

LAX
PROJECT ID:
WITH: N/A

5616-05-81

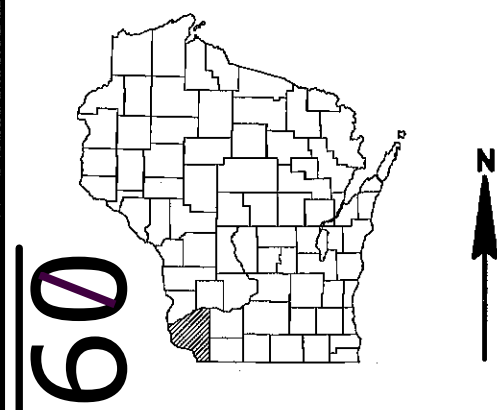
COUNTY:
GRANT

AUGUST 2021

ORDER OF SHEETS

Section No.	1	Title
Section No.	2	Typical Sections and Details
Section No.	3	Estimate of Quantities
Section No.	3	Miscellaneous Quantities
Section No.	4	Right of Way Plat
Section No.	5	Plan and Profile (Includes Erosion Control)
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 = 94



DESIGN DESIGNATION

A.A.D.T. (2022)	=	560
A.A.D.T. (2042)	=	640
D.H.V. (2042)	=	72
D.D.	=	60/40
T.	=	8.0%
DESIGN SPEED	=	80 MPH
ESALS	=	88,000

CONVENTIONAL SYMBOLS

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

PROFILE	
GRADE LINE	----
ORIGINAL GROUND	----
MARSH OR ROCK PROFILE (To be noted as such)	----
SPECIAL DITCH	----
GRADE ELEVATION	95.36
CULVERT (Profile View)	----
UTILITIES	
ELECTRIC	E
FIBER OPTIC	FO
GAS	G
SANITARY SEWER	SAN
STORM SEWER	SS
TELEPHONE	T
WATER	W
UTILITY PEDESTAL	----
POWER POLE	----
TELEPHONE POLE	----

BEGIN PROJECT
STA. 15+00
Y= 602,219.49
X= 784,533.48

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

MOUNT HOPE - BOSCOBEL

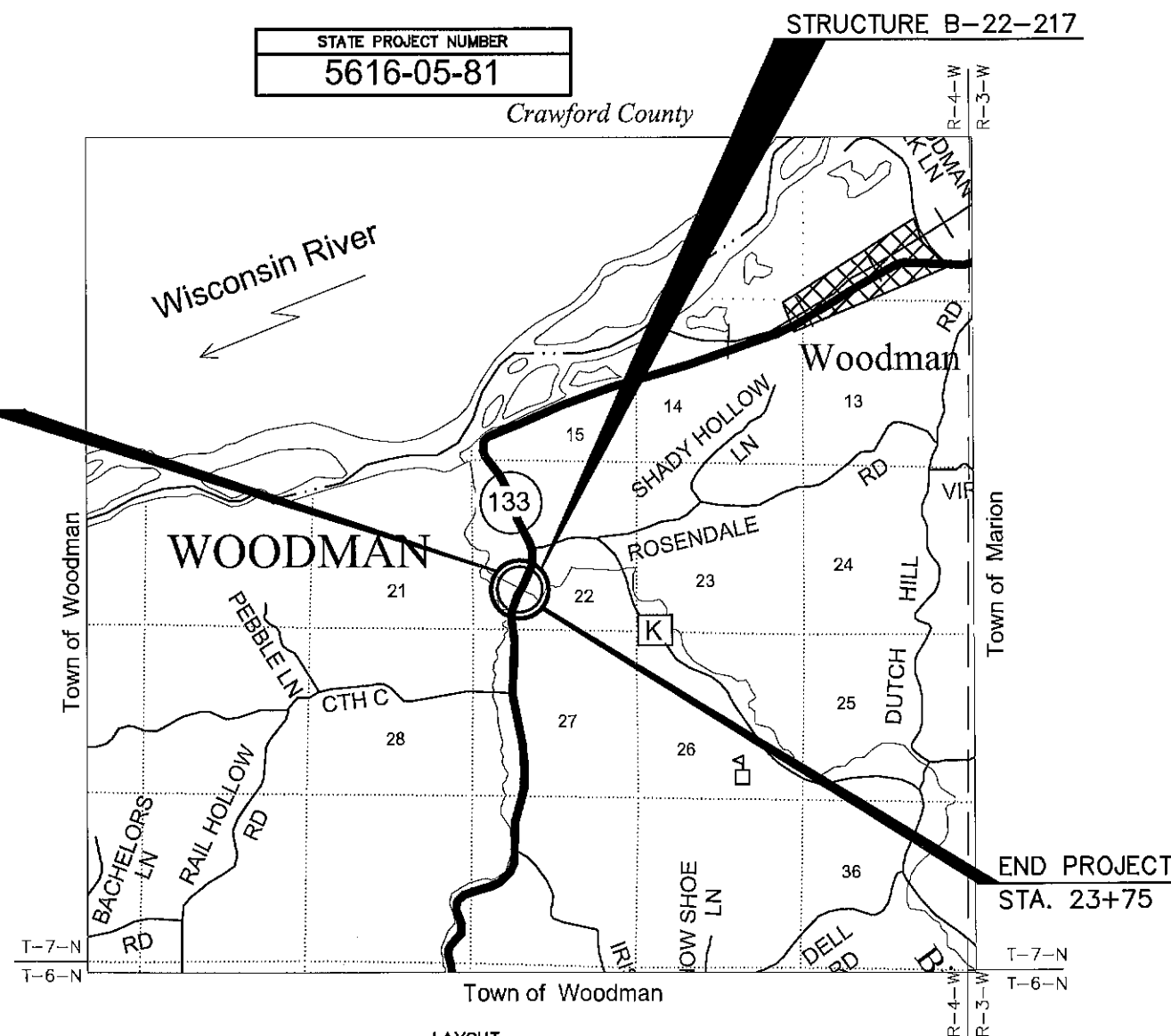
GREEN RIVER BRIDGE B-22-217

STH 133

GRANT COUNTY

STATE PROJECT NUMBER
5616-05-81

STRUCTURE B-22-217



LAYOUT
SCALE 0 1 MILE

TOTAL NET LENGTH OF CENTERLINE = 0.166 MILES

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

ELEVATION SHOWN ON THIS PLAN ARE REFERENCE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988, NAVD (2012).

STATE PROJECT

5616-05-81

FEDERAL PROJECT

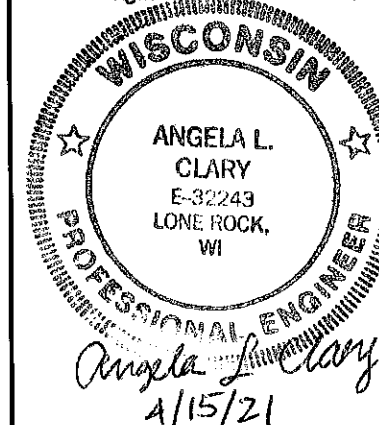
PROJECT
WISC 2021437

CONTRACT
1

ORIGINAL PLANS PREPARED BY

JEWELL
associates engineers, inc.

Engineers - Architects - Surveyors



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor JEWELL ASSOCIATES ENGINEERS, INC.
WISCONSIN DEPT. OF TRANSPORTATION/
JEWELL ASSOCIATES ENGINEERS, INC.

Designer

Project Manager TIMOTHY MAEDKE, P.E.

Regional Examiner SW REGION

Regional Supervisor REINY YAHNKE, P.E.

C.D. Examiner

APPROVED FOR THE DEPARTMENT

DATE: 4/19/2021

(Signature)

E

LIST OF STANDARD ABBREVIATIONS

ABUT	Abutment	INV	Invert	SALV	Salvaged
AC	Acre	IP	Iron Pipe or Pin	SAN S	Sanitary Sewer
AGG	Aggregate	IRS	Iron Rod Set	SEC	Section
AH	Ahead	JT	Joint	SHLDR	Shoulder
<	Angle	JCT	Junction	SHR	Shrinkage
ASPH	Asphaltic	LHF	Left-Hand Forward	SW	Sidewalk
AVG	Average	L	Length of Curve	S	South
ADT	Average Daily Traffic	LIN FT or LF	Linear Foot	SQ	Square
BAD	Base Aggregate Dense	LC	Long Chord of Curve	SF or SQ FT	Square Feet
BK	Back	MH	Manhole	SY or SQ YD	Square Yard
BF	Back Face	MB	Mailbox	STD	Standard
BM	Bench Mark	ML or M/L	Match Line	SDD	Standard Detail Drawings
BR	Bridge	N	North	STH	State Trunk Highways
C or C/L	Center Line	Y	North Grid Coordinate	STA	Station
CC	Center to Center	O.A.L.	Overall Length	SS	Storm Sewer
CTH	County Trunk Highway	OD	Outside Diameter	SG	Subgrade
CR	Creek	PLE	Permanent Limited	SE	Superelevation
CR	Crushed		Easement	SL or S/L	Survey Line
CY or CU YD	Cubic Yard	PT	Point	SV	Septic Vent
CP	Culvert Pipe	PC	Point of Curvature	T	Tangent
C & G	Curb and Gutter	PI	Point of Intersection	TEL	Telephone
D	Degree of Curve	PRC	Point of Reverse Curvature	TEMP	Temporary
DHV	Design Hour Volume	PT	Point of Tangency	TI	Temporary Interest
DIA	Diameter	POC	Point On Curve	TLE	Temporary Limited
E	East	POT	Point on Tangent		Easement
X	East Grid Coordinate	PVC	Polyvinyl Chloride	t	Ton
ELEC	Electric (al)	PCC	Portland Cement Concrete	T or TN	Town
EL or ELEV	Elevation	LB	Pound	TRANS	Transition
ESALS	Equivalent Single Axle	PSI	Pounds Per Square Inch	TL or T/L	Transit Line
	Loads	PE	Private Entrance	T	Trucks (percent of)
EBS	Excavation Below Subgrade	R	Radius	TYP	Typical
ESTR	Existing Sign to Remain	RR	Railroad	UNCL	Unclassified
FF	Face to Face	R	Range	UG	Underground Cable
FE	Field Entrance	RL or R/L	Reference Line	USH	United States Highway
F	Fill	RP	Reference Point	VAR	Variable
FG	Finished Grade	RCCP	Reinforced Concrete	V	Velocity or Design Speed
FL or F/L	Flow Line		Culvert Pipe	VERT	Vertical
FT	Foot	REQ'D	Required	VC	Vertical Curve
FTG	Footing	RES	Residence or Residential	VOL	Volume
GN	Grid North	RW	Retaining Wall	WM	Water Main
HT	Height	RT	Right	WV	Water Valve
CWT	Hundredweight	RHF	Right-Hand Forward	W	West
HYD	Hydrant	R/W	Right-of-Way	WB	Westbound
INL	Inlet	R	River	YD	Yard
ID	Inside Diameter	RD	Road		
		RDWY	Roadway		

GENERAL NOTES

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

EXCAVATION BELOW SUBGRADE (EBS) IS NOT USED TO BALANCE YARDAGE, AND IS NOT SHOWN ON THE CROSS SECTIONS BUT IS MEASURED AND PAID FOR AS COMMON EXCAVATION. EXACT LOCATIONS OF EBS WILL BE DETERMINED BY THE ENGINEER.

DISTURBED AREAS SHOWN WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER HINGE POINTS ARE TO BE FERTILIZED (TYPE B), SEEDED (USE SEED MIX NO. 20), AND MULCH/EROSION MAT AS DIRECTED BY THE ENGINEER. ALL POST CONSTRUCTION WET AREAS SHALL BE SEEDED WITH SEEDING MIXTURE NO. 60. DO NOT USE FERTILIZER IN WETLANDS.

SILT FENCE AND TEMPORARY DITCH CHECKS SHALL BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER IN THE FIELD. SILT FENCE SHALL BE PLACED PRIOR TO CONSTRUCTION AND IN PLACE PRIOR TO STRUCTURE REMOVAL.

MULCH/EROSION MAT ALL MAINLINE SLOPES AS DIRECTED BY THE ENGINEER IN THE FIELD.

FILL EXPANSION IS VARIABLE AND IS ESTIMATED AT 25%.

ADJUST DITCH GRADING AS NECESSARY TO FIT FIELD CONDITIONS AND AS DIRECTED BY THE ENGINEER.

HMA PAVEMENT QUANTITIES WERE CALCULATED USING 112 LB/SY/IN. 3.5-INCH OF HMA SHALL BE CONSTRUCTED WITH A 1.75-INCH UPPER LAYER AND A 1.75-INCH LOWER LAYER.

REMOVAL OF ASPHALTIC SURFACES WHERE AN ABUTTING ASPHALTIC SURFACE IS TO REMAIN IN PLACE SHALL REQUIRE A SAWCUT MEETING THE APPROVAL OF THE ENGINEER IN THE FIELD.

THE LOCATION OF ALL PERMANENT SIGNING SHALL BE VERIFIED BY THE ENGINEER IN THE FIELD PRIOR TO PLACEMENT.

WETLANDS ARE PRESENT IN THE PROJECT LIMITS. THE CONTRACTOR SHALL NOT OPERATE OR STOCKPILE EQUIPMENT BEYOND THE EXISTING TOE OF SLOPE AT STA. 16+74 – STA. 20+06, LT.

CURVE DATA IS BASED ON THE ARC DEFINITION.

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

COORDINATES AND BEARINGS ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATES SYSTEM (WCCS), GRANT COUNTY.

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

CONTACTS

WISCONSIN DEPARTMENT OF TRANSPORTATION

WISDOT SW REGION
3550 MORMON COULEE RD.
LA CROSSE, WI 54601
ATTN: TIM MAEDKE, P.E.
PHONE: (608) 789-6317
EMAIL: timothy.maedke@dot.wi.gov

DNR LIAISON

STATE OF WISCONSIN
DNR SOUTH CENTRAL REGION HQ
3911 FISH HATCHERY ROAD
FITCHBURG, WI 53711
ATTN: ANDY BARTA
PHONE: (608) 275-3308
EMAIL: Andrew.Barta@dnr.wisconsin.gov

DESIGN CONSULTANT

JEWELL ASSOCIATES ENGINEERS, INC.
560 SUNRISE DRIVE
SPRING GREEN, WI 53588
ATTN: ANGIE CLARY, P.E.
PHONE: (608) 588-7484
CELL: (608) 574-3333
EMAIL: angie.clary@jewellassoc.com

UTILITIES

COMMUNICATION

TDS TELECOM
ATTN: MICHAEL HAMMEL
827 16TH AVE
P.O. BOX 88
MONROE, WI 53566
PHONE: (608) 328-5262
CELL: (608) 426-0843
EMAIL: michael.hammel@tdstelecom.com

DIGGERS

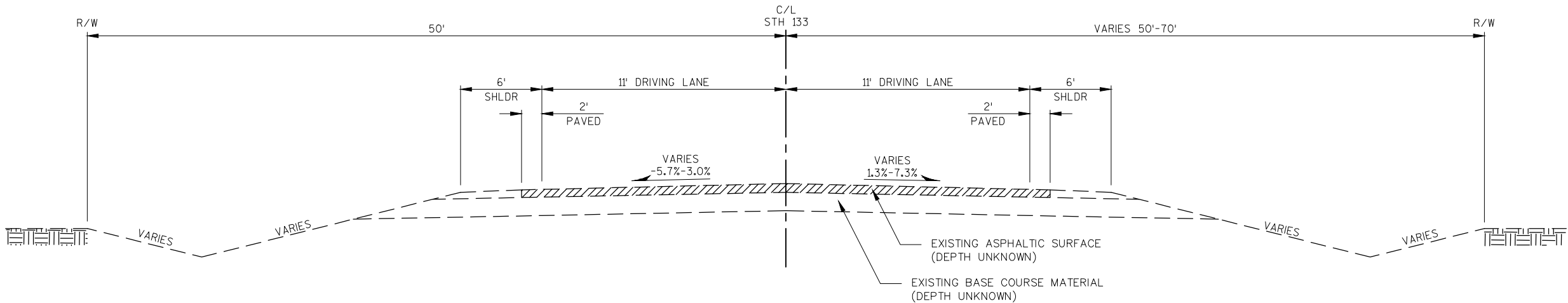
HOTLINE

Dial 811

or (800) 242-8511

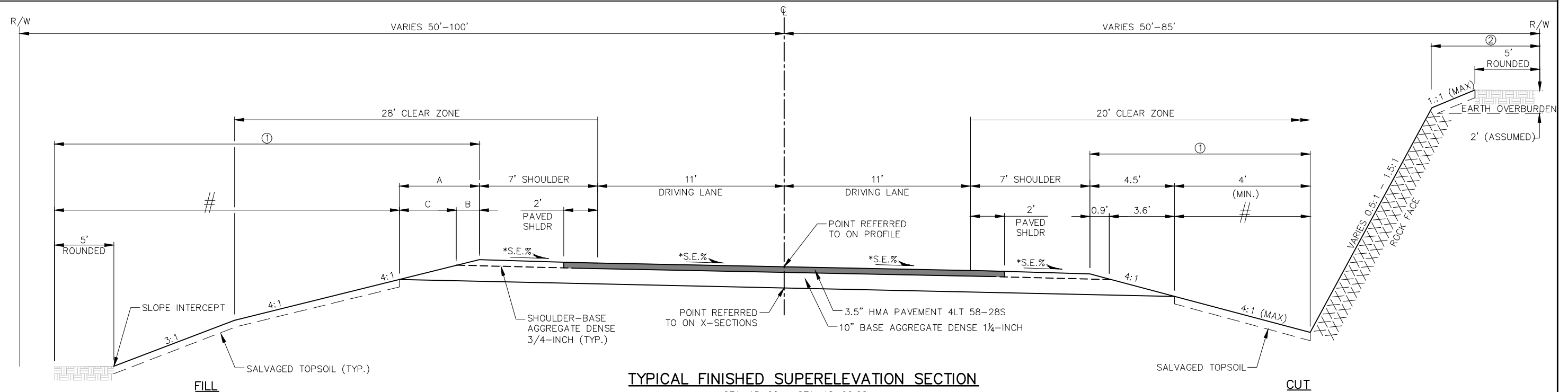
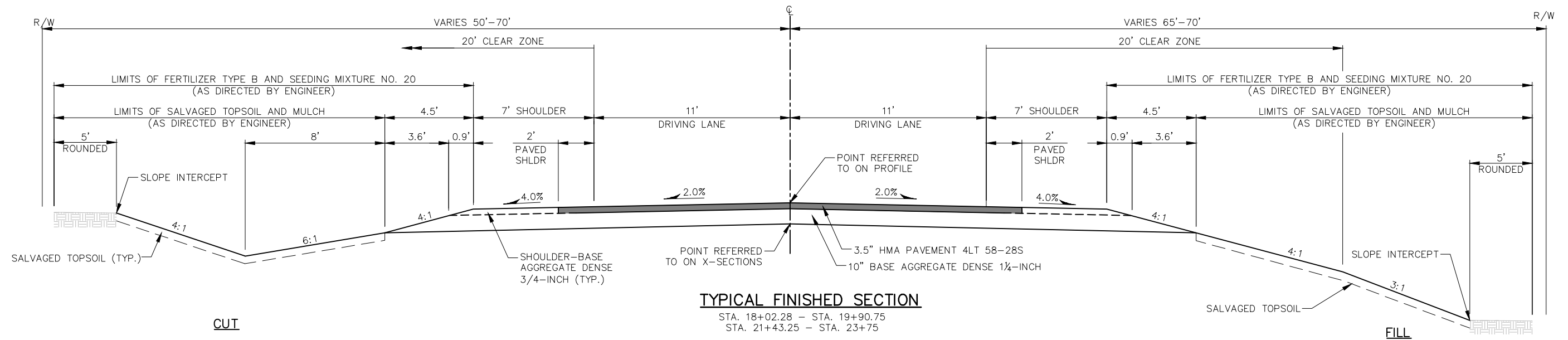
www.DiggersHotline.com

* DENOTES UTILITY IS NOT A MEMBER OF DIGGERS HOTLINE



TYPICAL EXISTING SECTION

STH 133

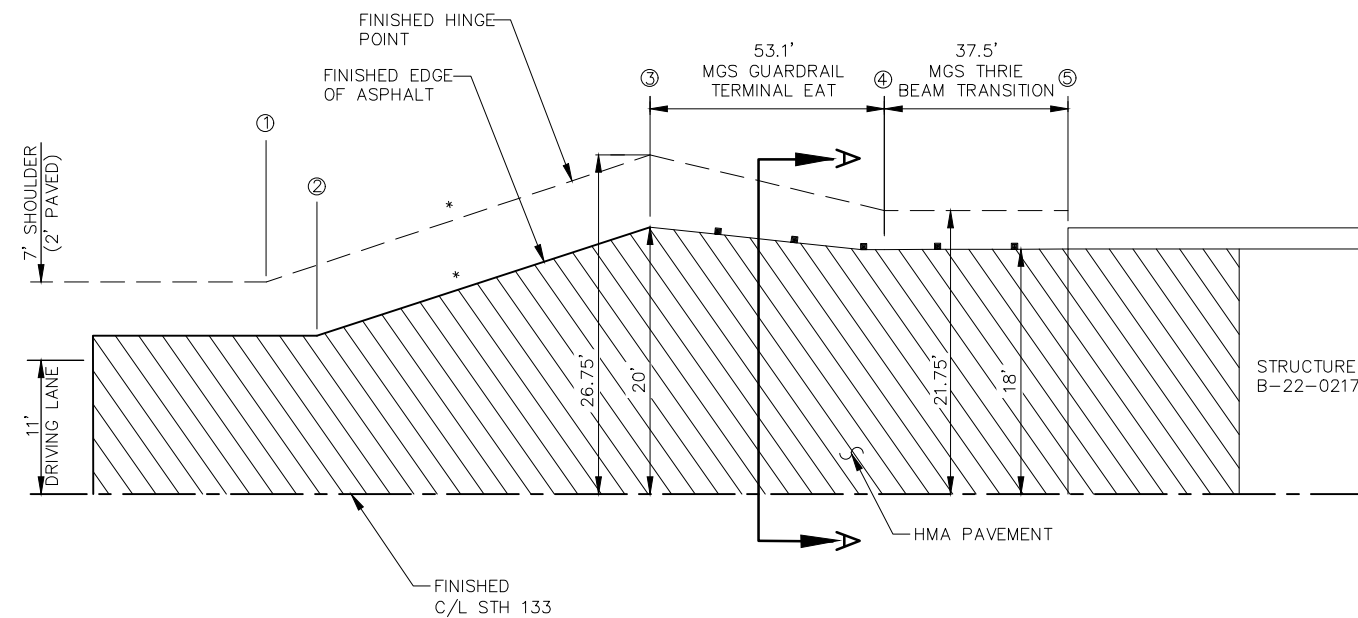
**SUPERELEVATION TABLE**

STATION	"A" "B" "C"		(FT.)	(FT.)	(FT.)
	LEFT	RIGHT			
15+00	MATCH EXISTING	MATCH EXISTING	—	—	—
15+35.28	6.0	6.0	3.6	0.9	2.7
15+50	5.6	5.6	3.7	1.0	2.7
16+00	4.1	4.1	3.9	1.0	2.9
16+50	2.6	2.6	4.0	1.0	3.0
16+68.62	2.0	2.0	4.2	1.1	3.1
17+00	1.1	2.0	4.3	1.1	3.2
17+35.28	0.0	2.0	4.5	1.2	3.3
17+50	0.4	2.0	4.6	1.2	3.4
18+00	1.9	2.0	4.8	1.2	3.6
18+02.28	2.0	2.0	4.9	1.3	3.6

THE LOW SIDE SHOULDER SLOPE ON SUPERELEVATED SECTIONS EQUALS THE SUPERELEVATION WHEN THE SUPERELEVATION IS GREATER THAN 0.04 FT./FT. IF THE SUPERELEVATION IS LESS THAN OR EQUALS 0.04 FT./FT., THEN THE LOW SIDE SHOULDER SLOPE IS 0.04 FT./FT. THE HIGH SIDE SHOULDER SLOPE ON THE SUPERELEVATED SECTIONS EQUALS THE SUPERELEVATION.

* SEE SUPERELEVATION TABLE

- ① LIMITS OF SEEDING MIXTURE NO. 20 AND FERTILIZER TYPE B (AS DIRECTED BY THE ENGINEER)
② LIMITS OF SEEDING MIXTURE NO. 20, FERTILIZER TYPE B, EROSION MAT CLASS II TYPE C, AND SALVAGED TOPSOIL (AS DIRECTED BY THE ENGINEER)
LIMITS OF SALVAGED TOPSOIL AND MULCH (AS DIRECTED BY THE ENGINEER)

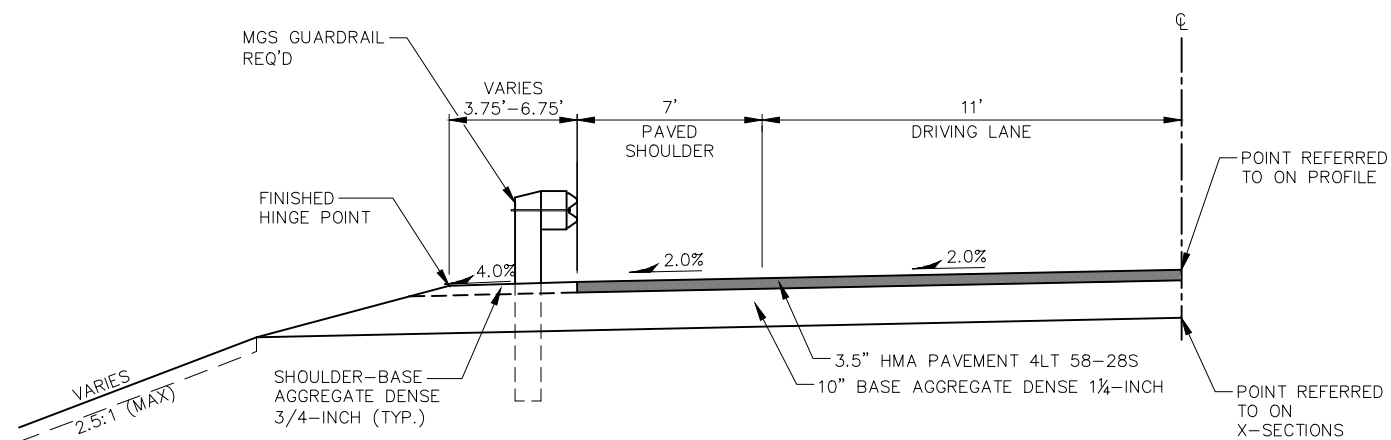


BEAMGUARD LAYOUT TABLE

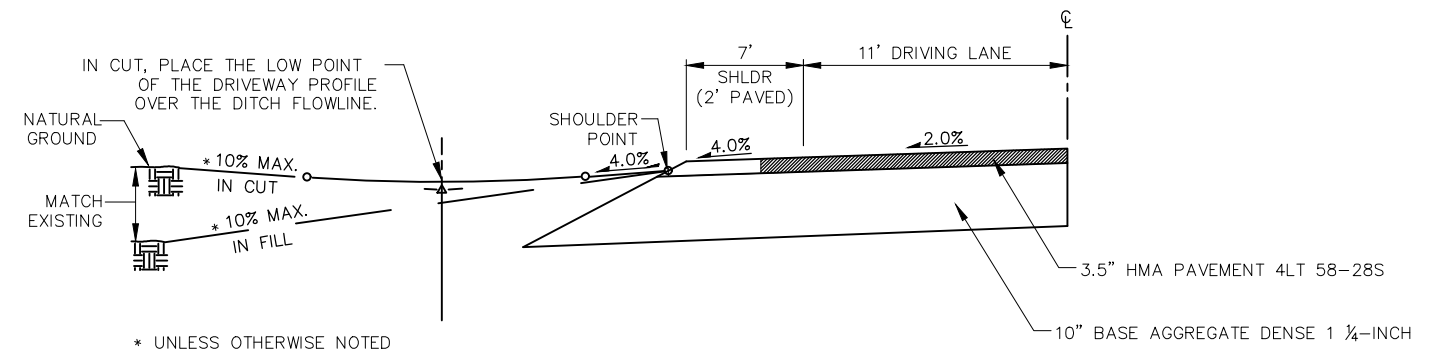
QUADRANT	LOCATION	STATION					*
		①	②	③	④	⑤	
SOUTHWEST	MAINLINE, LT.	18+46	18+52	18+80	19+33	19+70	4:1
SOUTHEAST	MAINLINE, RT.	18+46	18+52	18+80	19+33	19+70	4:1
** NORTHWEST	MAINLINE, LT.	23+75	23+59	22+54	22+01	21+64	15:1
** NORTHEAST	MAINLINE, RT.	23+75	23+59	22+54	22+01	21+64	15:1

BEAMGUARD LAYOUT DETAIL

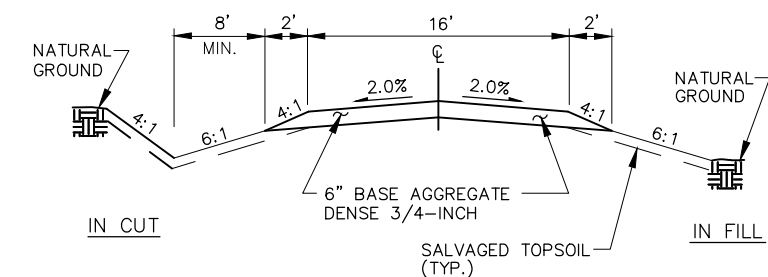
** SEE CONCRETE SURFACE DRAIN DETAIL



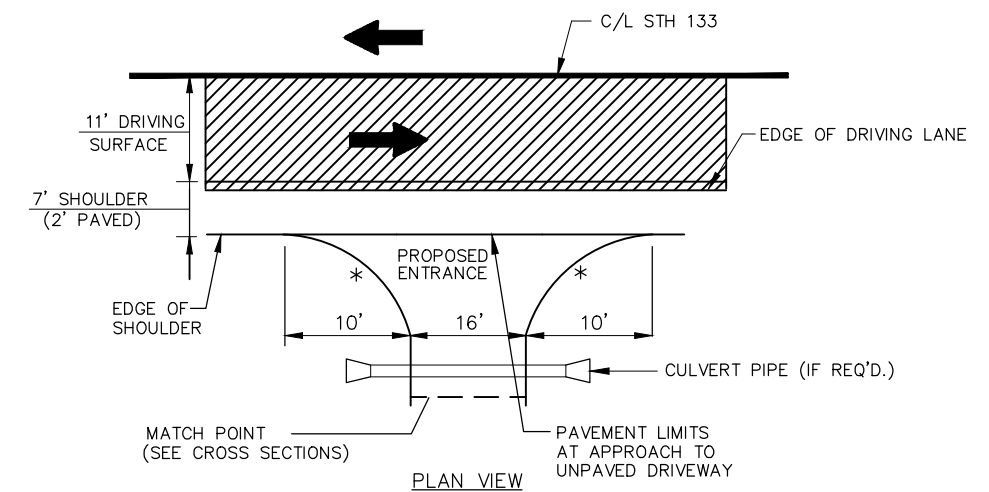
SECTION A-A



TYPICAL F.E. PROFILE



TYPICAL CROSS-SECTION FOR F.E.

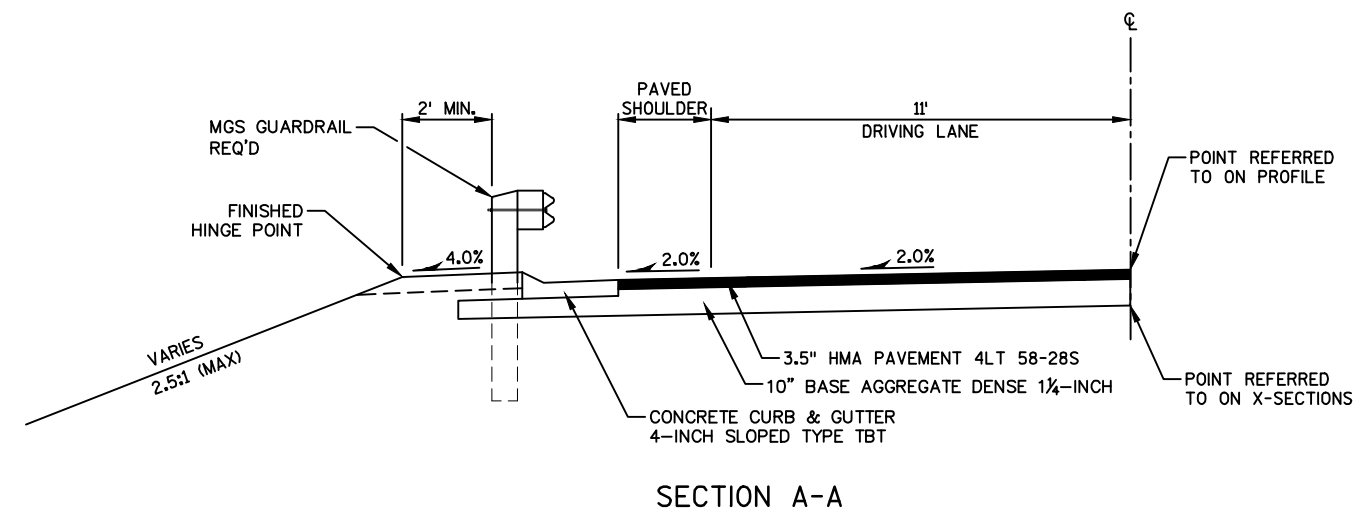
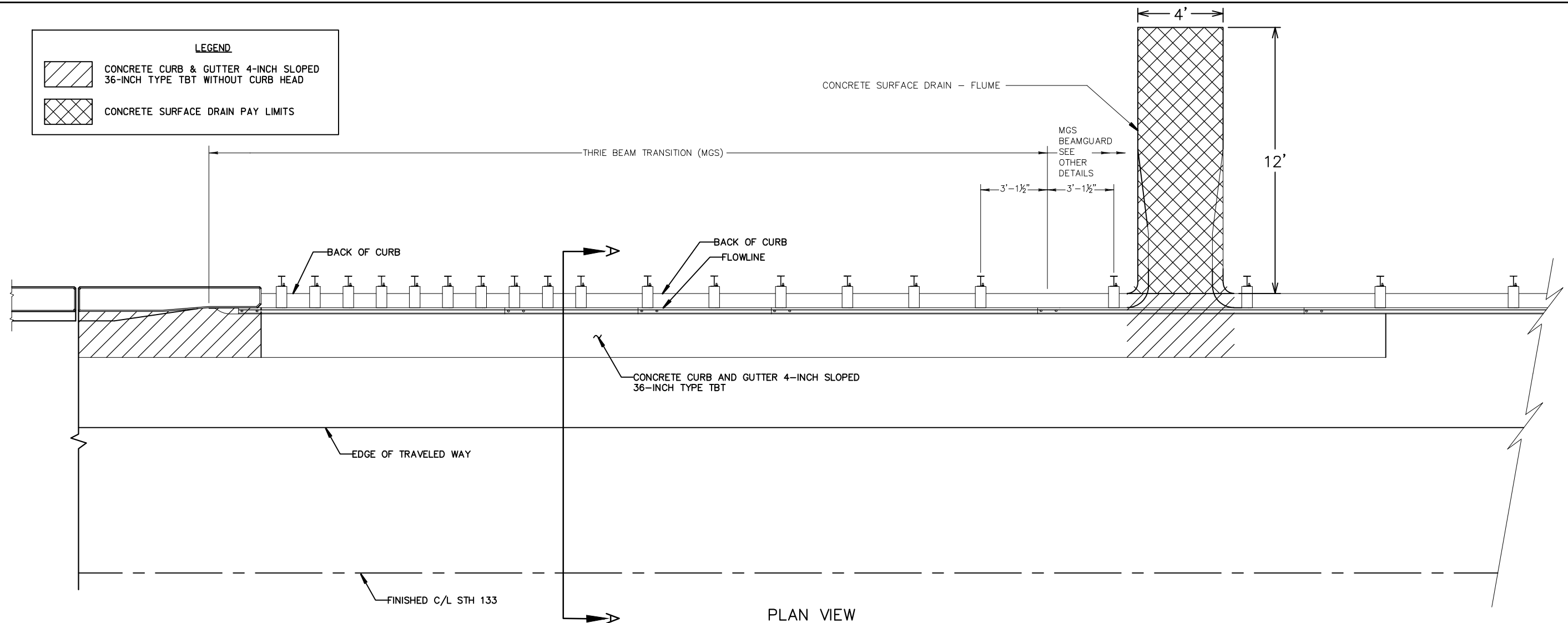
F.E. - STA. 17+89, RT.
F.E. - STA. 18+29, LT.

APPROACH AT F.E.

TYPICAL FIELD ENTERANCE (F.E.) DETAILS

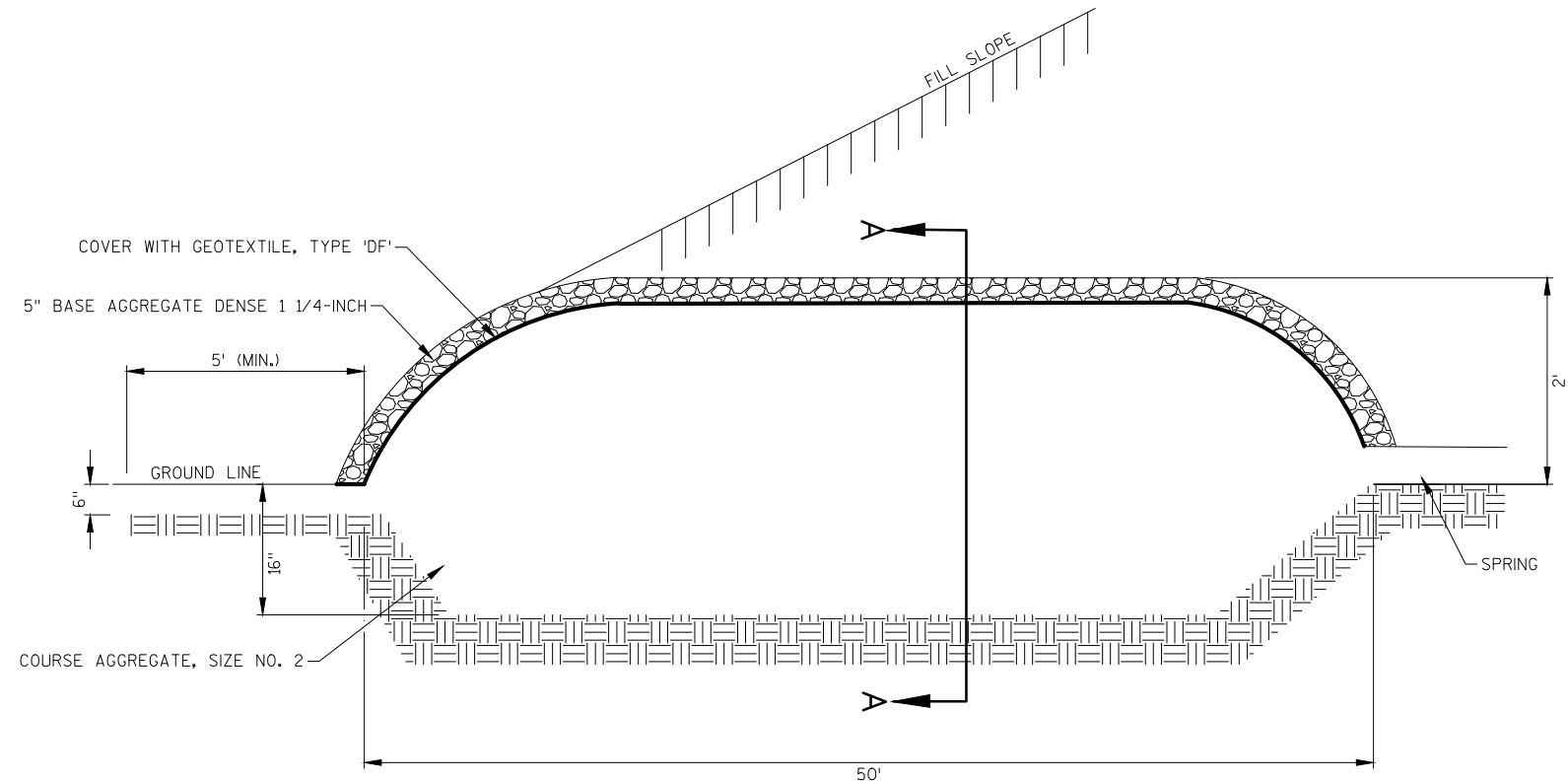
LIMITS OF HMA PAVEMENT 4LT 58-28S

* RADIUS = 10'

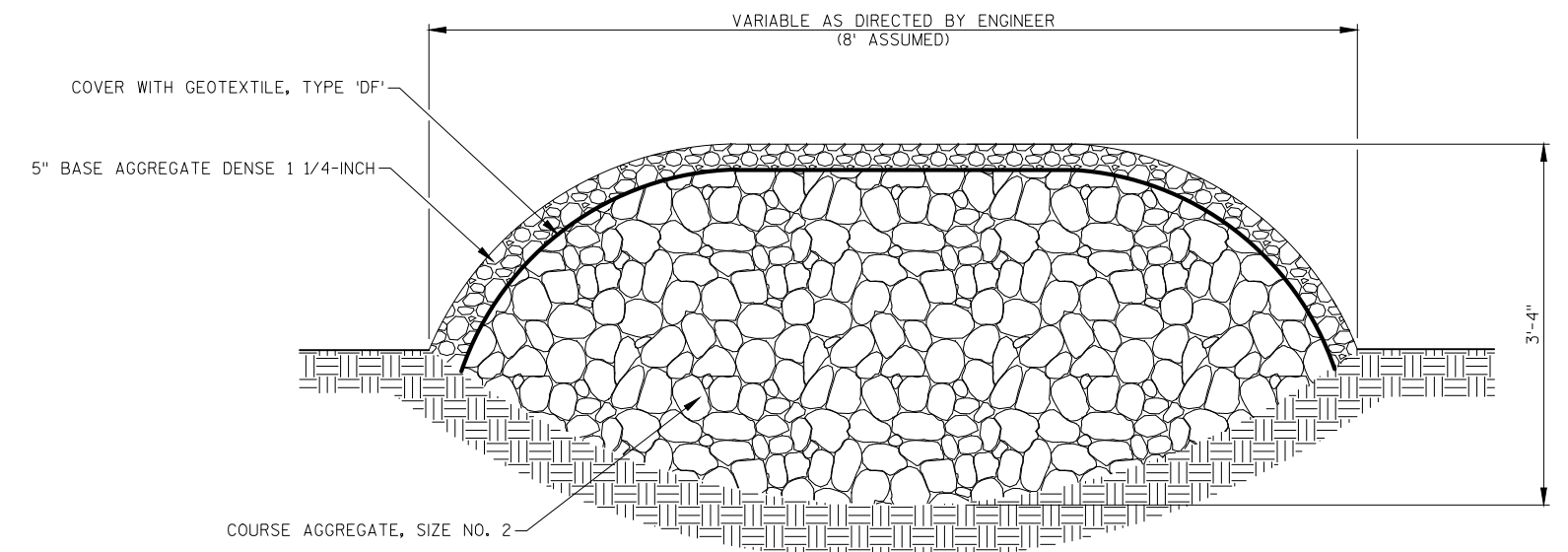
CONCRETE SURFACE DRAIN**NOTES**

THIS DETAIL IS FOR SHOWING PAY LIMITS ONLY.
SEE THE FOLLOWING SDD FOR SPECIFIC DETAILS:

- SDD MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
- SDD MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
- SDD MIDWEST GUARDRAIL SYSTEM (MGS) GUADRDRAIL
- SDD CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
- SDD CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
- SDD CONCRETE CURB & GUTTER



SECTION NORMAL TO CENTERLINE



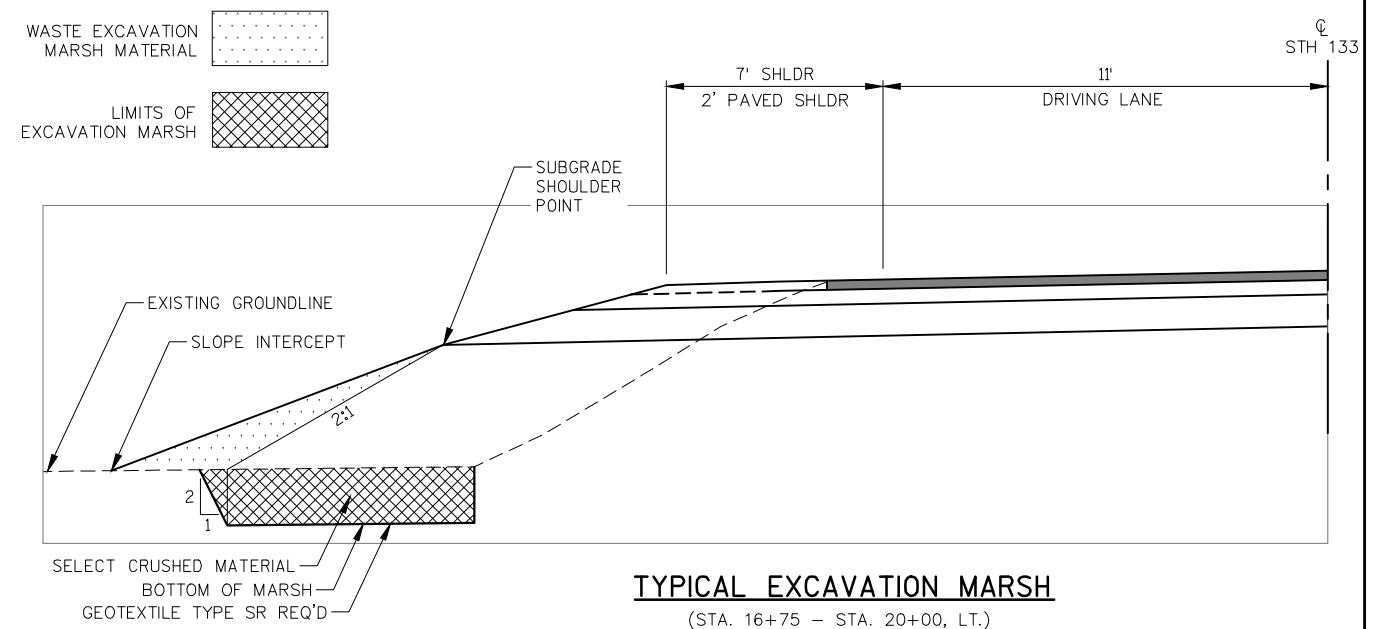
SECTION A-A

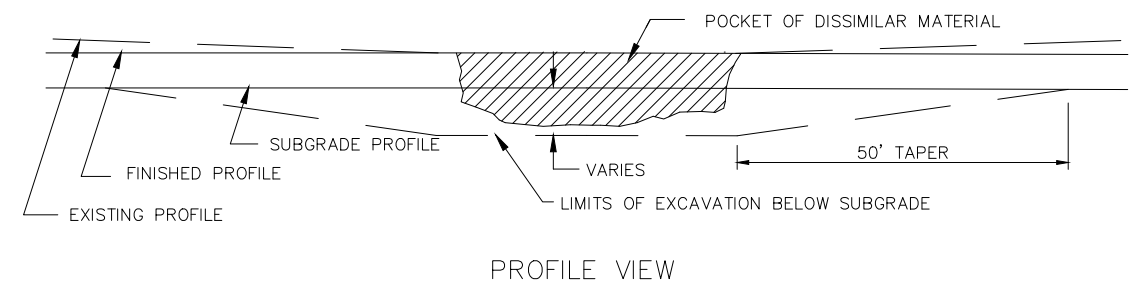
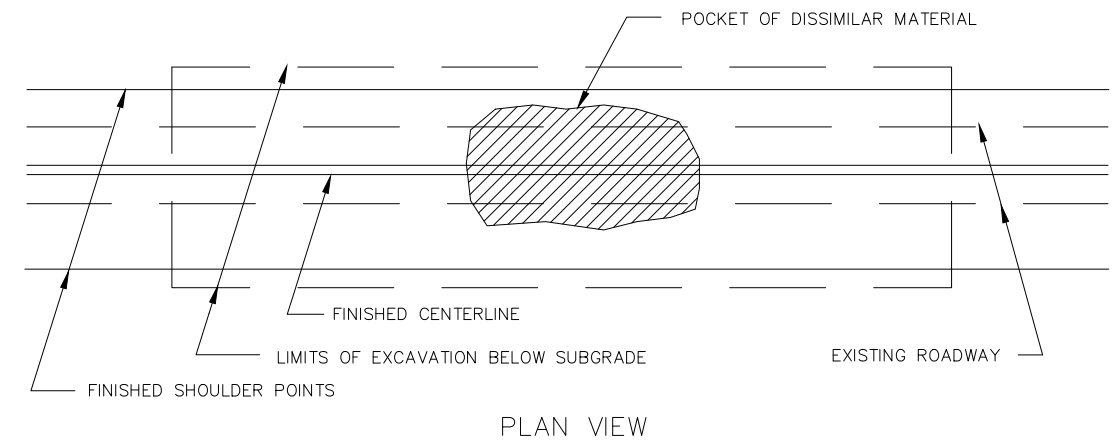
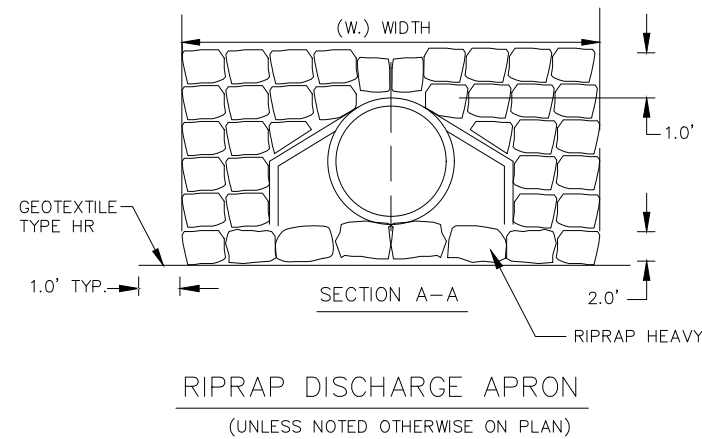
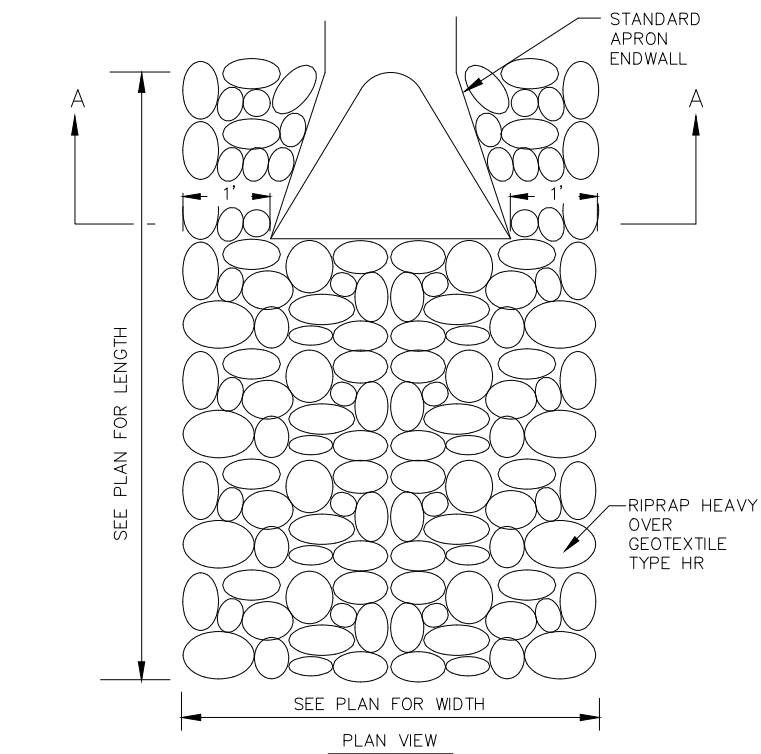
SPRING DRAINAGE

STA. 16+98, 42' LT.

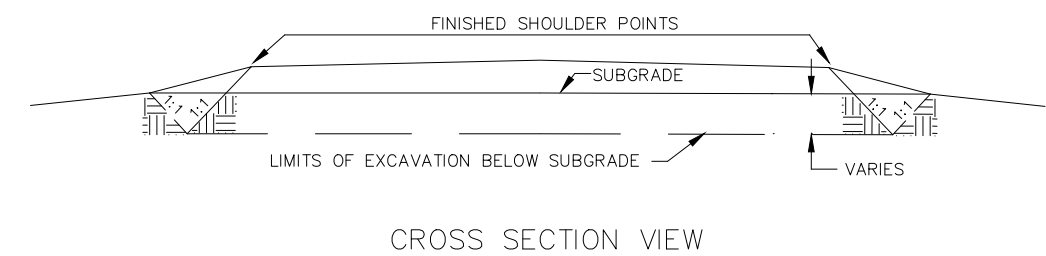
	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33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

TOTAL PROJECT AREA= 2.80 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 2.02 ACRES

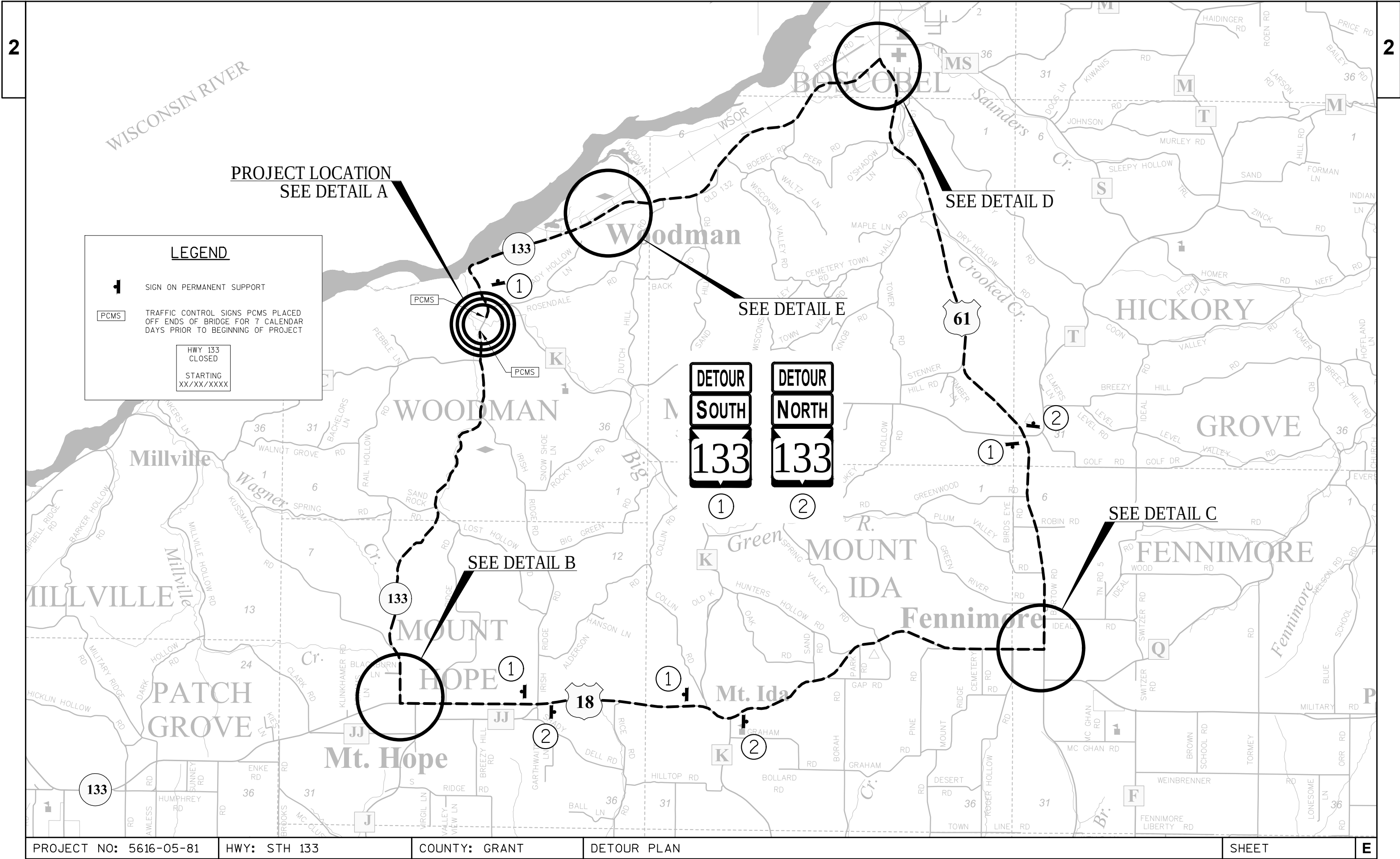




RURAL EXCAVATION BELOW SUBGRADE (E.B.S.)



1. EXACT LOCATION OF E.B.S. (EXCAVATION BELOW SUBGRADE) SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
2. E.B.S. AREA TO BE BACKFILLED WITH MATERIAL ACCEPTABLE TO THE ENGINEER. BACKFILL MUST BE HOMOGENEOUS WITH ADJOINING FILL MATERIAL.
3. THE FILL SECTION WITHIN 100' OF THE MOUTH OF THE CUT MUST BE KEPT 2' BELOW SUBGRADE UNTIL E.B.S. IS COMPLETED. LATERAL LIMITS OF EXCAVATION SHALL BE THE SUBGRADE SHOULDER POINTS.



WORK ZONE



COVER SIGN



DETOUR ROUTE



(A)

M1-6
24"x24"

(B)

M06-1
21"x21"

(C)

M06-1
21"x21"

(D)

M06-1
21"x21"

(E)

M05-1L
21"x21"

(F)

M05-1R
21"x21"

(G)

M04-8A
24"x18"

(H)

M04-8
24"x12"

(I)



(J)

R11-3-C
36"x18"

(K)

M04-9R
30"x24"

(L)

M04-9L
30"x24"

(M)

M3-1
24"x12"

(N)

M3-3
24"x12"

(O)

G20-51
60"x24"**LEGEND**SIGN ON PERMANENT
SUPPORTEXISTING SIGN ON
SINGLE POSTEXISTING SIGN ON
DOUBLE POSTTYPE III BARRICADE
WITH ATTACHED SIGN
AND WITH TRAFFIC
CONTROL LIGHTS
TYPE A* SIGN READS "BRIDGE OUT
1/4 MILES AHEAD"** SIGN READS "BRIDGE OUT
1/2 MILES AHEAD"*** SIGN READS "BRIDGE OUT
3 MILES AHEAD"# SIGN READS "BRIDGE OUT
7 MILES AHEAD"## SIGN READS "BRIDGE OUT
9 MILES AHEAD"**GENERAL NOTES:**

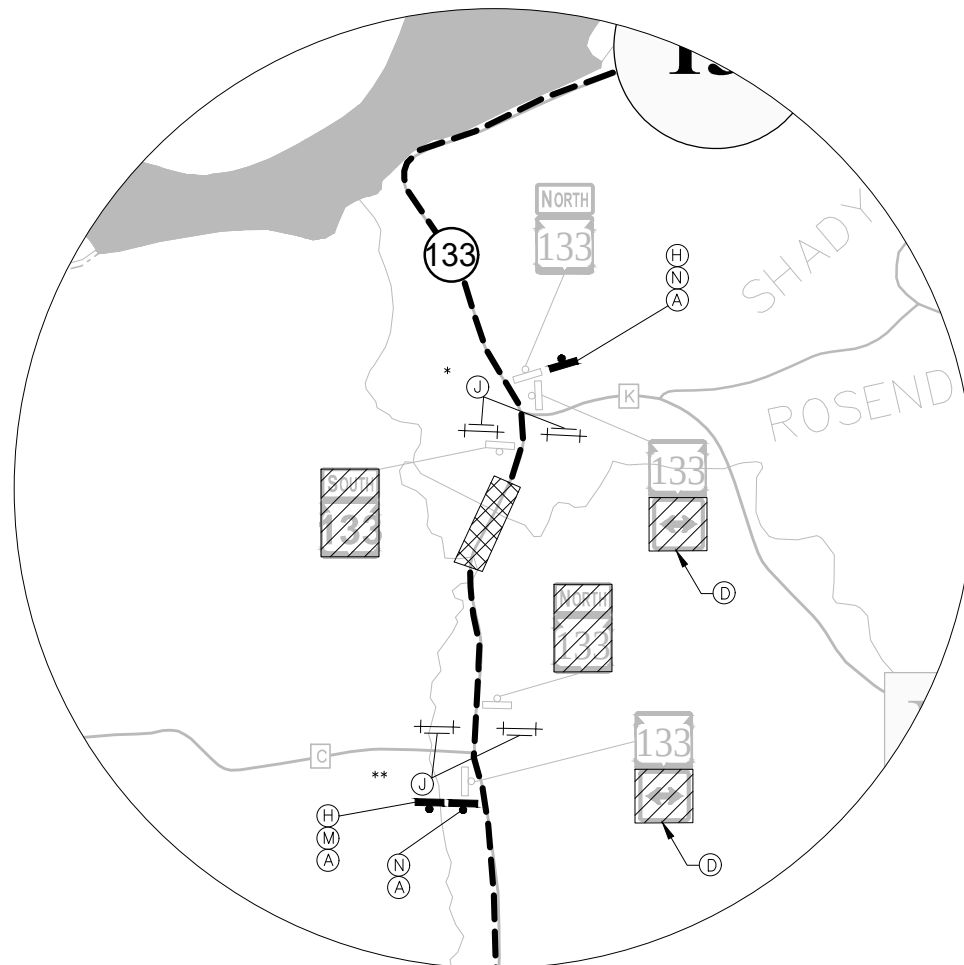
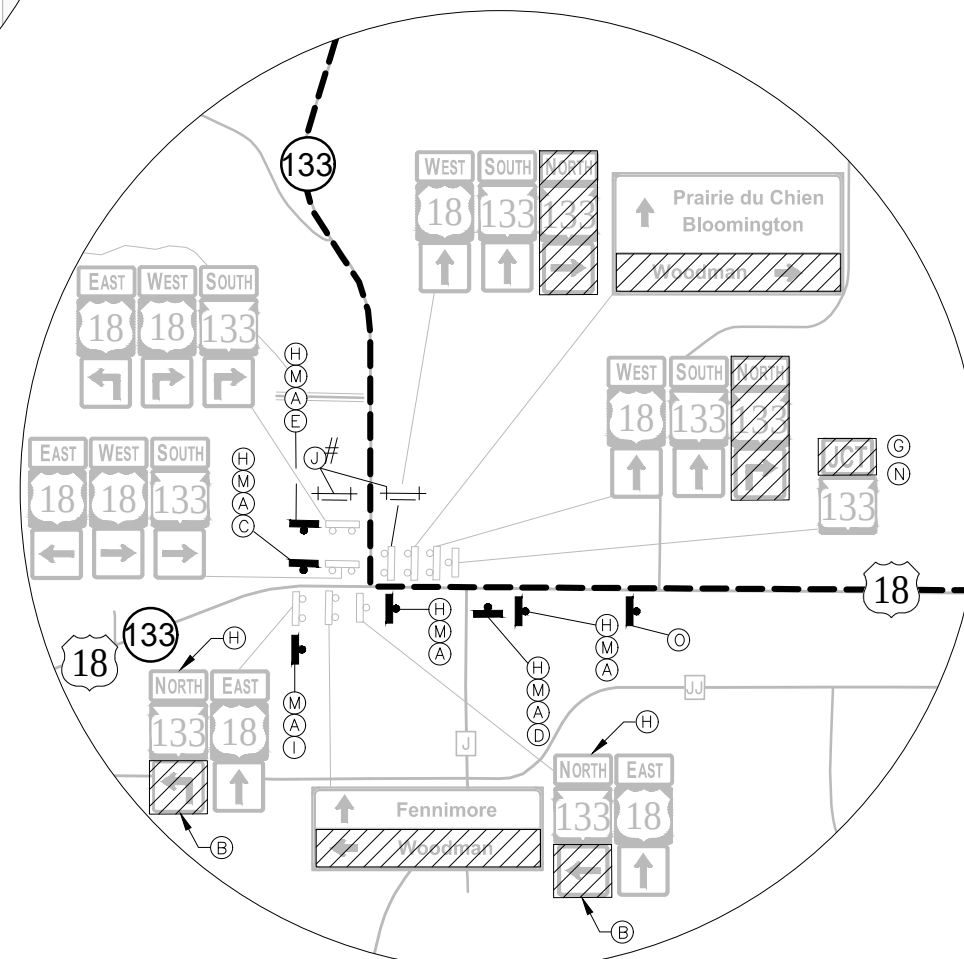
THE EXACT LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

ALL SIGNS INAPPROPRIATE TO THE STATUS OF THE CONTROL ZONE, INCLUDING PRE-EXISTING SIGNING IN THE VICINITY, SHALL BE COVERED OR REMOVED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS DIRECTED BY THE ENGINEER.

"WO" AND "MO" SERIES SIGNS ARE THE SAME AS "W" AND "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

ANY STOP SIGNS WHICH ARE REMOVED FOR A CONSTRUCTION OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED.

THE EXACT LOCATION OF CHANGEABLE PORTABLE MESSAGE BOARD SHALL BE DETERMINED IN FIELD AND APPROVED BY THE ENGINEER.

PROJECT SITE**DETAIL A****MT HOPE****DETAIL B**

PROJECT NO: 5616-05-81

HWY: STH 133

COUNTY: GRANT

DETOUR PLAN

SHEET

E

- WORK ZONE
- COVER SIGN
- DETOUR ROUTE
- (A) 133
M1-6
24"x24"
- (B) ↑
M06-1
21"x21"
- (C) ←
M06-1
21"x21"
- (D) →
M06-1
21"x21"
- (E) ↶
M05-1L
21"x21"
- (F) ↷
M05-1R
21"x21"
- (G) END
DETOUR
M04-8A
24"x18"
- (H) DETOUR
M04-8
24"x12"
- (I) DETOUR
AHEAD
W20-2-A
- (J) BRIDGE OUT
XX MILES AHEAD
R11-3-C
36"x18"
- (K) DETOUR
→
M04-9R
30"x24"
- (L) DETOUR
←
M04-9L
30"x24"
- (M) NORTH
M3-1
24"x12"
- (N) SOUTH
M3-3
24"x12"
- (O) DETOUR
NEXT 21 MILES
G20-51
60"x24"

LEGEND

- SIGN ON PERMANENT
SUPPORT
- EXISTING SIGN ON
SINGLE POST
- EXISTING SIGN ON
DOUBLE POST
- TYPE III BARRICADE
WITH ATTACHED SIGN
AND WITH TRAFFIC
CONTROL LIGHTS
TYPE A
- * SIGN READS "BRIDGE OUT
1/4 MILES AHEAD"
- ** SIGN READS "BRIDGE OUT
1/2 MILES AHEAD"
- *** SIGN READS "BRIDGE OUT
3 MILES AHEAD"
- # SIGN READS "BRIDGE OUT
7 MILES AHEAD"
- ## SIGN READS "BRIDGE OUT
9 MILES AHEAD"

GENERAL NOTES:

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

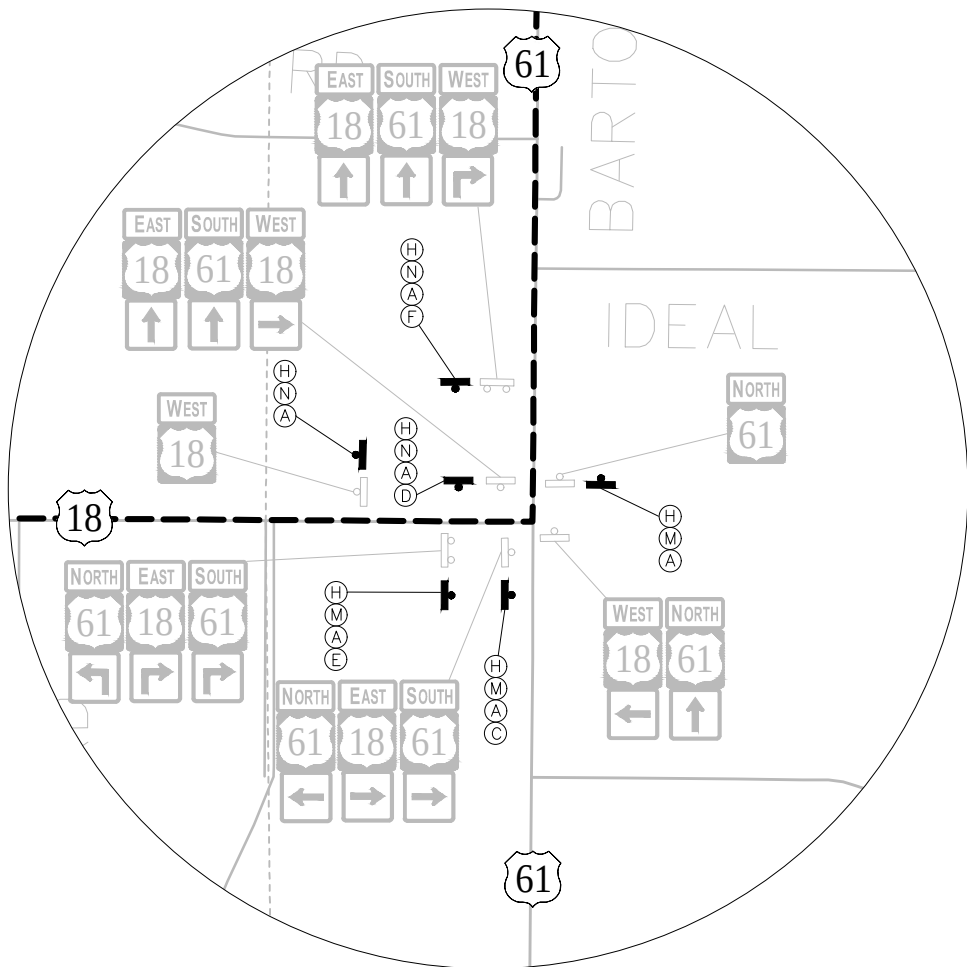
ALL SIGNS INAPPROPRIATE TO THE STATUS OF THE CONTROL ZONE, INCLUDING PRE-EXISTING SIGNING IN THE VICINITY, SHALL BE COVERED OR REMOVED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS DIRECTED BY THE ENGINEER.

"WO" AND "MO" SERIES SIGNS ARE THE SAME AS "W" AND "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

ANY STOP SIGNS WHICH ARE REMOVED FOR A CONSTRUCTION OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED.

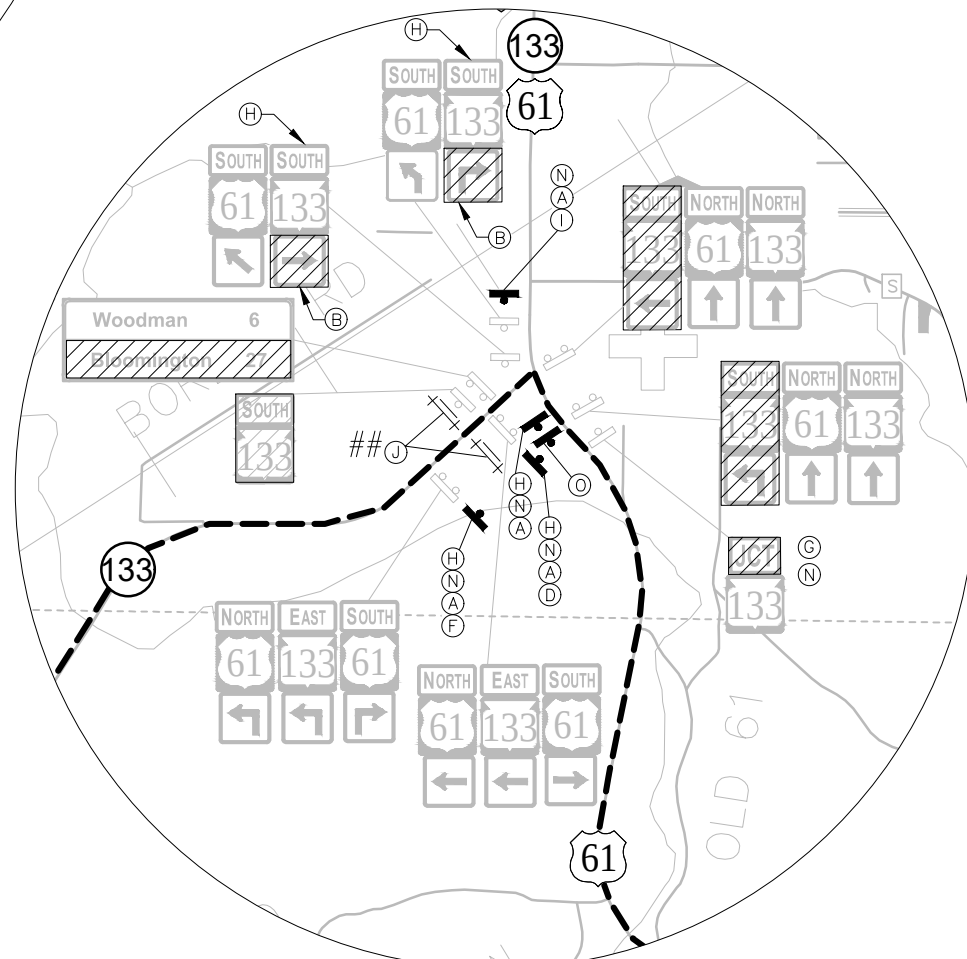
THE EXACT LOCATION OF CHANGEABLE PORTABLE MESSAGE BOARD SHALL BE DETERMINED IN FIELD AND APPROVED BY THE ENGINEER.

FENNIMORE



DETAIL C

BOSCOBEL



DETAIL D

WORK ZONE
COVER SIGN
DETOUR ROUTE

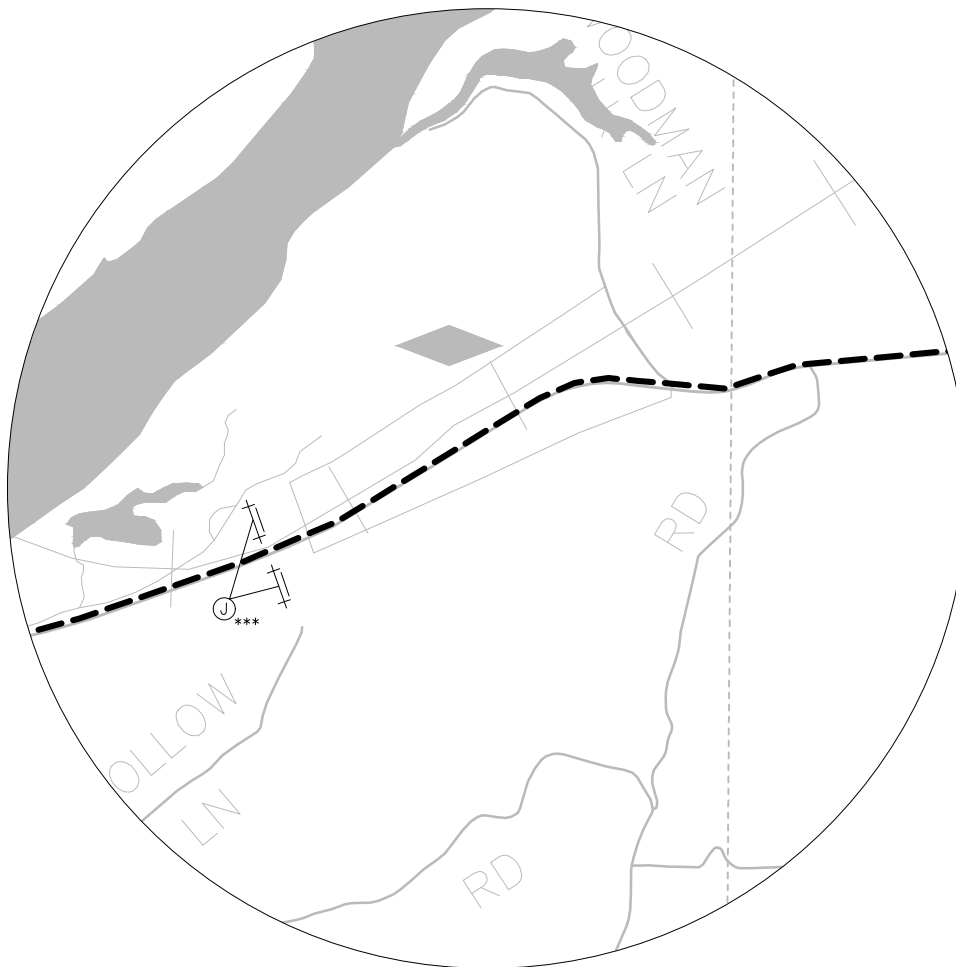
LEGEND

SIGN ON PERMANENT SUPPORT
EXISTING SIGN ON SINGLE POST
EXISTING SIGN ON DOUBLE POST
TYPE III BARRICADE WITH ATTACHED SIGN AND WITH TRAFFIC CONTROL LIGHTS TYPE A
* SIGN READS "BRIDGE OUT 1/4 MILES AHEAD"
** SIGN READS "BRIDGE OUT 1/2 MILES AHEAD"
*** SIGN READS "BRIDGE OUT 3 MILES AHEAD"
SIGN READS "BRIDGE OUT 7 MILES AHEAD"
SIGN READS "BRIDGE OUT 9 MILES AHEAD"

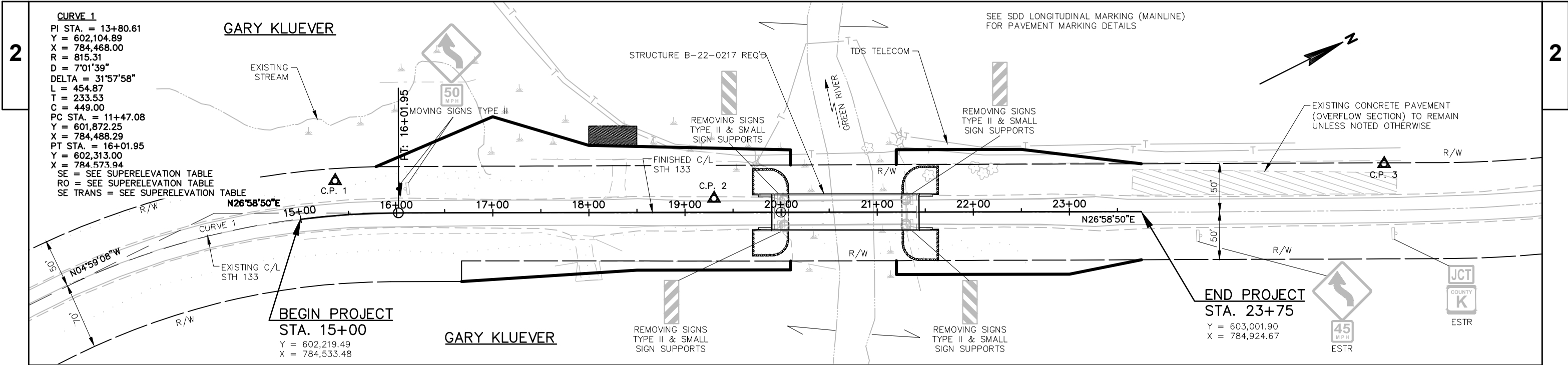
GENERAL NOTES:
THE EXACT LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
ALL SIGNS INAPPROPRIATE TO THE STATUS OF THE CONTROL ZONE, INCLUDING PRE-EXISTING SIGNING IN THE VICINITY, SHALL BE COVERED OR REMOVED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS DIRECTED BY THE ENGINEER.
"WO" AND "MO" SERIES SIGNS ARE THE SAME AS "W" AND "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
ANY STOP SIGNS WHICH ARE REMOVED FOR A CONSTRUCTION OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED.
THE EXACT LOCATION OF CHANGEABLE PORTABLE MESSAGE BOARD SHALL BE DETERMINED IN FIELD AND APPROVED BY THE ENGINEER.

- (A) 133 M1-6 24"x24"
- (B) ↑ M06-1 21"x21"
- (C) ← M06-1 21"x21"
- (D) → M06-1 21"x21"
- (E) ↙ M05-1L 21"x21"
- (F) ↘ M05-1R 21"x21"
- (G) END DETOUR M04-8A 24"x18"
- (H) DETOUR M04-8 24"x12"
- (I) DETOUR AHEAD W20-2-A
- (J) BRIDGE OUT XX MILES AHEAD R11-3-C 36"x18"
- (K) DETOUR → M04-9R 30"x24"
- (L) DETOUR ← M04-9L 30"x24"
- (M) NORTH M3-1 24"x12"
- (N) SOUTH M3-3 24"x12"
- (O) DETOUR NEXT 21 MILES G20-51 60"x24"

WOODMAN



DETAIL E



MAINLINE STATION LAYOUT

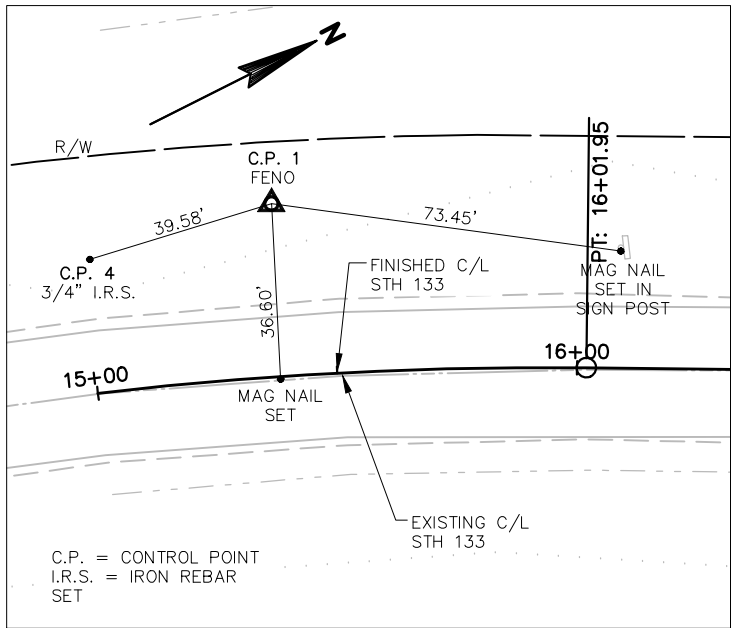
STATION	Y	X	COMMENTS
15+00.00	602,219.49	784,533.48	BEGIN PROJECT
15+50.00	602,265.98	784,551.86	-
16+00.00	602,311.25	784,573.06	-
16+50.00	602,355.81	784,595.74	-
17+00.00	602,400.37	784,618.43	-
17+50.00	602,444.93	784,641.11	-
18+00.00	602,489.49	784,663.79	-
18+50.00	602,534.05	784,686.48	-
19+00.00	602,578.60	784,709.16	-
19+50.00	602,623.16	784,731.85	-
19+90.75	602,659.48	784,750.34	END DECK
20+00.00	602,667.72	784,754.53	-

MAINLINE STATION LAYOUT CONTINUED

STATION	Y	X	COMMENTS
20+50.00	602,712.28	784,777.22	-
21+00.00	602,756.84	784,799.90	-
21+43.25	602,795.38	784,819.52	END DECK
21+50.00	602,801.39	784,822.59	-
22+00.00	602,845.95	784,845.27	-
22+50.00	602,890.51	784,867.95	-
23+00.00	602,935.07	784,890.64	-
23+50.00	602,979.63	784,913.32	-
23+75.00	603,001.90	784,924.67	END OF PROJECT

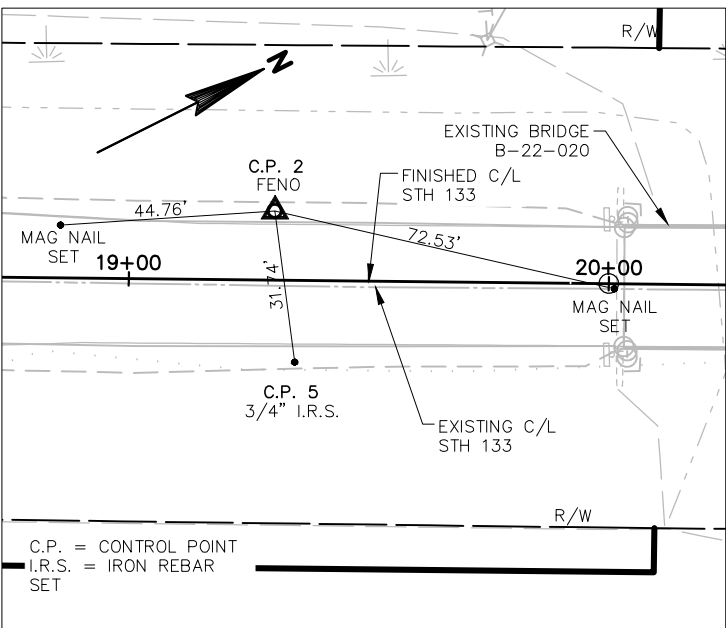
CONTROL POINTS

NO.	STA.	DESCRIPTION	Y	X
1	15+38.73	FENO MARKER, 36.05' LT.	602,269.40	784,514.15
2	19+30.31	FENO MARKER, 14.41' LT.	602,612.14	784,710.06
3	26+28.17	FENO MARKER, 48.36' LT.	603,249.51	784,995.31



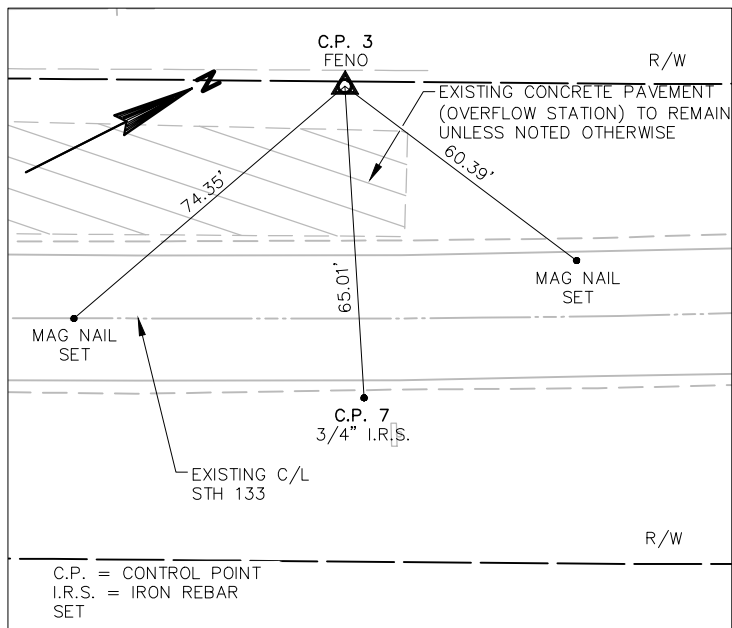
TIES TO C.P. #1

STA. 15+38.73; 36.05' LT.
Y = 602,269.40
X = 784,514.15



TIES TO C.P. #2

STA. 19+30.31; 14.41' LT.
Y = 602,612.14
X = 784,710.06



TIES TO C.P. #3

STA. 26+28.17; 48.36' LT.
Y = 603,249.51
X = 784,995.31

Estimate Of Quantities

5616-05-81

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	15.000	15.000
0004	201.0205	Grubbing	STA	15.000	15.000
0006	203.0100	Removing Small Pipe Culverts	EACH	1.000	1.000
0008	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 20+70	LS	1.000	1.000
0010	204.0100	Removing Concrete Pavement	SY	30.000	30.000
0012	204.0165	Removing Guardrail	LF	703.000	703.000
0014	205.0100	Excavation Common	CY	630.000	630.000
0016	205.0200	Excavation Rock	CY	720.000	720.000
0018	205.0400	Excavation Marsh	CY	330.000	330.000
0020	206.1000	Excavation for Structures Bridges (structure) 01. B-22-217	LS	1.000	1.000
0022	208.0100	Borrow	CY	5,755.000	5,755.000
0024	209.0300.S	Backfill Coarse Aggregate (size) 01. No. 2	CY	40.000	40.000
0026	210.1500	Backfill Structure Type A	TON	228.000	228.000
0028	213.0100	Finishing Roadway (project) 01. 5616-05-81	EACH	1.000	1.000
0030	305.0110	Base Aggregate Dense 3/4-Inch	TON	285.000	285.000
0032	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	2,220.000	2,220.000
0034	312.0110	Select Crushed Material	TON	1,078.000	1,078.000
0036	416.1010	Concrete Surface Drains	CY	3.000	3.000
0038	455.0605	Tack Coat	GAL	135.000	135.000
0040	460.2000	Incentive Density HMA Pavement	DOL	330.000	330.000
0042	460.5224	HMA Pavement 4 LT 58-28 S	TON	510.000	510.000
0044	502.0100	Concrete Masonry Bridges	CY	359.000	359.000
0046	502.3200	Protective Surface Treatment	SY	624.000	624.000
0048	502.3210	Pigmented Surface Sealer	SY	192.000	192.000
0050	503.0172	Prestressed Girder Type I 72W-Inch	LF	906.000	906.000
0052	505.0400	Bar Steel Reinforcement HS Structures	LB	7,480.000	7,480.000
0054	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	49,970.000	49,970.000
0056	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	12.000	12.000
0058	506.4000	Steel Diaphragms (structure) 01. B-22-217	EACH	10.000	10.000
0060	516.0500	Rubberized Membrane Waterproofing	SY	18.000	18.000
0062	520.1018	Apron Endwalls for Culvert Pipe 18-Inch	EACH	2.000	2.000
0064	520.3318	Culvert Pipe Class III-A 18-Inch	LF	42.000	42.000
0066	550.1120	Piling Steel HP 12-Inch X 53 Lb	LF	1,440.000	1,440.000
0068	601.0588	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type TBT	LF	148.000	148.000
0070	606.0300	Riprap Heavy	CY	549.000	549.000
0072	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	140.000	140.000
0074	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000

Estimate Of Quantities

5616-05-81

Line	Item	Item Description	Unit	Total	Qty
0076	614.2500	MGS Thrie Beam Transition	LF	160.000	160.000
0078	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0080	618.0100	Maintenance And Repair of Haul Roads (project) 01. 5616-05-81	EACH	1.000	1.000
0082	619.1000	Mobilization	EACH	1.000	1.000
0084	624.0100	Water	MGAL	20.000	20.000
0086	625.0500	Salvaged Topsoil	SY	5,130.000	5,130.000
0088	627.0200	Mulching	SY	6,100.000	6,100.000
0090	628.1504	Silt Fence	LF	1,910.000	1,910.000
0092	628.1520	Silt Fence Maintenance	LF	3,820.000	3,820.000
0094	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0096	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0098	628.2027	Erosion Mat Class II Type C	SY	400.000	400.000
0100	628.7504	Temporary Ditch Checks	LF	32.000	32.000
0102	628.7555	Culvert Pipe Checks	EACH	2.000	2.000
0104	629.0210	Fertilizer Type B	CWT	4.000	4.000
0106	630.0120	Seeding Mixture No. 20	LB	165.000	165.000
0108	630.0160	Seeding Mixture No. 60	LB	3.000	3.000
0110	630.0200	Seeding Temporary	LB	165.000	165.000
0112	630.0300	Seeding Borrow Pit	LB	120.000	120.000
0114	630.0500	Seed Water	MGAL	240.000	240.000
0116	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	1.000	1.000
0118	638.2102	Moving Signs Type II	EACH	1.000	1.000
0120	638.2602	Removing Signs Type II	EACH	4.000	4.000
0122	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
0124	642.5001	Field Office Type B	EACH	1.000	1.000
0126	643.0420	Traffic Control Barricades Type III	DAY	890.000	890.000
0128	643.0705	Traffic Control Warning Lights Type A	DAY	1,780.000	1,780.000
0130	643.0900	Traffic Control Signs	DAY	9,968.000	9,968.000
0132	643.0920	Traffic Control Covering Signs Type II	EACH	29.000	29.000
0134	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0136	643.5000	Traffic Control	EACH	1.000	1.000
0138	645.0111	Geotextile Type DF Schedule A	SY	127.000	127.000
0140	645.0120	Geotextile Type HR	SY	862.000	862.000
0142	645.0135	Geotextile Type SR	SY	640.000	640.000
0144	646.1020	Marking Line Epoxy 4-Inch	LF	3,500.000	3,500.000
0146	650.4500	Construction Staking Subgrade	LF	725.000	725.000
0148	650.5000	Construction Staking Base	LF	725.000	725.000
0150	650.6500	Construction Staking Structure Layout (structure) 01. B-22-217	LS	1.000	1.000

Estimate Of Quantities

5616-05-81					
Line	Item	Item Description	Unit	Total	Qty
0152	650.9910	Construction Staking Supplemental Control (project) 01. 5616-05-81	LS	1.000	1.000
0154	650.9920	Construction Staking Slope Stakes 01. 5616-05-81	LF	725.000	725.000
0156	690.0150	Sawing Asphalt	LF	54.000	54.000
0158	690.0250	Sawing Concrete	LF	30.000	30.000
0160	715.0502	Incentive Strength Concrete Structures	DOL	2,154.000	2,154.000
0162	999.2000.S	Installing and Maintaining Bird Deterrent System	EACH	1.000	1.000
0164	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,000.000	1,000.000
0166	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	600.000	600.000

3

EARTHWORK SUMMARY												
STATION - STATION	LOCATION	205.0100 COMMON EXCAVATION	AVAILABLE MATERIAL (CY) (2)	205.0400 EXCAVATION MARSH (3)	205.0200 EXCAVATION ROCK (4)	REDUCED MARSH IN FILL (CY) FACTOR 0.6 (5)	EXPANDED MARSH BACKFILL (CY) FACTOR 1.5 (6)	EXPANDED ROCK FACTOR 1.1 (7)	UNEXPANDED FILL (CY)	EXPANDED FILL (CY) FACTOR 1.25 (8)	MASS ORDINATE +/- (CY) (9)	208.0100 BORROW (CY)
		CUT (1) (CY)										
PROJECT	MAINLINE	630	630	330	720	200	495	792	6100	6385	-5755	5755
TOTALS =		630	630	330	720	200	495	792	6100	6385	-5755	5755
NOTES:												
1.) COMMON EXCAVATION IS THE SUM OF THE CUT. ITEM NUMBER 205.0100												
2.) AVAILABLE MATERIAL = CUT												
3.) MARSH EXCAVATION - AREA TO BE WRAPPED WITH GEOTEXTILE TYPE SR AND BACKFILLED WITH SELECT CRUSHED MATERIAL												
4.) ROCK EXCAVATION ITEM NUMBER 205.0200												
5.) REDUCED MARSH IN FILL - EXCAVATED MARSH MATERIAL IS USABLE IN FILLS OUTSIDE 2:1 SLOPE. MARSH IN FILL REDUCTION FACTO = 0.6												
6.) EXPANDED MARSH BACKFILL - THIS IS TO BE FILLED WITH SELECT BORROW MATERIAL. MARSH BACKFILL FACTOR = 1.5. ITEM NUMBER 208.1100												
7.) EXPANDED ROCK FACTOR = 1.1												
8.) EXPANDED FILL FACTOR = 1.25: EXPANDED FILL = (UNEXPANDED FILL - ROCK*ROCK FACTOR - REDUCED MARSH) * 1.25												
9.) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION												

CLEARING AND GRUBBING			
STATION - STATION	LOCATION	201.0105 CLEARING (STA.)	201.0205 GRUBBING (STA.)
15+00 - 18+00	MAINLINE	6	6
18+00 - 21+00	MAINLINE, RT.	3	3
21+00 - 23+00	MAINLINE	6	6
TOTALS =		15	15
REMOVING SMALL PIPE CULVERTS			
STATION - STATION	LOCATION	203.0100 REMOVING SMALL PIPE CULVERTS (EACH)	
17+88	MAINLINE, RT.	1	
TOTAL =		1	

3

REMOVING GUARDRAIL		
STATION - STATION	LOCATION	204.0165 REMOVING GUARDRAIL (LF)
18+32 - 20+01	MAINLINE, RT.	169
18+57 - 20+01	MAINLINE, LT.	144
21+32 - 23+27	MAINLINE, RT.	195
21+32 - 23+27	MAINLINE, LT.	195
TOTAL =		703

REMOVING CONCRETE PAVEMENT		
STATION - STATION	LOCATION	204.0100 REMOVING CONCRETE PAVEMENT (SY)
23+63 - 23+75	MAINLINE, LT.	30
TOTAL =		30

SPRING DRAIN					
STATION - STATION	LOCATION	DESCRIPTION	209.0300.S BACKFILL COARSE AGGREGATE NO. 2 (CY)	*305.0120 BASE AGGREGATE DENSE 1 1/4 - INCH (TON)	645.0111 GEOTEXTILE TYPE DF SCHEDULE A (SY)
16+98	MAINLINE, LT.	SPRING DRAIN	40	20	65
TOTALS =			40	20	65
*MORE LISTED ELSEWHERE					

CONCRETE SURFACE DRAINS		
STATION - STATION	LOCATION	416.1010 CONCRETE SURFACE DRAINS (CY)
22+04	MAINLINE, LT.	1.5
22+04	MAINLINE, RT.	1.5
TOTAL =		3.0

BASE AGGREGATE DENSE				
STATION - STATION	LOCATION	DESCRIPTION	305.0110 3/4 - INCH (TON)	305.0120 1 1/4 - INCH (TON)
15+00 - 19+90	MAINLINE	-	130	1450
21+44 - 23+75	MAINLINE	-	70	750
17+89	MAINLINE, RT.	F.E.	30	-
18+29	MAINLINE, LT.	F.E.	55	-
TOTALS =			285	2200
* ADDITIONAL BASE AGGREGATE DENSE 1 1/4-INCH INCLUDED WITH SPRING DRAIN				

MARSH BACKFILL				
STATION - STATION	LOCATION	DESCRIPTION	312.0100 SELECT CRUSHED MATERIAL (TON)	645.0135 GEOTEXTILE TYPE SR (SY)
16+75 - 20+00	MAINLINE, LT.	MARSH BACKFILL	1000	640
TOTAL =			1000	640

HMA PAVEMENT			
STATION - STATION	LOCATION	455.0605 TACK COAT (GAL)	460.5224 HMA PAVEMENT 4 LT 58-28 S (TON)
15+00 - 19+90	MAINLINE	85	330
21+44 - 23+75	MAINLINE	50	180
TOTALS =		135	510

CULVERT PIPE				
STATION - STATION	LOCATION	520.3318 CLASS III-A 18-INCH (LF)	520.1018 APRON ENDWALLS 18-INCH (EACH)	628.7550 CULVERT PIPE CHECKS (EACH)
17+89	MAINLINE, RT.	42	2	2
TOTALS =		42	2	2
MINIMUM THICKNESS (INCHES)				
PIPE SIZE		STEEL	ALUMIINUM	
18-INCH		0.064	0.060	

CONCRETE CURB & GUTTER		
STATION - STATION	LOCATION	601.0588 CONCRETE C&G 4-INCH SLOPED 36-INCH TBT (LF)
21+43.25 - 22+17	MAINLINE, LT.	74
21+43.25 - 22+17	MAINLINE, RT.	74
TOTALS =		148

RIPRAP HEAVY & GEOTEXTILE TYPE HR			
STATION - STATION	LOCATION	606.0300 RIPRAP HEAVY (CY)	645.0120 GEOTEXTILE TYPE HR (SY)
17+89	MAINLINE, RT.	4	6
22+04	MAINLINE, LT.	12	32
22+04	MAINLINE, RT.	12	32
	UNDISTRIBUTED	7	20
TOTALS =		35	90

PROJECT NO: 5616—05—81	HWY: STH 133	COUNTY: GRANT	MISCELLANEOUS QUANTITIES	SHEET	E
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FINISHING ITEMS

		625.0500 SALVAGED TOPSOIL	627.0200 MULCHING	628.2027 EROSION MAT CLASS II TYPE C	629.0210 FERTILIZER TYPE B	630.0120 SEEDING MIXTURE NO. 20	*630.0160 SEEDING MIXTURE NO. 60	630.0200 SEEDING TEMPORARY	630.0300 SEEDING BORROW PIT	630.0500 SEED WATER
STATION - STATION	LOCATION	(SY)	(SY)	(SY)	(CWT)	(LB)	(LB)	(LB)	(LB)	(MGAL)
15+00 - 23+75	MAINLINE	4100	4850	-	3.0	130	2.5	-	-	120
16+00-17+50	MAINLINE, RT	-	-	320	-	-	-	-	-	-
-	BORROW PIT	-	-	-	-	-	-	-	95	75
-	UNDISTRIBUTED	1030	1250	80	1.0	35	0.5	165	25	45
TOTALS=		5130	6100	400	4.0	165	3	165	120	240

*USE SEED MIX NO. 60 ADJACENT TO WETLANDS, STA. 16+74 - STA. 20+06, LT. DO NOT USE FERTILIZER IN WETLANDS.

SILT FENCE

		628.1504	628.1520
		SILT	SILT FENCE
		FENCE	MAINTENANCE
STATION - STATION	LOCATION	(LF)	(LF)
15+00 - 20+08	MAINLINE, LT.	635	1270
18+25 - 20+08	MAINLINE, RT.	245	490
21+26 - 23+75	MAINLINE, LT.	315	630
21+26 - 23+75	MAINLINE, RT.	330	660
	UNDISTRIBUTED	385	770
	TOTALS =	1910	3820

MOBILIZATION EROSION CONTROL

	528.1925 MOBL. ZAT. CN. EROSION CONTROL (EACH)	628.1920 MOBL. ZATION EMERGENCY EROSION CONTROL (EACH)
PROJECT 5518-05-81	4	2
TOTALS =	4	2

TEMPORARY DITCH CHECKS

STATION	LOCATION	628.7504 (EACH)
15+00	MAINLINE, RT.	8
16+00	MAINLINE, RT.	8
17+00	MAINLINE, RT.	8
-	UNDISTRIBUTED	8
TOTAL =		32

PERMANENT SIGNING

APPROX. STATION	POSITION	SITE ID	SIGN CODE	SIGN DESCRIPTION	ORDER LINES	634.0618	638.2102	638.2602	638.3000
						POSTS WOOD 4X6-INCH X18-FT (EACH)	MOVING SIGNS TYPE II (EACH)	REMOVING SIGNS TYPE II (EACH)	REMOVING SMALL SIGN SUPPORTS (EACH)
16+01	LEFT	MAINLINE	W1-2L & W13-1	LEFT CURVE & 50 MPH	-	1	1	-	-
20+00	LEFT	MAINLINE	W5-52-L	BRIDGE HASH MARKS	LEFT	-	-	1	1
20+00	RIGHT	MAINLINE	W5-52-R	BRIDGE HASH MARKS	RIGHT	-	-	1	1
21+31	LEFT	MAINLINE	W5-52-R	BRIDGE HASH MARKS	RIGHT	-	-	1	1
21+31	RIGHT	MAINLINE	W5-52-L	BRIDGE HASH MARKS	LEFT	-	-	1	1
PROJECT TOTALS						1	1	4	4

TRAFFIC CONTROL

	643.0420	643.0705		643.0920	643.1050	643.5000
	BARRICADES	WARNING LIGHTS	643.0900	COVERING	TRAFFIC CONTROL	TRAFFIC
LOCATION	TYPE III	TYPE A	SIGNS	SIGNS TYPE II	SIGNS PCMS	CONTROL
	(DAYS)	(DAY)	(DAYS)	(EACH)	(DAY)	(EACH)
PROJECT	890	1,780	9968	29	14	1.0
				(1 CYCLE)		
TOTALS =	890	1,780	9,968	29	14	1.0

PAVEMENT MARKING

			646.1020
			EPOXY
			4-INCH
STATION - STATION	LOCATION	DESCRIPTION	(LF)
15+00 - 23+75	MAINLINE	C/L DOUBLE - SOLID YELLOW	1750
15+00 - 23+75	MAINLINE, LT.	LANE LINE MARKING - SOLID WHITE	875
15+00 - 23+75	MAINLINE, RT.	LANE LINE MARKING - SOLID WHITE	875
TOTAL =			3500

CONSTRUCTION STAKING

		650.4500	650.5000	*650.6500	650.9910	650.9920
				STRUCTURE	SUPPLEMENTAL	SLOPE
		SUBGRADE	BASE	LAYOUT	CONTROL	STAKES
STATION - STATION	LOCATION	(LF)	(LF)	(LS)	01. 5616-05-81	(LF)
15+00 - 23+75	MAINLINE	725	725	1	-	725
-	PROJECT	-	-		1	-
TOTALS =		725	725	1	1	725

*CATEGORY 020

SAWING ASPHALT

		690.0150
STATION	LOCATION	(LF)
15+00	MAINLINE	27
23+75	MAINLINE	27
TOTAL =		54

SAWING CONCRETE

		690.0205
STATION	LOCATION	(LF)
23+75	MAINLINE, LT.	30
TOTAL =		30



STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

TRANSPORTATION PROJECT PLAT TITLE SHEET

PROJECT NO. 5616-05-21

MOUNT HOPE - BOSCOBEL

GREEN RIVER BRIDGE, B-22-20

STH 133

GRANT COUNTY

THE NOTES, CONVENTIONAL SIGNS, AND ABBREVIATIONS ARE ASSOCIATED WITH EACH TRANSPORTATION PROJECT PLAT FOR PROJECT 5616-05-21

NOTES:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), GRANT COUNTY, NAD 83 (2011), IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES. NGS POINT UTILIZED PID DH5331.

ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY 3/4" X 24" IRON REBARS), UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

ALL RIGHT-OF-WAY LINES DEPICTED IN THE NON-ACQUISITION AREAS ARE INTENDED TO RE-ESTABLISH EXISTING RIGHT-OF-WAY LINES AS DETERMINED FROM PREVIOUS PROJECTS, OTHER RECORDED DOCUMENTS, OR FROM CENTERLINE OF EXISTING PAVEMENTS.

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

PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES, EXCLUDING RIGHT-OF-WAY LINES, AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

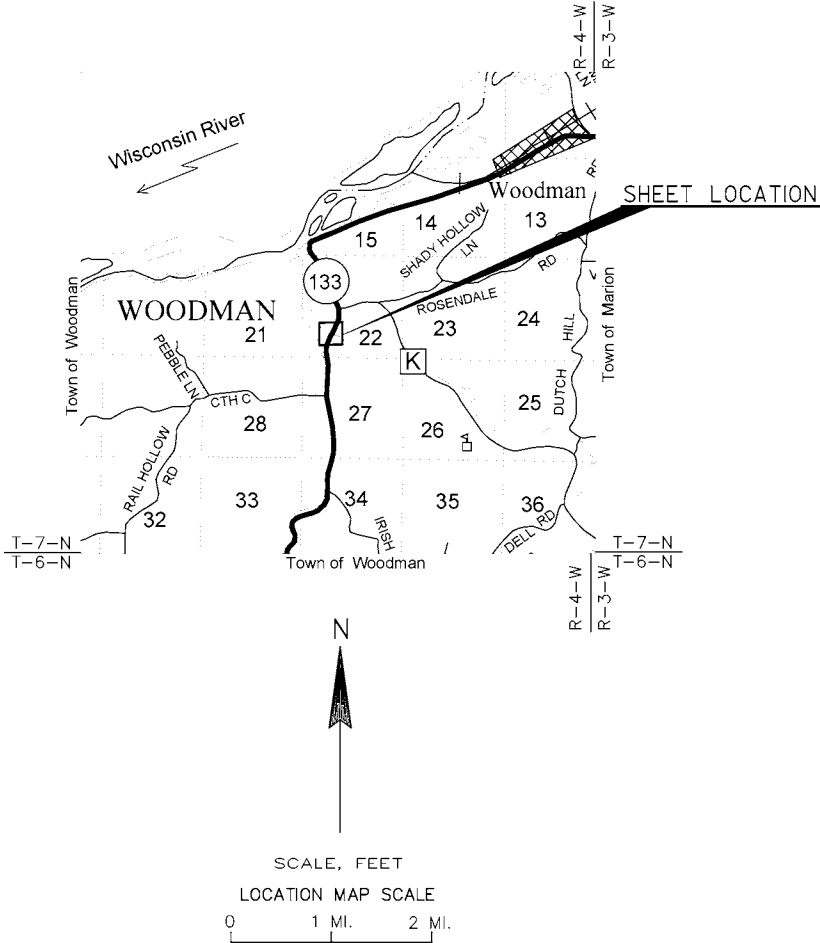
A TEMPORARY LIMITED EASEMENT (TLE) IS A RIGHT FOR CONSTRUCTION PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON AND THE RIGHT OF INGRESS AND EGRESS, AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY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

A PERMANENT LIMITED EASEMENT (PLE) IS A RIGHT FOR CONSTRUCTION AND MAINTENANCE PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON AND THE RIGHT OF INGRESS AND EGRESS, AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM NECESSARY OR DESIRABLE. BUT WITHOUT PREJUDICE TO THE OWNER'S RIGHT TO MAKE OR CONSTRUCT IMPROVEMENT ON SAID LANDS OR TO FLATTEN THE SLOPES, PROVIDING SAID ACTIVITIES WILL NOT IMPAIR OR OTHERWISE ADVERSELY AFFECT THE HIGHWAY FACILITIES.

FOR EXISTING HIGHWAY RIGHT-OF-WAY AND ACCESS CONTROL POINTS OF REFERENCE SEE INDIVIDUAL TPP DETAIL PAGES.

FOR CURRENT ACCESS/DRIVEWAY INFORMATION CONTACT THE WISCONSIN DEPARTMENT OF TRANSPORTATION REGIONAL OFFICE IN LA CROSSE.

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



CONVENTIONAL SYMBOLS

SECTION LINE	---	SECTION CORNER SYMBOL		R/W MONUMENT (TO BE SET)	•
QUARTER LINE	----	SIXTEENTH LINE	----	NON-MONUMENTED R/W POINT	o
NEW REFERENCE LINE		NEW R/W LINE	----	FOUND IRON PIN (1-INCH UNLESS NOTED)	IP
EXISTING R/W OR HE LINE	----	PROPERTY LINE	----	GEODETIC SURVEY MONUMENT	
LOT, TIE & OTHER MINOR LINES	----	SIXTEENTH CORNER MONUMENT		SIGN	
SLOPE INTERCEPT	-----	CORPORATE LIMITS	////	OFF-PREMISE SIGN	
UNDERGROUND FACILITY (COMMUNICATIONS, ELECTRIC, ETC)		NEW R/W (FEE OR HE) (HATCHING VARIES BY OWNER)		COMPENSABLE	
TEMPORARY LIMITED EASEMENT AREA		EASEMENT AREA (PERMANENT LIMITED OR RESTRICTED DEVELOPMENT)		NON-COMPENSABLE	
TRANSMISSION STRUCTURES		BUILDING TO BE REMOVED		ACCESS RESTRICTED BY ACQUISITION	
BRIDGE		R/W POINT NUMBER		NO ACCESS (BY STATUTORY AUTHORITY)	*****
				ACCESS RESTRICTED (BY PREVIOUS PROJECT OR CONTROL)	*****
				NO ACCESS (NEW HIGHWAY)	*****
				PARCEL NUMBER	
				UTILITY NUMBER	
				PARALLEL OFFSETS	

CONVENTIONAL ABBREVIATIONS

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

CURVE DATA

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

CONVENTIONAL UTILITY SYMBOLS

WATER	—W—
GAS	—G—
TELEPHONE	—T—
OVERHEAD	—OH—
TRANSMISSION LINES	
ELECTRIC	—E—
CABLE TELEVISION	—TV—
FIBER OPTIC	—FO—
SANITARY SEWER	—SS—
STORM SEWER	—SS—

PROJECT NUMBER: 5616-05-21 - 4.01
SHEET 2 OF 2
AMENDMENT NO:

TRANSPORTATION PROJECT PLAT NO: 5616-05-21 - 4.01

PART OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER (NE¼-SW¼), PART OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER (SE¼-SW¼) AND PART OF THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER (SW¼-SW¼) OF SECTION 22, TOWNSHIP 7 NORTH, RANGE 4 WEST, TOWN OF WOODMAN, GRANT COUNTY, WISCONSIN.

RELOCATION ORDER STH 133, MOUNT HOPE - BOSCOBEL, GREEN RIVER BRIDGE B-22-20, GRANT COUNTY

TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3), 84.09, AND 84.30, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:

- THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS Laid OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT;
- THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.

FOR CURRENT ACCESS/DRIVEWAY INFORMATION, CONTACT THE WISCONSIN DEPARTMENT OF TRANSPORTATION REGIONAL OFFICE IN LACROSSE.

ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY 3/4" X 24" IRON REBARS), UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES, EXCLUDING RIGHT-OF-WAY LINES, AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), GRANT COUNTY, NAD 83 (2011), IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES. NGS POINT UTILIZED PID DHS331.

RIGHT-OF-WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY SYSTEM OR OTHER "SURVEYS OF PUBLIC RECORD". EXISTING STH 133 RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING PREVIOUSLY COMPLETED RIGHT-OF-WAY PROJECTS, AND VARIOUS HIGHWAY CONVEYANCE DOCUMENTS ASSOCIATED WITH THEM: PROJECT T0355(1).

FOR ADDITIONAL INFORMATION REFER TO THE TITLE SHEET, RECORDED AS SHEET 2 OF 2.

SCHEDULE OF LANDS & INTERESTS REQUIRED

PARCEL NUMBER	OWNER (S)	INTEREST REQUIRED		R/W ACRES REQUIRED		T.L.E. ACRES	
		FEE, T.L.E.	NEW	EXISTING	TOTAL		
1	GARY H. KLUEVER		0.48	2.08	2.56	0.02	

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

#	OWNER	RECORDING INFORMATION	LOCATED IN R/W PARCEL #	REMARKS
201	PEOPLES TELEPHONE COMPANY (TDS TELECOM)	DOC. # 435536 VOL. 485 PG. 790	1	WIDTH OF CABLE NE¼&NW¼-SW¼
201	PEOPLES TELEPHONE COMPANY (TDS TELECOM)	DOC. #435551 VOL. 485 PG. 272	1	WIDTH OF CABLE N½-SW¼
202	GRANT ELECTRIC COOPERATIVE	DOC. #127862 VOL. 2 PG. 223	1	BLANKET SW¼-SW¼
202	GRANT ELECTRIC COOPERATIVE	DOC. #128019 VOL. 2 PG. 258	1	BLANKET W½-NE¼-SW¼
202	GRANT ELECTRIC COOPERATIVE	DOC. #128025 VOL. 2 PG. 264	1	BLANKET E½-NE¼-SW¼

UTILITY INTERESTS REQUIRED

UTILITY NUMBER	OWNER (S)	INTEREST REQUIRED	
		RELEASE OF RIGHTS	RELEASE OF RIGHTS
201	TDS TELECOM		
202	SCENIC RIVERS ENERGY COOPERATIVE (GRANT ELECTRIC COOPERATIVE)		

COORDINATE TABLE - TLE POINTS

PT.#	STATION	OFFSET	Y	X
500	18+00.00	90.00' LT.	602530.32	784583.59
501	18+50.00	90.00' LT.	602574.88	784606.27
502	18+50.00	68.81' LT.	602565.26	784625.16

COURSE	BEARING	DISTANCE
100-101	SEE CURVE NOTE	
102-103	N43°40'48"E	104.40'
103-104	N28°20'40"E	210.06'
104-105	S63°01'10"E	15.81'
105-106	N26°52'02"E	110.00'
106-107	N63°01'10"W	15.59'
107-108	N26°58'50"E	130.00'
111-112	S15°44'11"W	76.47'
113-114	N63°01'57"W	14.41'
114-115	S26°52'02"W	110.00'
115-116	S63°01'10"E	9.19'
118-119	S26°52'02"W	74.40'
119-120	SEE CURVE NOTE	

SW ¼ - SW ¼

SE ¼ - SW ¼

TOWN OF WOODMAN

ALIGNMENT CURVE INFORMATION

LCH=449.00'
LCB=N10°59'51"E
R = 815.31'
D = 7°01'39"
DELTA = 31°57'58" RT
L = 454.87'
T = 233.53'
DA= N26°58'50"E
DB= N04°59'08"W
PC STA. = 11+47.08
Y = 601872.25
X = 784488.29
PT STA. = 16+01.95
Y = 602313.00
X = 784573.94
PI STA. = 13+80.61
Y = 602104.89
X = 784468.00

N70°11'03"W, 42.87' FROM R/L TANGENT TO R/W

N26°58'50"E, 102.49' ALONG R/L TANGENT FROM R/W TRAVERSE TO PT

N03°51'53"E, 131.89'

N70°11'03"W, 70.71'

N70°11'03"W, 70.71'

N70°11'03"W, 70.71'

N70°11'03"W, 70.71'

N70°11'03"W, 70.71'

N70°11'03"W, 70.71'

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N70°11'03"W, 70.71'

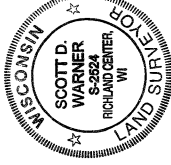
JEWELL
associates engineers, inc.
Engineers - Architects - Surveyors

I, SCOTT D. WARNER, PROFESSIONAL LAND SURVEYOR, HEREBY CERTIFY THAT IN FULL COMPLIANCE WITH THE PROVISIONS OF SECTION 84.095 OF THE WISCONSIN STATUTES AND UNDER THE DIRECTION OF THE DEPARTMENT OF TRANSPORTATION, I HAVE SURVEYED AND MAPPED THIS TRANSPORTATION PROJECT PLAT AND SUCH PLAT CORRECTLY REPRESENTS ALL EXTERIOR BOUNDARIES OF THE SURVEYED LAND.

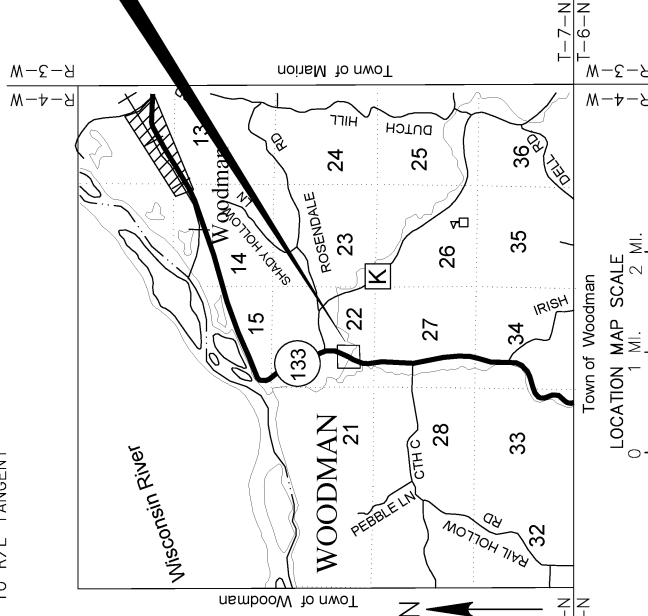
SIGNATURE: *Scott D. Warner* DATE: 11/08/2019
PRINT NAME: SCOTT D. WARNER
REGISTRATION NUMBER: S-2524

THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE WISCONSIN DEPARTMENT OF TRANSPORTATION SOUTHWEST REGION.

SIGNATURE: *Cory Schlager* DATE: 11/08/2019
PRINT NAME: CORY SCHLAGER



SHEET LOCATION



COORDINATE TABLE - R/W POINTS				
PT.#	STATION	OFFSET	Y	X
100	15+00.00	49.29' LT.	602236.20	784487.11
101	15+80.00	48.53' LT.	602314.15	784520.42
102	17+00.00	100.00' LT.	602445.74	784529.31
103	18+00.00	70.00' LT.	602521.25	784601.41
104	20+10.00	65.00' LT.	602706.12	784701.14
105	20+10.00	49.19' LT.	602698.95	784715.23
106	21+20.00	49.41' LT.	602797.07	784764.95
107	21+20.00	65.00' LT.	602804.15	784751.05
108	22+50.00	65.00' LT.	602920.00	784810.03
109	23+75.00	49.91' LT.	603024.55	784880.19
110	23+75.00	0.00'	603001.90	784924.67
111	23+75.00	50.09' RT.	602979.18	784969.30
112	23+00.00	65.00' RT.	602905.58	784948.56
113	21+20.00	65.00' RT.	602745.17	784866.90
114	21+20.00	50.59' RT.	602751.70	784854.06
115	20+10.00	50.81' RT.	602653.58	784804.35
116	20+10.00	60.00' RT.	602649.41	784812.54
117	18+50.00	60.00' RT.	602506.82	784739.95
118	16+67.48	71.49' RT.	602338.96	784667.38
119	15+92.23	71.58' RT.	602272.59	784633.76
120	15+00.00	70.72' RT.	602195.51	784600.01
121	15+00.00	0.00'	602219.49	784533.48

GRANT COUNTY, WI
RECEIVED FOR RECORD
11/12/2019 08:49 AM
#806118
MARILYN PERCE, REGISTER
Pages Recorded: 2

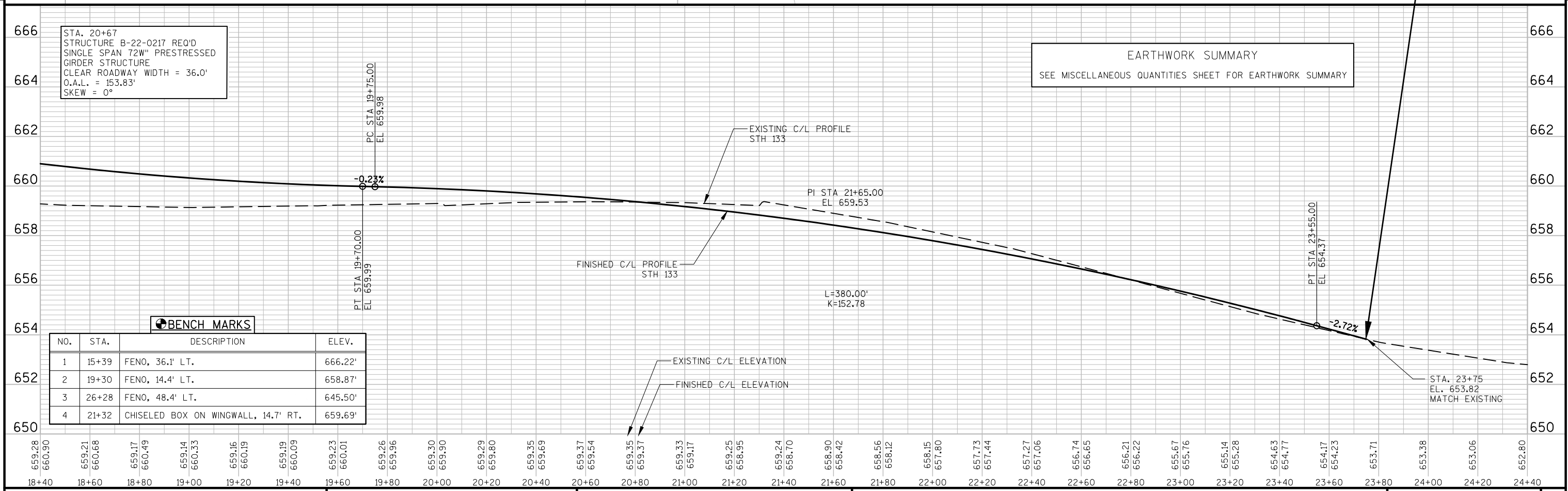
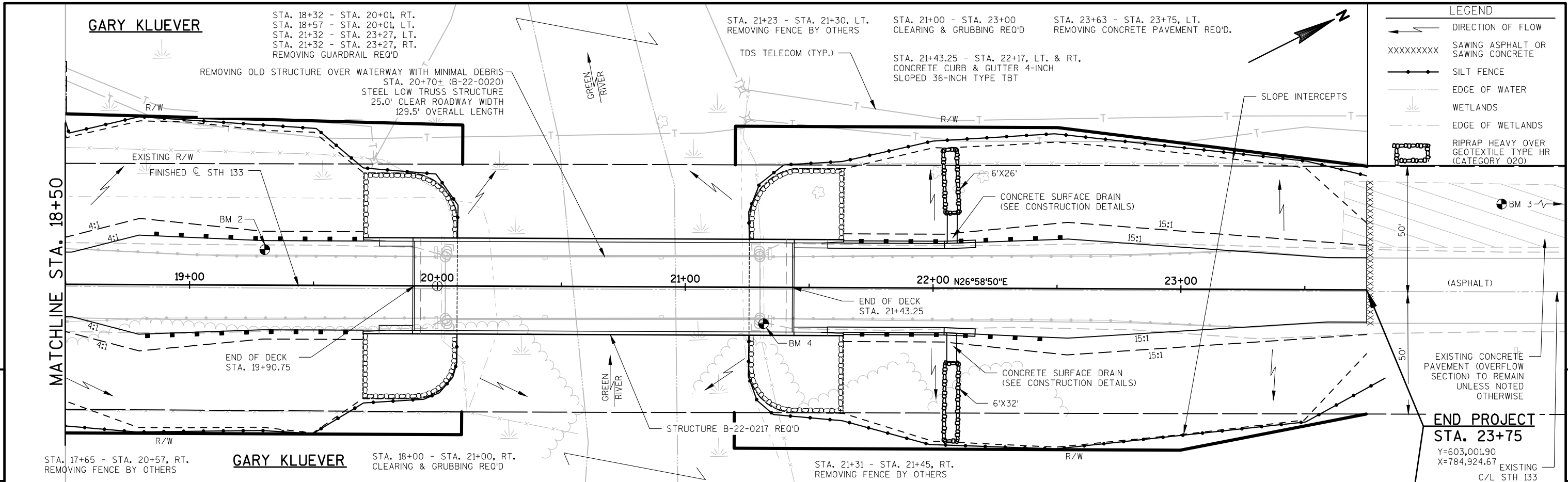
RESERVED FOR REGISTER OF DEEDS
PROJECT NUMBER 5616-05-21-4.01
SHEET 1 OF 2
AMENDMENT NO.

SCALE, FEET
0 50' 100'
N

ALUM. CAP ON
IRON ROD FOUND
Y = 604,083.22
X = 785,897.18

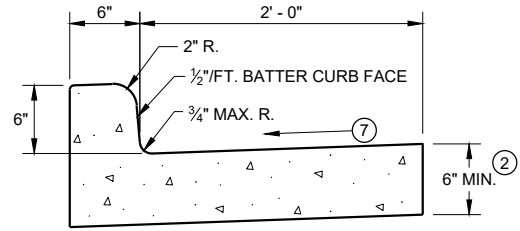
ALUM. CAP ON
IRON ROD FOUND
Y = 601,425.54
X = 785,910.46

CURVE 1 DATA	
FROM R/W PT. #100 TO R/W PT. #101	
RADIUS=888.60'	
ARC LENGTH=84.80'	
CHORD LENGTH=84.77'	
CHORD BEARING=N23°08'13"E	
CURVE 2 DATA	
FROM R/W PT. #119 TO R/W PT. #120	
RADIUS=748.60'	
ARC LENGTH=84.18'	
CHORD LENGTH=84.14'	
CHORD BEARING=S23°38'44"W	

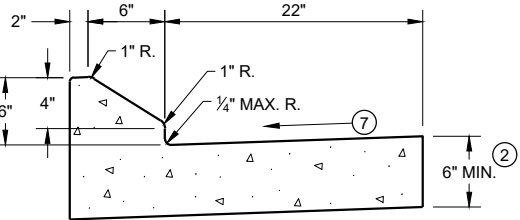


Standard Detail Drawing List

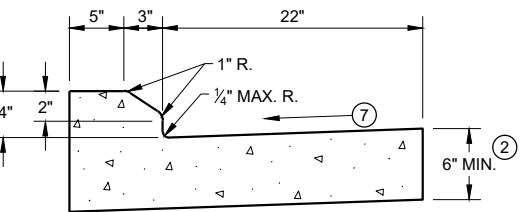
08D01-22A	CONCRETE CURB & GUTTER
08D01-22B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D02-07A	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-07B	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-07C	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
12A03-10	NAME PLATE (STRUCTURES)
13C19-03	HMA LONGITUDINAL JOINTS
14B42-06A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05K	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05L	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15A01-13A	MARKER POST FOR RIGHT-OF-WAY
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-08C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C08-20A	LONGITUDINAL MARKING (MAINLINE)
15C11-08B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



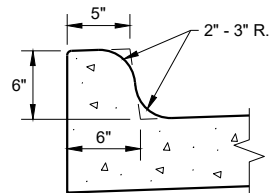
TYPES A^① & D



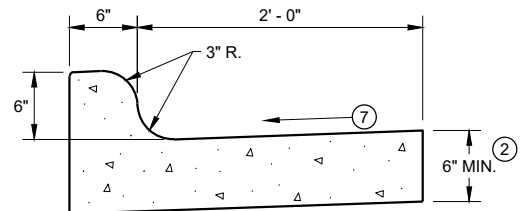
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

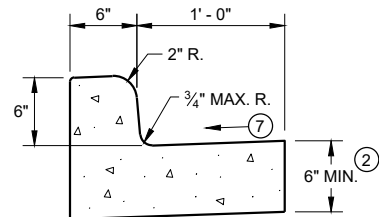


TYPES K^① & L
(OPTIONAL CURB SHAPE)



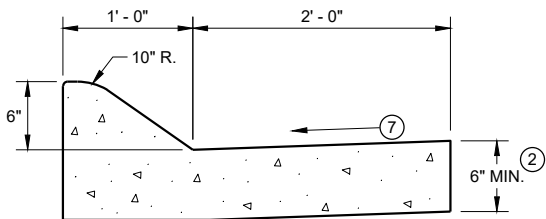
TYPES K^① & L

CONCRETE CURB AND GUTTER 30"

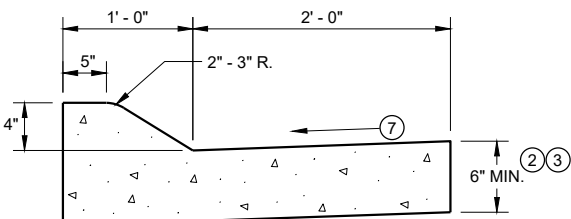


TYPES A^① & D

CONCRETE CURB AND GUTTER 18"

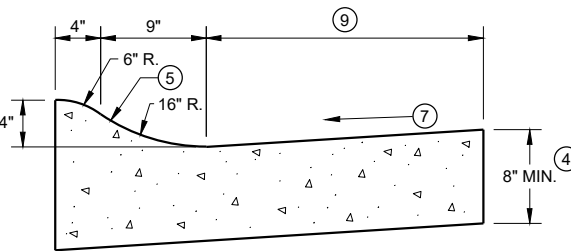


6" SLOPED CURB TYPES A^① & D



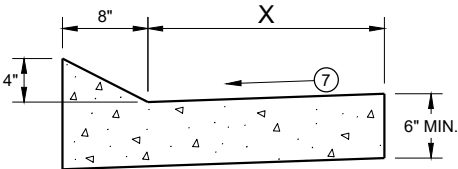
4" SLOPED CURB TYPES A^① & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R^① & T

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

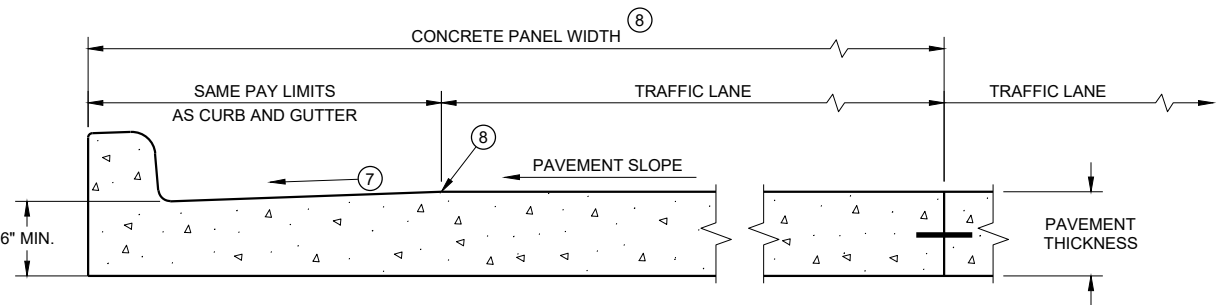


TYPES TBT & TBTT^①

CONCRETE CURB AND GUTTER

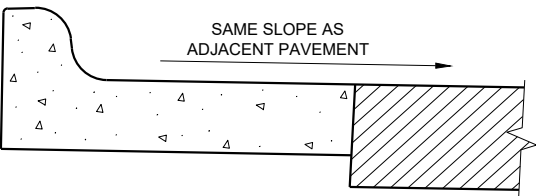
PAVEMENT THICKNESS
AND MAXIMUM CONCRETE
PANEL WIDTH TABLE

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



PARTIAL SECTION OF PAVEMENT *
WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



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

GENERAL NOTES

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

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

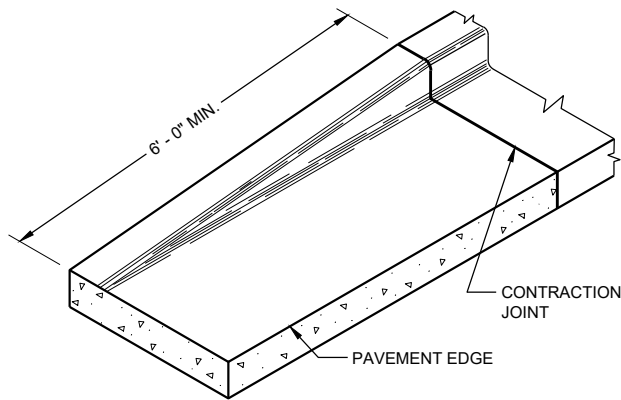
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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

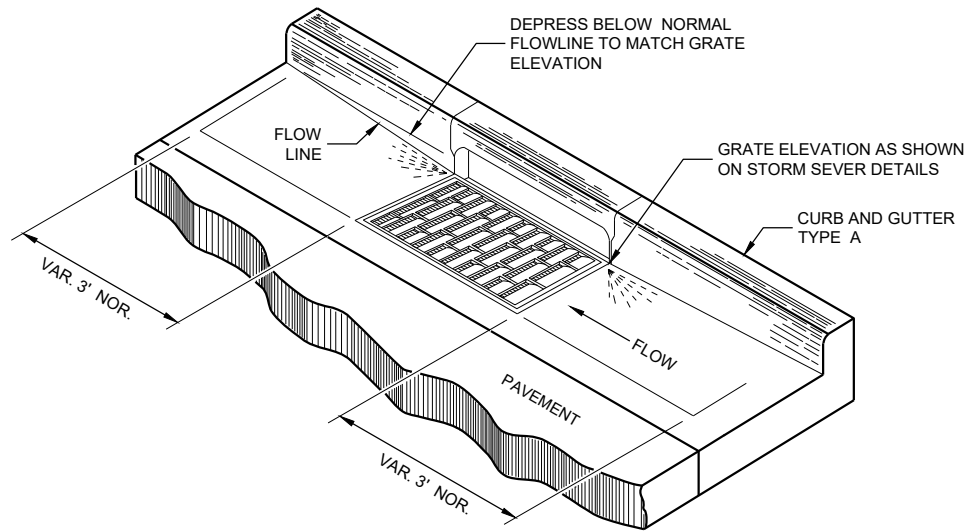
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.
- ④ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑤ UNLESS OTHERWISE NOTED, FOR STAKING PURPOSES THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- ⑥ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.
- ⑦ USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.
- ⑧ INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.
- ⑨ CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE "R" AND "T" = 17 INCHES
CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE "R" AND "T" = 23 INCHES

CONCRETE CURB AND GUTTER

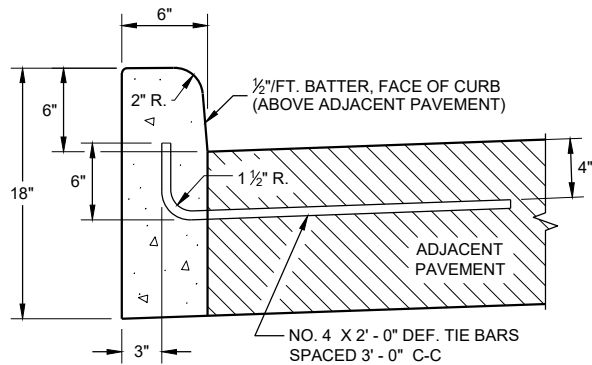
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



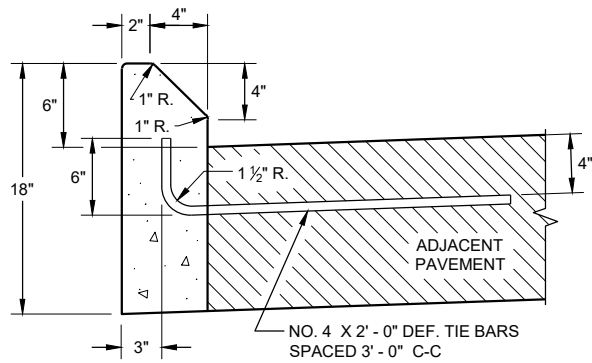
END SECTION CURB AND GUTTER



DETAIL OF CURB AND GUTTER AT INLETS
(TYPICAL H INLET COVER SHOWN)

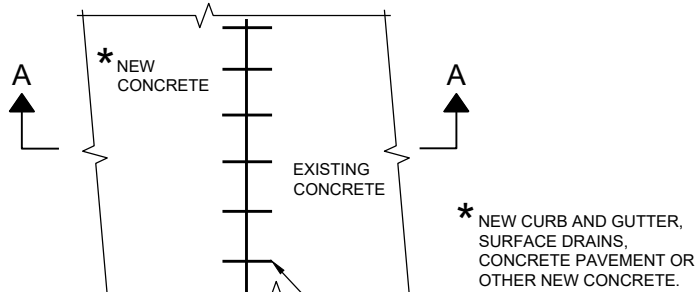


TYPES A^① & D

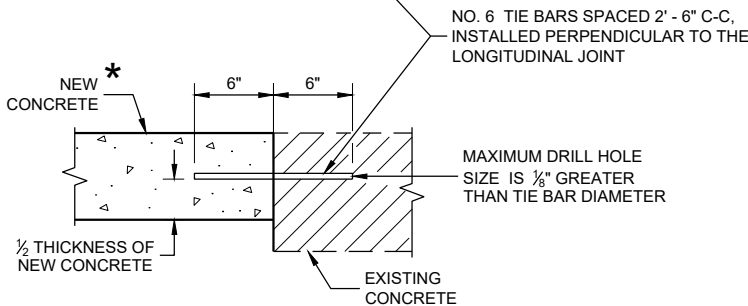


TYPES G^① & J

CONCRETE CURB



PLAN VIEW



SECTION A - A

TIE BARS DRILLED
INTO EXISTING PAVEMENT

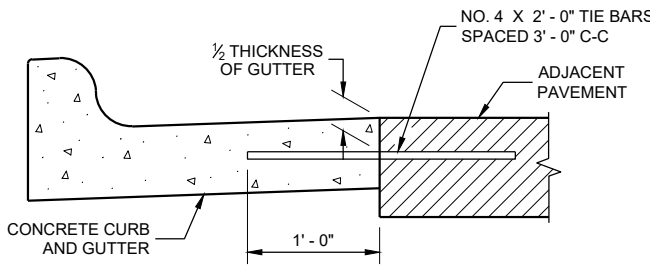
GENERAL NOTES

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

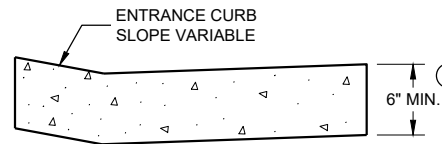
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑨ REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.



TYPICAL TIE BAR LOCATION^①



DRIVEWAY ENTRANCE CURB^⑨
(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021
DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

FHWA

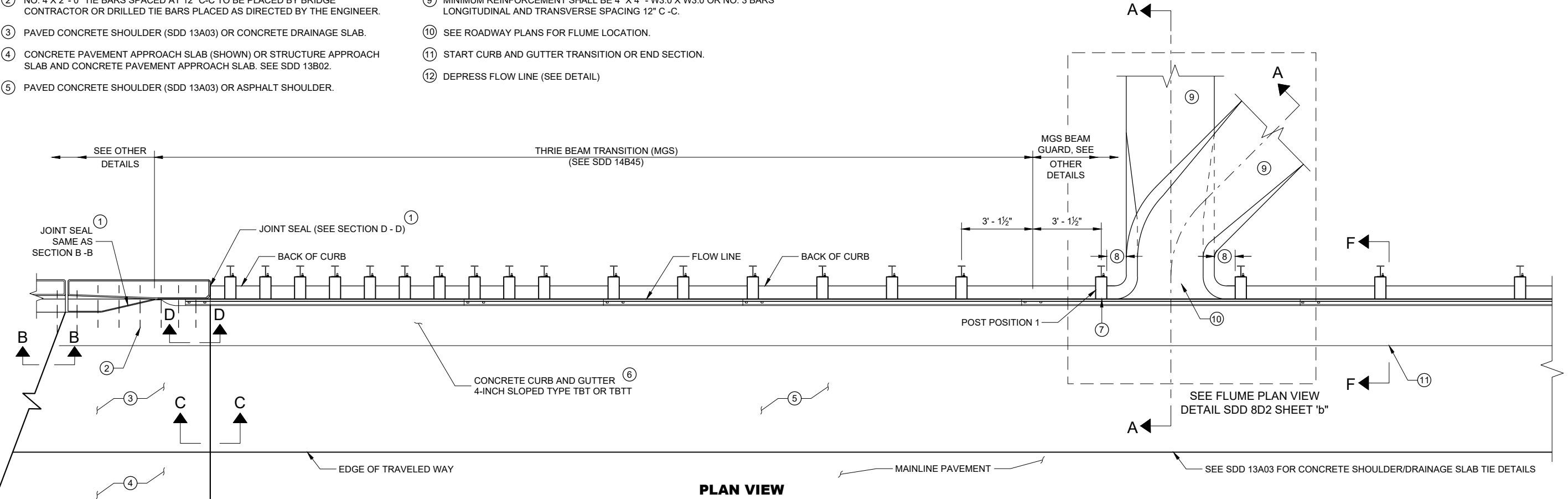
GENERAL NOTES

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.

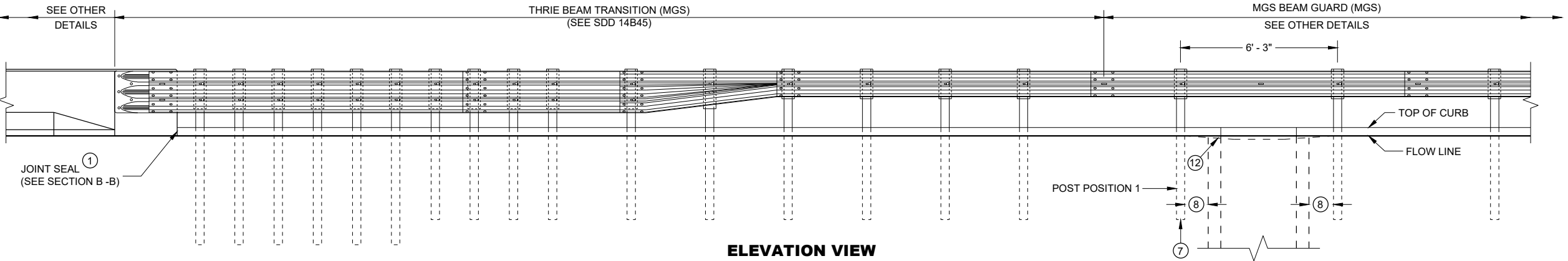
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

- 1 USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- 2 NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- 3 PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
- 4 CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02.
- 5 PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.

- 6 CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBTT. USE TYPE TBTT CURB WITH NO. 4 X 2' - 0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.
- 7 PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- 8 CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- 9 MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- 10 SEE ROADWAY PLANS FOR FLUME LOCATION.
- 11 START CURB AND GUTTER TRANSITION OR END SECTION.
- 12 DEPRESS FLOW LINE (SEE DETAIL)



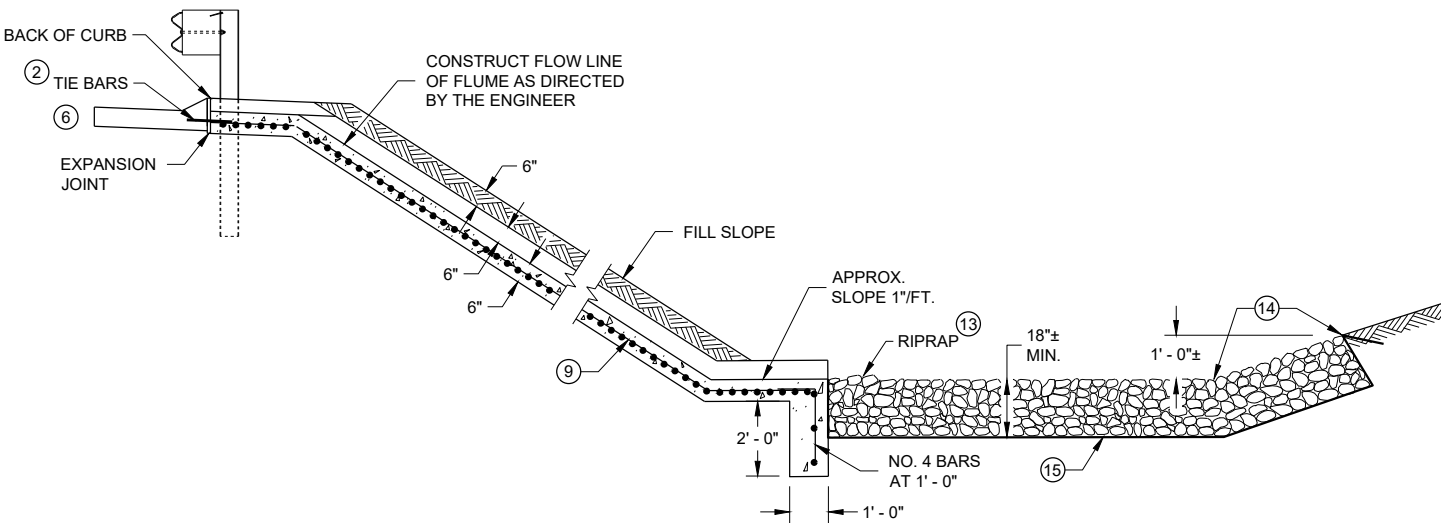
PLAN VIEW



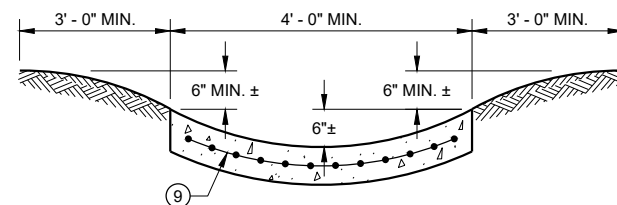
ELEVATION VIEW

CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES

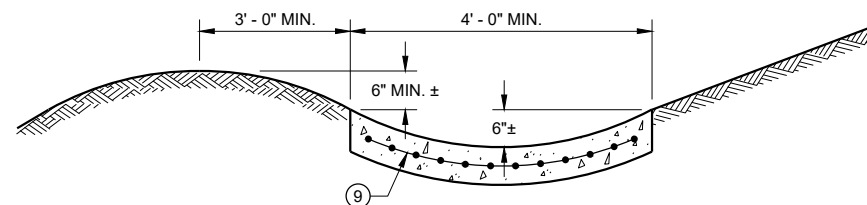
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



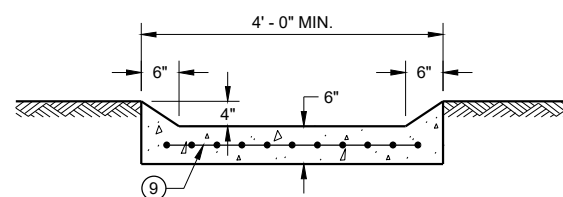
SECTION A - A



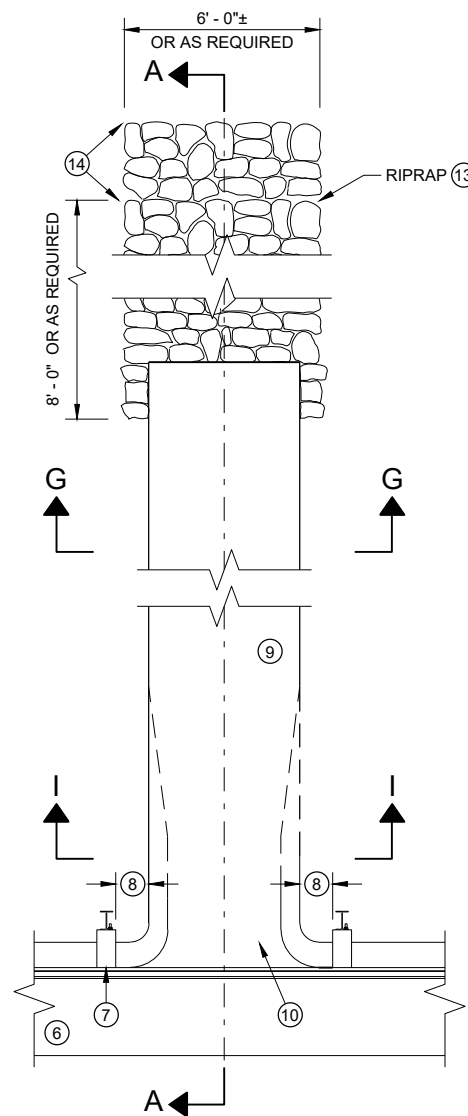
SECTION G - G



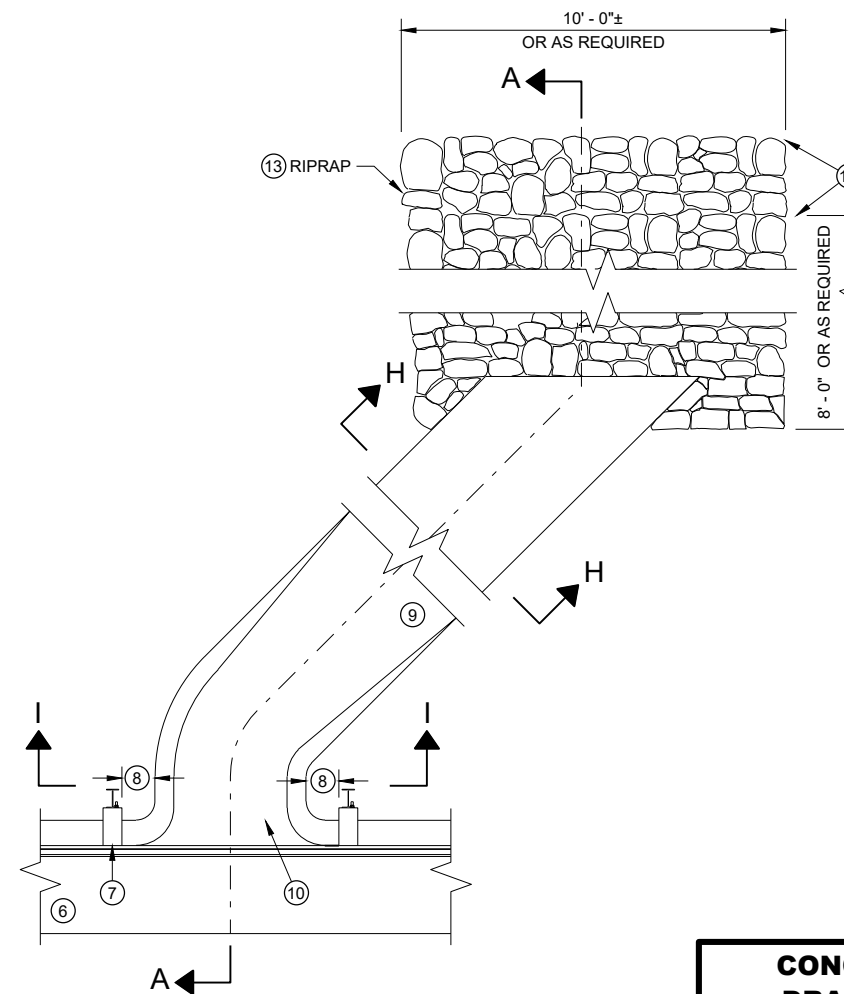
SECTION H - H



SECTION I - I



**PLAN VIEW
PERPENDICULAR FLUME**



**PLAN VIEW
SKEWED FLUME**

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.

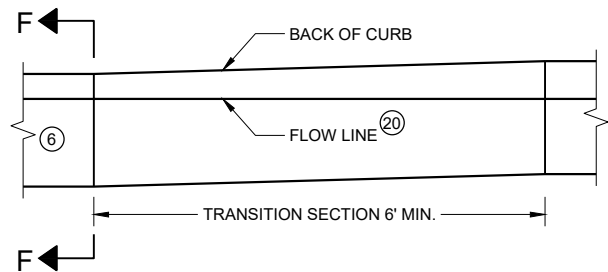
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

- ① USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- ② NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- ③ PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
- ④ CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02 AND STRUCTURE PLANS.
- ⑤ PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.
- ⑥ CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBT. USE TYPE TBT CURB WITH NO. 4 X 2' - 0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.

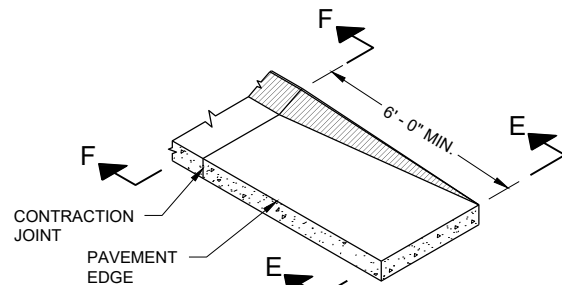
- ⑦ PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- ⑧ CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- ⑨ MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C - C.
- ⑩ SEE ROADWAY PLANS FOR FLUME LOCATION.
- ⑪ START CURB AND GUTTER TRANSITION OR END SECTION.
- ⑫ DEPRESS FLOW LINE (SEE DETAIL)
- ⑬ MEDIUM RIPRAP UNLESS OTHERWISE SPECIFIED.
- ⑭ LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH AS REQUIRED.
- ⑮ GEOTEXTILE FABRIC TYPE HR.

**CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES**

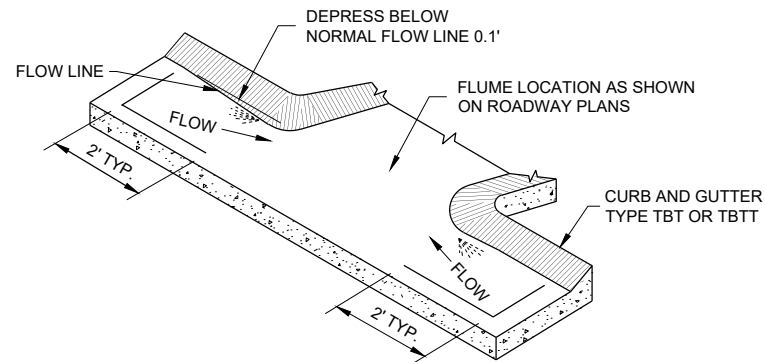
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



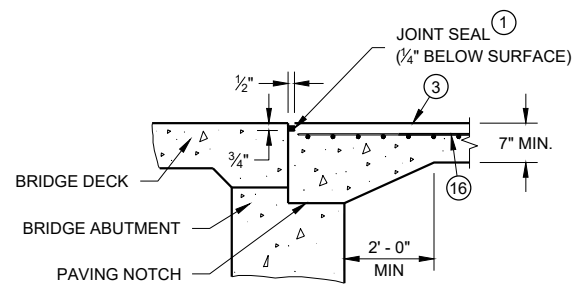
**CURB AND GUTTER TRANSITION SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBTT**



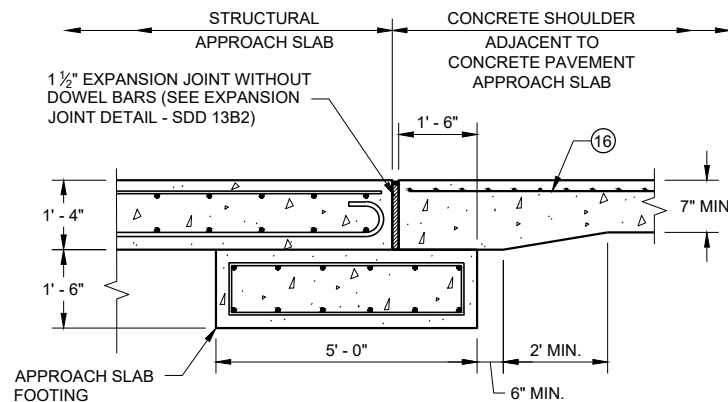
**CURB AND GUTTER END SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBTT**



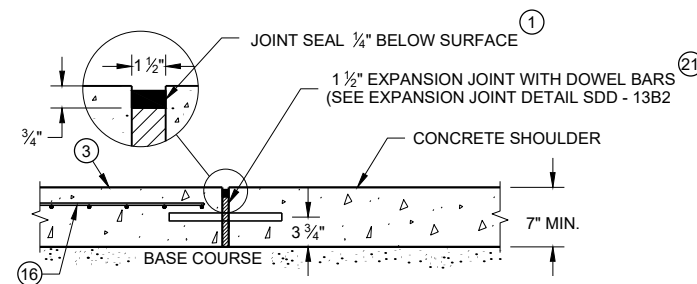
**CURB AND GUTTER FLOW LINE DEPRESSION
AT FLUMES CONCRETE CURB AND GUTTER
4-INCH SLOPED 36 INCH TYPE TBT OR TBTT**



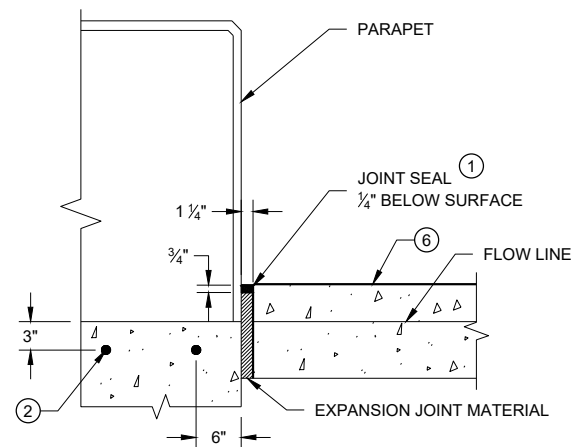
SECTION B-B



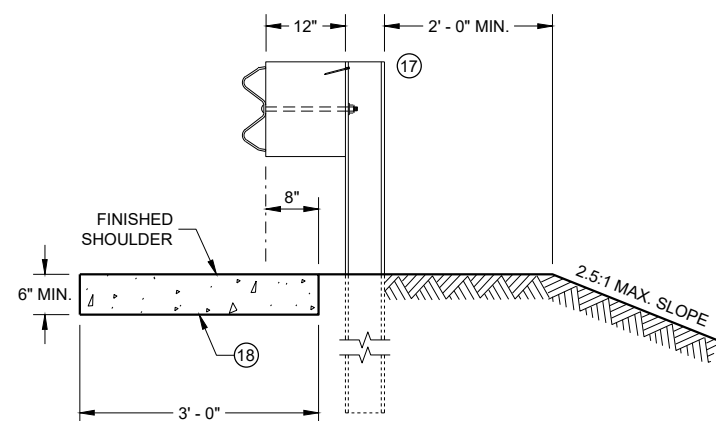
**SECTION C - C
JOINT DETAIL FOR BRIDGE WITH STRUCTURAL
APPROACH SLAB AND CONCRETE APPROACH SLAB**



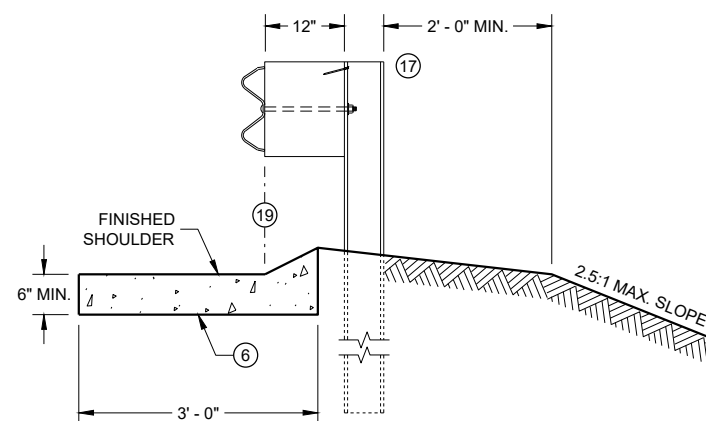
**SECTION C - C
JOINT DETAIL FOR BRIDGE APPROACH
WITH CONCRETE SHOULDERS**



SECTION D - D



SECTION E - E



SECTION F - F

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.

ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

- ① USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- ② NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- ③ PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
- ④ CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02 AND STRUCTURE PLANS.
- ⑤ PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.
- ⑥ CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBTT. USE TYPE TBTT CURB WITH NO. 4 X 2' - 0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.
- ⑦ PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- ⑧ CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- ⑨ MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C - C.
- ⑩ SEE ROADWAY PLANS FOR FLUME LOCATION.
- ⑪ START CURB AND GUTTER TRANSITION OR END SECTION.
- ⑫ DEPRESS FLOW LINE (SEE DETAIL)
- ⑬ MEDIUM RIPRAP UNLESS OTHERWISE SPECIFIED.
- ⑭ LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.
- ⑮ GEOTEXTILE FABRIC TYPE HR.
- ⑯ MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C - C.
- ⑰ MSG THRIE BEAM TRANSITION POST 1. SEE SDD 14B45 FOR ADDITIONAL CONSTRUCTION DETAILS AND ACCEPTABLE MATERIALS.
- ⑱ MAINTAIN WIDTH, THICKNESS AND CROSS SLOPE OF ADJACENT TYPE TBT OR TBTT CURB. SEE NOTE 6 FOR TIE BAR SPACING.
- ⑲ ALIGN FACE OF POST BLOCK WITH FLOW LINE.
- ⑳ MAINTAIN FLOW LINE AT EDGE OF PAVEMENT/FACE OF BEAM GUARD AS APPLICABLE.
- ㉑ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING HMA PAVEMENTS.

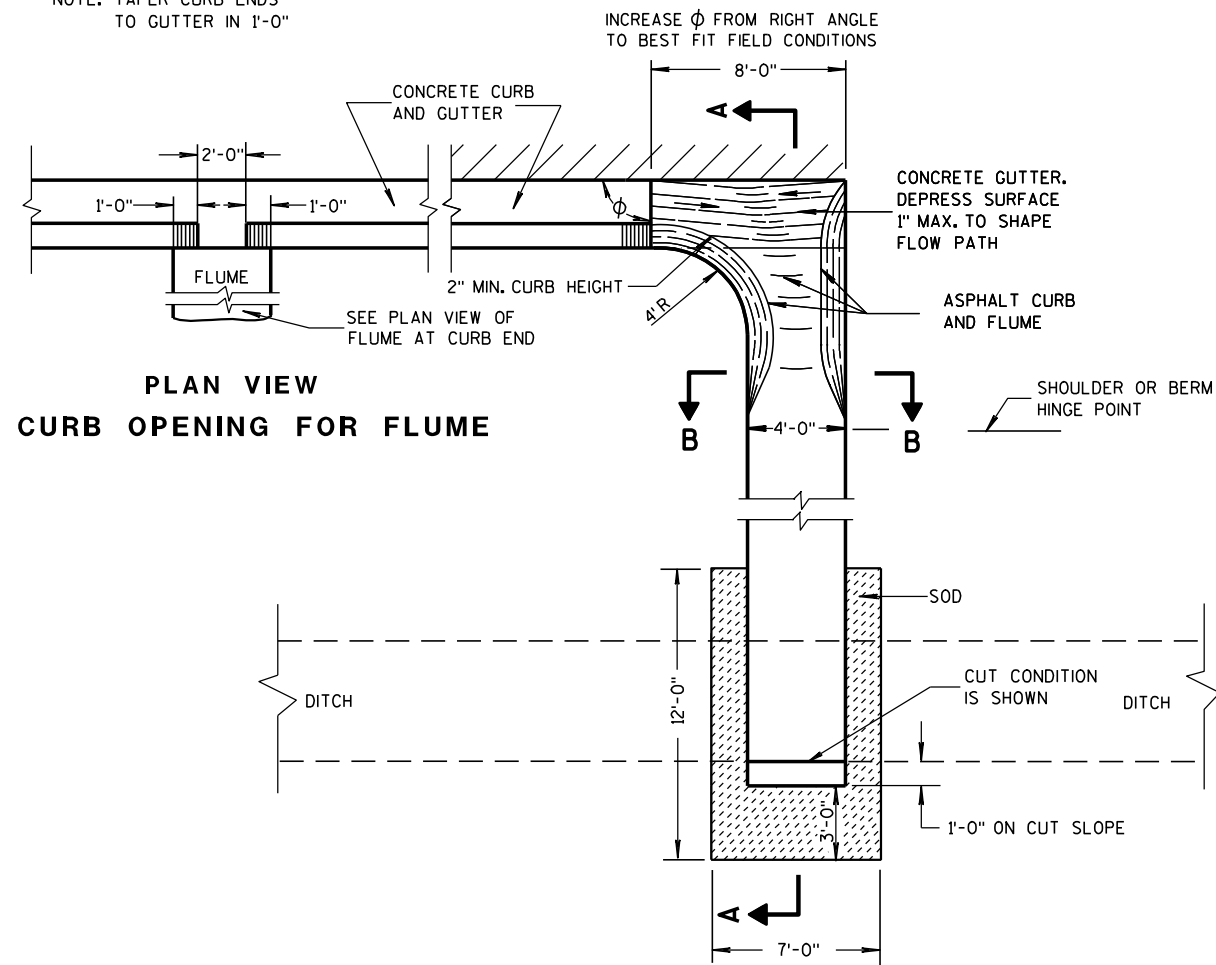
CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA

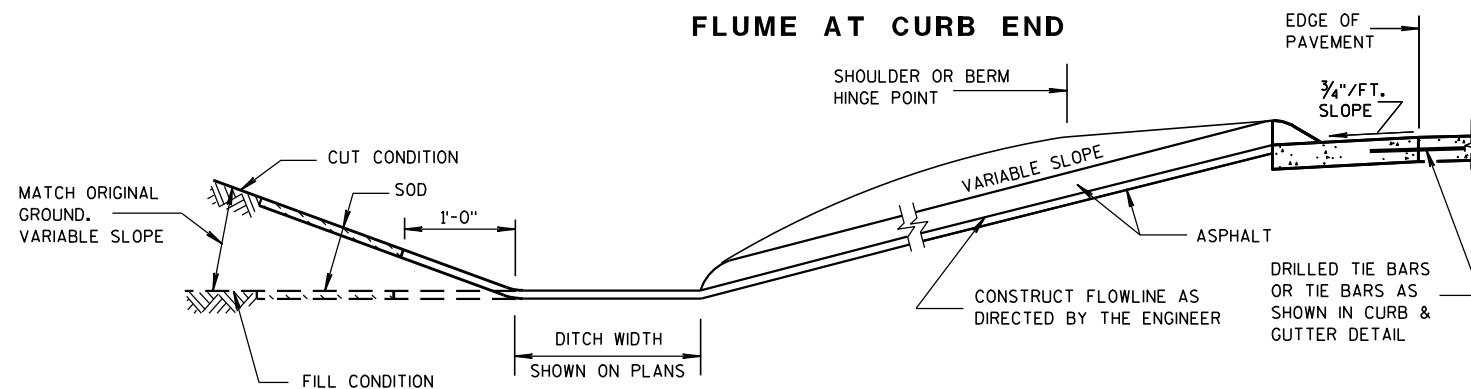
ASPHALTIC FLUME

NOTE: TAPER CURB ENDS
TO GUTTER IN 1'-0"

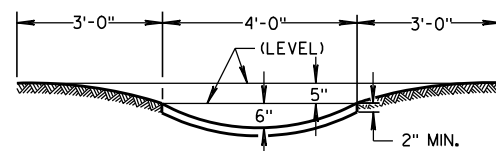


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

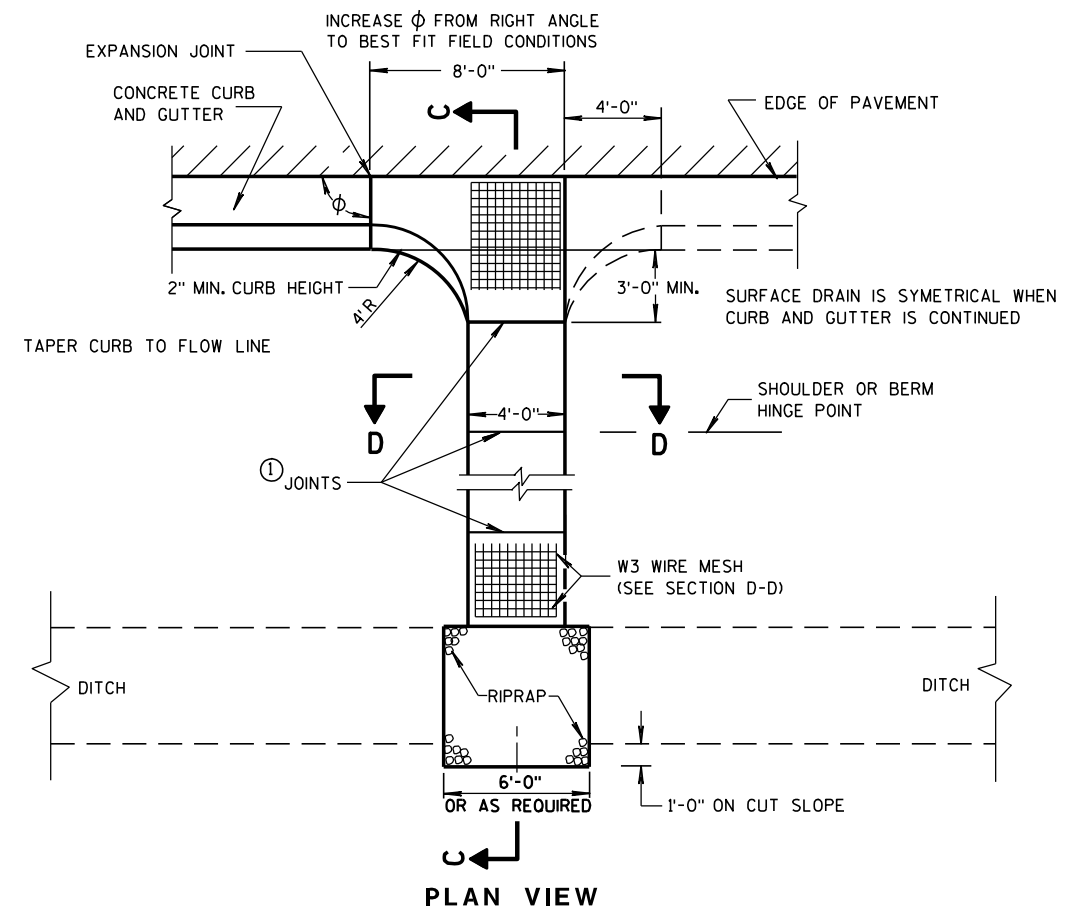
GENERAL NOTES

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

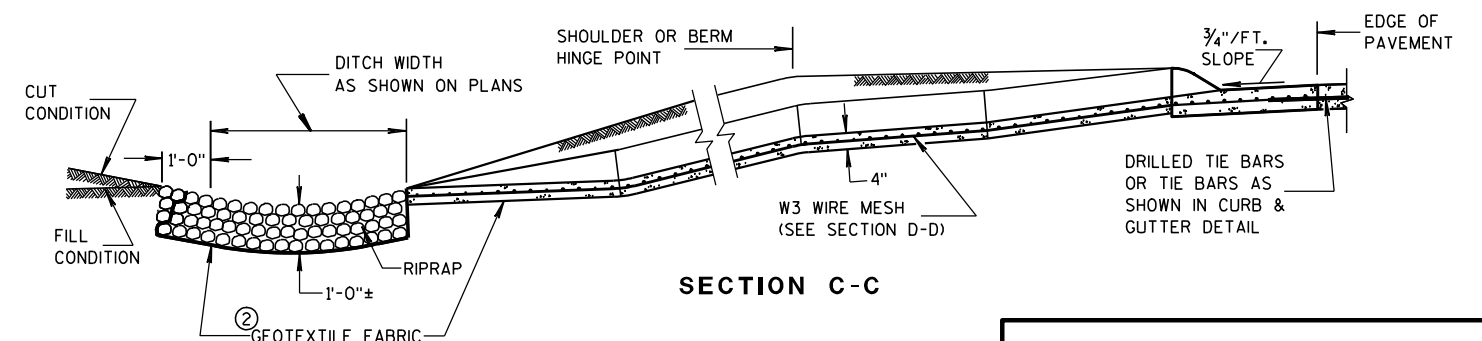
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

- ① JOINTS SHALL BE 1/8 TO 1/4 INCH WIDE BY 1 1/2 INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
- ② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
- ③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

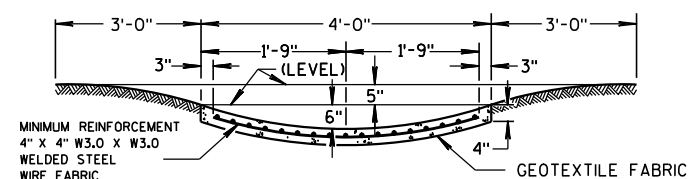
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

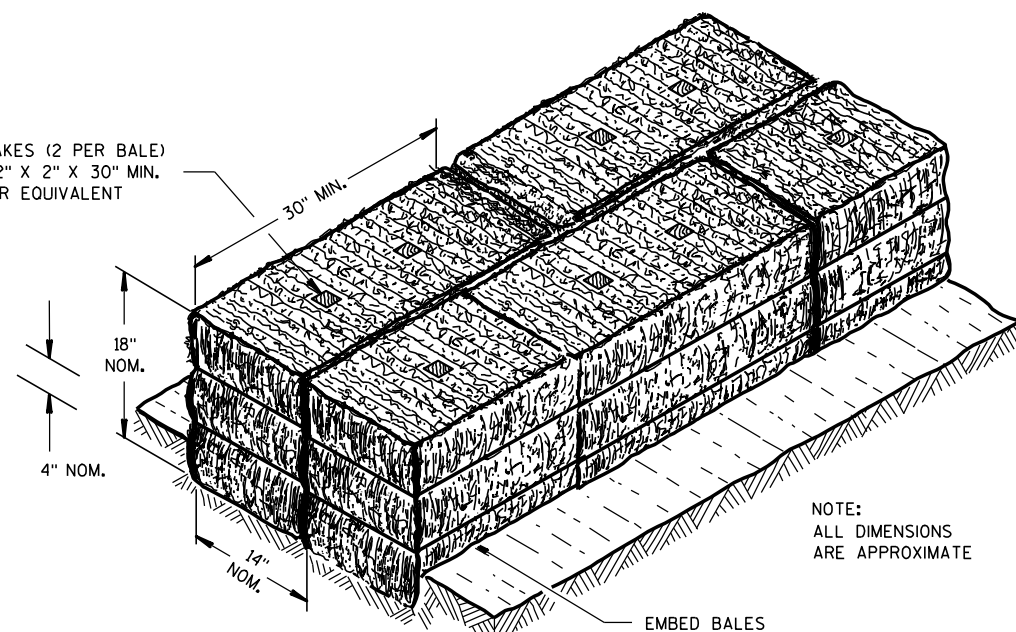
APPROVED

9-4-08
DATE

FHWA

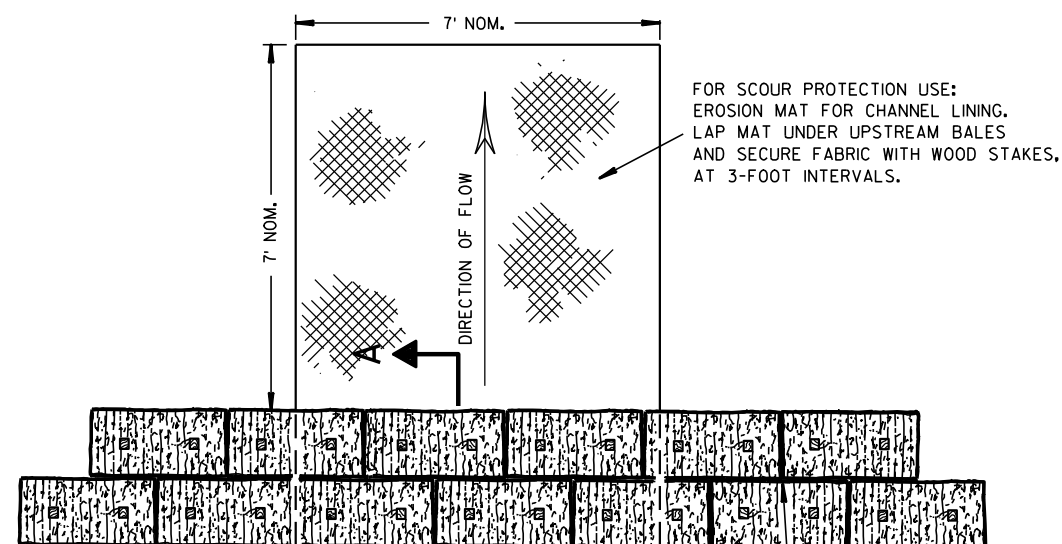
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

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

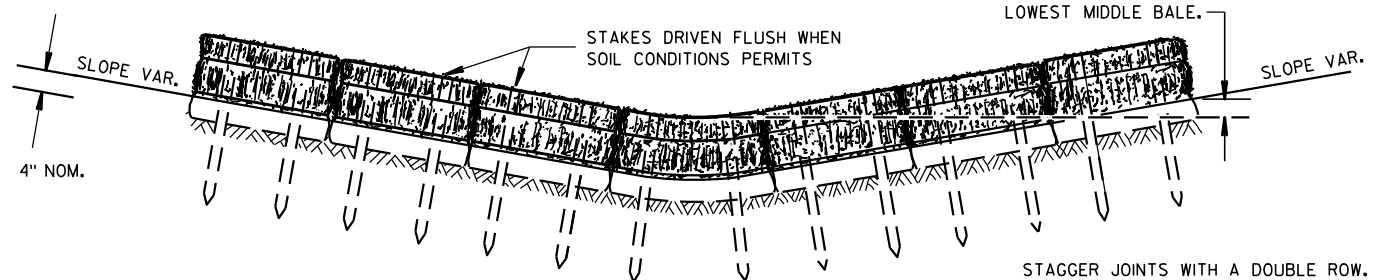


NOTE:
ALL DIMENSIONS
ARE APPROXIMATE

SECTION A-A



PLAN VIEW



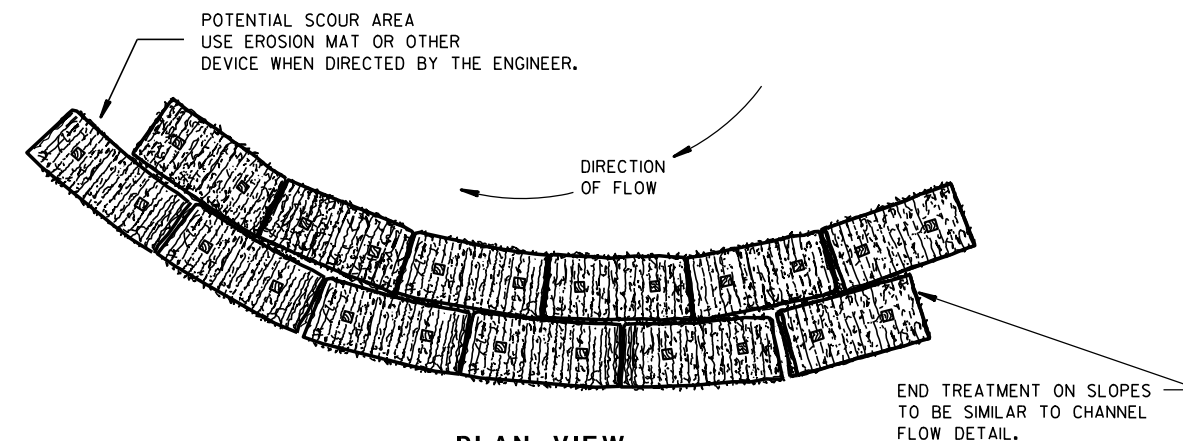
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

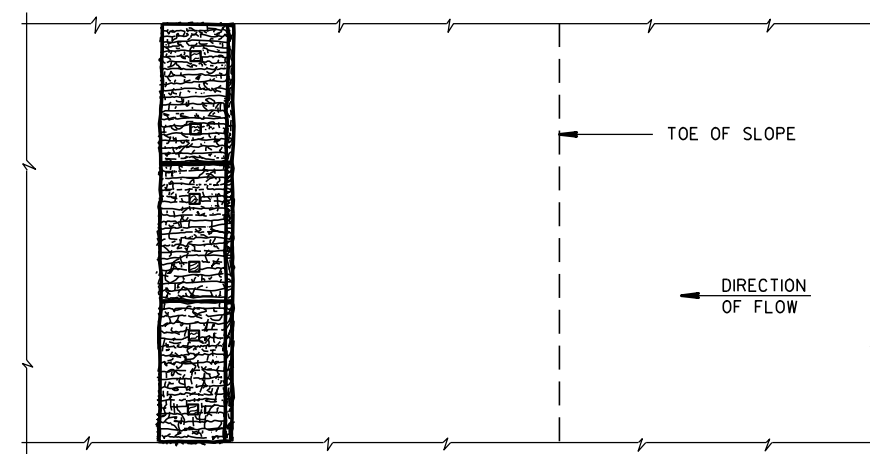
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

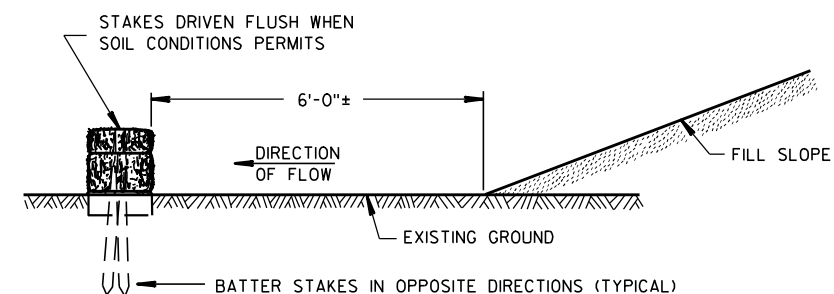


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

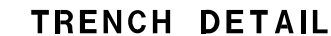
6/04/02
DATE

FHWA

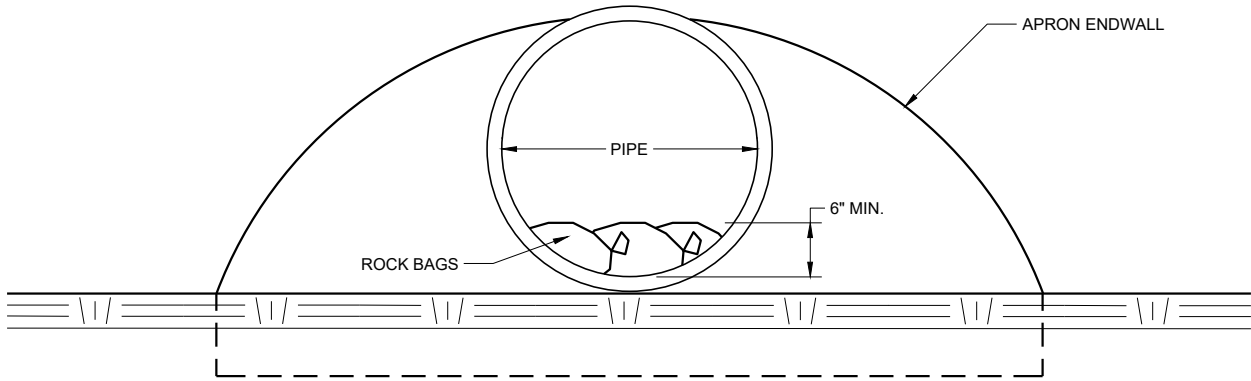
/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



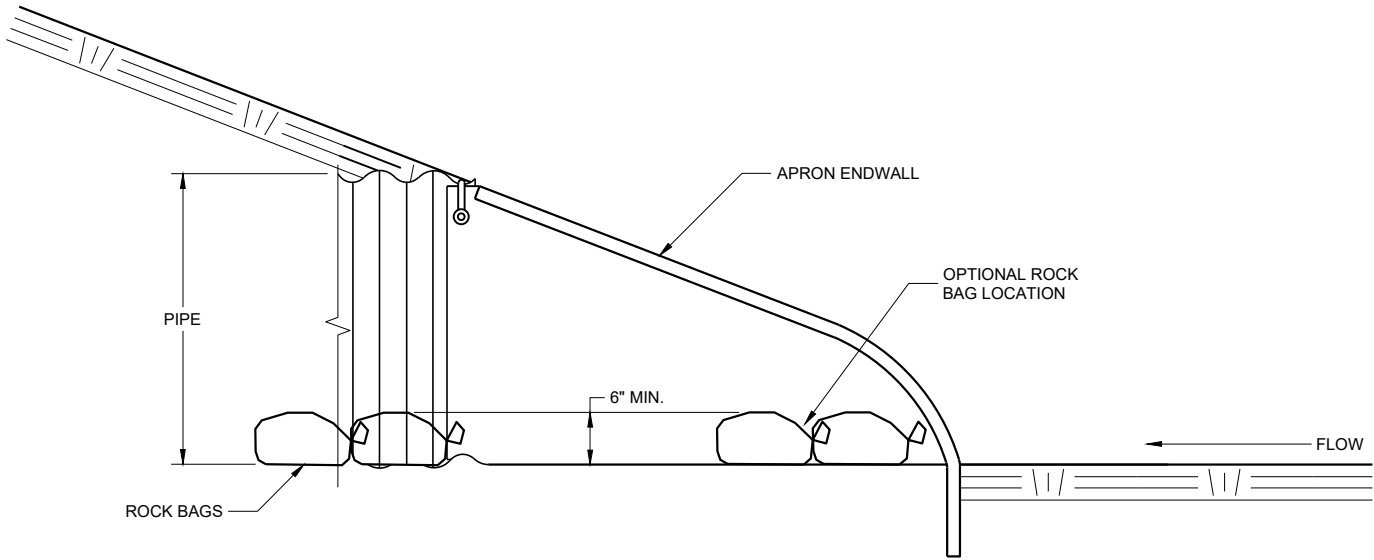
- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS 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.



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



END VIEW



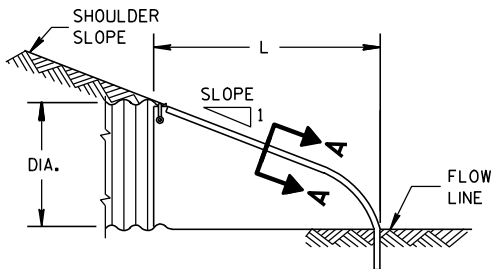
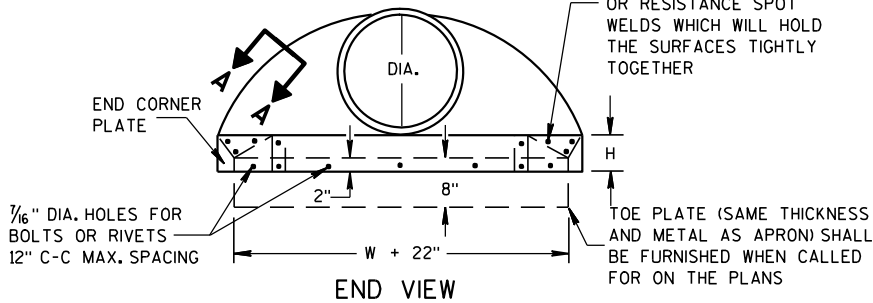
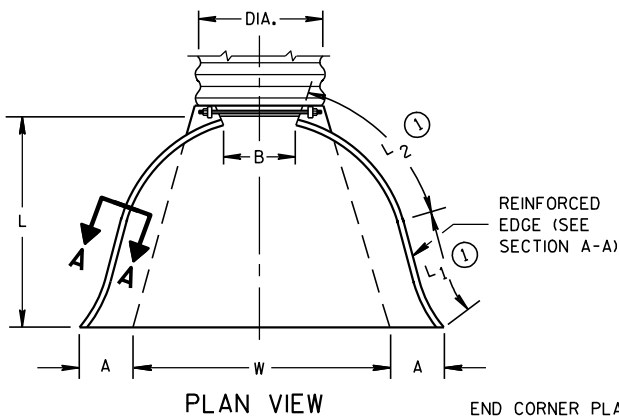
SIDE VIEW

CULVERT PIPE CHECK
(INSTALL ON INLET END ONLY)

CULVERT PIPE CHECK	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2019 DATE	/S/ Daniel Schave EROSION CONTROL ENGINEER
FHWA	

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

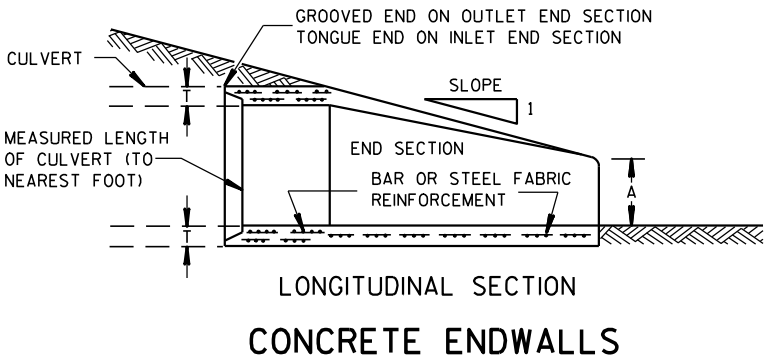
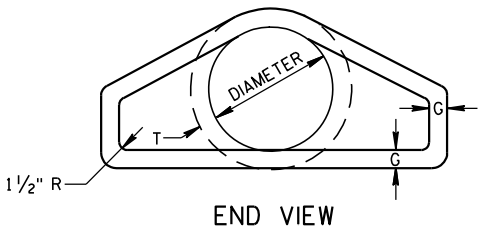
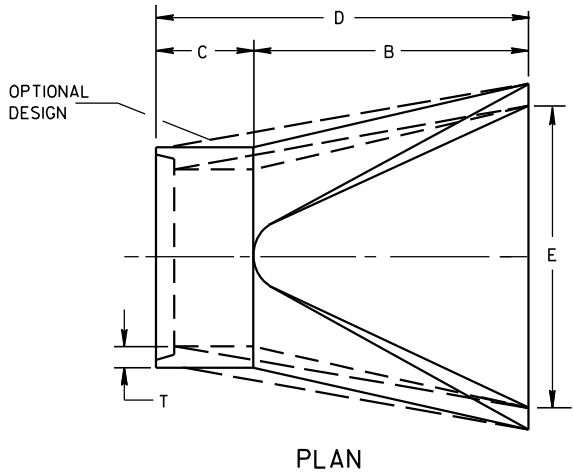
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



SIDE ELEVATION
METAL ENDWALLS

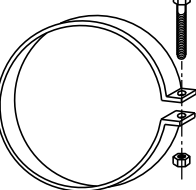
REINFORCED CONCRETE APRON ENDWALLS								
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE
	T	A	B	C	D	E	G	
12	2	4	24	48 ⁷ / ₈	72 ⁷ / ₈	24	2	3 to 1
15	2 ¹ / ₄	6	27	46	73	30	2 ¹ / ₄	3 to 1
18	2 ¹ / ₂	9	27	46	73	36	2 ¹ / ₂	3 to 1
21	2 ³ / ₄	9	36	37 ¹ / ₂	73 ¹ / ₂	42	2 ³ / ₄	3 to 1
24	3	9 ¹ / ₂	43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

* MINIMUM
** MAXIMUM

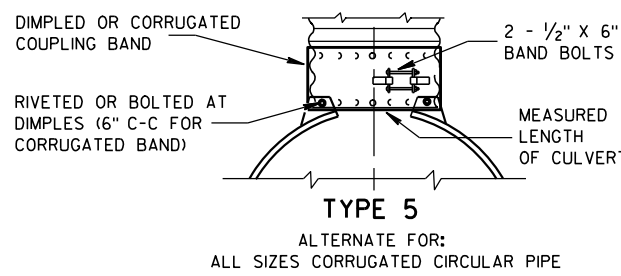
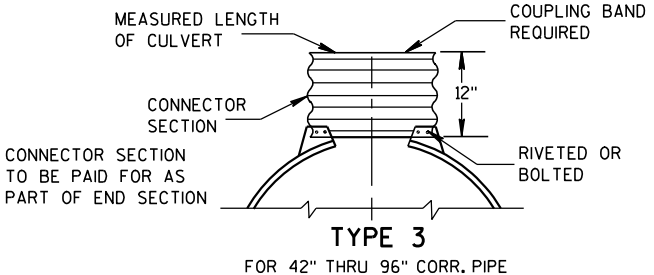
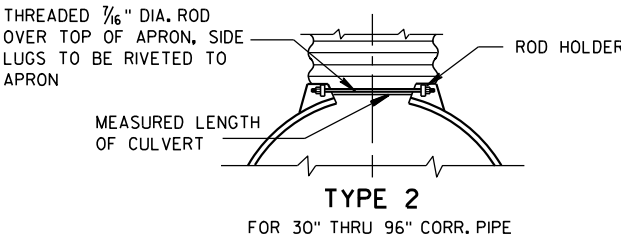
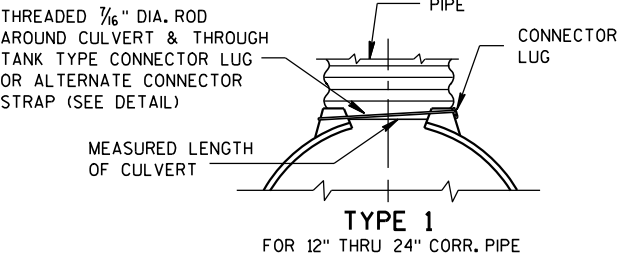


LONGITUDINAL SECTION
CONCRETE ENDWALLS

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



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



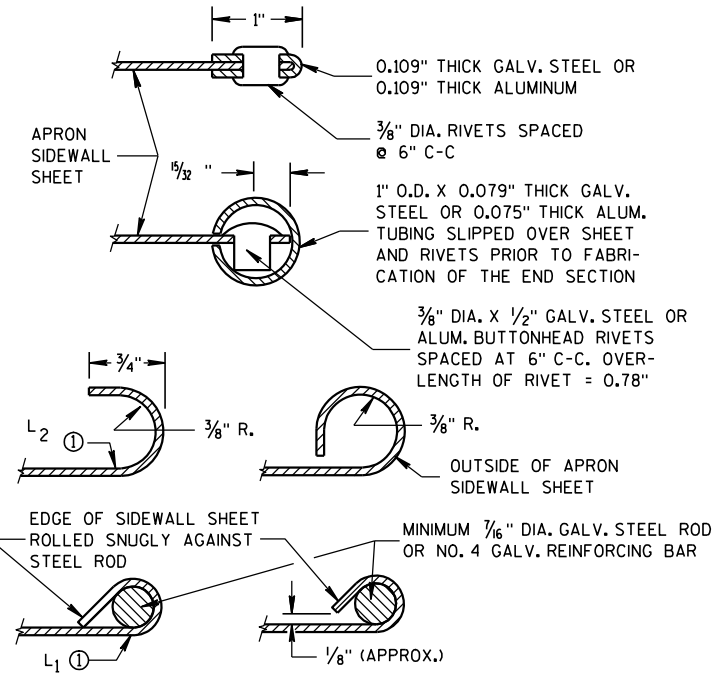
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



GENERAL NOTES

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

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

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

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

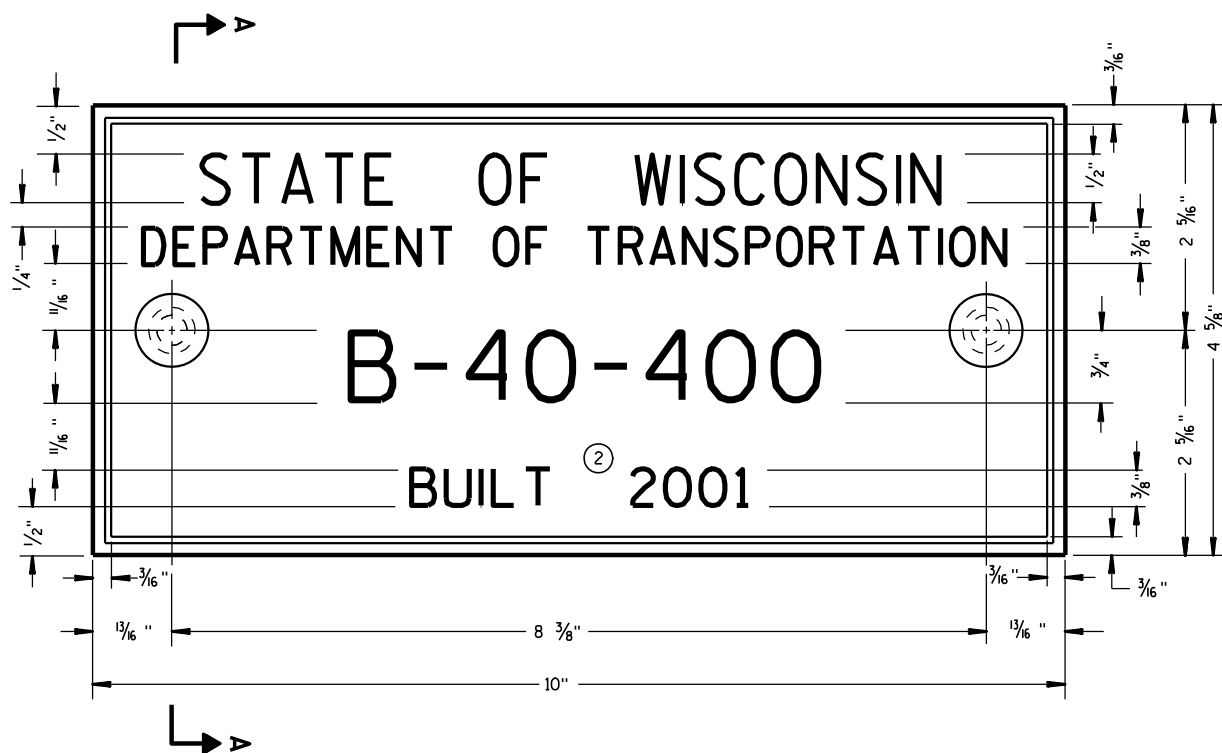
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

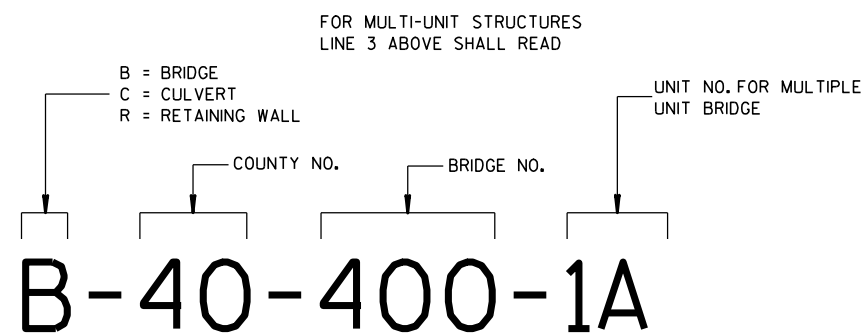
APRON ENDWALLS FOR
CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94
DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



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



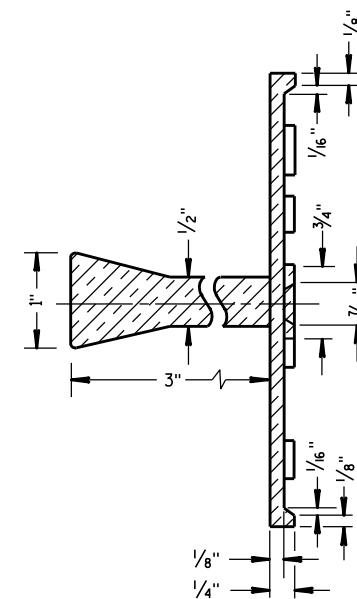
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

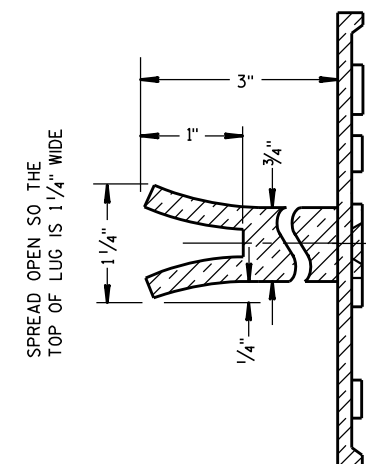
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

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

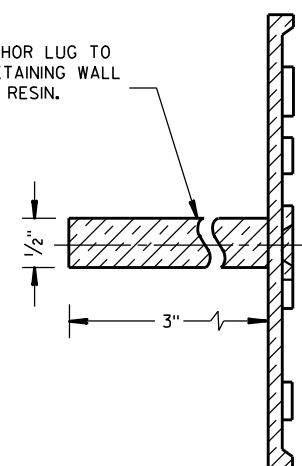


SECTION A-A



ALTERNATE LUG

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



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE
(STRUCTURES)**

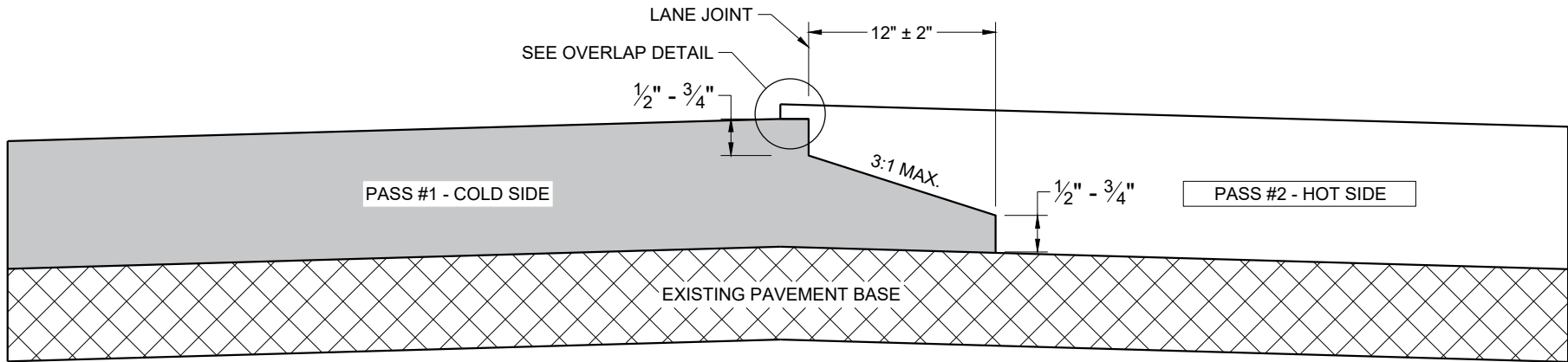
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

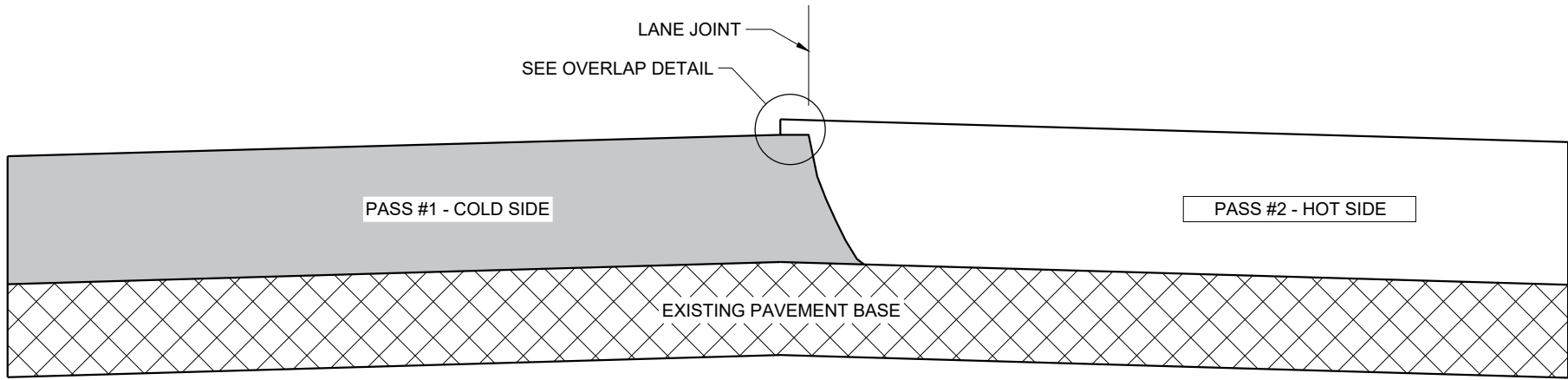
3/26/10
DATE

FHWA

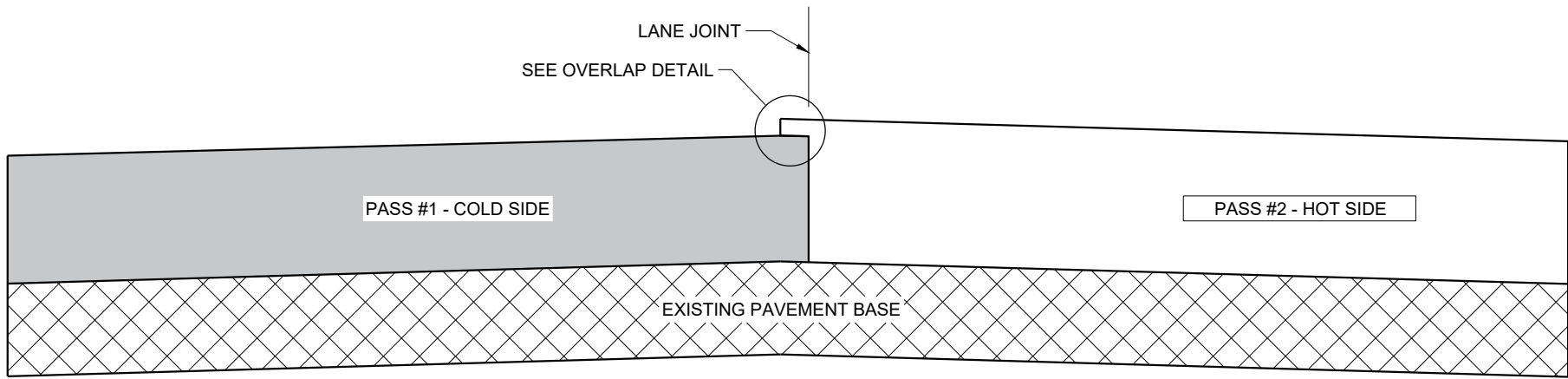
/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

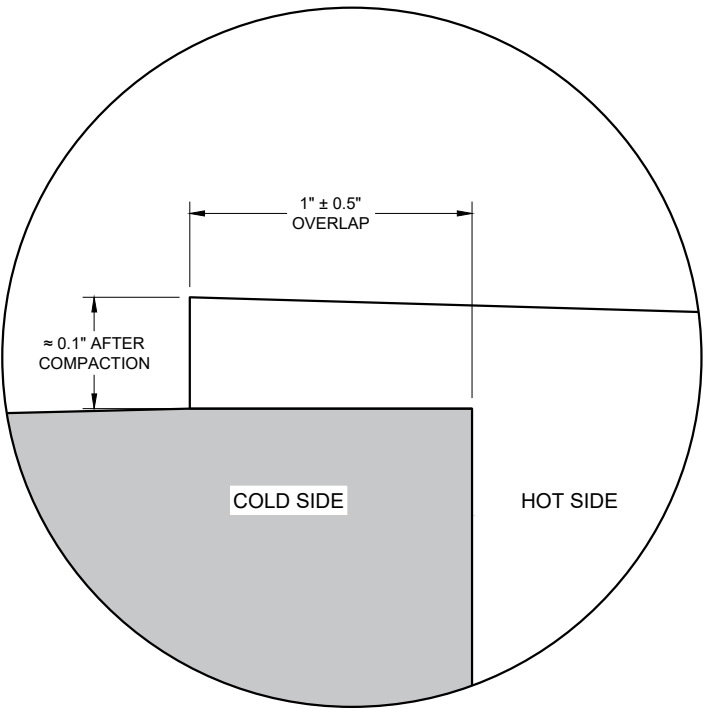
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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.



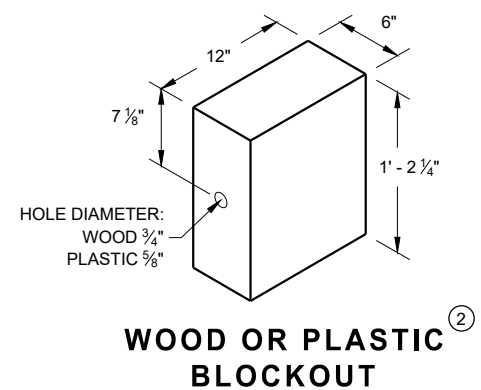
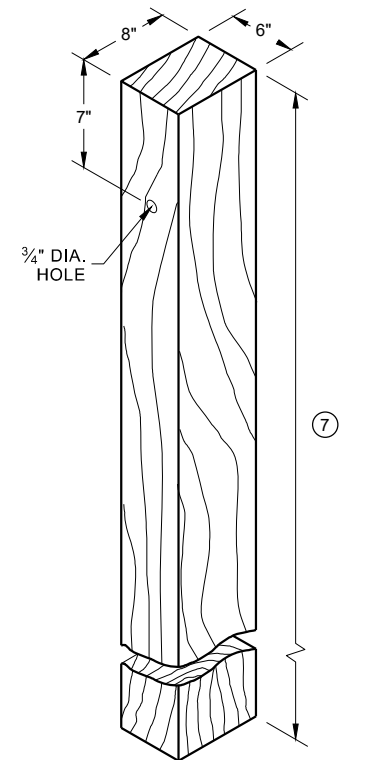
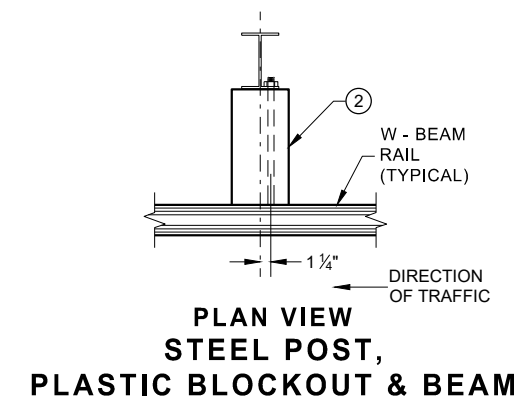
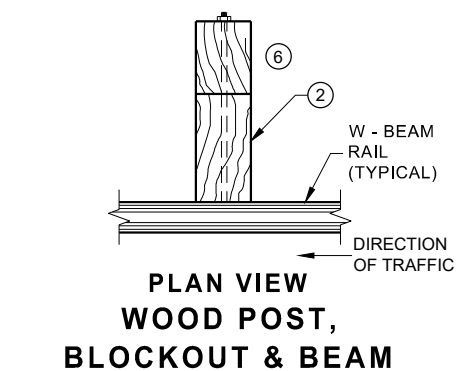
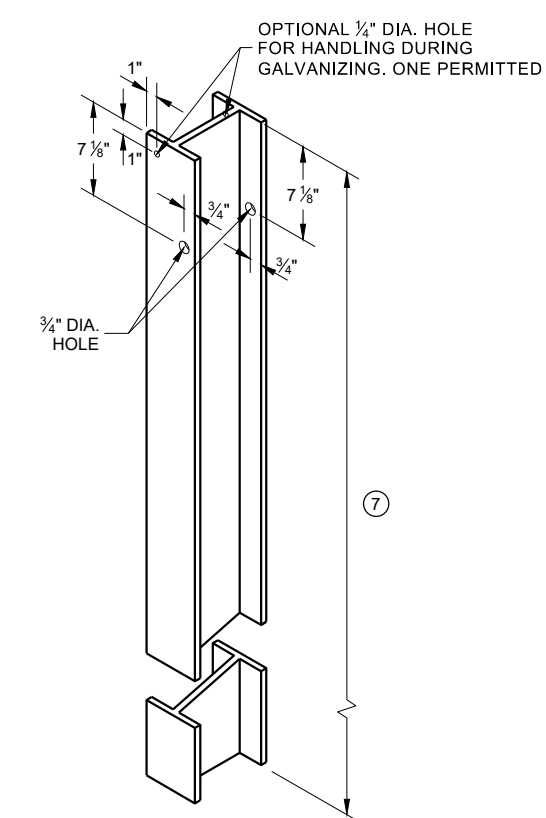
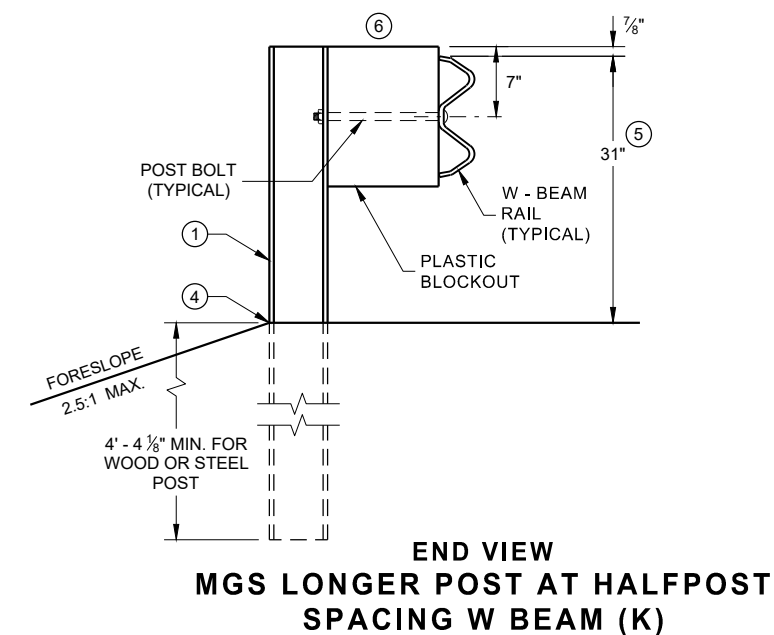
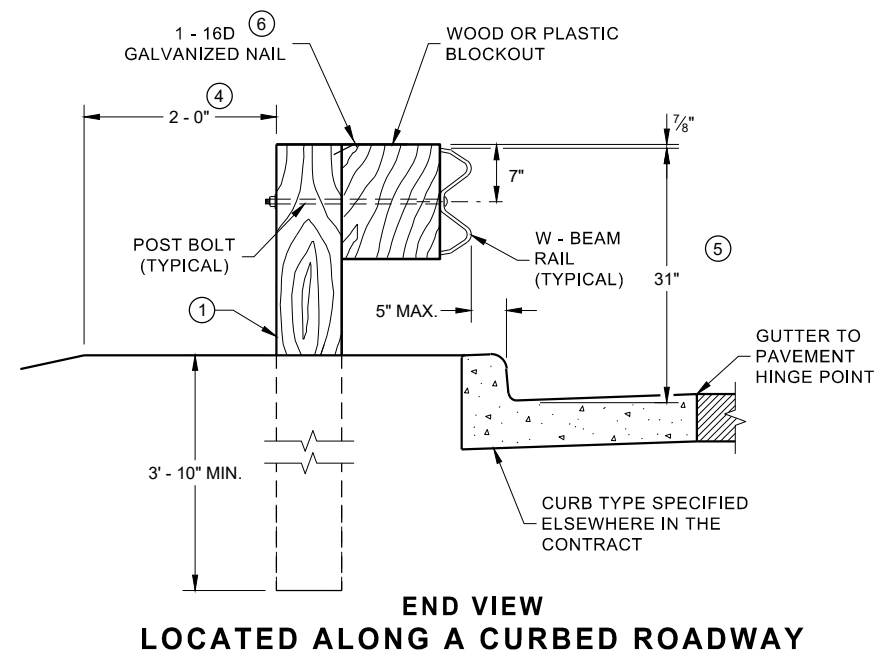
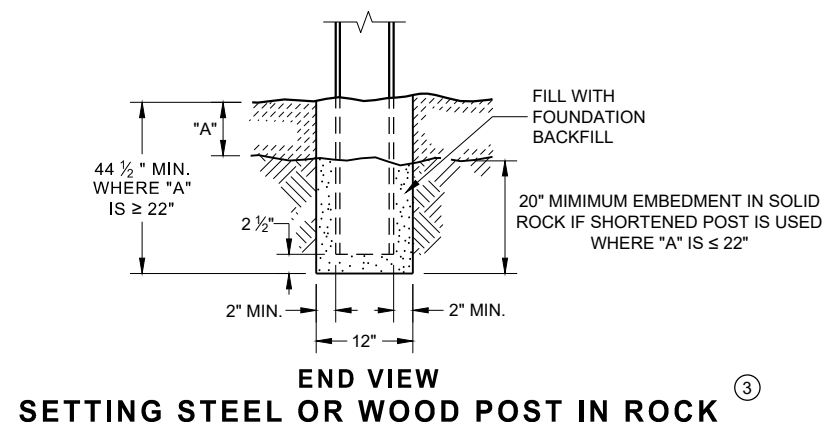
OVERLAP DETAIL (TYPICAL)

HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

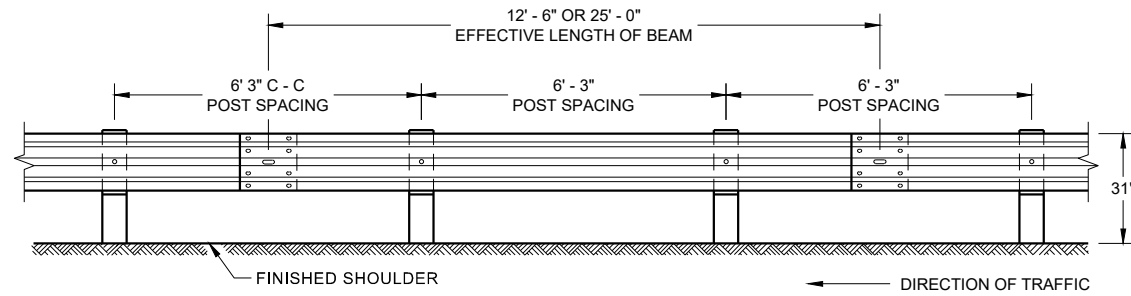
APPROVED
November 2020 /S/ Steven Hefel
DATE HMA PAVEMENT ENGINEER
FHWA

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

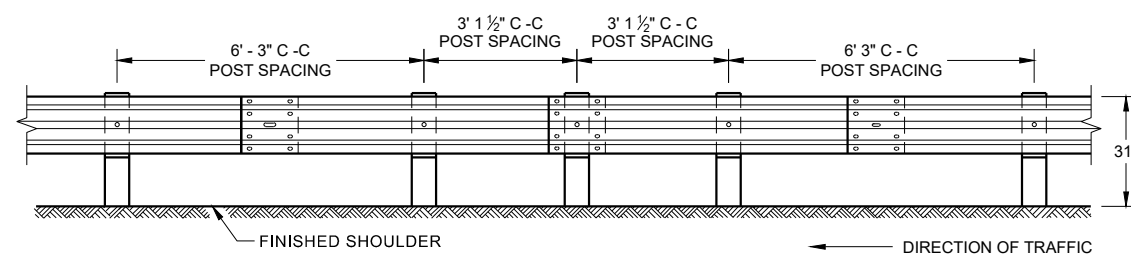


**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

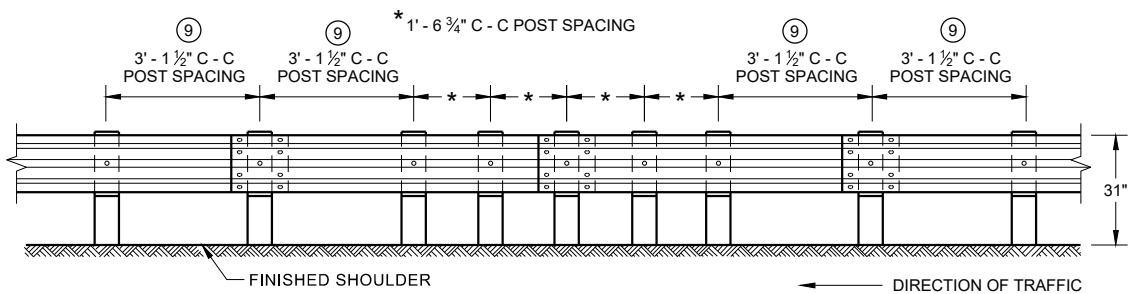
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



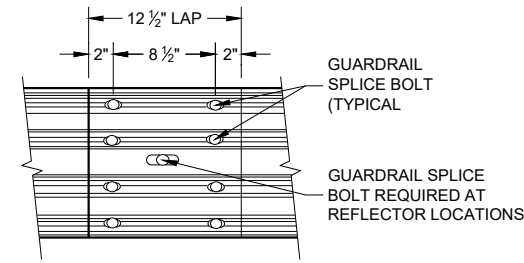
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



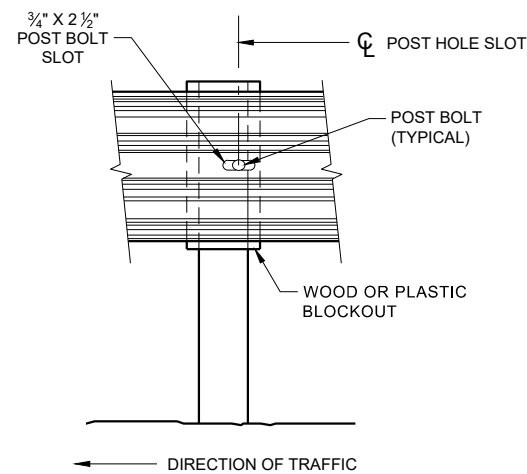
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



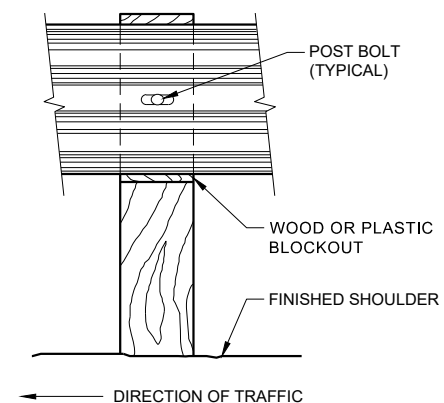
**FRONT VIEW
QUARTER POST SPACING (QS)**



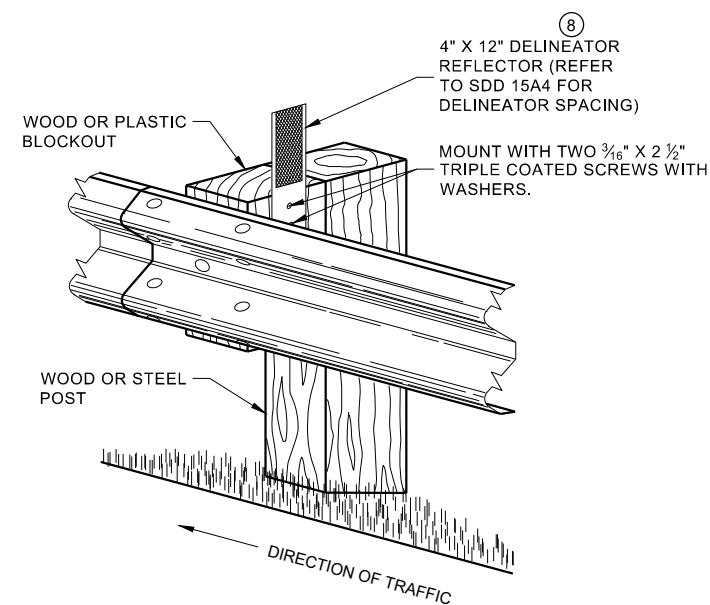
**FRONT VIEW
MID-SPAN BEAM SPLICE**



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



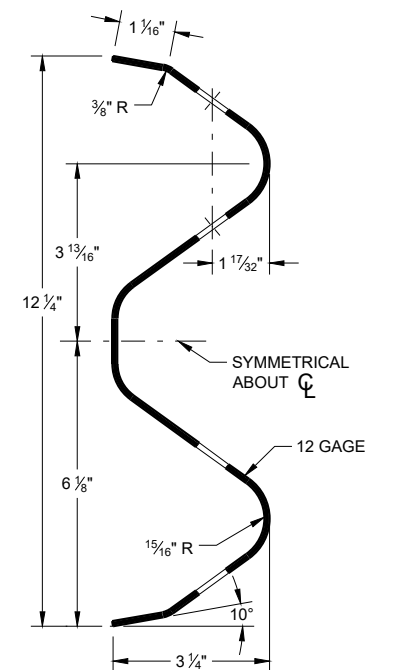
**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

GENERAL NOTES

- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
- 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 3/8" 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.

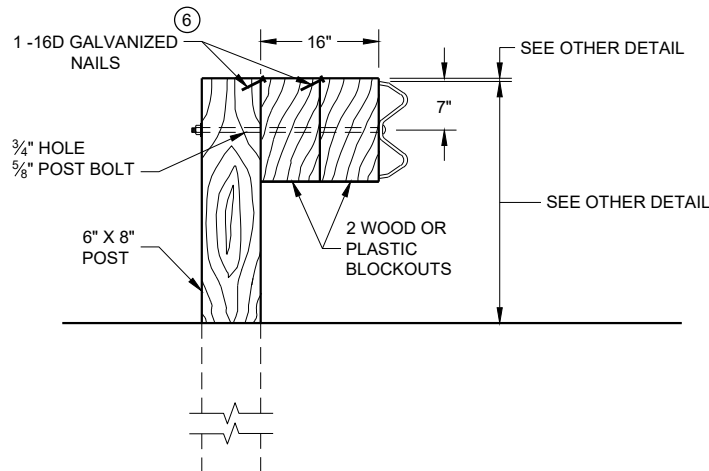
GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



SECTION THRU W-BEAM RAIL

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

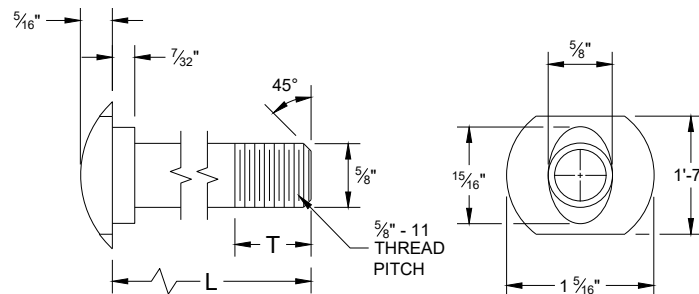
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR 16" BLOCKOUT DEPTH

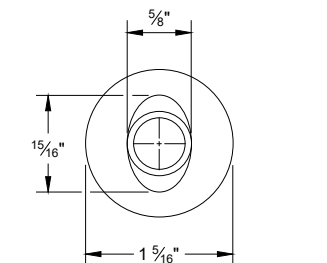
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.

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

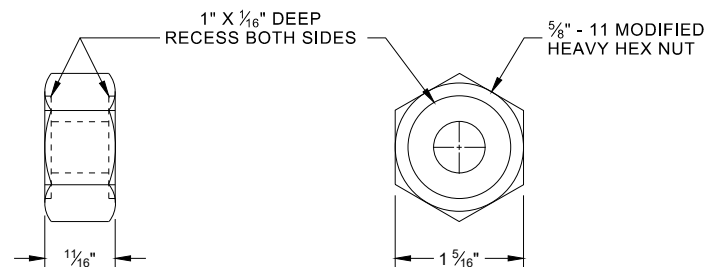


POST BOLT TABLE

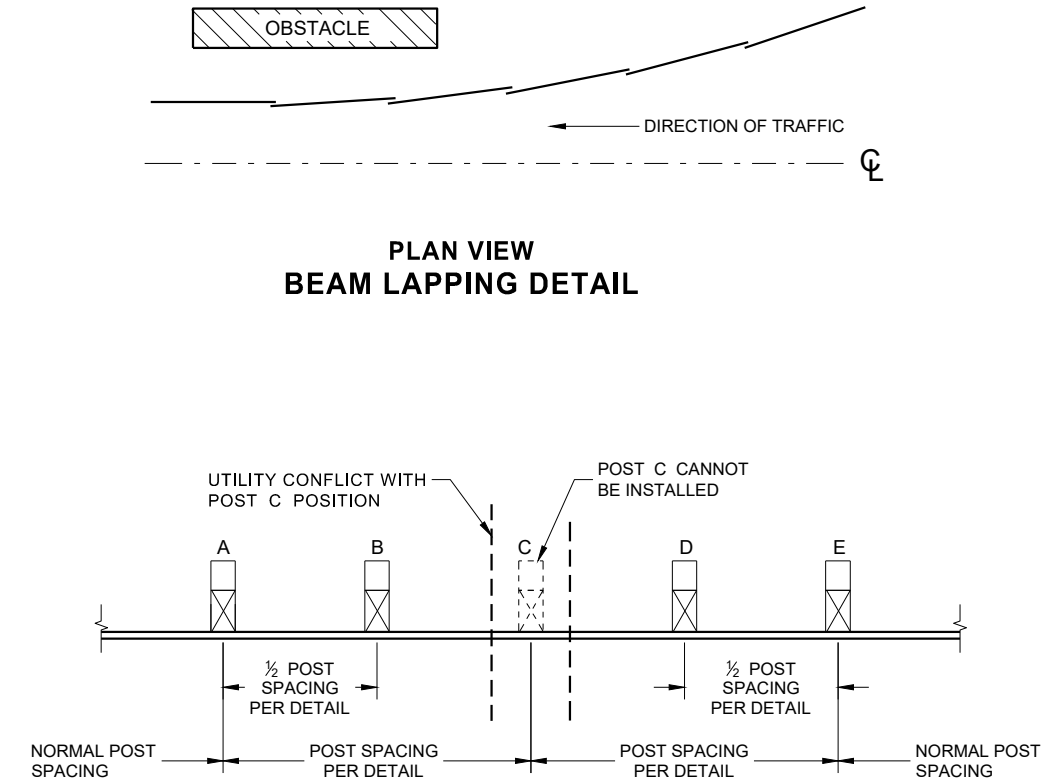
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



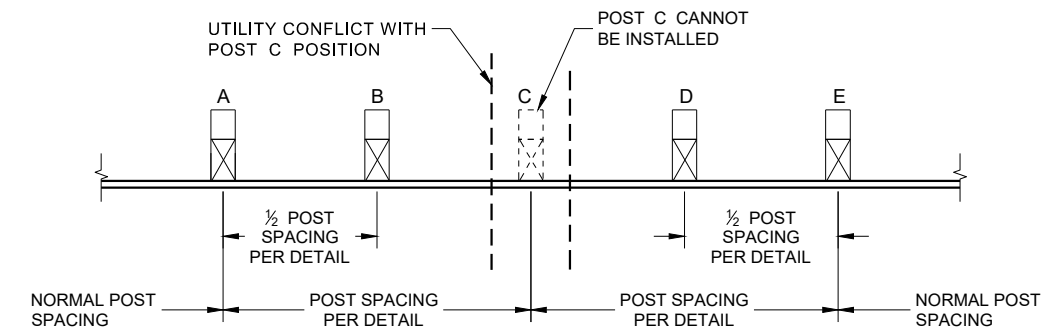
ALTERNATE BOLT HEAD



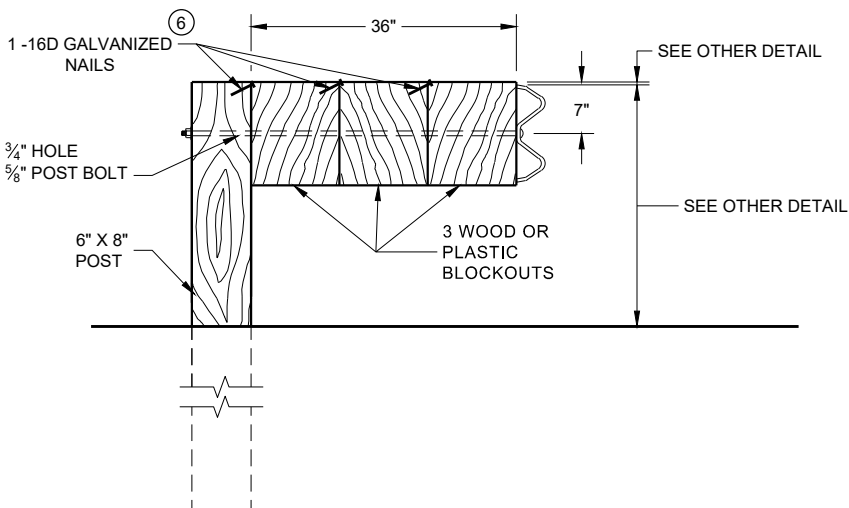
POST BOLT, SPLICE BOLT AND RECESS NUT



PLAN VIEW
BEAM LAPPING DETAIL



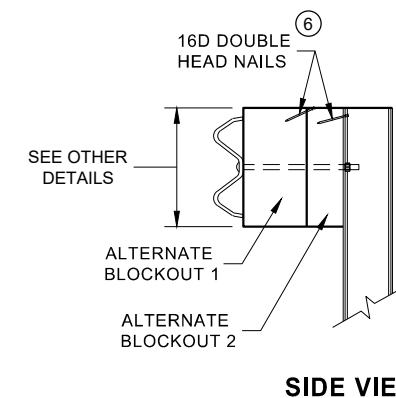
POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



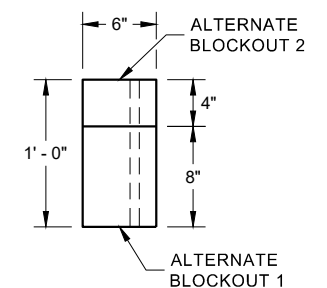
DETAIL FOR 36" BLOCKOUT DEPTH

- 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.

- 6 WHEN USING STEEL POST AD 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.



SIDE VIEW

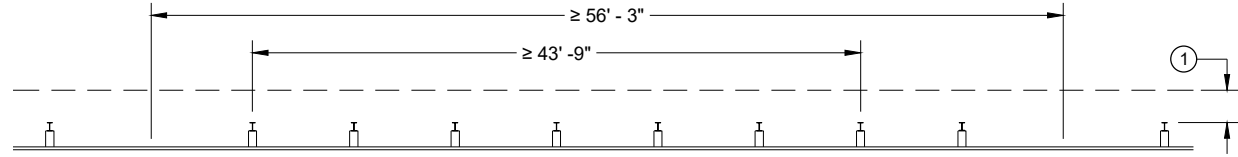


PLAN VIEW

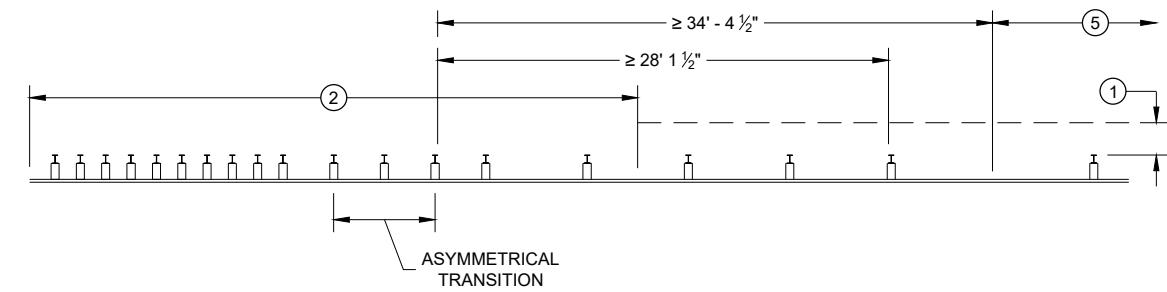
ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

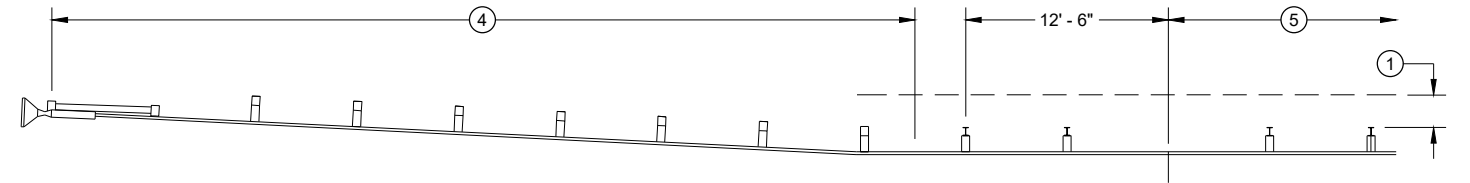
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



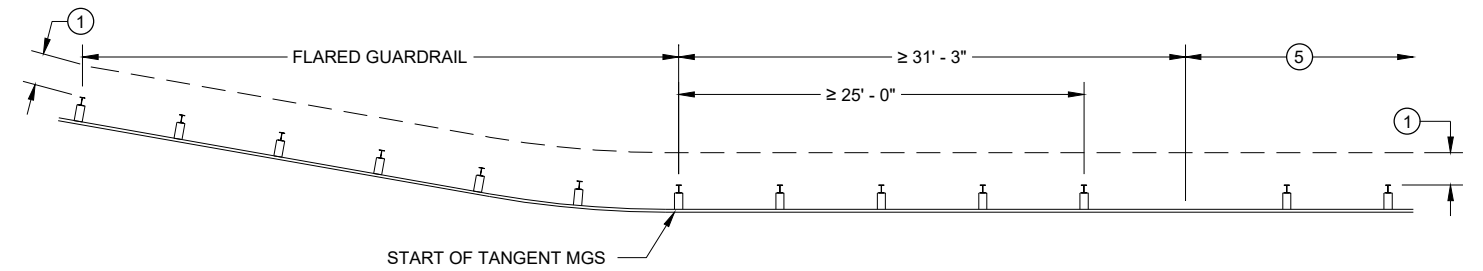
MISSING POST IN NORMAL BEAM GUARD RUN



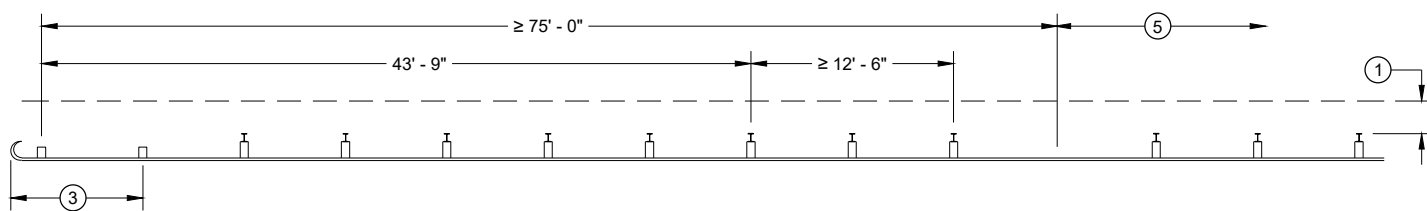
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



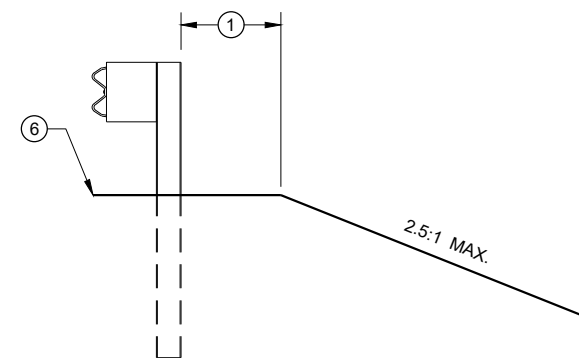
MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



MISSING POST IN NORMAL BEAM GUARD RUN
NEAR FLARED BEAM GUARD



MISSING POST IN NORMAL BEAM GUARD RUN
NEAR TYPE 2 TERMINAL



CROSS SECTION VIEW

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

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

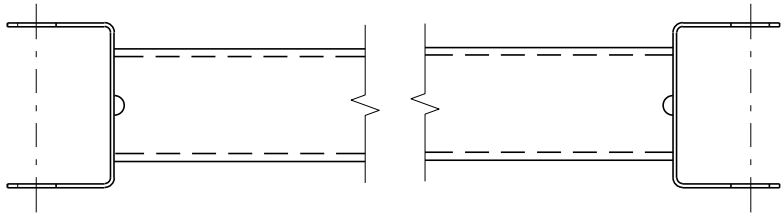
- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED
- (C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS.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

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

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

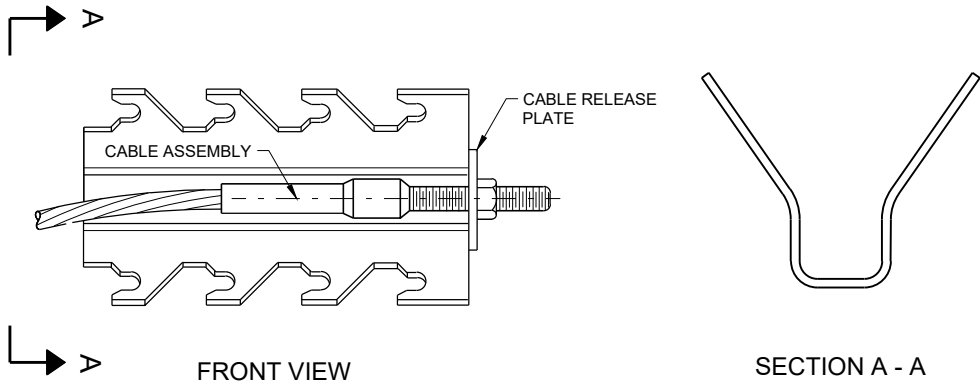


STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

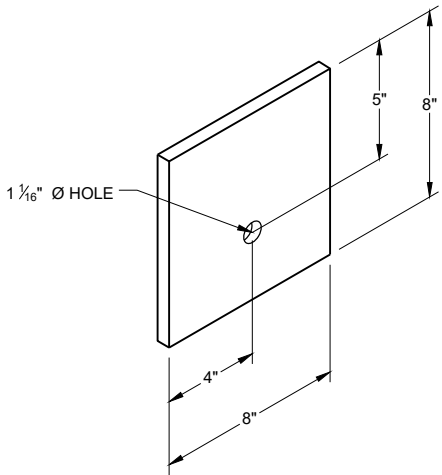


GENERIC GROUND STRUT⁹ ^E

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



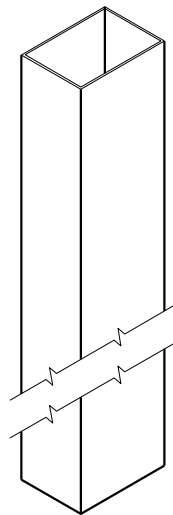
GENERIC ANCHOR CABLE BOX⁹ ^E



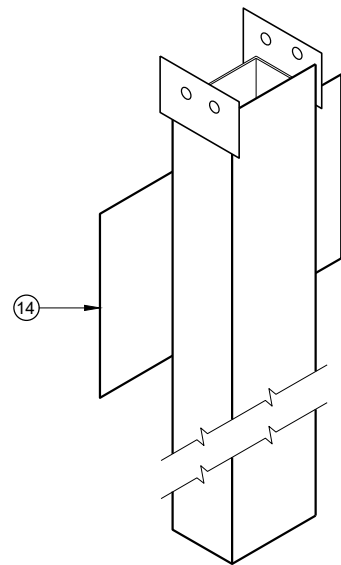
BEARING PLATE⁶ ^E

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

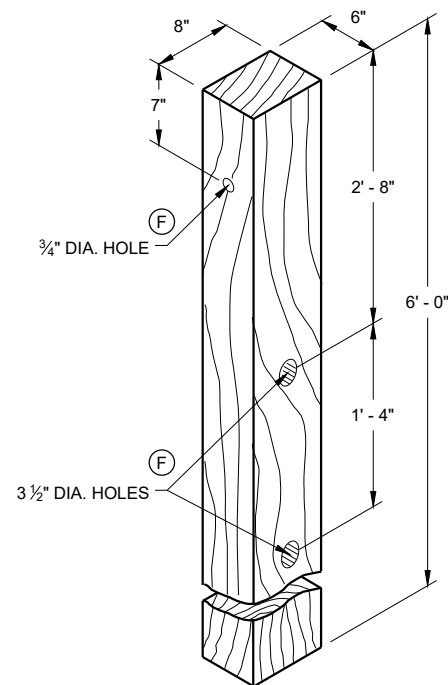
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



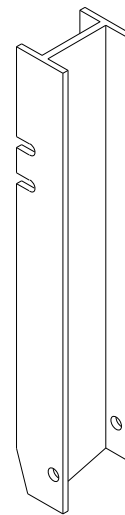
UPPER POST NO. 1 ⁽¹⁾ (E)



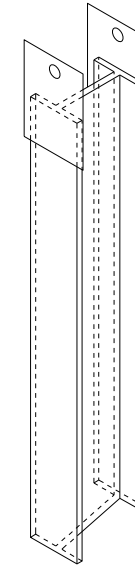
LOWER POST NO. 1 ⁽²⁾ (E)



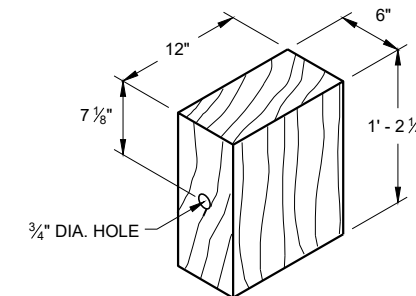
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



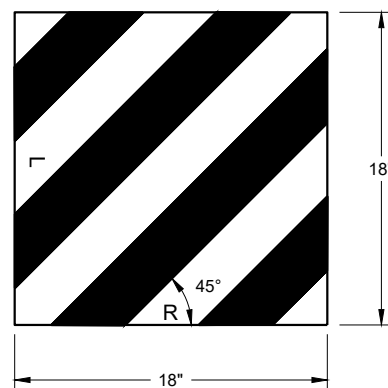
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



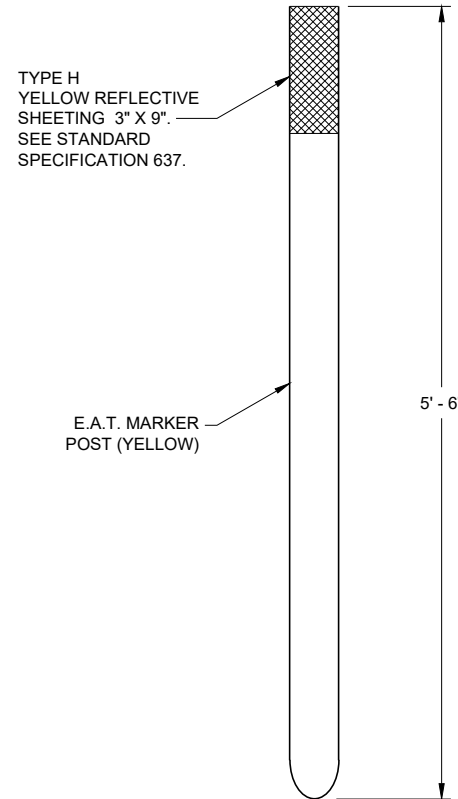
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



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



REFLECTIVE SHEETING DETAIL ^(E)

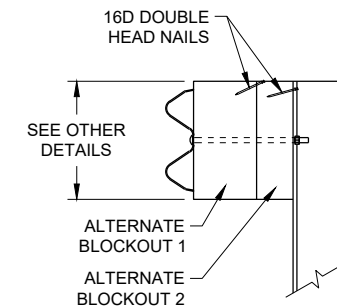


FRONT VIEW

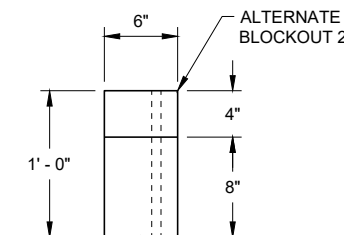


SIDE VIEW

E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW



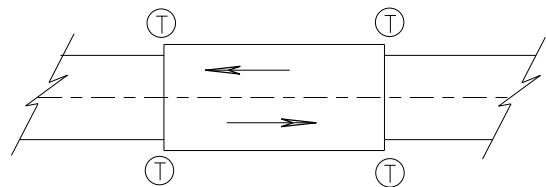
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

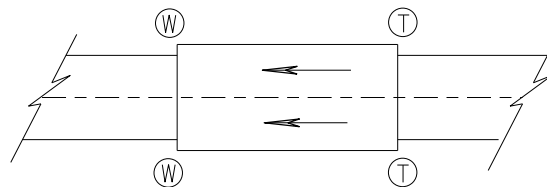
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

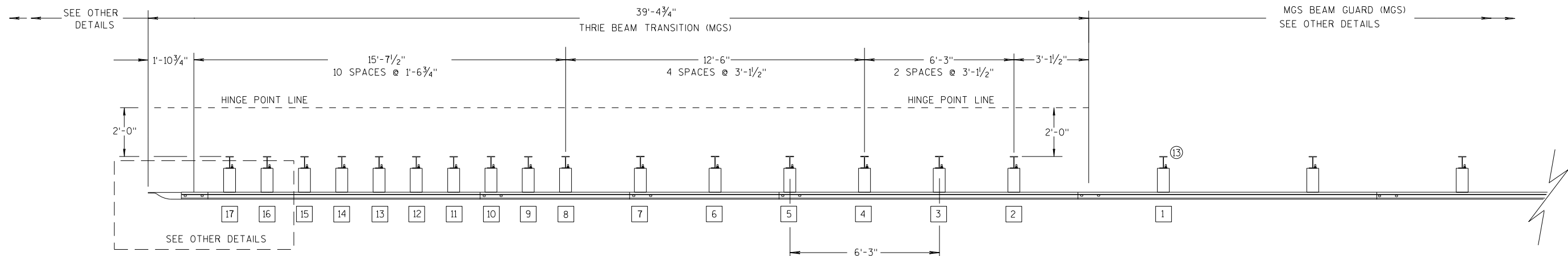
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

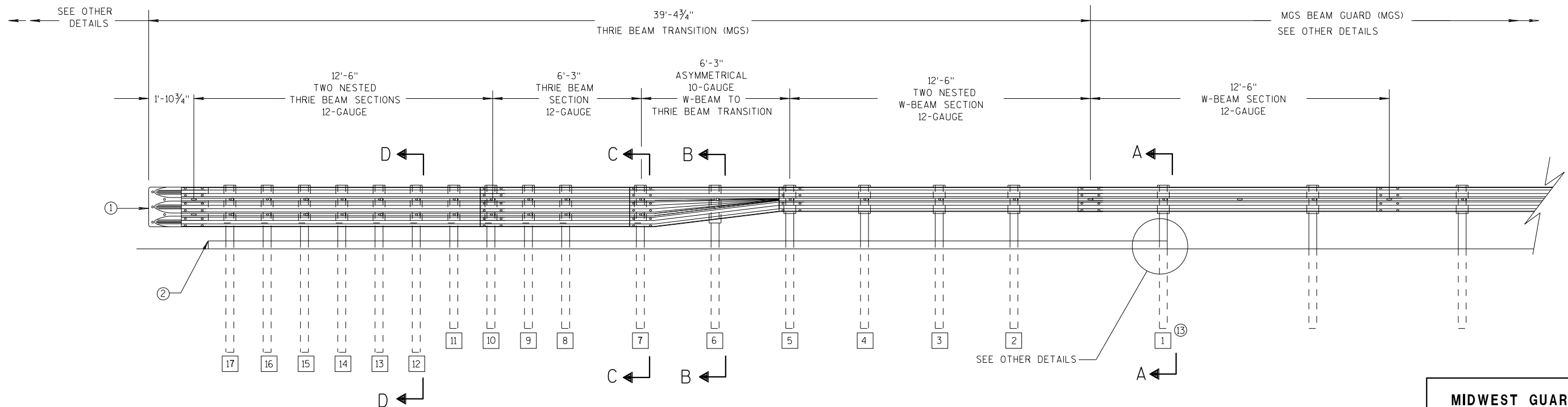
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

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



PLAN VIEW



ELEVATION VIEW

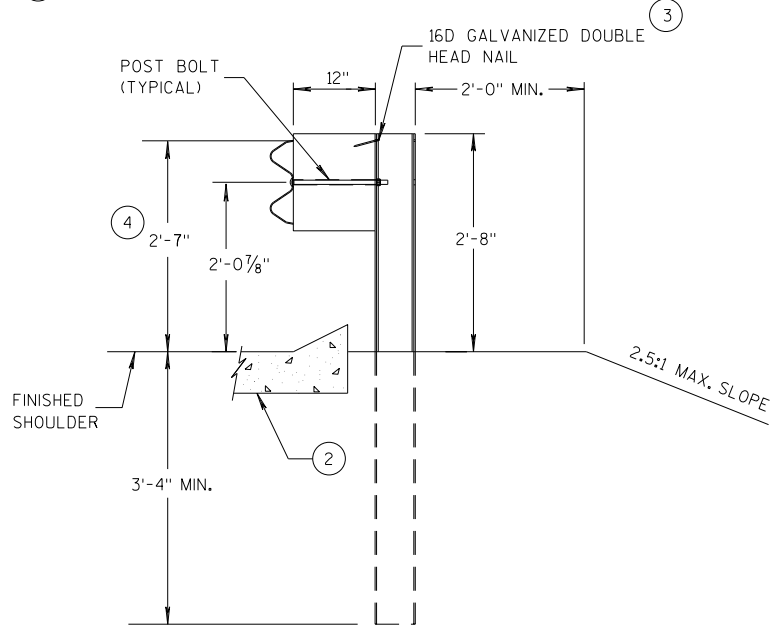
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

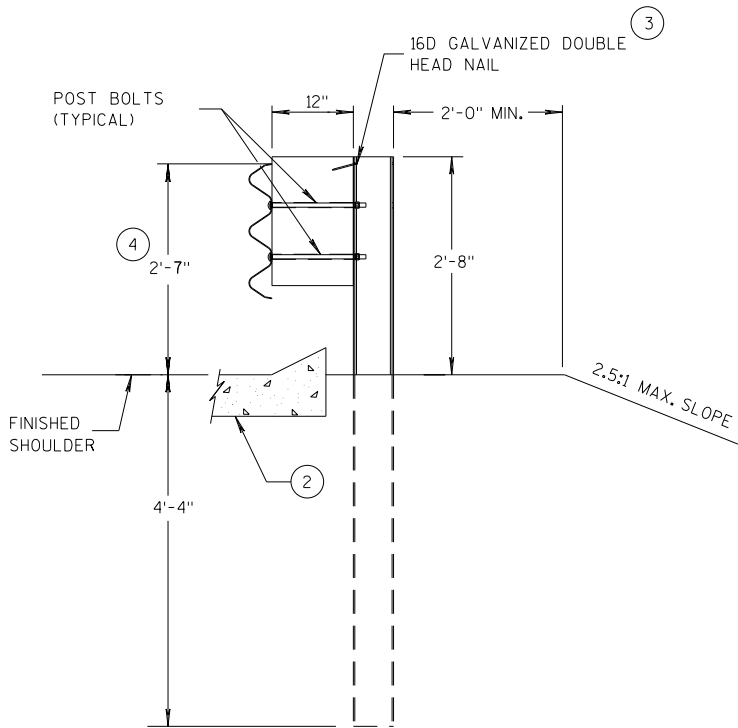
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

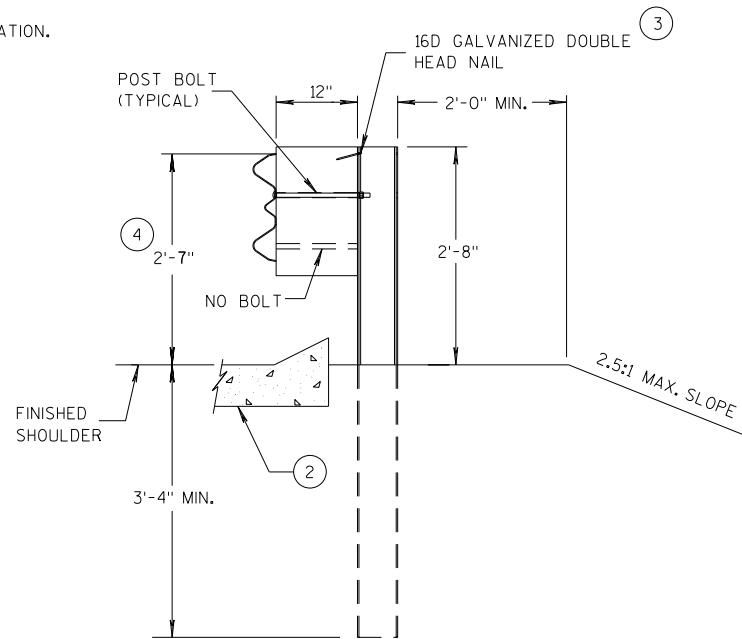
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm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



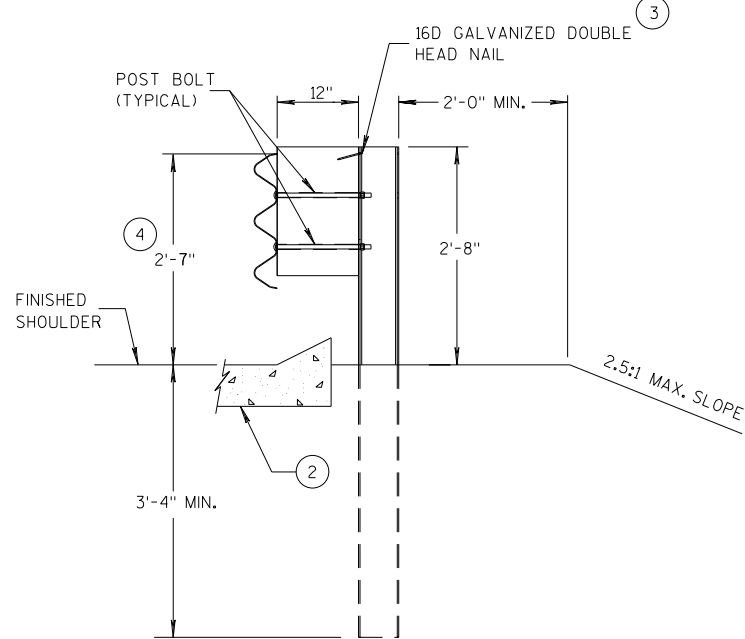
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

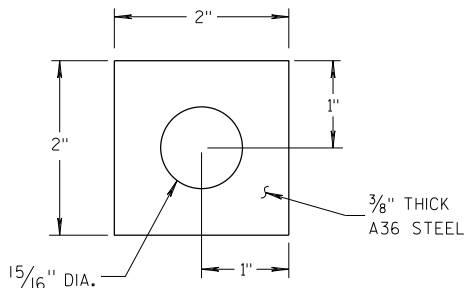
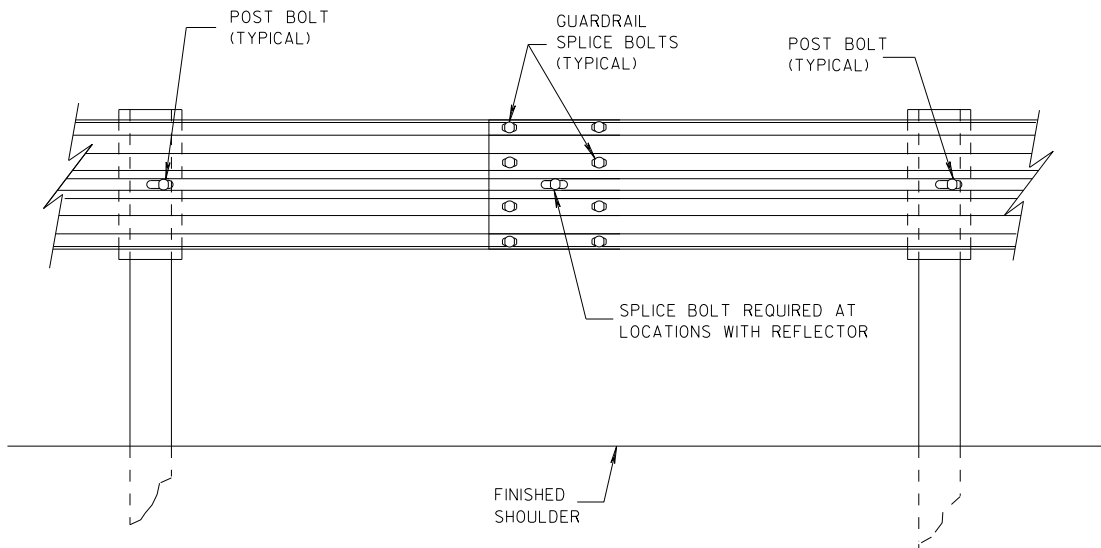
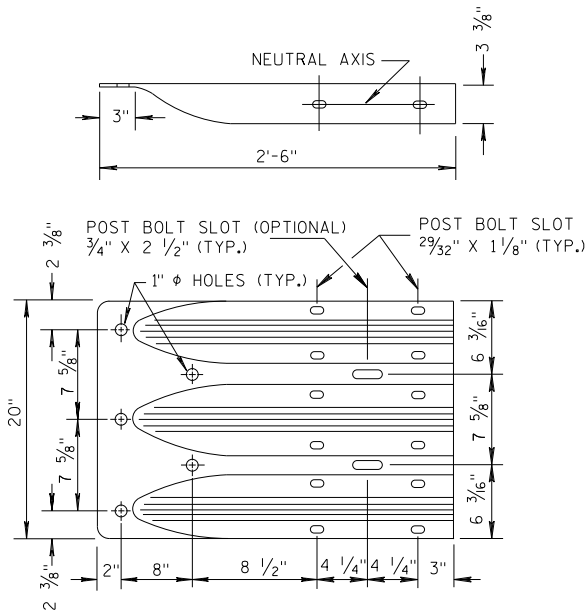


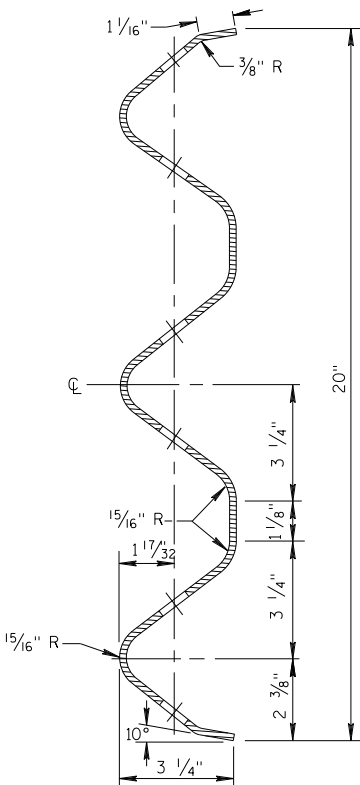
PLATE WASHER DETAIL



SPLICE DETAIL



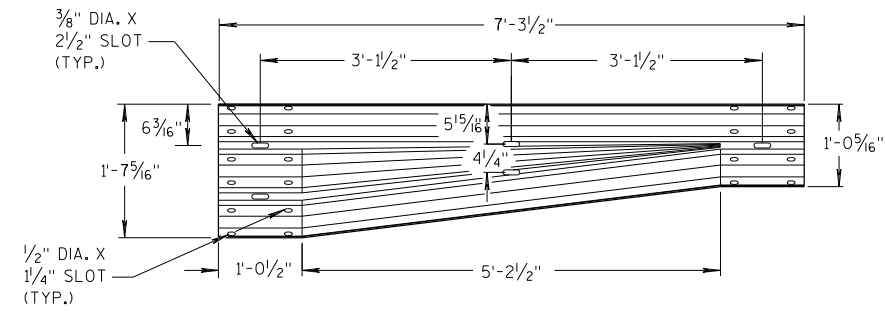
THRIE BEAM
TERMINAL CONNECTOR



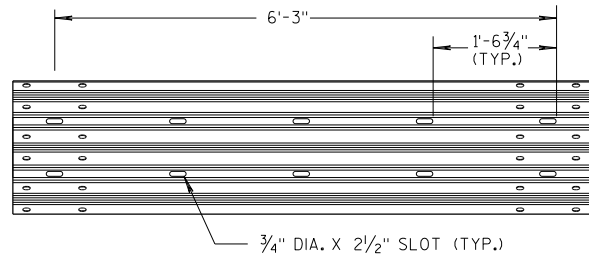
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

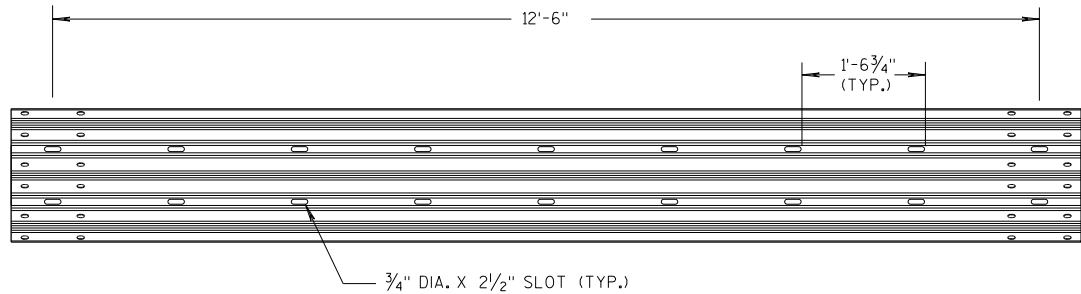
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



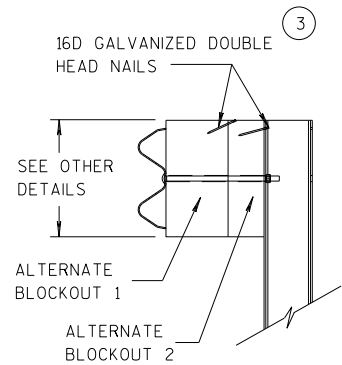
W-BEAM TO THRIE BEAM TRANSITION SECTION



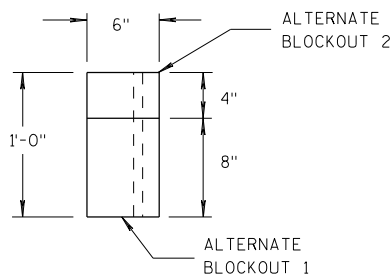
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

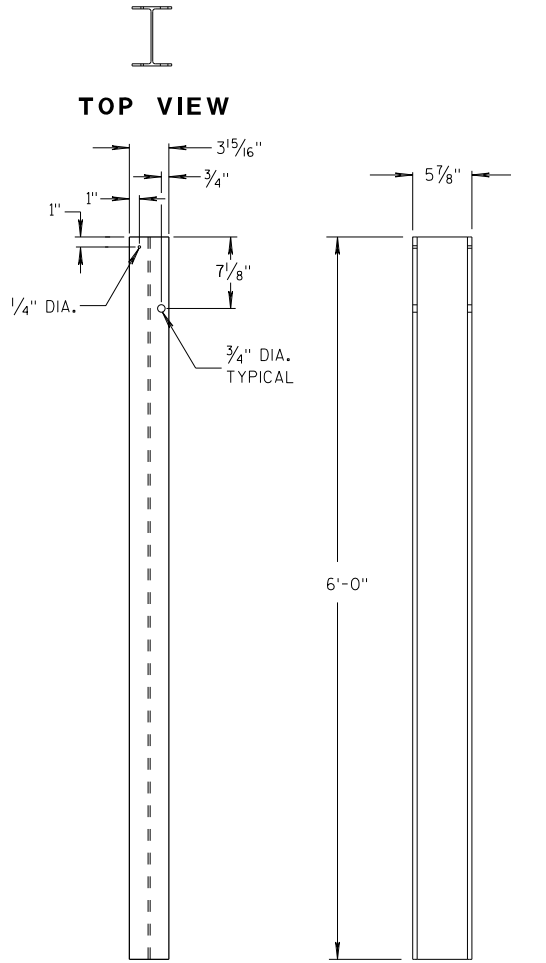


SIDE VIEW



TOP VIEW

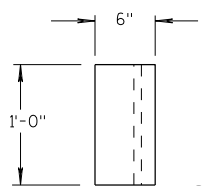
ALTERNATE WOOD BLOCKOUT DETAIL



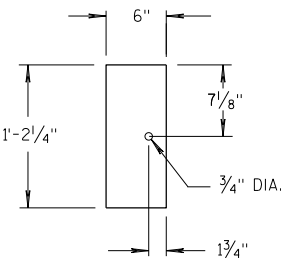
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

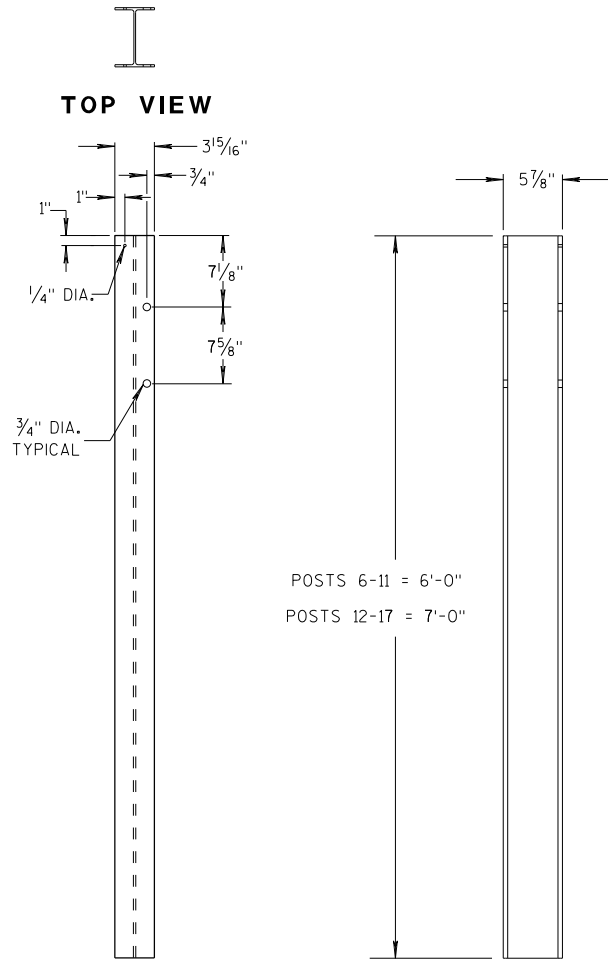


TOP VIEW



FRONT VIEW

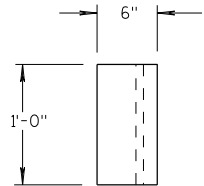
BLOCKOUT POSTS 1-5



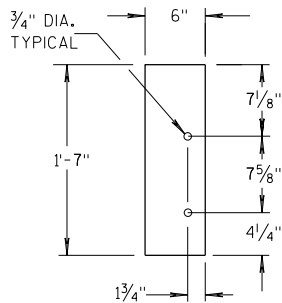
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17



TOP VIEW



FRONT VIEW

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.

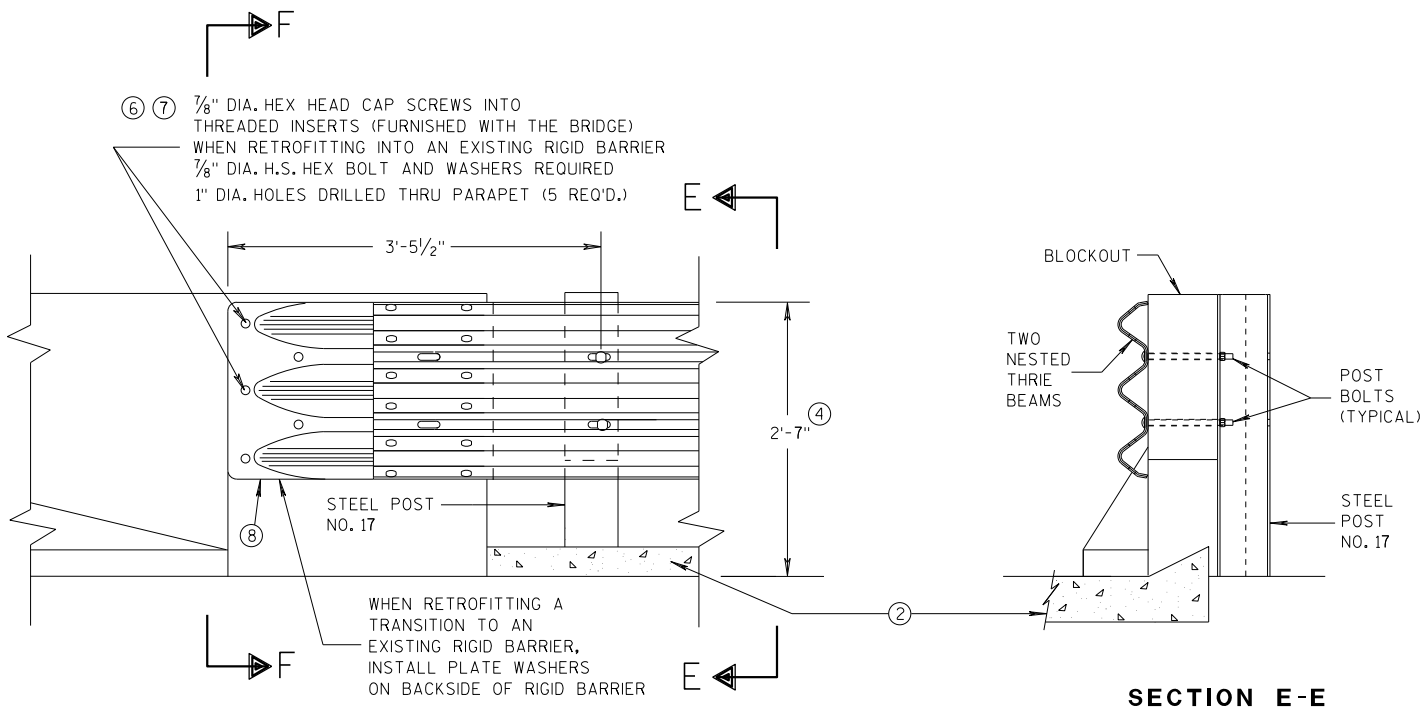
③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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.

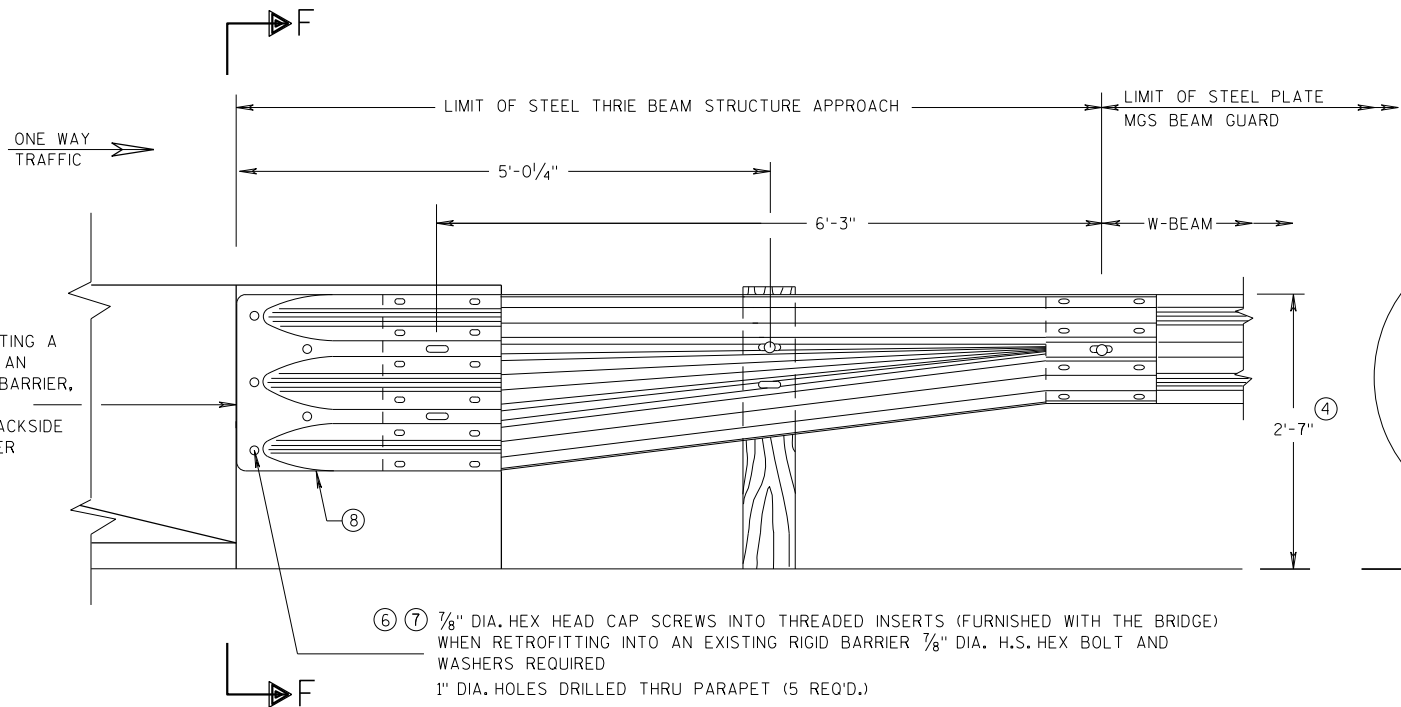
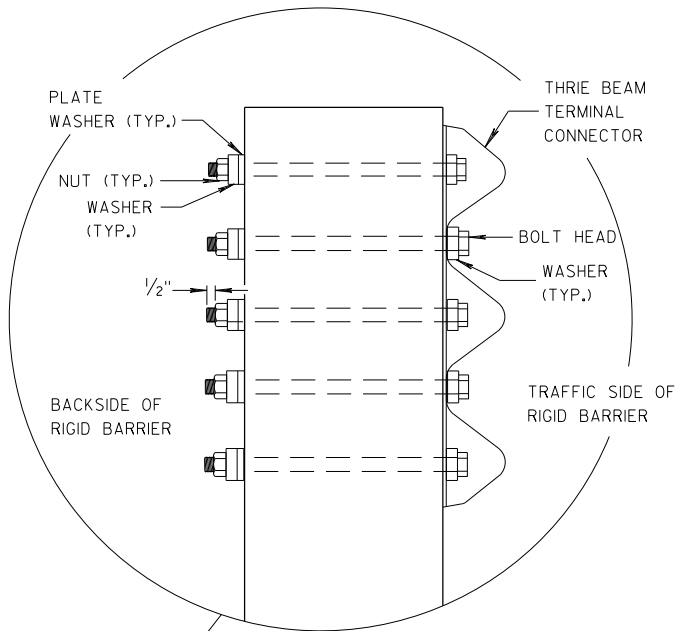
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

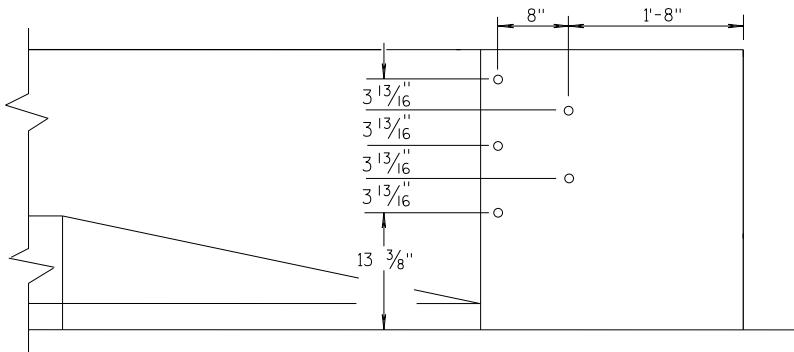


GENERAL NOTES

- THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ⑧ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".



SECTION F-F



DRILL HOLE LOCATION

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

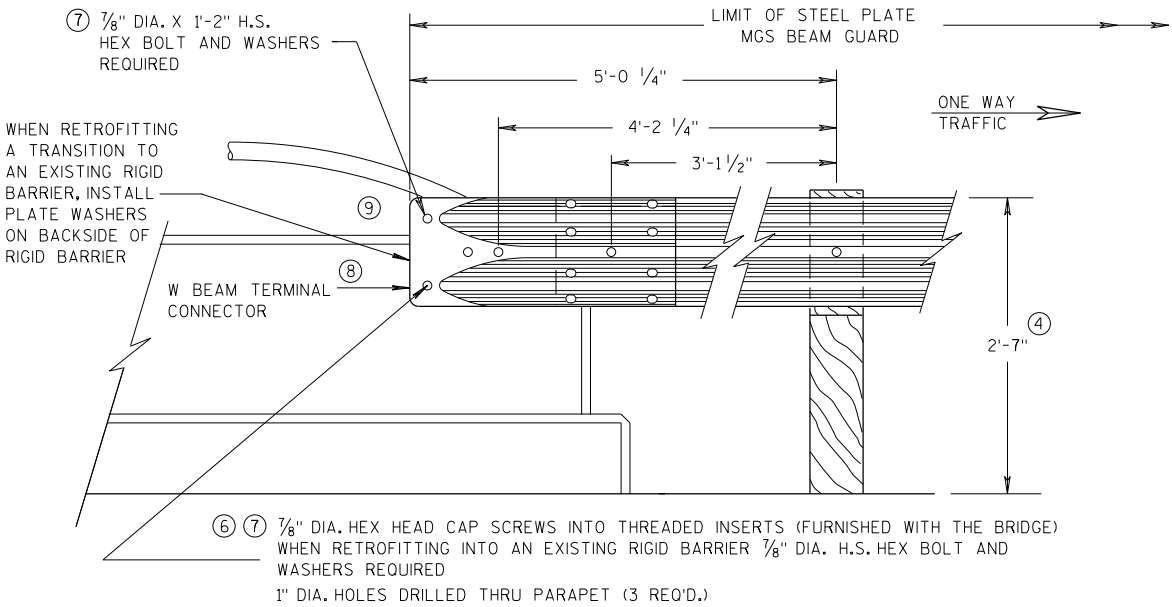
APPROVED
07/2018
DATE
FHWA

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

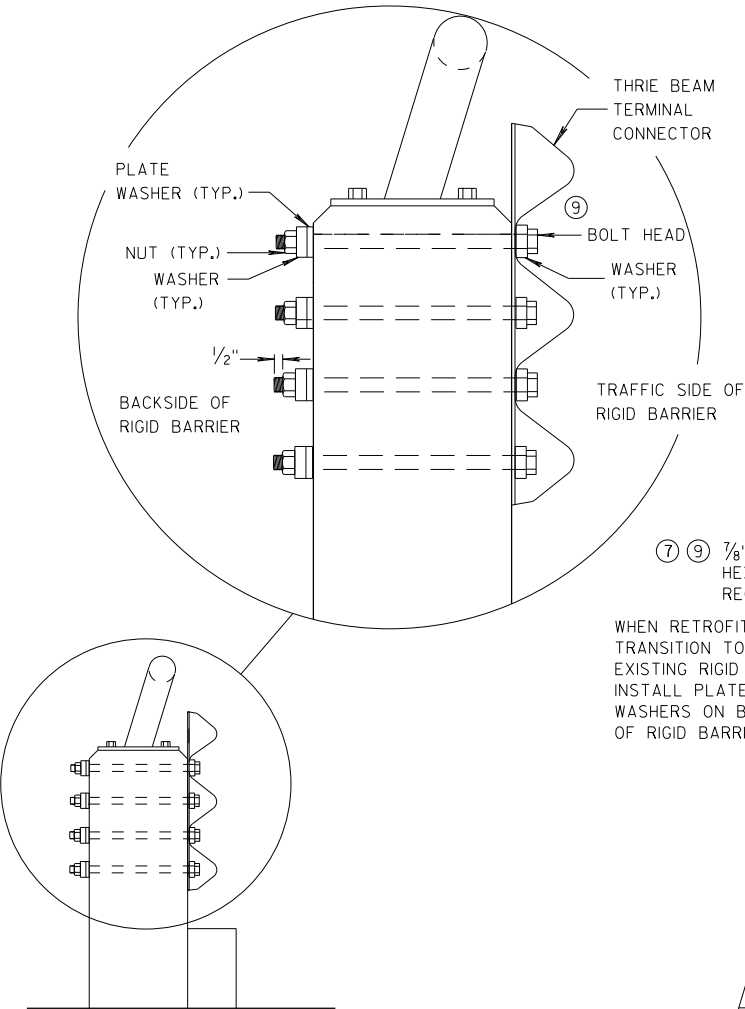
GENERAL NOTES

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

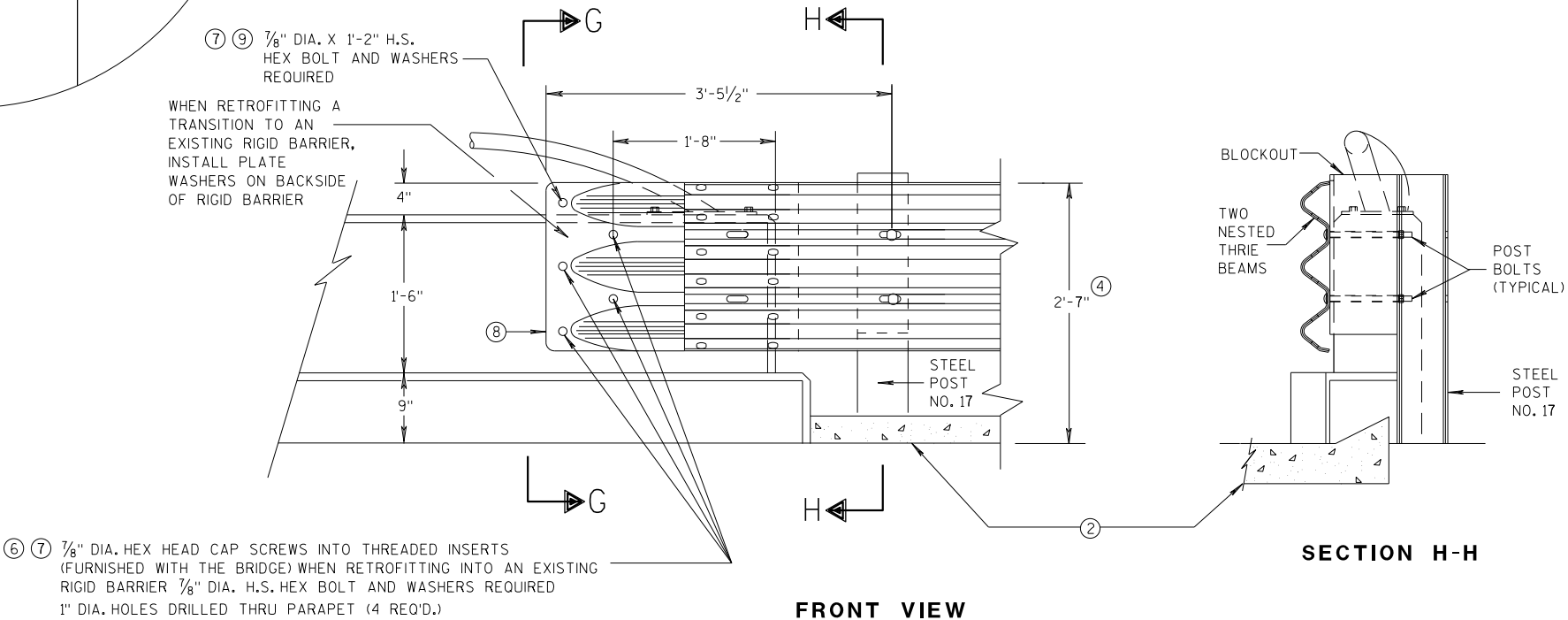
- OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
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- THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 $\frac{1}{2}"$.
- BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.



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



SECTION G-G



FRONT VIEW

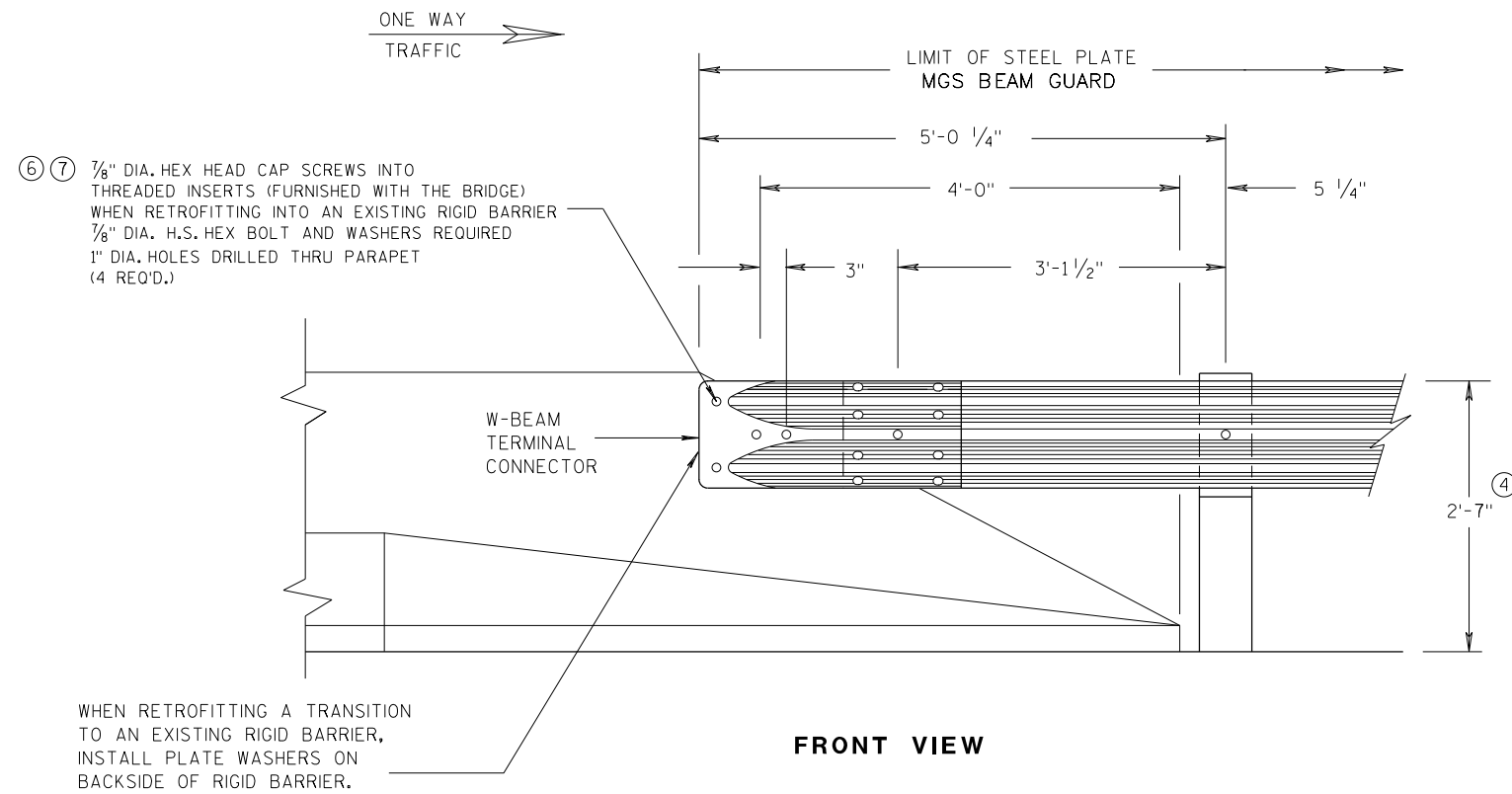
SECTION H-H

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

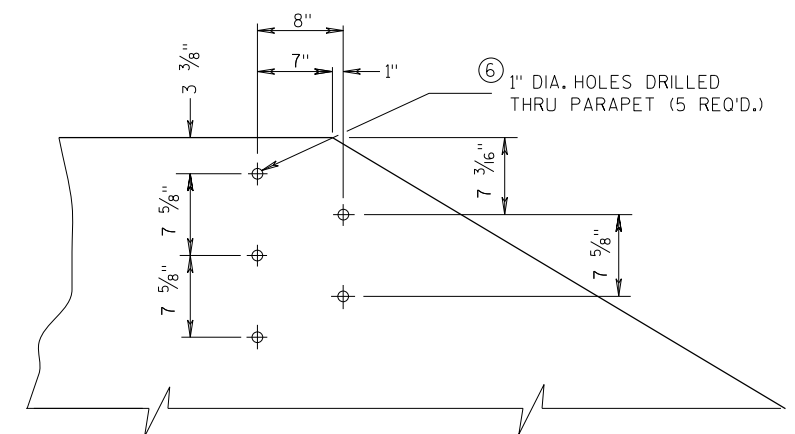
APPROVED
07/2018
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/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR



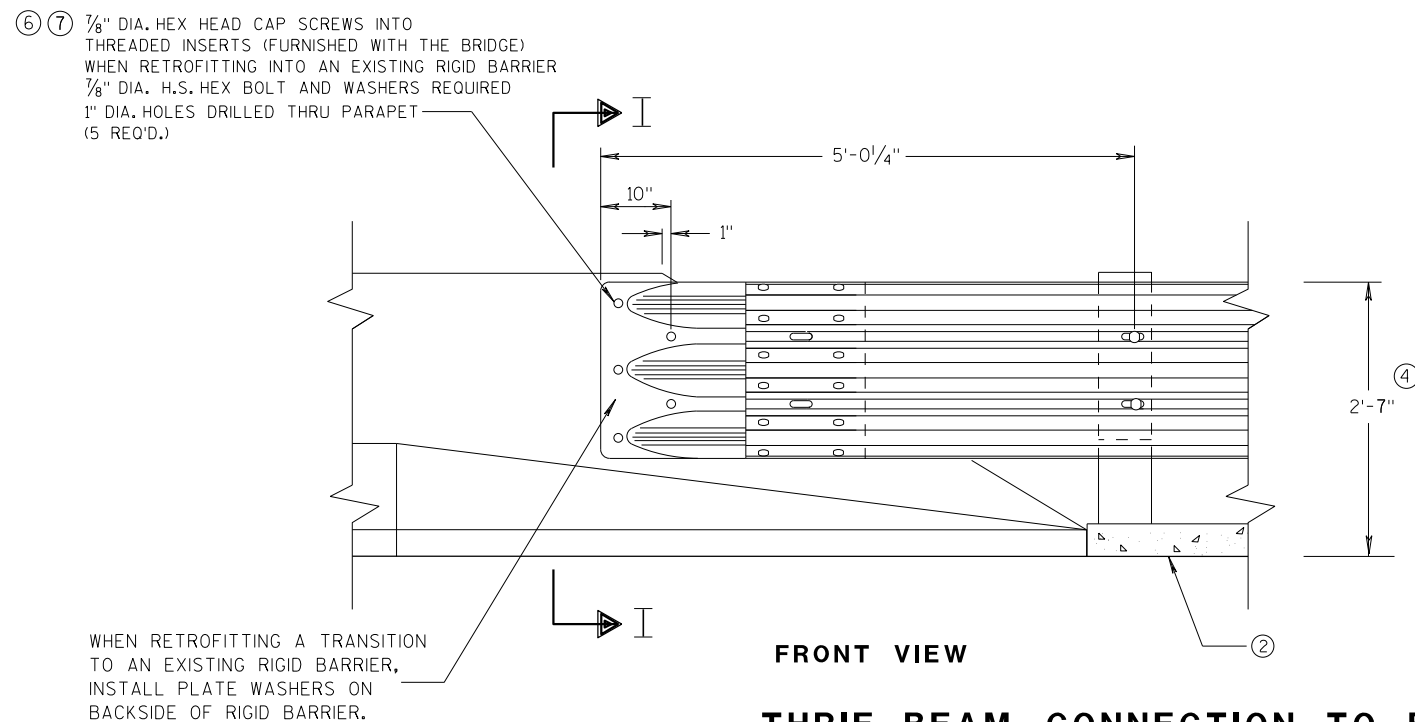
**W BEAM CONNECTION TO
PARAPETS WITH SLOPED ENDS**
(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

GENERAL NOTES

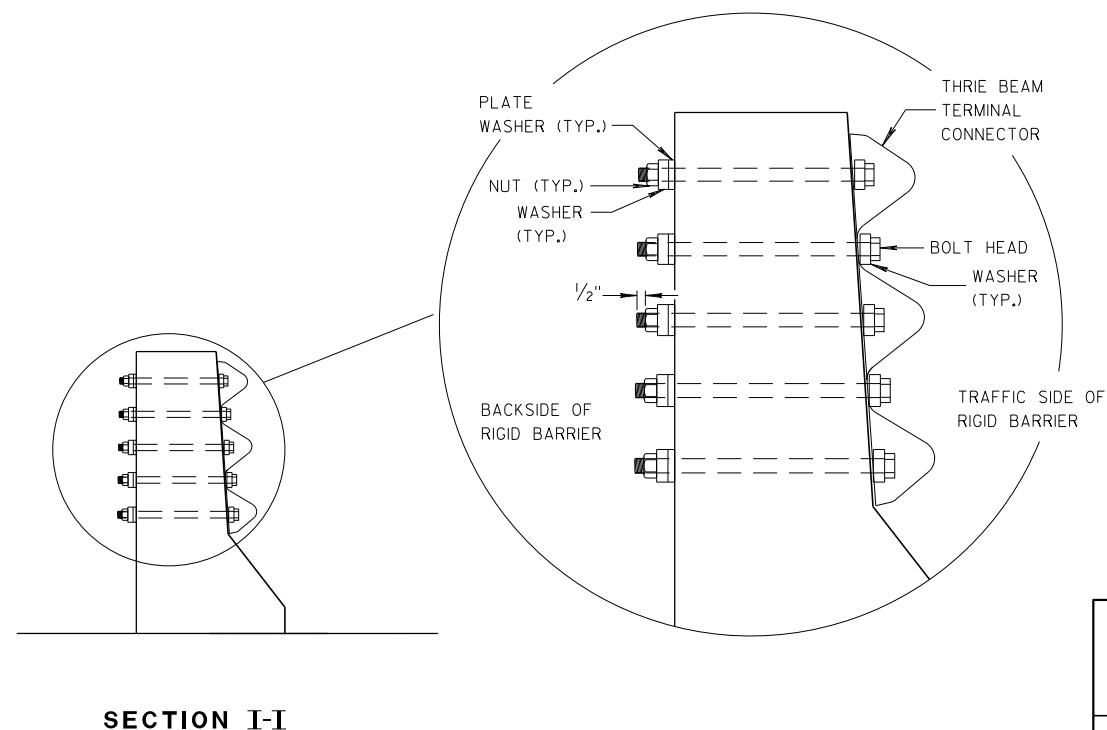
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
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**DRILL HOLE LOCATION AND PATTERN
FOR THRIE BEAM CONNECTION**



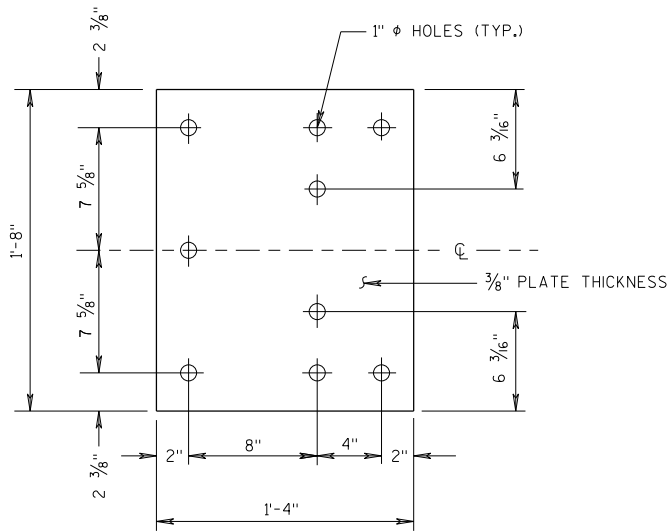
**THRIE BEAM CONNECTION TO BRIDGE
PARAPETS WITH SLOPED ENDS**



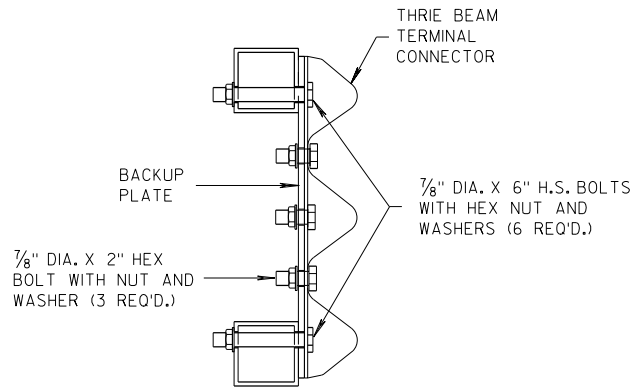
**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

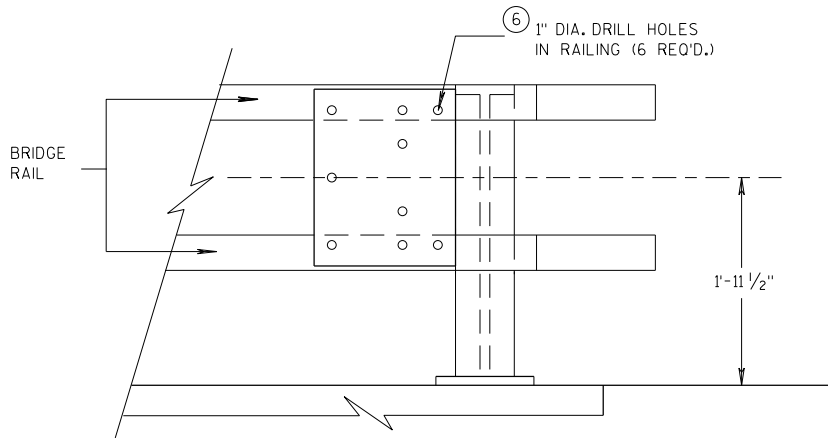
APPROVED
07/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA



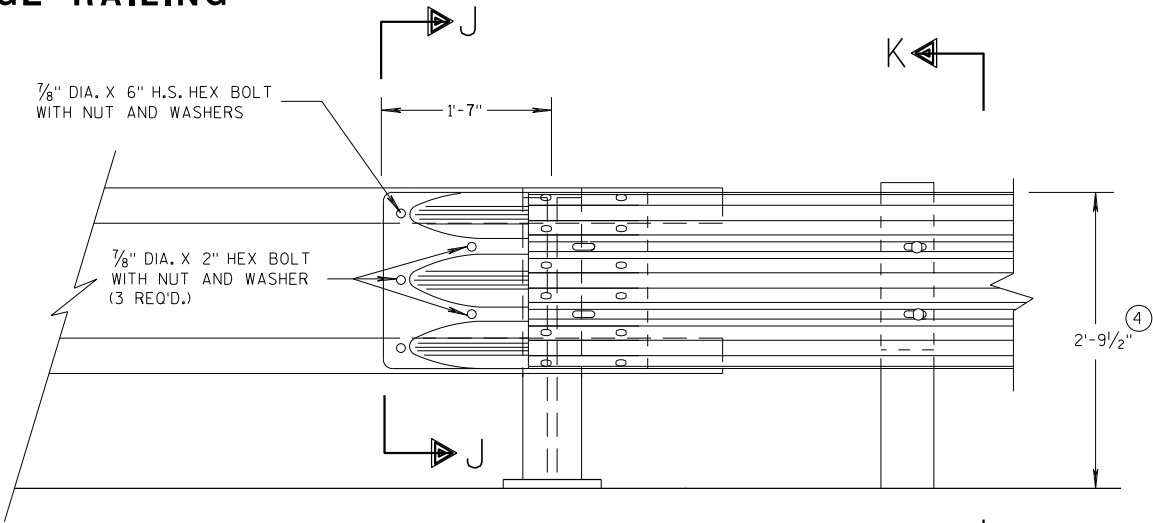
BACK-UP PLATE DETAIL



SECTION J-J

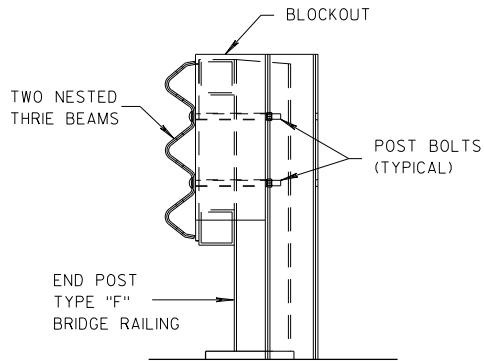


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



FRONT VIEW

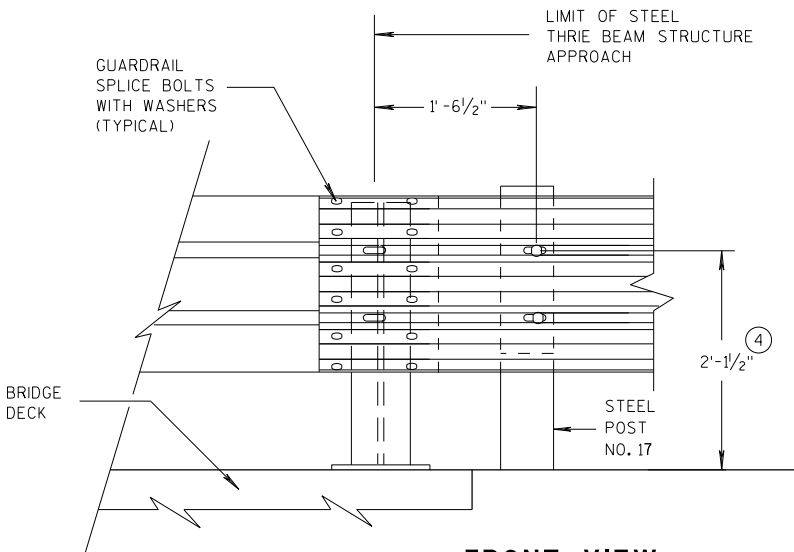
THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"



SECTION K-K

GENERAL NOTES

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



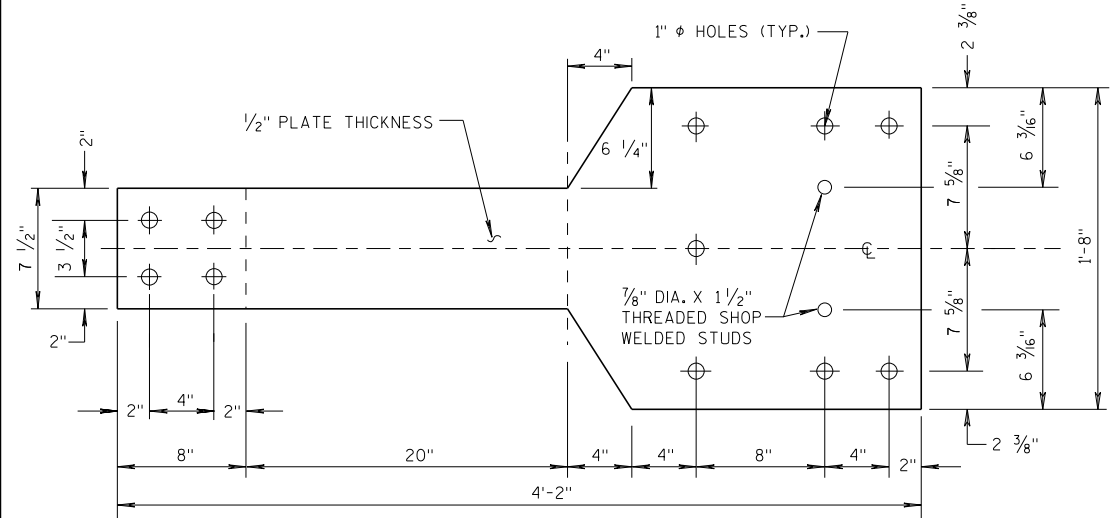
FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"

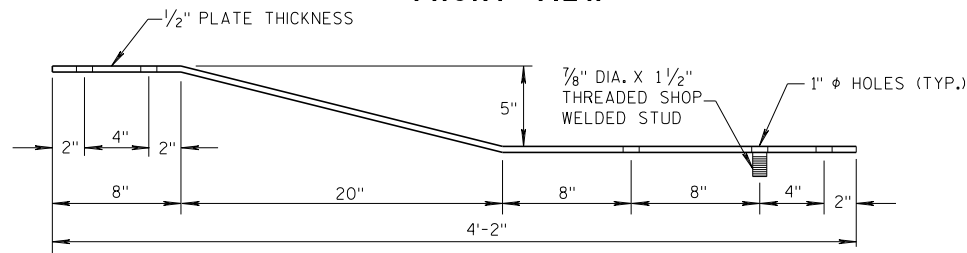
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 07/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	

GENERAL NOTES

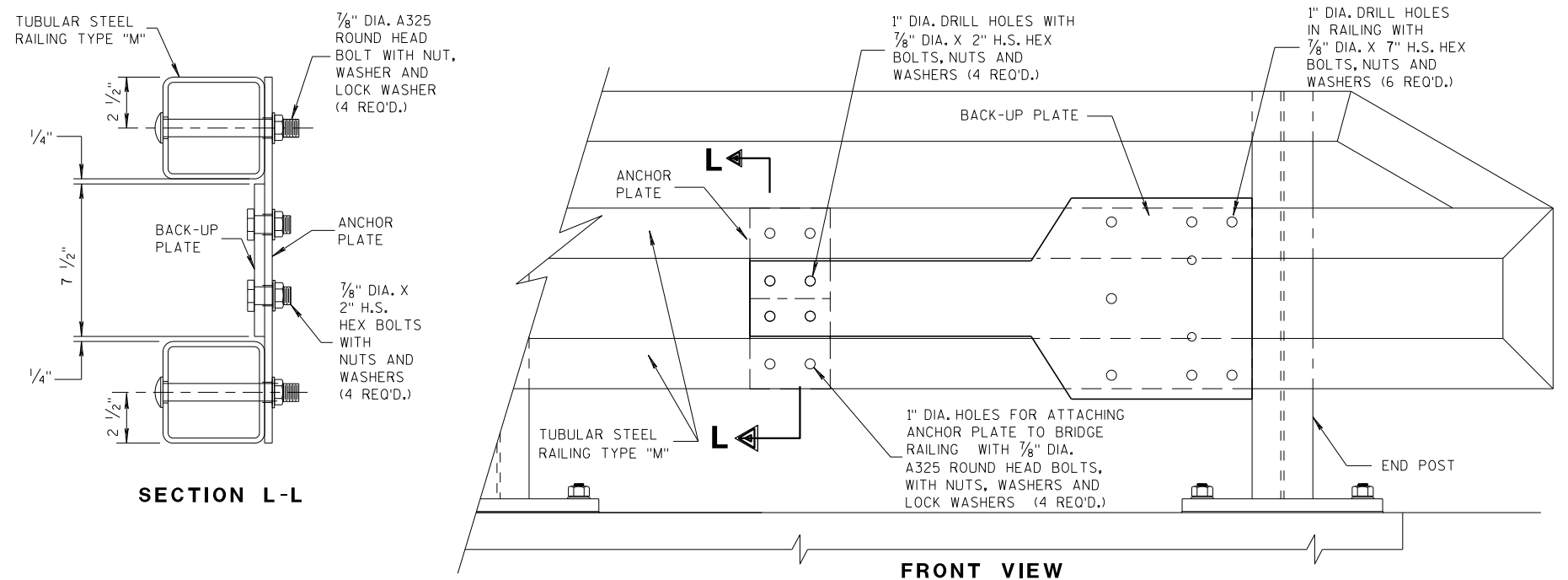
④ TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.



FRONT VIEW



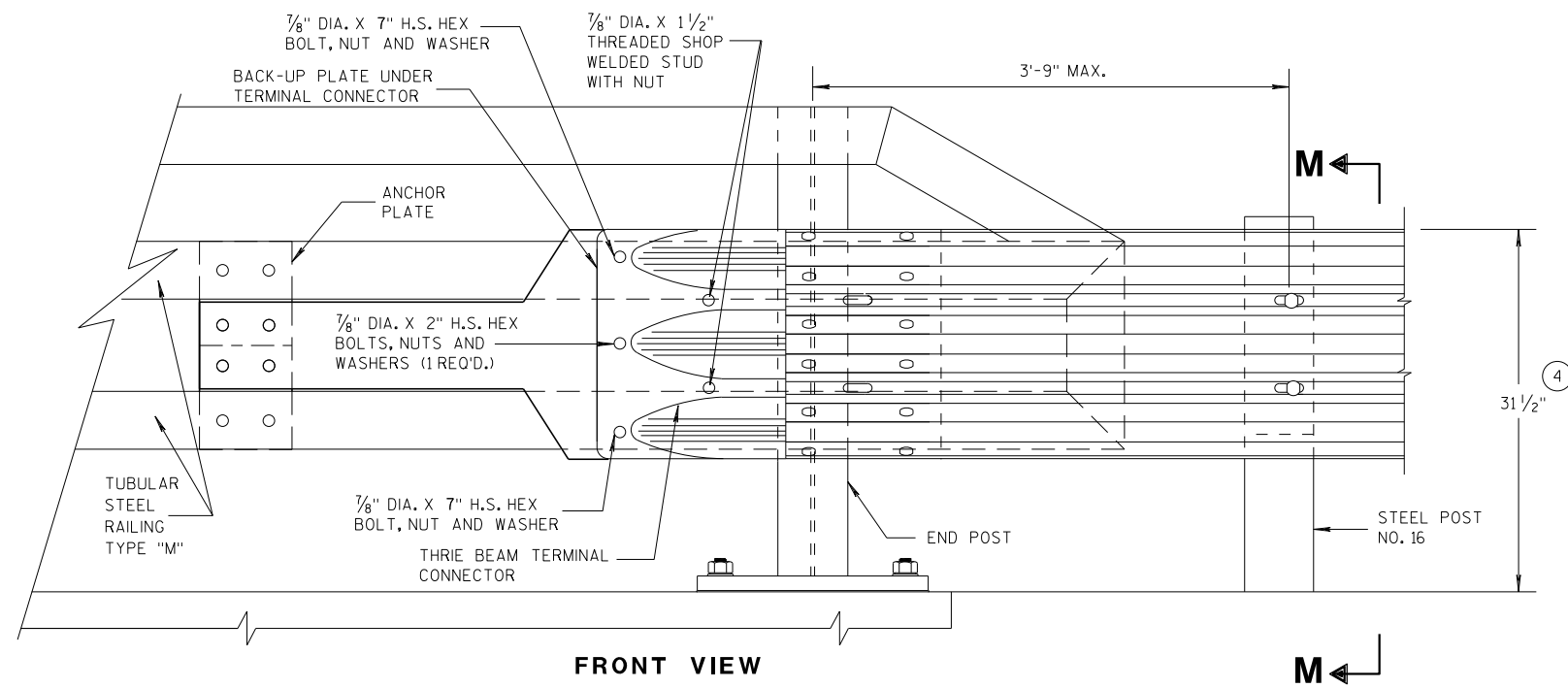
**PLAN VIEW
BACK-UP PLATE DETAIL, TYPE "M"**



SECTION L-L

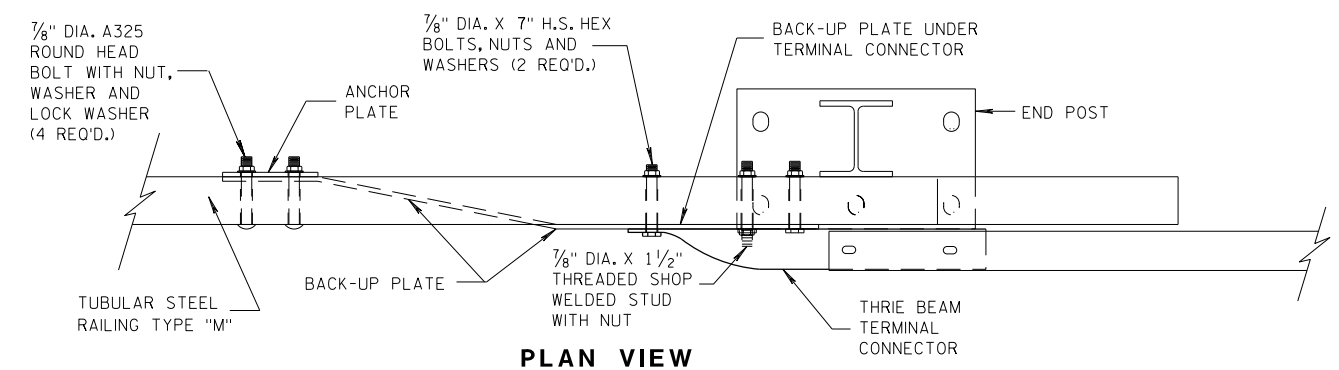
FRONT VIEW

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



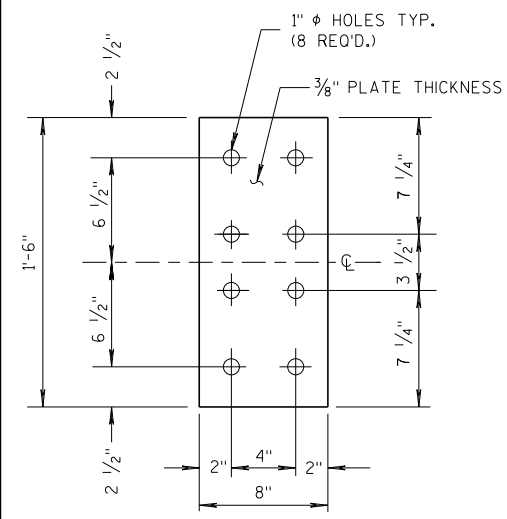
FRONT VIEW

M



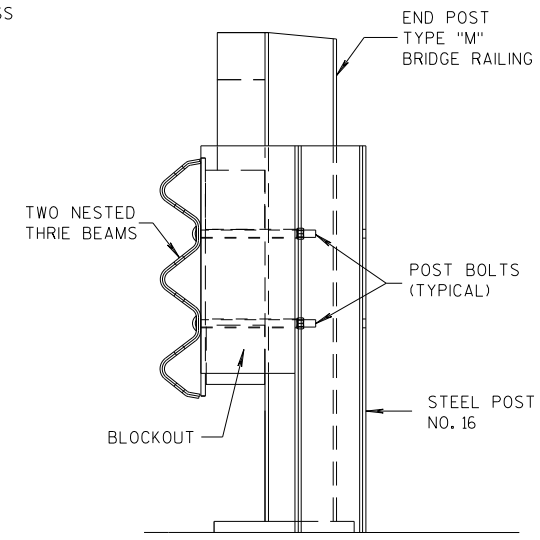
PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"



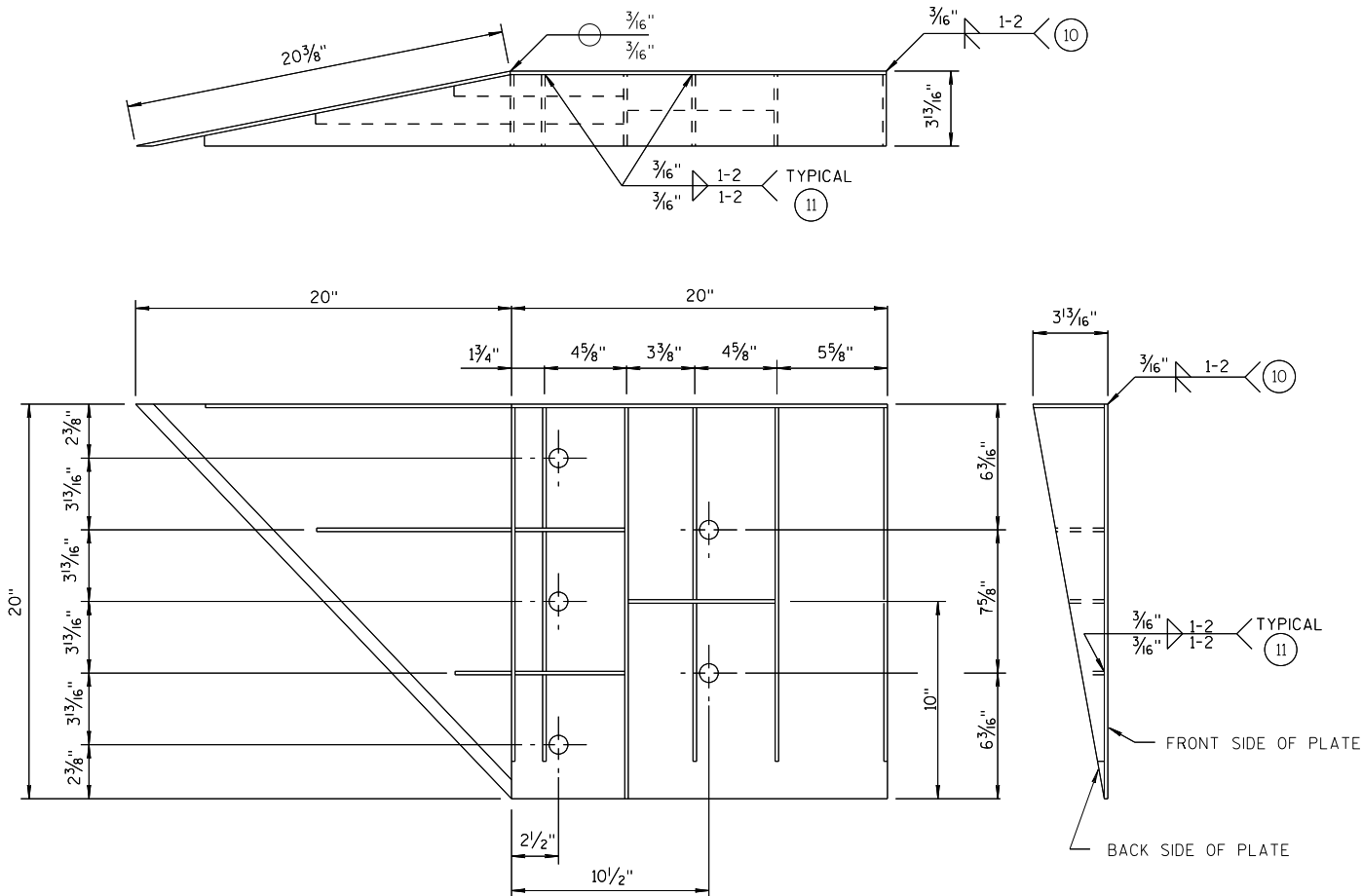
FRONT VIEW

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



SECTION M-M

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

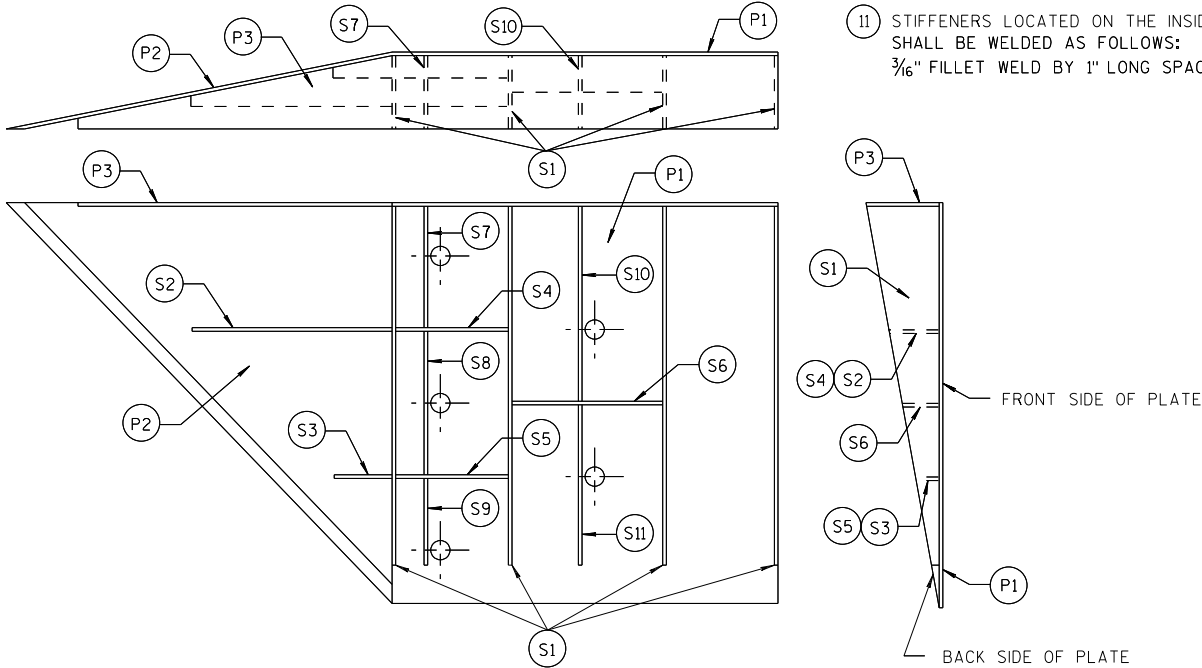


WELDING INSTRUCTION
(VIEWED FROM BACK SIDE OF PLATE)

SINGLE SLOPE CONNECTION PLATE

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)				
PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	3/16"
P2	1		20" x 20" x 28 3/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 7/16" x 3 5/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 1/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 3/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 7/16"	1/4"
S5	1		6 1/8" x 1 1/16"	1/4"
S6	1		7 3/4" x 1 3/4"	1/4"
S7	1		2 3/16" x 6" x 3 5/8" x 5 7/8"	1/4"
S8	1		1 5/32" x 7 1/2" x 2 1/2" x 7 3/8"	1/4"
S9	1		6 1/16" x 6 3/16" x 1 3/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 11/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 3/16"	1/4"

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



GENERAL NOTES

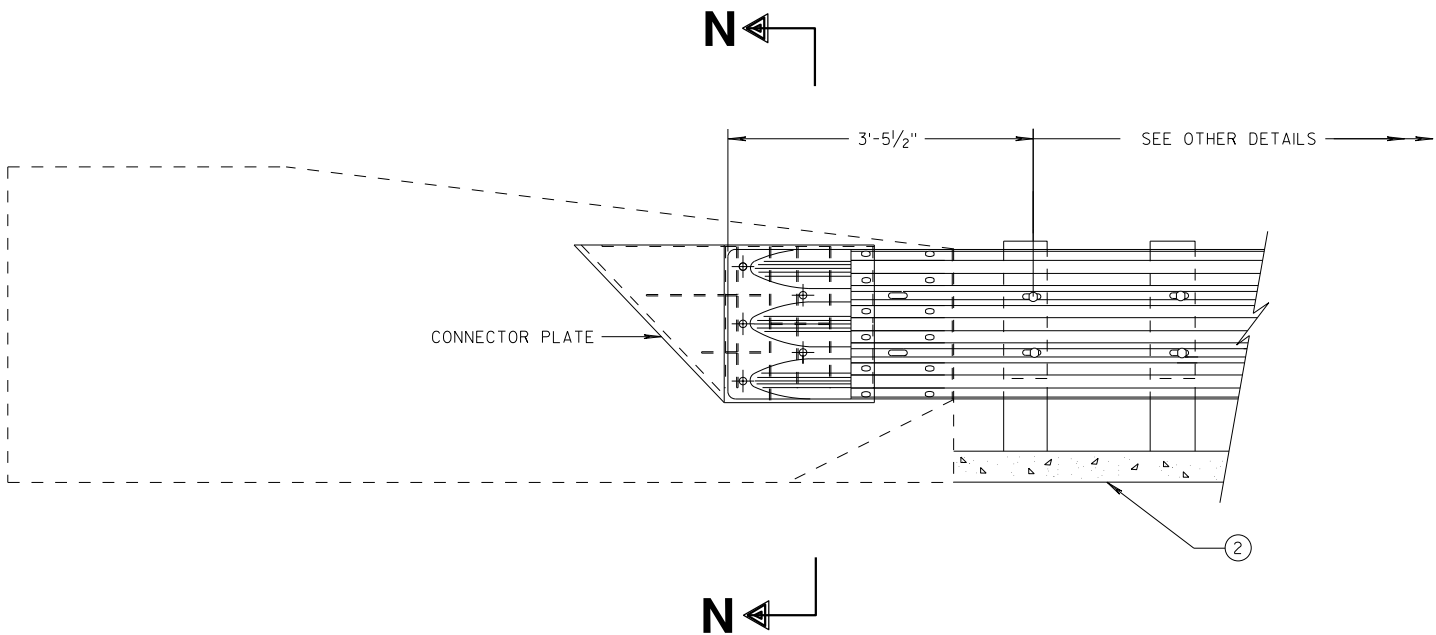
- COVER PLATE PANELS ARE 3/16" THICK.
- ALL STIFFENERS ARE 1/4" THICK.
- CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.
- FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.
- ALL HOLE DIAMETERS SHALL BE 1".
- FOR OPPOSITE SIDE INSTALLATION MIRROR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

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

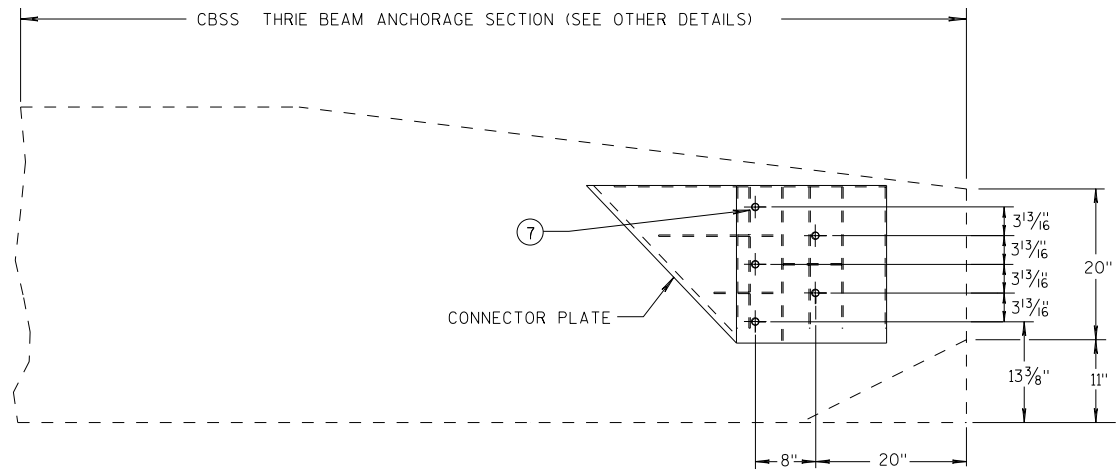
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



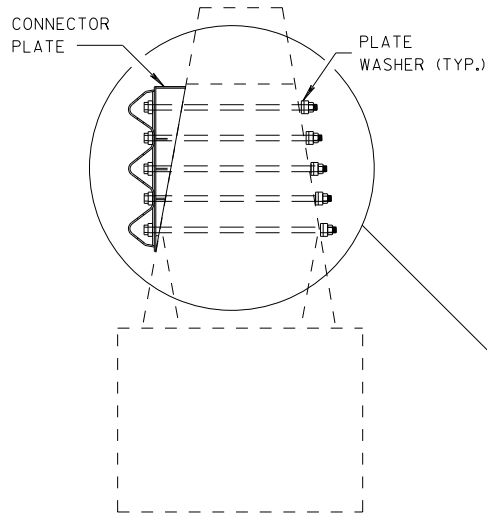
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

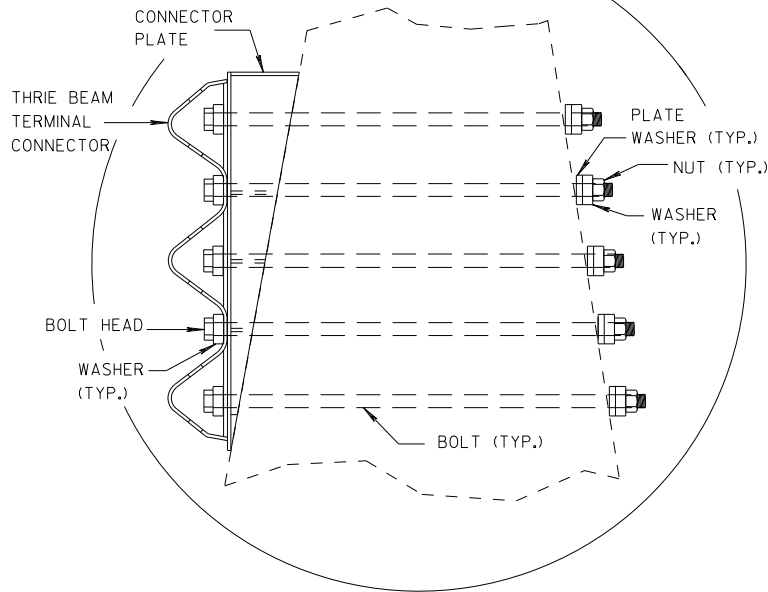
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

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



SECTION N-N



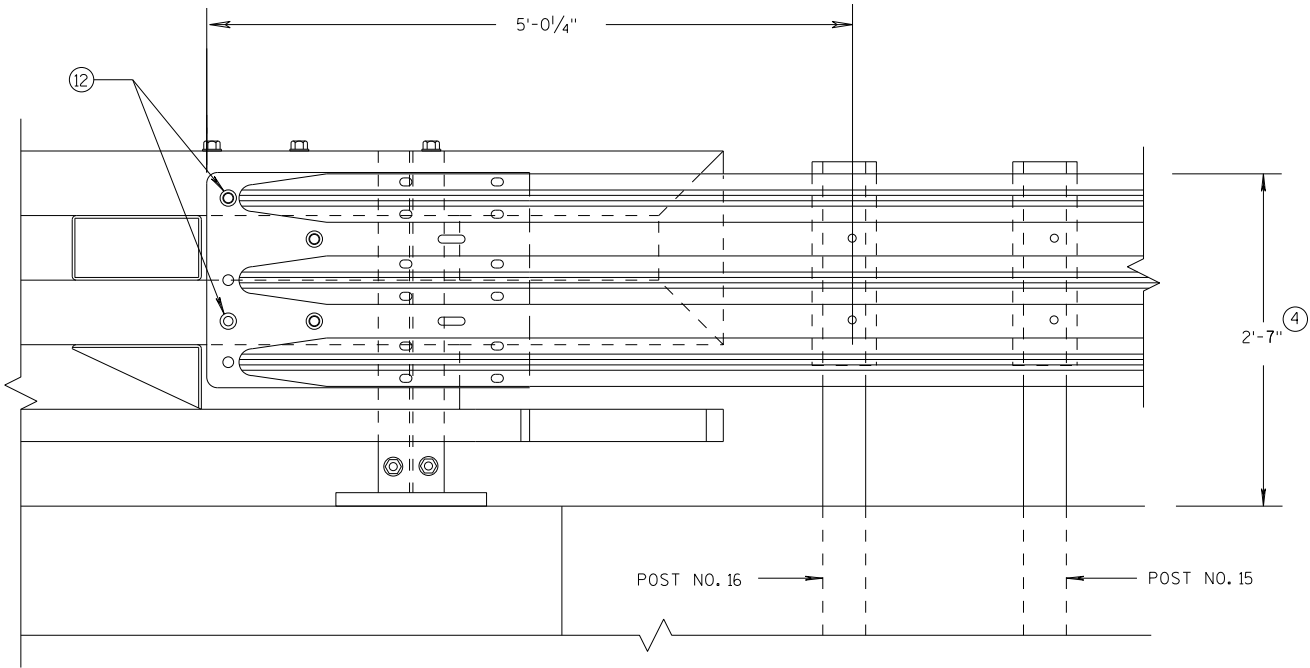
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

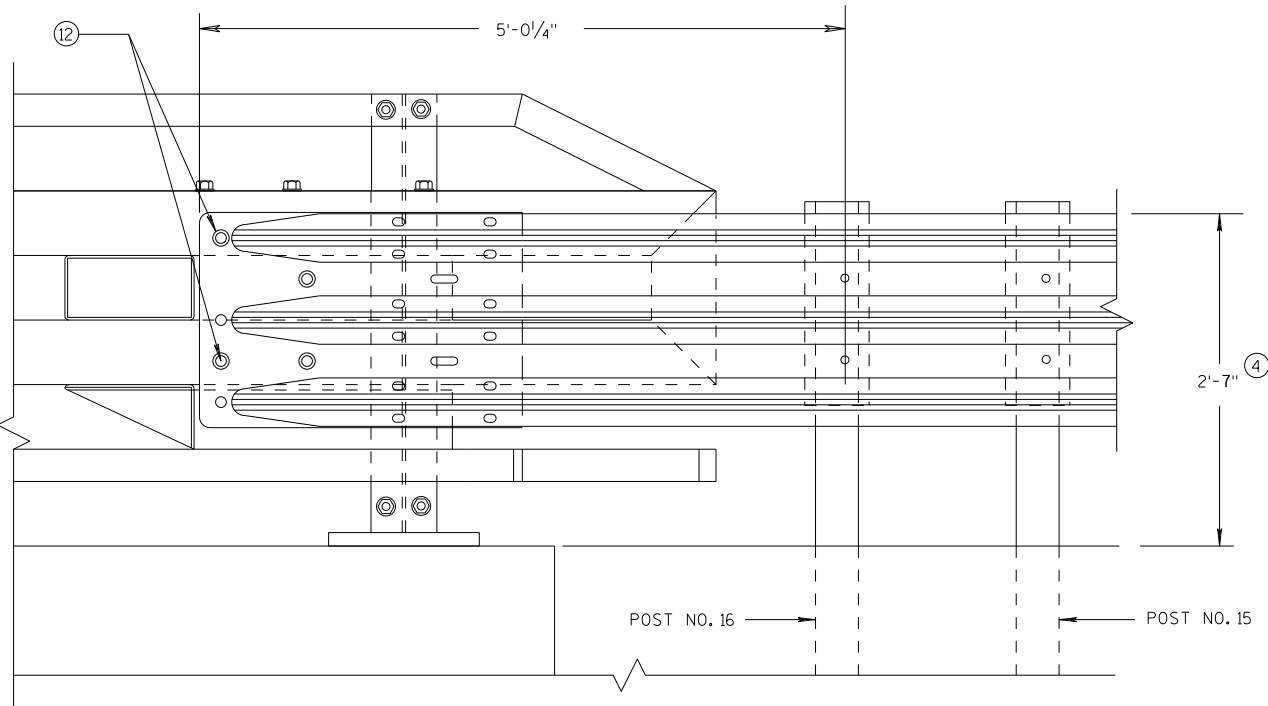
APPROVED
7/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA

GENERAL NOTES

- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑫ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND $\frac{1}{2}$ -INCH BEYOND NUT.



ELEVATION OF DETAIL AT NY3 END POST
THRIE BEAM RAIL ATTACHMENT

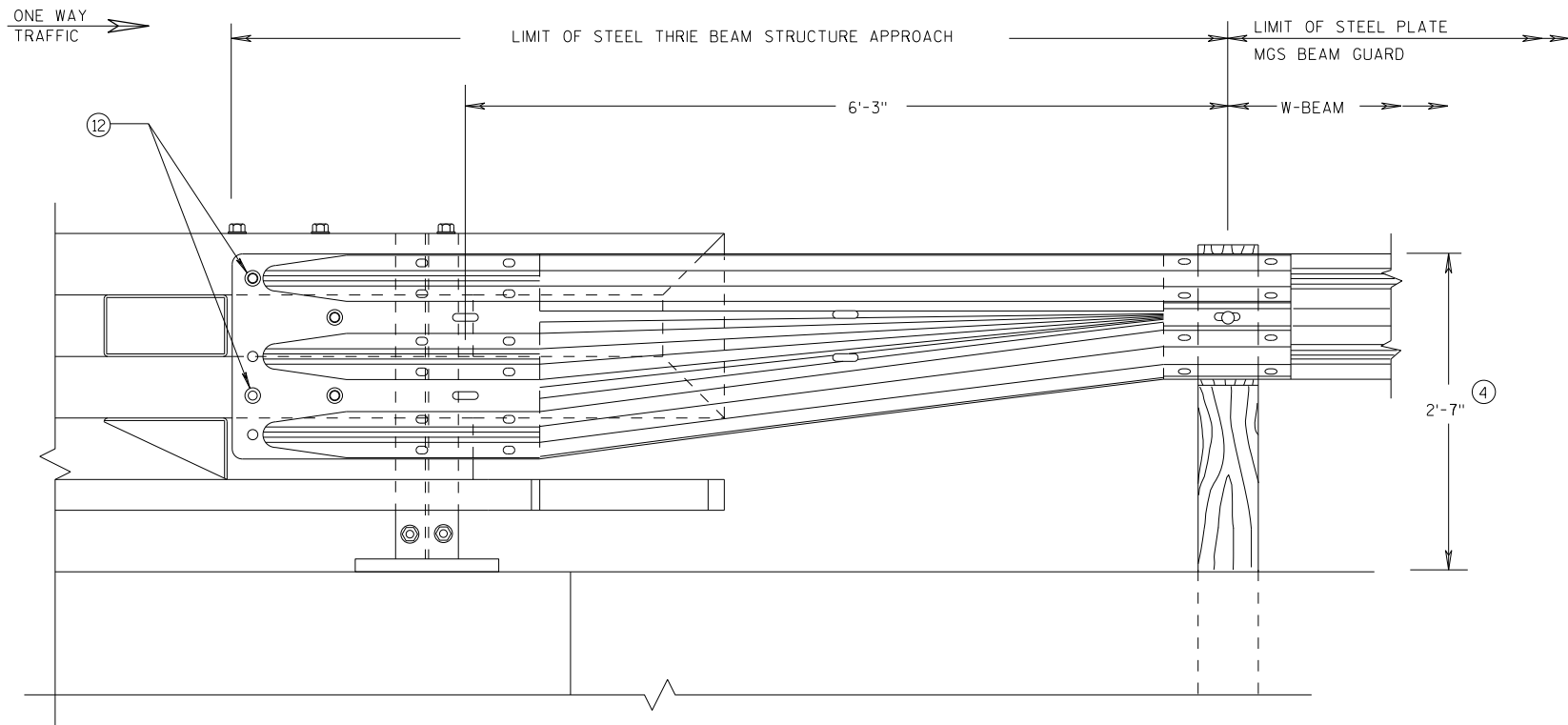


ELEVATION OF DETAIL AT NY4 END POST
THRIE BEAM RAIL ATTACHMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



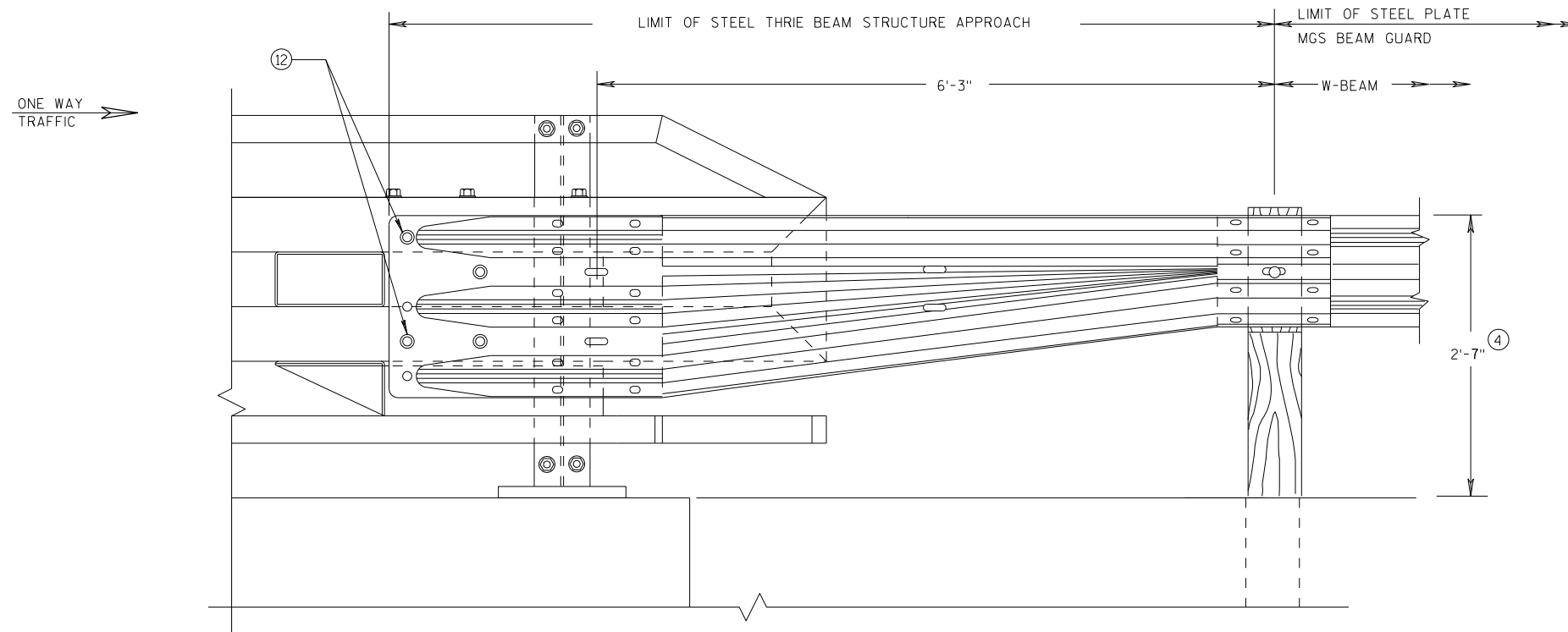
GENERAL NOTES

(4) TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.

(12) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND $\frac{1}{2}$ -INCH BEYOND NUT.

FRONT VIEW

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



FRONT VIEW

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018

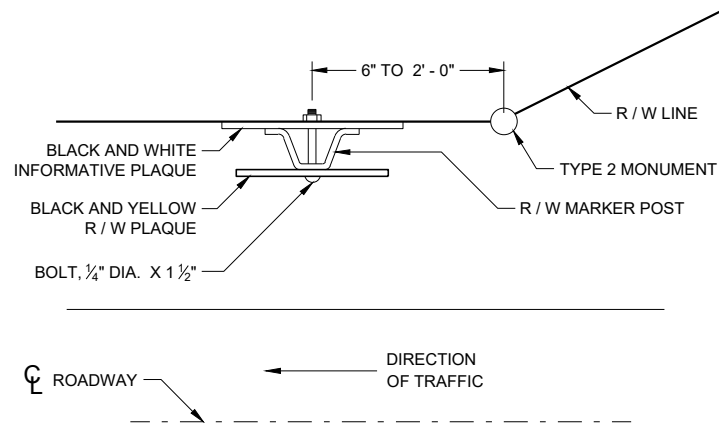
DATE

FHWA

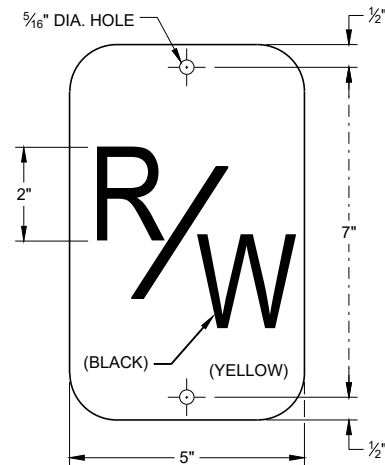
/S/ Rodney Taylor

ROADWAY STANDARDS DEVELOPMENT

UNIT SUPERVISOR

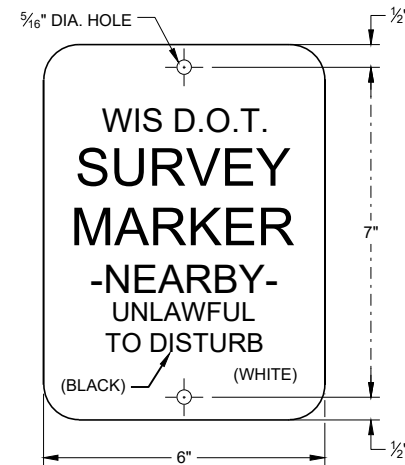


**PLAN VIEW
STEEL MARKER POST**



R / W PLAQUE

THE RIGHT-OF-WAY PLAQUE AND INFORMATIVE PLAQUE WILL BE FURNISHED BY THE WISCONSIN DEPARTMENT OF TRANSPORTATION.



INFORMATIVE PLAQUE

GENERAL NOTES

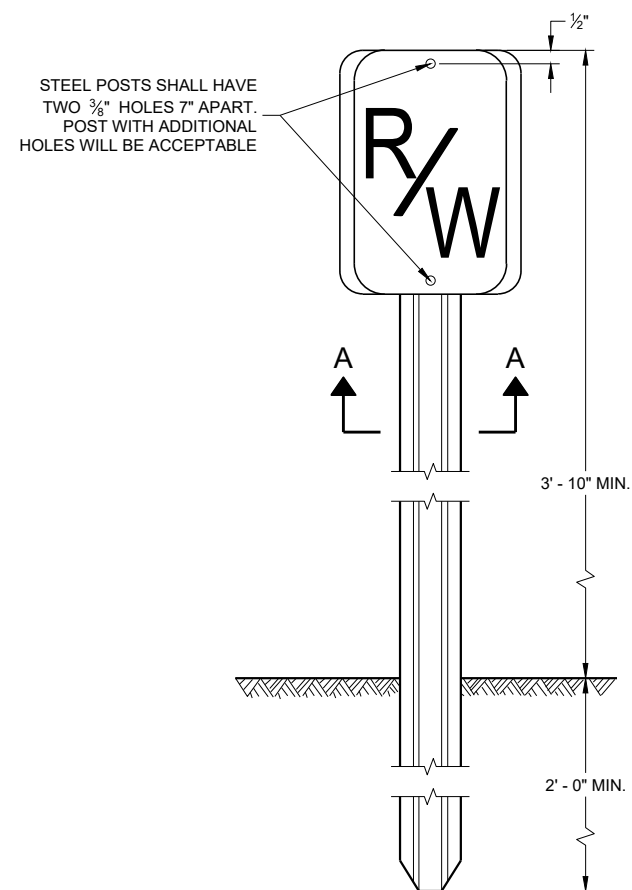
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

A STEEL MARKER POST FOR RIGHT -OF-WAY SHALL BE PLACED IN THE RIGHT-OF-WAY WITH THE BACK OF THE POST ON THE LONGER RIGHT-OF-WAY TANGENT, 6 INCHES TO 24 INCHES FROM EACH TYPE 2 MONUMENT TO SERVE AS A GUARD POST, AND AT OTHER LOCATIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

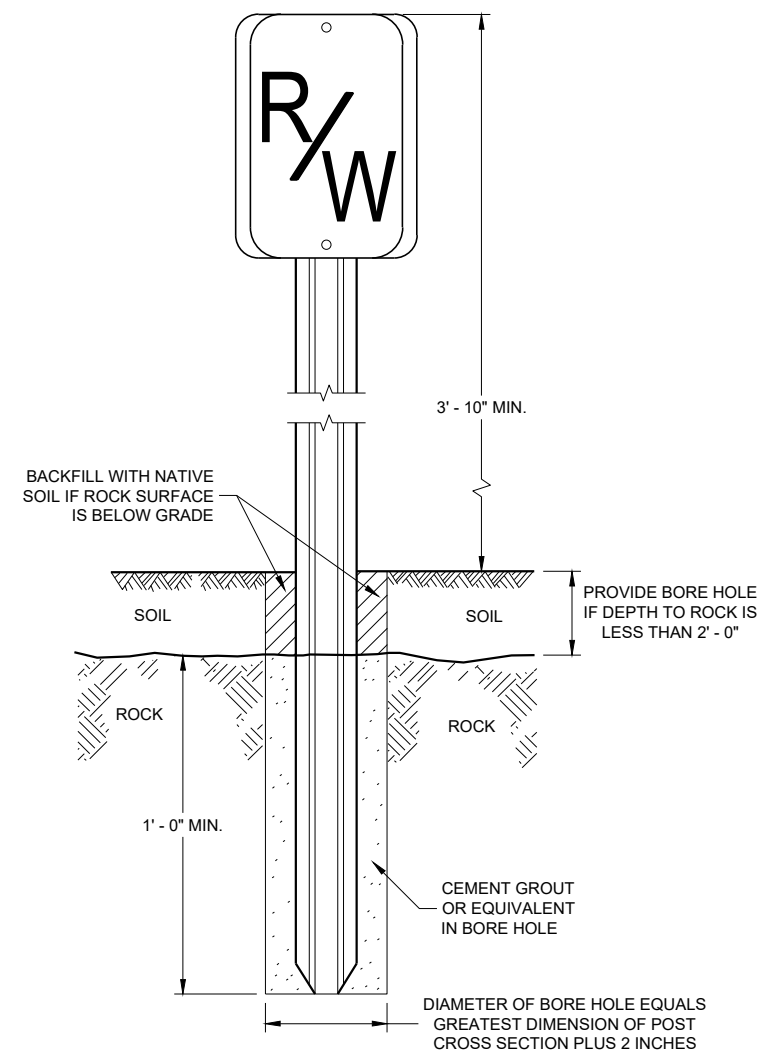
THE "R/W" PLAQUE SHALL FACE THE ROADWAY AND THE INFORMATIVE PLAQUE SHALL FACE AWAY FROM THE ROADWAY. "R/W" AND INFORMATIVE PLAQUES WILL BE FURNISHED BY THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

STEEL MARKER POSTS SHALL MEET THE MINIMUM MATERIAL REQUIREMENTS FOR STEEL DELINEATOR POSTS; EXCEPT POSTS PAINTED WITH FEDERAL YELLOW ENAMEL NEED NOT BE ZINC COATED.

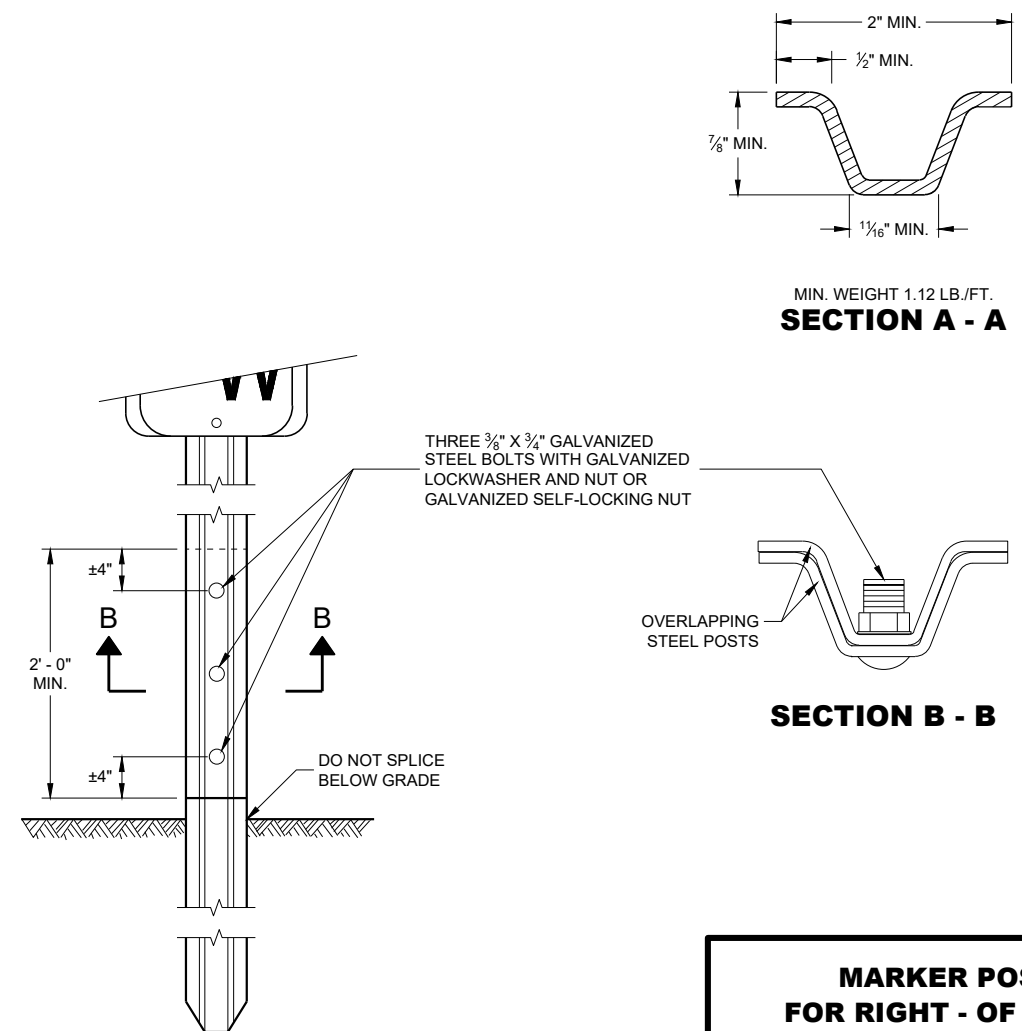
- ① IN AREAS OF SOLID ROCK, DRILL A BORE HOLE 2" GREATER THAN THE WIDEST DIMENSION OF THE POST CROSS SECTION INTO THE ROCK A MINIMUM DEPTH OF 12 INCHES. CUT OR SPLICE THE POST SO THAT A MINIMUM LENGTH OF 3' - 10" PROTRUDES ABOVE THE GROUND. BLOW OUT THE BORE HOLE IN THE ROCK USING COMPRESSED AIR. FILL THE BORE HOLE WITH CEMENT GROUT OR EQUIVALENT, DEPENDING ON THE STABILITY OF THE ROCK.



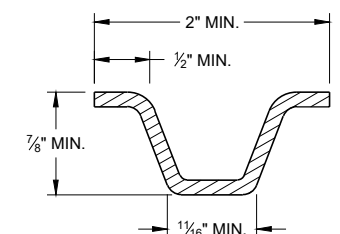
**FRONT VIEW
STEEL MARKER POST**



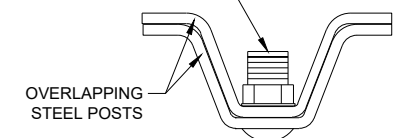
**FRONT VIEW
ROCK INSTALLATION** ①



**FRONT VIEW
SPLICE DETAIL**



**MIN. WEIGHT 1.12 LB./FT.
SECTION A - A**



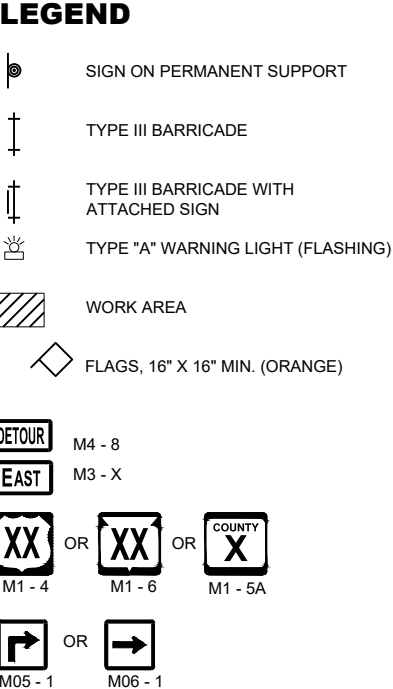
SECTION B - B

MARKER POST FOR RIGHT - OF - WAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
2/18/2016
DATE
/S/ Ray Kumapayi
CHIEF SURVEYING AND MAPPING
ENGINEER

FHWA



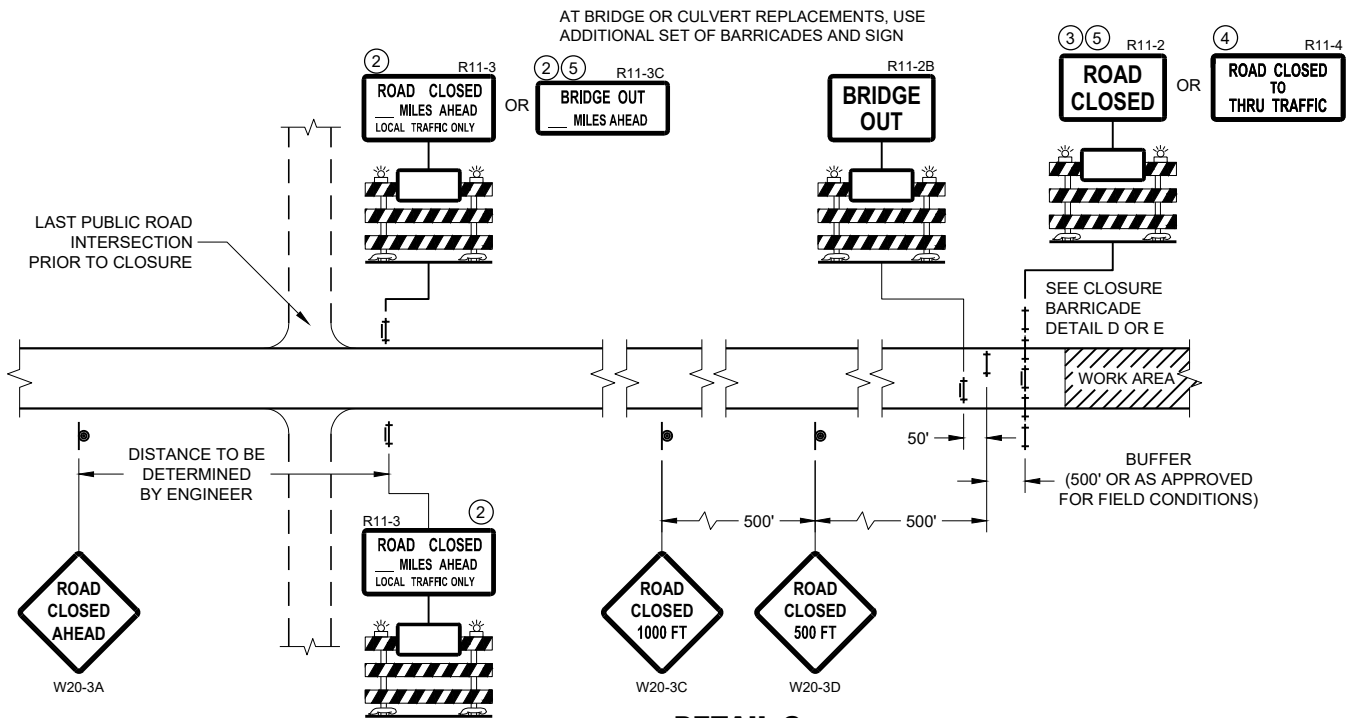
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR
 WORK ZONE GREATER THAN OR EQUAL TO ½ MILE FROM
 DETOUR ROUTE (1000 FEET IF URBAN)

DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
 WORK ZONE LESS THAN ½ MILE FROM
 DETOUR ROUTE (1000 FEET IF URBAN)

SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

SEE SDD 15C2-SHEET "b"
FOR GENERAL NOTES
AND FOOTNOTES ① THROUGH ⑦

DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

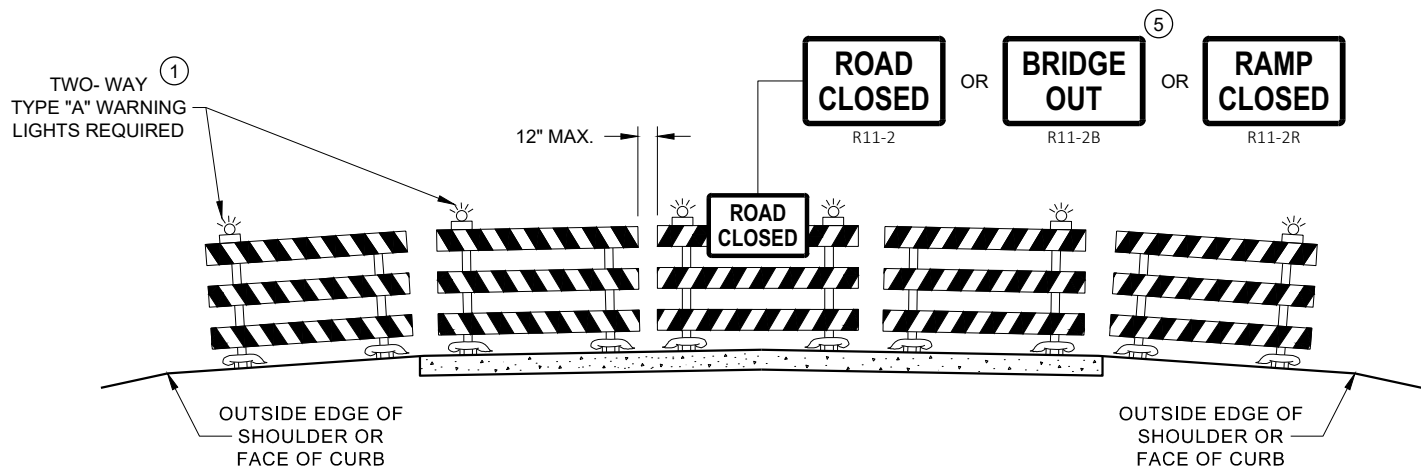


BARRICADES AND SIGNS FOR MAINLINE CLOSURES

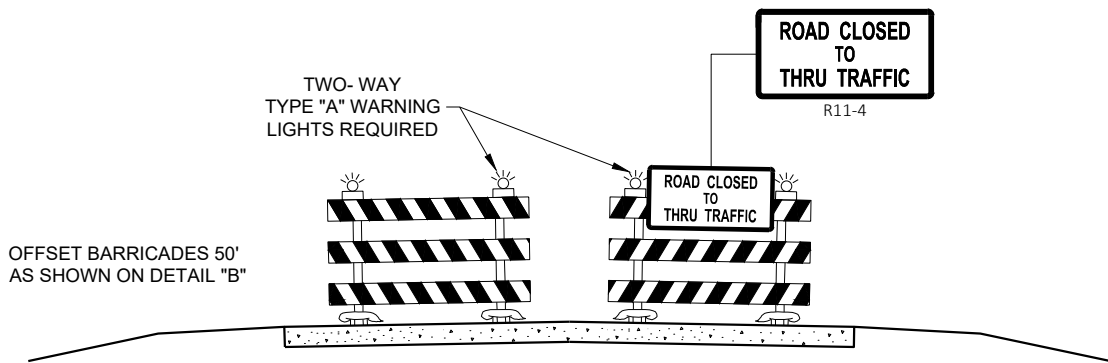
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 _____ /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

BARRICADES THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

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

ALL TYPE III BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL "D" FOR FULL ROAD CLOSURES.

TYPE "A" LOW - INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE R11 - 2, R11 - 3, M4 - 9, R11 - 4, AND R10 - 61 SIGNS PLACED ON THE BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE RAIL OR BOTTOM RAILS.

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:

- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60 " X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- MO5 - 1 AND MO6 - 1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- D1 - X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1 - 1 SHALL BE 36" X 36"

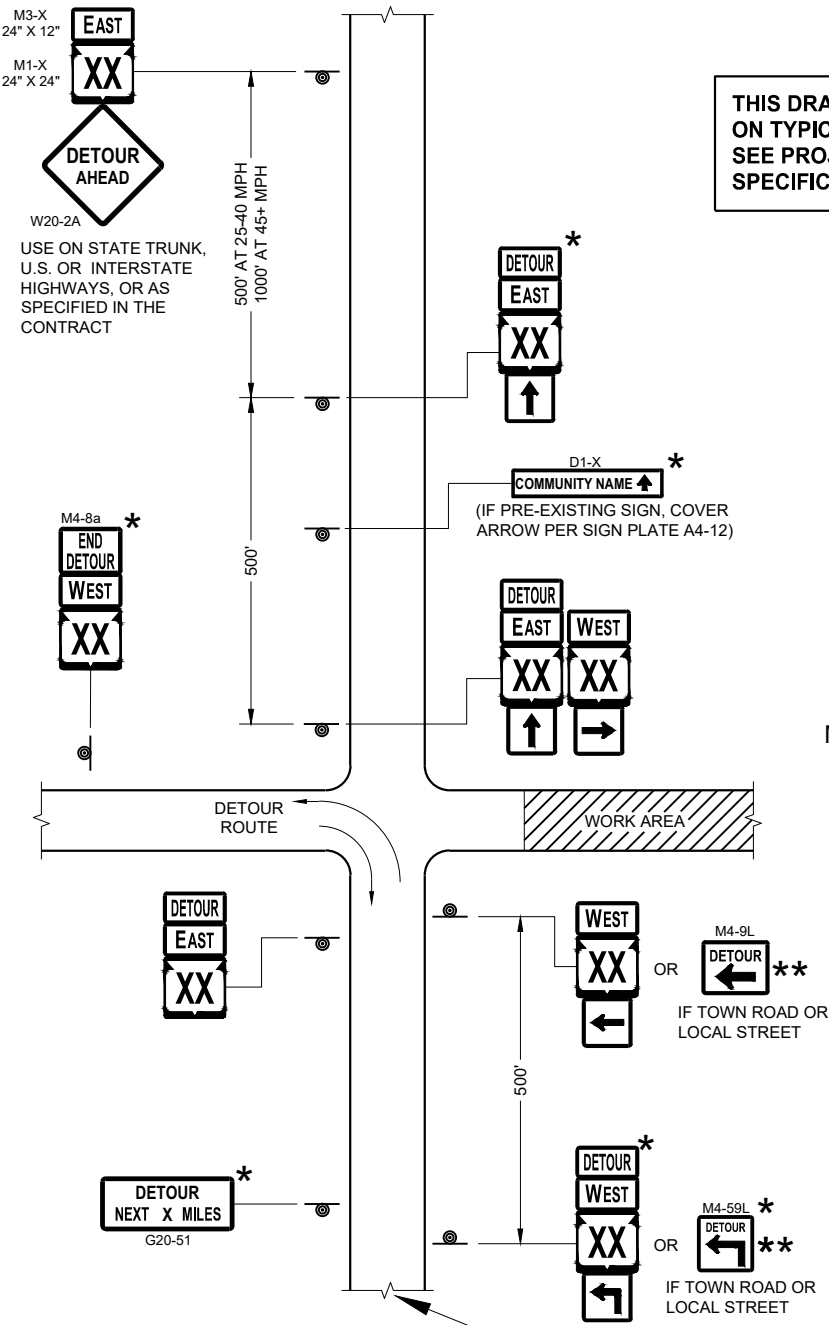
- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- 2 THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT AN INTERSECTION.
- 3 FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "D".
- 4 FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "E".
- 5 FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11 - 2 AND R11 - 3 SIGNS.
- 6 INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.
- 7 "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS
FOR
VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

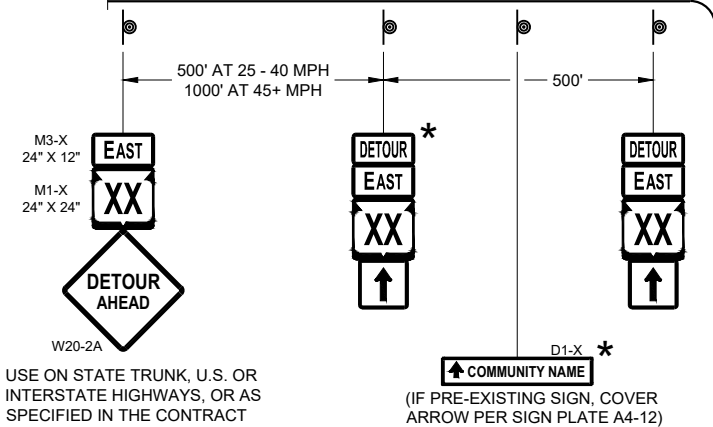
FHWA



SEE SPECIFIC PROJECT DETOUR
SIGNING DETAIL SHEETS AND
DETAIL A OR B ON SDD SHEET 15C02 - SHEET "a"

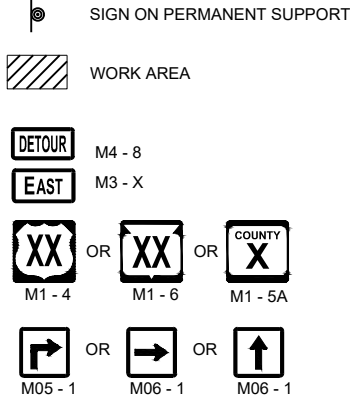
THIS DRAWING PROVIDES GENERAL GUIDANCE
ON TYPICAL DETOUR SIGN LAYOUT AND SPACING.
SEE PROJECT DETOUR SIGNING SHEETS FOR
SPECIFIC DETAILS FOR EACH PROJECT.

MATCH POINT



DETAIL F
DETOUR SIGNING

LEGEND



GENERAL NOTES

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

IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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

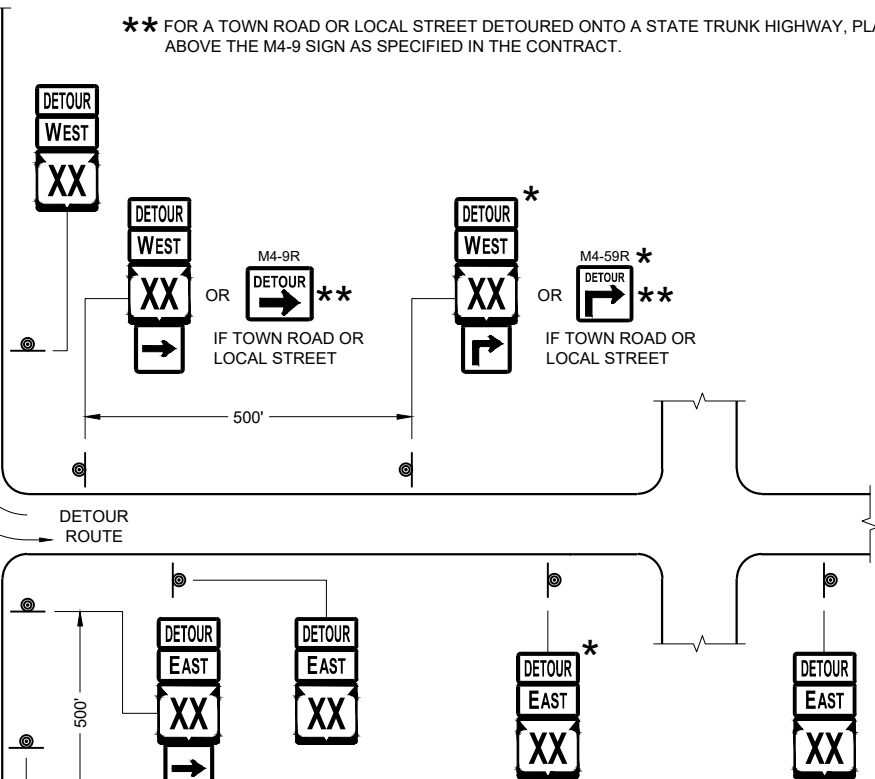
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

SIGN SIZES SHALL BE AS FOLLOWS:

- M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-9 AND M4-59 SHALL BE 30" X 24"
- M4-8a SHALL BE 24" X 18"
- G20-51 SHALL BE 60" X 24"
- W20-2A SHALL BE 48" X 48"
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

- * OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.
- ** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.



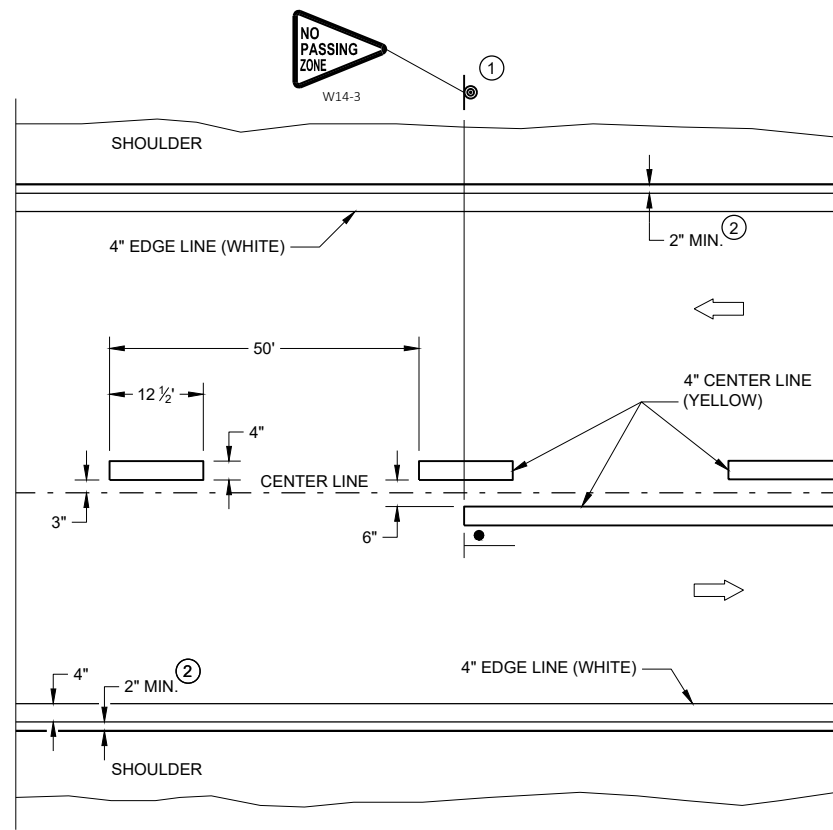
PLACE SIGNS BEYOND INTERSECTIONS
WITH STATE OR COUNTY TRUNK
HIGHWAYS OR AT 4 MILE MAXIMUM
SPACING (4 BLOCKS IF URBAN AREA)

DETOUR SIGNING
FOR MAINLINE CLOSURES

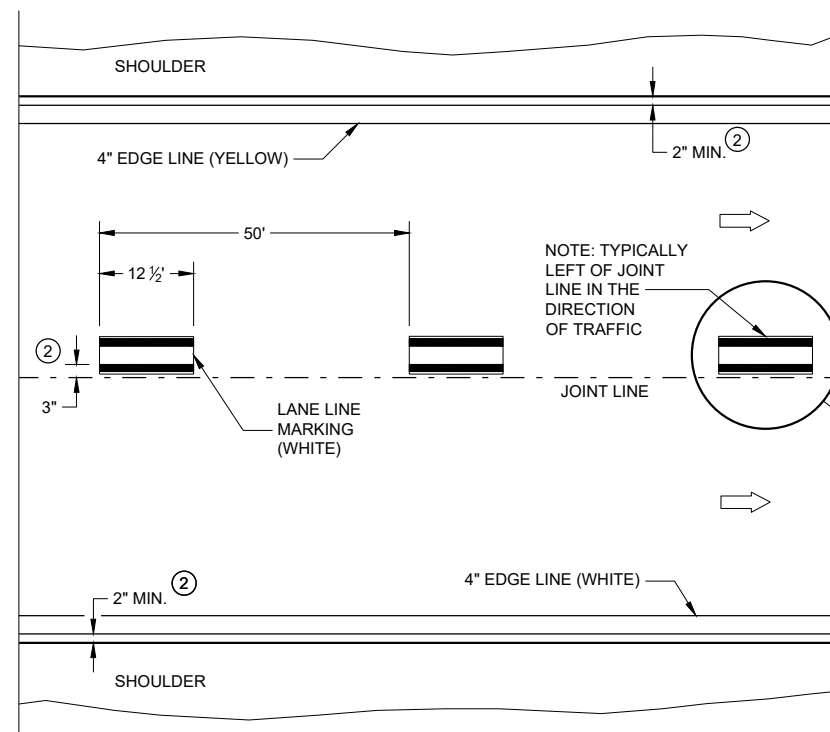
STATE OF WISCONSIN
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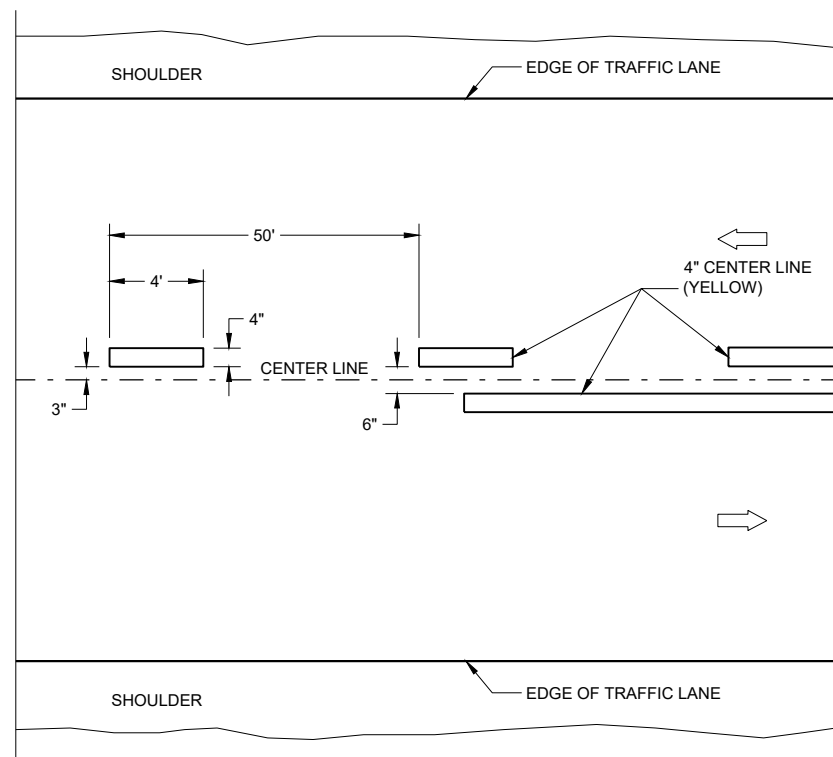


TWO WAY TRAFFIC

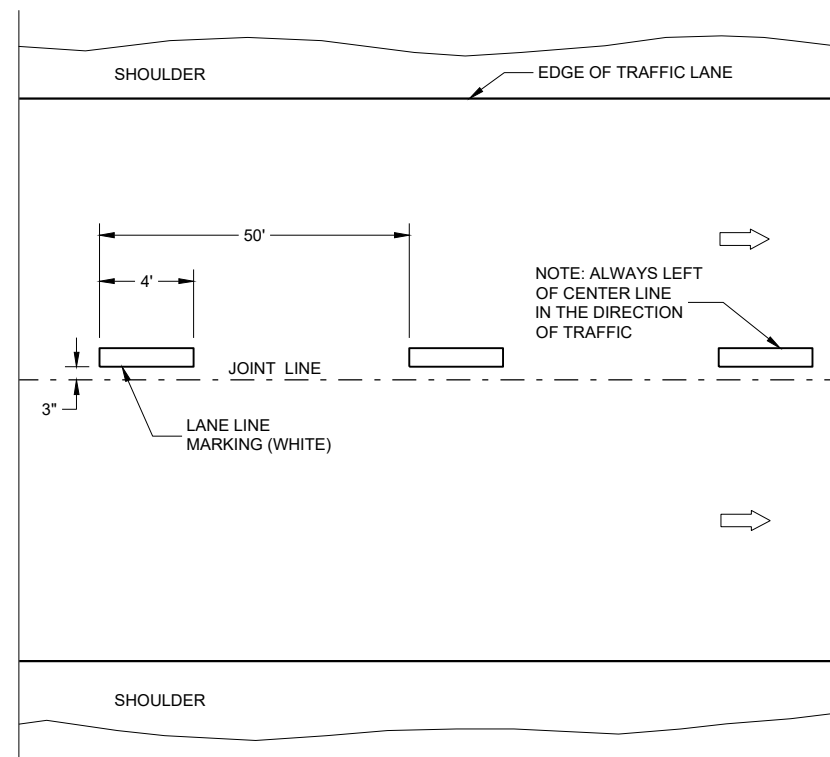


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

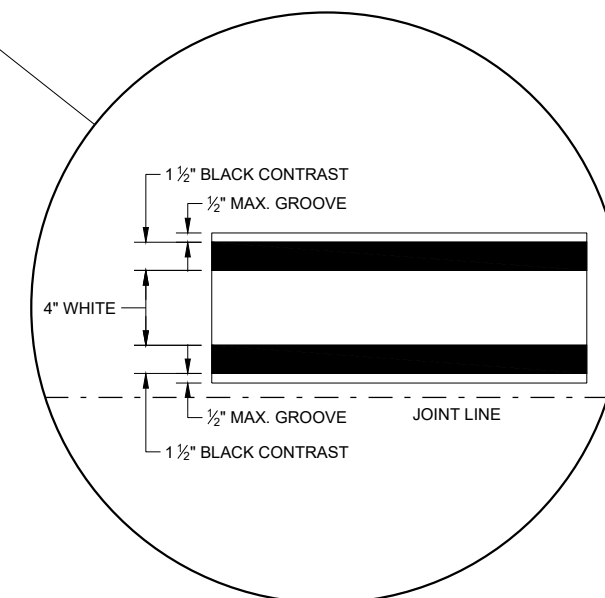
GENERAL NOTES

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

- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITH 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

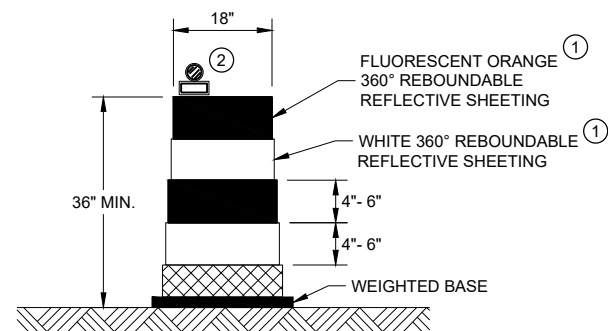
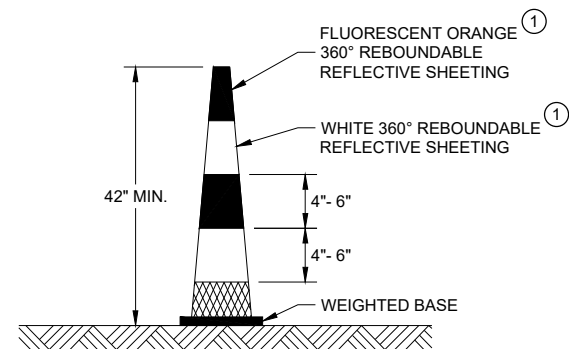


LONGITUDINAL MARKING (MAINLINE)

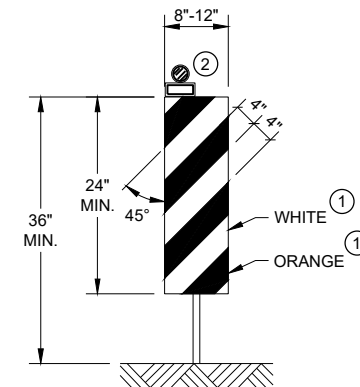
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE

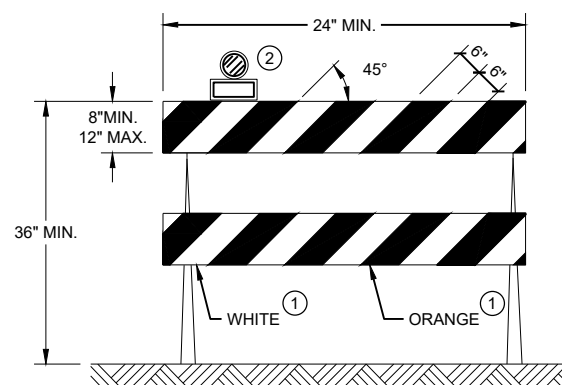
/S/ Matthew Rauch
STATEWIDE SIGNING AND MARKING
ENGINEER

**DRUM****42" CONE**

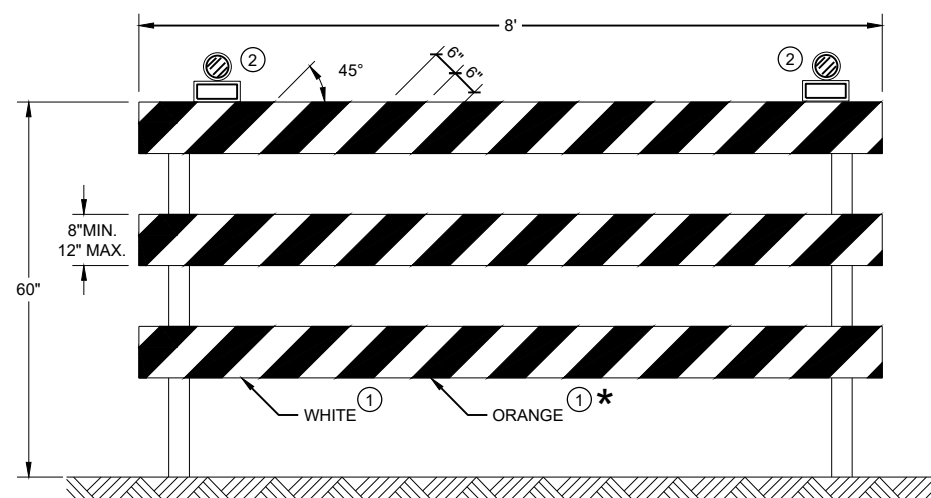
DO NOT USE IN TAPERS
½ SPACING OF DRUMS

**VERTICAL PANEL**

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

**TYPE II BARRICADE**

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

**TYPE III BARRICADE**

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

GENERAL NOTES

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

**CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA

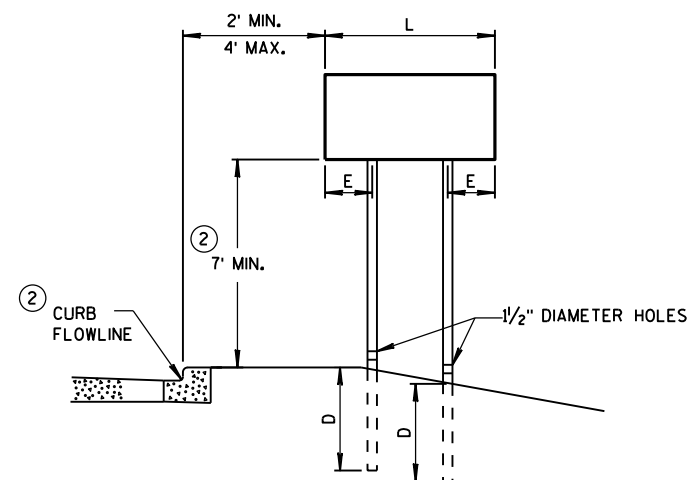
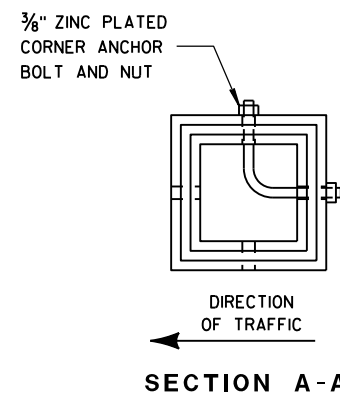


TUBULAR STEEL POSTS

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

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

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

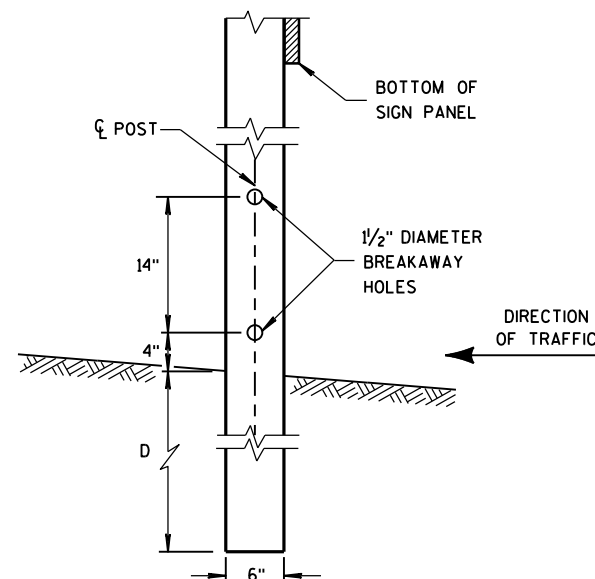


URBAN AREA

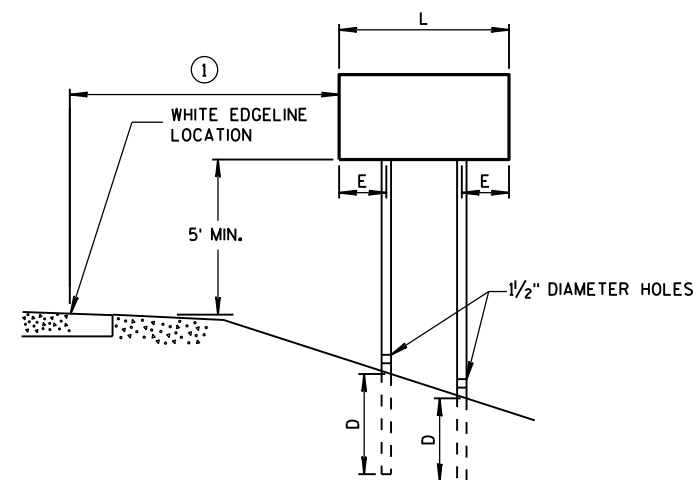
POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST
EMBEDMENT DEPTH

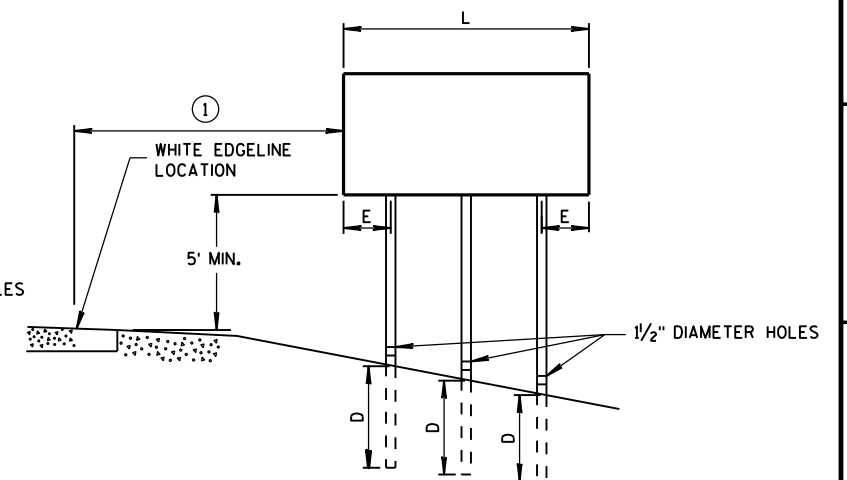
AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'



4" x 6" WOOD POST MODIFICATION



RURAL AREA



GENERAL NOTES

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

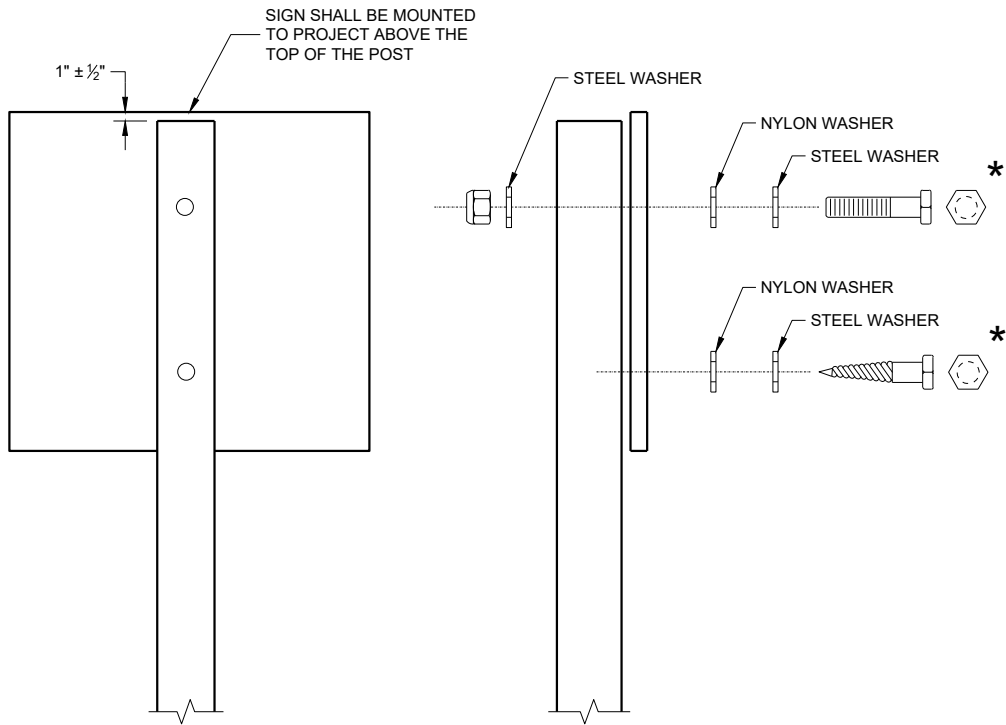
4" X 6" WOOD POST

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

SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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

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

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

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

SQUARE STEEL POST (2" x 2")
MACHINE BOLTS - 3/8" x 3 1/4" LENGTH W/NUTS
RIVETS - 3/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM
BODY/MANDREL O.D. FLANGE 0.720 - 0.765 INCH,
GRIP RANGE 0.042 - 0.375 INCH

WASHERS (ALL POSTS) -
1 1/4" O.D. x 3/8" I.D. x 1/16" STEEL
1 1/4" O.D. x 3/8" I.D. x 0.080 NYLON

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

ATTACHMENT OF SIGNS
TO POSTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF = 1.24
OPERATING RATING FACTOR: RF = 1.71
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 & STRUCTURAL APPROACH SLAB — f'_c = 4,000 P.S.I.
ALL OTHER — f'_c = 3,500 P.S.I.

BAR STEEL REINFORCEMENT:
GRADE 60 — f_y = 60,000 P.S.I.

72W" PRESTRESSED GIRDERS:
CONCRETE MASONRY — f'_c = 8,000 P.S.I.
STRANDS: 0.6" DIA. WITH ULTIMATE TENSILE STRENGTH OF 270,000 P.S.I.

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 12 X 53 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 220 TONS ** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA, ESTIMATED 60'-0" LONG, PILE POINTS REQ'D.

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

HYDRAULIC DATA

100 YEAR FREQUENCY

Q_{100} = 6500 C.F.S.
 VEL_{100} = 5.59 F.P.S.
 HW_{100} = EL. 649.02
WATERWAY AREA = 1859.2 SQ. FT.
DRAINAGE AREA = 48.4 SQ. MI.
ROADWAY OVERTOPPING = N/A
SCOUR CRITICAL CODE = 8

2 YEAR FREQUENCY

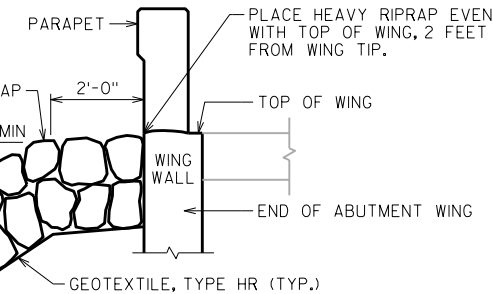
Q_2 = 1000 C.F.S.
 VEL_2 = 2.12 F.P.S.
 HW_2 = EL. 642.46

TRAFFIC VOLUME

STH 133
ADT = 640 (2042)
R.D.S. = 60 M.P.H.

STATE PROJECT NUMBER

5616-05-81



TYPICAL FILL SECTION AT WING TIPS

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. SOUTH ABUTMENT
5. SOUTH ABUTMENT DETAILS
6. NORTH ABUTMENT
7. NORTH ABUTMENT DETAILS
8. 72W" PRESTRESSED GIRDER DETAILS 1
9. 72W" PRESTRESSED GIRDER DETAILS 2
10. STEEL DIAPHRAGM
11. SUPERSTRUCTURE
12. SUPERSTRUCTURE DETAILS
13. SINGLE SLOPE PARAPET 42SS

STRUCTURE DESIGN CONTACTS:

JONATHON RESHESKE (608) 266-8491
LAURA SHADEWALD (608) 267-9592

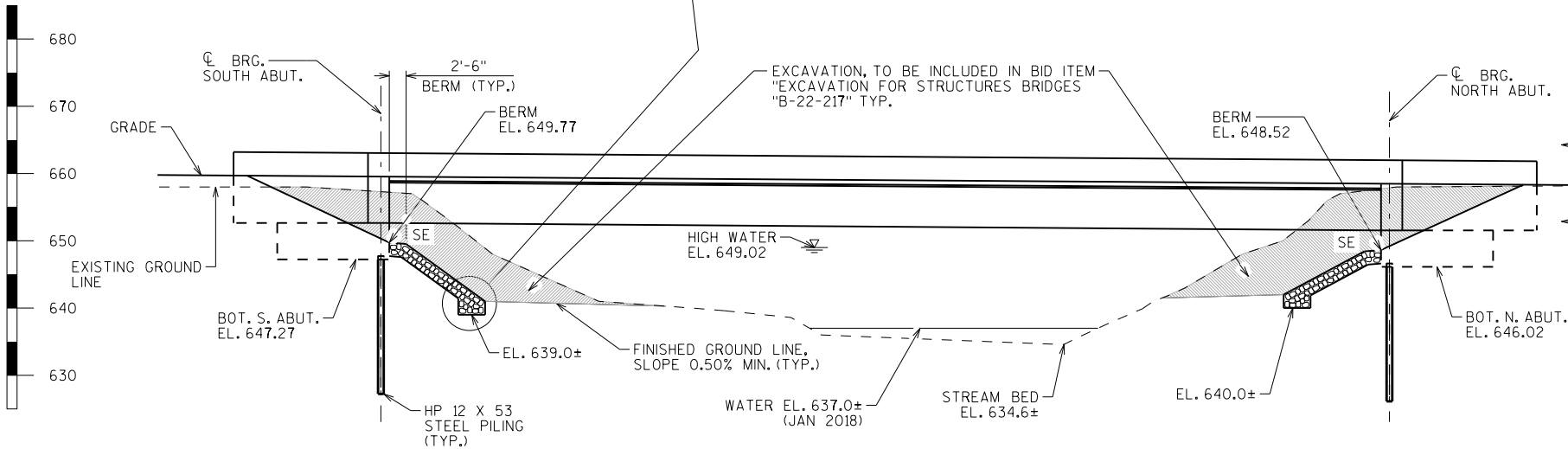
NO.	DATE	REVISION	BY
ACCEPTED LLS 5/11/21 CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-22-217			
STH 133 OVER GREEN RIVER			
COUNTY	GRANT	TOWN/CITY/VILLAGE	WOODMAN
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	JLR	DESIGNED CK'D.	PJR
DRAWN BY	MJH	PLANS CK'D.	JLR
GENERAL PLAN			SHEET 1 OF 13

I.D. 5616-05-01A

DATE: APRIL 2021

PLAN

SINGLE SPAN 72W" PRESTRESSED GIRDER



ELEVATION

NORMAL TO GREEN RIVER (LOOKING WEST)

TYPICAL FILL SECTION AT WING TIPS

TYPICAL FILL SECTION AT WING TIPS

TYPICAL FILL SECTION AT WING TIPS

TYPICAL FILL SECTION AT WING TIPS

TYPICAL FILL SECTION AT WING TIPS

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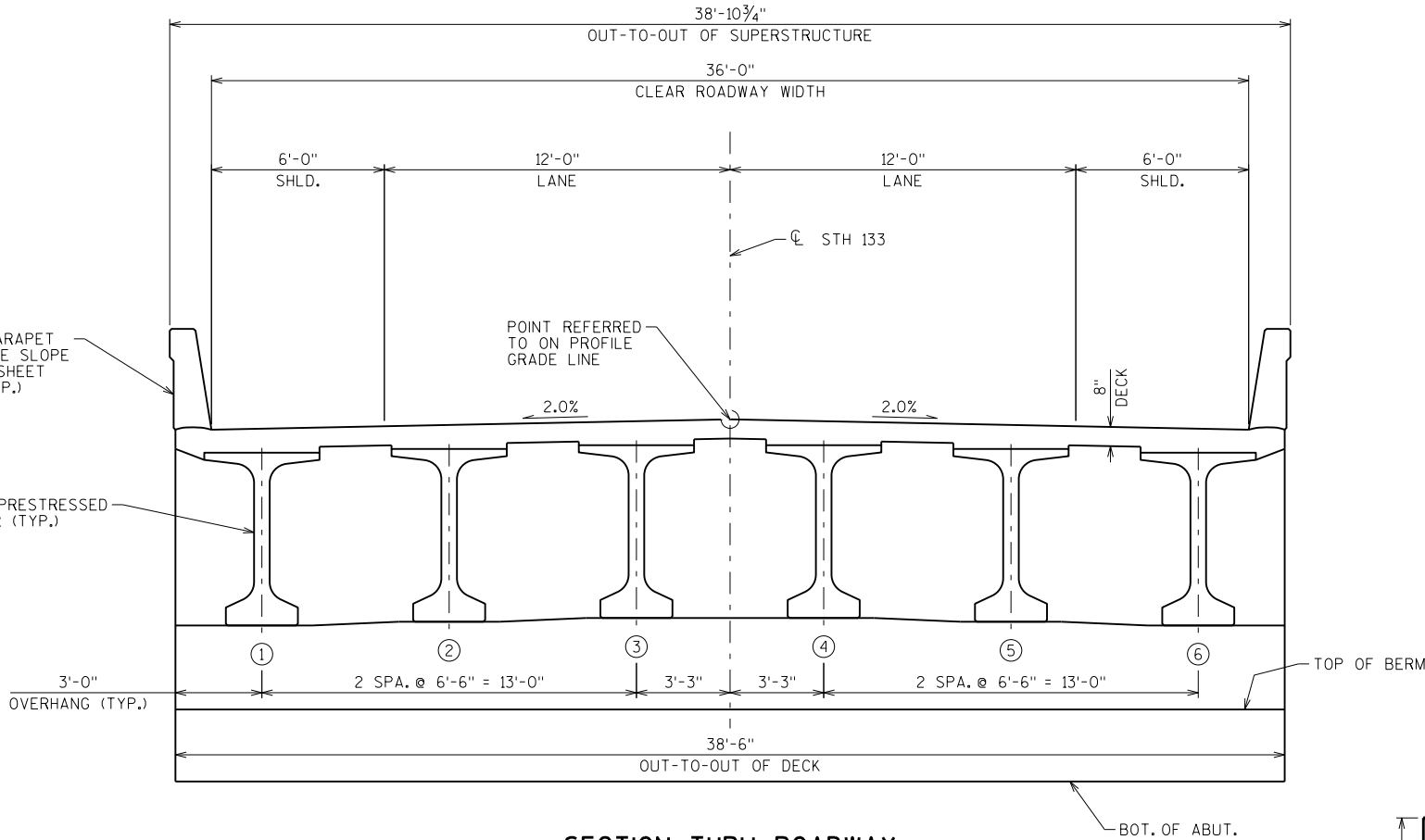
TYPICAL FILL SECTION AT WING TIPS

TYPICAL FILL SECTION AT WING TIPS

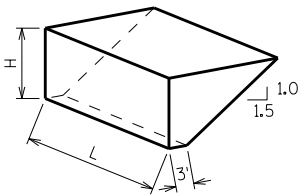
TYPICAL FILL SECTION AT WING TIPS

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 $\frac{3}{4}$ " UNLESS OTHERWISE NOTED.
- AT THE BACK FACE OF ABUTMENT 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.
- REMOVE 24" MIN. BELOW BOTTOM OF SOUTH ABUTMENT AND 12" MIN. BELOW BOTTOM OF NORTH ABUTMENT TO THE SATISFACTION OF THE REGION GEOTECHNICAL ENGINEER BEFORE DRIVING PILES. WORK PAID FOR WITH BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES B-22-217". BOTTOM OF ABUTMENT ELEVATION TO BE ESTABLISHED AFTER DRIVING PILES WITH "SELECT CRUSHED MATERIAL". GEOTEXTILE SHALL BE SET AT THE BOTTOM OF ABUTMENT AND EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT.
- THE QUANTITY FOR BACKFILL STRUCTURE IS CALCULATED BASED ON THE DETAIL SHOWN IN THE PLANS.
- ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.
- PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE EXPOSED TOP OF DECK SURFACE AND TO THE VERTICAL AND HORIZONTAL SURFACES OF THE PAVING NOTCHES AT ABUTMENT DIAPHRAGMS.
- PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND THE TOP OF THE PARAPETS, INCLUDING PARAPETS ON WINGS.
- THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE TYPE "HR" TO THE EXTENT SHOWN ON SHEET 1 AND THE ABUTMENT DETAILS.
- THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON THE "72W PRESTRESSED GIRDER DETAILS 2" SHEET.

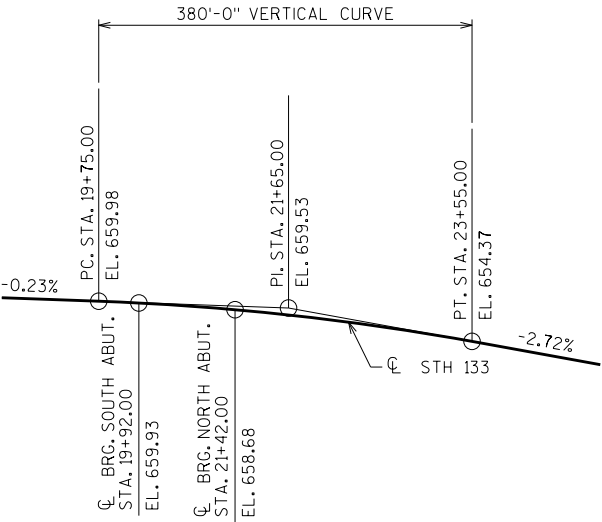


SECTION THRU ROADWAY
(LOOKING UPSTATION)

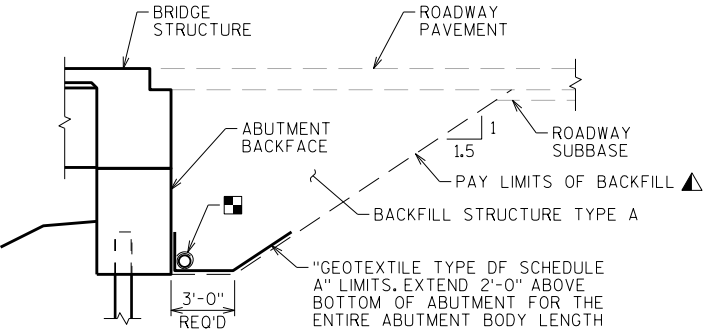


ABUTMENT BACKFILL DIAGRAM
FOR WINGS PARALLEL TO ROADWAY

- L = OUT TO OUT OF ABUTMENT, 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)
 $V_{CF} = (L)(3.0')(H) + (L)(0.5')(1.5H)(H)$
 $V_{CY} = V_{CF} (EF) / 27$
 $V_{TON} = V_{CY} (2.0)$



PROFILE GRADE LINE - STH 133



TYPICAL SECTION
THRU ABUTMENT

- BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL 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.

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER	SOUTH ABUT.	NORTH ABUT.	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS 20+70.00±	LS	----	----	----	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-22-217	LS	----	----	----	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	----	114	114	228
312.0110	SELECT CRUSHED MATERIAL	TON	----	52	26	78
502.0100	CONCRETE MASONRY BRIDGES	CY	236	61	62	359
502.3200	PROTECTIVE SURFACE TREATMENT	SY	624	----	----	624
502.3210	PIGMENTED SURFACE SEALER	SY	152	20	20	192
503.0172	PRESTRESSED GIRDER TYPE 172W-INCH	LF	906	----	----	906
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	----	3,740	3,740	7,480
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	40,610	4,660	4,700	49,970
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	----	6	6	12
506.4000	STEEL DIAPHRAGMS B-22-217	EACH	10	----	----	10
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	----	9	9	18
550.1120	PILING STEEL HP 12-INCH X 53 LB	LF	----	720	720	1,440
606.0300	RIPRAP HEAVY	CY	----	245	269	514
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	----	70	70	140
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	----	2	2	4
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	----	31	31	62
645.0120	GEOTEXTILE TYPE HR	SY	----	368	404	772
	NON-BID ITEMS					
	FILLER	SIZE	----	----	----	1/2", 3/4"

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-217			
DRAWN BY MJH		PLANS CK'D. JLR	
CROSS SECTION & QUANTITIES		SHEET 2	

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	5/29/2019	602766	784862
2	5/30/2019	602684	784696

BORINGS COMPLETED BY: WISDOT

REPORT COMPLETED BY: WISDOT

ALL COORDINATES REFERENCED TO WCCS NAD 83(91) GRANT COUNTY

COORDINATES COLLECTED USING NON-SURVEY GRADE EQUIPMENT

STATE PROJECT NUMBER

5616-05-81

MATERIAL SYMBOLS

ASPHALT

CONCRETE

SAND

BOULDERS OR COBBLES

SHALE

TOPSOIL

FILL

CLAY

LIMESTONE

SANDSTONE

PEAT

GRAVEL

SILT

BEDROCK (UNKNOWN)

IGNEOUS/META

LEGEND OF BORING

BORING #/EL.
STA./OFFSET

ST

(1) 0.25

(2) 17

▽

F-C

COBBLE OR BOULDER

WEATHERED LIMESTONE

CORE RUN #1 - 24'-29'

REC=80%, ROD=72%

(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

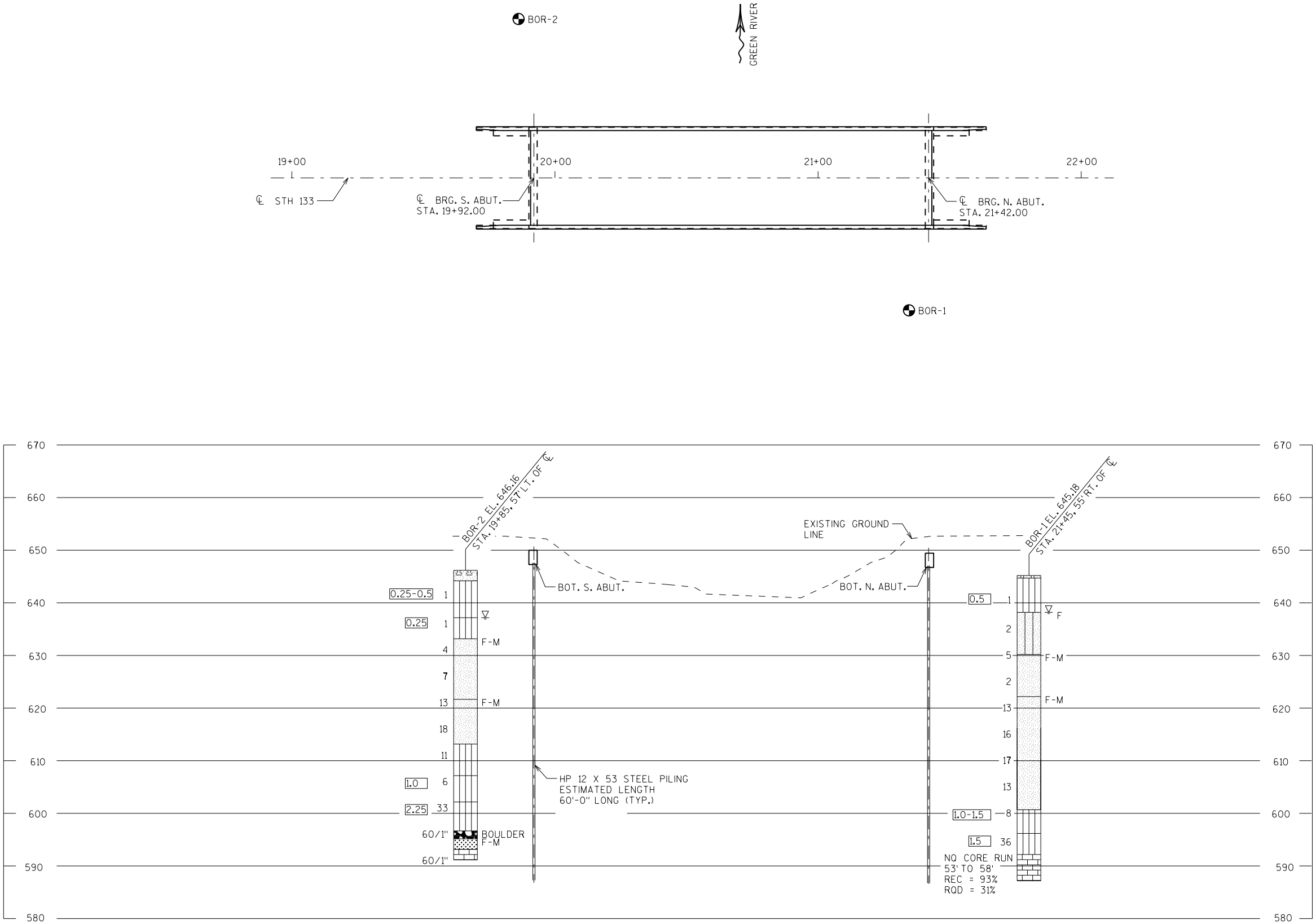
ABBREVIATIONS

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.

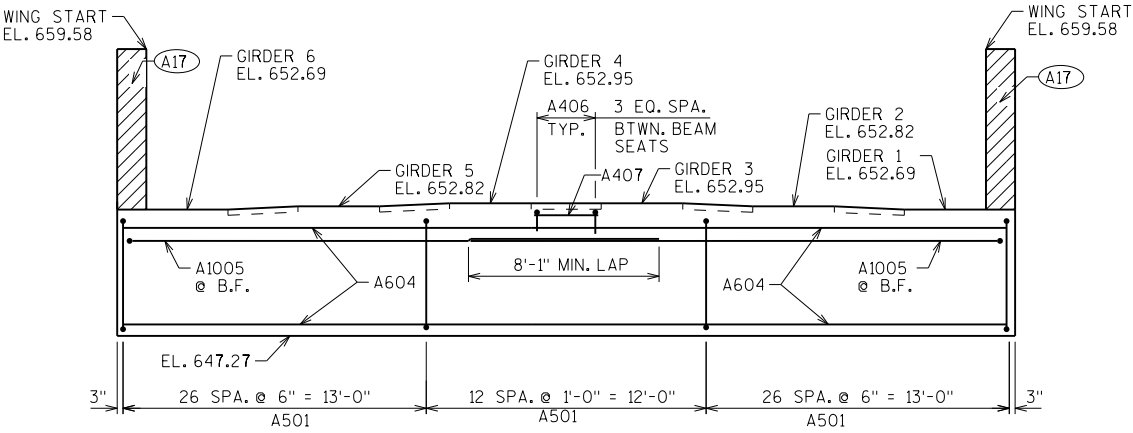
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-217			
DRAWN BY MJH/TLP		PLANS CK'D. JLR	
SUBSURFACE EXPLORATION		SHEET 3	



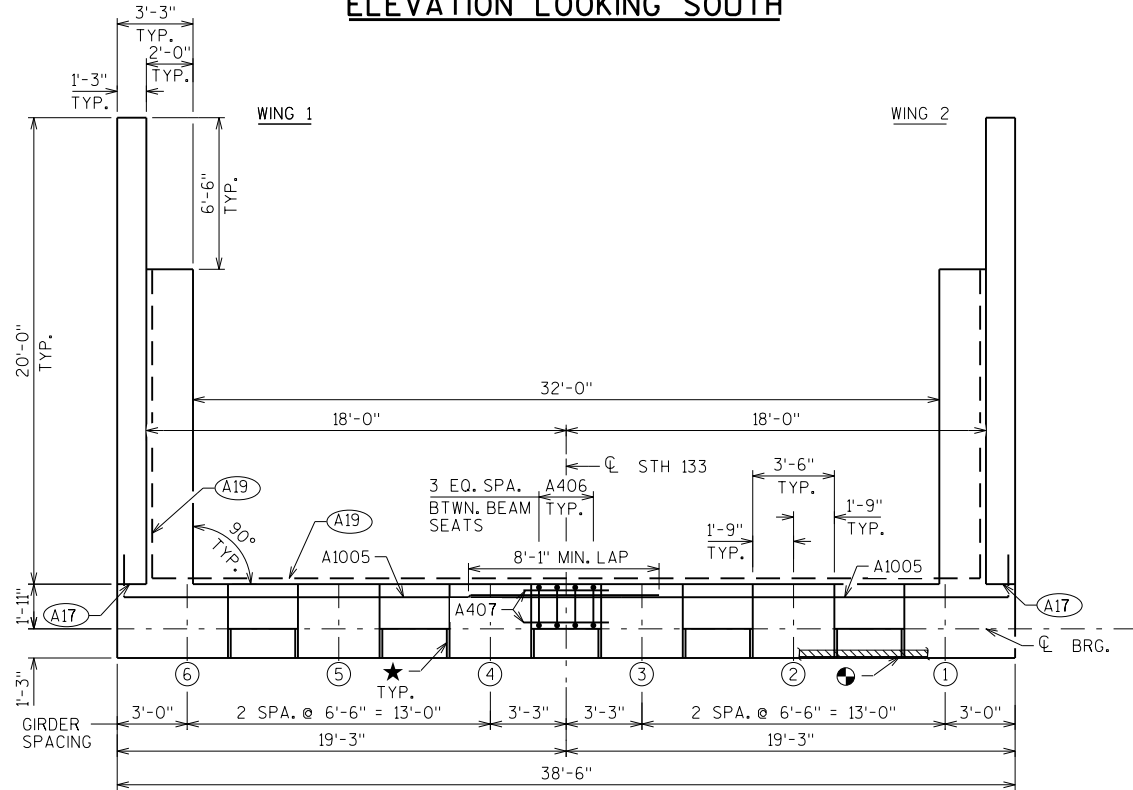
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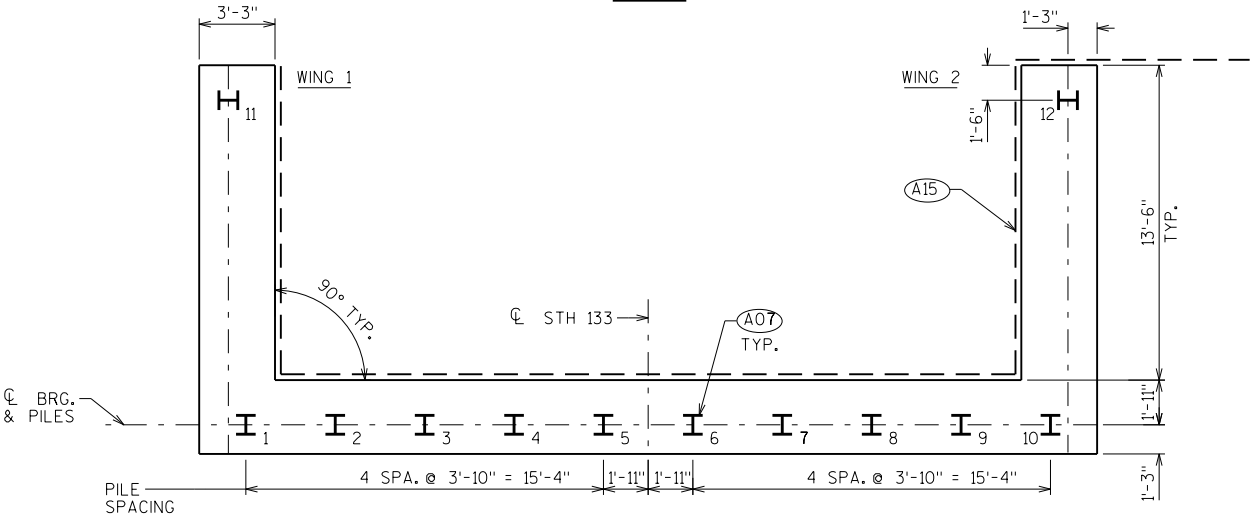
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ELEVATION LOOKING SOUTH

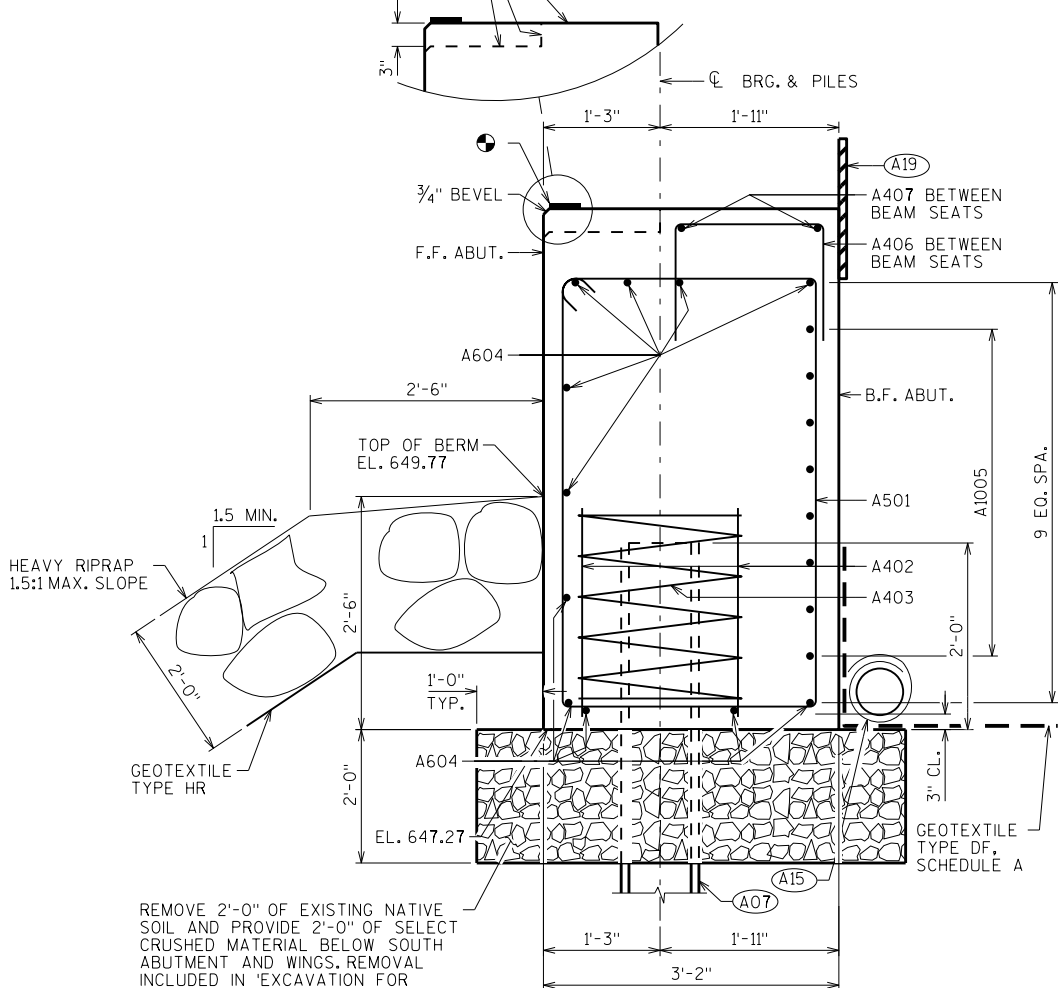


PLAN



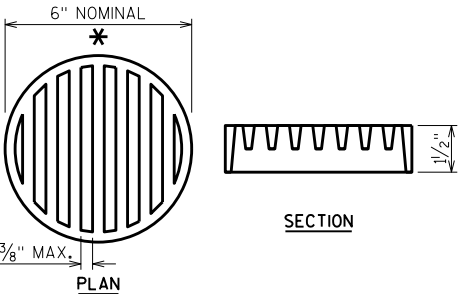
PILE PLAN

STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING BEARING PADS. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".



SECTION THRU BODY

REMOVE 2'-0" OF EXISTING NATIVE SOIL AND PROVIDE 2'-0" OF SELECT CRUSHED MATERIAL BELOW SOUTH ABUTMENT AND WINGS. REMOVAL INCLUDED IN 'EXCAVATION FOR STRUCTURES BRIDGES B-22-217' BID ITEM.



RODENT SHIELD DETAIL

* 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".

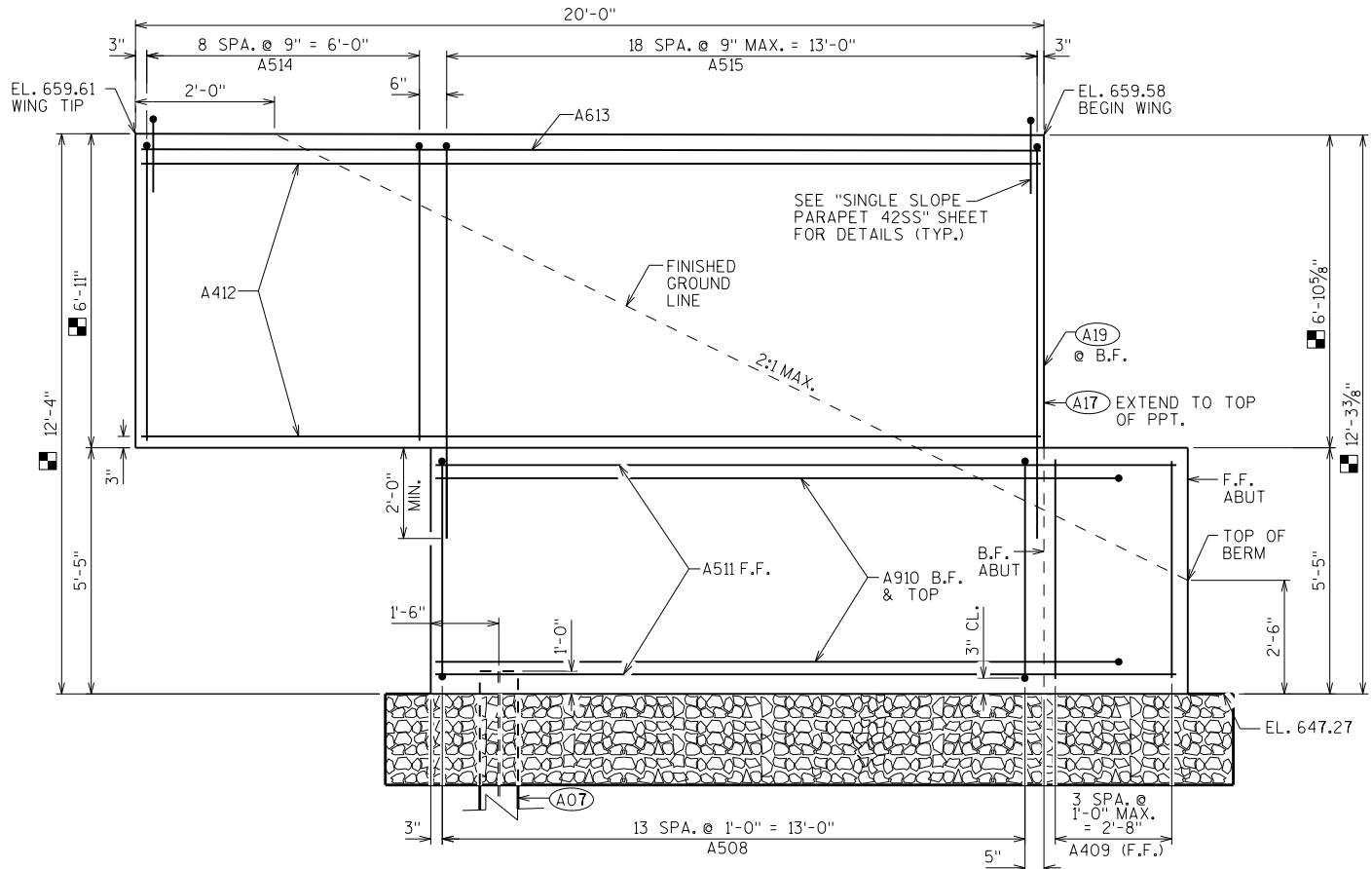
THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH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

- 4" X 1/2" PREFORMED JOINT FILLER X ABUTMENT LENGTH
- 3/4" CORK FILLER ON VERTICAL BEAM SEAT FACES.
- A07 SUPPORT ABUTMENT ON HP 12 X 53 STEEL PILING, ESTIMATED 60'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 220 TONS PER PILE. PILE POINTS REQUIRED
- A15 PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- A17 1/2" FILLER (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.
- A19 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

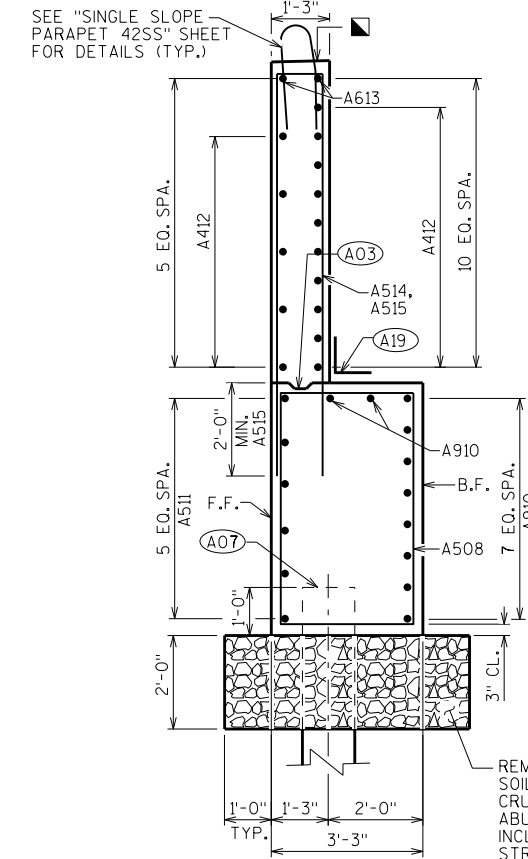
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-217			
DRAWN BY		MJH	PLANS CK'D. JLR
SOUTH ABUTMENT		SHEET 4	

BILL OF BARS

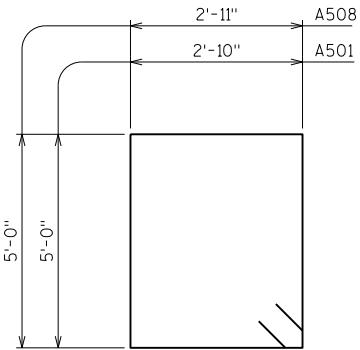
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A501		65	16'-4"	X		BODY-STIRRUPS
A402		20	2'-3"			PILES - 2 PER BODY PILE
A403		10	28'-0"	X		PILES - 1 PER BODY PILE
A604		11	38'-2"			BODY - HORIZ. - F.F., TOP. & BOT.
A1005		16	24'-8"	X		BODY - HORIZ. - B.F.
A406		20	3'-11"	X		BODY - BTWN. BEAM SEATS
A407		10	5'-6"			BODY - BTWN. BEAM SEATS
A508	X	28	16'-6"	X		WINGS 1 & 2 - STIRRUPS
A409	X	8	5'-0"			BODY - VERT. - ENDS
A910	X	20	17'-7"	X		WINGS 1 & 2 - HORIZ. - B.F. - LOWER WINGS
A511	X	12	16'-4"			WINGS 1 & 2 - HORIZ. - F.F. - LOWER WINGS
A412	X	30	19'-8"			WINGS 1 & 2 - HORIZ. - UPPER WINGS
A613	X	4	19'-8"			WINGS 1 & 2 - HORIZ. - UPPER WINGS - TOP
A514	X	18	13'-8"	X		WINGS 1 & 2 - VERT. -UPPER WINGS
A515	X	38	18'-2"	X		WINGS 1 & 2 - VERT. -UPPER WINGS



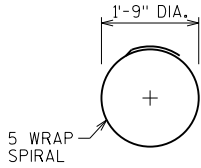
WING 1 ELEVATION
LOOKING AT FRONT FACE,
WING 2 SIMILAR



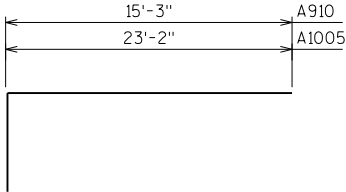
WING 1 SECTION
WING 2 SIMILAR



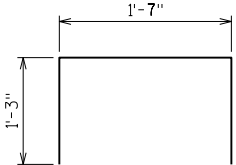
A501, A508



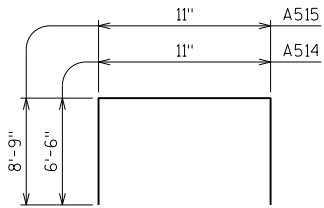
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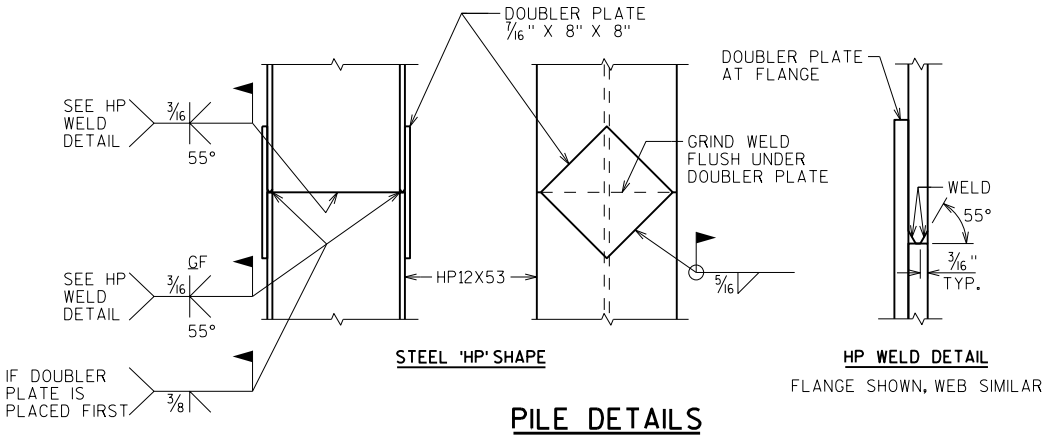
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A406



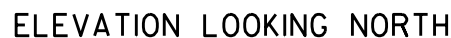
A514, A515



PILE DETAILS

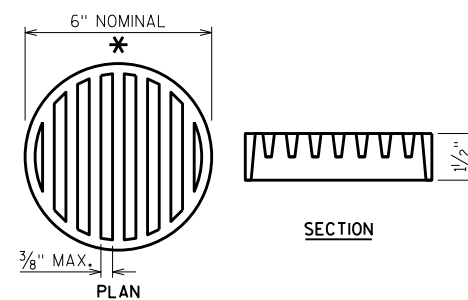
- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A07) SUPPORT ABUTMENT ON HP 12 X 53 STEEL PILING, ESTIMATED 60'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 220 TONS PER PILE. PILE POINTS REQ'D.
- (A17) 1/2" FILLER (INCLUDED 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.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- FINISH SMOOTH - SLOPE TO DRAIN
- MEASURED ALONG B.F. OF WING

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-217			
DRAWN BY MJH		PLANS CK'D. JLR	
SOUTH ABUTMENT DETAILS		SHEET 5	



SECTION THRU BODY

- 4" X 1/2" PREFORMED JOINT FILLER X ABUTMENT LENGTH
- ★ 3/4" CORK FILLER ON VERTICAL BEAM SEAT FACES.
- (A07) SUPPORT ABUTMENT ON HP 12 X 53 STEEL PILING, ESTIMATED 60'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 220 TONS PER PILE. PILE POINTS REQUIRED
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A17) 1/2" FILLER (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.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.



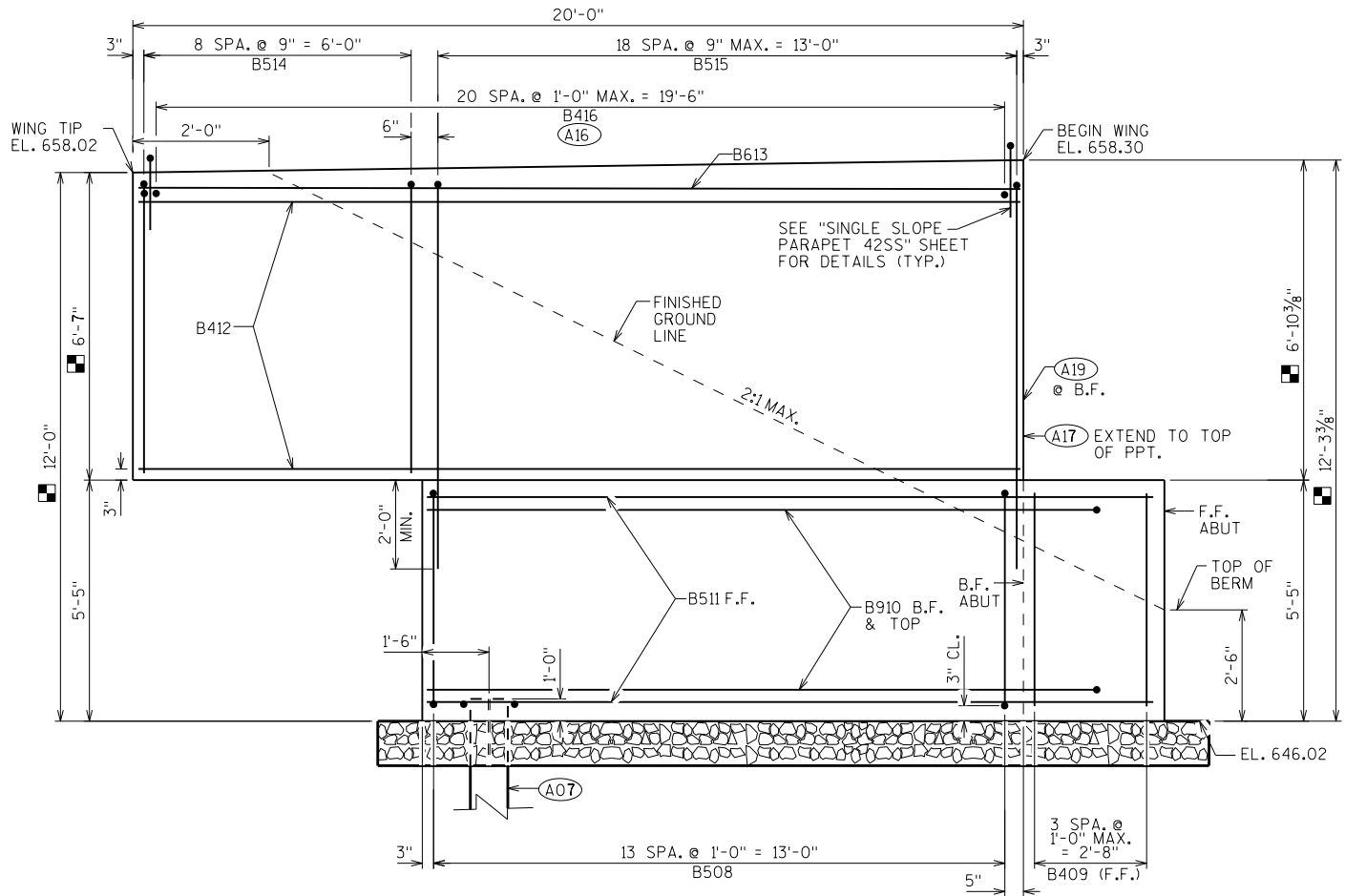
RODENT SHIELD DETAIL

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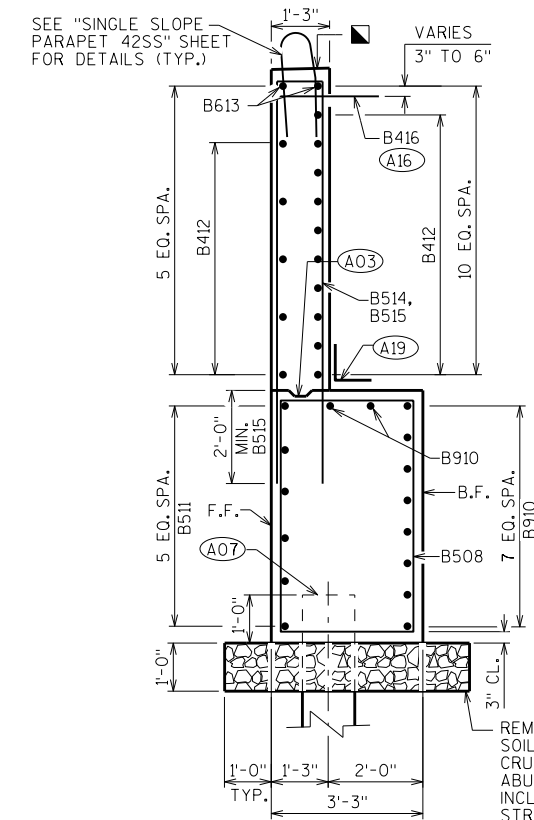
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-217			
DRAWN BY		MJH	PLANS CK'D. JLR
NORTH ABUTMENT		SHEET 6	

BILL OF BARS

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B501		65	16'-4"	X		BODY-STIRRUPS
B402		20	2'-3"			PILES - 2 PER BODY PILE
B403		10	28'-0"	X		PILES - 1 PER BODY PILE
B604		11	38'-2"			BODY - HORIZ. - F.F., TOP. & BOT.
B1005		16	24'-8"	X		BODY - HORIZ. - B.F.
B406		20	3'-11"	X		BODY - BTWN. BEAM SEATS
B407		10	5'-6"			BODY - BTWN. BEAM SEATS
B508	X	28	16'-6"	X		WINGS 3 & 4 - STIRRUPS
B409	X	8	5'-0"			BODY - VERT. - ENDS
B910	X	20	17'-7"	X		WINGS 3 & 4 - HORIZ. - B.F. - LOWER WINGS
B511	X	12	16'-4"			WINGS 3 & 4 - HORIZ.. - F.F. - LOWER WINGS
B412	X	30	19'-8"			WINGS 3 & 4 - HORIZ. - UPPER WINGS
B613	X	4	19'-8"			WINGS 3 & 4 - HORIZ. - UPPER WINGS - TOP
B514	X	18	13'-0"	X		WINGS 3 & 4 - VERT. -UPPER WINGS
B515	X	38	18'-2"	X		WINGS 3 & 4 - VERT. -UPPER WINGS
B416	X	42	2'-0"			WINGS 3 & 4 - SURFACE DRAIN ANCHORS

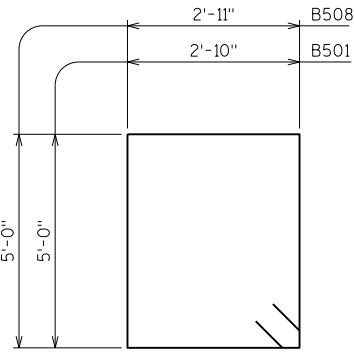


WING 3 ELEVATION
LOOKING AT FRONT FACE,
WING 4 SIMILAR

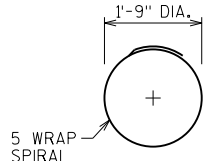


WING 3 SECTION
WING 4 SIMILAR

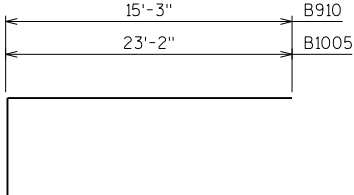
REMOVE 1'-0" OF EXISTING NATIVE SOIL AND PROVIDE 1'-0" OF SELECT CRUSHED MATERIAL BELOW SOUTH ABUTMENT AND WINGS. REMOVAL INCLUDED IN 'EXCAVATION FOR STRUCTURES BRIDGES B-22-217' BID ITEM.



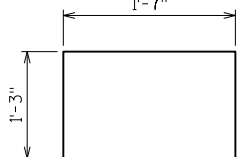
B501, B508



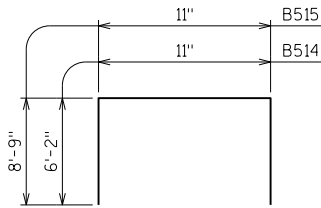
B403



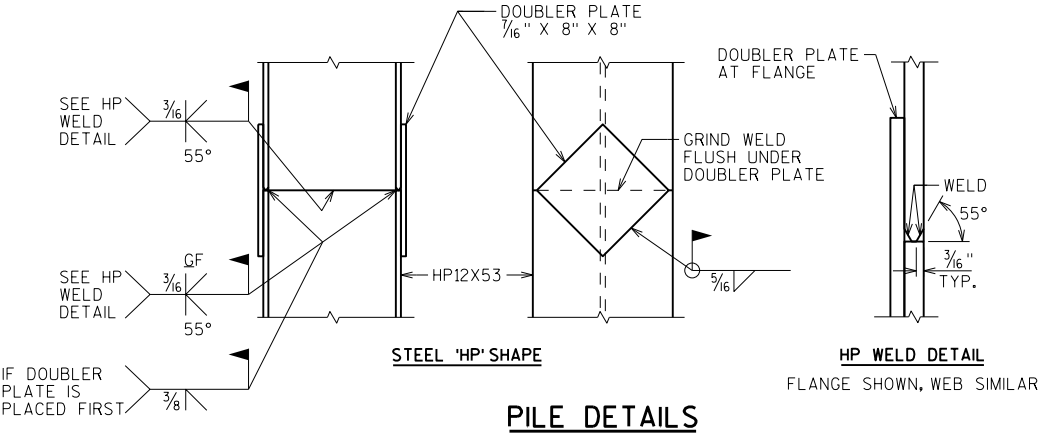
B1005, B910



B406



B514, B515



PILE DETAILS

- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A07) SUPPORT ABUTMENT ON HP 12 X 53 STEEL PILING, ESTIMATED 60'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 220 TONS PER PILE. PILE POINT REQ'D.
- (A16) A416 BARS SPACED @ 1'-0" CTRS. EMBED 1'-0" INTO WING CONC. LOCATE 3" DOWN FROM TOP OF WING @ BACKFACE TO 6" DOWN @ WING TIP.
- (A17) 1/2" FILLER (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.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- FINISH SMOOTH - SLOPE TO DRAIN
- MEASURED ALONG B.F. OF WING

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-217			
DRAWN BY		MJH	PLANS CK'D. JLR
NORTH ABUTMENT DETAILS		SHEET 7	

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE OUTSIDE 15" OF GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH. AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING THE OUTSIDE 15" OF THE TOP FLANGE.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS.

STRANDS SHALL BE FLUSH WITH END OF GIRDER. FOR GIRDER ENDS EMBEDDED COMPLETELY IN CONCRETE, END OF STRANDS SHALL BE COATED WITH NON-BITUMINOUS JOINT SEALER. FOR GIRDER ENDS THAT ARE FINALLY EXPOSED, COAT THE GIRDER ENDS, EXPOSED STRAND ENDS AND ALL NON-BONDING SURFACES WITHIN 2 FEET OF THE GIRDER ENDS WITH A NON-PIGMENTED EPOXY CONFORMING TO AASHTO M-235 TYPE III, GRADE 2, CLASS B OR C. THE EPOXY SHALL BE APPLIED AT LEAST 3 DAYS AFTER MOIST CURING HAS CEASED AND PRIOR TO THE APPLICATION OF THE SEALER.

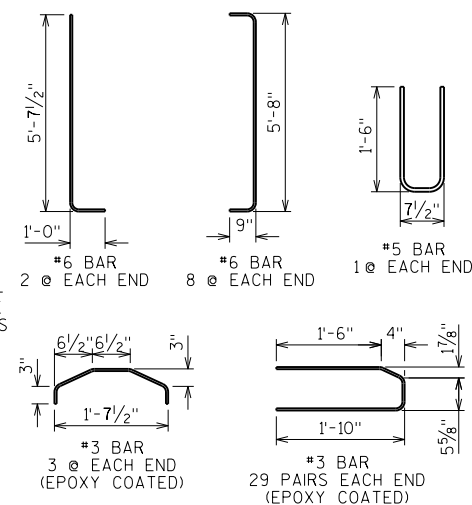
ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT.

AN EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A1064
MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT
SHOWN, UPON ACCEPTANCE OF THE STRUCTURES MAINTENANCE
SECTION, IF USED, WWF SUBSTITUTION DETAILS SHALL BE
SUBMITTED ELECTRONICALLY TO THE WISDOT FABRICATION
LIBRARY AND ACCEPTED PRIOR TO SHOP DRAWING SUBMITTAL.

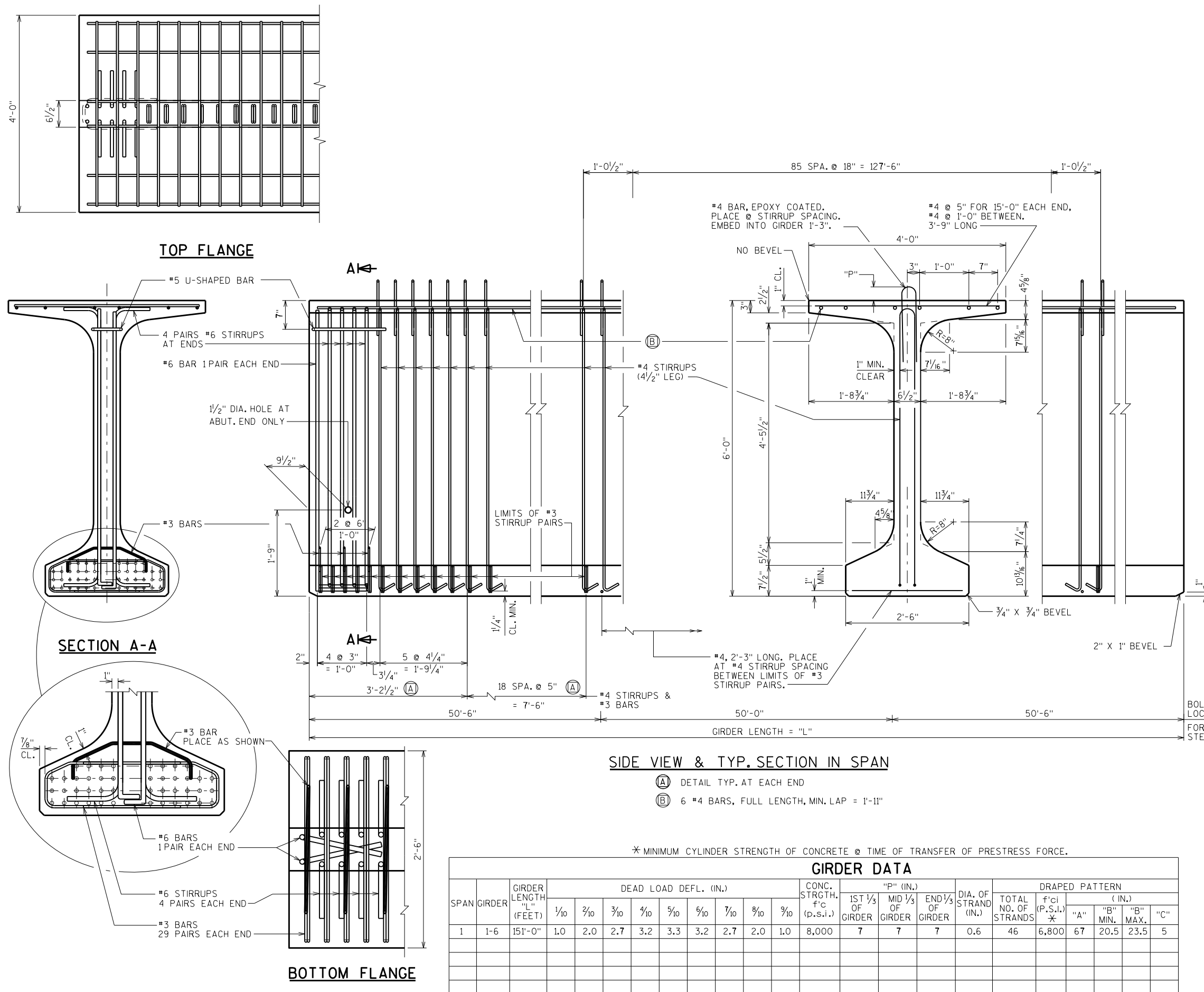
PRESTRESSING STRANDS SHALL BE (0.6" DIA.)-7 WIRE
LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF
270,000 PSI.

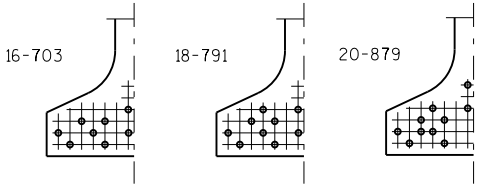
FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE
"STEEL DIAPHRAGM" SHEET.



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-217			
		DRAWN BY	PLANS CK'D.
		MJH	JLR
72W" PRESTRESSED GIRDER DETAILS 1		SHEET 8	

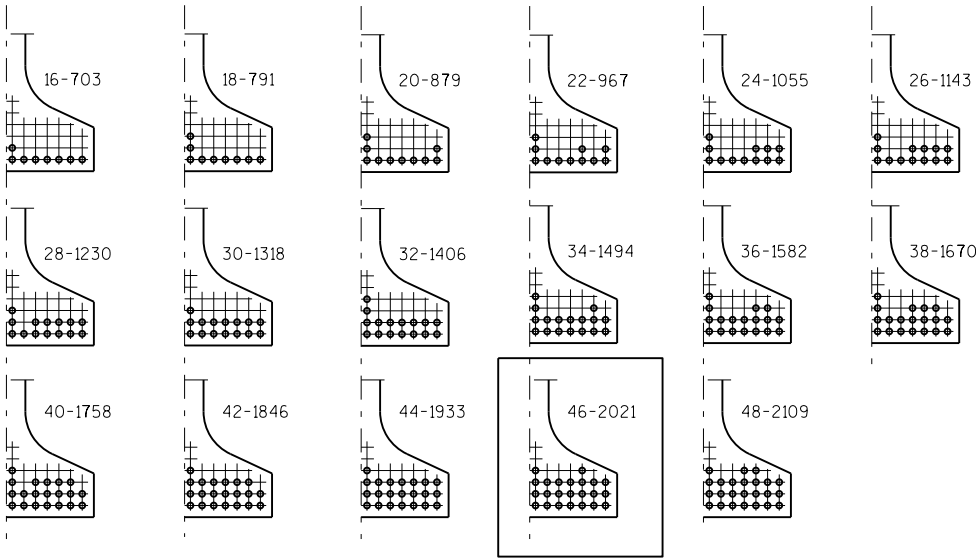
SCALE = 1.00





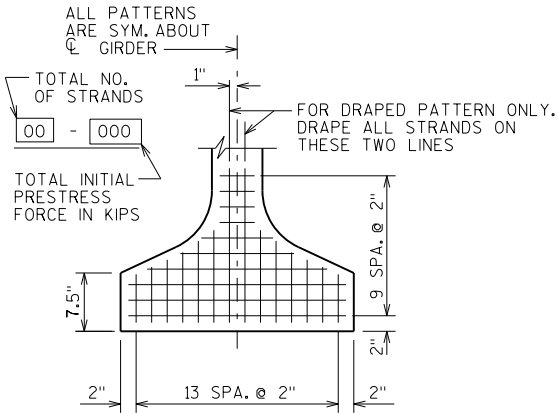
STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY
TO AVOID DRAPING OF STRANDS

0.6" DIA. STRANDS

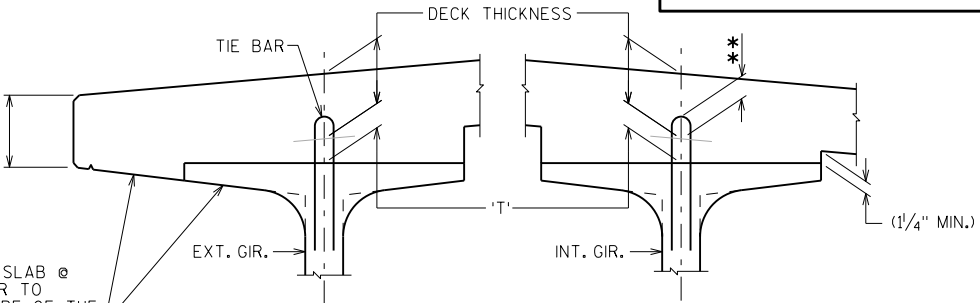


ARRANGEMENT AT $\frac{1}{4}$ SPAN - FOR GIRDERS WITH DRAPED STRANDS

0.6" DIA. STRANDS



TYP. STRAND PATTERN



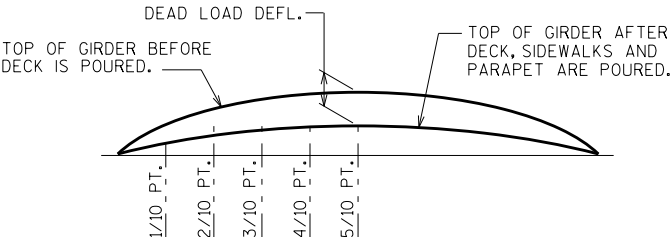
DECK HAUNCH DETAIL

IF 1/4" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR, THE PLAN DECK THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN 1/2" OR, ** IF 3" MINIMUM DECK EMBEDMENT OF TIE BAR CANNOT BE OBTAINED.

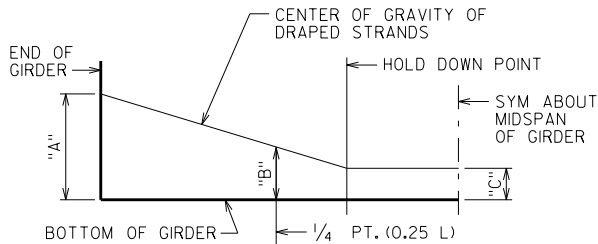
TO DETERMINE 'T', ELEV. OF TOP OF GIR'S, AT $\frac{1}{4}$ OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

- TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
- + DEAD LOAD DEFLECTION
- DECK THICKNESS
- = HAUNCH HEIGHT 'T'

NOTE: AN AVERAGE HAUNCH ('T') OF 2.5" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".



DEAD LOAD DEFLECTION DIAGRAM



DRAPED STRAND PROFILE

*THE THEORETICAL INITIAL CAMBER VALUE AT THE TIME OF STRAND RELEASE AT MIDSPAN MULTIPLIED BY A FACTOR OF 1.4 TO ACCOUNT FOR CAMBER GROWTH FROM THE TIME OF STRAND RELEASE TO JOBSITE PLACEMENT.

SPAN	CAMBER (IN.) *
1	4.58

THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T', USE ACTUAL GIRDER SHOTS.
THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-217			
DRAWN BY MJH		PLANS CK'D. JLR	
72W" PRESTRESSED GIRDER DETAILS 2		SHEET 9	

NOTES

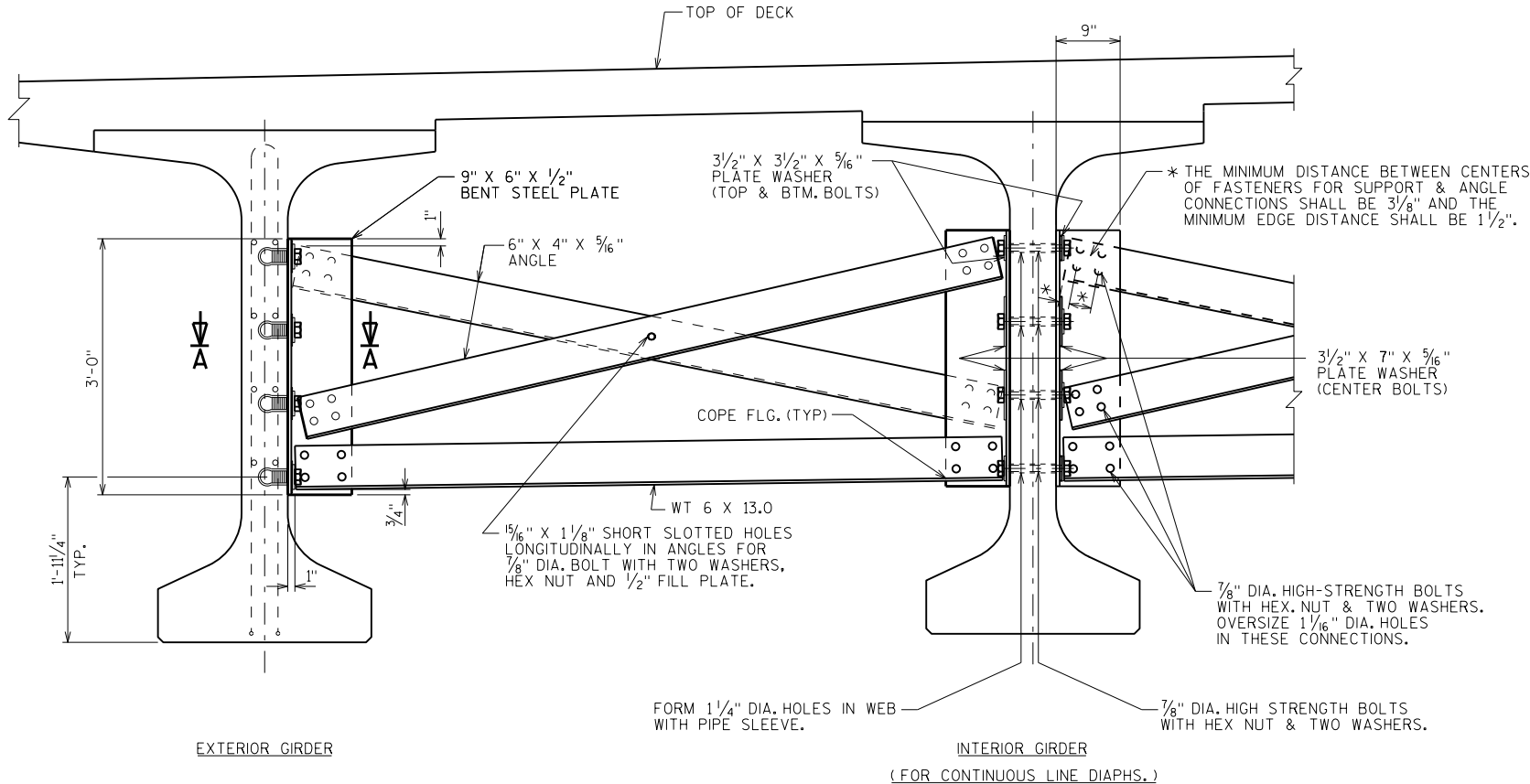
ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-22-217", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

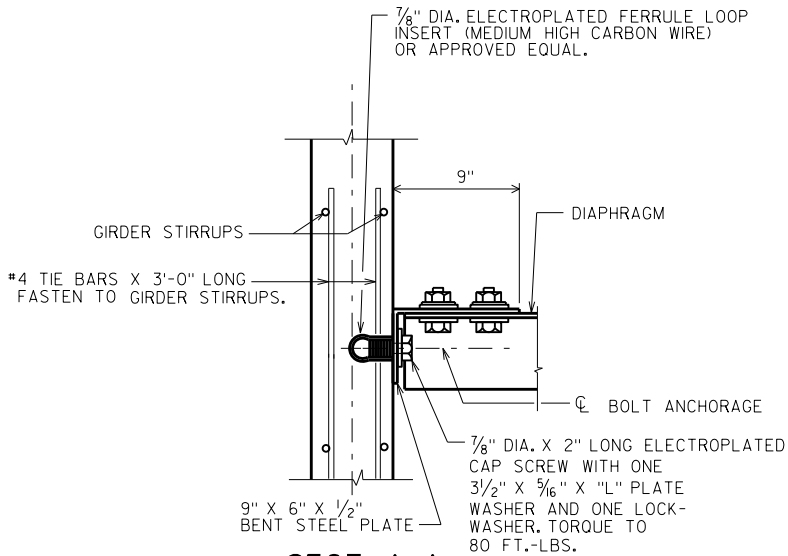
ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

ALL DIAPHRAGM MATERIAL INCLUDING BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AFTER FABRICATION.

STEEL DIAPHRAGM TO CONCRETE WEB CONNECTION SHALL BE SNUG-TIGHT PLUS 1/4 TURN, UNLESS NOTED OTHERWISE. HIGH STRENGTH BOLTS FOR WEB CONNECTION SHALL MEET THE REQUIREMENTS FOR ASTM A325 OR ASTM A449.



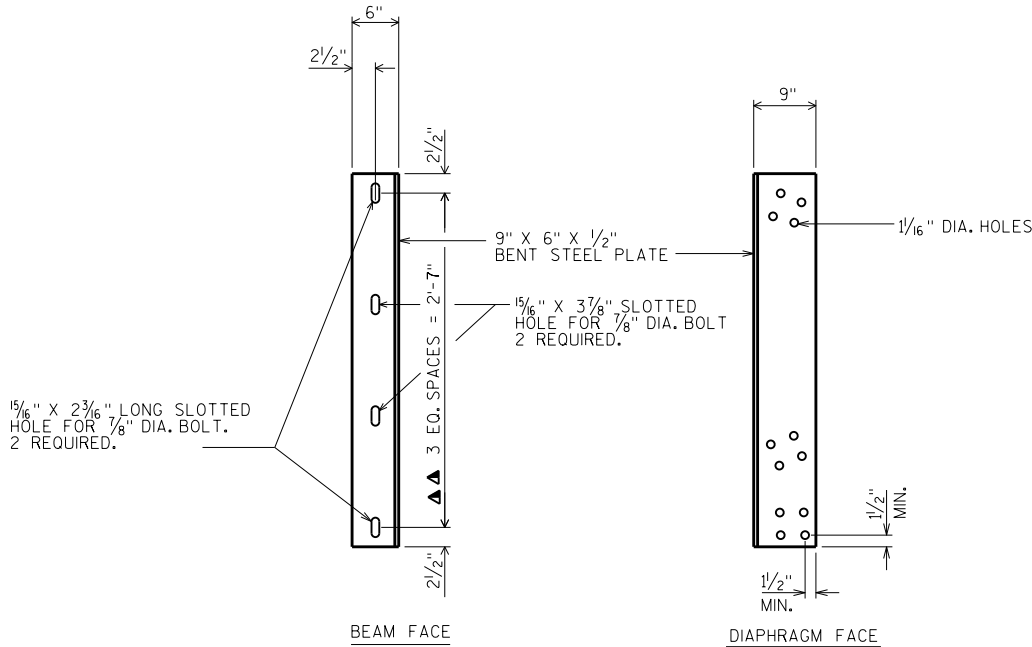
PART TRANSVERSE SECTION AT DIAPHRAGM
(72W" PRESTRESSED GIRDER)



SECT. A-A

(FOR EXTERIOR ATTACHMENT)

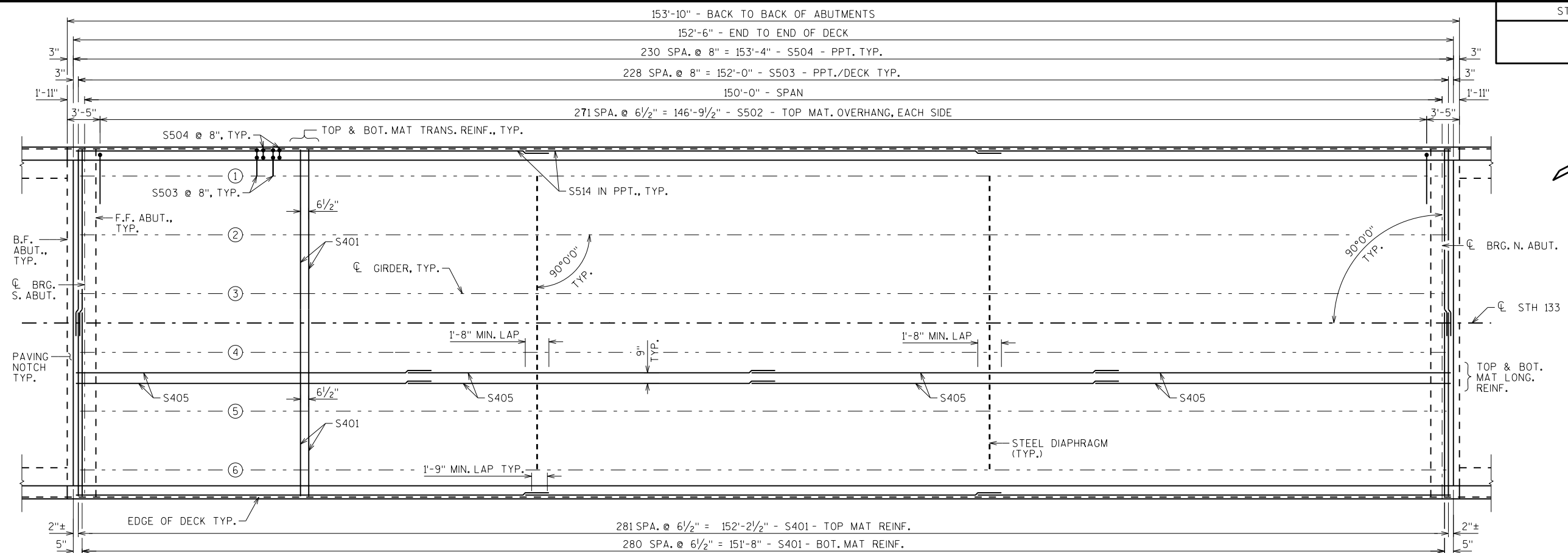
"L" = 3 1/2"; TOP AND BOTTOM BOLTS
"L" = 7"; CENTER BOLTS



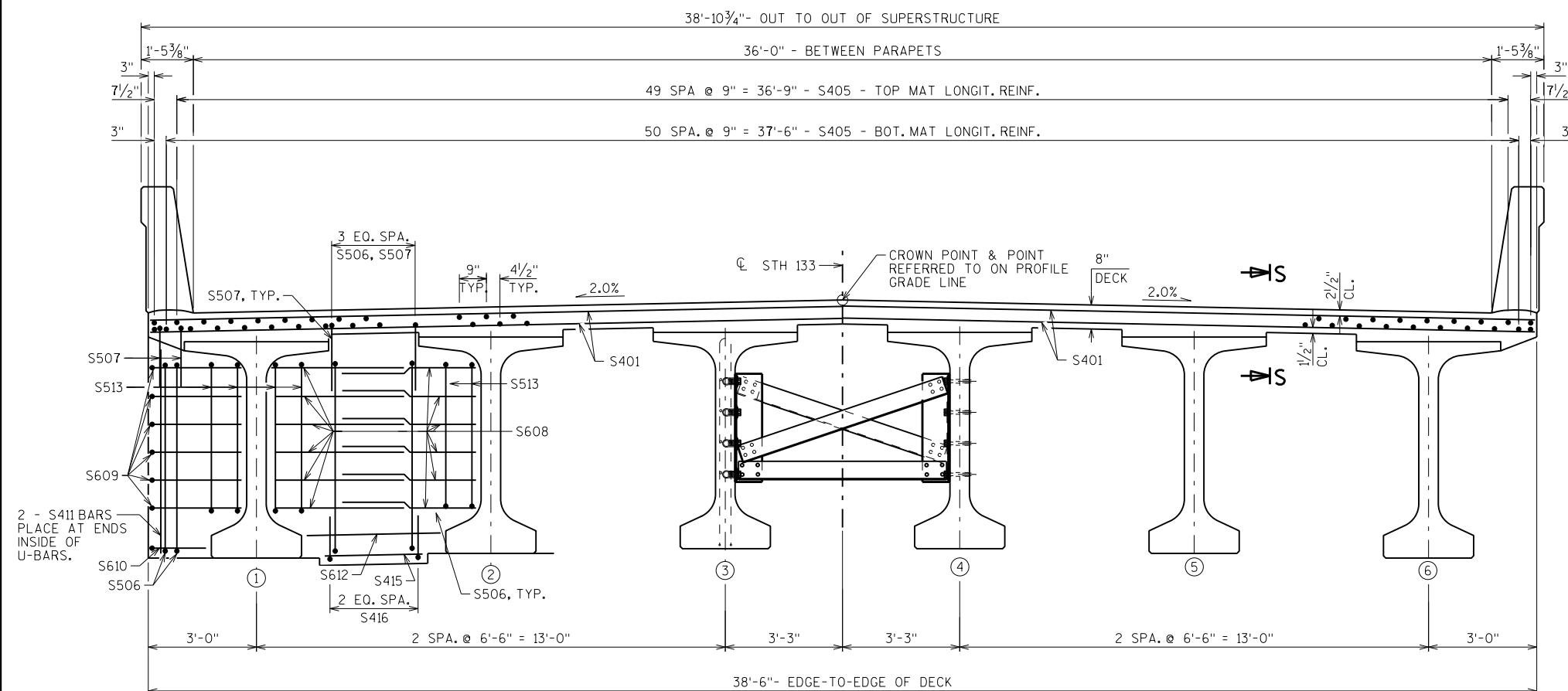
DIAPHRAGM SUPPORT

▲▲ BOLT HOLES SHALL BE SPACED SO AS TO MISS PRESTRESSED STRANDS IN CONCRETE BEAMS.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-217			
DRAWN BY MJH		PLANS CK'D. JLR	
STEEL DIAPHRAGM			SHEET 10

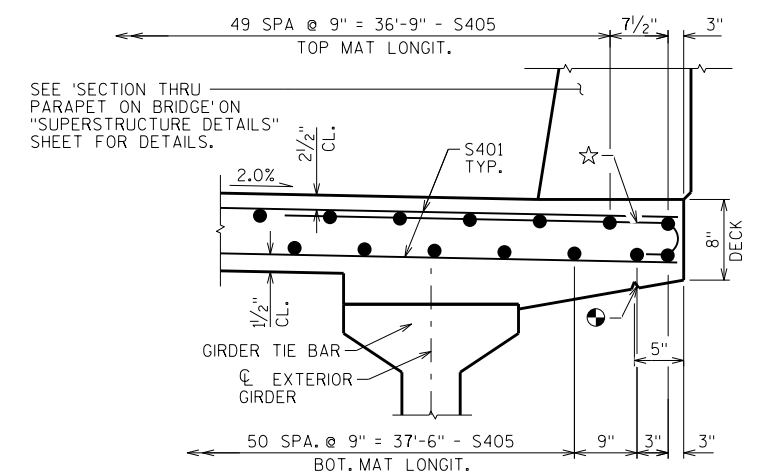


PLAN



CROSS SECTION THRU DECK

LOOKING UPSTATION

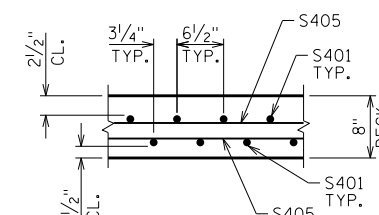


EDGE OF DECK DETAIL

- ⊙ 3/4" V-GROOVE. EXTEND V-GROOVE TO
6" FROM F.F. OF ABUT. DIAPHRAGM

V-GROVES ARE REQUIRED.

- ☆ S502 @ 6 1/2", LAP WITH EVERY S401
TOP TRANSVERSE BAR BTWN. FRONT FACES
OF ABUT. DIAPHRAGM.



SECTION S-S

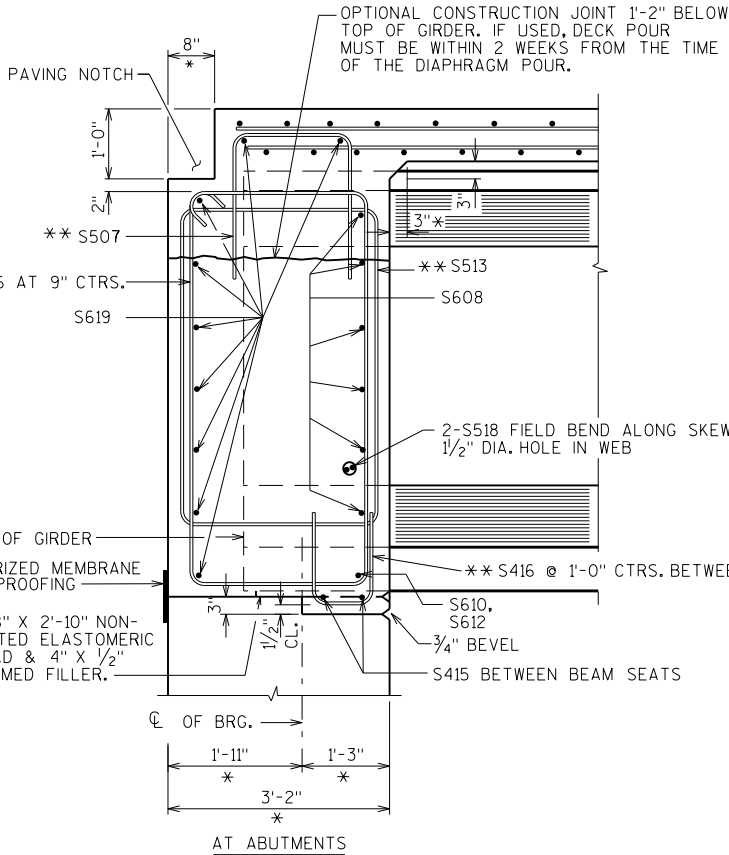
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-217			
DRAWN BY		PLANS CK'D.	JLR
SUPERSTRUCTURE		SHEET 11	

SCALE = 4.00

BILL OF BARS

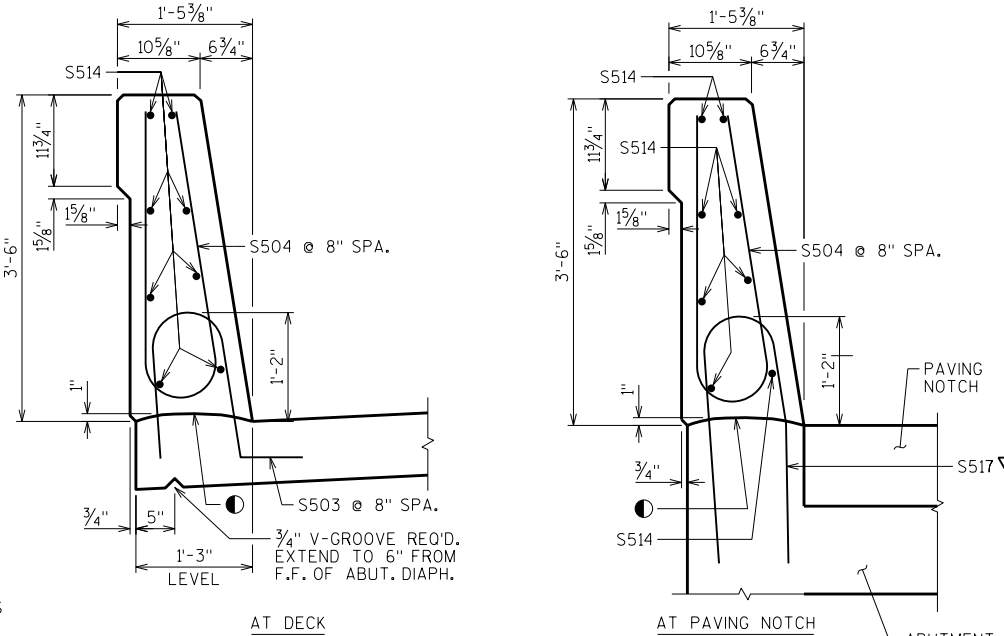
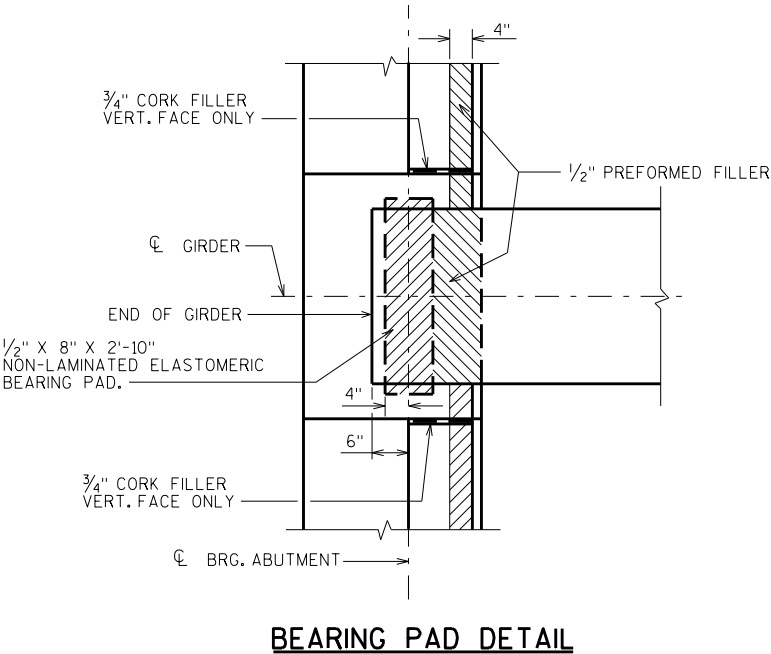
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

BAR MARK	COAT	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
S401	X	563	38'-2"			TOP & BOT. MAT - TRANSVERSE
S502	X	544	4'-11"	X		TOP MAT - TRANSVERSE - EDGE OF DECK
S503	X	458	4'-5"	X		DECK & PPT. - VERT.
S504	X	462	6'-8"	X		PPT. - VERT.
S405	X	420	39'-9"			TOP & BOT. MAT. - LONGITUDINAL
S506	X	48	17'-5"	X		ABUT. DIAPH. - VERT. - STIRRUP
S507	X	48	6'-1"	X		ABUT. DIAPH. - VERT.
S608	X	120	3'-10"			ABUT. DIAPH. - HORIZ. F.F.
S609	X	24	7'-0"	X		ABUT. DIAPH. - HORIZ. ENDS
S610	X	4	5'-3"	X		ABUT. DIAPH. - HORIZ. ENDS
S411	X	8	6'-0"			ABUT. DIAPH. - VERT. - ENDS
S612	X	10	3'-8"			ABUT. DIAPH. - HORIZ. F.F.
S513	X	48	15'-8"	X		ABUT. DIAPH. - VERT. UNDER FLANGES
S514	X	48	52'-11"			PPT. - HORIZ.
S415	X	20	2'-8"			ABUT. DIAPH. - HORIZ. - BTW. BEAM SEATS
S416	X	40	2'-9"	X		ABUT. DIAPH. - VERT. - BTW. BEAM SEATS
S517	X	4	5'-10"	X		PPT. - VERT. - AT PAVING NOTCH
S518	X	24	6'-0"			ABUT. DIAPH. - HORIZ. - THRU GIR.
S619	X	18	38'-2"			ABUT. DIAPH. - HORIZ.

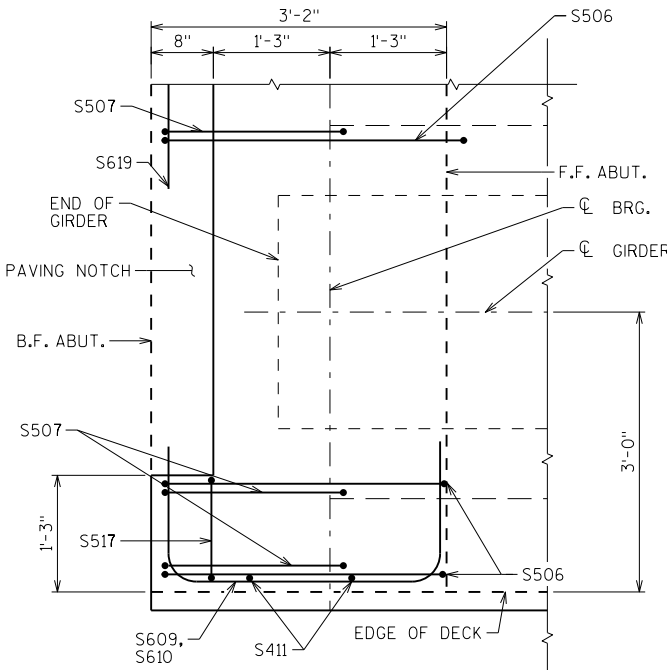


PART LONGIT. SECTION

- * DIMENSION IS TAKEN NORMAL TO ϕ SUBSTRUCTURE UNITS.
- ** BARS PLACED PARALLEL TO GIRDERS SPACING PERPENDICULAR TO ϕ GIRDERS



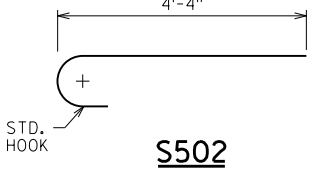
SECTION THRU PARAPET



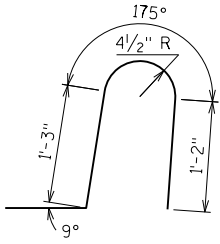
TYPICAL CORNER DIAPHRAGM PLAN

TOP OF DECK ELEVATIONS

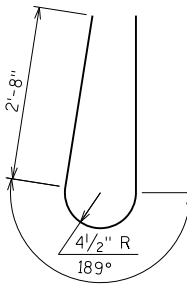
	C/L S. ABUT.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	C/L N. ABUT.
W. EOD	659.57	659.51	659.44	659.35	659.25	659.13	659.00	658.85	658.69	658.51	658.32
GIRDER 1	659.61	659.55	659.47	659.39	659.28	659.17	659.03	658.89	658.72	658.55	658.36
GIRDER 2	659.74	659.68	659.60	659.52	659.41	659.30	659.16	659.02	658.85	658.68	658.49
GIRDER 3	659.87	659.81	659.73	659.65	659.54	659.43	659.29	659.15	658.98	658.81	658.62
C/L STH 133	659.93	659.87	659.80	659.71	659.61	659.49	659.36	659.21	659.05	658.87	658.68
GIRDER 4	659.87	659.81	659.73	659.65	659.54	659.43	659.29	659.15	658.98	658.81	658.62
GIRDER 5	659.74	659.68	659.60	659.52	659.41	659.30	659.16	659.02	658.85	658.68	658.49
GIRDER 6	659.61	659.55	659.47	659.39	659.28	659.17	659.03	658.89	658.72	658.55	658.36
E. EOD	659.57	659.51	659.44	659.35	659.25	659.13	659.00	658.85	658.69	658.51	658.32



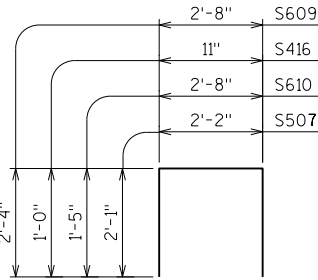
S502



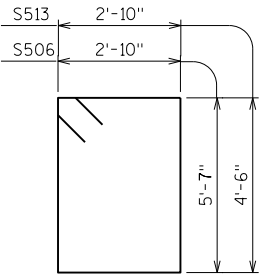
S503



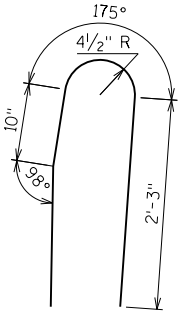
S504



S507, S609, S610, S416



S506, S513



S517

- CONST. JOINT - STRIKE OFF AS SHOWN
- ▽ S517 BARS TO BE TIED TO DIAPHRAGM STEEL BEFORE DIAPHRAGM IS POURED.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-217			
DRAWN BY		MJH	PLANS CK'D. JLR
SUPERSTRUCTURE DETAILS		SHEET 12	

BILL OF BARS

FOR ABUTMENT PARAPETS

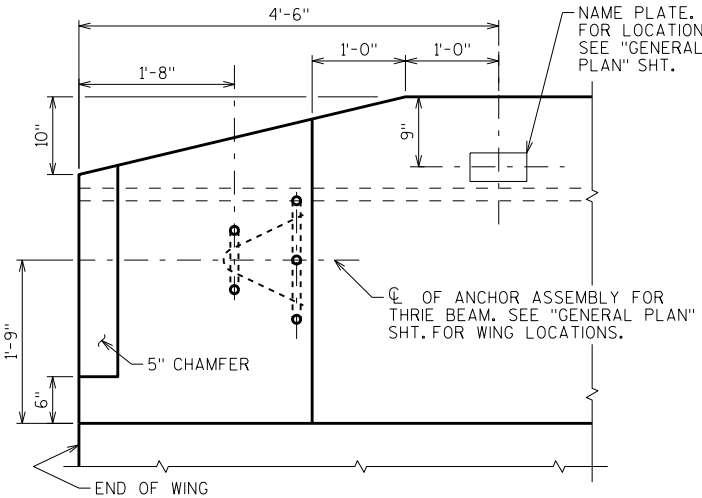
BAR MARK	COUNT	S. ABUT.	N. ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	34	34	5'-10"	X		PARAPET VERT.
R502	X	34	34	6'-8"	X		PARAPET VERT.
R503	X	24	24	3'-0"	X		PARAPET VERT.
R504	X	34	34	5'-7"	X		PARAPET VERT.
R505	X	10	10	6'-5"	X		PARAPET VERT.
R506	X	12	12	6'-6"	X		PARAPET VERT.
R507	X	2	2	19'-6"	X		PARAPET HORIZ.
R508	X	10	10	19'-8"			PARAPET HORIZ.
R509	X	12	12	5'-5"	X	▲	PARAPET VERT.
R510	X	4	4	19'-6"	X		PARAPET HORIZ.

▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

BAR SERIES TABLE

BAR MARK	NO. REQ'D	LENGTH
R509	4 SERIES OF 6	4'-9" TO 6'-1"

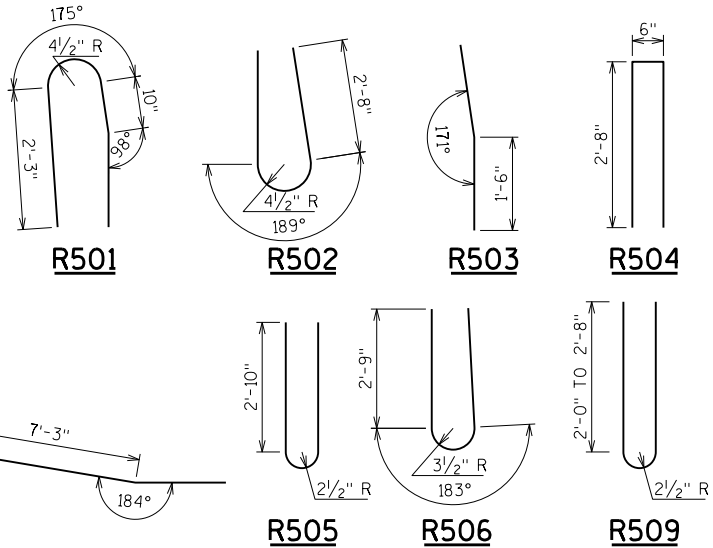
BUNDLE AND TAG EACH SERIES SEPARATELY.



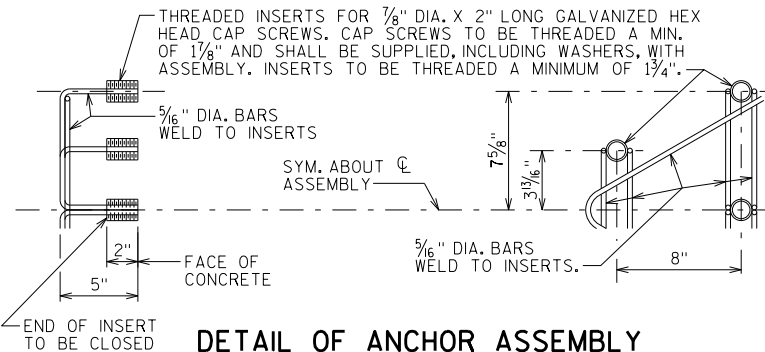
PARAPET END TREATMENT DETAIL

LOOKING AT INSIDE FACE OF PARAPET

OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF. THRU THE JOINT, LAP LONGIT. BARS A MIN. OF 1'-9". MIN. JOINT SPACING OF 80'-0". DEFINE CONST. JOINT WITH A 3/4" - 1" V-GROOVE.



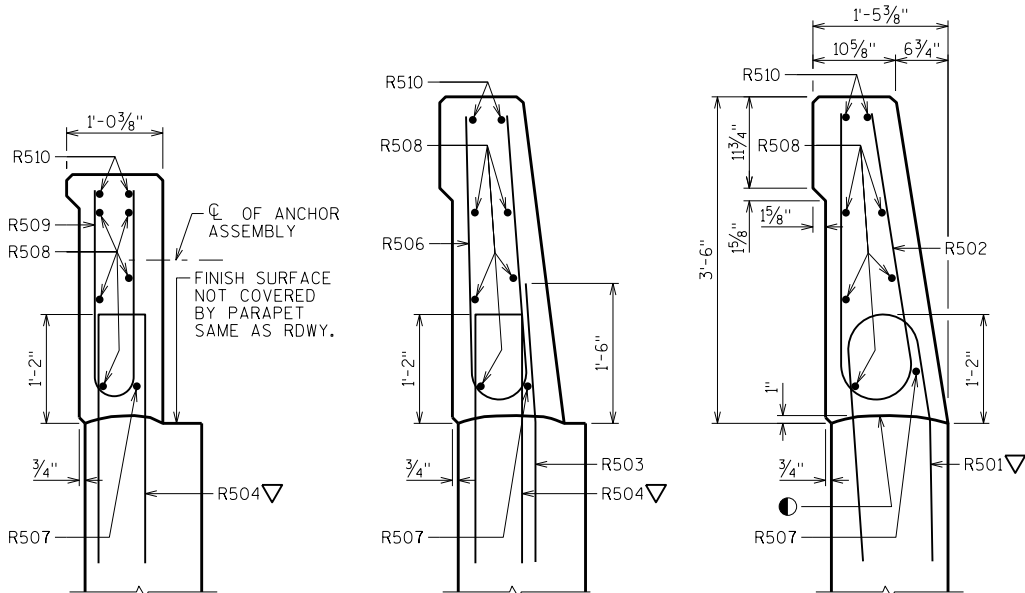
■ BENCH MARK CAP (WHEN SUPPLIED). AVOID PLACING A BENCH MARK CAP BELOW A RAIL OR FENCE SYSTEM THAT IS ATTACHED TO THE TOP OF THE PARAPET.



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

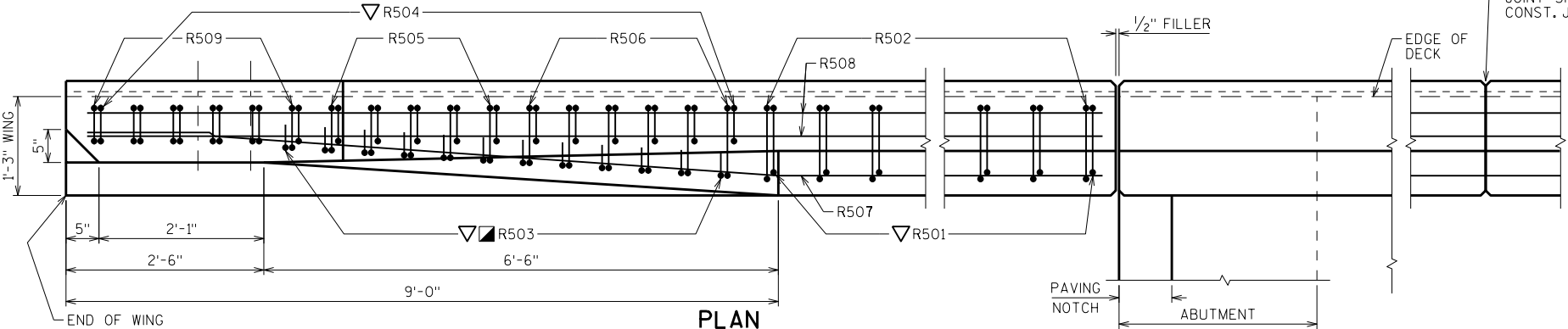
ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.



SECTION A-A

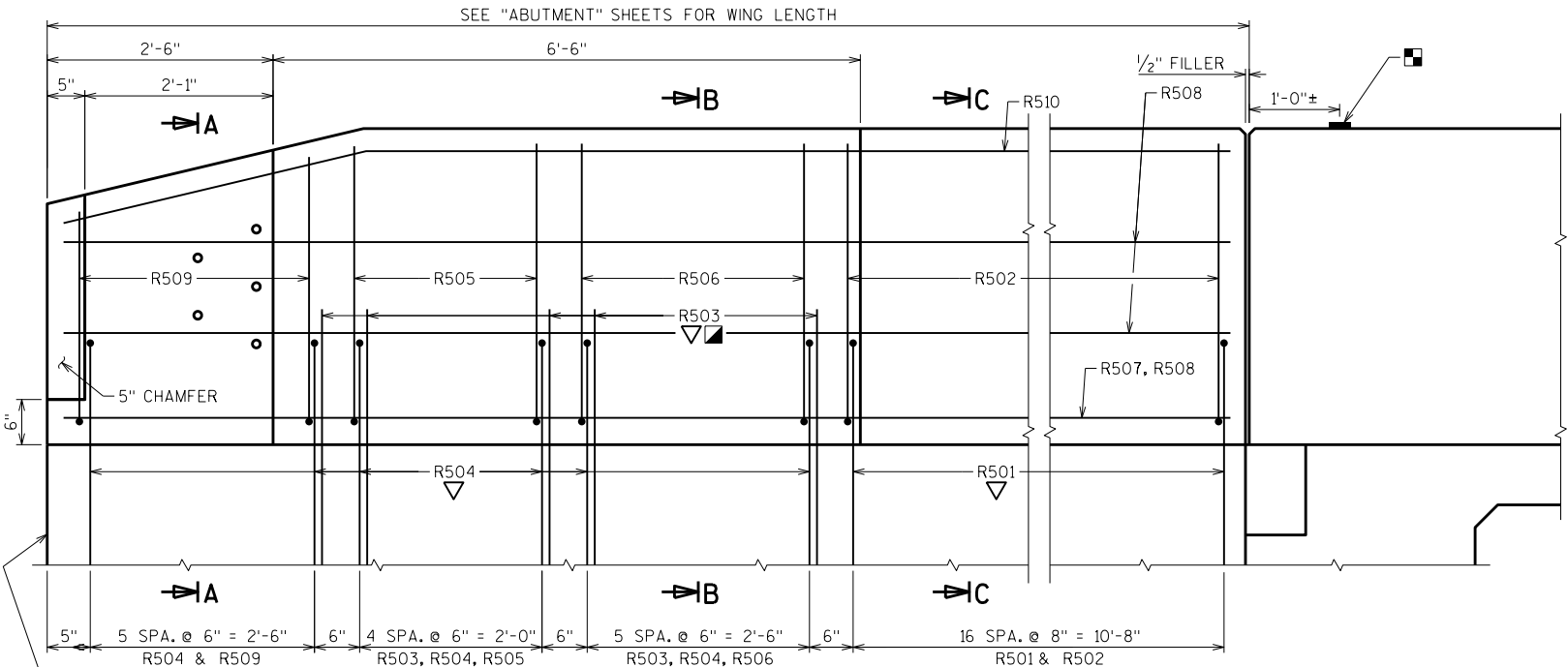
SECTION B-B

SECTION C-C



PLAN

SW CORNER SHOWN, OTHERS SIMILAR



INSIDE ELEVATION

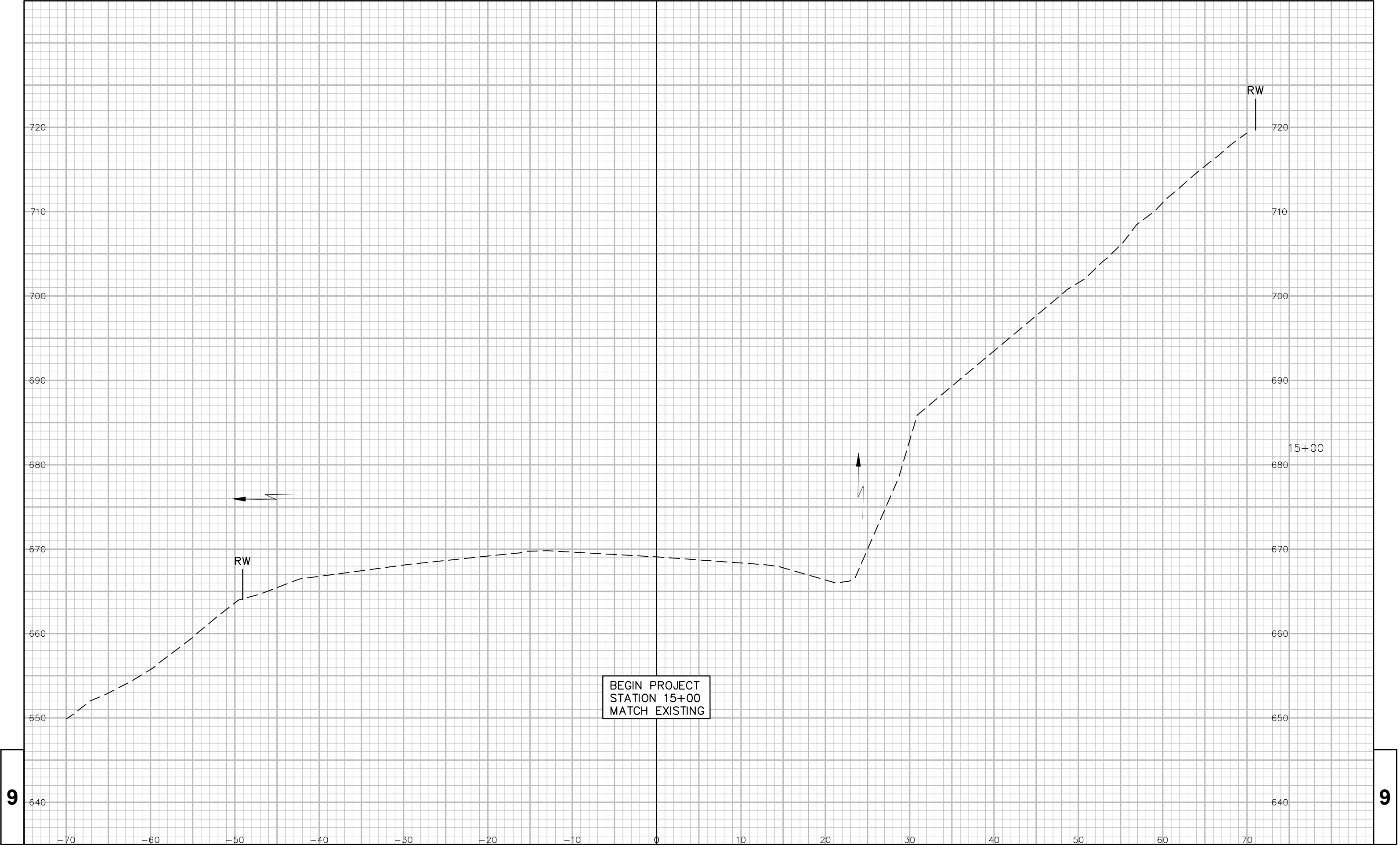
SW CORNER SHOWN, OTHERS SIMILAR

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-22-217			
DRAWN BY		MJH	PLANS CK'D. JLR
SINGLE SLOPE PARAPET 42SS		SHEET 13	

EARTHWORK - MAINLINE

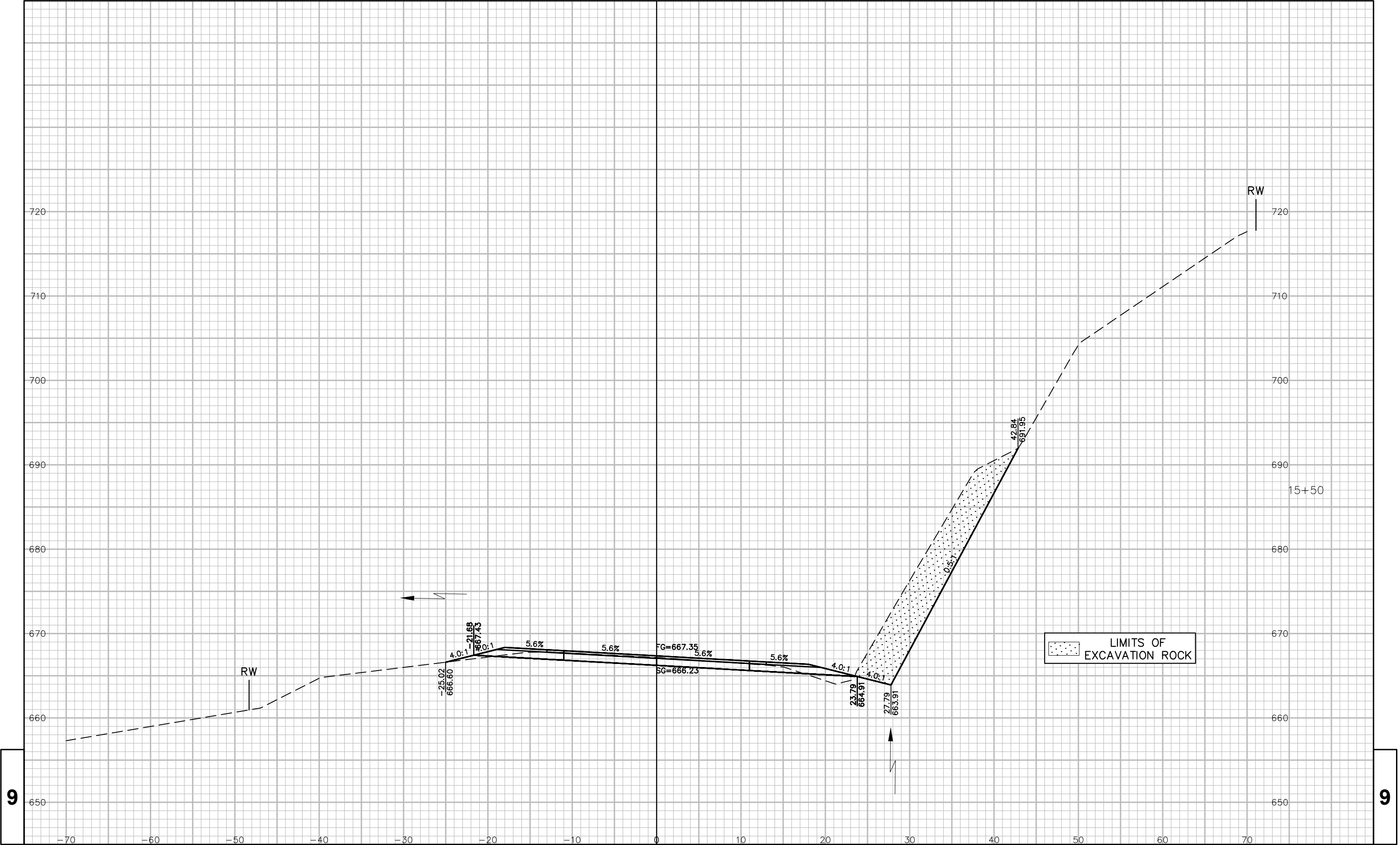
STATION	AREA (SF)				INCREMENTAL VOLUME (CY)							CUMULATIVE VOLUME (CY)				
	CUT	ROCK CUT	MARSH	FILL	CUT NOTE 1	ROCK CUT NOTE 2	MARSH CUT NOTE 3	FILL NOTE 4	ROCK (10%) NOTE 5	REDUCED MARSH (60%) NOTE 6	FILL (25%) NOTE 7	CUT 1.00 NOTE 1	ROCK CUT NOTE 2	FILL NOTE 4	FILL (25%) NOTE 7	MASS ORDINATE NOTE 8
15+00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15+50	26	113	0	5	24	105	0	5	116	0	-139	24	116	5	-139	163
16+00	23	157	0	10	45	249	0	14	274	0	-325	69	390	19	-464	533
16+50	6	99	0	264	27	237	0	254	260	0	-8	96	650	273	-472	568
17+00	30	20	60	708	33	110	56	900	121	35	930	129	771	1173	458	-329
17+50	0	0	25	355	28	19	79	980	21	49	1137	157	792	2153	1595	-1438
18+00	14	0	17	215	13	0	39	528	0	23	631	170	792	2681	2226	-2056
18+50	0	0	21	231	13	0	35	413	0	21	490	183	792	3094	2716	-2533
19+00	0	0	32	361	0	0	49	548	0	29	649	183	792	3642	3365	-3182
19+50	7	0	25	326	6	0	53	636	0	32	755	189	792	4278	4120	-3931
19+90	15	0	0	313	16	0	19	473	0	11	578	205	792	4751	4698	-4493
19+90	0	0	0	0	0	0	0	0	0	0	0	205	792	4751	4698	-4493
21+44	0	0	0	0	0	0	0	0	0	0	0	205	792	4751	4698	-4493
21+44	80	0	0	0	0	0	0	0	0	0	0	205	792	4751	4698	-4493
21+50	81	0	0	0	18	0	0	0	0	0	0	223	792	4751	4698	-4475
22+00	62	0	0	198	132	0	0	183	0	0	229	355	792	4934	4927	-4572
22+50	49	0	0	275	103	0	0	438	0	0	548	458	792	5372	5475	-5017
23+00	40	0	0	184	82	0	0	425	0	0	531	540	792	5797	6006	-5466
23+50	38	0	0	96	72	0	0	259	0	0	324	612	792	6056	6330	-5718
23+75	0	0	0	0	18	0	0	44	0	0	55	630	792	6100	6385	-5755
MAINLINE COLUMN SUBTOTALS =					630	720	330	6100	792	200	6385					

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - ROCK CUT	ROCK EXCAVATION
3 - MARSH CUT	MARSH EXCAVATION
4 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
5 - ROCK (10%)	(ROCK CUT)*1.10
6 - REDUCED MARSH (60%)	(MARSH CUT)*0.6
7 - FILL 25%	(UNEXPANDED FILL)*1.25
8 - MASS ORDINATE	CUT + ROCK (10%) + REDUCED MARSH (60%) - FILL (25%)



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PROJECT NO: 5616-05-81

HWY: STH 133

COUNTY: GRANT

CROSS SECTIONS: MAINLINE

SHEET

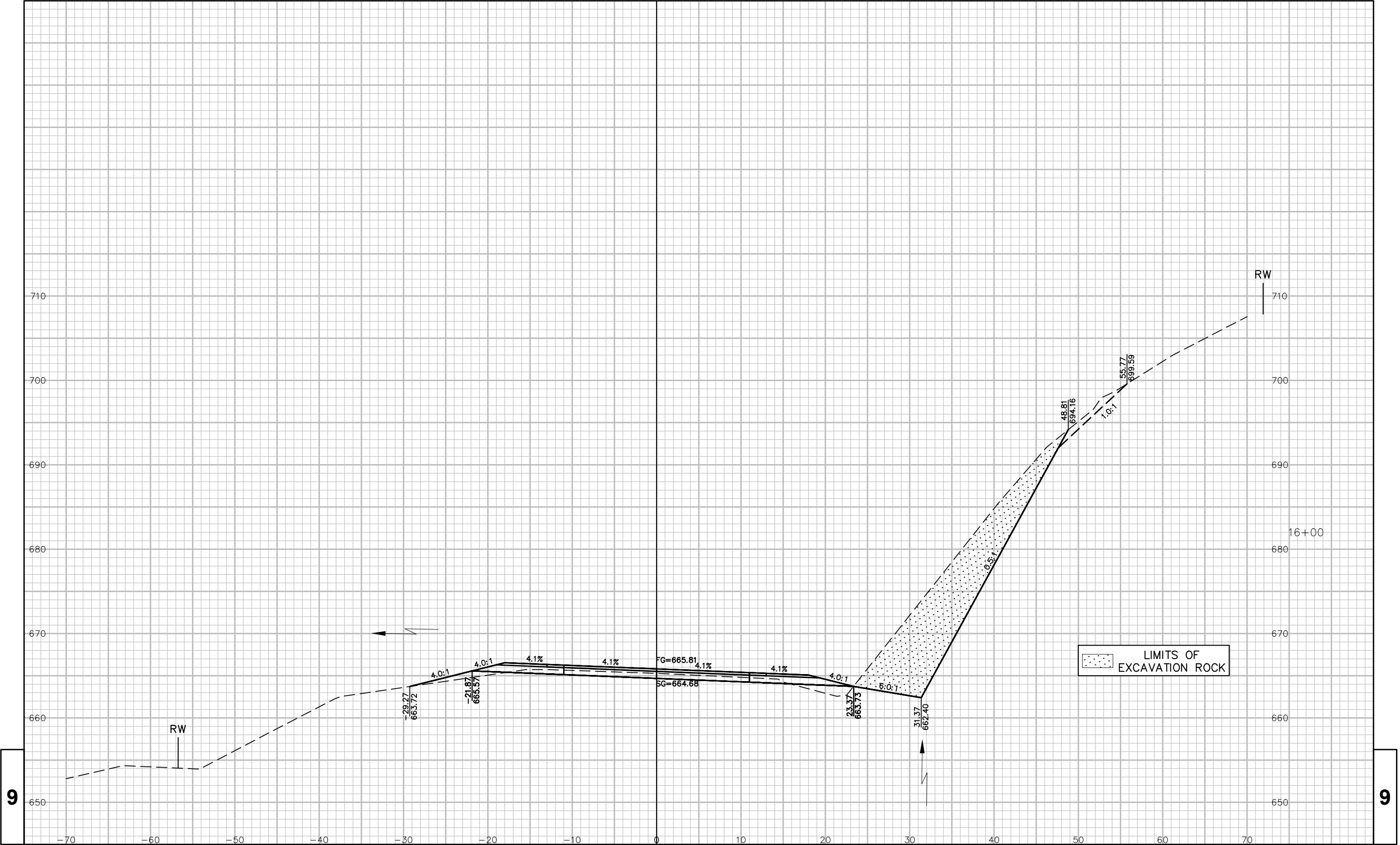
E

FILE NAME : S:\PROJECTS\W11582 STH 133 GRANT CO B-22-20\DESIGN\CORRIDORS\W11582_CORRIDOR.DWG
LAYOUT : MAINLINE - (2)

PLOT DATE : 4/6/2021
PLOT TIME : 2:30:30 PM

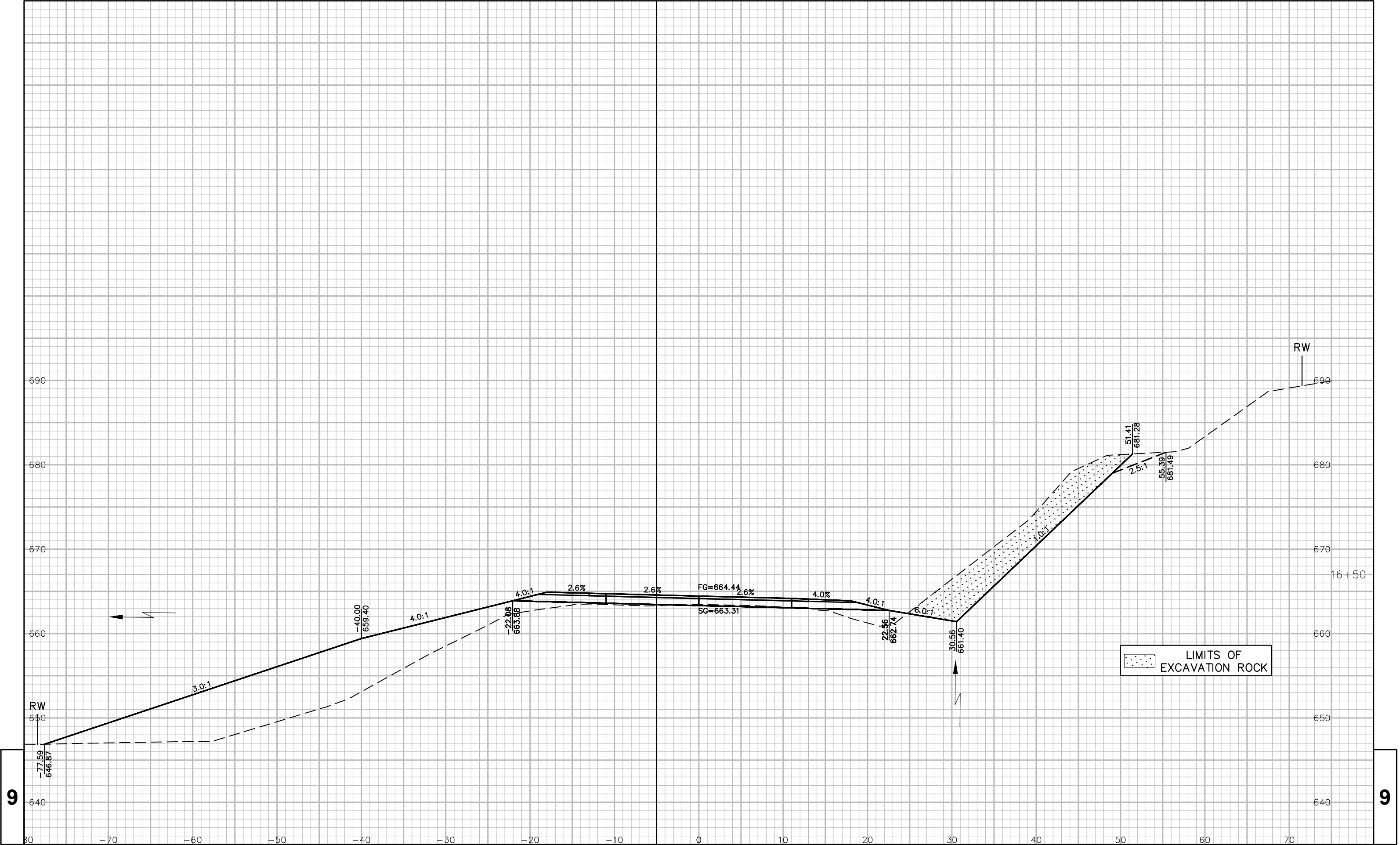
PLOT BY : KARTER ZAJICEK

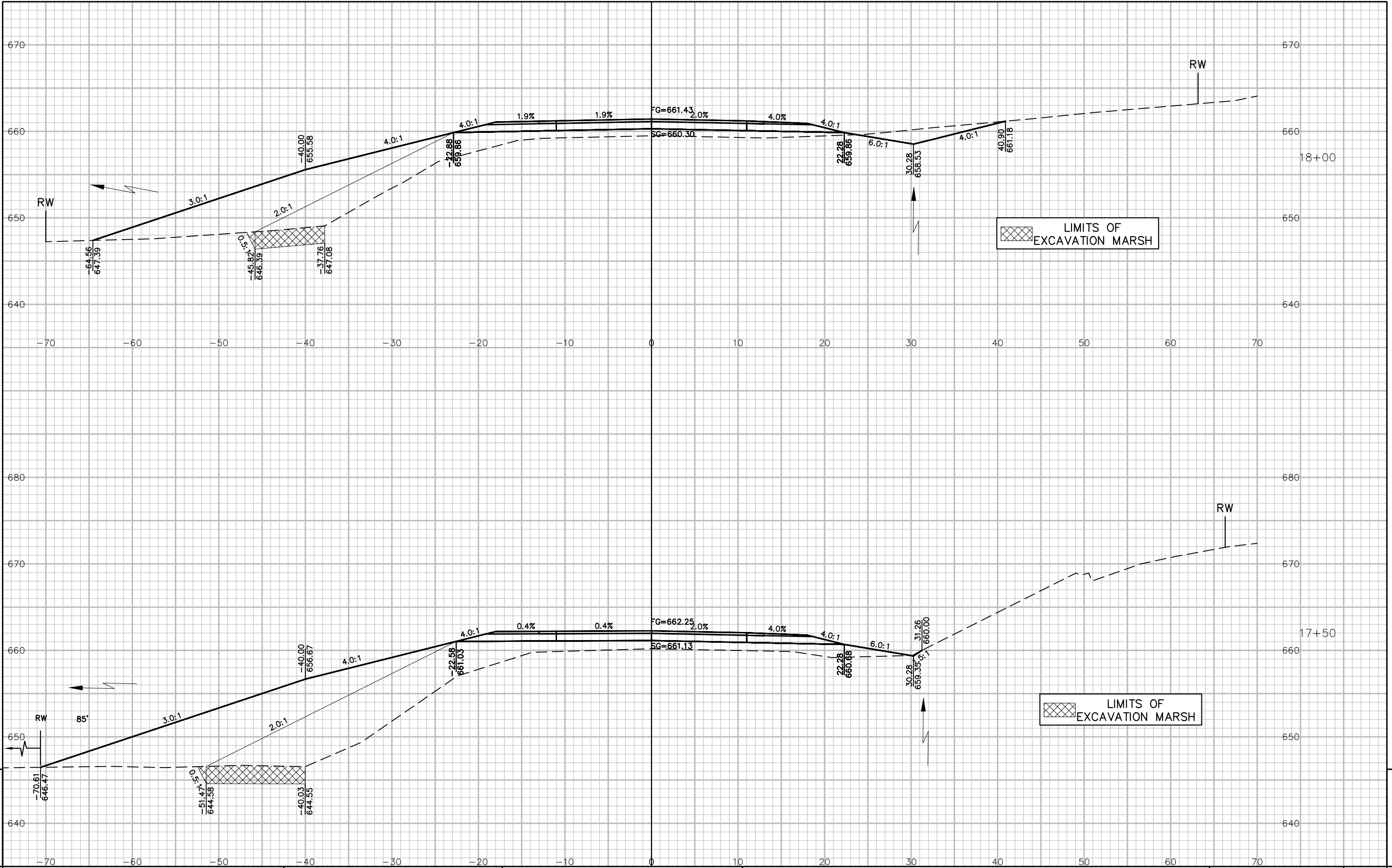
PLOT SCALE : 1" = 1'

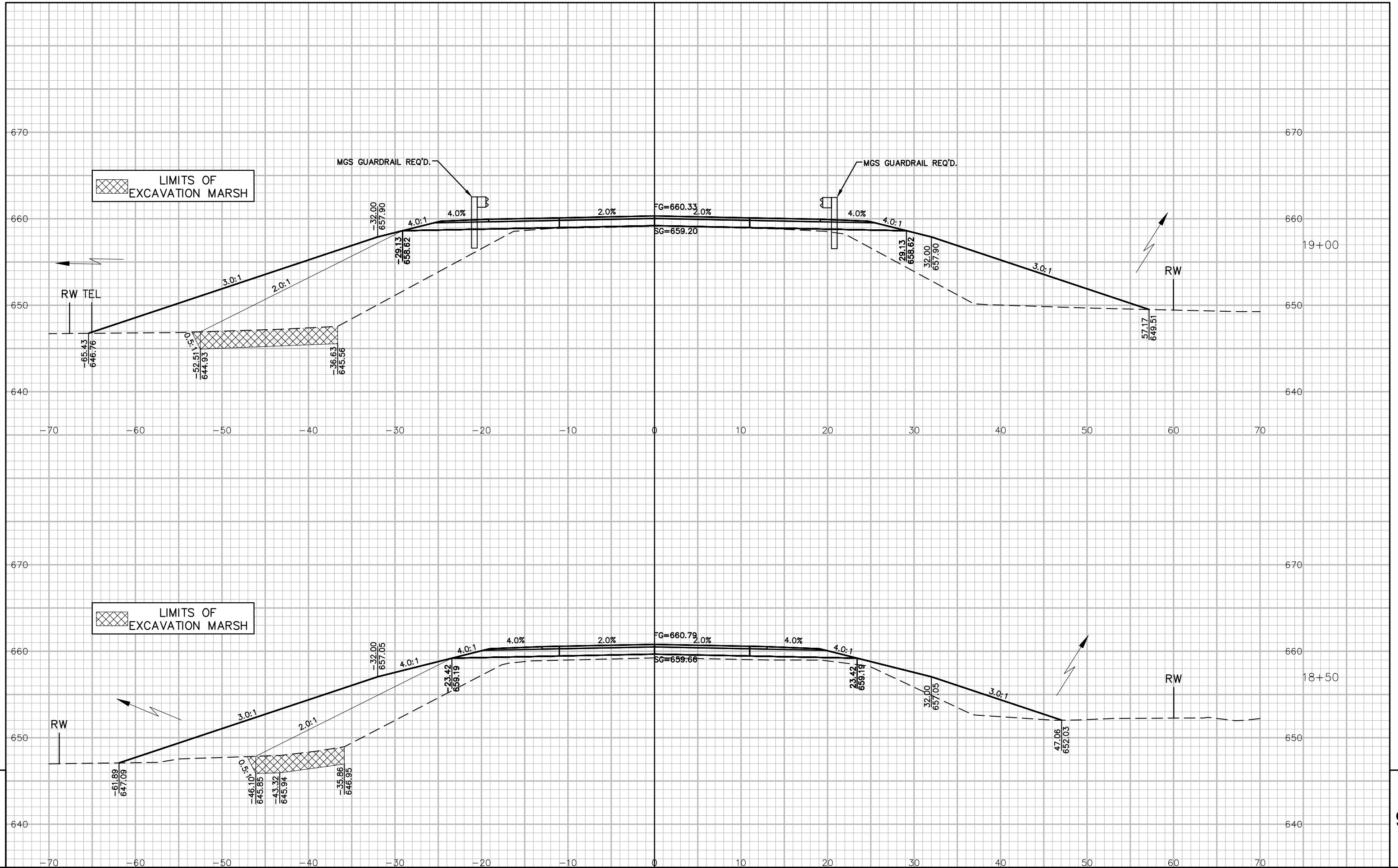


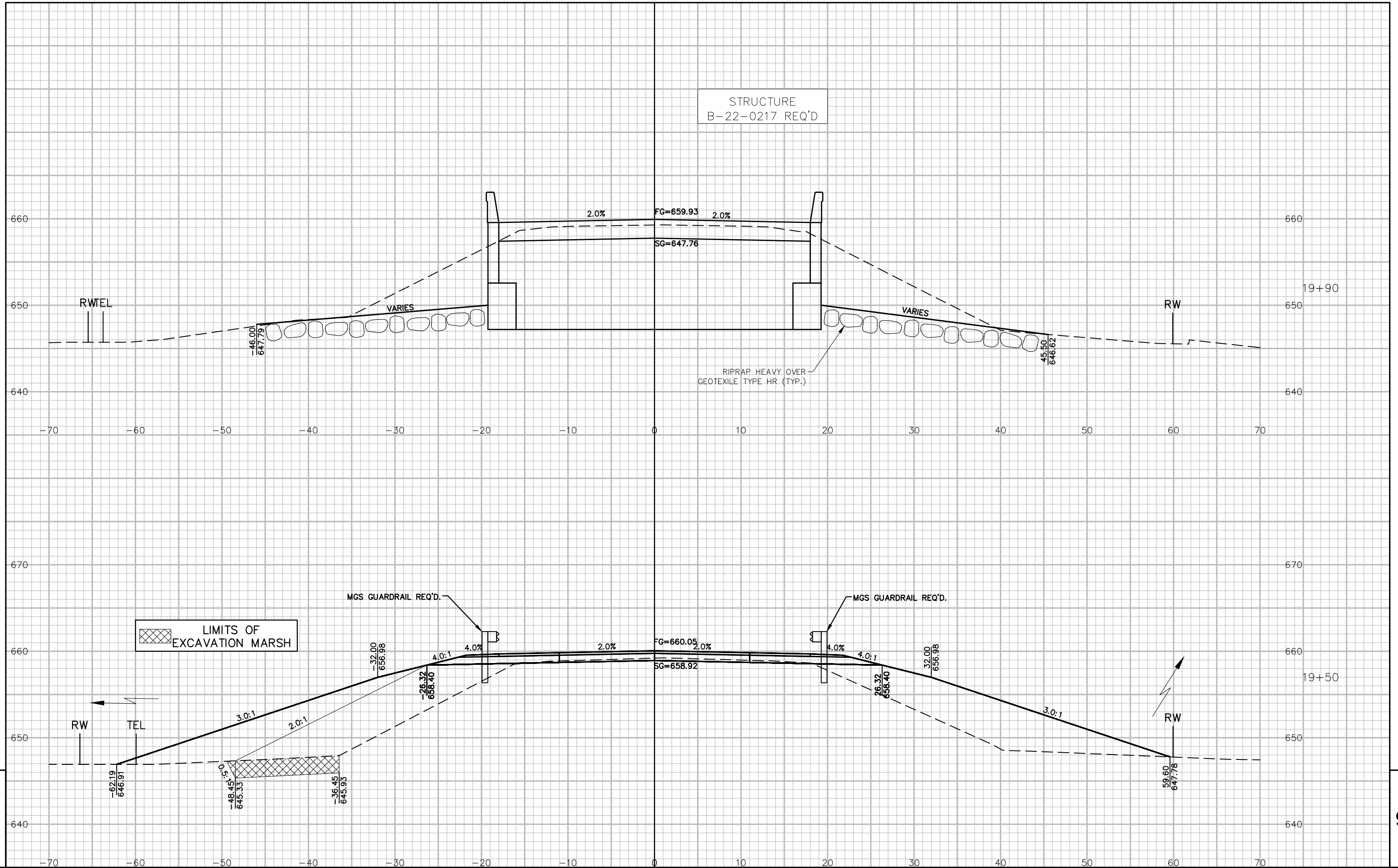
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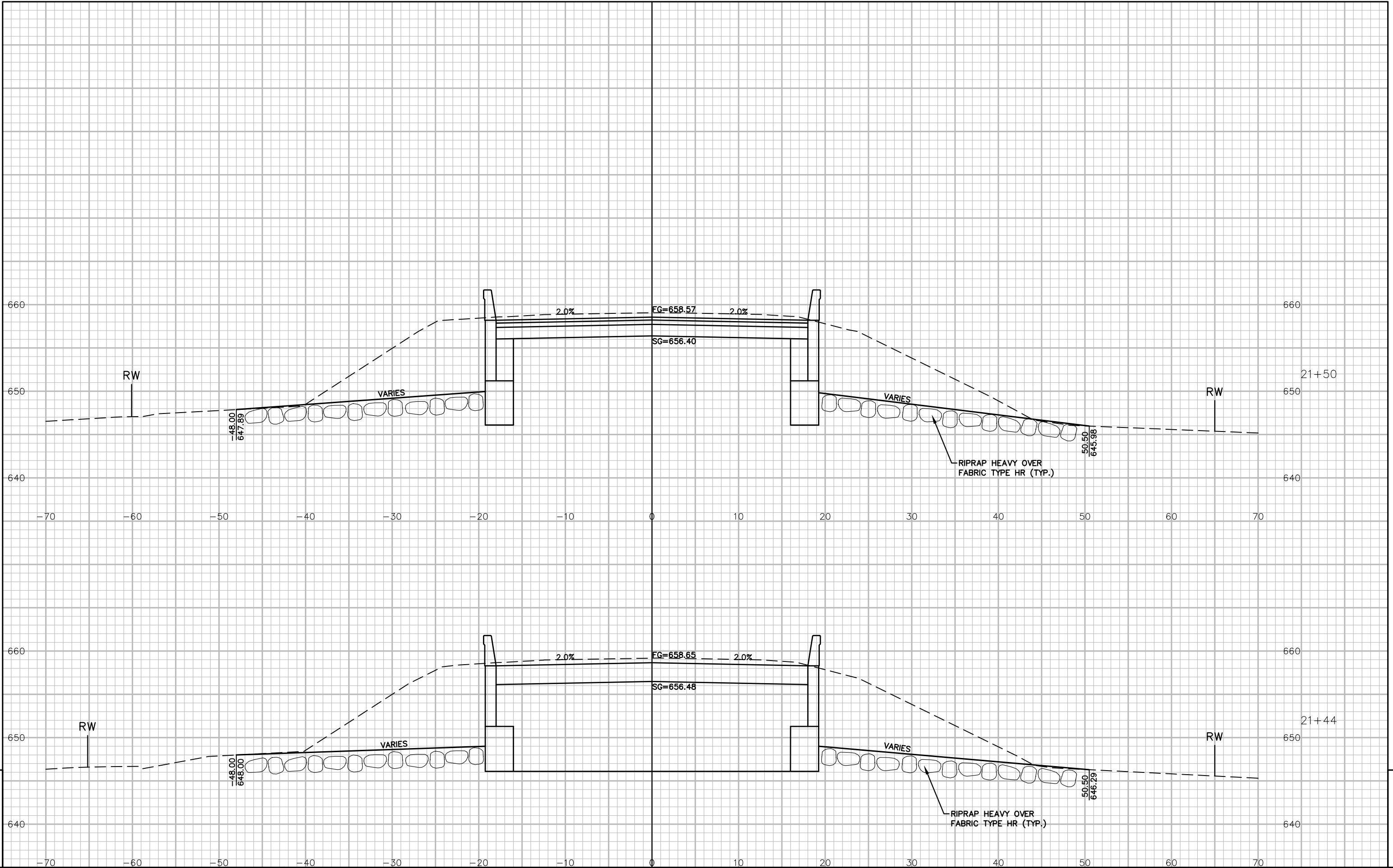
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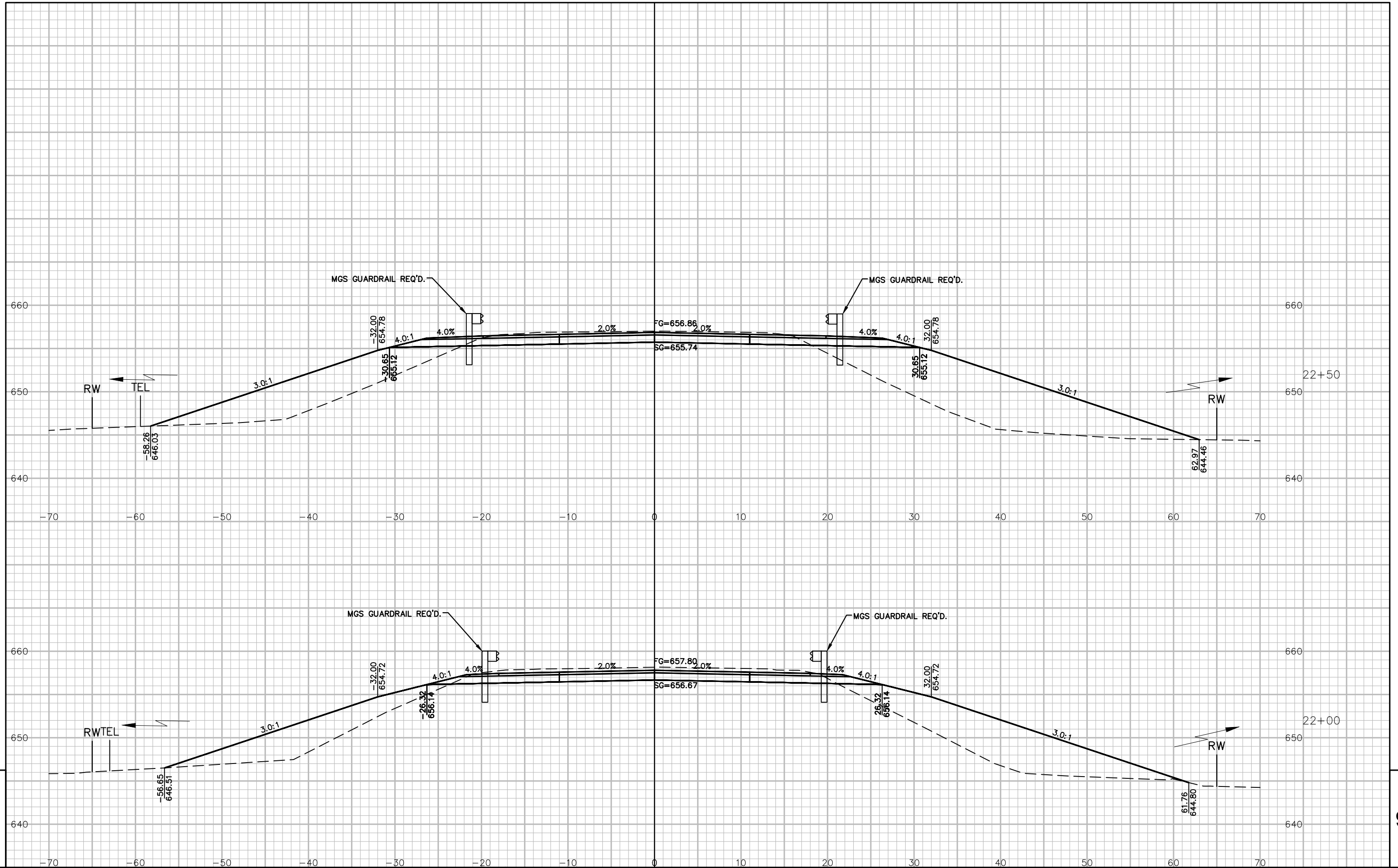






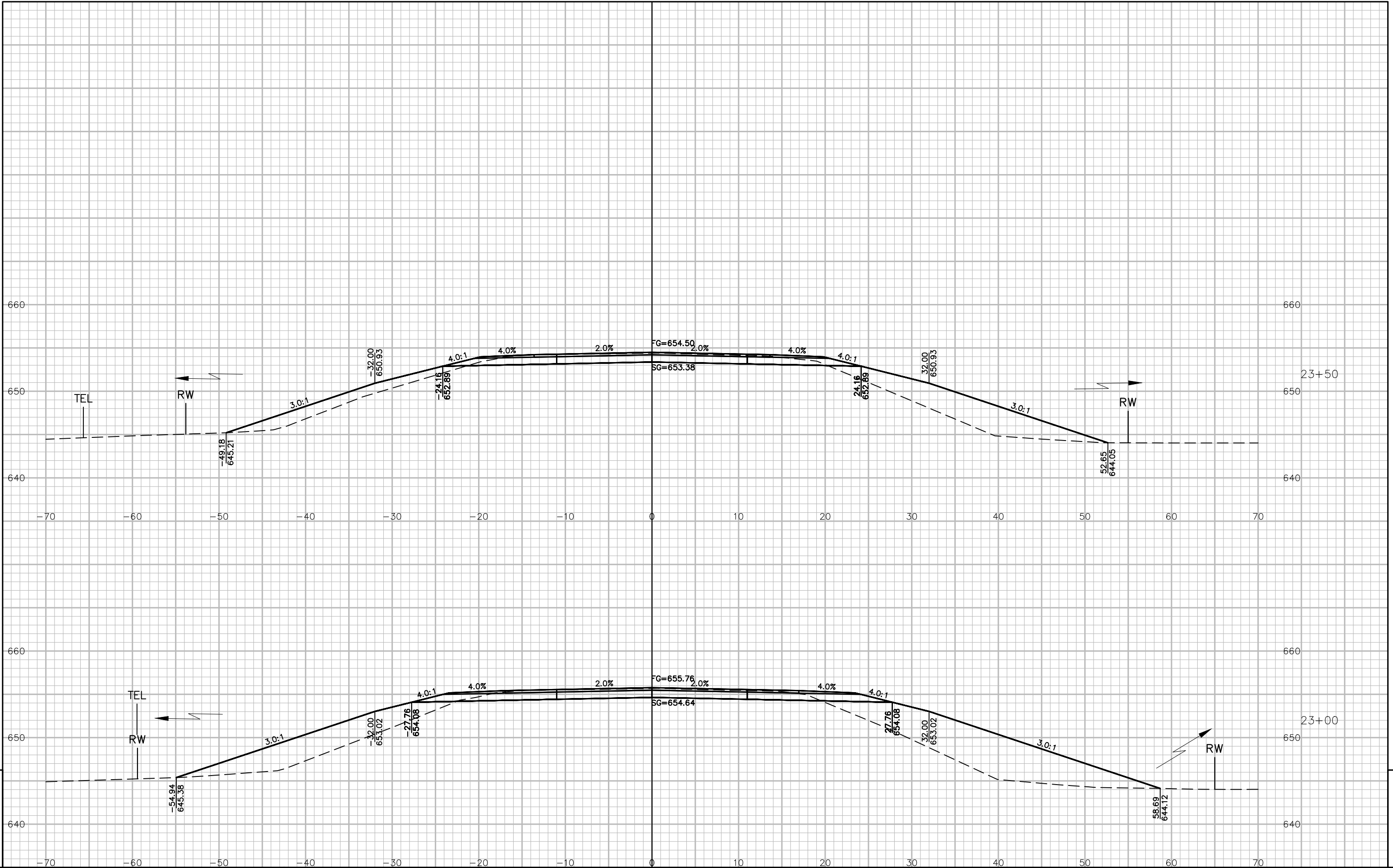
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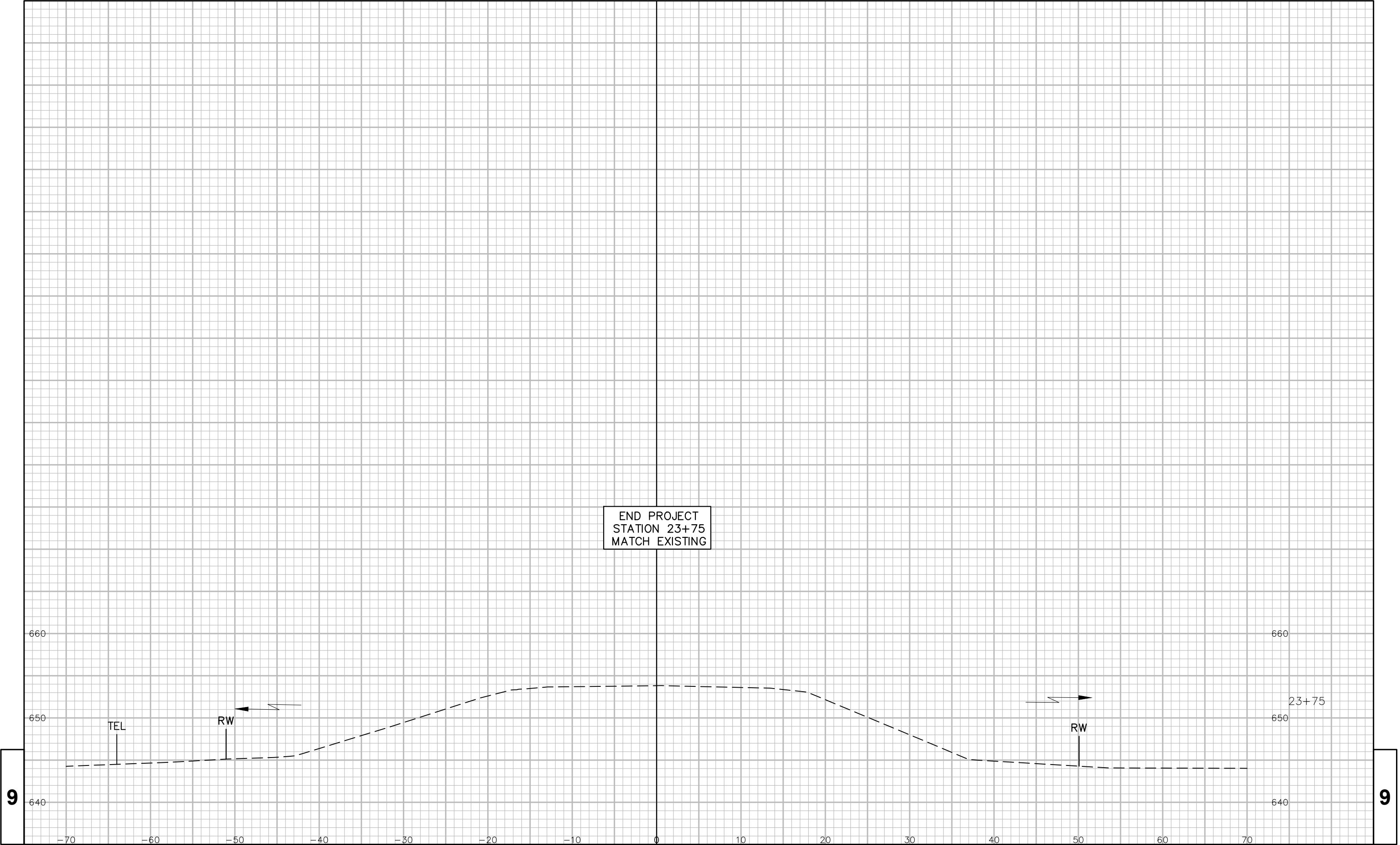


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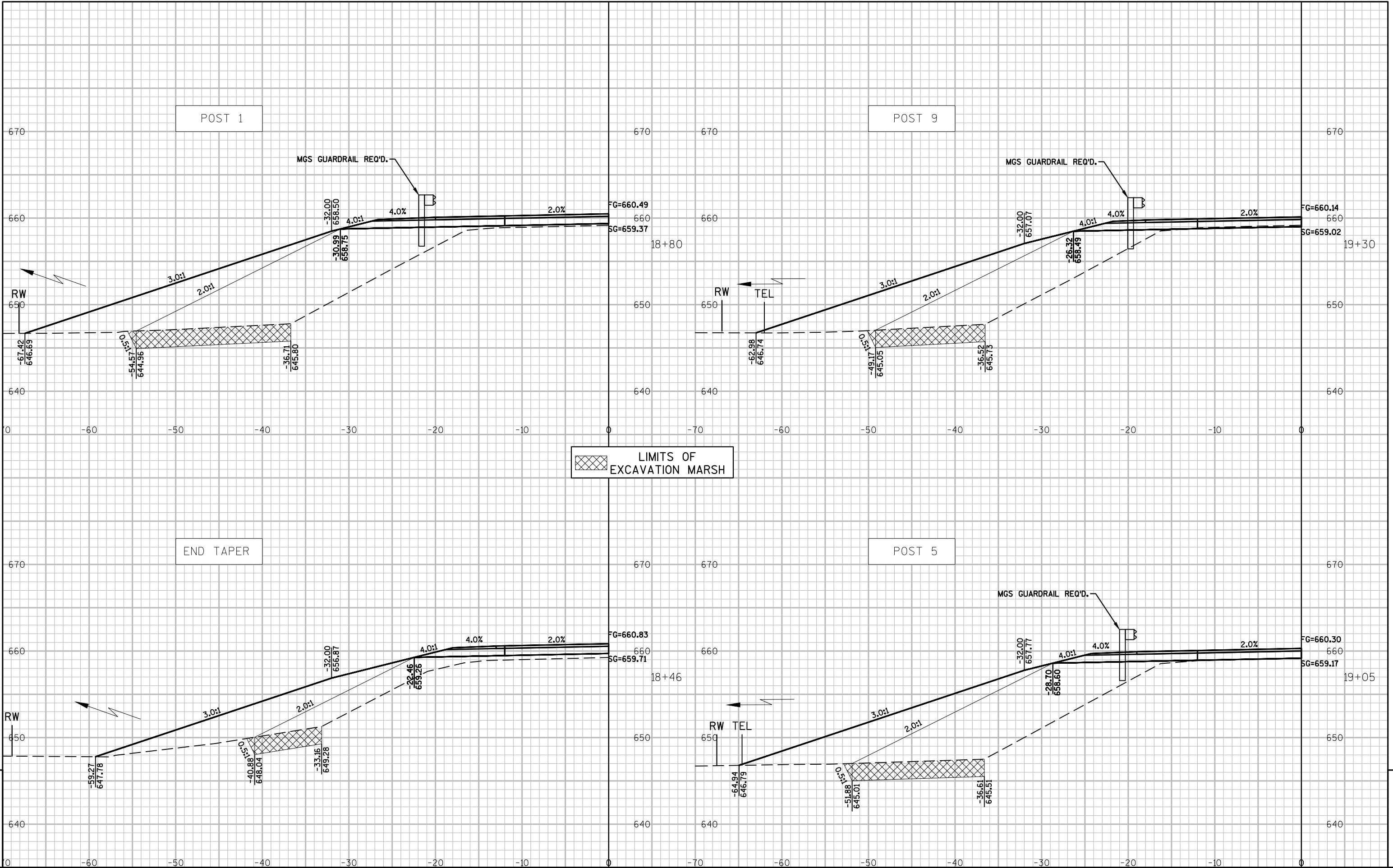


PROJECT NO: 5616-05-81	HWY: STH 133	COUNTY: GRANT	CROSS SECTIONS: MAINLINE	SHEET	E
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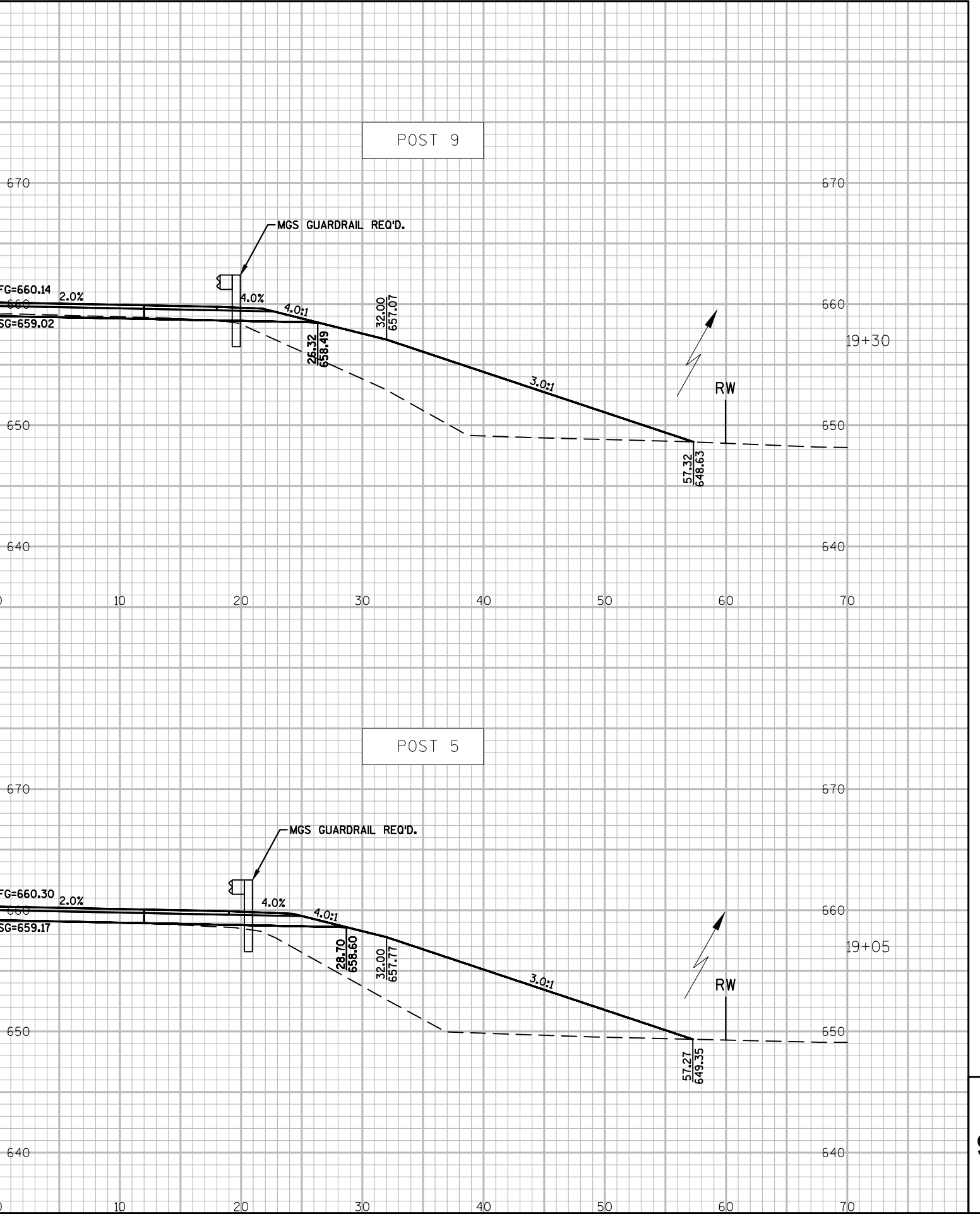
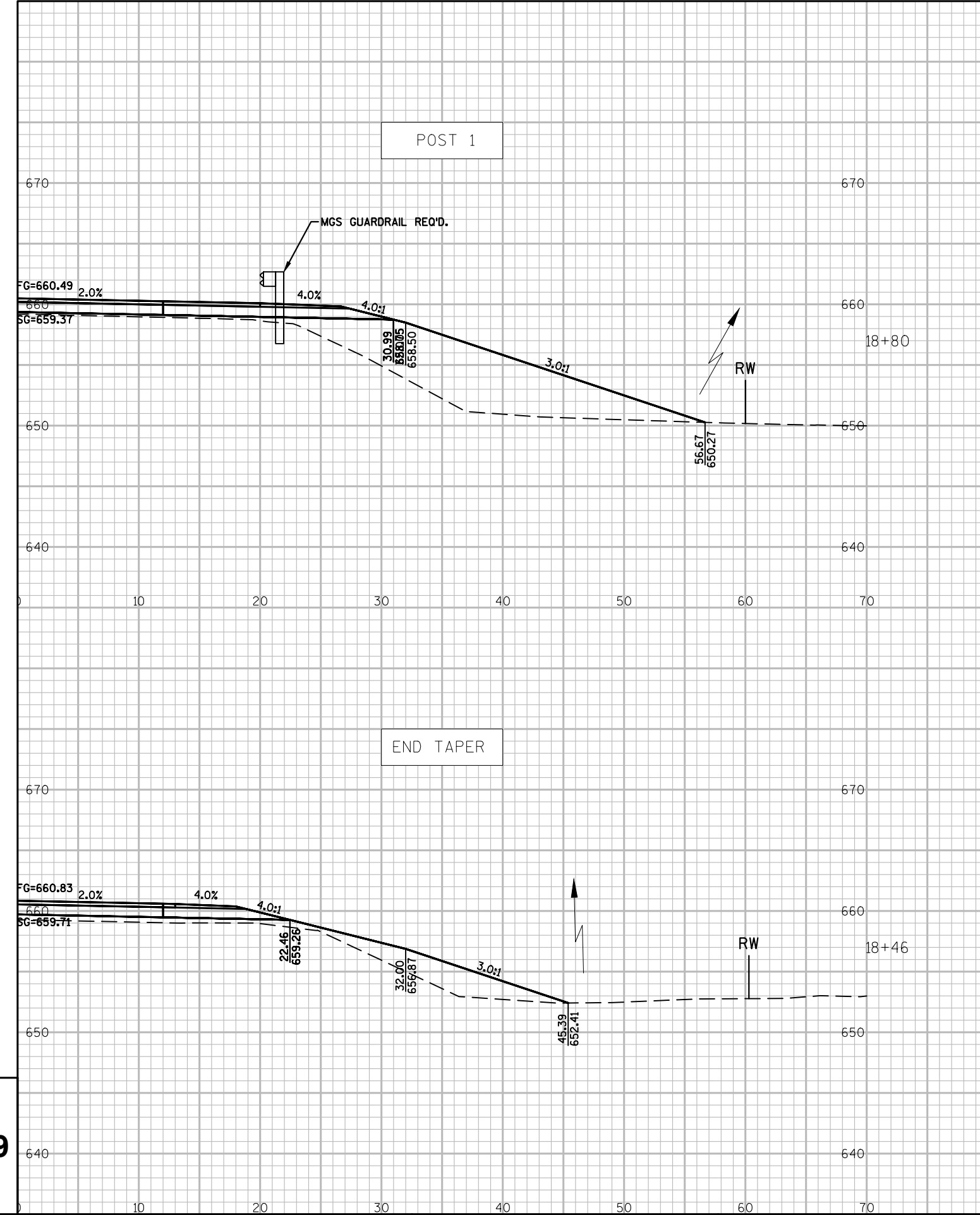
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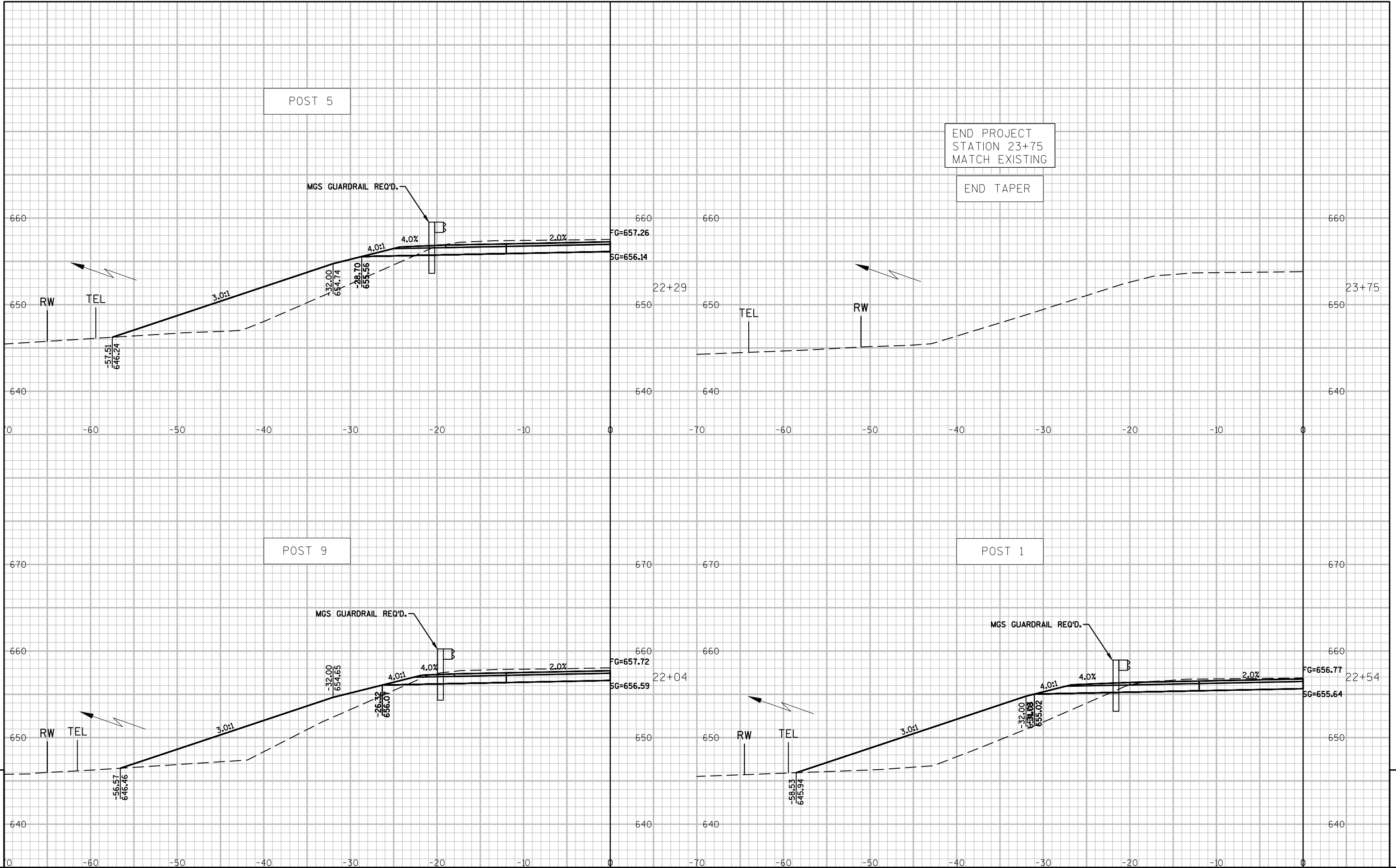


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PROJECT NO: 5616-05-81	HWY: STH 133	COUNTY: GRANT	CROSS SECTIONS: MAINLINE	SHEET	E
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FILE NAME : S:\PROJECTS\W11582 STH 133 GRANT CO B-22-20\DESIGN\CORRIDORS\W11582_CORRIDOR.DWG
LAYOUT : SE BEAMGUARD
PLOT DATE : 3/13/2020
PLOT TIME : 3:18:30 PM
PLOT BY : JONAH DRAKE
PLOT SCALE : 1" = 1'



POST 5

POST 9

END PROJECT
STATION 23+75
MATCH EXISTING

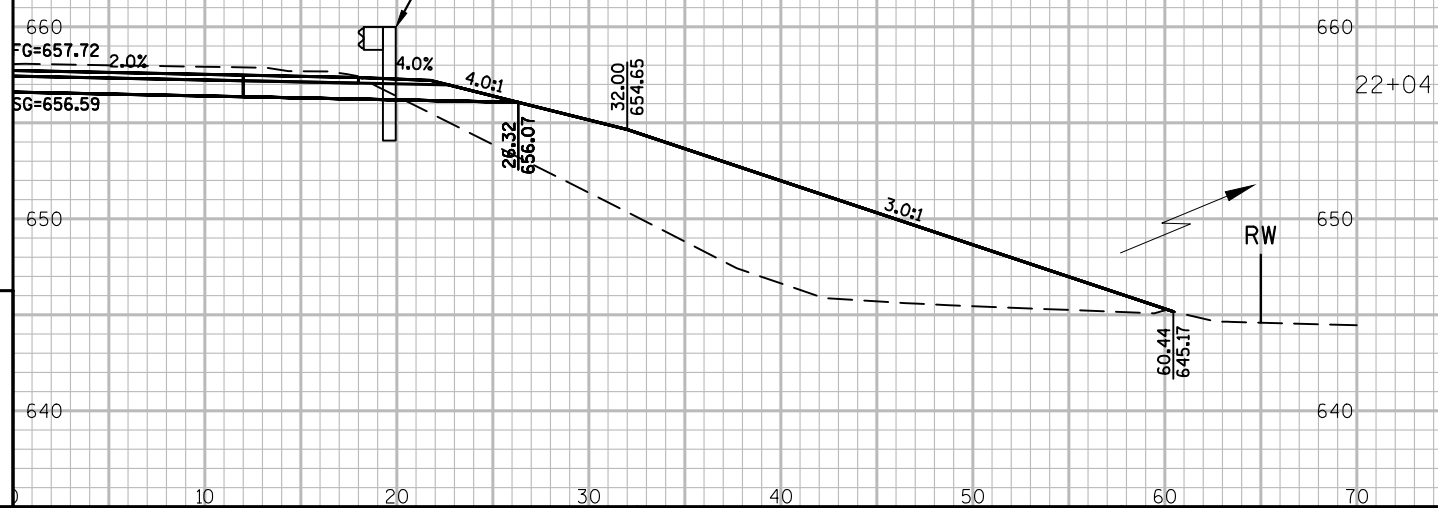
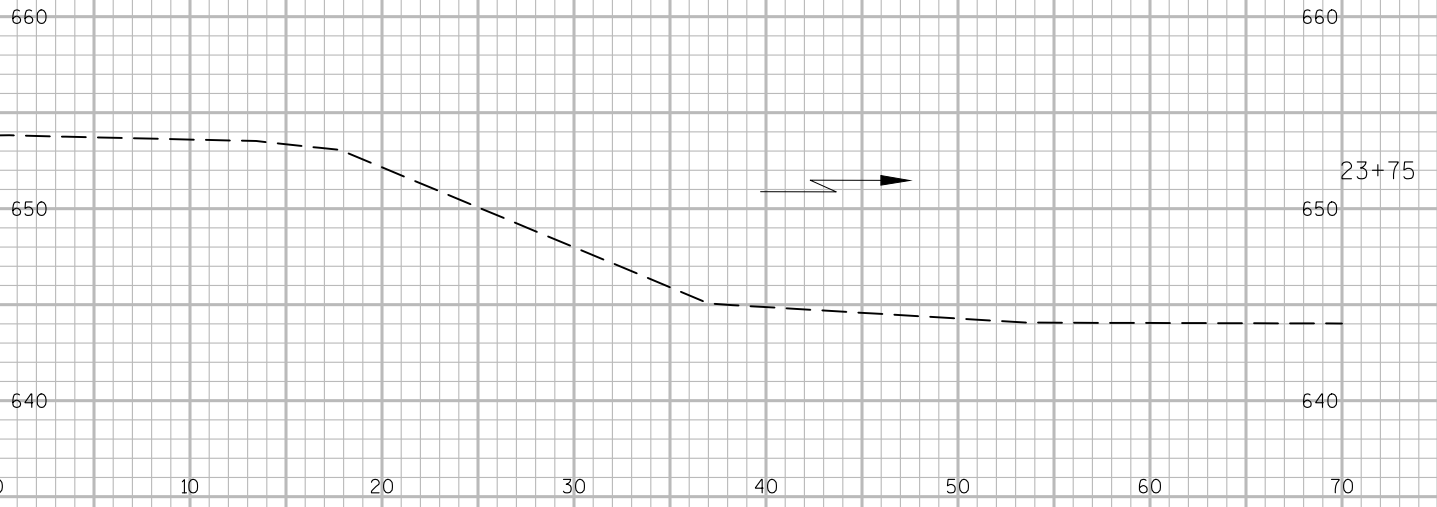
END TAPER

POST 1

MGS GUARDRAIL REQ'D.

MGS GUARDRAIL REQ'D.

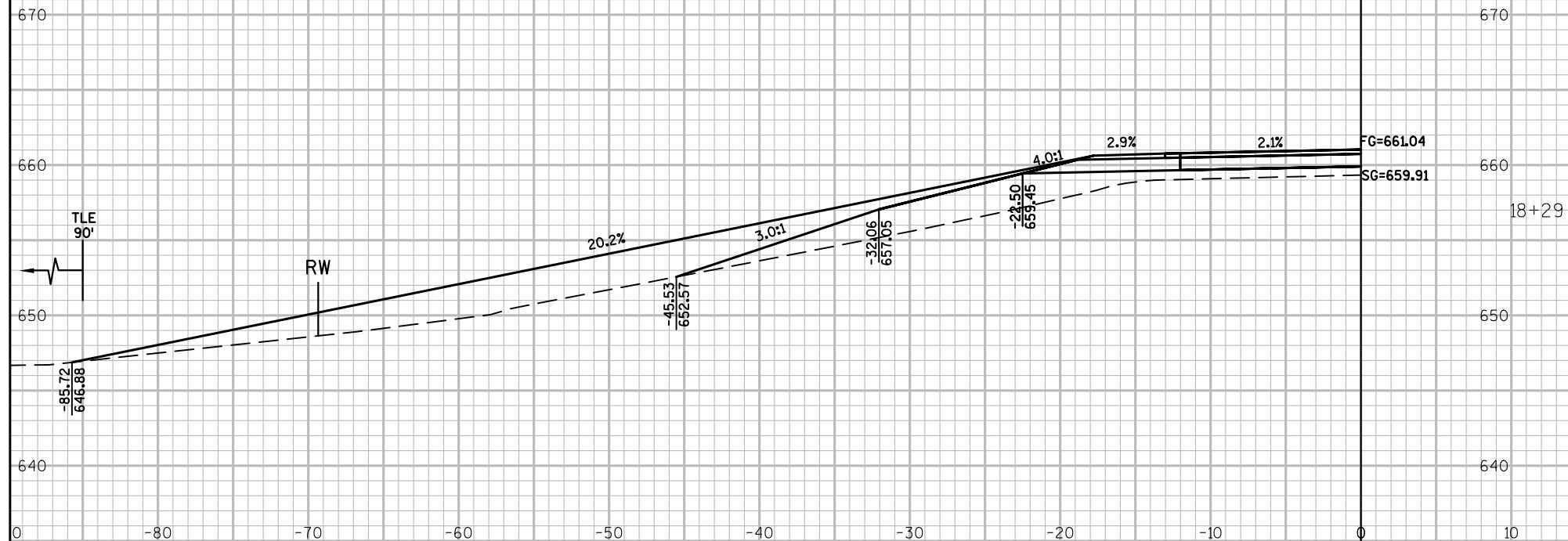
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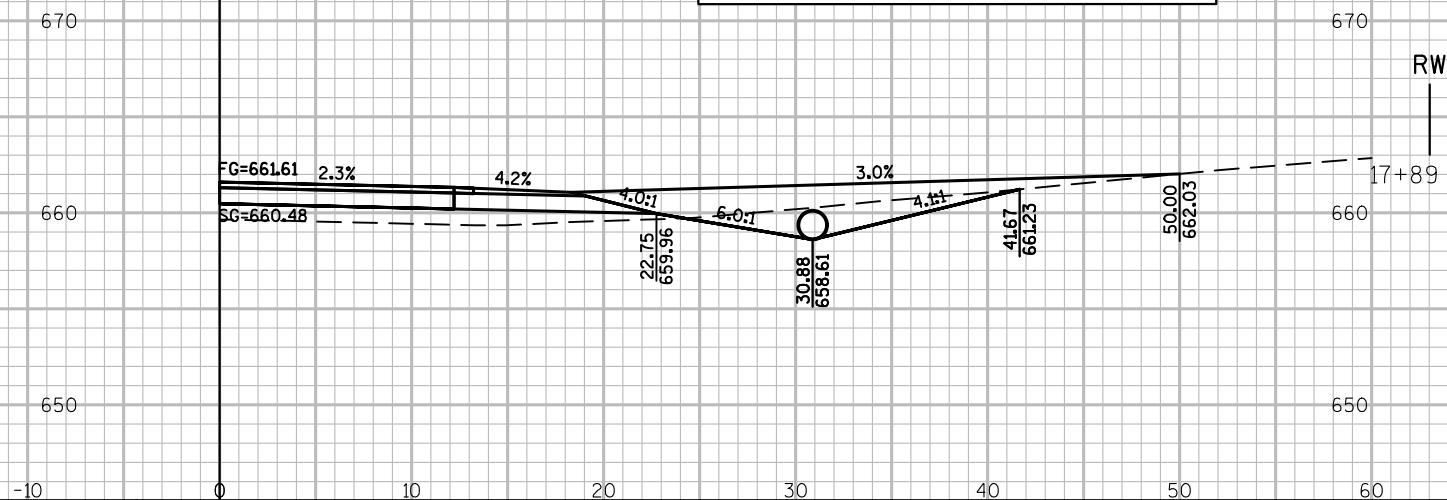
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STA. 18+29, LT.
CONSTRUCT F.E. (B.A.D.)



STA. 17+89, RT.
CONSTRUCT F.E. (B.A.D.)
(1) CULVERT PIPE CLASS III-A 18-INCH
(2) APRON ENDWALLS REQ'D
SKEWS = 3° RH



PROJECT NO: 5616-05-81

HWY: STH 133

COUNTY: GRANT

CROSS SECTIONS: F.E. DRIVEWAYS

SHEET

E

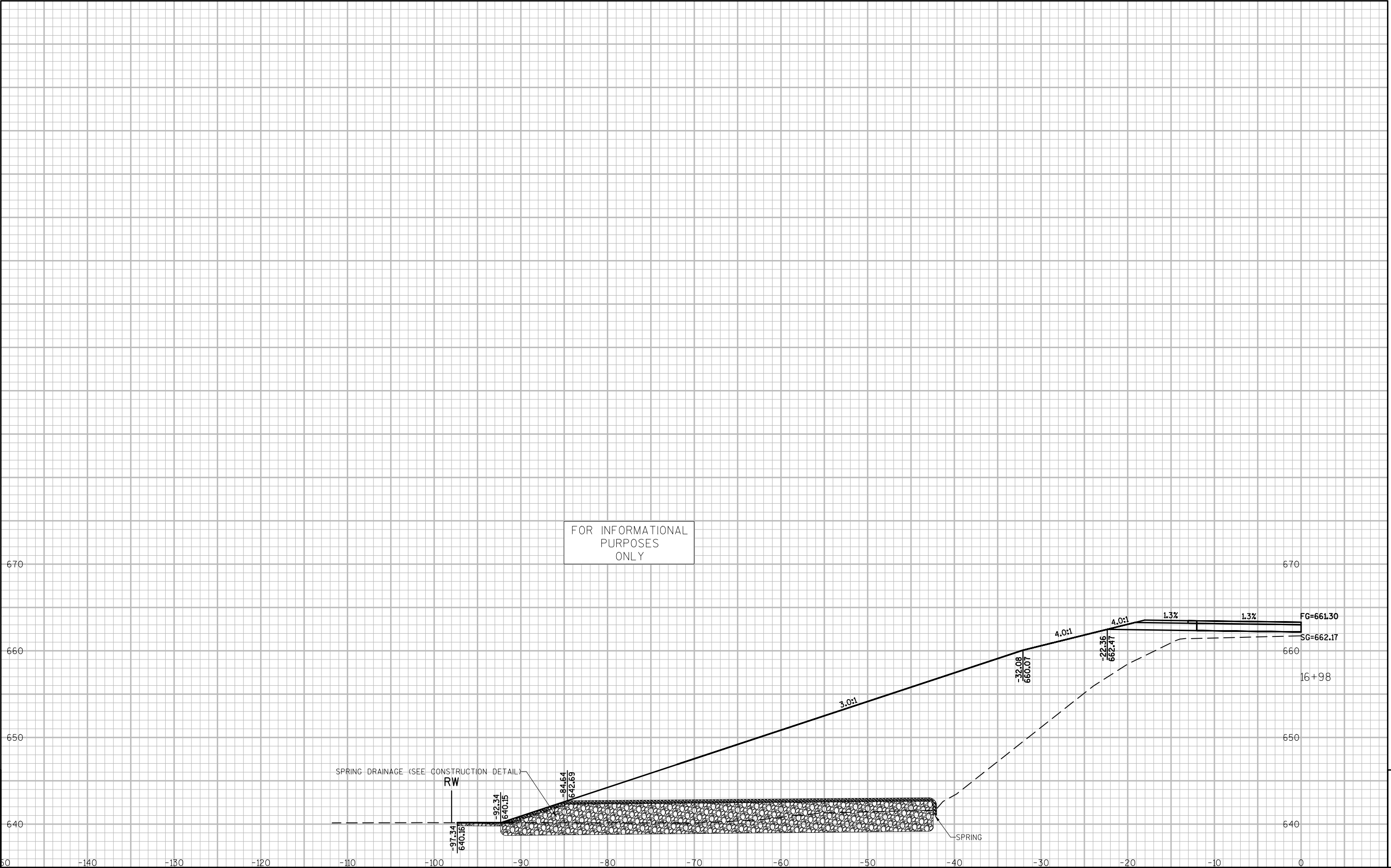
FILE NAME : S:\PROJECTS\W11582 STH 133 GRANT CO B-22-20\DESIGN\CORRIDORS\W11582_CORRIDOR.DWG
LAYOUT : FIELD ENTRANCES

PLOT DATE : 3/13/2020
PLOT TIME : 3:18:37 PM

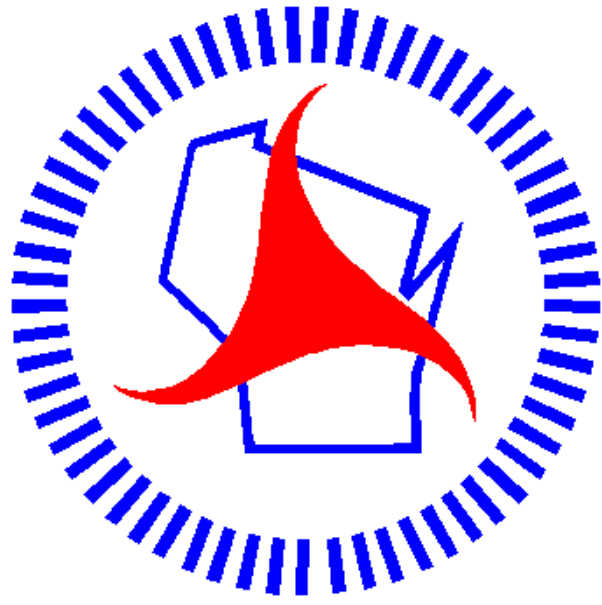
PLOT BY : JONAH DRAKE

PLOT SCALE : 1" = 1'

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