

ORDER OF SHEETS

Section No.	1	Title
Section No.	2	Typical Sections and Details (Includes Erosion Control)
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 = 56



29

DESIGN DESIGNATION

A.A.D.T. (2023)	=	800
A.A.D.T. (2043)	=	850
D.H.V.	=	120
D.D.	=	62/38
T.	=	7.8%
DESIGN SPEED	=	60 MPH
ESALS	=	110,000

CONVENTIONAL SYMBOLS

PLAN	
CORPORATE LIMITS	
PROPERTY LINE	
LOT LINE	
LIMITED HIGHWAY EASEMENT	
EXISTING RIGHT OF WAY	
PROPOSED OR NEW R/W LINE	
SLOPE INTERCEPT	
REFERENCE LINE	
EXISTING CULVERT	
PROPOSED CULVERT (Box or Pipe)	
COMBUSTIBLE FLUIDS	
MARSH AREA	
WOODED OR SHRUB AREA	



STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

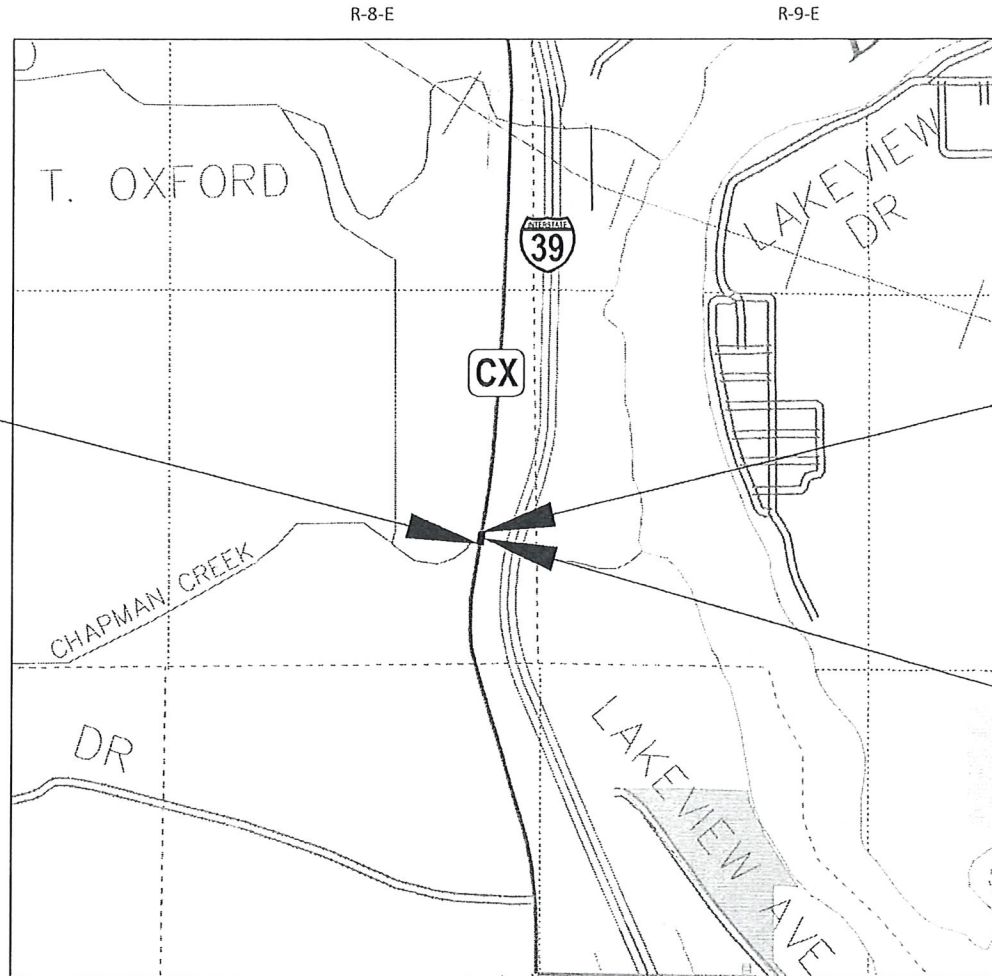
T OXFORD, CTH CX

CHAPMAN CREEK BRIDGE B-39-0080

CTH CX

MARQUETTE COUNTY

STATE PROJECT NUMBER
6748-02-70



BEGIN PROJECT
STA 18+51.75
Y: 233,742.294
X: 430,421.326

END PROJECT
STA 20+16.25

PROPOSED STRUCTURE
B-39-0080

LAYOUT
SCALE 0 0.5 MI
TOTAL NET LENGTH OF CENTERLINE = 0.031 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), MARQUETTE COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES.
ELEVATIONS ARE REFERENCED TO NAVD 88 (2012). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
6748-02-70	WISC 2023292	1

ACCEPTED FOR MARQUETTE COUNTY
Signature
Date 10/11/22
Highway Commissioner
(Signature and Title of Official)

ORIGINAL PLANS PREPARED BY:



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
Surveyor STRAND ASSOCIATES, INC.
Designer STRAND ASSOCIATES, INC.
Regional Examiner JASON SCHAEFFER
Regional Supervisor DAN ERVA

APPROVED FOR THE DEPARTMENT

DATE: 10/11/2022

Signature
(Signature)

E

GENERAL NOTES:

NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT APPROVAL OF 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 PROJECT AREA THAT ARE NOT SHOWN.

THE CONTRACTOR SHALL COORDINATE THEIR CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA.

EROSION CONTROL FEATURES AS SHOWN ON THE PLANS ARE AT SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE CONTRACTOR'S EROSION CONTROL IMPLEMENTATION PLAN (ECIP) AND APPROVED BY THE ENGINEER IN CONSULTATION WITH THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL SUCH TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY.

WETLANDS EXIST IN THE PROJECT AREA. DO NOT DISTURB AREAS OUTSIDE THE SLOPE INTERCEPTS.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE FERTILIZED, SEEDED AND MULCHED.

MISCELLANEOUS REMOVAL ITEMS SHALL BE REMOVED TO AN EXISTING JOINT, SAWCUT WHERE SHOWN ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.

SILT FENCE SHALL BE PLACED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER AND IN PLACE PRIOR TO CONSTRUCTION.

GRADES SHOWN ON THE PLANS MAY BE ADJUSTED BY THE ENGINEER TO FIT EXISTING FIELD CONDITIONS.

THE CONTRACTOR'S PAVING OPERATIONS SHALL BE CONSISTENT WITH THE PLAN TYPICAL SECTIONS AND CONSTRUCTED TO PREVENT HMA LONGITUDINAL JOINTS FROM BEING LOCATED WITHIN A DRIVING OR TURNING LANE.

EXISTING SIGNS SHALL REMAIN IN PLACE UNLESS MOVED AS PART OF THE PLAN OR THE ENGINEER APPROVES THE REMOVAL.

PRIOR TO PLACEMENT OF MGS GUARDRAIL, THE SHOULDERS SHALL BE IN PLACE, SHAPED AND COMPACTED UNLESS SHOWN OTHERWISE.

UTILITIES

**** ALLIANT ENERGY (ELECTRIC)**

MATTHEW JOHNSON
2777 COLUMBIA DRIVE
PORTAGE, WI 53901
PH: (608) 742-0801
matthewjohnson@alliantenergy.com

**** MARQUETTE-ADAMS TELEPHONE (FIBER)**


JASON SENGBUSCH
113 NORTH OXFORD STREET
PO BOX 45
OXFORD, WI 53952
PH: (608) 586-4111
jsengbusch@maadtelco.com

**** WE ENERGIES (GAS)**

LARRY KOCH
1921 8TH ST. S.
WISCONSIN RAPIDS, WI 54494
PH: (715) 421-7249
larry.koch@we-energies.com

**DENOTES DIGGERS HOTLINE MEMBER



Dial  or (800)242-8511

www.DiggersHotline.com

OTHER CONTACTS

DESIGN CONSULTANT

TERA MEYER
STRAND ASSOCIATES, INC.
910 WEST WINGRA DR.
MADISON, WI 53715
PH: (608) 251-4843
tera.meyer@strand.com

MARQUETTE COUNTY

BRIAN TREBIATOWSKI
MARQUETTE COUNTY
328 UNDERWOOD AVENUE
MONTELLO, WI 53949
PH: (608) 297-3071
btrebiatowski@co.marquette.wi.us

WISDOT RAILROAD CONTACT

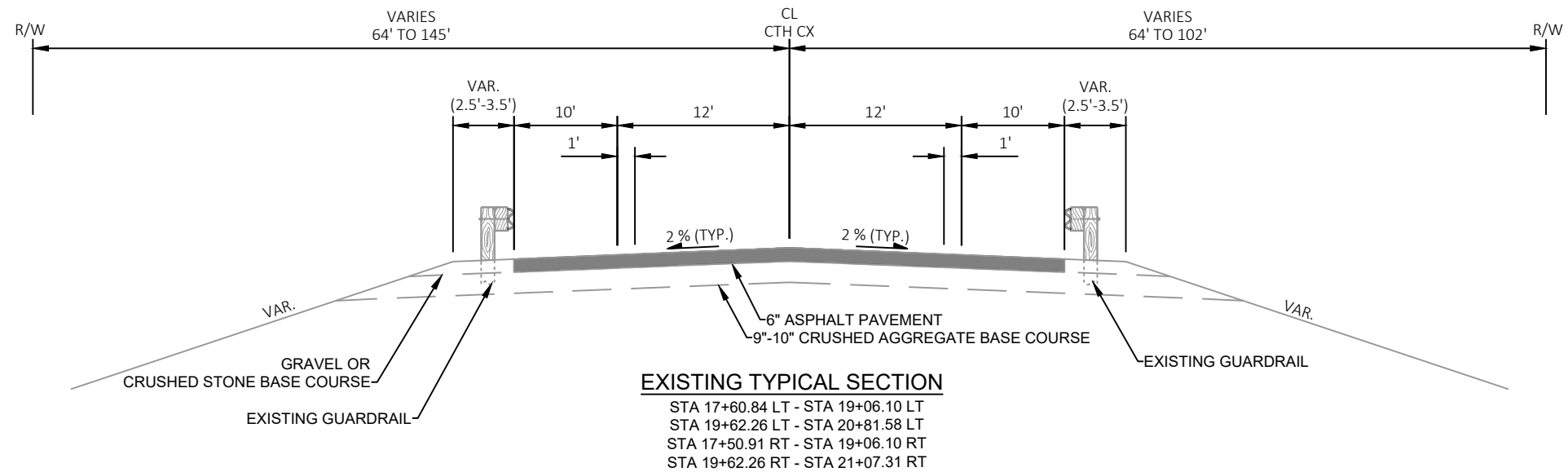
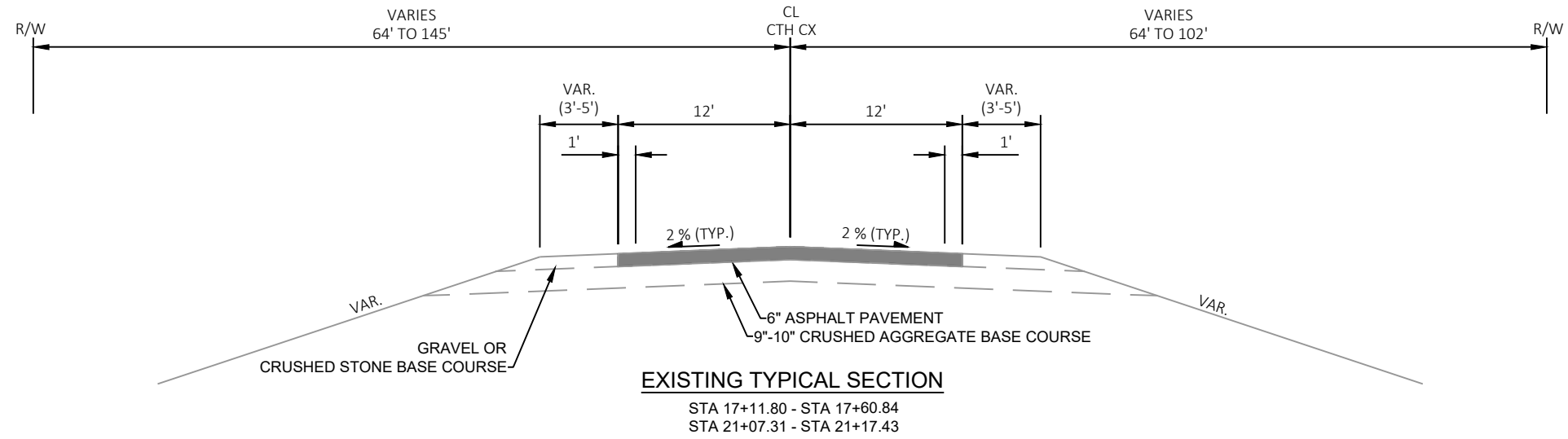
JARED KINZIGER
NORTHEAST AND NORTH CENTRAL
REGION RAILROAD COORDINATOR
944 VANDERPERREN WAY
GREEN BAY, WI 54304
PH: (920) 492-7713
jared.kinziger@dot.wi.gov

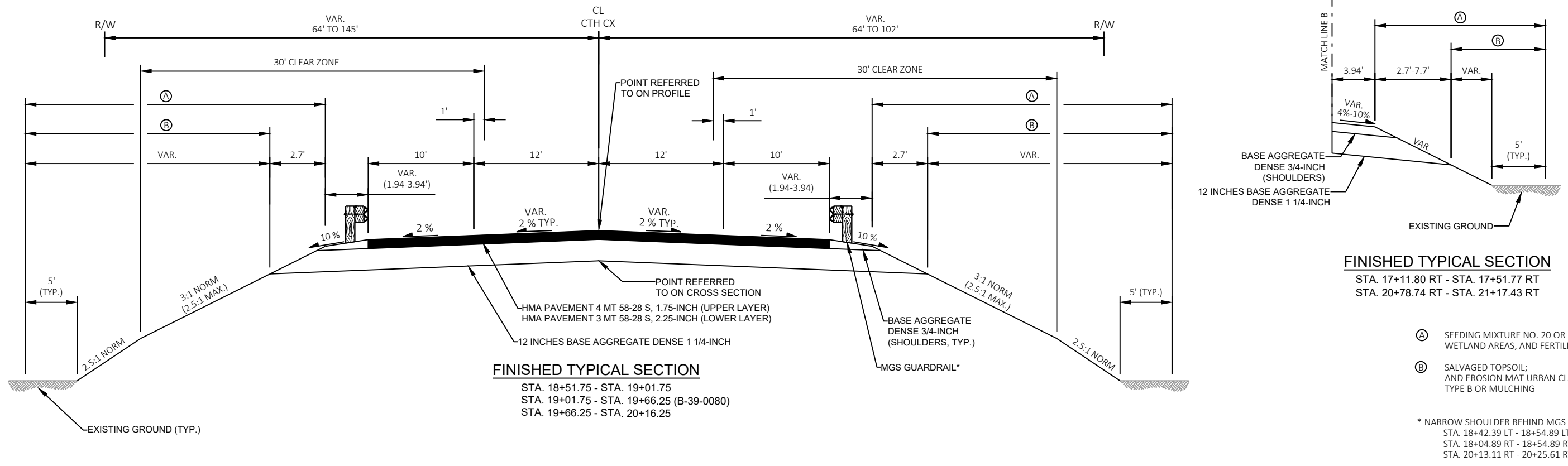
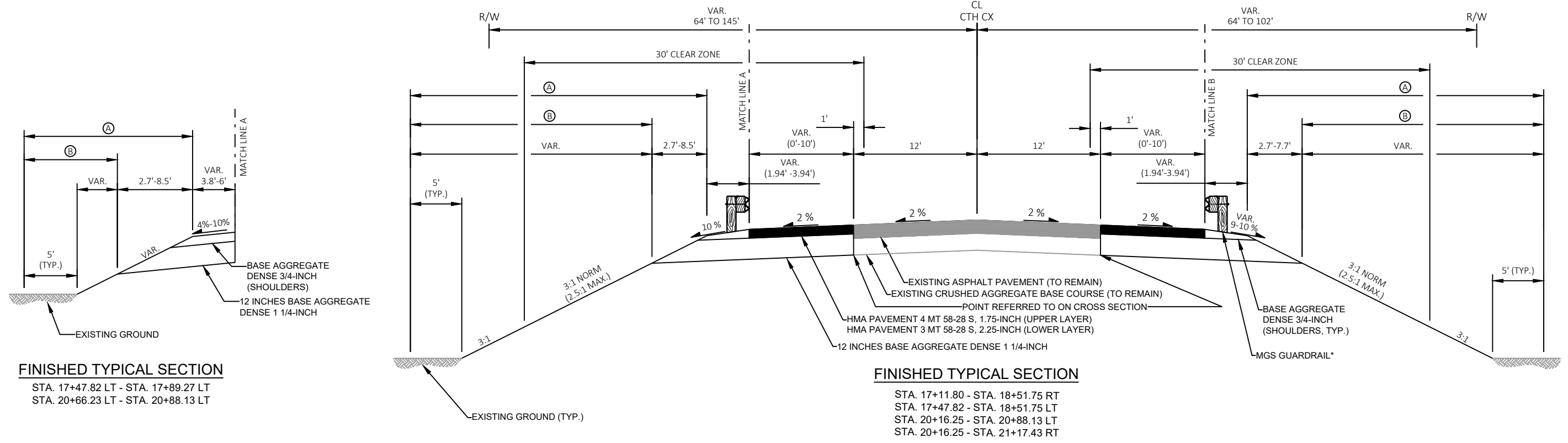
DNR LIAISON

CASEY JONES
WISCONSIN DNR
473 GRIFFITH AVE
WISCONSIN RAPIDS, WI 54494
PH: (715) 213-6571
casey.jones@wisconsin.gov

WISDOT CONTACT

JASON SCHAEFFER
WISDOT NORTH CENTRAL REGION
1681 2ND AVENUE SOUTH
WISCONSIN RAPIDS, WI 54495
PH: (715) 421-7309
jason.schaeffer@dot.wi.gov





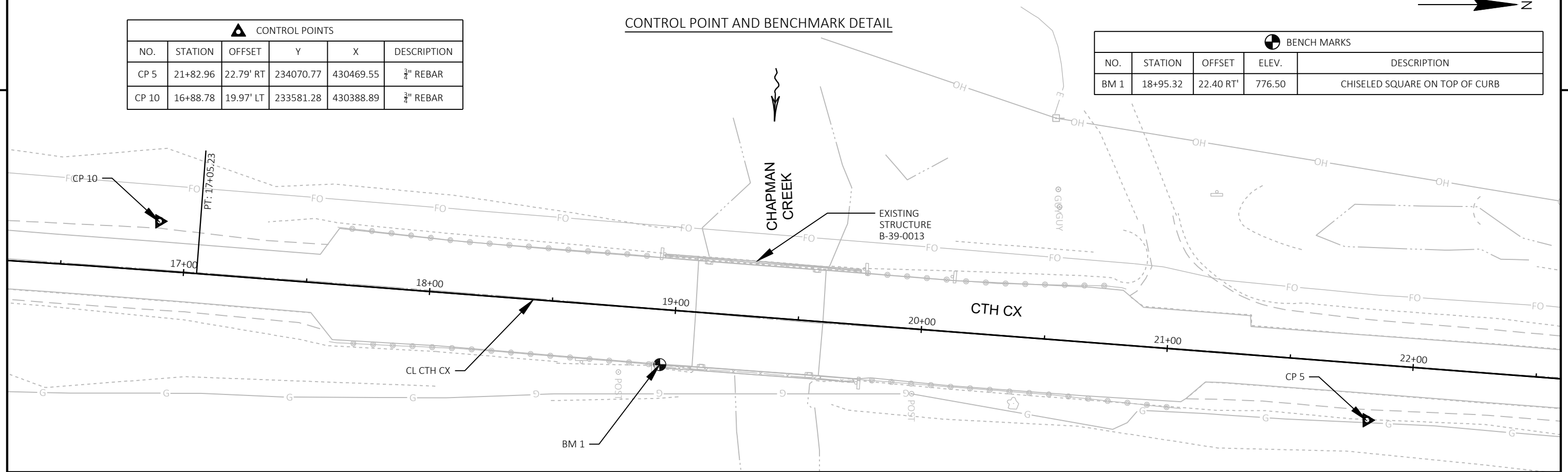
- (A) SEEDING MIXTURE NO. 20 OR NO. 60 IN WETLAND AREAS, AND FERTILIZER TYPE A.
- (B) SALVAGED TOPSOIL; AND EROSION MAT URBAN CLASS I TYPE B OR MULCHING

* NARROW SHOULDER BEHIND MGS GUARDRAIL 3 K
 STA. 18+42.39 LT - 18+54.89 LT
 STA. 18+04.89 RT - 18+54.89 RT
 STA. 20+13.11 RT - 20+25.61 RT

▲ CONTROL POINTS					
NO.	STATION	OFFSET	Y	X	DESCRIPTION
CP 5	21+82.96	22.79' RT	234070.77	430469.55	¾" REBAR
CP 10	16+88.78	19.97' LT	233581.28	430388.89	¾" REBAR

CONTROL POINT AND BENCHMARK DETAIL

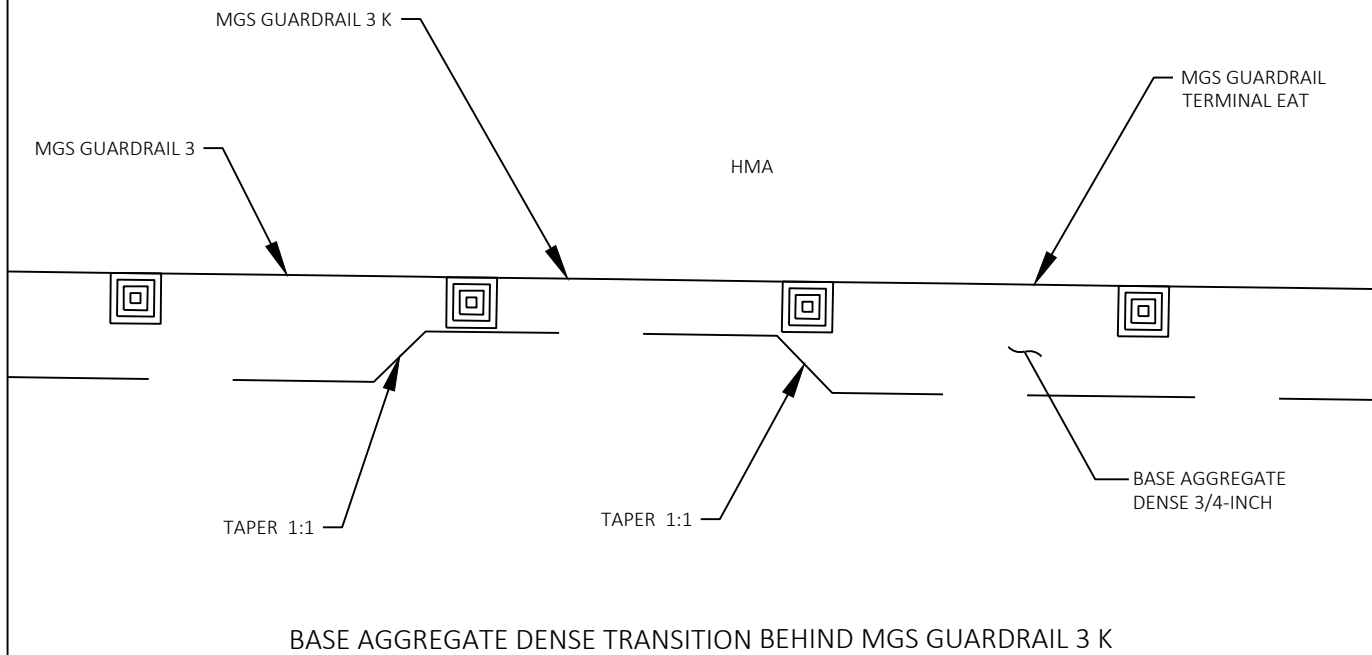
● BENCH MARKS				
NO.	STATION	OFFSET	ELEV.	DESCRIPTION
BM 1	18+95.32	22.40 RT'	776.50	CHISELED SQUARE ON TOP OF CURB

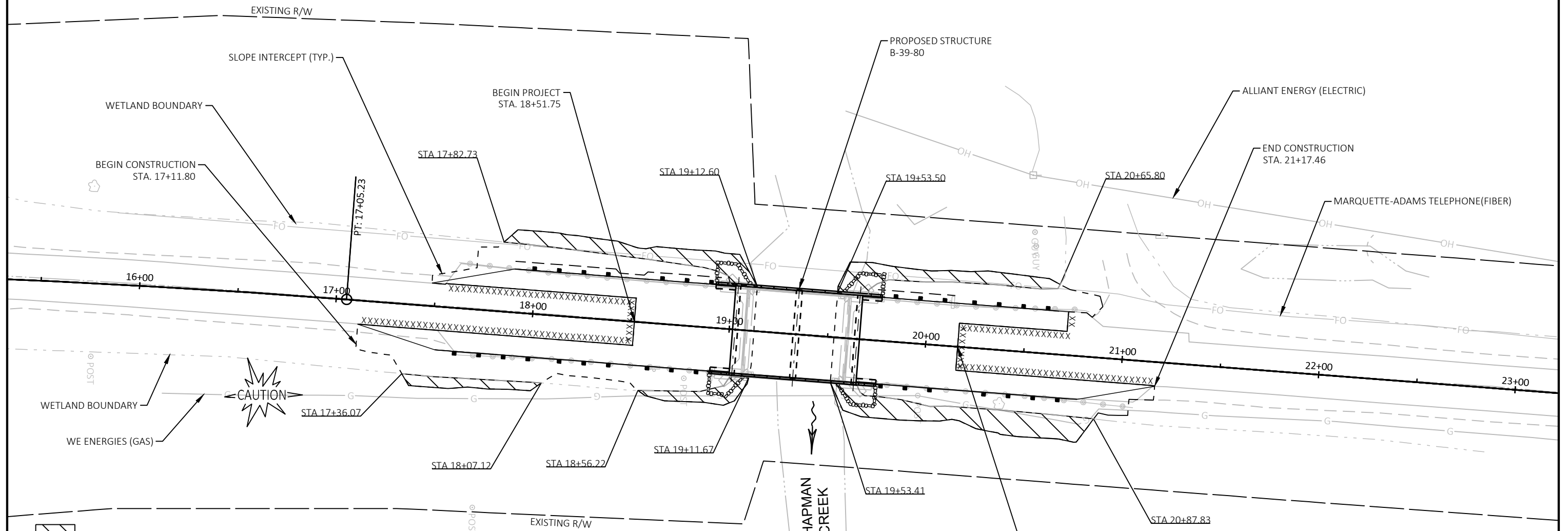


RUNOFF COEFFICIENT TABLE

	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											

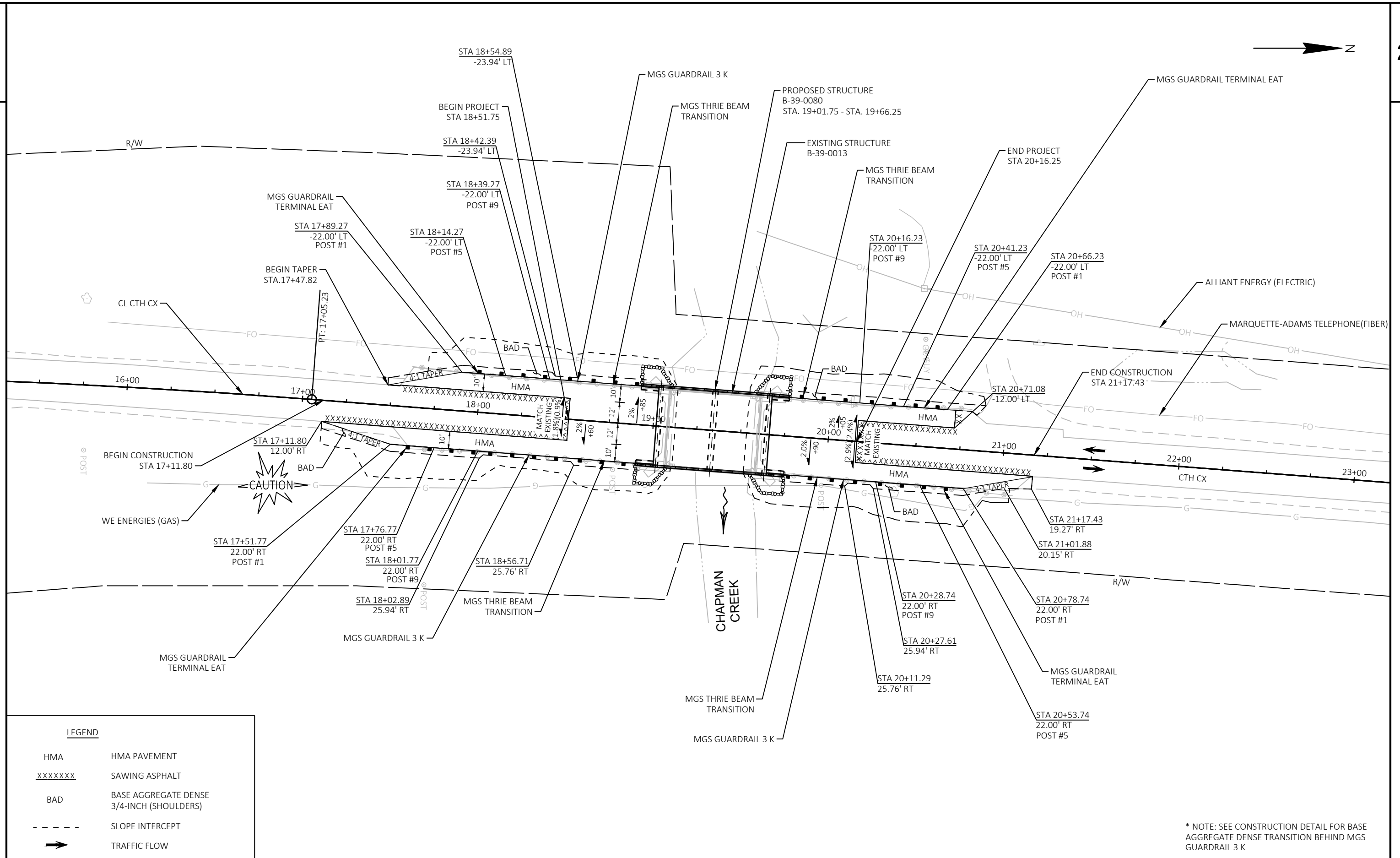
TOTAL PROJECT AREA = 0.818 ACRES
 TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.491 ACRES





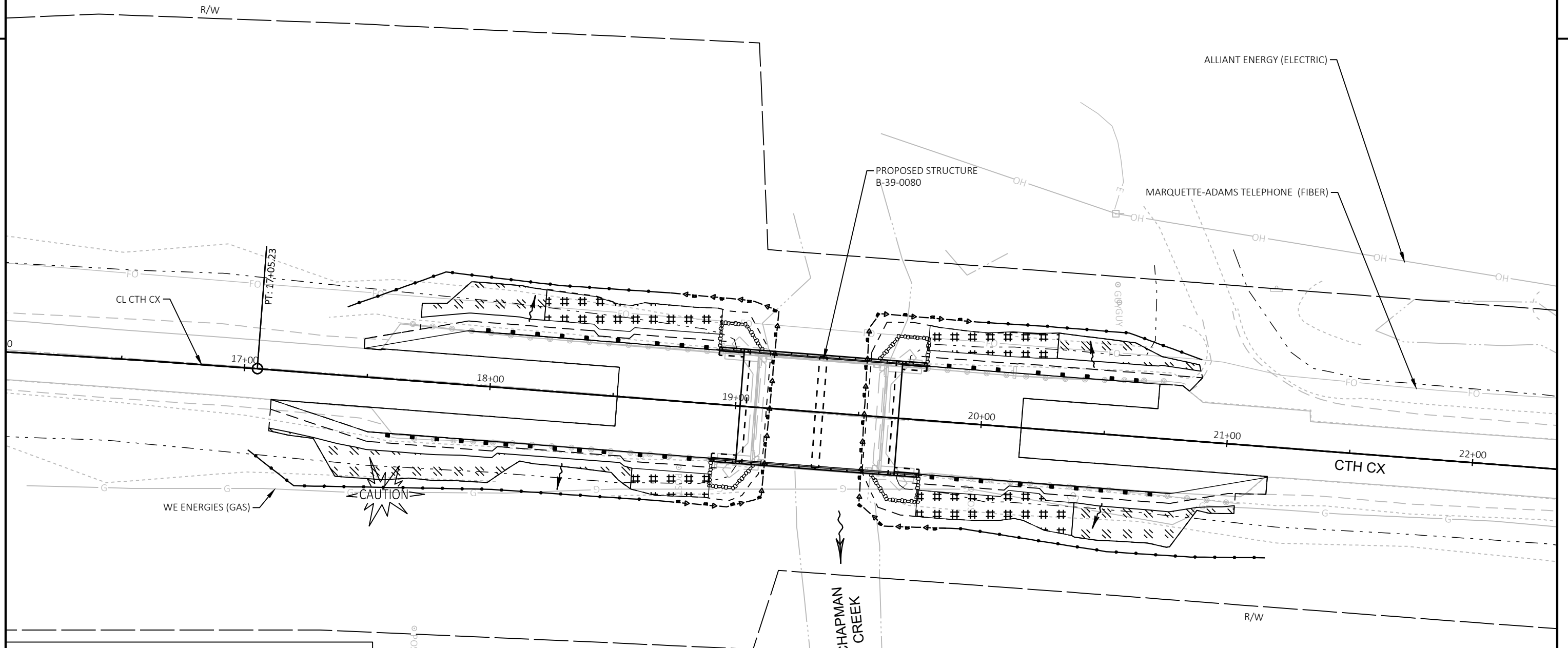
 WETLAND IMPACTS

IMPACT LOCATION STATION	IMPACT TYPE	AREA ACRES
STA. 17+36.07 RT - STA. 18+07.12 RT	RPE	0.007
STA. 17+82.73 LT - STA. 19+12.60 LT	RPE	0.023
STA. 18+56.22 RT - STA. 19+11.67 RT	RPE	0.008
STA. 19+53.41 RT - STA. 20+87.83 RT	RPE	0.031
STA. 19+53.50 LT - STA. 20+65.80 LT	RPE	0.019



LEGEND	
HMA	HMA PAVEMENT
XXXXXXX	SAWING ASPHALT
BAD	BASE AGGREGATE DENSE 3/4-INCH (SHOULDERS)
- - - -	SLOPE INTERCEPT
➔	TRAFFIC FLOW

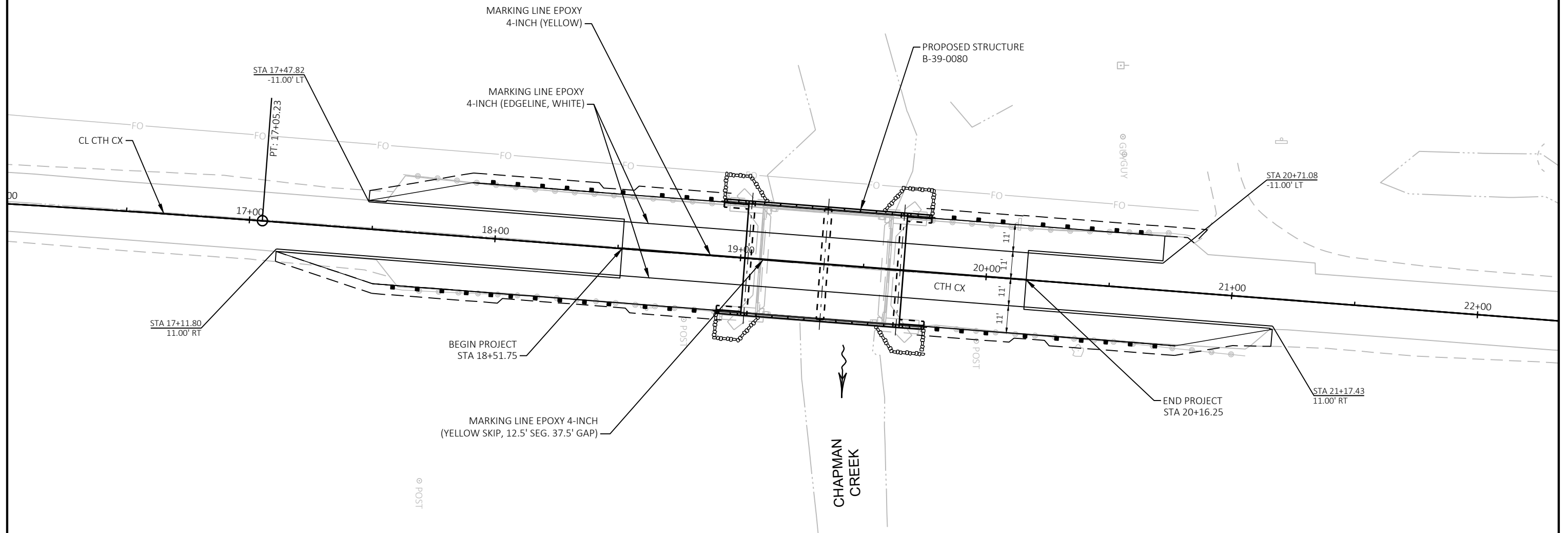
* NOTE: SEE CONSTRUCTION DETAIL FOR BASE AGGREGATE DENSE TRANSITION BEHIND MGS GUARDRAIL 3 K



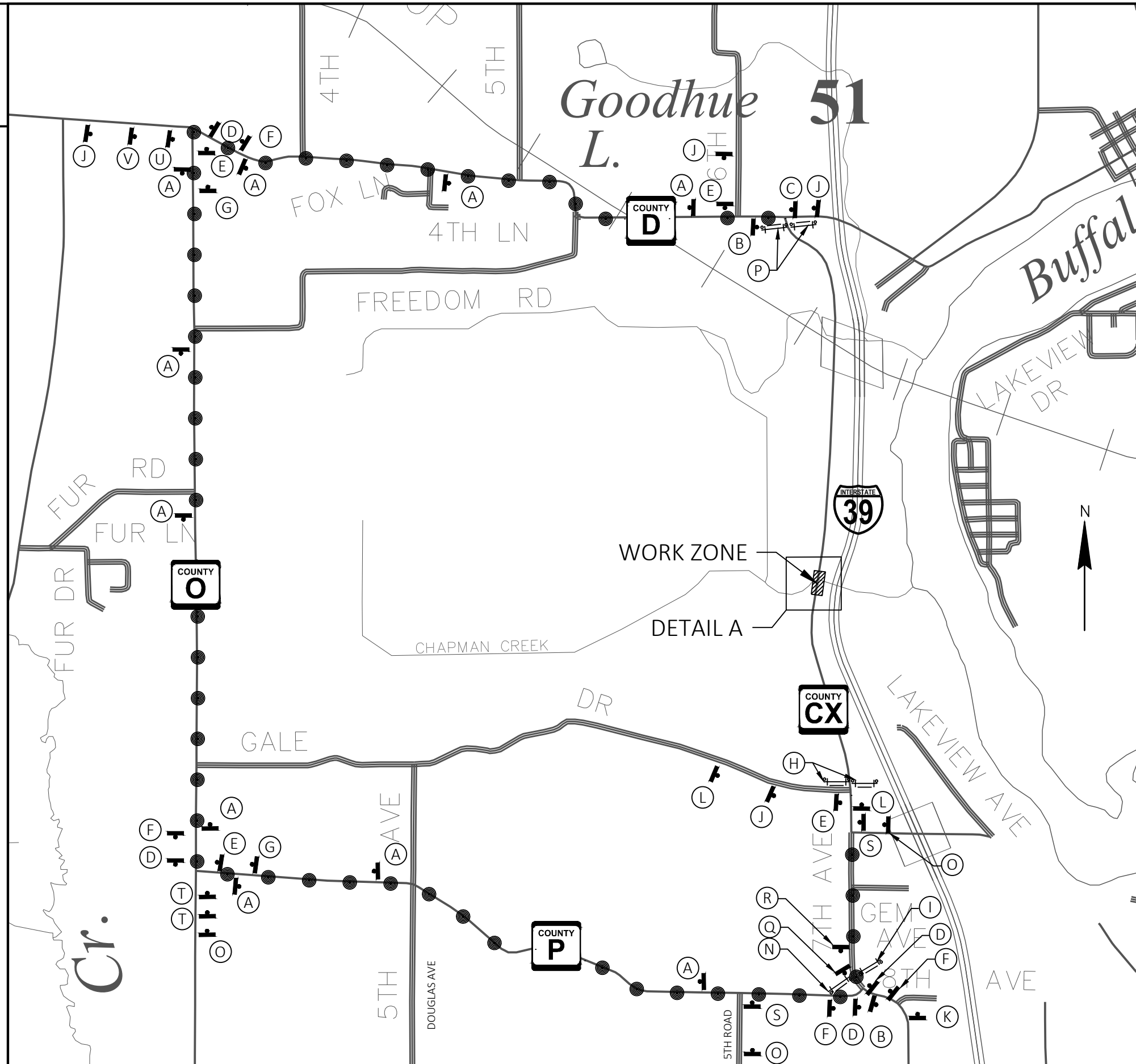
LEGEND

·#####·	EROSION MAT URBAN CLASS I TYPE B
—●—●—●—	SILT FENCE
—○—○—○—○—	RIPRAP HEAVY
-----	SLOPE INTERCEPT
—◄—◄—◄—	TURBIDITY BARRIERS
:/:/:/:/	MULCHING
~>	SURFACE FLOW
-----	WETLAND BOUNDARY

PROJECT NO: 6748-02-70	HWY: CTH CX	COUNTY: MARQUETTE	EROSION CONTROL	SHEET	E
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PROJECT NO: 6748-02-70	HWY: CTH CX	COUNTY: MARQUETTE	PAVEMENT MARKING	SHEET	E
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GENERAL NOTES: BY MARQUETTE COUNTY. FOR INFORMATION ONLY.

"WO" AND "W" SIGNS SHALL BE 48"X48" UNLESS OTHERWISE NOTED.

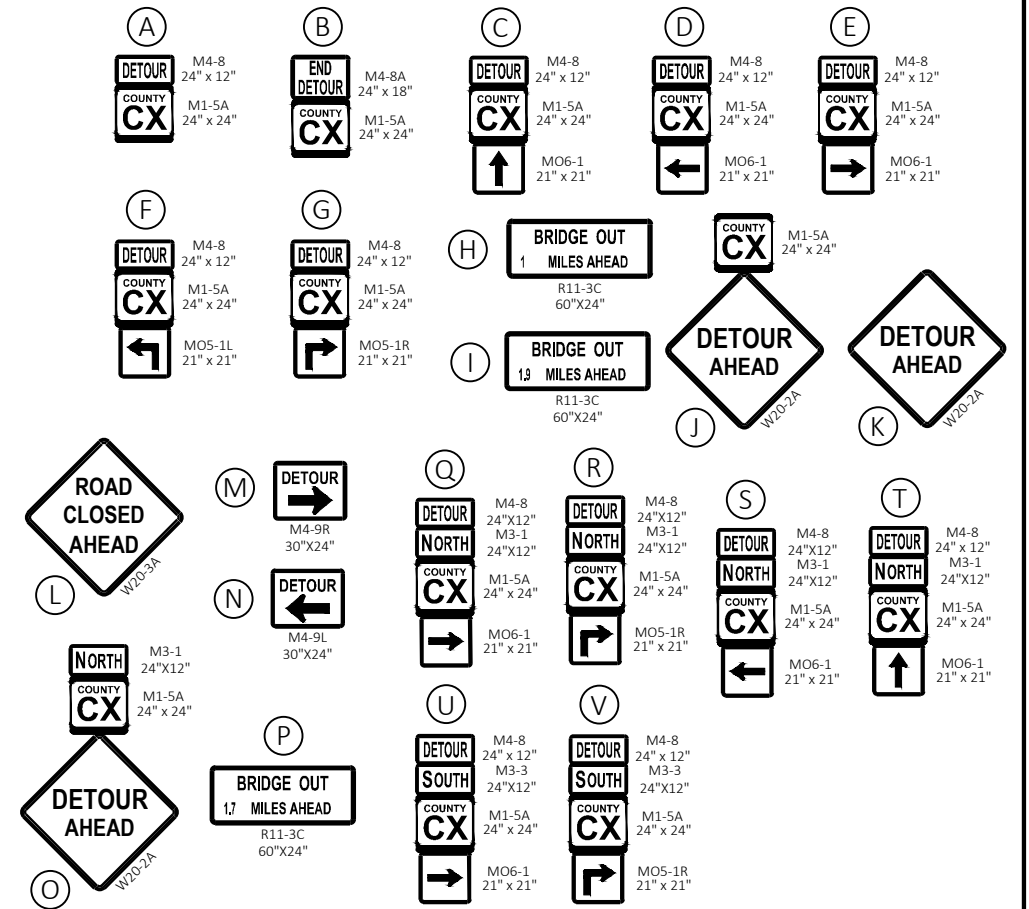
"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

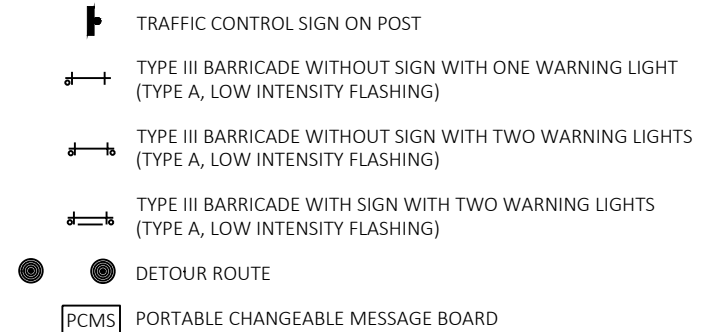
TRAFFIC CONTROL SIGNS PORTABLE CHANGEABLE MESSAGE FOR PREWARNING TO BE INSTALLED ONE WEEK PRIOR TO IMPLEMENTATION OF DETOUR ROUTE.

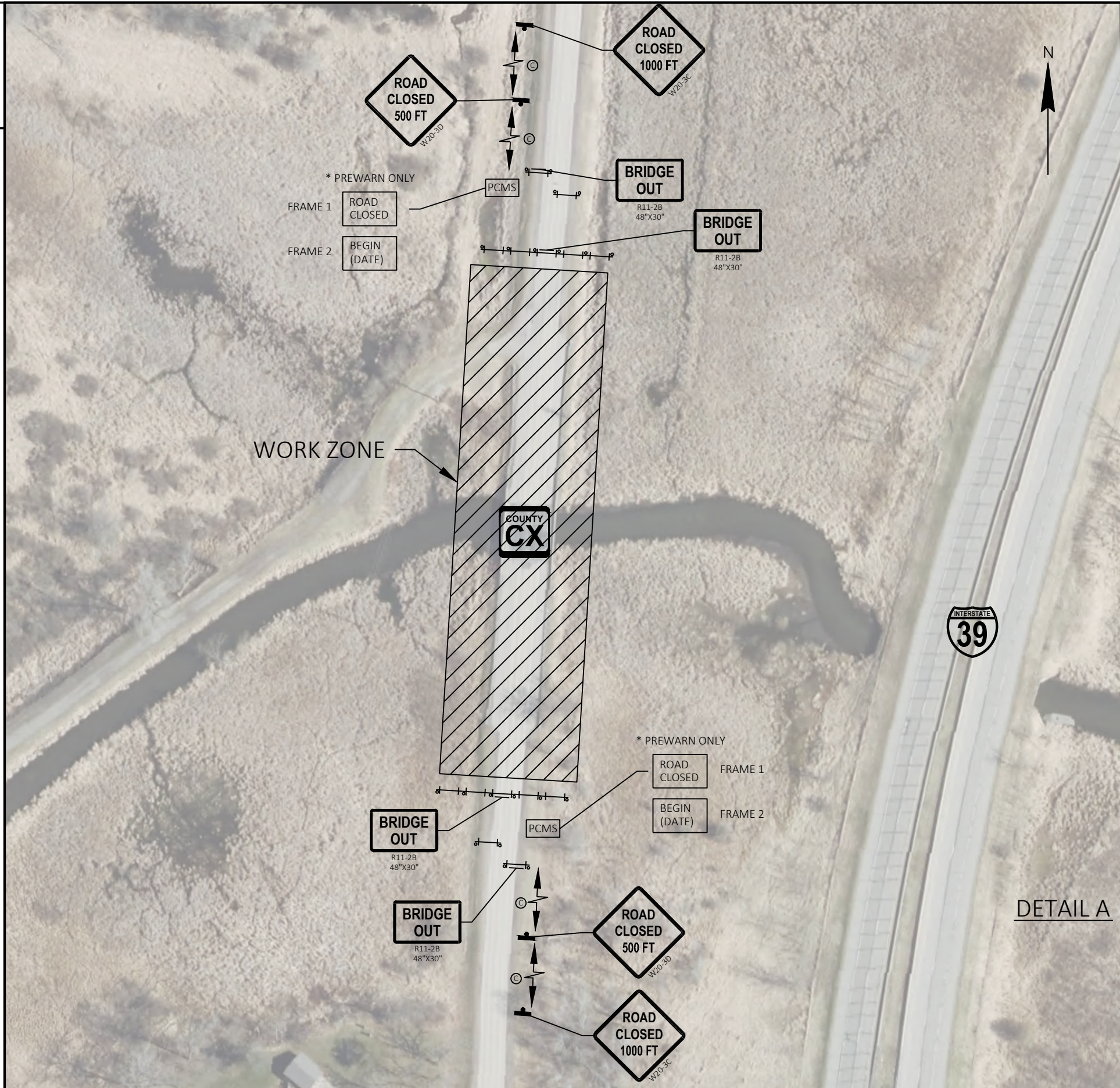
IMMEDIATELY RE-ESTABLISH "STOP" SIGNS THAT ARE REMOVED FOR A CONSTRUCTION OPERATION.

SIGN LEGEND



LEGEND





* BY MARQUETTE COUNTY. FOR INFORMATION ONLY.

LEGEND

- TRAFFIC CONTROL SIGN ON POST
- TYPE III BARRICADE WITHOUT SIGN WITH ONE WARNING LIGHT (TYPE A, LOW INTENSITY FLASHING)
- TYPE III BARRICADE WITHOUT SIGN WITH TWO WARNING LIGHTS (TYPE A, LOW INTENSITY FLASHING)
- TYPE III BARRICADE WITH SIGN WITH TWO WARNING LIGHTS (TYPE A, LOW INTENSITY FLASHING)
- DETOUR ROUTE
- PORTABLE CHANGEABLE MESSAGE BOARD

DETAIL A

Estimate Of Quantities

6748-02-70

Line	Item	Item Description	Unit	Total	Qty
0002	203.0211.S	Abatement of Asbestos Containing Material (structure) 01. B-39-13	EACH	1.000	1.000
0004	203.0260	Removing Structure Over Waterway Minimal Debris (structure) 01. B-39-13	EACH	1.000	1.000
0006	205.0100	Excavation Common	CY	542.000	542.000
0008	206.1001	Excavation for Structures Bridges (structure) 01. B-39-80	EACH	1.000	1.000
0010	210.1500	Backfill Structure Type A	TON	388.000	388.000
0012	213.0100	Finishing Roadway (project) 01. 6748-02-70	EACH	1.000	1.000
0014	305.0110	Base Aggregate Dense 3/4-Inch	TON	35.000	35.000
0016	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	820.000	820.000
0018	312.0110	Select Crushed Material	TON	56.000	56.000
0020	455.0605	Tack Coat	GAL	43.000	43.000
0022	460.2000	Incentive Density HMA Pavement	DOL	130.000	130.000
0024	460.6223	HMA Pavement 3 MT 58-28 S	TON	109.000	109.000
0026	460.6224	HMA Pavement 4 MT 58-28 S	TON	85.000	85.000
0028	502.0100	Concrete Masonry Bridges	CY	259.000	259.000
0030	502.3200	Protective Surface Treatment	SY	379.000	379.000
0032	505.0400	Bar Steel Reinforcement HS Structures	LB	9,220.000	9,220.000
0034	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	34,170.000	34,170.000
0036	513.4061	Railing Tubular Type M	LF	174.000	174.000
0038	516.0500	Rubberized Membrane Waterproofing	SY	24.000	24.000
0040	550.2126	Piling CIP Concrete 12 3/4 X 0.375-Inch	LF	1,115.000	1,115.000
0042	606.0300	Riprap Heavy	CY	121.000	121.000
0044	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	174.000	174.000
0046	614.0920	Salvaged Rail	LF	530.000	530.000
0048	614.2330	MGS Guardrail 3 K	LF	75.000	75.000
0050	614.2500	MGS Thrie Beam Transition	LF	157.600	157.600
0052	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0054	618.0100	Maintenance And Repair of Haul Roads (project) 01. 6748-02-70	EACH	1.000	1.000
0056	619.1000	Mobilization	EACH	1.000	1.000
0058	624.0100	Water	MGAL	15.000	15.000
0060	625.0500	Salvaged Topsoil	SY	700.000	700.000
0062	627.0200	Mulching	SY	790.000	790.000
0064	628.1504	Silt Fence	LF	935.000	935.000
0066	628.1520	Silt Fence Maintenance	LF	1,405.000	1,405.000
0068	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0070	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0072	628.2008	Erosion Mat Urban Class I Type B	SY	315.000	315.000
0074	628.6005	Turbidity Barriers	SY	306.000	306.000
0076	628.7560	Tracking Pads	EACH	2.000	2.000
0078	629.0205	Fertilizer Type A	CWT	0.300	0.300
0080	630.0120	Seeding Mixture No. 20	LB	14.000	14.000
0082	630.0160	Seeding Mixture No. 60	LB	6.000	6.000
0084	630.0300	Seeding Borrow Pit	LB	11.000	11.000
0086	630.0500	Seed Water	MGAL	30.000	30.000
0088	642.5201	Field Office Type C	EACH	1.000	1.000
0090	645.0111	Geotextile Type DF Schedule A	SY	78.000	78.000
0092	645.0120	Geotextile Type HR	SY	230.000	230.000
0094	646.1020	Marking Line Epoxy 4-Inch	LF	936.000	936.000
0096	650.4500	Construction Staking Subgrade	LF	340.000	340.000
0098	650.5000	Construction Staking Base	LF	100.000	100.000

Estimate Of Quantities

6748-02-70

Line	Item	Item Description	Unit	Total	Qty
0100	650.6501	Construction Staking Structure Layout (structure) 01. B-39-80	EACH	1.000	1.000
0102	650.9911	Construction Staking Supplemental Control (project) 01. 6748-02-70	EACH	1.000	1.000
0104	650.9920	Construction Staking Slope Stakes	LF	340.000	340.000
0106	690.0150	Sawing Asphalt	LF	460.000	460.000
0108	715.0502	Incentive Strength Concrete Structures	DOL	1,554.000	1,554.000
0110	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	300.000	300.000
0112	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	600.000	600.000

3

3

EARTHWORK

CATEGORY	LOCATION	STATION - STATION	205.0100										312.0110
			EXCAVATION COMMON (1)		AVAILABLE	AVAILABLE	EXPANDED EBS	UNEXPANDED	EXPANDED	MASS ORDINATE	WASTE	CRUSHED	
			CUT (2)	EBS EXCAVATION (3)	STRUCTURE	MATERIAL (5)	BACKFILL (6)	FILL	FILL (7)	+/- (8)	(9)	MATERIAL	
			5% OF CUT		EXCAVATION (4)		FACTOR		FACTOR			FACTOR	
			CY	CY	CY	CY	CY	CY	CY	CY	CY	TON	
0010	CTH CX	17+11.80 - 21+17.43	516	26	227	744	32	124	156	588	588	56	
TOTALS				542	227	744	32	124	156	588	588	56	

- 1) EXCAVATION COMMON 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 EXCAVATION TO BE BACKFILLED WITH SELECT CRUSHED MATERIAL.
- 4) AVAILABLE STRUCTURE EXCAVATION IS FOR INFORMATION ONLY AND IS INCLUDED IN BID ITEM "EXCAVATION FOR STRUCTURES B-39-0080"
- 5) AVAILABLE MATERIAL = CUT + AVAILABLE STRUCTURE EXCAVATION
- 6) EXPANDED EBS BACKFILL: THIS IS TO BE FILLED WITH SELECT CRUSHED MATERIAL. EBS BACKFILL EXPANSION FACTOR = 1.25.
- 7) EXPANDED FILL = (UNEXPANDED FILL)* EXPANDED FILL FACTOR. EXPANDED FILL FACTOR = 1.25.
- 8) MASS ORDINATE: MASS ORDINATE = CUT + AVAILABLE STRUCTURE EXCAVATION - EXPANDED FILL
PLUS MASS ORDINATE QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS MASS ORDINATE QUANTITY INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.
- 9) WASTE = POSITIVE MASS ORDINATE, BORROW = NEGATIVE MASS ORDINATE
- 10) SELECT CRUSHED MATERIAL IS USED FOR BACKFILL OF EBS.

SALVAGED RAIL

CATEGORY	STATION - STATION	LOCATION	614.0920
			LF
0010	17+61 - 18+97	LT	140
	17+61 - 18+97	RT	140
	19+72 - 20+82	LT	110
	19+72 - 21+07	RT	140
TOTAL			530

BASE AGGREGATE SUMMARY

FINISHING ROADWAY			305.0110		305.0120
CATEGORY	PROJECT	213.0100	BASE AGGREGATE	BASE AGGREGATE	
		EACH	DENSE 3/4-INCH	DENSE 1 1/4-INCH	
			TON	TON	
0010	6748-02-70	1	15	250	
			5	200	
			5	200	
			10	170	
TOTALS			35	820	

ASPHALTIC ITEMS

CATEGORY	STATION - STATION	LOCATION	460.6223	460.6224	455.0605
			HMA PAVEMENT	HMA PAVEMENT	TACK
			3 MT 58-28 S	4 MT 58-28 S	COAT
			TON	TON	GAL
0010	17+12 - 1902	LT+RT	59	46	23
	19+66 - 2117	LT+RT	50	39	20
TOTALS			109	85	43

NOTE: HMA PAVEMENT WEIGHT CALCULATIONS BASED ON 112 LB/SY/IN.

GUARDRAIL SUMMARY

CATEGORY	STATION - STATION	LOCATION	614.2330	614.2610	614.2500
			MGS GUARDRAIL	TERMINAL	THRIE BEAM
			3 K	EAT	TRANSITION
			LF	EACH	LF
0010	17+52 - 18+94	RT	50.0	1	39.4
	17+89 - 18+94	LT	12.5	1	39.4
	19+74 - 20+79	RT	12.5	1	39.4
	19+74 - 20+66	LT	---	1	39.4
TOTALS			75.0	4	157.6

WATER

CATEGORY	STATION - STATION	624.0100	REMARKS
		MGAL	
0010	10+50 - 16+29	3	DUST CONTROL
		12	COMPACTION
TOTAL		15	

MAINTENANCE AND REPAIR OF HAUL ROADS

CATEGORY	PROJECT	618.0100
		EACH
0030	6748-02-70	1

MOBILIZATION

CATEGORY	PROJECT	619.1000
		EACH
0010	6748-02-70	1

3

3

MOBILIZATIONS EROSION CONTROL			
CATEGORY	PROJECT	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
0010	6748-02-70	3	3

TRACKING PADS		
CATEGORY	LOCATION	628.7560 EACH
0010	UNDISTRIBUTED	2

EROSION CONTROL						
CATEGORY	STATION - STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	628.6005 TURBIDITY BARRIERS SY
0010	17+04 - 19+34	LT/RT	305	460	120	125
		19+34 - 21+19	225	340	135	120
	WASTE SITE UNDISTRIBUTED	---	215	325	---	---
		---	190	280	60	61
TOTALS			935	1,405	315	306

FINISHING ITEMS									
CATEGORY	STATION - STATION	LOCATION	625.0500 SALVAGED TOPSOIL SY	627.0200 MULCHING SY	629.0205 FERTILIZER TYPE A CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0160 SEEDING MIXTURE NO. 60 LB	630.0300 SEEDING BORROW PIT LB	630.0500 SEED WATER MGAL
0010	17+12 - 19+02	LT/RT	300	180	---	7	2	---	9
		19+66 - 21+17	260	120	---	4	3	---	8
	WASTE SITE UNDISTRIBUTED	---	---	330	0.2	---	---	9	7
		---	140	160	0.1	3	1	2	6
	TOTALS			700	790	0.3	14	6	11

FIELD OFFICE TYPE C		
CATEGORY	PROJECT	642.5201 EACH
0010	6748-02-70	1

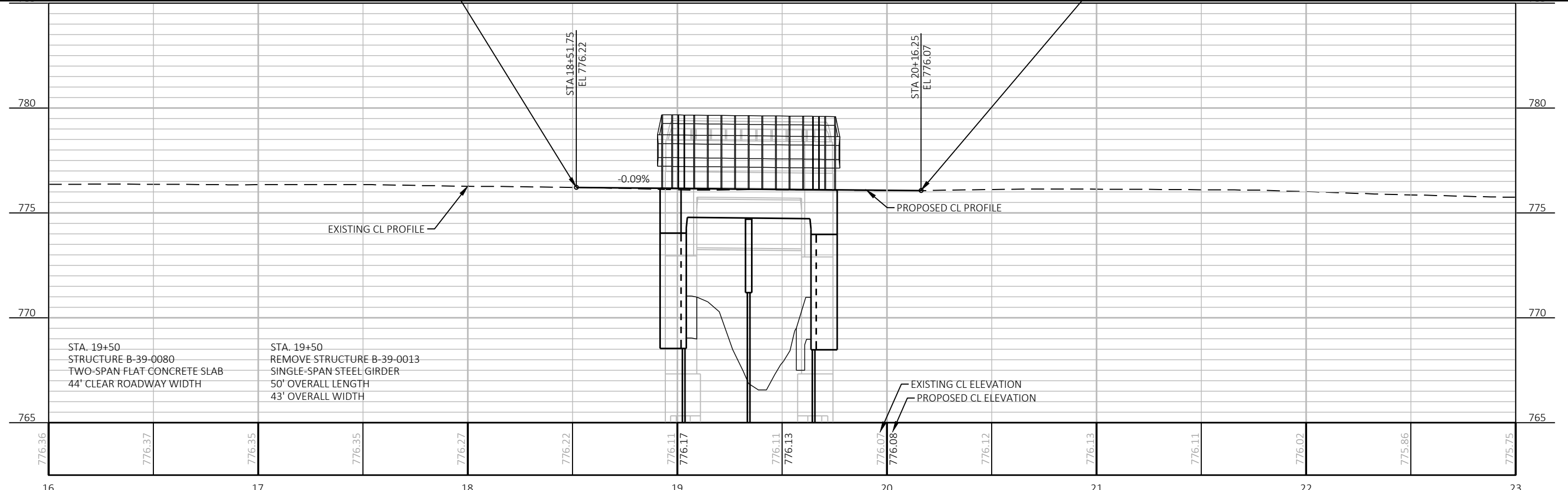
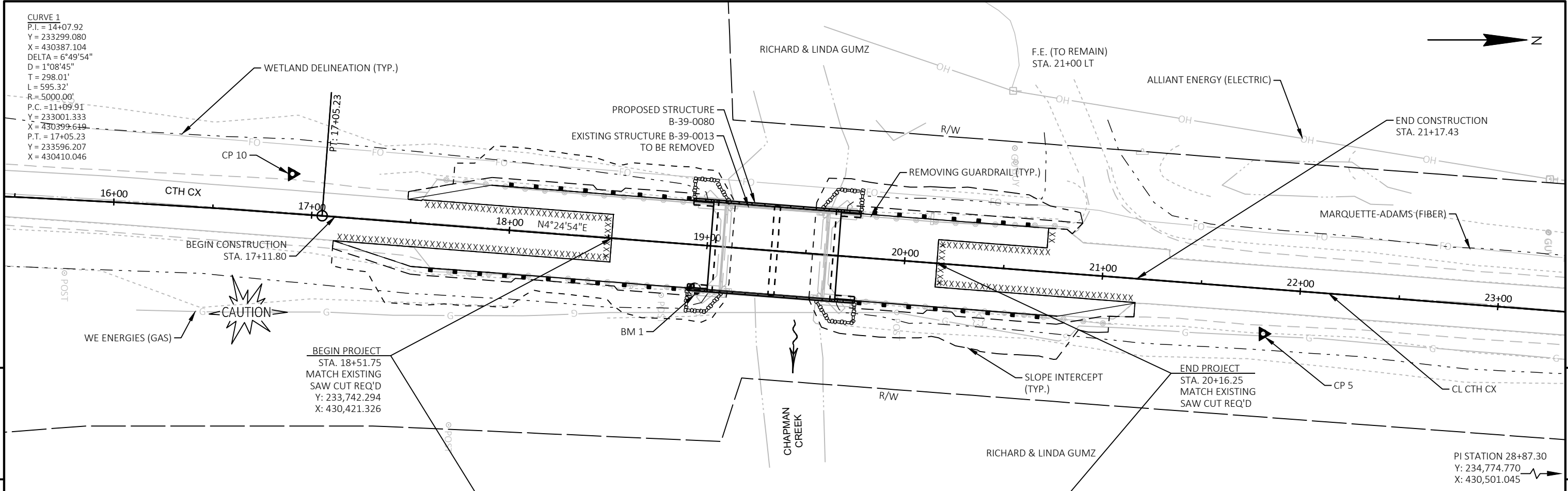
CONSTRUCTION STAKING					
CATEGORY	STATION - STATION	LOCATION	650.4500 SUBGRADE LF	650.5000 BASE LF	650.9920 SLOPE STAKES LF
0010	17+12 - 19+02	LT/RT	190	50	190
		19+66 - 21+17	150	50	150
TOTALS			340	100	340

MARKING LINE ITEMS					
CATEGORY	STATION - STATION	LOCATION	(WHITE) LF	646.1020 MARKING LINE EPOXY 4-INCH (12.5' SEG., 37.5' GAP) (YELLOW) LF	(YELLOW) LF
0010	17+12 - 21+17	LT+RT	730	41	165
TOTAL				936	

CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT)		
CATEGORY	PROJECT	650.9911 EACH
0010	6748-02-70	1

SAWING		
CATEGORY	LOCATION	690.0150 ASPHALT LF
0010	17+12 - 18+52	270
	20+16 - 21+17	190
TOTAL		460

CURVE 1
 P.I. = 14+07.92
 Y = 233299.080
 X = 430387.104
 DELTA = 6°49'54"
 D = 1°08'45"
 T = 298.01'
 L = 595.32'
 R = 5000.00'
 P.C. = 11+09.91
 Y = 233001.333
 X = 430399.619
 P.T. = 17+05.23
 Y = 233596.207
 X = 430410.046



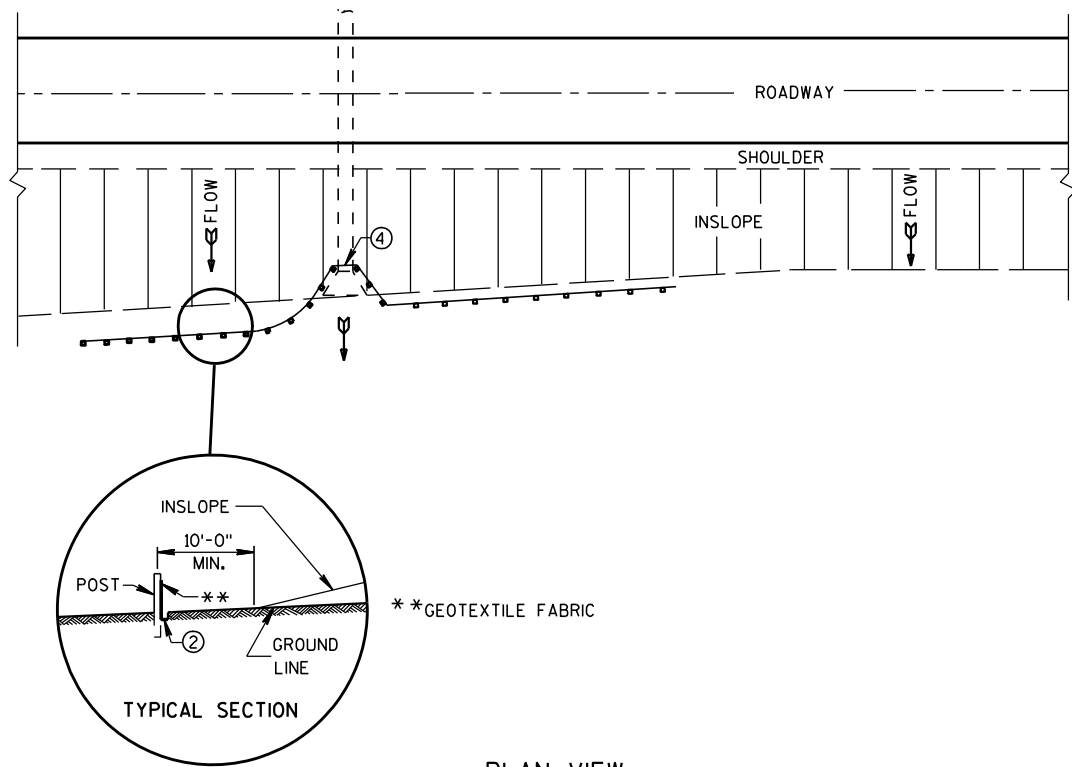
STA. 19+50
 STRUCTURE B-39-0080
 TWO-SPAN FLAT CONCRETE SLAB
 44' CLEAR ROADWAY WIDTH

STA. 19+50
 REMOVE STRUCTURE B-39-0013
 SINGLE-SPAN STEEL GIRDER
 50' OVERALL LENGTH
 43' OVERALL WIDTH

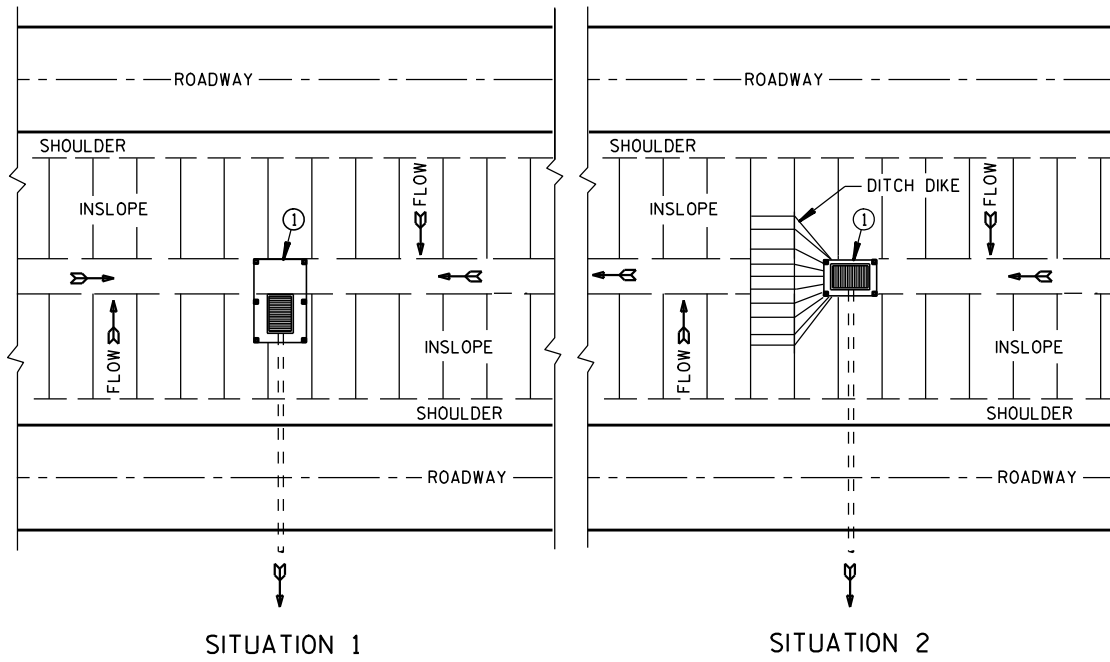
PROJECT NO: 6748-02-70	HWY: CTH CX	COUNTY: MARQUETTE	PLAN AND PROFILE: CTH CX	SHEET	E
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Standard Detail Drawing List

08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
08E14-01	TRACKING PAD
12A03-10	NAME PLATE (STRUCTURES)
13C19-03	HMA LONGITUDINAL JOINTS
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)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C06-10	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-22A	LONGITUDINAL MARKING (MAINLINE)



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

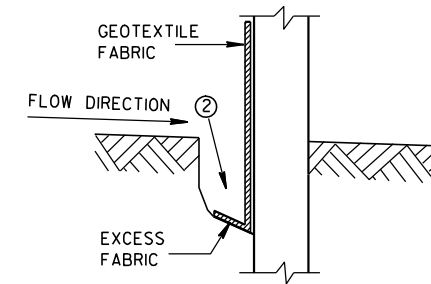


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

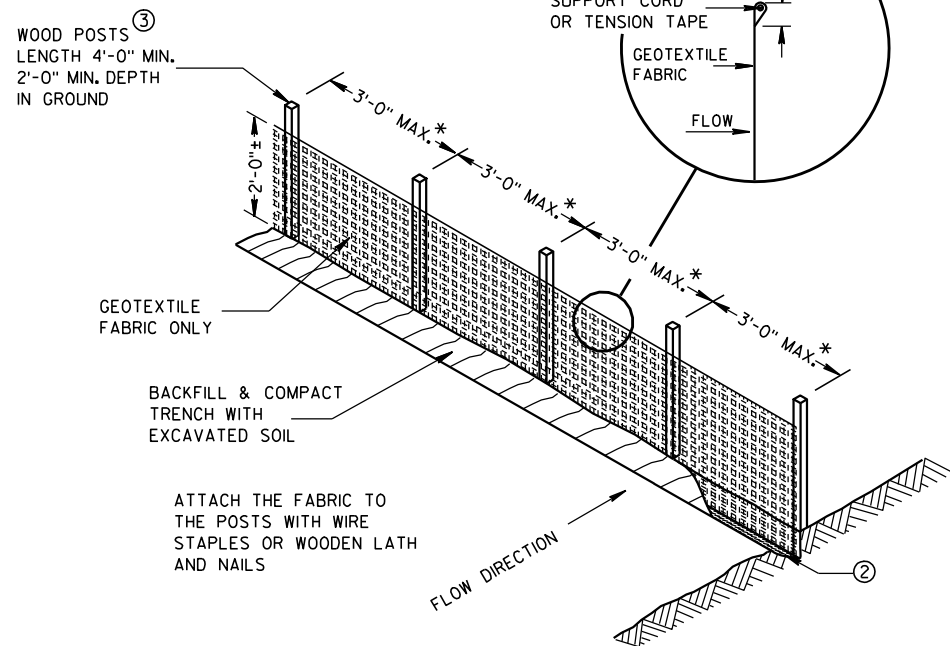
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

- 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.



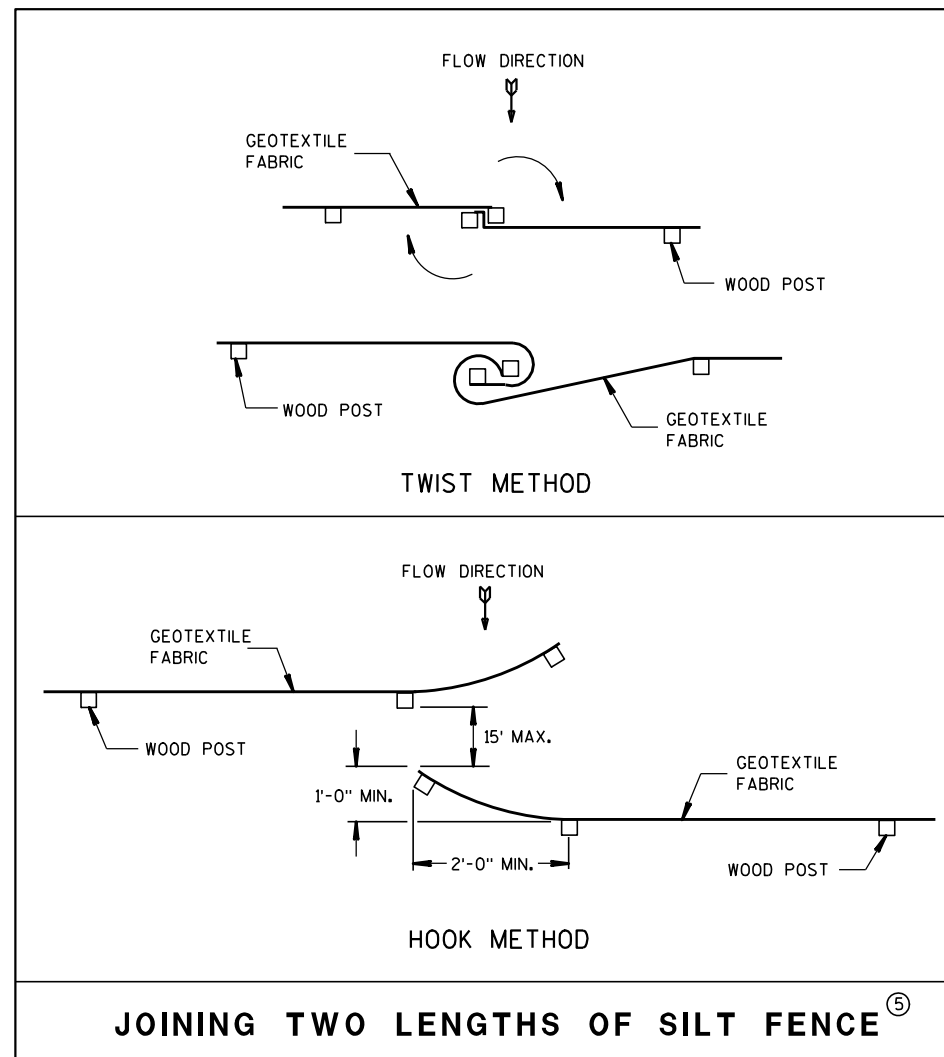
TRENCH DETAIL

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

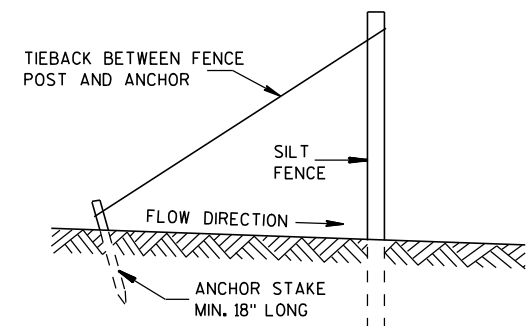


SILT FENCE

* 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

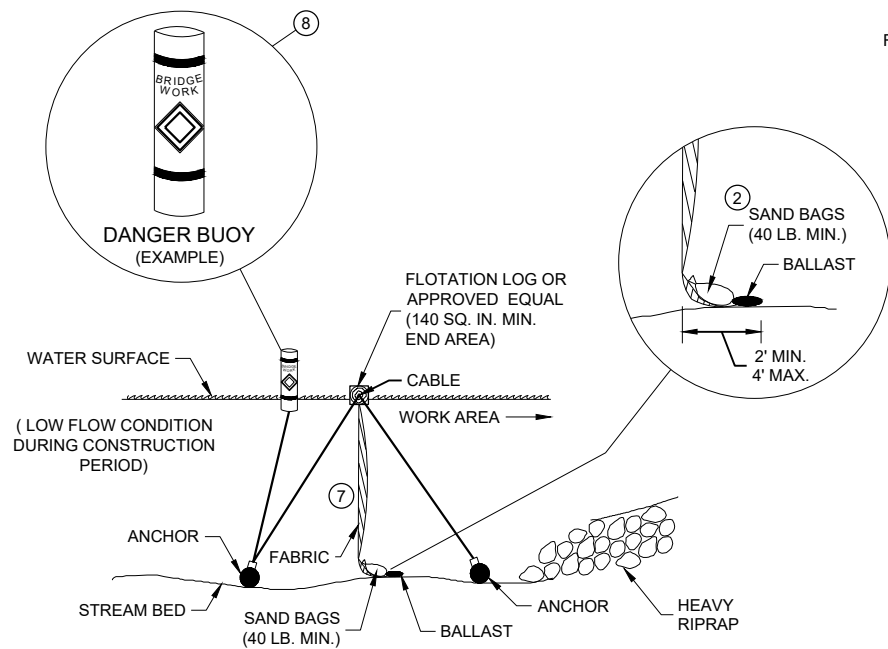
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4-29-05
DATE

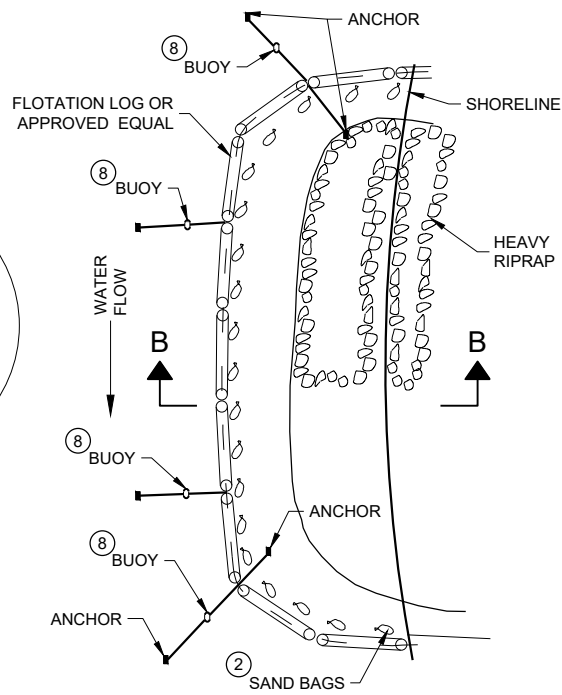
FHWA

/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

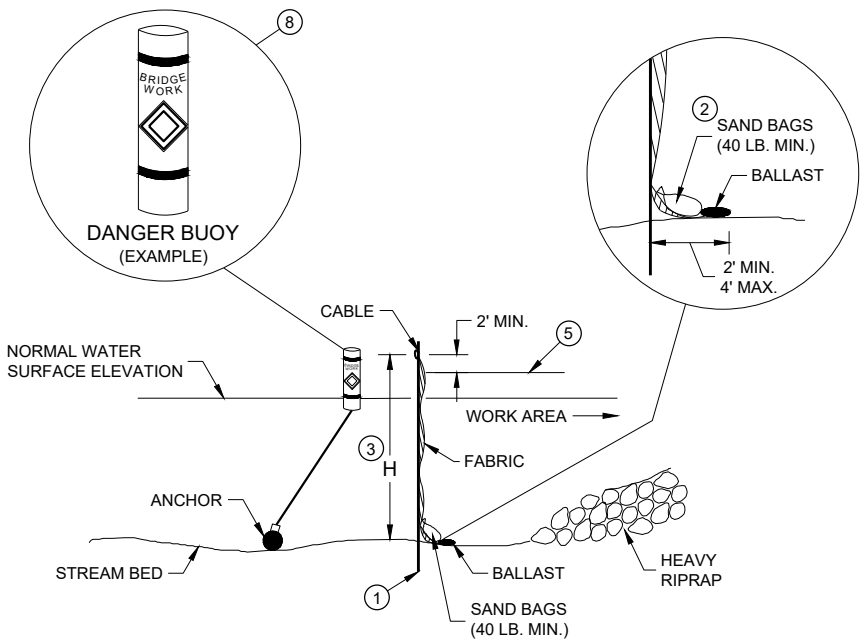


SECTION B - B

**TURBIDITY BARRIER - FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6**

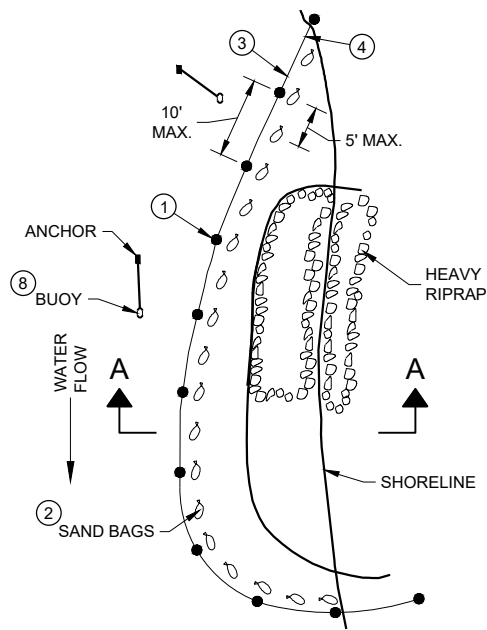


PLAN VIEW



SECTION A - A

TURBIDITY BARRIER - STANDARD POST INSTALLATION



PLAN VIEW

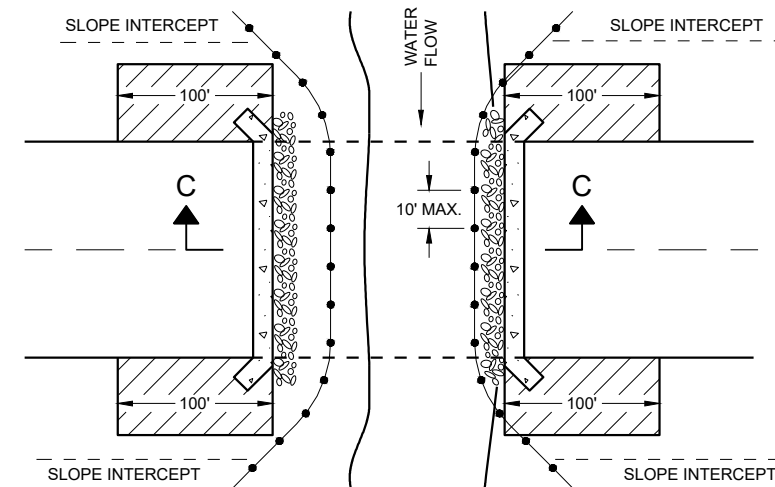
TURBIDITY BARRIER PLACEMENT DETAILS

GENERAL NOTES

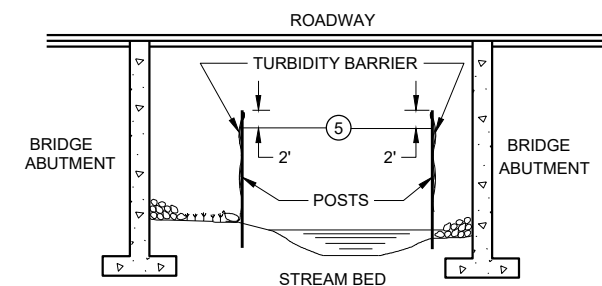
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

TURBIDITY BARRIER MAY BE REMOVED AT THE ENGINEERS DISCRETION, WHEN PERMANENT EROSION CONTROL MEASURES HAVE BEEN ESTABLISHED.

- ① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.
- ② SAND BAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.
- ③ WHEN BARRIER HEIGHT "H" EXCEEDS 8 FEET, POST SPACING MAY NEED TO BE DECREASED.
- ④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.
- ⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MINIMUM BARRIER HEIGHT SHALL BE 2' GREATER THAN EITHER THE Q2 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WHICHEVER IS GREATER.
- ⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BEDROCK PREVENTS THE INSTALLATION OF POSTS.
- ⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.
- ⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



PLAN VIEW



SECTION C - C

**TURBIDITY BARRIER DETAIL SHOWING
TYPICAL PLACEMENT AT STRUCTURES**

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/4/02 DATE /S/ Beth Cannestra
DATE CHIEF ROADWAY DEVELOPMENT
ENGINEER

FHWA

GENERAL NOTES

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

TRACKING PAD SHALL BE INSPECTED DAILY. DEFICIENT AREAS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

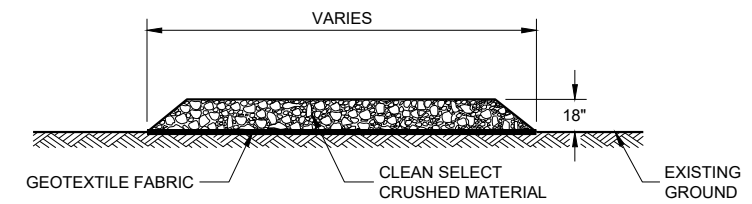
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

TRACKING PAD SHALL BE THE FULL WIDTH OF THE EGRESS POINT.

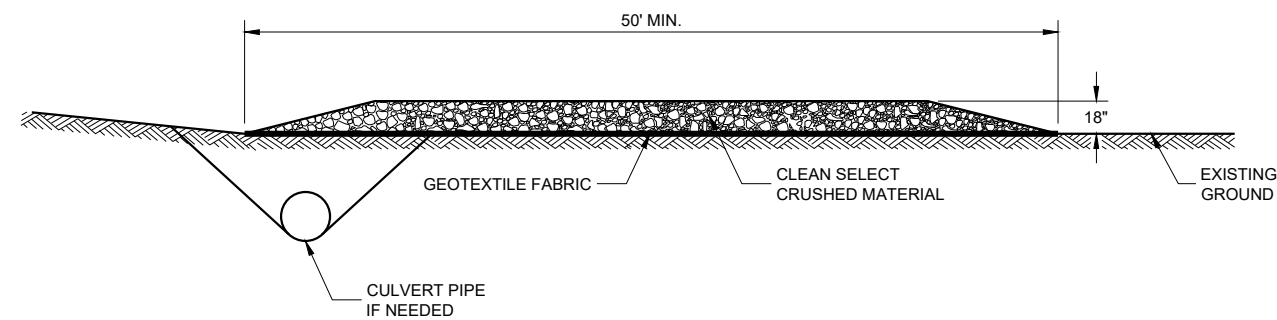
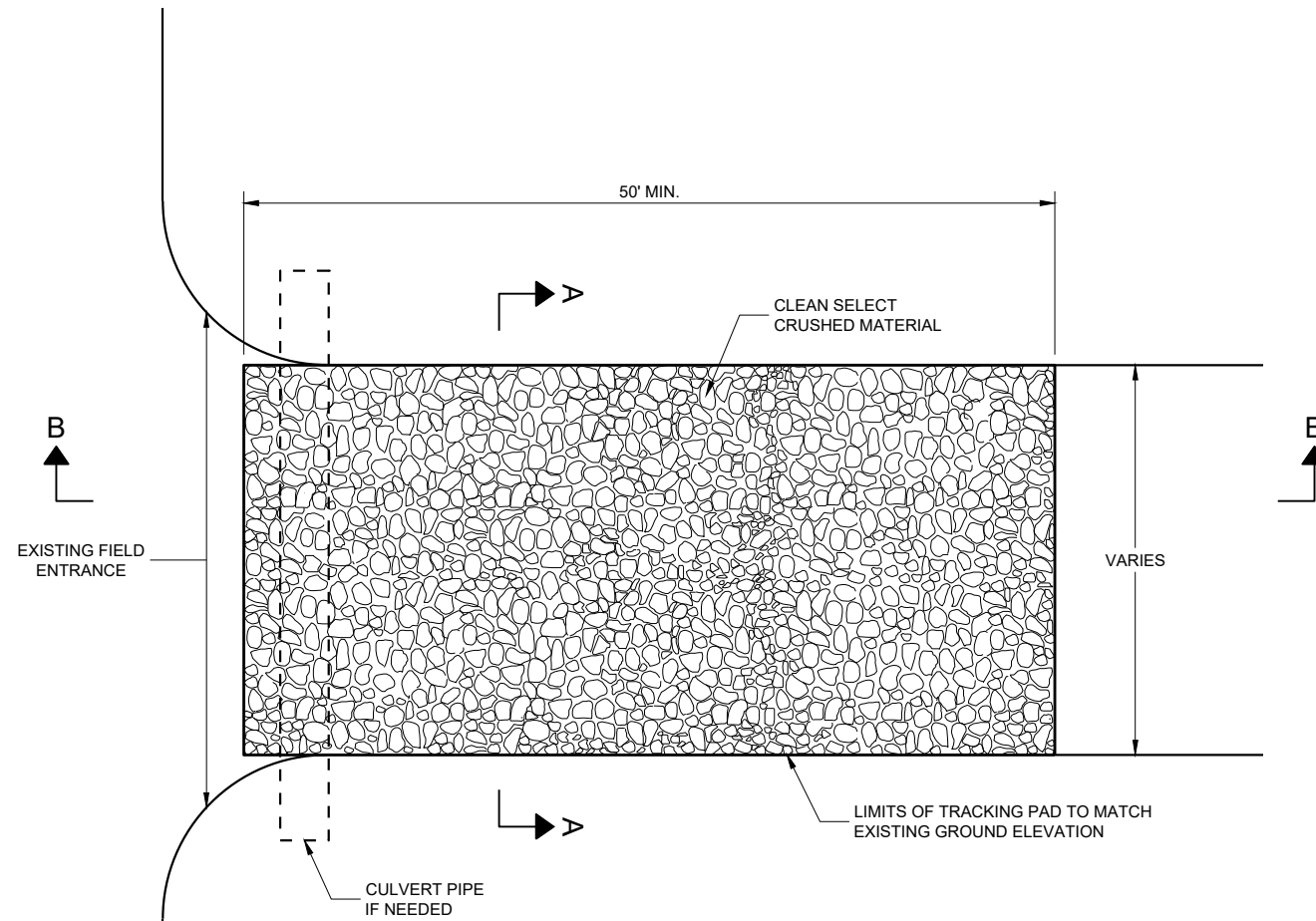
SURFACE WATER MUST BE PREVENTED FROM PASSING THROUGH THE TRACKING PAD. FLOWS SHALL BE DIVERTED AWAY, AROUND OR CONVEYED UNDER THE TRACKING PAD.

CULVERT PIPE OR OTHER BMP USED TO DIVERT WATER AWAY, AROUND OR UNDER THE TRACKING PAD SHALL BE DESIGNED TO CONVEY THE 2 YEAR - 24 HOUR EVENT.

THE COST OF ADDITIONAL BMP TO DIVERT WATER ARE INCIDENTAL TO THE TRACKING PAD BID ITEM.



SECTION A - A



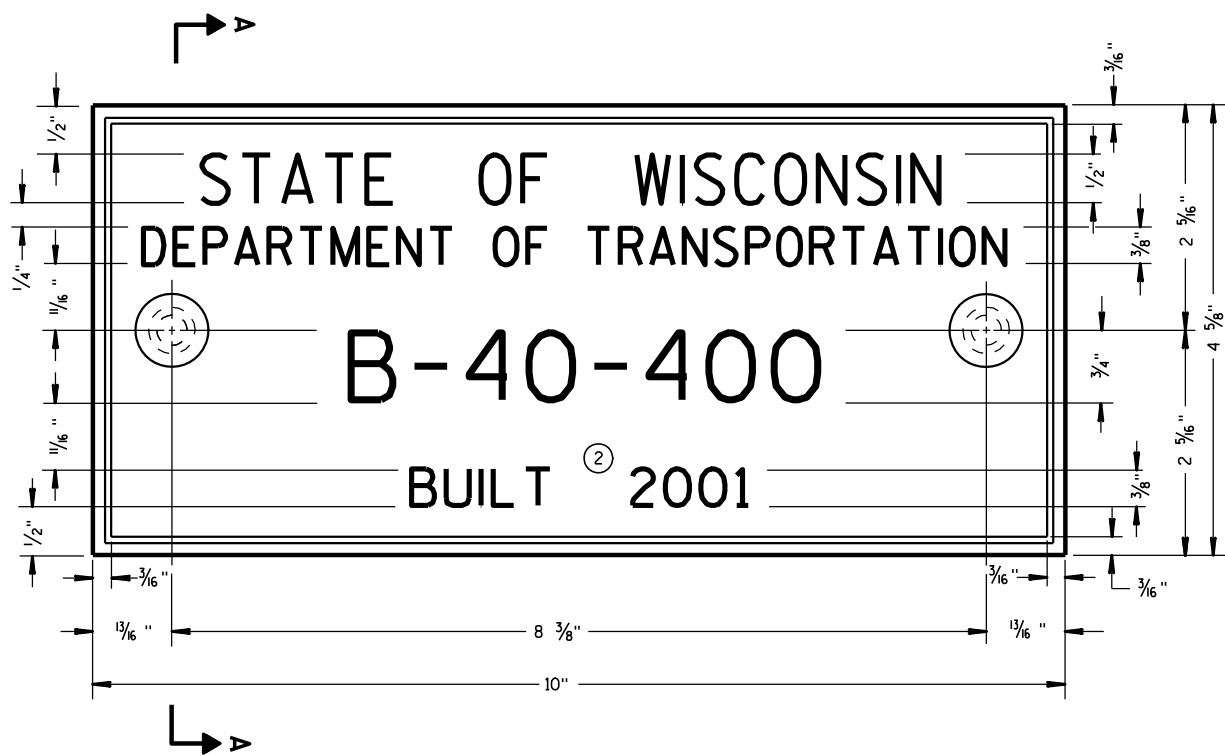
SECTION B - B

TRACKING PAD

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/24/2011 DATE /S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA



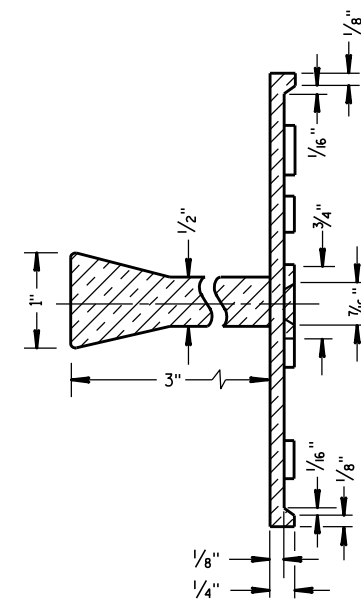
TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)

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.

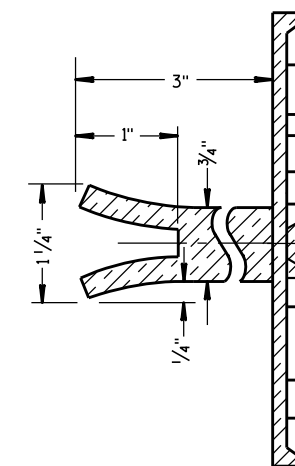
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

- 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.

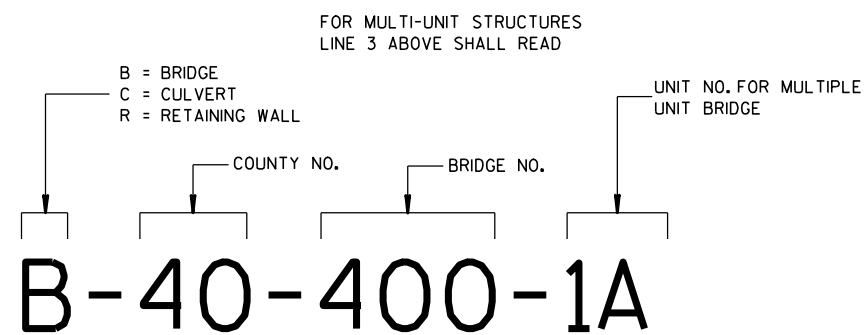


SECTION A-A

SPREAD OPEN SO THE TOP OF LUG IS 1 1/4" WIDE

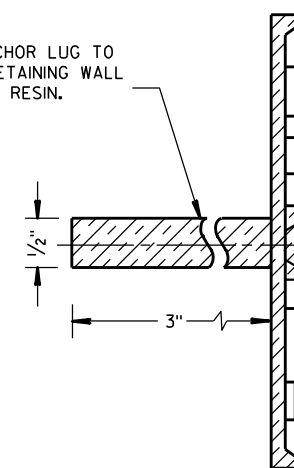


ALTERNATE LUG



**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

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

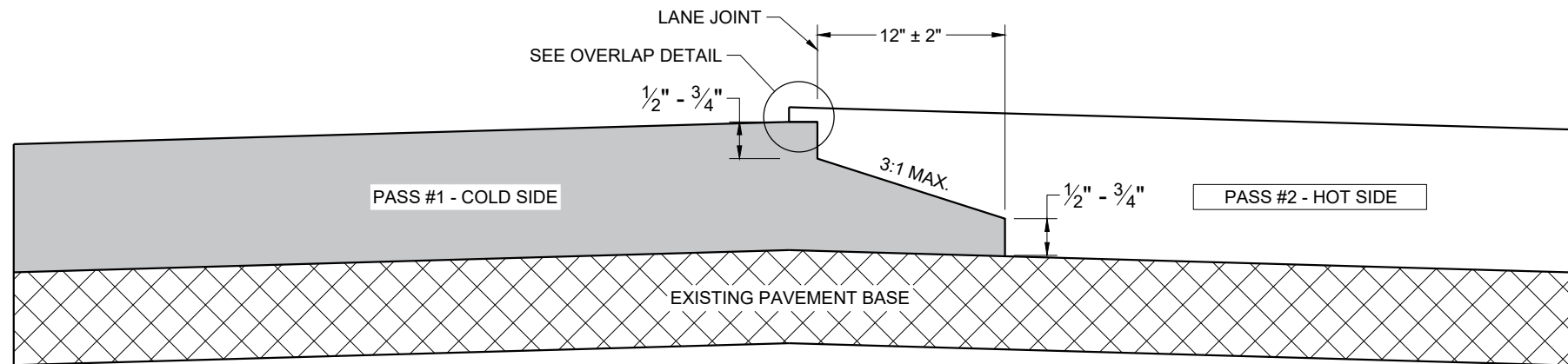


ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

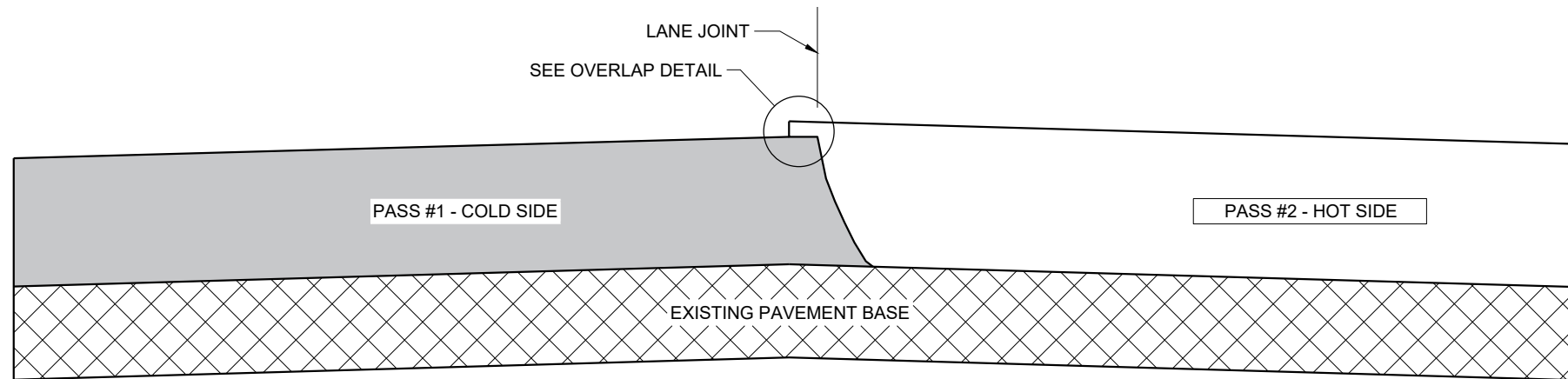
**NAME PLATE
(STRUCTURES)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

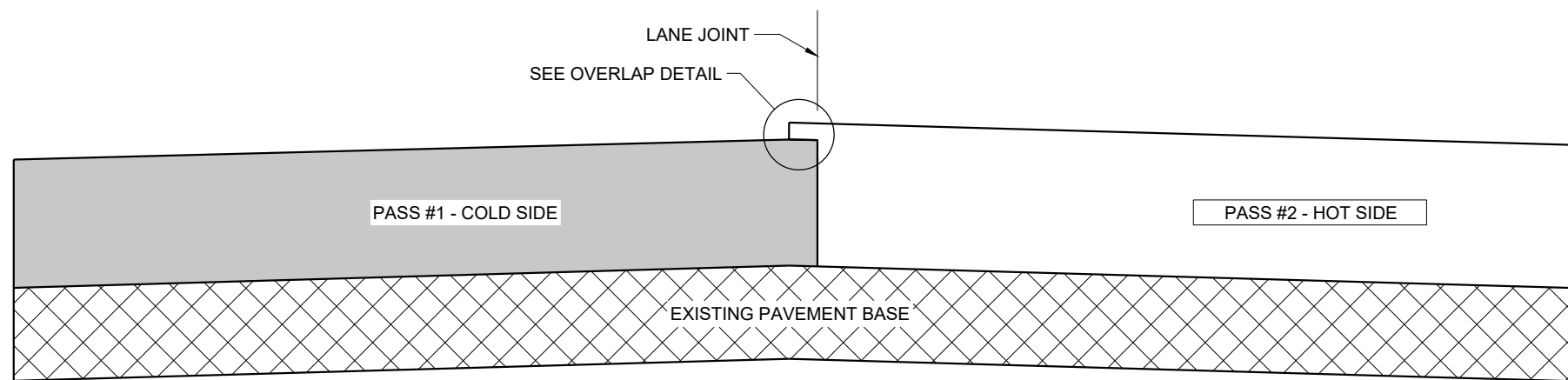
APPROVED
DATE 3/26/10 /S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA



**TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT**



**TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT**



**TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)**

GENERAL NOTES

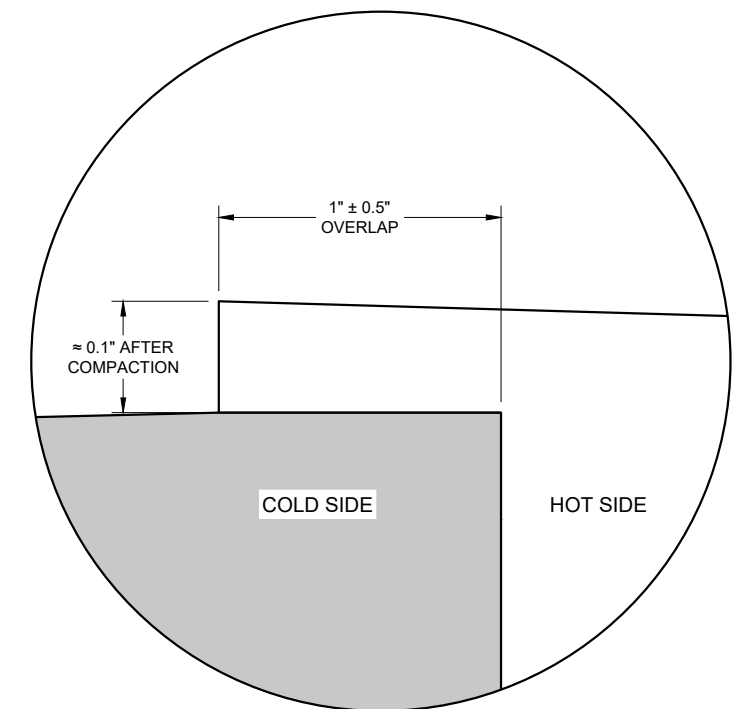
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

FOR ALL LONGITUDINAL JOINTS, ENSURE THE PAVER SCREED OVERLAPS THE PREVIOUSLY PLACED PAVEMENT BY $1" \pm 0.5"$ AND THE HOT SIDE OF THE JOINT REMAINS HIGHER THAN THE COLD SIDE BY APPROXIMATELY $0.1"$ AFTER FINAL COMPACTION. (IT WILL BE FLUSH WHEN PAVING IN ECHELON.)

ONLY REMOVE THE LONGITUDINAL NOTCHED WEDGE JOINT FOR SMA PAVEMENT OR AS DIRECTED BY THE ENGINEER TO ADDRESS SPECIFIC LENGTHS OF JOINT DAMAGED BY TRAFFIC.

WHEN MILLING BACK OR REMOVING ANY LONGITUDINAL JOINT, LIMIT THE MATERIAL REMOVED TO $2"$ FROM THE TOP NOTCH OR FROM THE VERTICAL JOINT EDGE ON THE COLD SIDE OF THE JOINT.

USE LONGITUDINAL MILLED JOINT AS PLANS SHOW OR THE AS THE ENGINEER DIRECTS.



OVERLAP DETAIL (TYPICAL)

6

6

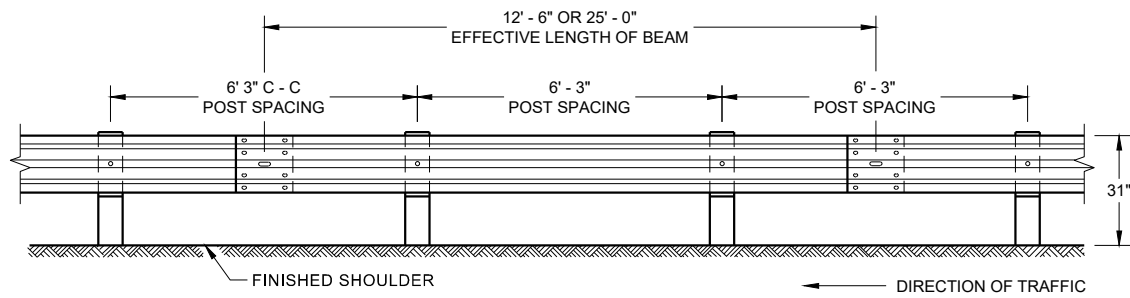
SDD 13C19 - 03

SDD 13C19 - 03

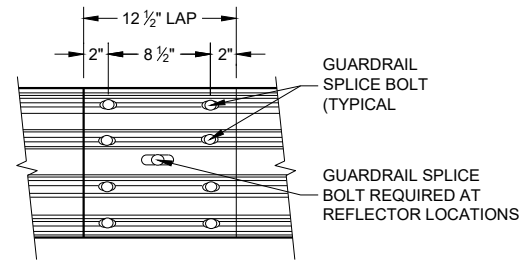
HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020 DATE /S/ Steven Hefel
HMA PAVEMENT ENGINEER
FHWA



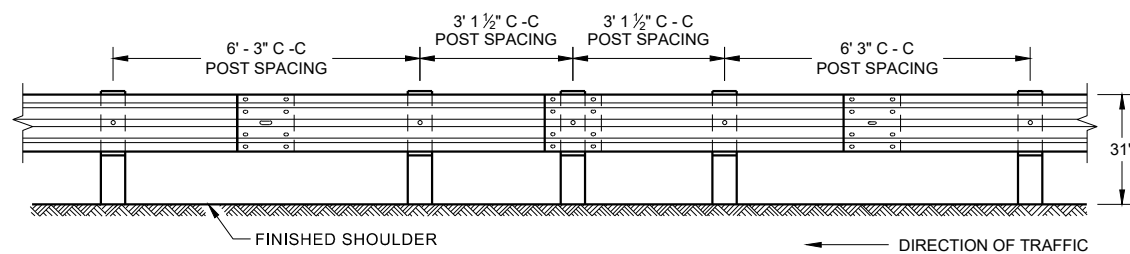
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



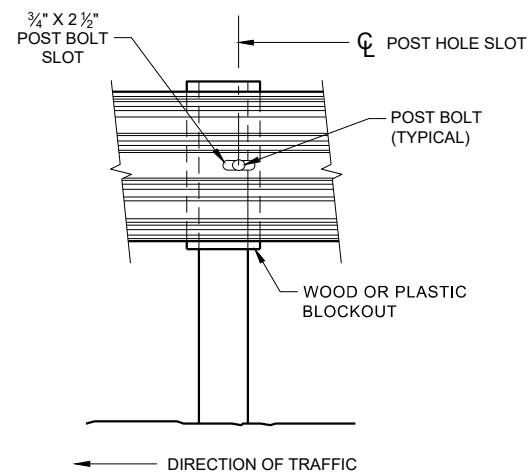
**FRONT VIEW
MID-SPAN BEAM SPLICE**

GENERAL NOTES

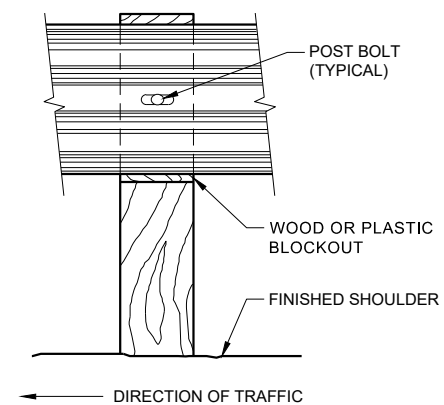
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
 - ⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER 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.



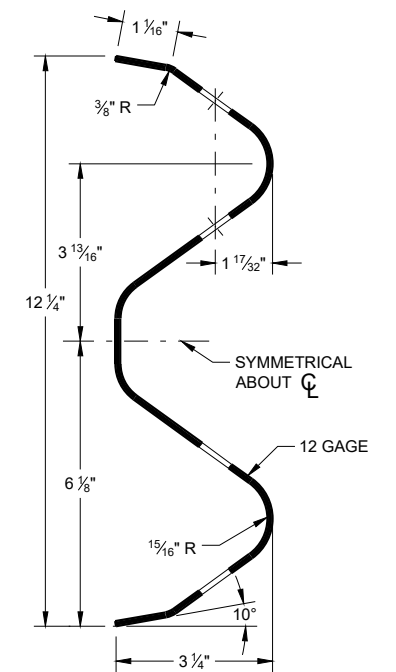
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



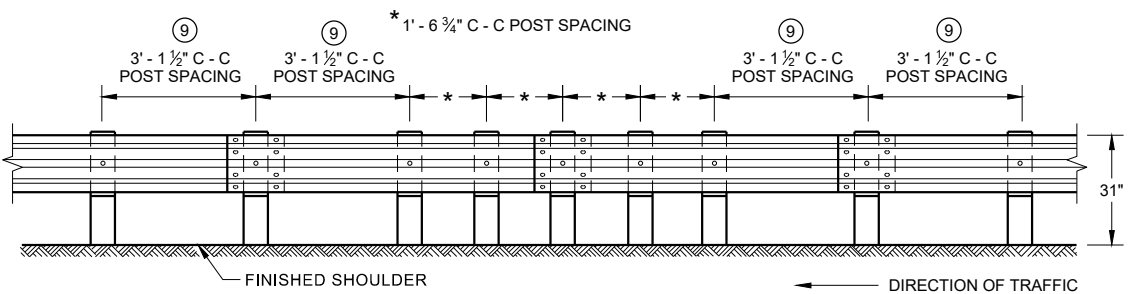
FRONT VIEW AT STEEL POST



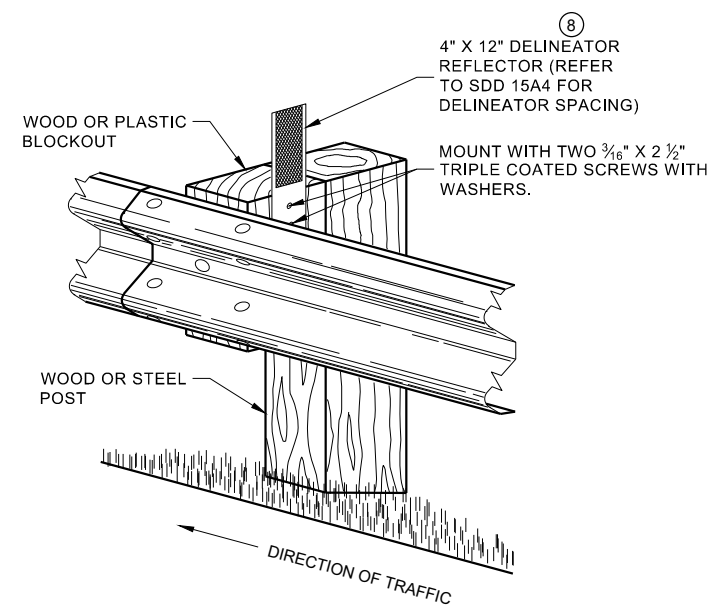
FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



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



**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

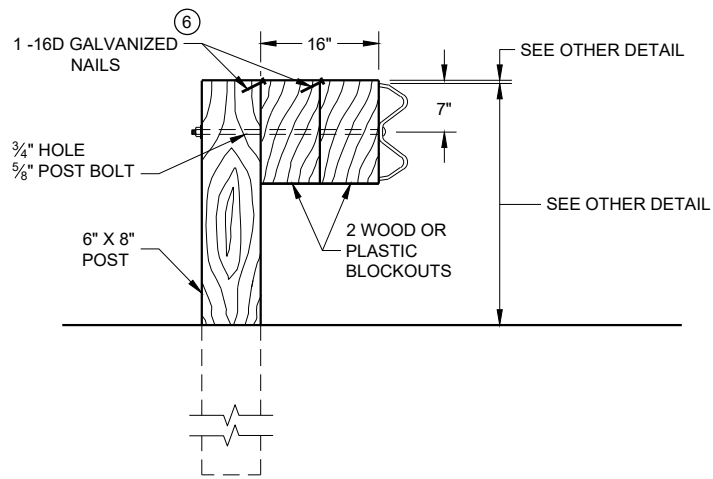
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

6

SDD 14B42 - 07b

SDD 14B42 - 07b

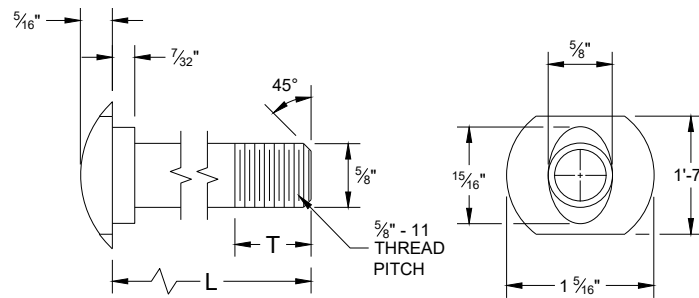


DETAIL FOR 16" BLOCKOUT DEPTH

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.

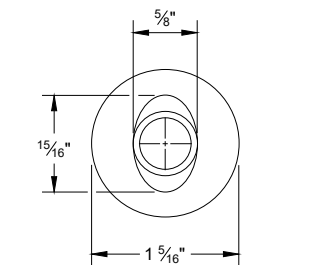
NOTE:

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.

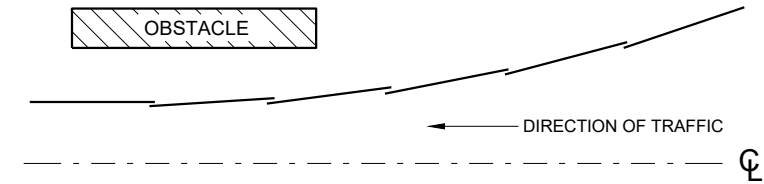


POST BOLT TABLE

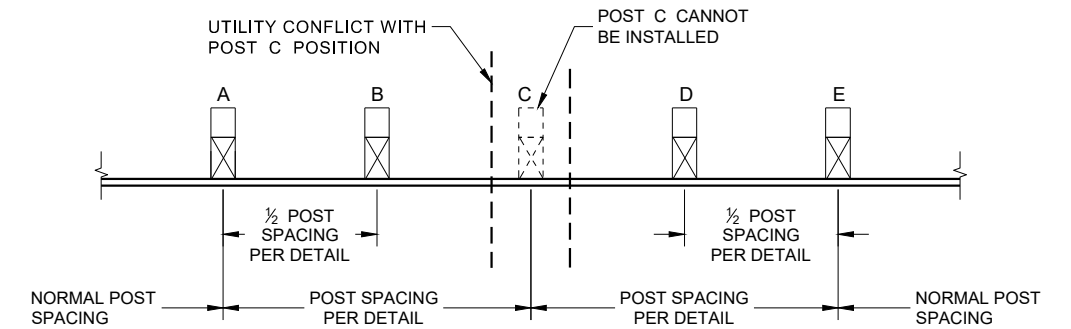
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



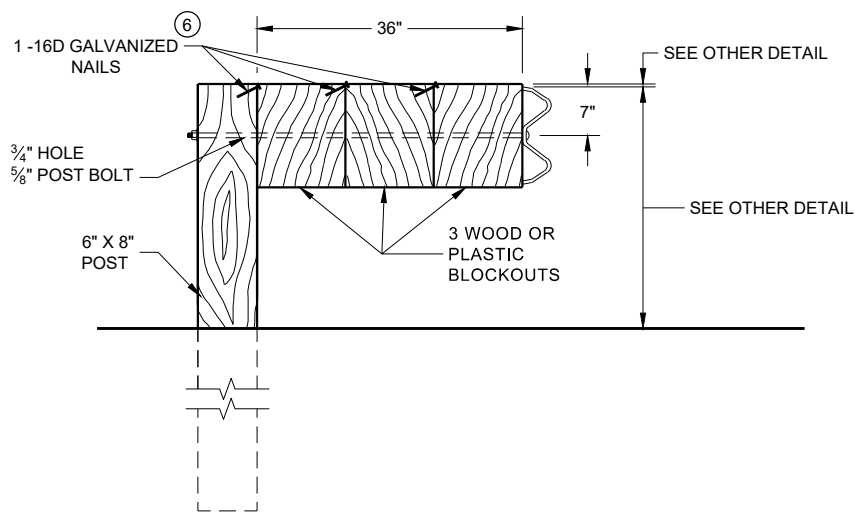
ALTERNATE BOLT HEAD



**PLAN VIEW
BEAM LAPPING DETAIL**

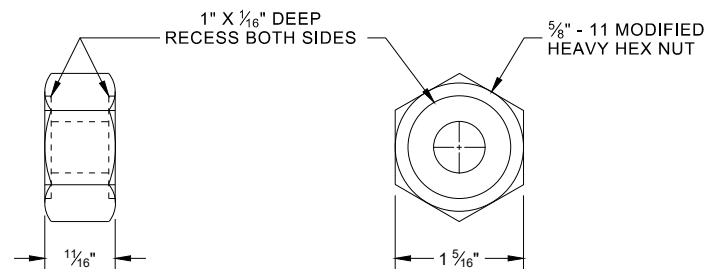


**POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION**

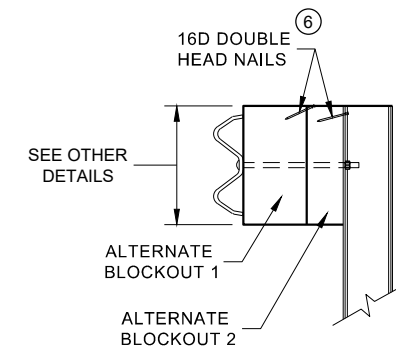


DETAIL FOR 36" BLOCKOUT DEPTH

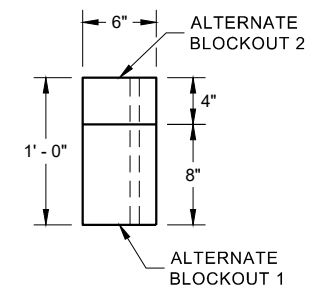
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.



**POST BOLT, SPLICE BOLT
AND RECESS NUT**



SIDE VIEW



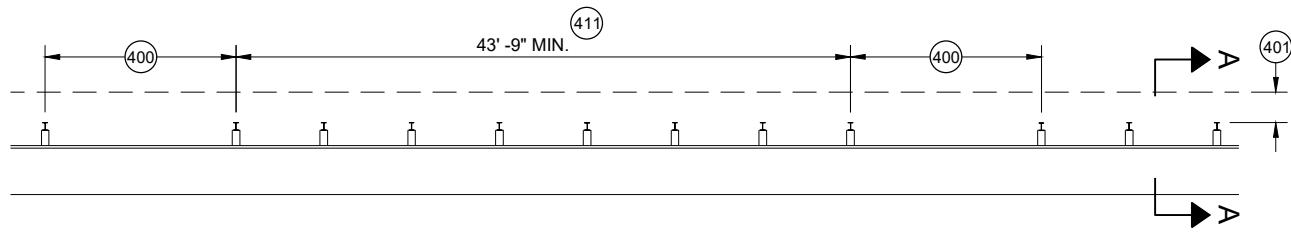
PLAN VIEW

**ALTERNATE WOOD
BLOCKOUT DETAIL**

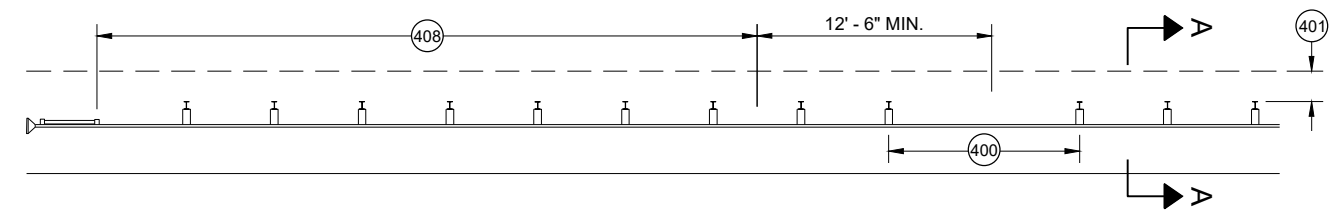
6 WHEN USING STEEL POST AND WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

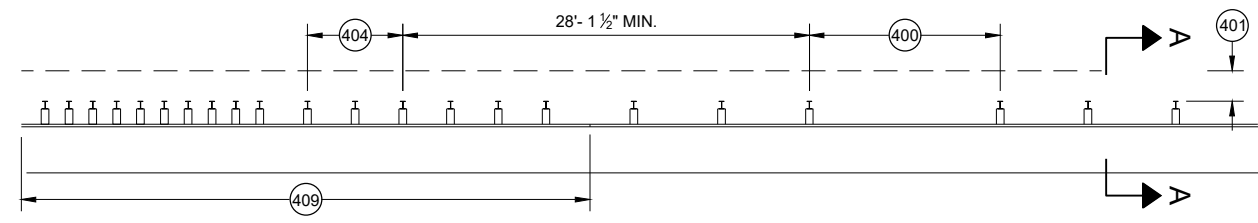
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



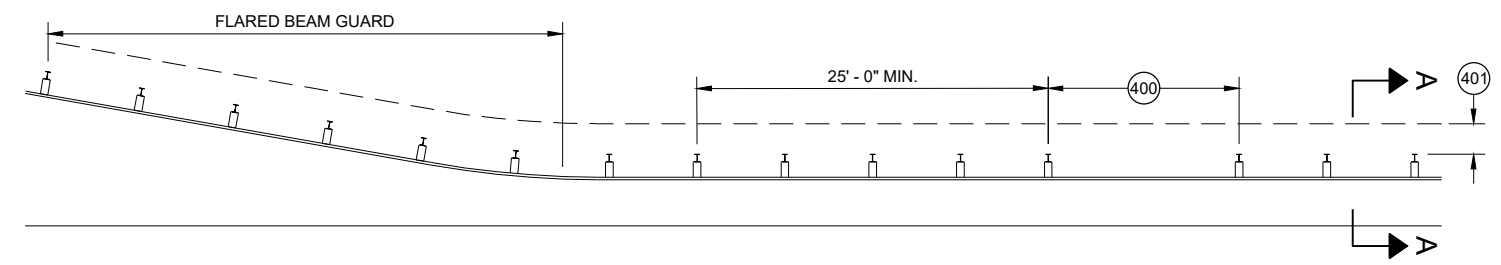
MISSING POST IN MGS GUARDRAIL



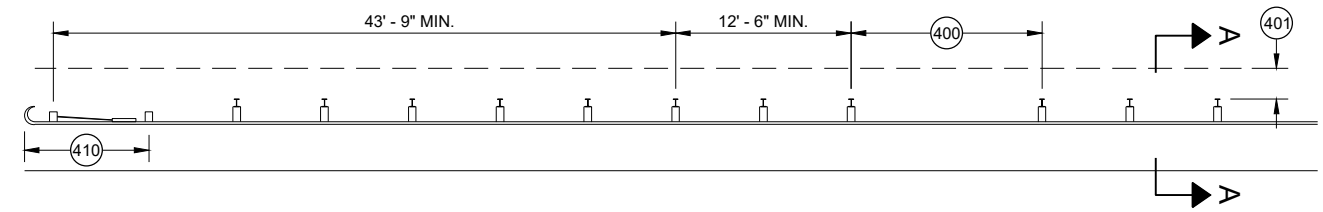
MISSING POST IN MGS GUARDRAIL NEAR EAT



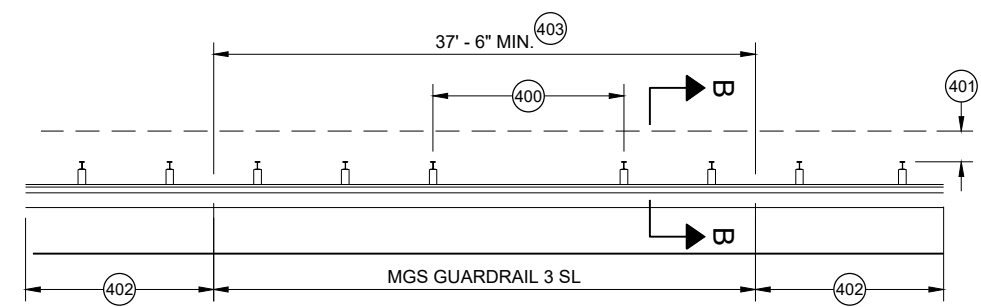
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

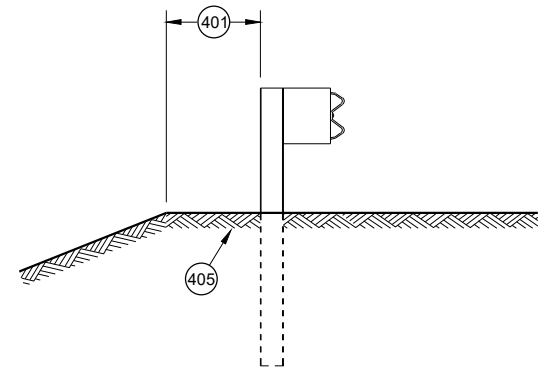


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

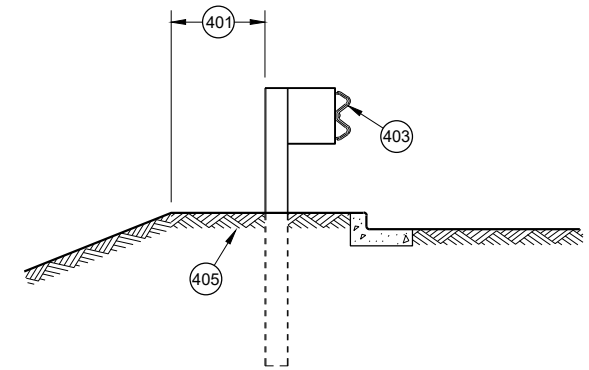


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

- 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.

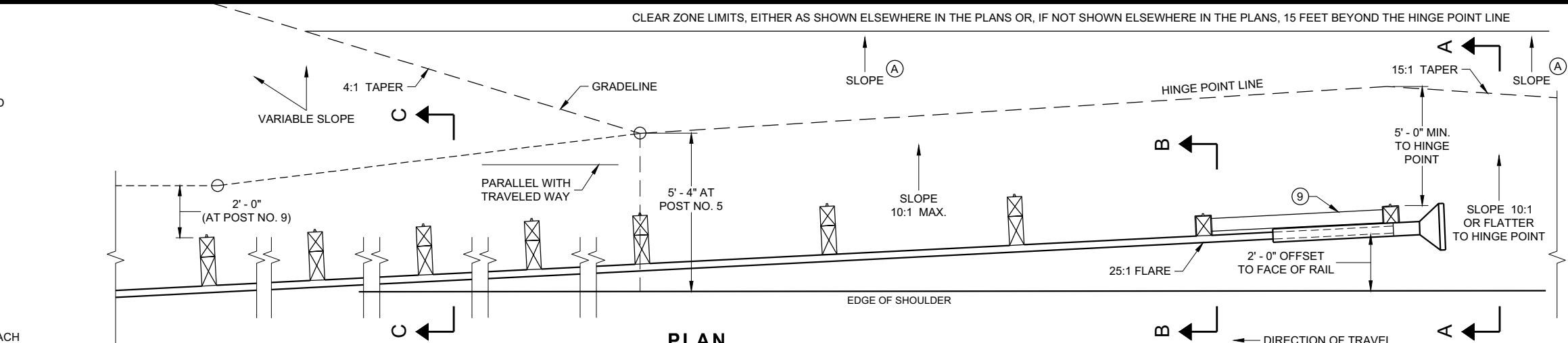
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

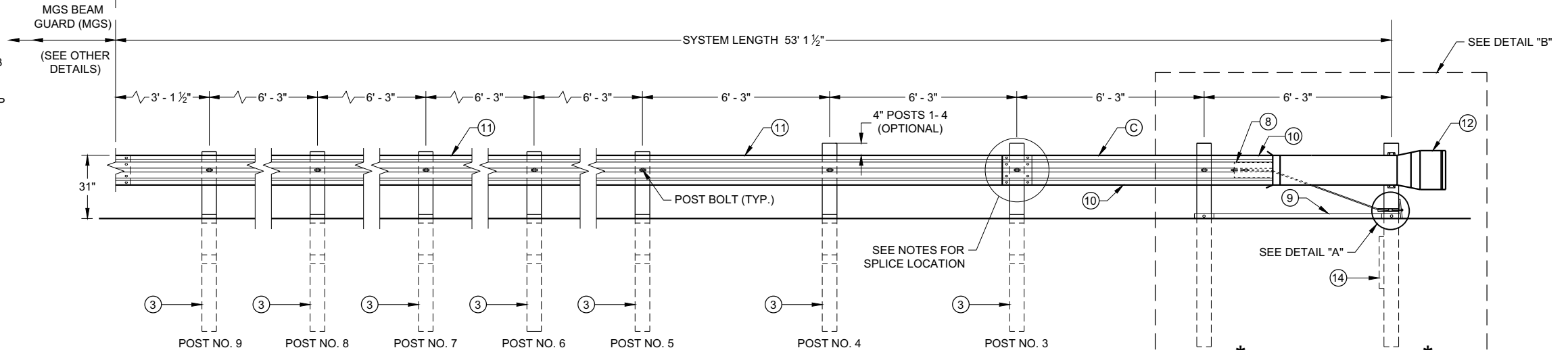
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

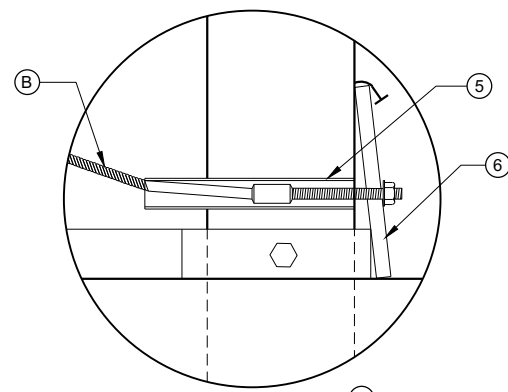
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



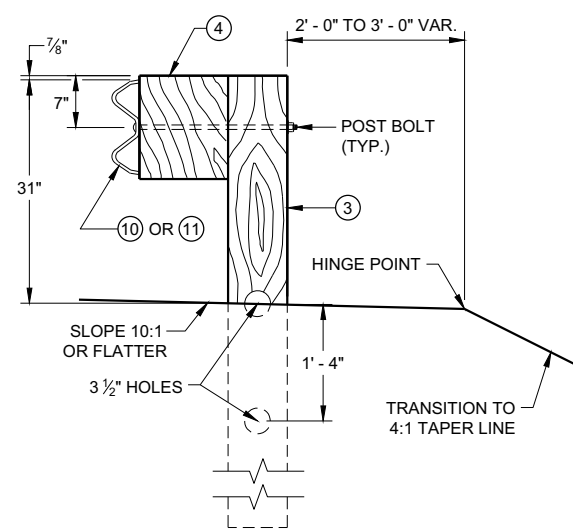
PLAN



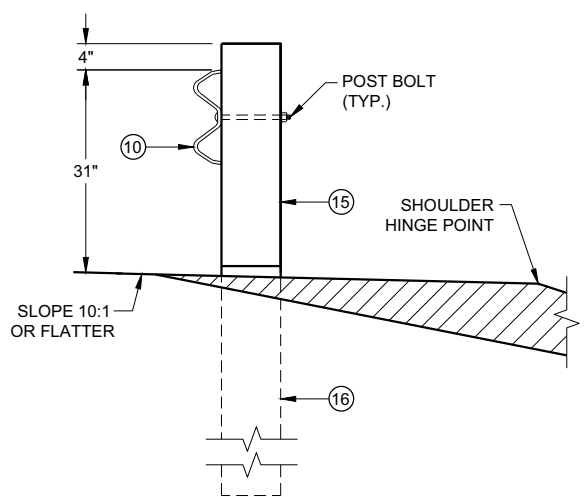
ELEVATION



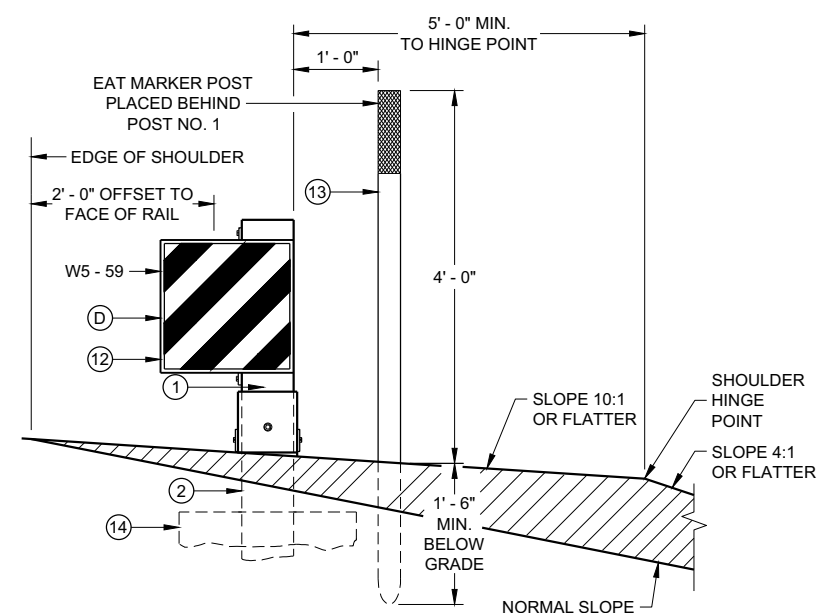
DETAIL "A"



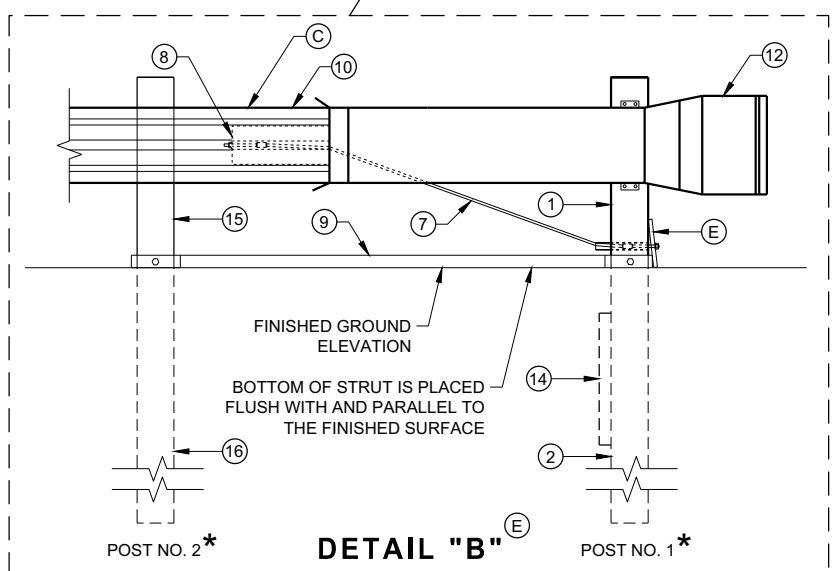
**SECTION C - C
TYPICAL AT POST NOS. 3 - 9**



**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

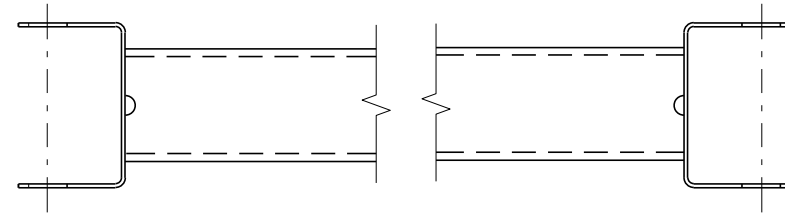
6

SDD 14B44 - 04a

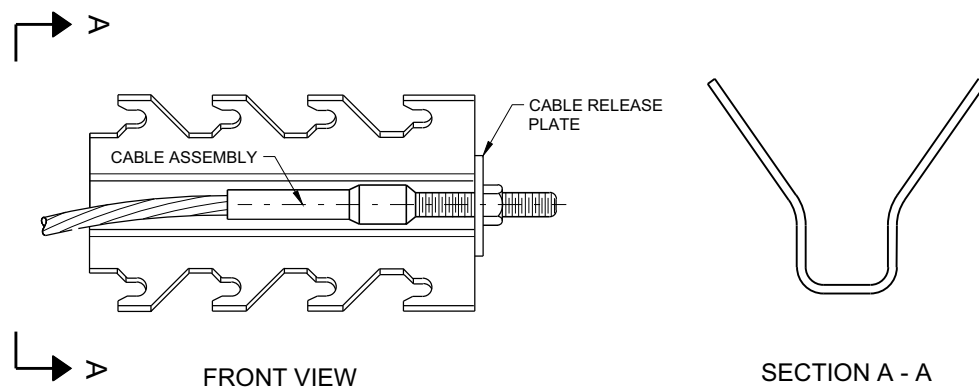
SDD 14B44 - 04a

BILL OF MATERIALS

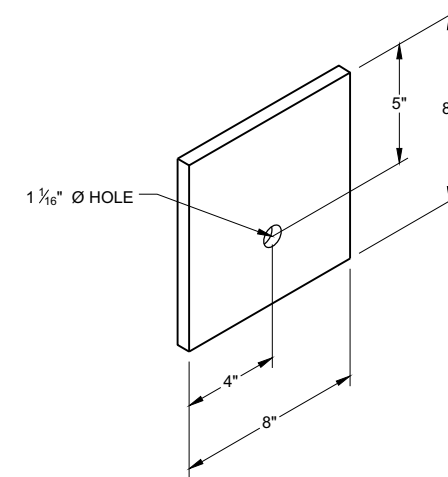
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL 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



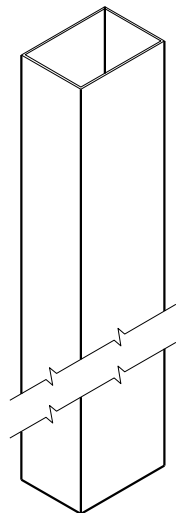
GENERIC ANCHOR CABLE BOX ⑨ ⑤



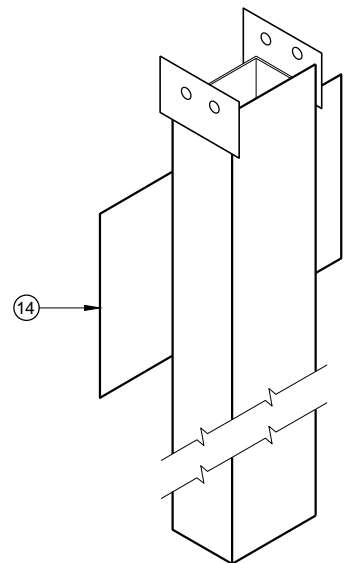
BEARING PLATE ⑥ ⑤

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

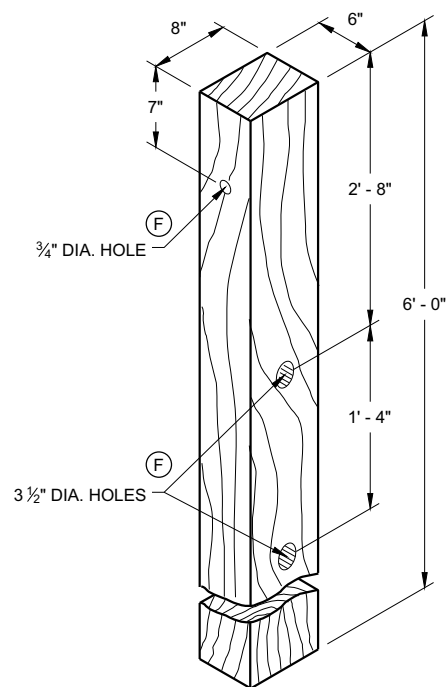
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



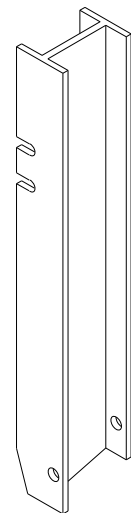
UPPER POST NO. 1 ⁽¹⁾ (E)



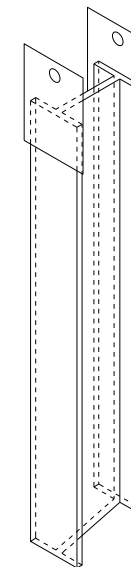
LOWER POST NO. 1 ⁽²⁾ (E)



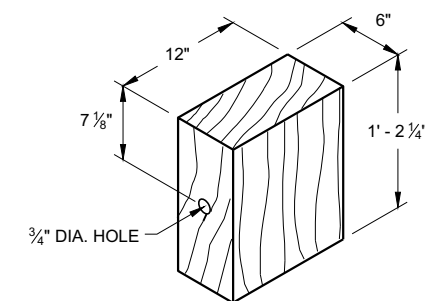
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



UPPER POST NO. 2 ⁽¹⁵⁾ (E)

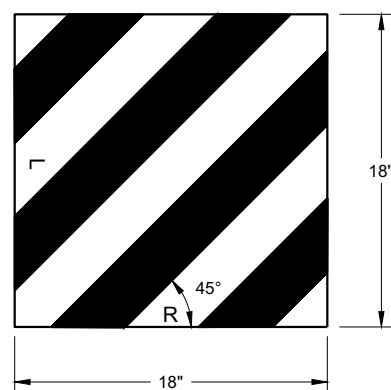


LOWER POST NO. 2 ⁽¹⁶⁾ (E)



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

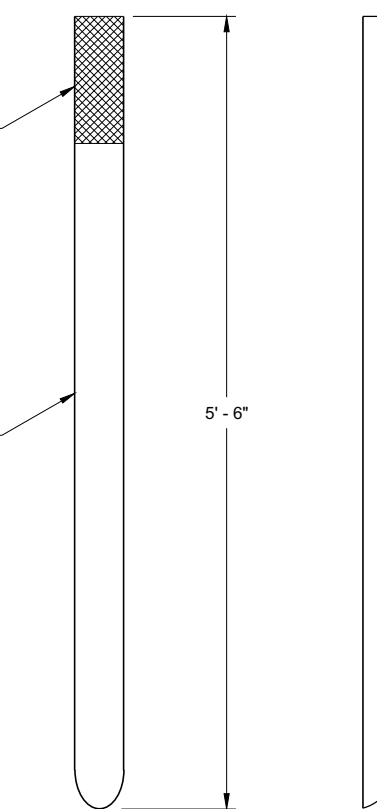
6



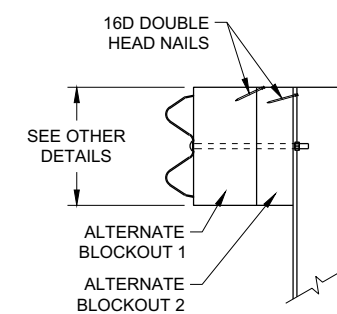
W5 - 59
REFLECTIVE SHEETING DETAIL ^(E)

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

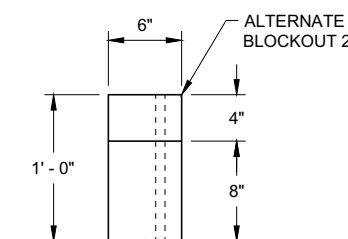
E.A.T. MARKER
POST (YELLOW)



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



SIDE VIEW



TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

6

SDD 14B44 - 04c

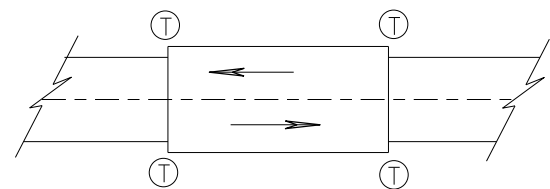
SDD 14B44 - 04c

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

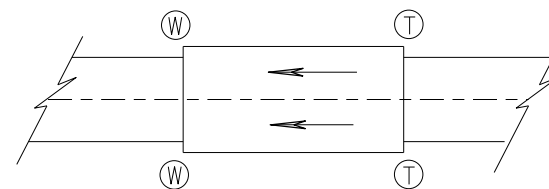
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

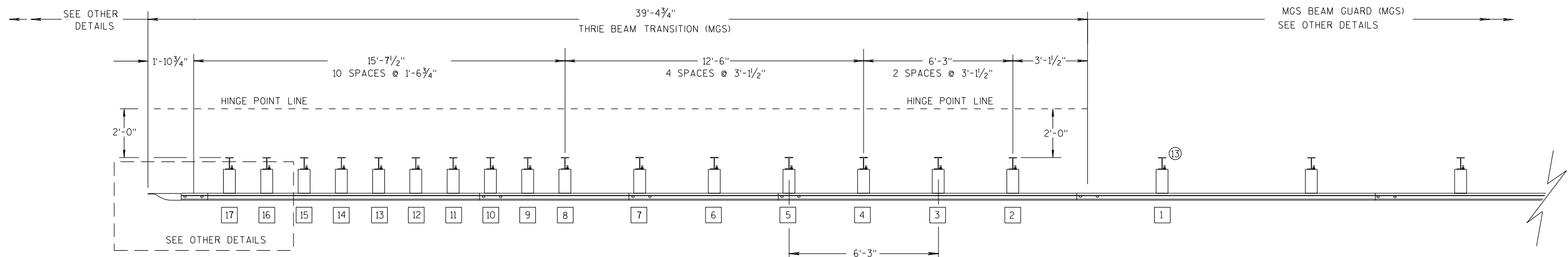
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

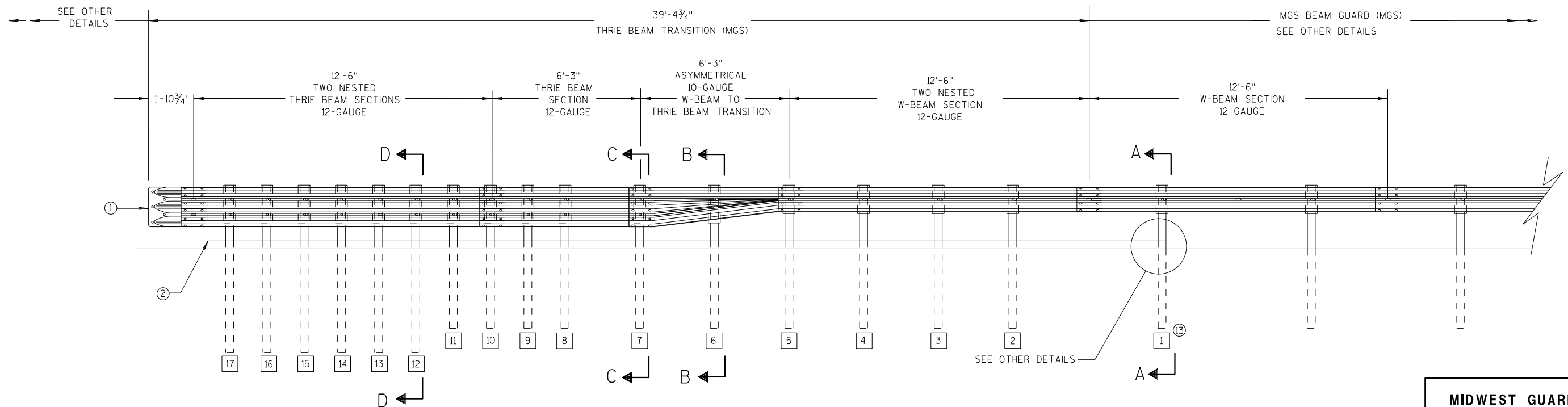
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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

6

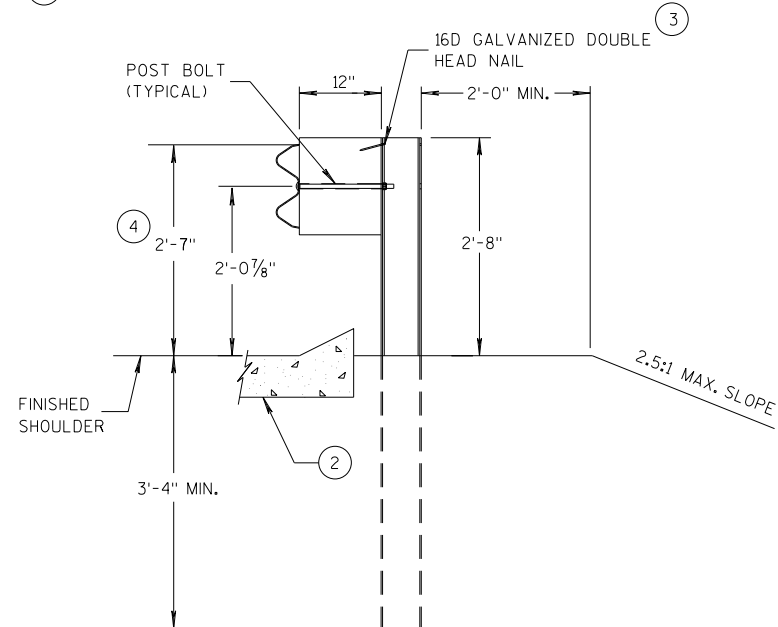
6

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

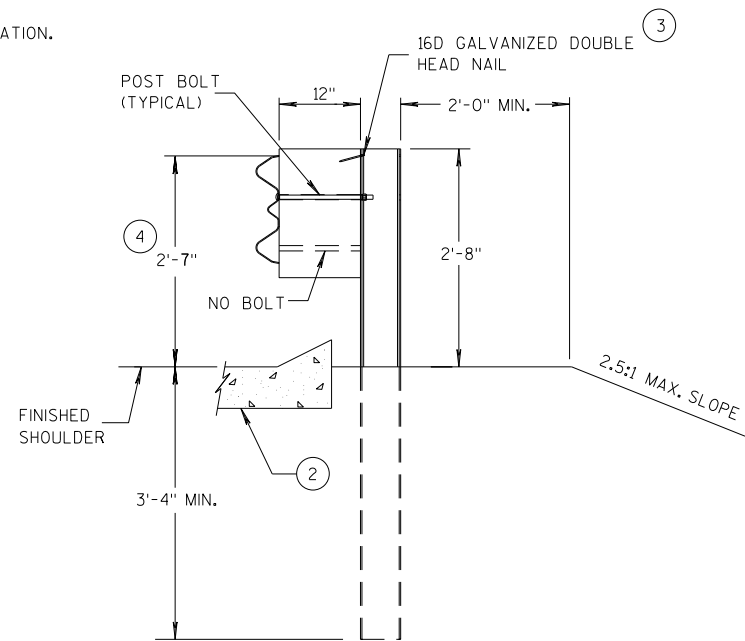
S.D.D. 14 B 45-5a

GENERAL NOTES

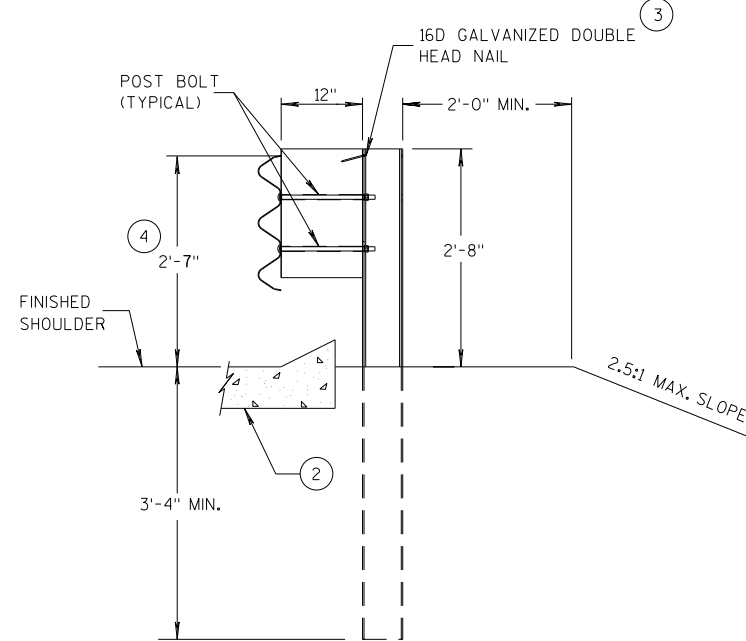
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ④ TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".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

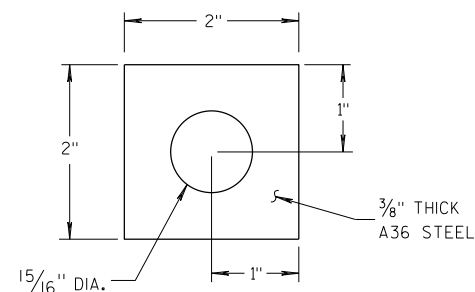
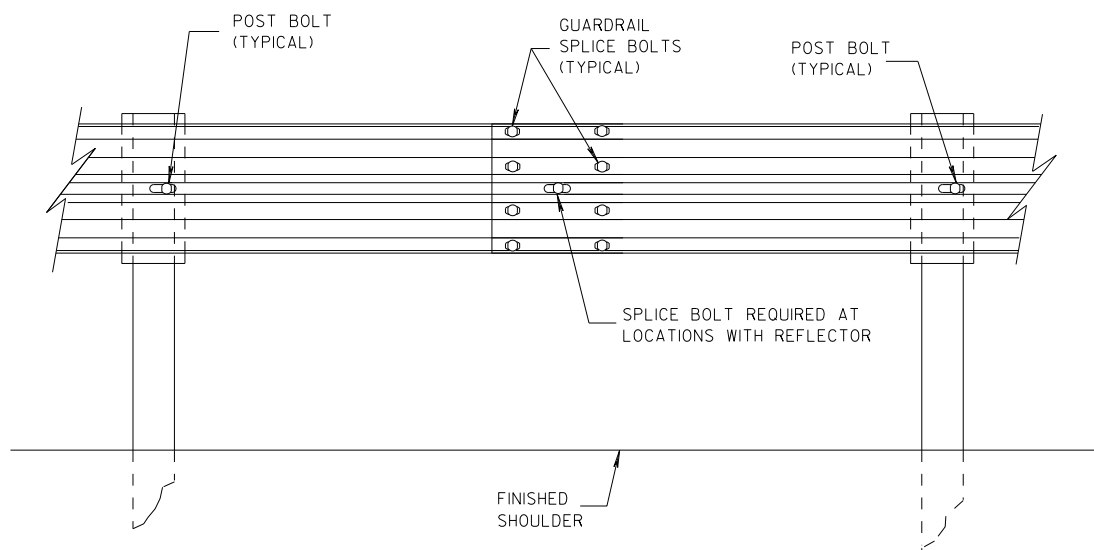
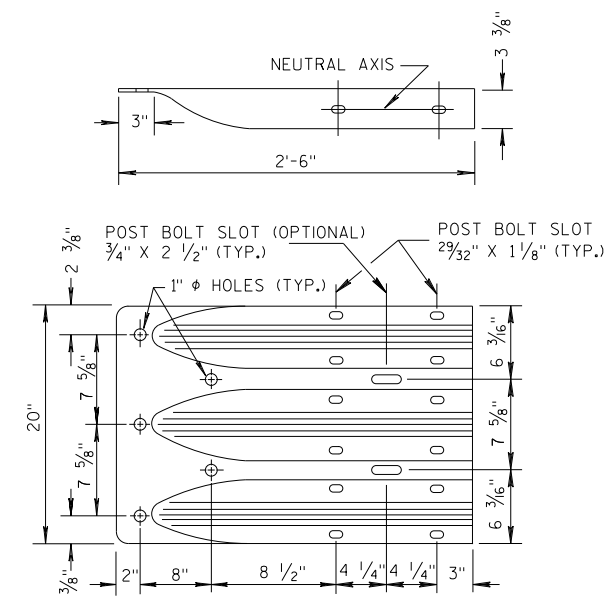


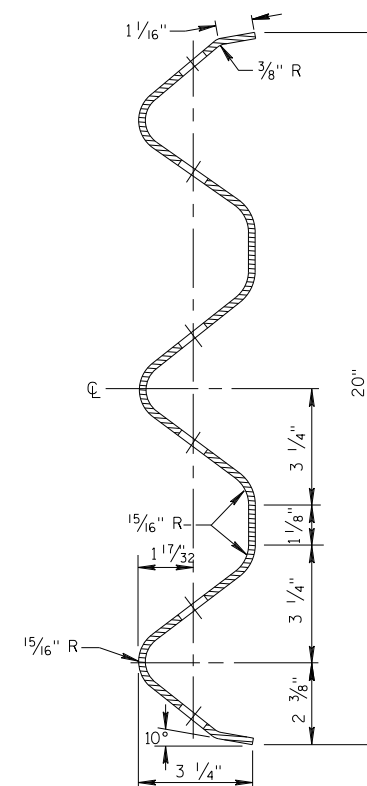
PLATE WASHER DETAIL



SPLICE DETAIL



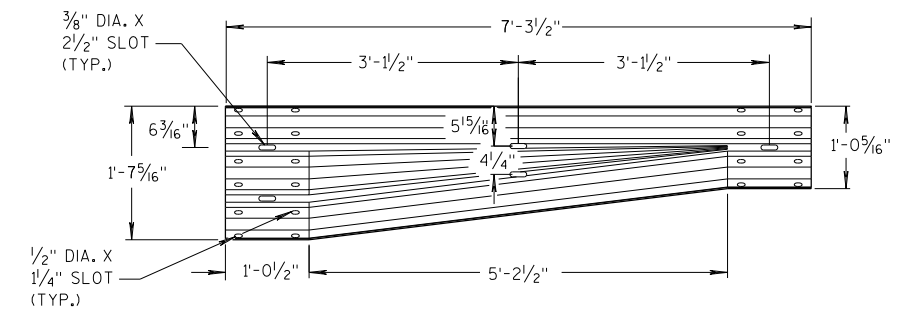
**THRIE BEAM
TERMINAL CONNECTOR**



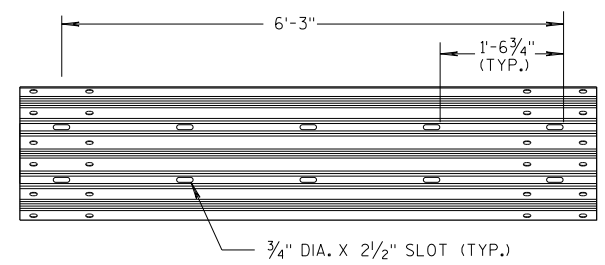
**SECTION THRU THRIE
BEAM RAIL ELEMENT**

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

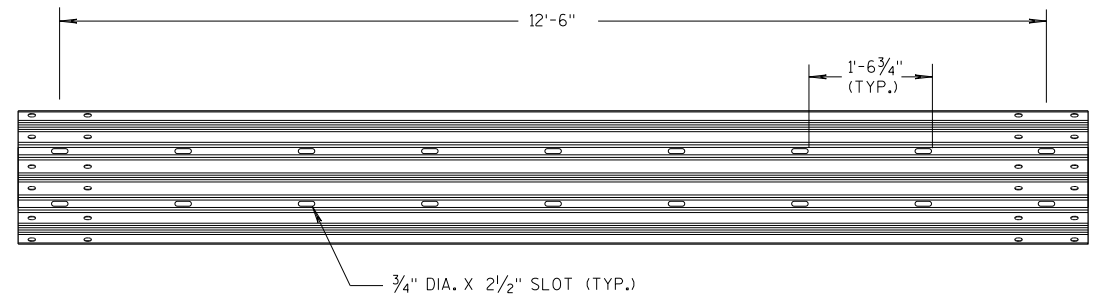
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



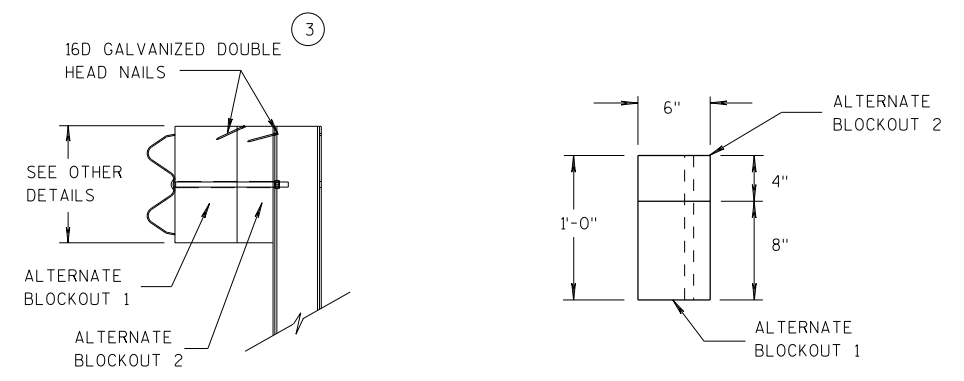
W-BEAM TO THRIE BEAM TRANSITION SECTION



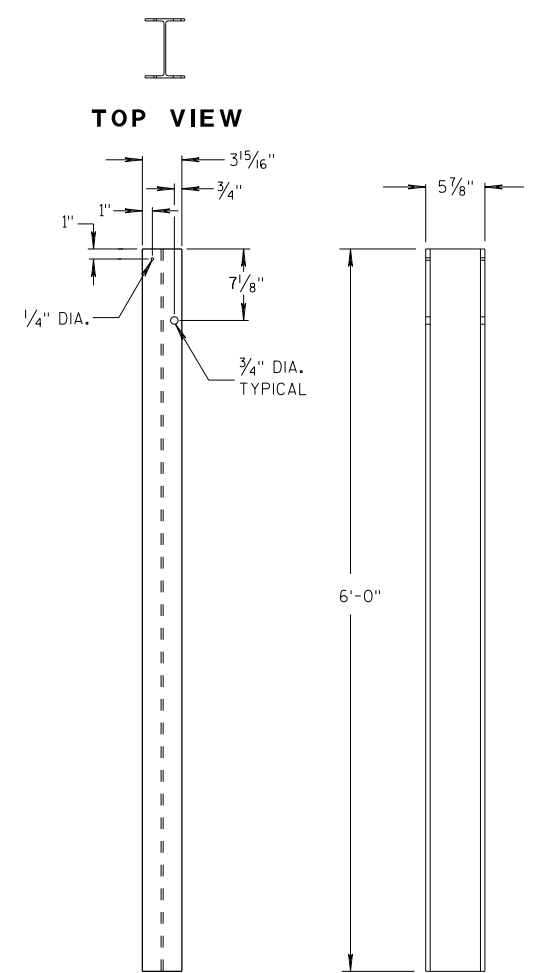
6'-3\"/>



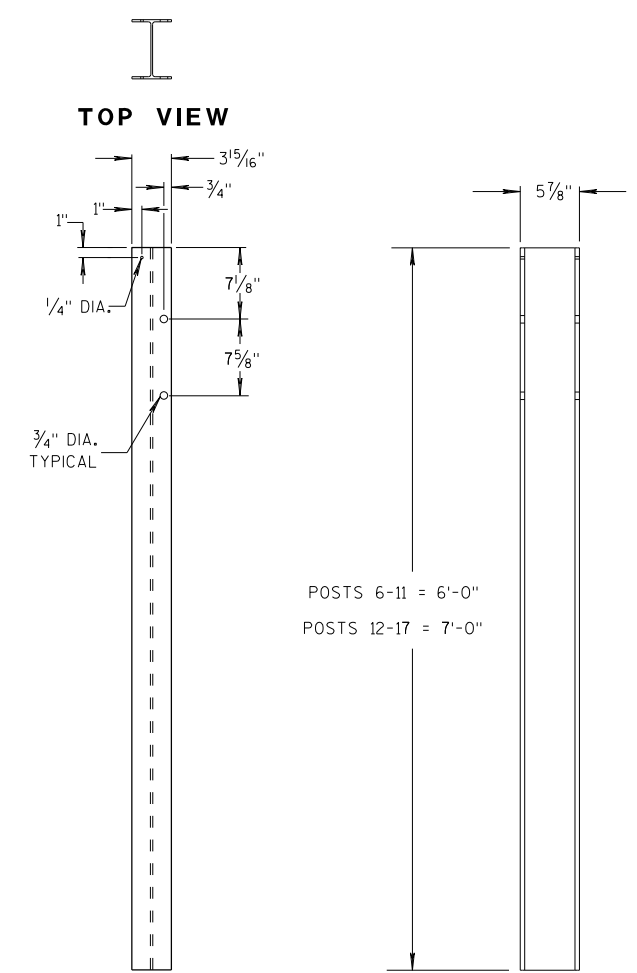
12'-6\"/>



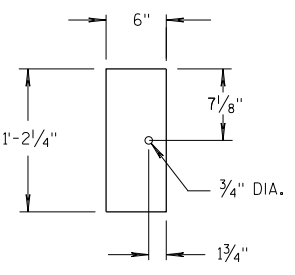
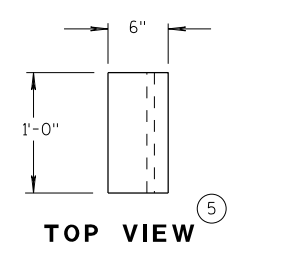
ALTERNATE WOOD BLOCKOUT DETAIL



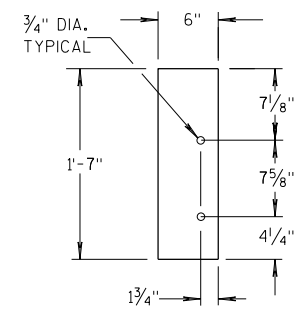
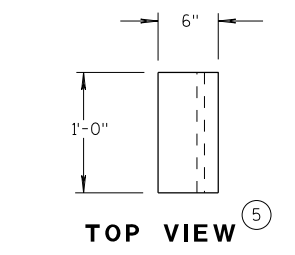
STEEL POSTS 1-5



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

6

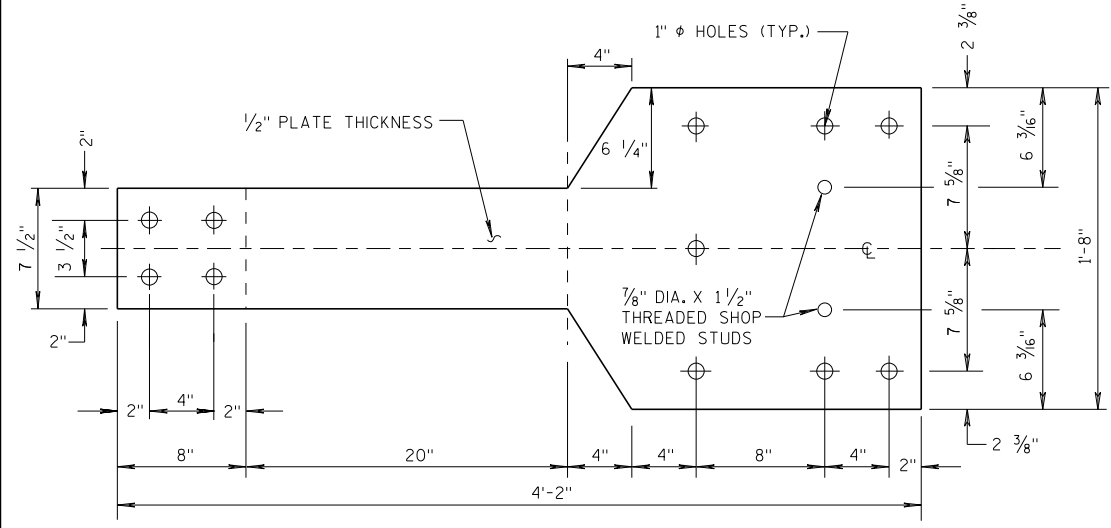
6

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

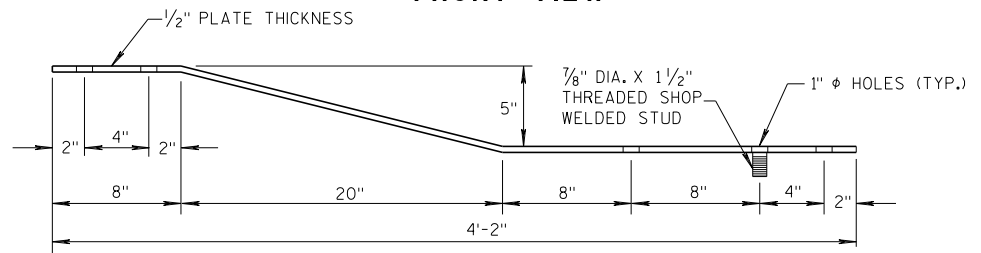
S.D.D. 14 B 45-5c

GENERAL NOTES

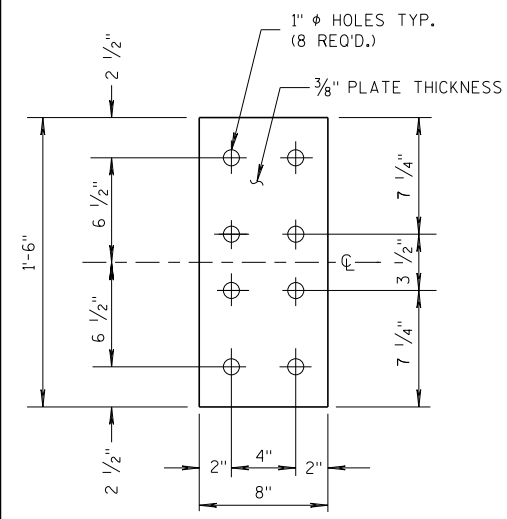
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



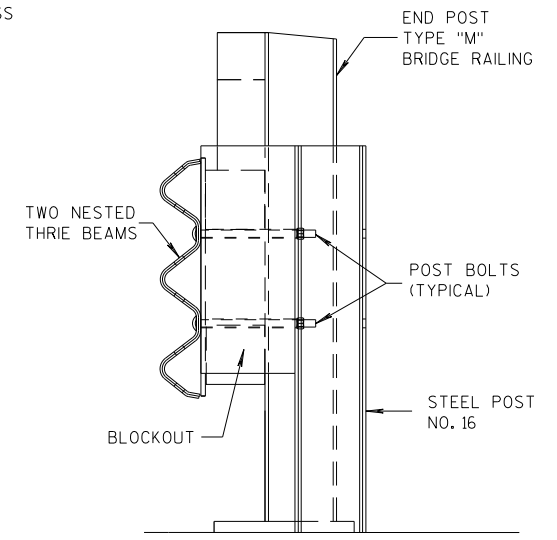
FRONT VIEW



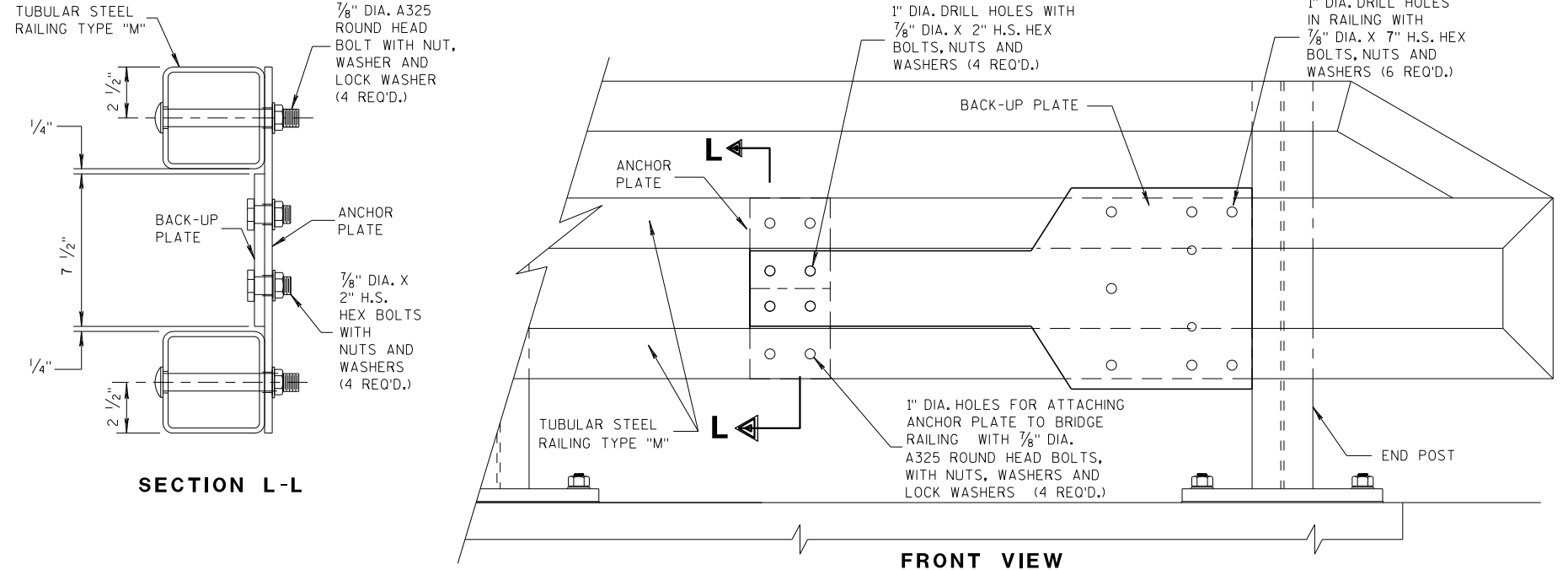
**PLAN VIEW
BACK-UP PLATE DETAIL, TYPE "M"**



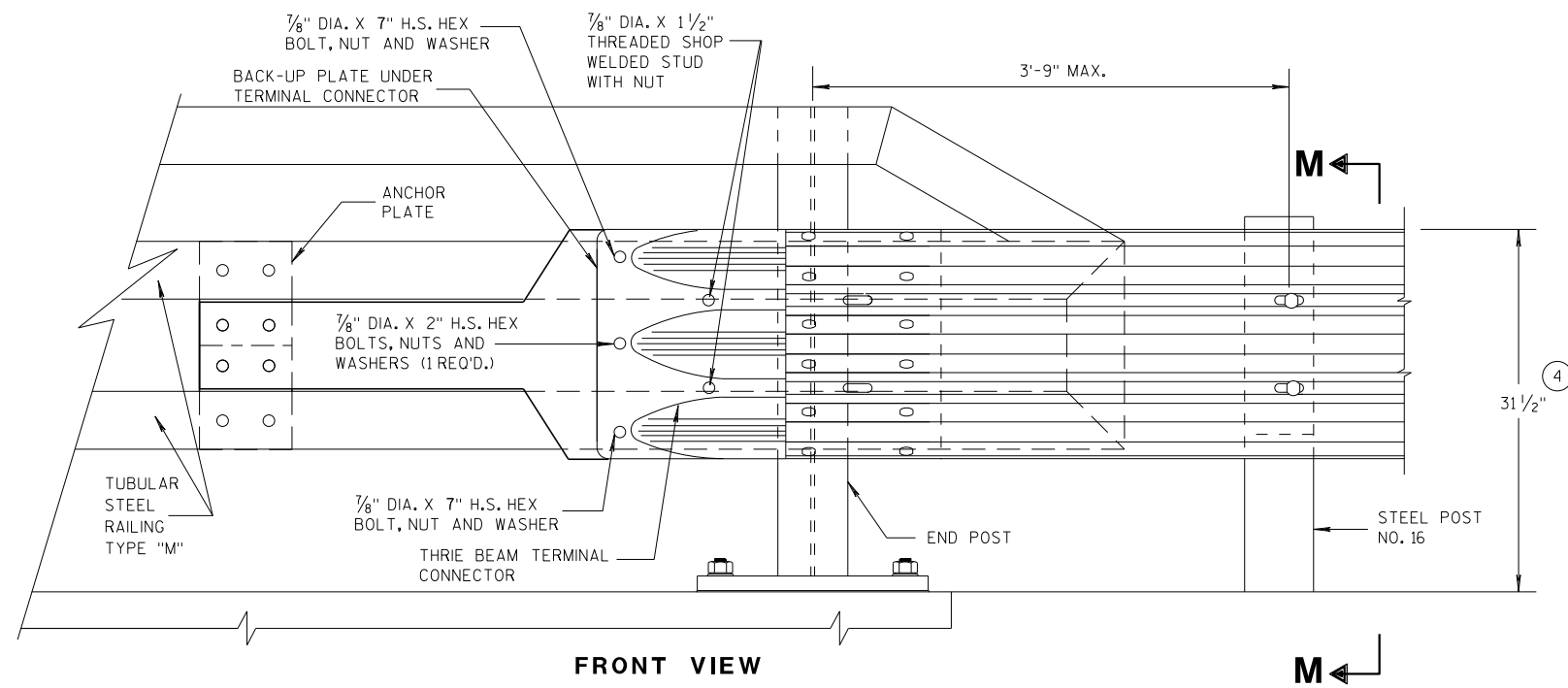
**FRONT VIEW
ANCHOR PLATE DETAIL, TYPE "M"**



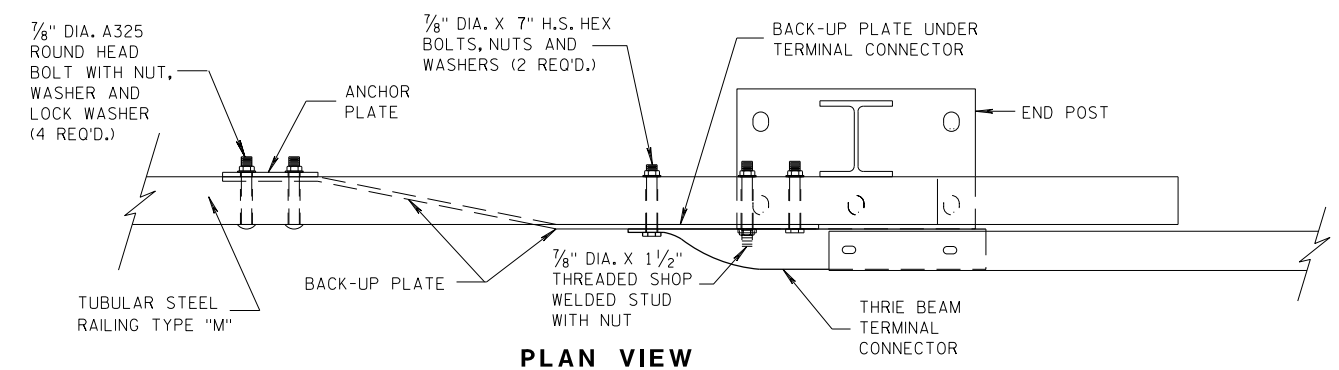
SECTION M-M



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



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

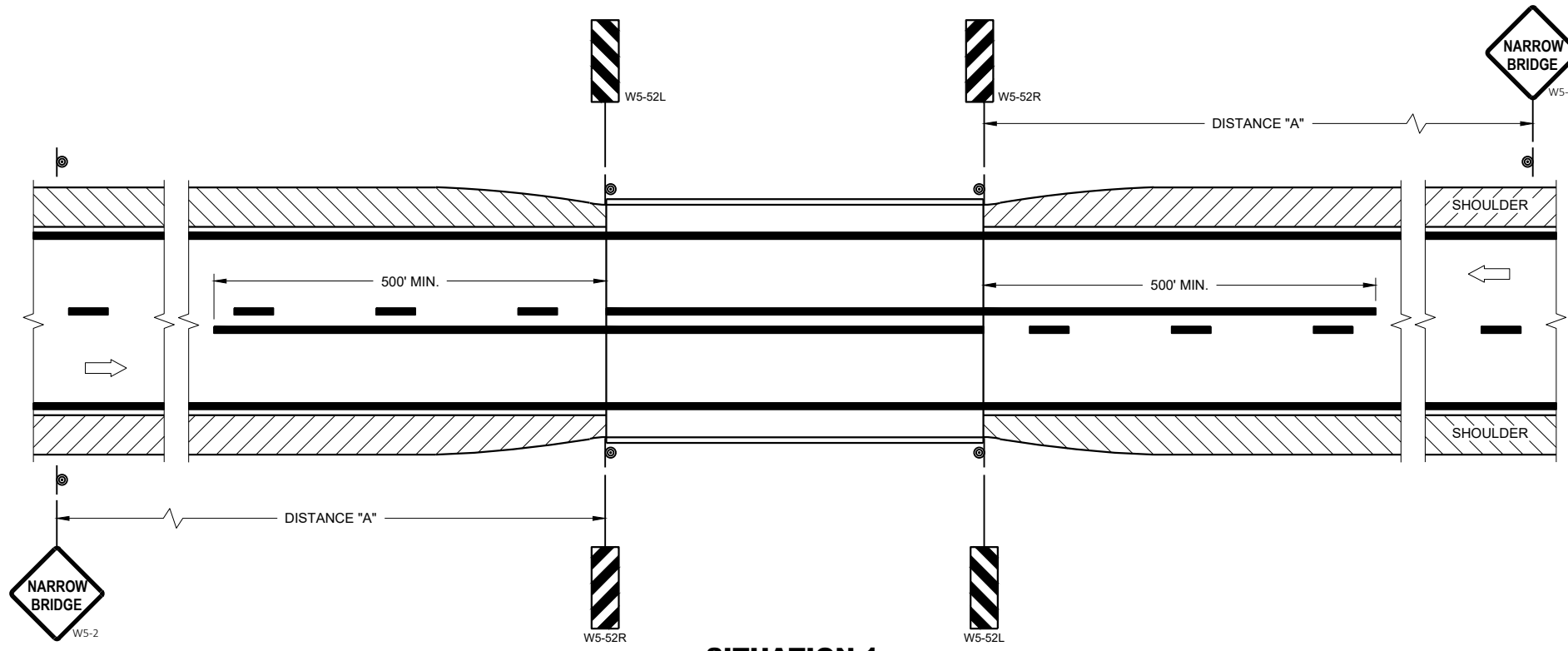
6

6

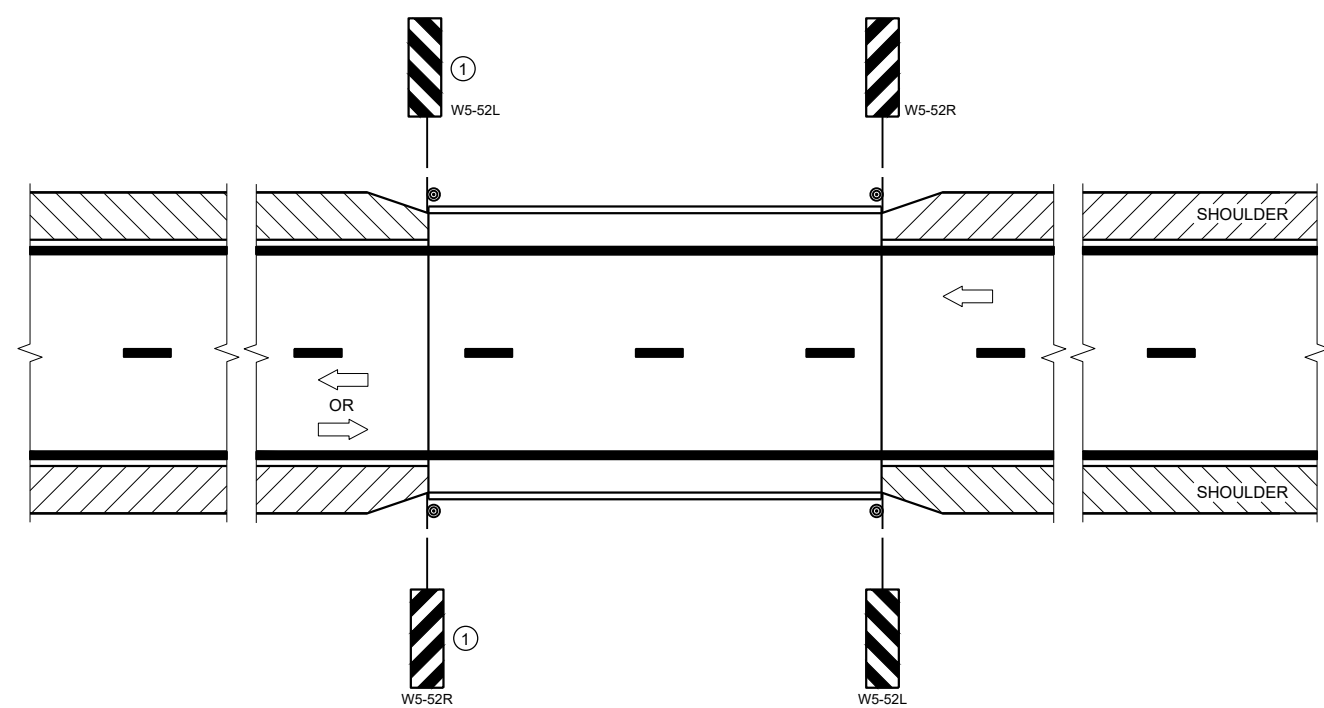
S.D.D. 14 B 45-5h

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

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



SITUATION 1
 WARRANTING CRITERIA:
 BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET.



SITUATION 2
 WARRANTING CRITERIA:
 1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
 2. BRIDGE SHOULDER WIDTH IS LESS THAN 6 FEET

GENERAL NOTES

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

LOCATE W5-52 SIGN POST(S) BEHIND GUARDRAIL WHEN PRESENT.

PLACE THE EDGE OF THE W5-52 SIGN IN LINE WITH FACE OF CURB OR PARAPET.

ON BRIDGE ONLY PROJECTS, PLACE 300 FEET OF EDGELINE.

OMIT EDGELINES ON ROADWAYS WITHOUT EXISTING EDGELINES.

① OMIT ON ONE-WAY TRAVELED WAYS.

LEGEND

- ⊙ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC

DISTANCE TABLE

POSTED OR 85TH PERCENTILE SPEED	DISTANCE "A"
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	700'

SIGNING AND MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

APPROVED
 May 2022 /S/ Jeannie Silver
 DATE STATE SIGNING AND MARKING ENGINEER




FHWA

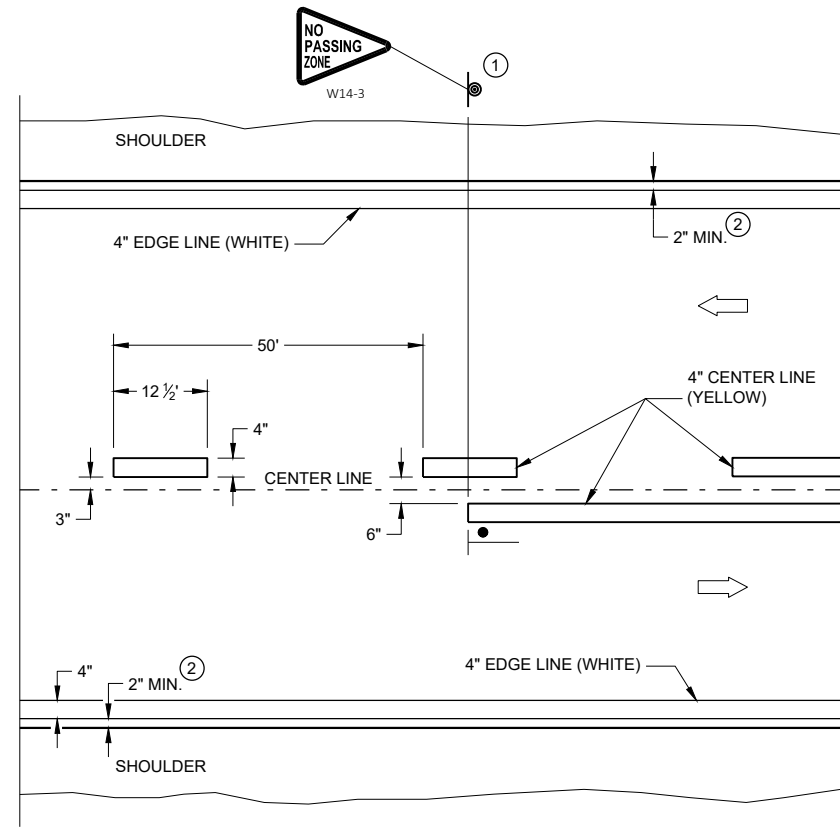
GENERAL NOTES

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

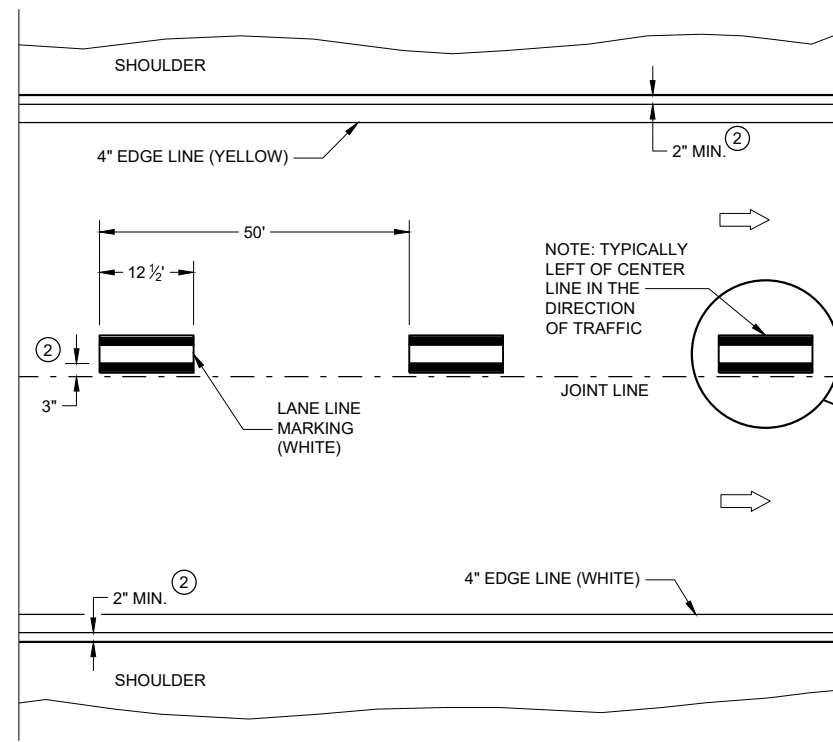
- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

-  "T" MARKING
-  SIGN ON PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC

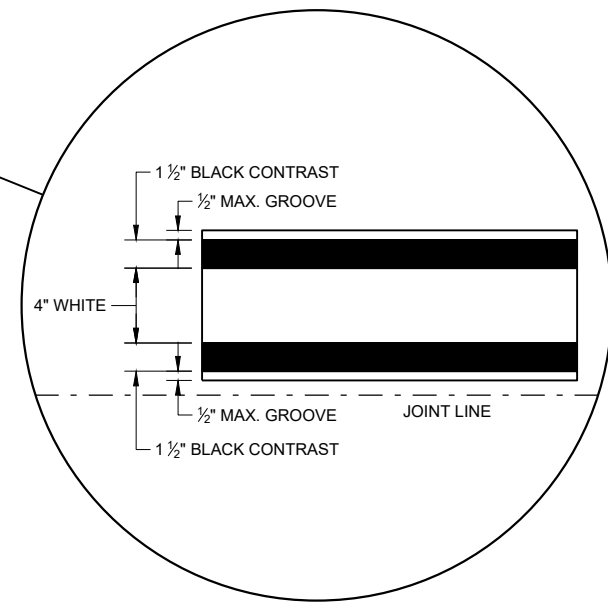


TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



PERMANENT LONGITUDINAL PAVEMENT MARKINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE: May 2022 /S/ Jeannie Silver
STATEWIDE SIGNING AND MARKING ENGINEER

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
 INVENTORY RATING: RF = 1.10
 OPERATING RATING: RF = 1.42
 WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV): 250 (KIPS)

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

MATERIAL PROPERTIES:

CONCRETE MASONRY:
 SUPERSTRUCTURE $f'_c = 4,000$ PSI
 ALL OTHER $f'_c = 3,500$ PSI

BAR STEEL REINFORCEMENT
 GRADE 60 $f_y = 60,000$ PSI

TRAFFIC DATA

FEATURE ON:

ADT = 800 (2023)
 R.D.S. = 60 MPH

FOUNDATION DATA

ABUTMENTS AND PIER TO BE SUPPORTED ON PILING CIP CONCRETE 12 3/4 X 0.375-INCH DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 100 TONS ** PER PILE AT ABUTMENTS AND 210 TONS ** PER PILE AT PIER AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.

ESTIMATED 40'-0" LONG AT SOUTH ABUTMENT.
 ESTIMATED 65'-0" LONG AT PIER.
 ESTIMATED 45'-0" LONG AT NORTH ABUTMENT.

**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 PILE CAPACITY.

HYDRAULIC DATA

100-YEAR FREQUENCY:

$Q_{100} = 875$ C.F.S.
 $V_{100} = 3.43$ F.P.S.
 $HW_{100} = EL. 773.13$
 WATERWAY AREA = 255 SQ. FT.
 DRAINAGE AREA = 11.0 SQ. MI.
 ROADWAY OVERTOPPING = N/A
 SCOUR CRITICAL CODE = 5

2-YEAR FREQUENCY:

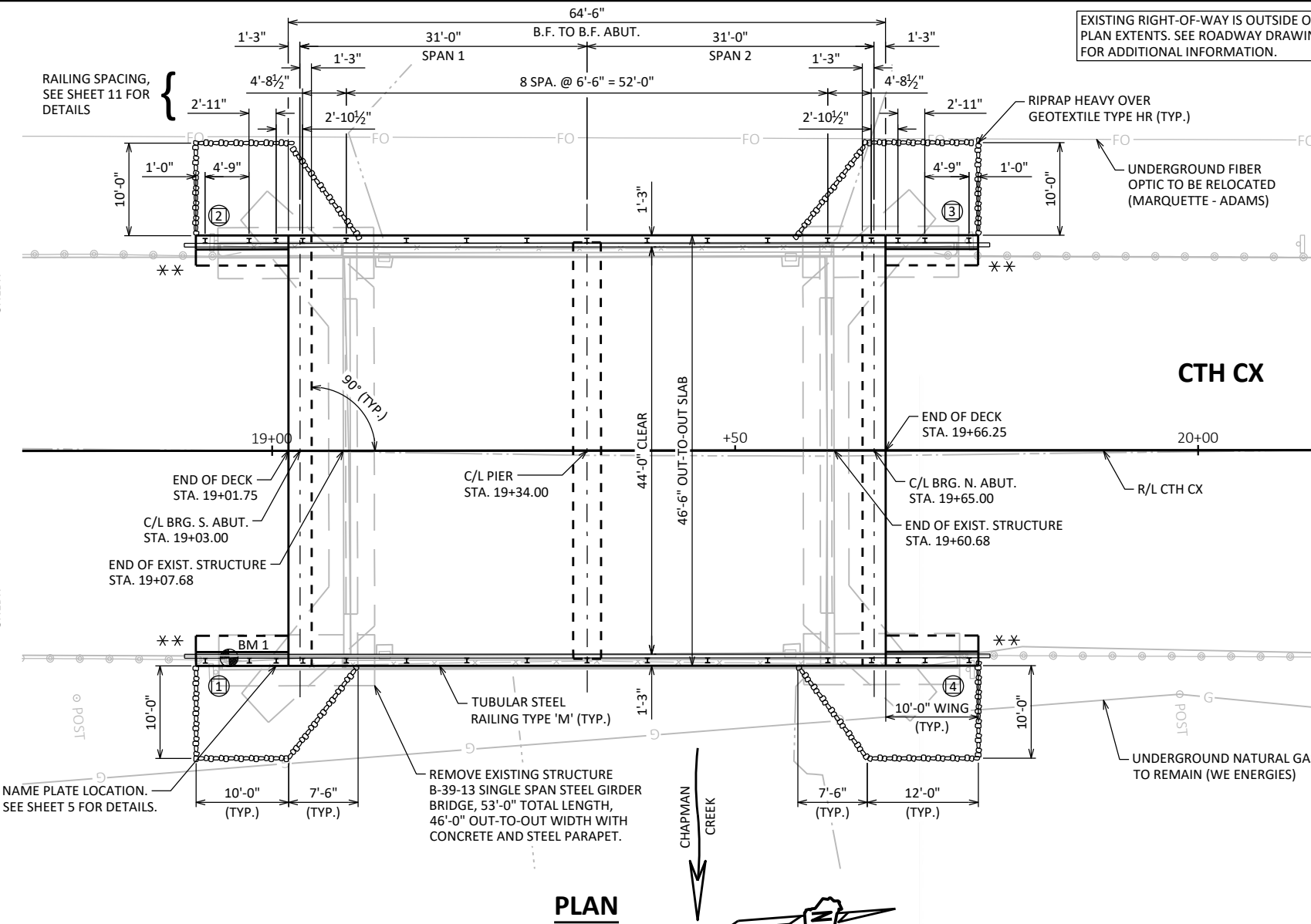
$Q_2 = 337$ C.F.S.
 $V_2 = 2.36$ F.P.S.
 $HW_2 = EL. 771.07$

LIST OF DRAWINGS:

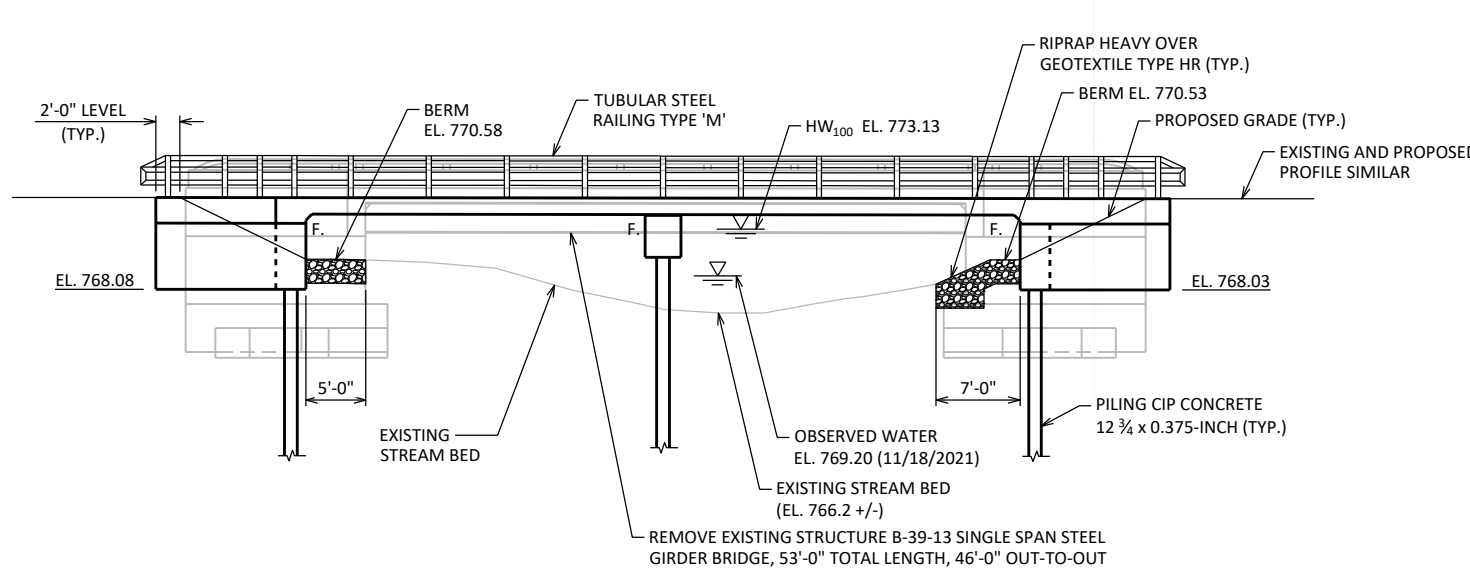
- 1 GENERAL PLAN
- 2 CROSS SECTION, QUANTITIES, NOTES, & DETAILS
- 3 SUBSURFACE EXPLORATION
- 4 SOUTH ABUTMENT
- 5 SOUTH ABUTMENT DETAILS
- 6 NORTH ABUTMENT
- 7 NORTH ABUTMENT DETAILS
- 8 PIER DETAILS
- 9 SUPERSTRUCTURE PLAN, SECTION, AND DETAILS
- 10 SUPERSTRUCTURE CROSS SECTION AND DETAILS
- 11 TUBULAR STEEL RAILING TYPE 'M'

LEGEND

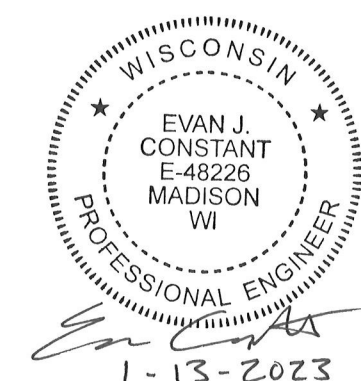
- ① INDICATES WING NUMBER
- ** PROVIDE FOR MGS THRIE BEAM TRANSITION RAIL ATTACHMENT.



PLAN
 (2-SPAN CONCRETE FLAT SLAB)



ELEVATION
 (NORMAL TO SUBSTRUCTURES, LOOKING UPSTREAM)



BENCH MARK

NO.	STATION	DESCRIPTION	ELEV.
1	18+95.32, 22.4' RT	CHISELED SQUARE TOP OF CURB	776.50

STRUCTURE DESIGN CONTACTS:

EVAN CONSTANT (608) 251-4843
 AARON BONK (608) 261-0261

NO.	DATE	REVISION	BY

STRAND ASSOCIATES
 910 WEST WINGRA DRIVE
 MADISON, WISCONSIN 53715
 (608)-251-4843
 (608) 251-8655 FAX
 WWW.STRAND.COM

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION
 ACCEPTED *[Signature]* SDR **01/17/23**
 CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-39-80
 CTH CX OVER CHAPMAN CREEK
 COUNTY MARQUETTE TOWN OXFORD
 DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATION
 DESIGNED BY EJC CK'D KRB DRAWN BY DTH PLANS CK'D KRB

GENERAL PLAN
 SHEET 1 OF 11

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE NOTED.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-39-80" SHALL BE THE EXISTING GROUNDLINE.

AT THE BACK FACE OF ABUTMENTS ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TYPE A.

EXCAVATION BELOW THE ABUTMENTS AND ABUTMENT BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT.

THE QUANTITY FOR BACKFILL STRUCTURE IS CALCULATED BASED ON THE DETAIL SHOWN IN THE PLANS.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE EXPOSED TOP OF DECK, SIDE OF DECK, 1'-0" WIDE STRIP AT EDGE UNDERSIDE OF DECK, TOP AND EXTERIOR EXPOSED FACE OF WINGS, AND THE END 1'-0" FRONT FACE OF ABUTMENTS.

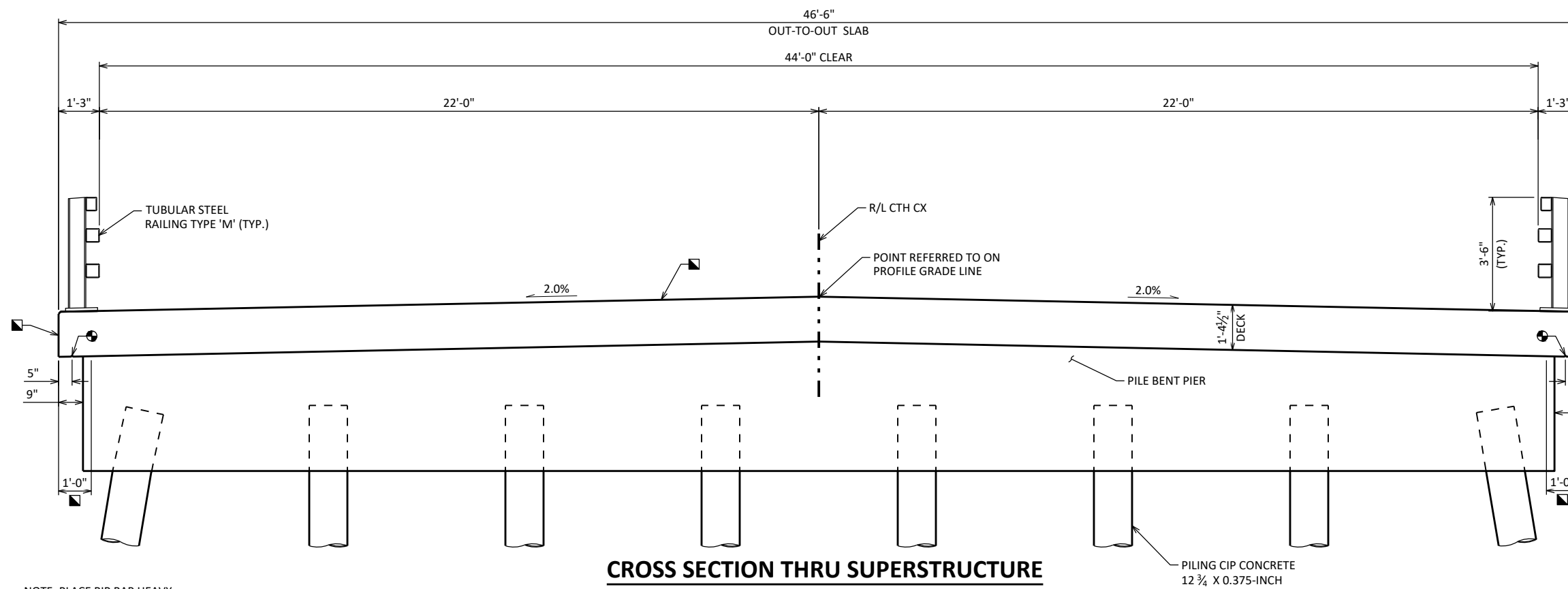
THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE TYPE "HR" TO THE EXTENT SHOWN ON SHEET 1 AND THE ABUTMENT DETAILS.

SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE, UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.

AT ABUTMENTS, CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.

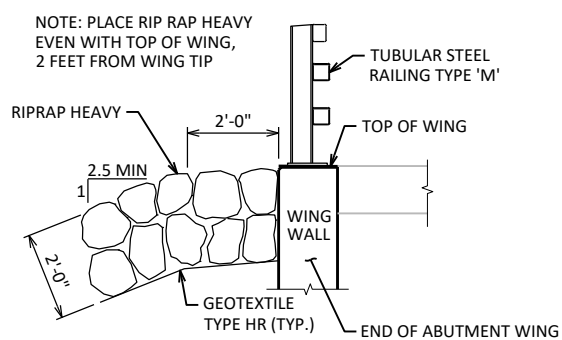
LEGEND

- ◐ 3/4" V-GROOVE REQ'D. EXTEND TO 6" FROM F.F. OF ABUT. DIAPHRAGMS.
- ◑ PROTECTIVE SURFACE TREATMENT.
- ▲ BACKFILL PAY LIMITS. BACKFILL BEYOND PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- ◑ PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.

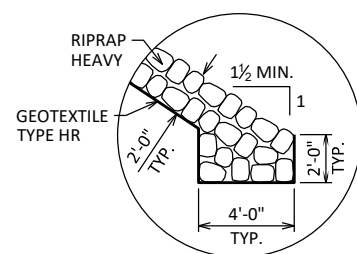


CROSS SECTION THRU SUPERSTRUCTURE

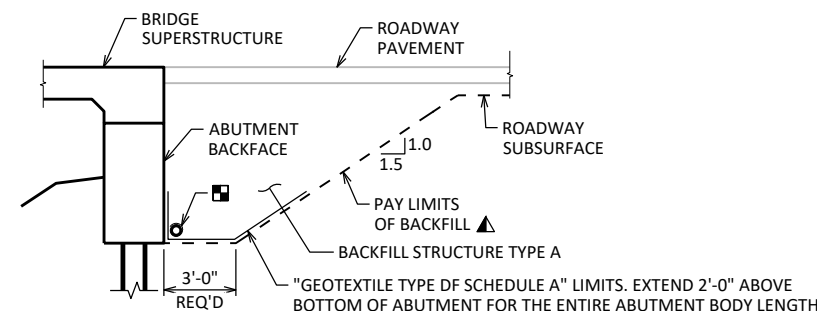
(LOOKING NORTH)



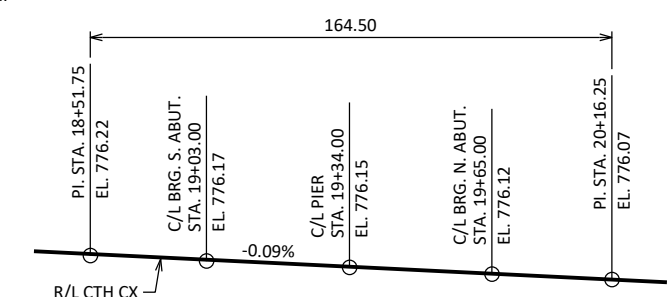
TYPICAL FILL SECTION AT WING TIPS



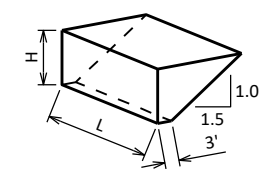
RIPRAP TOE DETAIL



TYPICAL SECTION THRU ABUTMENT



PROFILE GRADE LINE



ABUTMENT BACKFILL DIAGRAM

- L = OUT TO OUT OF ABUTMENT BODY INCLUDING WINGS (FT)
- H = AVERAGE ABUTMENT FILL HEIGHT (FT)
- EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS AND 1.00 FOR TON BID ITEMS)
- $V_{CF} = (L)(3.0')(H) + (L)(0.5')(1.5H)(H)$
- $V_{CY} = V_{CF}/27$
- $V_{TON} = V_{CY}(2.0)$

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SOUTH ABUT.	PIER	NORTH ABUT.	SUPERS.	TOTAL
203.0211.S	ABATEMENT OF ASBESTOS CONTAINING MATERIAL B-39-13	EACH	---	---	---	---	1
203.0260	REMOVING STRUCTURE OVER WATERWAY MIMINAL DEBRIS B-39-13	EACH	---	---	---	---	1
206.1001	EXCAVATION FOR STRUCTURES BRIDGES B-39-80	EACH	---	---	---	---	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	194	---	194	---	388
502.0100	CONCRETE MASONRY BRIDGES	CY	40.3	18.7	40.3	159.6	259
502.3200	PROTECTIVE SURFACE TREATMENT	SY	7	---	7	365	379
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2,820	3,580	2,820	---	9,220
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,460	90	1,460	31,160	34,170
513.4061	RAILING TUBULAR TYPE M	LF	---	---	---	174	174
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	12	---	12	---	24
550.2126	PILING CIP CONCRETE 12 3/4 X 0.375-INCH	LF	280	520	315	---	1,115
606.0300	RIPRAP HEAVY	CY	56	---	65	---	121
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	87	---	87	---	174
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	39	---	39	---	78
645.0120	GEOTEXTILE TYPE HR	SY	109	---	121	---	230
NON-BID ITEMS							
	NAME PLATE	EACH					1
	FILLER	SIZE					1/2" & 3/4"

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-39-80			
DRAWN BY		DTH	PLANS CK'D KRB
CROSS SECTION, QUANTITIES, NOTES, & DETAILS			SHEET 2

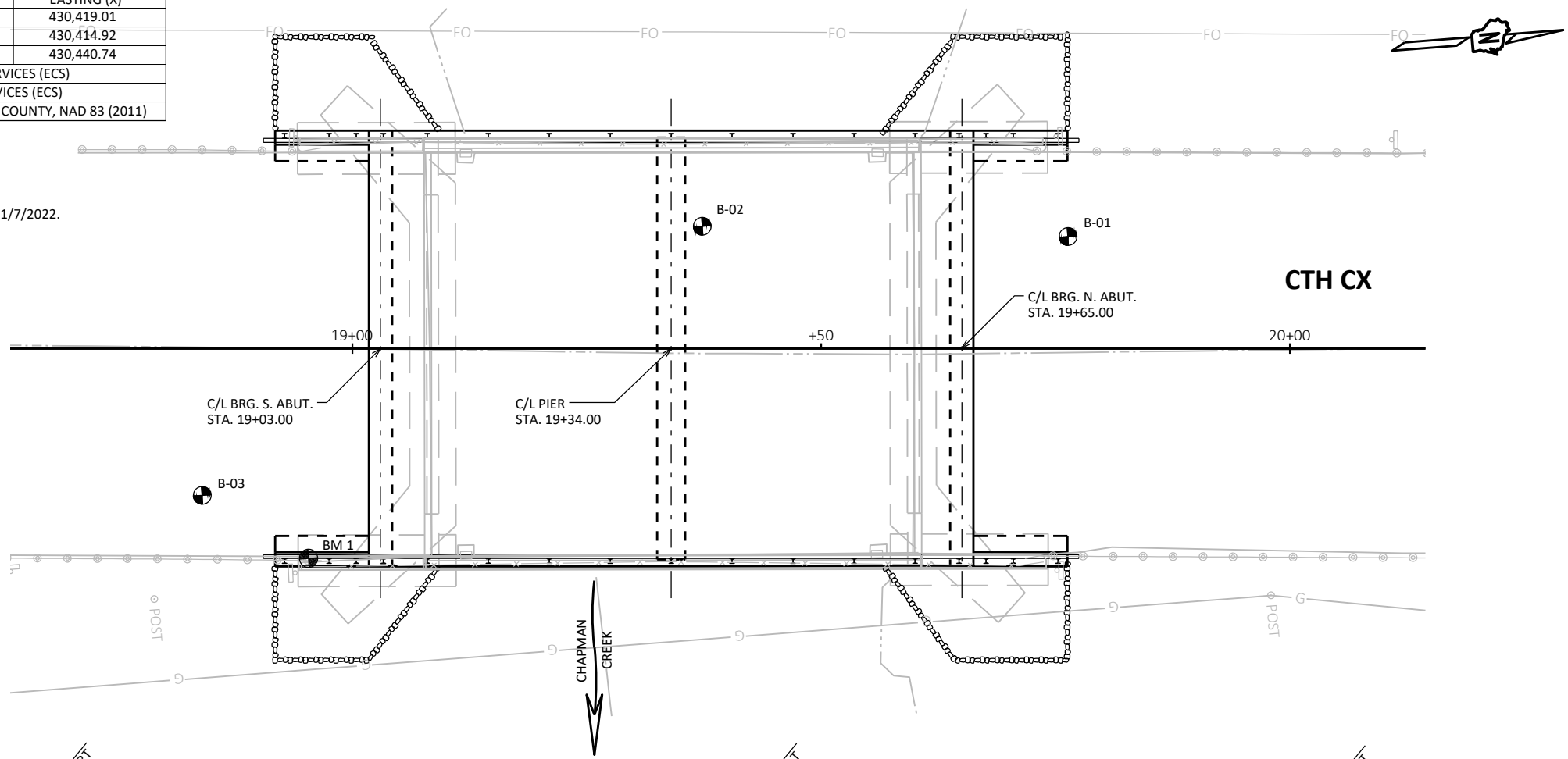
SCALE =

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	1/6/2022	233,867.40	430,419.01
2	1/7/2022	233,828.61	430,414.92
3	1/5/2022	233,774.79	430,440.74

BORINGS COMPLETED BY: ENGINEERING CONSULTING SERVICES (ECS)
 REPORT COMPLETED BY: ENGINEERING CONSULTING SERVICES (ECS)
 ALL COORDINATES REFERENCED TO WISCRS, MARQUETTE COUNTY, NAD 83 (2011)

BORINGS PERFORMED AND REPORT COMPLETED BY:
 ENGINEERING CONSULTING SERVICES (ECS)
 1060 BREEZEWOOD LANE, SUITE 102
 NEENAH, WI 54956

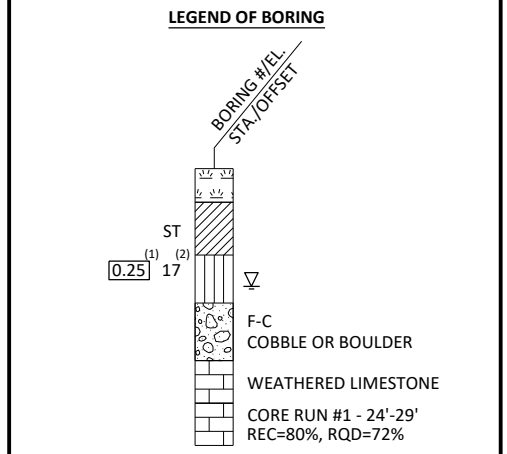
BORINGS WERE PERFORMED ON 1/5/2022, 1/6/2022, AND 1/7/2022.



STATE PROJECT NUMBER
6748-02-70

MATERIAL SYMBOLS

ASPHALT	TOPSOIL	PEAT
CONCRETE	FILL	GRAVEL
SAND	CLAY	SILT
BOULDERS OR COBBLES	LIMESTONE	BEDROCK (UNKNOWN)
SHALE	SANDSTONE	IGNEOUS/META



(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)
 (2) UNLESS OTHERWISE SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

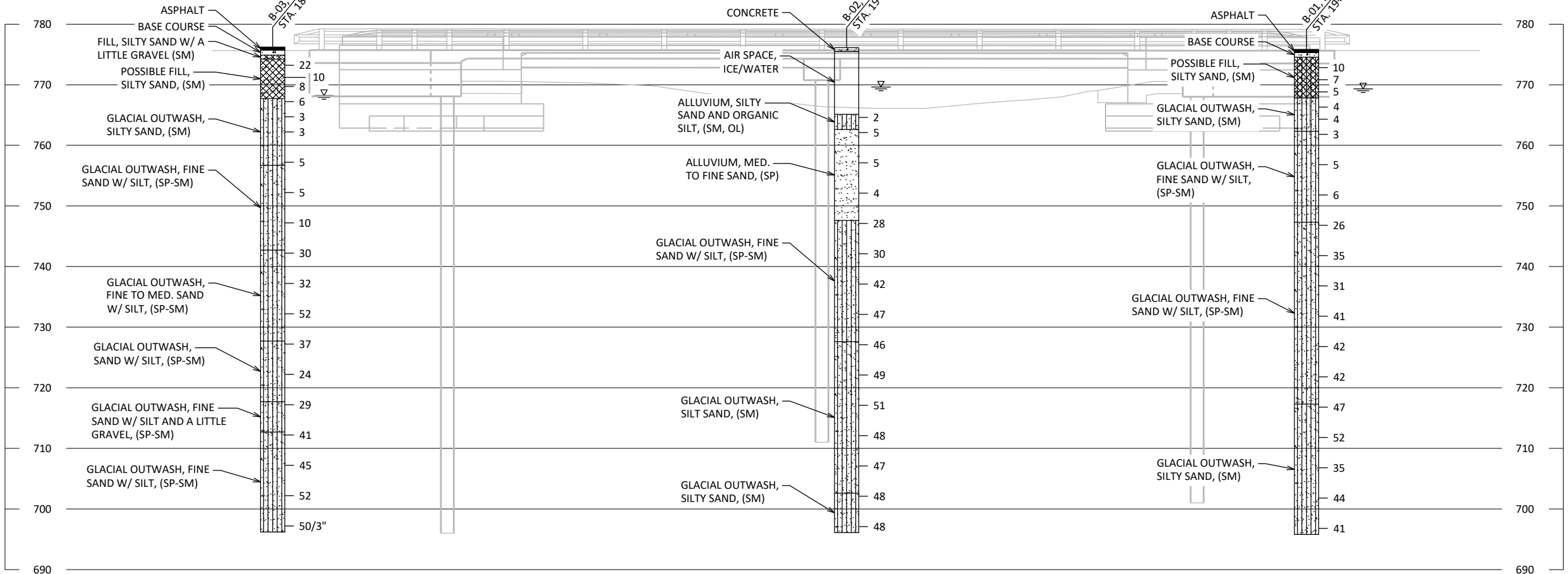
- ▽ AT TIME OF DRILLING
- ▼ END OF DRILLING
- ▼ AFTER DRILLING

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.



8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

STRUCTURE B-39-80

DRAWN BY: DTH, CK'D: KRB

SUBSURFACE EXPLORATION

SHEET 3

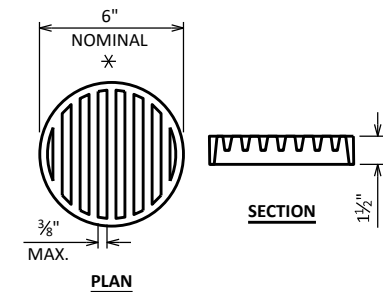
SCALE =

NOTES

- SEE SHEET 6 FOR PILES SPLICE DETAILS.
- SEE SHEET 5 FOR REINFORCING DETAILS.
- SUPPORT SOUTH ABUTMENT ON 12 3/4" DIA. X 0.375" CIP CONCRETE PILING, ESTIMATED 40'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 100 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.
- SEE SHEET 2 FOR TYPICAL FILL SECTION AT WING TIPS.

LEGEND

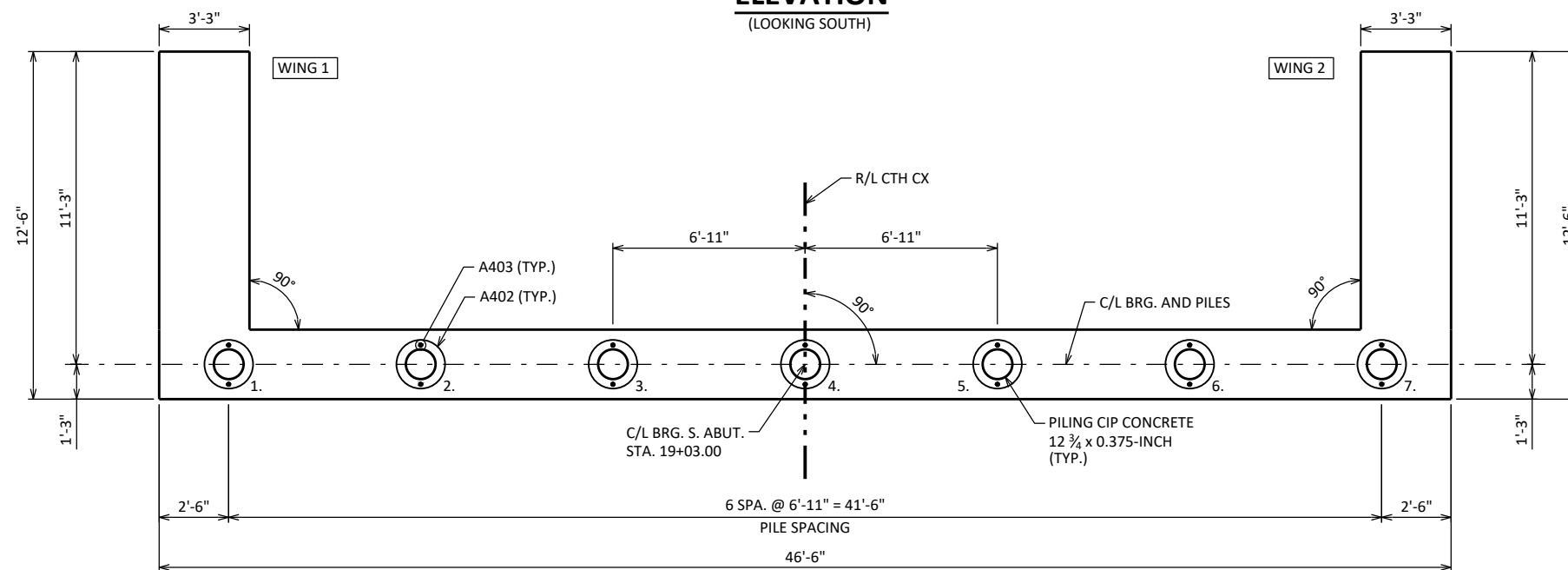
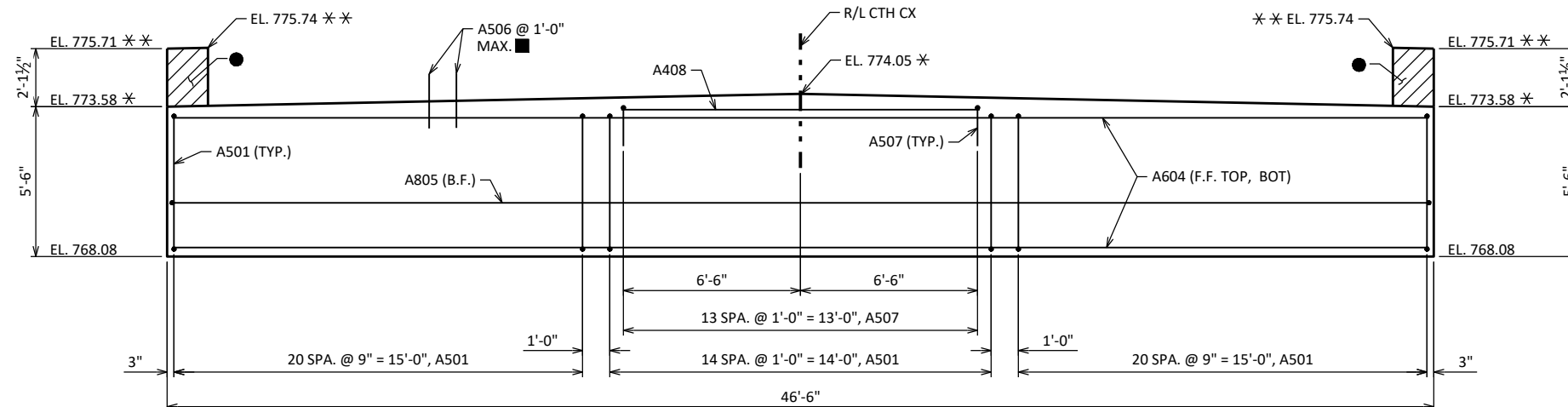
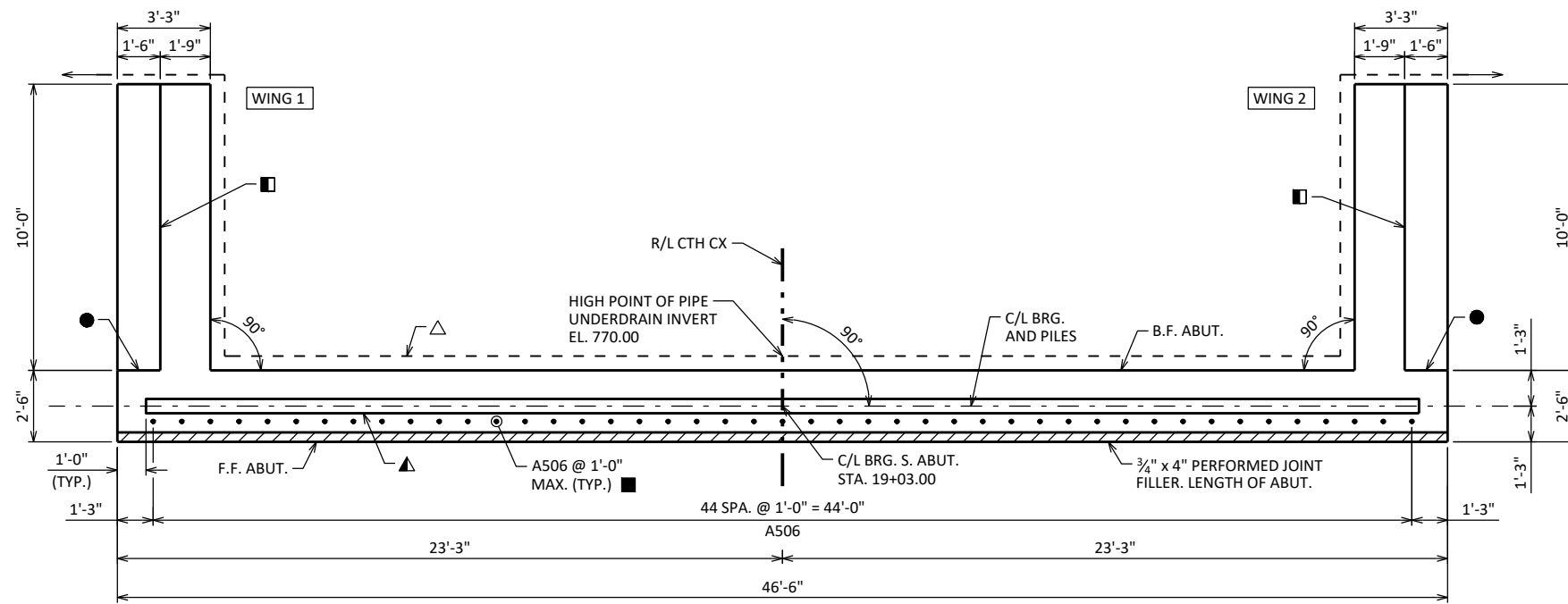
- ▲ CONST. JOINT: KEYWAY FORMED BY A BEVELED 2 x 6.
- △ PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. HIGH POINT EL. 770.00. RODENT SHIELD REQUIRED AT ENDS. SEE DETAIL ON THIS SHEET.
- 1/2" FILLER TO EXTEND FROM ABUTMENT SEAT TO TOP OF WING (INCLUDED IN WING LENGTH). SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/2" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- BARS @ 1'-0" CTRS. BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)
- * THESE ELEVATIONS GIVEN AT C/L BRG. ABUT.
- ** THESE ELEVATIONS GIVEN AT B.F. ABUT.



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

THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

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.



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-39-80			
DRAWN BY		DTH	PLANS CK'D KRB
SOUTH ABUTMENT			SHEET 4

8

8

SCALE =

NOTES

SEE THIS SHEET FOR PILE SPlice DETAILS.

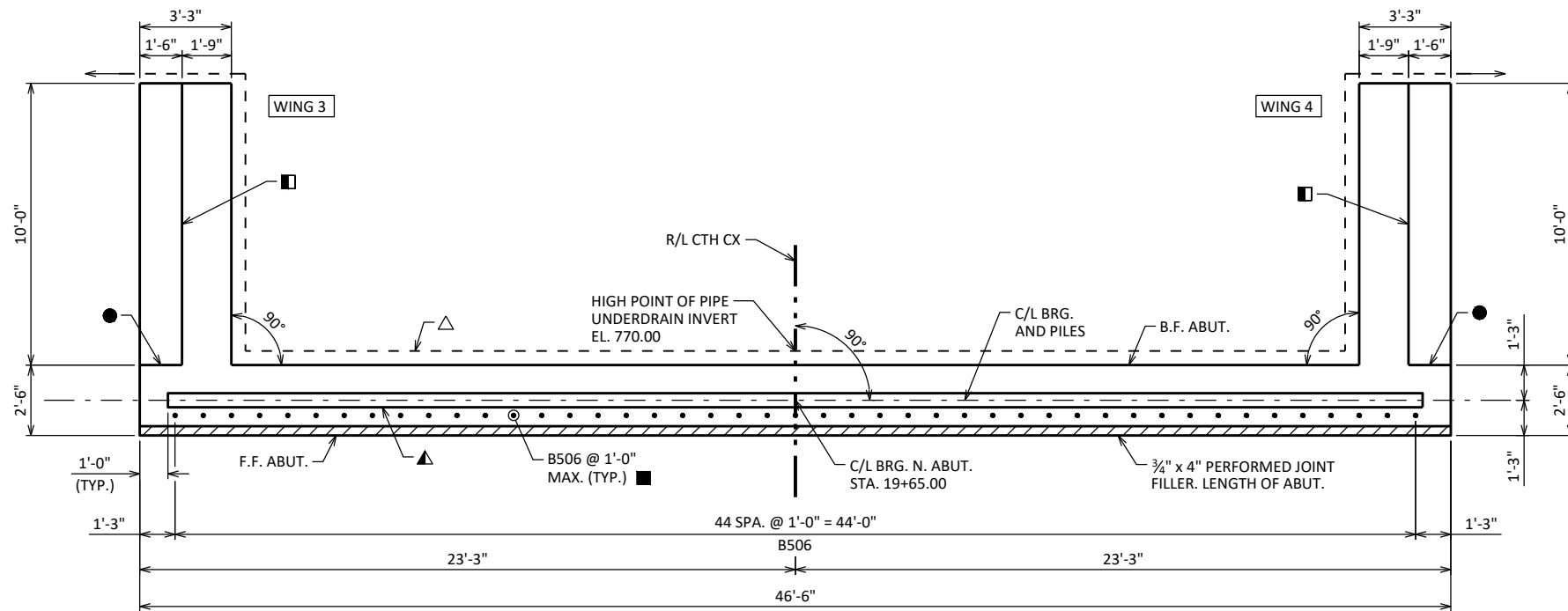
SEE SHEET 7 FOR REINFORCING DETAILS.

SUPPORT SOUTH ABUTMENT ON 12 3/4" DIA. X 0.375" CIP CONCRETE PILING, ESTIMATED 45'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 100 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.

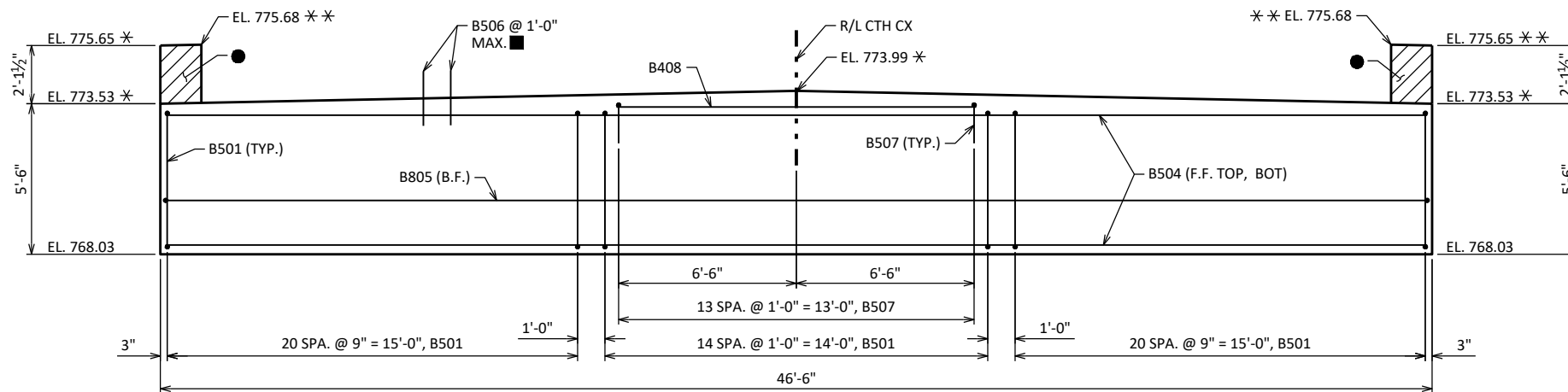
SEE SHEET 2 FOR TYPICAL FILL SECTION AT WING TIPS.

LEGEND

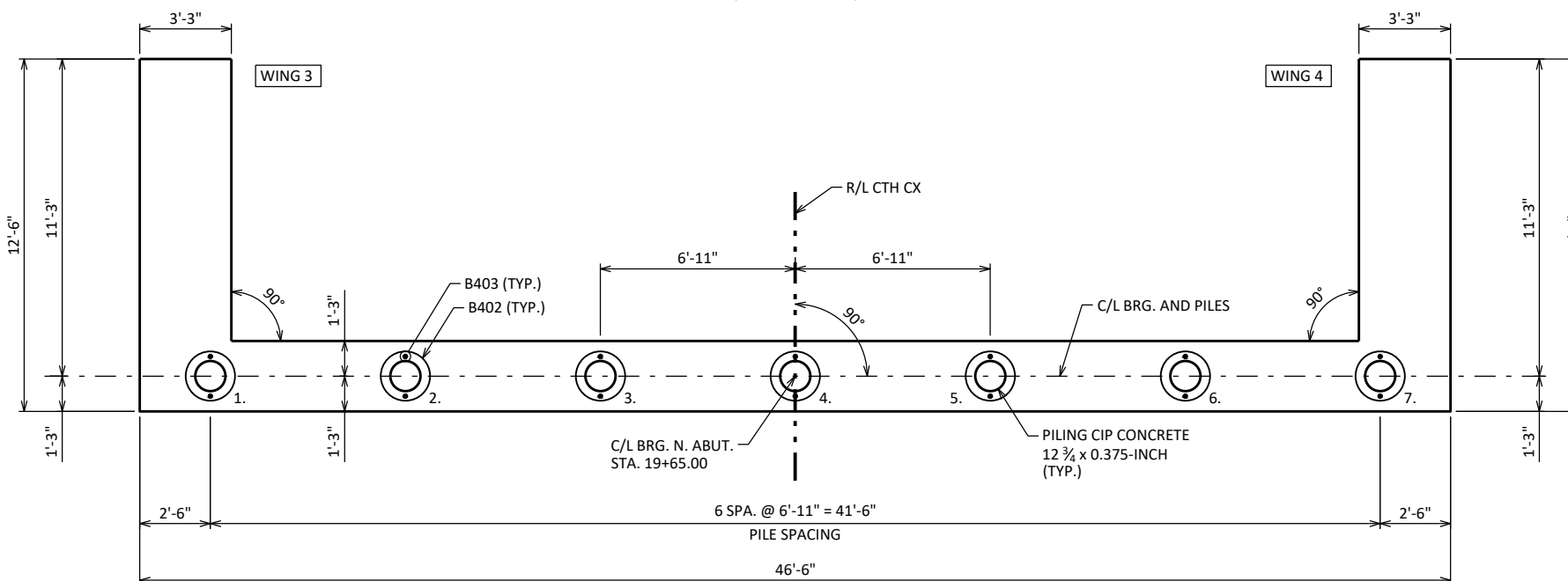
- ▲ CONST. JOINT: KEYWAY FORMED BY A BEVELED 2 x 6.
- △ PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. HIGH POINT EL. 770.00. RODENT SHIELD REQUIRED AT ENDS. SEE DETAIL ON SHEET 4.
- 1/2" FILLER TO EXTEND FROM ABUTMENT SEAT TO TOP OF WING (INCLUDED IN WING LENGTH). SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- BARS @ 1'-0" CTRS. BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)
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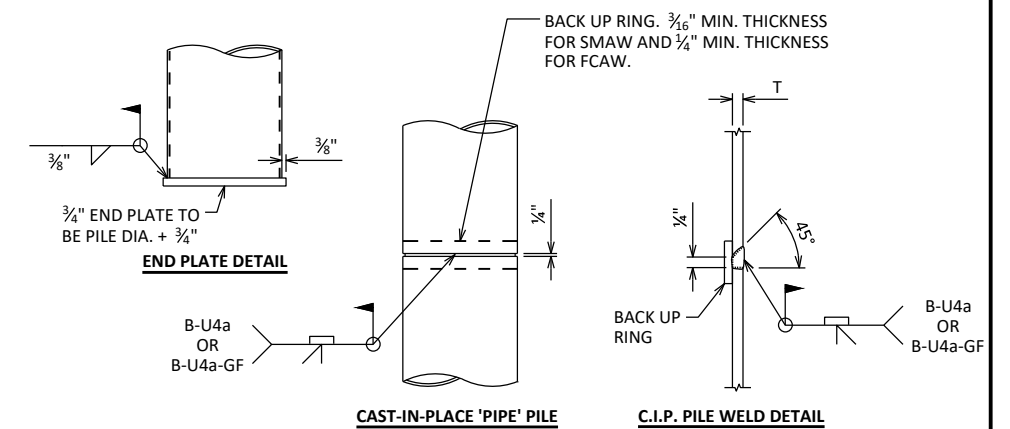
PLAN



ELEVATION
(LOOKING NORTH)



PILE PLAN



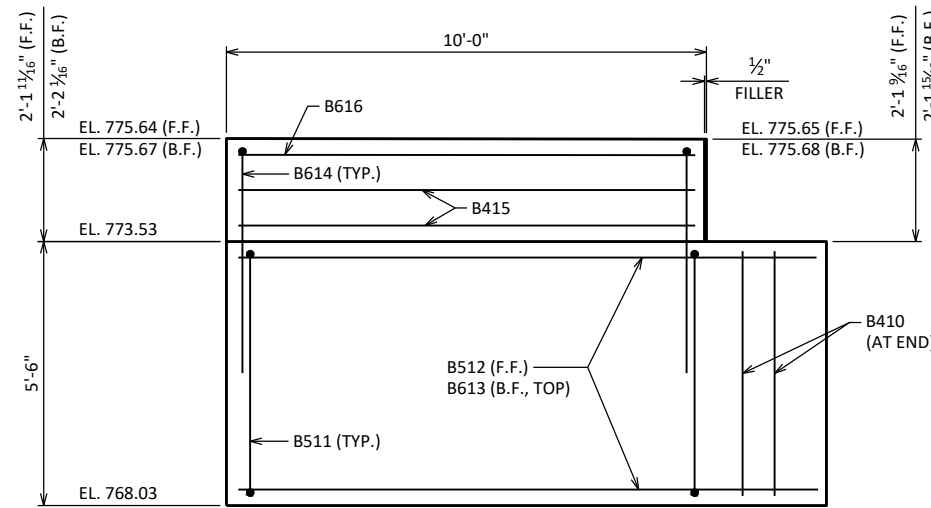
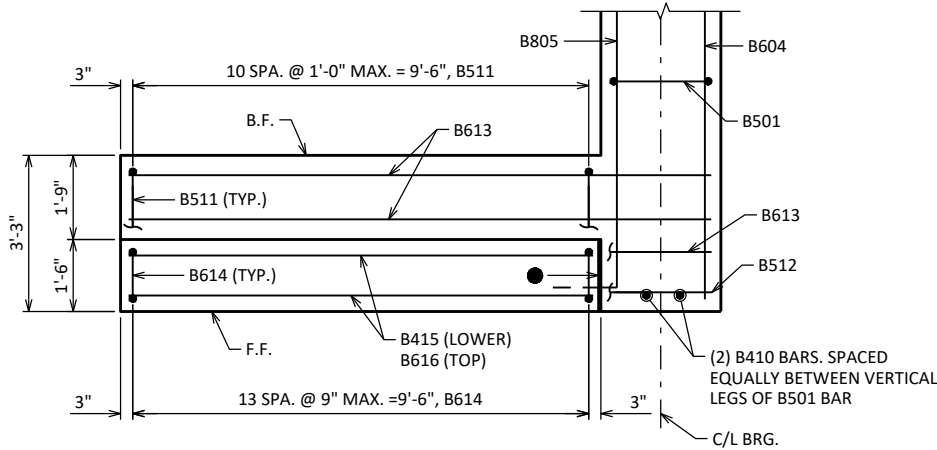
CIP PILE DETAILS

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-39-80			
DRAWN BY		DTH	PLANS CK'D KRB
NORTH ABUTMENT			SHEET 6

SCALE =

LEGEND

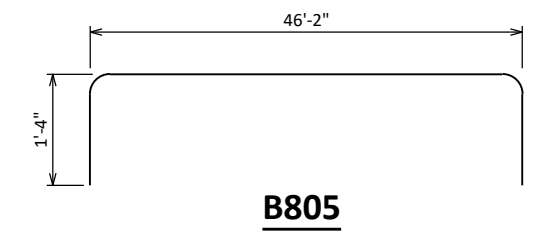
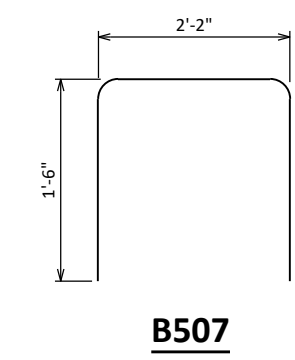
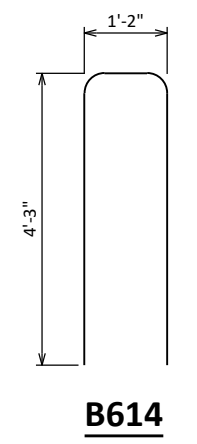
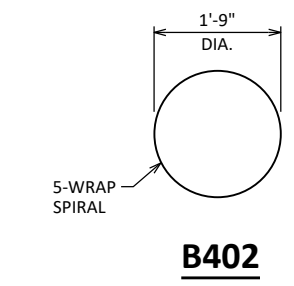
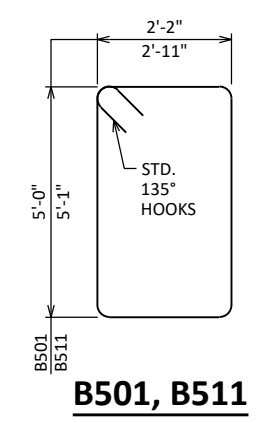
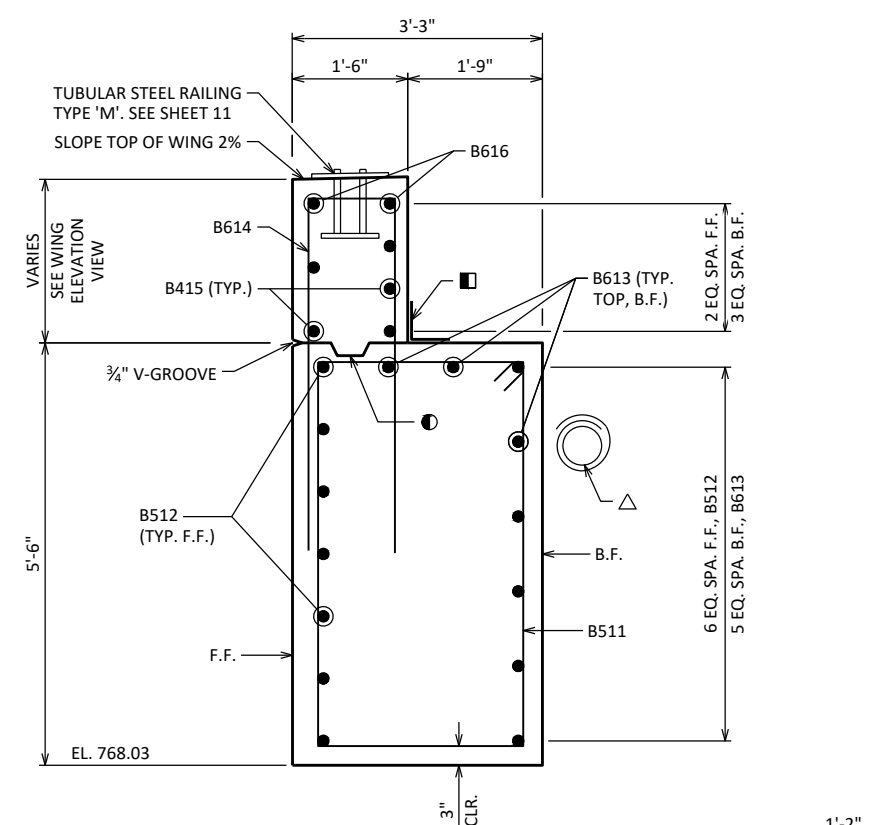
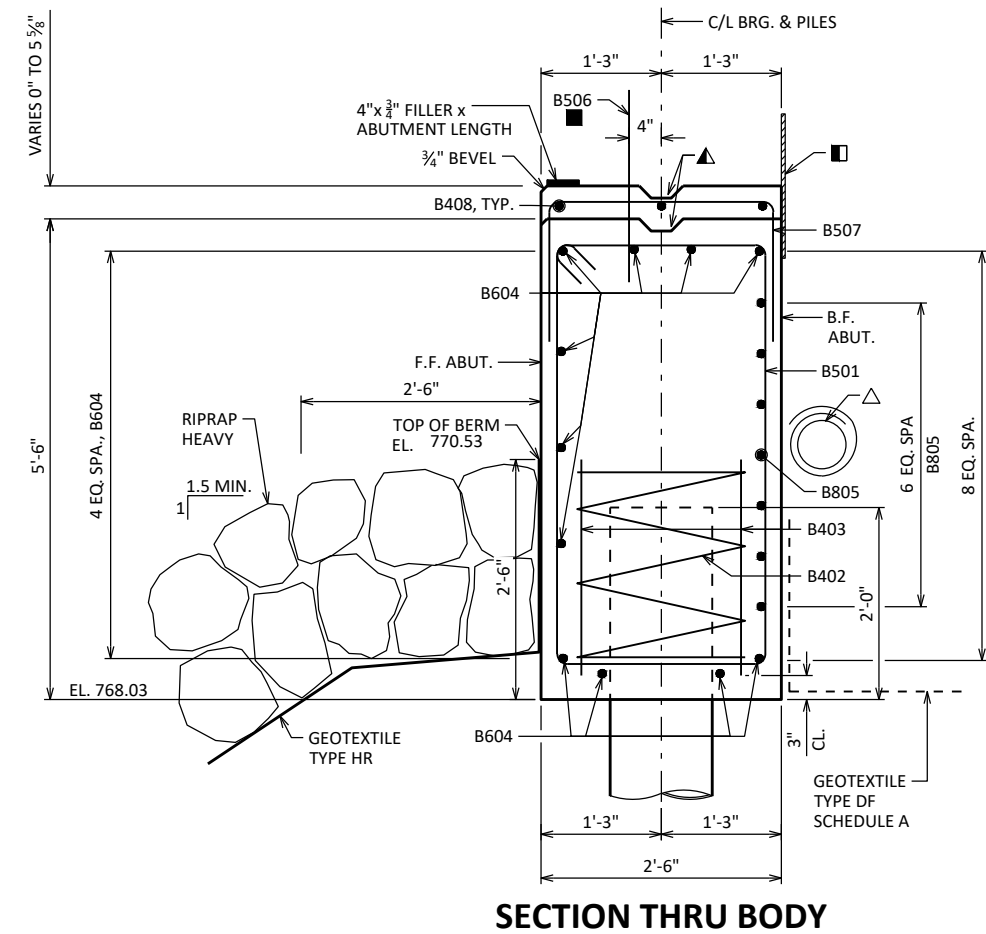
- ▲ CONST. JOINT: KEYWAY FORMED BY A BEVELED 2 x 6.
- KEYWAY FORMED BY BEVELED 2 x 6.
- △ PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. HIGH POINT EL. 770.00. RODENT SHIELD REQUIRED AT ENDS. SEE DETAIL ON SHEET 4.
- 1/2" FILLER TO EXTEND FROM ABUTMENT SEAT TO TOP OF WING (INCLUDED IN WING LENGTH). SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/2" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- BARS @ 1'-0" CTRS. BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)



**NORTH ABUTMENT
BILL OF BARS**

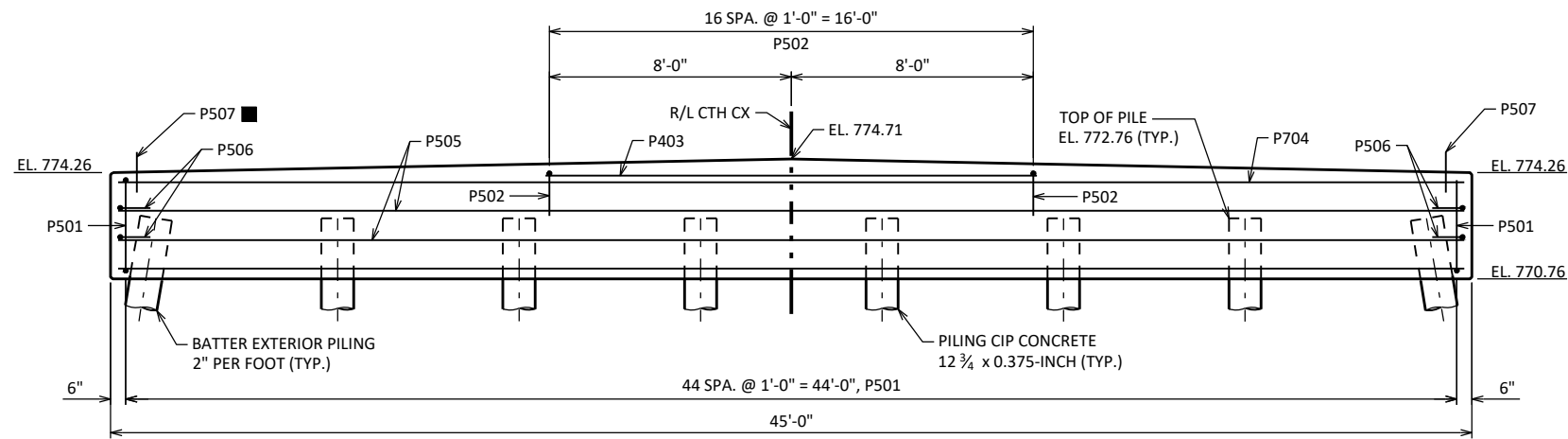
**UNCOATED: 2,820 LBS
COATED: 1,460 LBS**

BAR MARK	NO. REQ'D	LENGTH	BENT	COAT	LOCATION
B501	57	15'-0"	X		BODY - STIRRUPS - VERT.
B402	7	28'-0"	X		BODY - PILES - SPIRAL
B403	14	2'-3"			BODY - PILES - VERT.
B604	11	46'-2"			BODY - TOP, BOT., & F.F. - HORIZ.
B805	7	48'-5"	X		BODY - B.F. - HORIZ.
B506	45	2'-0"		X	BODY - DOWELS - VERT.
B507	14	4'-11"	X		BODY - TOP - VERT.
B408	3	13'-0"			BODY - TOP - HORIZ.
B410	4	5'-1"			LOWER WING - VERT. - ENDS
B511	22	16'-8"	X	X	LOWER WING - STIRRUPS - VERT.
B512	14	12'-2"		X	LOWER WING - F.F. - HORIZ.
B613	16	12'-2"		X	LOWER WING - TOP & B.F. - HORIZ.
B614	28	9'-4"	X	X	UPPER WING - VERT.
B415	10	9'-7"		X	UPPER WING - HORIZ.
B616	4	9'-7"		X	UPPER WING - TOP - HORIZ.

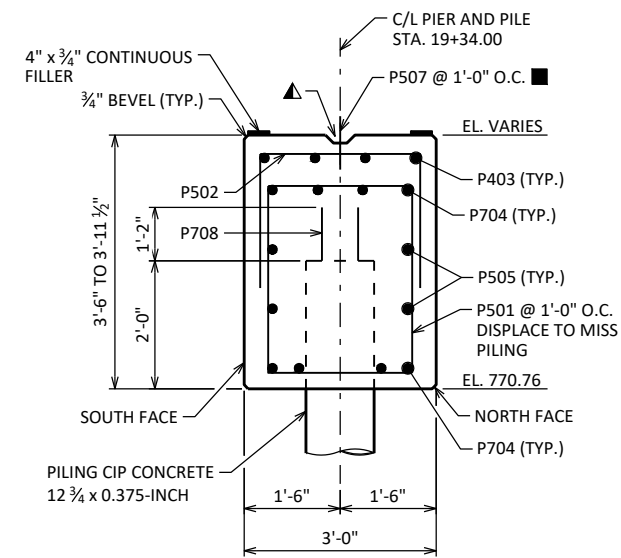


NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-39-80			
DRAWN BY		DTH	PLANS CK'D KRB
NORTH ABUTMENT DETAILS			SHEET 7

SCALE =



ELEVATION
(LOOKING NORTH)



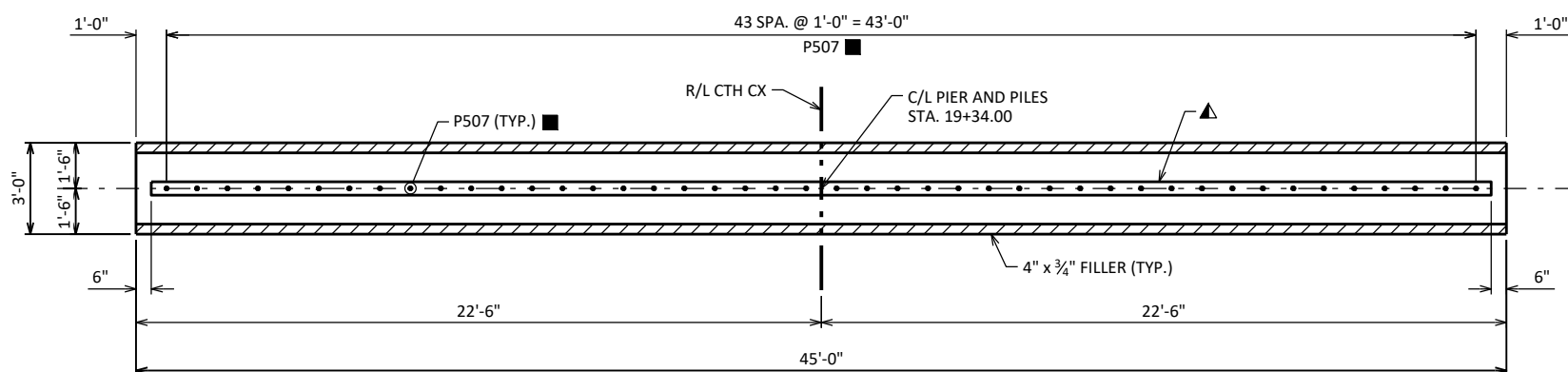
SECTION THRU PIER CAP

NOTES

- PILES SHALL BE PAINTED IN ACCORDANCE WITH SECTION 550.3.11.3 OF THE STANDARD SPECIFICATIONS.
- CAST-IN-PLACE PILE SHELL MATERIAL SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
- ADJUST P501 BARS INTERFERING WITH PILES.
- FOR PILE SPLICE DETAILS, SEE DETAILS ON SHEET 6.
- SUPPORT PIER ON 12 3/4" DIA. X 0.375" CIP CONCRETE PILING, ESTIMATED 65'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.

LEGEND

- ▲ KEYED CONST. JOINT-FORMED BY BEVELED 2 x 6.
- BARS @ 1'-0" CTRS. BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

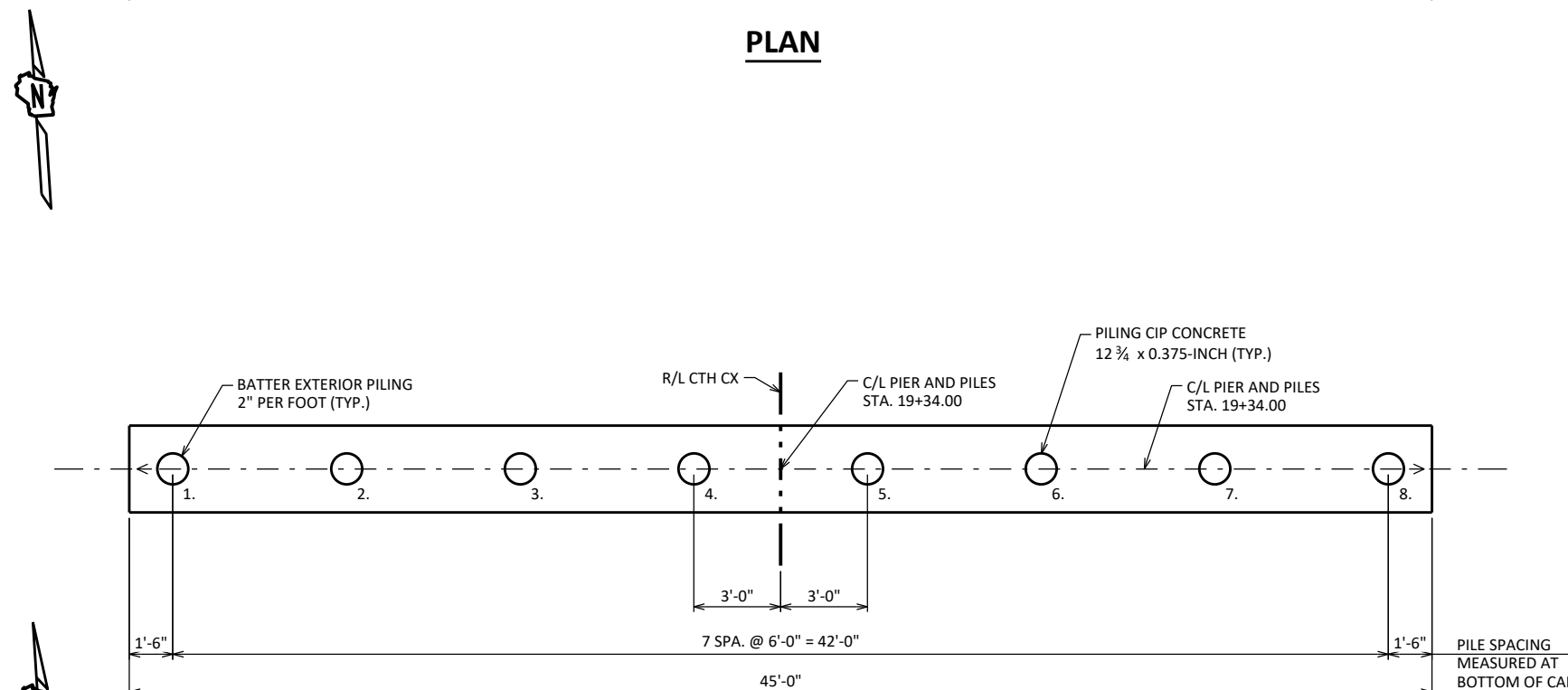


PLAN

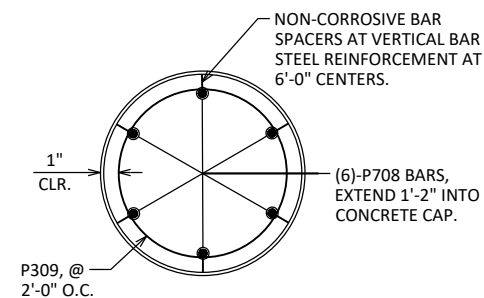
PIER BILL OF BARS

UNCOATED: 3,580 LBS
COATED: 90 LBS

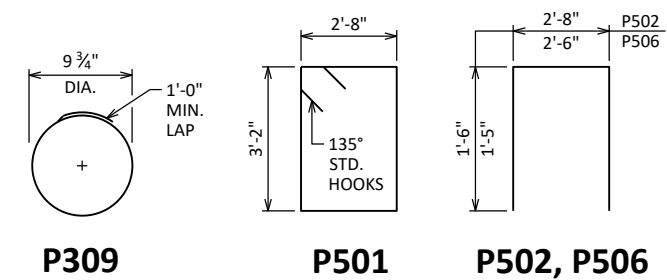
BAR MARK	NO. REQ'D	LENGTH	BENT	COAT	LOCATION
P501	45	12'-4"	X		PIER - STIRRUPS - VERT.
P502	17	5'-5"	X		PIER - TOP - VERT.
P403	4	16'-0"			PIER - TOP - HORIZ.
P704	8	44'-8"			PIER - TOP & BOTTOM - HORIZ.
P505	4	44'-8"			PIER - SIDES - HORIZ.
P506	4	5'-1"	X		PIER - ENDS - HORIZ.
P507	44	2'-0"		X	PIER - DOWELS - VERT.
P708	48	18'-6"			PILING - VERT.
P309	80	3'-7"	X		PILING - HORIZ.



PILE PLAN

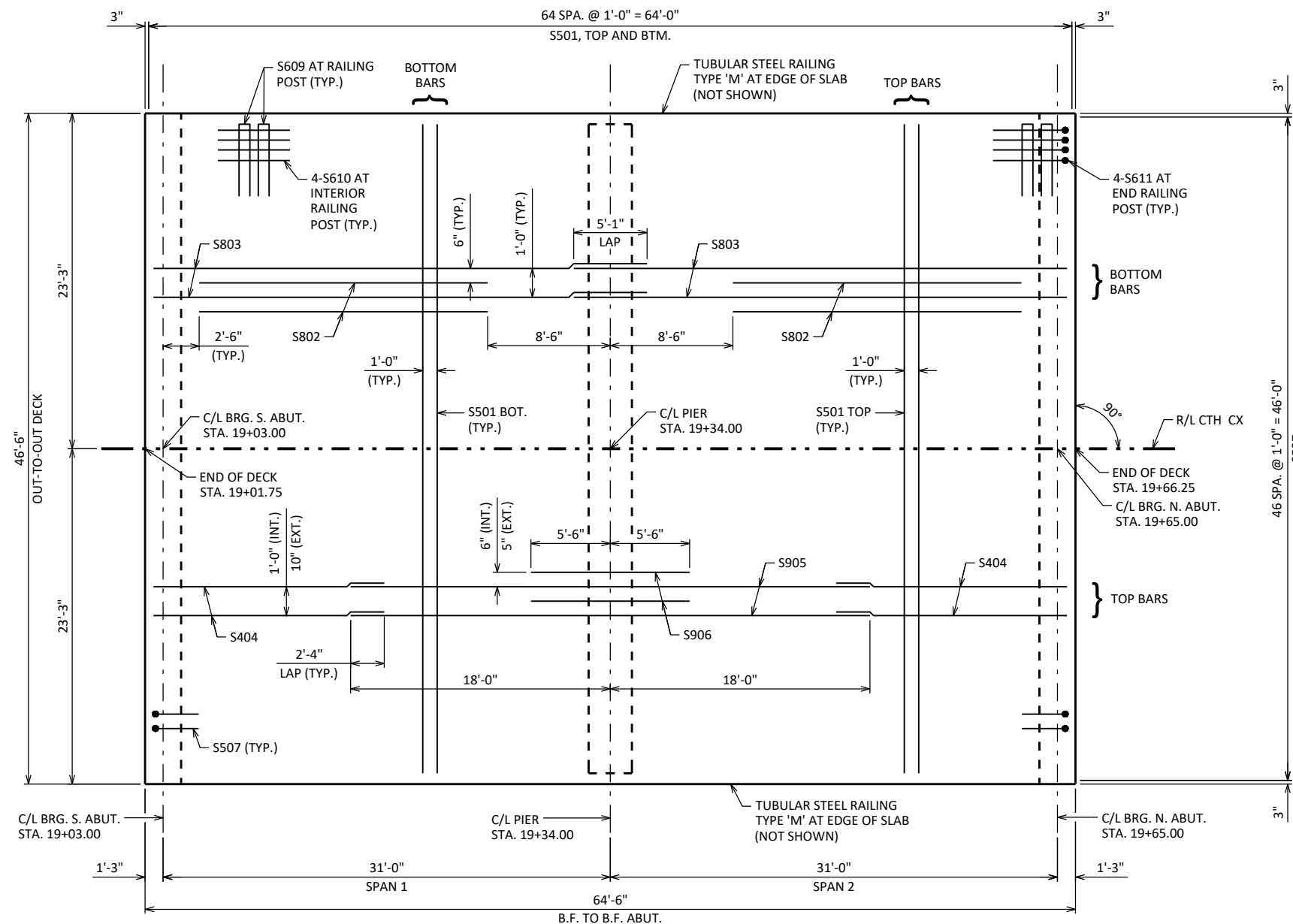


SECTION THRU PILE

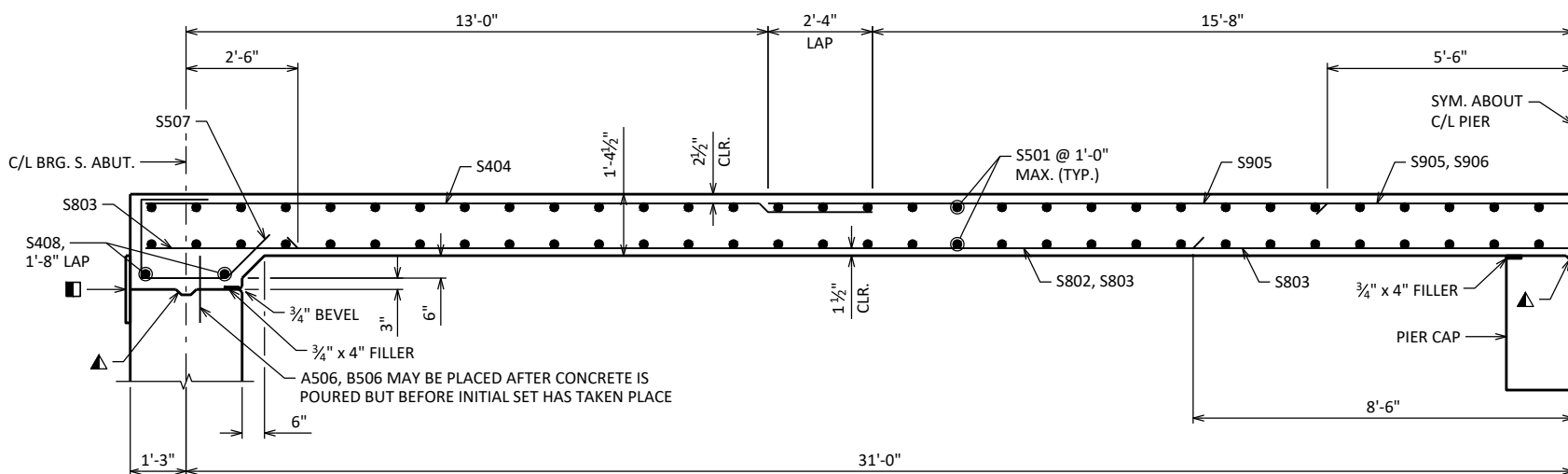


NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-39-80			
DRAWN BY		DTH	PLANS CK'D KRB
PIER DETAILS			SHEET 8

SCALE =



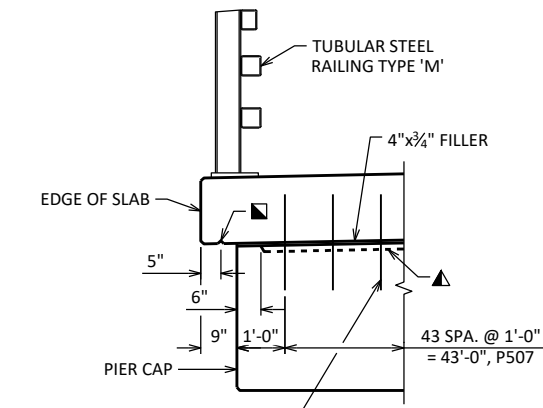
PLAN



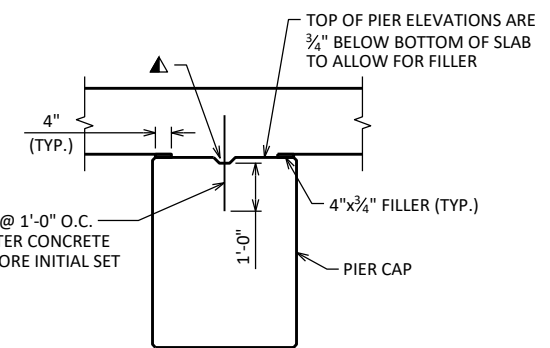
HALF LONGITUDINAL SECTION

LEGEND

- ▲ CONST. JOINT: KEYWAY FORMED BY A BEVELED 2 x 6.
- 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- 3/4" V-GROOVE REQ'D. EXTEND TO 6" FROM F.F. OF ABUT. DIAPHRAGMS.



P507 PIER DOWELS @ 1'-0" O.C. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE



P507 PIER DOWELS @ 1'-0" O.C. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE

PIER DETAILS

8

8

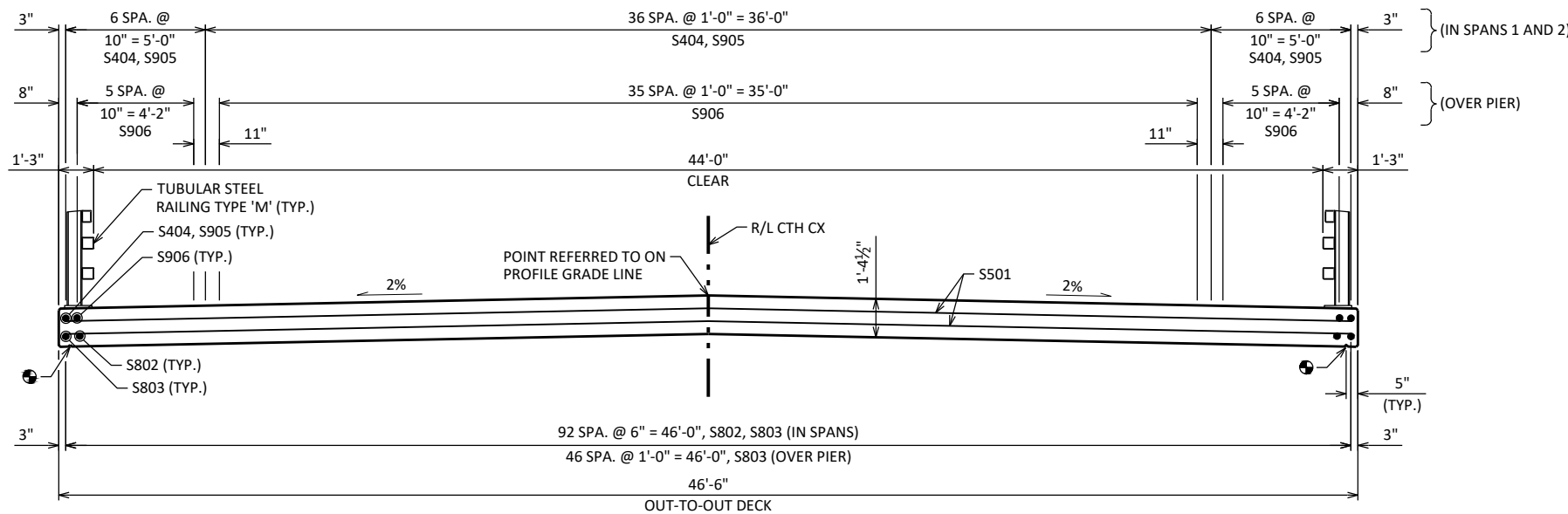
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STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-39-80			
DRAWN BY		PLANS CK'D	
DTH		KRB	
SUPERSTRUCTURE PLAN, SECTION AND DETAILS			SHEET 9

SCALE =

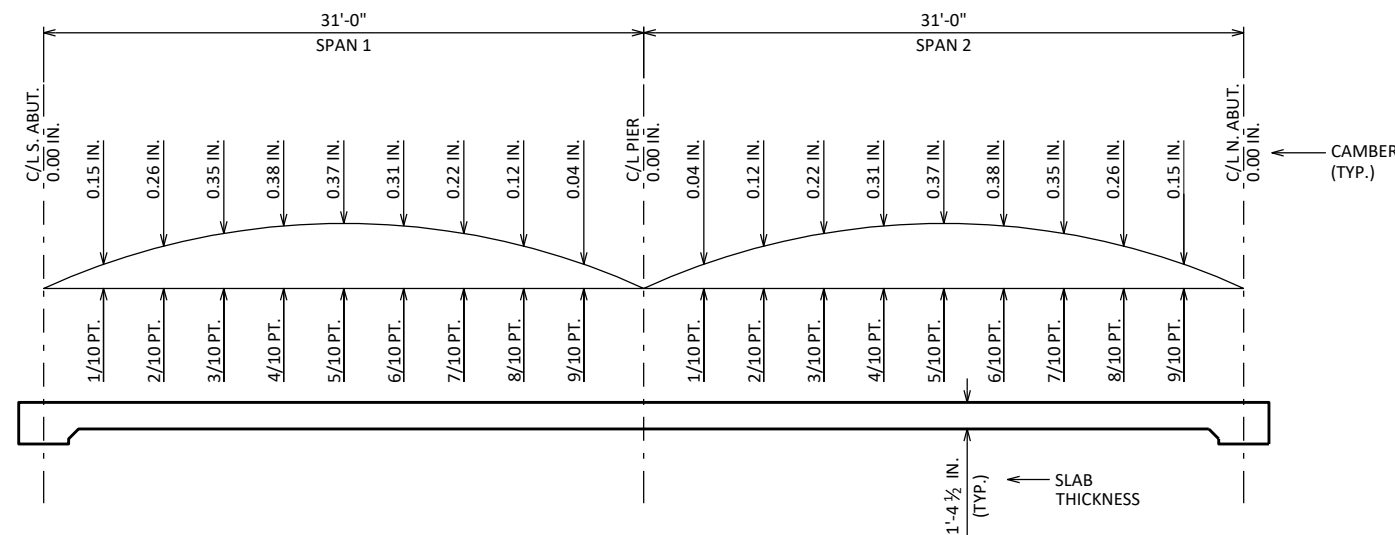
**SUPERSTRUCTURE
BILL OF BARS**

COATED: 31,160 LBS

BAR MARK	NO. REQ'D	LENGTH	BENT	COAT	LOCATION
S501	130	46'-2"		X	SLAB - TRANSVERSE - TOP & BOT.
S802	92	20'-0"		X	SLAB - LONG. - BOTTOM
S803	94	34'-8"		X	SLAB - LONG. - BOTTOM
S404	98	16'-5"		X	SLAB - LONG. - TOP
S905	49	36'-0"		X	SLAB - LONG. - TOP
S906	48	11'-0"		X	SLAB - LONG. - TOP
S507	94	7'-10"	X	X	ABUT. DIAPHRAGM - VERT.
S408	8	23'-11"		X	ABUT. DIAPHRAGM - HORIZ.
S609	44	11'-6"	X	X	SLAB - TUBULAR RAILING
S610	72	6'-0"		X	SLAB - TUBULAR RAILING - INT. POSTS
S611	16	4'-8"	X	X	SLAB - TUBULAR RAILING - END POSTS



CROSS SECTION THRU SUPERSTRUCTURE
(LOOKING NORTH)



CAMBER AND SLAB THICKNESS DIAGRAM

CAMBER SHOWN IS BASED ON 3 TIMES DEAD LOAD DEFLECTIONS. CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

RAILINGS ON TOP OF THE SLAB SHALL BE PLACED AFTER FALSEWORK HAS BEEN RELEASED.

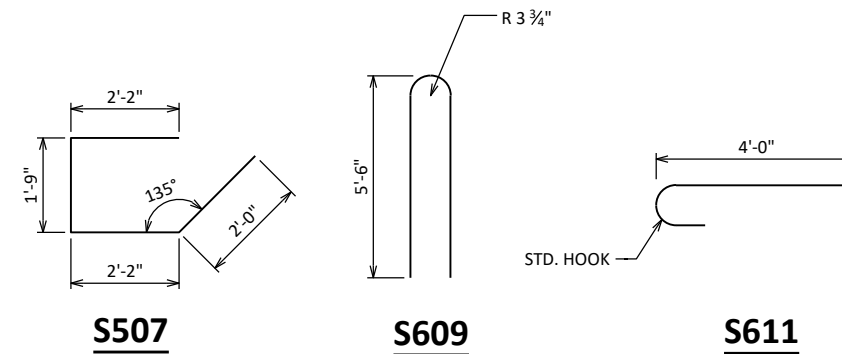
TO DETERMINE FALSEWORK ELEVATION AT EDGE OF SLAB, CROWN OR REFERENCE LINE FOLLOW THIS PROCEDURE:

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

SURVEY TOP OF SLAB ELEVATIONS

	C/L S. ABUT	5/10 PT.	PIER	5/10 PT.	C/L N. ABUT.
WEST EDGE OF SLAB					
CROWN ON R/L					
EAST EDGE OF SLAB					

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF DECK ELEVATIONS AT THE C/L OF ABUTMENTS, THE C/L OF PIER, AND AT 5/10 PTS. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGES OF SLAB AND CROWN ON R/L. RECORD THE ELEVATIONS IN THE ABOVE TABLE FOR THE "AS BUILT" PLANS.



TOP OF DECK ELEVATIONS

LOCATION	WEST EDGE OF DECK 23.25' LT		C/L BRIDGE -		EAST EDGE OF DECK 23.25' RT	
	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.
C/L BRG. S. ABUT.	19+03.00	775.71	19+03.00	776.17	19+03.00	775.71
0.1L POINT	19+06.10	775.71	19+06.10	776.17	19+06.10	775.71
0.2L POINT	19+09.20	775.70	19+09.20	776.17	19+09.20	775.70
0.3L POINT	19+12.30	775.70	19+12.30	776.17	19+12.30	775.70
0.4L POINT	19+15.40	775.70	19+15.40	776.16	19+15.40	775.70
0.5L POINT	19+18.50	775.69	19+18.50	776.16	19+18.50	775.69
0.6L POINT	19+21.60	775.69	19+21.60	776.16	19+21.60	775.69
0.7L POINT	19+24.70	775.69	19+24.70	776.15	19+24.70	775.69
0.8L POINT	19+27.80	775.69	19+27.80	776.15	19+27.80	775.69
0.9L POINT	19+30.90	775.68	19+30.90	776.15	19+30.90	775.68
C/L PIER	19+34.00	775.68	19+34.00	776.15	19+34.00	775.68
0.1L POINT	19+37.10	775.68	19+37.10	776.14	19+37.10	775.68
0.2L POINT	19+40.20	775.68	19+40.20	776.14	19+40.20	775.68
0.3L POINT	19+43.30	775.67	19+43.30	776.14	19+43.30	775.67
0.4L POINT	19+46.40	775.67	19+46.40	776.13	19+46.40	775.67
0.5L POINT	19+49.50	775.67	19+49.50	776.13	19+49.50	775.67
0.6L POINT	19+52.60	775.66	19+52.60	776.13	19+52.60	775.66
0.7L POINT	19+55.70	775.66	19+55.70	776.13	19+55.70	775.66
0.8L POINT	19+58.80	775.66	19+58.80	776.12	19+58.80	775.66
0.9L POINT	19+61.90	775.66	19+61.90	776.12	19+61.90	775.66
C/L BRG. N. ABUT.	19+65.00	775.65	19+65.00	776.12	19+65.00	775.65

NOTES

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.

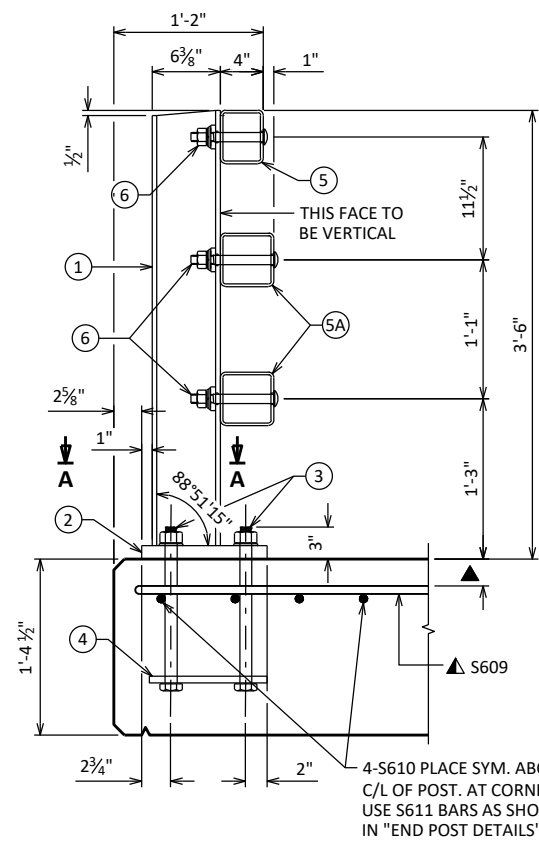
ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).

LEGEND

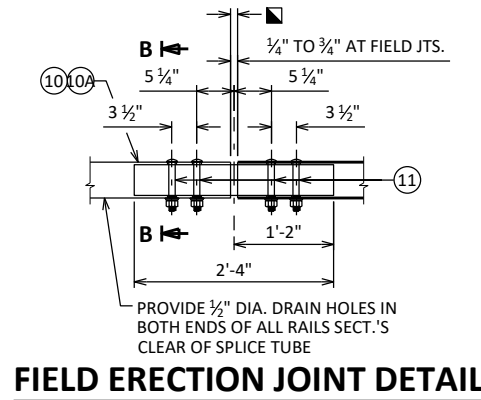
3/4" V-GROOVE REQ'D. EXTEND TO 6" FROM F.F. OF ABUT. DIAPHRAGMS.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-39-80			
DRAWN BY		DTH	PLANS CK'D KRB
SUPERSTRUCTURE CROSS SECTION AND DETAILS			SHEET 10

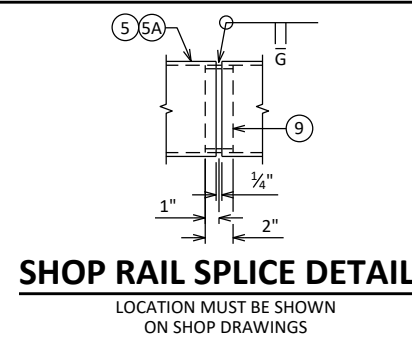
SCALE =



SECTION THRU RAILING ON DECK

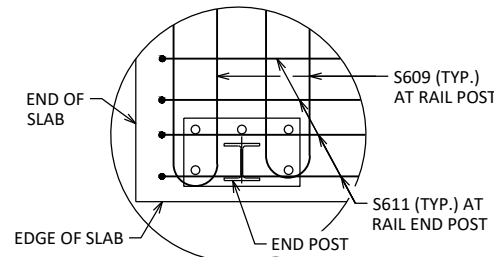


FIELD ERECTION JOINT DETAIL

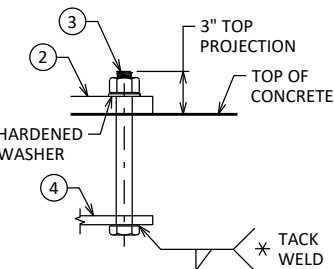


SHOP RAIL SPLICE DETAIL

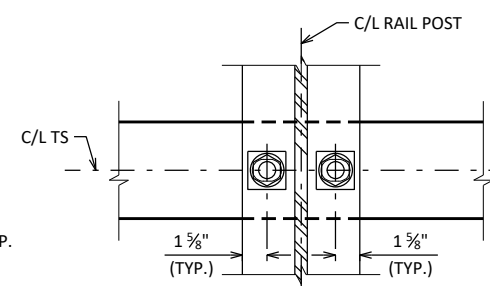
LOCATION MUST BE SHOWN ON SHOP DRAWINGS



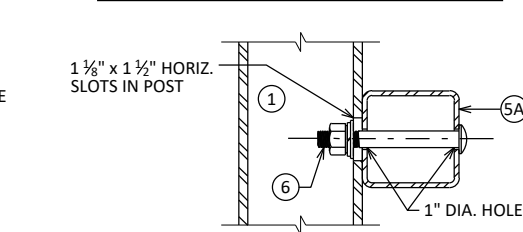
END POST DETAIL
REINFORCEMENT AT CORNERS



ANCHOR BOLTS



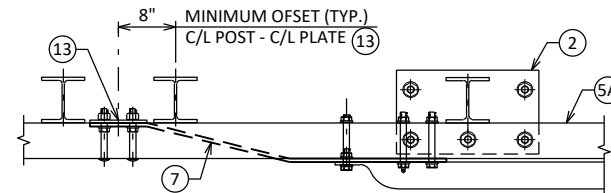
SECTION THRU POST WEB



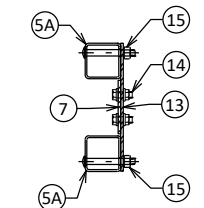
SECTION THRU RAIL

NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

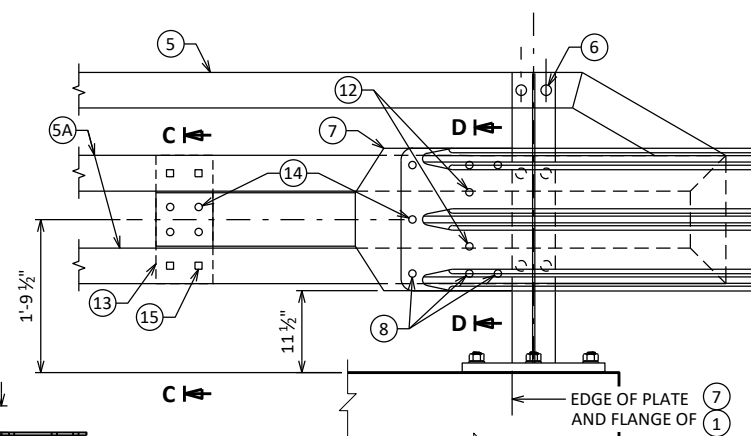
TYPICAL RAIL TO POST CONNECTIONS



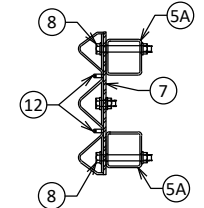
TOP VIEW AT END POST
THRIE BEAM RAIL ATTACHMENT



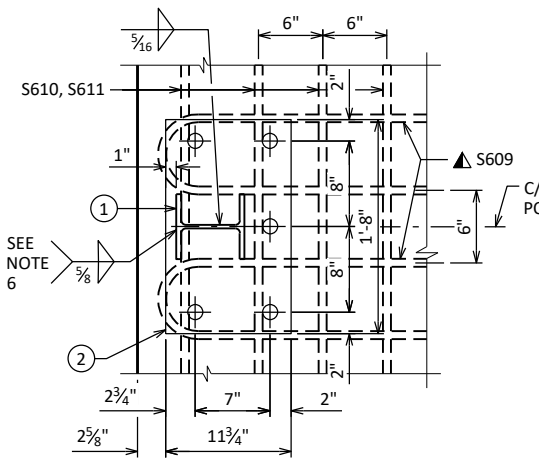
SECTION C-C



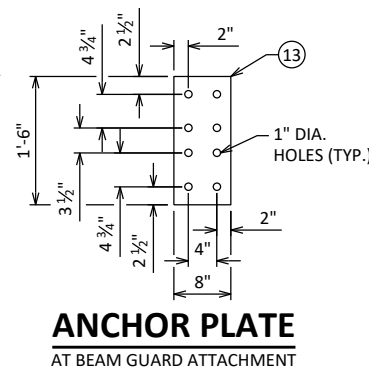
DETAIL AT END POST
THRIE BEAM RAIL ATTACHMENT



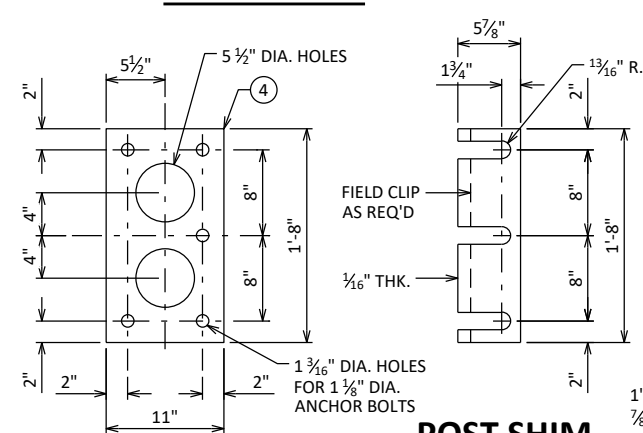
SECTION D-D



SECTION A-A

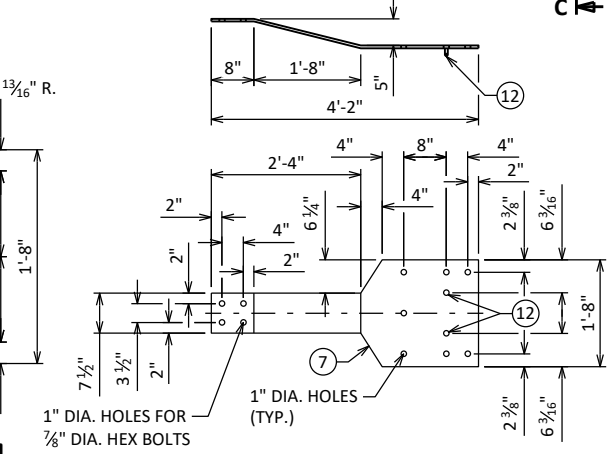


ANCHOR PLATE
AT BEAM GUARD ATTACHMENT

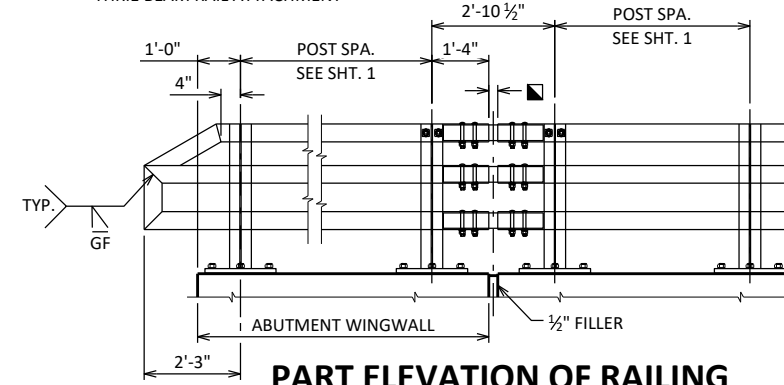


ANCHOR PLATE
AT RAIL TO DECK CONNECTION

POST SHIM
DETAIL



BACK-UP PLATE DETAIL
AT BEAM GUARD ATTACHMENT



PART ELEVATION OF RAILING

LEGEND

- ① W6x25 WITH 1 1/2" x 1 1/2" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6 CUT BOTTOM OF POST TO MATCH CROSS SLOPE OR ROADWAY. PLACE POST VERTICAL. PLACE NORMAL TO GRADE LINE.
- ② PLATE 1 1/4" x 11 3/4" x 1'-8" WITH 1 1/6" DIA. OVERSIZE HOLES FOR ANCHOR BOLTS NO. 3 WELD TO NO. 1 AS SHOWN.
- ③ ASTM A449 - 1 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'-9" LONG IN ABUTMENT WINGS. AT POSTS ON CONCRETE SLAB SUPERSTRUCTURE, USE 1'-3" LONG. (AN EQUIVALENT TREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D FOR CONSTRUCTABILITY.)
- ④ 5/8" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1 1/6" 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 3/8" 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 3/8" 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 5/16" x 1 1/4" LONGIT. SLOTTED HOLES IN PLATE NO. 10A. AT FIELD JOINTS. PROVIDE 1 5/16" 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 (5REQ'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.

LEGEND

- ▲ PLACE REINFORCING BELOW TOP MAT OF SLAB REINFORCEMENT.
- ▲ TIE TO TOP MAT OF STEEL.
- * ANCHOR BOLT ASSEMBLY MAY BE TACK WELDED, EITHER IN THE SHOP, OR IN THE FIELD AFTER THE ANCHOR PLATE IS PLACED.
- 1/4" TO 3/4" AT ABUTMENTS.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-39-80			
DRAWN BY		DTH	PLANS CK'D KRB
TUBULAR STEEL RAILING TYPE 'M'			SHEET 11

8

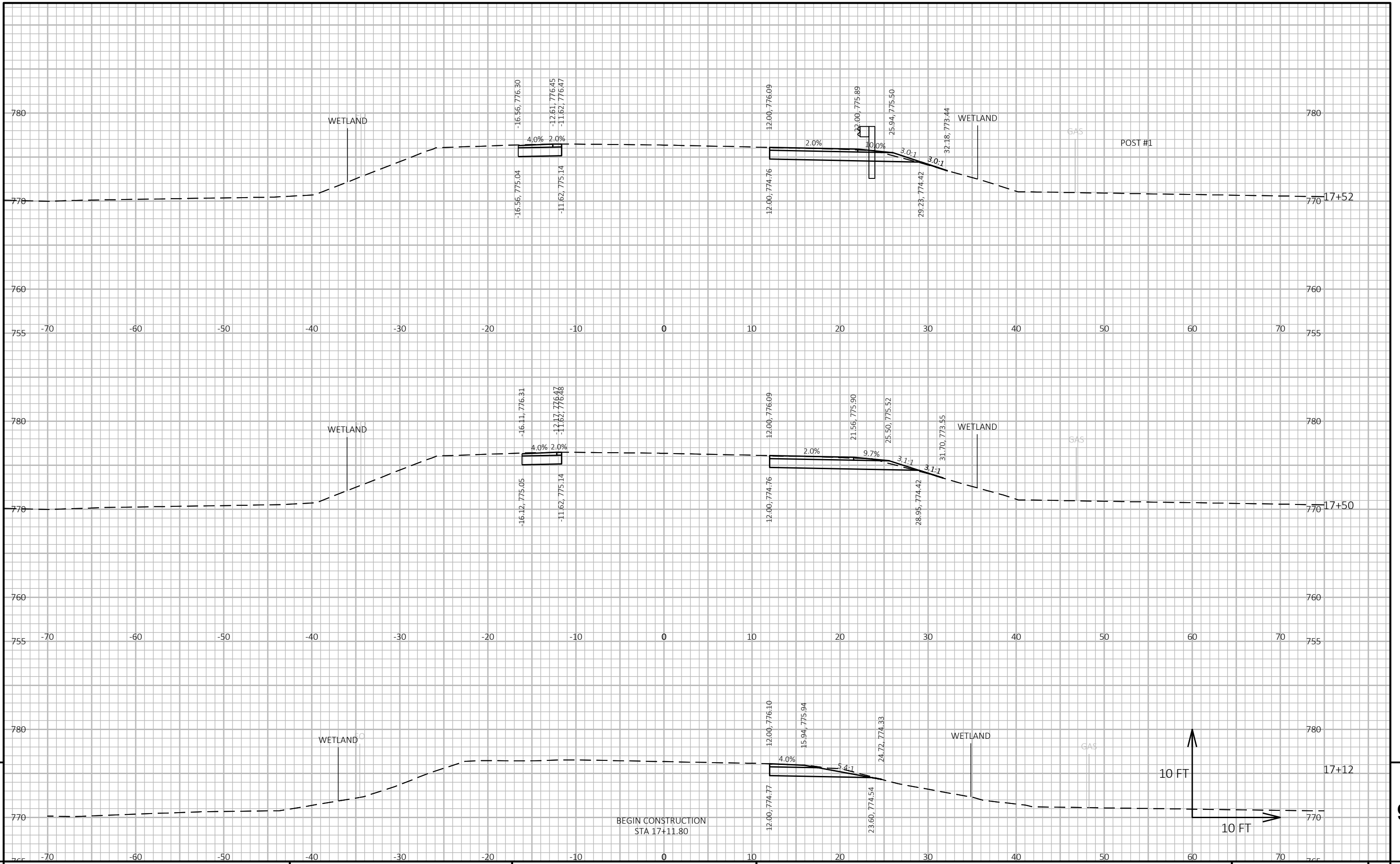
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SCALE =

CTH CX		AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		ORDINATE NOTE 3
STATION	DISTANCE	CUT NOTE 1	FILL NOTE 2	EBS (5% OF CUT)	CUT NOTE 1	FILL NOTE 2	EBS	1.00 NOTE 1	FILL 1.25	
17+12	---	11.4	0.0	0.6	0	0	0	0	0	0
17+50	38	23.9	0.1	1.2	25	0	1	25	0	25
17+52	2	38.5	0.2	1.9	2	0	0	27	0	27
17+77	25	40.3	2.2	2.0	36	1	2	63	1	62
17+89	13	38.8	8.4	1.9	18	2	1	82	5	77
18+00	11	37.8	9.8	1.9	15	4	1	97	9	88
18+02	2	37.6	10.1	1.9	2	1	0	99	10	90
18+14	13	37.9	9.3	1.9	18	5	1	117	15	101
18+39	25	37.5	9.3	1.9	35	9	2	152	26	126
18+50	11	36.8	3.7	1.8	15	3	1	167	29	137
18+52	2	68.7	3.9	3.4	3	0	0	170	30	140
19+00	48	63.4	8.2	3.2	118	11	6	288	43	245
19+02	2	63.8	15.1	3.2	4	1	0	292	44	248
19+66	---	64.9	10.5	3.2	0	0	0	292	44	248
20+00	34	60.8	17.1	3.0	79	17	4	371	66	305
20+16	16	65.6	8.5	3.3	38	8	2	409	75	333
20+29	12	33.9	22.6	1.7	23	7	1	432	84	347
20+41	13	34.5	26.9	1.7	16	11	1	448	99	349
20+50	9	35.5	29.9	1.8	11	9	1	459	110	349
20+54	4	35.9	29.5	1.8	5	4	0	464	115	348
20+66	13	37.8	21.5	1.9	17	12	1	481	130	351
20+79	13	18.1	24.5	0.9	13	11	1	494	144	350
21+00	21	18.8	0.0	0.9	15	10	1	508	156	353
21+17	17	5.6	0.0	0.3	8	0	0	516	156	361
COLUMN TOTALS					516	124	26			

NOTES:

- 1) CUT: CUT INCLUDES SALVAGED PAVEMENT MATERIAL.
- 2) FILL: FILL DOES NOT INCLUDE SALVAGED/UNUSABLE PAVEMENT MATERIAL.
- 3) AVAILABLE STRUCTURE EXCAVATION IS FOR INFORMATION ONLY AND IS INCLUDED IN BID ITEM "EXCAVATION FOR STRUCTURES B-13-0080"
- 3) MASS ORDINATE: MASS ORDINATE = (CUT) - (FILL * FILL FACTOR)



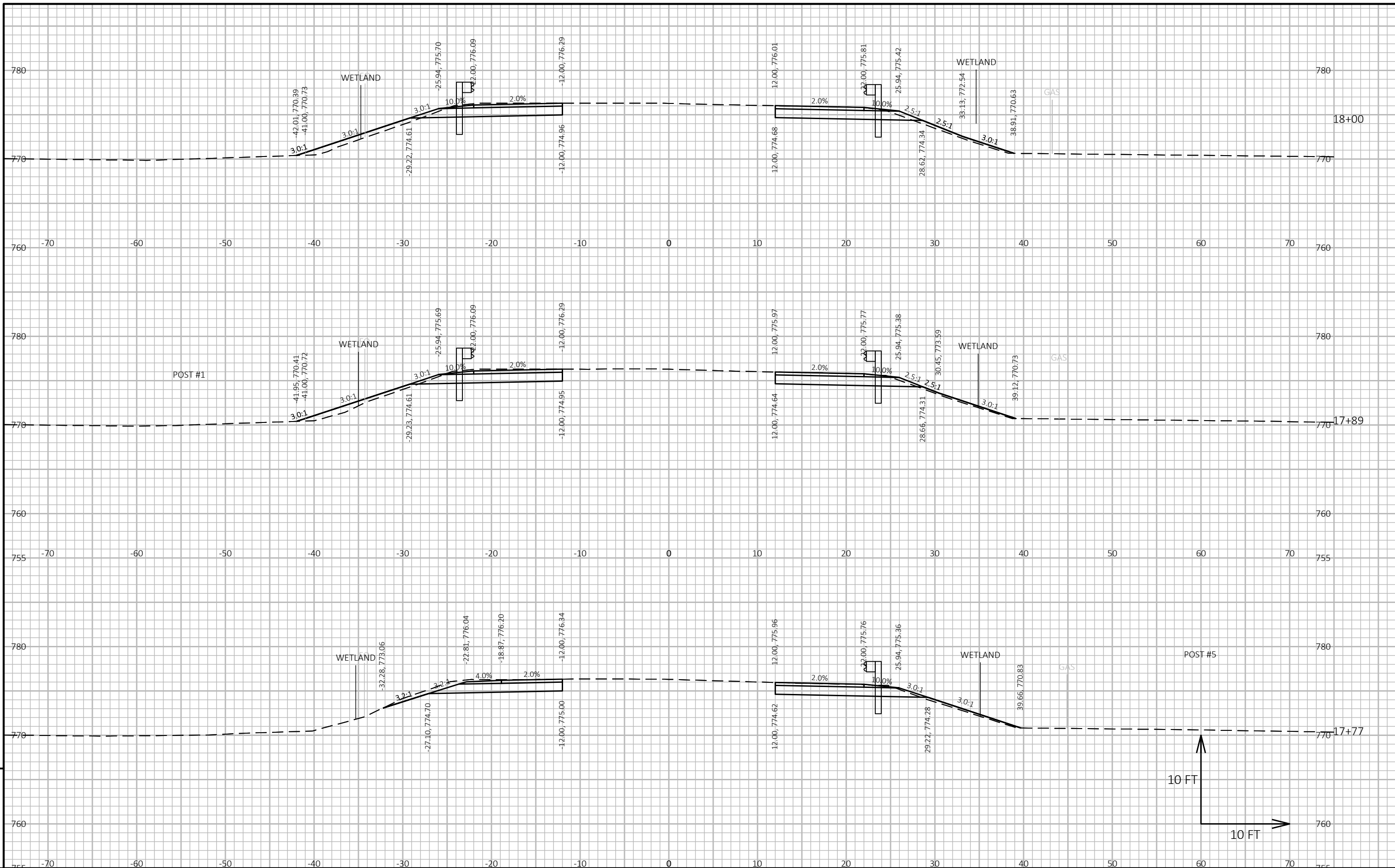
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PROJECT NO: 6748-02-70	HWY: CTH CX	COUNTY: MARQUETTE	CROSS SECTIONS: CTH CX	SHEET	E
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LAYOUT NAME - 090201-xs

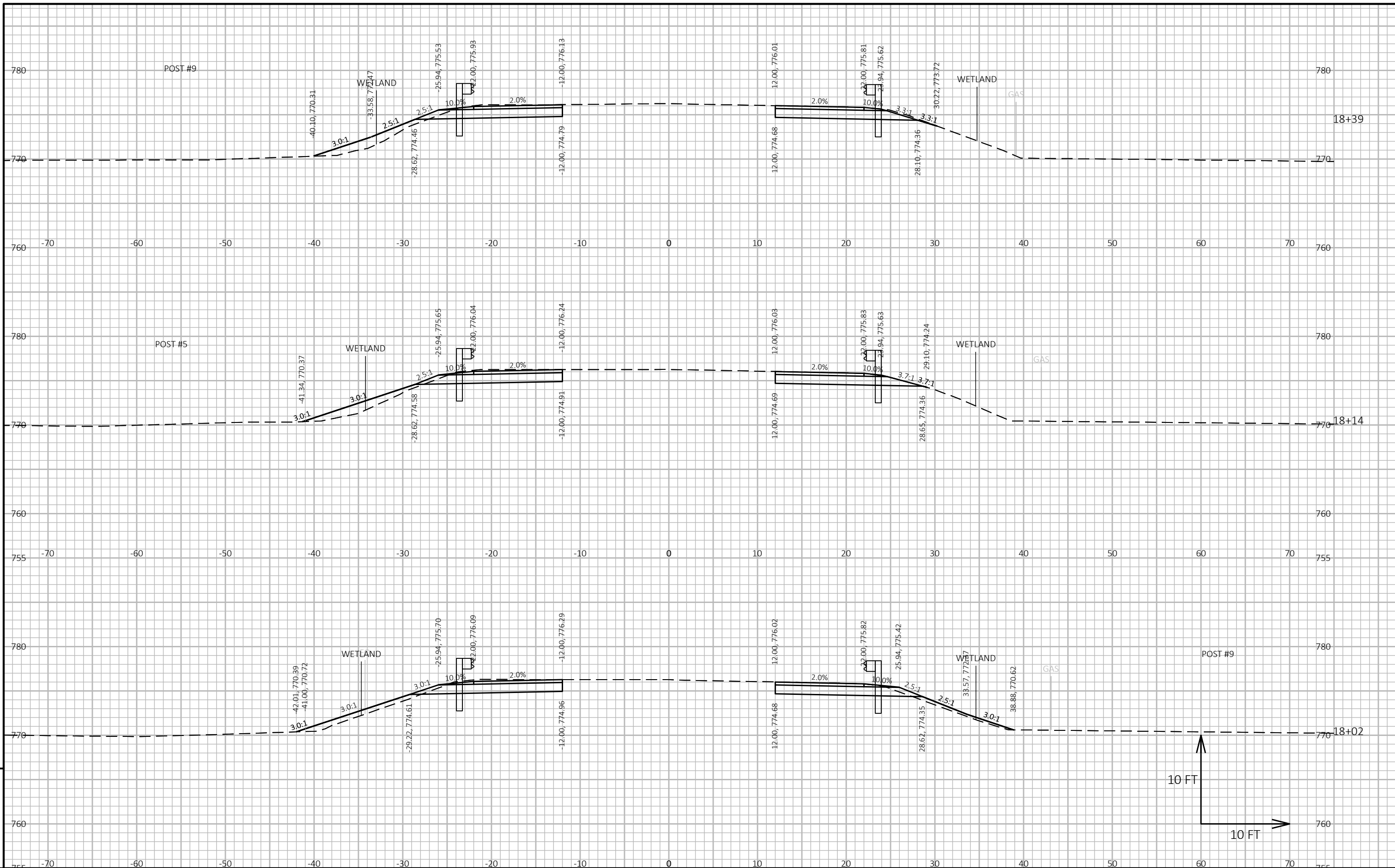


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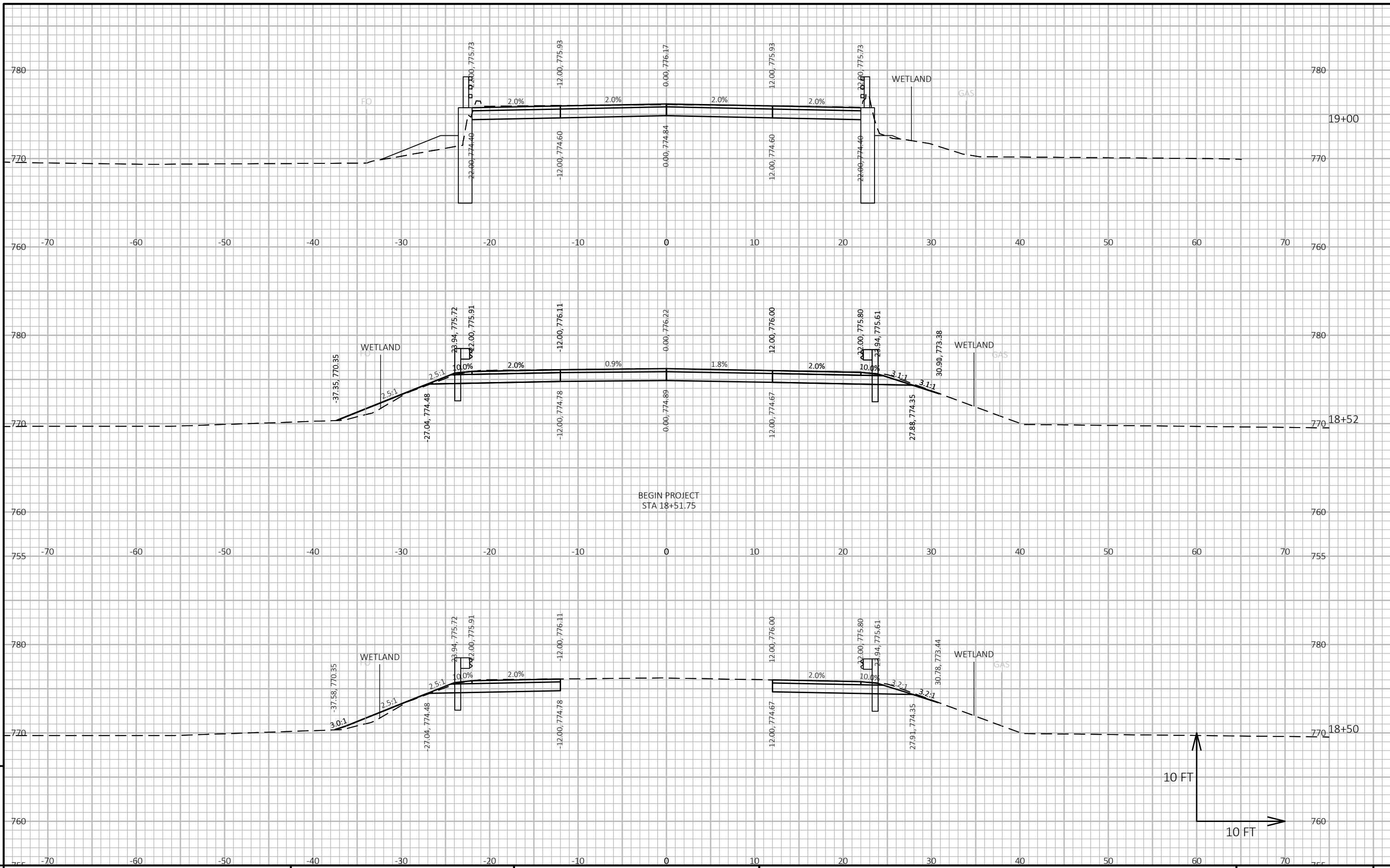
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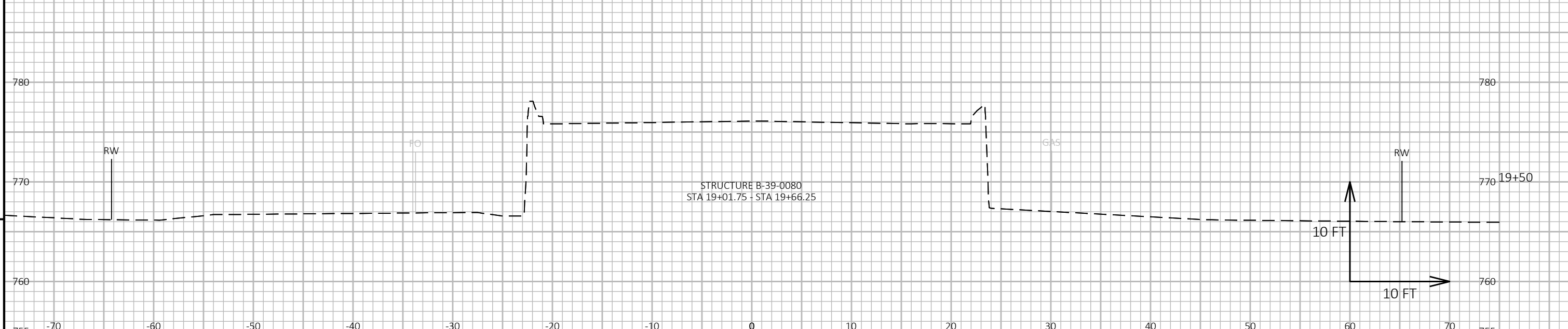
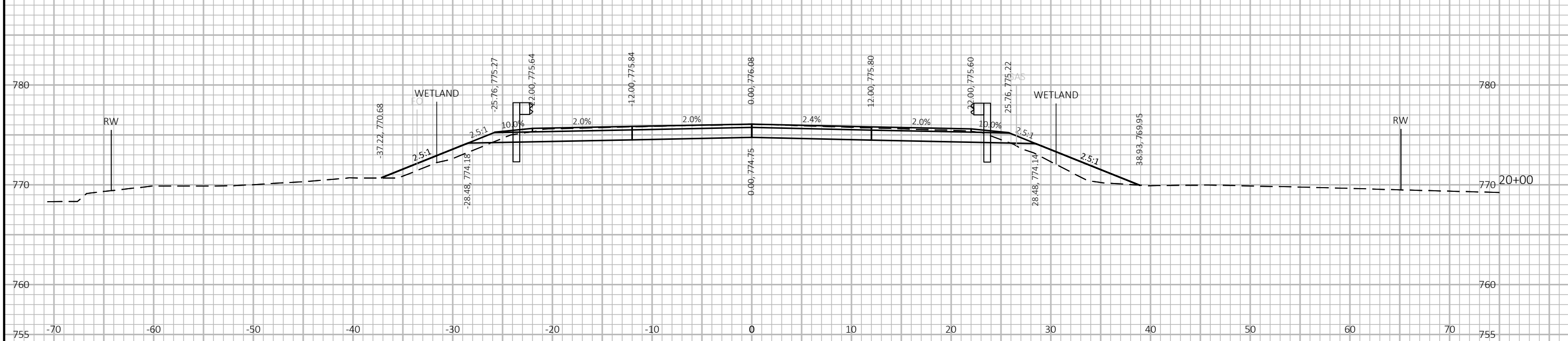
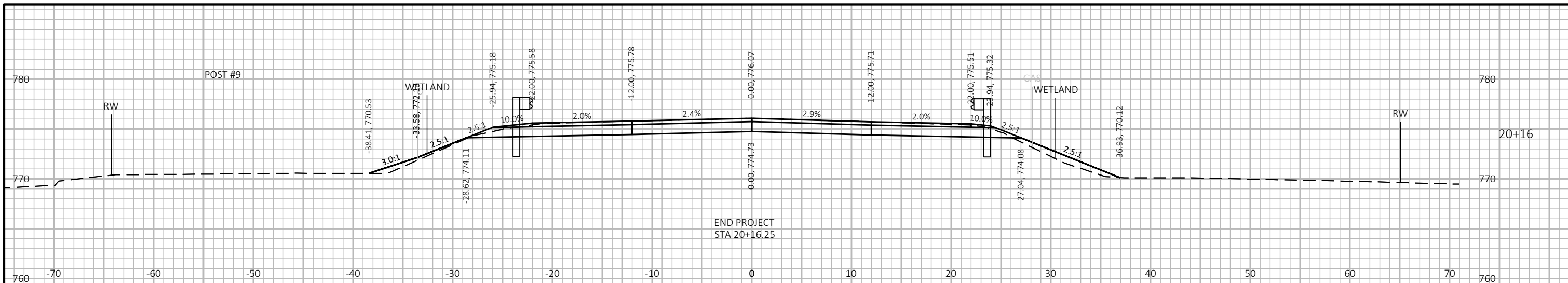
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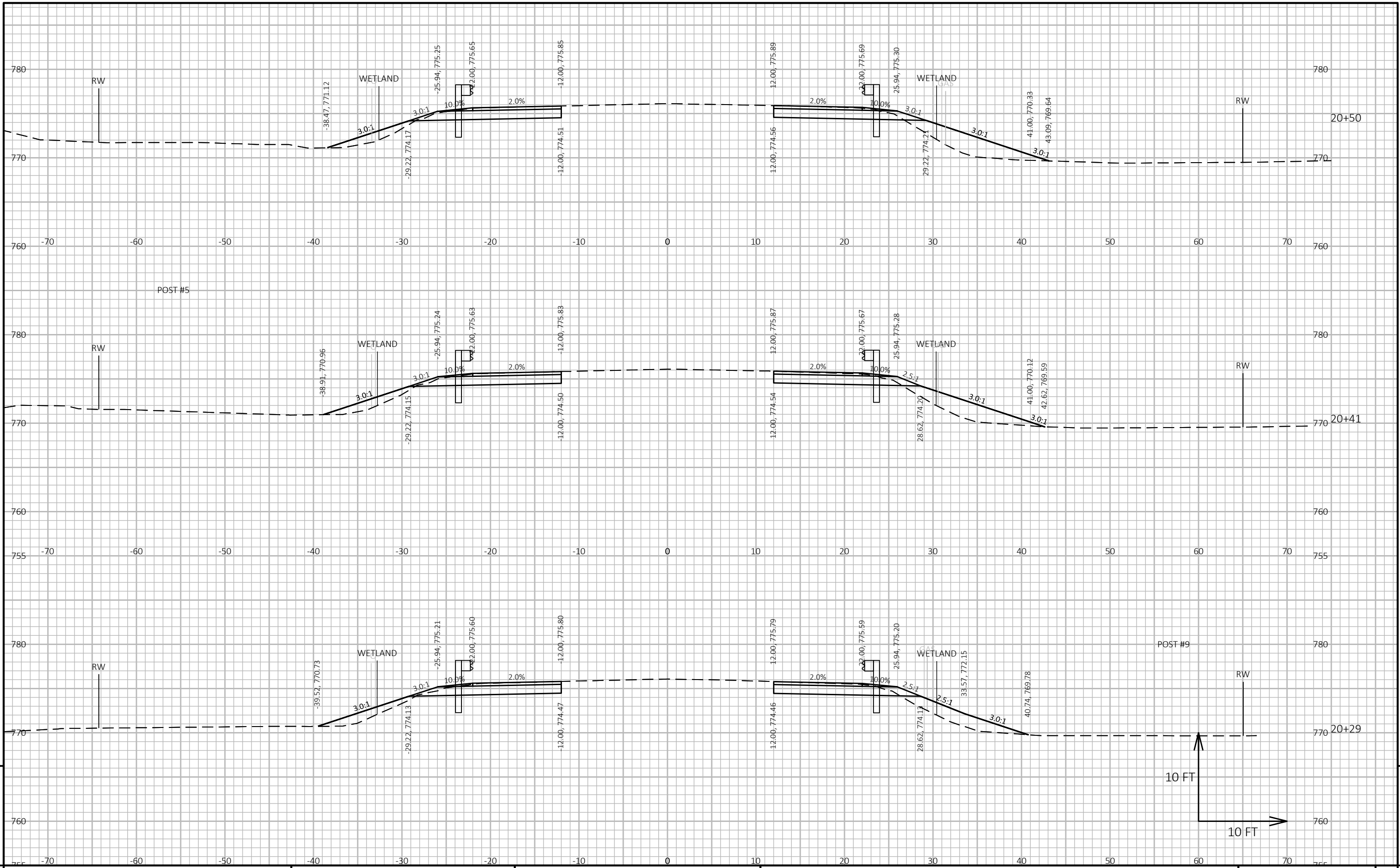
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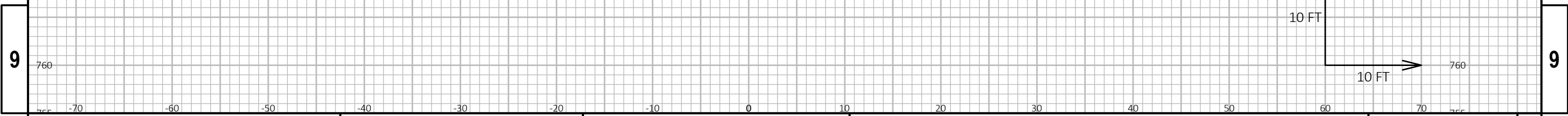


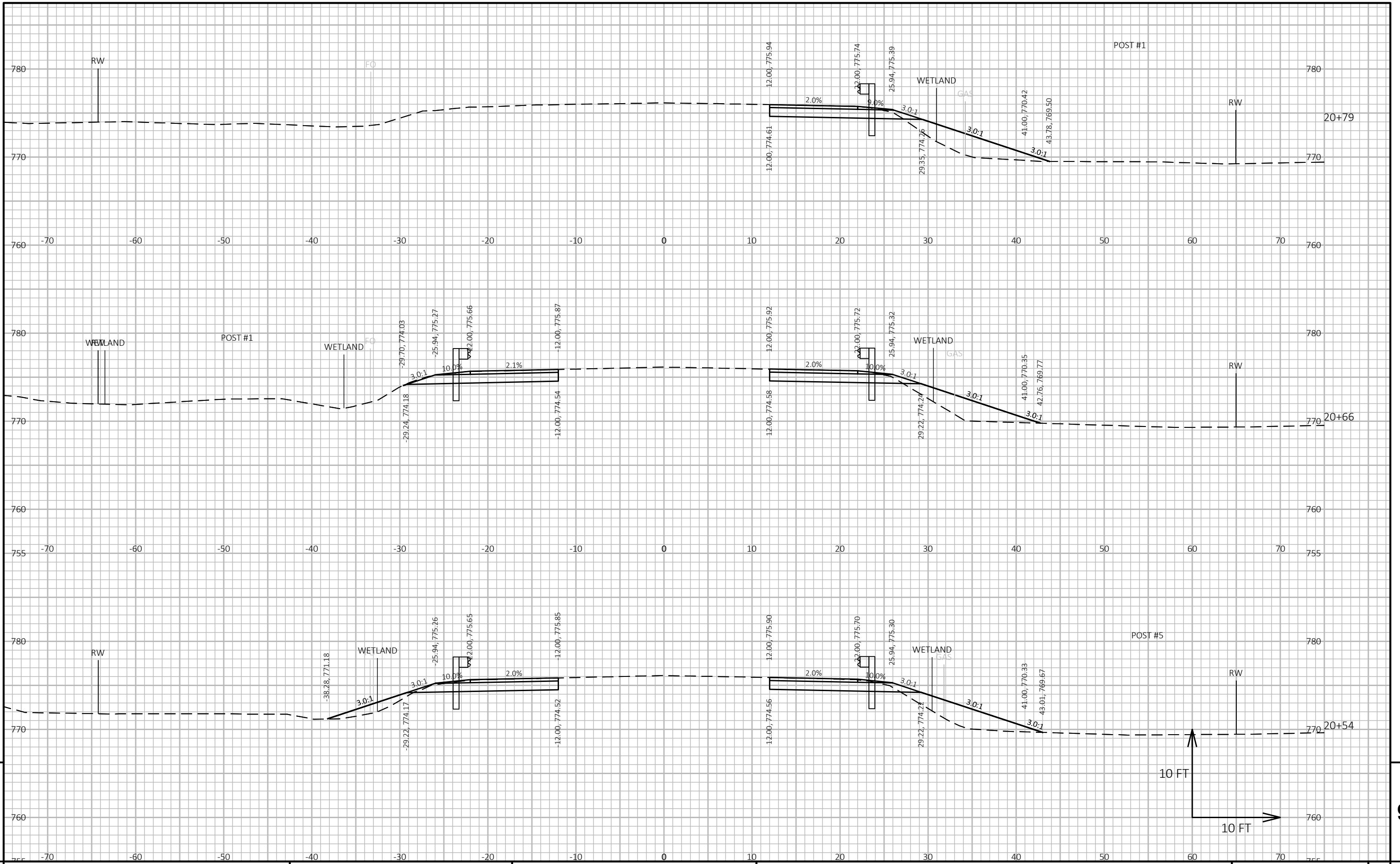
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PROJECT NO: 6748-02-70

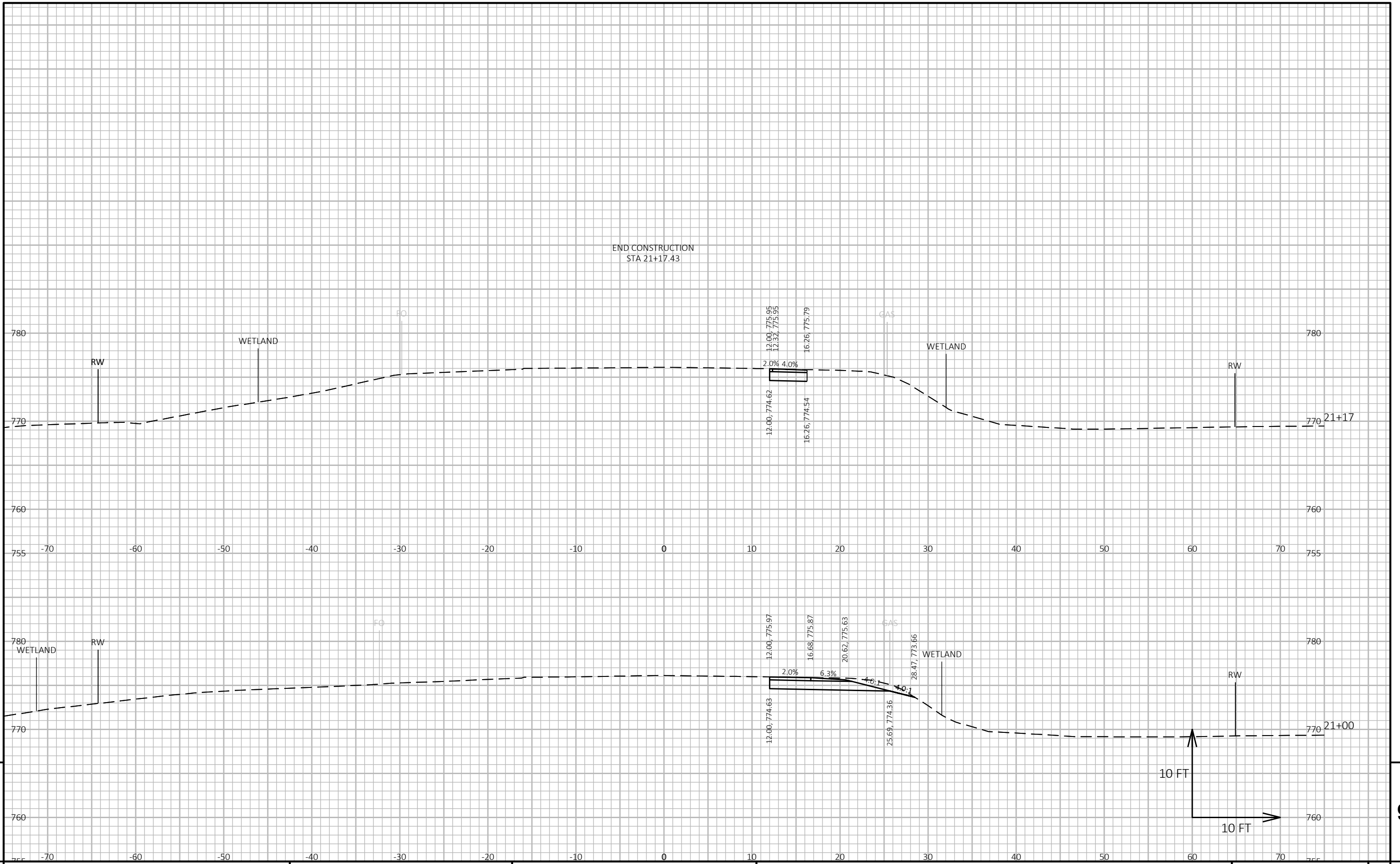
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COUNTY: MARQUETTE

CROSS SECTIONS: CTH CX

SHEET

E



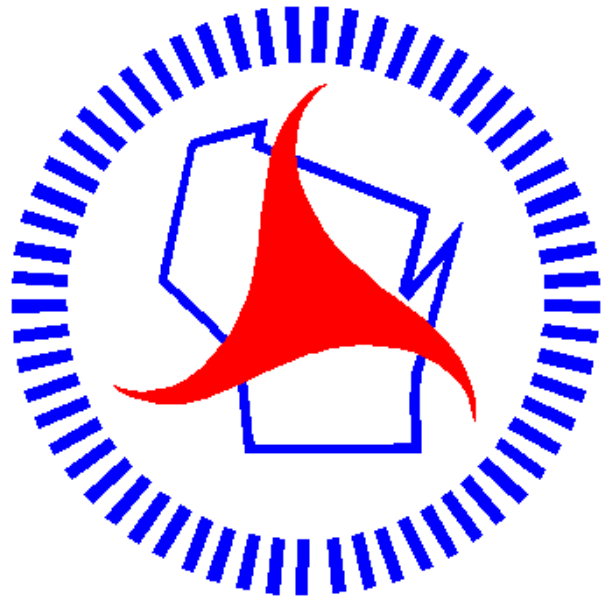
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LAYOUT NAME - 090208-xs



Wisconsin Department of Transportation

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