

EAU
PROJECT ID: 7828-03-71
WITH: N/A

JANUARY 2020

ORDER OF SHEETS

- Section No. 1 Title
- Section No. 2 Typical Sections and Details (includes Erosion Control Plans)
- Section No. 3 Estimate of Quantities
- Section No. 3 Miscellaneous Quantities
- Section No. 4 Right of Way Plat
- Section No. 5 ~~Plan and Profile~~
- Section No. 6 Standard Detail Drawings
- Section No. 7 Sign Plates
- Section No. 8 Structure Plans
- Section No. 9 Computer Earthwork Data
- Section No. 9 Cross Sections

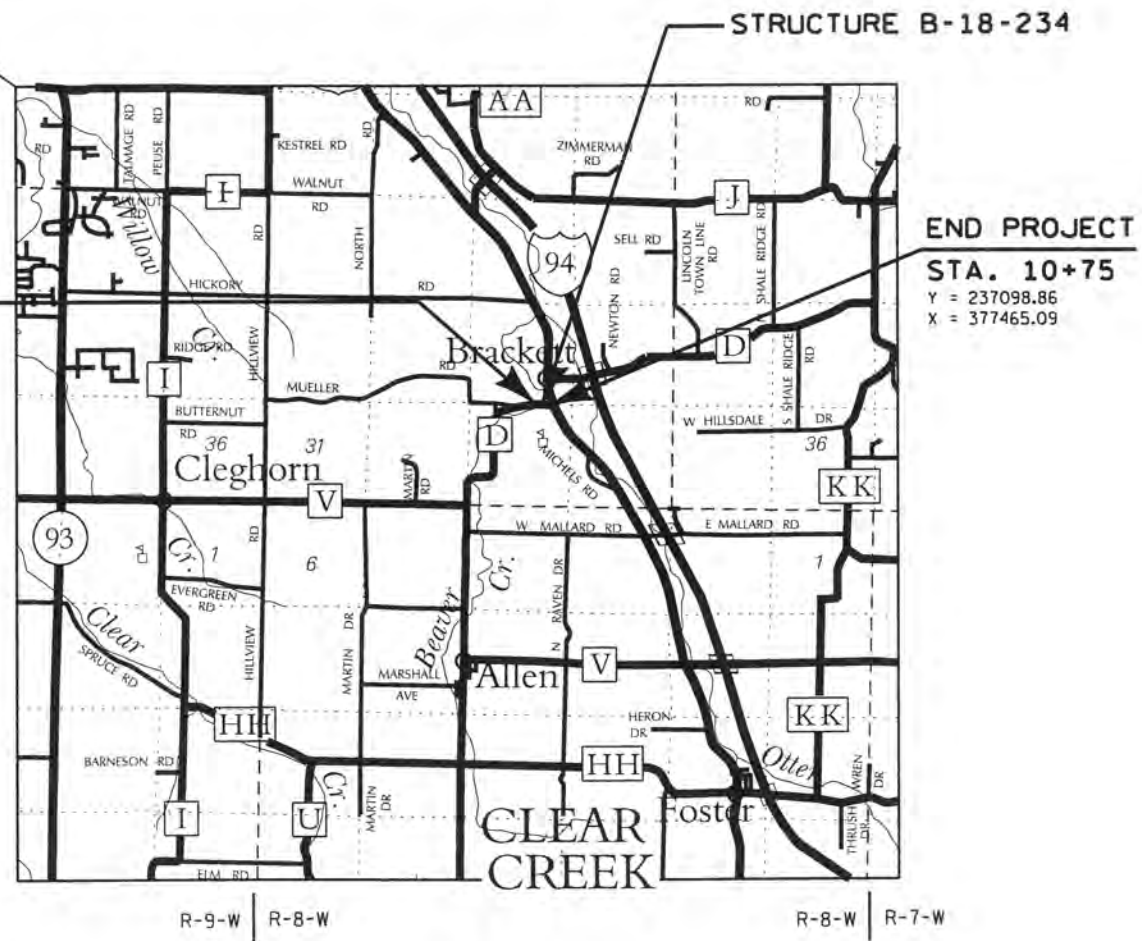
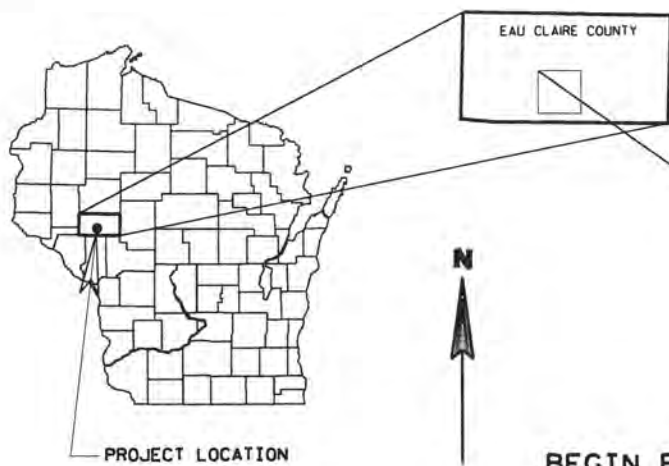
TOTAL SHEETS = 90

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT
CTH V - USH 53
BEAVER CREEK BRIDGE B180234
CTH D
EAU CLAIRE COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
7828-03-71	WISC 2019814	1

STATE PROJECT NUMBER
7828-03-71



DESIGN DESIGNATION

- A.A.D.T. (2020) = 1,200
- A.A.D.T. (2040) = 1,450
- D.H.V. = 120
- D. = 60/40
- T. = 6.5%
- DESIGN SPEED = 45 MPH
- ESALS = 220,000

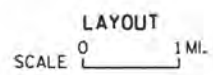
CONVENTIONAL SYMBOLS

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

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

BEGIN PROJECT
STA. 9+25
Y = 237115.45
X = 377316.01

END PROJECT
STA. 10+75
Y = 237098.86
X = 377465.09



TOTAL NET LENGTH OF CENTERLINE = 0.028 MI.

ACCEPTED FOR
County of Eau Claire

Date: 7/23/2019
Highway Commissioner: [Signature]

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

WISCONSIN PROFESSIONAL ENGINEER
CHRISTOPHER B. McMAHON
E-29454
EAU CLAIRE, WI

DATE: 7/23/19

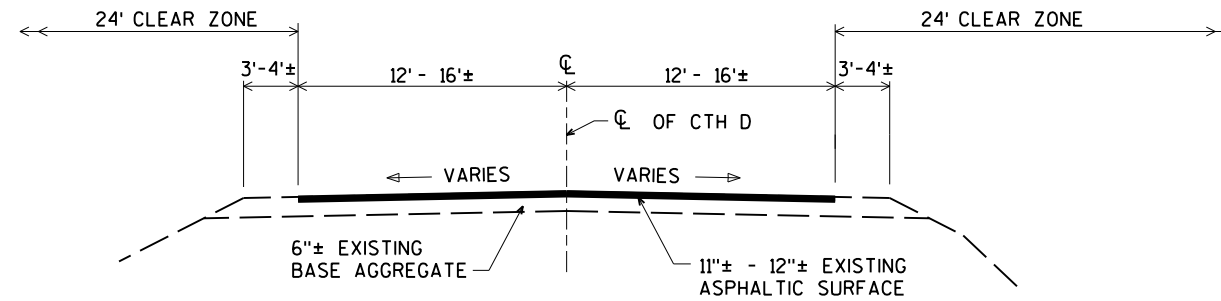
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
Surveyor: AYRES ASSOCIATES INC
Designer: AYRES ASSOCIATES INC
Project Manager: MATTHEW THORNSEN
Regional Examiner: NORTHWEST REGION
Regional Supervisor: ANDREW STENSLAND

APPROVED FOR THE DEPARTMENT
DATE: 7/23/19 [Signature]
(Signature)

26

COUNTY: EAU CLAIRE



TYPICAL EXISTING SECTION
(CTH D)

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.

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.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCLUSIVE OF THE ROADBED, SHALL BE FERTILIZED, SEEDED, AND MULCHED AS DIRECTED BY THE ENGINEER.

SEED MIXTURE NO. 20 AND SEEDING TEMPORARY SHALL BE USED IN THE PROJECT AND SHALL BE PLACED AS SHOWN IN THE PLANS AND/OR AS DIRECTED BY THE ENGINEER.

SILT FENCE IS TO BE PLACED AS SHOWN ON THE PLAN, OR AS DIRECTED BY THE ENGINEER. SILT FENCE TO BE PLACED PRIOR TO CONSTRUCTION AND IN PLACE PRIOR TO BRIDGE REMOVAL.

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

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

SHRINKAGE IS ESTIMATED AT 30%

WETLANDS EXIST IN THE PROJECT AREA AND THE CONTRACTOR SHALL NOT DISTURB OUTSIDE OF THE SLOPE INTERCEPTS IN THESE AREAS

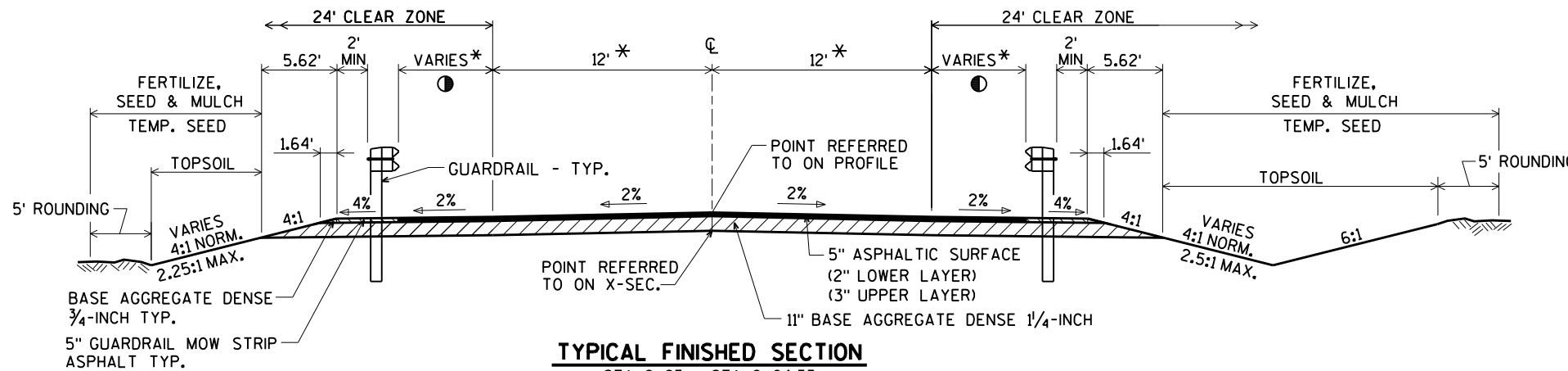
UTILITIES

CENTURYLINK
311 SOUTH COURT STREET
P.O. BOX 6256
SPARTA, WI 54656
ATTN: BRET CLARK
608-269-0819
bret.clark@centurylink.com

EAU CLAIRE ENERGY COOPERATIVE
8214 HIGHWAY 12
P.O. BOX 368
FALL CREEK, WI 54742-368
ATTN: BRIAN JENQUINE
715-836-6486
920-266-3031 (cell)
bjenquine@ecec.com

CHARTER COMMUNICATIONS
1201 McCANN DRIVE
ALTOONA, WI 54720
ATTN: SHANE YODER
715-831-8940 (ext. 51113)
715-370-7870 (cell)
shane.yoder@charter.com

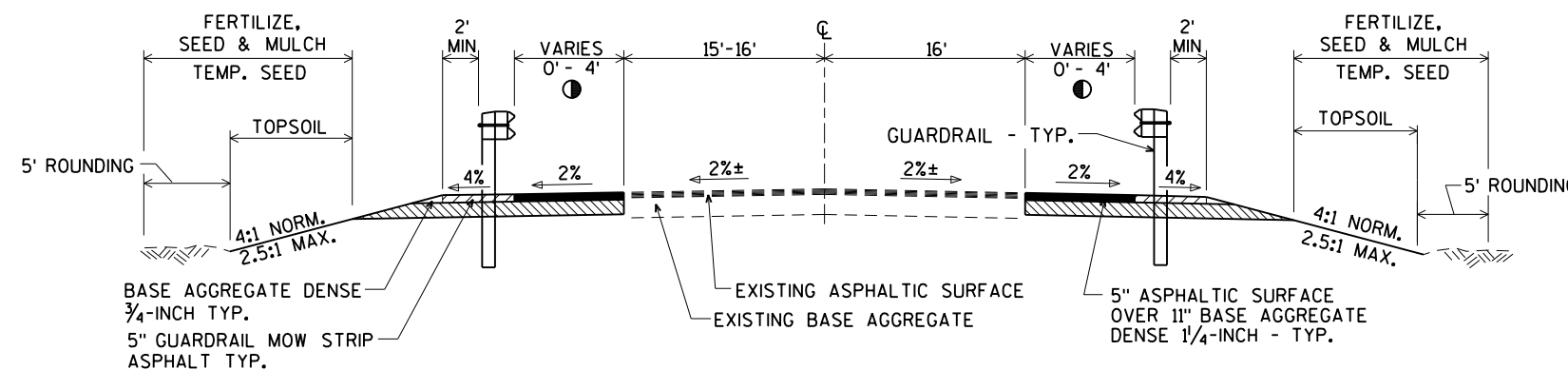
* * DENOTES UTILITIES THAT ARE NOT DIGGERS HOTLINE MEMBERS



TYPICAL FINISHED SECTION
STA 9+25 - STA 9+64.33
STA. 10+38.67 - STA. 10+75

* THE ASPHALTIC SURFACE SHALL BE PLACED 36 FEET WIDE AT THE ENDS OF THE APPROACH SLAB AND FOLLOW THE FACE OF GUARDRAIL, AND TAPER TO 32 FEET AT THE ENDS OF THE PROJECT.

● 6' NORMAL
6' MIN. (AT END OF BRIDGE)
8' MAX. (AT END TERMINAL)



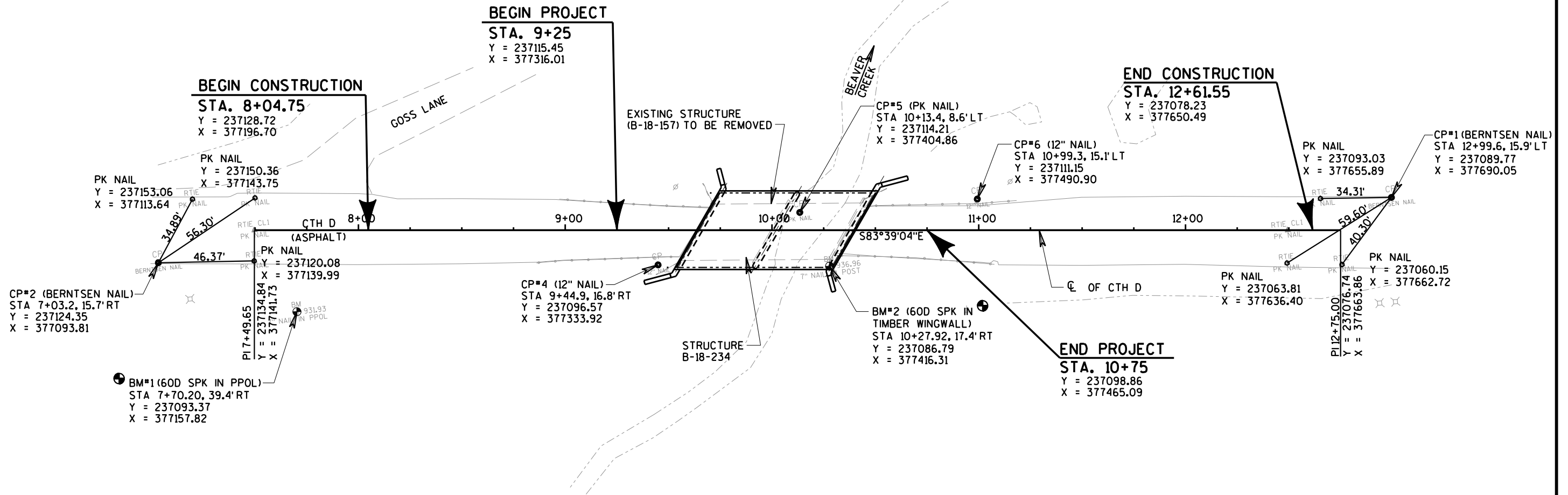
TYPICAL FINISHED SECTION - SHOULDER WIDENING

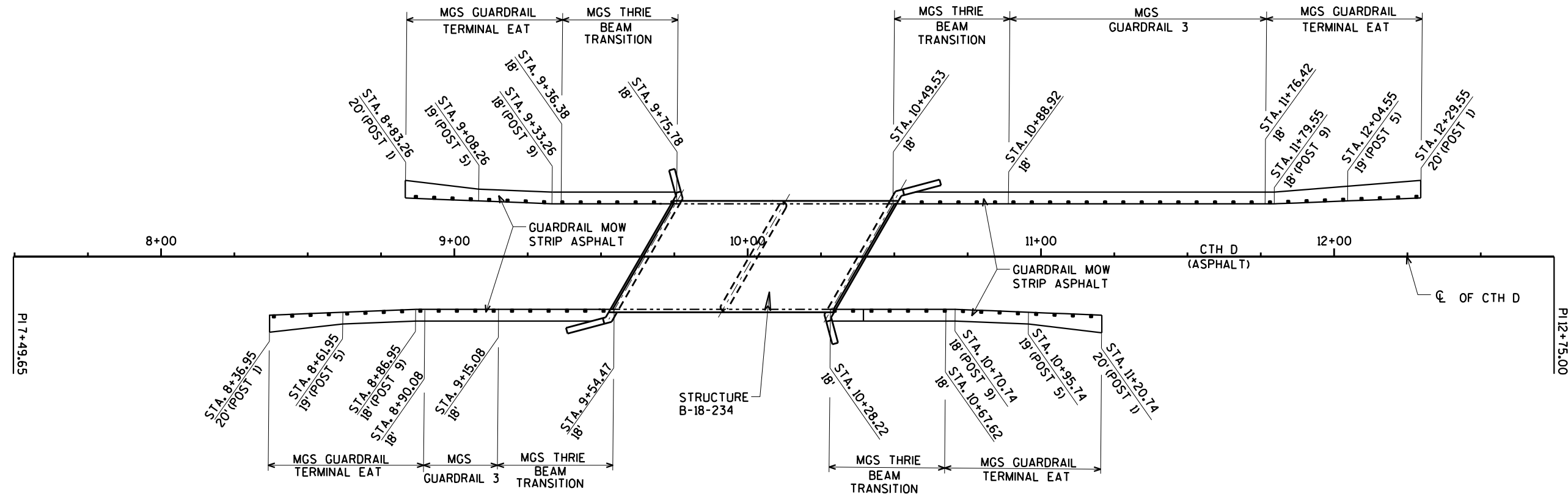
STA 8+04.95 - STA 9+25, RT.
STA 8+51.26 - STA 9+25, LT.
STA 10+75 - STA 11+52.74, RT.
STA 10+75 - STA 12+61.55, LT.

COUNTY CONTACT
EAU CLAIRE COUNTY, COMMISSIONER
2000 SPOONER AVENUE
ALTOONA, WI 54720
ATTN: JON JOHNSON
715-839-2952
jon.johnson@co.eau-claire.wi.us

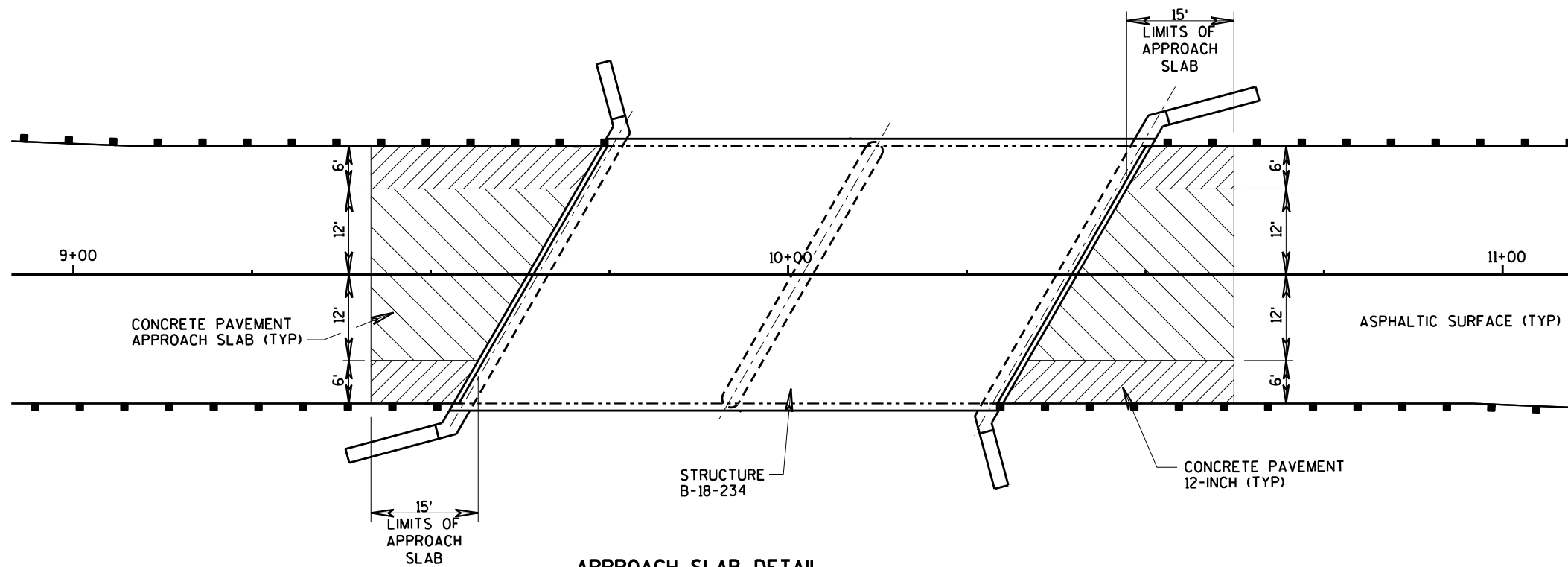
DESIGNER
AYRES ASSOCIATES
3433 OAKWOOD HILLS PARKWAY
EAU CLAIRE, WI 54701
ATTN: CHRIS MCMAHON, PE
715-834-3161
mcmahonc@ayresassociates.com

WISCONSIN DEPARTMENT OF NATURAL RESOURCES CONTACT:
LEAH NICOL
1300 WEST CLAIREMONT AVENUE
EAU CLAIRE, WI 54701
715-934-9014
leah.nicol@wisconsin.gov





GUARDRAIL LAYOUT

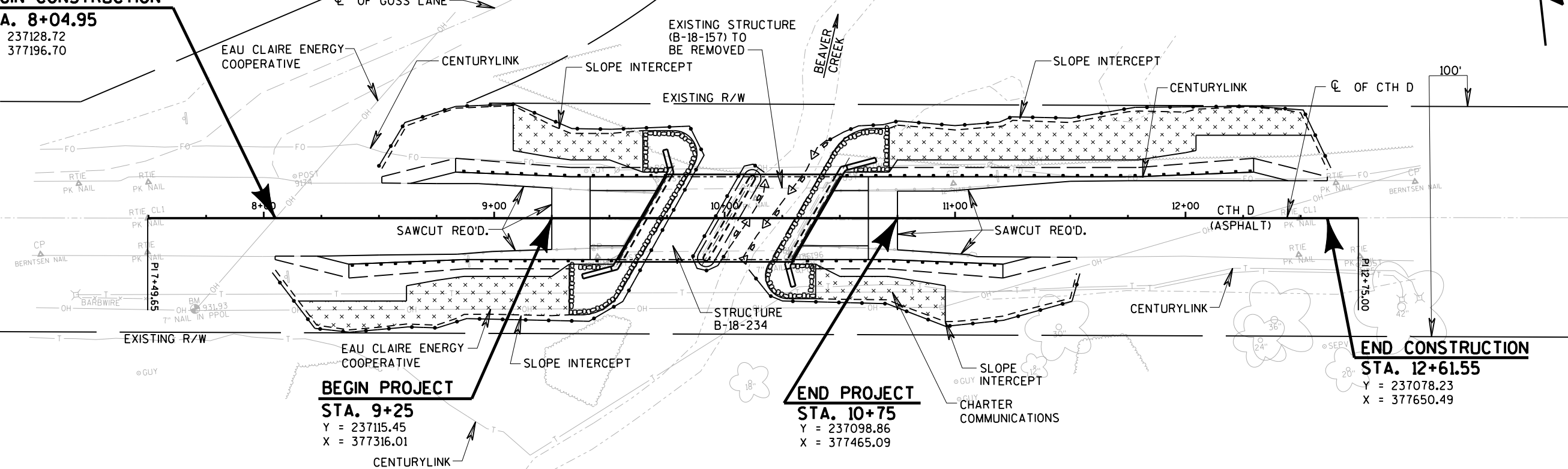


APPROACH SLAB DETAIL

BEGIN CONSTRUCTION

STA. 8+04.95

Y = 237128.72
X = 377196.70



BEGIN PROJECT

STA. 9+25

Y = 237115.45
X = 377316.01

END PROJECT

STA. 10+75

Y = 237098.86
X = 377465.09

END CONSTRUCTION

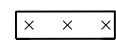
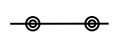
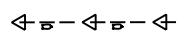
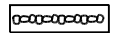
STA. 12+61.55

Y = 237078.23
X = 377650.49

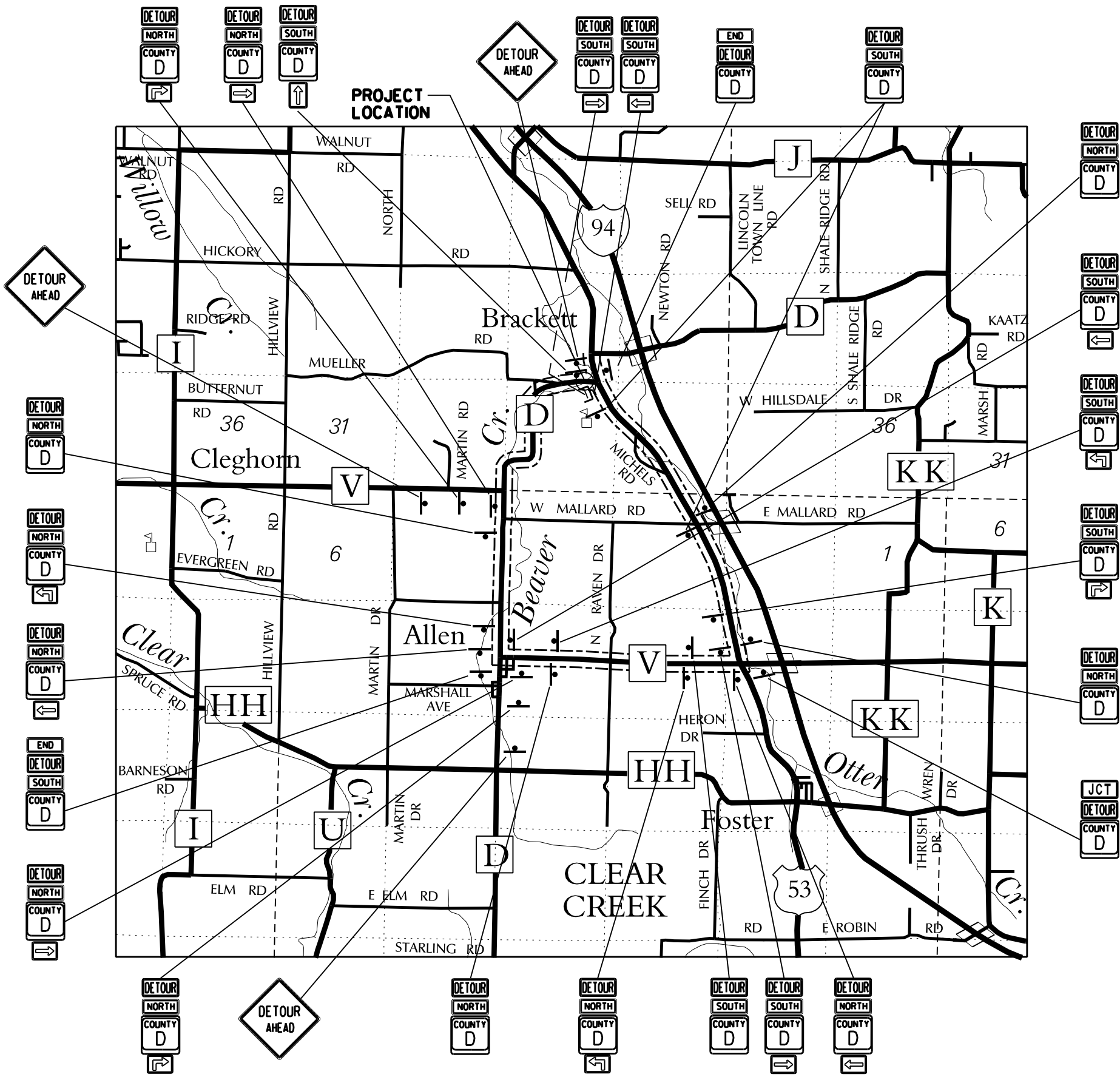
	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33 .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											

O₂ EL. 930.9

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

TOTAL PROJECT AREA = 0.867 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.606 ACRES



GENERAL NOTES

1. DRAWINGS SHOW TRAFFIC CONTROL FOR A TYPICAL SITUATION. ADDITIONAL TRAFFIC CONTROL DEVICES MAY BE REQUIRED AND/OR LAYOUT DETAILS MODIFIED DEPENDING ON CONTRACTORS METHODS OR SEQUENCE OF OPERATION.
2. ALL SIGN LOCATIONS ARE APPROXIMATE. THE ACTUAL LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
3. SIGN FACE LAYOUTS SHALL BE IN ACCORDANCE WITH THE FEDERAL HIGHWAY ADMINISTRATION MANUAL OF STANDARD HIGHWAY SIGNS. UNLESS OTHERWISE PROVIDED IN THE PLAN
4. ROAD MACHINERY, TRUCK ENTRANCE, FLAGMAN AHEAD, ETC., SIGNS SHALL BE USED AS NEEDED AND SHALL BE REMOVED OR COVERED AT NIGHT, WEEKENDS OR WHEN THE ACTIVITY OR CONDITION DOES NOT EXIST. NO FLASHER SHALL BE USED WITH A COVERED SIGN.
5. ALL SIGNS ARE 48" x 48" UNLESS OTHERWISE NOTED.
6. EXISTING TRAFFIC SIGNS MAY REQUIRE RELOCATION DURING STAGES OF CONSTRUCTION AND SHALL BE LOCATED AS REQUIRED BY THE ENGINEER IN THE FIELD.
7. "WO" AND "MO" SIGNS ARE THE SAME AS "W" AND "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE WITH TWO (2) TYPE "A" FLASHING LIGHTS WITH SIGNS ON EACH SIDE

SIGN SIZES

M1-5a	= 24" x 24"
M2-1	= 21" x 15"
M3-1	= 24" x 12"
M3-3	= 24" x 12"
M4-8	= 24" x 12"
M4-9	= 30" x 24"
M05-1 R	= 21" x 21"
M05-1 L	= 21" x 21"
M06-1	= 21" x 21"
M4-6	= 24" x 12"
R11-2B	= 48" x 30"
R11-3C	= 60" x 30"
W1-6	= 48" x 24"
W20-2A	= 48" x 48"
W20-3C	= 48" x 48"
W20-3D	= 48" x 48"

	W1-6
	M4-8
	M3-1, 3
	M1-5a
	M05-1 R, 1 L, M06-1
	M4-6
	M2-1
	W20-2A

DETOUR ROUTE





GENERAL NOTES

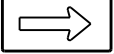







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7. "WO" AND "MO" SIGNS ARE THE SAME AS "W" AND "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

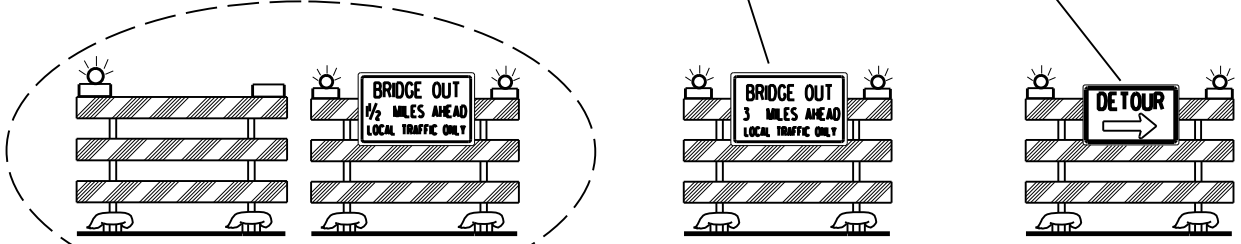
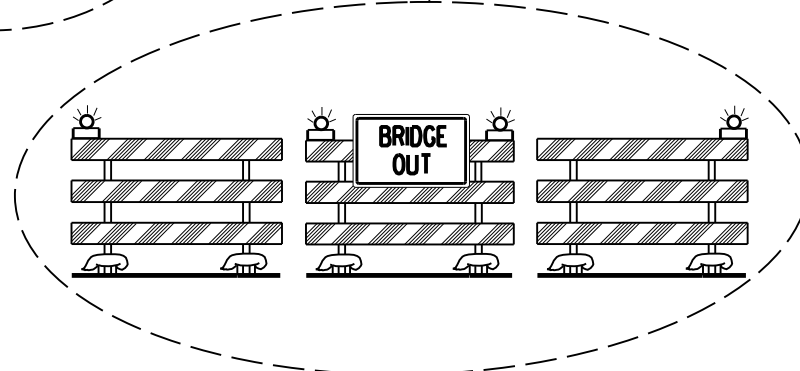
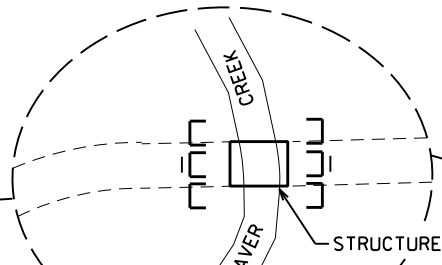
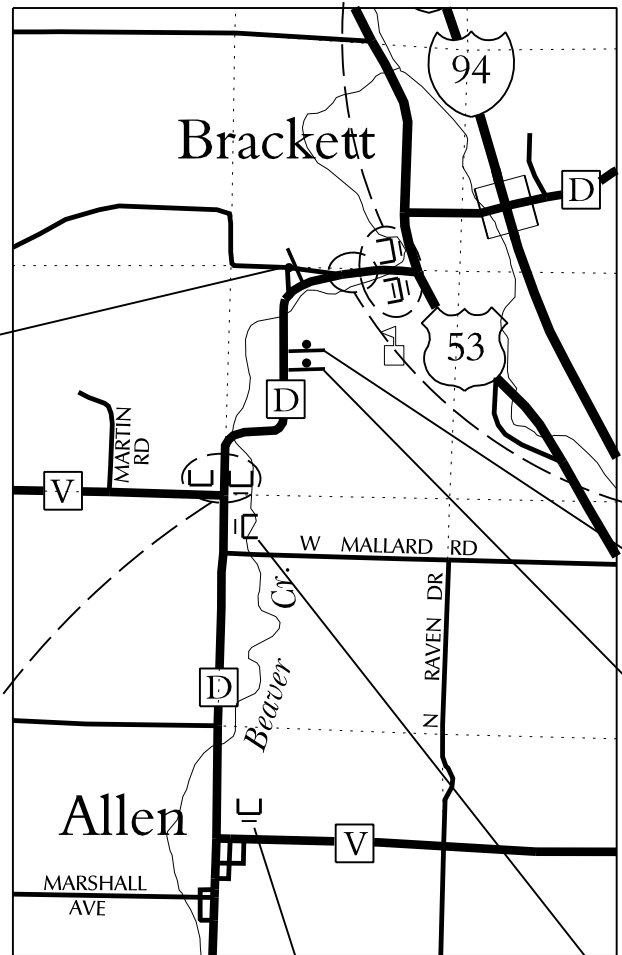
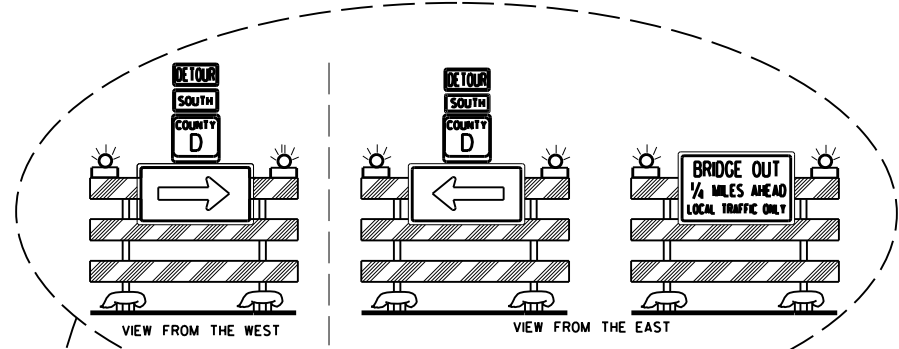
SIGN SIZES

M1-5a	= 24" x 24"
M2-1	= 21" x 15"
M3-1	= 24" x 12"
M3-3	= 24" x 12"
M4-8	= 24" x 12"
M4-9	= 30" x 24"
M05-1R	= 21" x 21"
M05-1L	= 21" x 21"
M06-1	= 21" x 21"
M4-6	= 24" x 12"
R11-2B	= 48" x 30"
R11-3C	= 60" x 30"
W1-6	= 48" x 24"
W20-2A	= 48" x 48"
W20-3C	= 48" x 48"
W20-3D	= 48" x 48"

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  TYPE III BARRICADE WITH TWO (2) TYPE "A" FLASHING LIGHTS WITH SIGN
-  TYPE III BARRICADE WITH ONE (1) TYPE "A" FLASHING LIGHT
-  TYPE III BARRICADE WITH TWO (2) TYPE "A" FLASHING LIGHTS WITH SIGN WITH SIGNS ON EACH SIDE

-  W1-6
-  M4-9R, M4-9L
-  R11-2B
-  R11-3C
-  W20-3D, 3C
-  M4-8
-  M3-1, 3
-  M1-5a



Estimate Of Quantities

7828-03-71

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	4.000	4.000
0004	201.0205	Grubbing	STA	4.000	4.000
0006	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 10+00	LS	1.000	1.000
0008	204.0165	Removing Guardrail	LF	294.000	294.000
0010	205.0100	Excavation Common	CY	216.000	216.000
0012	206.1000	Excavation for Structures Bridges (structure) 01. B-18-234	LS	1.000	1.000
0014	208.0100	Borrow	CY	873.000	873.000
0016	210.1500	Backfill Structure Type A	TON	680.000	680.000
0018	213.0100	Finishing Roadway (project) 01. 7828-03-71	EACH	1.000	1.000
0020	305.0110	Base Aggregate Dense 3/4-Inch	TON	35.000	35.000
0022	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	670.000	670.000
0024	415.0120	Concrete Pavement 12-Inch	SY	65.000	65.000
0026	415.0410	Concrete Pavement Approach Slab	SY	125.000	125.000
0028	455.0605	Tack Coat	GAL	18.000	18.000
0030	465.0105	Asphaltic Surface	TON	80.000	80.000
0032	502.0100	Concrete Masonry Bridges	CY	319.000	319.000
0034	502.3200	Protective Surface Treatment	SY	360.000	360.000
0036	505.0400	Bar Steel Reinforcement HS Structures	LB	8,730.000	8,730.000
0038	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	36,290.000	36,290.000
0040	513.7051	Railing Steel Type W	LF	154.000	154.000
0042	516.0500	Rubberized Membrane Waterproofing	SY	18.000	18.000
0044	550.0500	Pile Points	EACH	29.000	29.000
0046	550.2104	Piling CIP Concrete 10 3/4 X 0.25-Inch	LF	1,720.000	1,720.000
0048	606.0300	Riprap Heavy	CY	200.000	200.000
0050	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	180.000	180.000
0052	614.0396	Guardrail Mow Strip Asphalt	SY	235.000	235.000
0054	614.2300	MGS Guardrail 3	LF	112.500	112.500
0056	614.2500	MGS Thrie Beam Transition	LF	160.000	160.000
0058	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0060	618.0100	Maintenance And Repair of Haul Roads (project) 01. 7828-03-71	EACH	1.000	1.000
0062	619.1000	Mobilization	EACH	1.000	1.000
0064	624.0100	Water	MGAL	38.000	38.000
0066	625.0100	Topsoil	SY	1,100.000	1,100.000
0068	627.0200	Mulching	SY	900.000	900.000
0070	628.1504	Silt Fence	LF	1,015.000	1,015.000
0072	628.1520	Silt Fence Maintenance	LF	2,030.000	2,030.000
0074	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000

Estimate Of Quantities

7828-03-71

Line	Item	Item Description	Unit	Total	Qty
0076	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0078	628.2027	Erosion Mat Class II Type C	SY	890.000	890.000
0080	628.6005	Turbidity Barriers	SY	130.000	130.000
0082	628.7504	Temporary Ditch Checks	LF	50.000	50.000
0084	629.0210	Fertilizer Type B	CWT	1.300	1.300
0086	630.0120	Seeding Mixture No. 20	LB	55.000	55.000
0088	630.0200	Seeding Temporary	LB	55.000	55.000
0090	630.0300	Seeding Borrow Pit	LB	5.000	5.000
0092	630.0500	Seed Water	MGAL	45.000	45.000
0094	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	5.000	5.000
0096	637.2230	Signs Type II Reflective F	SF	21.000	21.000
0098	638.2602	Removing Signs Type II	EACH	7.000	7.000
0100	638.3000	Removing Small Sign Supports	EACH	7.000	7.000
0102	642.5001	Field Office Type B	EACH	1.000	1.000
0104	643.0420	Traffic Control Barricades Type III	DAY	1,120.000	1,120.000
0106	643.0705	Traffic Control Warning Lights Type A	DAY	1,540.000	1,540.000
0108	643.0900	Traffic Control Signs	DAY	7,210.000	7,210.000
0110	643.5000	Traffic Control	EACH	1.000	1.000
0112	645.0111	Geotextile Type DF Schedule A	SY	140.000	140.000
0114	645.0120	Geotextile Type HR	SY	400.000	400.000
0116	646.1020	Marking Line Epoxy 4-Inch	LF	630.000	630.000
0118	650.4500	Construction Staking Subgrade	LF	380.000	380.000
0120	650.5000	Construction Staking Base	LF	380.000	380.000
0122	650.6500	Construction Staking Structure Layout (structure) 01. B-18-234	LS	1.000	1.000
0124	650.9910	Construction Staking Supplemental Control (project) 01. 7828-03-71	LS	1.000	1.000
0126	650.9920	Construction Staking Slope Stakes	LF	380.000	380.000
0128	690.0150	Sawing Asphalt	LF	53.000	53.000
0130	715.0415	Incentive Strength Concrete Pavement	DOL	500.000	500.000
0132	715.0502	Incentive Strength Concrete Structures	DOL	1,914.000	1,914.000

CLEARING AND GRUBBING

STATION	TO	STATION	OFFSET	201.0105	201.0205
				CLEARING	GRUBBING
STA		STA	LT & RT	STA	STA
9+00	-	13+00	LT & RT	4	4
TOTALS				4	4

CTH D EARTHWORK SUMMARY

From/To Station	Location	Excavation Common (1) (item # 205.0100)	Salvaged / Unuseable Pavement Material (5)	Unexpanded Fill	Expanded Fill (2)	Mass Ordinate +/- (3)	Waste	Borrow (item #208.0100)	Comment:
		Cut			Factor 1.30				
8+04.95 - 12+61.55	CTH D	216	63	789	1025	-873		873	

- 1) Excavation Common is the Cut. Item number 205.0100.
- 2) Expanded Fill. Factor = 1.30; Expanded Fill = Unexpanded Fill * Fill Factor
- 3) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material on the project.
- 4) All quantities shown in CY.
- 5) Existing existing salvaged/unuseable asphalt pavement.

CONCRETE PAVEMENT

PAVING AND BASE QUANTITIES

STA	TO	STA	305.0110	305.0120	455.0605	465.0105
			BASE AGGREGATE DENSE 3/4-INCH	BASE AGGREGATE DENSE 1 1/4-INCH	TACK COAT	ASPHALTIC SURFACE
TON	TON	GAL	TON	TON		
8+04.95	--	9+64.33	15	305	9	35
10+39.67	--	12+62	20	335	9	40
UNDISTRIBUTED			0	30	0	5
TOTALS			35	670	18	80

STA	TO	STA	LOCATION	415.0120	415.0410
				CONCRETE PAVEMENT 12-INCH SY	CONCRETE PAVEMENT APPROACH SLAB SY
9+41.63	--	9+73.95	LT	20	-
9+41.63	--	9+57.4	RT	10	-
9+42.63	--	9+65.33	-	-	60
10+46.6	--	10+62.37	LT	10	-
10+32.75	--	10+62.37	RT	20	-
10+39.67	--	10+62.37	-	-	60
UNDISTRIBUTED				5	5
TOTAL				65	125

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

3

614.0396 GUARDRAIL MOW STRIP ASPHALT

STA	TO	STA	LOCATION	SY
9+41.63	--	9+73.95	LT	45
9+41.63	--	9+57.4	RT	55
10+46.6	--	10+62.37	LT	80
10+32.75	--	10+62.37	RT	45
UNDISTRIBUTED				10
TOTAL				235

WATER

PURPOSE	624.0100 WATER MGAL
COMPACTION	10
DUST CONTROL	28
TOTAL	38

MGS GUARDRAIL

204.0165 REMOVING GUARDRAIL	614.2300 MGS GUARDRAIL 3	614.2500 MGS THRIE BEAM TRANSITION	614.2610 MGS GUARDRAIL TERMINAL EAT
-----------------------------------	--------------------------------	---	--

STA	TO	STA	LOCATION	LF	LF	LF	EACH
8+36.95	--	8+90.08	RT	--	--	--	1
8+83.26	--	9+36.38	LT	--	--	--	1
8+90.08	--	9+15.08	RT	--	25.0	--	--
9+15.08	--	9+54.58	RT	--	--	40	--
9+36.38	--	9+75.78	LT	--	--	40	--
8+86	--	9+55	RT	69	--	--	--
8+97	--	9+70	LT	73	--	--	--
10+30	--	11+08	RT	78	--	--	--
10+44	--	11+18	LT	74	--	--	--
10+28.22	--	10+67.62	RT	--	--	40	--
10+49.53	--	10+88.92	LT	--	--	40	--
10+67.62	--	11+20.74	RT	--	--	--	1
10+88.92	--	11+76.42	LT	--	87.5	--	--
11+76.42	--	12+29.55	LT	--	--	--	1
TOTALS				294	112.5	160	4

EROSION CONTROL ITEMS

STA	TO	STA	LOCATION	SY	625.0100 TOPSOIL	627.0200 MULCHING	628.1504 SILT FENCE	628.1520 SILT FENCE MAINTENANCE	628.2027 EROSION MAT CLASS II TYPE C	629.0210 FERTILIZER TYPE B	630.0120 SEEDING MIXTURE NO. 20	630.0200 SEEDING TEMPORARY	630.0300 SEEDING BORROW PIT	630.0500 SEED WATER MGAL
8+04.95	--	9+64.33	RT	225		190	210	420	205	0.3	11	11	2	9
8+04.95	--	9+64.33	LT	175		235	195	390	95	0.2	9	9		7
10+39.67	--	12+61.55	RT	140		215	165	330	80	0.2	8	8		7
10+39.67	--	12+61.55	LT	340		260	240	480	330	0.4	16	16	2	13
UNDISTRIBUTED				220		--	205	410	180	0.3	11	11	1	9
TOTALS					1,100	900	1,015	2,030	890	1.3	55	55	5	45

3

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

EROSION CONTROL MOBILIZATION ITEMS

	628.1905 MOBILIZATIONS EROSION CONTROL	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL
LOCATION	EACH	EACH
ID 7828-03-71	4	4
TOTALS	4	4

TURBIDITY BARRIERS

	628.6005 SY
LOCATION	
PIER	40
EAST ABUTMENT	65
UNDISTRIBUTED	25
TOTAL	130

TEMPORARY DITCH CHECKS

	628.7504 LF
LOCATION	
UNDISTRIBUTED	50
TOTAL	50

SIGNAGE

	634.0612 POSTS WOOD 4X6-INCH X 12-FT	637.2230 SIGNS TYPE II REFLECTIVE F	638.2602 REMOVING SIGNS TYPE II	638.3000 REMOVING SMALL SIGN SUPPORTS	SIGNAGE TYPE	
STATION	LOCATION	EACH	SF	EACH	EACH	
8+10	RT	1	9	1	1	(STOP AHEAD) W3-1
8+88	RT	--	--	1	1	WEIGHT LIMIT 40 TONS
9+74	LT	1	3	1	1	W5-52L
9+52	RT	1	3	1	1	W5-52R
10+52	LT	1	3	1	1	W5-52R
10+30	RT	1	3	1	1	W5-52L
11+18	LT	--	--	1	1	WEIGHT LIMIT 40 TONS
TOTALS		5	21	7	7	

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

TRAFFIC CONTROL ITEMS

LOCATION	DURATION DAYS	643.0420 BARRICADES		643.0705 WARNING LIGHTS		643.0900 SIGNS	
		TYPE III		TYPE A			
		NO.	DAY	NO.	DAY	NO.	DAY
PER SDD 15C2	70	16	1,120	22	1,540	9	630
PER DETOUR PLAN	70	--	--	--	--	94	6,580
CTH D	--	--	--	--	--	--	--
TOTALS			1,120		1,540		7,210

TRAFFIC CONTROL PLACEMENT SUBJECT TO ENGINEER APPROVAL

MARKING LINE EPOXY 4-INCH

STA	TO	STA	LOCATION	DESCRIPTION	646.1020	
					YELLOW	WHITE
					LF	
9+25	-	10+75	LT	EDGE LINE	--	150
9+25	-	10+75	RT	EDGE LINE	--	150
9+25	-	10+75		DOUBLE SOLID CENTER LINES	300	--
UNDISTRIBUTED					15	15
SUBTOTALS					315	315
TOTAL					630	

STAKING ITEMS

CATEGORY	LOCATION	650.4500	650.5000	650.9920
		CONSTRUCTION STAKING SUBGRADE	CONSTRUCTION STAKING BASE	CONSTRUCTION STAKING SLOPE STAKES
		LF	LF	LF
0010	8+04.95 - 12+61.55	380	380	380
0020	B-18-0234	--	--	--
TOTALS		380	380	380

SAWING ASPHALT

		690.0150
STATION	LOCATION	LF
9+25	LT & RT	27
10+75	LT & RT	26
TOTAL		53

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

BENCH MARKS			
NO.	STA.	DESCRIPTION	ELEV.
1	7+70	60D SPK IN PPOL, 39.4' RT.	931.93
2	10+28	60D SPK IN TIMBER WINGWALL, 17.4' RT	936.96

NOTES:
 FOR ALIGNMENT CONTROL POINTS, BEARINGS, AND COORDINATES, SEE "ALIGNMENT CONTROLS" SHEET.
 FOR GUARDRAIL LAYOUT & APPROACH SLAB DETAIL, SEE "GUARDRAIL LAYOUT & APPROACH SLAB DETAIL" SHEET.

BEGIN CONSTRUCTION
STA. 8+04.95
 Y = 237128.72
 X = 377196.70

BEGIN PROJECT
STA. 9+25
 Y = 237115.45
 X = 377316.01

END PROJECT
STA. 10+75
 Y = 237098.86
 X = 377465.09

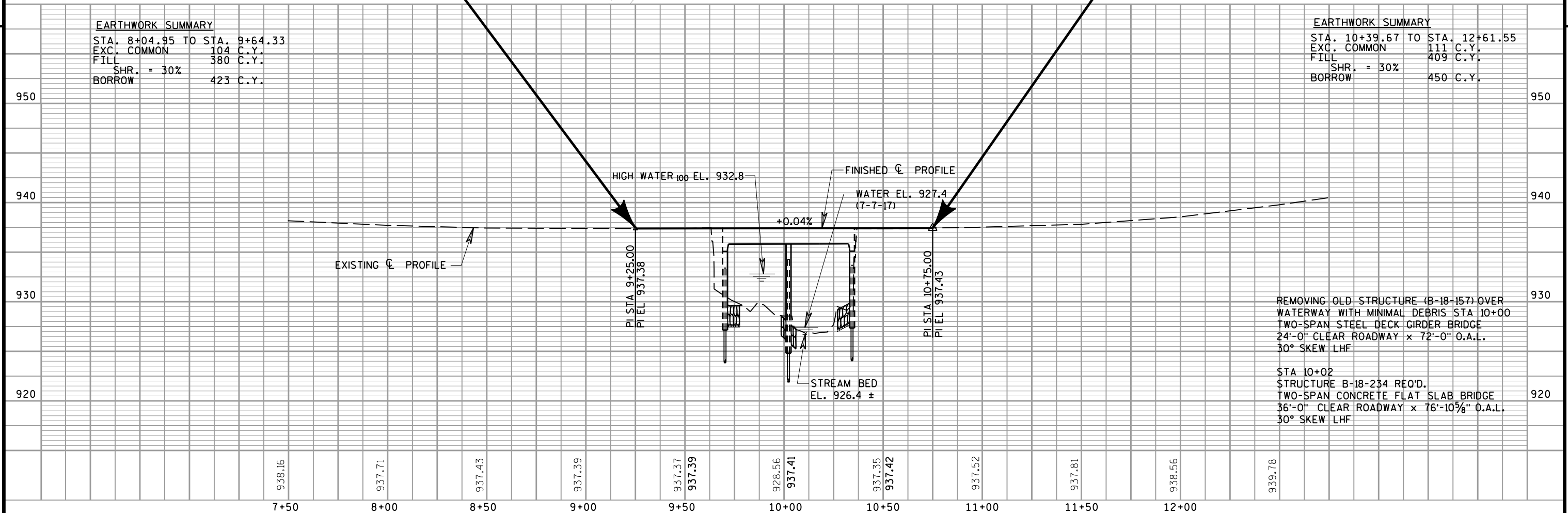
END CONSTRUCTION
STA. 12+61.55
 Y = 237078.23
 X = 377650.49

EARTHWORK SUMMARY

STA. 8+04.95 TO STA. 9+64.33	
EXC. COMMON	104 C.Y.
FILL	380 C.Y.
SHR. = 30%	
BORROW	423 C.Y.

EARTHWORK SUMMARY

STA. 10+39.67 TO STA. 12+61.55	
EXC. COMMON	111 C.Y.
FILL	409 C.Y.
SHR. = 30%	
BORROW	450 C.Y.



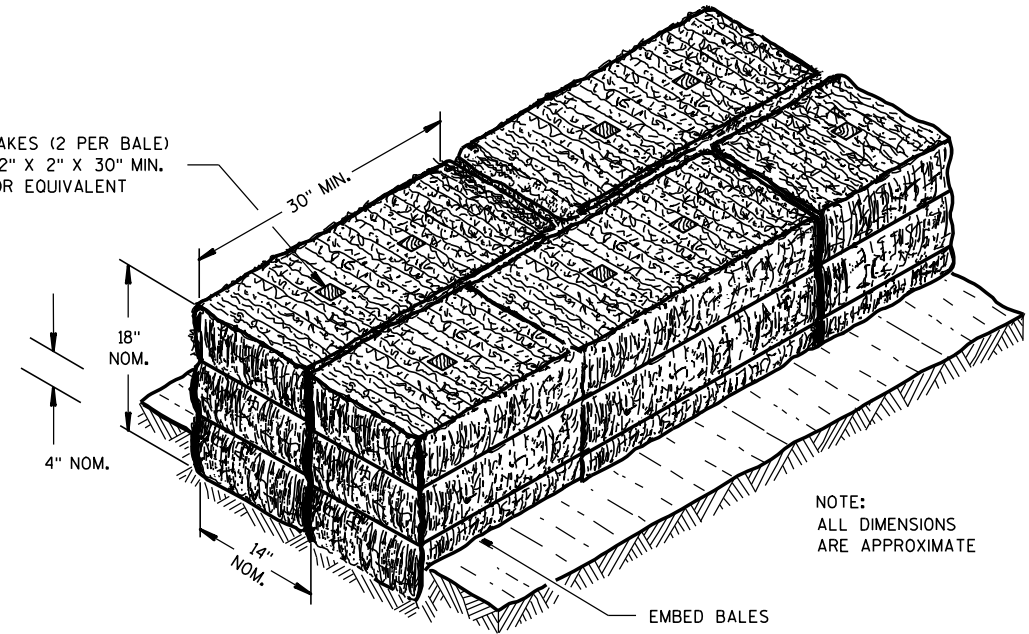
REMOVING OLD STRUCTURE (B-18-157) OVER WATERWAY WITH MINIMAL DEBRIS STA 10+00
 TWO-SPAN STEEL DECK GIRDER BRIDGE
 24'-0" CLEAR ROADWAY x 72'-0" O.A.L.
 30° SKEW LHF

STA 10+02
 STRUCTURE B-18-234 REO'D.
 TWO-SPAN CONCRETE FLAT SLAB BRIDGE
 36'-0" CLEAR ROADWAY x 76'-10⁵/₈" O.A.L.
 30° SKEW LHF

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)
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
14B28-03	GUARDRAIL MOW STRIP
14B42-06A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-07A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-07B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-07C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-19A	LONGITUDINAL MARKING (MAINLINE)
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS

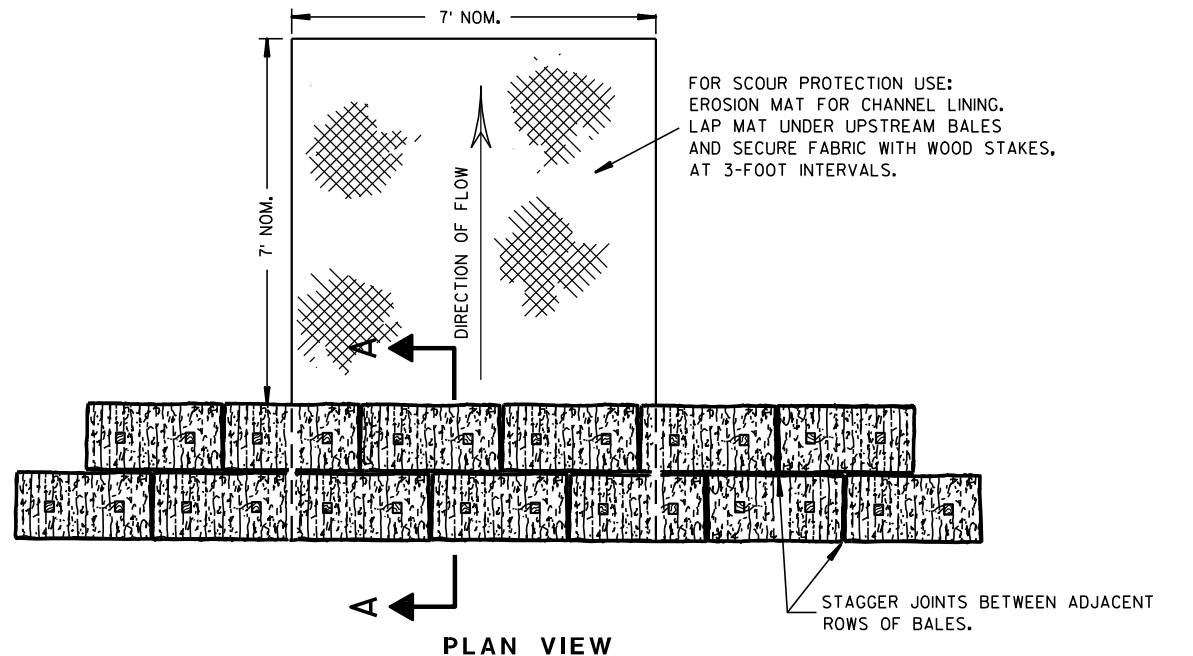
WOOD STAKES (2 PER BALE)
NOMINAL 2" X 2" X 30" MIN.
LENGTH OR EQUIVALENT



NOTE:
ALL DIMENSIONS
ARE APPROXIMATE

EMBED BALES

SECTION A-A

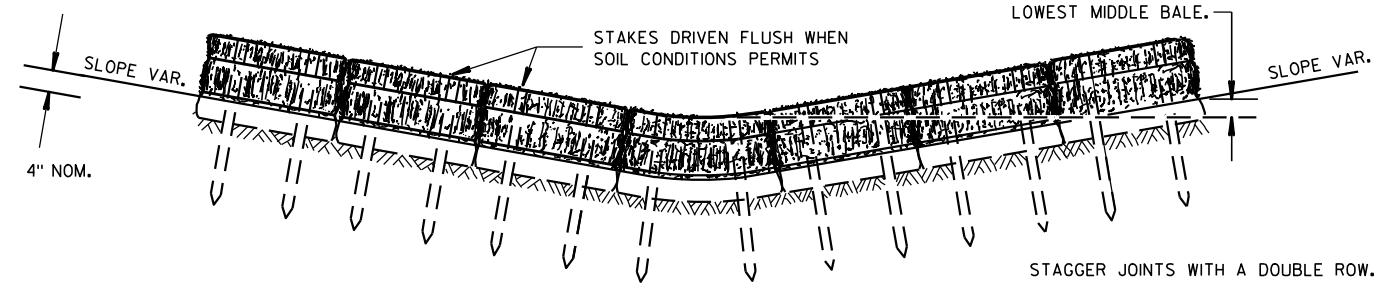


FOR SCOUR PROTECTION USE:
EROSION MAT FOR CHANNEL LINING.
LAP MAT UNDER UPSTREAM BALES
AND SECURE FABRIC WITH WOOD STAKES,
AT 3-FOOT INTERVALS.

STAGGER JOINTS BETWEEN ADJACENT
ROWS OF BALES.

PLAN VIEW

BOTTOM ELEVATION OF END BALE SHALL
BE EQUAL TO OR GREATER THAN TOP OF
LOWEST MIDDLE BALE.



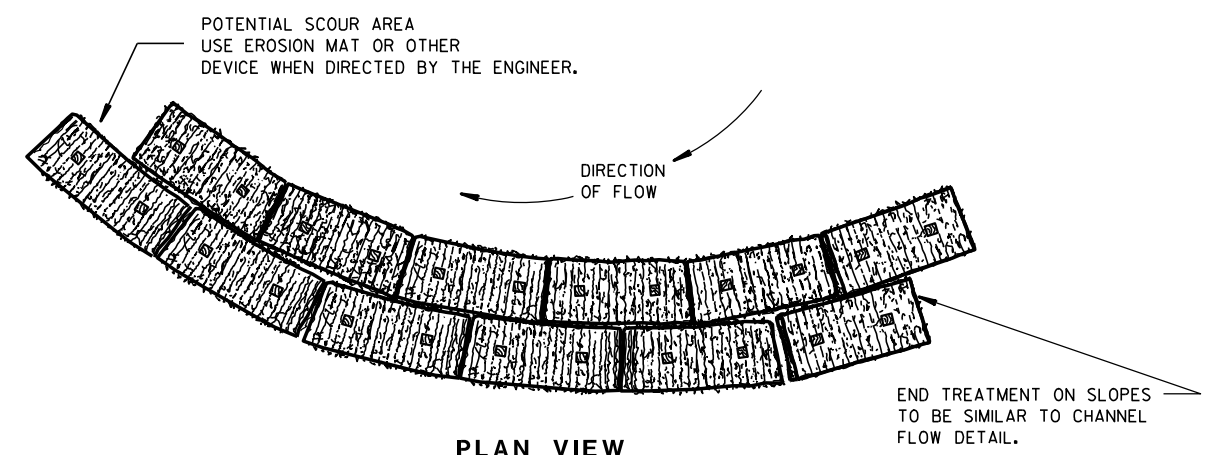
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

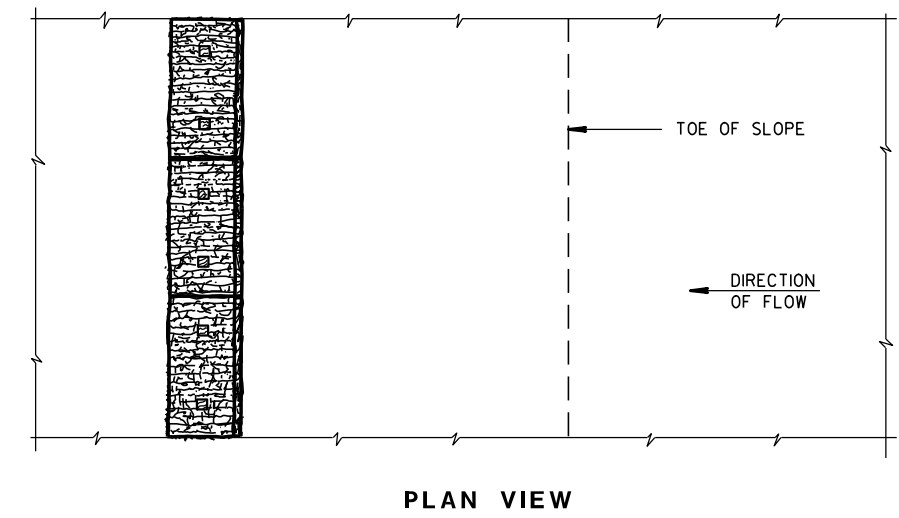
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

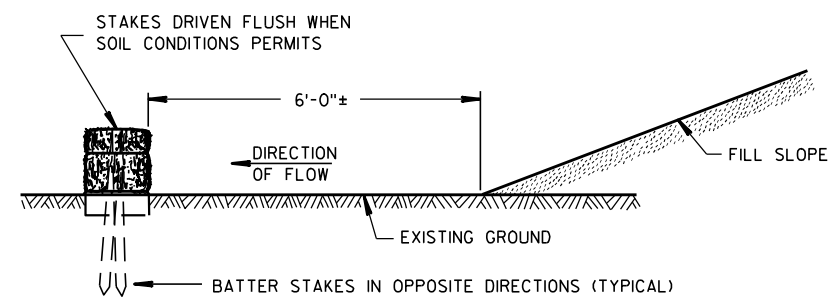


PLAN VIEW
WHEN ALTERING THE DIRECTION OF FLOW

END TREATMENT ON SLOPES
TO BE SIMILAR TO CHANNEL
FLOW DETAIL.



PLAN VIEW



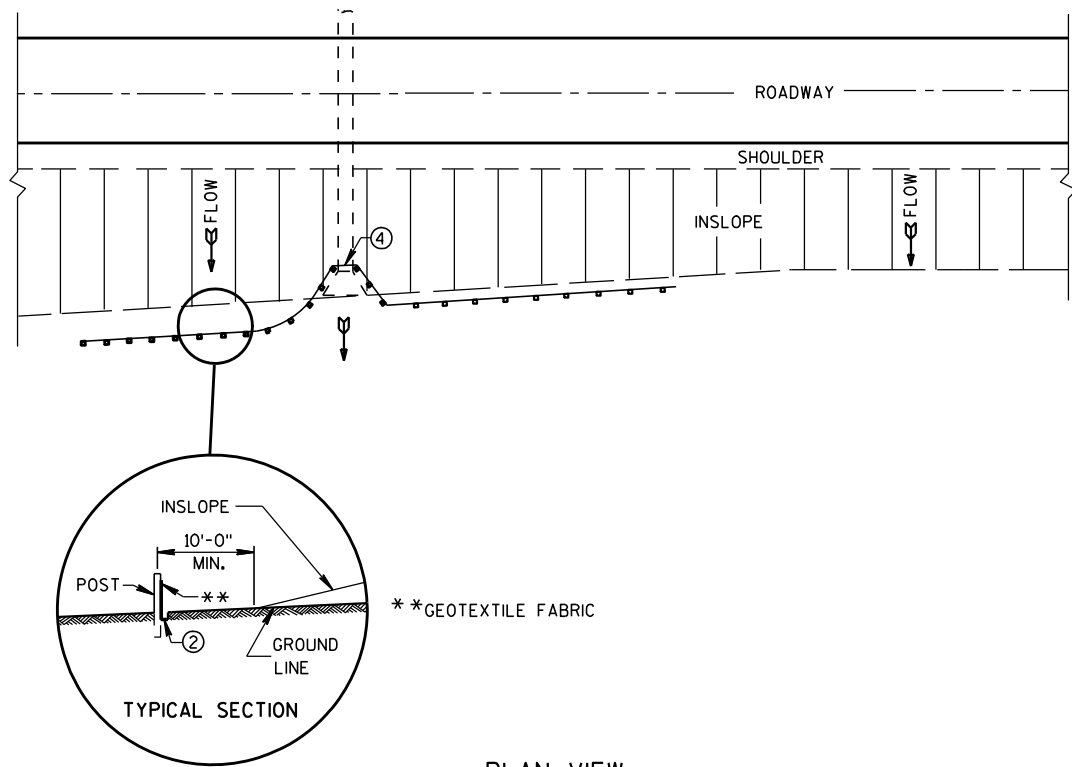
FRONT ELEVATION
WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

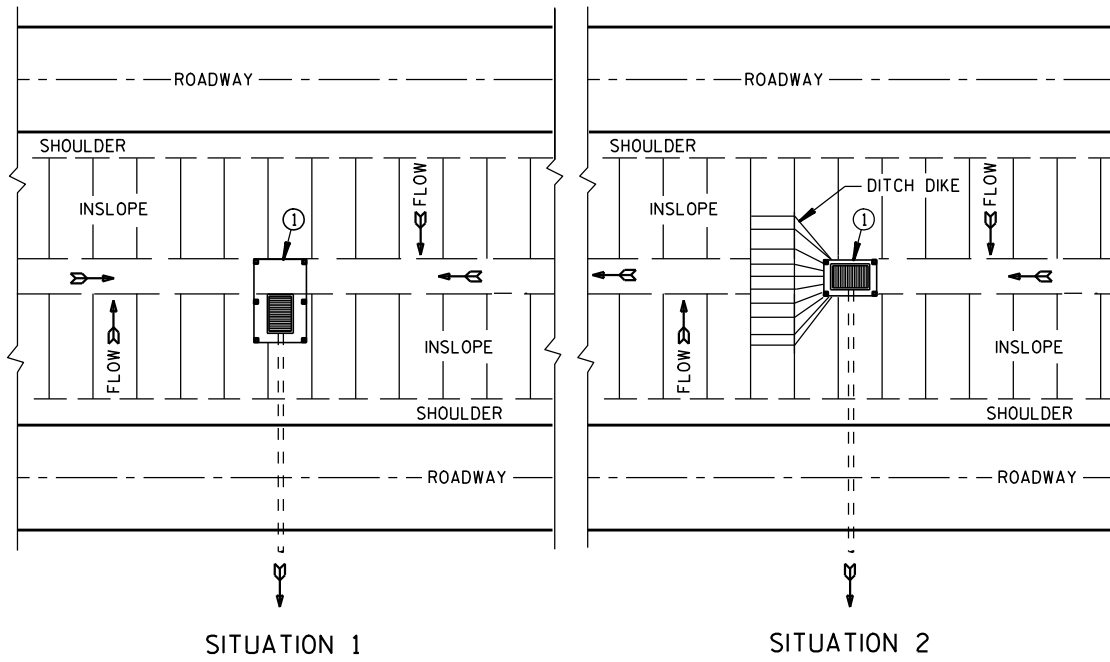
TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

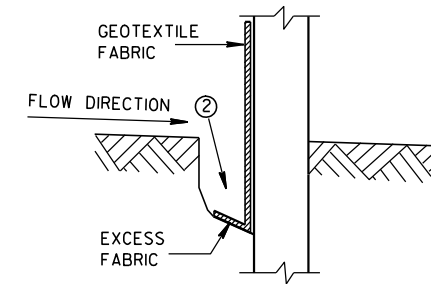


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

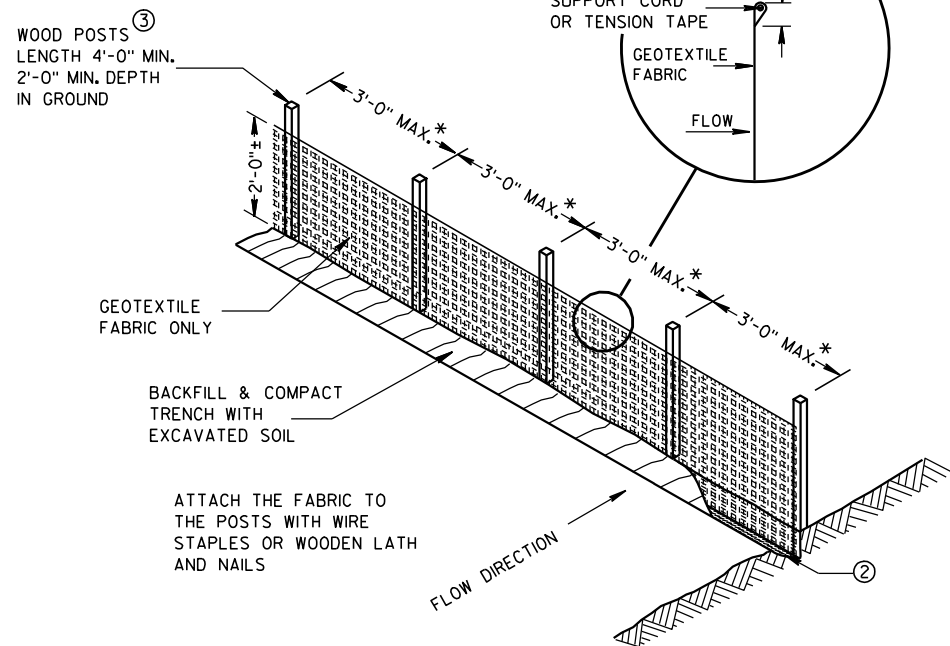
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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



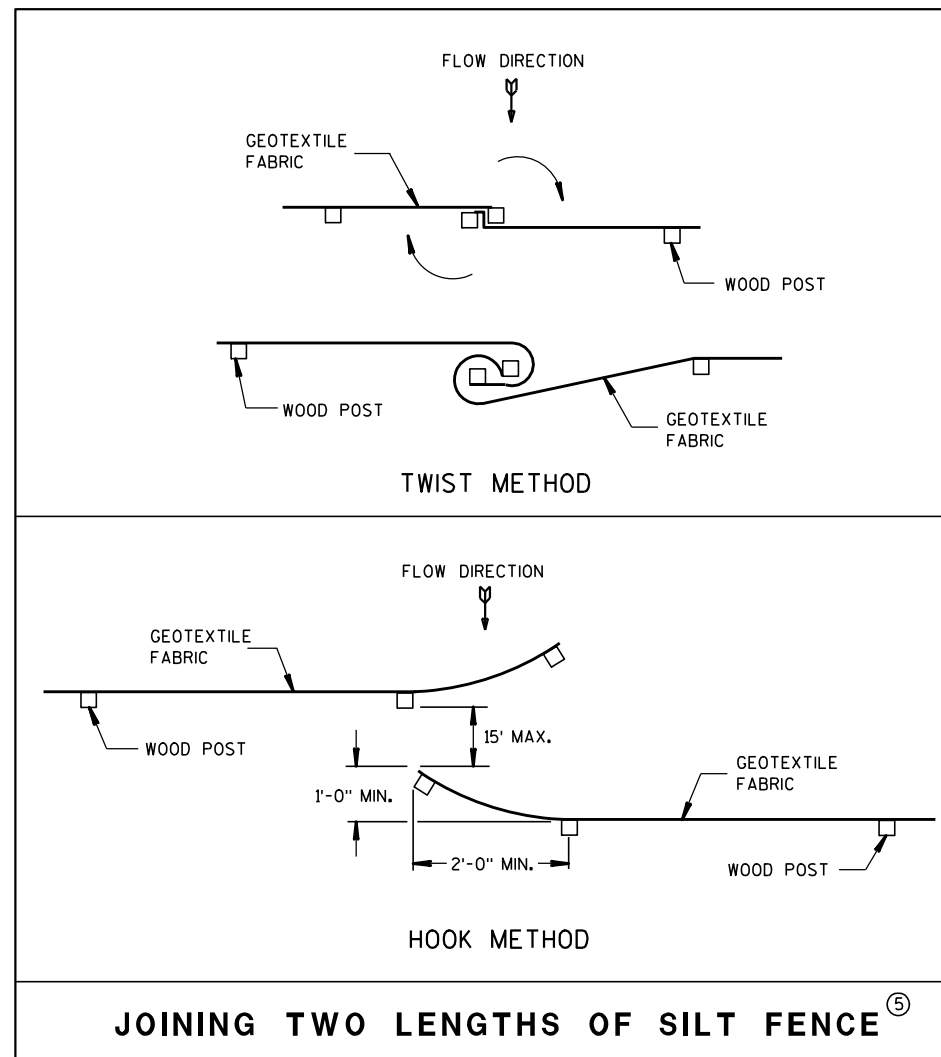
TRENCH DETAIL

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

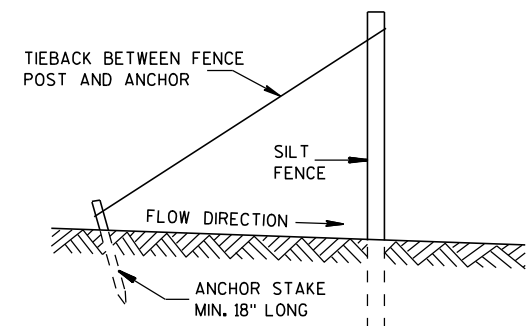


SILT FENCE

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



JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

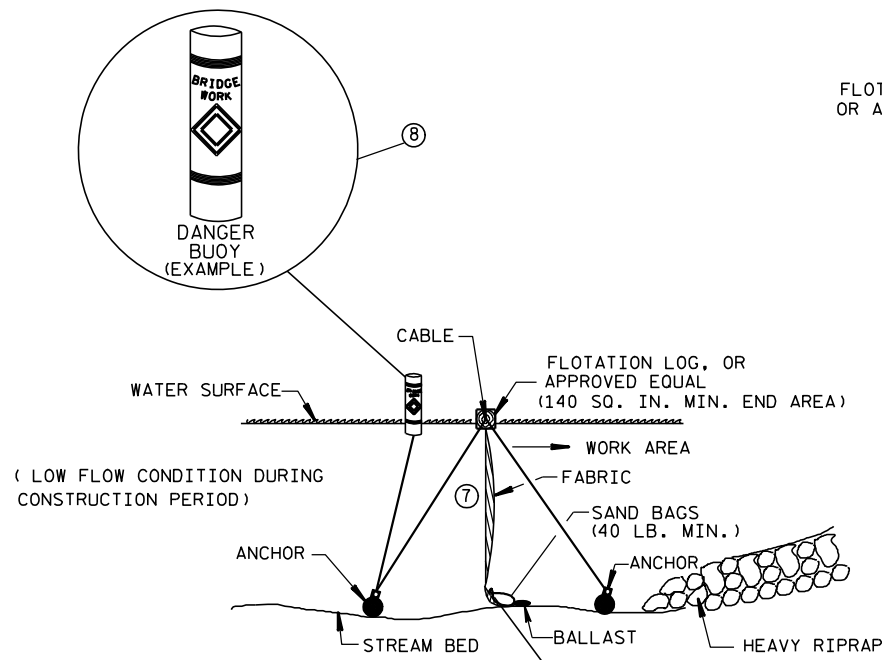
APPROVED

4-29-05

DATE

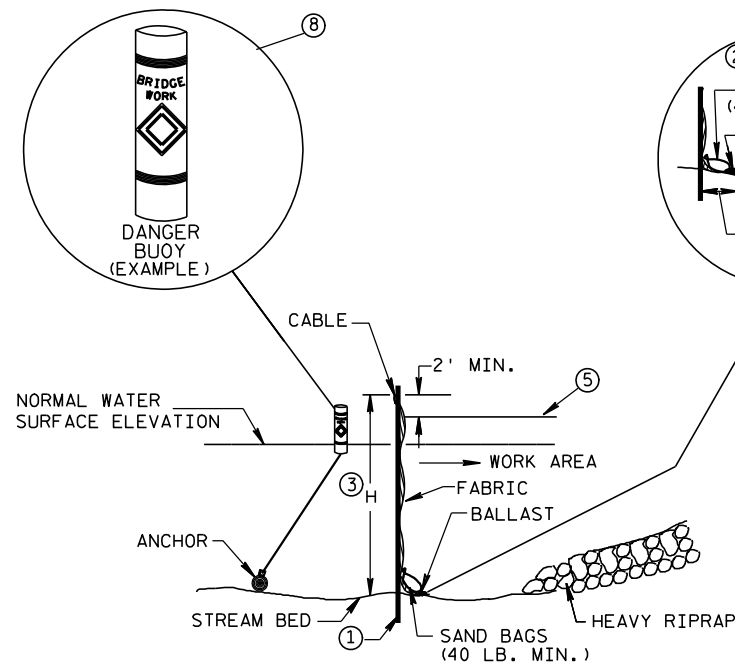
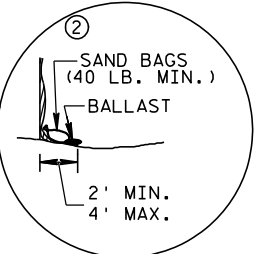
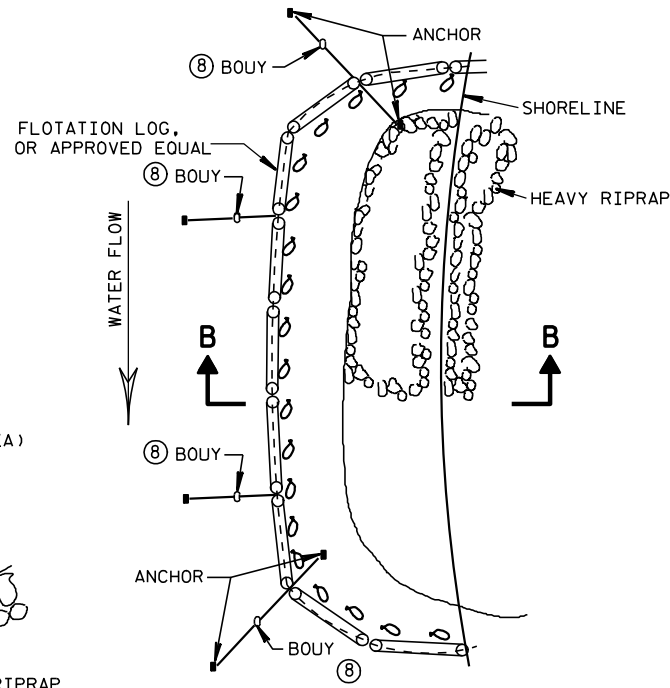
FHWA

/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



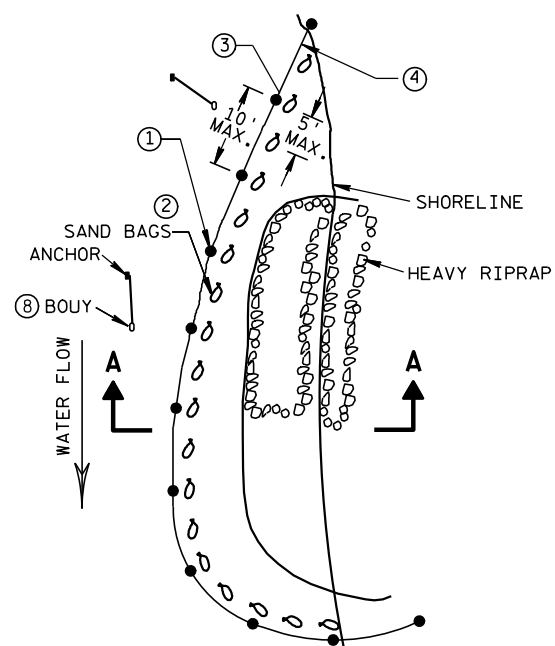
SECTION B-B

TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



SECTION A-A

TURBIDITY BARRIER STANDARD POST INSTALLATION



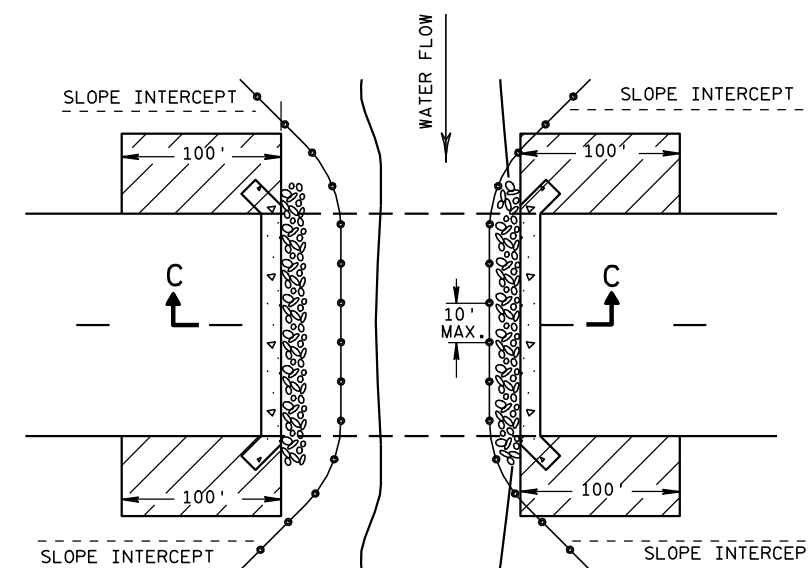
PLAN VIEW

GENERAL NOTES

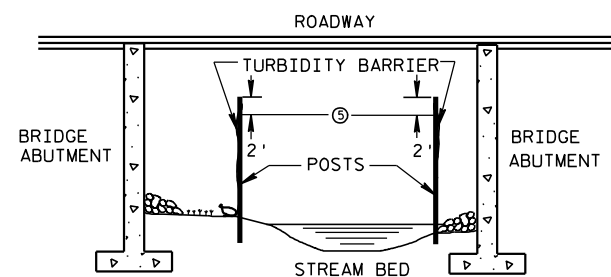
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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 O2 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.



PLAN VIEW



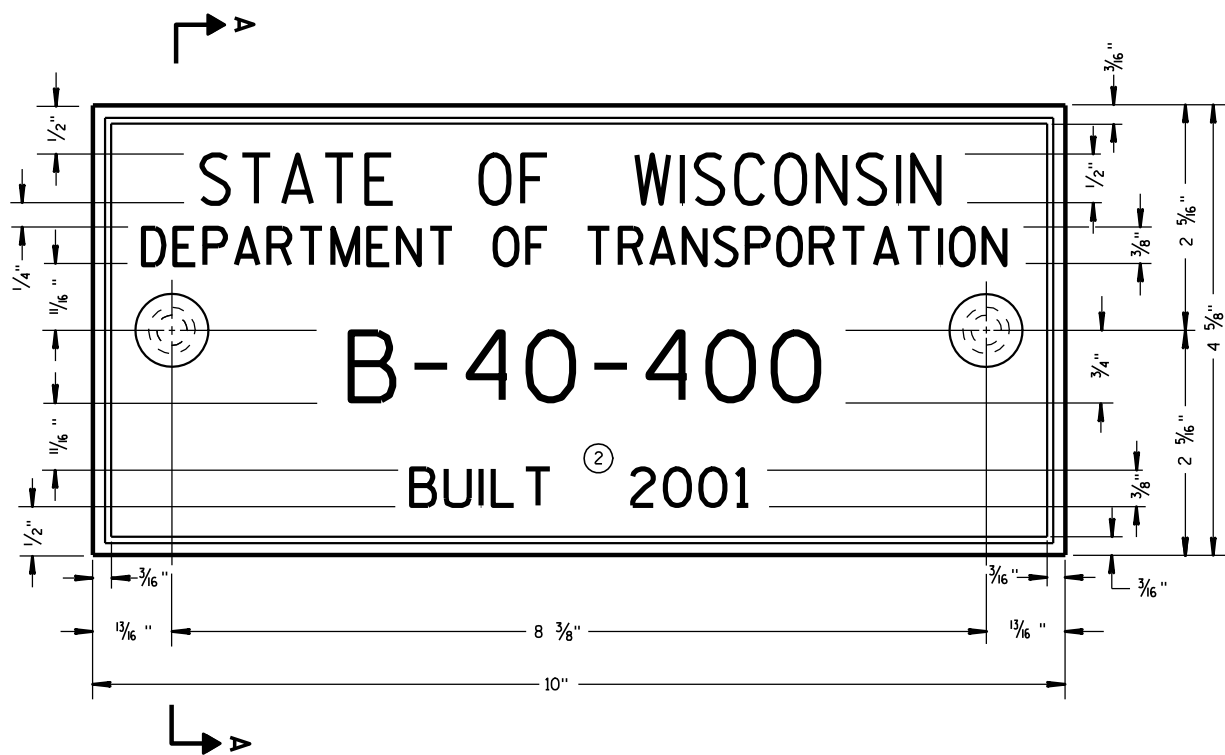
SECTION C-C

TURBIDITY BARRIER DETAIL SHOWING
TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



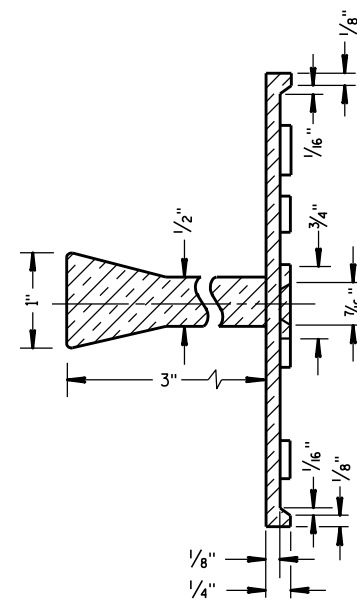
TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)

GENERAL NOTES

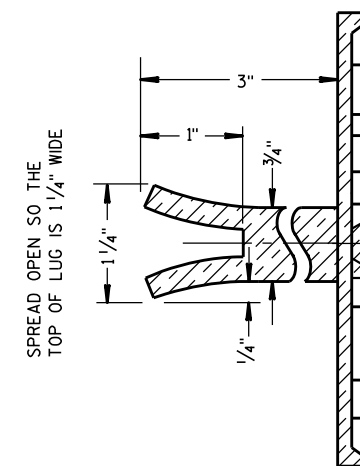
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

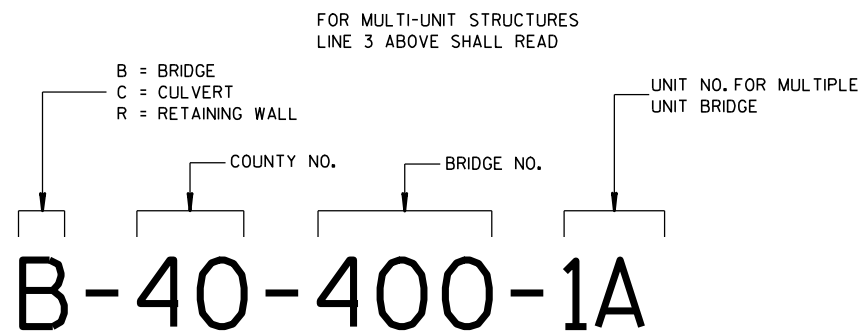
- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A

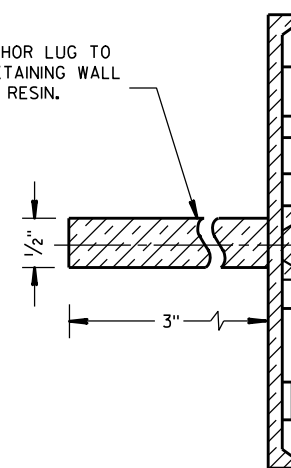


ALTERNATE LUG



**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

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

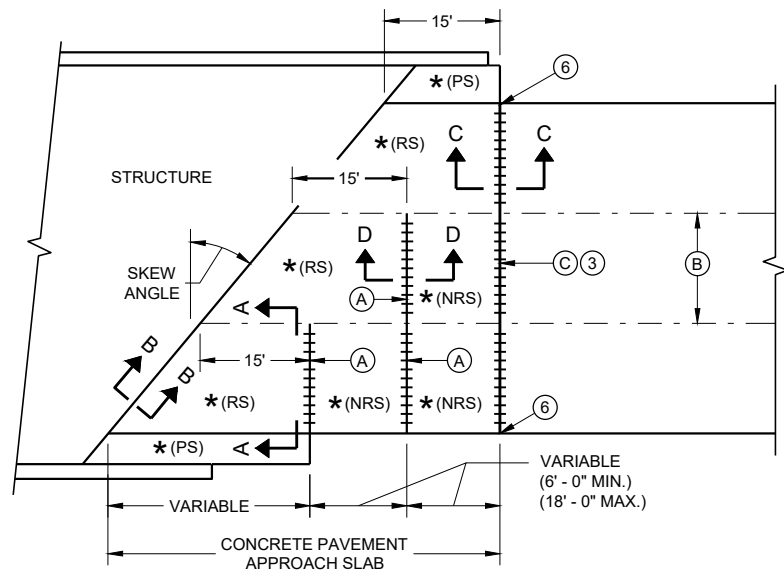


ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

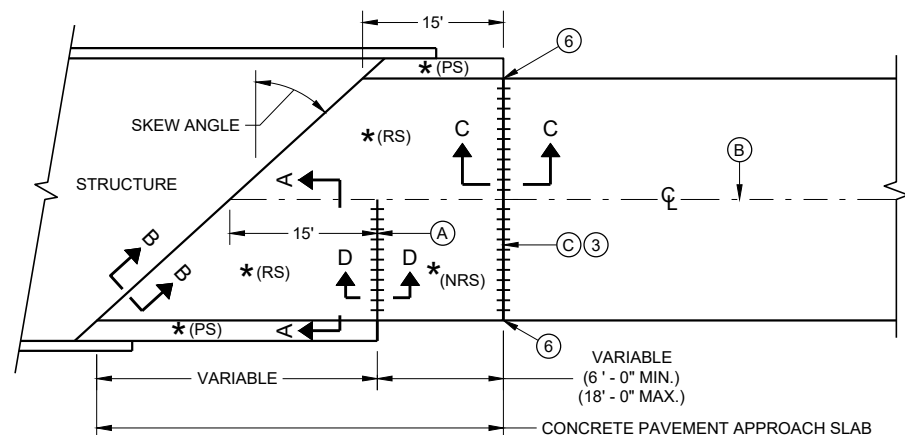
**NAME PLATE
(STRUCTURES)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

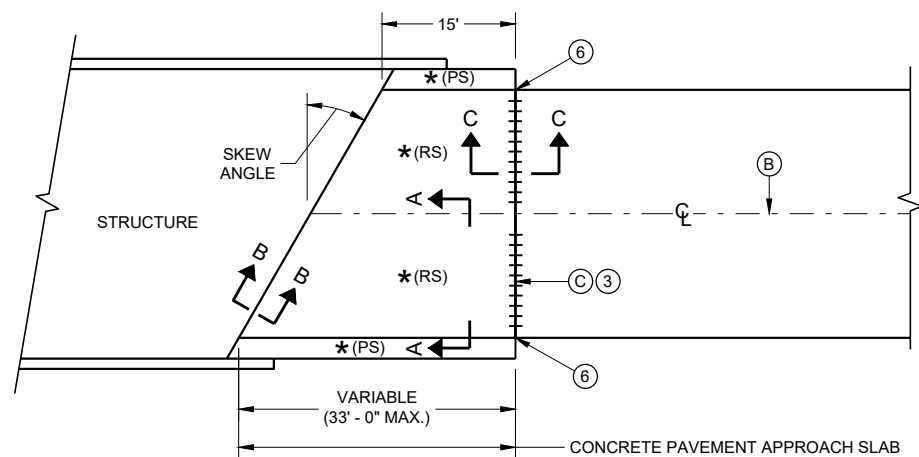
APPROVED
DATE 3/26/10 /S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA



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

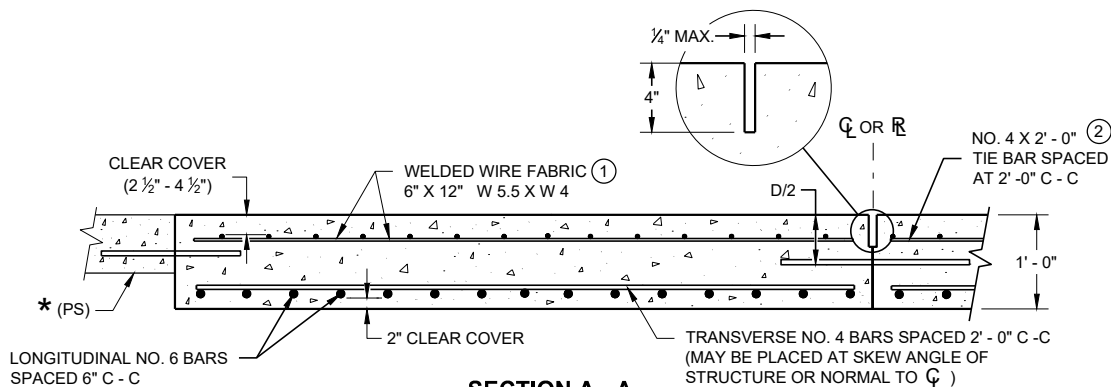


**SKews > 20°
(PAVEMENT WIDTH ≤ 30')**

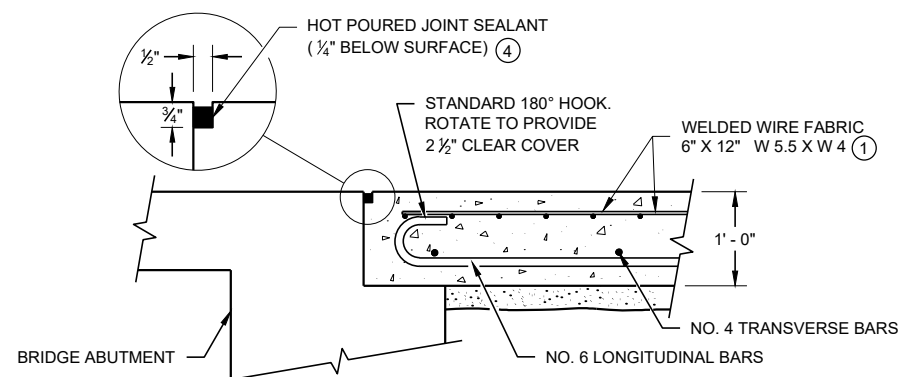


**SKews ≤ 20°
(PAVEMENT WIDTH ≤ 30')**
APPROACH SLAB AND ADJACENT PAVEMENT

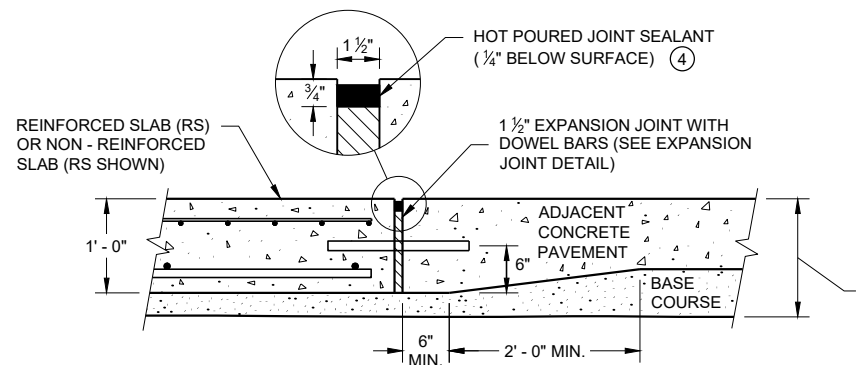
- * (RS) = REINFORCED CONCRETE SLAB
- * (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
- * (NRS) = NON - REINFORCED CONCRETE SLAB
- *** STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



**SECTION A - A
REINFORCEMENT POSITIONING DETAIL**



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



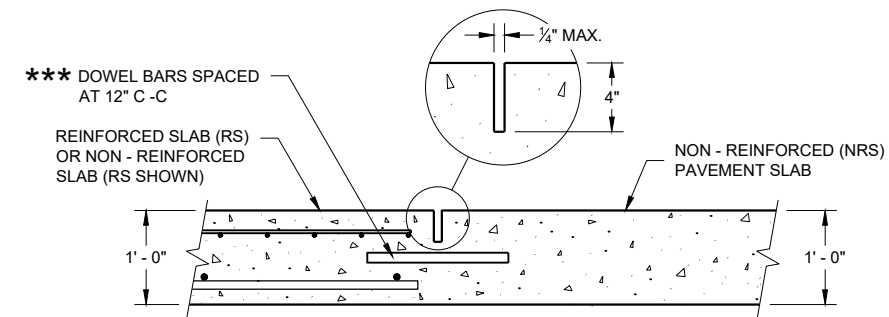
**SECTION C - C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT**

GENERAL NOTES

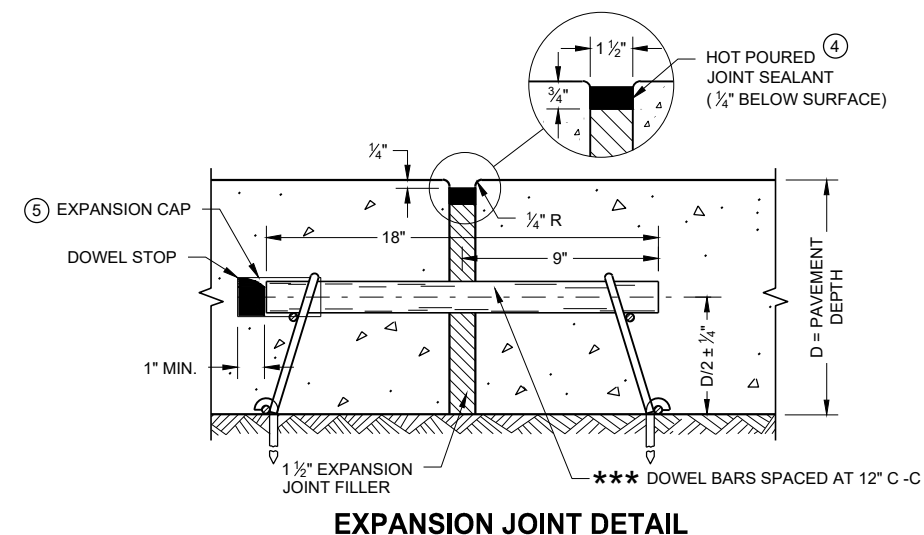
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

- ① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2' - 0" C - C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.
- ② THE CONTRACTOR MAY OMIT THE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.
- ③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.
- ④ USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.
- ⑤ PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.
- ⑥ EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.
- (A) STANDARD CONTRACTION JOINT NORMAL TO \bar{C} OR \bar{R} .
- (B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.
- (C) 1 1/2" EXPANSION JOINT WITH DOWEL BARS NORMAL TO \bar{C} OR \bar{R} .



**SECTION D - D
CONTRACTION JOINT**



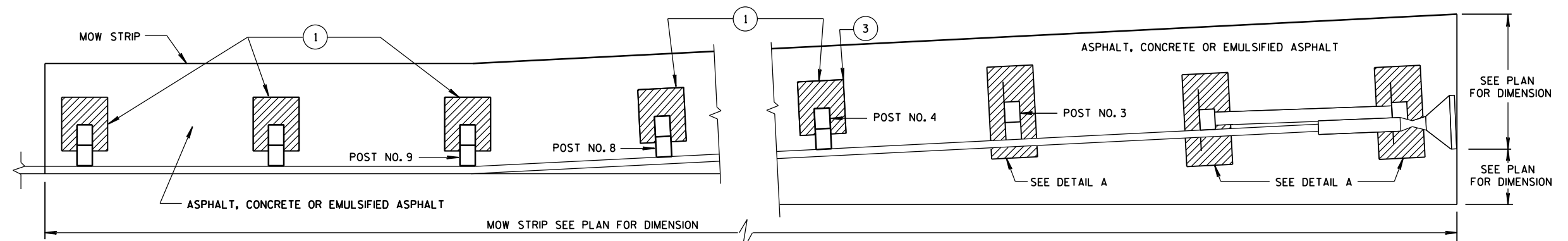
EXPANSION JOINT DETAIL

**CONCRETE PAVEMENT
APPROACH SLAB**

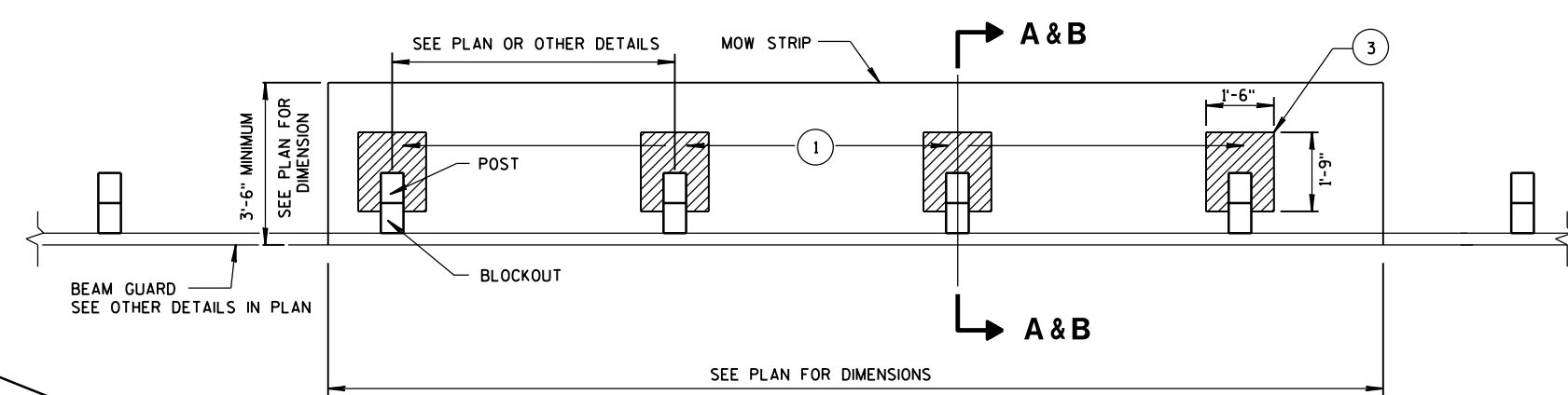
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

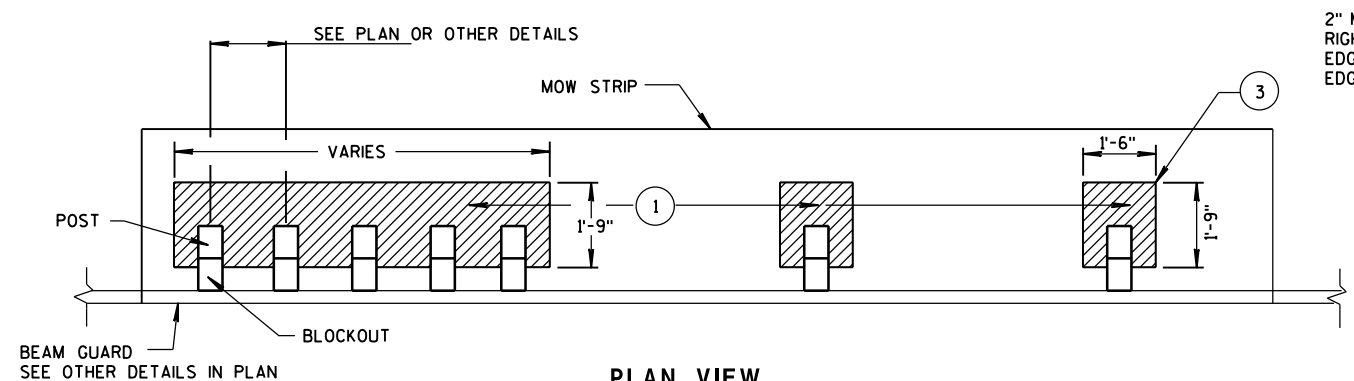
FHWA



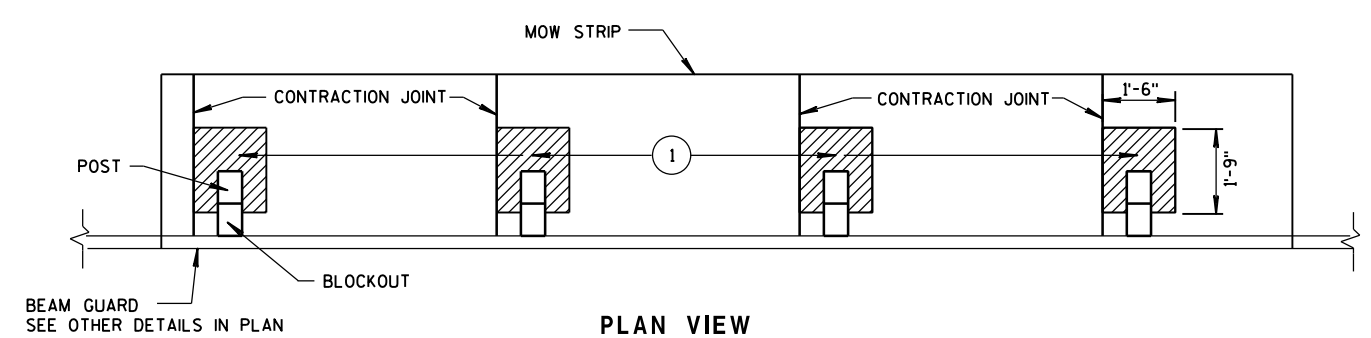
PLAN VIEW
MOW STRIP LAYOUT FOR ENERGY ABORING TERMINAL



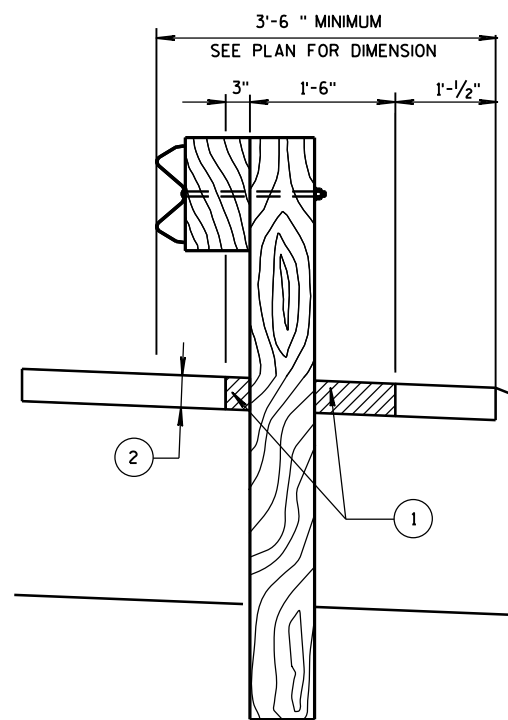
PLAN VIEW
MOW STRIP FOR TYPICAL BLOCKOUT LAYOUT



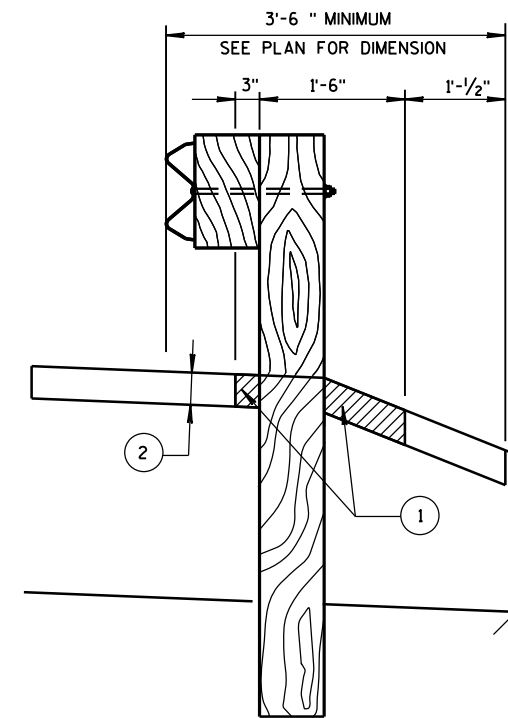
PLAN VIEW
MOW STRIP FOR TIGHT SPACING LAYOUT



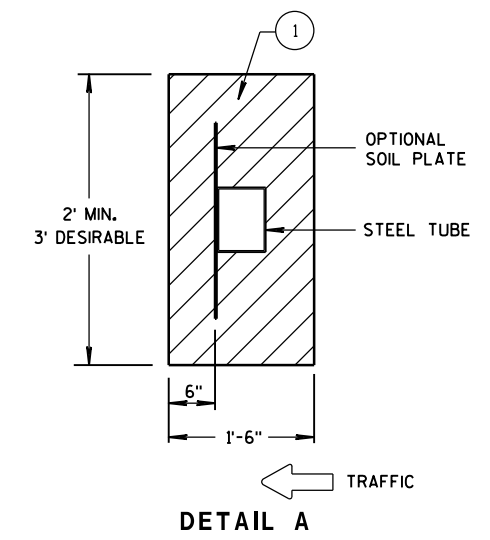
PLAN VIEW
JOINT PLACEMENT FOR CONCRETE MOW STRIP



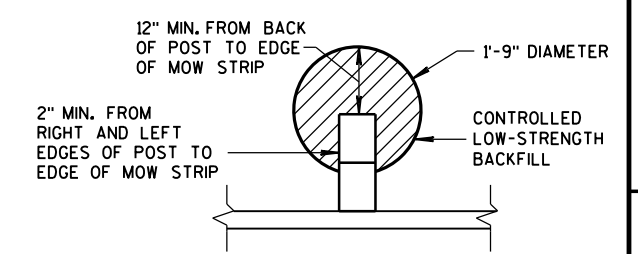
SECTION A-A



SECTION B-B



DETAIL A

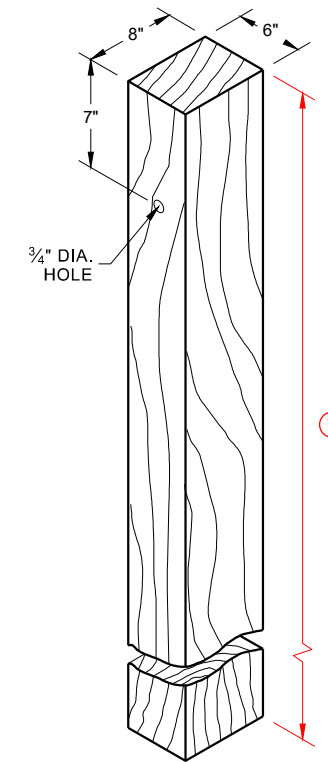
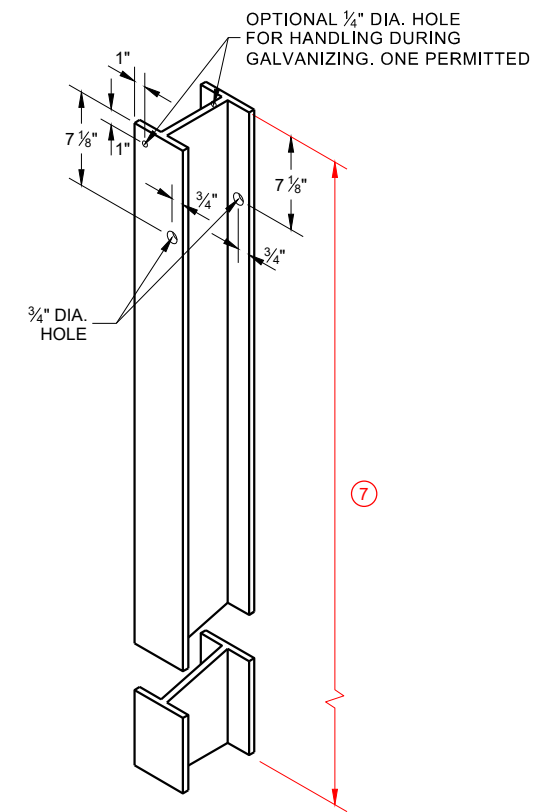
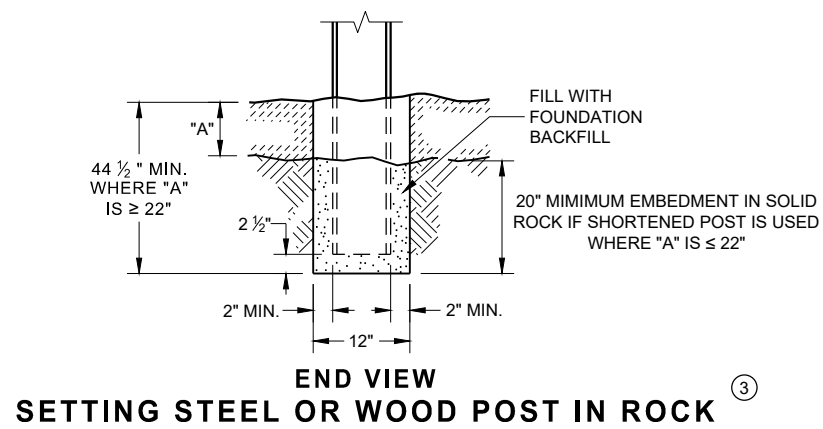


ALTERNATIVE HMA MOW STRIP DESIGN

- ① CONTROLLED LOW-STRENGTH BACKFILL OR EMULSIFIED ASPHALT.
- ② DEPTH OF MOW STRIP:
ASPHALT - 4"
CONCRETE - 4"
EMULSIFIED ASPHALT - 1" OR LESS
- ③ FOR EMULSIFIED ASPHALT MOW STRIP LEAVE OUTS NOT REQUIRED. (TYPICAL FOR ALL POSTS.)

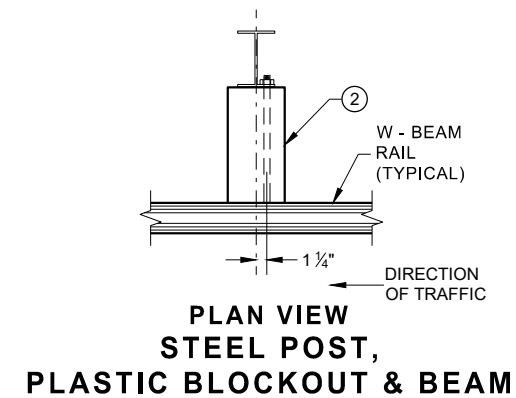
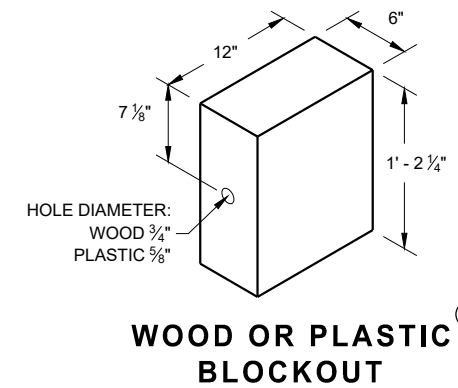
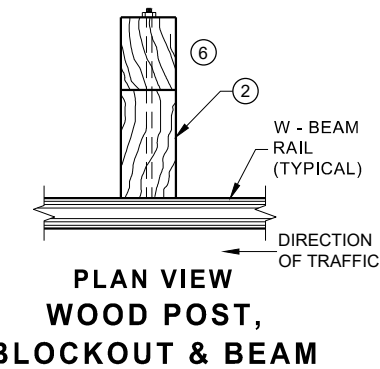
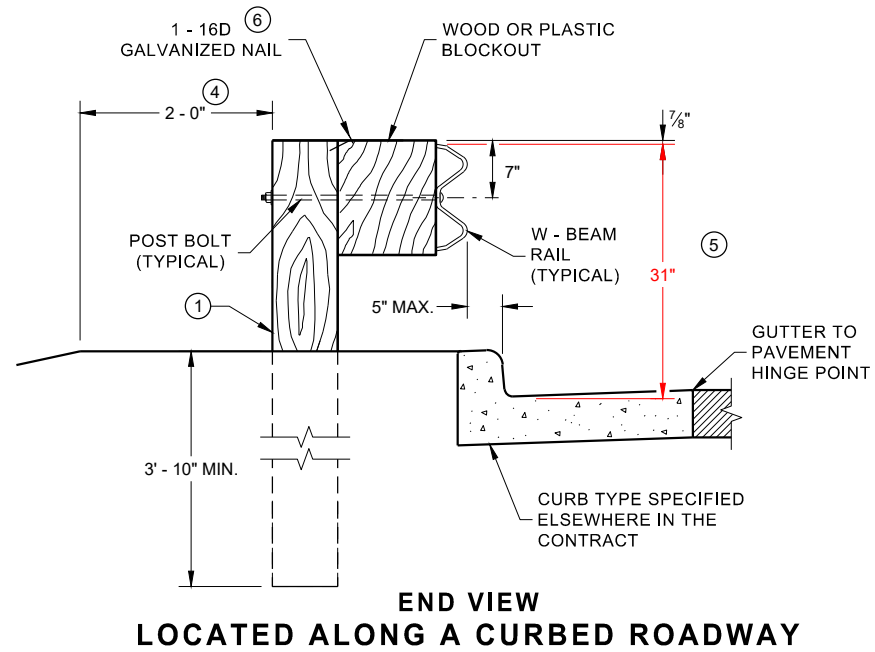
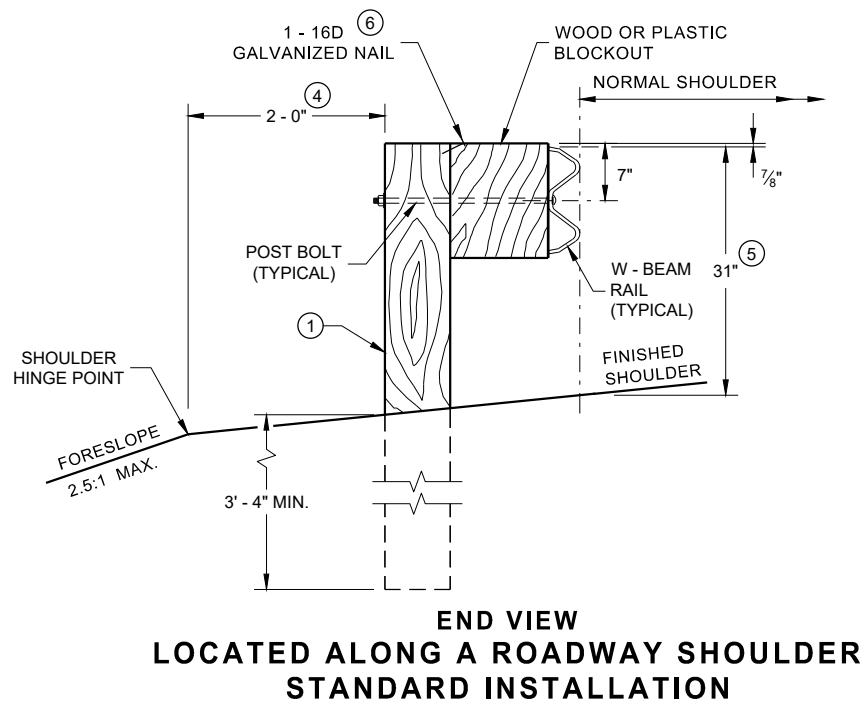
GUARDRAIL MOW STRIP	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2014	/s/ Jerry H. Zogg
DATE	ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	

- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- ③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH 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.
- ⑦ TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



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

WOOD POST (6" X 8") NOMINAL

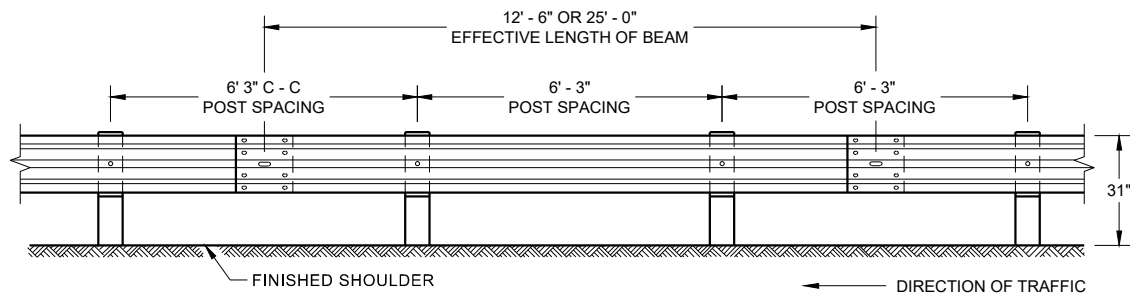


END VIEW MGS LONGER POST AT HALFPOST SPACING W BEAM (K)

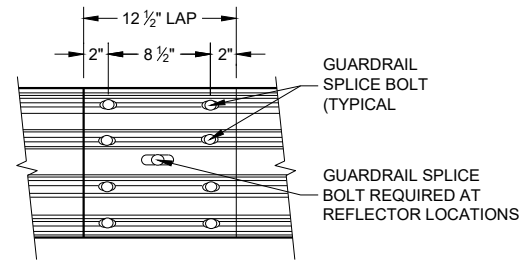
PLAN VIEW STEEL POST, PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



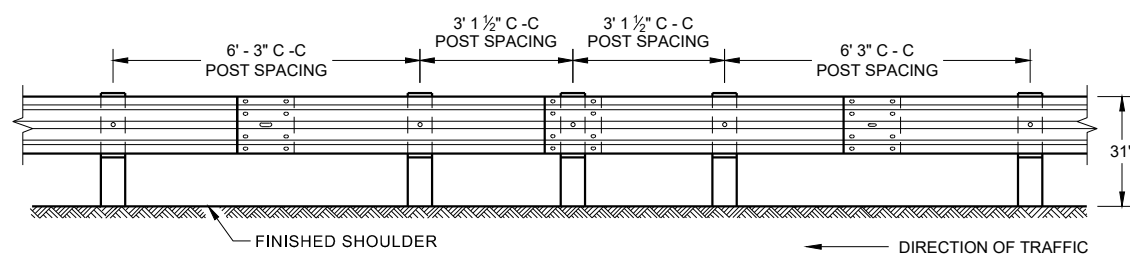
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



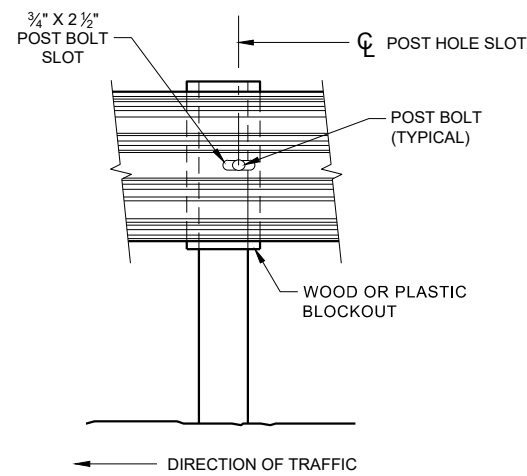
**FRONT VIEW
MID-SPAN BEAM SPLICE**

GENERAL NOTES

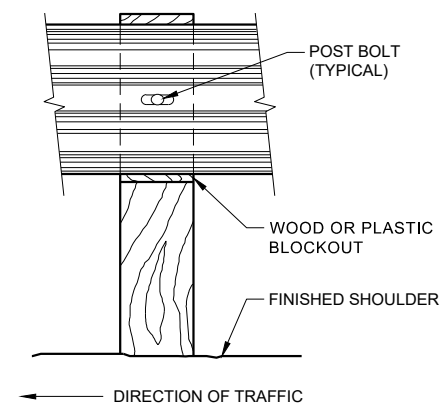
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
 - ⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 3/8"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



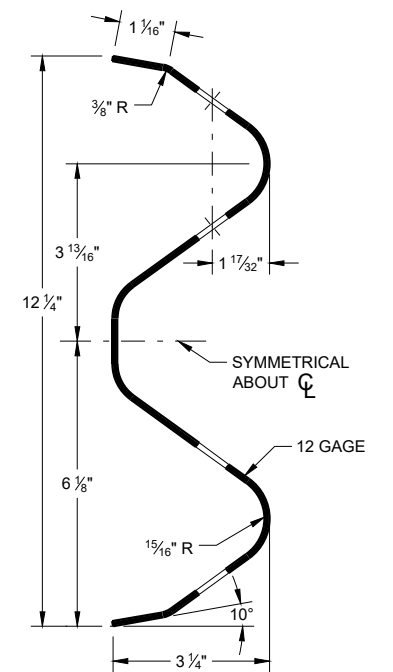
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



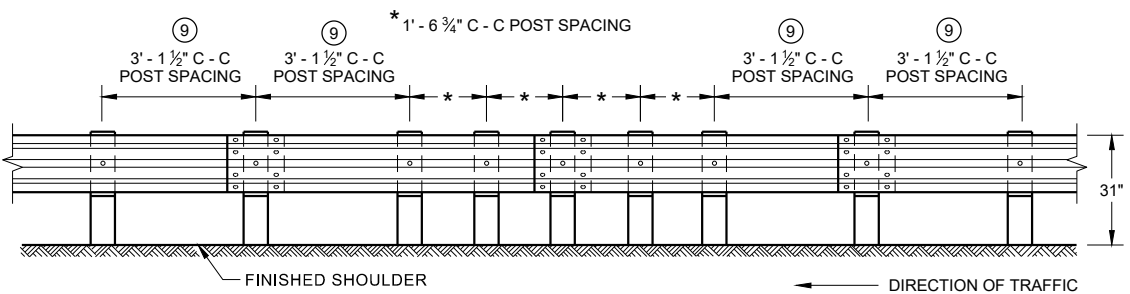
FRONT VIEW AT STEEL POST



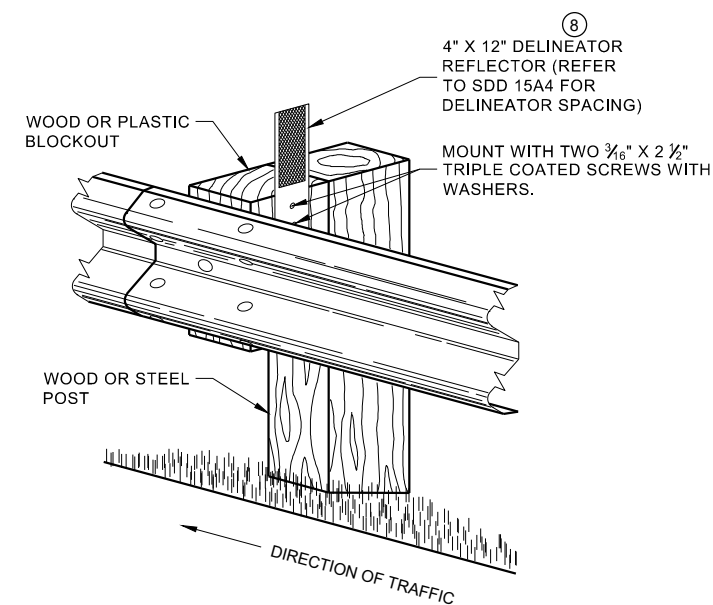
FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



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



**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

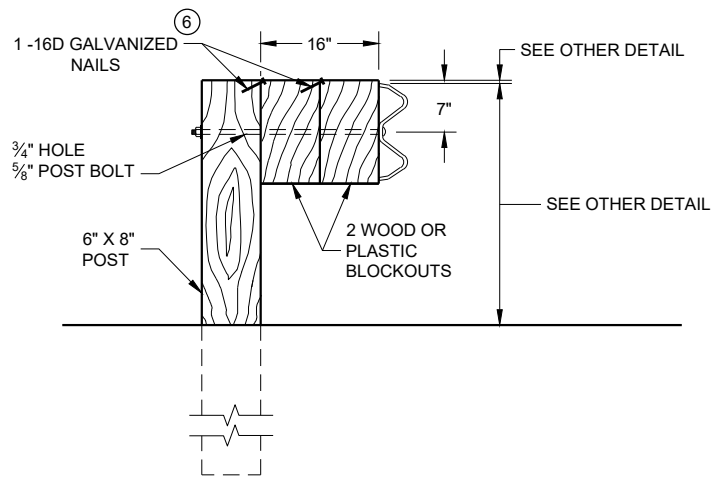
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

6

SDD 14B42 - 06b

SDD 14B42 - 06b

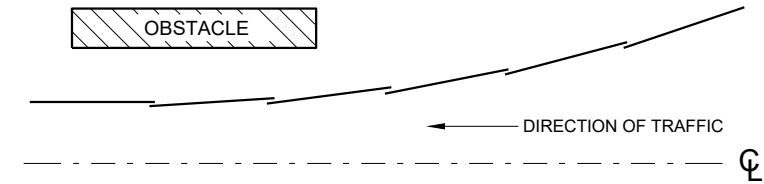
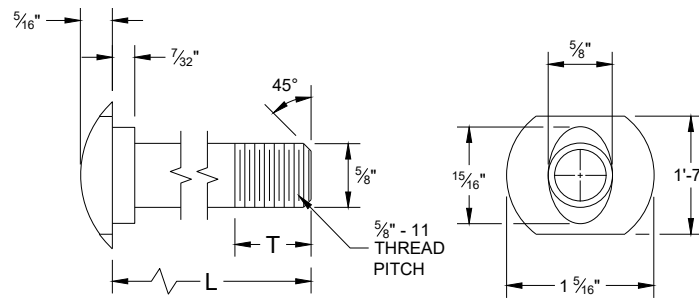


DETAIL FOR 16" BLOCKOUT DEPTH

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

NOTE:

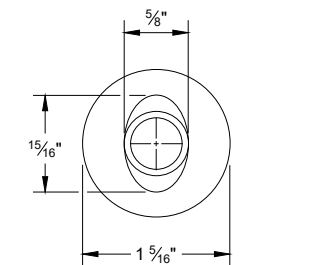
1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 3/16".
2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.



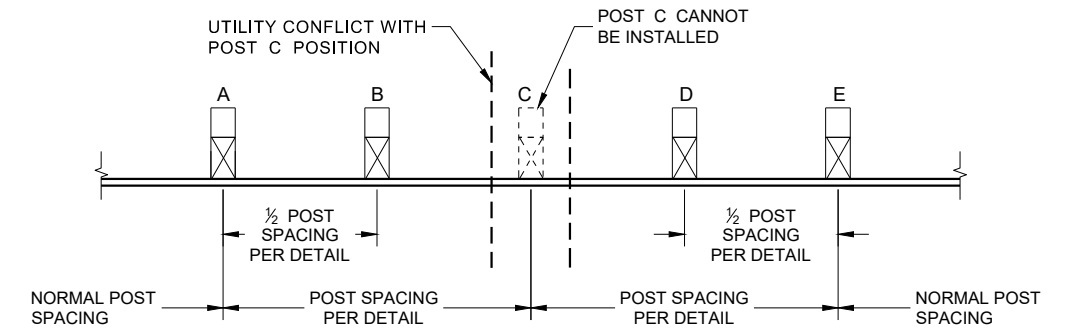
**PLAN VIEW
BEAM LAPPING DETAIL**

POST BOLT TABLE

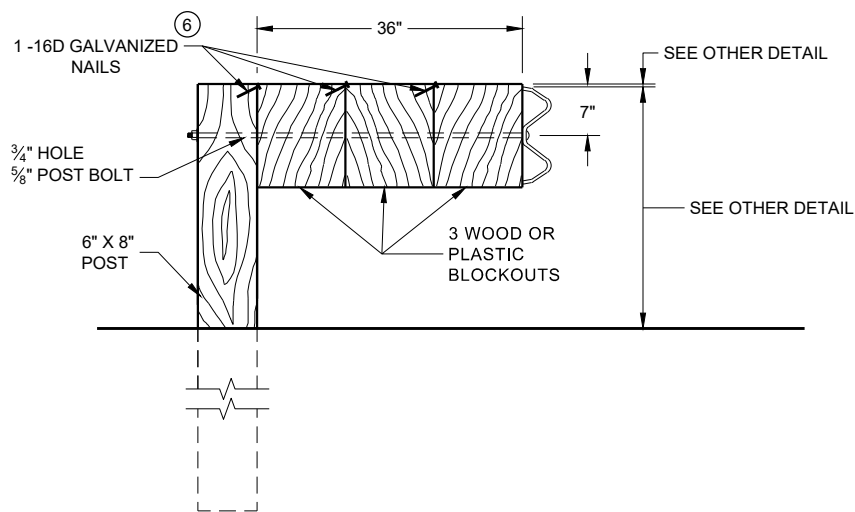
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

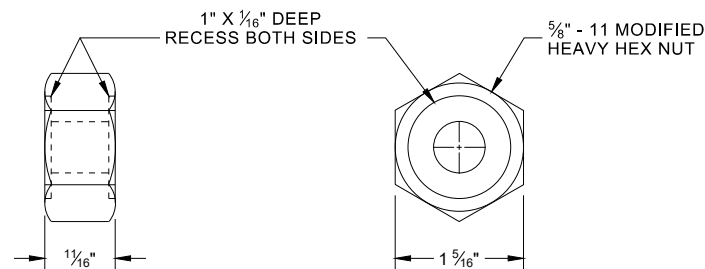


**POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION**

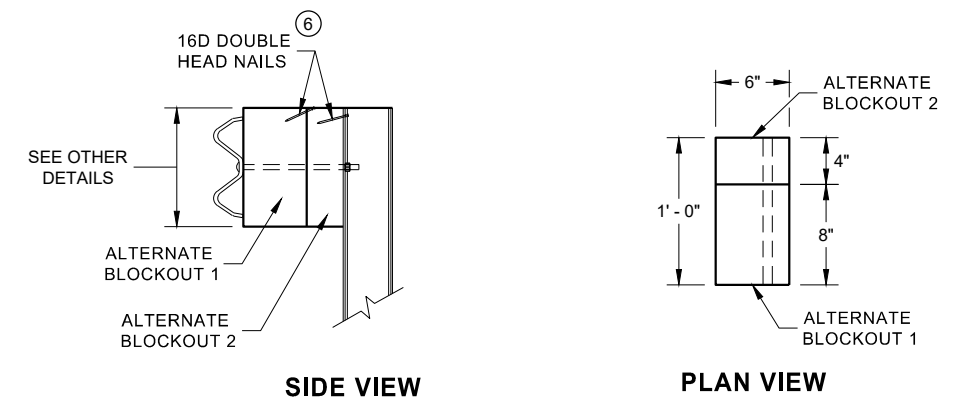


DETAIL FOR 36" BLOCKOUT DEPTH

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



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

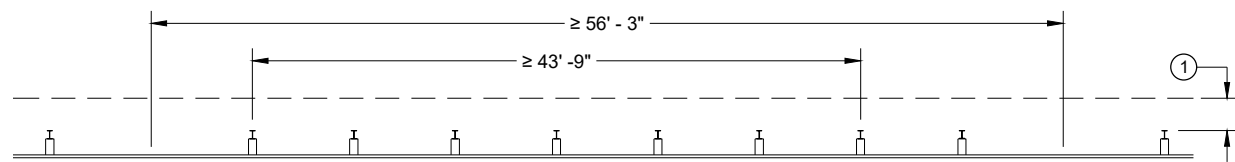


**ALTERNATE WOOD
BLOCKOUT DETAIL**

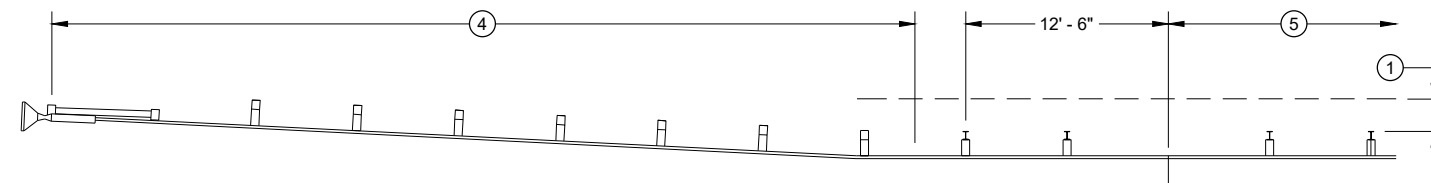
6 WHEN USING STEEL POST AND WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

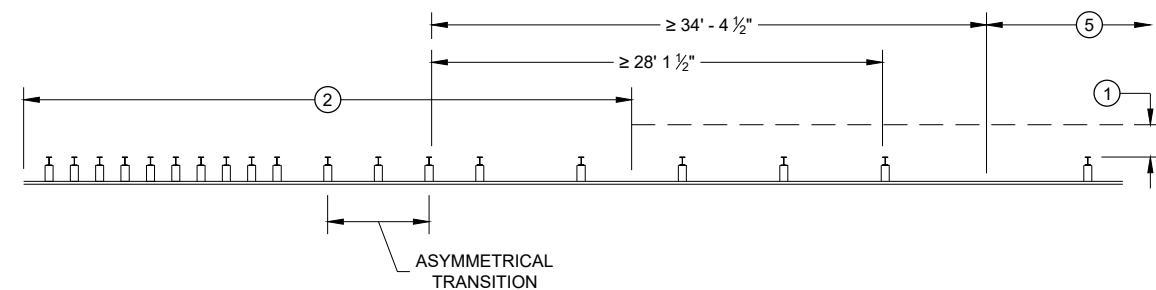
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



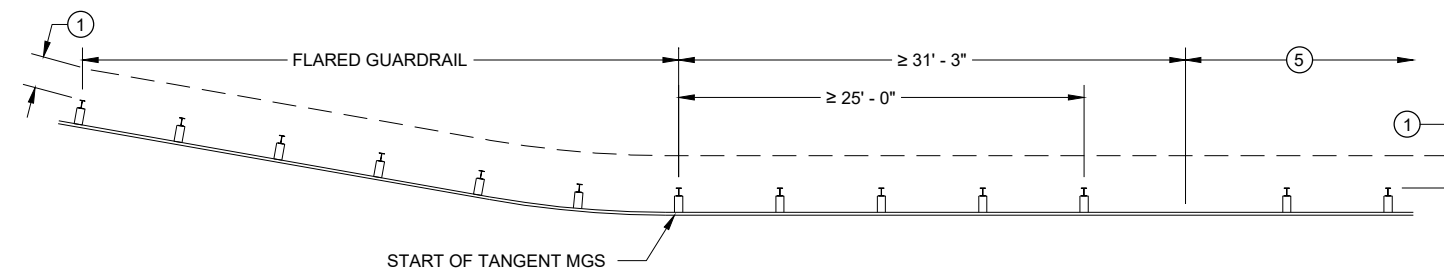
MISSING POST IN NORMAL BEAM GUARD RUN



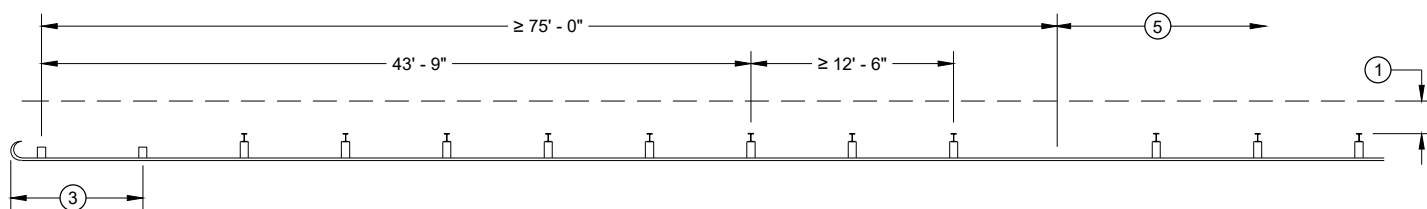
MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



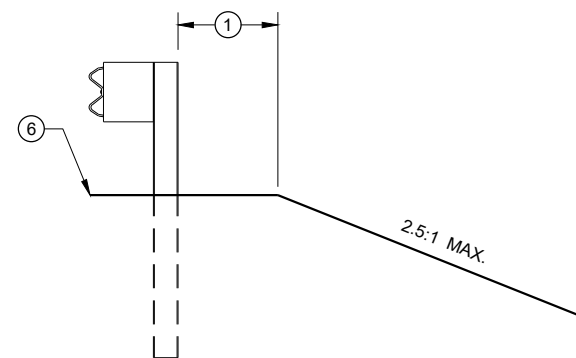
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



MISSING POST IN NORMAL BEAM GUARD RUN NEAR FLARED BEAM GUARD



MISSING POST IN NORMAL BEAM GUARD RUN NEAR TYPE 2 TERMINAL



CROSS SECTION VIEW

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

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

GENERAL NOTES

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

SEE SDD 14B42 FOR MORE INFORMATION.

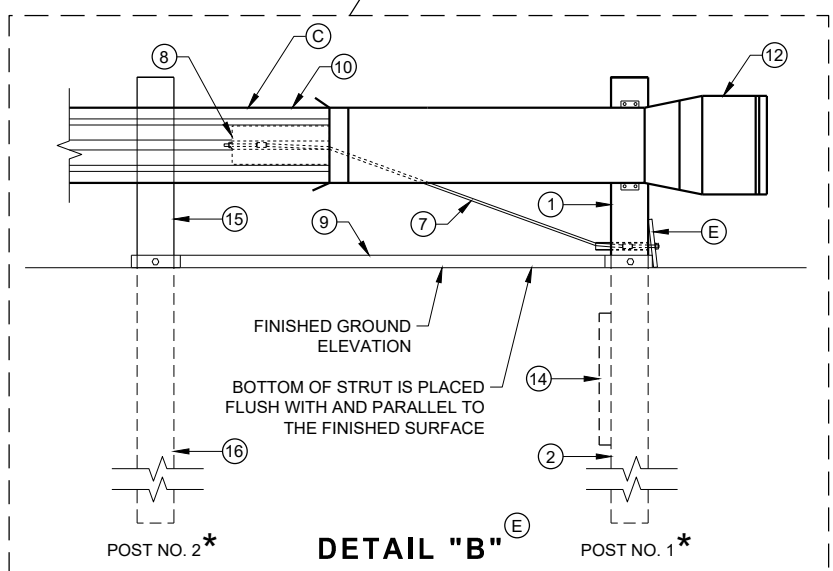
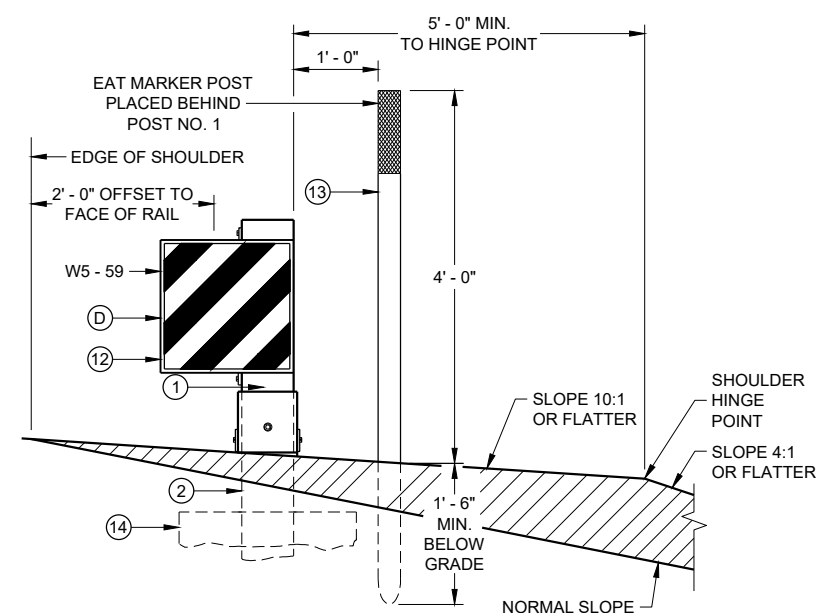
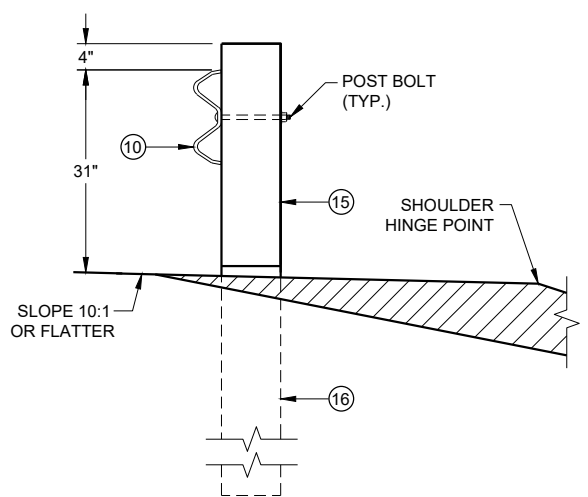
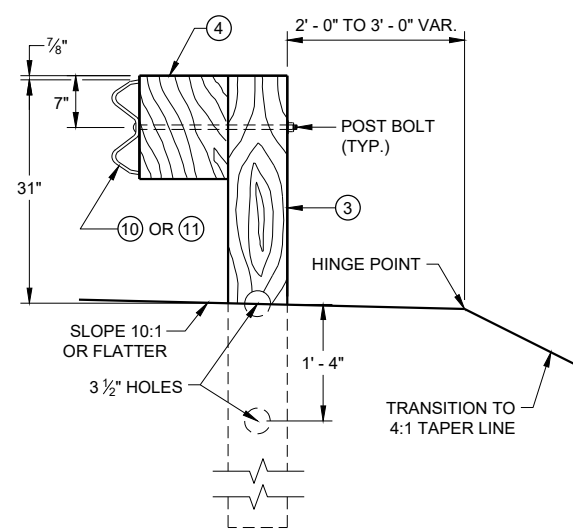
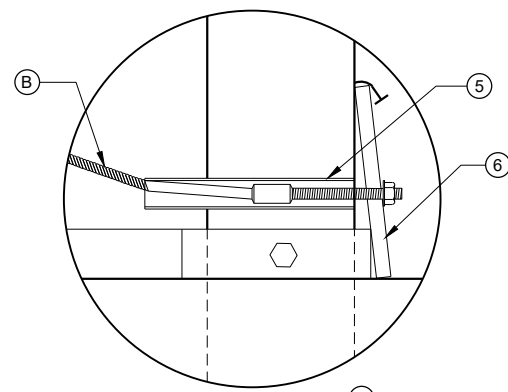
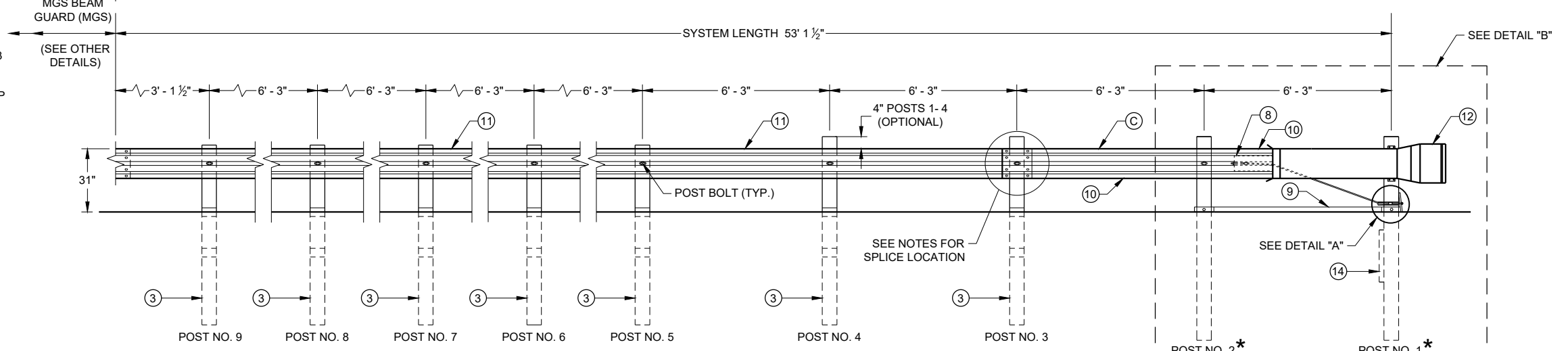
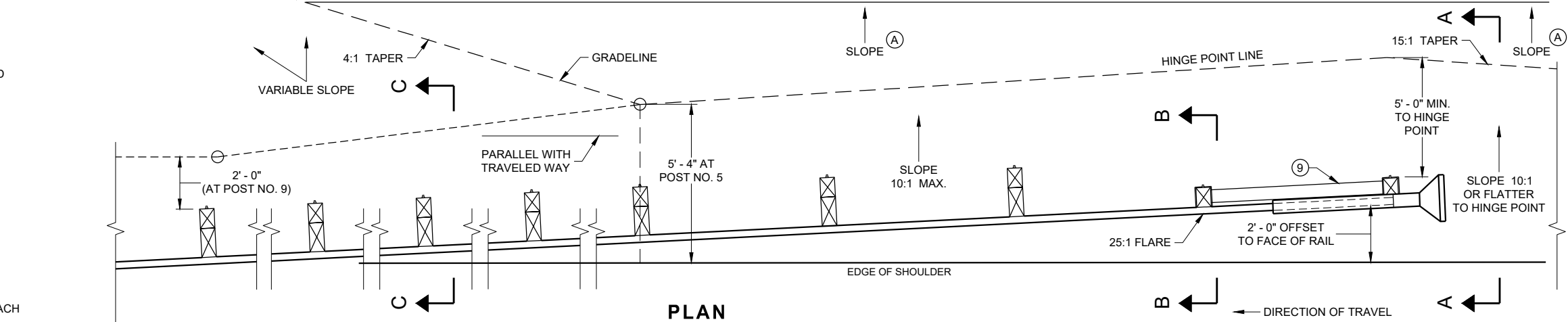
* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

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

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

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

CLEAR ZONE LIMITS, EITHER AS SHOWN ELSEWHERE IN THE PLANS OR, IF NOT SHOWN ELSEWHERE IN THE PLANS, 15 FEET BEYOND THE HINGE POINT LINE



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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

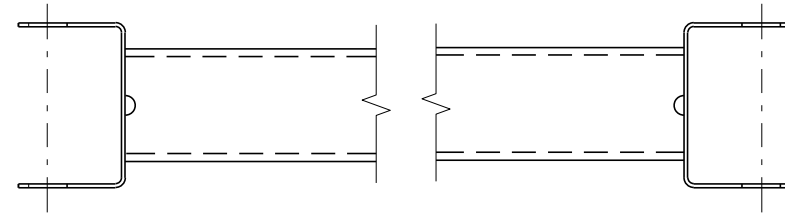
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SDD 14B44 - 04a

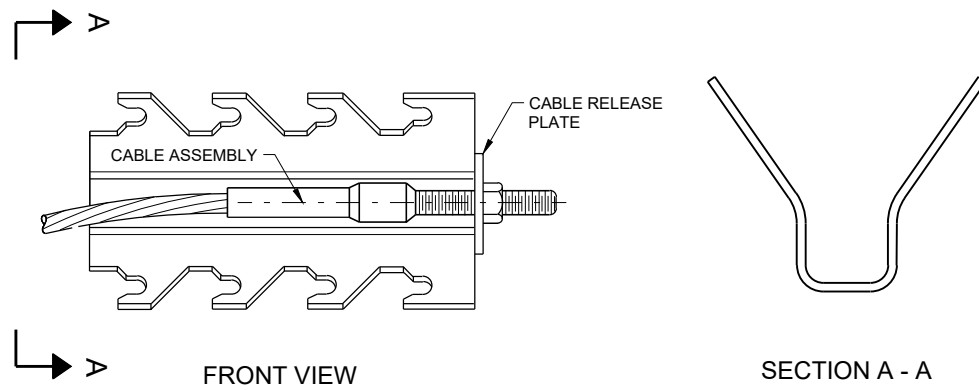
SDD 14B44 - 04a

BILL OF MATERIALS

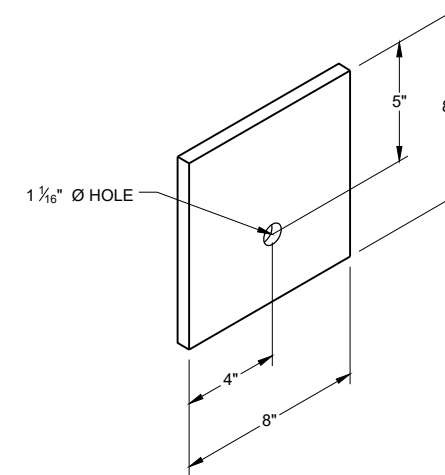
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL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



GENERIC GROUND STRUT ⑨ ⑤



GENERIC ANCHOR CABLE BOX ⑨ ⑤



BEARING PLATE ⑥ ⑤

6

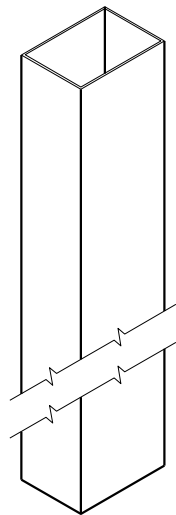
6

SDD 14B44 - 04b

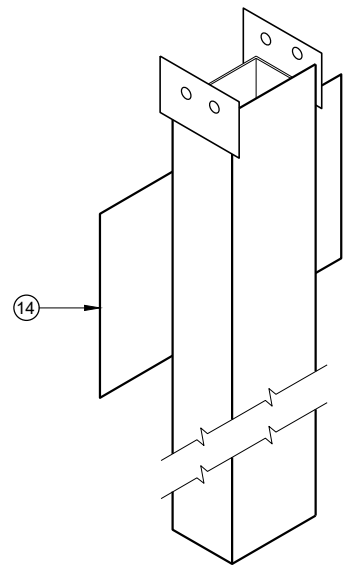
SDD 14B44 - 04b

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

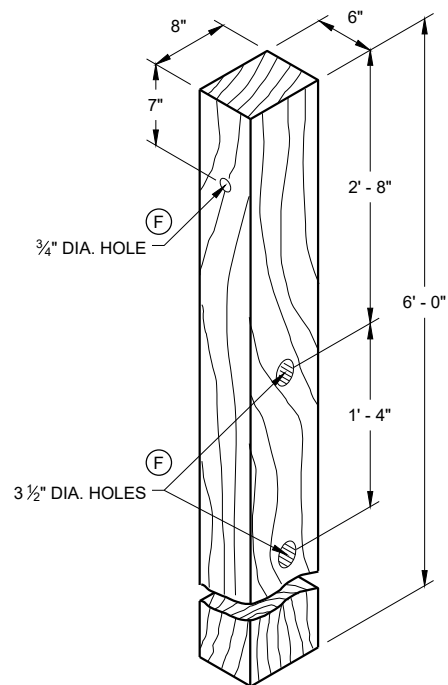
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



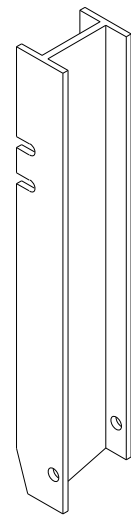
UPPER POST NO. 1 ⁽¹⁾ (E)



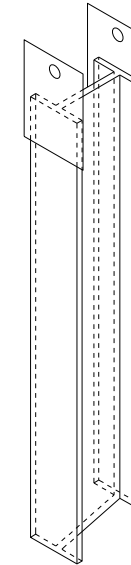
LOWER POST NO. 1 ⁽²⁾ (E)



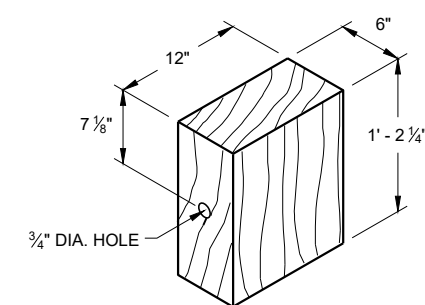
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



UPPER POST NO. 2 ⁽¹⁵⁾ (E)

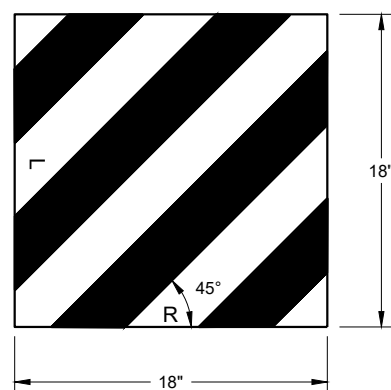


LOWER POST NO. 2 ⁽¹⁶⁾ (E)



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

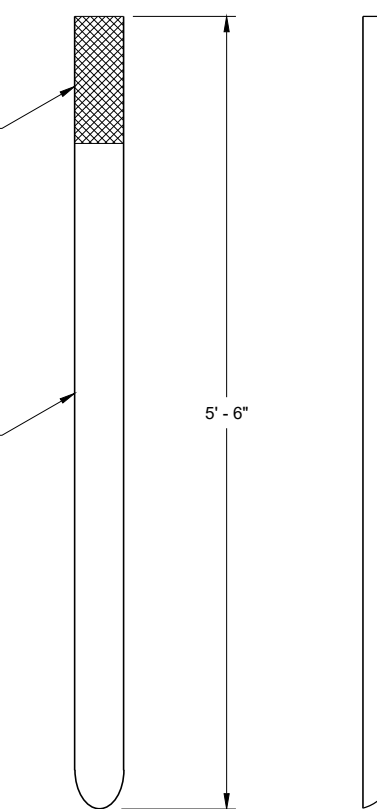
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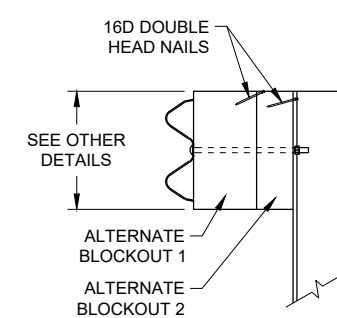
W5 - 59
REFLECTIVE SHEETING DETAIL ^(E)

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

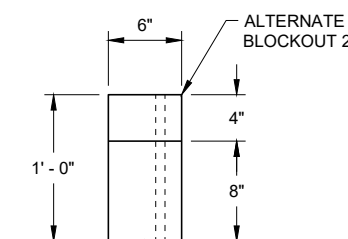
E.A.T. MARKER
POST (YELLOW)



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



SIDE VIEW



TOP VIEW

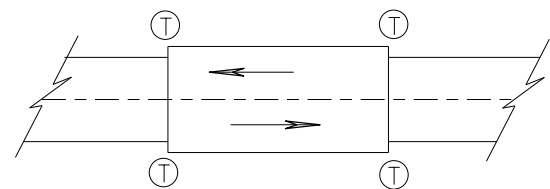
ALTERNATE WOOD
BLOCKOUT DETAIL

6

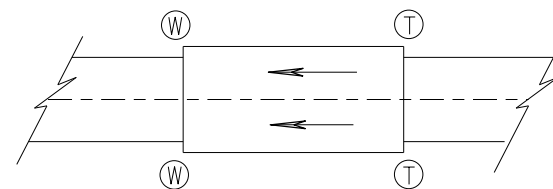
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

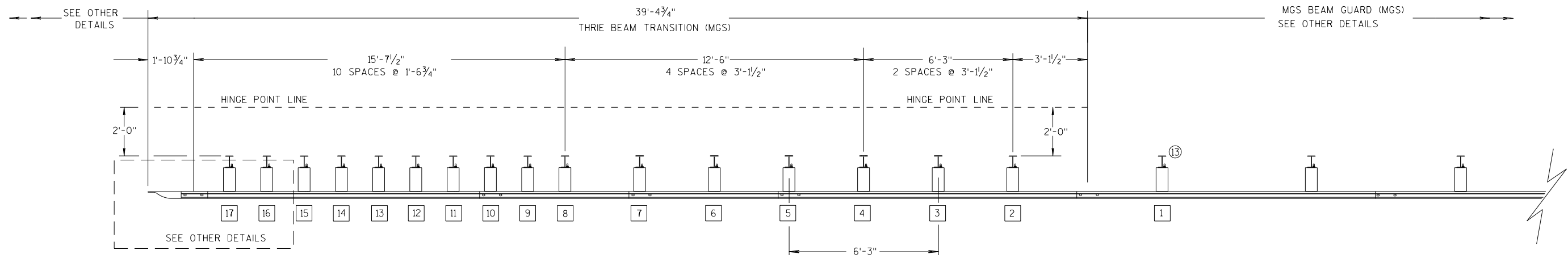
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

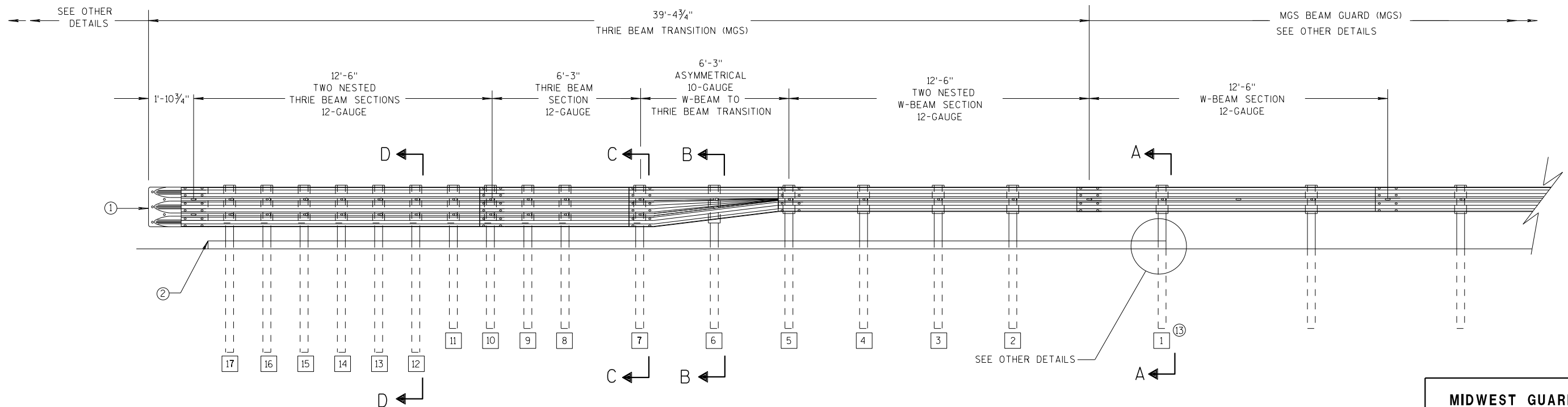
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

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



PLAN VIEW



ELEVATION VIEW

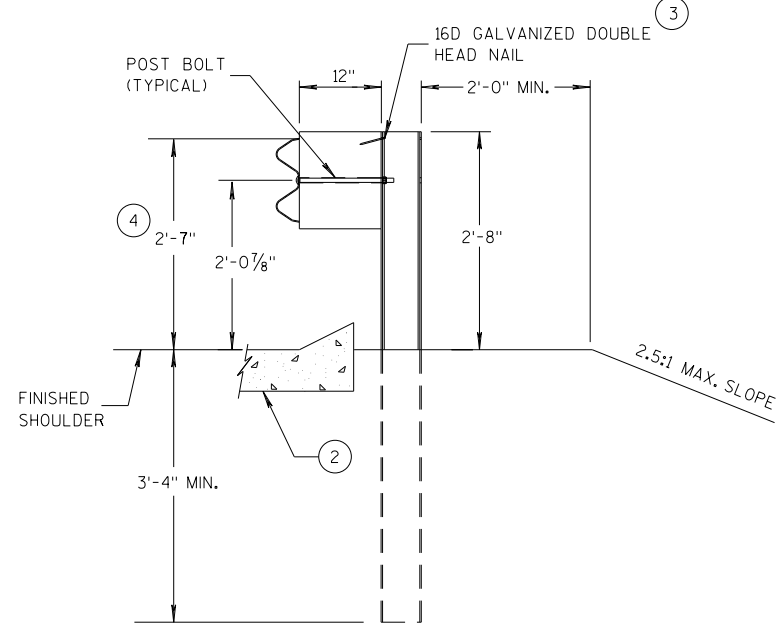
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

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

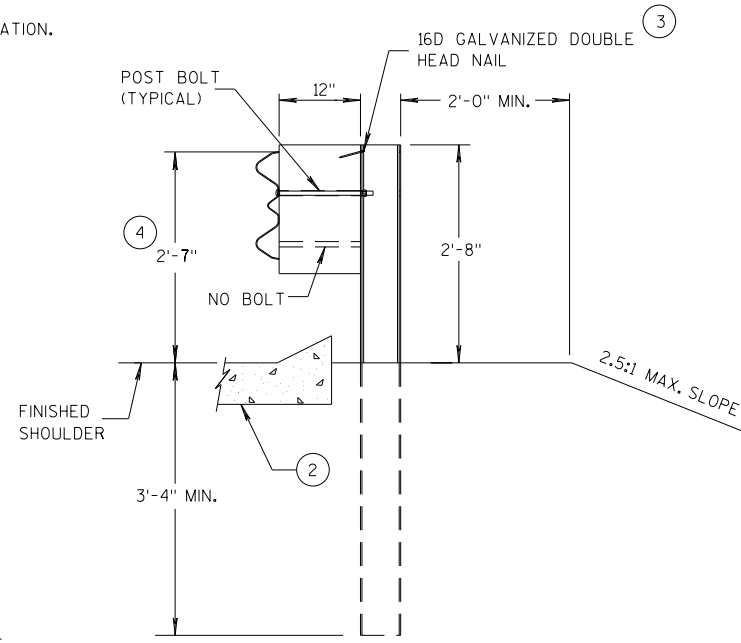
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

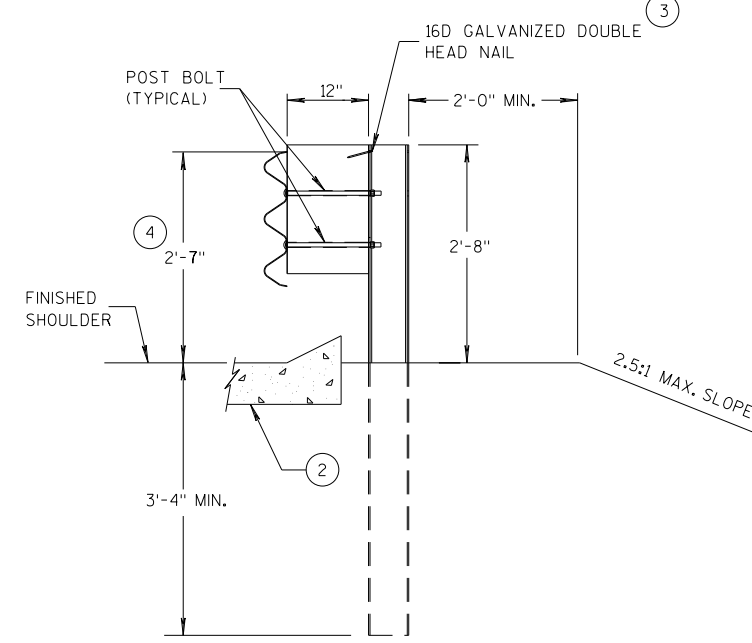
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ④ TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".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



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



**SECTION B-B
POST 6**



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

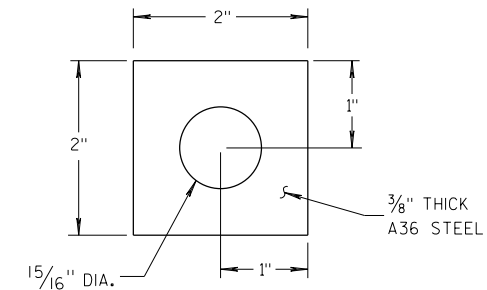
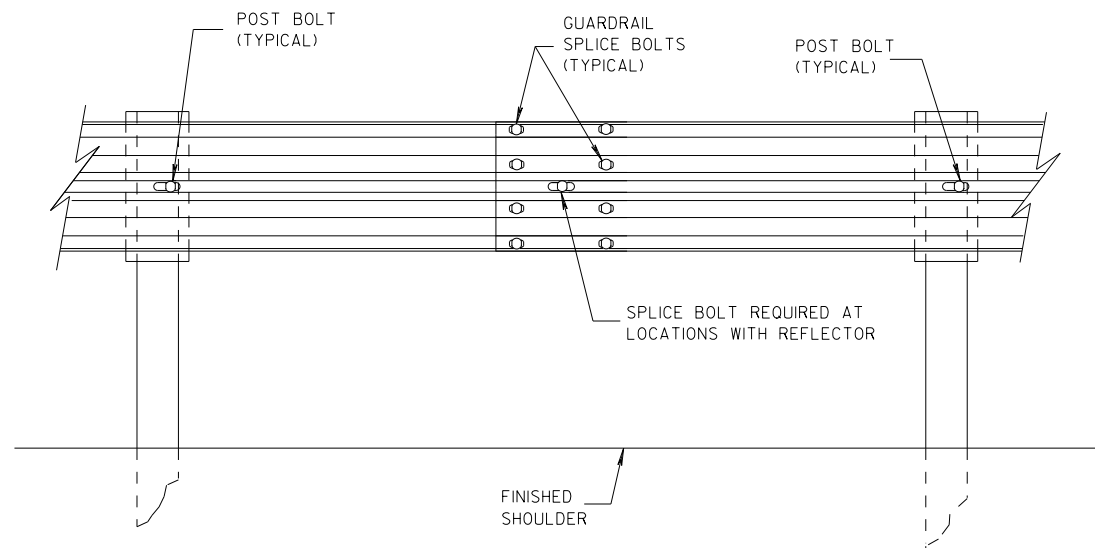
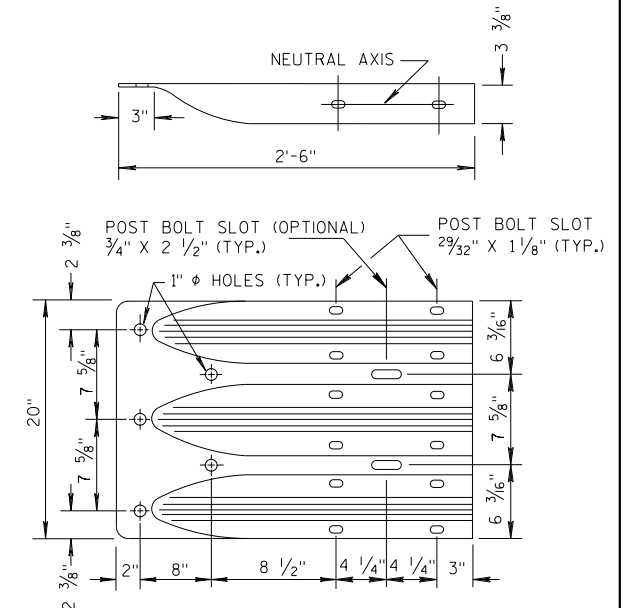


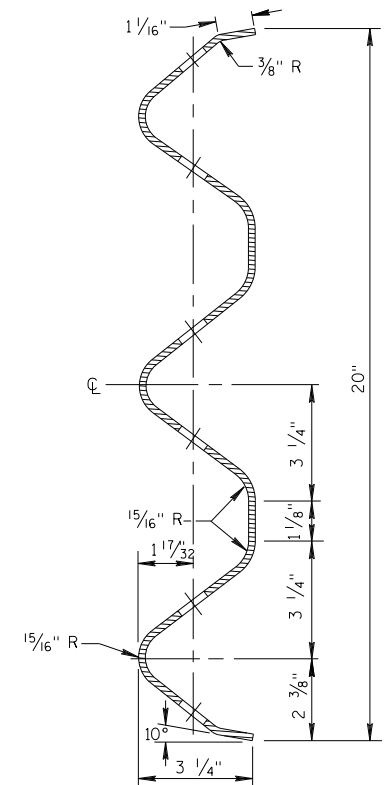
PLATE WASHER DETAIL



SPLICE DETAIL



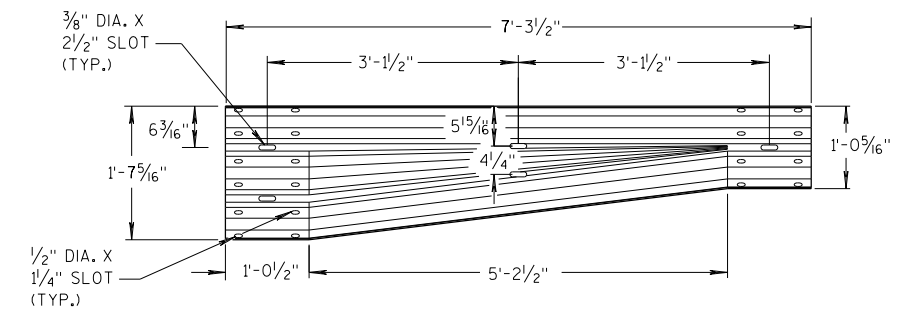
**THRIE BEAM
TERMINAL CONNECTOR**



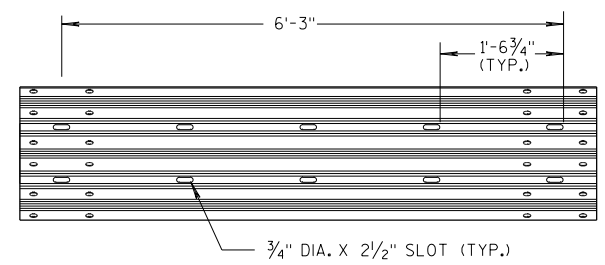
**SECTION THRU THRIE
BEAM RAIL ELEMENT**

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

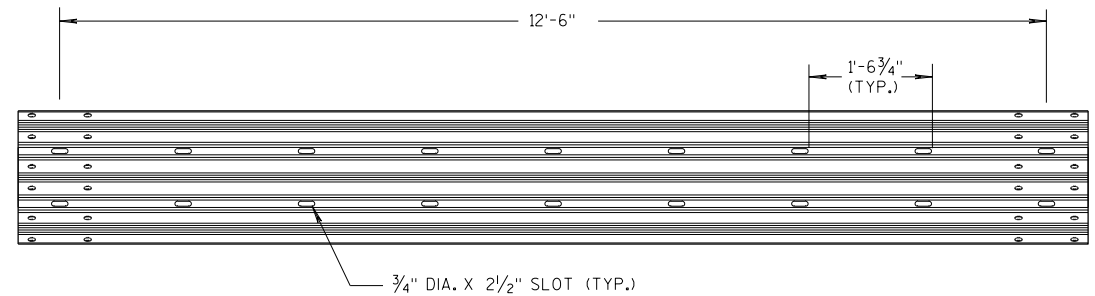
STATE OF WISCONSIN
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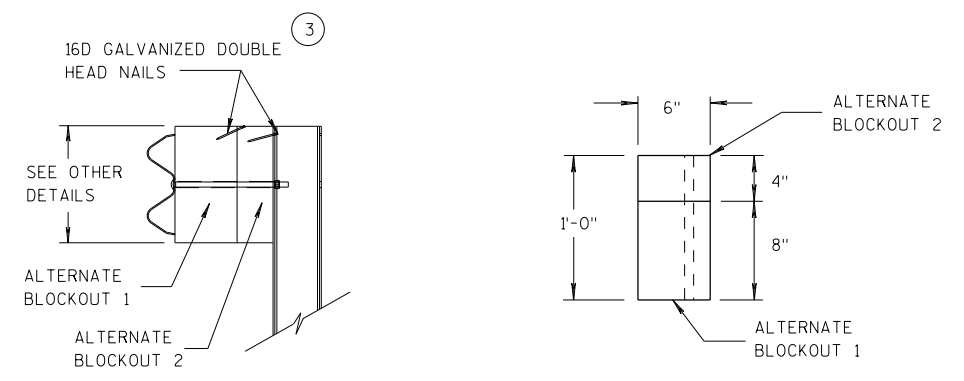
W-BEAM TO THRIE BEAM TRANSITION SECTION



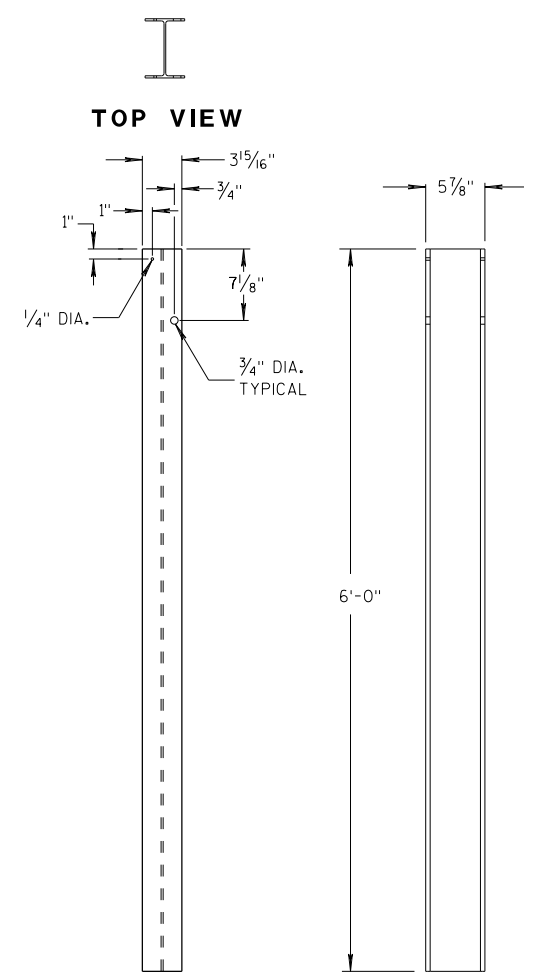
6'-3\"/>



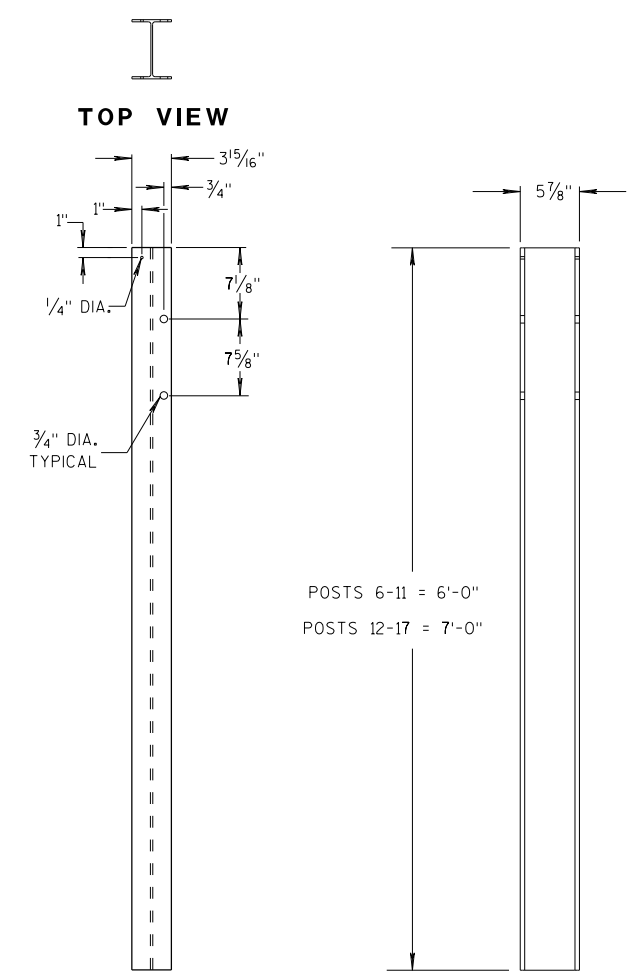
12'-6\"/>



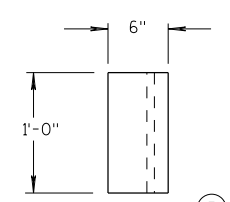
ALTERNATE WOOD BLOCKOUT DETAIL



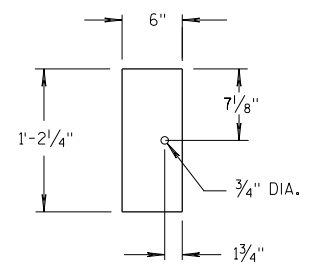
STEEL POSTS 1-5



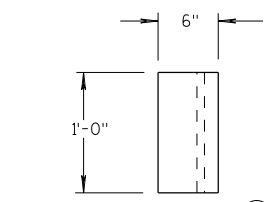
STEEL POSTS 6-17



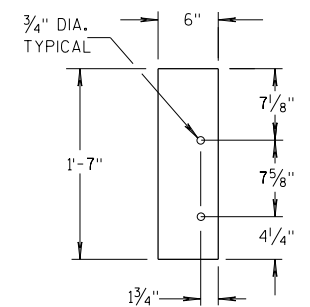
TOP VIEW



**FRONT VIEW
BLOCKOUT
POSTS 1-5**



TOP VIEW



**FRONT VIEW
BLOCKOUT
POSTS 6-17**

GENERAL NOTES

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

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

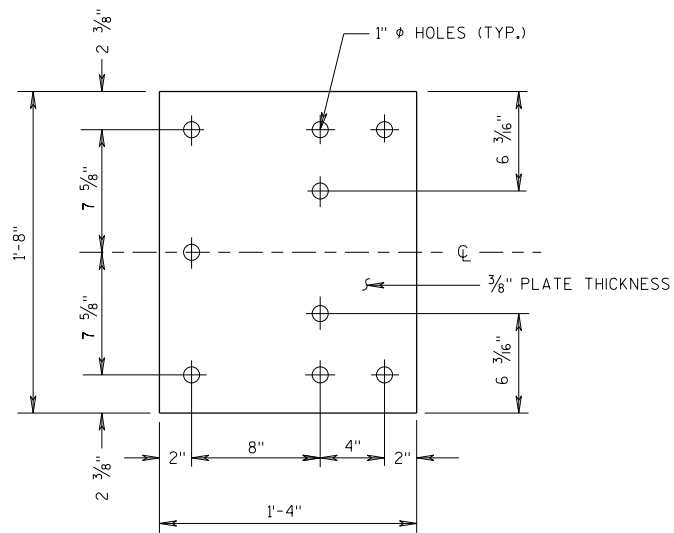
STATE OF WISCONSIN
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6

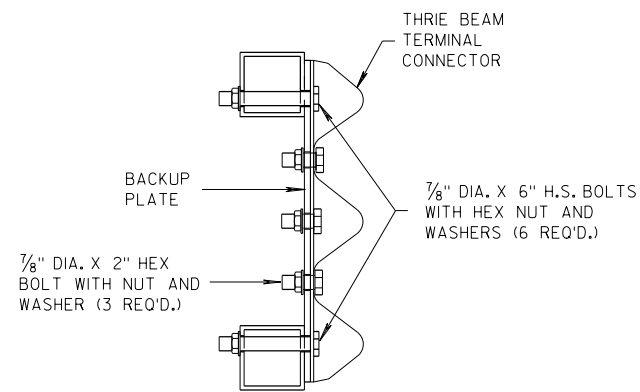
6

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

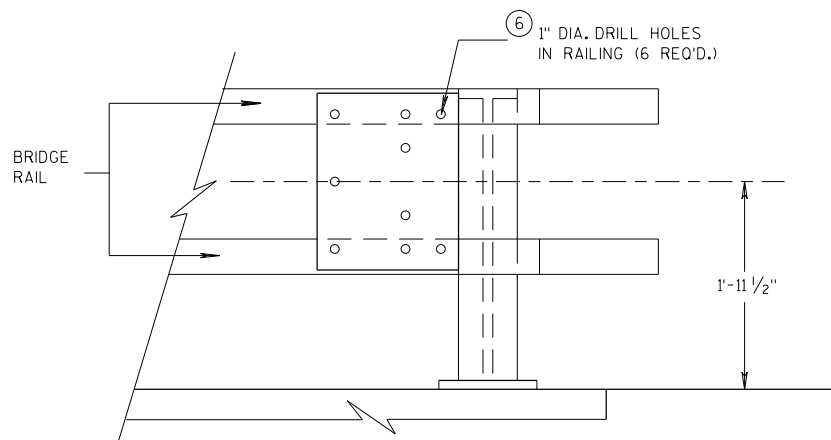
S.D.D. 14 B 45-5c



BACK-UP PLATE DETAIL



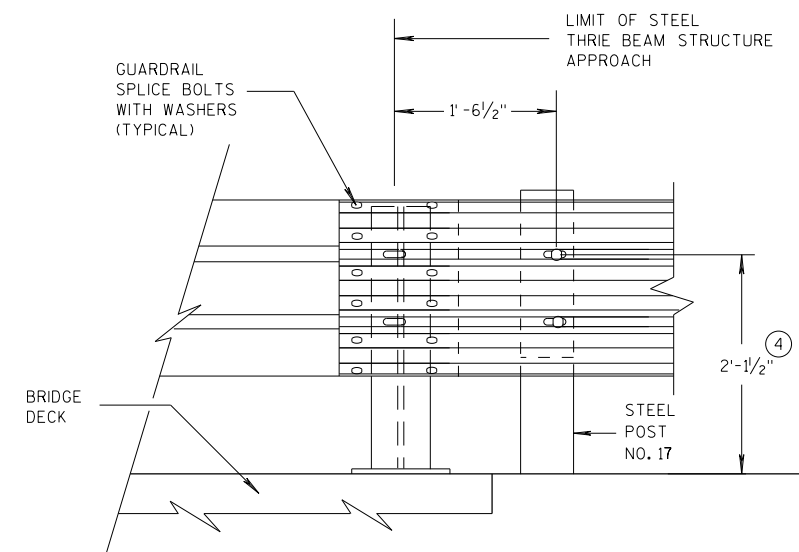
SECTION J-J



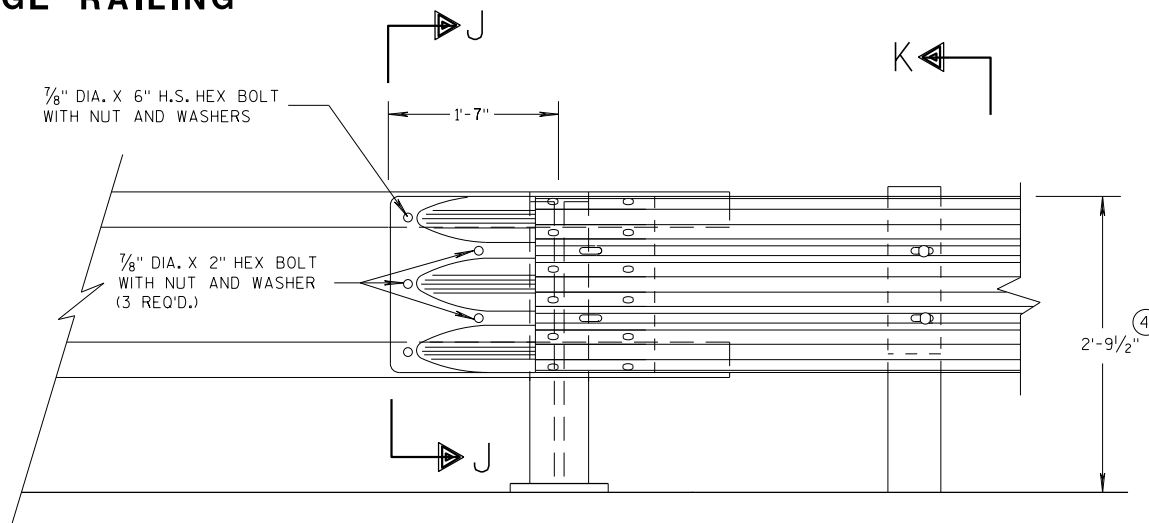
BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING

GENERAL NOTES

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

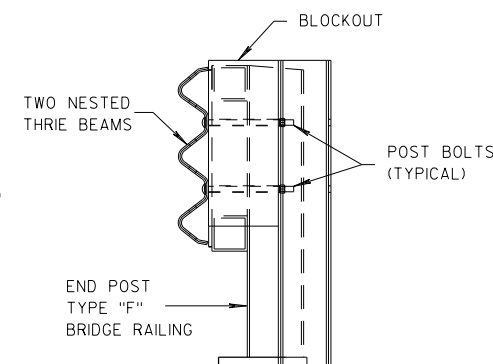


**FRONT VIEW
THRIE BEAM CONNECTION TO
STEEL RAILING TYPE "W"**



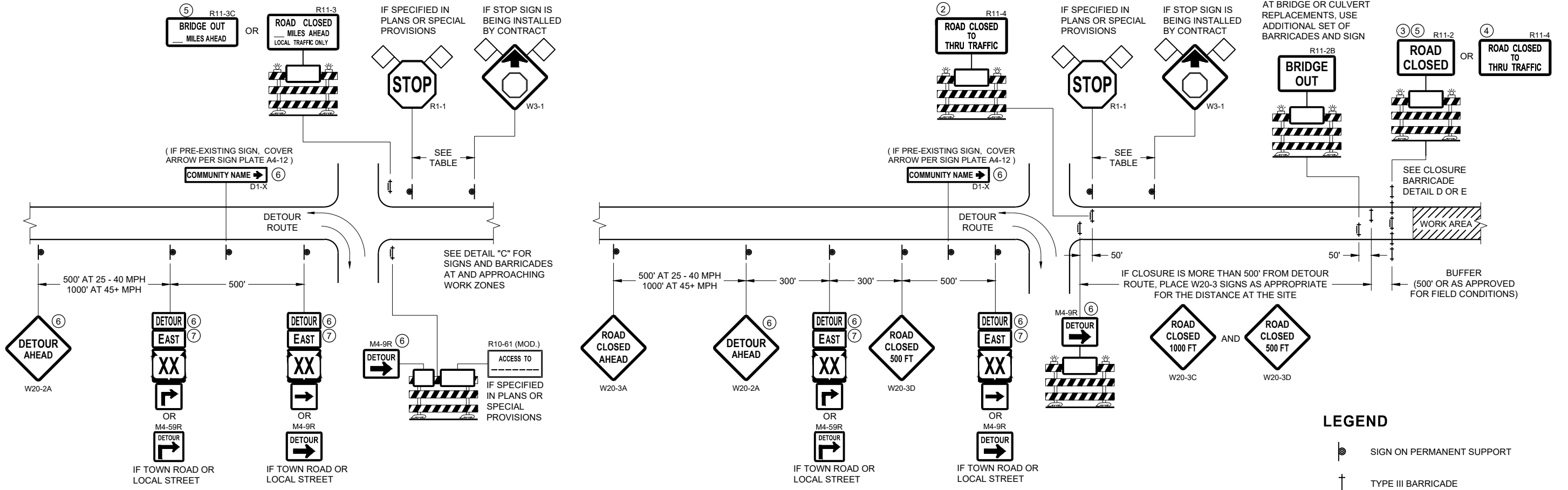
FRONT VIEW

**THRIE BEAM CONNECTION TO
TUBULAR RAILING TYPE "F"**



SECTION K-K

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

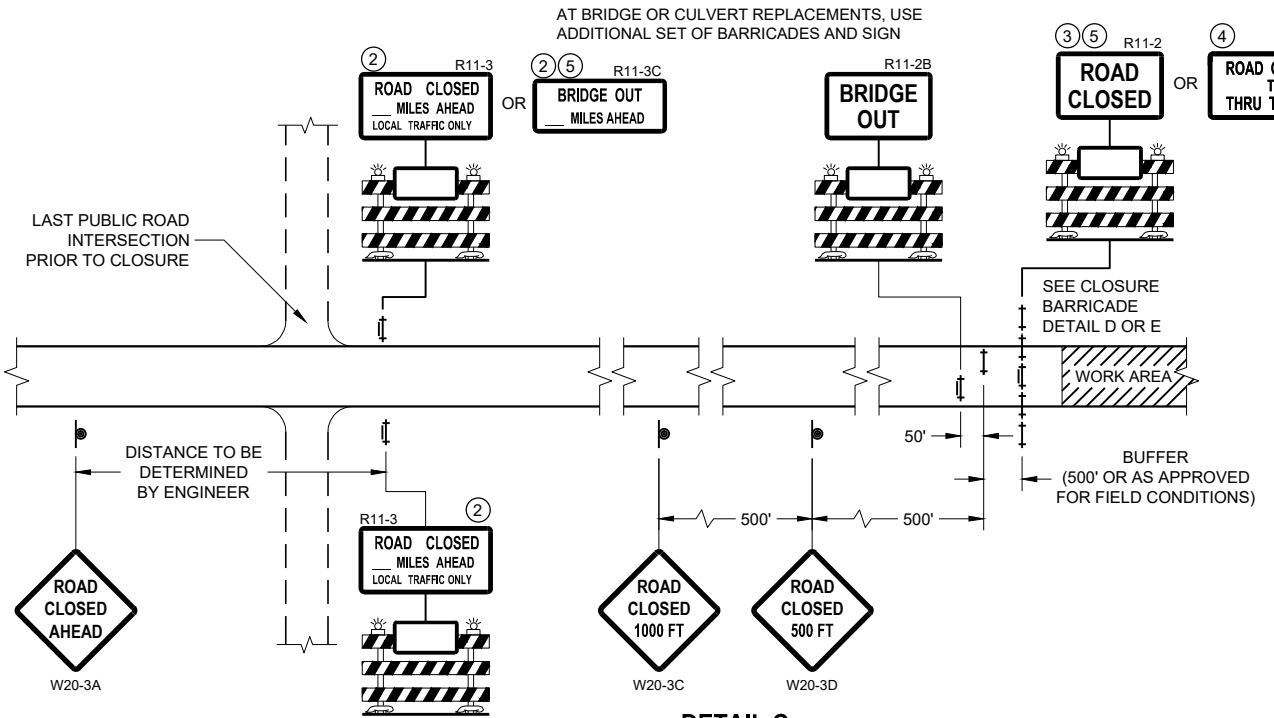
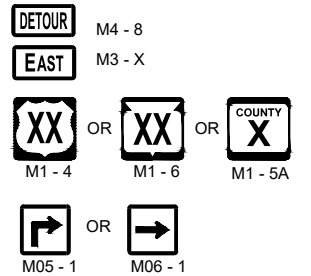


DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR
 WORK ZONE GREATER THAN OR EQUAL TO 1/2 MILE FROM
 DETOUR ROUTE (1000 FEET IF URBAN)

DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
 WORK ZONE LESS THAN 1/2 MILE FROM
 DETOUR ROUTE (1000 FEET IF URBAN)

- LEGEND**
- SIGN ON PERMANENT SUPPORT
 - TYPE III BARRICADE
 - TYPE III BARRICADE WITH ATTACHED SIGN
 - TYPE "A" WARNING LIGHT (FLASHING)
 - WORK AREA
 - FLAGS, 16" X 16" MIN. (ORANGE)

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



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

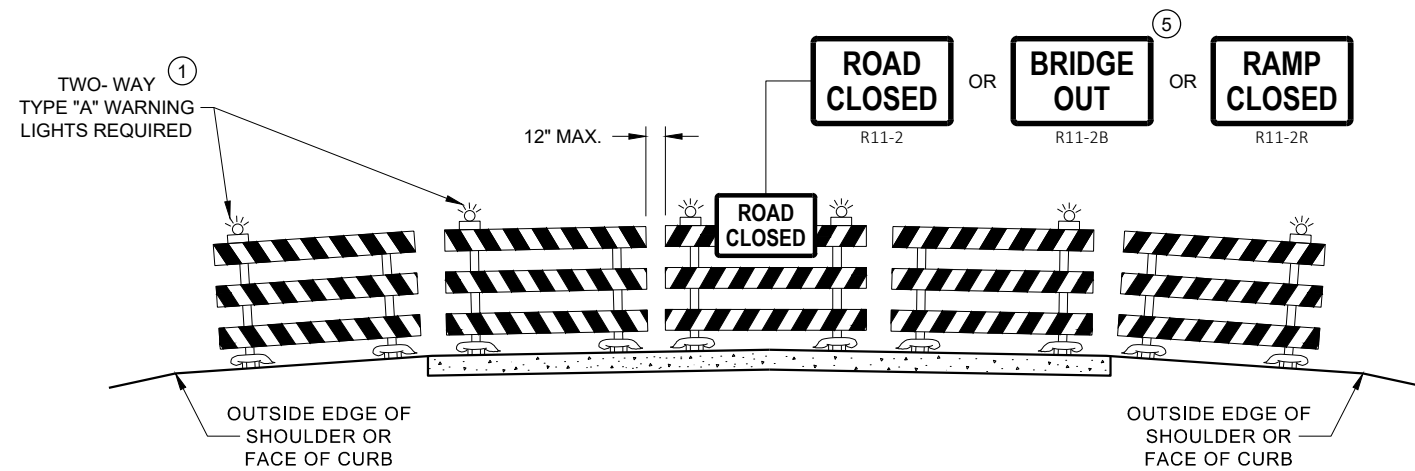
SEE SDD 15C2-SHEET "b"
 FOR GENERAL NOTES
 AND FOOTNOTES ① THROUGH ⑦

**BARRICADES AND SIGNS
 FOR MAINLINE CLOSURES**

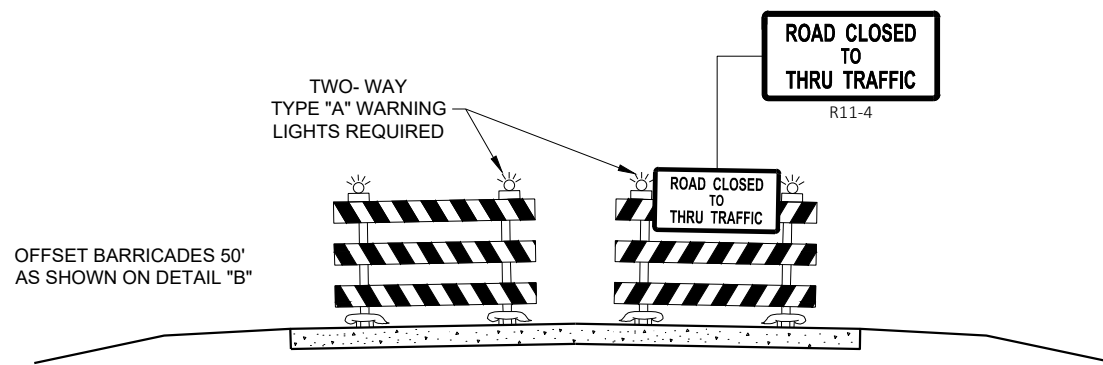
STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

APPROVED
 November 2018 /S/ Andrew Heidtke
 DATE DATE WORK ZONE ENGINEER

FHWA



**DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW**



**DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW**

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

**BARRICADES AND SIGNS
FOR
VARIOUS CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- M4 - 8
- M3 - X
- M1 - 4
- M1 - 6
- M1 - 5A
- M05 - 1
- M06 - 1
- M06 - 1

GENERAL NOTES

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

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

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

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

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

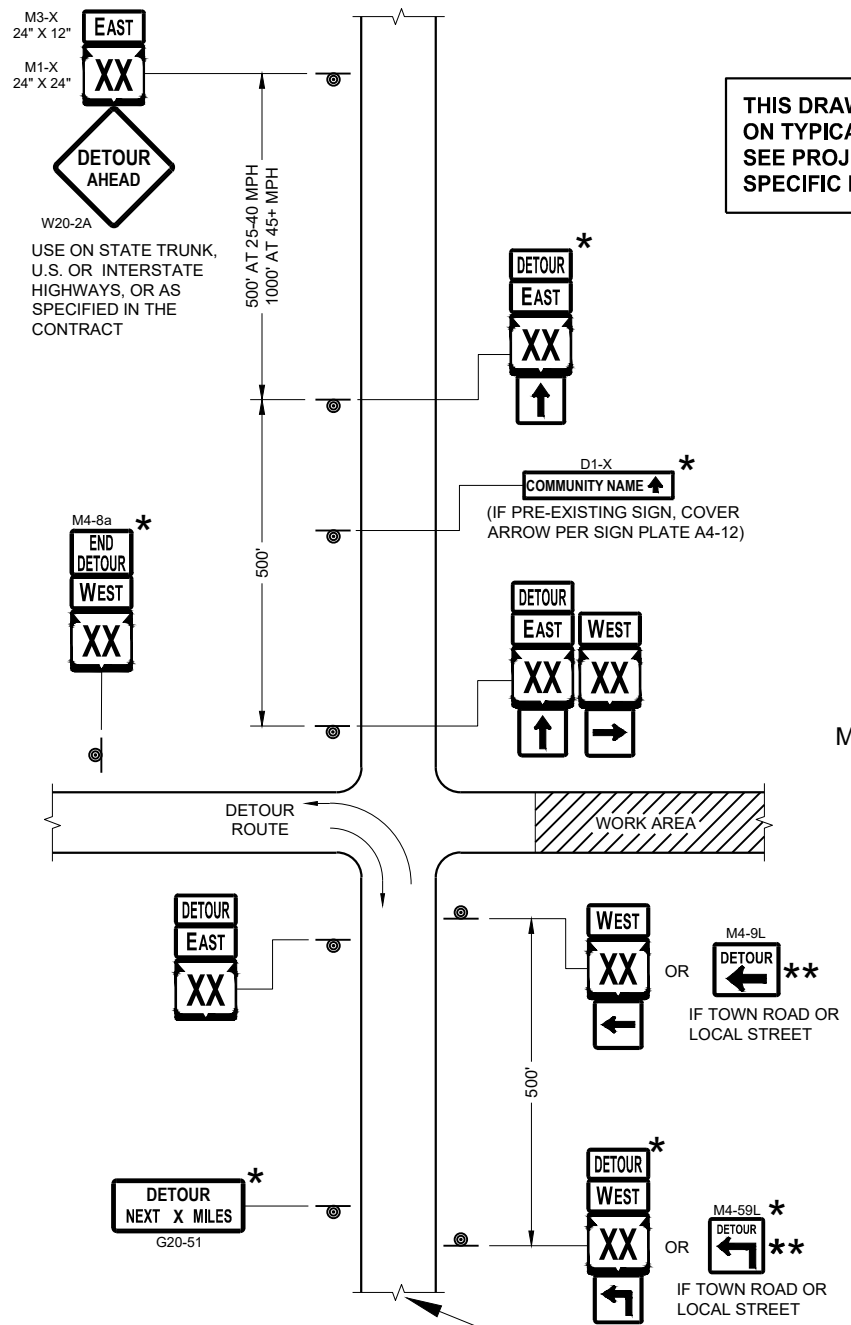
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

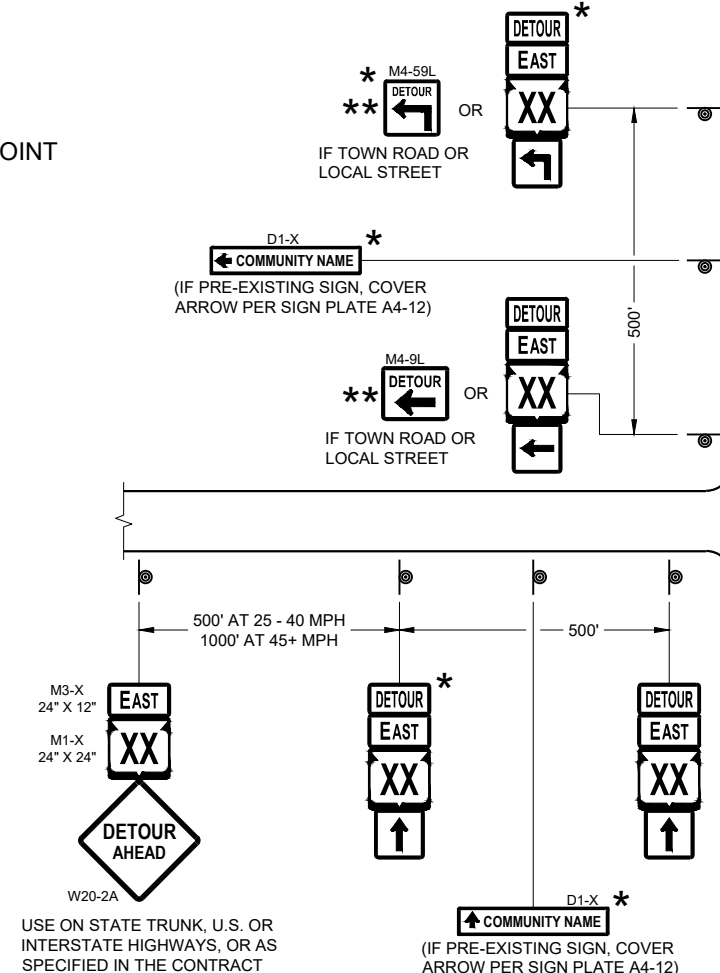
- M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING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

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

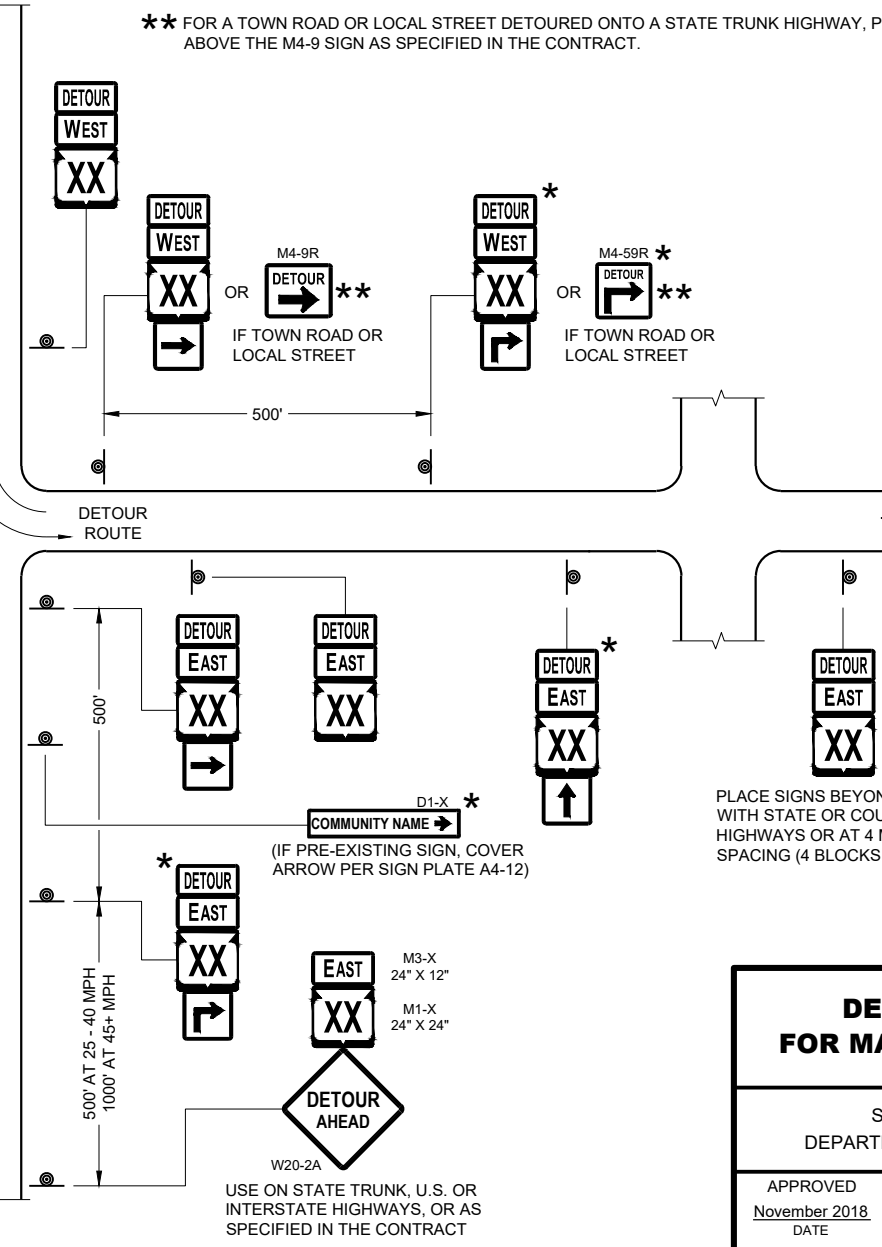
THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL DETOUR SIGN LAYOUT AND SPACING. SEE PROJECT DETOUR SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.



MATCH POINT



DETAIL F
DETOUR SIGNING



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

DETOUR SIGNING FOR MAINLINE CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2018 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

GENERAL NOTES

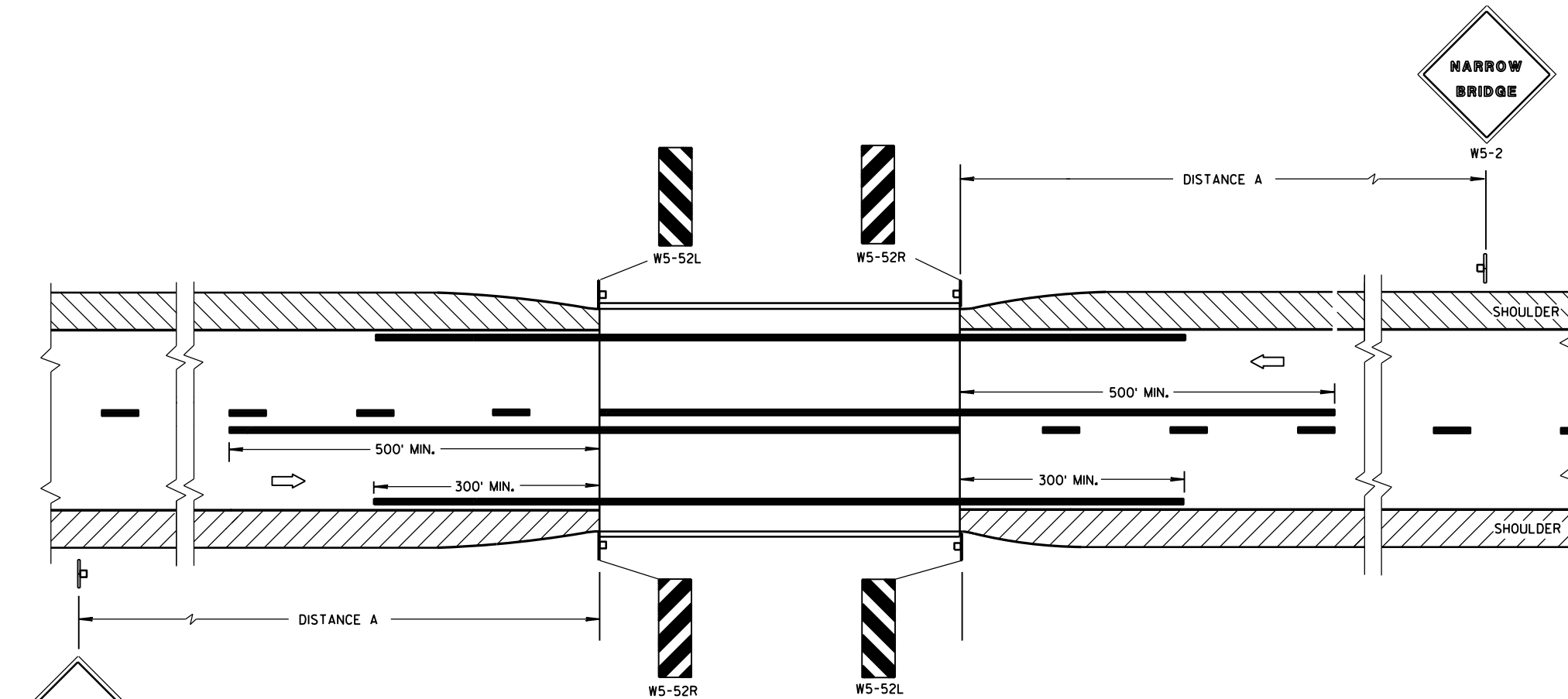
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

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

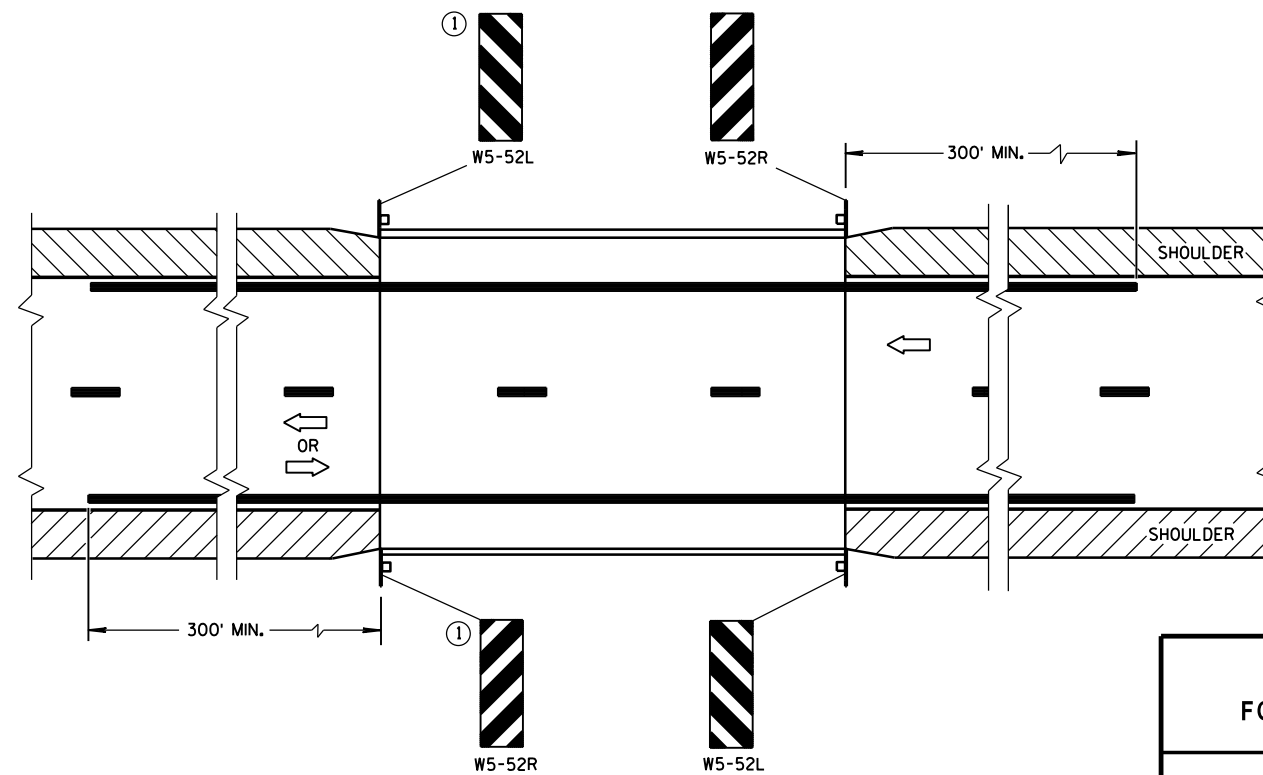
① OMIT ON ONE-WAY TRAVELLED WAYS.

➡ DIRECTION OF TRAFFIC



SITUATION 1

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



SITUATION 2

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

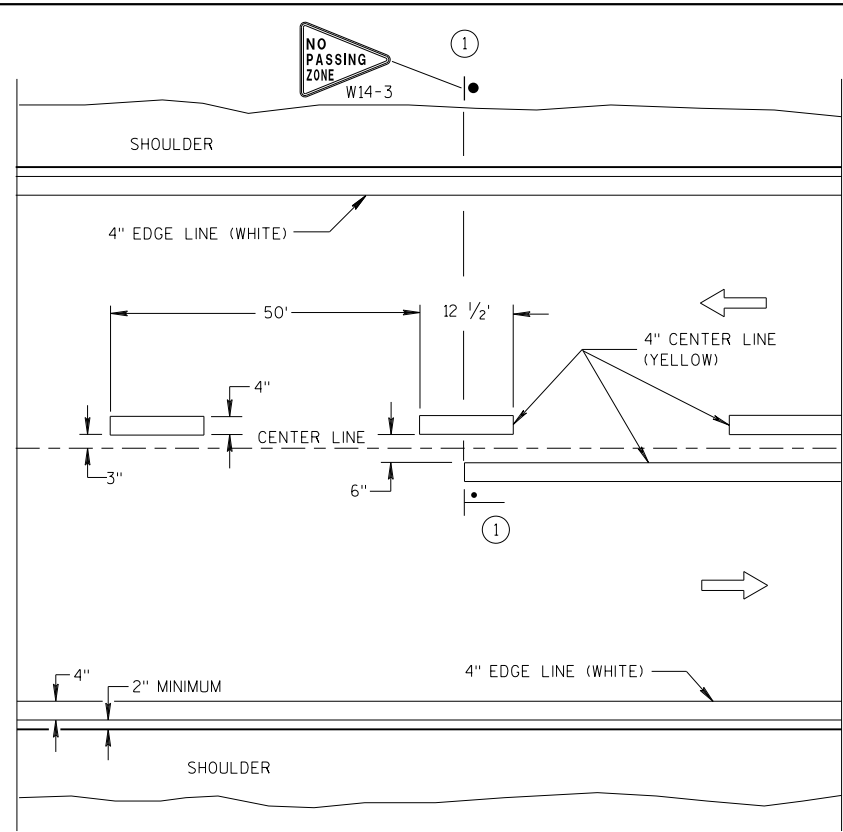
DISTANCE TABLE

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

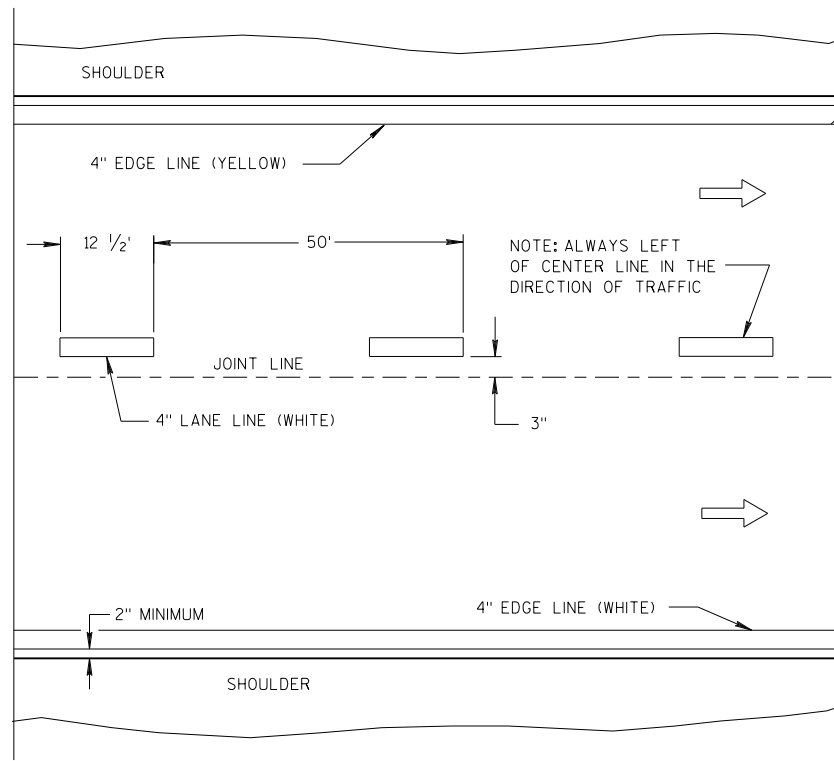
SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA

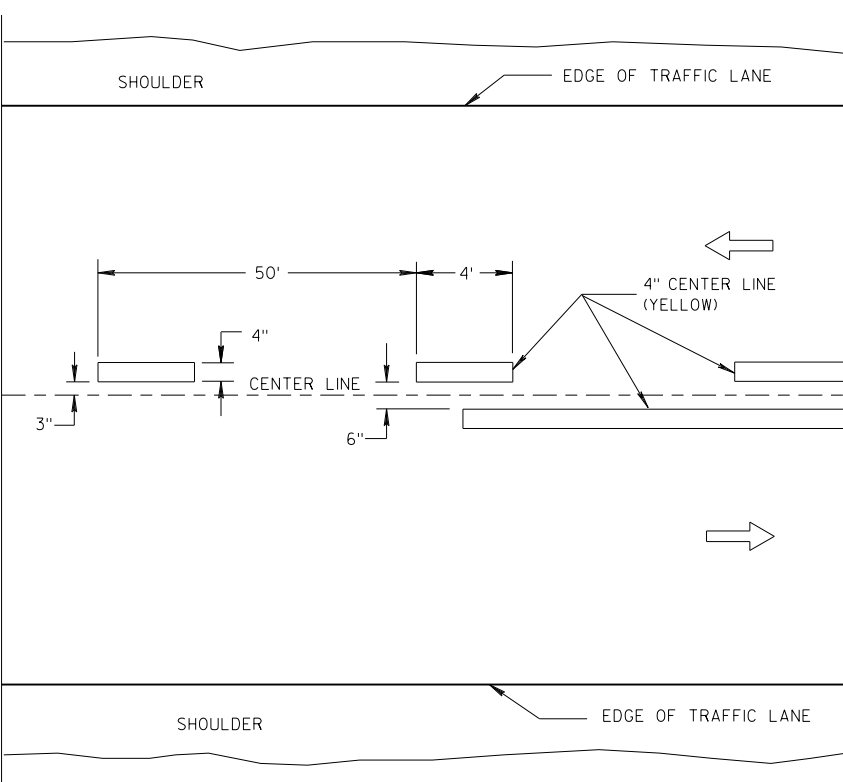


TWO WAY TRAFFIC

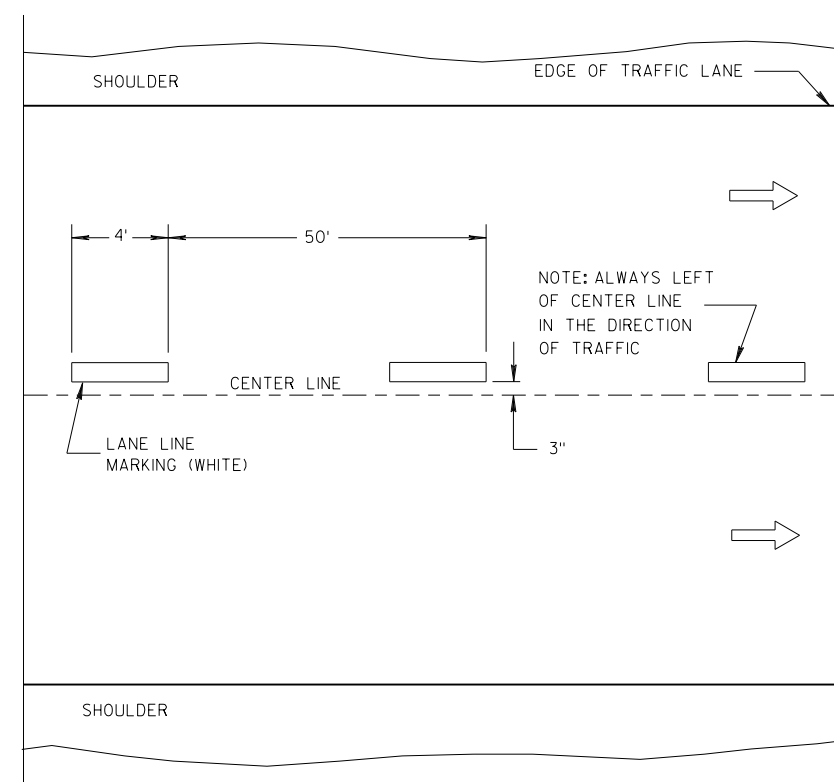


ONE WAY TRAFFIC

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 LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING.

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL

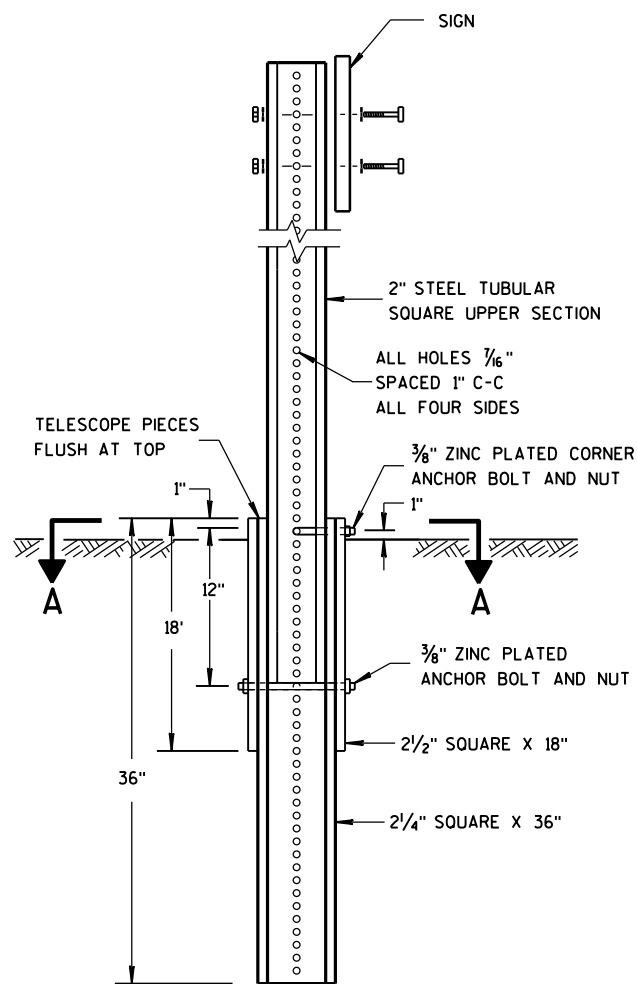
LEGEND

- "T" MARKING
- POST MOUNTED SIGN

LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE 7/2018 /S/ Matthew R. Rauch
STATE SIGNING AND MARKING ENGINEER
FHWA



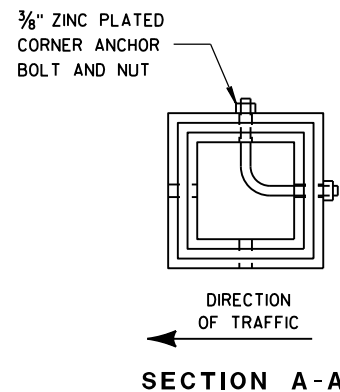
DETAIL OF TUBULAR STEEL SIGN POST

TUBULAR STEEL POSTS

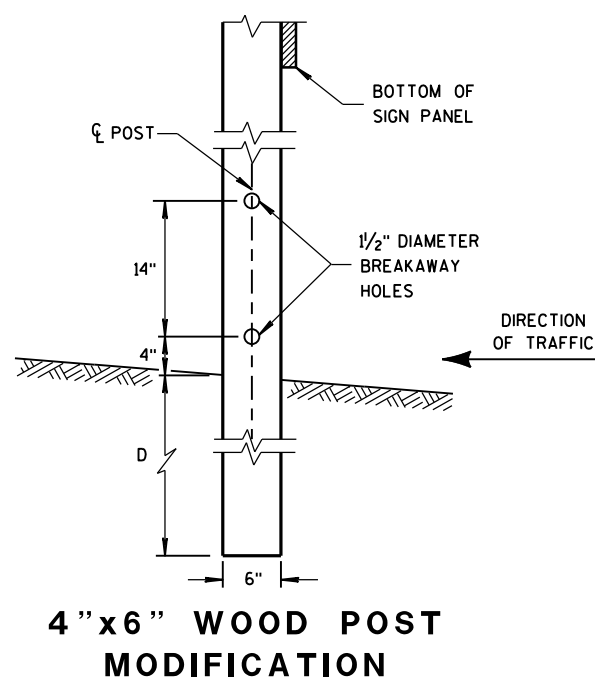
AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

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

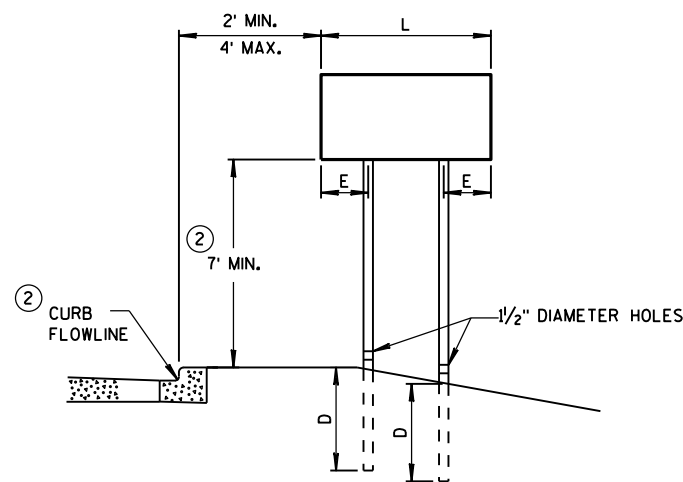
SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.



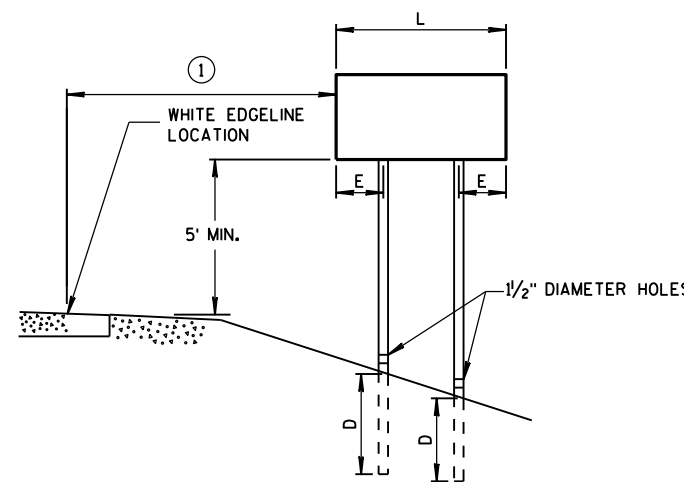
SECTION A-A



4" X 6" WOOD POST MODIFICATION



URBAN AREA



RURAL AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST EMBEDMENT DEPTH

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

4" X 6" WOOD POST

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

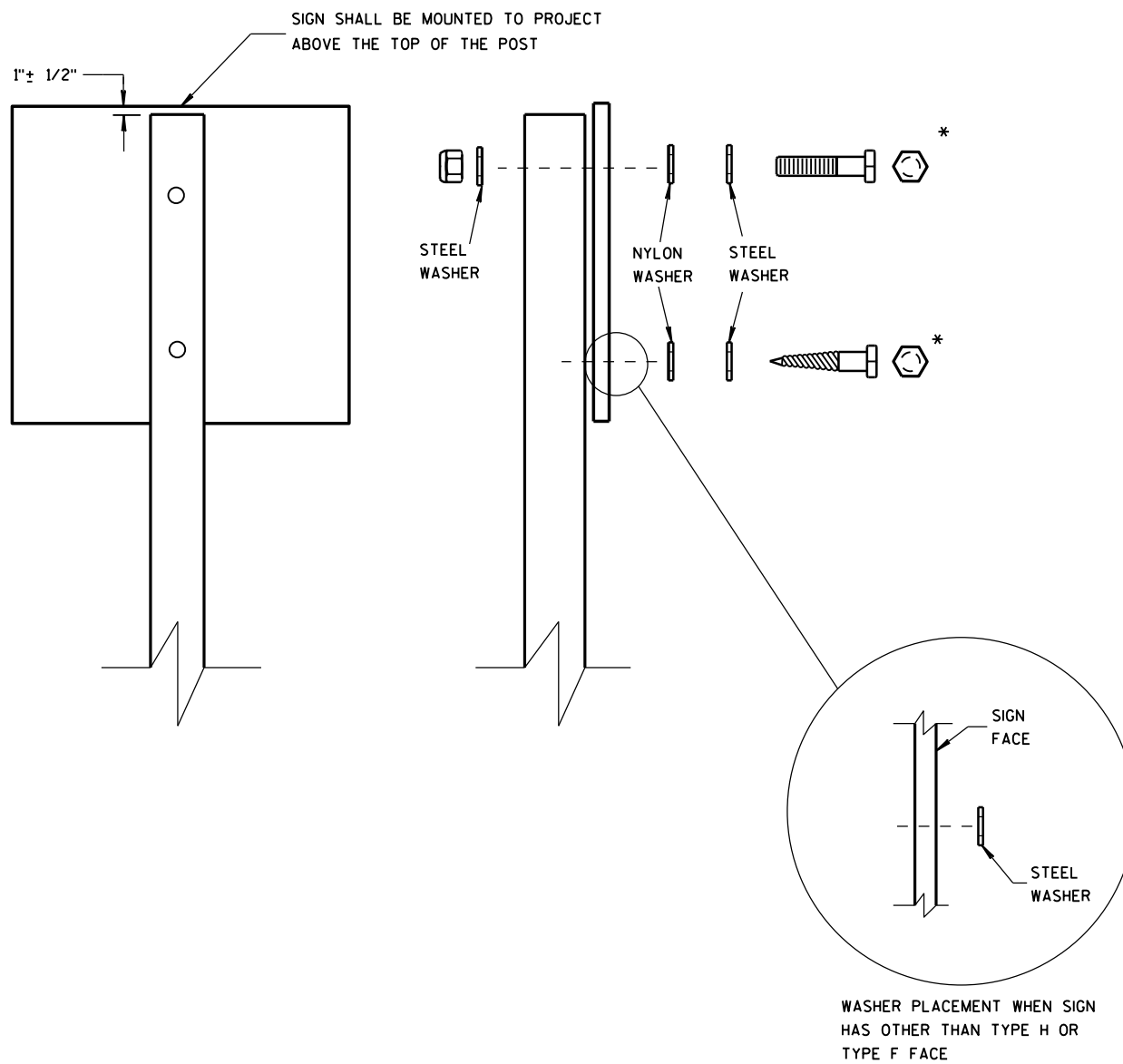
SEE NOTE ③

GENERAL NOTES

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

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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

A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3

B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

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

WOOD POSTS (4" x 4" or 4" x 6")

LAG SCREWS - 3/8" X 3"

MACHINE BOLTS - 5/16" X 6-1/2" OR 7" LENGTH W/ NUTS

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" LENGTH W/ NUTS

RIVETS - 5/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -

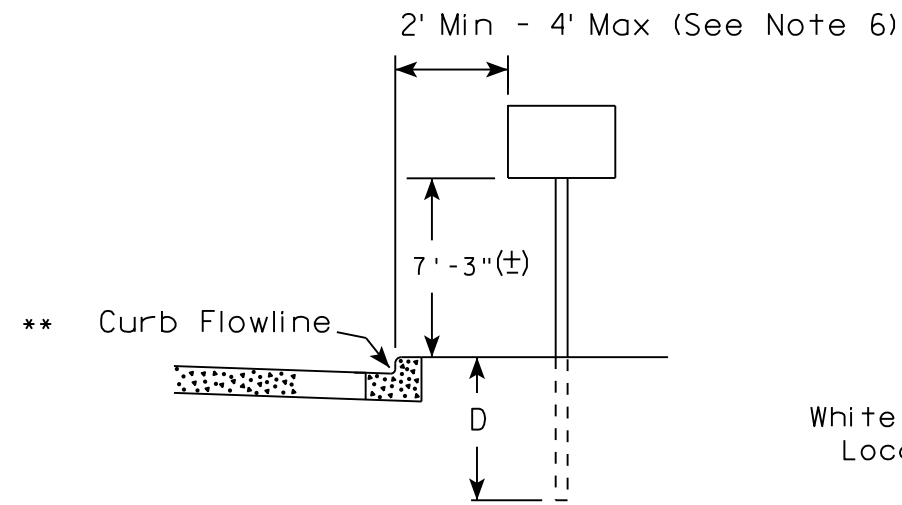
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL

1-1/4" O.D. X 3/8" I.D. X .080 NYLON FOR ALL TYPE H SIGNS

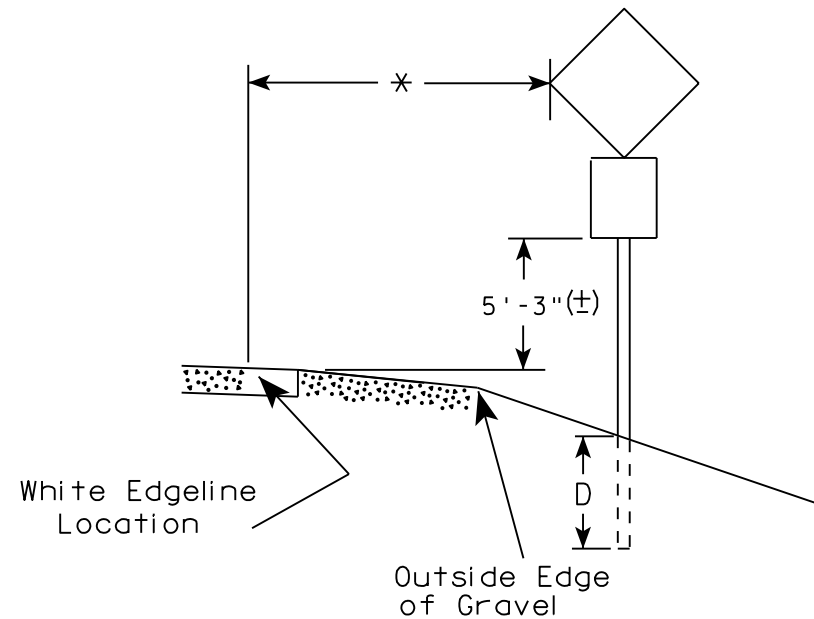
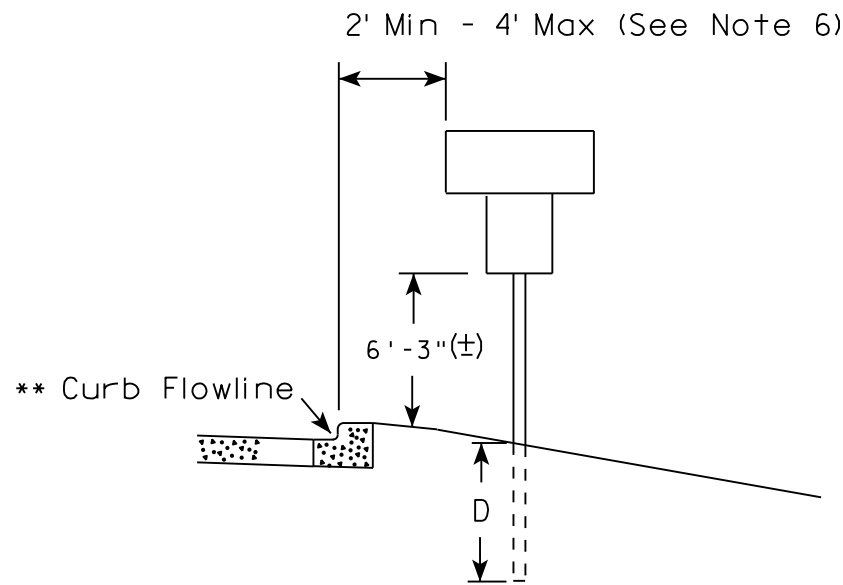
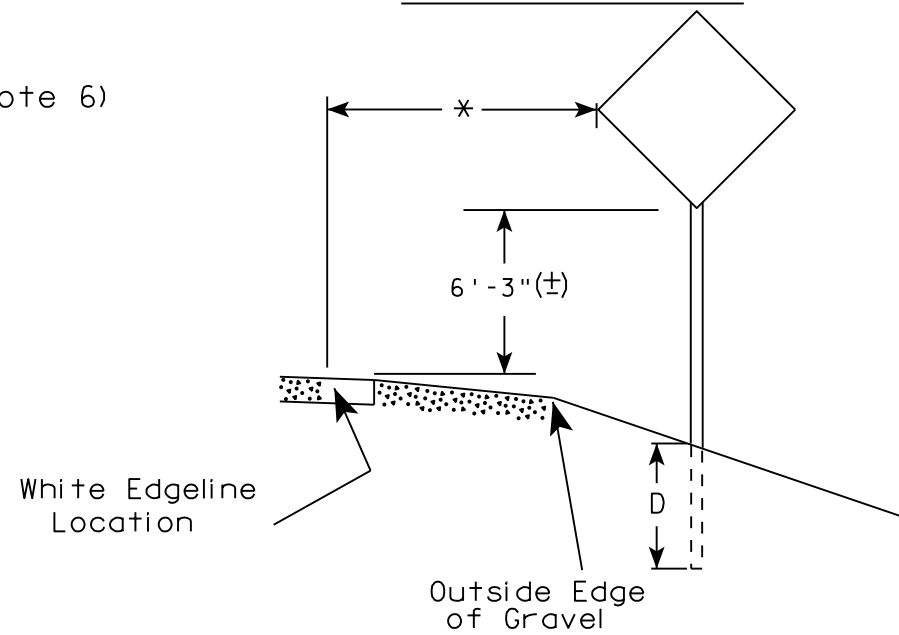
* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

ATTACHMENT OF SIGNS TO POSTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/s/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

URBAN AREA



RURAL AREA (See Note 2)



POST EMBEDMENT DEPTH

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

GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on 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. J-Assemblies are considered to be one sign for mounting height.
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" (±).

* * 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.

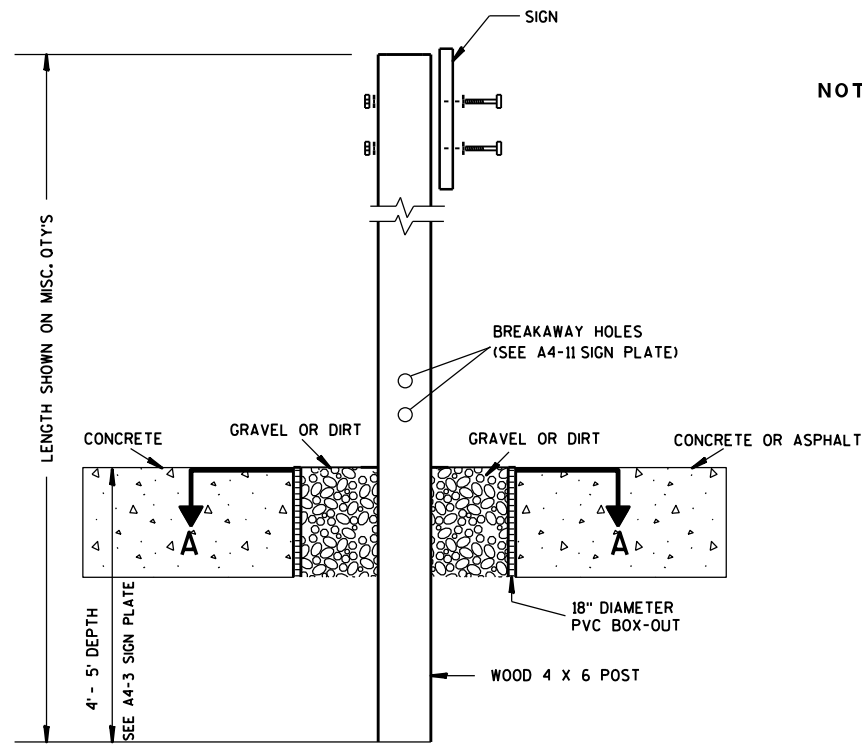
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

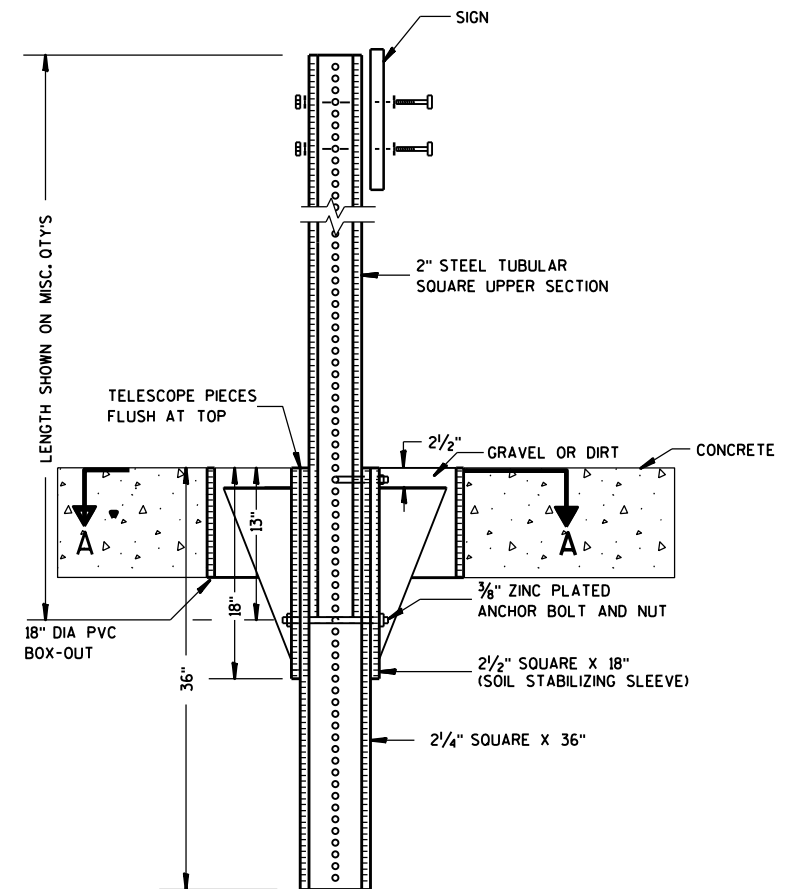
DATE 8/21/17 PLATE NO. A4-3.21



ELEVATION VIEW

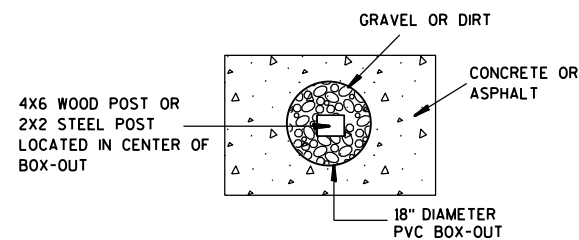
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ ASPHALT INSTALLATIONS

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

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*
for State Traffic Engineer

DATE 1/27/14 PLATE NO. A4-3B.1

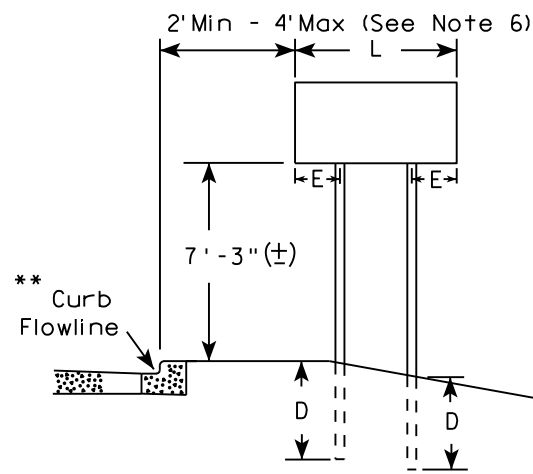
7

7

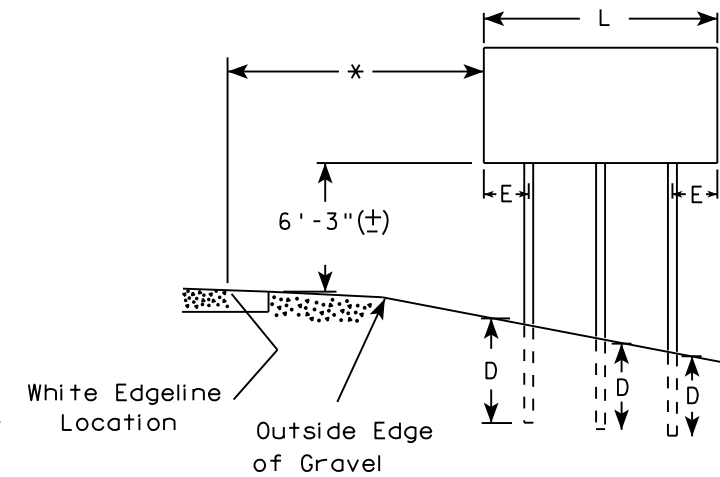
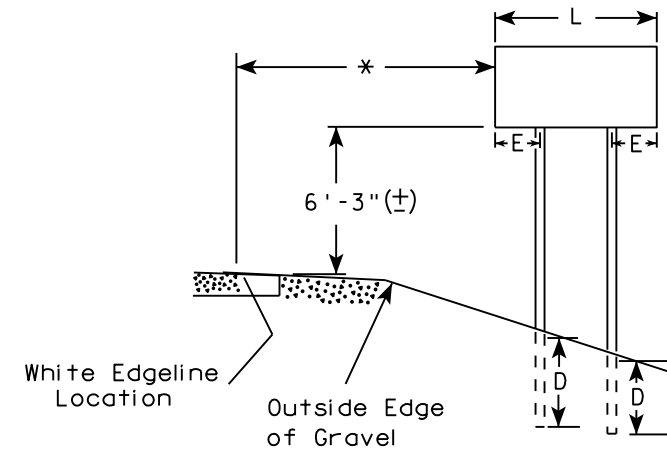
GENERAL NOTES

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

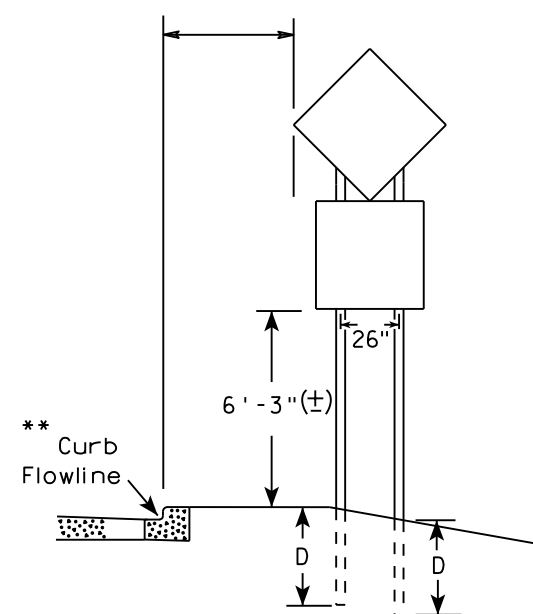
URBAN AREA



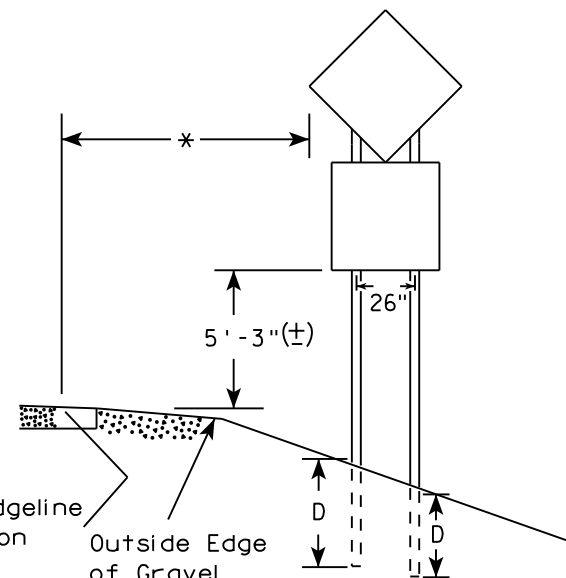
RURAL AREA (See Note 3)



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



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

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

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

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

POST EMBEDMENT DEPTH

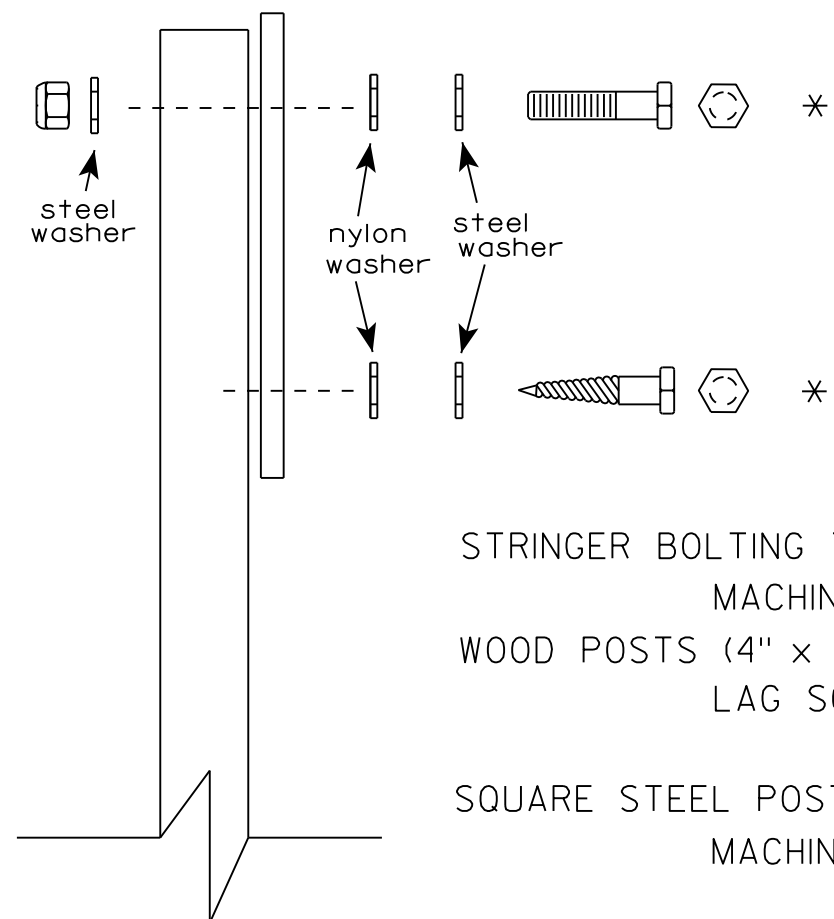
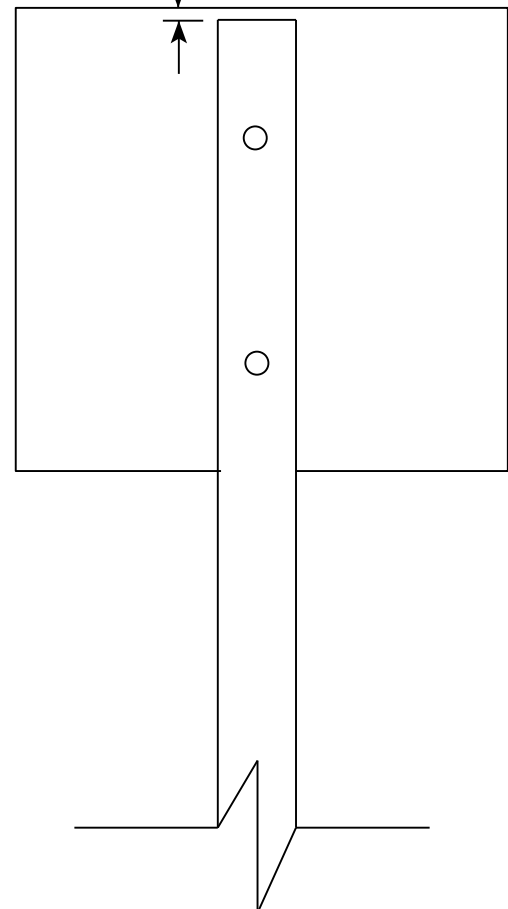
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

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

1"± 1/2"

SIGN SHALL BE MOUNTED TO PROJECT ABOVE THE TOP OF THE POST



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

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

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

- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - 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

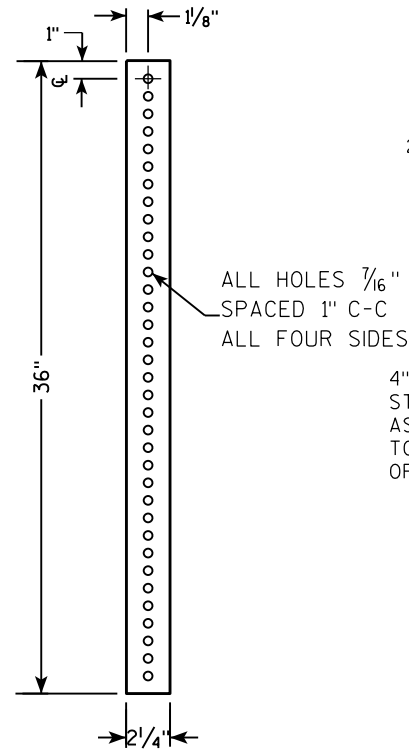
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

7

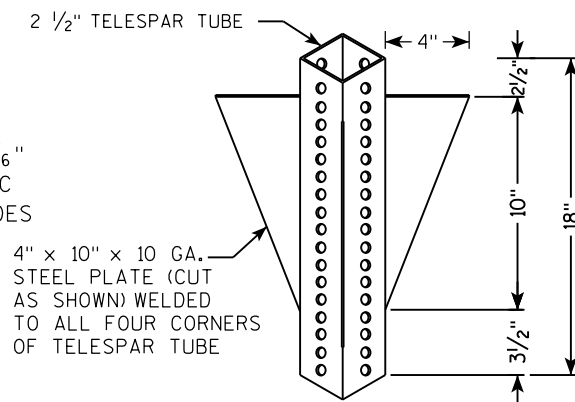
ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 8/11/16	PLATE NO. A4-8.8

**TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM**

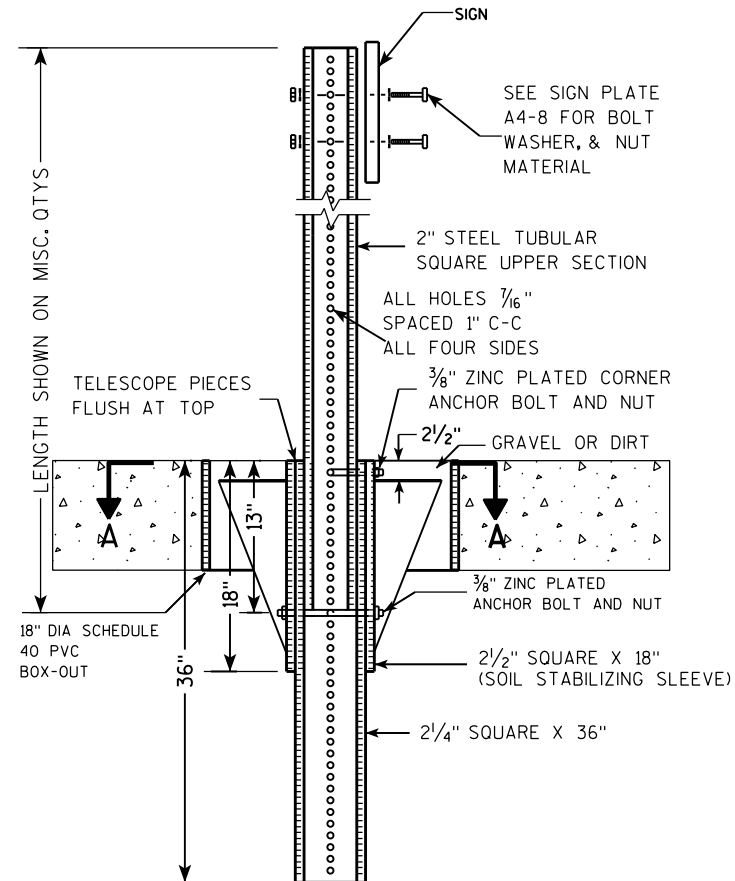
2 1/4" SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



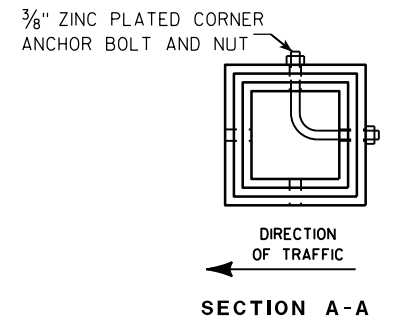
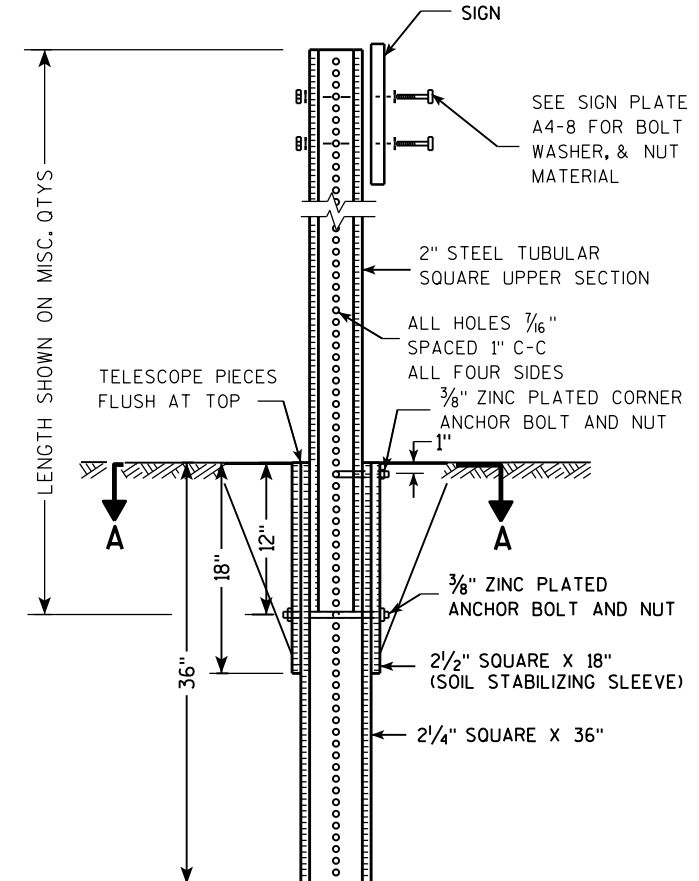
2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH



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



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



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

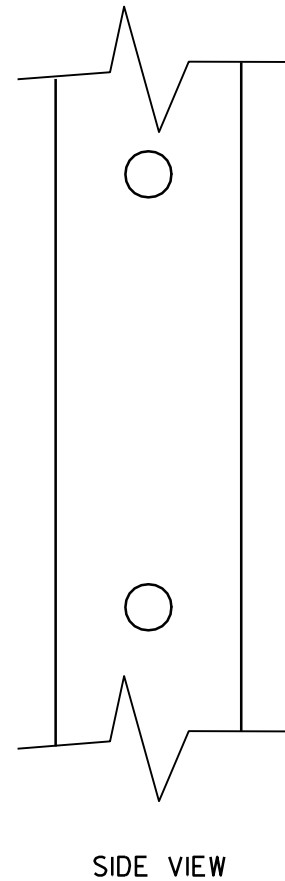
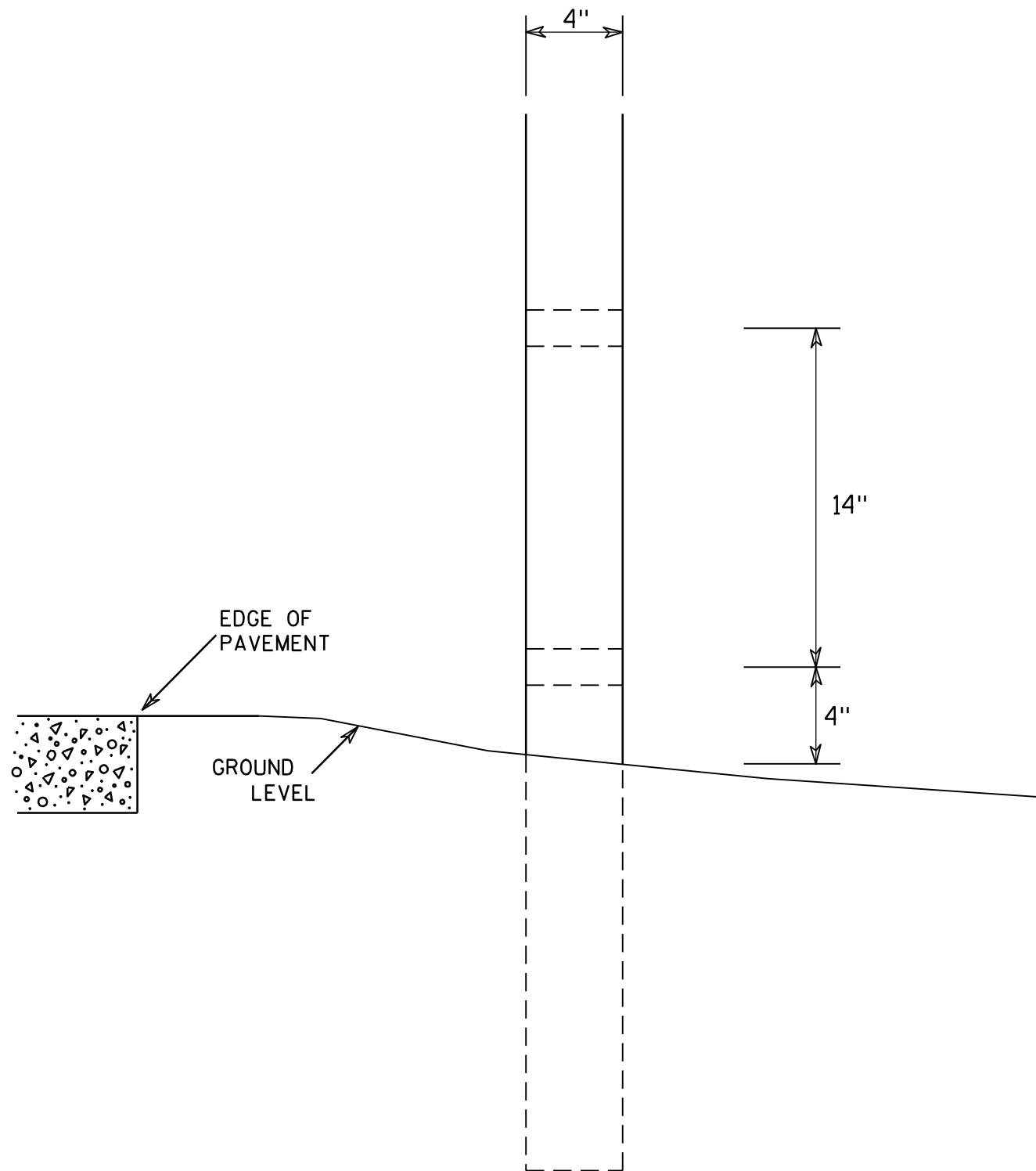
Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

**TUBULAR STEEL
SIGN POST
A4-9**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/05/15 PLATE NO. A4-9.9




GENERAL NOTES

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

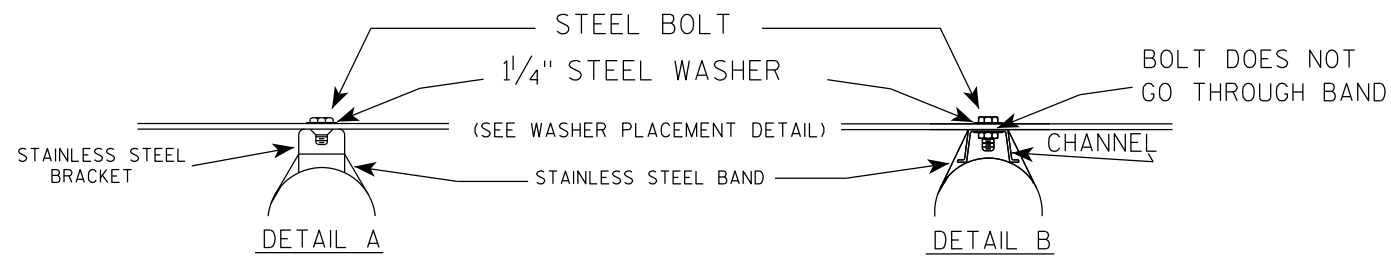
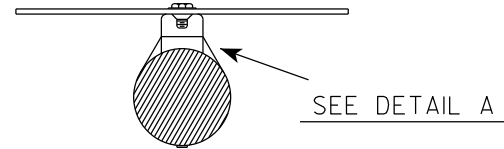
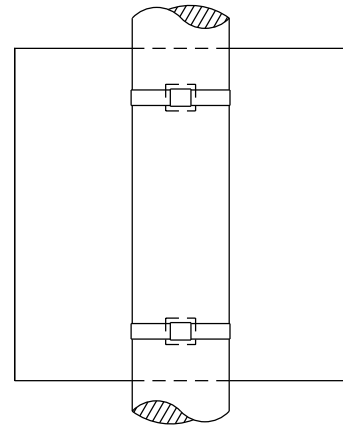
7

7

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

BANDING

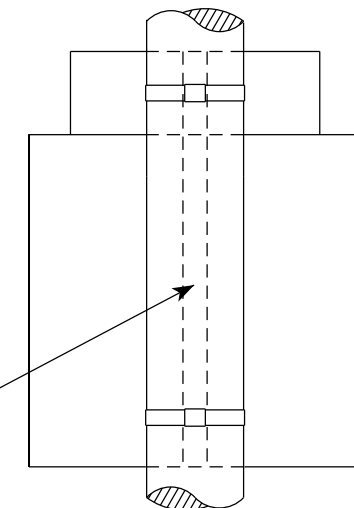
SINGLE SIGN



GENERAL NOTES

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

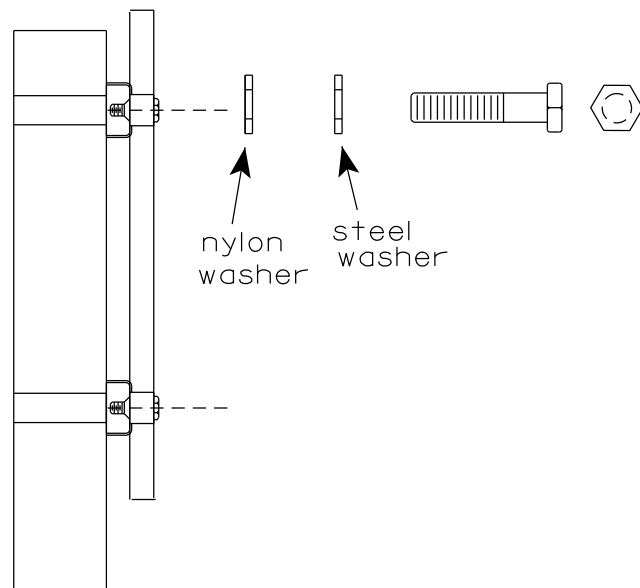
"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



WASHER PLACEMENT



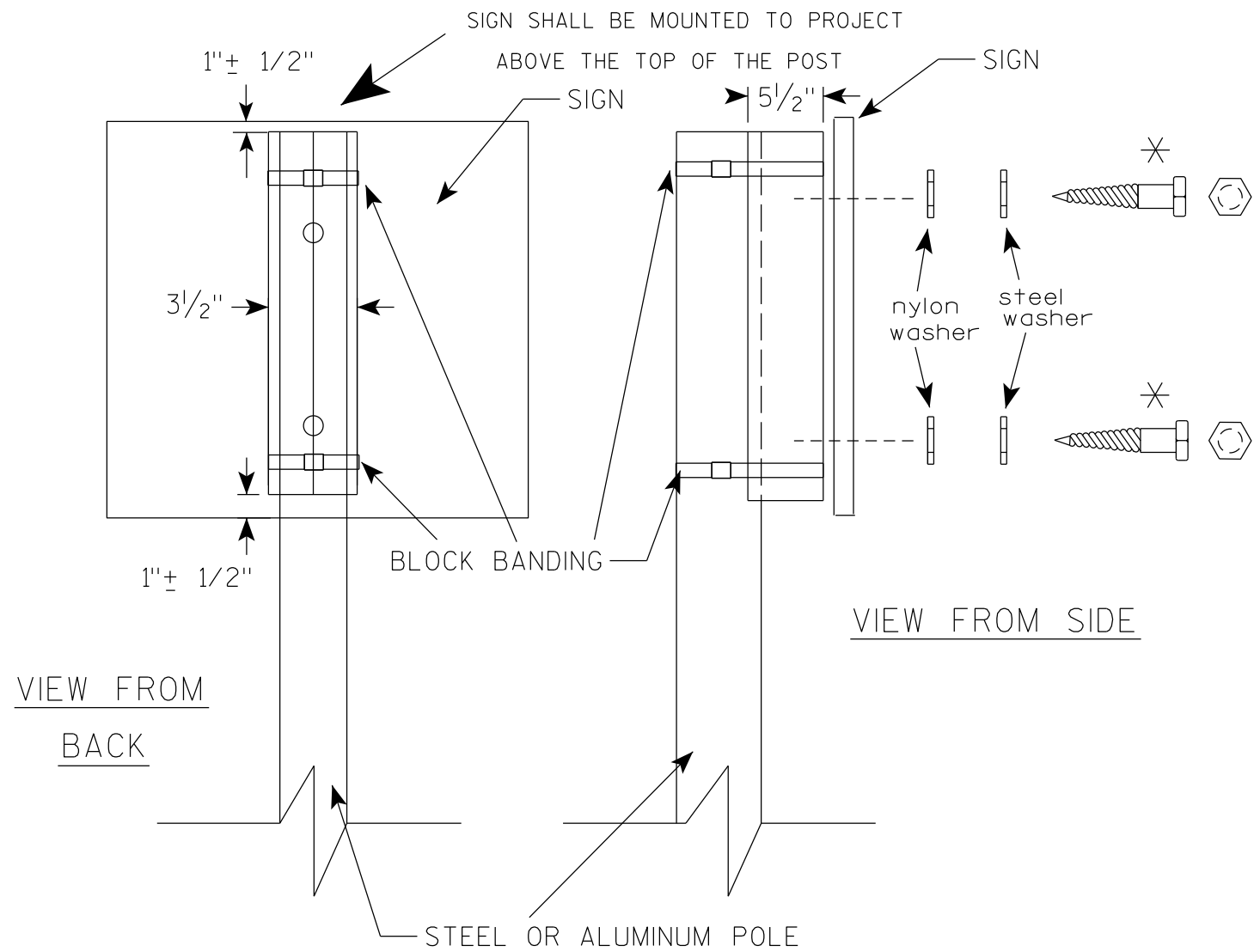
WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

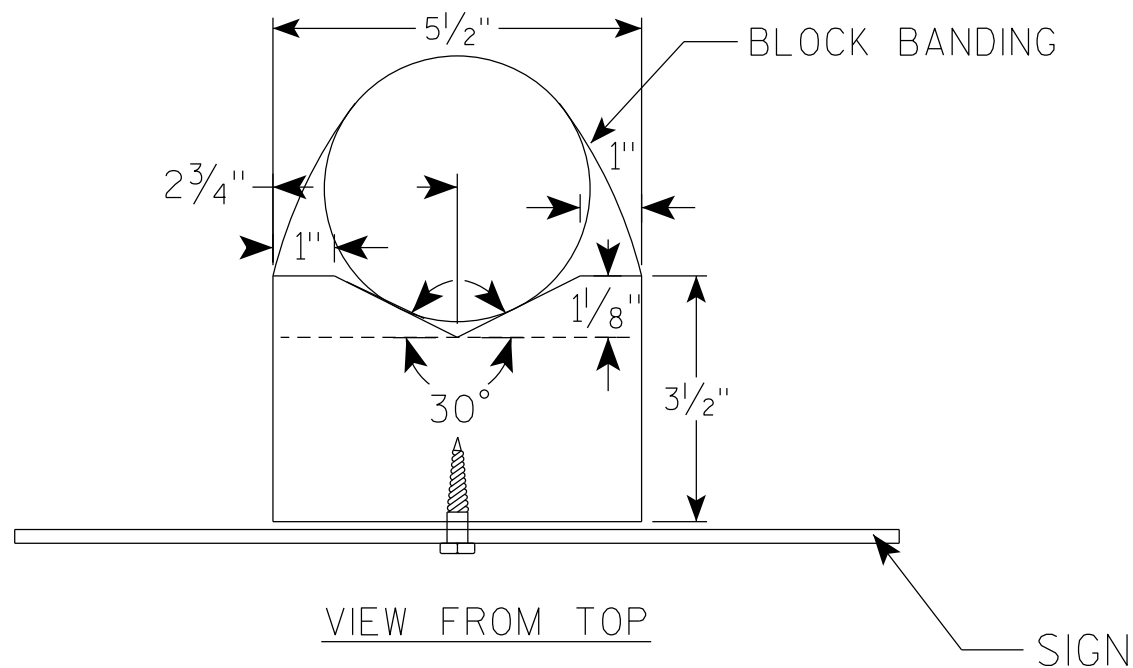
DATE 6/10/19 PLATE NO. A5-9.4



GENERAL NOTES

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

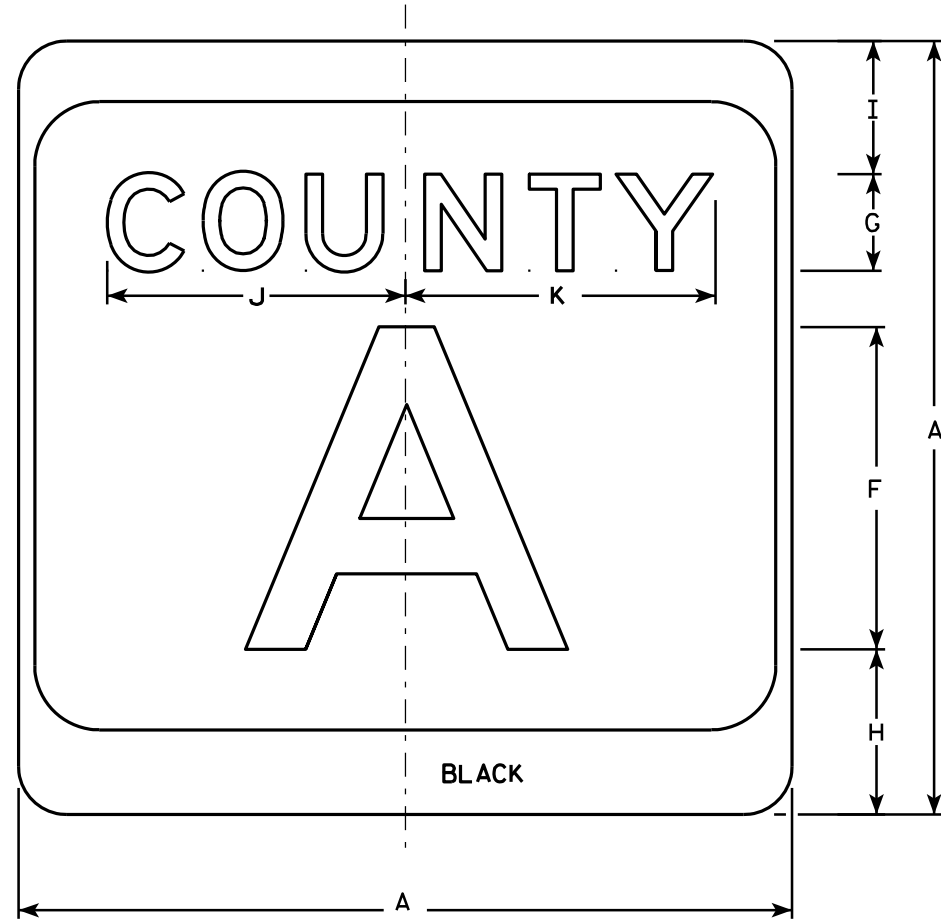
* LAG BOLTS SHALL BE 3/8" X 2 1/2"



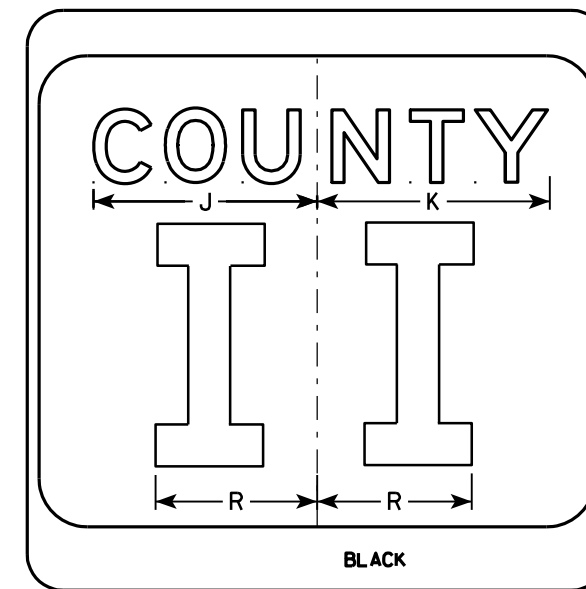
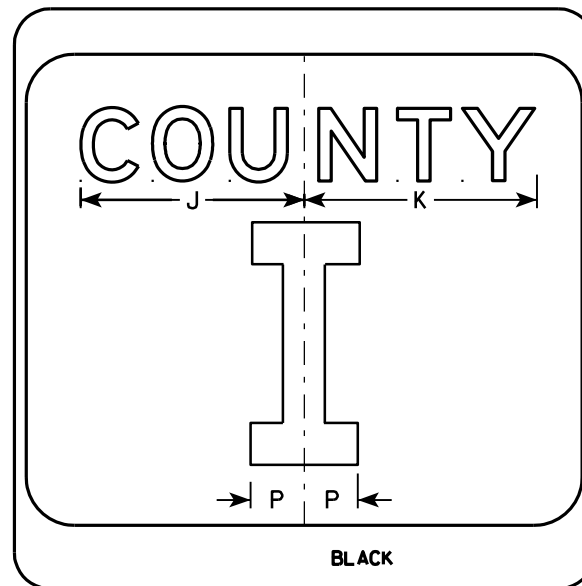
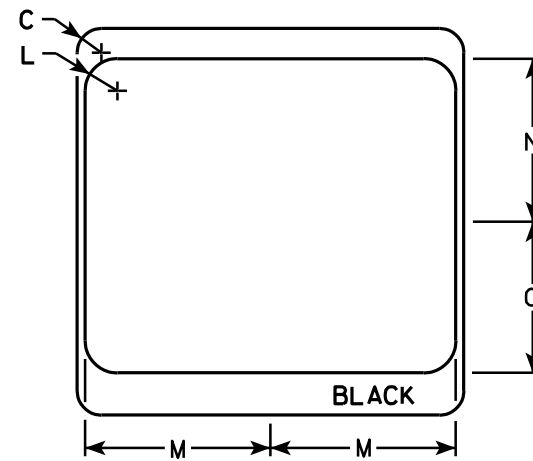
BLOCK BANDING DETAIL (V-BLOCK OPTION)	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R Rauch</i> For State Traffic Engineer
DATE 6/10/19	PLATE NO. A5-10.2

NOTES

1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White & Black - See Note 7
Message - Black
3. Message Series - see Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Message Series E for 1 letter.
Message Series D for 2 letters unless message is too big then Series C.
Message Series C for 3 letters unless message is too big then Series B.
6. Substitute appropriate letters & optically center to achieve proper balance.
7. Permanent Signs
Background - Type H Reflective
Detour or temporary Signs
Background - Reflective



M1-5A



7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

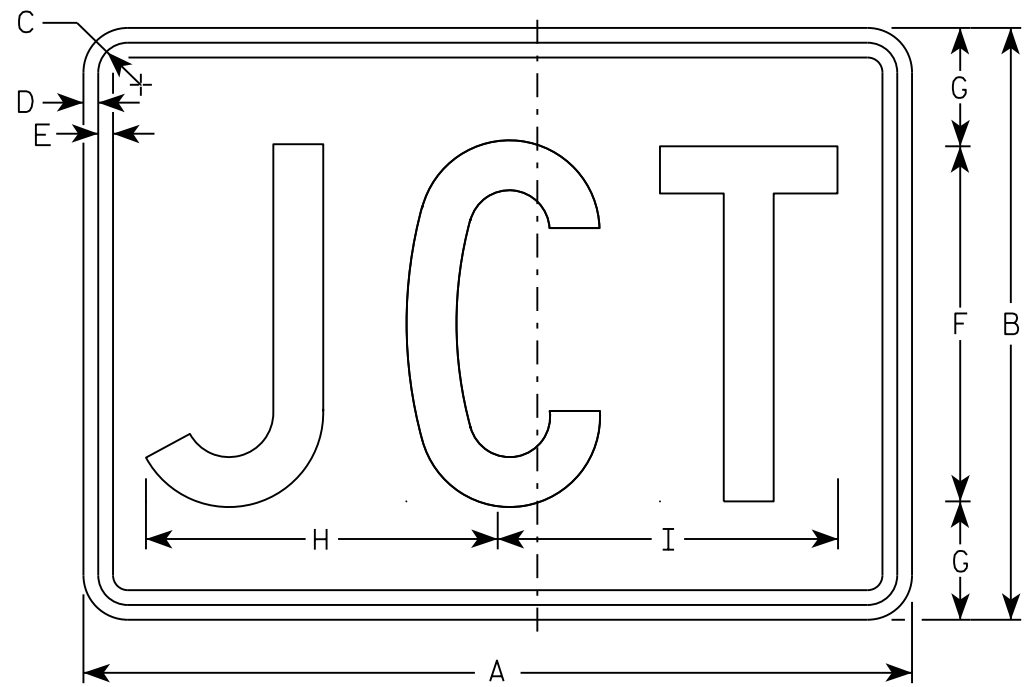
CTH MARKER
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

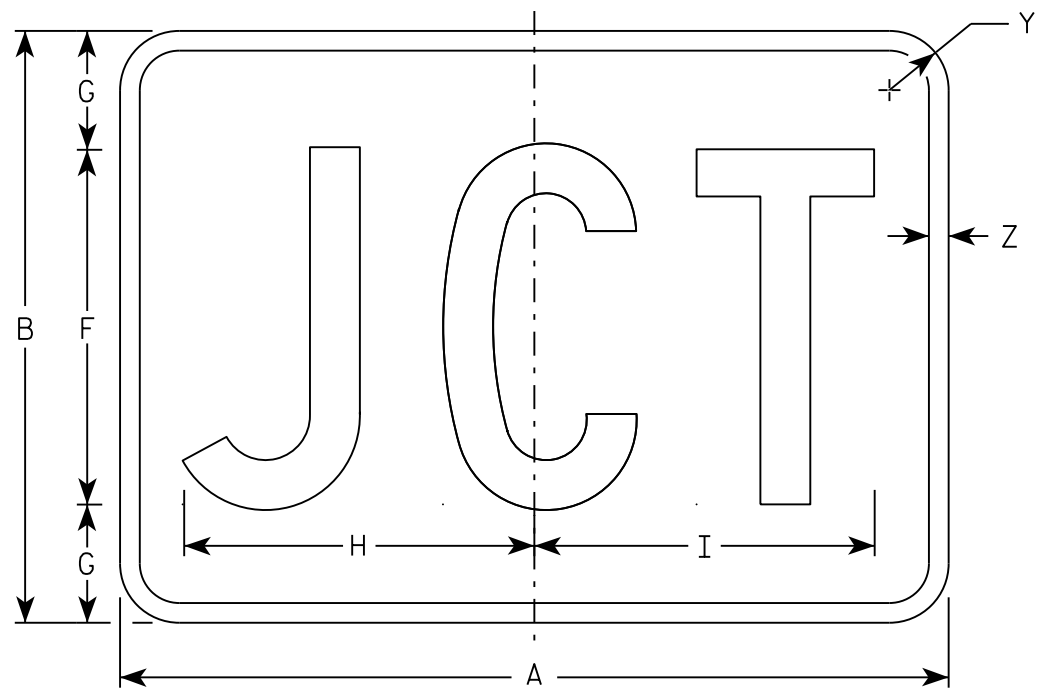
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 9/27/11 PLATE NO. MI-5A.8

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



M2-1
MM2-1
MP2-1



MB2-1
MK2-1
MN2-1
MR2-1

NOTES

1. Sign is Type II - Type H
2. Color:
Background - See note 5
Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M2-1 Background - White
Message - Black
MB2-1 Background - Blue
Message - White
MK2-1 Background - Green
Message - White
MM2-1 Background - White
Message - Green
MN2-1 Background - Brown
Message - White
MP2-1 Background - White
Message - Blue
MR2-1 Background - Brown
Message - Yellow

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21	15	1 1/8	3/8	3/8	9	3	8 7/8	8 5/8																1 1/2	1/2	2.20
3	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40
4	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40
5	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40

STANDARD SIGN
M2-1

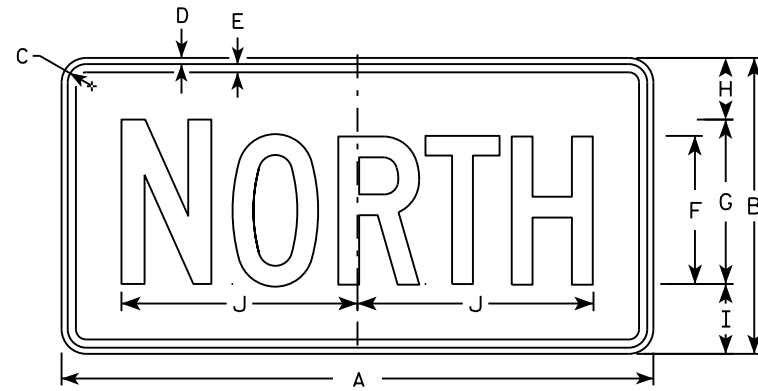
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

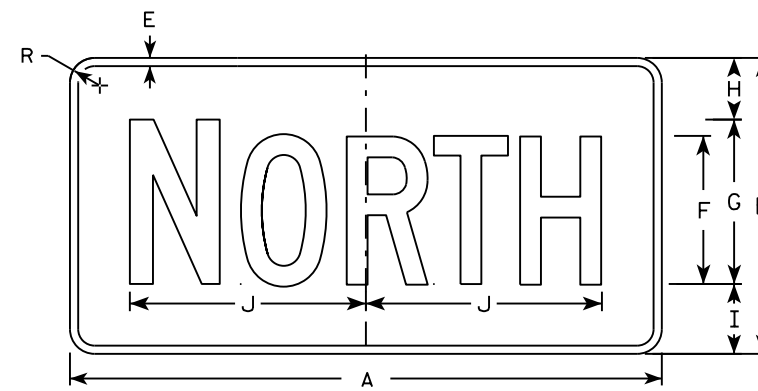
DATE 10/15/15 PLATE NO. M2-1.12

NOTES

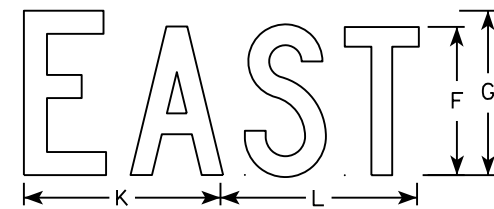
- All Signs Type II - Type H
- Color:
 - Background - See note 5
 - Message - See note 5
- Message Series - C
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M3-1 thru M3-4 Background - White
 Message - Black
 MB3-1 thru MB3-4 Background - Blue
 Message - White
 MK3-1 thru MK3-4 Background - Green
 Message - White
 MM3-1 thru MM3-4 Background - White
 Message - Green
 MN3-1 thru MN3-4 Background - Brown
 Message - White
 MP3-1 thru MP3-4 Background - White
 Message - Blue
- Note the first letter of each direction is larger than the remainder of the message.



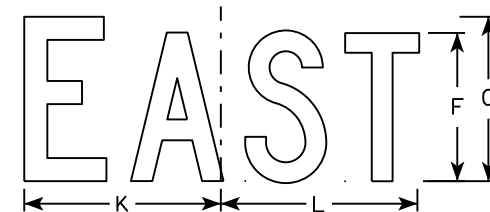
M3-1
MM3-1
MP3-1



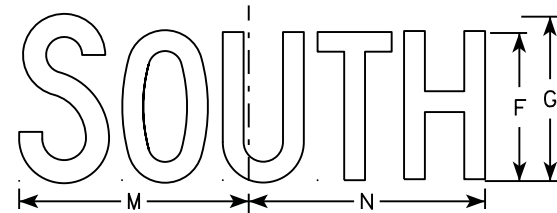
MB3-1
MK3-1
MN3-1



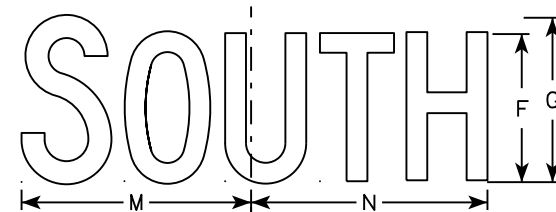
M3-2
MM3-2
MP3-2



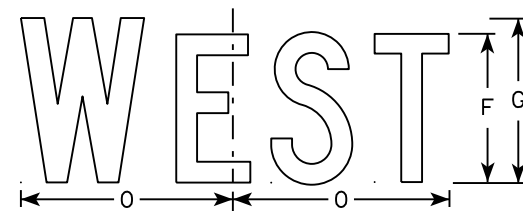
MB3-2
MK3-2
MN3-2



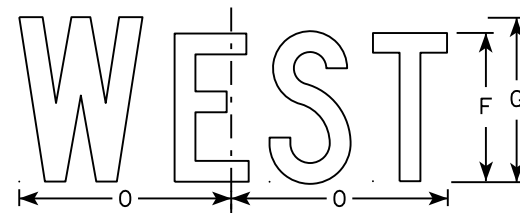
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

7

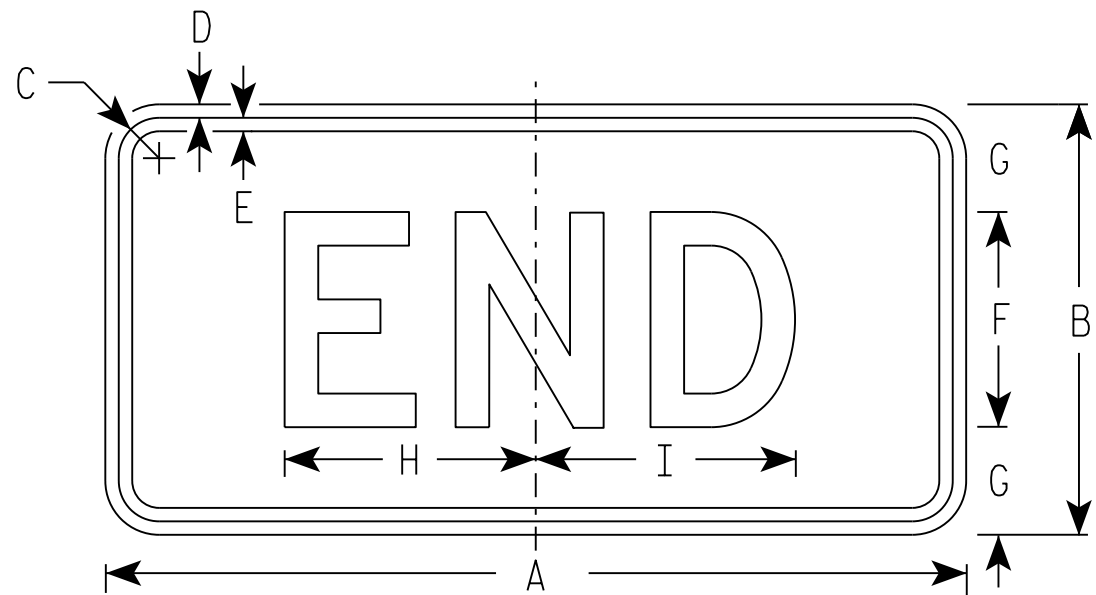
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
5	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5

STANDARD SIGNS
M3-1 thru M3-4
SERIES

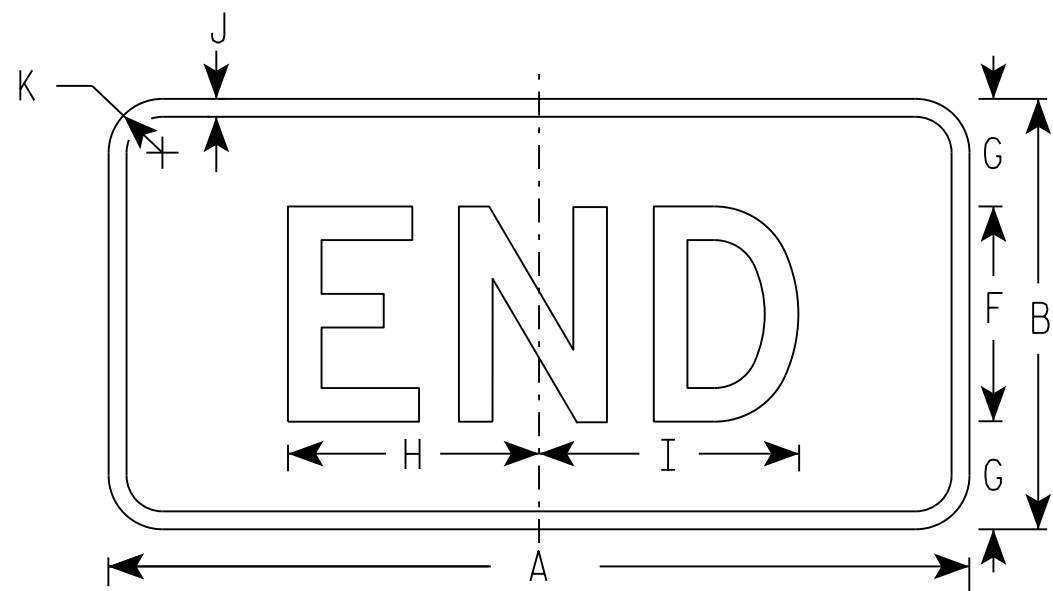
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M3-1.14



M4-6
MM4-6
MP4-6



MB4-6
MK4-6
MN4-6
MR4-6

NOTES

1. Sign is Type II - Type H
2. Color:
Background - See note 5
Message - See note 5
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-6 Background - White
Message - Black
MB4-6 Background - Blue
Message - White
MK4-6 Background - Green
Message - White
MM4-6 Background - White
Message - Green
MN4-6 Background - Brown
Message - White
MP4-6 Background - White
Message - Blue
MR4-6 Background - Brown
Message - Yellow

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	3	7	7 1/4	1/2	1 1/2																2.00
3	36	18	1 1/8	3/8	1/2	9	4 1/2	12	11 7/8	1/2	1 1/2																4.5
4	36	18	1 1/8	3/8	1/2	9	4 1/2	12	11 7/8	1/2	1 1/2																4.5
5	36	18	1 1/8	3/8	1/2	9	4 1/2	12	11 7/8	1/2	1 1/2																4.5

STANDARD SIGN
M4-6

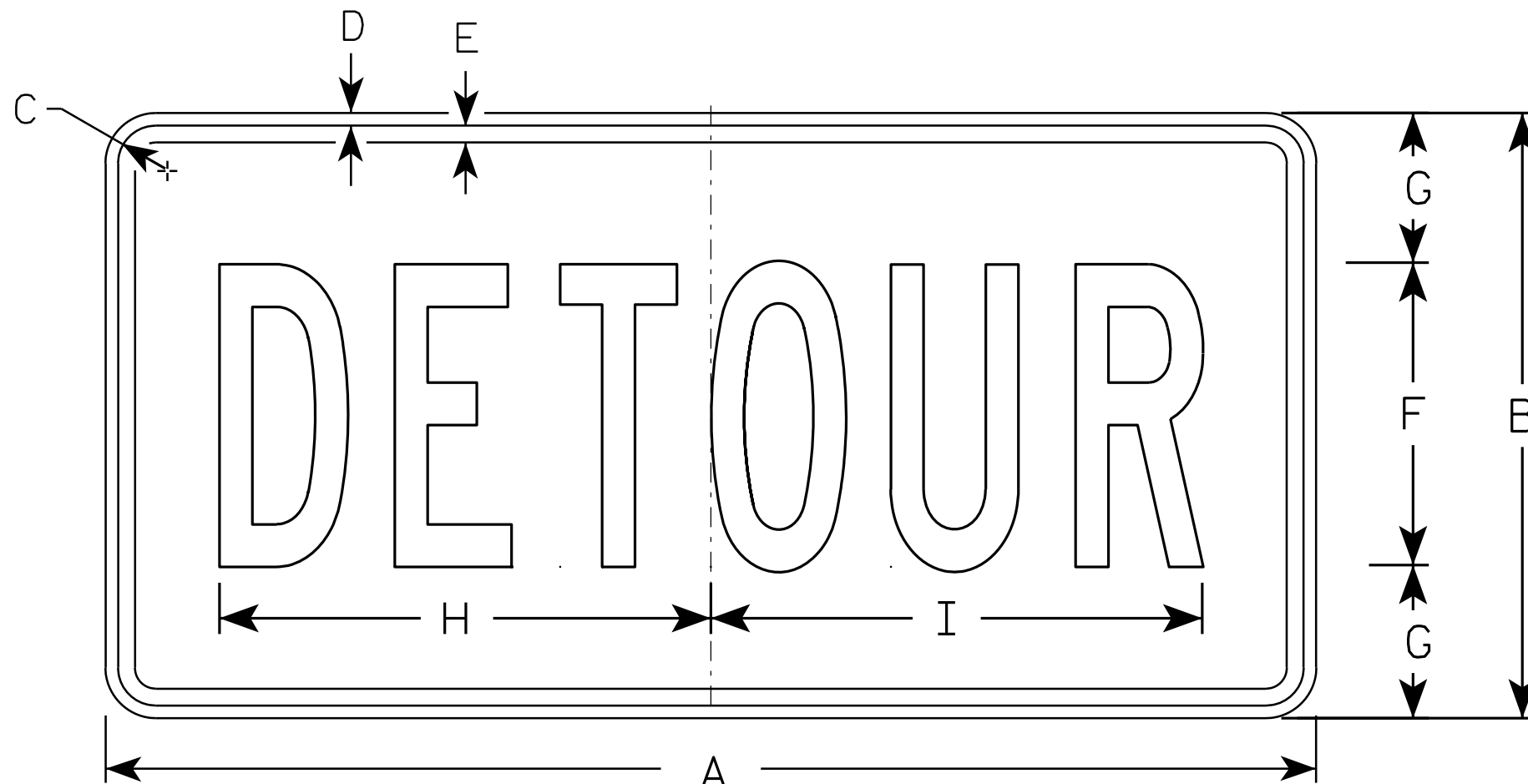
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M4-7.9

NOTES

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



M4-8

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	3	10	10 1/4																		2.0
3	36	18	1 1/8	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
4																											
5																											

STANDARD SIGN
M4-8

WISCONSIN DEPT OF TRANSPORTATION

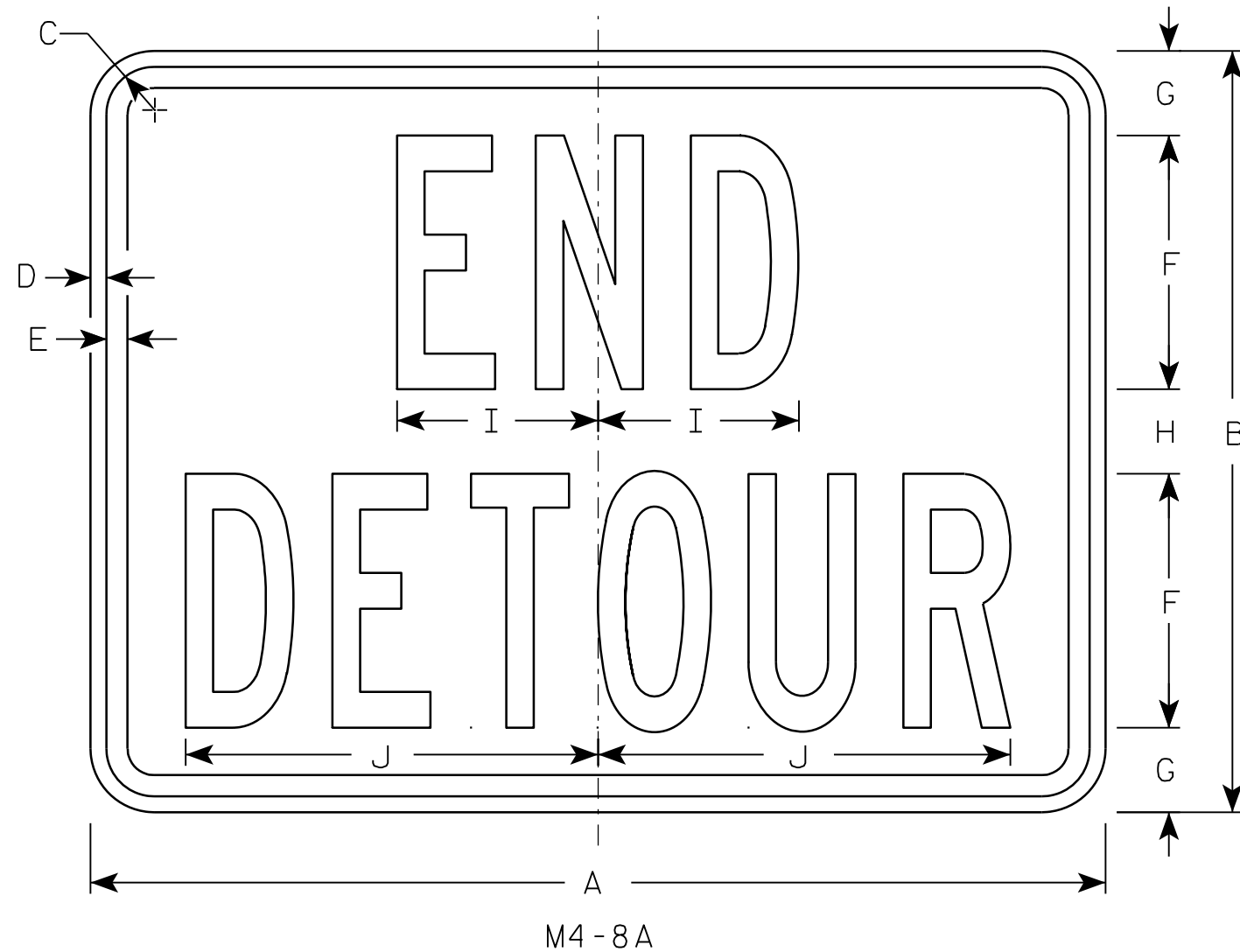
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-8.2

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

NOTES

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



7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	18	1 1/8	3/8	1/2	6	2	2	4 3/4	9 3/4																	3.0
3	30	24	1 1/8	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0
4																											
5																											

STANDARD SIGN
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

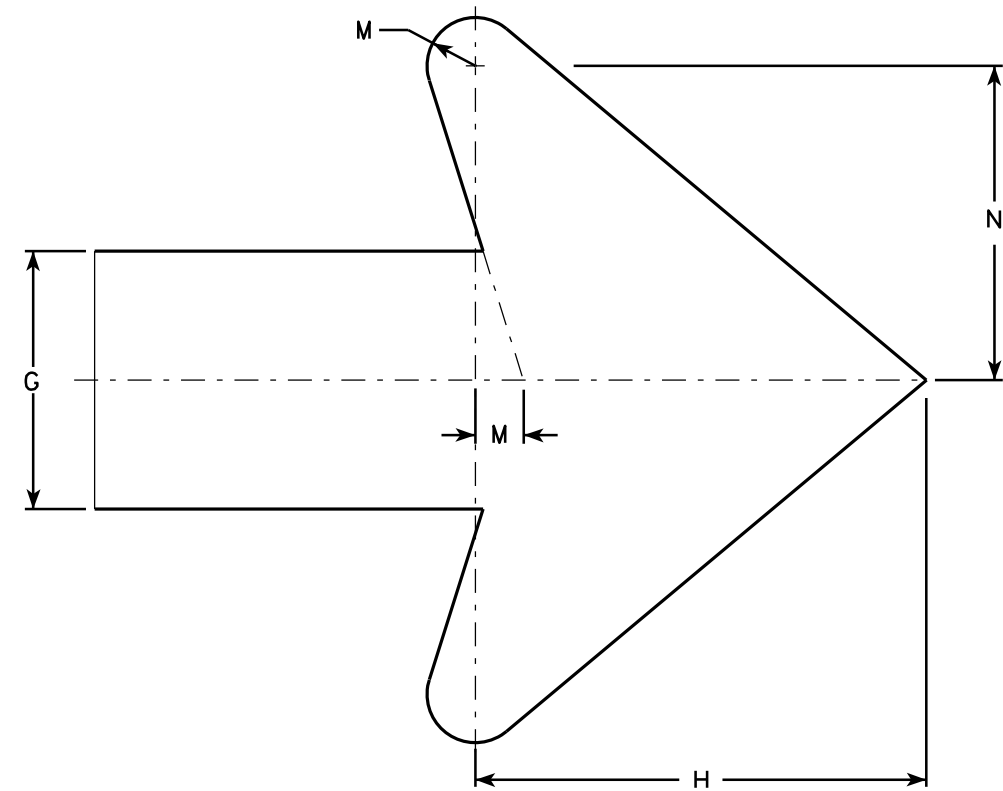
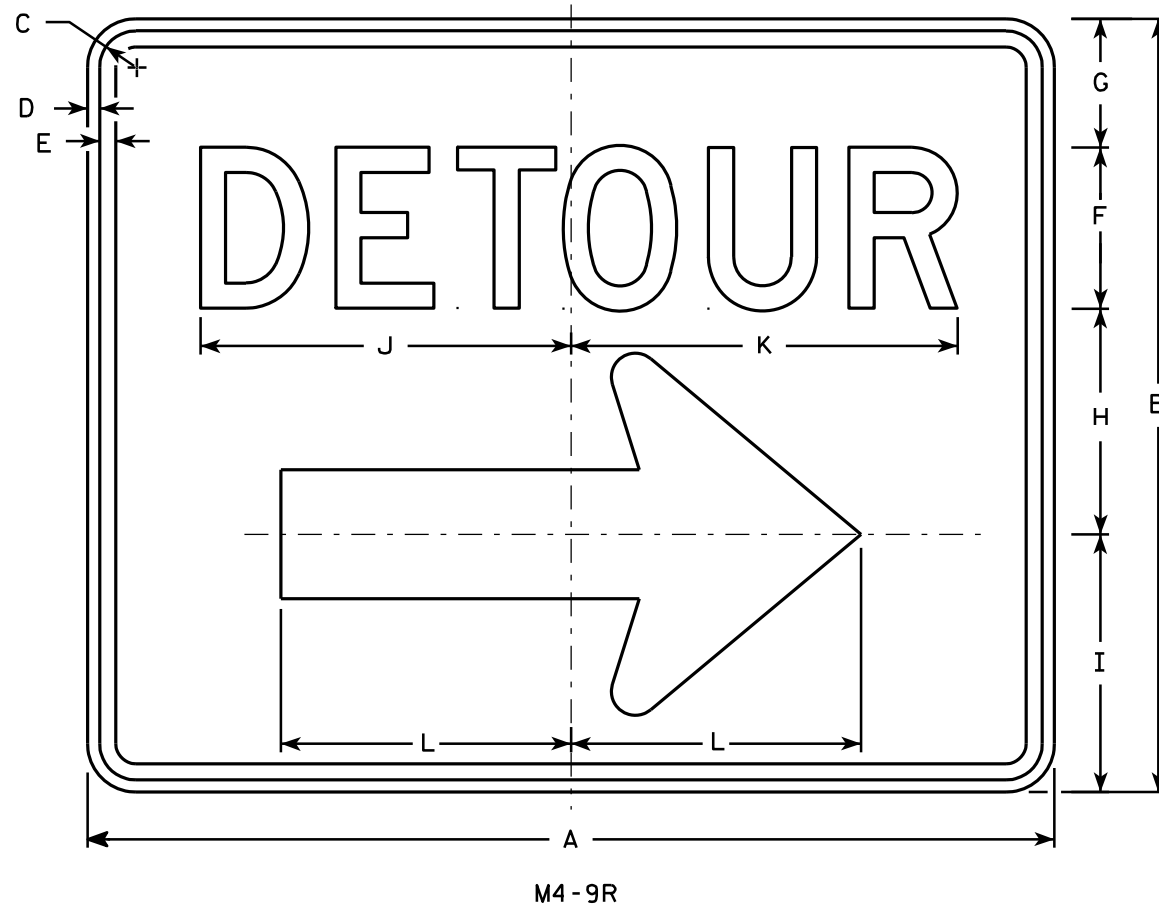
APPROVED *Matthew R Rauch*
for State Traffic Engineer

DATE 3/9/11 PLATE NO. M4-8A.2

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

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-9L is the same as M4-9R except the arrow is reversed.



Arrow Detail

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	30	24	1 1/8	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
3	30	24	1 1/8	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
4	48	36	1 3/8	1/2	5/8	8	6	10 1/2	11 5/8	20 5/8	20 1/2	13 1/4	1 1/8	6 7/8													12.0
5	48	36	1 3/8	1/2	5/8	8	6	10 1/2	11 5/8	20 5/8	20 1/2	13 1/4	1 1/8	6 7/8													12.0

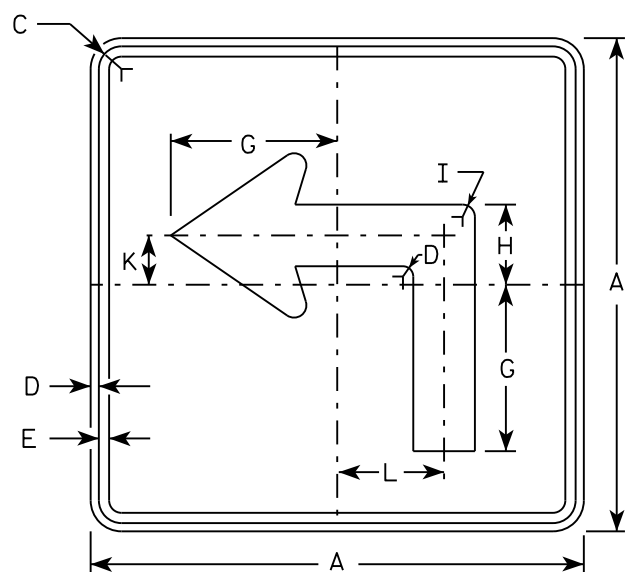
STANDARD SIGN
M4-9 R & L

WISCONSIN DEPT OF TRANSPORTATION

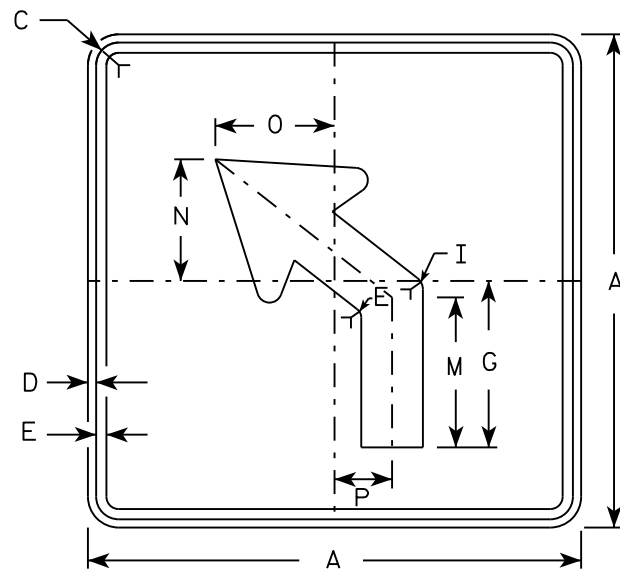
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/9/11 PLATE NO. M4-9R.4

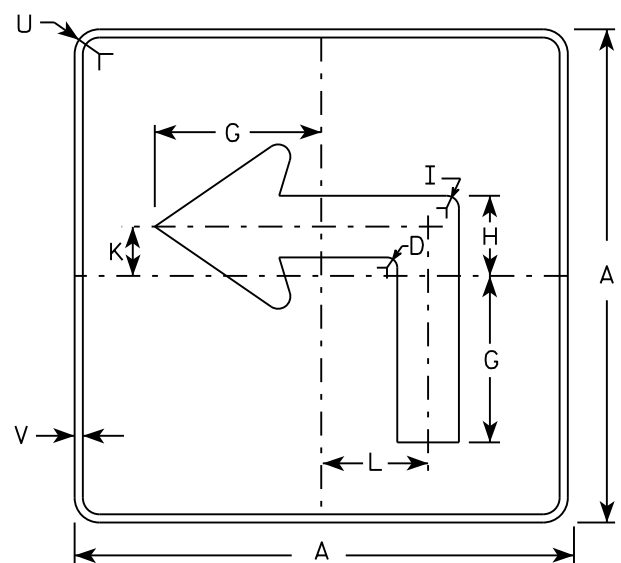
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**



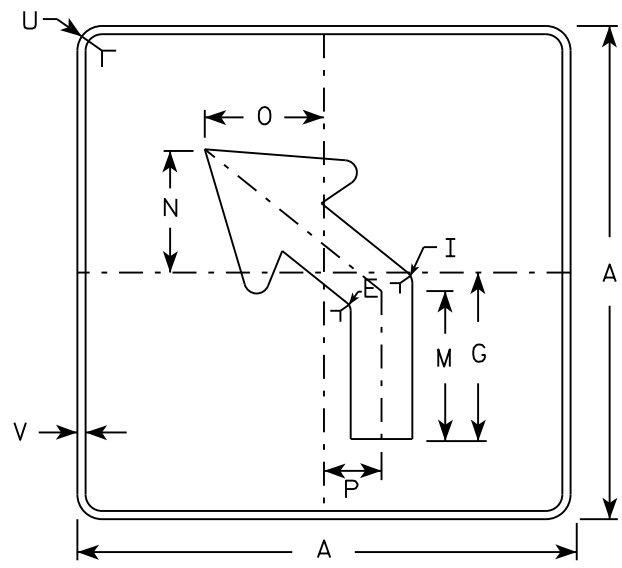
M5-1L
MM5-1L
M05-1L
MP5-1L



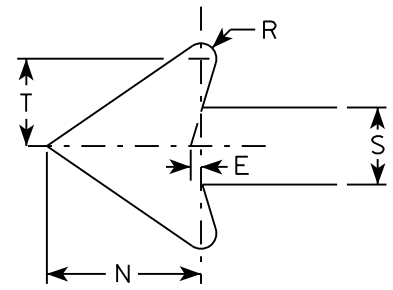
M5-2L
MM5-2L
M05-2L
MP5-2L



MB5-1L
MK5-1L
MN5-1L
MR5-1L



MB5-2L
MK5-2L
MN5-2L
MR5-2L



NOTES

- Signs are Type II - Type H reflective except as shown
- Color:
 - Background - See note 4
 - Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- | | |
|-----------------|---|
| M5-1 and M5-2 | Background - White |
| | Message - Black |
| MB5-1 and MB5-2 | Background - Blue |
| | Message - White |
| MK5-1 and MK5-2 | Background - Green |
| | Message - White |
| MM5-1 and MM5-2 | Background - White |
| | Message - Green |
| MN5-1 and MN5-2 | Background - Brown |
| | Message - White |
| M05-1 and M05-2 | Background - Orange - Type F Reflective |
| | Message - Black |
| MP5-1 and MP5-2 | Background - White - Type H Reflective |
| | Message - Blue |
| MR5-1 and MR5-2 | Background - Brown |
| | Message - Yellow |
- M5-1R same as M5-1L except arrow points right.
- M5-2R same as M5-2L except arrow tilts right.

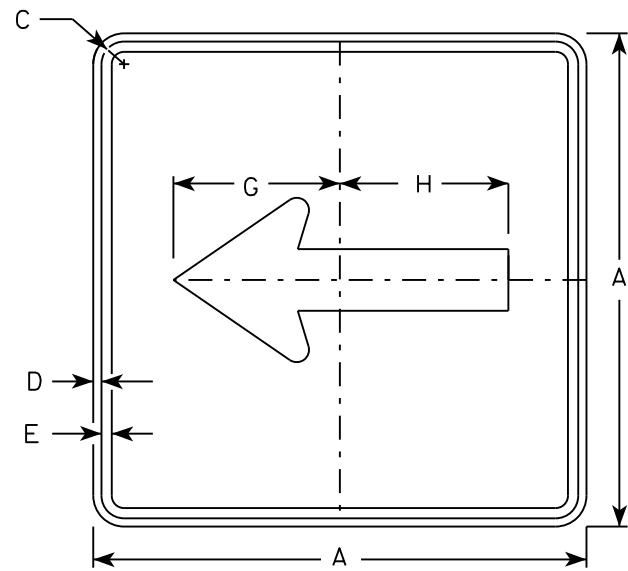
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25

STANDARD SIGN
M5-1 & M5-2

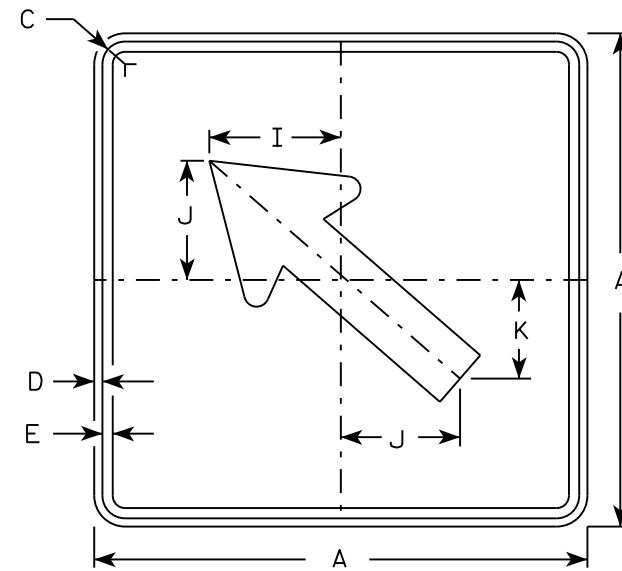
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

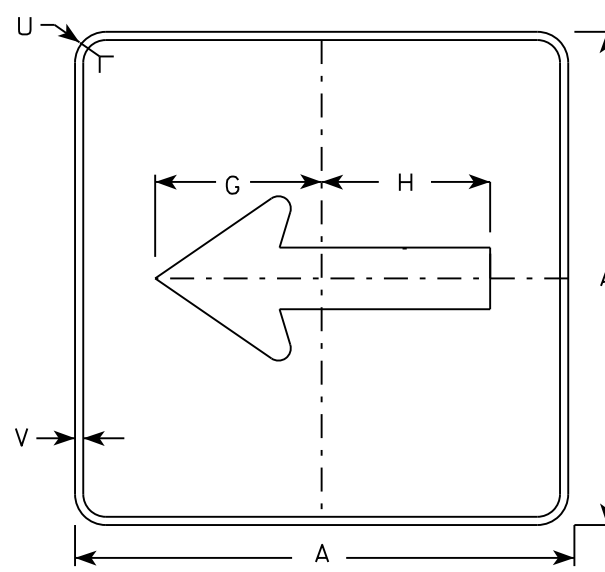
DATE 10/15/15 PLATE NO. M5-1.13



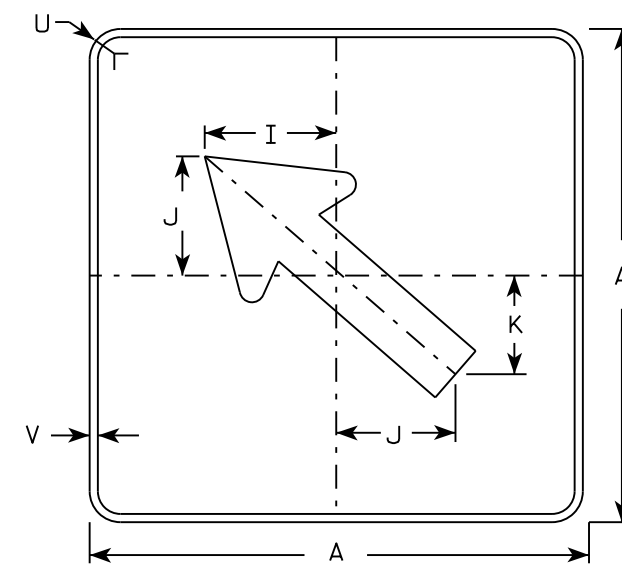
M6-1
MM6-1
M06-1
MP6-1



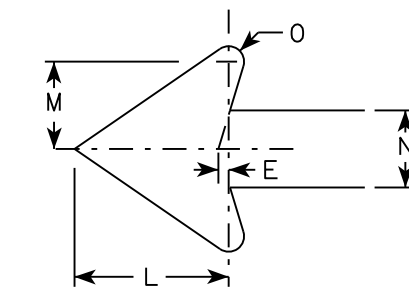
M6-2
MM6-2
M06-2
MP6-2



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



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



NOTES

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

7

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

STANDARD SIGN
M6-1 & M6-2
SERIES

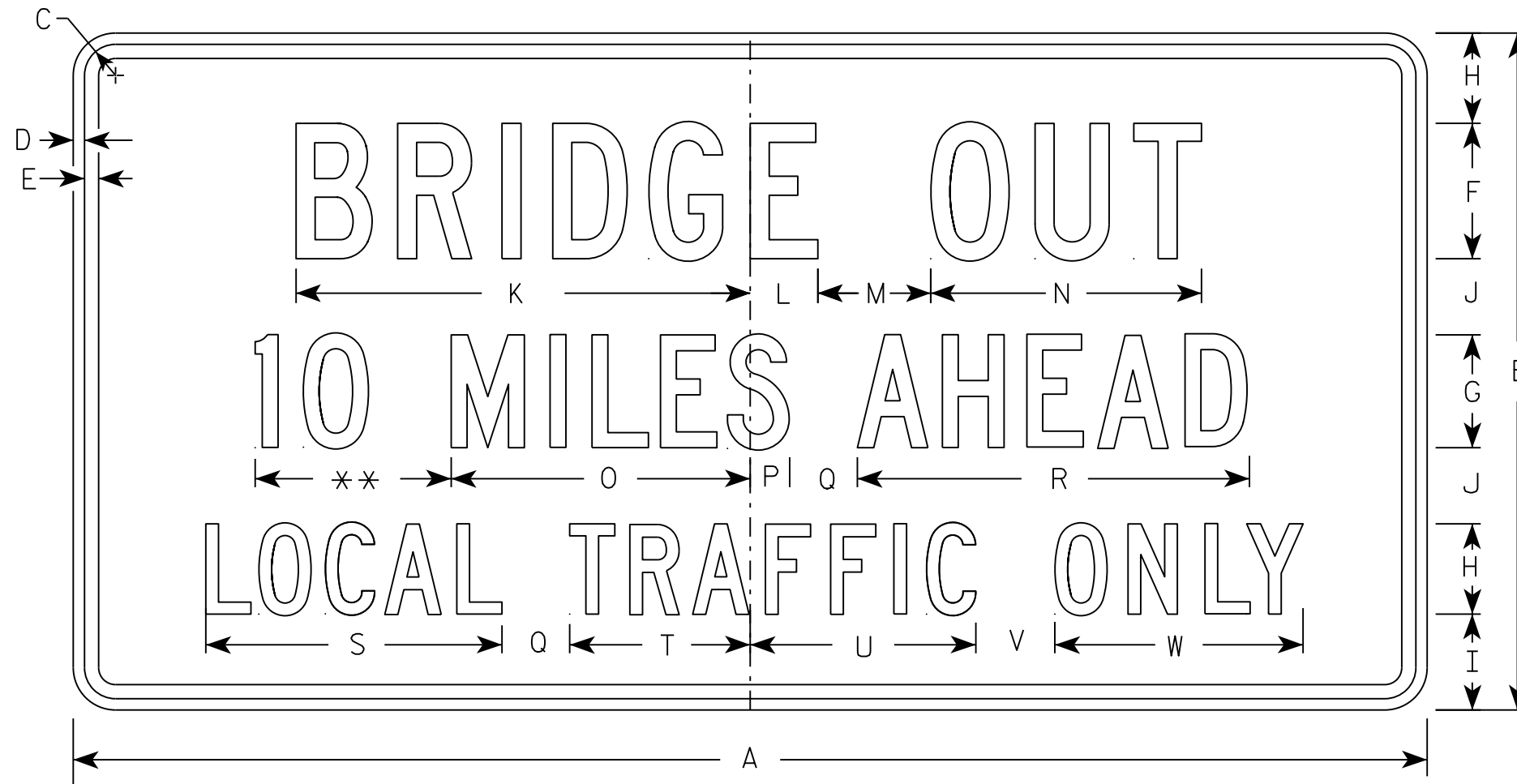
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

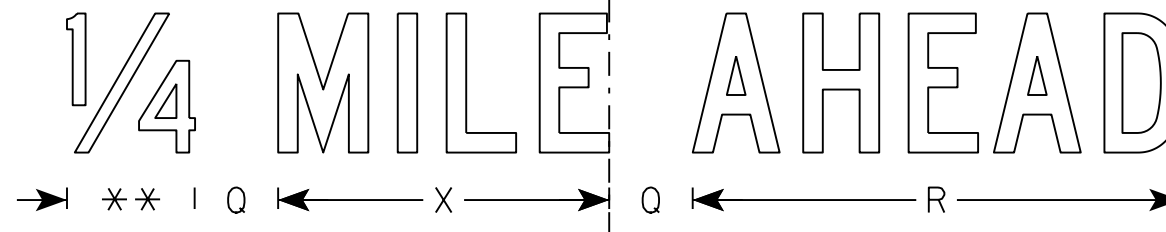
NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals to nearest quarter mile and optically adjust spacing to achieve proper balance.



** See Note 5

R11-3B



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 3/8	1/2	5/8	4	3	2 1/2	2	2	13 1/4	2 1/4	3	8	8	1 1/2	2	10 3/4	8 3/8	4 3/4	6 1/2	2	6 3/4	7 1/8		4.5	
2S	60	30	1 3/8	1/2	5/8	6	5	4	4 1/4	3 3/8	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8	13 1/8	8	10	3 1/2	11	11 7/8		12.5	
2M	60	30	1 3/8	1/2	5/8	6	5	4	4 1/4	3 3/8	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8	13 1/8	8	10	3 1/2	11	11 7/8		12.5	
3																											
4																											
5																											

STANDARD SIGN
R11-3B

WISCONSIN DEPT OF TRANSPORTATION

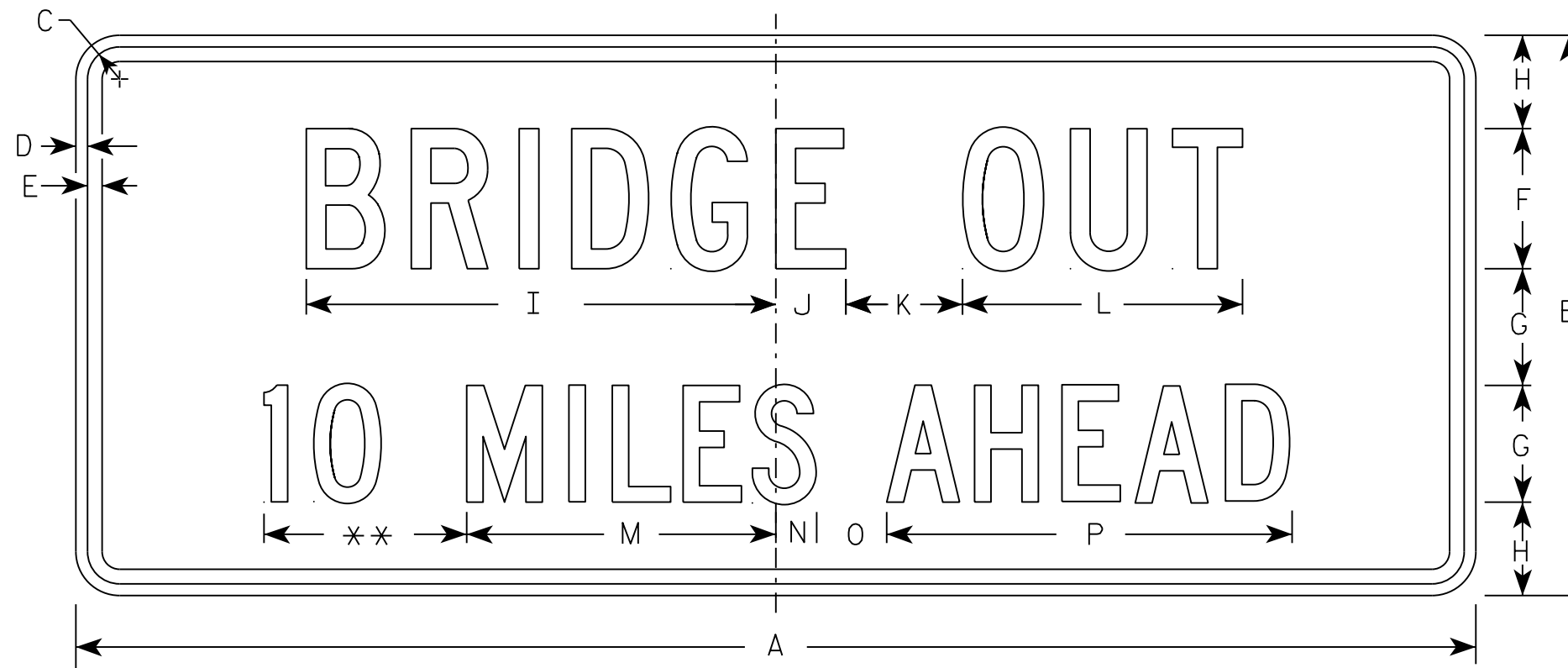
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/21/17 PLATE NO. R11-3B.3

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

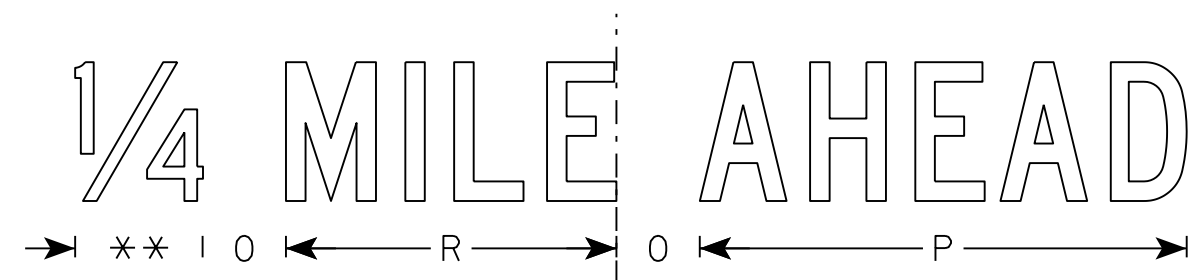
NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals to nearest quarter mile and optically adjust spacing to achieve proper balance.



R11-3C

** See Note 5



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	15	1 3/8	1/2	5/8	4	3	2 1/2	13 1/4	2 1/4	3	8	8	1 1/2	2	10 3/4		7 1/8									3.75
2S	60	24	1 3/8	1/2	5/8	6	5	4	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8		11 7/8									10.0
2M	60	24	1 3/8	1/2	5/8	6	5	4	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8		11 7/8									10.0
3																											
4																											
5																											

STANDARD SIGN
R11-3C

WISCONSIN DEPT OF TRANSPORTATION

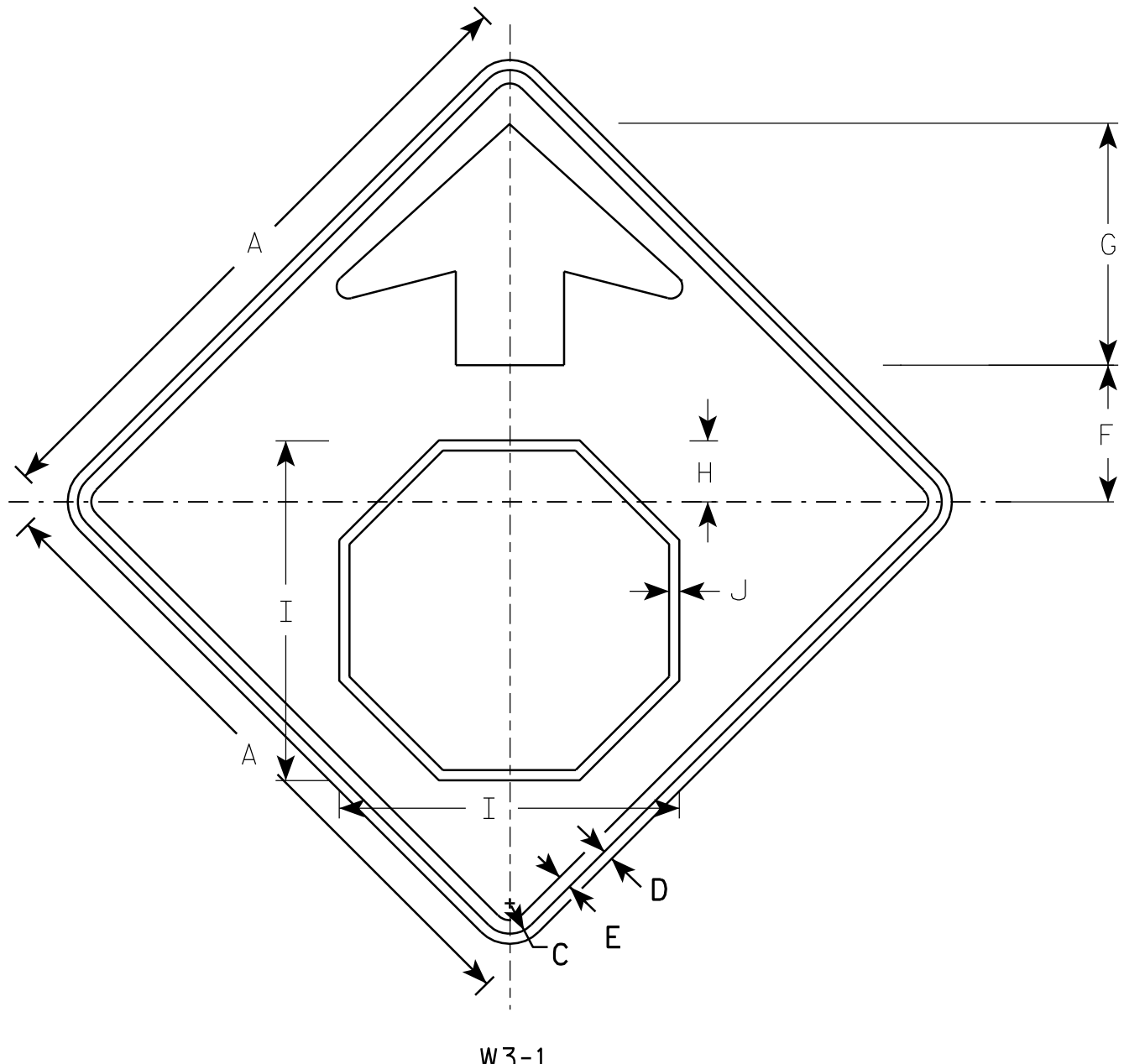
APPROVED
Matthew R. Rauch
For State Traffic Engineer

DATE 7/28/16 PLATE NO. R11-3C.3

PROJECT NO:

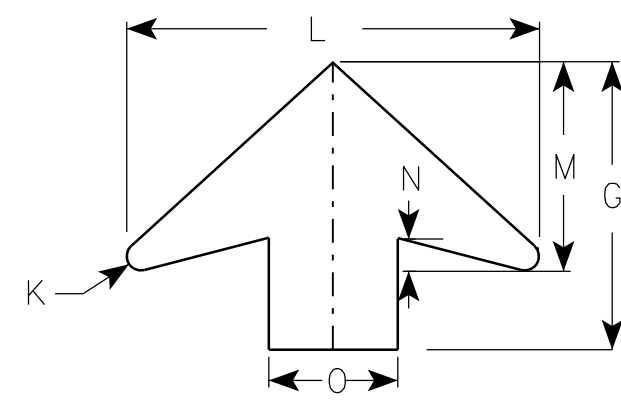
SHEET NO:

E



NOTES

1. All Signs Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
 Background - YELLOW
 Arrow & Border - BLACK
 Stop Symbol - WHITE BORDER ON RED BACKGROUND



ARROW DETAIL

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8	6 1/4	11 1/4	2 7/8	15 3/4	1/2	1/2	16	8	1 1/4	5												6.25
2S	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
2M	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
3	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
4	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0
5	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0

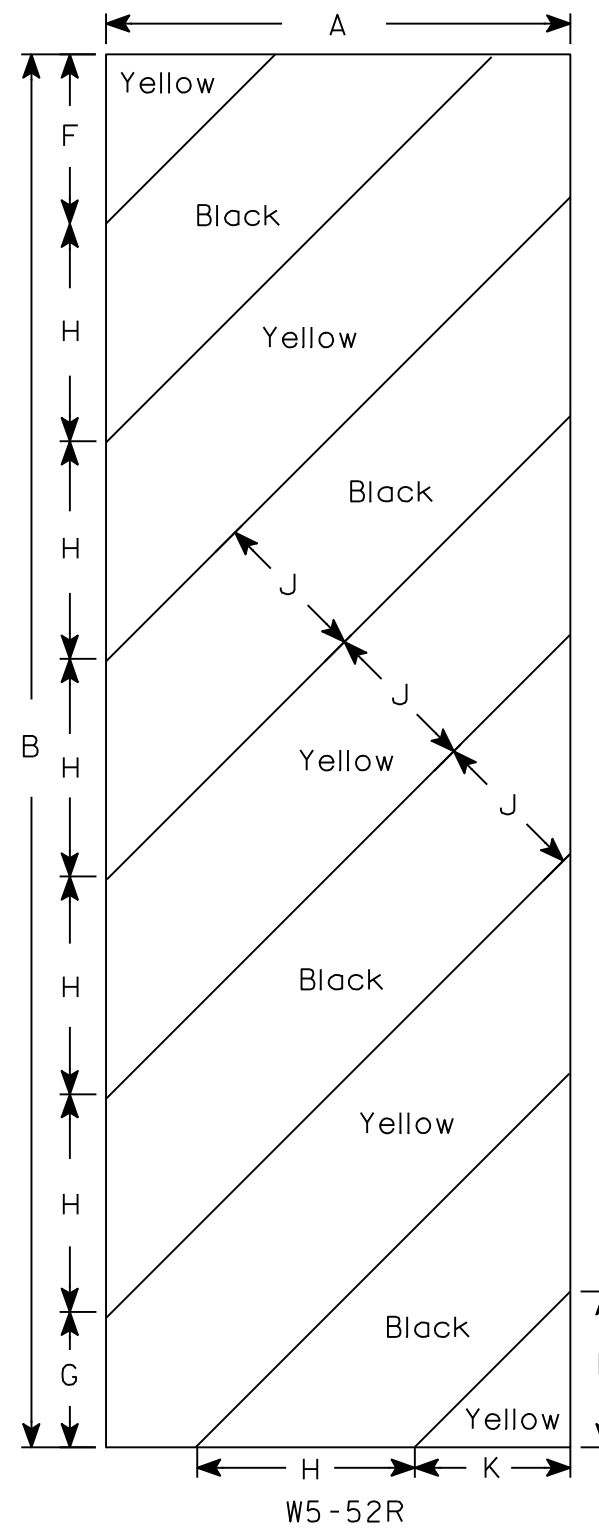
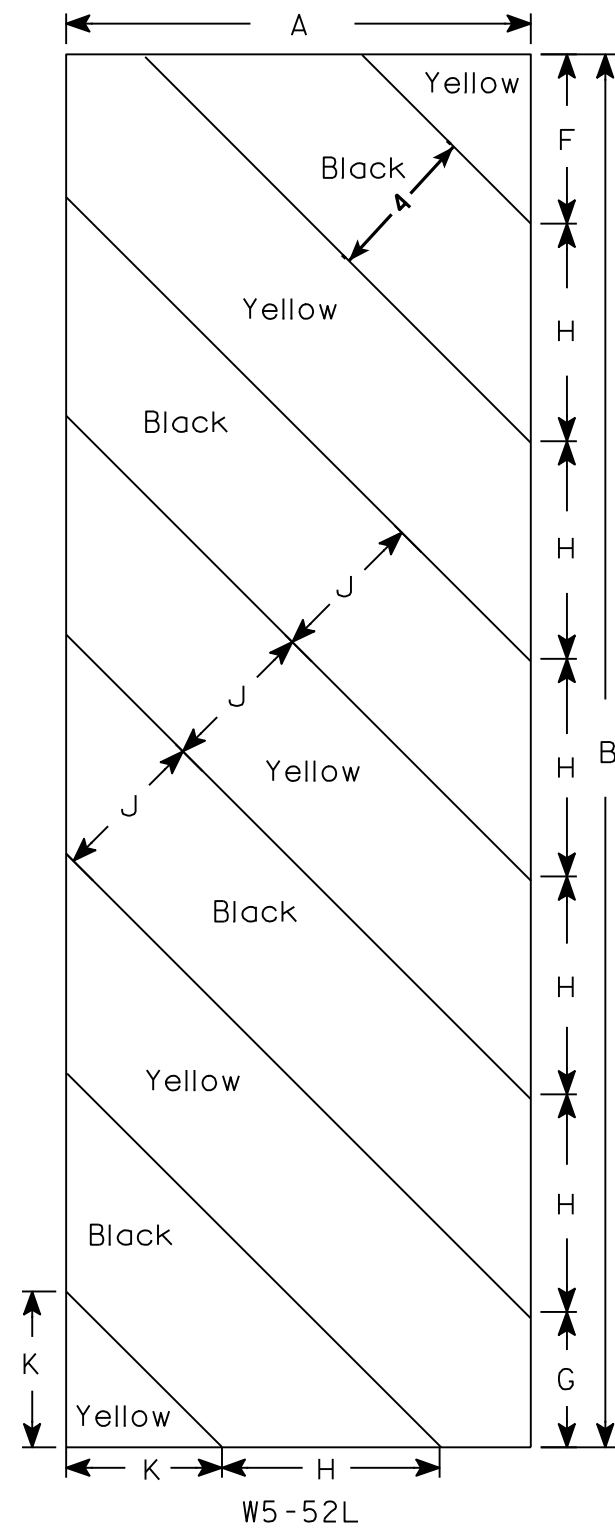
STANDARD SIGN
W3-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W3-1.12

PROJECT NO: _____ SHEET NO: _____ E



NOTES

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

7

7

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

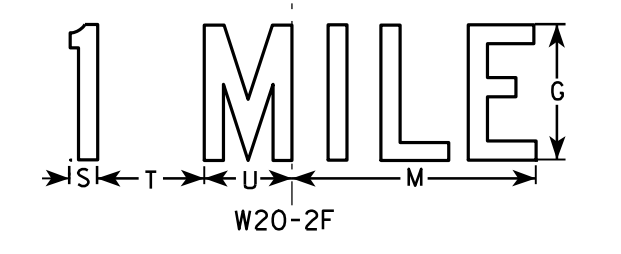
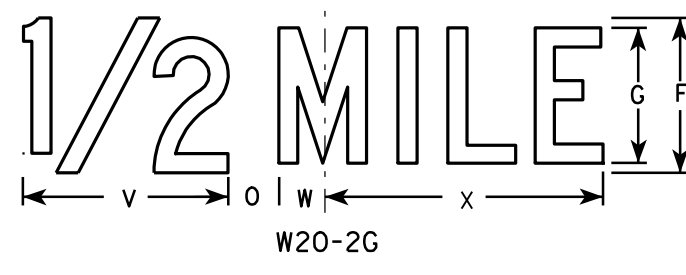
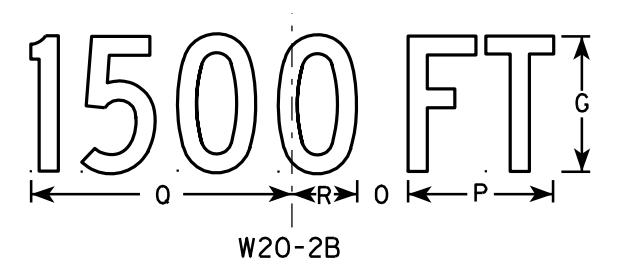
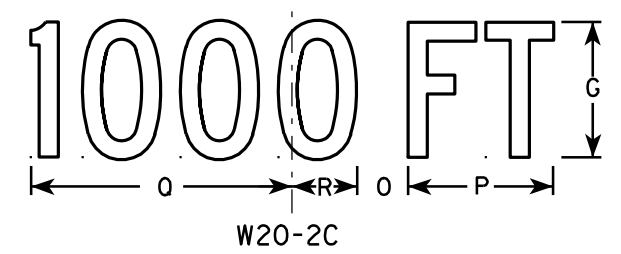
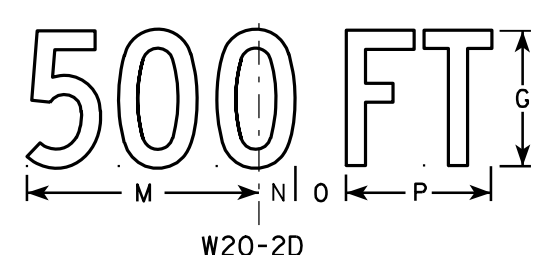
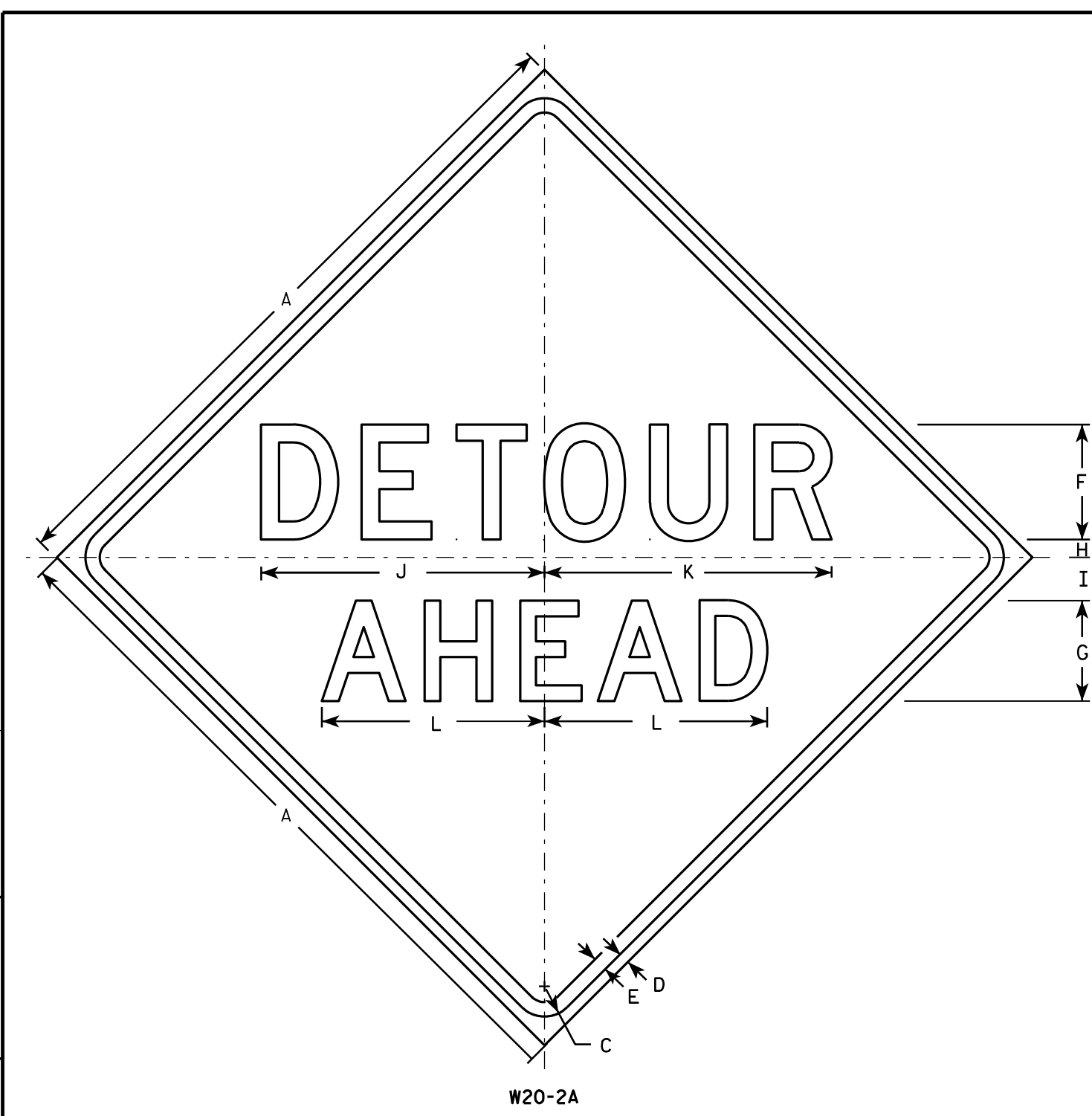
STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

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



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Line 1 is Series D.
Line 2 is Series D for AHEAD and Series C for all other distances.

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	6	5	1	2 1/4	14 3/4	15	11 5/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	8	1 3/4	10 3/4			9.0
2S	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
2M	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
3	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
4	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
5	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0

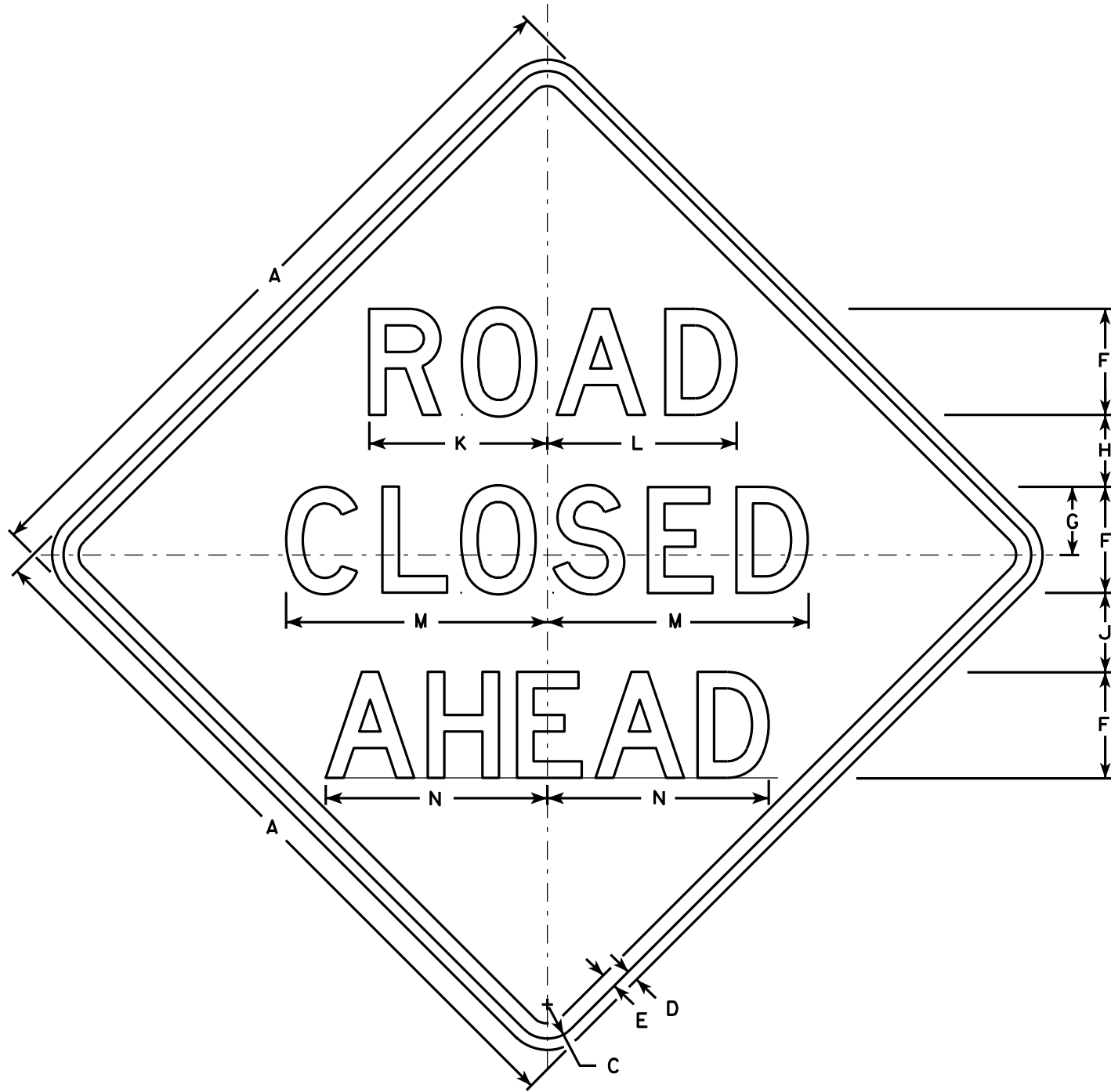
STANDARD SIGN
W20-2A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

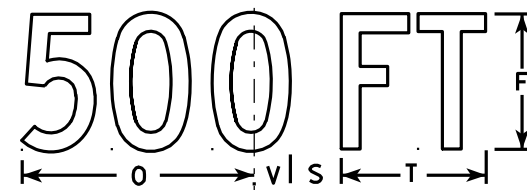
APPROVED *Matthew R. Raub*
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-2.6

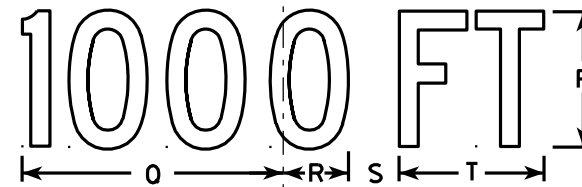
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ **E**



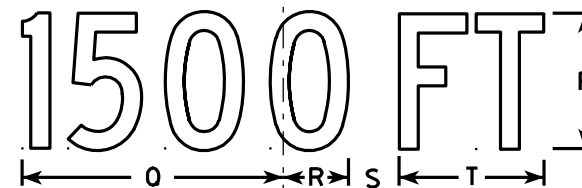
W20-3A



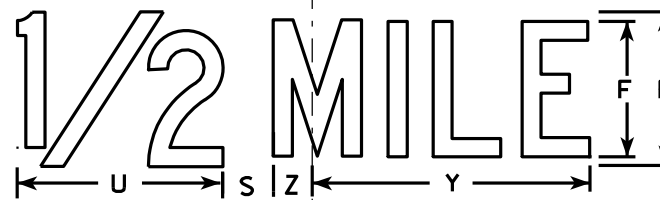
W20-3D



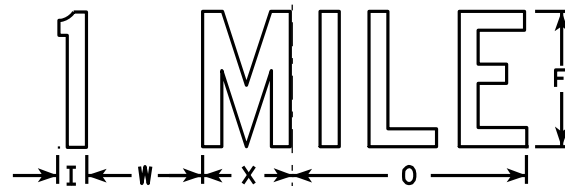
W20-3C



W20-3B



W20-3G



W20-3F

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - see note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1 and 2 are Series D.
Line 3 is Series D for AHEAD and Series C for all other distances.

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5	3 3/8	3 1/2	1 1/8	4	8 3/8	8 7/8	12 1/2	11	9	6	10 1/8	2 1/2	1 7/8	5 5/8	8	1 3/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
3	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
4	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
5	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0

STANDARD SIGN
W20-3A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

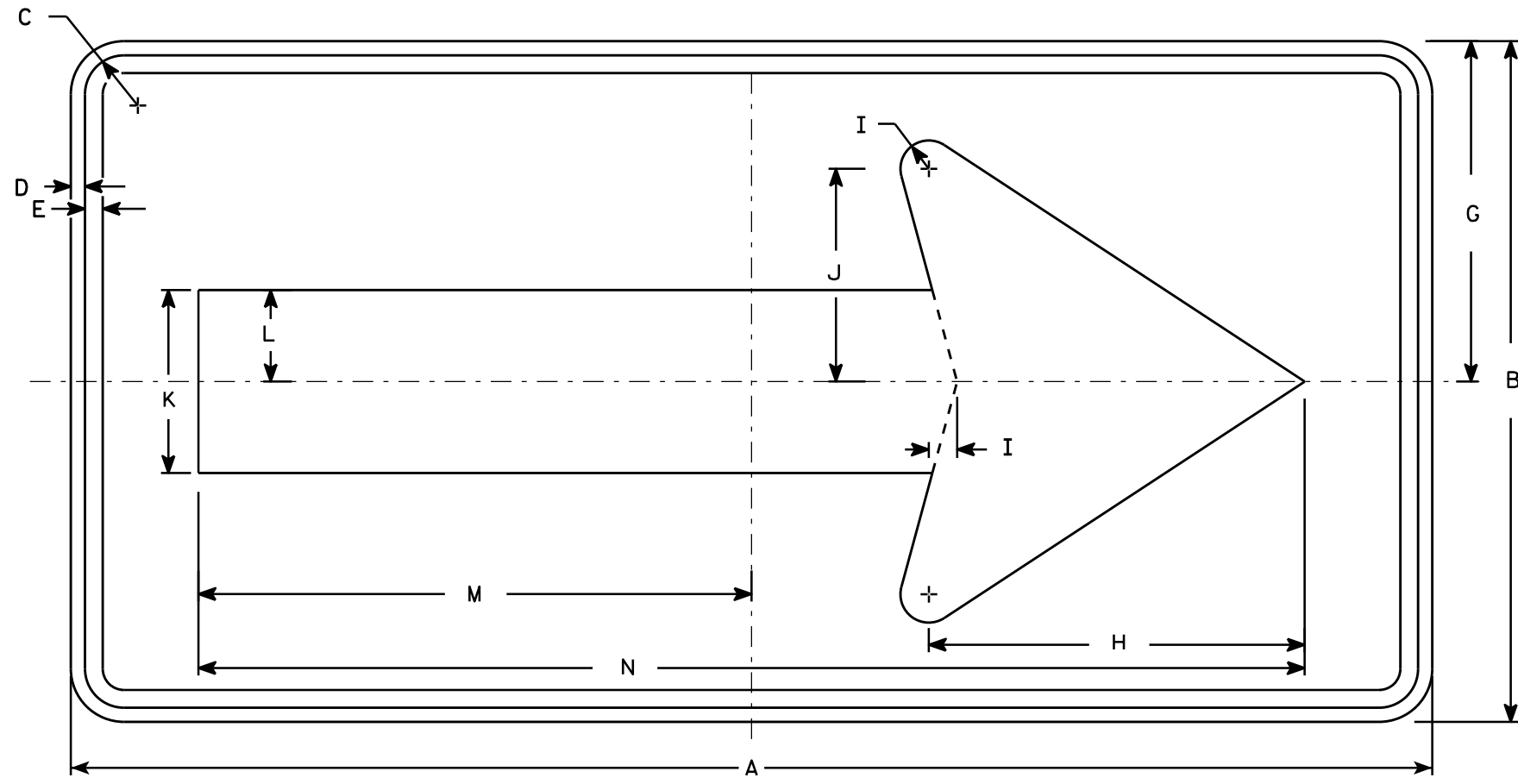
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-3.7

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

NOTES

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



W01-6

7

7

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

STANDARD SIGN
W01-6

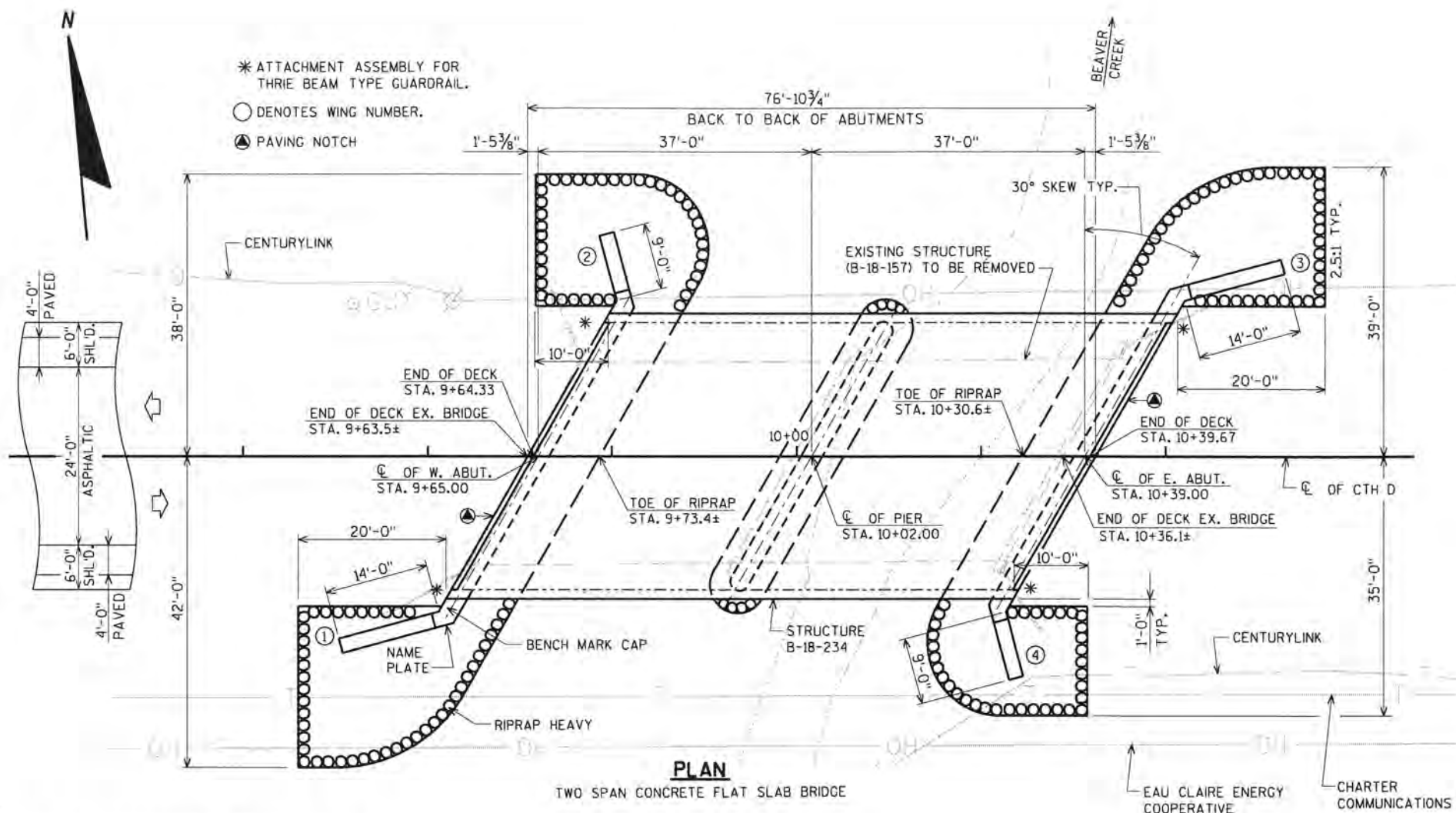
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

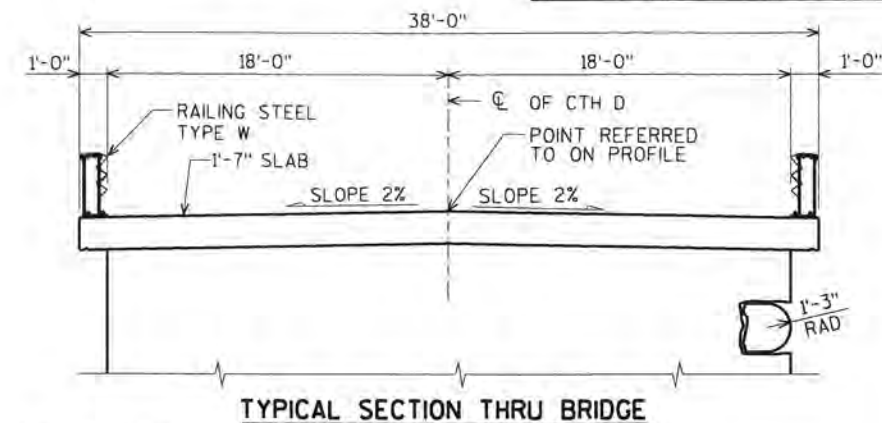
DATE 11/18/13 PLATE NO. W01-6.1

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

SPRNFAMES U:\42-1091.00 - Eau Claire Co.CTH D over Beaver Creek-Structures\Final\421091gp.dgn



PLAN
TWO SPAN CONCRETE FLAT SLAB BRIDGE



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) = 200 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

$Q_{100} = 795$ c.f.s.
 VEL. = 3.8 f.p.s.
 HW₁₀₀ = EL. 932.9
 WATERWAY AREA = 207 sq. ft.
 DRAINAGE AREA = 12.4 sq. mi.
 ROADWAY OVERTOPPING = N/A
 SCOUR CRITICAL CODE = 5
 DATUM = NAVD88 (2012)

2 YEAR FREQUENCY

$Q_2 = 245$ c.f.s.
 VEL. = 3.5 f.p.s.
 HW₂ = EL. 930.9

FOUNDATION DATA:

ABUTMENTS TO BE SUPPORTED ON 10 3/4" ϕ x 0.25" CIP CONCRETE 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 60'-0" FOR THE WEST AND EAST ABUTMENTS.

PIER TO BE SUPPORTED ON 10 3/4" ϕ x 0.25" CIP CONCRETE 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 60'-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.

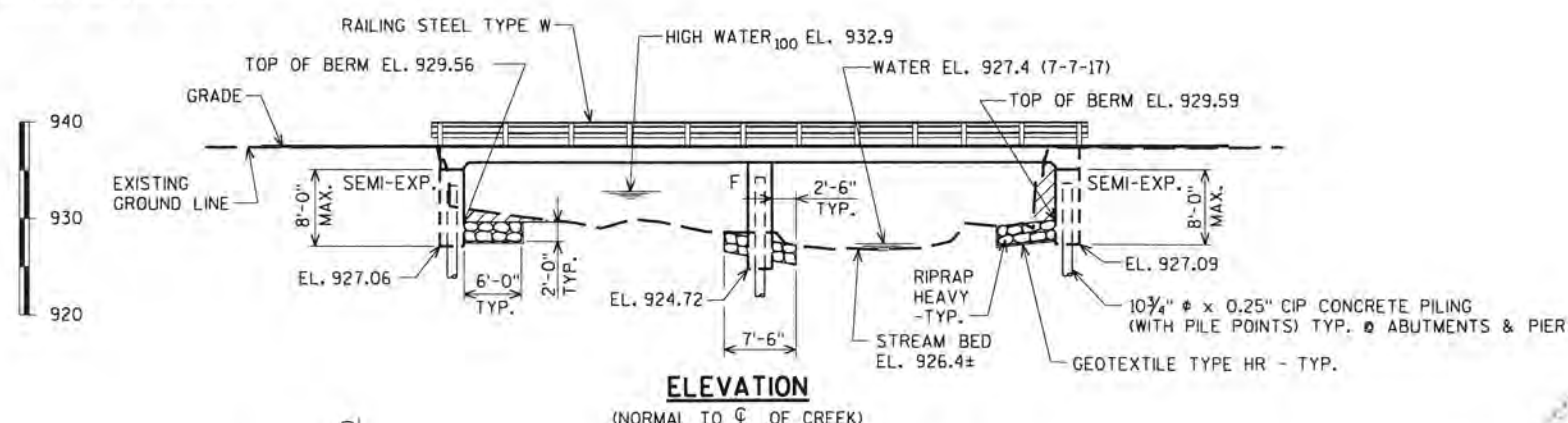
TRAFFIC DATA:

A.A.D.T. = 1,200 (2019)
 A.A.D.T. = 1,450 (2039)
 R.D.S. = 45 M.P.H.

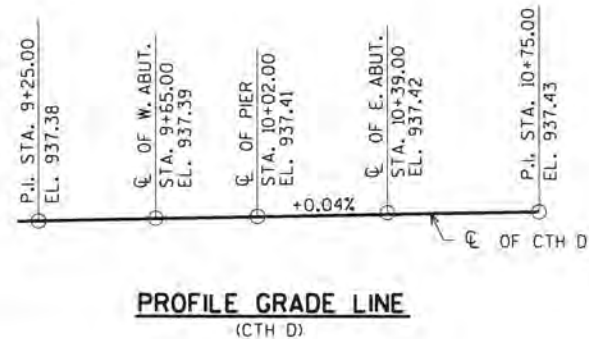
COST OF EXCAVATION AND FILL IN THE HATCHED AREAS SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES B-18-234".

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

8



ELEVATION
(NORMAL TO ϕ OF CREEK)



PROFILE GRADE LINE
(CTH D)

BENCH MARK:
 60d SPK IN TIMBER WINGWALL
 STA. 10+28, 17' RT. OF ϕ
 EL. 936.96

LIST OF DRAWINGS

1. GENERAL PLAN
2. QUANTITIES AND NOTES
3. SUBSURFACE EXPLORATION
4. WEST ABUTMENT
5. WEST ABUTMENT WING 1 DETAILS
6. WEST ABUTMENT WING 2 DETAILS
7. EAST ABUTMENT
8. EAST ABUTMENT WING 3 DETAILS
9. EAST ABUTMENT WING 4 DETAILS
10. PIER
11. SUPERSTRUCTURE
12. SUPERSTRUCTURE PLAN
13. STEEL RAILING TYPE W



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	<i>William C. Dreher</i> ^{SDR} CHIEF STRUCTURES DESIGN ENGINEER		DATE 11/19/18
STRUCTURE B-18-234			
CTH D OVER BEAVER CREEK			
COUNTY	EAU CLAIRE	TOWN/VILLAGE	WASHINGTON
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	ZSS	DRAWN BY	CJM
CK'D.	CJM	PLANS CK'D.	CBM
GENERAL PLAN			SHEET 1 OF 13

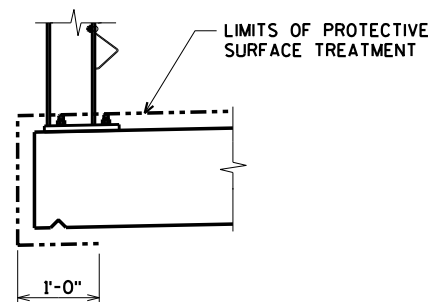
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TOTAL ESTIMATED QUANTITIES

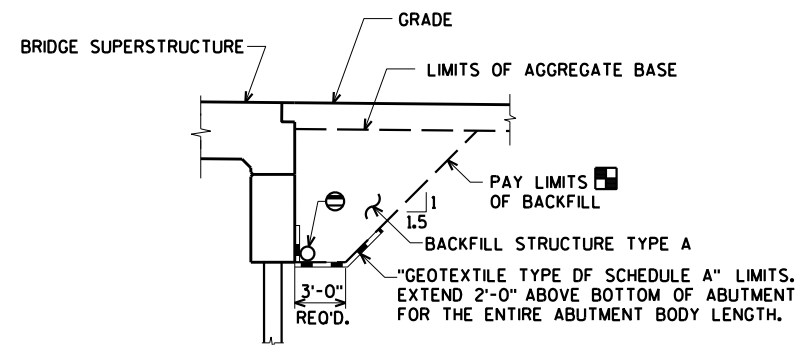
BID ITEM NUMBER	BID ITEMS	UNIT	W. ABUT.	PIER	E. ABUT.	SUPER.	TOTAL	CATEGORY 0020	CATEGORY 0030
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 10+00	LS	-----	-----	-----	-----	1	1	-----
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-18-234	LS	-----	-----	-----	-----	1	1	-----
210.1500	BACKFILL STRUCTURE TYPE A	TON	340	-----	340	-----	680	575	105
502.0100	CONCRETE MASONRY BRIDGES	CY	51	40	51	177	319	262	57
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-----	-----	-----	-----	360	290	70
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	3,410	1,860	3,460	-----	8,730	7,090	1,640
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,670	90	1,670	32,860	36,290	29,770	6,520
513.7051	RAILING STEEL TYPE W	LF	-----	-----	-----	-----	154	154	-----
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	9	-----	9	-----	18	15	3
550.0500	PILE POINTS	EACH	9	11	9	-----	29	25	4
550.2104	PILING CIP CONCRETE 10 3/4 X 0.25-INCH	LF	530	660	530	-----	1,720	1,480	240
606.0300	RIPRAP HEAVY	CY	95	20	85	-----	200	185	15
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	90	-----	90	-----	180	162	18
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	70	-----	70	-----	140	120	20
645.0120	GEOTEXTILE TYPE HR	SY	210	-----	190	-----	400	380	20
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 1, 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 AN ALTERNATIVE METHOD IS APPROVED BY THE ENGINEER.
 THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-18-234" SHALL BE THE EXISTING GROUNDLINE.
 THE EXISTING STRUCTURE, B-18-157, TO BE REMOVED, IS A TWO-SPAN STEEL DECK GIRDER BRIDGE, 73.0 FT. LONG WITH A 24.0 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.
 BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS NOTED OTHERWISE.
 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.
 EIGHT FOOT ADDITIONAL WIDTH TO BE 100% FUNDED BY COUNTY. THE QUANTITIES FOR THIS ADDITIONAL WIDTH ARE INCLUDED IN CATEGORY 0030.

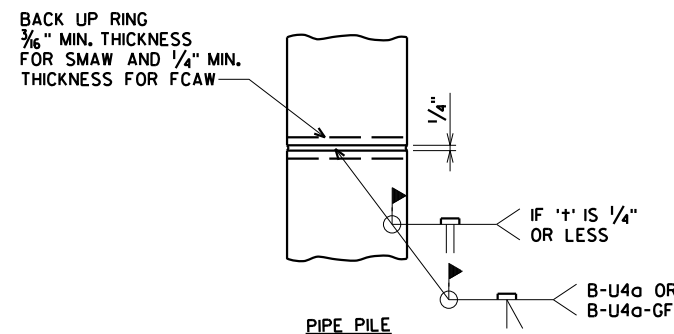


PROTECTIVE SURFACE TREATMENT DETAIL



BACKFILL STRUCTURE LIMITS THRU ABUTMENT

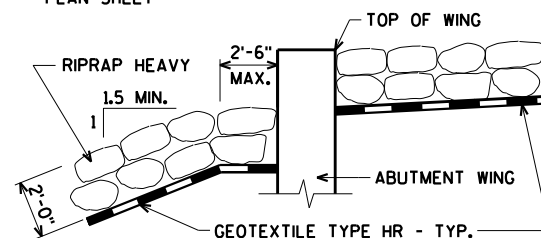
- BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 5.



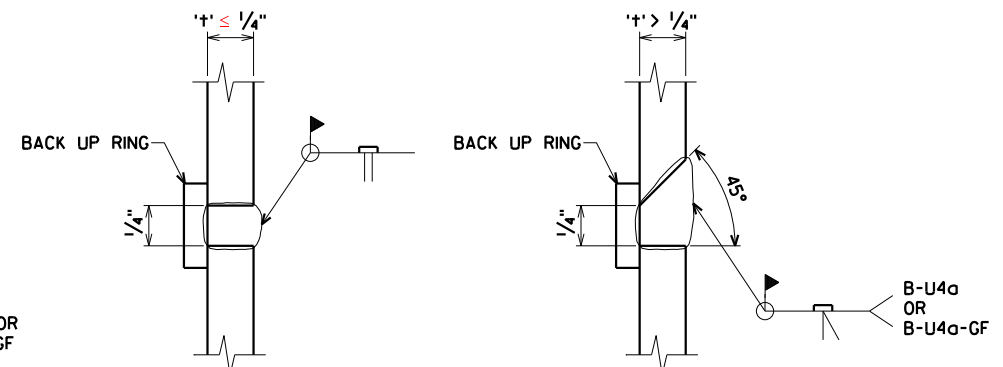
PILE SPLICE DETAIL

CAST-IN-PLACE PILE SHELL MATERIAL SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

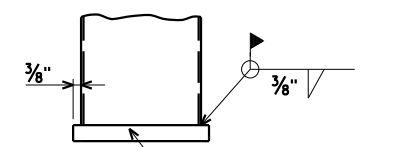
NOTE: PLACE RIPRAP HEAVY AS SHOWN ON GENERAL PLAN SHEET



TYPICAL FILL SECTION AT WING TIPS



CIP PILE WELD DETAIL



END PLATE DETAIL FOR CIP PILING

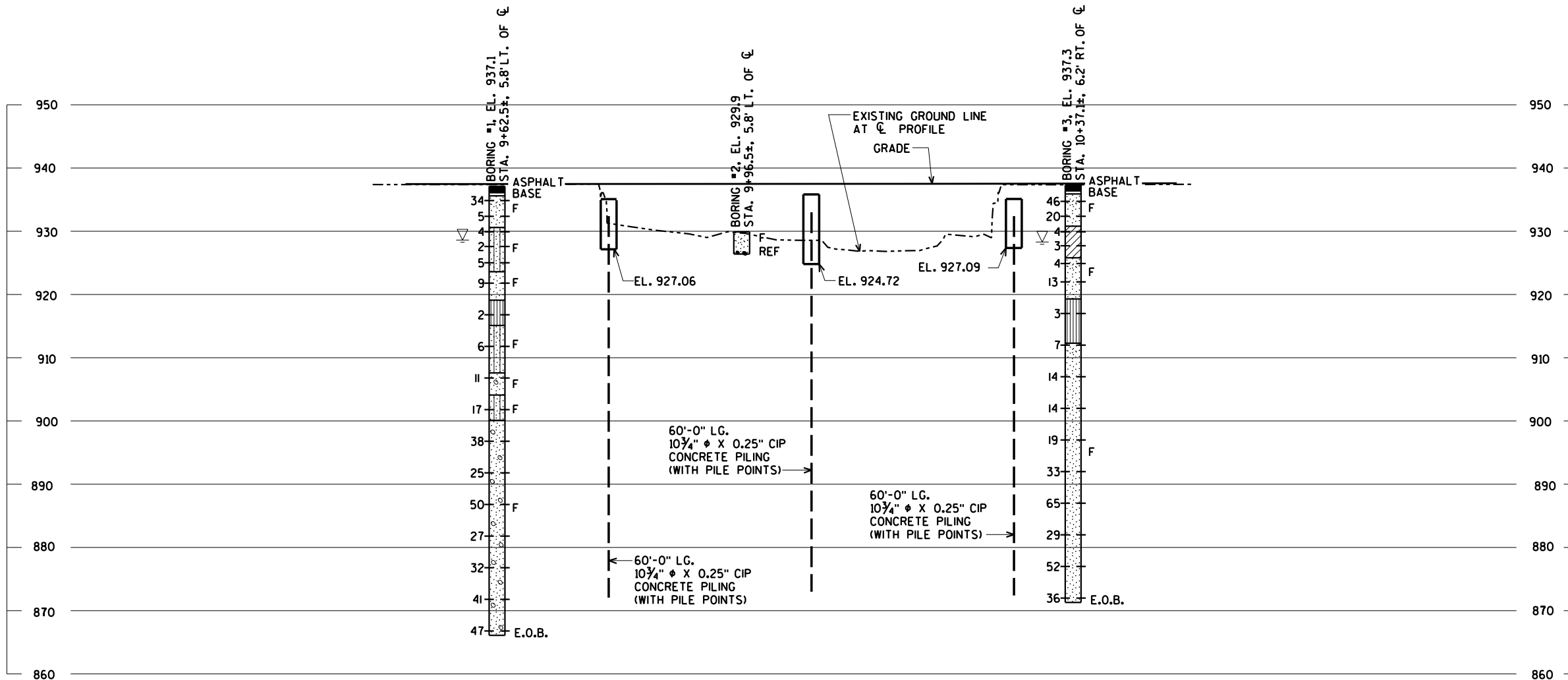
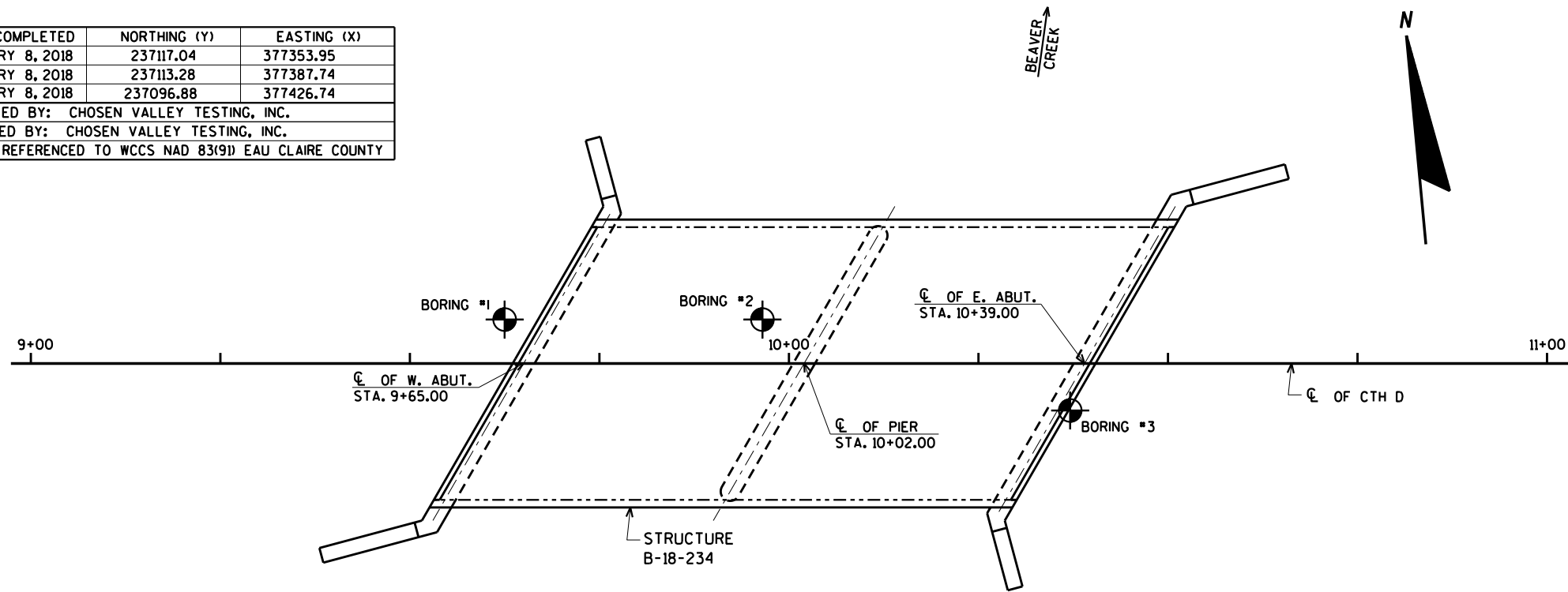
\$PRFNAME\$ Ut:42-1091.00 - Eau Claire Co. CTH D over Beaver Creek+Structures#Final#421091.gp.dgn

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-18-234			
DRAWN BY		CLS	PLANS CK'D. CBM
QUANTITIES AND NOTES			SHEET 2 OF 13

\$PRNAME\$ U:\42-1091.00 - Eau Claire Co. CTH D over Beaver Creek\Structures\Final\421091 soils.dgn

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	JANUARY 8, 2018	237117.04	377353.95
2	JANUARY 8, 2018	237113.28	377387.74
3	JANUARY 8, 2018	237096.88	377426.74

BORINGS COMPLETED BY: CHOSEN VALLEY TESTING, INC.
 REPORT COMPLETED BY: CHOSEN VALLEY TESTING, INC.
 ALL COORDINATES REFERENCED TO WCCS NAD 83(91) EAU CLAIRE COUNTY



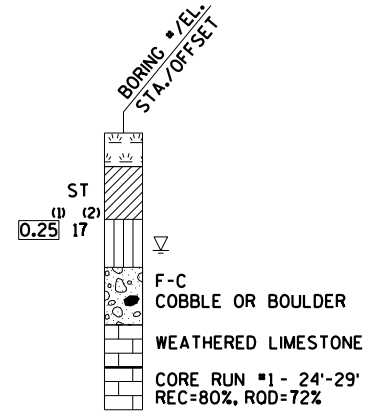
STATE PROJECT NUMBER

7828-03-71

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

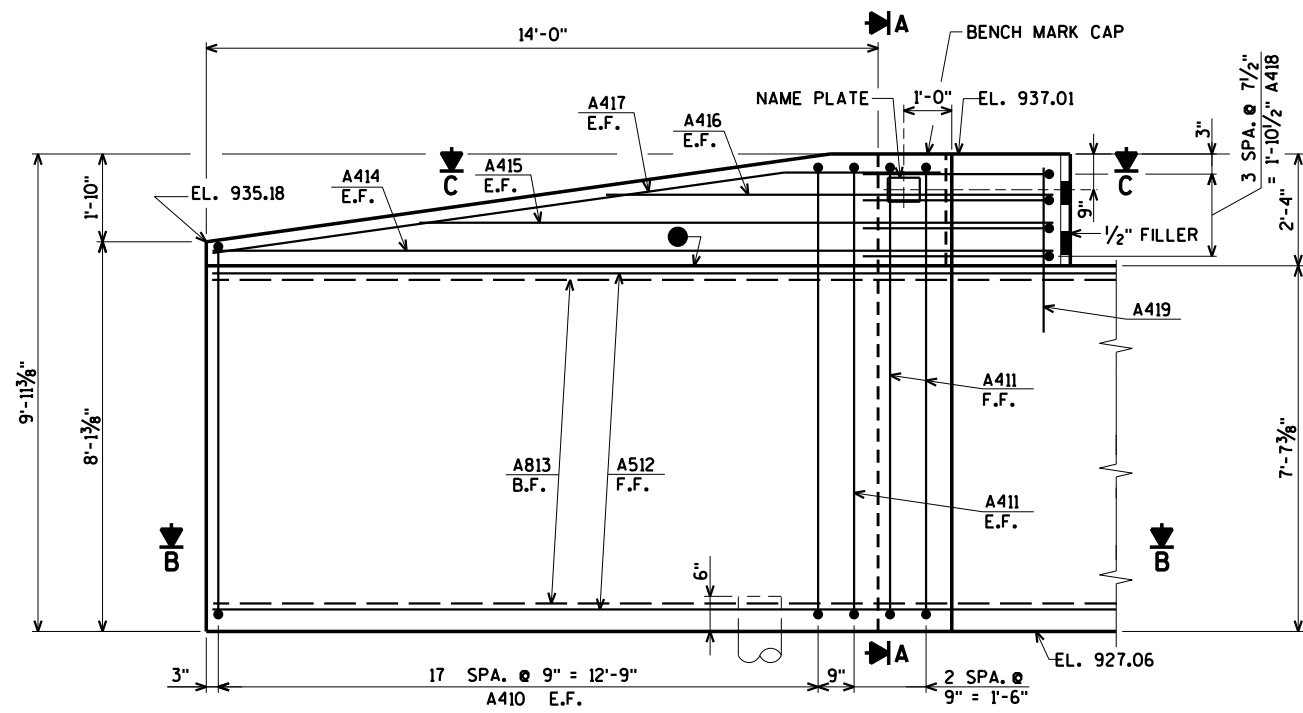
SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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.

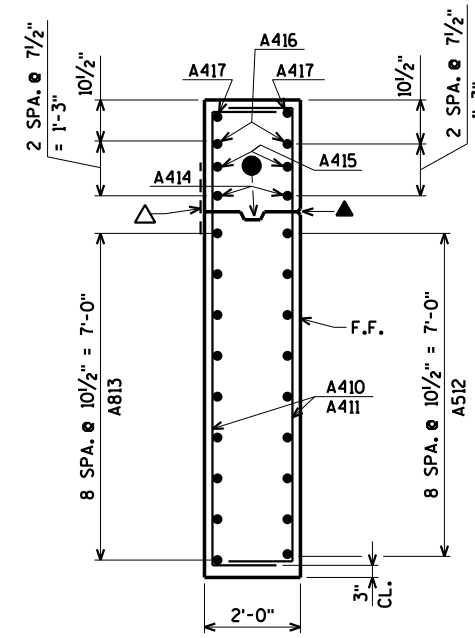
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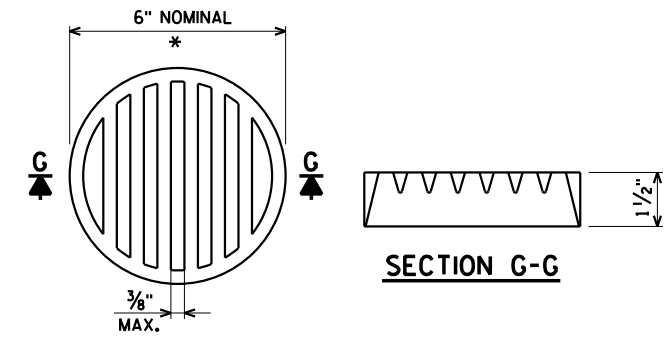
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-18-234			
DRAWN BY		CLS	PLANS CK'D. CBM
SUBSURFACE EXPLORATION			SHEET 3 OF 13



ELEVATION - WING I



SECTION A

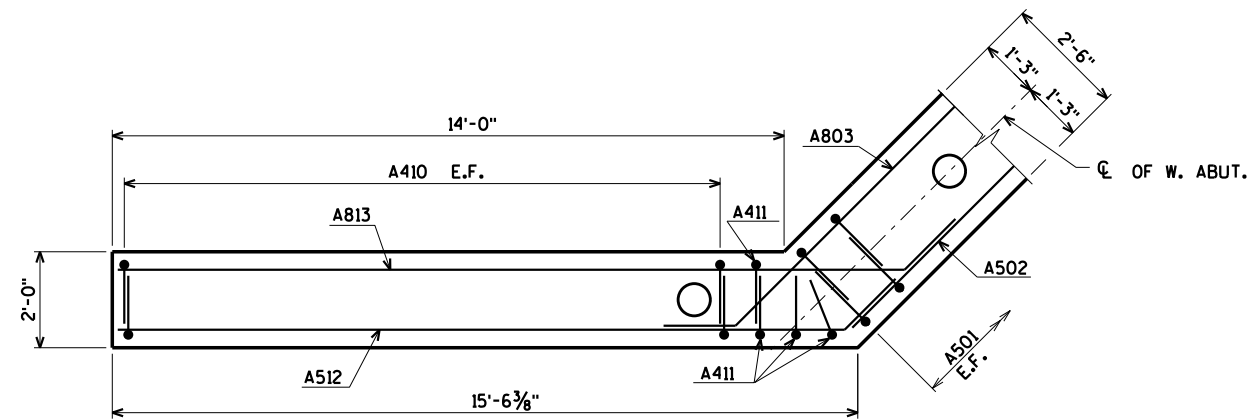


* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

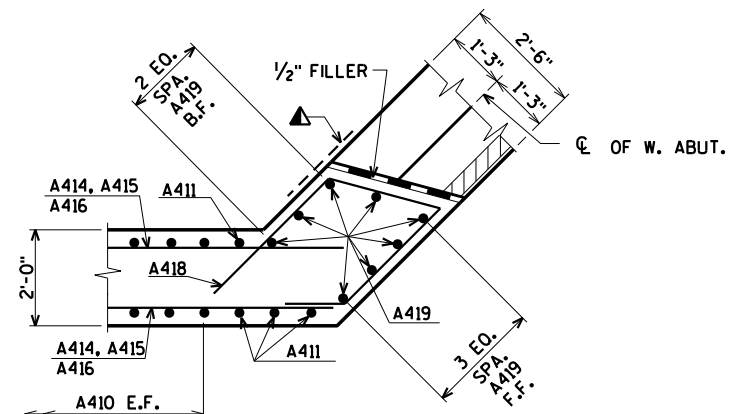
THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

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

RODENT SHIELD DETAIL



SECTION B



SECTION C

- ▲ 3/4" 'V' GROOVE ON F.F. OF WING - NOT REQUIRED IF CONST. JT. IS NOT USED.
 - OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" x 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F. (RUBBERIZED MEMBRANE WATERPROOFING INCIDENTAL TO BID ITEM "CONCRETE MANSIONRY BRIDGES" IF CONST. JOINT IS USED).
 - ▲ 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING.
 - △ RUBBERIZED MEMBRANE WATERPROOFING IF CONST. JOINT IS USED (COST INCIDENTAL TO BID ITEM "CONCRETE MANSIONRY BRIDGES")
- FOR PILE SPLICE DETAIL SEE SHEET 2.
 B.F. DENOTES BACK FACE.
 F.F. DENOTES FRONT FACE.
 E.F. DENOTES EACH FACE.

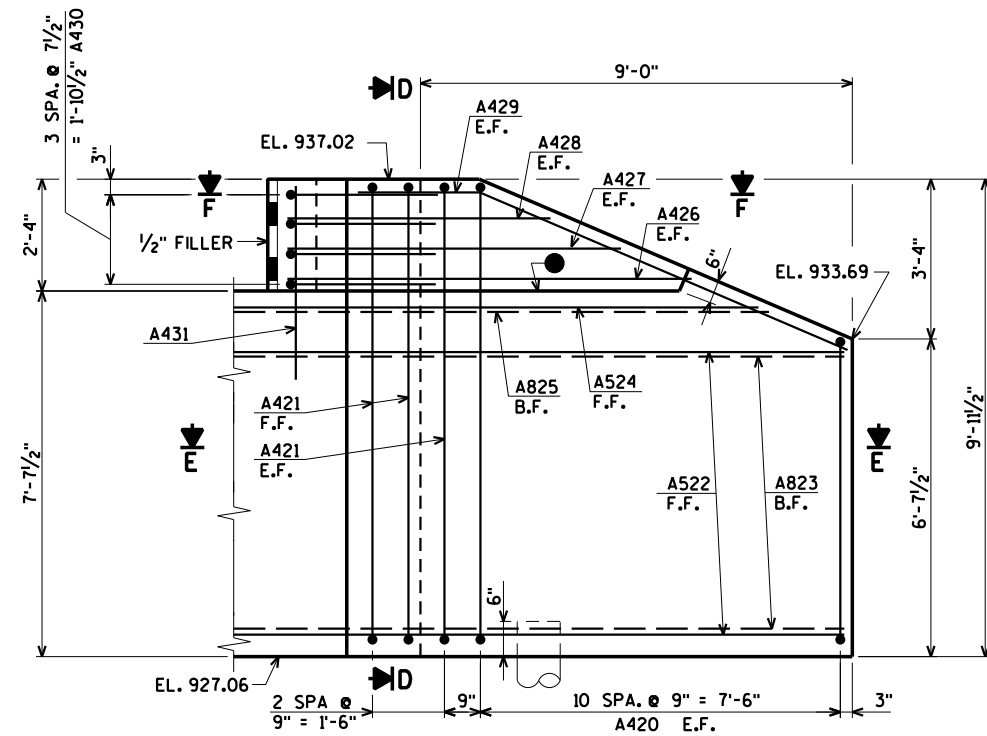
\$PRNAME\$ U:\42-1091.00 - Eau Claire Co. CTH D over Beaver Creek Structures\Final\421091.wa.DGN

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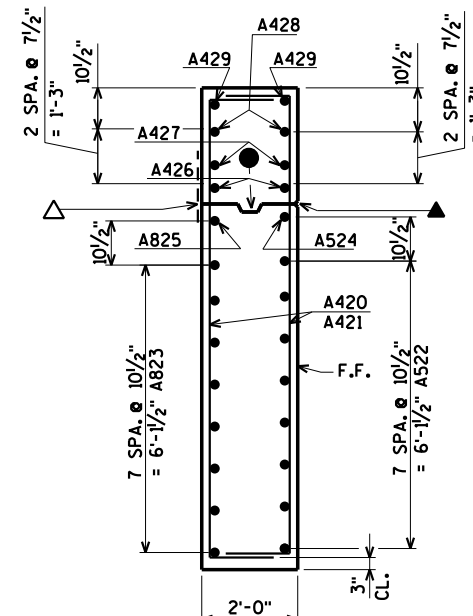
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-18-234			
DRAWN BY CJM		PLANS CK'D. CBM	
WEST ABUTMENT WING 1 DETAILS			SHEET 5 OF 13

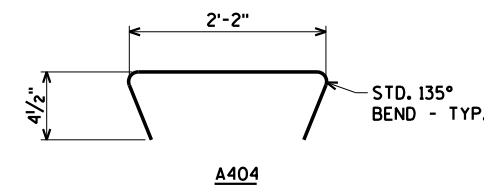
ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
 3433 Oakwood Hills Parkway
 Eau Claire, WI 54701
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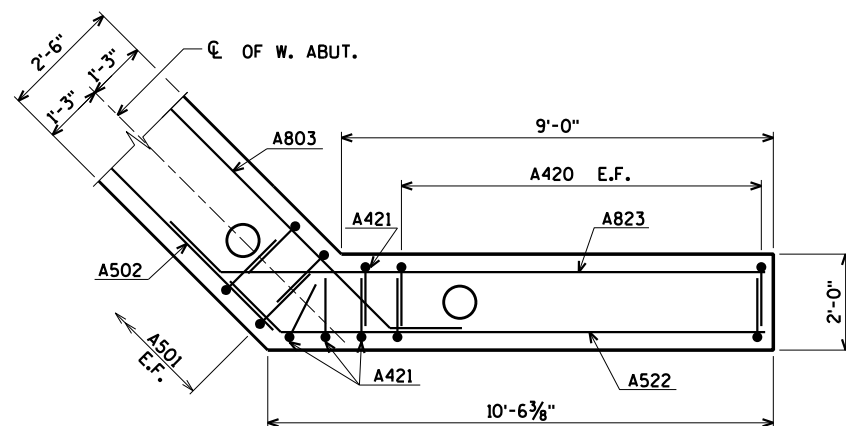
ELEVATION - WING 2



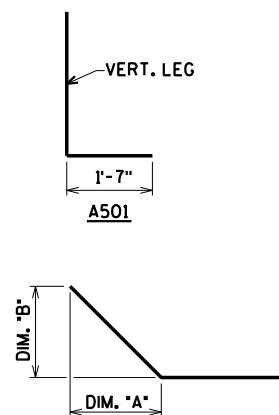
SECTION D



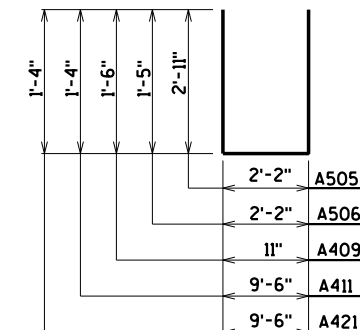
A404



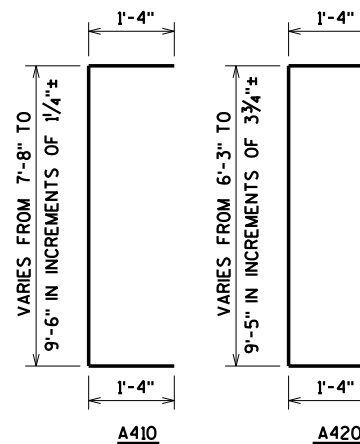
SECTION E



A501

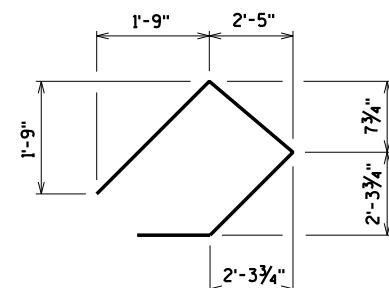


BAR NO.	DIM. 'A'	DIM. 'B'
A803	1'-0 3/4"	1'-0 3/4"
A512	1'-0 3/4"	1'-0 3/4"
A813	1'-0 3/4"	1'-0 3/4"
A417	13'-0"	1'-10"
A522	1'-0 3/4"	1'-0 3/4"
A823	1'-0 3/4"	1'-0 3/4"
A524	1'-0 3/4"	1'-0 3/4"
A825	1'-0 3/4"	1'-0 3/4"
A429	8'-0"	3'-4"

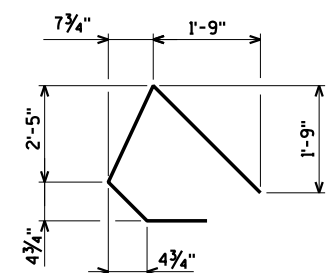


A410

A420



A418



A430

BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED BAR SERIES	3,410* UNCOATED 1,670* COATED	
						LOCATION	
A501		98	8-4	X		BODY VERT. E.F.	
A502		9	48-2			BODY HORIZ. F.F.	
A803		18	30-2	X		BODY HORIZ. B.F.	
A404		39	2-9	X		BODY TIES	
A505		49	7-10	X		BODY VERT. TOP	
A506		8	4-9	X		BODY VERT. TOP	
A407		3	7-3			BODY HORIZ. TOP	
A408		2	44-0			BODY HORIZ. TOP NOTCH	
A409		30	3-9	X		BODY VERT. TOP NOTCH	
A410	X	36	11-1	X		WING 1 VERT. E.F.	
A411	X	4	12-0	X		WING 1 VERT. E.F.	
A512	X	9	16-9	X		WING 1 HORIZ. F.F.	
A813	X	9	18-3	X		WING 1 HORIZ. B.F.	
A414	X	2	15-2			WING 1 HORIZ. E.F.	
A415	X	2	11-9			WING 1 HORIZ. E.F.	
A416	X	2	7-4			WING 1 HORIZ. E.F.	
A417	X	2	14-5	X		WING 1 DIAG. E.F.	
A418	X	4	9-8	X		WING 1 HORIZ.	
A419	X	8	3-2			WING 1 VERT.	
A420	X	22	10-4	X		WING 2 VERT. E.F.	
A421	X	4	12-0	X		WING 2 VERT. E.F.	
A522	X	8	11-9	X		WING 2 HORIZ. F.F.	
A823	X	8	13-3	X		WING 2 HORIZ. B.F.	
A524	X	1	10-0	X		WING 2 HORIZ. F.F.	
A825	X	1	11-6	X		WING 2 HORIZ. B.F.	
A426	X	2	7-0			WING 2 HORIZ. E.F.	
A427	X	2	5-6			WING 2 HORIZ. E.F.	
A428	X	2	4-0			WING 2 HORIZ. E.F.	
A429	X	2	10-9	X		WING 2 DIAG. E.F.	
A430	X	4	6-10	X		WING 2 HORIZ.	
A431	X	4	3-2			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

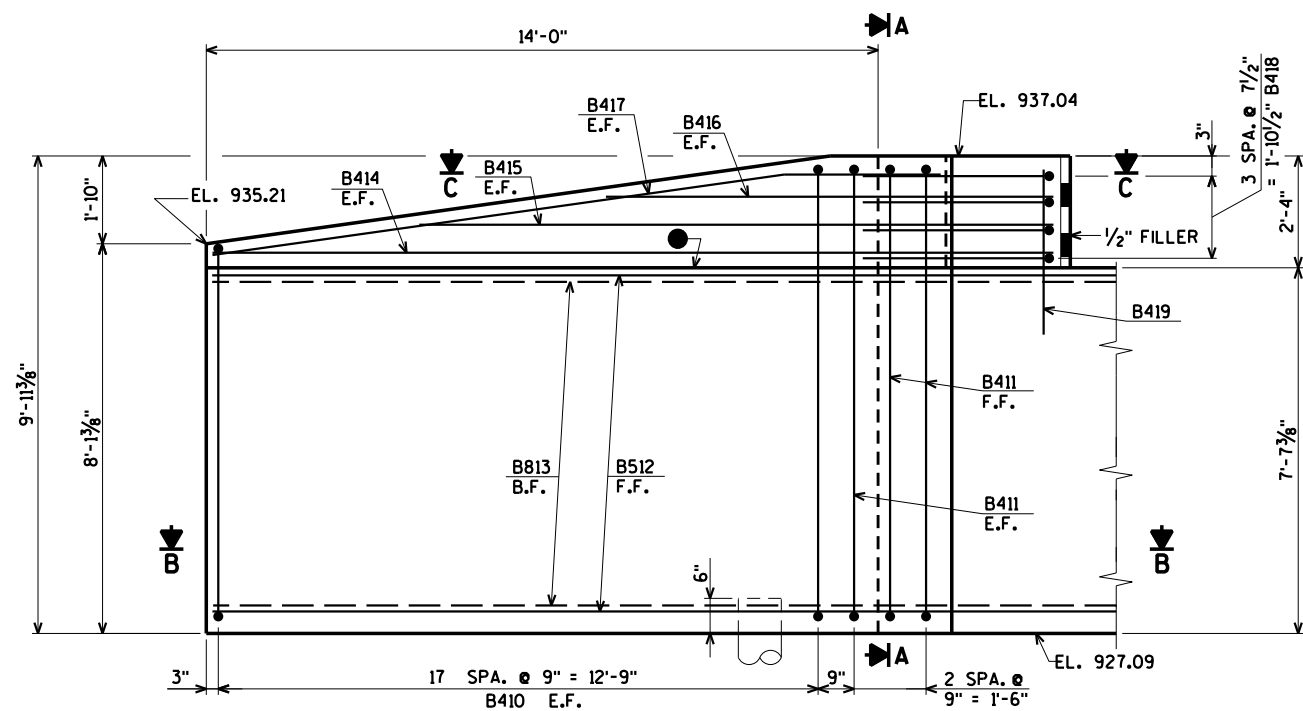
BAR MARK	NO REQ'D.	LENGTH
A410	2 SERIES OF 18	10'-2" TO 12'-0"
A420	2 SERIES OF 11	8'-9" TO 11'-11"

BUNDLE AND TAG EACH SERIES SEPARATELY.

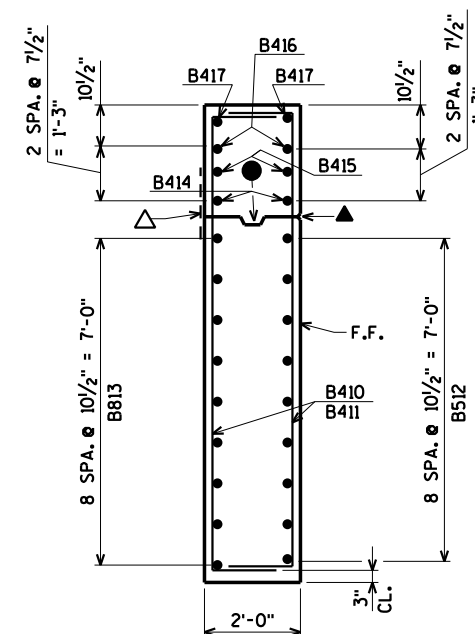
- ▲ 3/4" 'V' GROOVE ON F.F. OF WING - NOT REQUIRED IF CONST. JT. IS NOT USED.
 - OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" x 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F. (RUBBERIZED MEMBRANE WATERPROOFING INCIDENTAL TO BID ITEM "CONCRETE MANSORY BRIDGES" IF CONST. JOINT IS USED).
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- FOR PILE SPLICE DETAIL SEE SHEET 2.
 B.F. DENOTES BACK FACE.
 F.F. DENOTES FRONT FACE.
 E.F. DENOTES EACH FACE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-18-234			
DRAWN BY CJM		PLANS CK'D. CBM	
WEST ABUTMENT WING 2 DETAILS			SHEET 6 OF 13

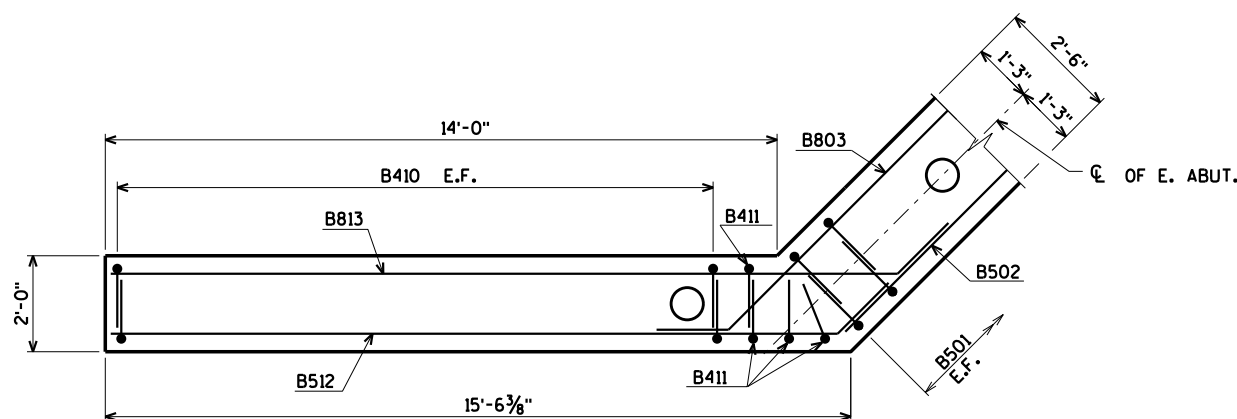
ORIGINAL PLANS PREPARED BY
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 3433 Oakwood Hills Parkway
 Eau Claire, WI 54701
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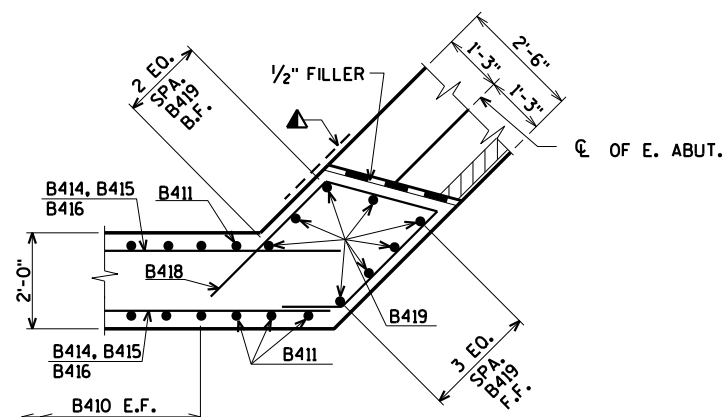
ELEVATION - WING 3



SECTION A



SECTION B



SECTION C

- ▲ 3/4" 'V' GROOVE ON F.F. OF WING - NOT REQUIRED IF CONST. JT. IS NOT USED.
 - OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" x 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F. (RUBBERIZED MEMBRANE WATERPROOFING INCIDENTAL TO BID ITEM "CONCRETE MANSONRY BRIDGES" IF CONST. JOINT IS USED).
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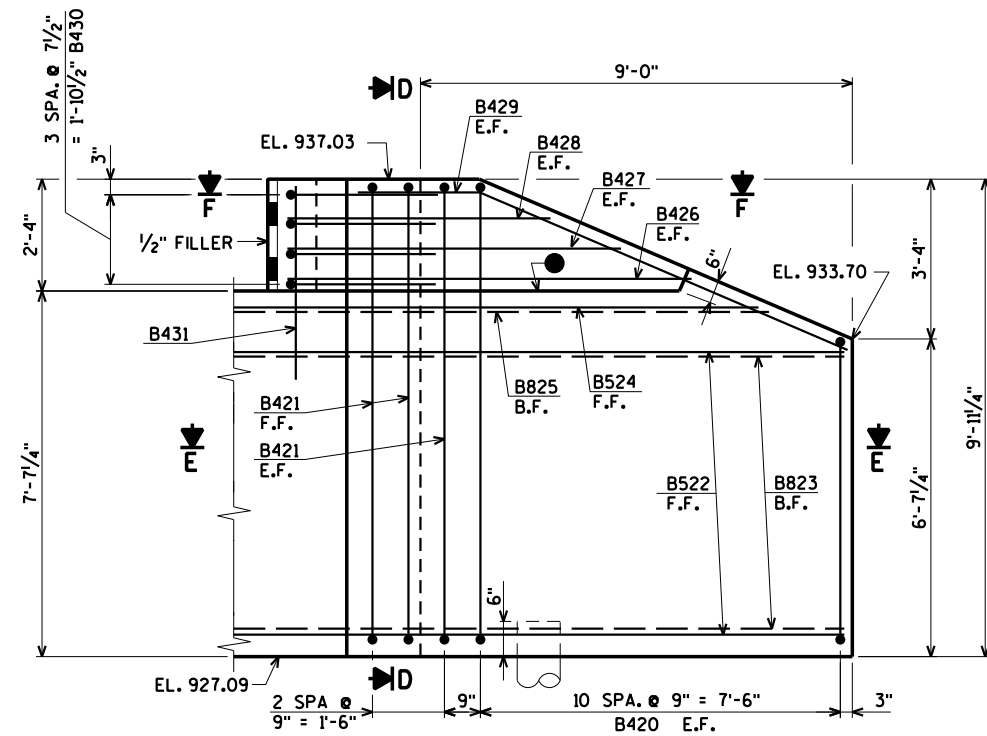
\$PRNAME\$ U:\42-1091.00 - Eau Claire Co. CTH D over Beaver Creek Structures\Final\421091.Led.DGN

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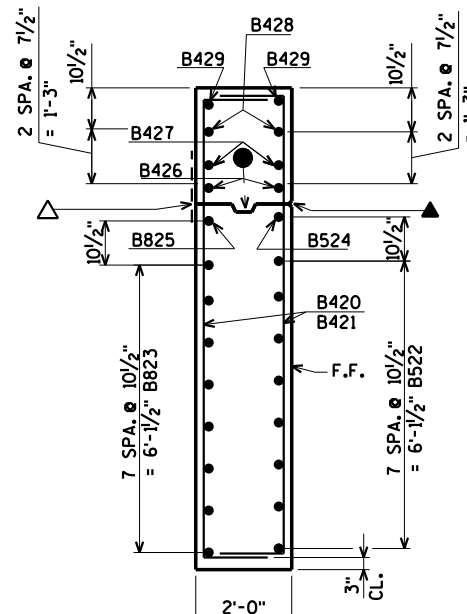
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-18-234			
DRAWN BY CJM		PLANS CK'D. CBM	
EAST ABUTMENT WING 3 DETAILS			SHEET 8 OF 13

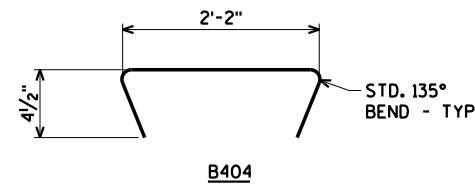
ORIGINAL PLANS PREPARED BY
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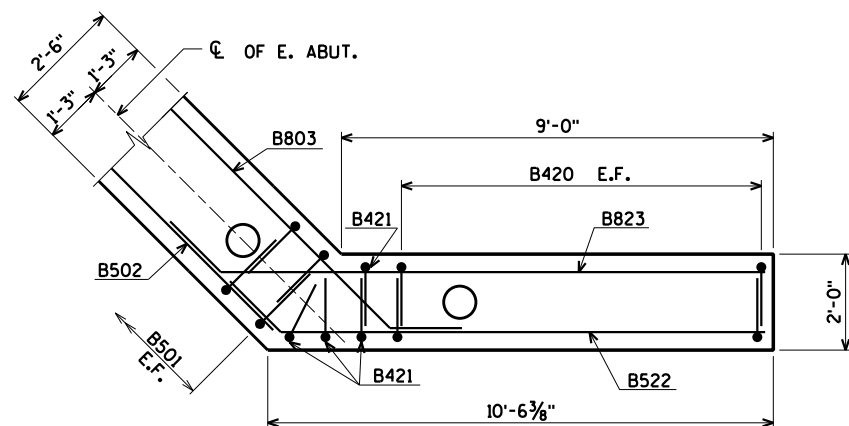
ELEVATION - WING 4



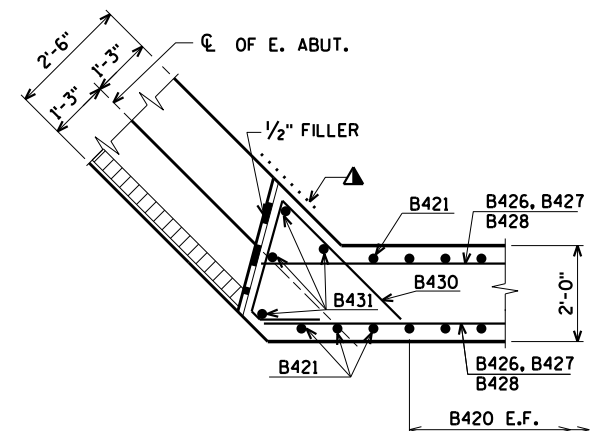
SECTION D



B404



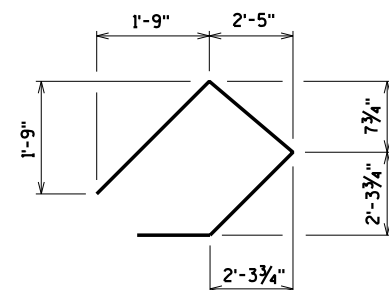
SECTION E



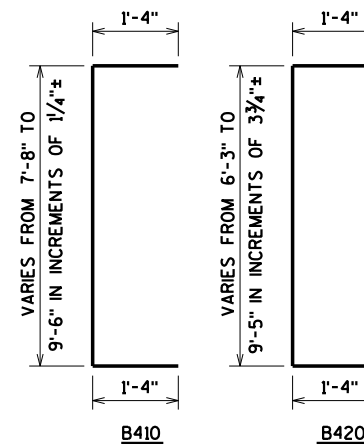
SECTION F

- ▲ 3/4" 'V' GROOVE ON F.F. OF WING - NOT REQUIRED IF CONST. JT. IS NOT USED.
 - OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" x 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F. (RUBBERIZED MEMBRANE WATERPROOFING INCIDENTAL TO BID ITEM "CONCRETE MANSIONRY BRIDGES" IF CONST. JOINT IS USED).
 - ▲ 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING.
 - △ RUBBERIZED MEMBRANE WATERPROOFING IF CONST. JOINT IS USED (COST INCIDENTAL TO BID ITEM "CONCRETE MANSIONRY BRIDGES")
- FOR PILE SPLICE DETAIL SEE SHEET 2.
 B.F. DENOTES BACK FACE.
 F.F. DENOTES FRONT FACE.
 E.F. DENOTES EACH FACE.

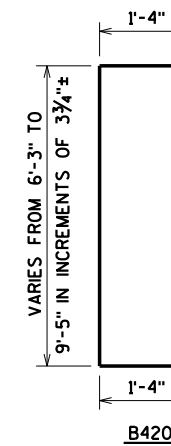
BAR NO.	DIM. 'A'	DIM. 'B'
B803	1'-0 3/4"	1'-0 3/4"
B512	1'-0 3/4"	1'-0 3/4"
B813	1'-0 3/4"	1'-0 3/4"
B417	13'-0"	1'-10"
B522	1'-0 3/4"	1'-0 3/4"
B823	1'-0 3/4"	1'-0 3/4"
B524	1'-0 3/4"	1'-0 3/4"
B825	1'-0 3/4"	1'-0 3/4"
B429	8'-0"	3'-4"



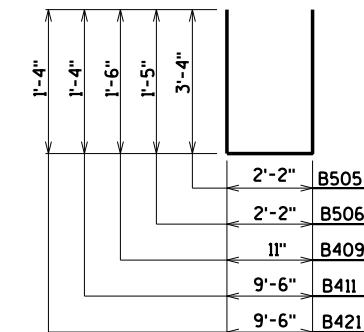
B418



B410



B420



B505

B506

B409

B411

B421

BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED	BAR SERIES	3,460' UNCOATED
							1,670' COATED
							LOCATION
B501		98	8-4	X			BODY VERT. E.F.
B502		9	48-2				BODY HORIZ. F.F.
B803		18	30-2	X			BODY HORIZ. B.F.
B404		39	2-9	X			BODY TIES
B505		49	8-8	X			BODY VERT. TOP
B506		8	4-9	X			BODY VERT. TOP
B407		3	7-3				BODY HORIZ. TOP
B408		2	44-0				BODY HORIZ. TOP NOTCH
B409		30	3-9	X			BODY VERT. TOP NOTCH
B410	X	36	11-1	X			WING 3 VERT. E.F.
B411	X	4	12-0	X			WING 3 VERT. E.F.
B512	X	9	16-9	X			WING 3 HORIZ. F.F.
B813	X	9	18-3	X			WING 3 HORIZ. B.F.
B414	X	2	15-2				WING 3 HORIZ. E.F.
B415	X	2	11-9				WING 3 HORIZ. E.F.
B416	X	2	7-4				WING 3 HORIZ. E.F.
B417	X	2	14-5	X			WING 3 DIAG. E.F.
B418	X	4	9-8	X			WING 3 HORIZ.
B419	X	8	3-2				WING 3 VERT.
B420	X	22	10-4	X			WING 4 VERT. E.F.
B421	X	4	12-0	X			WING 4 VERT. E.F.
B522	X	8	11-9	X			WING 4 HORIZ. F.F.
B823	X	8	13-3	X			WING 4 HORIZ. B.F.
B524	X	1	10-0	X			WING 4 HORIZ. F.F.
B825	X	1	11-6	X			WING 4 HORIZ. B.F.
B426	X	2	7-0				WING 4 HORIZ. E.F.
B427	X	2	5-6				WING 4 HORIZ. E.F.
B428	X	2	4-0				WING 4 HORIZ. E.F.
B429	X	2	10-9	X			WING 4 DIAG. E.F.
B430	X	4	6-10	X			WING 4 HORIZ.
B431	X	4	3-2				WING 4 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
B410	2 SERIES OF 18	10'-2" TO 12'-0"
B420	2 SERIES OF 11	8'-9" TO 11'-11"

BUNDLE AND TAG EACH SERIES SEPARATELY.

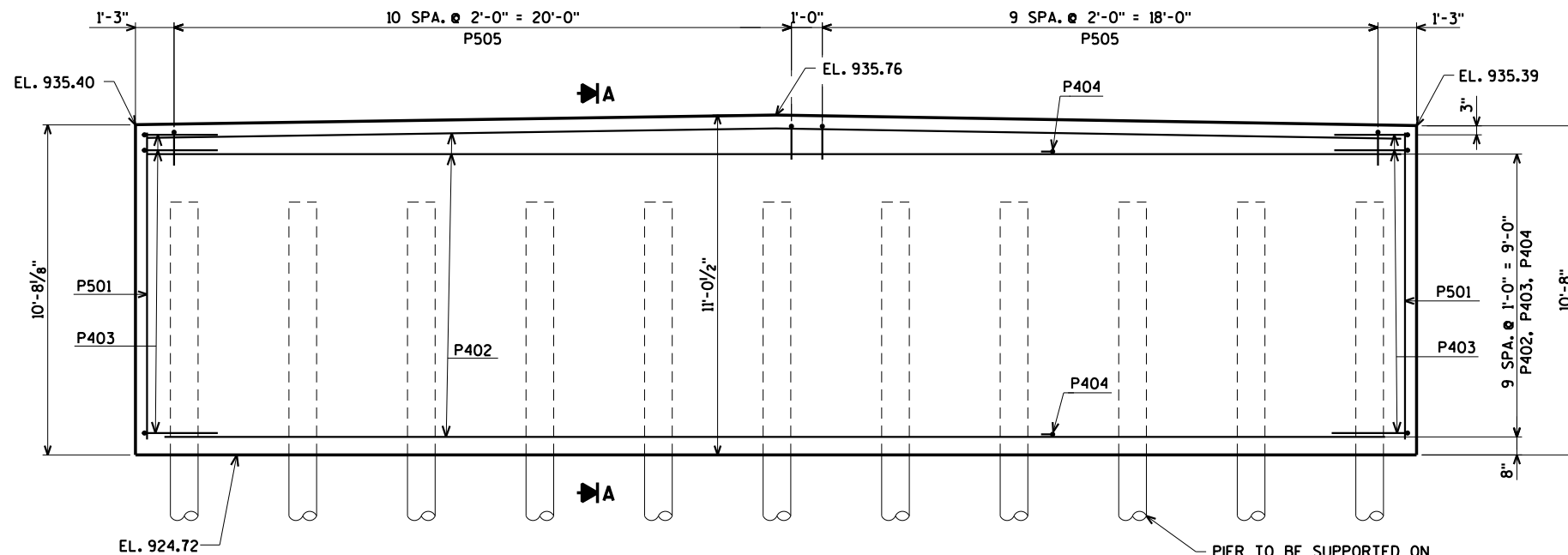
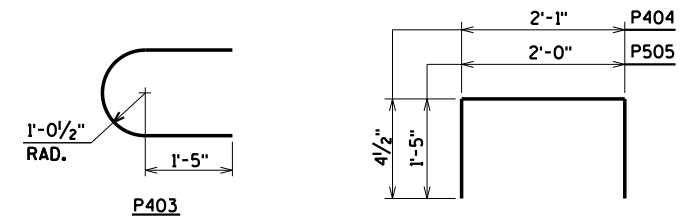
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-18-234			
DRAWN BY CJM		PLANS CK'D. CBM	
EAST ABUTMENT WING 4 DETAILS			SHEET 9 OF 13

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BILL OF BARS

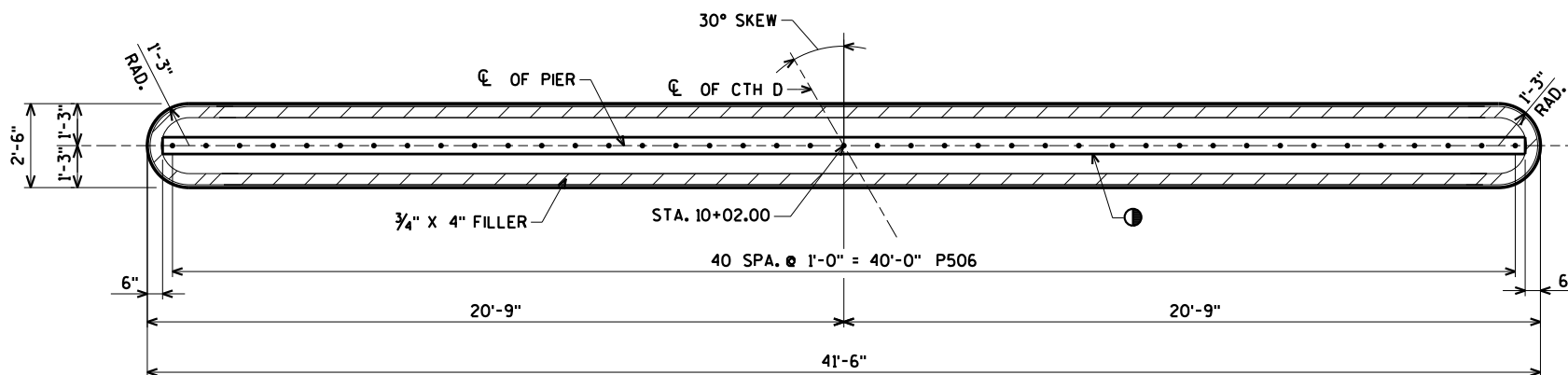
BAR NO.	COATED BAR	NO. REOD.	LENGTH	BENT BAR	BUNDLED BAR SERIES	90° COATED 1,860° UNCOATED
						LOCATION
P501		86	10-0			COLUMN VERT.
P402		22	39-0			COLUMN HORIZ.
P403		22	6-1	X		COLUMN HORIZ. @ ENDS
P404		110	2-8	X		COLUMN TIES
P505		21	4-7	X		COLUMN TOP
P506	X	41	2-0			COLUMN DOWELS

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



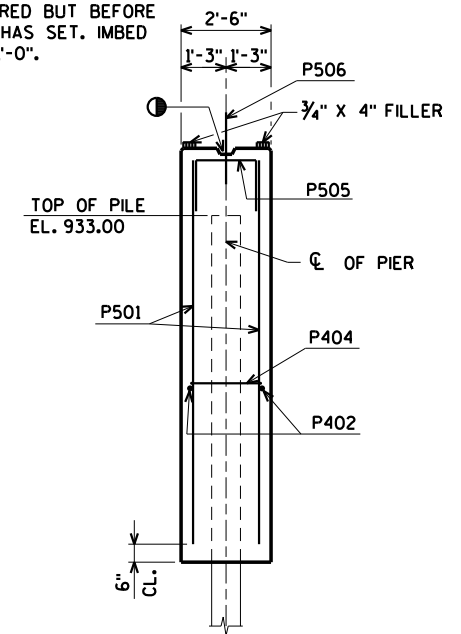
ELEVATION
(LOOKING EAST)

PIER TO BE SUPPORTED ON 10 3/4"Ø x 0.25" CIP CONCRETE (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 130 TONS PER PILE. ESTIMATED LENGTH 60'-0".

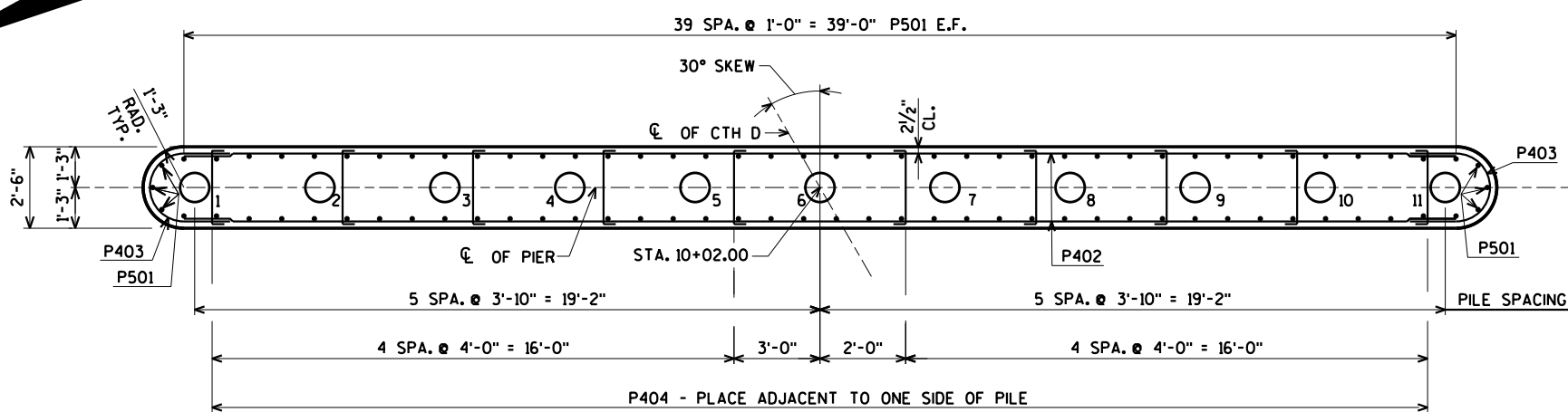


PLAN

P506 BARS MAY BE PLACED AFTER PIER IS POURED BUT BEFORE CONC. HAS SET. IMBED BARS 1'-0".



SECTION A



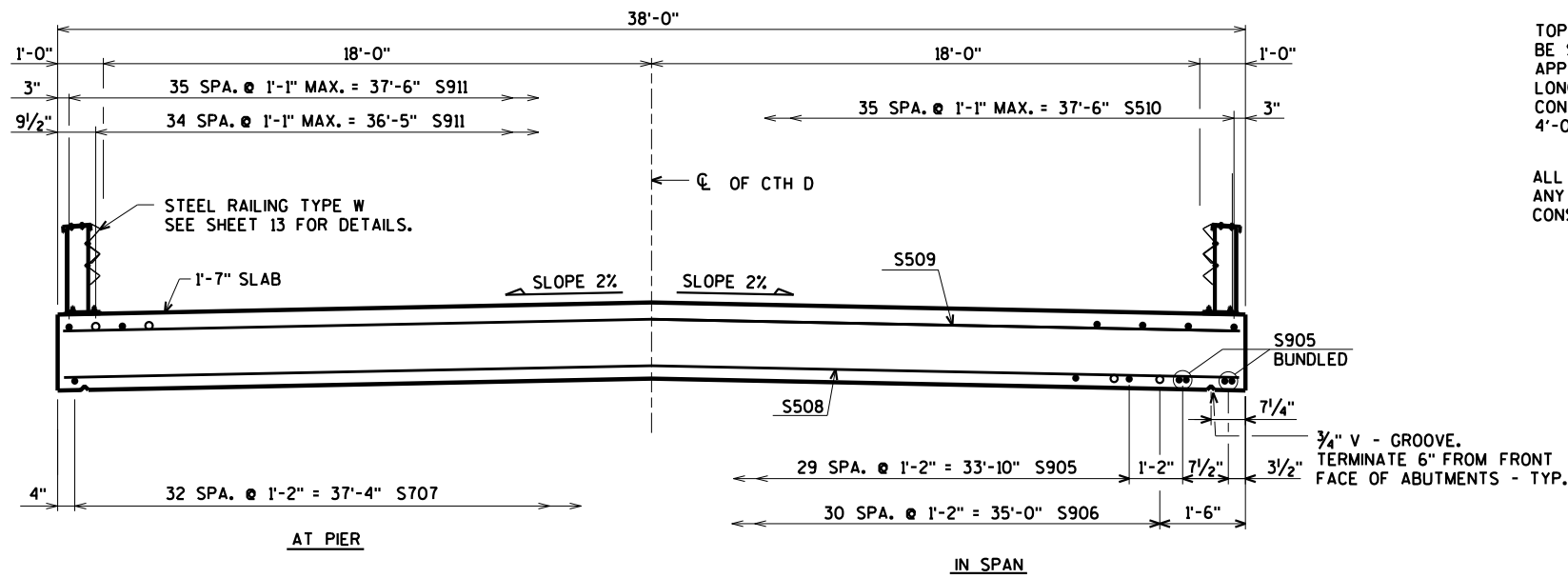
PILE LAYOUT

KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".
FOR PILE SPLICE DETAIL SEE SHEET 2.
E.F. DENOTES EACH FACE

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STRUCTURE B-18-234			
DRAWN BY CJM		PLANS CK'D. CBM	
PIER			SHEET 10 OF 13

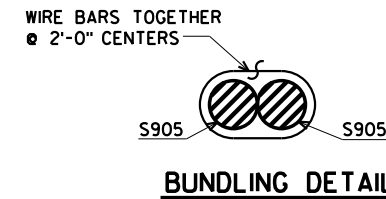
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TYPICAL SECTION THRU BRIDGE

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

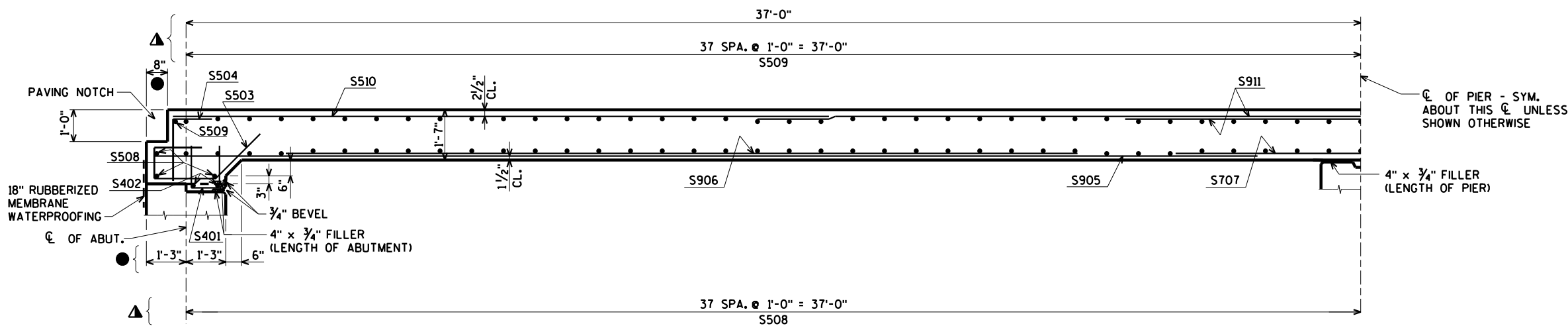
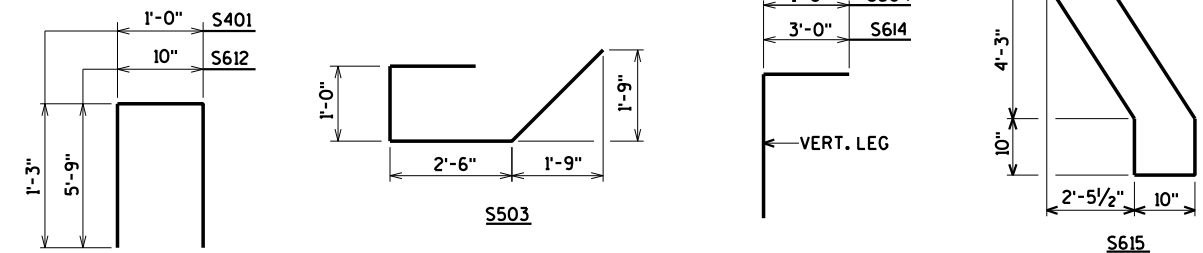
ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).



BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLED	BAR SERIES	32,860* COATED	
							LOCATION	
S401	X	78	3-4	X			SLAB @ ABUT. NOTCH	
S402	X	4	43-5				SLAB @ ABUT. NOTCH	
S503	X	78	7-2	X			SLAB @ ABUT.	
S504	X	78	3-4	X			SLAB @ ABUT.	
S905	X	76	35-0		X		SLAB LONG. BOT.	
S906	X	62	25-3				SLAB LONG. BOT.	
S707	X	33	14-2				SLAB LONG. BOT. @ PIER	
S508	X	81	43-5				SLAB TRANS. BOT.	
S509	X	77	43-5				SLAB TRANS. TOP	
S510	X	72	21-5				SLAB LONG. TOP	
S911	X	71	26-5				SLAB LONG. TOP @ PIER	
S612	X	48	12-0	X			SLAB @ RAIL POSTS	
S613	X	44	4-0				SLAB @ INT. RAIL POSTS	
S614	X	8	4-0	X			SLAB @ END RAIL POSTS	
S615	X	4	12-0	X			SLAB @ END RAIL POSTS	

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



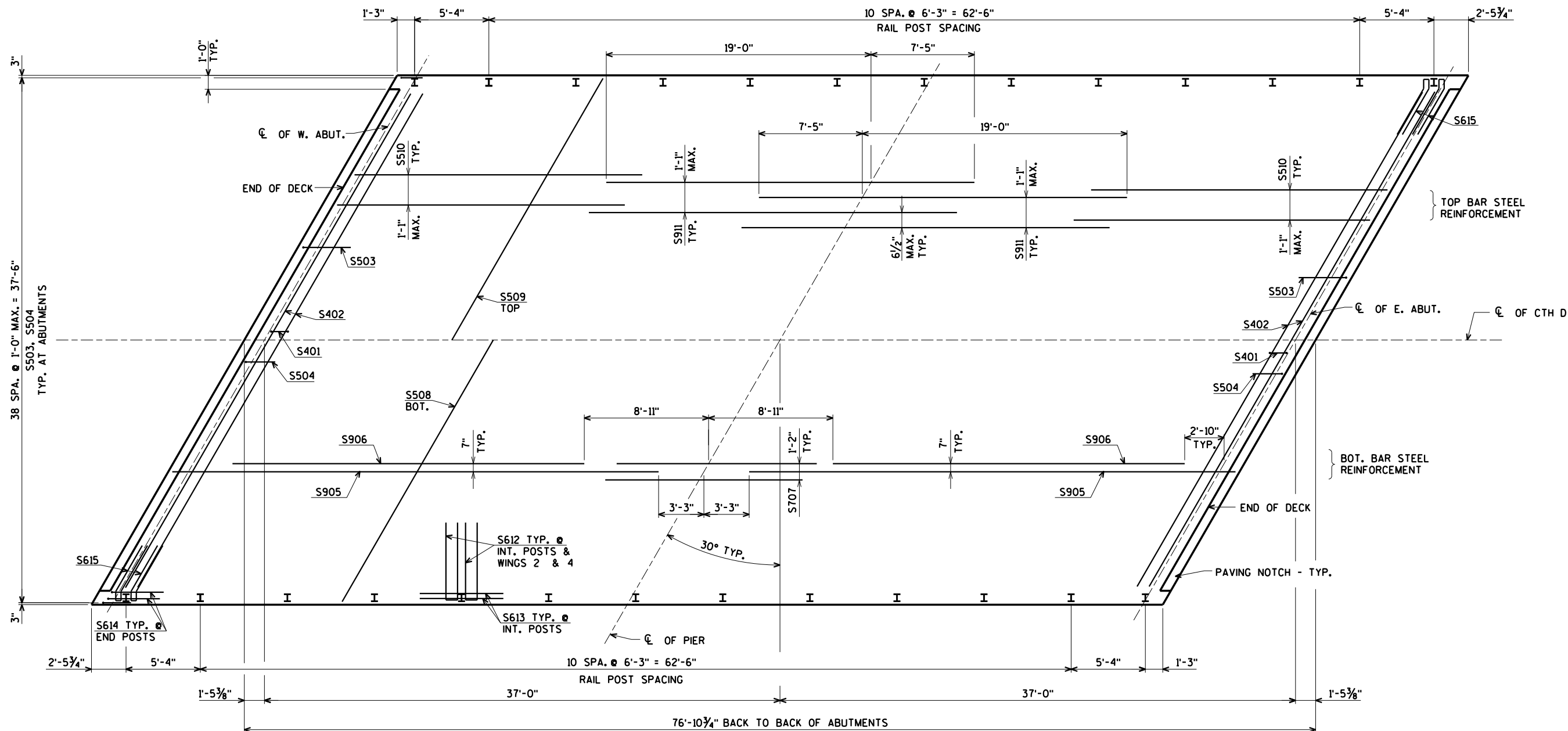
PART LONGITUDINAL SECTION

- DIMENSIONS MEASURED NORMAL TO CL OF SUBSTRUCTURE.
- ▲ DIMENSIONS MEASURED ALONG CL OF CTH D

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STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-18-234			
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SUPERSTRUCTURE			SHEET 11 OF 13

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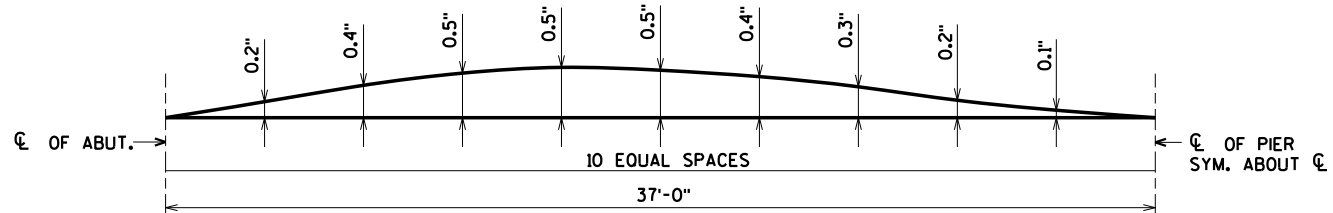


PLAN

TOP OF DECK ELEVATIONS

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

LOCATION	€ OF W. ABUT.	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	€ OF PIER	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	€ OF E. ABUT.	
N. EDGE OF SLAB	937.02	937.02	937.02	937.02	937.02	937.03	937.03	937.03	937.03	937.03	937.03	937.03	937.03	937.03	937.03	937.04	937.04	937.04	937.04	937.04	937.04	937.04
€ OF CTH D	937.39	937.39	937.40	937.40	937.40	937.40	937.40	937.40	937.40	937.40	937.41	937.41	937.41	937.41	937.41	937.41	937.41	937.41	937.41	937.42	937.42	937.42
S. EDGE OF SLAB	937.01	937.01	937.01	937.01	937.01	937.02	937.02	937.02	937.02	937.02	937.02	937.02	937.02	937.02	937.03	937.03	937.03	937.03	937.03	937.03	937.03	937.03



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 € OF ABUTMENTS, € OF PIER AND 1/2 POINTS TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGE OF SLAB AND CROWN OR €.

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STRUCTURE B-18-234			
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SUPERSTRUCTURE PLAN			SHEET 12 OF 13

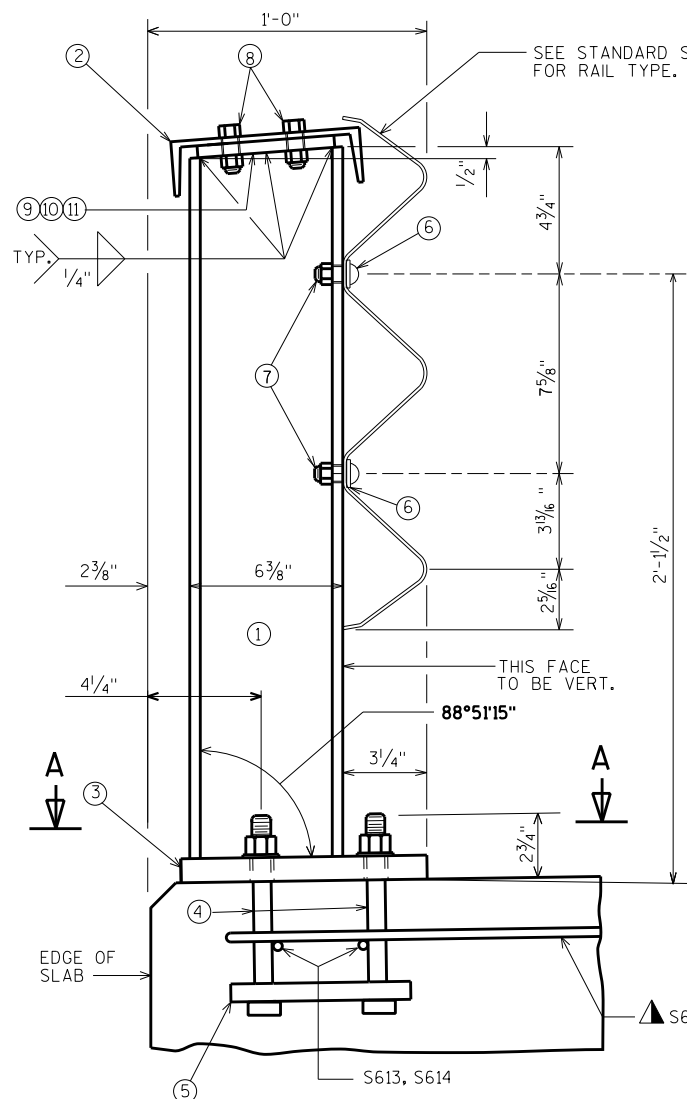
LEGEND

- ① W6x25 WITH 2 - 3/4" x 2 1/2" VERT. SLOTS IN FLG. (SLOT ON OTHER SIDE OF WEB IS OPTIONAL) FOR NO. 7. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POSTS VERTICAL AND NORMAL TO GRADE LINE.
- ② C8x11.5 WITH 13/16" DIA. HOLES FOR NO. 8.
- ③ BASE PLATE 1" X 9 1/2" X 10" WITH 1/16" X 1/2" SLOTTED HOLES FOR ANCHOR BOLTS NO. 4. WELD TO NO. 1 AS SHOWN.
- ④ A325 - 7/8" DIA. HEX BOLTS (GALVANIZED) WITH A325 NUT AND WASHER. 14" LONG AT END POSTS AND AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 15". USE 8" LONG AT ALL OTHER LOCATIONS. 4 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 3. CHAMFER TOP OF BOLTS BEFORE THREADING.
- ⑤ 1/4" x 8" x 8" FLAT BAR WITH 13/16" DIA. HOLES FOR ANCHOR BOLTS NO. 4.
- ⑥ 1 3/4" x 3" MOUNTING BOLT WASHER (GALVANIZED).
- ⑦ 5/8" DIA. BUTTON HEAD POST MOUNTING BOLT WITH ROUND WASHER AND NUT.
- ⑧ 5/8" DIA. x 2" HEX BOLTS WITH NUT AND TWO WASHERS EACH.
- ⑨ PLATE 1/2" x 5 3/4" x 6" AT BASIC POST CONNECTION. 1/4" DIA. HOLES IN PLATE. 13/16" DIA. HOLES IN CHANNEL.
- ⑩ ~~PLATE 1/2" x 5 3/4" x 1 2 1/2". 1/4" DIA. HOLES IN PLATE. 13/16" DIA. HOLES IN CHANNEL. EXPANSION SLOTS ON JOINT SIDE OF POST. 1/16" x 2 1/4" IN PLATE. 1/16" x 2 1/4" IN CHANNEL. (AT EXPANSION SPLICE).~~
- ⑪ PLATE 1/2" x 5 3/4" x 1 1/2". 1/4" DIA. HOLES IN PLATE. 13/16" DIA. HOLES IN CHANNEL. (AT TYPICAL SPLICE.)

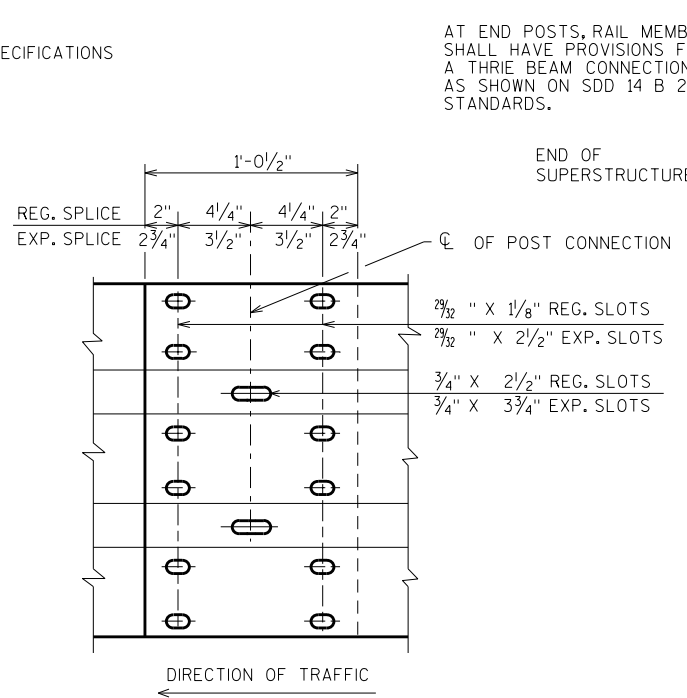
NOTES

- BID ITEM SHALL BE "RAILING STEEL TYPE W" WHICH INCLUDES ALL ITEMS SHOWN.
- 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 CUTS.
- ALL MATERIAL EXCEPT ANCHORAGE DETAIL NO. 5 SHALL BE GALVANIZED AFTER FABRICATION.
- PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS AND CHANNELS SHALL BE GIVEN A NO. 6 COMMERCIAL BLAST CLEANING BY SSPC SPECS.
- ALL MATERIAL USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO ASTM DESIGNATION A709 GRADE 36 UNLESS NOTED OTHERWISE.
- FILL BOLT SLOT OPENINGS IN POST SHIMS & PLATE NO. 3 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.
- CHANNEL MEMBER SHALL BE ATTACHED CONTINUOUSLY TO A MINIMUM OF FOUR POSTS AND A MAXIMUM OF EIGHT (EXCEPT AT ABUTMENTS).
- AT EXPANSION SLOTS IN RAIL AND CHANNEL MEMBERS, TIGHTEN BOLTS, BACK OFF ONE HALF TURN AND BURR THREADS. RAIL MEMBERS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC AND THE UPPER RAIL SHALL LAP THE LOWER RAIL.
- STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
- SEE STANDARD SPECIFICATIONS FOR RAIL TYPE.
- ▲ PLACE BELOW AND TIE TO TOP MAT OF STEEL.

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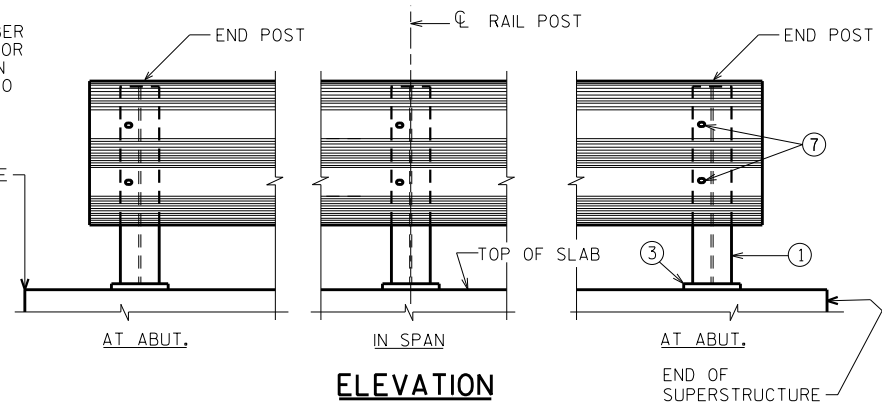


SECTION THRU RAILING

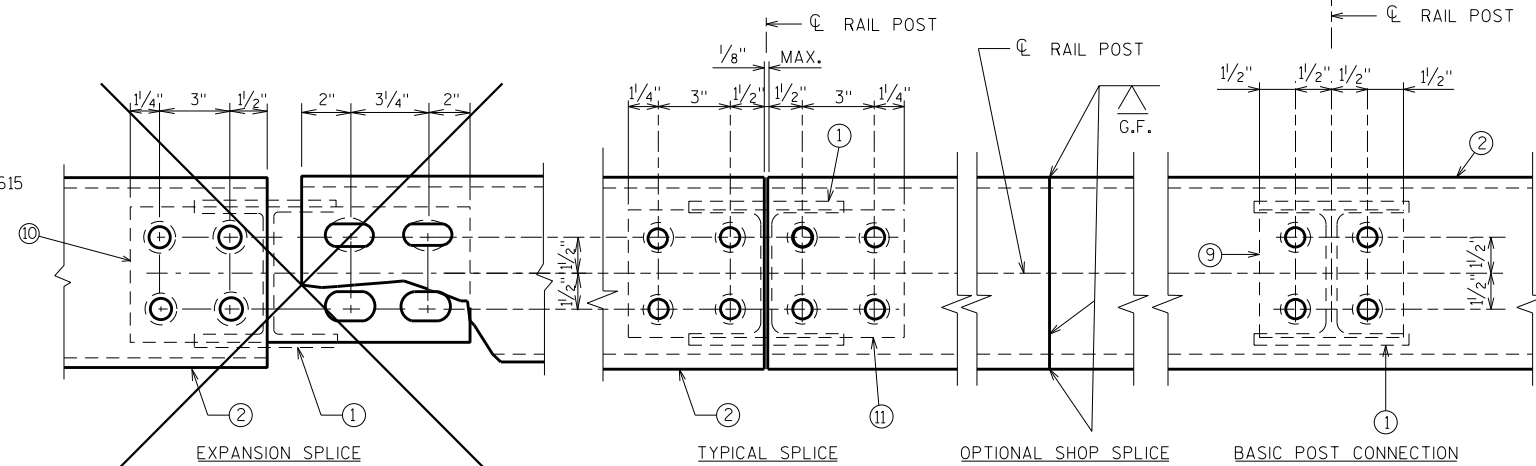


RAIL MEMBER SPLICE

5/8" DIA. BUTTON HEAD OVAL SHOULDER BOLTS WITH HEX NUTS AT ALL SLOTS.

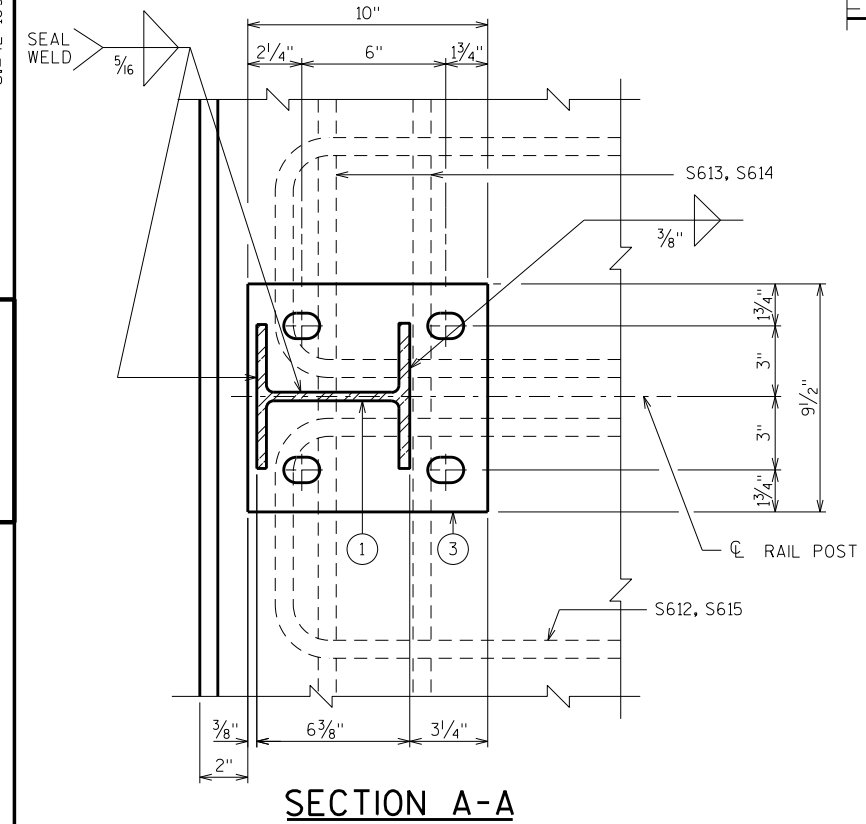


ELEVATION

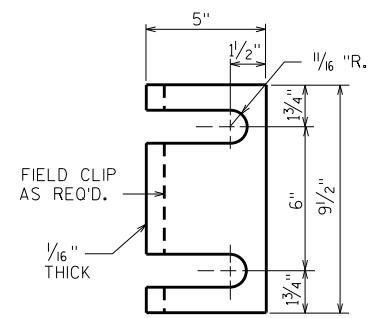


CHANNEL MEMBER DETAILS

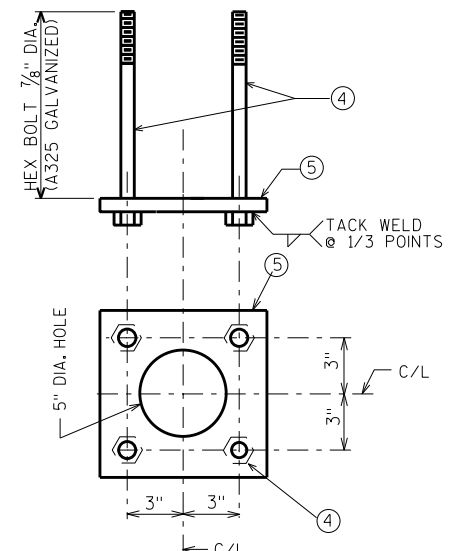
SHIM PLATES 6" X 1/16" X 6" MAY BE USED BETWEEN TOP OF POST AND CHANNEL MEMBER TO ACHIEVE VERTICAL ALIGNMENT.



SECTION A-A



POST SHIM DETAIL
(4 PER POST)



ANCHORAGE DETAIL

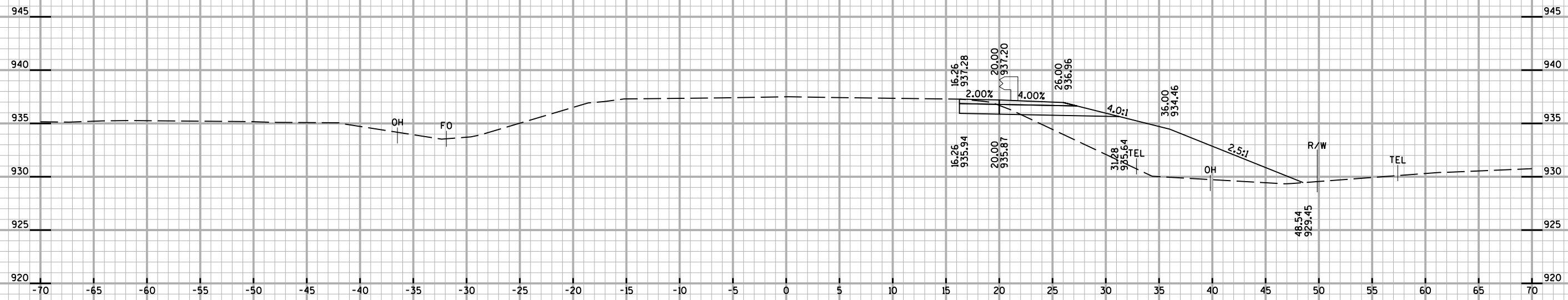
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STRUCTURE B-18-234			
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STEEL RAILING TYPE "W"			SHEET 13 OF 13

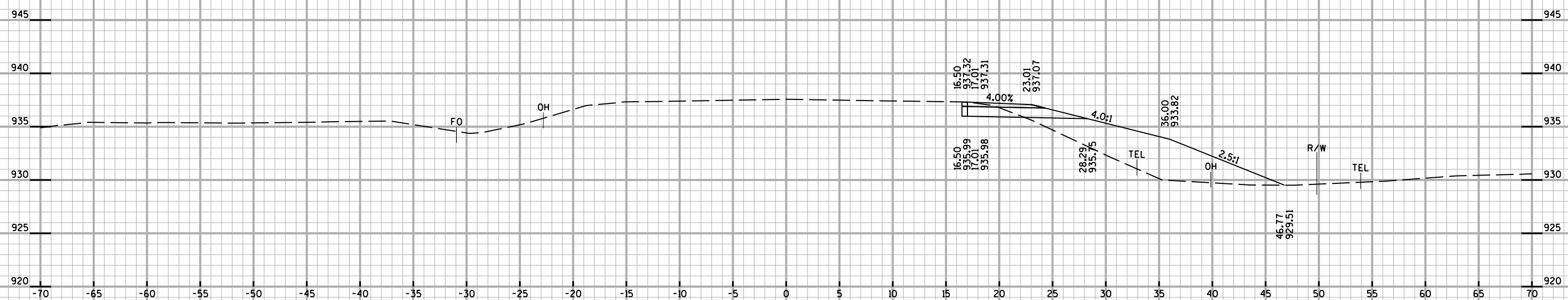
CTH D COMPUTER EARTHWORK

Station	Distance	Area (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)		Mass Ordinate
		Cut	Unuseable Pavement Material	Fill	Cut	Salvaged / Unuseable Pavement Material	Fill	Cut 1.00	Expanded Fill 1.30	
8+04.95	--	5.2	0.0	0.0						
8+25	20.05	5.1	0.0	55.1	4	0	20	4	27	-23
8+36.95	11.95	5.3	0.0	70.1	2	0	28	6	63	-56
8+50	13.05	5.3	0.0	64.5	3	0	33	9	105	-96
8+51.26	1.26	10.5	0.0	63.7	0	0	3	9	109	-100
8+61.95	10.69	9.7	0.0	79.9	4	0	27	13	144	-131
8+75	13.05	8.4	0.0	87.2	4	0	40	17	197	-180
8+83.26	8.26	7.5	0.0	84.9	2	0	26	20	231	-211
8+86.95	3.69	7.0	0.0	81.6	1	0	11	21	246	-225
9+00	13.05	7.3	0.0	86.0	3	0	41	24	299	-274
9+08.26	8.26	8.0	0.0	87.3	2	0	27	27	333	-306
9+25	16.74	10.5	0.0	62.0	6	0	46	32	393	-361
9+25	--	46.6	24.4	62.0						
9+33.26	8.26	47.9	23.7	51.8	14	7	17	39	416	-376
9+50	16.74	50.5	22.8	51.9	30	14	32	56	458	-402
9+64.33	14.33	50.5	22.8	51.9	27	12	28	70	493	-423
B-18-234	--	--	--	--	--	--	--	--	--	--
10+39.67	--	48.6	22.3	54.0	--	--	--	--	--	--
10+50	10.33	48.6	22.3	54.0	19	9	21	80	520	-440
10+70.74	20.74	45.7	23.1	52.4	36	17	41	99	573	-474
10+75	4.26	44.5	23.4	55.0	7	4	8	103	584	-482
10+75	--	10.7	0.0	55.0						
10+95.74	20.74	10.3	0.0	52.1	8	0	41	111	638	-527
11+00	4.26	10.0	0.0	54.9	2	0	8	112	649	-537
11+20.74	20.74	9.5	0.0	64.8	8	0	46	120	709	-589
11+25	4.26	9.8	0.0	62.8	2	0	10	121	722	-600
11+50	25.00	11.3	0.0	28.5	10	0	42	131	777	-646
11+52.74	2.74	11.1	0.0	23.1	1	0	3	132	780	-648
11+75	22.26	4.8	0.0	31.7	7	0	23	139	809	-671
11+79.55	4.55	4.8	0.0	31.2	1	0	5	140	816	-677
12+00	20.45	4.5	0.0	52.8	3	0	32	143	858	-715
12+04.55	4.55	4.4	0.0	59.2	1	0	9	144	870	-726
12+25	20.45	4.1	0.0	67.8	3	0	48	147	932	-785
12+29.55	4.55	4.0	0.0	70.1	1	0	12	148	948	-800
12+50	20.45	3.5	0.0	55.8	3	0	48	150	1010	-859
12+61.55	11.55	4.2	0.0	0.0	2	0	12	152	1025	-873
					216	63	789			

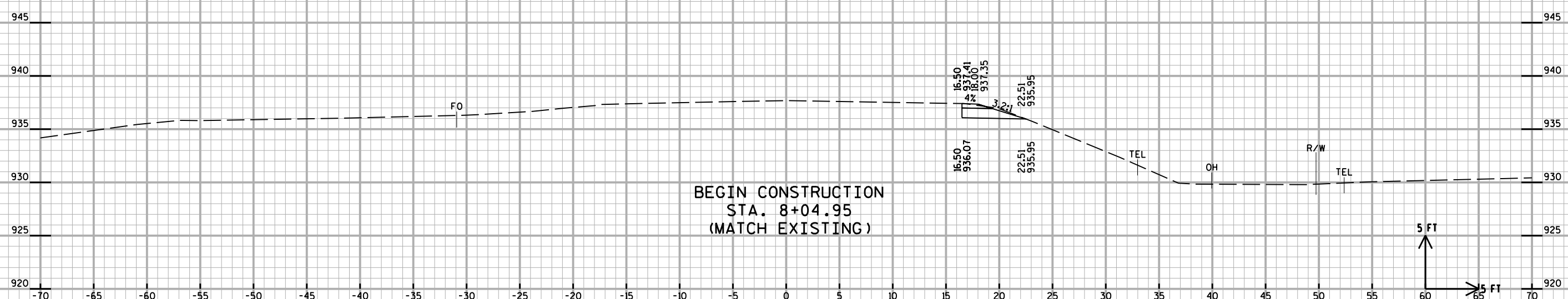
Note 1 - Cut	Cut includes existing asphalt pavement.
Note 2 - Fill	Volume needed to be filled.
Note 3 - Mass Ordinate	(Cut) - (Fill * 1.30)
Note 4 - Salvaged / Unuseable Pavement Material	Existing existing asphalt pavement to be removed from Cut.
Note 5 - Cut	Cut reduced by salvaged/unuseable asphaltic pavement



POST IRT
8+37

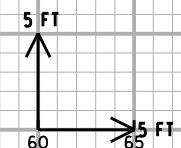


8+25



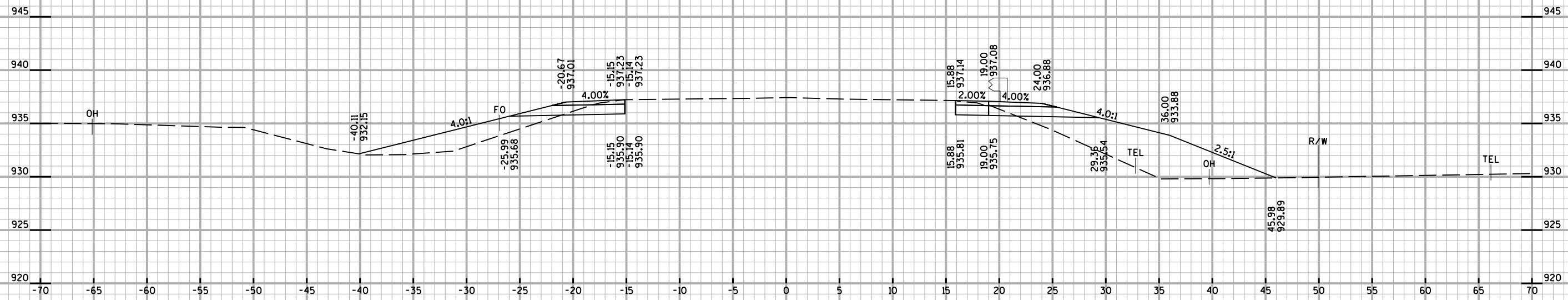
8+05

BEGIN CONSTRUCTION
STA. 8+04.95
(MATCH EXISTING)

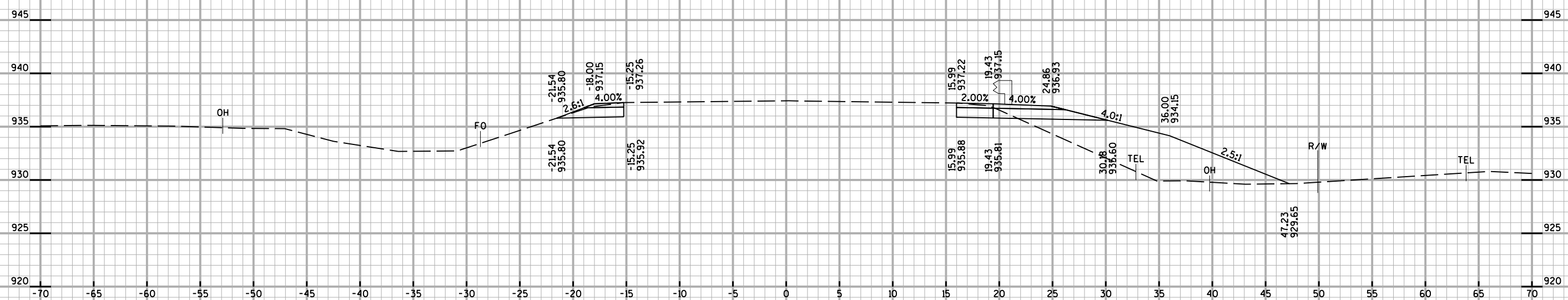


9

9



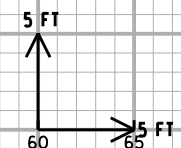
POST 5 RT
8+62



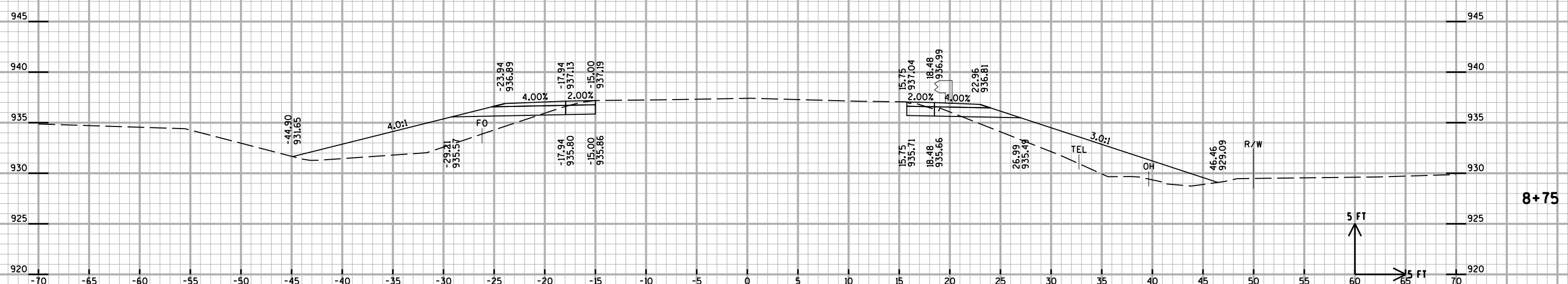
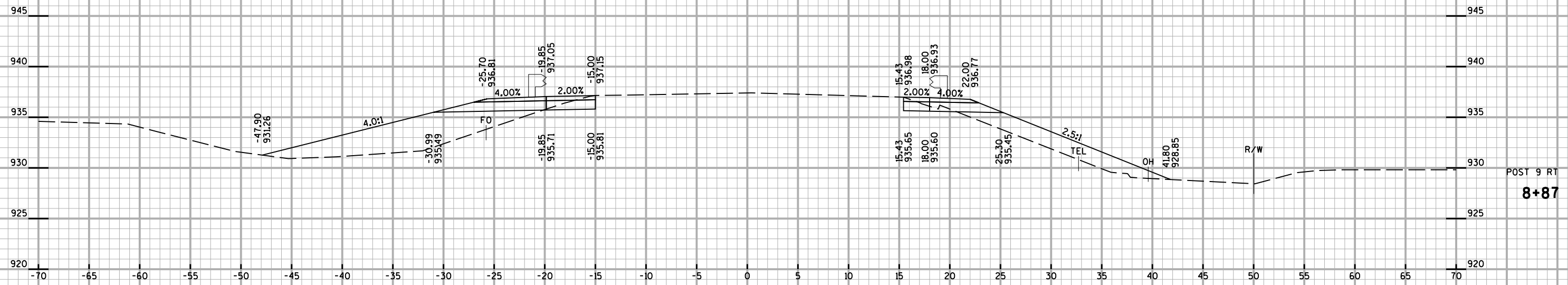
8+51

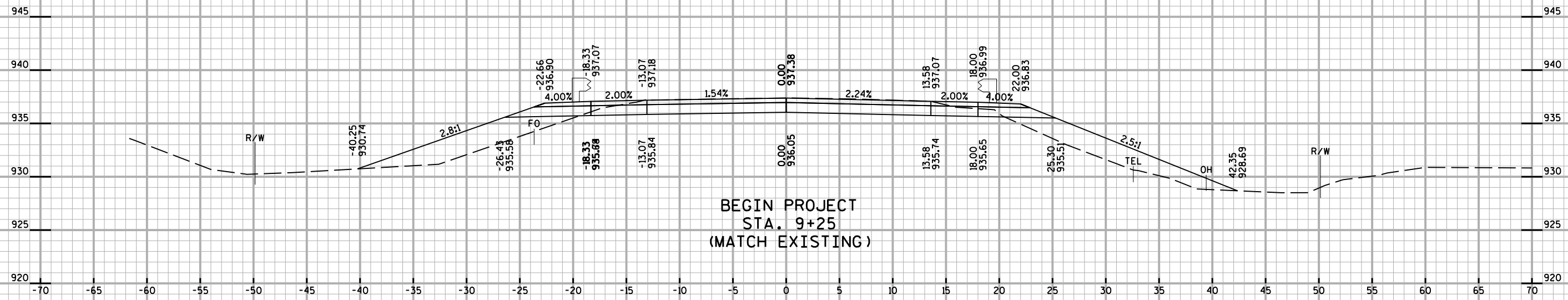


8+50

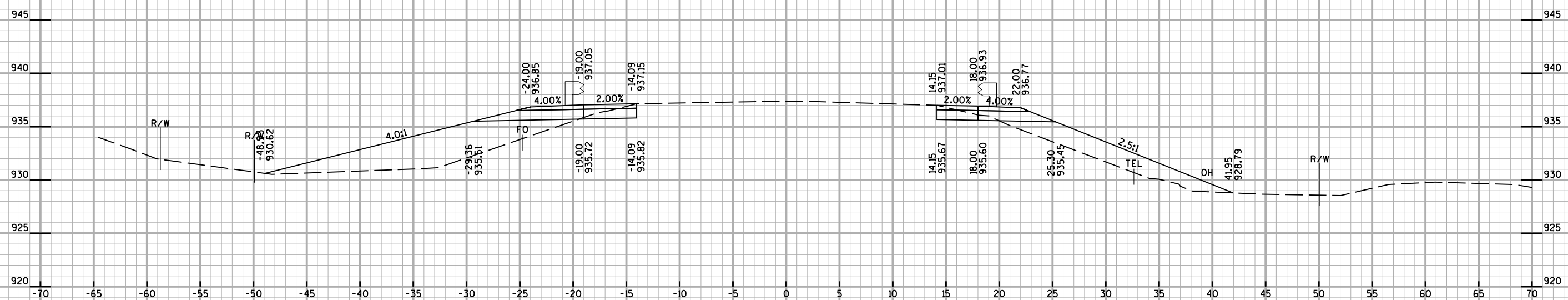


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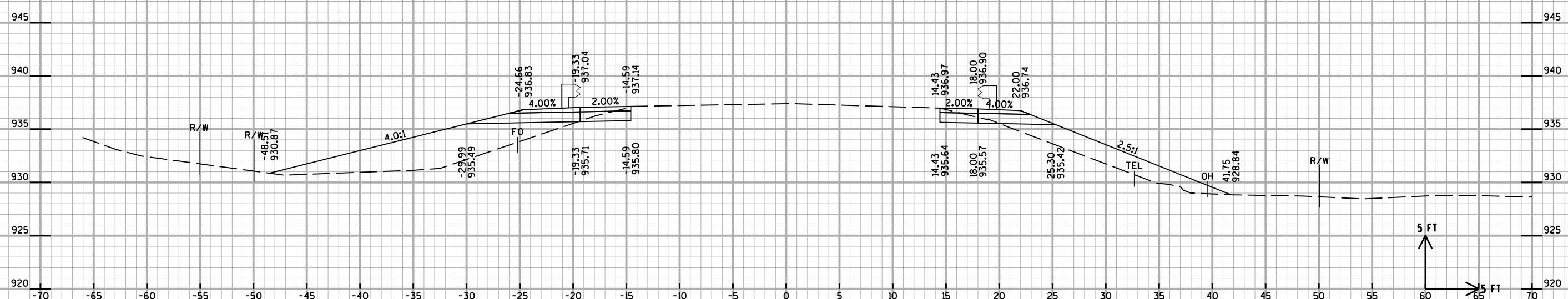




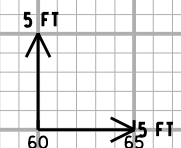
9+25

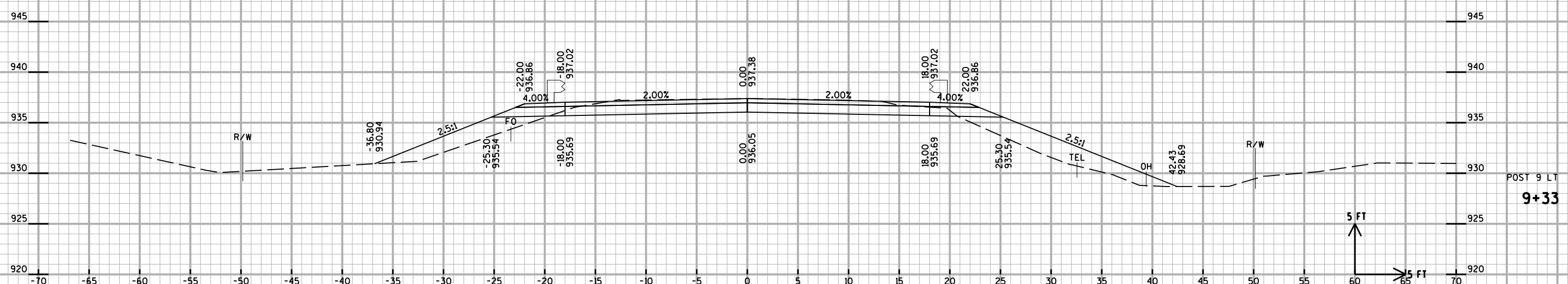
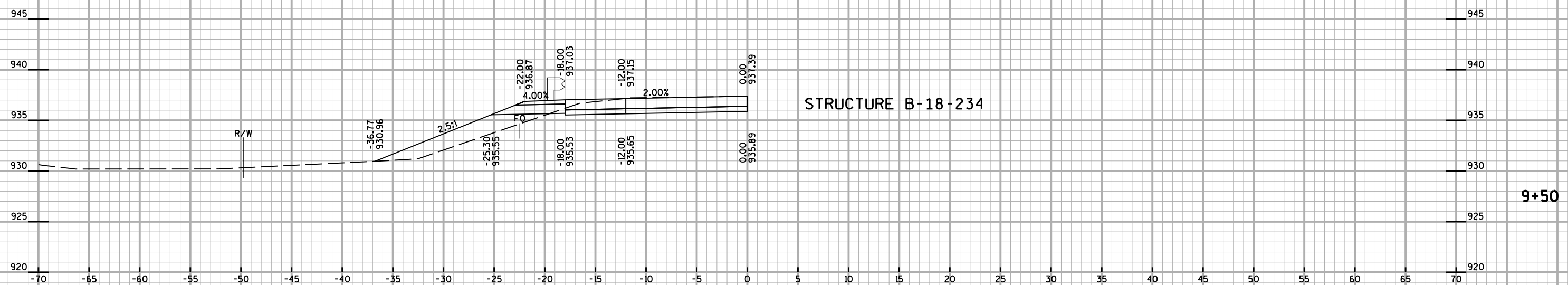
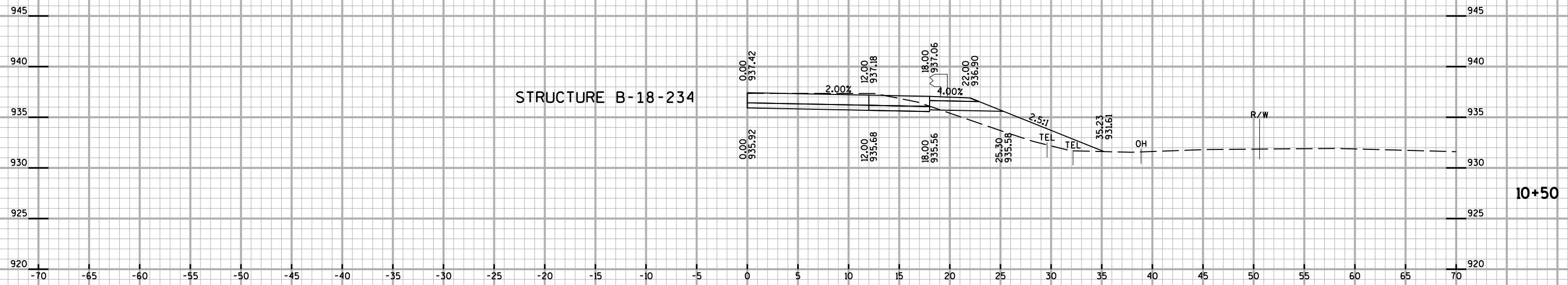


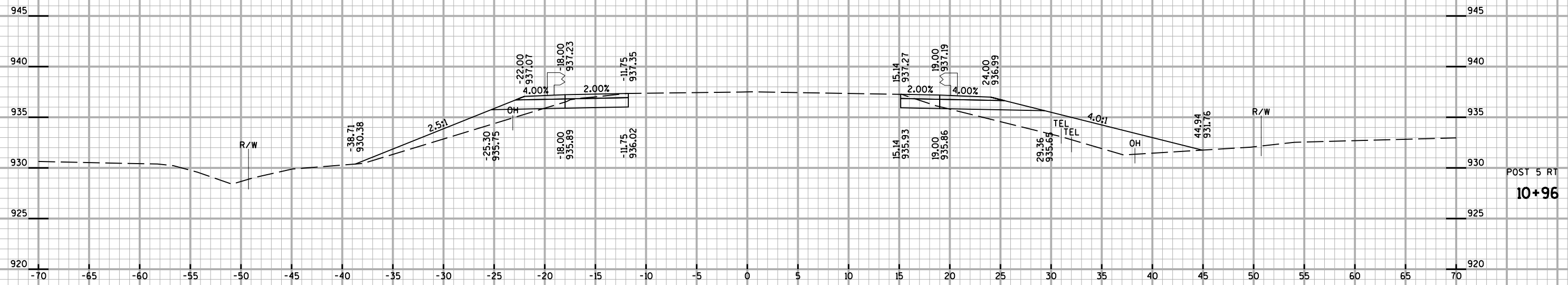
POST 5 LT 9+08



9+00

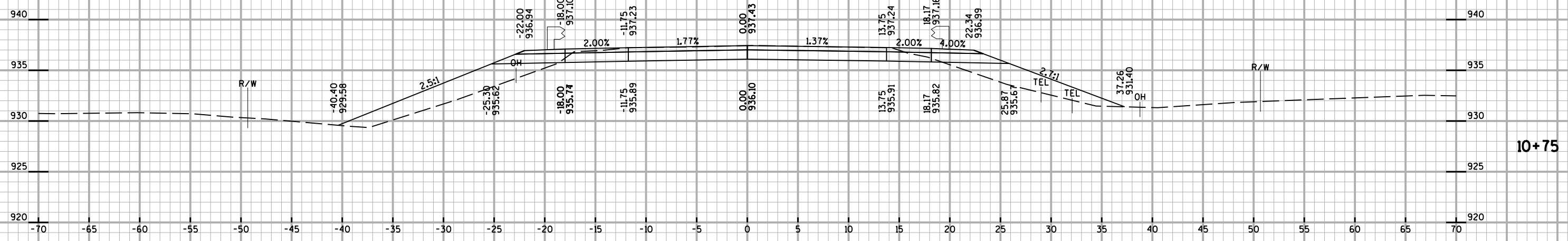




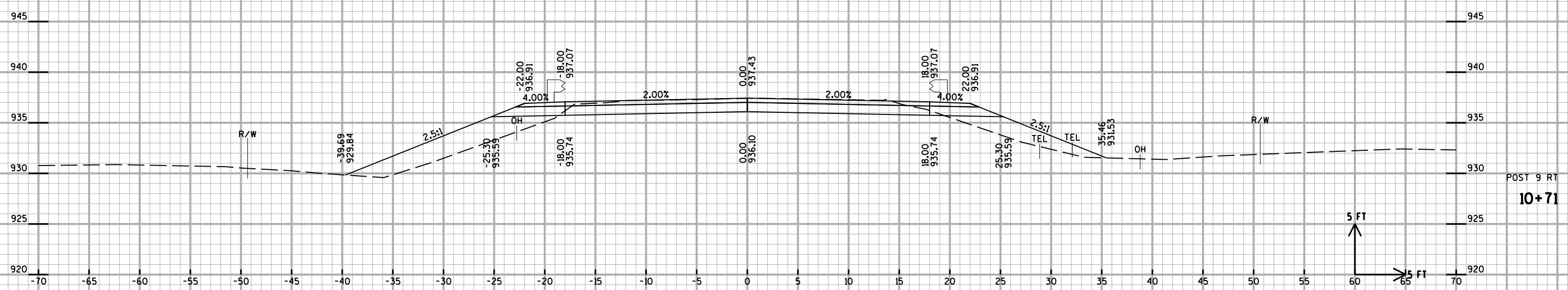


POST 5 RT
10+96

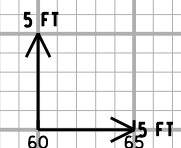
END PROJECT
STA. 10+75
(MATCH EXISTING)

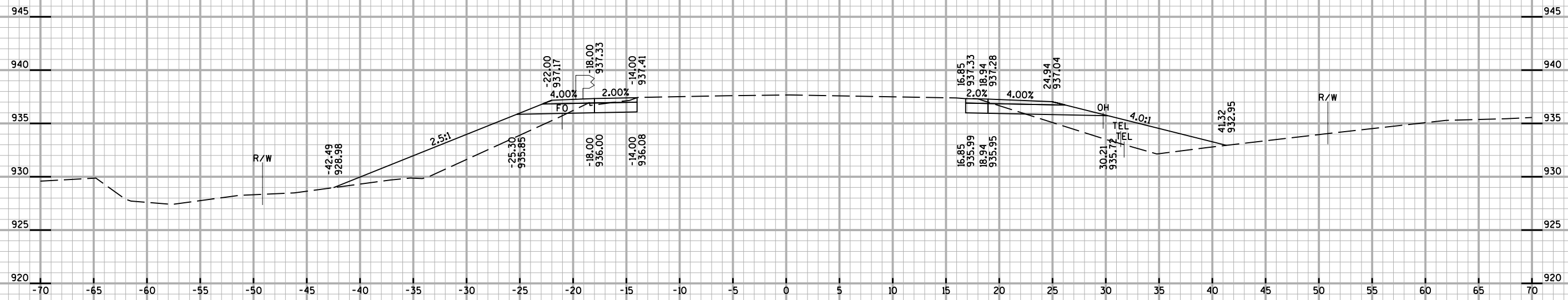


10+75

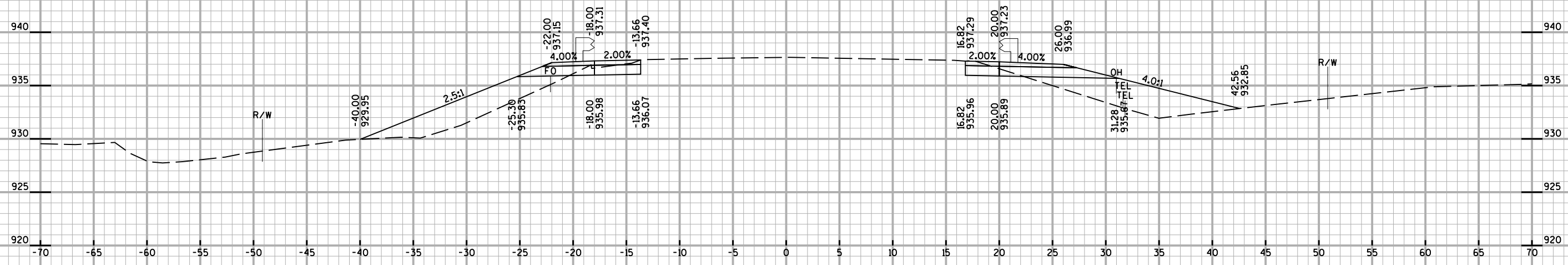


POST 9 RT
10+71

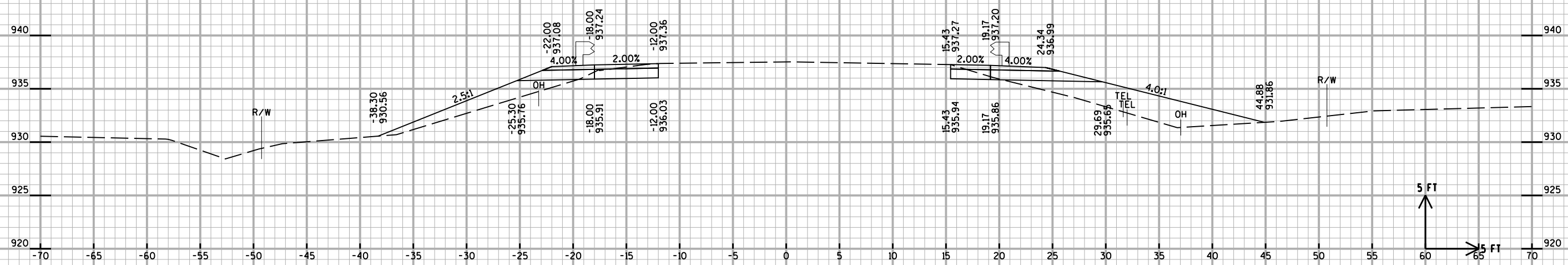




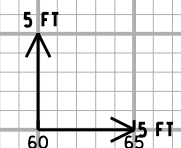
11+25



11+21

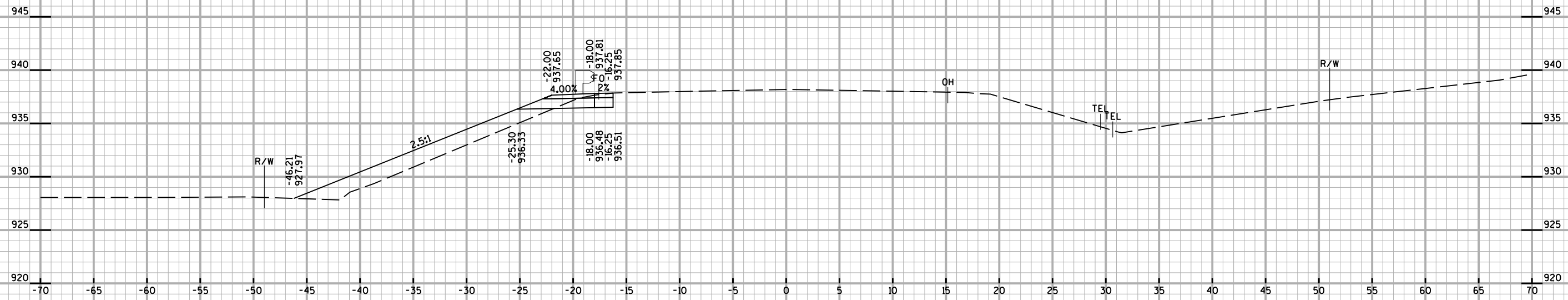


11+00

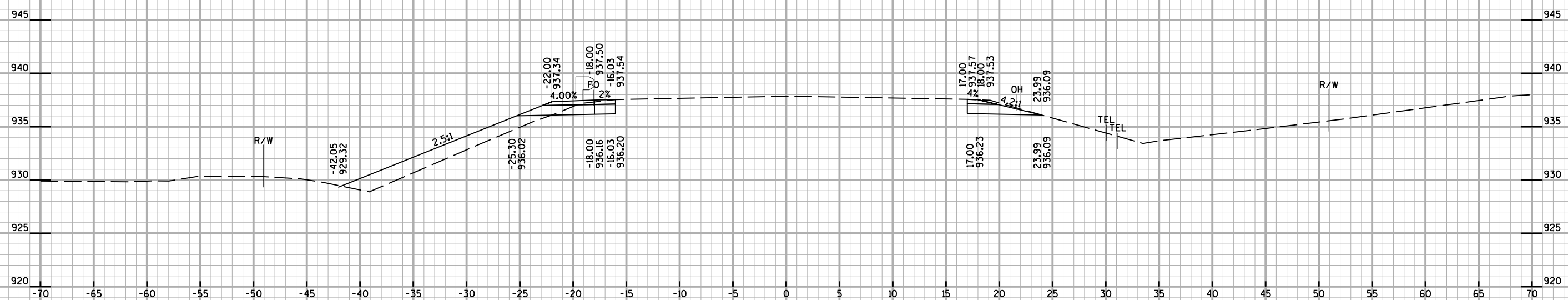


9

9



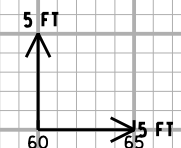
11+75



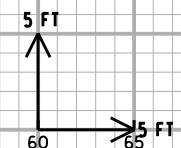
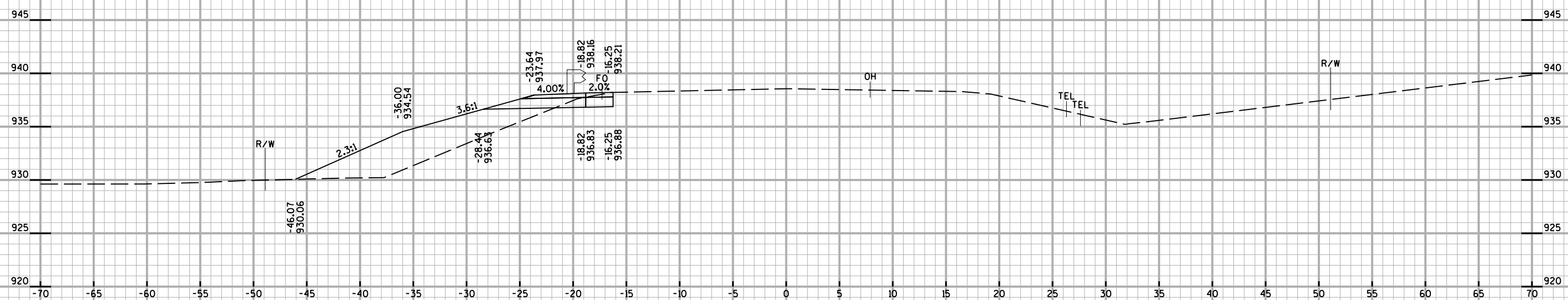
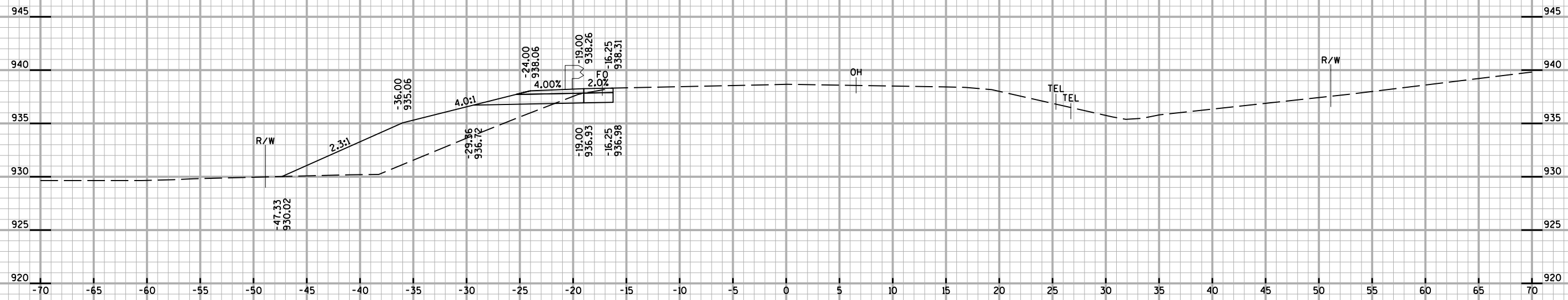
11+53

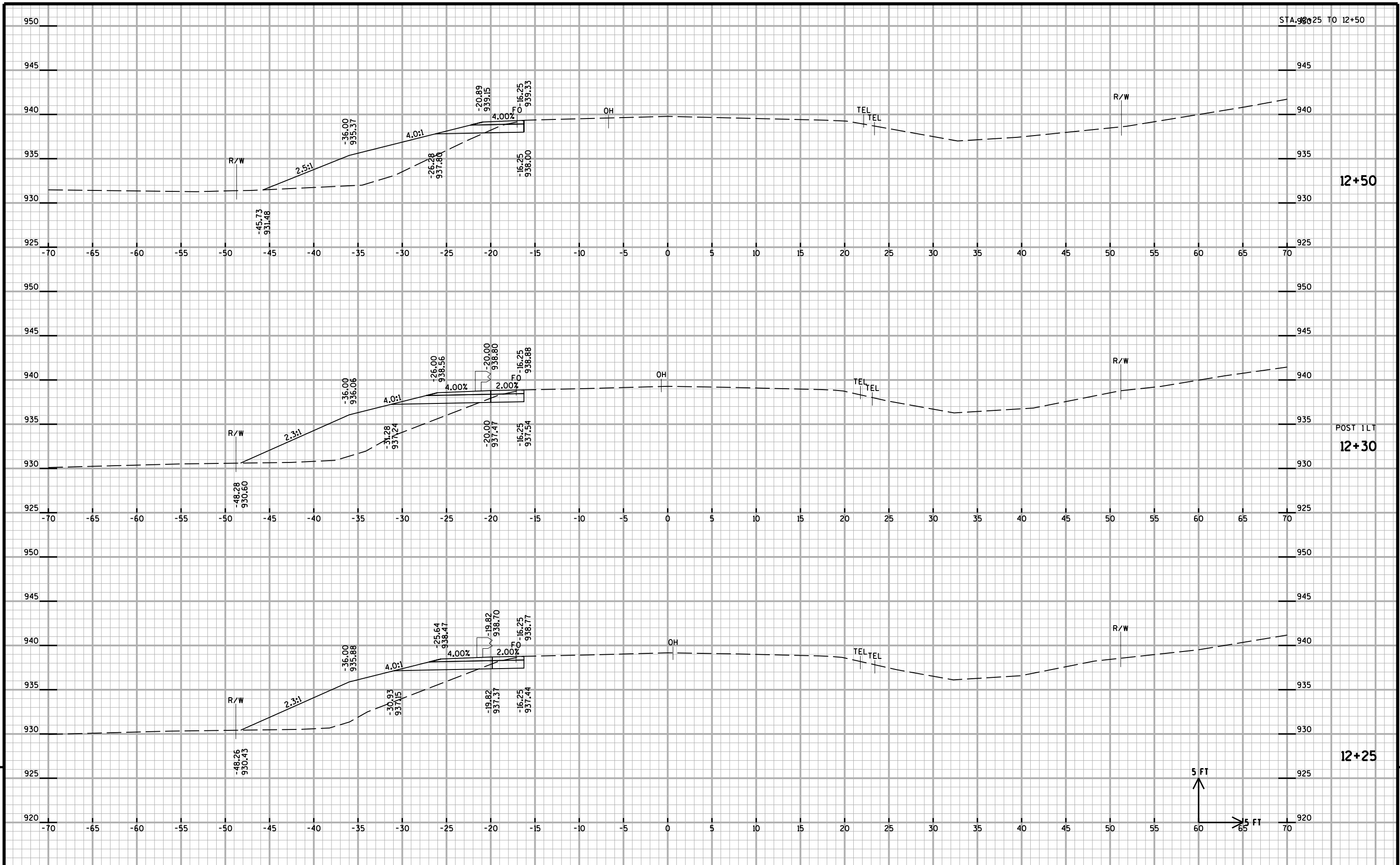


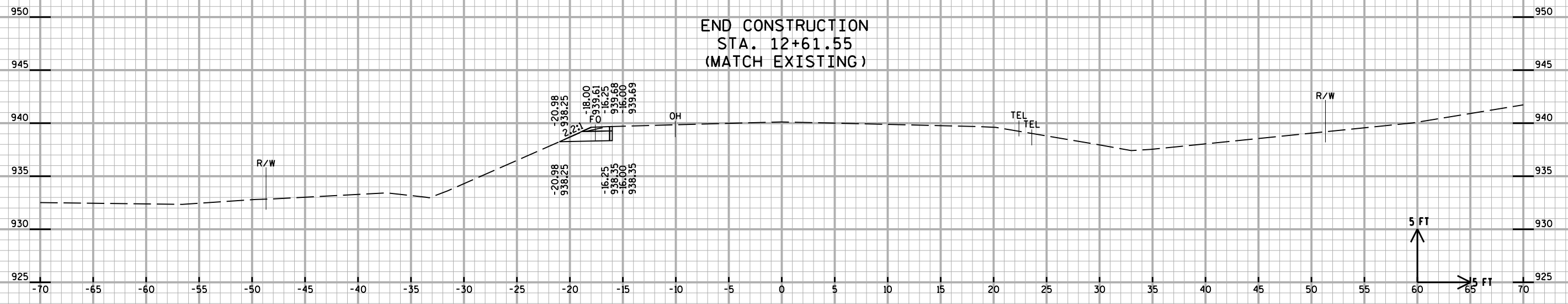
11+50



9



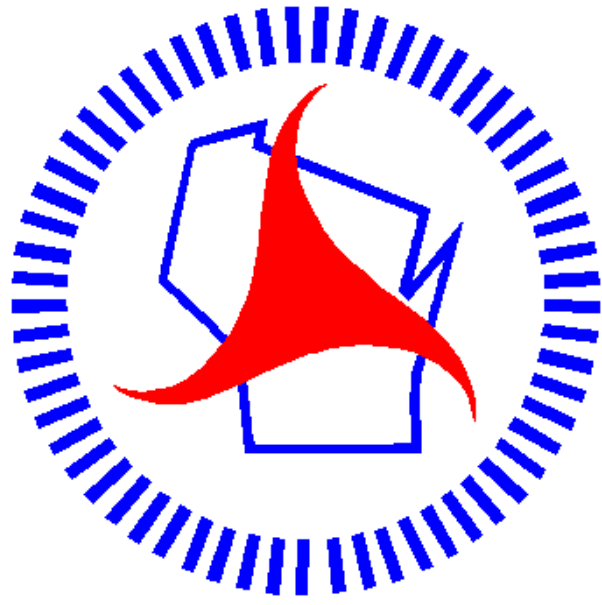




9

9

Notes



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