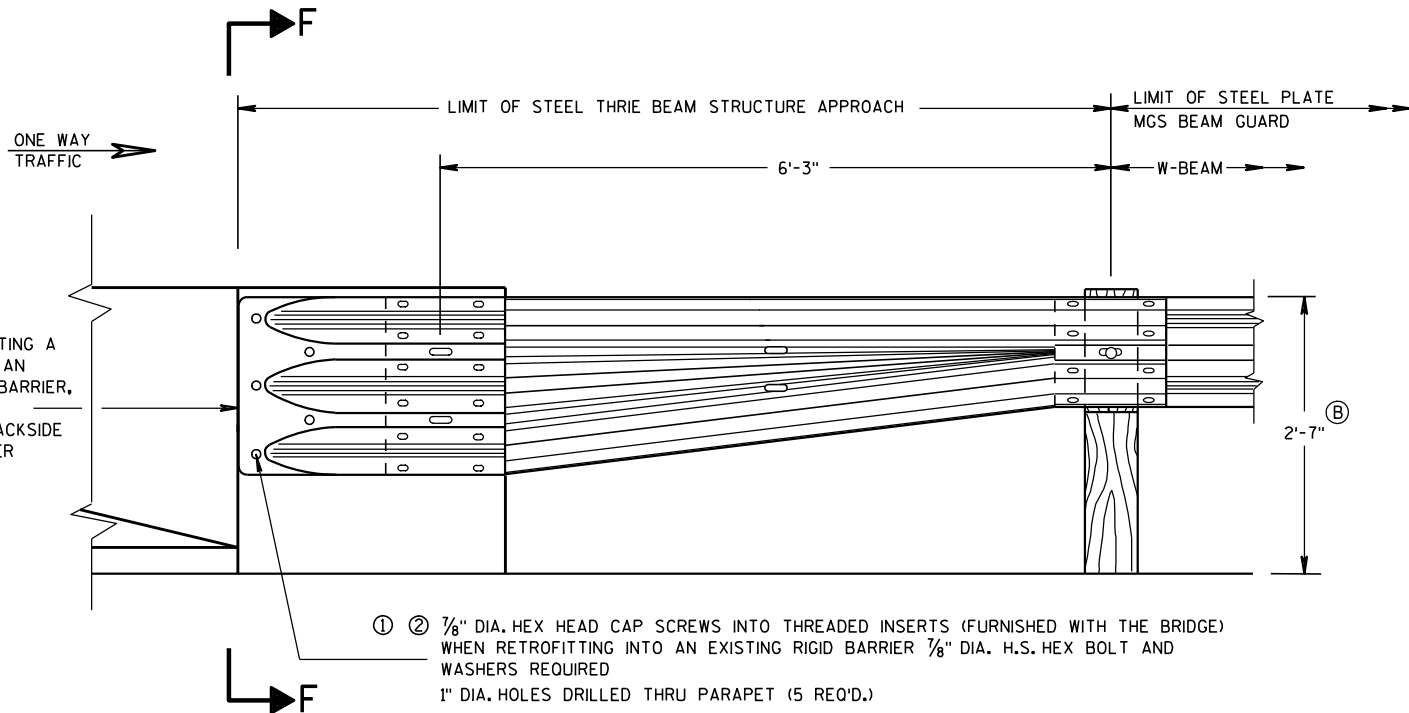
THRIE BEAM CONNECTION TO BRIDGE
PARAPET WITH SQUARE ENDS



SECTION E-E

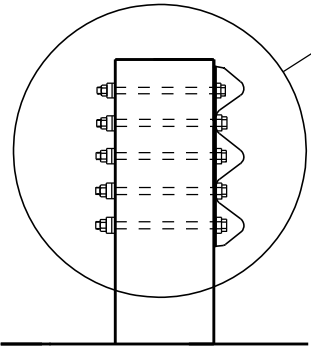
GENERAL NOTES

- THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.
- ① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
 - ② BOLTS MAY BE A325 BOLTS OR A449 BOLTS, BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
 - ③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".
- ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

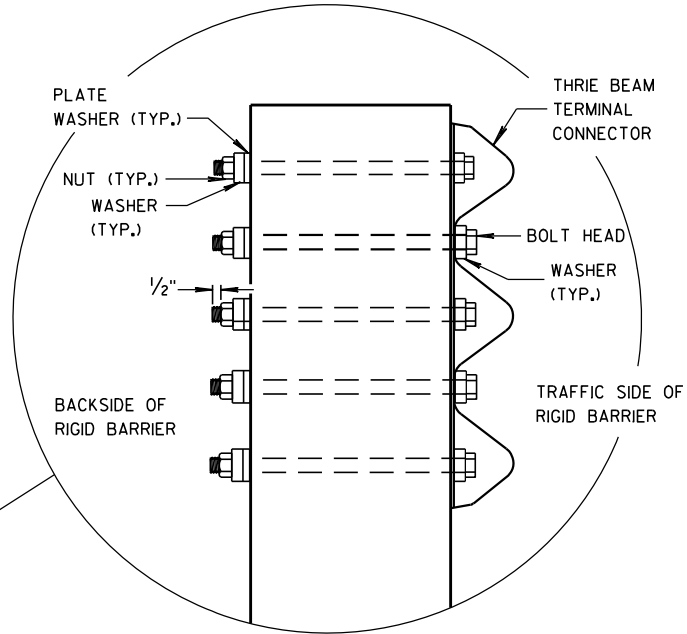


FRONT VIEW

W BEAM TRANSITION AND CONNECTION TO
BRIDGE PARAPETS WITH SQUARE ENDS
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)



SECTION F-F

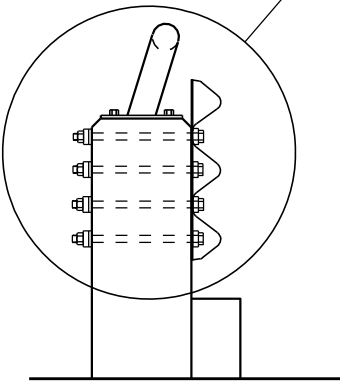
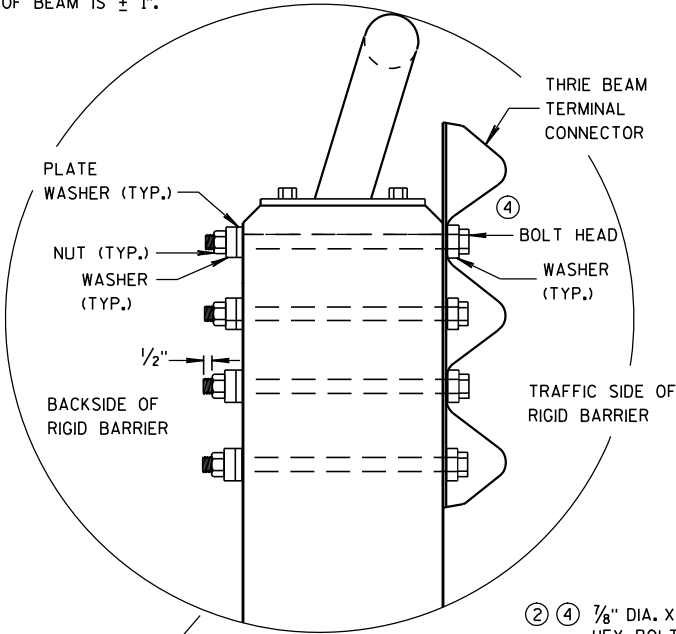


MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 8/31/2012 DATE	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	

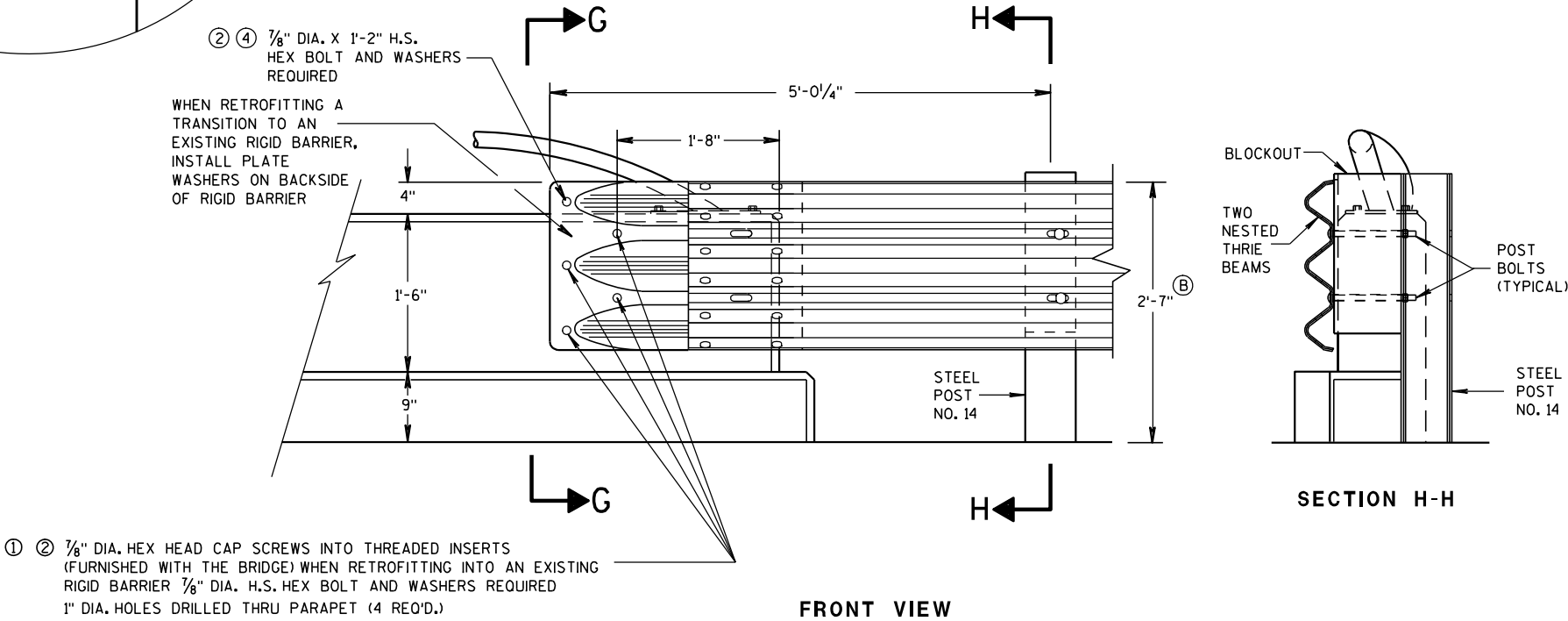
GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSITION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

- ① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X $\frac{5}{8}$ " THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 $\frac{1}{2}$ ". BLOCK IS INCIDENTAL TO THE CONTRACT.
- ④ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.
- Ⓑ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.

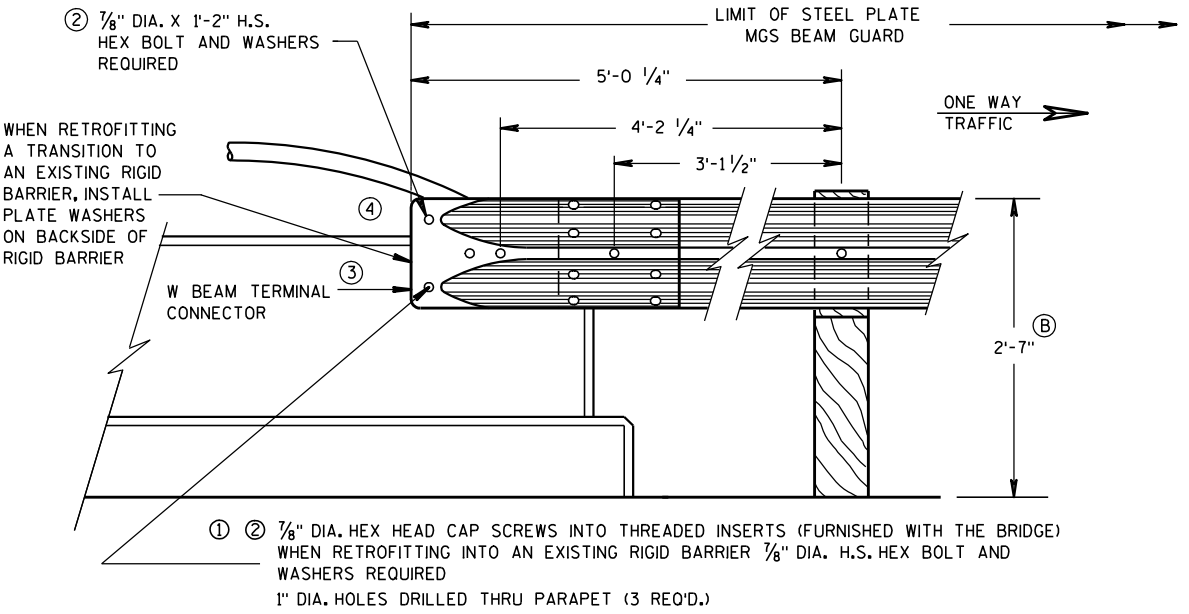


SECTION G-G



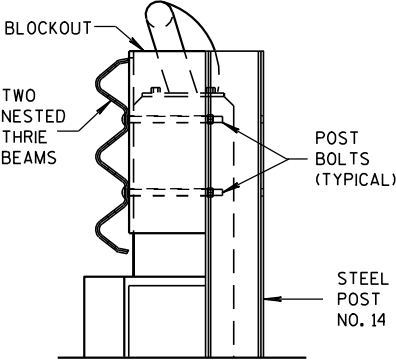
FRONT VIEW

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

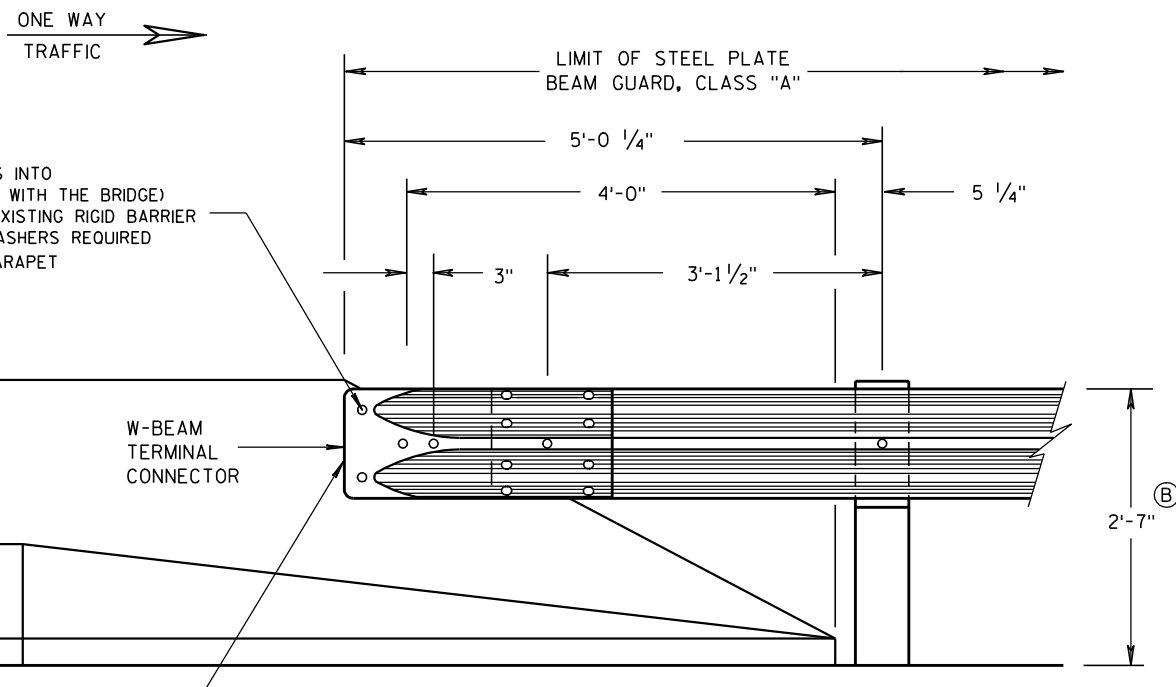


SECTION H-H

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8-31-2012 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



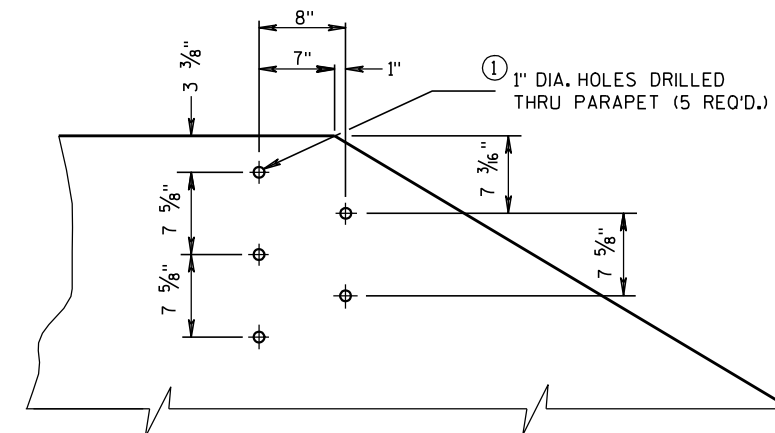
FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

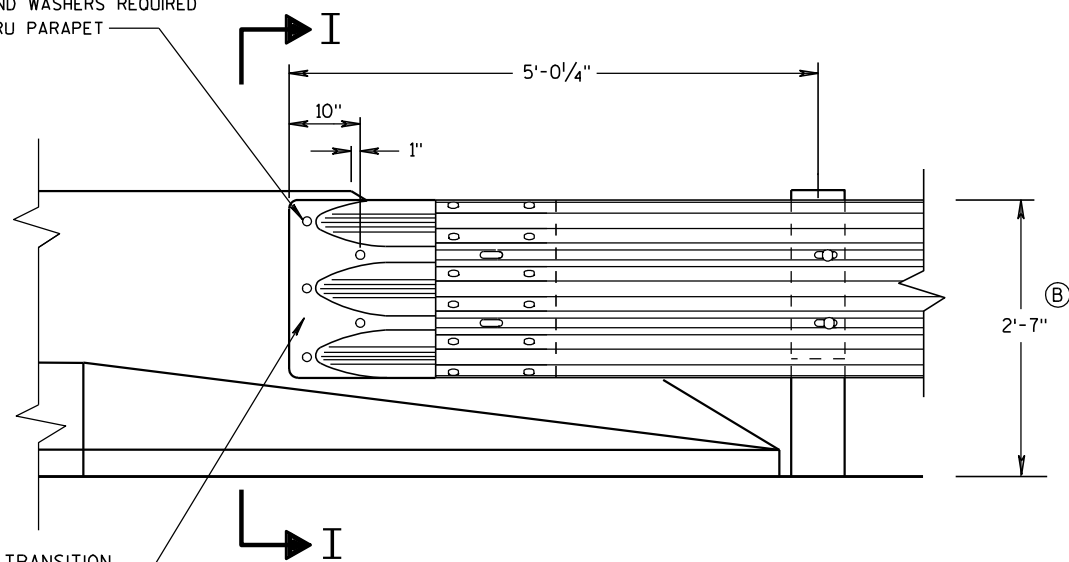
GENERAL NOTES

- ① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ③ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.



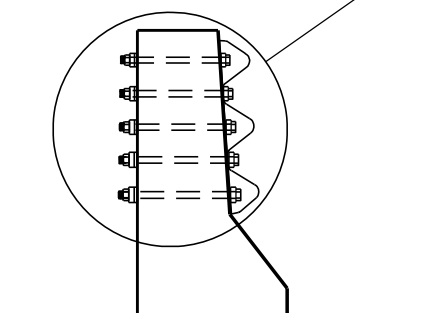
DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION

- ① ② 1/8" DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER 1/8" DIA. H.S. HEX BOLT AND WASHERS REQUIRED 1" DIA. HOLES DRILLED THRU PARAPET (5 REQ'D.)

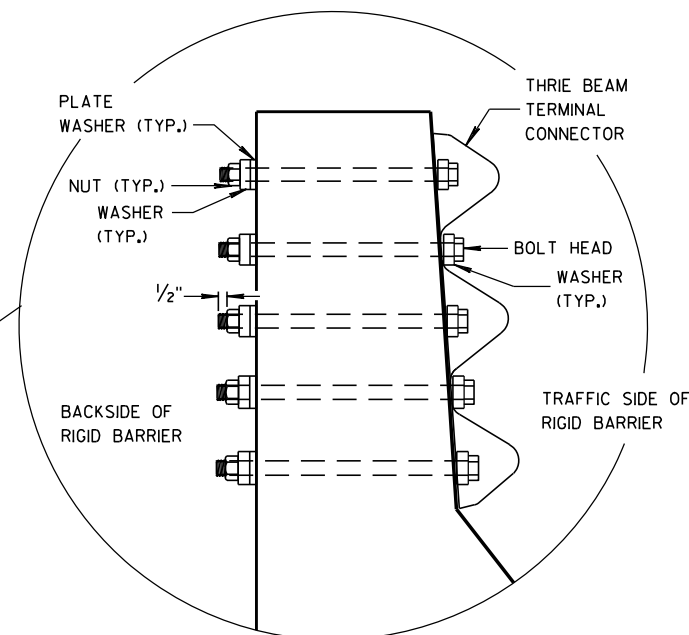


FRONT VIEW

THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS



SECTION I-I

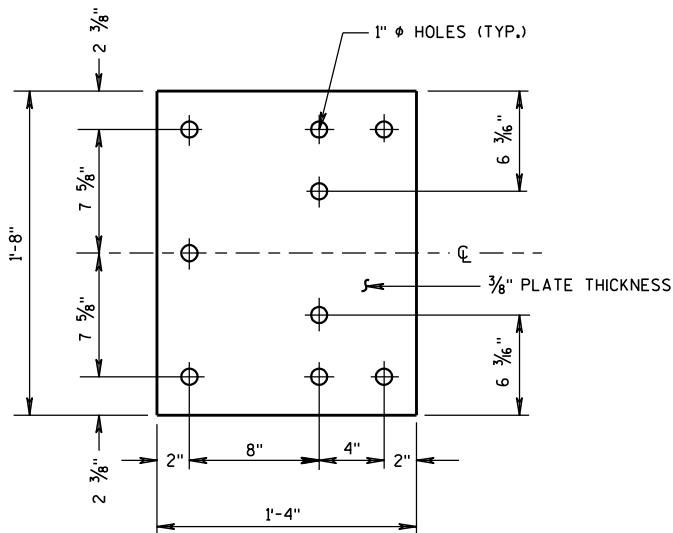


MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

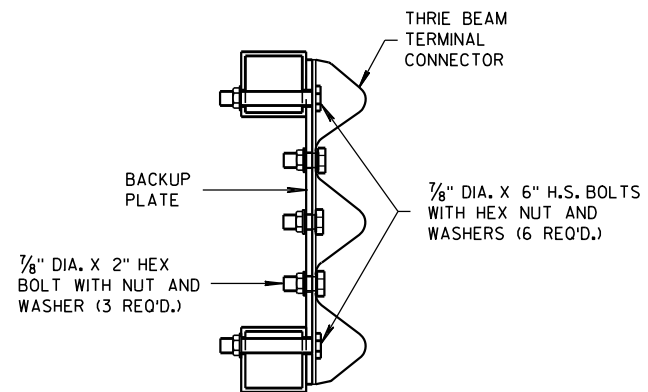
STATE OF WISCONSIN
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APPROVED
8/31/2012
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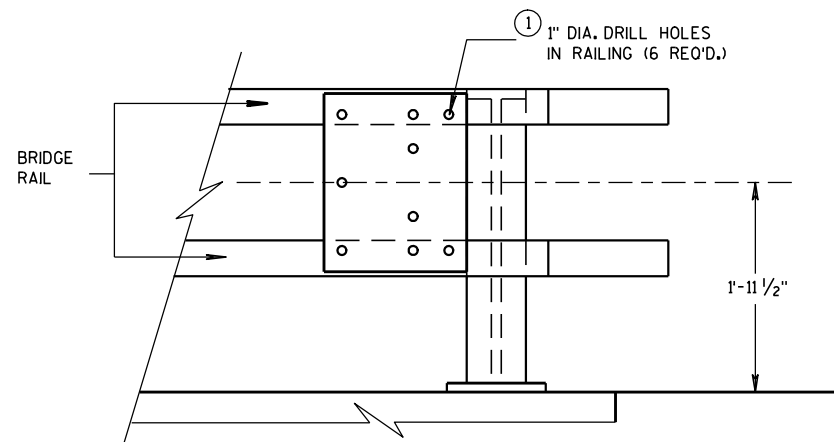
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



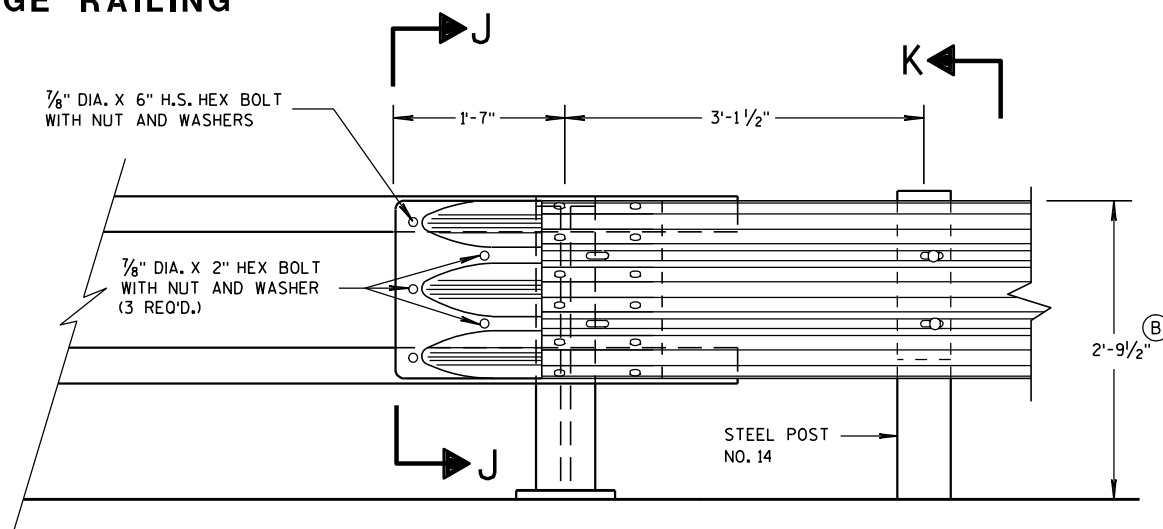
BACK-UP PLATE DETAIL



SECTION J-J

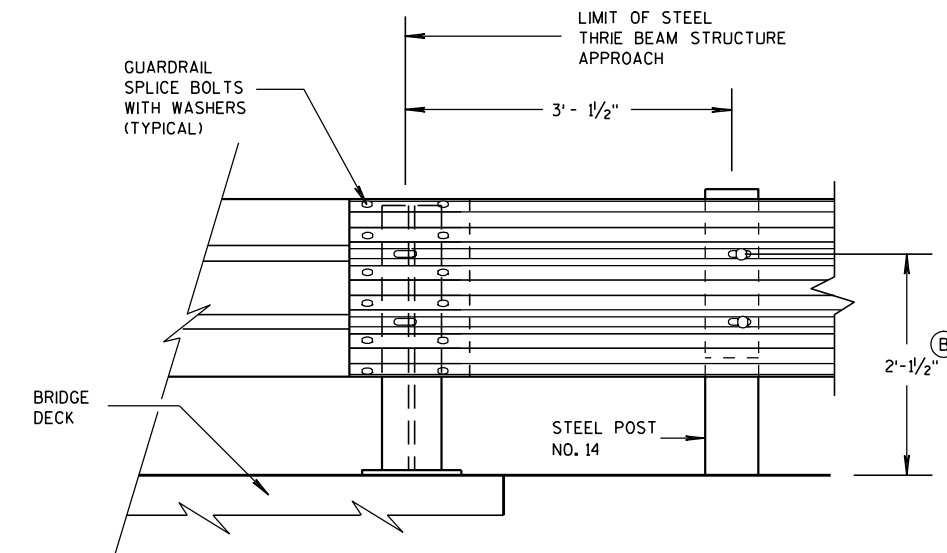


BACK-UP PLATE MOUNTING
ONTO BRIDGE RAILING



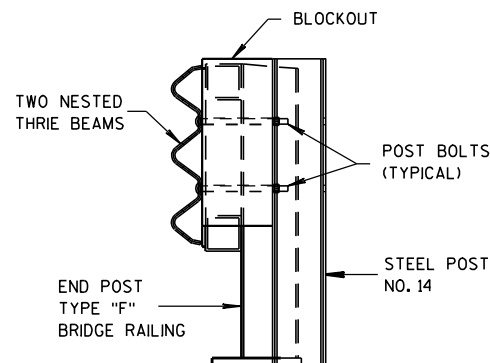
FRONT VIEW

THRIE BEAM CONNECTION TO
TUBULAR RAILING TYPE "F"



FRONT VIEW

THRIE BEAM CONNECTION TO
STEEL RAILING TYPE "W"



SECTION K-K

GENERAL NOTES

- ① DRILLING HOLES THROUGH THE PAPER, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ② TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

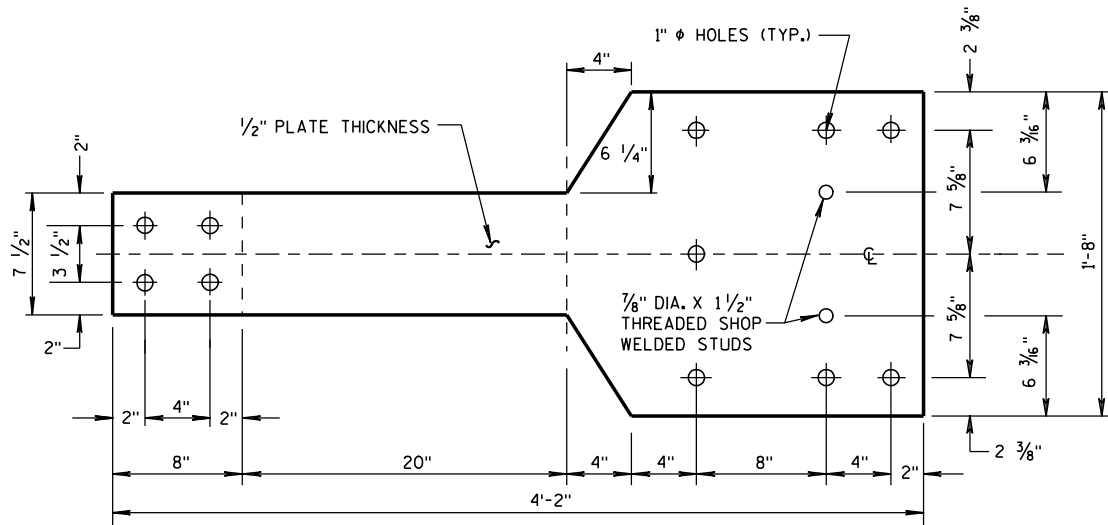
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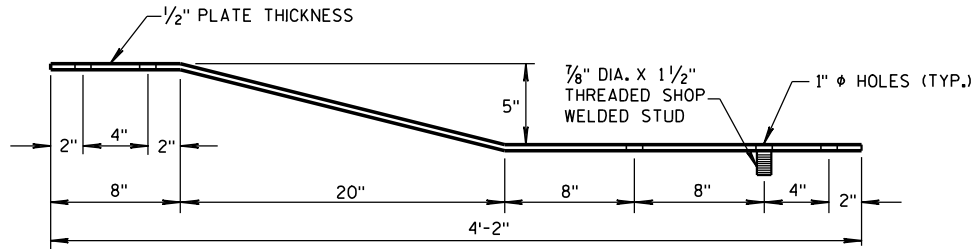
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

GENERAL NOTES

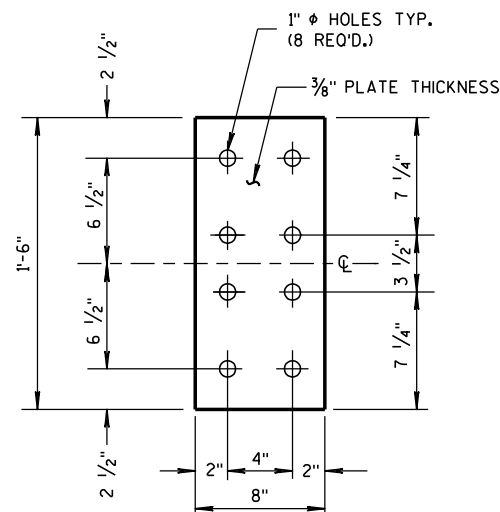
(B) TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.



FRONT VIEW

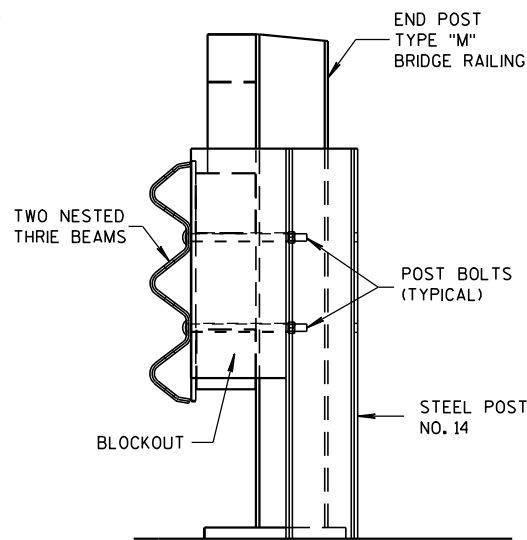


PLAN VIEW
BACK-UP PLATE DETAIL, TYPE "M"

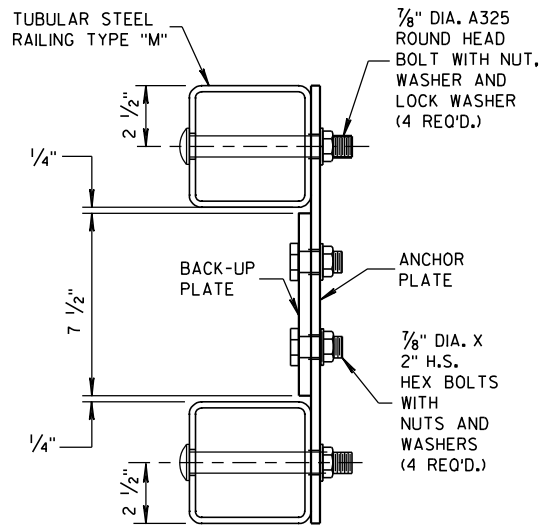


FRONT VIEW

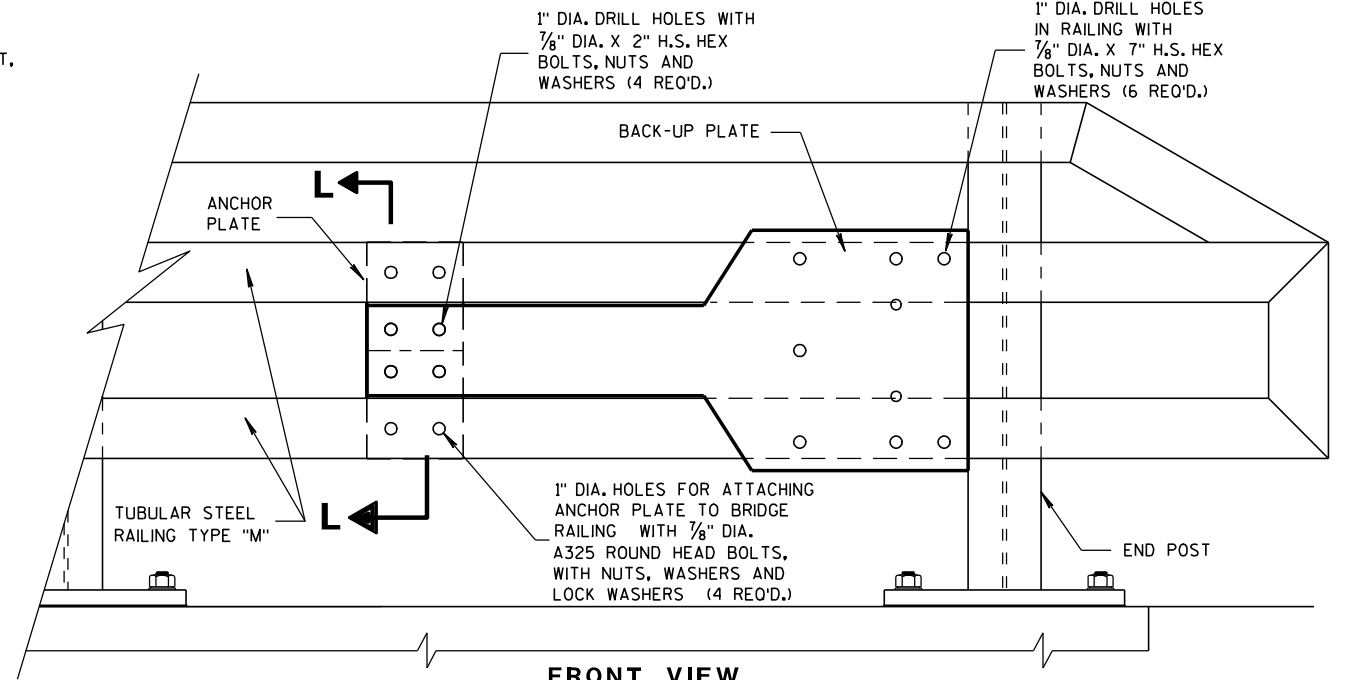
ANCHOR
PLATE DETAIL,
TYPE "M"



SECTION M-M

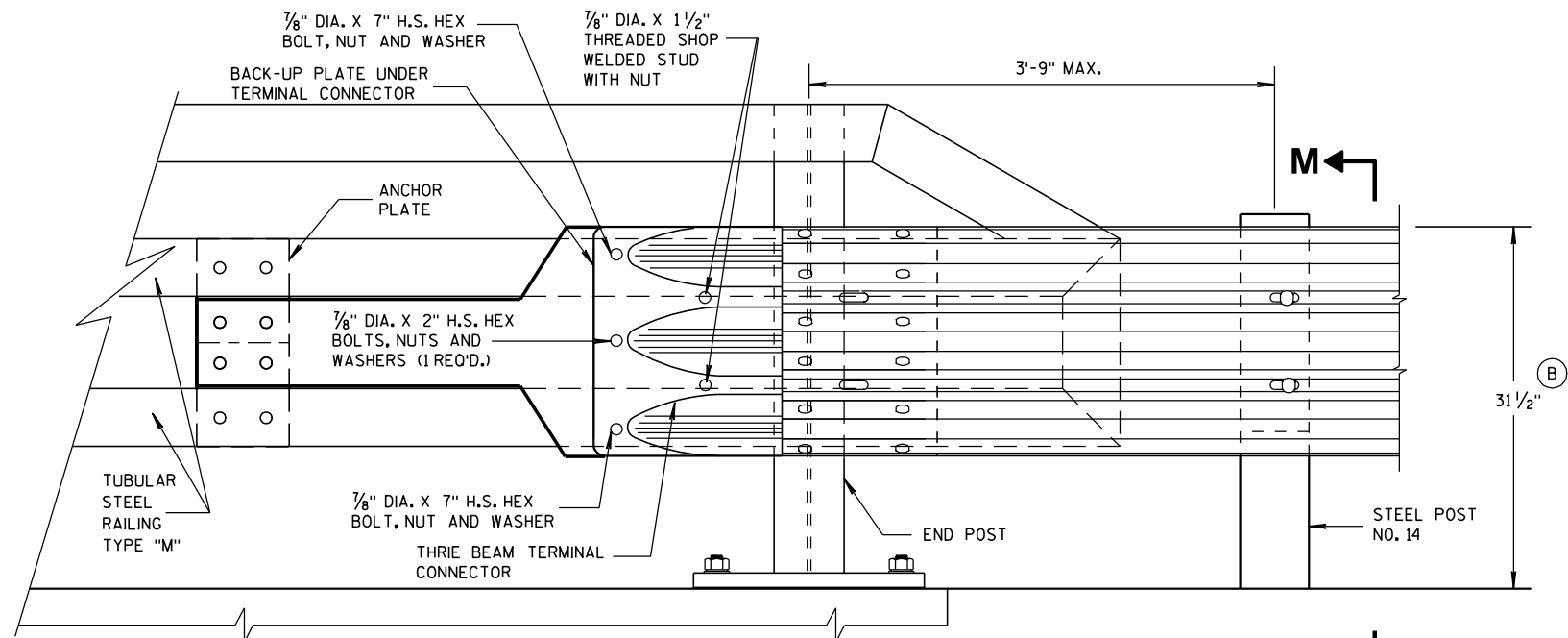


SECTION L-L

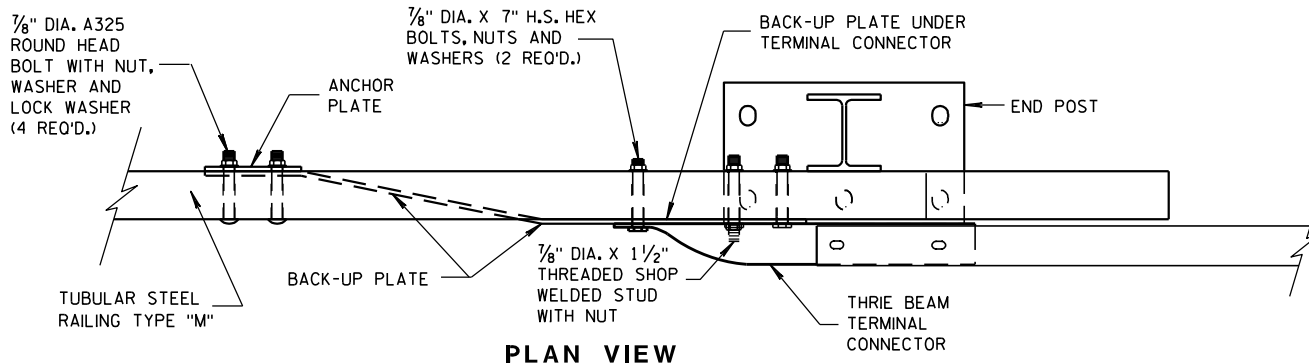


FRONT VIEW

ANCHOR AND BACK-UP PLATE MOUNTING TO BRIDGE RAILING, TYPE "M"



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

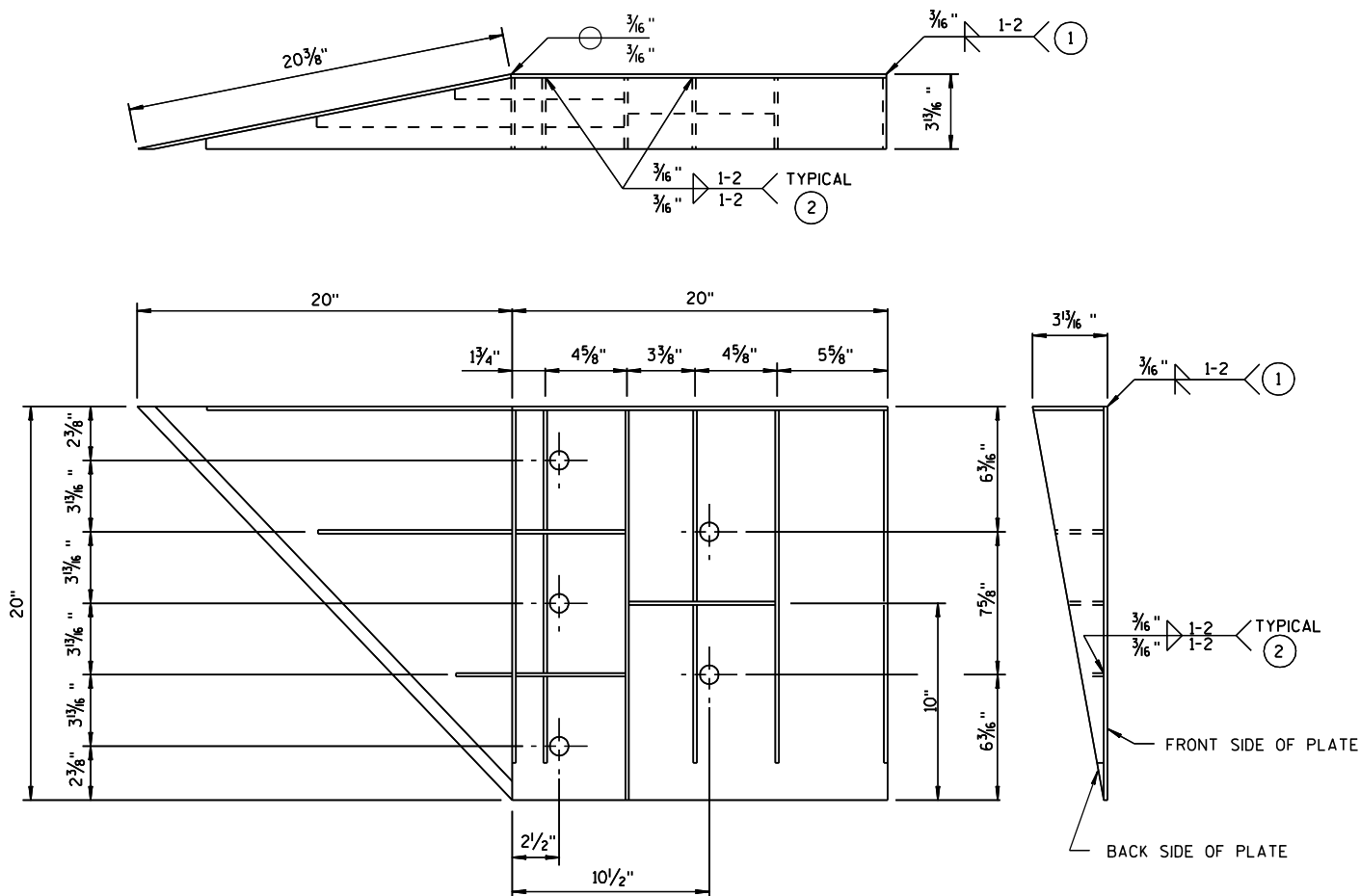
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8-31-2012

DATE

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ROADWAY STANDARDS DEVELOPMENT
ENGINEER

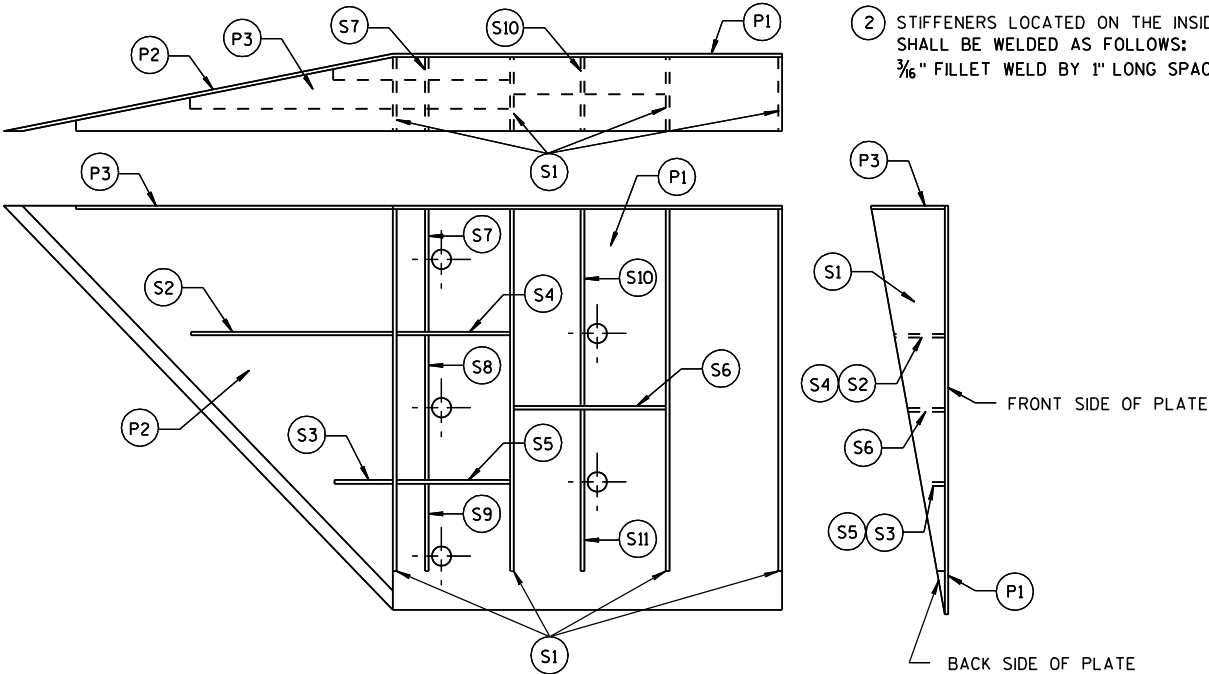


WELDING INSTRUCTION
(VIEWED FROM BACK SIDE OF PLATE)

SINGLE SLOPE CONNECTION PLATE

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)				
PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	3/16"
P2	1		20" x 20" x 28 5/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 7/16" x 3 5/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 7/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 1/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 1/16"	1/4"
S5	1		6 1/8" x 1 1/16"	1/4"
S6	1		7 3/4" x 1 3/4"	1/4"
S7	1		2 9/16" x 6" x 3 5/8" x 5 7/8"	1/4"
S8	1		1 7/32" x 7 1/2" x 2 1/2" x 7 3/8"	1/4"
S9	1		6 1/16" x 6 3/16" x 1 1/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 1/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 1/16"	1/4"

PLATE AND STIFFENER IDENTIFICATION
(VIEWED FROM BACK SIDE OF PLATE)



GENERAL NOTES

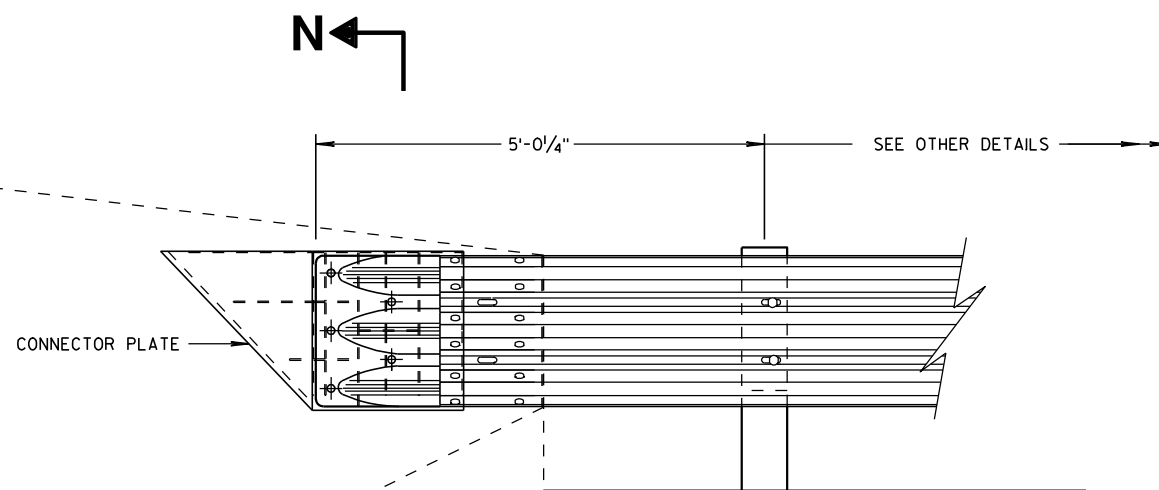
- COVER PLATE PANELS ARE 3/16" THICK.
- ALL STIFFENERS ARE 1/4" THICK.
- CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.
- FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.
- ALL HOLE DIAMETERS SHALL BE 1".
- FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

- 1 STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND 3/16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.
- 2 STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD BY 1" LONG SPACED AT 2".

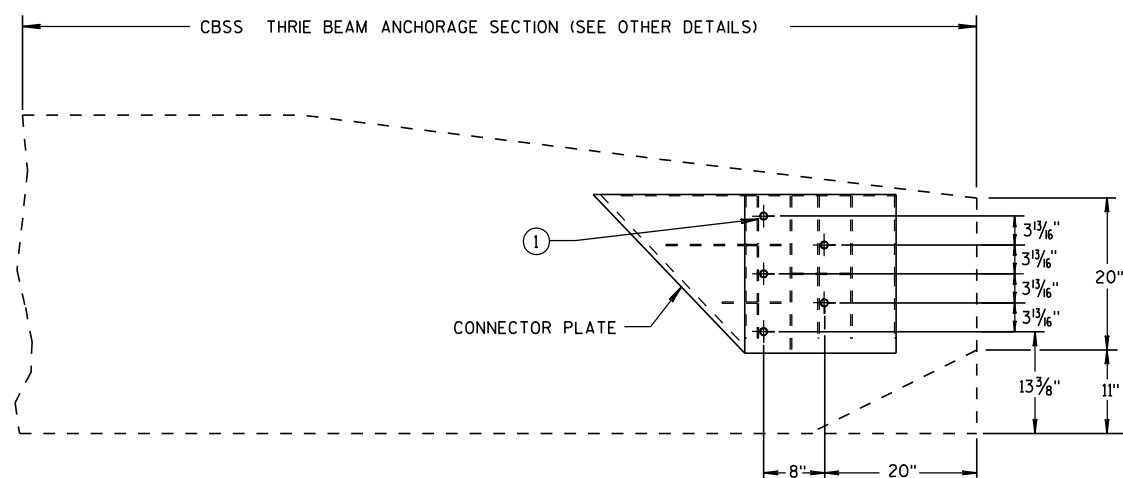
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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8/31/2012 DATE /S/ Jerry H. Zogg
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ENGINEER
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THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER

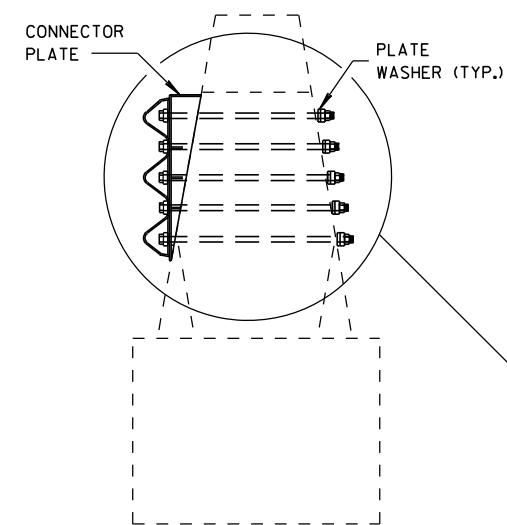


SINGLE SLOPE CONNECTION PLATE PLACEMENT

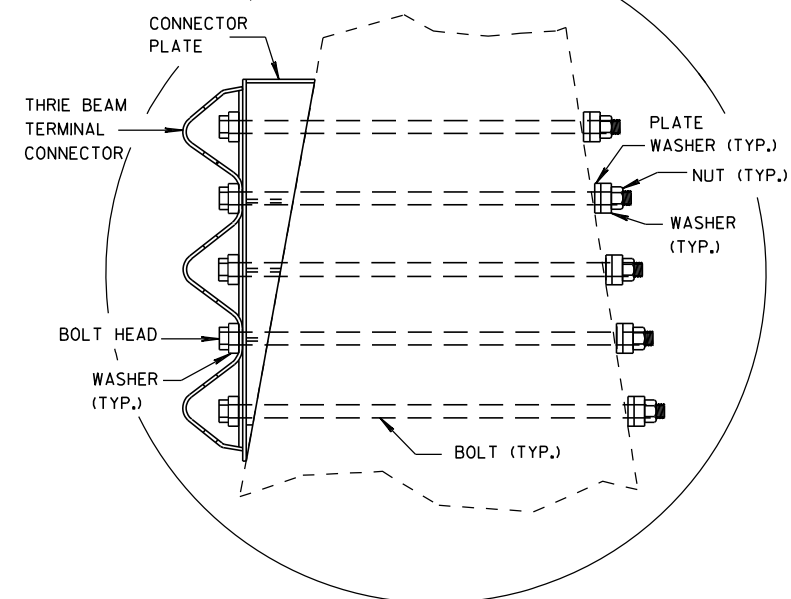
GENERAL NOTES

CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

- ① BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



SECTION N-N



MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)

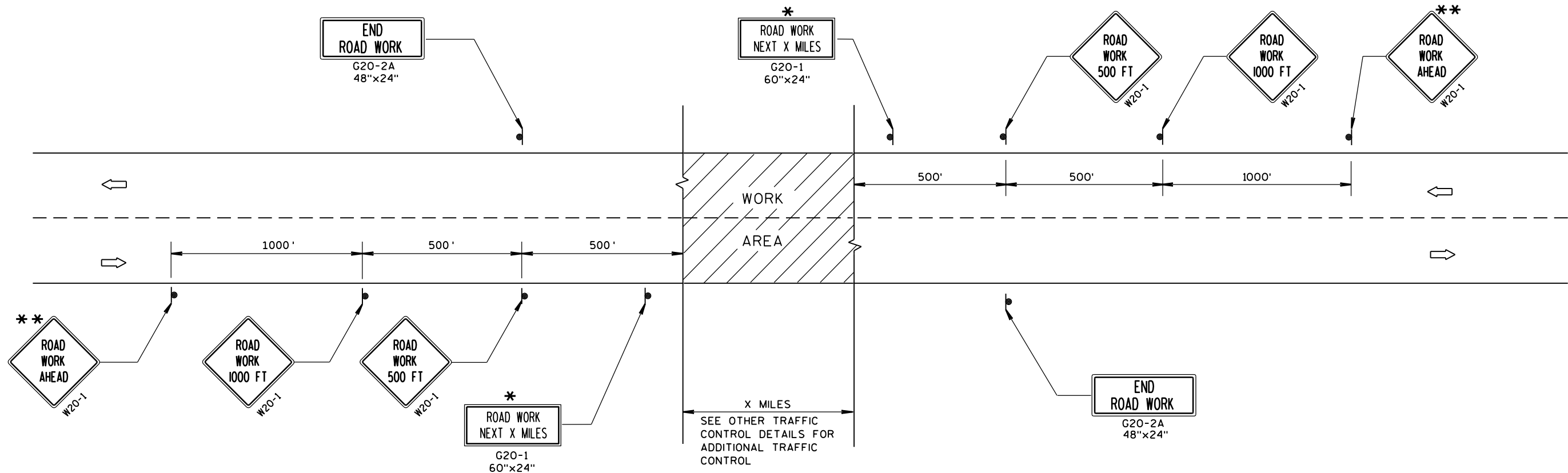
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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8/31/2012
DATE

FHWA

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ROADWAY STANDARDS DEVELOPMENT
ENGINEER



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.

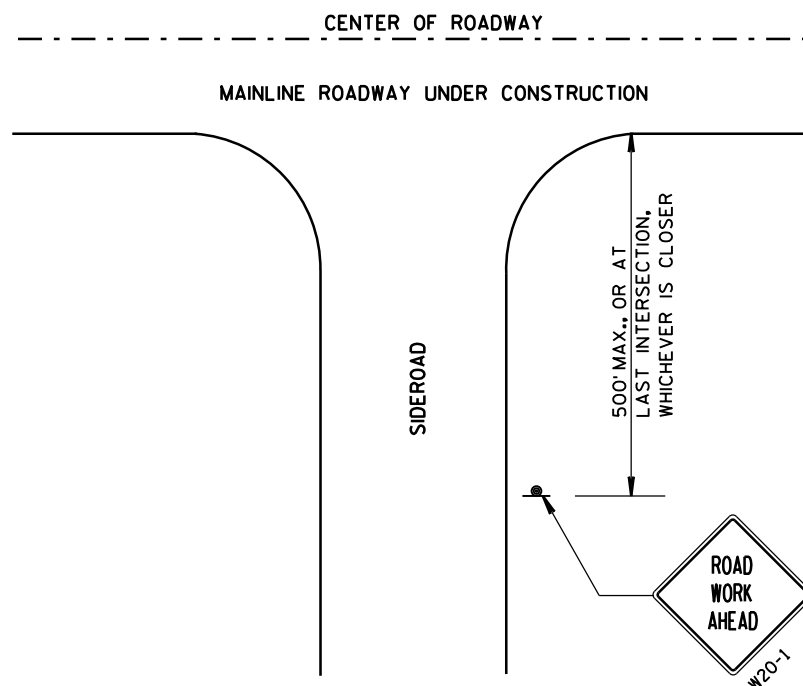
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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 W20-1 "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

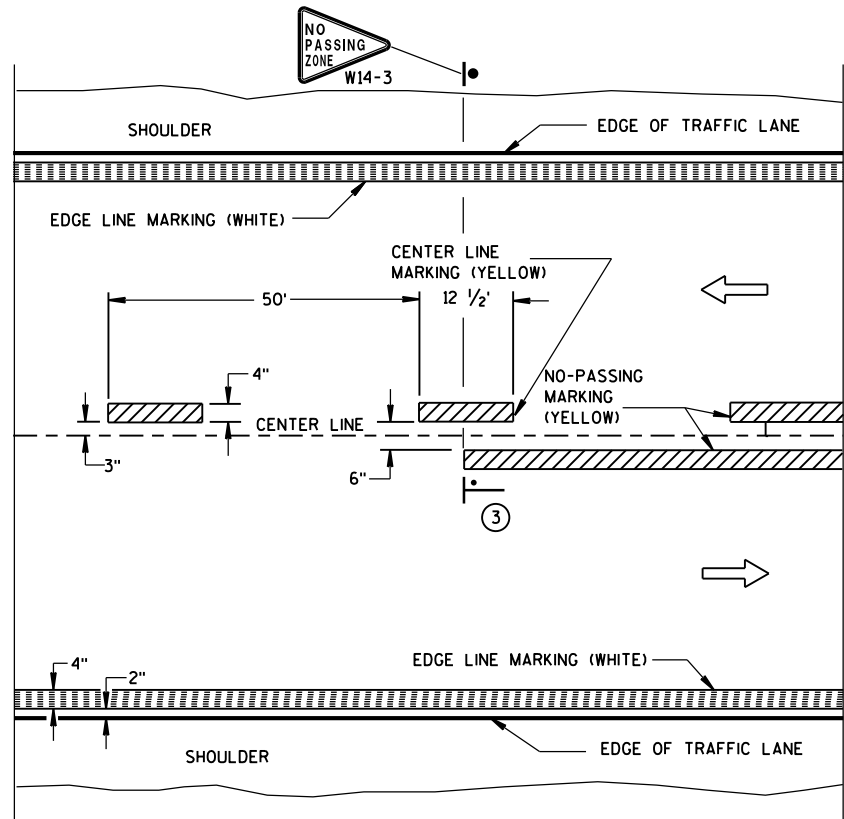
APPROVED

8/2013

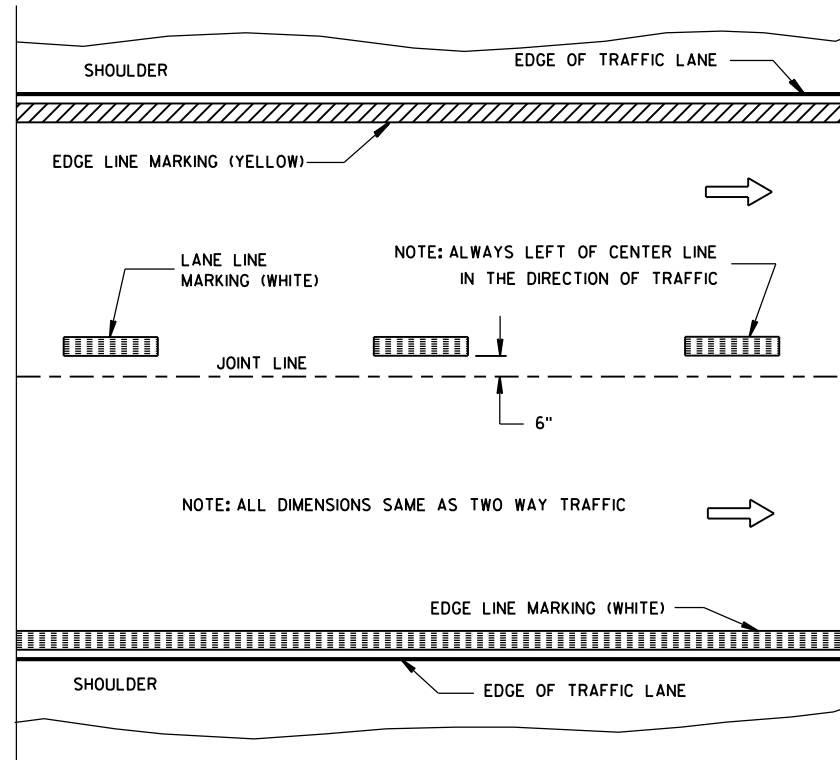
DATE

FHWA

/S/ Travis Feltes
STATE TRAFFIC ENGINEER OF DESIGN

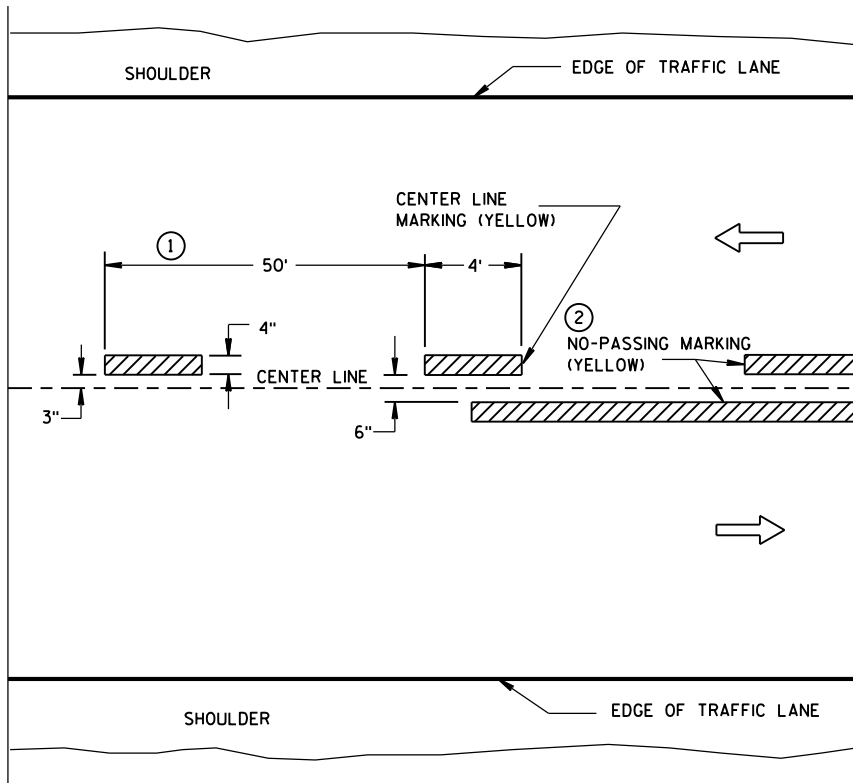


TWO WAY TRAFFIC

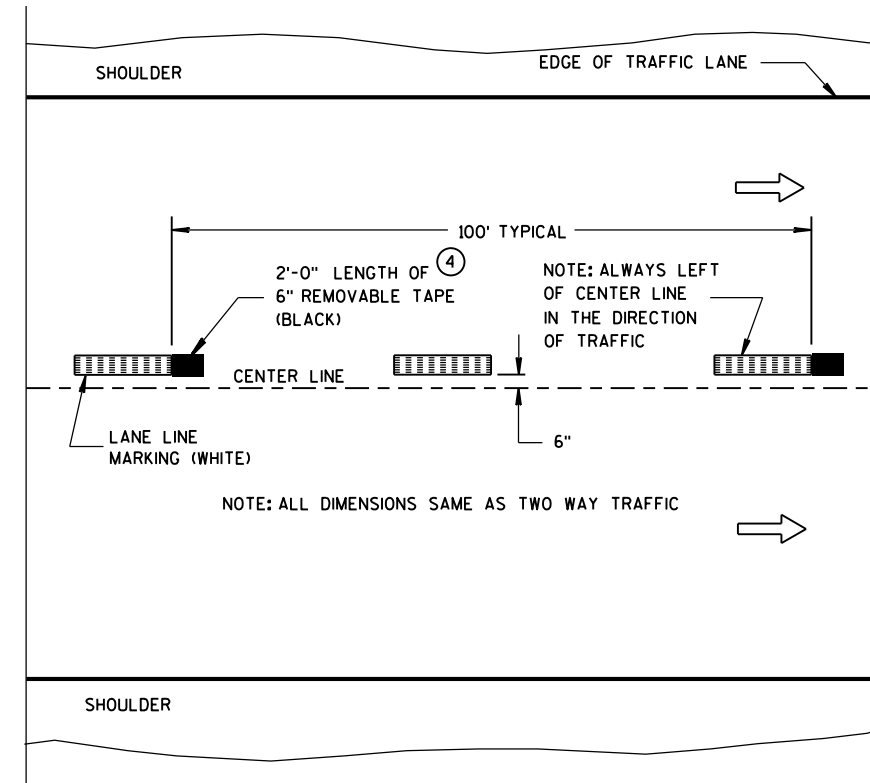


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING
(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

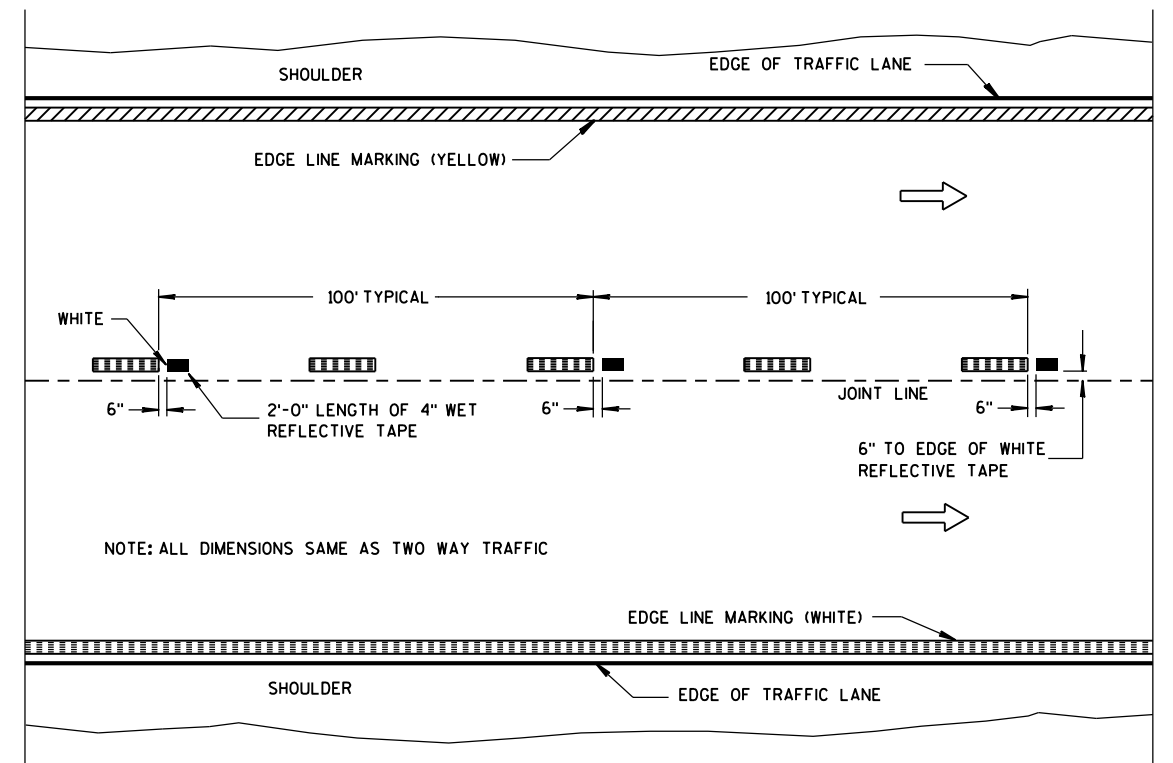
GENERAL NOTES

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

- 1 HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
- 2 NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.
- 3 NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
- 4 CONCRETE ONLY.

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL



WET REFLECTIVE TAPE SUPPLEMENT TO
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

LEGEND

- "T" MARKING
- POST MOUNTED SIGN

PAVEMENT MARKING
(MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5-13-2013
DATE

FHWA

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

LEGEND

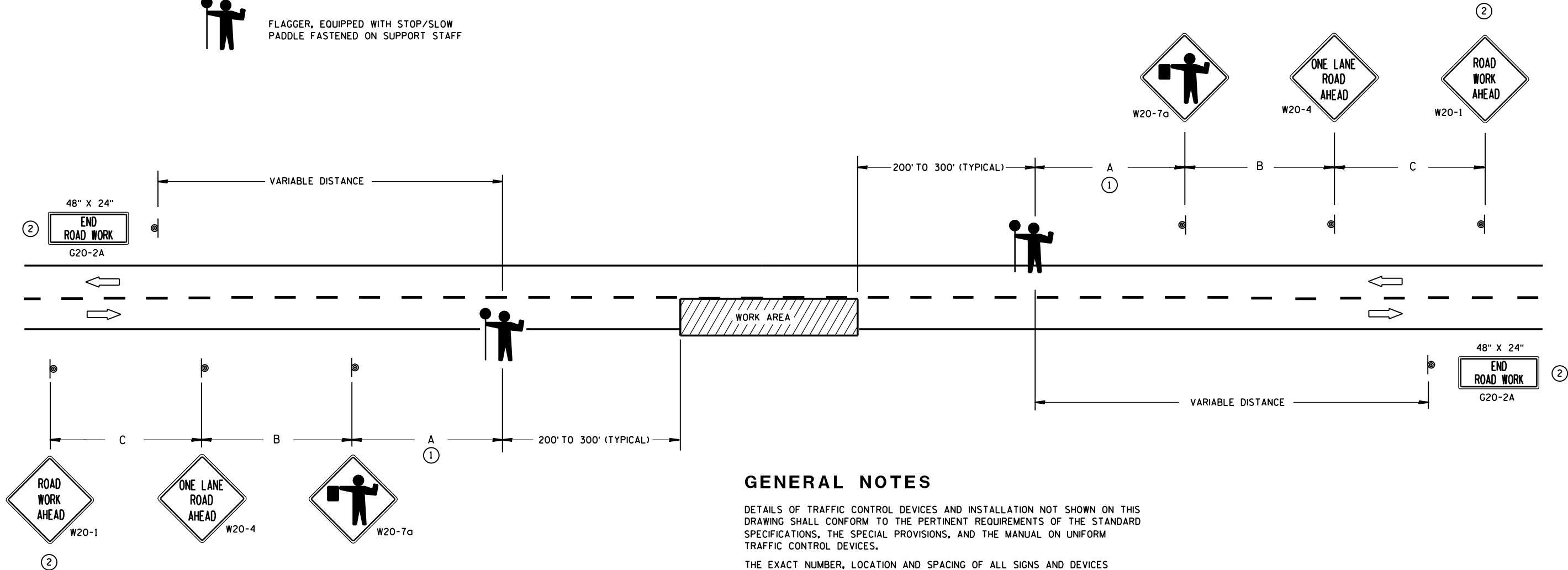
-  SIGN ON PORTABLE OR PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN SPACING TABLE

SPEED LIMIT	SIGN SPACING A,B,C
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 W20-4 SIGNS. A 500' TYPICAL SPACING SHALL BE PROVIDED BETWEEN THE SIGNS.



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.

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.

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, COVER OR REMOVE ALL TEMPORARY TRAFFIC CONTROL SIGNS.

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

① FOR A MOVING WORK OPERATION, SIGNING FOR BOTH DIRECTIONS SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3500 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.

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER OF DESIGN
FHWA



ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.

VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL OPERATING IN CAUTION MODE. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.

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

IF SPEED LIMIT IS 40 MPH OR LESS STATIONARY SIGNS MAY BE OMITTED IF CONES ARE USED.

ALTERNATE SIGN MESSAGES, SUCH AS "PAINT CREW AHEAD" OR "ROAD PAINTING AHEAD" MAY BE USED.

DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.

THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.

THIS DRAWING SHALL BE USED FOR CENTERLINE OR EDGELINE MARKING.

WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR TURN THE STATIONARY WARNING SIGNS AWAY FROM TRAFFIC.

① CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.

② USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.

 WET PAINT

OR

WET PAINT

W21-64 W21-64

③ OPTIONAL TRUCK-MOUNTED ATTENUATOR.

① SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.

⑤ IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1 OR W21-63 ARE NOT REQUIRED.

V1	LEAD VEHICLE
V2	SHADOW VEHICLE
V3	TRAIL VEHICLE WITH TMA
TMA	TRUCK-MOUNTED ATTENUATOR
	SIGN ON TEMPORARY SUPPORT
	DIRECTION OF TRAFFIC
	CONES
	FLASHING ARROW PANEL (CAUTION)

MOVING PAVEMENT MARKING
OPERATION
TWO-LANE TWO-WAY ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/3/2013
DATE

/s/ Travis Fettes
STATE TRAFFIC ENGINEER

FWHA

LEGEND

- SIGN ON PERMANENT SUPPORT
- REMOVING PAVEMENT MARKING
- TYPE III BARRICADE WITH ATTACHED SIGN
- CONCRETE BARRIER TEMPORARY PRECAST
- FLAGS, 16" x 16" MIN., (ORANGE)
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- ASPHALTIC PAVEMENT WIDENING
- DIRECTION OF TRAFFIC

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.

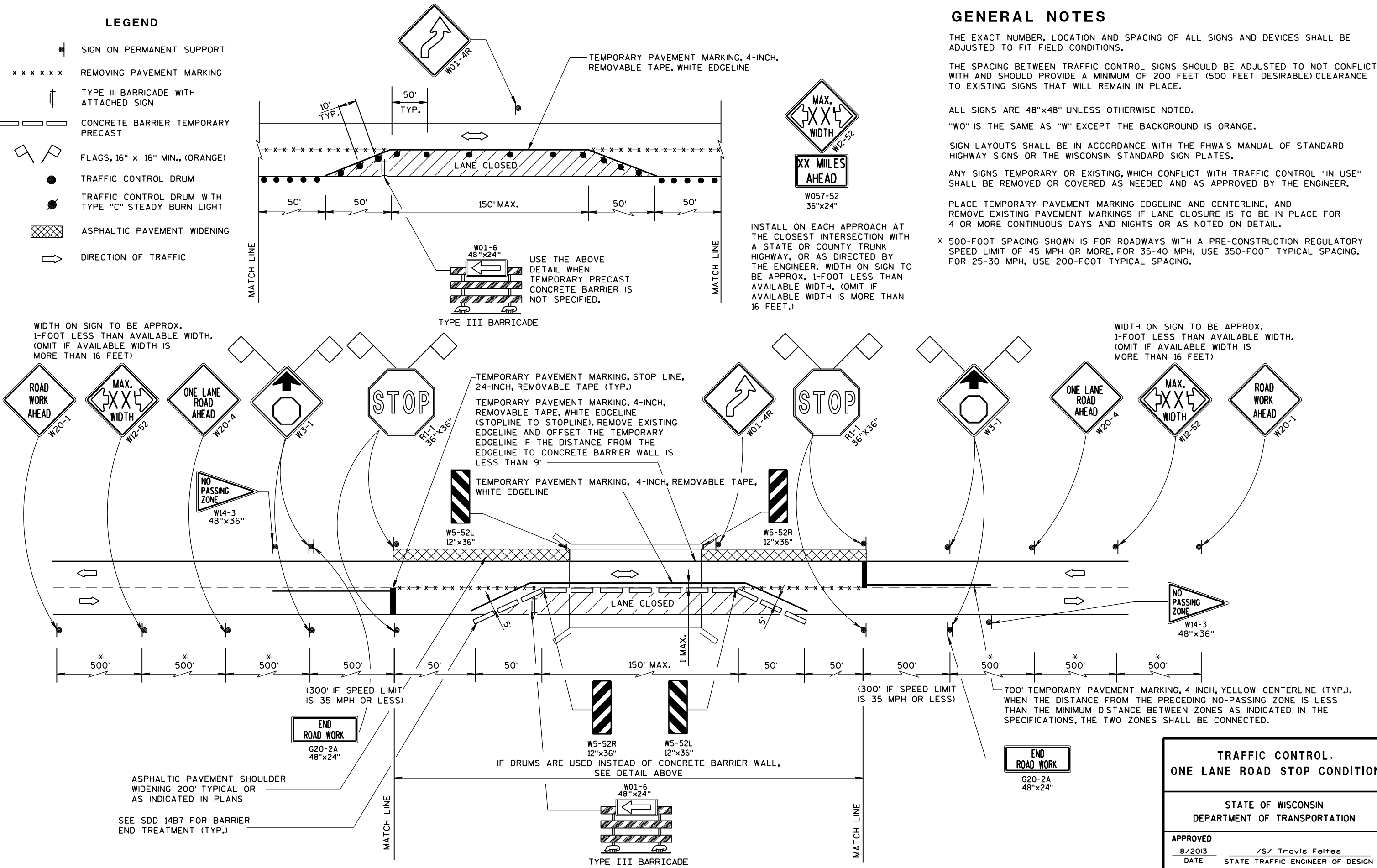
"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

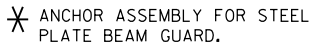
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

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.

PLACE TEMPORARY PAVEMENT MARKING EDGELINE AND CENTERLINE, AND REMOVE EXISTING PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS OR AS NOTED ON DETAIL.

* 500-FOOT SPACING SHOWN IS FOR ROADWAYS WITH A PRE-CONSTRUCTION REGULATORY SPEED LIMIT OF 45 MPH OR MORE. FOR 35-40 MPH, USE 350-FOOT TYPICAL SPACING. FOR 25-30 MPH, USE 200-FOOT TYPICAL SPACING.





SHEET 1 OF 4

BID ITEM NUMBER	BID ITEM	UNIT	SOUTH ABUTMENT	NORTH ABUTMENT	SUPER.	TOTALS
203.0200	REMOVING OLD STRUCTURE 598+92.44	LS				1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-6-40	LS				1
210.0100	BACKFILL STRUCTURE	CY	90	90		180
502.0100	CONCRETE MASONRY BRIDGES	CY	23	23		46
502.5010	MASONRY ANCHORS TYPE L NO. 6 BARS	EACH	32	32		64
502.6115	MASONRY ANCHORS TYPE S 7/8-INCH	EACH	16	16		32
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,720	1,720		3,440
509.0301	PREPARATION DECKS TYPE 1	SY			38	38
509.0302	PREPARATION DECKS TYPE 2	SY			13	13
509.0500	CLEANING DECKS	SY			249	249
509.1500	CONCRETE SURFACE REPAIR	SF	5	10		15
509.2500	CONCRETE MASONRY OVERLAY DECKS	CY			18	18
509.9020.	EPOXY CRACK SEALING	LF	15	5		20
511.1200	TEMPORARY SHORING B-6-40	SF	540	540		1,080
513.9005.S	REMOVING AND RESETTING TUBULAR RAILING STRUCTURE B-6-40	LS				1
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	8	8		16
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	50	50		100
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	2	2		4
	NON-BID ITEMS					
	FILLER	SIZE				1/2" & 3/4"

1. GENERAL PLAN
2. WING DETAILS
3. REPAIR DETAILS
4. WING PARAPET DETAILS

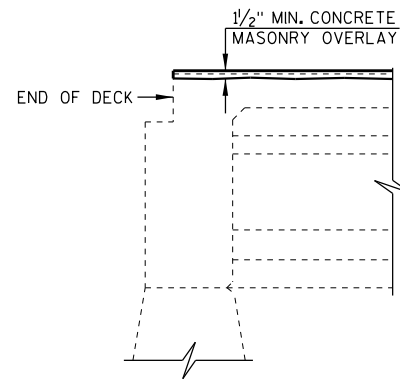
A1 MASONRY ANCHORS TYPE L NO. 6 BARS, EMBED 1'-3".
TOTAL NUMBER REQUIRED = 64. (16 AT EACH WING)

A2 1/2" FILLER TO EXTEND FROM BRIDGE SEAT TO TOP OF WING. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER, (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

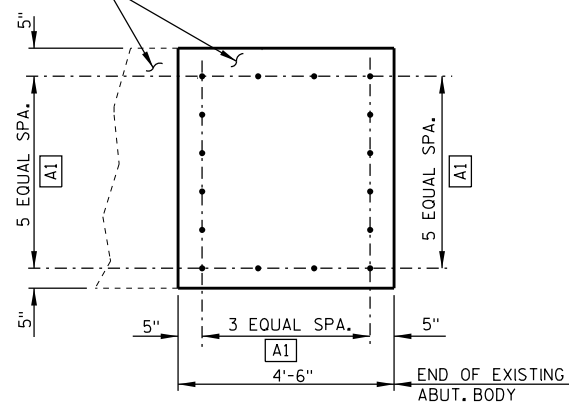
A3 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON THE BACKFACE.

[A4] OPTIONAL CONSTRUCTION JOINT FORMED BY BEVELED 2" x 6" KEYWAY WITH MEMBRANE ON BACKFACE AND A 3/4" "V" GROOVE ON THE F.F. OF WING WALL.

A5 PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN.
IN DIRECTION OF ARROWS TO SUITABLE DRAINAGE.
ATTACH RODENT SHIELD AT END OF PIPE UNDERDRAIN.
SEE "RODENT SHIELD" DETAIL ON THIS SHEET.



B.F. OF EXIST. ABUT. BODY



1'-6"

B.F.

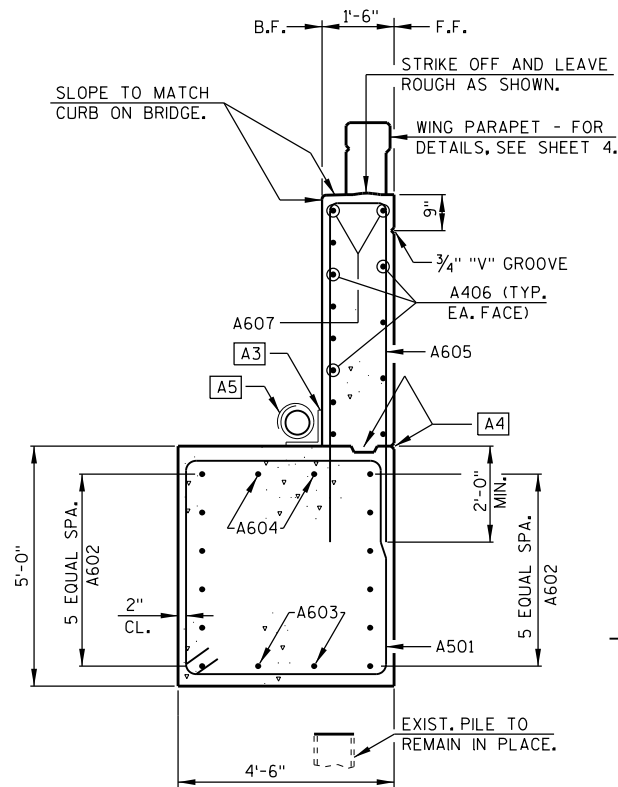
F.F.

SLOPE TO MATCH CURB ON BRIDGE.

STRIKE OFF AND LEAVE ROUGH AS SHOWN.

WING PARAPET - FOR DETAILS, SEE SHEET 4.

6"



THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO.10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS. THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

*** 6" NOMINAL

1/2"

SECTION W-W

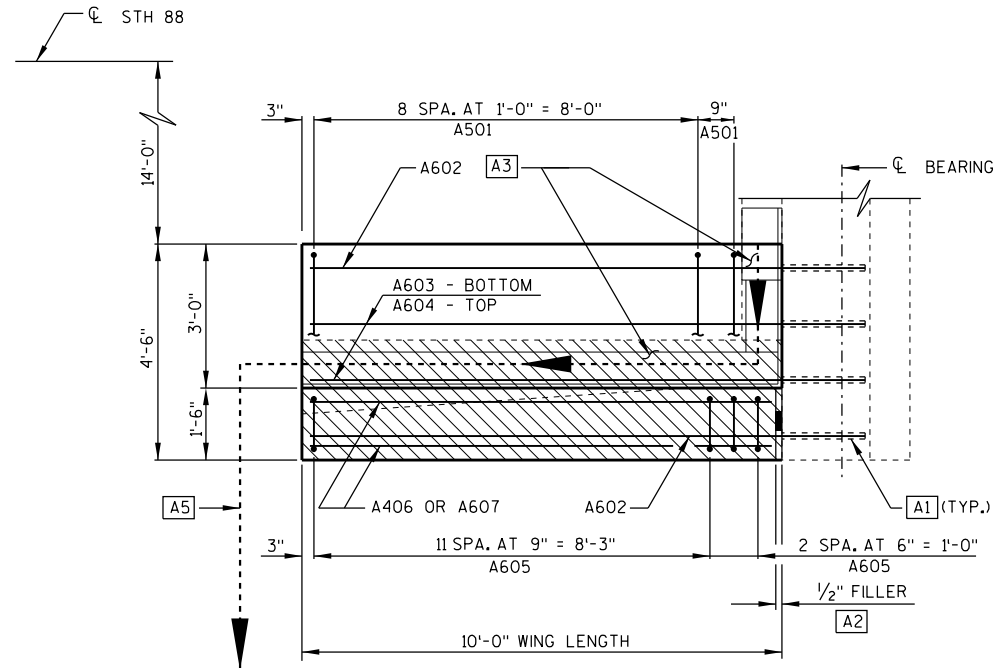
3/8" MAX.

NO.	DATE	REVISION
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
STRUCTURE B		
		DRAWN BY

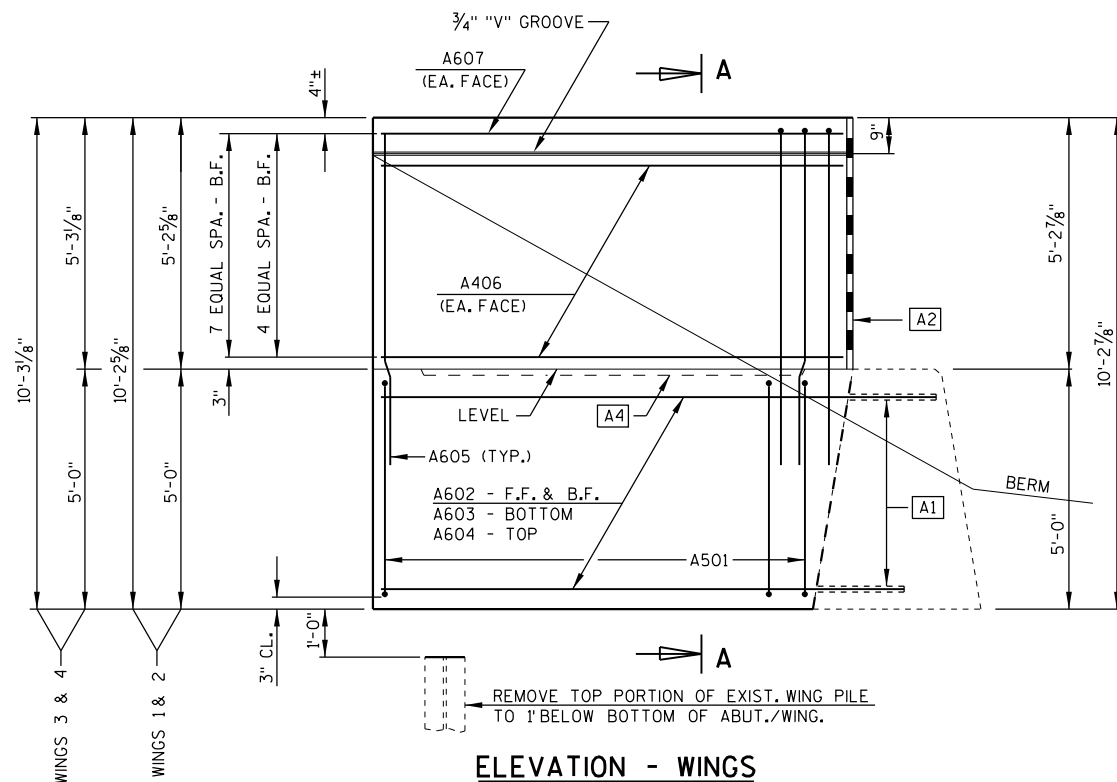
*** DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS
DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR
STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT
OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN.
THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH
TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL
SCREWS. THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL
BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN
WRAPPED 6-INCH".

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-6-40			
		DRAWN BY TAW	PLANS CK'D. IGG
WING DETAILS		SHEET 2 OF 4	

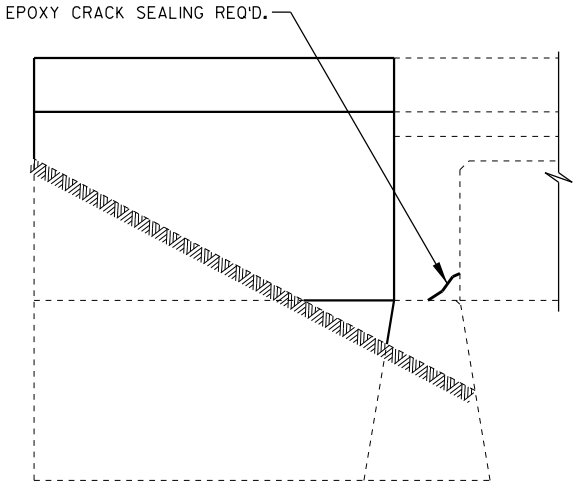


(WING 1 SHOWN, WINGS 2 THRU 4 SIMILAR)

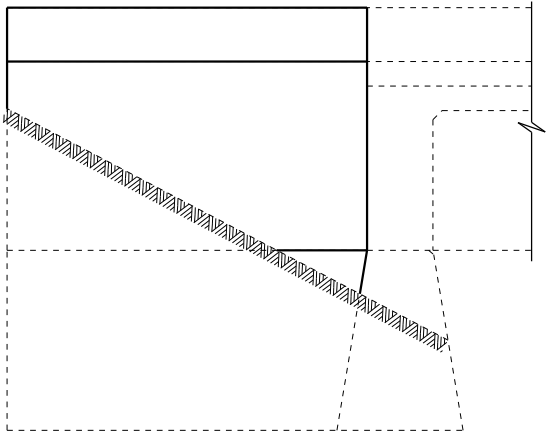


(WING 1 SHOWN, WINGS 2 THRU 4 SIMILAR)

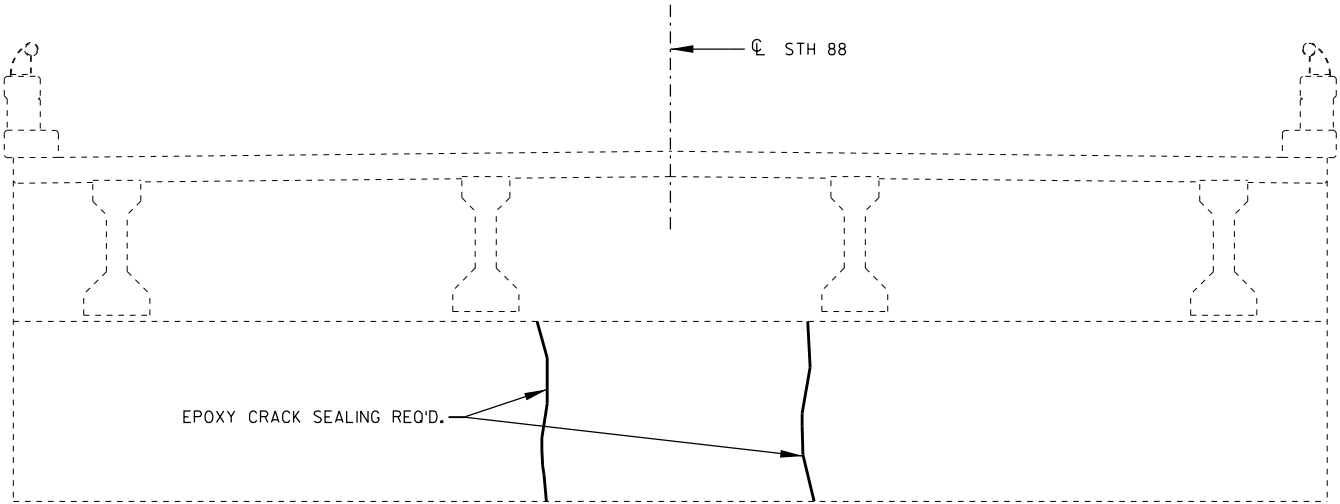
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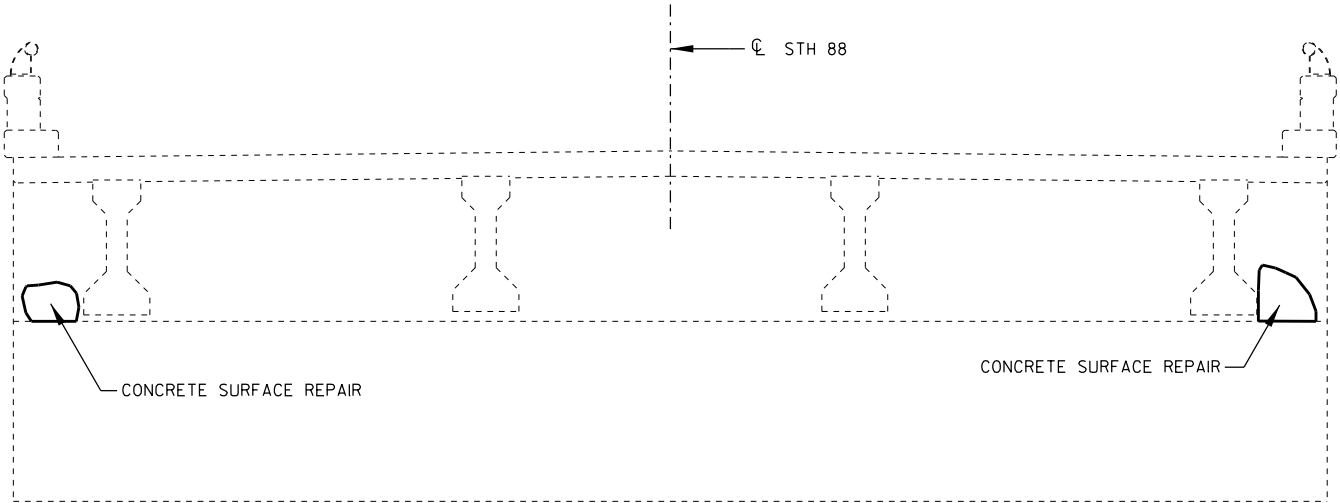
SOUTH EAST WING - ELEVATION



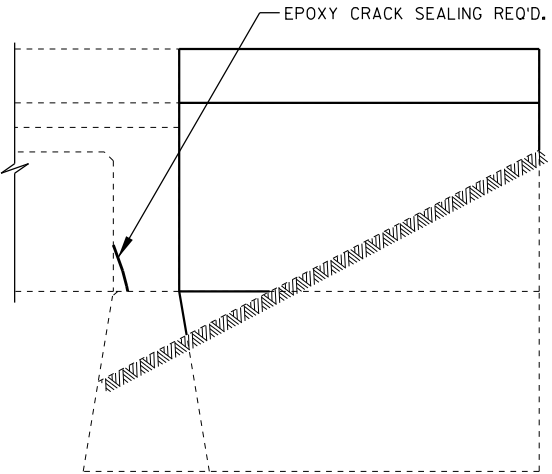
NORTH WEST WING - ELEVATION



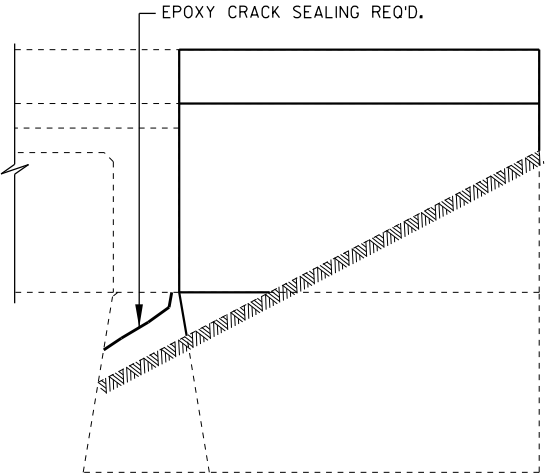
SOUTH ABUTMENT - ELEVATION
(LOOKING SOUTH)



NORTH ABUTMENT - ELEVATION
(LOOKING NORTH)



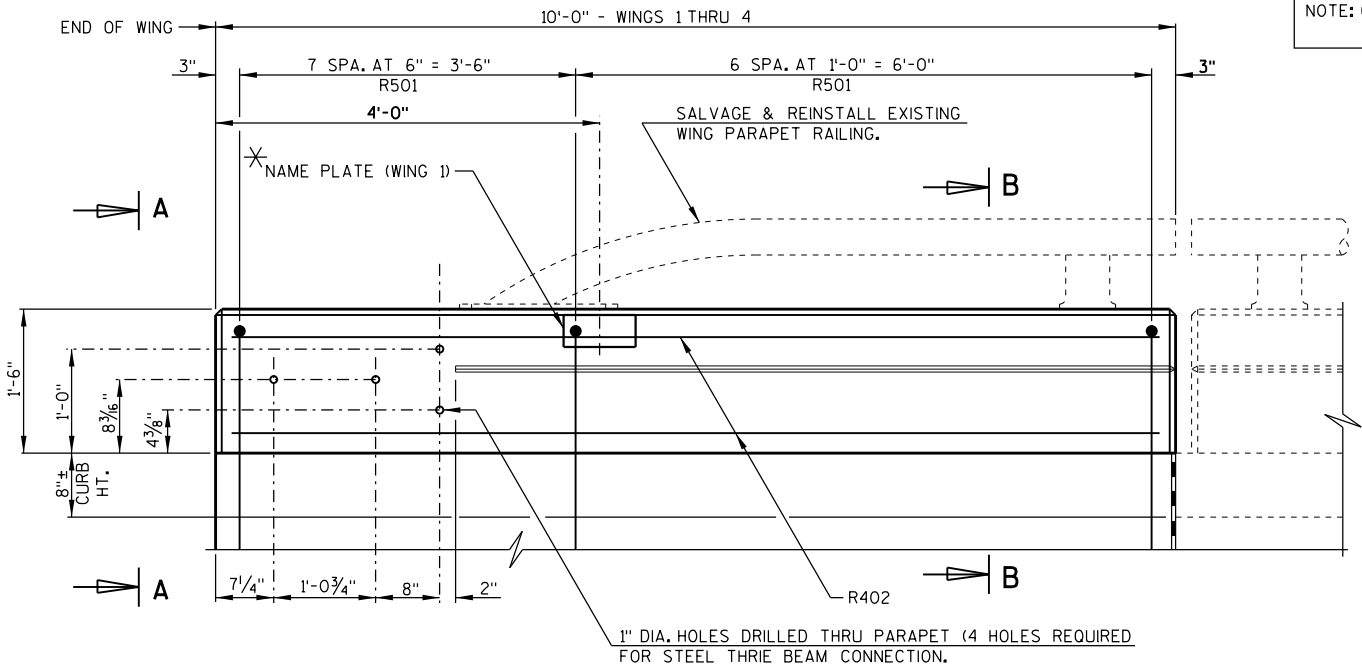
SOUTH WEST WING - ELEVATION



NORTH EAST WING - ELEVATION

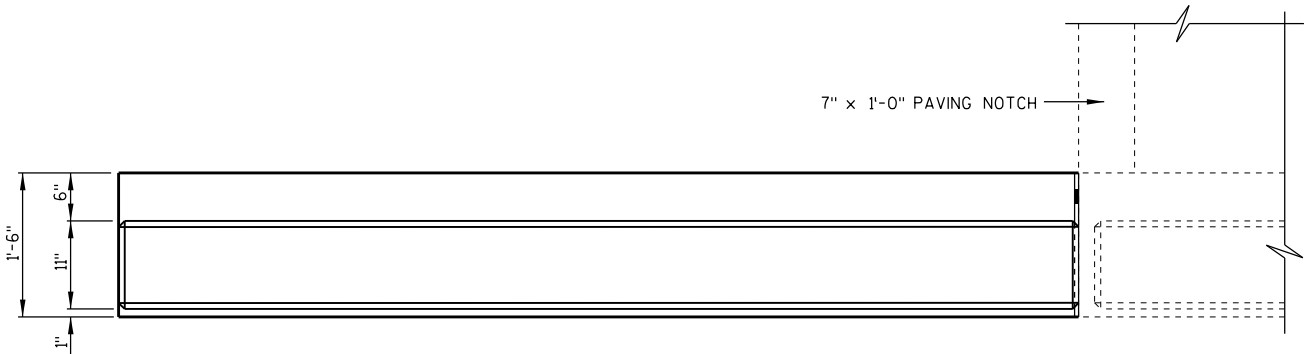
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-6-40			
DRAWN BY TAW		PLANS CK'D. IGG	
REPAIR DETAILS			SHEET 3 OF 4

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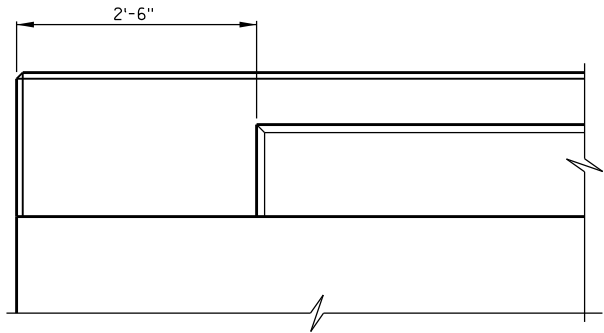
PART ELEVATION AT INSIDE FACE OF PARAPET AT ABUTMENTS

* SALVAGE EXISTING NAME PLATE. COST SHALL BE INCLUDED IN BID ITEM "REMOVING OLD STRUCTURE STATION 598+92.44".

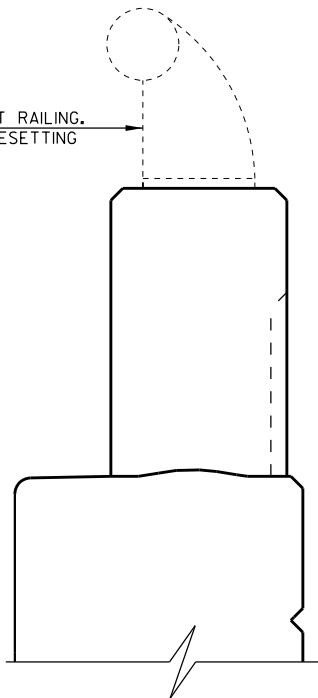


PART PLAN OF PARAPET

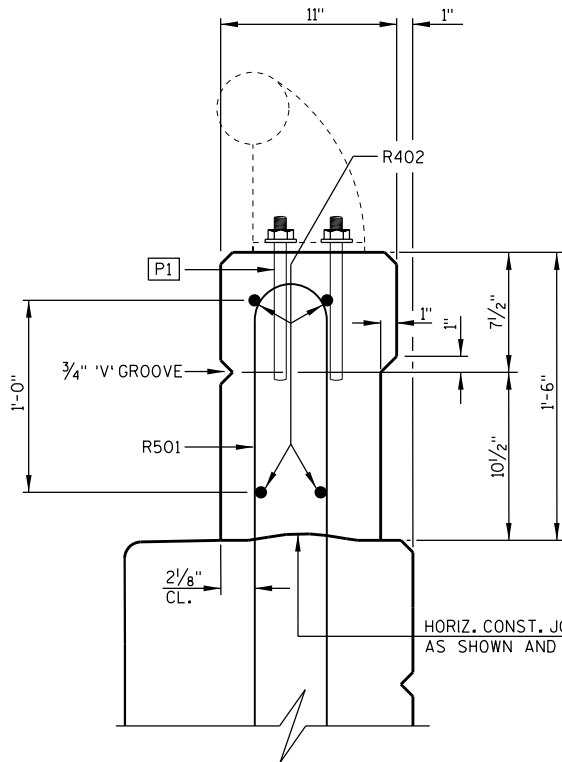
(WING 1 SHOWN, WINGS 2 THRU 4 SIMILAR)



PART ELEVATION AT OUTSIDE FACE OF PARAPET



VIEW A-A



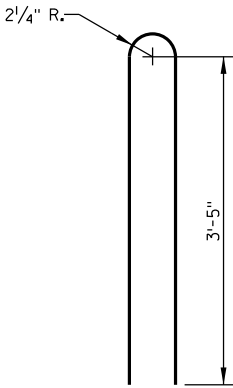
SECTION B-B

NOTE: QUANTITIES OF CONCRETE MASONRY AND BAR STEEL REINFORCEMENT ARE INCLUDED IN THE ABUTMENT QUANTITIES ON SHEET 1.

BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR. CALCULATIONS, SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
COATED BARS					
TOTAL WEIGHT = 540 LBS					
R501	56	7 - 5	X		PARAPET - WINGS VERT.
R402	16	9 - 8			PARAPET - WINGS HORIZ.



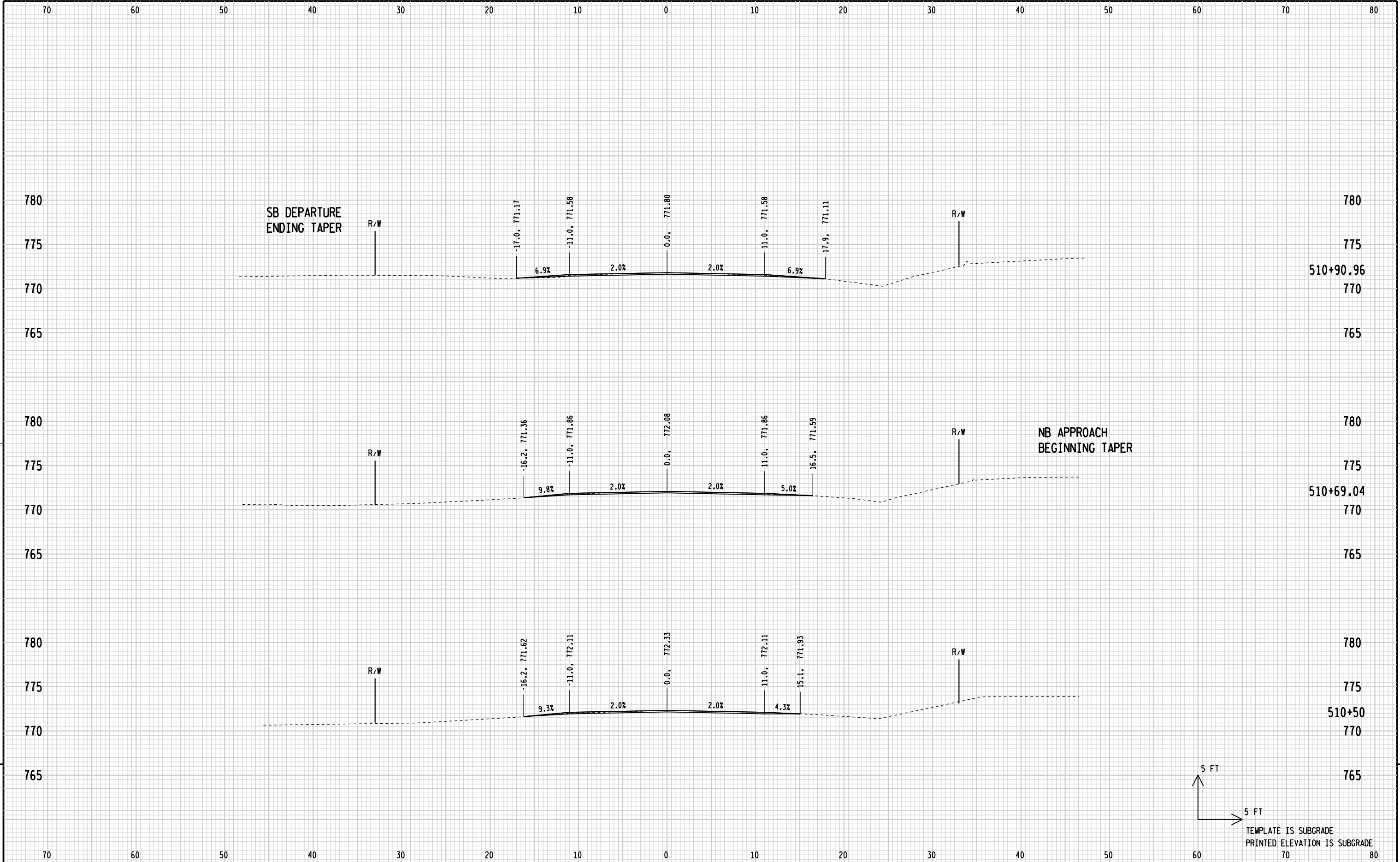
R501

NOTE: R501 BARS TO BE TIED TO WING STEEL BEFORE WING CONCRETE IS POURED.

LEGEND

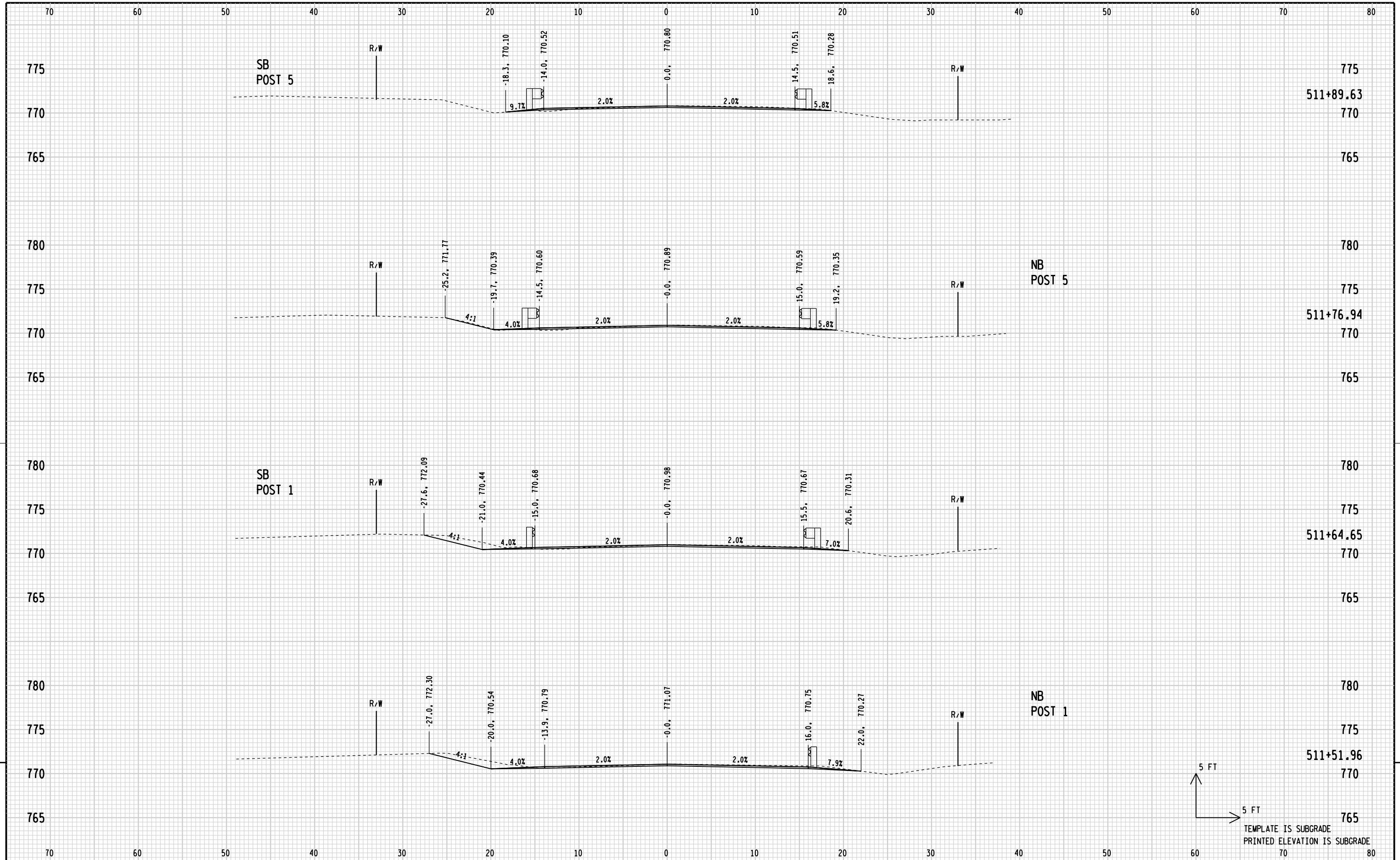
P1 MASONRY ANCHORS TYPE S 7/8-INCH HAVING A MINIMUM PULLOUT CAPACITY OF 26 KIPS, EMBED 8" WITH 3/4" DIA. x 10 1/4" LONG ANCHOR BOLTS. THE TOP 3" OF THE ANCHOR BOLT SHALL BE THREADED. THE ANCHOR BOLT, WASHER, AND NUT SHALL BE INCLUDED WITH THE BID ITEM "MASONRY ANCHORS TYPE S 7/8-INCH". TOTAL NUMBER REQUIRED = 32 FOR WINGS 1 THRU 4.

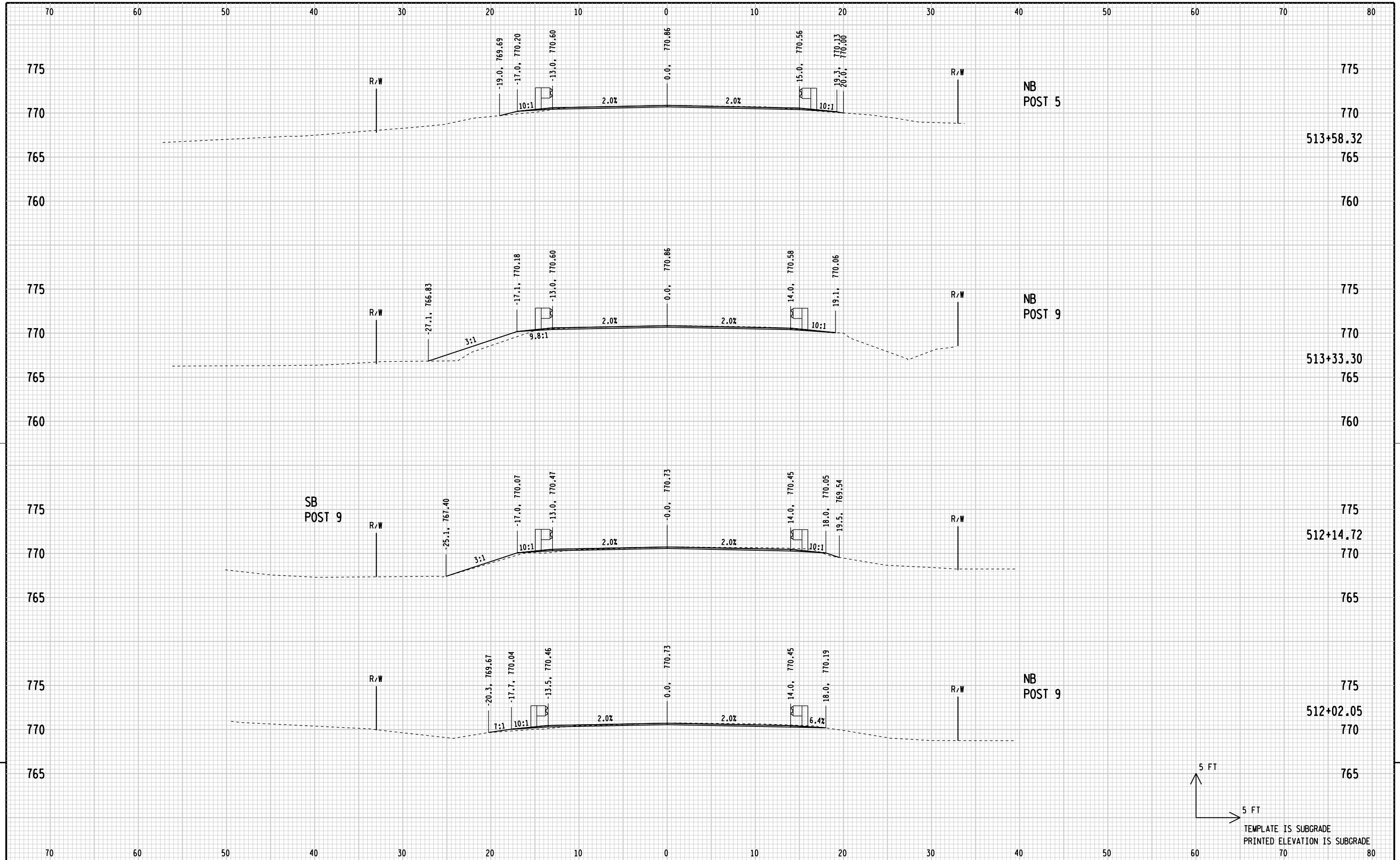
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-6-40			
DRAWN BY TAW		PLANS CK'D. IGG	
WING PARAPET DETAILS		SHEET 4 OF 4	

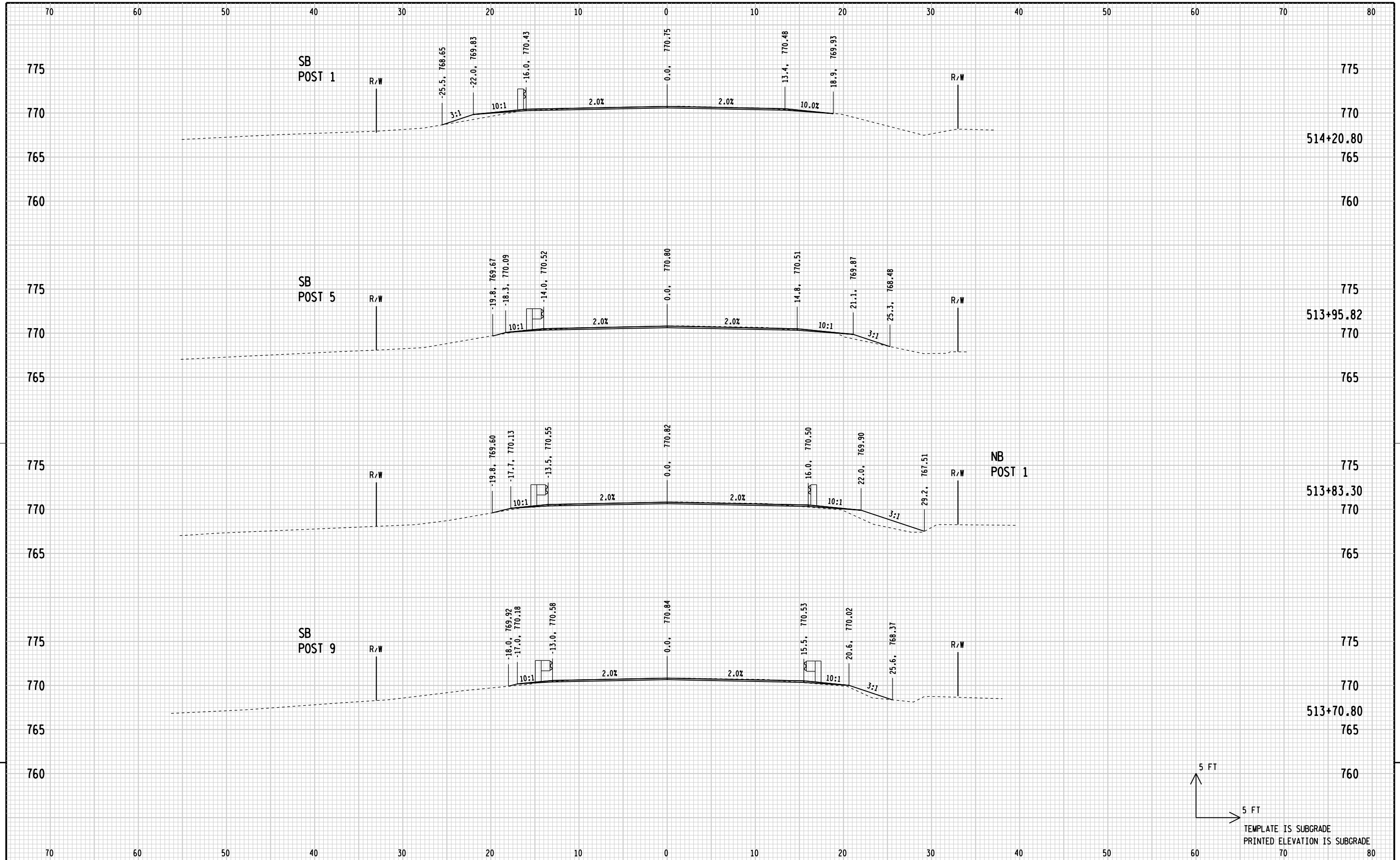


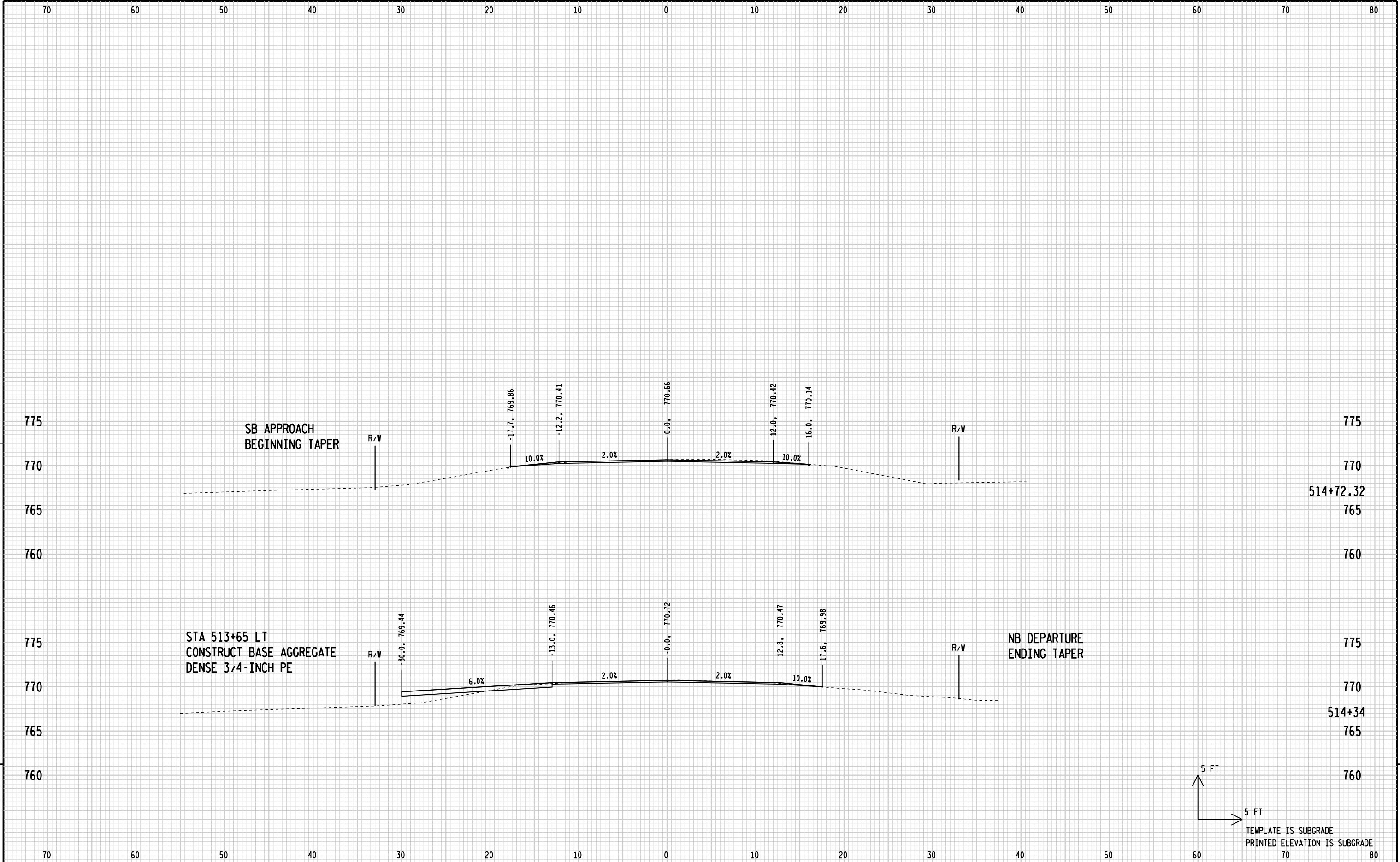
9

9



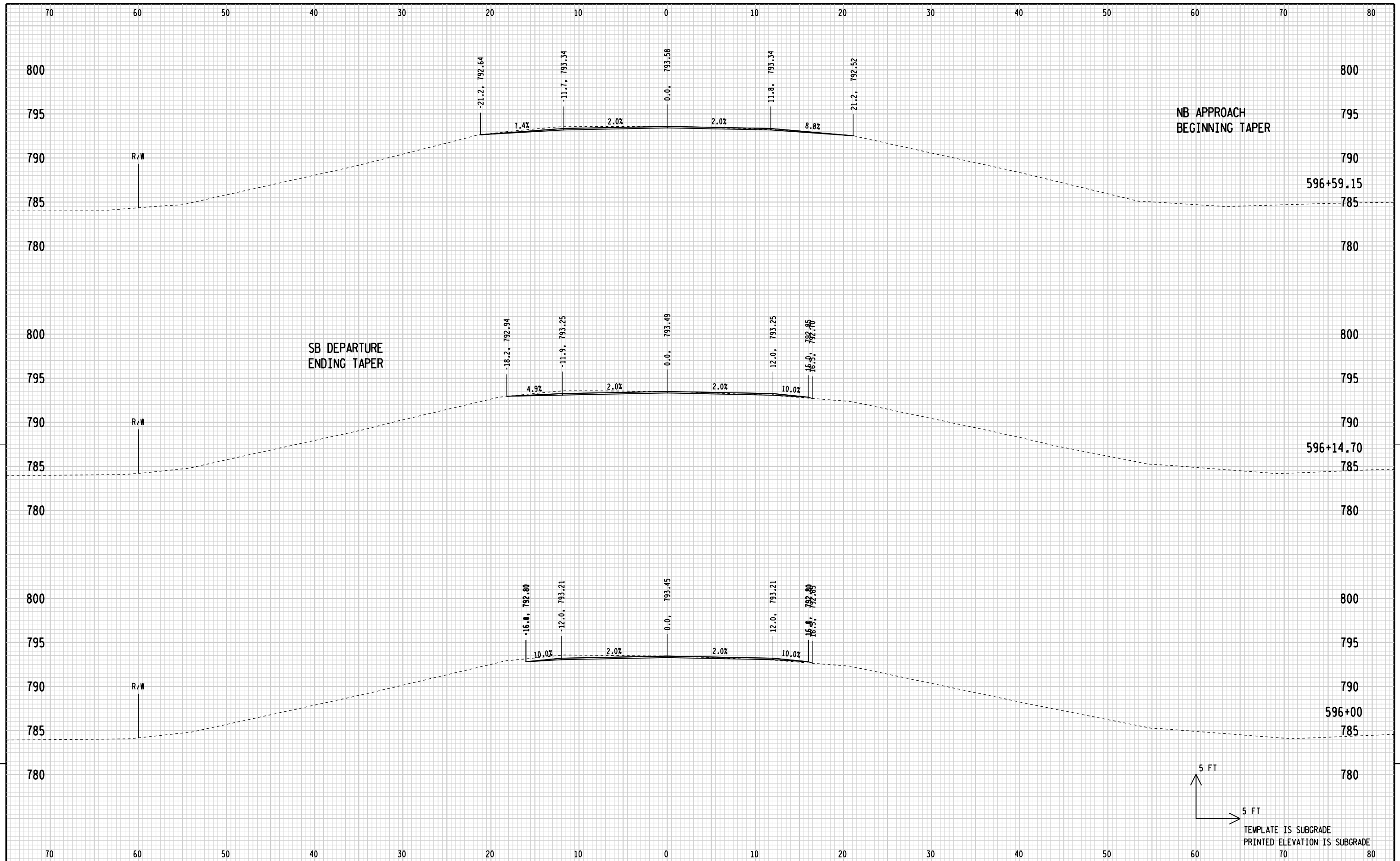


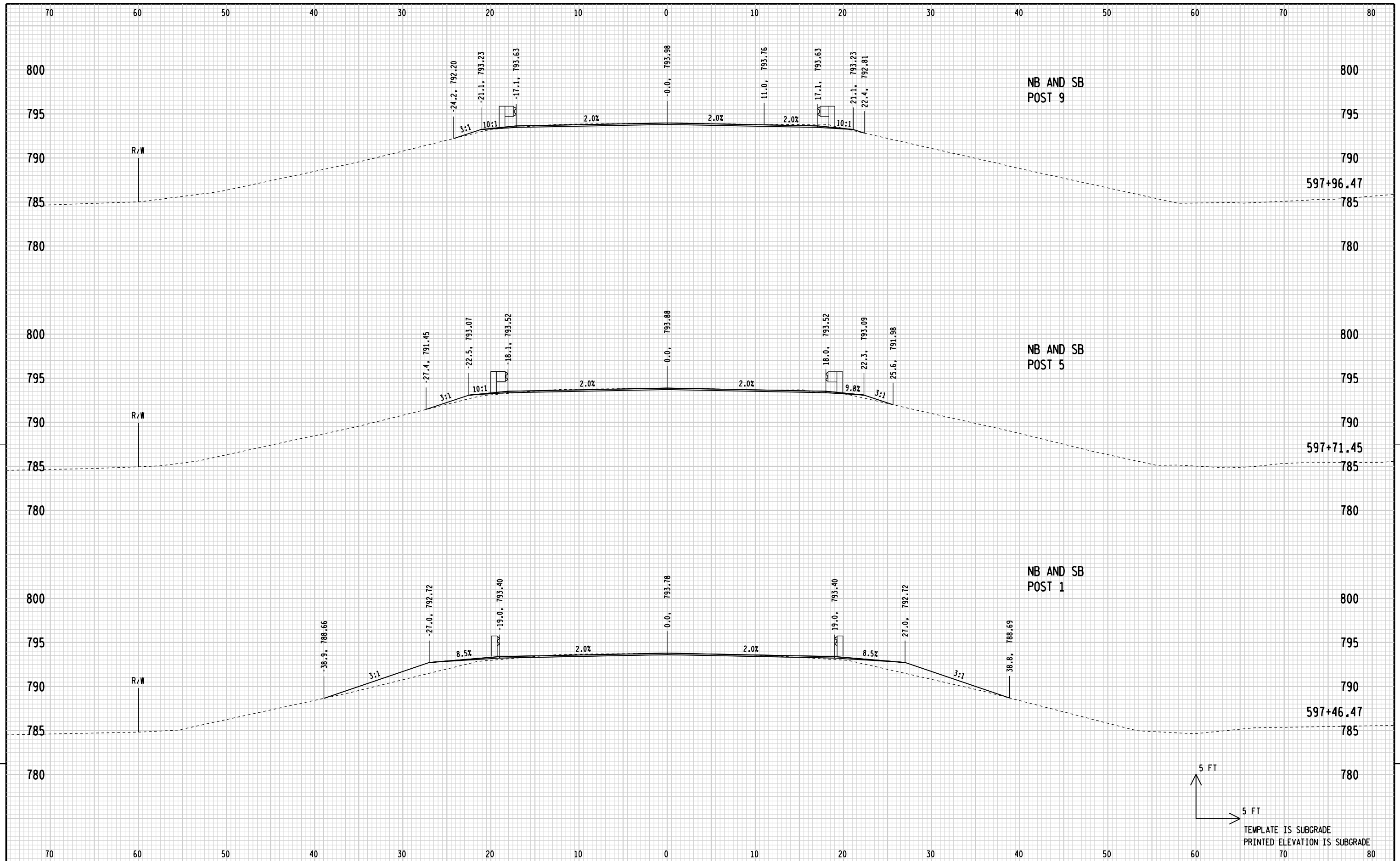


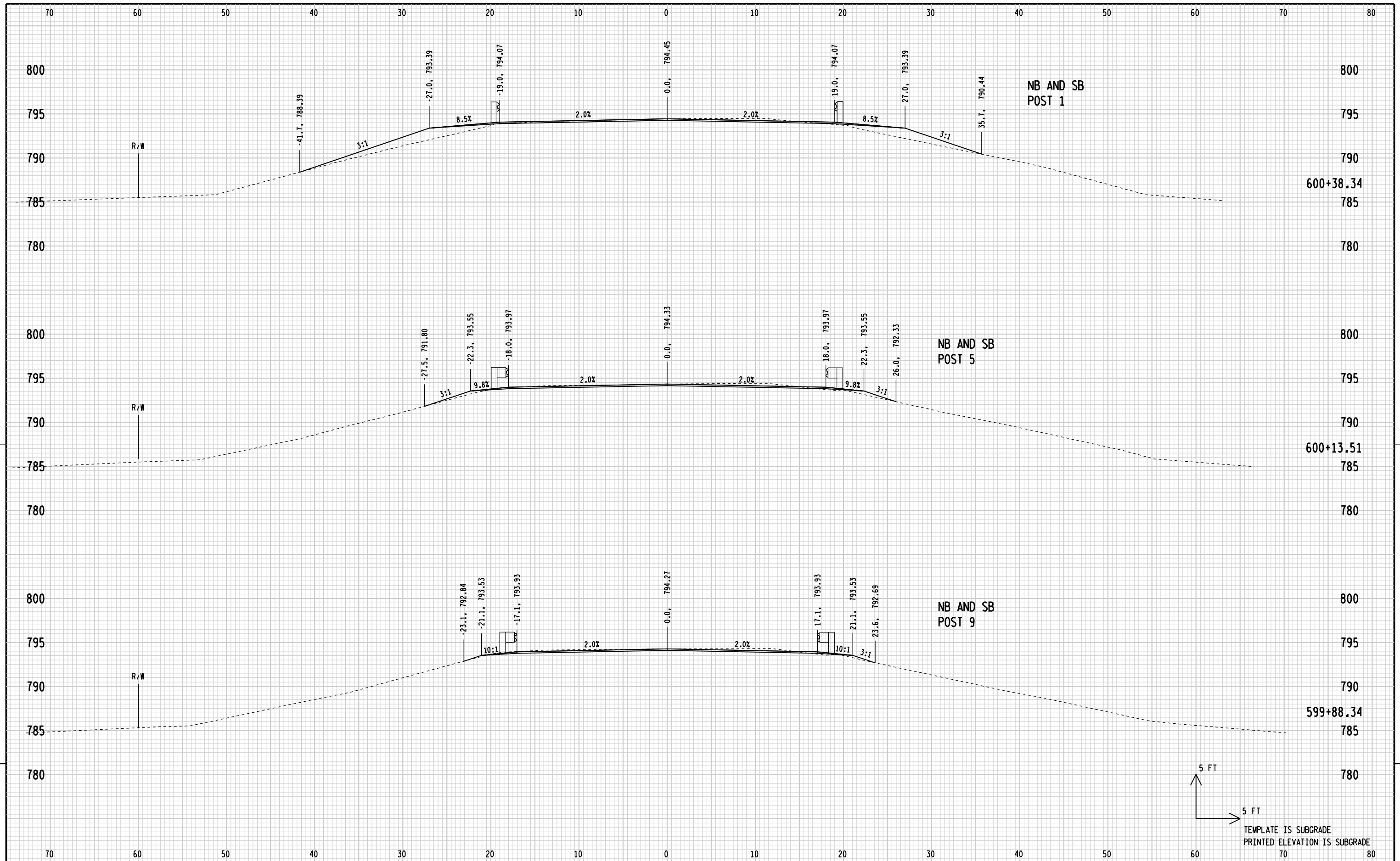


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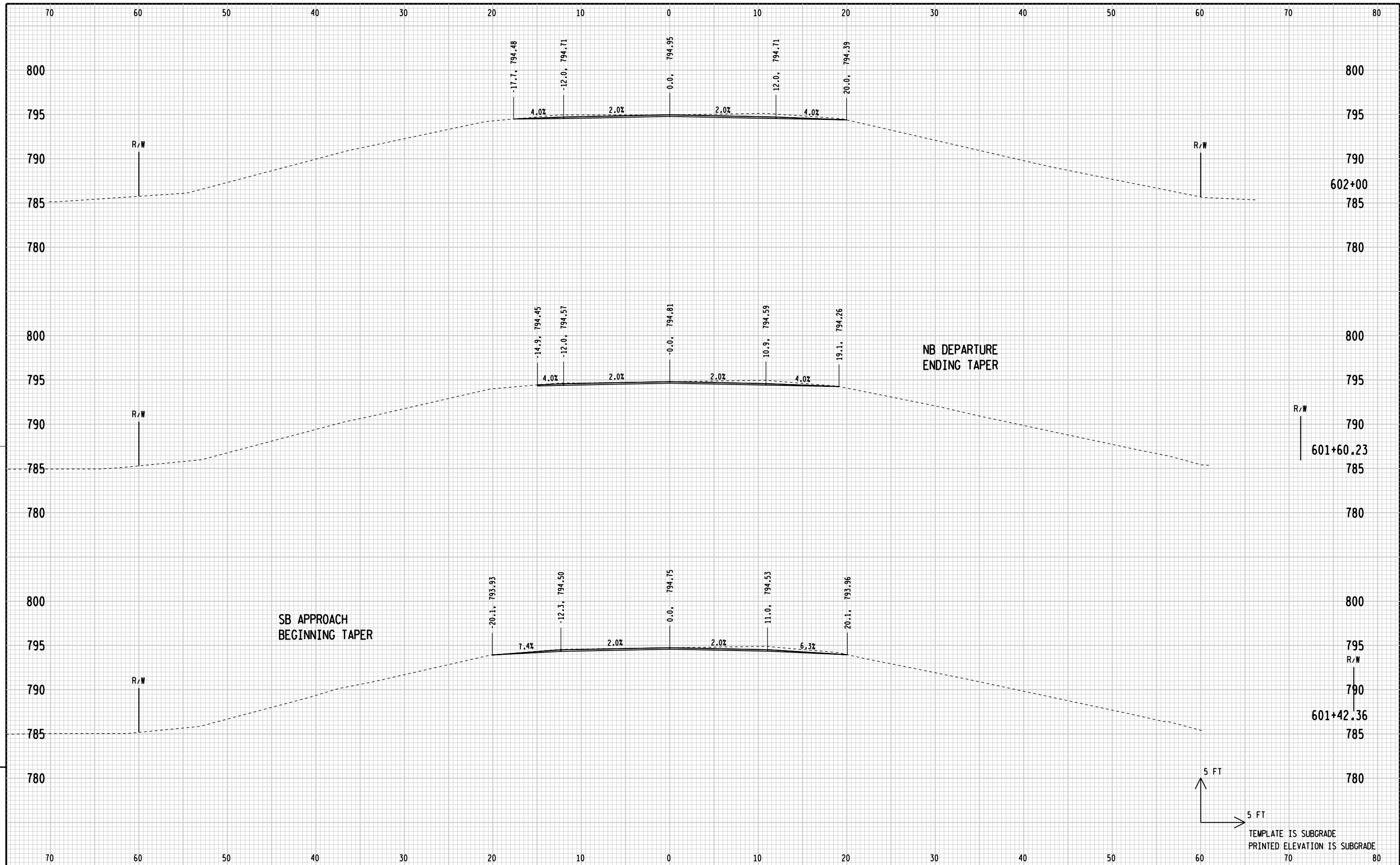
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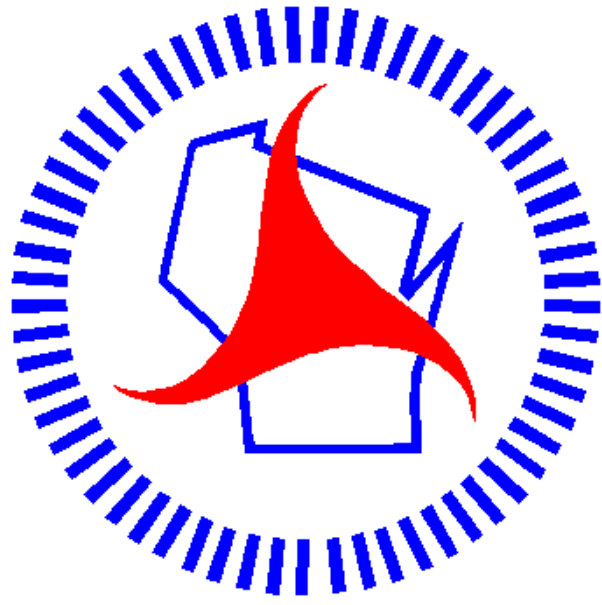






STATE PROJECT NUMBER:7730-01-60	HWY:STH 88	COUNTY:BUFFALO	CROSS SECTIONS:	SHEET	E
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