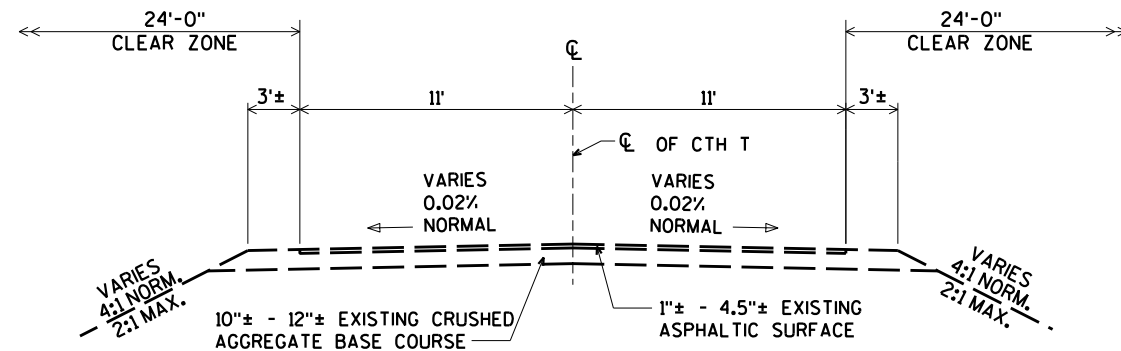
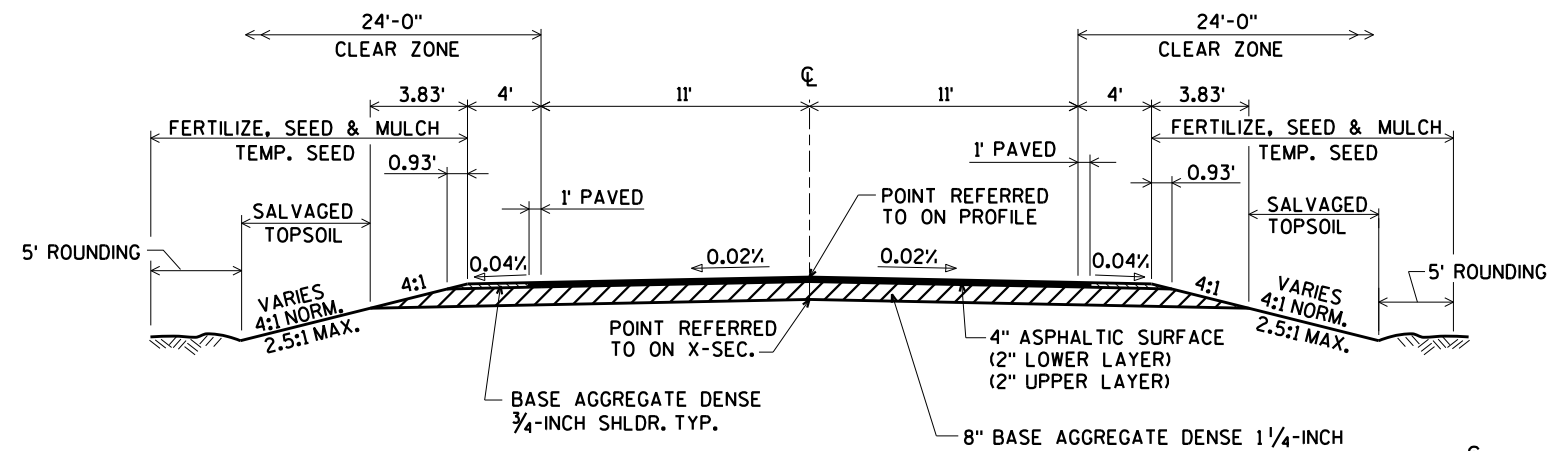


COUNTY: **TAYLOR**



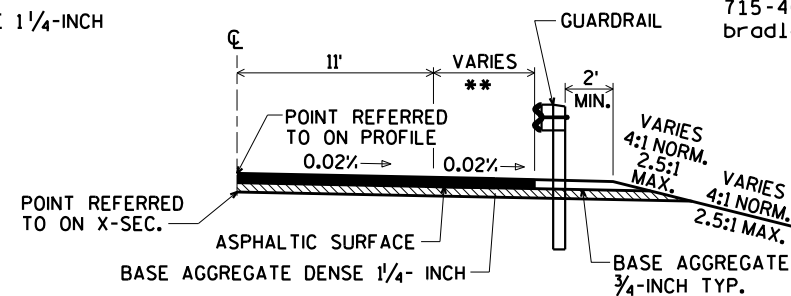
TYPICAL EXISTING SECTION

STA 7+75.38 - STA 12+16.62

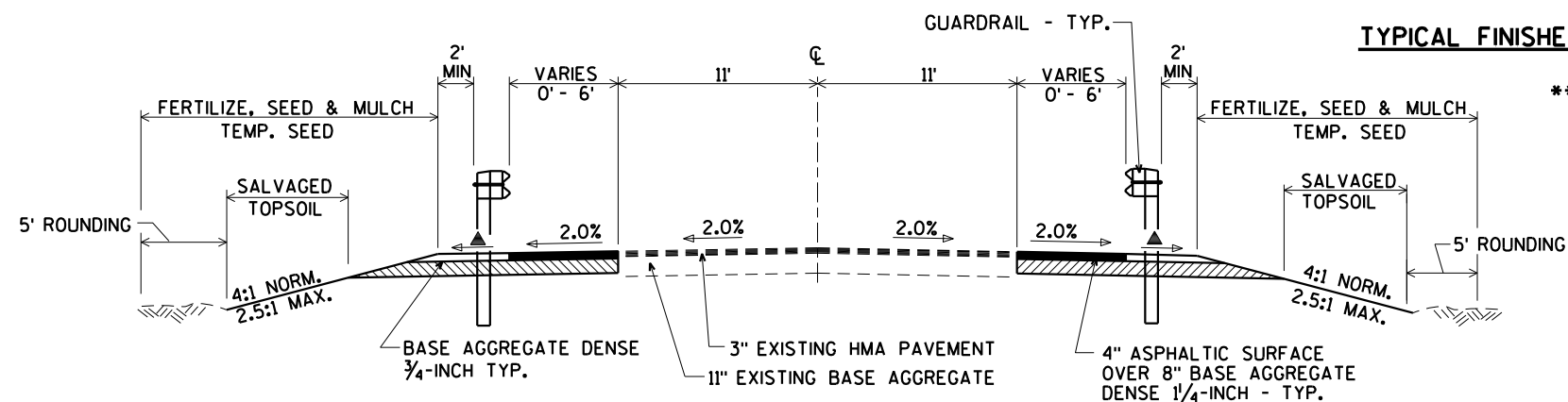


TYPICAL FINISHED SECTION

STA 8+50 - STA 11+50



TYPICAL FINISHED HALF SECTION WITH GUARDRAIL



TYPICAL FINISHED SECTION - SHOULDER WIDENING

▲ 4.0%
STA 7+75.38 - STA 8+50 RT.
STA 11+50 - STA 12+16.62 LT.

GENERAL NOTES

EROSION CONTROL ITEMS TO BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER.

NO TREES (AND/OR SHRUBS) ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.

EXCAVATION FOR STRUCTURES SHALL INCLUDE FURNISHING, PLACEMENT AND COMPACTION OF ANY FILL MATERIAL REQUIRED TO PROVIDE A SUITABLE FOUNDATION FOR SUBSTRUCTURE UNITS.

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

THE DEPARTMENT OF TRANSPORTATION WILL FURNISH THE CONTRACTOR WITH A MONUMENT TO BE INSTALLED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER.

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 88).

WETLANDS EXIST IN THE PROJECT AREA. NO DISTURBANCE IS ALLOWED OUTSIDE THE SLOPE INTERCEPT.

THE LOCATION AND WIDTH OF THE EXISTING RIGHT-OF-WAY WAS NOT DETERMINED FOR THIS PROJECT. THE INFORMATION SHOWN IS ASSUMED AND AYRES ASSOCIATES DOES NOT WARRANT ITS ACCURACY.

UTILITIES

FRONTIER COMMUNICATIONS, ENGINEERING DEPT.
1851 N. 14th AVE.
WAUSAU, WI 54401
ATTN: BRAD KSIONEK
715-847-1550 office
715-409-9701 cell
bradley.ksionek@ftr.com

CLARK ELECTRIC CO-OP.
124 N. MAIN ST.
P.O. BOX 190
GREENWOOD, WI 54437
ATTN: KEVIN STERLAND
715-267-6188 ext. 235
ksterland@cecoop.com

* * DENOTES UTILITIES THAT ARE NOT DIGGERS HOTLINE MEMBERS

DIGGERS HOTLINE

Dial 811 or (800)242-8511

www.DiggersHotline.com

WISCONSIN DEPARTMENT OF NATURAL RESOURCES CONTACT:

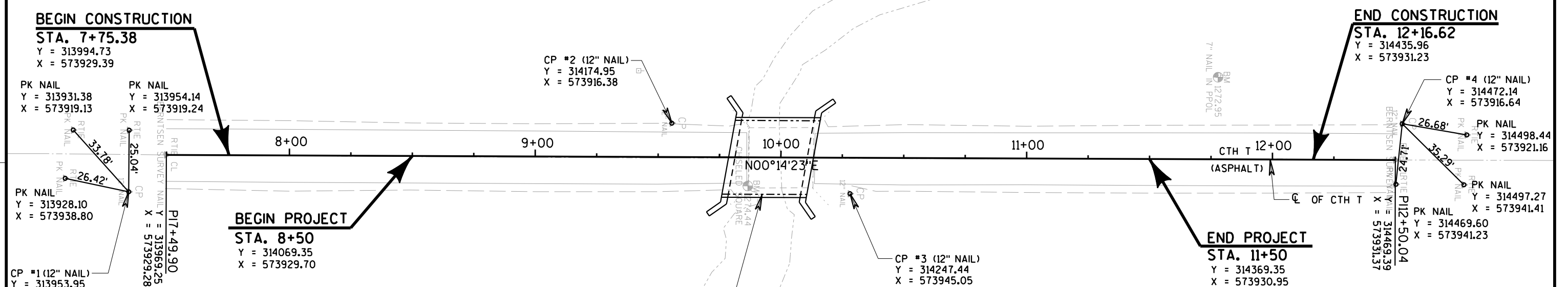
JON SIMONSEN
107 SUTLIFF
RHINELANDER, WI 54501
715-367-1936
jonathan.simonsen@wisconsin.gov

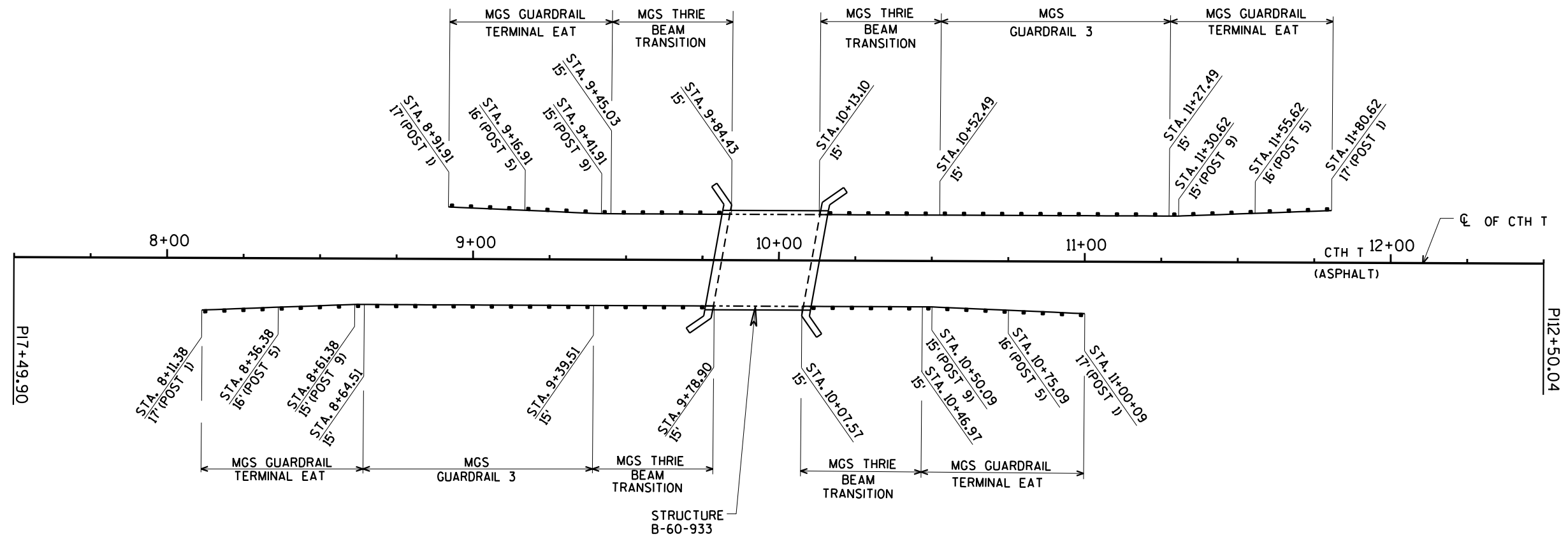
TAYLOR COUNTY

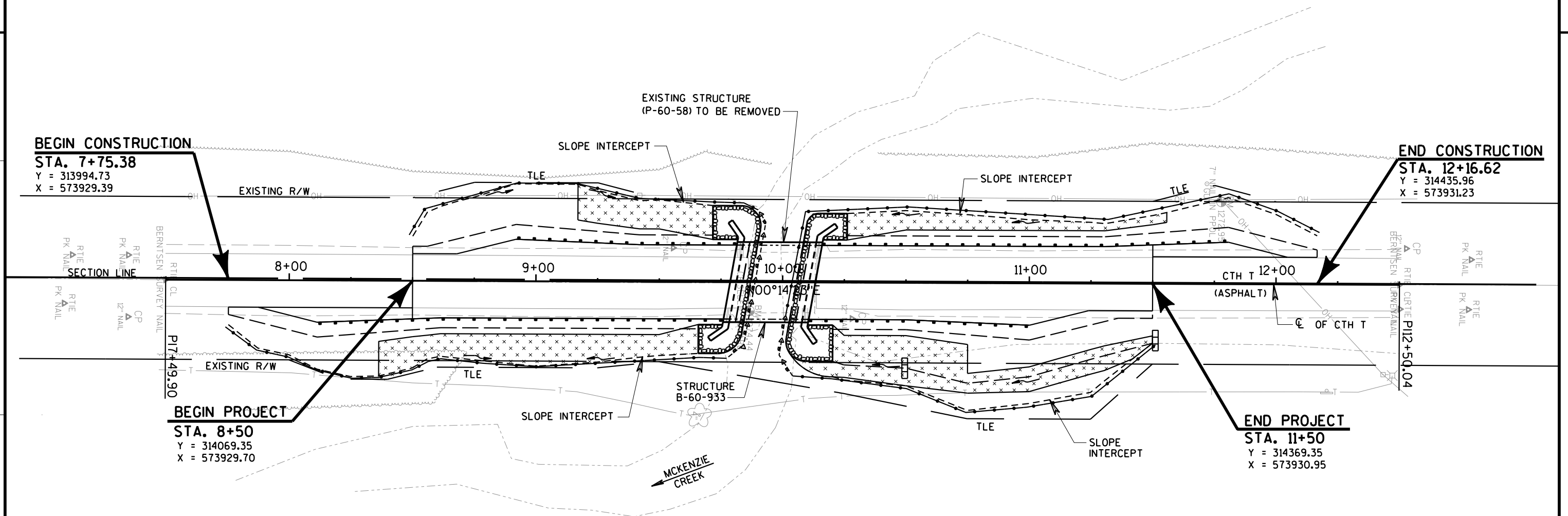
TAYLOR COUNTY, COMMISSIONER
209 NORTH 8th STREET
P.O. BOX 89
MEDFORD, WI 54451
ATTN: JESS SACKMANN
715-748-2456
jess.sackmann@co.taylor.wi.us

DESIGNER

AYRES ASSOCIATES
3433 OAKWOOD HILLS PARKWAY
EAU CLAIRE, WI 54701
ATTN: CHRIS MCMAHON, PE
715-834-3161
mcmahon@ayresassociates.com



GUARDRAIL LAYOUT



	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 = 0.653 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.540 ACRES

NOTE: NO DISTURBANCE OR TOPSOIL STOCKPILING IS ALLOWED OUTSIDE OF THE SLOPE INTERCEPTS. WETLANDS EXIST IN THE PROJECT AREA.

LEGEND

- EROSION MAT CLASS II TYPE C
- SILT FENCE
- TURBIDITY BARRIER
- RIPRAP HEAVY
- TEMPORARY DITCH CHECKS

PROJECT NO: 8887-08-72

HWY: CTH T

COUNTY: TAYLOR

EROSION CONTROL

SCALE, FEET

SHEET

E

BEGIN CONSTRUCTION

STA. 7+75.38

Y = 313994.73

X = 573929.39

END CONSTRUCTION

STA. 12+16.62

Y = 314435.96

X = 573931.23

BEGIN PROJECT

STA. 8+50

Y = 314069.35

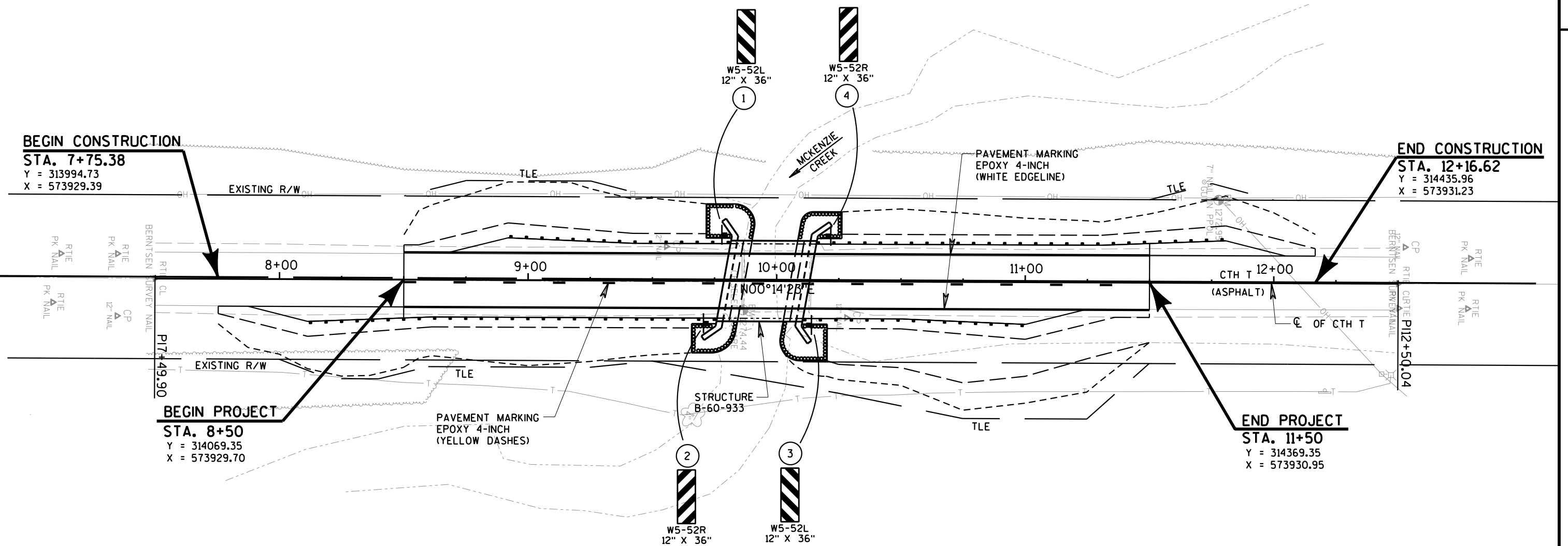
X = 573929.70

END PROJECT

STA. 11+50

Y = 314369.35

X = 573930.95



SIGN-REMOVE AND PLACE NEW

Estimate Of Quantities

8887-08-72

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	2.000	2.000
0004	201.0205	Grubbing	STA	2.000	2.000
0006	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 9+96	LS	1.000	1.000
0008	205.0100	Excavation Common	CY	333.000	333.000
0010	206.1000	Excavation for Structures Bridges (structure) 01. B-60-933	LS	1.000	1.000
0012	208.0100	Borrow	CY	141.000	141.000
0014	210.1500	Backfill Structure Type A	TON	280.000	280.000
0016	213.0100	Finishing Roadway (project) 01. 8887-08-72	EACH	1.000	1.000
0018	305.0110	Base Aggregate Dense 3/4-Inch	TON	79.000	79.000
0020	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	623.000	623.000
0022	455.0605	Tack Coat	GAL	57.000	57.000
0024	465.0105	Asphaltic Surface	TON	230.000	230.000
0026	502.0100	Concrete Masonry Bridges	CY	127.000	127.000
0028	502.3200	Protective Surface Treatment	SY	144.000	144.000
0030	505.0400	Bar Steel Reinforcement HS Structures	LB	4,760.000	4,760.000
0032	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	13,720.000	13,720.000
0034	513.4061	Railing Tubular Type M (structure) 01. B-60-933	LF	73.000	73.000
0036	516.0500	Rubberized Membrane Waterproofing	SY	20.000	20.000
0038	550.0500	Pile Points	EACH	10.000	10.000
0040	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	375.000	375.000
0042	606.0300	Riprap Heavy	CY	115.000	115.000
0044	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	150.000	150.000
0046	614.2300	MGS Guardrail 3	LF	150.000	150.000
0048	614.2500	MGS Thrie Beam Transition	LF	160.000	160.000
0050	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0052	619.1000	Mobilization	EACH	1.000	1.000
0054	624.0100	Water	MGAL	8.000	8.000
0056	625.0500	Salvaged Topsoil	SY	1,210.000	1,210.000
0058	627.0200	Mulching	SY	815.000	815.000
0060	628.1504	Silt Fence	LF	970.000	970.000
0062	628.1520	Silt Fence Maintenance	LF	1,940.000	1,940.000
0064	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0066	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0068	628.2027	Erosion Mat Class II Type C	SY	695.000	695.000
0070	628.6005	Turbidity Barriers	SY	50.000	50.000
0072	628.7504	Temporary Ditch Checks	LF	50.000	50.000
0074	628.7570	Rock Bags	EACH	50.000	50.000
0076	629.0210	Fertilizer Type B	CWT	1.100	1.100

Estimate Of Quantities

8887-08-72					
Line	Item	Item Description	Unit	Total	Qty
0078	630.0120	Seeding Mixture No. 20	LB	48.000	48.000
0080	630.0200	Seeding Temporary	LB	33.000	33.000
0082	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0084	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0086	638.2602	Removing Signs Type II	EACH	4.000	4.000
0088	638.3000	Removing Small Sign Supports	EACH	4.000	4.000
0090	642.5001	Field Office Type B	EACH	1.000	1.000
0092	643.0100	Traffic Control (project) 01. 8887-08-72	EACH	1.000	1.000
0094	645.0111	Geotextile Type DF Schedule A	SY	92.000	92.000
0096	645.0120	Geotextile Type HR	SY	245.000	245.000
0098	646.0106	Pavement Marking Epoxy 4-Inch	LF	675.000	675.000
0100	650.4500	Construction Staking Subgrade	LF	408.000	408.000
0102	650.5000	Construction Staking Base	LF	408.000	408.000
0104	650.6500	Construction Staking Structure Layout (structure) 01. B-60-933	LS	1.000	1.000
0106	650.9910	Construction Staking Supplemental Control (project) 01. 8887-08-72	LS	1.000	1.000
0108	650.9920	Construction Staking Slope Stakes	LF	408.000	408.000
0110	690.0150	Sawing Asphalt	LF	44.000	44.000
0112	715.0502	Incentive Strength Concrete Structures	DOL	762.000	762.000
0114	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,200.000	1,200.000
0116	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	300.000	300.000

CLEARING AND GRUBBING (CATEGORY 0010)

STATION	TO	STATION	LOCATION	201.0105 CLEARING STA	201.0205 GRUBBING STA
7+75.38	-	12+16.62	CTH T	2	2
TOTALS				2	2

FINISHING ROADWAY (CATEGORY 0010)

LOCATION	213.0100 EACH
PROJECT 8887-08-72	1

EARTHWORK SUMMARY (CATEGORY 0010)

Division	From/To Station	Location	Common Excavation (1) (item 205.0100)	Available Material (2)	Unexpanded Fill	Expanded Fill (3)	Mass Ordinate +/- (4)	Borrow	Waste
			Cut			Factor 1.30		(item 208.0100)	
1	7+75.38 - 9+78.73	CTH T	116	116	198	257	-141	141	0
	10+13.27 - 12+16.62	CTH T	217	217	120	156	61	0	61
Division 1 Total			333	333	318	413	-80	141	61

- 1) Excavation common is the sum of the cut column. Item number 205.0100
- 2) Available Material = Cut - Unusable Pavement Material
- 3) Expanded Fill. Factor = 1.3 Expanded Fill = Unexpanded Fill * Fill Factor
- 4) 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.
- 5) All quantities show n in CY.

BASE AGGREGATE DENSE (CATEGORY 0010)

STATION	TO	STATION	LOCATION	305.0110 3/4-INCH TON	305.0120 1 1/4-INCH TON
7+75	-	9+79	CTH T	39	306
10+13	-	12+17	CTH T	40	317
TOTALS				79	623

ASPHALTIC SURFACE (CATEGORY 0010)

STATION	TO	STATION	LOCATION	455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TON
7+87	-	9+79	CTH T	28	110
10+13	-	12+05	CTH T	29	120
TOTALS				57	230

MOBILIZATION

LOCATION	619.1000 EACH
PROJECT 8887-08-72 (CATEGORY 0010)	0.4
PROJECT 8887-08-72 (CATEGORY 0020)	0.6
TOTAL	1

GUARDRAIL (CATEGORY 0010)

STATION	TO	STATION	LOCATION	614.2300	614.2500	614.2610
				MGS GUARDRAIL 3 LF	MGS THRIE BEAM TRANSITION LF	MGS GUARDRAIL TERMINAL EAT EACH
8+11.38	-	8+64.51	CTH T, RT	-	-	1
8+91.91	-	9+45.03	CTH T, LT	-	-	1
10+46.97	-	11+00.09	CTH T, RT	-	-	1
11+27.49	-	11+80.62	CTH T, LT	-	-	1
8+64.51	-	9+39.51	CTH T, RT	75	-	-
10+52.49	-	11+27.49	CTH T, LT	75	-	-
9+39.51	-	9+78.90	CTH T, RT	-	40	-
9+45.03	-	9+84.43	CTH T, LT	-	40	-
10+07.57	-	10+46.97	CTH T, RT	-	40	-
10+13.10	-	10+52.49	CTH T, LT	-	40	-
TOTALS				150	160	4

EROSION MAT CLASS II TYPE C (CATEGORY 0010)

STATION	TO	STATION	LOCATION	628.2027 SY
8+36	-	9+65	CTH T, RT	175
9+17	-	9+72	CTH T, LT	85
10+20	-	11+50	CTH T, RT	205
10+26	-	11+56	CTH T, LT	90
UNDISTRIBUTED				140
TOTAL				695

SILT FENCE (CATEGORY 0010)

STATION	TO	STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 MAINTENANCE LF
7+75	-	9+90	CTH T, RT & LT	360	720
10+01	-	12+17	CTH T, RT & LT	415	830
UNDISTRIBUTED				195	390
TOTALS				970	1,940

MULCHING (CATEGORY 0010)

STATION	TO	STATION	LOCATION	627.0200 SY
7+75	-	8+36	CTH T, RT	125
8+36	-	9+79	CTH T, LT & RT	220
10+13	-	11+20	CTH T, LT & RT	280
11+20	-	12+17	CTH T, LT	25
UNDISTRIBUTED				165
TOTAL				815

MOBILIZATION EROSION CONTROL & EMERGENCY EROSION CONTROL (CATEGORY 0010)

LOCATION	628.1905 MOBILIZATION EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
PROJECT 8887-08-72	4	2

SALVAGED TOPSOIL, FERTILIZER AND SEED (CATEGORY 0010)

STATION	TO	STATION	LOCATION	625.0500 SALVAGED TOPSOIL SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0200 SEEDING TEMPORARY LB
7+75	-	9+79	CTH T	580	0.5	23	16
10+13	-	12+17	CTH T	630	0.6	25	17
TOTALS				1,210	1.1	48	33

WATER (CATEGORY 0010)

PURPOSE	LOCATION	624.0100 WATER MGAL
COMPACTION	CTH T	7
DUST CONTROL	CTH T	1
		8

TURBIDITY BARRIERS (CATEGORY 0010)

STATION	LOCATION	628.6005 SY
SOUTH ABUTMENT	CTH T	26
NORTH ABUTMENT	CTH T	11
UNDISTRIBUTED		13
TOTAL		50

SIGNS REFLECTIVE TYPE II AND POSTS WOOD (CATEGORY 0010)

STATION	LOCATION	634.0612	637.2230	
		POSTS WOOD 4 X 6-INCH X 12-FT EACH	SIGNS TYPE II REFLECTIVE F W5-52L SF	W5-52R SF
9+76	CTH T, RT	1	-	3
9+81	CTH T, LT	1	3	-
10+11	CTH T, RT	1	3	-
10+16	CTH T, LT	1	-	3
TOTALS		4	12	

TEMPORARY DITCH CHECKS (CATEGORY 0010)

STATION	LOCATION	628.7504 LF
10+50	CTH T, RT	15
11+50	CTH T, RT	15
	UNDISTRIBUTED	20
TOTAL		50

TRAFFIC CONTROL (CATEGORY 0010)

LOCATION	643.0100 EACH
PROJECT 8887-08-72	1

CONSTRUCTION STAKING

STATION	TO	STATION	LOCATION	650.4500	650.5000	650.6500	650.9910	650.9920	CATEGORY CODE
				SUBGRADE LF	BASE LF	STRUCTURE LAYOUT LS	SUPPLEMENTAL CONTROL LS	SLOPE STAKES LF	
7+75	-	9+79	CTH T	204	204	-	0.5	204	0010
10+13	-	12+17	CTH T	204	204	-	0.5	204	0010
SUBTOTALS				408	408	0	1	408	0010
B-60-0933				CTH T	-	-	1	-	0020
SUBTOTALS				0	0	1	0	0	0020
TOTALS				408	408	1	1	408	

REMOVING SIGNS AND SUPPORTS (CATEGORY 0010)

STATION	LOCATION	638.2602	638.3000	REMARKS
		REMOVING SIGNS TYPE II EA	REMOVING SMALL SIGN SUPPORTS EA	
9+87	CTH T, RT	1	1	BRIDGE HASH MARKS
9+87	CTH T, LT	1	1	BRIDGE HASH MARKS
10+14	CTH T, RT	1	1	BRIDGE HASH MARKS
10+14	CTH T, LT	1	1	BRIDGE HASH MARKS
TOTALS		4	4	

ROCK BAGS (CATEGORY 0010)

STATION	LOCATION	628.7570 EACH
UNDISTRIBUTED	CTH T	50
TOTAL		50

FIELD OFFICE TYPE B (CATEGORY 0010)

LOCATION	642.5001 EACH
PROJECT 8887-08-72	1

PAVEMENT MARKING (CATEGORY 0010)

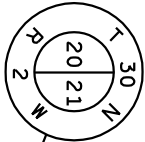
STATION	TO	STATION	LOCATION	646.0106	646.0106	REMARKS
				4-INCH EPOXY WHITE LF	4-INCH EPOXY YELLOW LF	
8+50	-	11+50	CTH T	600	75	CENTERLINE PASSING & EDGELINES
SUBTOTAL				600	75	
TOTAL				675		

SAWING ASPHALT (CATEGORY 0010)

STATION	LOCATION	690.0150 LF
8+50	CTH T	22
11+50	CTH T	22
TOTAL		44

BENCH MARKS			
NO.	STA.	DESCRIPTION	ELEV.
1	9+87	CHIS. SO. AT TOP OF SE WINGWALL, 12' RT.	1274.44
2	11+78	NAIL IN POWER POLE, 33' LT.	1272.95

COTTON GIN SPIKE
Y=313,304.858
X=573,925.241



BEGIN CONSTRUCTION
STA. 7+75.38
Y = 313994.73
X = 573929.39

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

BEGIN PROJECT
STA. 8+50
(SAWCUT REQ'D.)
Y = 314069.35
X = 573929.70

EARTHWORK SUMMARY

STA. 7+75.38 TO STA. 9+78.73
EXC. COMMON 116 C.Y.
FILL 198 C.Y.
SHR. = 30%
BORROW 141 C.Y.

TOWN

SE-NE
T30N R2W
SECTION 20

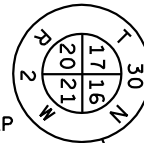
1
DAVID & KRISTIE KUETTEL
EXISTING STRUCTURE (P-60-58) TO BE REMOVED

OF

50 CLARK ELECTRIC CO-OP

END CONSTRUCTION
STA. 12+16.62
Y = 314435.96
X = 573931.23

ALUMINUM CAP
Y=315,913.563
X=573,938.133



SCHEDULE OF LANDS & INTERESTS REQUIRED

PARCEL NUMBER	OWNER(S)	INTEREST REQUIRED	TLE ACRES
1	DAVID & KRISTIE KUETTEL	TLE	.015
2	DALE E. & DENISE HOLBROOK	TLE	.076
50	CLARK ELECTRIC CO-OP	RELEASE OF RIGHTS	-----
51	FRONTIER COMMUNICATIONS	RELEASE OF RIGHTS	-----

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

END PROJECT

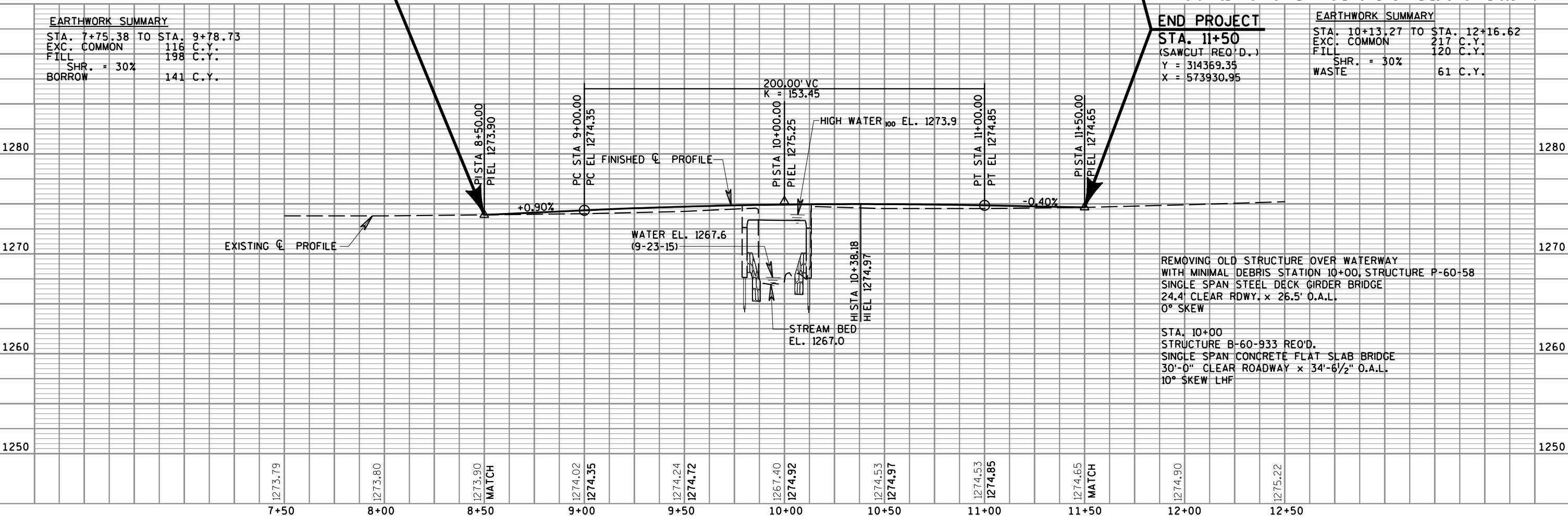
STA. 11+50
(SAWCUT REQ'D.)
Y = 314369.35
X = 573930.95

EARTHWORK SUMMARY

STA. 10+13.27 TO STA. 12+16.62
EXC. COMMON 217 C.Y.
FILL 120 C.Y.
SHR. = 30%
WASTE 61 C.Y.

REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 10+00, STRUCTURE P-60-58
SINGLE SPAN STEEL DECK GIRDER BRIDGE
24.4' CLEAR ROWY. x 26.5' O.A.L.
0° SKEW

STA. 10+00
STRUCTURE B-60-933 REQ'D.
SINGLE SPAN CONCRETE FLAT SLAB BRIDGE
30'-0" CLEAR ROADWAY x 34'-6 1/2" O.A.L.
10° SKEW LHF



PROJECT NO: 8887-08-72

HWY: CTH T

COUNTY: TAYLOR

PLAN AND PROFILE

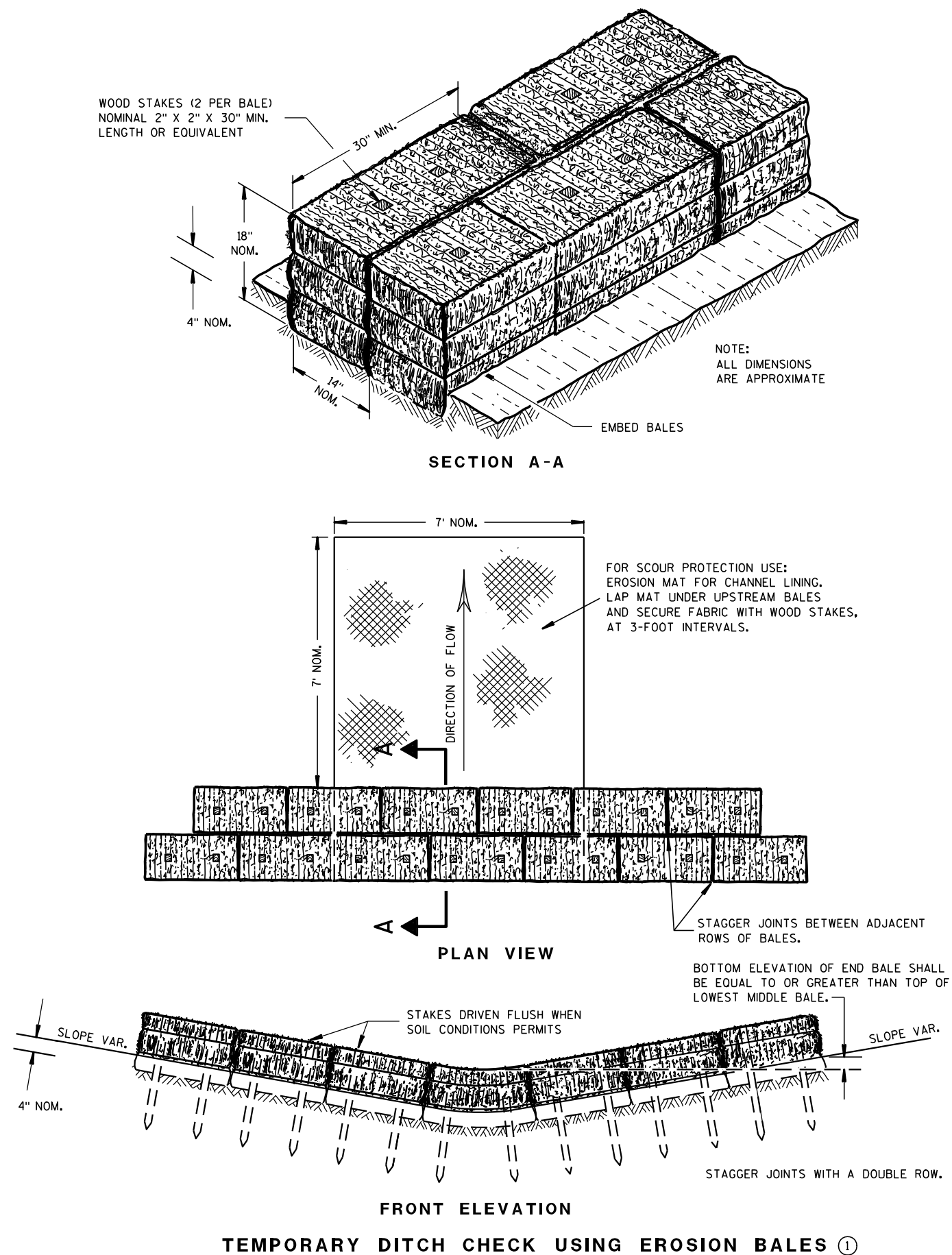
SCALE, FEET 0 25 50

SHEET

E

Standard Detail Drawing List

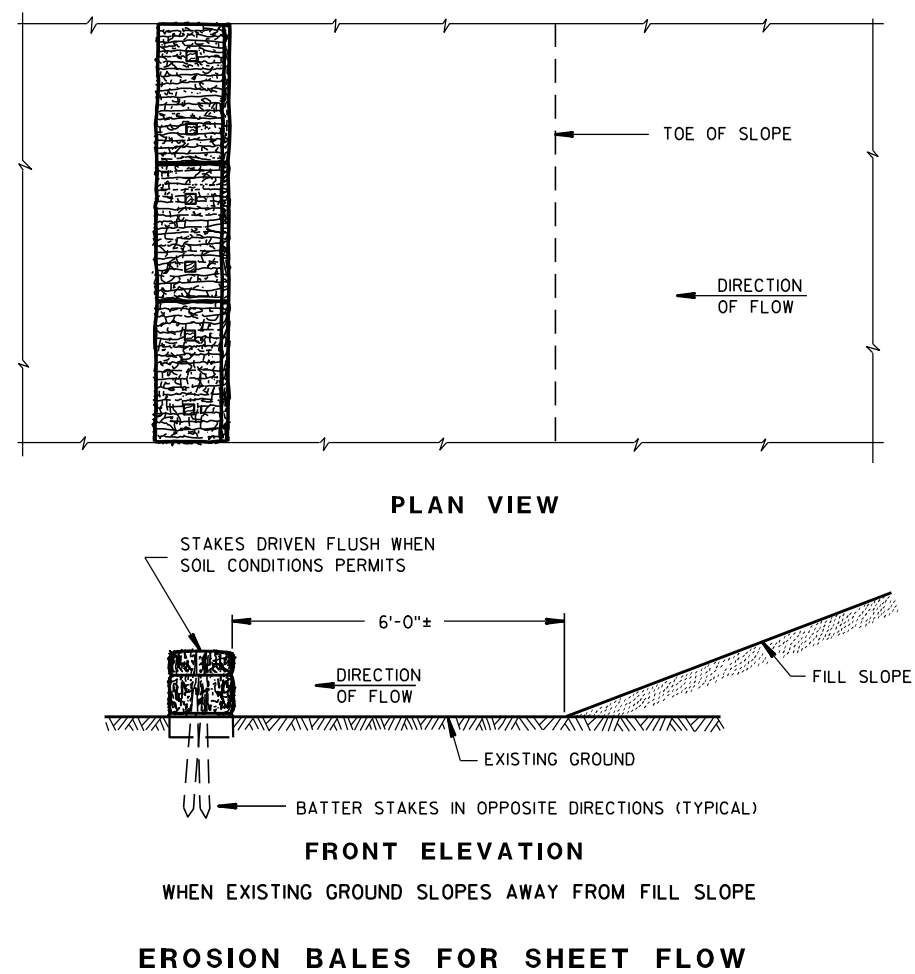
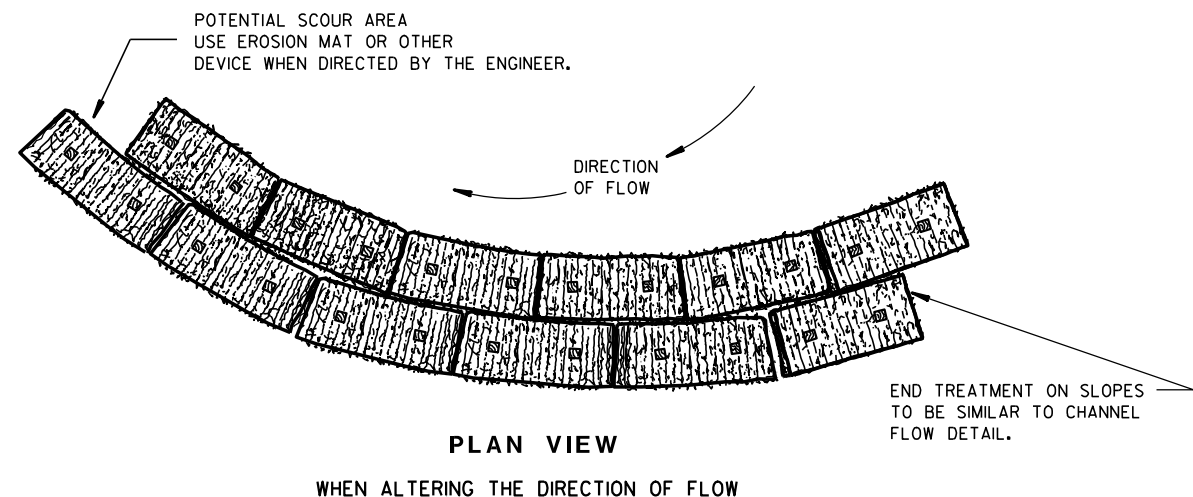
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
14B42-04A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-04B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-04C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-02A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-04A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C06-08	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-17A	LONGITUDINAL MARKING (MAINLINE)



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.

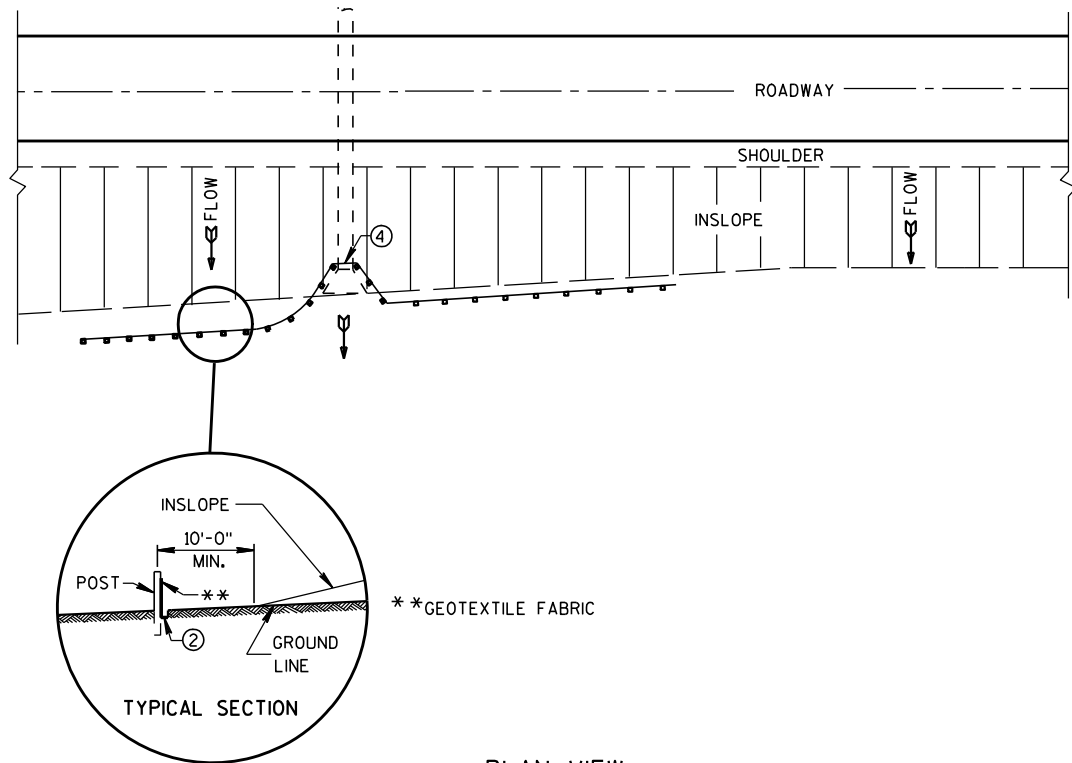
TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

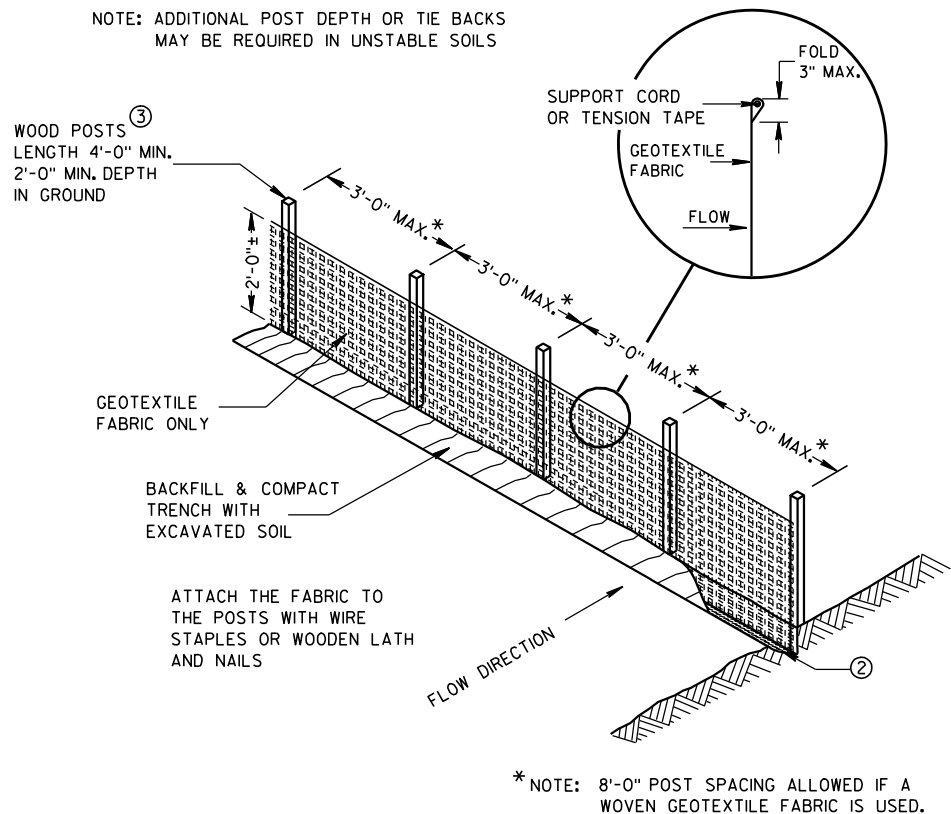
APPROVED

6/04/02
DATE/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

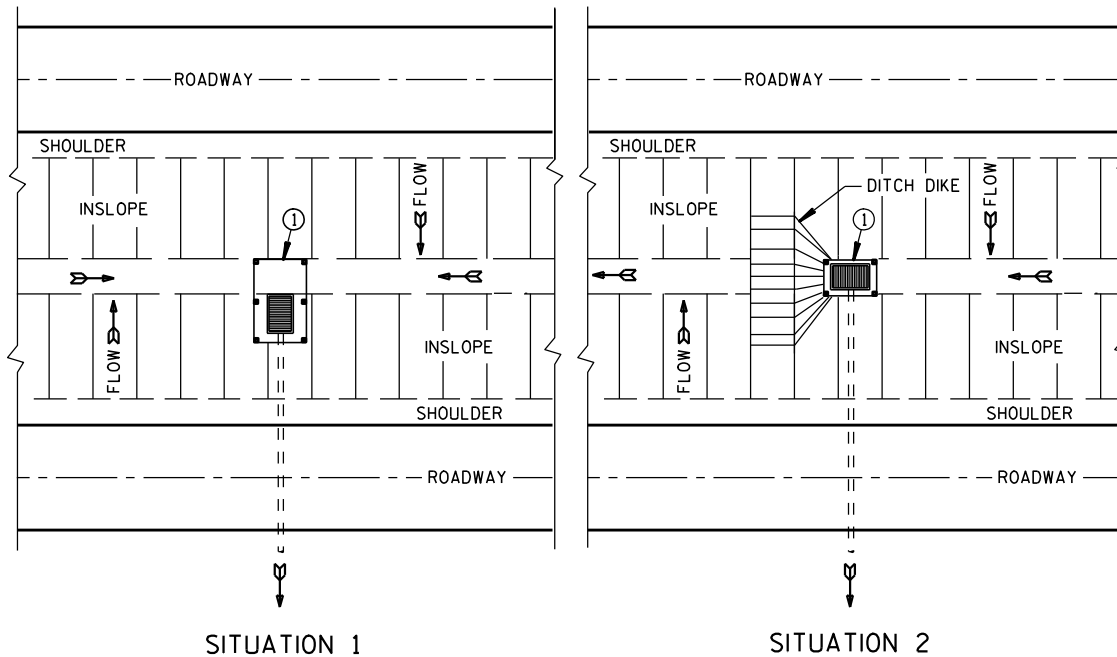
FHWA



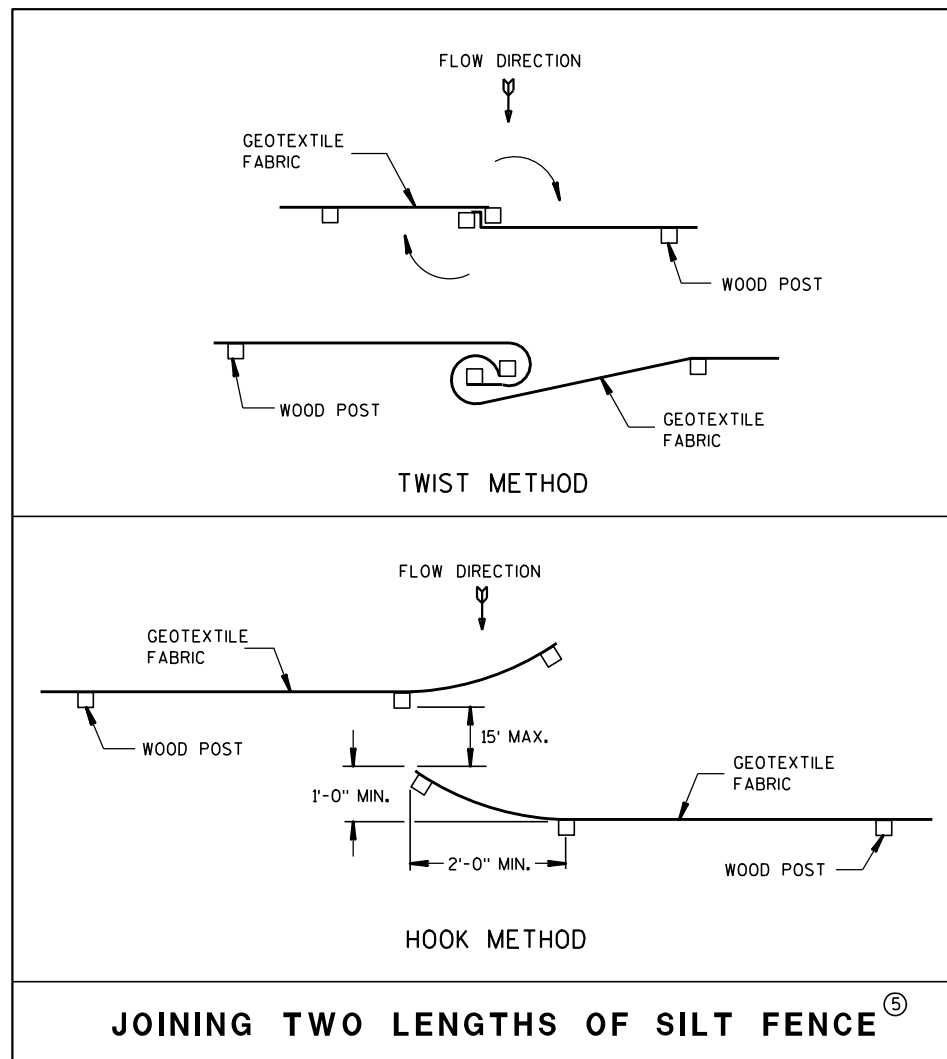
PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE



SILT FENCE



PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

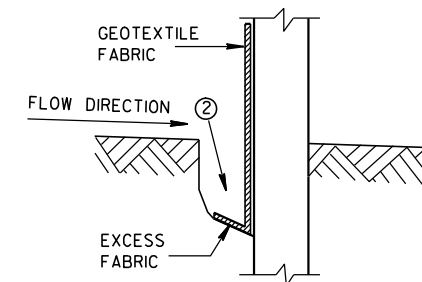


JOINING TWO LENGTHS OF SILT FENCE (5)

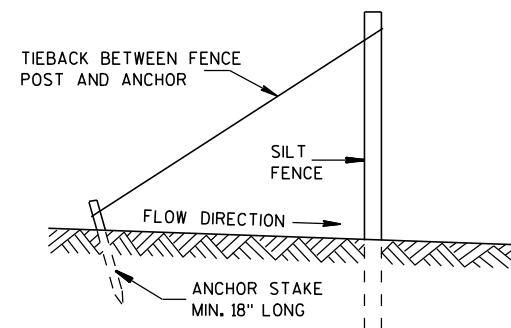
GENERAL NOTES

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

- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1 1/8" X 1 1/8" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.

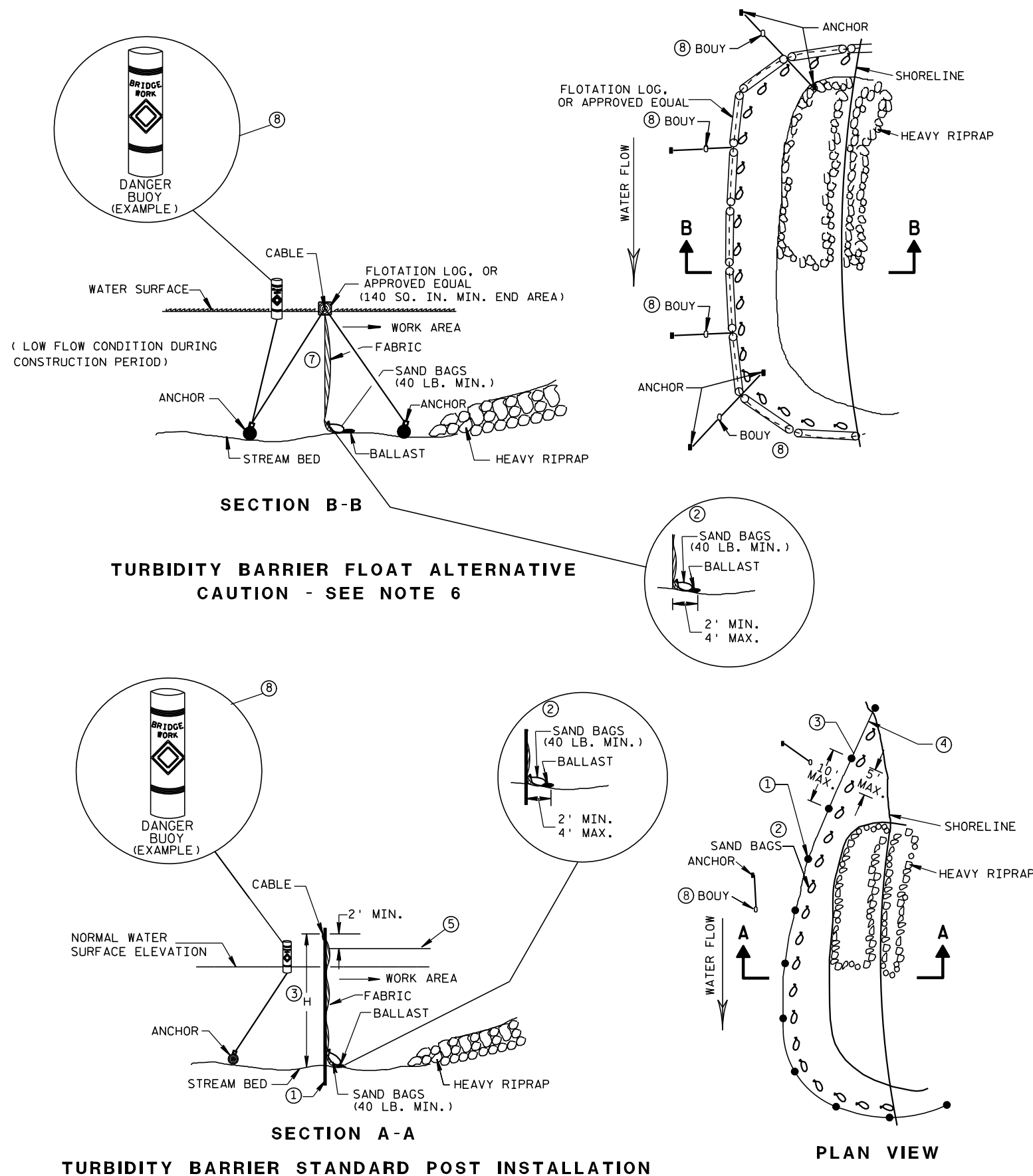


TRENCH DETAIL



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

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

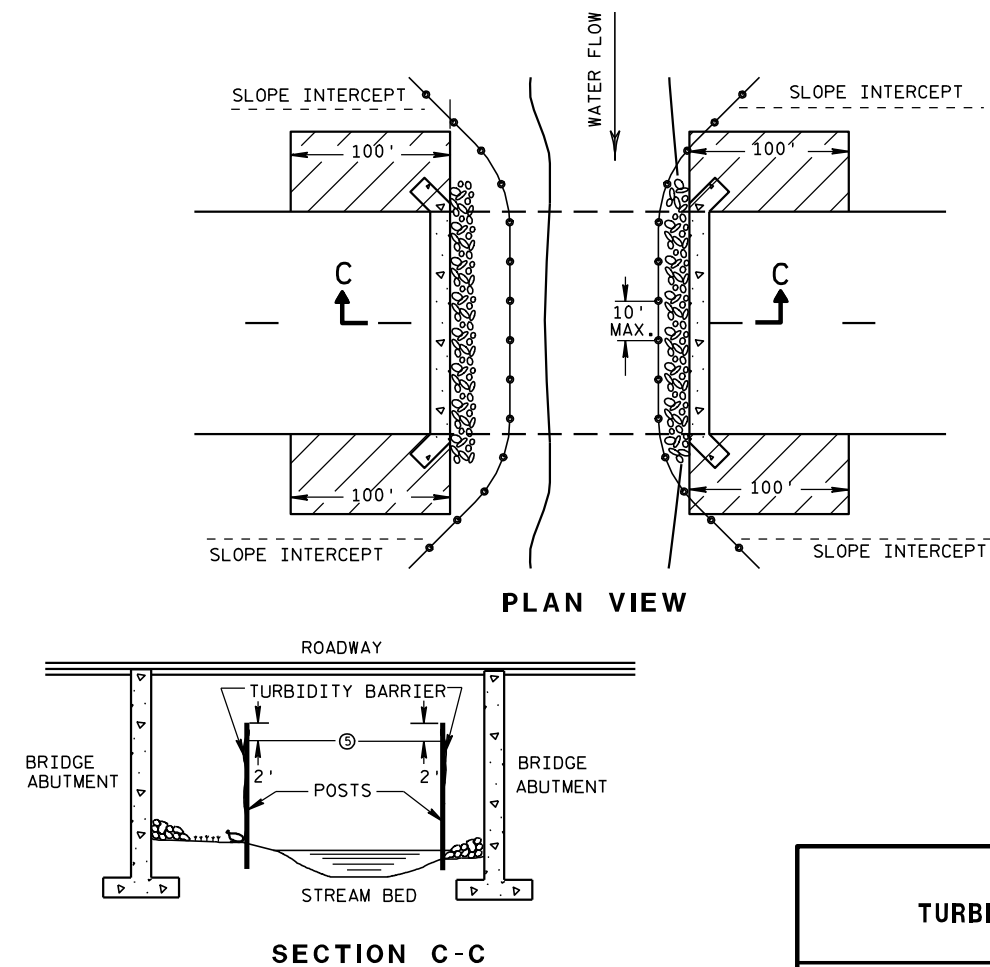


GENERAL NOTES

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

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

- ① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.
- ② SANDBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.
- ③ WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.
- ④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.
- ⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MINIMUM BARRIER HEIGHT SHALL BE 2' GREATER THAN EITHER THE 02 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WHICHEVER IS GREATER.
- ⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.
- ⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.
- ⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

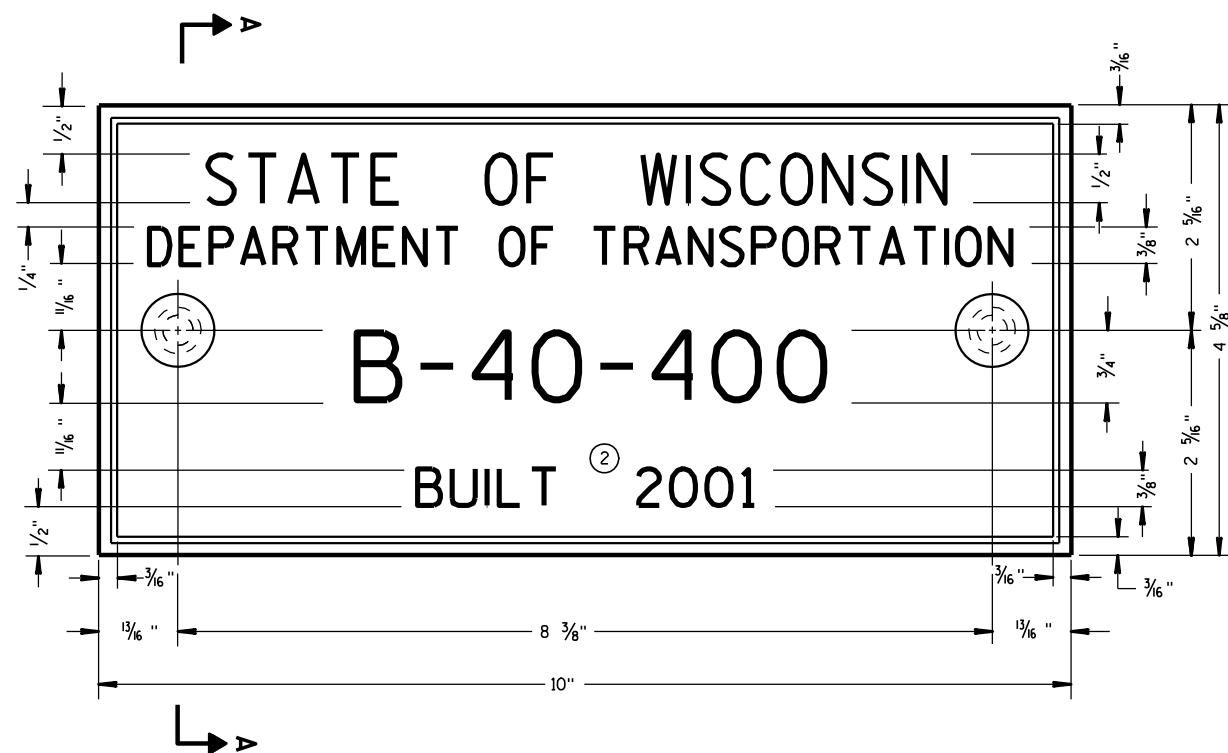
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

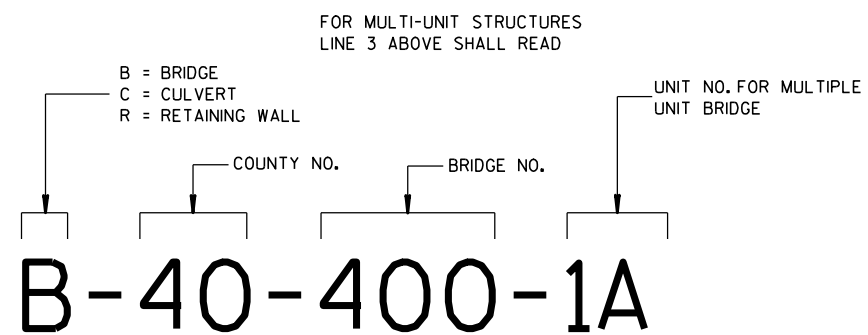
6/04/02
DATE

FHWA

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



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



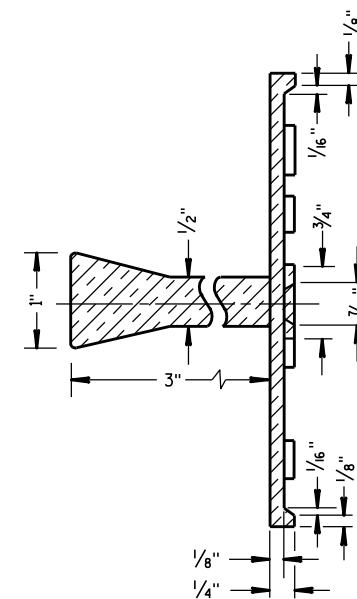
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

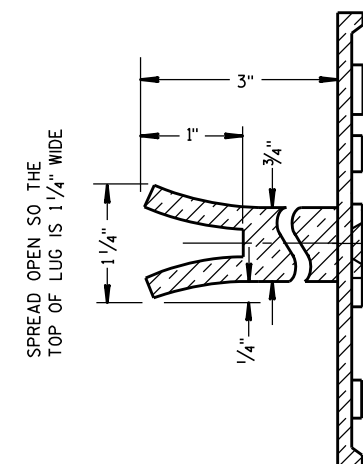
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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.

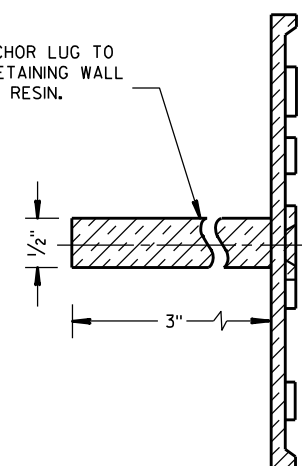


SECTION A-A



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

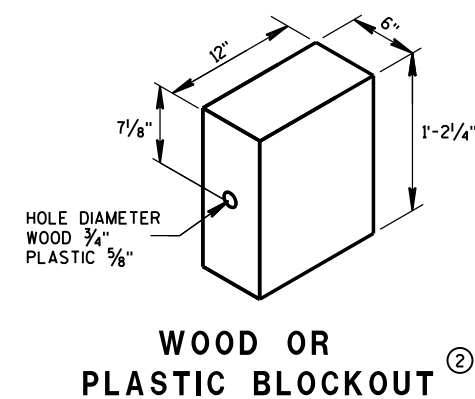
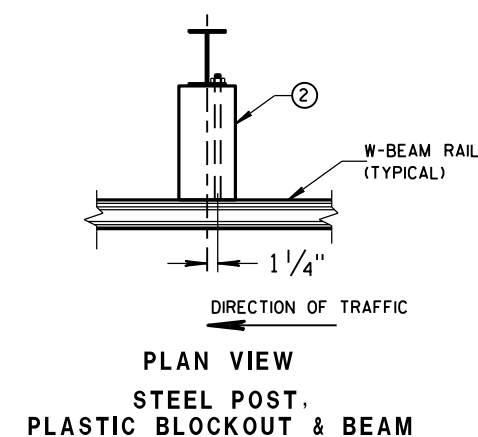
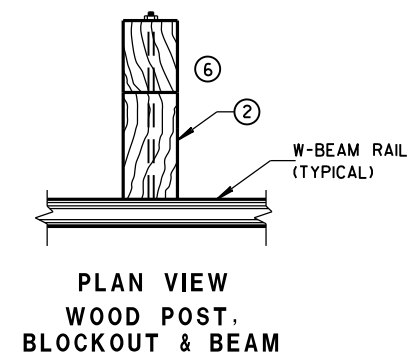
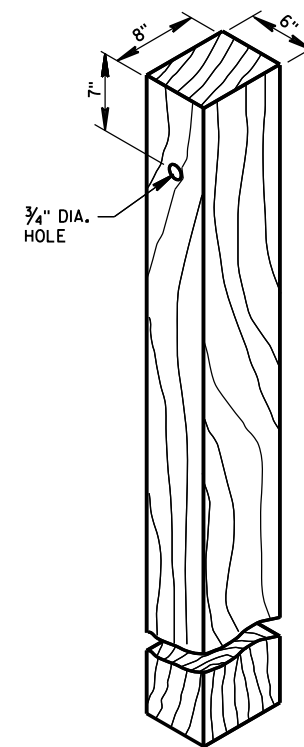
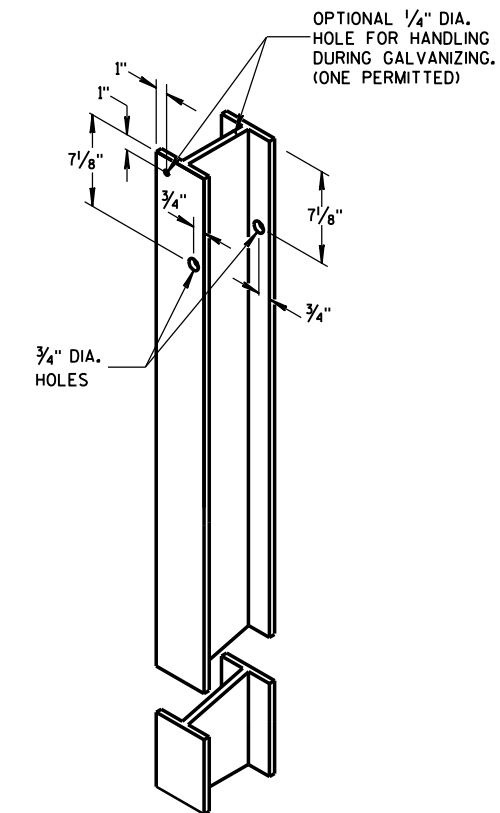
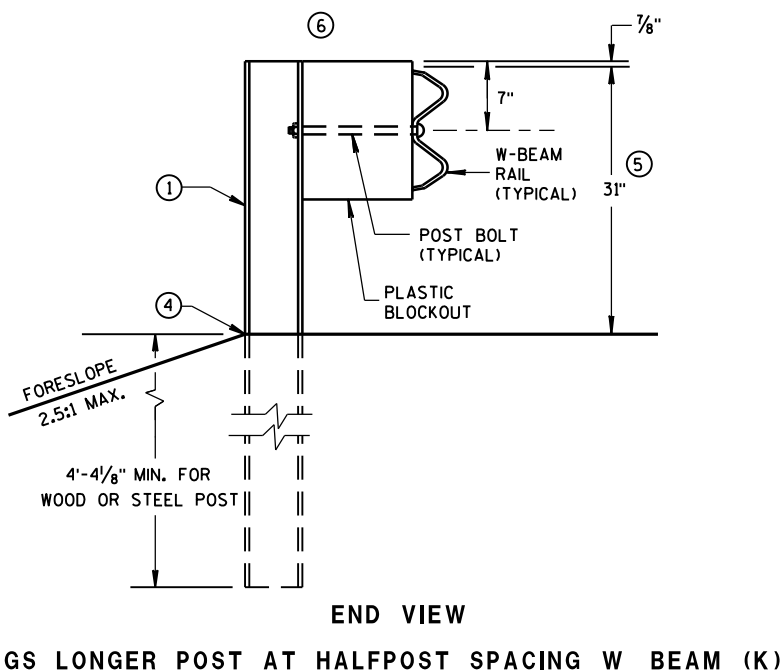
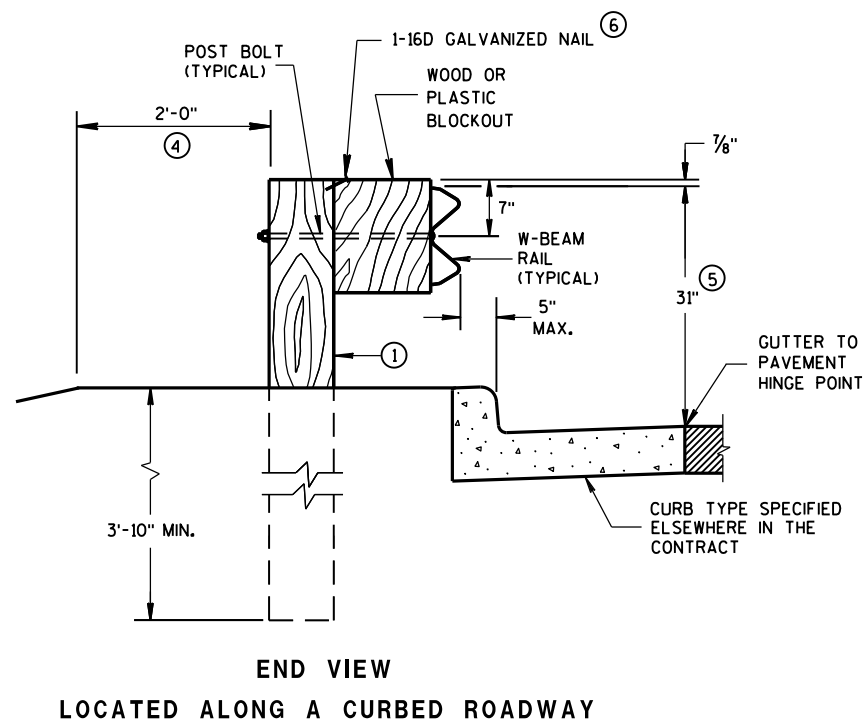
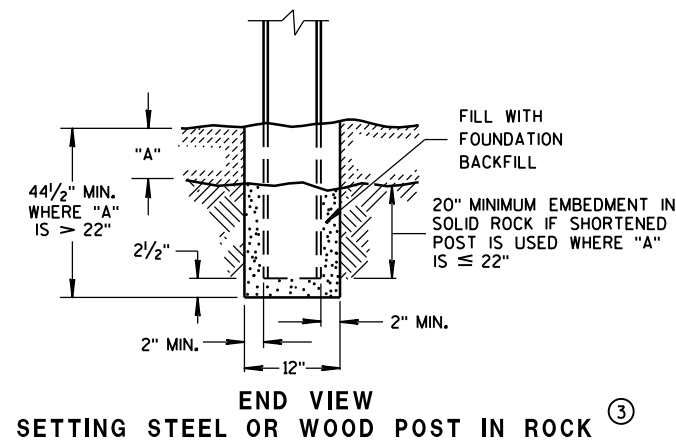
APPROVED

3/26/10
DATE

FHWA

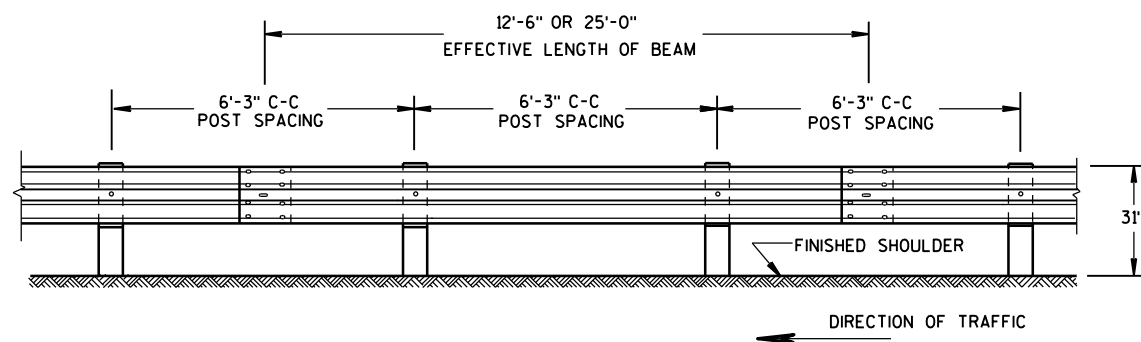
/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER

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



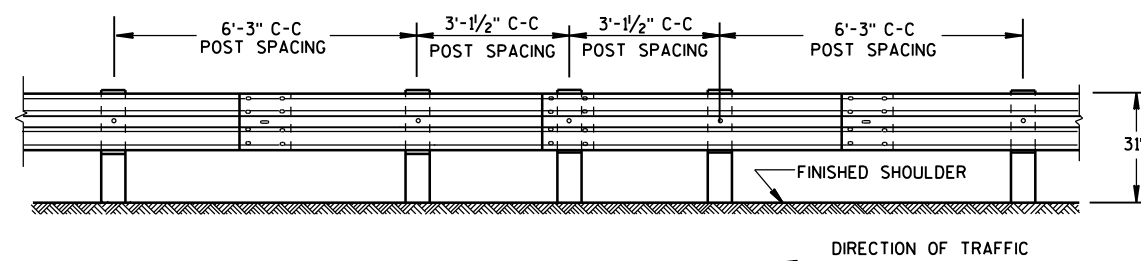
**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION**



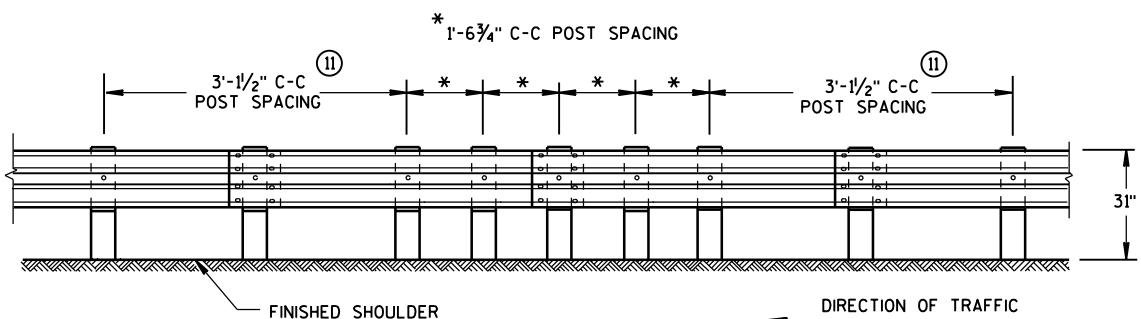
FRONT VIEW

POST SPACING STANDARD INSTALLATION



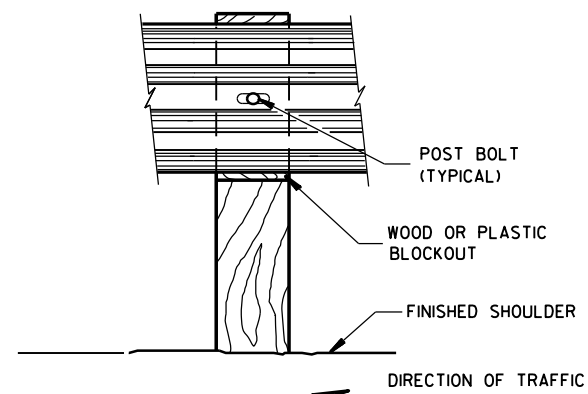
FRONT VIEW

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

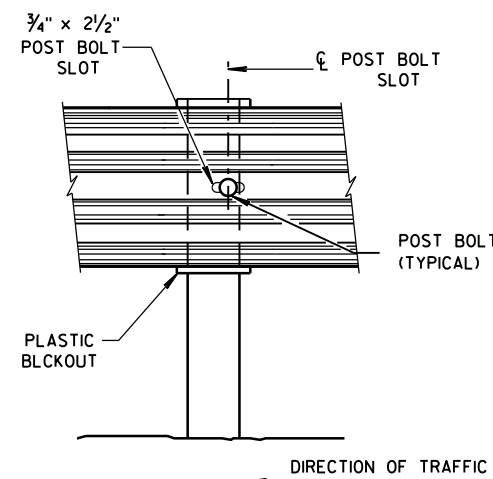


FRONT VIEW

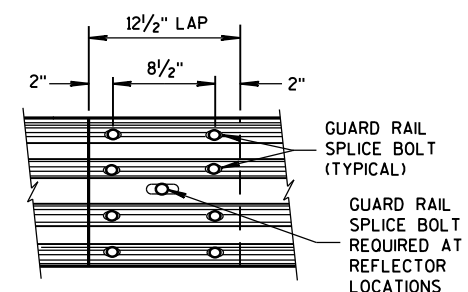
QUARTER POST SPACING (QS)



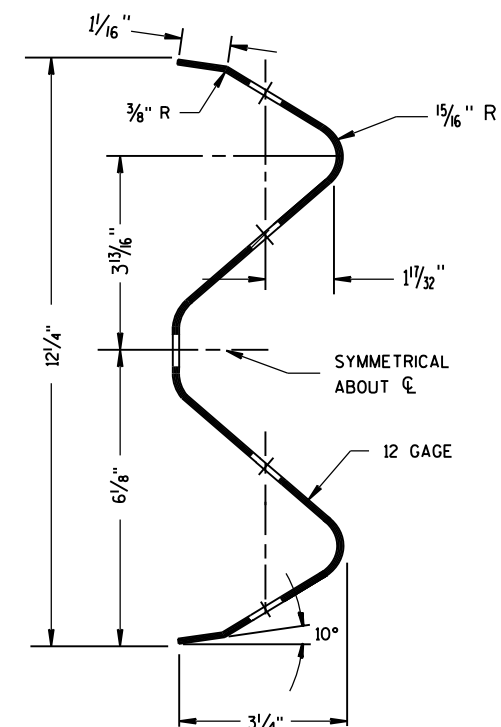
FRONT VIEW AT WOOD POST



FRONT VIEW AT STEEL POST



FRONT VIEW
MID-SPAN BEAM SPLICE

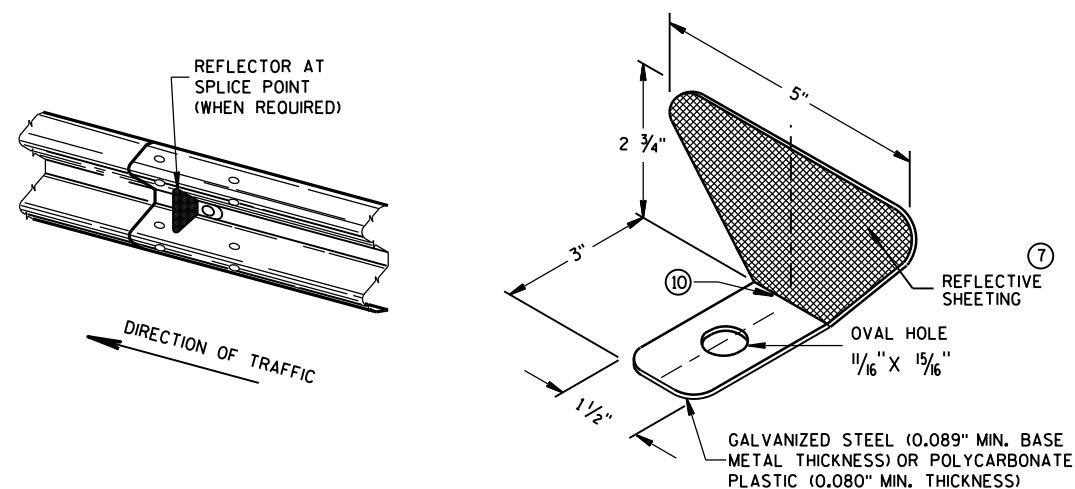


SECTION THRU W-BEAM RAIL

REFLECTOR SPACING ^⑧				
	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	1 1	3
TWO WAY TRAFFIC	< 200' > 200'	25' C-C 50' C-C	1 1 ^⑨	6
TWO WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	2 2 ^⑩	3

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

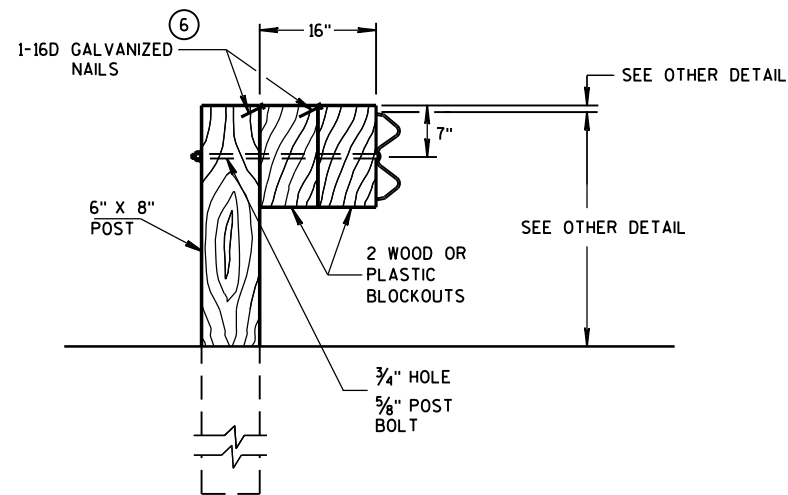
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

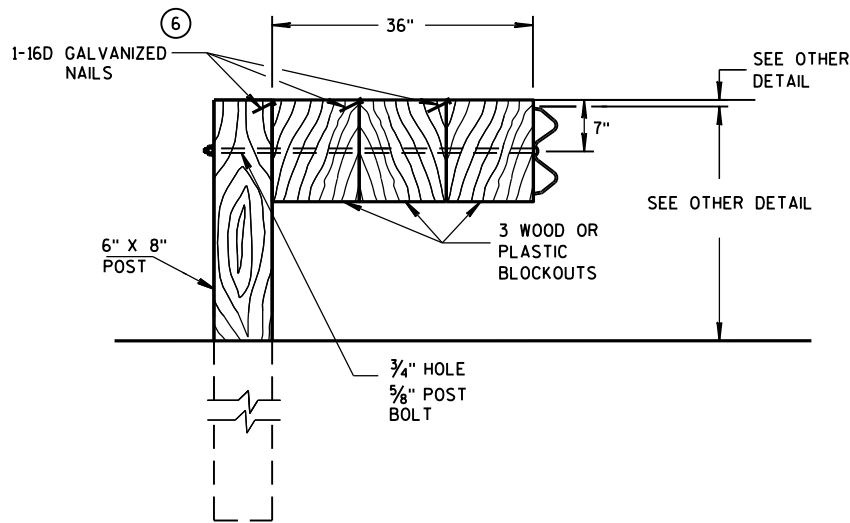
- ⑦ PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.
 - ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF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

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



DETAIL FOR 16" BLOCKOUT DEPTH

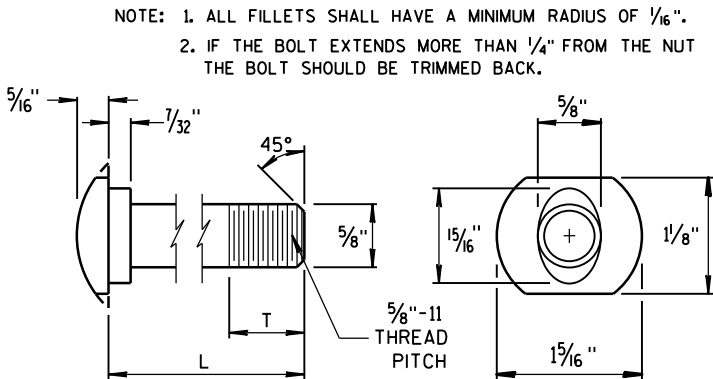
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



DETAIL FOR 36" BLOCKOUT DEPTH

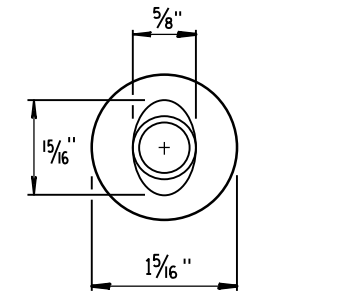
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

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

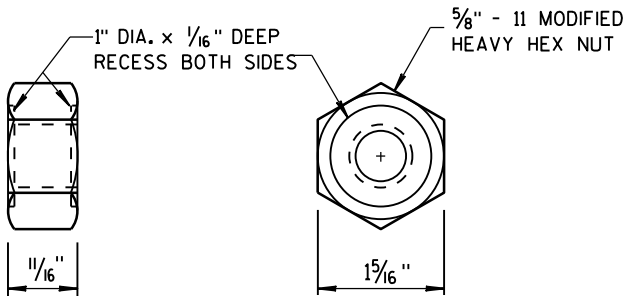


POST BOLT TABLE

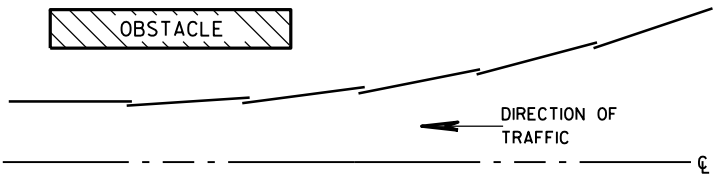
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



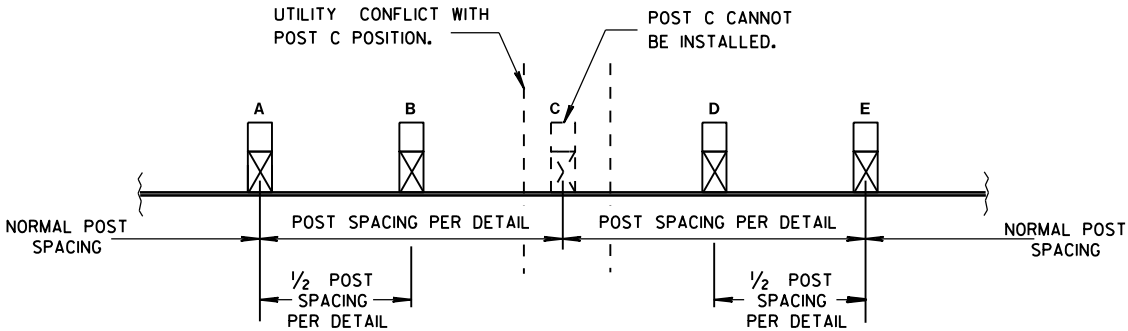
ALTERNATE BOLT HEAD



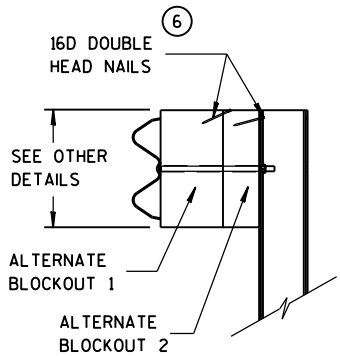
POST BOLT, SPLICE BOLT AND RECESS NUT



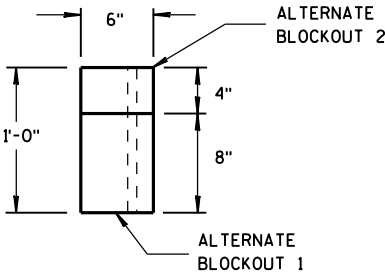
PLAN VIEW BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA ENGINEER

GENERAL NOTES

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.
- (C) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.
- (D) THE TOP OF THE STEEL TUBE ON POST 1 AND POST 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.
- (E) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER.
- (G) 1/2" DIAMETER X 3" LONG LAG BOLT AND WASHER.
- (H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.
- (I) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

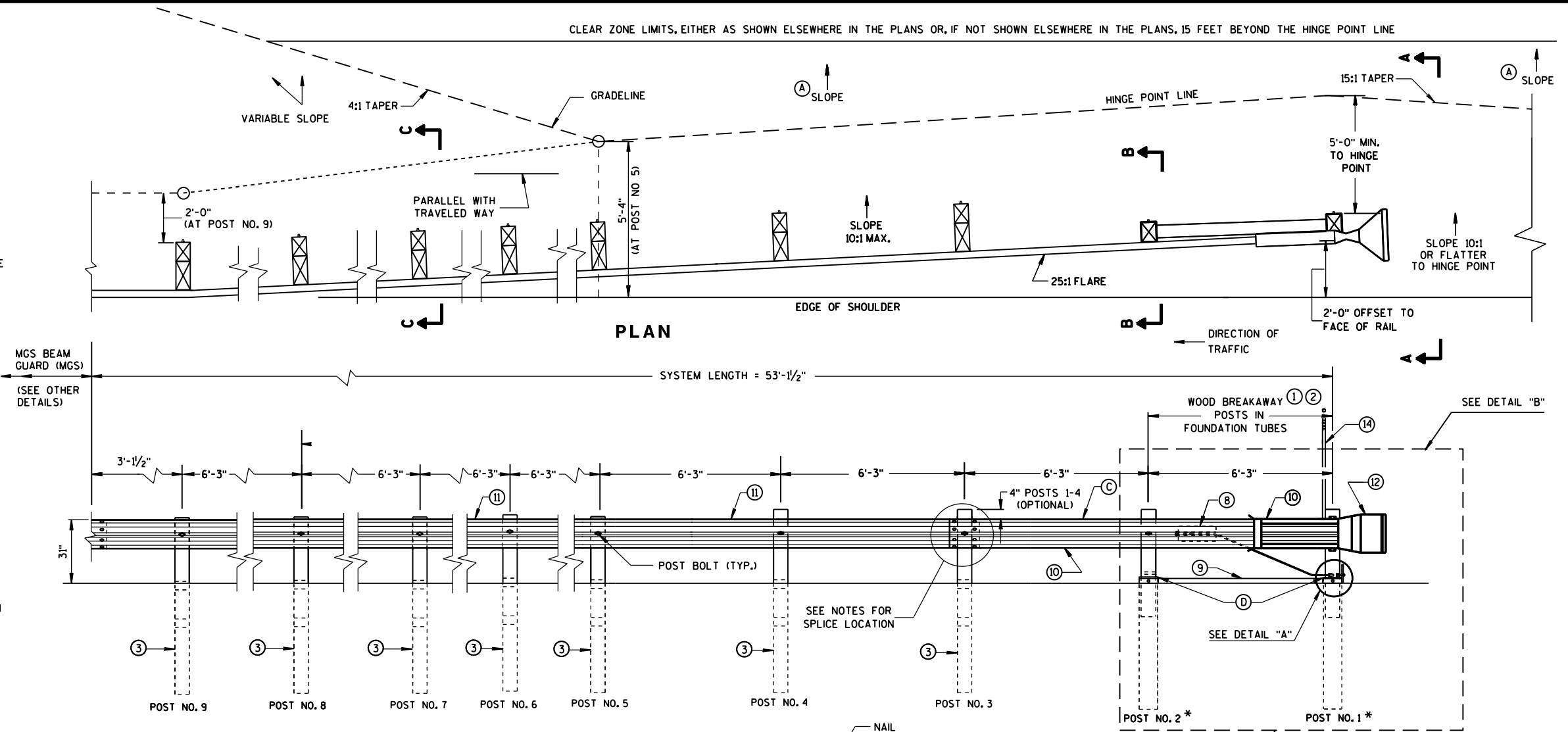
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

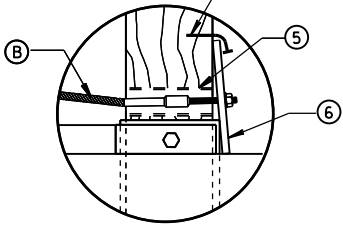
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

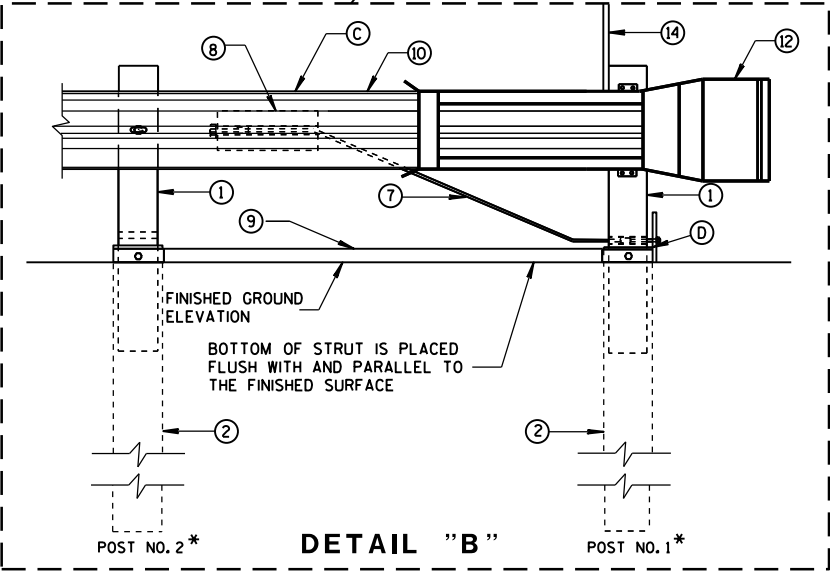
THE CENTER OF THE UPPER 3/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.



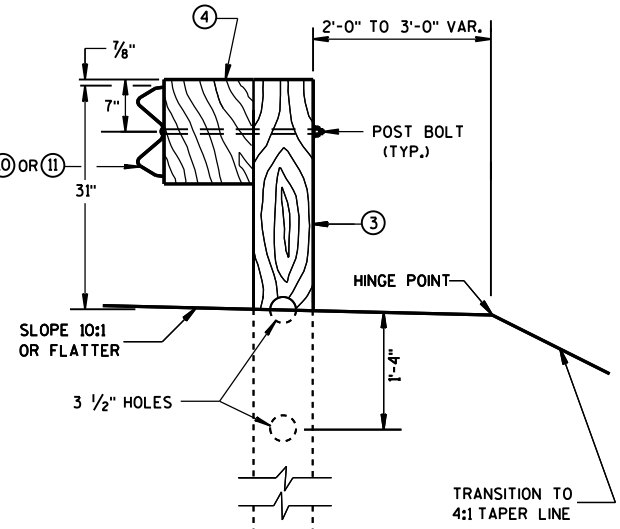
ELEVATION



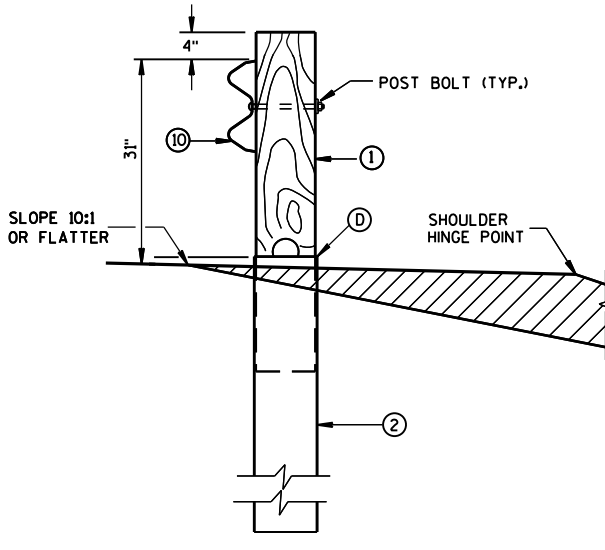
DETAIL "A"



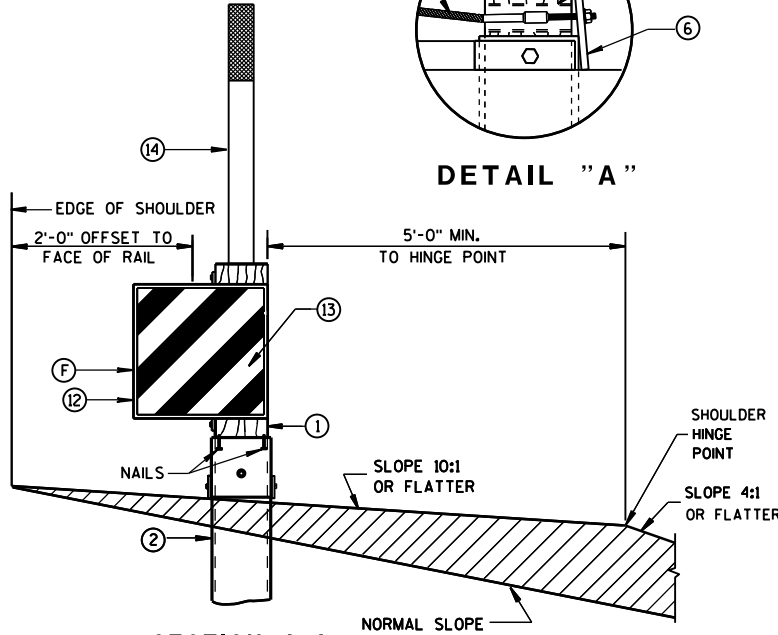
DETAIL "B"



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



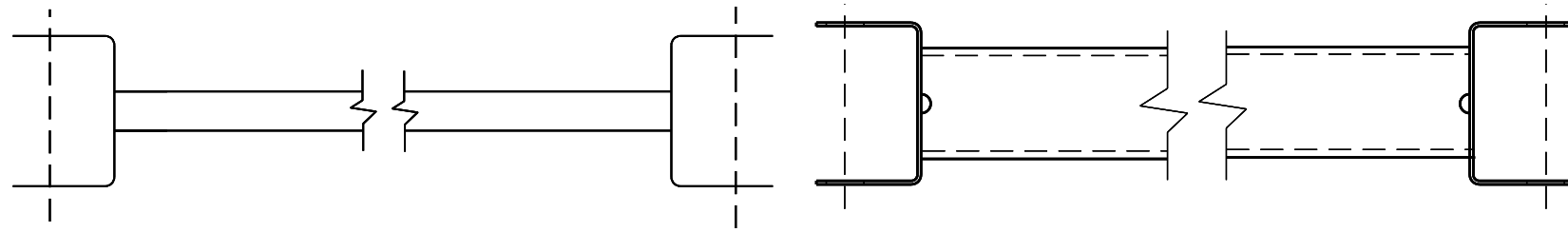
SECTION B-B
TYPICAL AT POST NO. 2*



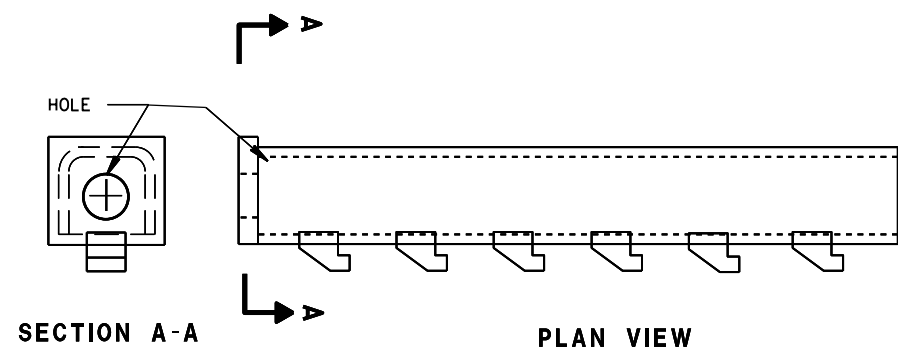
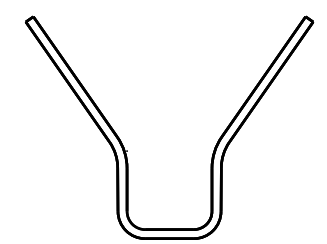
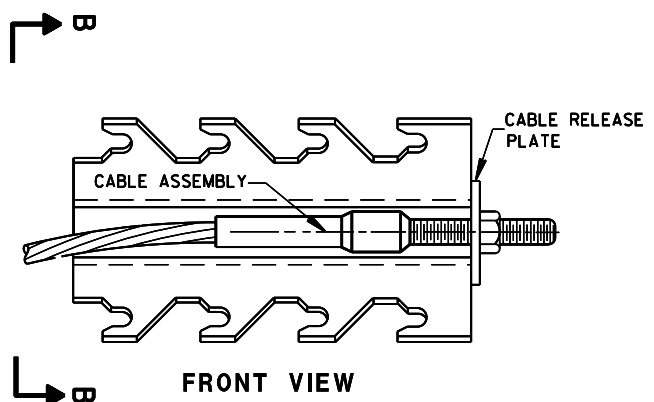
SECTION A-A
TYPICAL AT POST NO. 1*

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



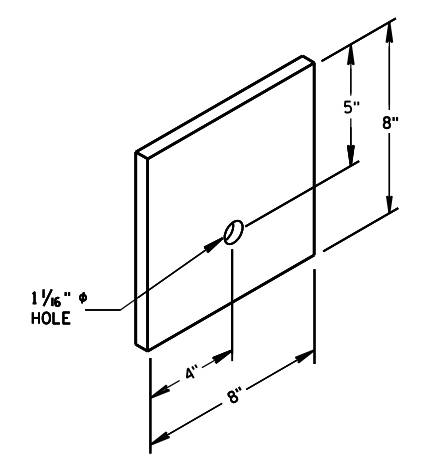
9 H
GENERIC GROUND STRUT



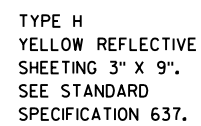
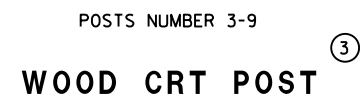
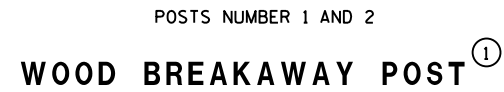
8 H
GENERIC ANCHOR CABLE BOX

BILL OF MATERIALS

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



6
BEARING PLATE



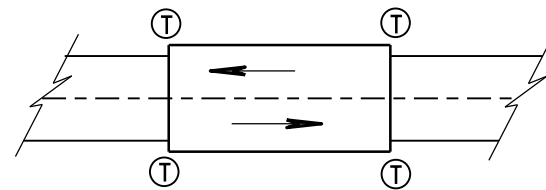
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION**

APPROVED
June 2014 /S/ Jerry H. Zogg

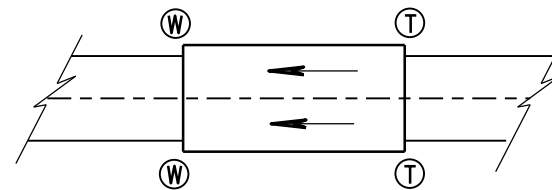
**DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER**

FHWA



TWO WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION



ONE WAY TRAFFIC

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

GENERAL NOTES

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

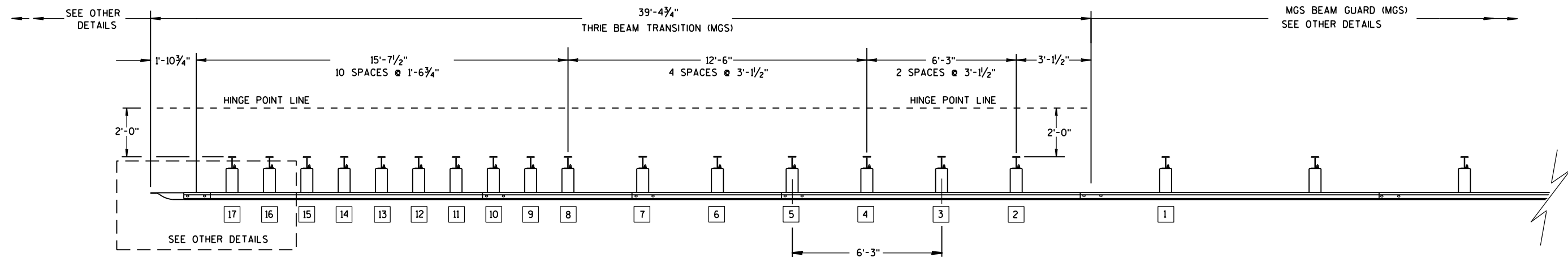
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

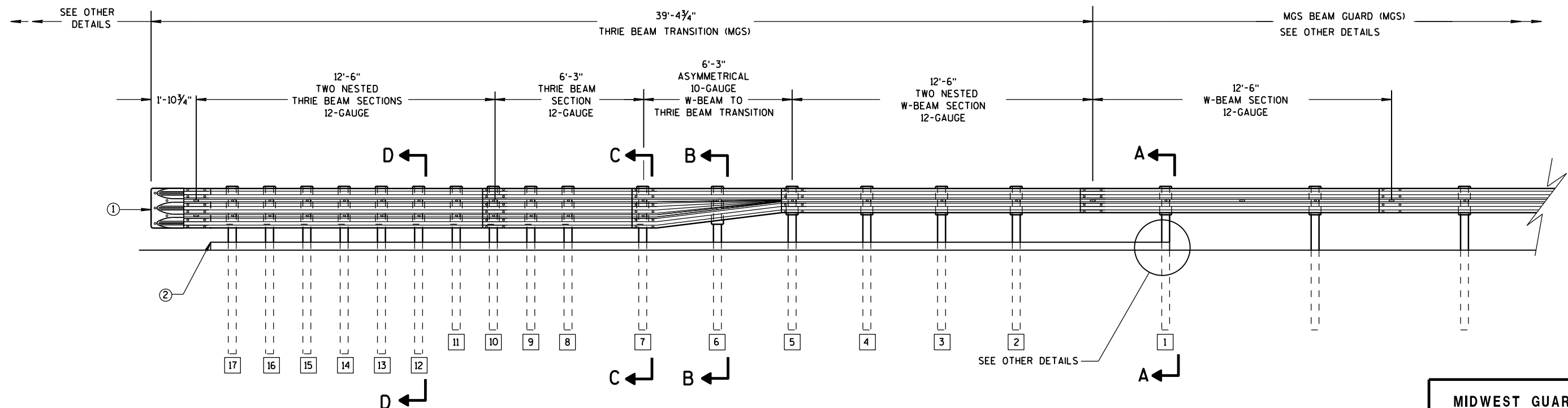
① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

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

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



PLAN VIEW



ELEVATION VIEW

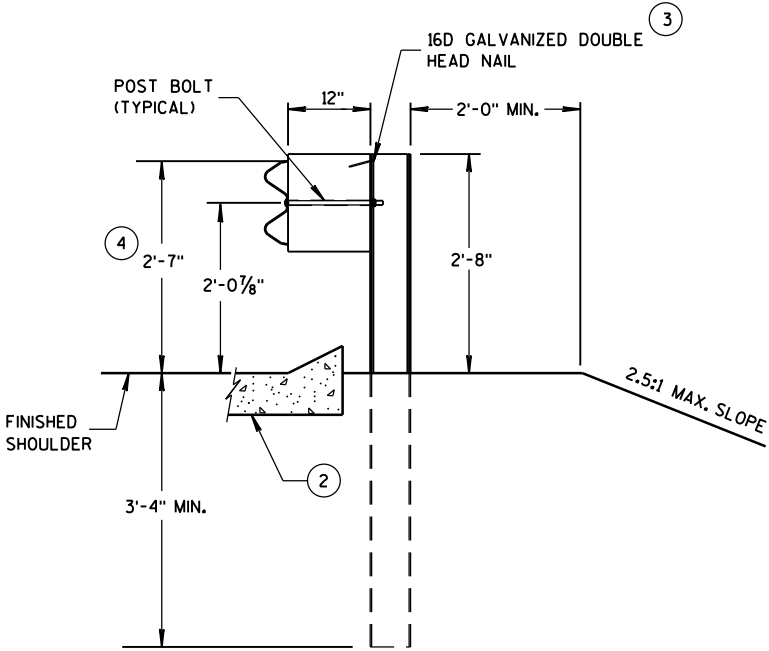
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

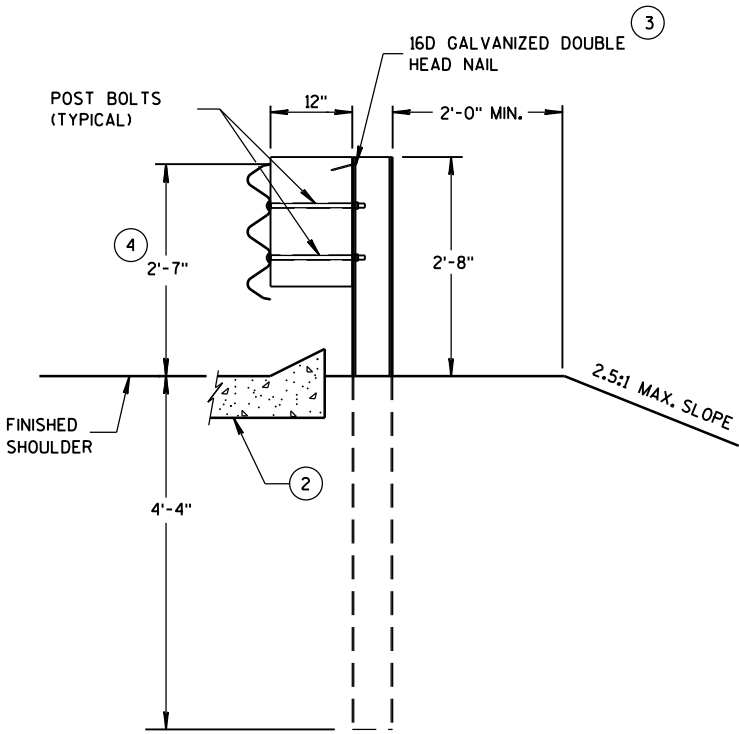
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

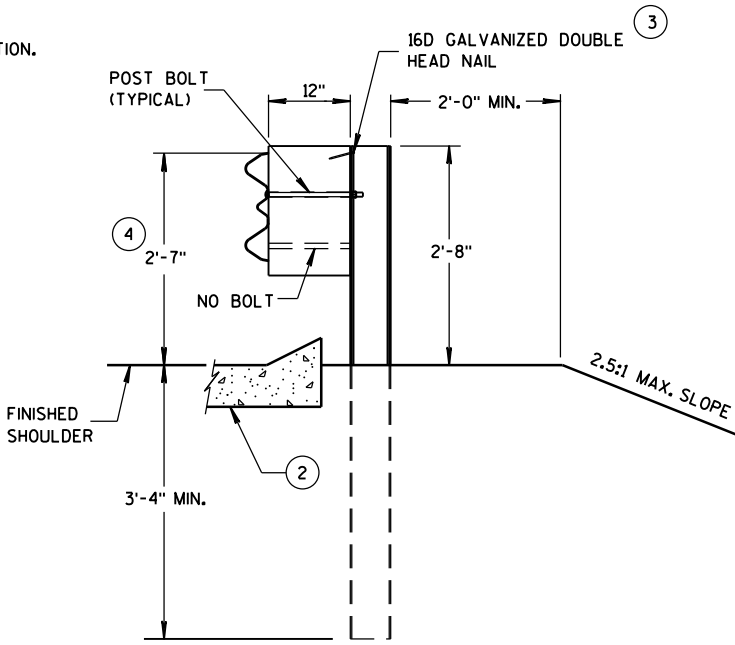
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm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



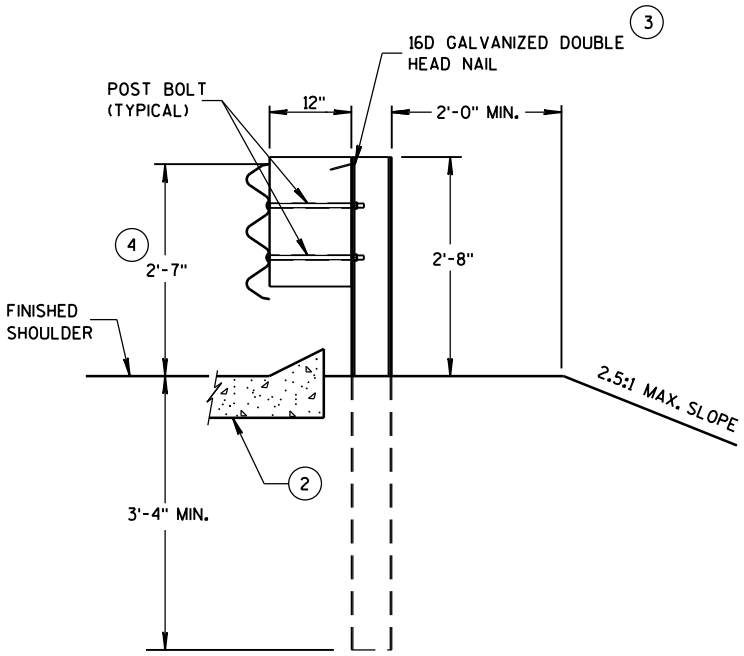
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

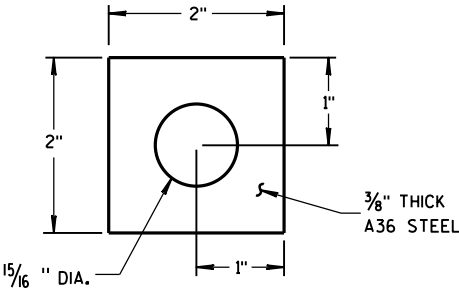
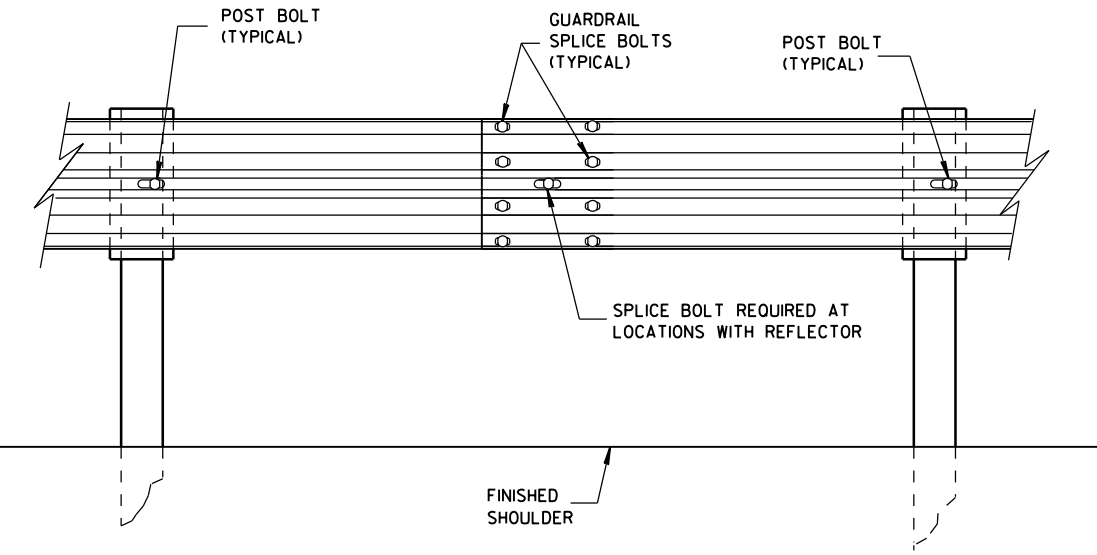
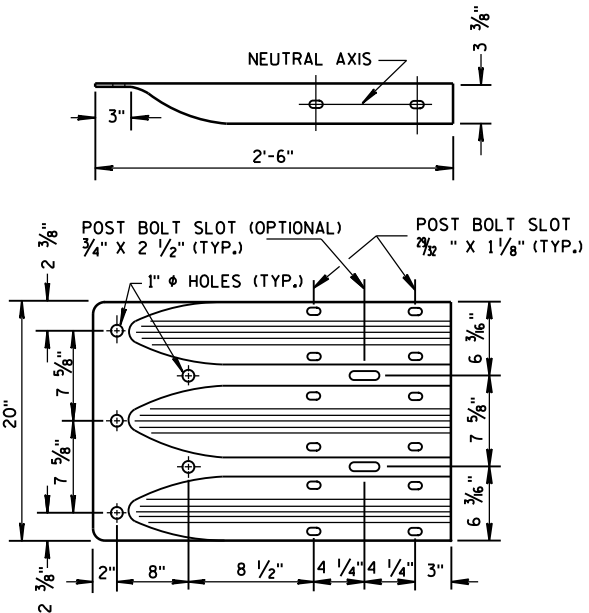


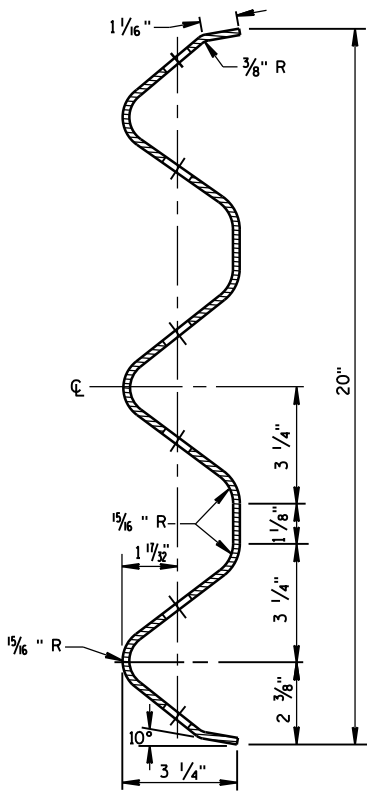
PLATE WASHER DETAIL



SPlice DETAIL



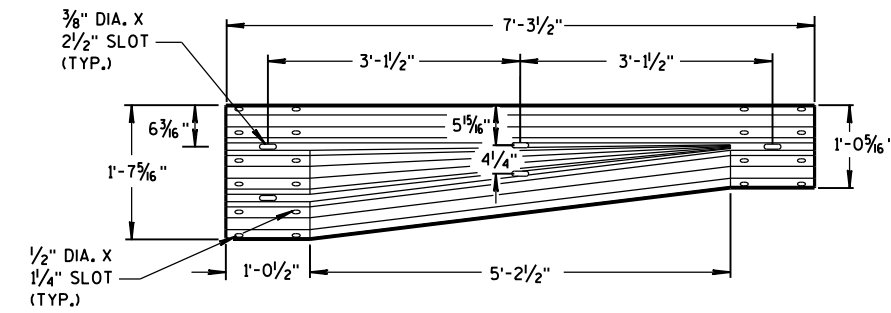
THRIE BEAM
TERMINAL CONNECTOR



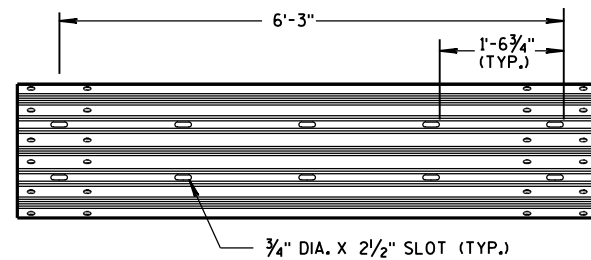
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

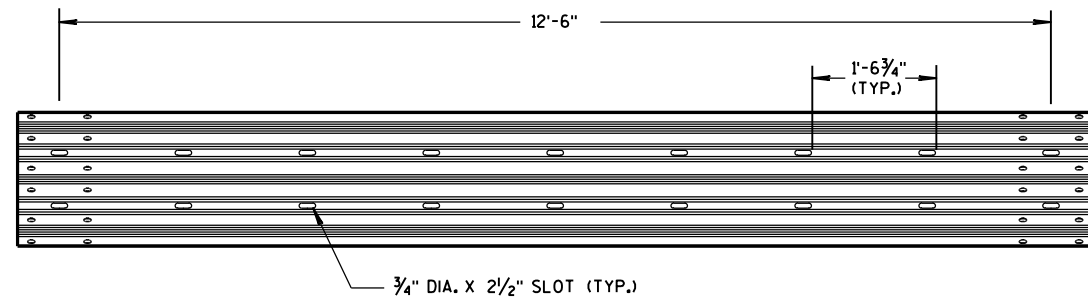
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



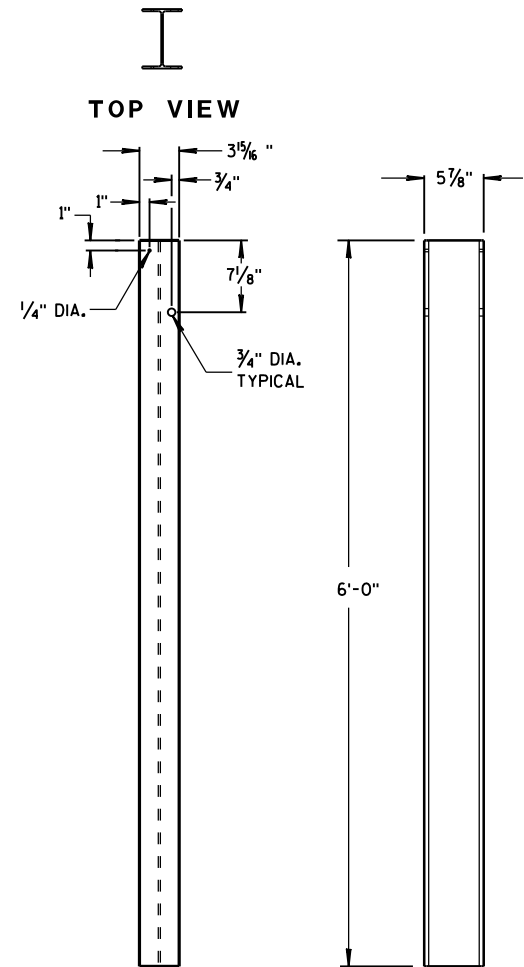
W-BEAM TO THRIE BEAM TRANSITION SECTION



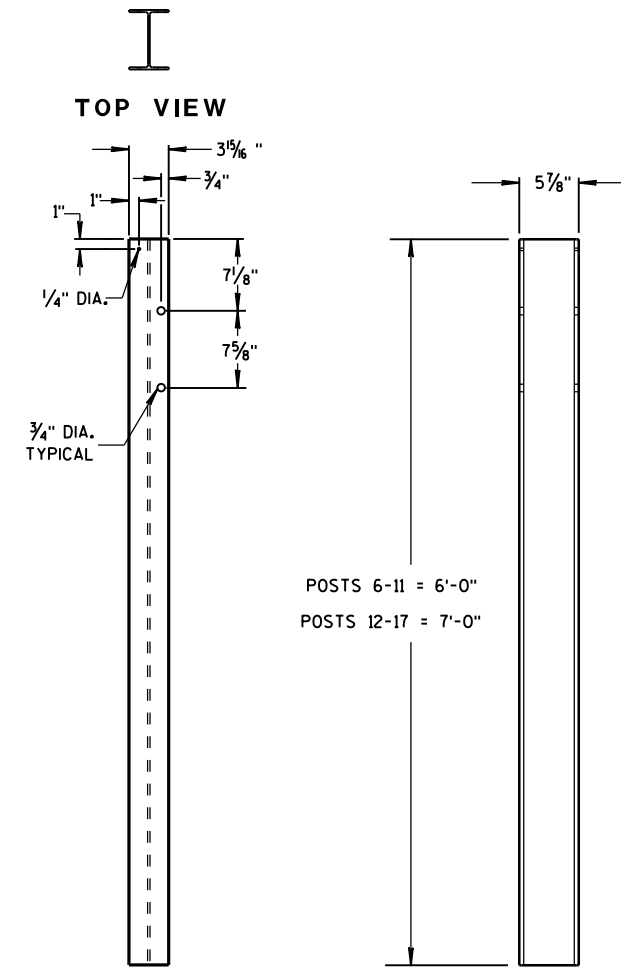
6'-3" THRIE BEAM SECTION



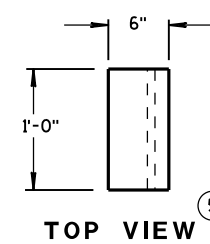
12'-6" THRIE BEAM SECTION



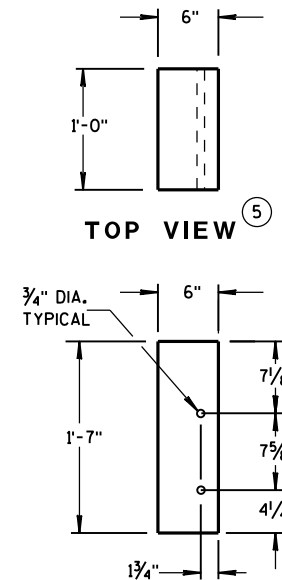
STEEL POSTS 1-5



STEEL POSTS 6-17



BLOCKOUT POSTS 1-5



BLOCKOUT POSTS 6-17

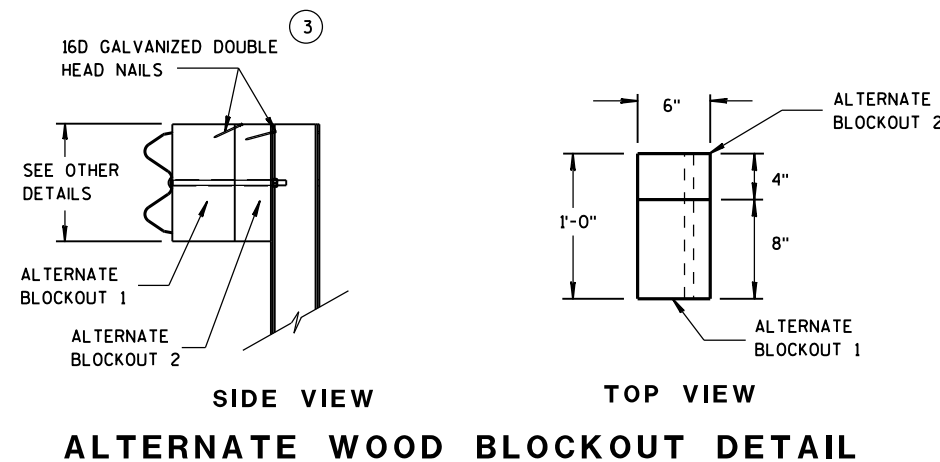
GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

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

⑤ WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

- S.D.D. 14 B 45-4h**



6



5-4h

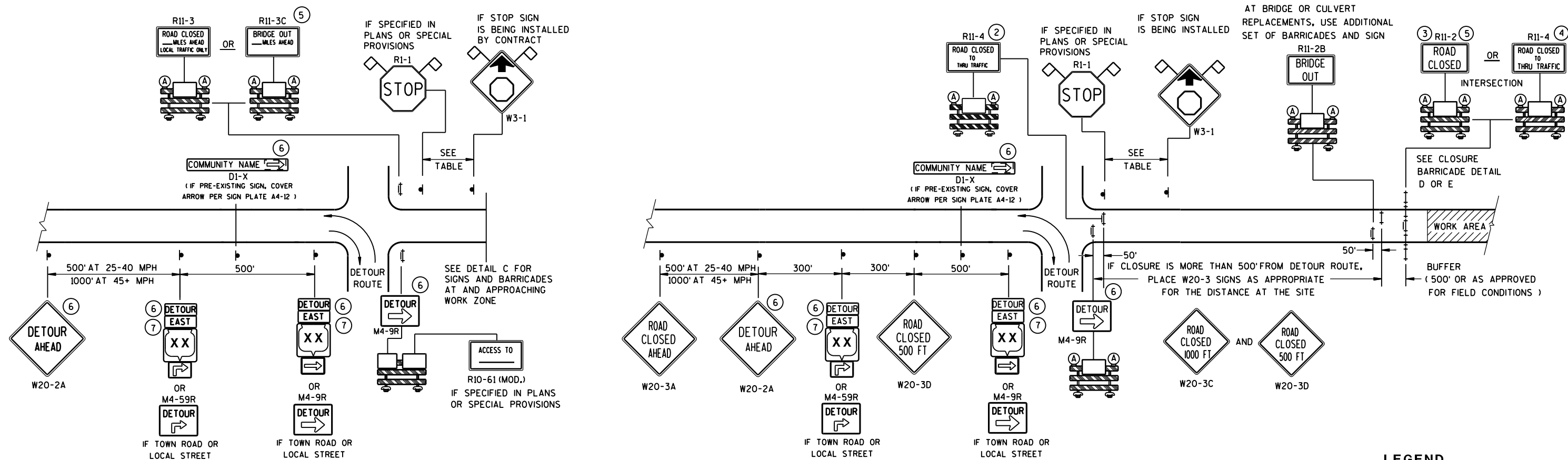


6



S.D.D. 14 B 45-4h

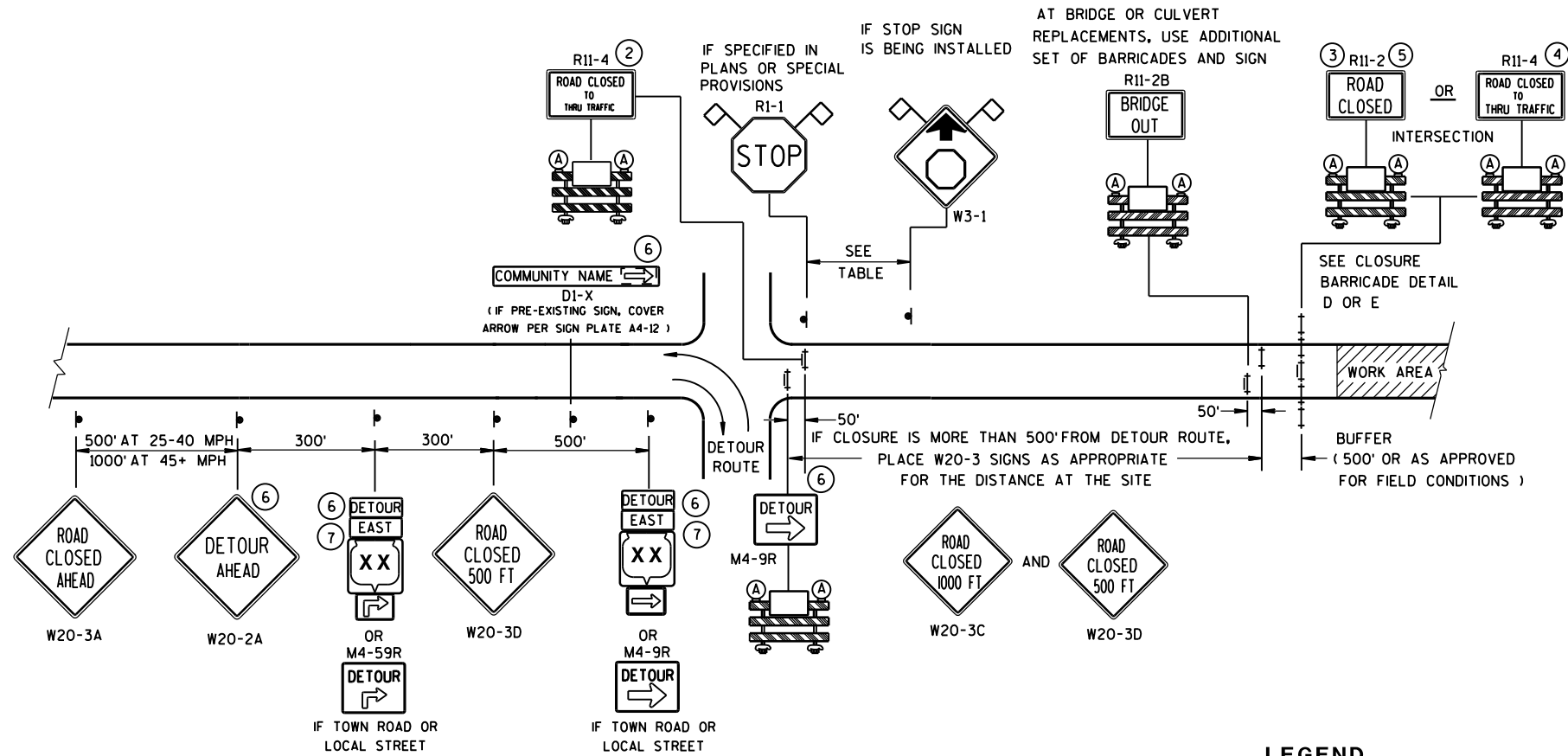
APPROVED	
June, 2015	/s/ Jerry H. Zogg
DATE	ROADWAY STANDARDS DEVELOPMENT
FHWA	ENGINEER



DETAIL A

MAINLINE CLOSURE WITH POSTED DETOUR

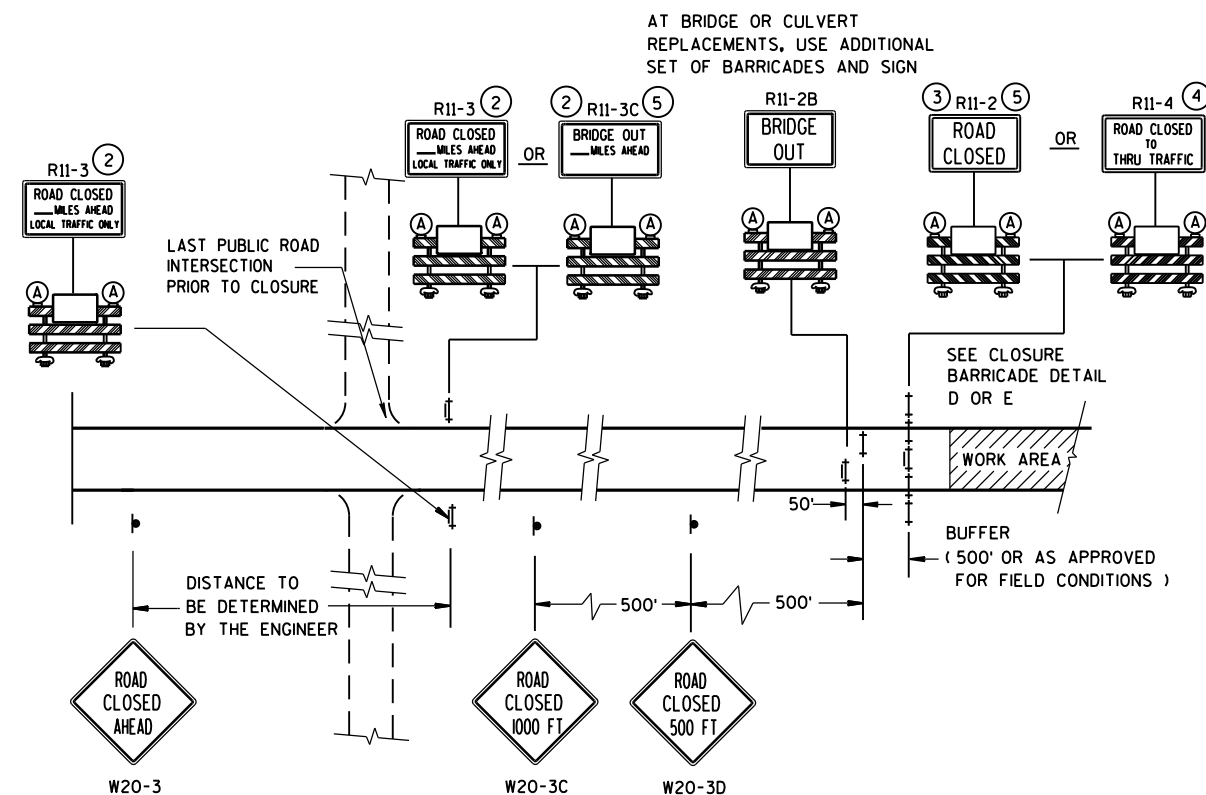
WORK ZONE GREATER THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B

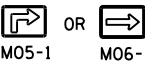
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



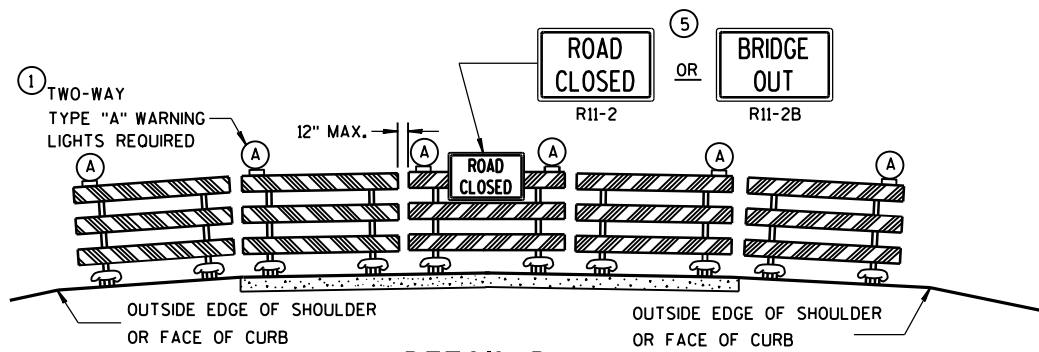
DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

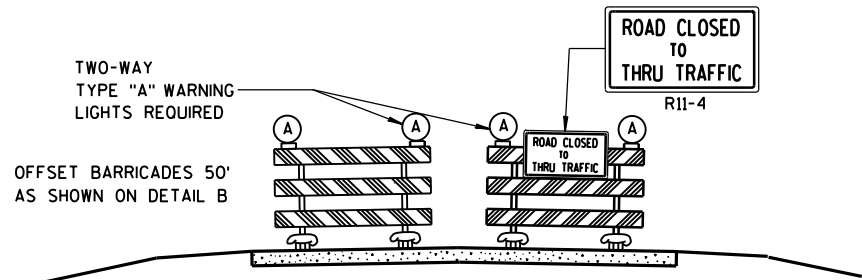
- ## LEGEND
- | | |
|---|---------------------------------------|
|  | SIGN ON PERMANENT SUPPORT |
|  | TYPE III BARRICADE |
|  | TYPE III BARRICADE WITH ATTACHED SIGN |
|  | TYPE "A" WARNING LIGHT (FLASHING) |
|  | WORK AREA |
|  | M4-8
M3-X |
|  | MI-4 OR COUNTY XX OR MI-6 |
|  | M05-1 OR M06-1 |
|  | FLAGS, 16" X 16" MIN., (ORANGE) |

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
Sept. 2015 DATE	/S/ Peter Amakobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY 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 BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE 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:

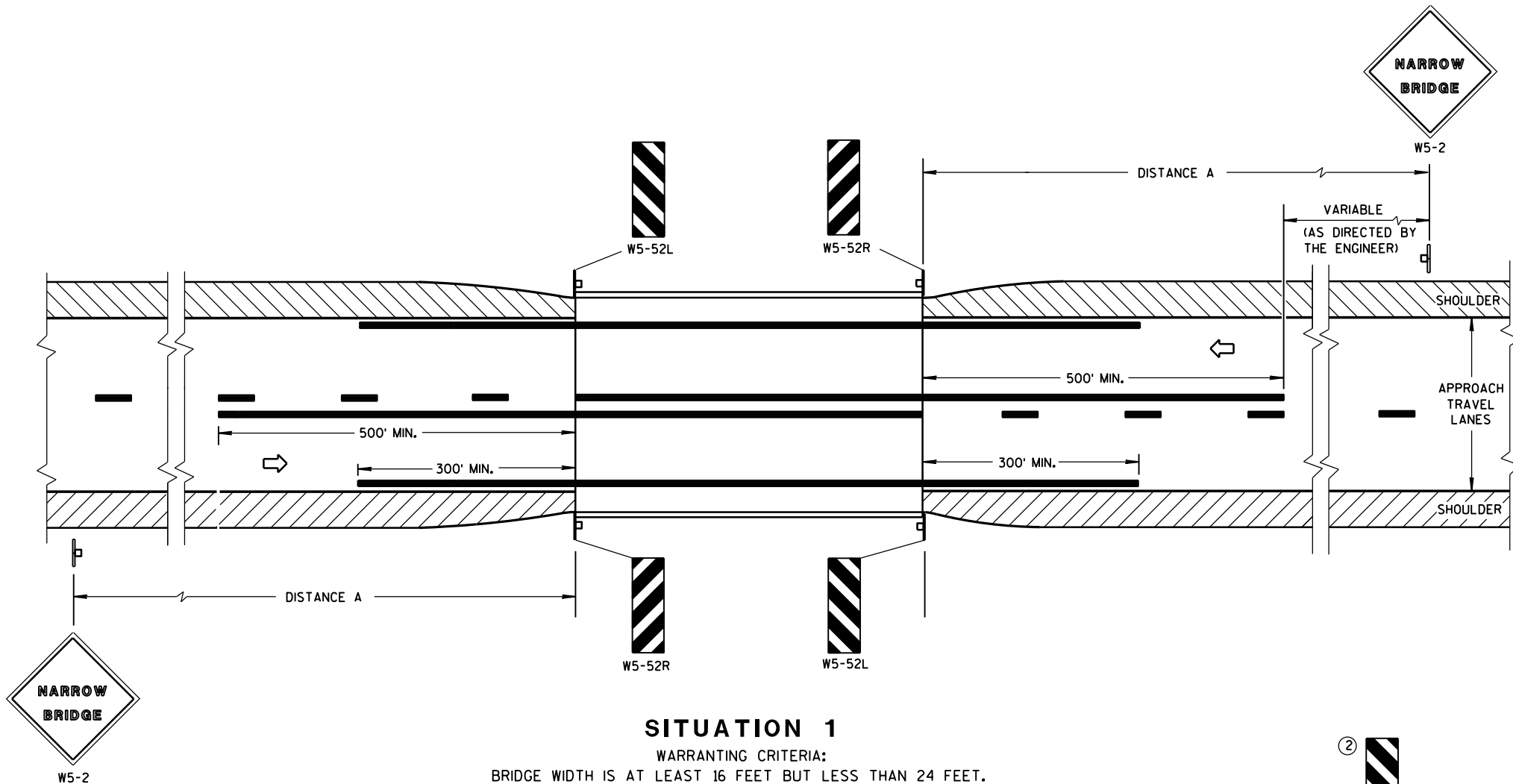
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 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 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 LANE 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
MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Sept. 2015 /S/ Peter Amokobe Atepe
DATE STATEWIDE WORK ZONE TRAFFIC
FHWA SAFETY ENGINEER



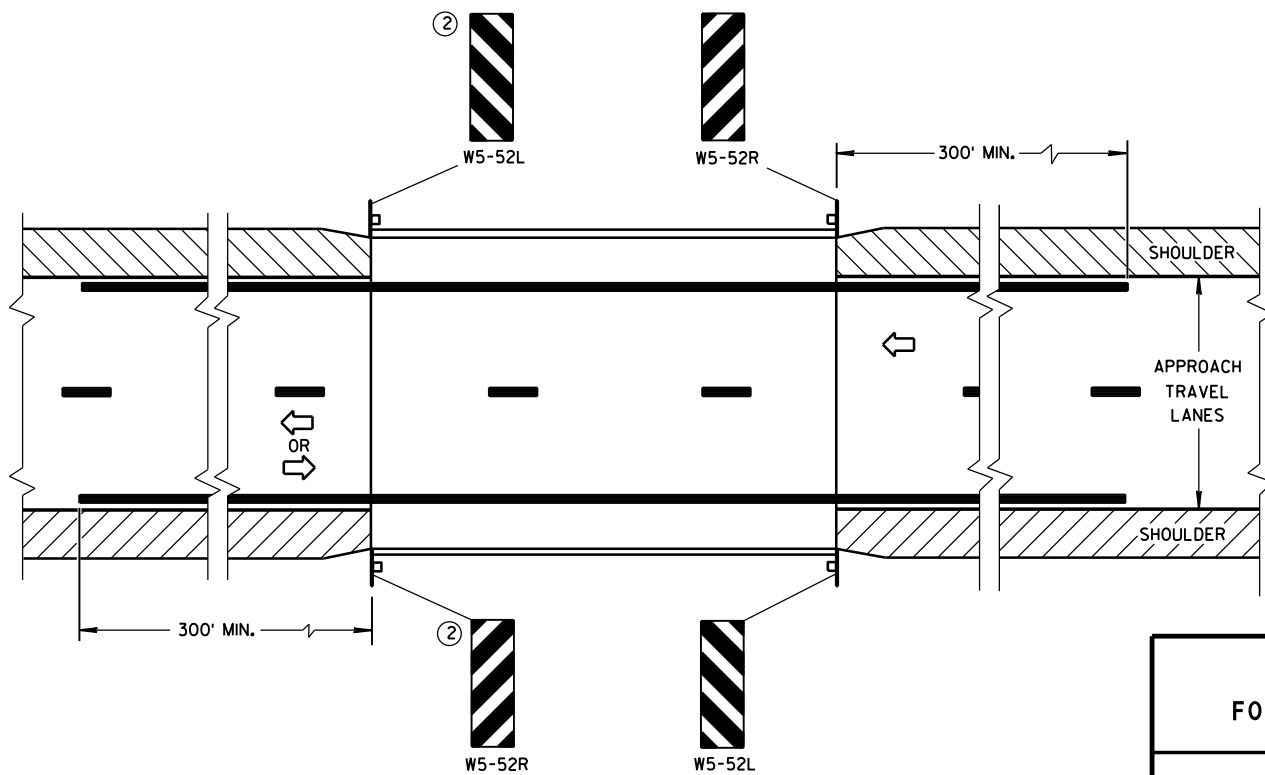
DISTANCE TABLE

POSTED OR 85th PERCENTILE SPEED	DISTANCE "A"
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	750'

GENERAL NOTES

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

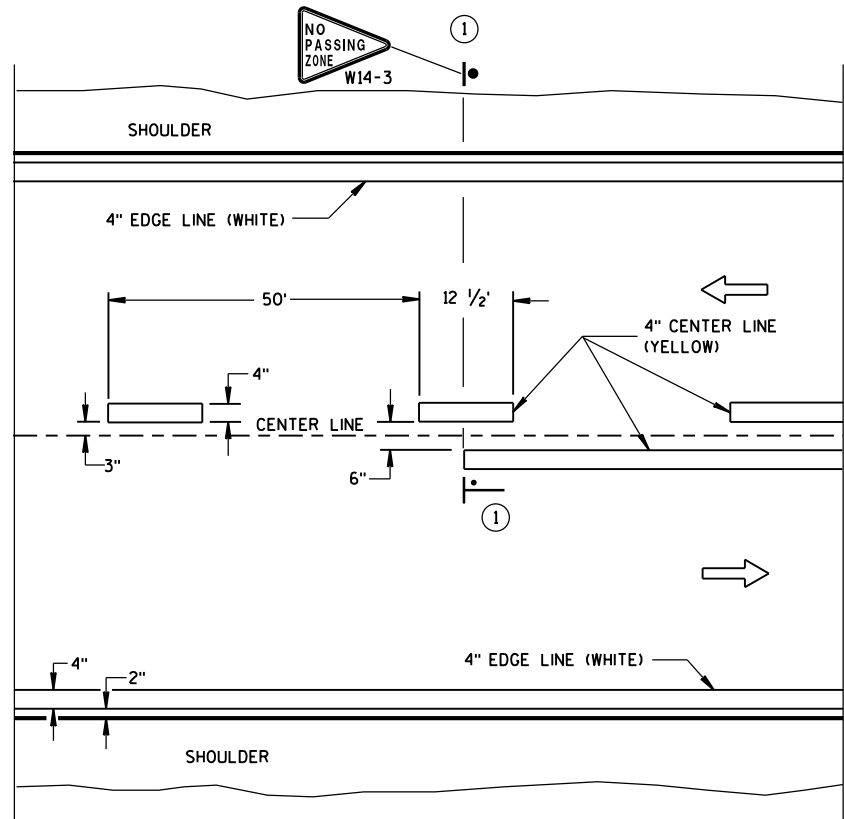
- ① LOCATE W5-52 SIGN POST(S) BEHIND GUARDRAIL WHEN PRESENT.
- ② OMIT ON ONE-WAY TRAVELLED WAYS.
- ③ EDGE OF W5-52 SIGN SHALL BE PLACED IN LINE WITH FACE OF CURB OR PARAPET.



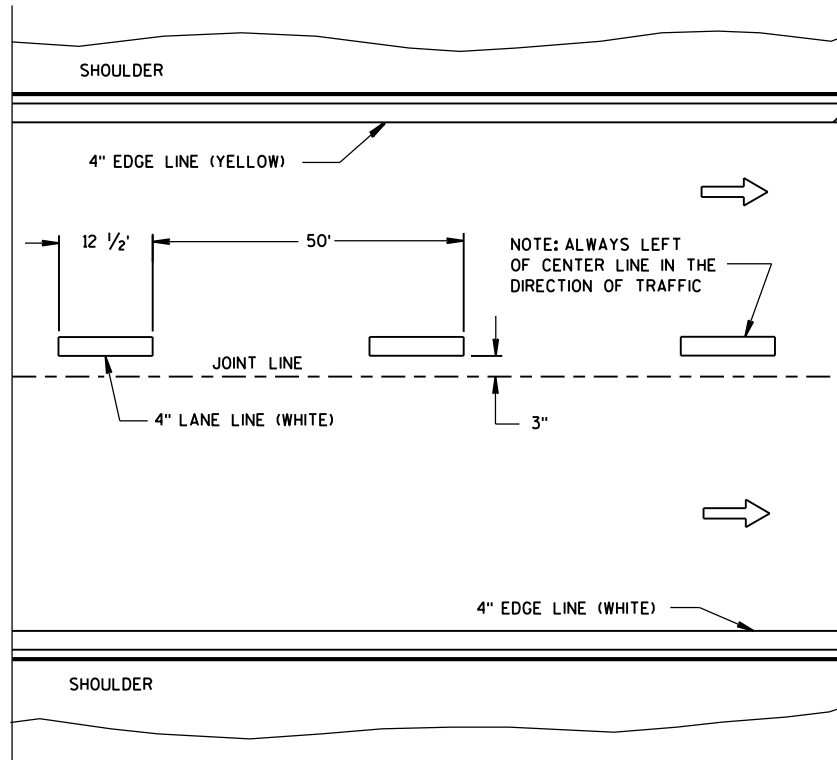
SIGNING & MARKING
FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-18-16 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA

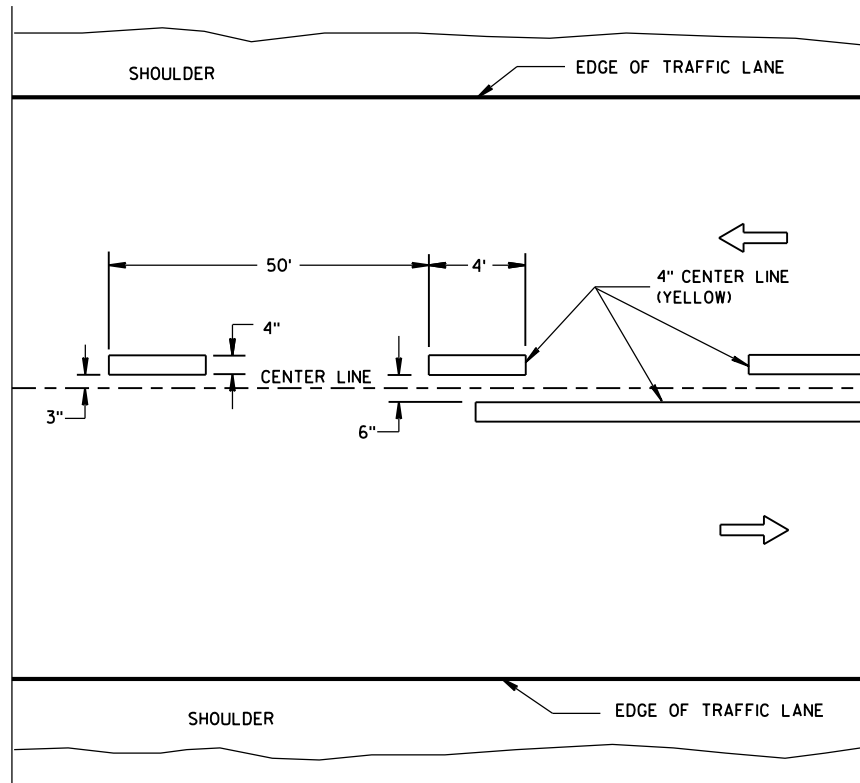


TWO WAY TRAFFIC

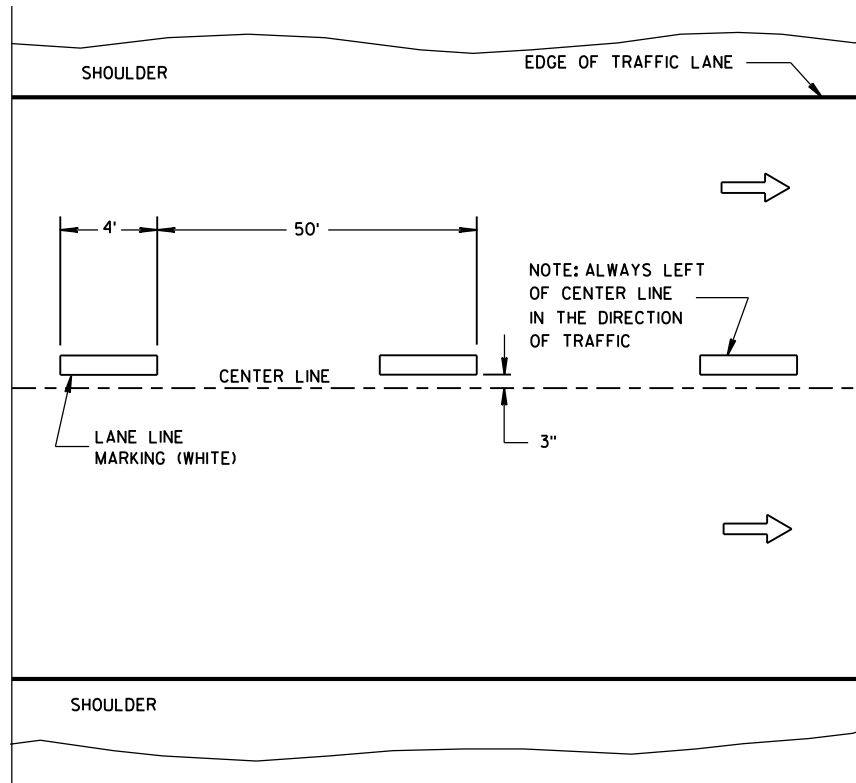


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

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

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL

LEGEND

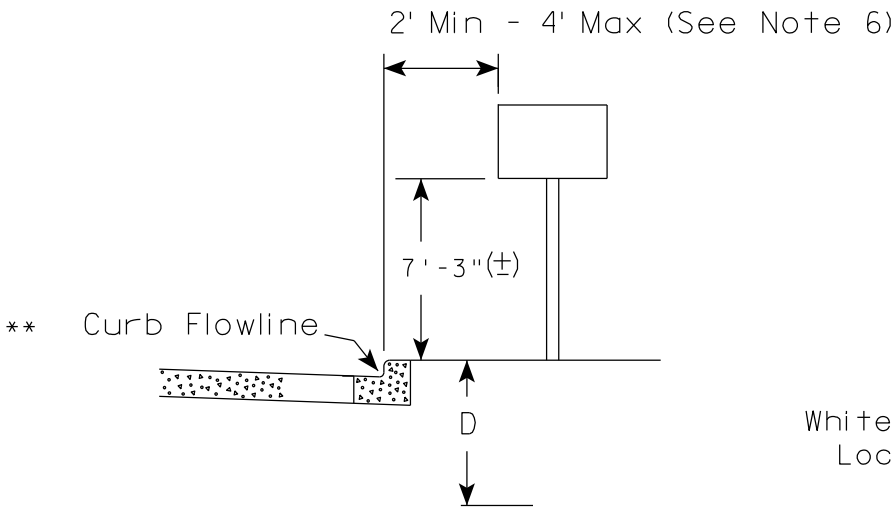
- "T" MARKING
- POST MOUNTED SIGN

LONGITUDINAL MARKING
(MAINLINE)

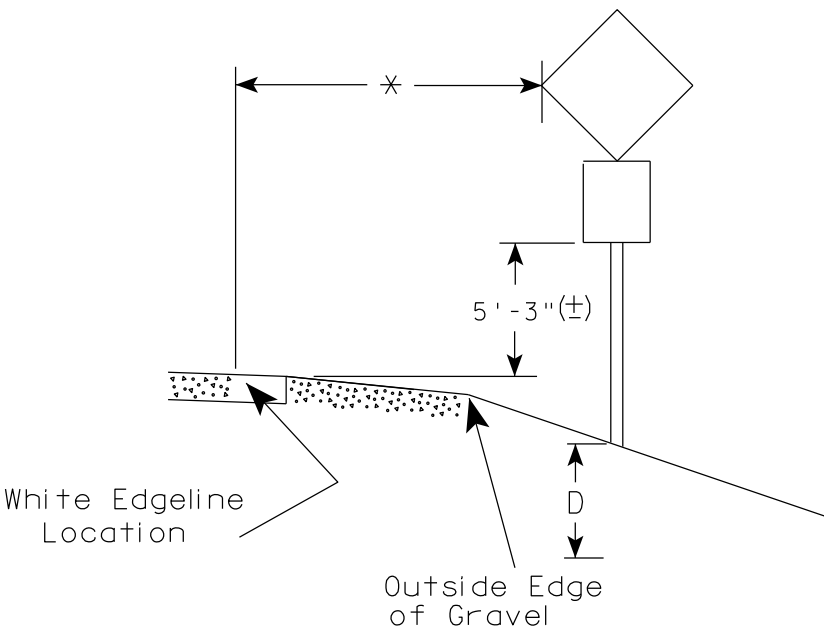
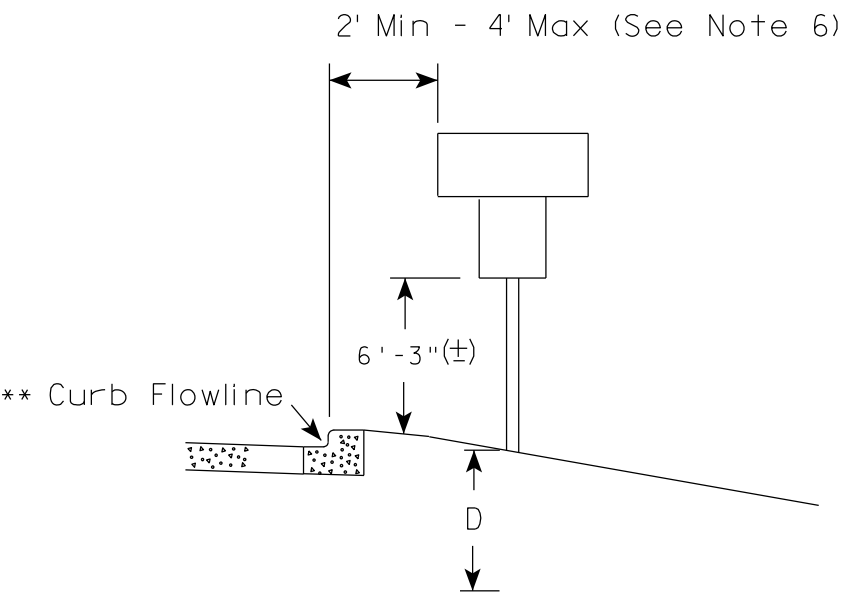
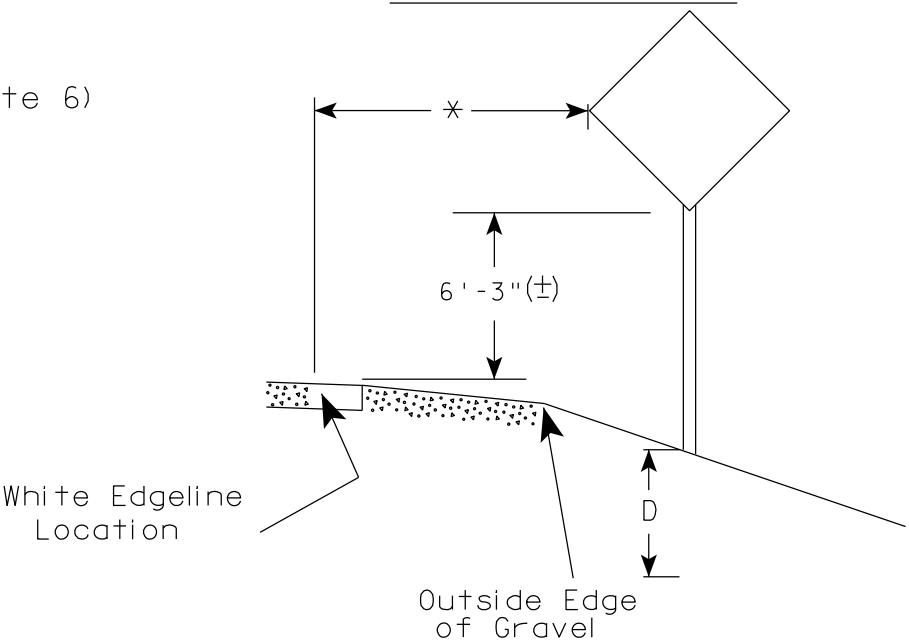
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA

URBAN AREA



RURAL AREA (See Note 2)



GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

POST EMBEDMENT DEPTH

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

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

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

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

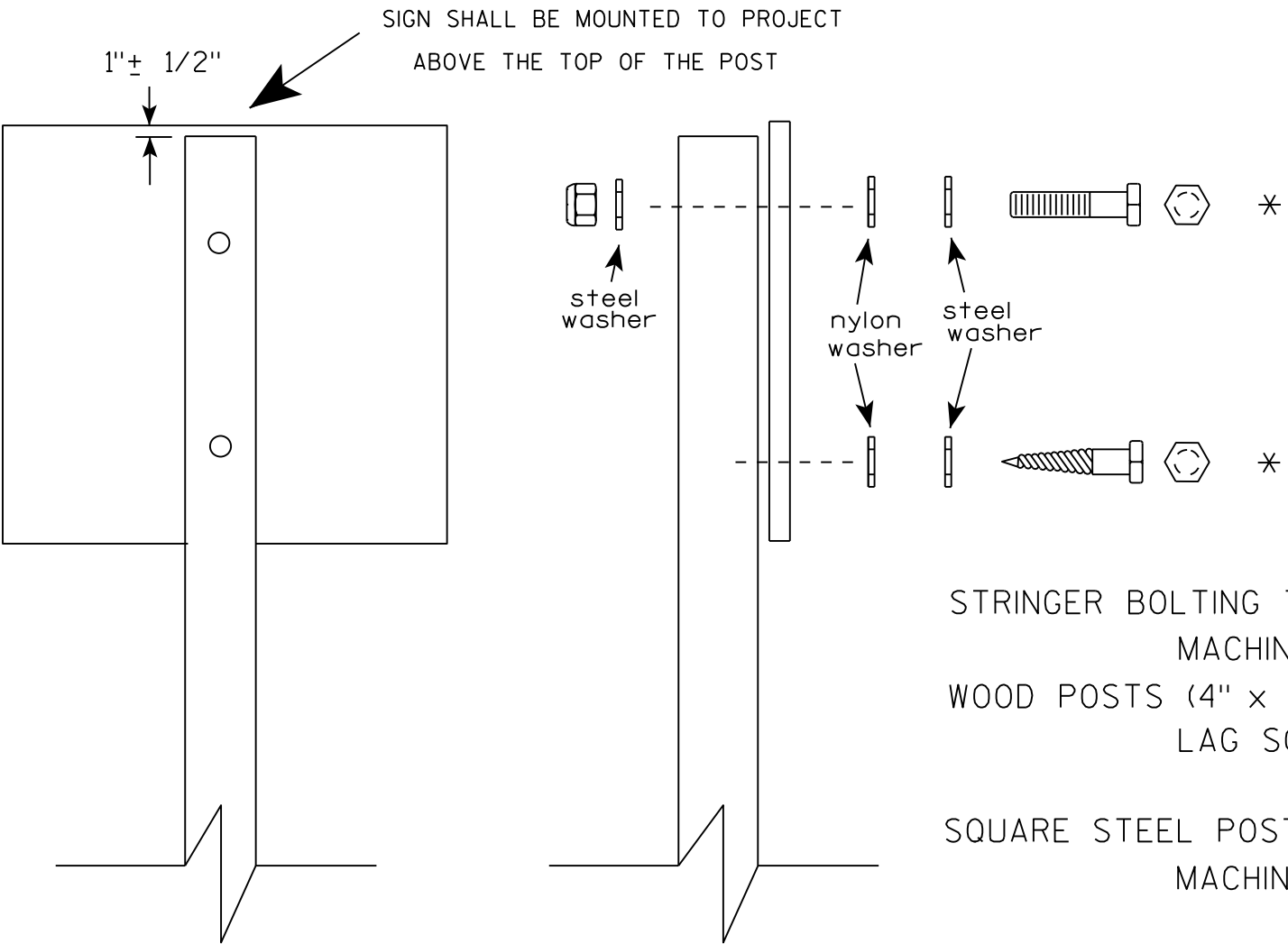
WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 7/23/15

PLATE NO. A4-3.20



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

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

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

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

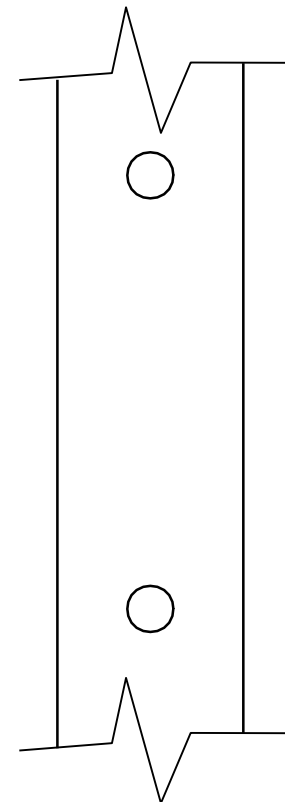
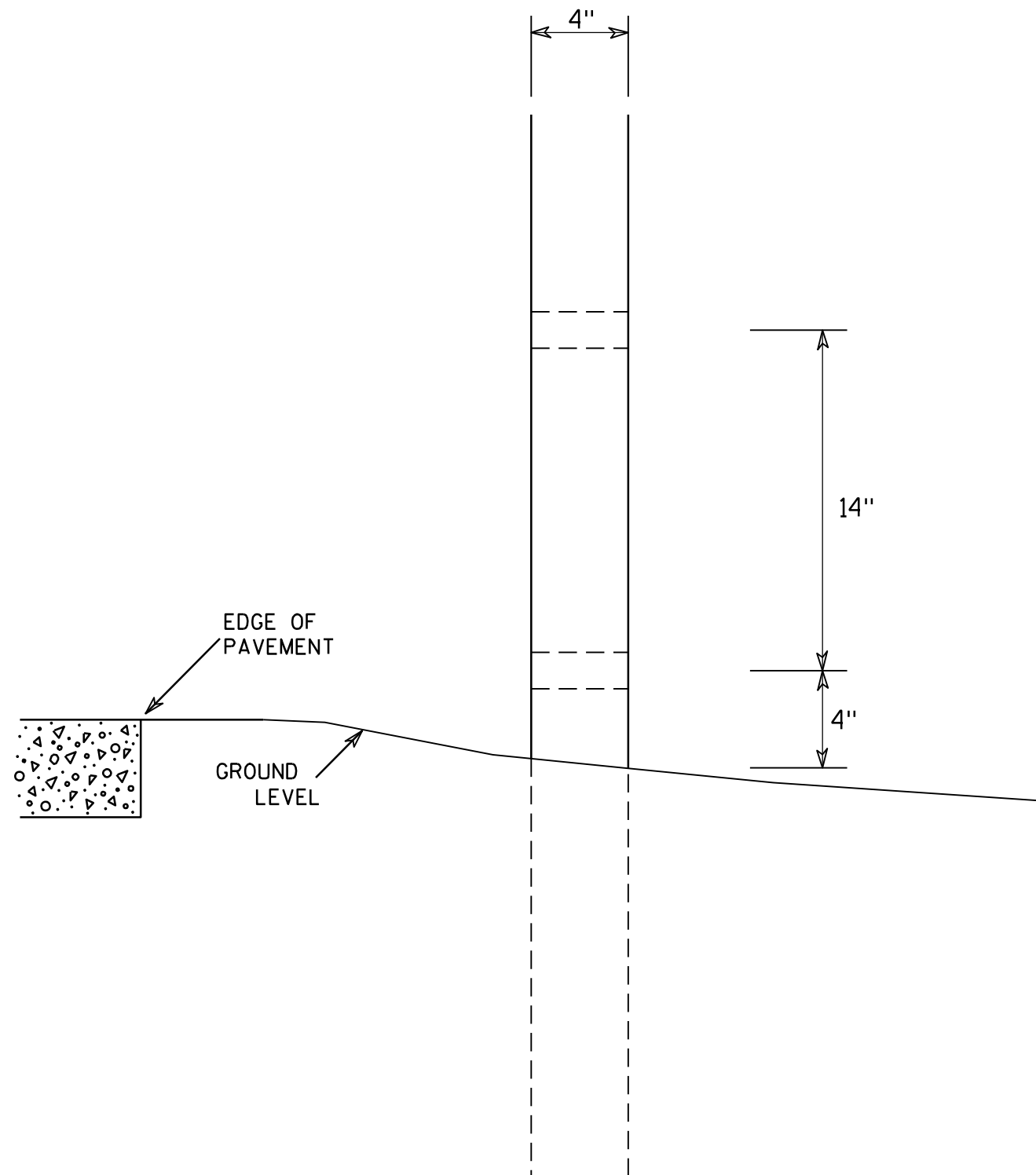
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

ATTACHMENT OF SIGNS
TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 8/11/16 PLATE NO. A4-8.8



SIDE VIEW

GENERAL NOTES

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

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

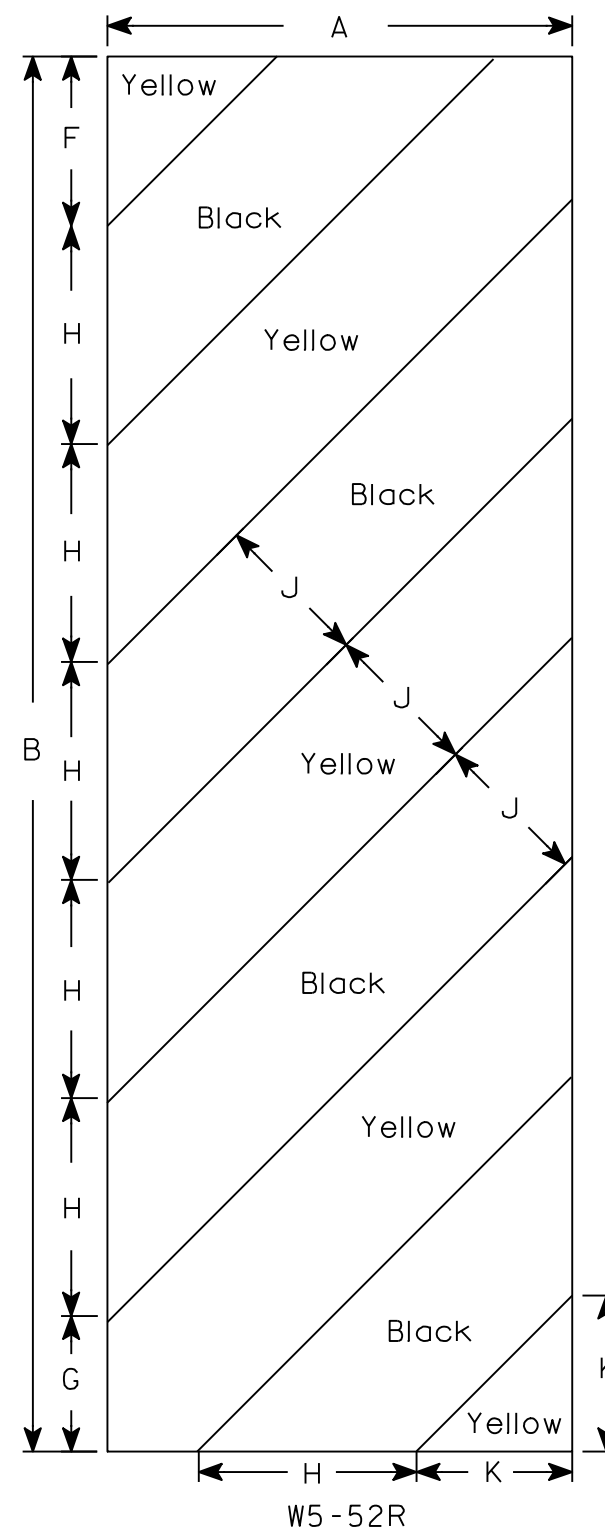
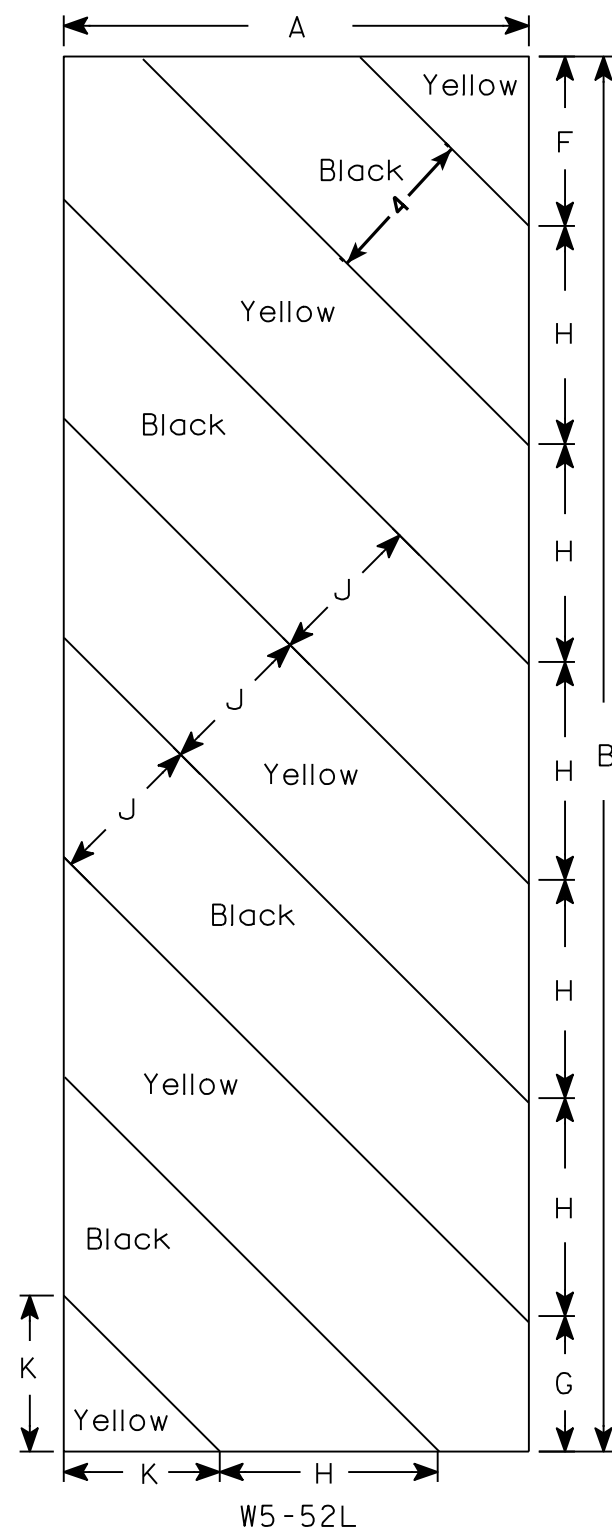
PROJECT NO: 8887-08-72

HWY: CTH T

COUNTY: TAYLOR

SHEET NO:

E



NOTES

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

[illegible]

STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer
DATE 5/29/12 PLATE NO. W5-52.9

PROJECT NO: 8887-08-72

HWY: CTH T

COUNTY: TAYLOR

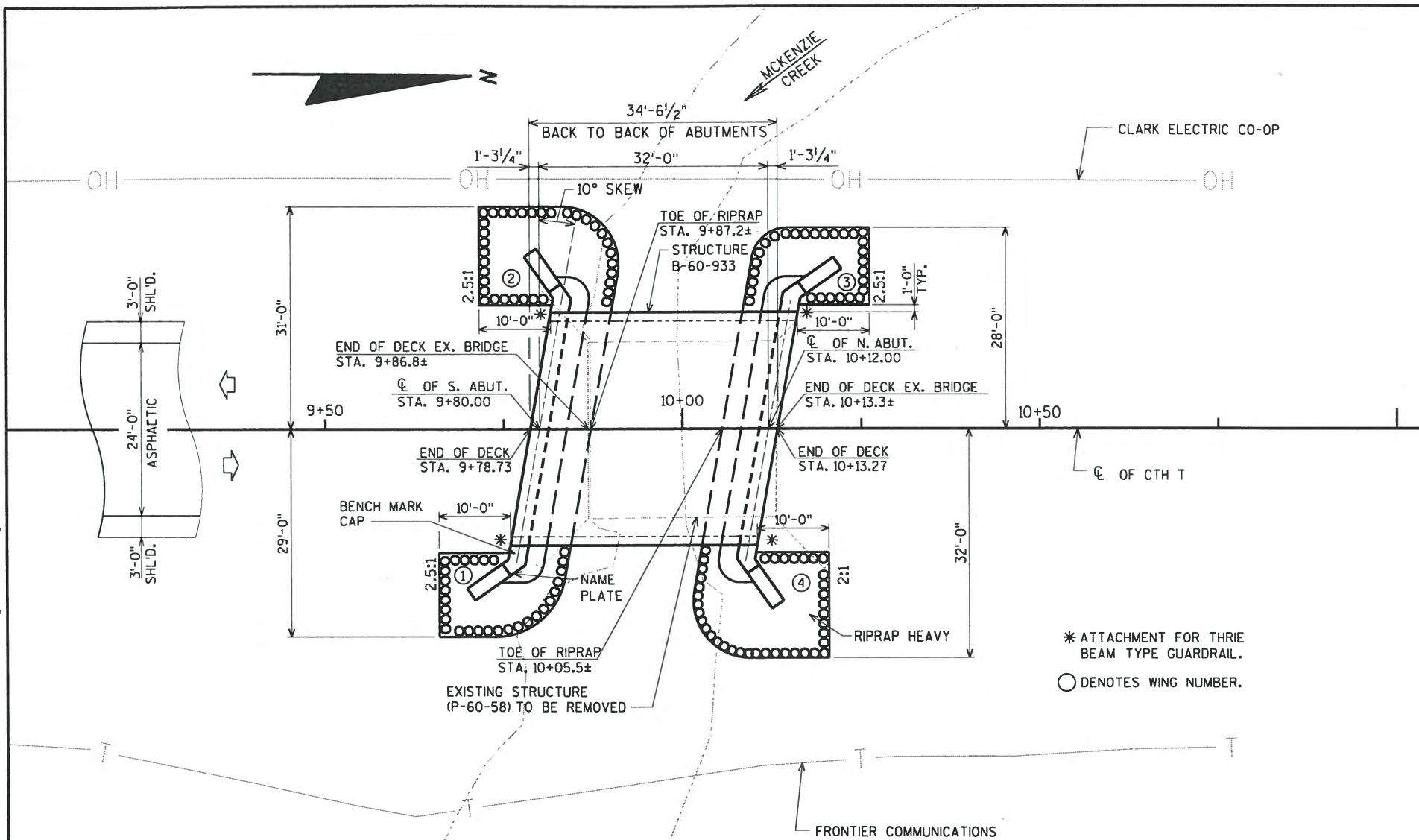
SHEET NO:

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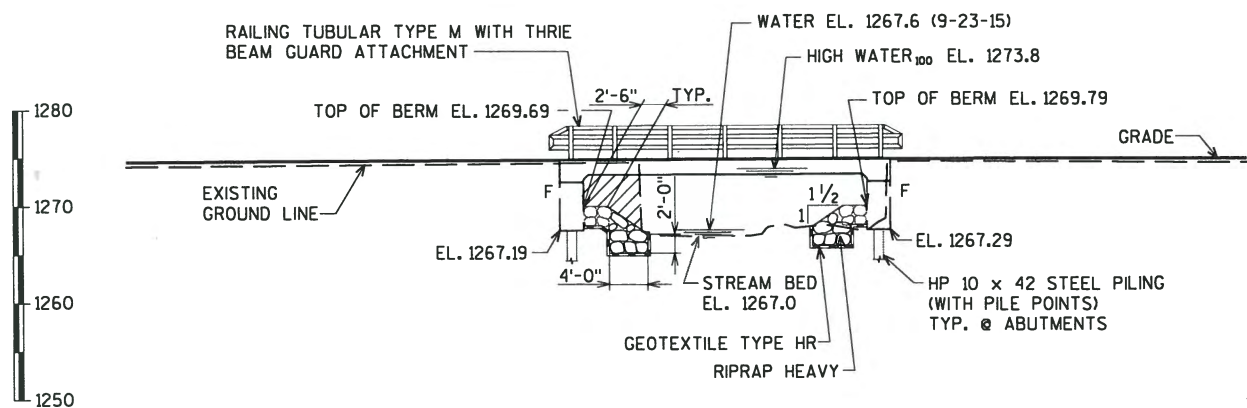
DATE: DATE: DATE:
CHECKED BY: BACK CHECKED BY: CORRECTED BY:

8



PLAN

SINGLE SPAN CONCRETE FLAT SLAB



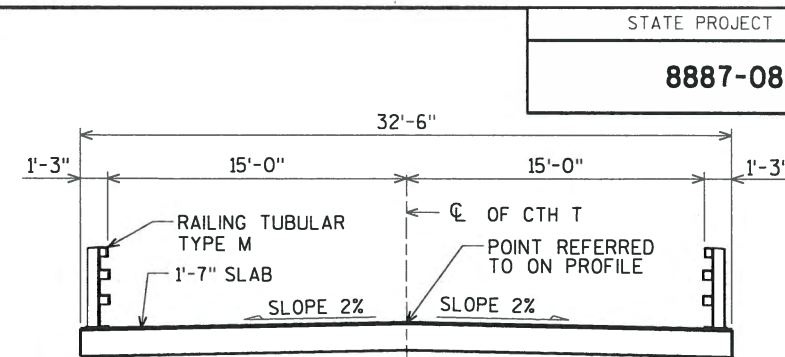
ELEVATION

(NORMAL TO CL OF CREEK)

LIST OF DRAWINGS

1. GENERAL PLAN
2. QUANTITIES AND NOTES
3. SUBSURFACE EXPLORATION
4. SOUTH ABUTMENT
5. SOUTH ABUTMENT WING 1 DETAILS
6. SOUTH ABUTMENT WING 2 DETAILS AND BILL OF BARS
7. NORTH ABUTMENT
8. NORTH ABUTMENT WING 3 DETAILS
9. NORTH ABUTMENT WING 4 DETAILS AND BILL OF BARS
10. SUPERSTRUCTURE
11. SUPERSTRUCTURE DETAILS
12. RAILING TUBULAR TYPE M

COST OF EXCAVATION OR FILL IN THE HATCHED AREAS SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES B-60-933".



TYPICAL SECTION THRU BRIDGE

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: 1.09
OPERATING RATING FACTOR: 1.41
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 #/S.F.

MATERIAL PROPERTIES:

CONCRETE MASONRY { SUPERSTRUCTURE f'_c = 4,000 p.s.i.
ALL OTHER f'_c = 3,500 p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60) f_y = 60,000 p.s.i.

HYDRAULIC DATA:

100 YEAR FREQUENCY	2 YEAR FREQUENCY
DRAINAGE AREA = 15.5 sq. mi.	Q_2 = 320 c.f.s.
WATERWAY AREA = 97 sq. ft.	VEL. = 7.7 f.p.s.
V = 10.1 f.p.s.	HW ₂ = EL. 1270.1
Q_{100} = 980 c.f.s.	
HIGH WATER ₁₀₀ EL. 1273.8	
SCOUR CRITICAL CODE = 8	
NAVD 88 DATUM	

FOUNDATION DATA:

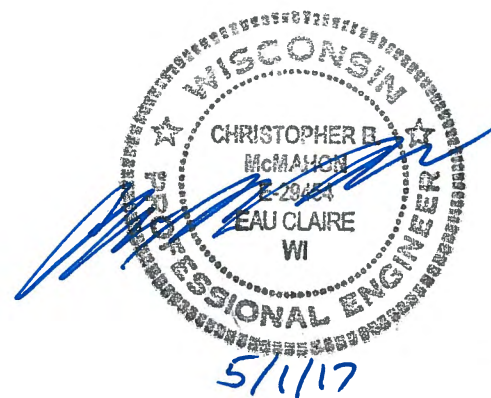
SOUTH ABUTMENT TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 130 TONS # PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 35'-0".

NORTH ABUTMENT TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 130 TONS # PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 40'-0".

#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.

TRAFFIC DATA:

A.A.D.T. = 500 (2018)
A.A.D.T. = 670 (2038)
R.D.S. = 60 M.P.H.



BRIDGE OFFICE CONTACT:
WILLIAM DREHER
(608)-266-8489

CONSULTANT CONTACT:
CHRIS MCMAHON
(715)-834-3161

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES 3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED *William C. Dreher* SDR 06/05/17
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-60-933

CTH T OVER MCKENZIE CREEK

COUNTY TAYLOR TOWN/CITY/VILLAGE MAPLEHURST

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY JWZ DESIGN CKD. CJM DRAWN BY JWZ/CJM CKD. CBM

GENERAL PLAN

SHEET 1 OF 12

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STATE PROJECT NUMBER

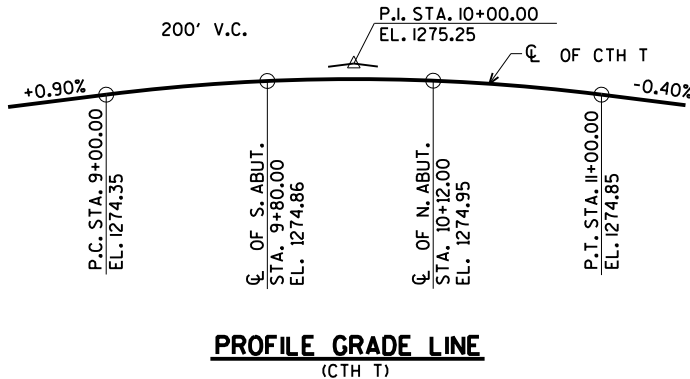
8887-08-72

TOTAL ESTIMATED QUANTITIES

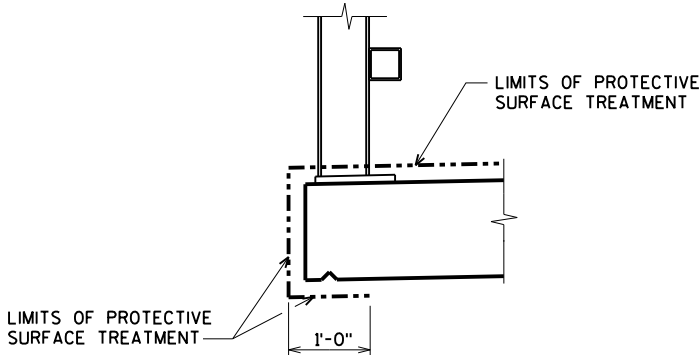
BID ITEM NUMBER	BID ITEMS	UNIT	S. ABUT.	N. ABUT.	SUPER.	TOTAL
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 9+96	LS	-----	-----	-----	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-60-933	LS	-----	-----	-----	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	140	140	-----	280
502.0100	CONCRETE MASONRY BRIDGES	CY	28	28	71	127
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-----	-----	144	144
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2,380	2,380	-----	4,760
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	770	770	12,180	13,720
513.4061	RAILING TUBULAR TYPE M B-60-933	LF	-----	-----	73	73
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	10	10	-----	20
550.0500	PILE POINTS	EACH	5	5	-----	10
550.1100	PILING STEEL HP 10-INCH x 42 LB	LF	175	200	-----	375
606.0300	RIPRAP HEAVY	CY	55	60	-----	115
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	75	75	-----	150
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	46	46	-----	92
645.0120	GEOTEXTILE TYPE HR	SY	120	125	-----	245
NON-BID ITEMS						
	FILLER	SIZE	-----	-----	-----	1/2" & 3/4"

GENERAL NOTES

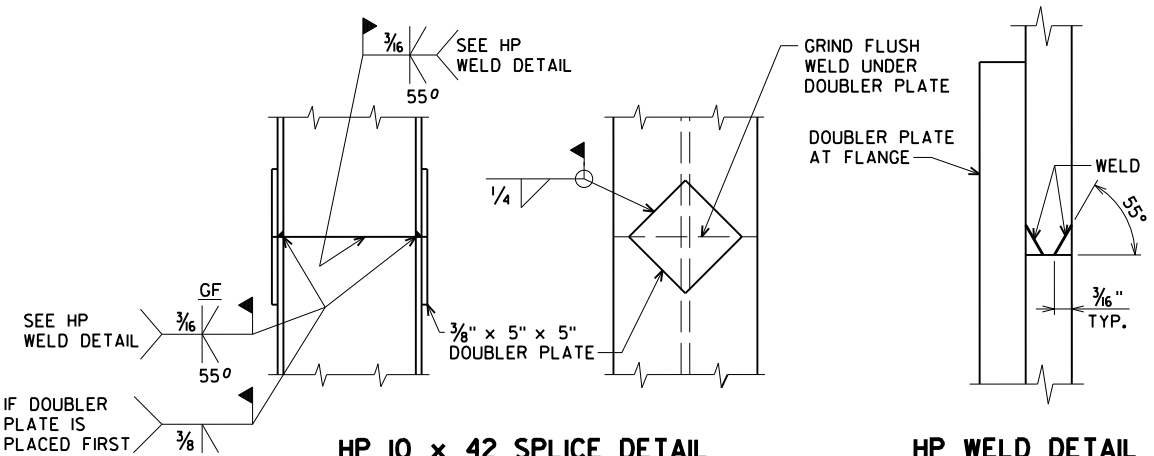
DRAWINGS SHALL NOT BE SCALED.
BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS SHOWN OR NOTED OTHERWISE.
THE FIRST DIGIT OF A THREE DIGIT BAR NO. AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR NO. SIGNIFIES THE BAR SIZE.
JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M 153, TYPE I, II OR III OR A.A.S.H.T.O. DESIGNATION M 213.
THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE TYPE HR TO THE EXTENT SHOWN ON THE GENERAL PLAN SHEET AND IN THE ABUTMENT DETAILS.
SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS OTHERWISE APPROVED BY THE ENGINEER.
THE EXISTING GROUND LINE SHALL BE THE UPPER LIMIT FOR EXCAVATION FOR STRUCTURES.
THE EXISTING STRUCTURE, P-60-58, TO BE REMOVED, IS A SINGLE SPAN STEEL DECK GIRDER BRIDGE, 26.5 FT. LONG WITH AN APPROX. 24.4 FT. CLEAR ROADWAY WIDTH.
AT BACKFACE OF ABUTMENTS ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH BACKFILL STRUCTURE TYPE A.
PROTECTIVE SURFACE TREATMENT IS TO BE APPLIED AS SHOWN IN DETAIL ON THIS SHEET.
EXCAVATION BELOW THE ABUTMENT AND ABUTMENT BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT.



BENCH MARK:
CHISLED SQUARE ON SOUTHEAST ABUTMENT
STA. 9+87, 12' RT. OF CL
EL. 1274.44



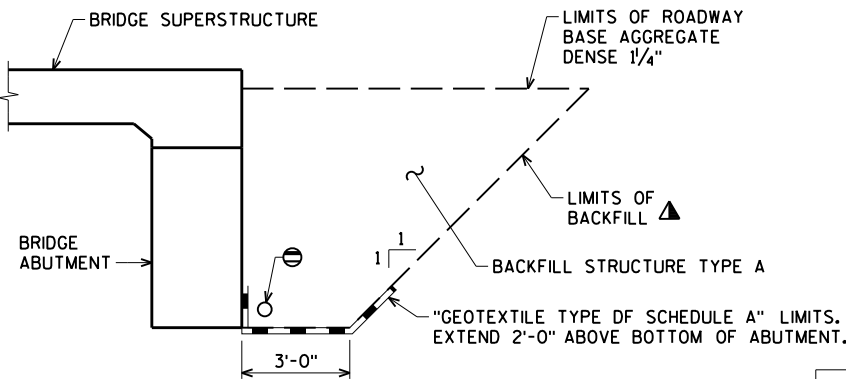
PROTECTIVE SURFACE TREATMENT DETAIL



HP 10 x 42 SPLICE DETAIL

HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR



BACKFILL STRUCTURE LIMITS

- ▲ 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 AS DETAILED ON SHEET 5.

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

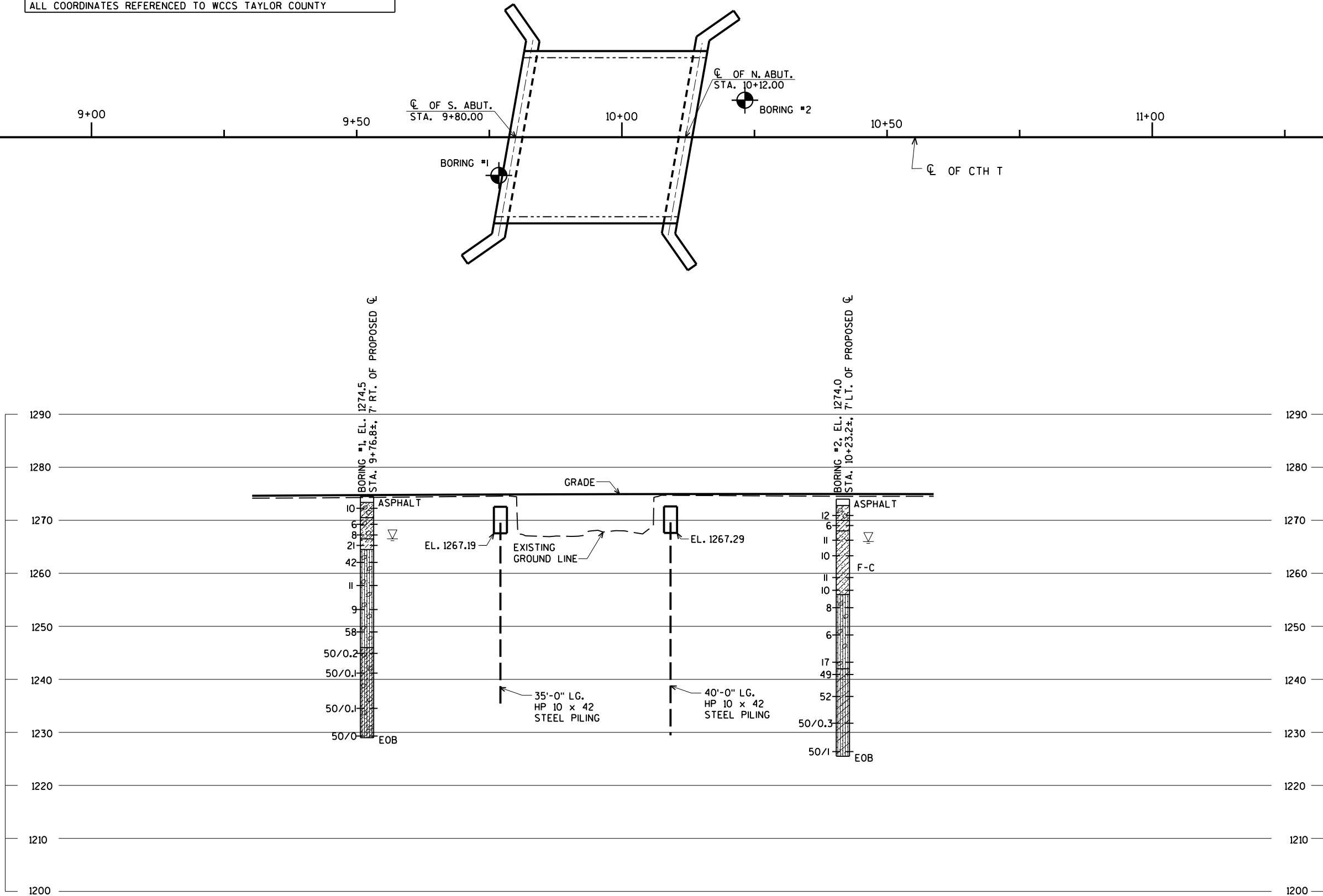
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-60-933			
DRAWN BY JWZ/CJM		PLANS CK'D. CKJ	
QUANTITIES AND NOTES			SHEET 2 OF 12

\$PRNAME\$
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BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	04/19/2016	314196.12	573937.44
2	04/19/2016	314242.57	573923.44
BORINGS COMPLETED BY: GEOTECHNICAL DRILLING CONTRACTORS, LLC			
REPORT COMPLETED BY: RIVER VALLEY TESTING CORP.			
ALL COORDINATES REFERENCED TO WCCS TAYLOR COUNTY			

MCKENZIE
CREEK



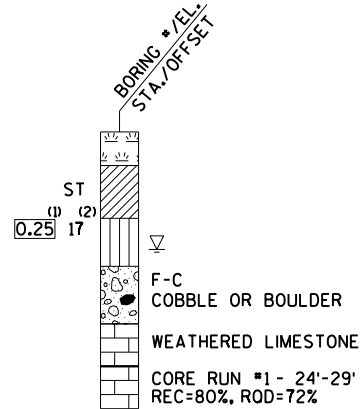
STATE PROJECT NUMBER

8887-08-72

MATERIAL SYMBOLS

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

LEGEND OF BORING



(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

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

ABBREVIATIONS

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

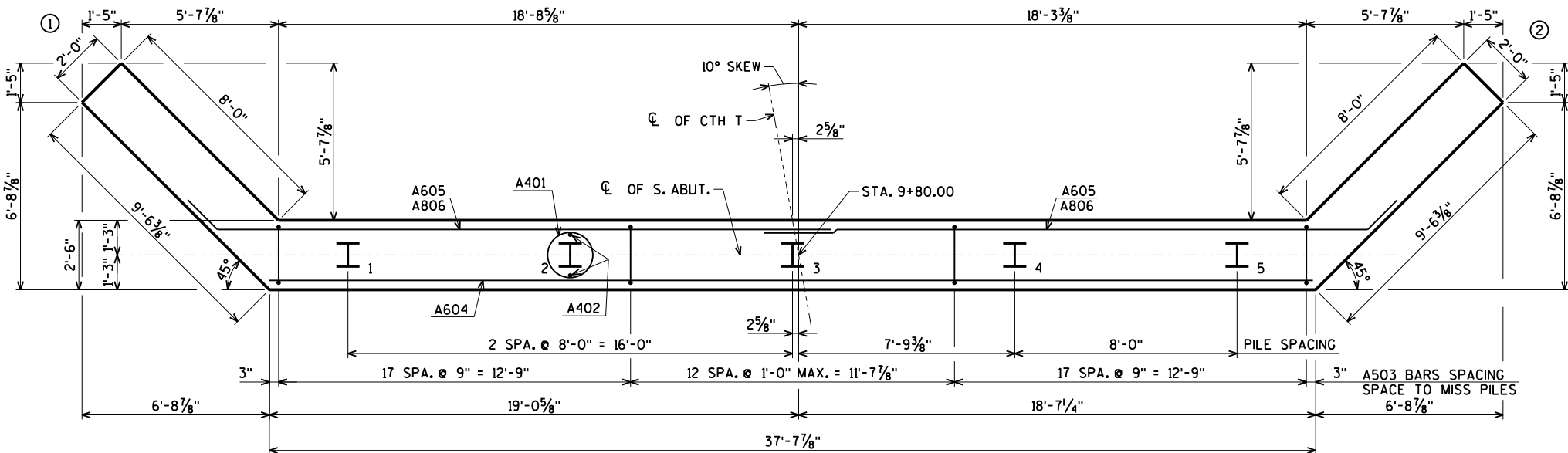
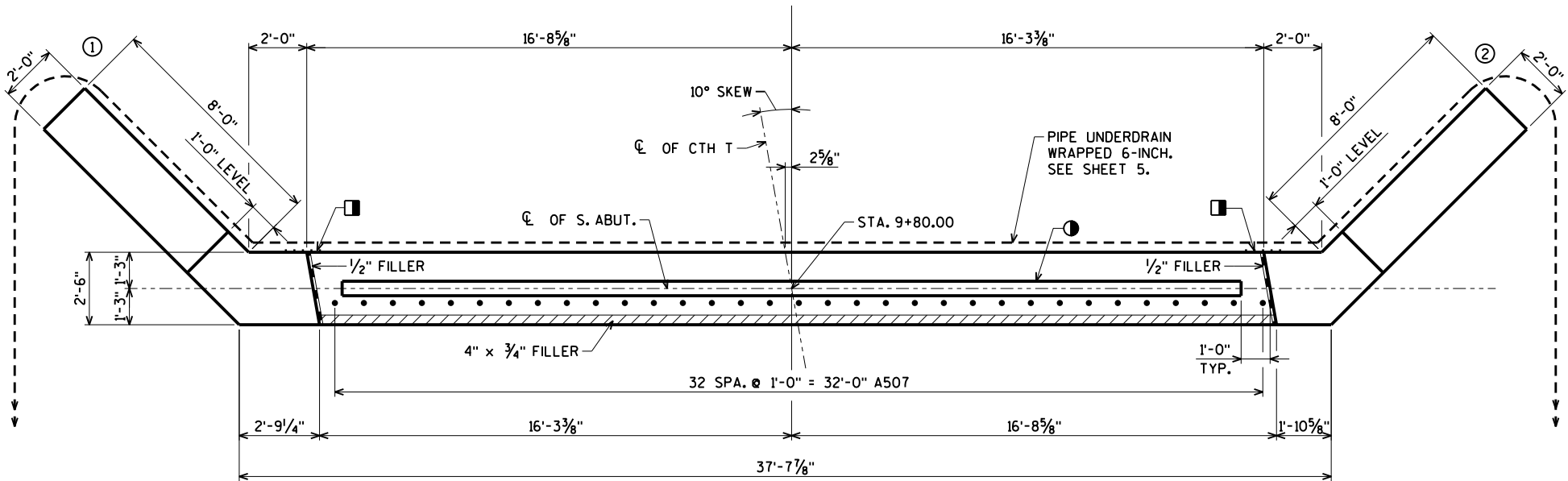
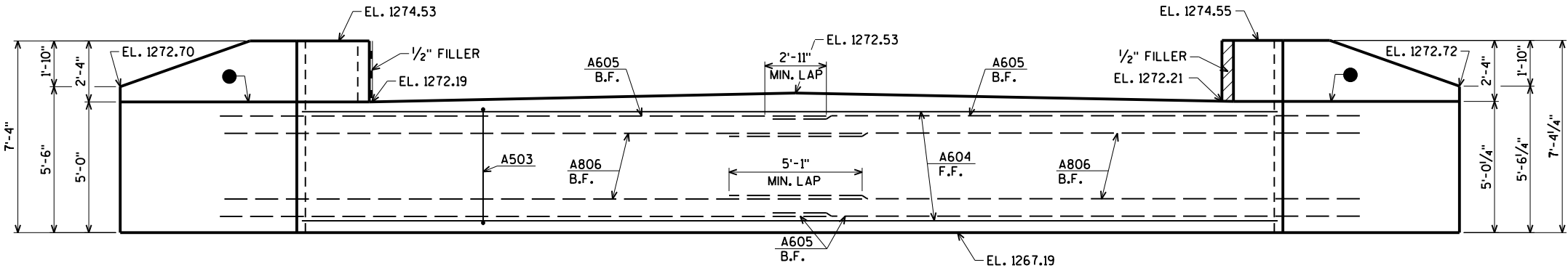
SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

8

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-60-933			
DRAWN BY JWZ		PLANS CKD CKJ	
SUBSURFACE EXPLORATION		SHEET 3 OF 12	

NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.)



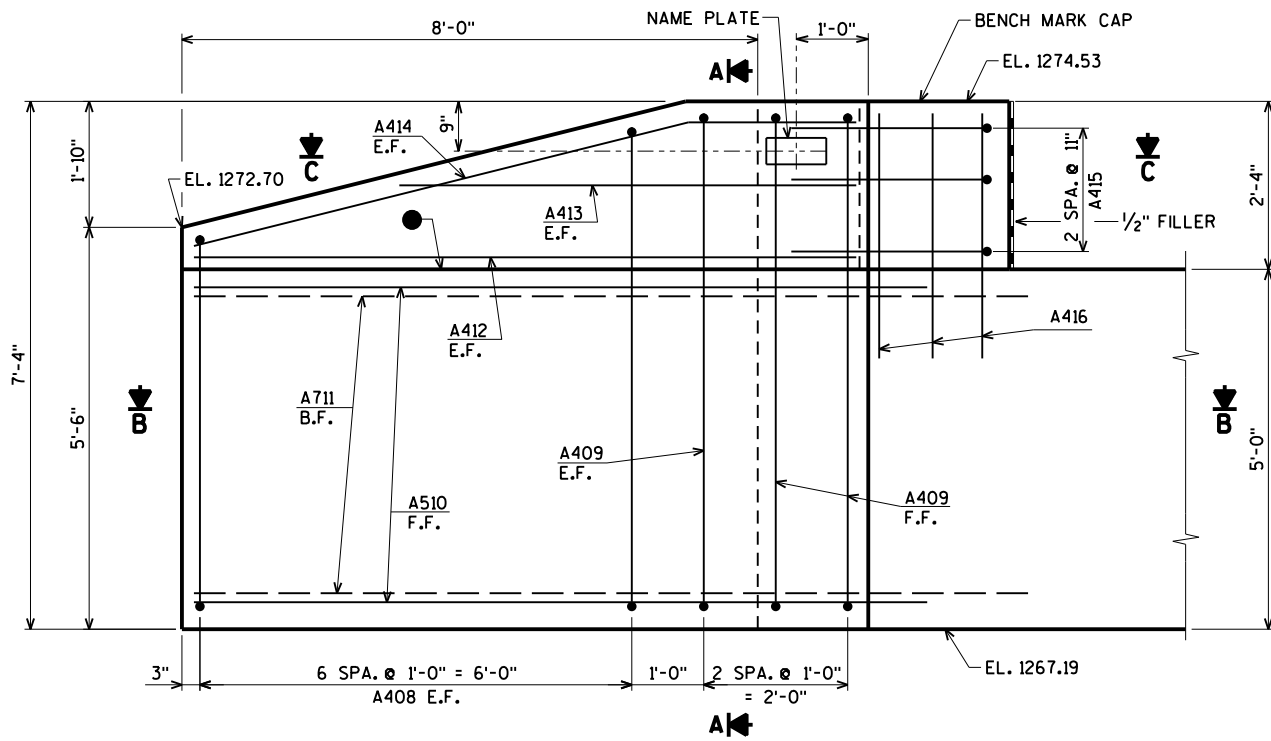
- OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.
 - KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".
 - VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING WALL.
- FOR PILE SPICE DETAIL SEE SHEET 2.
- B.F. DENOTES BACK FACE
F.F. DENOTES FRONT FACE

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-60-933			
DRAWN BY JWZ		PLANS CK'D. CKJ	
SOUTH ABUTMENT		SHEET 4 OF 12	

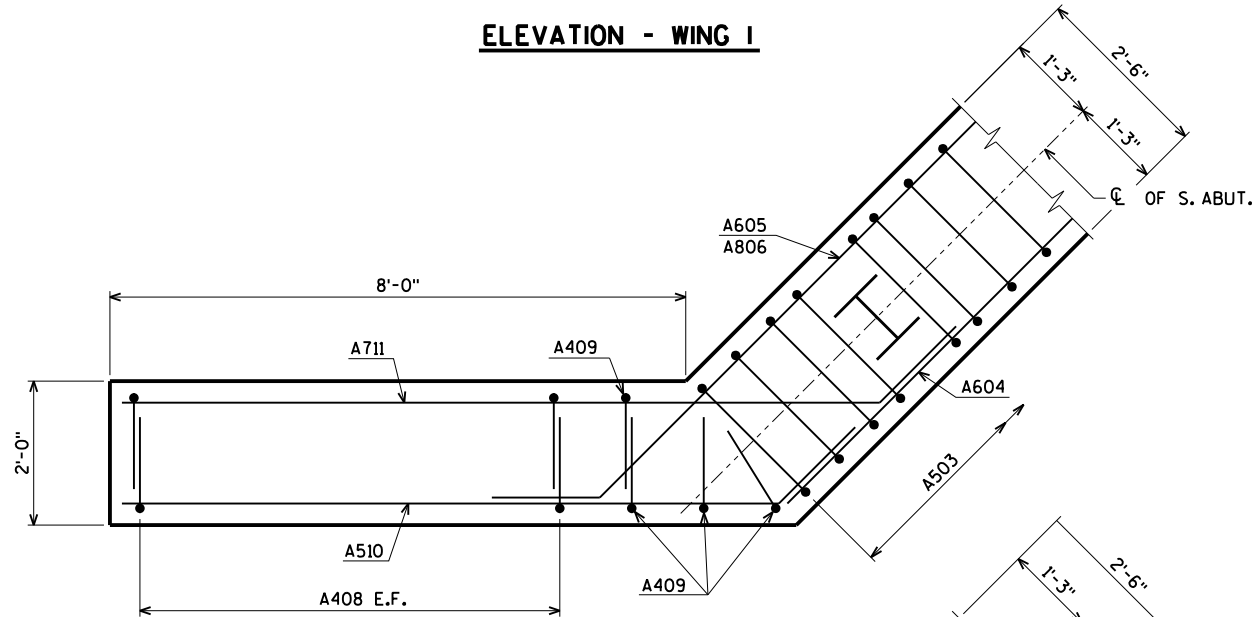
ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
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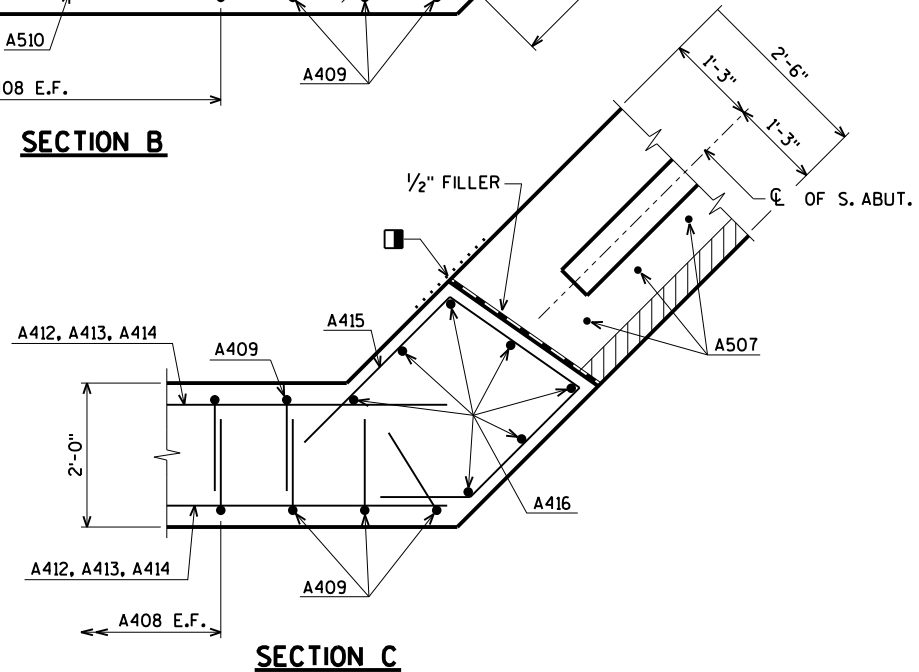
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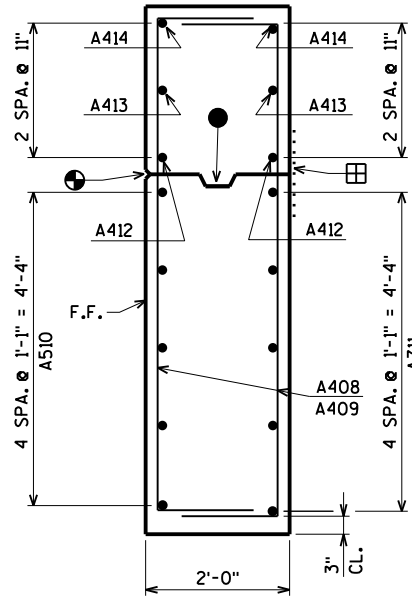
ELEVATION - WING 1



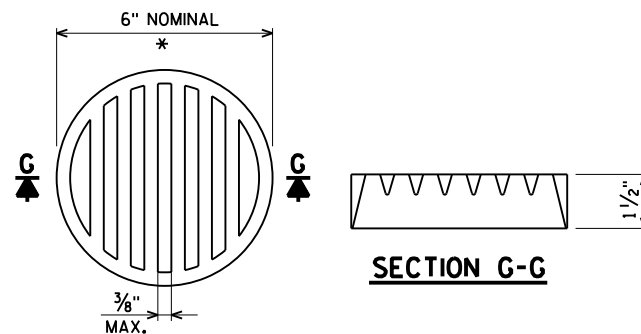
SECTION B



SECTION C



SECTION A



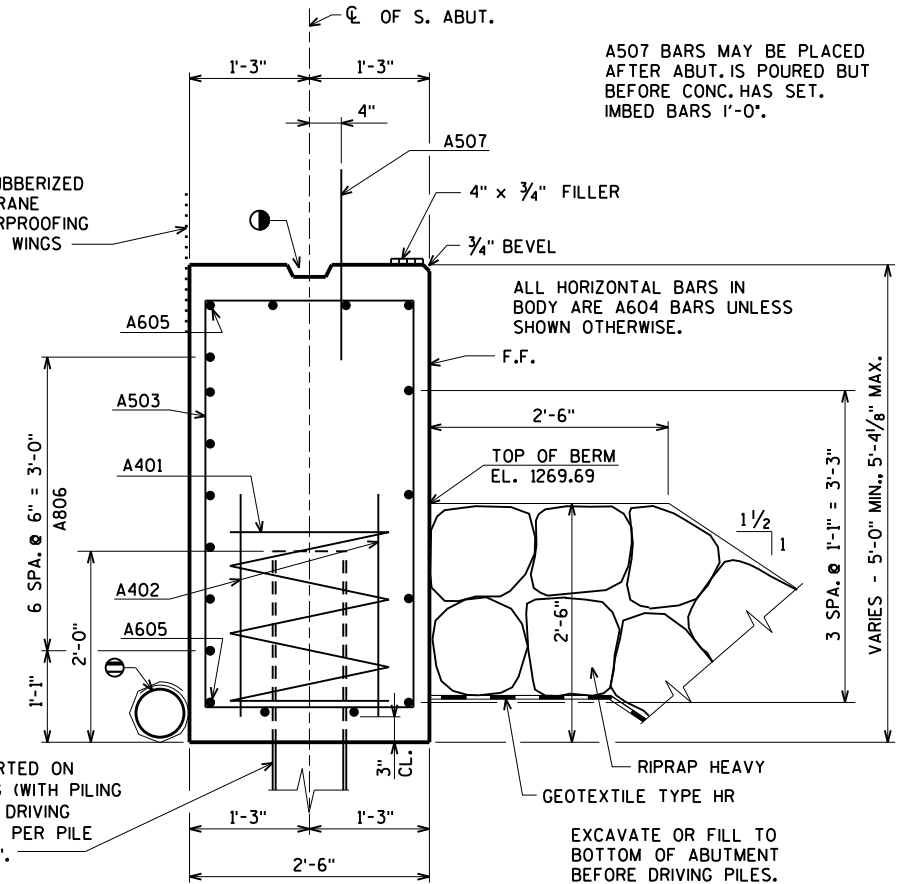
* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

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 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 SCREEN 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 SHEET METAL SCREWS.

RODENT SHIELD DETAIL

18" RUBBERIZED MEMBRANE WATERPROOFING BETW. WINGS



TYPICAL SECTION THRU BODY

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON THIS SHEET. RODENT SHIELD TO BE INCLUDED IN BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".

⦿ KEYED CONST. JOINT - FORMED BY A BEVELED 2' x 6".

⦿ 18" RUBBERIZED MEMBRANE WATERPROOFING ON BACK FACE. NOT REQUIRED IF CONST. JT. IS NOT USED.

● OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2' x 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.

⦿ 3/4" 'V' GROOVE ON F.F. OF WING WALL NOT REQUIRED IF CONST. JT. IS NOT USED.

⦿ VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING WALL.

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

F.F. DENOTES FRONT FACE

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-60-933			
DRAWN BY JWZ		PLANS CK'D. CKJ	
SOUTH ABUTMENT WING 1 DETAILS			SHEET 5 OF 12

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
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Eau Claire, WI 54701
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STATE PROJECT NUMBER

8887-08-72

BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLE	BAR SERIES	2,380# UNCOATED 770# COATED
							LOCATION
A401		5	28-0	X			BODY @ PILES
A402		10	2-3				BODY @ PILES
A503		47	13-9	X			BODY VERT.
A604		9	37-4				BODY HORIZ. F.F.
A605		4	24-2	X			BODY HORIZ. B.F.
A806		14	25-3	X			BODY HORIZ. B.F.
A507	X	33	2-0				BODY DOWELS
A408	X	14	8-3	X		⊗	WING 1 VERT. E.F.
A409	X	4	9-5	X			WING 1 VERT. E.F.
A510	X	5	10-8	X			WING 1 HORIZ. F.F.
A711	X	5	12-2	X			WING 1 HORIZ. B.F.
A412	X	2	9-4				WING 1 HORIZ. E.F.
A413	X	2	6-4				WING 1 HORIZ. E.F.
A414	X	2	9-8	X			WING 1 DIAG. E.F.
A415	X	3	8-4	X			WING 1 HORIZ.
A416	X	7	4-2				WING 1 VERT.
A417	X	14	8-3	X		⊗	WING 2 VERT. E.F.
A418	X	4	9-5	X			WING 2 VERT. E.F.
A519	X	5	10-8	X			WING 2 HORIZ. F.F.
A720	X	5	12-2	X			WING 2 HORIZ. B.F.
A421	X	2	9-4				WING 2 HORIZ. E.F.
A422	X	2	6-4				WING 2 HORIZ. E.F.
A423	X	2	9-8	X			WING 2 DIAG. E.F.
A424	X	3	7-8	X			WING 2 HORIZ.
A425	X	7	4-2				WING 2 VERT.

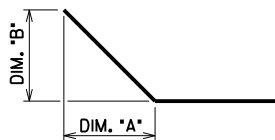
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

⊗ 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
A408	2 SERIES OF 7	7'-6" TO 9'-0"
A417	2 SERIES OF 7	7'-6" TO 9'-0"

BUNDLE AND TAG EACH SERIES SEPARATELY.

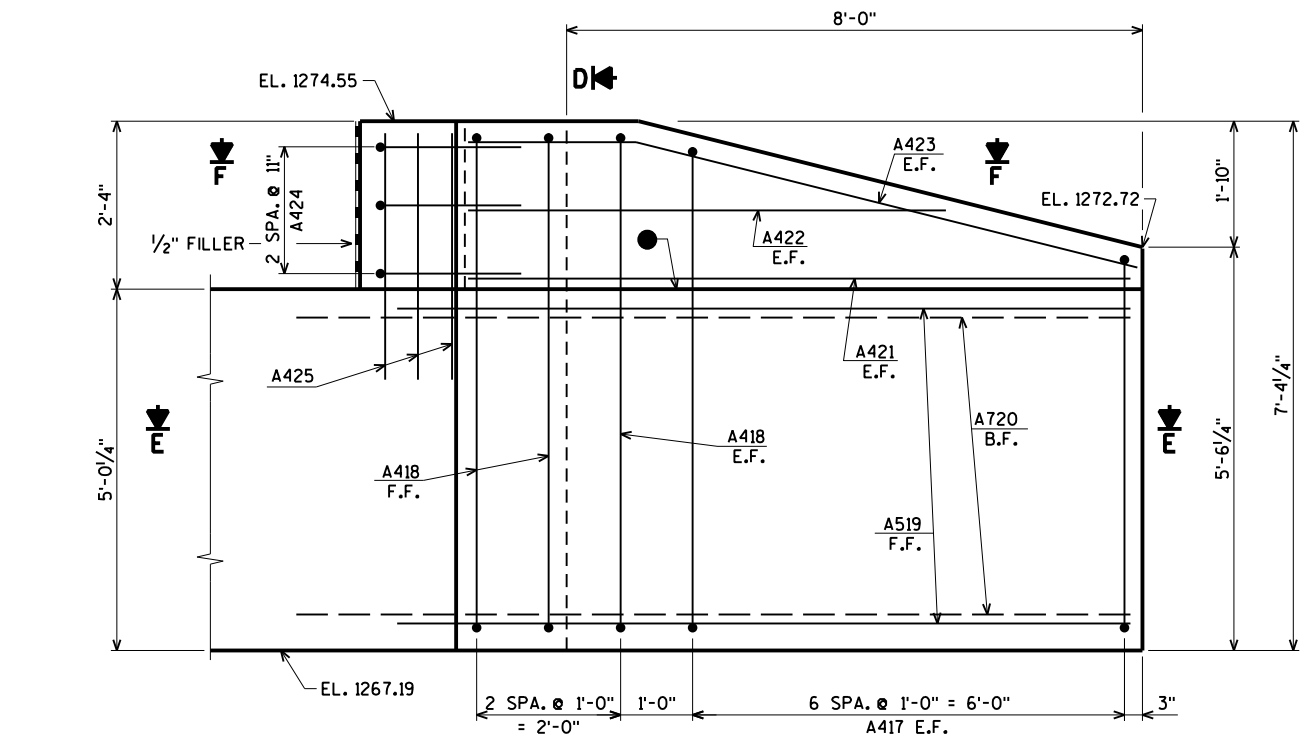


BAR NO.	DIM. 'A'	DIM. 'B'
A605	1'-0 3/4"	1'-0 3/4"
A806	1'-0 1/4"	1'-0 3/4"
A510	1'-0 3/4"	1'-0 3/4"
A711	1'-0 3/4"	1'-0 3/4"
A414	6'-10"	1'-10"
A519	1'-0 3/4"	1'-0 3/4"
A720	1'-0 3/4"	1'-0 3/4"
A423	6'-10"	1'-10"

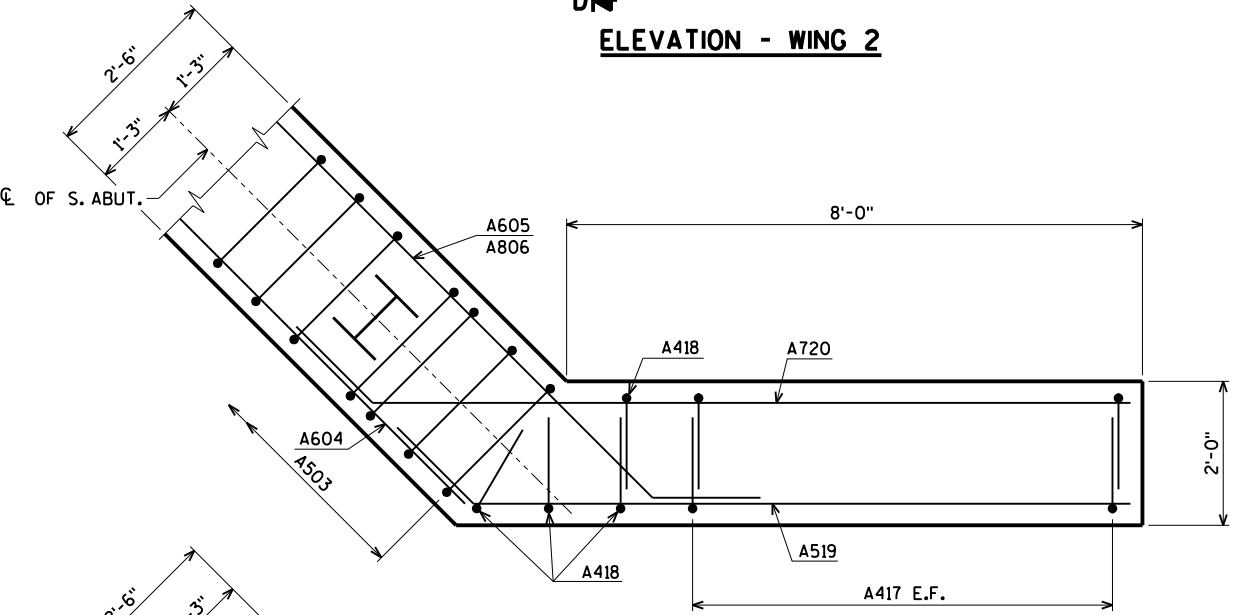
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-60-933			
DRAWN BY		JWZ	PLANS CK'D. CKJ
SOUTH ABUTMENT WING 2 DETAILS AND BILL OF BARS			SHEET 6 OF 12

ORIGINAL PLANS PREPARED BY
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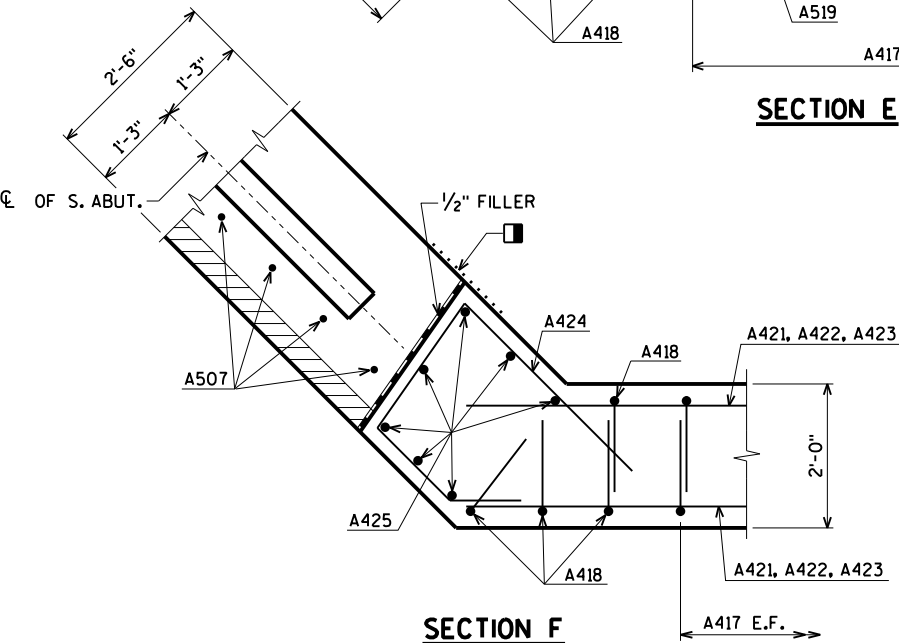
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ELEVATION - WING 2



SECTION E



SECTION F

18" RUBBERIZED MEMBRANE WATERPROOFING ON BACK FACE. NOT REQUIRED IF CONST. JT. IS NOT USED.

OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.

3/4" 'V' GROOVE ON F.F. OF WING WALL NOT REQUIRED IF CONST. JT. IS NOT USED.

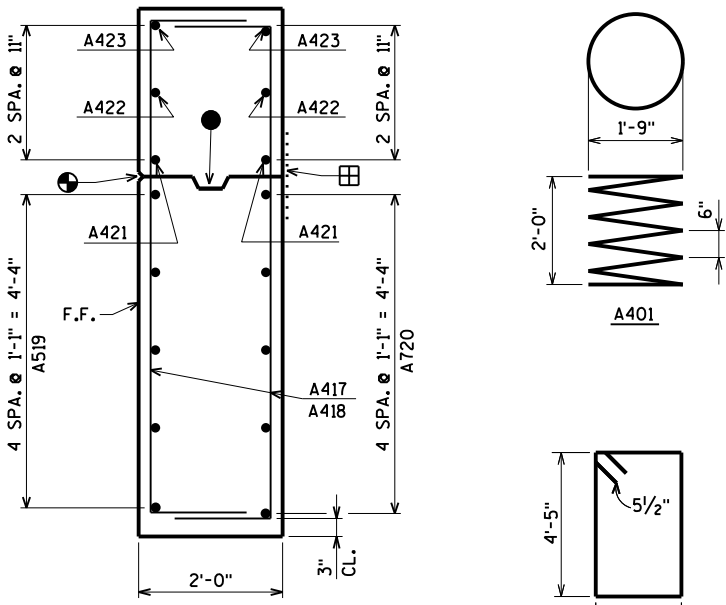
VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING WALL.

FOR PILE SPLICE DETAIL SEE SHEET 2.

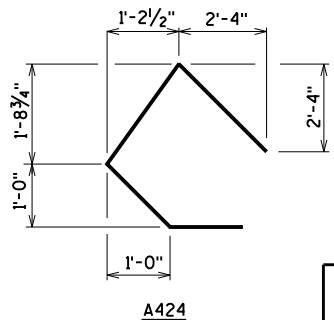
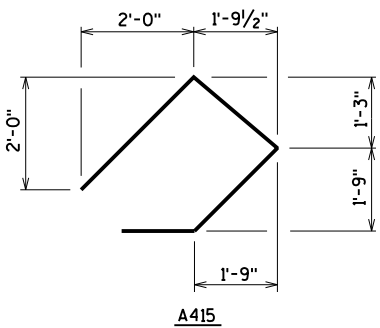
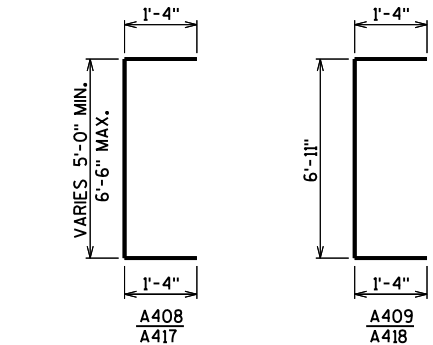
B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

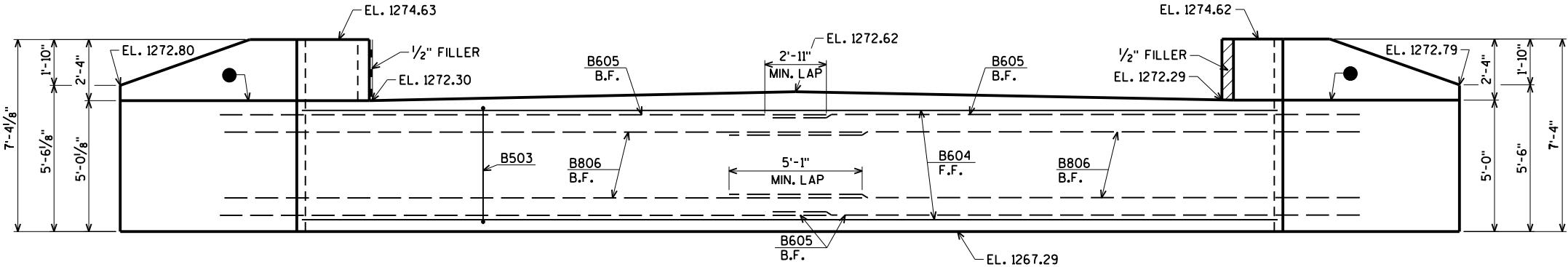
F.F. DENOTES FRONT FACE



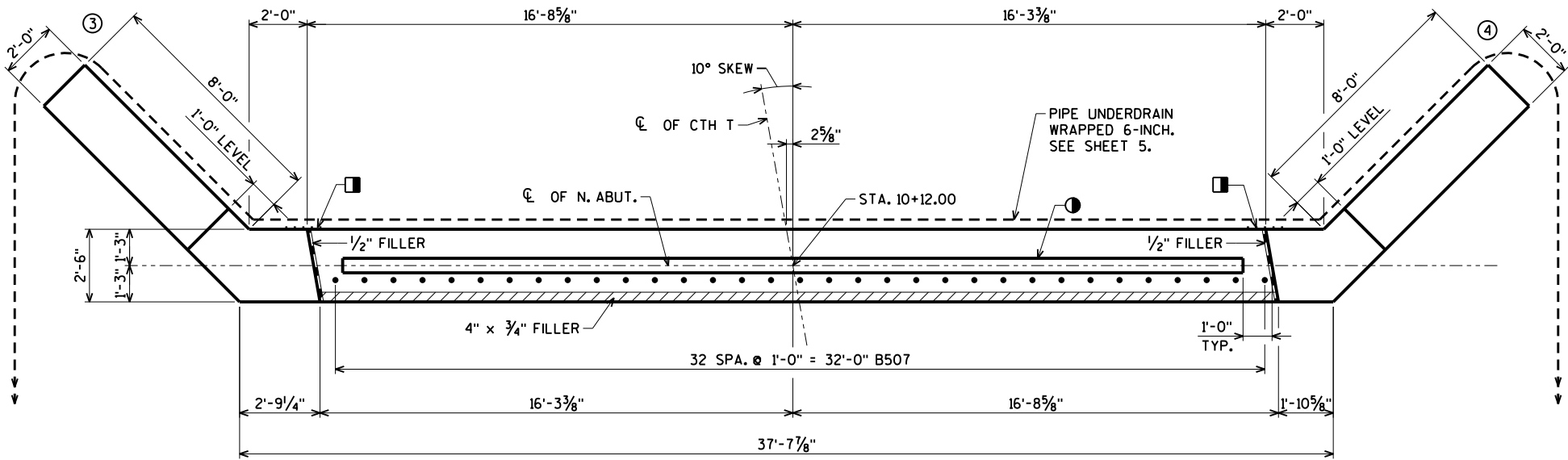
SECTION D



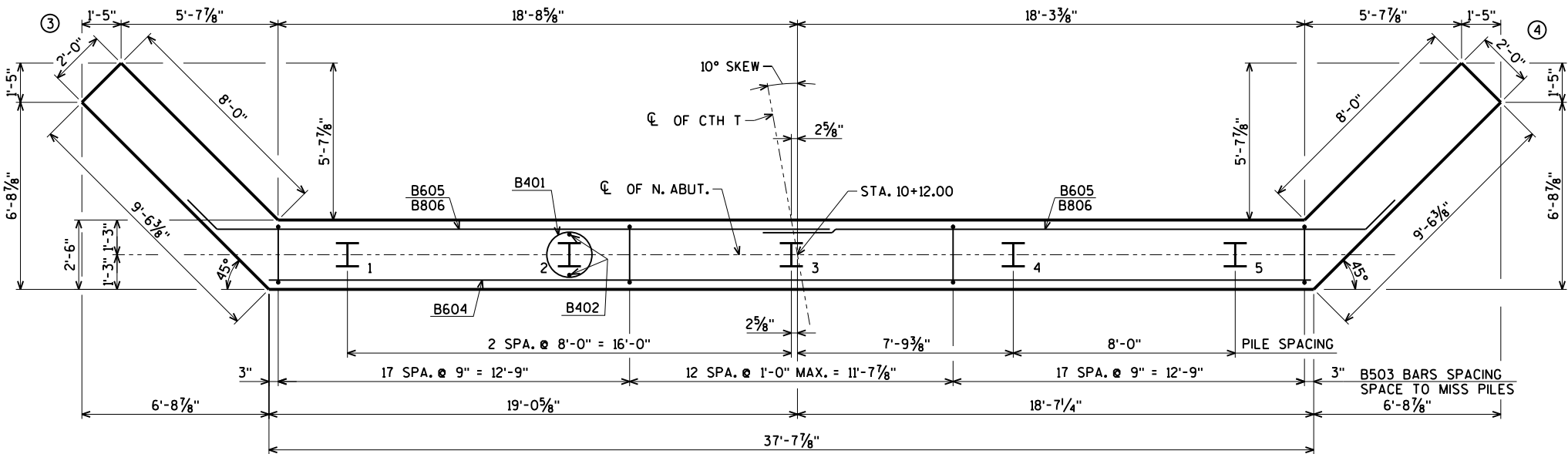
NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.)



ELEVATION
(LOOKING NORTH)



PLAN



PILE LAYOUT

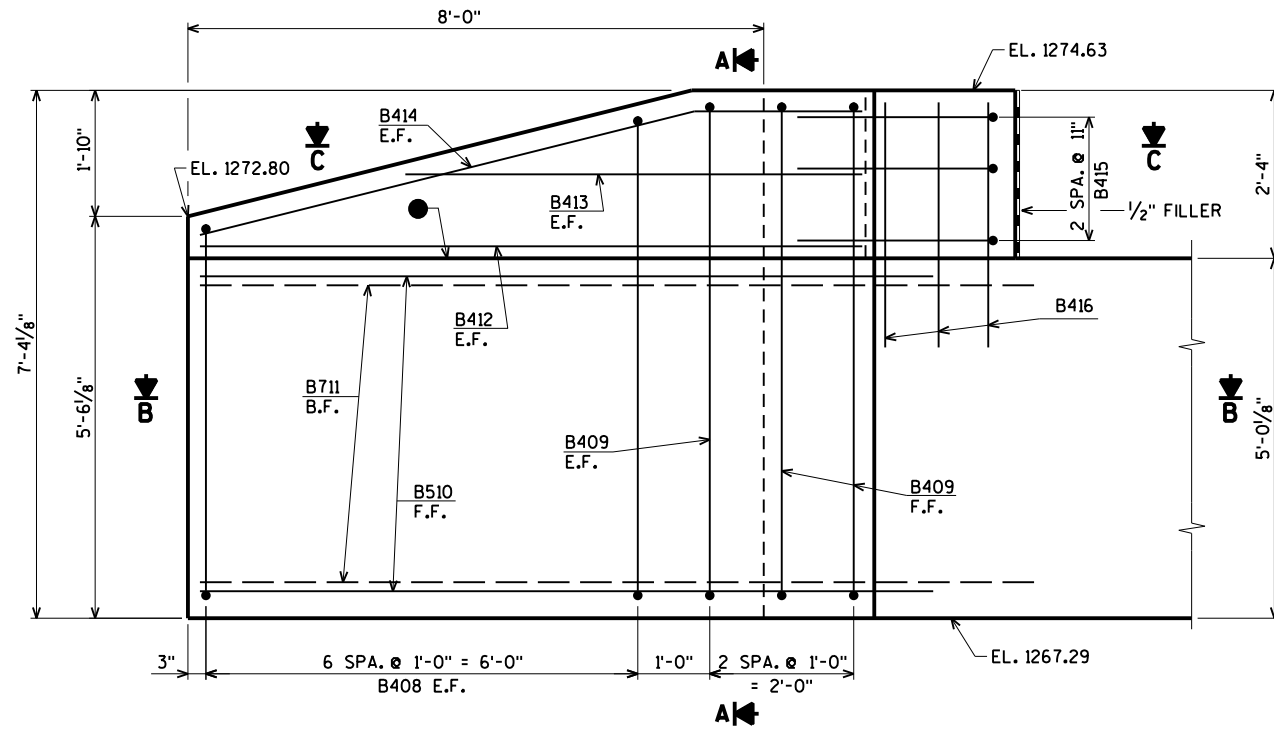
- OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.
 - ⦿ KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".
 - ▣ VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING WALL.
- FOR PILE SPlice DETAIL SEE SHEET 2.
- B.F. DENOTES BACK FACE
F.F. DENOTES FRONT FACE

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-60-933			
DRAWN BY JWZ		PLANS CK'D. CKJ	
NORTH ABUTMENT		SHEET 7 OF 12	

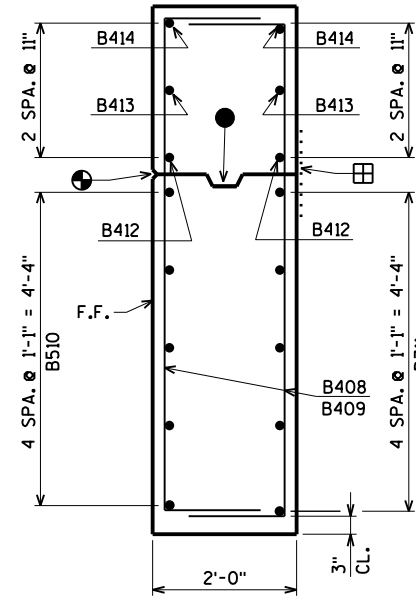
ORIGINAL PLANS PREPARED BY
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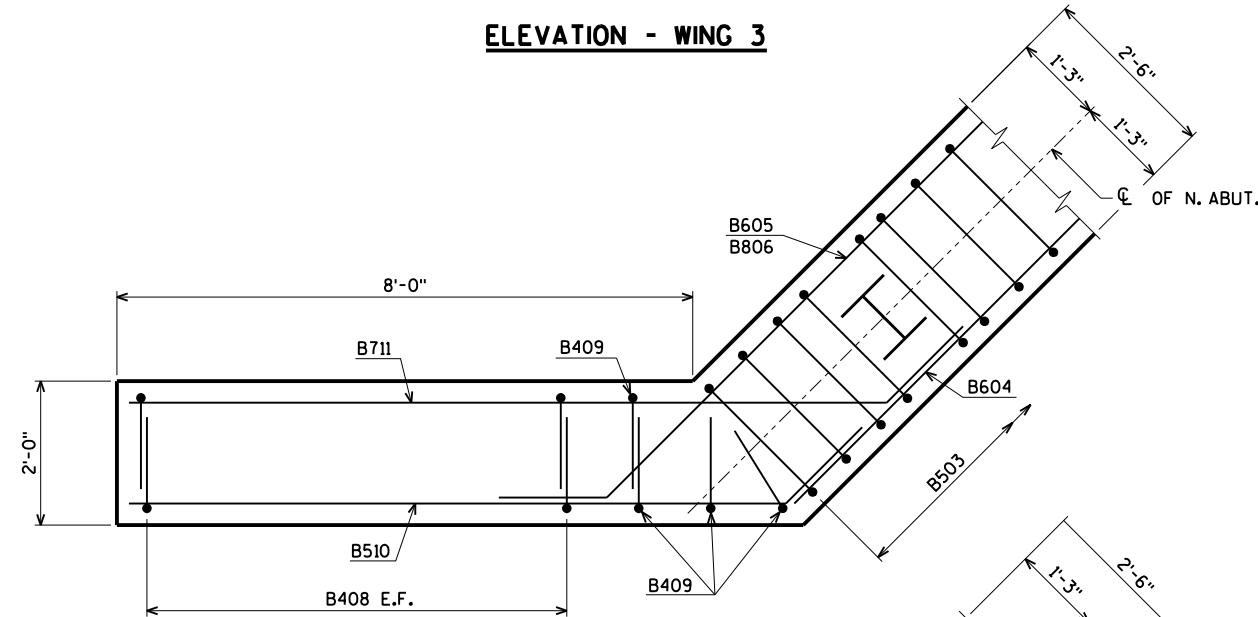
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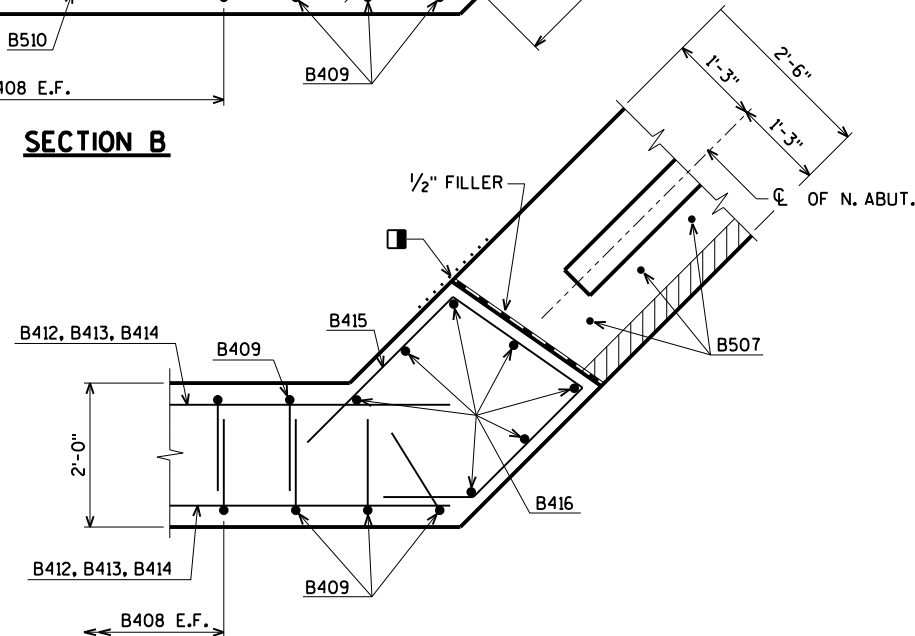
ELEVATION - WING 3



SECTION A



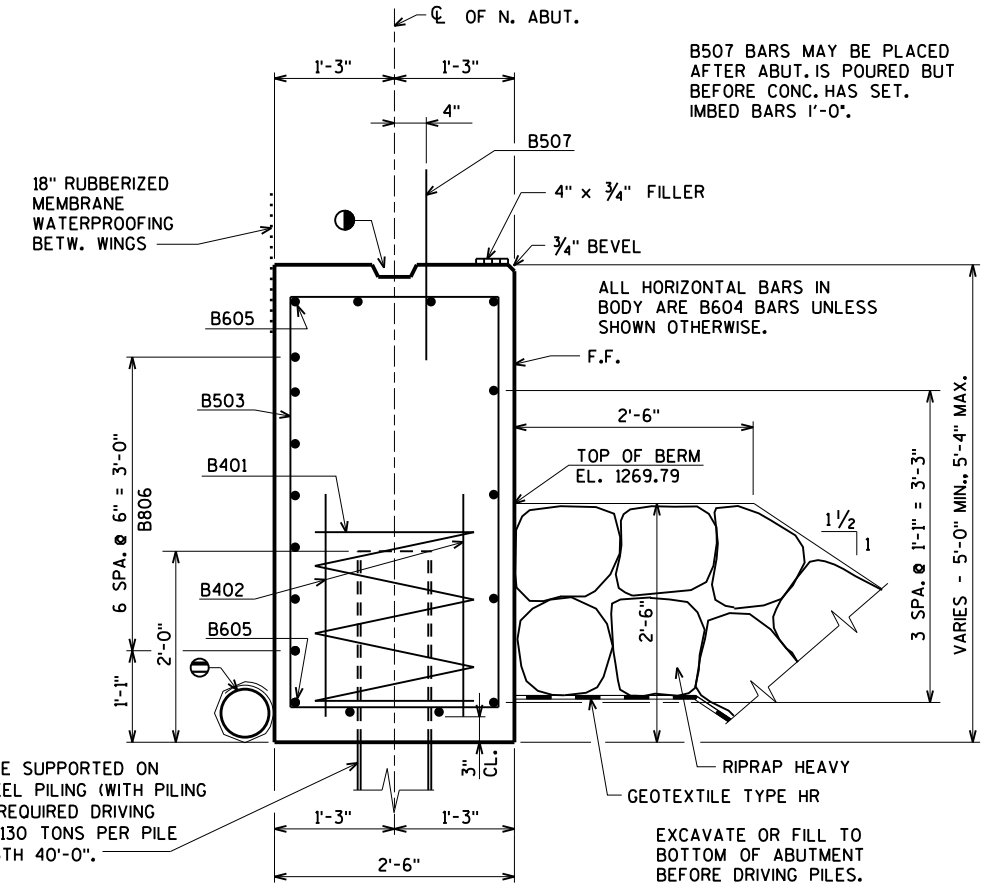
SECTION B



SECTION C

STATE PROJECT NUMBER

8887-08-72



TYPICAL SECTION THRU BODY

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 5. RODENT SHIELD TO BE INCLUDED IN BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".

⦶ KEYED CONST. JOINT - FORMED BY A BEVELED 2' x 6".

⦶ 18" RUBBERIZED MEMBRANE WATERPROOFING ON BACK FACE. NOT REQUIRED IF CONST. JT. IS NOT USED.

● OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2' x 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.

⦶ 3/4" 'V' GROOVE ON F.F. OF WING WALL NOT REQUIRED IF CONST. JT. IS NOT USED.

⦶ VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING WALL.

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

F.F. DENOTES FRONT FACE

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-60-933			
DRAWN BY JWZ		PLANS CK'D. CKJ	
NORTH ABUTMENT WING 3 DETAILS			SHEET 8 OF 12

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STATE PROJECT NUMBER

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BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLE BAR	BAR SERIES	2,380# UNCOATED 770# COATED
							LOCATION
B401		5	28-0	X			BODY @ PILES
B402		10	2-3				BODY @ PILES
B503		47	13-9	X			BODY VERT.
B604		9	37-4				BODY HORIZ. F.F.
B605		4	24-2	X			BODY HORIZ. B.F.
B806		14	25-3	X			BODY HORIZ. B.F.
B507	X	33	2-0				BODY DOWELS
B408	X	14	8-3	X			WING 3 VERT. E.F.
B409	X	4	9-5	X			WING 3 VERT. E.F.
B510	X	5	10-8	X			WING 3 HORIZ. F.F.
B711	X	5	12-2	X			WING 3 HORIZ. B.F.
B412	X	2	9-4				WING 3 HORIZ. E.F.
B413	X	2	6-4				WING 3 HORIZ. E.F.
B414	X	2	9-8	X			WING 3 DIAG. E.F.
B415	X	3	8-4	X			WING 3 HORIZ.
B416	X	7	4-2				WING 3 VERT.
B417	X	14	8-3	X			WING 4 VERT. E.F.
B418	X	4	9-5	X			WING 4 VERT. E.F.
B519	X	5	10-8	X			WING 4 HORIZ. F.F.
B720	X	5	12-2	X			WING 4 HORIZ. B.F.
B421	X	2	9-4				WING 4 HORIZ. E.F.
B422	X	2	6-4				WING 4 HORIZ. E.F.
B423	X	2	9-8	X			WING 4 DIAG. E.F.
B424	X	3	7-8	X			WING 4 HORIZ.
B425	X	7	4-2				WING 4 VERT.

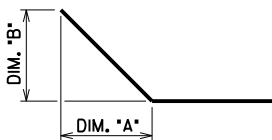
BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

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BAR SERIES TABLE

BAR MARK	NO REQ'D.	LENGTH
B408	2 SERIES OF 7	7'-6" TO 9'-0"
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BUNDLE AND TAG EACH SERIES SEPARATELY.

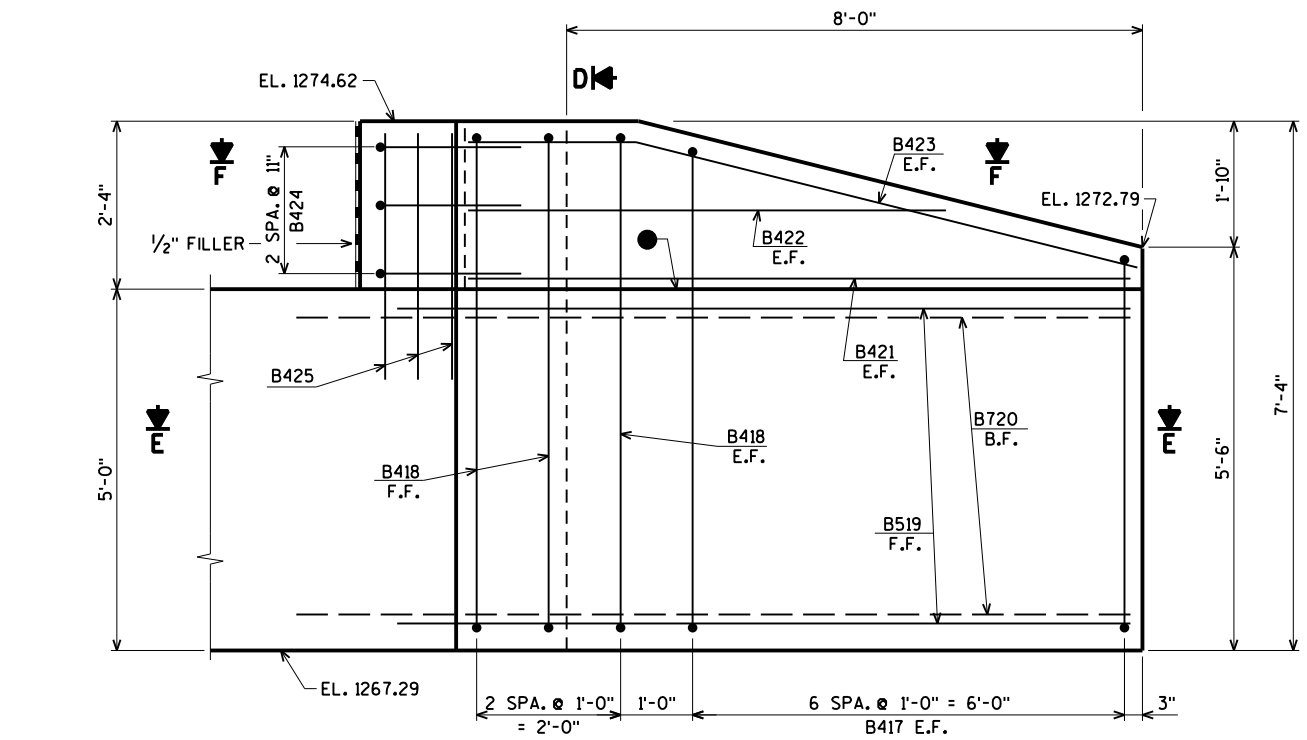


BAR NO.	DIM. "A"	DIM. "B"
B605	1'-0 3/4"	1'-0 3/4"
B806	1'-0 1/2"	1'-0 3/4"
B510	1'-0 3/4"	1'-0 3/4"
B711	1'-0 3/4"	1'-0 3/4"
B414	6'-10"	1'-10"
B519	1'-0 3/4"	1'-0 3/4"
B720	1'-0 3/4"	1'-0 3/4"
B423	6'-10"	1'-10"

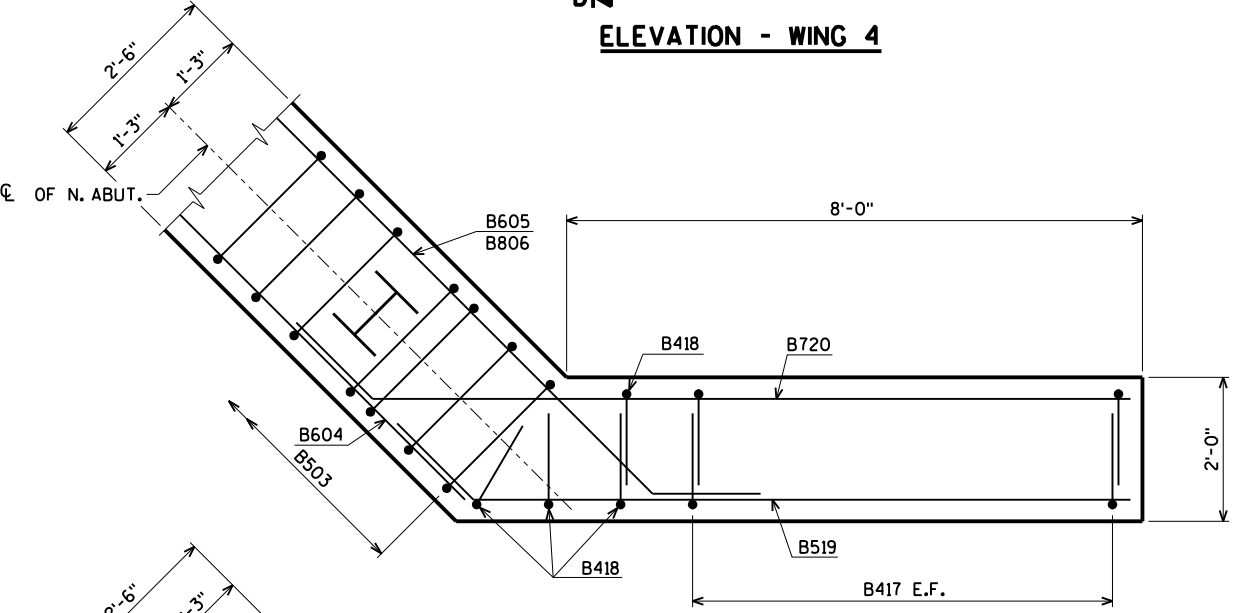
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-60-933			
DRAWN BY		JWZ	PLANS CK'D. CKJ
NORTH ABUTMENT WING 4 DETAILS AND BILL OF BARS			SHEET 9 OF 12

ORIGINAL PLANS PREPARED BY
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Eau Claire, WI 54701
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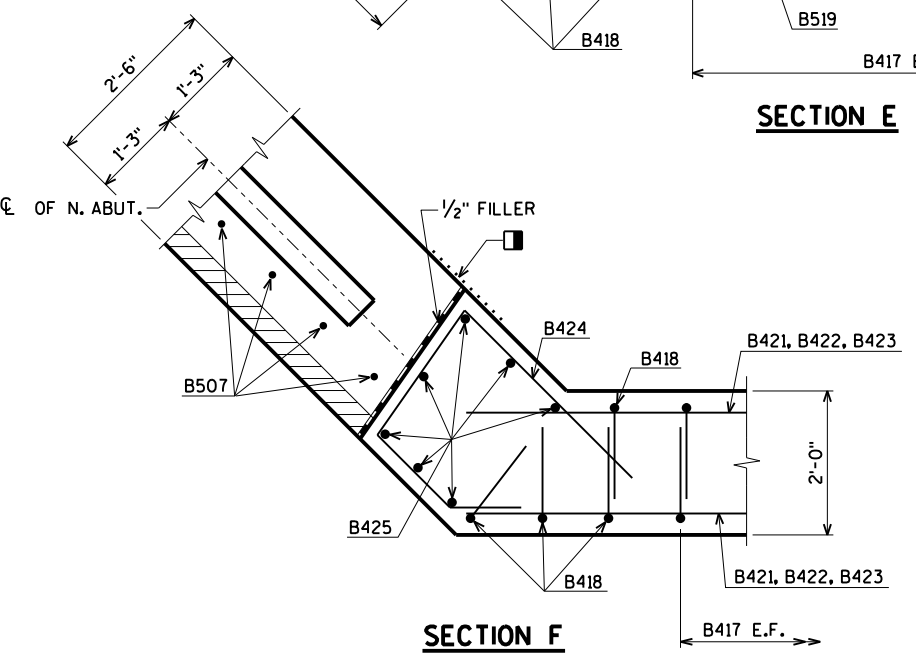
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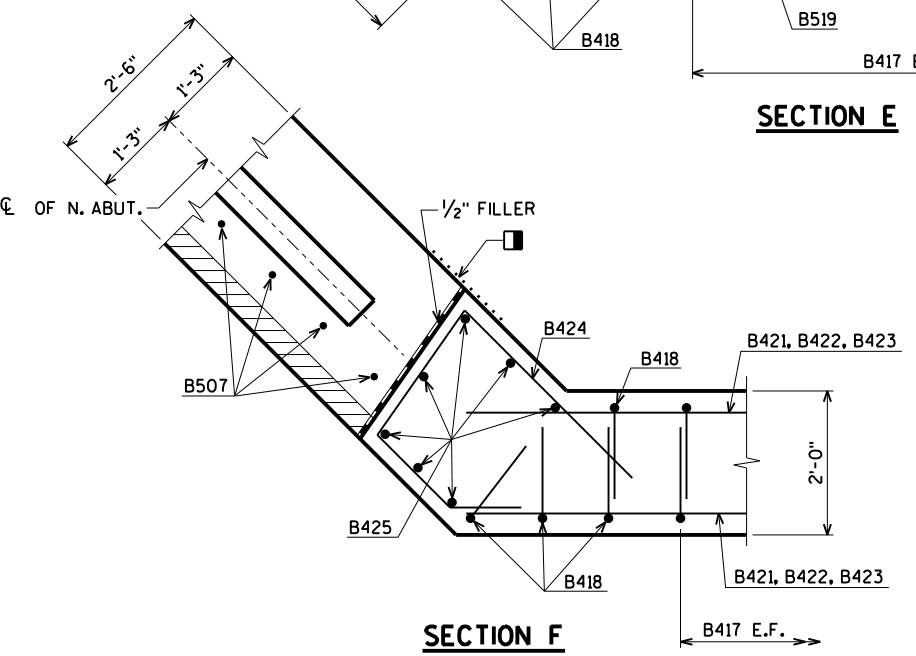
ELEVATION - WING 4



SECTION D



SECTION E



SECTION F

18" RUBBERIZED MEMBRANE WATERPROOFING ON BACK FACE. NOT REQUIRED IF CONST. JT. IS NOT USED.

OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.

3/4" 'V' GROOVE ON F.F. OF WING WALL NOT REQUIRED IF CONST. JT. IS NOT USED.

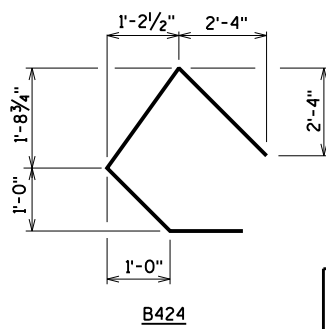
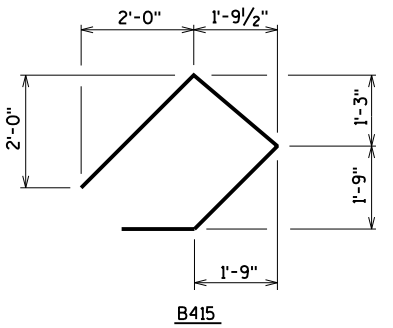
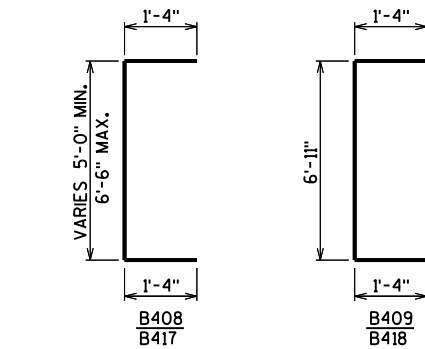
VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING WALL.

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE

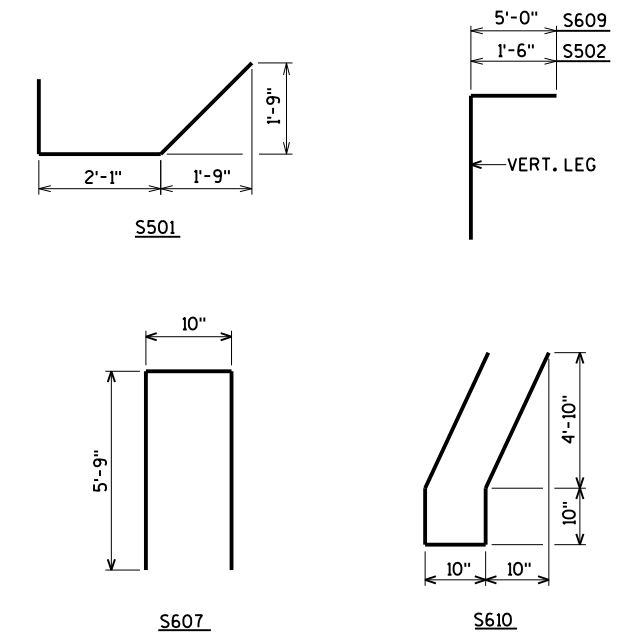
E.F. DENOTES EACH FACE

F.F. DENOTES FRONT FACE





BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

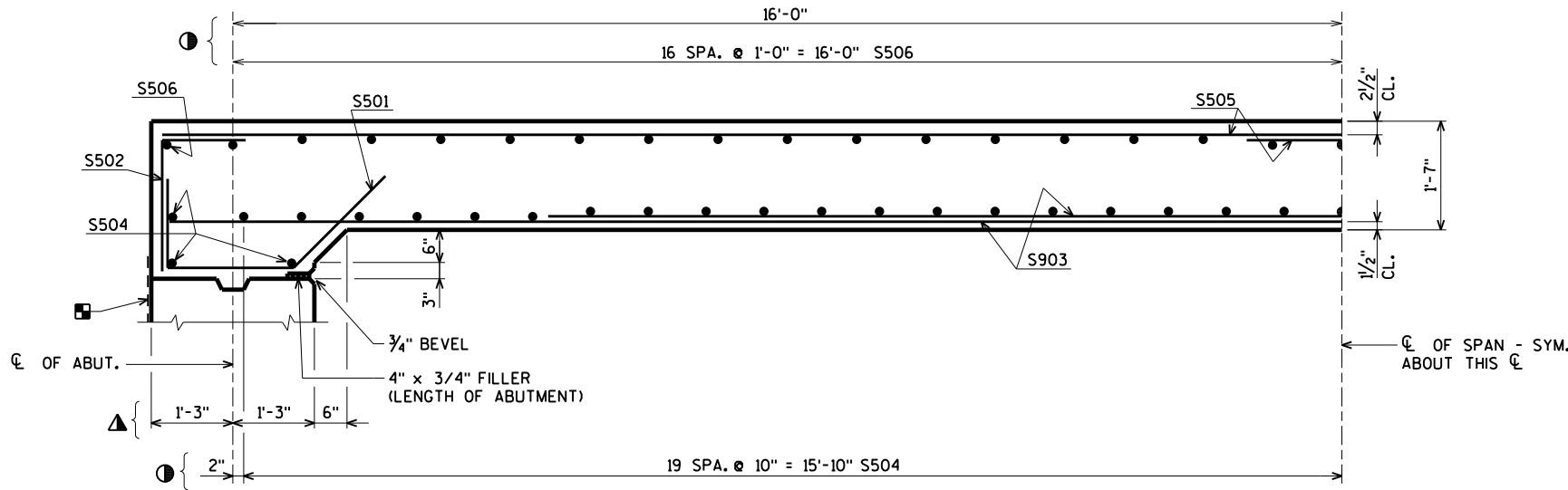


PLAN

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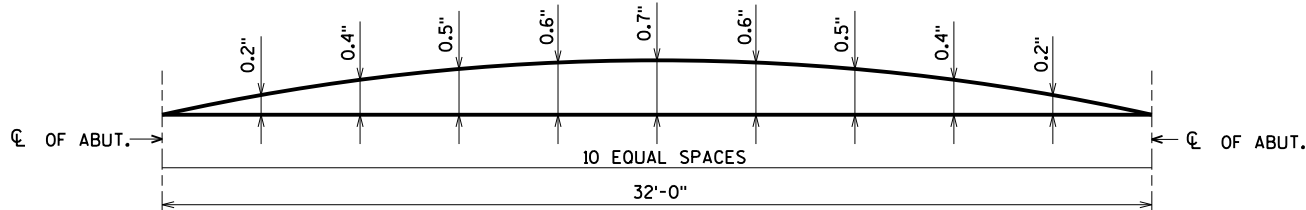
STATE PROJECT NUMBER

8887-08-72



PART LONGITUDINAL SECTION

- DIMENSIONS MEASURED ALONG CL OF CTH T.
- ▲ DIMENSIONS MEASURED NORMAL TO CL OF SUBSTRUCTURE.
- 18" RUBBERIZED MEMBRANE WATERPROOFING



CAMBER DIAGRAM

CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION & FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE CL OF ABUTMENTS AND 5/10 POINTS TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGE OF SLAB AND CROWN OR CL.

TOP OF DECK ELEVATIONS

LOCATION	CL OF S. ABUT.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	CL OF N. ABUT.
W. EDGE OF SLAB	1274.55	1274.56	1274.57	1274.58	1274.59	1274.60	1274.61	1274.61	1274.62	1274.62	1274.63
CL OF STRUCTURE	1274.86	1274.87	1274.88	1274.90	1274.91	1274.91	1274.92	1274.93	1274.94	1274.94	1274.95
E. EDGE OF SLAB	1274.53	1274.54	1274.55	1274.56	1274.57	1274.58	1274.59	1274.60	1274.61	1274.61	1274.62

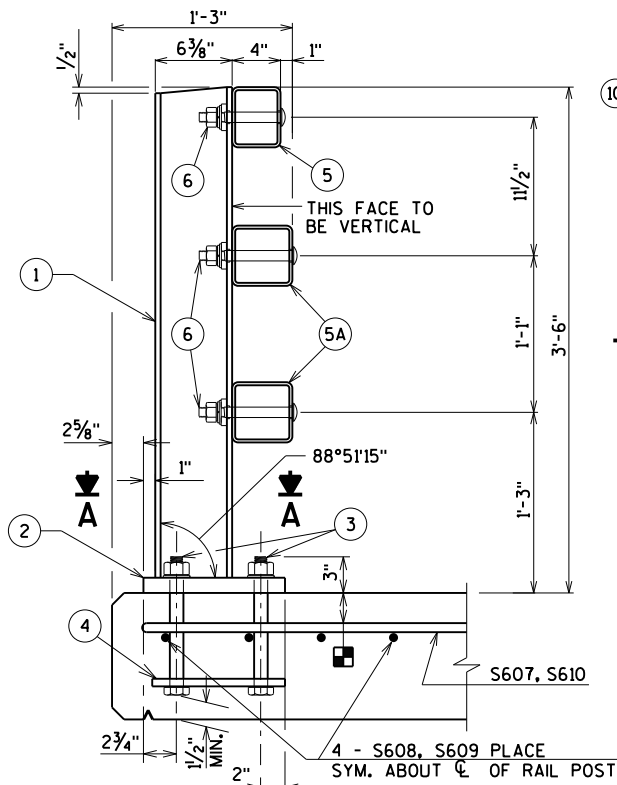
ELEVATIONS SHOWN ARE FINISHED DECK AND DO NOT INCLUDE ALLOWANCES OF DEAD LOAD DEFLECTION AND FUTURE CREEP.

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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-60-933			
DRAWN BY JWZ		PLANS CK'D. CKJ	
SUPERSTRUCTURE DETAILS		SHEET 11 OF 12	

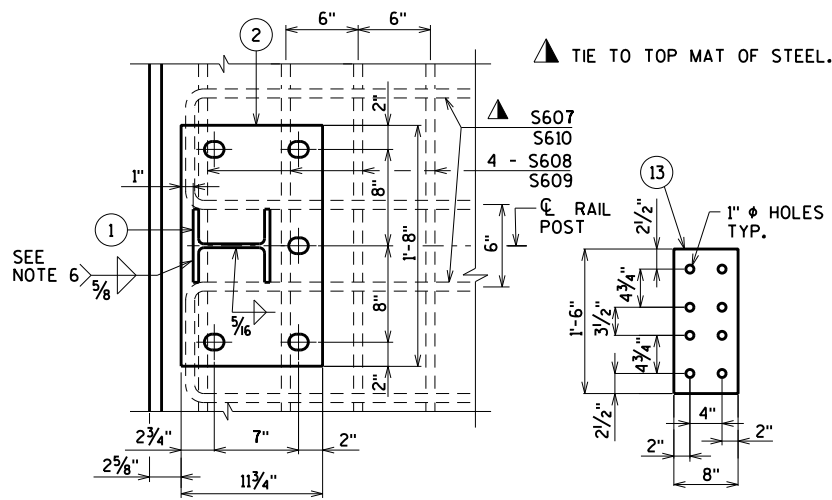
LEGEND

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



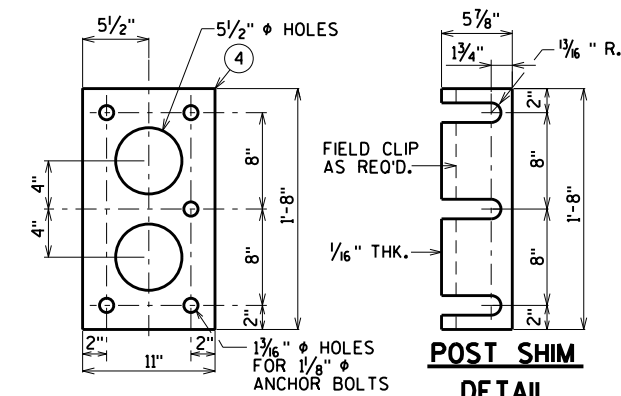
SECTION THRU RAILING ON DECK

PLACE BELOW TOP MAT SLAB REINFORCEMENT.



SECTION A

ANCHOR PLATE
(AT BEAM GUARD ATTACHMENT)

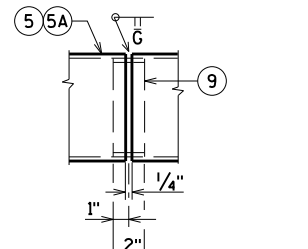


ANCHOR PLATE

(AT RAIL TO DECK CONNECTION)

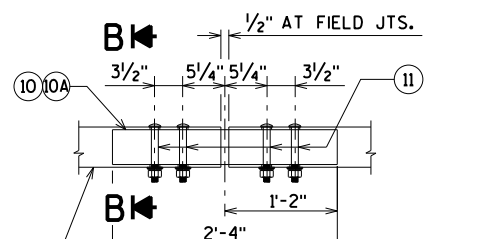
POST SHIM
DETAIL

SHOP RAIL SPLICE DETAIL
(LOCATION MUST BE SHOWN ON THE SHOP DRAWINGS)

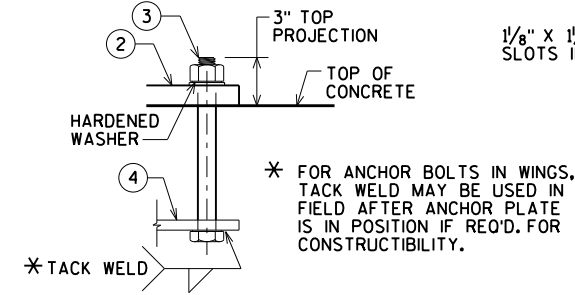


FIELD ERECTION JOINT DETAIL

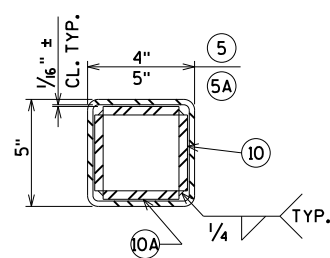
PROVIDE 1/2" phi DRAIN HOLES IN LOW END OF ALL RAILS CLEAR OF SPLICE TUBE



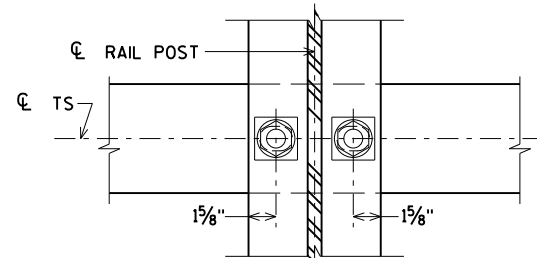
ANCHOR BOLTS



SECTION B



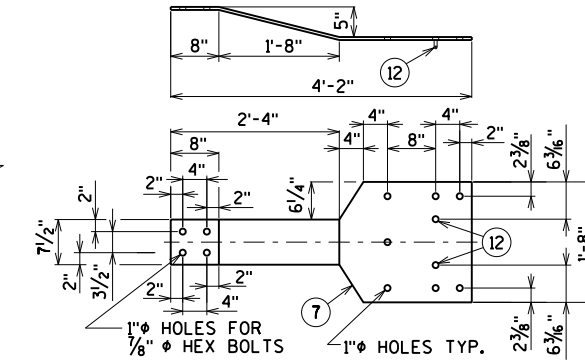
SECTION THRU POST WEB



SECTION THRU RAIL

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

TYPICAL RAIL TO POST CONNECTIONS

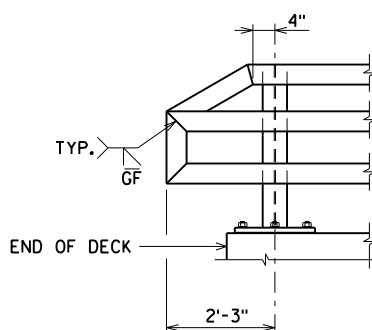


BACK-UP PLATE DETAIL
(AT BEAM GUARD ATTACHMENT)

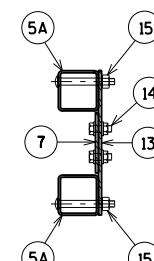
GENERAL NOTES

- BID ITEM SHALL BE "RAILING TUBULAR TYPE M B-60-933" WHICH INCLUDES ALL ITEMS SHOWN.
- RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
- THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8" TURN.
- RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE. RAILS SHALL BE SPLICED IN A PANEL OVER EXPANSION JOINTS.
- ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
- WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
- FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
- POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
- ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.
- WHEN PAINTING IS REQUIRED, ALL MATERIAL EXCEPT ANCHORAGE DETAIL (NO. 3 & 4) SHALL BE PAINTED OVER GALVANIZING WITH APPROVED TIE COAT AND TOP COAT.
- THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (TL-4).
- PLACE FIRST BOTTOM LONGITUDINAL BAR CLEAR OF DRIP GROOVE.

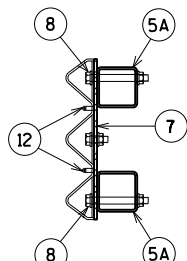
DETAIL AT END POST
(THRIE BEAM RAIL ATTACHMENT)



PART ELEVATION OF RAILING



SECTION C



SECTION D

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-60-933			
DRAWN BY		JWZ	PLANS CK'D. CKJ
RAILING TUBULAR TYPE M		SHEET 12 OF 12	

AVRES ASSOCIATES

ORIGINAL PLANS PREPARED BY
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

EARTHWORK SUMMARY (CATEGORY 0010)											
DIVISION	STATION	AREA			INCREMENTAL VOLUME			CUMULATIVE VOLUME			
		CUT	SALVAGED/ UNUSABLE PAVEMENT MATERIAL SF	FILL SF	CUT (1) CY	SALVAGED/ UNUSABLE PAVEMENT MATERIAL (2) CY	FILL (3) CY	CUT (1) 1.00 CY	EXPANDED FILL (4) 1.30 CY	MASS	ORDINATE ±(5) CY
1 CTH T	7+75.38	5	0	0	5	0	4	5	5		0
	8+00.00	5	0	10	2	0	6	7	13		-6
	8+11.38	5	0	18	3	0	10	10	26		-16
	8+25.00	5	0	23	2	0	9	12	38		-26
	8+36.38	5	0	22	9	0	9	21	49		-28
	8+50.00	31	0	15	13	0	6	34	57		-23
	8+61.38	29	0	15	14	0	12	48	73		-25
	8+75.00	26	0	31	15	0	26	63	107		-44
	8+91.91	22	0	53	6	0	16	69	127		-58
	9+00.00	20	0	57	12	0	35	81	173		-92
	9+16.91	18	0	56	5	0	16	86	194		-108
	9+25.00	18	0	48	11	0	25	97	226		-129
	9+41.91	17	0	32	5	0	9	102	238		-136
	9+50.00	17	0	31	13	0	15	115	257		-142
	9+75.00	10	0	1	1	0	0	116	257		-141
	9+78.73	10	0	1	0	0	0	116	257		-141
	STRUCTURE (B-60-0933)										
	10+13.27	30	0	28	13	0	12	13	16		-3
	10+25.00	30	0	28	27	0	25	40	48		-8
	10+50.00	29	0	25	0	0	0	40	48		-8
	10+50.09	29	0	25	36	0	26	76	82		-6
	10+75.00	48	0	31	0	0	0	76	82		-6
	10+75.09	49	0	31	45	0	24	121	113		8
	11+00.00	49	0	21	0	0	0	121	113		8
	11+00.09	49	0	21	43	0	15	164	133		31
	11+25.00	45	0	11	9	0	2	173	135		38
	11+30.62	45	0	8	28	0	4	201	140		61
	11+50.00	32	0	3	4	0	1	205	142		63
	11+55.62	5	0	4	4	0	5	209	148		61
	11+75.00	5	0	9	1	0	2	210	151		59
	11+80.62	5	0	10	4	0	4	214	156		58
	12+00.00	6	0	2	3	0	0	217	156		61
	12+16.62	6	0	0	0	0	0	217	156		61
TOTALS					333	0	318				61

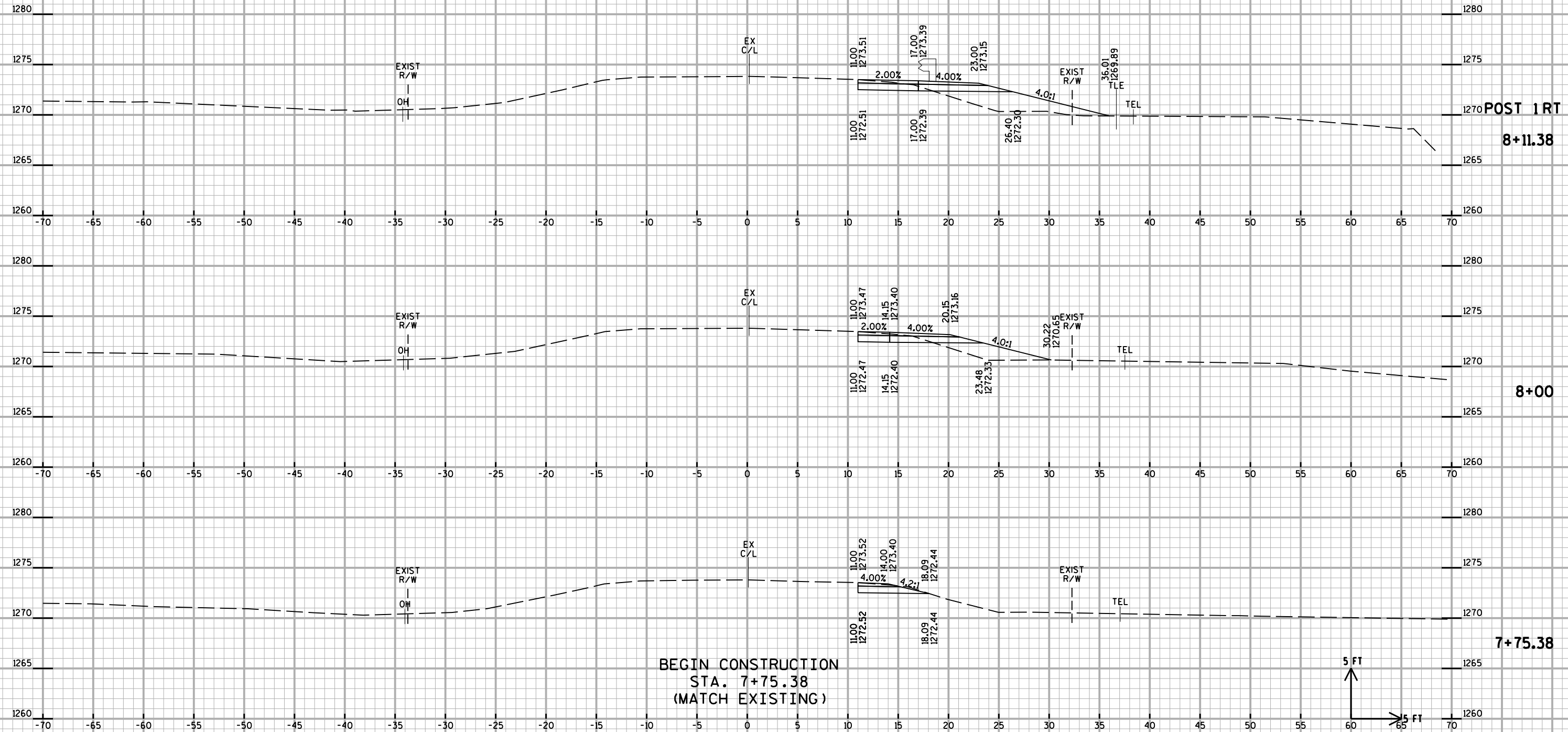
205.0100 EXCAVATION COMMON = SAY 333

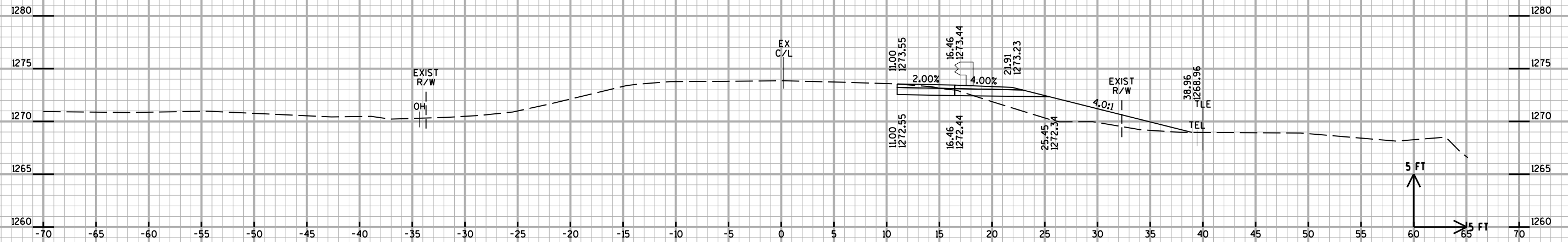
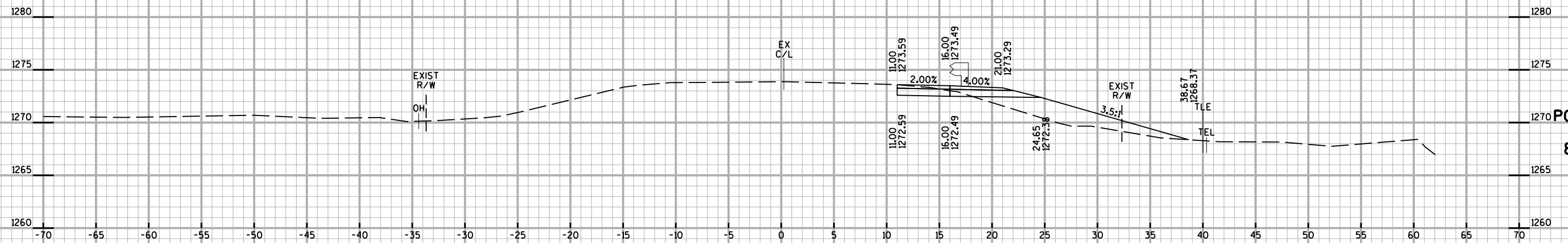
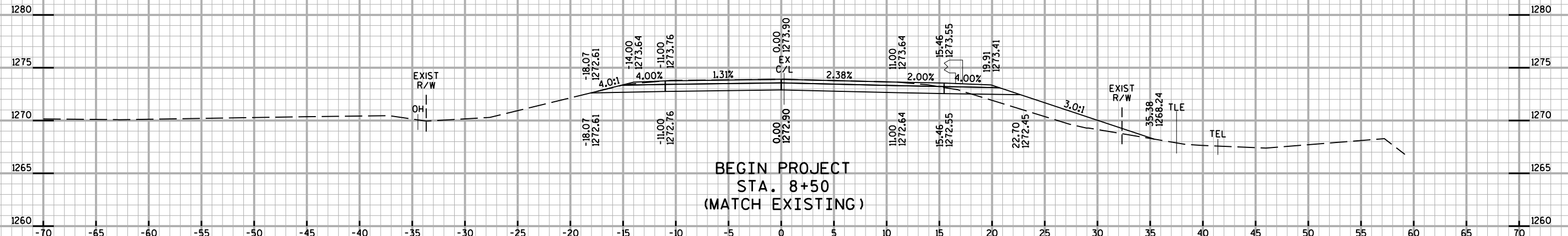
208.0100 BORROW = SAY 141

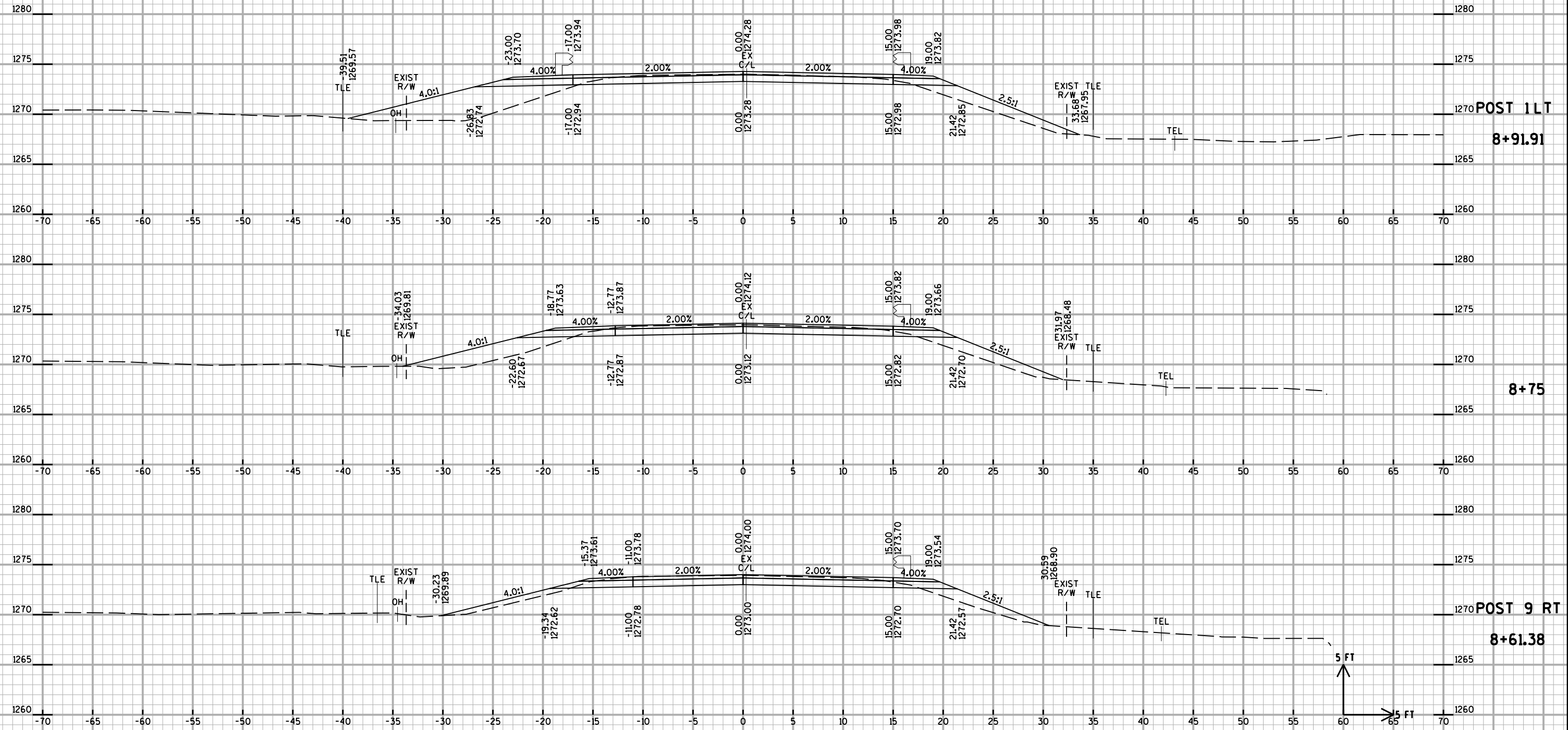
WASTE = SAY 61

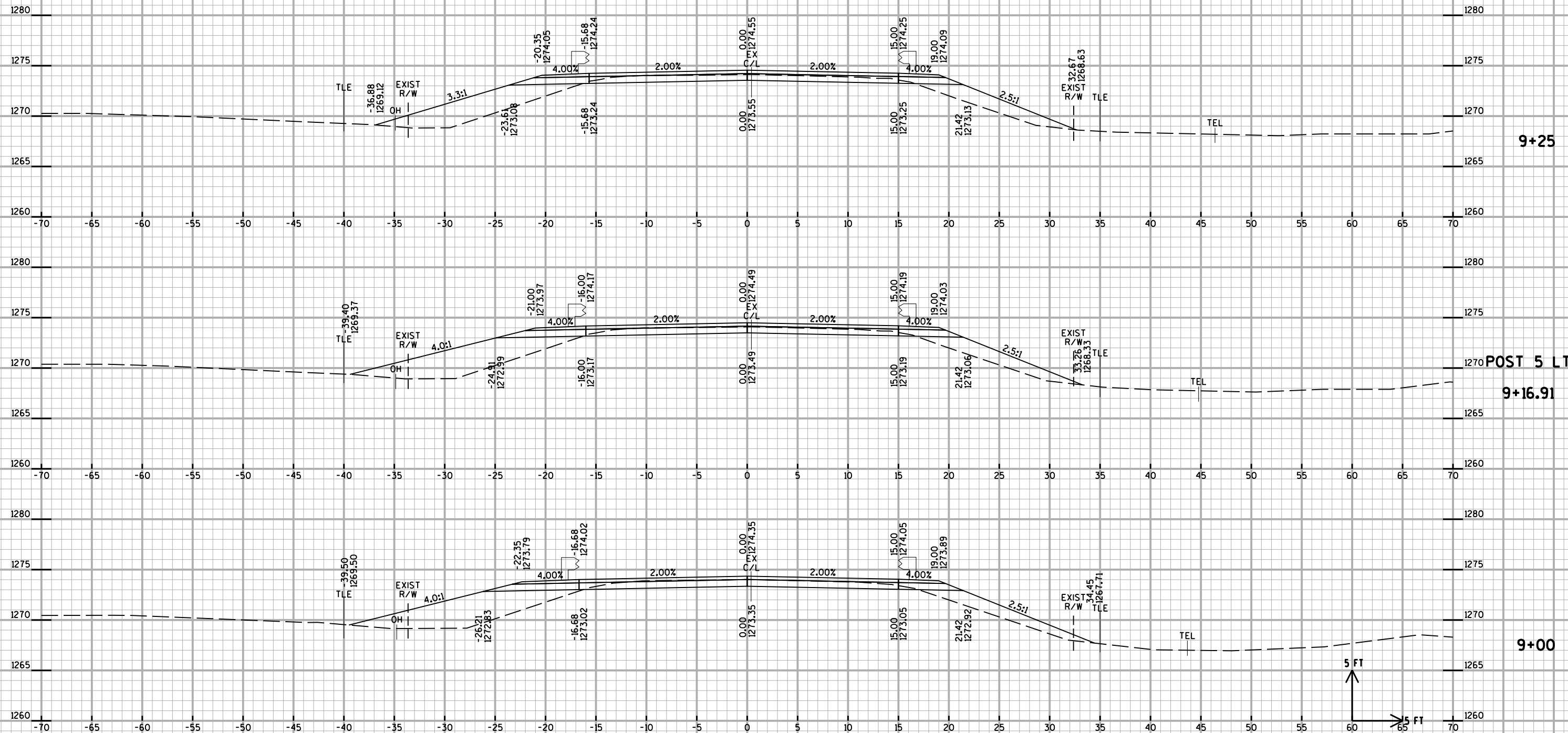
NOTES:
1) EXCAVATION COMMON IS THE SUM OF THE CUT COLUMN. ITEM NUMBER 205.0100
2) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
3) DOES NOT INCLUDE UNUSABLE PAVEMENT EXCAVATION VOLUME.
4) EXPANDED FILL FACTOR = 1.30 EXPANDED FILL = UNEXPANDED FILL * FILL FACTOR
5) THE MASS ORDINATE ± QTY CALCULATED FOR THE DIVISION.

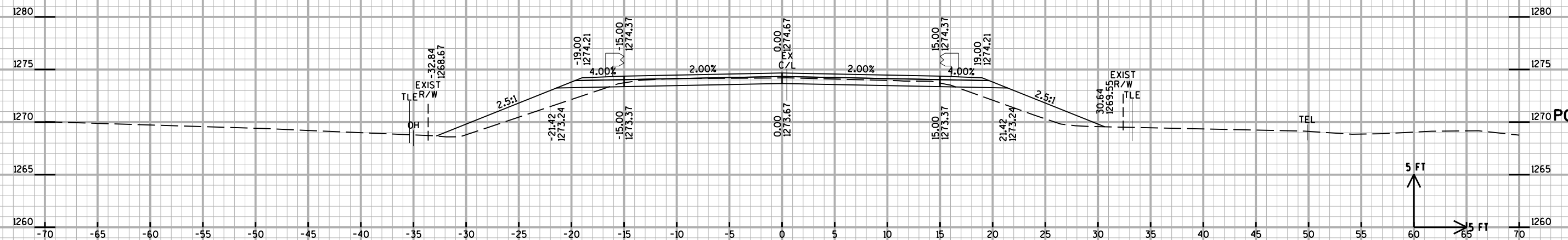
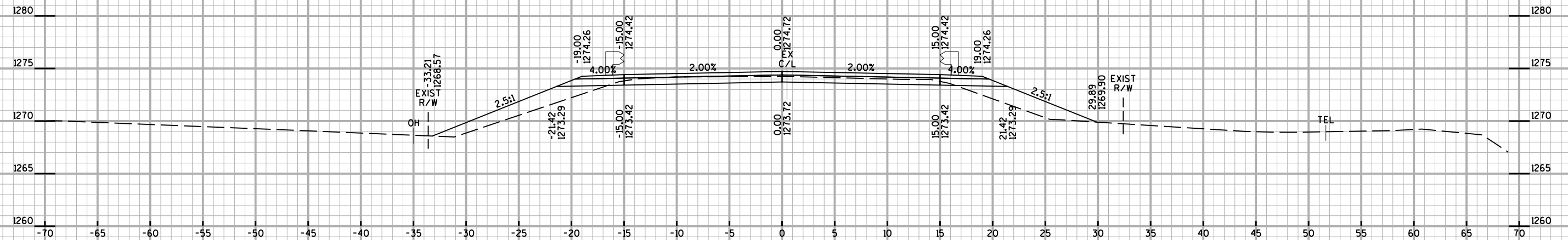
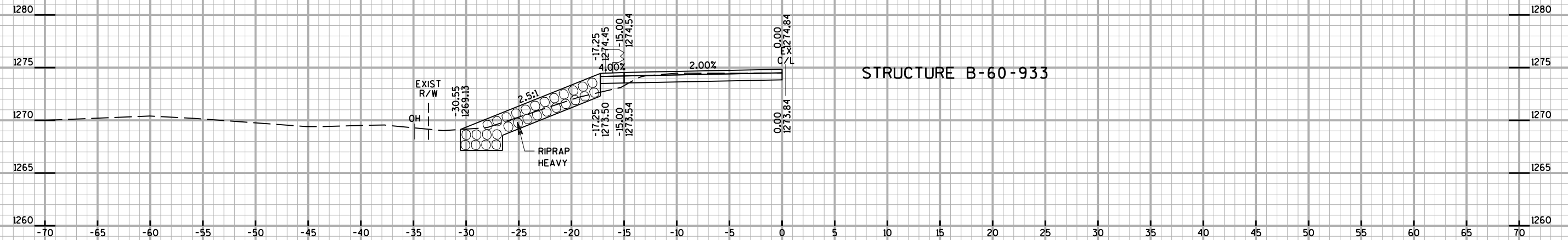
PLUS (+) QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION.
MINUS (-) QUANTITY INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

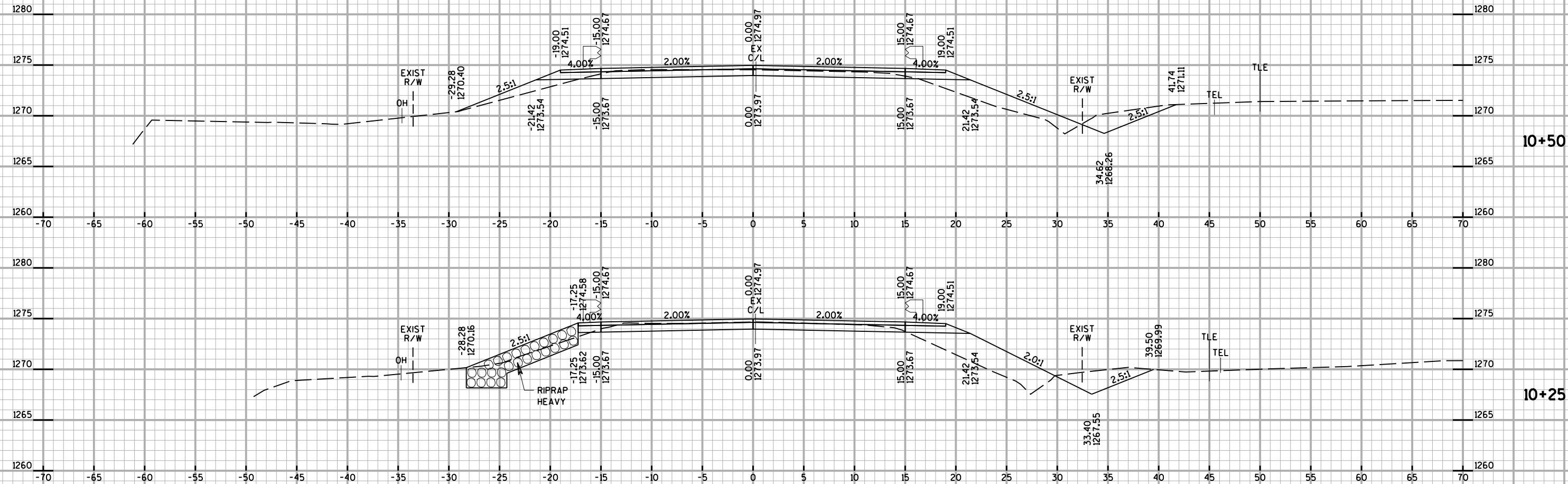


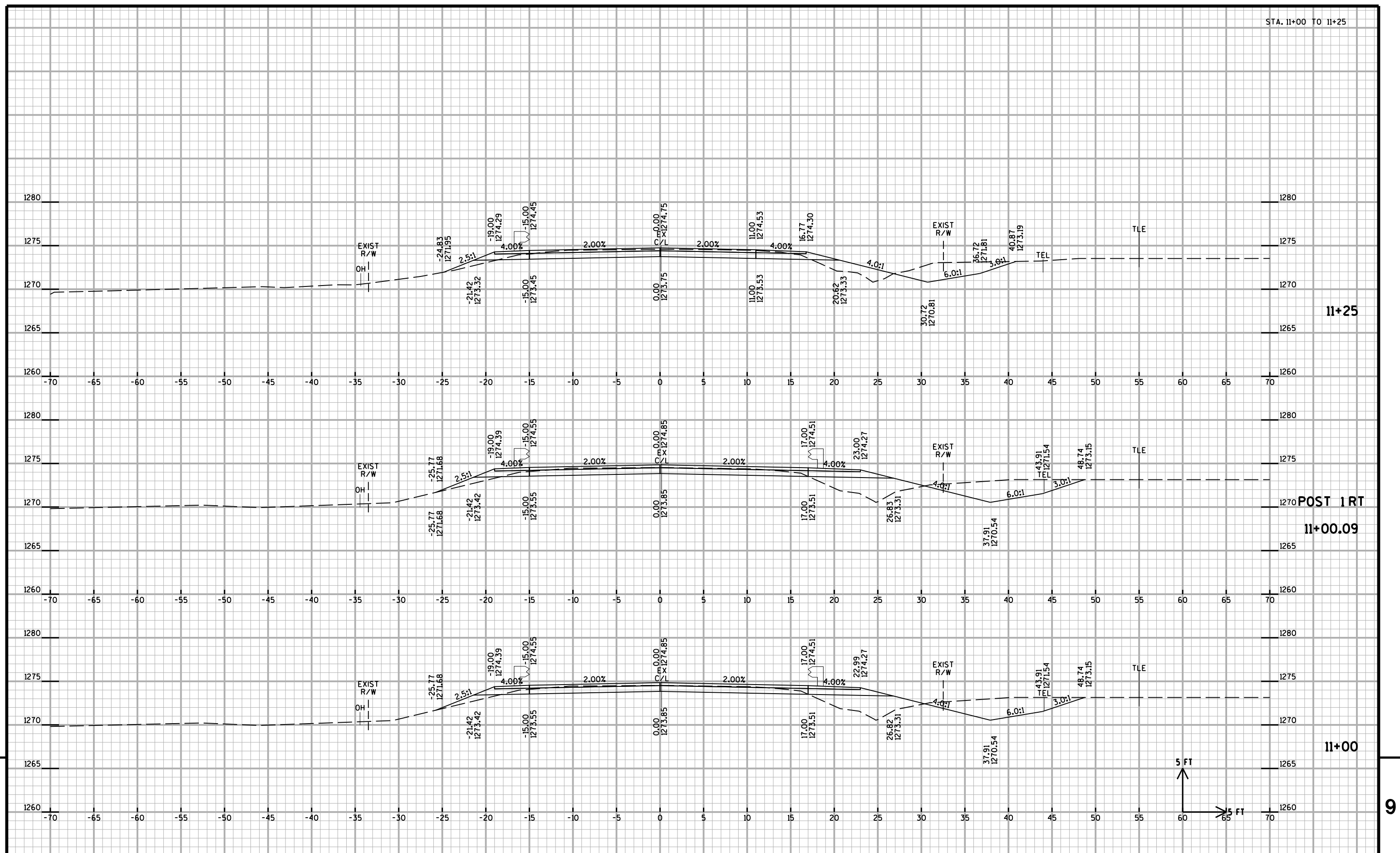


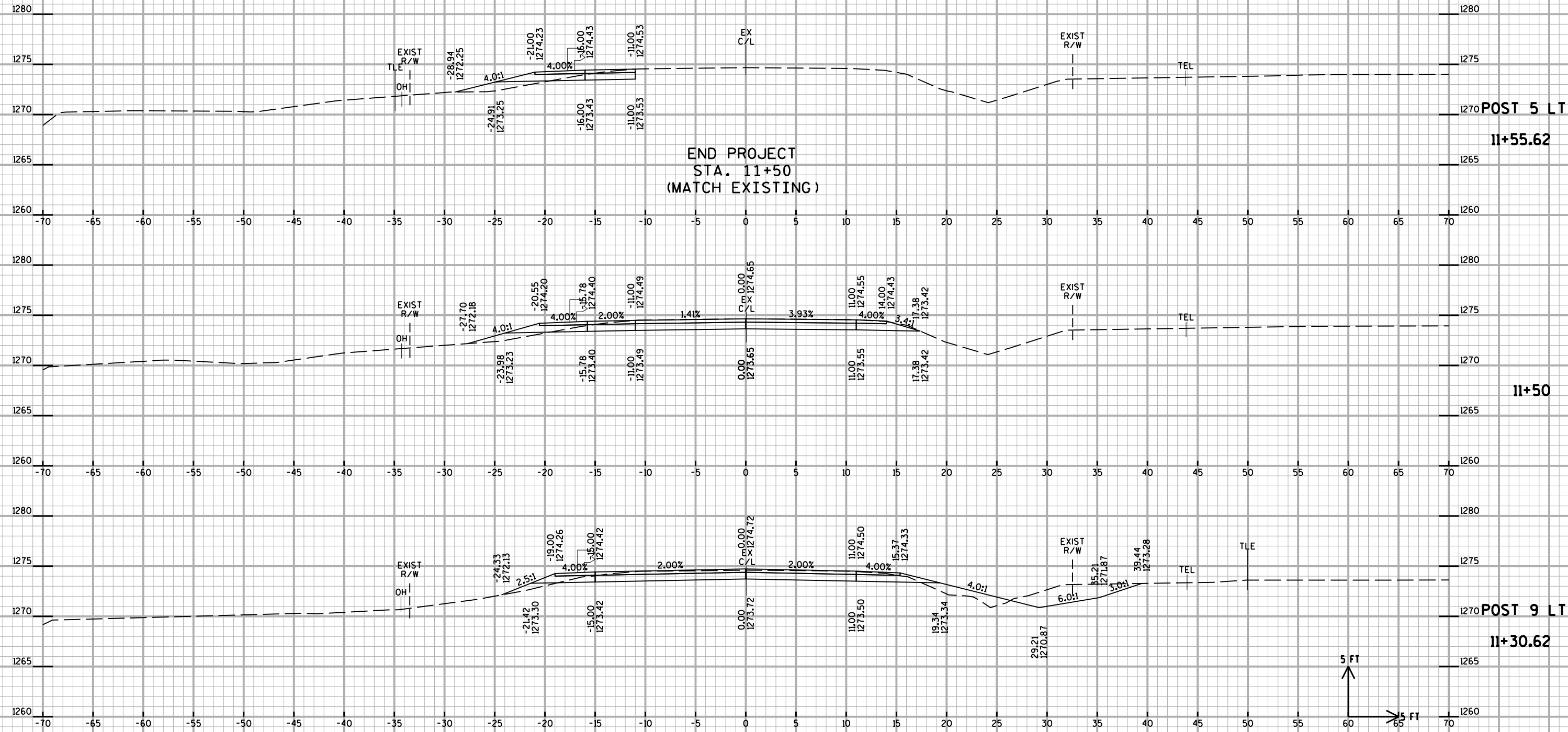






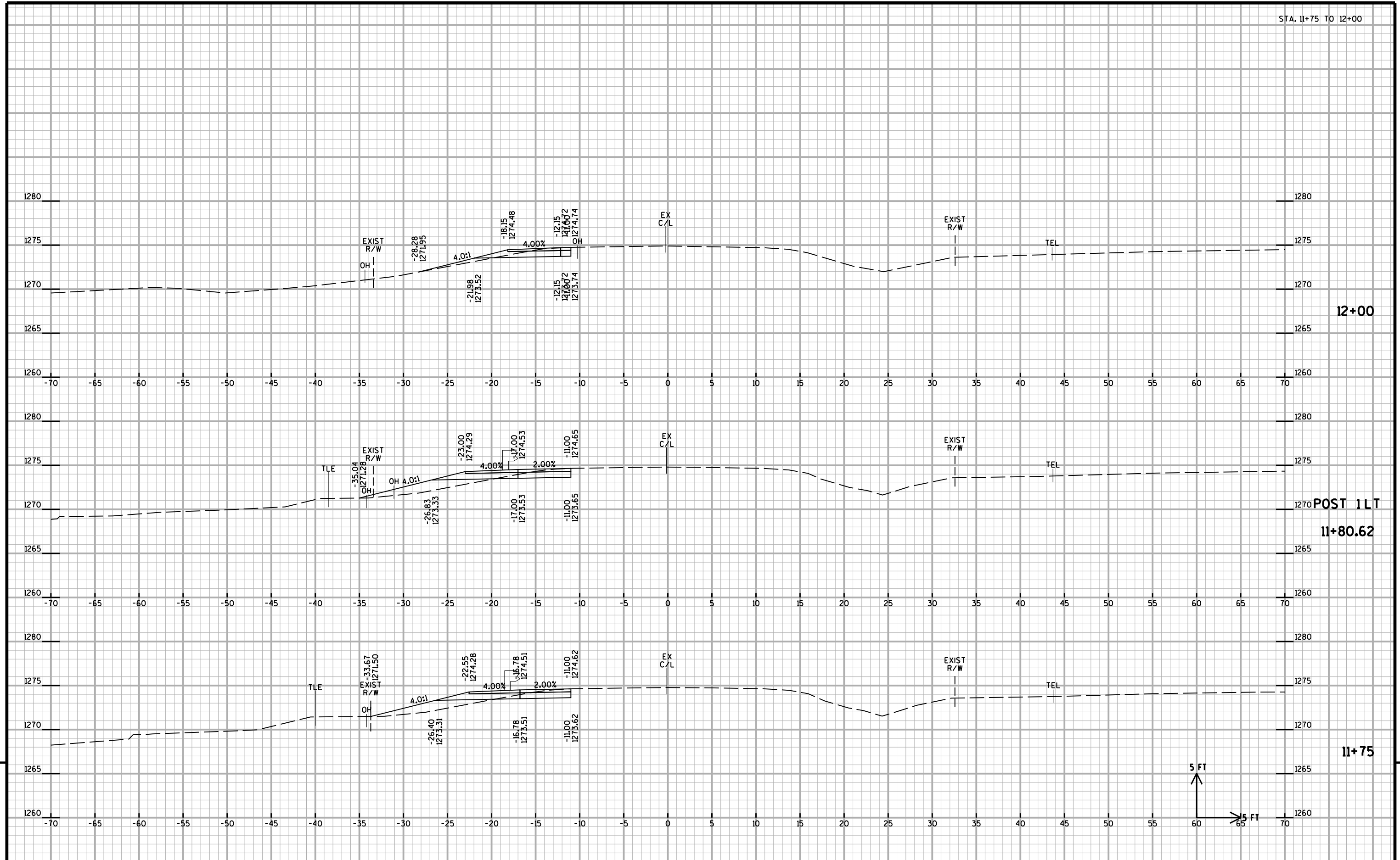


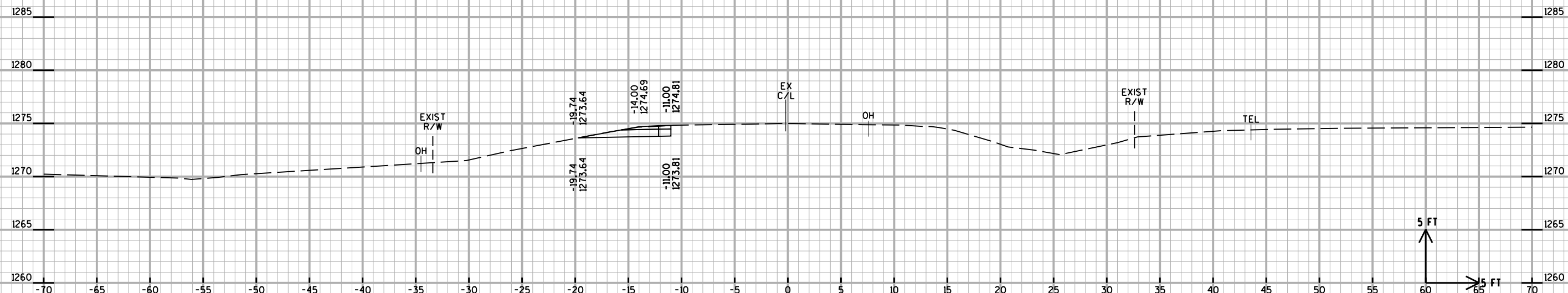
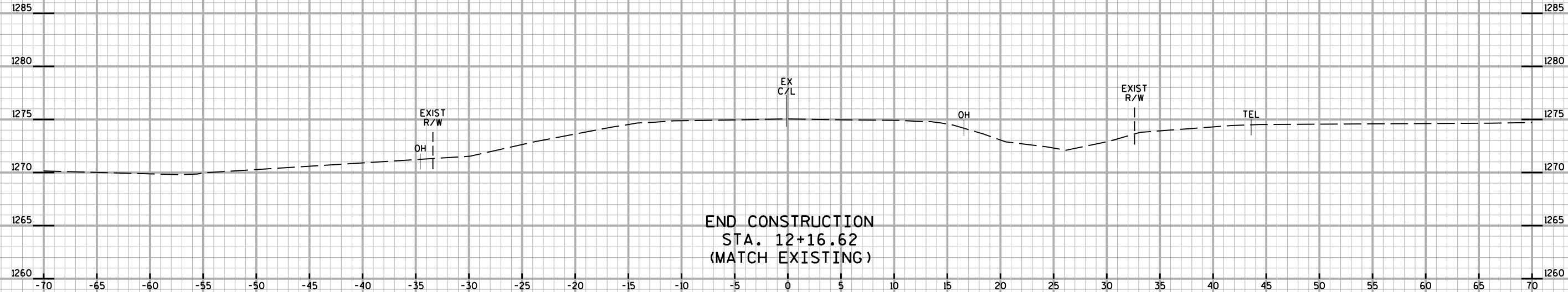


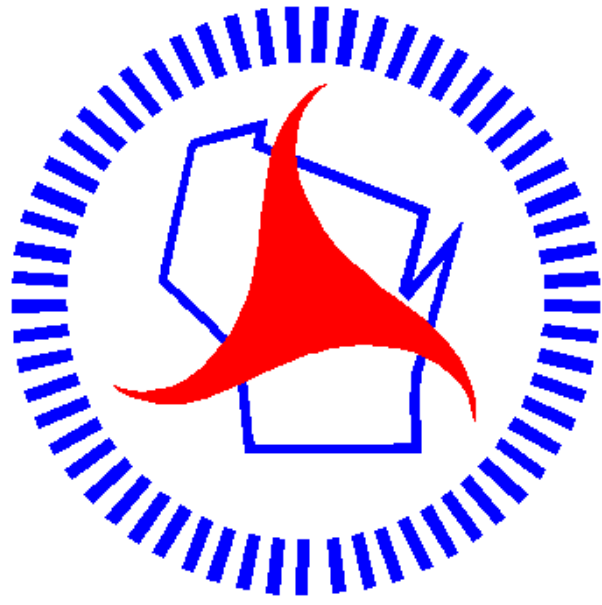


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