

GRE

PROJECT ID: 4501-00-71

WITH: N/A

NOVEMBER 2018
ORDER OF SHEETS

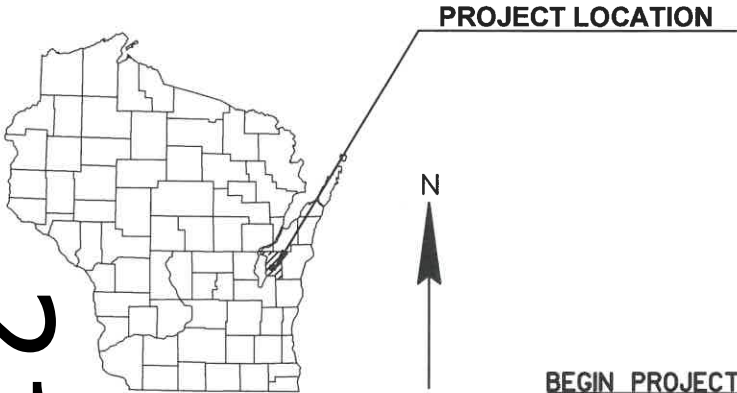
Section No. 1	Title
Section No. 2	Typical Sections and Details(Includes Erosion Control Plan)
Section No. 3	Estimate of Quantities
Section No. 3	Miscellaneous Quantities
Section No. 4	Right of Way Plan
Section No. 5	Plan and Profile
Section No. 6	Standard Detail Drawings
Section No. 7	Sign Plates
Section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

TOTAL SHEETS = 68

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PLAN OF PROPOSED IMPROVEMENT

C NEW HOLSTEIN
CLARK STREET-MANITOWOC CALUMET CO
CTH X
CALUMET COUNTY

STATE PROJECT NUMBER
4501-00-71



BEGIN PROJECT
STA. 107+10
Y=448772.036
X=914617.701

DESIGN DESIGNATION

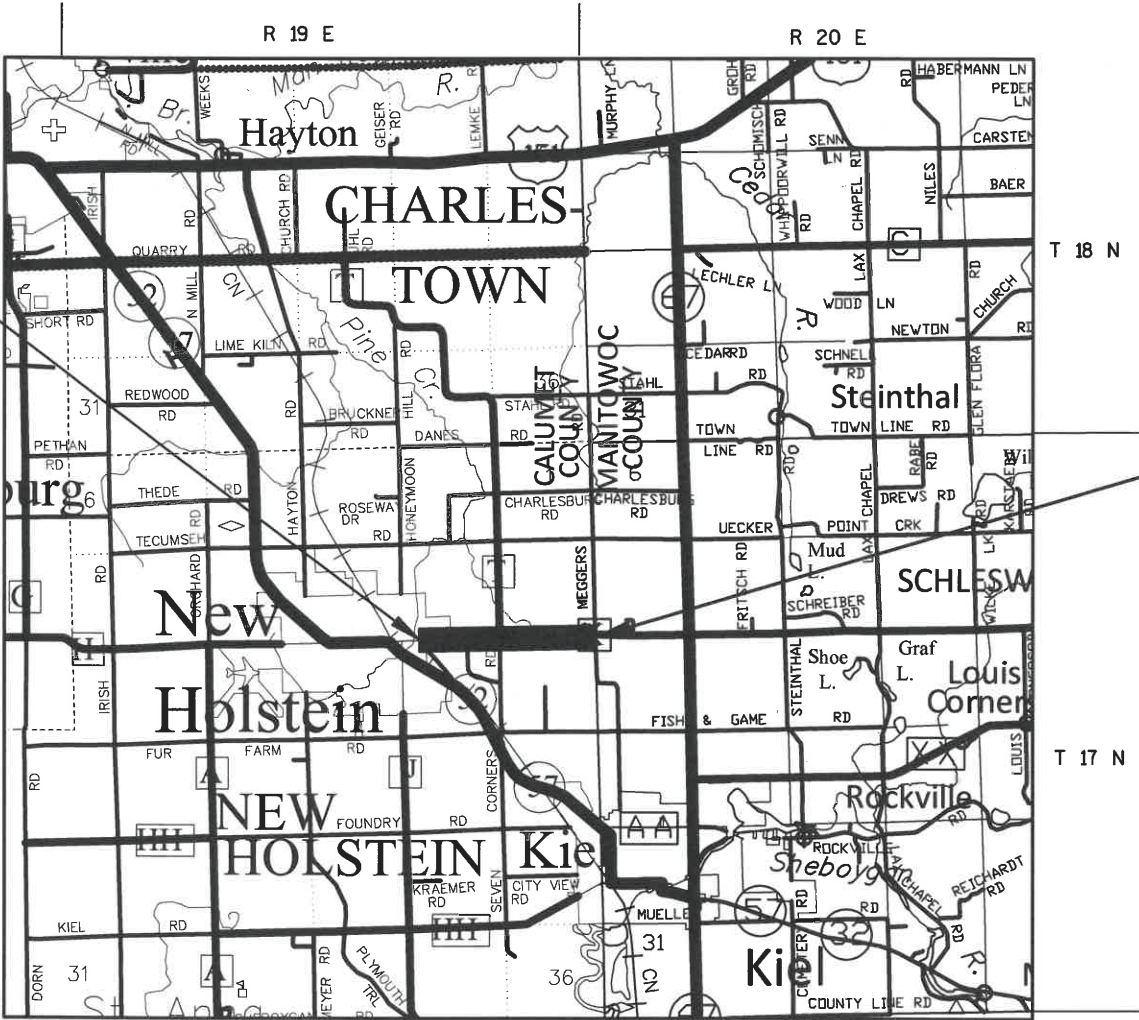
A.A.D.T.	2019	=	1800
A.A.D.T.	2039	=	2000
D.H.V.	(2039)	=	264
D.D.		=	60/40
T.		=	7.4%
DESIGN SPEED		=	55 MPH
ESALS		=	250,000

CONVENTIONAL SYMBOLS

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

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

ROCK	
LABEL	
95.36	
E	
FO	
G	
SAN	
SS	
T	
W	



LAYOUT
SCALE 0 2 Mi.

TOTAL NET LENGTH OF CENTERLINE = 1.703 MI.

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

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
4501-00-71	WISC 2018443	1

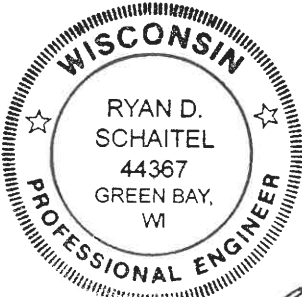
ACCEPTED FOR
CALUMET COUNTY

4/5/18
DATE

Brian P. Glasse
COUNTY HIGHWAY COMMISSIONER

ORIGINAL PLANS PREPARED BY

AYRES
ASSOCIATES



4-3-18
(Date)

Signature

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor AYRES ASSOCIATES

Designer AYRES ASSOCIATES

Management Consultant JT ENGINEERING

APPROVED FOR THE DEPARTMENT

DATE: 4/10/18
(Management Consultant Signature)

PRE_1

E

GENERAL NOTES

DISTURBED AREAS WITHIN THE RIGHT OF WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, WILL BE FERTILIZED, SEEDED AND EROSION MAT OR MULCH.

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

EROSION CONTROL MEASURES WILL BE PLACED AS SHOWN ON THE CONSTRUCTION DETAILS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.

MEETING EXISTING PAVEMENT WITH NEW PAVEMENT WILL BE PREFORMED WITH A BUTT JOINT. ALL BUTT JOINTS ARE TO BE SAW CUT.

SAW CUT LOCATIONS SHOWN ON THE PLAN ARE SUBJECTED TO ADJUSTMENT BY THE ENGINEER IN FIELD. THE LINE OF SUCH SAW CUTS WILL BE NEATLY DELINEATED THRU THE ASPHALT WITHOUT ANY DAMAGE TO THE REMAINING PORTION OF THE EXISTING PAVEMENT.

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

CURVE DATA IS BASED ON ARC DEFINITION.

ACCESS TO ALL RESIDENCES AND BUSINESSES SHALL BE MAINTAINED DURING CONSTRUCTION.

EXACT LOCATION OF ENTRANCES WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

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

FILL EXPANSION FACTOR IS 33%.

INLET AND DISCHARGE ELEVATIONS FOR DRAINAGE PIPES SHOWN ON THE PLAN SHEETS ARE APPROXIMATE AND WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

PRIOR TO ORDERING DRAINAGE PIPES, THE CONTRACTOR WILL VERIFY RELATED DRAINAGE INFORMATION IN THE PLAN WITH THE ENGINEER IN THE FIELD.

REFERENCE LINE REFERS TO ALIGNMENT AND STATIONING. CENTERLINE REFERS TO EXISTING ROADWAY CENTERLINE. REFERENCE LINE AND CENTERLINE ARE NOT COINCIDENTAL.

THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING MOTORISTS AND PEDESTRIANS THAT MAY ENTER THE WORK ZONE FROM POSSIBLE HAZARDS.

ALL ELEVATIONS ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF NAVD 88 (2012).

VERIFY CONCRETE CURB AND GUTTER REPAIR AREAS WITH THE ENGINEER IN THE FILED BEFORE BEGINNING WORK.

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 AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.71 ACRES
SOIL GROUP D

UTILITIES

- * WISCONSIN PUBLIC SERVICE CORP.-GAS TELEPHONE 920-433-1289

700 N. ADAMS ST.
PO BOX 1210
GREEN BAY, WI 54307
ATTN: MR. MARTY SCHAUB
E-MAIL: MFSchaub@wisconsinpublicservice.com
- * FRONTIER COMMUNICATIONS TELEPHONE 608-837-1605

100 COMMUNICATIONS DRIVE
SUN PRAIRIE, WI 53590
ATTN: MS. DANA GILLET
E-MAIL: Dana.Gillette@ftr.com
- * CHARTER COMMUNICATIONS TELEPHONE 920-263-0074

1623 BROADWAY AVE.
SHEBOYGAN, WI 53081
ATTN: MR. BRUCE HENRY
E-MAIL: Bruce.Henry@Charter.com
- * NEW HOLSTIEN PUBLIC UTILITIES TELEPHONE 920-898-5776

2110 WASHINGTON STREET
NEW HOLSTIEN, WI 53061
ATTN: RANDY JAECKELS
E-MAIL: rjackels@wppienergy.org
- * WEST SHORE PIPELINE TELEPHONE 920-655-1428

2119 N. QUINCY STREET
GREEN BAY, WI 54302
ATTN: MR. CASEY SCHWANDT
E-MAIL: Cschwandt@buckeye.com

* MEMBER OF DIGGERS HOTLINE



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

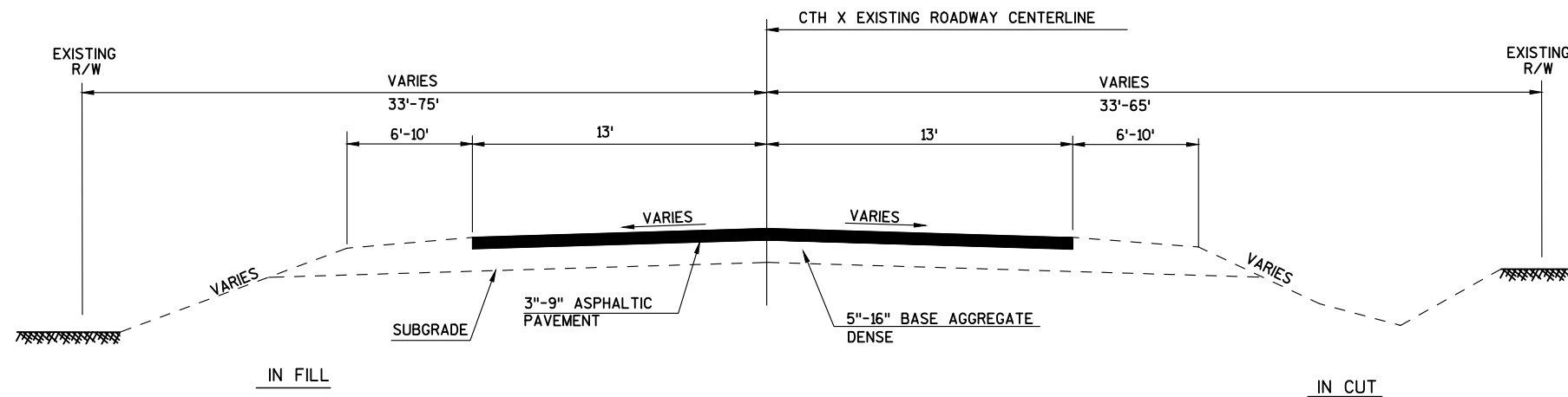
STANDARD ABBREVIATIONS

ADT	AVERAGE DAILY TRAFFIC	NC	NORMAL CROWN
AC	ASPHALT CEMENT	PT	POINT OF TANGENCY
AGG	AGGREGATE	PC	POINT OF CURVATURE
ASPH	ASPHALT	PI	POINT OF INTERSECTION
BM	BENCH MARK	PE	PRIVATE ENTRANCE
C/L	CENTERLINE	R	RADIUS
CONC	CONCRETE	REM	REMOVE
CMP	CORRUGATED METAL PIPE	R/L OR RL	REFERENCE LINE
CR.	CREEK	RCCP	REINFORCED CONCRETE CULVERT PIPE
D	DEGREE OF CURVE	RCPPS	REINFORCED CONCRETE PIPE STORM SEWER
DHV	DESIGN HOUR VOLUME	R.O.	RUNOUT
ESALS	EQUIVALENT SINGLE AXIS LOADS	R/W	RIGHT-OF-WAY
EXIST	EXISTING	STA	STATION
FE	FIELD ENTRANCE	SE	SUPER ELEVATION
HYD	HYDRANT	SS	STORM SEWER
IP	IRON PIPE OR PIN	T	TANGENT
L	LENGTH OF CURVE	TEL	TELEPHONE
LC	LONG CHORD OF CURVE	TLE	TEMPORARY LIMITED EASEMENT
LR	LENGTH OF RUNOFF	T	TRUCKS
MH	MANHOLE	VC	VERTICAL CURVE
		W	WELL

DEPARTMENT OF NATURAL RESOURCES

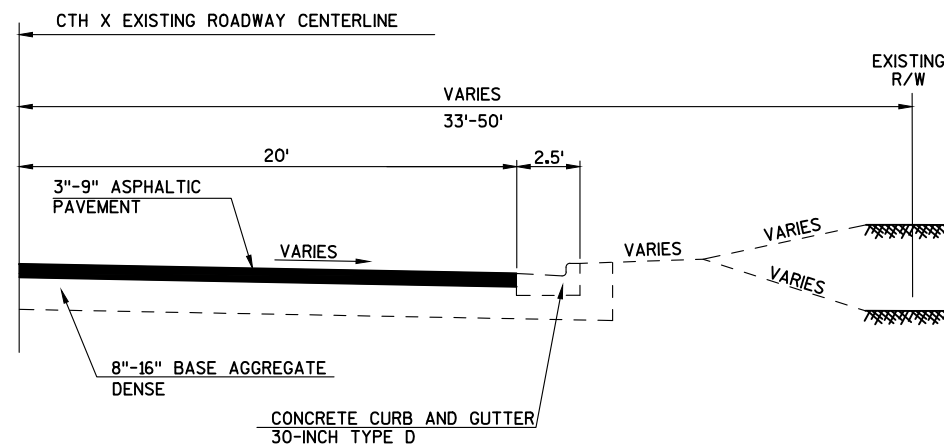
WDNR TELEPHONE 920-366-1544

2984 SHAWANO AVE.
P.O. BOX 10448
GREEN BAY, WISCONSIN 54313
ATTENTION: MATT SCHAEVE
E-MAIL: MATTHEW.SCHAEVE@WISCONSIN.GOV



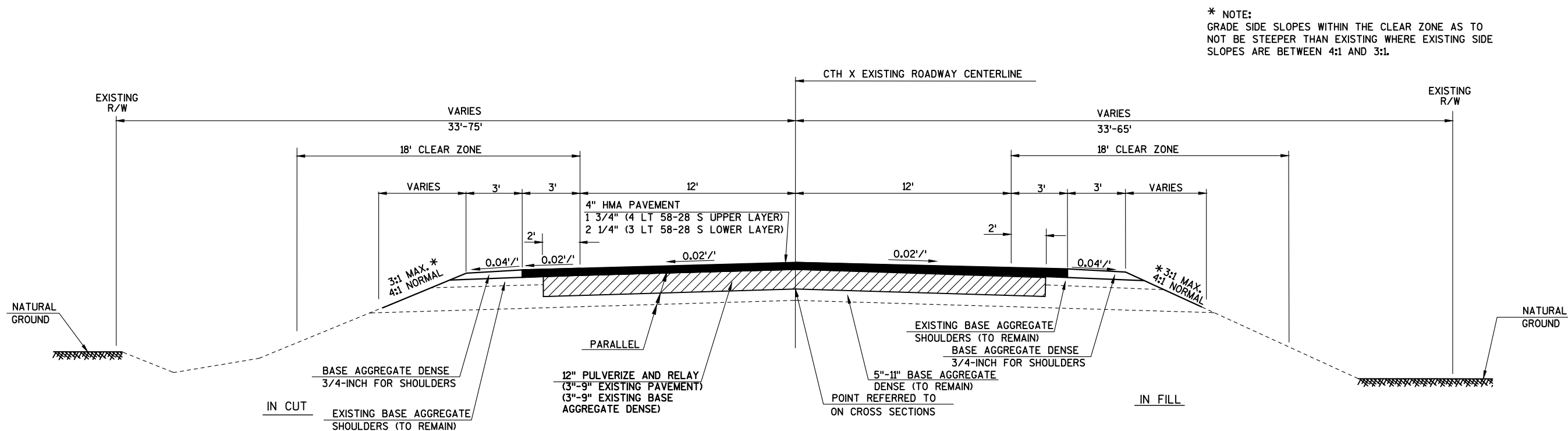
TYPICAL EXISTING SECTION FOR CTH X

STA. 107+10-STA. 113+47.5
STA. 125+73-STA. 134+66.5
STA. 138+23-STA. 189+61
STA. 191+75-STA. 197+00



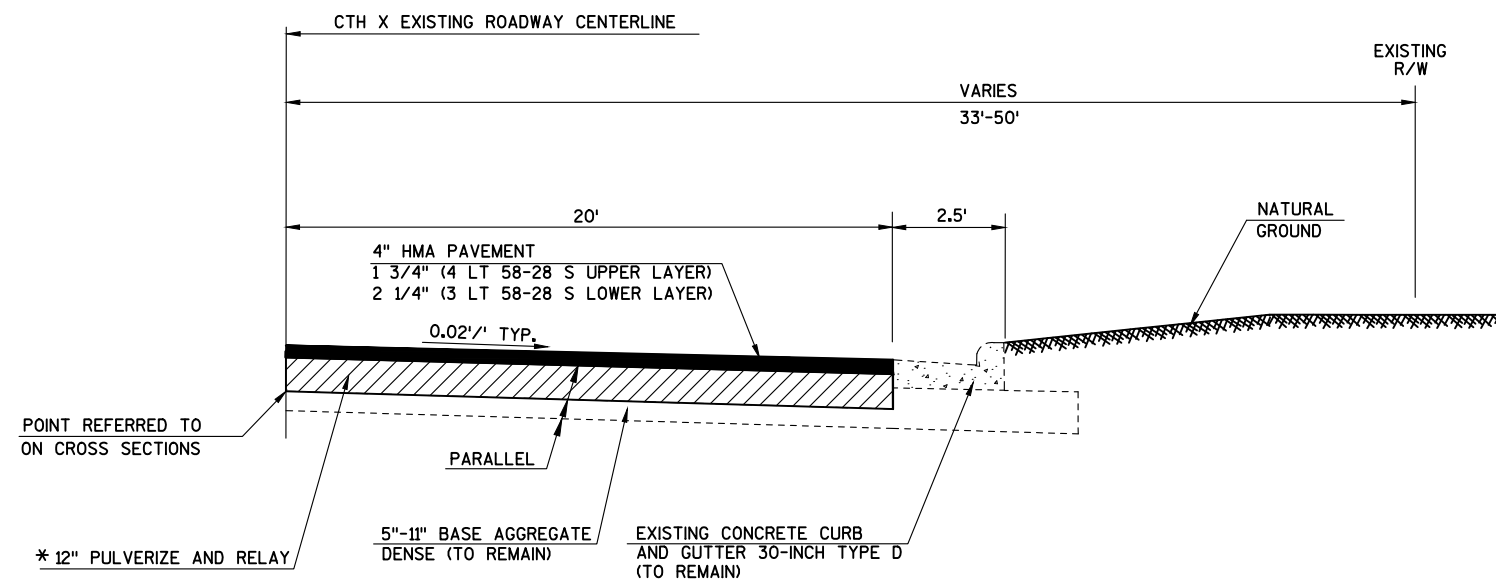
1/2 TYPICAL EXISTING SECTION FOR CTH X

STA. 113+47.5-STA. 125+73 LT.
STA. 134+66.5-STA. 138+23 LT. AND RT.
STA. 189+61-STA. 191+75 RT.



TYPICAL FINISHED SECTION FOR CTH X

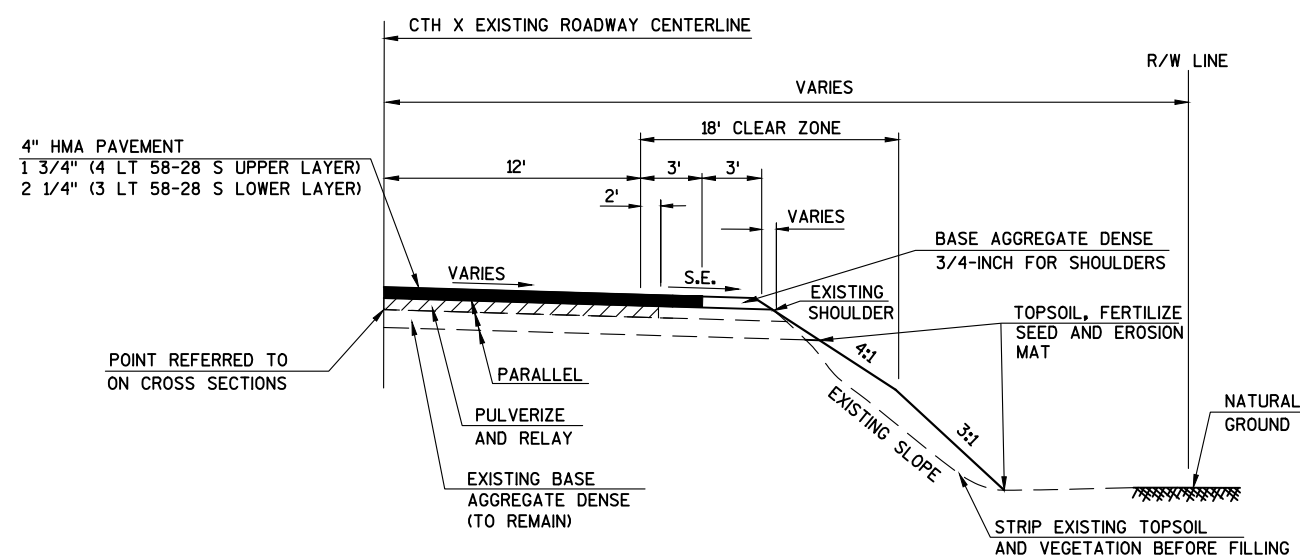
STA. 107+10-STA. 113+47.5
STA. 113+47.5-STA. 125+73 RT.
STA. 125+73-STA. 134+66.5
STA. 138+23-STA. 189+61
STA. 189+61-STA. 191+75 LT.
STA. 191+75-197+00



1/2 TYPICAL FINISHED SECTION FOR CTH X

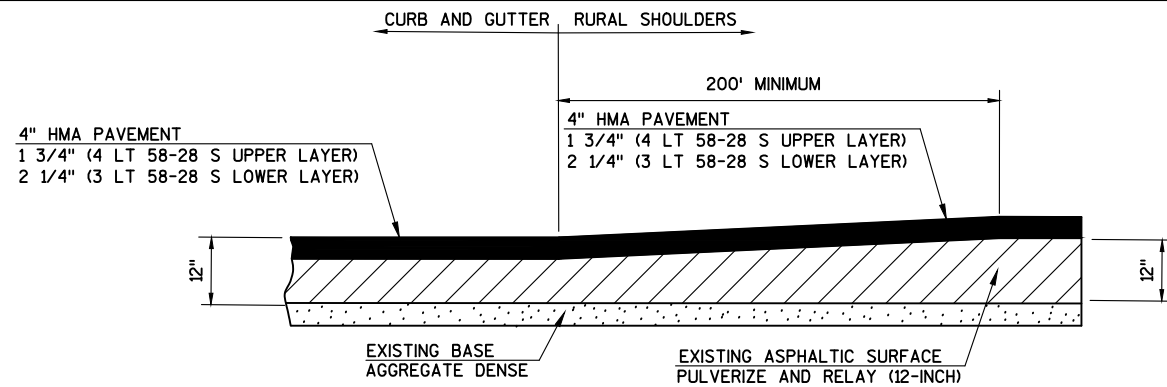
STA. 113+47.5-STA. 125+73 LT.
STA. 134+66.5-STA. 138+23 LT. AND RT.
STA. 189+61-STA. 191+75 RT.

* NOTE: PULVERIZED MATERIAL TO BE
REMOVED AS NEEDED TO MATCH
FINISHED GRADES AS SHOWN ON THE
PLANS. (APPROXIMATELY 4-INCHES).



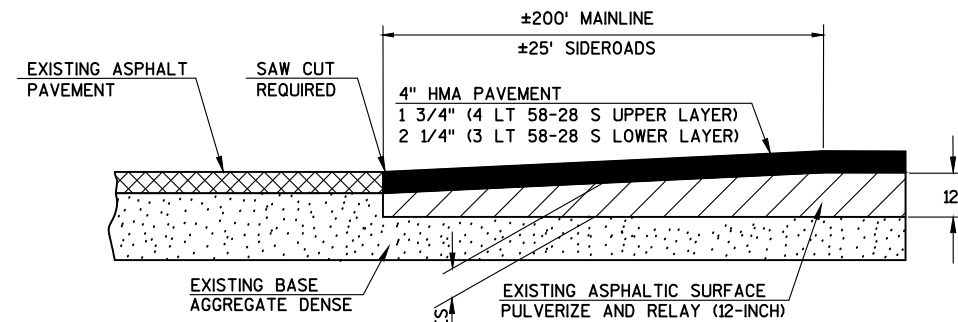
SLOPE FILLING DETAIL FOR CTH X

SEE CROSS SECTIONS FOR LOCATIONS



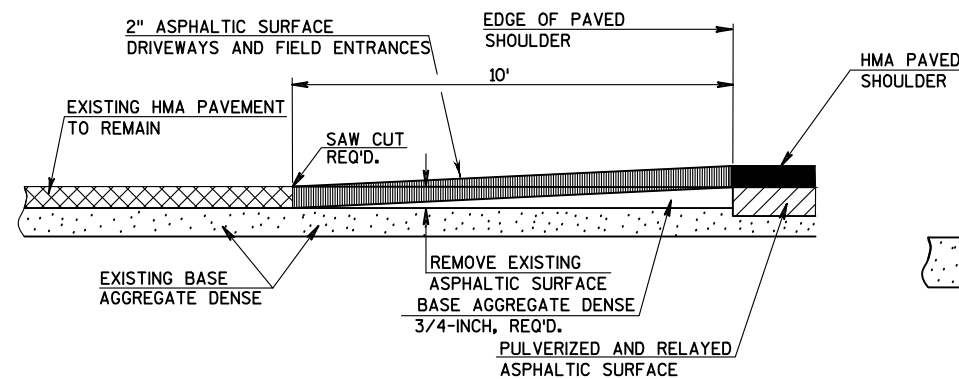
**JOINT DETAIL FOR PULVERIZE AND RELAY AREA
TRANSITION TO CURB AND GUTTER SECTION**

STA. 113+47.5
STA. 125+73
STA. 134+66.5
STA. 138+23
STA. 189+61
STA. 191+75

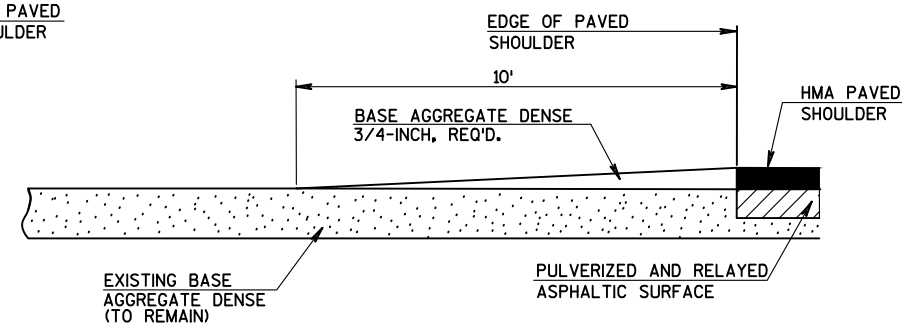


JOINT DETAIL

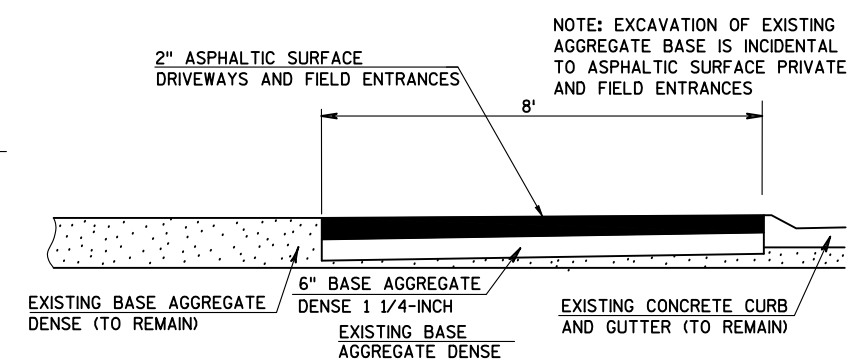
STA. 107+10
STA. 197+00
SIDEROADS



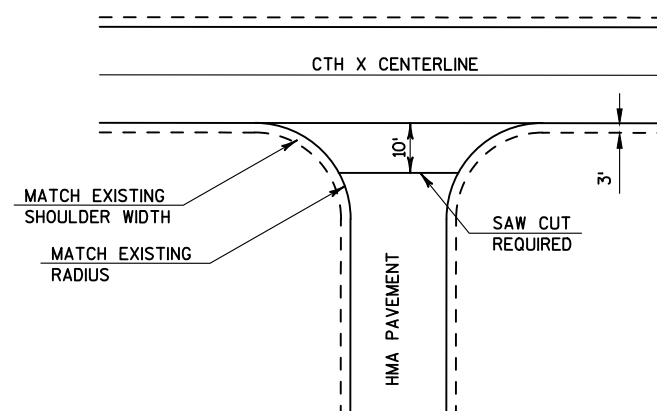
**JOINT DETAIL FOR HMA PRIVATE ENTRANCES
(REPLACE IN KIND)**



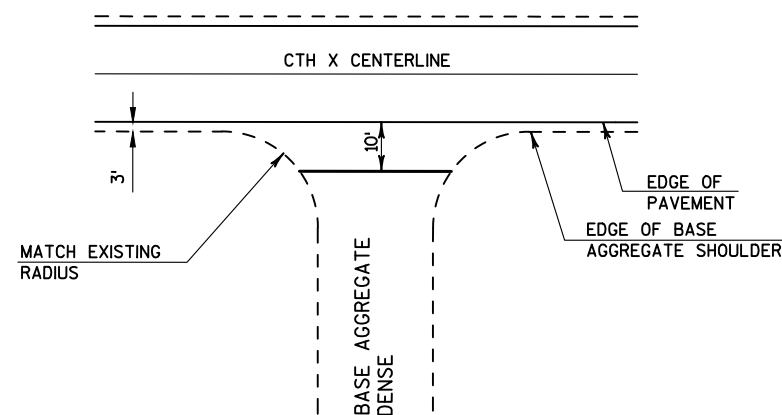
DETAIL FOR BASE AGGREGATE DENSE PRIVATE ENTRANCES



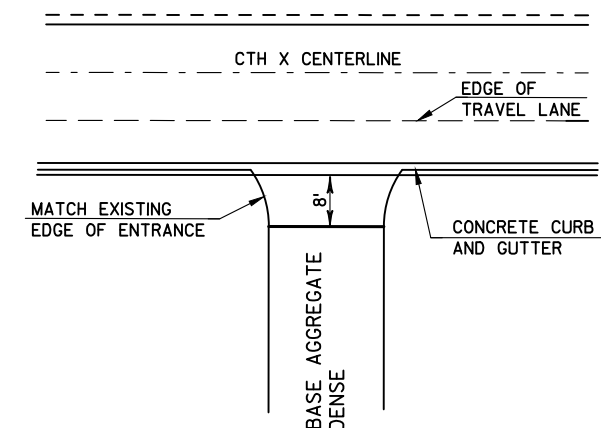
**DETAIL FOR PRIVATE ENTRANCE AND FIELD ENTRANCE
BASE AGGREGATE DENSE AT CURB AND GUTTER**



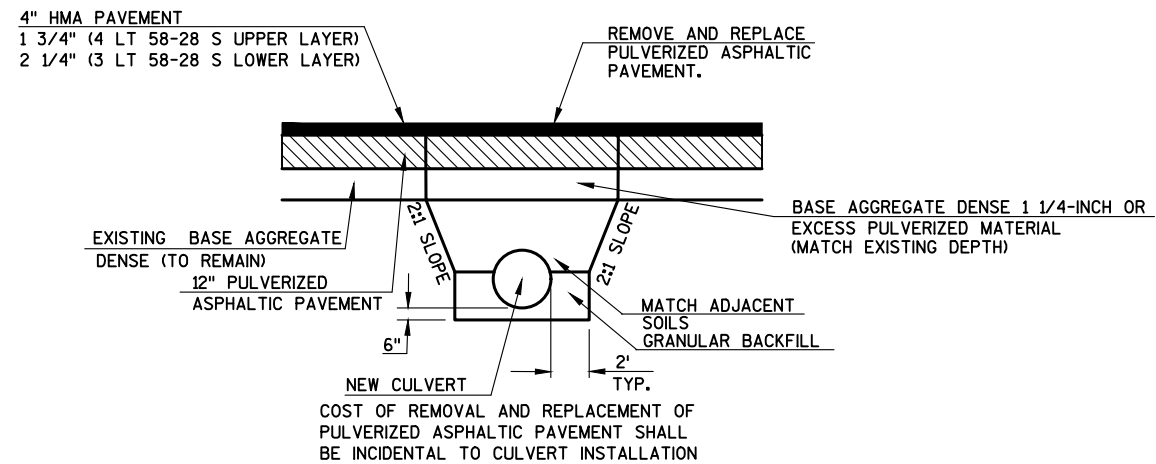
PRIVATE ENTRANCE AND FIELD ENTRANCE HMA DETAIL
STA. 120+07



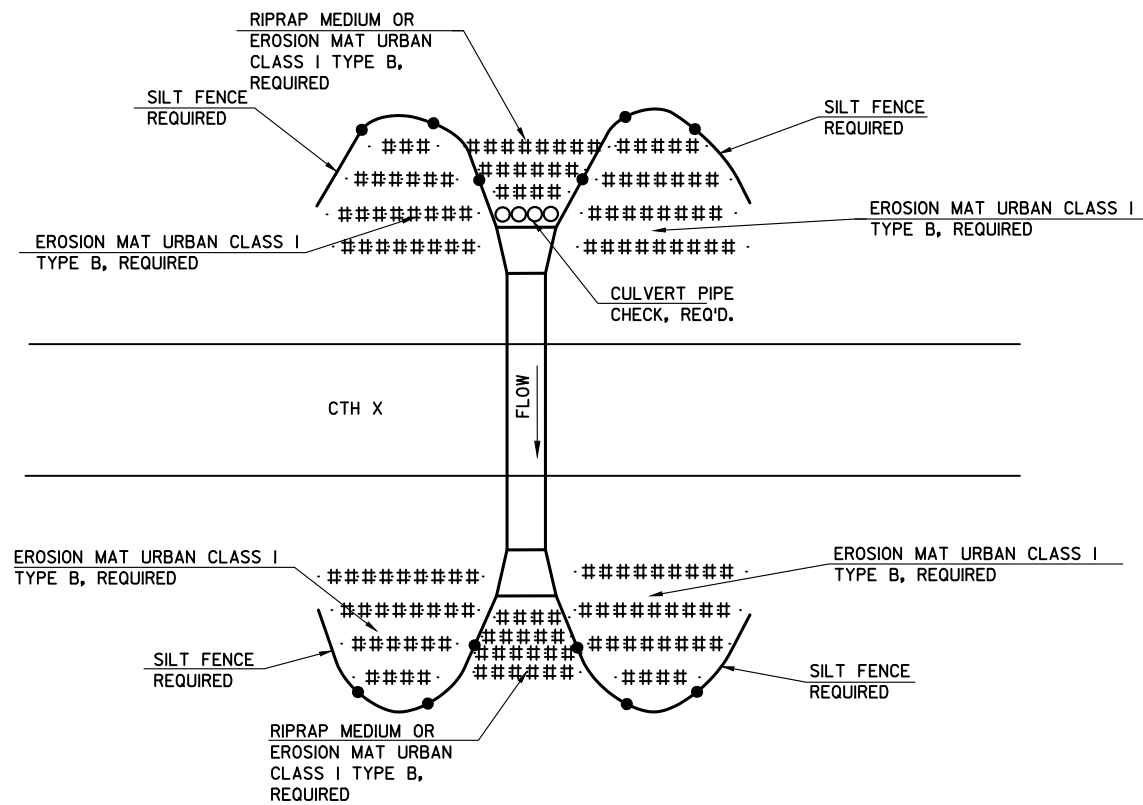
**PRIVATE ENTRANCE AND FIELD ENTRANCE
BASE AGGREGATE DENSE DETAIL**



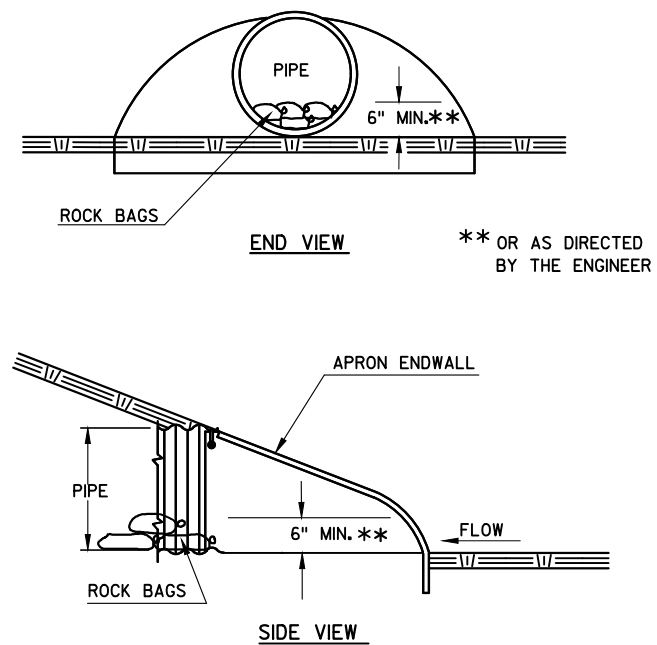
**PRIVATE ENTRANCE AND FIELD ENTRANCE
BASE AGGREGATE DENSE AT CURB AND GUTTER DETAIL**



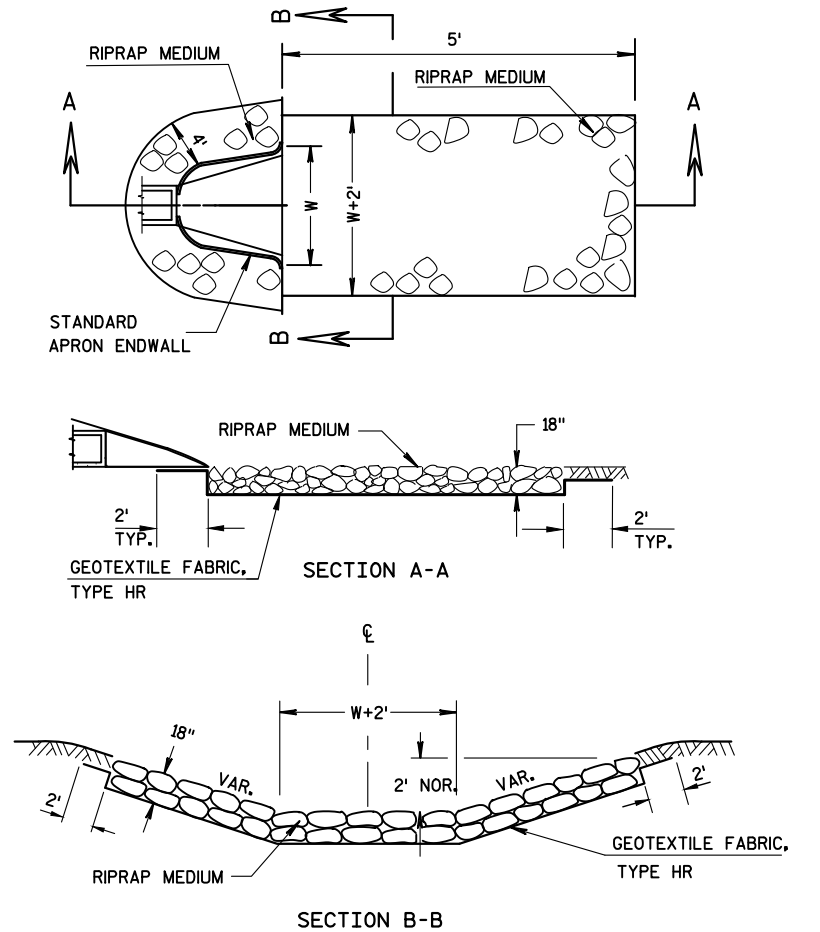
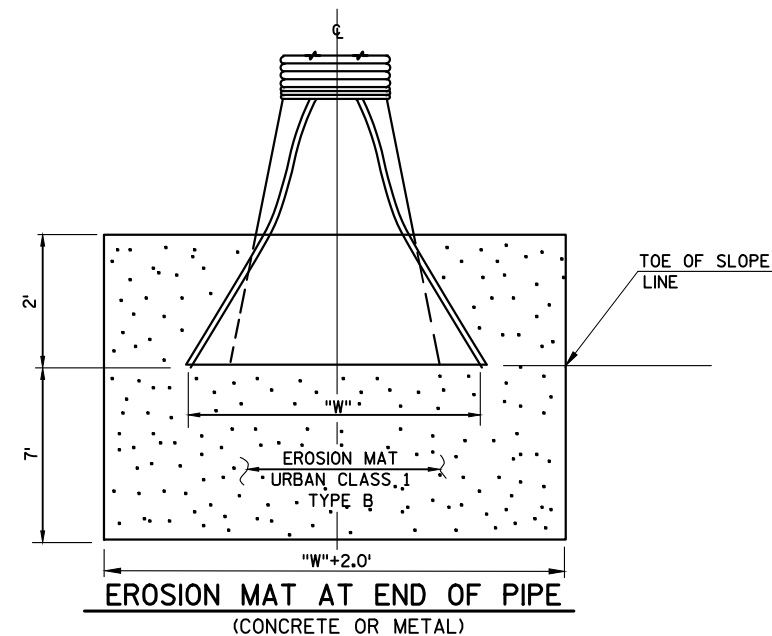
DETAIL FOR CULVERT REPLACEMENT IN PULVERIZE AREAS



EROSION CONTROL DETAIL FOR CROSS PIPES

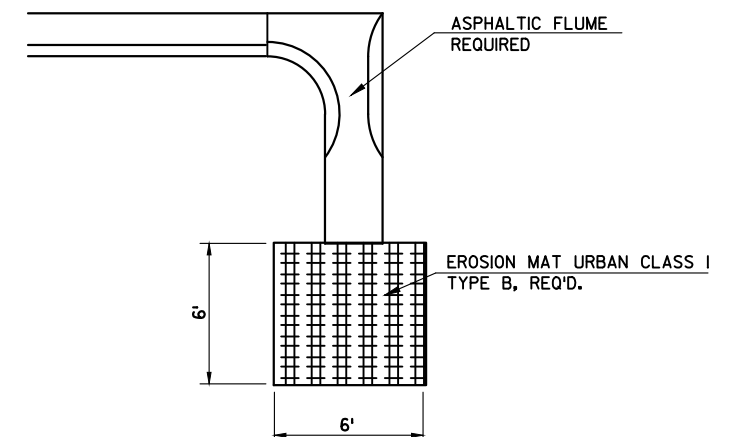


DETAIL FOR CULVERT PIPE CHECK

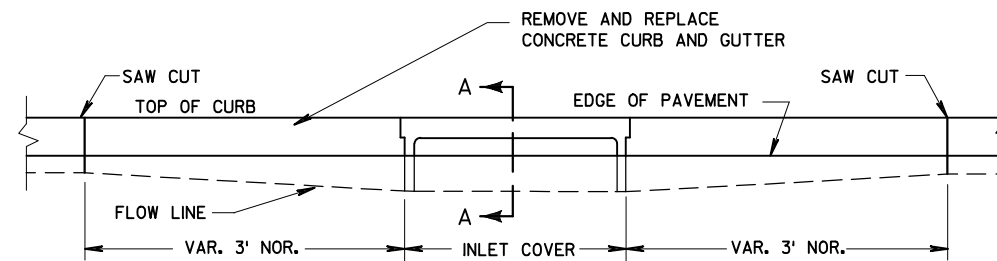


RIPRAP AND GEOTEXTILE DETAIL AT APRON ENDWALLS

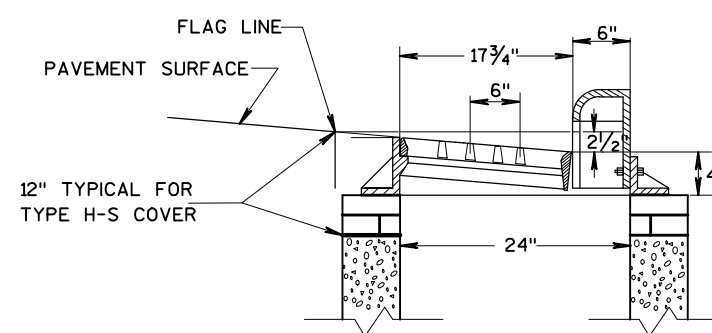
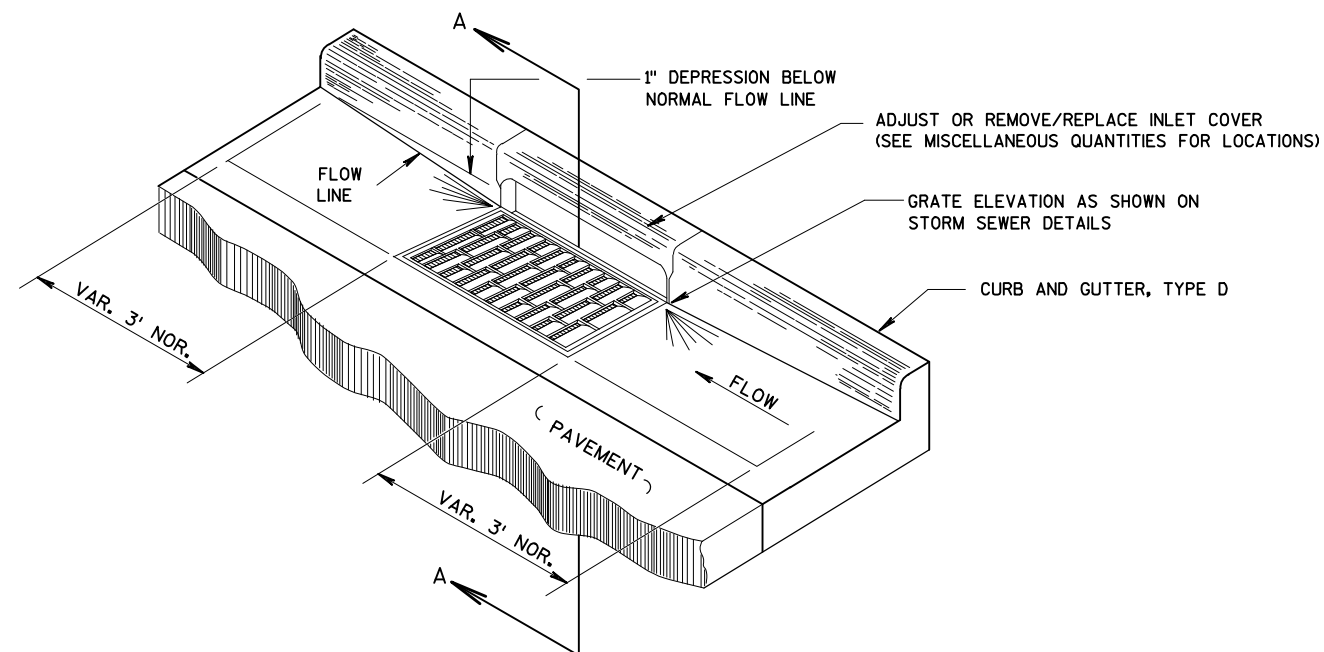
(SEE MISCELLANEOUS QUANTITIES FOR LOCATIONS)



EROSION MAT AT ASPHALTIC FLUME

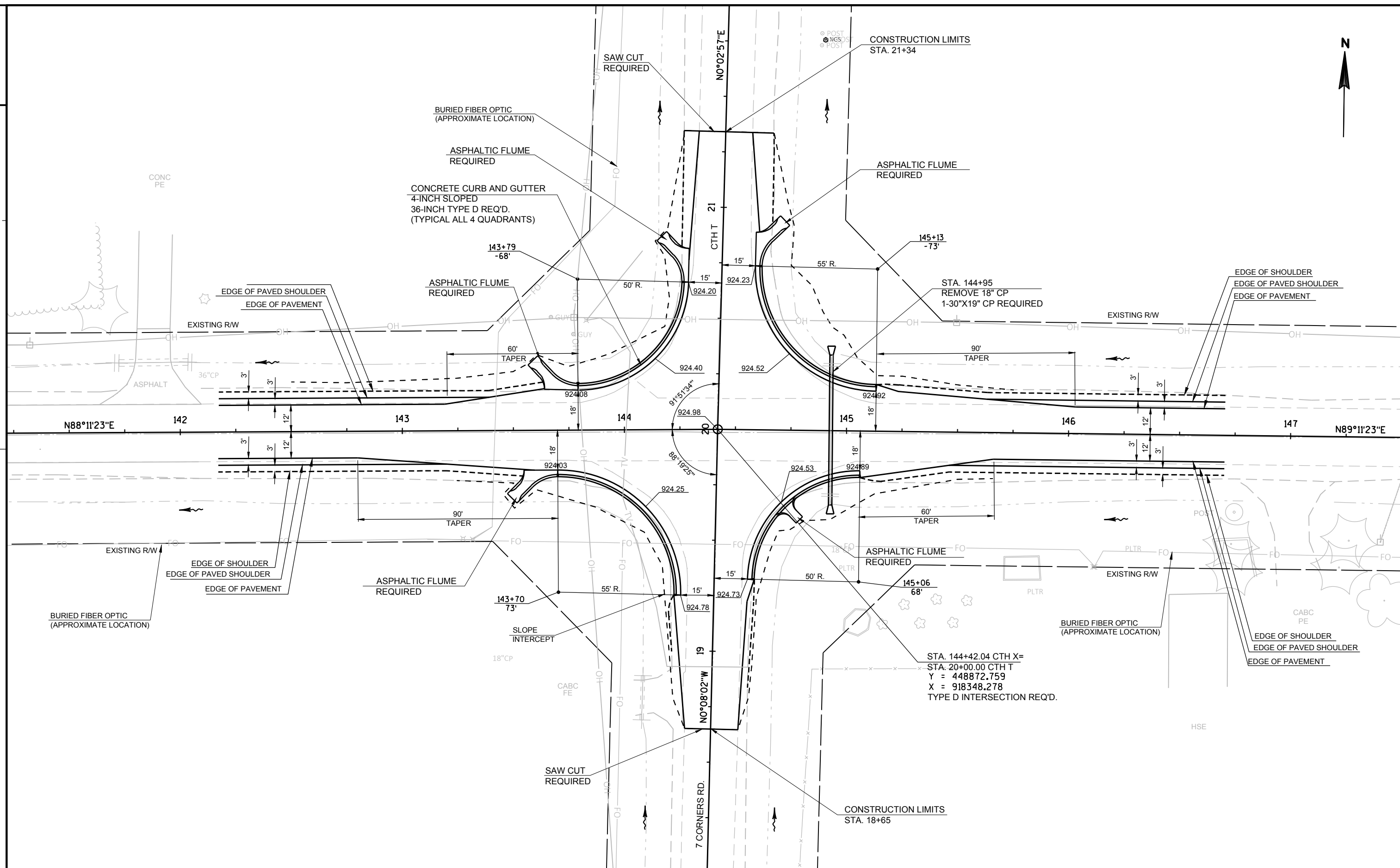


ELEVATION



SECTION A-A

DETAIL OF CURB AND GUTTER AT INLETS
(2X3-FT INLET SHOWN)



EROSION MAT CLASS I, TYPE B

----- SILT FENCE

- - - - - SLOPE INTERCEPT

██ RIP RAP MEDIUM

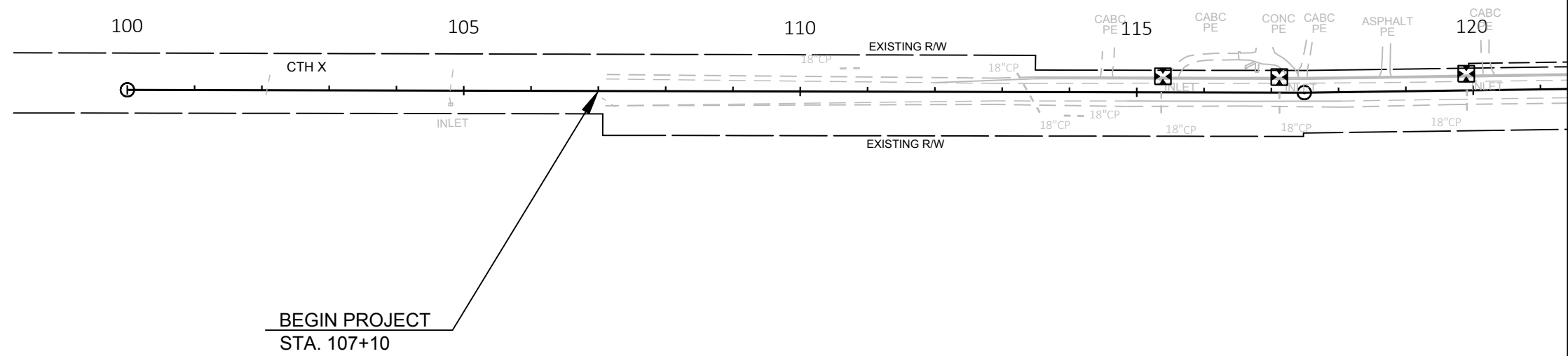
ASPH ASPHALTIC FLUME

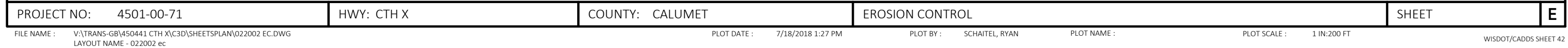
⊗ INLET PROTECTION

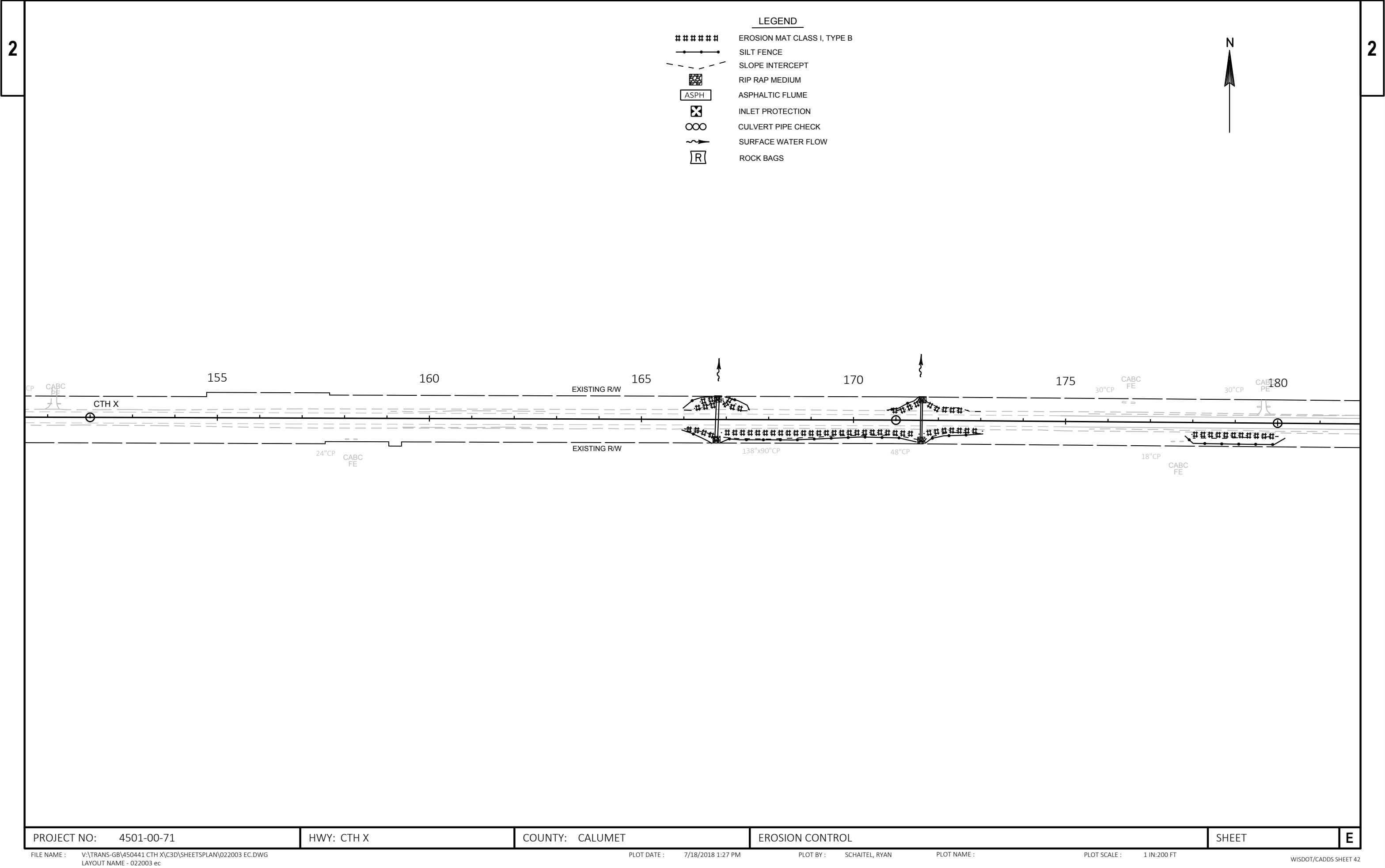
∞ CULVERT PIPE CHECK

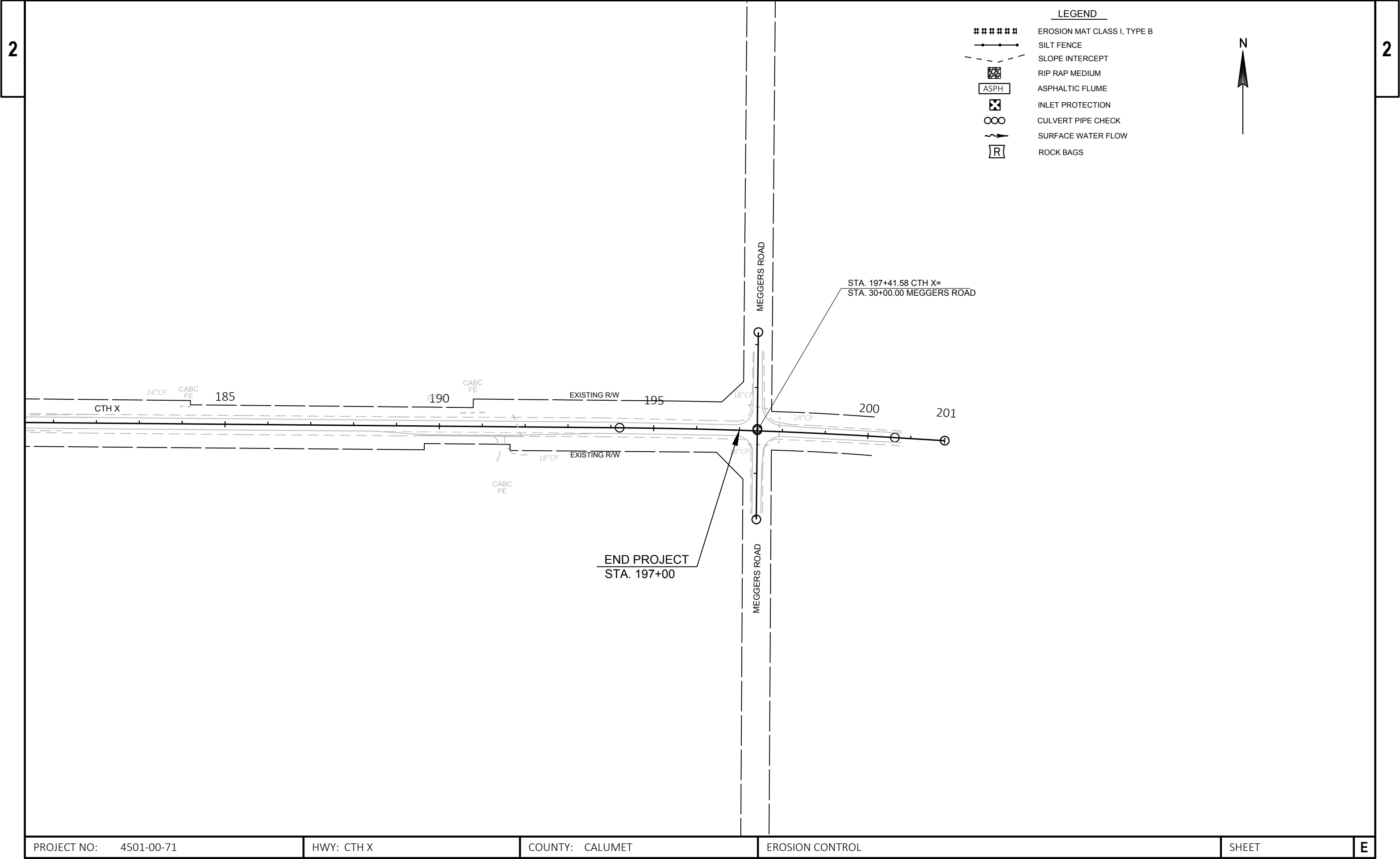
~> SURFACE WATER FLOW

R ROCK BAGS









Estimate Of Quantities

4501-00-71

Line	Item	Item Description	Unit	Total	Qty
0002	203.0100	Removing Small Pipe Culverts	EACH	2.000	2.000
0004	203.0200	Removing Old Structure (station) 01. 166+75	LS	1.000	1.000
0006	204.0110	Removing Asphaltic Surface	SY	70.000	70.000
0008	204.0150	Removing Curb & Gutter	LF	230.000	230.000
0010	204.9060.S	Removing (item description) 01. Inlet Covers	EACH	2.000	2.000
0012	205.0100	Excavation Common	CY	40.000	40.000
0014	205.9010.S	Grading and Shaping Intersection (location) 01. CTH T	LS	1.000	1.000
0016	208.0100	Borrow	CY	290.000	290.000
0018	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	160.000	160.000
0020	213.0100	Finishing Roadway (project) 01. 4501-00-71	EACH	1.000	1.000
0022	305.0110	Base Aggregate Dense 3/4-Inch	TON	1,210.000	1,210.000
0024	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	260.000	260.000
0026	325.0100	Pulverize and Relay	SY	31,510.000	31,510.000
0028	440.4410	Incentive IRI Ride	DOL	6,810.000	6,810.000
0030	455.0605	Tack Coat	GAL	1,990.000	1,990.000
0032	460.2000	Incentive Density HMA Pavement	DOL	4,864.000	4,864.000
0034	460.5223	HMA Pavement 3 LT 58-28 S	TON	4,280.000	4,280.000
0036	460.5224	HMA Pavement 4 LT 58-28 S	TON	3,320.000	3,320.000
0038	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	25.000	25.000
0040	465.0315	Asphaltic Flumes	SY	25.000	25.000
0042	465.0475	Asphalt Centerline Rumble Strips 2-Lane Rural	LF	8,000.000	8,000.000
0044	521.1060	Apron Endwalls for Culvert Pipe Steel 60-Inch	EACH	2.000	2.000
0046	521.3160	Culvert Pipe Corrugated Steel 60-Inch	LF	84.000	84.000
0048	522.2419	Culvert Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 19x30-Inch	LF	64.000	64.000
0050	522.2619	Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 19x30-Inch	EACH	2.000	2.000
0052	601.0411	Concrete Curb & Gutter 30-Inch Type D	LF	230.000	230.000
0054	601.0553	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type D	LF	320.000	320.000
0056	606.0200	Riprap Medium	CY	30.000	30.000
0058	611.0639	Inlet Covers Type H-S	EACH	2.000	2.000
0060	611.8115	Adjusting Inlet Covers	EACH	4.000	4.000
0062	619.1000	Mobilization	EACH	1.000	1.000
0064	621.0100	Landmark Reference Monuments	EACH	12.000	12.000
0066	623.0200	Dust Control Surface Treatment	SY	36,000.000	36,000.000
0068	624.0100	Water	MGAL	230.000	230.000
0070	625.0100	Topsoil	SY	3,460.000	3,460.000
0072	627.0200	Mulching	SY	350.000	350.000
0074	628.1504	Silt Fence	LF	2,600.000	2,600.000
0076	628.1520	Silt Fence Maintenance	LF	5,200.000	5,200.000

Estimate Of Quantities

4501-00-71

Line	Item	Item Description	Unit	Total	Qty
0078	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0080	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0082	628.2008	Erosion Mat Urban Class I Type B	SY	3,110.000	3,110.000
0084	628.7015	Inlet Protection Type C	EACH	8.000	8.000
0086	628.7555	Culvert Pipe Checks	EACH	5.000	5.000
0088	628.7570	Rock Bags	EACH	30.000	30.000
0090	629.0210	Fertilizer Type B	CWT	2.600	2.600
0092	630.0120	Seeding Mixture No. 20	LB	80.000	80.000
0094	630.0140	Seeding Mixture No. 40	LB	40.000	40.000
0096	630.0200	Seeding Temporary	LB	105.000	105.000
0098	633.0100	Delineator Posts Steel	EACH	4.000	4.000
0100	633.5200	Markers Culvert End	EACH	6.000	6.000
0102	637.2230	Signs Type II Reflective F	SF	2.000	2.000
0104	638.2102	Moving Signs Type II	EACH	10.000	10.000
0106	638.4000	Moving Small Sign Supports	EACH	4.000	4.000
0108	642.5001	Field Office Type B	EACH	1.000	1.000
0110	643.0300	Traffic Control Drums	DAY	802.000	802.000
0112	643.0420	Traffic Control Barricades Type III	DAY	793.000	793.000
0114	643.0705	Traffic Control Warning Lights Type A	DAY	1,336.000	1,336.000
0116	643.0900	Traffic Control Signs	DAY	1,189.000	1,189.000
0118	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0120	643.5000	Traffic Control	EACH	1.000	1.000
0122	645.0120	Geotextile Type HR	SY	90.000	90.000
0124	646.1020	Marking Line Epoxy 4-Inch	LF	26,550.000	26,550.000
0126	648.0100	Locating No-Passing Zones	MI	1.700	1.700
0128	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	320.000	320.000
0130	650.6000	Construction Staking Pipe Culverts	EACH	3.000	3.000
0132	650.8000	Construction Staking Resurfacing Reference	LF	8,990.000	8,990.000
0134	650.9910	Construction Staking Supplemental Control (project) 01. 4501-00-71	LS	1.000	1.000
0136	650.9920	Construction Staking Slope Stakes	LF	1,930.000	1,930.000
0138	690.0150	Sawing Asphalt	LF	180.000	180.000
0140	690.0250	Sawing Concrete	LF	100.000	100.000
0142	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	300.000	300.000
0144	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	600.000	600.000
0146	SPV.0035	Special 01. Excavation And Hauling Of Excess Pulverized Material	CY	1,250.000	1,250.000
0148	SPV.0060	Special 01. Section Survey Monuments	EACH	3.000	3.000
0150	SPV.0060	Special 02. Reconditioning Inlets	EACH	4.000	4.000
0152	SPV.0090	Special 01. Pipe Arch Corrugated Steel 137x87-Inch	LF	90.000	90.000

REMOVING SMALL PIPE CULVERTS			
STATION	LOCATION	203.0100 EACH	DESCRIPTION
144+95	CTH X	1	18" x 58', CMP
171+62	CTH X	1	48" x 93', CMP
TOTAL		2	

REMOVING OLD STRUCTURE			
STATION	LOCATION	203.0200 EACH	DESCRIPTION
166+75	CTH X	1	138" x 90" x 95', CMP
TOTAL		1	

REMOVING ASPHALTIC SURFACE				
STATION	TO	STATION	LOCATION	204.0110 SY
107+10	-	197+00	CTH X, DRIVEWAYS	70
TOTAL				70

REMOVING INLET COVERS		
STATION	LOCATION	204.9060.S.01 EACH
115+36	CTH X, LT	1
117+11	CTH X, LT	1
TOTAL		2

GRADING & SHAPING INTERSECTION	
LOCATION	205.9010.S.01 LF
CTH T	1
TOTAL	1

REMOVING CURB & GUTTER					
STATION	TO	STATION	LOCATION	204.0150 LF	DESCRIPTION
113+48	-	125+73	CTH X, LT	125	CURB & GUTTER REPAIR
134+67	-	138+23	CTH X, LT	40	CURB & GUTTER REPAIR
134+67	-	138+23	CTH X, RT	40	CURB & GUTTER REPAIR
189+61	-	191+75	CTH X, RT	25	CURB & GUTTER REPAIR
TOTAL				230	

PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS				
STATION	TO	STATION	LOCATION	211.0400 STA
107+10	-	113+48	CTH X, LT	7
107+10	-	134+67	CTH X, RT	28
125+73	-	134+67	CTH X, LT	10
138+23	-	143+70	CTH X, RT	6
138+23	-	143+79	CTH X, LT	6
145+06	-	189+61	CTH X, RT	45
145+13	-	197+00	CTH X, LT	52
191+75	-	197+00	CTH X, RT	6
TOTAL				160

INCENTIVE IRI RIDE				
STATION	TO	STATION	LOCATION	440.4410 DOL
107+10	-	197+00	CTH X	6,810
TOTAL				6,810

EARTHWORK SUMMARY								
Division	From/To Station	Location	Common Excavation (1)	Unexpanded Fill	Expanded Fill (2)	Mass Ordinate +/- (3)	Borrow (item #208.0100)	Comment:
			Cut		Factor 1.30			
1	107+10 - 197+00	CTH X	40	254	330	-290	290	
Division 1 Total			40	254	330	-290	290	
Total Common Exc			40					

- 1) Common Excavation is the sum of the Cut column. Item number 205.0100
- 2) Expanded Fill Factor = 1.3, Expanded Fill = Unexpanded Fill * Fill Factor
- 3) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

HMA PAVEMENT ITEMS							
STATION	TO	STATION	LOCATION	455.0605 TACK COAT	460.5223 HMA PAVEMENT 3 LT 58-28 S	460.5224 HMA PAVEMENT 4 LT 58-28 S	465.0120 ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES
				GAL	TON	TON	TON
107+10	-	197+00	CTH X	1,900	4,090	3,180	25
			RABE HILLTOP ROAD	10	15	10	-
			CTH T	80	175	130	-
TOTALS				1,990	4,280	3,320	25

BASE AGGREGATE DENSE AND WATER					
STATION	TO	STATION	LOCATION	305.0110 3/4-INCH TON	305.0120 1 1/4-INCH TON
107+10	-	197+00	CTH X	1,180	-
			CULVERTS	-	250
			DRIVEWAYS / FIELD ENTRANCES	30	10
TOTALS				1,210	260

★ QUANTITIES SHOWN ELSEWHERE

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED

CULVERT PIPES AND ENDWALLS

STATION	LOCATION	521.3160	522.2419	SPV.0090.01	521.1060	522.2619	633.5200	* JOINT TIES EACH	THICKNESS STEEL INCH	ELEVATION INLET OUTLET		END OF PIPE OFFSETS	
		CULVERT PIPE	CULVERT PIPE REINFORCED CONCRETE	PIPE ARCH CORRUGATED	APRON ENDWALLS	APRON ENDWALLS CULVERT PIPE	MARKERS CULVERT						
		CORRUGATED STEEL 60-INCH LF	HORIZONTAL ELLIPTICAL CLASS HE-IV 19x30-INCH LF	STEEL 137x87-INCH LF	CULVERT PIPE STEEL 60-INCH EACH	REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-IV, 19X30-INCH EACH	END						
144+95	CTH X	-	64	-	-	2	2	12	-	922.10	921.90	144+93, 37.0' RT	144+93, 39.0' LT
166+75	CTH X	-	-	90	-	-	2	-	0.138	875.20	874.50	166+80, 45.0' RT	166+80, 45.0' LT
171+62	CTH X	84	-	-	2	-	2	-	0.109	876.10	875.80	171+60, 50.0' RT	171+60, 48.6' LT
TOTALS		84	64	90	2	2	6						

NOTES:
-PIPE OFFSETS MEASURED FROM END OF APRON ENDWALL. IF A PIPE DOES NOT HAVE AN ENDWALL, OFFSET IS TO END OF PIPE
★ -FOR INFORMATION ONLY: JOINT TIES ARE REQUIRED FOR ENDWALLS. TIE LAST THREE PIPE JOINTS (TWO TIES PER JOINT 6 TIES MINIMUM PER ENDWALL).

ASPHALTIC FLUMES

STATION	LOCATION	465.0315 SY	DECRPTION
143+70	CTH X, RT	5	CTH T INTERSECTION, SW QUAD
143+75	CTH X, LT	5	CTH T INTERSECTION, NW QUAD
144+25	CTH X, LT	5	CTH T INTERSECTION, NW QUAD
144+73	CTH X, RT	5	CTH T INTERSECTION, SE QUAD
144+58	CTH X, LT	5	CTH T INTERSECTION, NE QUAD
TOTAL		25	

ASPHALTIC CENTERLINE RUMBLE STRIPS 2-LANE RURAL

STATION	TO	STATION	LOCATION	465.0475 LF
107+10	-	197+00	CTH X	8,000
TOTAL				8,000

RIPRAP AND GEOTEXTILE FABRIC

STATION	LOCATION	606.0200 RIPRAP MEDIUM CY	645.0120 GEOTEXTILE TYPE HR SY	REMARKS
166+75	CTH X, RT	10	30	PIPE END
166+75	CTH X, LT	10	30	PIPE END
171+62	CTH X, RT	5	15	PIPE END
171+62	CTH X, LT	5	15	PIPE END
TOTALS		30	90	

CONCRETE CURB & GUTTER

STATION	TO	STATION	LOCATION	601.0411 30-INCH TYPE D LF	601.0553 4-INCH SLOPED 36-INCH TYPE D LF	DESCRIPTION
113+48	-	125+73	CTH X, LT	125	-	CURB & GUTTER REPAIR
134+67	-	138+23	CTH X, LT	40	-	CURB & GUTTER REPAIR
134+67	-	138+23	CTH X, RT	40	-	CURB & GUTTER REPAIR
143+70	-	144+23	CTH X, RT	-	85	CTH T INTERSECTION, SW QUAD
143+79	-	144+27	CTH X, LT	-	75	CTH T INTERSECTION, NW QUAD
144+58	-	145+06	CTH X, RT	-	75	CTH T INTERSECTION, SE QUAD
144+60	-	145+13	CTH X, LT	-	85	CTH T INTERSECTION, NE QUAD
189+61	-	191+75	CTH X, RT	25	-	CURB & GUTTER REPAIR
TOTAL				230	320	

INLET COVERS

STATION	LOCATION	TYPE H-S 611.0639 EACH
115+36	CTH X, LT	1
117+11	CTH X, LT	1
TOTALS		2

ADJUSTING INLET COVERS

STATION	LOCATION	611.8115 EACH
134+70	CTH X, LT	1
134+70	CTH X, RT	1
137+61	CTH X, LT	1
138+19	CTH X, LT	1
TOTALS		4

RECONDITIONING INLETS

STATION	LOCATION	SPV.0060.02 EACH
115+36	CTH X, LT	1
117+11	CTH X, LT	1
119+91	CTH X, LT	1
122+91	CTH X, LT	1
TOTALS		4

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED

TOPSOIL, MULCHING, FERTILIZER, AND SEED

STATION	TO	STATION	LOCATION	625.0100	627.0200	629.0210	630.0120	630.0140	630.0200
				TOPSOIL	MULCHING	FERTILIZER,	SEEDING	SEEDING	SEEDING
						TYPE B	MIXTURE NO. 20	MIXTURE NO.40	TEMPORARY
				SY	SY	CWT	LB		LB
133+00	-	134+75	CTH X, LT	145	-	0.1	-	5	5
143+50	-	144+25	CTH X, LT	190	-	0.2	-	5	5
143+50	-	144+25	CTH X, RT	140	-	0.1	-	5	5
144+60	-	146+00	CTH X, LT	155	-	0.1	-	5	5
144+60	-	146+00	CTH X, RT	125	-	0.1	-	5	5
166+00	-	173+00	CTH X, RT	1,305	-	0.9	35	-	35
166+00	-	167+50	CTH X, LT	185	-	0.2	5	-	5
170+75	-	173+00	CTH X, LT	230	-	0.2	10	-	10
177+75	-	180+25	CTH X, RT	285	-	0.2	10	-	10
UNDISTRIBUTED				700	350	0.5	20	15	20
TOTALS				3,460	350	2.6	80	40	105

EROSION MAT

STATION	TO	STATION	LOCATION	628.2008	REMARKS
				URBAN CLASS I TYPE B SY	
133+00	-	134+75	CTH X, LT	145	
143+50	-	144+25	CTH X, LT	190	FLUME
143+50	-	144+25	CTH X, RT	140	FLUME
144+60	-	146+00	CTH X, LT	155	PIPE END / FLUME
144+60	-	146+00	CTH X, RT	125	PIPE END / FLUME
166+00	-	173+00	CTH X, RT	1,305	PIPE END
166+00	-	167+50	CTH X, LT	185	PIPE END
170+75	-	173+00	CTH X, LT	230	PIPE END
177+75	-	180+25	CTH X, RT	285	
UNDISTRIBUTED				350	
TOTALS				3,110	

ROCK BAGS

STATION	LOCATION	628.7570 EACH
144+95	CTH X, LT	15
UNDISTRIBUTED		15
TOTAL		30

OBJECT MARKERS

STATION	LOCATION	633.0100 DELINEATOR POST STEEL EACH	637.2230 SIGNS TYPE II REFLECTIVE F W5-53 EACH
135+15	CTH X, RT	1	0.5
136+20	CTH X, RT	1	0.5
136+51	CTH X, RT	1	0.5
137+15	CTH X, RT	1	0.5
TOTAL		4	2.0

MONUMENT SUMMARY

STATION	OFFSET	LOCATION	DESCRIPTION	621.0100 LANDMARK REFERENCE MONUMENTS EACH	SPV.0060.01 SECTION SURVEY MONUMENTS EACH
117+48.94	0.00'	CTH X	S QUARTER CORNER SECTION 11, T17N, R20E	4	1
144+42.04	0.00'	CTH X	SE CORNER SECTION 11, T17N, R20E	4	1
170+89.36	6.71' RT	CTH X	S QUARTER CORNER SECTION 12, T17N, R20E	4	1
TOTALS				12	3

DUST CONTROL SURFACE TREATMENT

STATION	LOCATION	623.0200 SY
UNDISTRIBUTED	ENTIRE PROJECT	36,000
TOTAL		36,000

CULVERT PIPE CHECKS

STATION	LOCATION	628.7555 EACH
144+95	CTH X, RT	5
TOTAL		5

SILT FENCE

STATION	TO	STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 MAINTENANCE LF
133+00	-	134+75	CTH X, LT	175	350
143+50	-	144+25	CTH X, LT	250	500
143+50	-	144+25	CTH X, RT	175	350
144+60	-	146+00	CTH X, LT	225	450
144+60	-	146+00	CTH X, RT	200	400
166+00	-	173+00	CTH X, RT	700	1400
166+00	-	167+50	CTH X, LT	150	300
170+75	-	173+00	CTH X, LT	225	450
177+75	-	180+25	CTH X, RT	250	500
UNDISTRIBUTED				250	500
TOTALS				2,600	5,200

INLET PROTECTION

STATION	LOCATION	628.7015 TYPE C EACH
115+36	CTH X, LT	1
117+11	CTH X, LT	1
119+91	CTH X, LT	1
122+91	CTH X, LT	1
134+70	CTH X, LT	1
134+70	CTH X, RT	1
137+61	CTH X, LT	1
138+19	CTH X, LT	1
TOTAL		8

MOVING SIGNS

STATION	LOCATION	SIGNS TYPE II 638.2102 EACH	SMALL SIGN SUPPORTS 638.4000 EACH	REMARKS
143+70	CTH X, RT	2	1	REMOVE & REPLACE FOR GRADING
145+00	CTH X, LT	2	1	REMOVE & REPLACE FOR GRADING
19+40	7 CORNERS ROAD, RT	3	1	REMOVE & REPLACE FOR GRADING
20+50	CTH T, LT	3	1	REMOVE & REPLACE FOR GRADING
TOTALS		10	4	

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED

TRAFFIC CONTROL SUMMARY

LOCATION	APPROXIMATE SERVICE DAYS	643.0300 DRUMS		643.0420 BARRICADES TYPE III		643.0705 WARNING LIGHTS TYPE A		643.0900 SIGNS		643.1050 SIGNS PCMS		REMARKS
		NO. IN SERVICE	DAYS	NO. IN SERVICE	DAYS	NO. IN SERVICE	DAYS	NO. IN SERVICE	DAYS	NO. IN SERVICE	DAYS	
CTH X / CLARK DRIVE	7	3	21	-	-	-	-	-	-	1	7	BEFORE CLOSURE OF ROADWAY
CTH X / MEGGERS ROAD	7	3	21	-	-	-	-	-	-	1	7	BEFORE CLOSURE OF ROADWAY
CTH X / STH 32/STH 57	38	-	-	4	152	6	228	7	266	-	-	BARRICADES AND SIGNS FOR MAINLINE CLOSURES - DETAIL A & C
STATION 107+00	38	-	-	2	76	4	152	1	38	-	-	BARRICADES AND SIGNS FOR MAINLINE CLOSURES - DETAIL E
RABE HILLTOP ROAD / CTH X	38	-	-	3	114	4	152	5	190	-	-	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES - DETAIL 4
CTH T / CTH X	31	-	-	4	124	8	248	7	217	-	-	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES - DETAIL 3
CTH T / CTH X	31	-	-	-	-	-	-	2	62	-	-	TEMPORARY STOP SIGNS FOR CTH T & 7 CORNERS ROAD
CTH T / STH 151	7	-	-	-	-	-	-	1	7	-	-	ROAD CLOSED AHEAD (FOR USE DURING CTH T INTERSECTION WORK)
CTH T / TECUMSEH ROAD	7	-	-	2	14	4	28	2	14	-	-	ROAD CLOSED 1 MILE AHEAD (FOR USE DURING CTH T INTERSECTION WORK)
CTH T / CTH X	7	-	-	5	35	8	56	8	56	-	-	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES - DETAIL 4 (FOR USE DURING CTH T INTERSECTION WORK)
CTH X / CTH T	7	-	-	4	28	8	56	3	21	-	-	BARRICADES AND SIGNS FOR MAINLINE CLOSURES - DETAIL C (FOR USE DURING CULVERT REPLACEMENTS)
STATION 164+00	7	-	-	7	49	8	56	1	7	-	-	BARRICADES AND SIGNS FOR MAINLINE CLOSURES - DETAIL D (FOR USE DURING CULVERT REPLACEMENTS)
STATION 175+00	7	-	-	7	49	8	56	1	7	-	-	BARRICADES AND SIGNS FOR MAINLINE CLOSURES - DETAIL D (FOR USE DURING CULVERT REPLACEMENTS)
STATION 197+10	38	-	-	2	76	4	152	2	76	-	-	BARRICADES AND SIGNS FOR MAINLINE CLOSURES - DETAIL E
CTH X / MEGGERS ROAD	38	-	-	2	76	4	152	4	152	-	-	BARRICADES AND SIGNS FOR MAINLINE CLOSURES - DETAIL B
CTH X / MEGGERS ROAD	38	-	-	-	-	-	-	2	76	-	-	TEMPORARY STOP SIGN
UNDISTRIBUTED	38	20	760	-	-	-	-	-	-	-	-	
TOTALS			802		793		1,336		1,189		14	

MARKING LINE

STATION	TO	STATION	LOCATION	646.1020	
				EPOXY 4-INCH YELLOW LF	EPOXY 4-INCH WHITE LF
107+10	-	197+00	CTH X	8,000	17,750
			RABE HILLTOP ROAD	20	-
			CTH T	300	480
TOTAL				26,550	

LOCATING NO-PASSING ZONES

STATION	TO	STATION	LOCATION	648.0100 MI
107+10	-	197+00	CTH X	1.7
TOTAL				1.7

CONSTRUCTION STAKING

STATION	TO	STATION	LOCATION	650.5500 CURB, GUTTER, AND CURB & GUTTER LF	650.6000 PIPE CULVERTS EACH	650.8000 RESURFACING REFERENCE LF	650.9910 SUPPLEMENTAL CONTROL LS	650.9920 SLOPE STAKES LF
107+10	-	197+00	CTH X	320	3	8,990	1	1,930
TOTALS				320	3	8,990	1	1,930

SAWING PAVEMENT

STATION	LOCATION	690.0150 SAWING ASPHALT LF	690.0250 SAWING CONCRETE LF
107+10	CTH X	40	-
197+00	CTH X	25	-
	RABE HILLTOP ROAD	25	-
	CTH T	50	-
	DRIVEWAYS	40	-
CURB & GUTTER REPAIR		-	100
TOTAL		180	100

EXCAVATION AND HAULING OF EXCESS PULVERIZED MATERIAL

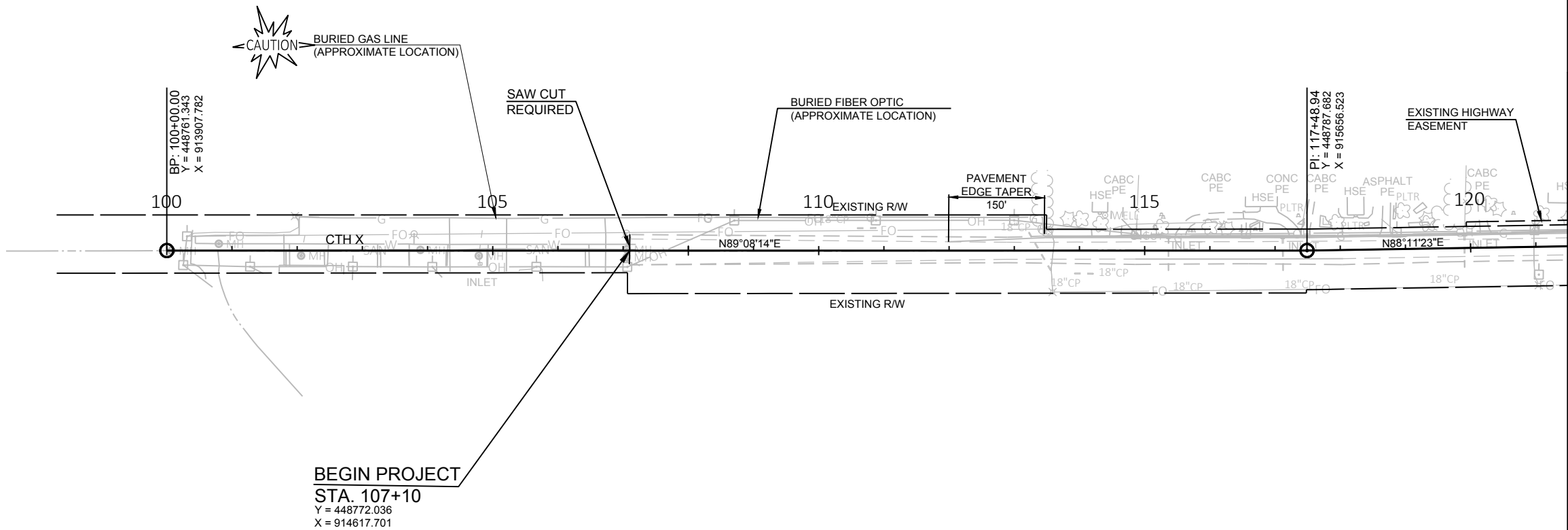
STATION	TO	STATION	LOCATION	SPV.0035.01 CY
111+48	-	127+73	CTH X	663
132+66	-	140+23	CTH X	343
187+61	-	193+75	CTH X	244
TOTAL				1,250

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED

BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
105	134+45	SPK. IN PP*123805-62' RT.	906.81
106	139+93	SPK. IN PP*123807-33' RT.	901.42
107	145+81	SPK. IN PP*123809-34' RT.	905.94
108	153+84	SPK. IN PP*123812-32' RT.	906.53

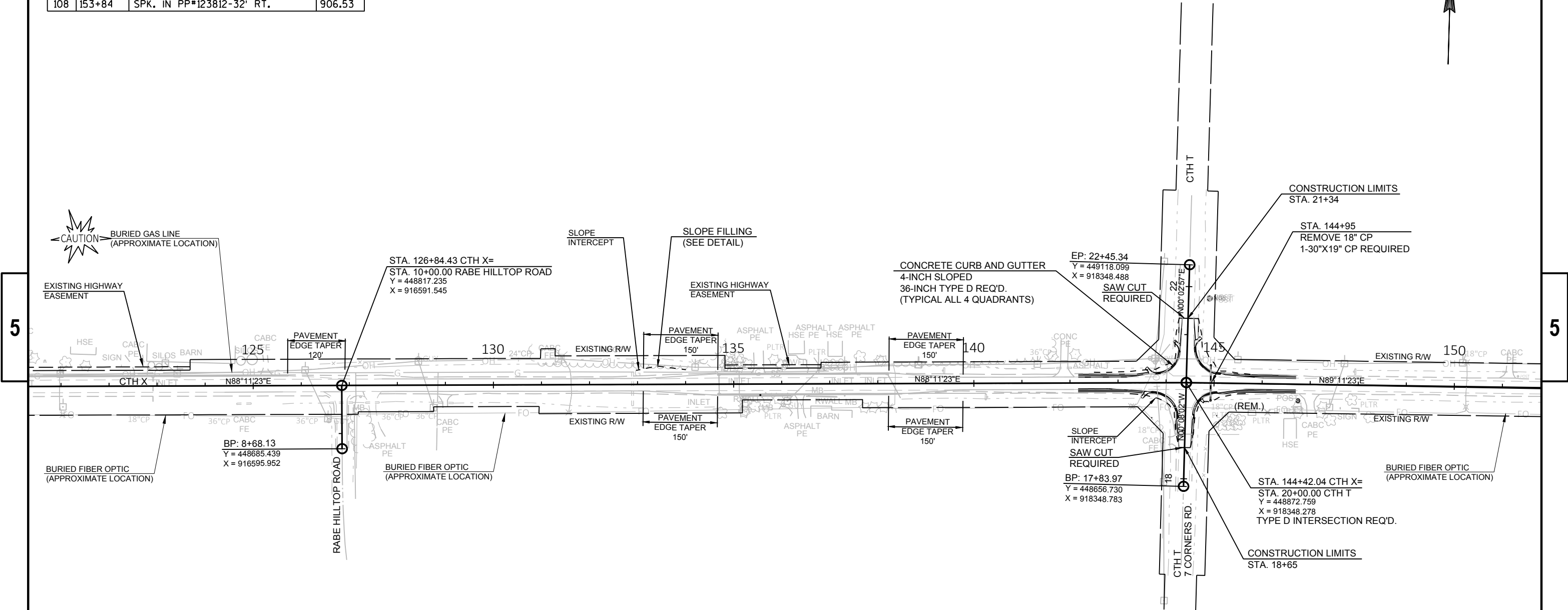


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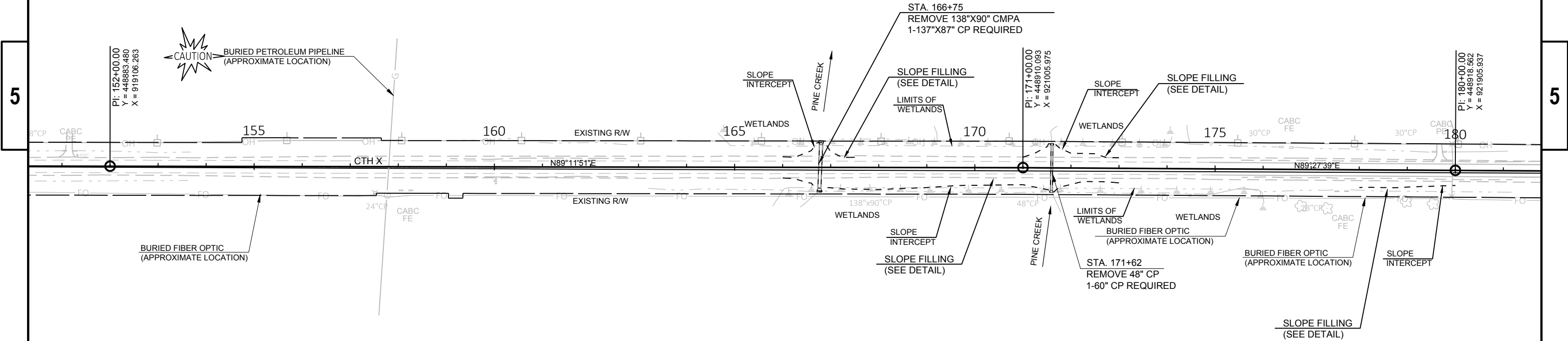


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BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
105	134+45	SPK. IN PP*123805-62' RT.	906.81
106	139+93	SPK. IN PP*123807-33' RT.	901.42
107	145+81	SPK. IN PP*123809-34' RT.	905.94
108	153+84	SPK. IN PP*123812-32' RT.	906.53



BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
105	134+45	SPK. IN PP*123805-62' RT.	906.81
106	139+93	SPK. IN PP*123807-33' RT.	901.42
107	145+81	SPK. IN PP*123809-34' RT.	905.94
108	153+84	SPK. IN PP*123812-32' RT.	906.53

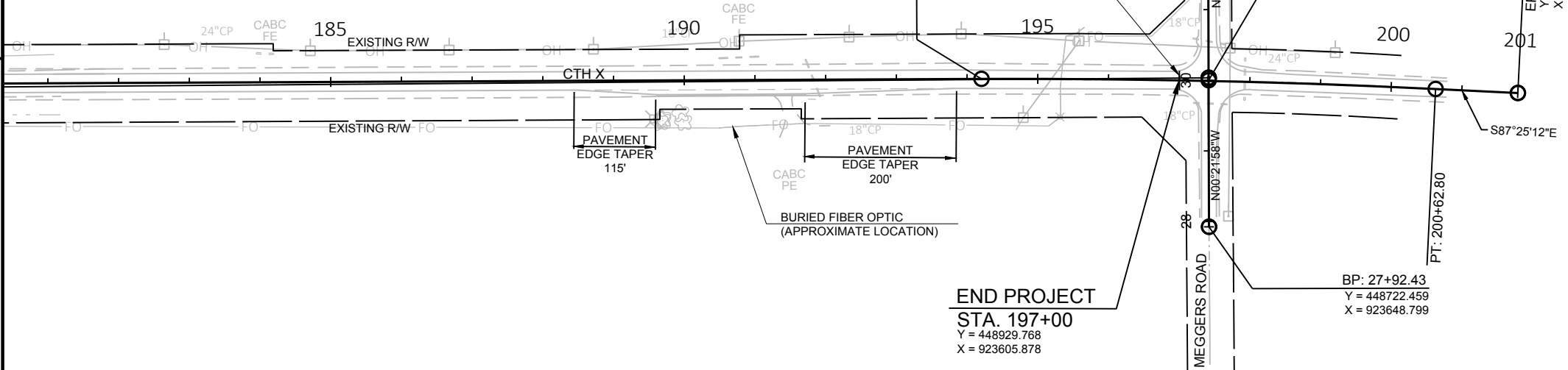


BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
105	134+45	SPK. IN PP*123805-62' RT.	906.81
106	139+93	SPK. IN PP*123807-33' RT.	901.42
107	145+81	SPK. IN PP*123809-34' RT.	905.94
108	153+84	SPK. IN PP*123812-32' RT.	906.53

CTH X
CURVE NOTES
PI STA = 197+41.64
Y = 448933.382
X = 923647.512
DELTA = 3°04'04"
D = 0°28'39"
T = 321.32'
L = 642.49'
R = 12000.00'
PC STA = 194+20.32
Y = 448930.648
X = 923326.204
PT STA = 200+62.80
Y = 448918.918
X = 923968.506
BK = N89°30'44.8"E
AH = S87°25'11.7"E

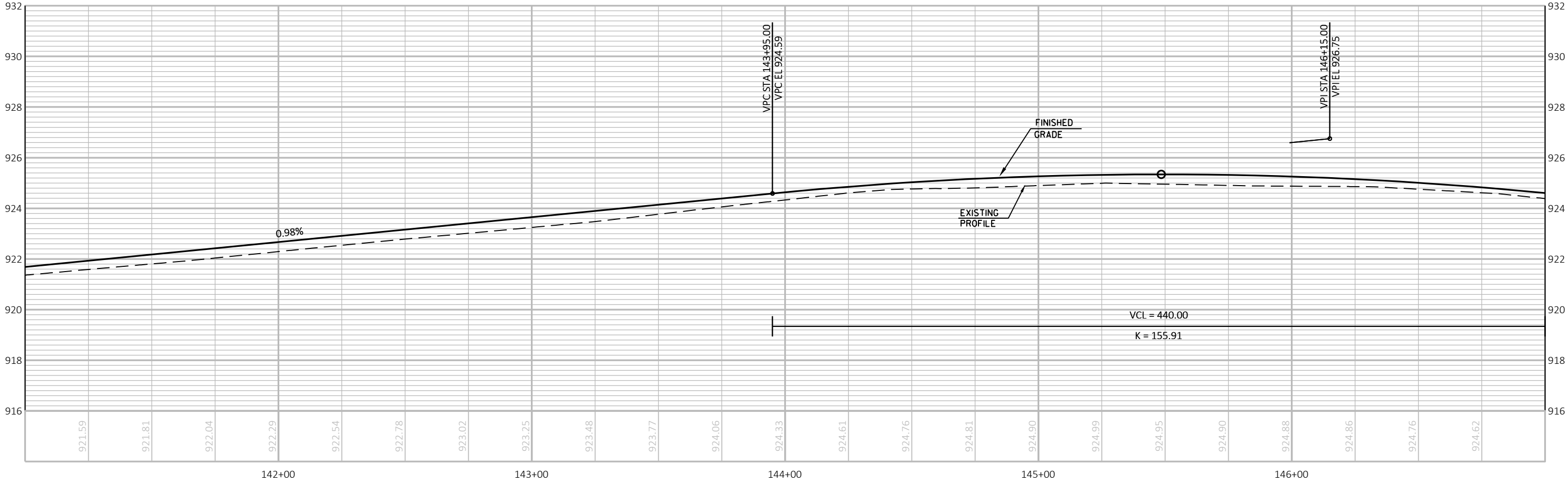


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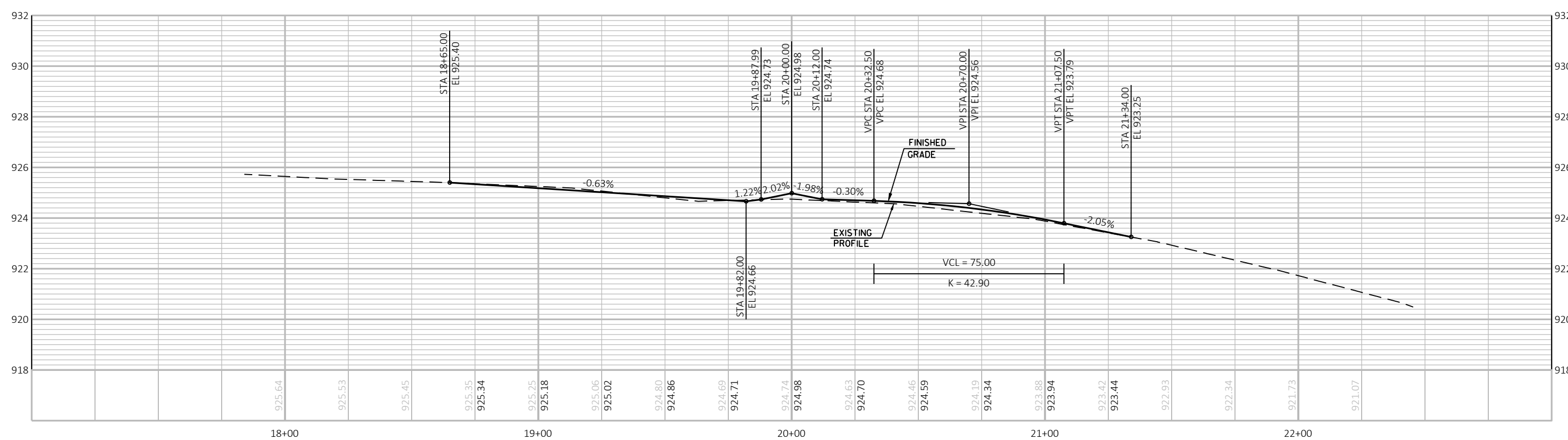


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CTH X PROFILE

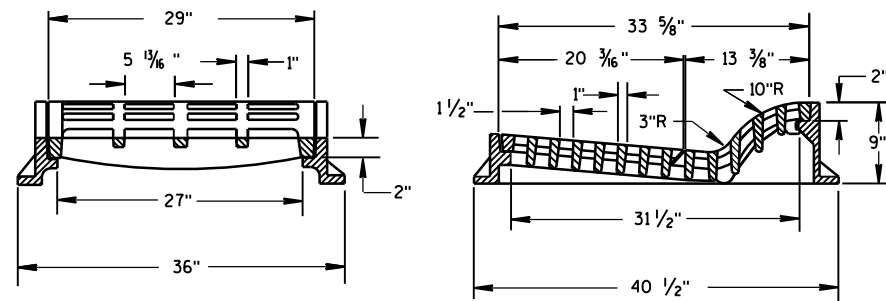
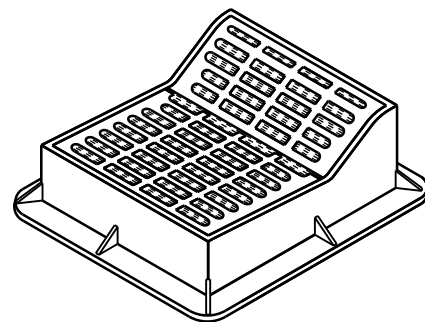


CTH T PROFILE



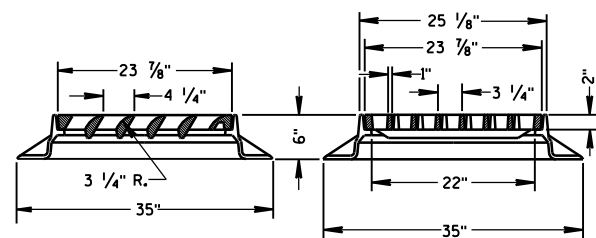
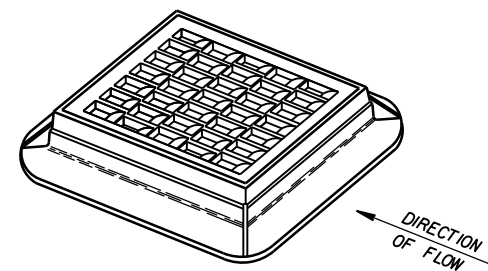
Standard Detail Drawing List

08A05-19C	INLET COVERS TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S
08D01-20A	CONCRETE CURB & GUTTER
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F02-01	APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09A01-13A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE
13A11-02A	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13A11-02B	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
14B29-01	SAFETY EDGE
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15A07-02	OBJECT MARKER FOR HAZARDOUS CULVERT
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C03-04	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C08-18A	LONGITUDINAL MARKING (MAINLINE)
15C35-02A	PAVEMENT MARKING (INTERSECTIONS)
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS
16A01-07	LANDMARK REFERENCE MONUMENTS AND COVERS

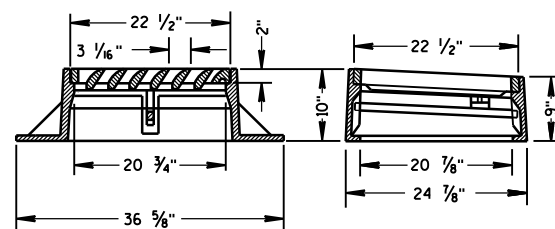
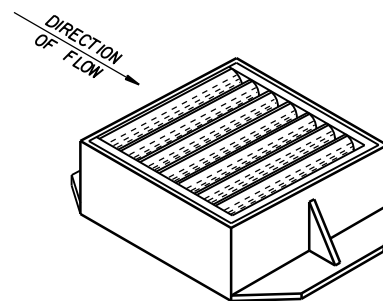


TYPE "F"

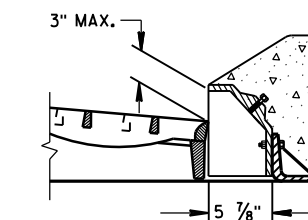
USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.



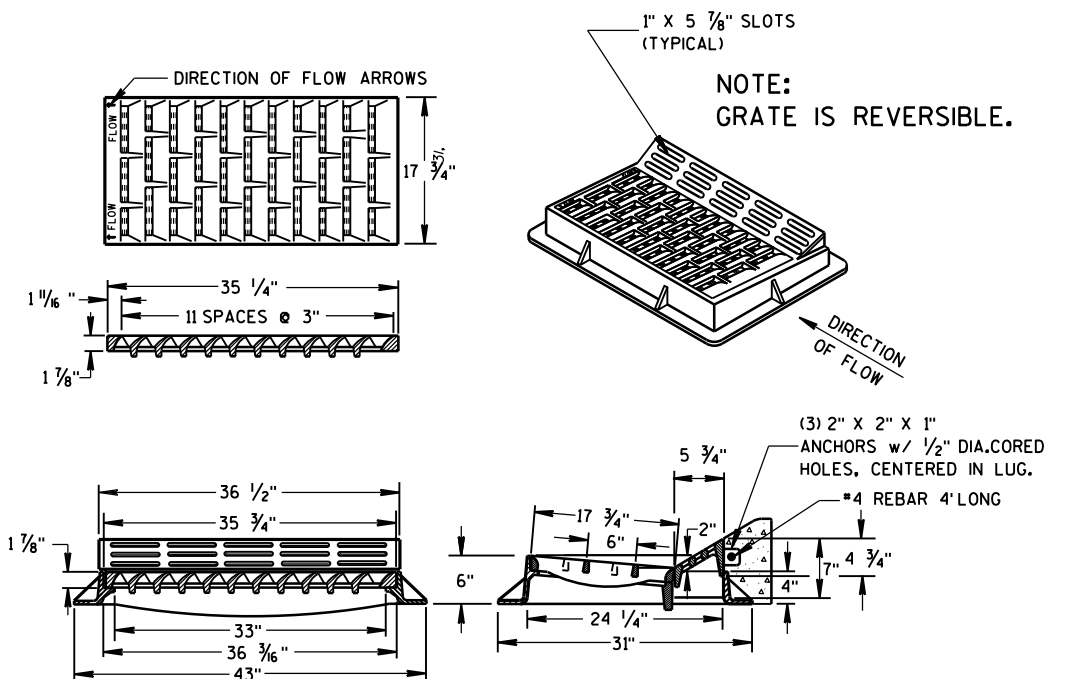
TYPE "S"



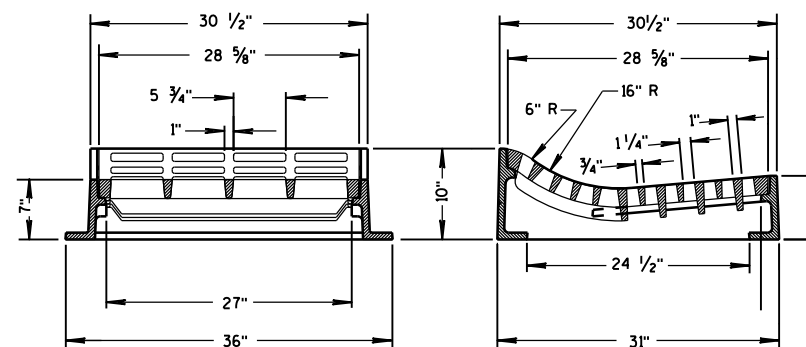
TYPE "V"

ALTERNATIVE CURB BOX
FOR TYPE "HM" COVERUSE WITH TYPES G & J CONCRETE CURB & GUTTER, 30 INCH
NOTED AS TYPE HM-GJ ON DRAINAGE TABLENOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM-GJ" COVER
NOTED AS TYPE HM-GJ-S ON DRAINAGE TABLE

GENERAL NOTES

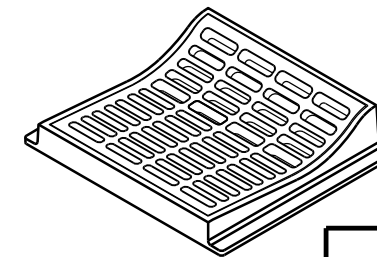
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING
SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND
THE APPLICABLE SPECIAL PROVISIONS.DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLET COVERS SHALL BE SUBMITTED
TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION
FOR EQUIVALENT CAPACITY AND STRENGTH.

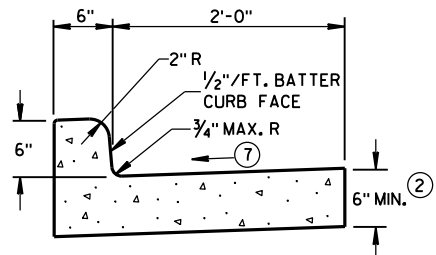
TYPE "HM"

USE WITH TYPES A & D CONCRETE
CURB & GUTTER, 36 INCH.NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM" COVER
NOTED AS TYPE HM-S ON DRAINAGE TABLE

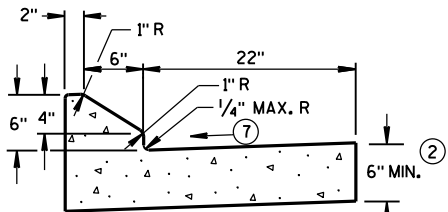
TYPE "T"

USE WITH TYPES R & T CONCRETE CURB & GUTTER, 36 INCH.

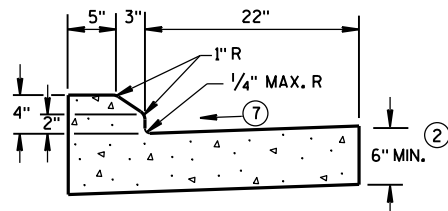
INLET COVERS
TYPE F, HM, HM-S, S, T, V,
HM-GJ, & HM-GJ-SSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATIONAPPROVED
11/27/2013
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



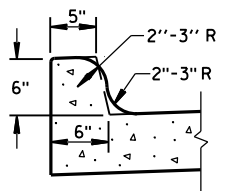
TYPES A^① & D



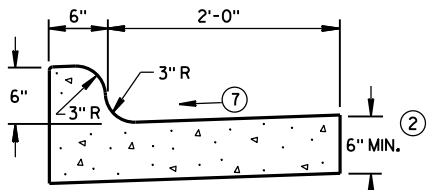
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

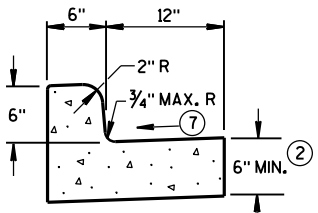


TYPES K^① & L
(OPTIONAL CURB SHAPE)



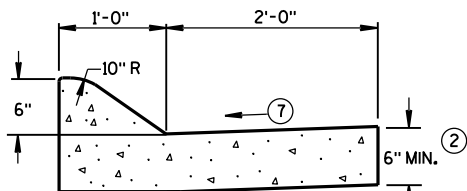
TYPES K^① & L

CONCRETE CURB & GUTTER 30"

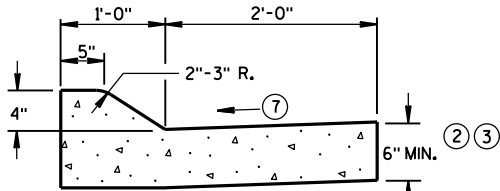


TYPES A^① & D

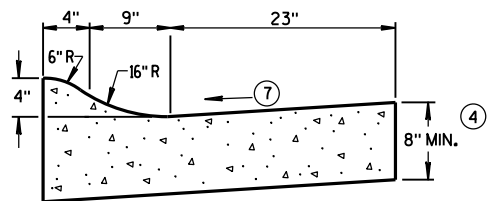
CONCRETE CURB & GUTTER 18"



6" SLOPED CURB TYPES A^① & D

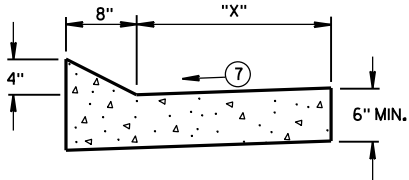


4" SLOPED CURB TYPES A^① & D



4" SLOPED CURB TYPES R^① & T^⑤

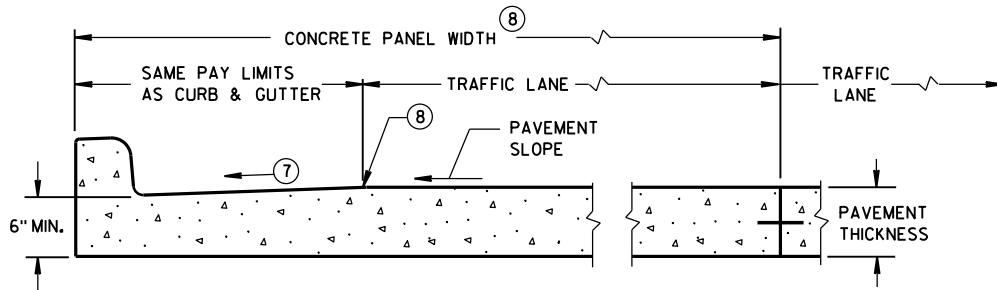
CONCRETE CURB & GUTTER 36"



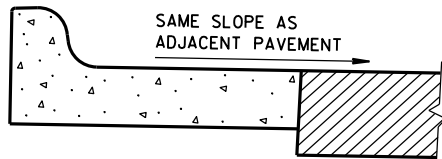
TYPES TBT & TBTT^①

CONCRETE CURB & GUTTER

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



PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB & GUTTER



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

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.

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

PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

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

* BIKE LANE IS NOT SHOWN.

CONCRETE CURB & GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6



PLAN VIEW
FLUME AT CURB END



6

S.D.D. 8 D 4-5

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

EXPANSION JOINT

CONCRETE CURB AND GUTTER

8'-0"

4'-0"

EDGE OF PAVEMENT

2" MIN. CURB HEIGHT

4" R

3'-0" MIN.

SURFACE DRAIN IS SYMMETRICAL WHEN CURB AND GUTTER IS CONTINUED

TAPER CURB TO FLOW LINE

JOINTS

SHOULDER OR BERM HINGE POINT

W3 WIRE MESH (SEE SECTION D-D)

RIPRAP

6'-0"

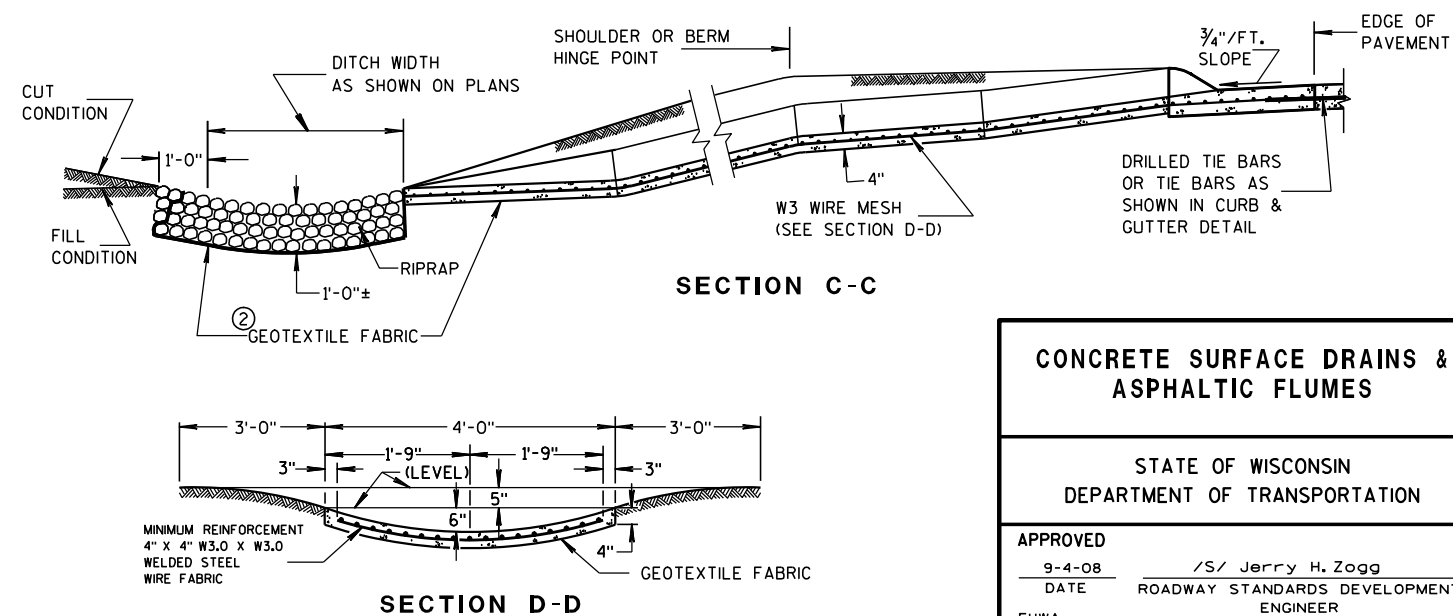
OR AS REQUIRED

1'-0" ON CUT SLOPE

DITCH

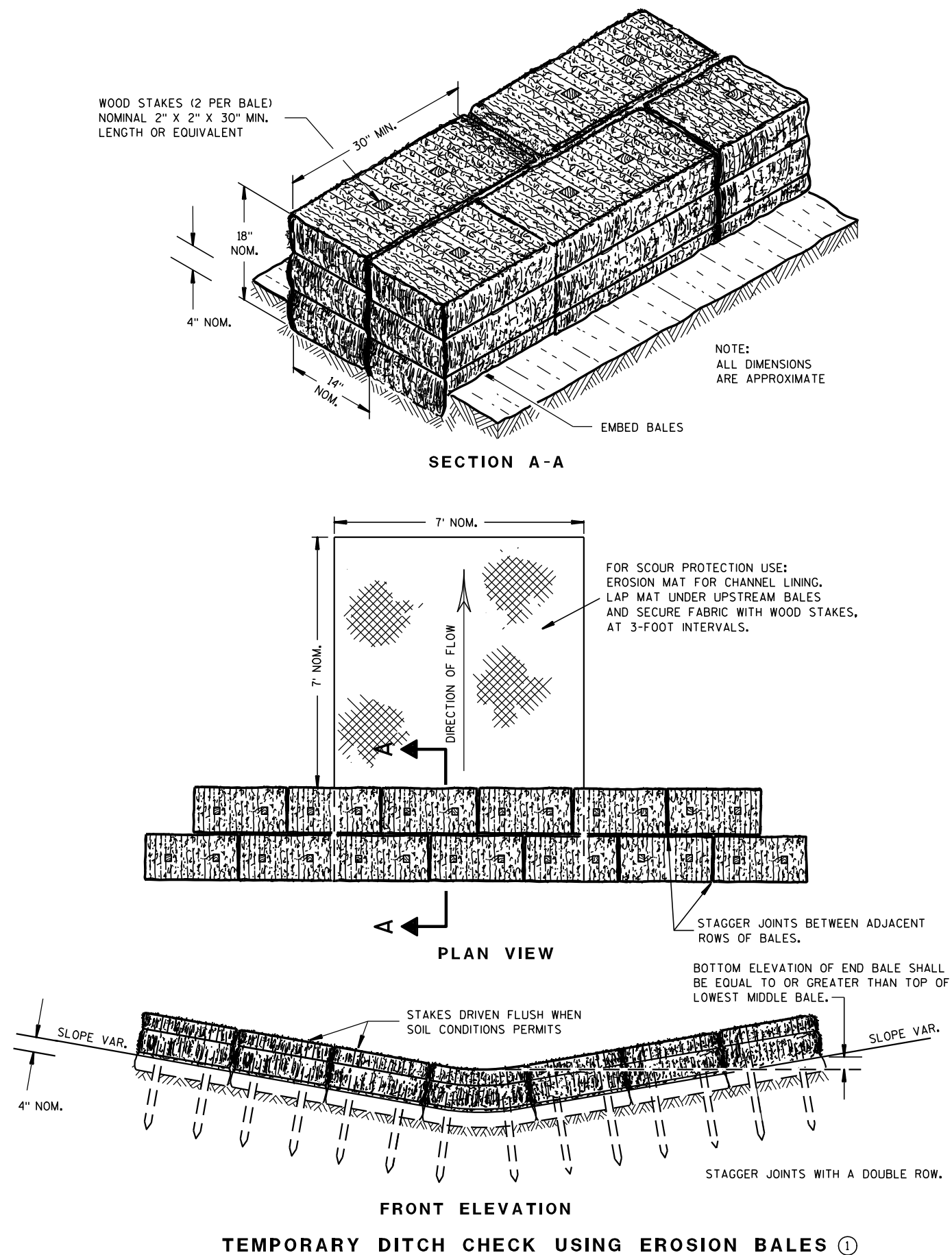
PLAN VIEW

PLAN VIEW



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

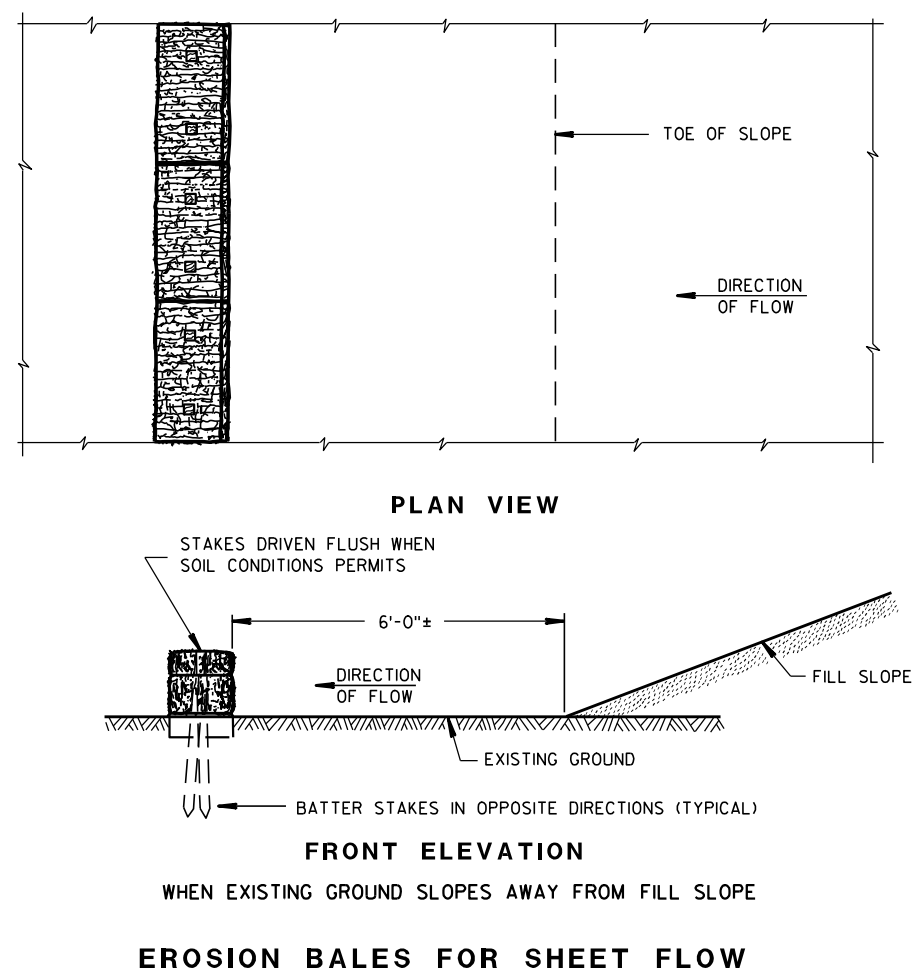
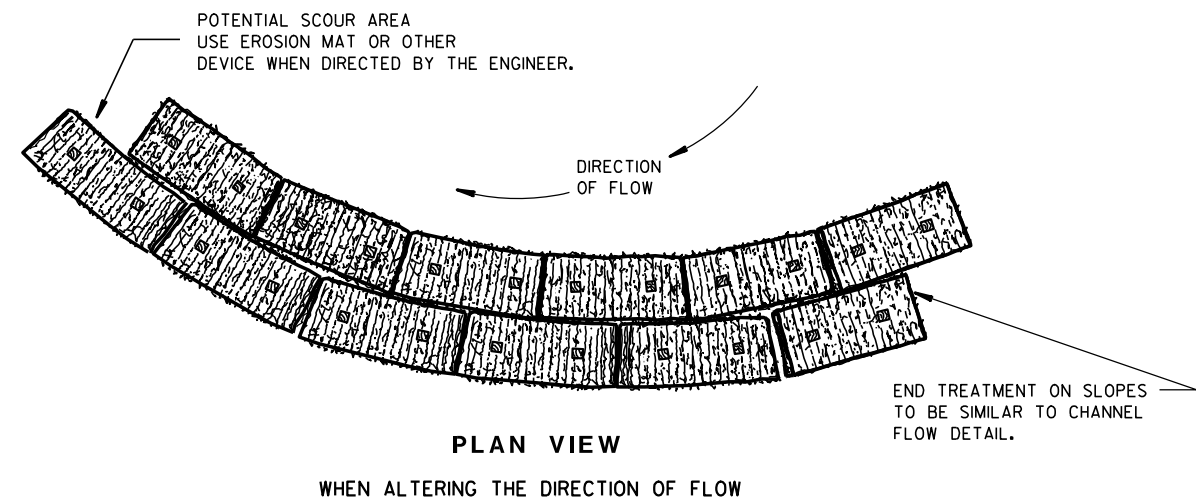
APPROVED
9-4-08 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER



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.

- 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

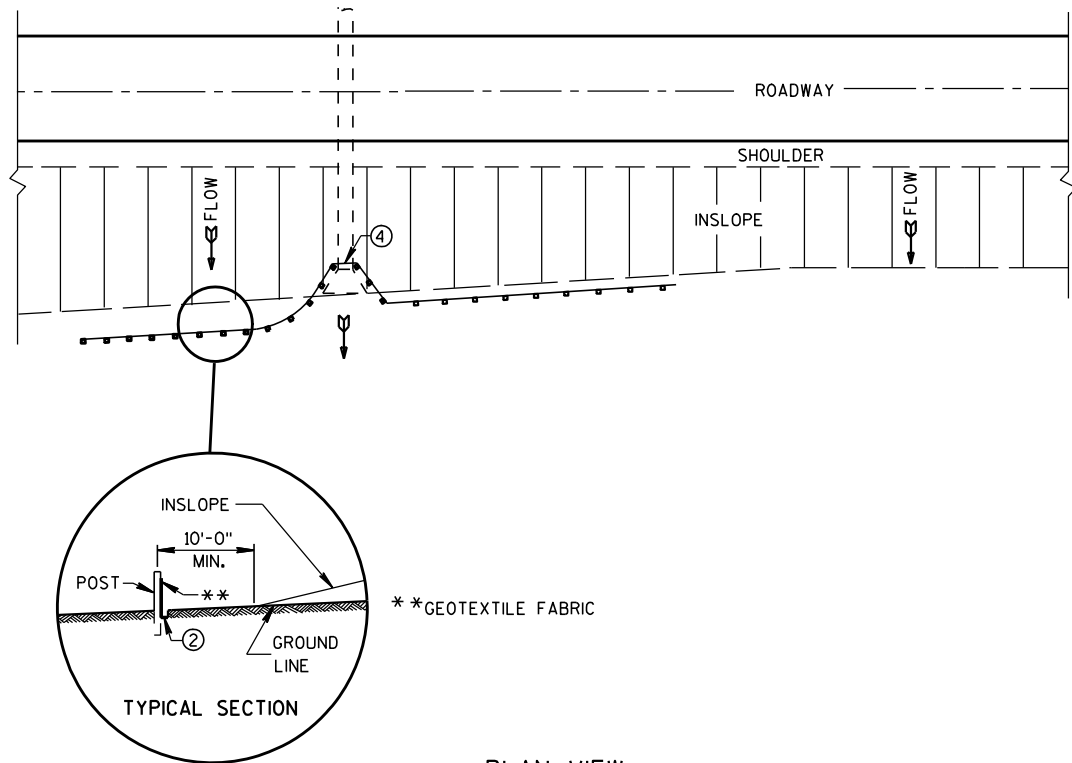
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

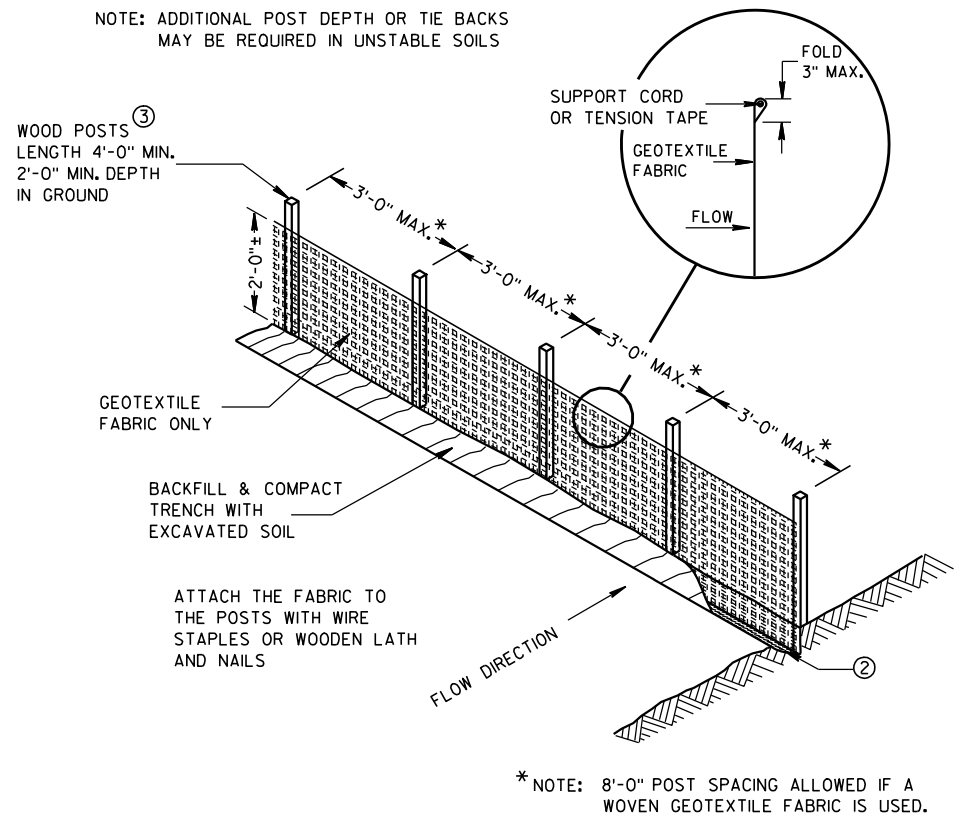
6/04/02
DATE

FHWA

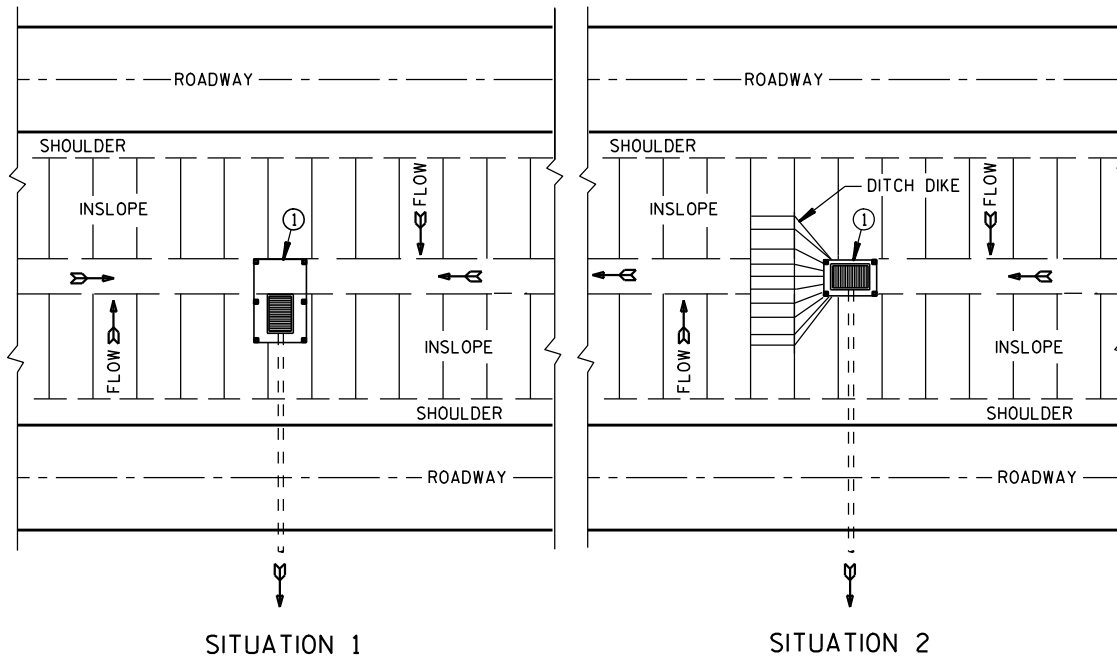
/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



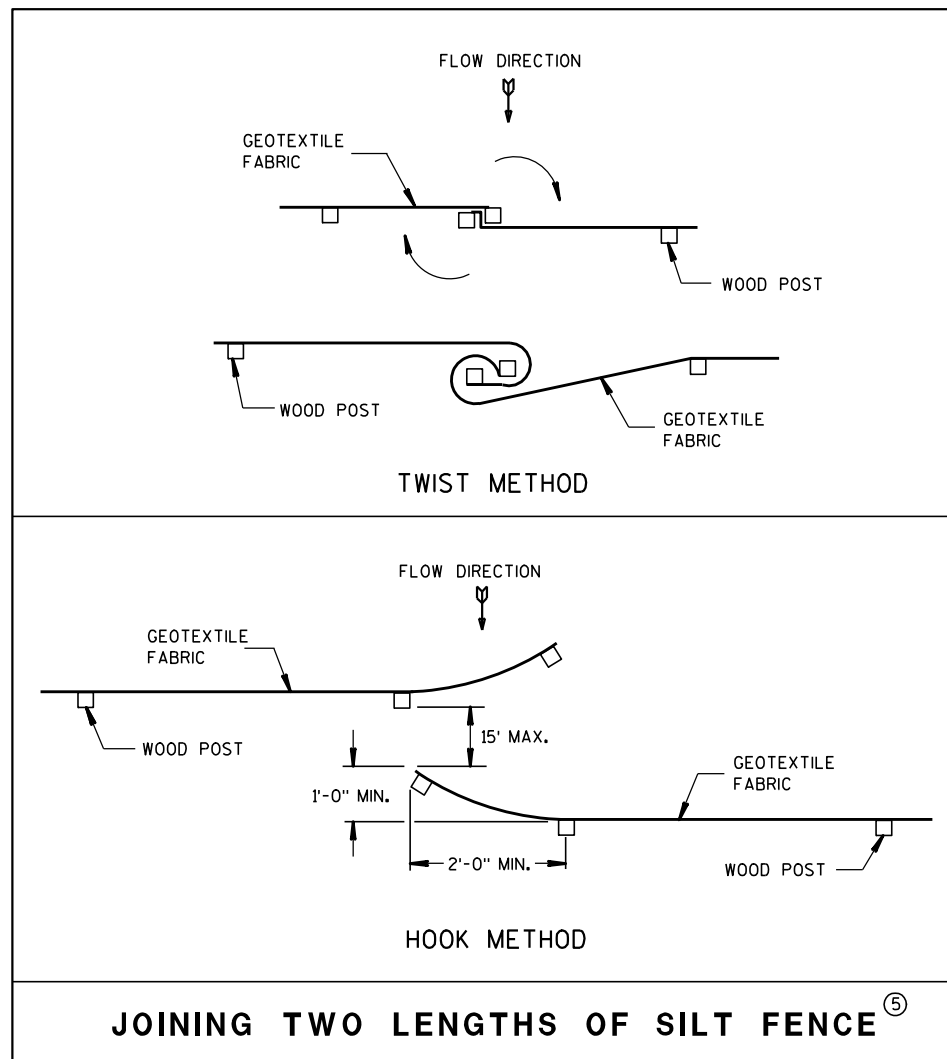
PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE



SILT FENCE



PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

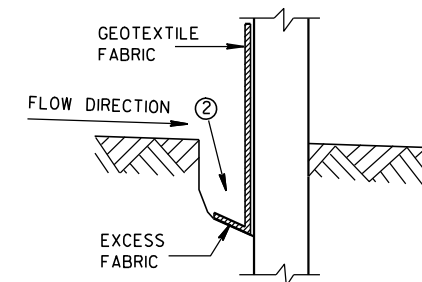


JOINING TWO LENGTHS OF SILT FENCE (5)

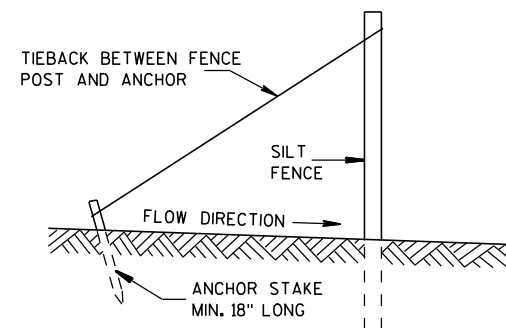
GENERAL NOTES

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

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



TRENCH DETAIL

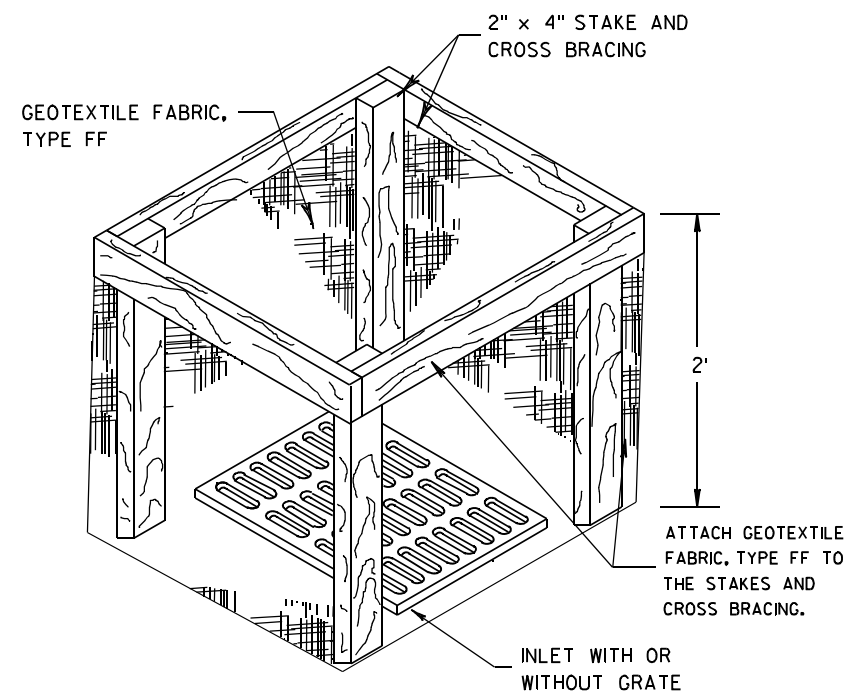
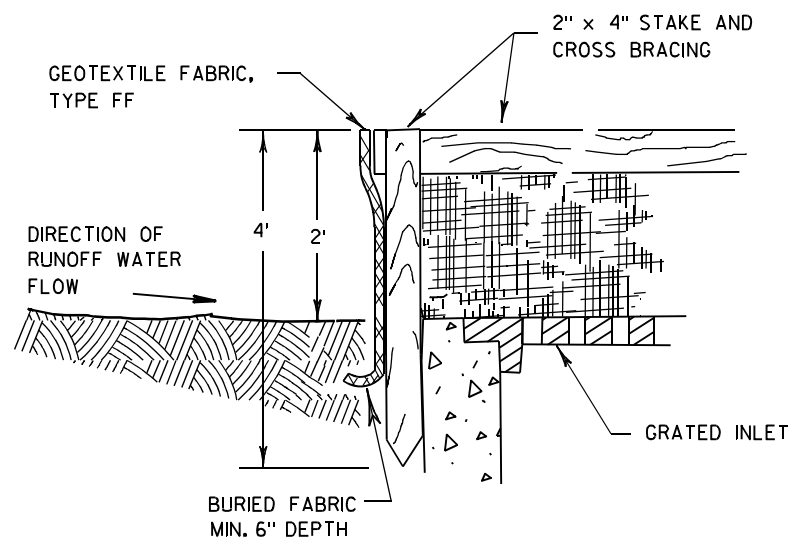


SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05 /S/ Beth Cannestra
DATE CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



INLET PROTECTION, TYPE A

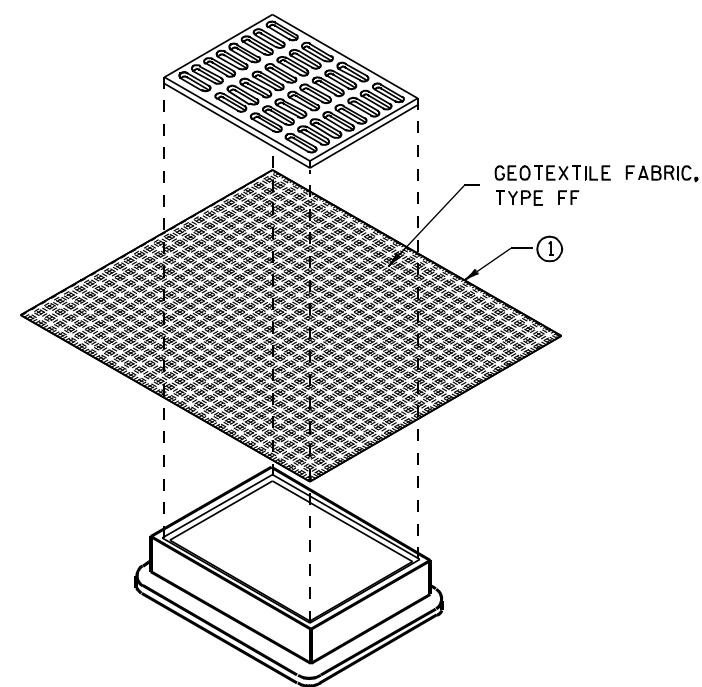
GENERAL NOTES

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.

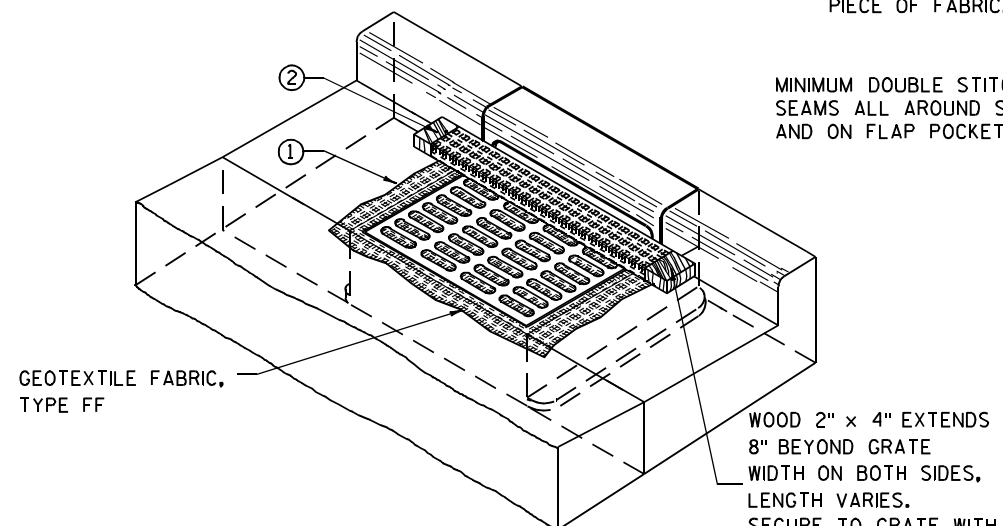
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- 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.

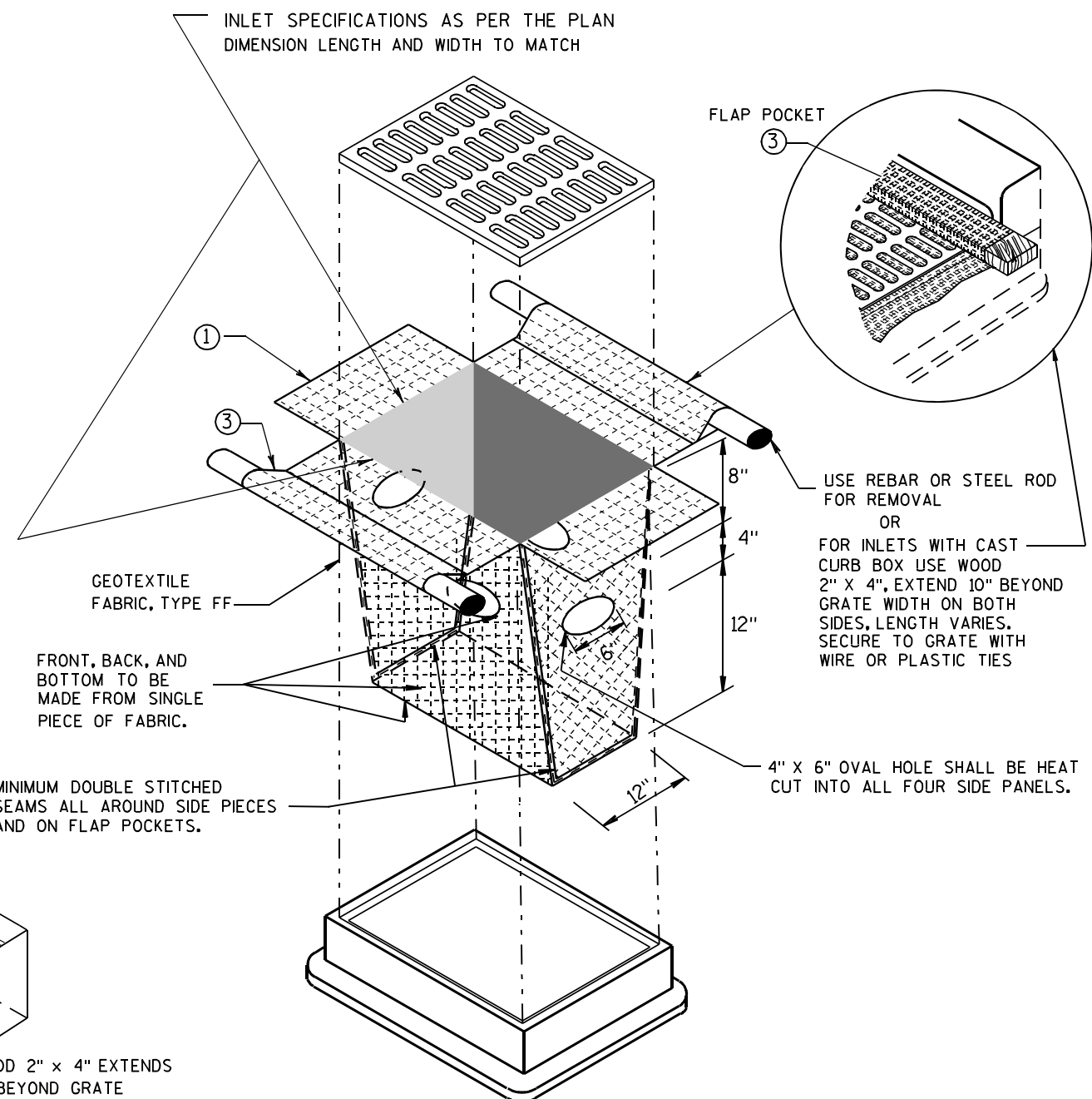
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

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)

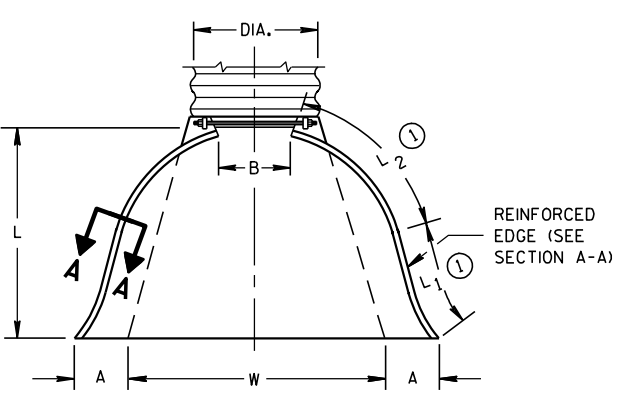
**INLET PROTECTION
TYPE A, B, C, AND D**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

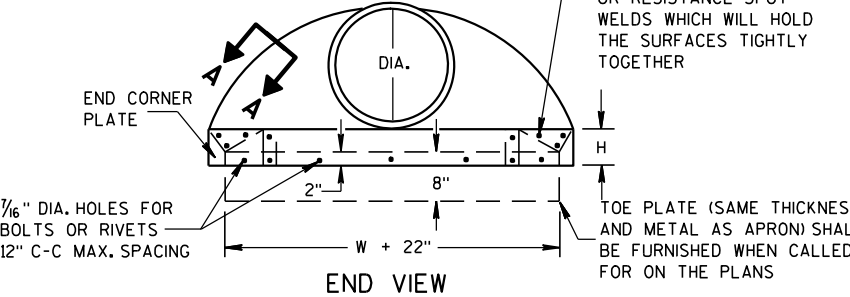
APPROVED
10/16/02 /S/ Beth Cannestra
DATE
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

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")	L1 ①	L2 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

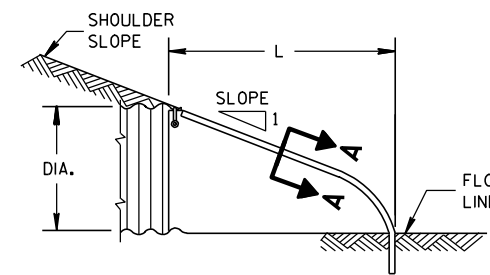


REINFORCED
EDGE (SEE
SECTION A-A)



END CORNER PLATES MAY
BE FASTENED TO APRON
PROPER BY BOLTS, RIVETS,
OR RESISTANCE SPOT
WELDS WHICH WILL HOLD
THE SURFACES TIGHTLY
TOGETHER

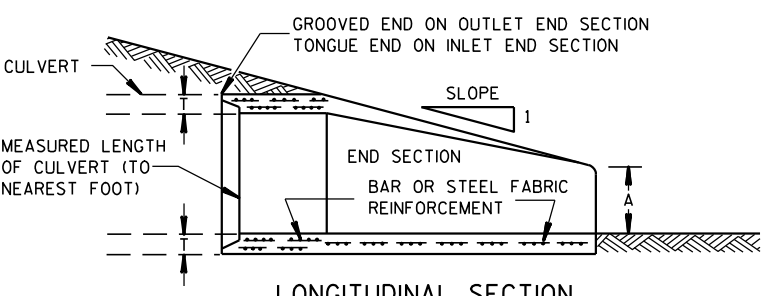
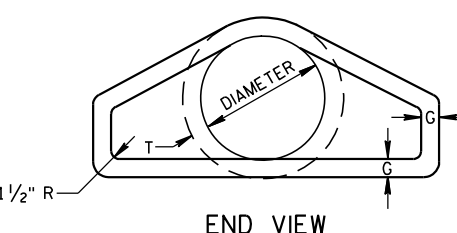
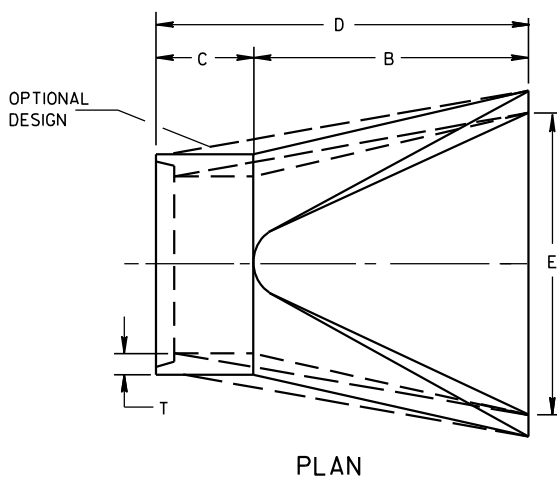
TOE PLATE (SAME THICKNESS
AND METAL AS APRON) SHALL
BE FURNISHED WHEN CALLED
FOR ON THE PLANS



SIDE ELEVATION
METAL ENDWALLS

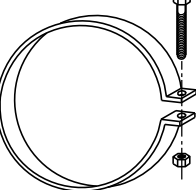
REINFORCED CONCRETE APRON ENDWALLS												
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE				
	T	A	B	C	D	E	G					
12	2	4	24	48 1/8	72 1/8	24	2	3 to 1				
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1				
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1				
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1				
24	3	9 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

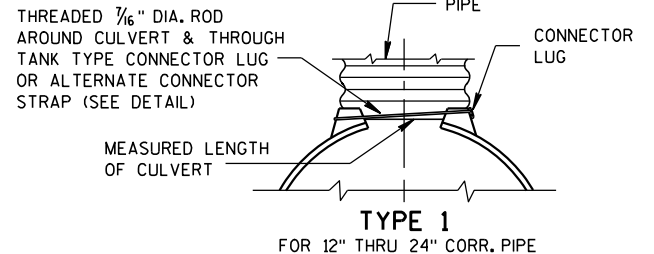


LONGITUDINAL SECTION
CONCRETE ENDWALLS

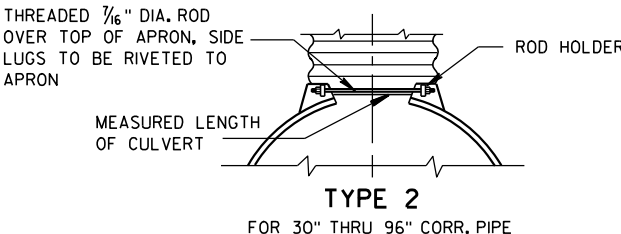
1" WIDE, 12 GA. (0.109"
THICK) GALVANIZED STRAP
WITH STANDARD 6" X 1/2"
BAND BOLT AND NUT



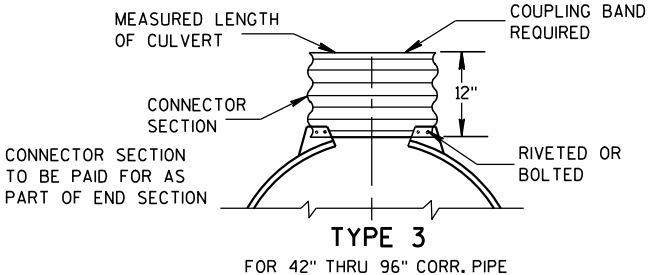
ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



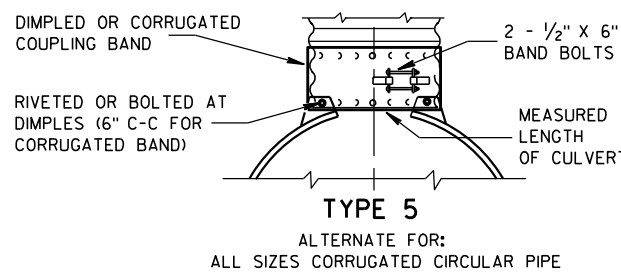
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



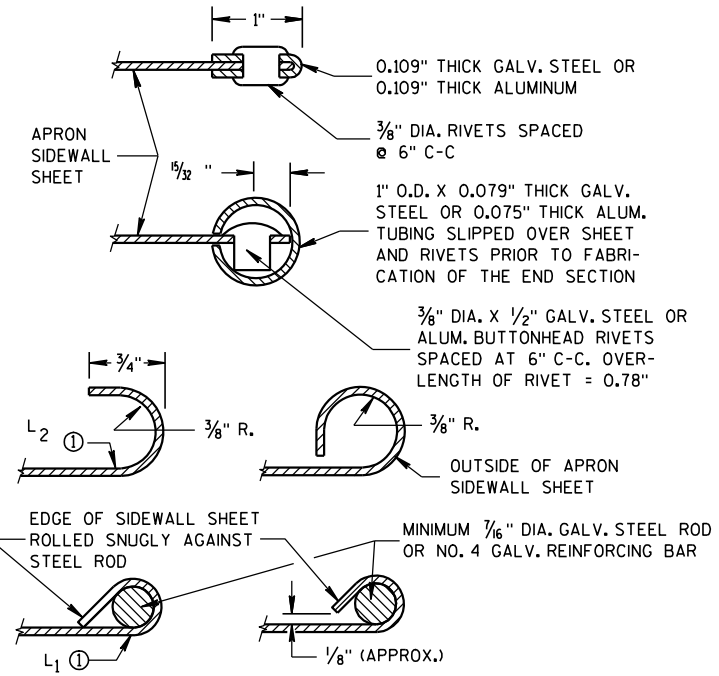
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL,
AND CORRUGATED BAND FITS INSIDE ENDWALL.
DIMPLED BAND MAY BE USED WITH HELICALLY
CORRUGATED PIPE.

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



SECTION A-A

GENERAL NOTES

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

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

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

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

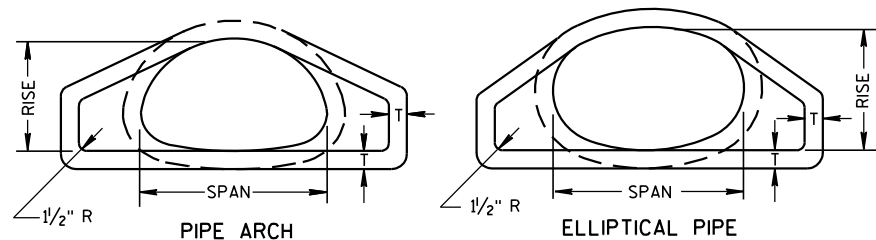
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT
TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT
TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

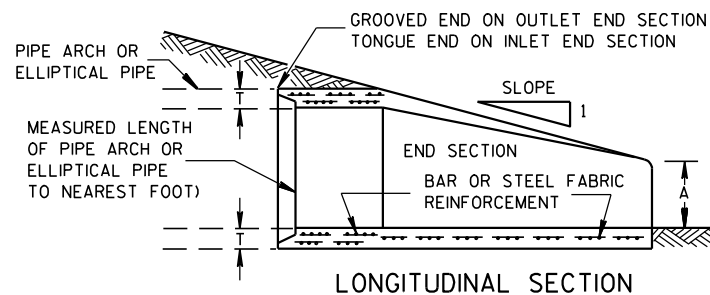
APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

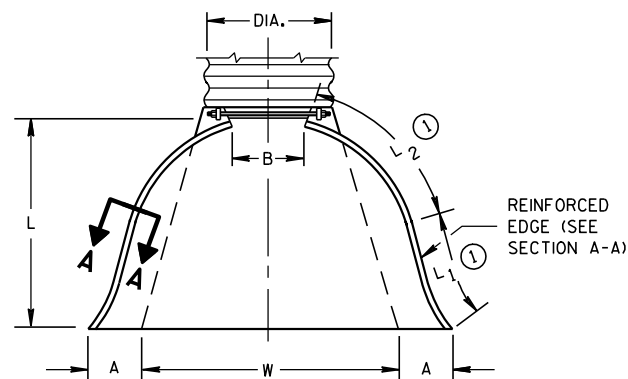


END VIEW



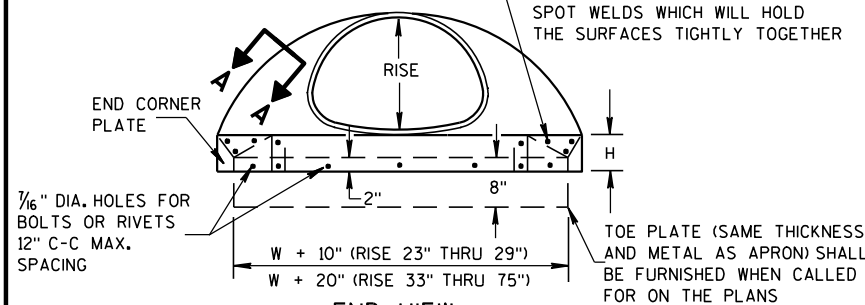
LONGITUDINAL SECTION

CONCRETE ENDWALLS

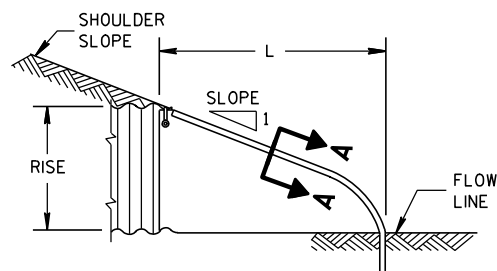
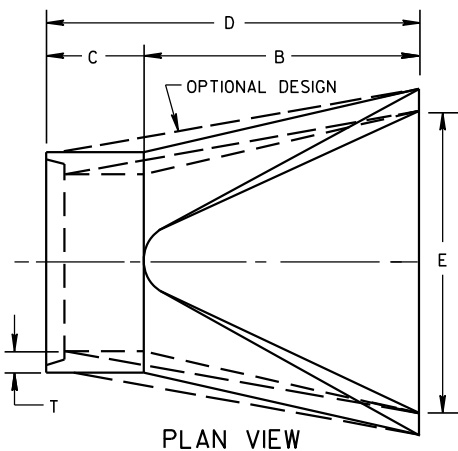


PLAN VIEW

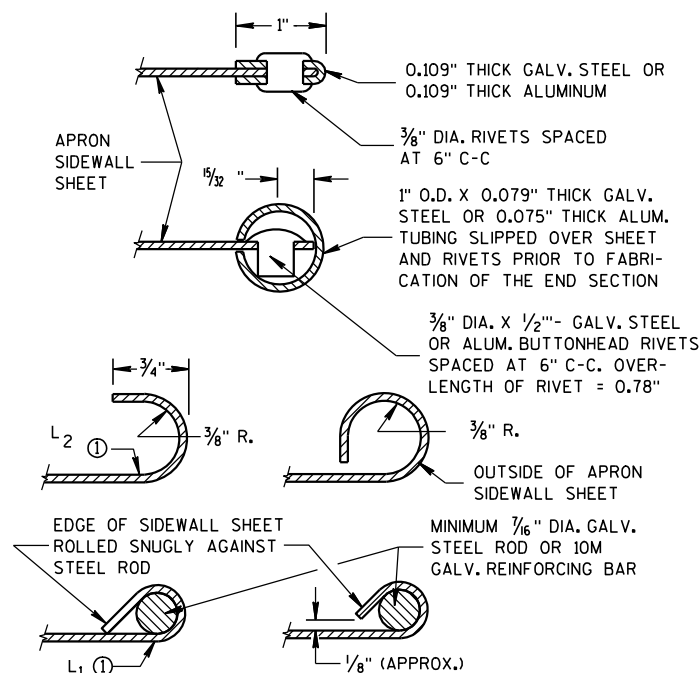
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



END VIEW

SIDE ELEVATION
METAL ENDWALLS

PLAN VIEW

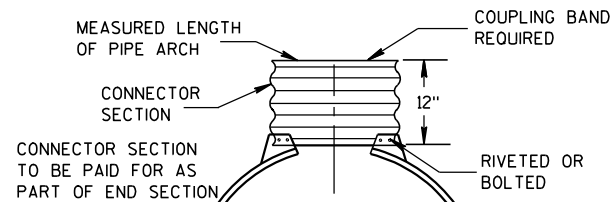


SECTION A-A



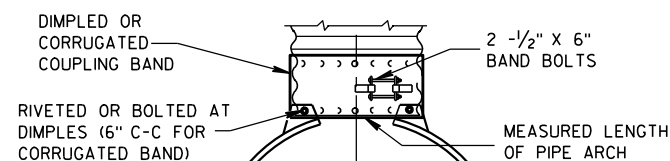
TYPE 2

FOR 17" X 13" THRU 112" X 75" PIPE ARCH



TYPE 3

FOR 64" X 43" THRU 112" X 75" PIPE ARCH



TYPE 5

ALTERNATE FOR:
ALL SIZES CORRUGATED PIPE ARCHESNOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL,
AND CORRUGATED BAND FITS INSIDE ENDWALL.

CONNECTION DETAILS

2- 2/3" X 1/2" CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
15	17	13	.064	.060	7	9	6	19	14	16	30	2 1/2 to 1	1 Pc.
18	21	15	.064	.060	7	10	6	23	14	19 3/8	36	2 1/2 to 1	1 Pc.
21	24	18	.064	.060	8	12	6	28	18	21 3/4	42	2 1/2 to 1	1 Pc.
24	28	20	.064	.060	9	14	6	32	18	27 1/2	48	2 1/2 to 1	1 Pc.
30	35	24	.079	.075	10	16	6	39	18	37 5/8	60	2 1/2 to 1	1 Pc.
36	42	29	.079	.075	12	18	8	46	24	45 3/8	75	2 1/2 to 1	1 Pc.
42	49	33	.109	.105	13	21	9	53	24	54 3/4	85	2 1/2 to 1	2 Pc.
48	57	38	.109	.105	18	26	12	63	24	68	90	2 1/2 to 1	3 Pc.
54	64	43	.109	.105	18	30	12	70	24	72 3/4	102	2 1/4 to 1	3 Pc.
60	71	47	.109*	.105*	18	33	12	77	30	82 1/4	114	2 1/4 to 1	3 Pc.
66	77	52	.109*	.105*	18	36	12	77	—	—	126	2 to 1	3 Pc.
72	83	57	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.

3" X 1" CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
48	53	41	.109	.105	18	26	12	63	24	72 3/4	90	2 1/2 to 1	2 Pc.
54	60	46	.109	.105	18	30	12	70	30	82 1/4	102	2 to 1	2 Pc.
60	66	51	.109*	.105*	18	33	12	77	—	—	114	1 1/2 to 1	3 Pc.
66	73	55	.109*	.105*	18	36	12	77	—	—	126	1 1/2 to 1	3 Pc.
72	81	59	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.
78	87	63	.109*	.105*	22	38	12	77	—	—	148	1 1/2 to 1	3 Pc.
84	95	67	.109*	.105*	22	34	12	77	—	—	162	1 1/2 to 1	3 Pc.
90	103	71	.109*	.105*	22	38	12	77	—	—	174	1 1/2 to 1	3 Pc.
96	112	75	.109*	.105*	24	40	12	77	—	—	174	1 1/2 to 1	3 Pc.

NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED.

* EXCEPT CENTER PANEL
SEE GENERAL NOTES

REINFORCED CONCRETE PIPE ARCH

EQUIV. DIA. (Inches)	DIMENSIONS (Inches)								APPROX. SLOPE
	** SPAN	** RISE	T	A	B	C	D	E	
24	29	18	3	8 1/2	39	33	72	48	3 to 1
30	36	22	3 1/2	9 1/2	50	46	96	60	3 to 1
36	44	27	4	11 1/8	60	36	96	72	3 to 1
42	51	31	4 1/2	15 1/16	60	36	96	78	3 to 1
48	58	36	5	21	60	36	96	84	3 to 1
54	65	40	5 1/2	25 1/2	60	36	96	90	3 to 1
60	73	45	6	31	60	36	96	96	3 to 1
72	88	54	7	31	60	39	99	120	2 to 1
84	102	62	8	28 1/2	83	19	102	144	2 to 1

REINFORCED CONCRETE ELLIPTICAL PIPE

EQUIV. DIA. (Inches)	DIMENSIONS (Inches)								APPROX. SLOPE
	** SPAN	** RISE	T	A	B	C	D	E	
24	30	19	3 1/4	8 1/2	39	33	72	48	3 to 1
30	38	24	3 3/4	9 1/2	54	18	72	60	3 to 1
36	45	29	4 1/2	11 1/8	60	24	84	72	2 1/2 to 1
42	53	34	5	15 1/4	60	36	96	78	2 1/2 to 1
48	60	38	5 1/2	21	60	36	96	84	2 1/2 to 1
54	68	43	6	25 1/2	60	36	96	90	2 1/2 to 1
60	76	48	6 1/2	30	60	36	96	96	2 1/2 to 1

**NOMINAL SIZE

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

ALL THREE PIECE STEEL APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 66" X 51" PIPE ARCH 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 ARCH 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 77" X 52" THROUGH 112" X 75" 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.

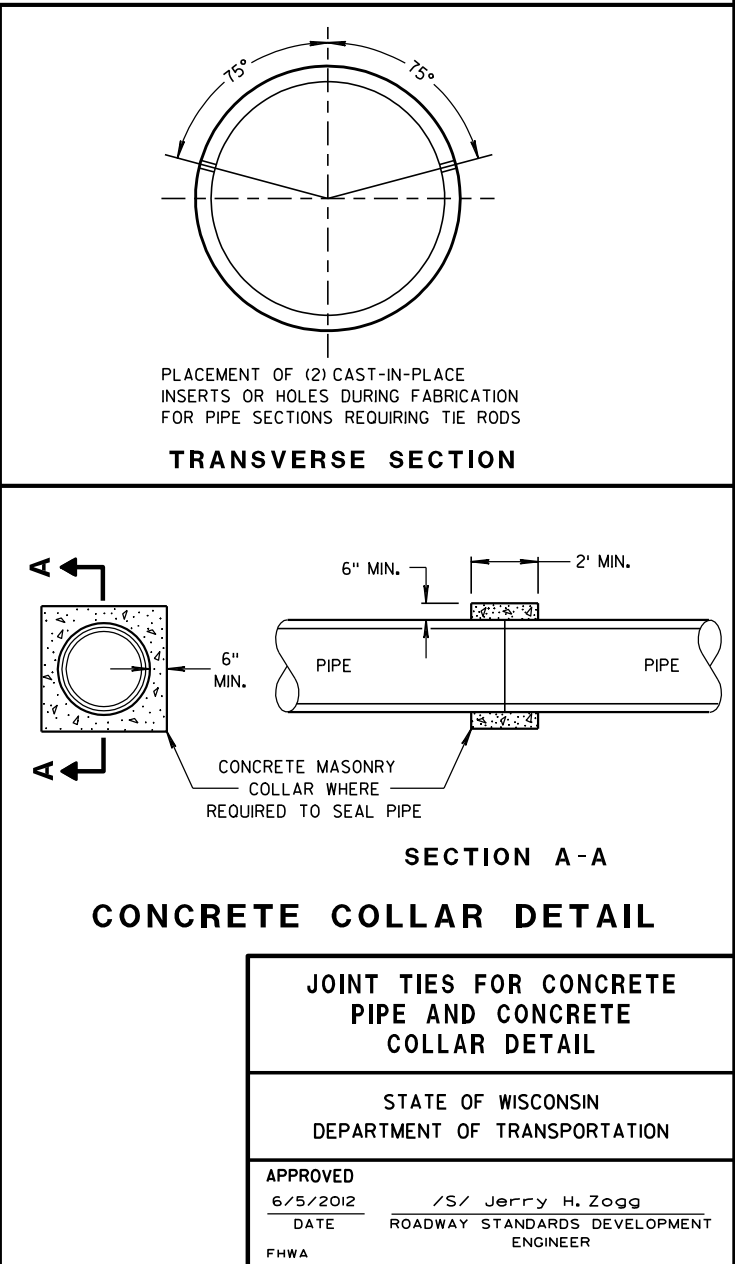
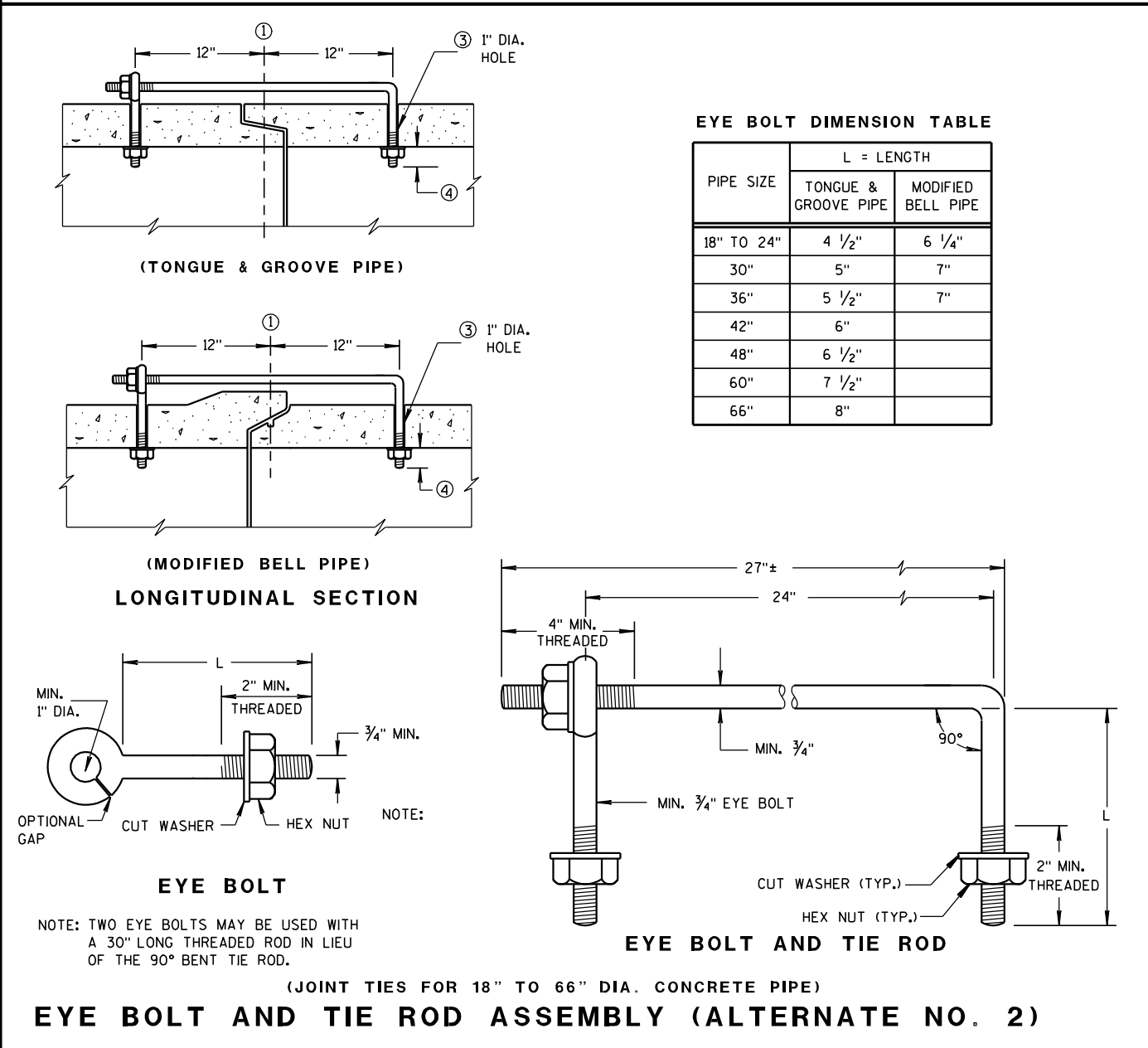
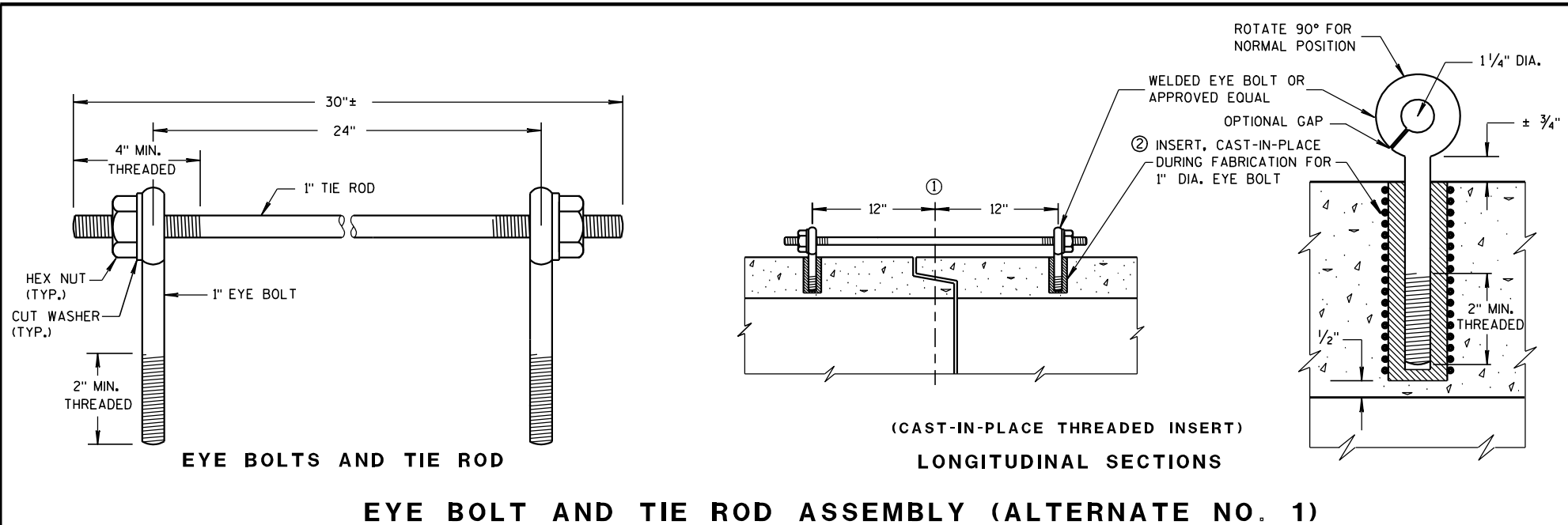
① FOR PIPE ARCH SIZES UP TO 73" X 55" A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

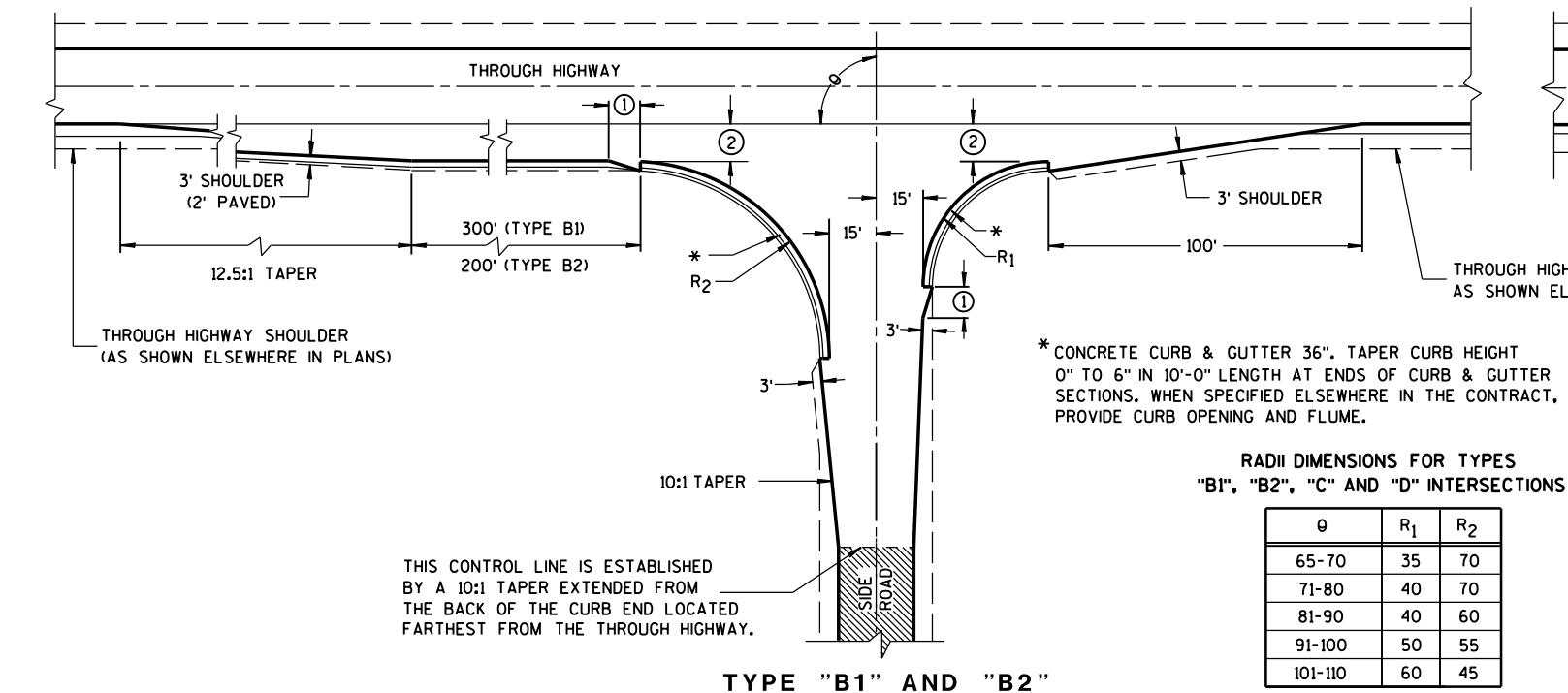
APRON ENDWALLS FOR
PIPE ARCH AND
ELLIPTICAL PIPESTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

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

FHWA





GENERAL NOTES

DESIGNS MAY BE USED INTERCHANGEABLY IN COMBINATION OR SEPARATELY FOR ANY ONE COMPLETE INTERSECTION DEPENDING UPON INTERSECTION ANGLE AND SURFACING OF EACH APPROACH ROADWAY.

SIDE ROAD SURFACING NOTE

WHEN THE SIDE ROAD IS NOT PRESENTLY PAVED, PAVEMENT SHALL BE PLACED TO THE LIMITS SHOWN UNLESS OTHERWISE PROVIDED IN THE CONTRACT. WHERE THE CONSTRUCTION LIMITS ARE BEYOND THE PAVING LIMITS, CRUSHED AGGREGATE SURFACING SHALL BE PLACED BETWEEN THE PAVING LIMITS AND CONSTRUCTION LIMITS.

WHEN THE SIDE ROAD IS PRESENTLY PAVED, NEW PAVEMENT SHALL BE PLACED TO THE LIMITS OF DESIGN AS SHOWN AND BEYOND, IF NECESSARY, TO MEET EXISTING PAVEMENT.

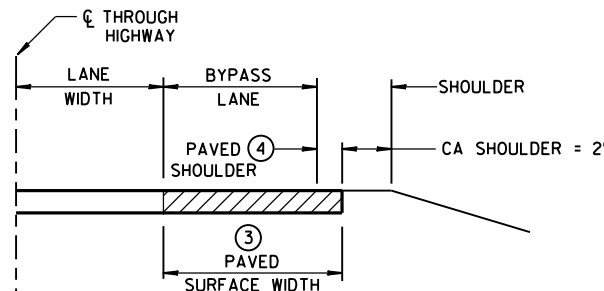
WHEN THE SIDE ROAD IS THE CONSTRUCTION PROJECT, THE INTERSECTION SURFACING SHALL BE THE SAME AS FOR THE PROJECT.

EXISTING PAVED SURFACE

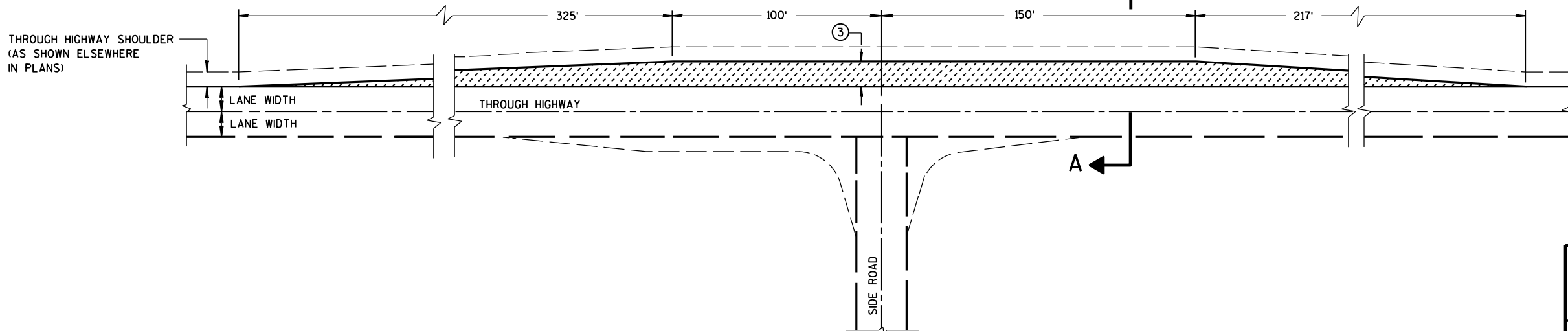
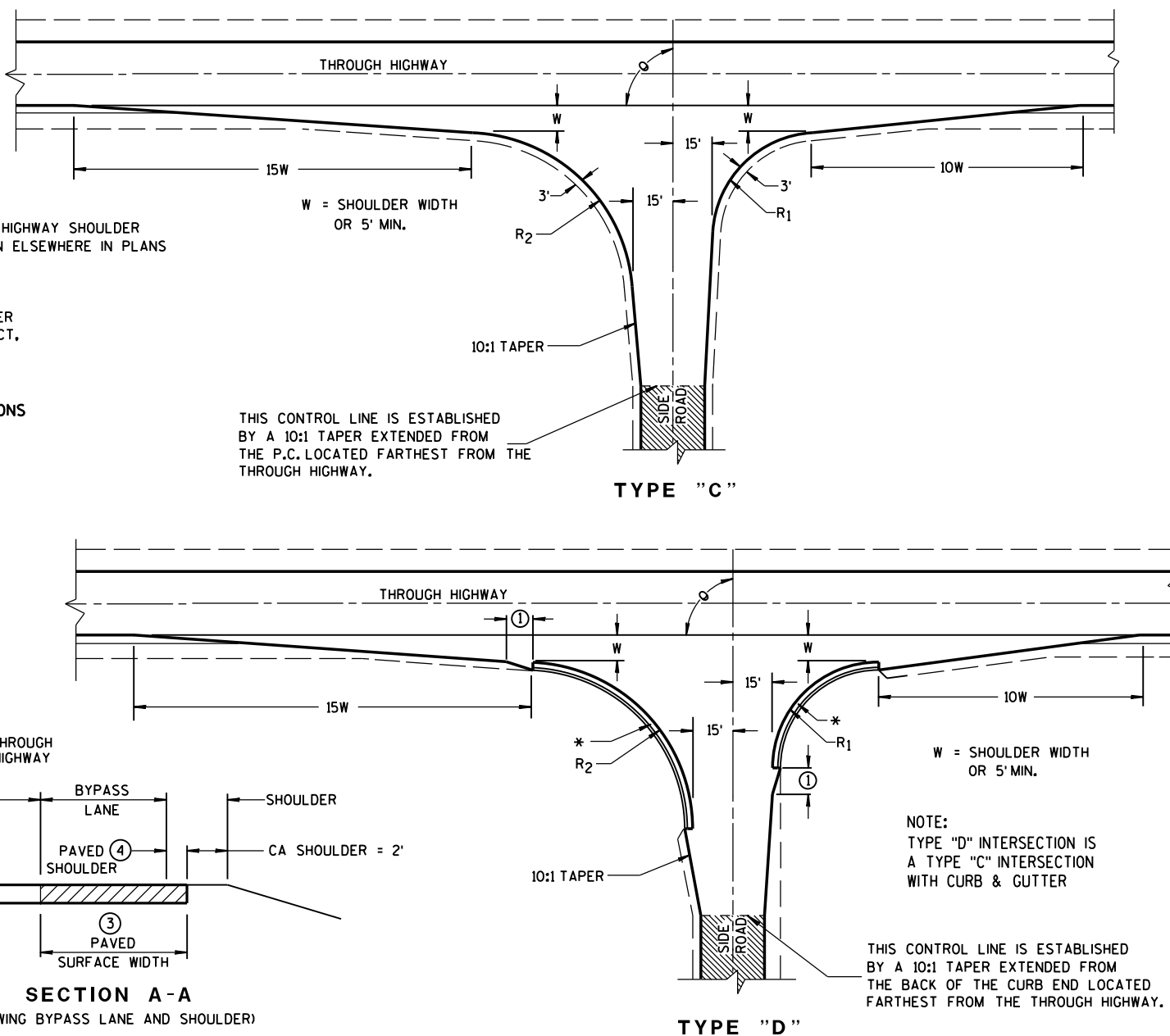
BYPASS LANE

- 10-FT TYPICAL.
- 12-FT** PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLAN.

**10-FT MAY BE USED ON TYPE B2 ON RESURFACING PROJECTS IF SPECIFIED IN THE CONTRACT.
- BYPASS LANE PAVED SURFACE WIDTH OUTSIDE OF TRAVEL LANE
-ASPHALT = 12-FT PLUS PAVED SHOULDER WIDTH.
-PC CPNCRETE = 13-FT PLUS PAVED SHOULDER WIDTH.
- BYPASS LANE PAVED SHOULDER WIDTH = THE GREATER OF 1-FT OR THE PAVED SHOULDER WIDTH OF THE THROUGH HIGHWAY.



SECTION A-A
(SHOWING BYPASS LANE AND SHOULDER)



TEE INTERSECTION BYPASS LANE DETAIL

AT-GRADE SIDE ROAD
INTERSECTION, TYPES "B1", "B2",
"C" AND "D" AND TEE
INTERSECTION BYPASS LANE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

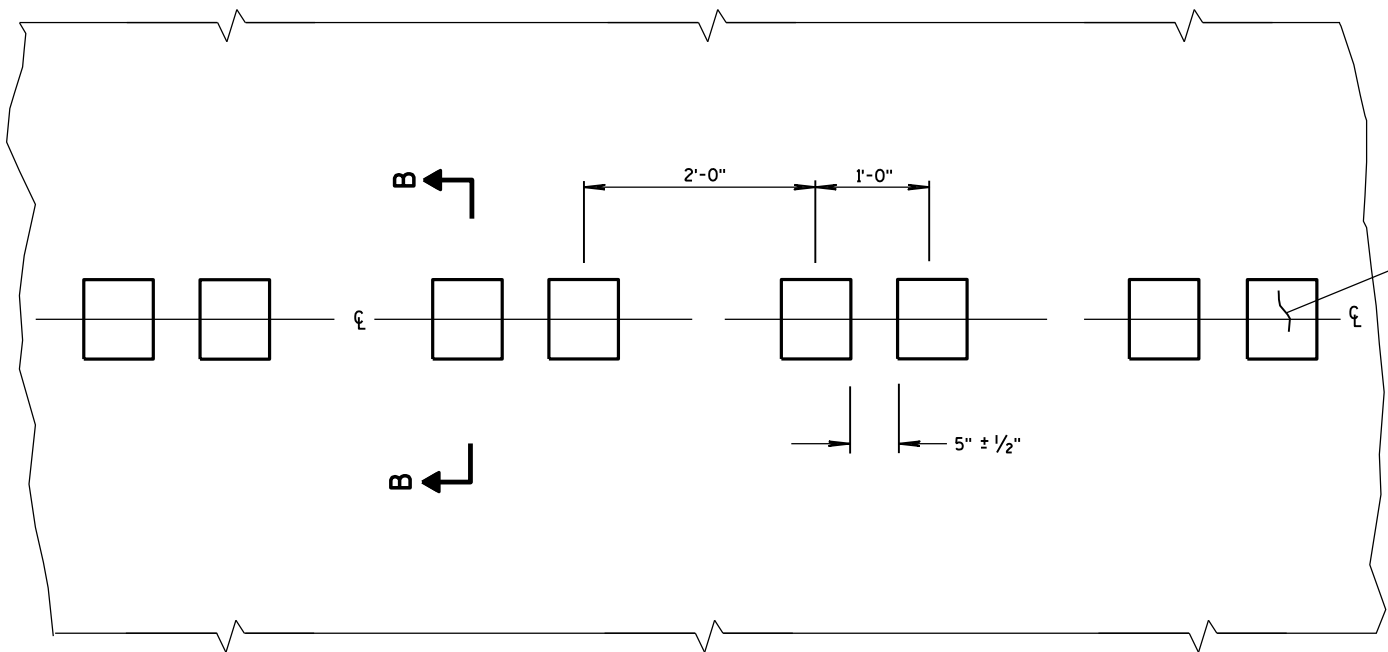
DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

DO NOT MILL CENTER LINE GROOVES THROUGH ANY INTERSECTION, MARKED CROSSWALK, NON-MOTORIZED PATH CROSSING, OR SNOWMOBILE CROSSING.

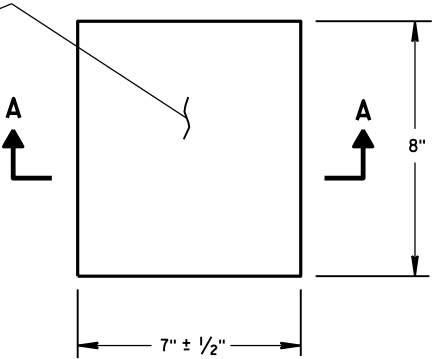
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

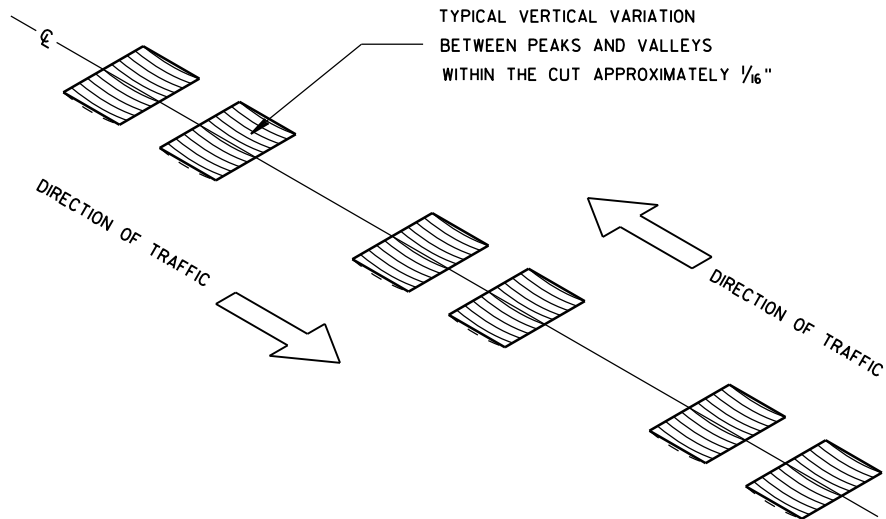
- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.



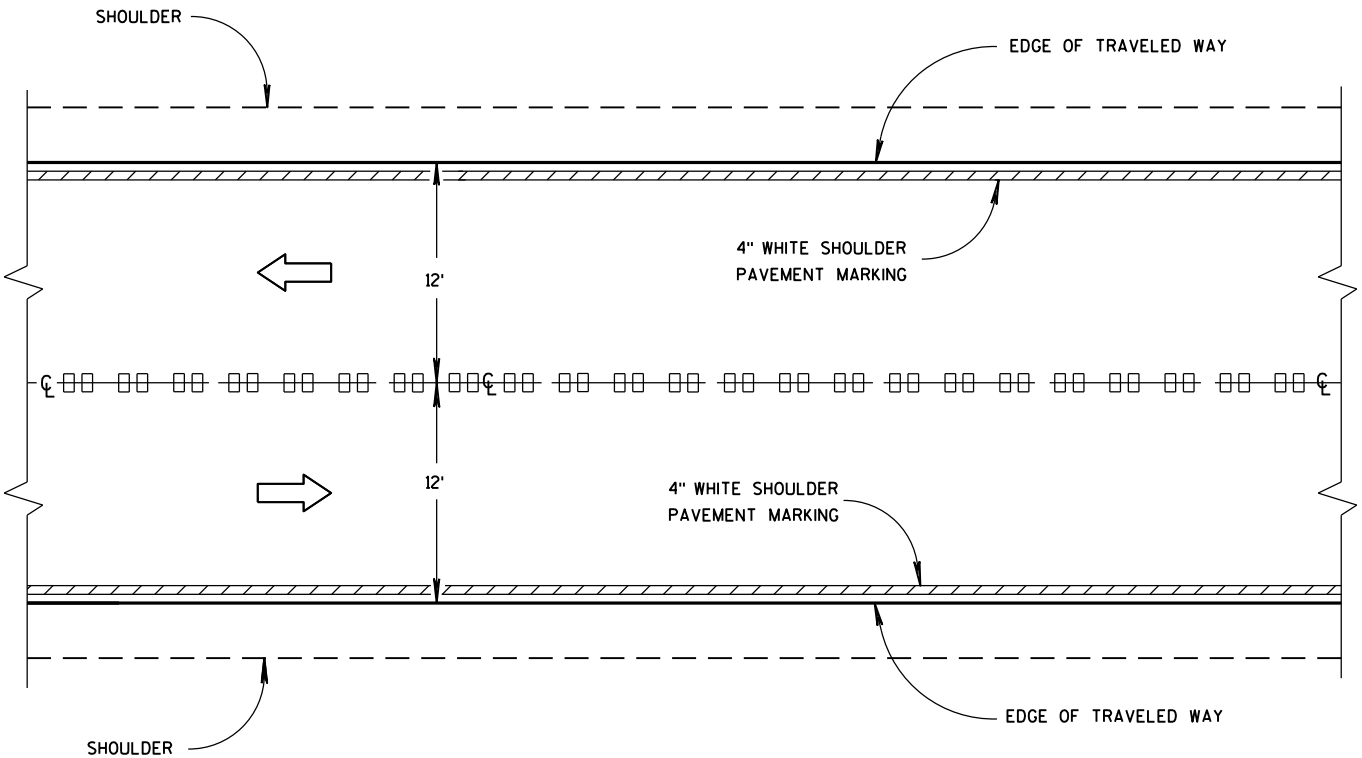
PLAN VIEW
CENTER LINE WITH GROOVES



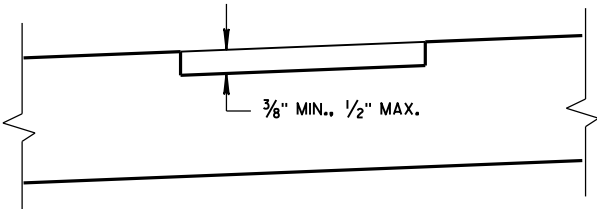
PLAN VIEW
(SINGLE GROOVE)



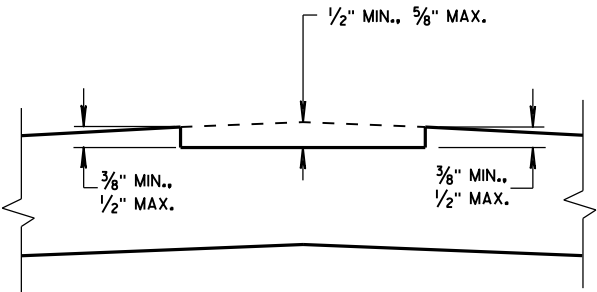
ISOMETRIC



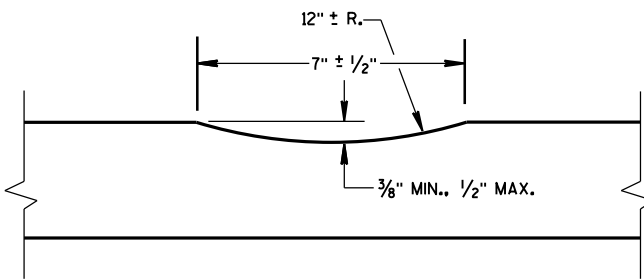
CENTER LINE GROOVES ON TWO-WAY ROADWAYS



SECTION B-B
SUPERELEVATED ROADWAY



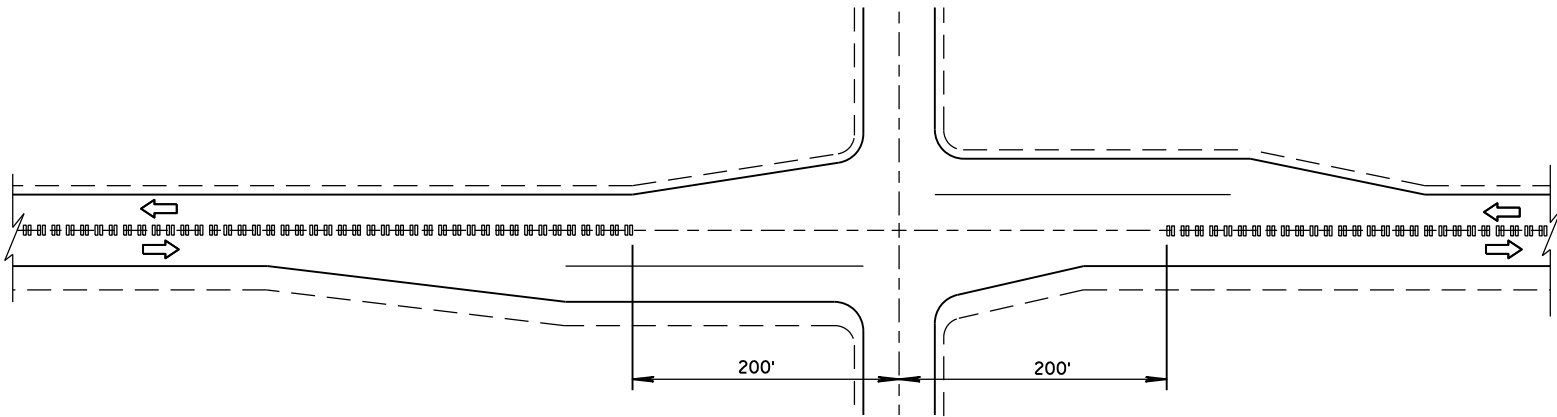
SECTION B-B
CROWNED ROADWAY



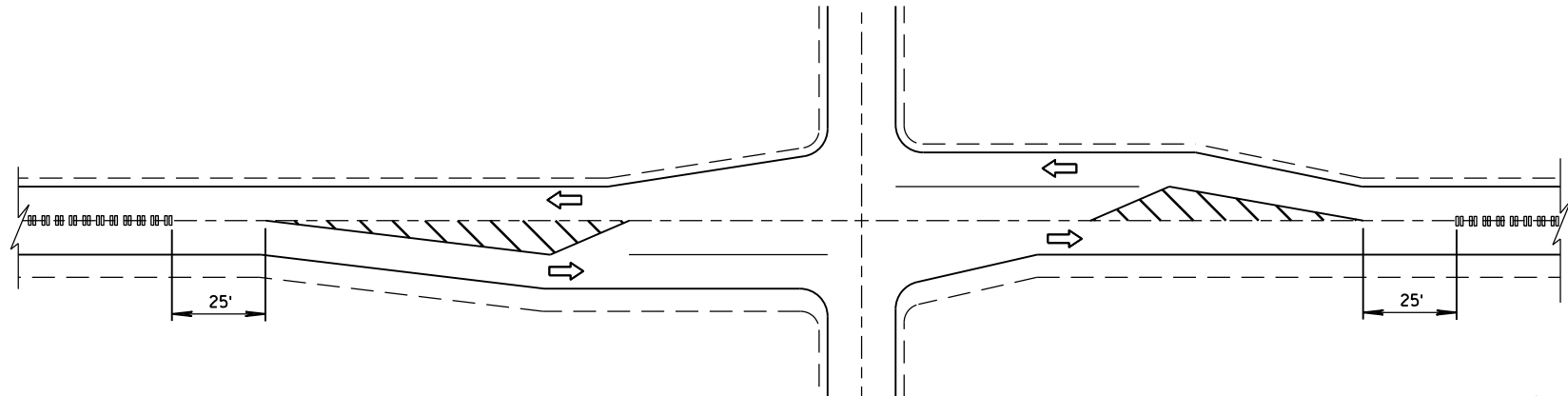
SECTION A-A

2-LANE RURAL
CENTER LINE RUMBLE STRIP,
MILLING

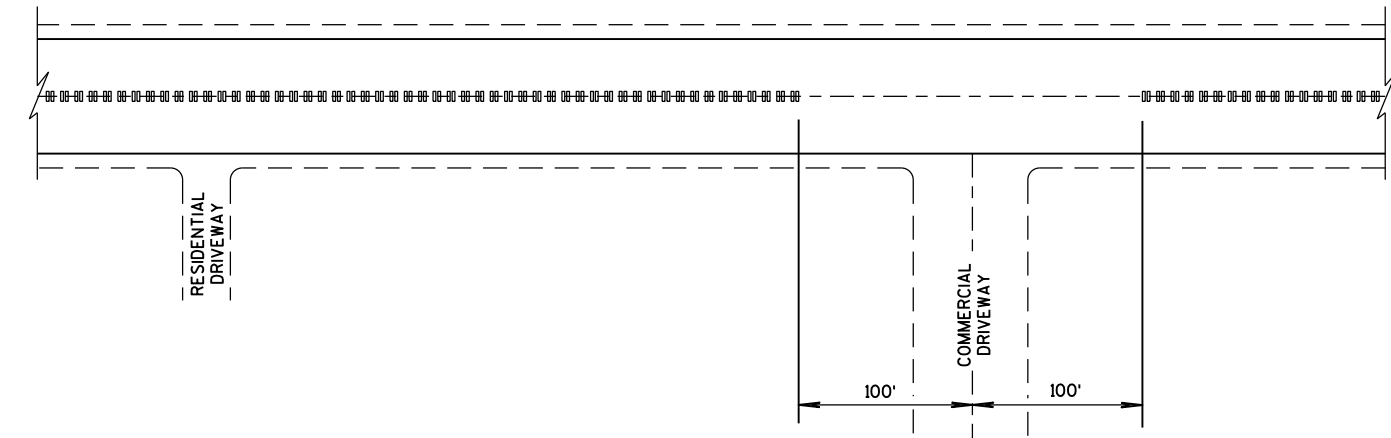
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



CENTER LINE GROOVES AT INTERSECTIONS

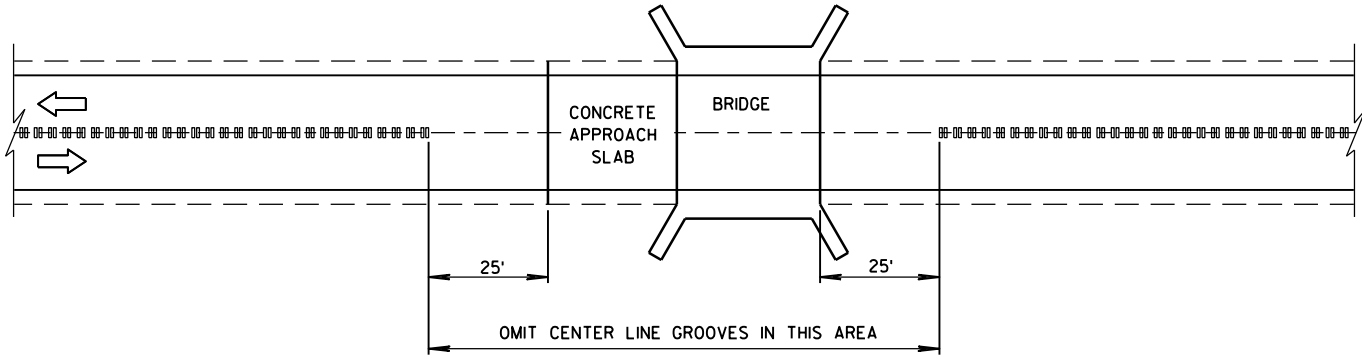


CENTER LINE GROOVES AT INTERSECTIONS
(WITH LEFT TURN LANES)

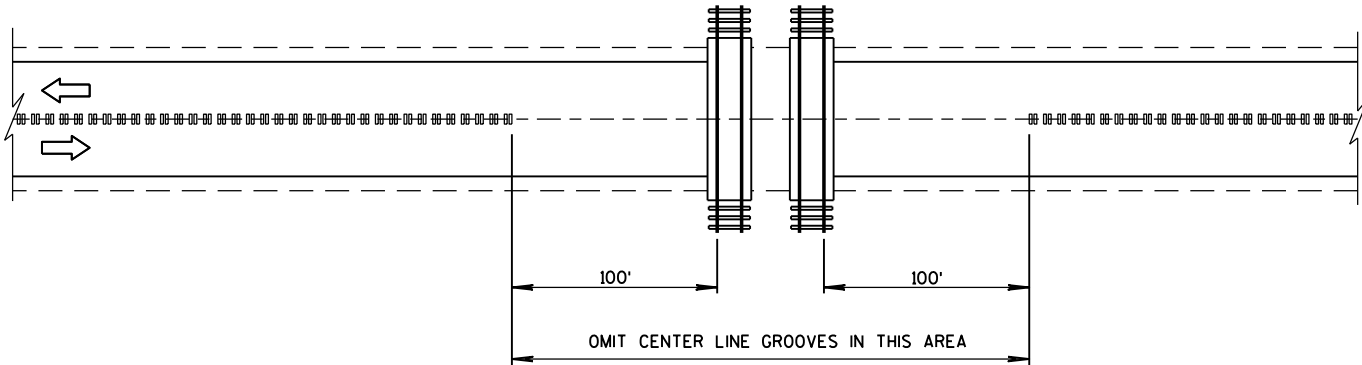


CENTER LINE GROOVES AT DRIVEWAYS¹

¹ CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.

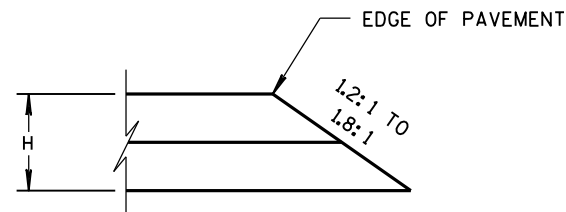


CENTER LINE GROOVES AT BRIDGES

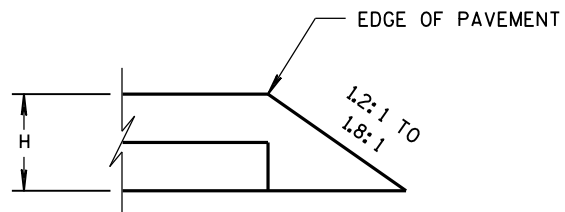


CENTER LINE GROOVES AT RAILROADS

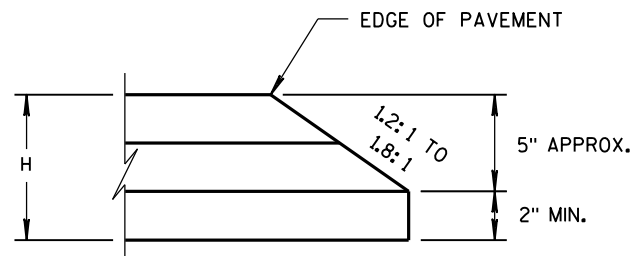
2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 5/15/2013 DATE	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	



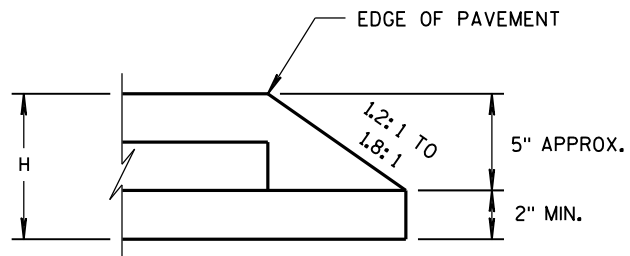
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

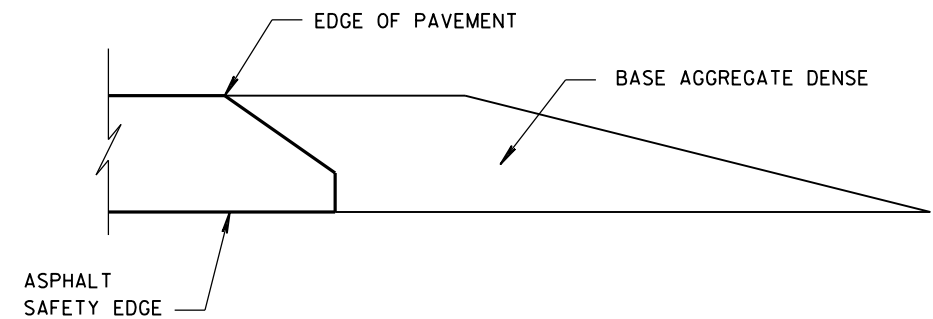


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



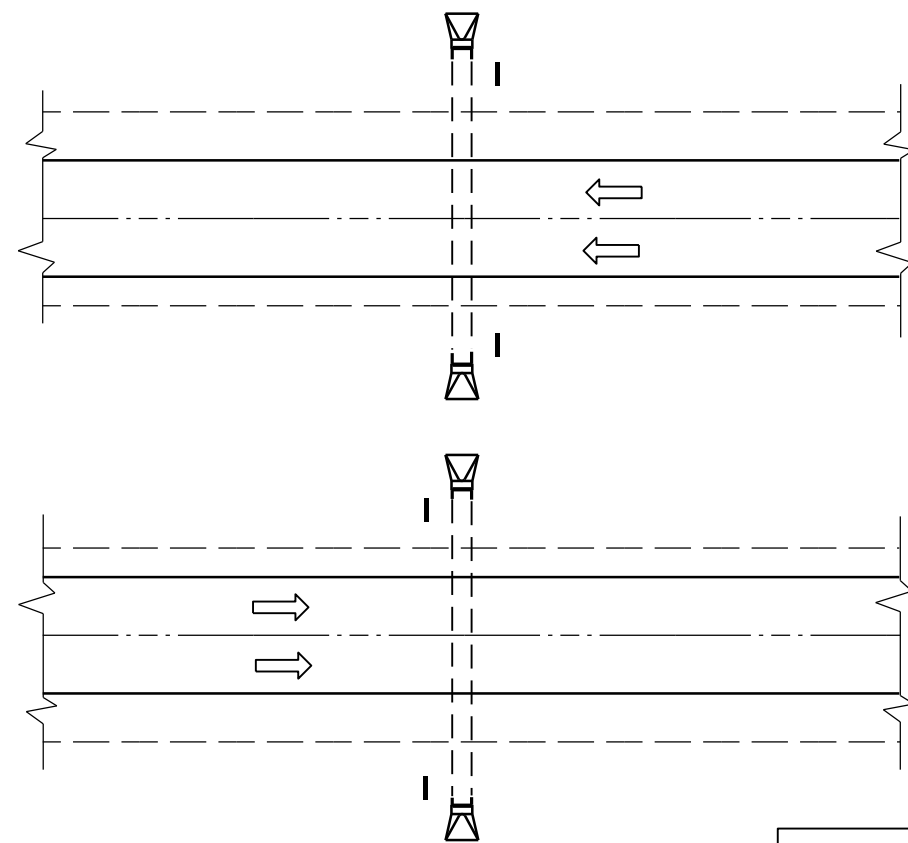
FINISHED SHOULDER AGGREGATE PLACEMENT

SAFETY EDGE_{SM}

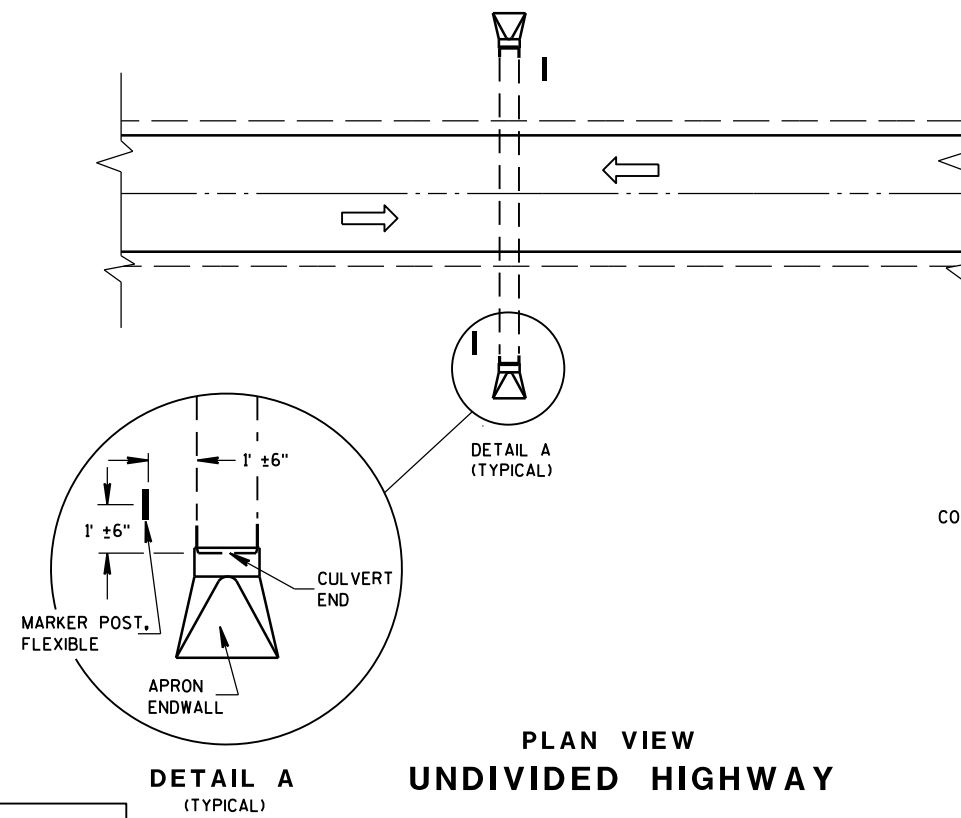
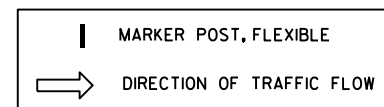
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/2012
DATE
FHWA

/s/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



PLAN VIEW
DIVIDED HIGHWAY

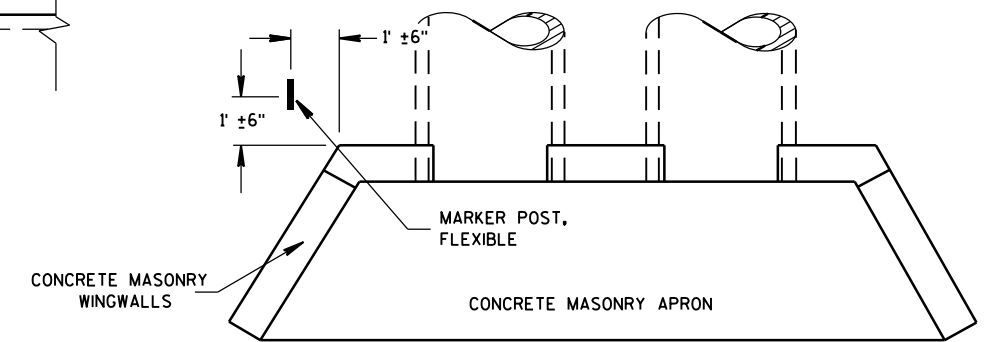


PLAN VIEW
UNDIVIDED HIGHWAY

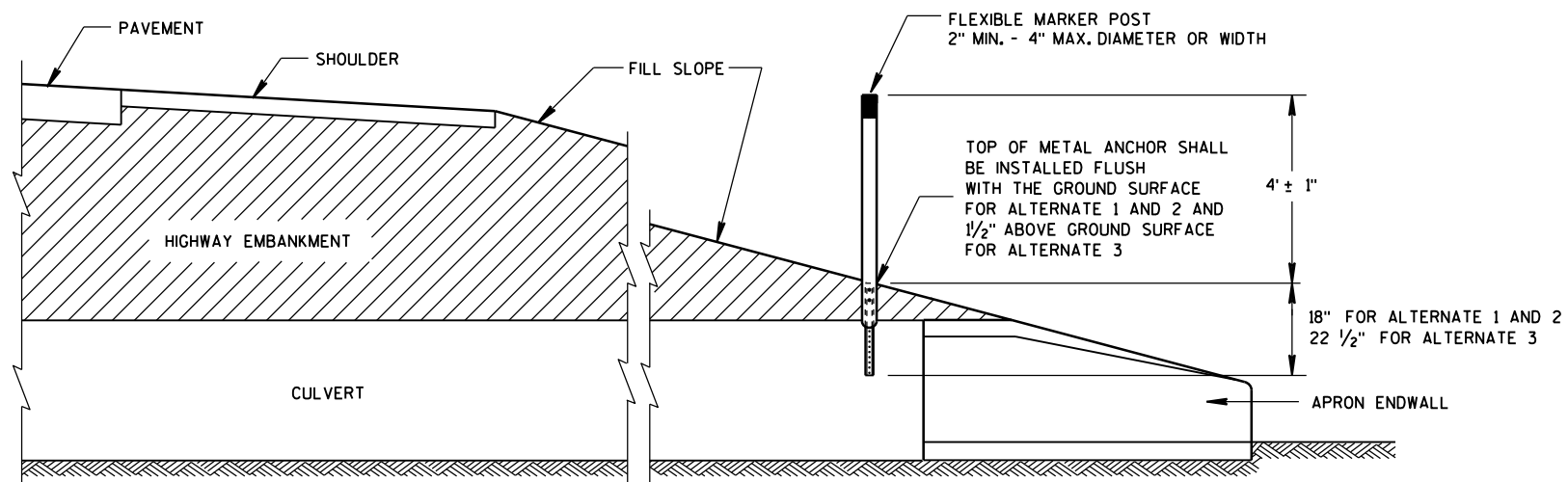
FLEXIBLE MARKER POST LOCATION

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.



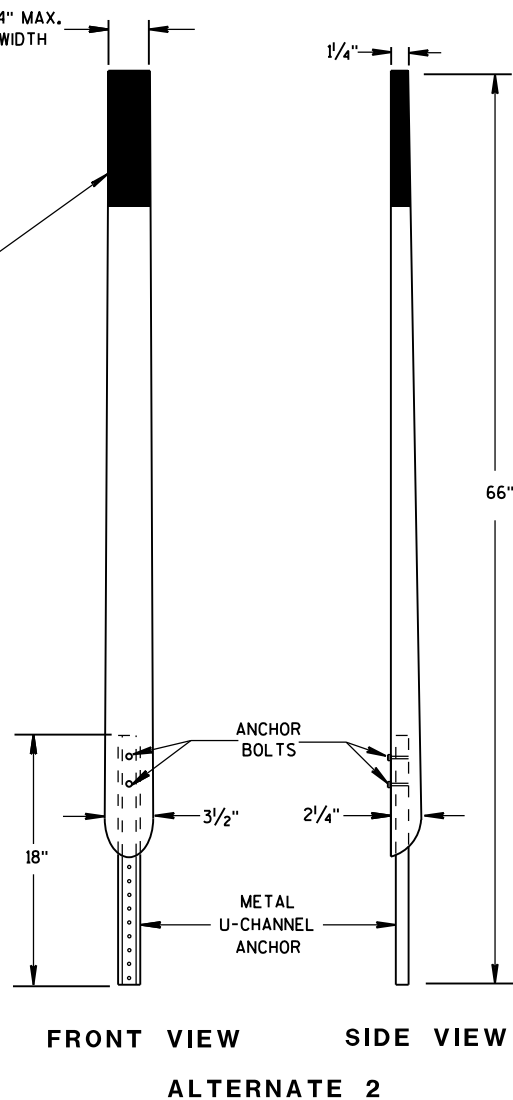
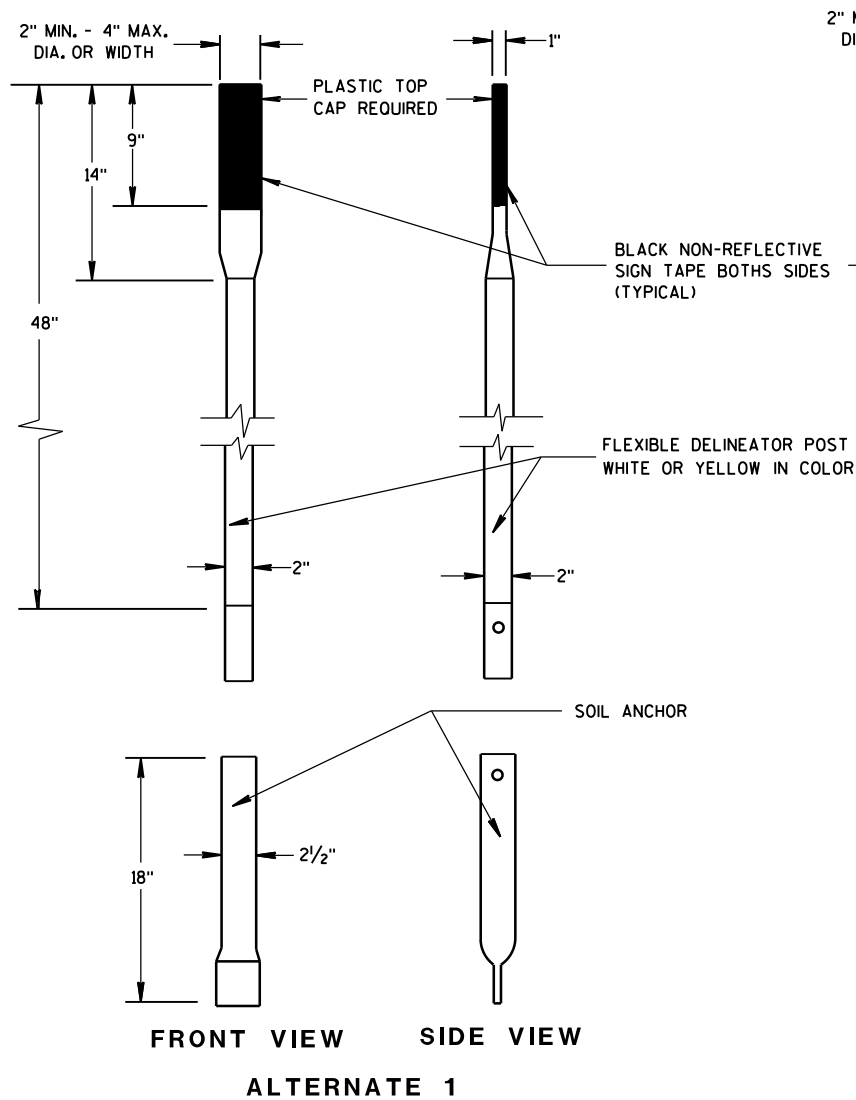
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



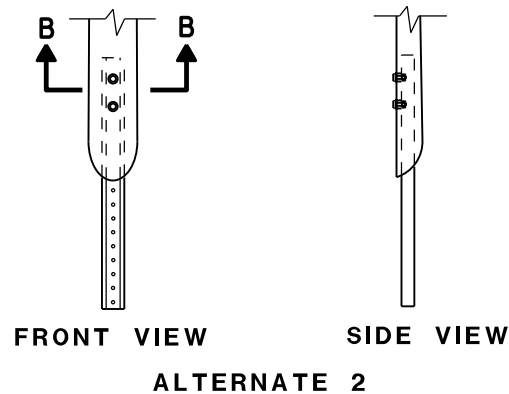
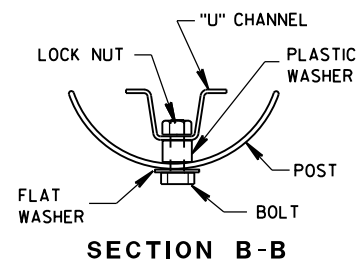
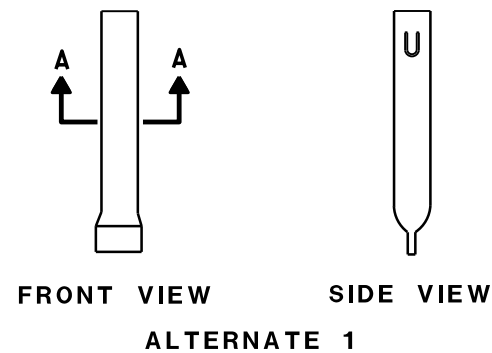
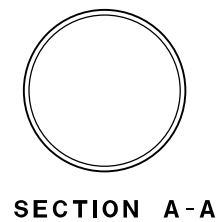
CROSS SECTION
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

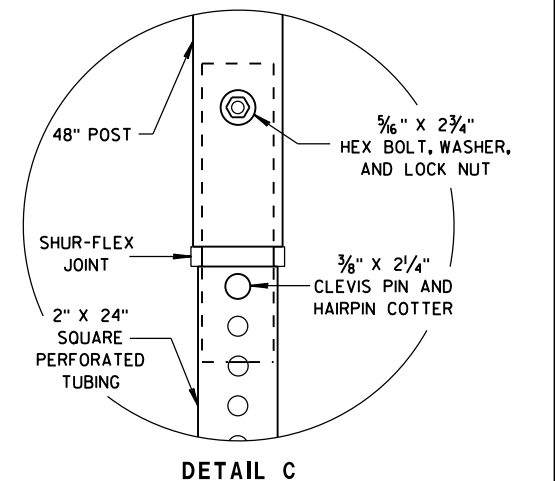
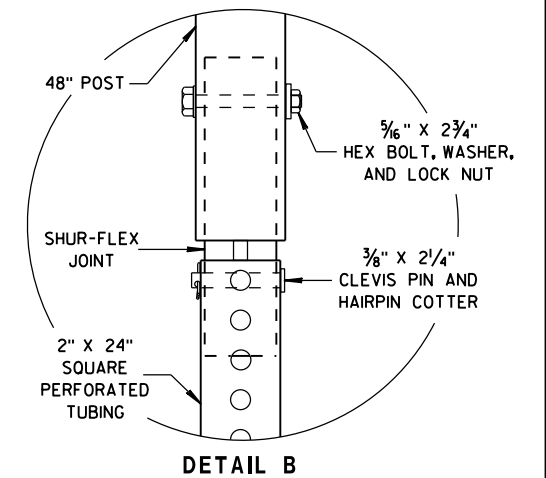
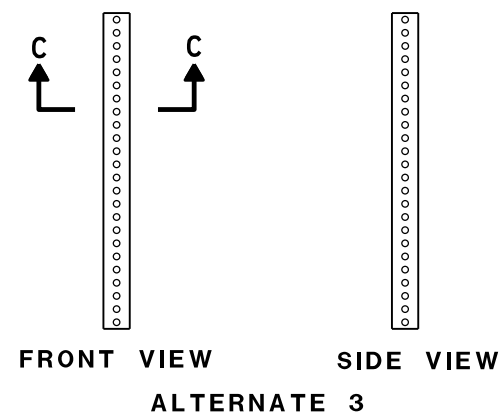
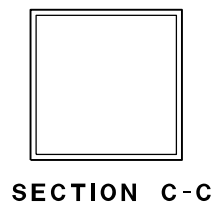
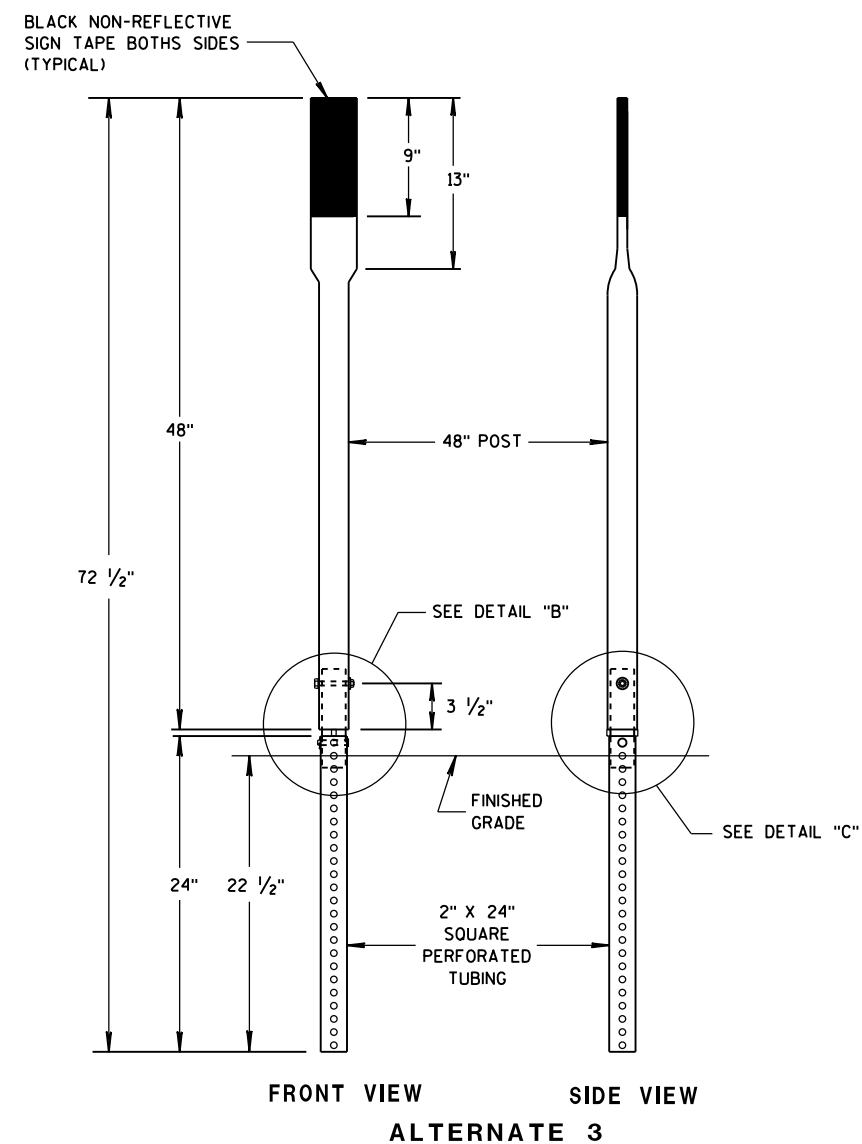
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



FLEXIBLE MARKER POSTS



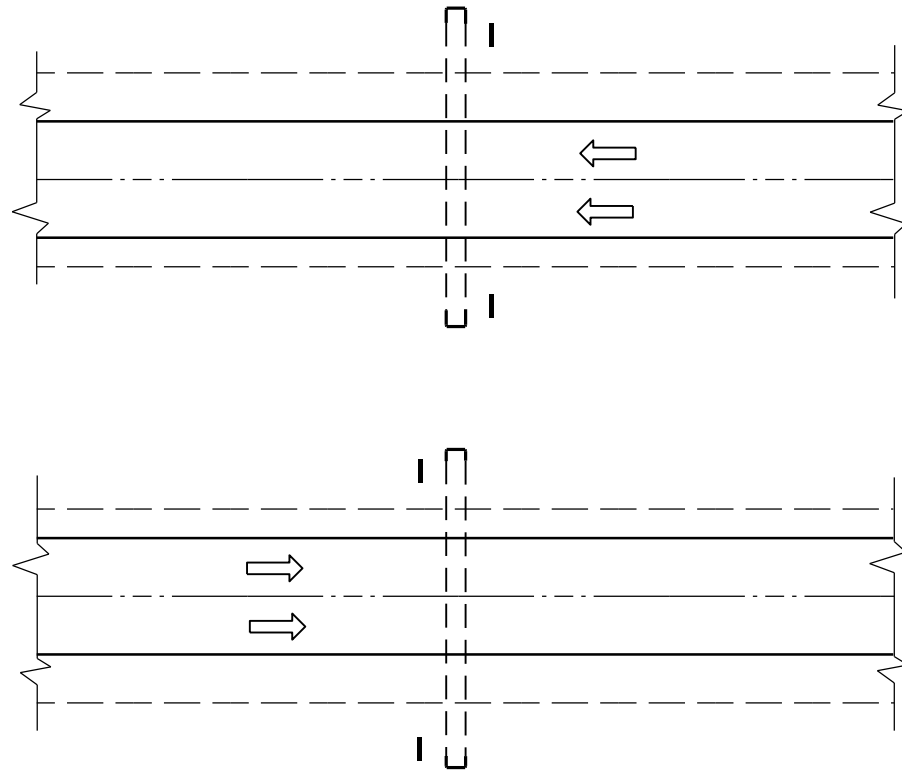
FLEXIBLE MARKER POST ANCHORS



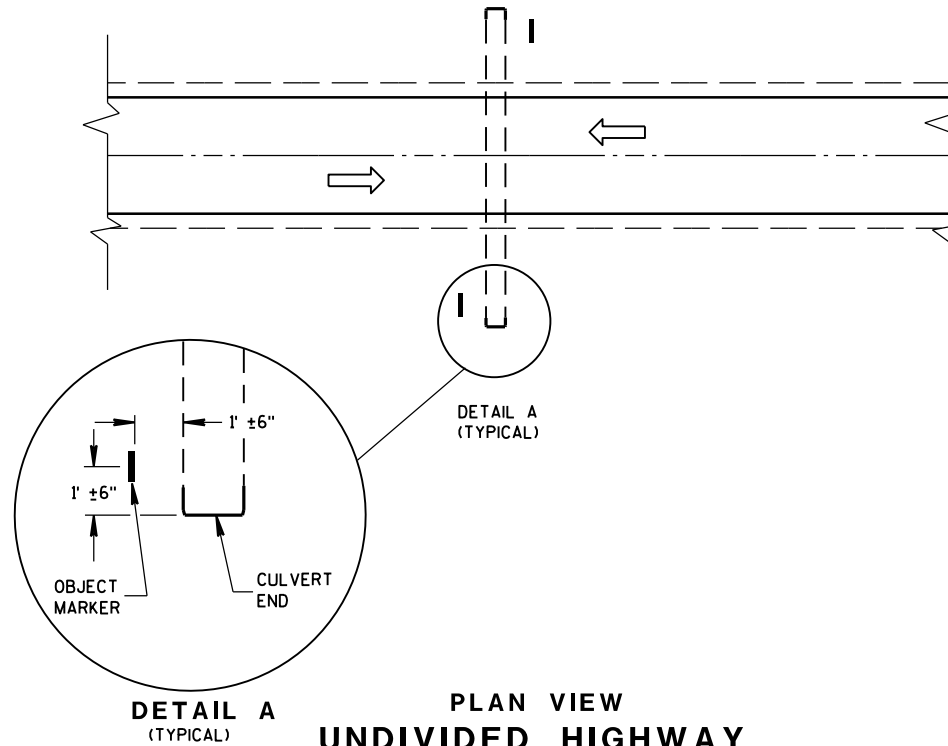
FLEXIBLE MARKER POST FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

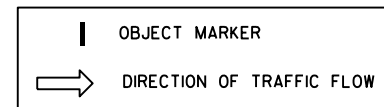
APPROVED
10/1/2012 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER OF DESIGN
FHWA



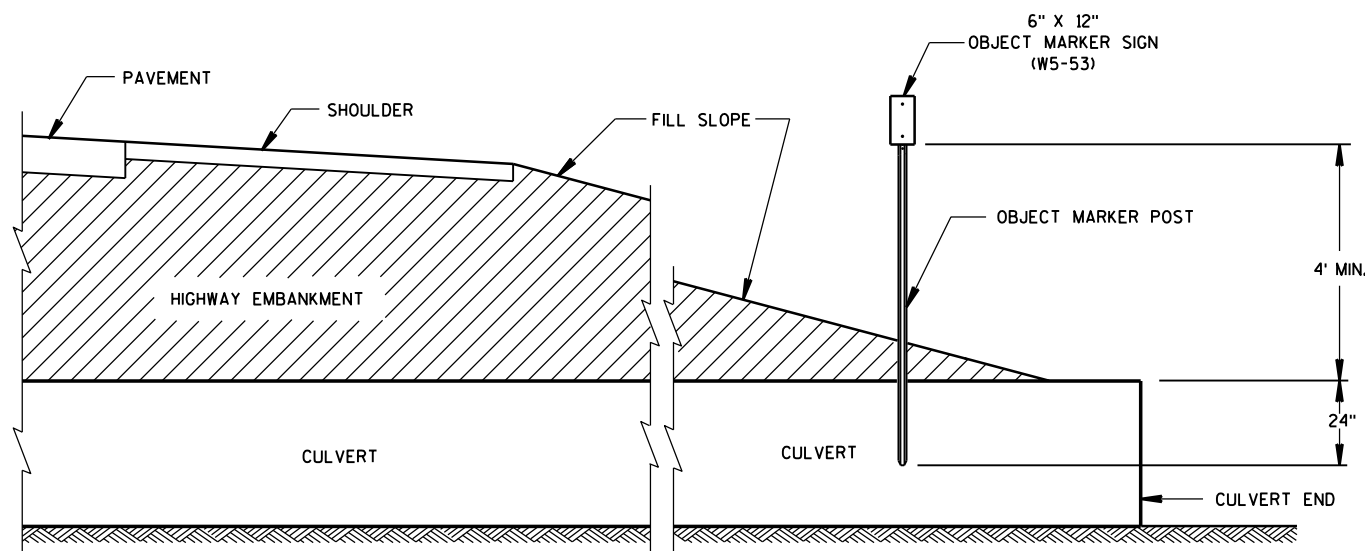
PLAN VIEW
DIVIDED HIGHWAY



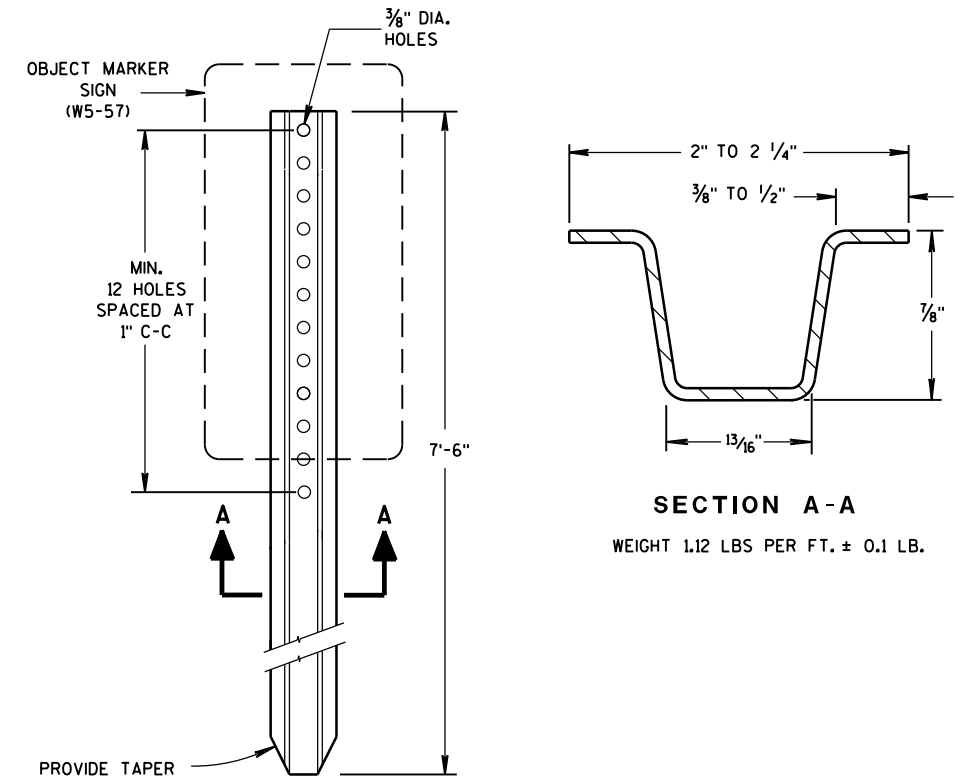
PLAN VIEW
UNDIVIDED HIGHWAY



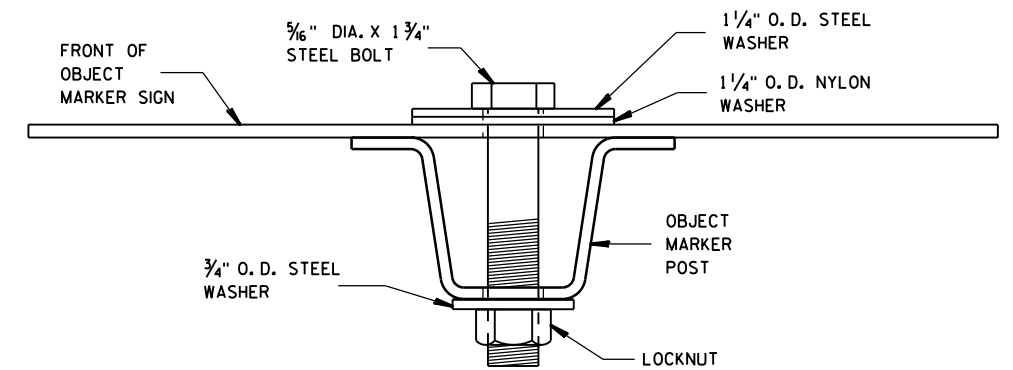
OBJECT MARKER LOCATION



CROSS SECTION
OBJECT MARKER PLACEMENT



OBJECT MARKER POST

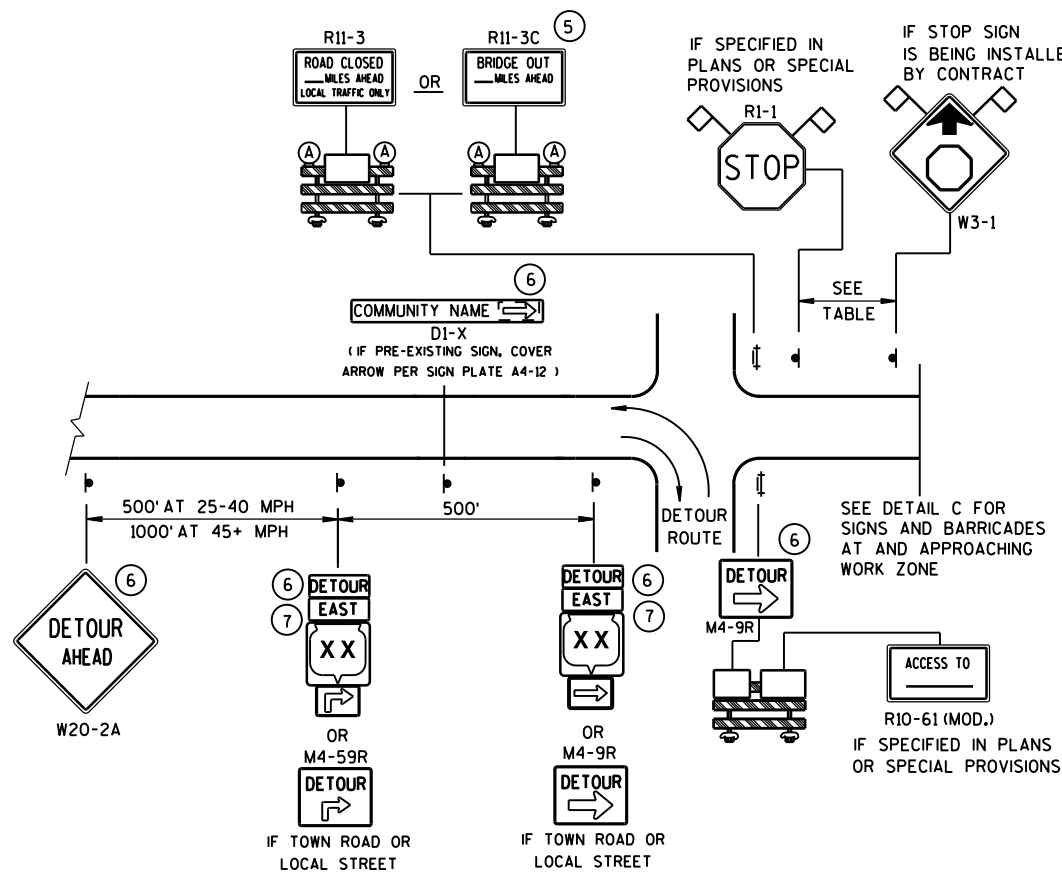


MOUNTING DETAIL FOR
OBJECT MARKER SIGN

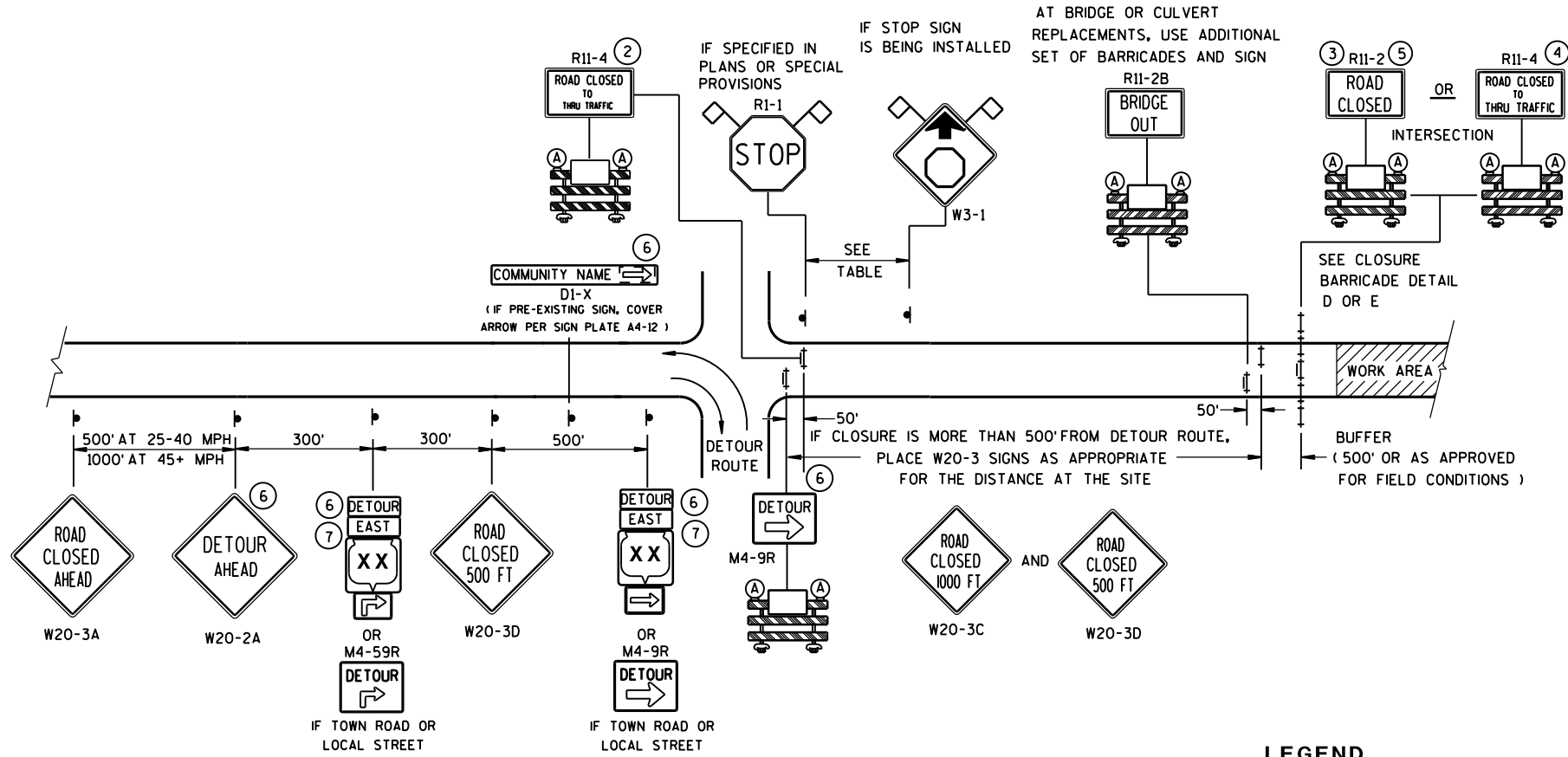
OBJECT MARKER
FOR HAZARDOUS CULVERT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

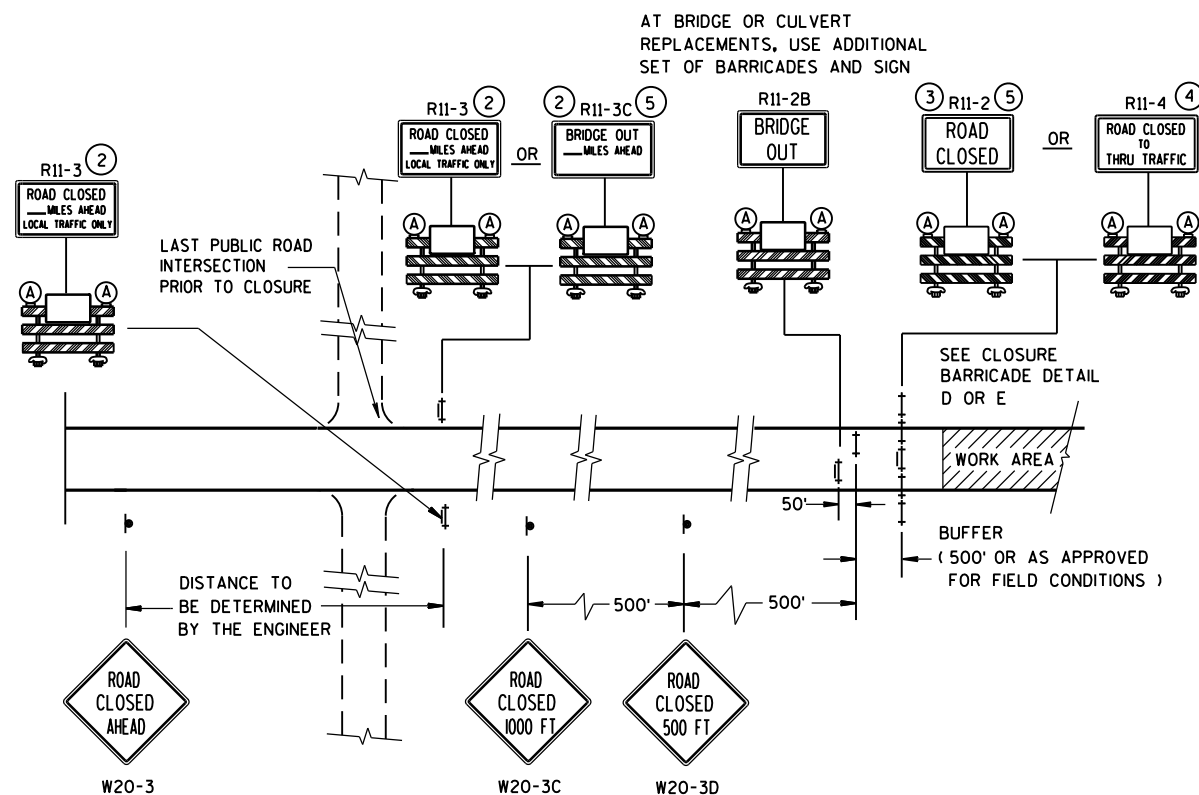
APPROVED
June 2017 /S/ Matthew Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA



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



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



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

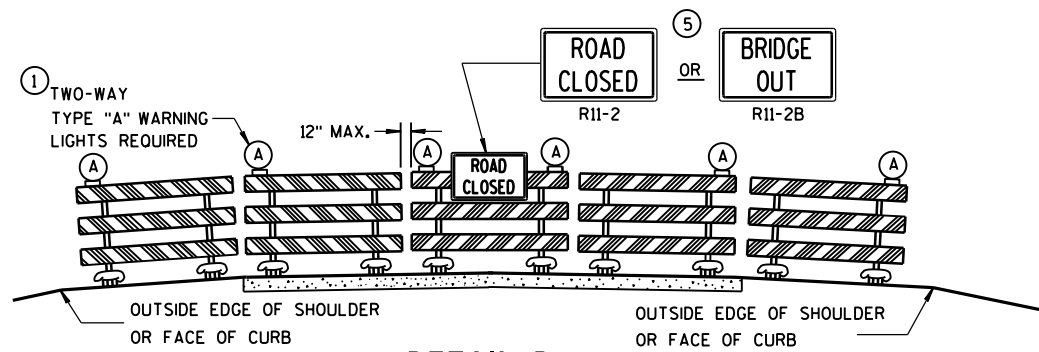
LEGEND

- SIGN ON PERMANENT SUPPORT
- ⊥ TYPE III BARRICADE
- ⊥ TYPE III BARRICADE WITH ATTACHED SIGN
- Ⓐ TYPE "A" WARNING LIGHT (FLASHING)
- ▨ WORK AREA
- DETOUR EAST M4-8 M3-X
- XX OR COUNTY XX OR XX M1-4 M1-5A M1-6
- OR M05-1 M06-1
- ◇ ◇ FLAGS, 16" X 16" MIN., (ORANGE)

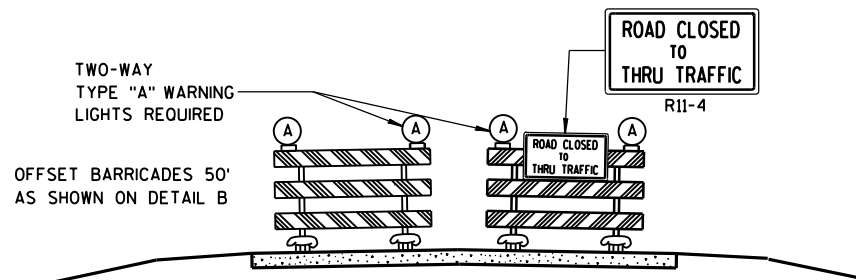
SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
Sept. 2015 DATE	/S/ Peter Amokobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA	



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2-SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

R11-2 SHALL BE 48" X 30".

R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".

M4-9 SHALL BE 30" X 24".

M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)

M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)

M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)

M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)

D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

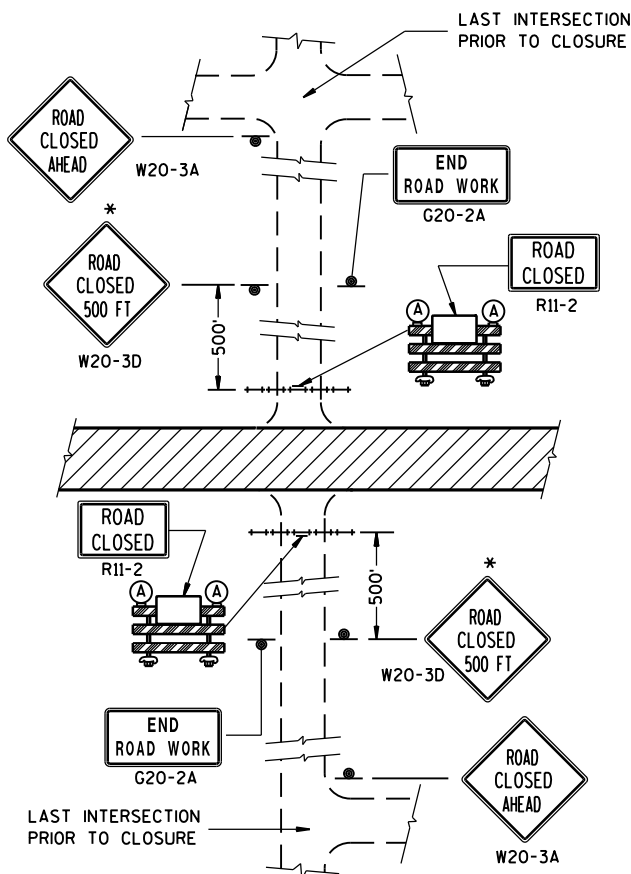
R1-1 SHALL BE 36" X 36".

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

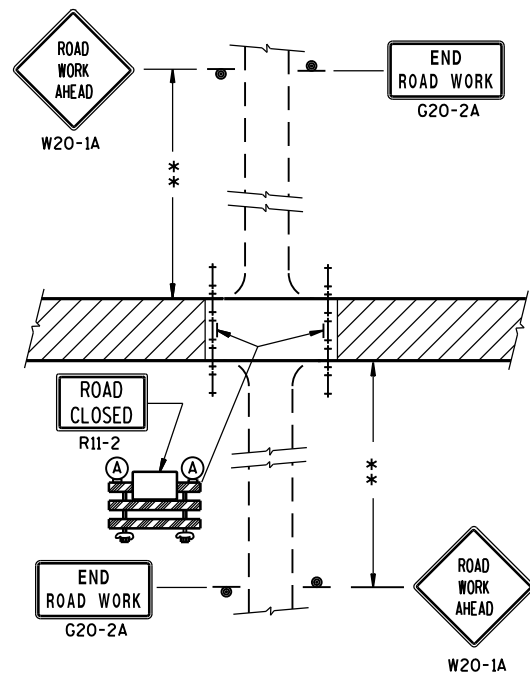
BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

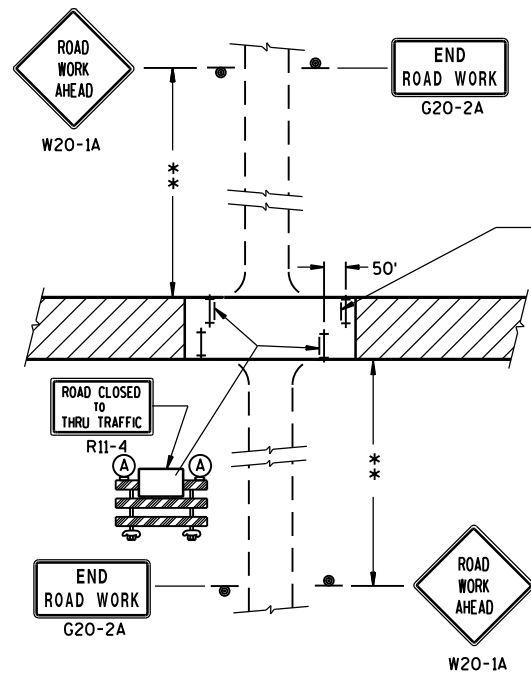
Sept. 2015 /S/ Peter Amokobe Atepe
DATE STATEWIDE WORK ZONE TRAFFIC
FHWA SAFETY ENGINEER



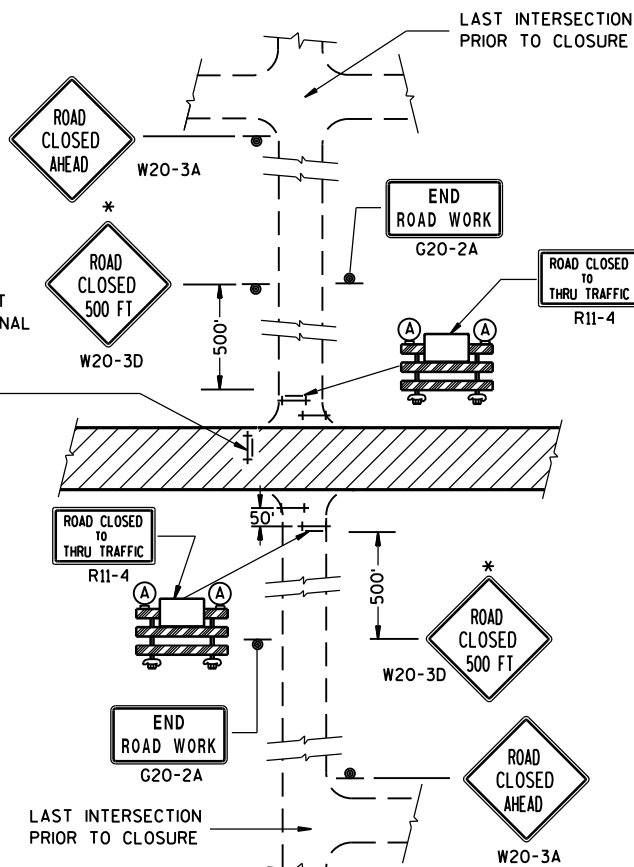
DETAIL 1
(NO ACCESS TO PROJECT)



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



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



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

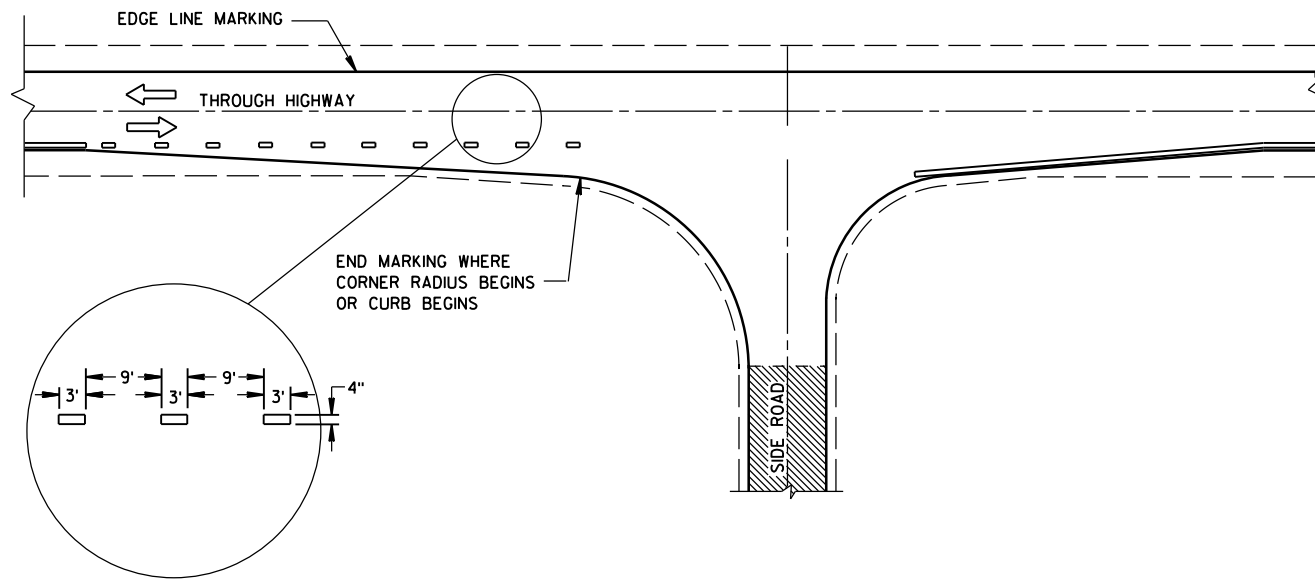
Sept. 2017

DATE

FHWA

/S/ Andrew Heidtke

WORK ZONE ENGINEER



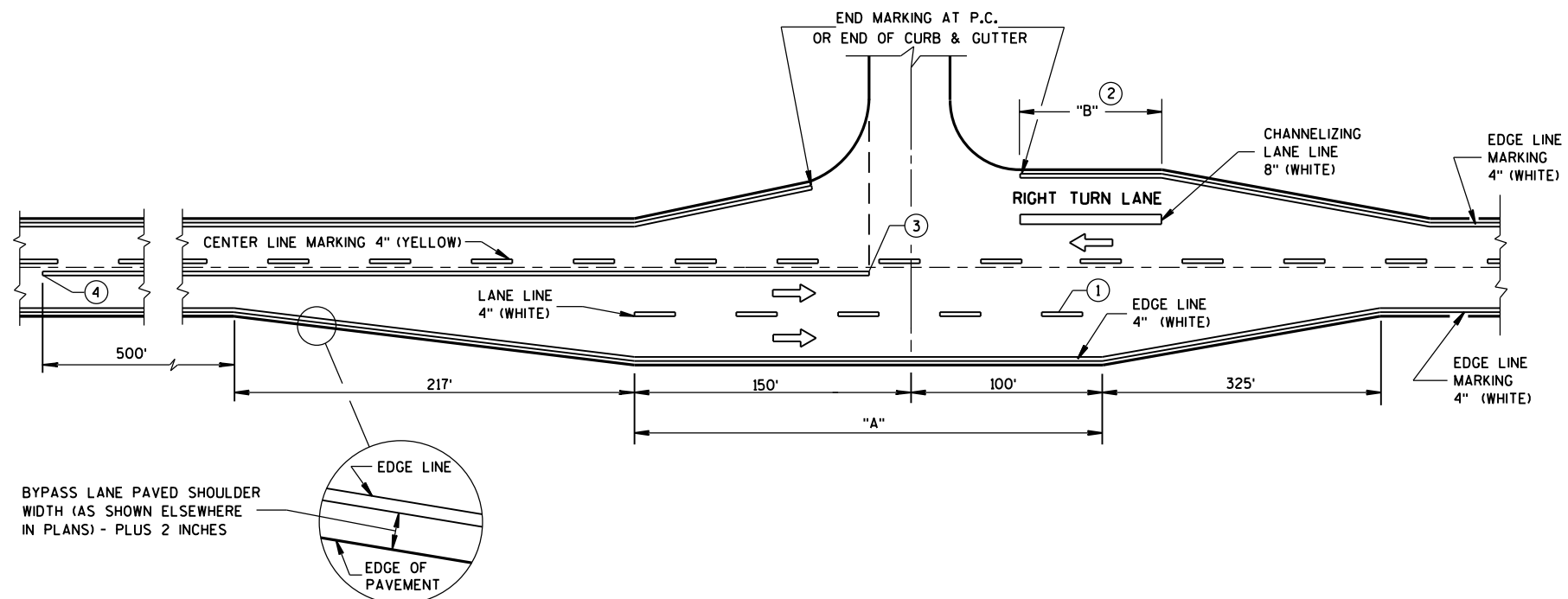
MINOR INTERSECTION

GENERAL NOTES

OMIT EDGE LINES THROUGH INTERSECTIONS. CONTINUE EDGE LINES THROUGH DRIVEWAYS.

- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
- ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
- ③ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.
- ④ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

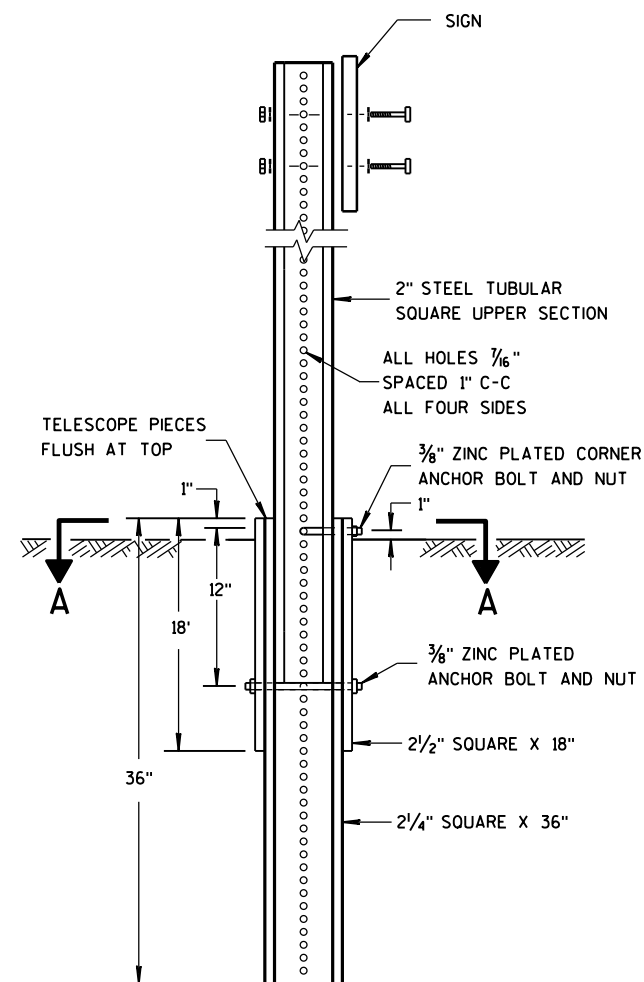
ARROW SYMBOL () SHOWS DIRECTION OF TRAVEL



MAJOR INTERSECTIONS
(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)

**PAVEMENT MARKING
(INTERSECTIONS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

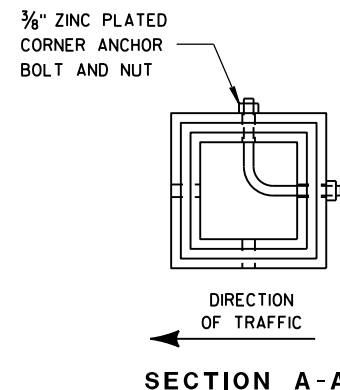


DETAIL OF TUBULAR
STEEL SIGN POST

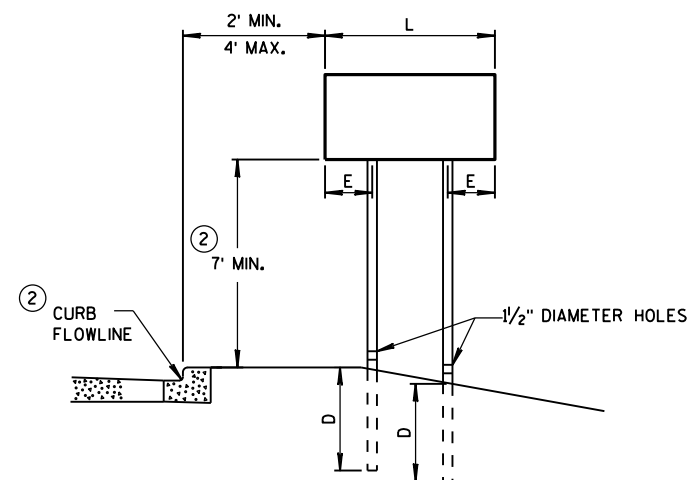
TUBULAR STEEL POSTS

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

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL
BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).
SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED
ON TUBULAR STEEL POSTS.



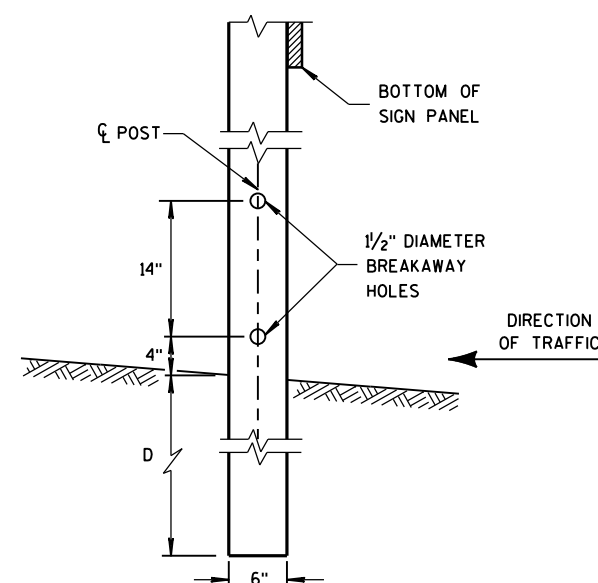
SECTION A-A



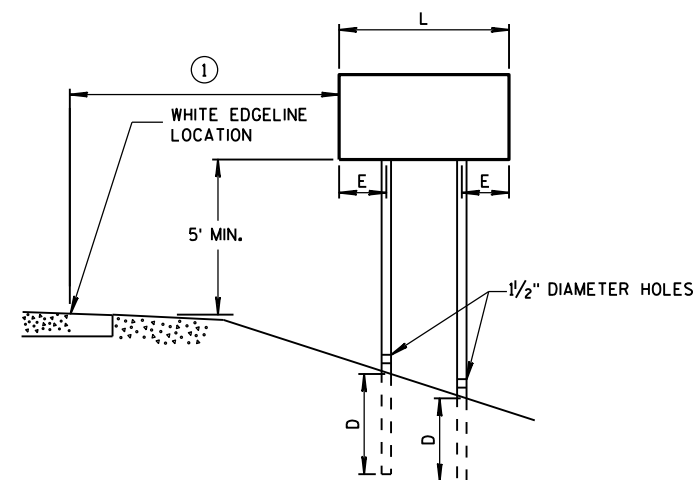
URBAN AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

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



4 "x6 " WOOD POST
MODIFICATION



RURAL AREA

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

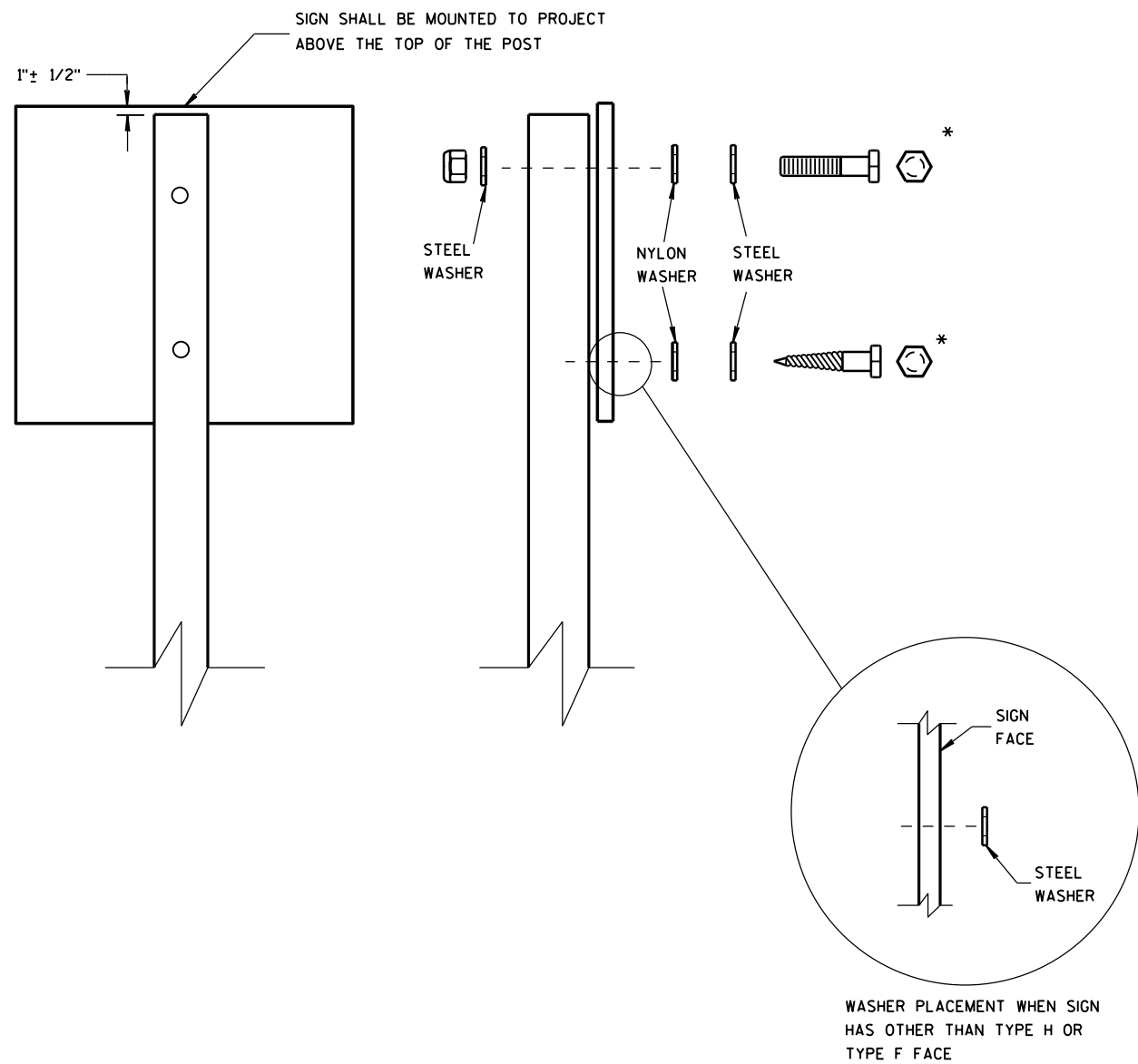
SEE NOTE ③

GENERAL NOTES

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

TEMPORARY TRAFFIC CONTROL
SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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

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

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

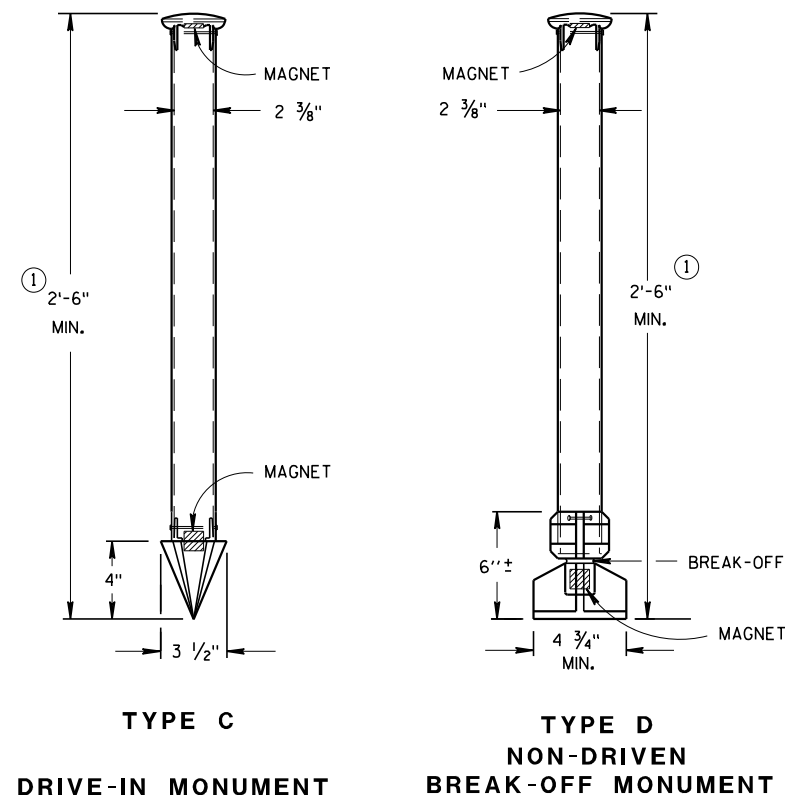
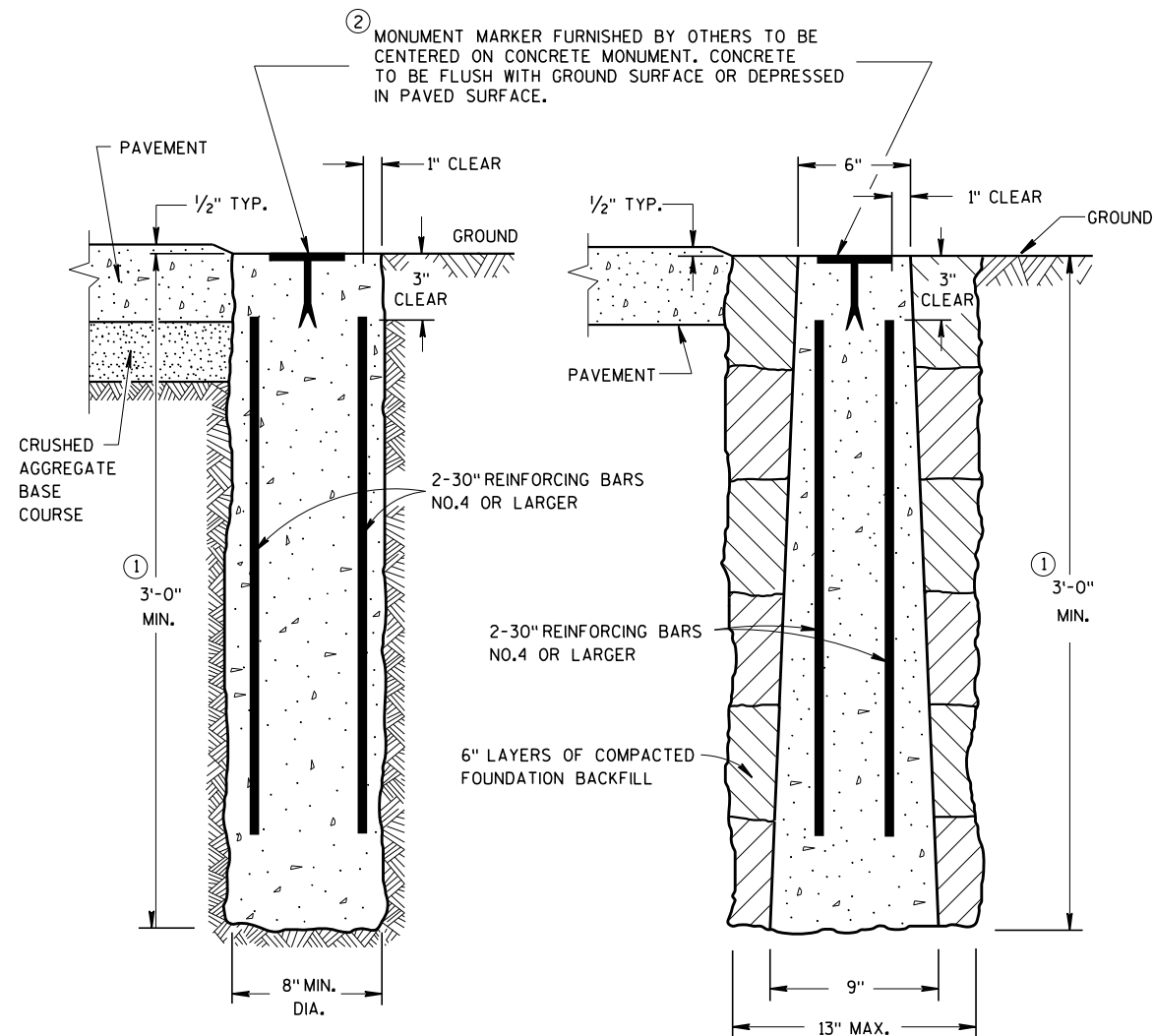
- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" x 3"
 - MACHINE BOLTS - 5/16" x 6-1/2" OR 7" LENGTH W/ NUTS

- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" x 3-1/4" LENGTH W/ NUTS
 - RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

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

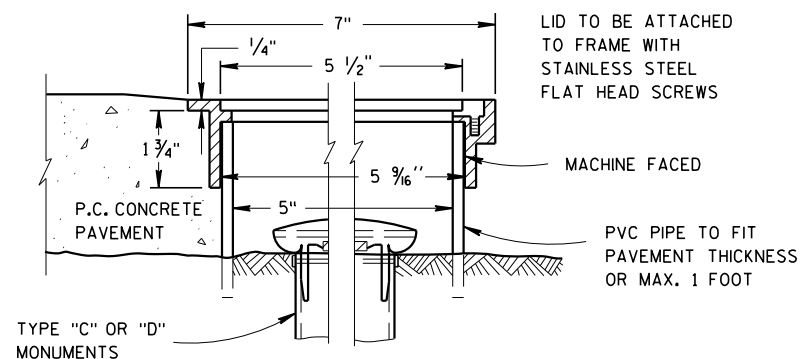
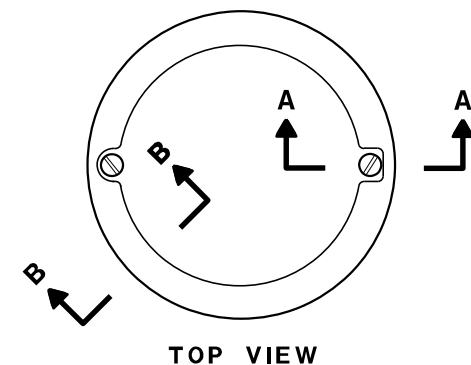
* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

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



ALUMINUM MONUMENTS

(INCLUDES MARKER)



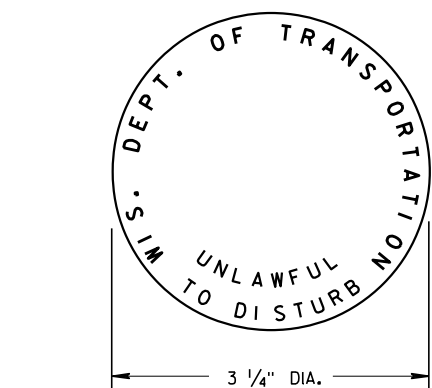
ALUMINUM MONUMENT COVER

(APPROXIMATE WEIGHT 2 LBS)
(FOR CONCRETE PAVEMENT ONLY)

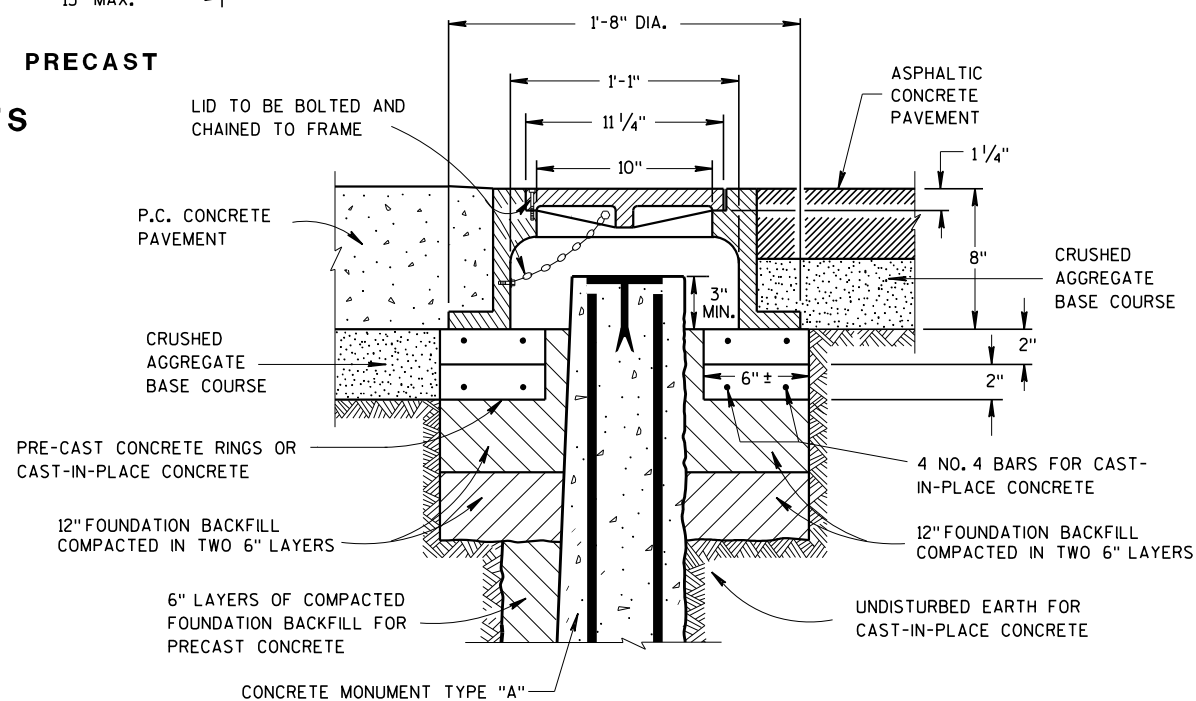
LANDMARK REFERENCE MONUMENTS AND COVERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 /S/ Raymond A. Kumapayi
DATE CHIEF SURVEYING AND MAPPING ENGINEER
FHWA



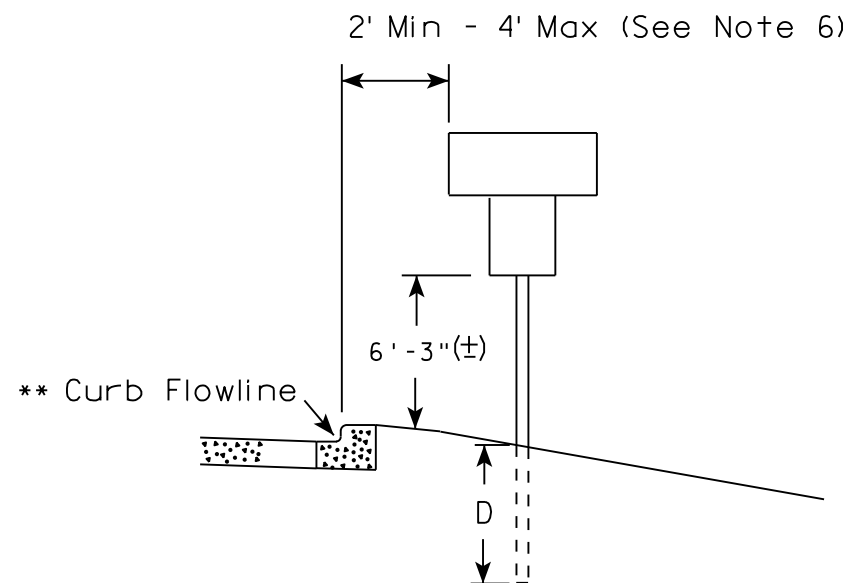
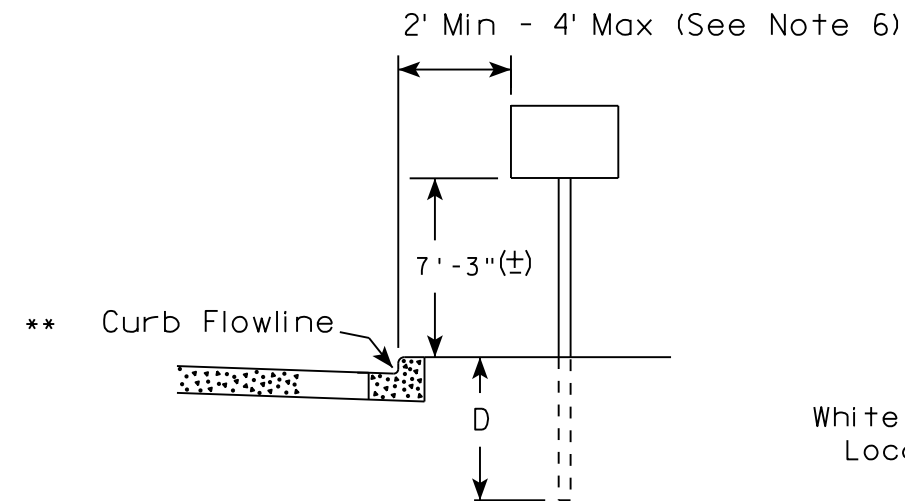
② WIS DOT MONUMENT MARKER LOGO
FOR TYPES "A", "C", & "D"



CAST IRON MONUMENT COVER

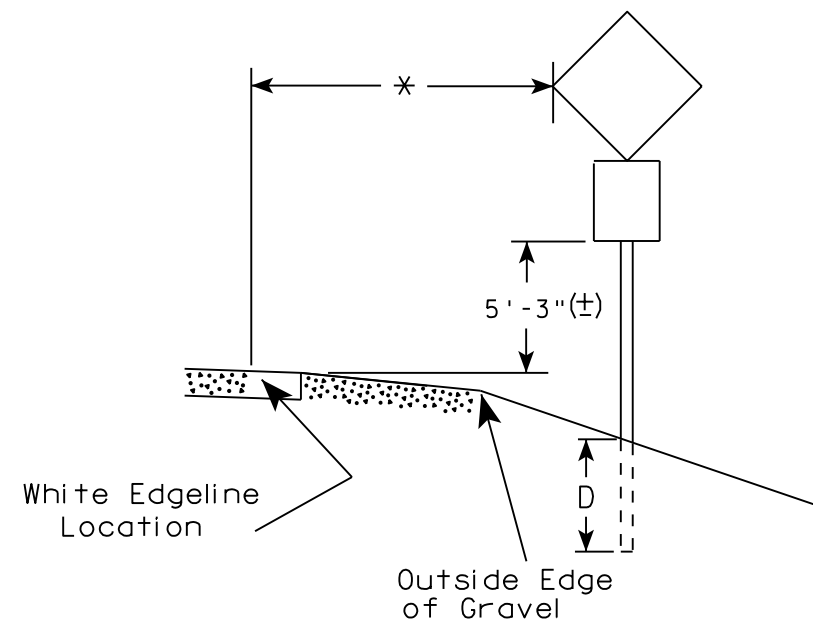
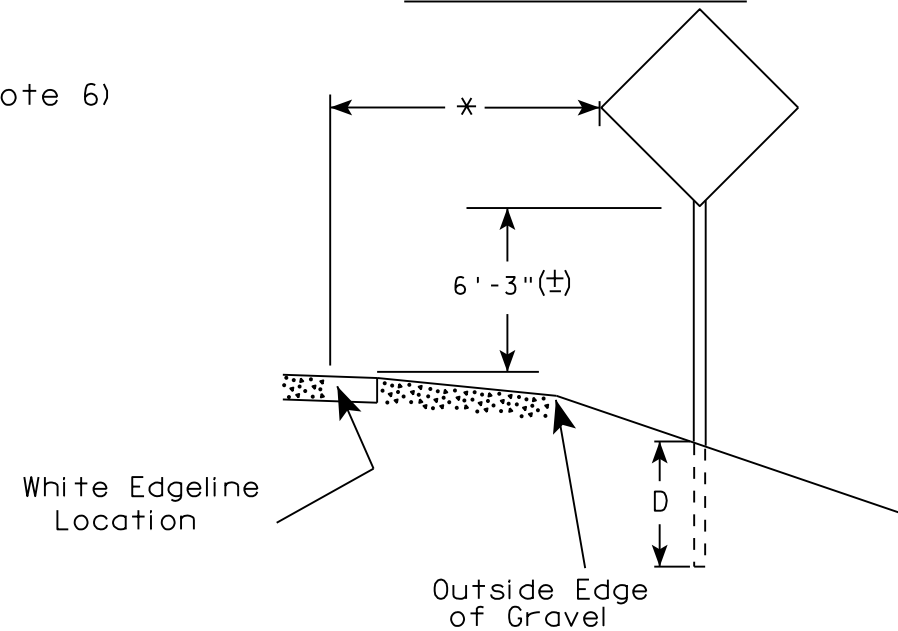
(APPROXIMATE WEIGHT 95 LBS)

URBAN AREA



✱✱ 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.

RURAL AREA (See Note 2)



* 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.

POST EMBEDMENT DEPTH

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

GENERAL NOTES

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

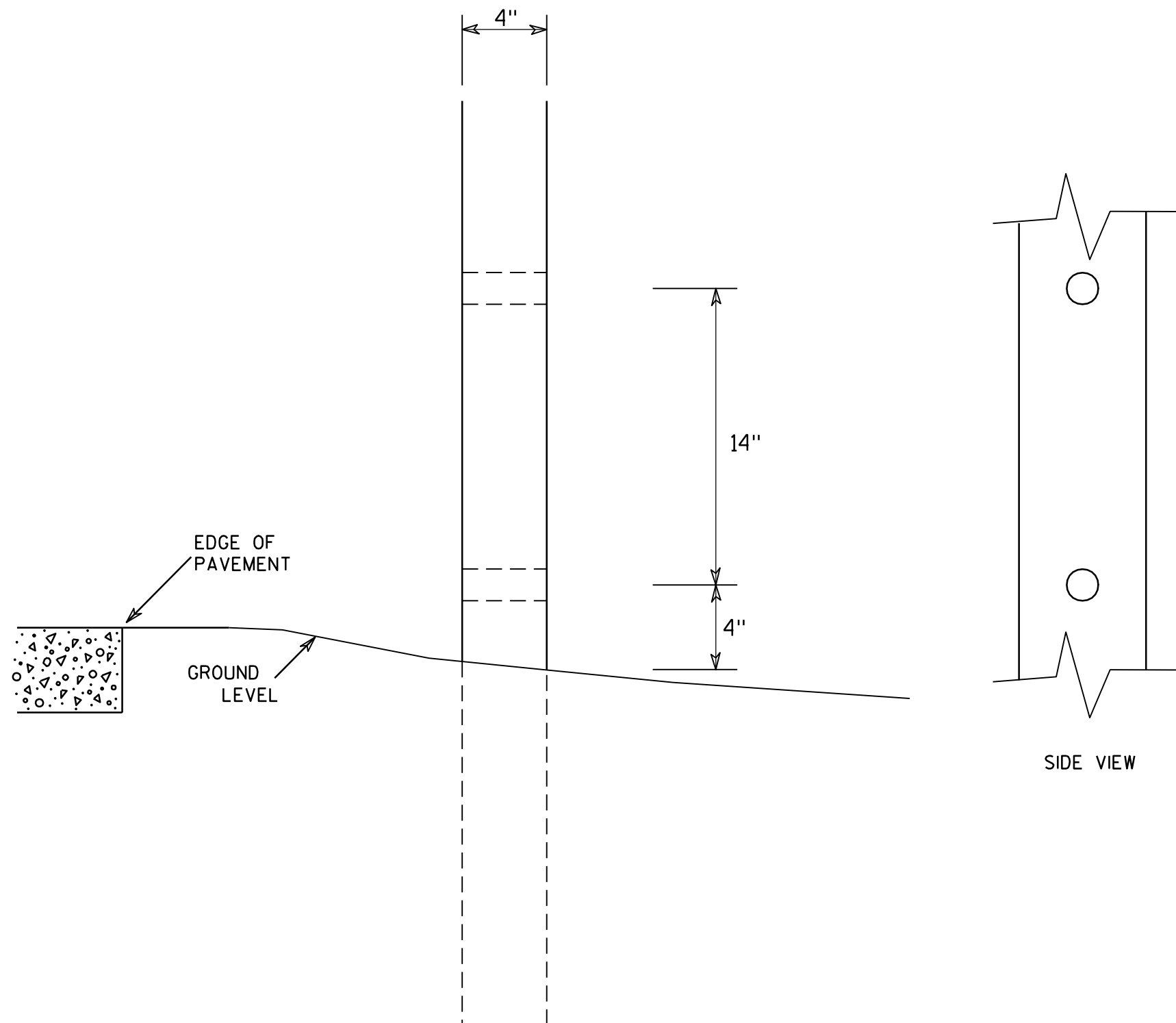
TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

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:

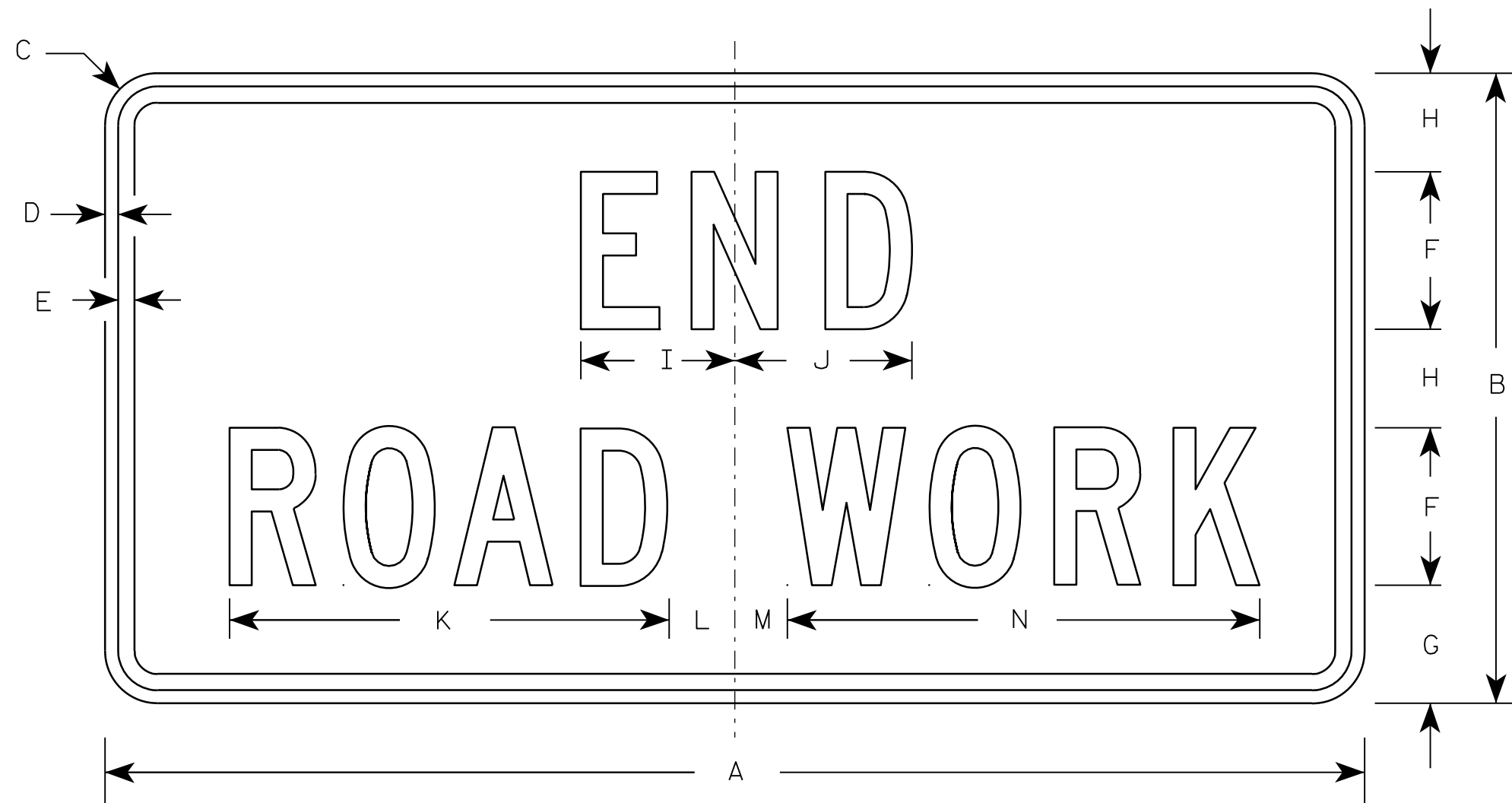
HWY:

COUNTY:

SHEET NO:

E

7



G20-2A

Metric equivalent
for this sign is:

SIZE	
1	900 mm X 450 mm
2	1200 mm X 600 mm
3	1200 mm X 600 mm
4	1200 mm X 600 mm
5	1200 mm X 600 mm

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.	Area sq. m.
1	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
4	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
5	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72

NOTES

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

7

PROJECT NO:

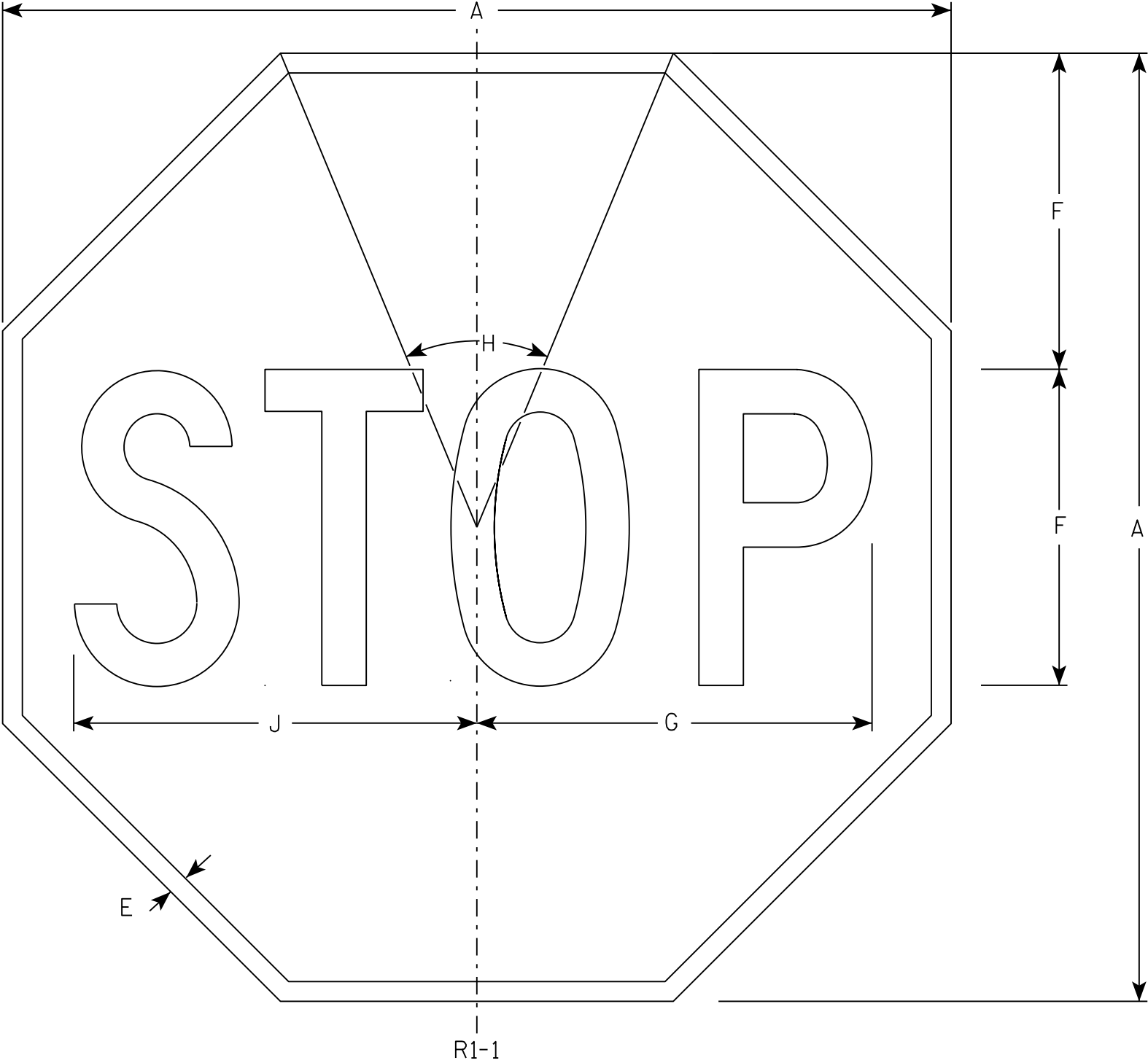
HWY:

COUNTY:

SHEET NO:

E

7



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

7

R1-1

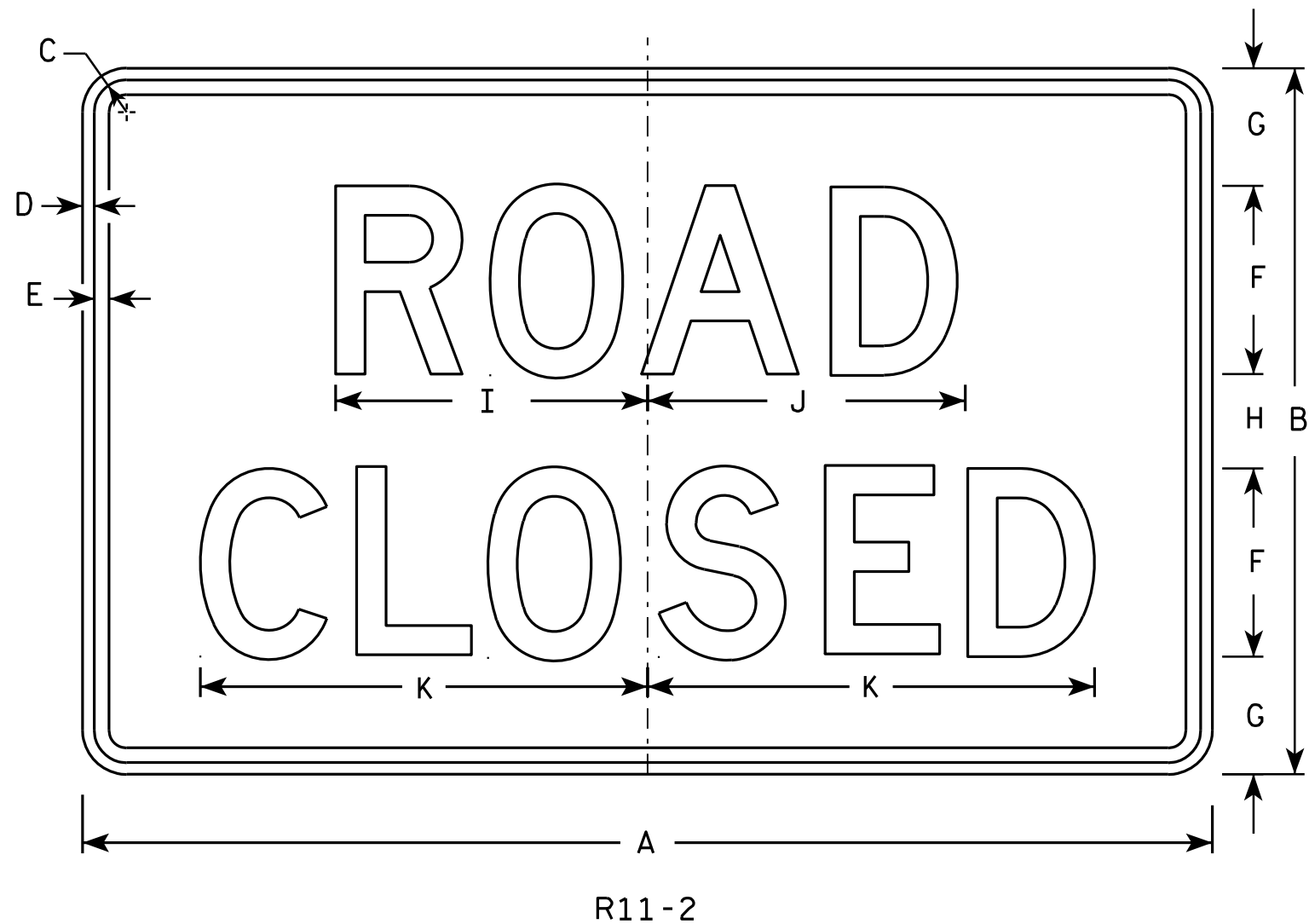
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°		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

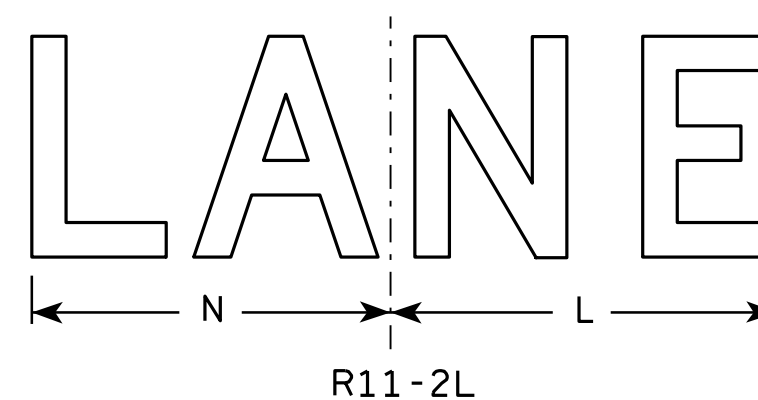
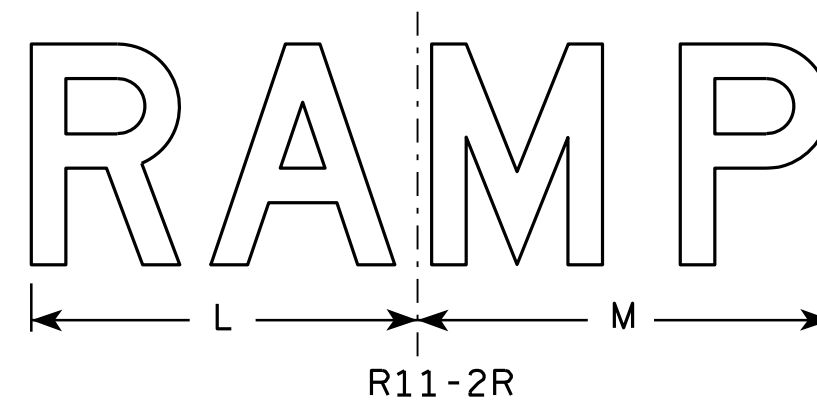
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/12/15 PLATE NO. R1-1.13



NOTES

- Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - White
Message - Black
- Message Series - D
- 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.
- Modify the message as required.



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
2M	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
3	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
4	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
5	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0

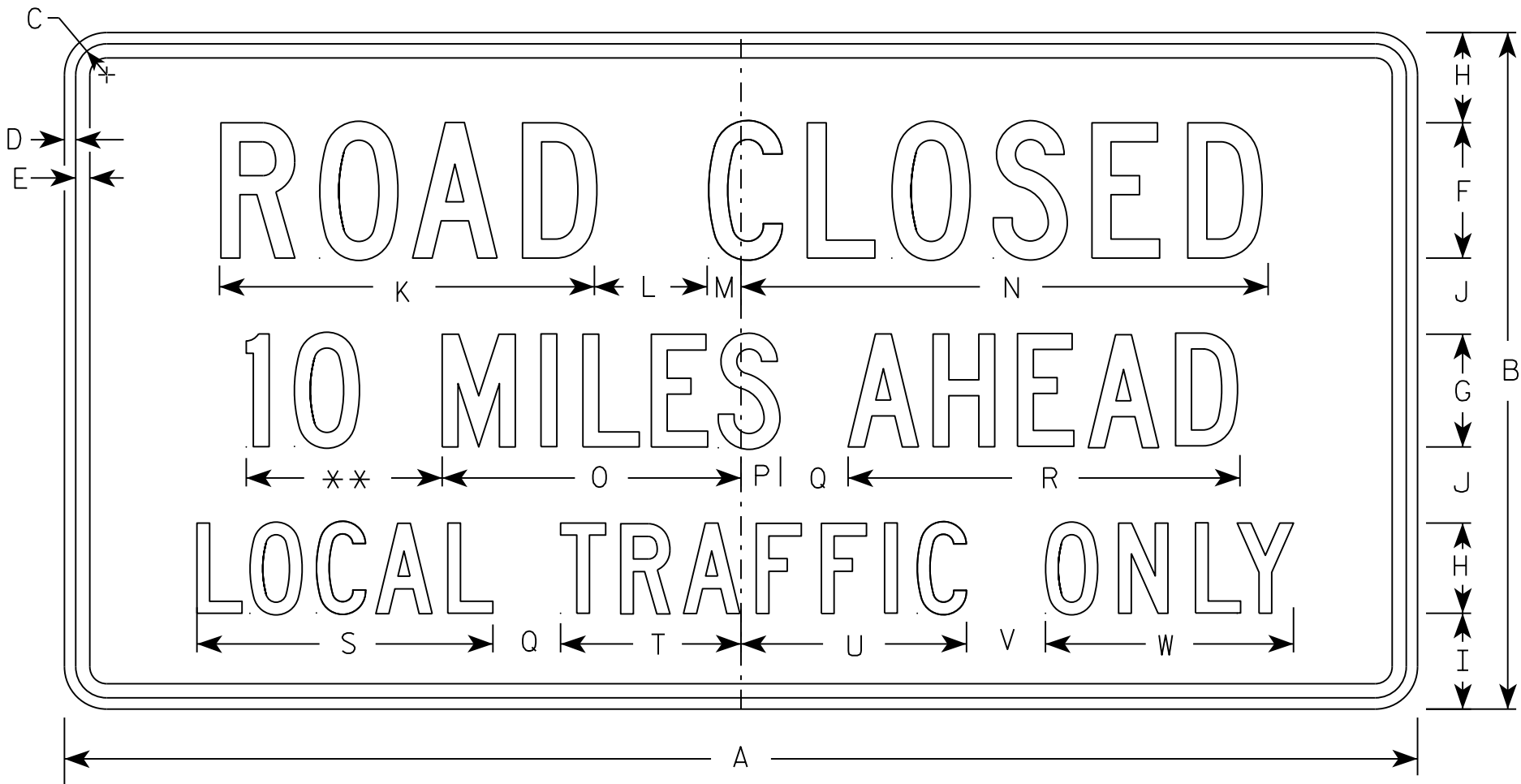
STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 4/1/11 PLATE NO. R11-2.10

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

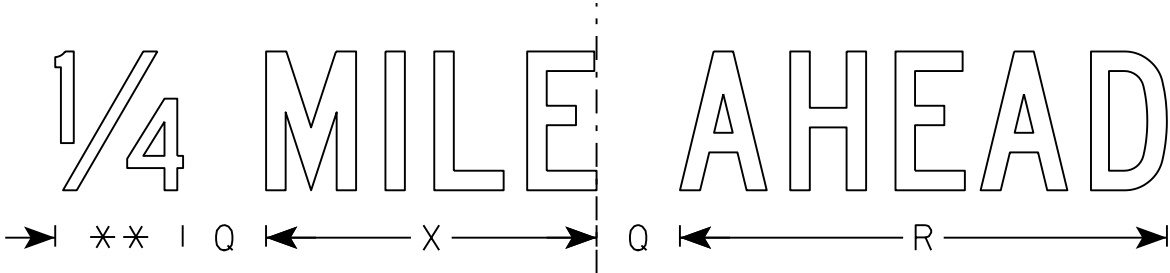
NOTES

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



R11-3

** See Note 5

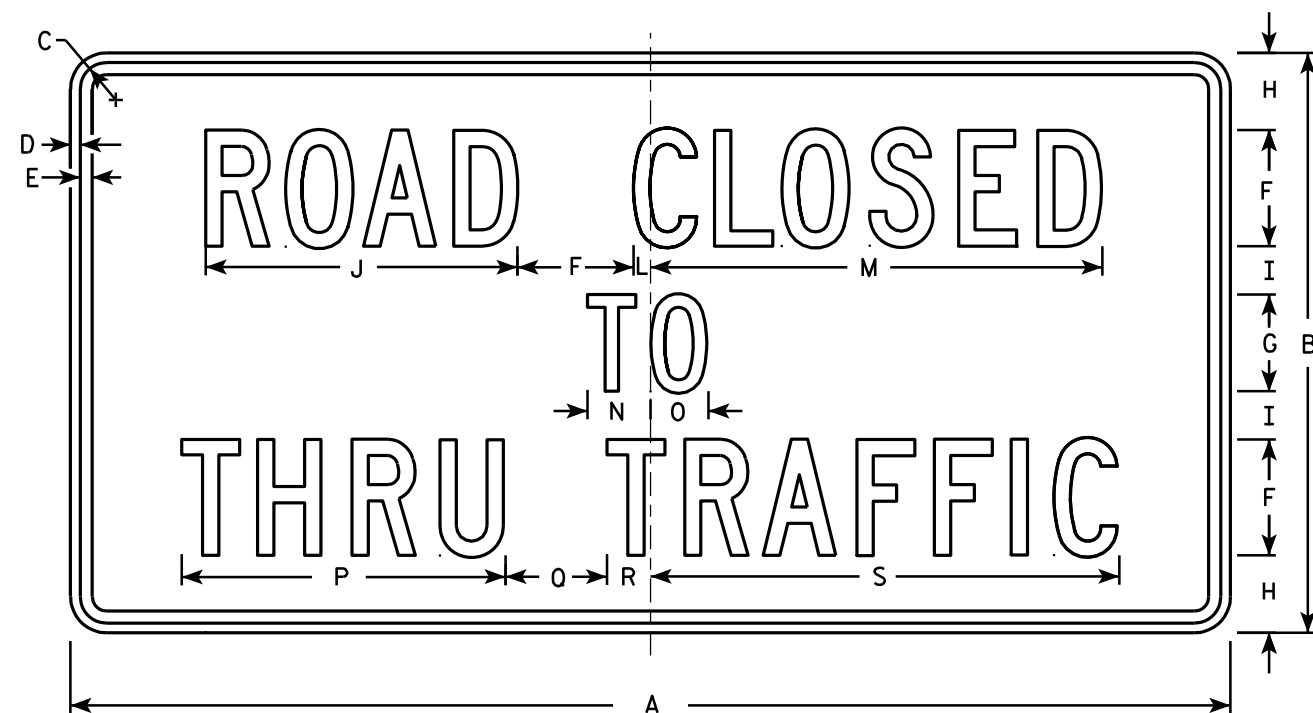


SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 3⁄8	1⁄2	5⁄8	4	3	2 1⁄2	2	2	11 1⁄8	3	1 1⁄8	15 1⁄4	8	1 1⁄2	2	10 3⁄4	8 3⁄8	4 3⁄4	6 1⁄2	2	6 3⁄4	7 1⁄8			4.5
2S	60	30	1 3⁄8	1⁄2	5⁄8	6	5	4	4 1⁄4	3 3⁄8	16 5⁄8	5	1 1⁄2	23	13 1⁄4	1 3⁄4	3	17 3⁄8	13 1⁄8	8	10	3 1⁄2	11	11 7⁄8			12.5
2M	60	30	1 3⁄8	1⁄2	5⁄8	6	5	4	4 1⁄4	3 3⁄8	16 5⁄8	5	1 1⁄2	23	13 1⁄4	1 3⁄4	3	17 3⁄8	13 1⁄8	8	10	3 1⁄2	11	11 7⁄8			12.5
3																											
4																											
5																											

STANDARD SIGN
R11-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 3/15/17 PLATE NO. R11-3.8



R11-4

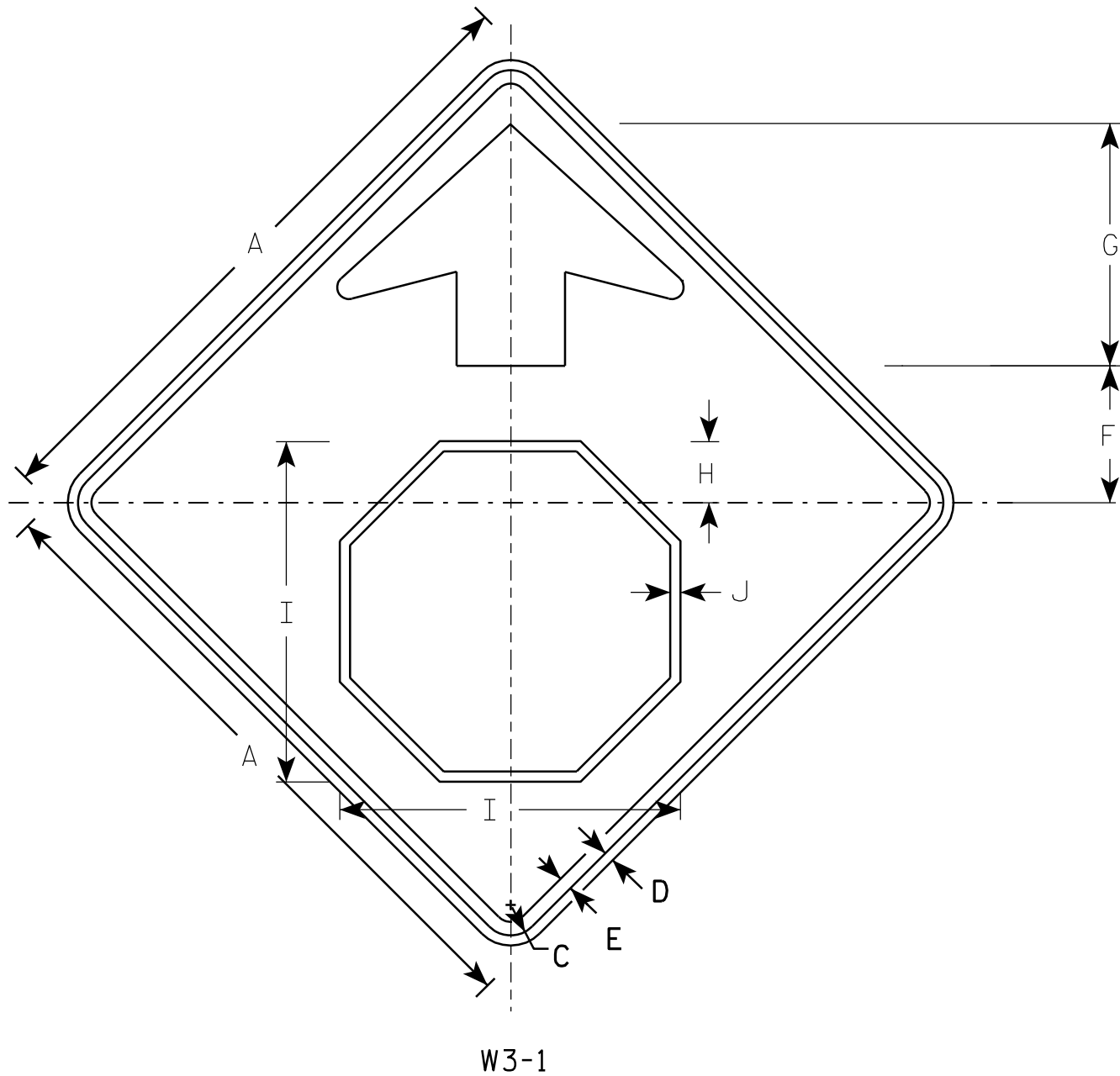
NOTES

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 - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

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	60	30	1 3⁄8	½	5⁄8	6	5	4	2 ½	16 ⅛		7⁄8	23 3⁄8	3 ¼	3	16 ¾	5 ¼	2 ¼	24 ¼								12.5
2M	60	30	1 3⁄8	½	5⁄8	6	5	4	2 ½	16 ⅛		7⁄8	23 3⁄8	3 ¼	3	16 ¾	5 ¼	2 ¼	24 ¼								12.5
3																											
4																											
5																											

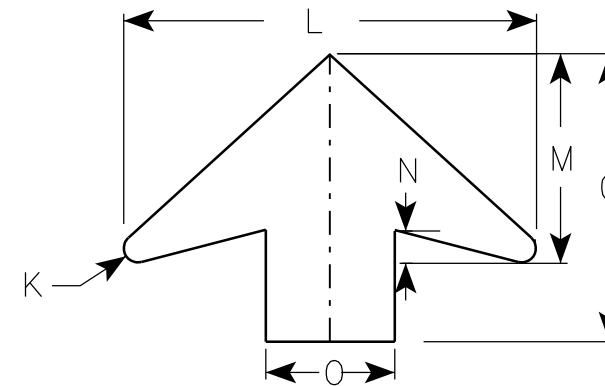
STANDARD SIGN	
R11 - 4	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 4/1/11	PLATE NO. R11-4.3

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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NOTES

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



ARROW DETAIL

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

PROJECT NO:

STANDARD SIGN
W3-1

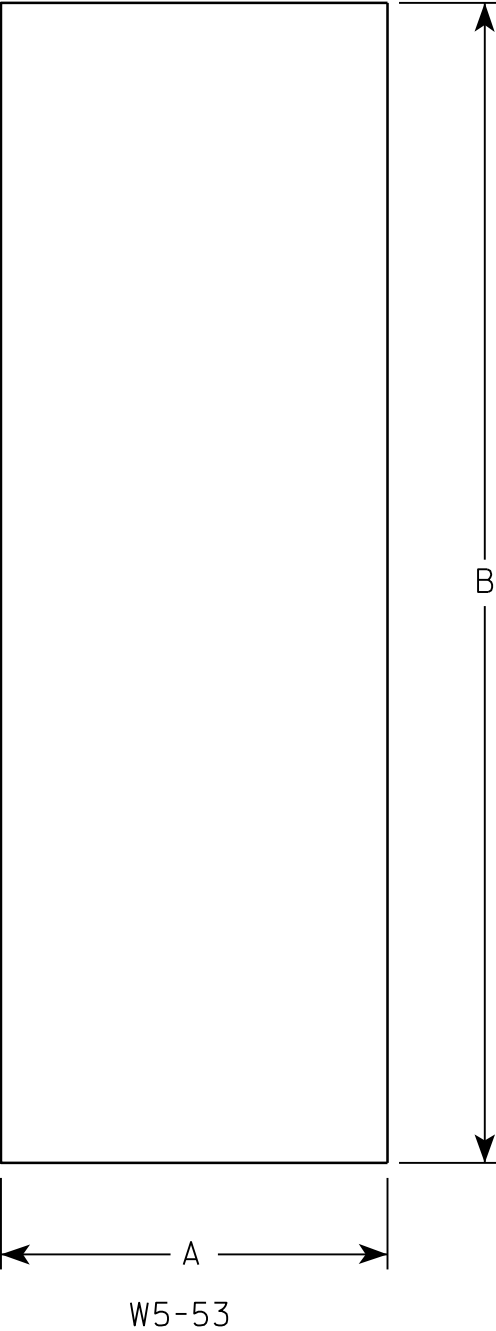
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/7/10 PLATE NO. W3-1.12

SHEET NO:

E

7



NOTES

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

7

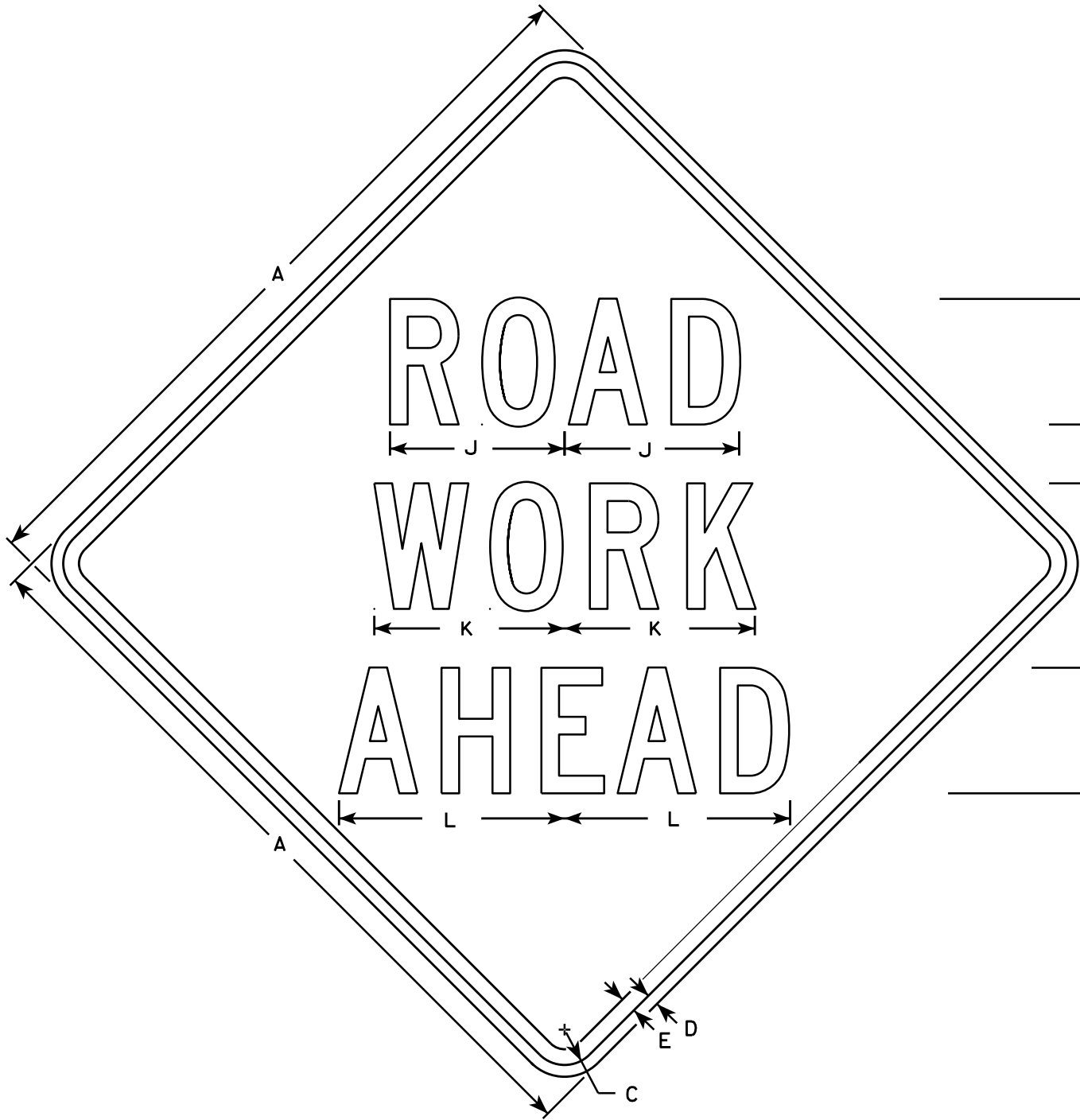
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	4	12																									.33
2M	4	12																									.33
3																											
4																											
5																											

STANDARD SIGN
W5-53

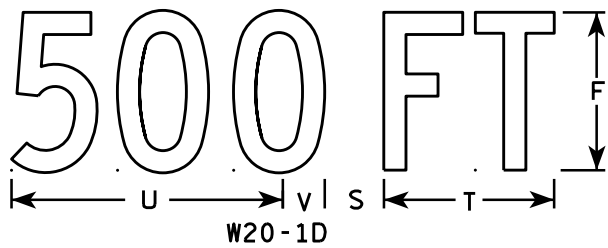
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
For State Traffic Engineer

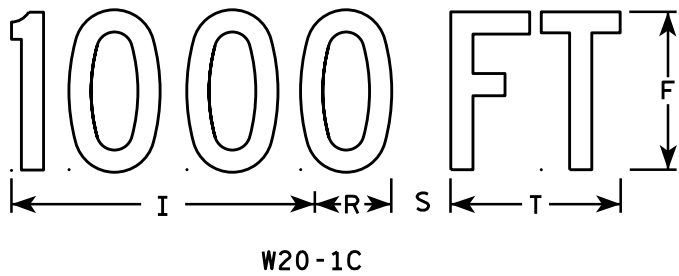
DATE 11/3/10 PLATE NO. W5-53.7



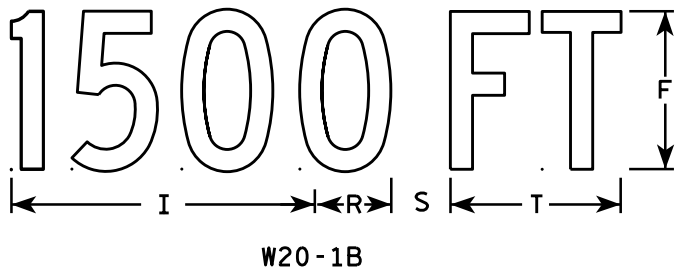
W20-1A



W20-1D



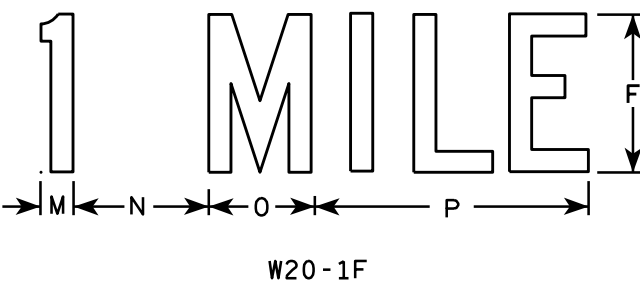
W20-1C



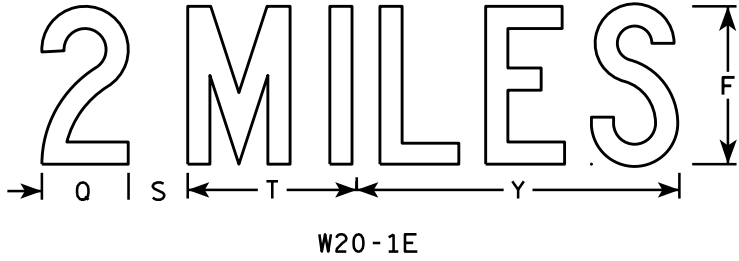
W20-1B



W20-1G



W20-1F



W20-1E

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Message Series - C
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 3/8	1/2	5/8	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9		2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
2M	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
3	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
4	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
5	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0

STANDARD SIGN
W20-1A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED _____
State Traffic Engineer

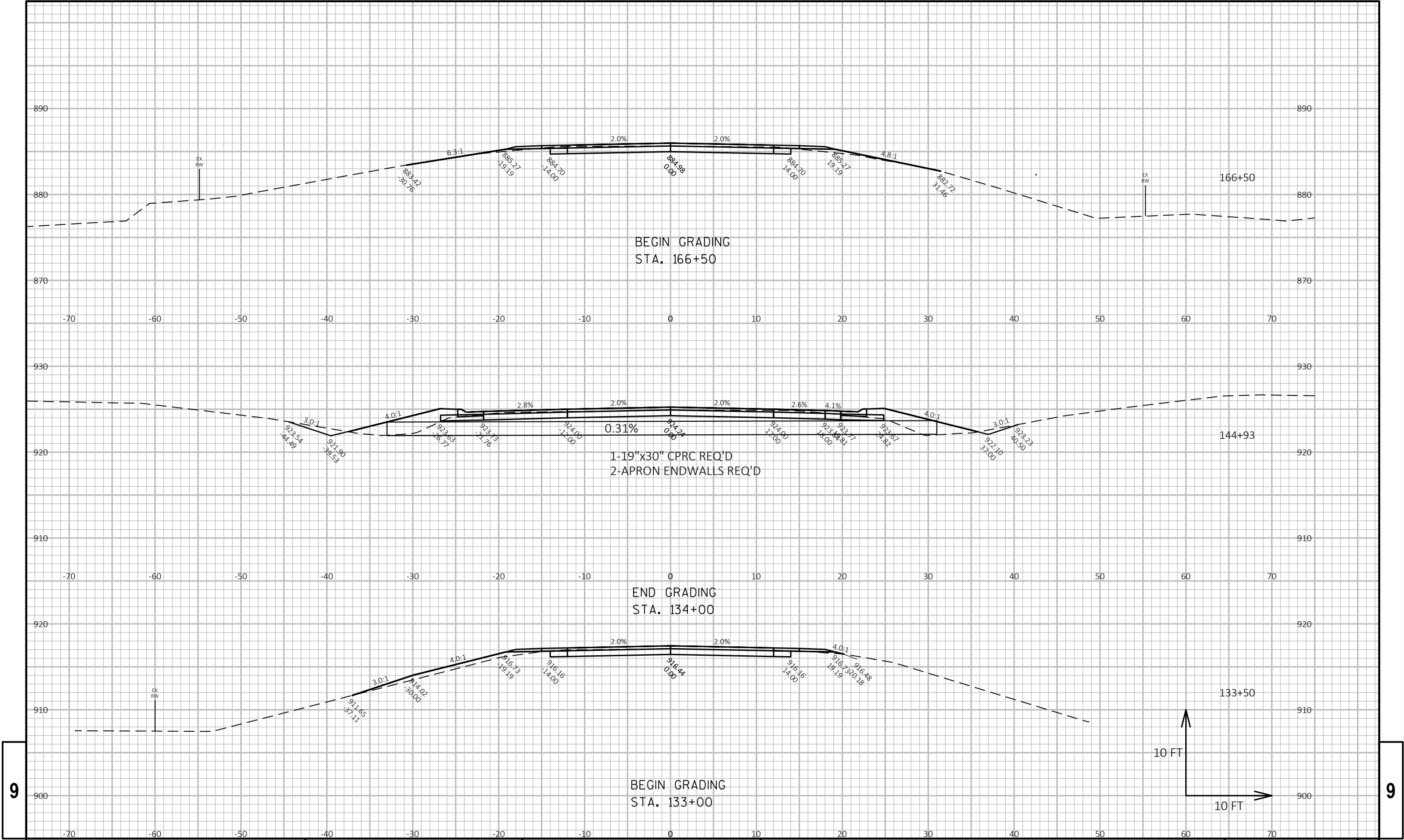
DATE 5/07/15 PLATE NO. W20-1.10

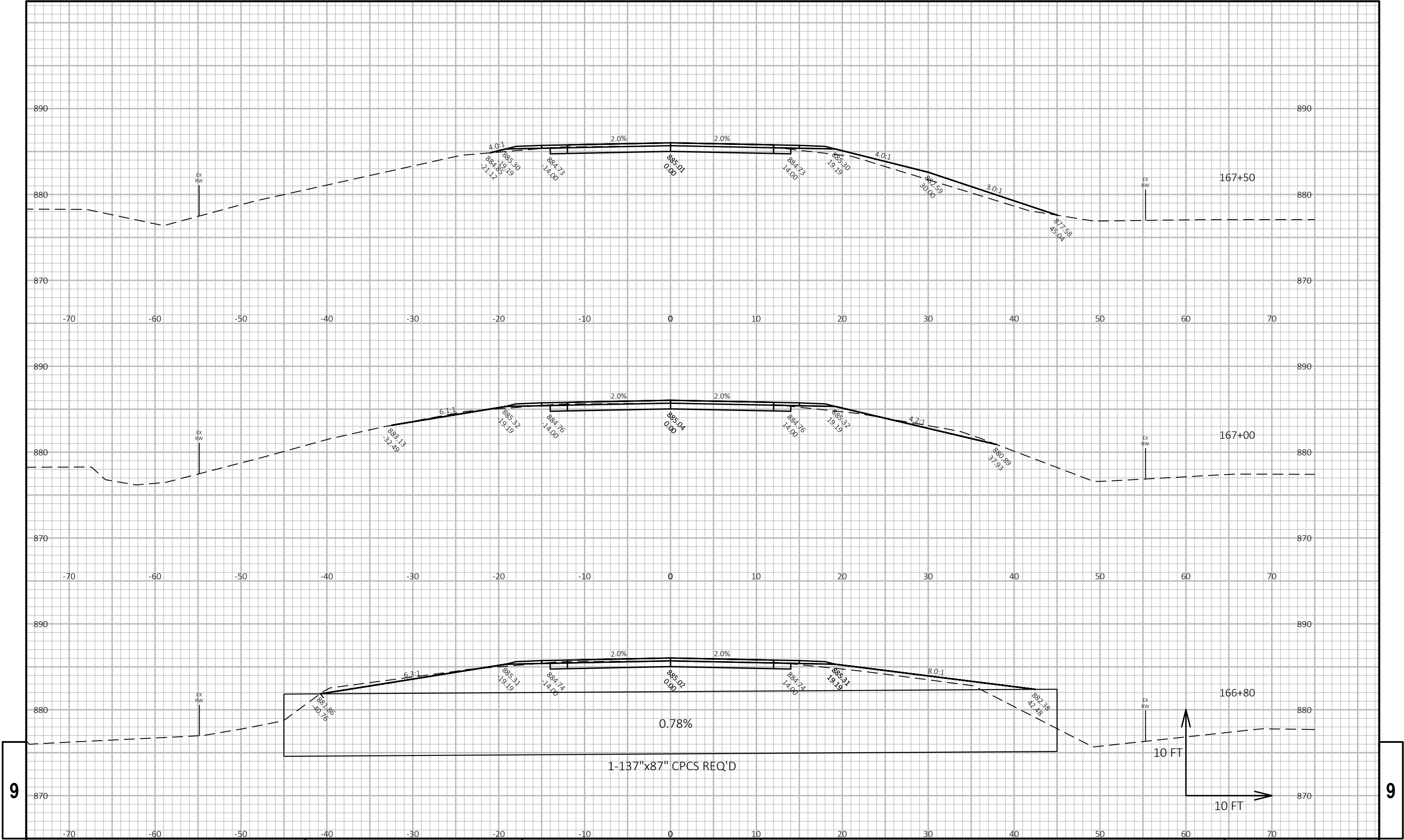
EARTHWORK - CTH X

STATION	AREA (SF)		Incremental Vol (CY) (Unadjusted)		Cumulative Vol (CY)		Mass Ordinate
	Cut	Fill	Cut	Fill	Cut	Expanded Fill	
			Note 1	Note 3	1.00 Note 1	1.30	
133+00	2	5	0	0	0	0	0
133+50	8	8	9	12	9	16	-6
134+00	5	2	12	9	21	28	-6
166+00	0	1	0	0	21	28	-6
166+50	1	2	1	3	22	31	-9
167+00	4	2	5	4	27	36	-9
167+50	0	16	4	17	31	58	-27
168+00	0	19	0	32	31	100	-69
168+50	0	14	0	31	31	140	-109
169+00	0	13	0	25	31	172	-142
169+50	0	10	0	21	31	200	-169
170+00	0	7	0	16	31	220	-190
170+50	0	5	0	11	31	235	-204
171+00	0	7	0	11	31	249	-219
171+50	3	3	3	9	33	261	-228
172+00	2	2	5	5	38	267	-229
172+50	0	2	2	4	40	272	-232
173+00	0	3	0	5	40	278	-238
178+00	0	5	0	0	40	278	-238
178+50	0	8	0	12	40	294	-254
179+00	0	6	0	13	40	311	-271
179+50	0	4	0	9	40	323	-283
180+00	0	2	0	6	40	330	-290

40254

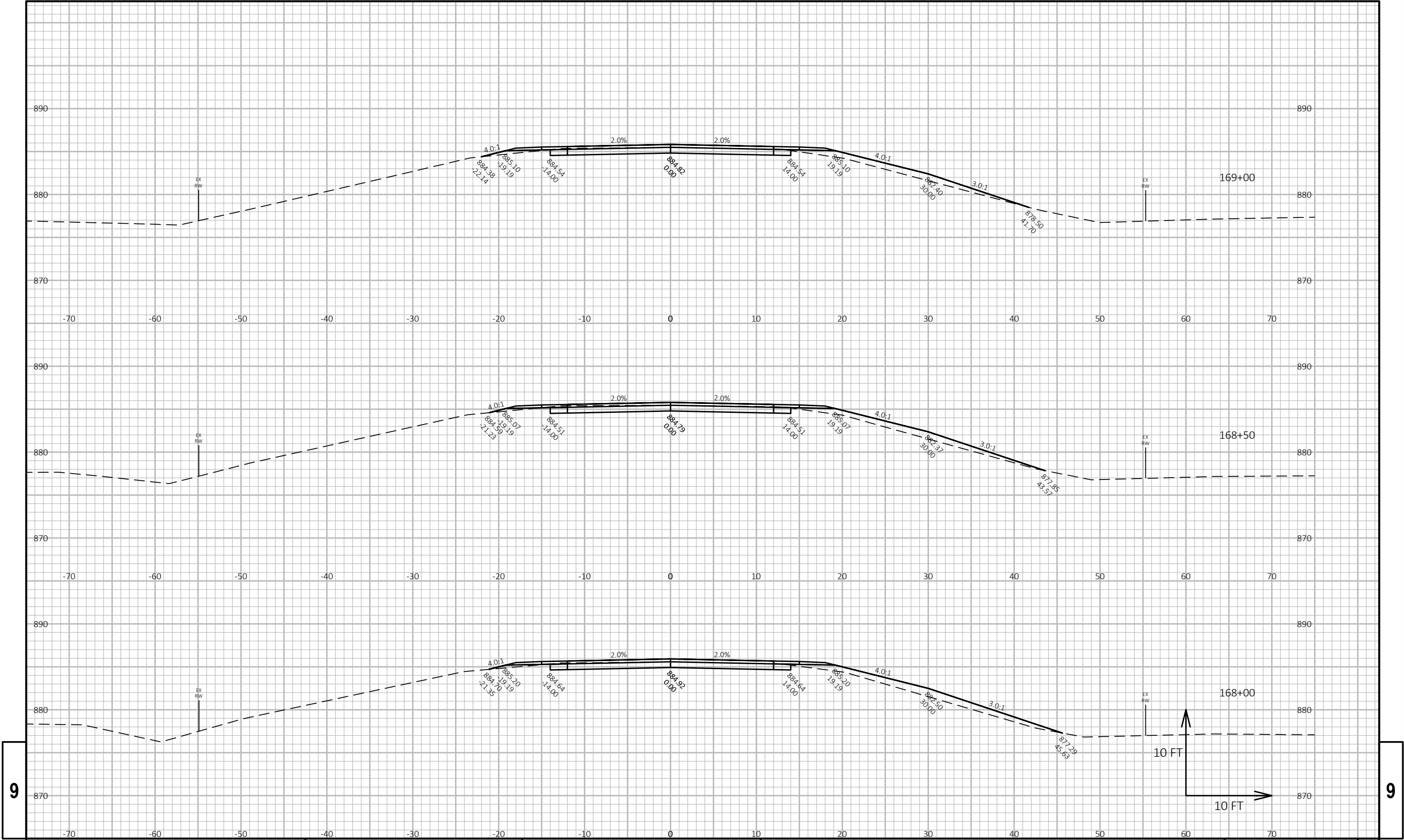
Notes:	
1 - Cut	Cut includes existing asphalt and base material
3 - Fill	Does not include Unusable Pavement Material Volume
8 - Mass Ordinate	Cut - (Fill * Fill Factor)





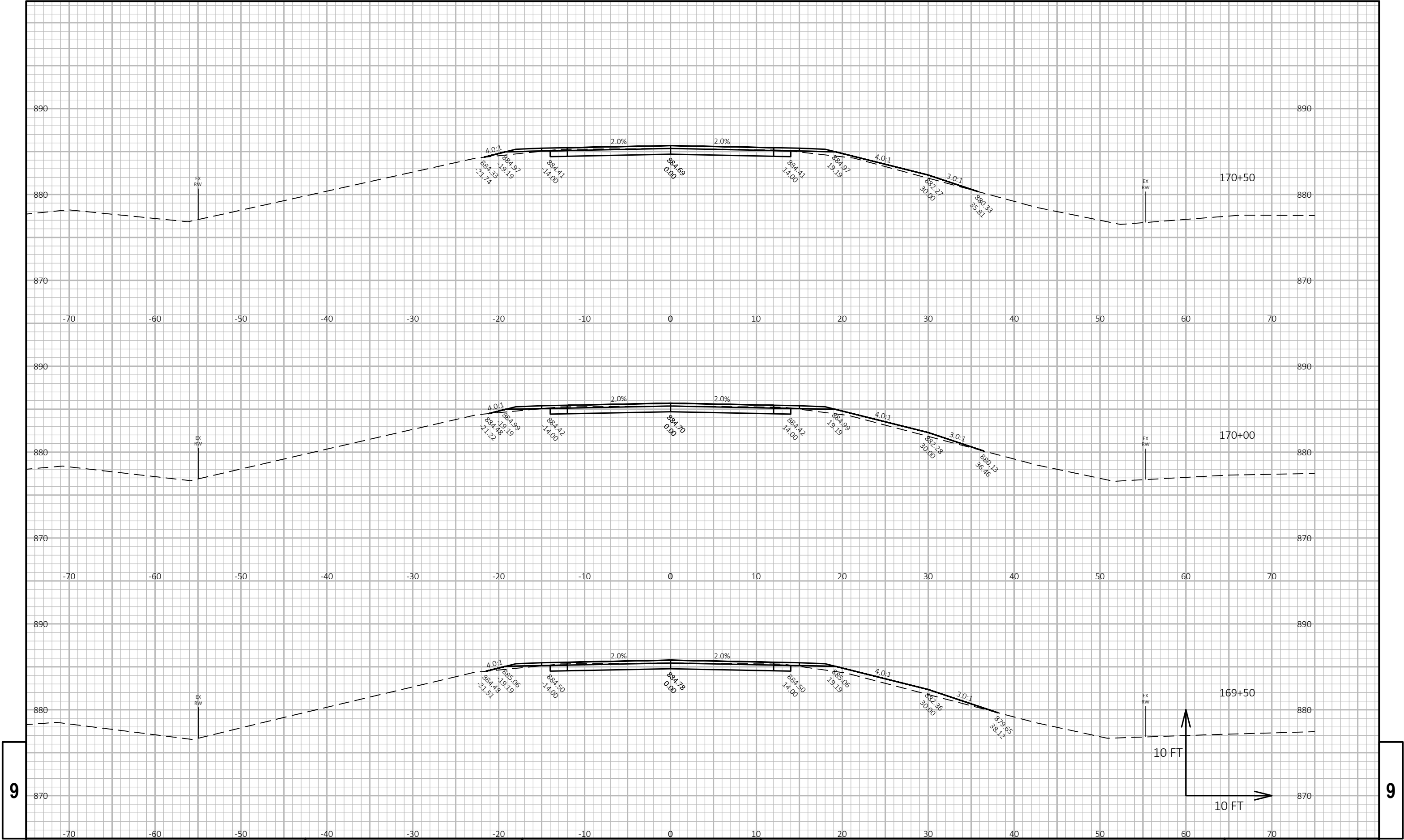
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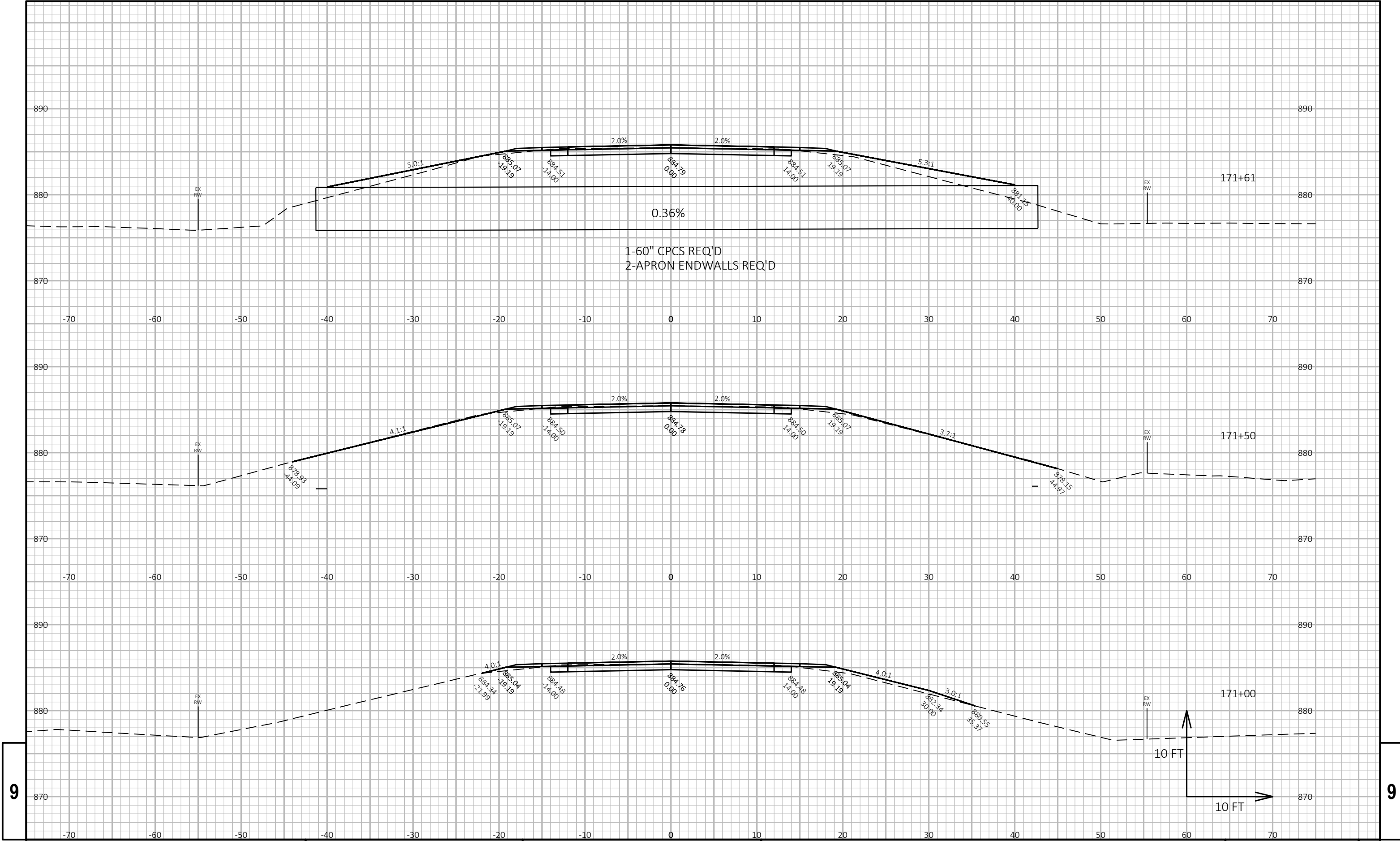
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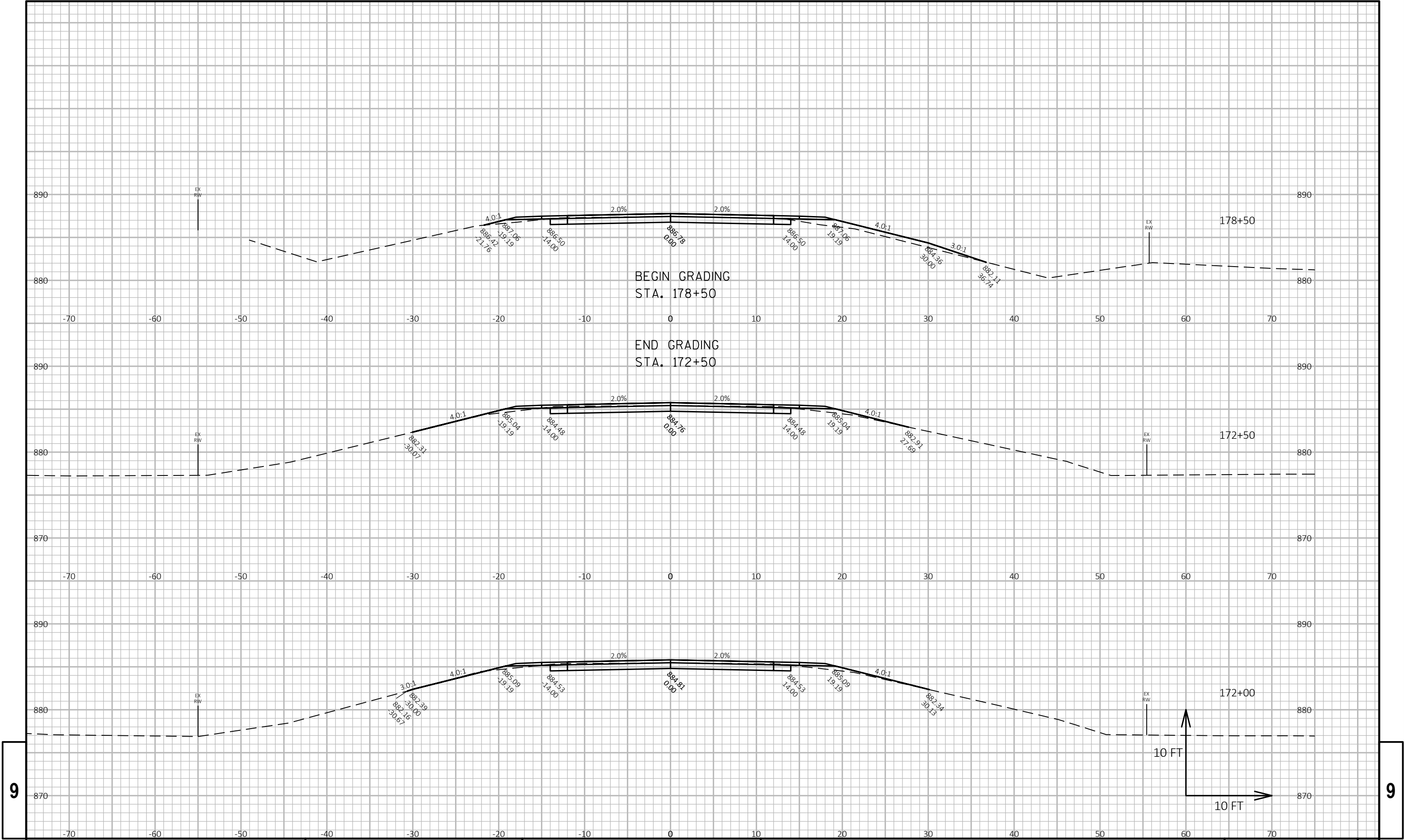
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PROJECT NO: 4501-00-71	HWY: CTH X	COUNTY: CALUMET	CROSS SECTIONS: CTH X	SHEET	E
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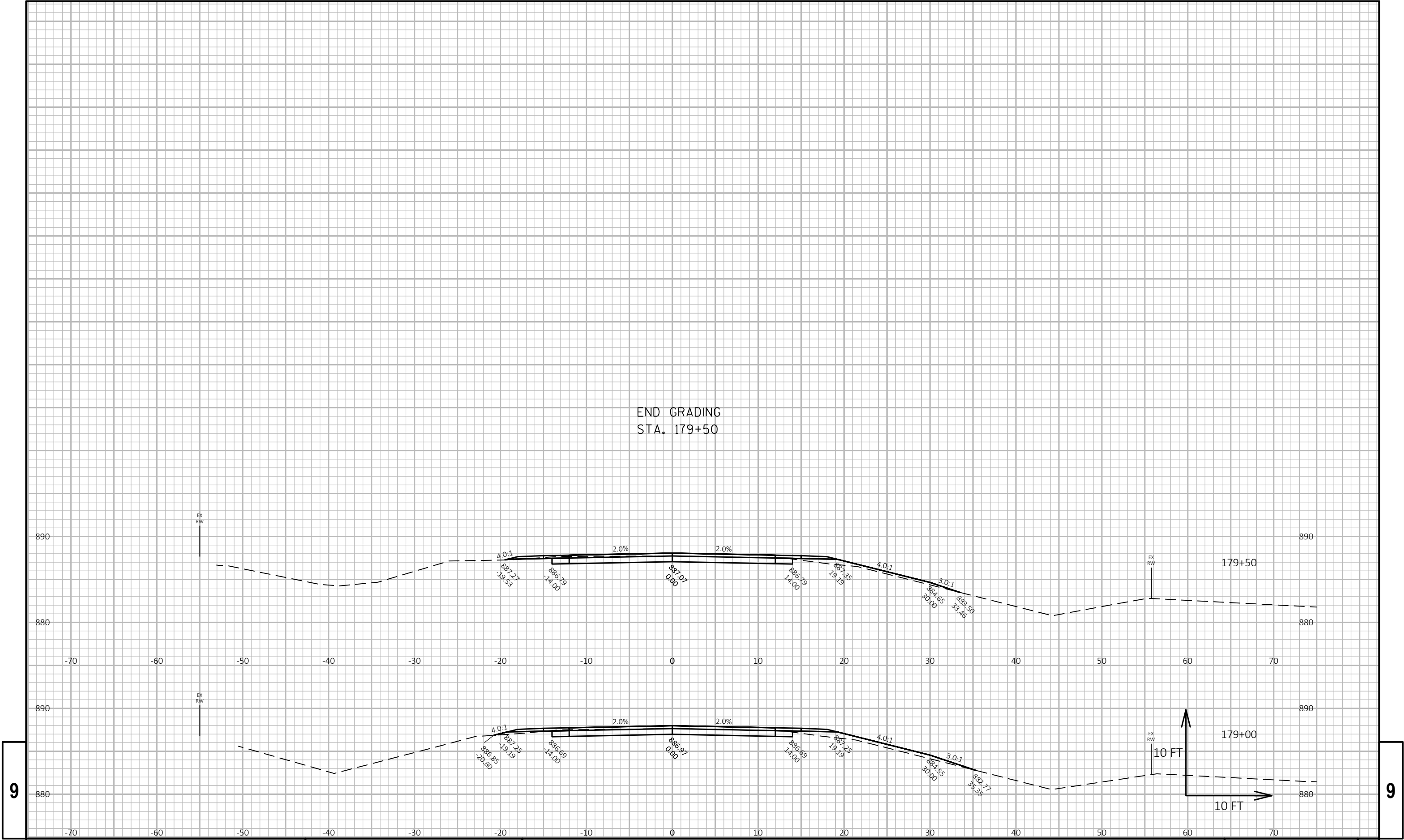
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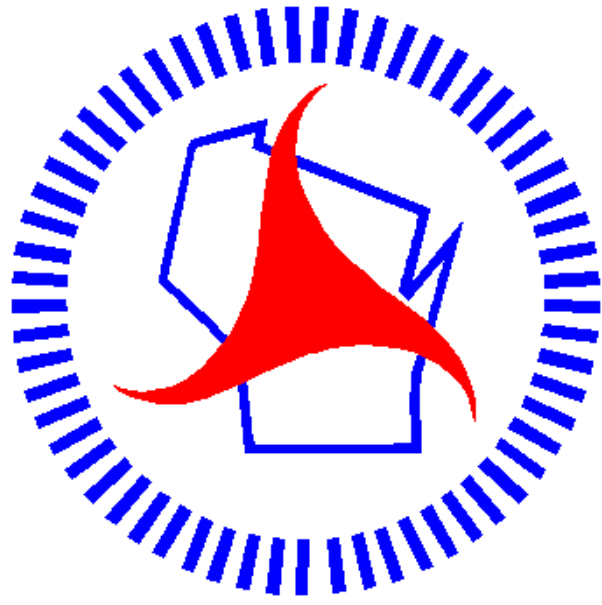


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Notes



Wisconsin Department of Transportation

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