

WIS JUL 2016
ORDER OF SHEETS

PROJECT ID: 6350-07-80
WITH: N/A

- Section No. 1 Title
Section No. 2 Typical Sections and Details
Section No. 3 Estimate of Quantities
Section No. 3 Miscellaneous Quantities
Section No. 4 Right of Way Plot
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 = 104

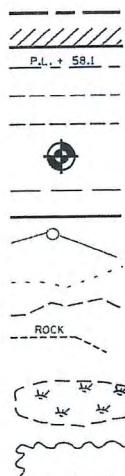


DESIGN DESIGNATION

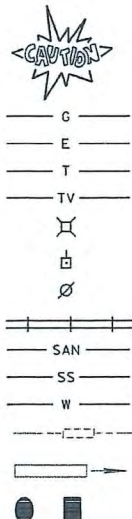
A.D.T. = NA
A.D.T. = NA
D.H.V. = NA
D.D. = NA
T. = NA
DESIGN SPEED = 15 MPH
ESALS = NA

CONVENTIONAL SYMBOLS

COUNTY LINE
CORPORATE LIMITS
PROPERTY LINE
LOT LINE
LIMITED EASEMENT
EARTHWORK BALANCE POINT
EXISTING RIGHT OF WAY
PROPOSED OR NEW R/W LINE
SURVEY LINE
SLOPE INTERCEPT
ORIGINAL GROUND
MARSH OR ROCK PROFILE
(To be noted as such)
MARSH AREA
WOODED OR SHRUB AREA



COMBUSTIBLE FLUIDS
UNDERGROUND UTILITIES
GAS
ELECTRIC
TELEPHONE OR TELEGRAPH
TV/CABLE
SERVICE PEDESTAL
POWER POLE
TELEPHONE POLE
RAILROAD
SANITARY SEWER
STORM SEWER
WATER
EXISTING CULVERT
PROPOSED CULVERT
(Box or Pipe)
CULVERT (Profile View)



LAYOUT
SCALE 0 1/4 MI
TOTAL NET LENGTH OF CENTERLINE = 0.233 MI

Coordinates on this plan are referenced to the Wisconsin County
Coordinate System (WCCS), Wood County.
Elevations shown on this plan are referenced to the
North American Vertical Datum of 1988 NAVD 88.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PLAN OF PROPOSED IMPROVEMENT
MARSHFIELD - STEVENS POINT
WCL RR PEDESTRIAN UNDERPASS
USH 10
WOOD COUNTY

STATE PROJECT NUMBER
6350-07-80

STRUCTURE C-71-46
STA 15+48.74 TO STA 15+96.74

END PROJECT
STA 21+97.37

BEGIN PROJECT
STA 9+65.62
Y = 538451.935
X = 678879.260

STRUCTURE R-71-22
STA 13+00.00 TO STA 15+37.31

ORIGINAL PLANS PREPARED BY:
SHORT ELLIOTT HENDRICKSON, INC.



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
Surveyor SEH
Designer SEH
Project Manager JEFF STEWART
Regional Examiner
Regional Supervisor

APPROVED FOR THE DEPARTMENT
DATE: 1/26/16 (Signature)

E

GENERAL NOTES

WHEN THE QUANTITY OF BASE AGGREGATE IS MEASURED FOR PAYMENT BY THE TON OR CUBIC YARD, 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.

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

NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.

ALL CURB AND GUTTER RADII, PAVEMENT DIMENSIONS AND STATIONS ARE SHOWN TO THE EDGE OF PAVEMENT UNLESS NOTED OTHERWISE.

TOP OF CASTING ELEVATIONS SHOWN FOR INLETS REFER TO THE NORMAL CASTING FLOW LINE.

ALL STORM SEWER INVERTS, ELEVATIONS, PIPE LENGTHS, AND GRADES ARE COMPUTED CENTER-TO-CENTER OF STRUCTURES.

ORDER OF TYPICAL SECTION AND DETAIL SHEETS

- GENERAL NOTES
- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- EROSION CONTROL
- STORM SEWER
- PERMANENT SIGNING
- PAVEMENT MARKING

UTILITY CONTACTS

ALLIANT ENERGY-ELECTRIC
ATTENTION: JASON HOGAN
SUITE 1000
4902 N. BILTMORE LANE
MADISON, WI 53718
TELEPHONE DESK: 608.458.4871
TELEPHONE CELL: 608.395.7395
jasonhogan@alliantenergy.com
FIELD CONTACT
TELEPHONE: 715.424.7039
ATTENTION: MICHAEL PEETERS
michaelpeeters@alliantenergy.com

CENTRAL STATE TELEPHONE
FIELD CONTACT
TELEPHONE: 920.655.8748
ATTENTION: JEREMIAH LUBEN
jeremiah.luben@tdstelecom.com

KDL INC.
FIELD CONTACT
TELEPHONE: 608.512.5587
ATTENTION: DENNIS RUESS
dennis.ruess@windstream.com

PACKERLAND BROADBAND
105 KENT STREET
IRON MOUNTAIN, MI 49801
TELEPHONE: 906.282.3802
ATTENTION: RANDY SIMMS
randy.simms@ccisystems.com

WE ENERGIES-GAS
ATTENTION: LATROY BRUMFIELD
333 W EVERETT ST, A299
MILWAUKEE, WI 53203
TELEPHONE: 414.221.5617
latroy.brumfield@we-energies.com
FIELD CONTACT
TELEPHONE: 715.421.9293
ATTENTION: RYAN MIENTKE
ryan.mientke@we-energies.com

VILLAGE OF AUBURNDALE-SANITARY & STREET LIGHTING
5988 1ST STREET
AUBURNDALE, WI 54412
TELEPHONE: 715.652.2244
ATTENTION: JOHN SPATZ
spatzj@tds.net

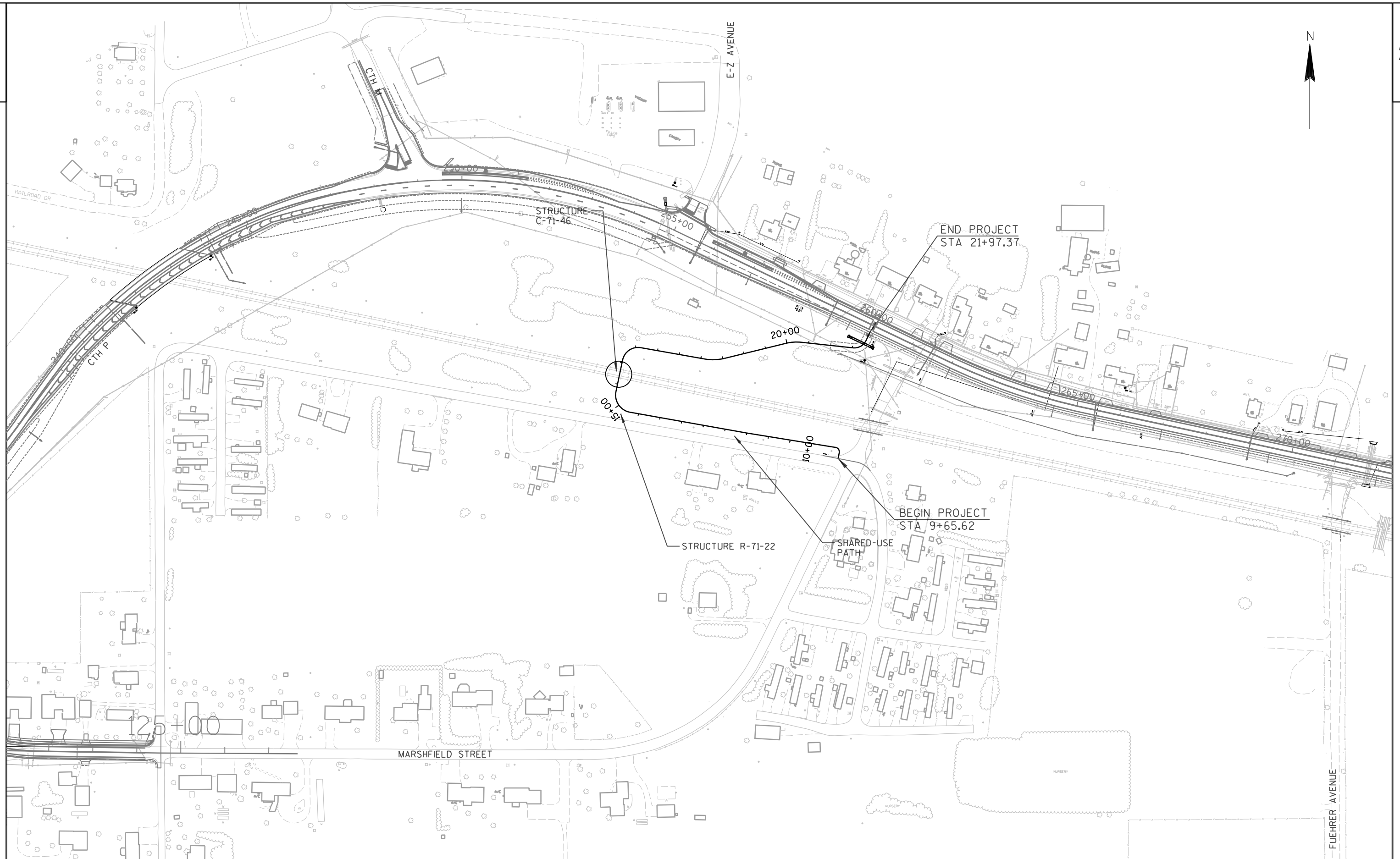
SOLARUS
FIELD CONTACT
TELEPHONE: 715.572.0152
ATTENTION: DENNIS PIERCE
pierce@solarus.net

DNR CONTACT

DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL ANALYST AND REVIEW SPECIALIST
473 GRIFFITH AVENUE
WISCONSIN RAPIDS, WI 54494
TELEPHONE: 715.421.7867
ATTENTION: MARC HERSHFELD
EMAIL: marc.hershfield@wisconsin.gov



Dial 811 or (800)242-8511
www.DiggersHotline.com



PROJECT NO:6350-07-80

HWY:PEDESTRIAN UNDERPASS

COUNTY:WOOD

PROJECT OVERVIEW

SHEET

3

E

FILE NAME : P:\UZ\W\W1\nc\111618\CAD - Underpass\020201 po_U.dgn

PLOT TIME : 2:20:19 PM

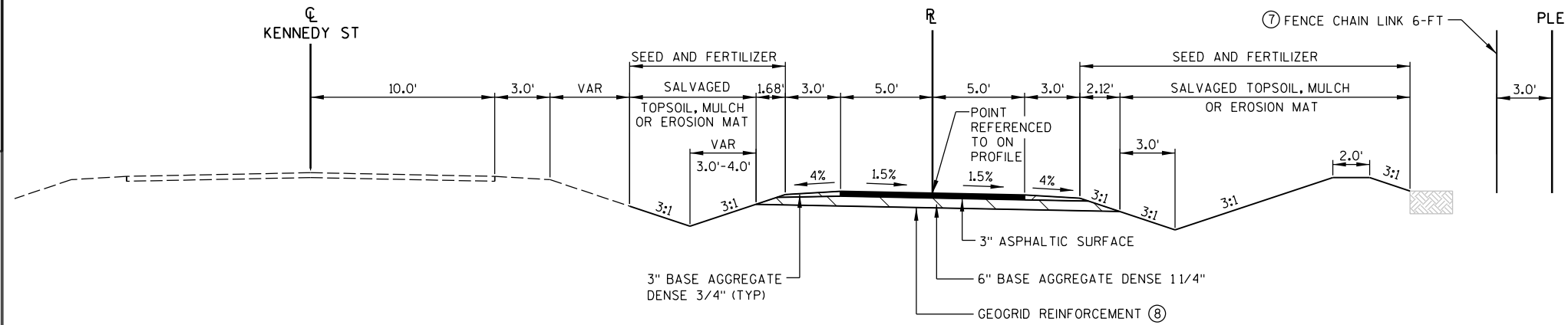
PLOT DATE : 4/28/2016

PLOT BY : SEH

PLOT NAME :

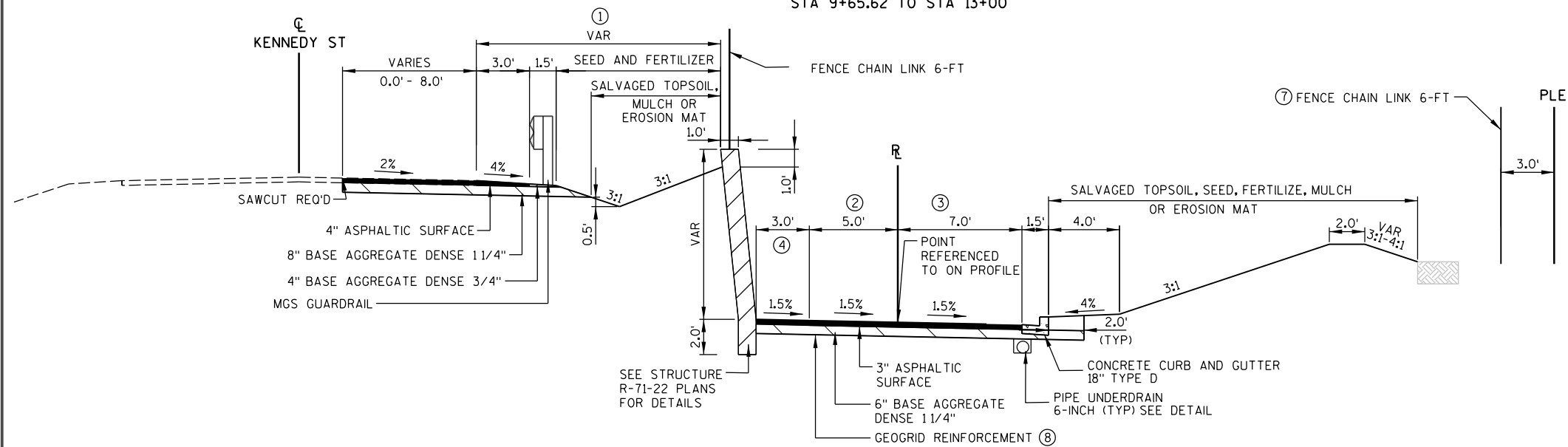
PLOT SCALE : N/A

WISDOT/CADDs SHEET 42



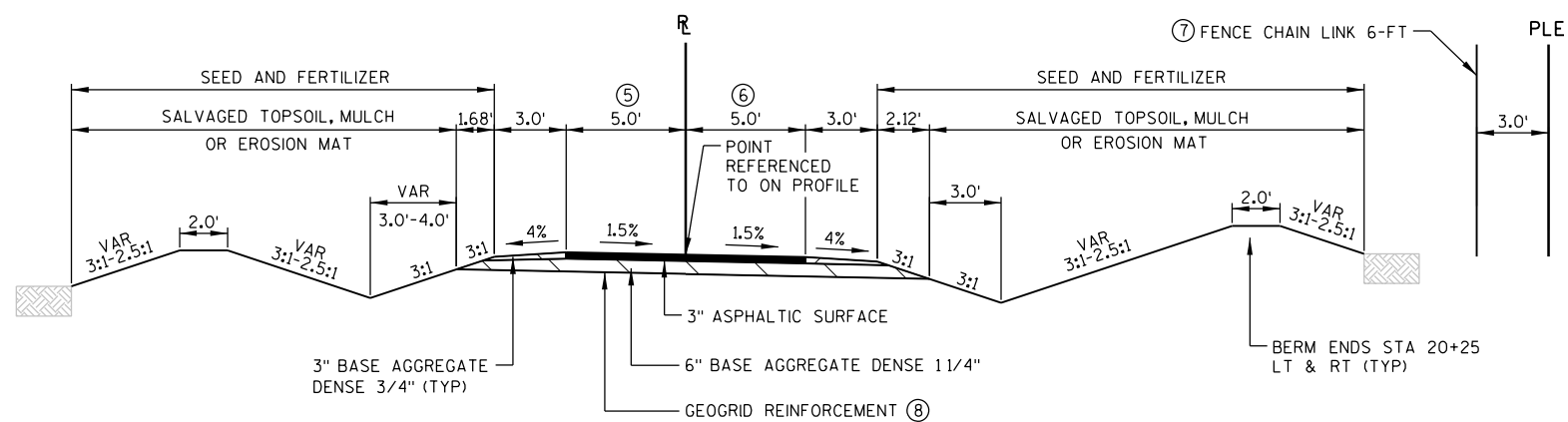
TYPICAL FINISHED SECTION

SHARED-USE PATH
STA 9+65.62 TO STA 13+00



TYPICAL FINISHED SECTION

SHARED-USE PATH
STA 13+00 TO STA 15+48.74

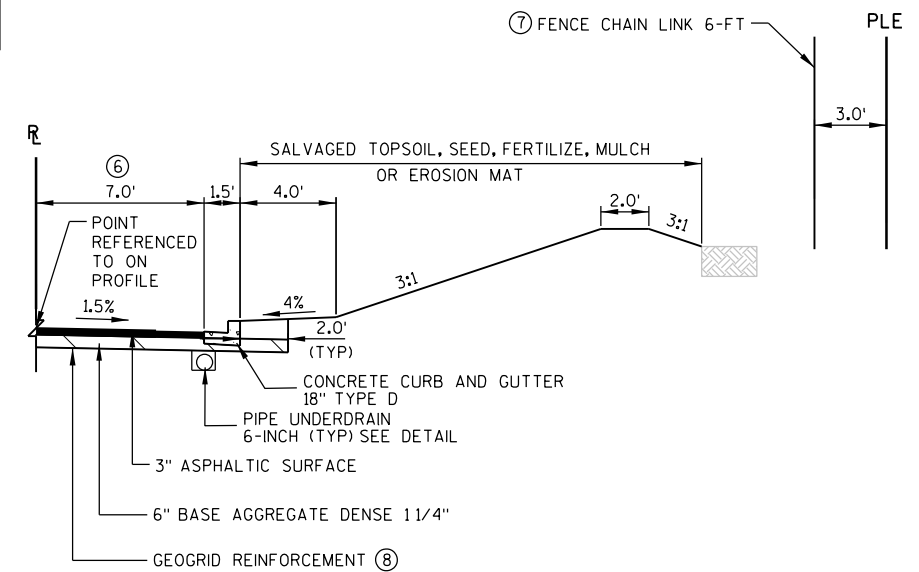


TYPICAL FINISHED SECTION

SHARED-USE PATH
STA 15+96.74 TO STA 21+00.00

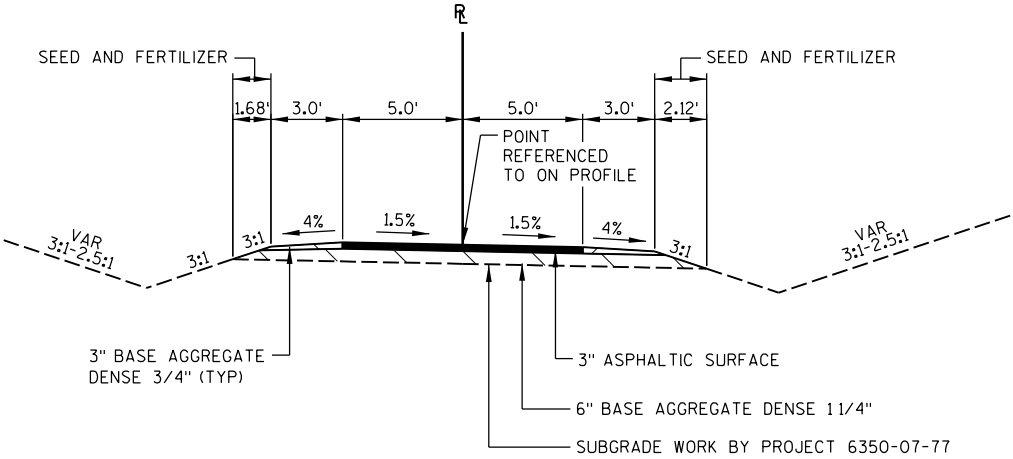
NOTES:

- ① WIDTH VARIES FROM STA 14+69.11 TO STA 15+00.00.
- ② WIDTH VARIES FROM 5.0'-6.0' FROM STA 14+69.11 TO STA 15+33.22.
- ③ WIDTH VARIES FROM 5.0'-7.0' FROM STA 12+65.00 TO STA 13+00.00. WIDTH VARIES FROM 7.0'-6.0' FROM STA 14+69.11 TO STA 15+33.22. WIDTH VARIES FROM 6.0'-5.0' FROM STA 15+38.74 TO STA 15+48.74.
- ④ WIDTH VARIES FROM 3.0'-1.0' FROM STA 15+38.74 TO STA 15+48.74.
- ⑤ WIDTH VARIES FROM 6.0'-5.0' FROM STA 16+06.02 TO STA 16+61.42.
- ⑥ WIDTH VARIES FROM 5.0'-6.0' FROM STA 15+96.74 TO STA 16+06.02. WIDTH VARIES FROM 6.0'-7.0' FROM STA 16+06.02 TO STA 16+61.42. WIDTH VARIES FROM 7.0'-5.0' FROM STA 18+50.00 TO STA 18+85.00.
- ⑦ SEE PLAN AND PROFILES FOR LOCATION OF FENCE CHAIN LINK 6-FT.
- ⑧ GEOGRID REINFORCEMENT EXTENDS FROM BACK OF CURB TO FACE OF WALL OR FROM LT SHOULDER TOP OF SUBGRADE TO RT SHOULDER TOP OF SUBGRADE.



TYPICAL FINISHED SECTION

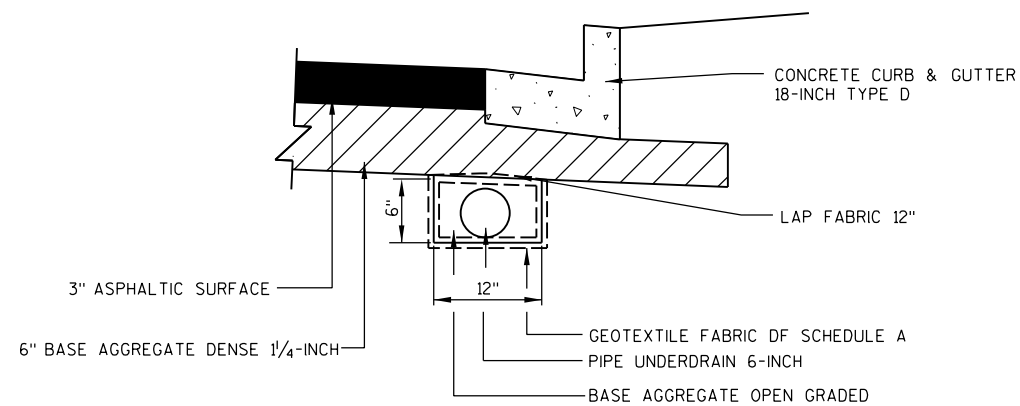
SHARED-USE PATH
STA 15+96.74 TO STA 18+50.00



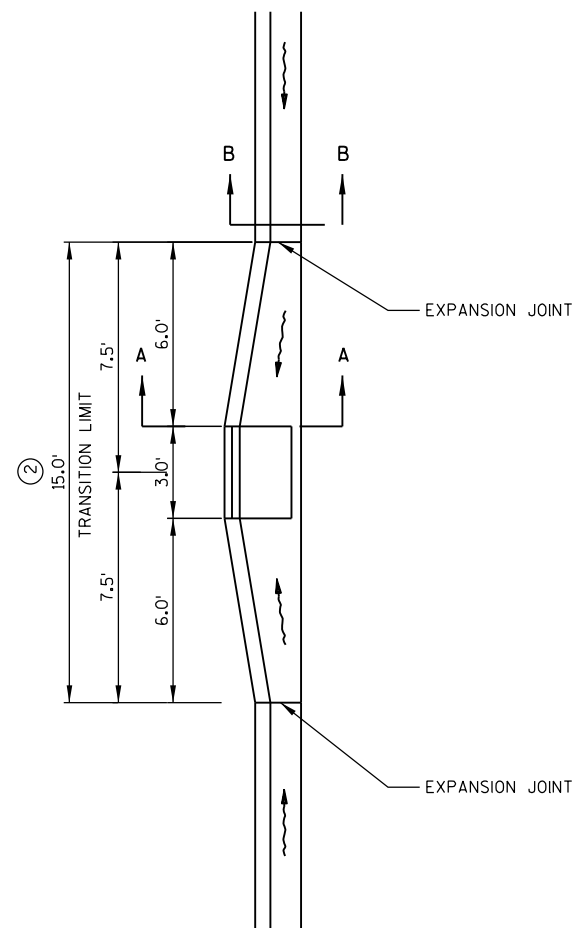
TYPICAL FINISHED SECTION

SHARED-USE PATH
STA 21+00 TO STA 21+97.37

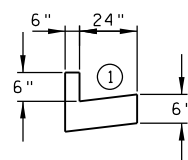




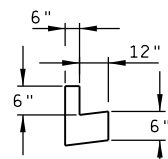
PIPE UNDERDRAIN



CURB & GUTTER AT INLETS



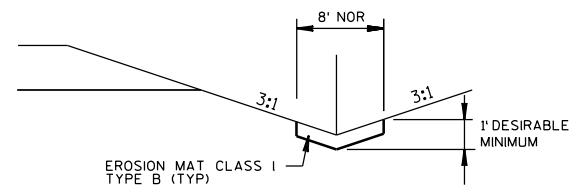
SECTION A-A



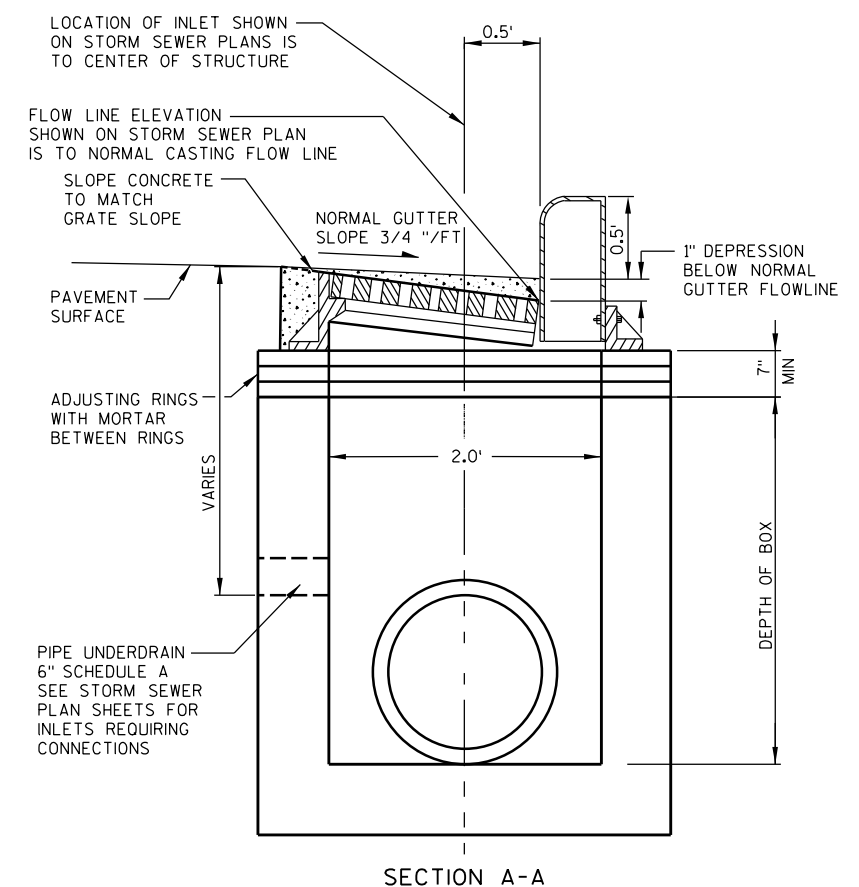
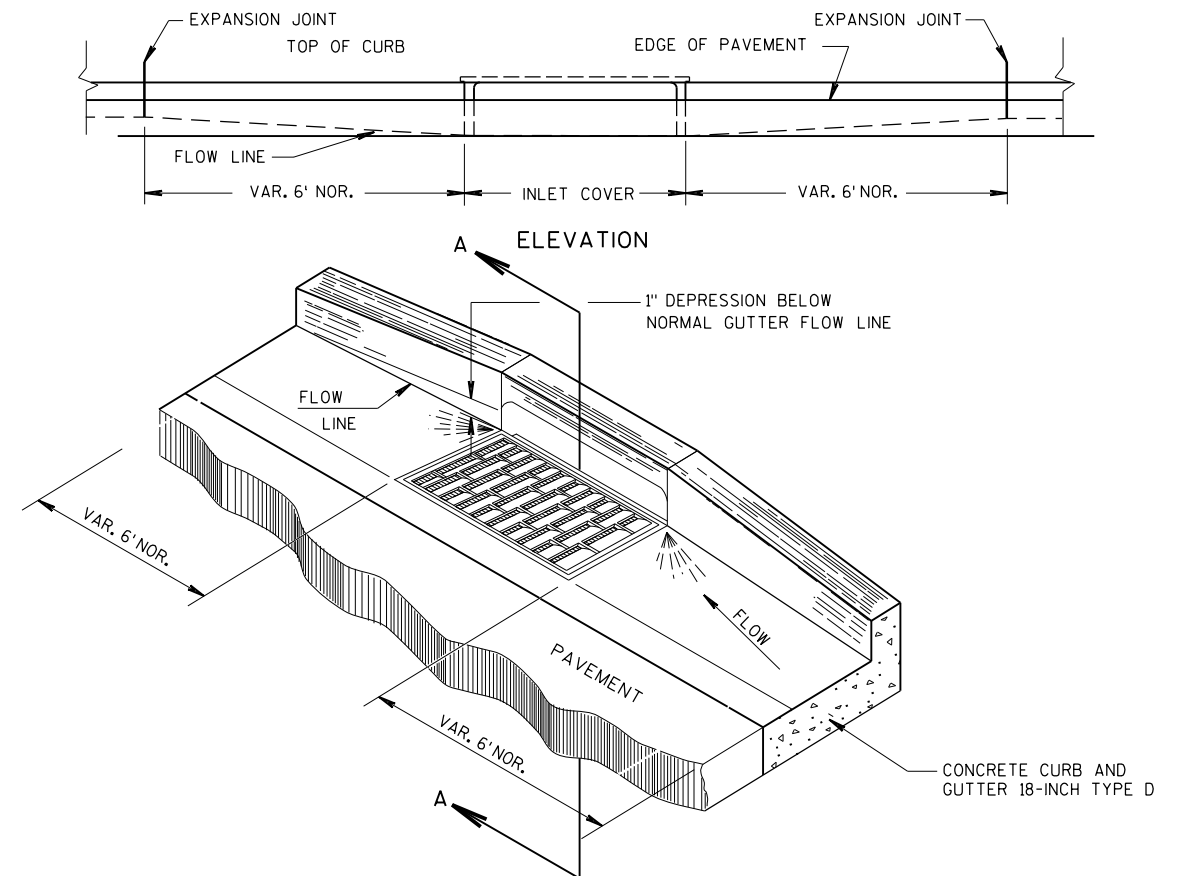
SECTION B-B

NOTES:

- ① USE INLETS WITH H OR H-S CASTING.
- ② PAYMENT FOR TRANSITION SHALL BE PAID AS THE ITEM OF CONCRETE CURB & GUTTER 18-INCH TYPE D.

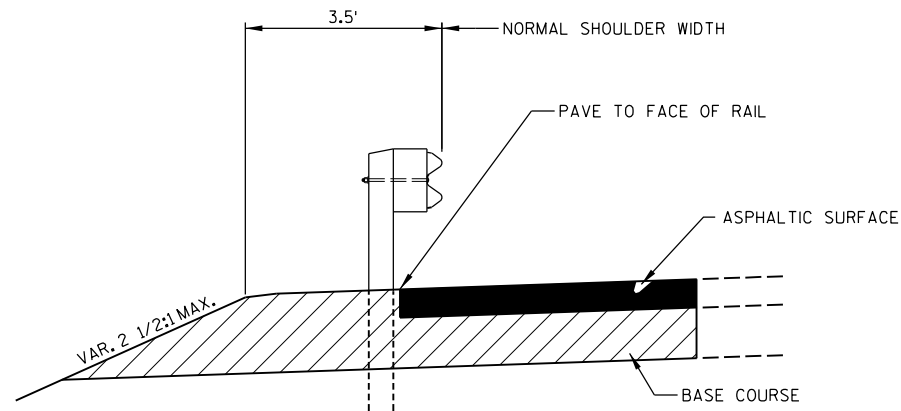


EROSION MAT DETAIL FOR DITCHES

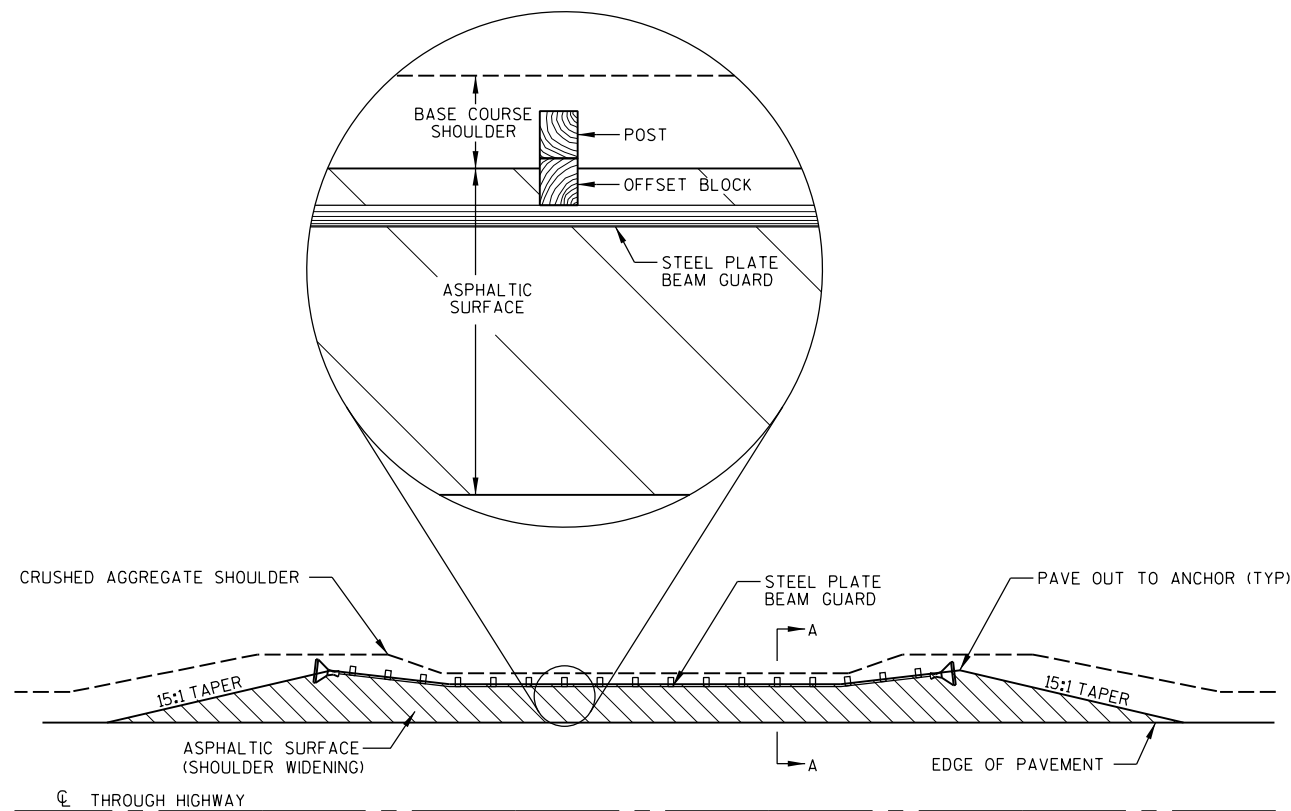


SECTION A-A

INLET



SECTION A-A
SHOULDER DETAIL AT GUARD RAIL

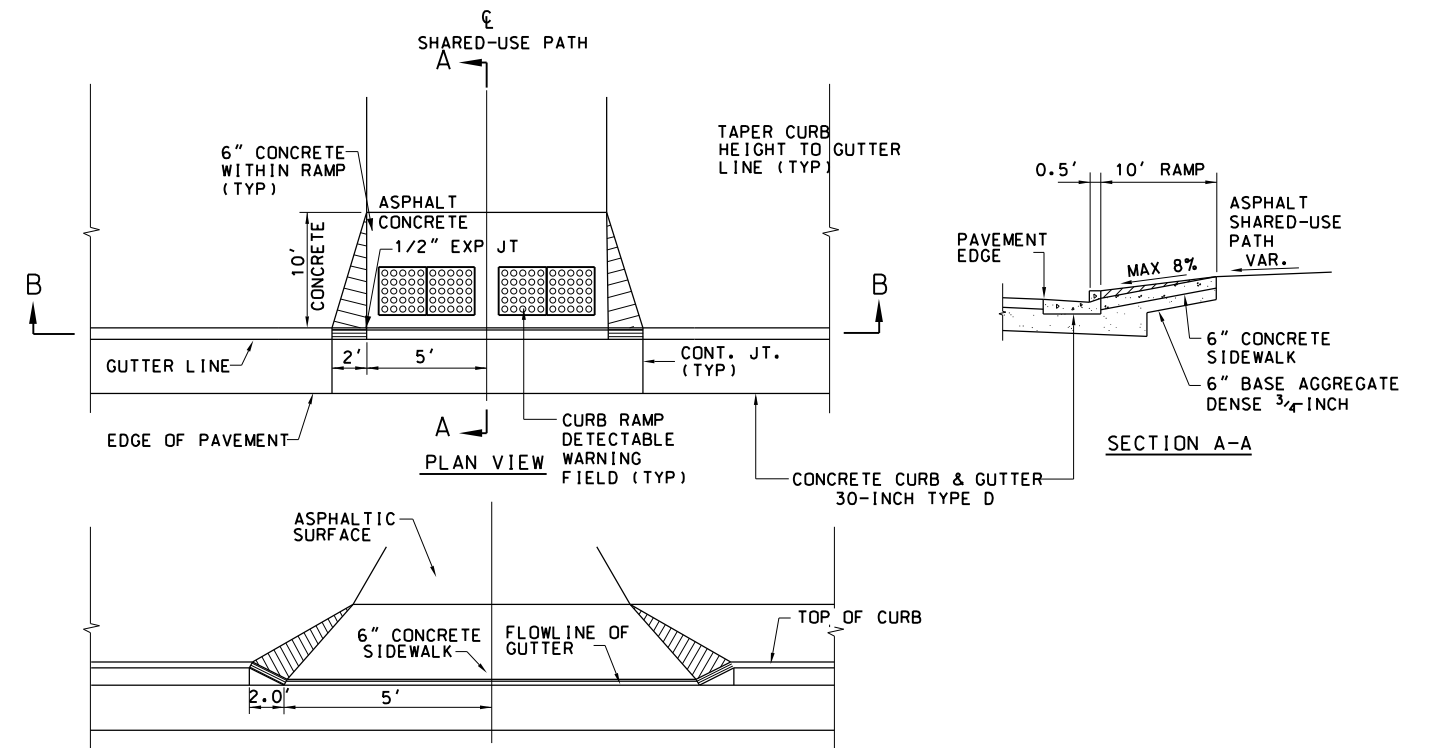


ASPHALTIC PAVING ALONG BEAM GUARD

RUNOFF COEFFICIENT TABLE

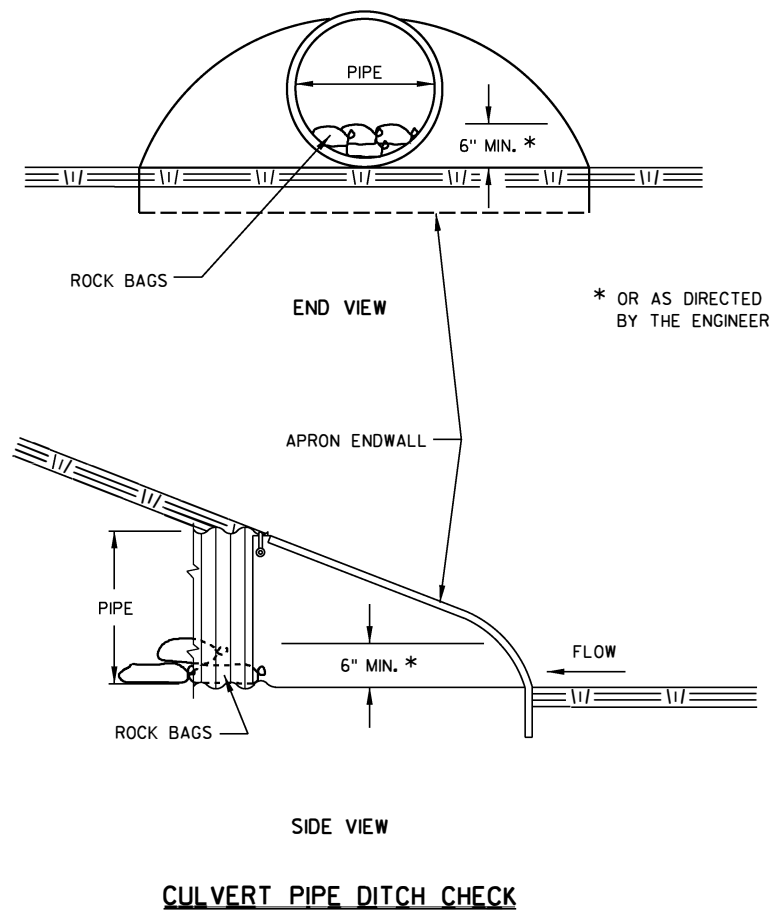
	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33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

TOTAL PROJECT AREA = 1.65 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 1.94 ACRES



SECTION B-B

SHARED-USE PATH RAMP



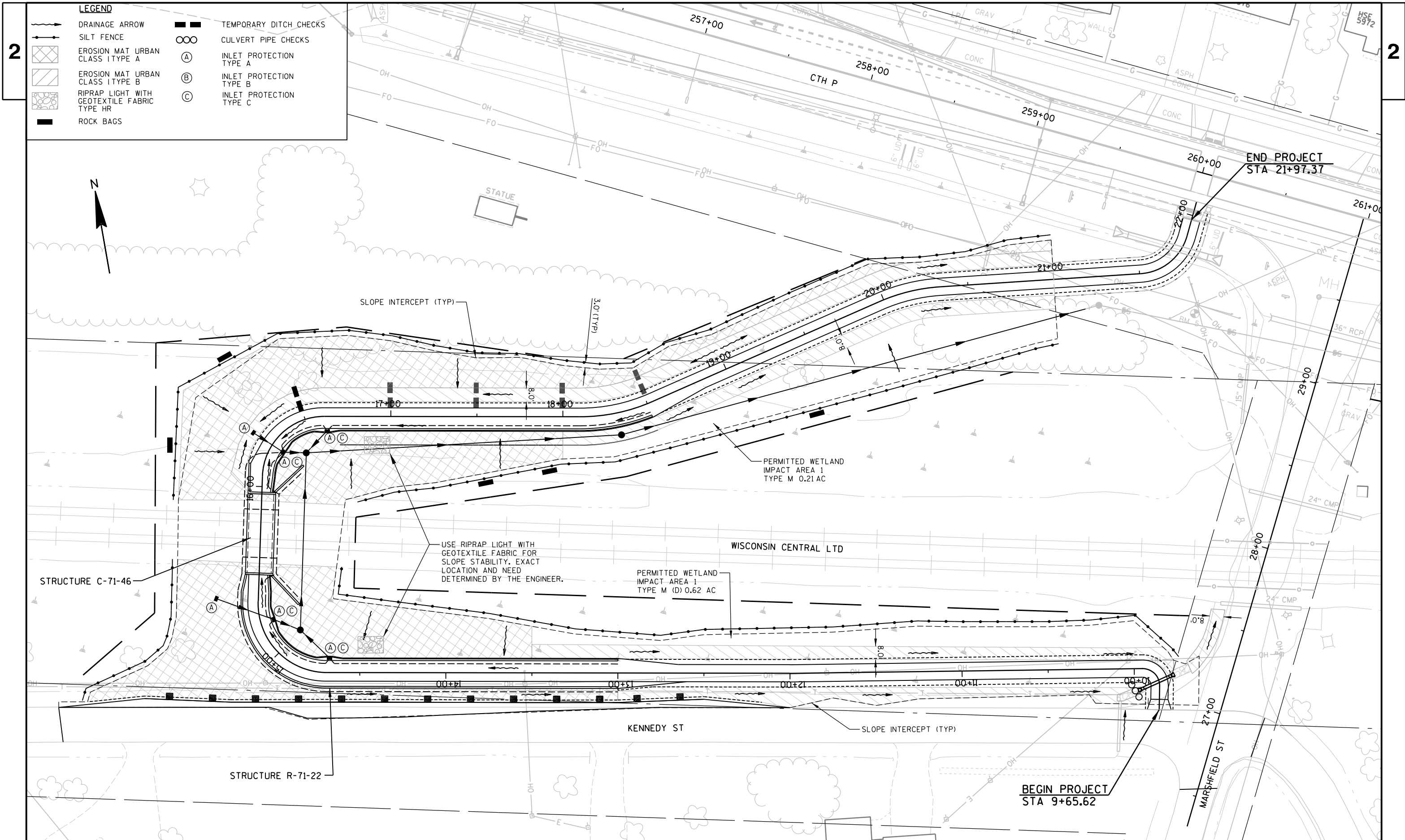
2

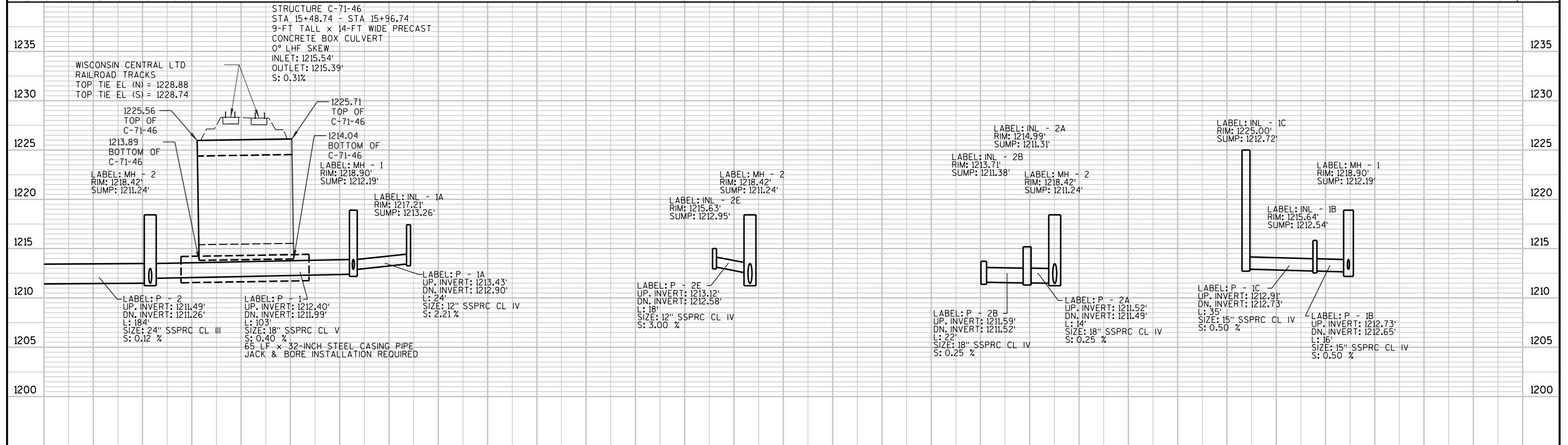
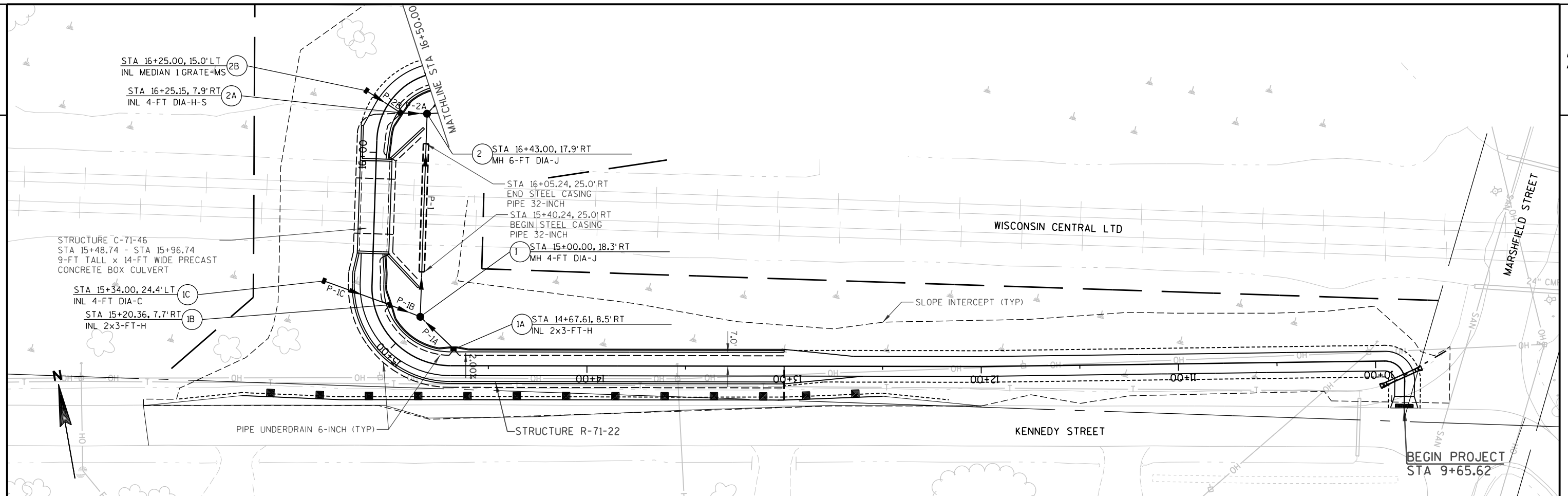


ATTACH FENCE CHAIN LINK 6-FT
TO TOP OF STRUCTURE R-71-22
AND ALONG STRUCTURE C-71-46
END AND WING WALLS

E

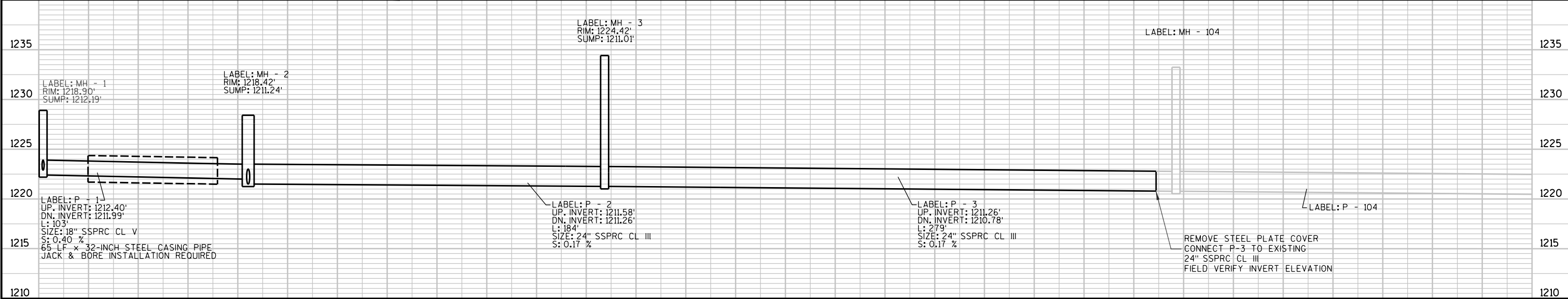
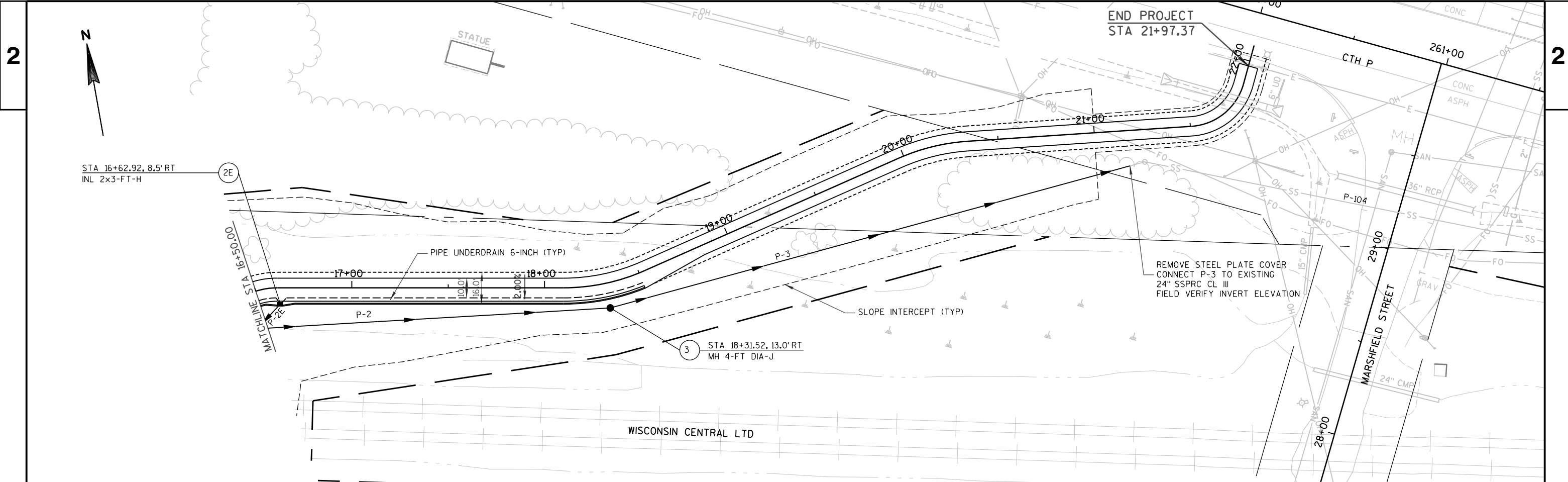
WISDOT/CADDS SHEET 43





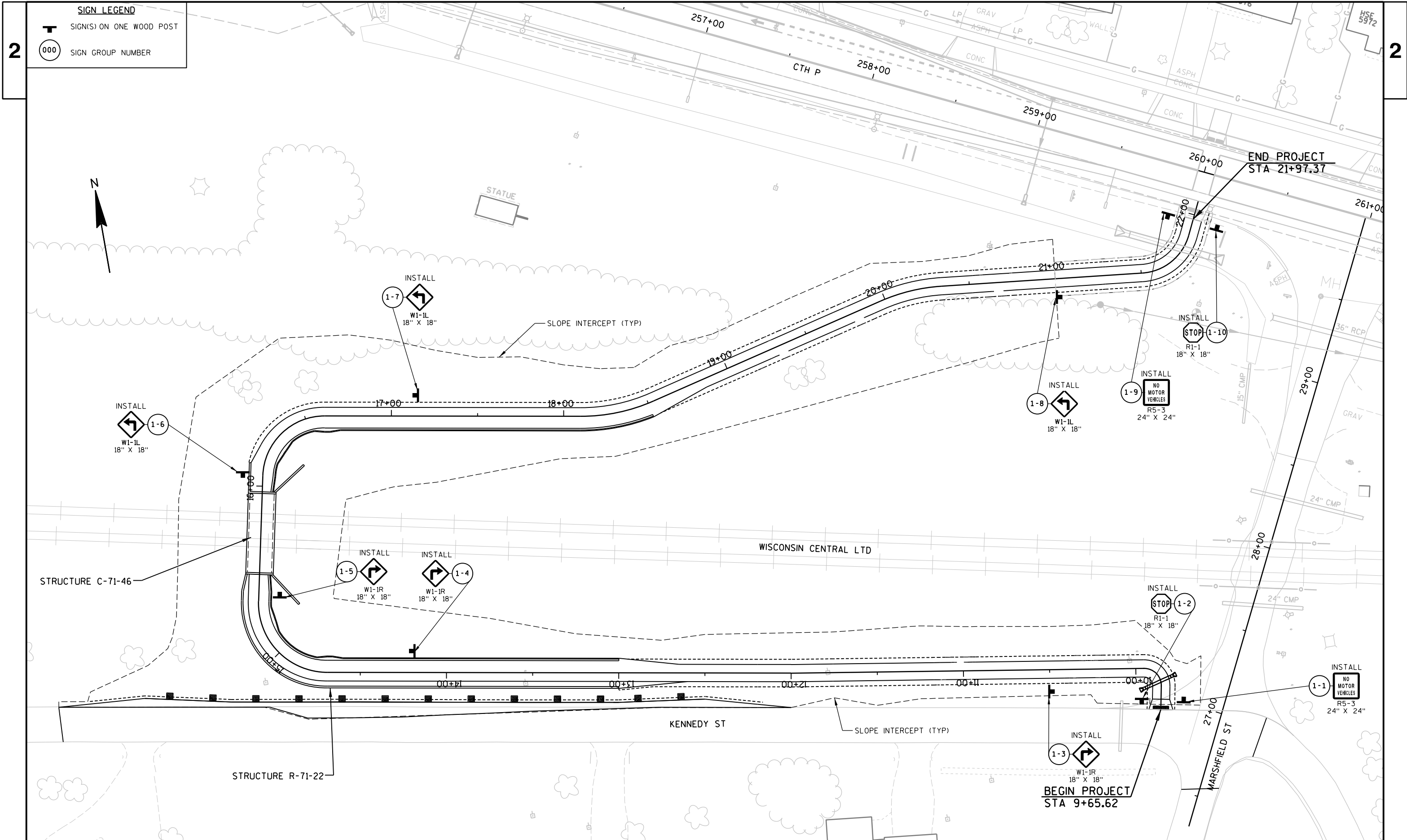
STA 9+68.74 0 STA 16+50.00															
STRUCT NO	STATION	LOCATION	PAY LENGTH C-C FT	TO STRUCT NO	CATCH BASIN, INLET OR MANHOLE	TYPE	FLOW LINE/ RIM ELEV	TOP OF STRUCT ELEV	STRUCT DEPTH FT	DISCHARGE PIPE INLET ELEV	OUTLET ELEV	SIZE IN	INSTALL LENGTH FT	SLOPE %	REMARKS
1A	14+67.61	8.5' RT	24	1	INL	2X3-FT-H	1217.21	1216.29	3.03	1213.43	1212.90	12	24	2.21	
1	15+00.00	18.3' RT	103	2	MH	4-FT DIA J	1218.90	1217.57	5.38	1212.40	1212.08	18	103	0.31	
2	16+43.00	17.9' RT	184	3	MH	6-FT DIA J	1218.42	1217.09	5.76	1211.49	1211.26	24	184	0.12	
1B	15+20.36	7.7' RT	16	1	INL	2X3-FT-H	1215.64	1214.72	1.91	1212.73	1212.65	15	16	0.50	
1C	15+34.00	24.4' LT	35	1B	INL	4-FT DIA-C	1225.00	1223.67	10.68	1212.91	1212.73	15	35	0.50	
2A	16+25.15	7.9' RT	14	2	INL	4-FT DIA-H-S	1214.99	1214.07	2.76	1211.52	1211.49	18	14	0.25	
2B	16+25.00	13.0' LT	22	2A	INL	MEDIAN 1 GRATE-MS	1213.71	1213.71	2.33	1211.59	1211.52	18	22	0.25	
2E	16+62.92	8.5' RT	18	2	INL	2X3-FT-H	1215.63	1214.71	1.76	1213.12	1212.58	12	18	3.00	

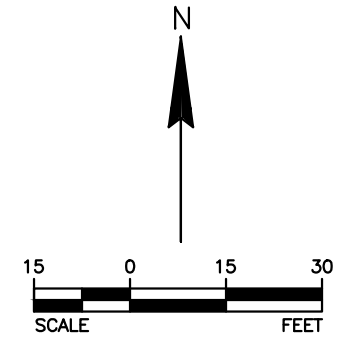
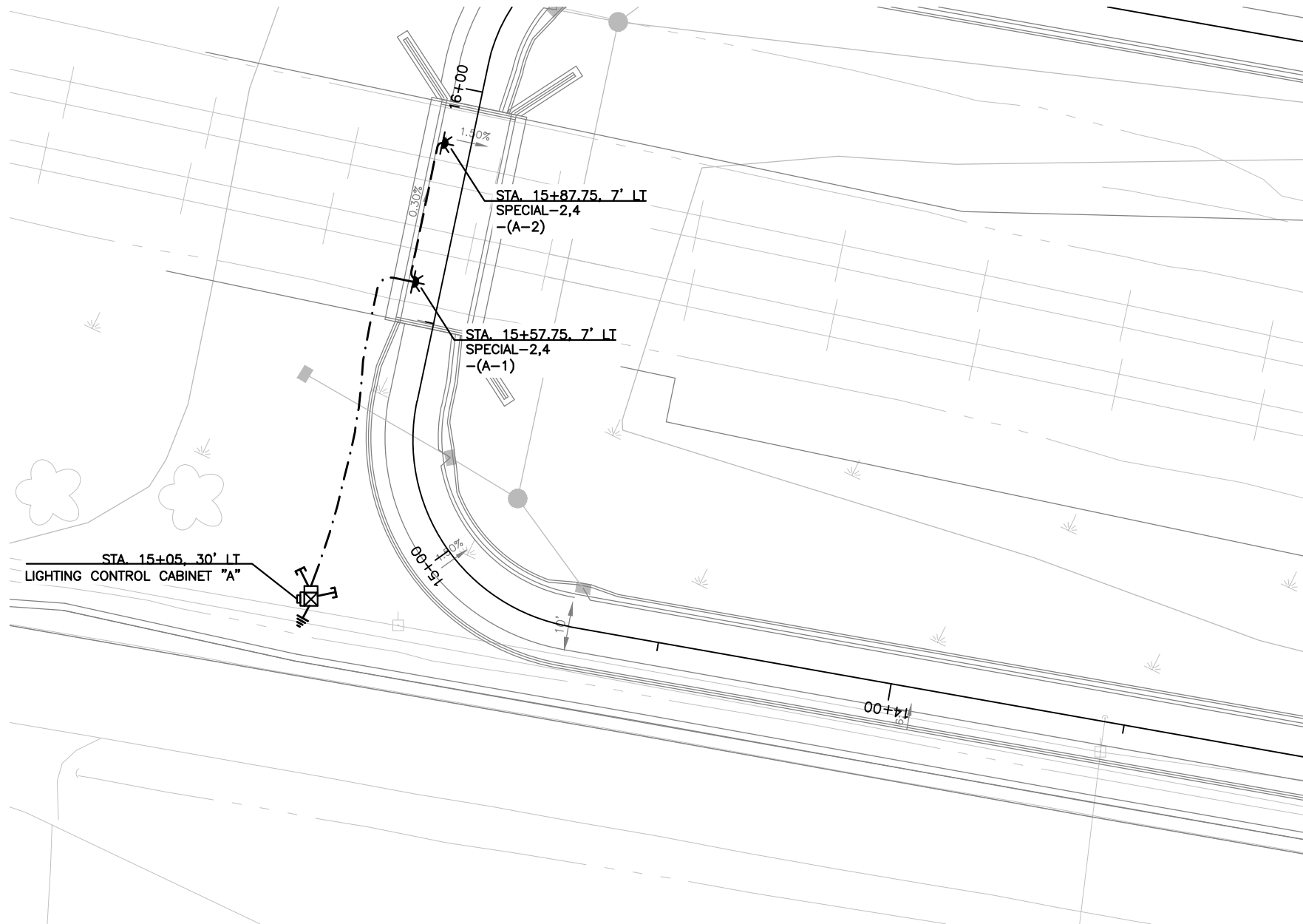
MANHOLES		MANHOLE COVERS	INLETS			INLET COVERS				SSPRC C-C				
4-FT DIA	6-FT DIA	J	2x3-FT	4-FT DIA	MEDIAN 1 GRATE	TYPE C	TYPE H	TYPE H-S	TYPE MS	CLASS III	CLASS IV		CLASS V	
24-INCH	12-INCH	15-INCH	18-INCH	18-INCH										
1	1	2	3	2	1	1	3	1	1	184	42	51	36	103



STA 16+50.00 - STA 21+47.37															
STRUCT NO	STATION	LOCATION	PAY LENGTH C-C FT	TO STRUCT NO	CATCH BASIN, INLET OR MANHOLE	TYPE	FLOW LINE/ RIM ELEV	TOP OF STRUCT ELEV	STRUCT DEPTH FT	DISCHARGE PIPE INLET ELEV	OUTLET ELEV	SIZE IN	INSTALL LENGTH FT	SLOPE %	REMARKS
3	18+31.52	13.0' RT	279	EXIST	MH	4-FT DIA-J	1224.42	1223.17	12.08	1211.26	1210.78	24	279	0.17	

MANHOLES	MH COVERS	SSPRC C-C CLASS III	INLETS	INLET COVERS
4-FT DIA	TYPE J	24-INCH	2x3-FT	TYPE H
1	1	279	1	1

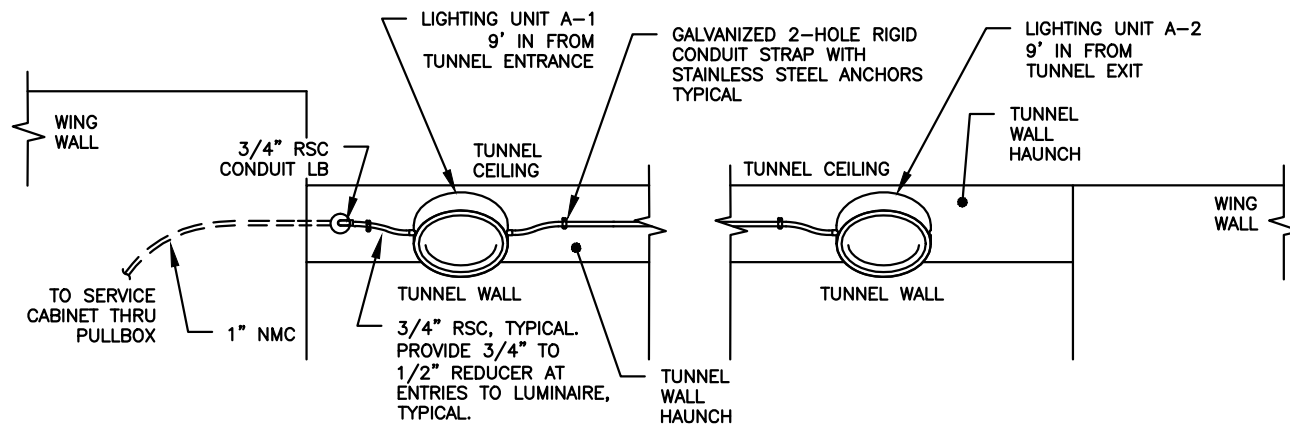
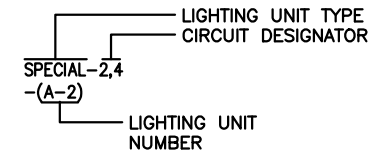




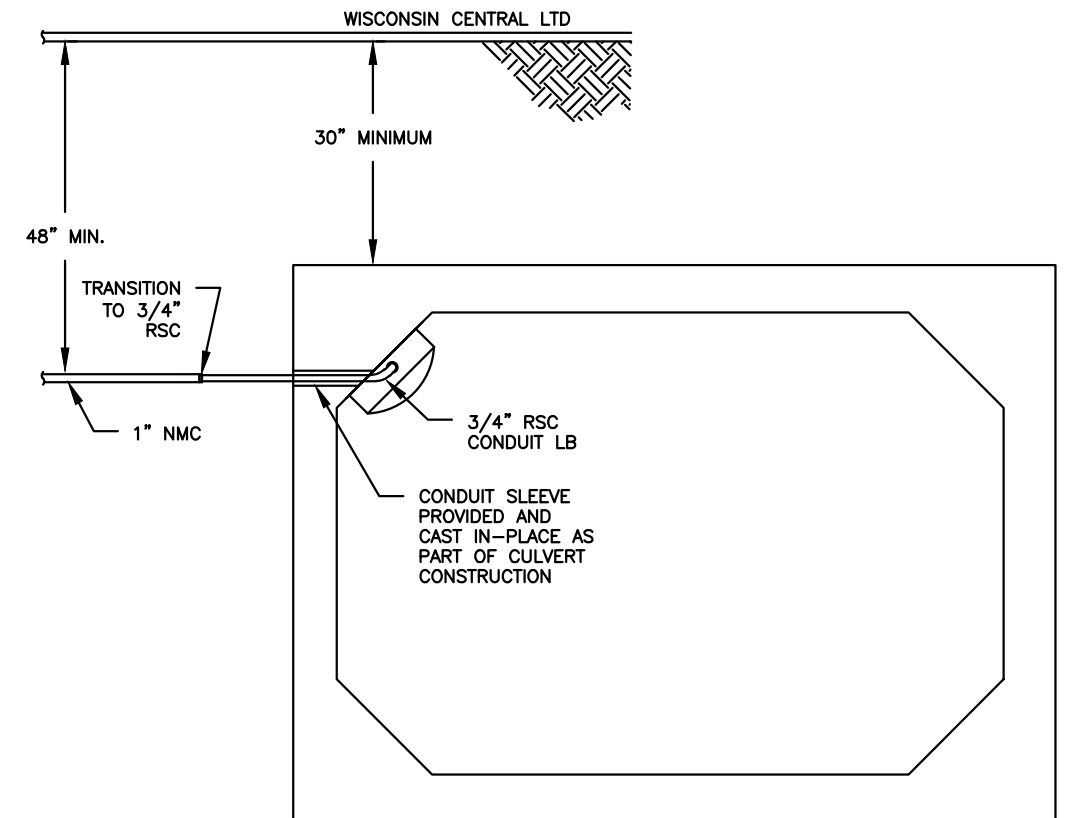
LEGEND	
	LIGHTING UNIT TYPE SPECIAL
	CONDUIT RIGID NONMETALLIC SCHEDULE 40 1-INCH (UNLESS NOTED OTHERWISE)
	CONDUIT RIGID METALLIC 3/4-INCH
	LIGHTING CONTROL CABINET TYPE SPECIAL
	25 OHM GROUND
	CONDUIT STUB

NOTES:

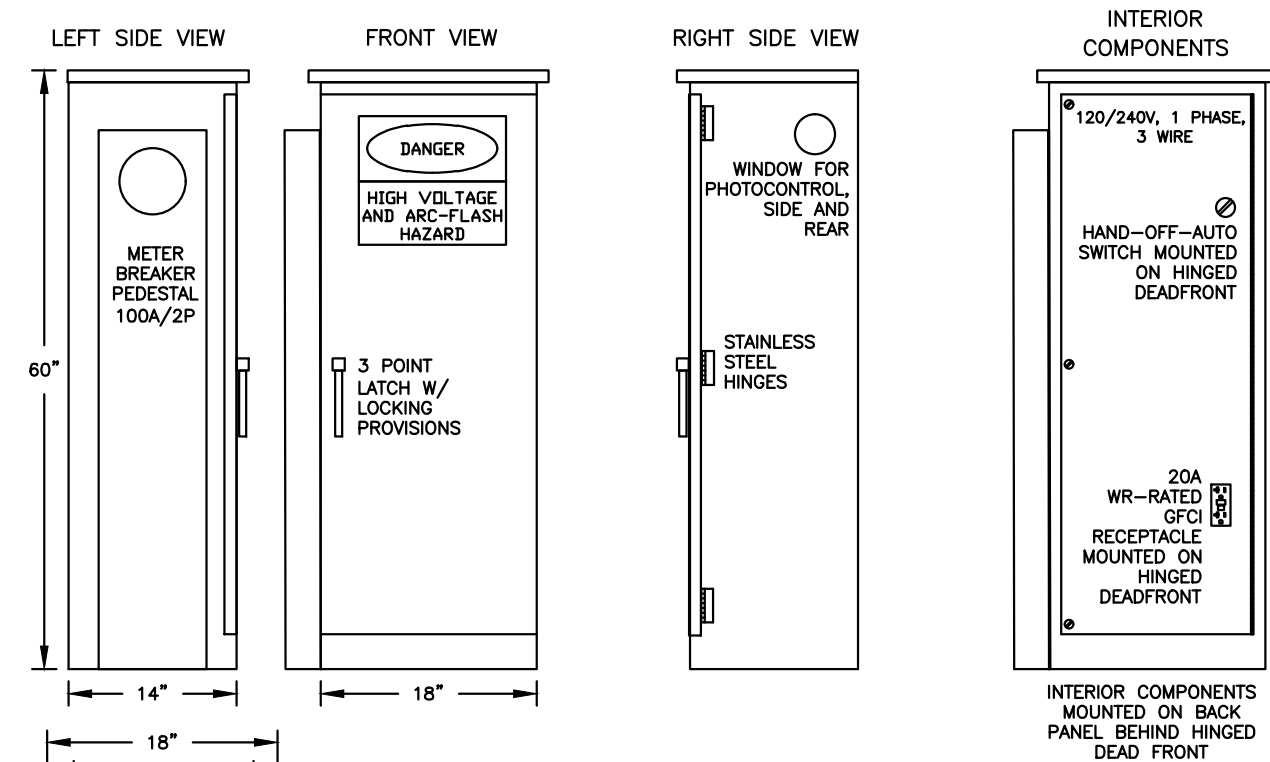
- ALL CONDUCTORS SHALL BE COPPER, TYPE XHHW-2, (2)#10 & (1)#10 GND UNLESS OTHERWISE NOTED.
- PROVIDE 2" CONDUIT STUBS AS INDICATED.
- "CONDUIT RIGID NON-METALLIC SCHEDULE 40 XX-INCH" ABBREVIATED AS "NMC" FOR DRAWING CLARITY. "CONDUIT RIGID METALLIC XX-INCH" ABBREVIATED AS "RSC" FOR DRAWING CLARITY.



TUNNEL WALL MOUNTING DETAILS



TUNNEL ELEVATION



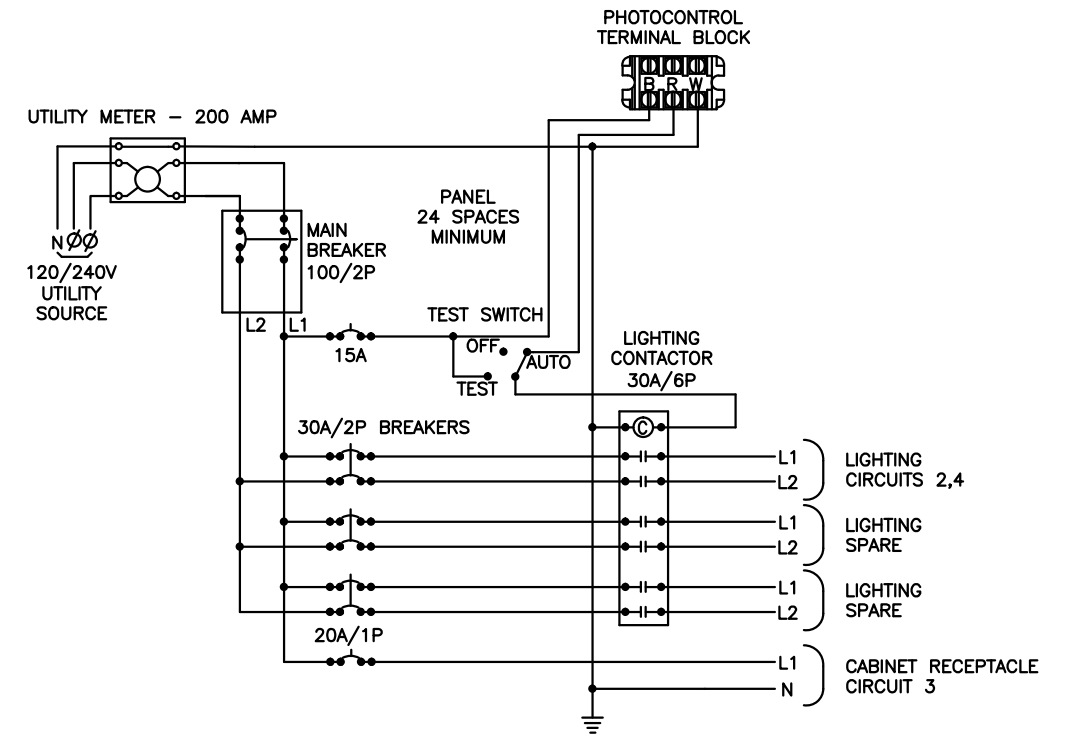
SERVICE CABINET NOTES:

- PROVIDE 100A/2P METER BREAKER PEDESTAL PER WISDOT REQUIREMENTS.
- CIRCUIT BREAKERS SHALL BE 120/240 VOLT AC, 60Hz AND SHALL BE CLEARLY MARKED WITH THE "ON" AND "OFF" POSITIONS AND IDENTIFIED WITH THE LOAD WHICH IT IS CARRYING.
- SHORT CIRCUIT RATING - 22,000 AIC SYMMETRICAL.
- 3-POSITION SELECTOR SWITCH ALLEN BRADLEY #800T-J2A.
- CIRCUIT CONTACTORS SHALL HAVE A 240 VOLT RATING, WITH 120 VOLT COIL.
- PROVIDE PANEL WITH DIMENSIONS AS REQUIRED TO FIT EQUIPMENT PROPOSED.
- PROVIDE A 25-OHM GROUND AT CABINET AS PER NEC.
- PROVIDE 20A WR-RATED GFCI RECEPTACLE MOUNTED TO CABINET DEADFRONT.
- BOTH PHOTOCONTROL AND ITS SOCKET SHALL BE 3 TERMINAL, POLARIZED, TWIST-LOCK TYPE. IT SHALL BE EQUIPPED WITH A MOVRO TYPE LIGHTNING ARRESTER.

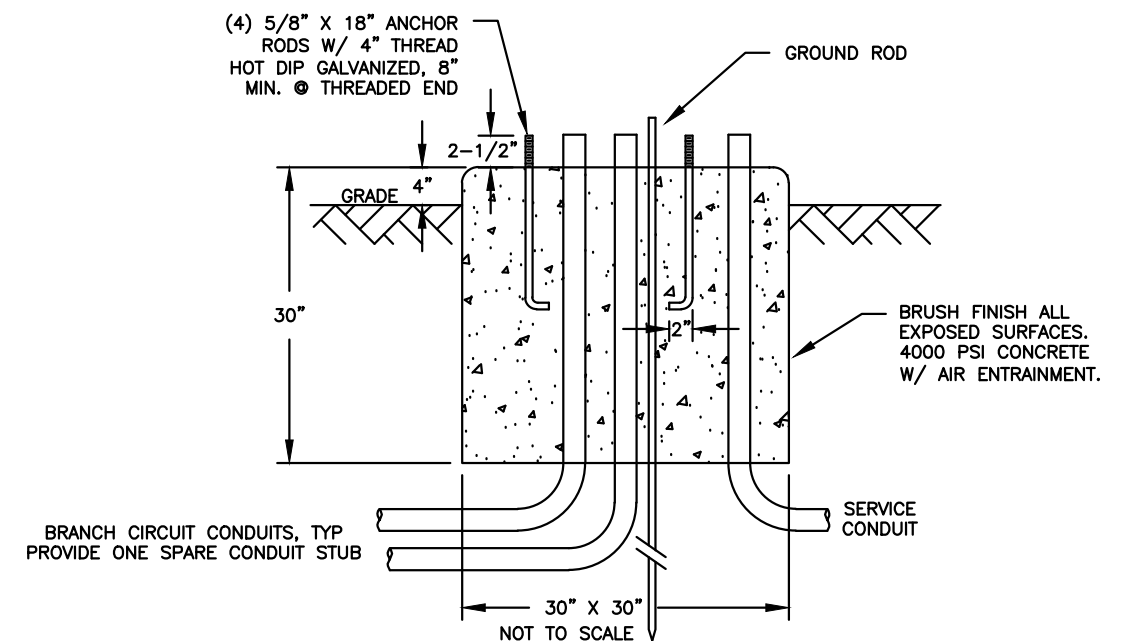
LIGHTING CONTROL CABINET TYPE SPECIAL DETAILS

CABINET CONSTRUCTION

- NEMA 3R
- INTERIOR COMPONENTS MOUNTED ON BACK PANEL BEHIND DEAD FRONT
- 1/8" ANODIZED ALUMINUM (DURANODIC #314)
- NEOPRENE GASKETED DOORS
- STAINLESS STEEL HARDWARE
- ETL LISTED IN ACCORDANCE WITH UL508A



LIGHTING CONTROL CABINET TYPE SPECIAL SCHEMATIC



LIGHTING CONTROL CABINET BASE TYPE SPECIAL DETAIL

GENERAL TRAFFIC CONTROL NOTES:

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS ARE APPROXIMATE AND SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.

DURING HOURS OF DARKNESS ALL BARRICADES USED TO SHIELD A HAZARD SHALL BE EQUIPPED WITH WARNING LIGHTS, TYPE A.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

UNLESS OTHERWISE NOTED, THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVEWAYS AT ALL TIMES DURING CONSTRUCTION.

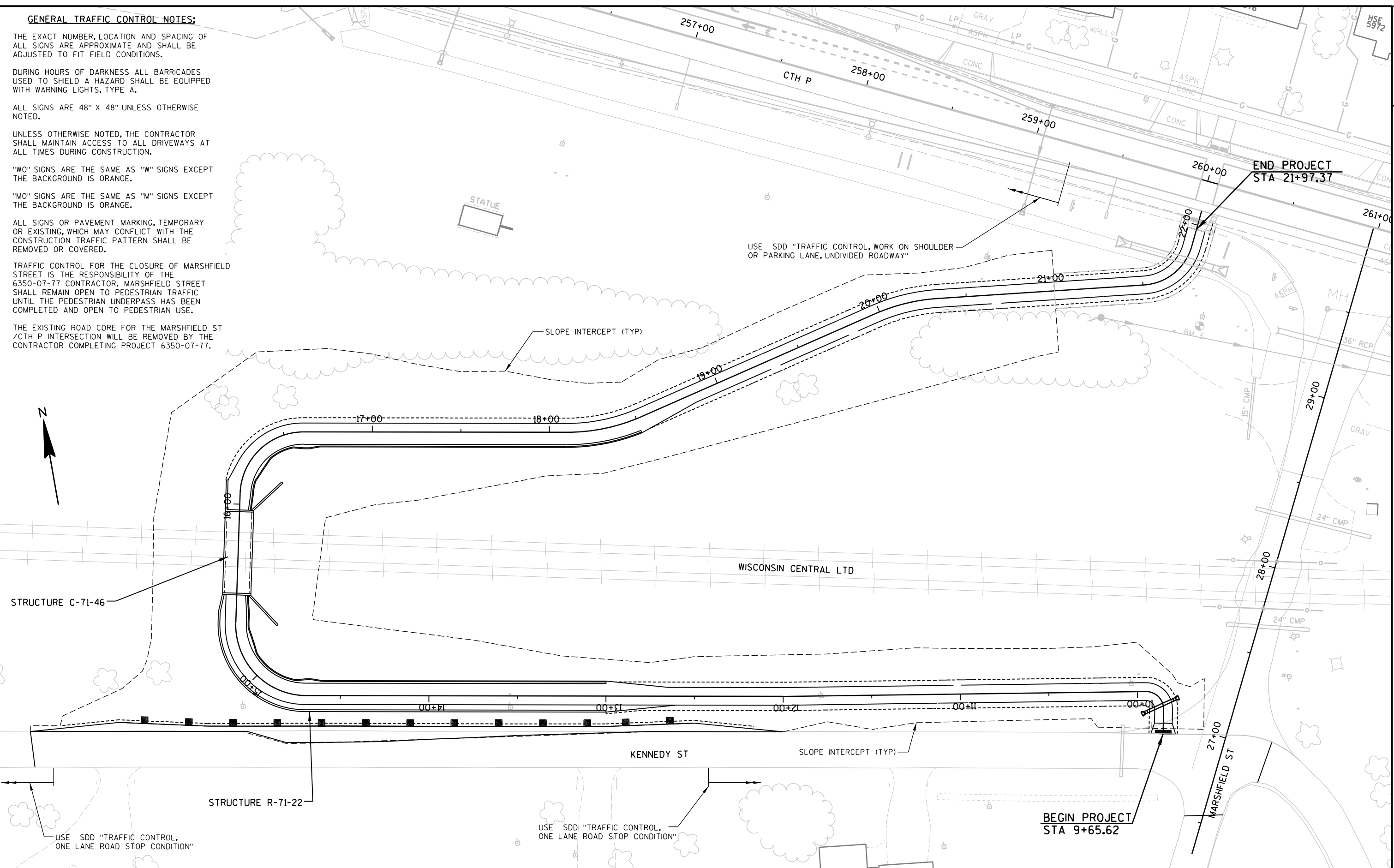
"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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

ALL SIGNS OR PAVEMENT MARKING, TEMPORARY OR EXISTING, WHICH MAY CONFLICT WITH THE CONSTRUCTION TRAFFIC PATTERN SHALL BE REMOVED OR COVERED.

TRAFFIC CONTROL FOR THE CLOSURE OF MARSHFIELD STREET IS THE RESPONSIBILITY OF THE 6350-07-77 CONTRACTOR. MARSHFIELD STREET SHALL REMAIN OPEN TO PEDESTRIAN TRAFFIC UNTIL THE PEDESTRIAN UNDERPASS HAS BEEN COMPLETED AND OPEN TO PEDESTRIAN USE.

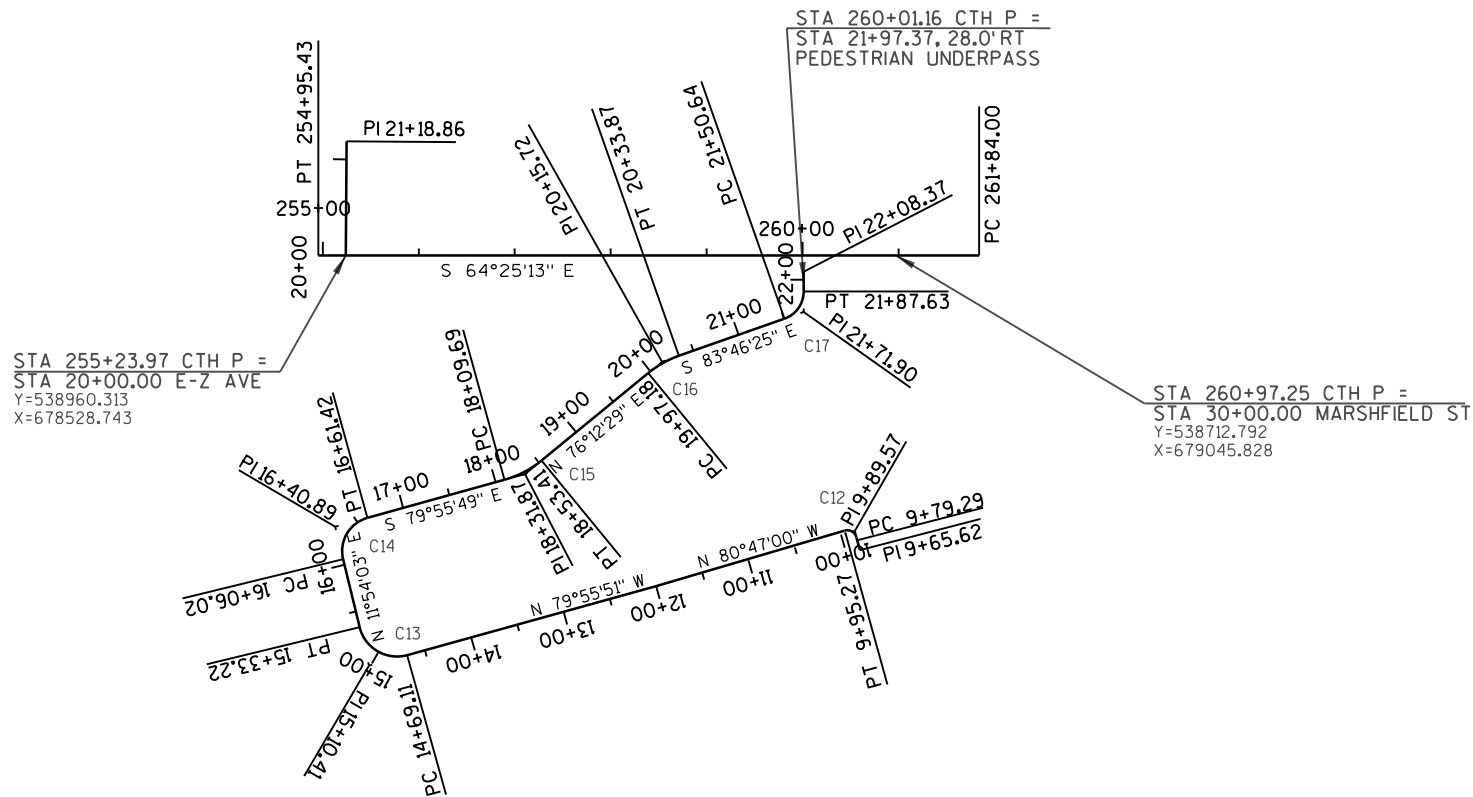
THE EXISTING ROAD CORE FOR THE MARSHFIELD ST /CTH P INTERSECTION WILL BE REMOVED BY THE CONTRACTOR COMPLETING PROJECT 6350-07-77.



CURVE *15 DATA
DELTA =23°51'41" (LT)
D =54°34'03"
T =22.19
L =43.73
E =2.32
R =105.00
DB =S 79°55'50" E
DA =N 76°12'29" E
PC STA 18+09.69
PC Y =538677.946
PC X =678577.035
PISTA 18+31.87
PIY =538674.067
PIX =678598.879
PT STA 18+53.41
PT Y =538679.356
PT X =678620.425
SE = NC

CURVE *16 DATA
DELTA =20°01'09" (RT)
D =54°34'06"
T =18.53
L =36.69
E =1.62
R =105.00
DB =N 76°12'28" E
DA =S 83°46'23" E
PC STA 19+97.18
PC Y =538713.631
PC X =678760.048
PISTA 20+15.72
PIY =538718.049
PIX =678778.046
PT STA 20+33.87
PT Y =538716.039
PT X =678796.469
SE = NC

CURVE *17 DATA
DELTA =70°38'44" (LT)
D =190°59'09"
T =21.26
L =36.99
E =6.77
R =30.00
DB =S 83°46'24" E
DA =N 25°34'52" E
PC STA 21+50.64
PC Y =538703.374
PC X =678912.549
PISTA 21+71.90
PIY =538701.068
PIX =678933.683
PT STA 21+87.63
PT Y =538720.243
PT X =678942.862
SE = NC



CURVE *12 DATA
DELTA =91°33'58" (LT)
D =572°57'28"
T =10.28
L =15.98
E =4.34
R =10.00
DB =N 11°03'51" E
DA =N 80°30'07" W
PC STA 9+79.29
PC Y =538465.354
PC X =678881.884
PISTA 9+89.57
PIY =538475.440
PIX =678883.856
PT STA 9+95.27
PT Y =538477.136
PT X =678873.720
SE = NC

CURVE *13 DATA
DELTA =91°49'53" (RT)
D =143°14'22"
T =41.30
L =64.11
E =17.49
R =40.00
DB =N 79°55'48" W
DA =N 11°54'06" E
PC STA 14+69.11
PC Y =538556.978
PC X =678406.667
PISTA 15+10.41
PIY =538564.200
PIX =678366.004
PT STA 15+33.22
PT Y =538604.611
PT X =678374.521
SE = NC

CURVE *14 DATA
DELTA =88°10'08" (RT)
D =159°09'18"
T =34.87
L =55.40
E =14.12
R =36.00
DB =N 11°54'06" E
DA =S 79°55'47" E
PC STA 16+06.02
PC Y =538675.848
PC X =678389.534
PISTA 16+40.89
PIY =538709.966
PIX =678396.725
PT STA 16+61.42
PT Y =538703.869
PT X =678431.055
SE = NC

3

DATE 18MAY16		E S T I M A T E O F Q U A N T I T I E S			
LINE					6350-07-80
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	201.0205	Grubbing	STA	5.000	5.000
0020	205.0100	Excavation Common	CY	5,664.000	5,664.000
0030	206.2000	Excavation for Structures Culverts (structure) 01. C-71-46	LS	1.000	1.000
0040	209.0100	Backfill Granular	CY	1,187.000	1,187.000
0050	213.0100	Finishing Roadway (project) 01. 6350-07-80	EACH	1.000	1.000
0060	305.0110	Base Aggregate Dense 3/4-Inch	TON	74.000	74.000
0070	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,001.000	1,001.000
0080	310.0115	Base Aggregate Open-Graded	CY	185.000	185.000
0090	465.0105	Asphaltic Surface	TON	562.000	562.000
0100	504.0100	Concrete Masonry Culverts	CY	49.000	49.000
0110	504.1000.S	Precast Concrete Wingwalls (structure) 01. C-71-46	LS	1.000	1.000
0120	504.2000.S	Precast Concrete Box Culvert (ft X ft) 01. 14-ft x 9-ft	LF	48.000	48.000
0130	505.0400	Bar Steel Reinforcement HS Structures	LB	1,000.000	1,000.000
0140	516.0500	Rubberized Membrane Waterproofing	SY	265.000	265.000
0150	517.1010.S	Concrete Staining (structure) 01. R-71-22	SF	1,525.000	1,525.000
0160	517.1010.S	Concrete Staining (structure) 02. C-71-46	SF	1,925.000	1,925.000
0170	522.0318	Culvert Pipe Reinforced Concrete Class IV 18-Inch	LF	16.000	16.000
0180	522.1018	Apron Endwalls for Culvert Pipe Reinforced Concrete 18-Inch	EACH	2.000	2.000
0190	601.0407	Concrete Curb & Gutter 18-Inch Type D	LF	481.000	481.000
0200	602.0415	Concrete Sidewalk 6-Inch	SF	120.000	120.000
0210	602.0505	Curb Ramp Detectable Warning Field Yellow	SF	16.000	16.000
0220	606.0100	Riprap Light	CY	70.000	70.000
0230	608.0324	Storm Sewer Pipe Reinforced Concrete Class III 24-Inch	LF	463.000	463.000
0240	608.0412	Storm Sewer Pipe Reinforced Concrete Class IV 12-Inch	LF	42.000	42.000
0250	608.0415	Storm Sewer Pipe Reinforced Concrete Class IV 15-Inch	LF	51.000	51.000
0260	608.0418	Storm Sewer Pipe Reinforced Concrete Class IV 18-Inch	LF	36.000	36.000
0270	608.0518	Storm Sewer Pipe Reinforced Concrete Class V 18-Inch	LF	103.000	103.000
0280	611.0530	Manhole Covers Type J	EACH	3.000	3.000
0290	611.0612	Inlet Covers Type C	EACH	1.000	1.000
0300	611.0624	Inlet Covers Type H	EACH	3.000	3.000
0310	611.0639	Inlet Covers Type H-S	EACH	1.000	1.000
0320	611.0642	Inlet Covers Type MS	EACH	1.000	1.000
0330	611.2004	Manholes 4-FT Diameter	EACH	2.000	2.000
0340	611.2006	Manholes 6-FT Diameter	EACH	1.000	1.000
0350	611.3004	Inlets 4-FT Diameter	EACH	2.000	2.000
0360	611.3230	Inlets 2x3-FT	EACH	3.000	3.000
0370	611.3901	Inlets Median 1 Grate	EACH	1.000	1.000
0380	612.0106	Pipe Underdrain 6-Inch	LF	540.000	540.000
0390	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	434.000	434.000
0400	614.2300	MGS Guardrail 3	LF	225.000	225.000
0410	614.2610	MGS Guardrail Terminal EAT	EACH	2.000	2.000
0420	616.0206	Fence Chain Link 6-FT	LF	2,060.000	2,060.000

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DATE 18MAY16		E S T I M A T E O F Q U A N T I T I E S			
LINE					6350-07-80
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0430	616.0800.S	Fence Track Clearance	LF	220.000	220.000
0440	619.1000	Mobilization	EACH	1.000	1.000
0450	623.0200	Dust Control Surface Treatment	SY	2,895.000	2,895.000
0460	624.0100	Water	MGAL	10.000	10.000
0470	625.0500	Salvaged Topsoil	SY	9,360.000	9,360.000
0480	627.0200	Mulching	SY	4,600.000	4,600.000
0490	628.1504	Silt Fence	LF	2,053.000	2,053.000
0500	628.1520	Silt Fence Maintenance	LF	2,053.000	2,053.000
0510	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0520	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0530	628.2006	Erosion Mat Urban Class I Type A	SY	3,400.000	3,400.000
0540	628.2008	Erosion Mat Urban Class I Type B	SY	1,600.000	1,600.000
0550	628.7005	Inlet Protection Type A	EACH	6.000	6.000
0560	628.7015	Inlet Protection Type C	EACH	5.000	5.000
0570	628.7504	Temporary Ditch Checks	LF	63.000	63.000
0580	628.7555	Culvert Pipe Checks	EACH	5.000	5.000
0590	628.7560	Tracking Pads	EACH	2.000	2.000
0600	628.7570	Rock Bags	EACH	110.000	110.000
0610	629.0210	Fertilizer Type B	CWT	6.000	6.000
0620	630.0130	Seeding Mixture No. 30	LB	170.000	170.000
0630	630.0200	Seeding Temporary	LB	255.000	255.000
0640	633.5200	Markers Culvert End	EACH	2.000	2.000
0650	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	10.000	10.000
0660	637.2210	Signs Type II Reflective H	SF	11.720	11.720
0670	637.2230	Signs Type II Reflective F	SF	18.000	18.000
0680	642.5201	Field Office Type C	EACH	1.000	1.000
0690	643.0100	Traffic Control (project) 01. 6350-07-80	EACH	1.000	1.000
0700	643.0300	Traffic Control Drums	DAY	900.000	900.000
0710	643.0420	Traffic Control Barricades Type III	DAY	36.000	36.000
0720	643.0715	Traffic Control Warning Lights Type C	DAY	144.000	144.000
0730	643.0900	Traffic Control Signs	DAY	342.000	342.000
0740	645.0111	Geotextile Type DF Schedule A	SY	654.000	654.000
0750	645.0120	Geotextile Type HR	SY	188.000	188.000
0760	649.0400	Temporary Pavement Marking Removable Tape 4-Inch	LF	800.000	800.000
0770	649.1400	Temporary Pavement Marking Stop Line Removable Tape 24-Inch	LF	24.000	24.000
0780	650.4000	Construction Staking Storm Sewer	EACH	9.000	9.000
0790	650.4500	Construction Staking Subgrade	LF	1,498.000	1,498.000
0800	650.5000	Construction Staking Base	LF	1,498.000	1,498.000
0810	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	481.000	481.000
0820	650.6000	Construction Staking Pipe Culverts	EACH	1.000	1.000
0830	650.8500	Construction Staking Electrical Installations (project) 01. 6350-07-80	LS	1.000	1.000
0840	650.9910	Construction Staking Supplemental Control (project) 01. 6350-07-80	LS	1.000	1.000
0850	650.9920	Construction Staking Slope Stakes	LF	1,498.000	1,498.000
0860	652.0105	Conduit Rigid Metallic 3/4-Inch	LF	35.000	35.000
0870	652.0210	Conduit Rigid Nonmetallic Schedule 40 1-Inch	LF	75.000	75.000
0880	655.0615	Electrical Wire Lighting 10 AWG	LF	390.000	390.000
0890	656.0200	Electrical Service Meter Breaker Pedestal (location) 01. Station 15+05, 30' LT	LS	1.000	1.000

3

DATE 18MAY16		E S T I M A T E O F Q U A N T I T I E S			
LINE					6350-07-80
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0900	690.0150	Sawing Asphalt	LF	425.000	425.000
0910	715.0502	Incentive Strength Concrete Structures	DOL	500.000	500.000
0920	SPV.0060	Special 01. Lighting Control Cabinet	EACH	1.000	1.000
		Base Type Special			
0930	SPV.0060	Special 02. Lighting Control Cabinet	EACH	1.000	1.000
		Type Special			
0940	SPV.0060	Special 03. Lighting Unit Type Special	EACH	2.000	2.000
0950	SPV.0090	Special 01. Steel Casing Pipe 32-Inch	LF	65.000	65.000
0960	SPV.0165	Special 01. Temporary Shoring Railroad	SF	3,300.000	3,300.000
0970	SPV.0165	Special 02. Wall Modular Block	SF	1,525.000	1,525.000
		Mechanically Stabilized Earth			
		LRFD/QMP(**P**)			
0980	SPV.0180	Special 01. Geogrid Reinforcement	SY	2,230.000	2,230.000

3

3

GRUBBING

STATION	LOCATION	201.0205 GRUBBING STA
15+00-17+00	LT	2
18+50-19+50	LT	1
19+00-21+00	RT	2
ITEM TOTALS		5

FINISHING ROADWAY

STATION	LOCATION	213.0100 EACH
PROJECT 01. 6350-07-80	LT & RT	1
ITEM TOTAL		1

REMOVING ASPHALTIC SURFACE

STATION	LOCATION	204.0110 SY
KENNEDY ST	UNDISTRIBUTED	1580
ITEM TOTAL		1580

BASE COURSE AND BACKFILL ITEMS

STATION	LOCATION	305.0110 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	310.0115 BASE AGGREGATE OPEN GRADED CY	209.0100 BACKFILL GRANULAR CY	624.0100 WATER MGAL
9+65.52 - 15+48.83	LT & RT	49	412			4
KENNEDT ST	LT	6	139			1
15+96.74 - 21+97.37	LT & RT	19	450		267	5
ABOVE BOX CULVERT						
UNDERDRAIN				80		
UNDISTRIBUTED	UNDER BOX CULVERT				60	
ITEM TOTALS		74	1001	80	327	10

PIPE CULVERTS

STATION	LOCATION	522.0318 CULVERT PIPE REINFORCED CONCRETE CLASS IV 18-INCH LF	522.1018 APRON ENWALLS FOR CULVERT PIPE REINFORCED CONCRETE 18-INCH EACH
9+78	LT & RT	16	2
ITEM TOTALS		16	2

EARTHWORK SUMMARY

DIVISION	STATION	LOCATION	(1)(7) 205.0100 EXCAVATION COMMON CY	(2)(3) SALVAGED/ UNUSABLE MATERIAL CY	(4) AVAILABLE MATERIAL CY	(5) UNEXPANDED FILL CY	(6) EXPANDED FILL CY	MASS ORDINATE CY	WASTE CY	COMMENTS
DIVISION 1 PROJECT 6350-07-80 (PEDESTRIAN UNDERPASS)	9+68.74 - 15+48.74	PEDESTRIAN UNDERPASS	2120	0	2120	196	255	1865	1865	SUBCUT DIRECTED BY GEOTECHNICAL ENGINEER
	15+96.74 - 21+00.00	PEDESTRIAN UNDERPASS	3544	0	3544	159	207	3337	3337	
	UNDISTRIBUTED	UNDER BOX CULVERT	60							
PROJECT 6350-07-80 (PEDESTRIAN UNDERPASS)			5664	0	5664	355	462	5203	5203	
DIVISION 1 TOTALS			5664	0	5664	355	462	5203	5203	

(1) EXCAVATION COMMON IS THE TOTAL VOLUME OF CUT. ITEM NUMBER 205.0100

(2) SALVAGED/ UNUSABLE PAVEMENT MATERIAL ARE INCLUDED IN THE QUANTITY OF EXCAVATION COMMON.

(3) SALVAGED/ UNUSABLE PAVEMENT MATERIAL.

(4) AVAILABLE MATERIAL = EXCAVATION COMMON - UNUSABLE PAVEMENT MATERIAL.

(5) EXPANDED FILL FACTOR = 1.30

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

(7) EXCAVATION COMMON ADJACENT TO THE MSE WALL WAS COMPUTED USING 1:1 CUT SLOPES FROM THE PEDESTRIAN SUBGRADE POINT AT THE FACE OF THE WALL. REMAINING EXCAVATION REQUIRED FOR CONSTRUCTION OF THE MSE WALL WILL BE PAID AS EXCAVATION FOR STRUCTURES. SEE STRUCTURE R-71-22 PLANS.

THE MASS ORDINATE IS = EXCAVATION COMMON - SALVAGED/UNUSABLE PAVEMENT MATERIAL - EXPANDED FILL.

ALL ITEMS AND QUANTITIES CATEGORY 0010

ASPHALTIC SURFACE

STATION	LOCATION	465.0105 TON
9+65.52 - 15+48.83	LT & RT	133
KENNEDY ST	LT	33
15+96.74 - 21+97.37	LT & RT	124
UNDISTRIBUTED	KENNEDY ST	272
ITEM TOTAL		562

CONCRETE CURB & GUTTER

STATION	LOCATION	601.0407 18-INCH TYPE D LF
13+00-15+48.74	RT	237
15+96.63-18+50	RT	244
ITEM TOTAL		481

CURB RAMP DETECTABLE WARNING FIELD YELLOW

		602.0415	602.0505	COMMENTS
STATION	LOCATION	CONCRETE SIDEWALK 6-INCH SF	DETECTABLE WARNING FIELD YELLOW SF	
9+68.74	LT & RT	120	16	4-2'X2'
ITEM TOTAL		120	16	

FENCE TRACK CLEARANCE

STATION	LOCATION	616.0800.S LF
PROJECT		220
ITEM TOTAL		220

BEAM GUARD ITEMS

		614.2300	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
STATION	LOCATION	MGS GUARDRAIL 3 LF	
12+50-13+00	LT		1
13+00-15+00	LT	225	
15+00-15+12.7	LT		1
ITEM TOTALS		225	2

FENCE CHAIN LINK 6-FT

STATION	LOCATION	616.0206* LF
PROJECT		1701
ITEM TOTAL		1701

MAINTENANCE AND REPAIR OF HAUL ROADS

STATION	LOCATION	618.0100 EACH
PROJECT		1
ITEM TOTAL		1

MOBILIZATION

STATION	LOCATION	619.1000 EACH
PROJECT		1
ITEM TOTAL		1

DUST CONTROL SURFACE TREATMENT

STATION	LOCATION	623.0200 SY
PROJECT		2895
ITEM TOTAL		2895

SAWING

STATION	LOCATION	690.0150 ASPHALT LF
KENNEDY ST 12+00 - 15+17	LT	425
ITEM TOTAL		425

TRACKING PAD

STATION	LOCATION	628.7560 EACH
PROJECT		2
ITEM TOTAL		2

MARKERS CULVERT ENDS

STATION	LOCATION	633.5200 EACH
9+78	LT & RT	2
ITEM TOTAL		2

GEOGRID REINFORCEMENT

STATION	LOCATION	SPV.0180.01 SY
9+65 - 15+50	LT & RT	1120
16+00 - 21+97	LT & RT	1110
ITEM TOTAL		2230

EROSION CONTROL ITEMS

		606.0100	628.1504	628.1520	628.1905	628.1910 MOBILIZATIONS EROSION CONTROL EACH	628.2006 EROSION MAT URBAN CLASS I TYPE A SY	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	628.7005 INLET PROTECTION TYPE A EACH	628.7015 INLET PROTECTION TYPE C EACH	628.7504 TEMPORARY DITCH CHECKS LF	645.0120 GEOTEXTILE FABRIC TYPE HR SY	628.7570 ROCK BAGS EACH	628.7555 CULVERT PIPE CHECKS EACH
STATION	LOCATION	R/PRAP LIGHT CY	SILT FENCE LF	SILT FENCE MAINTENANCE LF	MOBILIZATIONS EROSION CONTROL EACH	EROSION CONTROL EACH	TYPE A SY	TYPE B SY	TYPE A EACH	TYPE C EACH	LF	SY	EACH	EACH
PROJECT	LT & RT	8	1642	1642	1	1	2724	1272	6	4	50	18	90	5
UNDISTRIBUTED		62	411	411	1	1	676	328		1	13	170	20	0
ITEM TOTALS		70	2053	2053	2	2	3400	1600	6	5	63	188	110	5

STORM SEWER STRUCTURE ITEMS

		608.0324	608.0412	608.0415	608.0418	608.052	611.0530	611.0612	611.0624	611.0639	611.0642	611.2004	611.2006	611.3004	611.3230	611.3901	612.0106	645.0111	SPV.0090.01
		STORM SEWER PIPE REINFORCED CONCRETE																	
		CLASS III		CLASS IV		CLASS V		MANHOLE COVERS		INLET COVERS		MANHOLES		INLETS		PIPE UNDERDRAIN		GEOTEXTILE FABRIC TYPE DF SCHEDULE A SY	STEEL CASING PIPE 32-INCH LF
STATION		24-INCH LF	12-INCH LF	15-INCH LF	18-INCH LF	18-INCH LF	TYPE J EACH	TYPE C EACH	TYPE H EACH	TYPE H-S EACH	TYPE MS EACH	4-FT DIA EACH	6-FT DIA EACH	4-FT DIA EACH	2X3-FT EACH	MED 1 GRATE EACH	6-INCH LF		
PROJECT		463	42	51	36	103	3	1	3	1	1	2	1	2	3	1	540	180	65
ITEM TOTALS		463	42	51	36	103	3	1	3	1	1	2	1	2	3	1	540	180	65

*QUANTITIES SHOWN ELSEWHERE (C-71-46 AND R-71-22)
ALL ITEMS AND QUANTITIES CATEGORY 0010

SIGNING ITEMS

SIGN GROUP NUMBER	SIGN CODE	SIGN MESSAGE	SIGN SIZE W X H (INCHES)	634.0612 POSTS WOOD 4X6-INCH X 12-FT EACH	637.2210 SIGNS TYPE II REFLECTIVE H SF	637.2230 F SF
1-1	R5-3	NO MOTOR VEHICLES	24X24	1	4.00	
1-2	R1-1	STOP	18X18	1	1.86	
1-3	W1-1R	CURVE RIGHT	18X18	1		3.00
1-4	W1-1R	CURVE RIGHT	18X18	1		3.00
1-5	W1-1R	CURVE RIGHT	18X18	1		3.00
1-6	W1-1L	CURVE LEFT	18X18	1		3.00
1-7	W1-1L	CURVE LEFT	18X18	1		3.00
1-8	W1-1L	CURVE LEFT	18X18	1		3.00
1-9	R5-3	NO MOTOR VEHICLES	24X24	1	4.00	
1-10	R1-1	STOP	18X18	1	1.86	
ITEM TOTALS				10	11.72	18.00

TURF ESTABLISHMENT

STATION	LOCATION	625.0500 SALVAGED TOPSOIL SY	627.0200 MULCHING SY	629.0210 FERTILIZER TYPE B CWT	630.0130 SEEDING MIXTURE NO. 30 LB	630.0200 SEEDING TEMPORARY LB
PROJECT	LT & RT	7488	3712	4.8	136	204
UNDISTRIBUTED	LT & RT	1872	888	1.2	34	51
ITEM TOTALS		9360	4600	6	170	255

TRAFFIC CONTROL

	643.0300	643.0420	643.0715	643.0900	643.0100
	DRUMS	BARRICADES	WARNING LIGHTS	SIGNS	PROJECT
LOCATION	DAY	TYPE III	TYPE C	DAY	6350-07-80
PROJECT	900	36	144	342	1
ITEM TOTALS	900	36	144	342	1

TEMPORARY PAVEMENT MARKING REMOVABLE TAPE

STATION	LOCATION	649.1400 STOP LINE 24-INCH LF	649.0400 4-INCH LF
KENNEDY STREET		24	800
ITEM TOTALS		24	800

LIGHTING UNIT ITEMS

LIGHTING UNIT NO.	SPV.0060.03 LIGHTING UNIT TYPE SPECIAL EACH
A-1	1
A-2	1
ITEM TOTAL	2

CONSTRUCTION STAKING STORM SEWER

STATION	650.4000 EACH
PROJECT	9
ITEM TOTAL	9

CONSTRUCTION STAKING PIPE CULVERTS

STATION	LOCATION	650.6000 EACH
9+78	LT & RT	1
ITEM TOTAL		1

CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER

STATION	LOCATION	650.5500 LF
13+00-15+48.74	RT	237
15+96.63-18+50	RT	244
ITEM TOTAL		481

FIELD OFFICE TYPE C

STATION	LOCATION	642.5201 EACH
PROJECT	LT & RT	1
ITEM TOTAL		1

CONSTRUCTION STAKING

STATION	LOCATION	650.4500 SUBGRADE LF	650.5000 BASE LF	651.9920 SLOPE STAKES LF	650.9910 SUPPLEMENTAL CONTROL LS	650.8500 ELECTRICAL INSTALLATIONS LS
9+65.52 - 15+48.83	LT & RT	580	580	580		
12+00 - 15+17.13	LT	317	317	317		
15+96.74 - 21+97.37	LT & RT	601	601	601		
PROJECT (6350-07-80)		1498	1498	1498	1	1
ITEM TOTAL					1	1

LIGHTING ELECTRICAL WIRE AND CONDUIT ITEMS

FROM	TO	655.0615 ELECTRICAL WIRE LIGHTING 10 AWG LF	652.0105 CONDUIT RIGID METALLIC 3/4 INCH LF	652.0210 CONDUIT RIGID NONMETALLIC SCHEDULE 40 - 1 INCH LF
A-2	A-1	120	30	
A-1	LCC-A	270	5	75
ITEM TOTALS		390	35	75

LIGHTING CONTROL CABINET

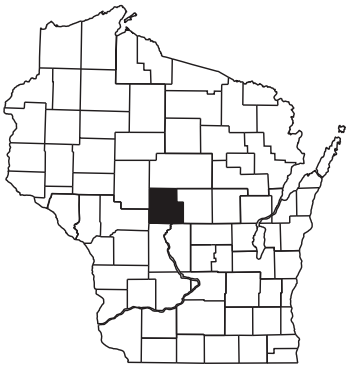
CABINET	SPV.0060.02 LIGHTING CONTROL CABINET TYPE SPECIAL EACH	SPV.0060.01 LIGHTING CONTROL CABINET BASE TYPE SPECIAL EACH	656.0200 ELECTRICAL SERVICE METER BREAKER PEDESTAL EACH
A	1	1	1
ITEM TOTAL		1	1

ALL ITEMS AND QUANTITIES CATEGORY 0010

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

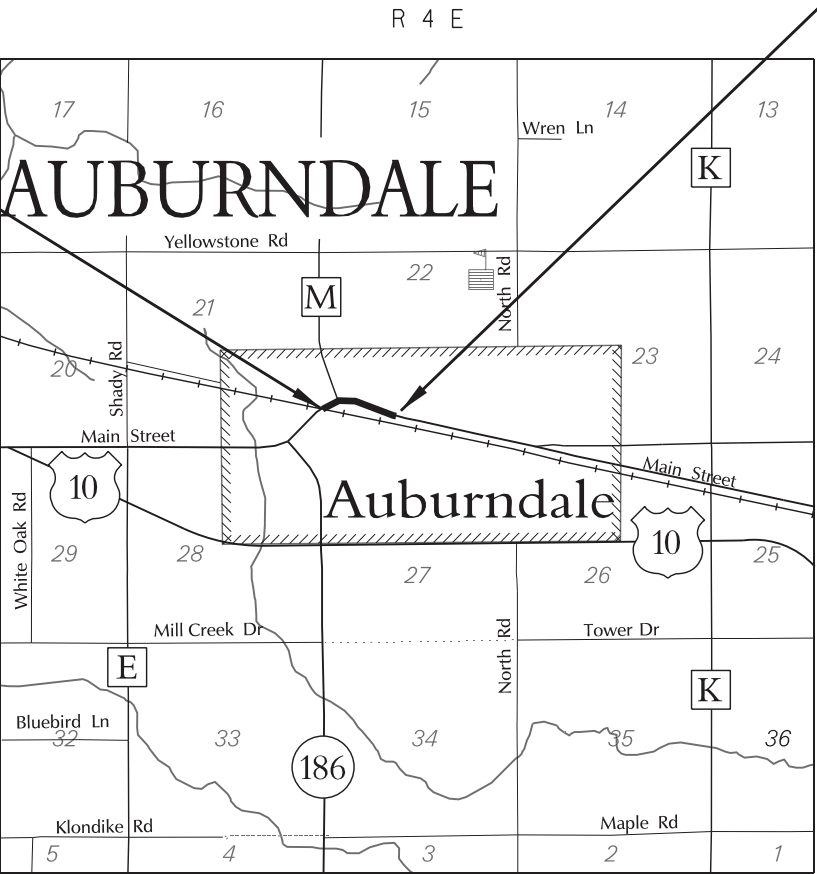
TRANSPORTATION PROJECT PLAT TITLE SHEET

6350-08-20
MARSHFIELD - STEVENS POINT
(WCL RR PEDESTRIAN UNDERPASS)
WOOD COUNTY



BEGIN PROJECT

END PROJECT



NOTES:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COUNTY COORDINATES, WOOD COUNTY, NAD 83 (2008) IN U.S. SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

RIGHT-OF-WAY MONUMENTS ARE TYPE 2 AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT. (TYPICALLY 3/4"X24" RE-BAR)

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

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

EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINTS OF REFERENCE: EXISTING HIGHWAY RIGHT-OF-WAY FOR USH 10 ESTABLISHED FROM PREVIOUS PROJECTS 6350-5-21, 4848, 4641, 6350-1-70, 6350-7-71, 6350-07-21, AND EXISTING HIGHWAY RIGHT-OF-WAY FOR SIDE ROADS ESTABLISHED FROM CENTERLINE OF EXISTING PAVEMENTS AND CERTIFIED SURVEY MAPS.

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

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

A **HIGHWAY EASEMENT** (HE) IS AN EASEMENT FOR HIGHWAY PURPOSES, AS LONG AS SO USED, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM NECESSARY OR DESIRABLE.

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

DISTANCES SHOWN TO BUILDINGS ARE APPROXIMATE.

FOR THE CURRENT ACCESS/DRIVEWAY INFORMATION CONTACT THE WISCONSIN DEPARTMENT OF TRANSPORTATION OFFICE WISCONSIN RAPIDS.

CONVENTIONAL ABBREVIATIONS

ACCESS POINT / DRIVEWAY CONNECTION	AP	REFERENCE LINE	R/L
ACCESS RIGHTS	AR	RELEASE OF RIGHTS	ROR
ACRES	AC.	REMAINING	REM.
AND OTHERS	ET. AL.	RIGHT-OF-WAY	R/W
CENTERLINE	C/L	SECTION	SEC.
CERTIFIED SURVEY MAP	CSM	STATION	STA.
CORNER	COR.	TEMPORARY LIMITED EASEMENT	TLE
DOCUMENT	DOC.	VOLUME	V.
EASEMENT	EASE.	CURVE DATA	
HIGHWAY EASEMENT	H.E.	LONG CHORD	LCH
LAND CONTRACT	LC	LONG CHORD BEARING	LCB
MONUMENT	MON.	RADIUS	R
PAGE	P.	DEGREE OF CURVE	D
PERMANENT LIMITED EASEMENT	PLE	CENTRAL ANGLE OR DELTA	DELTA
PROPERTY LINE	PL	LENGTH OF CURVE	L
RECORDED AS	(100')	TANGENT	TAN

CONVENTIONAL SYMBOLS

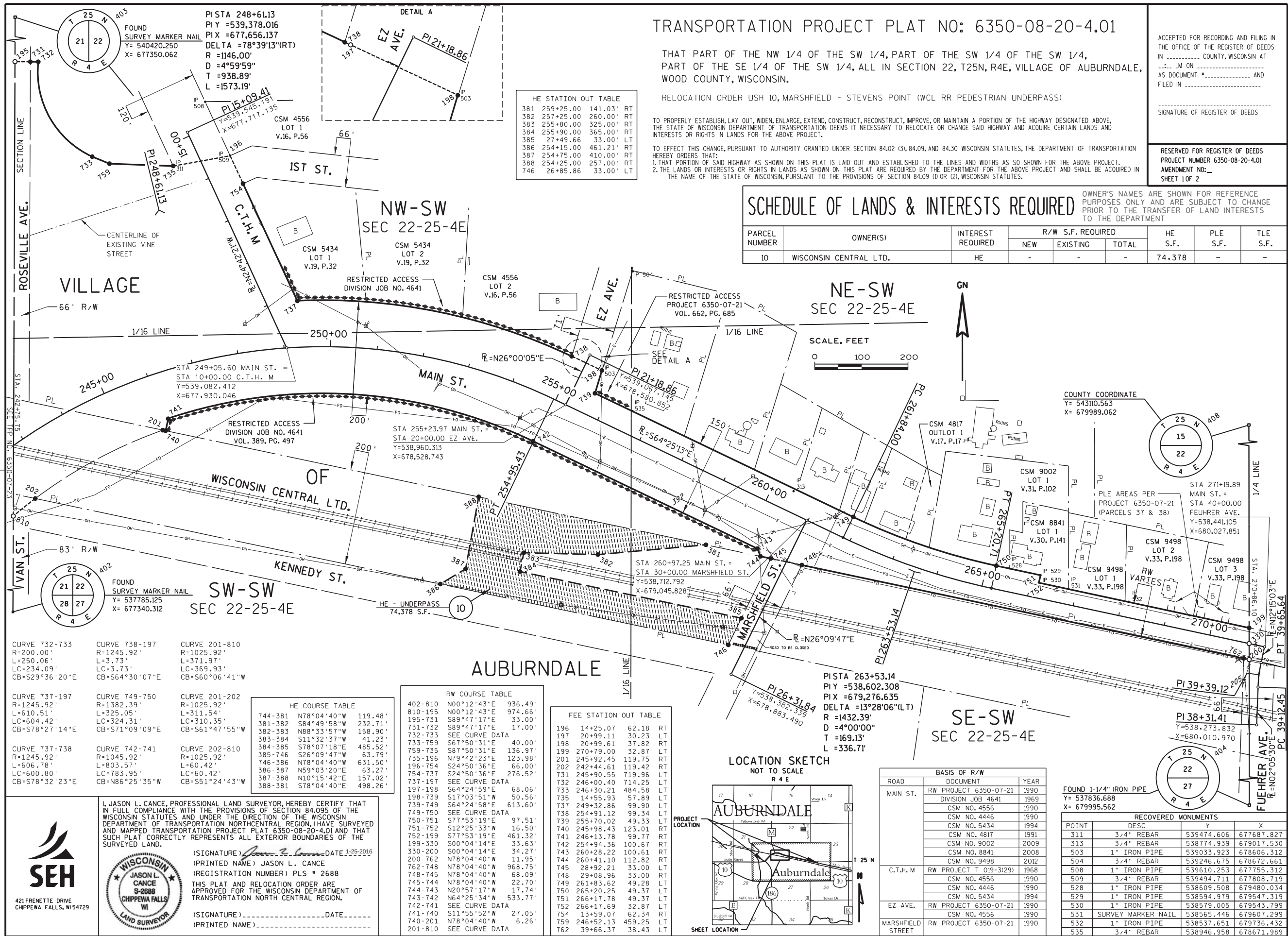
FOUND IRON PIPE/PIN	IF (1" UNLESS NOTED)	PROPOSED R/W LINE	---
R/W MONUMENT	• (SET)	EXISTING H.E. LINE	---
R/W STANDARD	Δ (SET)	PROPERTY LINE	---
SIGN	ISIGN	LOT & TIE LINES	---
SECTION CORNER MONUMENT	⊙	SLOPE INTERCEPTS	---
SECTION CORNER SYMBOL	⊙	CORPORATE LIMITS	---
FEE (HATCH VARIES)	⊙	ACCESS RESTRICTION (BY PREVIOUS ACQUISITION/CONTROL)	---
TEMPORARY LIMITED EASEMENT	⊙	ACCESS RESTRICTION (BY ACQUISITION)	---
PERMANENT LIMITED EASEMENT	⊙	ACCESS RESTRICTION (BY STATUTORY AUTHORITY)	---
R/W BOUNDARY POINT	⊙	SECTION LINE	---
PARCEL NUMBER	⊙	QUARTER LINE	---
UTILITY PARCEL NUMBER	⊙	SIXTEENTH LINE	---
SIGN NUMBER (OFF PREMISE)	⊙	EXISTING CENTERLINE	---
BUILDING	⊙	PROPOSED REFERENCE LINE	---
		PARALLEL OFFSET	---

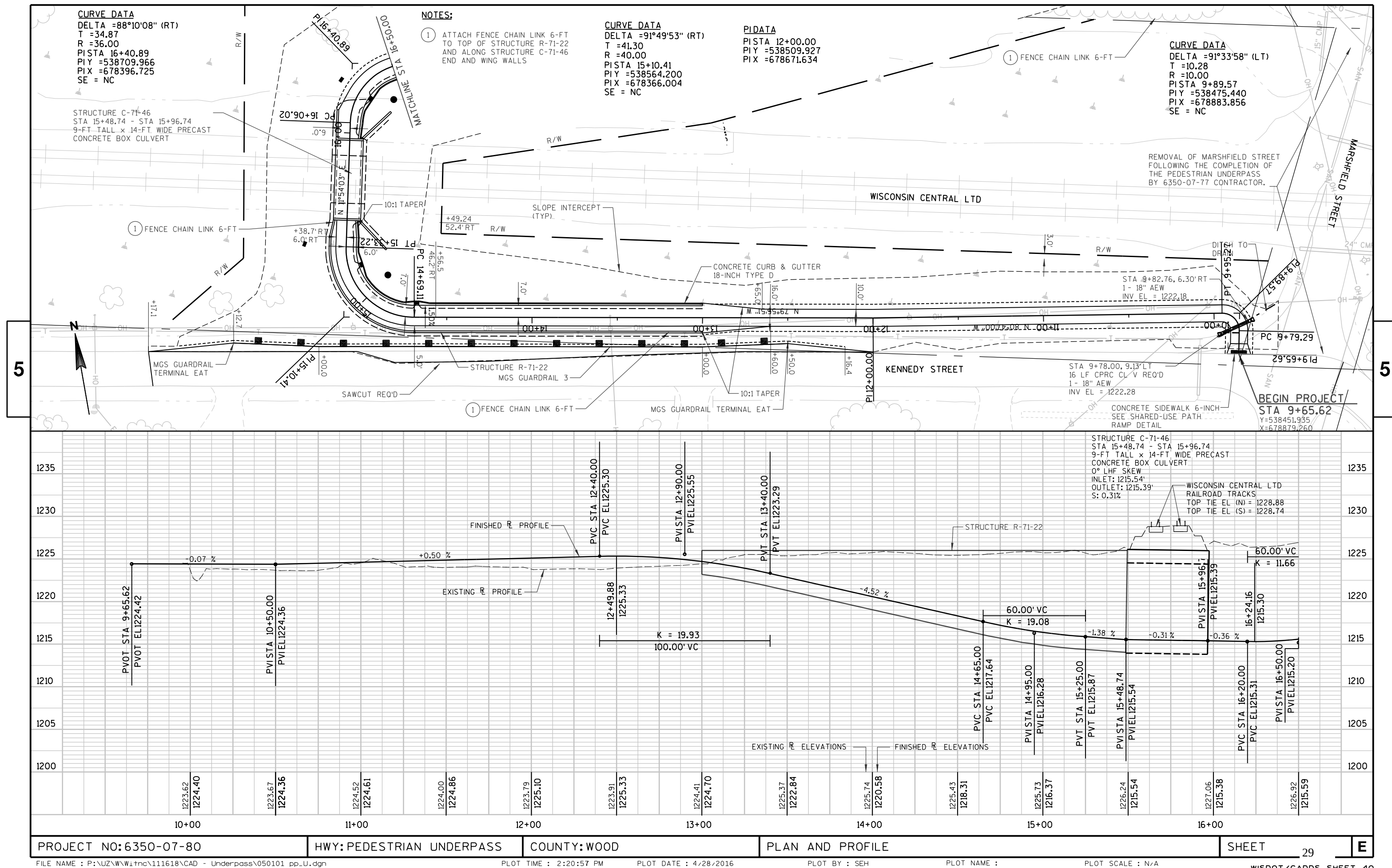
CONVENTIONAL UTILITY SYMBOLS

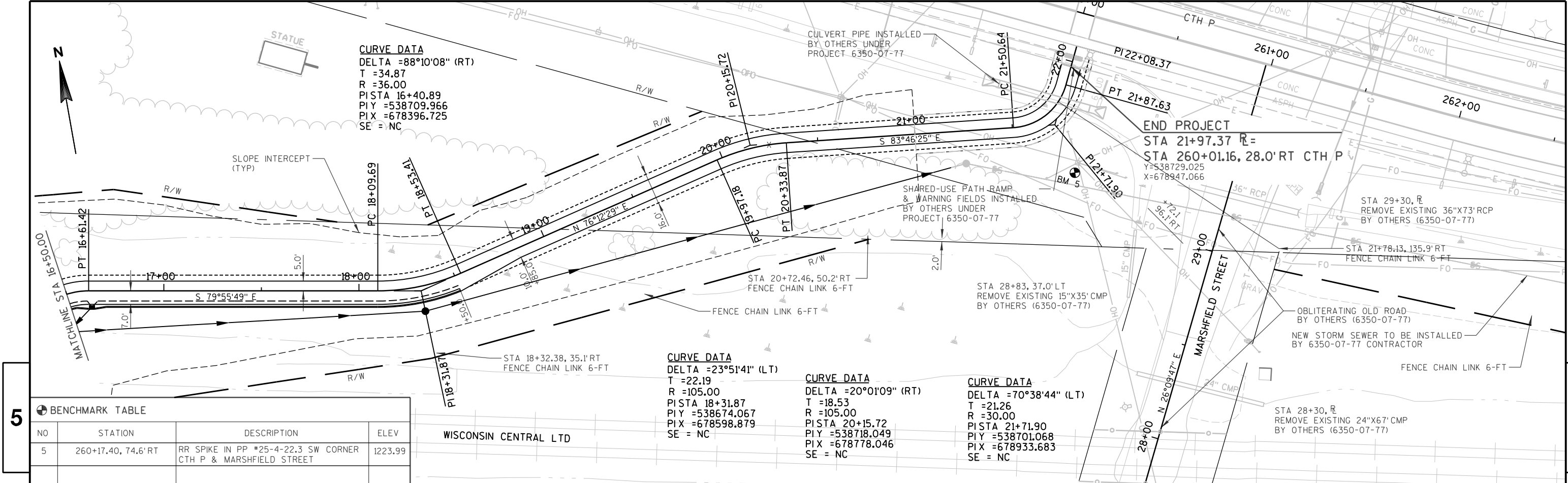
WATER	W
GAS	G
TELEPHONE	T
OVERHEAD TRANSMISSION LINES	OH
ELECTRIC	E
CABLE TELEVISION	TV
FIBER OPTIC	FO
SANITARY SEWER	SAN
STORM SEWER	SS
NON COMPENSABLE	NON
POWER POLE	⊙
TELEPHONE POLE	⊙
TELEPHONE PEDESTAL	⊙
ELECTRIC TOWER	⊙



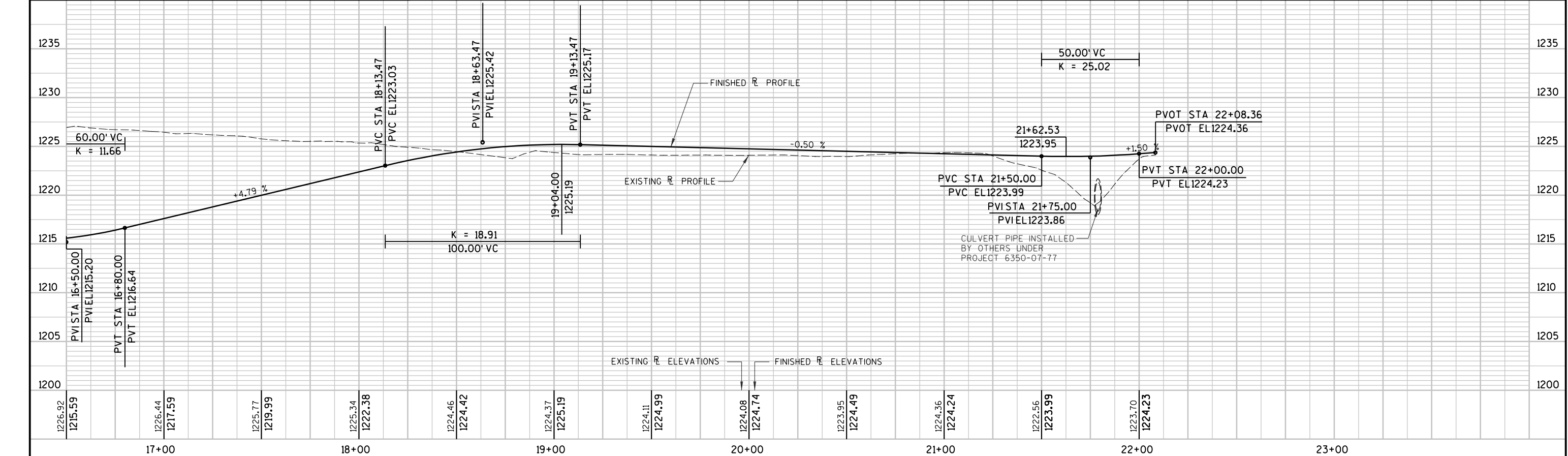
RESERVED FOR REGISTER OF DEEDS
PROJECT NUMBER 6350-08-20-4.01
SHEET 2 OF 2
AMENDMENT NO:







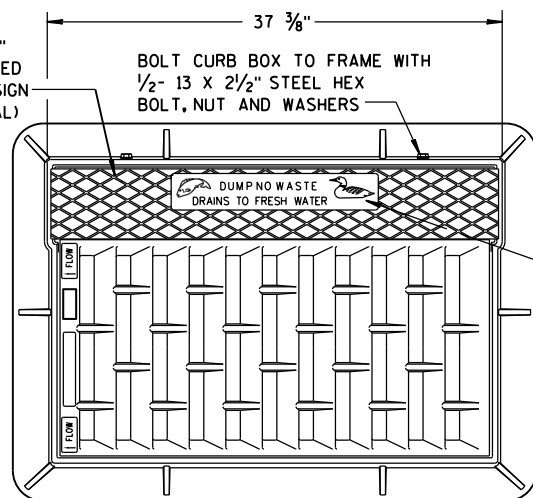
BENCHMARK TABLE			
NO	STATION	DESCRIPTION	ELEV
5	260+17.40, 74.6' RT	RR SPIKE IN PP #25-4-22.3 SW CORNER CTH P & MARSHFIELD STREET	1223.99



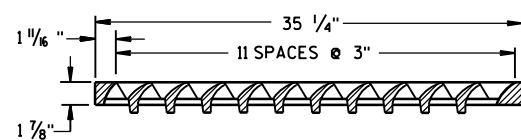
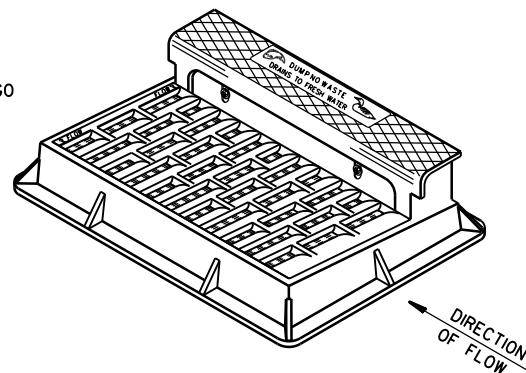
Standard Detail Drawing List

08A05-19A	INLET COVERS TYPE A, H, A-S, H-S & Z
08A05-19B	INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM
08A05-19D	INLET COVER TYPE BW, MANHOLE COVERS, TYPE K, J, J-S, L & M
08B09-01	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER
08C06-01	INLETS 3-FT AND 4-FT DIAMETER
08C07-01	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08C08-01	INLETS MEDIAN 1 AND 2 GRATE
08D01-18	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D05-16A	CURB RAMPS TYPES 1 AND 1-A
08D05-16B	CURB RAMPS TYPES 2 AND 3
08D05-16C	CURB RAMPS TYPES 4A AND 4A1
08D05-16D	CURB RAMPS TYPE 4B AND 4B1
08D05-16E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08D15-05A	EDGEDRAIN OUTLET AND OUTFALL MARKERS
08D15-05B	EDGEDRAIN AND BASE AGGREGATE OPEN GRADED
08D15-05C	EDGEDRAIN AND BASE AGGREGATE OPEN GRADED
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E14-01	TRACKING PAD
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09B02-09	CONDUIT
12A03-10	NAME PLATE (STRUCTURES)
14B42-03A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-02A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15B03-15A	FENCE CHAIN LINK
15B03-15B	FENCE CHAIN LINK
15C03-03	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15D28-03	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D32-04	TRAFFIC CONTROL, ONE LANE ROAD STOP CONDITION

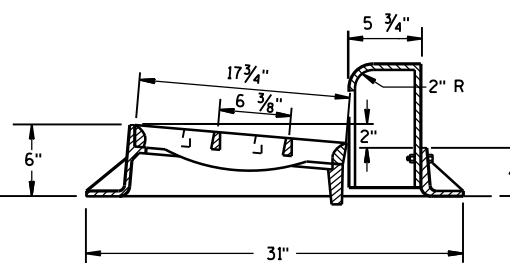
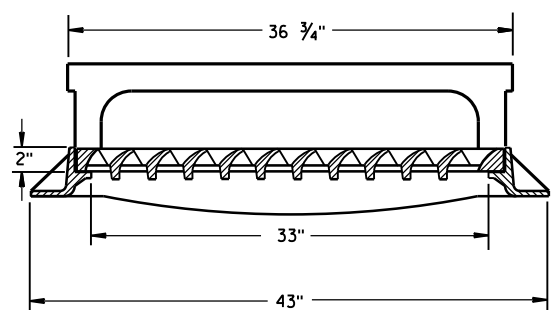
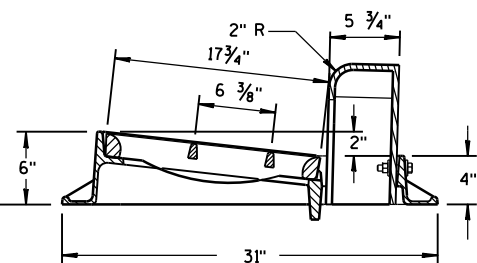
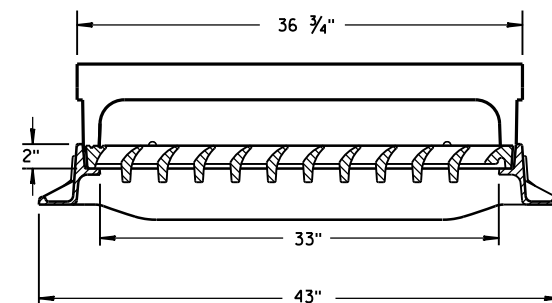
TYPE "C"
CHECKERED
TOP DESIGN
(OPTIONAL)



NOTE:
GRATE IS REVERSIBLE.

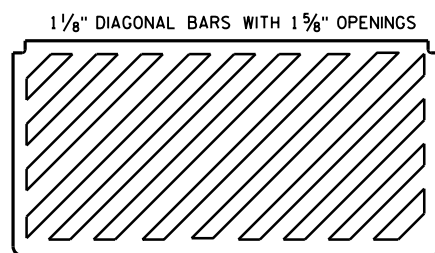


NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"



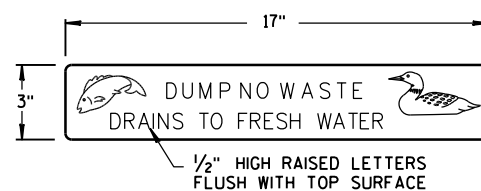
TYPE "H"

NOTE: EITHER CASTING IS ACCEPTABLE

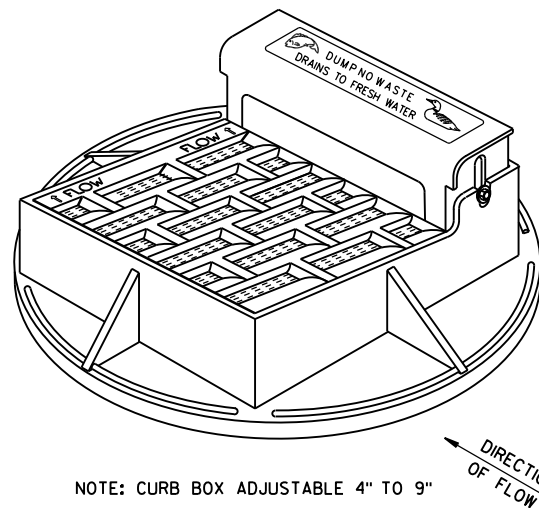


SPECIAL GRATE FOR
TYPE "H" COVER

(MEASURES 35 1/4" X 17 3/4" X 2")
(NOTED AS TYPE H-S ON DRAINAGE TABLE)

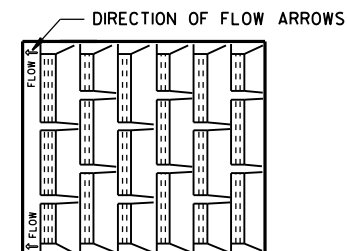


LOGO DETAIL

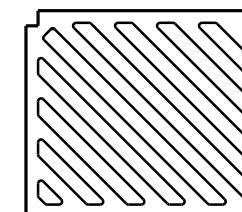


NOTE: CURB BOX ADJUSTABLE 4" TO 9"

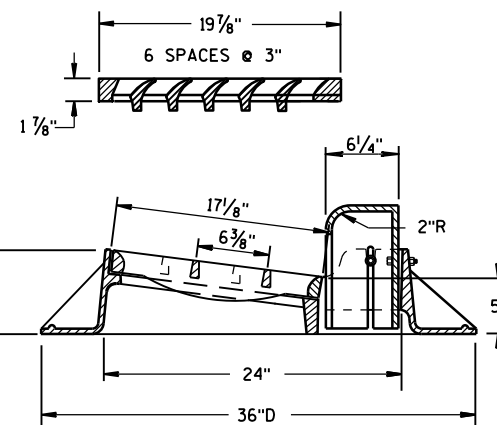
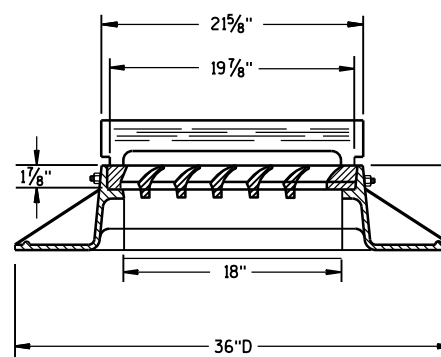
NOTE:
GRATE IS REVERSIBLE.



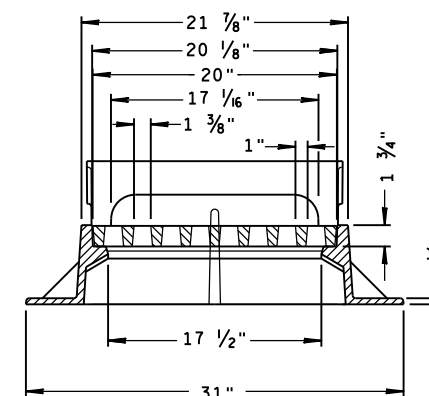
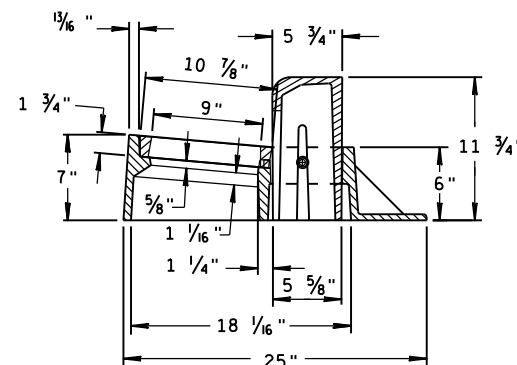
1" DIAGONAL BARS
WITH 1 1/2" OPENINGS



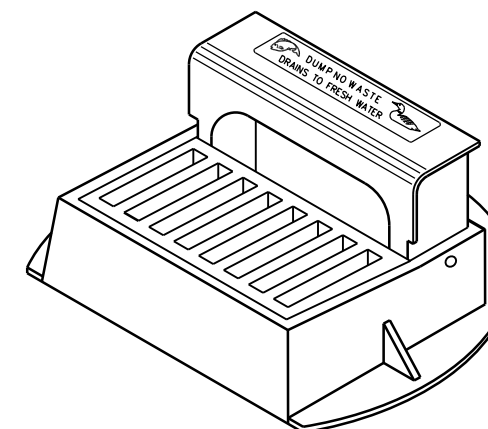
SPECIAL GRATE FOR
TYPE "A" COVER
(MEASURES 19 3/4" X 17" X 1 1/8")
(NOTED AS TYPE A-S ON DRAINAGE TABLE)



TYPE "A"



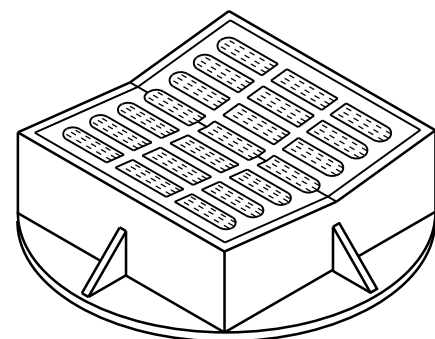
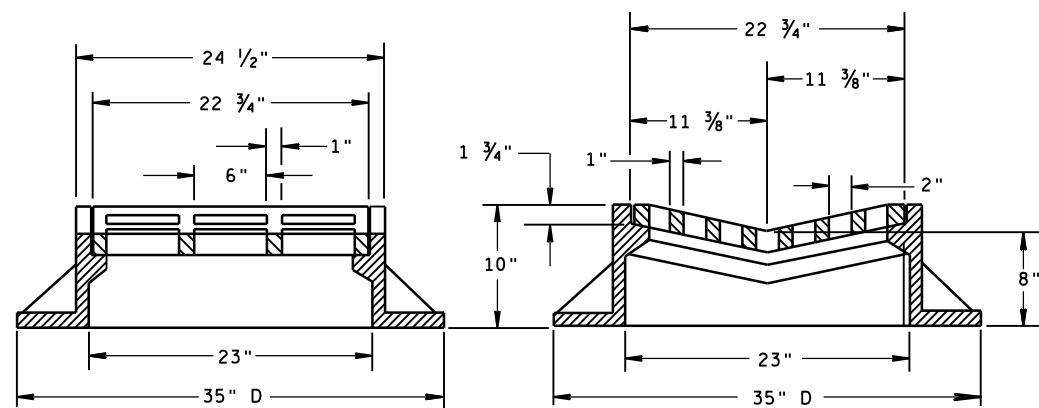
TYPE "Z"



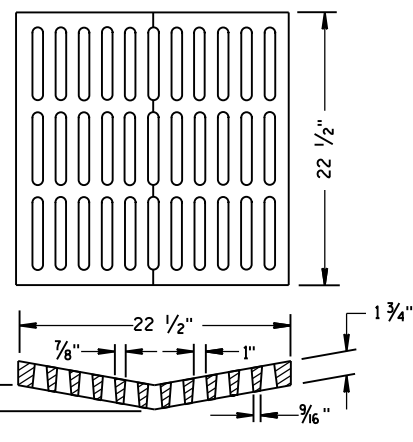
INLET COVERS
TYPE A, H, A-S, H-S & Z

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

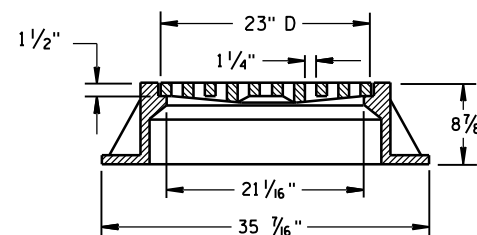
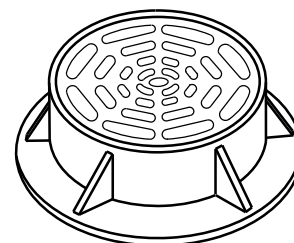
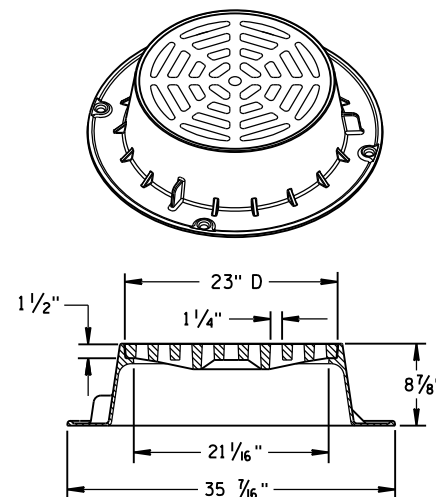
APPROVED
11-27-13 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS 132 ENT
FHWA ENGINEER



TYPE "B"

ALTERNATIVE GRATE FOR
TYPE "B" COVER

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS POSSIBLE.
 NOTED AS TYPE B-A ON THE DRAINAGE TABLE



TYPE "C"

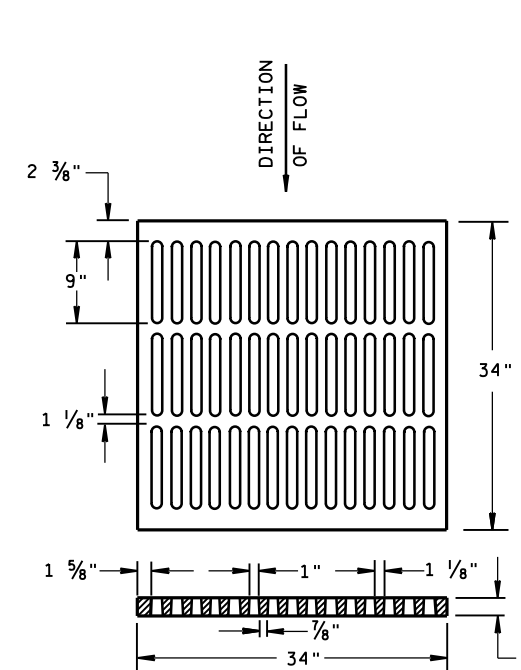
NOTE: EITHER CASTING IS ACCEPTABLE

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.

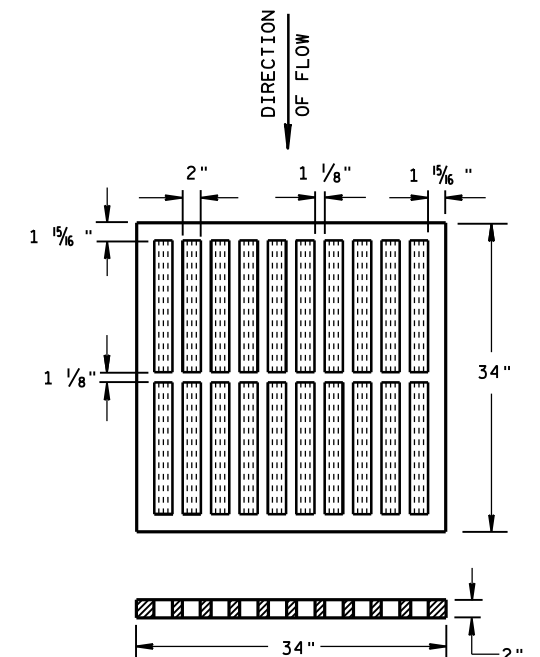
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.



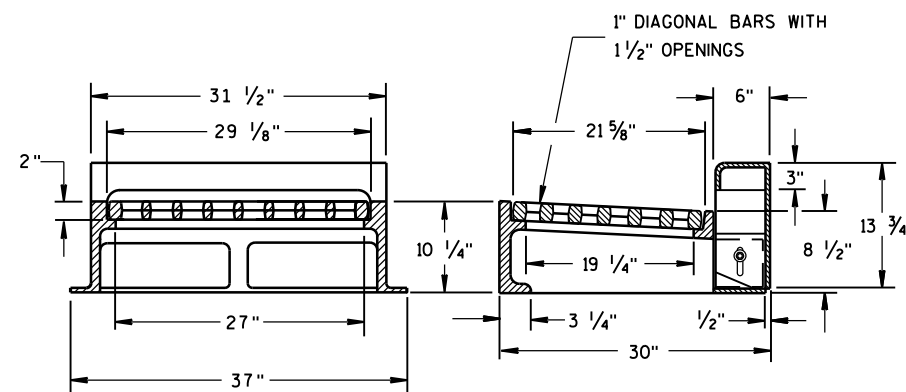
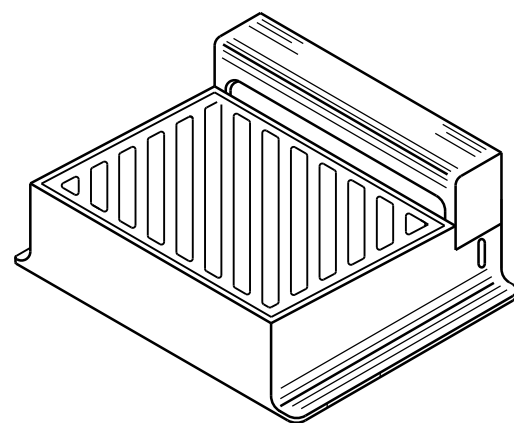
ALTERNATIVE TYPE "MS"

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS PERMITTED
 NOTED AS TYPE MS-A ON THE DRAINAGE TABLE



TYPE "MS"

USE ON FREEWAYS AND EXPRESSWAYS
 NOTED AS TYPE MS ON DRAINAGE TABLE



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

TYPE "WM"

DIAGONAL SLOTS, SHALL BE ORIENTED
 TO THE DIRECTION OF FLOW AS ILLUSTRATED.
 GRATES ARE MANUFACTURED TO BE REVERSIBLE.

DIRECTION
OF FLOW

INLET COVERS
 TYPE B, B-A, C,
 MS, MS-A, & WM

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

APPROVED

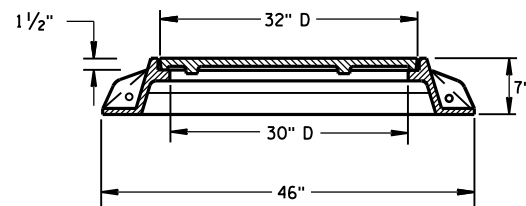
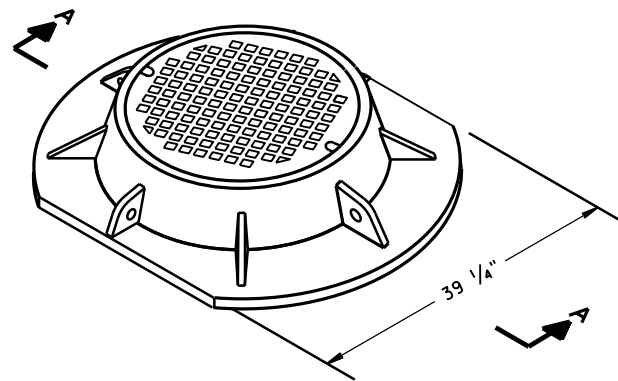
DATE 11/27/2013

FHWA

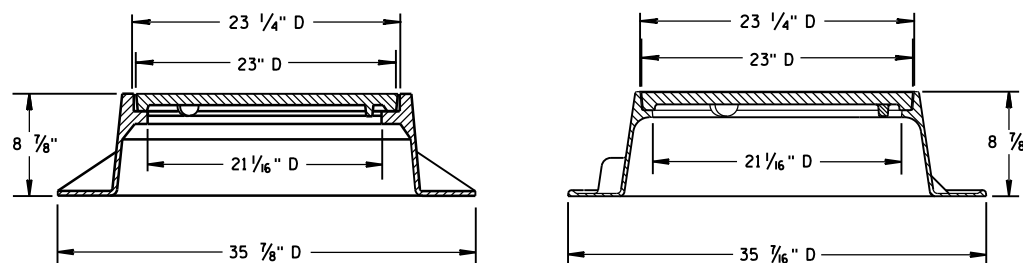
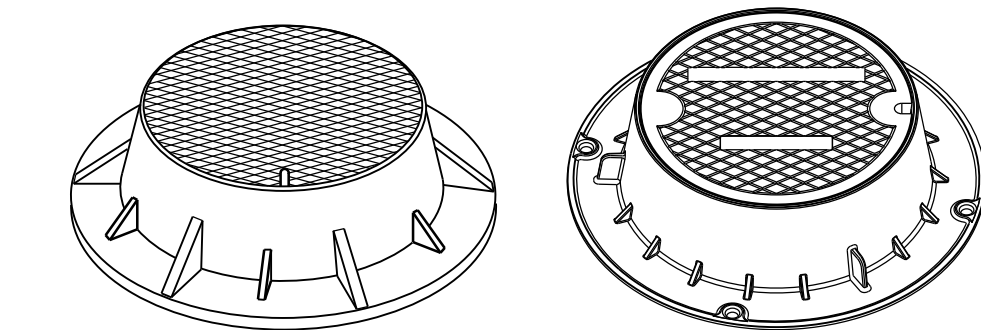
/S/ Jerry H. Zogg

ROADWAY STANDARDS ENGINEER

33 NT



SECTION A-A
TYPE "K"



TYPE "J"

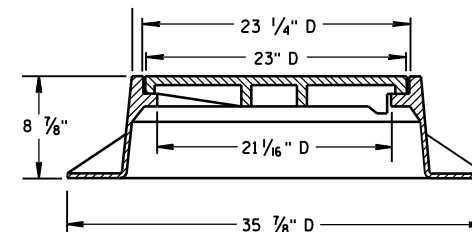
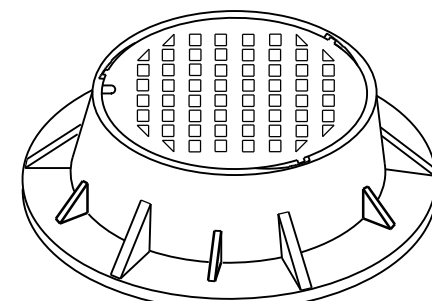
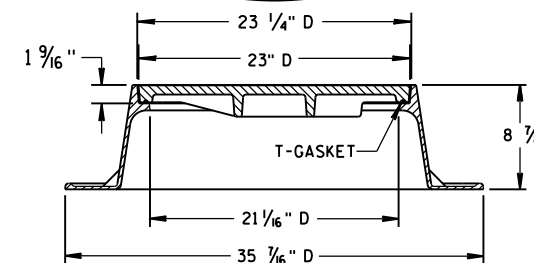
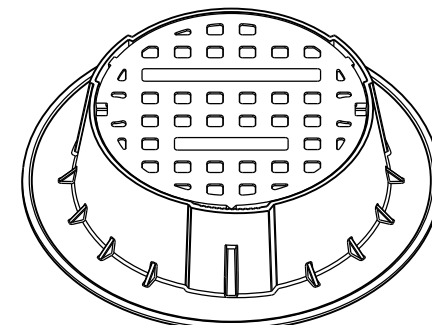
NOTE: EITHER CASTING IS ACCEPTABLE

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.

DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

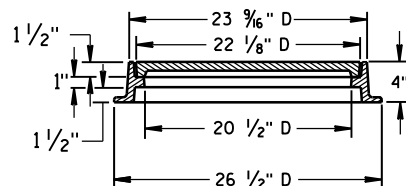
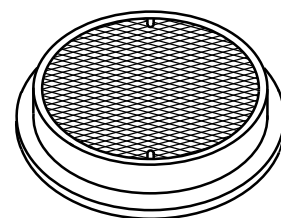


TYPE "J" SPECIAL

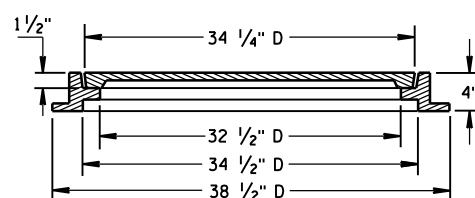
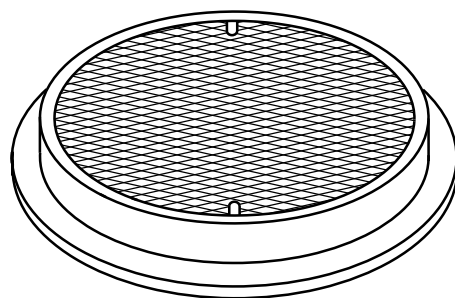
TYPE "B" NON-ROCKING SELF-SEAL LID

(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)

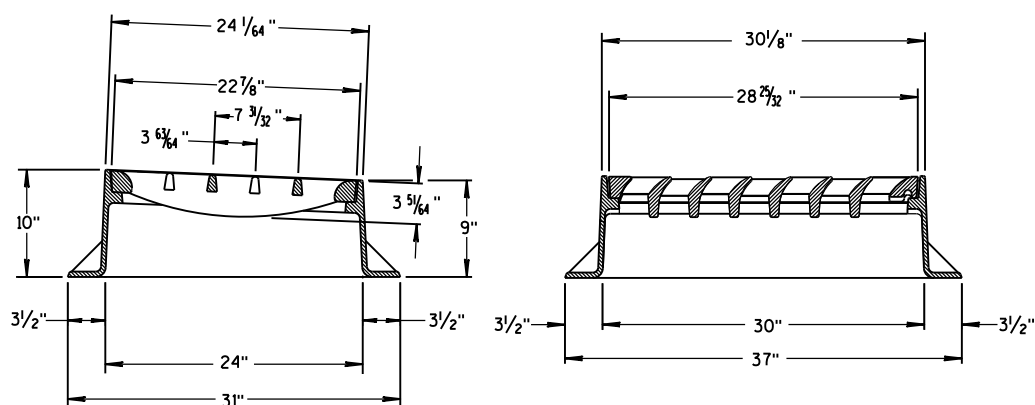
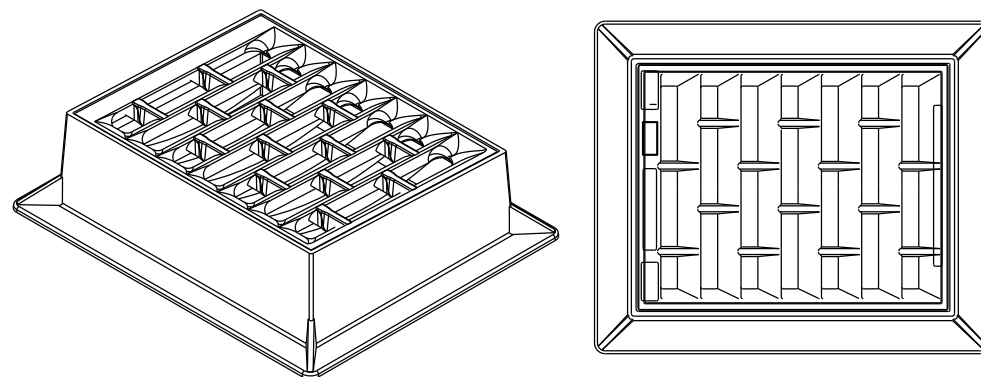
NOTE: EITHER CASTING IS ACCEPTABLE



TYPE "L"



TYPE "M"



INLET COVER TYPE "BW"

INLET COVER TYPE BW
MANHOLE COVERS, TYPE K,
J, J-S, L & M

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/27/2013

DATE

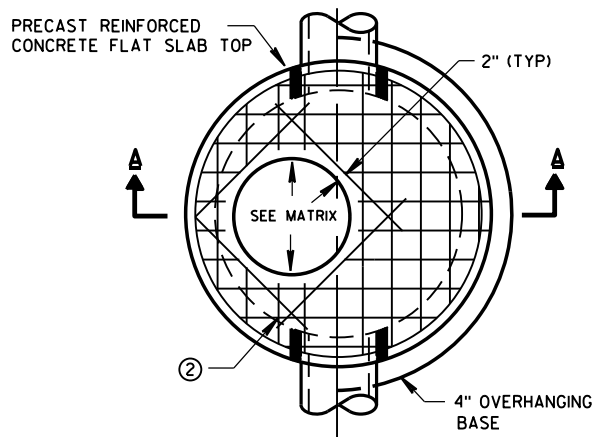
FHWA

/S/ Jerry H. Zogg

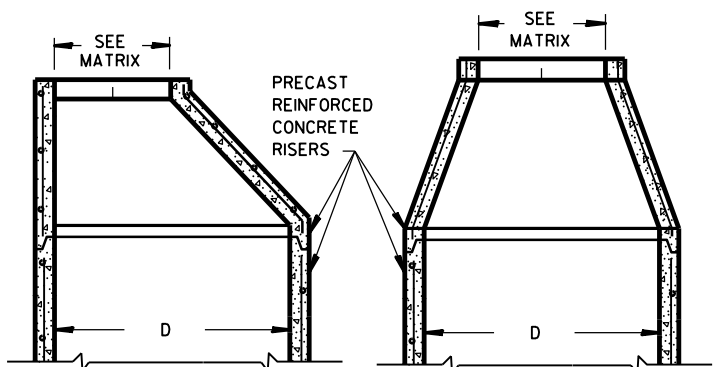
ROADWAY STANDARDS 034

ENGINEER

VT

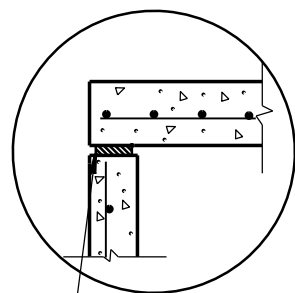


PLAN VIEW CIRCULAR OPENING

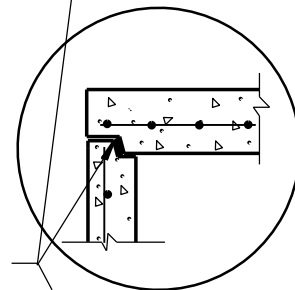


OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

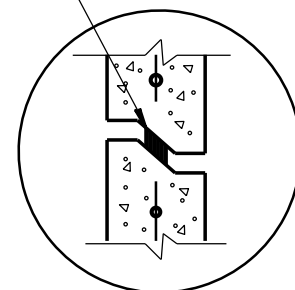
OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP



TOP WITH PLAIN END JOINT



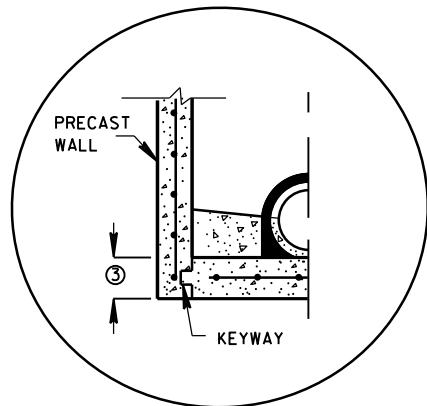
TOP WITH TONGUE AND GROOVE JOINT



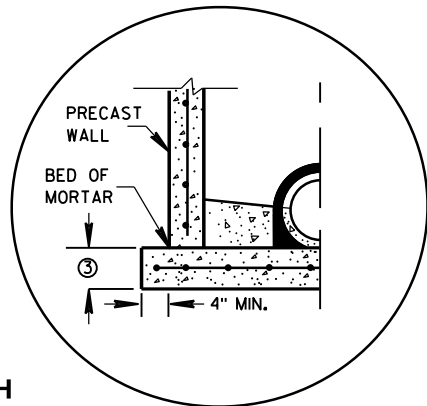
RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"

JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C990 (TYP)

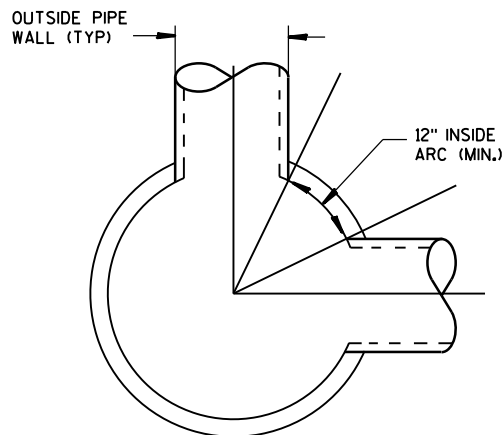


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION

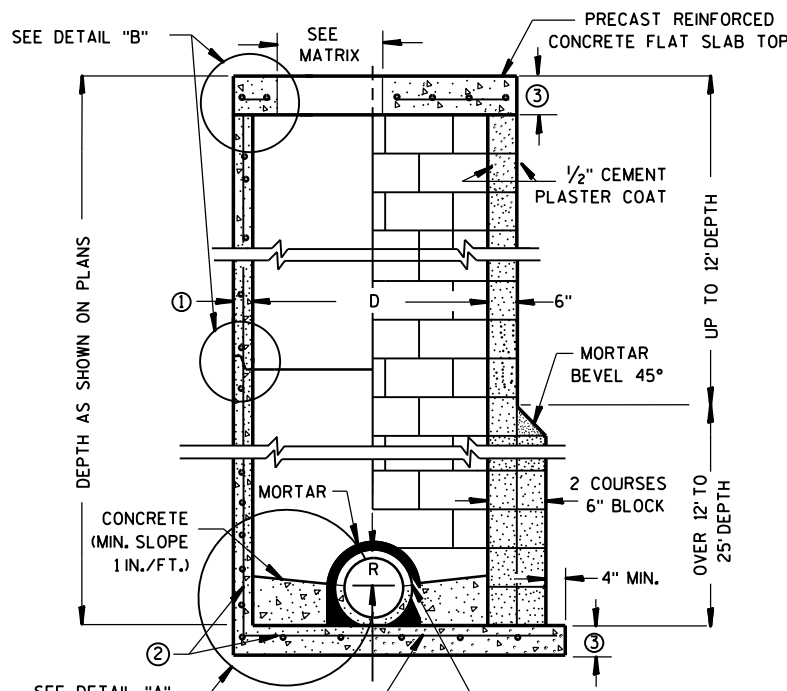


SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



DETAIL "C"



CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES

PRECAST REINFORCED CONCRETE BLOCK WITH CONCRETE WITH MONOLITHIC BASE CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ②

MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER

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. UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST MANHOLE UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATE THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF GRANULAR BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

PRECAST REINFORCED CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES. THE CONE TOPS SHALL BE INSTALLED ON A BED OF MORTAR.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES, AND CONCENTRIC CONE TOPS SHALL BE USED ONLY ON STRUCTURES 5 FEET OR LESS IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

STEPS MEETING AASHTO M199 AND THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH: 16 INCH C-C MAXIMUM SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM LENGTH OF 10 INCHES; MINIMUM WALL EMBEDMENT OF 3 INCHES. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 1 INCH.

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF 1/2" AND MEET THE REQUIREMENTS OF ASTM A615.

CERTIFICATION SHALL BE PROVIDED THAT INSTALLED STEPS WHEN TESTED IN ACCORDANCE WITH SECTION 10 OF AASHTO T280 CAN WITHSTAND A VERTICAL LOAD OF 800 LBS. AND A HORIZONTAL LOAD OF 400 LBS.

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

CONCRETE BLOCK WILL NOT BE PERMITTED FOR STRUCTURES GREATER THAN 4 FEET IN DIAMETER.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

ALL PRECAST MANHOLE UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.

4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

① MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT, 5 INCHES FOR 4-FT, 6 INCHES FOR 5-FT, 7 INCHES FOR 6-FT, 8 INCHES FOR 7-FT AND 9 INCHES FOR 8-FT DIAMETER PRECAST MANHOLES.

② FOR PRECAST MANHOLES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

③ PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER OF 48" AND LESS SHALL HAVE A MINIMUM THICKNESS OF 6". PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER LARGER THAN 48" SHALL HAVE A MINIMUM THICKNESS OF 8".

MANHOLE COVER OPENING MATRIX

MANHOLE COVER TYPE	C	ALL J'S	K	L	M
OPENING SIZE (FT)					
2 DIA.	X	X		X	
3 DIA.			X		X

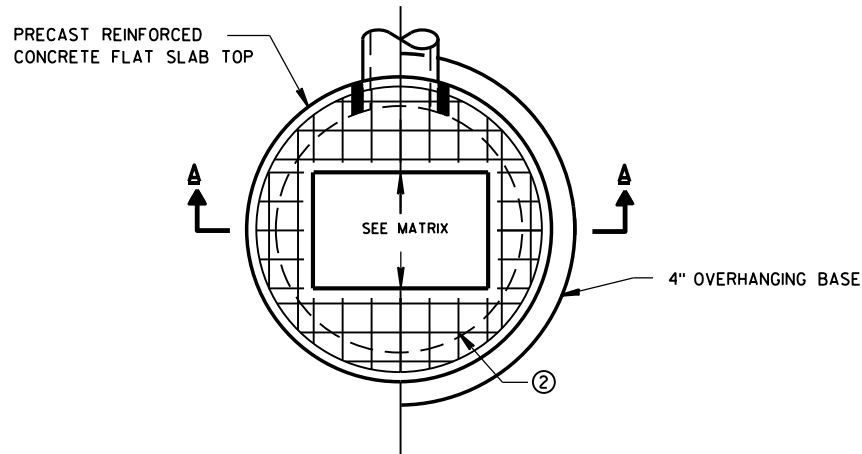
PIPE MATRIX

MANHOLE SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18
5-FT	36	24
6-FT	42	36
7-FT	48	36
8-FT	60	42

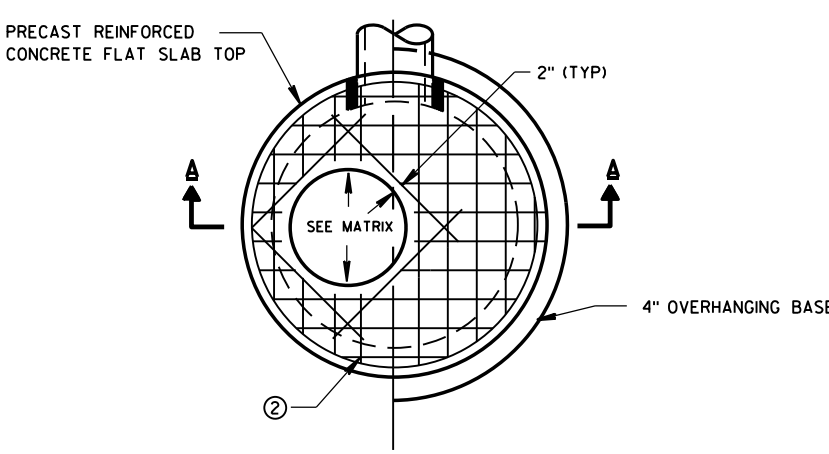
MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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6/5/2012 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA ENGINEER 35

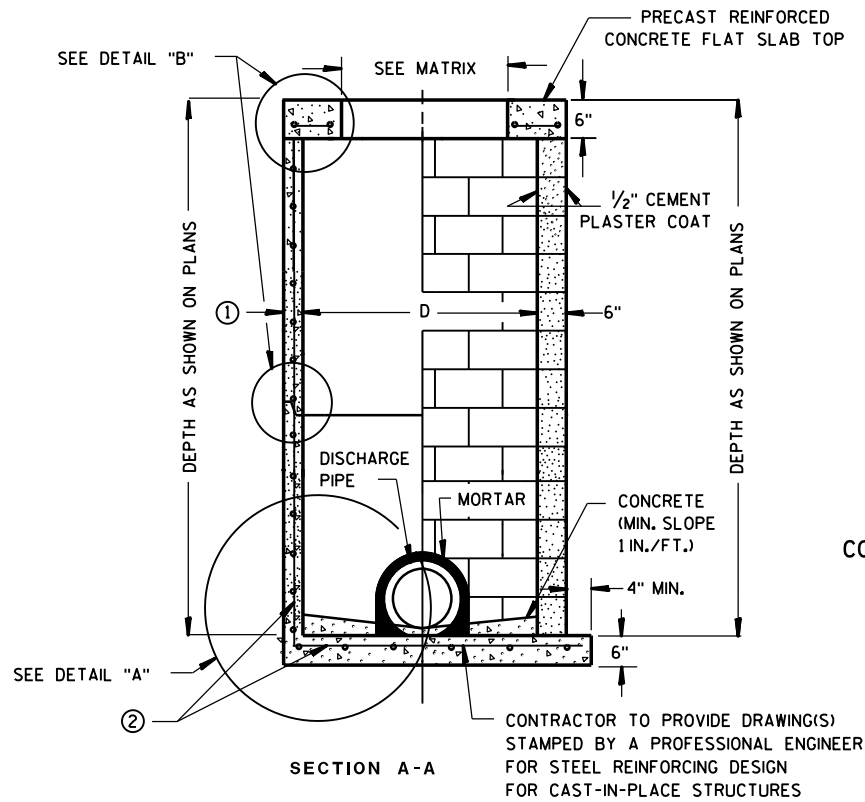


PLAN VIEW RECTANGULAR OPENING



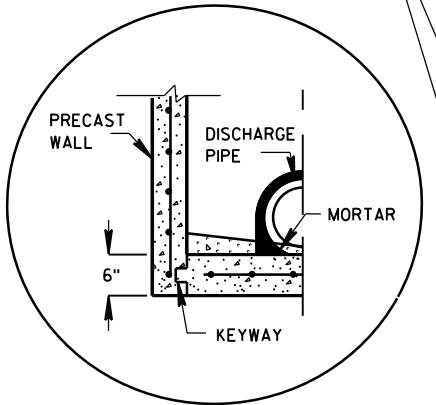
PLAN VIEW CIRCULAR OPENING

JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C990 (TYP)

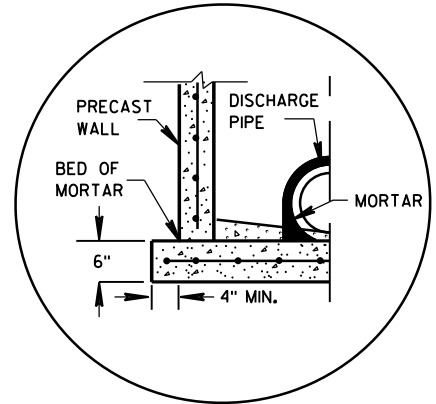


PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE **CONCRETE BLOCK WITH CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ②**

CIRCULAR INLETS W/ FLAT TOP

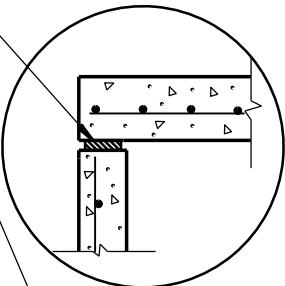


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION

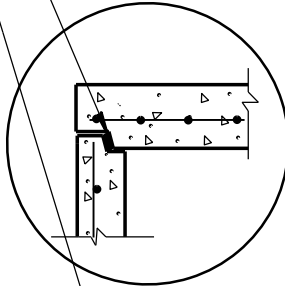


SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

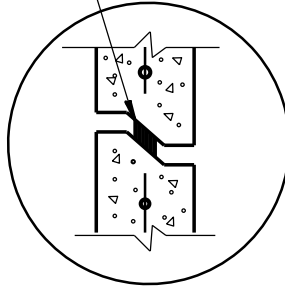
DETAIL "A"



TOP WITH PLAIN END JOINT



TOP WITH TONGUE AND GROOVE JOINT



RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"

INLETS 3-FT AND 4-FT DIAMETER

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.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST INLET UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATE THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF GRANULAR BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

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

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M199.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

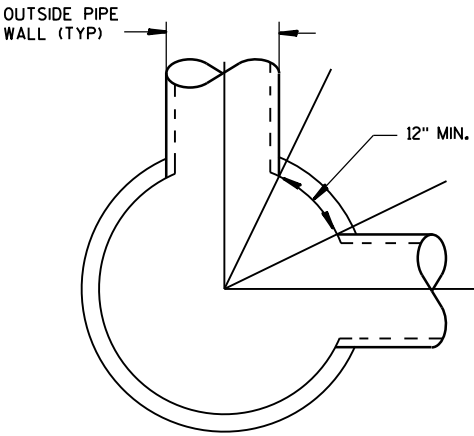
4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

- ① MINIMUM WALL THICKNESS SHALL BE 4-IN FOR 3-FT DIAMETER AND 5-IN FOR 4-FT DIAMETER PRECAST INLETS.
- ② FOR PRECAST CATCH BASINS PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

INLET COVER OPENING MATRIX

	INLET COVER TYPE	ALL A'S	ALL B'S	BW	C	F	ALL H'S	S	T	V	WM	Z
INLET SIZE	OPENING SIZE (FT)											
3-FT	2 DIA.				X							X
	2X2	X	X					X		X		
4-FT	2 DIA.				X							X
	2X2	X	X					X	X	X	X	
	2X2.5			X								
	2X3						X					
	2.5X3					X						



DETAIL "C"

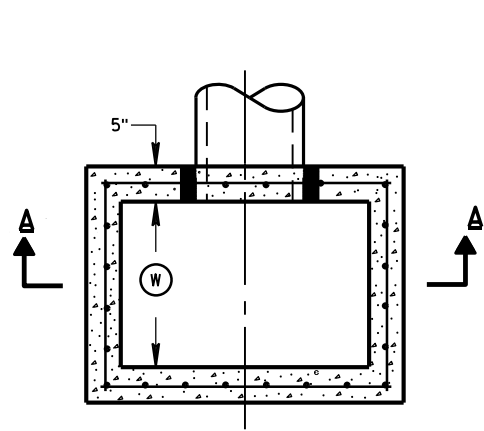
PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18

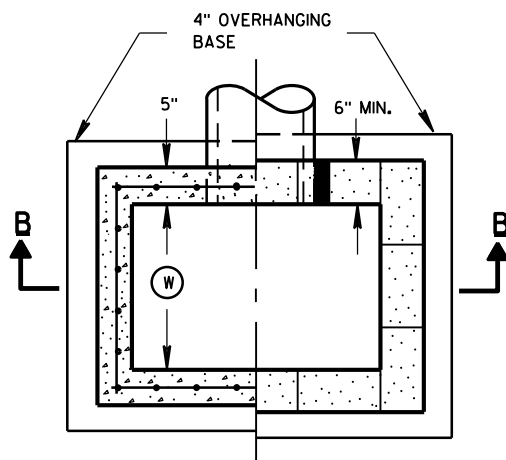
INLETS 3-FT AND 4-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

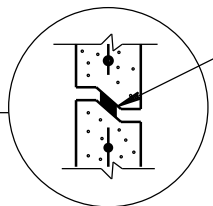
APPROVED
6/5/2012 DATE /S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER 36
FHWA



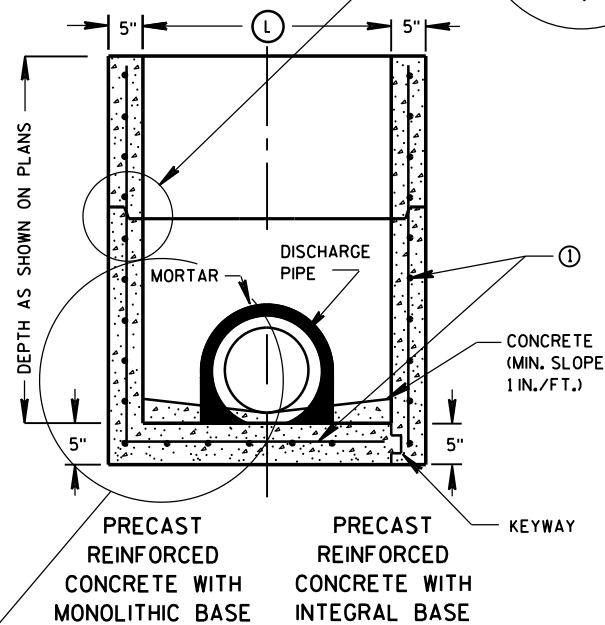
PLAN VIEW



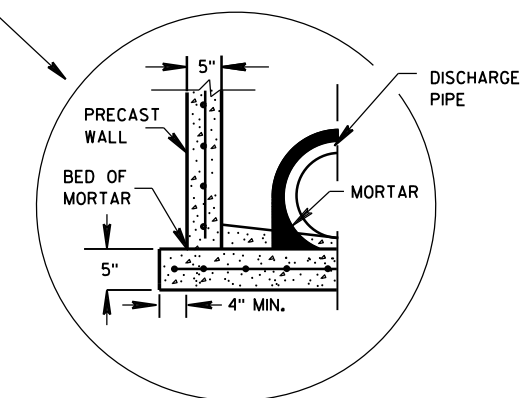
PLAN VIEW



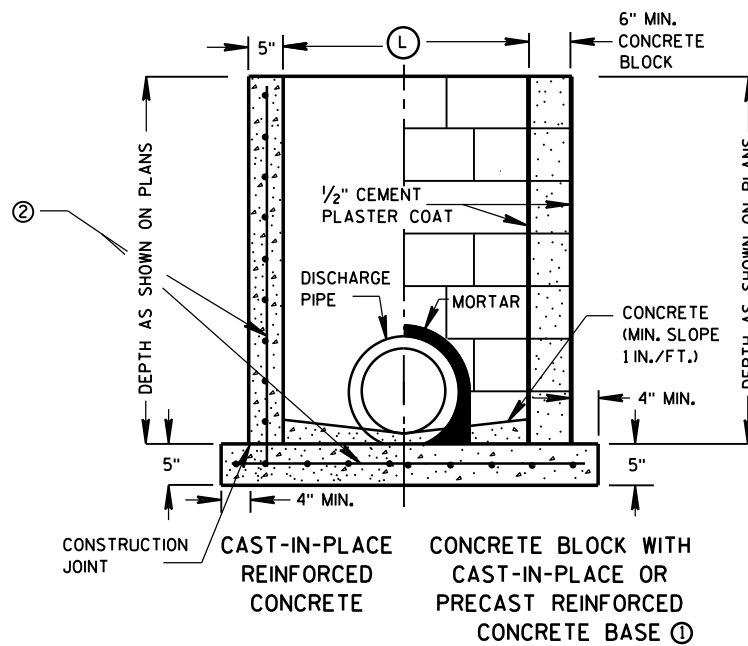
RISER JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP)



SECTION A-A



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION



SECTION B-B

INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

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.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST INLET UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATES THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF GRANULAR BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

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

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

4" OVERHANGING BASES ARE REQUIRED FOR CAST-IN-PLACE REINFORCED CONCRETE AND CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3 INCH CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

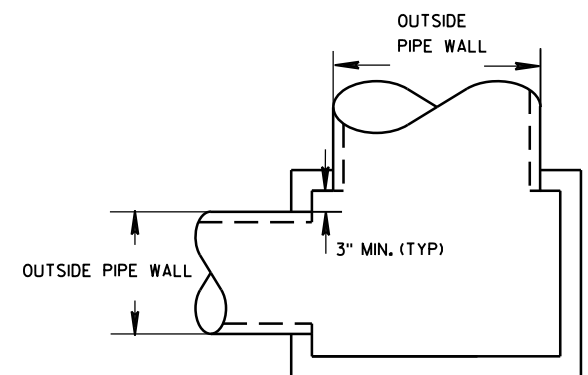
- ① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.
- ② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

INLET SIZE		INLET COVER TYPE	ALL A'S	ALL B'S	BW	F	ALL H'S	S	T	V	WM
	WIDTH ① (FT)	LENGTH ② (FT)									
2X2-FT	2	2	X	X				X		X	
2X2.5-FT	2	2.5			X			X	X	X	X
2X3-FT	2	3					X				
2.5X3-FT	2.5	3				X					

PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER	
	WIDTH (IN)	LENGTH (IN)
2X2-FT	12	12
2X2.5-FT	12	18
2X3-FT	12	24
2.5X3-FT	18	24

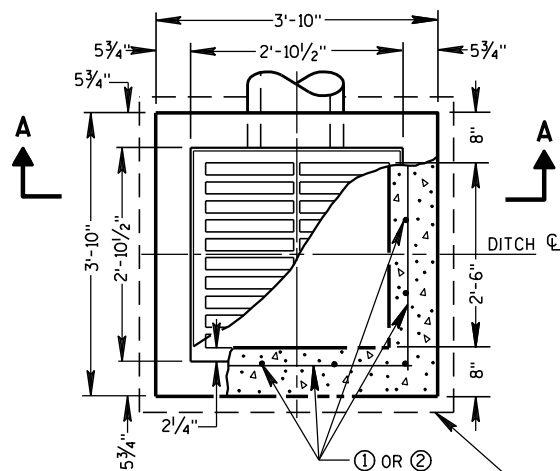


DETAIL "A"

INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

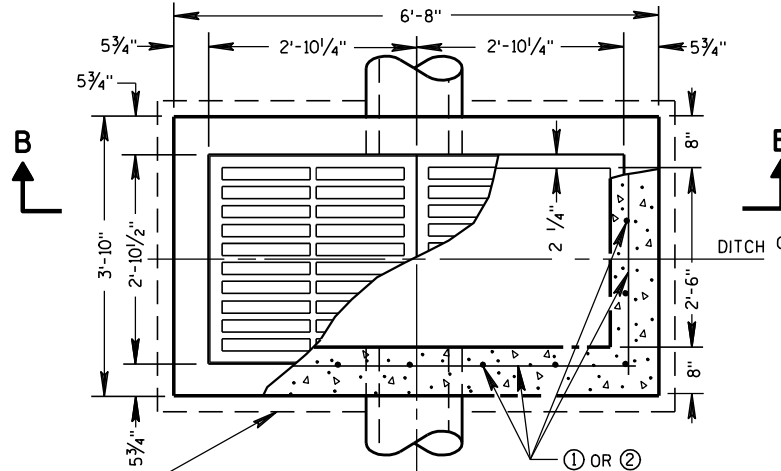
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DE
FHWA ENGINEER 37

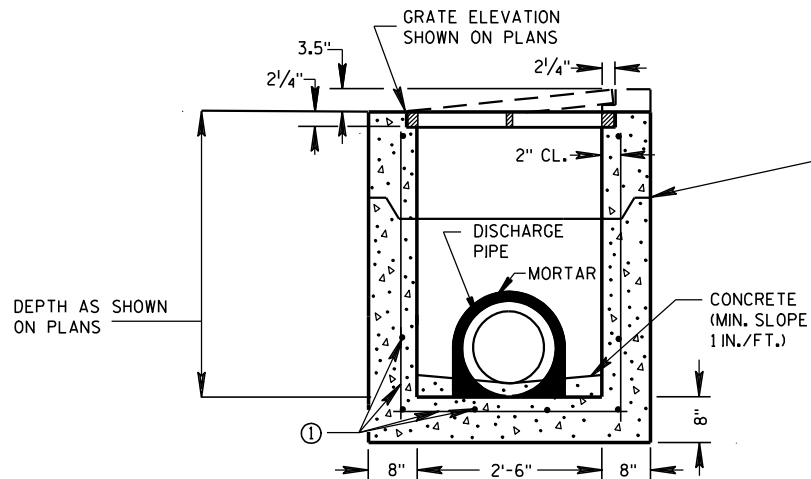


PLAN VIEW

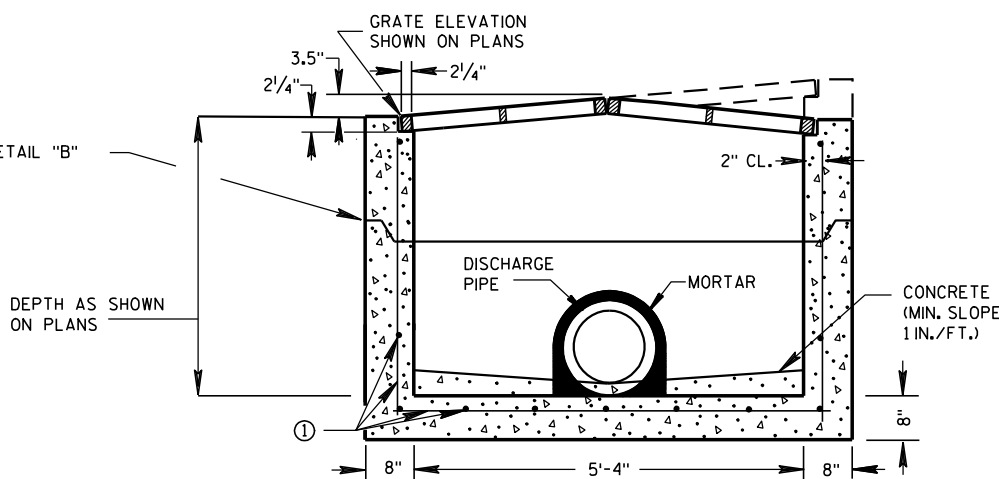
4" OVERHANGING BASE ON REINFORCED CAST-IN-PLACE CONCRETE INLETS



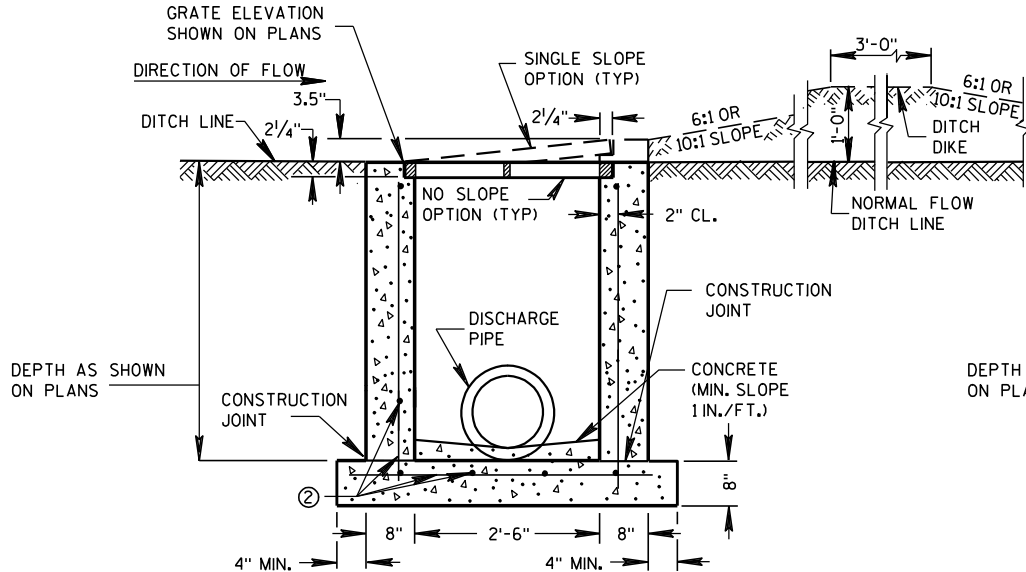
PLAN VIEW



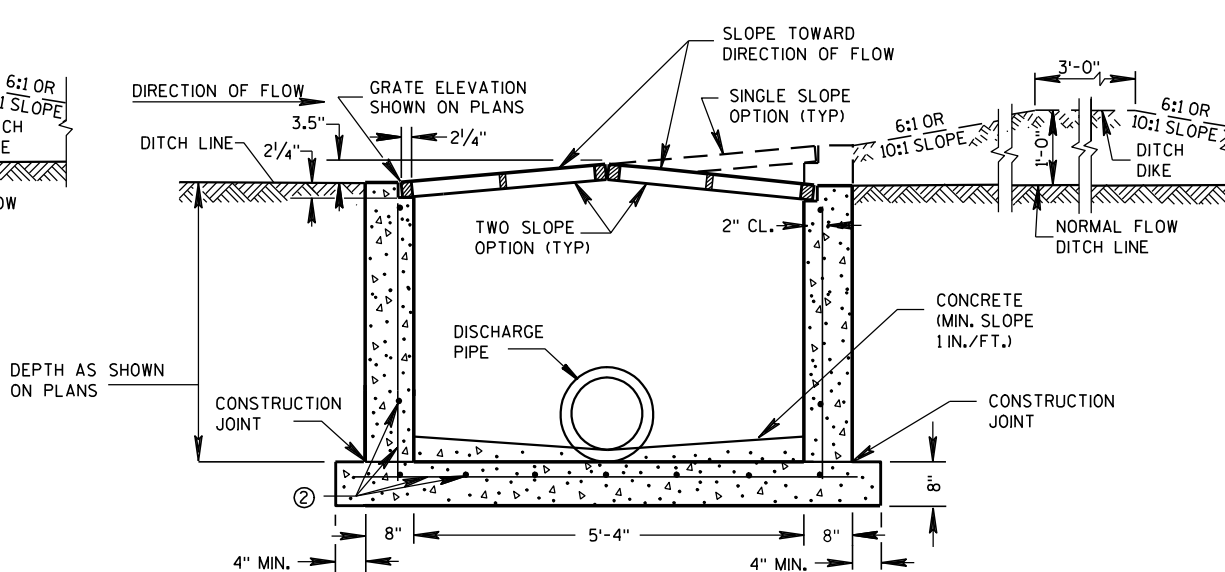
PRECAST REINFORCED CONCRETE SECTION A-A



PRECAST REINFORCED CONCRETE SECTION B-B



REINFORCED CAST-IN-PLACE CONCRETE SECTION A-A



REINFORCED CAST-IN-PLACE CONCRETE SECTION B-B

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.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST INLET UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLETS WHICH MAY INCLUDE PRECAST REINFORCED CONCRETE INLETS, SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL MEDIAN INLETS ARE DESIGNATED ON THE PLANS AS "INLETS, IG-MS", ETC. THE FIRST NUMBER AND LETTER DESIGNATE THE TYPE OF STRUCTURE, AND THE FOLLOWING LETTERS DESIGNATE THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

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

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

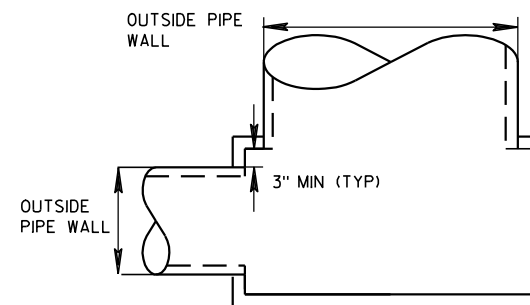
ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3" CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

- ① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.
- ② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

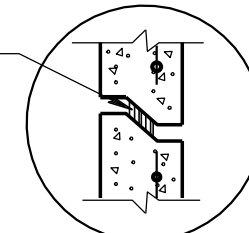
PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER	
	WIDTH (IN)	LENGTH (IN)
1 GRATE	18	18
2 GRATE	18	42



DETAIL "A"

JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP)



DETAIL "B"

INLETS MEDIAN 1 AND 2 GRATE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/5/2012

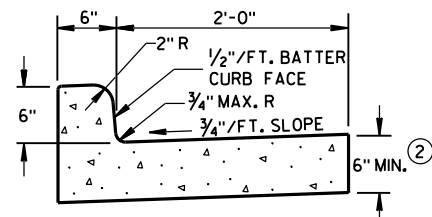
DATE

FHWA

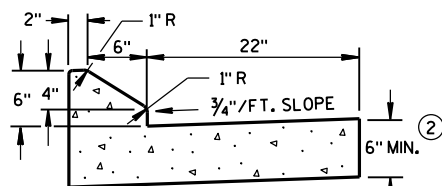
/s/ Jerry H. Zoon

ROADWAY STANDARDS ENGINEER

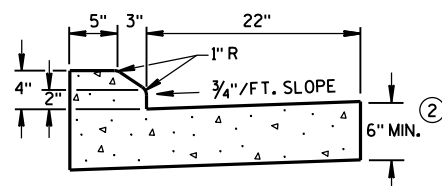
38 INT



TYPES A & D ①

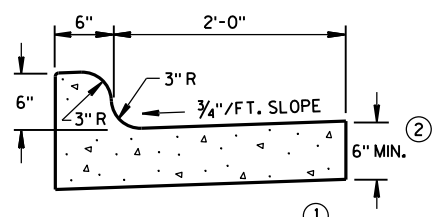


6" SLOPED CURB TYPES G & J ①



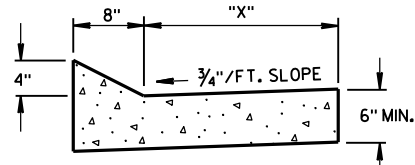
4" SLOPED CURB TYPES G & J ①

CONCRETE CURB & GUTTER 30"



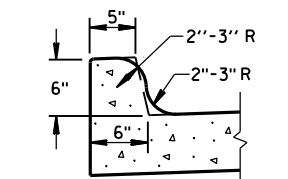
TYPES K & L ①

CONCRETE CURB & GUTTER 30"

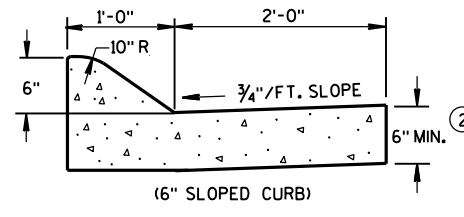


TYPES TBT & TBT
CONCRETE CURB & GUTTER

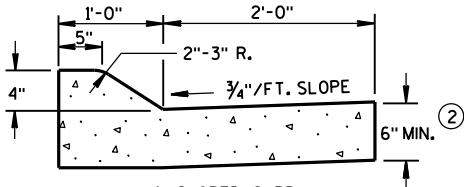
TBT & TBT	"X"
30"	22"
36"	28"



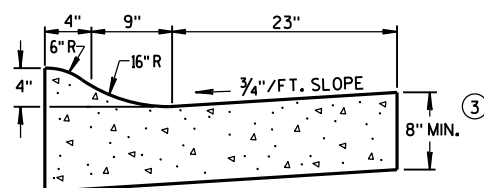
OPTIONAL CURB SHAPE
FOR TYPES K & L ①



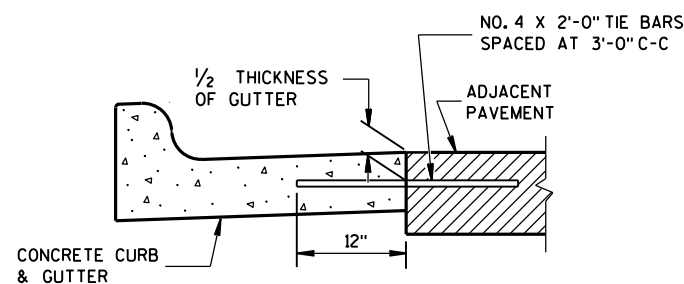
(6" SLOPED CURB)



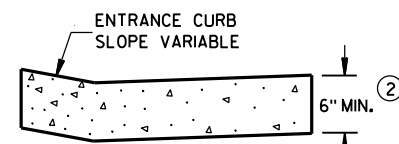
TYPES A & D ①



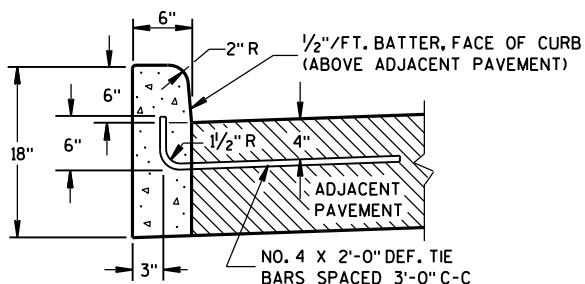
4" SLOPED CURB TYPES R & T ① ④
CONCRETE CURB & GUTTER 36"



TYPICAL TIE BAR LOCATION ①

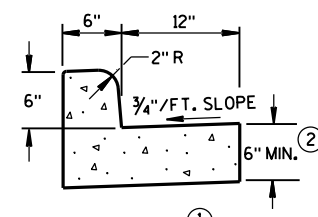


DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)

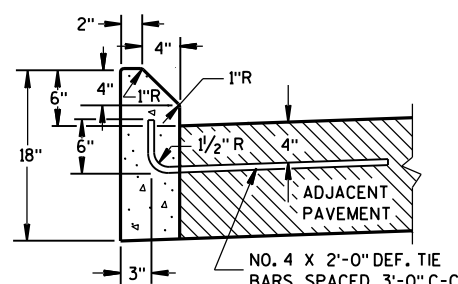


TYPES A & D ①

CONCRETE CURB



TYPES A & D
CONCRETE CURB & GUTTER 18"



TYPES G & J ①

GENERAL NOTES

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

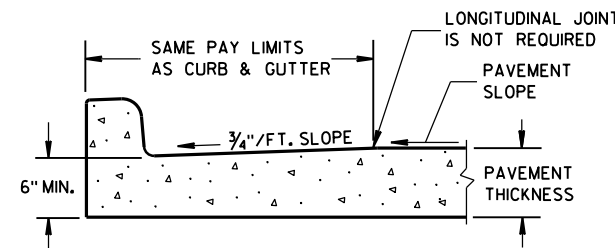
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

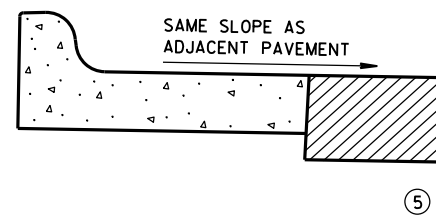
WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

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

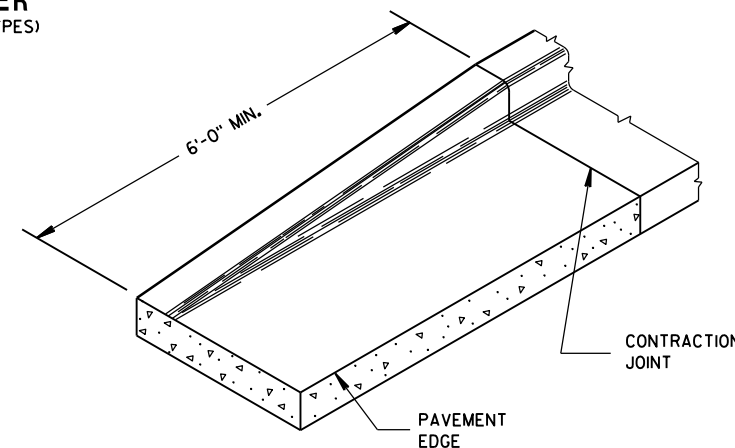
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ④ THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- ⑤ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.



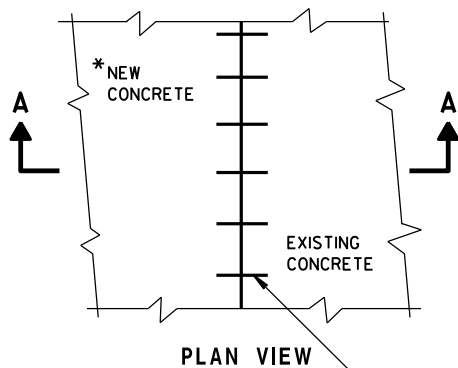
PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB & GUTTER



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



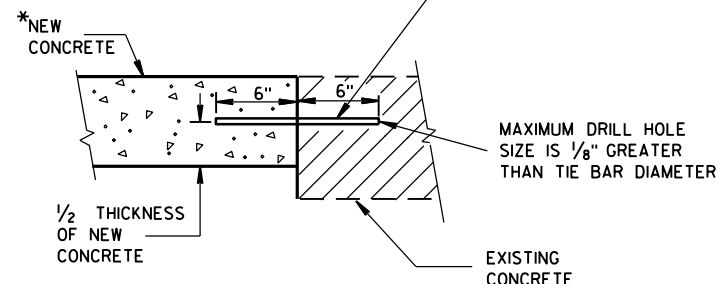
END SECTION CURB & GUTTER



PLAN VIEW

*NEW CURB & GUTTER,
SURFACE DRAINS,
CONCRETE PAVEMENT
OR OTHER NEW CONCRETE.

NO. 6 TIE BARS SPACED 2'-6" C-C,
INSTALLED PERPENDICULAR
TO THE LONGITUDINAL JOINT.

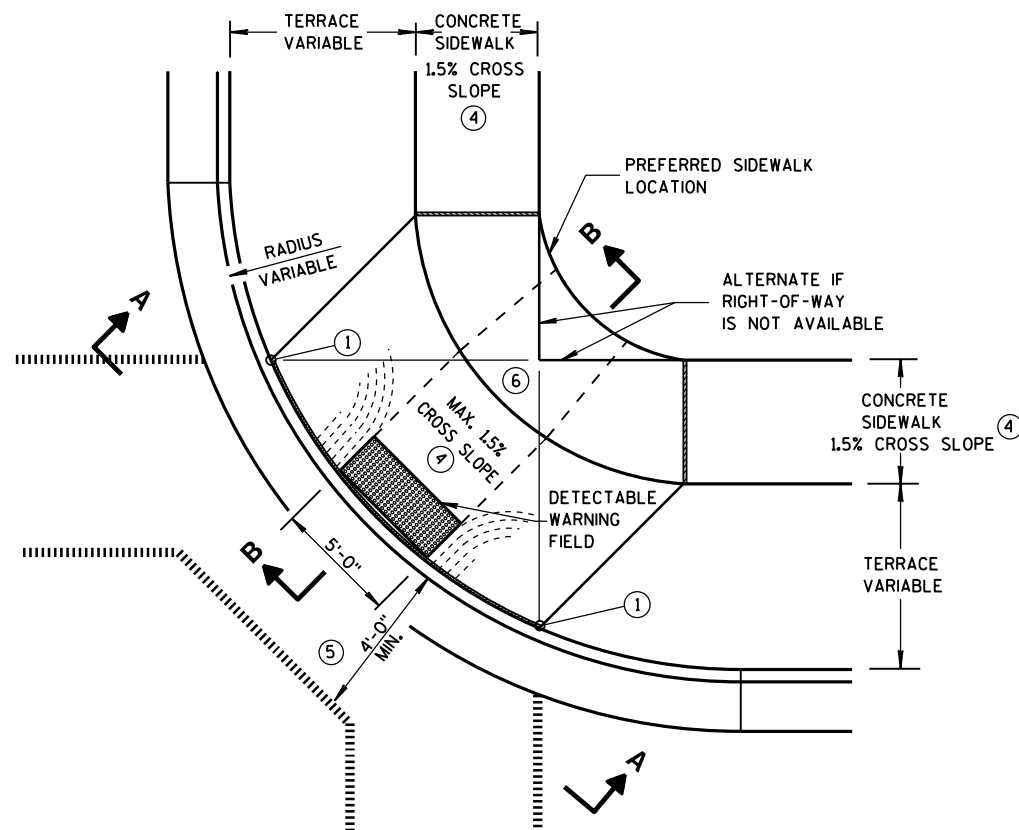


SECTION A-A
TIE BARS DRILLED
INTO EXISTING PAVEMENT

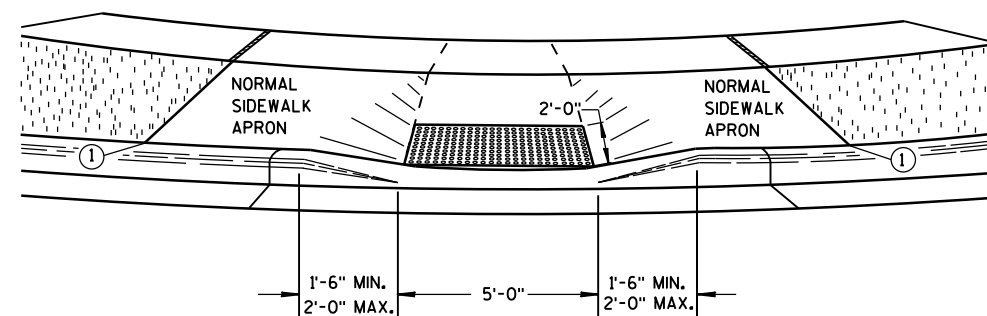
CONCRETE CURB, CONCRETE
CURB & GUTTER AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

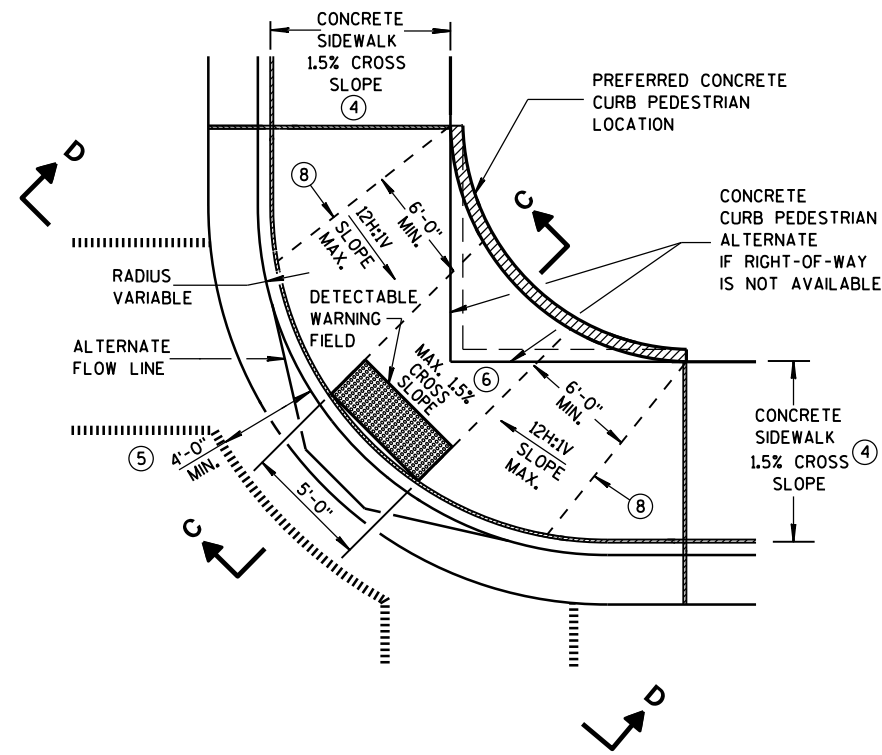
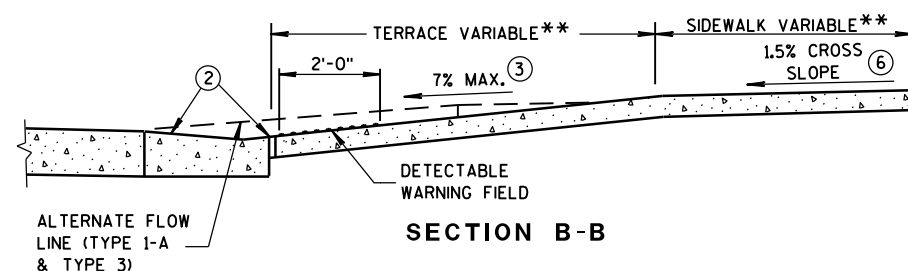


PLAN VIEW
TYPE 1 RAMP
(CENTER OF CORNER RADIUS)

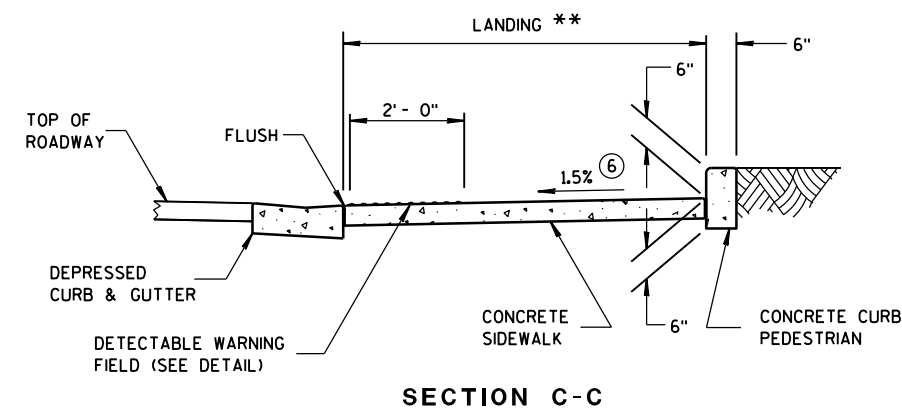


VIEW A-A

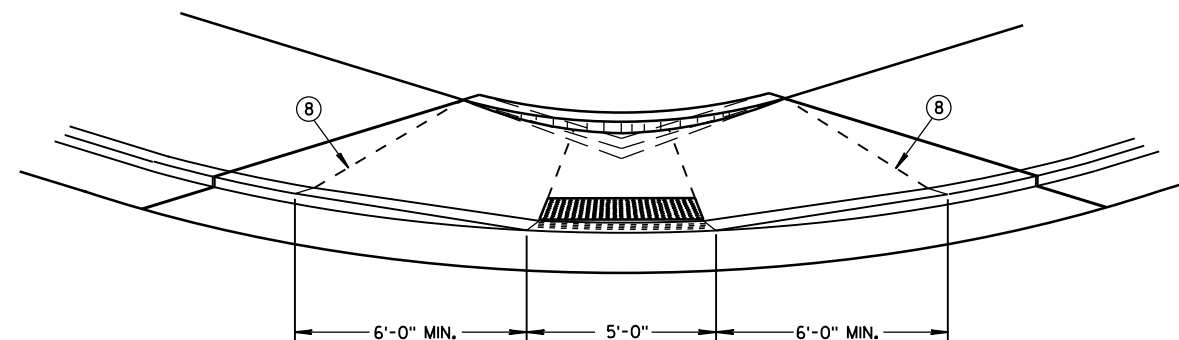
** WIDTH SHOWN ELSEWHERE
IN THE PLANS



PLAN VIEW
TYPE 1-A RAMP
(NO TERRACE)



SECTION C-C



VIEW D-D

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.

WHEN NECESSARY, THE SIDEWALK ELEVATION MAY BE LOWERED TO MEET THE HIGH POINT ON THE RAMP.

TYPE 1 RAMPS SHALL HAVE A NORMAL SIDEWALK APRON AND CURB ON BOTH SIDES OF RAMP.

DETECTABLE WARNING FIELD SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS "CURB RAMP
DETECTABLE WARNING FIELD". THE CONCRETE PEDESTRIAN CURB, IF NEEDED, SHALL BE MEASURED AND
PAID BY THE LINEAL FOOT AS "CONCRETE CURB PEDESTRIAN". CONCRETE SIDEWALK IN THE CURB RAMP
AREA SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS CONCRETE SIDEWALK, INCLUDING THE
AREA UNDER THE DETECTABLE WARNING FIELD.

SELECT CURB RAMP DETECTABLE WARNING FIELD MATERIALS AND DEVICES FROM THE DEPARTMENT'S APPROVED MATERIALS LIST. THE COLOR OF THE DETECTABLE WARNING FIELD IS SPECIFIED ELSEWHERE AND IS INCIDENTAL TO THE BID ITEM OF "CURB RAMP DETECTABLE WARNING FIELD".

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

SURFACE TEXTURE OF THE RAMP SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP.

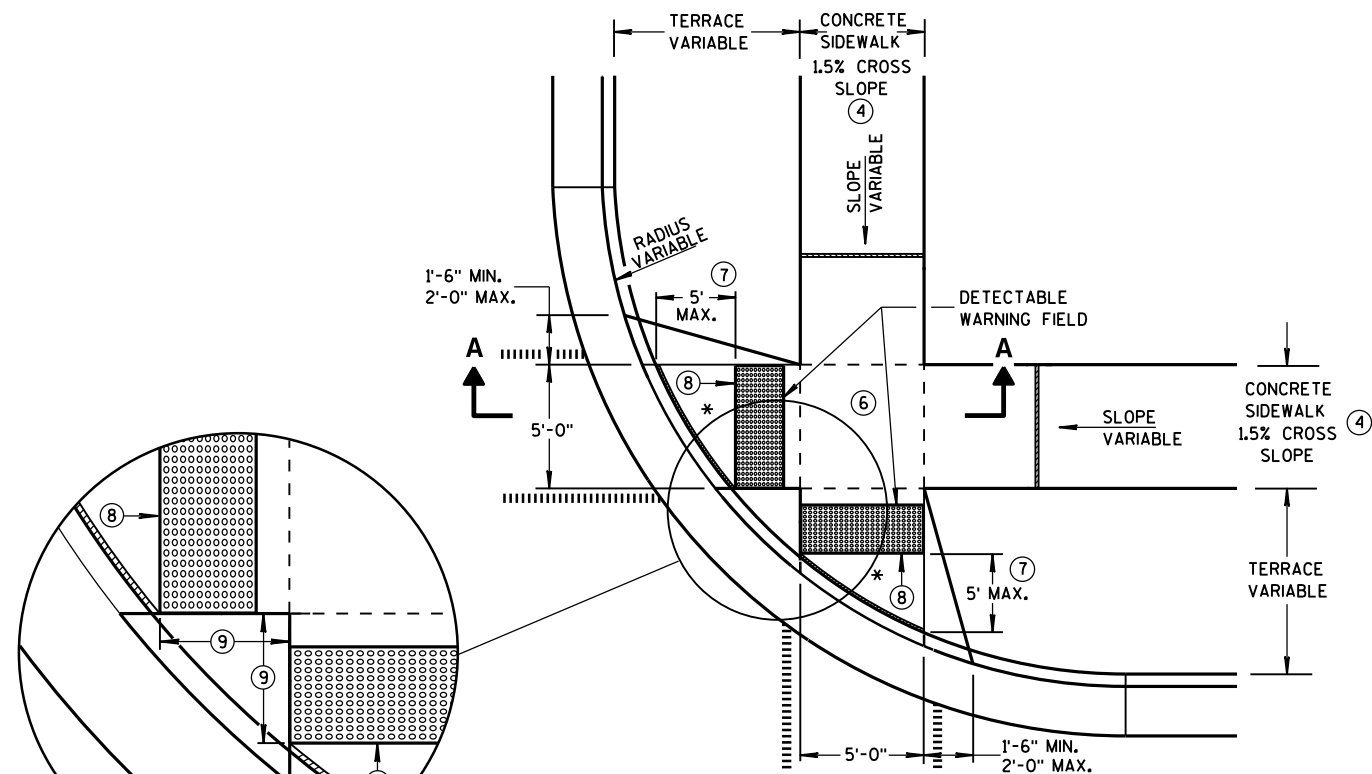
- ① THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB.
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED.
- ③ ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ④ $\pm 0.5\%$ CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑤ PROVIDE A LEVEL LANDING IN THE STREET AND GUTTER AREA. (2% MAXIMUM SLOPE IN ANY DIRECTION). WHEN THE GUTTER SLOPE EXCEEDS 2%, CONSTRUCT THE LEVEL LANDING IN THE STREET AREA.
- ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET (MINIMUM 4 FEET X 4 FEET).
- ⑧ PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

LEGEND

-  1/2" EXPANSION JOINT-SIDEWALK
 CONTRACTION JOINT FIELD LOCATED
 PAVEMENT MARKING CROSSWALK (WHITE)
 ALTERNATIVE LAYOUT

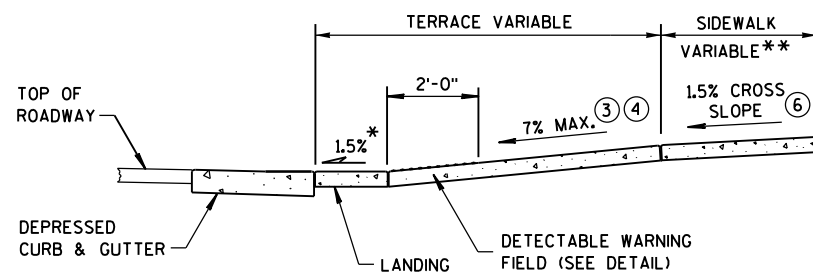
CURB RAMPS TYPES 1 AND 1-A

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 40



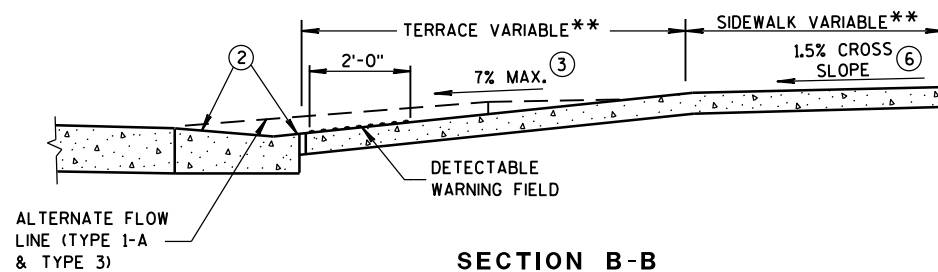
**PLAN VIEW
TYPE 2 RAMP**
(ON LINE WITH SIDEWALK)

* MAXIMUM 2.0% SLOPE
IN ALL DIRECTIONS IN
FRONT OF GRADE BREAK



SECTION A-A

** WIDTH SHOWN ELSEWHERE
IN THE PLANS



SECTION B-B

GENERAL NOTES

USE THE TYPE 3 RAMP ONLY WHEN A TYPE 1 OR TYPE 2 CANNOT BE ACHIEVED BECAUSE OF FIELD CONDITIONS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED.

③ ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

④ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET (MINIMUM 4 FEET X 4 FEET).

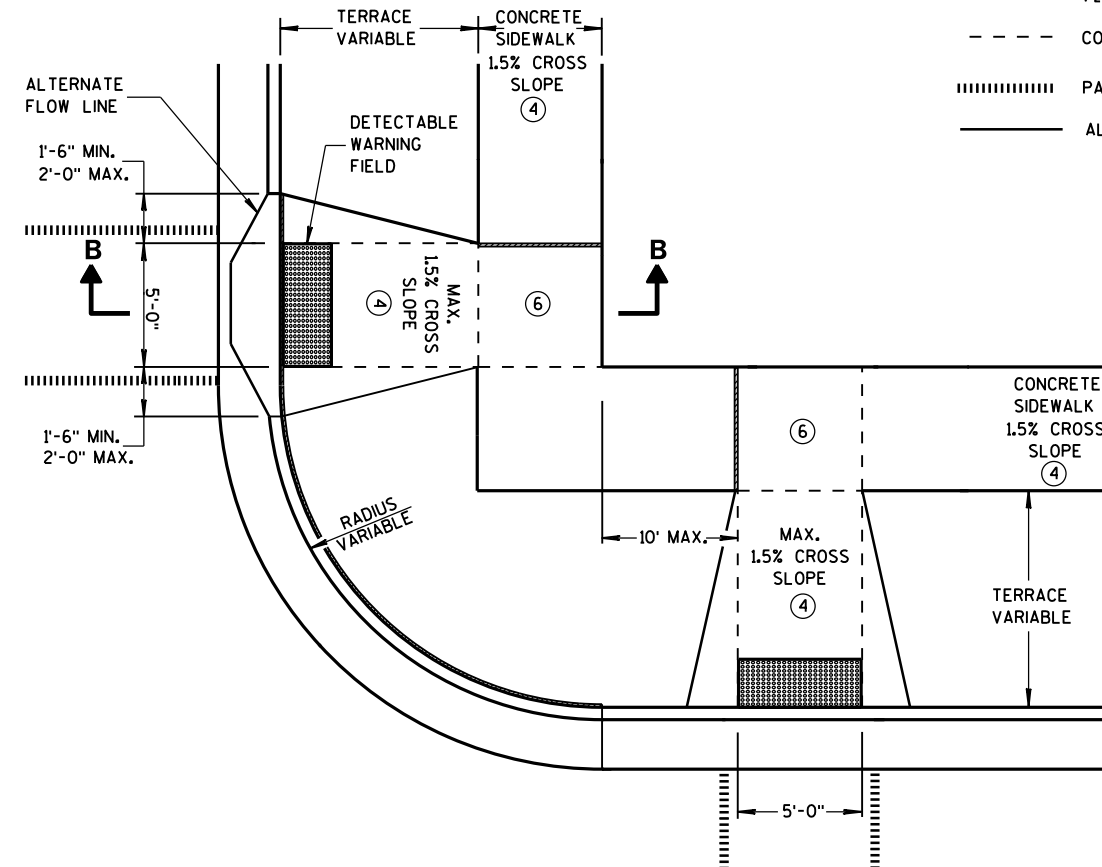
⑦ WHEN THIS DISTANCE EXCEEDS 5 FEET, USE MULTIPLE DETECTABLE WARNING PANELS ACROSS THE RAMP AND STAGGER ADDITIONAL DETECTABLE WARNING PANEL(S) FORWARD TO REDUCE THIS DISTANCE.

⑧ PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

⑨ WHEN THIS DISTANCE IS LESS THAN 6'-0", IT MAY BE DIFFICULT TO ACHIEVE A 7% SLOPE OR FLATTER ALONG THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 7% SLOPE OR FLATTER ON RAMP. 2" MINIMUM CURB HEIGHT.

LEGEND

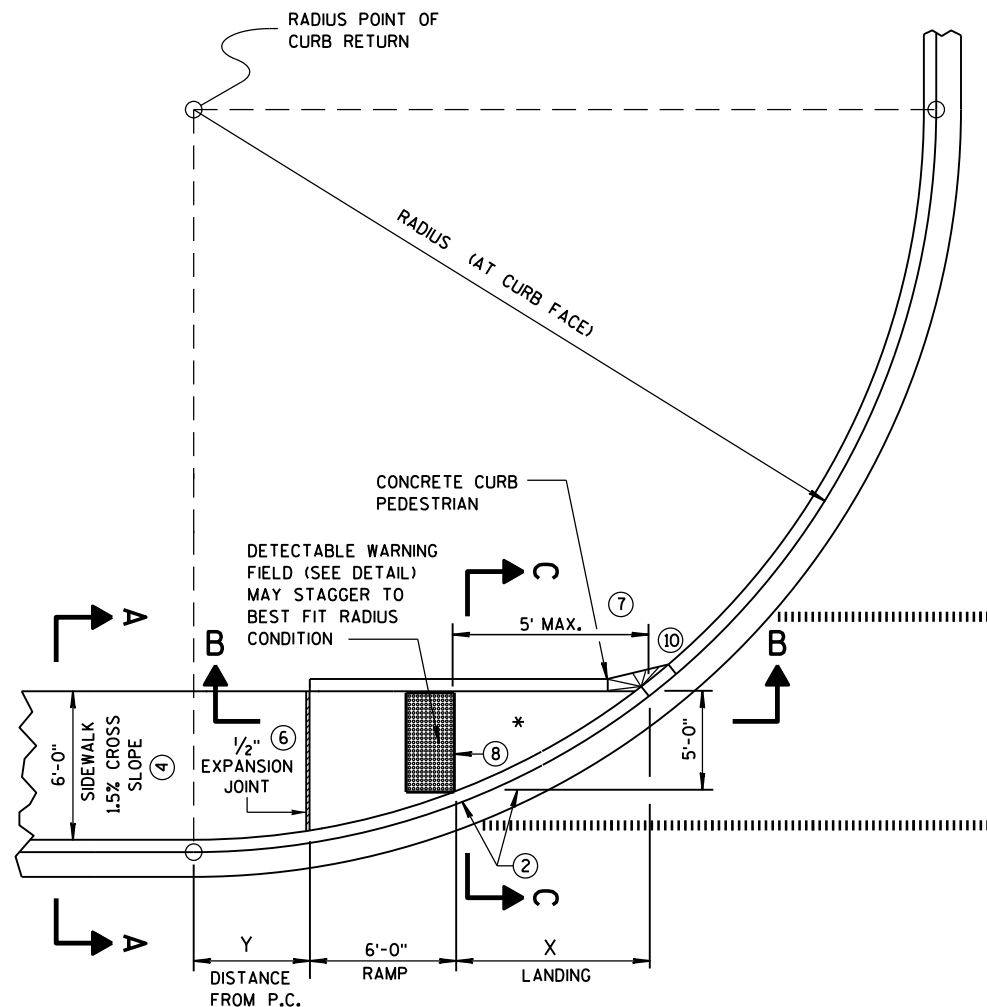
- 1/2" EXPANSION JOINT-SIDEWALK
- - - CONTRACTION JOINT FIELD LOCATED
- ||||| PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT



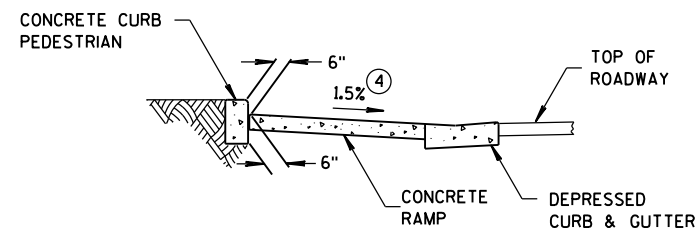
**PLAN VIEW
TYPE 3 RAMP**
(OUTSIDE OF CROSSWALK AREA)

**CURB RAMPS
TYPES 2 AND 3**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

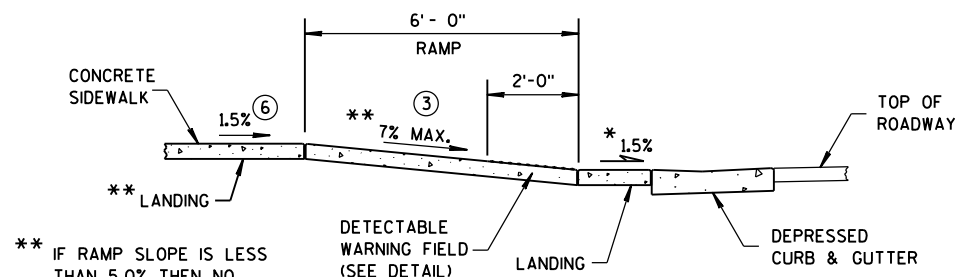


CURB RAMP TYPE 4A
PLAN VIEW



SECTION C-C FOR TYPE 4A

* MAXIMUM 2.0% SLOPE
IN ALL DIRECTIONS IN
FRONT OF GRADE BREAK

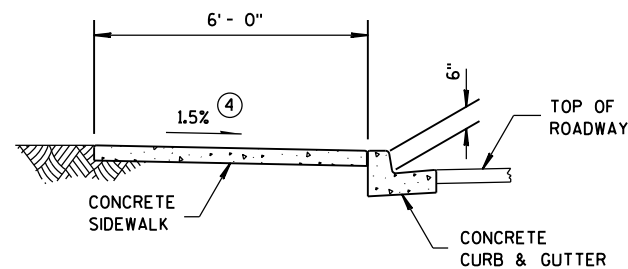


SECTION B-B FOR TYPE 4A

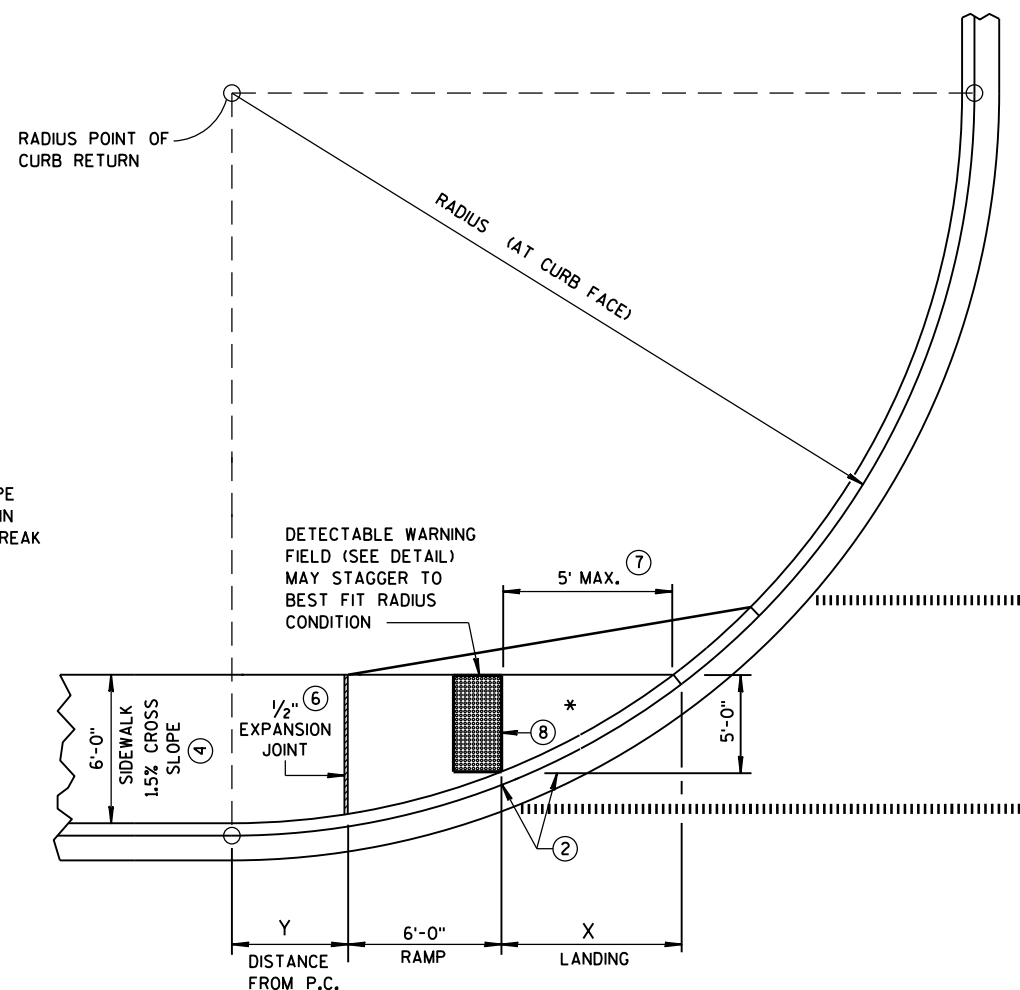
** IF RAMP SLOPE IS LESS
THAN 5.0%, THEN NO
ADJACENT UPHILL LANDING
IS REQUIRED

RADIUS (AT CURB FACE)	X	Y
20 FEET	6'-1 $\frac{3}{4}$ "	2'-7 $\frac{1}{4}$ "
30 FEET	7'-11 $\frac{3}{4}$ "	4'-8 $\frac{1}{4}$ "
40 FEET	9'-5 $\frac{1}{4}$ "	6'-5"
50 FEET	10'-8 $\frac{3}{4}$ "	7'-11 $\frac{1}{4}$ "
60 FEET	11'-10 $\frac{1}{4}$ "	9'-3 $\frac{1}{2}$ "

INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION A-A FOR TYPE 4A



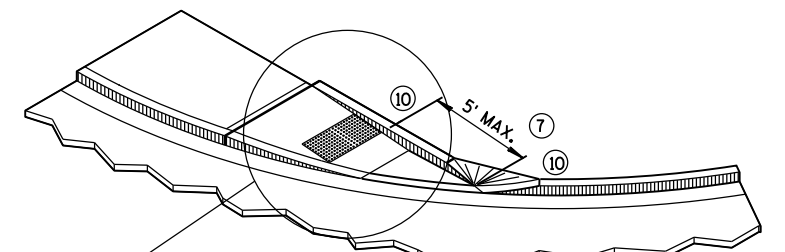
CURB RAMP TYPE 4A1
PLAN VIEW

GENERAL NOTES

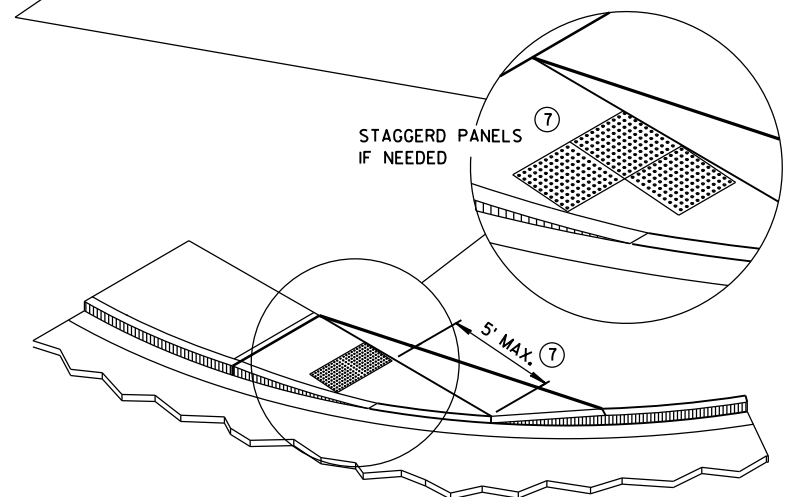
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED.
- ③ ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ④ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET (MINIMUM 4 FEET X 4 FEET).
- ⑦ WHEN THIS DISTANCE EXCEEDS 5 FEET, USE MULTIPLE DETECTABLE WARNING PANELS ACROSS THE RAMP AND STAGGER ADDITIONAL DETECTABLE WARNING PANEL(S) FORWARD TO REDUCE THIS DISTANCE.
- ⑧ PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- ⑩ INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



ISOMETRIC VIEW FOR TYPE 4A



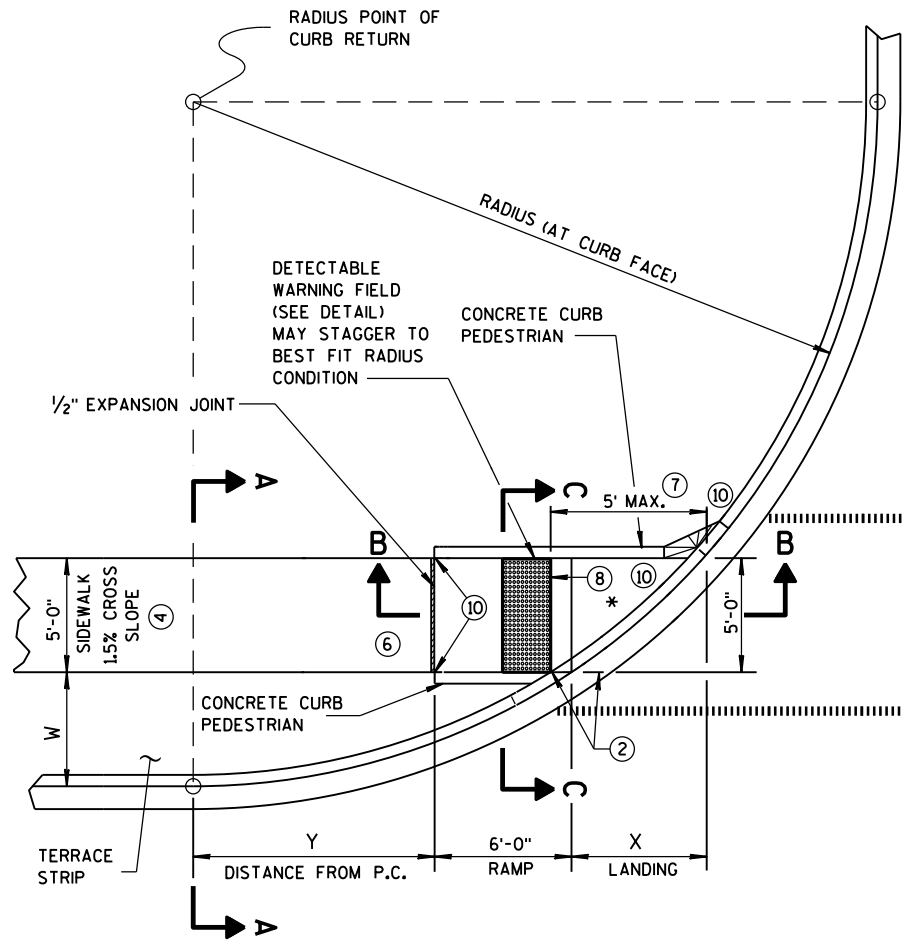
ISOMETRIC VIEW FOR TYPE 4A1

LEGEND

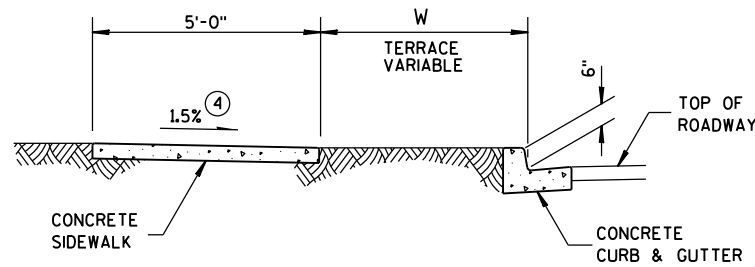
- 1/2" EXPANSION JOINT-SIDEWALK
- - - CONTRACTION JOINT FIELD LOCATED
- ||||| PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS
TYPES 4A AND 4A1

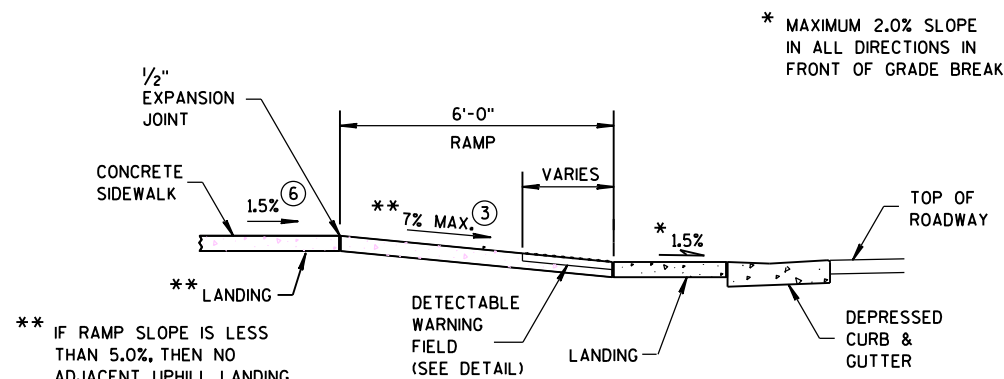
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



**CURB RAMP TYPE 4B
PLAN VIEW**



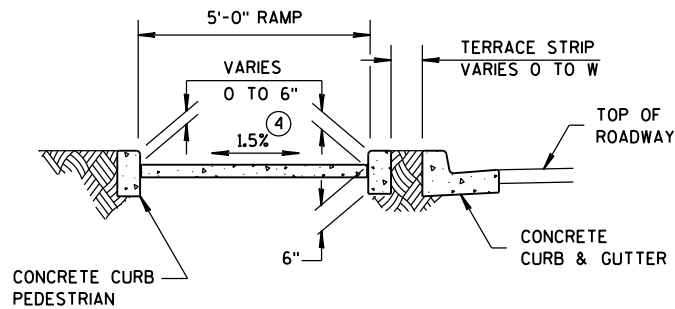
SECTION A-A FOR TYPE 4B



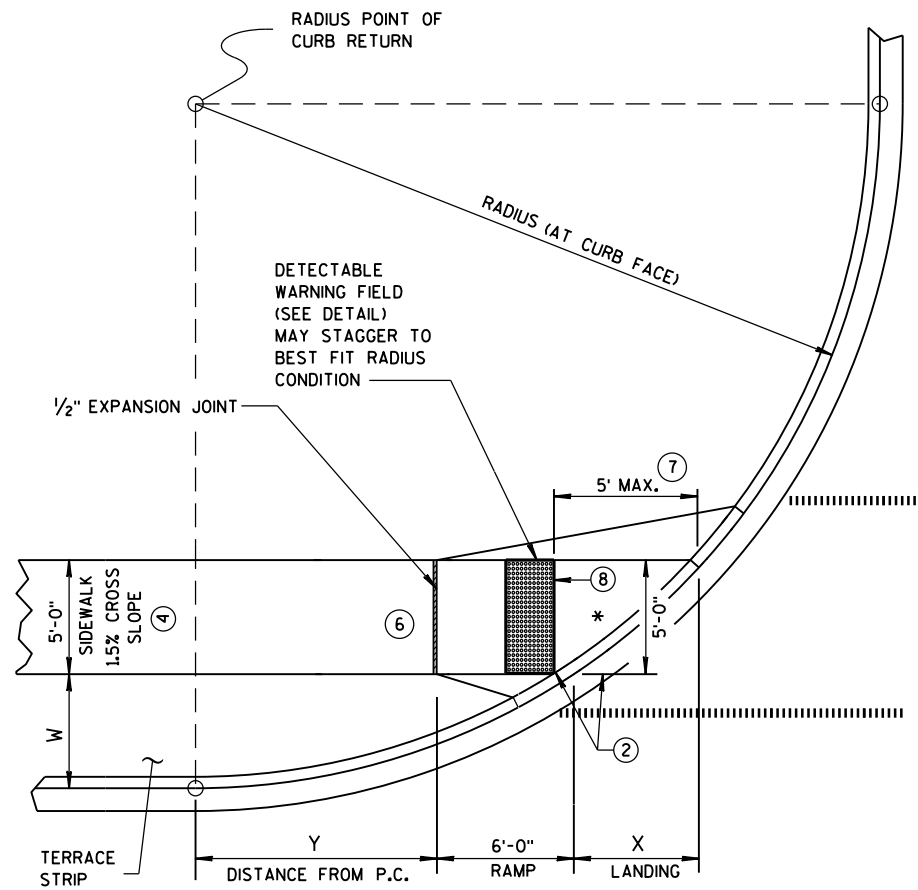
SECTION B-B FOR TYPE 4B

** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

- LEGEND**
- 1/2" EXPANSION JOINT-SIDEWALK
 - CONTRACTION JOINT FIELD LOCATED
 - PAVEMENT MARKING CROSSWALK (WHITE)



SECTION C-C FOR TYPE 4B

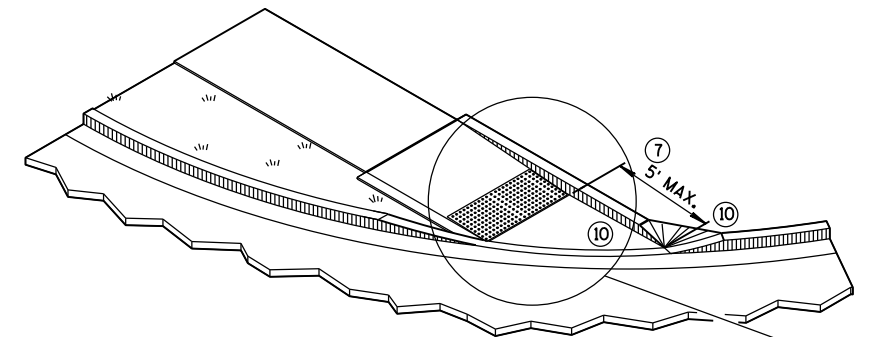


**CURB RAMP TYPE 4B1
PLAN VIEW**

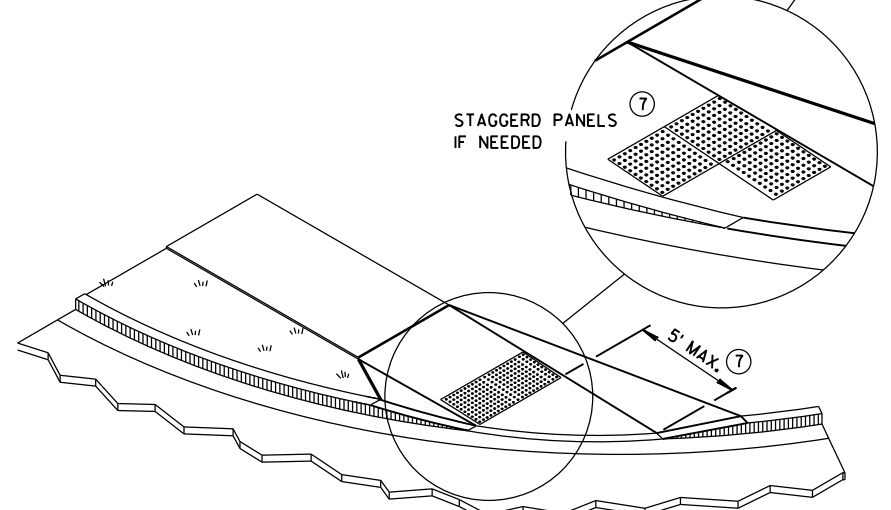
RADIUS (AT CURB FACE)	W = 3' - 0"		W = 4' - 0"		W = 5' - 0"		W = 6' - 0"		W = 7' - 0"	
	X	Y	X	Y	X	Y	X	Y	X	Y
20 FEET	5'-5 1/2"	4'-6 1/2"	4'-8 1/2"	6'-0"	4'-1"	7'-2 3/4"	3'-7"	8'-3 1/2"	3'-1 1/2"	9'-2 1/2"
30 FEET	7'-3 3/4"	7'-1"	6'-5 1/2"	8'-11 1/2"	5'-9 1/4"	10'-7"	5'-2 1/2"	12'-0"	4'-8 3/4"	13'-3 1/4"
40 FEET	8'-9 1/2"	9'-2 1/2"	7'-10"	11'-5 1/4"	7'-1"	13'-4 1/2"	6'-5 3/4"	15'-3/4"	5'-11 1/2"	16'-7 1/4"
50 FEET	10'-3/4"	11'-3/4"	9'-1/4"	13'-7 1/4"	8'-2 1/2"	15'-9 1/2"	7'-6 1/2"	17'-9"	6'-11 3/4"	19'-6 1/4"
60 FEET	11'-2 1/2"	12'-8 3/4"	10'-3/4"	15'-6 1/2"	9'-2 1/4"	17'-11 3/4"	8'-5 3/4"	20'-1 3/4"	7'-10 1/2"	22'-1 1/2"

GENERAL NOTES

- INTERMEDIATE RADII CAN BE INTERPOLATED
- AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS. DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.
- 2 GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED.
 - 3 ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
 - 4 ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
 - 6 PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET (MINIMUM 4 FEET X 4 FEET).
 - 7 WHEN THIS DISTANCE EXCEEDS 5 FEET, USE MULTIPLE DETECTABLE WARNING PANELS ACROSS THE RAMP AND STAGGER ADDITIONAL DETECTABLE WARNING PANEL(S) FORWARD TO REDUCE THIS DISTANCE.
 - 8 PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
 - 10 INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



ISOMETRIC VIEW FOR TYPE 4B

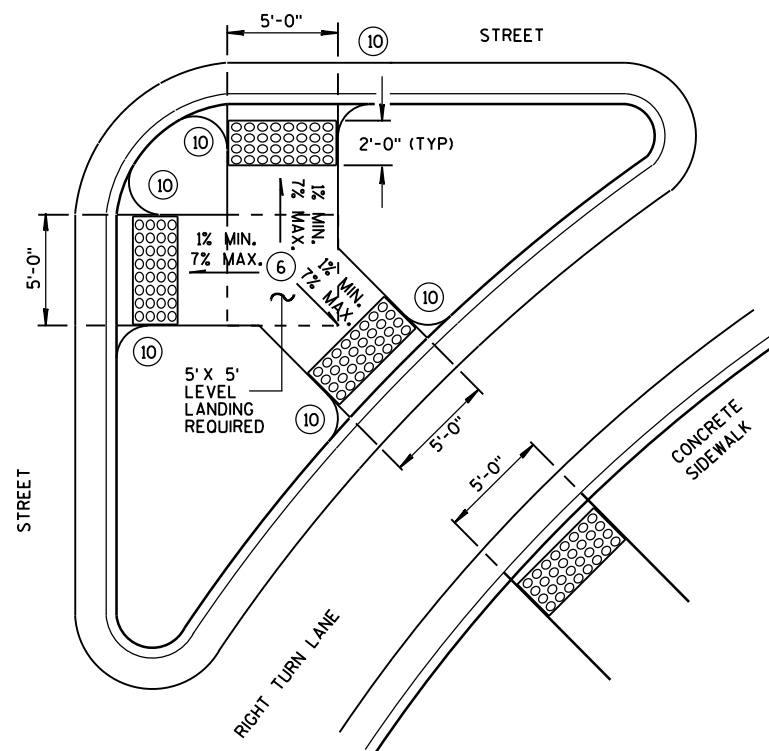


ISOMETRIC VIEW FOR TYPE 4B1

**CURB RAMPS
TYPE 4B AND 4B1**

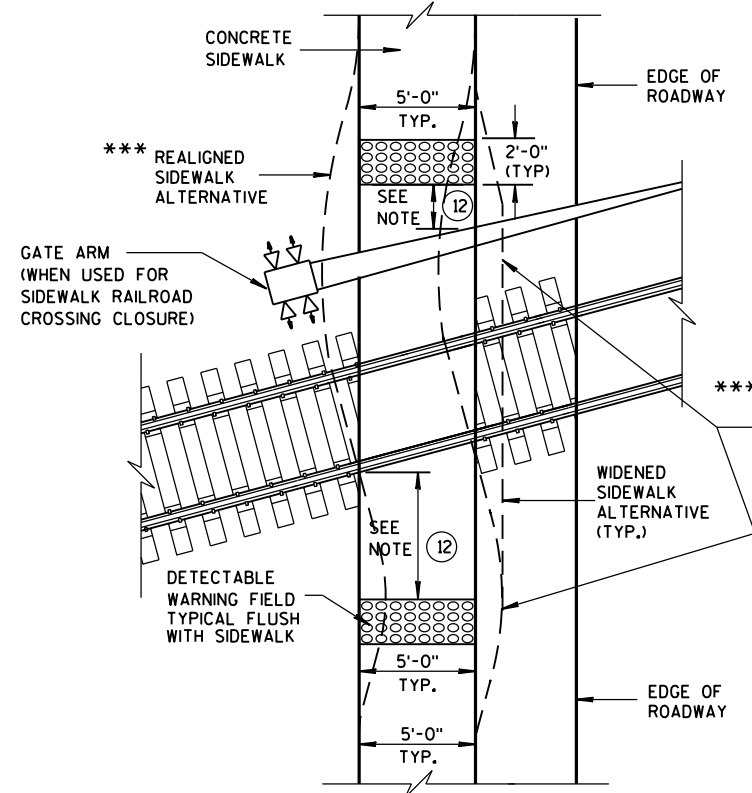
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

REFER TO GENERAL NOTES ② AND ③
FOR ALL ISLAND CURB RAMPS

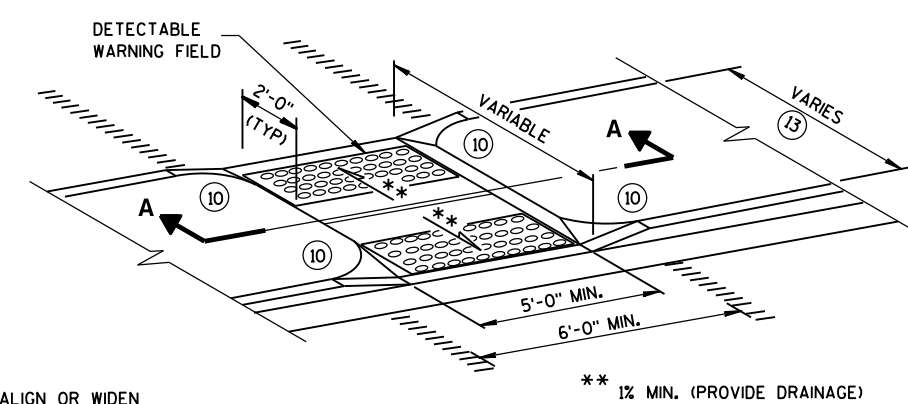


TYPE 6

DETECTABLE WARNING AT ISLANDS

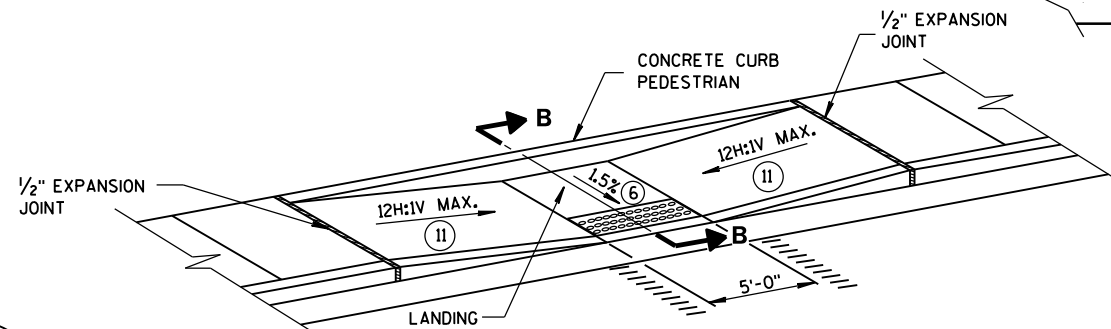


TYPE 8
DETECTABLE WARNINGS
AT RAILROAD CROSSING

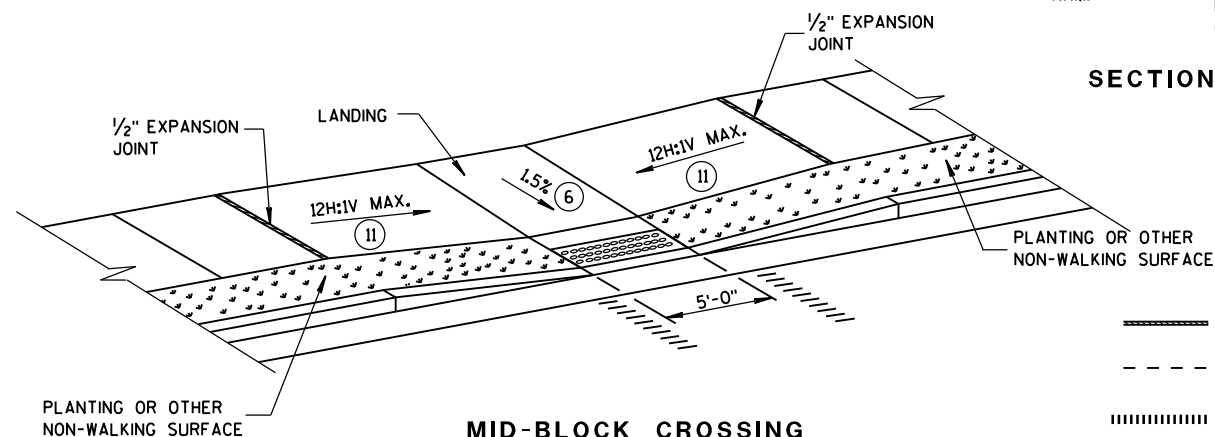


MEDIAN ISLAND
NON-ELEVATED CROSSING
TYPE 5

*** DETAILS TO BE DETERMINED
BY DESIGNER

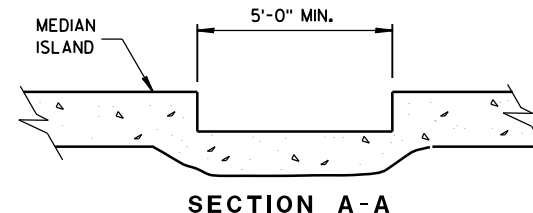


MID-BLOCK CROSSING
TYPE 7A

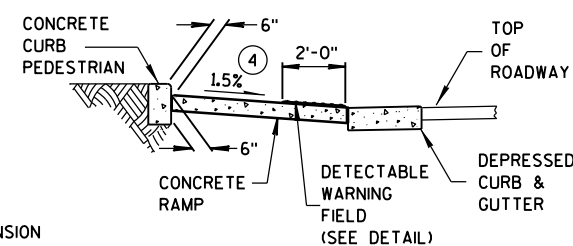


MID-BLOCK CROSSING
TYPE 7B

NOTE: THESE PARALLEL AND PARALLEL/PERPENDICULAR CURB RAMPS
MAY BE USED AT INTERSECTIONS AND MID BLOCK LOCATIONS.



SECTION A-A



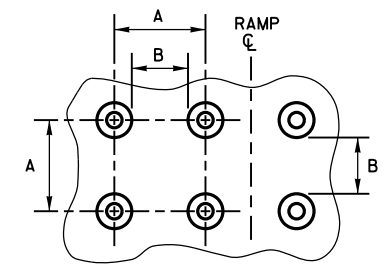
SECTION B-B

LEGEND

- 1/2" EXPANSION JOINT-SIDEWALK
- - - CONTRACTION JOINT FIELD LOCATED
- ||||| PAVEMENT MARKING CROSSWALK (WHITE)

GENERAL NOTES

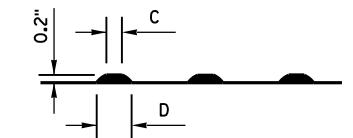
- SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.
- DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED.
- ③ ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ④ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET (MINIMUM 4 FEET X 4 FEET).
- ⑩ INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.
- ⑪ SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.
- ⑫ THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET ± 0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET FROM THE NEAREST RAIL.
- ⑬ DO NOT INSTALL DETECTABLE WARNING FIELDS IF MEDIAN WIDTH BETWEEN BACK OF CURBS IS LESS THAN 6 FEET.



PLAN VIEW

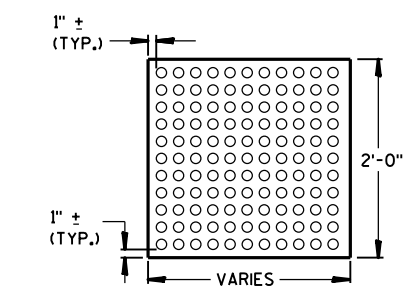
	MIN.	MAX.
A	1.6"	2.4"
B	0.65"	1.5"
C	*	*
D	0.9"	1.4"

* THE C DIMENSION IS 50% TO
65% OF THE D DIMENSION.



ELEVATION VIEW

TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL



PLAN VIEW
DETECTABLE WARNING
FIELD (TYPICAL)

CURB RAMPS
TYPES 5, 6, 7A, 7B & 8

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June, 2015

DATE

FHWA

/s/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

44

INT

GENERAL NOTES

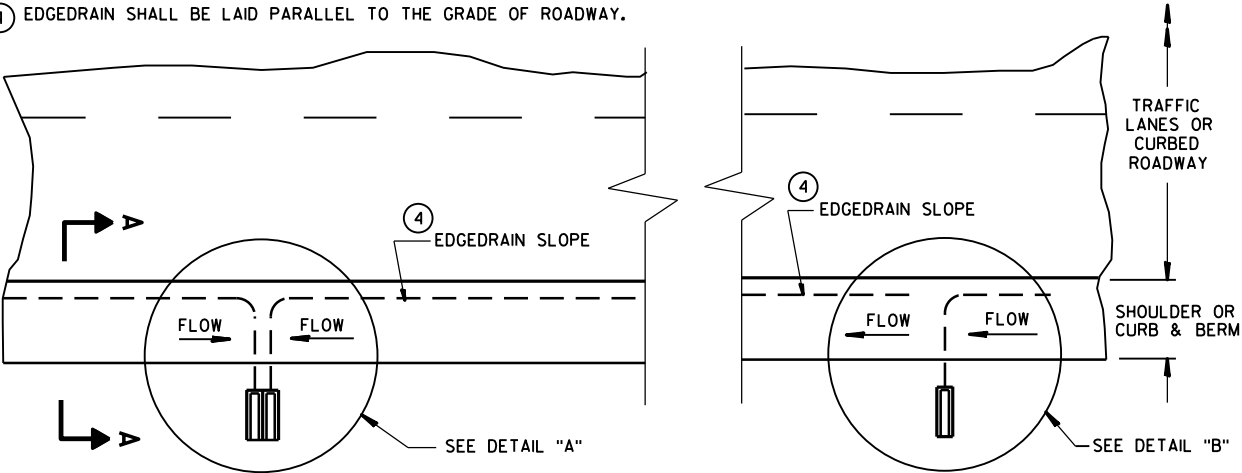
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- ① UNPERFORATED PIPE UNDERDRAIN AND FITTINGS FURNISHED FOR OUTFALL PIPE SHALL MEET THE REQUIREMENTS OF ONE OF THE FOLLOWING SPECIFICATIONS:

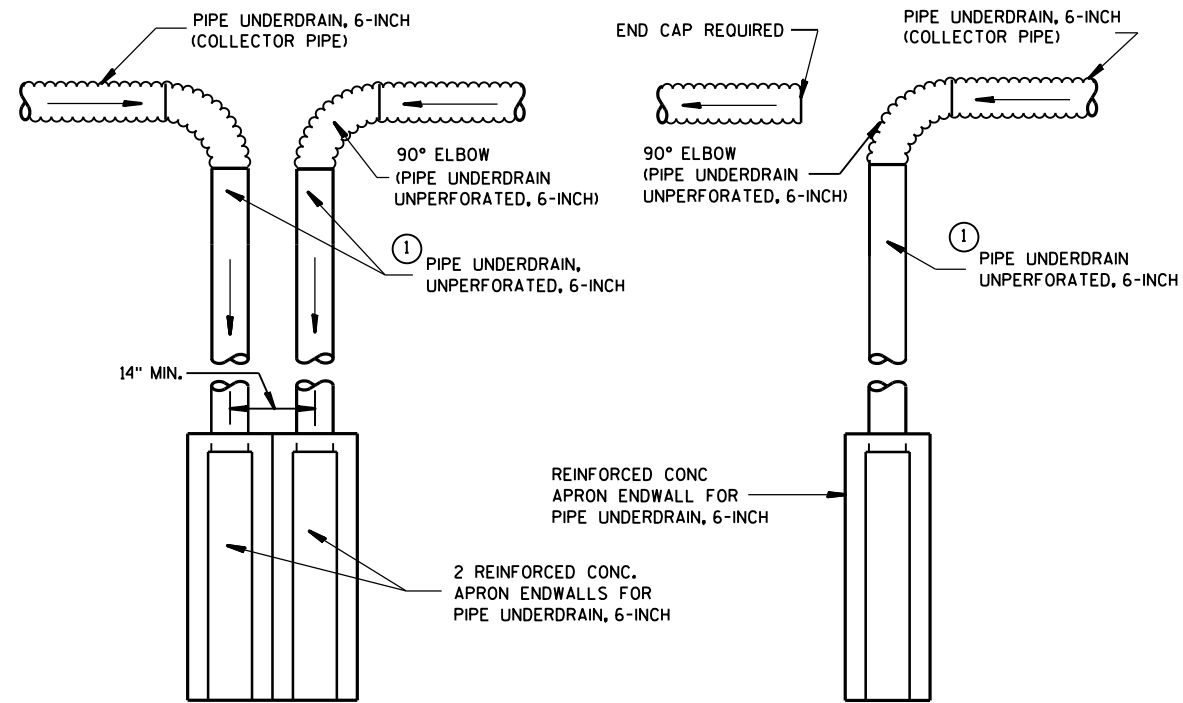
POLYVINYL CHLORIDE (PVC) PLASTIC DRAIN, WASTE, AND VENT PIPE AND FITTINGS, ASTM D 2665, SCHEDULE 40 PVC.

TYPE PSM POLYVINYL CHLORIDE (PVC) SEWER PIPE AND FITTINGS, ASTM D 3034, SDR 23.5 PVC SEWER PIPE.

- ② MAXIMUM SPACING OF EDGEDRAIN OUTLETS SHALL BE 250 FEET UNLESS OTHERWISE SPECIFIED IN THE CONTRACT OR DIRECTED BY THE ENGINEER.
- ③ EDGEDRAIN SHALL BE CONNECTED TO INLETS REGARDLESS OF FLOW DIRECTION FOR DRAINAGE AND MAINTENANCE ACCESS.
- ④ EDGEDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF ROADWAY.



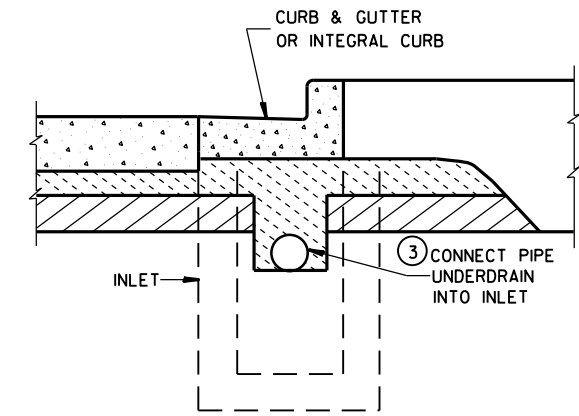
PLAN VIEW
ROADWAY WITH SHOULDERS OR CURBS
(EDGEDRAIN OUTLETS TO ROADSIDE) ②



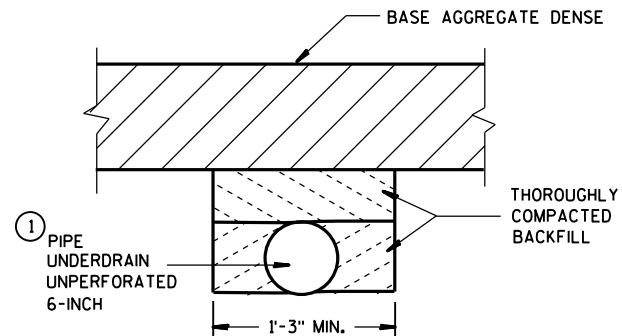
DETAIL "A"
TO BE USED AT LOW POINT LOCATIONS

DETAIL "B"
TO BE USED AT INTERMEDIATE LOCATIONS

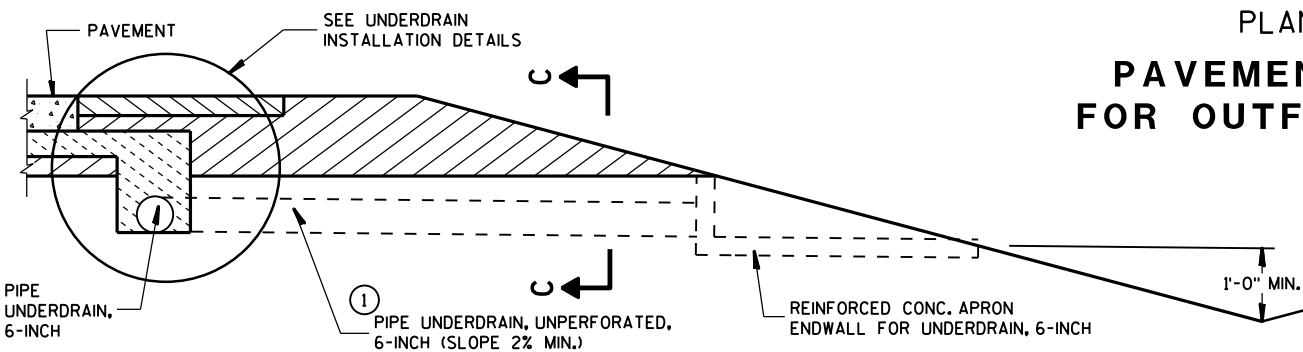
TYPICAL DRAIN OUT DETAILS



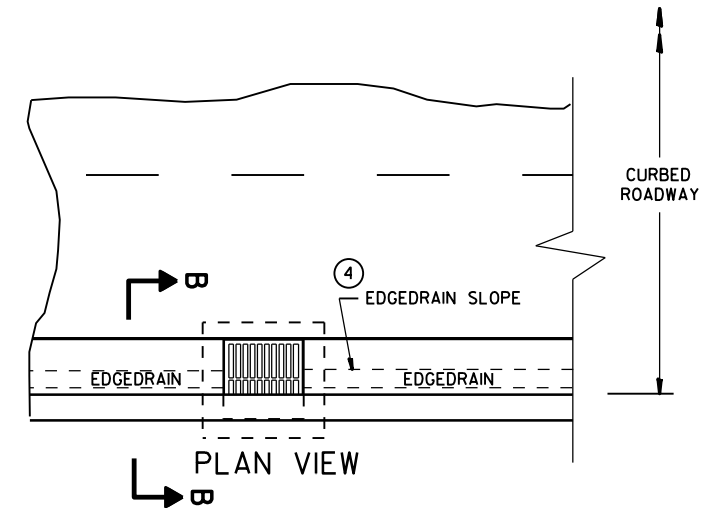
SECTION B-B
URBAN CROSS SECTION



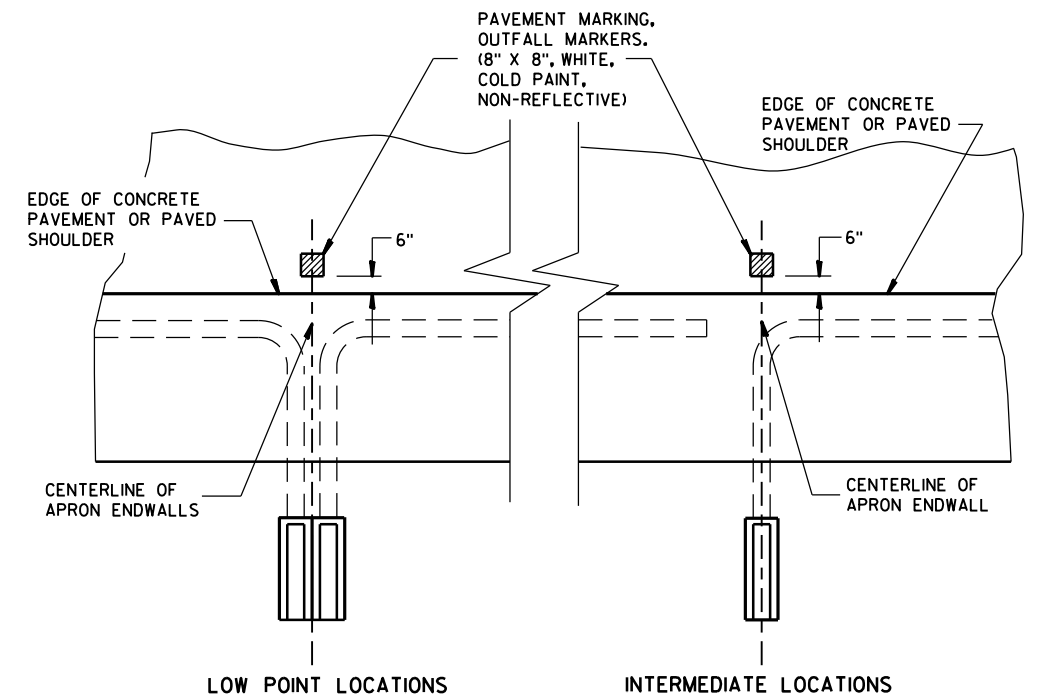
SECTION C-C
(TRENCH FOR OUTFALL PIPE)



SECTION A-A
RURAL CROSS SECTION



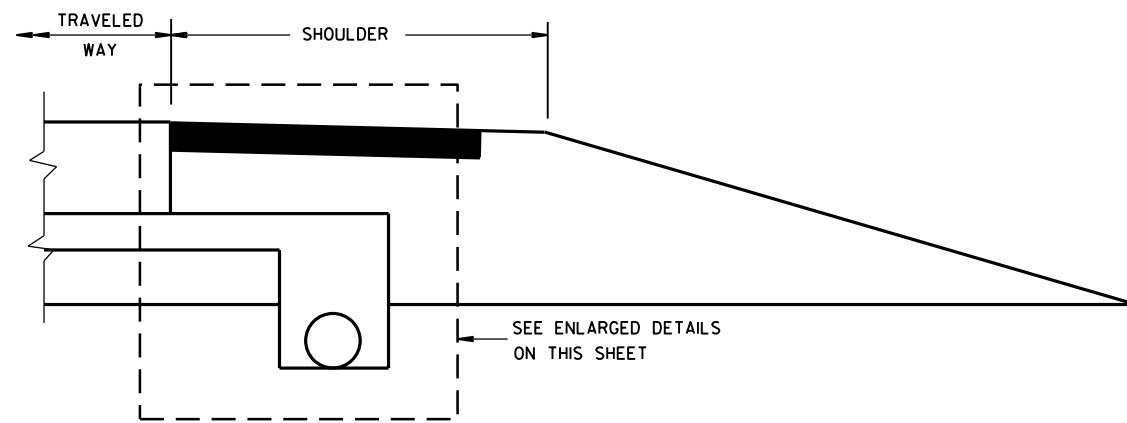
ROADWAY WITH CURBS
(EDGEDRAIN CONNECTS INTO INLET STRUCTURE)



PLAN VIEW
**PAVEMENT MARKING
FOR OUTFALL MARKERS**

**EDGEDRAIN OUTLET
AND OUTFALL MARKERS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



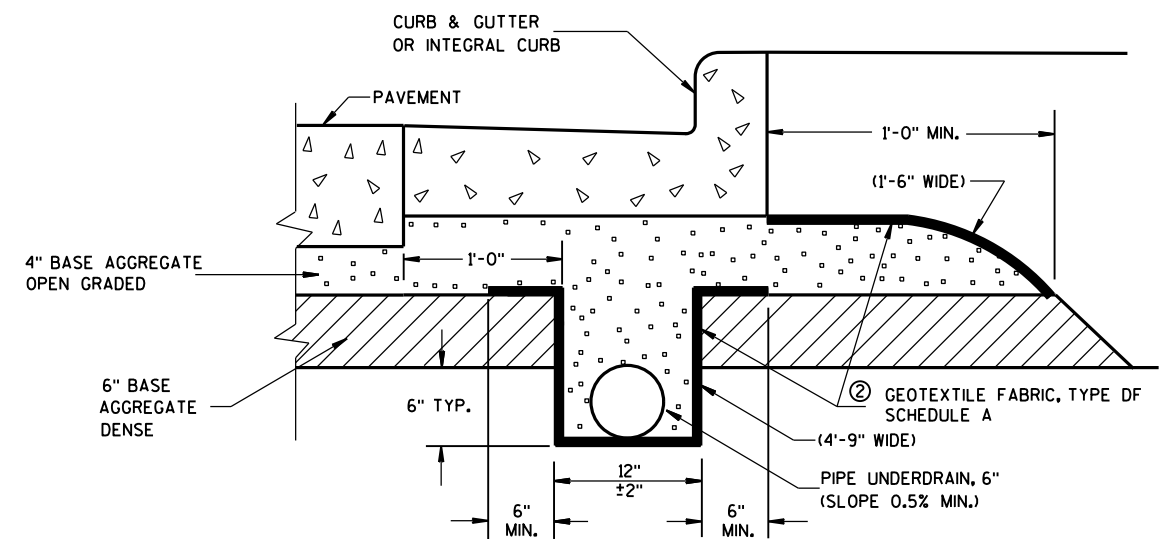
RURAL CROSS SECTION

GENERAL NOTES

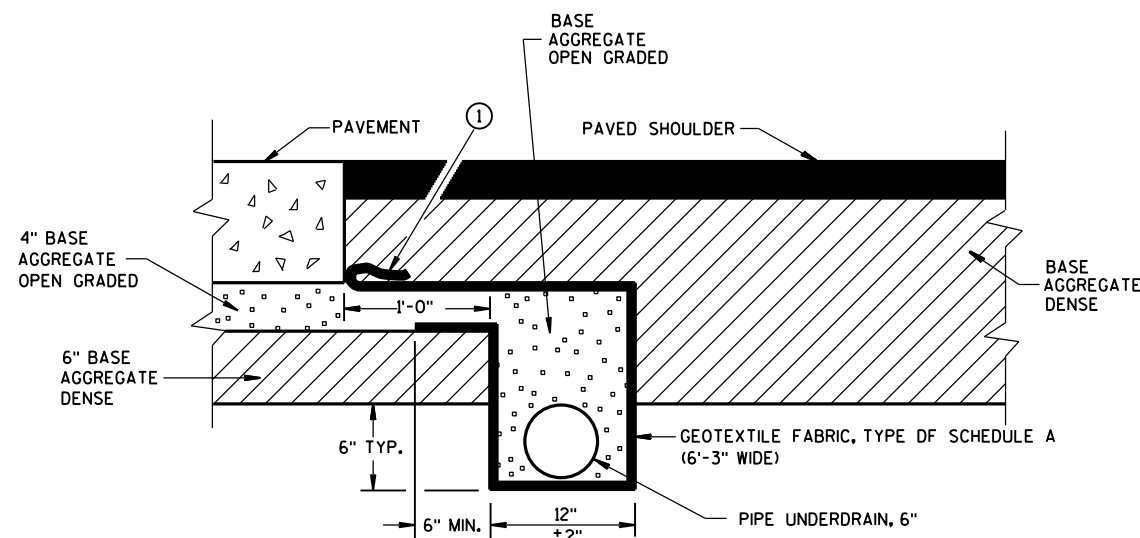
THE DIMENSIONS SHOWN ON THE TYPICAL CROSS SECTIONS WILL GOVERN IN THE EVENT THERE IS A CONFLICT WITH THE DETAILS SHOWN ON THIS DRAWING.

PIPE UNDERDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF THE ROADWAY.

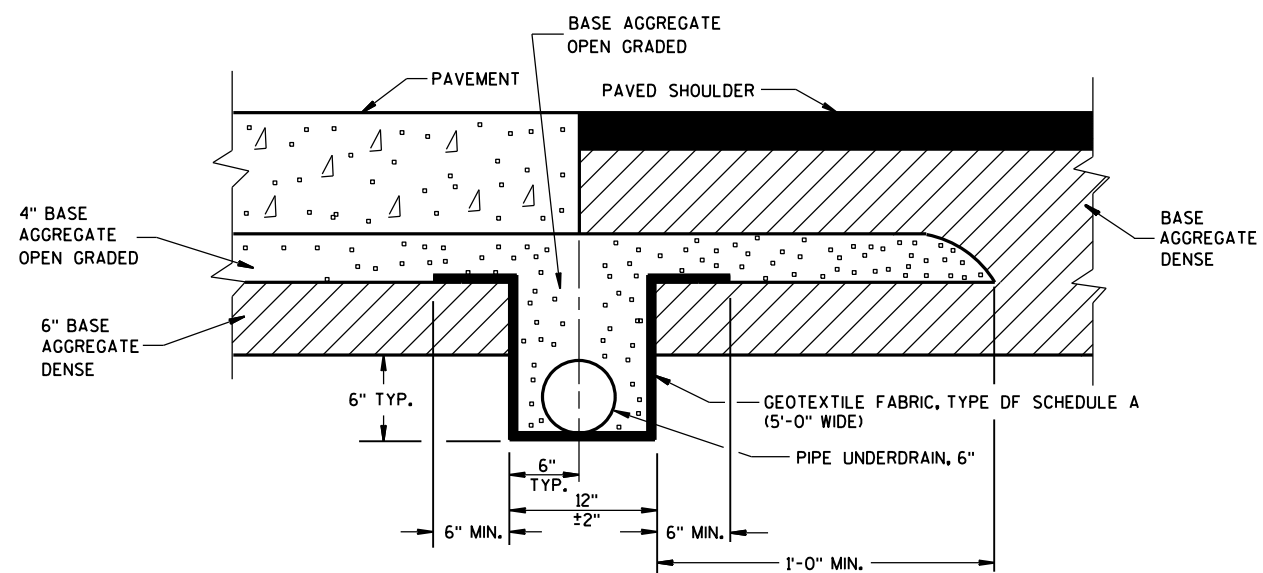
- ① FOLD OVER EXCESS GEOTEXTILE FABRIC AT THIS LOCATION.
- ② TOTAL FABRIC WIDTH IS 6'-3" FOR PAYMENT.



EDGEDRAIN IN URBAN ROADWAY



POST PAVING INSTALLATION
(QUANTITIES ARE BASED ON THIS DETAIL)



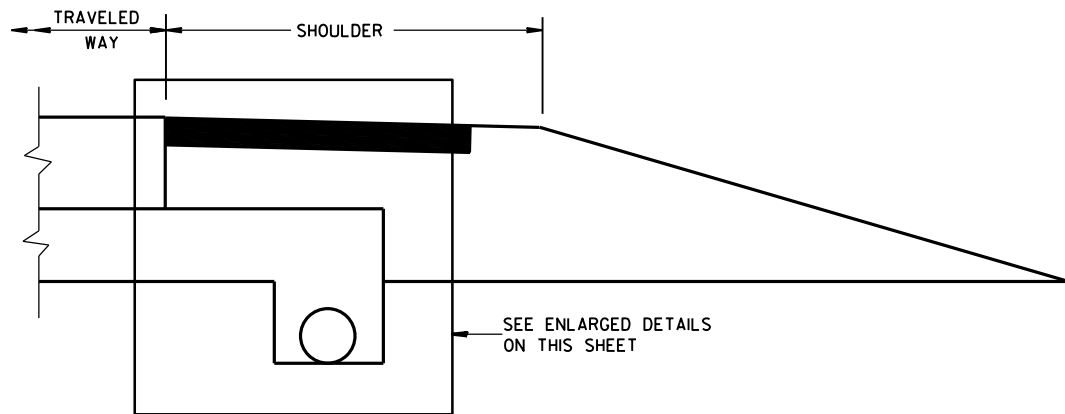
PRE-PAVING INSTALLATION ALTERNATE

EDGEDRAIN IN RURAL ROADWAY

**EDGEDRAIN AND BASE
AGGREGATE OPEN GRADED**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2015 /S/ Peter Kemp, P.E.
DATE PAVEMENT SUPE 46
FHWA

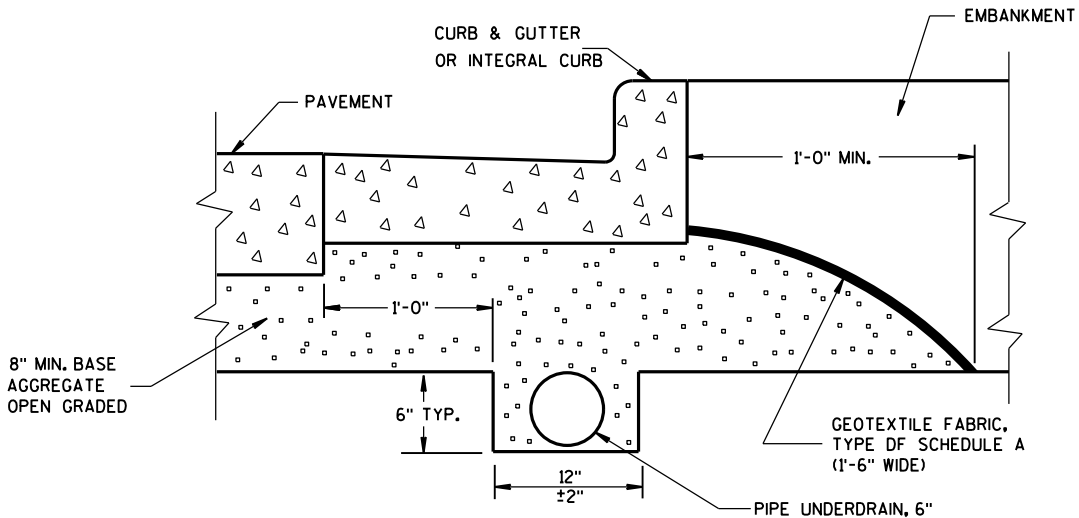


RURAL CROSS SECTION

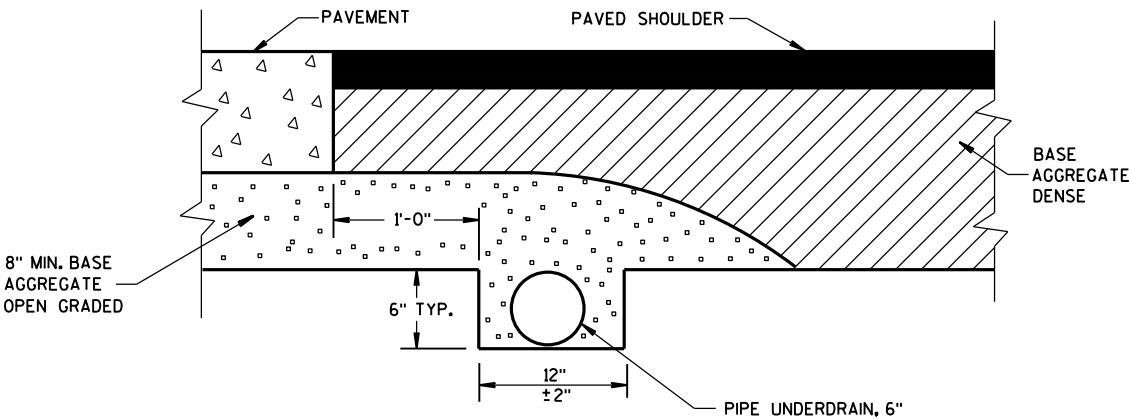
GENERAL NOTES

THE DIMENSIONS SHOWN ON THE TYPICAL CROSS SECTIONS WILL GOVERN IN THE EVENT THERE IS A CONFLICT WITH THE DETAILS SHOWN ON THIS DRAWING.

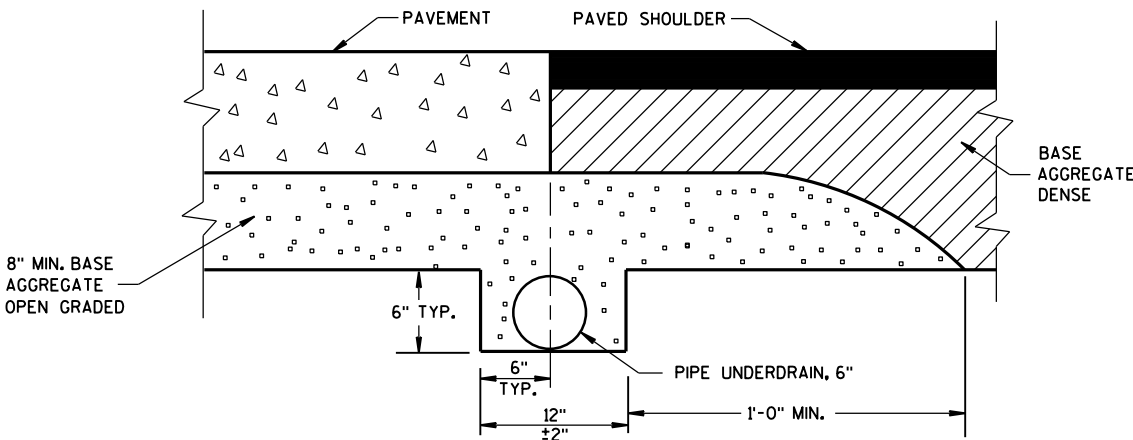
PIPE UNDERDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF THE ROADWAY.



EDGEDRAIN IN URBAN ROADWAY



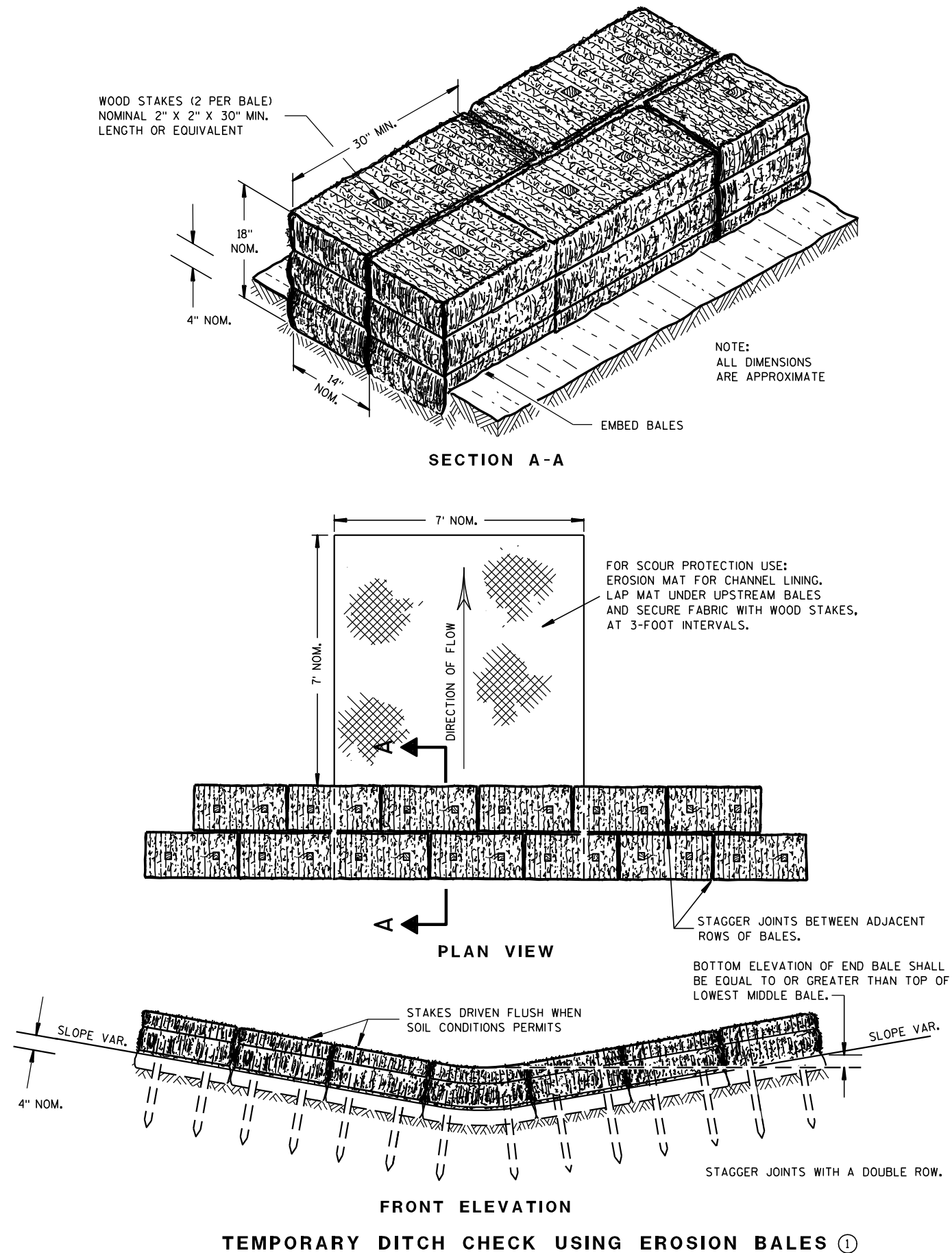
POST PAVING INSTALLATION
(QUANTITIES ARE BASED ON THIS DETAIL)



PRE-PAVING INSTALLATION ALTERNATIVE

EDGEDRAIN IN RURAL ROADWAY

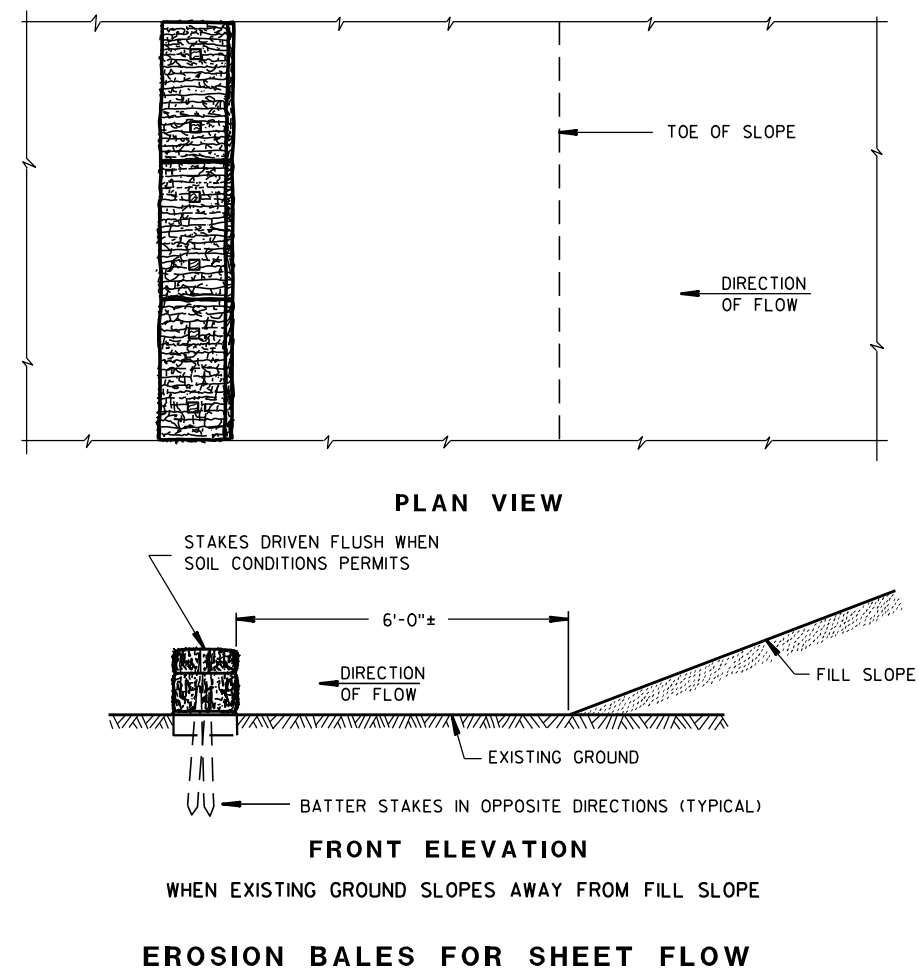
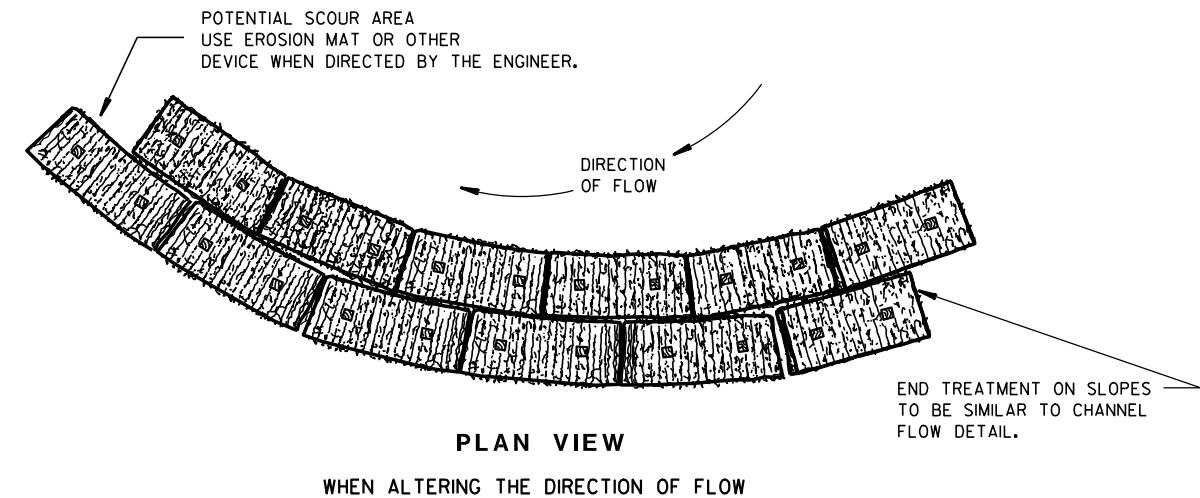
EDGEDRAIN AND BASE AGGREGATE OPEN GRADED	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED Sept. 2015 DATE	/S/ Peter Kemp, P.E. PAVEMENT SUPE 47
FHWA	



GENERAL NOTES

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

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

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02
DATE

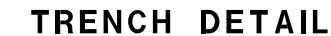
/S/ Beth Conn-----
CHIEF ROADWAY DEVELOPER

ENGINEER

FHWA



- 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 1½" X 1½" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

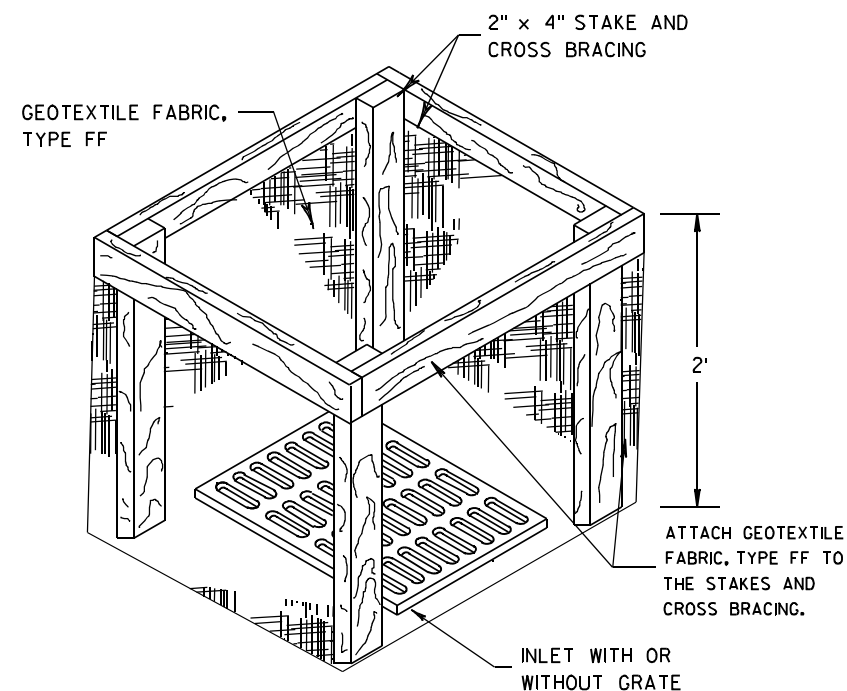
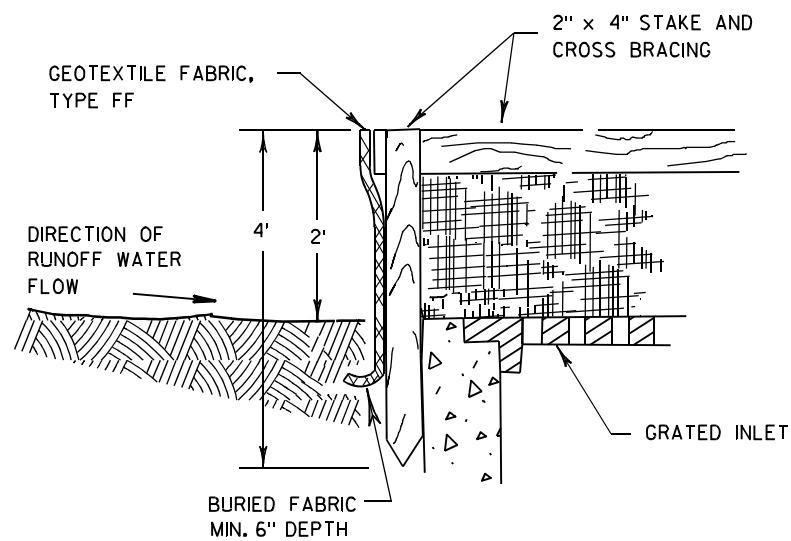
APPROVED
4-29-05
DATE

/S/ Beth Connolly
CHIEF ROADWAY DEVELOPMENT

49

ENGINEER

FHWA



INLET PROTECTION, TYPE A

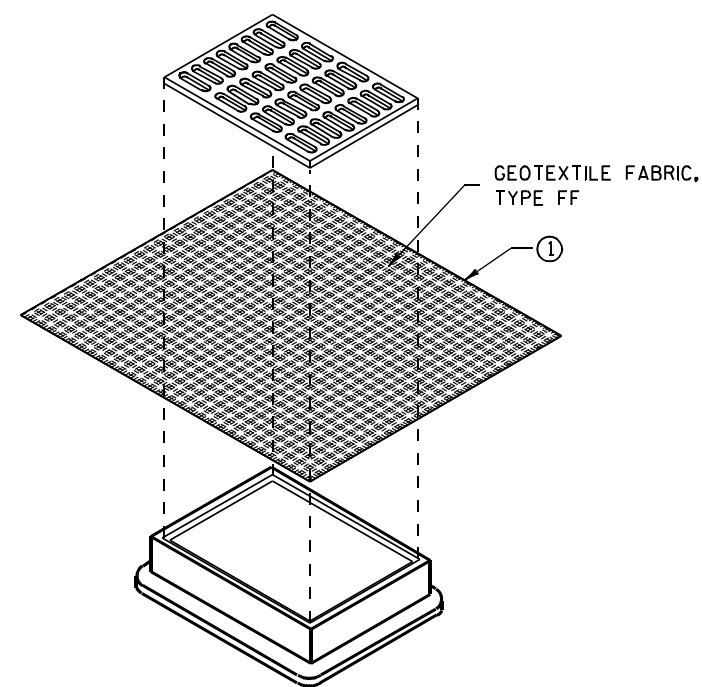
GENERAL NOTES

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

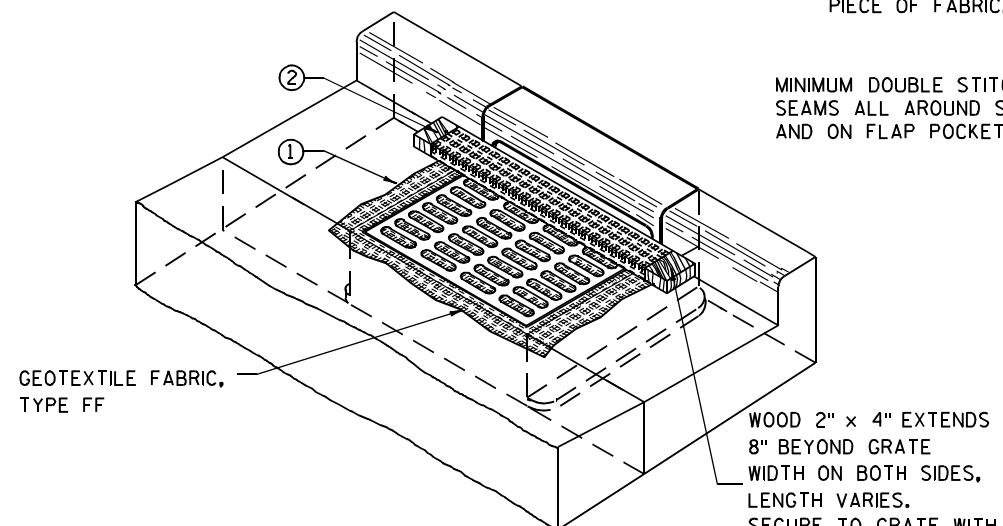
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- ① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
- ③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.



**INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)**

(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

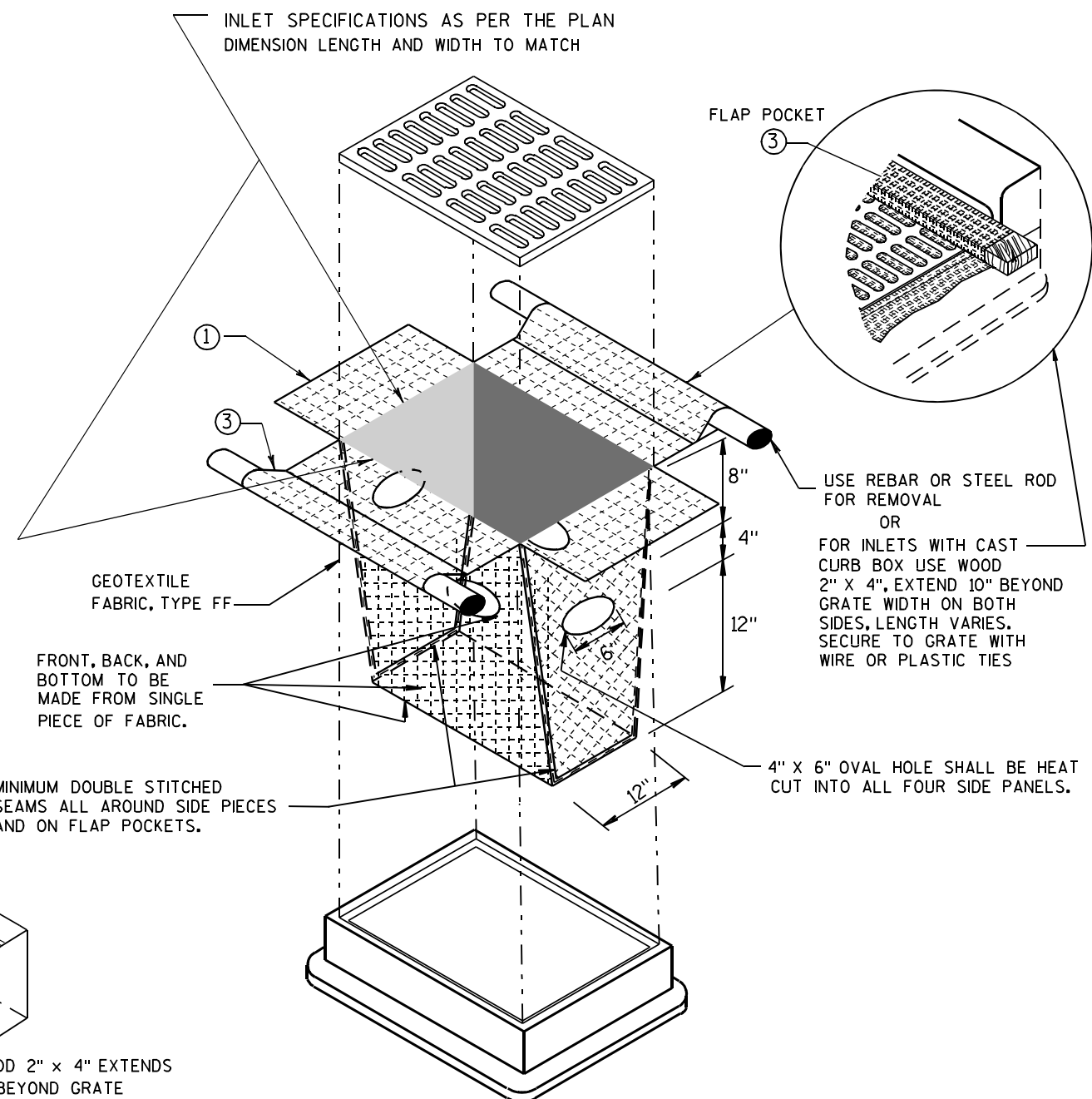
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLower THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.



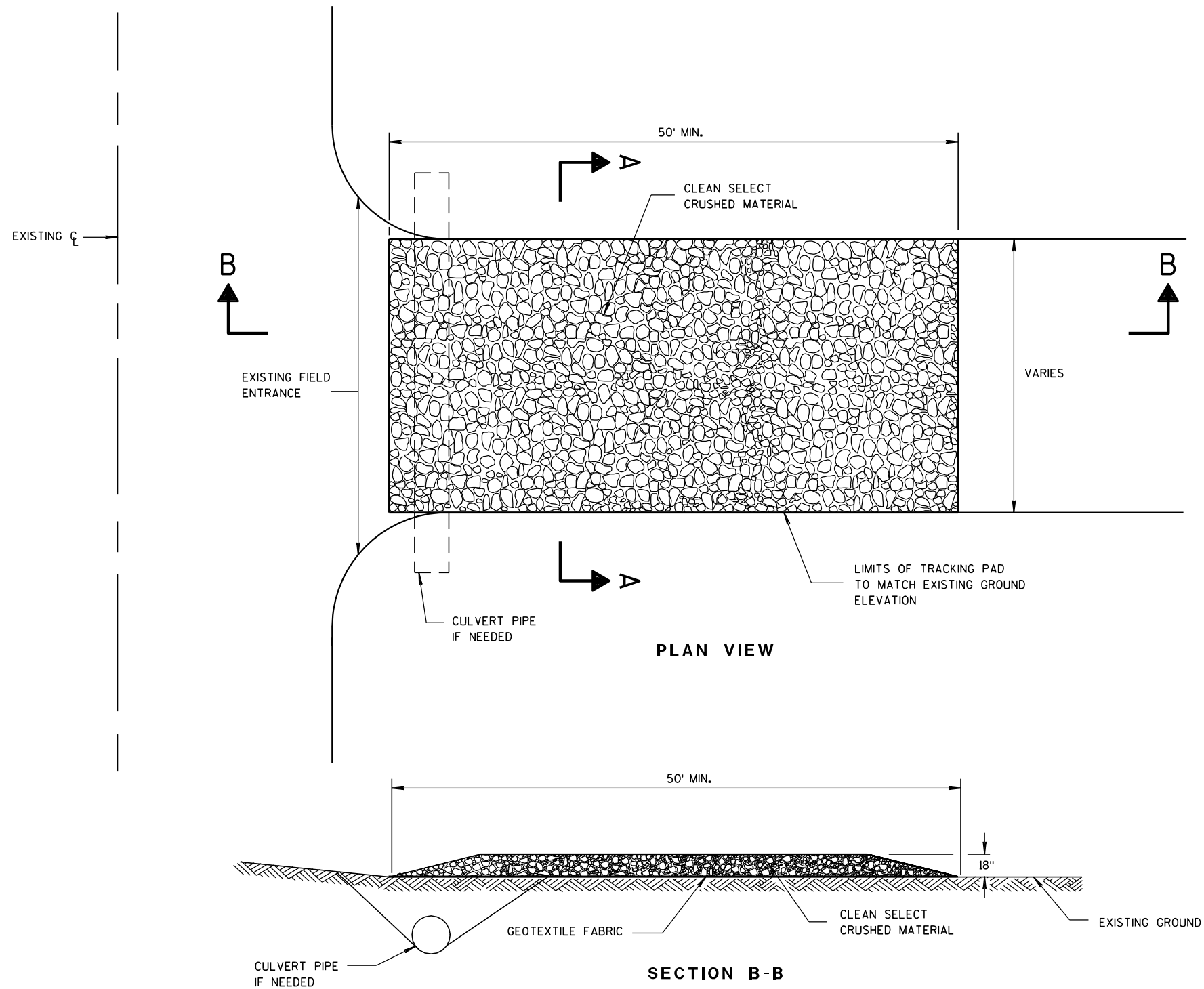
INLET PROTECTION, TYPE D

(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX AS PER NOTE ②)

**INLET PROTECTION
TYPE A, B, C, AND D**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02 /S/ Beth Connolly
DATE 50
FHWA CHIEF ROADWAY DEVELOPMENT ENGINEER



GENERAL NOTES

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

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

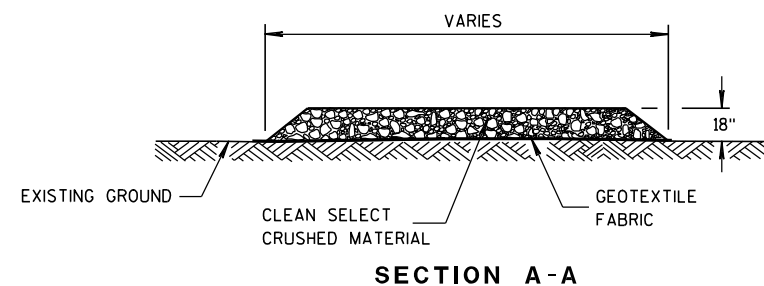
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

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

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

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

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



TRACKING PAD

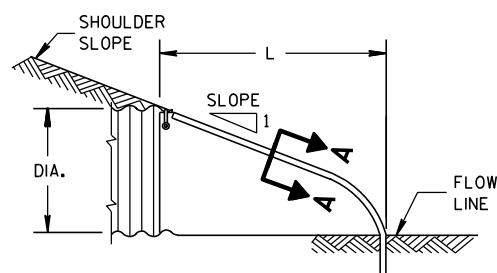
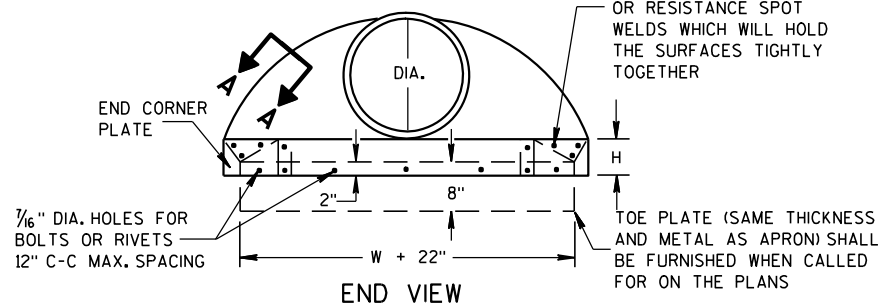
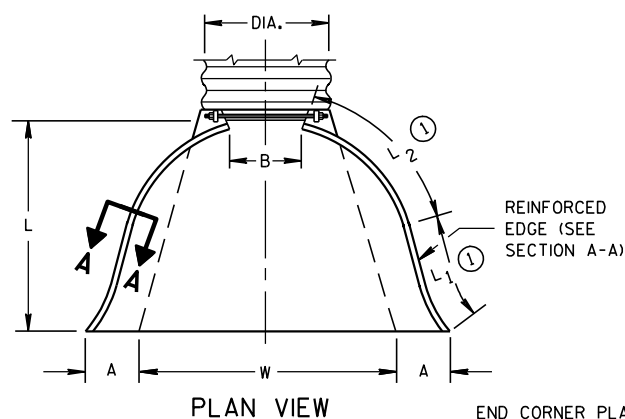
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED	DATE	3/24/2011	FOR	Jerry H. Zonn	ENT
			ROADWAY STANDARDS	51	ENGINEER
FHWA					

METAL APRON ENDWALLS

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

* EXCEPT CENTER PANEL
SEE GENERAL NOTES

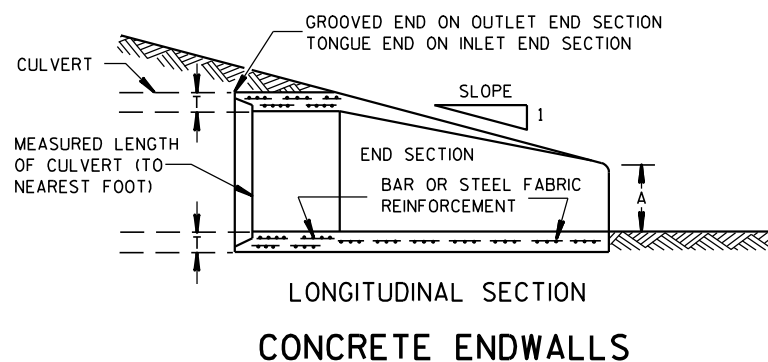
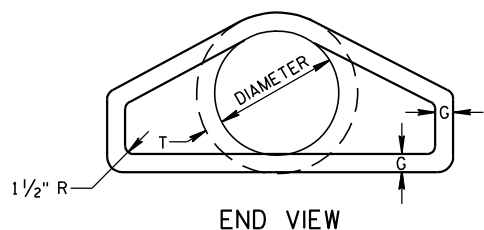
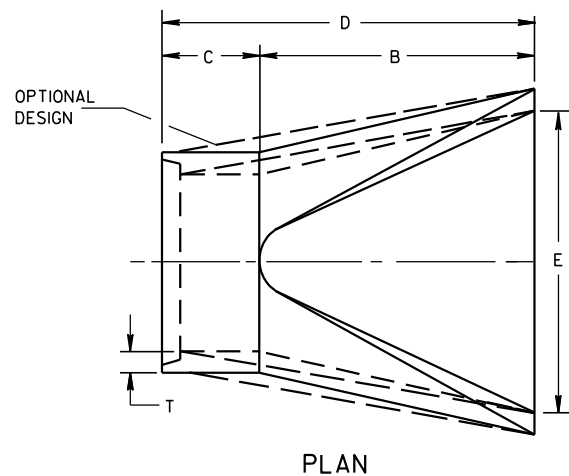


METAL ENDWALLS

REINFORCED CONCRETE APRON ENDWALLS

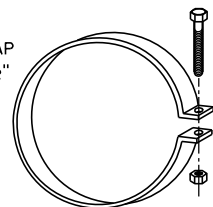
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE
	T	A	B	C	D	E	G	
12	2	4	24	48 1/8	72 1/8	24	2	3 to 1
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1
24	3	9 1/2	43 1/2	30	73 1/2	48	3	3 to 1
27	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3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

* MINIMUM
** MAXIMUM

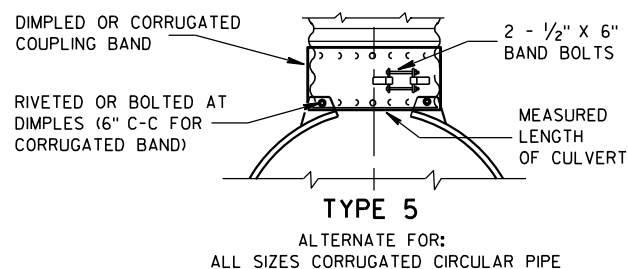
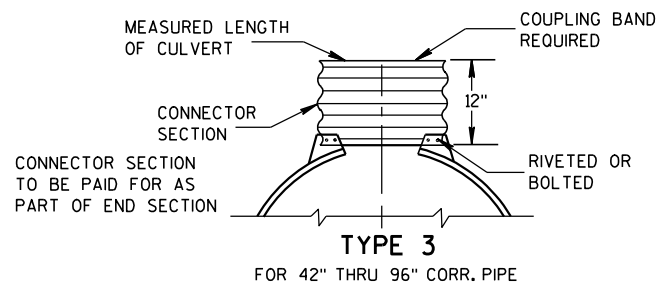
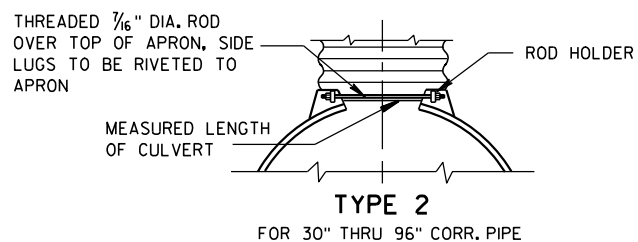
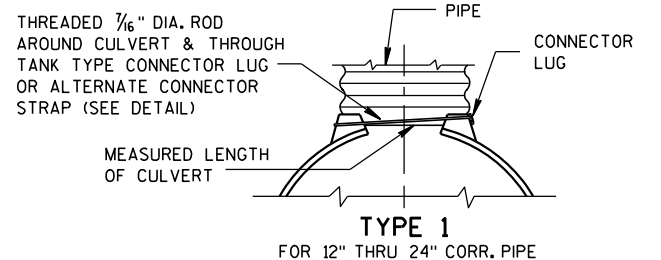


CONCRETE ENDWALLS

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



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



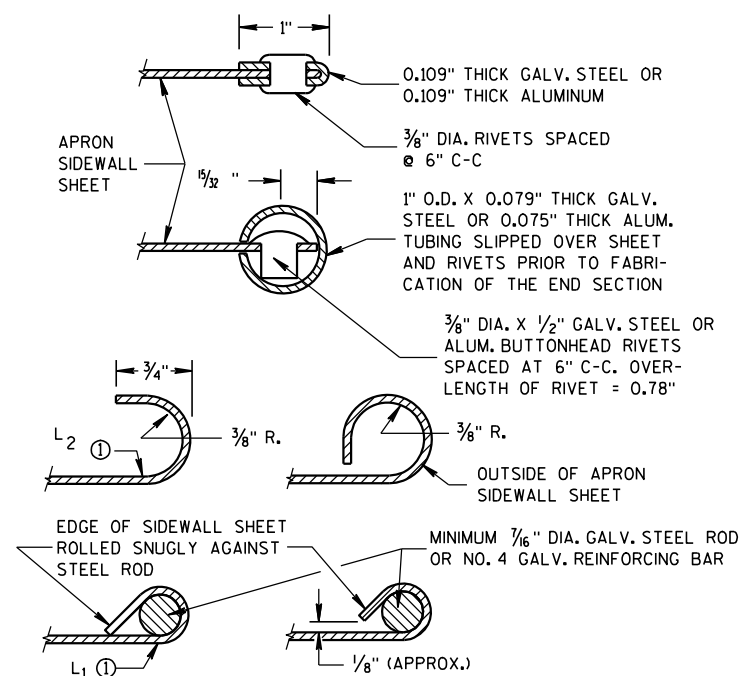
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



GENERAL NOTES

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

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

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

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

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

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

APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/94

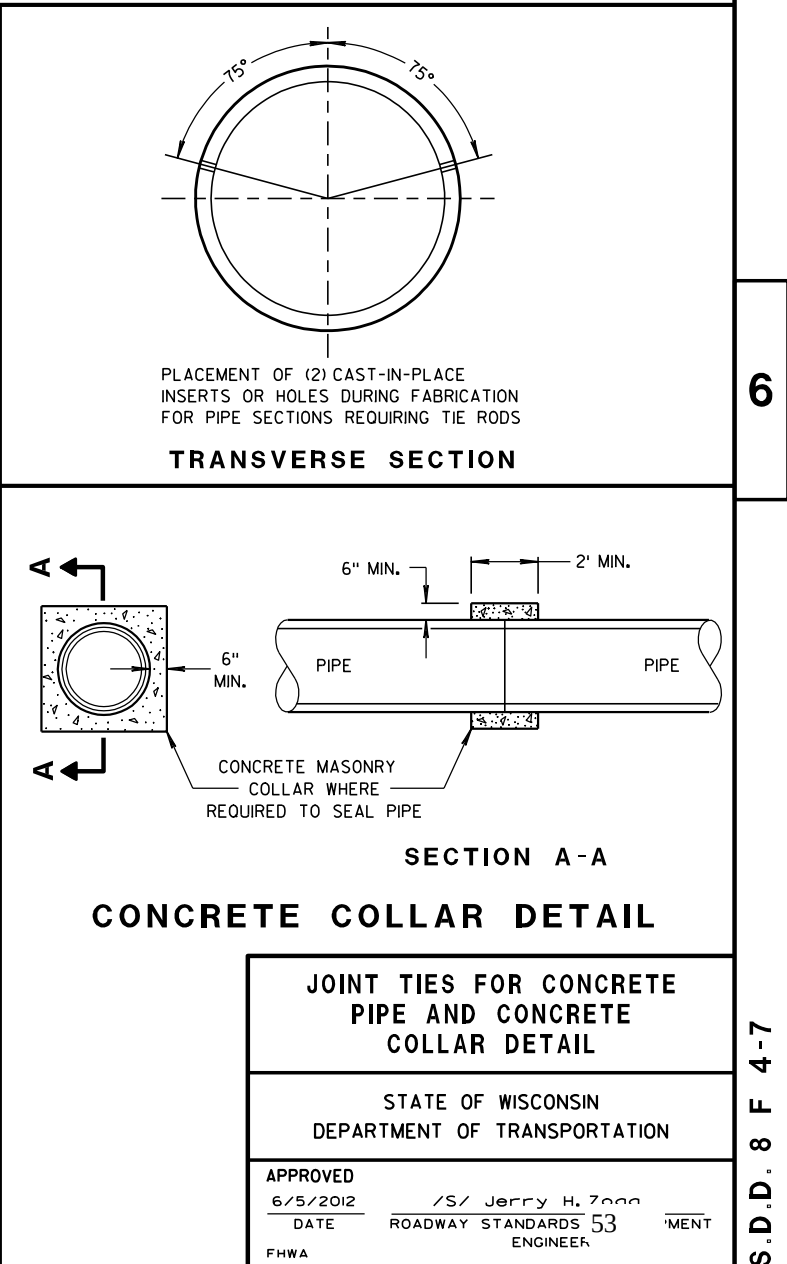
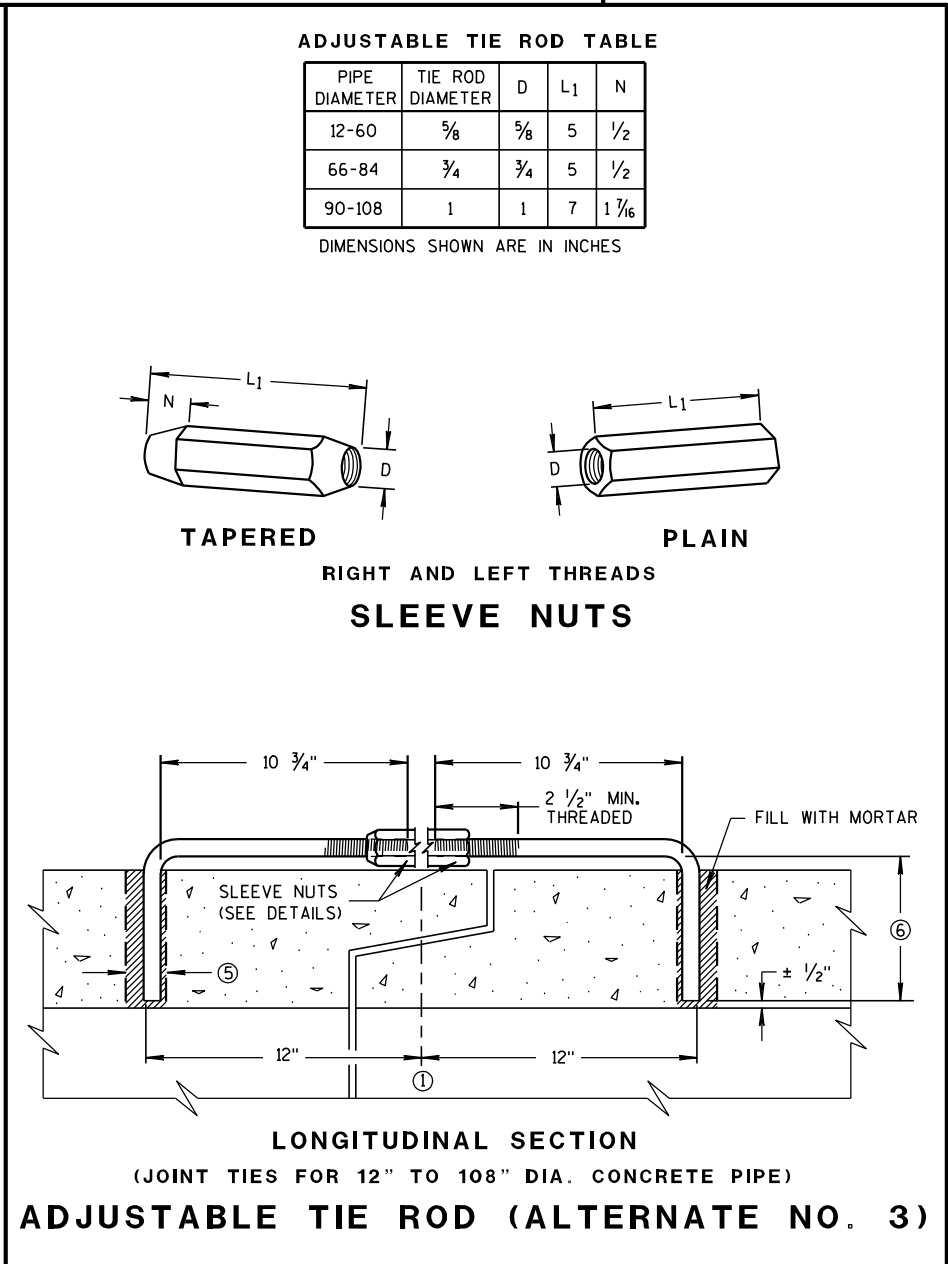
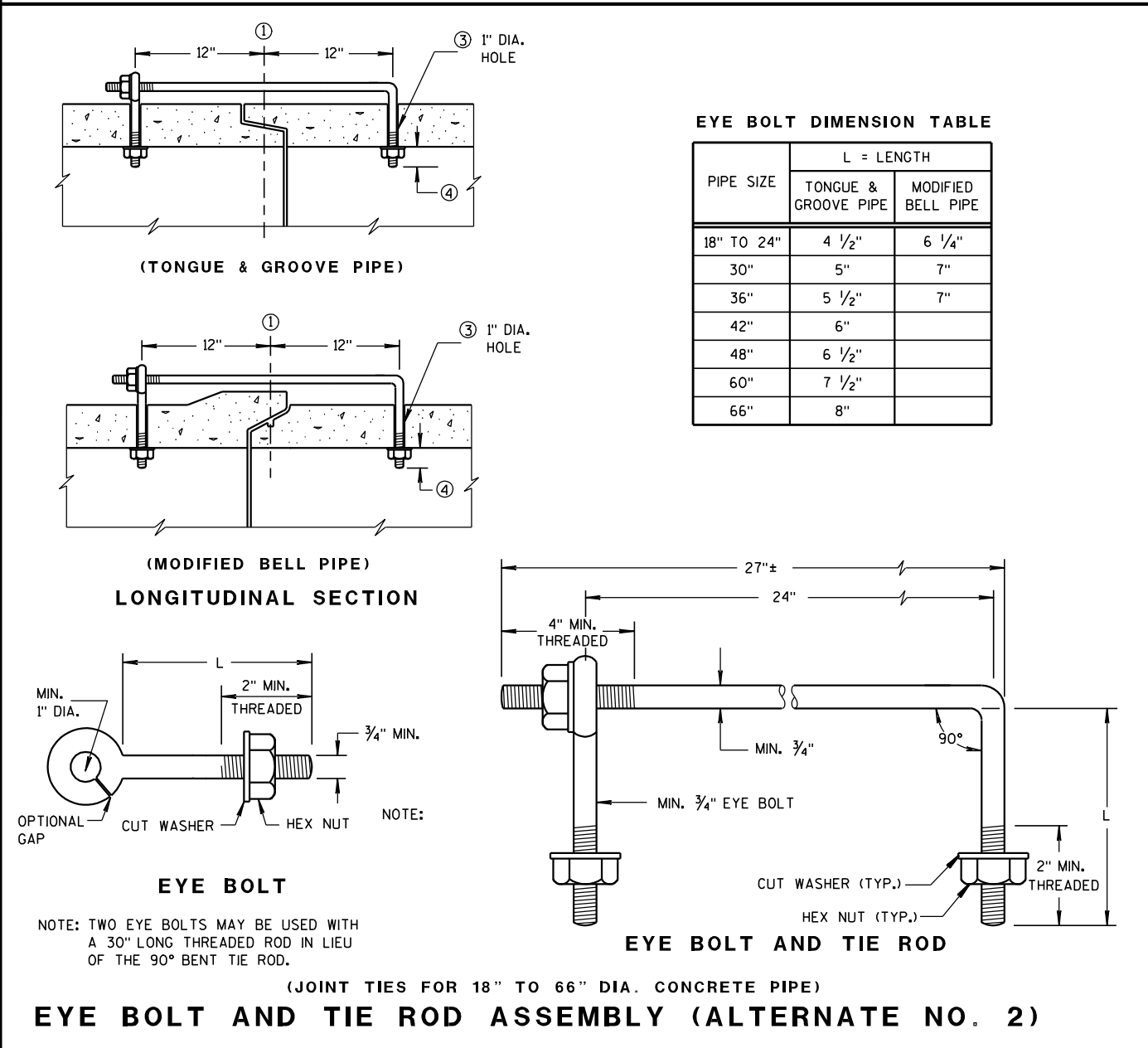
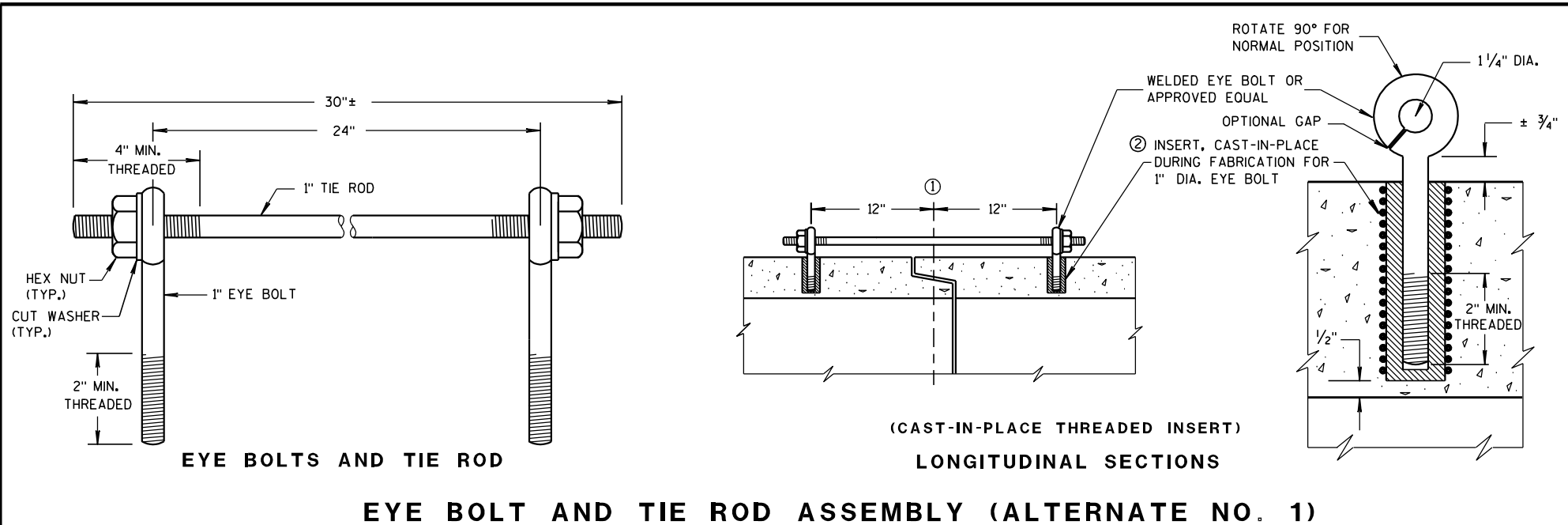
DATE

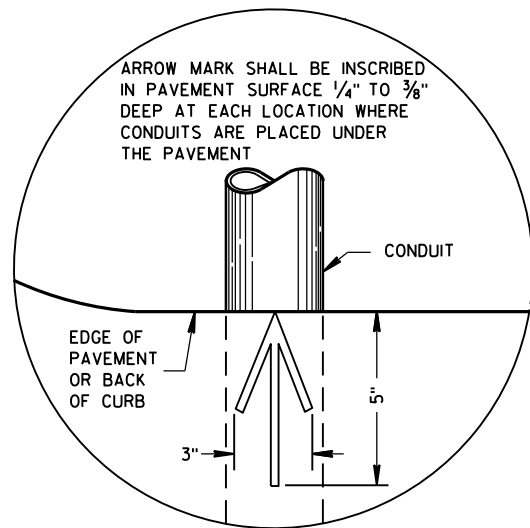
FHWA

/S/ Rory L. Rhinehart
CHIEF ROADWAY DEVELOP

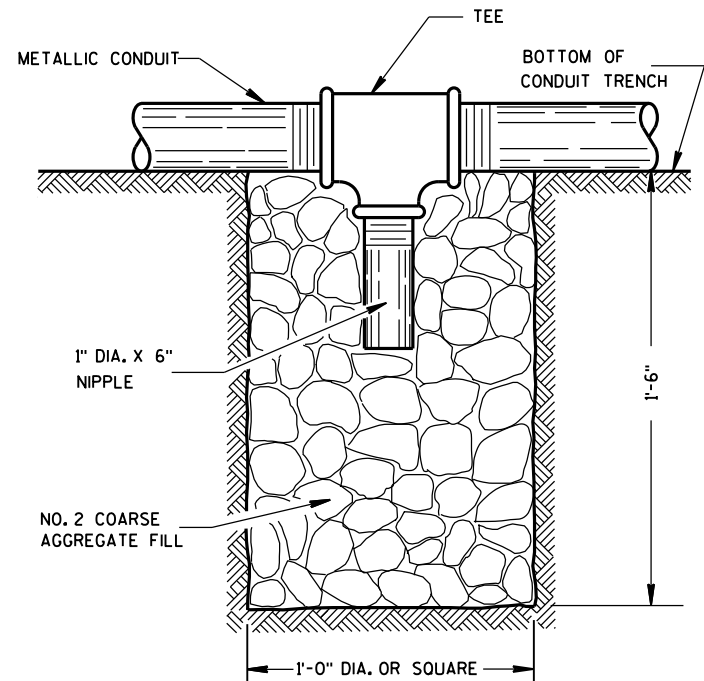
52

NEER



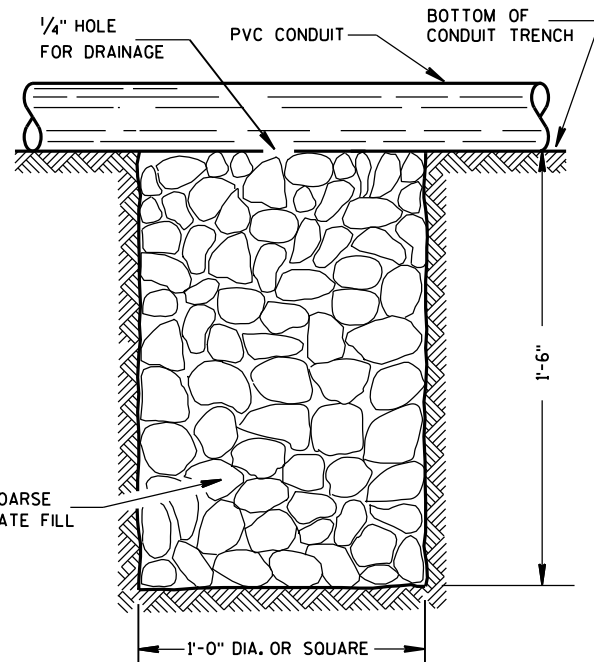


PLAN VIEW
ARROW MARK



NOTE: INSTALL AT LOCATIONS WHERE METALLIC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

DRAIN SUMP FOR METALLIC CONDUIT



NOTE: INSTALL AT LOCATIONS WHERE PVC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

DRAIN SUMP FOR PVC CONDUIT

GENERAL NOTES

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

METALLIC (STANDARD SPECIFICATION 652.2.2) OR NONMETALLIC (STANDARD SPECIFICATION 652.2.3) CONDUIT SHALL BE FURNISHED AND PLACED AS SHOWN.

DEPTH OF CONDUIT INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES MINIMUM AND 36 INCHES MAXIMUM.

DEPTH OF CONDUIT INSTALLED THAT IS NOT BELOW THE TRAVELED WAY SHALL BE 18 INCHES MINIMUM AND 36 INCHES MAXIMUM.

ANY EXCEPTION TO THE MAXIMUM DEPTH SHALL BE ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER.

THE TRENCH SHALL NOT BE BACKFILLED PRIOR TO INSPECTION OF THE CONDUIT.

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

ALL METALLIC CONDUIT IN WHICH WIRE OR CABLE IS TO BE INSTALLED SHALL BE BUSHED WITH APPROVED THREADED BUSHINGS BEFORE INSTALLATION OF THE WIRE OR CABLE.

ALL METALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT TO BE INSTALLED SHALL BE CAPPED WITH THREADED PROTECTIVE CAPS, AS APPROVED BY THE ENGINEER.

ALL NONMETALLIC CONDUIT SHALL BE CAPPED OR PLUGGED IMMEDIATELY AFTER INSTALLATION AND SHALL REMAIN CAPPED OR PLUGGED UNTIL WIRE/CABLES ARE INSTALLED.

NONMETALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BENDING OF PVC ELECTRICAL CONDUIT SHALL BE ACCOMPLISHED BY USING A BLANKET OR EMERSION TYPE TANK DESIGNED FOR THE PURPOSE OF BENDING PVC ELECTRICAL CONDUIT.

ALL CUT ENDS SHALL BE TRIMMED INSIDE AND OUTSIDE TO REMOVE ALL ROUGH EDGES ON NONMETALLIC CONDUIT. (SEE NEC 347.5)

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY U.L. LISTED ADAPTER FITTINGS SHALL BE USED.

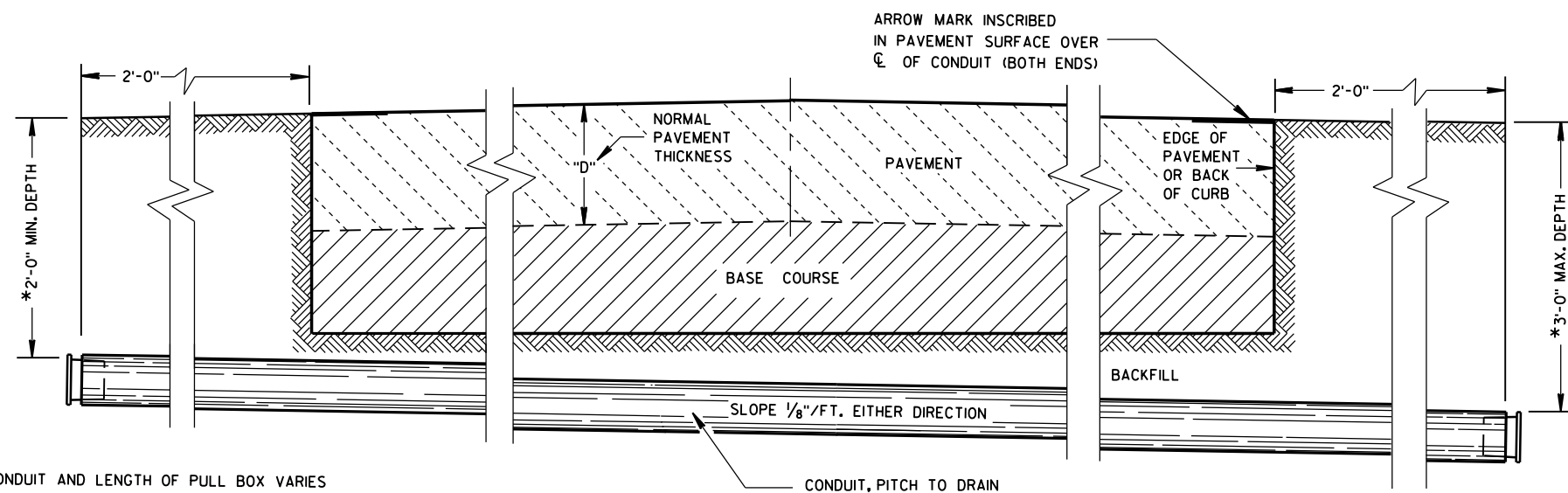
PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

ALL CONDUIT BEING FURNISHED AND INSTALLED SHALL HAVE THE U.L. LABEL FIRMLY ATTACHED.

CONDUIT RUNS SHALL BE THE SAME SIZE OF CONDUIT FROM ONE END TO THE OTHER (FROM PULL BOX TO PULL BOX-OR-JUNCTION BOX TO JUNCTION BOX-OR-BASE TO BASE, ETC.).

TRACER WIRE SHALL BE INSTALLED AS STATED IN THE STANDARD SPECIFICATION, ITEM 652.3.1.1.

ALL CONDUIT RUNS SHALL BE STRAIGHT (WITHOUT BENDS) FROM PULL BOX TO PULL BOX, PULL BOX TO BASE AND BASE TO BASE AS SHOWN ON THE PLANS.



*DEPTH OF CONDUIT AND LENGTH OF PULL BOX VARIES WITH HEIGHT OF CURB USED. ALSO SEE PULL BOX S.D.D. 9B4

SIDE ELEVATION
DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

CONDUIT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

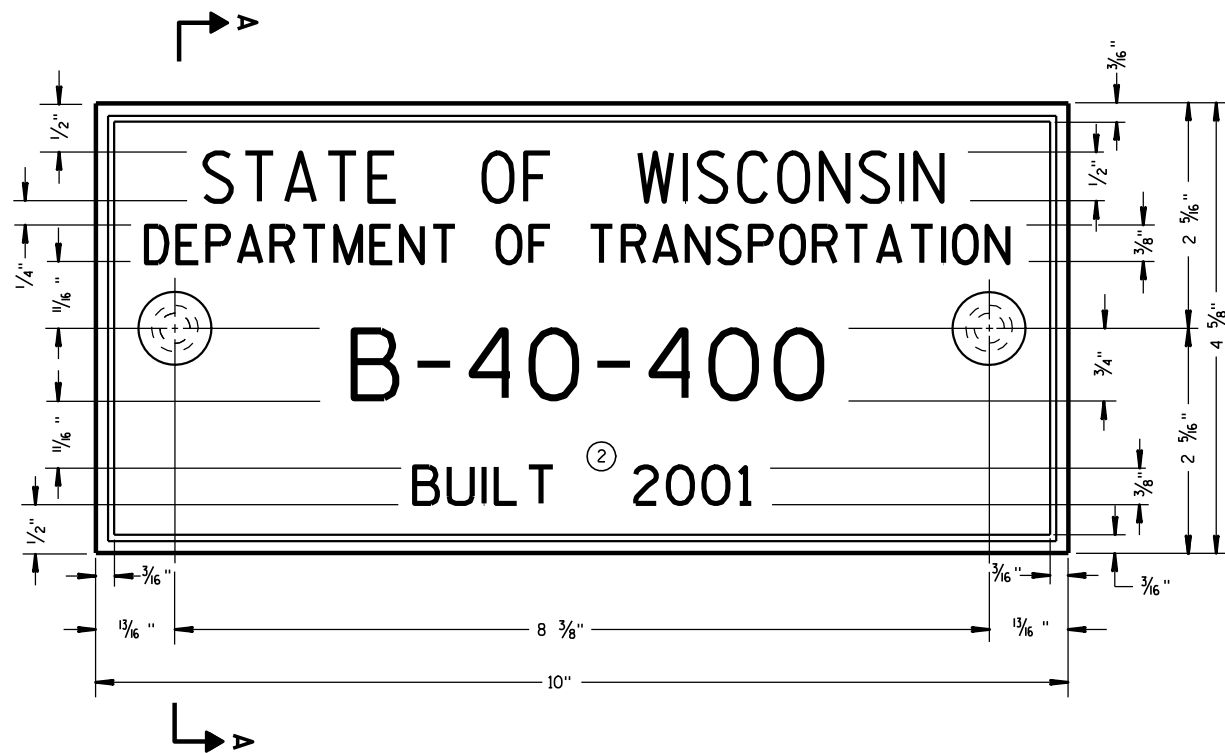
June, 2015

DATE

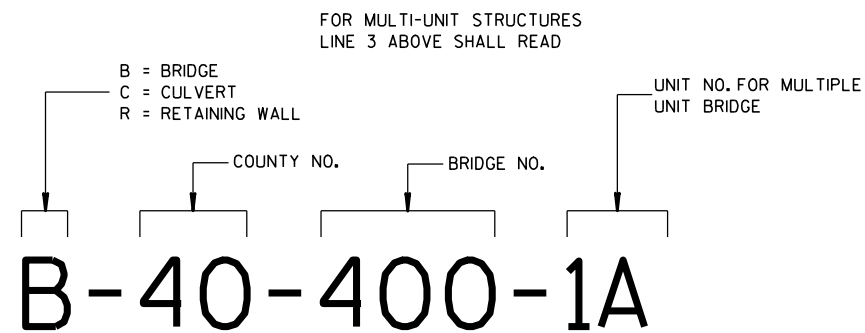
FHWA

/S/ Ahmet Demirbilek

STATE ELECTRICAL 54



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



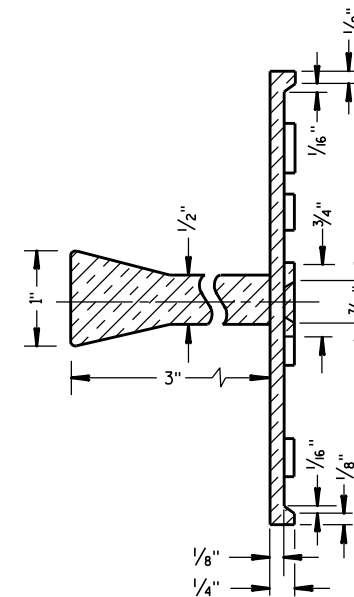
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

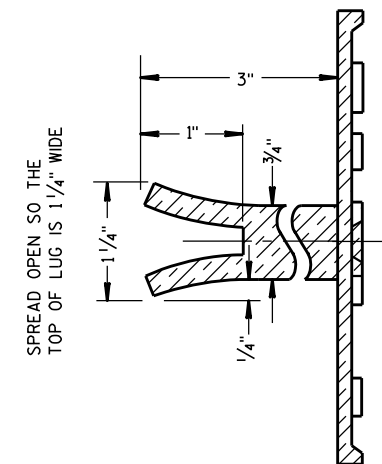
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

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

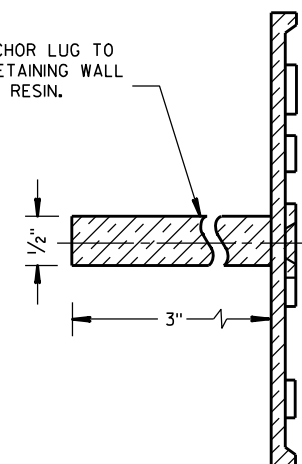


SECTION A-A



ALTERNATE LUG

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



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE
(STRUCTURES)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE 3/26/10
CHIEF STRUCTURAL DEVELOPER
/S/ Scot Beck
55
JEER

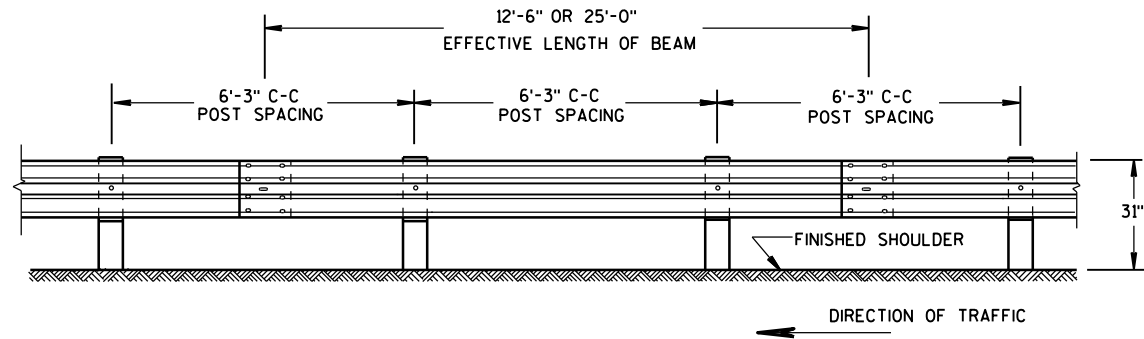
6

- S.D.D. 14 B 42-3a**



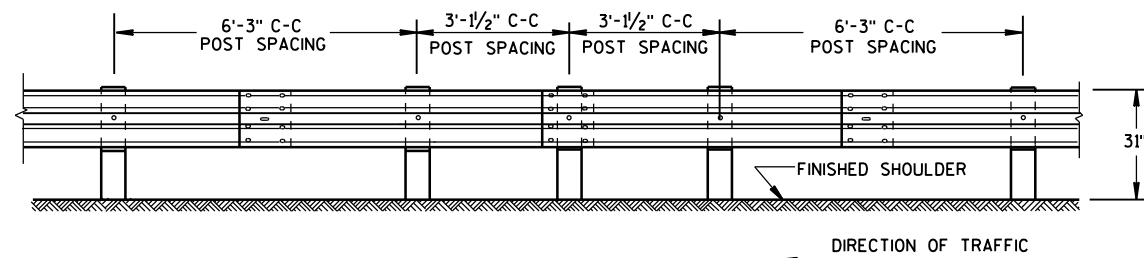
S.D.D. 14 B 42-3a





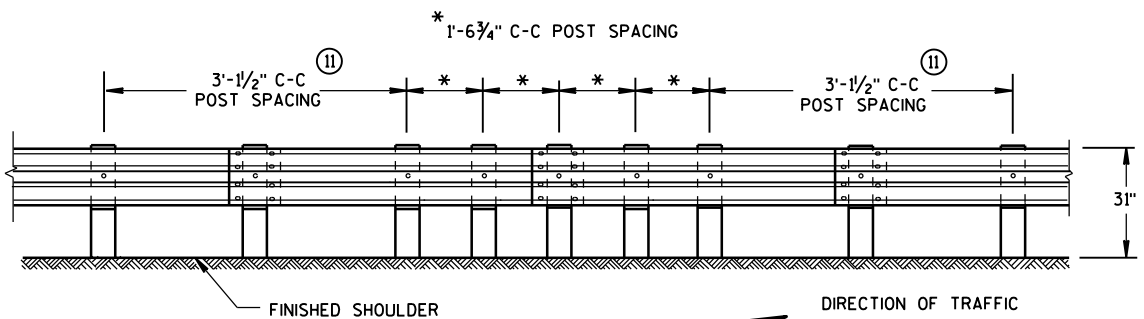
FRONT VIEW

POST SPACING STANDARD INSTALLATION



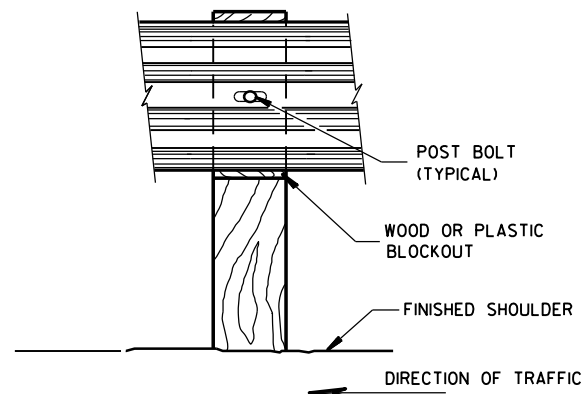
FRONT VIEW

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

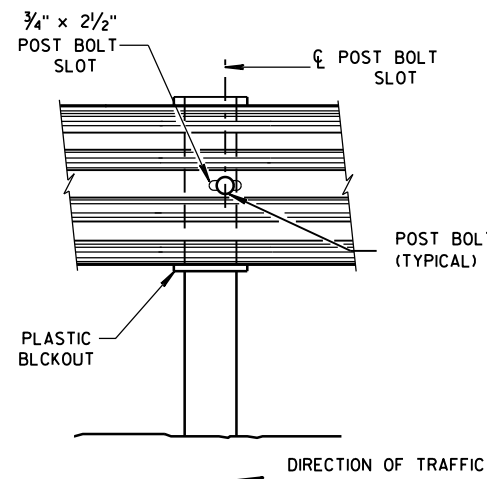


FRONT VIEW

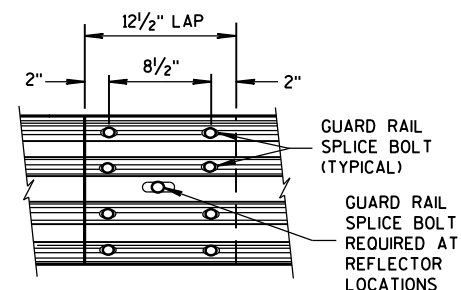
QUARTER POST SPACING (QS)



FRONT VIEW AT WOOD POST

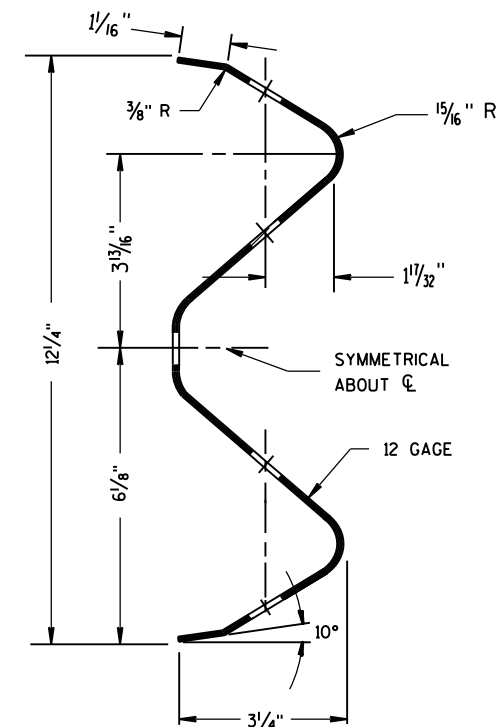


FRONT VIEW AT STEEL POST

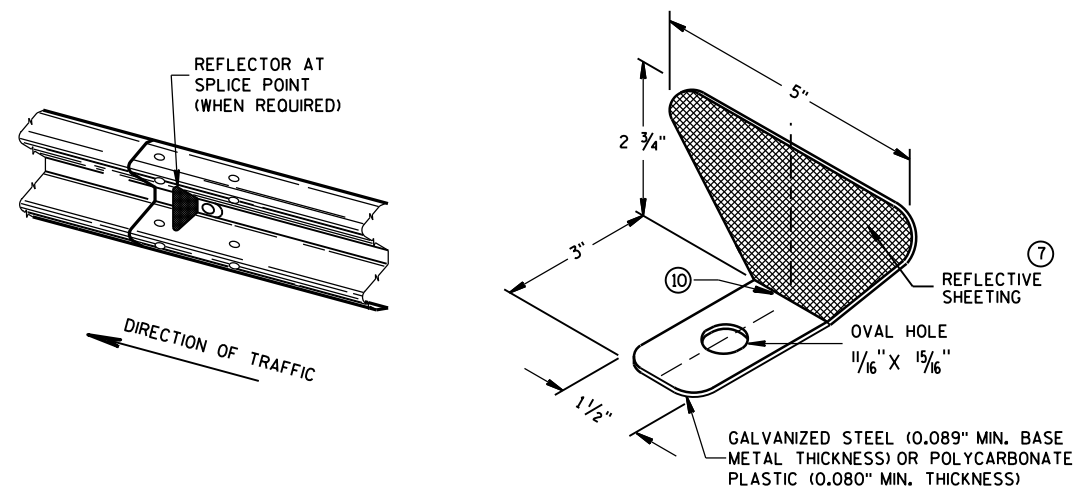


FRONT VIEW

MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

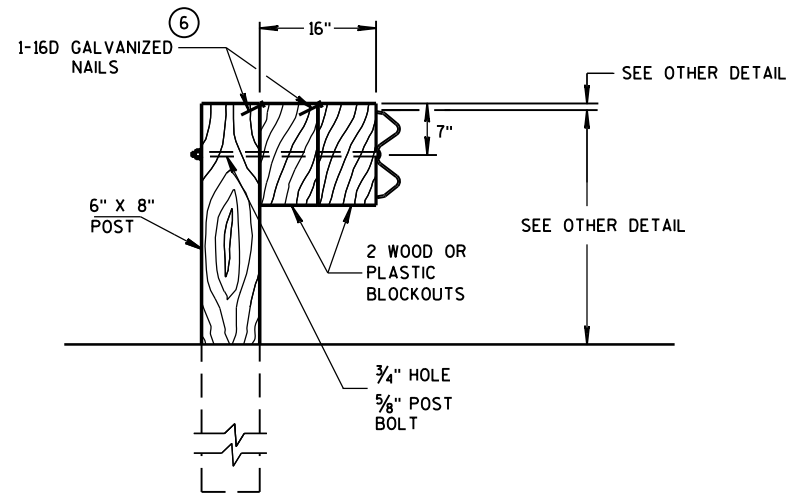
GENERAL NOTES

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

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

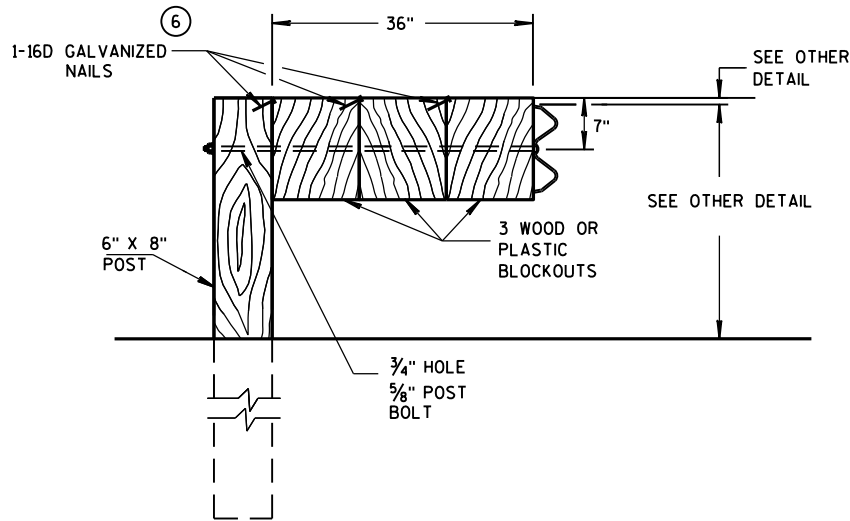
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR 16" BLOCKOUT DEPTH

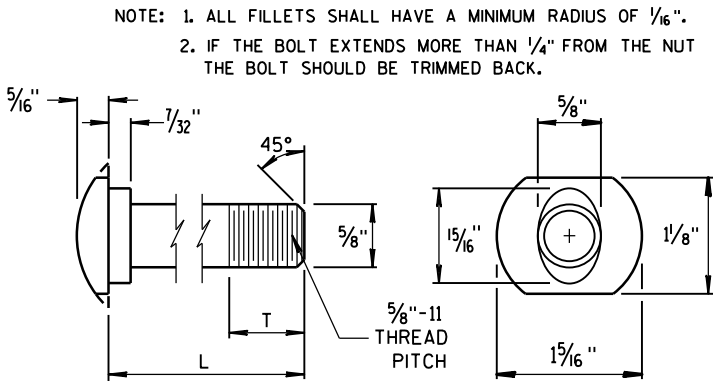
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



DETAIL FOR 36" BLOCKOUT DEPTH

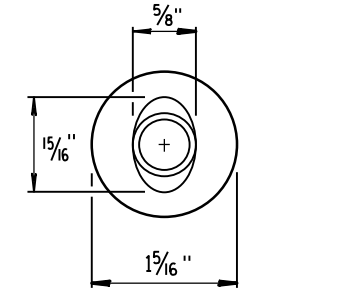
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

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

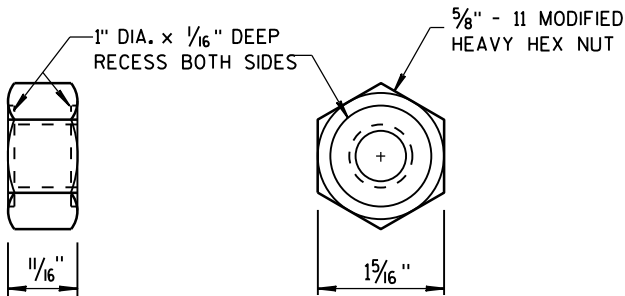


POST BOLT TABLE

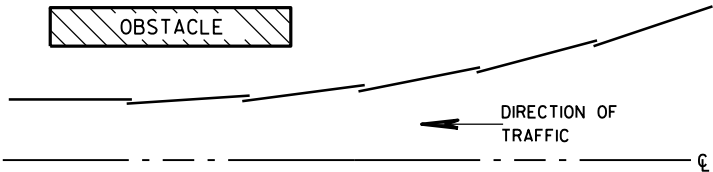
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



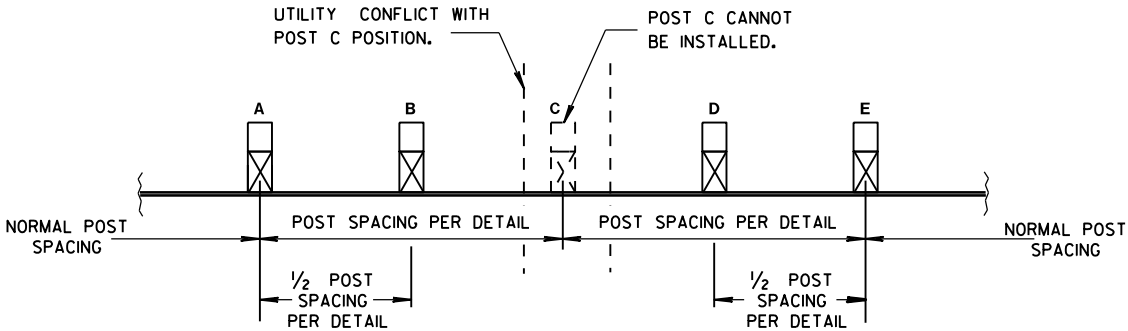
ALTERNATE BOLT HEAD



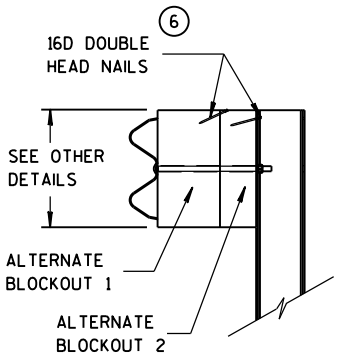
POST BOLT AND RECESS NUT



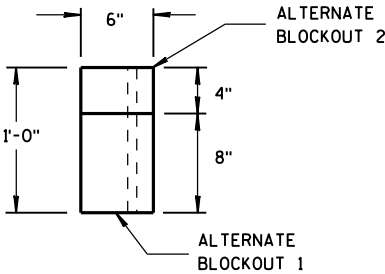
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS (58) INT
FHWA ENGINEER

GENERAL NOTES

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

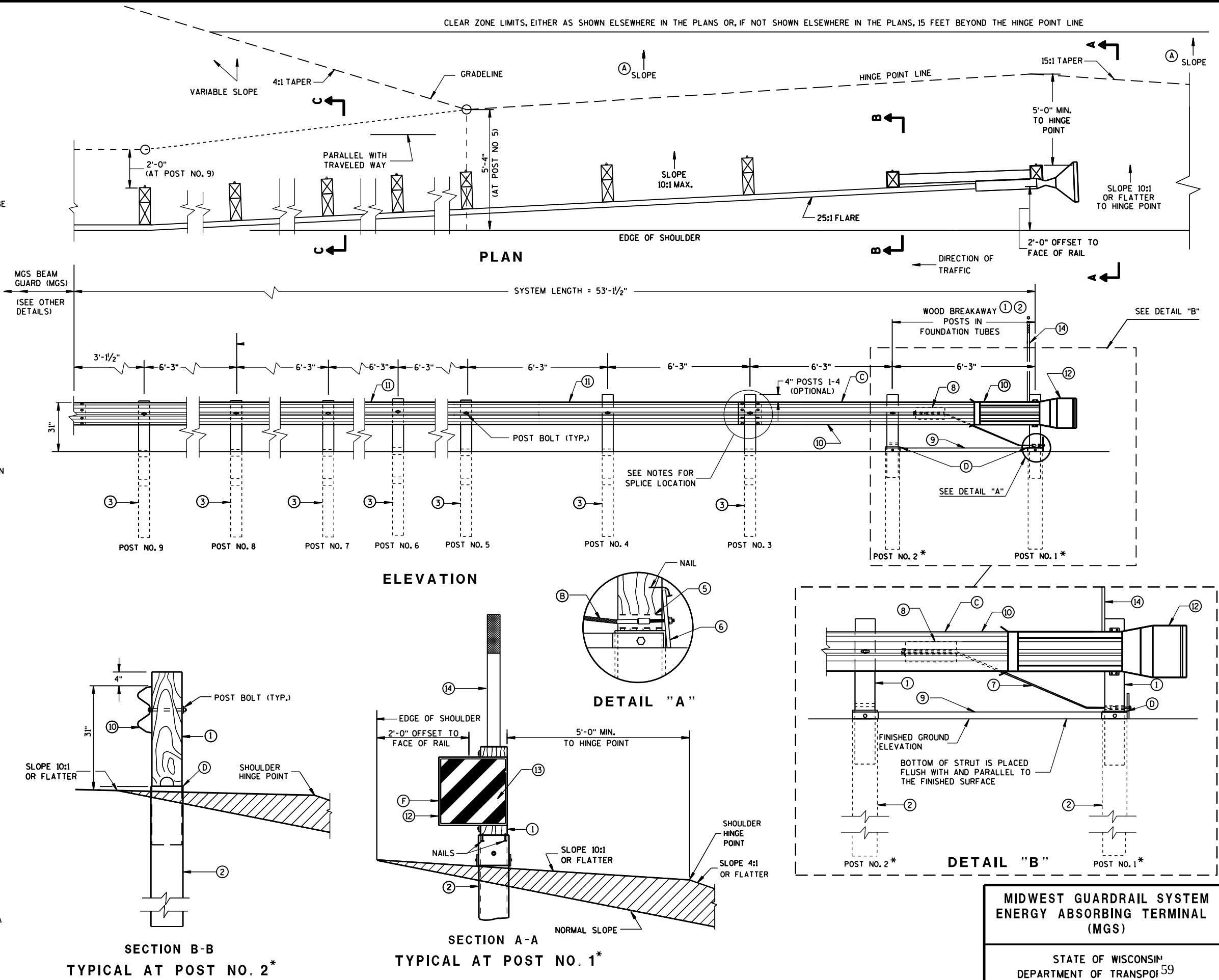
SEE SDD 14B42 FOR MORE INFORMATION.

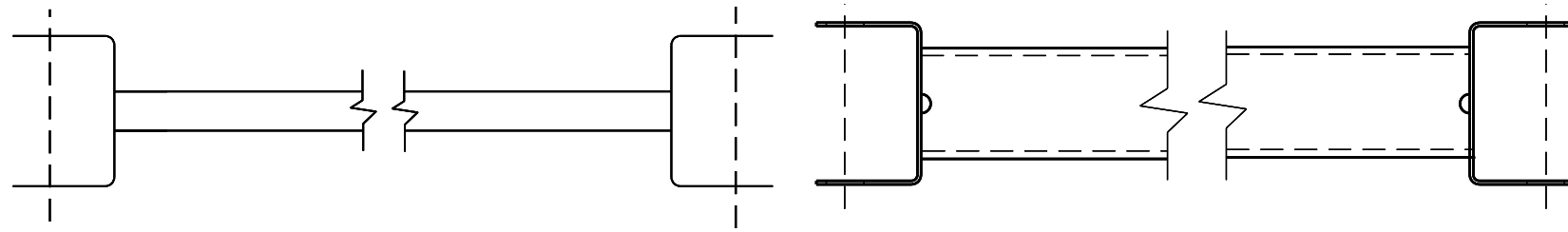
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

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

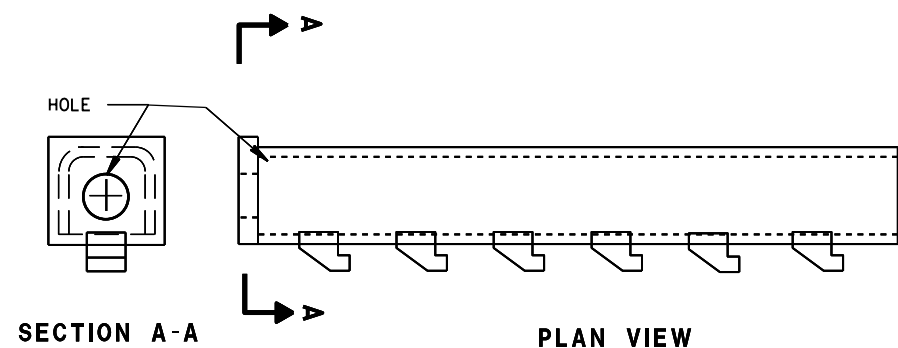
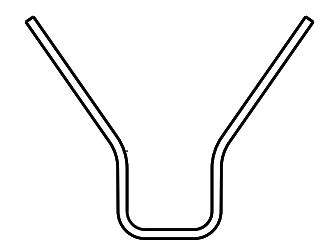
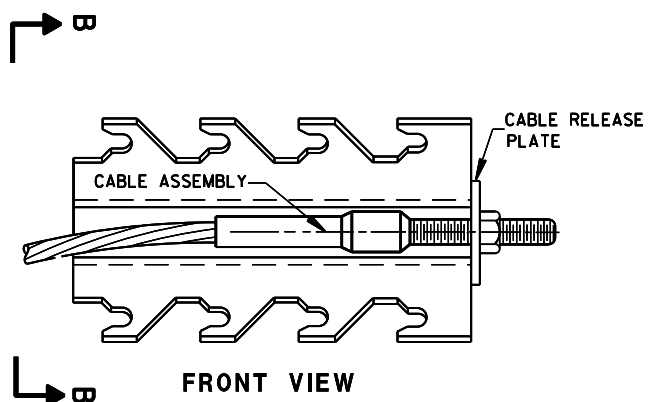
W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

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





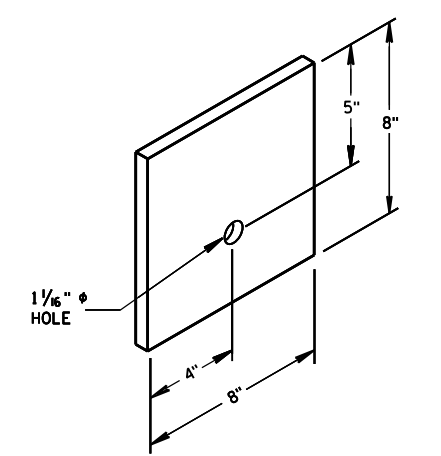
9 H
GENERIC GROUND STRUT



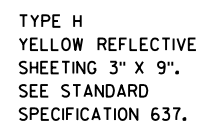
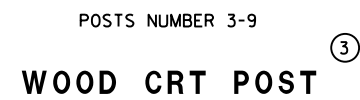
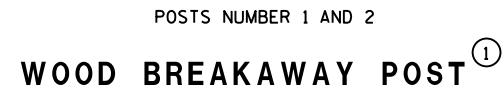
8 H
GENERIC ANCHOR CABLE BOX

BILL OF MATERIALS

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

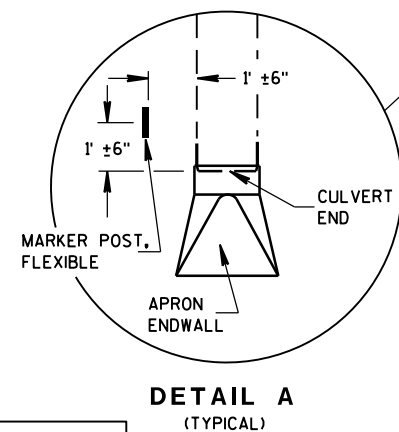
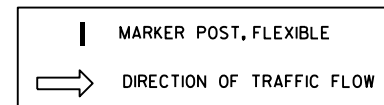
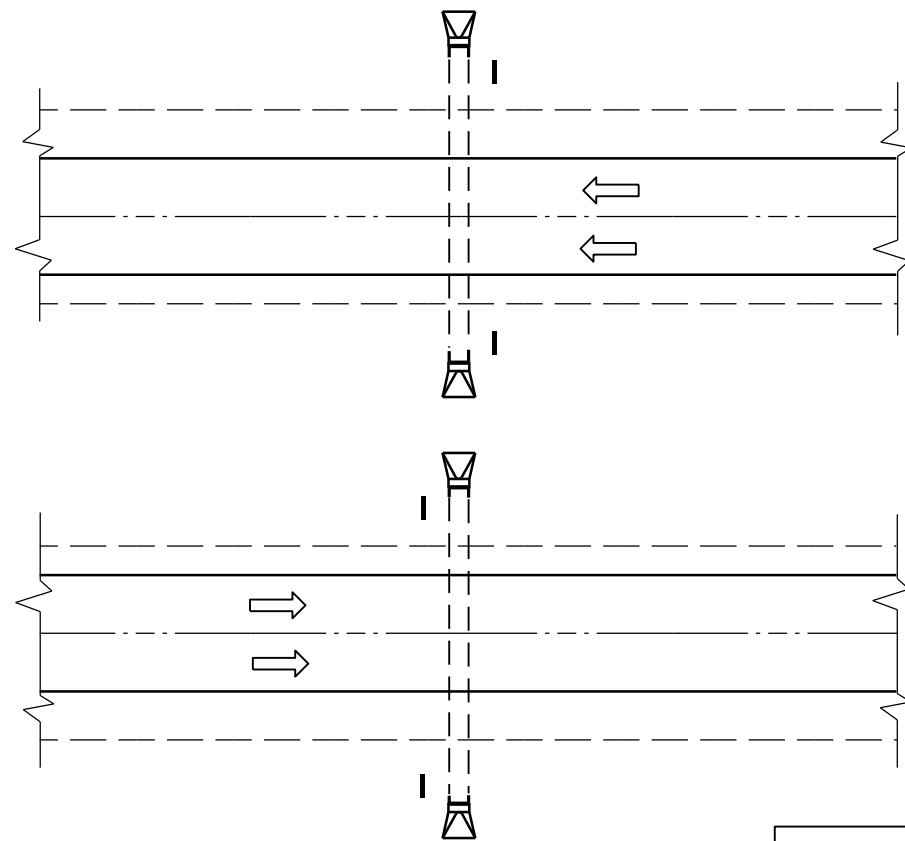


⑥
BEARING PLATE



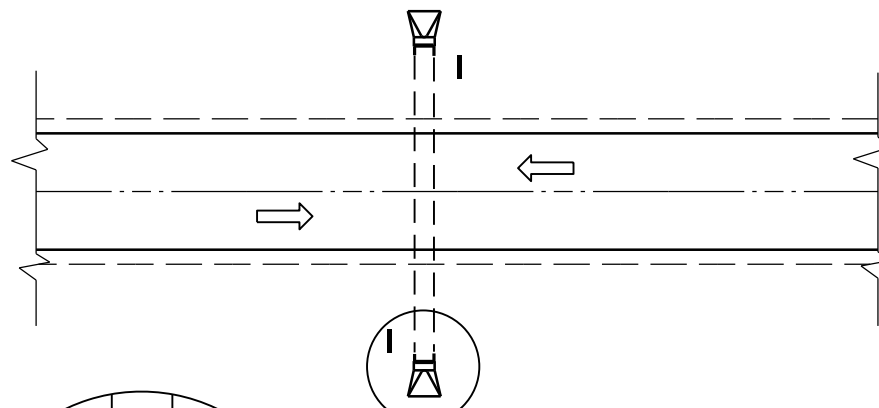
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED <u>June 24</u> DATE	<u>/s/ Jerry H. Zogg</u> ROADWAY STANDARDS	<u>61</u> ENGINEER	ENT

PLAN VIEW
DIVIDED HIGHWAY

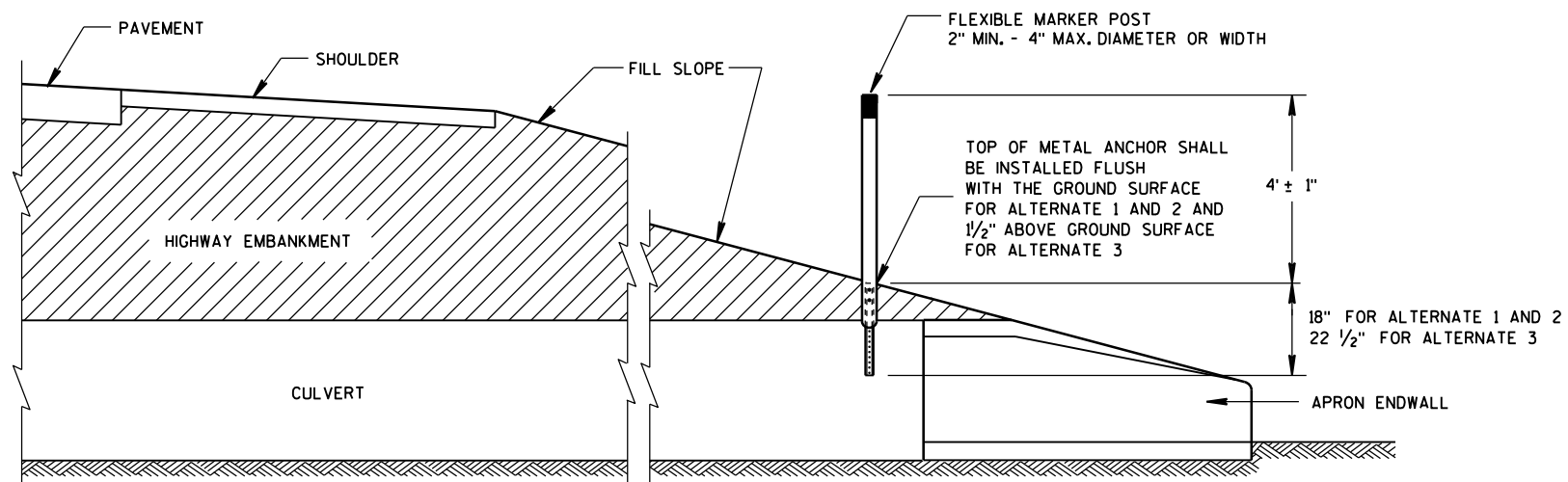


DETAIL A
(TYPICAL)

PLAN VIEW
UNDIVIDED HIGHWAY



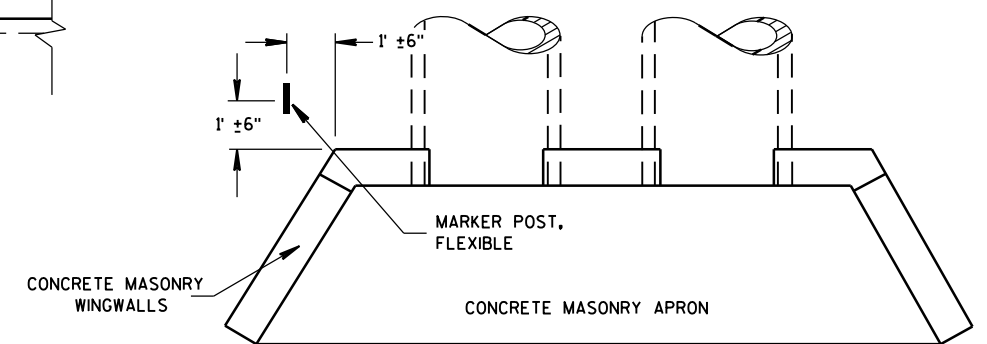
FLEXIBLE MARKER POST LOCATION



CROSS SECTION
FLEXIBLE MARKER POST

GENERAL NOTES

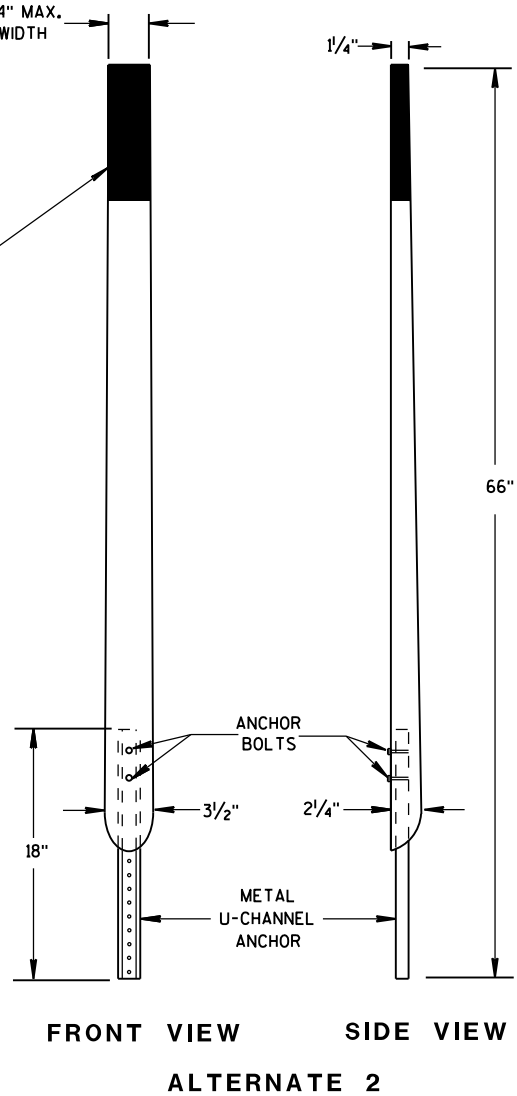
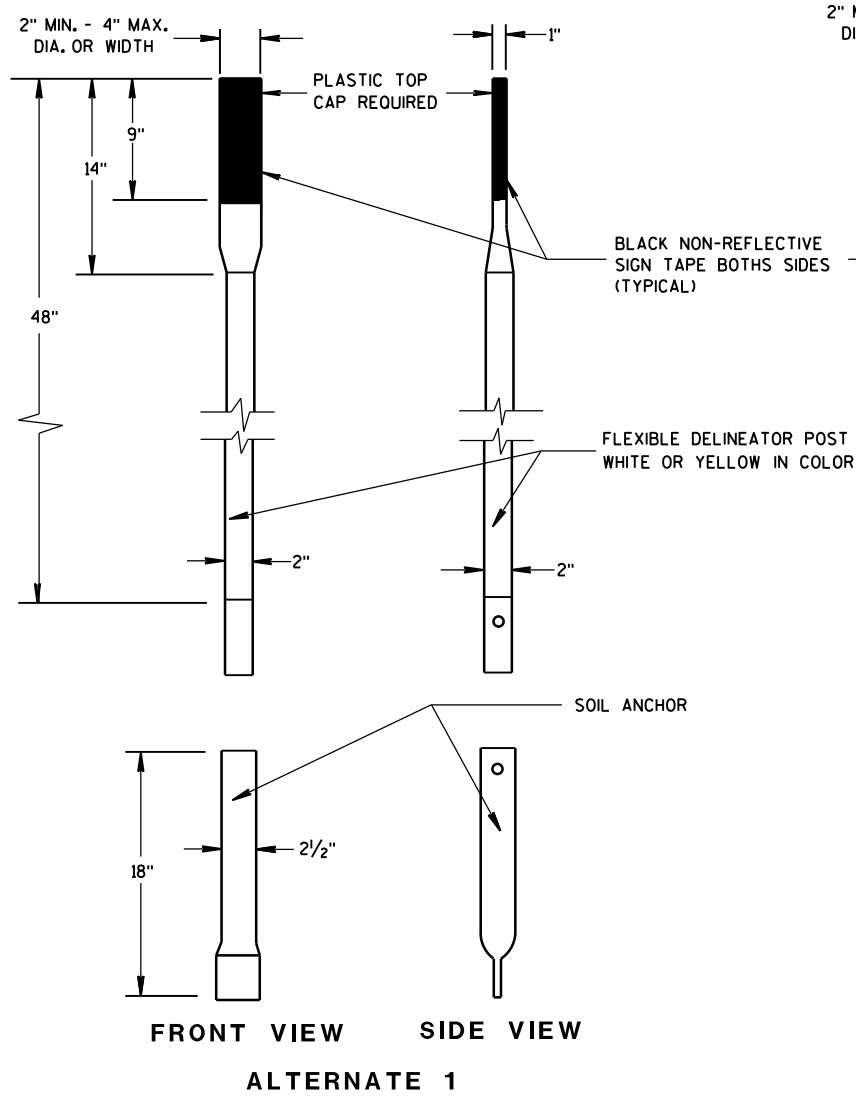
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



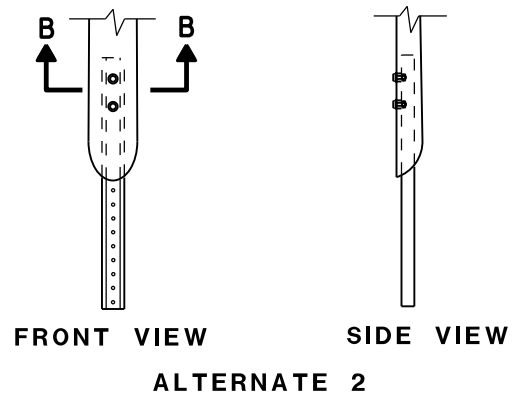
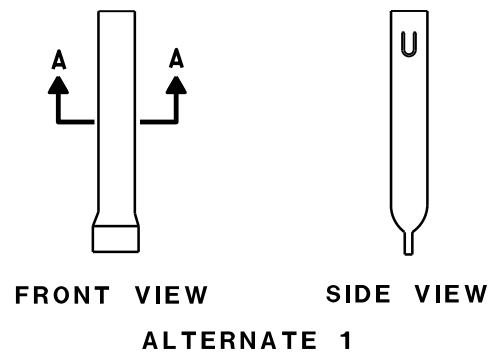
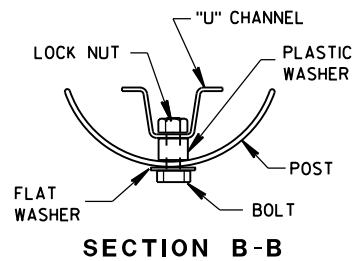
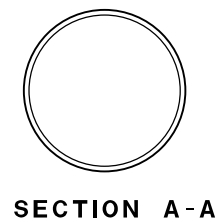
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST
FOR CULVERT END

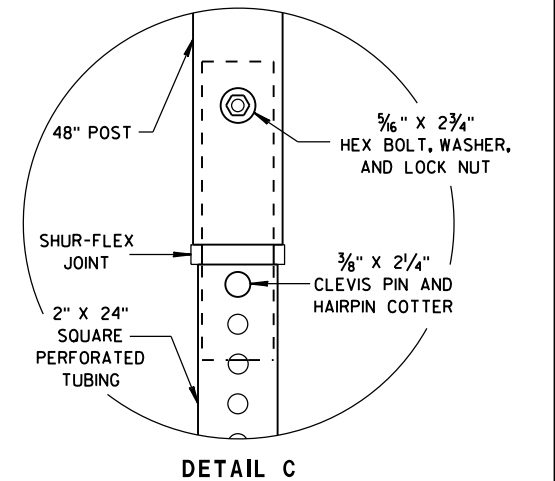
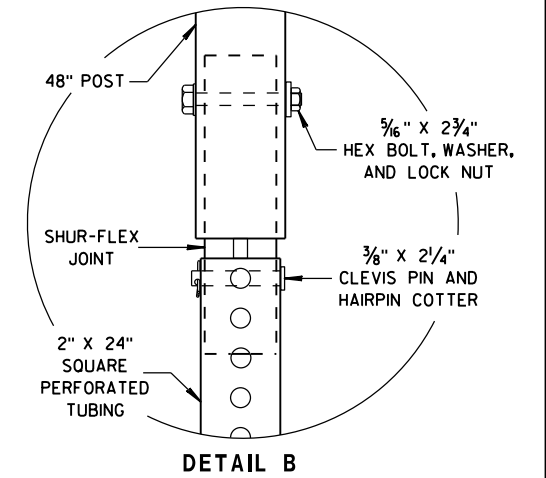
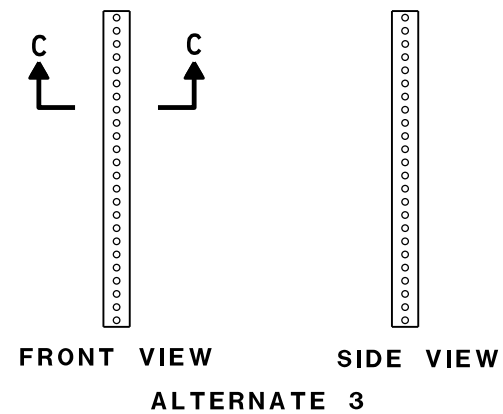
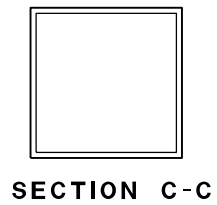
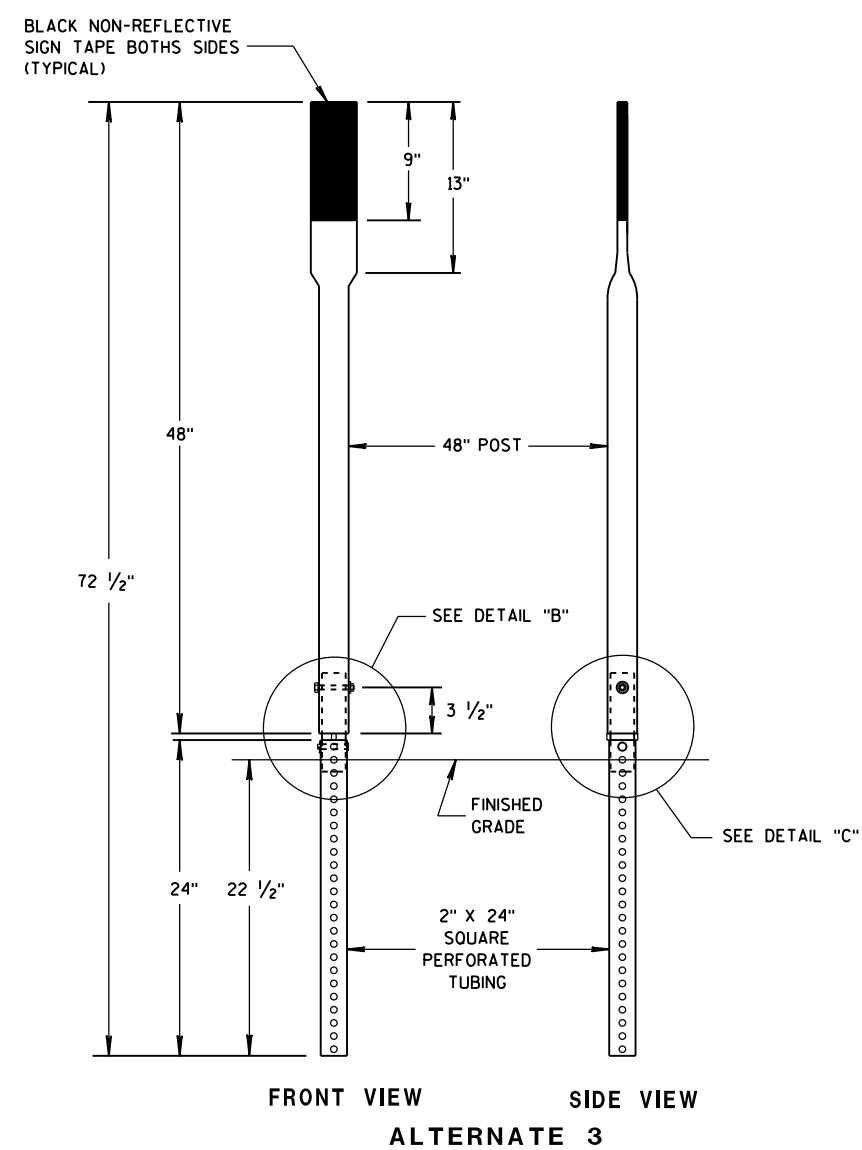
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



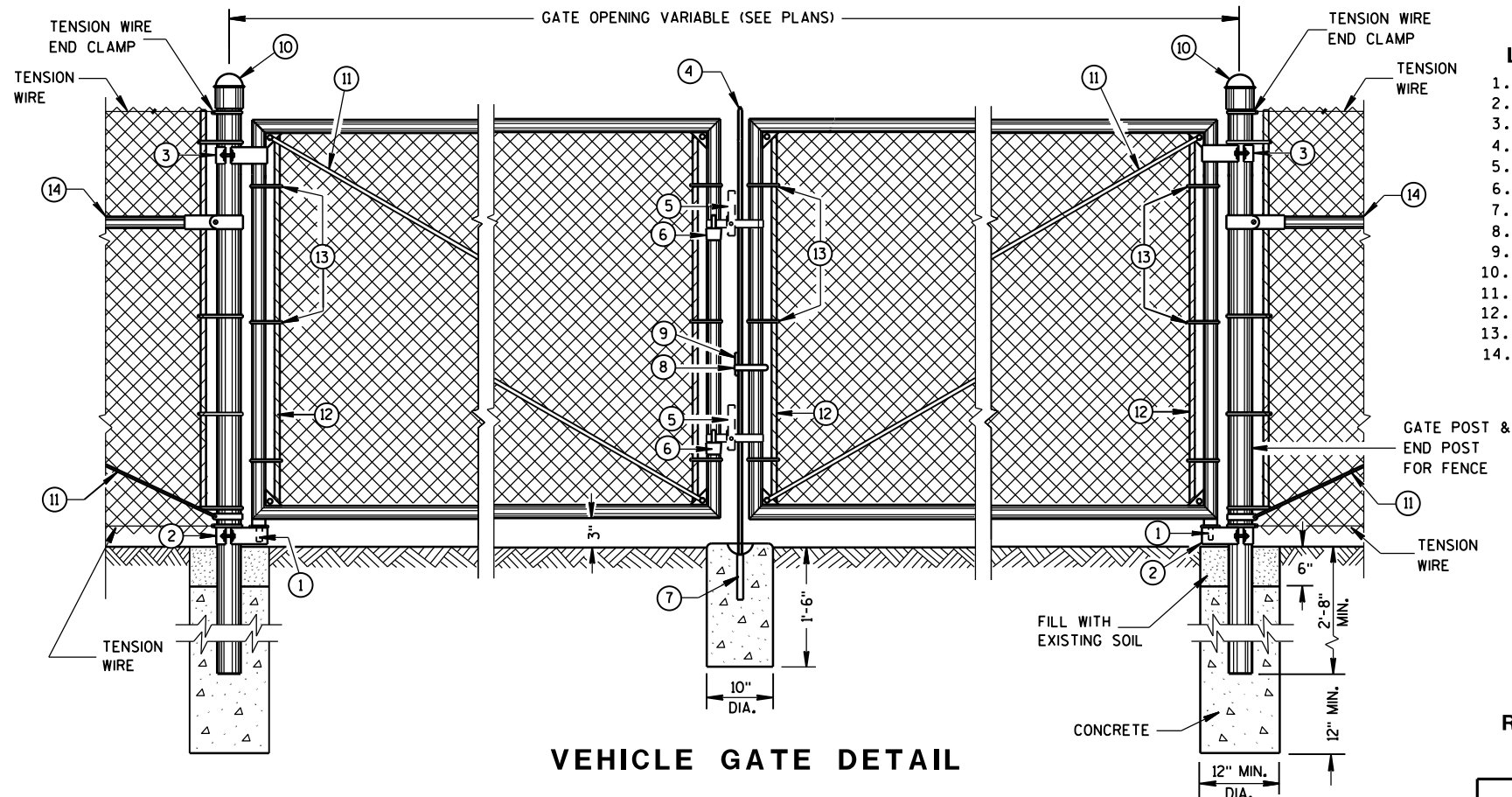
FLEXIBLE MARKER POSTS



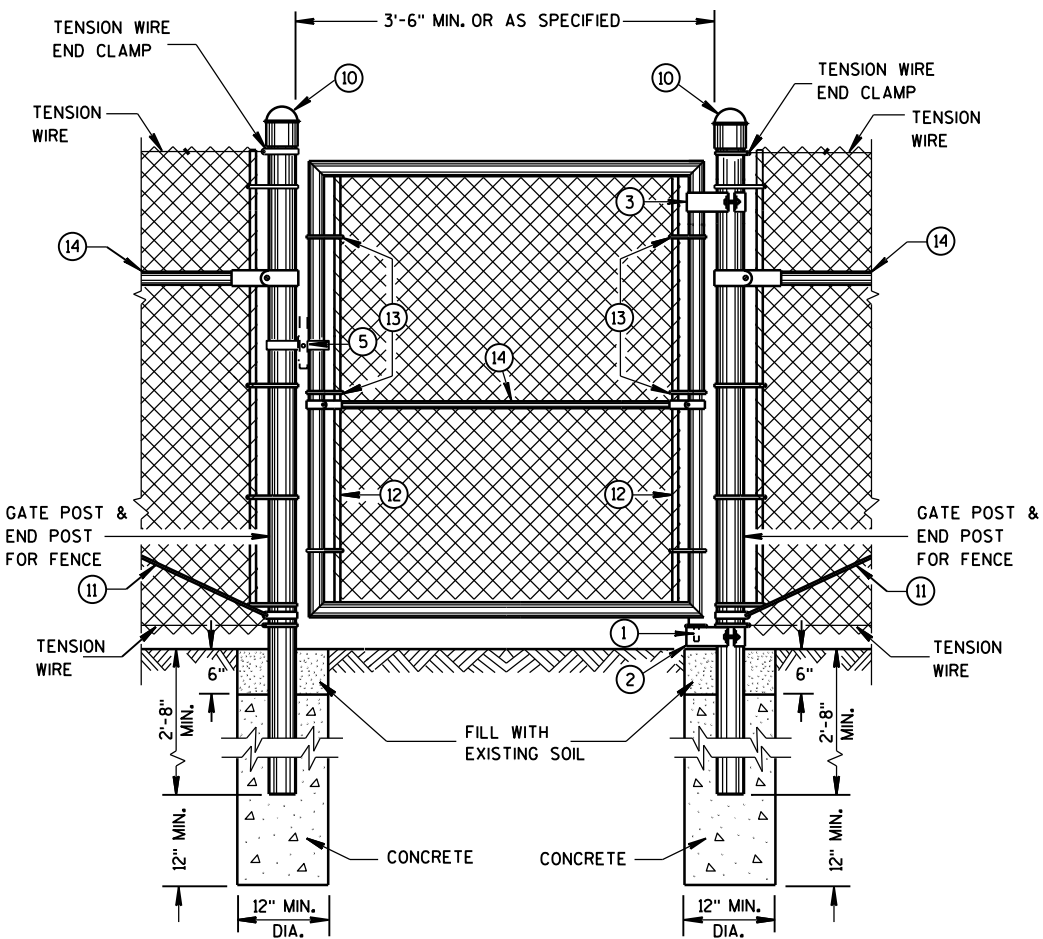
FLEXIBLE MARKER POST ANCHORS



FLEXIBLE MARKER POST FOR CULVERT END		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED 10/1/2012 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER 63	IGN
FHWA		



VEHICLE GATE DETAIL



PEDESTRIAN GATE DETAIL

REQUIRED FENCE POST SIZES

USE	FABRIC HEIGHTS FEET	POST TYPE
TERMINAL POSTS **	LESS THAN OR EQUAL TO 6 FT.	SP3
	GREATER THAN OR EQUAL TO 6 FT.	SP4
LINE POSTS	LESS THAN OR EQUAL TO 6 FT.	SP2
	LESS THAN OR EQUAL TO 8 FT.	SP3
	GREATER THAN OR EQUAL TO 8 FT.	SP4
	LESS THAN OR EQUAL TO 8 FT.	FS2 OR FS2+
	GREATER THAN OR EQUAL TO 8 FT.	FS3

BRACE RAIL TYPES

USE	TYPE
BRACE RAIL	SP1 OR FS1

** INCLUDES END, CORNER, ANGLE, INTERSECTION AND INTERMEDIATE BRACED POSTS

LEGEND

1. STRAIGHT PLUG
 2. BOTTOM HINGE
 3. TOP HINGE
 4. PLUNGER ROD
 5. FULCRUM LATCH
 6. FORK CATCH *
 7. PLUNGER ROD CATCH
 8. LOCK KEEPER GUIDE
 9. LOCK KEEPER
 10. DOME TOPS
 11. TRUSS RODS
 12. TENSION BAR
 13. TENSION BANDS
 14. BRACE RAIL
- *NOT REQUIRED ON SINGLE SWING PEDESTRIAN GATE

GENERAL NOTES

FENCE POSTS INSTALLED ON CONCRETE WALLS SHALL BE ANCHORED INTO EMBEDDED METAL SLEEVES OR CORED HOLE BY FILLING THE ANNULAR SPACE WITH PEA GRAVEL FOLLOWED BY AN EPOXY RESIN ADHESIVE. THE EPOXY RESIN ADHESIVE SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 235, CLASS A, B OR C.

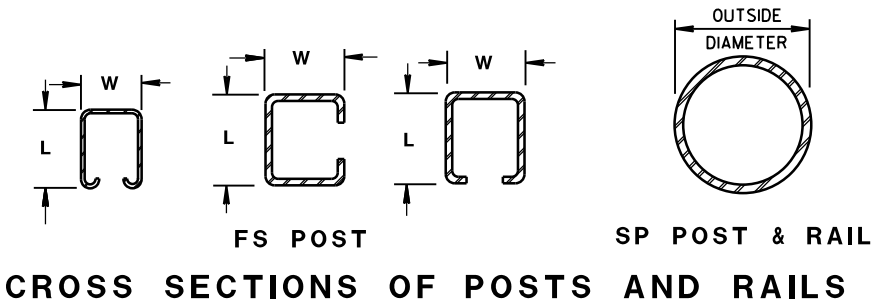
USE FENCE FABRIC KNUCKLED AT BOTH SELVAGES.

FOR LEAF GATES GREATER THAN 8 FEET WIDE, INSTALL INTERIOR VERTICAL BRACE RAIL AT 8 FOOT INTERVALS.

FOR FABRIC HEIGHTS GREATER THAN 8 FEET, INSTALL INTERIOR HORIZONTAL BRACE RAILS TO LEAF GATE.

MAXIMUM SAG FOR OUTER GATE MEMBER SHALL NOT EXCEED THE GREATER OF 1% OF THE LEAF GATE WIDTH OR 2 INCHES.

USE TYPE 2, CLASS 3, MARCELLED/CRIMPED, TENSION WIRE PER ASTM A 817.



ROLLED-FORMED STEEL FENCE POST
(2.0 OZ./SQ. FT. COATING)

POST TYPE	LENGTH (L) INCH	WIDTH (W) INCH	WEIGHT LBS/FT
FS1	1.625	1.25	1.35
FS2+	1.875	1.625	1.850
FS2	1.875	1.625	2.400
FS3	2.250	1.700	2.780

ROUND STEEL FENCE POST
(1.8 OZ./SQ. FT. COATING)

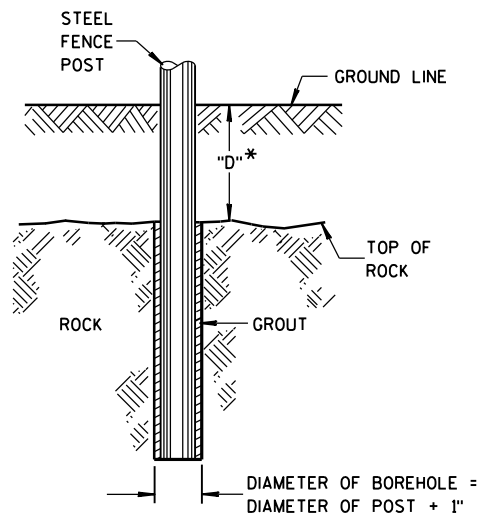
POST TYPE	OUTSIDE DIMENSION INCH	WALL THICKNESS INCH	WEIGHT LBS/FT
SP1	1.660	0.140	2.270
SP2	1.900	0.145	2.720
SP3	2.375	0.154	3.650
SP4	2.875	0.203	5.800
SP5	4.000	0.226	9.120
SP6	6.625	0.280	18.990
SP7	8.625	0.322	28.580

REQUIRED POST SIZE FOR GATES

USE	LEAF WIDTHS FEET	POST TYPE
GATES	LESS THAN OR EQUAL TO 6 FT.	SP4
	LESS THAN OR EQUAL TO 13 FT.	SP5
	LESS THAN OR EQUAL TO 18 FT.	SP6
	LESS THAN OR EQUAL TO 23 FT.	SP7

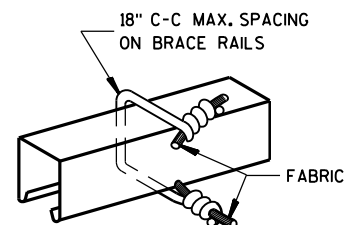
FENCE CHAIN LINK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



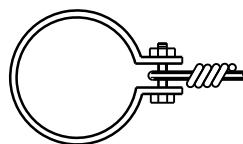
* IF "D" IS LESS THAN 2'-6",
DRILL ROCK AND INSTALL GROUT

ROCK INSTALLATION OF LINE POST

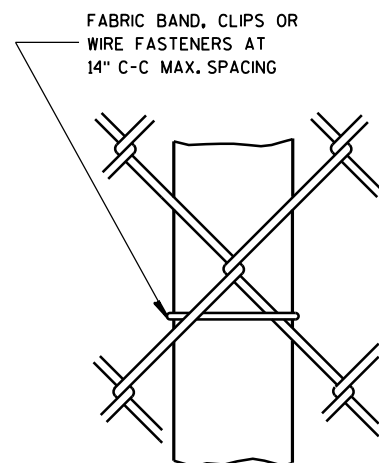


BRACE RAIL FABRIC FASTENER

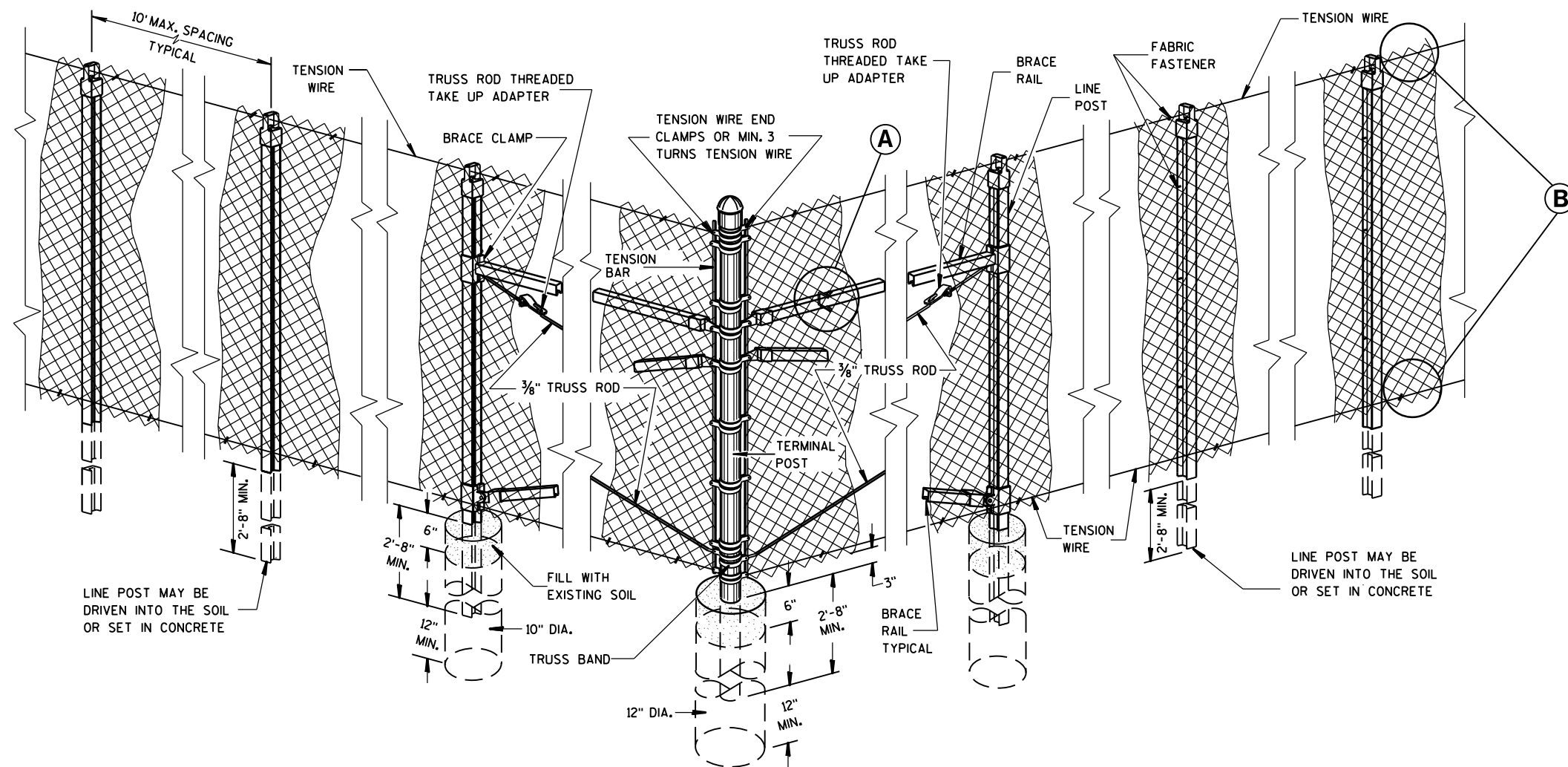
(A)



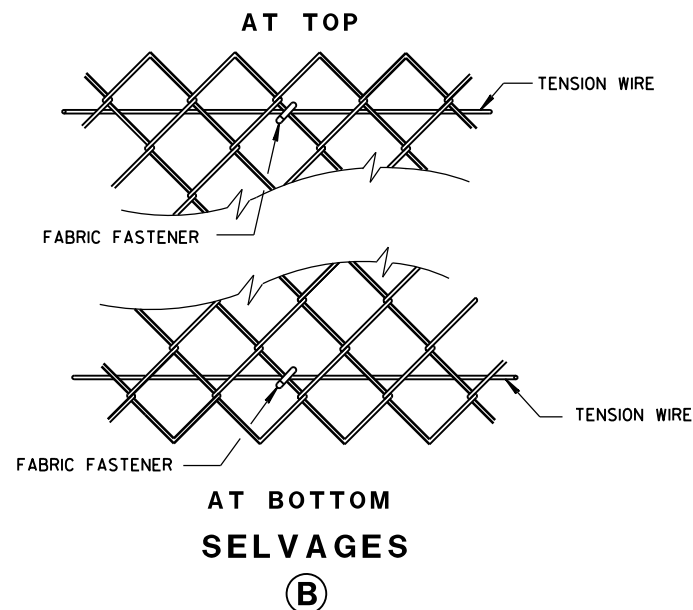
TENSION WIRE END CLAMP



LINE POST FABRIC FASTENER



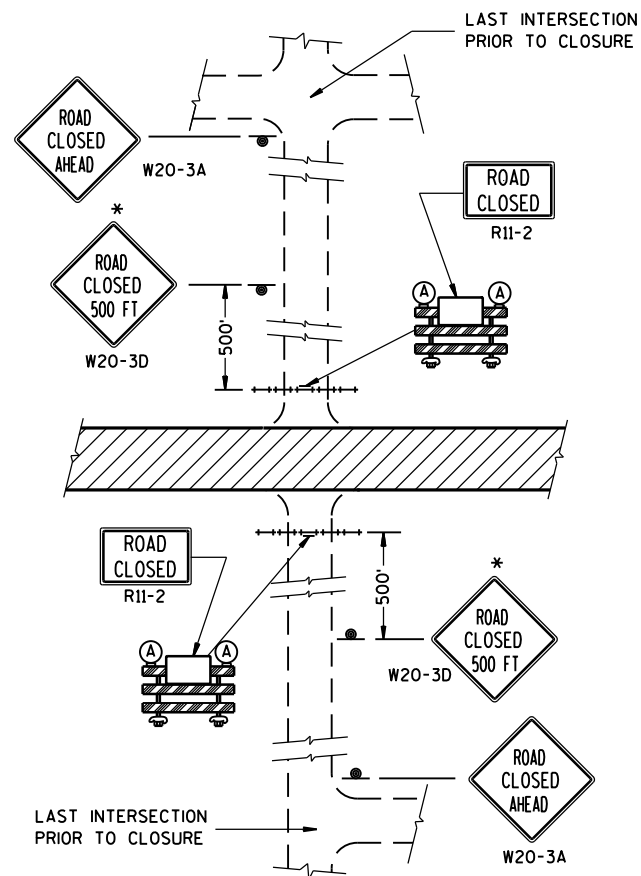
END, CORNER, ANGLE INTERSECTION & INTERMEDIATE BRACED POSTS



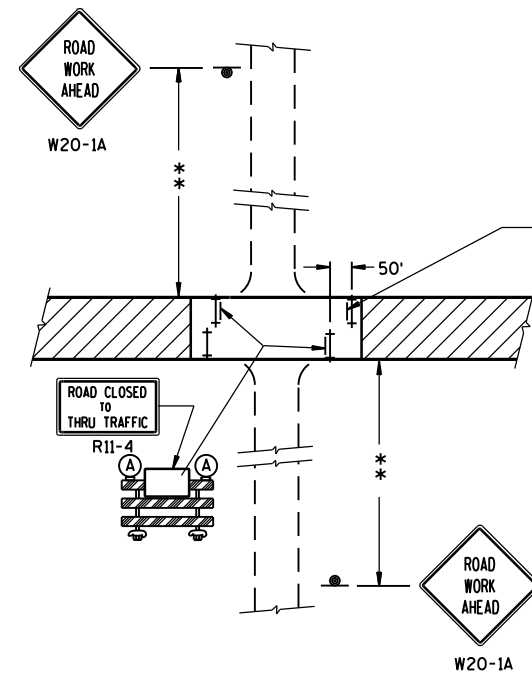
FENCE CHAIN LINK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

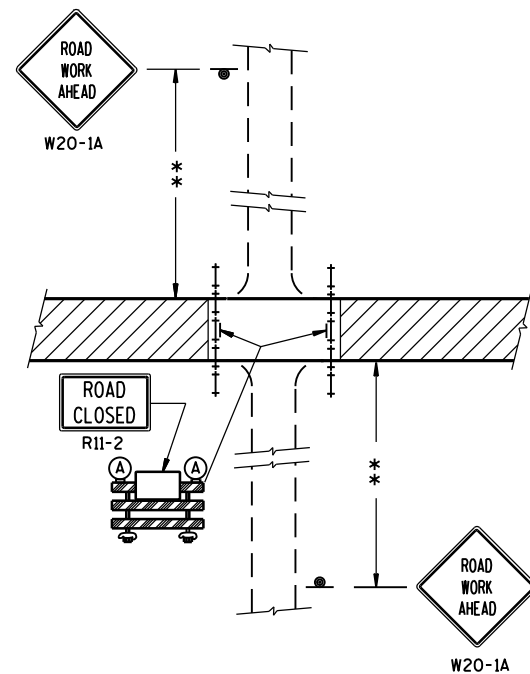
APPROVED
FEB. 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS 65 ENT
FHWA ENGINEER



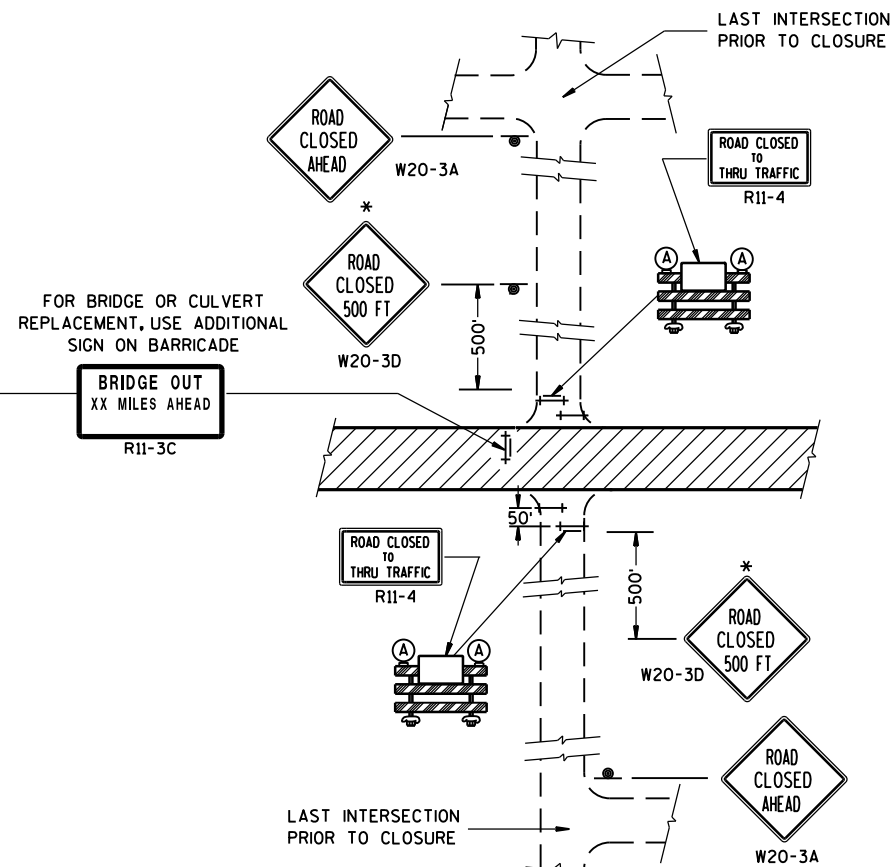
DETAIL 1
(NO ACCESS TO PROJECT)



DETAIL 3
(PUBLIC CROSS-TRAFFIC MAINTAINED. CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS).



DETAIL 2
(PUBLIC CROSS-TRAFFIC MAINTAINED. NO ACCESS TO PROJECT).



DETAIL 4
(CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS TO PROJECT)

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.

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS RE-ESTABLISHED.

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 AND R11-4 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

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

R11-2 SHALL BE 48" X 30".

R11-4 AND R11-3 SHALL BE 60" X 30".

*OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FT. OR LESS FROM THE WORK ZONE.

**500' MAX. OR AT LAST INTERSECTION WHICHEVER IS CLOSER.

LEGEND

- ⊙ SIGN ON PERMANENT SUPPORT
- ⊥ TYPE III BARRICADE
- ⊥ TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- ▨ WORK AREA

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2015

DATE

FHWA

/S/ Peter Amakobe Atepe

STATEWIDE WORK ZONE SAFETY ENGINEER

66

GENERAL NOTES

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

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

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

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.

W20-1A AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.

CHANNELIZING DEVICES PLACED ADJACENT TO THE WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

TABLE A

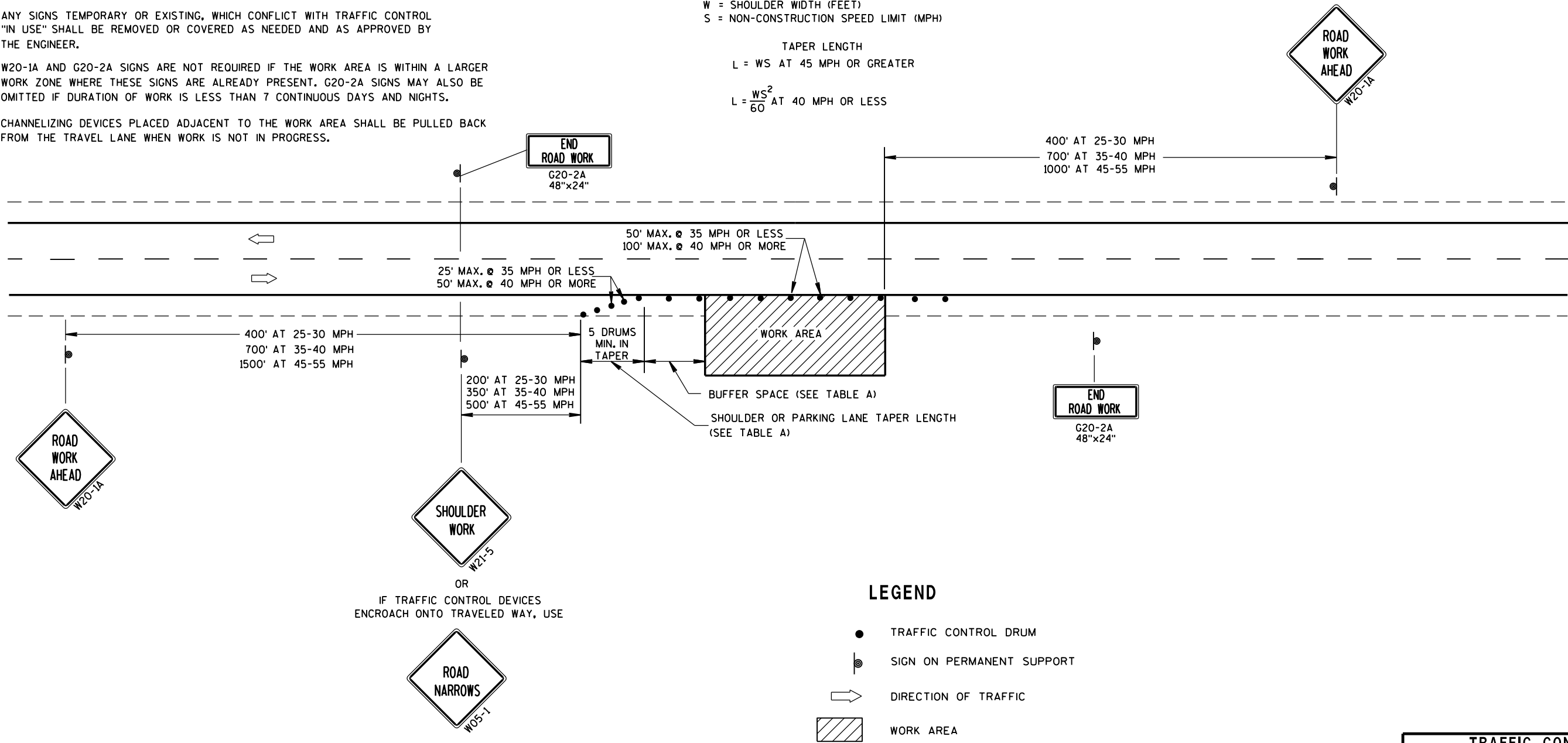
SHOULDER TAPER LENGTH (FEET)					BUFFER SPACE (FEET)
S \ W	4	6	8	10	
30	20	30	40	50	200
35	30	45	55	70	250
40	40	55	75	90	305
45	60	90	120	150	360
50	70	100	135	170	425
55	75	110	150	185	495

W = SHOULDER WIDTH (FEET)
S = NON-CONSTRUCTION SPEED LIMIT (MPH)

TAPER LENGTH
L = WS AT 45 MPH OR GREATER

$L = \frac{WS^2}{60}$ AT 40 MPH OR LESS

SHOULDER TAPER LENGTH = $\frac{1}{3}L$



TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED July 14, 2015 DATE	/S/ Peter Amakobe Atepe STATEWIDE WORK ZONE SAFETY ENGINEER	IC
FHWA		

LEGEND

- SIGN ON PERMANENT SUPPORT
- REMOVING PAVEMENT MARKING
- TYPE III BARRICADE WITH ATTACHED SIGN
- CONCRETE BARRIER TEMPORARY PRECAST
- FLAGS, 16" x 16" MIN., (ORANGE)
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- ASPHALTIC PAVEMENT WIDENING
- DIRECTION OF TRAFFIC

GENERAL NOTES

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

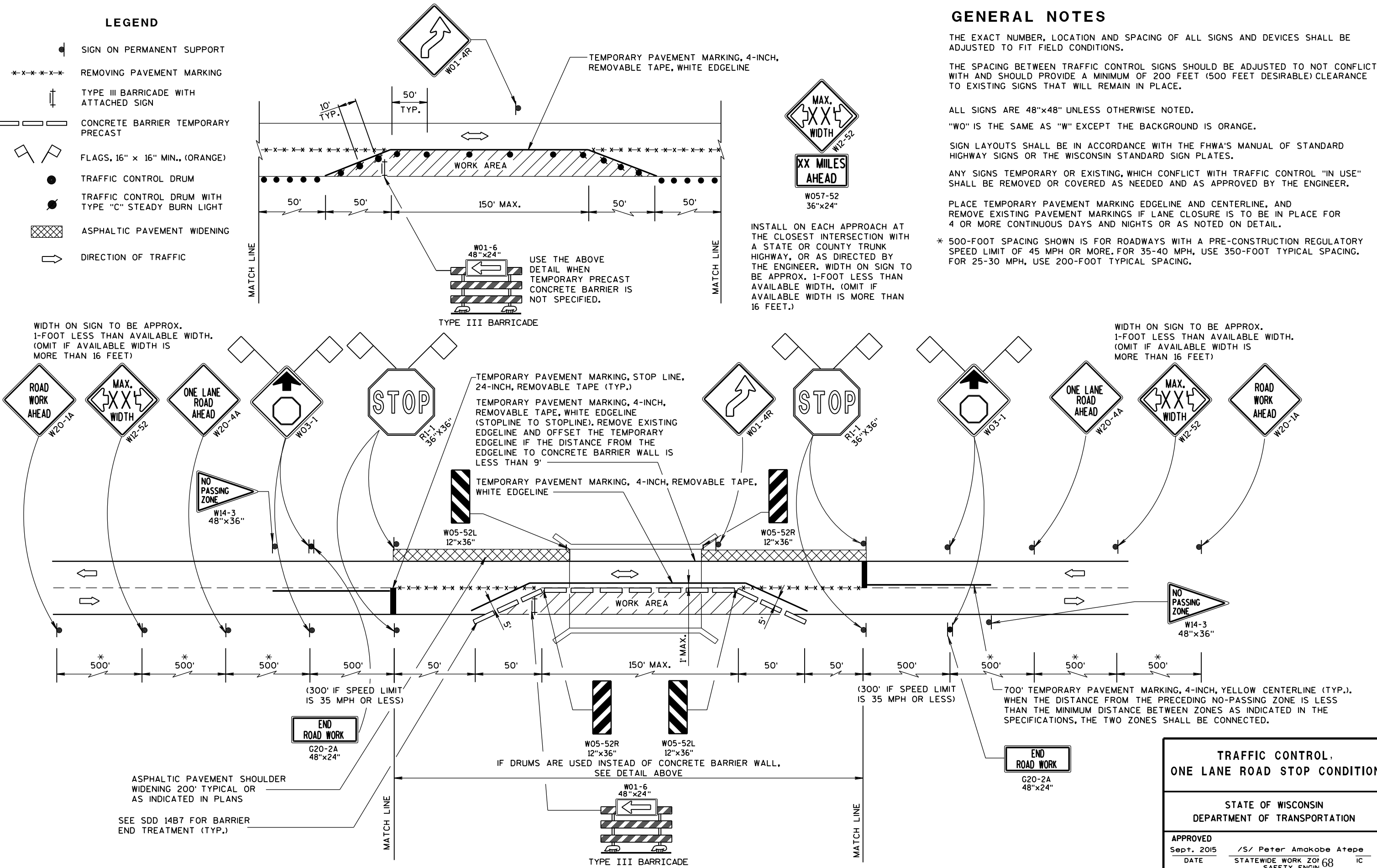
"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

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.

PLACE TEMPORARY PAVEMENT MARKING EDGELINE AND CENTERLINE, AND REMOVE EXISTING PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS OR AS NOTED ON DETAIL.

* 500-FOOT SPACING SHOWN IS FOR ROADWAYS WITH A PRE-CONSTRUCTION REGULATORY SPEED LIMIT OF 45 MPH OR MORE. FOR 35-40 MPH, USE 350-FOOT TYPICAL SPACING. FOR 25-30 MPH, USE 200-FOOT TYPICAL SPACING.

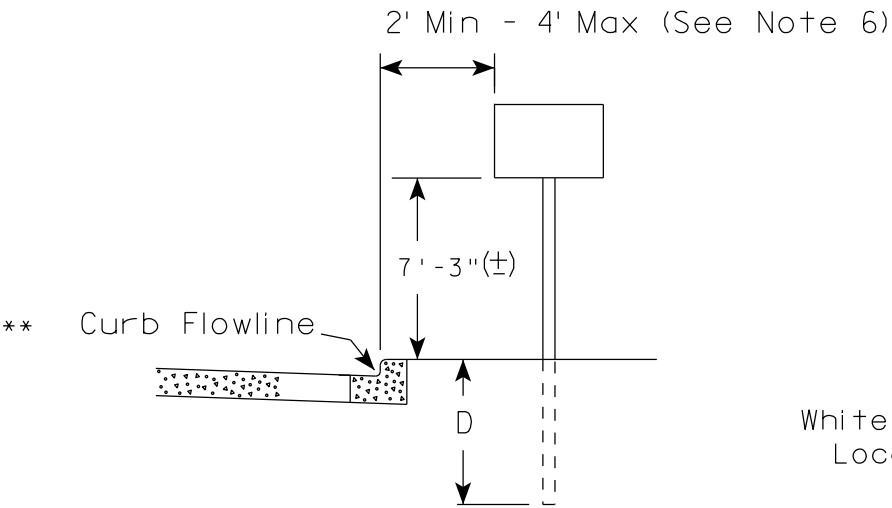


TRAFFIC CONTROL,
ONE LANE ROAD STOP CONDITION

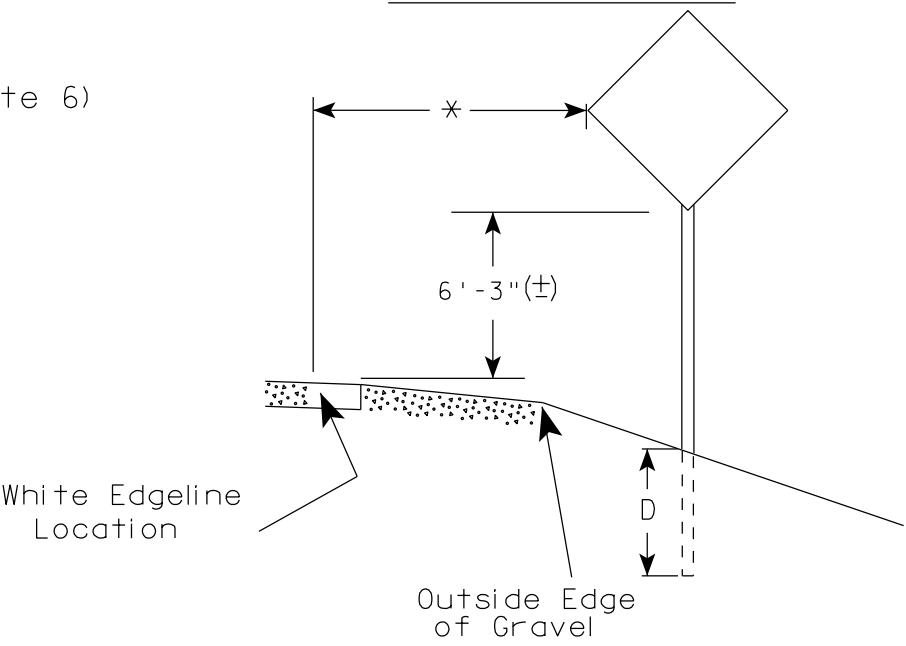
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2015 /S/ Peter Amakobe Atepe
DATE STATEWIDE WORK ZONE SAFETY ENGIN 68 IC
FHWA

URBAN AREA

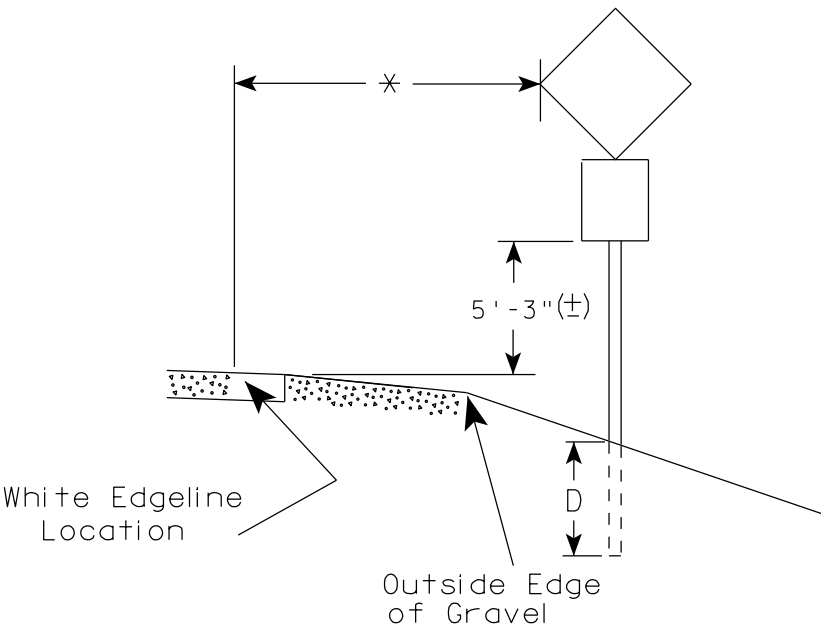
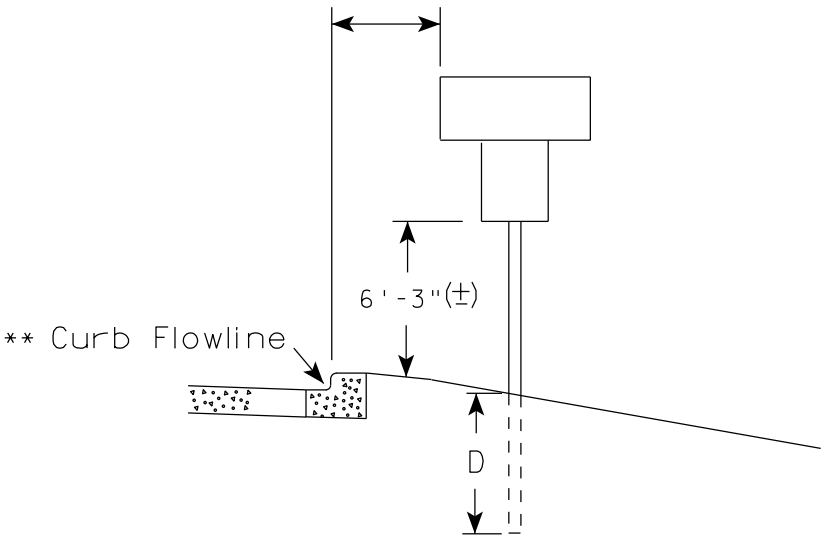


RURAL AREA (See Note 2)



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

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



POST EMBEDMENT DEPTH

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

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

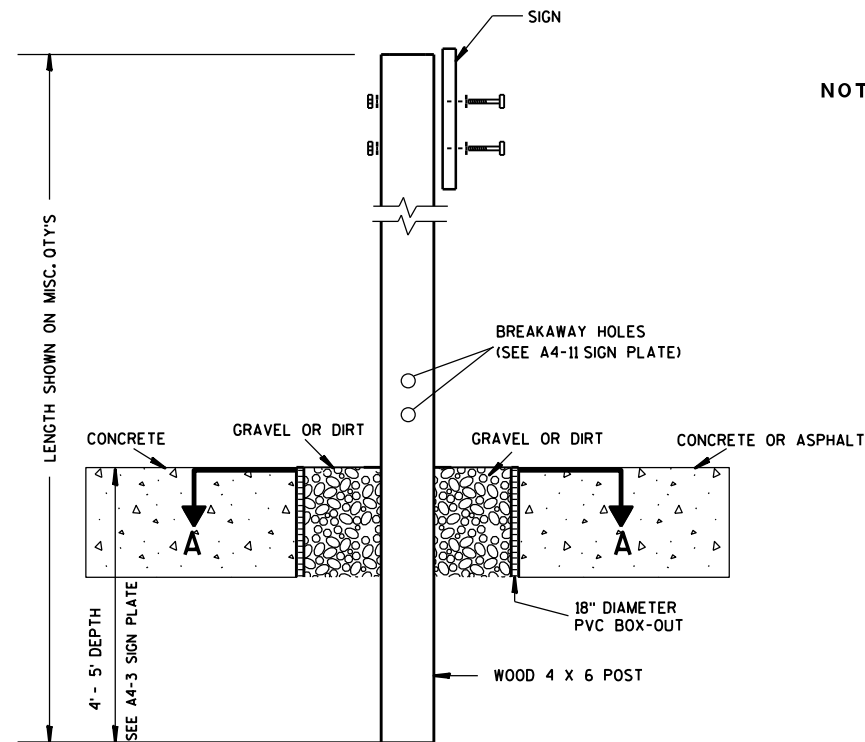
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

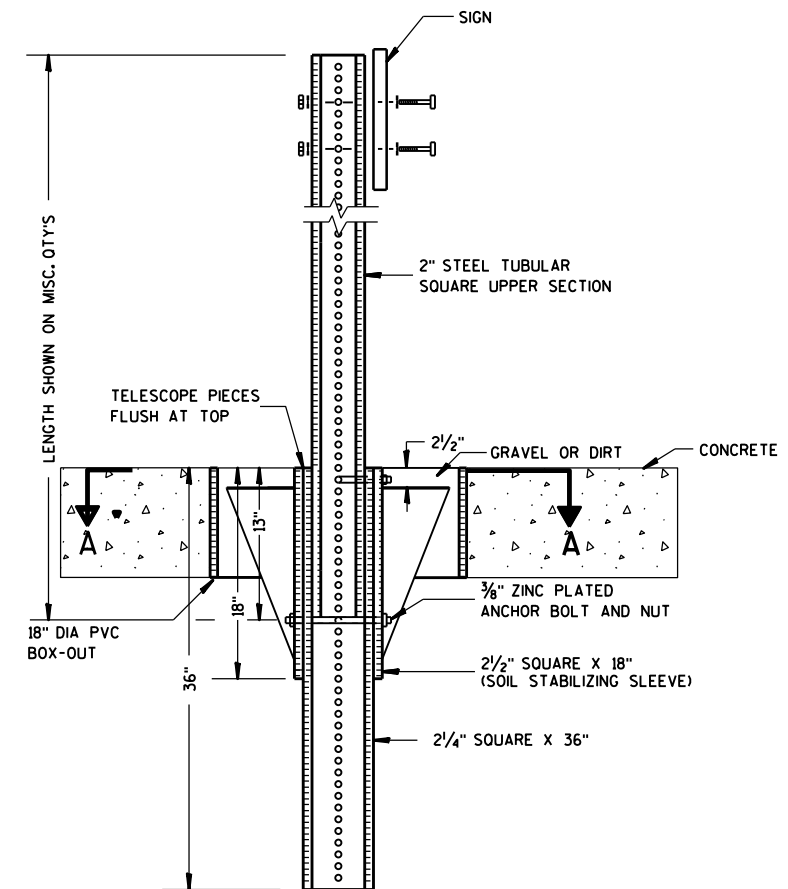
DATE 7/23/15 PLATE NO. A4-3.20



ELEVATION VIEW

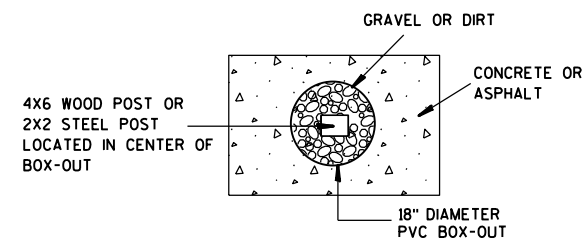
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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 PLAT 70 A4-3B.1

PROJECT NO:

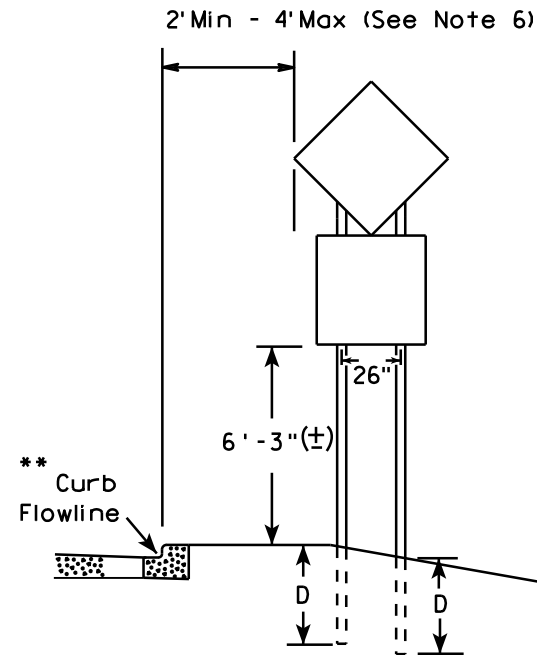
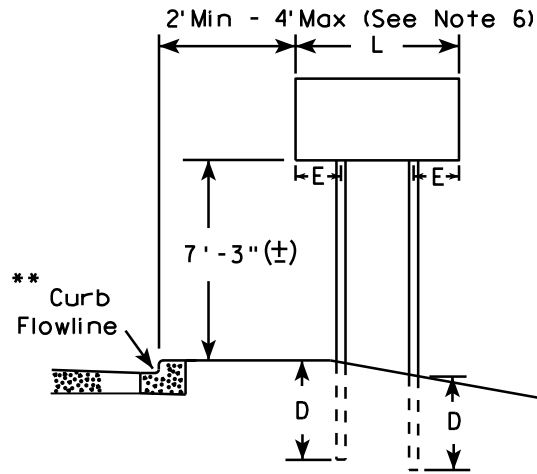
HWY:

COUNTY:

SHEET NO:

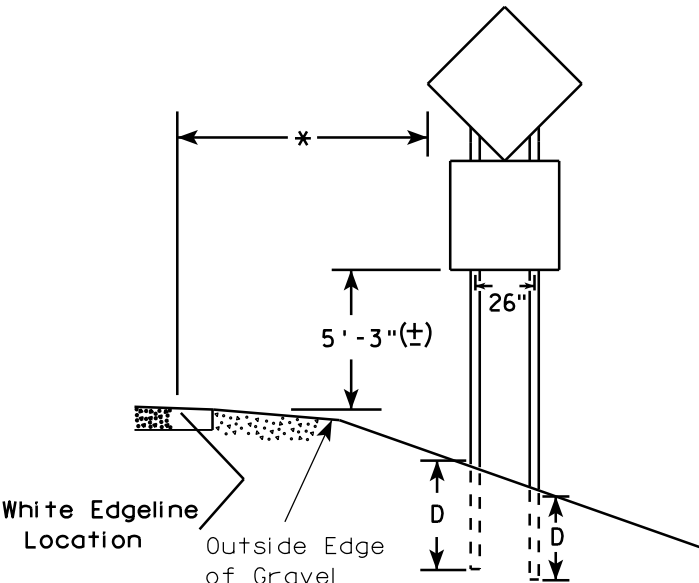
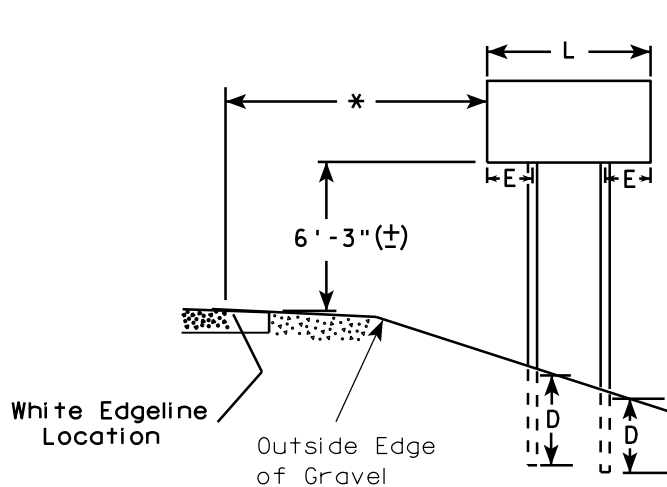
E

URBAN AREA



48" DIAMOND WARNING SIGN

RURAL AREA (See Note 3)



48" DIAMOND WARNING SIGN

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. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
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" (±).

* 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 120"	L/5

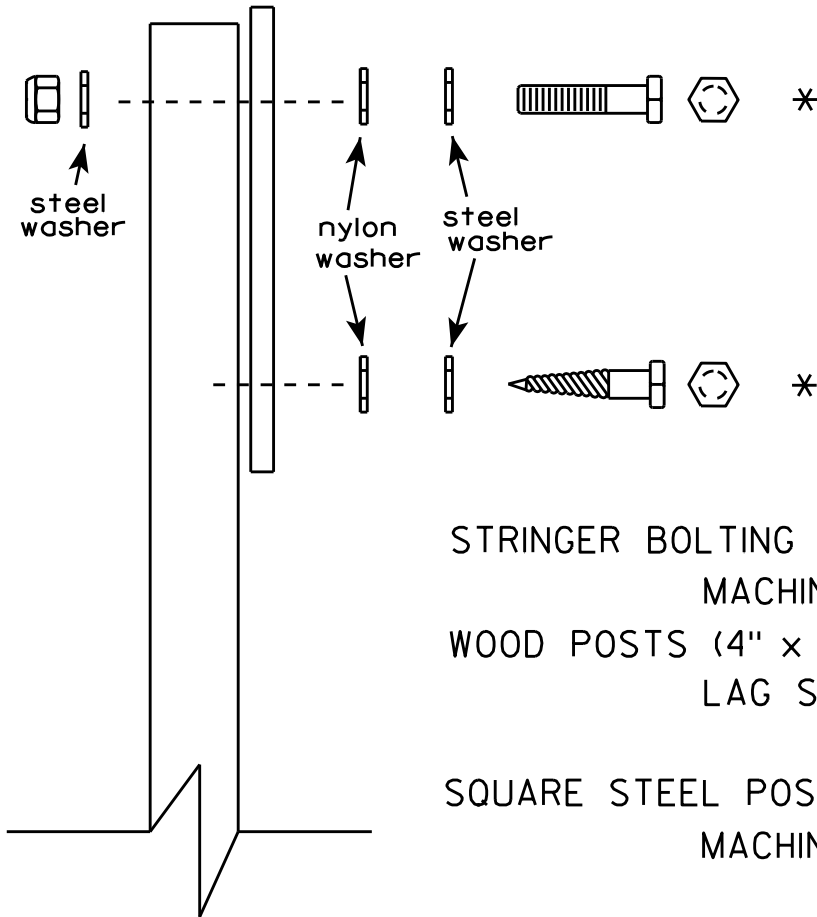
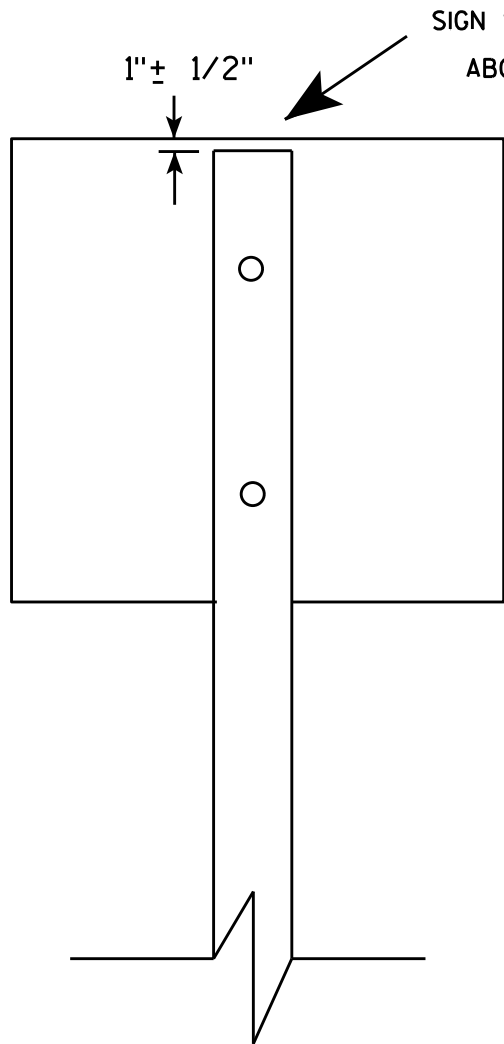
SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 120" less than 168"	12"

SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" and greater	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	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 7/23/15	PLATE NO. ^{AA-A} 14 71



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

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

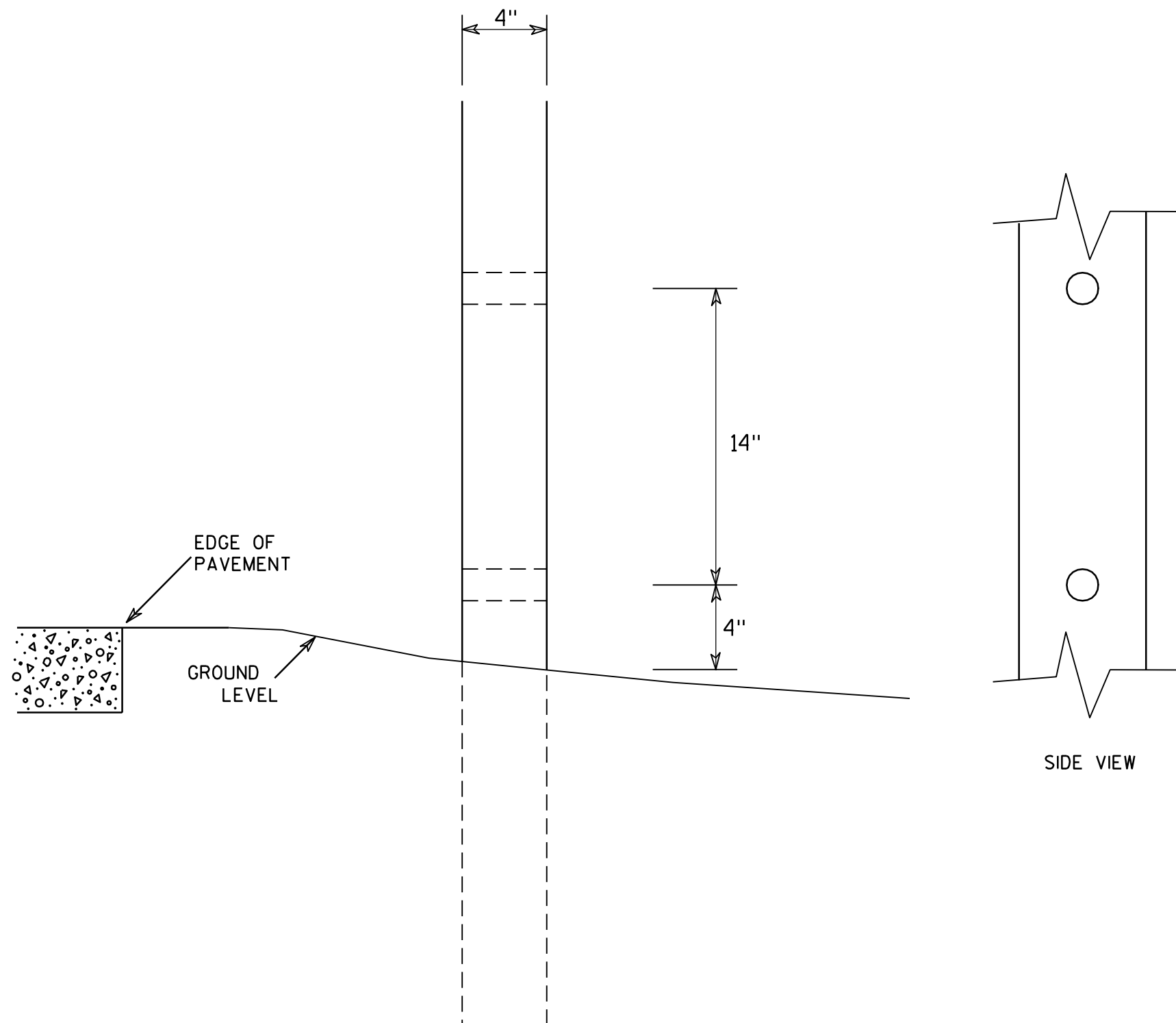
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

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

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

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 4/27/16	PLATE NO. A4-8.8 72

7



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

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

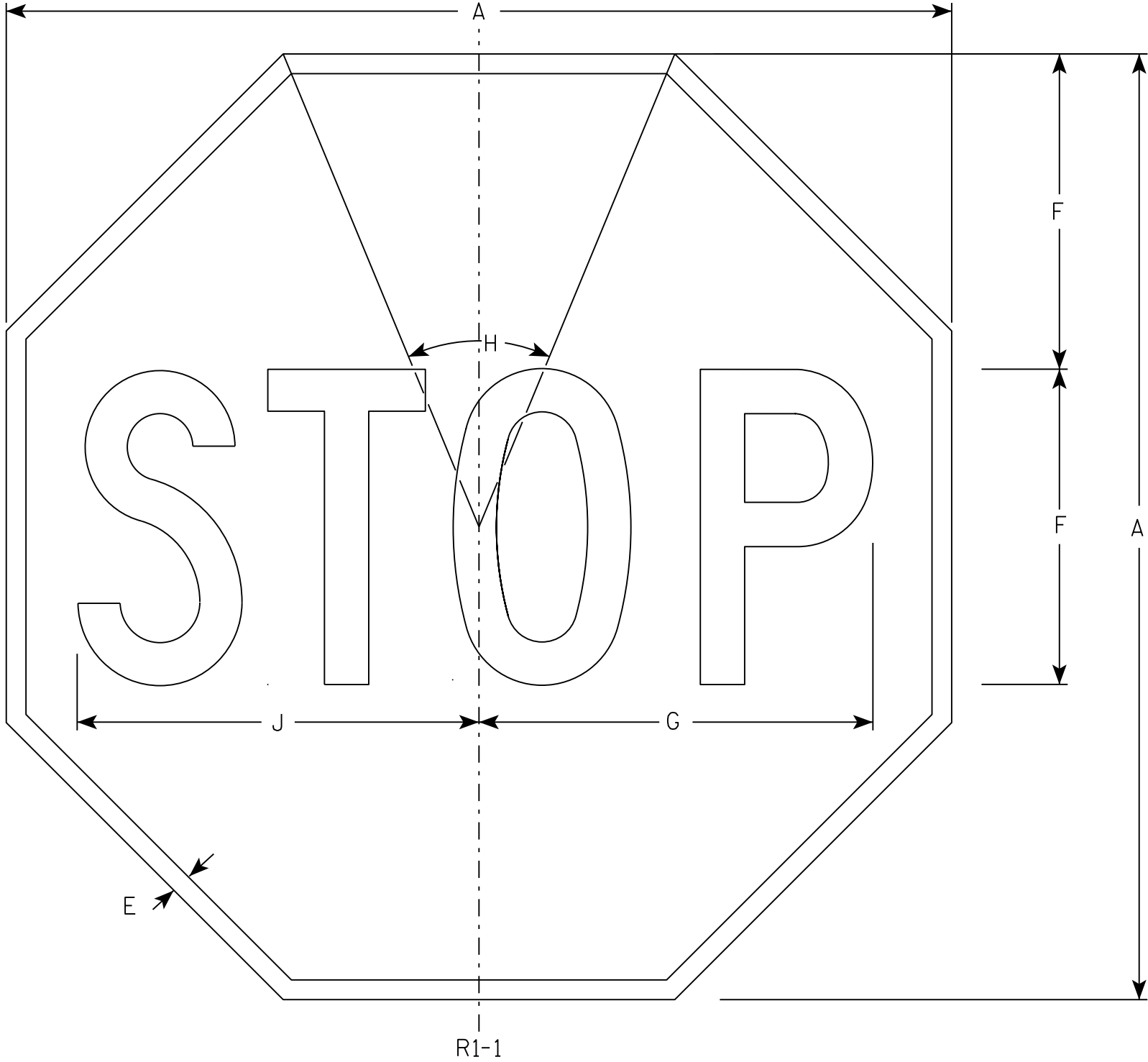
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 73

E



NOTES

- 1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
Background - Red
Message - White
- 3. Message Series - C

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				5/8	10	12 1/2	45°		12 3/4																	5.18
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°		20 1/2																	13.25
5	48				1	16	20	45°		20 1/2																	13.25
6	18				3/8	6	7 3/4	45°		7 3/4																	1.86
7	12				1/4	4	5	45°		5 1/8																	0.78

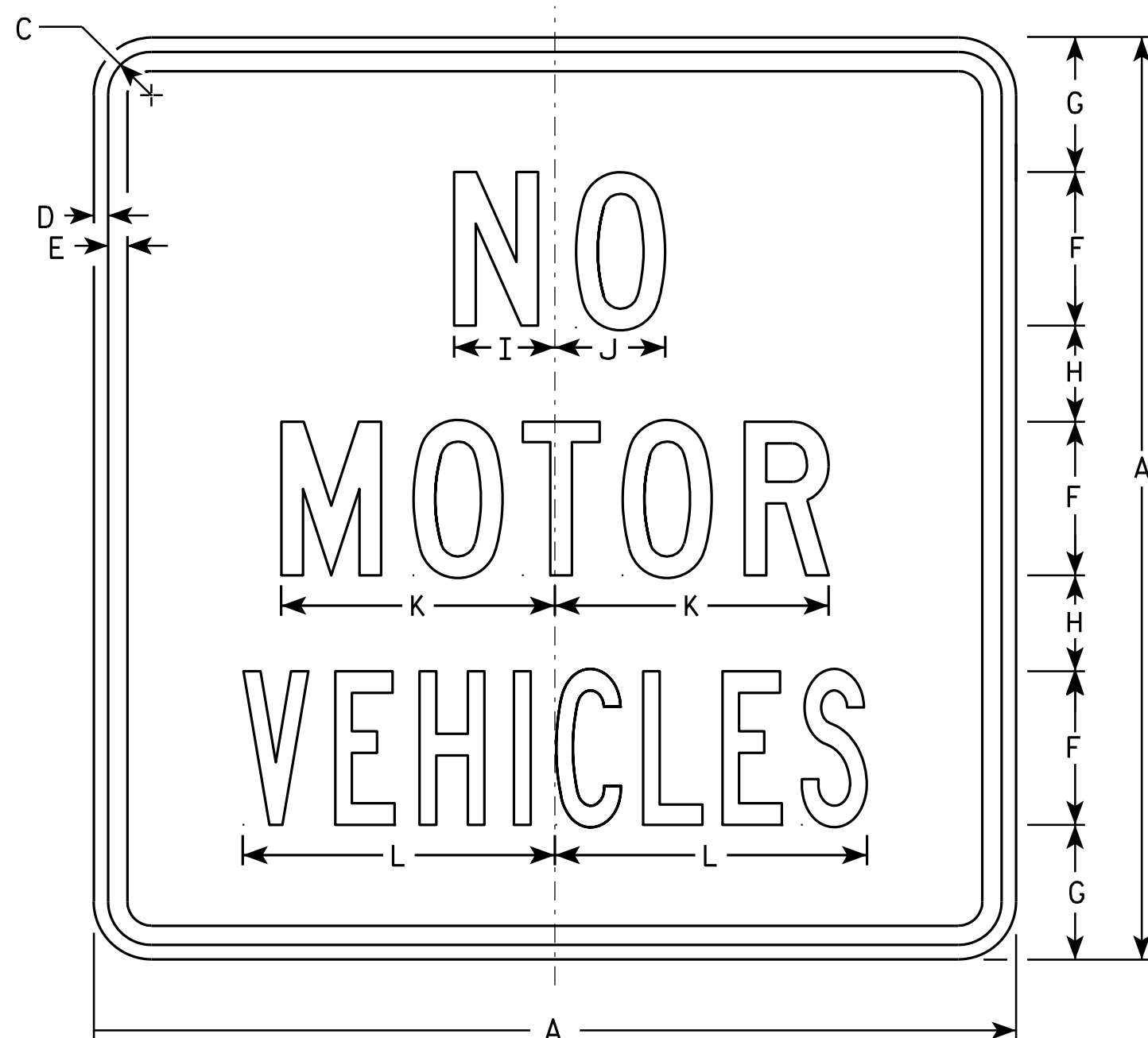
STANDARD SIGN

R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/12/15 PLATE 174 R1-1.13



R5-3

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - 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 & 2 are Series C.
Line 3 is Series B.

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	24		1 1/8	3/8	1/2	4	3 1/2	2 1/2	2 5/8	2 7/8	7 1/8	8 1/8															4.0
2M	24		1 1/8	3/8	1/2	4	3 1/2	2 1/2	2 5/8	2 7/8	7 1/8	8 1/8															4.0
3																											
4																											
5																											

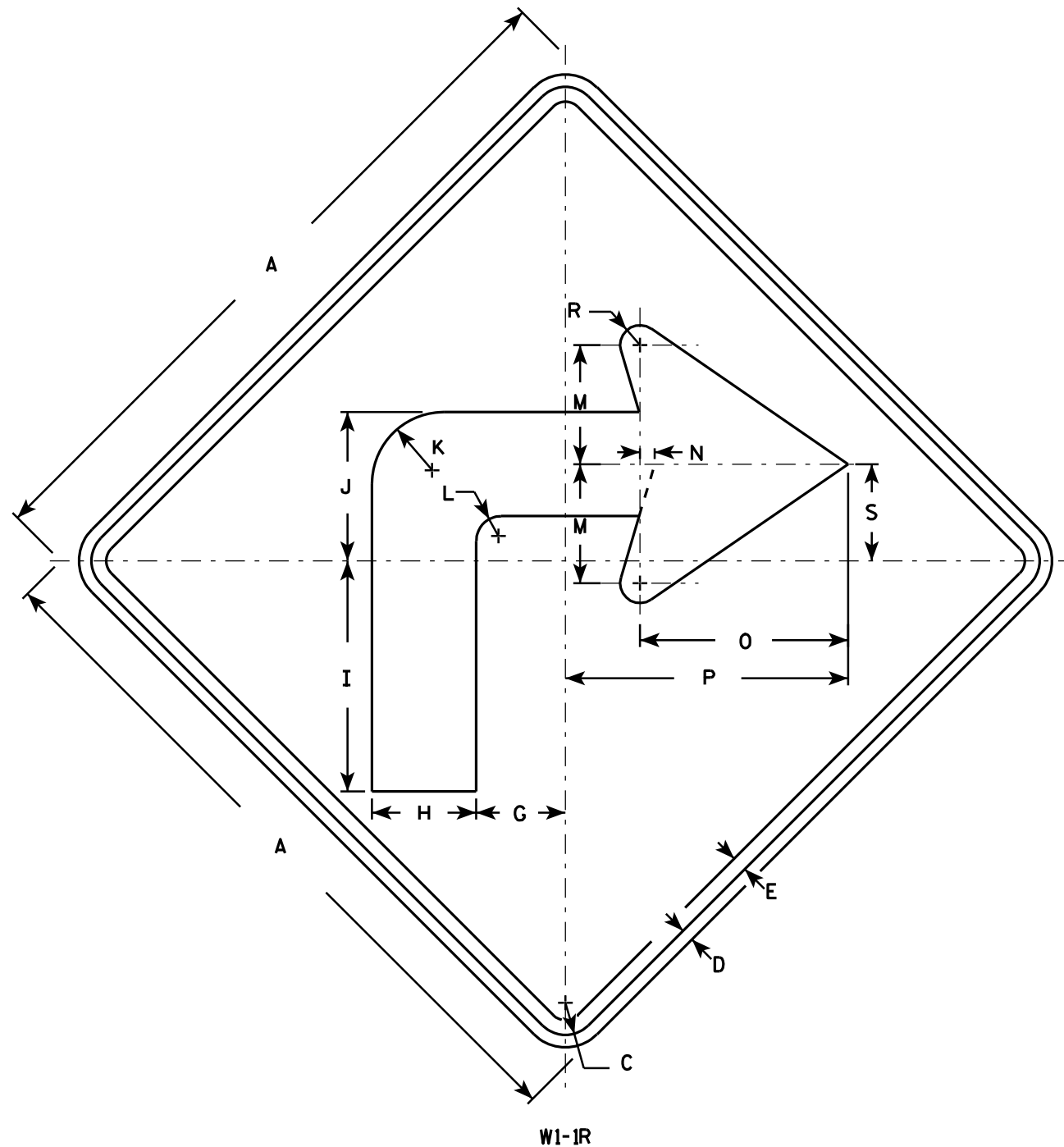
STANDARD SIGN R5-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/29/2011 PLATE NO. R5-3.2

PROJECT NO: HWY: COUNTY: SHEET NO: 75 E



NOTES

- Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - Yellow
Message - Black
- 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.
- W1-1L is the same as W1-1R except the arrow is reversed along the vertical centerline.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2		3	3 1/2	7 3/4	5	2 1/2	7/8	4	1/2	7	9 1/2		5/8	3 1/4								4.0
2S	36		1 5/8	5/8	3/4		4 1/2	5 1/4	11 5/8	7 1/2	3 5/8	1 1/4	6	3/4	10 1/2	14 1/4		1	4 7/8								9.0
2M	36		1 5/8	5/8	3/4		4 1/2	5 1/4	11 5/8	7 1/2	3 5/8	1 1/4	6	3/4	10 1/2	14 1/4		1	4 7/8								9.0
3	36		1 5/8	5/8	3/4		4 1/2	5 1/4	11 5/8	7 1/2	3 5/8	1 1/4	6	3/4	10 1/2	14 1/4		1	4 7/8								9.0
4	48		2 1/4	3/4	1		6	7	15 1/2	10	4 7/8	1 5/8	8	1	14	19		1 1/4	6 1/2								16.0
5	48		2 1/4	3/4	1		6	7	15 1/2	10	4 7/8	1 5/8	8	1	14	19		1 1/4	6 1/2								16.0

STANDARD SIGN

W1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/15/12 PLATE NO. W1-1.11

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 76

E

LIVE LOAD:
DESIGN LOADING: COOPER E90
EARTH LOAD = DESIGNED FOR 2.63' FEET OF OVERFILL

DRAWINGS SHALL NOT BE SCALED.

SEE ROADWAY DRAWINGS FOR EXISTING & PROPOSED UTILITY
LOCATIONS.

ALL SPACES EXCAVATED AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH BACKFILL GRANULAR GRADE 1 TO THE ELEVATION AND SECTION EXISTING PRIOR TO EXCAVATION WITHIN LENGTH OF THE BOX.

THE EXISTING GROUNDLINE SHALL BE THE UPPER LIMITS OF
EXCAVATION FOR STRUCTURES.

ALL EXPOSED CORNERS SHALL BE BEVELED $\frac{3}{4}$ " ON THE SIDES OR TOOL EDGED WITH A $\frac{1}{2}$ " MINIMUM RADIUS EDGER.

A 2'-0" STRIP OF GEOTEXTILE FABRIC SHALL BE PLACED OVER THE RUBBERIZED MEMBRANE WATERPROOFING OF EACH BOX AND APRON JOINT ON THE TOP AND ON THE SIDES OF THE CULVERT BEFORE BACKFILL IS PLACED. THE GEOTEXTILE FABRIC SHALL COMPLY WITH STANDARD SPECIFICATION 645.2.4 SCHEDULE A.

ALL ANCHOR BOLTS AND MISCELLANEOUS HARDWARE FOR CULVERT PRECAST ELEMENTS SHALL BE GALVANIZED AND CONFORM TO THE REQUIREMENTS OF ASTM A575.

GROUNDWATER WAS OBSERVED ABOVE THE PROPOSED BOTTOM OF CULVERT. THE OBSERVED WATER LEVEL MAY BE DUE TO A PERCHED WATER CONDITION, WATER SHOULD BE ANTICIPATED DURING EXCAVATION. THEREFORE, INSTALLATION OF THE CULVERT MAY REQUIRE DEWATERING WITHIN THE CONSTRUCTION AREA.

CONCRETE STAIN SHALL BE A LIGHT EARTH TONE BROWN, FEDERAL
COLOR #10266. OR AS DIRECTED BY THE ENGINEER.

APPLY CONCRETE STAIN TO ALL EXPOSED SURFACES OF WINGWALLS, HEADERS AND BOX SECTIONS. IF TOUCH UP PAINTING IS REQUIRED IT SHALL BE DONE TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST.

STAINING OF CONCRETE SURFACES SHALL BE PAID FOR UNDER BID
ITEM "CONCRETE STAINING (C-71-46)"

1	GENERAL PLAN
2	CROSS SECTION
3	SUBSURFACE EXPLORATION
4	FENCING DETAILS
5	CULVERT DETAILS
6	CULVERT DETAILS



(SEE TRAIL PLANS)

PLAN

(SINGLE CELL PRECAST CONCRETE BOX CULVERT)

SECTION A-A

This section shows the elevation of the bridge structure from station 1210 to 1235. It includes the following details:

- SOUTH PORTAL:** Shows the MSE wall, ground line at back face, field poured apron base, T/WALK EL 1215.64, T/APRON EL 1215.47, and a cutoff wall not required.
- CULVERT BOX:** Dimensions include 10'-10" AT CULVERT BOX and 24'-0" overall width.
- MIDDLE SECTION:** Includes a lighting system, design overfill, precast concrete box elements, precast wingwall elements, fence chain link 6-ft on wingwalls and header, and a field poured apron base. Elevations for T/WALK (1215.54, 1215.39) and T/APRON & BOX (1215.37, 1215.22) are shown. Slope is -0.31%.
- NORTH PORTAL:** Similar to the south portal, showing the MSE wall, ground line, field poured apron base, T/WALK EL 1215.39, T/APRON EL 1215.22, and a cutoff wall not required.
- LEGEND:**
 - (b) PRECAST CONCRETE BOX ELEMENTS
 - (c) PRECAST WINGWALL ELEMENTS
 - (g) 6" BACKFILL GRANULAR GRADE 1 BENEATH BOX AND APRON
- ADDITIONAL NOTES:**
 - EL 1215.30 - BOX BOTTOM INSIDE AT STA 15+72.74 (CONTROL PT.)
 - (SEE TRAIL PLANS FOR MSE WALL) (R-71-22)

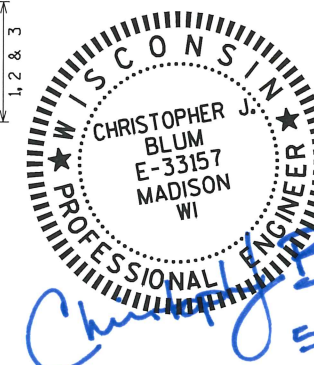
○ INDICATES WING NUMBER

- (a) QUANTITY FOR BACKFILL GRANULAR GRADE 1 IN THE "TOTAL ESTIMATED QUANTITIES C-71-46" IS FOR PORTION UNDER BOX AND APRON AND BEHIND WINGS AND SIDES OF BOX. SEE GENERAL NOTES FOR ADDITIONAL BACKFILL INFORMATION. SEE TRAIL DRAWINGS FOR QUANTITIES, SUBCUT AND BACKFILL INFORMATION FOR MSE WALL (R-71-22).
 - (b) RUBBERIZED MEMBRANE WATERPROOFING UP WALLS AND ACROSS TOP OF BOX SLAB TO COVER ENTIRE SURFACE OF SIDES AND TOP. RUBBERIZED MEMBRANE WATERPROOFING TO COVER ENTIRE BACKSIDE OF ALL WINGWALLS. SEE GENERAL NOTES FOR GEOTEXTILE WATERPROOFING.
 - (c) 2" AT C/L THICK ASPHALTIC PAVEMENT WALK ON BOX, AND APRON BASE SLAB. (PLACED BY OTHERS) (SEE TRAIL PLANS FOR DETAILS AND QUANTITY).
 - (d) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5 % MIN TO STORM SEWER AS SHOWN IN ROADWAY PLANS PIPE UNDERDRAIN DETAIL AND INLET DETAIL.
- ◆ SEE NOTE ON SHEET 2.
LIGHTING SYSTEM DETAILS AND QUANTITIES ARE A PART OF THE LIGHTING PLANS.

NO	STATION	DESCRIPTION	ELEV
5	260+17.40, 74.6' RT	RR SPIKE IN PP #25-4-223 SW CORNER OF CTH P & MARSHFIELD STREET	1223.99

	BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
	206.2000	EXCAVATION FOR STRUCTURES CULVERTS (C-71-46)	LS	1
①	209.0100	BACKFILL GRANULAR	CY	860
④	504.0100	CONCRETE MASONRY CULVERTS	CY	49
②	504.1000.S	PRECAST CONCRETE WINGWALL (C-71-46)	LS	1
②	504.2000.S	PRECAST CONCRETE BOX CULVERT 14-FT x 9-FT	LF	48
④	505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	1,000
③	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	265
⑧	517.1010.S	CONCRETE STAINING (C-71-46)	SF	1,925
⑥	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	170
⑥	616.0206	FENCE CHAIN LINK 6-FT	LF	95
⑤	645.0111	GEOTEXTILE FABRIC TYPE DF SCHEDULE A	SY	84
⑦	SPV.0165.01	TEMPORARY SHORING RAILROAD	SF	3,300

- ① UNDER BOX SLAB, APRON, ALONG SIDES AND BEHIND WINGS ALSO PER GENERAL NOTES.
- ② INCLUDES FILLING OF HOLES. NO ADDITIONAL PAYMENT FOR CAST-IN-PLACE CULVERT OPTION.
- ③ RUBBERIZED MEMBRANE WATERPROOFING UP WALLS AND ACROSS TOP OF BOX SLAB TO COVER ENTIRE SURFACE OF SIDES AND TOP. SEE GENERAL NOTES FOR GEOTEXTILE WATERPROOFING. QUANTITY INCLUDES ENTIRE COVERAGE OF WING BACKFACES AS WELL ENTIRE TOP AND SIDES OF BOX.
- ④ PERTAINS TO CAST-IN-PLACE APRON.
- ⑤ INCLUDES GEOTEXTILE AT JOINTS WITH PRECAST ELEMENTS.
- ⑥ QUANTITY ONLY PERTAINS TO CULVERT PORTION.
- ⑦ INCLUDES TIE-BACK SYSTEM.
- ⑧ INCLUDES EXPOSED FACES OF WINGS AND HEADER, INSIDE WALLS AND TOP OF BOX AND TOP FACE OF EXTERIOR BOX SECTION.



SEH CONTACT: CHRIS BLUM, PE, 608.620.6192
WISDOT BRIDGE OFFICE CONTACT: BILL DREHER, PE, 608.266.8489

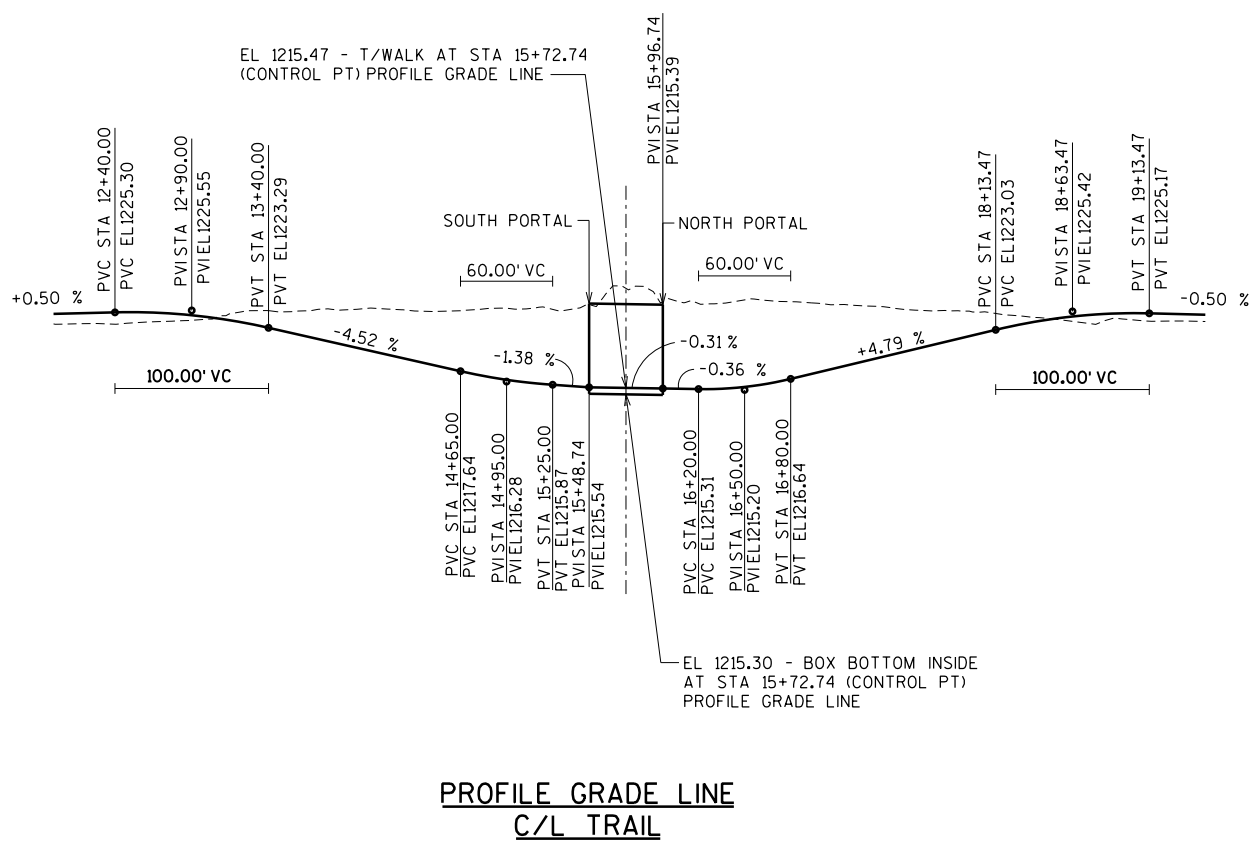
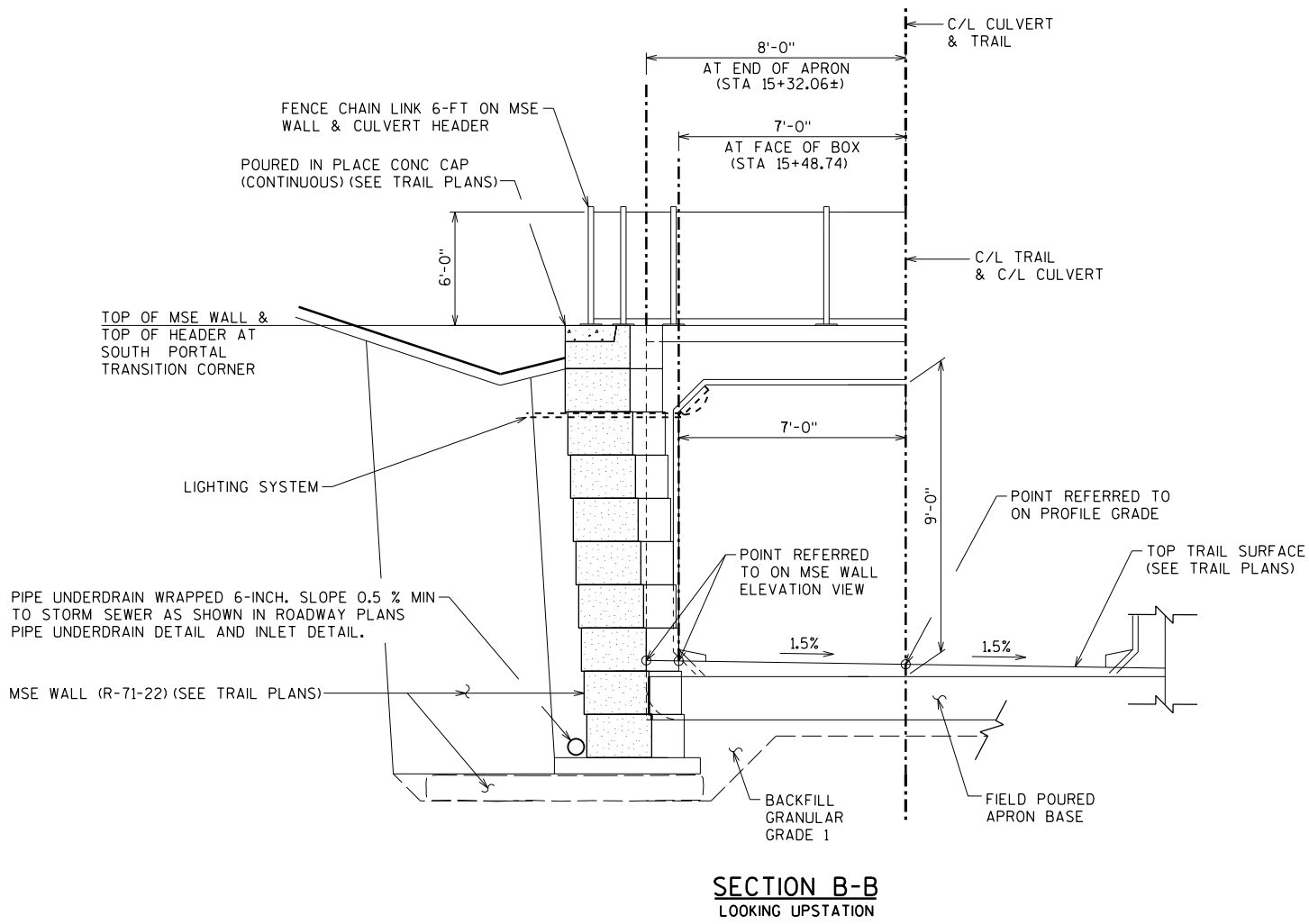
NO.	DATE	REVISION	BY
 SHORT ELLIOTT HENDRICKSON INC.			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	 SDR 05/19/16		
CHIEF STRUCTURES DESIGN ENGINEER		DATE	
STRUCTURE C-71-46			
14' SPAN X 9' RISE X 48' LONG PRECAST BOX CULVERT AND WINGWALLS UNDER WISCONSIN CENTRAL LTD			
COUNTY	WOOD	TOWN/CITY/VILLAGE	AUBURNDALE
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, AREMA			
DESIGNED BY	CJB	DESIGN CK'D.	COMP
DRAWN BY	DLF	PLANS CK'D.	CJB
GENERAL PLAN		SHEET 1 OF 6	
		77	

FILE NAME : S:\U2\W\Witnc\1168\5-final-dgn\5-drawings\20-Struct\culvert\c7046gp2.dgn

PLOT TIME: 9:07:19 AM

PLOT DATE: 5/19/2016

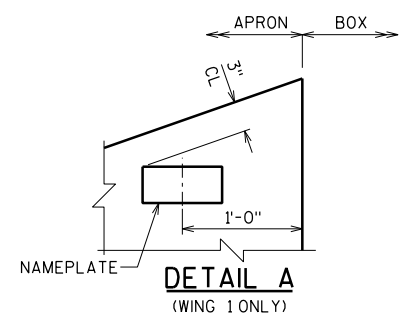
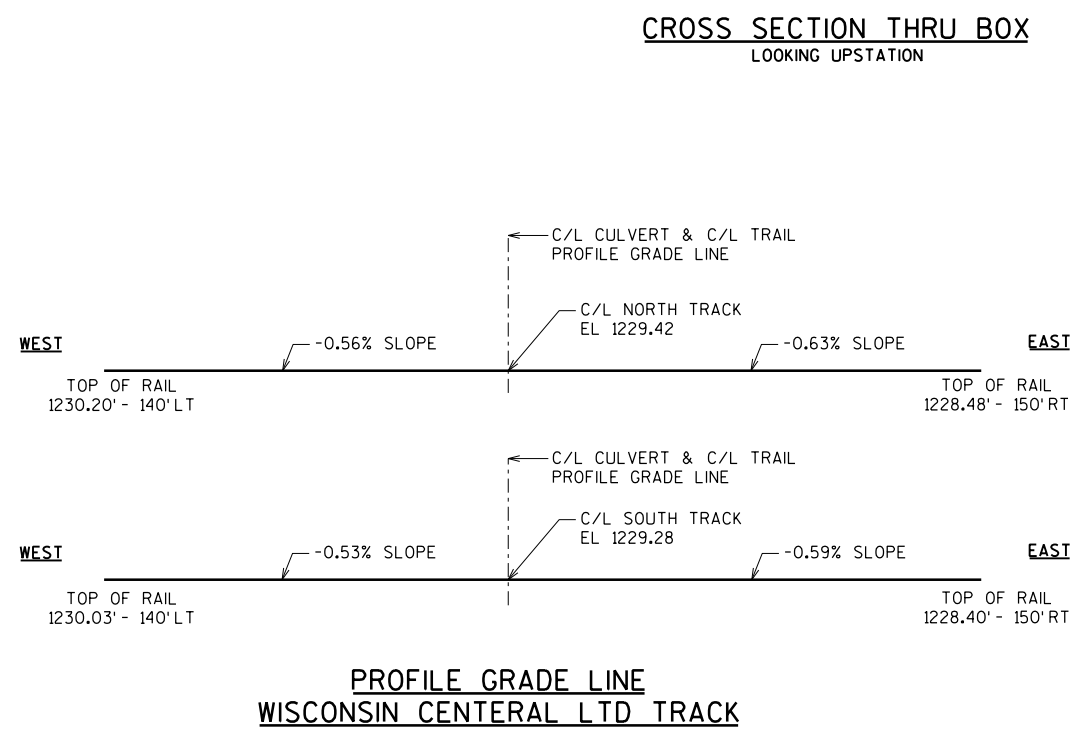
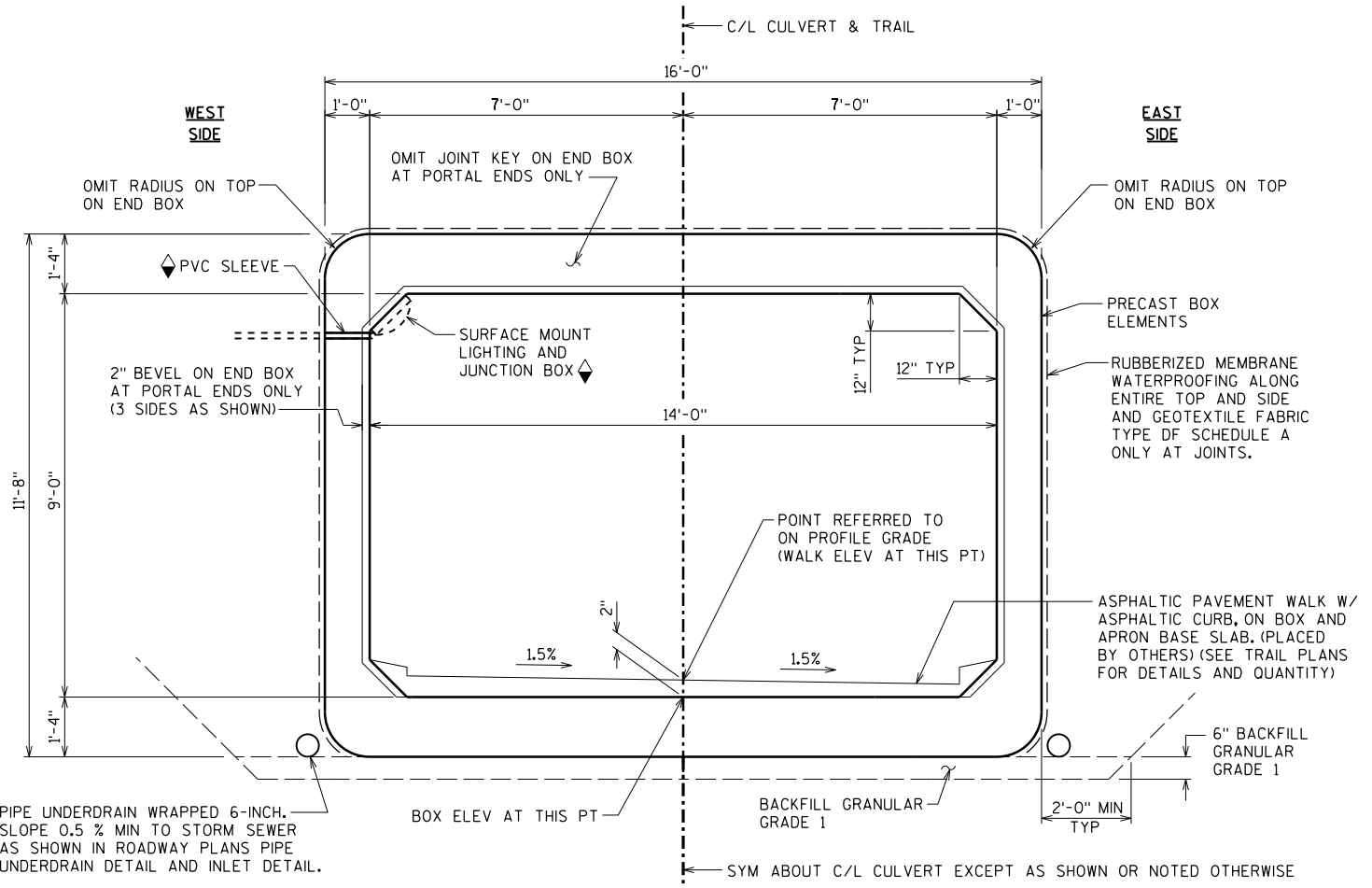
8



◆ PVC SLEEVE FOR LIGHTING SYSTEM CAST INTO BOX SECTION. SLOPE SLEEVE AWAY FROM INSIDE OF BOX TO PREVENT WATER DRAINAGE. SLEEVE IS INCIDENTAL TO BID ITEM "PRECAST CONCRETE BOX CULVERT 14-FT x 9-FT". LIGHTING SYSTEM DETAILS AND QUANTITIES ARE A PART OF THE LIGHTING PLANS.

LOCATE A SINGLE PVC SLEEVE 2'-0" IN FROM THE SOUTH END SECTION BELOW THE TOP BEVEL ON THE WEST SIDE ONLY. LOCATE THE LIGHTS AT MID-POINT OF THE BOX SECTION ON THE BEVEL. COORDINATE WITH THE LIGHTING PLANS.

SEAL ANY GAPS INSIDE AND OUTSIDE BETWEEN SLEEVE AND CONDUIT WITH 100% SILICONE CAULK PER LIGHTING SPECIFICATION.



8

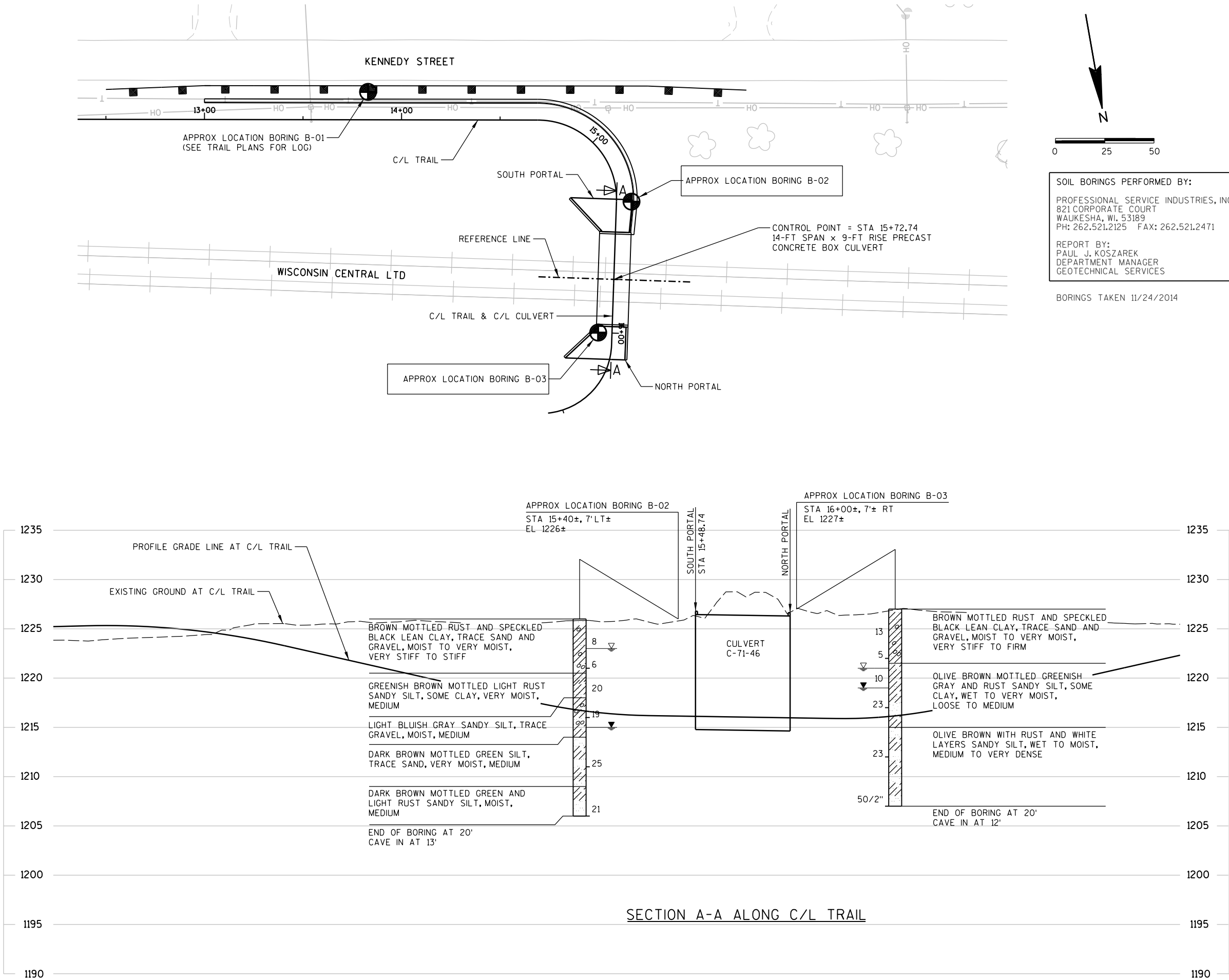
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6350-07-80			
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE C-71-46			
DRAWN BY		DLF	PLANS CK'D. CJB
CROSS SECTION AND QUANTITIES		SHEET 2 OF 6	
		78	

PLOT TIME: 15:21:06 PM

PLOT DATE: 3/15/2016

FILE NAME : S:\UZ\W\1168\5-final-dgn\5-final-dgn\5-structure\culvert\c71046bbldgn

8



SOIL BORINGS PERFORMED BY:

PROFESSIONAL SERVICE INDUSTRIES, INC
821 CORPORATE COURT
WAUKESHA, WI. 53189
PH: 262.521.2125 FAX: 262.521.2471

REPORT BY:
PAUL J. KOSZAREK
DEPARTMENT MANAGER
GEOTECHNICAL SERVICES

BORINGS TAKEN 11/24/2014

STATE PROJECT NUMBER

6350-07-80

ABBREVIATIONS

F— FINE M— MEDIUM C— COARSE
WS— WEATHERED SO— SOUND

MATERIAL SYMBOLS

TOPSOIL SILT SANDSTONE
SAND PEAT LIMESTONE
GRAVEL CLAY IGNEOUS ROCK

LEGEND OF PROBING

PROBING NO.
STA.
ELEVATION
95/6=95 BLOWS FOR 6"
PENETRATION
PROBING TAKEN WITH
A 350# WT.
FALLING 18" ON A 2"
O.D. POINT.
7 AVERAGE BLOWS PER FOOT
REFUSAL 95/6

LEGEND OF BORING

ELEV. BORING NO.
STA.
UNCONFINED STRENGTH → 7.7
BLOWS PER FT.
USING 140# WT.
FALLING 30"
WASH SAMPLE
SHELBY TUBE — S.T.
GROUND WATER ELEVATION
NO GROUND WATER
OBSERVED ABOVE
THIS ELEVATION
SANDY GRAVEL
F. BOULDERS OR
COBBLES
SAND
SILTY CLAY
SO
LIMESTONE

UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT
THE LOCATIONS INDICATED ARE BASED ON DRIVING A
2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140#
HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT
IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A
CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON
THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION
DESIGN AND BIDDERS INFORMATION

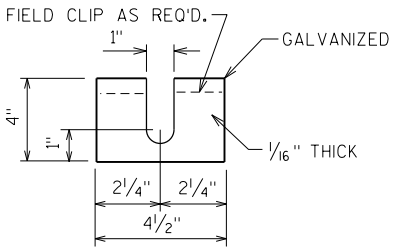
TO OBTAIN RELATIVE DATA CONCERNING THE
CHARACTER OF MATERIAL IN AND UPON WHICH THE
FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS
WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON
THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS
THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE.
HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE
LIMITED AND THE AREA OF THE BORINGS AND/OR
SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE
AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION
DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS
INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL
ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY
TYPICAL OF THE ENTIRE SITE.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE C-71-46			
DRAWN BY DLF		PLANS CK'D. CJB	
SUBSURFACE EXPLORATION		SHEET 3 OF 6 79	

8

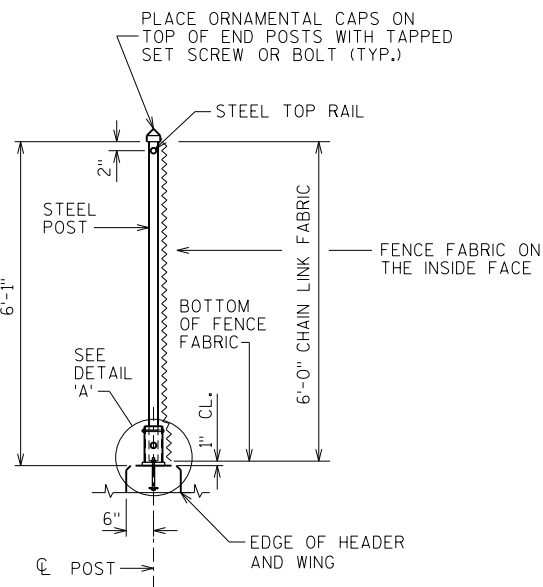
FENCE MEMBER
SIZE & WEIGHT

STEEL FENCE MEMBER	OUTSIDE DIAMETER (INCHES)	WEIGHT (LB/FT)
RAILS	1.660	2.27
END POST	2.875	5.80
OVERHANG POST	2.875	5.80
LINE POST	2.375	3.65
POST SLEEVE	4.000	9.12

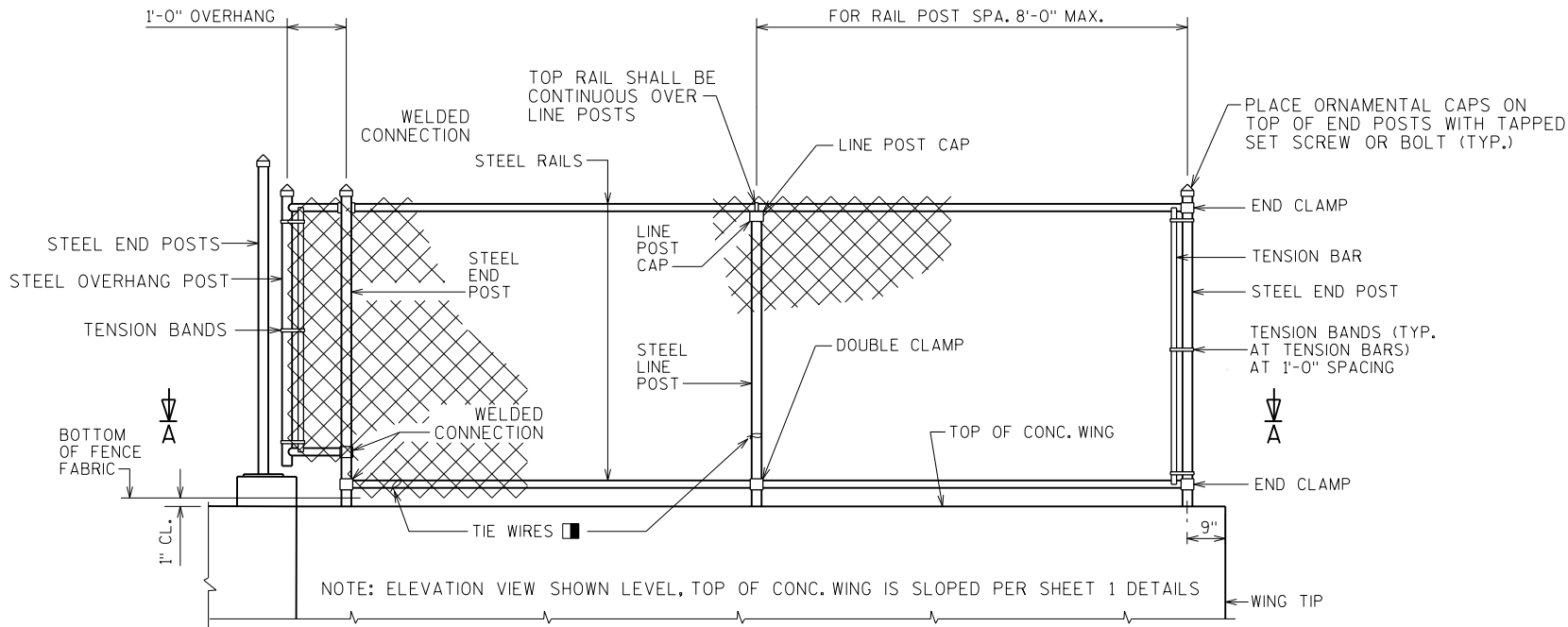


POST SHIM DETAILS

SHIMS REQUIRED ONLY WHEN END POSTS AND LINE POSTS ARE WELDED TO BASE PLATES. PROVIDE 4 SHIMS PER POST. USE WHERE REQUIRED FOR ALIGNMENT.

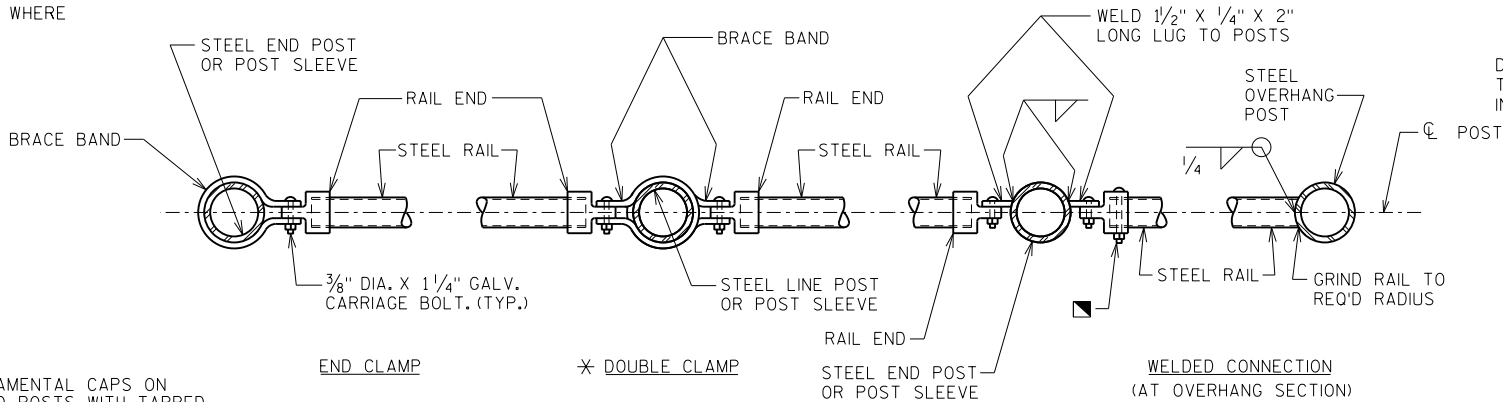


TYP. SECTION THRU RAILING



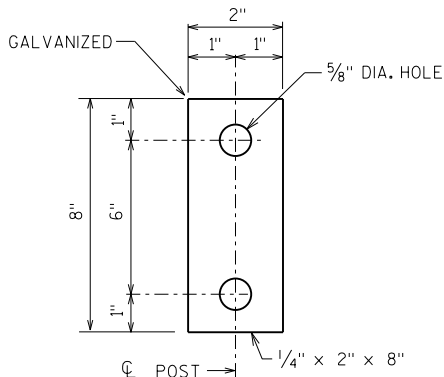
FENCE PART ELEVATION

VIEWING FABRIC SIDE

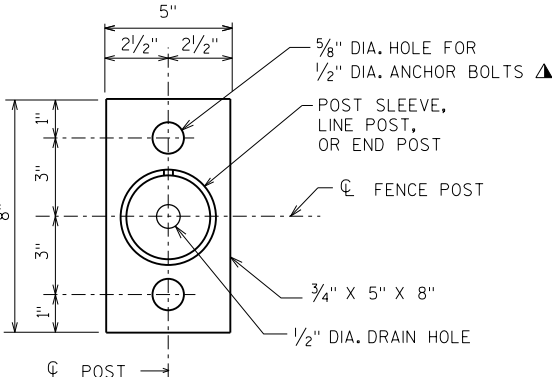


SECTION A-A

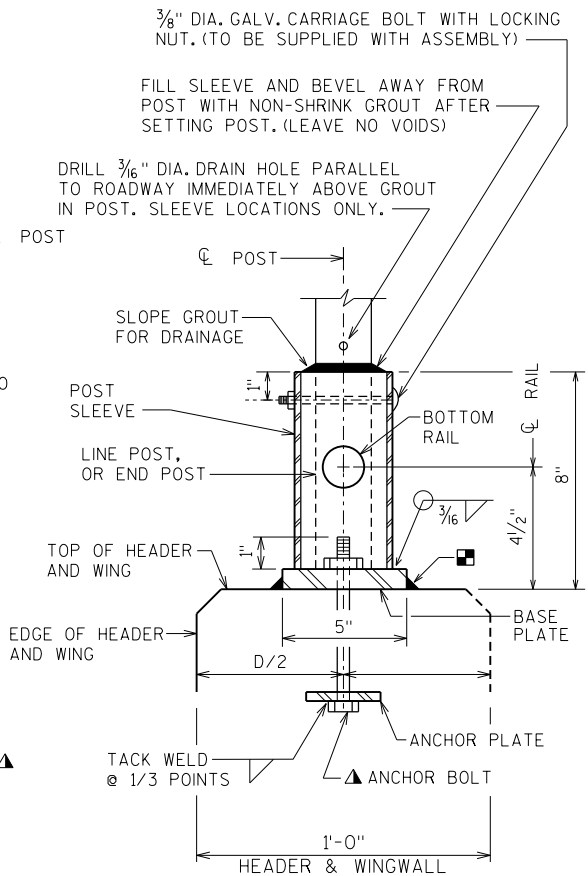
NOTE: PLACE ALL BOLT HEADS ON SIDE OF FENCE ADJACENT TO PEDESTRIANS



ANCHOR PLATE



BASE PLATE



DETAIL 'A'

UNIT SHALL BE GALVANIZED AFTER FABRICATION

NOTE: IN LIEU OF USING THE POST SLEEVE, THE FENCE POST MAY BE WELDED TO THE BASE PLATE.

STATE PROJECT NUMBER

6350-07-80

GENERAL NOTES

POSTS ARE TO BE SET VERTICAL.

ALL FENCE COMPONENTS SHALL BE GALVANIZED STEEL WITH A COLORED POLYMER-COATING ON THE OUTSIDE.

FABRIC SHALL CONFORM TO ASTM F668, CLASS 2B. STEEL RAILS, POSTS AND POST SLEEVES SHALL CONFORM TO ASTM F1083, STANDARD WEIGHT PIPE (SCHEDULE 40). FITTINGS SHALL CONFORM TO ASTM F626. SEE THE SPECIAL PROVISIONS FOR ADDITIONAL DETAILS.

THE COLOR OF POLYMER-COATING FOR THIS STRUCTURE SHALL BE BLACK IN ACCORDANCE WITH ASTM F934.

THE BID ITEM SHALL BE "FENCE CHAIN LINK POLYMER-COATED 6-FT.", LF.

COMPLETE ANY REQUIRED WELDING OF COMPONENTS BEFORE GALVANIZING.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

BASE PLATES, ANCHOR PLATES AND SHIMS SHALL BE ASTM A709, GRADE 36.

ALL POST SPACINGS ARE MEASURED HORIZONTALLY ALONG THE C/L OF THE POST.

CAULK AROUND PERIMETER OF BASE PLATE AND FILL PORTION OF SLOTTED HOLE AROUND ANCHOR BOLT IN SHIM WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

ALTERNATE TO DOUBLE CLAMP: USE LINE RAIL CLAMP (BOULEVARD) OR 180° BRACE BAND, WHICH MAY BE USED WHEN THE POSTS ARE EITHER BOLTED TO THE POST SLEEVES OR DIRECTLY WELDED TO THE BASE PLATE.

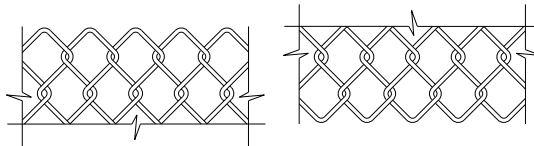
1/2" DIA. X 6 7/8" LONG GALVANIZED HEX BOLT WITH NUT & WASHER, TYPE "S", 1/2" DIA. CONCRETE MASONRY ANCHORS MAY BE SUBSTITUTED FOR 1/2" DIA. BOLTS. ANCHOR PLATE NOT REQUIRED WHEN TYPE "S" ANCHORS ARE USED. SEE ☆

MASONRY ANCHOR TYPE S 1/2"-INCH. EMBED 6" IN CONCRETE. ANCHOR, WASHER, AND NUT SHALL BE GALVANIZED.

ATTACH FABRIC TO RAILS, AND TO POSTS WITHOUT TENSION BANDS, WITH TIE WIRES (ROUND, 9-GAGE) SPACED AT 1'-0".

BOLT RAIL TO RAIL END TO SECURE OVERHANG SECTION. ALTERNATE IS TO WELD RAIL DIRECTLY TO END POST.

MINIMUM LENGTH OF TOP RAIL BETWEEN SPLICES SHALL BE 20'-0". LOCATE SPLICES NEAR 1/4 POINT OF POST SPACING.



TOP DETAIL

BOTTOM DETAIL

FENCE FABRIC

FENCE FABRIC WOVEN OF 9-GAGE WIRE IN 2" DIAMOND PATTERN MESH WITH BOTH THE TOP AND BOTTOM SELVAGES KNUCKLED.

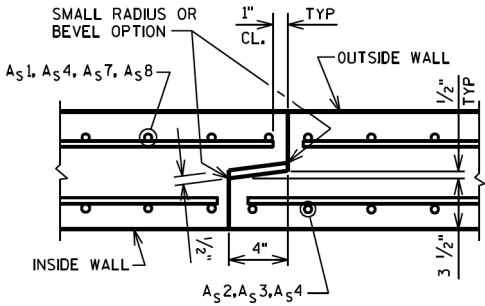
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE C-71-46			
DRAWN BY DLF		PLANS CK'D. CJB	
FENCING DETAILS			SHEET 4 OF 6
			80

PLOT TIME: 9/19/24 AM

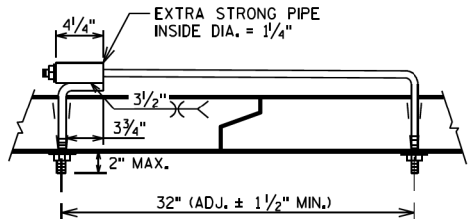
PLOT DATE: 5/19/2016

FILE NAME : S:\UZ\W\WIT\ne\lib8\5-final-dgn\51-drawings\20-Struct\culvert\c7046_3605.dgn

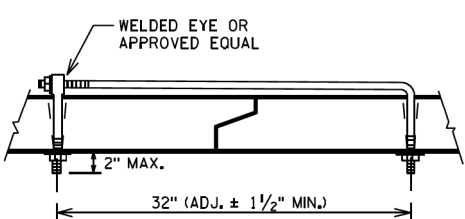
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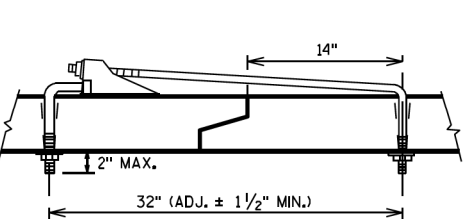
JOINT DETAIL



WELDED PIPE TIE



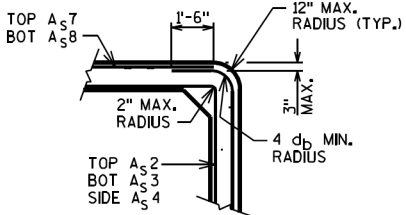
EYE BOLT TIE



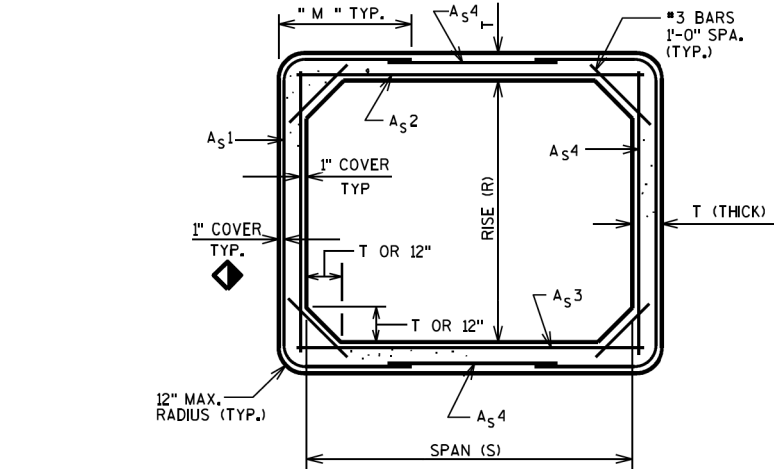
CANOPY TIE

NOTES:
EITHER EYE BOLT TIES, WELDED PIPE TIES, OR CANOPY TIES MAY BE USED.
THREADS MAY BE CUT OR ROLLED. TIE NUTS SHALL BE TIGHTENED AS DIRECTED
BY THE ENGINEER. (2 TIES REQ'D. PER JOINT.) (TIES TO BE GALVANIZED.)

JOINT TIES

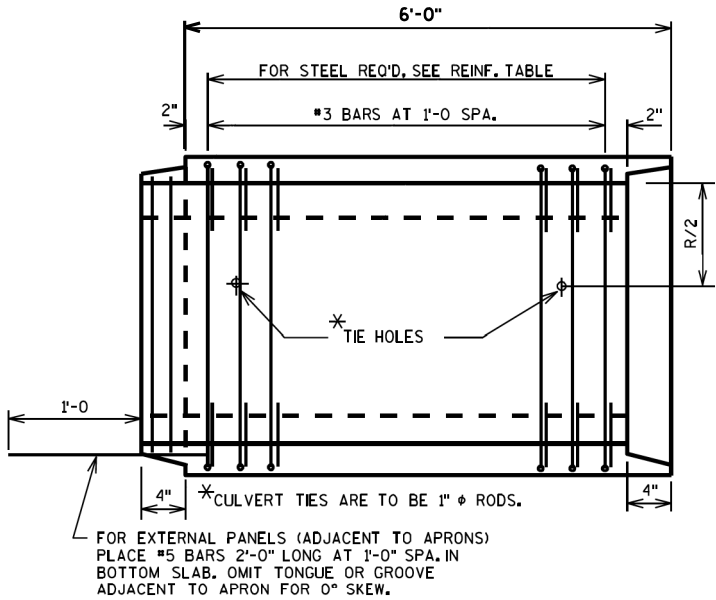


ALTERNATE DETAIL OPTION



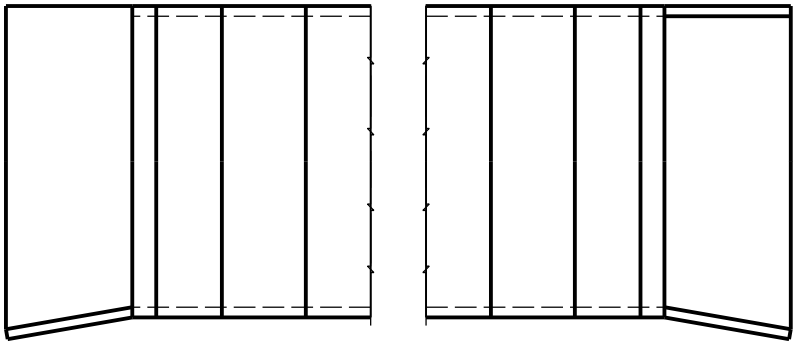
1" OR 3 x WIRE DIAMETER,
WHICHEVER IS GREATER

SECTION THRU BARREL
FOR 2'-0" OR MORE OF COVER



LONGITUDINAL SECTION

8 BARREL SECTIONS
@ 6'-0" = 48'-0" SEE SHEET 6



PLAN
CELL INSTALLATION

DIMENSIONS				BOX CULVERT DATA								
14 S (FT.)	9 R(FT.)	12 T OR T _S , T _D , T _T (IN.)	16 16	EARTH COVER (FT.) 2.63'								
REINFORCEMENT				AREA/FT.	LENGTH	M	AREA/FT.	LENGTH	M	AREA/FT.	LENGTH	M
A _S 1				1.37	-	2'-0"						
A _S 2				2.42	-	-						
A _S 3				2.45	-	-						
A _S 4				0.29	-	-						
A _S 5				0.65	-	-						
A _S 6				0.39	-	-						
A _S 7				0.39	-	-						
A _S 8				0.39	-	-						
TOTAL BARREL OR PANEL LENGTH				SEE PLAN								

STATE PROJECT NUMBER

6350-07-80

NOTES

DETAILS FOR MATERIALS, FABRICATION, CONSTRUCTION AND DESIGN OF PRECAST BOX CULVERTS NOT SHOWN OR STATED ON THIS DRAWING SHALL BE IN ACCORDANCE WITH THE CURRENT ASTM SPECIFICATION, C1577; AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS; CURRENT AREMA CODE; WISCONSIN DOT BRIDGE MANUAL; WISCONSIN DOT STANDARD SPECIFICATIONS & APPLICABLE SPECIAL PROVISIONS, EXCEPT THAT THE CONCRETE MIXTURE SHALL CONTAIN NOT LESS THAN 565 LBS. OF CEMENTITIOUS MATERIALS PER CUBIC YARD.

THE DESIGN OF PRECAST BOX CULVERTS WITH ALL FILL HEIGHTS SHALL BE AS STATED IN ASTM C1577.

ALL PRECAST BOX SECTIONS SHALL BE PLACED ON A BEDDING OF "BACKFILL GRANULAR GRADE 1" OF 6" MINIMUM DEPTH.

THE COVER OF CONCRETE OVER THE REINFORCEMENT SHALL BE 1 INCH OR 2 INCHES AS SHOWN WITH AN ALLOWABLE VARIATION OF -3/8" TO +1/2 INCH.

THE SPACING CTR. TO CTR. OF THE CIRCUMFERENTIAL WIRES SHALL NOT BE LESS THAN 2 INCHES NOR MORE THAN 4 INCHES. THE SPACING CTR. TO CTR. OF THE LONGIT. WIRES SHALL NOT BE MORE THAN 8 INCHES.

NOT MORE THAN FOUR (4) HOLES MAY BE CAST, DRILLED OR OTHERWISE NEATLY MADE IN THE SHELL OF EACH PIECE OF BOX SECTION FOR HANDLING. THE HOLES SHALL BE TAPERED UNLESS DRILLED. HOLES SHALL BE FILLED WITH PORTLAND CEMENT MORTAR EXCEPT TAPERED HOLES MAY BE FILLED WITH CONCRETE PLUGS SECURED WITH PORTLAND CEMENT MORTAR OR OTHER APPROVED ADHESIVE.

THE JOINT ON THE BOTTOM OF THE CULVERT & THE SIDES OF THE CULVERT FROM THE BOTTOM TO A POINT 1'-0" FROM THE CEILING SHALL BE SEALED WITH A PREFORMED MASTIC. PREFORMED MASTIC MUST CONFORM TO AASHTO MATERIALS SPEC. M198, TYPE B.

ASPHALT WITHIN BOX NOT SHOWN FOR CLARITY.

OMIT JOINT KEY ON END BOX AT PORTAL ENDS ONLY.

OMIT RADIUS ON TOP ON END BOX.

2" BEVEL ON END BOX AT PORTAL ENDS ONLY.

8

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE C-71-46			
DRAWN BY DLF		PLANS CK'D. CJB	
CULVERT DETAILS		SHEET 5 OF 6 81	

PLOT TIME: 4:52:58 PM

PLOT DATE: 3/15/2016

FILE NAME : S:\UZ\W\Witnc\lib8\5-final-dgn\5-drawings\20-Struct\culvert\c7046_3606.dgn

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STATE PROJECT NUMBER

6350-07-80

GENERAL NOTES

CONCRETE COVER ON ALL REINFORCEMENT IN THE PRECAST ELEMENTS SHALL BE 2" UNLESS SHOWN OR NOTED OTHERWISE.

STEEL REINFORCEMENT MAY BE EITHER GRADE 60 DEFORMED BARS (FY = 60,000 P.S.I.) OR WELDED DEFORMED - WIRE FABRIC OF EQUIVALENT AREA, (FY = 65,000 P.S.I.)

THE ULTIMATE COMPRESSIVE STRENGTH OF THE FIELD POURED CONCRETE SHALL BE 3,500 P.S.I.

THE ULTIMATE COMPRESSIVE STRENGTH OF THE CONCRETE IN THE PRECAST ELEMENTS SHALL BE 5,000 P.S.I.

VERTICAL CONSTRUCTION JOINTS THRU THE WALLS AND FOOTING WILL BE ALLOWED ONLY WITH THE APPROVAL OF THE ENGINEER. DETAILS MUST BE SHOWN ON THE SHOP DRAWINGS FOR APPROVAL.

THE AREA OF REINFORCING STEEL NOT IDENTIFIED IN SECTIONS SHALL CONFORM TO THE FOLLOWING TEMPERATURE AND SHRINKAGE REQUIREMENTS:

THICKNESS	T&S REINF.
≤ 12"	#4 @ 18"
> 12" - 18"	#4 @ 12"

THE MAXIMUM BAR SIZE OF GRADE 60 DEFORMED BARS, OTHER THAN THE A_S10 BARS, SHALL BE #5.

THE 7/8" Φ ANCHOR BOLTS SHALL BE GALVANIZED AND CONFORM TO THE REQUIREMENTS OF A.S.T.M. A575.

ASPHALT WITHIN BOX & APRON NOT SHOWN FOR CLARITY.

OMIT JOINT KEY ON END BOX AT PORTAL ENDS ONLY.

OMIT RADIUS ON TOP ON END BOX.

2" BEVEL ON END BOX AT PORTAL ENDS ONLY.

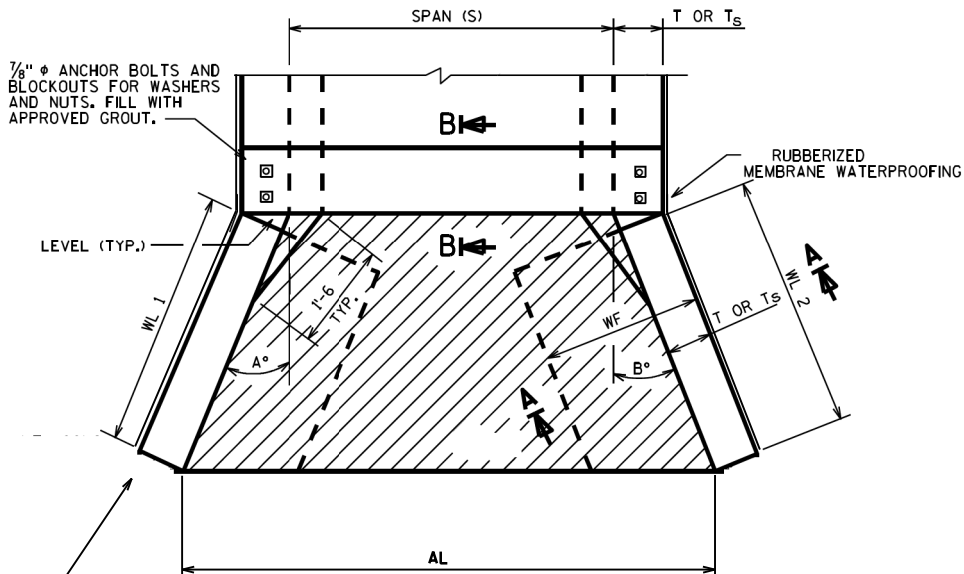
APRON SHALL BE POURED AND CURED PRIOR TO BACKFILLING WINGWALLS.

	S(FT.)	R ₁ (FT.)	T OR T _S (IN)	SKEW	ANGLE A	ANGLE B	WL 1	WL 2	AL	AH	WH	BE1	BE2
SOUTH PORTAL	14	9	12	0	-	45	-	22'-7"	31'-3"	-	12'-4"	-	-
NORTH PORTAL	14	9	12	0	45	0	22'-7"	16'-8"	30'-3"	-	12'-4"	-	-

RISE(R)	A _S 9 IN. ² /FT	WF
4'-0"	.19	2'-6"
6'-0"	.24	3'-6"
8'-0"	.31	4'-0"
10'-0"	.34	4'-9"

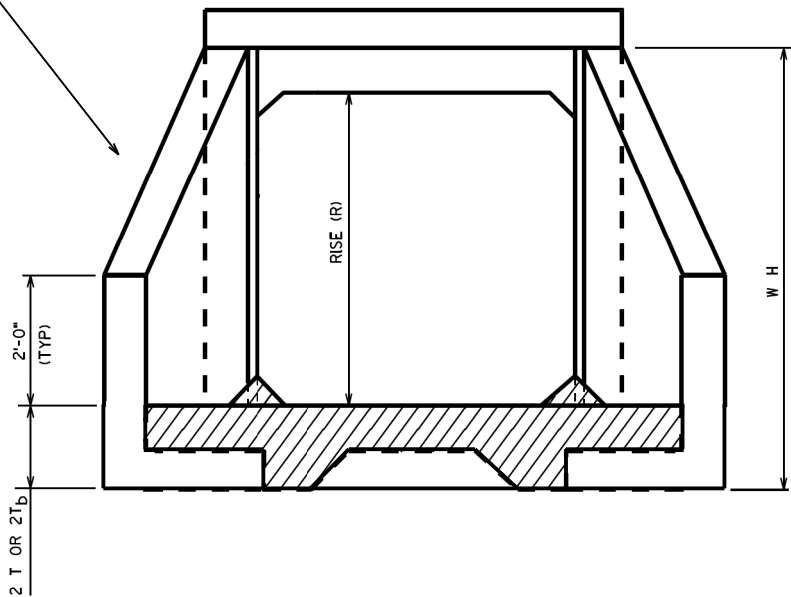
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE C-71-46			
DRAWN BY DLF		PLANS CK'D. CJB	
CULVERT DETAILS			SHEET 6 OF 6 82

8

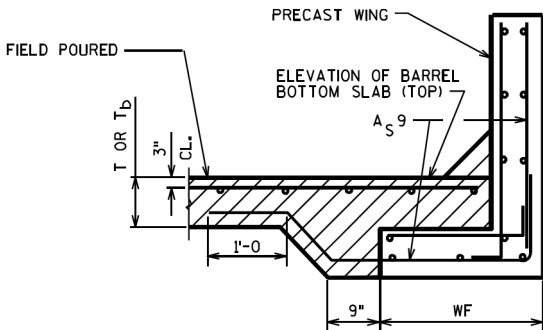


APRON PLAN
(NON-SKEWED STRUCTURE)

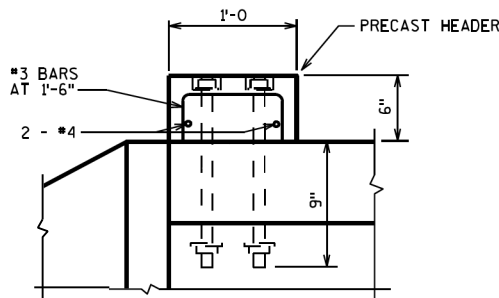
WING NOT APPLICABLE FOR SOUTH PORTAL ONLY.
RETAINING WALL R-71-22 LOCATED HERE. SEE SHEET 1
FOR ORIENTATION OF WINGWALLS 1, 2 & 3.



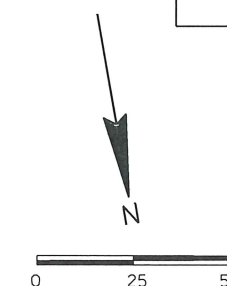
END VIEW



SECTION A



SECTION B

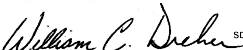


SEE SHEET 3

SEE SHEET 3

1	PLAN AND ELEVATION VIEW
2	SUBSURFACE EXPLORATION
3	TYPICAL SECTION
4	MISCELLANEOUS DETAILS



NO.	DATE	REVISION	BY
 SHORT ELLIOTT HENDRICKSON INC.			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	 SDR		05/16/11
CHIEF STRUCTURES DESIGN ENGINEER		DATE	
STRUCTURE R-71-22			
WETCAST MSE WALL			
COUNTRY	WOOD	TOWN/CITY/VILLAGE AUBURNDALE	
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	HDF	DESIGN CK'D.	WSW
DRAWN BY	DLF	PLANS CK'D.	HDF/W
MSE WALL PLAN AND ELEVATION VIEW		SHEET 1 OF 83	

BENCHMARK			
NO	STATION	DESCRIPTION	ELEV
5	260+17.40, 74.6' RT	RR SPIKE IN PP #25-4-223 SW CORNER OF CTH P & MARSHFIELD STREET	1223.99

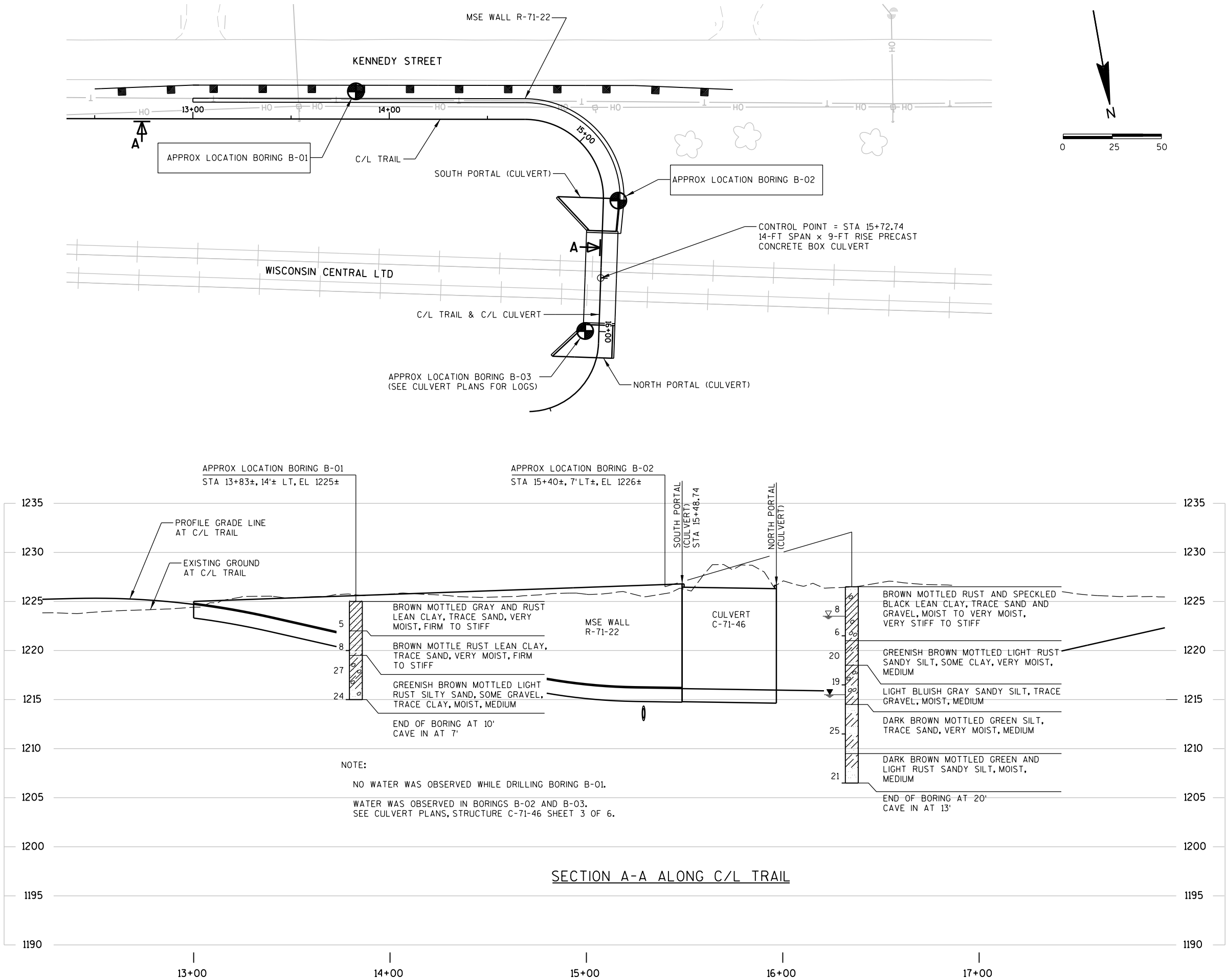
SEH CONTACT: CHRIS BLUM, PE, 608.620.6192
WISDOT BRIDGE OFFICE CONTACT: BILL DREHER, PE, 608.266.8489

PLOT TIME: 9:54:33 AM

PLOT DATE: 5/12/2016

FILE NAME : S:\UZ\W\trnc\lil6\B\5-Final-dgn\51-drawings\20-Struct\culvert\tr7022r-w2.dgn

8



STATE PROJECT NUMBER		
6350-07-80		
ABBREVIATIONS		
F — FINE	M — MEDIUM	C — COARSE
WS — WEATHERED	SO — SOUND	
MATERIAL SYMBOLS		
TOPSOIL	SILT	SANDSTONE
SAND	PEAT	LIMESTONE
GRAVEL	CLAY	IGNEOUS ROCK
LEGEND OF PROBING		
PROBING NO. STA. ELEVATION 7 AVERAGE BLOWS PER FOOT REFUSAL 95/6		
95/6=95 BLOWS FOR 6" PENETRATION PROBING TAKEN WITH A 350# WT. FALLING 18" ON A 2" O.D. POINT.		
LEGEND OF BORING		
BORING NO. STA. ELEV. UNCONFINED STRENGTH BLOWS PER FT. USING 140# WT. FALLING 30" WASH SAMPLE SHELBY TUBE — S.T. GROUND WATER ELEVATION NO GROUND WATER OBSERVED ABOVE THIS ELEVATION		
SANDY GRAVEL F. BOULDERS OR COBBLES SAND SILTY CLAY SO LIMESTONE		
UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.		
SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION		
TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.		

8

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE R-71-22			
DRAWN BY		DLF	PLANS CK'D, HDF/WSW
MSE WALL SUBSURFACE EXPLORATION			SHEET 2 OF 4 84

1. THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS, AND SHOP DRAWINGS FOR THE RETAINING WALLS IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE RETAINING WALL MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST FOR FURNISHING THESE ITEMS SHALL BE INCLUDED IN THE BID ITEM "WALL MODULAR BLOCK MECHANICALLY STABILIZED EARTH".
2. SOIL REINFORCEMENT LENGTH:
 MINIMUM STA 13+00.00 TO STA 14+40.00 = 6'.
 MINIMUM STA 14+40.00 TO STA 15+48.74 = 0.7 X (H).
3. PLANS, ELEVATIONS AND DETAILS SHOWN ON THESE DRAWINGS ARE INTENDED TO INDICATE WALL LOCATIONS, LENGTH, HEIGHTS, AND DETAILS COMMON TO THE WALL SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE WALL SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.
4. THE RETAINING WALL IS TO BE DESIGNED USING THE ELEVATION GIVEN ON THE MSE WALL PLAN AND ELEVATION VIEW SHEET.
5. DESIGN FOR RETAINING WALL TO PROVIDE FOR FINISHED GRADE SLOPED BEHIND WALL AS SHOWN.
6. A LIVE LOAD SURCHARGE OF 100 PSF IS USED FOR DESIGN.

1. WALL MODULAR BLOCK MECHANICALLY STABILIZED EARTH.
2. WALL FACING UNITS TO CONSIST OF PRECAST MODULAR CONCRETE BLOCKS PRODUCED BY A WETCAST PROCESS.

1. CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL REQUIRED SUBMITTALS HAVE BEEN RECEIVED AND APPROVED PRIOR TO COMMENCING CONSTRUCTION.
2. MSE = MECHANICALLY STABILIZED EARTH.
3. GROUNDWATER WAS OBSERVED ABOVE THE PROPOSED BOTTOM OF WALL. DESIGN SUBSURFACE DRAIN TO ACCOUNT FOR OBSERVED WATER LEVELS. OUTLET DRAINS TO INLET STRUCTURES 1A OR 1B.
4. OVER EXCAVATION IS INCLUDED IN BID ITEM 310.0115. ENSURE SUBSURFACE DRAIN ELEVATION IS LOWERED TO DRAIN OPEN GRADED BASE, IF USED.
5. STAINING OF BLOCK AND CONCRETE CAP FOR RAILING TO BE INCLUDED IN BID ITEM SPV.0165.02. COLOR AND TEXTURE OF BLOCK TO BE APPROVED BY ENGINEER.

BID ITEM NUMBERS	BID ITEMS	UNIT	TOTALS
SPV.0165.02	WALL MODULAR BLOCK MECHANICALLY STABILIZED EARTH LRFD/QMP	SF	1525
310.0115	BASE AGGREGATE OPEN GRADED	CY	105
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	264
616.0206	FENCE CHAIN LINK 6-FT	LF	264
645.0111	GEOTEXTILE FABRIC, TYPE DF SCHEDULE A	SY	390
517.1010.S.01	CONCRETE STAINING R-71-22	SF	1525

- ① QUANTITY IS EXPOSED HT OF WALL - THE GROUND LINE AT FRONT FACE OF WALL TO THE TOP OF THE WALL.
- ② THE CONCRETE STAINING SHALL BE FEDERAL COLOR CODE 10266 OR AS DIRECTED BY THE ENGINEER.

NOTE: FOR FENCE/RAILING DETAILS,
SEE CULVERT DRAWING.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE R-71-22			
		DRAWN BY DLF	PLANS CK'D. HDF/WSW
MSE WALL		SHEET 3 OF 4	
TYPICAL SECTION		85	



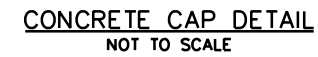
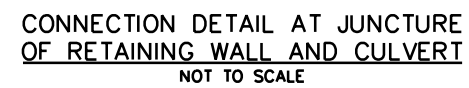
STATION RANGE			BEGIN OFFSET	END OFFSET
13+00.00	TO	15+32.07	8'	8'
15+32.07	TO	15+48.74	8'	7'

SOIL PARAMETERS			
STRATUM LOCATION & SOIL DESCRIPTIONS	UNIT WEIGHT (PCF)	FRICTION ANGLE (DEGREES)	COHESION (PCF)
FOUNDATION SOIL ZONE (SAND) *	120.0	28	0
RETAINED SOIL ZONE *	120.0	35	0

* DESIGN WALL FOR THESE VALUES

MINIMUM DOT STANDARD	CALCULATED CDR (≥ 1.0 REQUIRED)
SLIDING	1.37
BEARING RESISTANCE	10.0
ECCENTRICITY	1.46
GLOBAL STABILITY	1.55

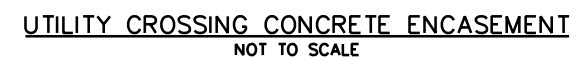
** BASED ON TALLEST WALL HEIGHT AT STA 15+48.74 USING
 A BASE WIDTH OF 10.5' MEASURED FROM FRONT FACE OF WALL



- ① REINFORCEMENT SHALL BE EPOXY COATED.
- ② VERIFY WITH BLOCK MANUFACTURER FOR RETAINING WALL UNIT DIMENSIONS.
- ③ PROVIDE EXPANSION JOINTS AT 30' MAX INTERVALS. DO NOT RUN BARS THROUGH EXPANSION JOINTS. USE ¾" JOINT FILLER AND SEAL ALL JOINTS WITH NON-STAINING, NON-BITUMINOUS JOINT SEALER (1" DEEP AND HOLD ⅛" BELOW FINISHED CONCRETE SURFACE).

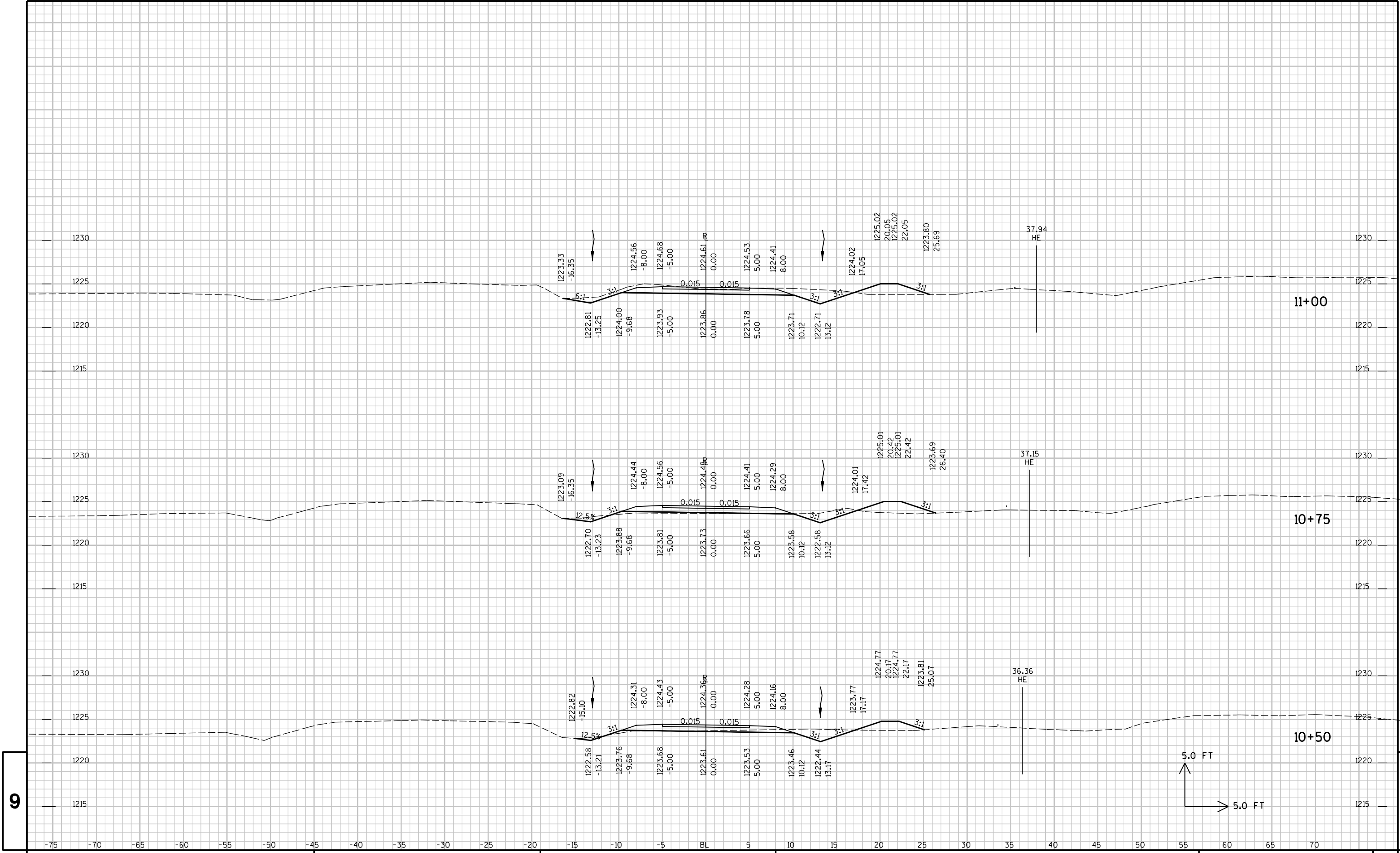


- UTILITY PENETRATIONS AT WALLS
NOT TO SCALE



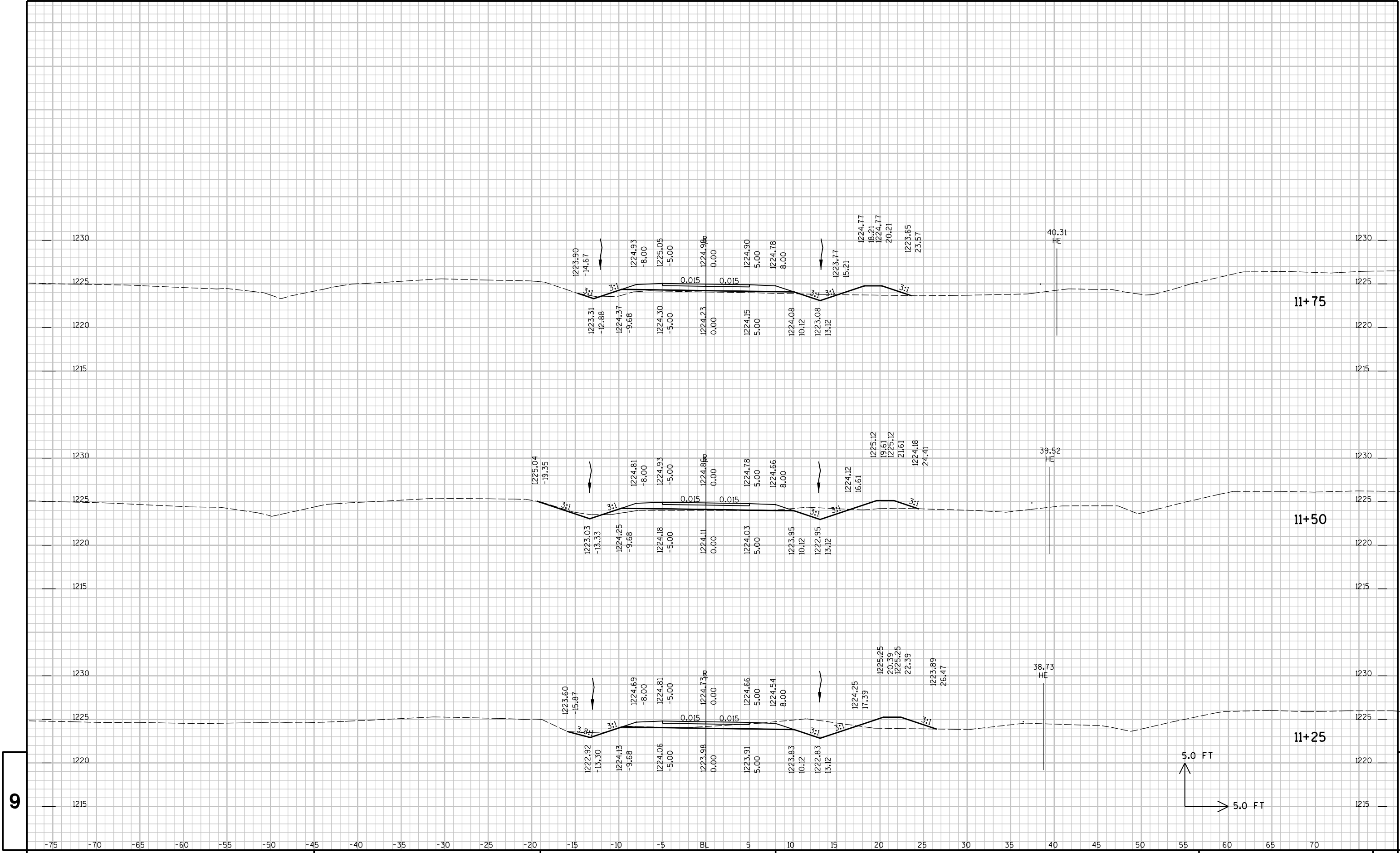
NO.	DATE	REVISION
BY		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
STRUCTURE R-71-22		
DRAWN BY		PLANS CK'D. HDF/WSW
DLC		
MSE WALL MISCELLANEOUS DETAILS		SHEET 4 OF 4 86

TITLE		EXP Fact= 1.3					
STATION	END AREA		VOLUME		CUMULATIVE VOLUME		MASS HAUL (CY)
	CUT (SF)	FILL (SF)	CUT (CY)	FILL (CY)	CUT (CY)	FILL (CY)	
9+69	7.2	0.0					
9+75	7.2	5.0	2	1	2	1	1
9+82	7.6	29.4	2	6	4	7	-3
10+00	21.6	7.7	10	16	13	23	-9
10+25	15.6	5.8	17	8	31	31	0
10+50	8.8	6.0	11	7	42	38	4
10+75	6.6	9.4	7	9	49	47	2
11+00	24.6	6.6	14	10	63	57	7
11+25	17.8	7.3	20	8	83	65	18
11+50	7.1	7.7	12	9	95	74	20
11+75	2.4	10.2	4	11	99	85	14
12+00	2.4	17.8	2	17	101	102	-1
12+25	1.8	19.1	2	22	103	124	-21
12+50	1.6	19.8	2	23	105	147	-43
12+75	0.7	12.7	1	20	106	167	-61
13+00	11.9	8.0	6	12	112	179	-68
13+25	48.6	7.9	28	10	140	189	-49
13+50	76.4	7.4	58	9	197	198	-1
13+75	116.4	7.0	89	9	287	207	80
14+00	161.5	6.9	129	8	415	215	200
14+25	208.2	6.9	171	8	587	224	363
14+50	259.1	6.8	216	8	803	232	571
14+75	323.2	6.8	270	8	1072	240	832
15+00	381.2	4.4	326	7	1398	247	1152
15+25	409.1	5.2	366	6	1764	252	1512
15+49	400.5	0.0	356	3	2120	255	1865
Structure C-71-46							
15+97	450.0	0.0					
16+25	751.0	12.3	629	8	2749	264	2485
16+50	649.1	10.6	648	14	3397	278	3119
16+75	565.4	11.2	562	13	3959	291	3669
17+00	449.8	8.1	470	12	4429	302	4127
17+25	343.9	8.1	367	10	4797	312	4485
17+50	250.4	7.0	275	9	5072	321	4751
17+75	187.0	10.0	203	10	5274	331	4943
18+00	121.8	8.7	143	11	5417	343	5075
18+25	62.4	12.5	85	13	5503	355	5147
18+50	20.5	7.7	38	12	5541	368	5173
18+75	8.2	14.2	13	13	5554	381	5174
19+00	1.4	13.1	4	16	5559	397	5162
19+25	4.5	13.2	3	16	5561	413	5148
19+50	4.9	12.7	4	16	5566	429	5137
19+75	7.7	11.4	6	15	5572	443	5129
20+00	9.1	9.9	8	13	5579	456	5123
20+25	12.5	0.2	10	6	5589	462	5127
20+50	17.0	0.0	14	0	5603	462	5141
20+75	38.1	0.0	26	0	5629	462	5166
21+00	38.5	0.0	35	0	5664	462	5202



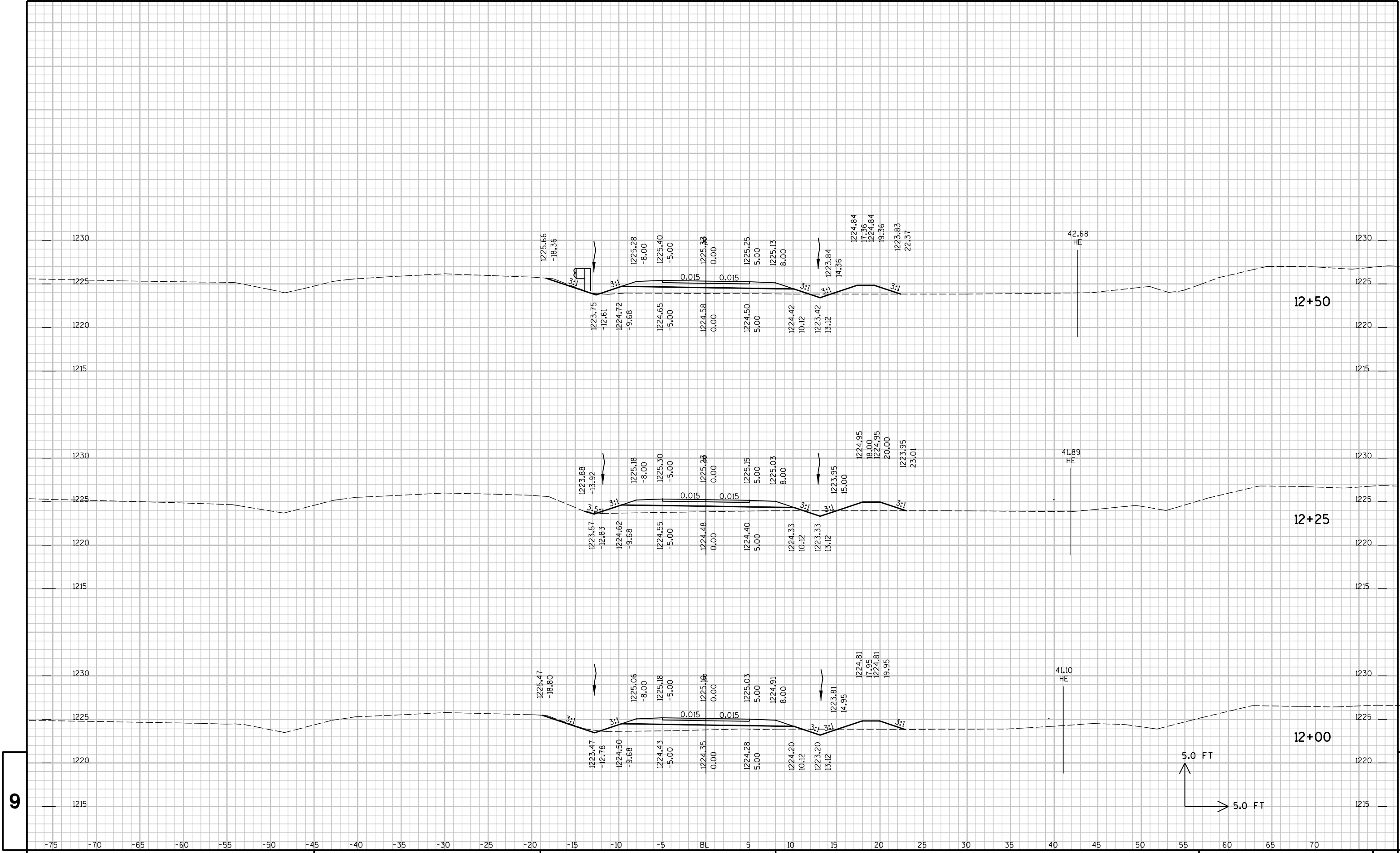
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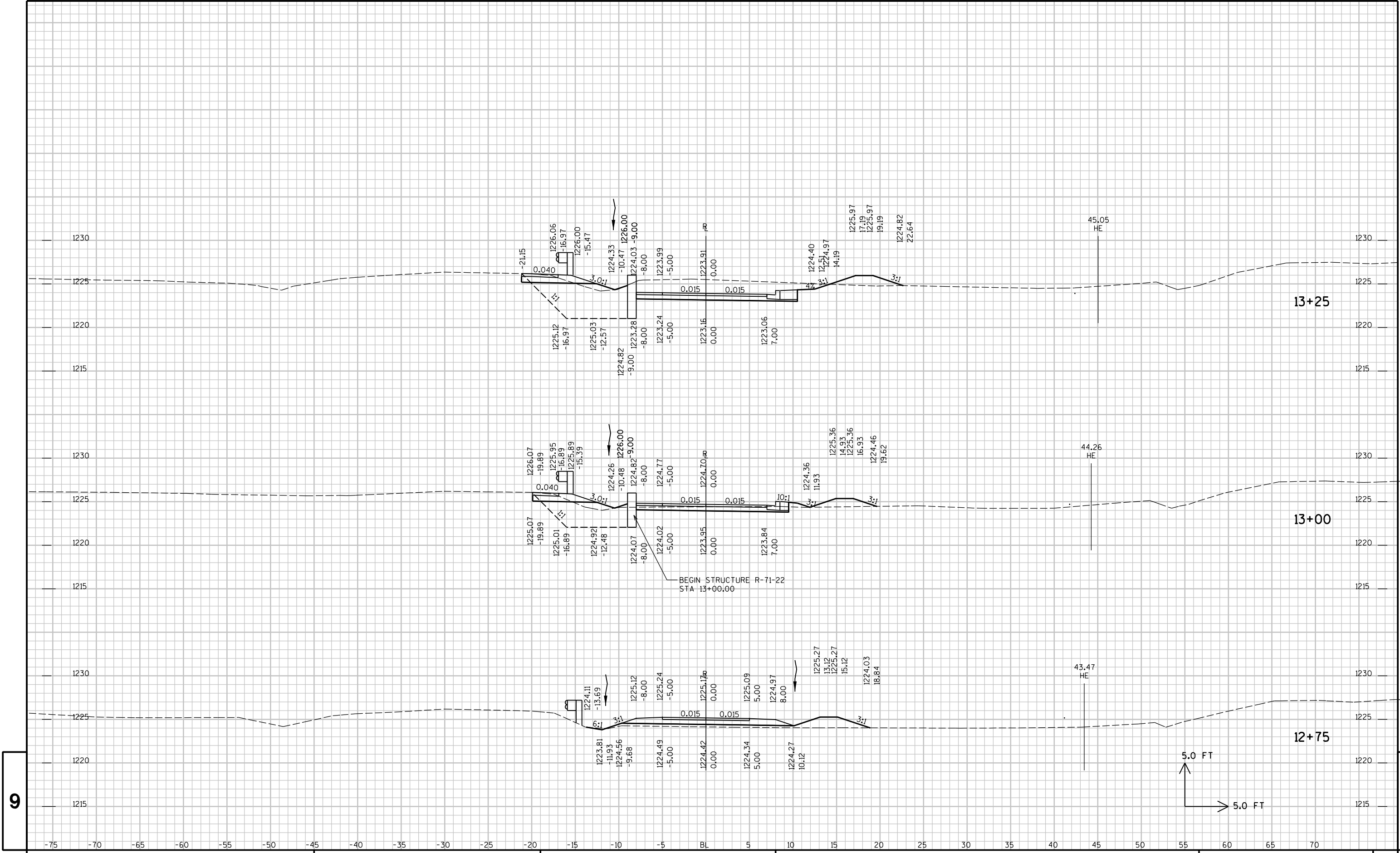
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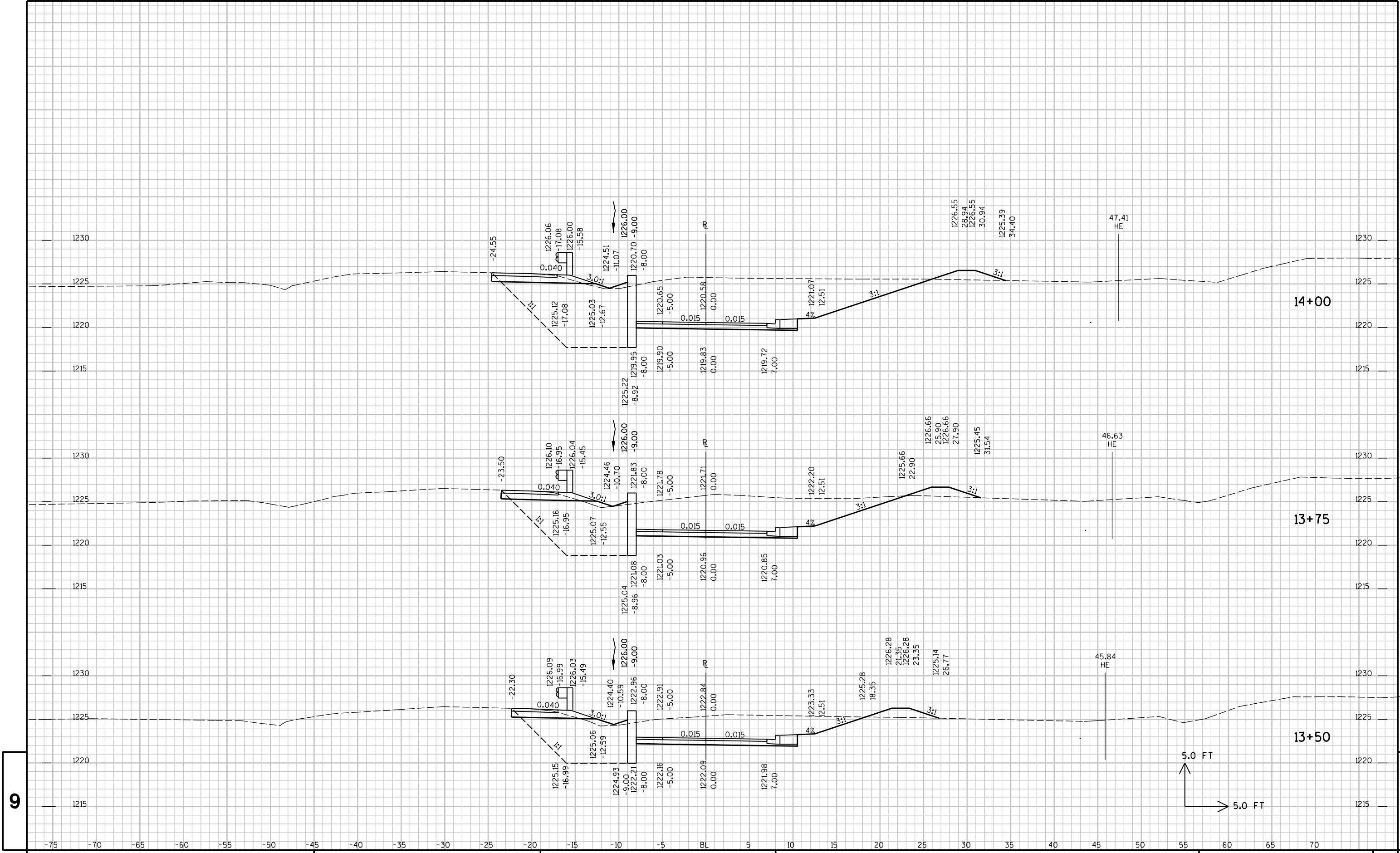
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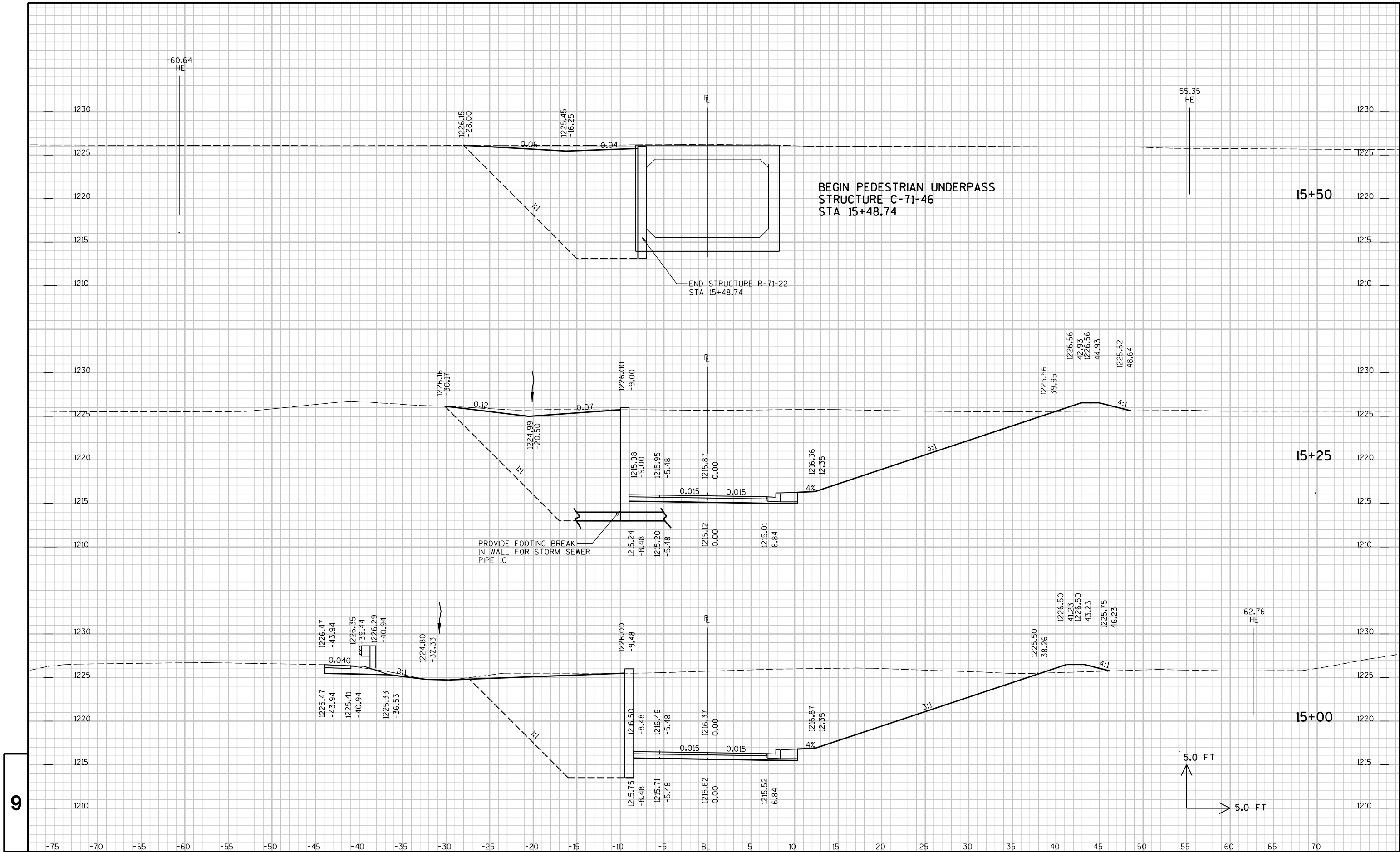
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PROJECT NO : 6350-07-80

HWY : PEDESTRIAN UNDERPASS

COUNTY : WOOD

CROSS SECTIONS - PEDESTRIAN UNDERPASS

SHEET NO:

95

E

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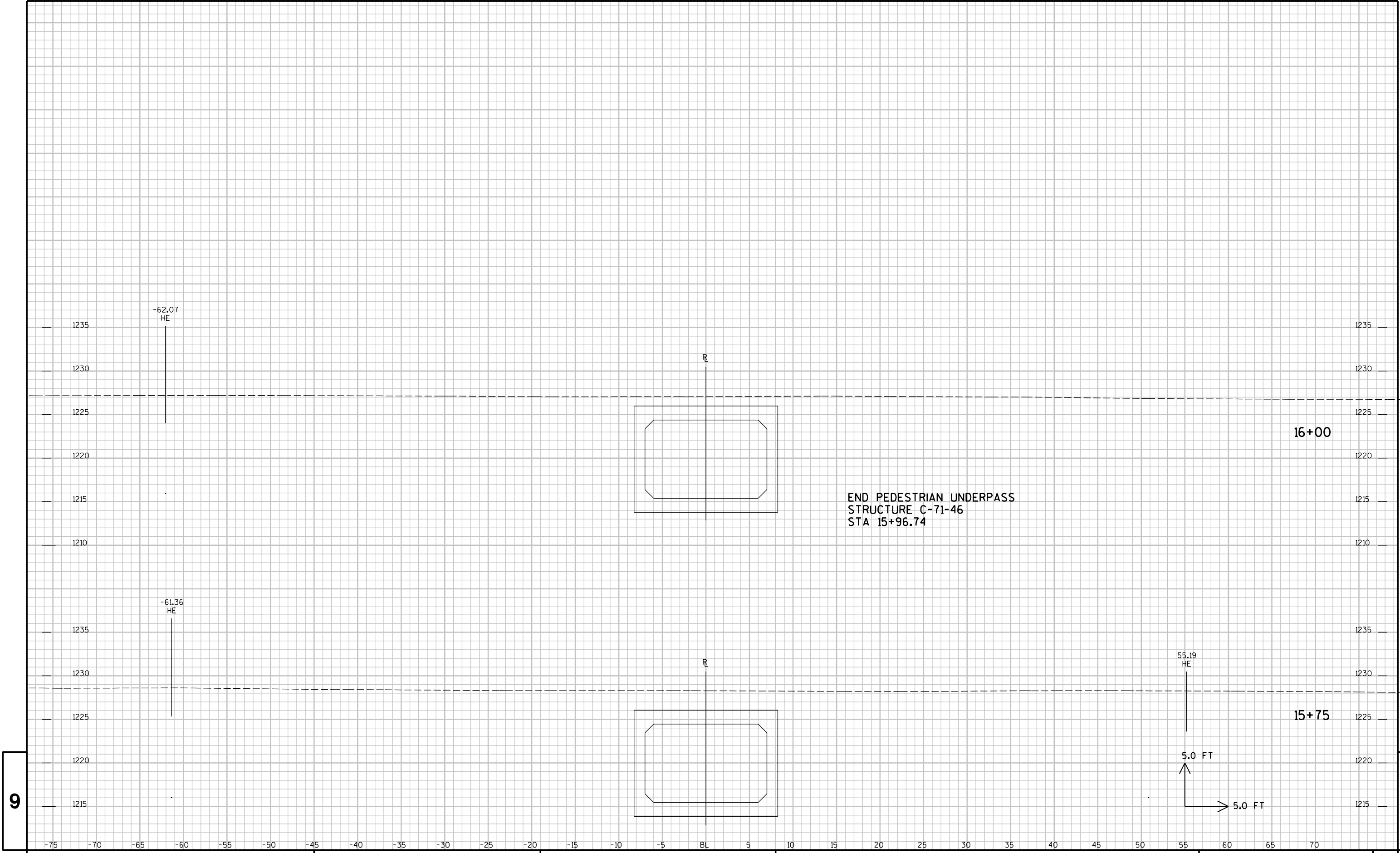
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PLOT DATE : 1/26/2016

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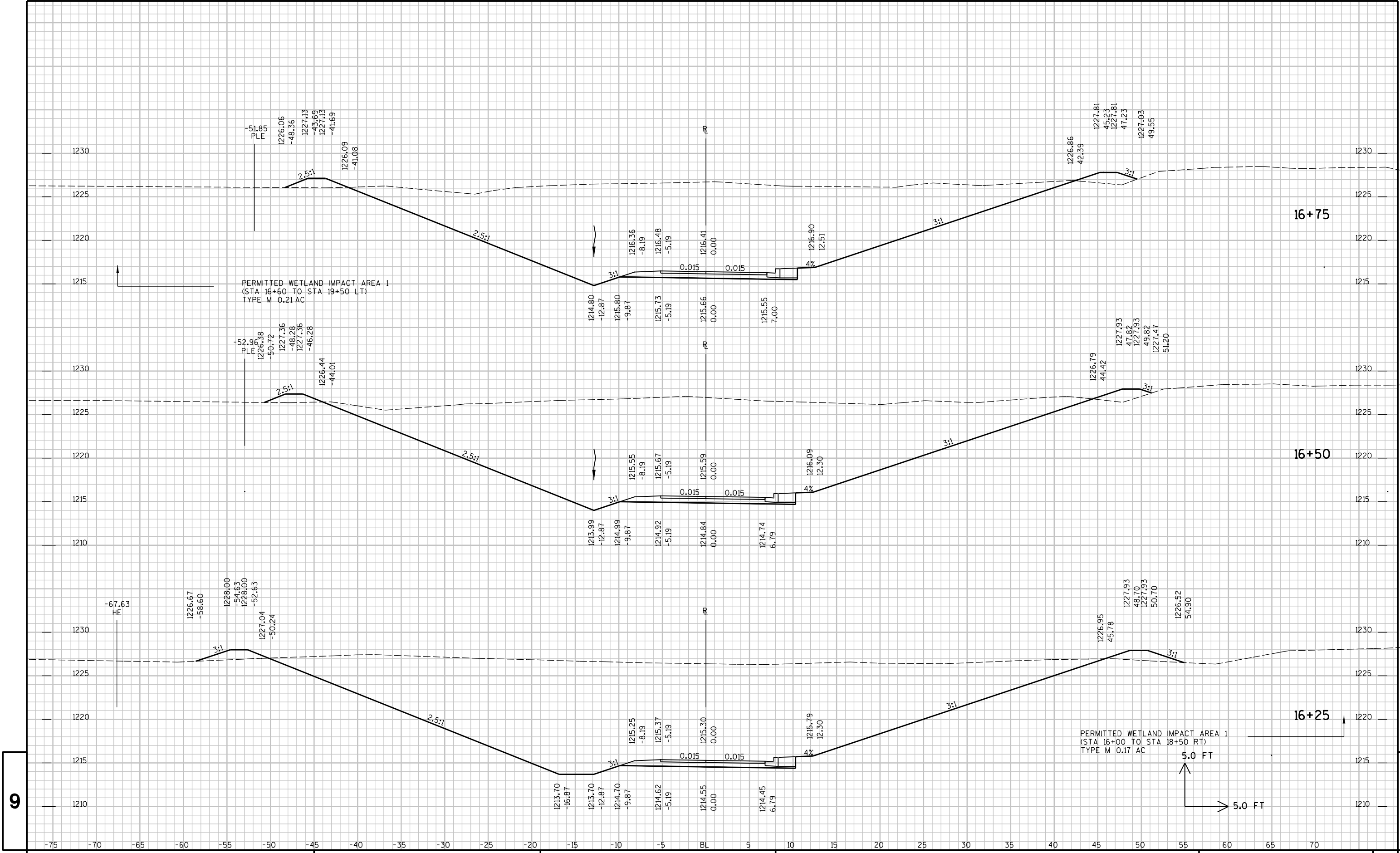
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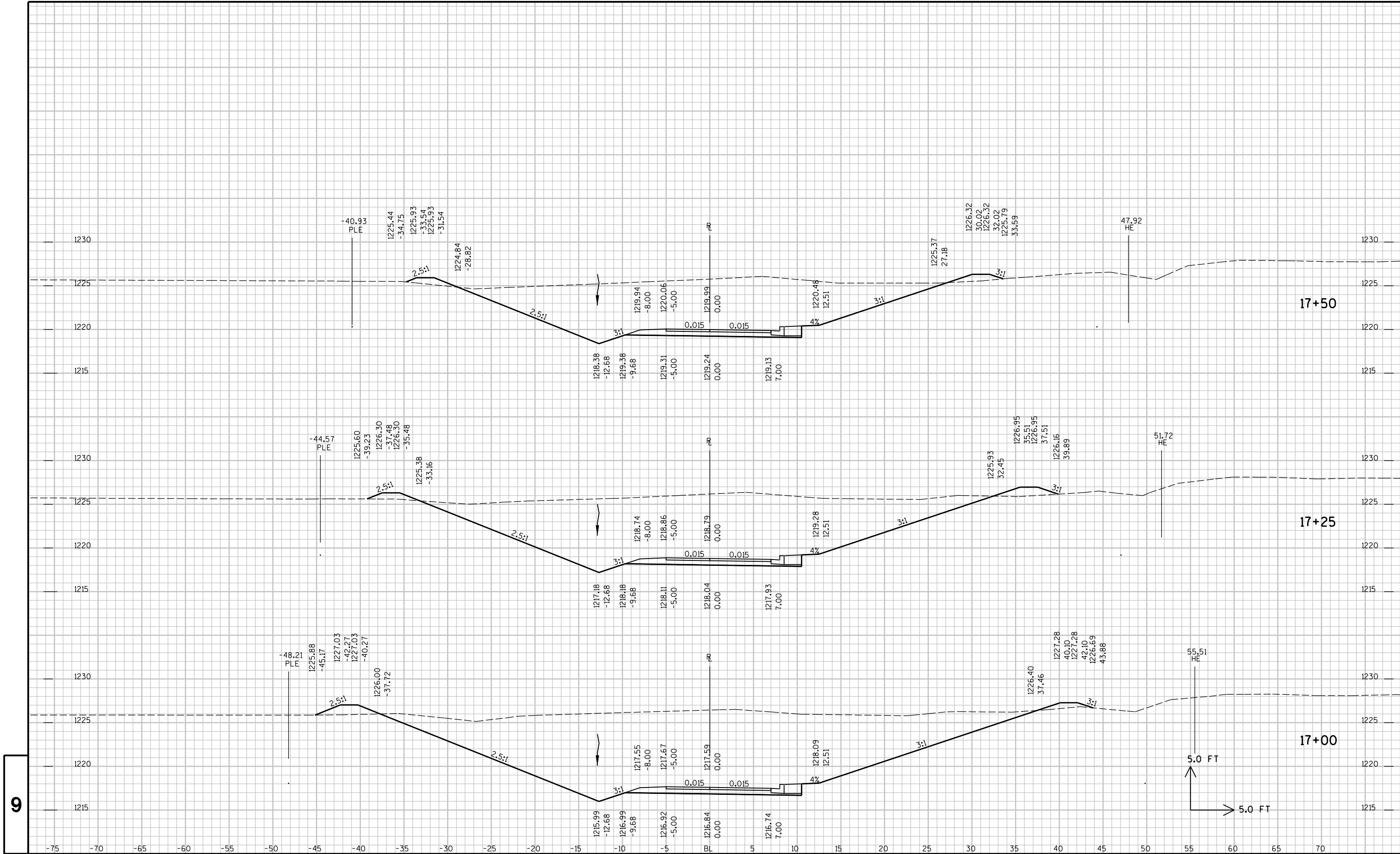
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PROJECT NO : 6350-07-80

HWY : PEDESTRIAN UNDERPASS

COUNTY : WOOD

CROSS SECTIONS - PEDESTRIAN UNDERPASS

SHEET NO: 98

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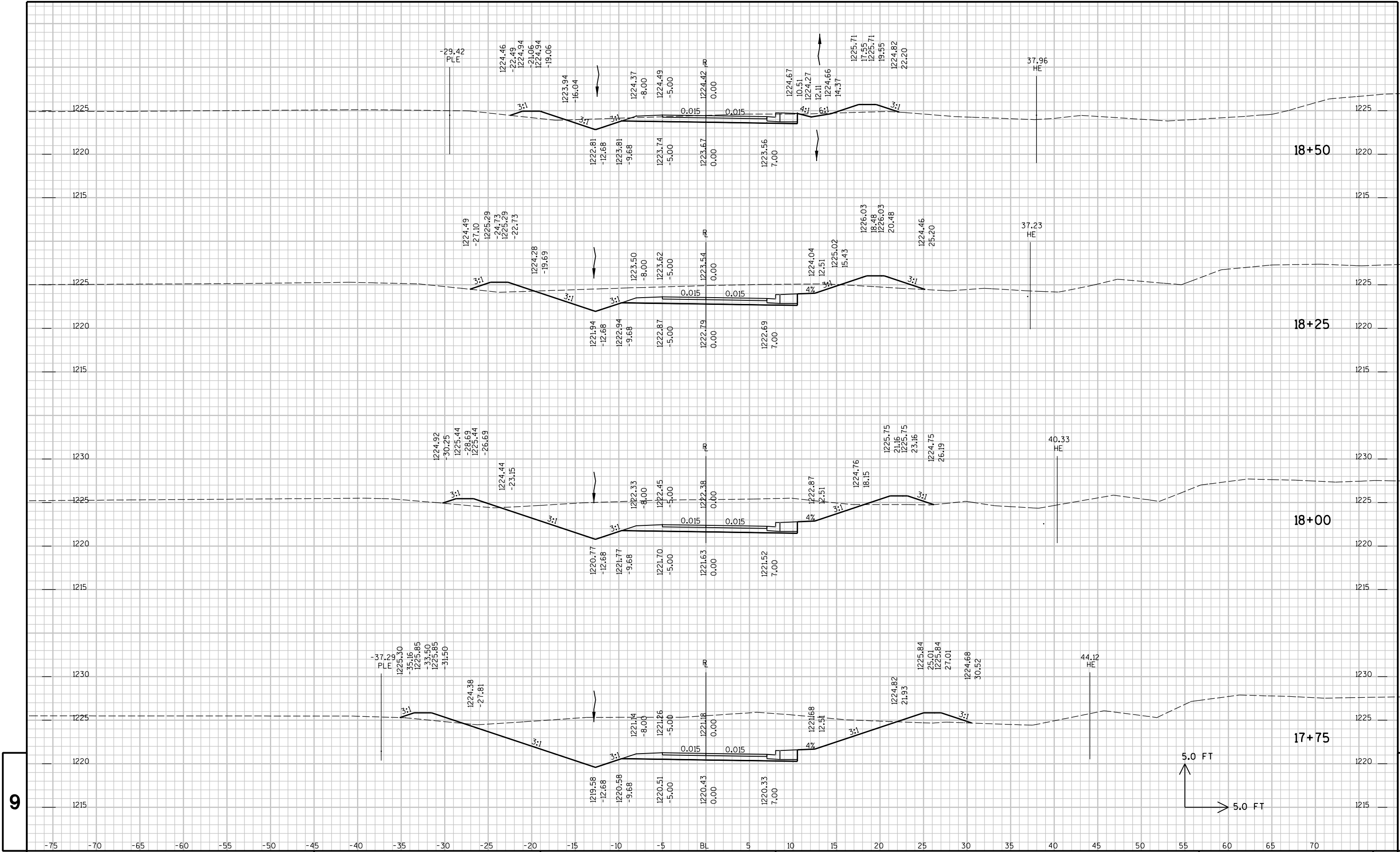
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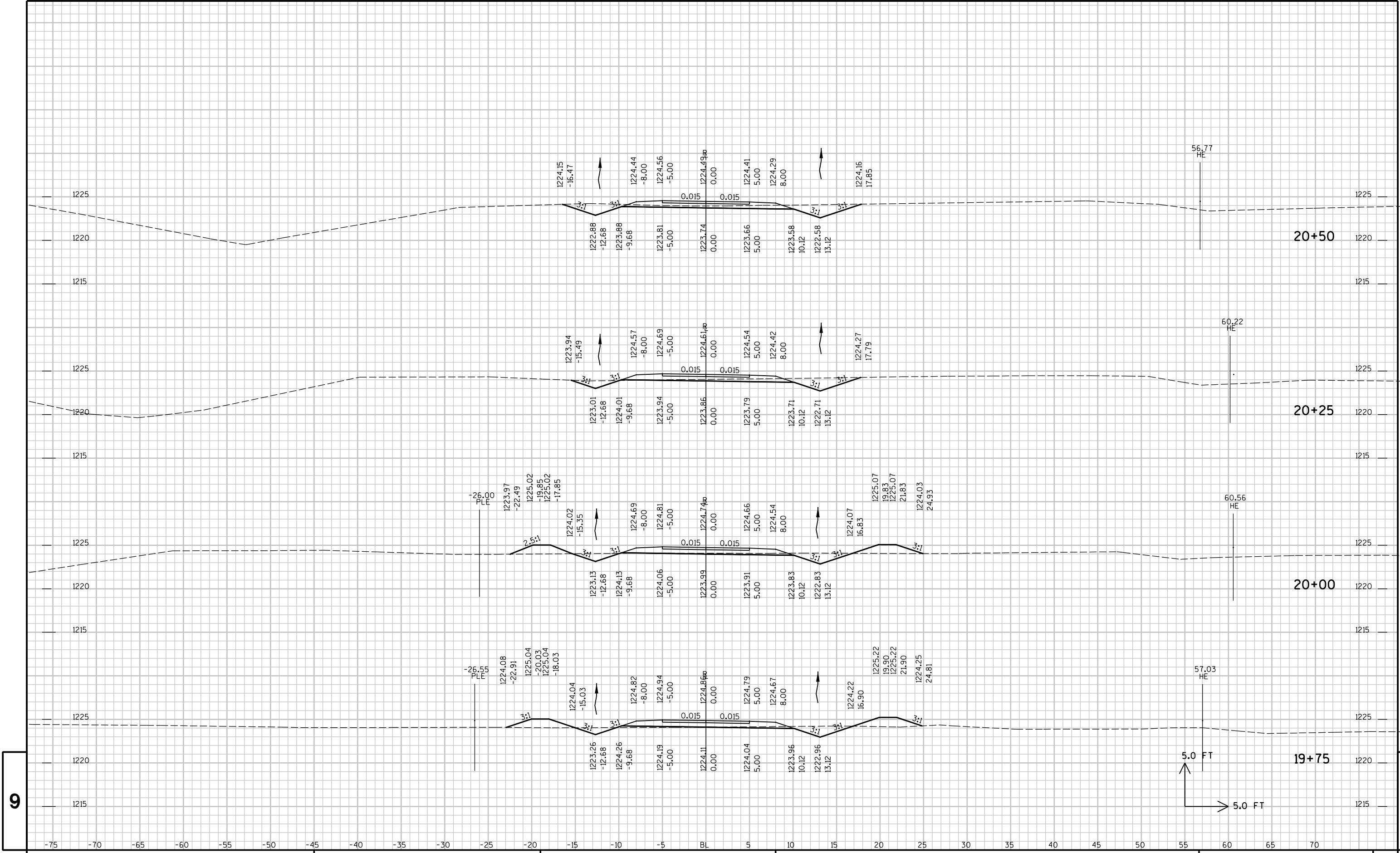
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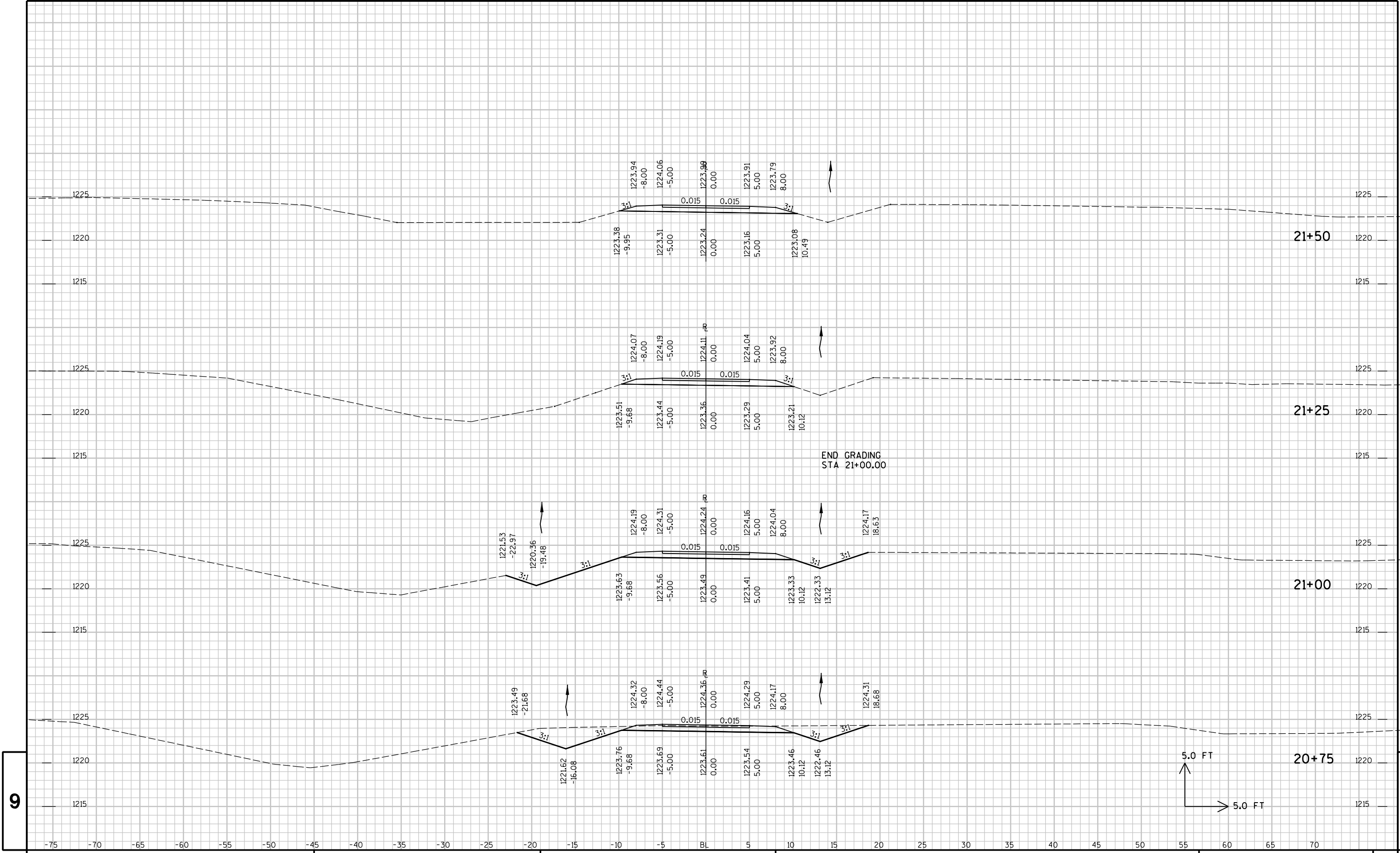
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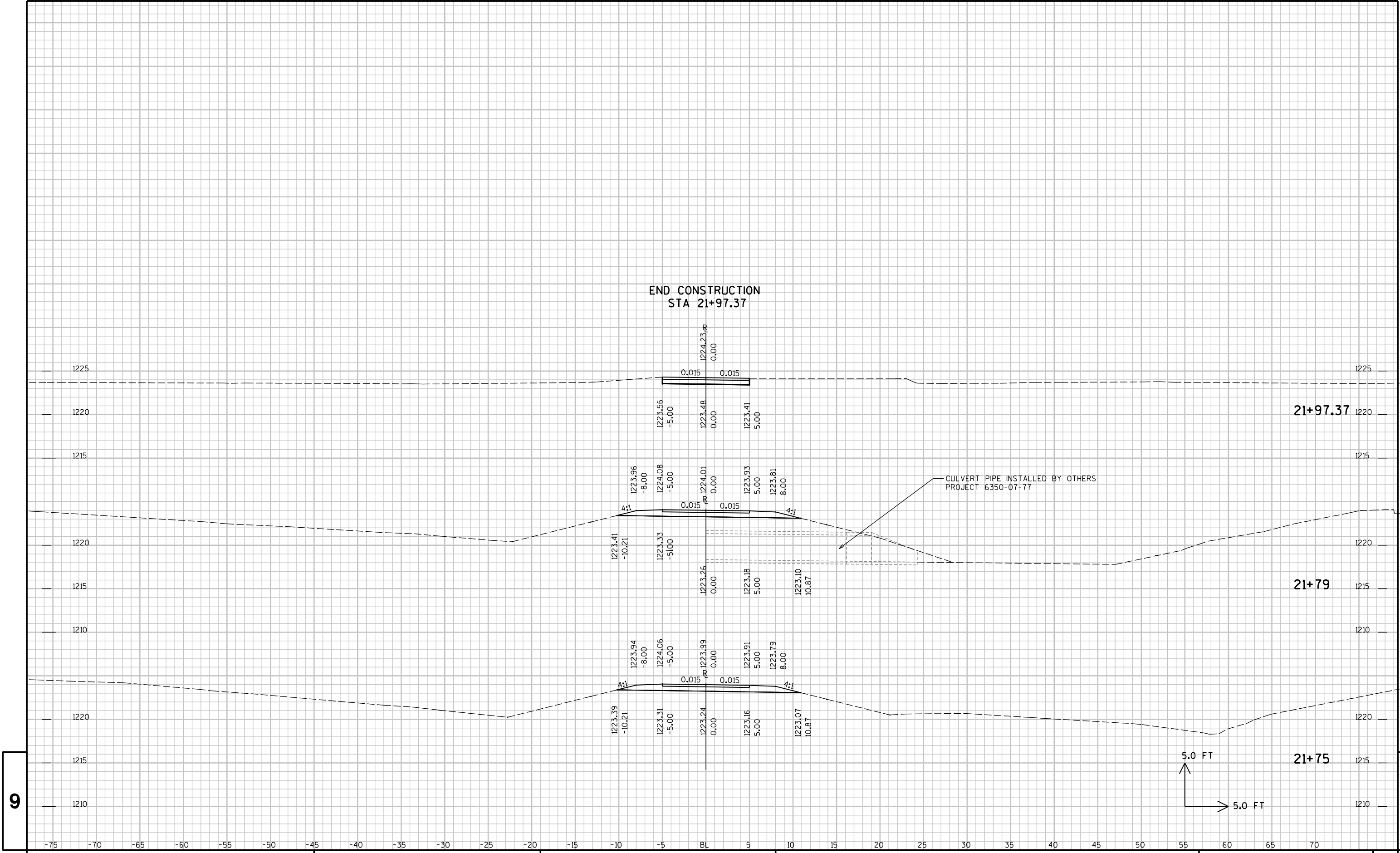
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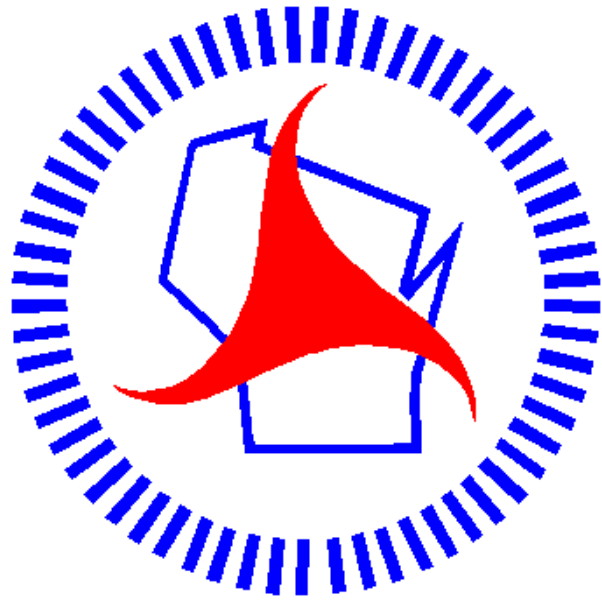
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Place Sheet Numbers