

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 =



DESIGN DESIGNATION

A.A.D.T.	2022	=	890
A.A.D.T.	2042	=	1035
D.H.V.		=	160
D.D.		=	50/50
T.		=	12.3%
DESIGN SPEED		=	35 MPH
ESALS		=	219,000

CONVENTIONAL SYMBOLS

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

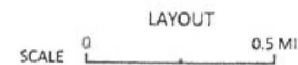
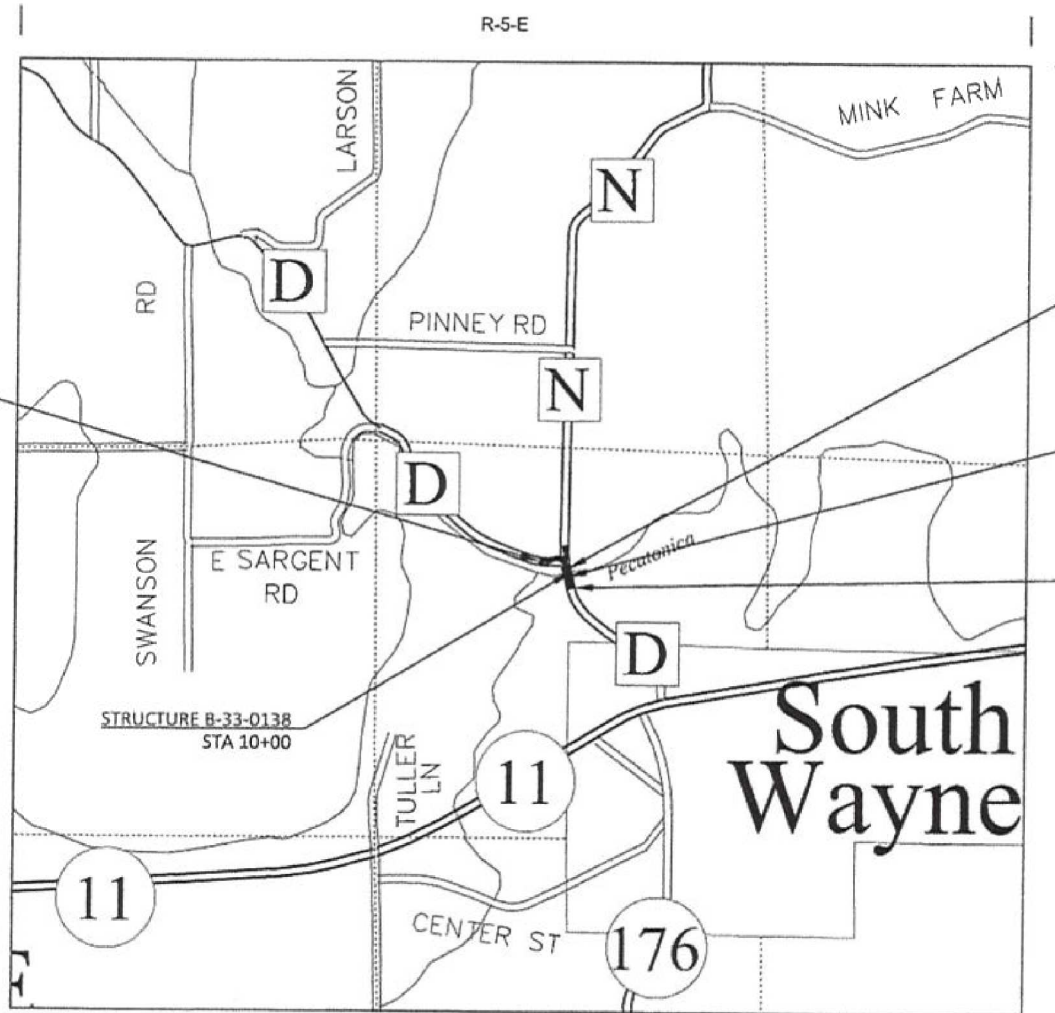
STH 11 - CTH N

(PECATONICA RIVER BRIDGE B-33-0138)

CTH D

LAFAYETTE COUNTY

STATE PROJECT NUMBER
5725-00-72



TOTAL NET LENGTH OF CENTERLINE = 0.047 MILE

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, LAFAYETTE COUNTY, NAD83(2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES, MAY BE USED AS GROUND DISTANCES, ELEVATIONS SHOWN ON THIS PLAN REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988, NAVD (2012).

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
5725-00-72	WISC 2022076	1

ACCEPTED FOR COUNTY OF LAFAYETTE

7/19/2021 *Don Ruff*
(Date) (Highway Commissioner)

ORIGINAL PLANS PREPARED BY



1702 Pankratz Street, Madison, WI 53704
608-242-7779 1-800-446-0679 Fax: 608-242-5664

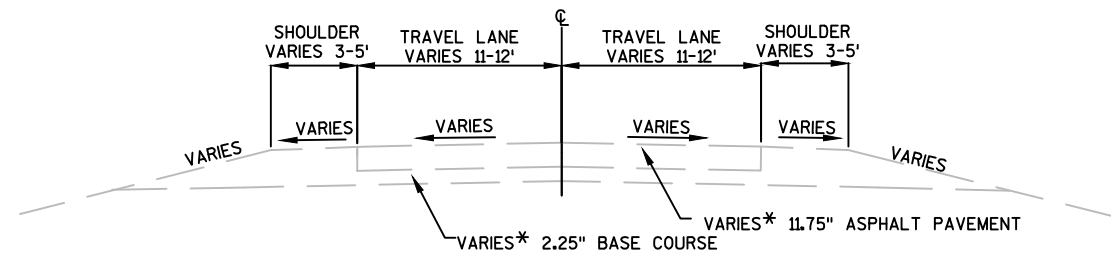


DATE: 7-13-2021 *Jaime L. Kurten-Chmielewski*
(Professional Engineer)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	MSA PROFESSIONAL SERVICES, INC.
Designer	MSA PROFESSIONAL SERVICES, INC.
Project Manager	ALEIGHA BURG
Regional Examiner	SW REGION
Regional Supervisor	IAN WINGER

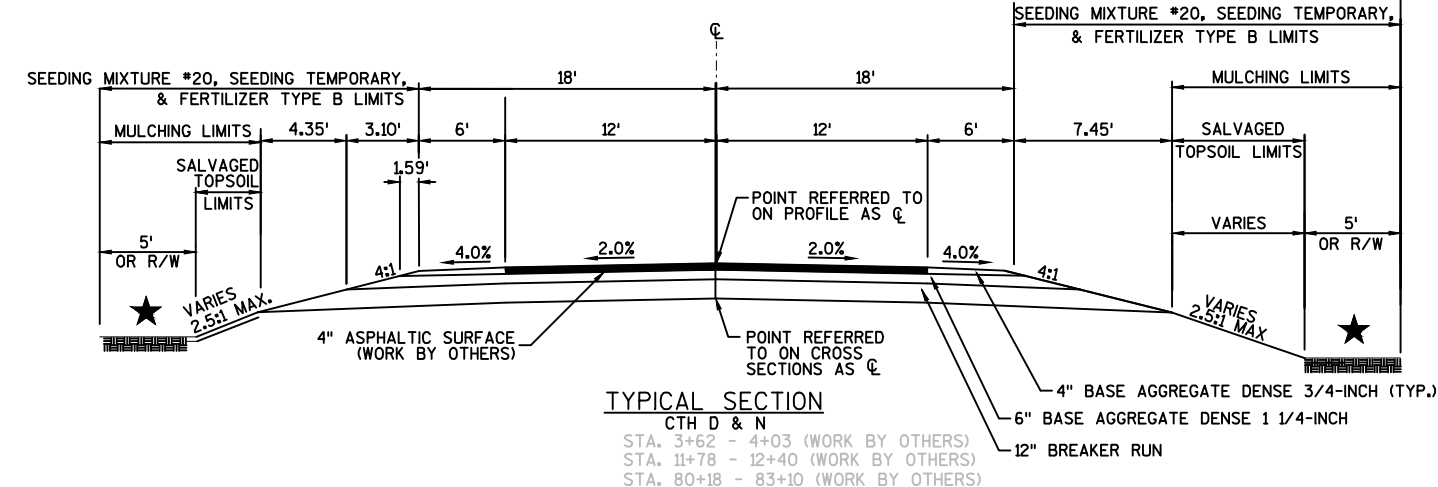
APPROVED FOR THE DEPARTMENT
DATE: 7/22/2021 *Aleigha Burg, P.E.*
(Signature)



EXISTING TYPICAL SECTION

CTH D & CTH N

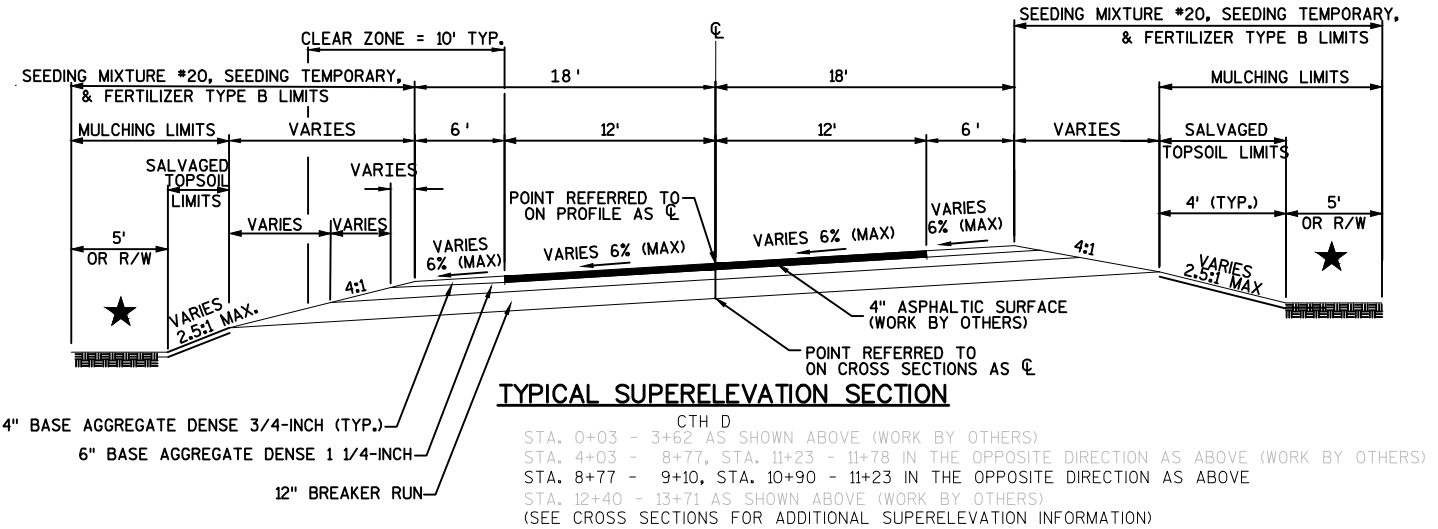
*ONLY ONE BORING WAS CONDUCTED TO DETERMINE EXISTING PAVEMENT THICKNESS. ACTUAL PAVEMENT THICKNESS MAY VARY



TYPICAL SECTION

CTH D & N

STA. 3+62 - 4+03 (WORK BY OTHERS)
 STA. 11+78 - 12+40 (WORK BY OTHERS)
 STA. 80+18 - 83+10 (WORK BY OTHERS)



TYPICAL SUPERELEVATION SECTION

CTH D

STA. 0+03 - 3+62 AS SHOWN ABOVE (WORK BY OTHERS)
 STA. 4+03 - 8+77, STA. 11+23 - 11+78 IN THE OPPOSITE DIRECTION AS ABOVE (WORK BY OTHERS)
 STA. 8+77 - 9+10, STA. 10+90 - 11+23 IN THE OPPOSITE DIRECTION AS ABOVE
 STA. 12+40 - 13+71 AS SHOWN ABOVE (WORK BY OTHERS)
 (SEE CROSS SECTIONS FOR ADDITIONAL SUPERELEVATION INFORMATION)

GENERAL NOTES

- DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS SHALL BE FERTILIZED, SEEDED AND MULCHED AS DIRECTED BY THE ENGINEER.
- THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE AREA THAT ARE NOT SHOWN.
- NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.
- THE 4" ASPHALTIC SURFACE SHALL BE CONSTRUCTED USING A 2.25" LOWER LAYER OF 19MM NOMINAL SIZE AGGREGATE AND A 1.75" UPPER LAYER OF 12.5MM NOMINAL AGGREGATE.
- SILT FENCE TO BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER AND IN PLACE PRIOR TO CONSTRUCTION.
- STONE OR ROCK DITCH CHECKS, IF NEEDED, SHALL BE PLACED AS DIRECTED BY THE ENGINEER.
- ★ WETLANDS EXIST BEYOND THE TOE OF THE EXISTING ROADWAY FORESLOPE. AVOID DISTURBING WETLANDS OUTSIDE OF THE SLOPE INTERCEPTS IN THESE AREAS.

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	.16	.22	.12	.20	.27	.15	.24	.33	.19	.28	.38
	.22	.30	.38	.26	.34	.44	.30	.37	.50	.34	.41	.56
MEDIAN STRIP-TURF	.19	.20	.24	.19	.22	.26	.20	.23	.30	.20	.25	.30
	.24	.26	.30	.25	.28	.33	.26	.30	.37	.27	.32	.40
SIDE SLOPE-TURF			.25			.27			.28			.30
			.32			.34			.36			.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 = 4.31 ACRES
 TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 3.16 ACRES

DESIGN CONTACT

MSA PROFESSIONAL SERVICES, INC.
 ATTN: JAIME KURTEN, P.E.
 1702 PANKRATZ STREET
 MADISON, WI 53704
 PHONE: (608) 242-6619
 EMAIL: JKURTEN@MSA-PS.COM

LAFAYETTE COUNTY HIGHWAY COMMISSIONER
 ATTN: DAN REILLY
 PO BOX 100
 12016 COUNTY SHOP ROAD
 DARLINGTON, WI 53530
 PHONE: (608) 776-4917
 EMAIL: DAN.RIELLY@LAFAYETTECOUNTYWI.ORG

DNR LIAISON

DEPARTMENT OF NATURAL RESOURCES
 ATTN: SHELLEY NELSON
 3911 FISH HATCHERY ROAD
 FITCHBURG, WI 53711
 PHONE: (608) 444-2835
 EMAIL: SHELLEY.NELSON@WISCONSIN.GOV

UTILITIES

TELEPHONE:
 TDS TELECOM
 (REPRESENTED BY MI-TECH SERVICES INC.)
 ATTN: MICHAEL S. RITCHIE
 6484 RONALD REAGAN AVENUE
 MADISON, WI 53704
 PHONE: (608)-347-7542
 EMAIL: MRITCHIE@MI-TECH.US

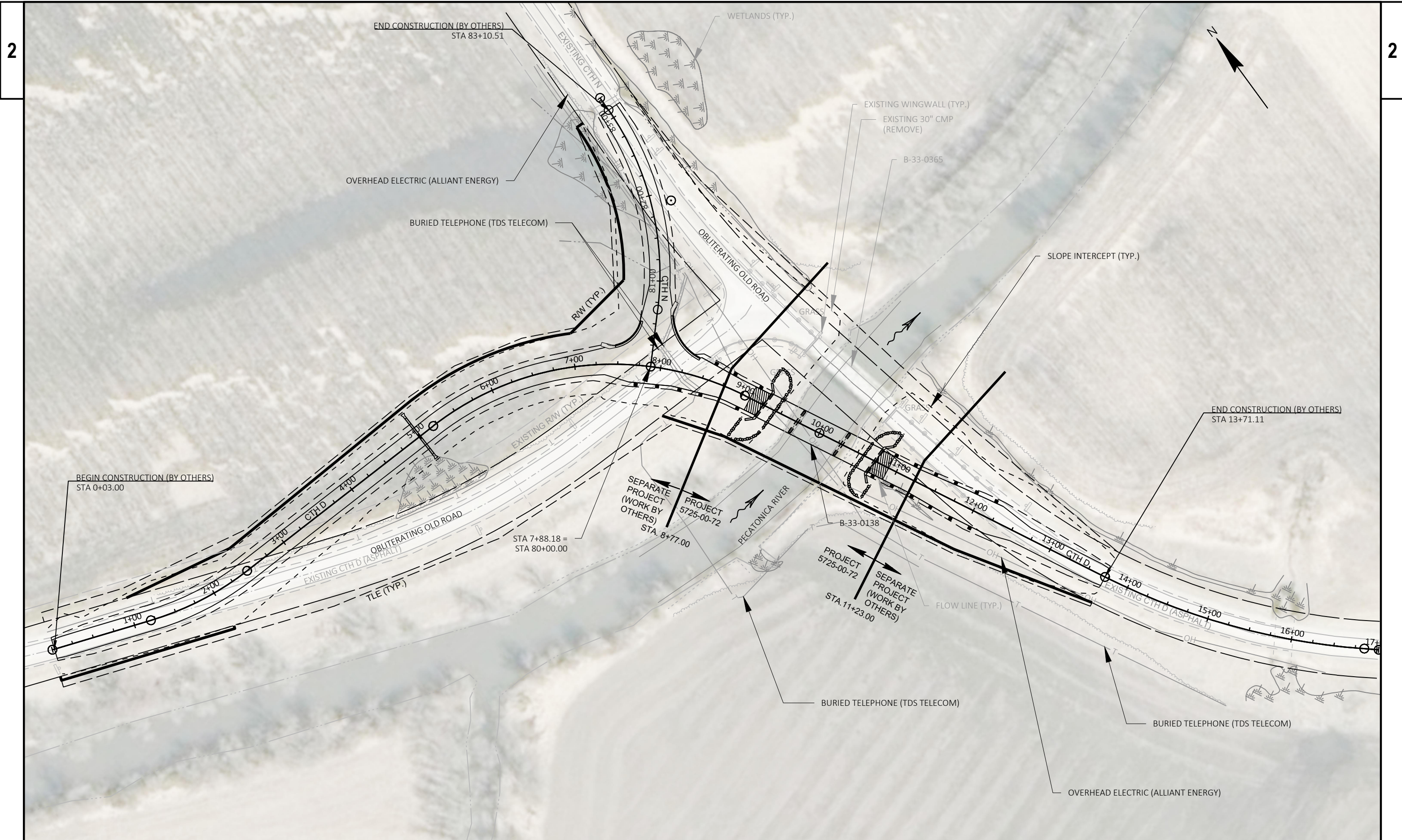
ELECTRIC:
 ALLIANT ENERGY
 ATTN: BETSI BASS
 1915 STATE ROAD 69 S
 MONROE, WI 53566
 PHONE: (608)-328-5323
 EMAIL: BETSIBASS@ALLIANTENERGY.COM

INDEX OF TYPICAL SECTIONS AND DETAIL SHEETS

- GENERAL NOTES AND TYPICAL SECTIONS
- PROJECT OVERVIEW
- CONSTRUCTION DETAILS
- CURB AND GUTTER DETAILS
- EROSION CONTROL
- PERMANENT SIGNING AND PAVEMENT MARKING
- TRAFFIC CONTROL

(TDS TELECOM AND ALLIANT ENERGY ARE BOTH MEMBERS OF DIGGERS HOTLINE)





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PROJECT NO: 5725-00-72	HWY: CTH D	COUNTY: LAFAYETTE	PROJECT OVERVIEW	SHEET	E
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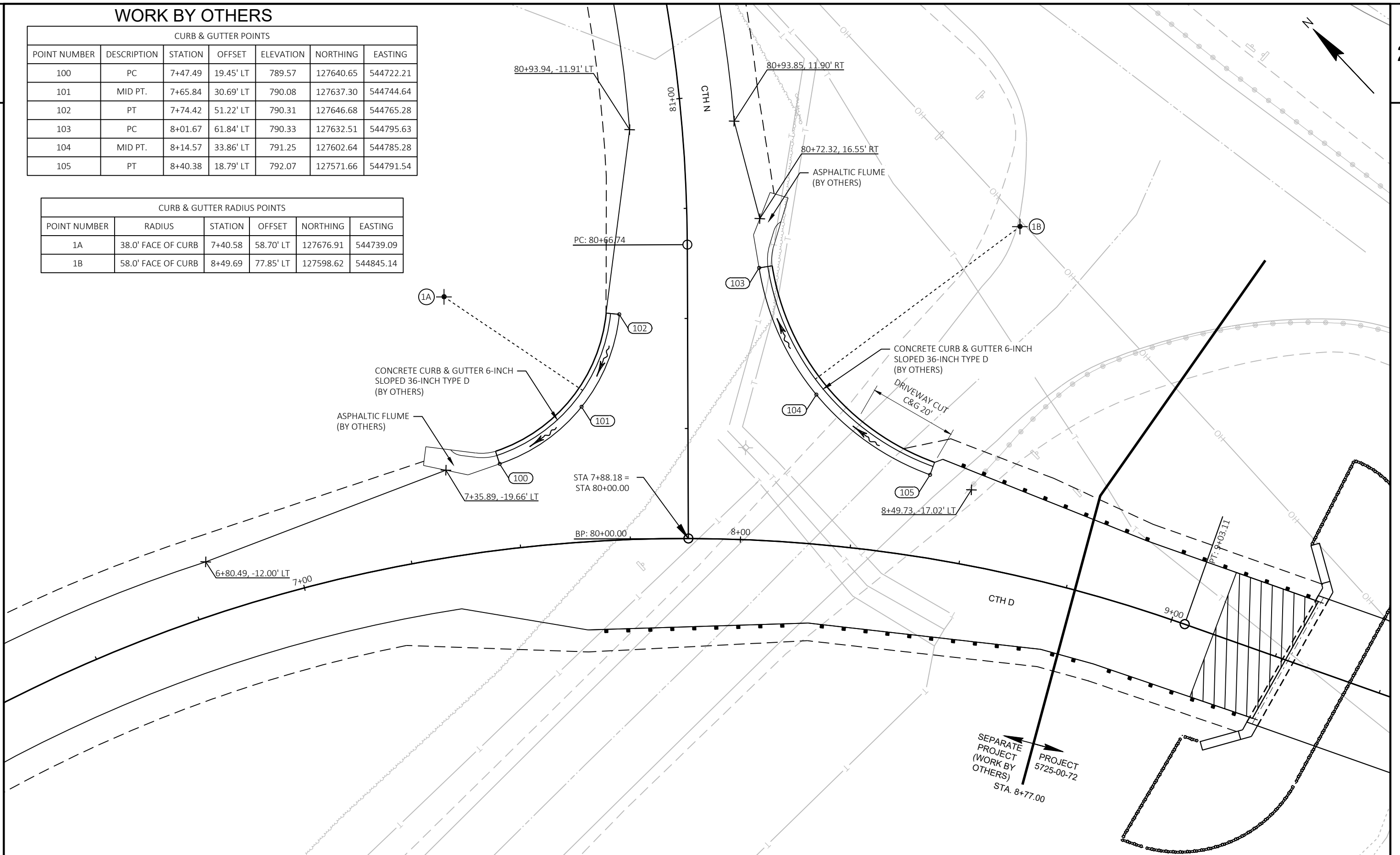
WORK BY OTHERS

CURB & GUTTER POINTS

POINT NUMBER	DESCRIPTION	STATION	OFFSET	ELEVATION	NORTHING	EASTING
100	PC	7+47.49	19.45' LT	789.57	127640.65	544722.21
101	MID PT.	7+65.84	30.69' LT	790.08	127637.30	544744.64
102	PT	7+74.42	51.22' LT	790.31	127646.68	544765.28
103	PC	8+01.67	61.84' LT	790.33	127632.51	544795.63
104	MID PT.	8+14.57	33.86' LT	791.25	127602.64	544785.28
105	PT	8+40.38	18.79' LT	792.07	127571.66	544791.54

CURB & GUTTER RADIUS POINTS

POINT NUMBER	RADIUS	STATION	OFFSET	NORTHING	EASTING
1A	38.0' FACE OF CURB	7+40.58	58.70' LT	127676.91	544739.09
1B	58.0' FACE OF CURB	8+49.69	77.85' LT	127598.62	544845.14



PROJECT NO: 5725-00-72

HWY: CTH D




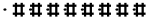
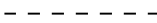

COUNTY: LAFAYETTE

CURB & GUTTER STAKING DETAIL (WORK BY OTHERS)

SHEET

E

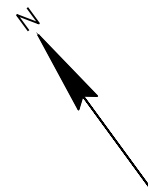
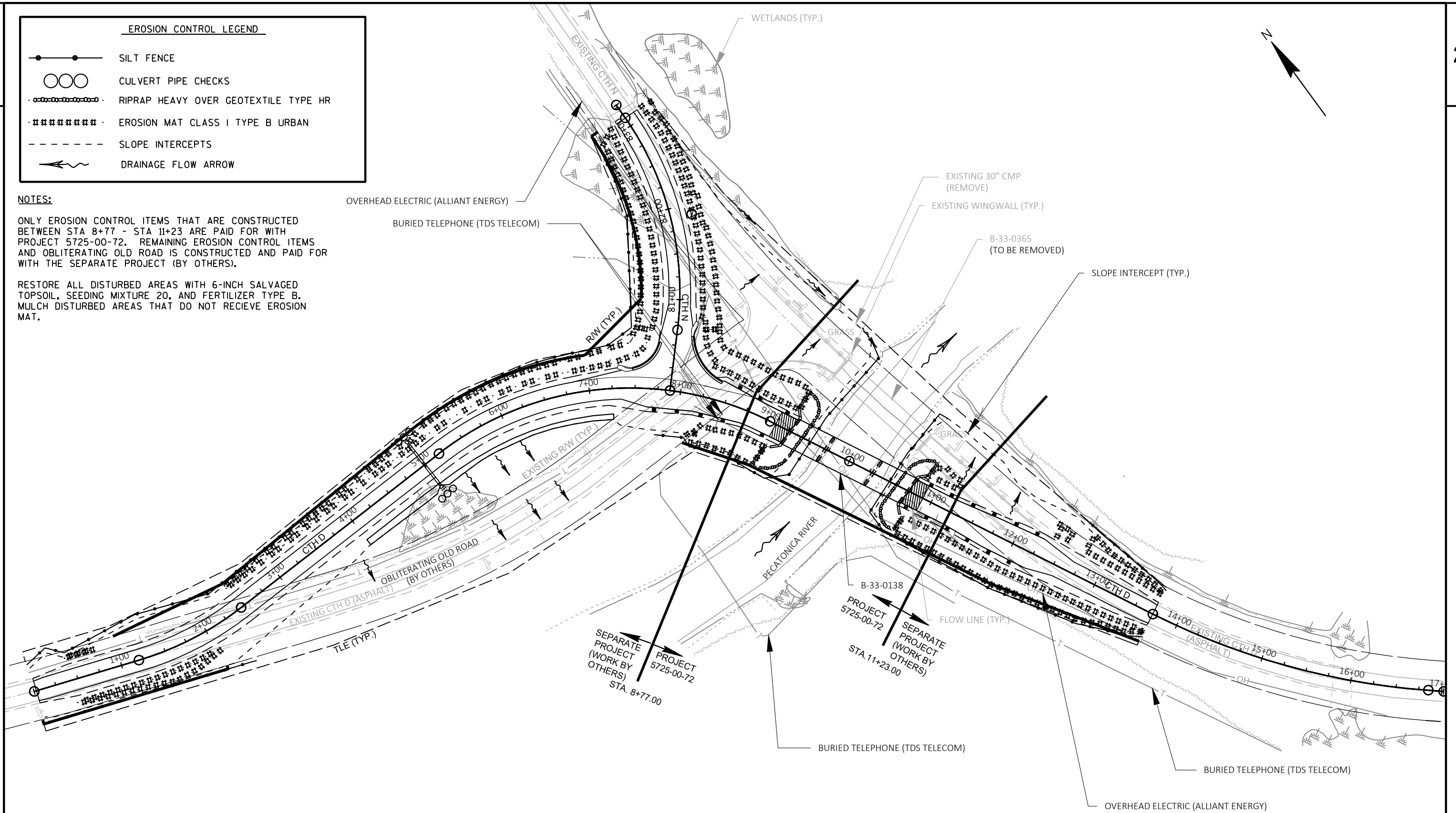
EROSION CONTROL LEGEND

-  SILT FENCE
-  CULVERT PIPE CHECKS
-  RIPRAP HEAVY OVER GEOTEXTILE TYPE HR
-  EROSION MAT CLASS I TYPE B URBAN
-  SLOPE INTERCEPTS
-  DRAINAGE FLOW ARROW

NOTES:

ONLY EROSION CONTROL ITEMS THAT ARE CONSTRUCTED BETWEEN STA 8+77 - STA 11+23 ARE PAID FOR WITH PROJECT 5725-00-72. REMAINING EROSION CONTROL ITEMS AND OBLITERATING OLD ROAD IS CONSTRUCTED AND PAID FOR WITH THE SEPARATE PROJECT (BY OTHERS).

RESTORE ALL DISTURBED AREAS WITH 6-INCH SALVAGED TOPSOIL, SEEDING MIXTURE 20, AND FERTILIZER TYPE B. MULCH DISTURBED AREAS THAT DO NOT RECEIVE EROSION MAT.

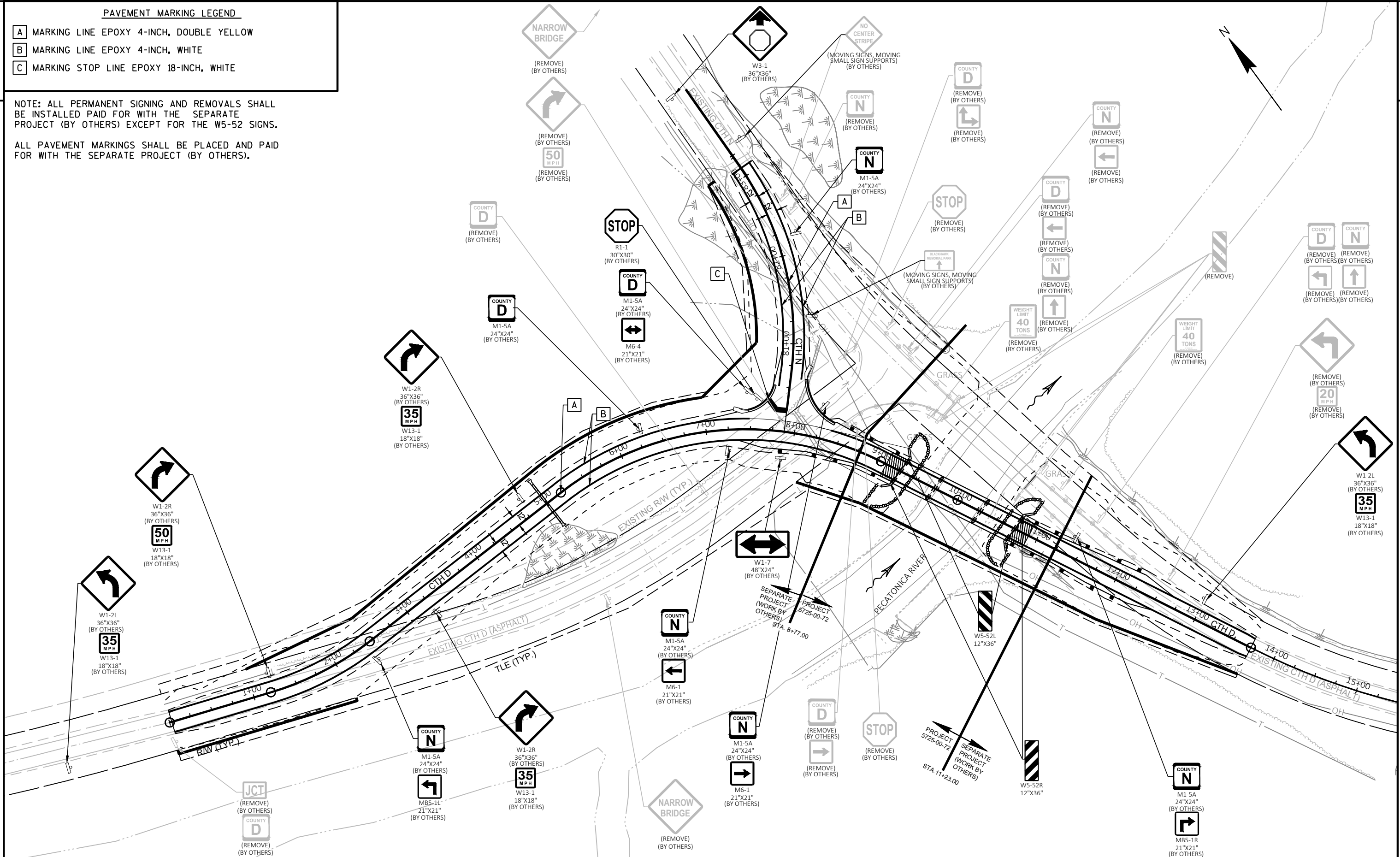


PAVEMENT MARKING LEGEND

- A** MARKING LINE EPOXY 4-INCH, DOUBLE YELLOW
- B** MARKING LINE EPOXY 4-INCH, WHITE
- C** MARKING STOP LINE EPOXY 18-INCH, WHITE

NOTE: ALL PERMANENT SIGNING AND REMOVALS SHALL BE INSTALLED PAID FOR WITH THE SEPARATE PROJECT (BY OTHERS) EXCEPT FOR THE W5-52 SIGNS.

ALL PAVEMENT MARKINGS SHALL BE PLACED AND PAID FOR WITH THE SEPARATE PROJECT (BY OTHERS).



PROJECT NO: 5725-00-72 (KEEP SIGN)







HWY: CTH D

COUNTY: LAFAYETTE

PAVEMENT MARKING & SIGNING

SHEET

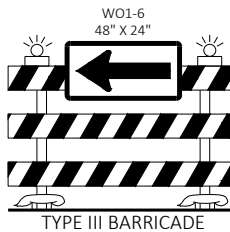
LEGEND

-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TYPE III BARRICADE
-  TRAFFIC CONTROL DRUM
-  WORK ZONE
-  WORK COMPLETED IN PREVIOUS STAGES
-  DIRECTION OF TRAFFIC

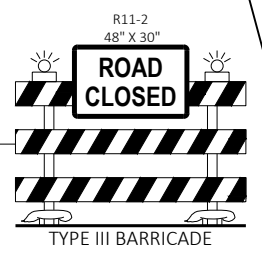
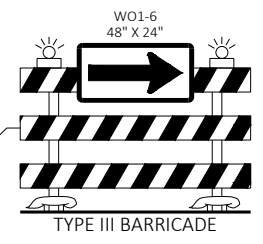
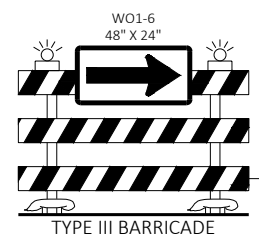
NOTE: SEE SDD 15D28 "TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY" FOR ADVANCE SIGNING ON CTH D & CTH N

ALL TRAFFIC CONTROL DEVICES TO BE INSTALLED AS PART OF A SEPERATE LOCALLY LET PROJECT (WORK BY OTHERS)

OVERHEAD ELECTRIC (ALLIANT ENERGY)

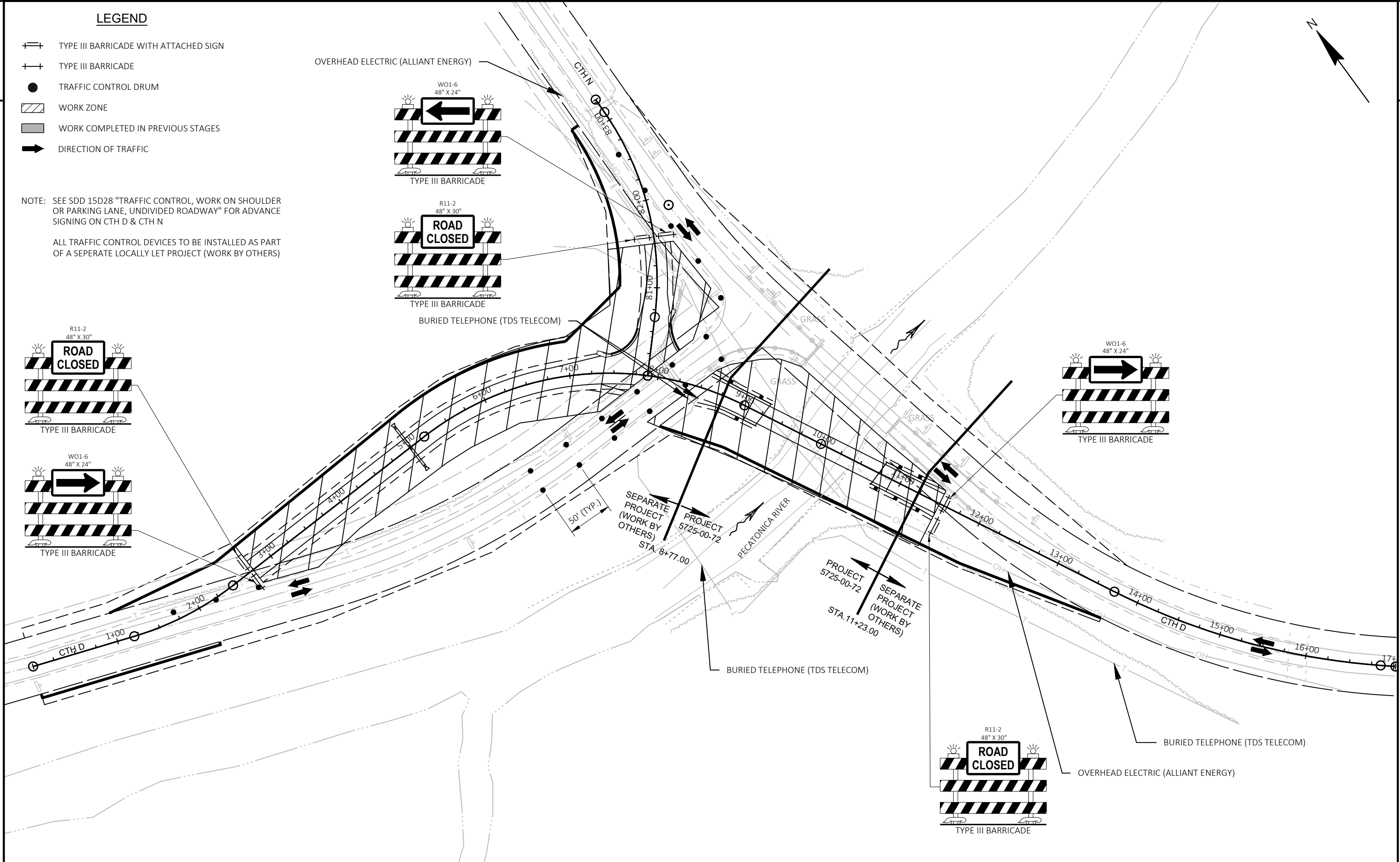


BURIED TELEPHONE (TDS TELECOM)








OVERHEAD ELECTRIC (ALLIANT ENERGY)

BURIED TELEPHONE (TDS TELECOM)



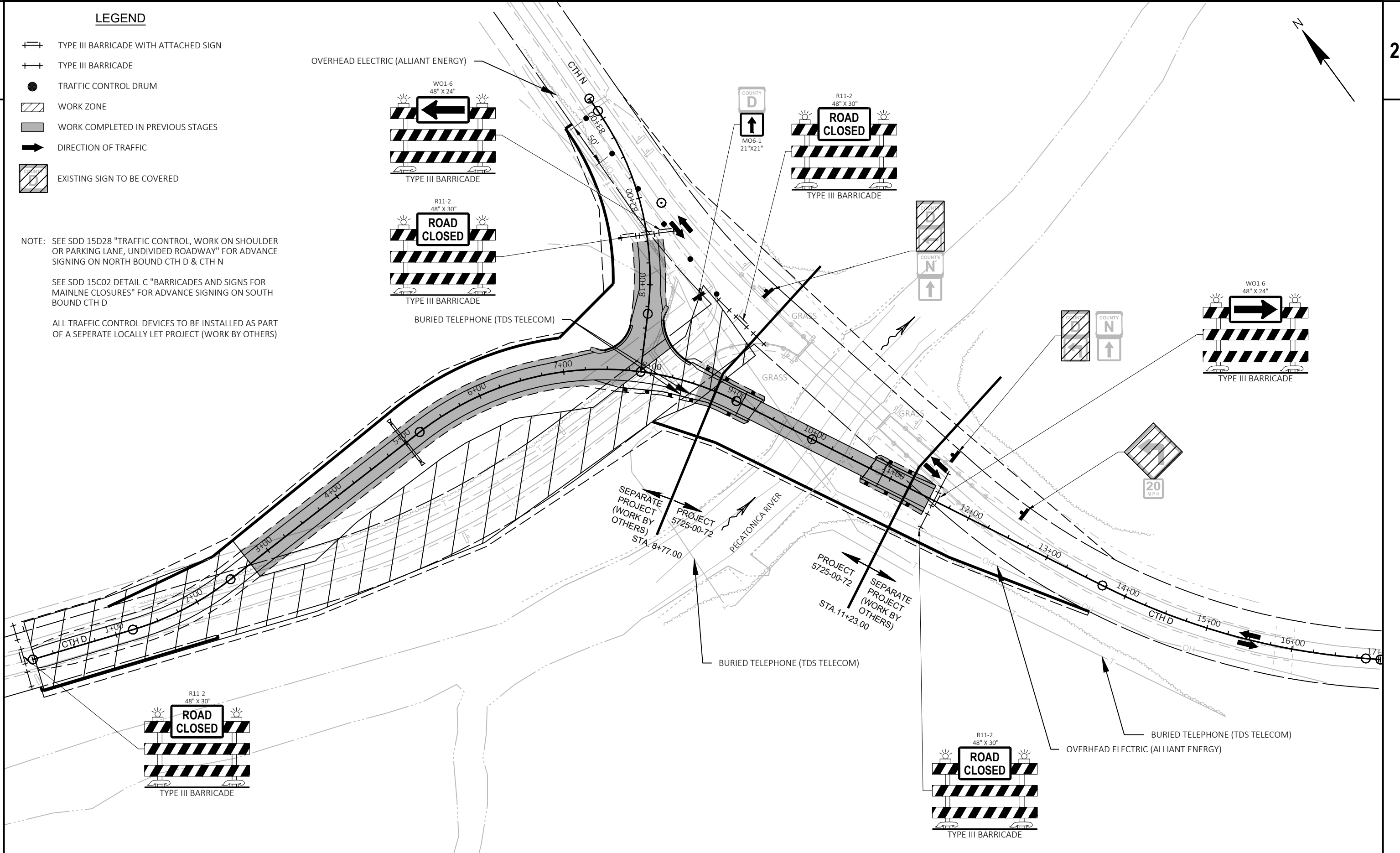
LEGEND

-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TYPE III BARRICADE
-  TRAFFIC CONTROL DRUM
-  WORK ZONE
-  WORK COMPLETED IN PREVIOUS STAGES
-  DIRECTION OF TRAFFIC
-  EXISTING SIGN TO BE COVERED

NOTE: SEE SDD 15D28 "TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY" FOR ADVANCE SIGNING ON NORTH BOUND CTH D & CTH N







SEE SDD 15C02 DETAIL C "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" FOR ADVANCE SIGNING ON SOUTH BOUND CTH D

ALL TRAFFIC CONTROL DEVICES TO BE INSTALLED AS PART OF A SEPERATE LOCALLY LET PROJECT (WORK BY OTHERS)



PROJECT NO: 5725-00-72	HWY: CTH D	COUNTY: LAFAYETTE	STAGE CONSTRUCTION - STAGE 2 (BY OTHERS)
SHEET			E

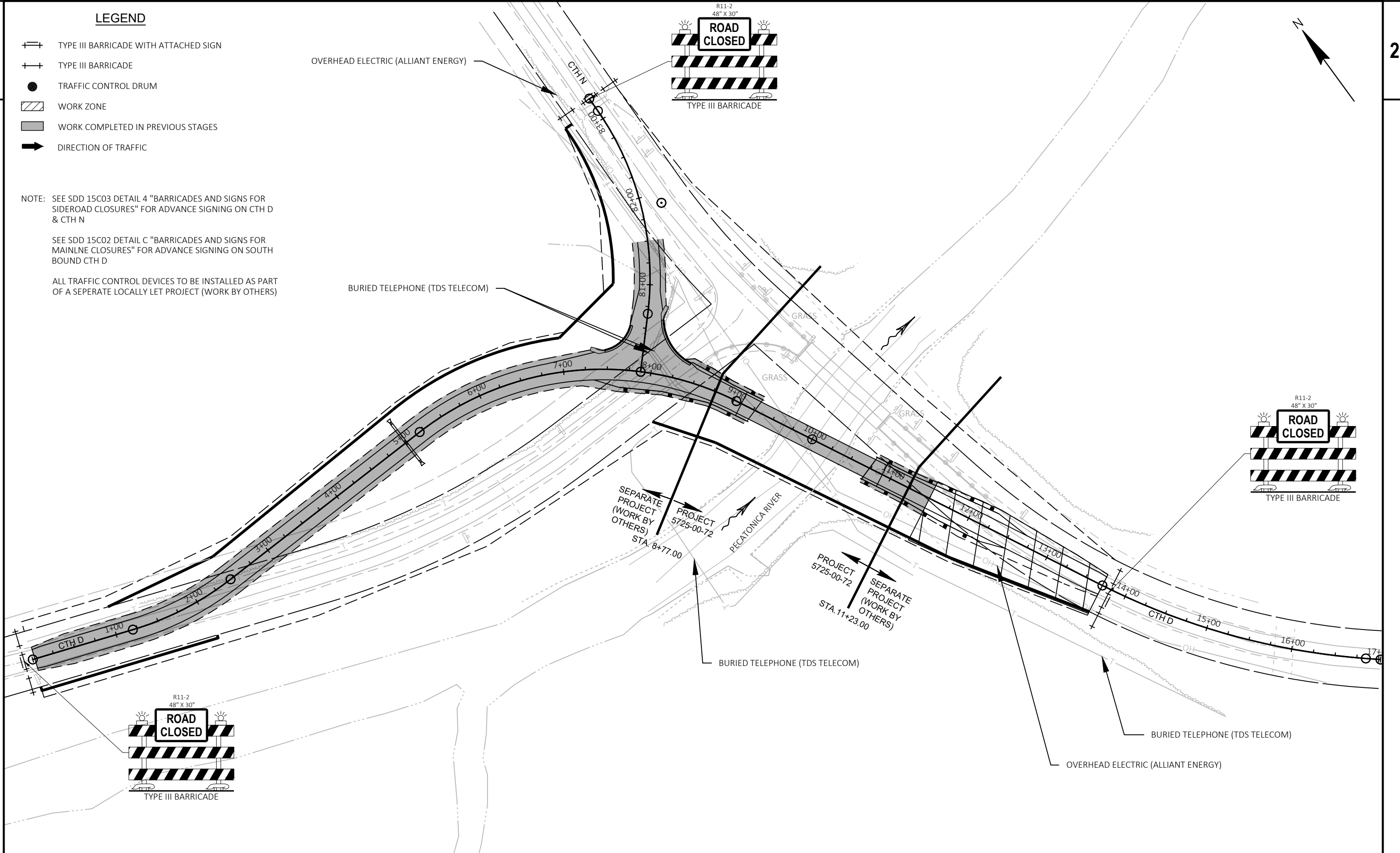
LEGEND

-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TYPE III BARRICADE
-  TRAFFIC CONTROL DRUM
-  WORK ZONE
-  WORK COMPLETED IN PREVIOUS STAGES
-  DIRECTION OF TRAFFIC

NOTE: SEE SDD 15C03 DETAIL 4 "BARRICADES AND SIGNS FOR SIDEROAD CLOSURES" FOR ADVANCE SIGNING ON CTH D & CTH N

SEE SDD 15C02 DETAIL C "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" FOR ADVANCE SIGNING ON SOUTH BOUND CTH D

ALL TRAFFIC CONTROL DEVICES TO BE INSTALLED AS PART OF A SEPERATE LOCALLY LET PROJECT (WORK BY OTHERS)



PROJECT NO: 5725-00-72

HWY: CTH D







COUNTY: LAFAYETTE

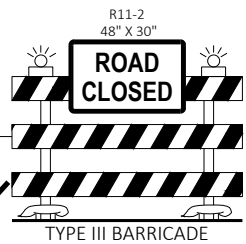
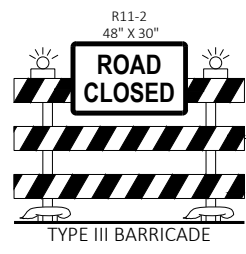
STAGE CONSTRUCTION - STAGE 3 (BY OTHERS)

SHEET

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LEGEND

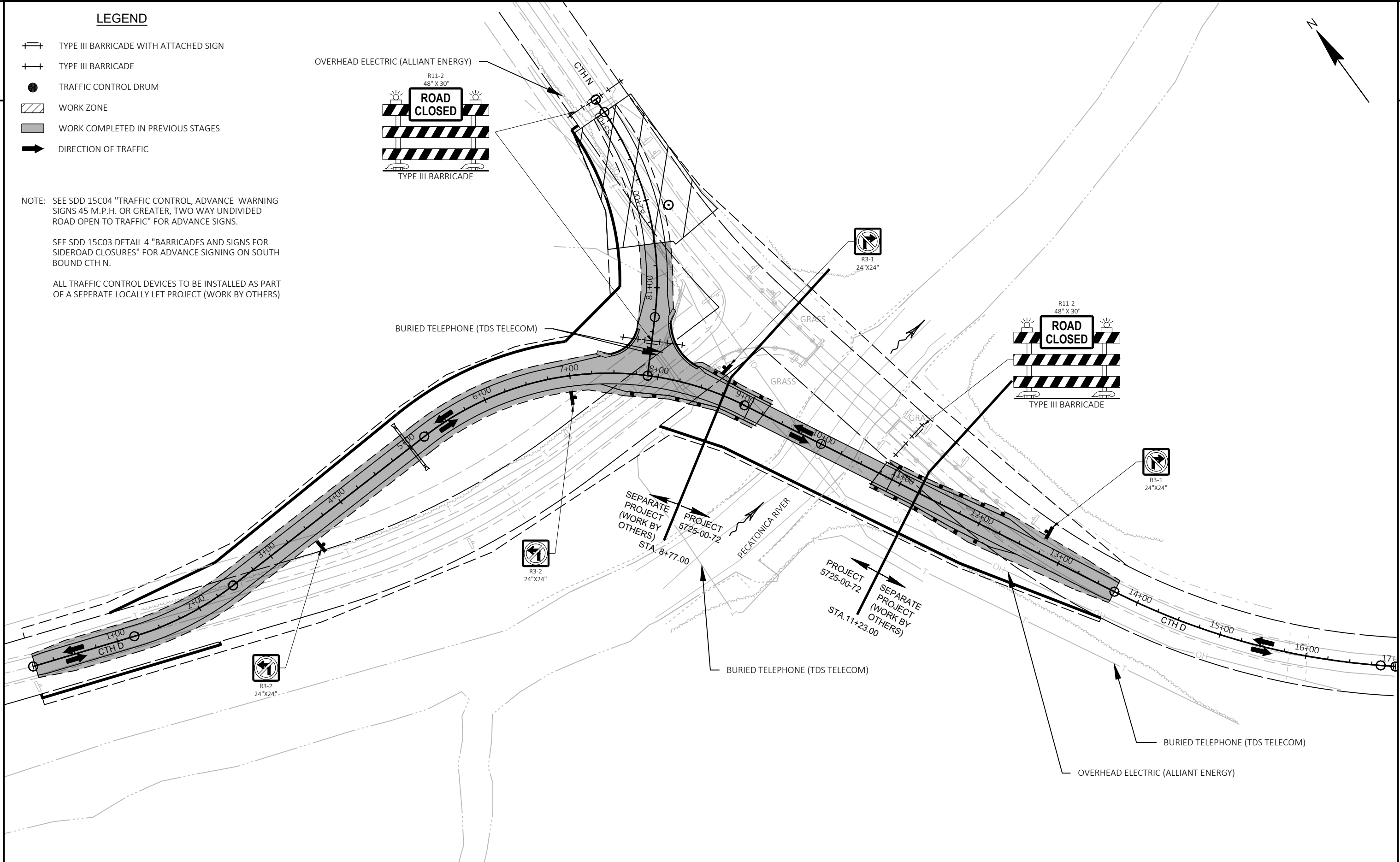
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TYPE III BARRICADE
-  TRAFFIC CONTROL DRUM
-  WORK ZONE
-  WORK COMPLETED IN PREVIOUS STAGES
-  DIRECTION OF TRAFFIC



NOTE: SEE SDD 15C04 "TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC" FOR ADVANCE SIGNS.







SEE SDD 15C03 DETAIL 4 "BARRICADES AND SIGNS FOR SIDEROAD CLOSURES" FOR ADVANCE SIGNING ON SOUTH BOUND CTH N.

ALL TRAFFIC CONTROL DEVICES TO BE INSTALLED AS PART OF A SEPERATE LOCALLY LET PROJECT (WORK BY OTHERS)



PROJECT NO: 5725-00-72	HWY: CTH D	COUNTY: LAFAYETTE	STAGE CONSTRUCTION - STAGE 4 (BY OTHERS)	SHEET	E
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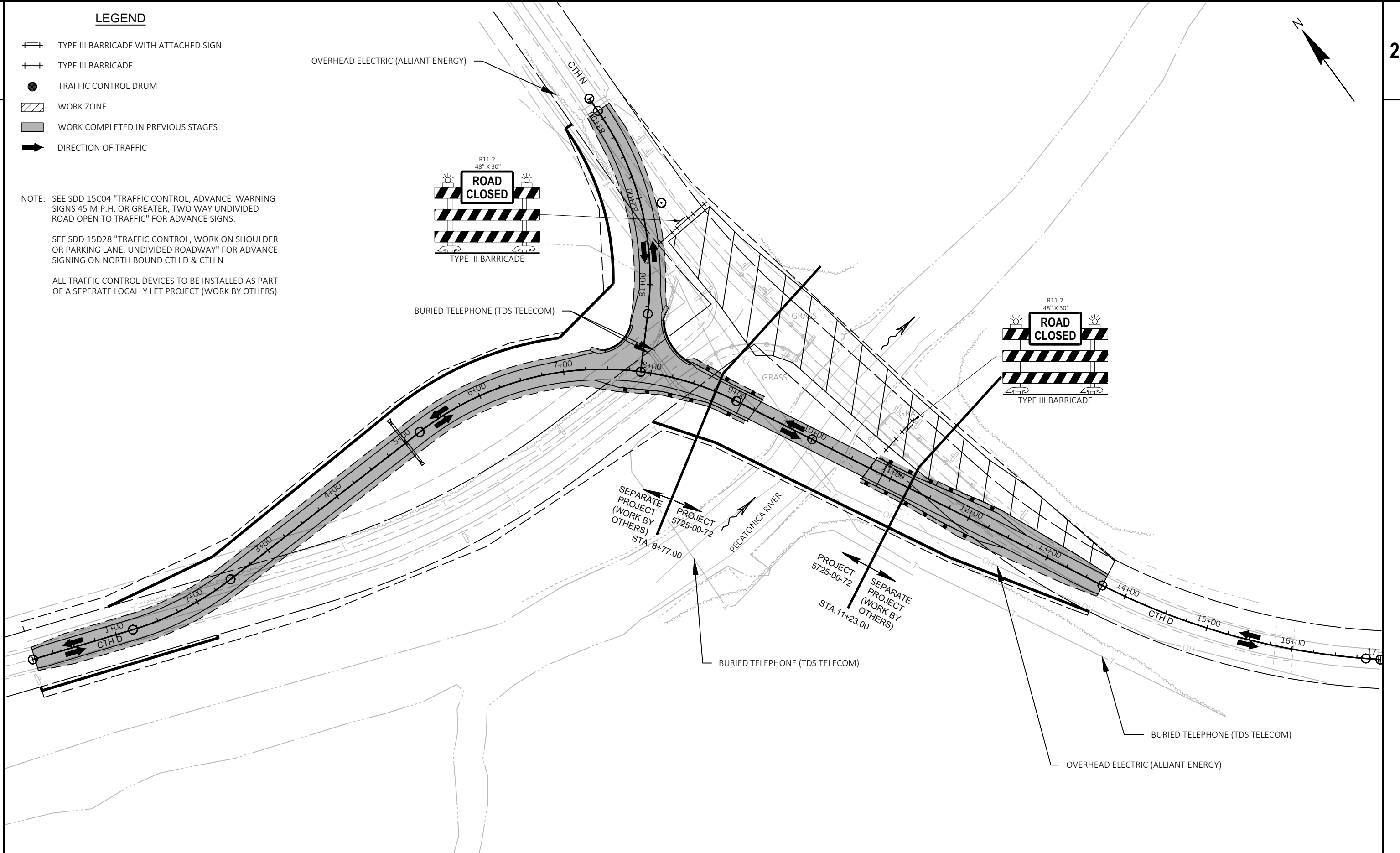
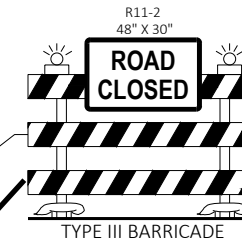
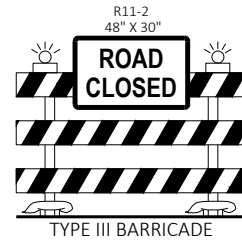
LEGEND

-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TYPE III BARRICADE
-  TRAFFIC CONTROL DRUM
-  WORK ZONE
-  WORK COMPLETED IN PREVIOUS STAGES
-  DIRECTION OF TRAFFIC

NOTE: SEE SDD 15C04 "TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC" FOR ADVANCE SIGNS.

SEE SDD 15D28 "TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY" FOR ADVANCE SIGNING ON NORTH BOUND CTH D & CTH N

ALL TRAFFIC CONTROL DEVICES TO BE INSTALLED AS PART OF A SEPERATE LOCALLY LET PROJECT (WORK BY OTHERS)



PROJECT NO: 5725-00-72	HWY: CTH D	COUNTY: LAFAYETTE	STAGE CONSTRUCTION - STAGE 5 (BY OTHERS)	SHEET
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Estimate Of Quantities

5725-00-72

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	1.000	1.000
0004	201.0205	Grubbing	STA	1.000	1.000
0006	203.0100	Removing Small Pipe Culverts	EACH	1.000	1.000
0008	203.0270	Removing Structure Over Waterway Debris Capture (structure) 01. B-33-365	EACH	1.000	1.000
0010	204.0165	Removing Guardrail	LF	593.000	593.000
0012	205.0100	Excavation Common	CY	2,261.000	2,261.000
0014	206.1000	Excavation for Structures Bridges (structure) 01. B-33-138	LS	1.000	1.000
0016	206.5000	Cofferdams (structure) 01. B-33-138	LS	1.000	1.000
0018	208.0100	Borrow	CY	2,851.000	2,851.000
0020	210.1500	Backfill Structure Type A	TON	300.000	300.000
0022	213.0100	Finishing Roadway (project) 01. 5725-00-72	EACH	1.000	1.000
0024	305.0110	Base Aggregate Dense 3/4-Inch	TON	26.000	26.000
0026	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	160.000	160.000
0028	311.0110	Breaker Run	TON	320.000	320.000
0030	415.0410	Concrete Pavement Approach Slab	SY	114.000	114.000
0032	502.0100	Concrete Masonry Bridges	CY	538.000	538.000
0034	502.1100	Concrete Masonry Seal	CY	94.000	94.000
0036	502.3200	Protective Surface Treatment	SY	664.000	664.000
0038	505.0400	Bar Steel Reinforcement HS Structures	LB	11,650.000	11,650.000
0040	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	67,120.000	67,120.000
0042	513.4061	Railing Tubular Type M	LF	297.000	297.000
0044	516.0500	Rubberized Membrane Waterproofing	SY	14.000	14.000
0046	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	1,120.000	1,120.000
0048	550.1120	Piling Steel HP 12-Inch X 53 Lb	LF	1,280.000	1,280.000
0050	606.0300	Riprap Heavy	CY	305.000	305.000
0052	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	180.000	180.000
0054	614.2300	MGS Guardrail 3	LF	187.500	187.500
0056	614.2500	MGS Thrie Beam Transition	LF	157.600	157.600
0058	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0060	618.0100	Maintenance And Repair of Haul Roads (project) 01. 5725-00-72	EACH	1.000	1.000
0062	619.1000	Mobilization	EACH	1.000	1.000
0064	624.0100	Water	MGAL	7.000	7.000
0066	625.0500	Salvaged Topsoil	SY	905.000	905.000
0068	627.0200	Mulching	SY	545.000	545.000
0070	628.1504	Silt Fence	LF	2,430.000	2,430.000
0072	628.1520	Silt Fence Maintenance	LF	4,860.000	4,860.000
0074	628.1905	Mobilizations Erosion Control	EACH	10.000	10.000
0076	628.1910	Mobilizations Emergency Erosion Control	EACH	5.000	5.000
0078	628.2008	Erosion Mat Urban Class I Type B	SY	360.000	360.000
0080	629.0210	Fertilizer Type B	CWT	0.570	0.570
0082	630.0120	Seeding Mixture No. 20	LB	25.000	25.000
0084	630.0200	Seeding Temporary	LB	60.000	60.000
0086	630.0500	Seed Water	MGAL	20.000	20.000
0088	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	4.000	4.000
0090	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0092	638.3000	Removing Small Sign Supports	EACH	6.000	6.000
0094	642.5001	Field Office Type B	EACH	1.000	1.000
0096	643.5000	Traffic Control	EACH	1.000	1.000
0098	645.0111	Geotextile Type DF Schedule A	SY	110.000	110.000

Estimate Of Quantities

5725-00-72

Line	Item	Item Description	Unit	Total	Qty
0100	645.0120	Geotextile Type HR	SY	545.000	545.000
0102	650.4500	Construction Staking Subgrade	LF	105.000	105.000
0104	650.5000	Construction Staking Base	LF	105.000	105.000
0106	650.6500	Construction Staking Structure Layout (structure) 01. B-33-0138	LS	1.000	1.000
0108	650.9910	Construction Staking Supplemental Control (project) 01. 5725-00-72	LS	1.000	1.000
0110	650.9920	Construction Staking Slope Stakes	LF	105.000	105.000
0112	715.0502	Incentive Strength Concrete Structures	DOL	3,228.000	3,228.000
0114	715.0720	Incentive Compressive Strength Concrete Pavement	DOL	500.000	500.000
0116	999.2005.S	Maintaining Bird Deterrent System (station) 01. 10+00	EACH	1.000	1.000
0118	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,000.000	1,000.000
0120	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	1,500.000	1,500.000

3

3

DIVISION	FROM/TO STATION	LOCATION	205.0100 COMMON EXCAVATION (1)		SALVAGED/UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (5)	UNEXPANDED FILL	EXPANDED FILL (6)	MASS ORDINATE +/- (7)	WASTE	208.0100 BORROW	COMMENT
			CUT (2)	EBS EXCAVATION (3)				FACTOR 1.25				
PROJECT ID 5725-00-72												
DIVISION 1B - CTH D - PROJECT 5725-00-72 (Stage 1)	08+77/09+26.72	CTH D	0	0	0	0	1,410	1,763	-1,763	0	1,763	
DIVISION 2A - CTH D - PROJECT 5725-00-72 (Stage 1)	10+73.28/11+23	CTH D	0	0	0	0	871	1,089	-1,089	0	1,089	
DIVISION 1B - CTH D - PROJECT 5725-00-72 (Stage 5)	08+77/09+26.72	CTH D	1,515	0	0	1,515	0	0	1,515	1,515	0	
DIVISION 2A - CTH D - PROJECT 5725-00-72 (Stage 5)	10+73.28/11+23	CTH D	546	0	0	546	0	0	546	546	0	
UNDISTRIBUTED			0	200								
PROJECT ID 5725-00-72			2,061	200	0	2,061	2,281	2,851	-790	2,061	2,851	
OVERALL PROJECT TOTAL			2,261									

NOTES:

- (1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100
- (2) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
- (3) EBS IS AN UNDISTRIBUTED QUANTITY. EBS EXCAVATION TO BE BACKFILLED WITH BORROW MATERIAL.
- (4) SALVAGED/UNUSABLE PAVEMENT MATERIAL
- (5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE PAVEMENT MATERIAL
- (6) EXPANDED FILL FACTOR = 1.25

DEPENDENT ON SELECTIONS:

- OR **EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED MARSH - REDUCED EBS) * FILL FACTOR**
- OR EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED EBS) * FILL FACTOR
- OR EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED MARSH) * FILL FACTOR
- OR EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK) * FILL FACTOR

(7) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

203.0100 - REMOVING SMALL PIPE

201 - CLEARING & GRUBBING

CATEGORY	STATION TO	STATION	LOCATION	201.0105 CLEARING		201.0205 GRUBBING	
				STA	STA	STA	STA
0010	9+00 -	10+00	LT	1	1		
TOTAL 0010				1	1		

CATEGORY	STATION TO	STATION	LOCATION	203.0100 REMOVING SMALL PIPE CULVERTS		REMARKS
				EACH		
0010	9+12 -	9+78	LT	1		30" CMP
TOTAL 0010				1		

204.0165 - REMOVE BEAM GUARD

CATEGORY	STATION TO	STATION	LOCATION	204.0165 REMOVING GUARDRAIL	
				LF	
0010	8+48 -	9+43	RT	128	
0010	8+48 -	9+48	RT	130	
0010	10+62 -	12+33	RT	179	
0010	10+68 -	12+19	RT	156	
TOTAL 0010				593	

415 - CONCRETE APPROACH SLAB

CATEGORY	STATION TO	STATION	LOCATION	415.0410 CONCRETE PAVEMENT APPROACH SLAB	
				SY	
0030	9+10 -	9+27	LT&RT	57	
0030	10+73 -	10+90	LT&RT	57	
TOTAL 0010				114	

311- BASE AGGREGATE

614- BEAM GUARD

CATEGORY	STATION	TO	STATION	LOCATION	305.0110	305.0120	311.0110	624.0100
					BASE AGGREGATE DENSE 3/4-INCH TON	BASE AGGREGATE DENSE 1 1/4-INCH TON	BREAKER RUN TON	WATER MGAL
0010	8+77	-	9+10	LT&RT	13	80	160	4
0010	10+90	-	11+23	LT&RT	13	80	160	3
TOTAL 0010					26	160	320	7

CATEGORY	STATION	TO	STATION	LOCATION	614.2500	614.2300	614.2610
					MGS THRIE BEAM TRANSITION LF	MGS GUARDRAIL 3 LF	MGS GUARDRAIL TERMINAL EAT EACH
0010	7+64	-	9+26	RT	39.4	62.5	1
0010	8+43	-	9+31	LT	39.4	-	1
0010	10+69	-	12+24	RT	39.4	62.5	1
0010	10+74	-	12+29	LT	39.4	62.5	1
TOTAL 0010					157.6	187.5	4

628- EC MOBILIZATION

CATEGORY	LOCATION	628.1905	628.1910
		MOBILIZATIONS EROSION CONTROL EACH	MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
0010	Project 5725-00-72	10	5
TOTAL 0010		10	5

630- FINISHING ITEMS

CATEGORY	STATION	TO	STATION	LOCATION	625.0500	627.0200	628.1504	628.1520	628.2008	629.0210	630.0120	630.0200	630.0500
					SALVAGED TOPSOIL SY	MULCHING SY	SILT FENCE LF	SILT FENCE MAINTENANCE LF	EROSION MAT URBAN CLASS I TYPE B SY	FERTILIZER TYPE B CWT	SEEDING MIXTURE NO. 20 LB	SEEDING TEMPORARY LB	SEED WATER MGAL
0010	8+77	-	9+23	LT&RT	587	387	1,004	2,008	200	0.37	16	-	13
0010	9+23	-	10+73	LT&RT	-	-	422	844	-	-	-	-	-
0010	10+73	-	11+23	LT&RT	318	158	1,004	2,008	160	0.20	9	-	7
0010	UNDISTRIBUTED				-	-	-	-	-	-	-	60	-
TOTAL 0010					905	545	2,430	4,860	360	0.57	25	60	20

637-PERMANENT SIGNING

CATEGORY	STATION	LOCATION	634.0614 POSTS WOOD 4X6-INCH X 14-FT EACH	637.2230 SIGNS TYPE II REFLECTIVE F SF	REMARKS
0010	9+24	RT	1	3	W5-52R
0010	9+30	LT	1	3	W5-52L
0010	10+72	RT	1	3	W5-52R
0010	10+74	LT	1	3	W5-52L
TOTAL 0010			4	12	

638-REMOVING SIGNS

CATEGORY	STATION	LOCATION	638.3000 REMOVING SMALL SIGN SUPPORTS EACH
0010	9+33	LT	1
0010	9+43	LT	1
0010	9+51	LT	1
0010	10+58	LT	1
0010	10+70	LT	1
0010	10+98	LT	1
TOTAL 0010			6

650-CONSTRUCTION STAKING

CATEGORY	STATION	TO	STATION	LOCATION	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF	650.9910.01 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (LOCAL) (01. TBD) LS
0010	8+77	-	9+27	LT&RT	55	55	55	-
0010	10+73	-	11+23	LT&RT	50	50	50	-
0010	PROJECT ID 5725-00-72				-	-	-	1
TOTAL 0010					105	105	105	1

R/W PROJECT NUMBER 5725-00-02	SHEET NUMBER 4.01	TOTAL SHEETS 2
CONSTRUCTION PROJECT NUMBER 5725-00-72		
PLAT OF RIGHT OF WAY REQUIRED FOR STH 11 - CTH N PECATONICA RIVER BRIDGE B-33-0138		
CTH D	LAFAYETTE COUNTY	

CONVENTIONAL SYMBOLS

SECTION LINE		PARCEL NUMBER	UTILITY NUMBER
QUARTER LINE		SECTION CORNER	R/W MONUMENT
SIXTEENTH LINE		NOTATION FOR COMBUSTIBLE FLUIDS	NON-MONUMENTED R/W POINT
NEW REFERENCE LINE		NOTATION FOR HIGH VOLTAGE TRANSMISSION LINES	FOUND IRON PIN
NEW R/W LINE		CAUTION	VALVE (GAS, WATER, ETC.)
EXISTING R/W LINE			(TYPE)
PROPERTY LINE			SIGN
LOT, TIE, AND OTHER MINOR LINES			OFF-PREMISE SIGN
SLOPE INTERCEPT			
CORPORATE LIMITS			
UNDERGROUND FACILITY (COMMUNICATIONS, ELECTRIC, ETC.)			

FEE ACQUISITION AREA (HATCHING VARIES BY OWNER)		ACCESS CONTROLLED BY ACQUISITION	
TEMP. LIMITED EASEMENT AREA		NO ACCESS (BY STATUTORY AUTHORITY)	
EASEMENT AREA (HIGHWAY, PERMANENT LIMITED, OR RESTRICTED DEVELOPMENT)		ACCESS RESTRICTED (BY PREVIOUS PROJECT OR CONTROL)	
TRANSMISSION STRUCTURES		NO ACCESS (NEW HIGHWAY)	
BUILDING		NATIONAL GEODETIC SURVEY MONUMENT	
BUILDING (TO BE REMOVED)		SIXTEENTH CORNER MONUMENT	
BRIDGE		PARALLEL OFFSETS	

CONVENTIONAL UTILITY SYMBOLS

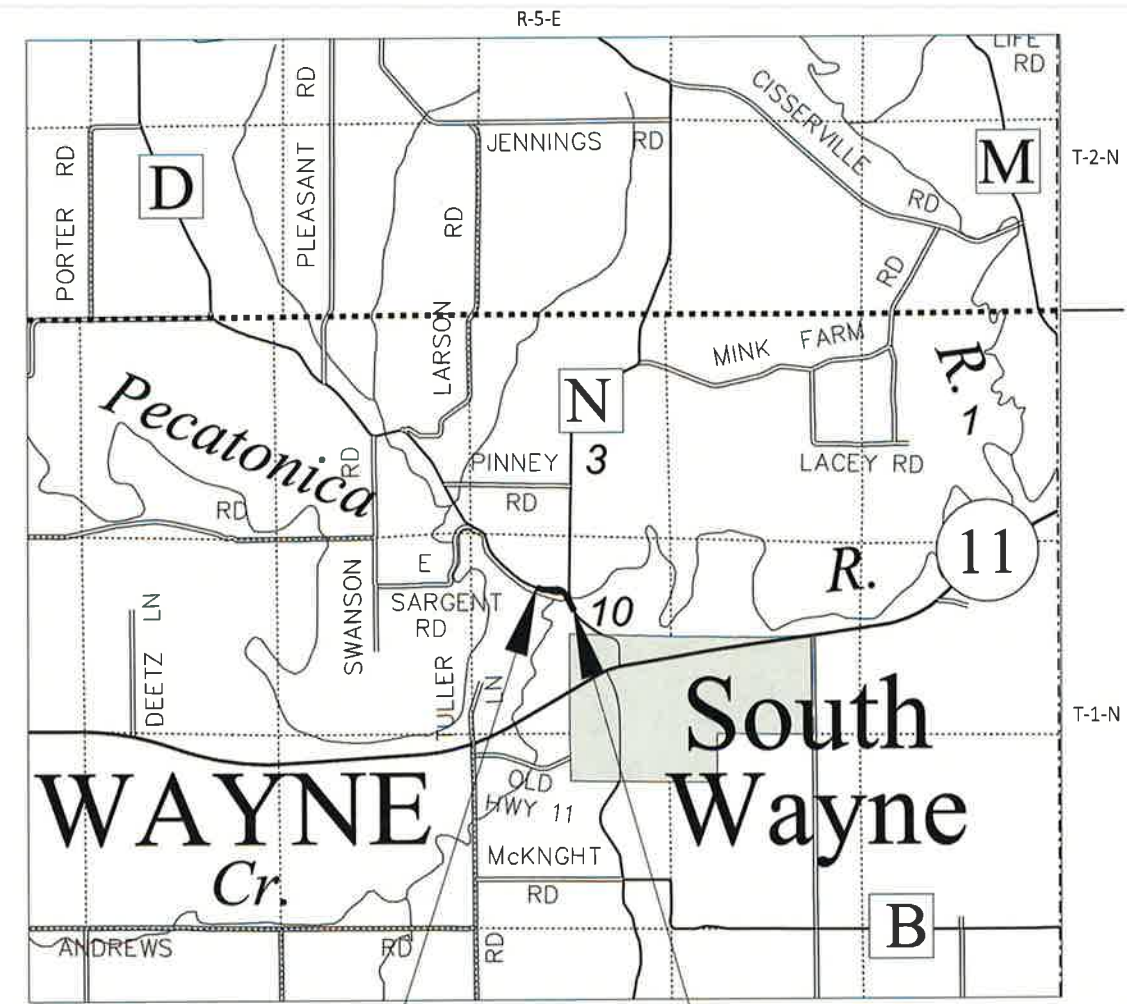
WATER		NON-COMPENSABLE	
GAS		COMPENSABLE	
TELEPHONE			
OVERHEAD TRANSMISSION LINES			
ELECTRIC			
CABLE TELEVISION			
FIBER OPTIC			
SANITARY SEWER			
STORM SEWER			
ELECTRIC TOWER			
POWER POLE			
TELEPHONE POLE			
TELEPHONE PEDESTAL			

CURVE DATA ABBREVIATIONS

LONG CHORD	LCH
LONG CHORD BEARING	LCB
RADIUS	R
DEGREE OF CURVE	D
CENTRAL ANGLE	Δ / DELTA
LENGTH OF CURVE	L
TANGENT	T
DIRECTION AHEAD	DA
DIRECTION BACK	DB

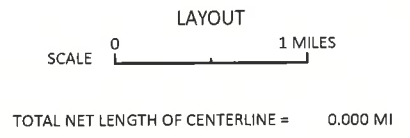
CONVENTIONAL ABBREVIATIONS

ACCESS RIGHTS	AR	NUMBER	NO
ACRES	AC	OUTLOT	OL
AHEAD	AH	PAGE	P
ALUMINUM	ALUM	POINT OF TANGENCY	PT
AND OTHERS	ET AL	PROPERTY LINE	PL
BACK	BK	RECORDED AS	(100')
BLOCK	BLK	REEL / IMAGE	R/I
CENTERLINE	C/L	REFERENCE LINE	R/L
CERTIFIED SURVEY MAP	CSM	PERMANENT LIMITED EASEMENT	PLE
CONCRETE	CONC	POINT OF BEGINNING	POB
COUNTY	CO	POINT OF CURVATURE	PC
COUNTY TRUNK HIGHWAY	CTH	POINT OF COMPOUND CURVE	PCC
DISTANCE	DIST	POINT OF INTERSECTION	PI
CORNER	COR	REMAINING	REM
DOCUMENT NUMBER	DOC	RESTRICTIVE DEVELOPMENT EASEMENT	RDE
EASEMENT	EASE	RIGHT	RT
EXISTING	EX	RIGHT OF WAY	R/W
GARAGE	GRG	SECTION	SEC
GAS VALVE	GV	SEPTIC VENT	SEPV
GRID NORTH	GN	SQUARE FEET	SF
HIGHWAY EASEMENT	HE	STATE TRUNK HIGHWAY	STH
HOUSE	HSE	STATION	STA
IDENTIFICATION	ID	TELEPHONE PEDESTAL	TP
LAND CONTRACT	LC	TEMPORARY LIMITED EASEMENT	TLE
LEFT	LT	TRANSPORTATION PROJECT PLAT	TPP
MONUMENT	MON	UNITED STATES HIGHWAY	USH
NATIONAL GEODETIC SURVEY	NGS	VOLUME	V



BEGIN RELOCATION ORDER
STA 0+00.45
 1,290.46' SOUTH OF AND 907.54' WEST OF THE NORTH QUARTER CORNER OF SEC. 10, T-1-N, R-5-E

END RELOCATION ORDER
STA 13+71.11
 662.80' NORTH OF AND 115.78' EAST OF THE CENTER OF SEC. 10, T-1-N, R-5-E



NOTES:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), LAFAYETTE COUNTY, NAD83 (2011) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

RIGHT-OF-WAY MONUMENTS ARE TYPE 2 AND ARE PLACED PRIOR TO OR AT THE TIME OF LAND TITLE TRANSFER.

RIGHT-OF-WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY SYSTEM OR OTHER "SURVEYS" OF PUBLIC RECORD.

EXISTING HIGHWAY RIGHT-OF-WAY FOR CTH D AND CTH N ESTABLISHED FROM THE CENTERLINE OF EXISTING PAVEMENTS.

DIMENSIONS FOR THE NEW RIGHT-OF-WAY IS MEASURED ALONG AND PERPENDICULAR TO THE NEW REFERENCE LINES.

A TEMPORARY LIMITED EASEMENT (TLE) IS A RIGHT FOR CONSTRUCTION PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON, THE RIGHT OF INGRESS AND EGRESS, AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM DESIRABLE. ALL (TLES) ON THIS PLAT EXPIRE AT THE COMPLETION OF THE CONSTRUCTION PROJECT FOR WHICH THIS INSTRUMENT IS GIVEN.

CAUTION:
 THIS PLAT IS FOR ILLUSTRATIVE PURPOSES ONLY. DEEDS MUST BE CHECKED TO DETERMINE PROPERTY BOUNDARIES.

ACCEPTED FOR LAFAYETTE COUNTY

DATE: _____ (Highway Commissioner)

ORIGINAL PLAT PREPARED BY

MSA

ENGINEERING | ARCHITECTURE | SURVEYING
 FUNDING | PLANNING | ENVIRONMENTAL
 1702 Parkratz Street, Madison, WI 53704
 (608) 242-7779 www.msa-ps.com
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WISCONSIN LAND SURVEYOR

KEVIN C. LORD
 S-2645
 MADISON, WIS.

DATE: 1-8-2021

(Professional Land Surveyor)

PI = 0+00.45 Y = 127,743.092 X = 543,987.315
 PI = 1+83.60 Y = 127,681.849 X = 544,159.927
 PI = 7+34.68 Y = 127,698.636 X = 544,712.218
 PI = 13+71.11 Y = 127,090.758 X = 545,023.622

BEGIN RELOCATION ORDER

STA 0+00.45
 Y = 127,743.092
 X = 543,987.315

R/W POINT COORDINATES

PT. NO.	Y	X
100	127,774.704	543,998.531
101	127,741.006	544,092.206
102	127,716.774	544,222.756
103	127,730.736	544,487.698
104	127,684.867	544,689.340
105	127,698.444	544,775.562
106	127,873.671	544,836.037
107	127,873.435	544,845.179
108	127,871.732	544,911.158
109	127,762.211	544,908.856
110	127,573.832	544,926.817
111	127,288.261	544,988.020
112	127,105.643	545,052.679
200	127,712.502	543,976.462
201	127,708.221	543,974.943
202	127,638.011	544,172.833
203	127,641.420	544,174.059
204	127,597.898	544,295.043
205	127,543.286	544,626.885
206	127,545.043	544,718.903
207	127,483.114	544,763.076
208	127,220.248	544,901.108
209	127,215.873	544,903.915
210	127,075.551	544,993.938

R/W COURSE TABLE

COURSE	BEARING	DISTANCE
100 - 101	S70° 12' 53"E	99.55'
101 - 102	S79° 29' 06"E	132.78'
102 - 103	N86° 59' 00"E	265.31'
104 - 105	N81° 03' 05"E	87.28'
106 - 107	S88° 31' 17"E	9.15'
108 - 109	S01° 12' 15"W	109.55'
110 - 111	S12° 05' 48"E	292.06'
210 - 209	N32° 40' 55"W	166.72'
209 - 208	N32° 40' 55"W	5.20'
208 - 207	N27° 42' 15"W	296.90'
207 - 206	N35° 29' 59"W	76.07'
206 - 205	S88° 54' 22"W	92.04'
204 - 203	N70° 12' 53"W	128.57'
203 - 202	S19° 47' 07"W	3.62'
202 - 201	N70° 27' 56"W	209.98'
201 - 200	N19° 32' 04"E	4.54'

EASEMENT TABLE

UTILITY NUMBER	OWNER	RECORDING INFORMATION	LOCATED IN R/W PARCEL
50	ALIIANT ENERGY	DOC. 131401A V. 10, P. 423	1 & 2
51	TDS TELECOM	DOC. 210522 V. 50, P. 154	1
51	TDS TELECOM	DOC. 186681 V. 35, P. 17	2
51	TDS TELECOM	DOC. 254770 V. 68, P. 758	2

R/W COURSE CURVE TABLE

COURSE	CURVE LENGTH	CHORD LENGTH	CHORD BEARING	DELTA	RADIUS
103 - 104	209.45'	206.79'	S77° 11' 05"E	31° 39' 49" RT	379.00'
105 - 106	188.58'	185.37'	N19° 02' 26"E	36° 44' 20" LT	294.10'
109 - 110	189.66'	189.23'	S05° 26' 46"E	13° 18' 02" LT	817.00'
111 - 112	194.27'	193.73'	S19° 29' 50"E	14° 48' 05" LT	752.00'
205 - 204	338.17'	336.31'	N80° 39' 16"W	20° 52' 45" RT	928.00'

SCHEDULE OF LANDS & INTERESTS REQUIRED

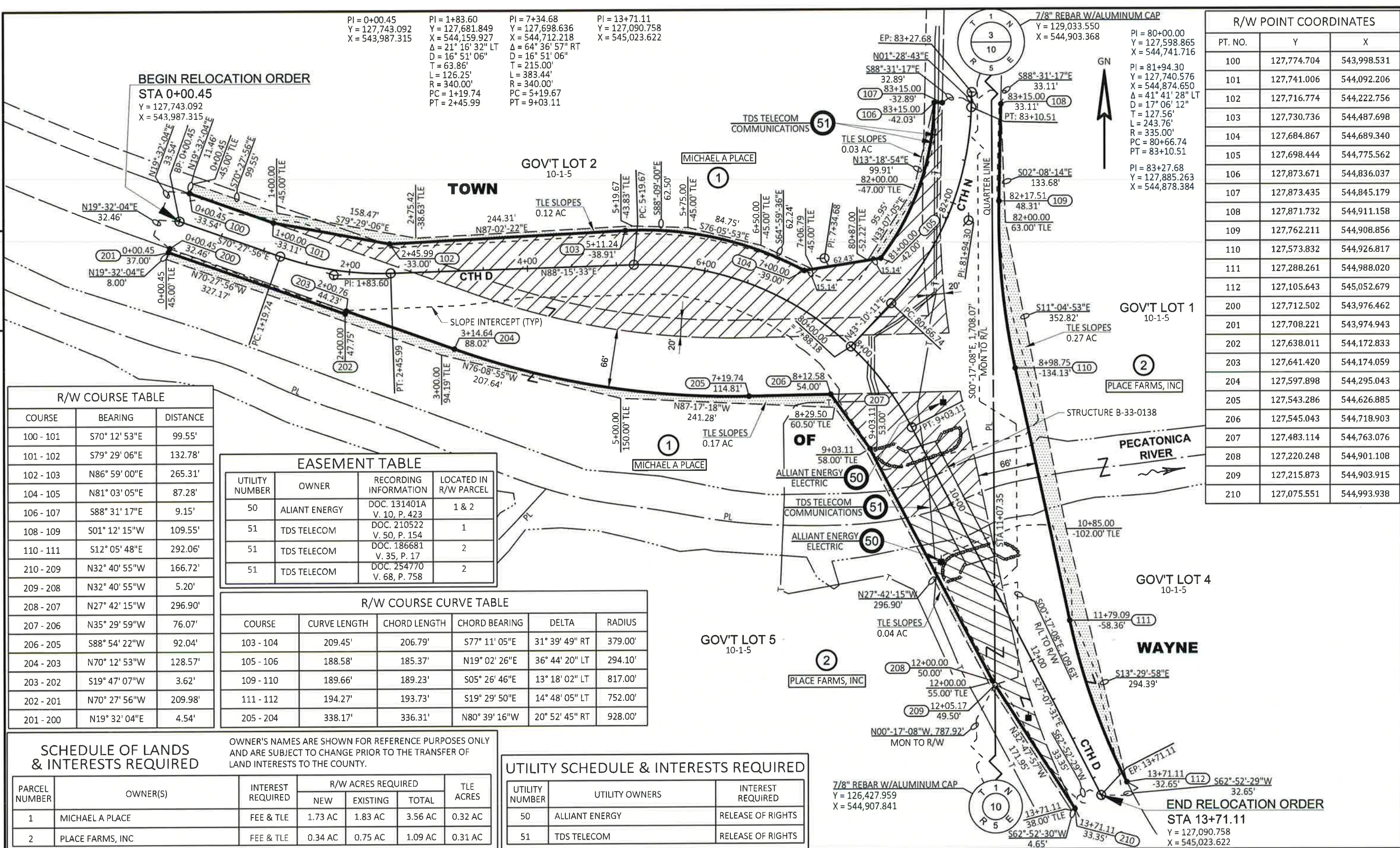
PARCEL NUMBER	OWNER(S)	INTEREST REQUIRED	R/W ACRES REQUIRED			TLE ACRES
			NEW	EXISTING	TOTAL	
1	MICHAEL A PLACE	FEE & TLE	1.73 AC	1.83 AC	3.56 AC	0.32 AC
2	PLACE FARMS, INC	FEE & TLE	0.34 AC	0.75 AC	1.09 AC	0.31 AC

OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE COUNTY.

UTILITY SCHEDULE & INTERESTS REQUIRED

UTILITY NUMBER	UTILITY OWNERS	INTEREST REQUIRED
50	ALIIANT ENERGY	RELEASE OF RIGHTS
51	TDS TELECOM	RELEASE OF RIGHTS

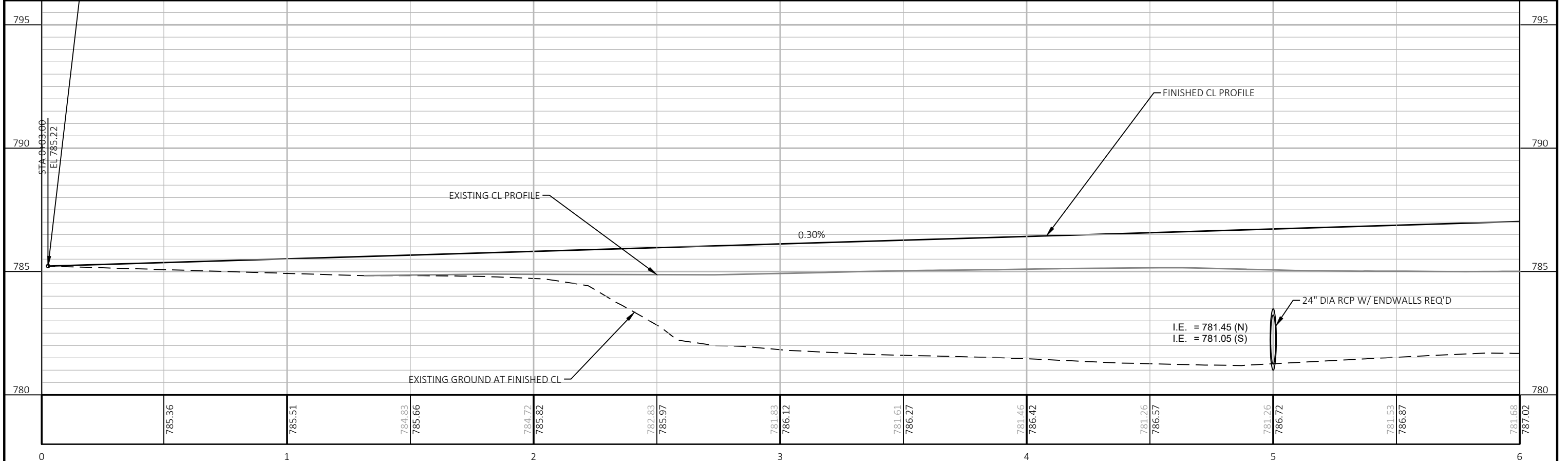
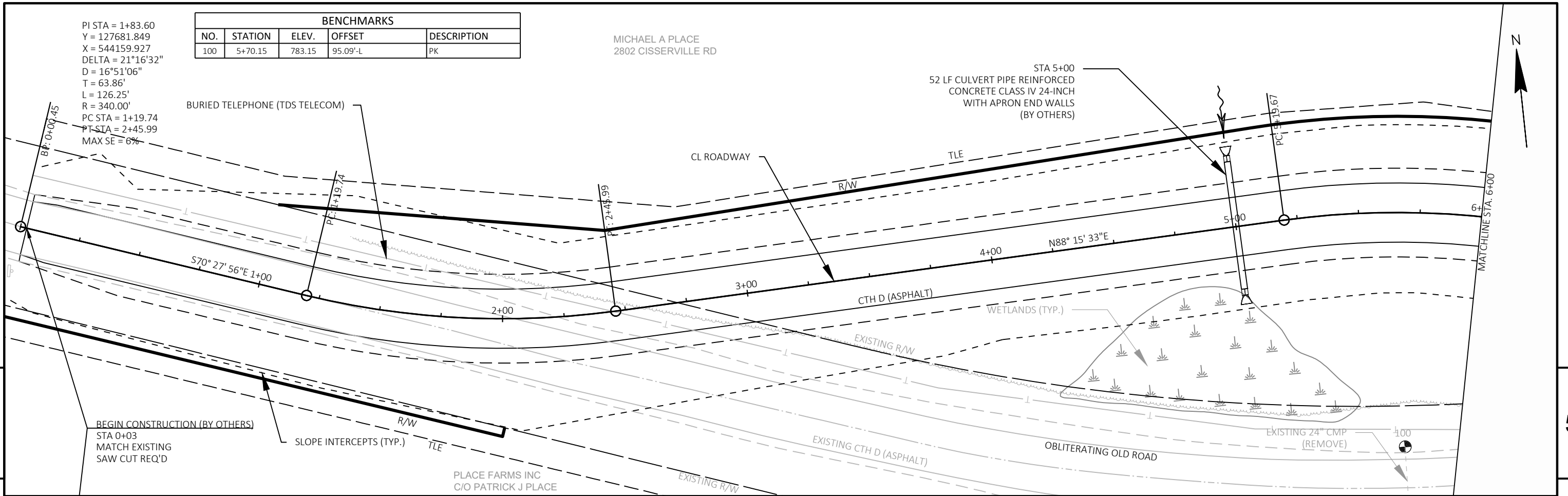
REVISION DATE	DATE DECEMBER 23, 2020	SCALE, FEET	HWY: CTH D	STATE R/W PROJECT NUMBER 5725-00-02	PLAT SHEET 4.02
		0 50 100	COUNTY: LAFAYETTE	CONSTRUCTION PROJECT NUMBER 5725-00-72	PS&E SHEET
FILE NAME : 040101_RP.DWG	DATE : 12/28/2020 6:38 AM		PLOT BY : BRAD LEE	PLOT NAME :	PLOT SCALE : 1 IN=100 FT
LAYOUT NAME - 040102_rp					WISDOT/CADDS SHEET 75



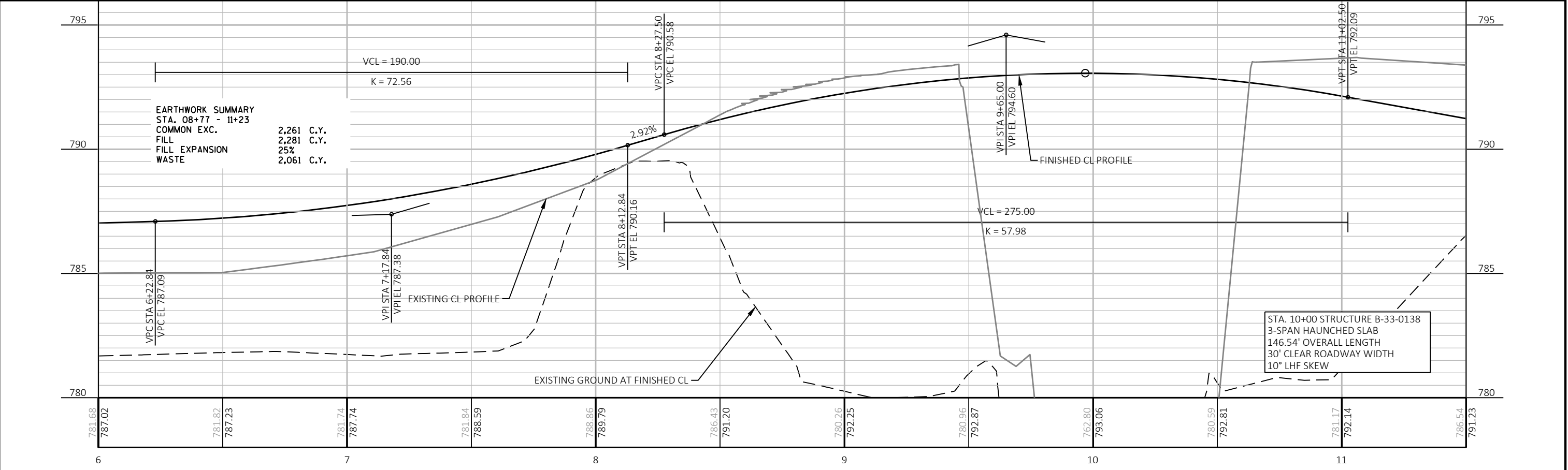
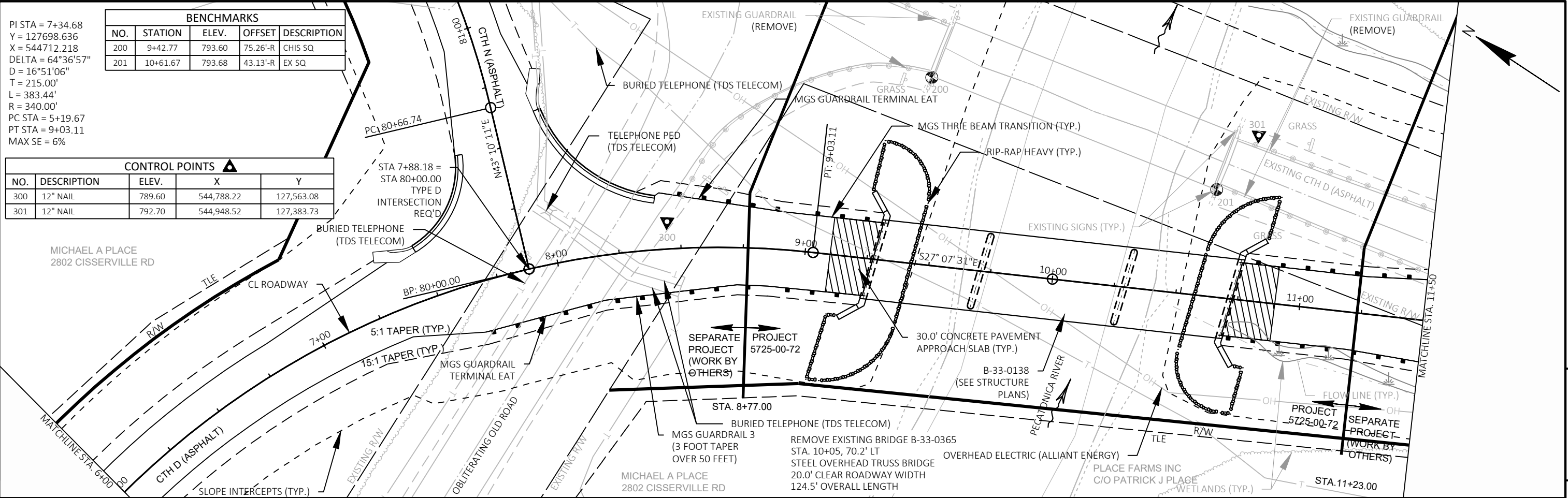
PI STA = 1+83.60
 Y = 127681.849
 X = 544159.927
 DELTA = 21°16'32"
 D = 16°51'06"
 T = 63.86'
 L = 126.25'
 R = 340.00'
 PC STA = 1+19.74
 PT STA = 2+45.99
 MAX SE = 6%

BENCHMARKS				
NO.	STATION	ELEV.	OFFSET	DESCRIPTION
100	5+70.15	783.15	95.09'-L	PK

MICHAEL A PLACE
 2802 CISSERVILLE RD



PROJECT NO: 5725-00-72	HWY: CTH D	COUNTY: LAFAYETTE	PLAN AND PROFILE: CTH D	SHEET E
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PROJECT NO: 5725-00-72	HWY: CTH D	COUNTY: LAFAYETTE	PLAN AND PROFILE: CTH D	SHEET: E
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PI STA = 7+34.68
 Y = 127698.636
 X = 544712.218
 DELTA = 64°36'57"
 D = 16°51'06"
 T = 215.00'
 L = 383.44'
 R = 340.00'
 PC STA = 5+19.67
 PT STA = 9+03.11
 MAX SE = 6%

BENCHMARKS				
NO.	STATION	ELEV.	OFFSET	DESCRIPTION
200	9+42.77	793.60	75.26'-R	CHIS SQ
201	10+61.67	793.68	43.13'-R	EX SQ

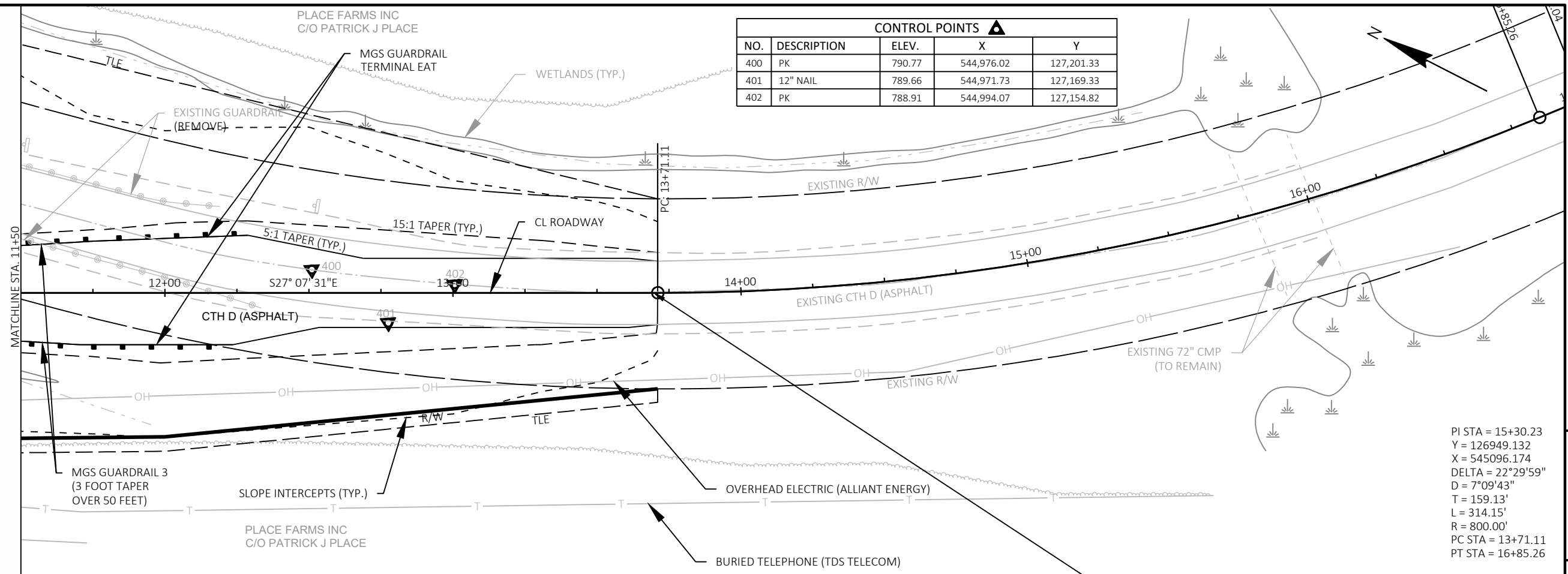
CONTROL POINTS				
NO.	DESCRIPTION	ELEV.	X	Y
300	12" NAIL	789.60	544,788.22	127,563.08
301	12" NAIL	792.70	544,948.52	127,383.73

EARTHWORK SUMMARY
 STA. 08+77 - 11+23
 COMMON EXC. 2,261 C.Y.
 FILL 2,281 C.Y.
 FILL EXPANSION 25%
 WASTE 2,061 C.Y.

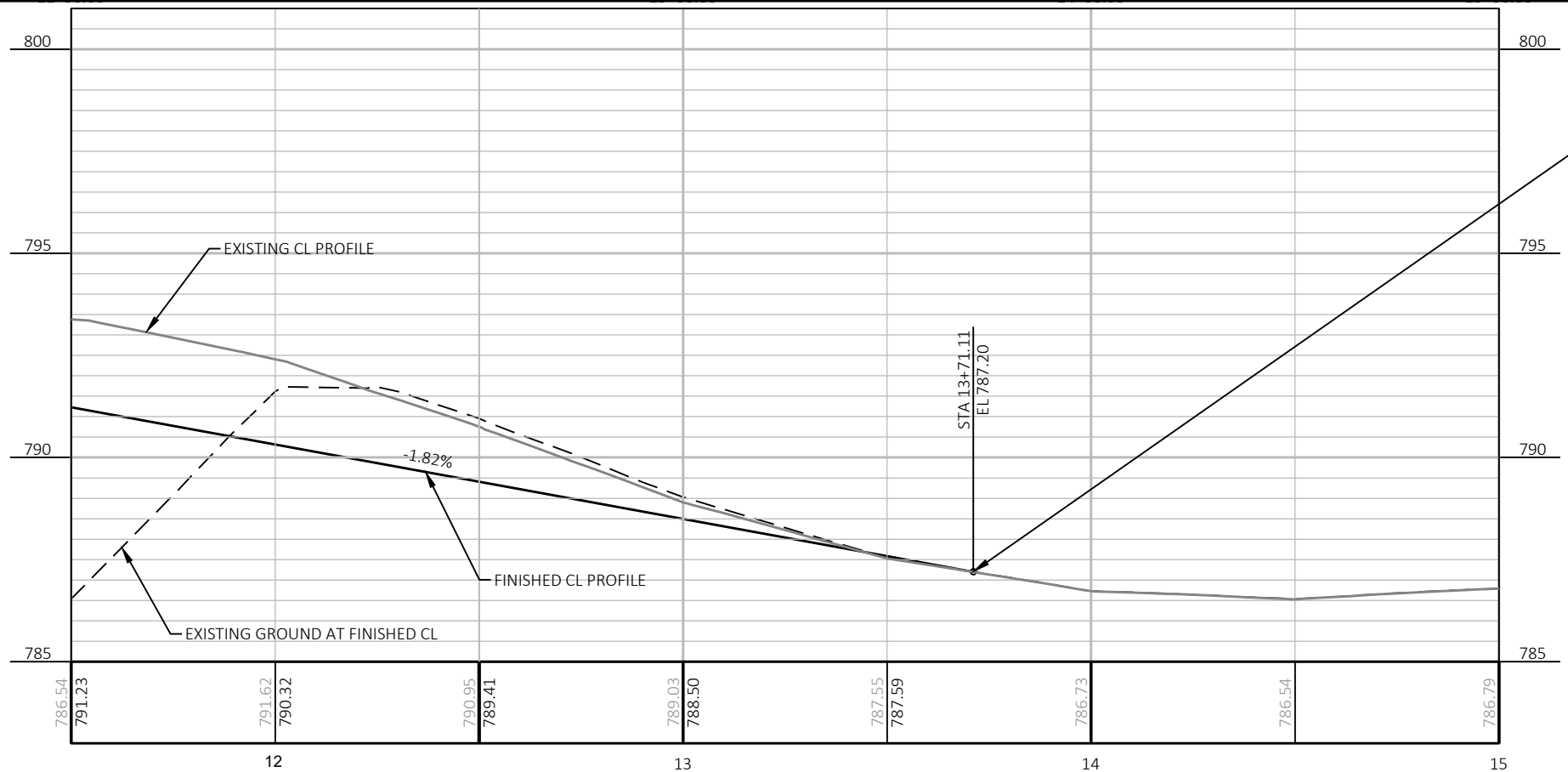
STA. 10+00 STRUCTURE B-33-0138
 3-SPAN HAUNCHED SLAB
 146.54' OVERALL LENGTH
 30' CLEAR ROADWAY WIDTH
 10° LHF SKEW

PLACE FARMS INC
C/O PATRICK J PLACE

CONTROL POINTS ▲				
NO.	DESCRIPTION	ELEV.	X	Y
400	PK	790.77	544,976.02	127,201.33
401	12" NAIL	789.66	544,971.73	127,169.33
402	PK	788.91	544,994.07	127,154.82

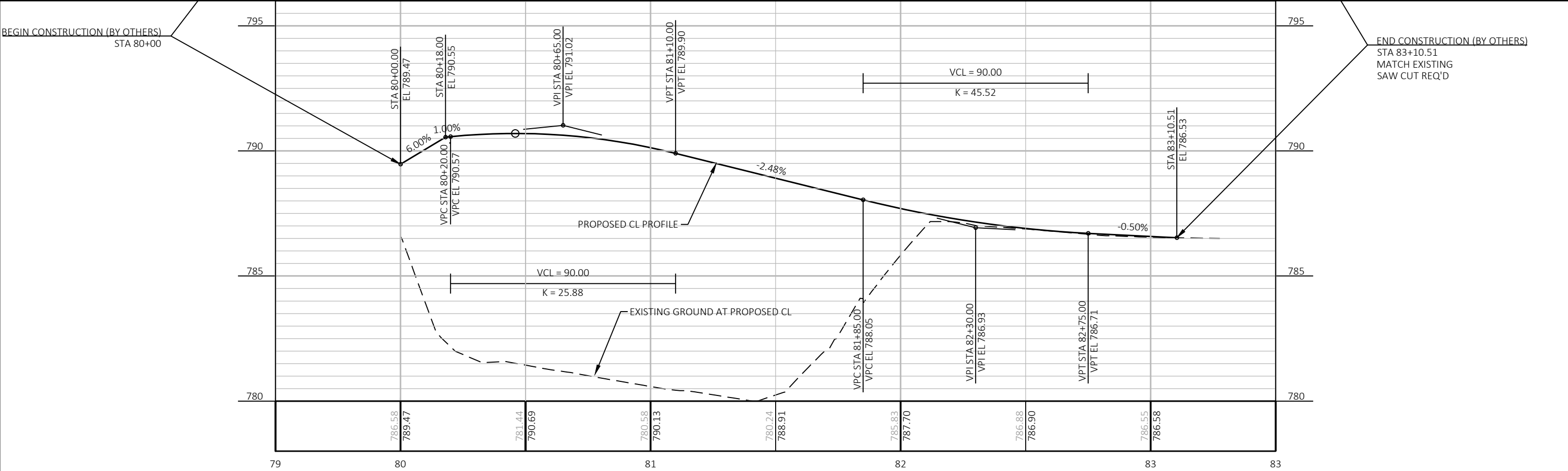
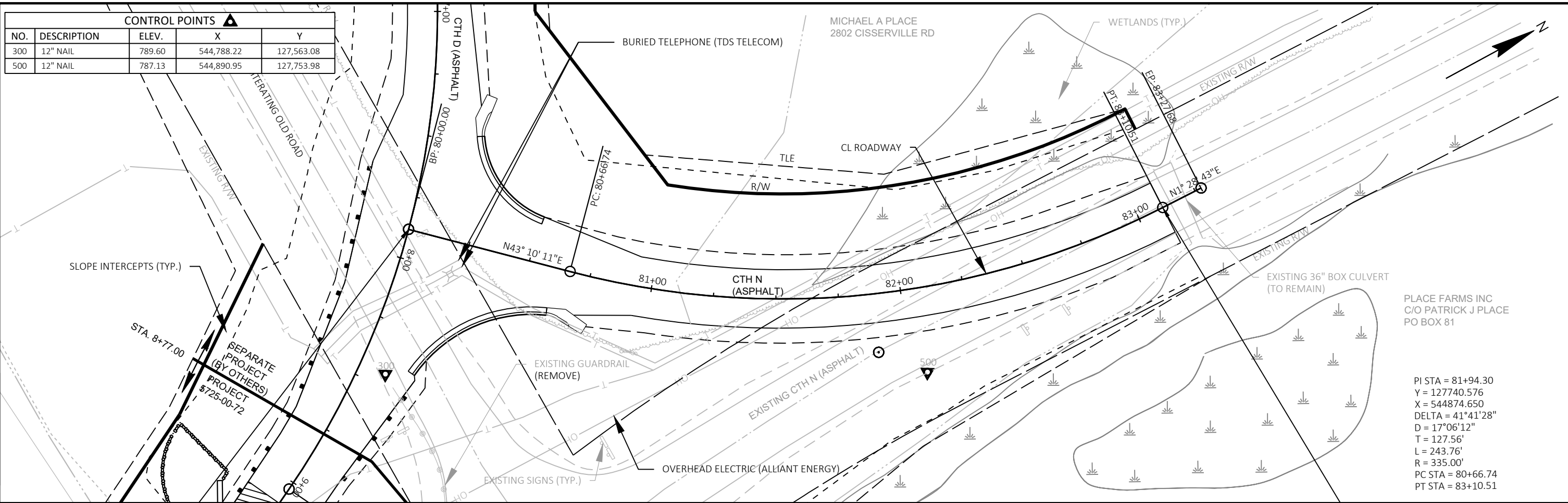


PI STA = 15+30.23
Y = 126949.132
X = 545096.174
DELTA = 22°29'59"
D = 7°09'43"
T = 159.13'
L = 314.15'
R = 800.00'
PC STA = 13+71.11
PT STA = 16+85.26



END CONSTRUCTION (BY OTHERS)
STA 13+71.11
MATCH EXISTING
SAW CUT REQ'D

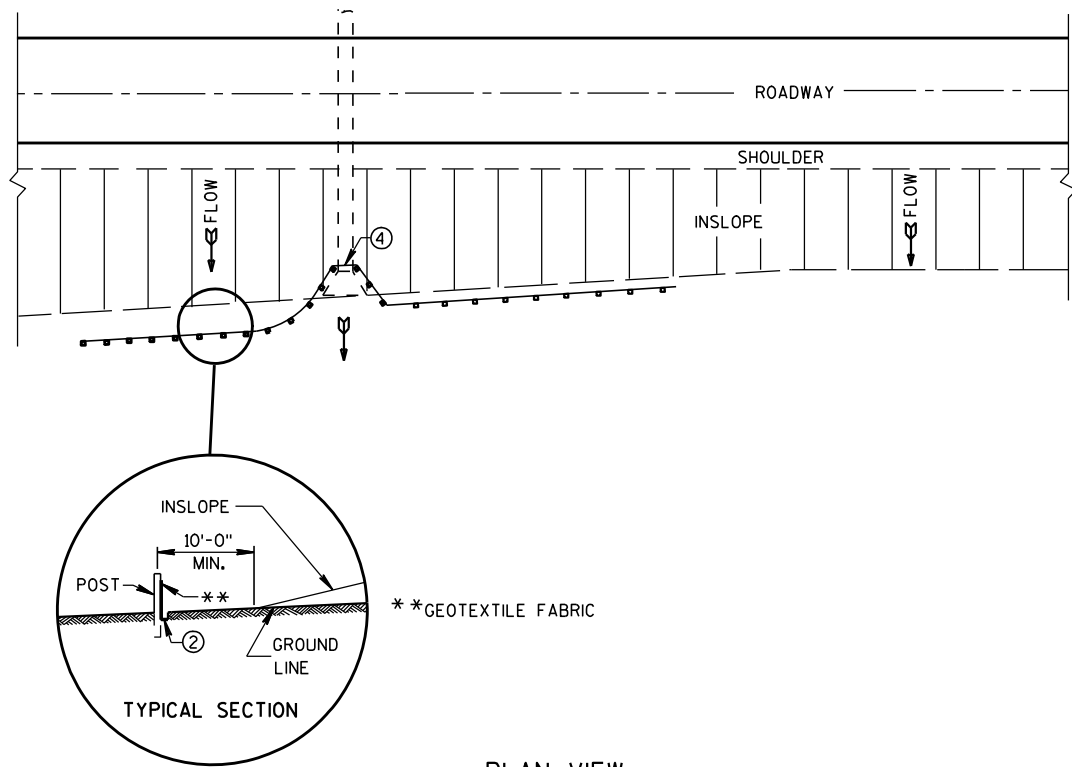
CONTROL POINTS				
NO.	DESCRIPTION	ELEV.	X	Y
300	12" NAIL	789.60	544,788.22	127,563.08
500	12" NAIL	787.13	544,890.95	127,753.98



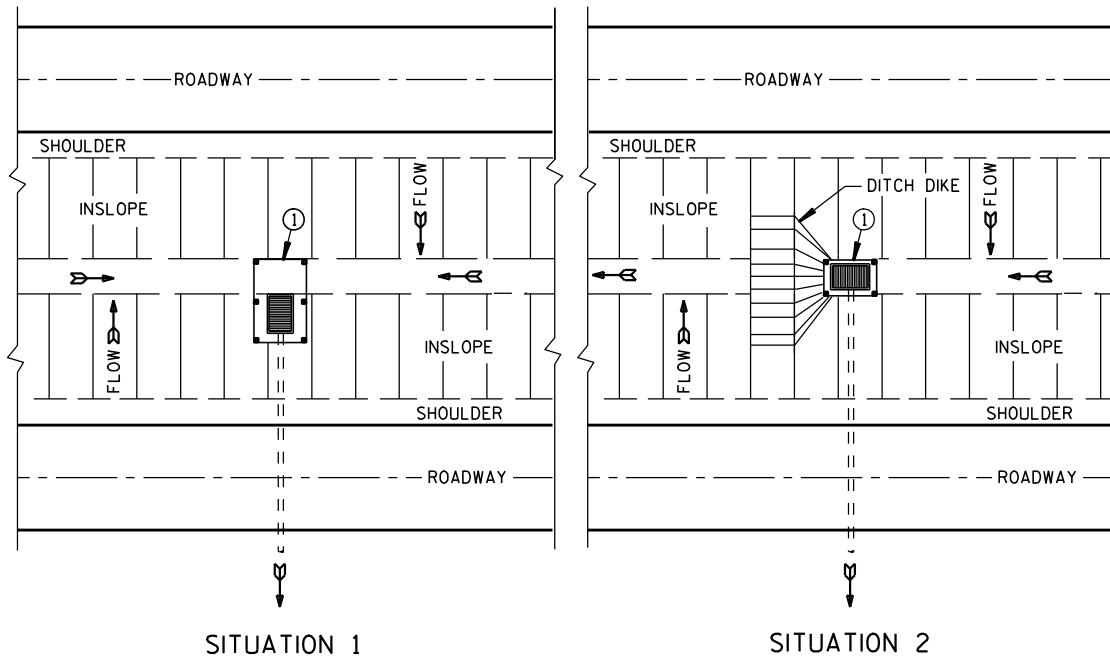
PROJECT NO: 5725-00-72 HWY: CTH D COUNTY: LAFAYETTE PLAN AND PROFILE: CTH N SHEET: E

Standard Detail Drawing List

08E09-06	SILT FENCE
12A03-10	NAME PLATE (STRUCTURES)
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05K	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05L	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

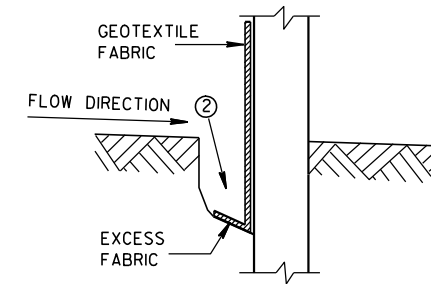


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

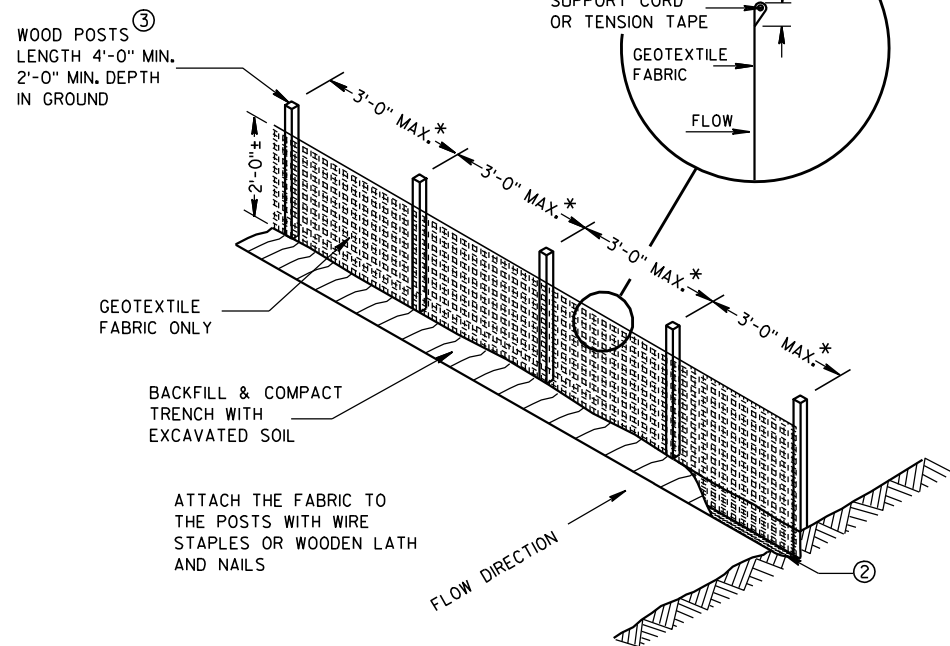
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

- 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.



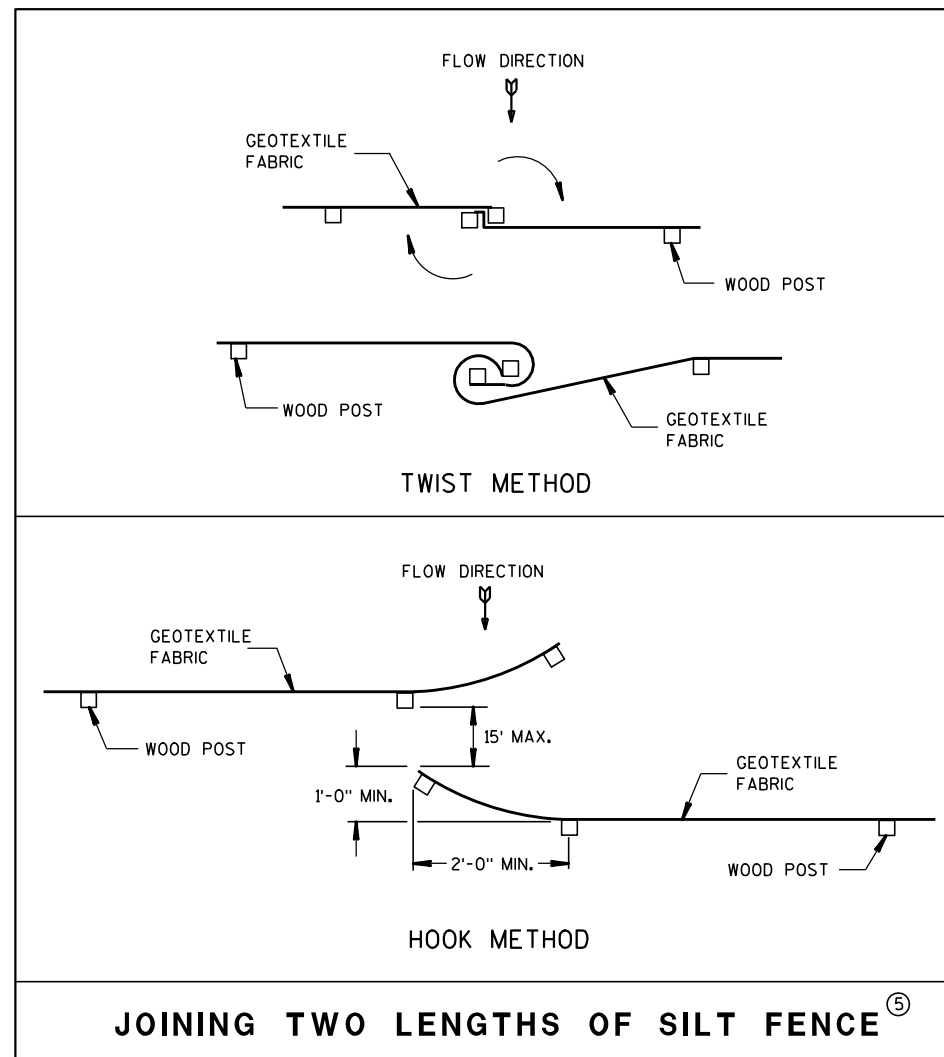
TRENCH DETAIL

NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS

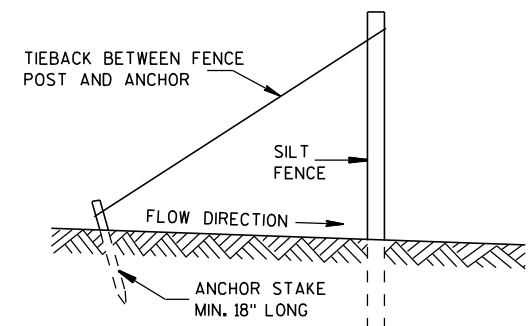


SILT FENCE

* NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.



JOINING TWO LENGTHS OF SILT FENCE ⑤

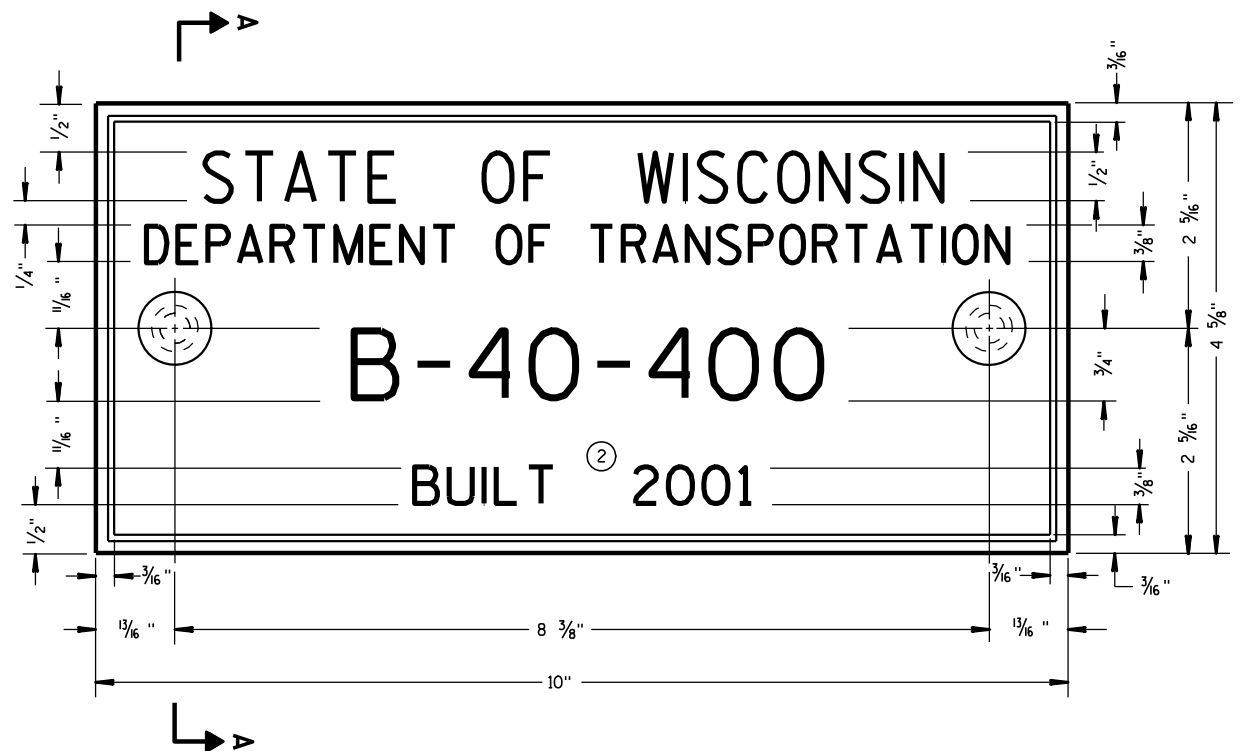


SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



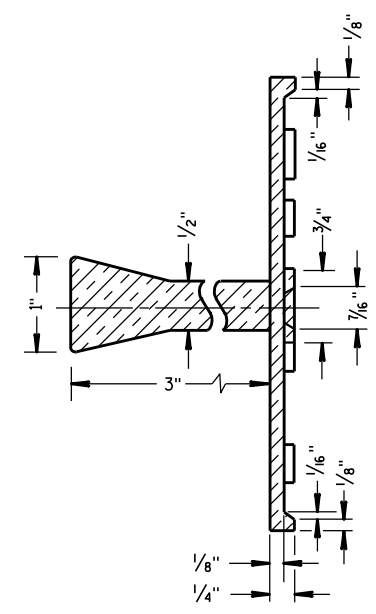
TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)

GENERAL NOTES

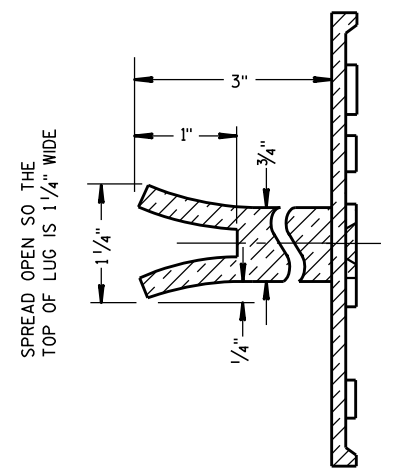
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG

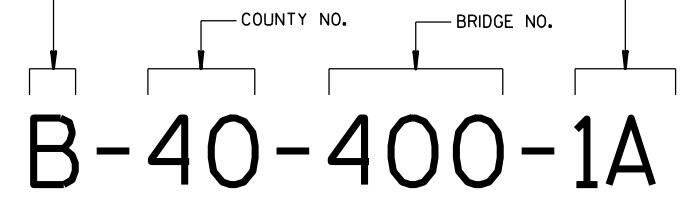
6

6

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

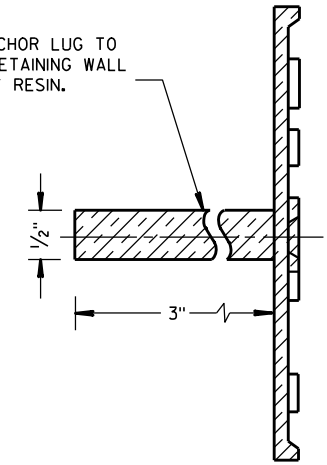
B = BRIDGE
C = CULVERT
R = RETAINING WALL

UNIT NO. FOR MULTIPLE
UNIT BRIDGE



**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

- ① ADHERE ANCHOR LUG TO PRECAST RETAINING WALL WITH EPOXY RESIN.

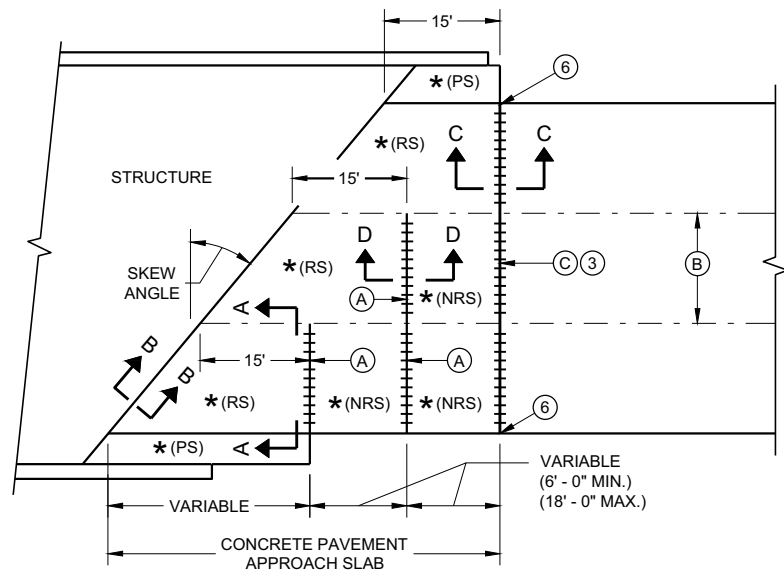


ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

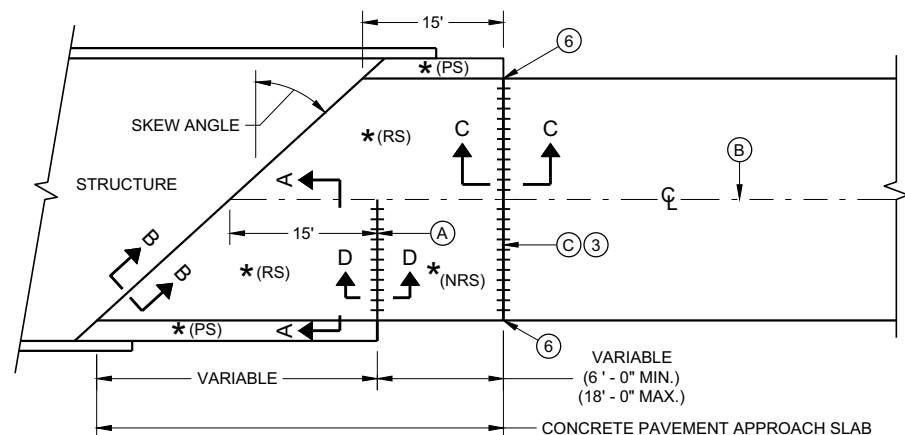
S.D.D. 12 A 3-10

S.D.D. 12 A 3-10

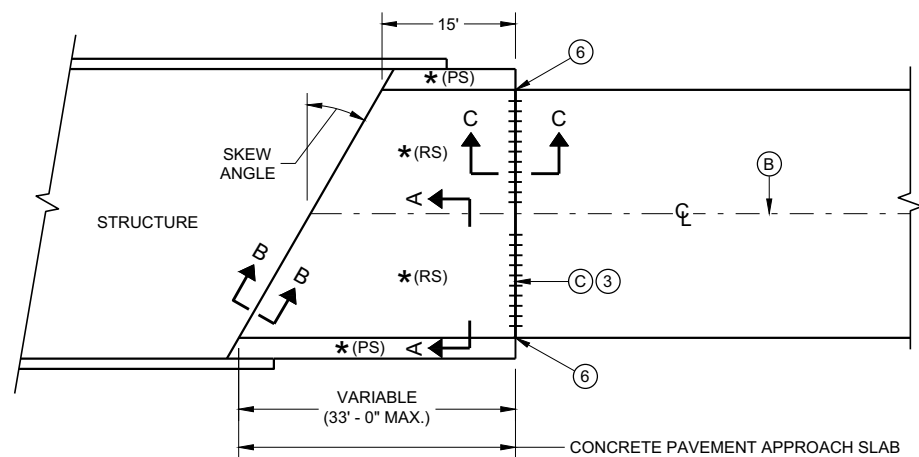
NAME PLATE (STRUCTURES)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE 3/26/10	/S/ Scot Becker CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA	



**SKewed APPROACH
(PAVEMENT MORE THAN TWO LANES)**

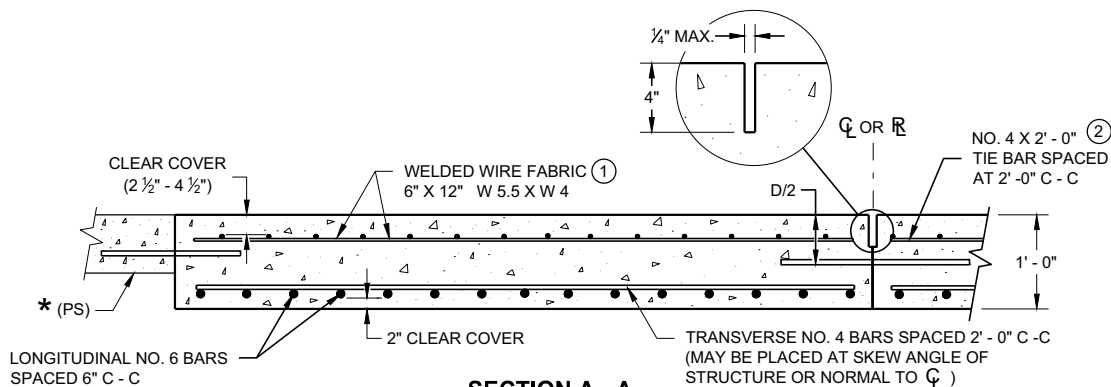


**SKews > 20°
(PAVEMENT WIDTH ≤ 30')**

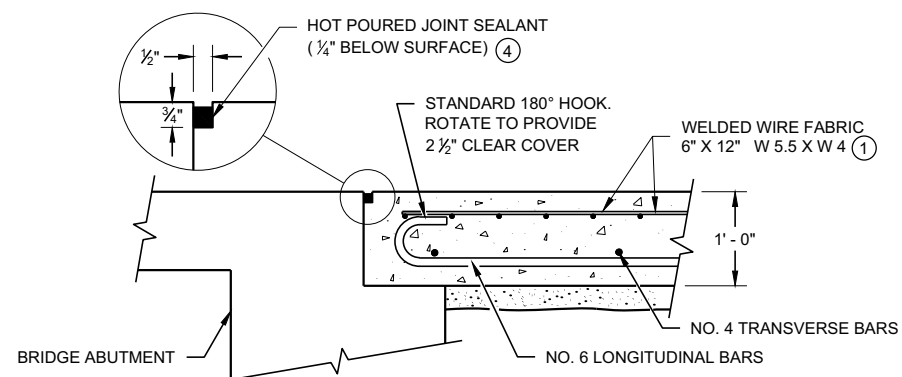


**SKews ≤ 20°
(PAVEMENT WIDTH ≤ 30')**
APPROACH SLAB AND ADJACENT PAVEMENT

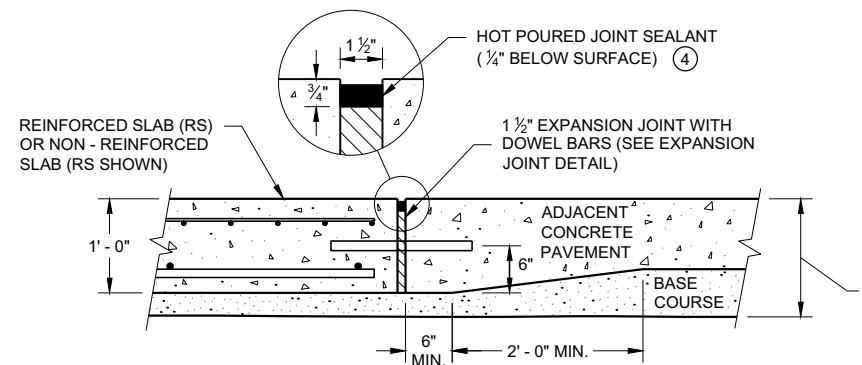
- * (RS) = REINFORCED CONCRETE SLAB
- * (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
- * (NRS) = NON - REINFORCED CONCRETE SLAB
- *** STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



**SECTION A - A
REINFORCEMENT POSITIONING DETAIL**



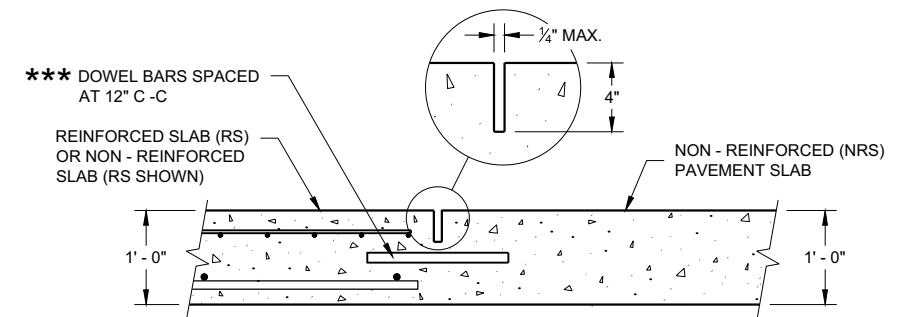
**SECTION B - B
BEND DETAIL
BOTTOM REINFORCEMENT**



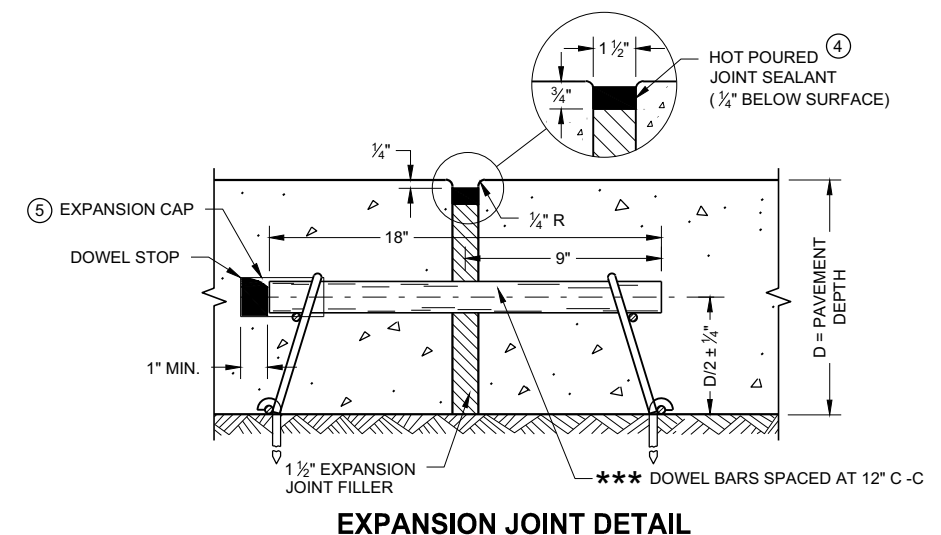
**SECTION C - C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT**

GENERAL NOTES

- THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.
- TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.
- ① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2' - 0" C - C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.
 - ② THE CONTRACTOR MAY OMIT THE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.
 - ③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.
 - ④ USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
 - ⑤ PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.
 - ⑥ EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.
 - (A) STANDARD CONTRACTION JOINT NORMAL TO C OR R.
 - (B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.
 - (C) 1 1/2" EXPANSION JOINT WITH DOWEL BARS NORMAL TO C OR R.



**SECTION D - D
CONTRACTION JOINT**



EXPANSION JOINT DETAIL

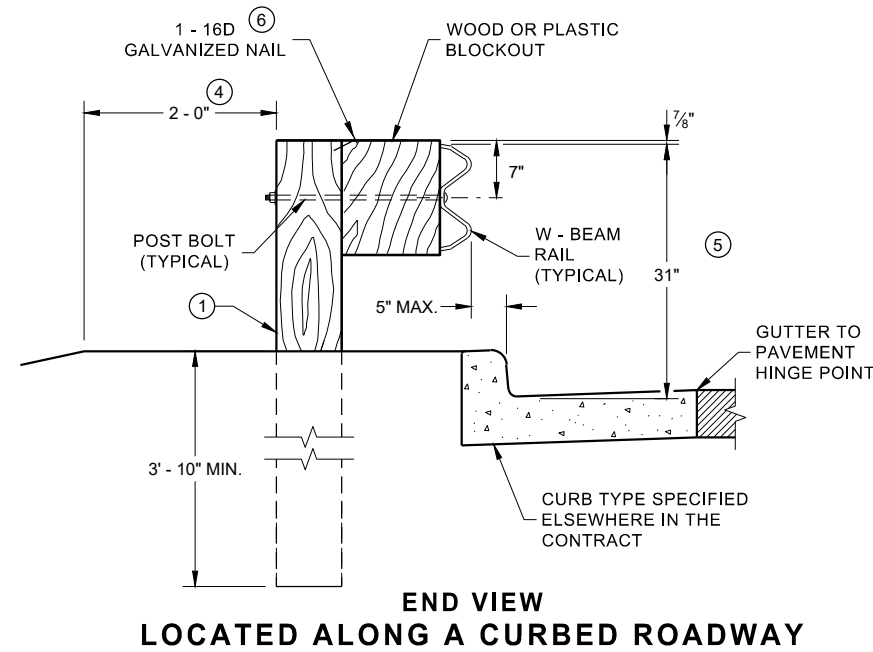
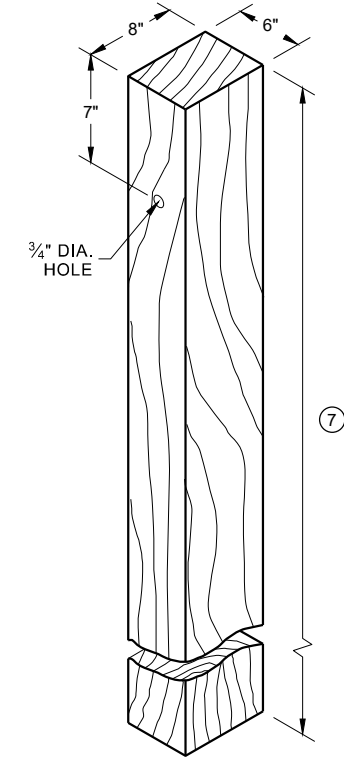
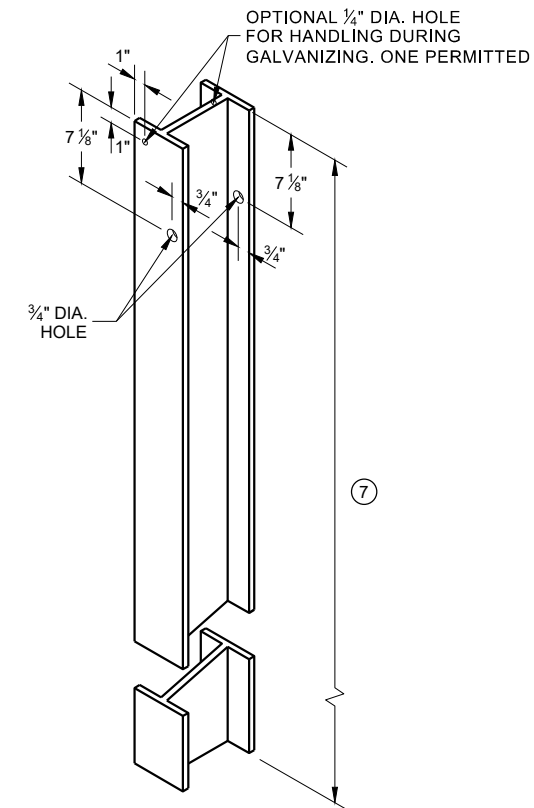
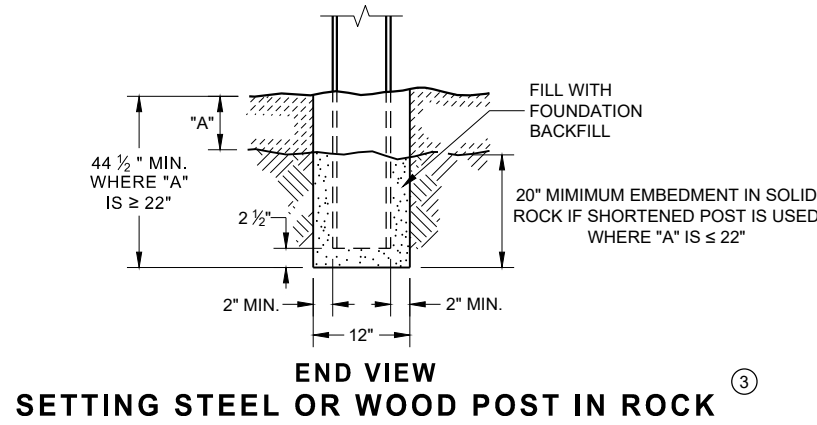
**CONCRETE PAVEMENT
APPROACH SLAB**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Peter Kemp, P.E.
DATE PAVEMENT SUPERVISOR

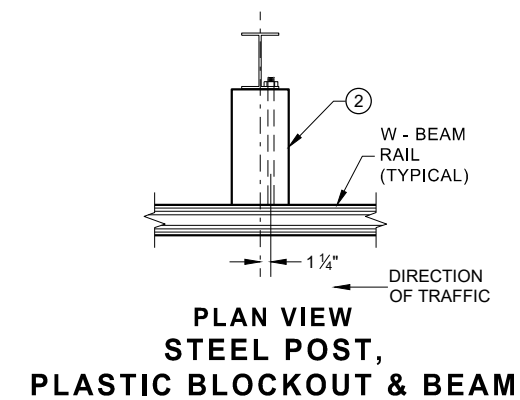
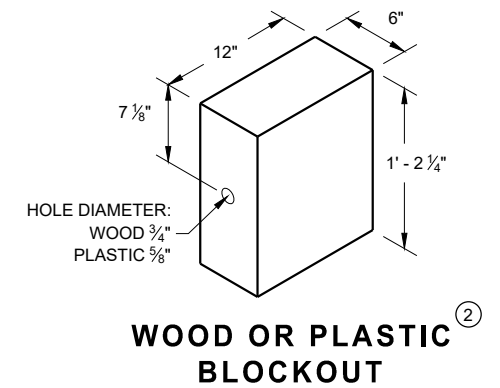
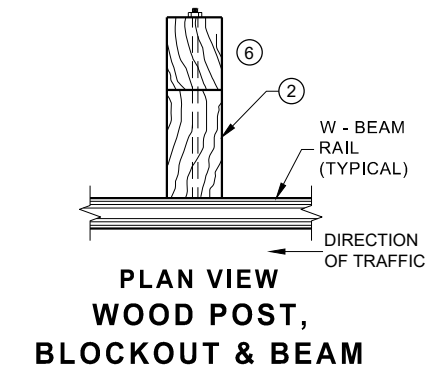
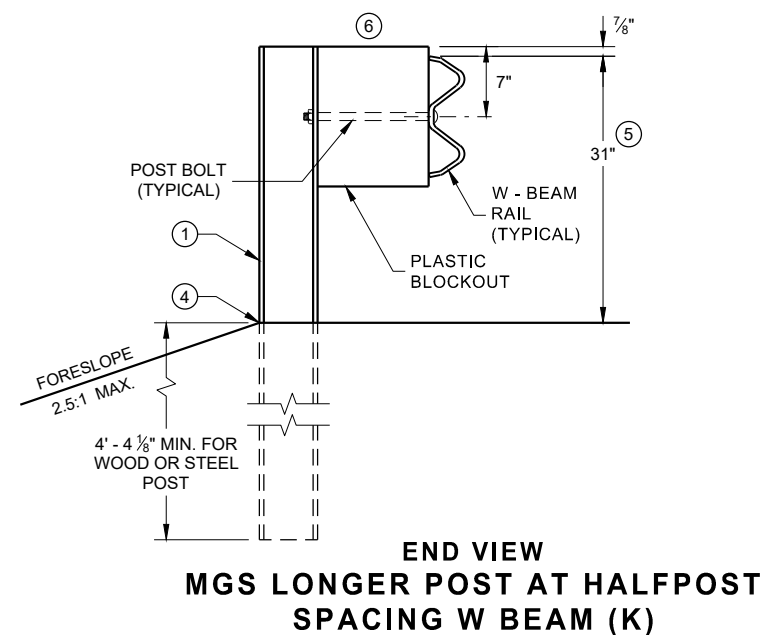
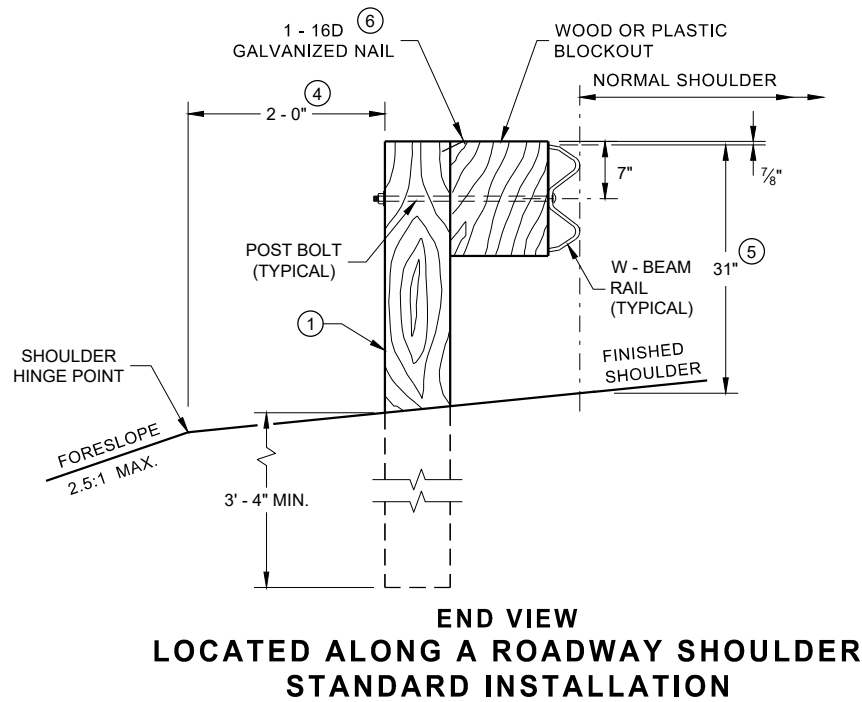
FHWA

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



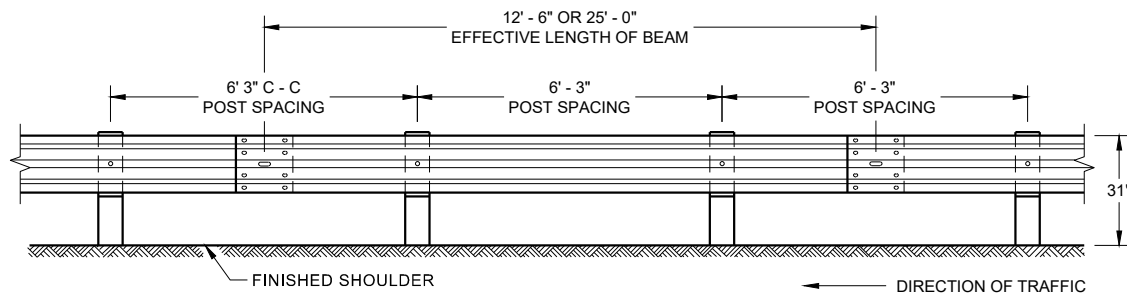
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) ①

WOOD POST (6" X 8") NOMINAL ①

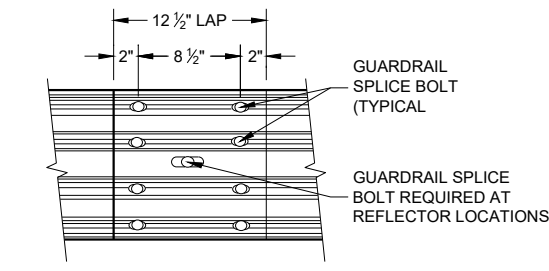


MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



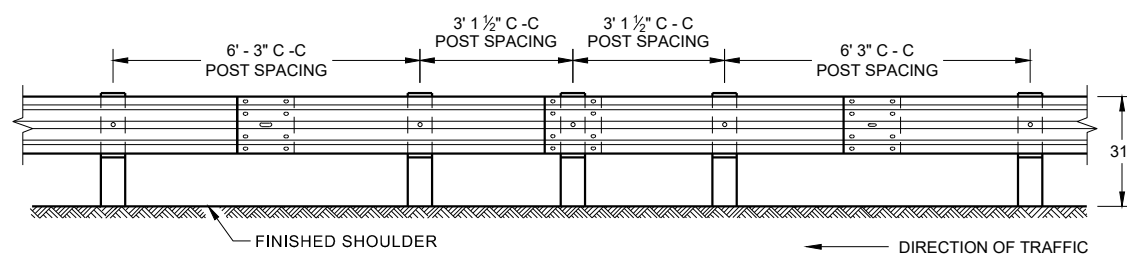
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



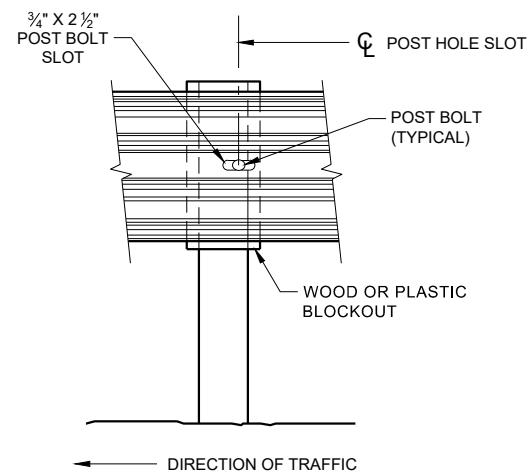
**FRONT VIEW
MID-SPAN BEAM SPLICE**

GENERAL NOTES

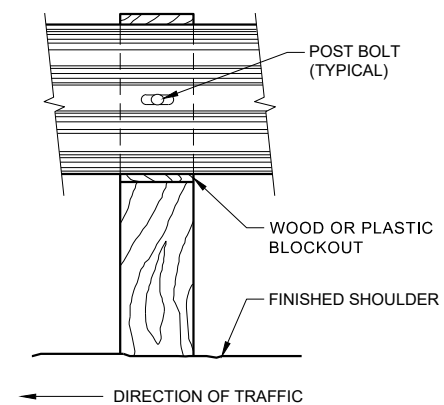
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
 - ⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.
- GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



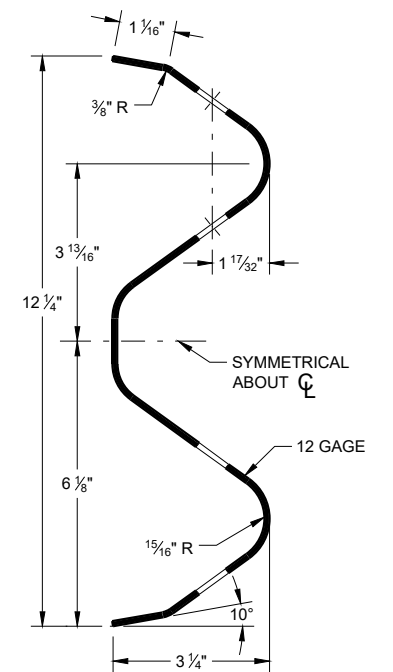
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



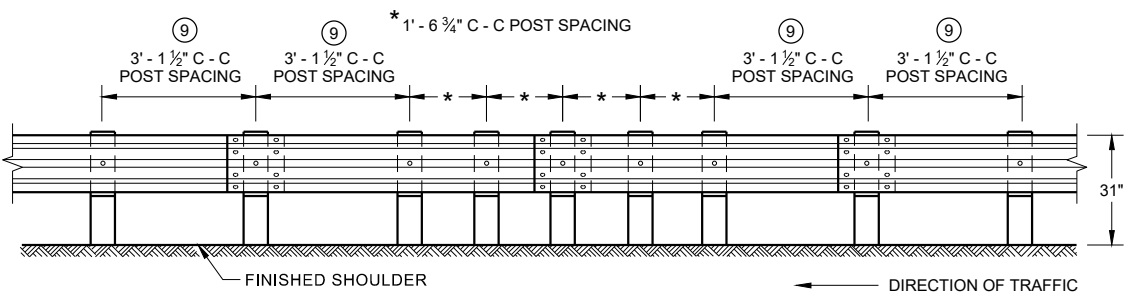
FRONT VIEW AT STEEL POST



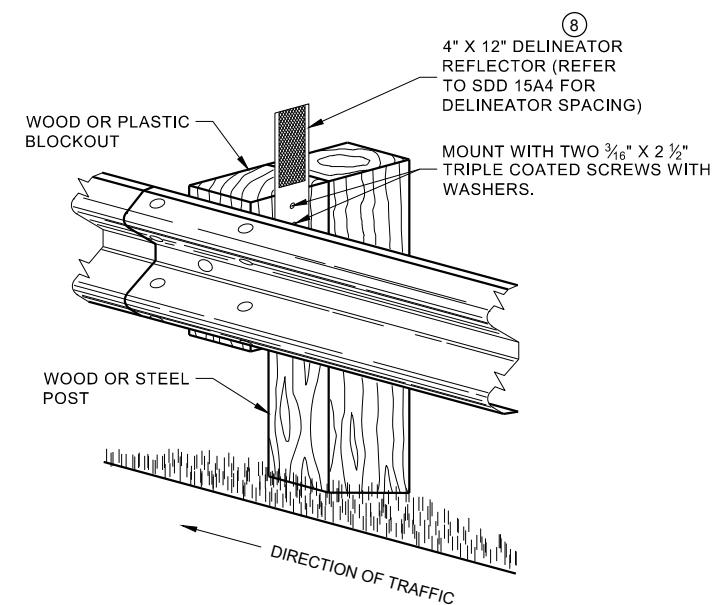
FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



**FRONT VIEW
QUARTER POST SPACING (QS)**



**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

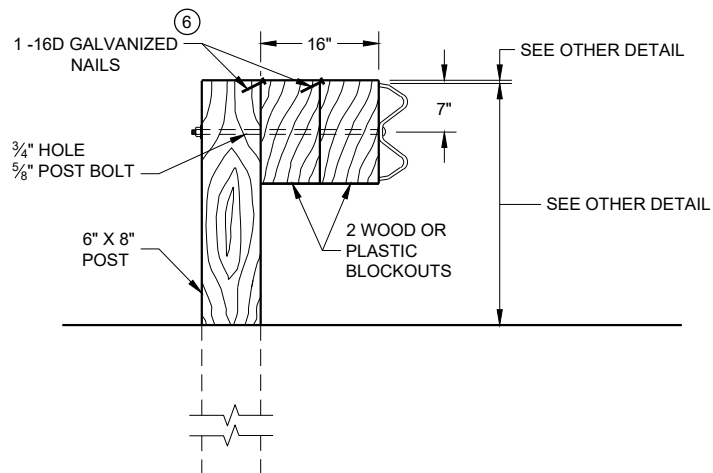
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

6

SDD 14B42 - 07b

SDD 14B42 - 07b

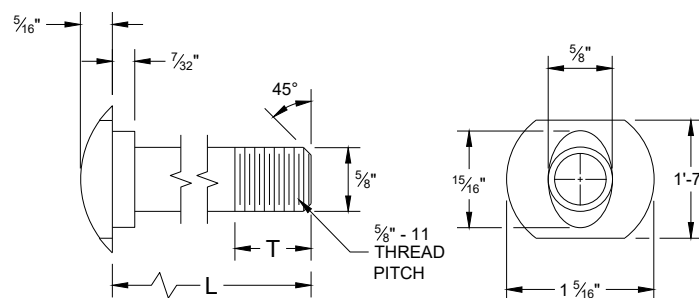


DETAIL FOR 16" BLOCKOUT DEPTH

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.

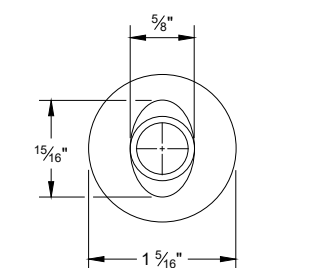
NOTE:

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

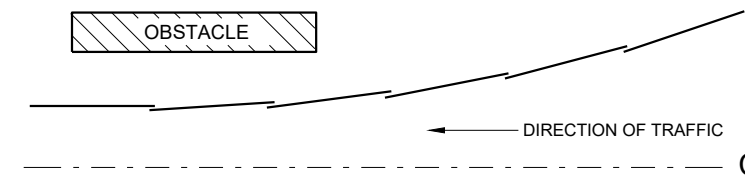


POST BOLT TABLE

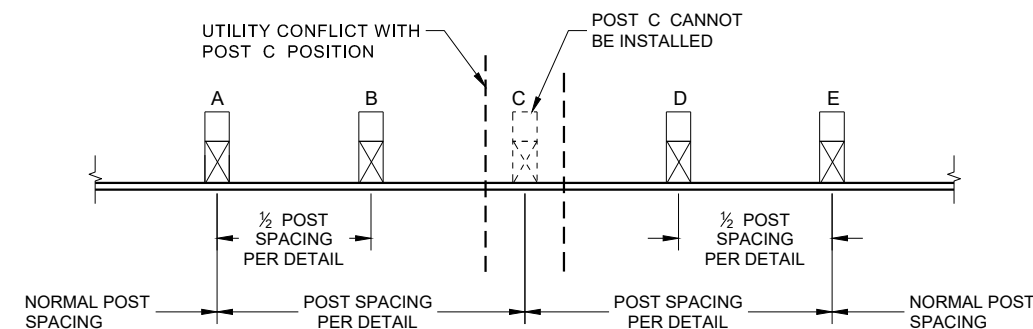
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



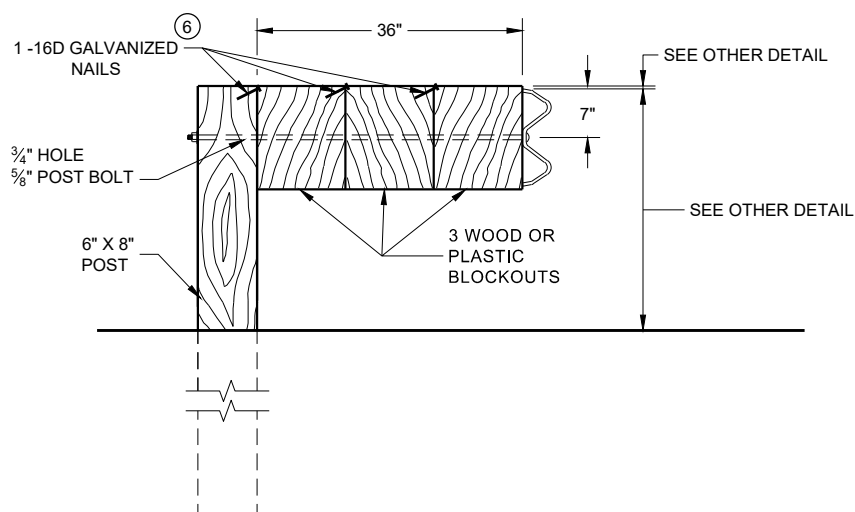
ALTERNATE BOLT HEAD



**PLAN VIEW
BEAM LAPPING DETAIL**

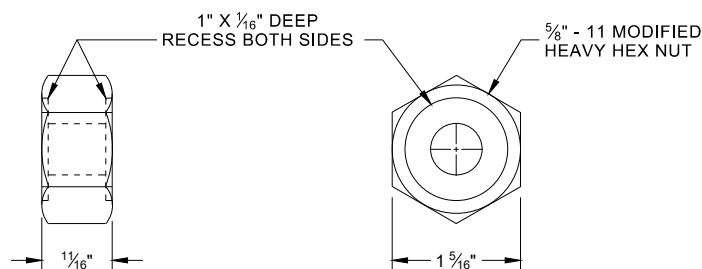


**POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION**

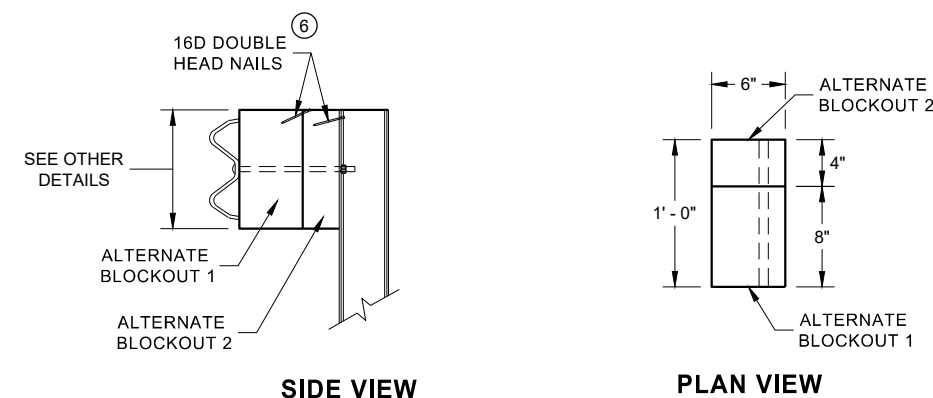


DETAIL FOR 36" BLOCKOUT DEPTH

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, SPLICE BOLT
AND RECESS NUT**

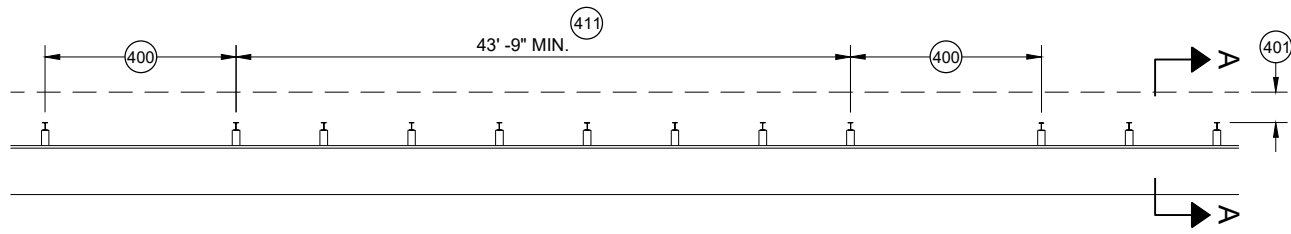


**ALTERNATE WOOD
BLOCKOUT DETAIL**

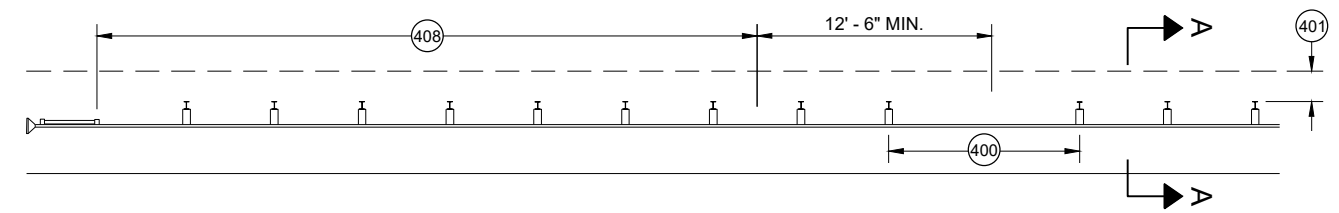
6 WHEN USING STEEL POST AND WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

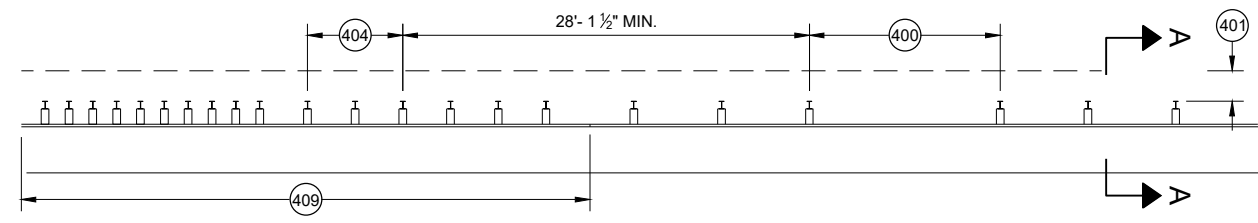
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



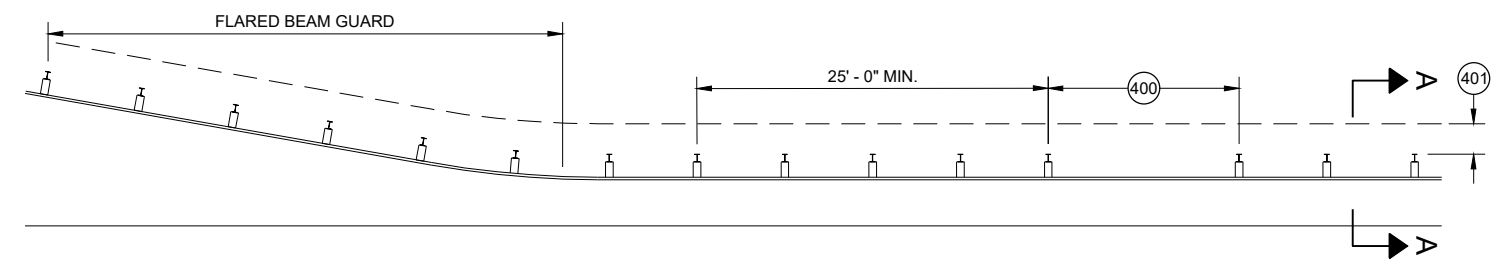
MISSING POST IN MGS GUARDRAIL



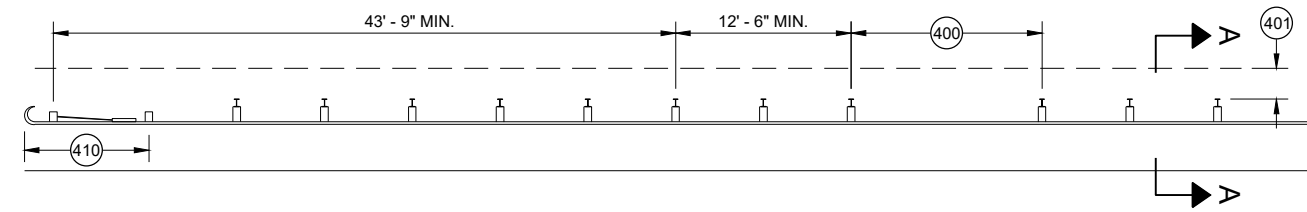
MISSING POST IN MGS GUARDRAIL NEAR EAT



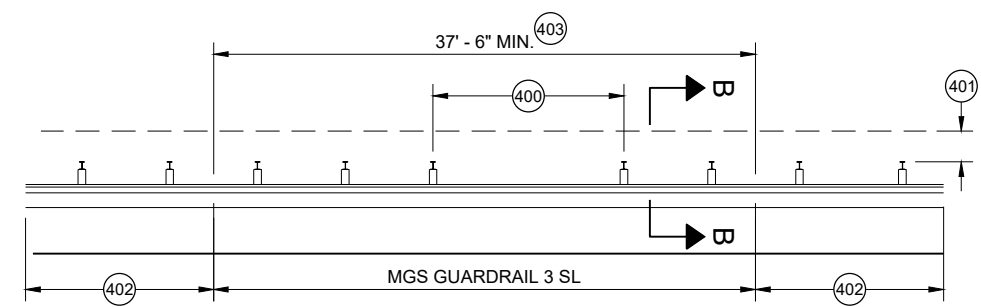
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

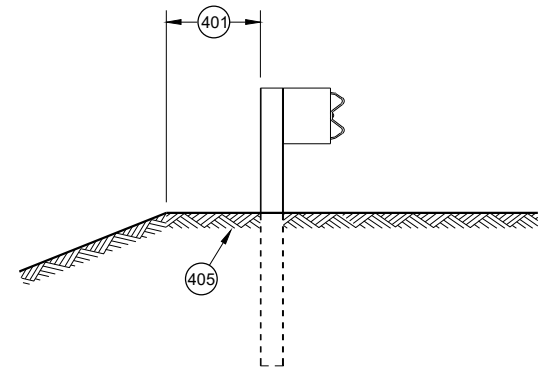


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

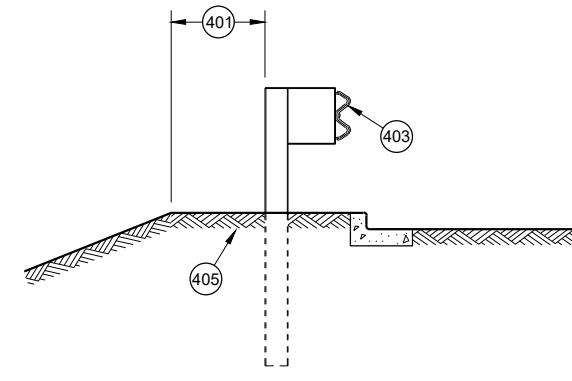


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

- 400 MAX SPAN 12' - 6"
- 401 2' MIN.
- 402 MGS GUARDRAIL 3
- 403 NESTING BEAM GUARD
- 404 ASYMMETRIC TRANSITION
- 405 SOIL WELL DRAINED AND COMPACTED
- 406 SEE OTHER DRAWINGS IN THIS SDD
- 407 SEE OTHER DRAWINGS FOR MIN. SPACING BETWEEN SPANS
- 408 SEE SDD 14B44
- 409 SEE SDD 14B45
- 410 SEE SDD 14B47
- 411 MINIMUM DISTANCE BETWEEN MISSING POST SPANS.



SECTION A - A



SECTION B - B

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2021 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
<small>FHWA</small>	

GENERAL NOTES

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

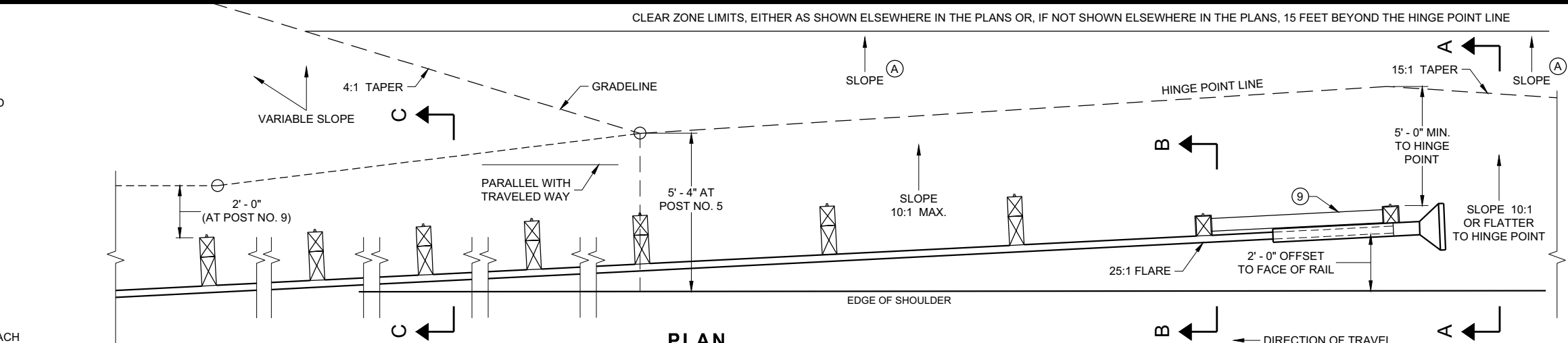
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

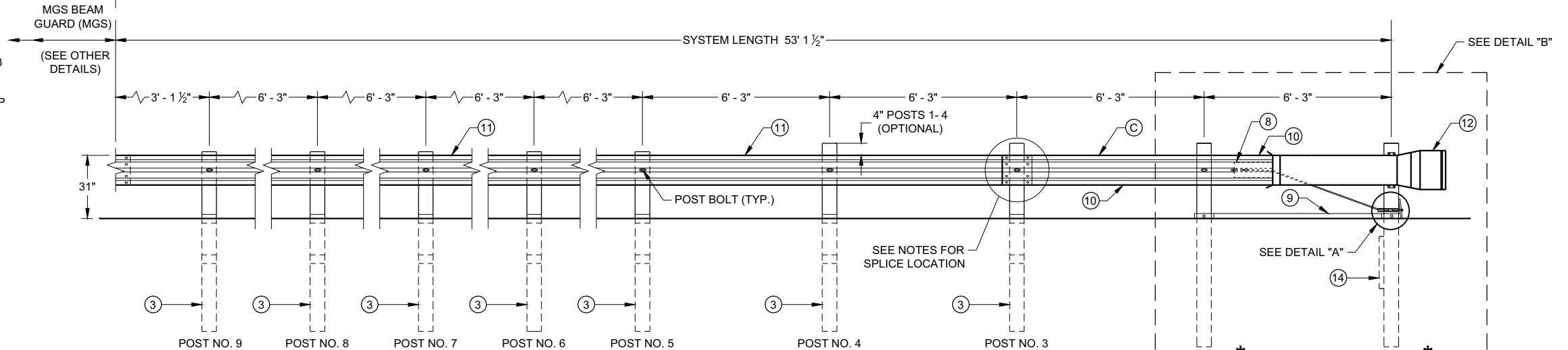
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

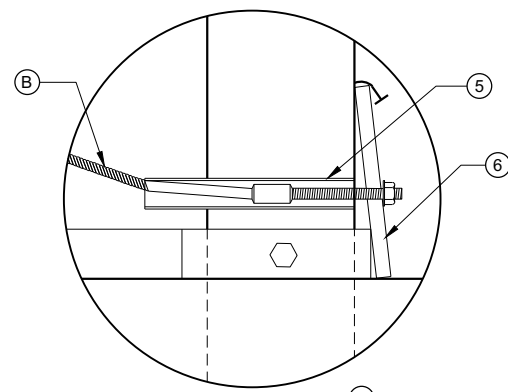
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



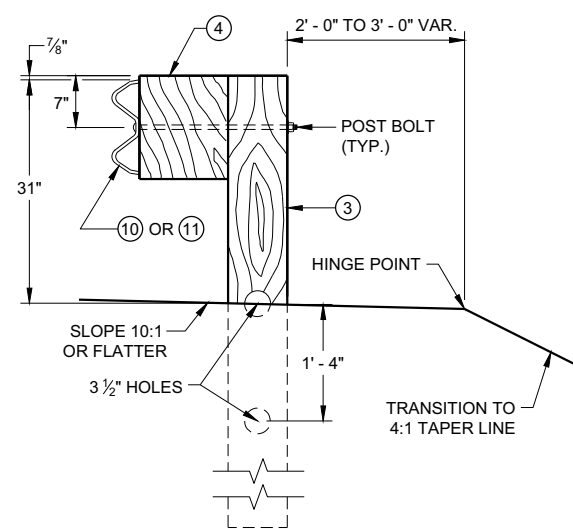
PLAN



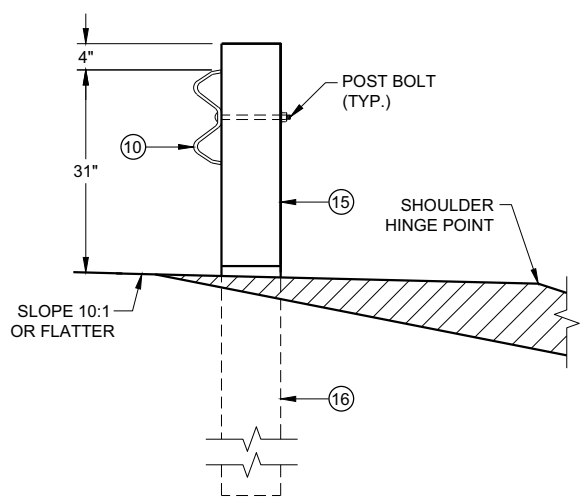
ELEVATION



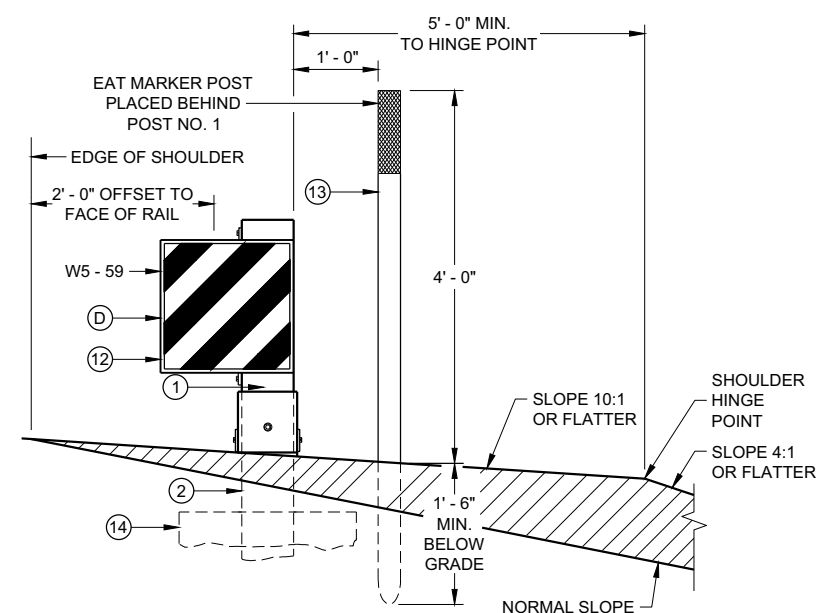
DETAIL "A"



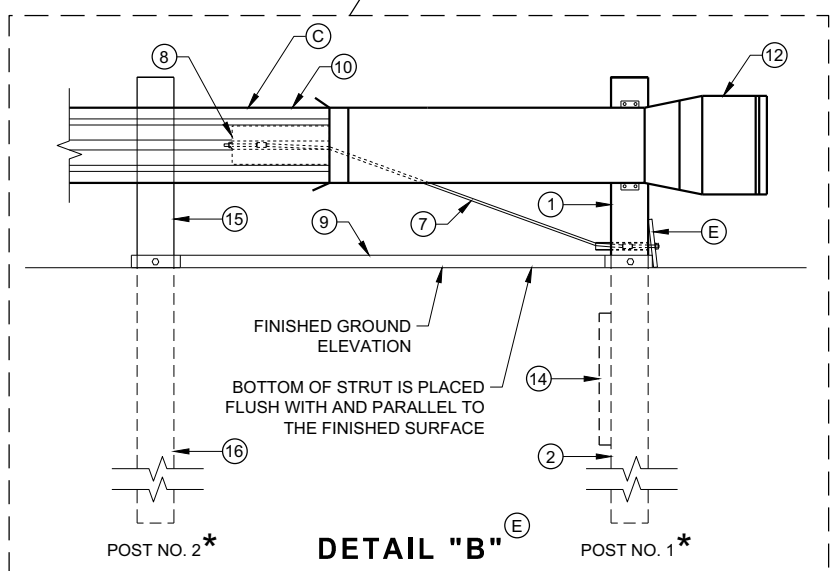
**SECTION C - C
TYPICAL AT POST NOS. 3 - 9**



**SECTION B - B
TYPICAL AT POST NO. 2***



**SECTION A - A
TYPICAL AT POST NO. 1***



DETAIL "B"

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

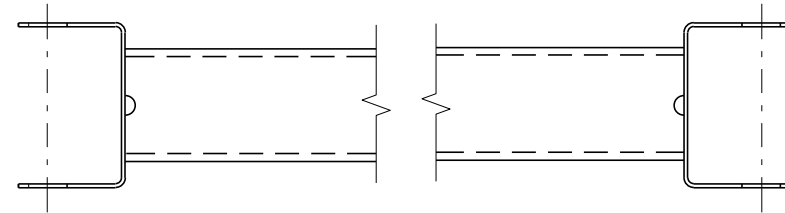
6

SDD 14B44 - 04a

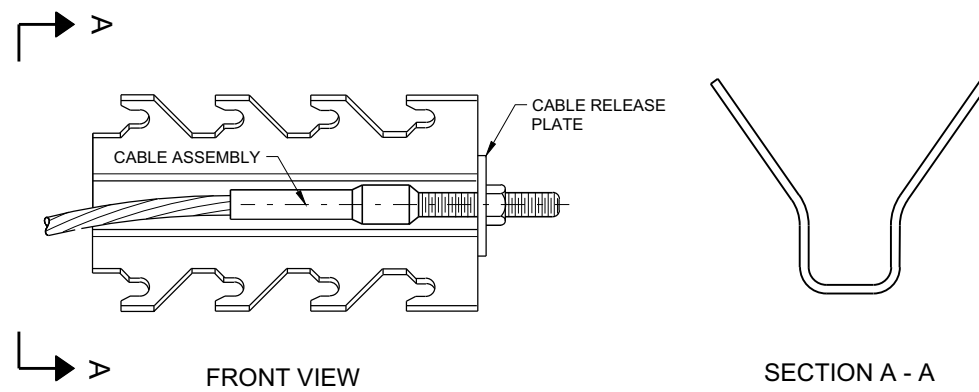
SDD 14B44 - 04a

BILL OF MATERIALS

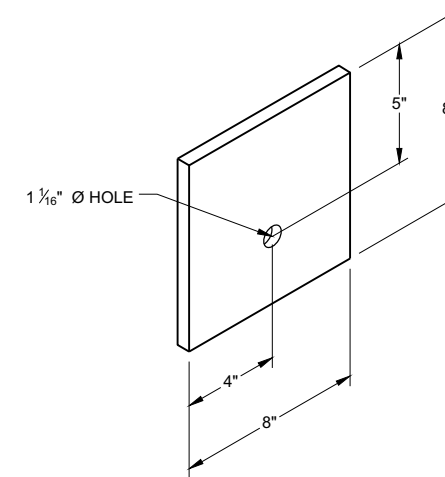
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL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



GENERIC GROUND STRUT ⑨ ⑤



GENERIC ANCHOR CABLE BOX ⑨ ⑤



BEARING PLATE ⑥ ⑤

6

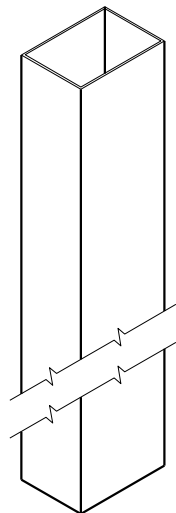
6

SDD 14B44 - 04b

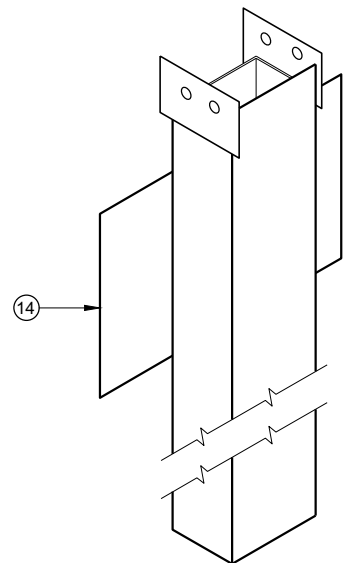
SDD 14B44 - 04b

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

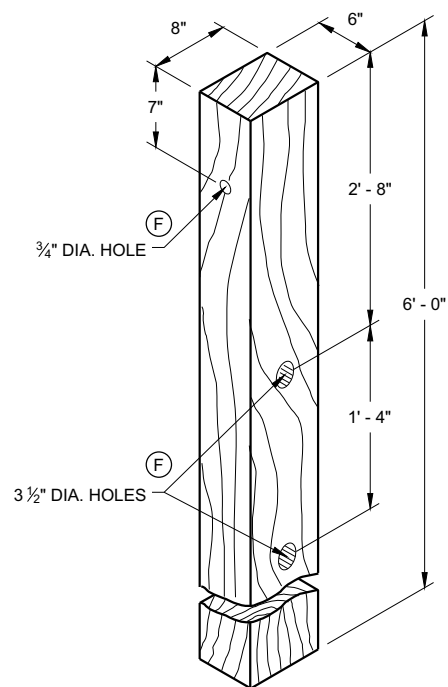
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



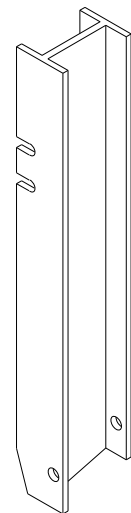
UPPER POST NO. 1 ⁽¹⁾ (E)



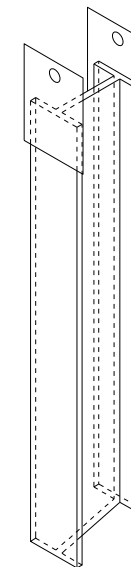
LOWER POST NO. 1 ⁽²⁾ (E)



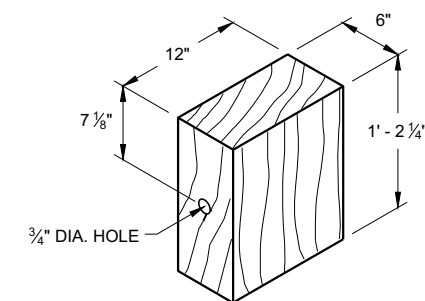
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



UPPER POST NO. 2 ⁽¹⁵⁾ (E)

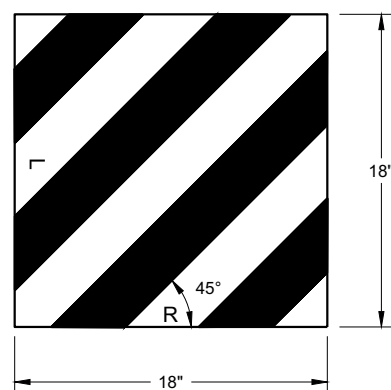


LOWER POST NO. 2 ⁽¹⁶⁾ (E)



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

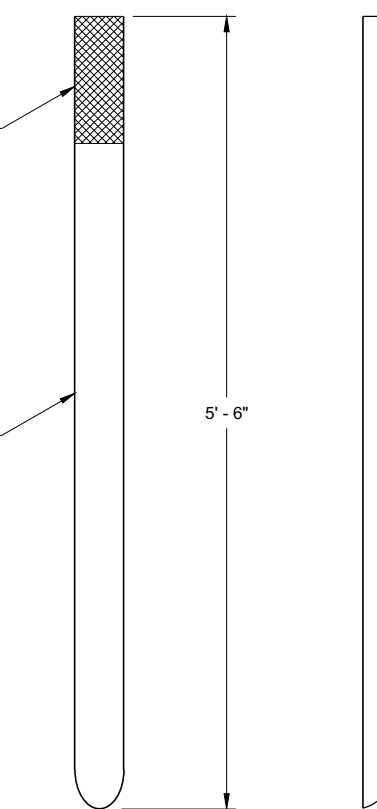
6



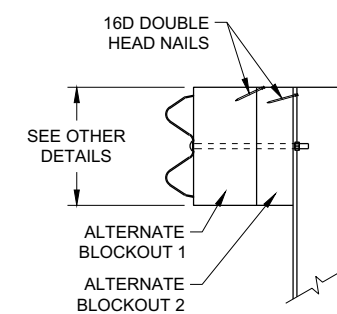
W5 - 59
REFLECTIVE SHEETING DETAIL ^(E)

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

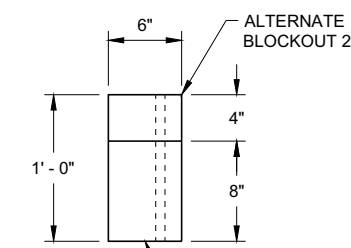
E.A.T. MARKER
POST (YELLOW)



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



SIDE VIEW



TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

6

SDD 14B44 - 04c

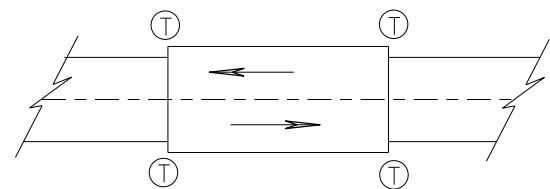
SDD 14B44 - 04c

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

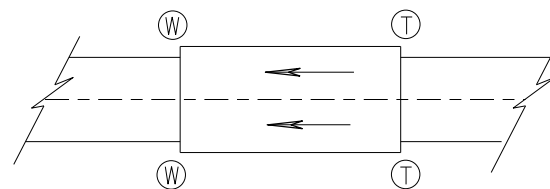
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

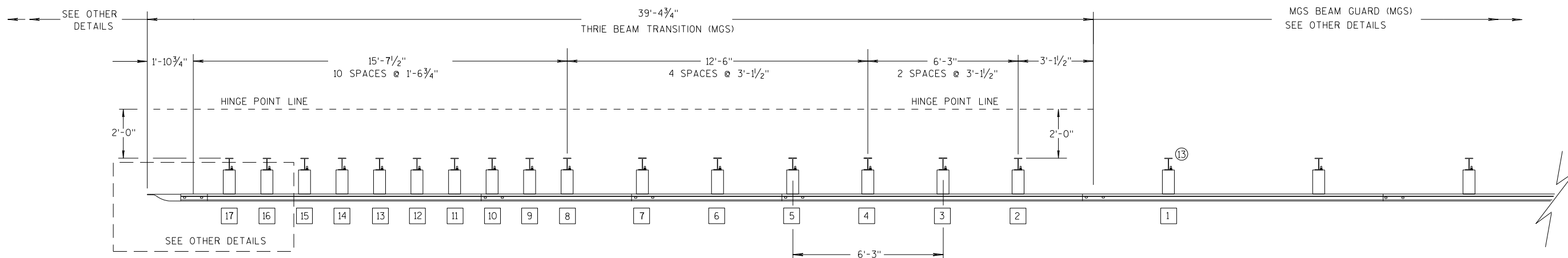
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

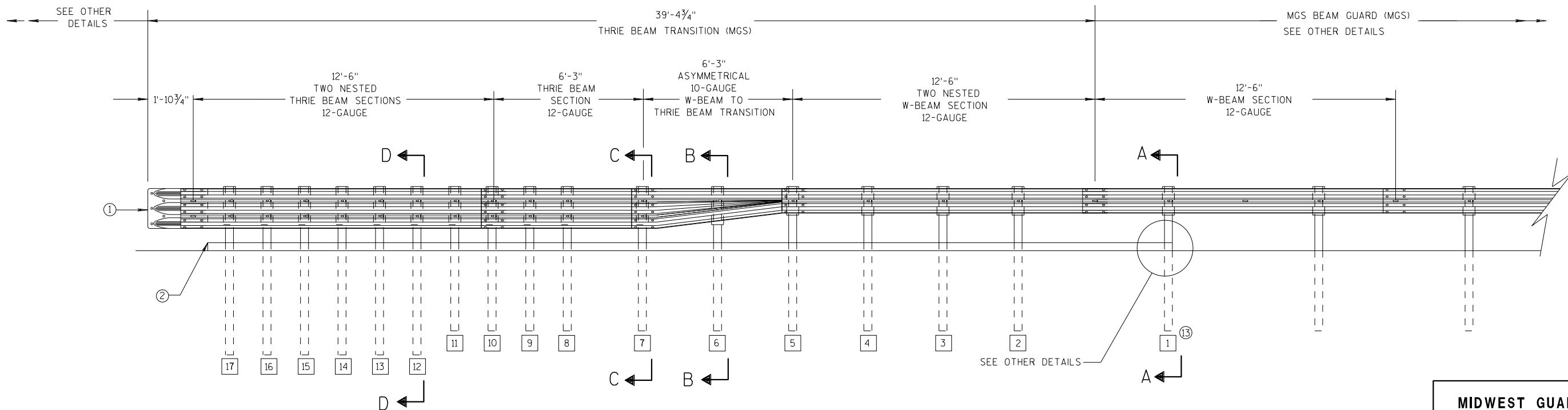
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

- ① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD14B42



PLAN VIEW



ELEVATION VIEW

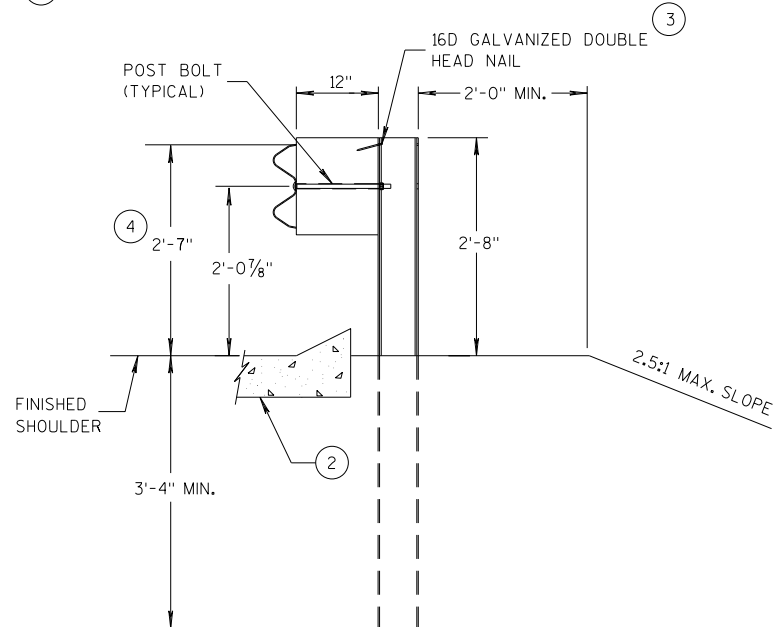
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

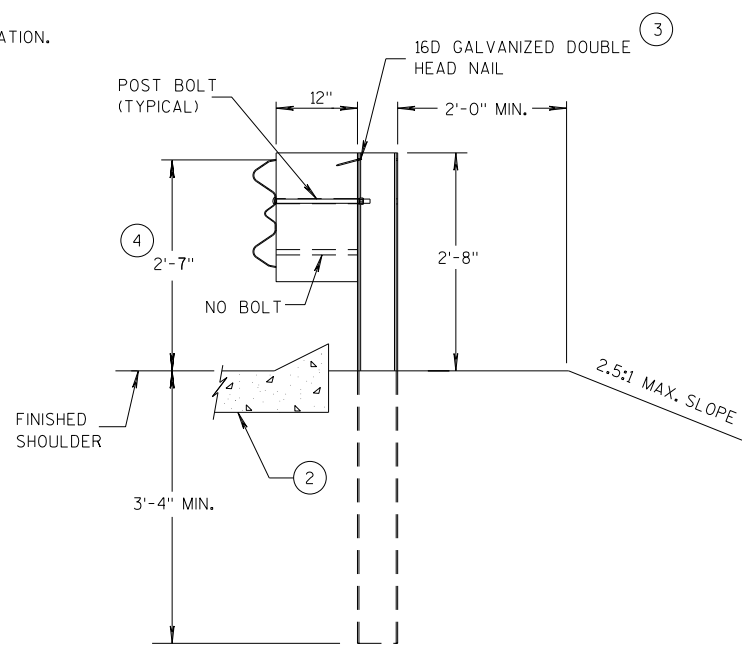
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

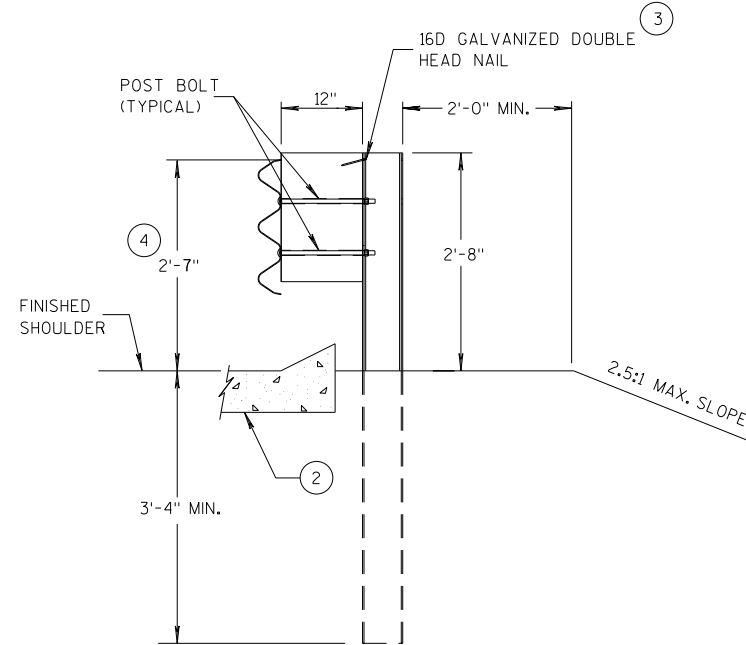
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ④ TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".
- ⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42



**SECTION A-A
POSTS 1-5**



**SECTION B-B
POST 6**



**SECTION C-C
POSTS 7-11**

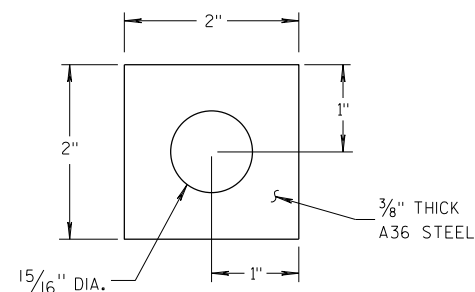
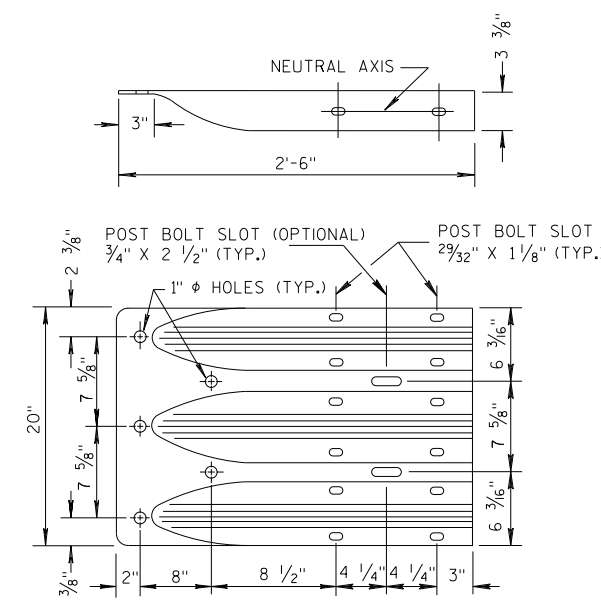
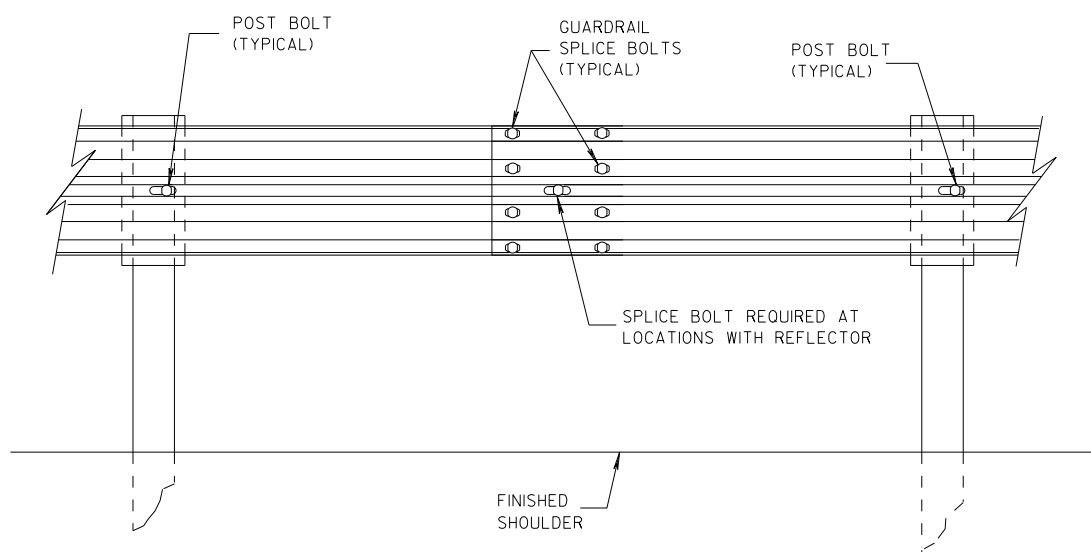


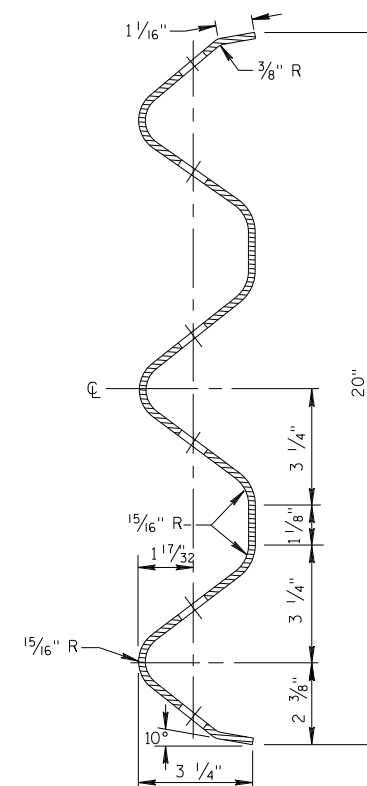
PLATE WASHER DETAIL



**THRIE BEAM
TERMINAL CONNECTOR**



SPLICE DETAIL

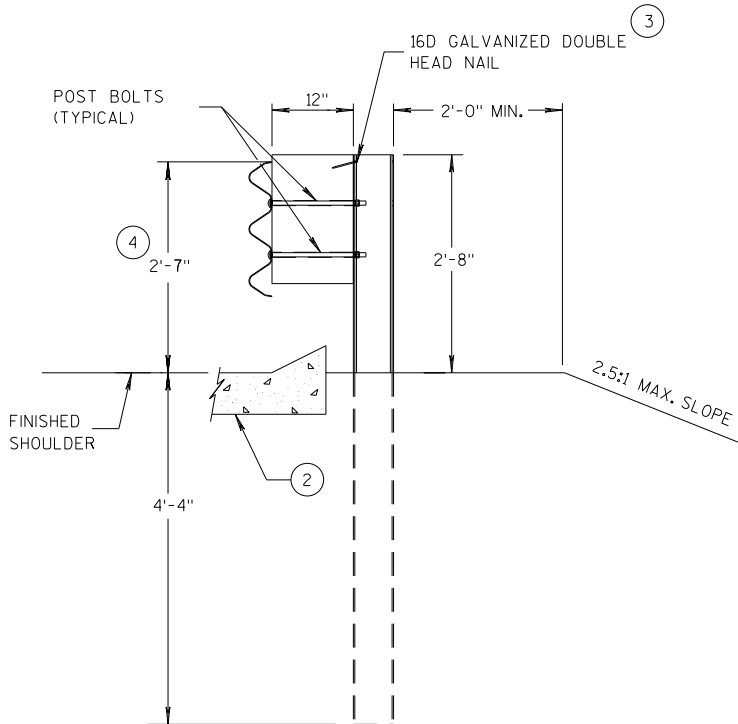


**SECTION THRU THRIE
BEAM RAIL ELEMENT**

6

6

**SECTION D-D
POSTS 12-17**

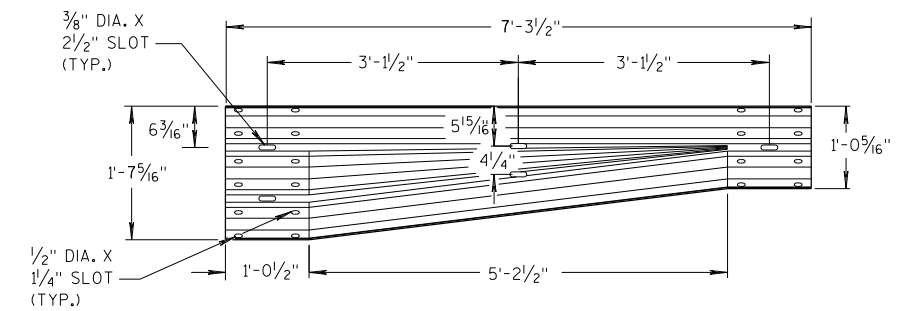


**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

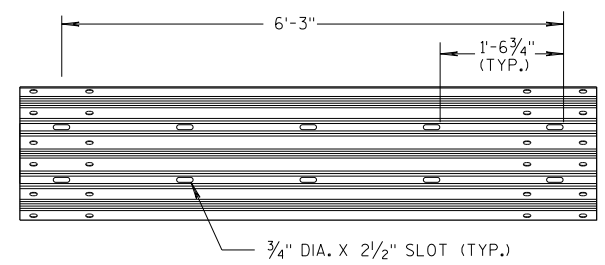
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

S.D.D. 14 B 45-5b

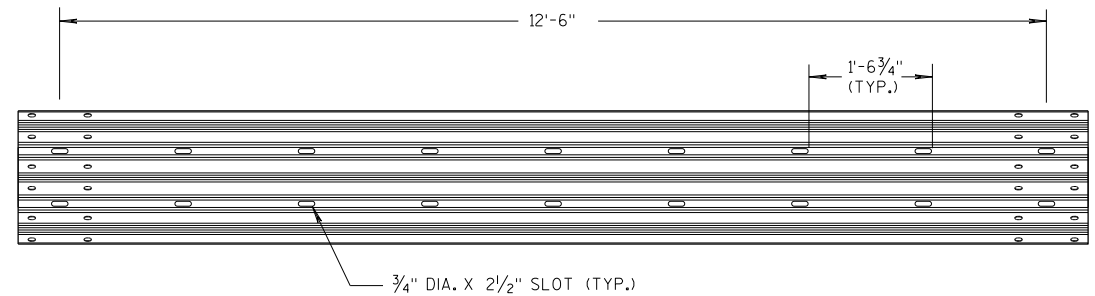
S.D.D. 14 B 45-5b



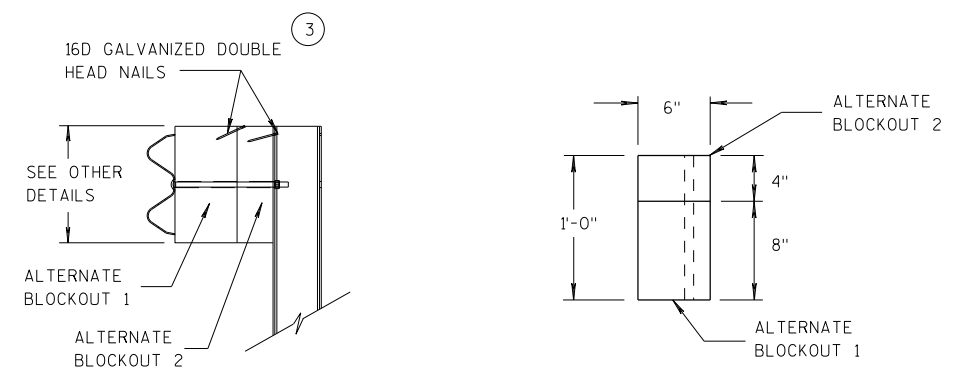
W-BEAM TO THRIE BEAM TRANSITION SECTION



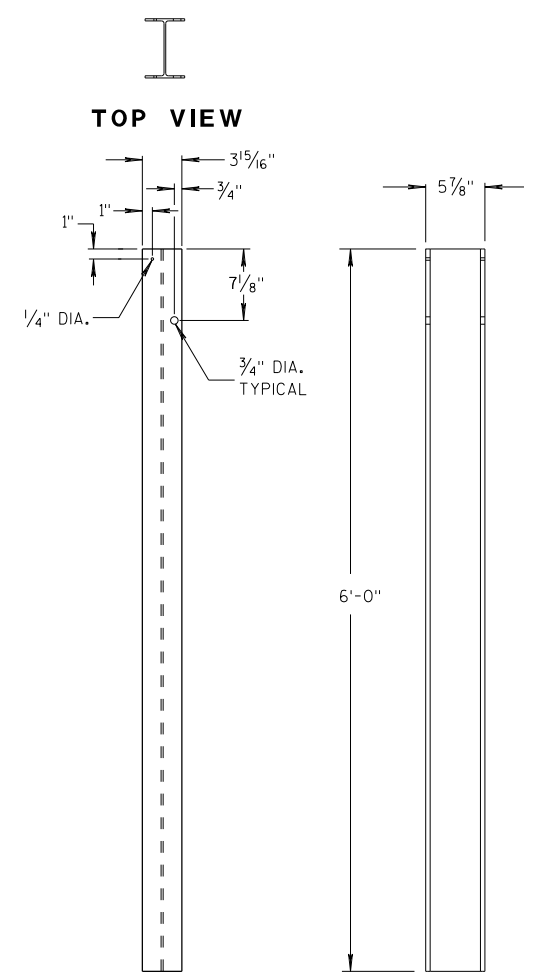
6'-3\"/>



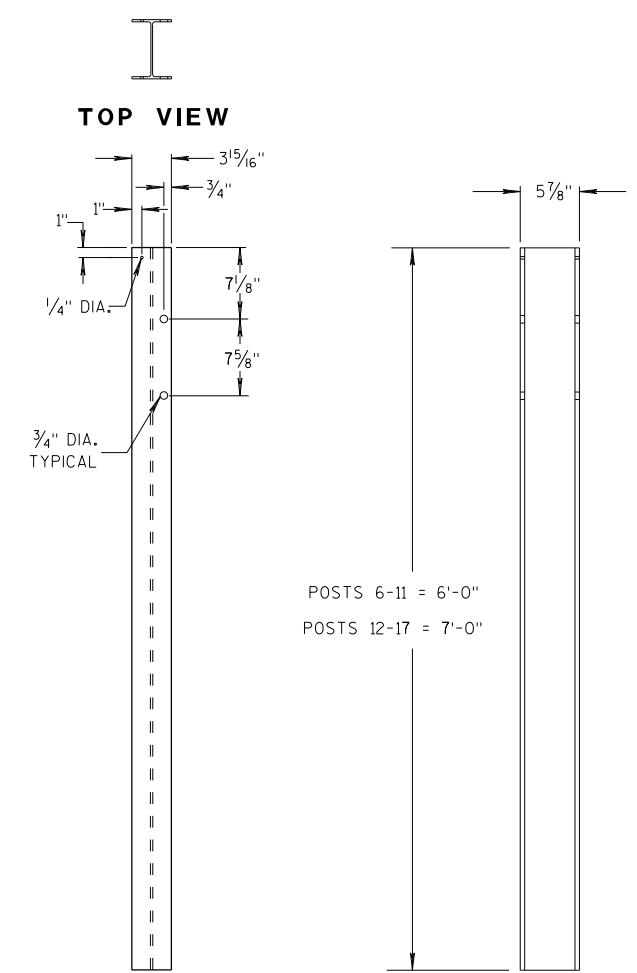
12'-6\"/>



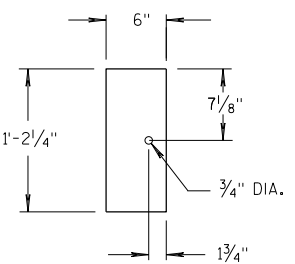
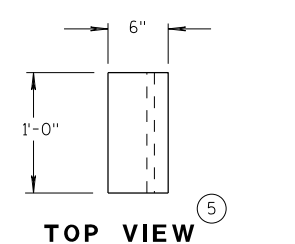
ALTERNATE WOOD BLOCKOUT DETAIL



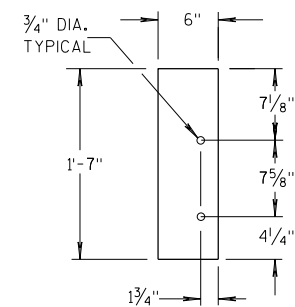
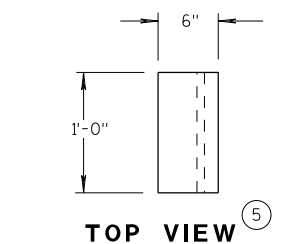
STEEL POSTS 1-5



STEEL POSTS 6-17



BLOCKOUT POSTS 1-5



BLOCKOUT POSTS 6-17

GENERAL NOTES

- STEEL POSTS ARE W6X9 OR W6X8.5.
- BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.
- (3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- (5) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.
- (13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

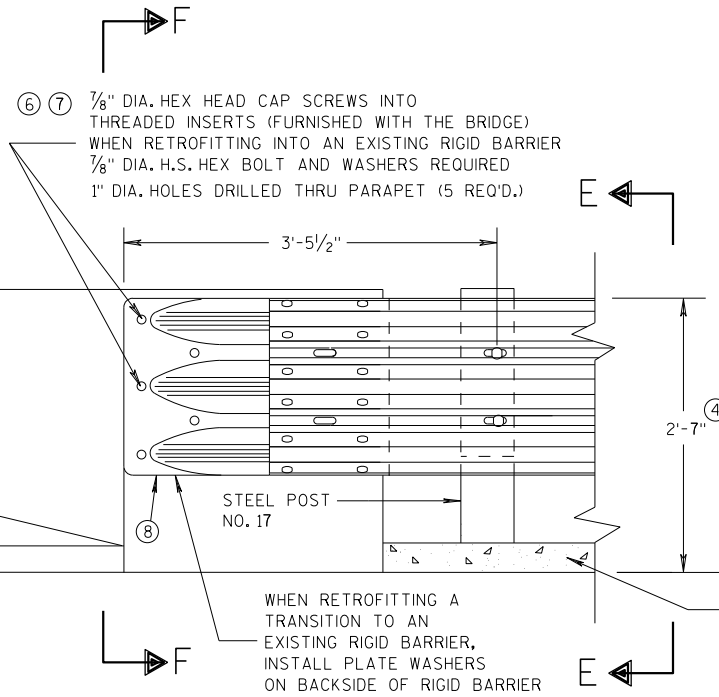
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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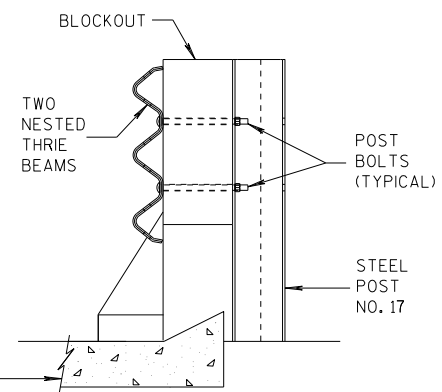
S.D.D. 14 B 45-5c

S.D.D. 14 B 45-5c

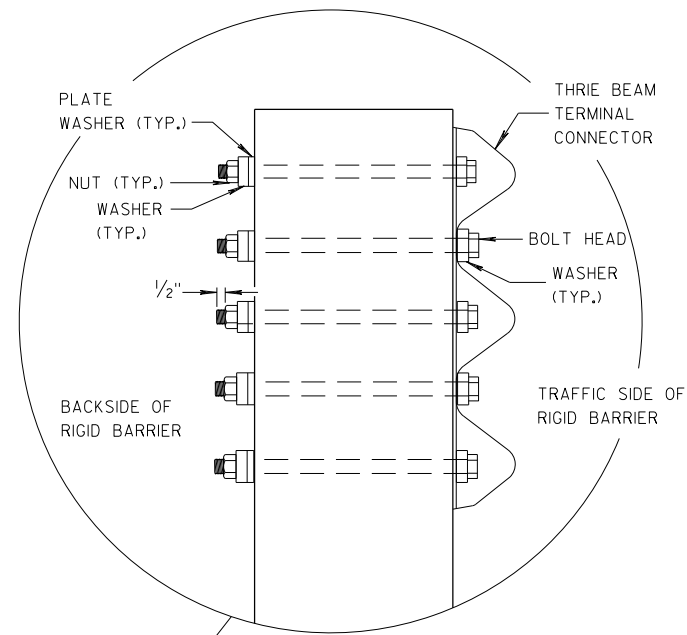


FRONT VIEW

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

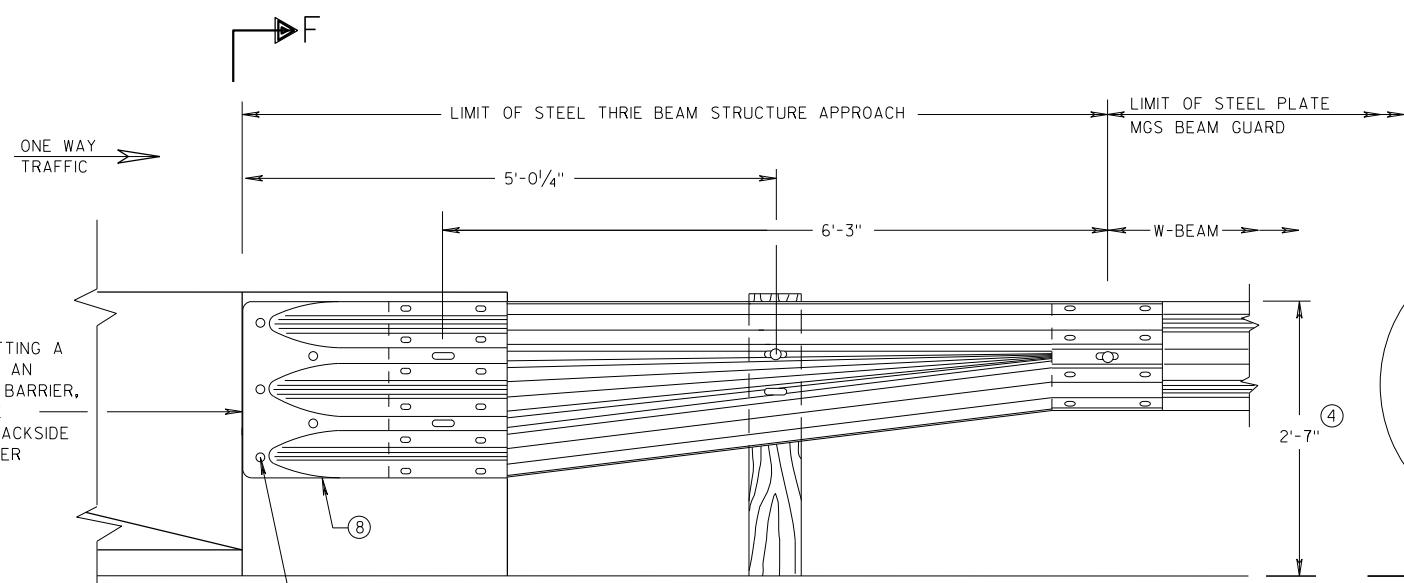


SECTION E-E



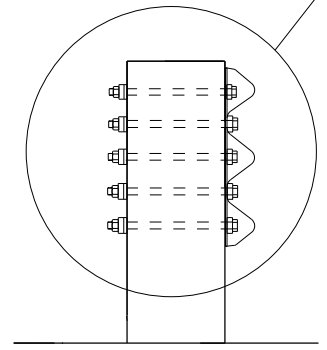
GENERAL NOTES

- THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSITION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS ± 1\".
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ 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 5/32\" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ⑧ 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\".

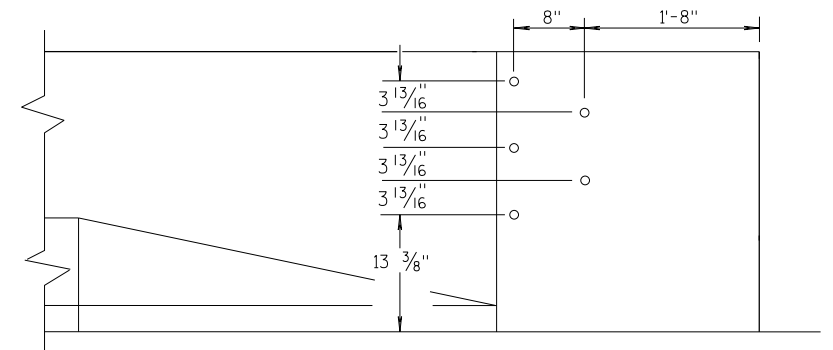


FRONT VIEW

**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



DRILL HOLE LOCATION

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 07/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	

6

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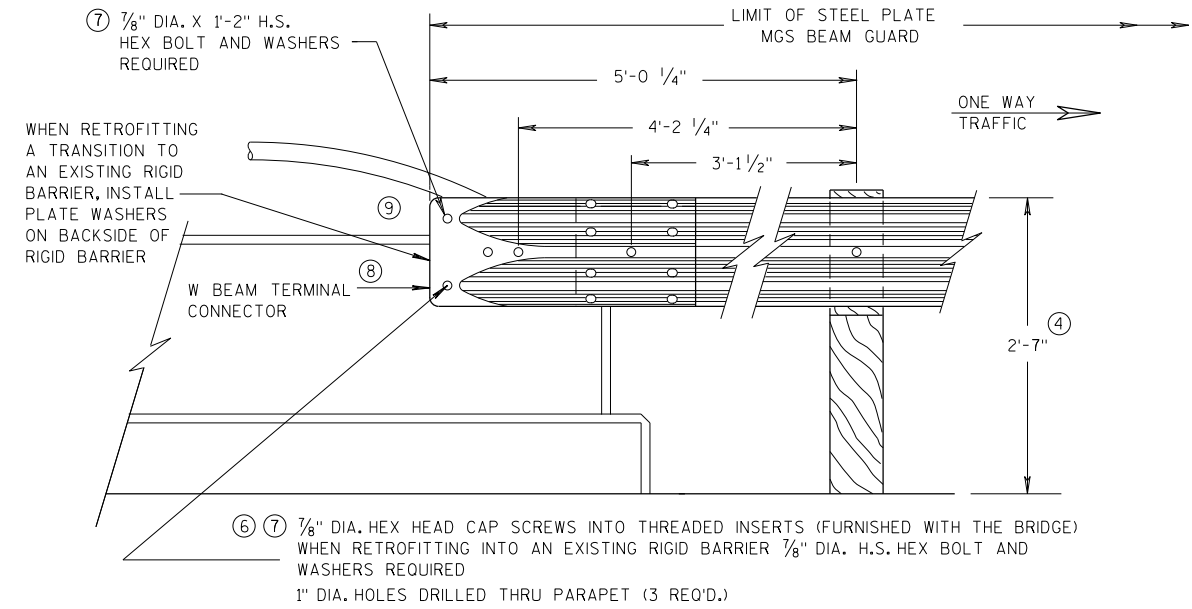
S.D.D. 14 B 45-5d

S.D.D. 14 B 45-5d

GENERAL NOTES

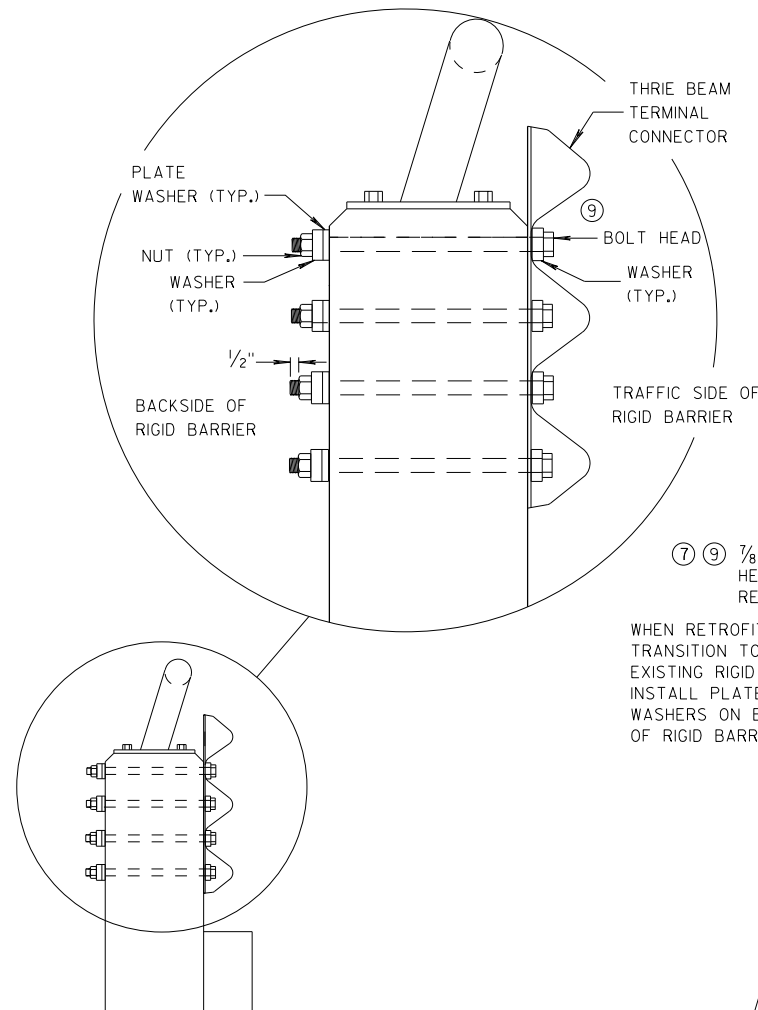
THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSITION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ 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 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ⑧ 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".
- ⑨ 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.

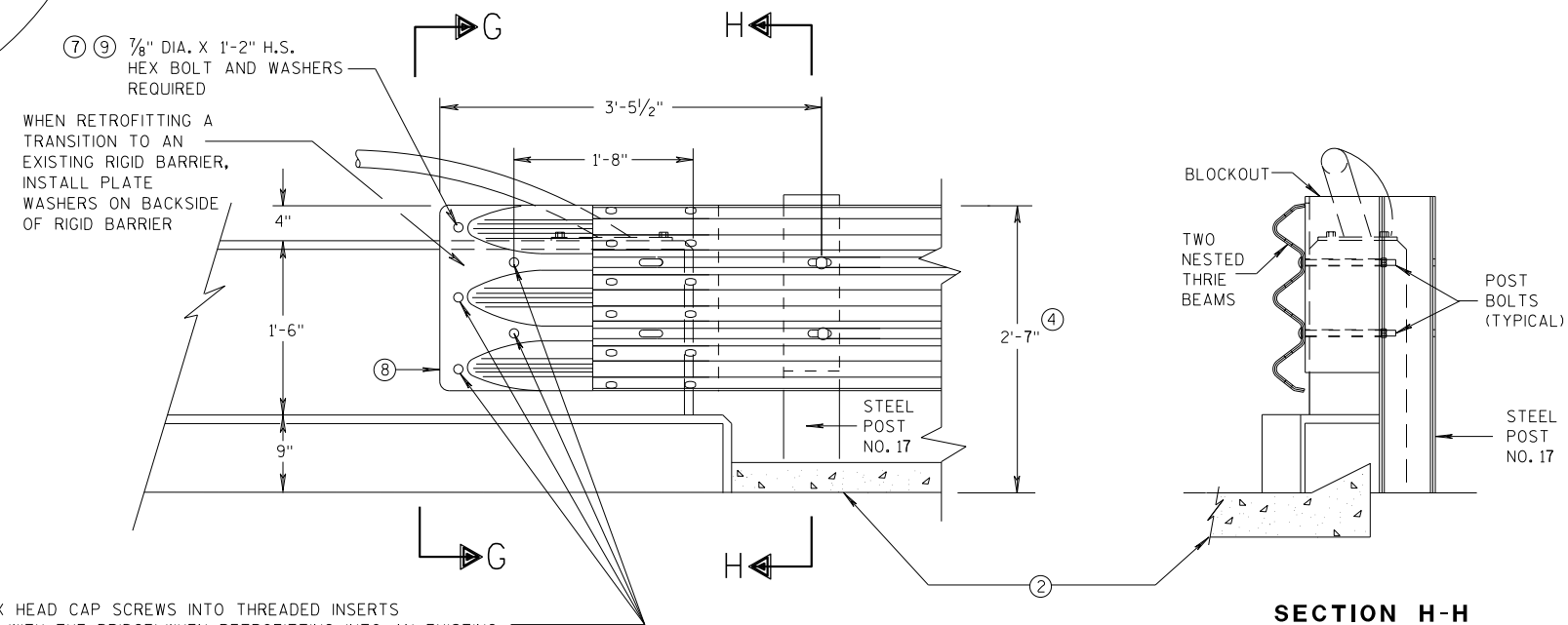


FRONT VIEW

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



SECTION G-G



FRONT VIEW

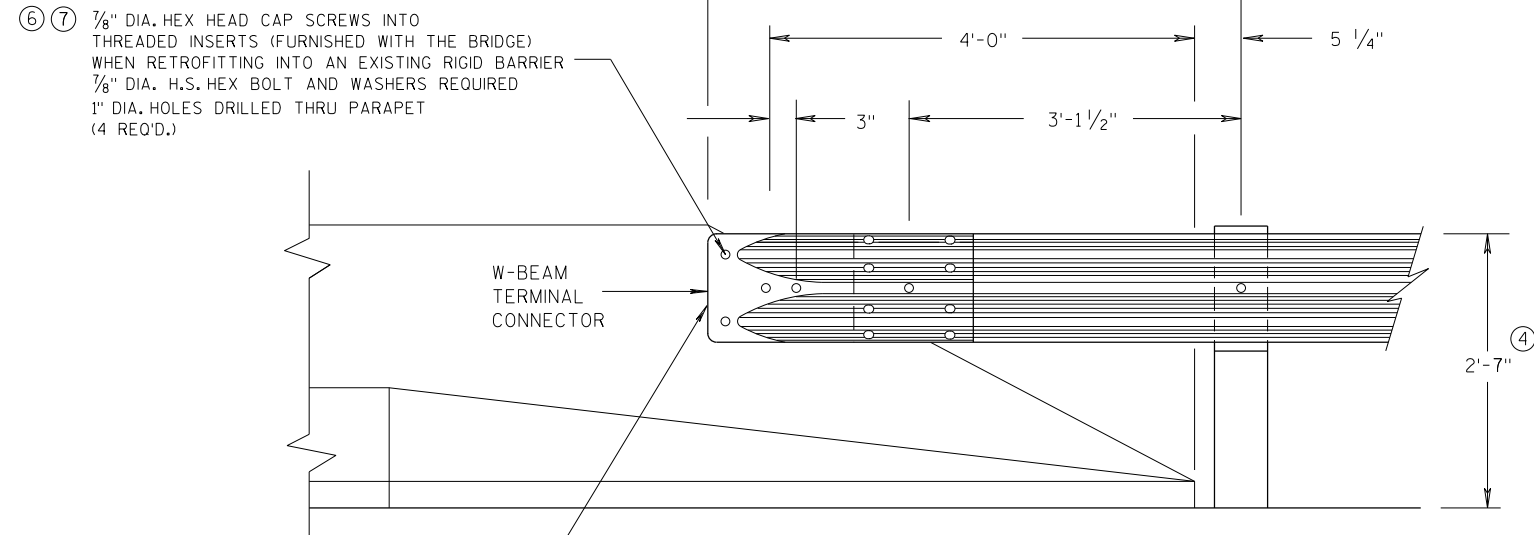
THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
07/2018 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR

ONE WAY
TRAFFIC



WHEN RETROFITTING A TRANSITION TO AN EXISTING RIGID BARRIER, INSTALL PLATE WASHERS ON BACKSIDE OF RIGID BARRIER.

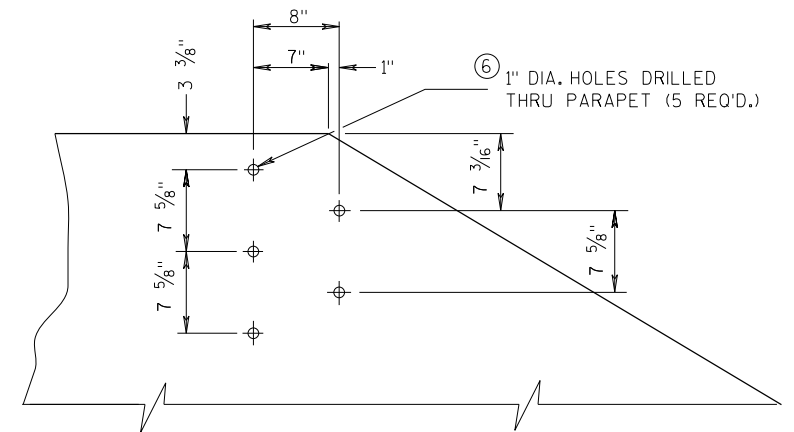
FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

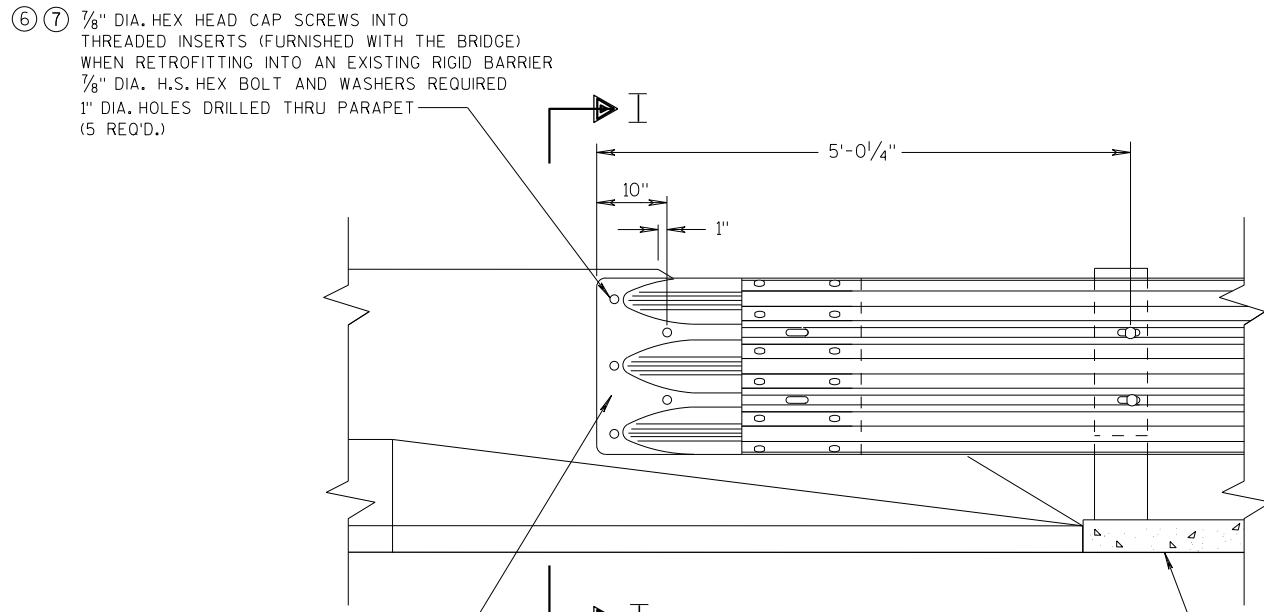
(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

GENERAL NOTES

- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ 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 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



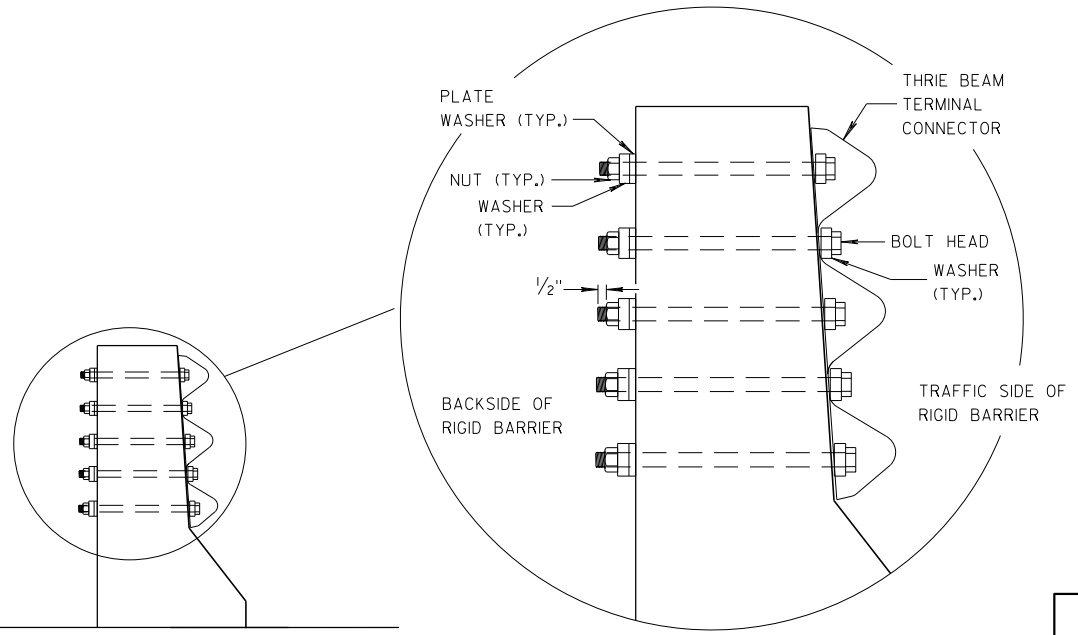
DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION



WHEN RETROFITTING A TRANSITION TO AN EXISTING RIGID BARRIER, INSTALL PLATE WASHERS ON BACKSIDE OF RIGID BARRIER.

FRONT VIEW

THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

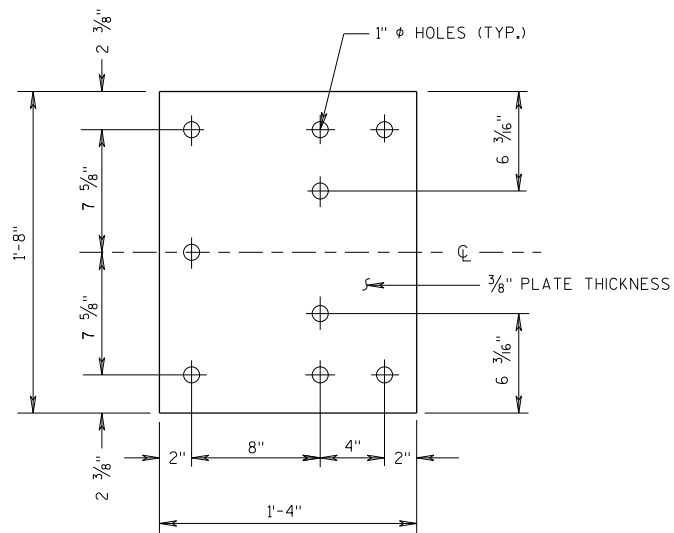


SECTION I-I

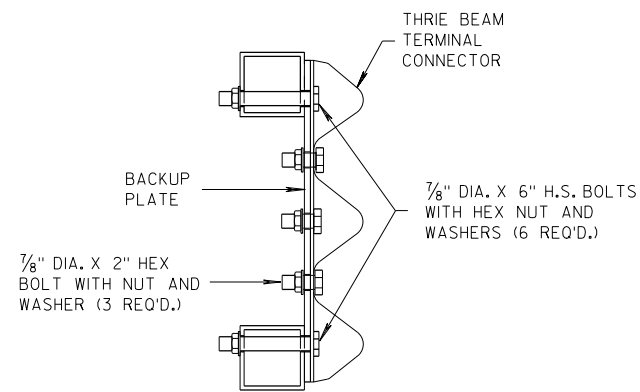
**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

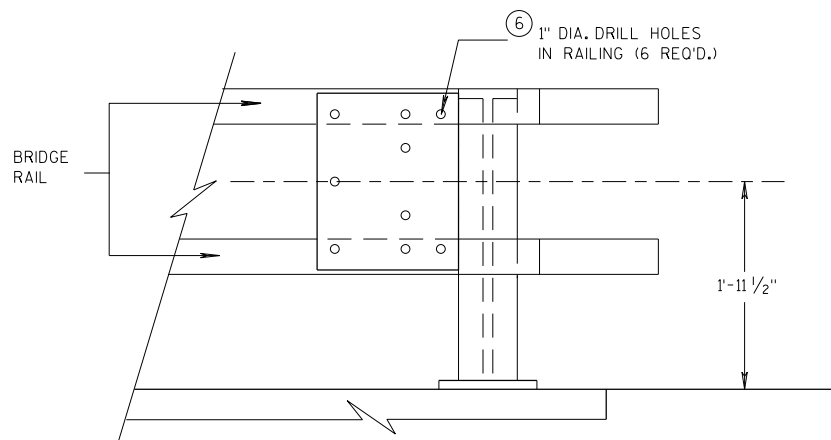
APPROVED
DATE 07/2018 /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA



BACK-UP PLATE DETAIL



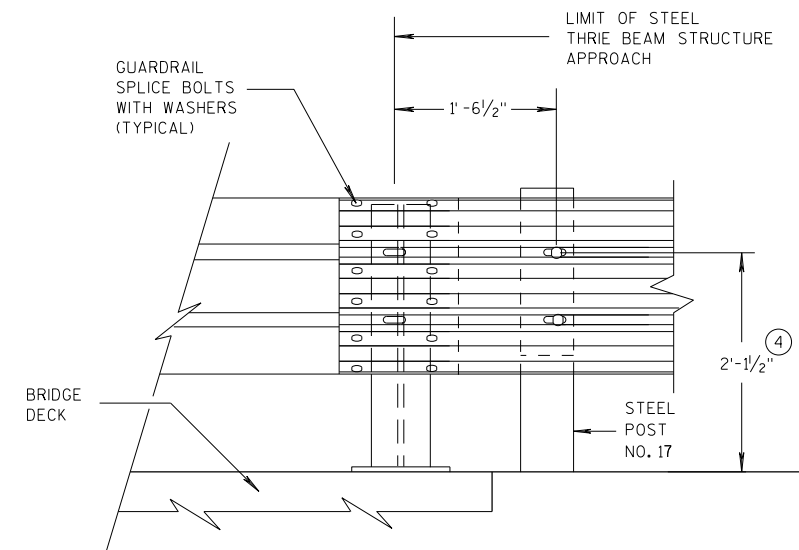
SECTION J-J



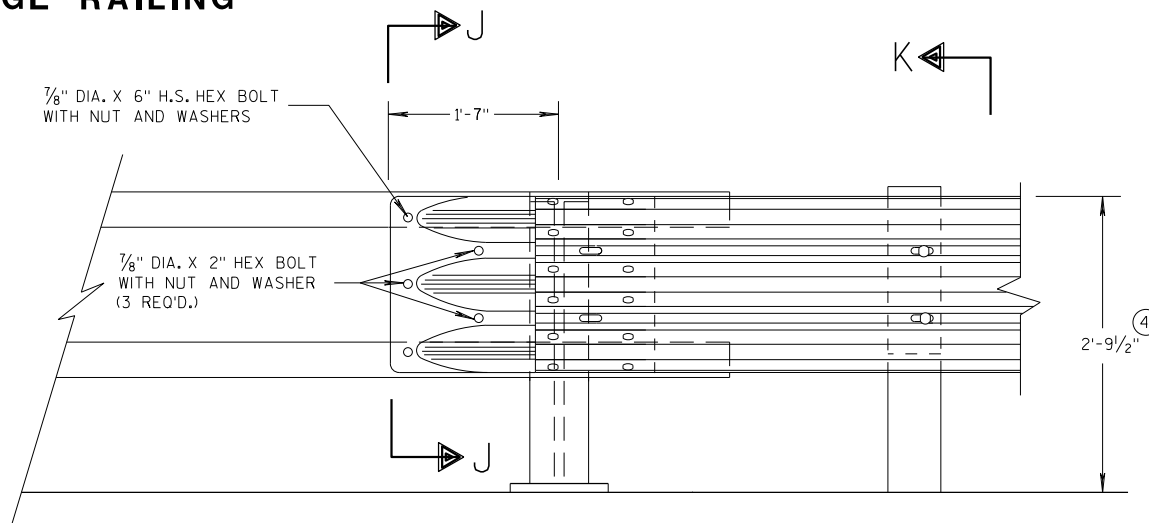
BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

GENERAL NOTES

- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1'$.
- ⑥ DRILLING HOLES THROUGH THE PAPER, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

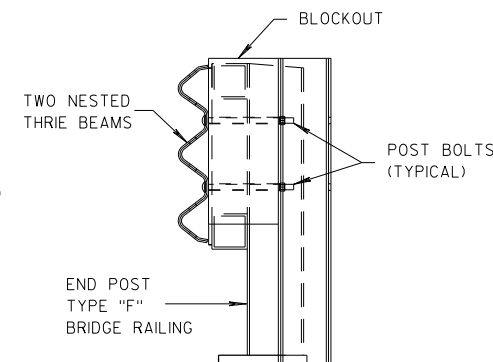


FRONT VIEW THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



FRONT VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"



SECTION K-K

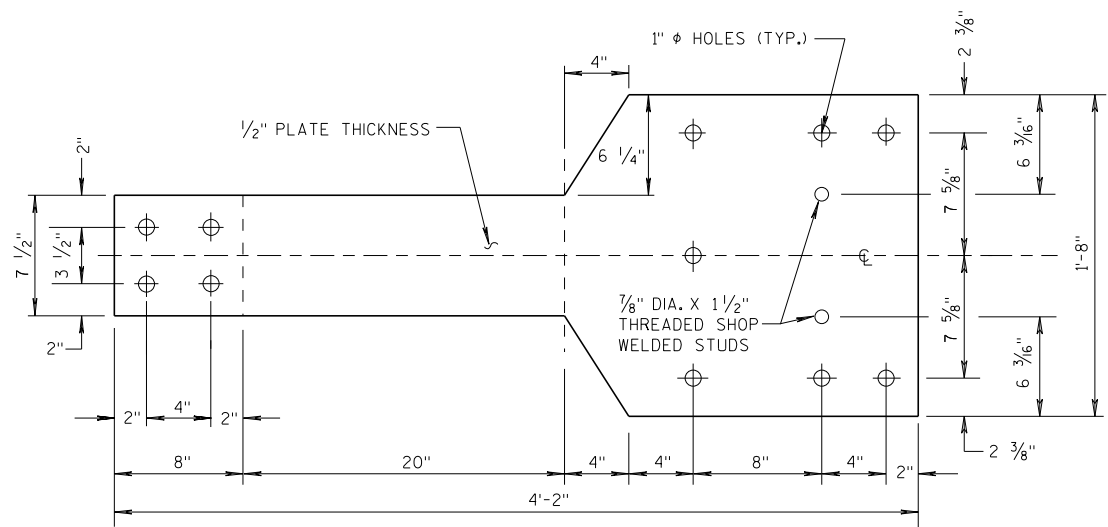
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 07/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	

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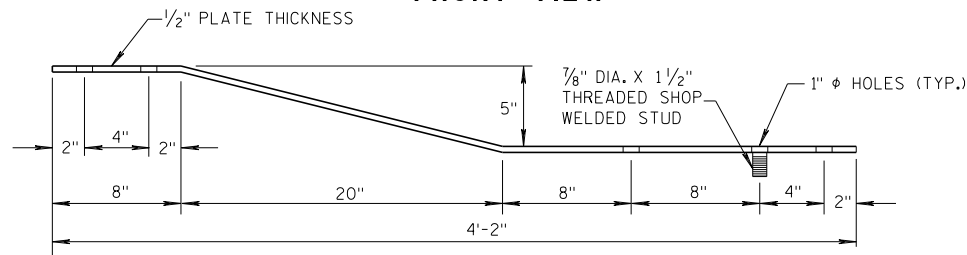
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GENERAL NOTES

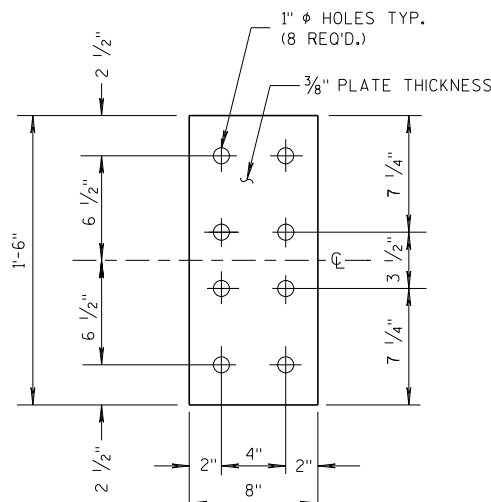
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



FRONT VIEW

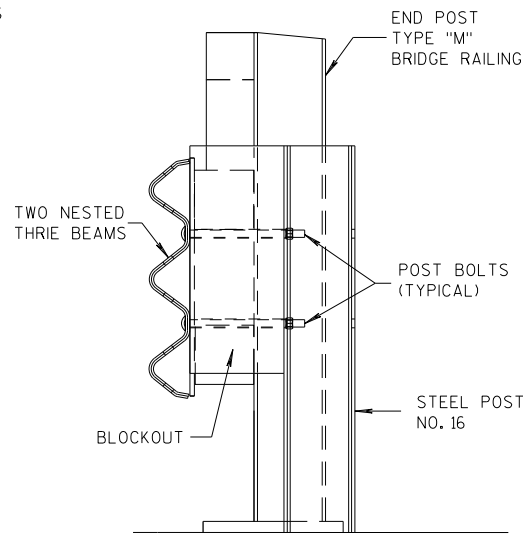


**PLAN VIEW
BACK-UP PLATE DETAIL, TYPE "M"**

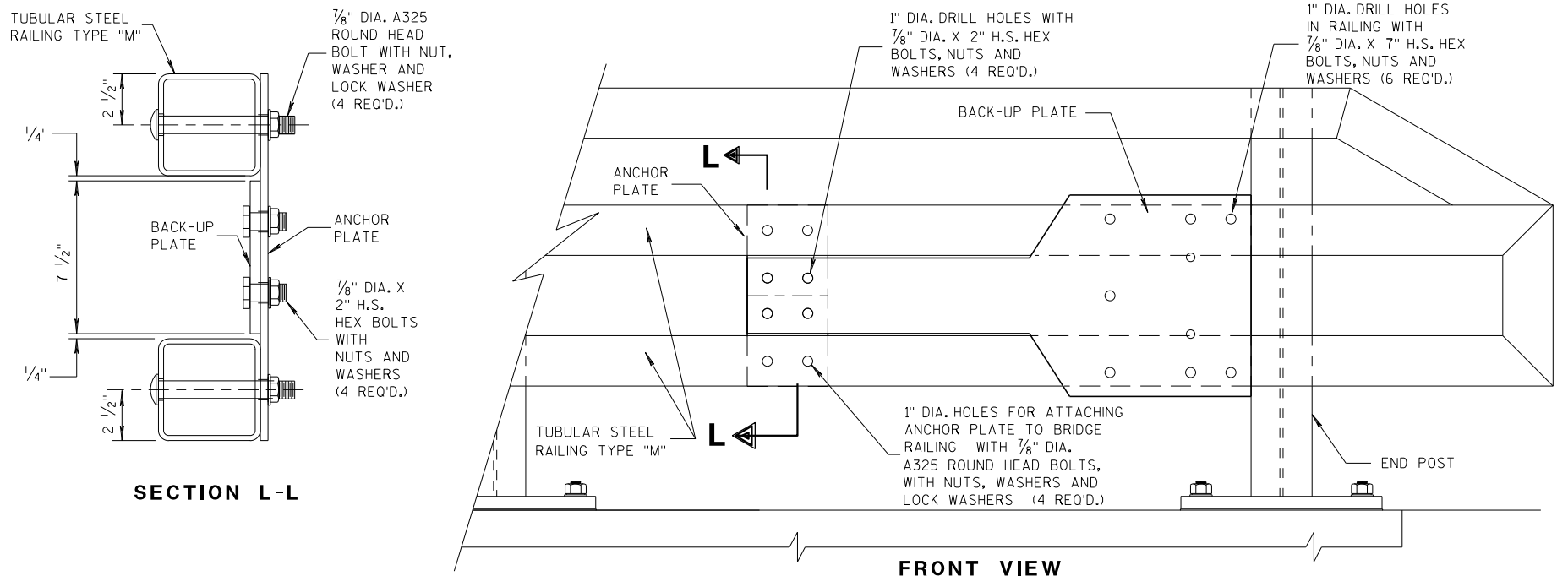


FRONT VIEW

**ANCHOR
PLATE DETAIL,
TYPE "M"**



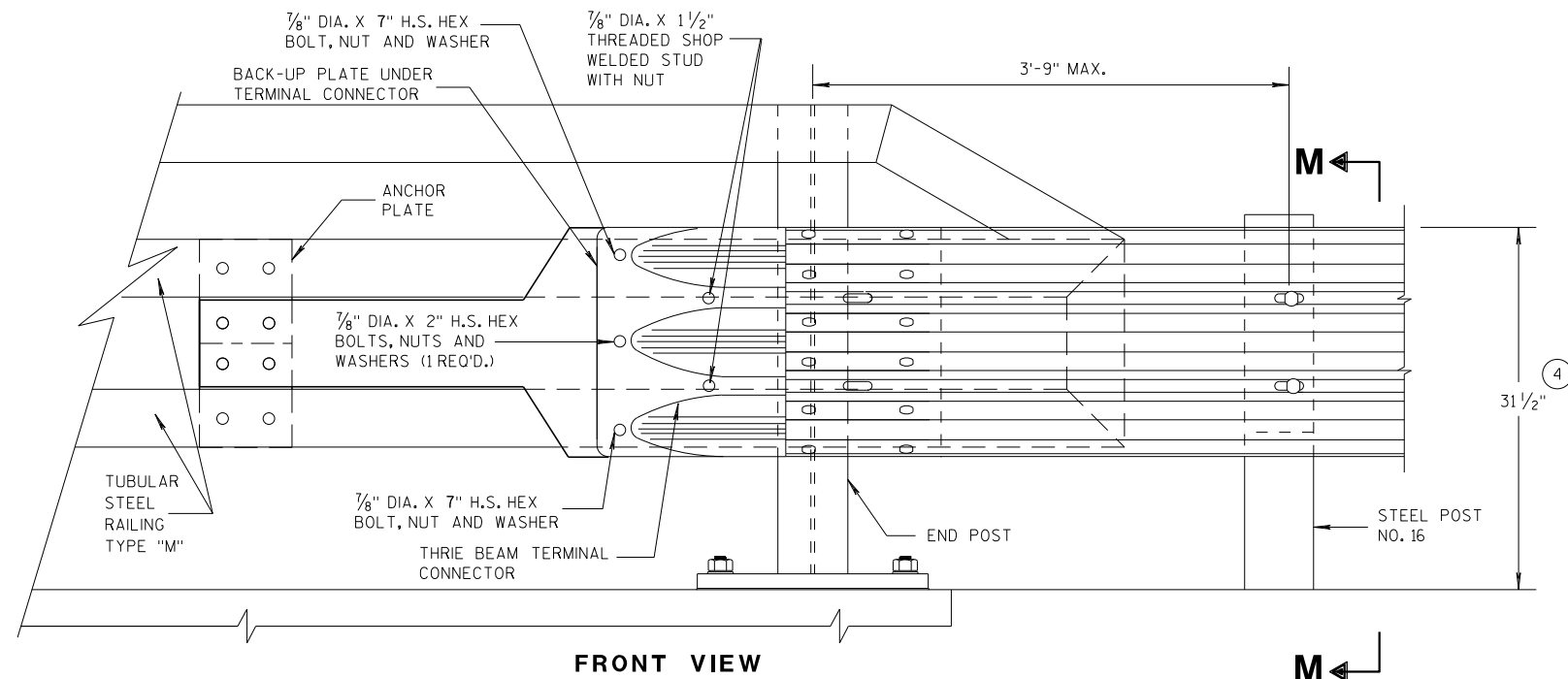
SECTION M-M



SECTION L-L

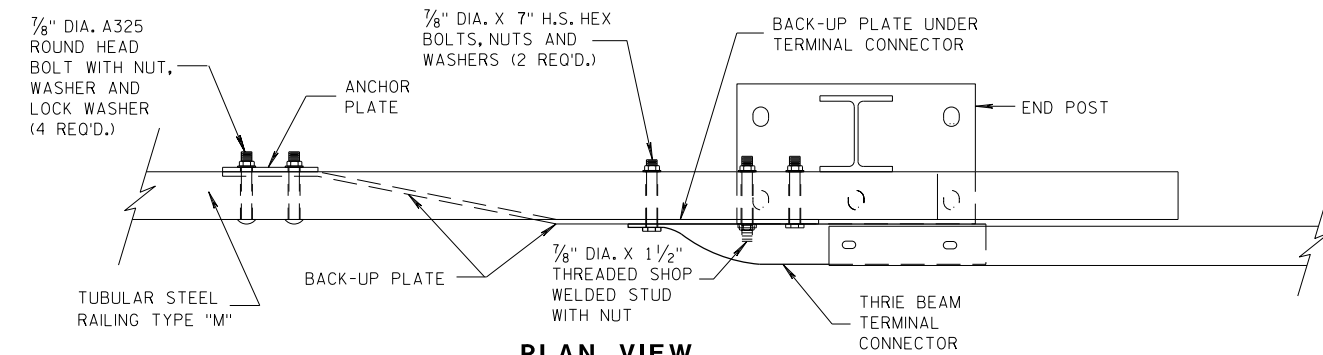
FRONT VIEW

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



FRONT VIEW

M



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

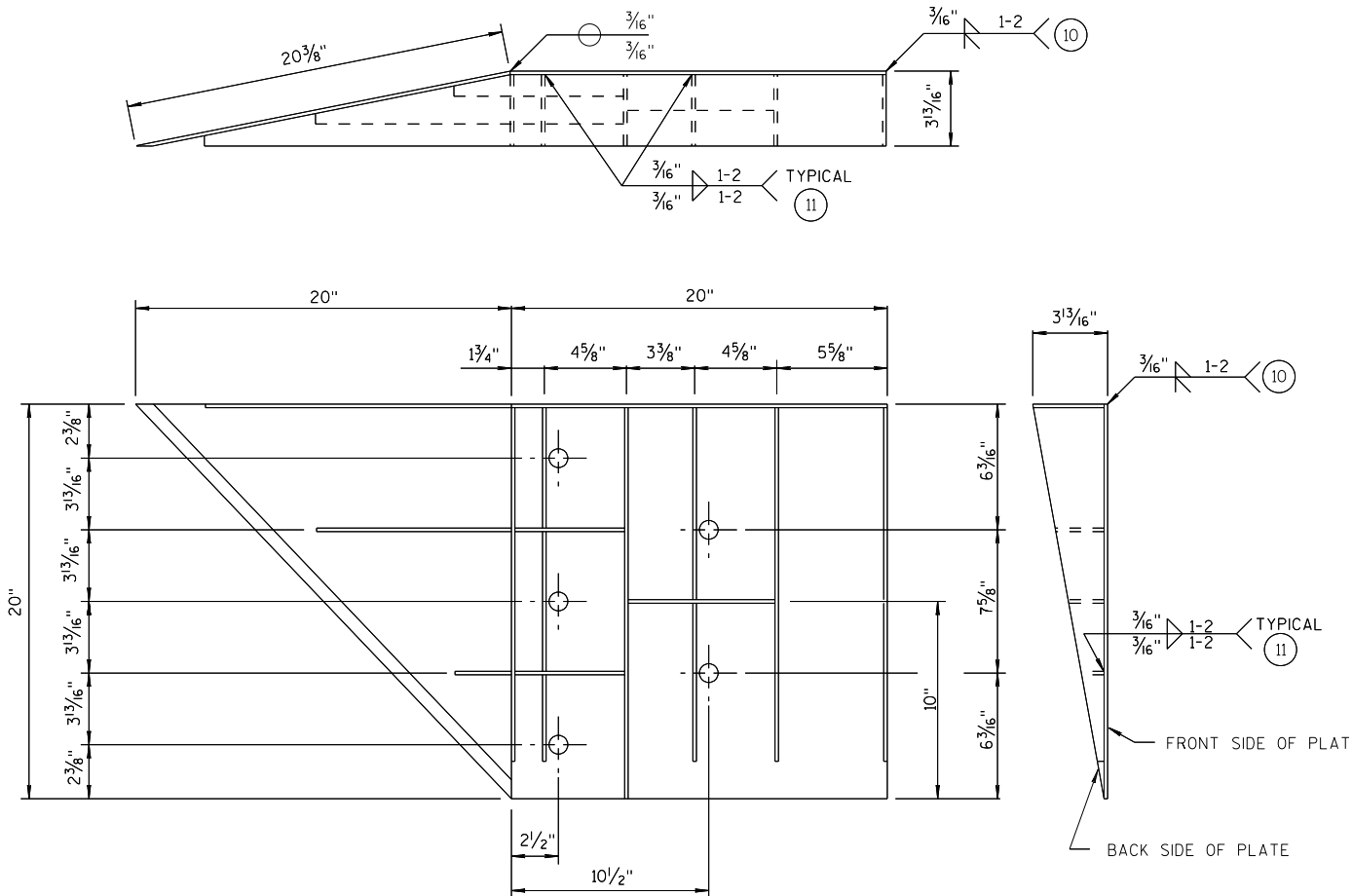
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE 07/2018 /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA

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.

- (10) 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.
- (11) STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD BY 1" LONG SPACED AT 2".



WELDING INSTRUCTION
(VIEWED FROM BACK SIDE OF PLATE)

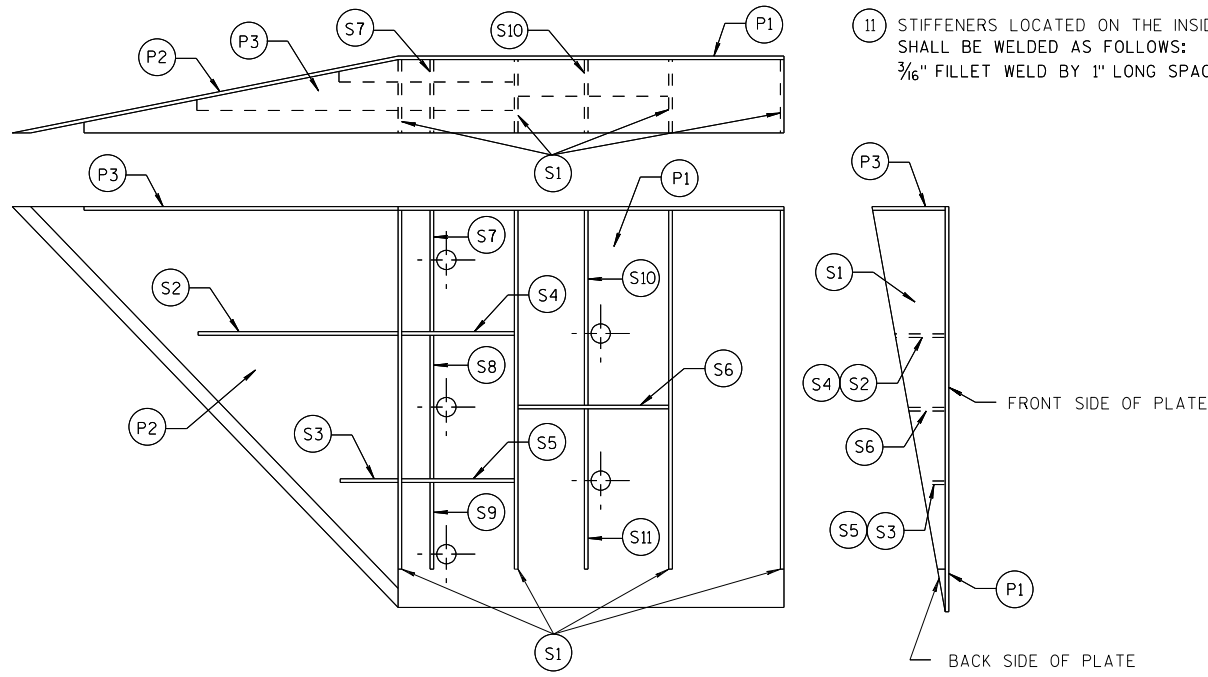


PLATE AND STIFFENER IDENTIFICATION
(VIEWED FROM BACK SIDE OF PLATE)

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 3/16"	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 1/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 3/8" 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 3/16" x 6" x 3 5/8" x 5 1/8"	1/4"
S8	1		1 5/32" 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 3/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 11/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 3/16"	1/4"

SINGLE SLOPE CONNECTION PLATE

**MIDWEST GUARDRAIL SYSTEM
THREE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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7/2018
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

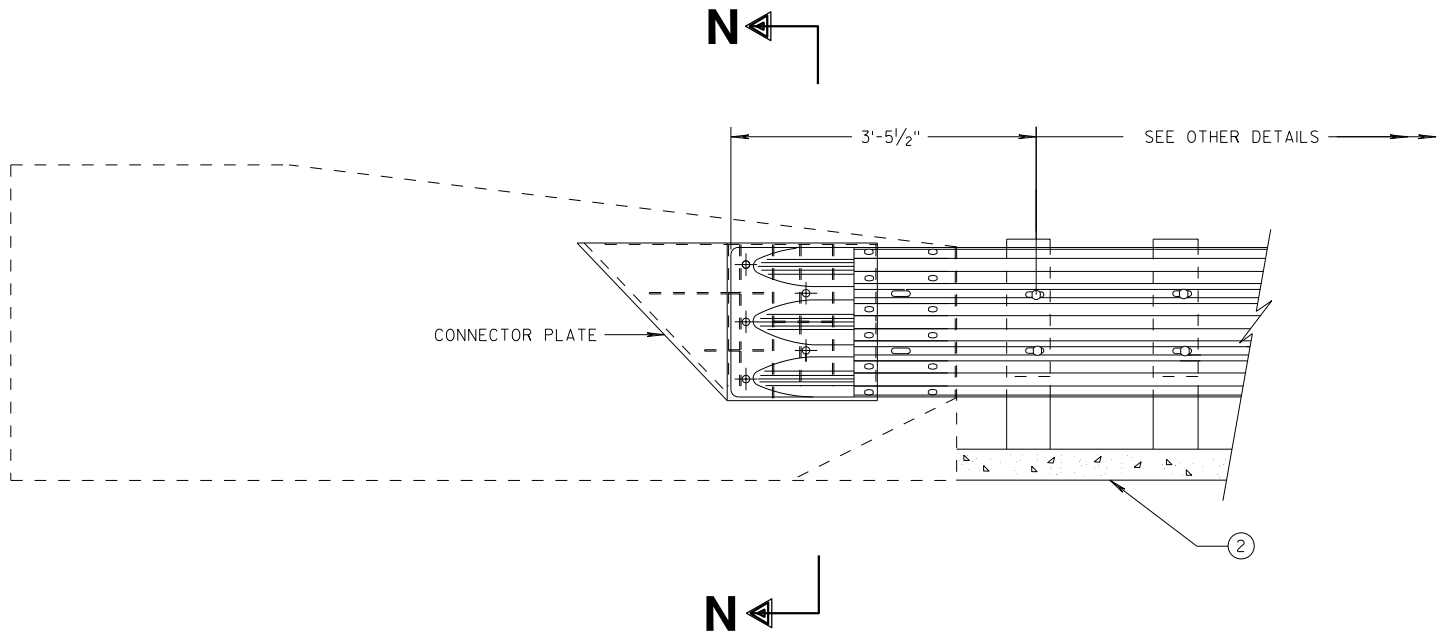
FHWA

GENERAL NOTES

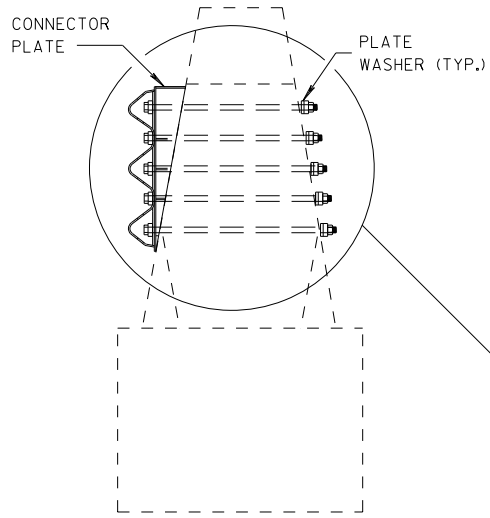
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

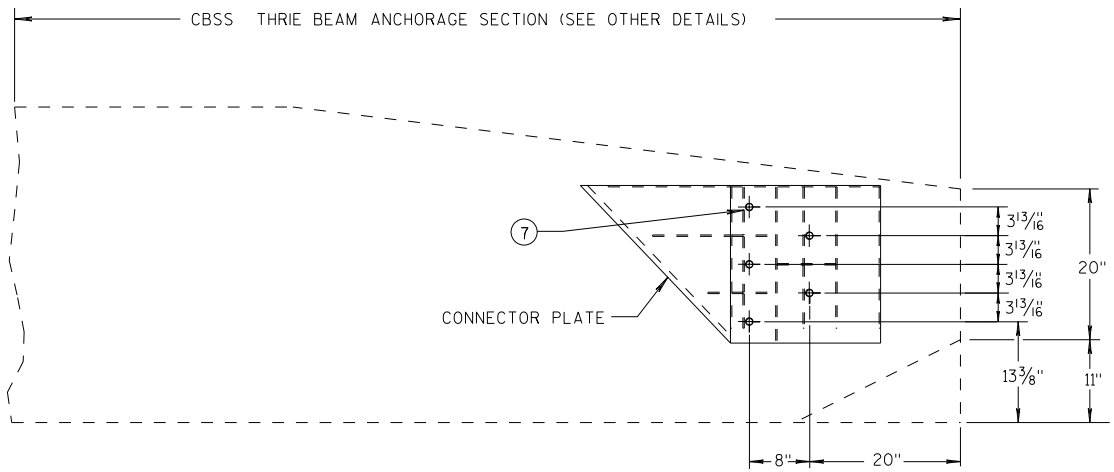
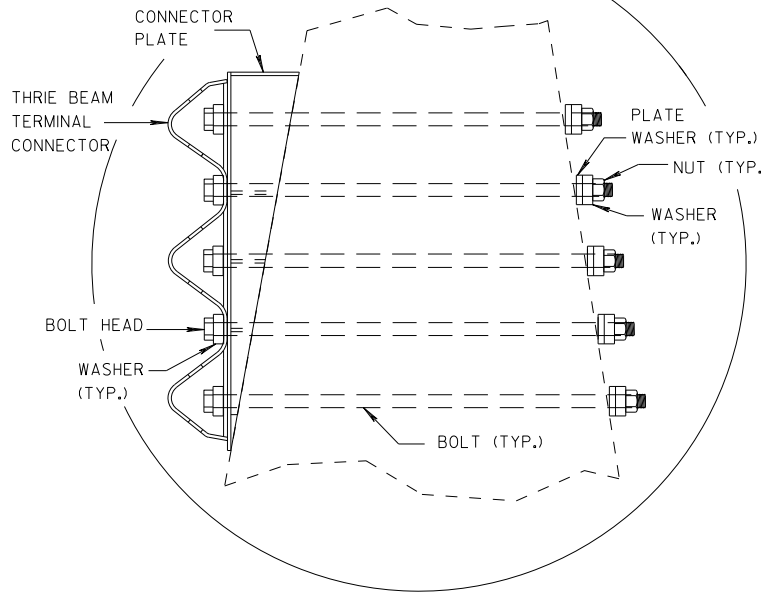
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTION PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



SECTION N-N

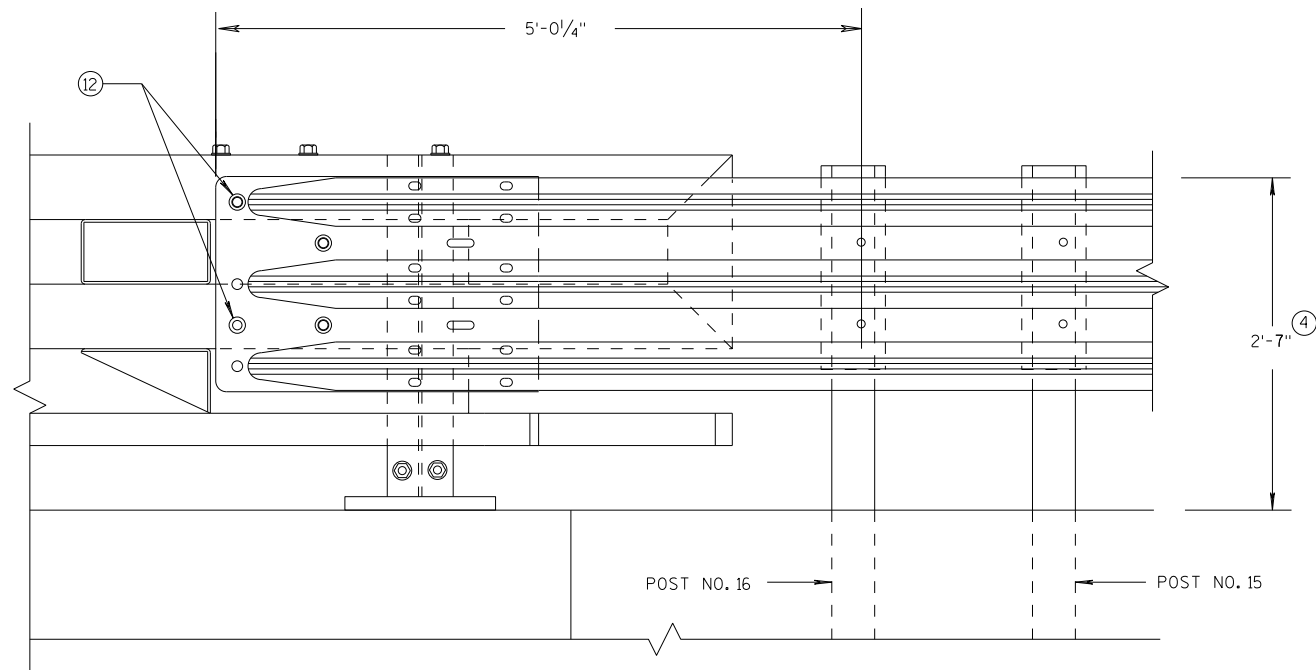


SINGLE SLOPE CONNECTION PLATE PLACEMENT

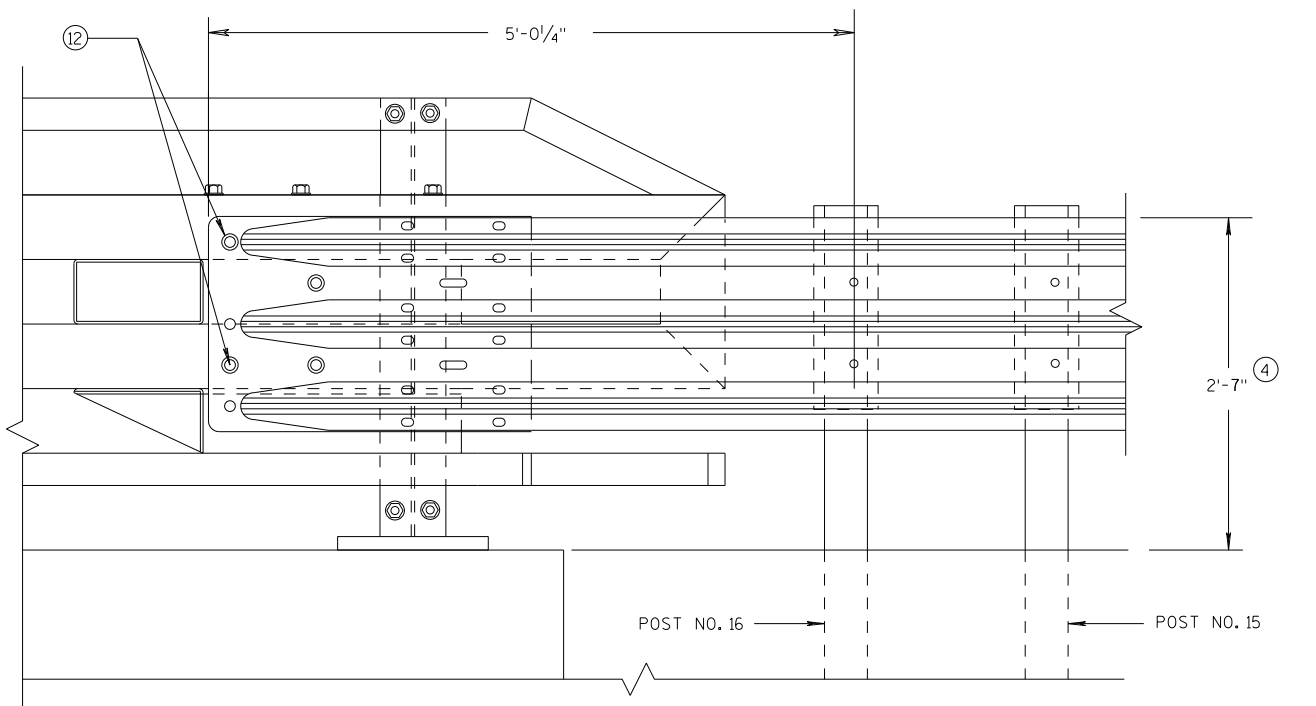
**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



**ELEVATION OF DETAIL AT NY3 END POST
THRIE BEAM RAIL ATTACHMENT**



**ELEVATION OF DETAIL AT NY4 END POST
THRIE BEAM RAIL ATTACHMENT**

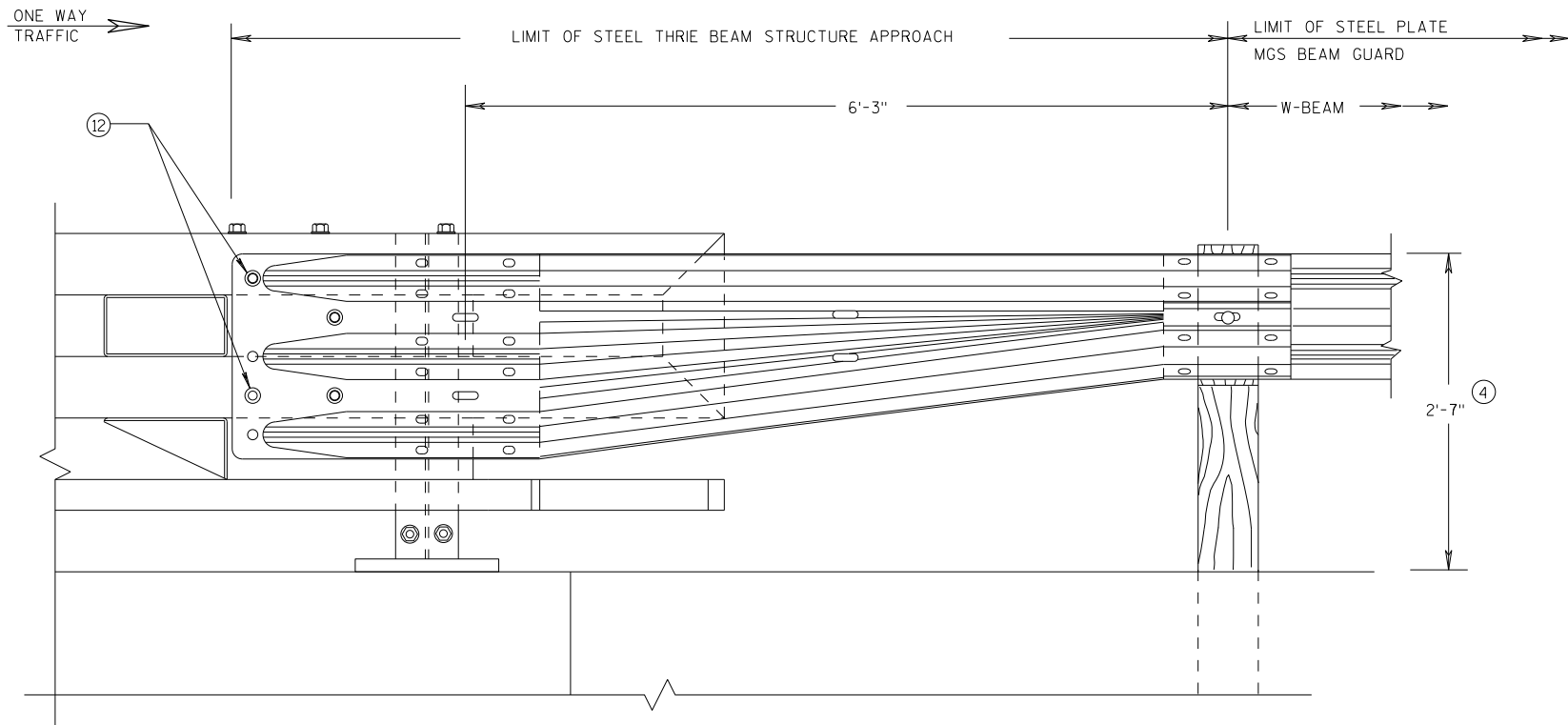
GENERAL NOTES

- ④ TOLERANCE FOR TOP OF BEAM IS ± 1".
- ⑫ 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. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND 1/2-INCH BEYOND NUT.

**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

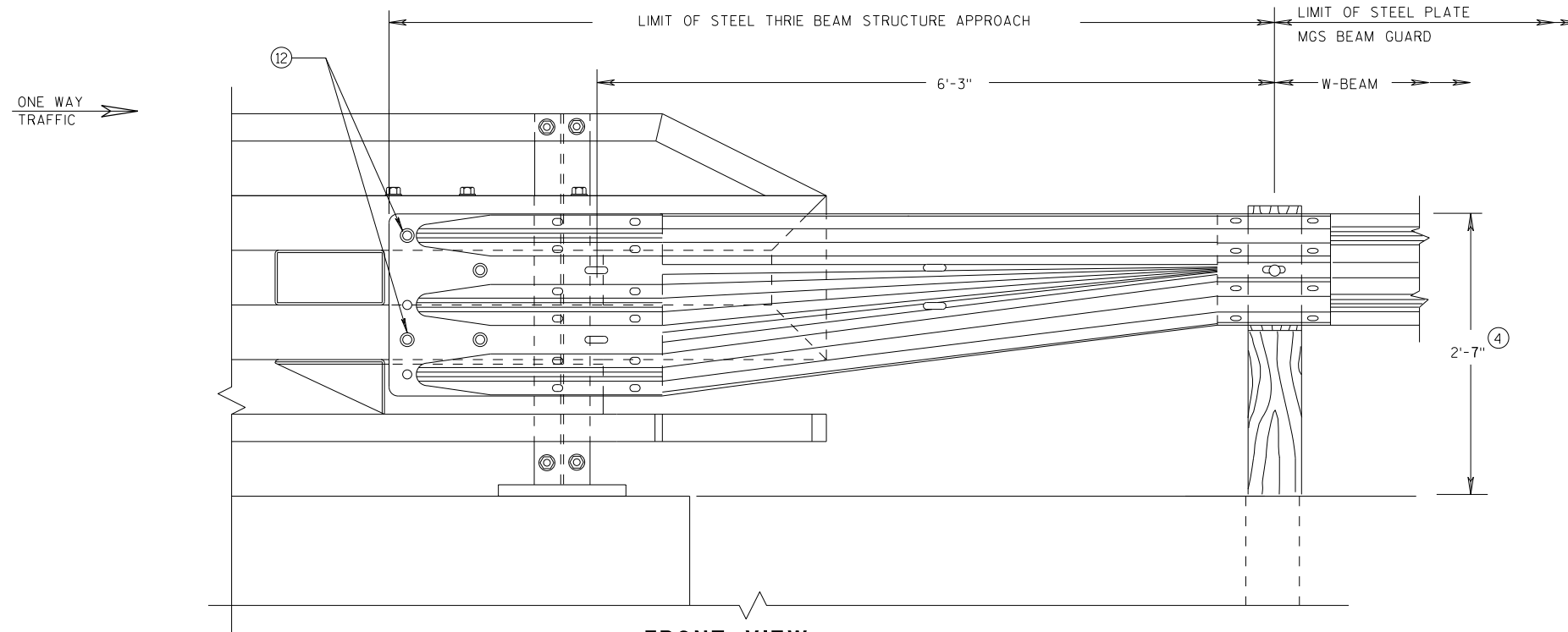
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DATE 7/2018 /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA



FRONT VIEW
W BEAM TRANSITION AND
CONNECTION TO BRIDGE RAILING TYPE "NY3"
 (USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

GENERAL NOTES

- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑫ 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. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND $\frac{1}{2}$ -INCH BEYOND NUT.



FRONT VIEW
W BEAM TRANSITION AND
CONNECTION TO BRIDGE RAILING TYPE "NY4"
 (USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

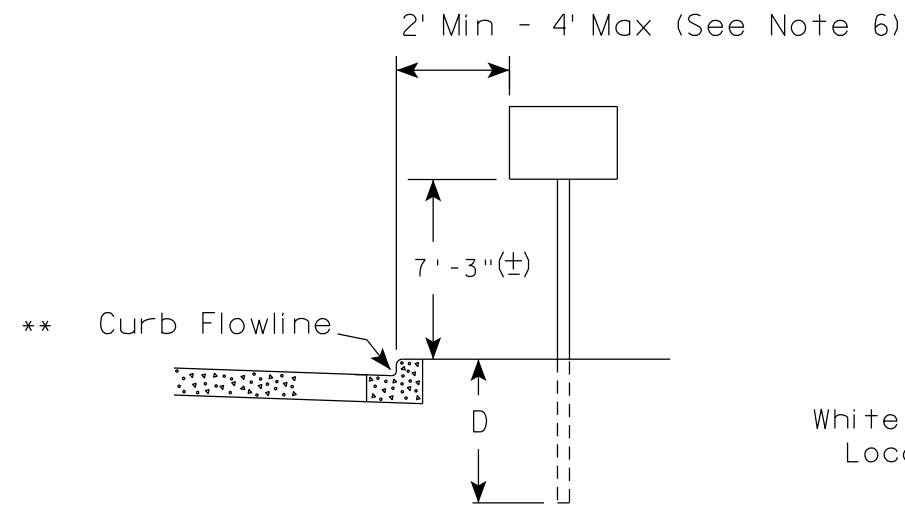
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

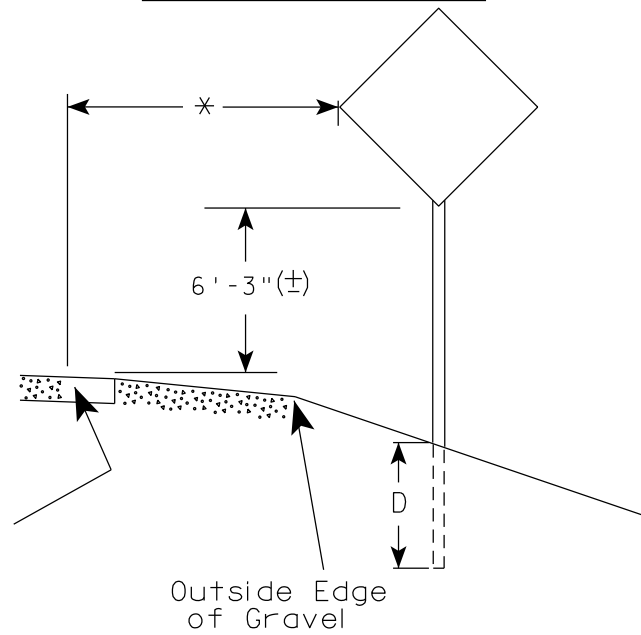
APPROVED
 DATE 7/2018 /S/ Rodney Taylor
 ROADWAY STANDARDS DEVELOPMENT
 UNIT SUPERVISOR
 FHWA

URBAN AREA

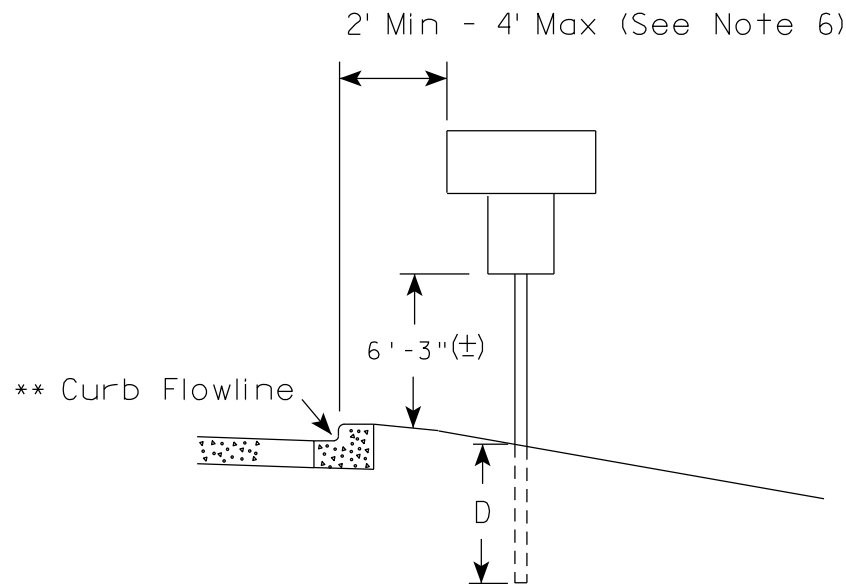
RURAL AREA (See Note 2)



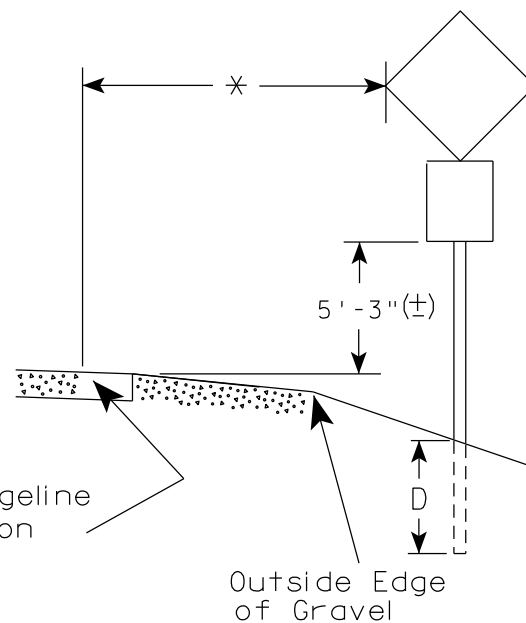
White Edgeline Location



Outside Edge of Gravel



White Edgeline Location



Outside Edge of Gravel

POST EMBEDMENT DEPTH

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

GENERAL NOTES

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

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

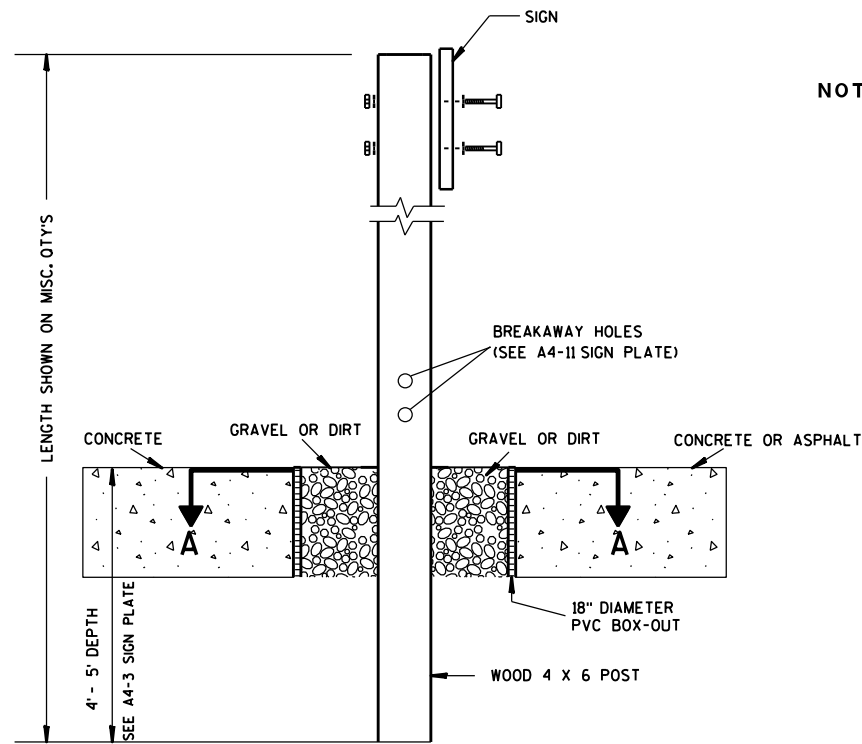
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

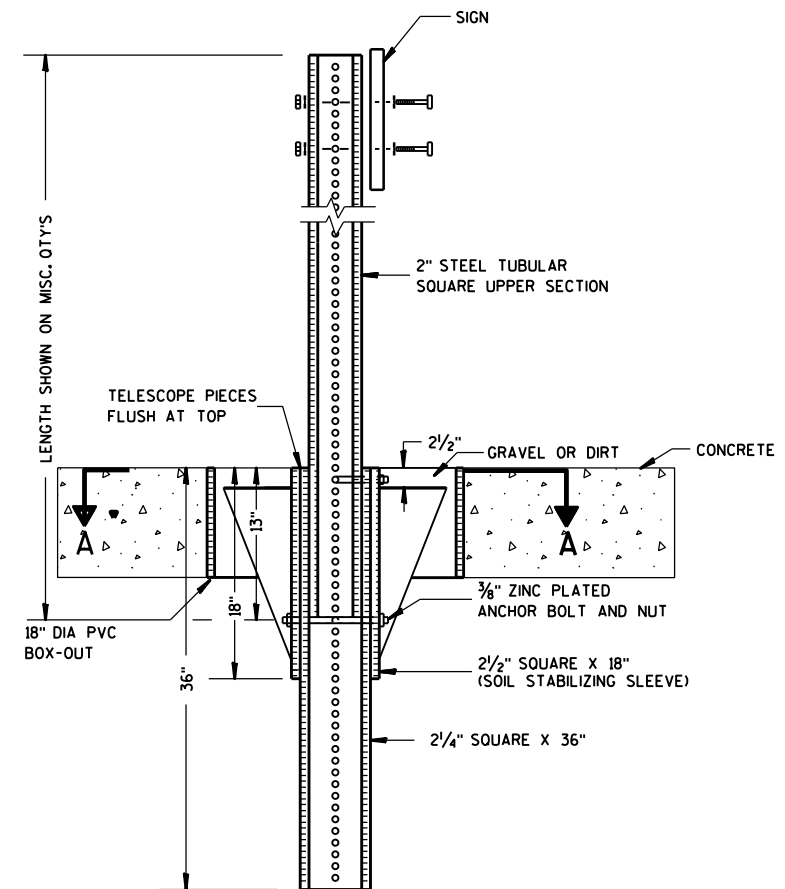
DATE 5/13/2020 PLATE NO. A4-3.22



ELEVATION VIEW

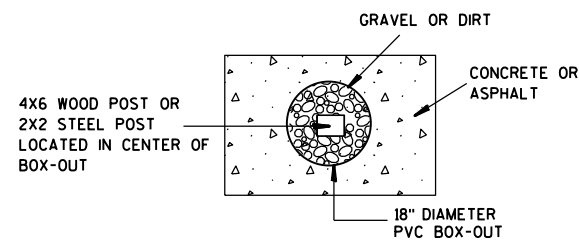
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ ASPHALT INSTALLATIONS

**SIGN POST
BOX-OUTS
A4-3B**

WISCONSIN DEPT OF TRANSPORTATION

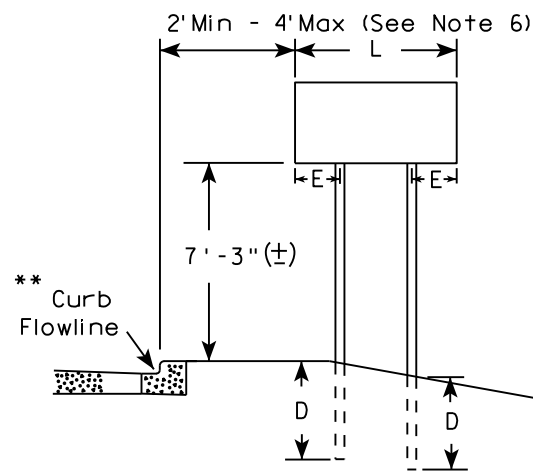
APPROVED *Matthew R. Rauch*

for State Traffic Engineer
DATE 1/27/14 PLATE NO. A4-3B.1

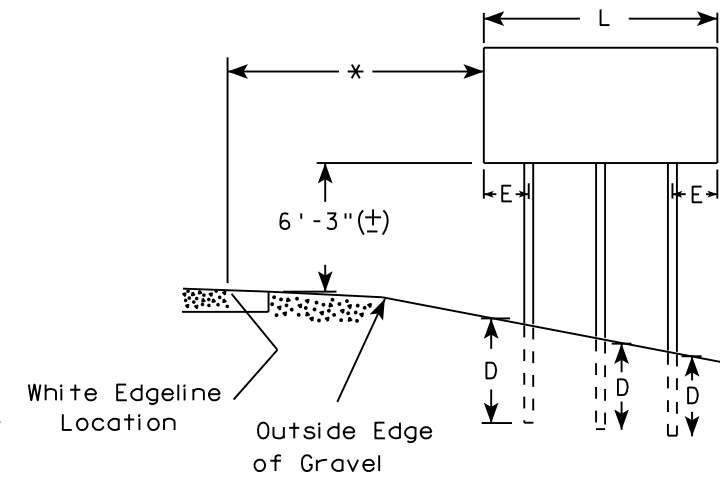
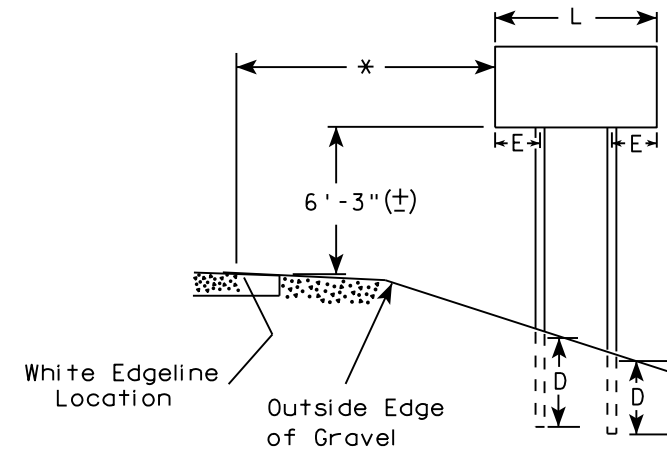
GENERAL NOTES

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

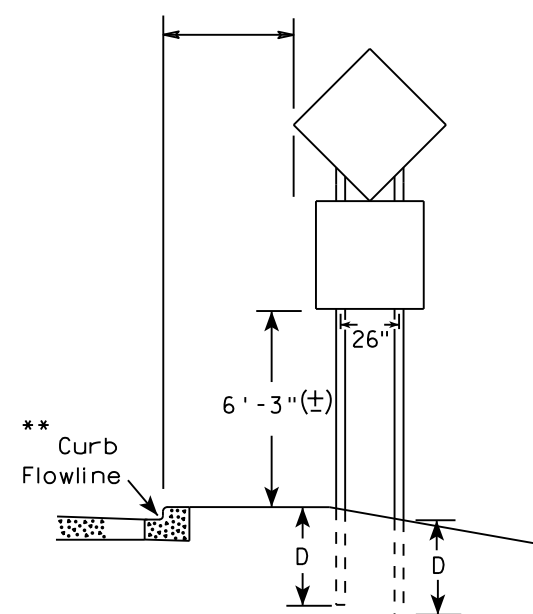
URBAN AREA



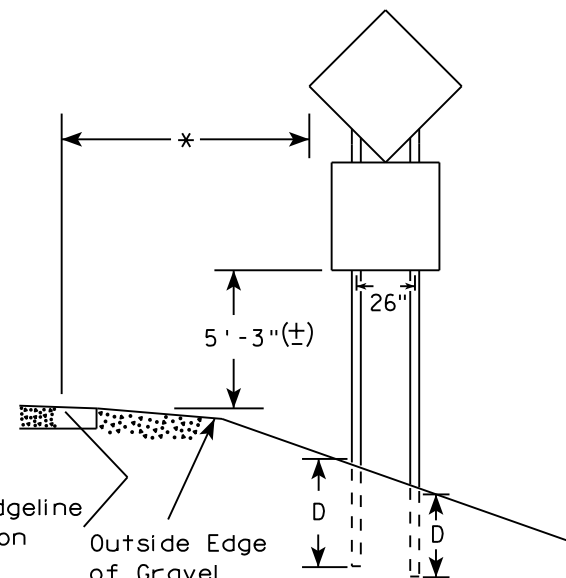
RURAL AREA (See Note 3)



2' Min - 4' Max (See Note 6)



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

*** See A4-3 sign plate for signs 4' or less in width and less than 20 S.F. in area.

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

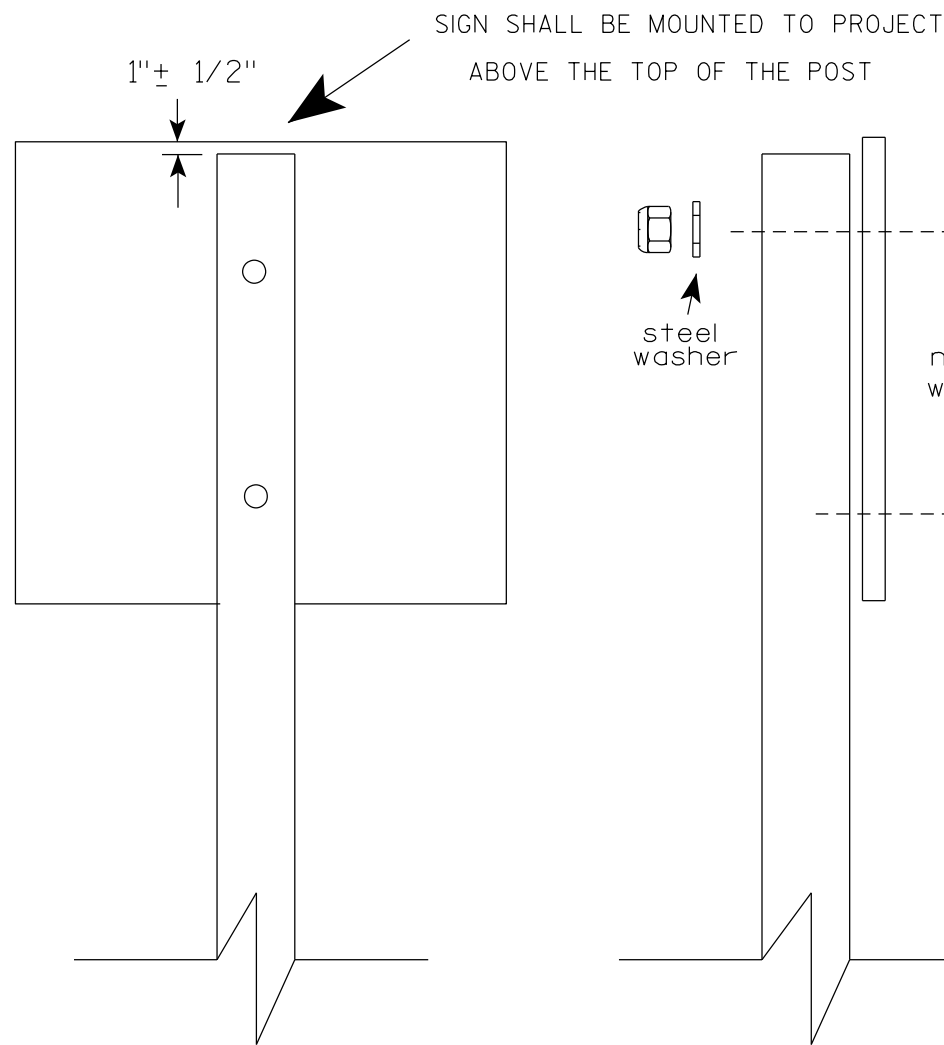
SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION
 APPROVED *Matthew R. Rauch*
 For State Traffic Engineer
 DATE 8/21/17 PLATE NO. A4-4.15



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

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

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

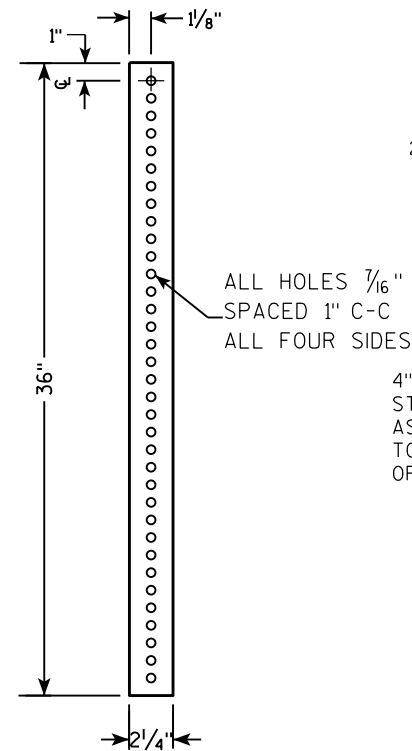
- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS - $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)
 $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE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

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

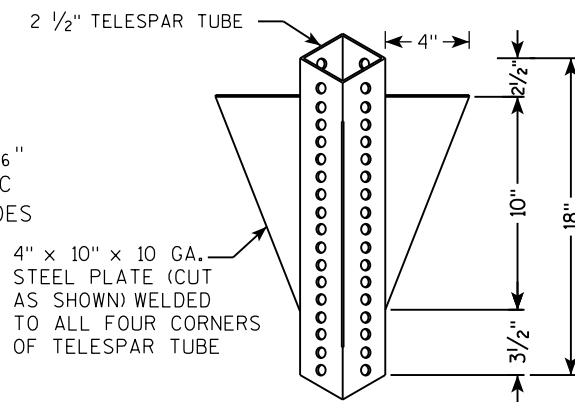
ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R Rauch</i> For State Traffic Engineer
DATE 4/1/2020	PLATE NO. A4-8.9

**TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM**

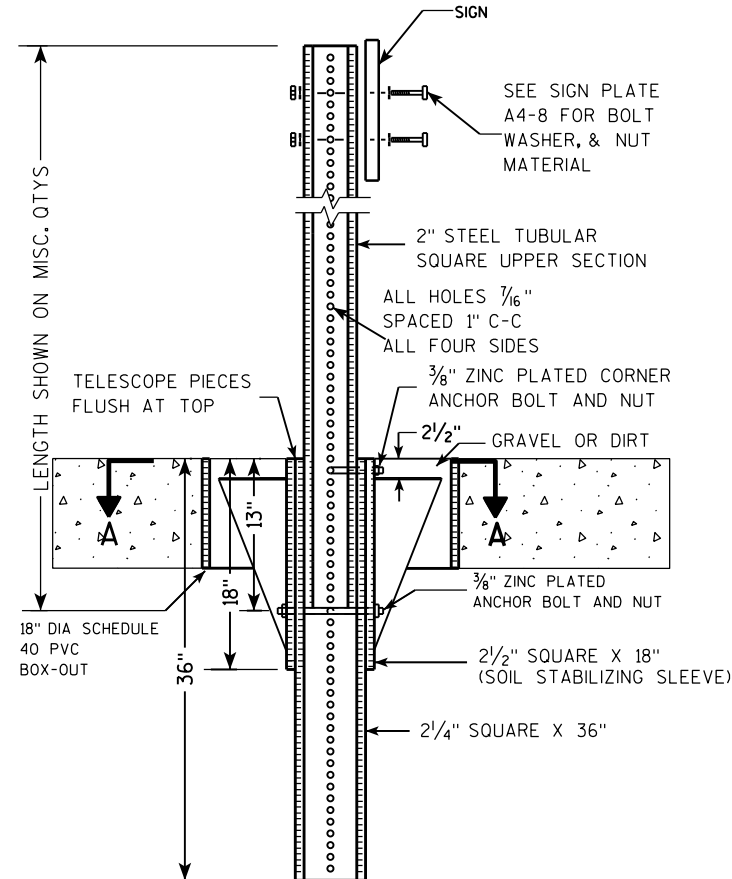
2 1/4" SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



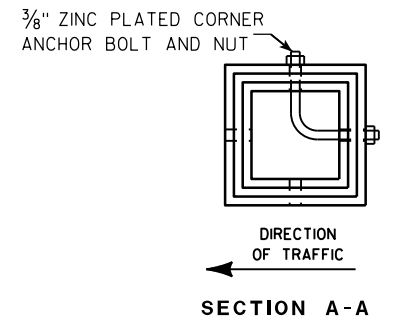
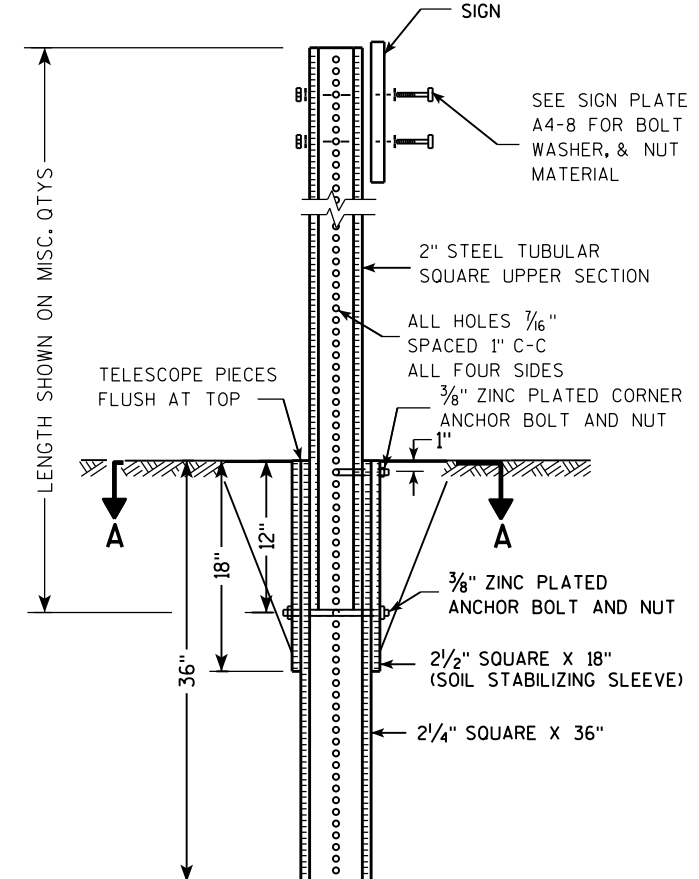
2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH



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



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

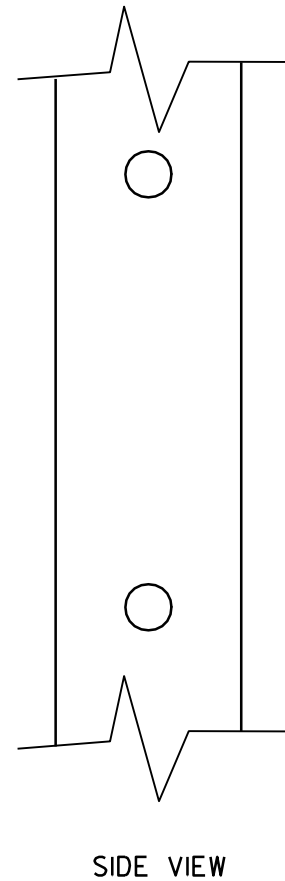
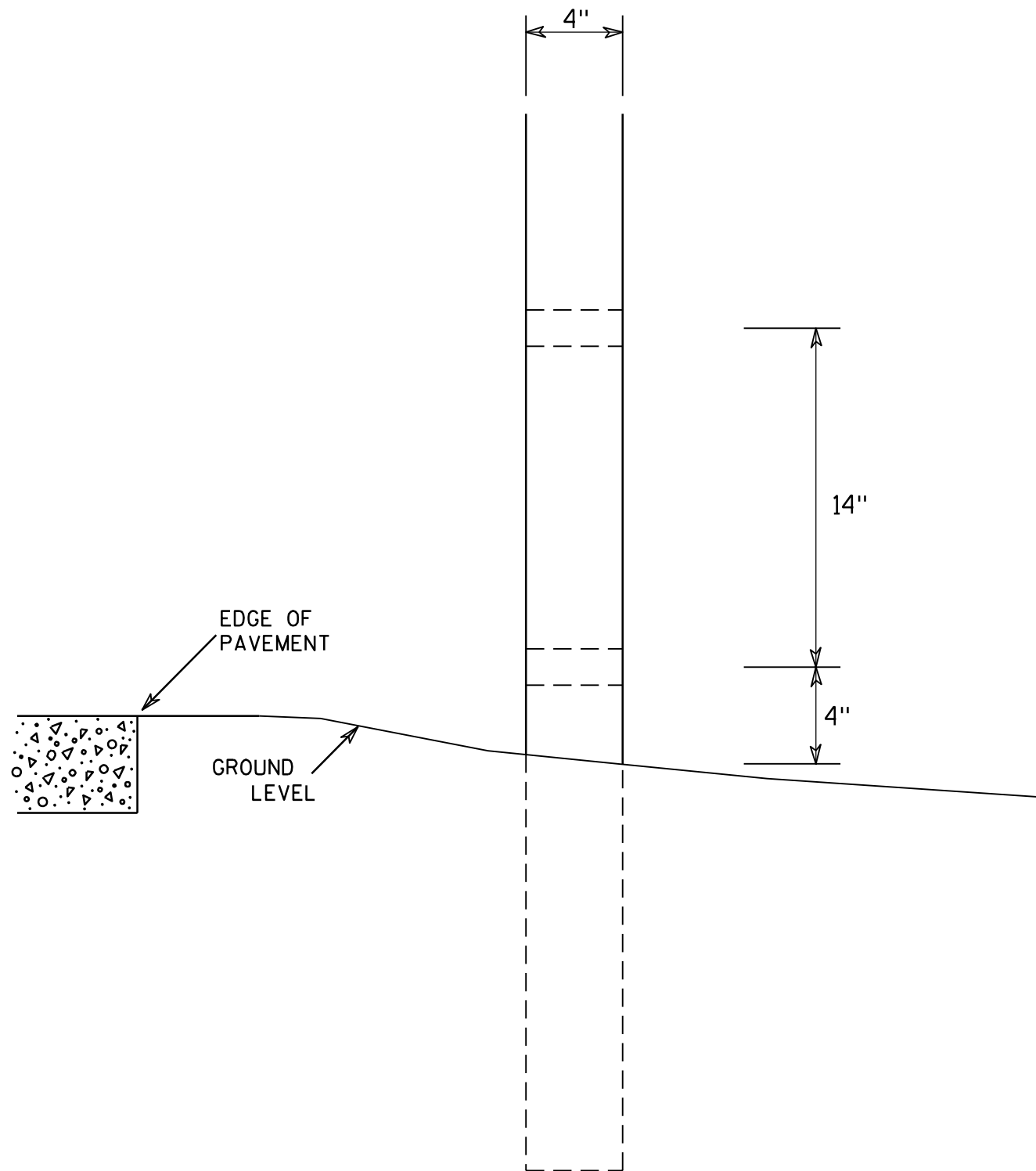


Area of Sign Installation (Sq. Ft.)	Number of Required Posts
9 or less	1
Greater than 9 less than or equal to 18	2
Greater than 18 less than or equal to 27	3

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

**TUBULAR STEEL
SIGN POST
A4-9**

WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 2/05/15 PLATE NO. A4-9.9



GENERAL NOTES

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

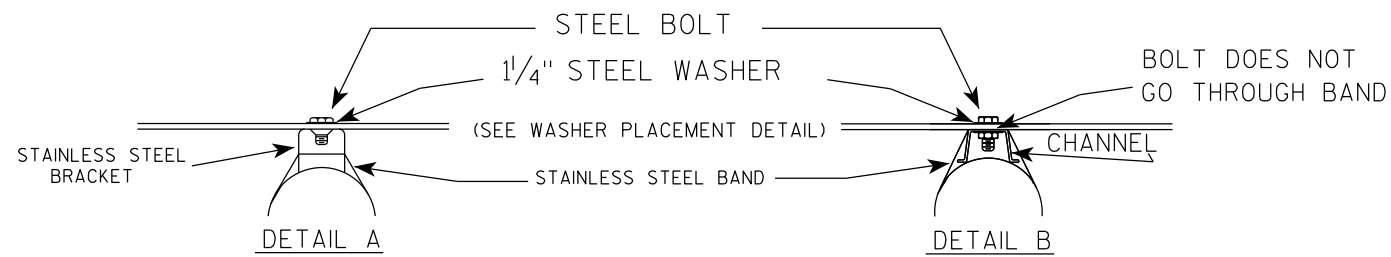
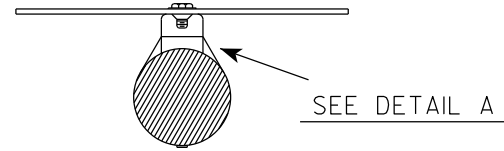
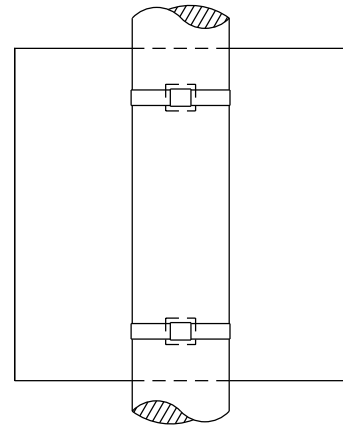
7

7

4 X 6 WOOD POST MODIFICATIONS	
<i>WISCONSIN DEPT OF TRANSPORTATION</i>	
APPROVED	<i>Chester J Spang</i> for State Traffic Engineer
DATE <u>3/27/97</u>	PLATE NO. <u>A4-11.2</u>

BANDING

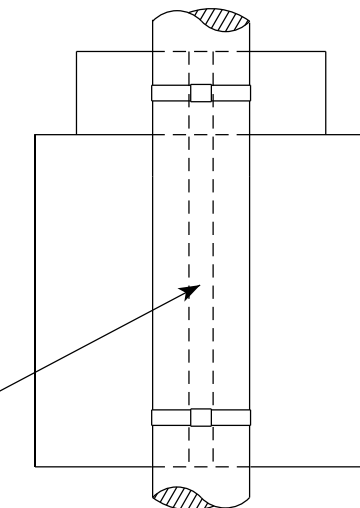
SINGLE SIGN



GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be 3/4" in width and 0.025" thickness.
4. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM designation: B 633, Type III, SC 3

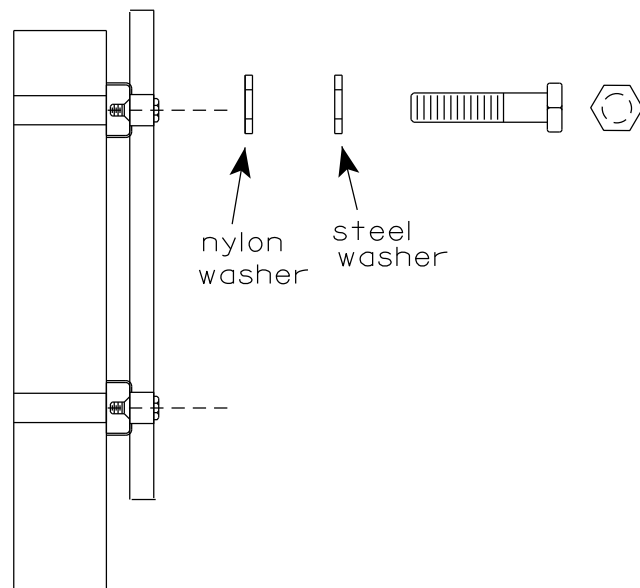
"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET

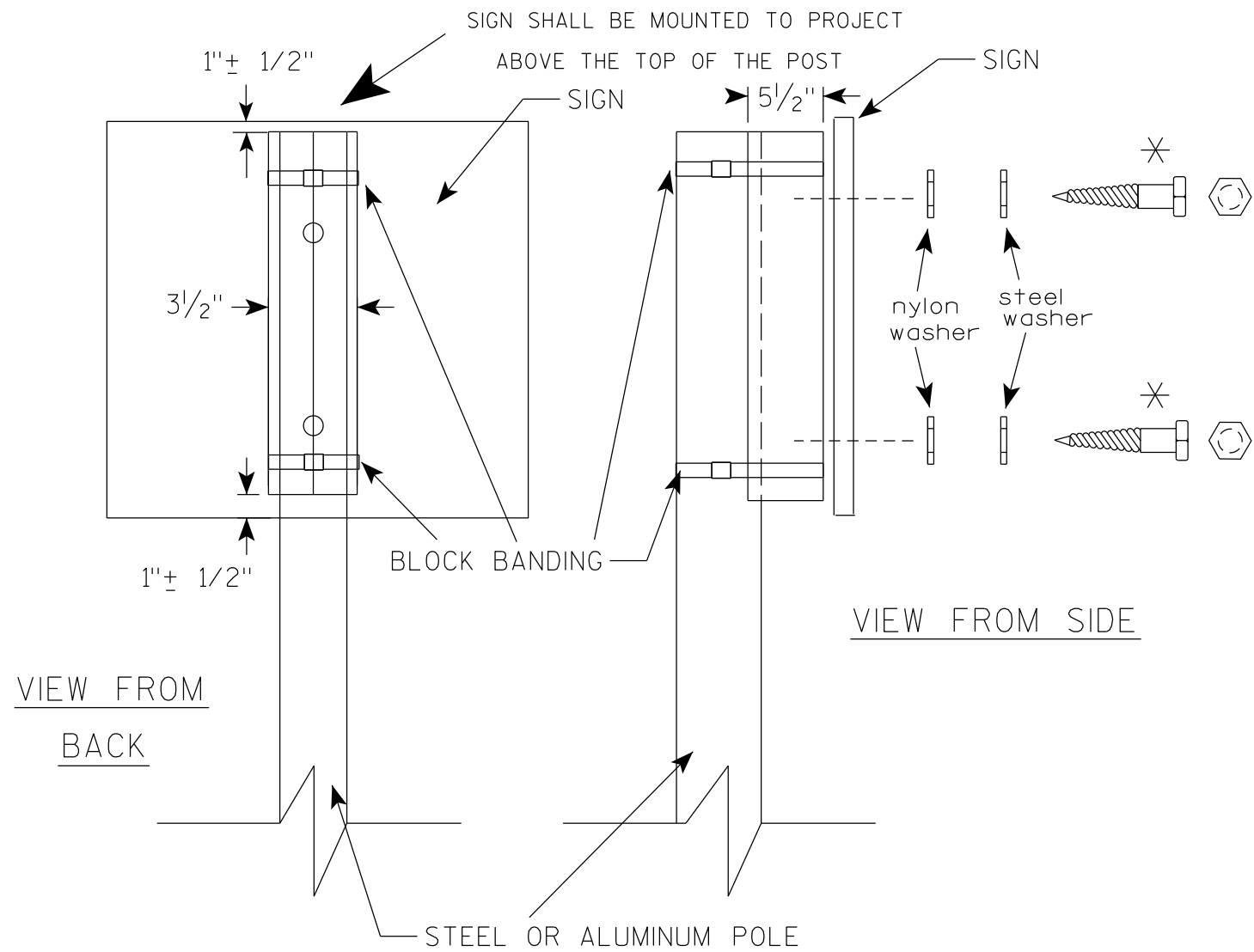


WASHER PLACEMENT



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

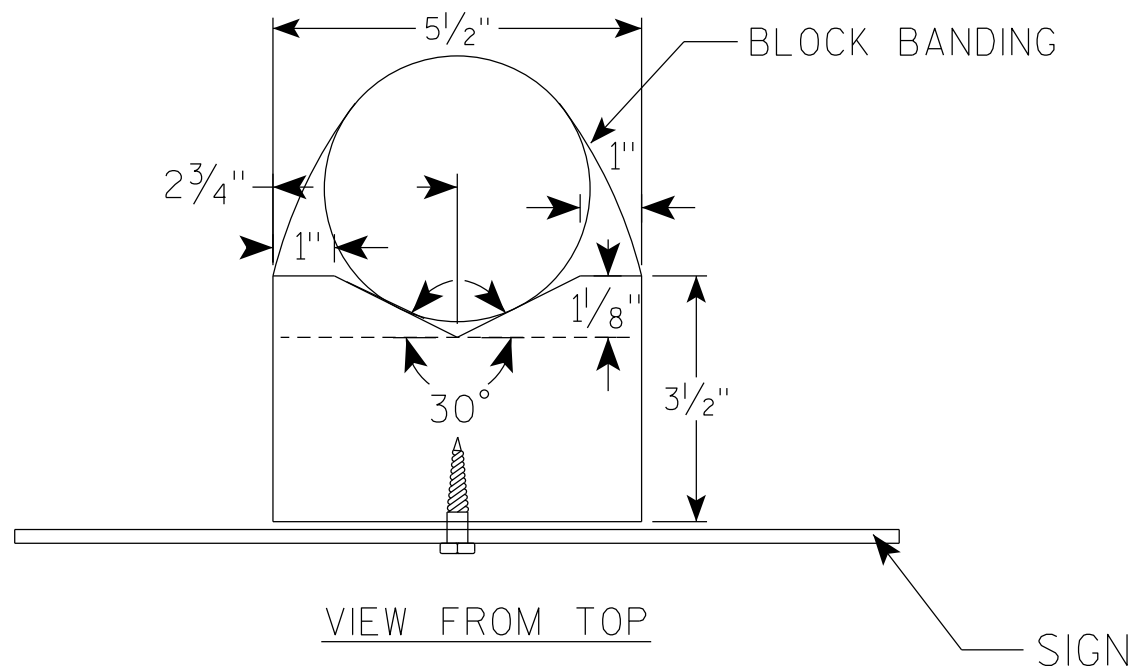
STANDARD SIGN SIGN BANDING DETAILS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 6/10/19	PLATE NO. A5-9.4



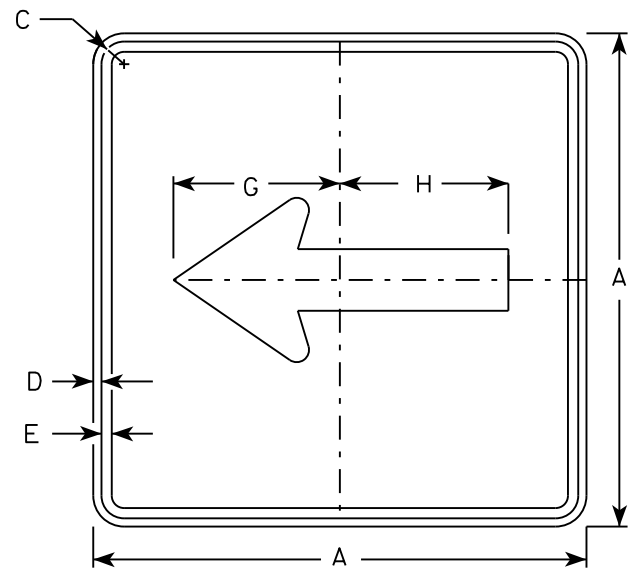
GENERAL NOTES

1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WisDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, 3/4" WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORMALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE 1/4" O.D. X 3/8" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1/4" O.D. X 3/8" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

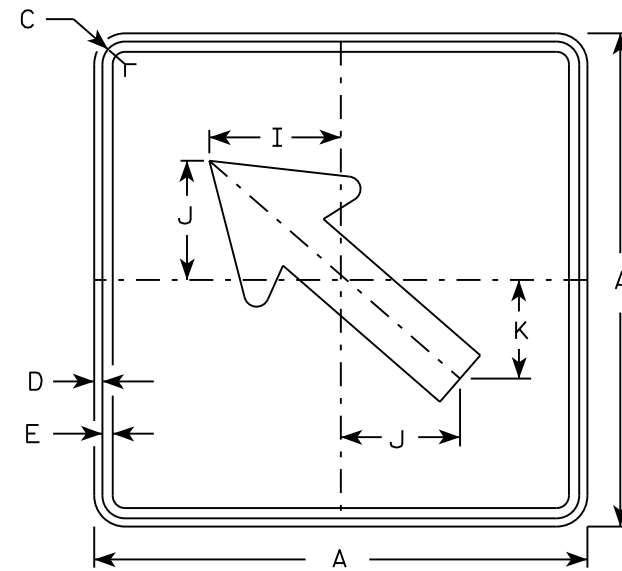
✱ LAG BOLTS SHALL BE 3/8" X 2 1/2"



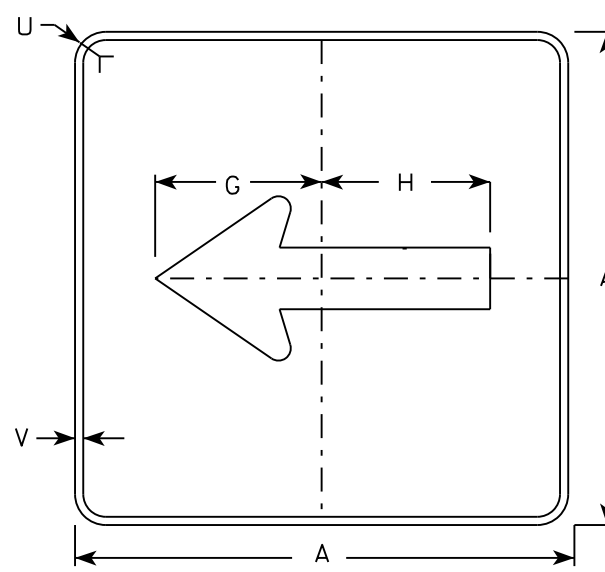
BLOCK BANDING DETAIL (V-BLOCK OPTION)	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R Rauch</i> for State Traffic Engineer
DATE <u>6/10/19</u>	PLATE NO. <u>A5-10.2</u>



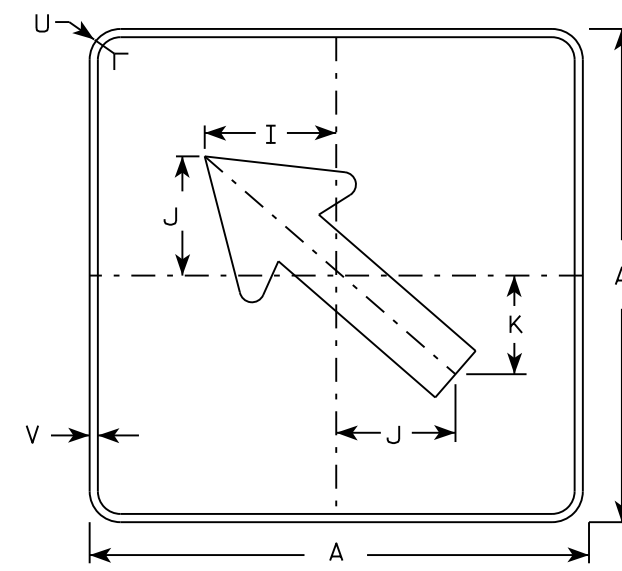
M6-1
MM6-1
M06-1
MP6-1



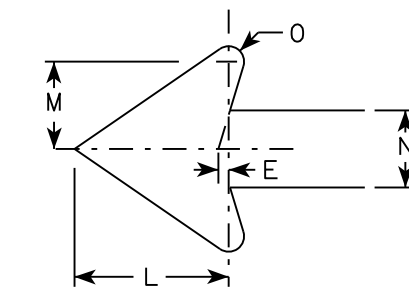
M6-2
MM6-2
M06-2
MP6-2



MB6-1
MK6-1
MN6-1
MR6-1



MB6-2
MK6-2
MN6-2
MR6-2



NOTES

- Signs are Type II - Type H except as Shown
- Color:
Background - See note 4
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M6-1 and M6-2 Background - White
Message - Black
MB6-1 and MB6-2 Background - Blue
Message - White
MK6-1 and MK6-2 Background - Green
Message - White
MM6-1 and MM6-2 Background - White
Message - Green
MN6-1 and MN6-2 Background - Brown
Message - White
M06-1 and M06-2 Background - Orange - Type F Reflective
Message - Black
MP6-1 and MP6-2 Background - White
Message - Blue
MR6-1 and MR6-2 Background - Brown
Message - Yellow

7

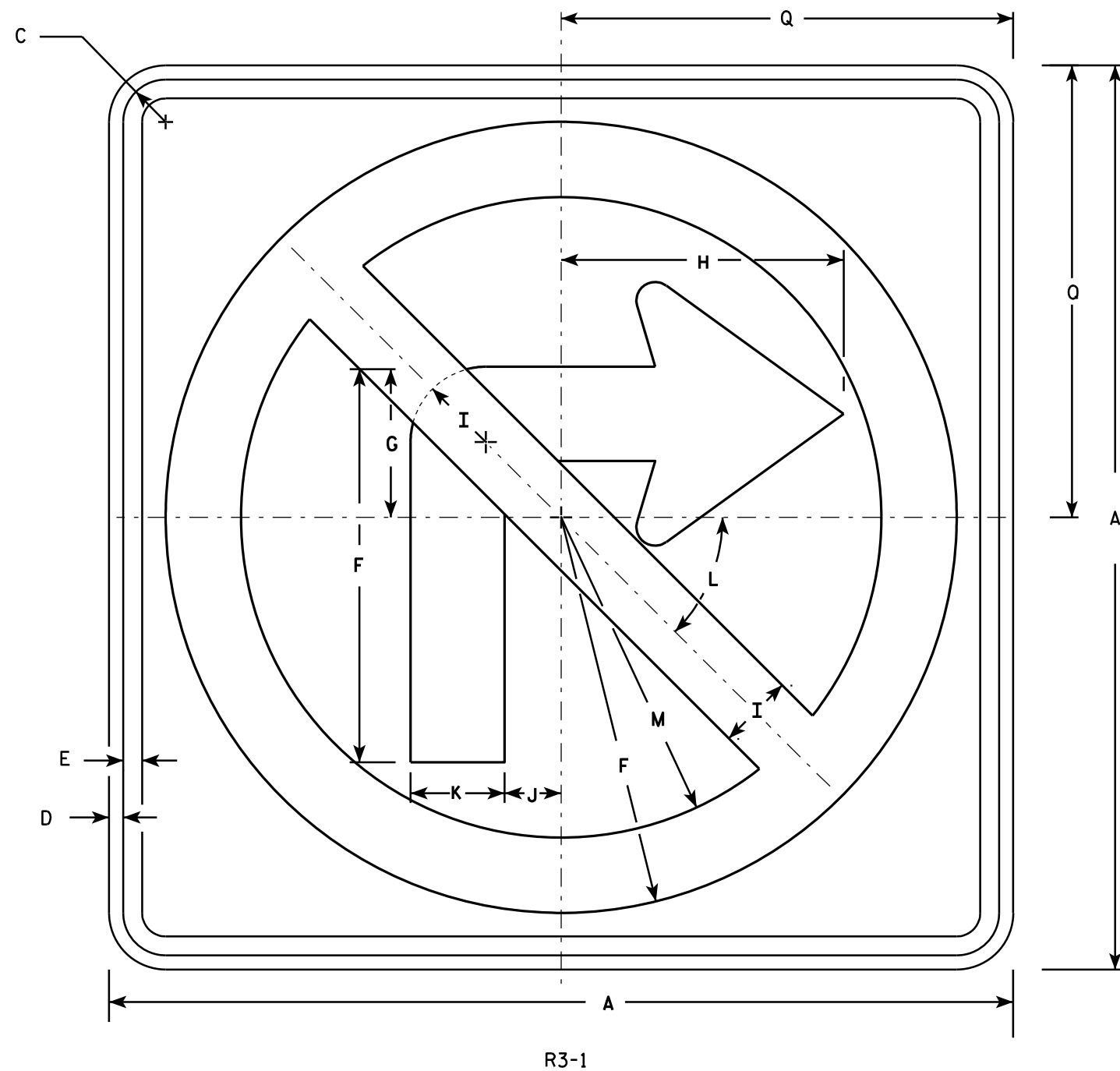
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25

STANDARD SIGN
M6-1 & M6-2
SERIES

WISCONSIN DEPT OF TRANSPORTATION

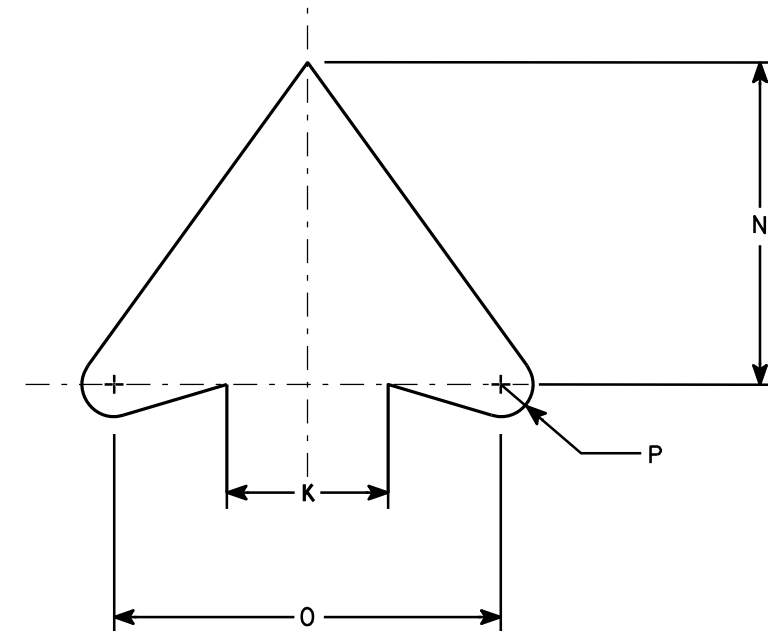
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M6-1.15



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45	8 1/2	5	6	1/2	12										4.0
2S	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2	12										4.0
2M	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45	12 3/4	7 1/2	9	3/4	18										9.0
3	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45	12 3/4	7 1/2	9	3/4	18										9.0
4	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4	18										9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1	24										16.0

STANDARD SIGN

R3-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-1.5

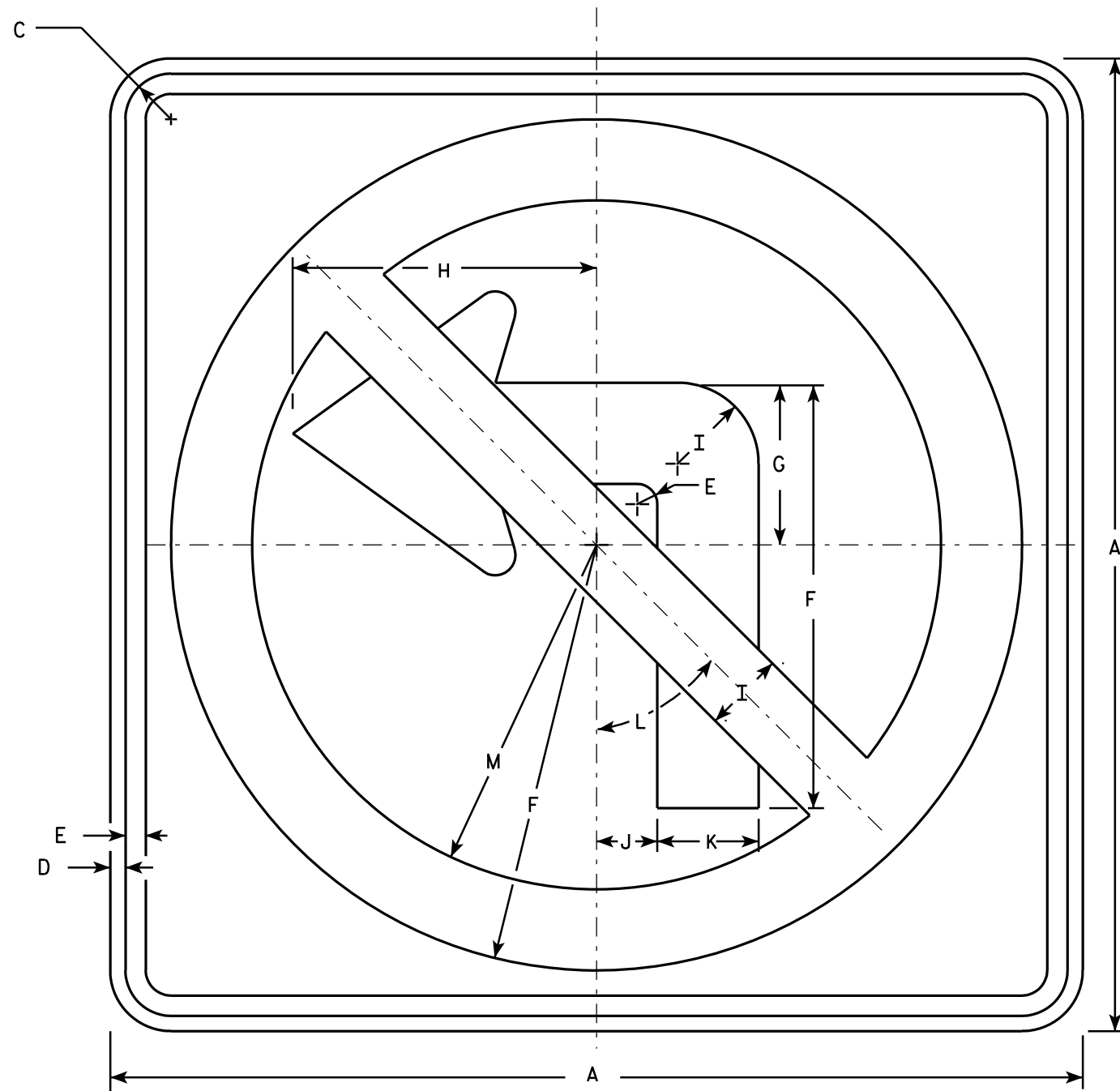
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

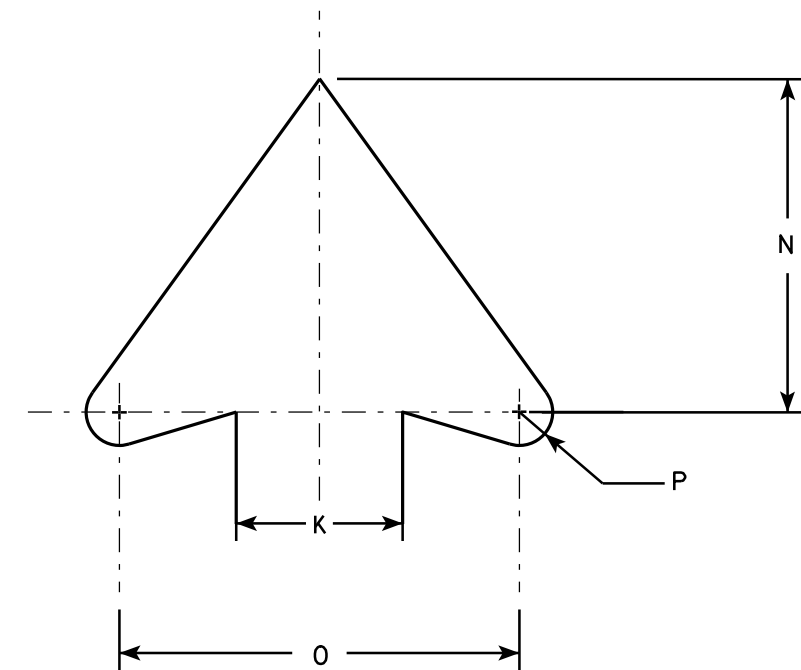
E



R3-2

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. Ft.
1	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2											4.0
2S	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2											4.0
2M	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
3	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
4	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1											16.0

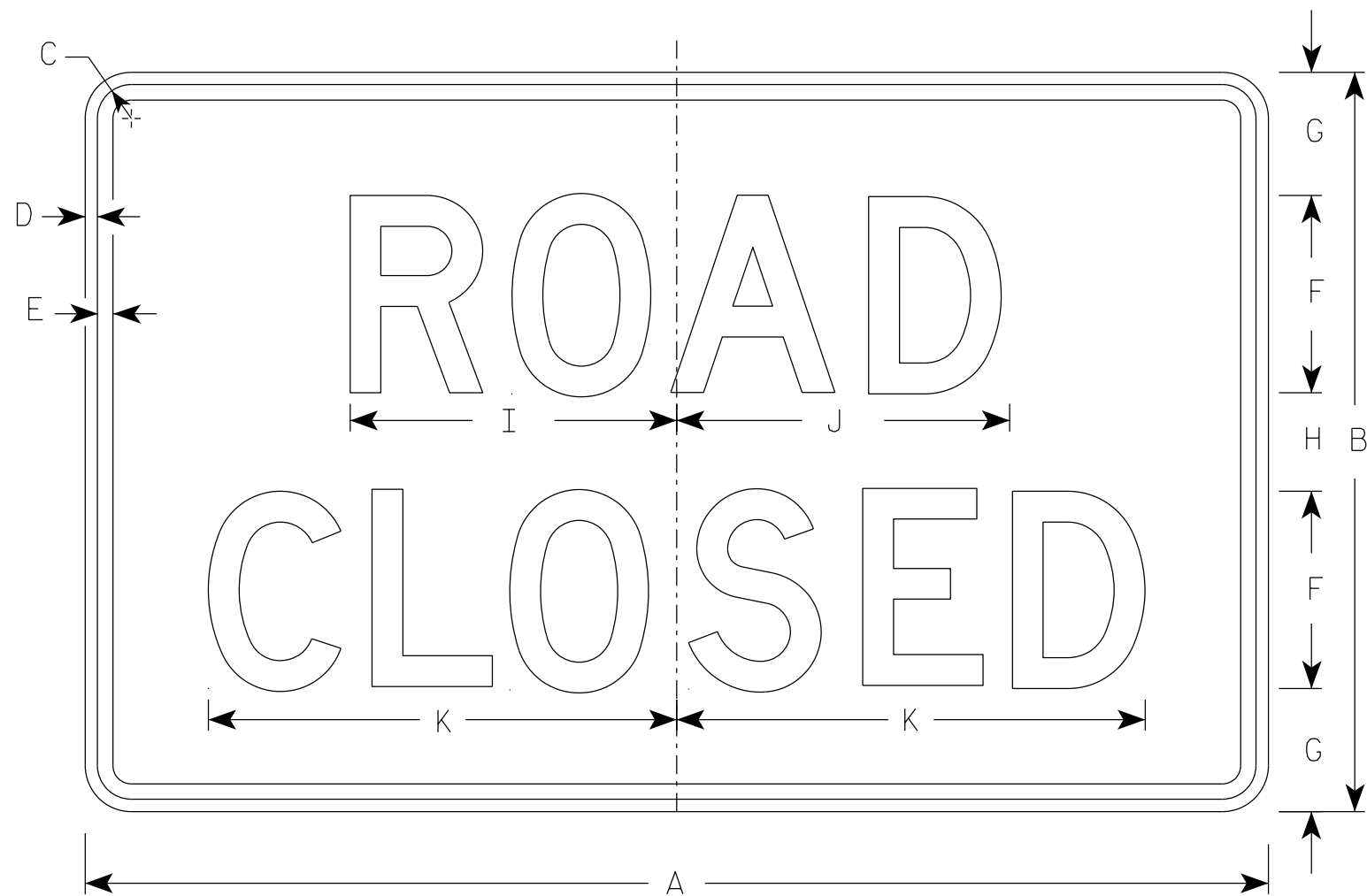
STANDARD SIGN
R3-2

WISCONSIN DEPT OF TRANSPORTATION

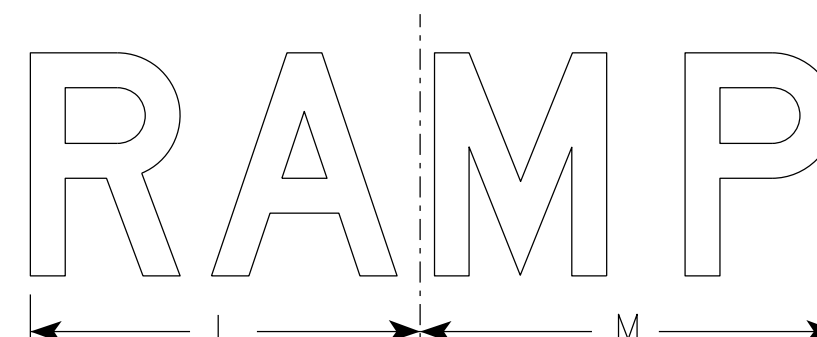
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-2.10

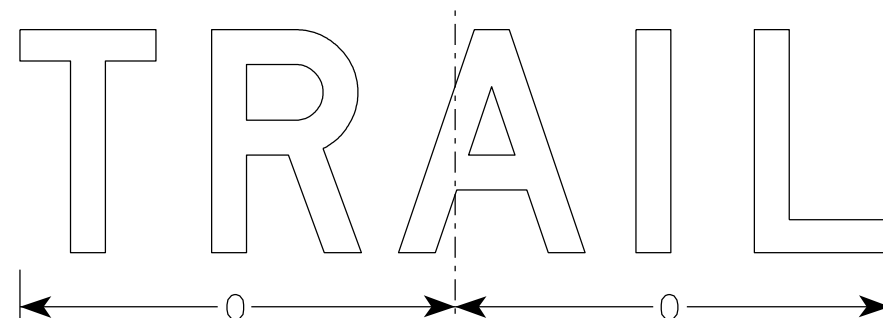
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E



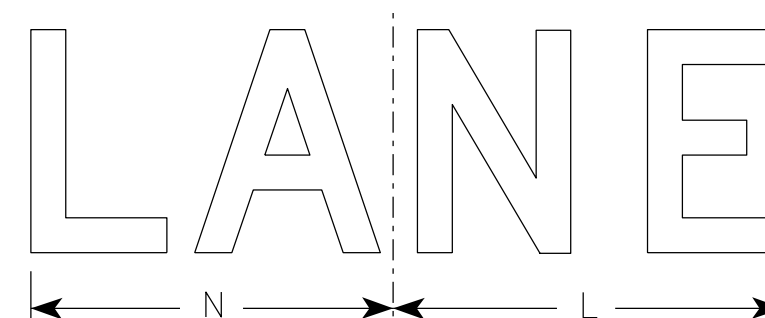
R11-2



R11-2R



R11-2T



R11-2L

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Modify the message as required.

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
2M	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
3	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
4	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
5	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0

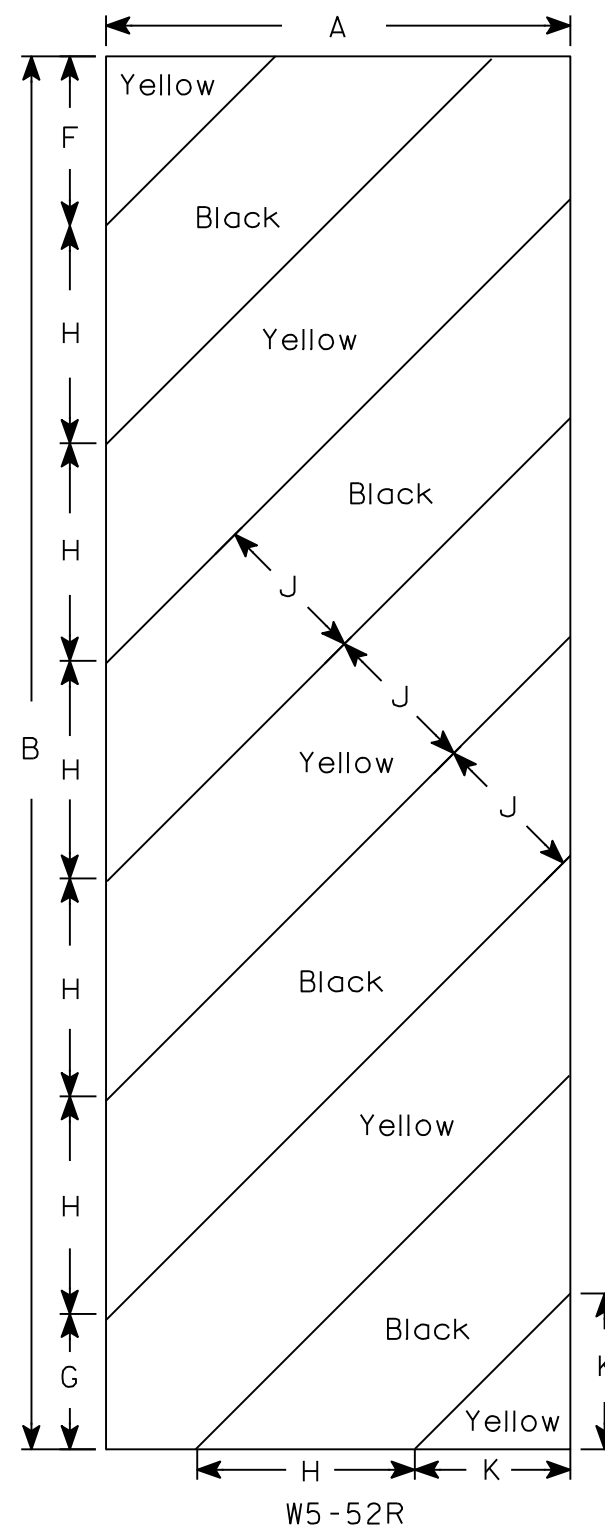
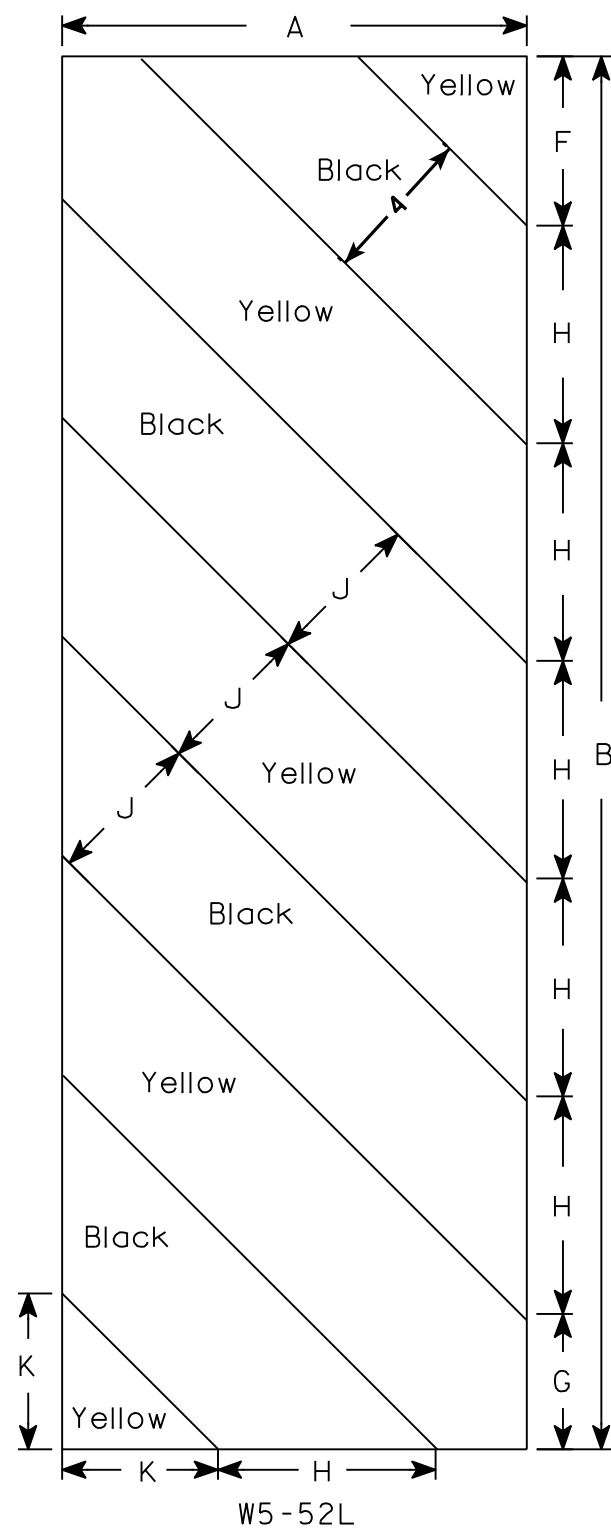
STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*
For State Traffic Engineer

DATE 3/29/2021 PLATE NO. R11-2.11

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**



NOTES

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

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
2M	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
3	18	54				6	5 1/2	8 1/2	45°	6	6 9/16																6.75
4																											
5																											

STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

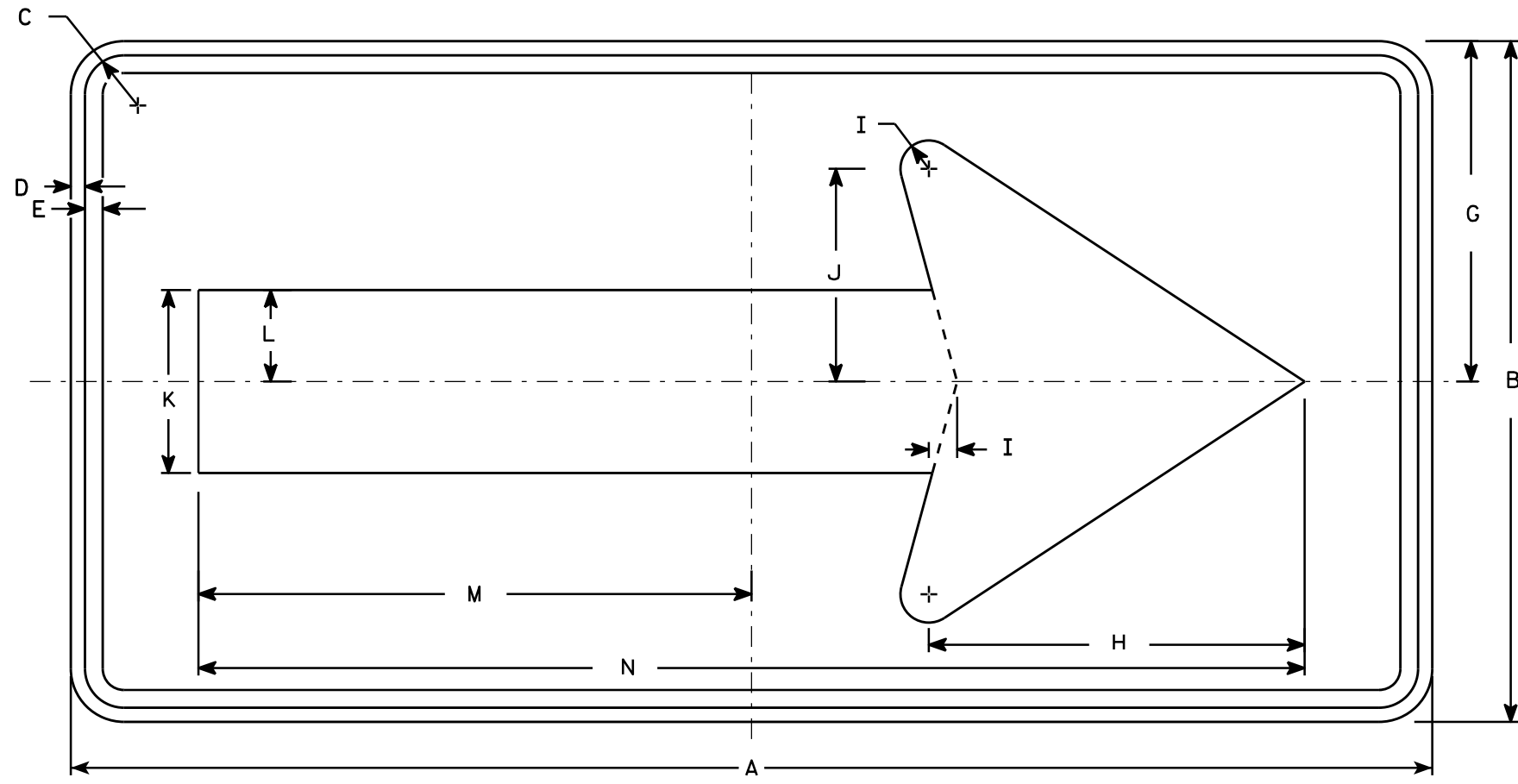
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W5-52.9

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E

NOTES

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



W01-6

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
2M	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
3	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
4	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
5	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5

STANDARD SIGN
W01-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/18/13 PLATE NO. W01-6.1

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

DESIGN DATA

LIVE LOAD:
 DESIGN LOADING : HL-93
 INVENTORY RATING FACTOR : 1.10
 OPERATIONAL RATING FACTOR : 1.42
 WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS.
 STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

TRAFFIC DATA:
 A.A.D.T. (2022) = 890
 A.A.D.T. (2042) = 1035
 R.D.S. = 35 MPH

MATERIAL PROPERTIES:
 CONCRETE MASONRY, SLAB $f'_c = 4,000$ P.S.I.
 ALL OTHER $f'_c = 3,500$ P.S.I.

HIGH-STRENGTH BAR STEEL REINFORCEMENT, GRADE 60 $f_y = 60,000$ P.S.I.
 PILING STEEL HP $f_y = 50,000$ P.S.I.

FOUNDATION DATA:
 ABUTMENTS TO BE SUPPORTED ON PILING STEEL HP 10-INCH X 42 LB. DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 125 TONS * PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED PILE LENGTHS ARE 80'-0" AT THE ABUTMENTS.
 PIERS TO BE SUPPORTED ON PILING STEEL HP 12-INCH X 53 LB. DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 215 TONS * PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED PILE LENGTHS ARE 80'-0" AT THE PIERS.

* THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

HYDRAULIC DATA:
100 YEAR FREQUENCY
 DRAINAGE AREA _____ 520 SQ. MI.
 Q₁₀₀ - TOTAL _____ 25,800 C.F.S.
 - THRU BRIDGE _____ 8,222 C.F.S.
 - OVERTOPPING ROADWAY _____ 17,578 C.F.S.
 VELOCITY - THRU BRIDGE _____ 3.91 FT./SEC.
 WATERWAY AREA - THRU BRIDGE _____ 2,142 SQ. FT.
 SCOUR CRITICAL CODE _____ 5
 HIGH WATER₁₀₀ ELEVATION _____ 791.22
 Q₂ ELEVATION (7,850 C.F.S.) _____ 786.58
 Q₂ VELOCITY _____ 5.33 FT./SEC.

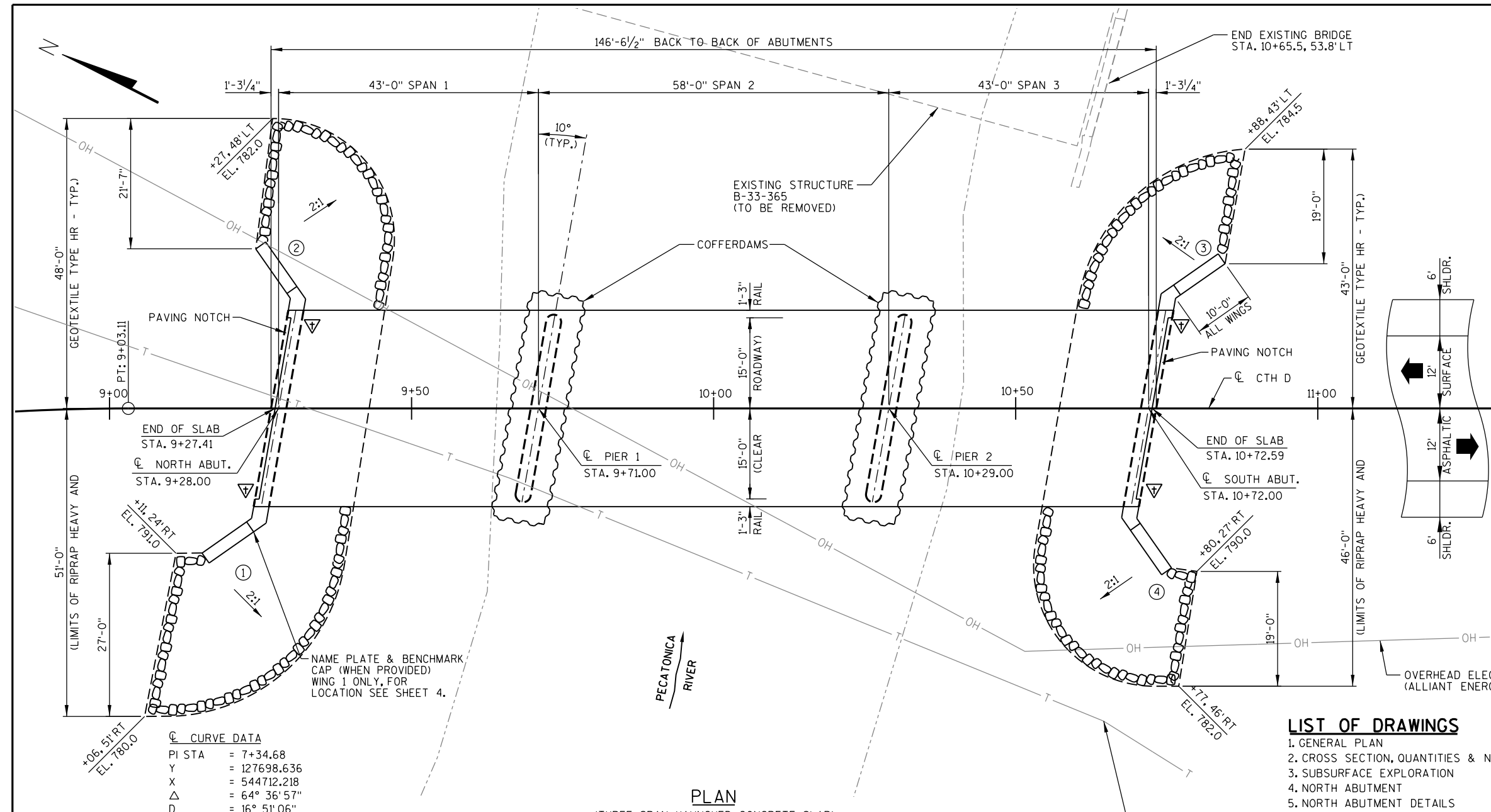
ROADWAY OVERFLOW DESIGN FREQUENCY
 OVERTOPPING FREQUENCY _____ 2 YEARS
 Q₂ _____ 7,850 C.F.S.
 HIGH WATER₂ ELEVATION _____ 786.58

LEGEND

- - INDICATES WING NUMBER.
- ▽ - INDICATES LOCATION OF PROVISION FOR THRIE BEAM GUARD ATTACHMENT.
- ⊕ - DIMENSIONS GIVEN NORMAL TO ϕ OF SUBSTRUCTURES.

LIST OF DRAWINGS

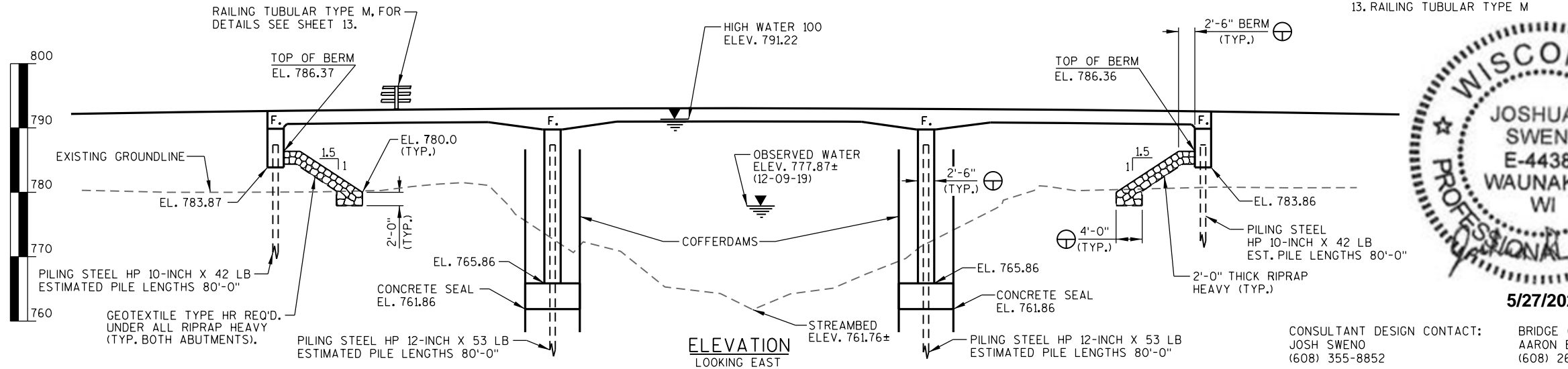
1. GENERAL PLAN
2. CROSS SECTION, QUANTITIES & NOTES
3. SUBSURFACE EXPLORATION
4. NORTH ABUTMENT
5. NORTH ABUTMENT DETAILS
6. SOUTH ABUTMENT
7. SOUTH ABUTMENT DETAILS
8. PIER 1
9. PIER 2
10. SUPERSTRUCTURE
11. SUPERSTRUCTURE SECTIONS
12. SUPERSTRUCTURE DETAILS
13. RAILING TUBULAR TYPE M



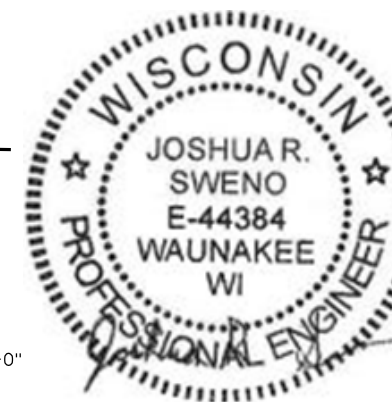
PLAN
 (THREE SPAN HAUNCHED CONCRETE SLAB)

☉ CURVE DATA

PI STA	= 7+34.68
Y	= 127698.636
X	= 544712.218
Δ	= 64° 36' 57"
D	= 16° 51' 06"
T	= 215.00'
L	= 383.44'
R	= 340.00'
PC STA	= 5+19.67
PT STA	= 9+03.11
MAX. S.E.	= 6%



ELEVATION
 LOOKING EAST



5/27/2021

CONSULTANT DESIGN CONTACT: JOSH SWENO (608) 355-8852
 BRIDGE OFFICE CONTACT: AARON BONK (608) 261-0261

NO.	DATE	REVISION	BY

ENGINEERING | ARCHITECTURE | SURVEYING
MSA
 FUNDING | PLANNING | ENVIRONMENTAL
 1702 PANKRATZ STREET, MADISON WI 53704
 (608) 242-7779 www.msa-ps.com
 © MSA Professional Services, Inc.

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION
 ACCEPTED *[Signature]* SDR **08/25/21**
 CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-33-138
 CTH D OVER PECATONICA RIVER

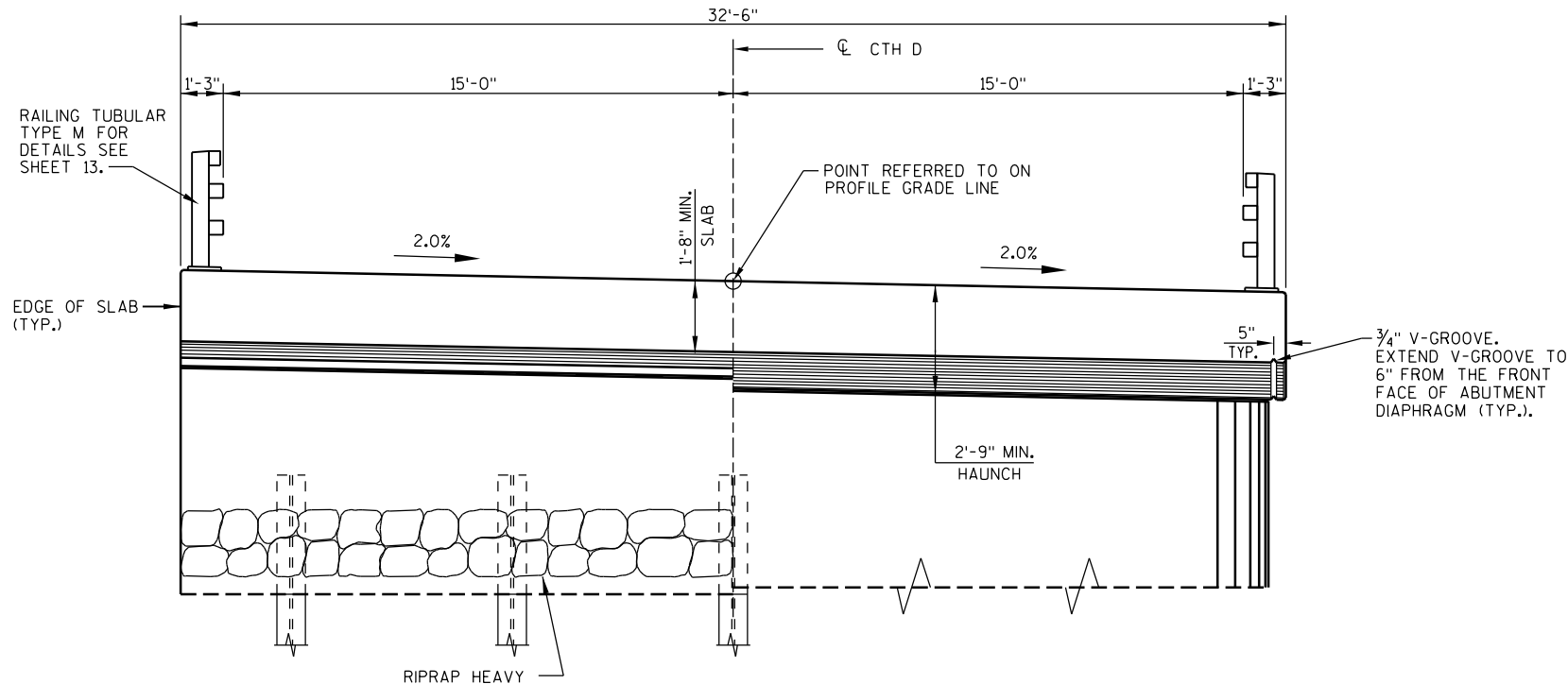
COUNTY LAFAYETTE TOWN/CITY/VILLAGE WAYNE

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS
 DESIGNED BY JFM DESIGN CK'D. JRS DRAWN BY RLR PLANS CK'D. JRS

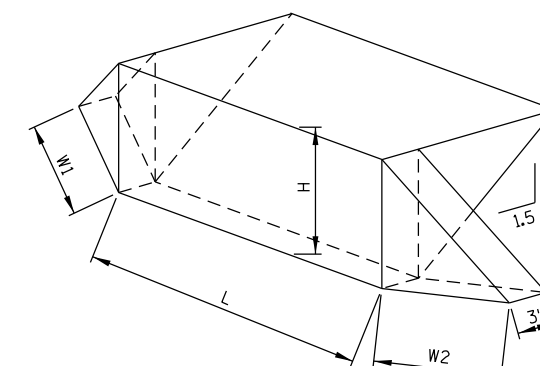
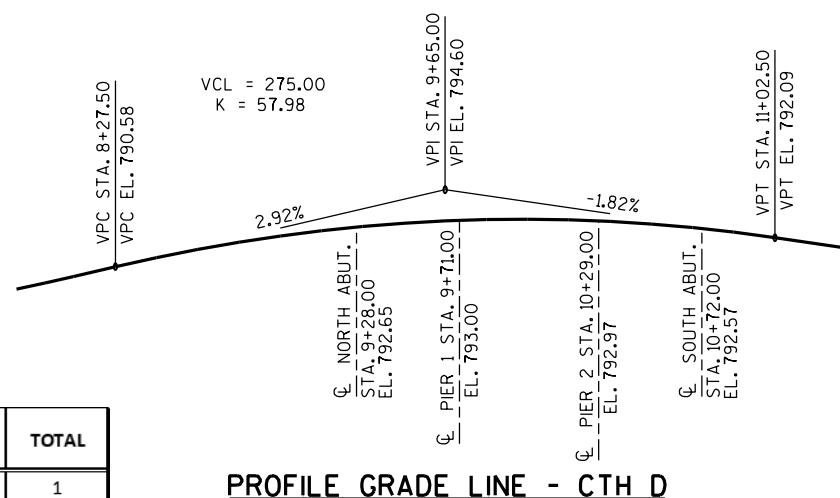
GENERAL PLAN SHEET 1 OF 13

GENERAL NOTES

- DRAWINGS SHALL NOT BE SCALED.
- THE FIRST DIGIT OF A THREE DIGIT BAR MARK SIGNIFIES THE BAR SIZE.
- BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS SHOWN OR NOTED OTHERWISE.
- THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE TYPE HR TO THE LIMITS SHOWN ON SHEET 1 AND ON THE ABUTMENT SHEETS OR AS DIRECTED BY THE ENGINEER.
- THE EXISTING GROUNDLINE SHALL BE THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-33-138" FOR THE ABUTMENTS AND PIERS.
- SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE, UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.
- THIS STRUCTURE WILL REPLACE EXISTING BRIDGE, B-33-365, A 124.5 FT. LONG SINGLE SPAN STEEL OVERHEAD TRUSS BRIDGE ON OPEN CONCRETE ABUTMENTS.
- BACKFILL PAY LIMITS, BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES. "BACKFILL STRUCTURE TYPE A" REQUIRED DIRECTLY BEHIND ABUTMENTS AND ABUTMENT WINGS FOR 3 FEET. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES.
- DO NOT PLACE FILL ABOVE 3'-0" FROM THE BOTTOM OF THE ABUTMENT UNTIL THE SUPERSTRUCTURE IS IN PLACE.
- EXCAVATION BELOW THE ABUTMENT AND ABUTMENT BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT.
- AT PIER 1 AND PIER 2 COFFERDAM AND COFFERDAM DEWATERING REQUIRED. COFFERDAM SHALL BE DEWATERED PRIOR TO PLACING PIER CONCRETE.
- PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE TOP AND EDGES OF SLAB, TO THE PAVING NOTCH, TO THE OUTSIDE 1'-0" OF THE UNDERSIDE OF SLAB, TO THE TOPS OF WINGS, TO THE EXPOSED FRONT FACES OF WINGS, AND TO THE END 1'-0" OF THE ABUTMENT BODY FRONT FACE.
- ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO USGS NAVD 88 (2012 ADJUSTED). BENCHMARK ELEVATIONS AT THE PROJECT SITE WERE SET BY THE CONSULTANT USING GPS TECHNOLOGY.



AT ABUTMENTS **AT PIERS**
CROSS SECTION THRU BRIDGE
(LOOKING SOUTH)



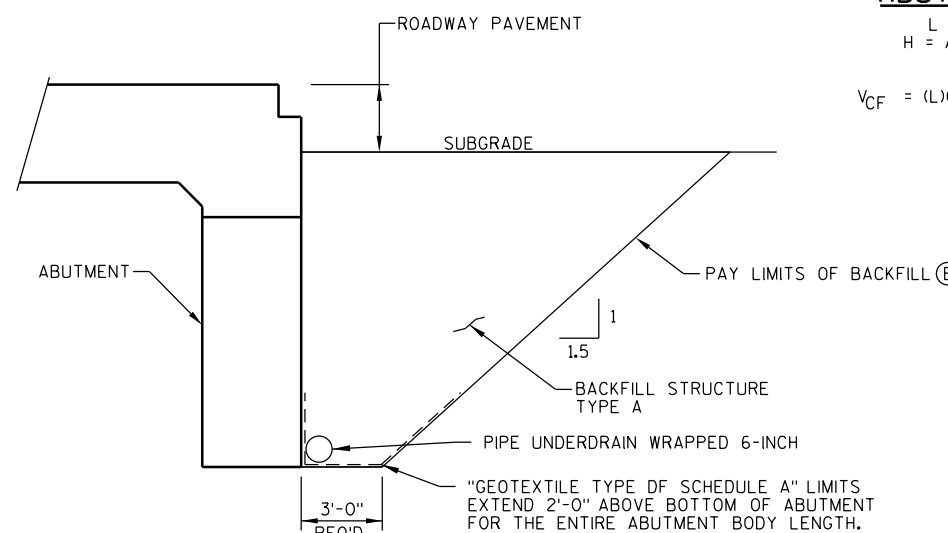
ABUTMENT BACKFILL DIAGRAM

L = OUT-TO-OUT OF ABUTMENT (FT)
 H = AVERAGE ABUTMENT FILL HEIGHT (FT)
 W1 = WING 1 LENGTH (FT)
 W2 = WING 2 LENGTH (FT)
 $V_{CF} = (L)(3.0')(H) + (L)(0.5')(1.5)(H) + (0.5)(H)(W1+W2)(3.0')$
 $V_{TON} = V_{CF} (2.0)/27$

TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	BID ITEM	UNIT	NORTH ABUT.	PIER 1	PIER 2	SOUTH ABUT.	SUPER	TOTAL
203.0270.01	REMOVING STRUCTURE OVER WATERWAY DEBRIS CAPTURE B-33-365	EACH	-	-	-	-	-	1
206.1000.01	EXCAVATION FOR STRUCTURES BRIDGES B-33-138	LS	-	-	-	-	-	1
206.5000.01	COFFERDAMS B-33-138	LS	-	-	-	-	-	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	150	-	-	150	-	300
502.0100	CONCRETE MASONRY BRIDGES	CY	36	70	70	36	326	538
502.1100	CONCRETE MASONRY SEAL	CY	-	47	47	-	-	94
502.3200	PROTECTIVE SURFACE TREATMENT	SY	20	-	-	20	624	664
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2550	3280	3280	2540	-	11650
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1630	65	65	1620	63740	67120
513.4061	RAILING TUBULAR TYPE M	LF	-	-	-	-	297	297
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	7	-	-	7	-	14
550.1100	PILING STEEL HP 10-INCH x 42 LB	LF	560	-	-	560	-	1120
550.1120	PILING STEEL HP 12-INCH x 53 LB	LF	-	640	640	-	-	1280
606.0300	RIPRAP HEAVY	CY	166	-	-	139	-	305
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	90	-	-	90	-	180
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	55	-	-	55	-	110
645.0120	GEOTEXTILE TYPE HR	SY	295	-	-	250	-	545
NON-BID ITEMS								
	PREFORMED FILLER	SIZE						1/2", 3/4"

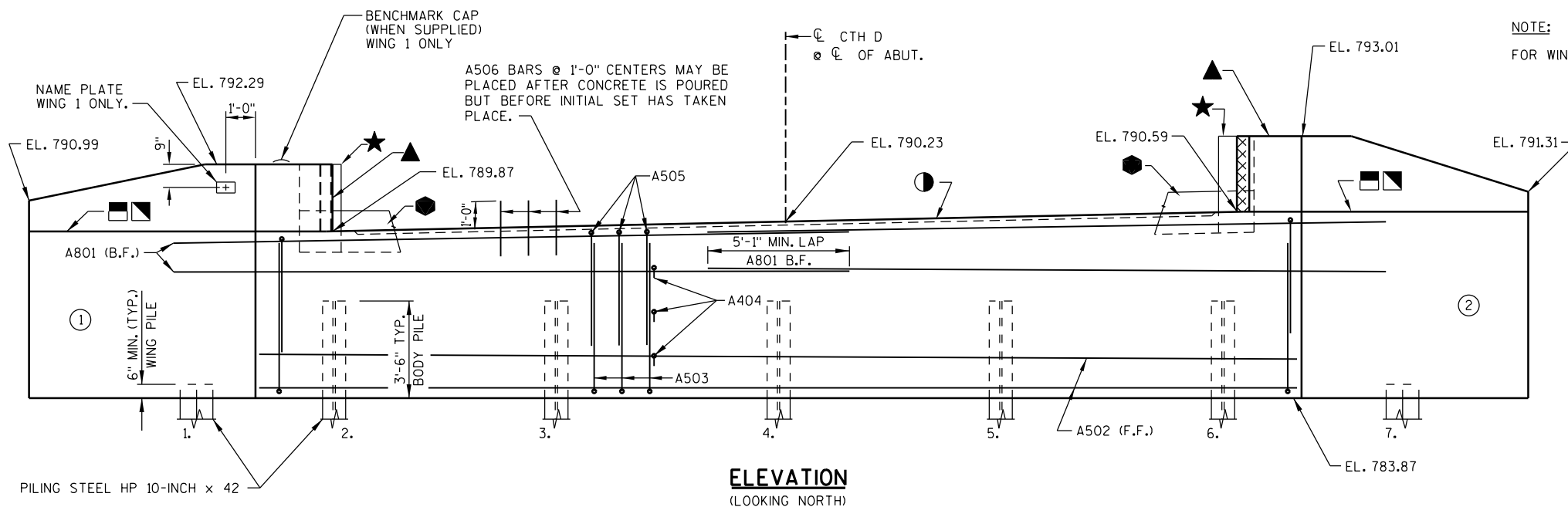
PROFILE GRADE LINE - CTH D



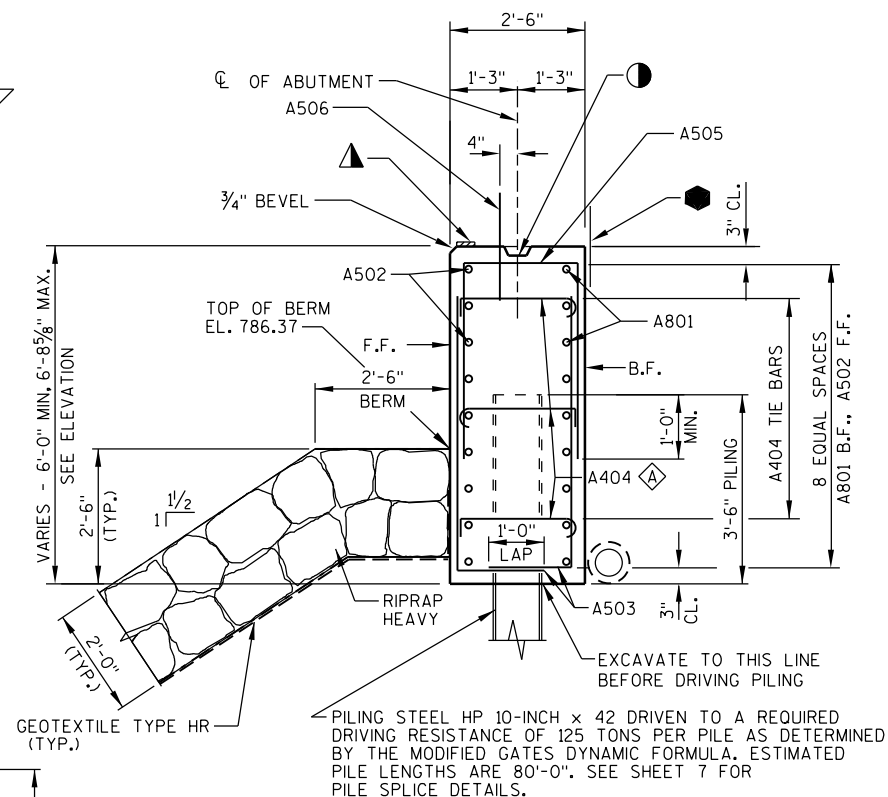
STRUCTURE BACKFILL DETAIL

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-33-138			
DRAWN BY RLR		PLANS CK'D. JRS	
CROSS SECTION, QUANTITIES & NOTES			SHEET 2 OF 13

NOTE:
FOR WING DETAILS, SEE SHEET 5.



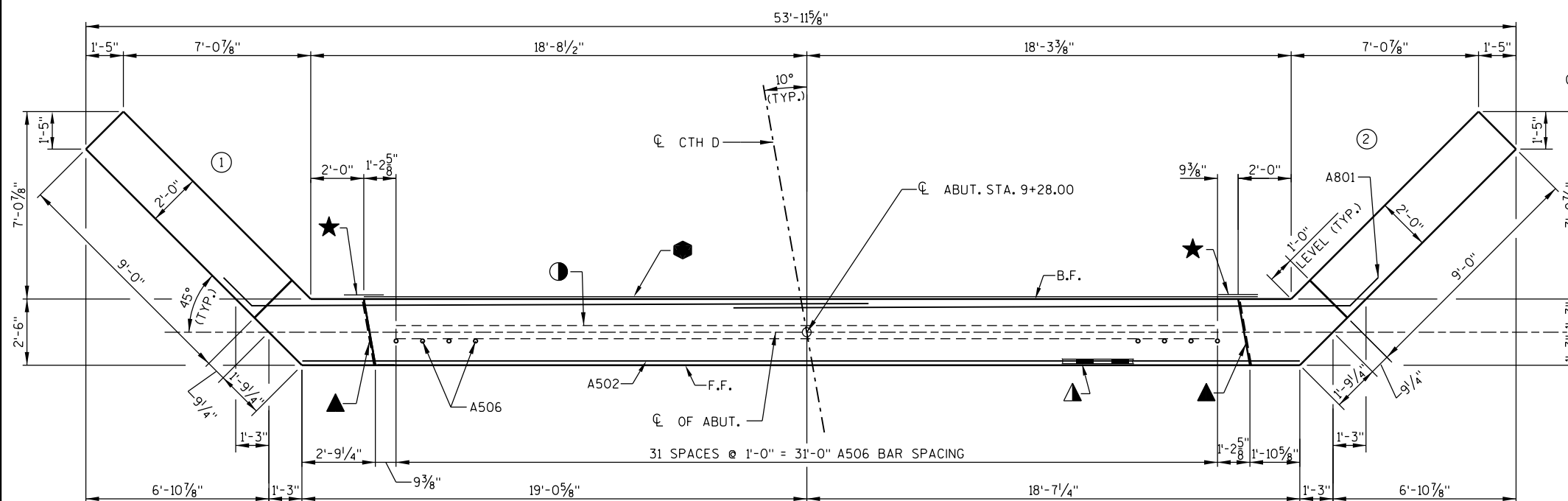
ELEVATION
(LOOKING NORTH)



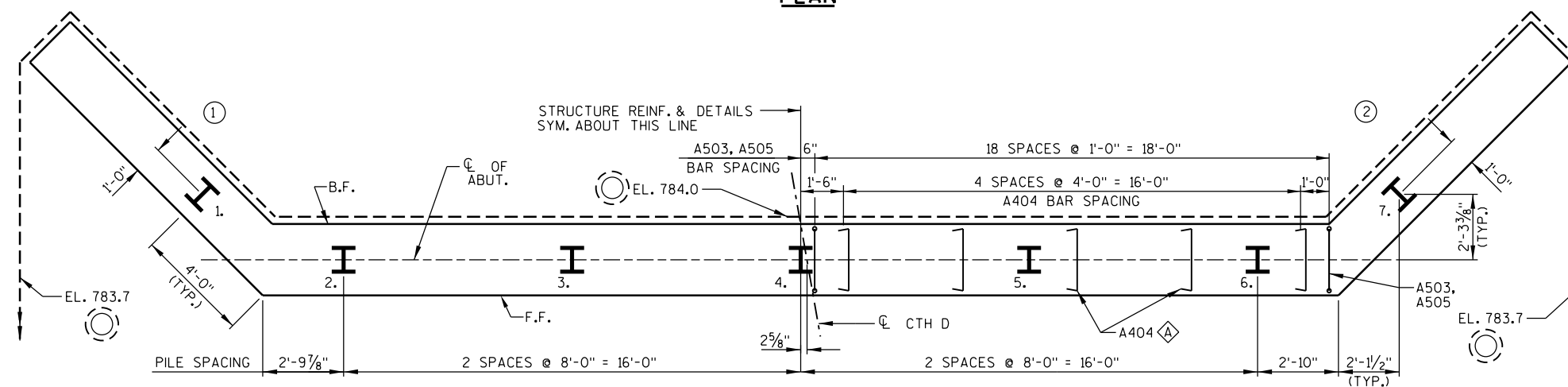
TYPICAL SECTION THRU ABUTMENT

LEGEND

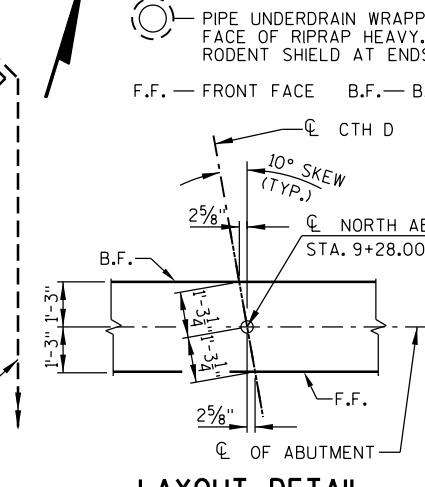
- — INDICATES WING NUMBER
 - ◇ — ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.
 - — KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2x6.
 - ▲ — 1/2" FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP & HOLD 1/8" BELOW SURFACE OF CONCRETE).
 - ▲ — 4"x 3/4" FILLER, EXTEND FULL LENGTH OF ABUTMENT BETWEEN EDGES OF SLAB.
 - ★ — VERTICAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. EXTEND FROM 9" BELOW BRIDGE SEAT TO TOP OF WINGS.
 - — HORIZONTAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. EXTEND BETWEEN WINGS.
 - — OPTIONAL KEYED CONSTRUCTION JOINT ON WING FORMED BY BEVELED 2 X 6. IF JOINT IS USED, PLACE ● ON B.F. OF WING. COST OF ● IS INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES".
 - ◻ — 3/4" "V" GROOVE ON FRONT FACE OF WING WALL, REQUIRED ONLY WHERE CONSTRUCTION JOINT IS USED.
 - — PIPE UNDERDRAIN WRAPPED 6-INCH. EXTEND THRU GEOTEXTILE TYPE HR AT FACE OF RIPRAP HEAVY. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. PROVIDE RODENT SHIELD AT ENDS OF PIPE. FOR RODENT SHIELD DETAILS, SEE SHEET 5.
- F.F. — FRONT FACE B.F. — BACK FACE CL. — CLEAR



PLAN

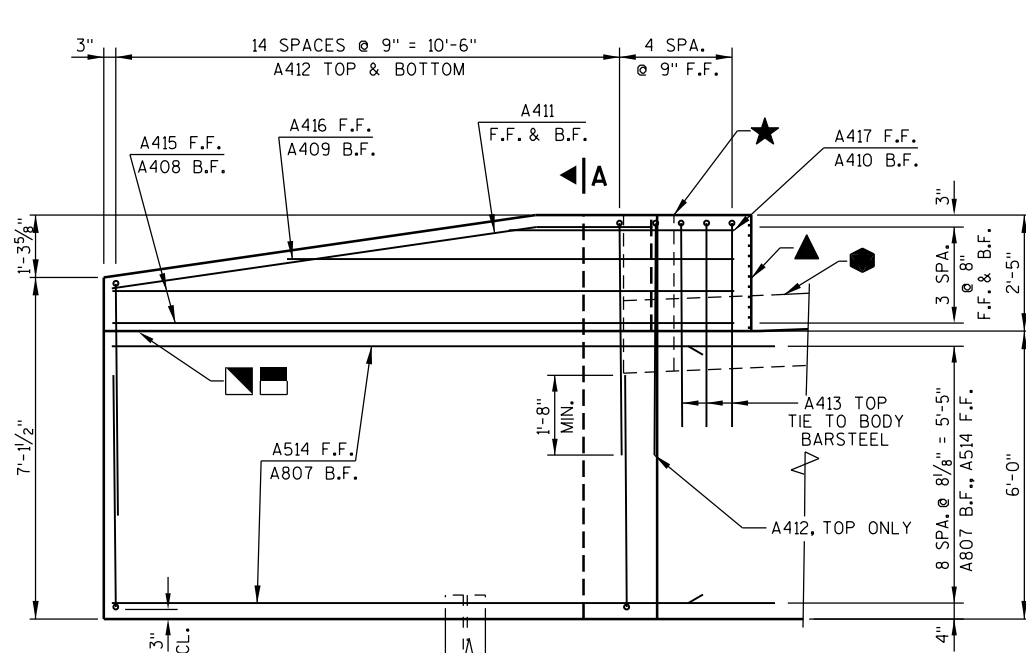


PILE PLAN

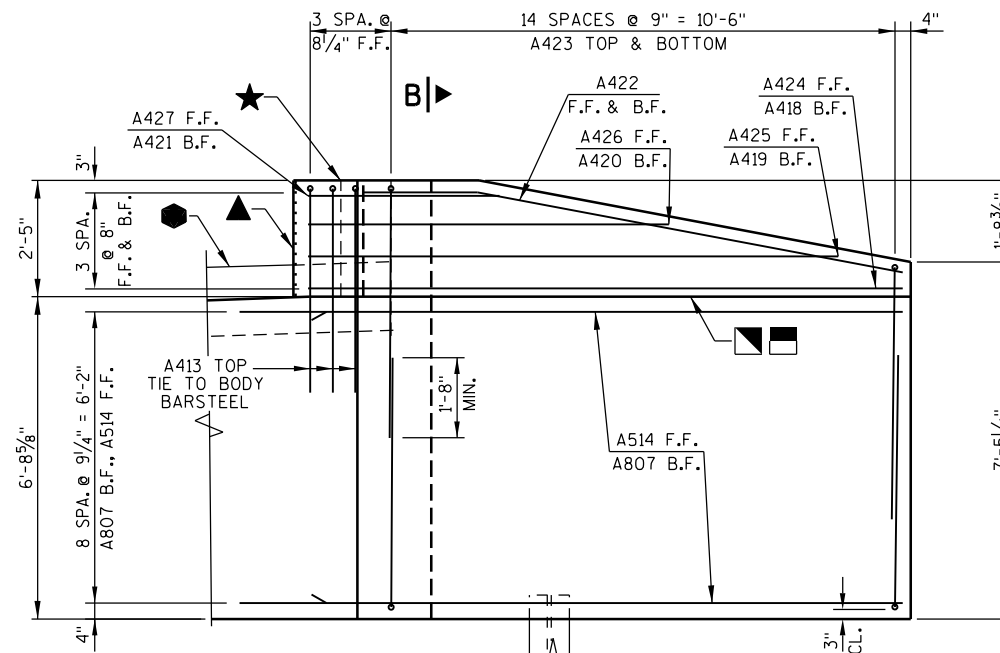


LAYOUT DETAIL

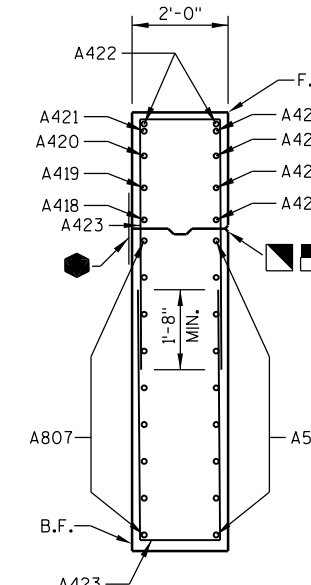
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-33-138			
DRAWN BY RLR		PLANS CK'D. JRS	
NORTH ABUTMENT			SHEET 4 OF 13



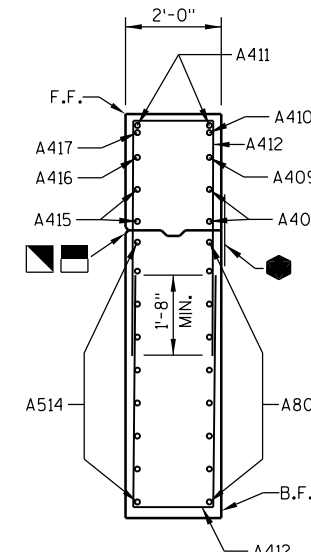
ELEVATION - WING 1
(LOOKING AT F.F. OF WING)



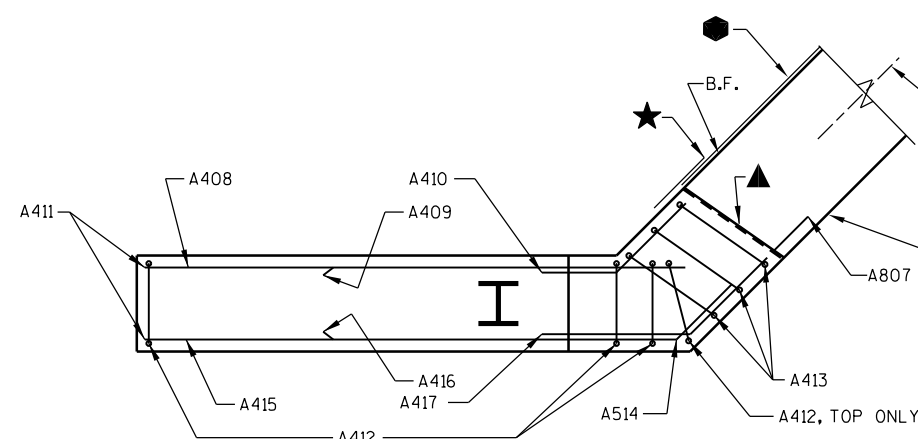
ELEVATION - WING 2
(LOOKING AT F.F. OF WING)



SECTION B-B THRU WING 2

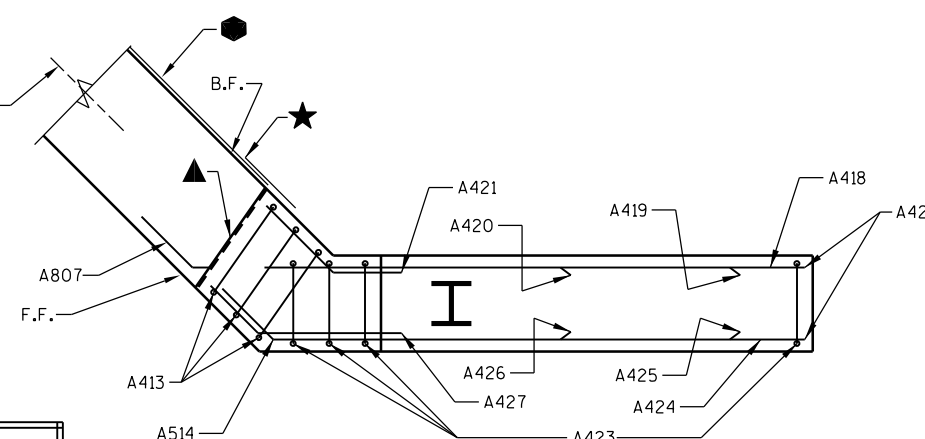


SECTION A-A THRU WING 1



PLAN - WING 1

SEE LEGEND ON SHEET 4 FOR DESCRIPTION OF
 ★ ● ◻ ◼ ▲



PLAN - WING 2

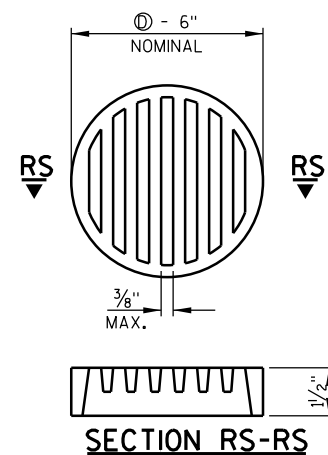
BILL OF BARS NORTH ABUTMENT

**UNCOATED 2550 LBS.
COATED 1630 LBS.**

MARK	NUMBER REQUIRED		LENGTH	BENT	LOCATION
	COATED	UNCOATED			
A801	-	18	24'-8"	X	ABUTMENT BODY - B.F. - HORIZ.
A502	-	9	37'-7"		ABUTMENT BODY - F.F. - HORIZ.
A503	-	76	7'-0"	X	ABUTMENT BODY - F.F. & B.F. - VERT.
A404	-	30	3'-0"	X	ABUTMENT BODY - TIES - HORIZ.
A505	-	38	9'-11"	X	ABUTMENT BODY - TOP - VERT.
A506	32	-	2'-0"		ABUTMENT BODY - TOP DOWELS - VERT.
A807	18	-	14'-2"	X	WINGS - B.F. - HORIZ.
A408	2	-	11'-10"	X	WING 1 - B.F. - HORIZ.
A409	1	-	8'-2"	X	WING 1 - B.F. - HORIZ.
A410	1	-	3'-7"	X	WING 1 - B.F. - HORIZ.
A411	2	-	11'-4"	X	WING 1 - F.F. & B.F. - TOP - HORIZ.
A412	31	-	11'-2"	X	WING 1 - TOP & BOTTOM - VERT.
A413	6	-	10'-6"	X	WINGS - TOP - VERT.
A514	18	-	12'-7"	X	WINGS - F.F. - HORIZ.
A415	2	-	13'-7"	X	WING 1 - F.F. - HORIZ.
A416	1	-	9'-10"	X	WING 1 - F.F. - HORIZ.
A417	1	-	5'-4"	X	WING 1 - F.F. - HORIZ.
A418	1	-	11'-8"	X	WING 2 - B.F. - HORIZ.
A419	1	-	10'-4"	X	WING 2 - B.F. - HORIZ.
A420	1	-	6'-9"	X	WING 2 - B.F. - HORIZ.
A421	1	-	3'-3"	X	WING 2 - B.F. - HORIZ.
A422	2	-	11'-5"	X	WING 2 - B.F. - HORIZ.
A423	30	-	12'-0"	X	WING 2 - F.F. & B.F. - TOP - HORIZ.
A424	1	-	12'-9"	X	WING 2 - F.F. - HORIZ.
A425	1	-	11'-5"	X	WING 2 - F.F. - HORIZ.
A426	1	-	7'-10"	X	WING 2 - F.F. - HORIZ.
A427	1	-	4'-4"	X	WING 2 - F.F. - HORIZ.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

MARK	A	B
A801	1'-6"	45°
A807	1'-11"	45°
A514	2'-5"	9°
A415	2'-5"	45°
A416	2'-5"	45°
A417	2'-5"	45°
A418	1'-10"	45°
A419	1'-10"	45°
A420	1'-10"	45°
A421	1'-10"	45°
A422	2'-5"	11°
A424	1'-7"	45°
A425	1'-7"	45°
A426	1'-7"	45°
A427	1'-7"	45°

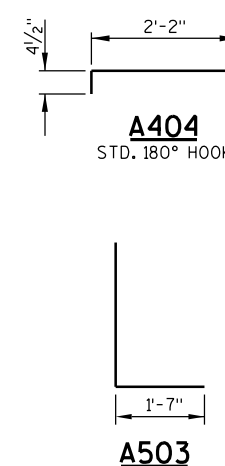


RODENT SHIELD NOTES:
 ORIENT SHIELD SO SLOTS ARE VERTICAL.
 THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER.
 A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL 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 INCLUDED IN THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

⊙ - DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.

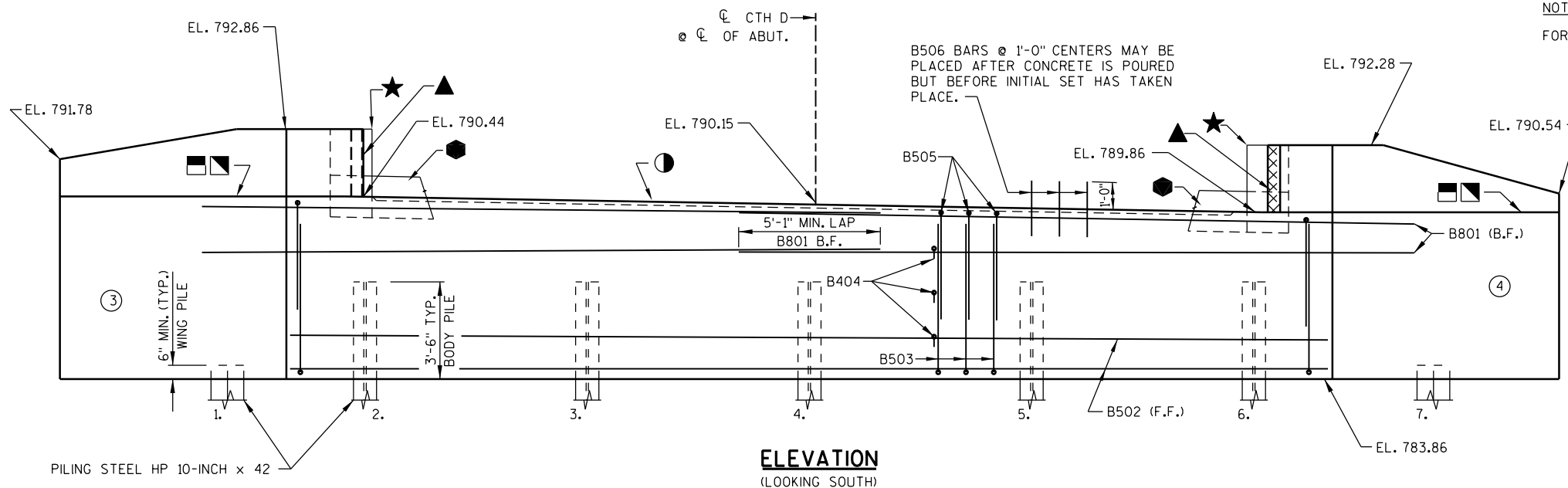
STIRRUPS AND TIES

MARK	C	D
A505	4'-0"	2'-2"
A412	4'-10"	1'-8"
A413	4'-3"	2'-2"
A423	5'-3"	1'-8"

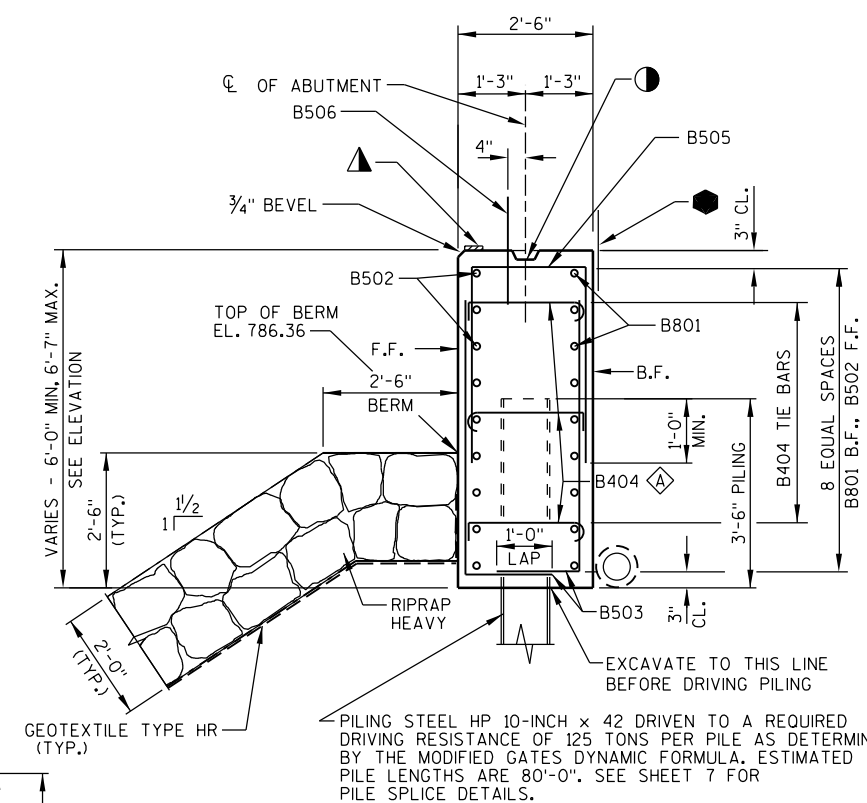


NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-33-138	
DRAWN BY: RLR		PLANS CK'D: JRS	
NORTH ABUTMENT DETAILS		SHEET 5 OF 13	

NOTE:
FOR WING DETAILS, SEE SHEET 7.

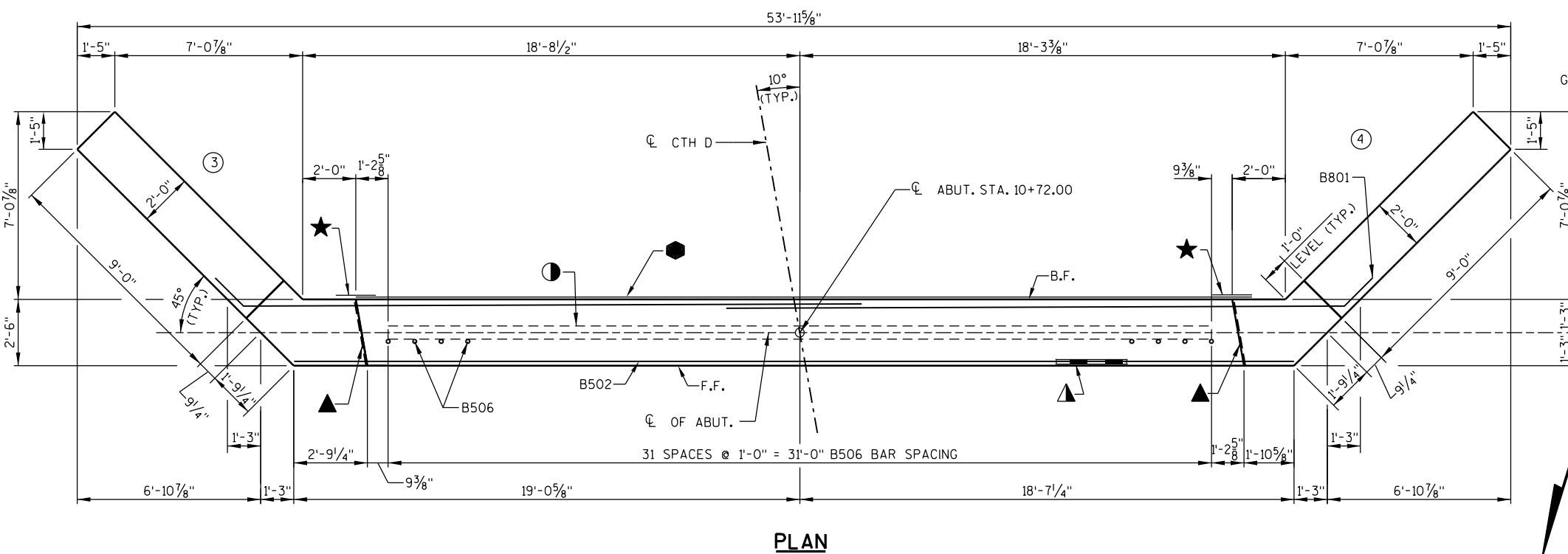


ELEVATION
(LOOKING SOUTH)

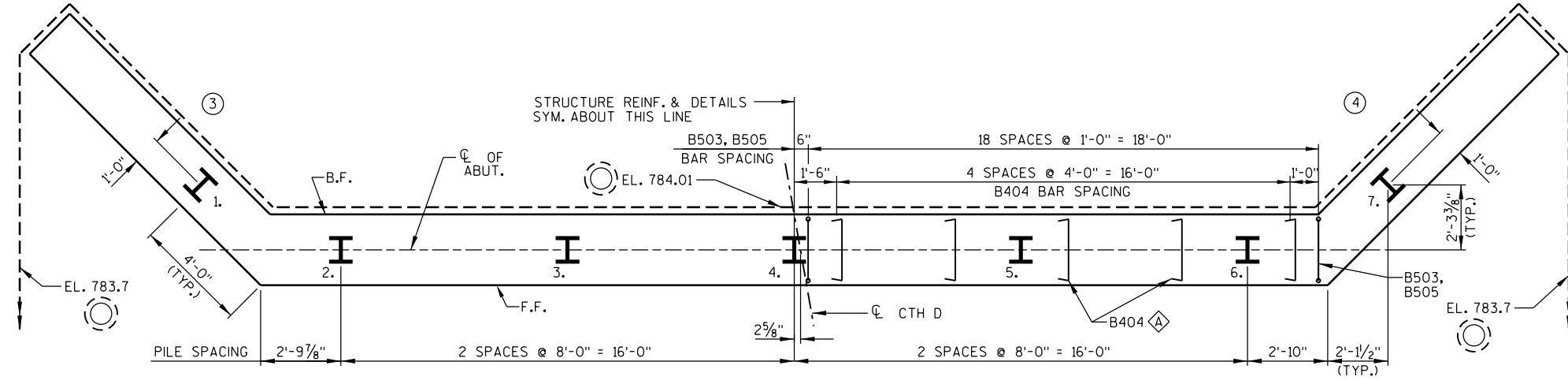


TYPICAL SECTION THRU ABUTMENT

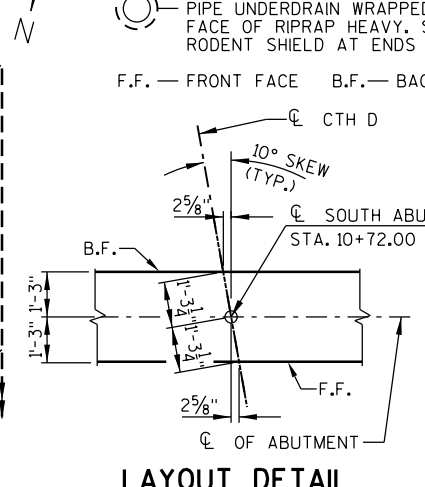
- LEGEND**
- — INDICATES WING NUMBER
 - ◇ — ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.
 - — KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2x6.
 - ▲ — 1/2" FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP & HOLD 1/8" BELOW SURFACE OF CONCRETE).
 - ▲ — 4"x 3/4" FILLER, EXTEND FULL LENGTH OF ABUTMENT BETWEEN EDGES OF SLAB.
 - ★ — VERTICAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. EXTEND FROM 9" BELOW BRIDGE SEAT TO TOP OF WINGS.
 - — HORIZONTAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. EXTEND BETWEEN WINGS.
 - — OPTIONAL KEYED CONST. JOINT ON WING FORMED BY BEVELED 2 X 6. IF JOINT IS USED, PLACE ● ON B.F. OF WING. COST OF ● IS INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES".
 - ▣ — 3/4" "V" GROOVE ON FRONT FACE OF WING WALL, REQUIRED ONLY WHERE CONSTRUCTION JOINT IS USED.
 - — PIPE UNDERDRAIN WRAPPED 6-INCH. EXTEND THRU GEOTEXTILE TYPE HR AT FACE OF RIPRAP HEAVY. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. PROVIDE RODENT SHIELD AT ENDS OF PIPE. FOR RODENT SHIELD DETAILS, SEE SHEET 5.
- F.F. — FRONT FACE B.F. — BACK FACE CL. — CLEAR



PLAN



PILE PLAN

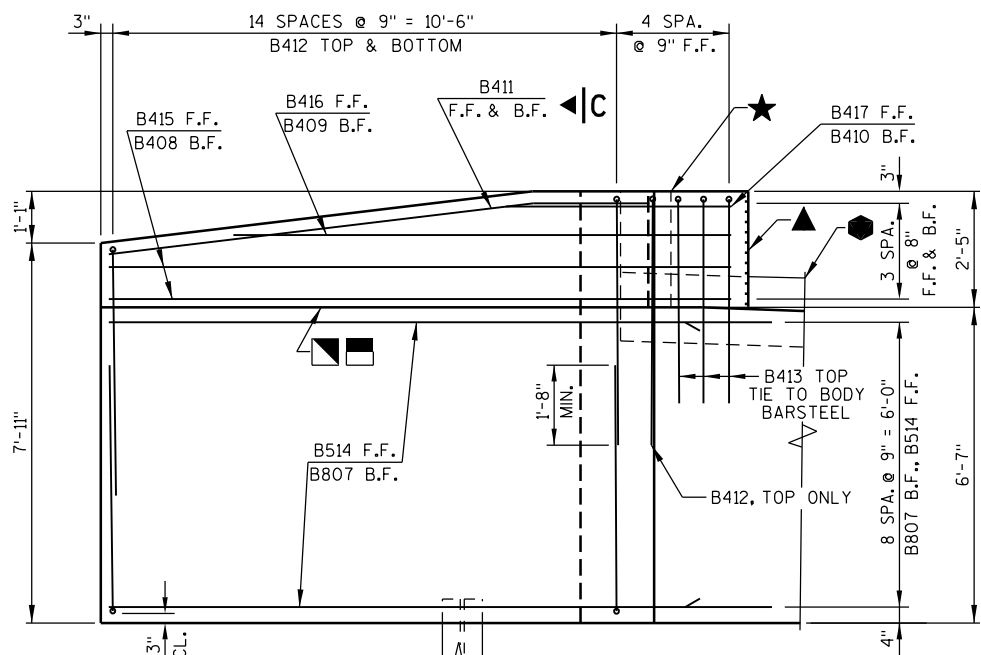


LAYOUT DETAIL

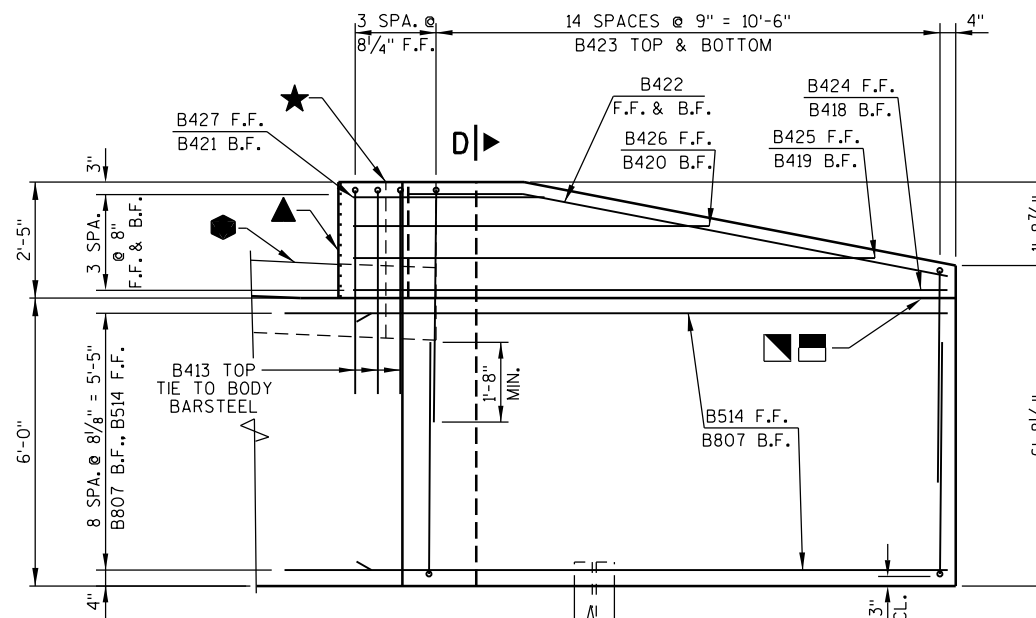
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-33-138	
DRAWN BY	RLR	PLANS CK'D.	JRS
SOUTH ABUTMENT		SHEET 6 OF 13	

8

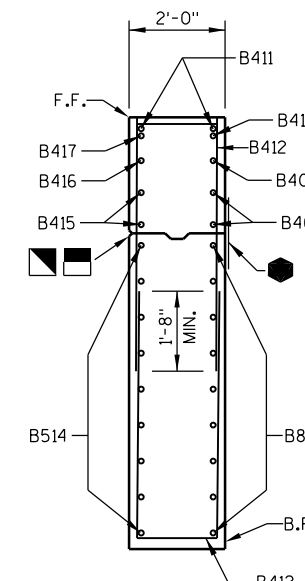
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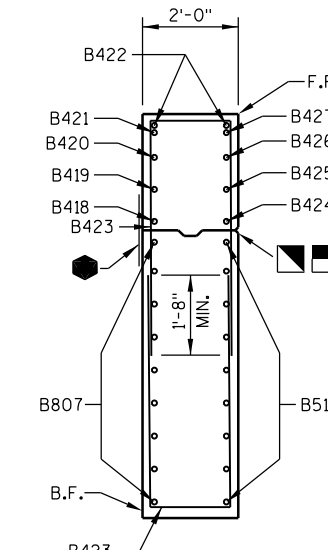
ELEVATION - WING 3
(LOOKING AT F.F. OF WING)



ELEVATION - WING 4
(LOOKING AT F.F. OF WING)



SECTION C-C THRU WING 3

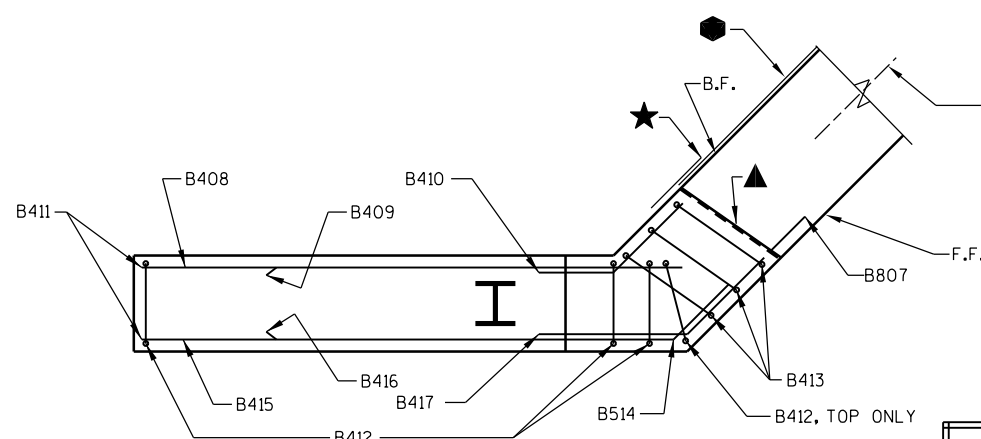


SECTION D-D THRU WING 4

BILL OF BARS SOUTH ABUTMENT

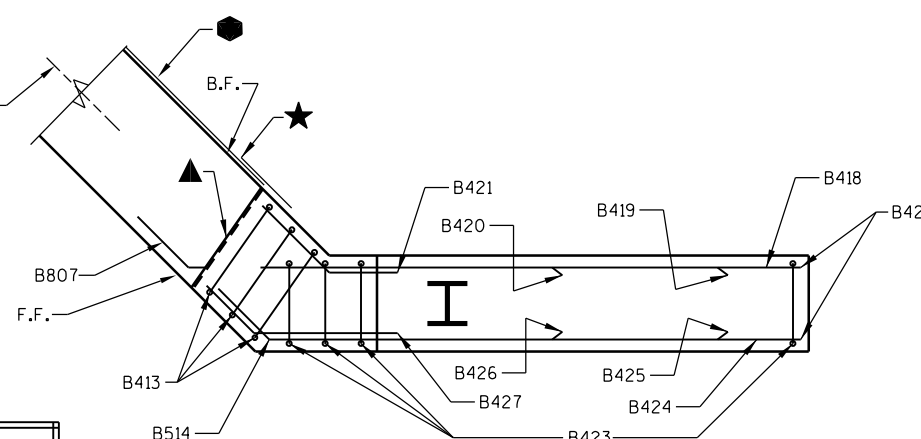
UNCOATED 2540 LBS., COATED 1620 LBS.

MARK	NUMBER REQUIRED		LENGTH	BENT	LOCATION
	COATED	UNCOATED			
B801	-	18	24'-8"	X	ABUTMENT BODY - B.F. - HORIZ.
B502	-	9	37'-7"		ABUTMENT BODY - F.F. - HORIZ.
B503	-	76	7'-0"	X	ABUTMENT BODY - F.F. & B.F. - VERT.
B404	-	30	3'-0"	X	ABUTMENT BODY - TIES - HORIZ.
B505	-	38	9'-9"	X	ABUTMENT BODY - TOP - VERT.
B506	32	-	2'-0"		ABUTMENT BODY - TOP DOWELS - VERT.
B807	18	-	14'-2"	X	WINGS - B.F. - HORIZ.
B408	2	-	11'-10"	X	WING 3 - B.F. - HORIZ.
B409	1	-	9'-3"	X	WING 3 - B.F. - HORIZ.
B410	1	-	3'-7"	X	WING 3 - B.F. - HORIZ.
B411	2	-	11'-4"	X	WING 3 - F.F. & B.F. - TOP - HORIZ.
B412	31	-	11'-10"	X	WING 3 - TOP & BOTTOM - VERT.
B413	6	-	10'-6"	X	WINGS - TOP - VERT.
B514	18	-	12'-7"	X	WINGS - F.F. - HORIZ.
B415	2	-	13'-7"	X	WING 3 - F.F. - HORIZ.
B416	1	-	11'-0"	X	WING 3 - F.F. - HORIZ.
B417	1	-	5'-4"	X	WING 3 - F.F. - HORIZ.
B418	1	-	11'-8"	X	WING 4 - B.F. - HORIZ.
B419	1	-	10'-2"	X	WING 4 - B.F. - HORIZ.
B420	1	-	6'-9"	X	WING 4 - B.F. - HORIZ.
B421	1	-	3'-3"	X	WING 4 - B.F. - HORIZ.
B422	2	-	11'-5"	X	WING 4 - B.F. - HORIZ.
B423	30	-	11'-2"	X	WING 4 - F.F. & B.F. - TOP - HORIZ.
B424	1	-	12'-9"	X	WING 4 - F.F. - HORIZ.
B425	1	-	11'-3"	X	WING 4 - F.F. - HORIZ.
B426	1	-	7'-10"	X	WING 4 - F.F. - HORIZ.
B427	1	-	4'-4"	X	WING 4 - F.F. - HORIZ.

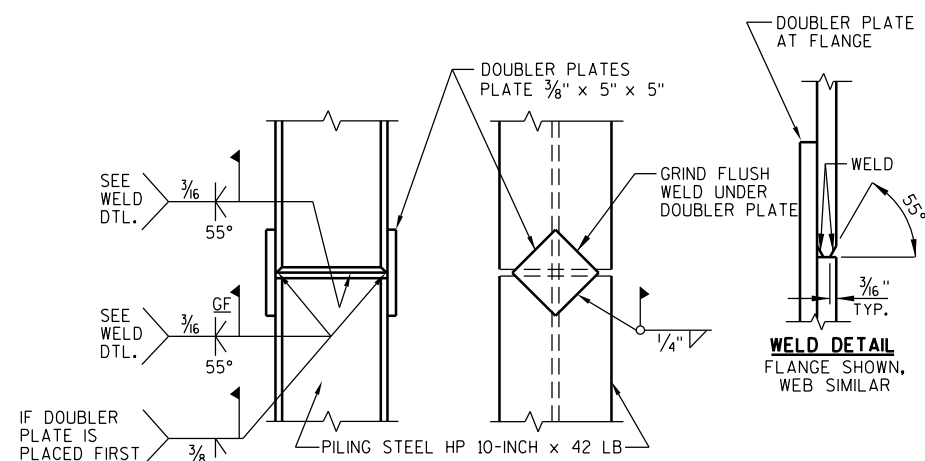


PLAN - WING 3

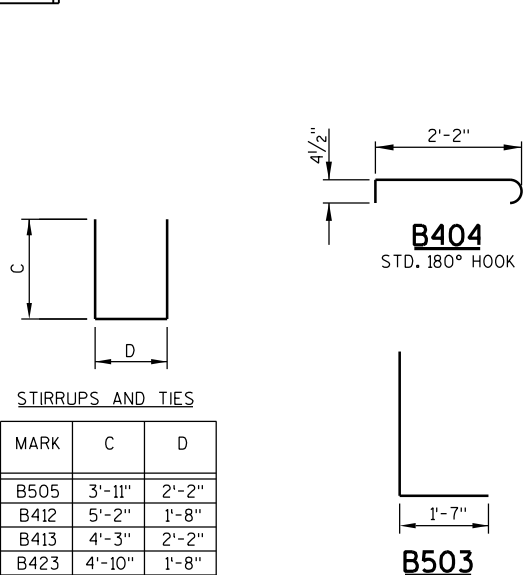
SEE LEGEND ON SHEET 6 FOR DESCRIPTION OF
 ★ ● ◻ ◼ ▲



PLAN - WING 4



ABUTMENT PILE SPLICE DETAILS



MARK	A	B
B801	1'-6"	45°
B807		
B514		
B408	1'-11"	45°
B409		
B410		
B411	2'-5"	7°
B415	2'-5"	45°
B416		
B417		
B418	1'-10"	45°
B419		
B420		
B421	2'-5"	11°
B422		
B424	1'-7"	45°
B425		
B426		
B427		

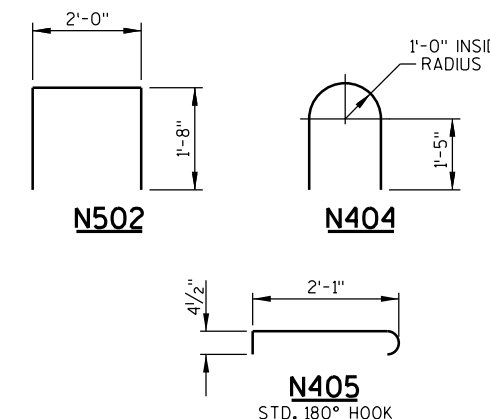
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-33-138	
DRAWN BY: RLR		PLANS CK'D: JRS	
SOUTH ABUTMENT DETAILS		SHEET 7 OF 13	

BILL OF BARS COATED 65 LBS.
PIER 1 UNCOATED 3280 LBS.

MARK	NO. REQ'D.	LENGTH	BENT	LOCATION
N501	66	23'-4"		PIER - VERT.
N502	16	5'-1"	X	PIER - STIRRUPS - TOP - VERT.
N403	50	29'-0"		PIER - TOP & SIDES - HORIZ.
N404	50	6'-1"	X	PIER - AT ENDS - HORIZ.
N405	192	2'-11"	X	PIER - TIES - HORIZ.
N506	30	2'-0"		PIER - DOWELS @ TOP - VERT.
N407	2	30'-10"		PIER - TOP - HORIZ.

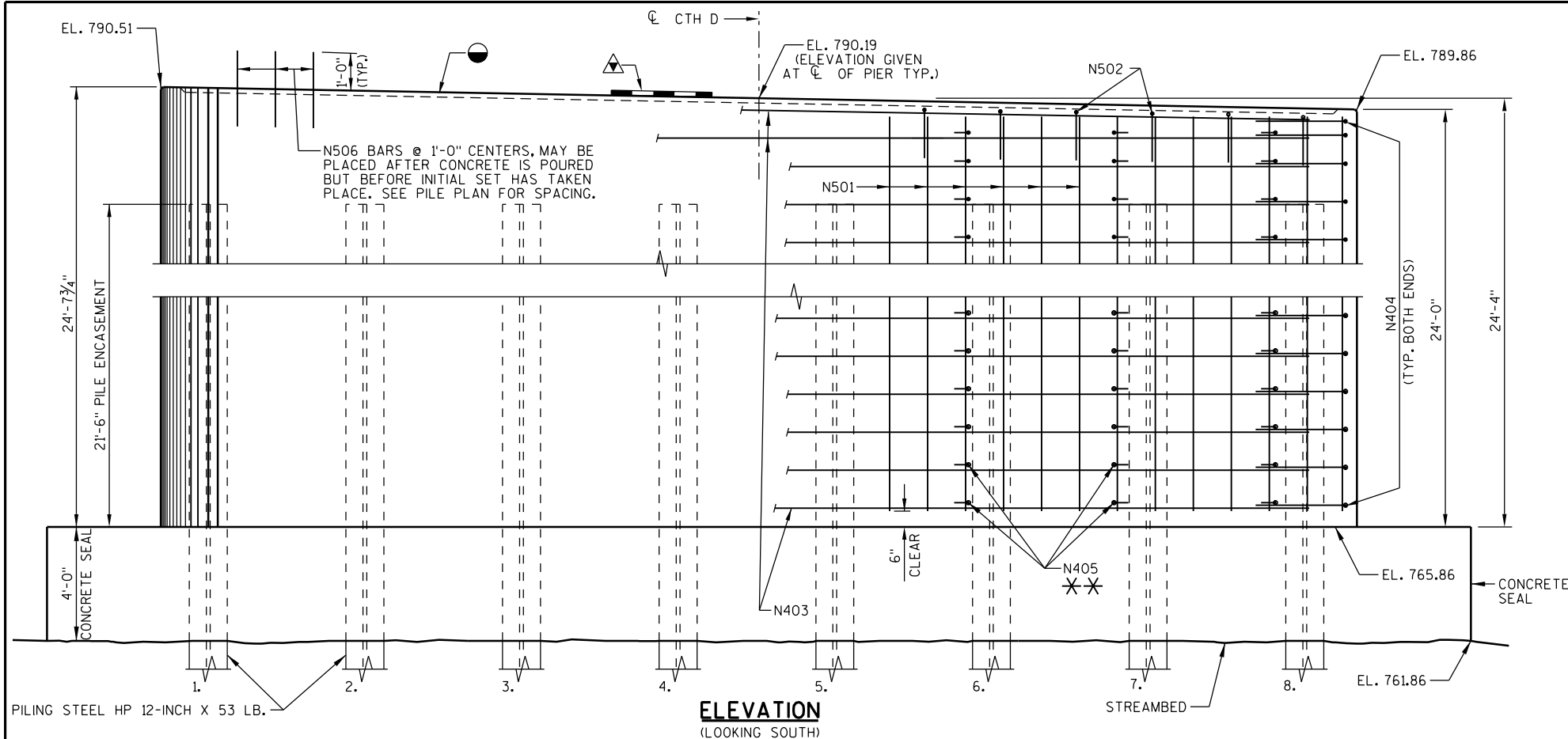
Ⓢ - THESE BARS SHALL BE EPOXY COATED.
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR EXCEPT AS NOTED.



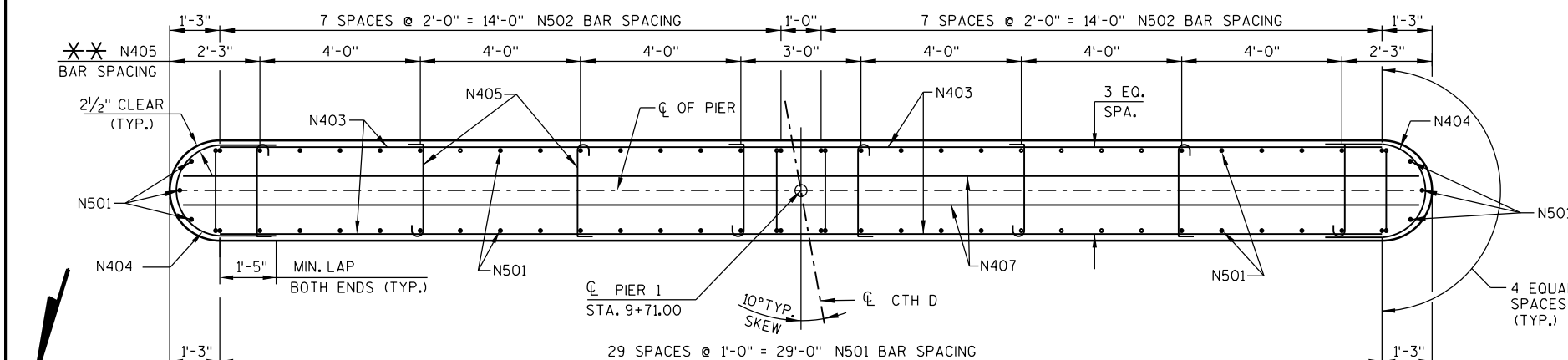
LEGEND

- ▲ - 4"x 3/4" FILLER, TYPICAL ALL AROUND TOP EDGES OF PIER.
- - 2"x 6" BEVELED KEYWAY.
- * * - ADJACENT TO EACH PILE ONE SIDE ONLY. ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.

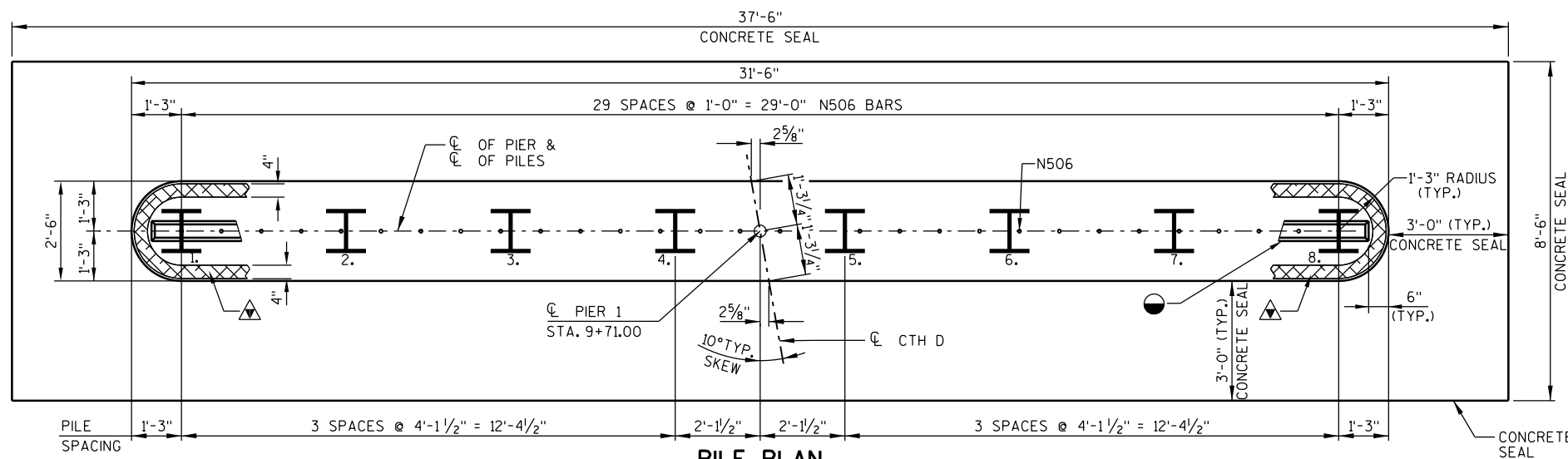
PIER 1 TO BE SUPPORTED ON PILING STEEL HP 12-INCH X 53 LB. DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 215 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED PILE LENGTHS ARE 80'-0". SEE PILE SPLICE DETAILS, SHEET 12.



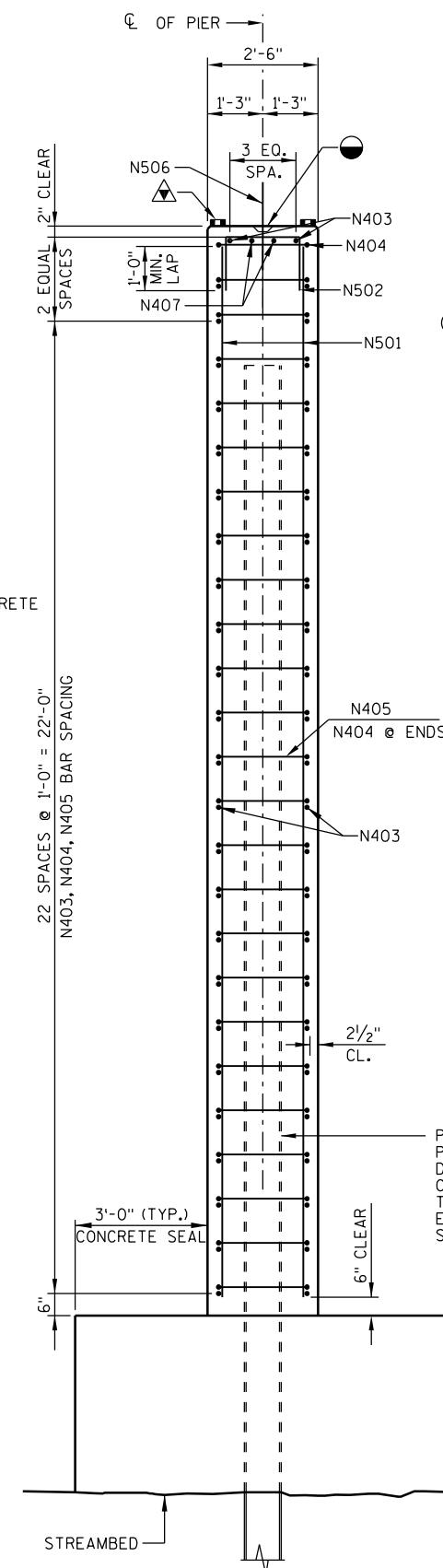
ELEVATION
(LOOKING SOUTH)



PLAN



PILE PLAN



TYPICAL SECTION THRU PIER

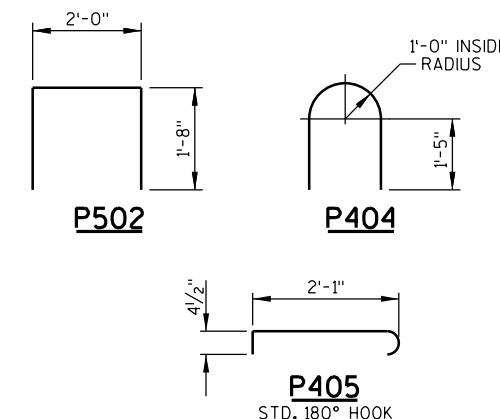
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-33-138			
DRAWN BY RLR		PLANS CK'D. JRS	
PIER 1			SHEET 8 OF 13

BILL OF BARS COATED 65 LBS.
PIER 2 UNCOATED 3280 LBS.

MARK	NO. REQ'D.	LENGTH	BENT	LOCATION
P501	66	23'-4"		PIER - VERT.
P502	16	5'-1"	X	PIER - STIRRUPS - TOP - VERT.
P403	50	29'-0"		PIER - TOP & SIDES - HORIZ.
P404	50	6'-1"	X	PIER - AT ENDS - HORIZ.
P405	192	2'-11"	X	PIER - TIES - HORIZ.
P506	30	2'-0"		PIER - DOWELS @ TOP - VERT.
P407	2	30'-10"		PIER - TOP - HORIZ.

Ⓢ - THESE BARS SHALL BE EPOXY COATED.

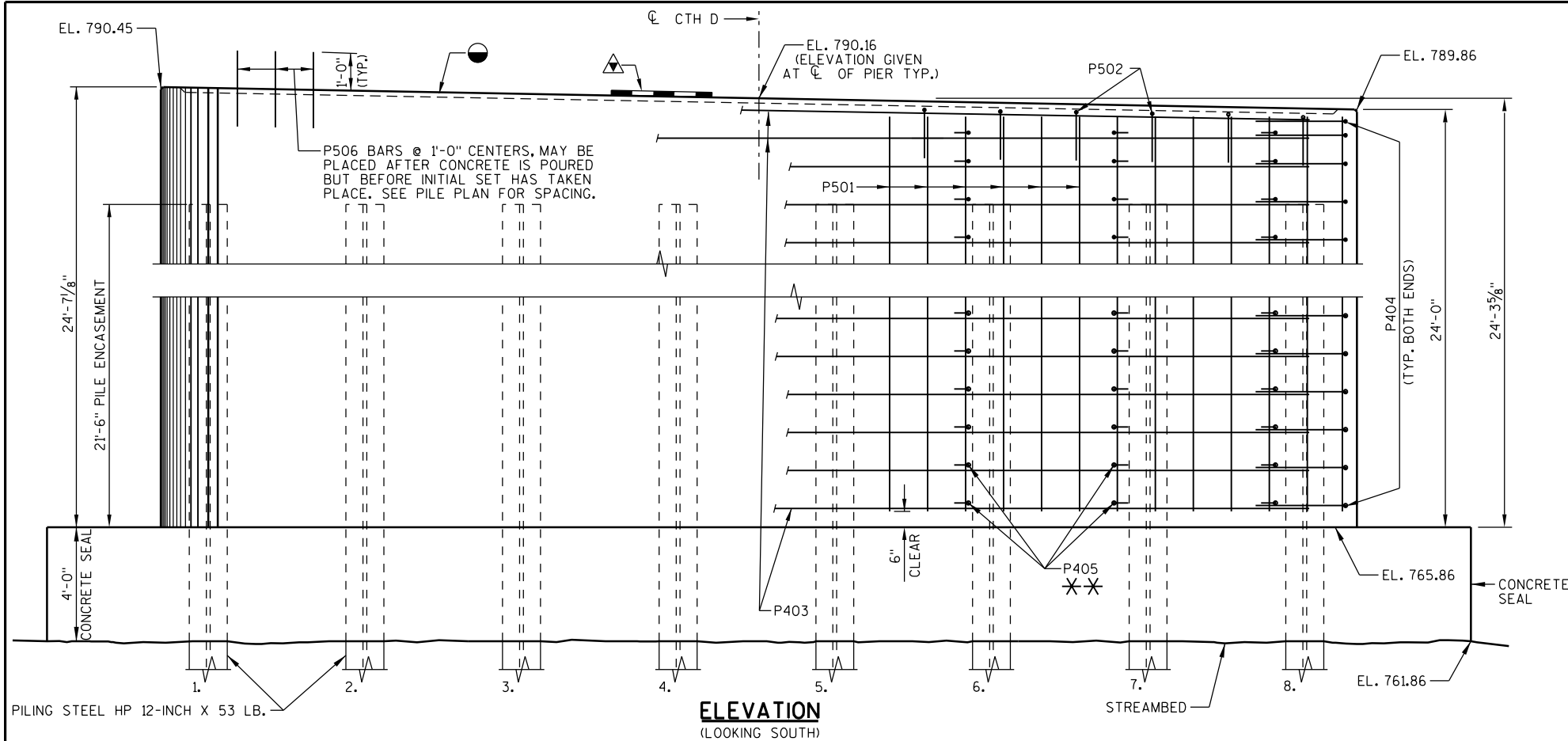
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR EXCEPT AS NOTED.



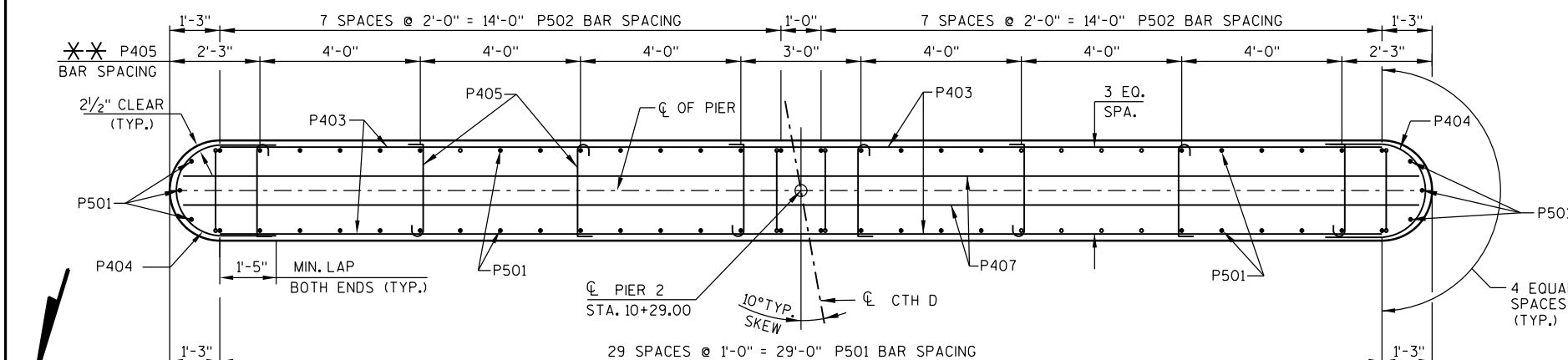
LEGEND

- ▲ - 4"x 3/4" FILLER, TYPICAL ALL AROUND TOP EDGES OF PIER.
- - 2"x 6" BEVELED KEYWAY.
- * * - ADJACENT TO EACH PILE ONE SIDE ONLY. ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.

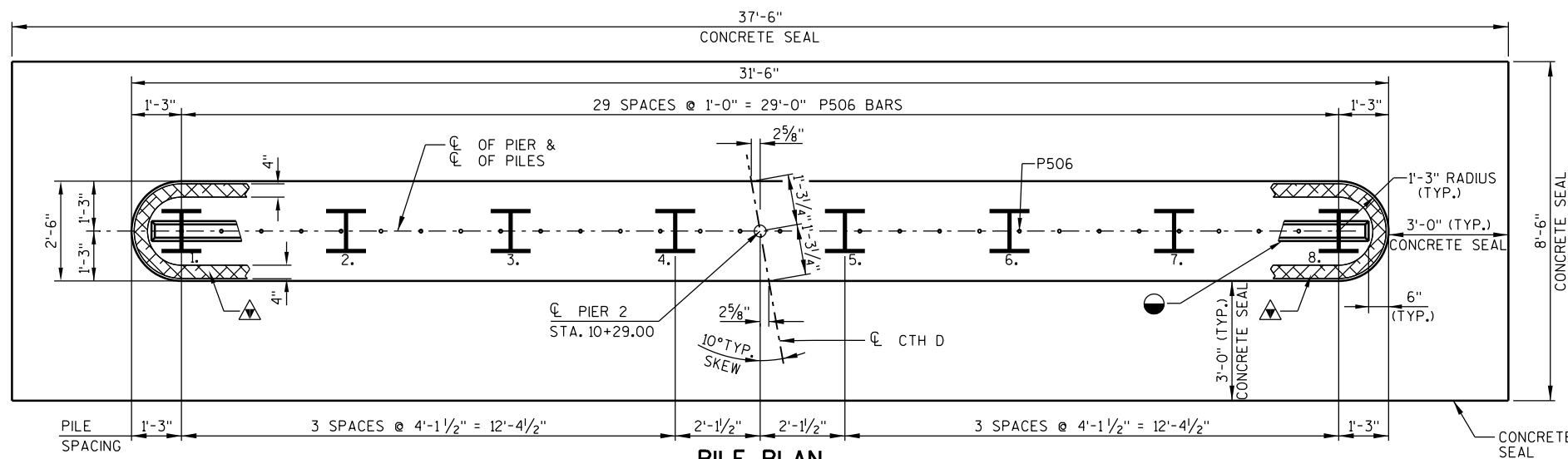
PIER 2 TO BE SUPPORTED ON PILING STEEL HP 12-INCH X 53 LB. DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 215 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED PILE LENGTHS ARE 80'-0". SEE PILE SPLICE DETAILS, SHEET 12.



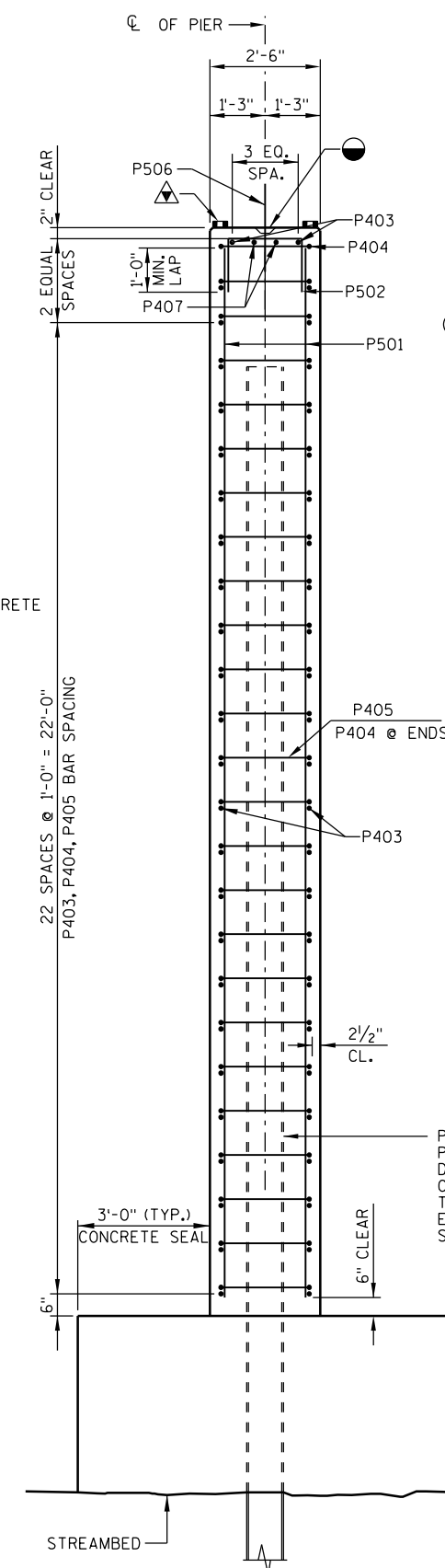
ELEVATION
(LOOKING SOUTH)



PLAN

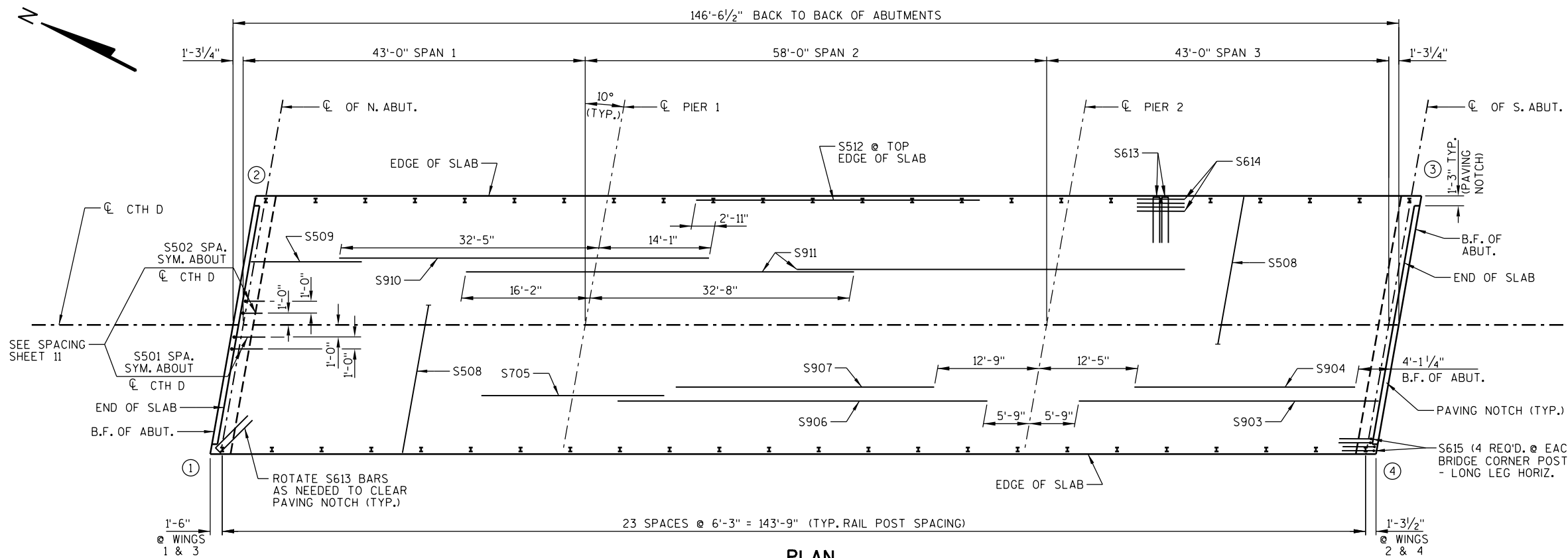


PILE PLAN



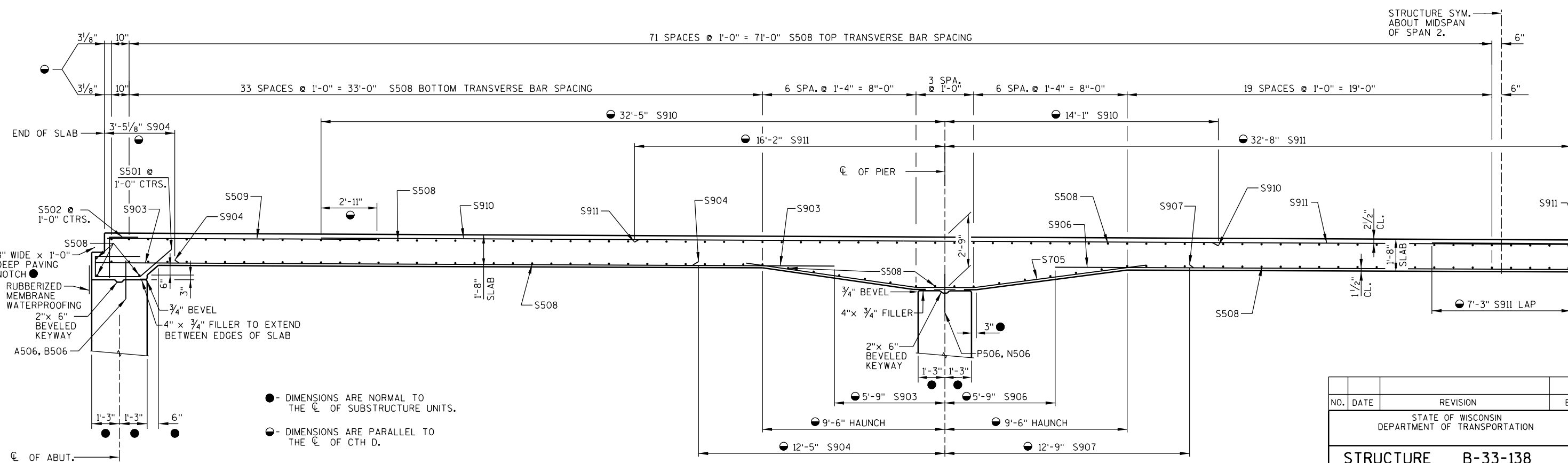
TYPICAL SECTION THRU PIER

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-33-138			
DRAWN BY RLR		PLANS CK'D. JRS	
PIER 2			SHEET 9 OF 13



PLAN
(THREE SPAN HAUNCHED CONCRETE SLAB)

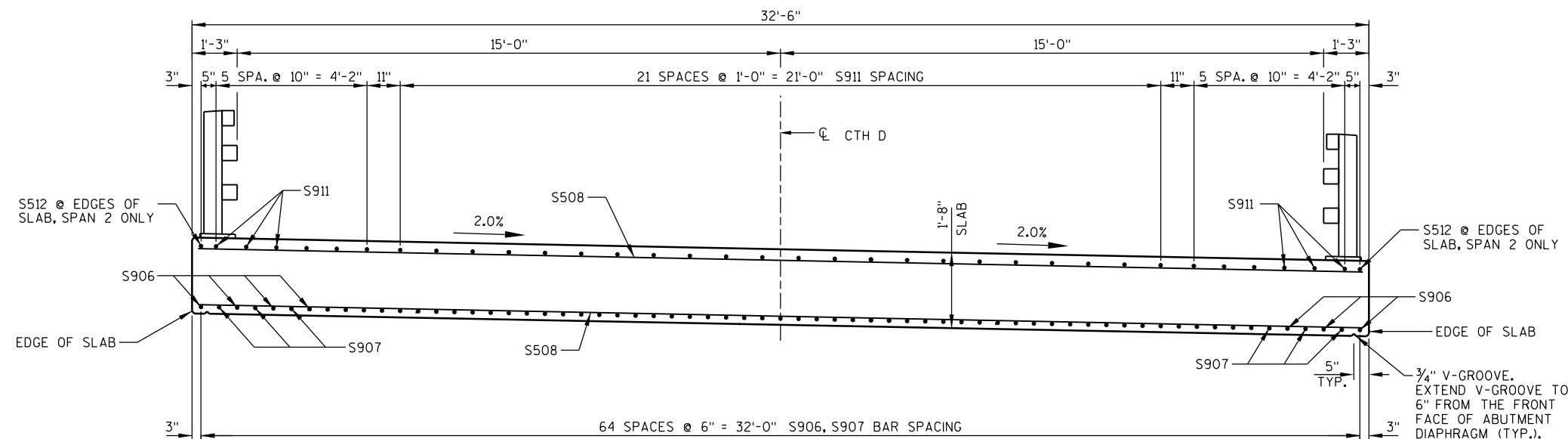
○ - INDICATES WING NUMBER
FOR CROSS SECTIONS THRU BRIDGE, SEE SHEET 11.
FOR DETAILS OF RAILING TUBULAR TYPE M, SEE SHEET 13.



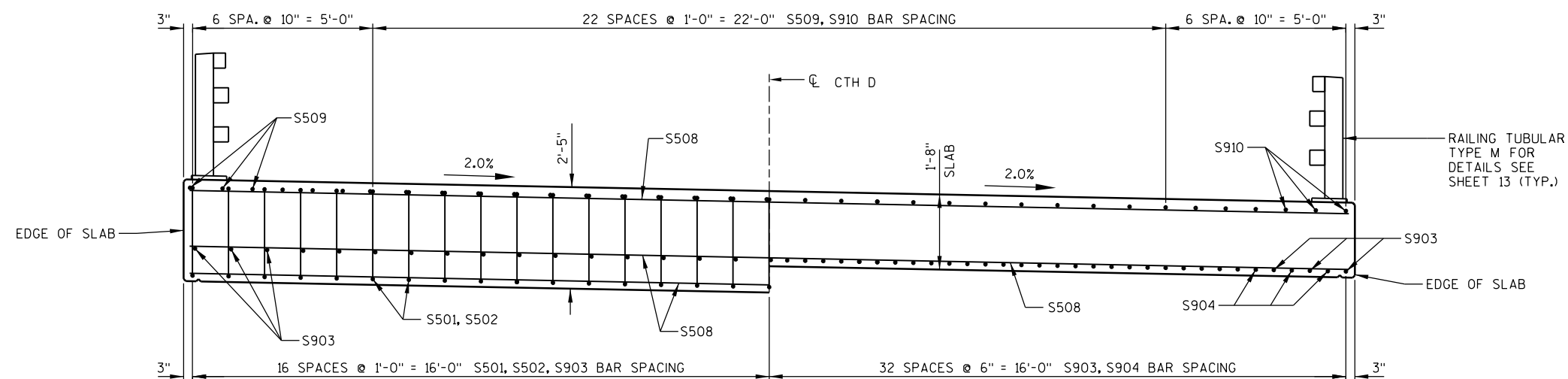
PART LONGITUDINAL SECTION

● - DIMENSIONS ARE NORMAL TO THE CL OF SUBSTRUCTURE UNITS.
○ - DIMENSIONS ARE PARALLEL TO THE CL OF CTH D.

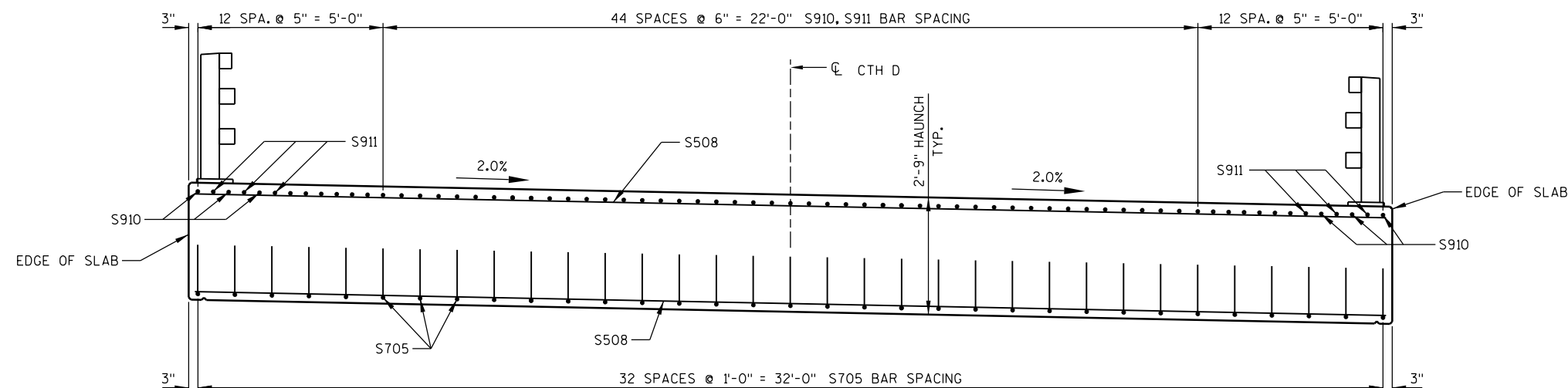
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-33-138			
DRAWN BY RLR		PLANS CK'D. JRS	
SUPERSTRUCTURE			SHEET 10 OF 13



CROSS SECTION THRU BRIDGE - SPAN 2
(LOOKING SOUTH)



CROSS SECTION THRU BRIDGE - SPANS 1 & 3
(LOOKING SOUTH)



SECTION THRU BRIDGE AT PIERS
(LOOKING SOUTH)

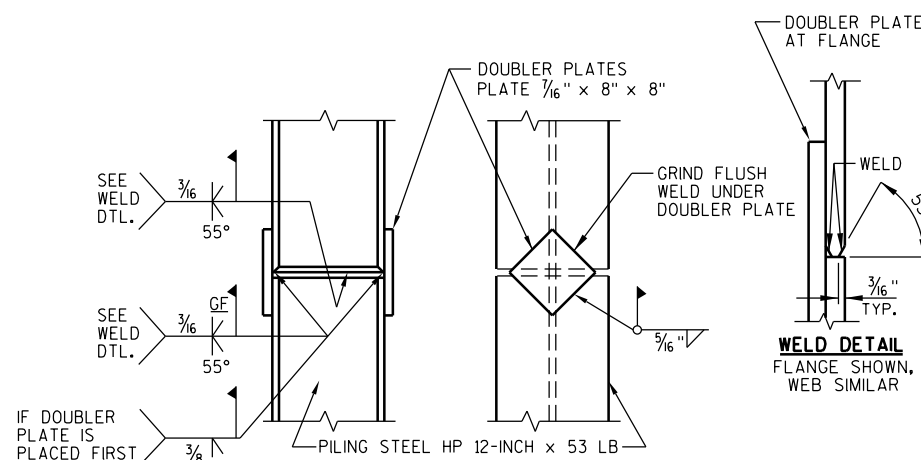
8

8

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-33-138			
DRAWN BY RLR		PLANS CK'D. JRS	
SUPERSTRUCTURE SECTIONS			SHEET 11 OF 13

TOP OF SLAB ELEVATIONS AND CAMBER VALUES

LOCATION	EAST EDGE OF SLAB ELEV.	C/L CTH D ELEV.	WEST EDGE OF SLAB ELEV.	CAMBER VALUE (INCHES)
N. ABUT.	793.01	792.65	792.29	0
1/10	793.05	792.70	792.34	0.2
2/10	793.10	792.74	792.39	0.4
3/10	793.14	792.79	792.43	0.5
4/10	793.18	792.83	792.48	0.5
5/10	793.21	792.86	792.51	0.5
6/10	793.24	792.90	792.55	0.3
7/10	793.27	792.93	792.58	0.2
8/10	793.30	792.95	792.61	0.1
9/10	793.32	792.98	792.64	0
PIER 1	793.34	793.00	792.66	0
1/10	793.36	793.02	792.69	0.1
2/10	793.37	793.04	792.71	0.3
3/10	793.38	793.05	792.72	0.6
4/10	793.38	793.06	792.73	0.8
5/10	793.38	793.06	792.73	0.9
6/10	793.37	793.05	792.73	0.8
7/10	793.36	793.04	792.72	0.6
8/10	793.33	793.02	792.71	0.3
9/10	793.31	793.00	792.68	0.1
PIER 2	793.28	792.97	792.66	0
1/10	793.25	792.94	792.63	0
2/10	793.22	792.91	792.61	0.1
3/10	793.18	792.88	792.58	0.2
4/10	793.15	792.85	792.55	0.3
5/10	793.11	792.81	792.51	0.5
6/10	793.06	792.77	792.47	0.5
7/10	793.02	792.72	792.43	0.5
8/10	792.97	792.68	792.38	0.4
9/10	792.91	792.62	792.33	0.2
S. ABUT.	792.86	792.57	792.28	0



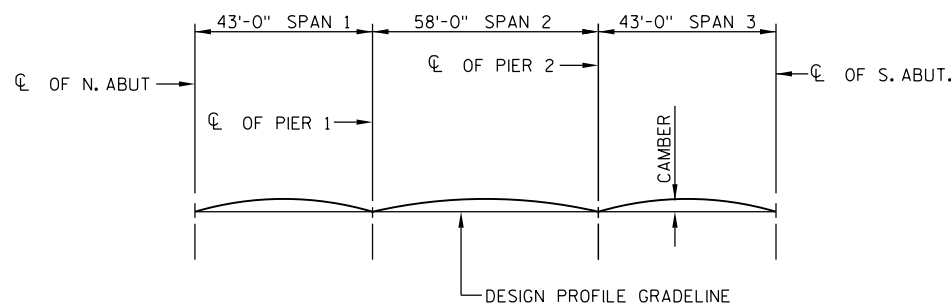
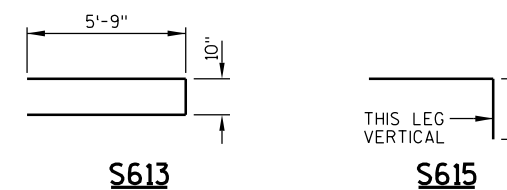
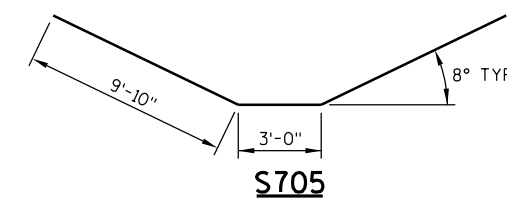
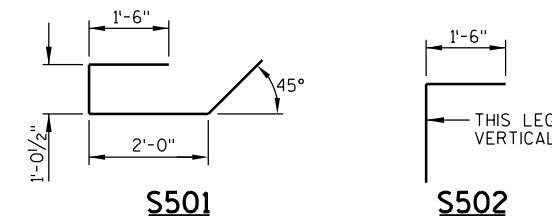
PIER PILE SPLICE DETAILS

BILL OF BARS (COATED) 63,740 LBS.

MARK	NO. REQ'D.	LENGTH	BENT	LOCATION
S501	66	6'-5"	X	DIAPHRAGM @ ABUTS. - LONGIT.
S502	66	3'-5"	X	DIAPHRAGM @ ABUTS. - VERT.
S903	66	37'-8"		SLAB BOTTOM - SPANS 1 & 3 - LONGIT.
S904	64	27'-9"		SLAB BOTTOM - SPANS 1 & 3 - LONGIT.
S705	66	22'-8"	X	HAUNCH OVER PIERS - LONGIT.
S906	33	46'-6"		SLAB BOTTOM - SPAN 2 - LONGIT.
S907	32	32'-6"		SLAB BOTTOM - SPAN 2 - LONGIT.
S508	290	32'-7"		SLAB TOP & BOTTOM - TRANS.
S509	70	13'-11"		SLAB TOP - @ ABUT. - LONGIT.
S910	70	46'-6"		SLAB TOP - SPANS 1 & 3 - LONGIT.
S911	68	48'-10"		SLAB TOP - SPAN 2 - LONGIT.
S512	2	35'-8"		SLAB TOP - SPAN 2 @ EDGE OF SLAB - LONGIT.
S613	96	12'-0"	X	SLAB @ RAIL POST, TWO PER POST
S614	176	6'-0"		SLAB @ RAIL POST, FOUR PER POST
S615	16	6'-0"	X	SLAB @ RAIL CORNER POSTS AS NOTED

EPOXY COAT ALL SUPERSTRUCTURE BAR STEEL.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.



CAMBER DIAGRAM

CAMBER SPANS AS SHOWN ABOVE AND IN THE TABLE OF VALUES TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT. DEAD LOAD DEFLECTION APPROXIMATES 1/3 OF CAMBER VALUES SHOWN.

TO DETERMINE FALSEWORK ELEVATION AT EDGE OF SLAB, CROWN OR REFERENCE LINE, FOLLOW THIS PROCEDURE:

- TOP OF SLAB ELEVATION AT FINAL GRADE
- SLAB THICKNESS
- + CAMBER
- + FORM SETTLEMENT/DEFLECTION DUE TO PLACEMENT OF SLAB CONCRETE (TO BE COMPUTED BY THE CONTRACTOR)
- = TOP OF SLAB FALSEWORK ELEVATION

GENERAL NOTES

ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).

TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

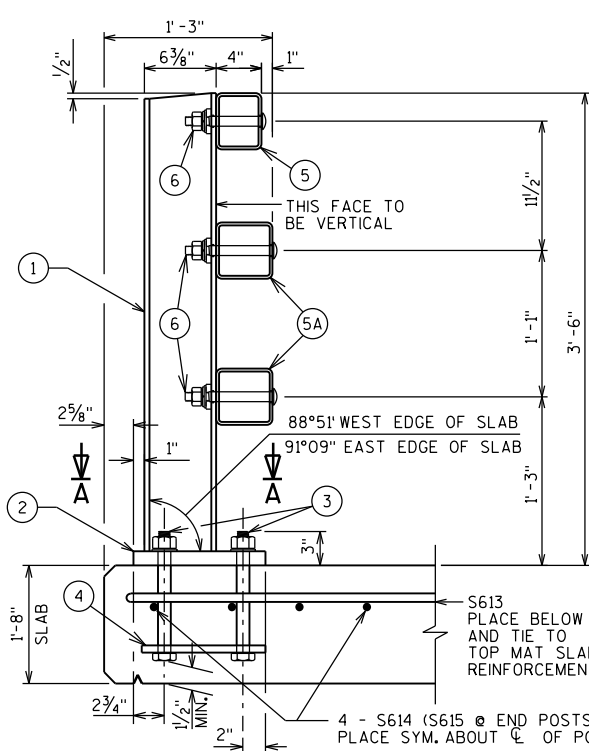
PLACE ALL TRANSVERSE BARS ON THE SKEW.

SURVEY TOP OF SLAB ELEVATIONS

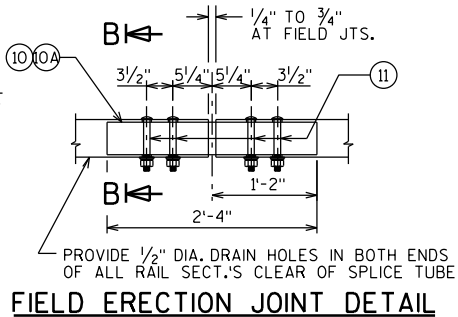
LOCATION	EAST SLAB EDGE	CL CTH D	WEST SLAB EDGE
N. ABUT.			
SPAN 1 - 5/10			
PIER 1			
SPAN 2 - 5/10			
PIER 2			
SPAN 3 - 5/10			
S. ABUT.			

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE CL OF ABUTMENTS, THE CL OF PIERS, AND AT THE 5/10 PTS. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGE OF SLAB AND CL. RECORD THE ELEVATIONS IN THE ABOVE TABLE FOR THE "AS BUILT" PLANS.

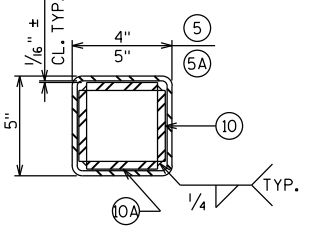
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-33-138			
DRAWN BY RLR		PLANS CK'D. JRS	
SUPERSTRUCTURE DETAILS			SHEET 12 OF 13



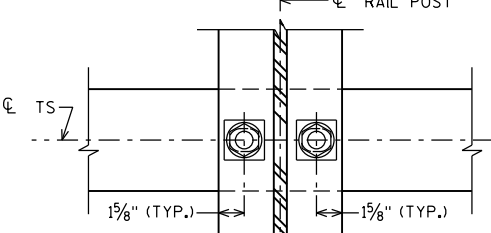
SECTION THRU RAILING ON SLAB



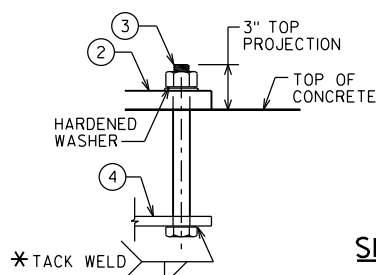
FIELD ERECTION JOINT DETAIL



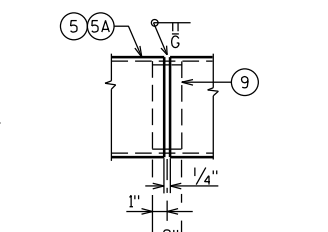
SECTION B-B



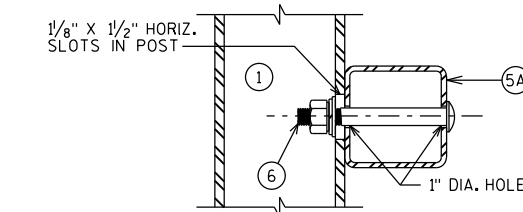
SECTION THRU POST WEB



ANCHOR BOLTS



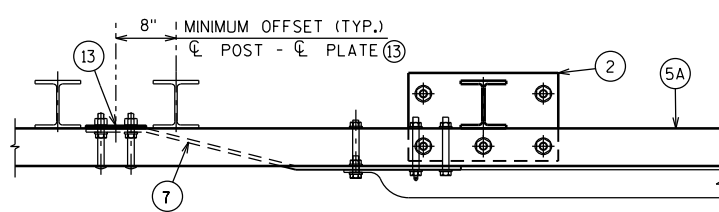
SHOP RAIL SPLICE DETAIL



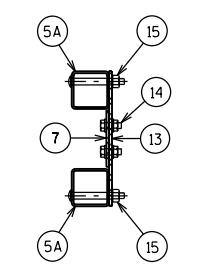
SECTION THRU RAIL

TYPICAL RAIL TO POST CONNECTIONS

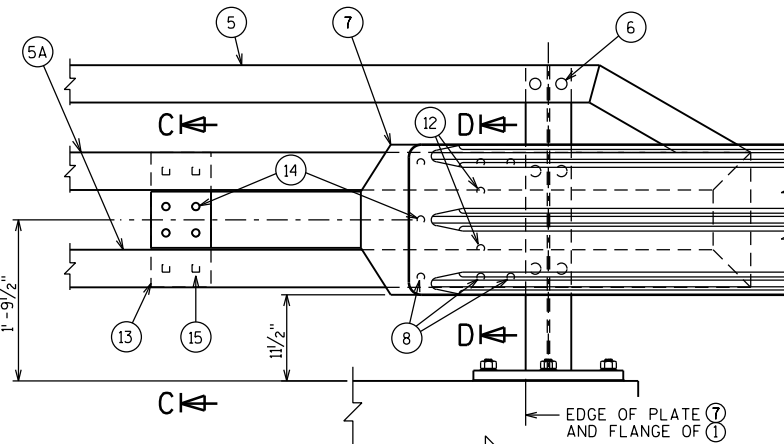
* ANCHOR BOLT ASSEMBLY MAY BE TACK WELDED, EITHER IN THE SHOP, OR IN THE FIELD AFTER THE ANCHOR PLATE IS PLACED.



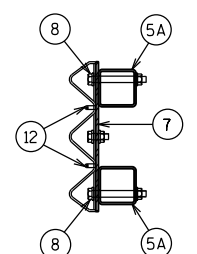
TOP VIEW AT END POST



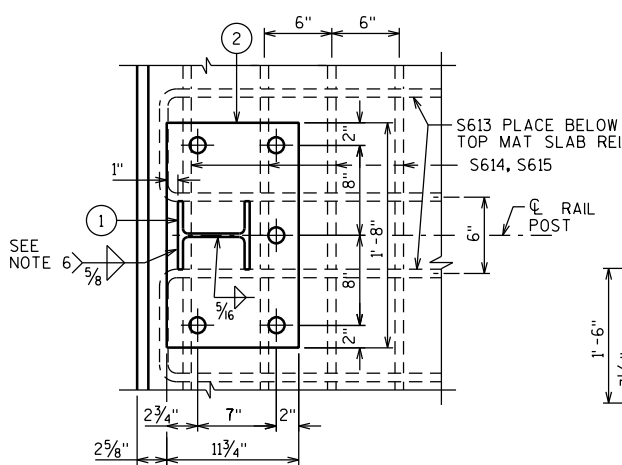
SECTION C-C



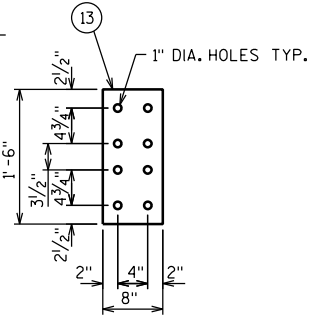
DETAIL AT END POST



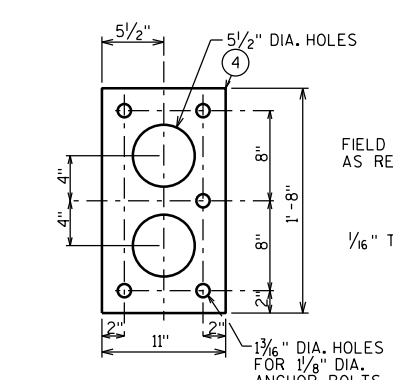
SECTION D-D



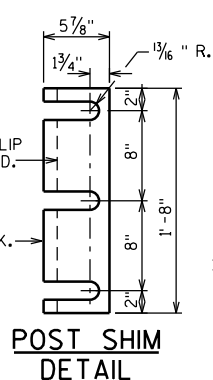
SECTION A-A



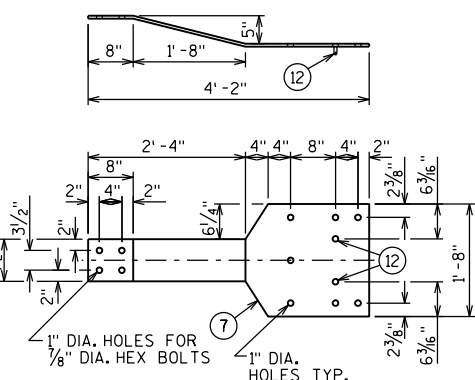
ANCHOR PLATE AT BEAM GUARD ATTACHMENT



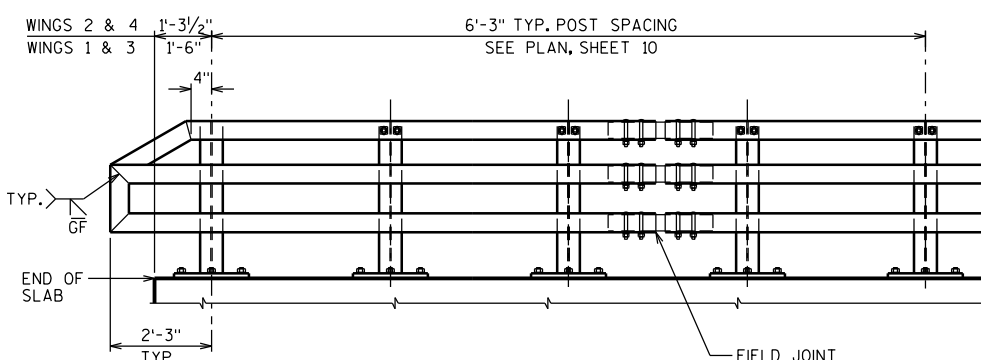
ANCHOR PLATE AT RAIL TO SLAB CONNECTION



POST SHIM DETAIL



BACK-UP PLATE DETAIL



PART ELEVATION OF RAILING

LEGEND

- ① W6 x 25 WITH 1/8" X 1/2" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- ② PLATE 1/4" X 11 3/4" X 1'-8" WITH 1 7/16" DIA. OVERSIZED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN.
- ③ ASTM A449 - 1/8" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED), 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-3" LONG ON CONCRETE SLAB SUPERSTRUCTURE.
- ④ 5/8" X 11" X 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1 3/16" DIA. HOLES FOR ANCHOR BOLTS NO. 3
- ⑤ TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- ⑤A TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- ⑥ 7/8" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/16" X 1 5/8" X 1 5/8" MIN. WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)
- ⑦ 1/2" THK. BACK-UP PLATE WITH 2 - 7/8" X 1 1/2" THREADED SHOP WELDED STUDS (NO. 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.
- ⑧ 1" DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5A FOR 7/8" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.
- ⑨ SPLICE SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE "SLIDING FIT".
- ⑩ 3/8" X 3 3/8" X 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.
- ⑩A 3/8" X 2 5/8" X 2'-4" PLATE USED IN NO. 5. 3/8" X 3 3/8" X 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.
- ⑪ 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 1 7/8" X 1 1/4" LONGIT. SLOTTED HOLES IN PLATE NO. 10A. PROVIDE 1/16" DIA. ROUND HOLES IN TUBES NO. 5 AND NO. 5A.
- ⑫ 7/8" DIA. X 1 1/2" LONG THREADED SHOP WELDED STUDS (2 REQ'D).
- ⑬ 3/8" X 8" X 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.
- ⑭ 7/8" DIA. X 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).
- ⑮ 1" DIA. HOLES IN TUBES NO. 5A FOR 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

GENERAL NOTES

1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
3. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
7. FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
8. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
9. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY SSPC SPECIFICATIONS.
10. PAINTING IS NOT REQUIRED.
11. THIS RAILING MEETS AASHTO MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) FOR TEST LEVEL 2 (TL-2).

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-33-138			
DRAWN BY RLR		PLANS CK'D. JRS	
RAILING TUBULAR TYPE M			SHEET 13 OF 13

STAGE 1

Division 1 - CTH D - PROJECT 5725-00-72 (STAGE 1)

STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
									1.00	1.25	
08+77	877.00	0.00	0.00	0.00	601.54	0	0	0	0	0	0
08+82.6	882.60	5.60	0.00	0.00	674.93	0	0	132	0	165	-165
08+89.39	889.39	6.79	0.00	0.00	724.52	0	0	176	0	385	-385
09+00	900.00	10.61	0.00	0.00	782.52	0	0	296	0	755	-755
09+09.61	909.61	9.61	0.00	0.00	826.03	0	0	286	0	1,113	-1,113
09+26.72	926.72	17.11	0.00	0.00	814.67	0	0	520	0	1,763	-1,763
						0	0	1,410			

Division 2 - CTH D - PROJECT 5725-00-72 (STAGE 1)

STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
						NOTE 1	NOTE 2	NOTE 3	NOTE 1	1.25	NOTE 8
10+73.28	1073.28	0.00	0.00	0.00	568.39	0	0	0	0	0	0
10+89.61	1089.61	16.33	0.00	0.00	506.13	0	0	325	0	406	-406
11+00	1100.00	10.39	0.00	0.00	464.57	0	0	187	0	640	-640
11+11.22	1111.22	11.22	0.00	0.00	422.75	0	0	184	0	870	-870
11+16.51	1116.51	5.29	0.00	0.00	403.54	0	0	81	0	971	-971
11+23	1123.00	6.49	0.00	0.00	381.47	0	0	94	0	1,089	-1,089
						0	0	871			

STAGE 5

Division 1 - CTH D - PROJECT 5725-00-72 (STAGE 5)

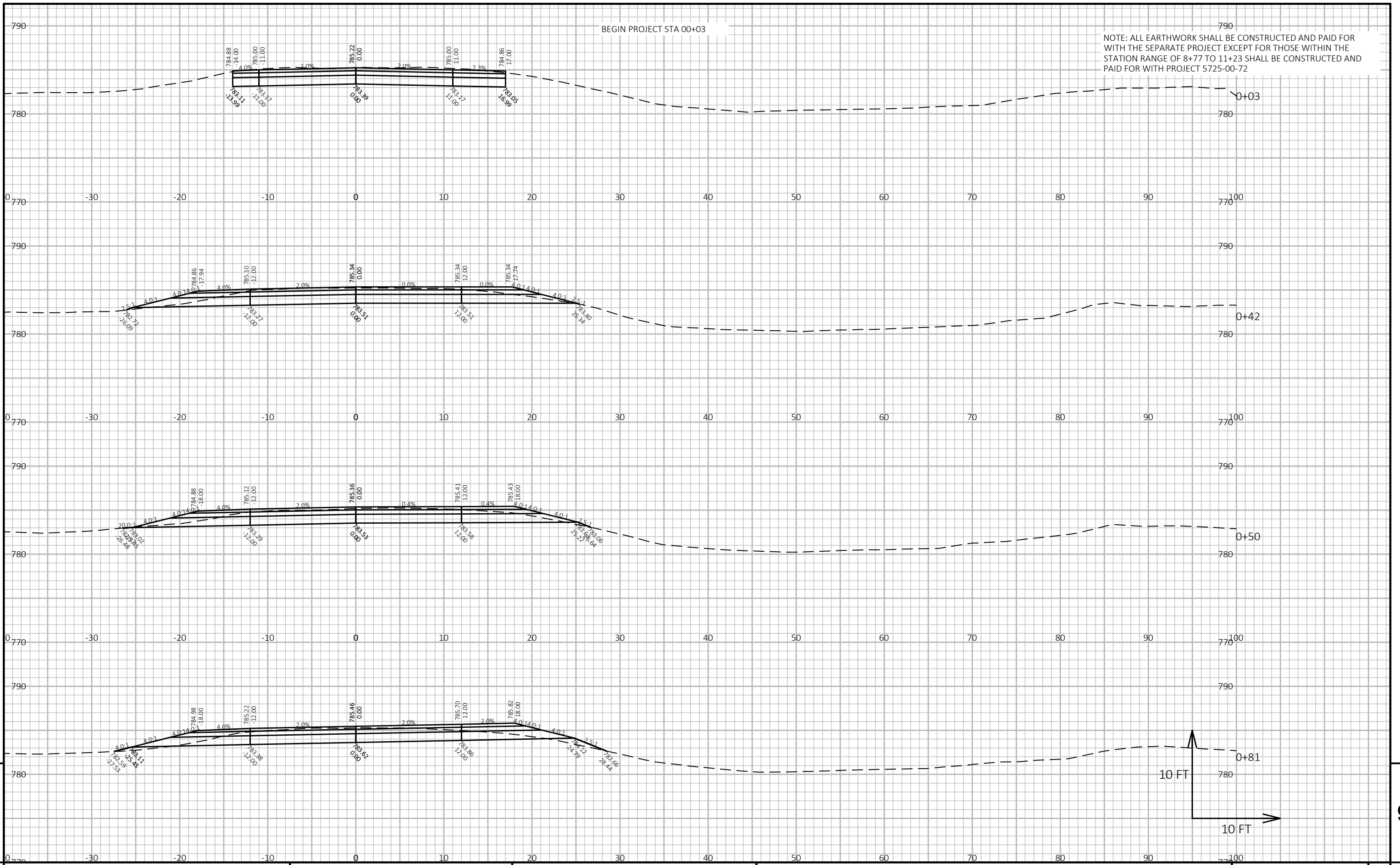
STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
									1.00	1.25	
08+77	877.00	0.00	1002.73	0.00	0.00	0	0	0	0	0	0
08+82.6	882.60	5.60	964.57	0.00	0.00	204	0	0	204	0	204
08+89.39	889.39	6.79	910.63	0.00	0.00	236	0	0	440	0	440
09+00	900.00	10.61	830.41	0.00	0.00	342	0	0	782	0	782
09+09.61	909.61	9.61	772.19	0.00	0.00	285	0	0	1,067	0	1,067
09+26.72	926.72	17.11	642.61	0.00	0.00	448	0	0	1,515	0	1,515
						1,515	0	0			

Division 2 - CTH D - PROJECT 5725-00-72 (STAGE 5)

STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
						NOTE 1	NOTE 2	NOTE 3	NOTE 1	1.25	NOTE 8
10+73.28	1073.28	0.00	211.62	0.00	0.00	0	0	0	0	0	0
10+89.61	1089.61	16.33	342.54	0.00	0.00	168	0	0	168	0	168
11+00	1100.00	10.39	338.89	0.00	0.00	131	0	0	299	0	299
11+11.22	1111.22	11.22	295.08	0.00	0.00	132	0	0	431	0	431
11+16.51	1116.51	5.29	267.87	0.00	0.00	55	0	0	486	0	486
11+23	1123.00	6.49	227.77	0.00	0.00	60	0	0	546	0	546
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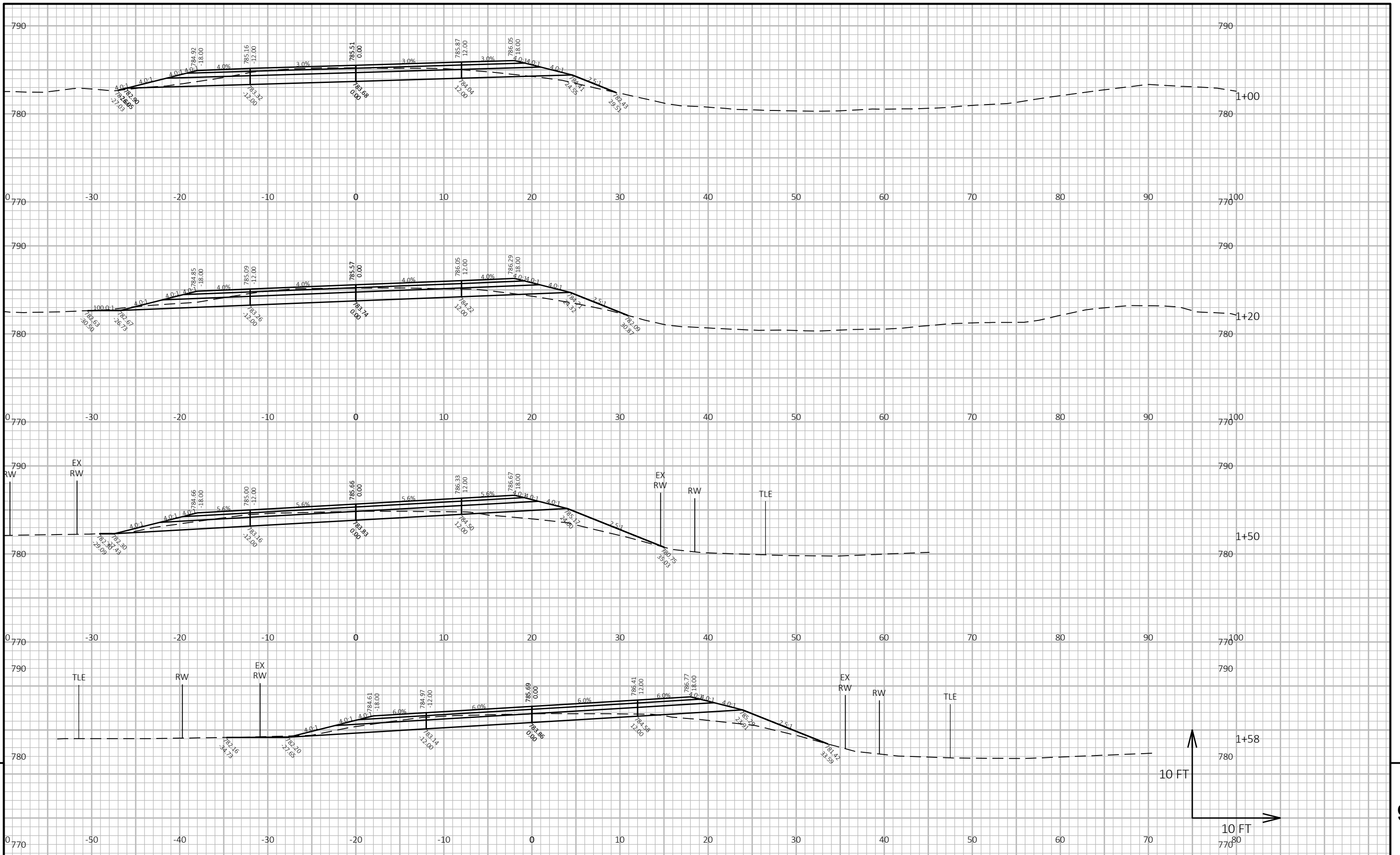


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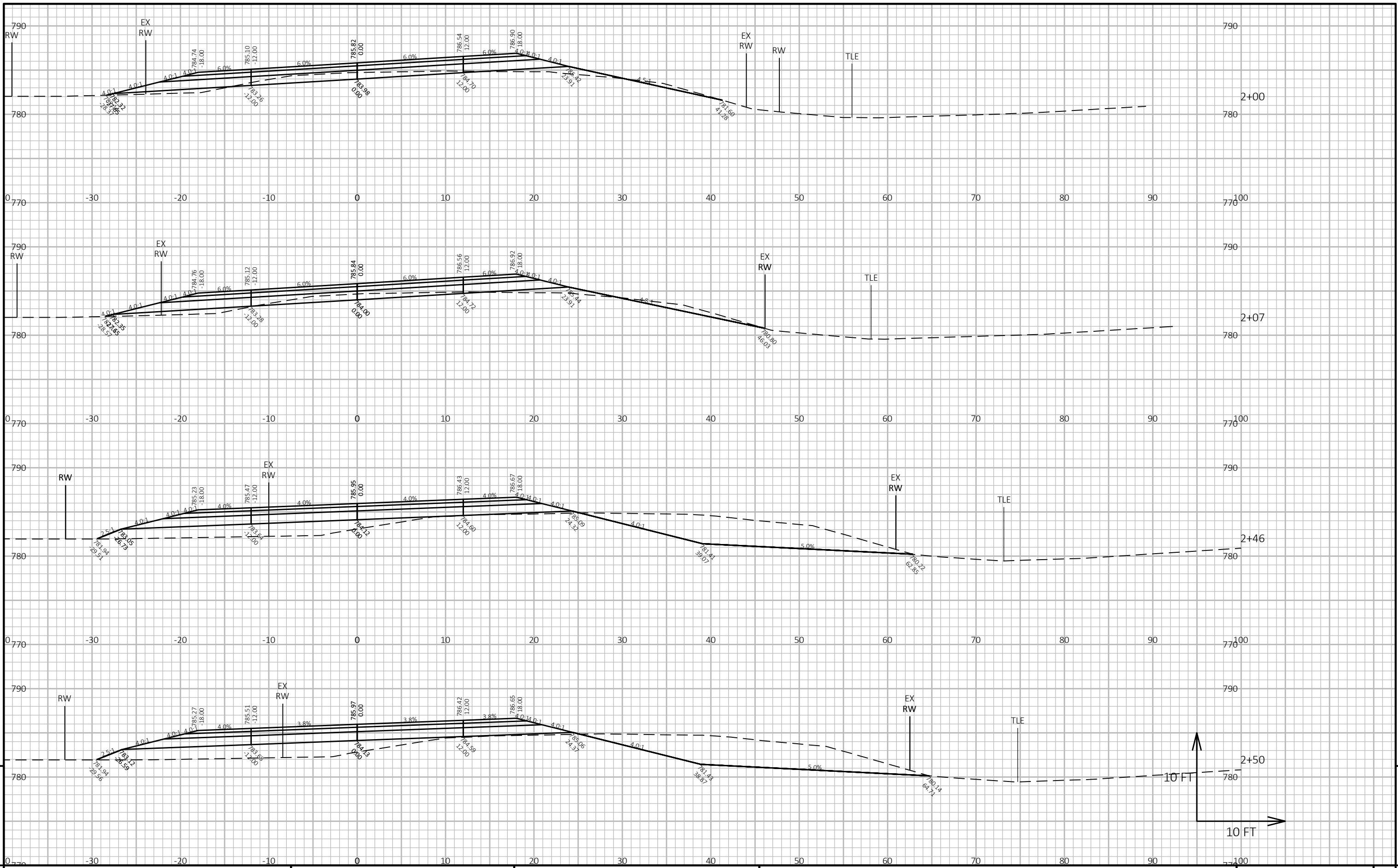
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PROJECT NO: 5725-00-72 HWY: CTH D COUNTY: LAFAYETTE CROSS SECTIONS: CTH D SHEET E

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PROJECT NO: 5725-00-72	HWY: CTH D	COUNTY: LAFAYETTE	CROSS SECTIONS: CTH D	SHEET	E
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PROJECT NO: 5725-00-72

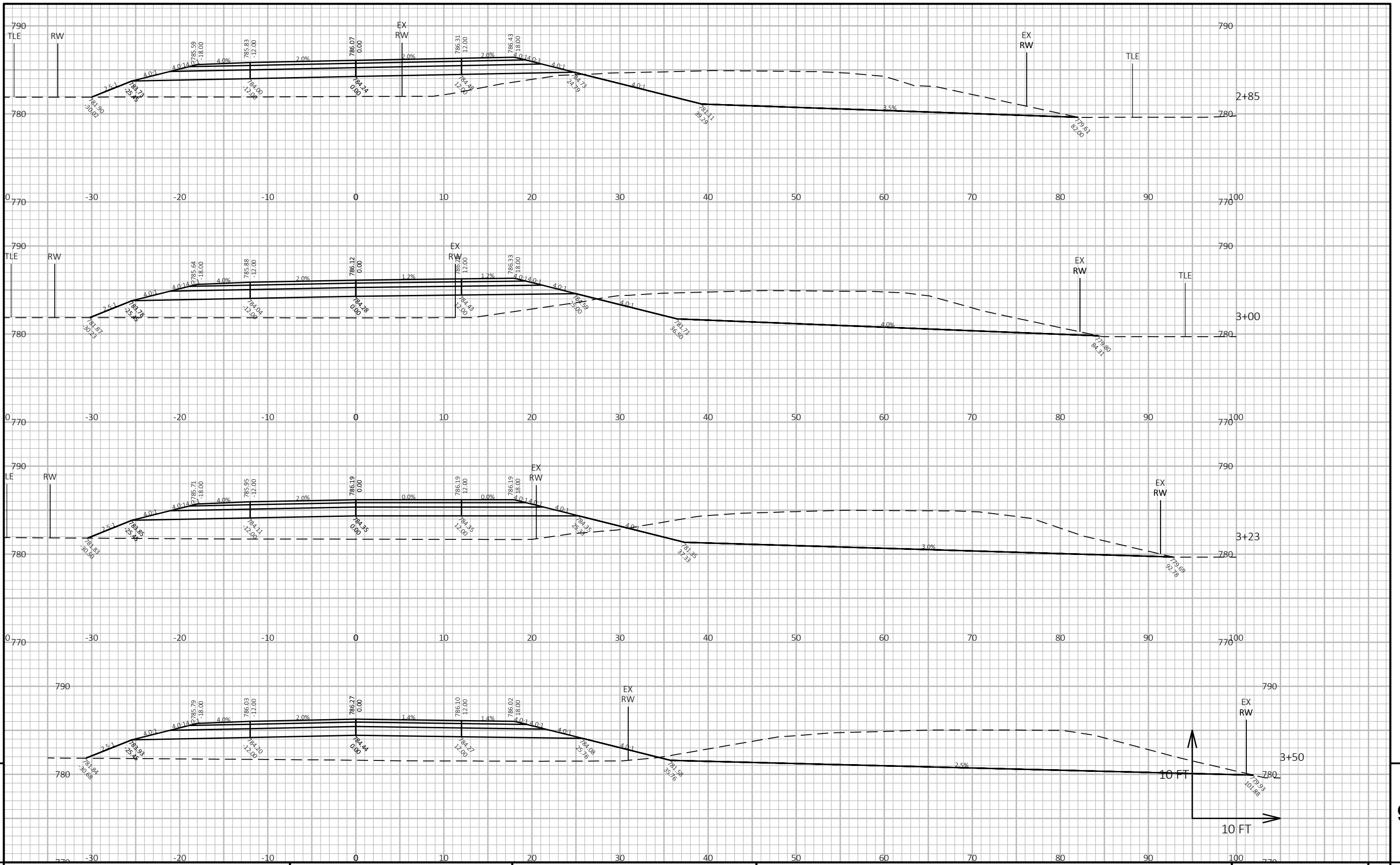
HWY: CTH D

COUNTY: LAFAYETTE

CROSS SECTIONS: CTH D

SHEET

E

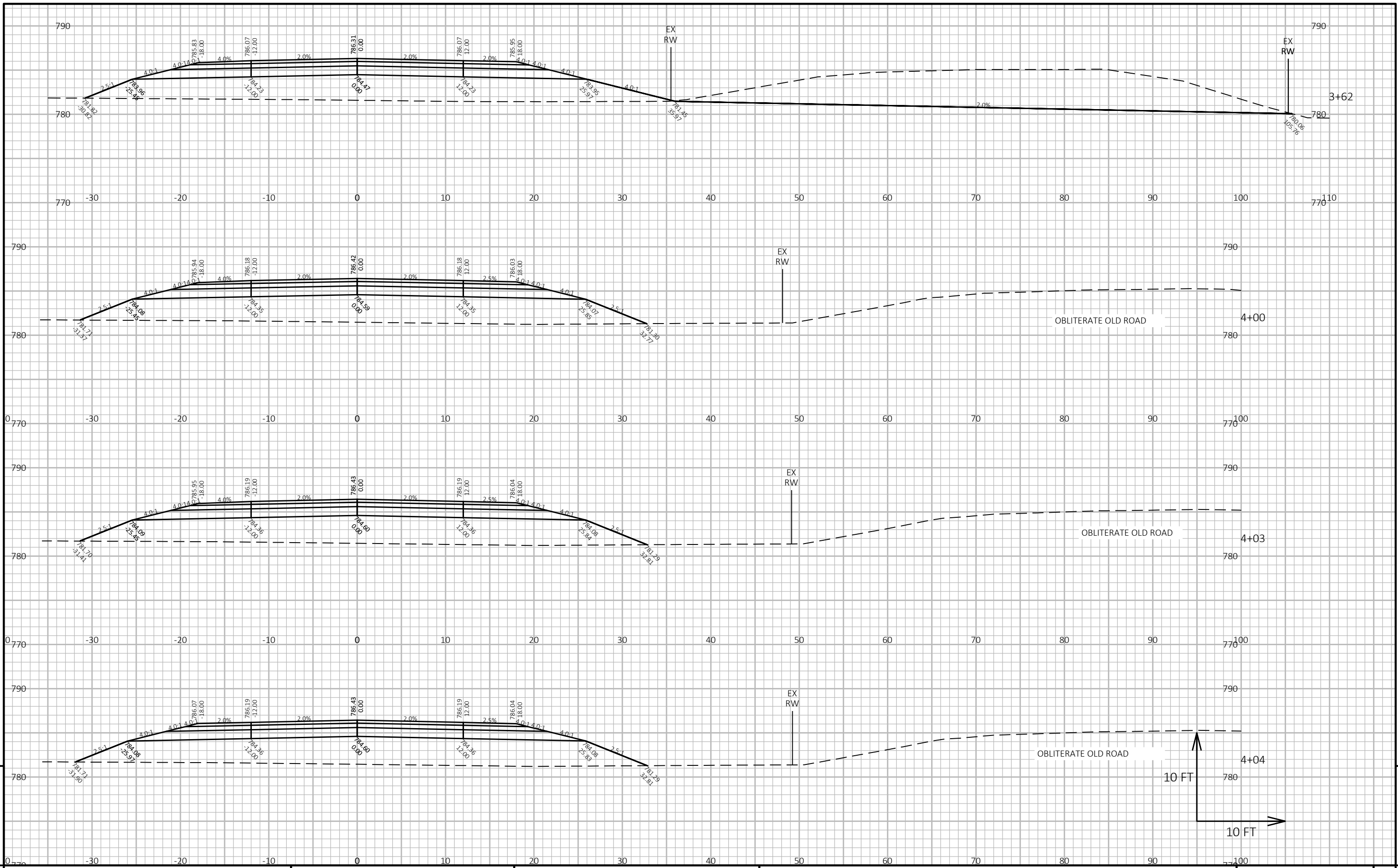


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PROJECT NO: 5725-00-72 HWY: CTH D COUNTY: LAFAYETTE CROSS SECTIONS: CTH D SHEET E

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LAYOUT NAME - 090205-xs



PROJECT NO: 5725-00-72

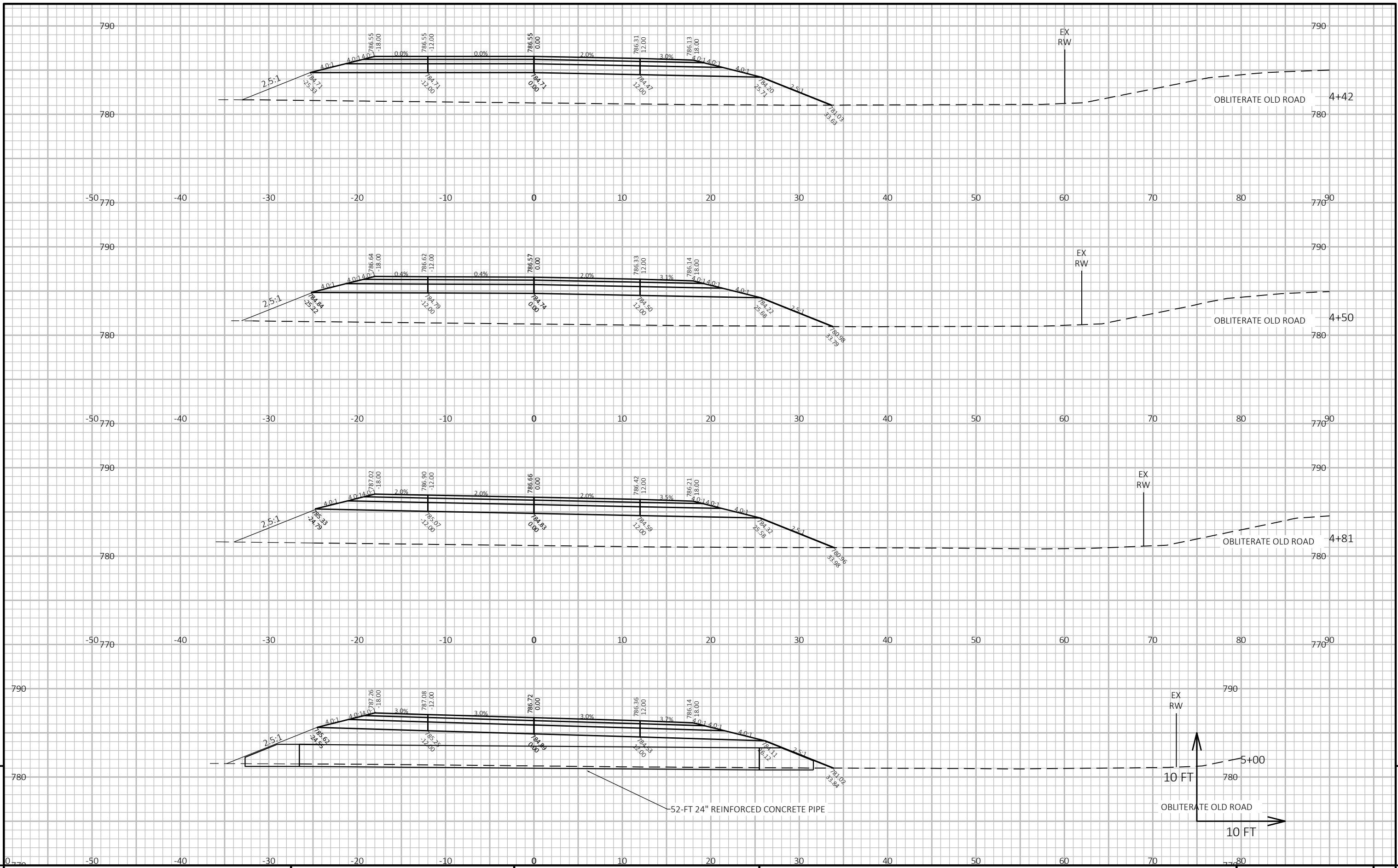
HWY: CTH D

COUNTY: LAFAYETTE

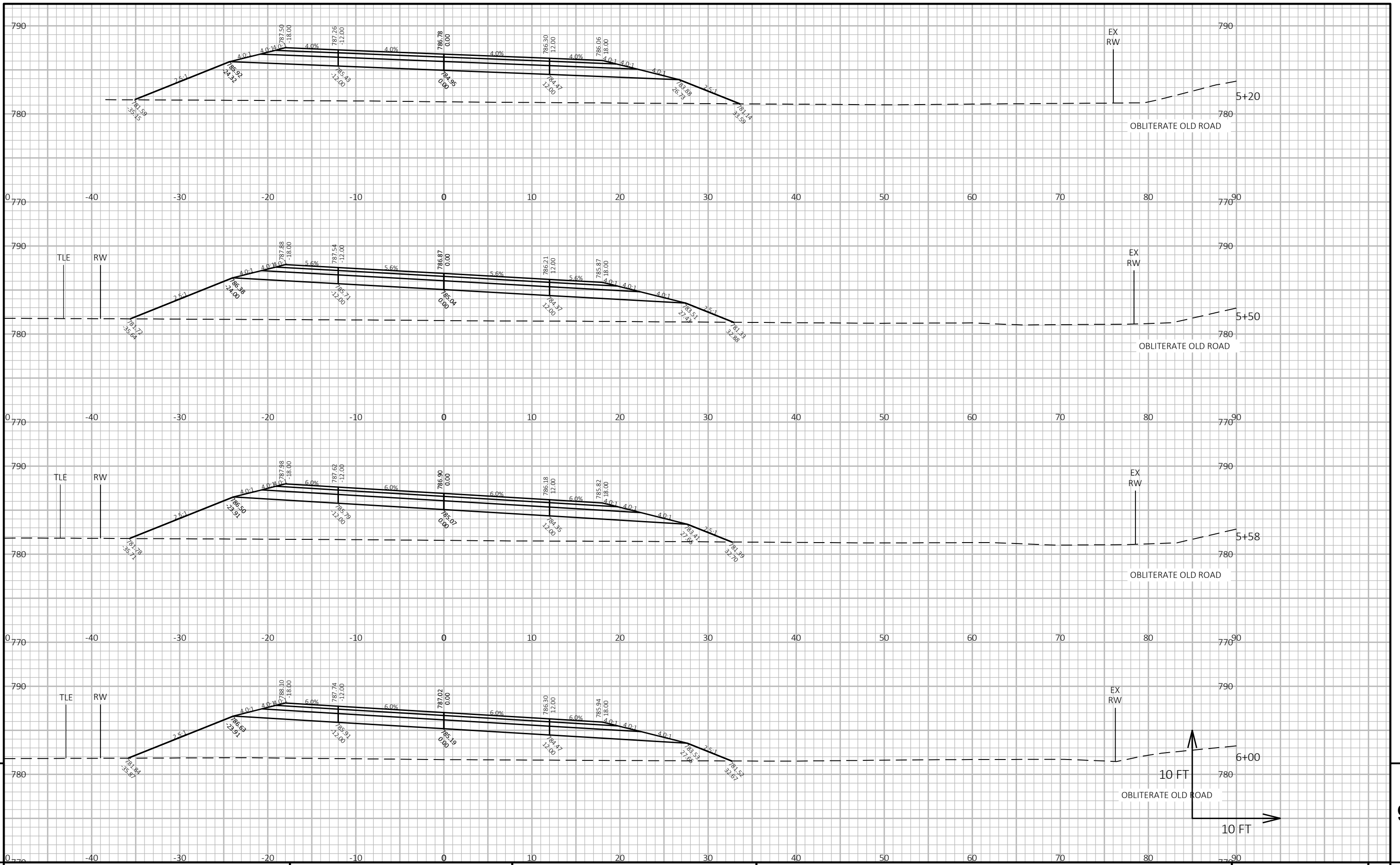
CROSS SECTIONS: CTH D

SHEET

E



PROJECT NO: 5725-00-72 HWY: CTH D COUNTY: LAFAYETTE CROSS SECTIONS: CTH D SHEET E



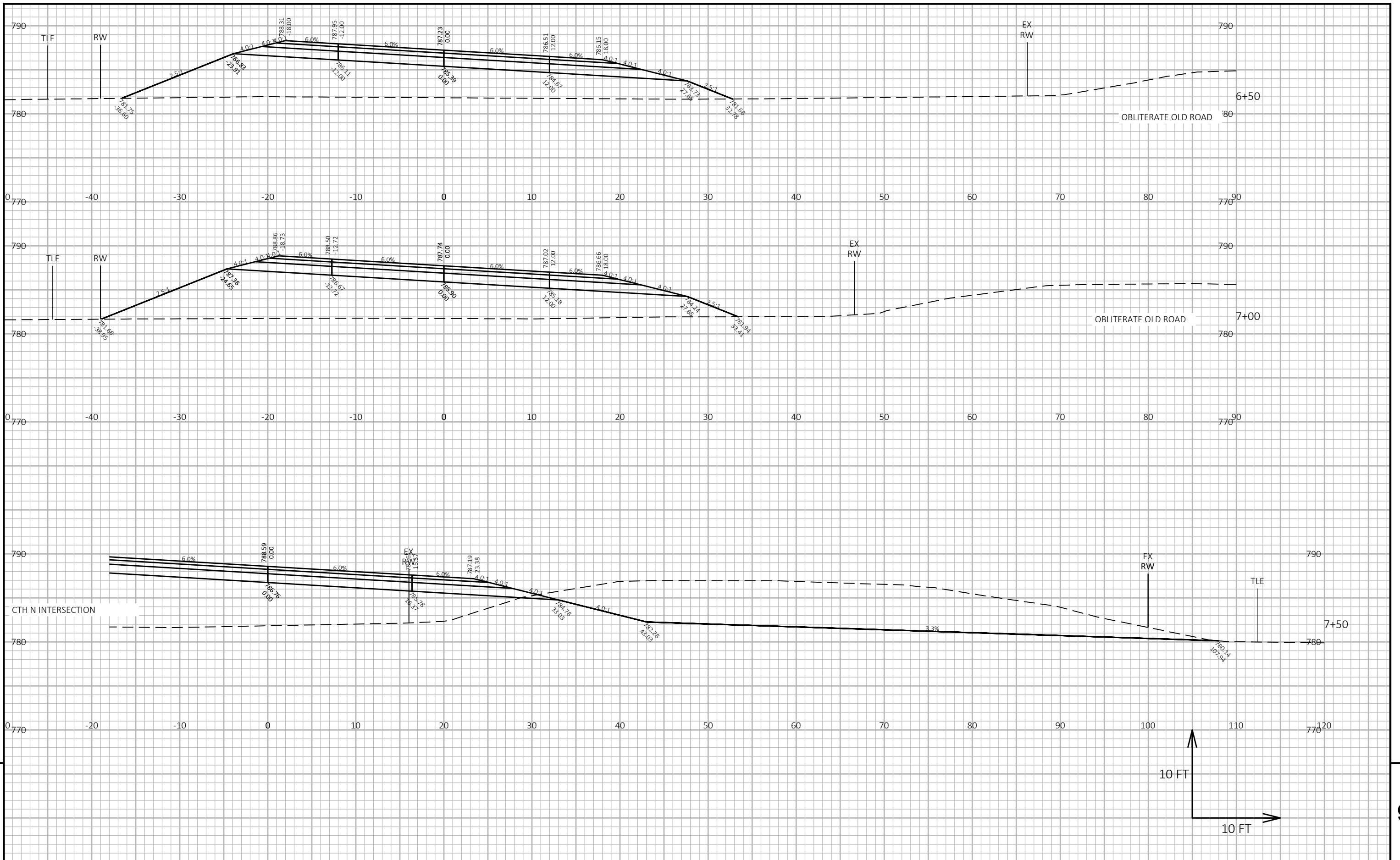
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PROJECT NO: 5725-00-72 HWY: CTH D COUNTY: LAFAYETTE CROSS SECTIONS: CTH D SHEET E

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LAYOUT NAME - 090208-xs



PROJECT NO: 5725-00-72

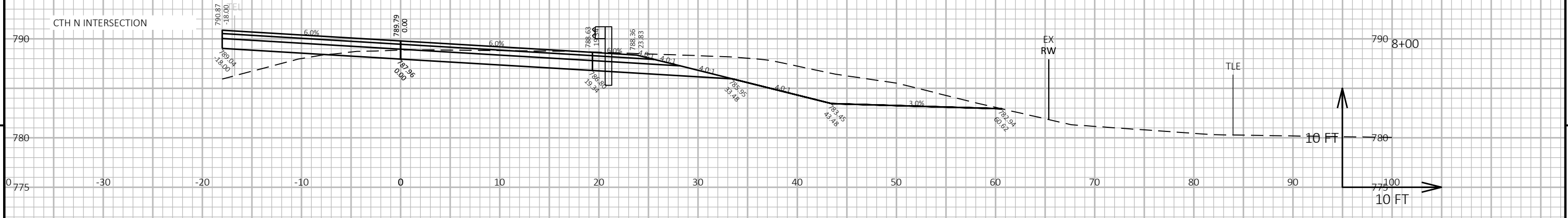
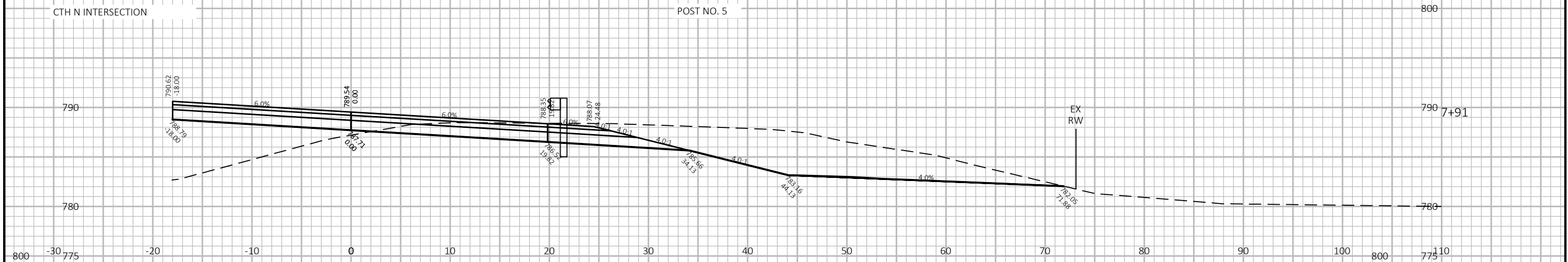
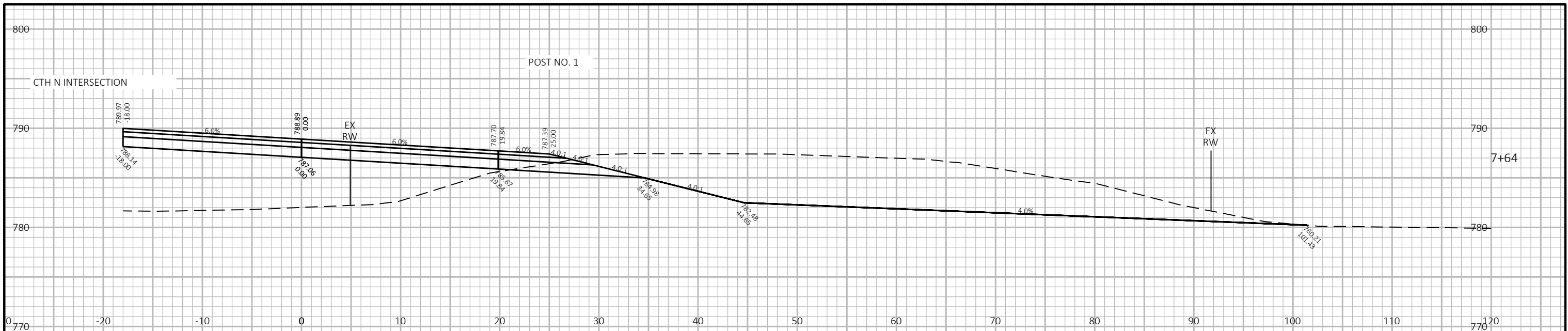
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COUNTY: LAFAYETTE

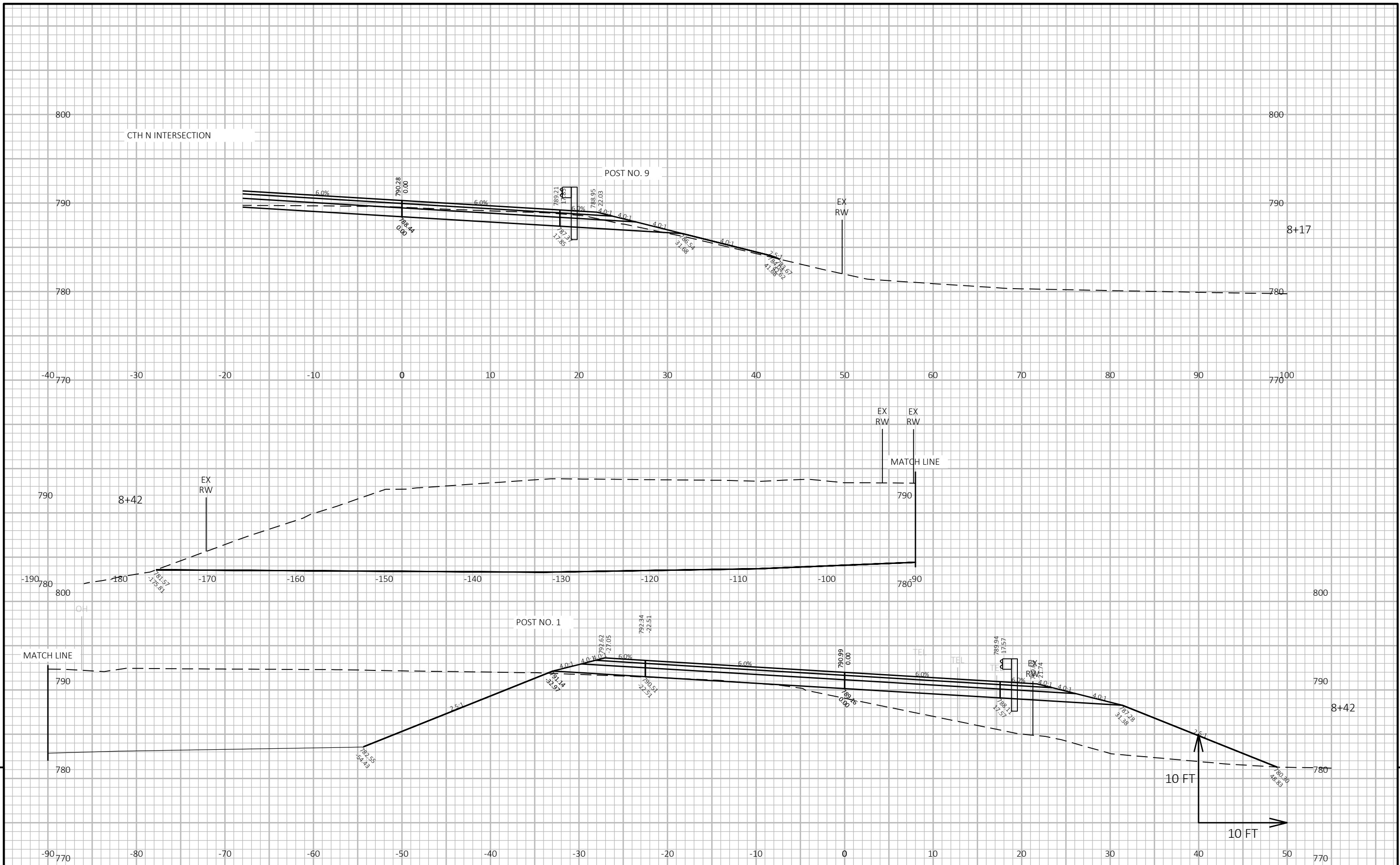
CROSS SECTIONS: CTH D

SHEET

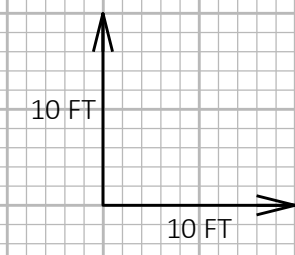
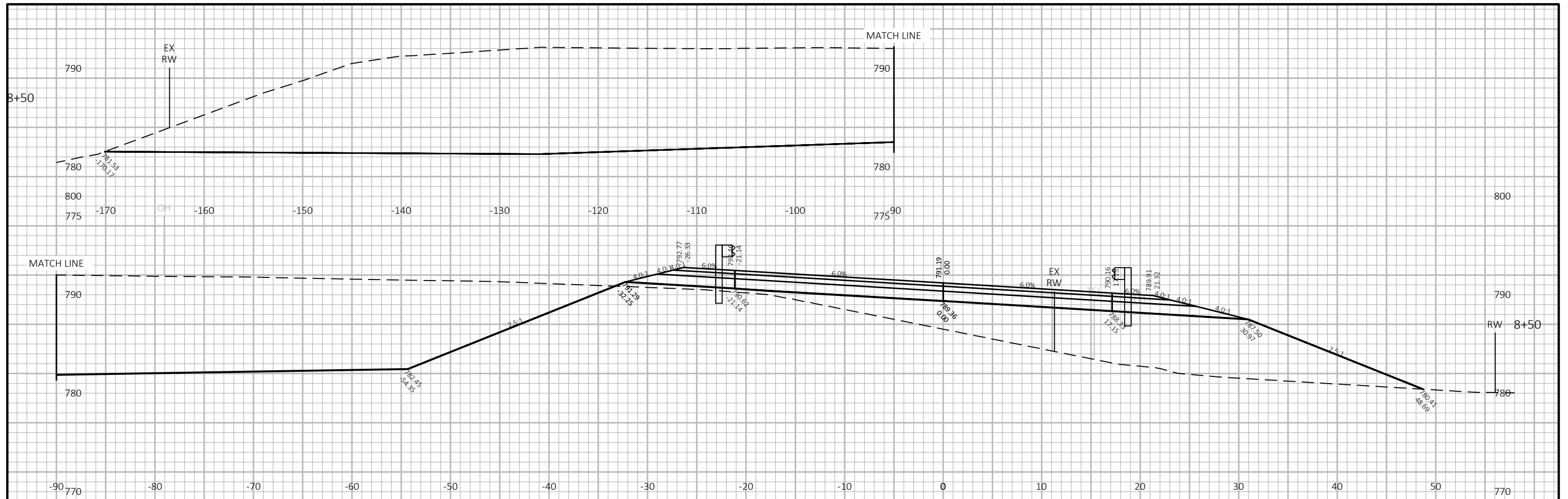
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PROJECT NO: 5725-00-72 HWY: CTH D COUNTY: LAFAYETTE CROSS SECTIONS: CTH D SHEET E



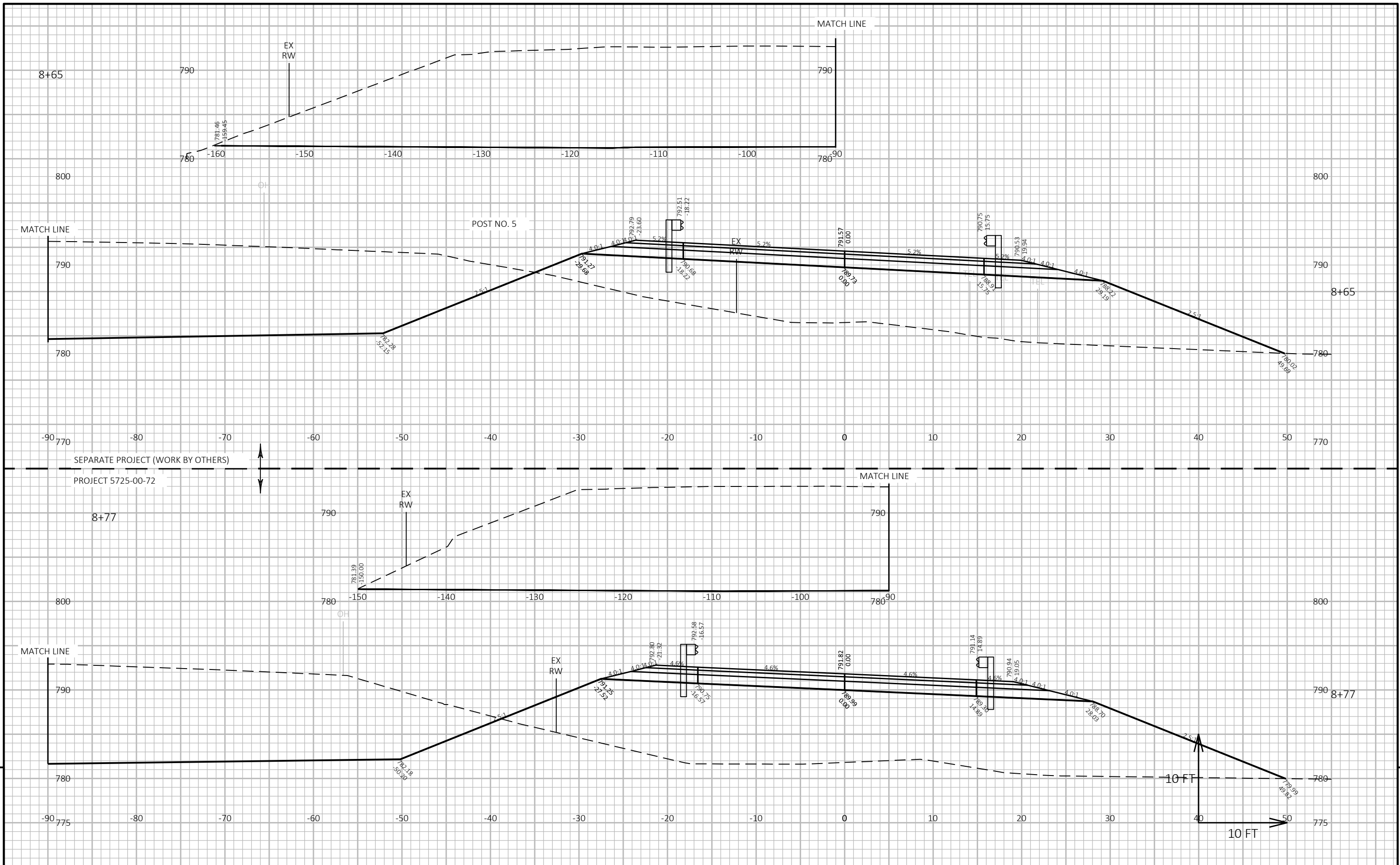
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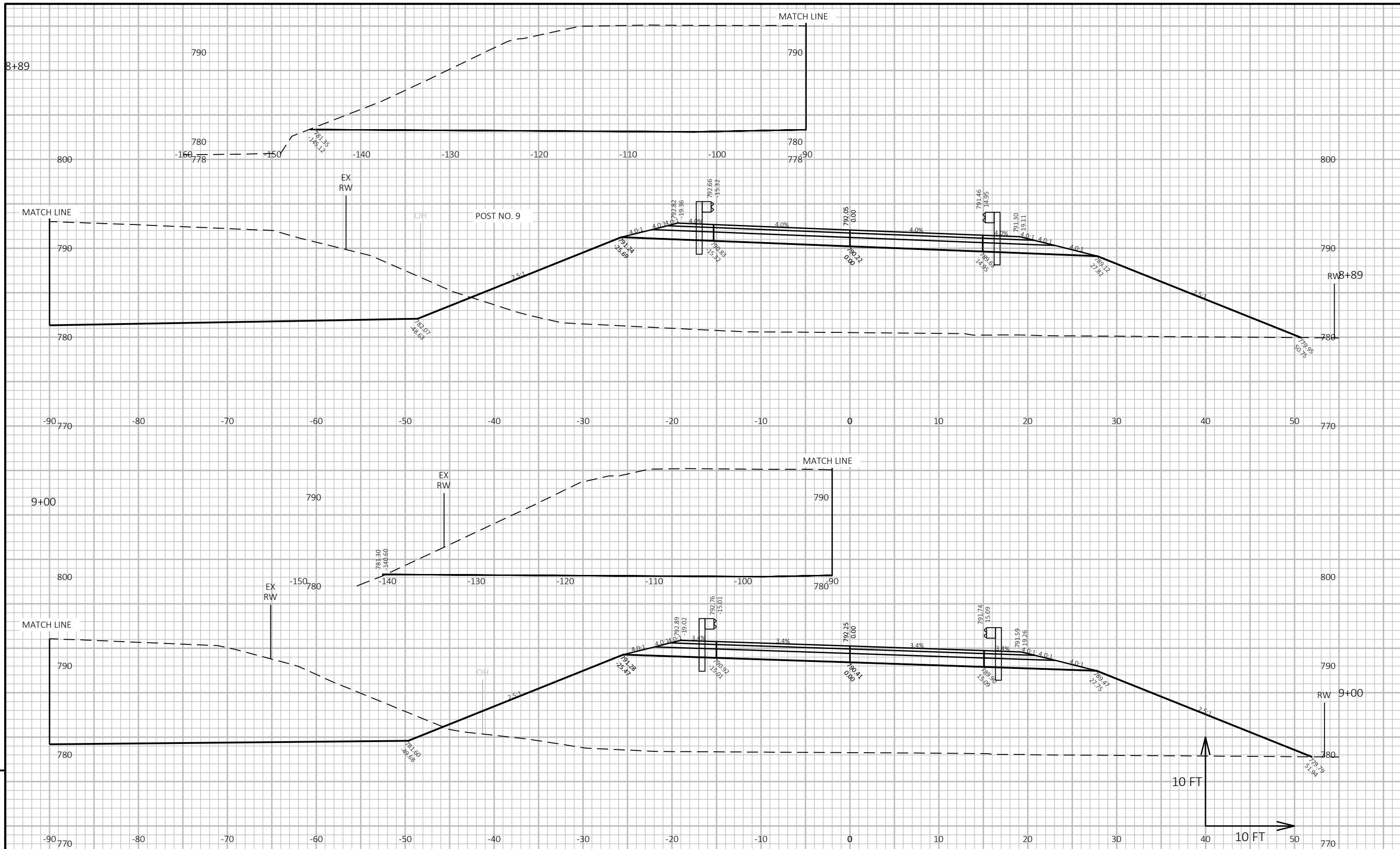
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PROJECT NO: 5725-00-72	HWY: CTH D	COUNTY: LAFAYETTE	CROSS SECTIONS: CTH D	SHEET	E
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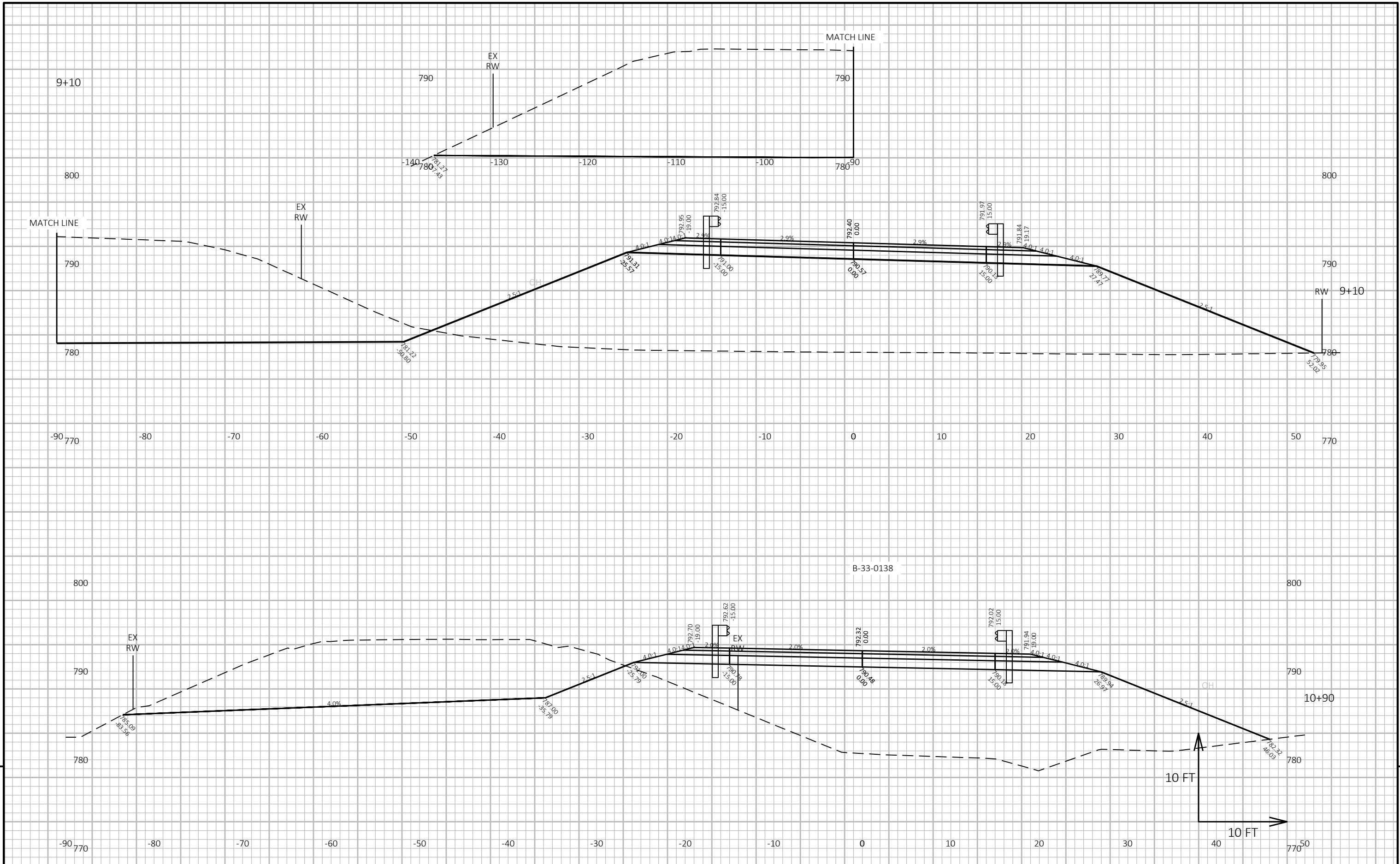


PROJECT NO: 5725-00-72	HWY: CTH D	COUNTY: LAFAYETTE	CROSS SECTIONS: CTH D	SHEET E
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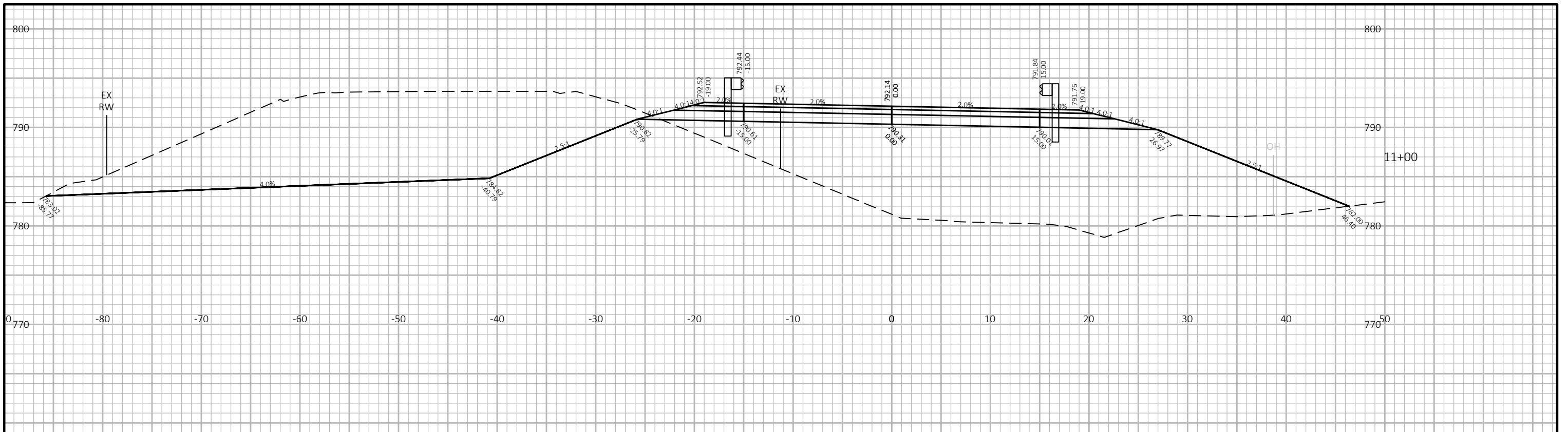


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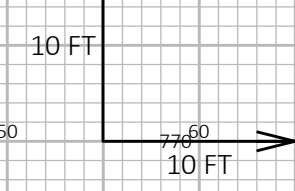
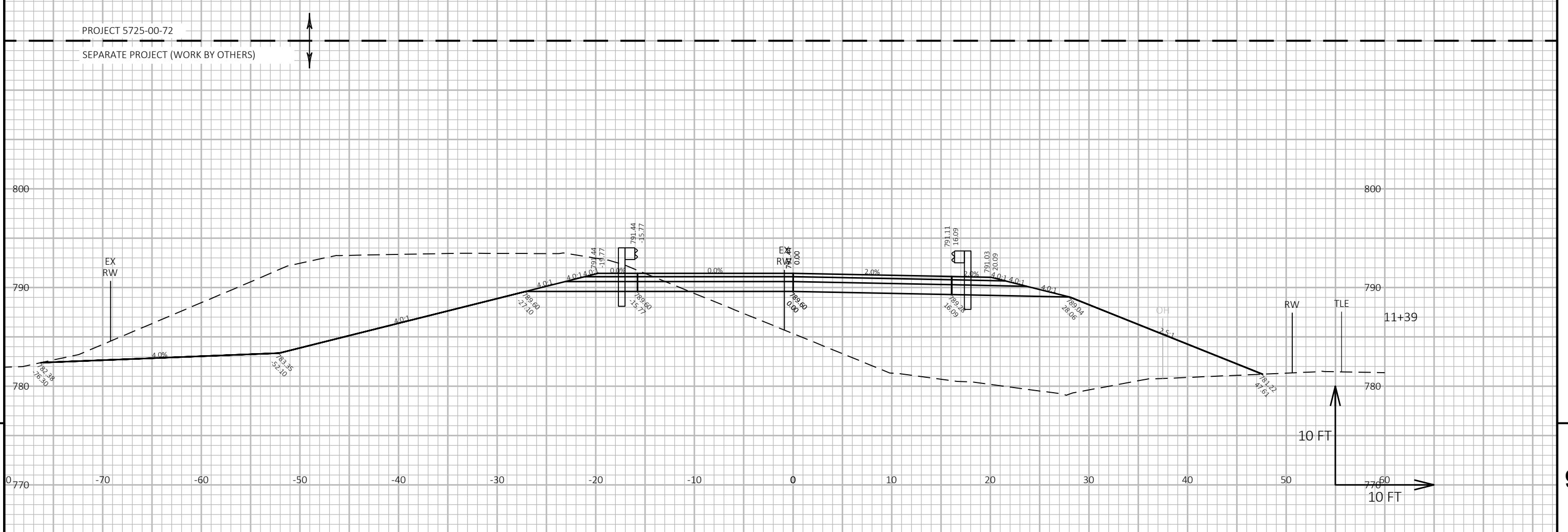
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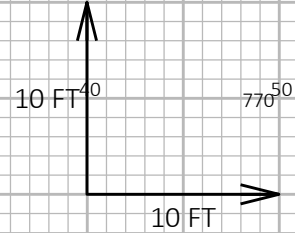
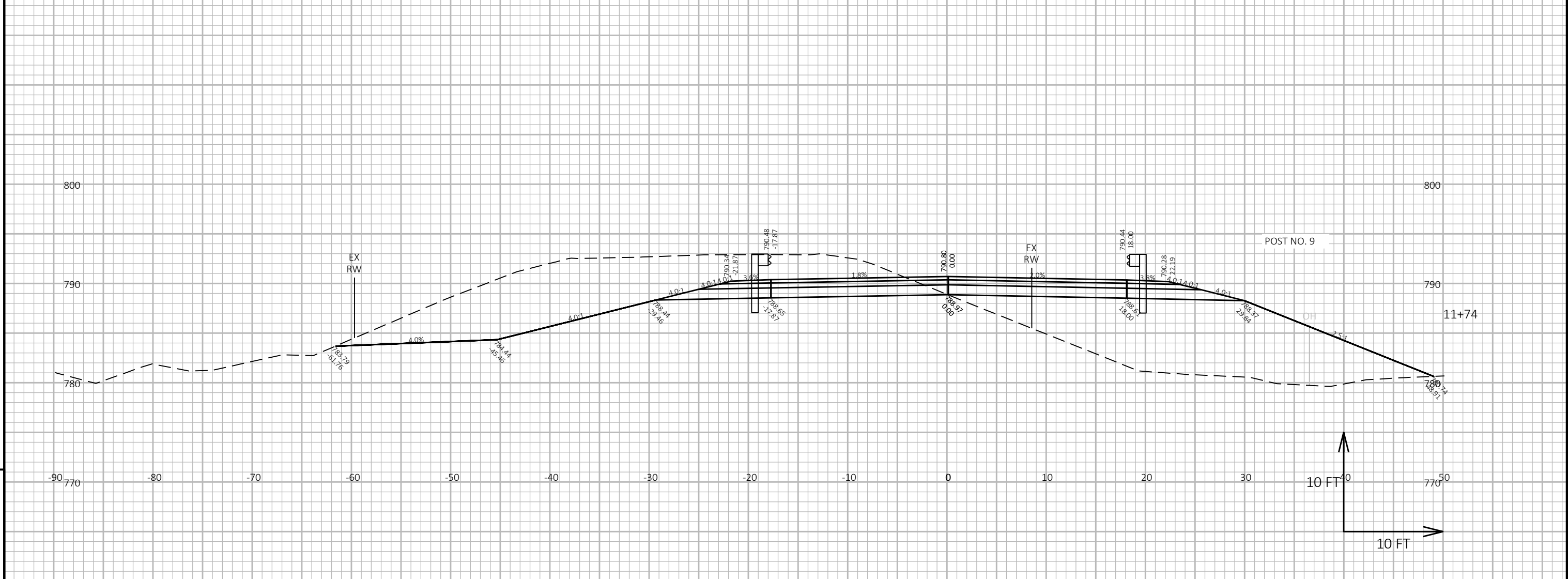
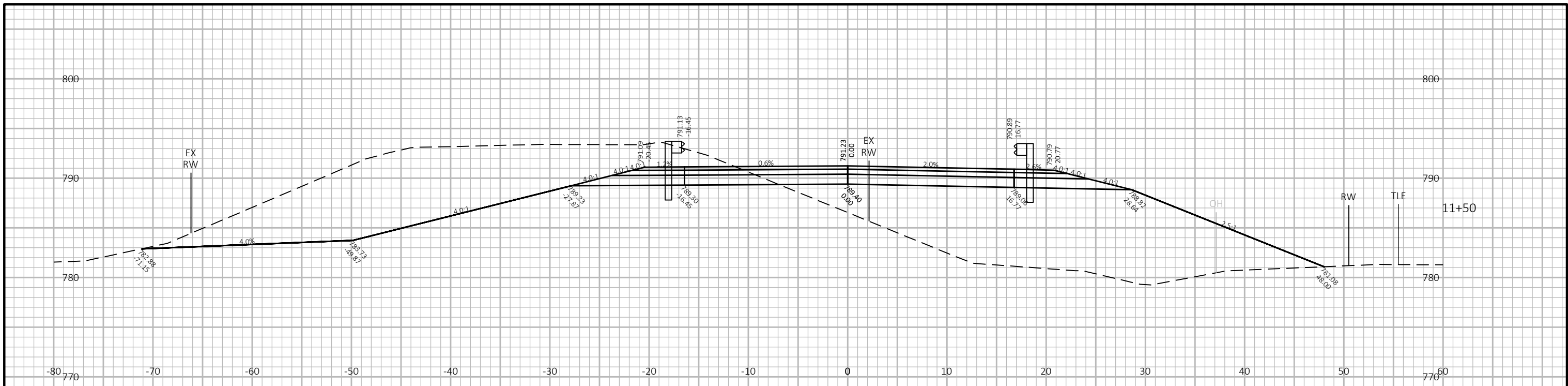
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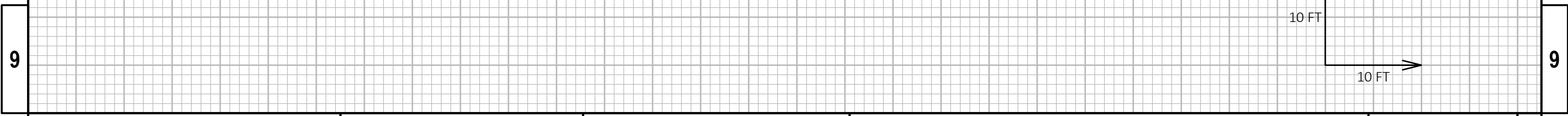
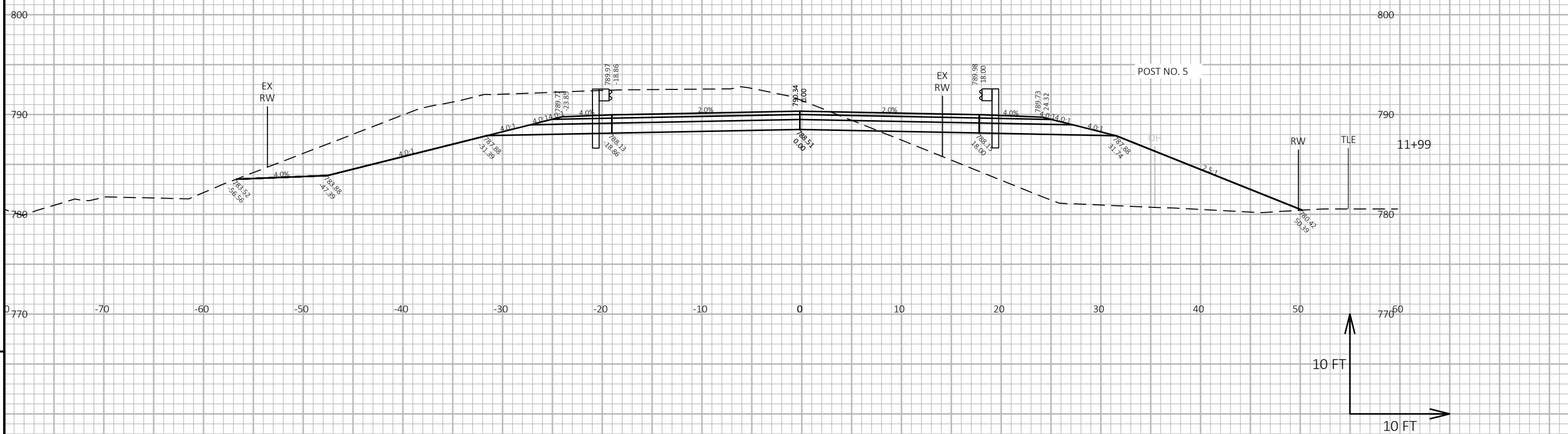
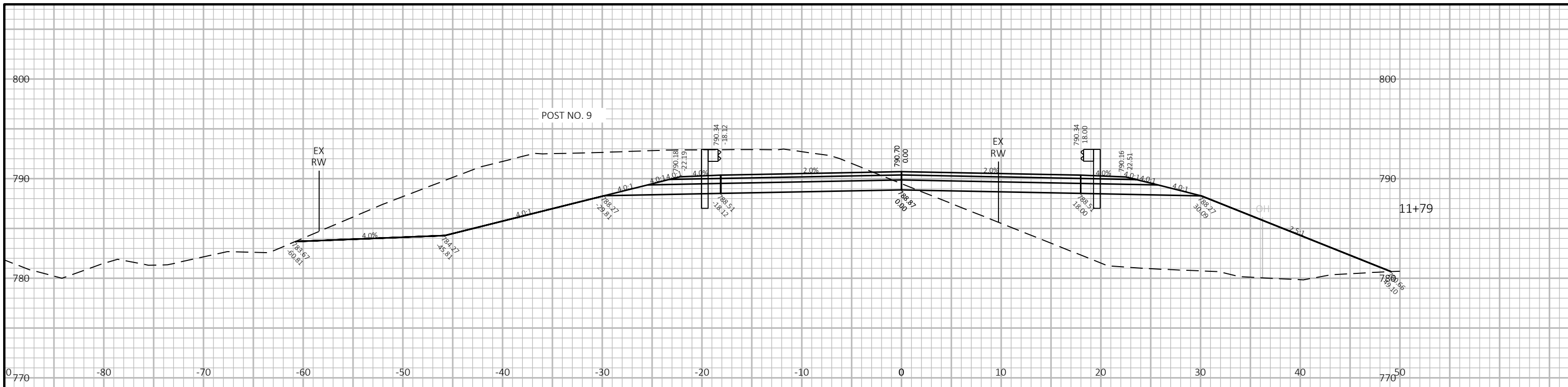
PROJECT 5725-00-72
SEPARATE PROJECT (WORK BY OTHERS)



PROJECT NO: 5725-00-72	HWY: CTH D	COUNTY: LAFAYETTE	CROSS SECTIONS: CTH D	SHEET	E
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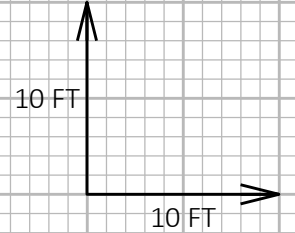
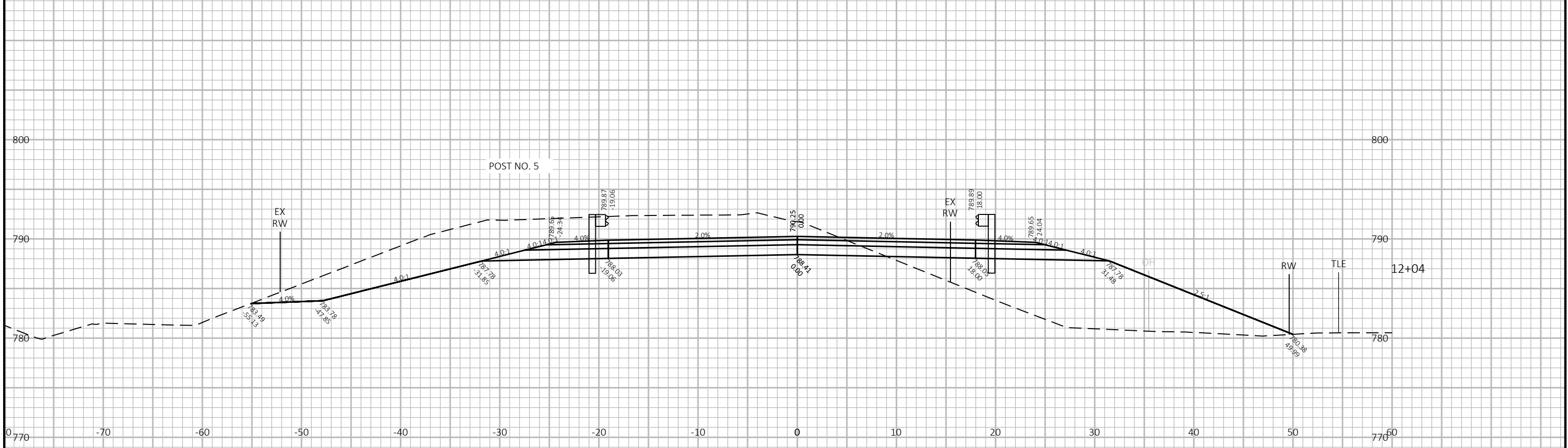
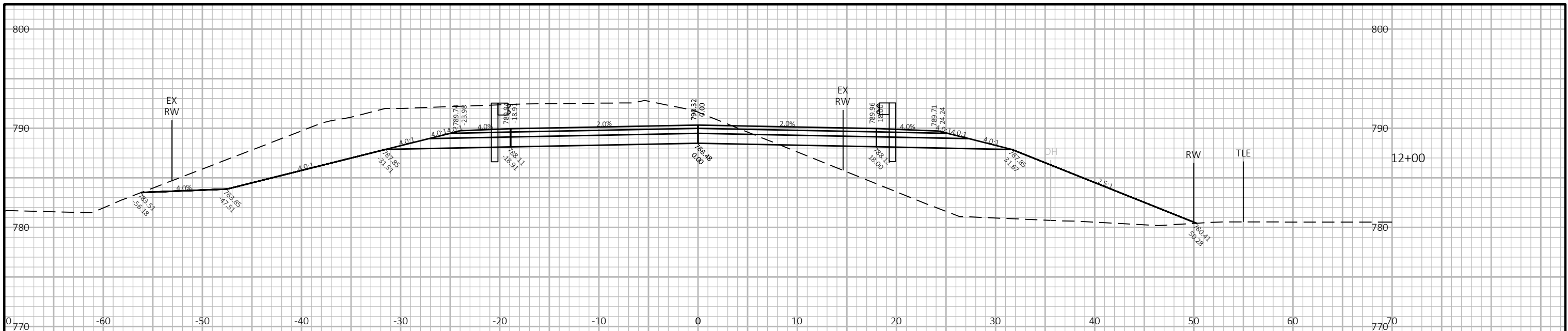


PROJECT NO: 5725-00-72	HWY: CTH D	COUNTY: LAFAYETTE	CROSS SECTIONS: CTH D	SHEET E
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PROJECT NO: 5725-00-72	HWY: CTH D	COUNTY: LAFAYETTE	CROSS SECTIONS: CTH D	SHEET	E
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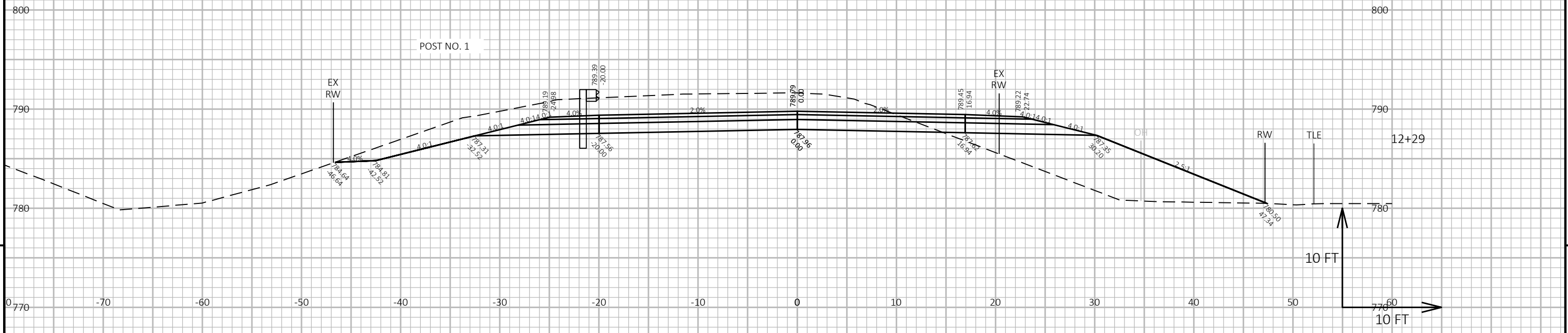
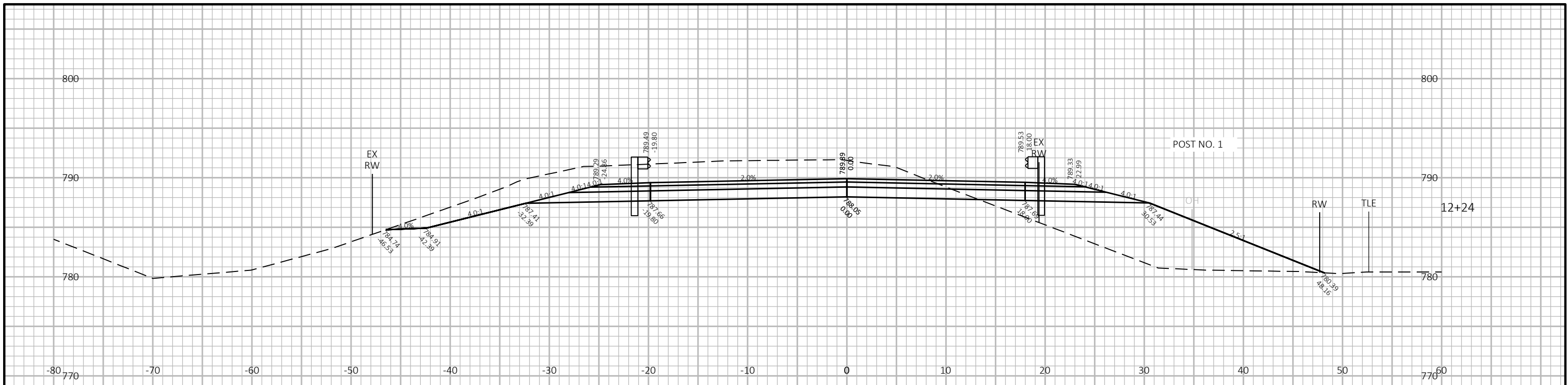
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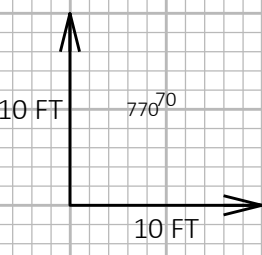
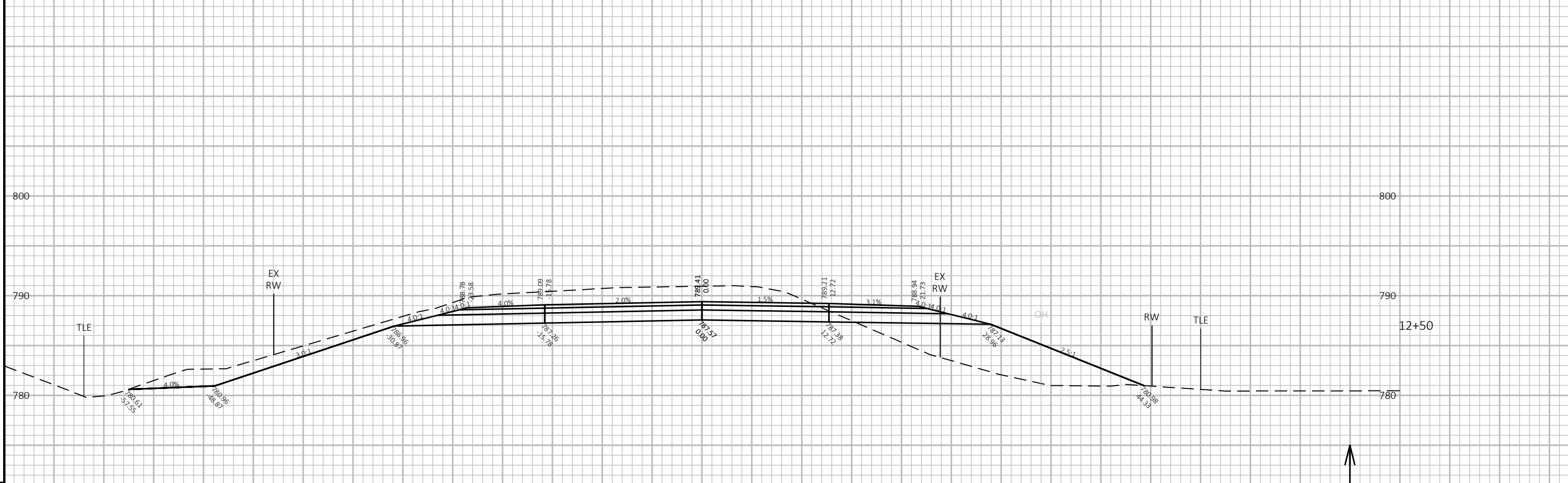
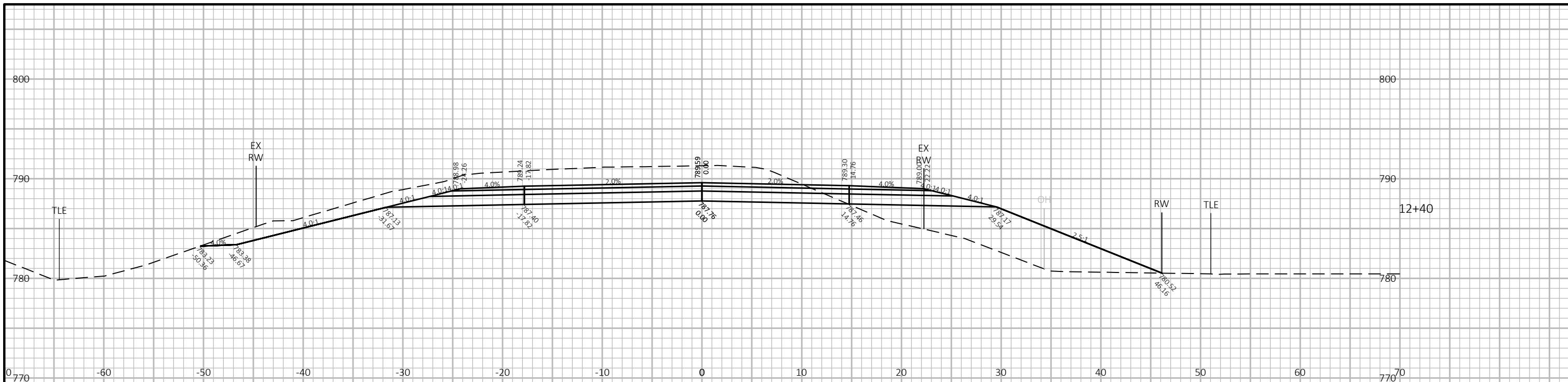
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PROJECT NO: 5725-00-72 HWY: CTH D COUNTY: LAFAYETTE CROSS SECTIONS: CTH D SHEET E

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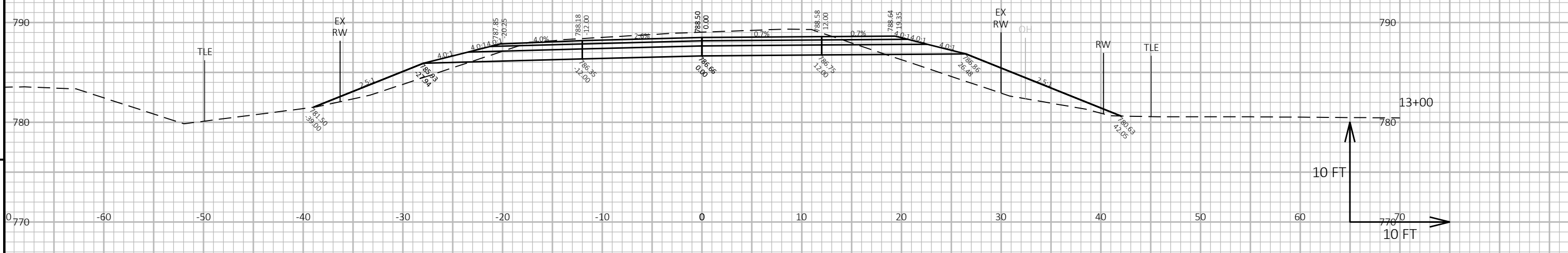
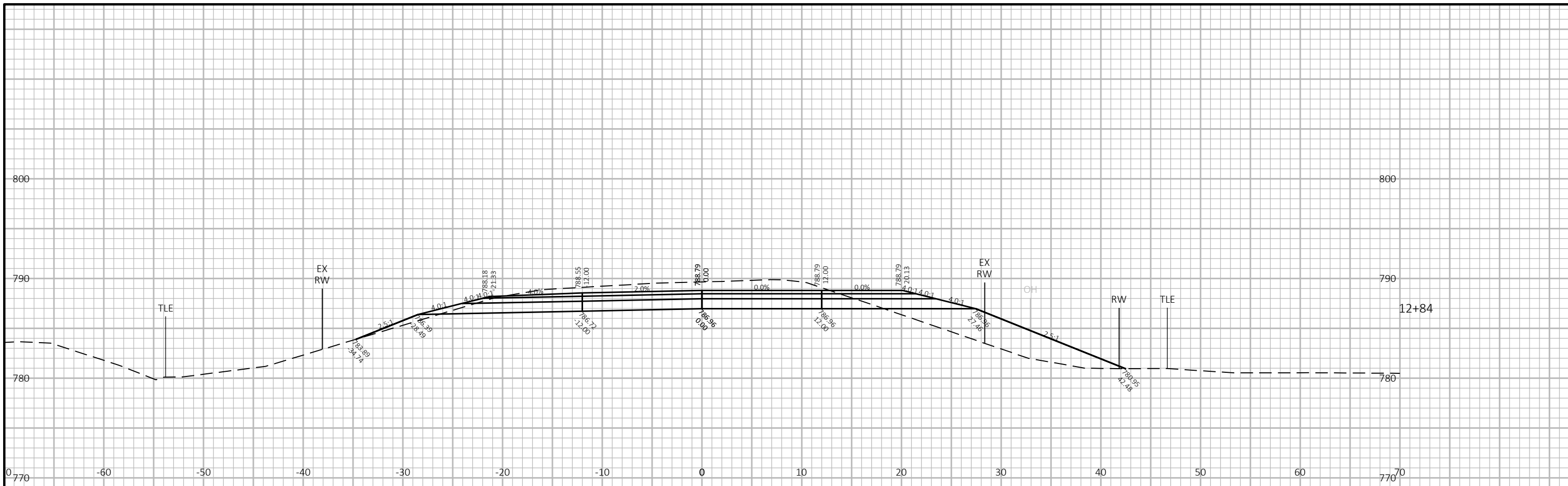


PROJECT NO: 5725-00-72	HWY: CTH D	COUNTY: LAFAYETTE	CROSS SECTIONS: CTH D	SHEET	E
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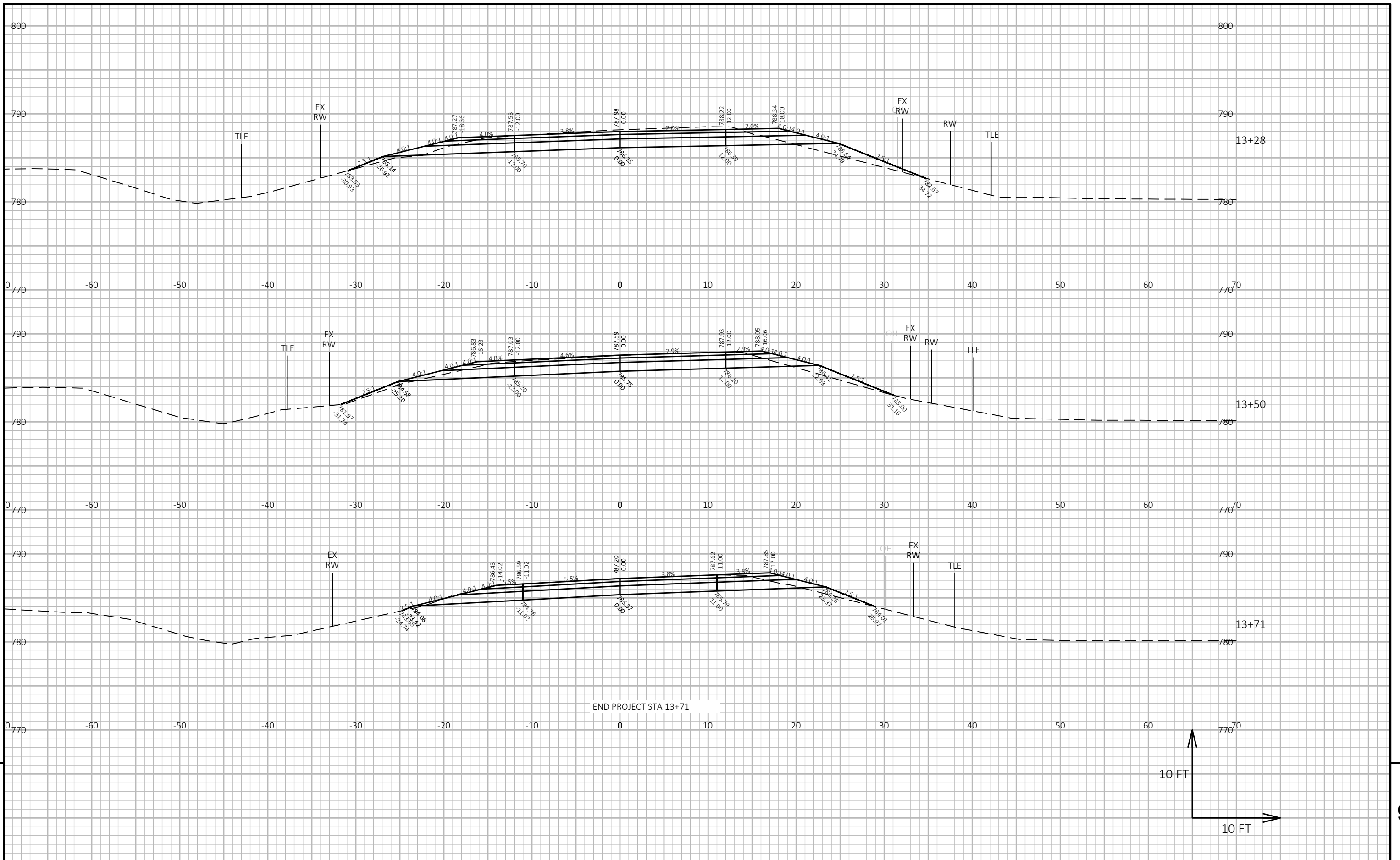


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PROJECT NO: 5725-00-72 HWY: CTH D COUNTY: LAFAYETTE CROSS SECTIONS: CTH D SHEET E



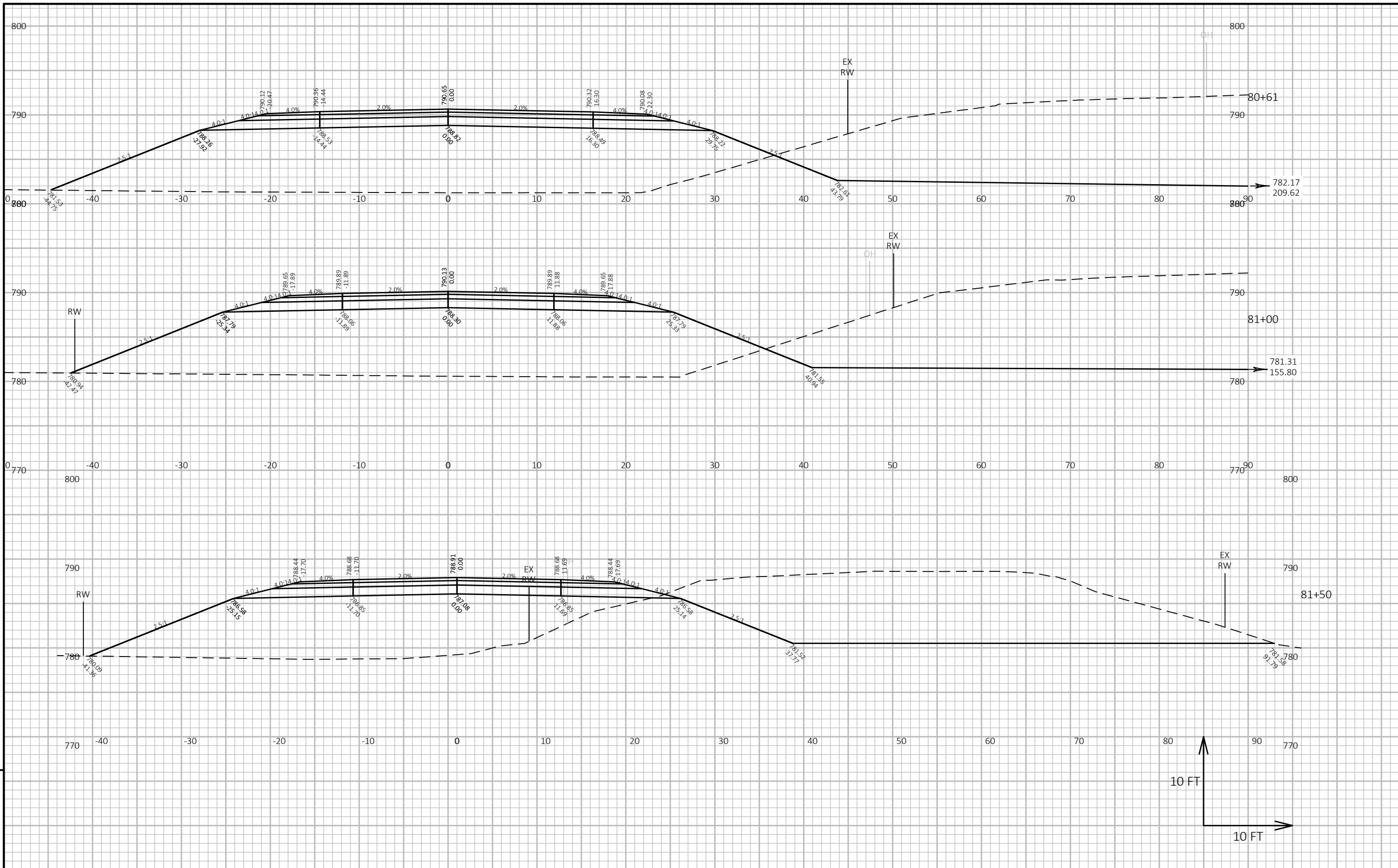
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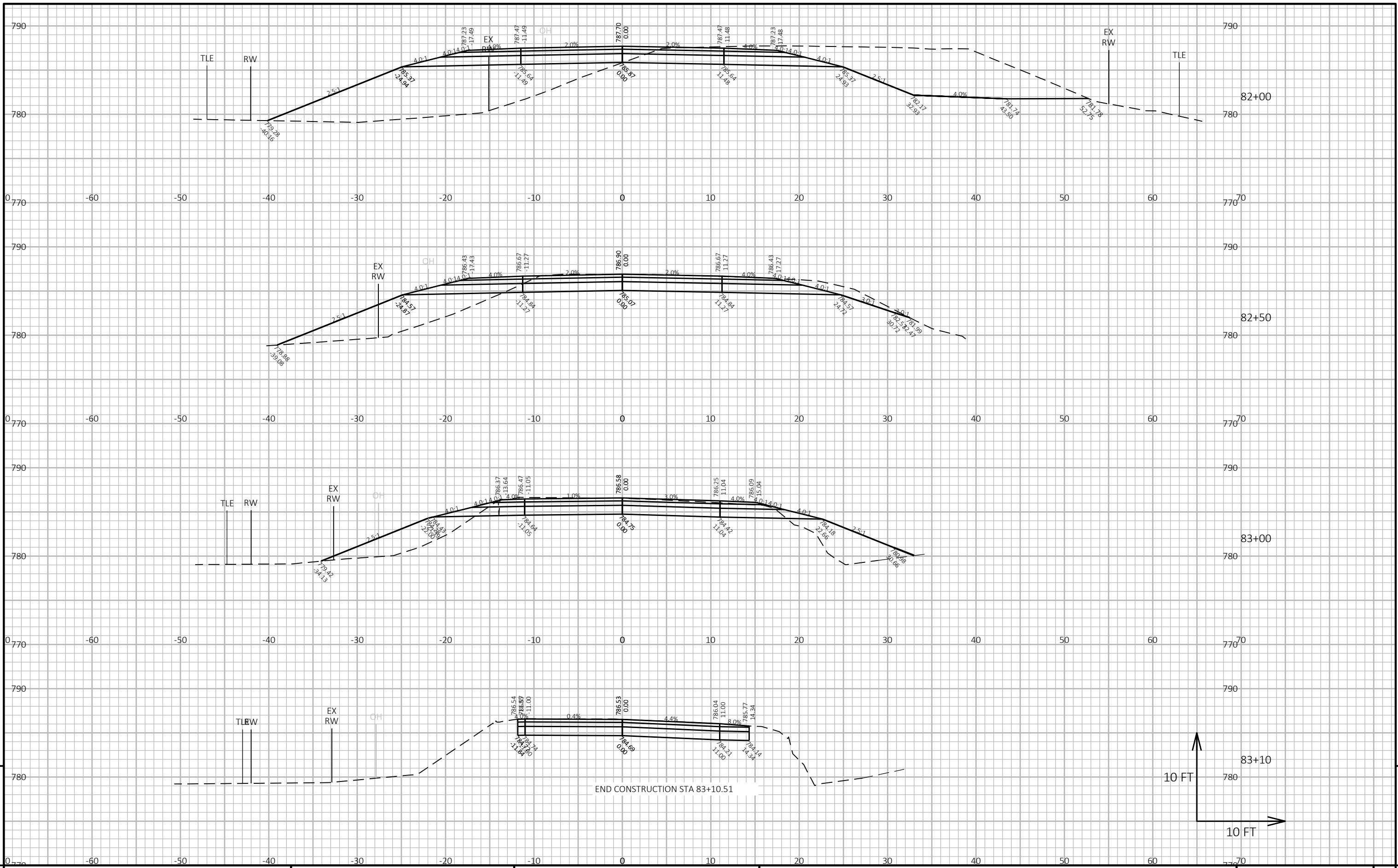
PROJECT NO: 5725-00-72	HWY: CTH D	COUNTY: LAFAYETTE	CROSS SECTIONS: CTH D	SHEET	E
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PROJECT NO: 5725-00-72	HWY: CTH D	COUNTY: LAFAYETTE	CROSS SECTIONS: CTH N	SHEET	E
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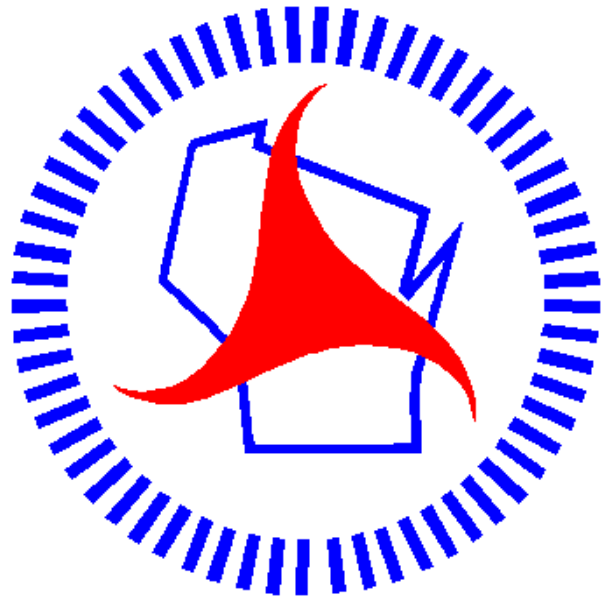
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LAYOUT NAME - 090225-xs



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