

MAD

WITH:

PROJECT ID: 5080-09-82

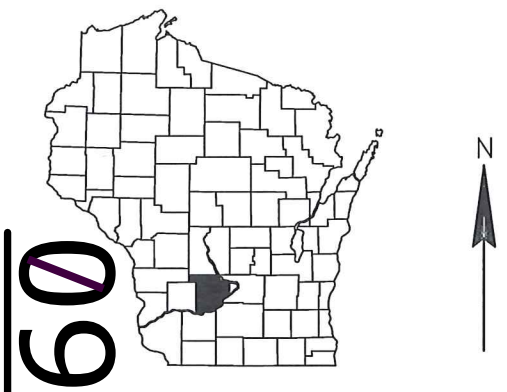
COUNTY: SAUK

JUNE 2014

ORDER OF SHEETS

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

TOTAL SHEETS = 94



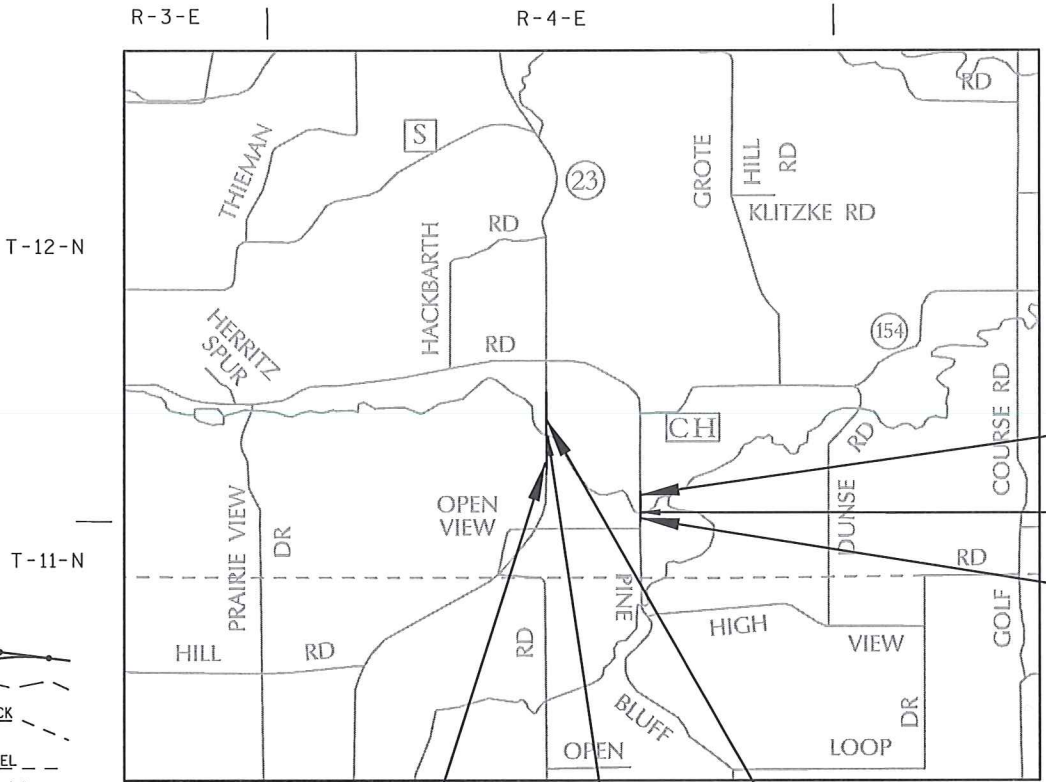
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PLAN OF PROPOSED IMPROVEMENT
SPRING GREEN - REEDSBURG
NARROWS CREEK BRIDGE B-56-222 AND B-56-227
STH 23
SAUK COUNTY

STATE PROJECT NUMBER
5080-09-82

DESIGN DESIGNATION	STH 23	CTH CH
A.A.D.T. (2015)	= 4700	740
A.A.D.T. (2035)	= 5700	880
D.H.V.	= 587	91
D.D.	= 60/40	60/40
T.	= 6.5%	6.5%
DESIGN SPEED	= 60 MPH	50 MPH
ESALS	= 818,000	127,400

CONVENTIONAL SYMBOLS

PLAN	PROFILE
CORPORATE LIMITS	GRADE LINE
PROPERTY LINE	ORIGINAL GROUND
LOT LINE	MARSH OR ROCK PROFILE (To be noted as such)
LIMITED HIGHWAY EASEMENT	SPECIAL DITCH
EXISTING RIGHT OF WAY	GRADE ELEVATION
PROPOSED OR NEW R/W LINE	CULVERT (Profile View)
SLOPE INTERCEPT	UTILITIES
REFERENCE LINE	ELECTRIC
EXISTING CULVERT	FIBER OPTIC
PROPOSED CULVERT (Box or Pipe)	GAS
COMBUSTIBLE FLUIDS	SANITARY SEWER
MARSH AREA	STORM SEWER
WOODED OR SHRUB AREA	TELEPHONE
	WATER
	UTILITY PEDESTAL
	POWER POLE
	TELEPHONE POLE



BEGIN PROJECT STA. 101+20.00 STH 23
Y = 241,201.73
X = 578,767.29

STRUCTURE B-56-222

END PROJECT STA. 108+80.00 STH 23

BEGIN PROJECT STA. 507+20.00 CH
STRUCTURE B-56-227
END PROJECT STA. 503+50.00 CH
Y = 237,909.73
X = 581,362.21

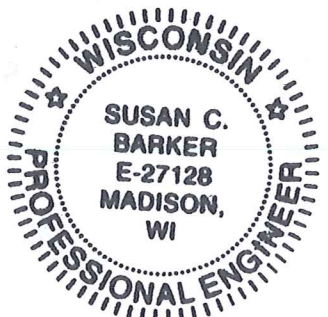
LAYOUT
SCALE 0 1 MI.
TOTAL NET LENGTH OF CENTERLINE = 0.144 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), SAUK COUNTY.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
5080-09-82	WISC 2014236	1

ORIGINAL PLANS PREPARED BY

Baker
MICHAEL BAKER JR., INC.
7633 CANSER WAY, SUITE 206,
MADISON, WI 53719



DATE: 1/29/14 Susan C. Barker
(Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	RA SMITH NATIONAL
Designer	MICHAEL BAKER JR., INC
Project Manager	MAHESH SHRESTHA
Regional Examiner	
Regional Supervisor	WILLIAM STROBEL
C.O. Examiner	

APPROVED FOR THE DEPARTMENT
DATE: 1/30/14 William Strobel
(Signature)

E

GENERAL NOTES

MISCELLANEOUS
ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988.

DETAILS OF CONSTRUCTION NOT SHOWN SHALL BE IN ACCORDANCE WITH THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS.

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

SEE SUBSURFACE EXPLORATION REPORTS FOR SOIL BORING INFORMATION. REPORTS ARE AVAILABLE FROM THE WISDOT SW REGION PROJECTS SECTION. MAHESH SHRESTHA, PROJECT MANAGER, PHONE (608) 245-2674

RESTORATION OF EXPOSED SLOPES AND DITCHES SHALL TAKE PLACE IMMEDIATELY AFTER FINISHED GRADING IS COMPLETE.

REMOVALS
NO TREES OR SHRUBS ARE TO BE REMOVED UNLESS INDICATED FOR REMOVAL BY THE ENGINEER.

GRADING/EROSION CONTROL
ALL EROSION CONTROL FEATURES ARE AT SUGGESTED LOCATIONS IN THE PLANS. EXACT LOCATIONS WILL BE DETERMINED BY THE CONTRACTORS EROSION CONTROL IMPLEMENTATION PLAN AND APPROVED BY THE ENGINEER IN CONSULTATION WITH THE DNR.

DISTURBED AREAS WITHIN THE RIGHT OF WAY SHALL BE RESTORED AS DIRECTED BY THE ENGINEER.

PAVEMENT RECOMMENDATIONS:

THE CONTRACTOR'S PAVING OPERATIONS SHALL BE CONSISTENT WITH THE PLAN TYPICAL SECTIONS AND CONSTRUCTED TO PREVENT HMA LONGITUDINAL JOINTS FROM BEING LOCATED WITHIN A DRIVING, TURNING, PASSING, OR PARKING LANE.

HMA PAVEMENT ON STH 23 SHALL BE PLACED IN TWO LAYERS, LOWER LAYER OF 3 INCHES AND UPPER LAYER OF 2 INCHES. THE 12.5 MM MIX GRADATION MAY BE USED FOR BOTH LAYERS.

HMA PAVEMENT ON CTH CH SHALL BE PLACED IN TWO LAYERS, LOWER LAYER OF 1¾ INCHES AND UPPER LAYER OF 1¾ INCHES. THE 12.5 MM MIX GRADATION SHALL BE USED FOR BOTH LAYERS.

HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 112 LB/SY/IN.

ABBREVIATIONS

ABUT	ABUTMENT	FE	FIELD ENTRANCE	RAD.	RADIUS
A.D.T.	AVERAGE DAILY TRAFFIC	FL	FLOW LINE	RL	REFERENCE LINE
AP	ACCESS POINT	HT	HEIGHT	REQ'D	REQUIRED
B.F.	BACK FACE	CWT	HUNDREDWEIGHT	RT	RIGHT
B&B	BALLED AND BURLAPPED	IN DIA	INCH DIAMETER	RHF	RIGHT HAND FORWARD
B.M.	BENCH MARK	INL	INLET	R/W	RIGHT OF WAY
B.O.P.	BEGIN OF PROJECT	IEP	INSIDE EDGE OF PAVEMENT	STA.	STATION
CL	CENTER LINE	INV	INVERT	SSPRC	STORM SEWER PIPE
CTR.	CENTER	IP	IRON PIPE		REINFORCED CONCRETE
CE	COMMERCIAL ENTRANCE	LT	LEFT	SSPRCHE	STORM SEWER PIPE REINFORCED
CY	CUBIC YARD	LHF	LEFT HAND FORWARD		CONCRETE HORIZONTAL ELLIPTICAL
CPRCHE	CULVERT PIPE REINFORCED CONCRETE	MH	MANHOLE	SE	SUPERELEVATION
	HORIZONTAL ELLIPTICAL	ML	MATCH LINE	STR.	STRUCTURE
CPRC	CULVERT PIPE REINFORCED CONCRETE	MAX.	MAXIMUM	TLE	TEMPORARY LIMITED EASEMENT
CP	CULVERT PIPE	MIN.	MINIMUM	TYP.	TYPICAL
C&G	CURB AND GUTTER	NORM.	NORMAL	V.	DESIGN SPEED
D.H.V.	DESIGN HOURLY VOLUME	O.H.	OVER HEAD POWER LINE		
DIA.	DIAMETER	PLE	PERMANENT LIMITED EASEMENT		
DIM.	DIMENSION	PACS	PIPE ARCH CORRUGATED STEEL		
EL	ELEVATION	PT	POINT		
EW	END WALL	PC	POINT OF CURVAURE		
EBS	EXCAVATION BELOW SUBGRADE	PI	POINT OF INTERSECTION		
E.O.P.	END OF PROJECT	PT	POINT OF TANGENCY		
EXC.	EXCAVATION	PE	PRIVATE ENTRANCE		
EXIST	EXISTING	PL	PROPERTY LINE		
F.F.	FRONT FACE	PB	PULL BOX		

UTILITIES

UTILITY OR MUNICIPALITY	ADDRESS	CONTACT	UTILITY TYPE
ALLIANT ENERGY	4902 N BILTMORE LANE SUITE 1000 MADISON, WI 53718	MR. JASON HOGAN 608-458-4871 JASONHOGAN@ALLIANTENERGY.COM	ELECTRIC & GAS
ATC MANAGEMENT, INC.	801 O'KEEFE ROAD P.O. BOX 6113 DE PERE, WI 54115-6113	MIKE OLSEN (920) 338-6582 MOLSEN@ATCLLC.COM	ELECTRIC
SAUK COUNTY EMERGENCY MANAGEMENT BULIDINGS & SAFETY	510 BROADWAY STREET BARABOO, WI 53913	TIMOTHY STIEVE (608) 355-4419 TSTIEVE@CO.SAUK.WI.US	COMMUNICATION
FRONTIER NORTH COMMUNICATIONS	2222 W. WISCONSIN STREET PORTAGE, WI 53901	ROBERT CHURCH (608) 742-1817 ROBERT.CHURCH@FTR.COM	COMMUNICATION

REGION CONTACT

MAHESH SHRESTHA
2101 WRIGHT STREET
MADISON, WI 53704
PH: (608) 245-2674
MAHESH.SHRESTHA@DOT.WI.GOV


DNR CONTACT

CATHERINE BLESER
3911 FISH HATCHERY ROAD
FITCHBURG, WI 53711
PH: (608) 275-3308

COUNTY HIGHWAY CONTACT

DARIN CARIGNAN
SAUK COUNTY HIGHWAY DEPARTMENT
PH: (608) 355-4381

DESIGN CONSULTANT

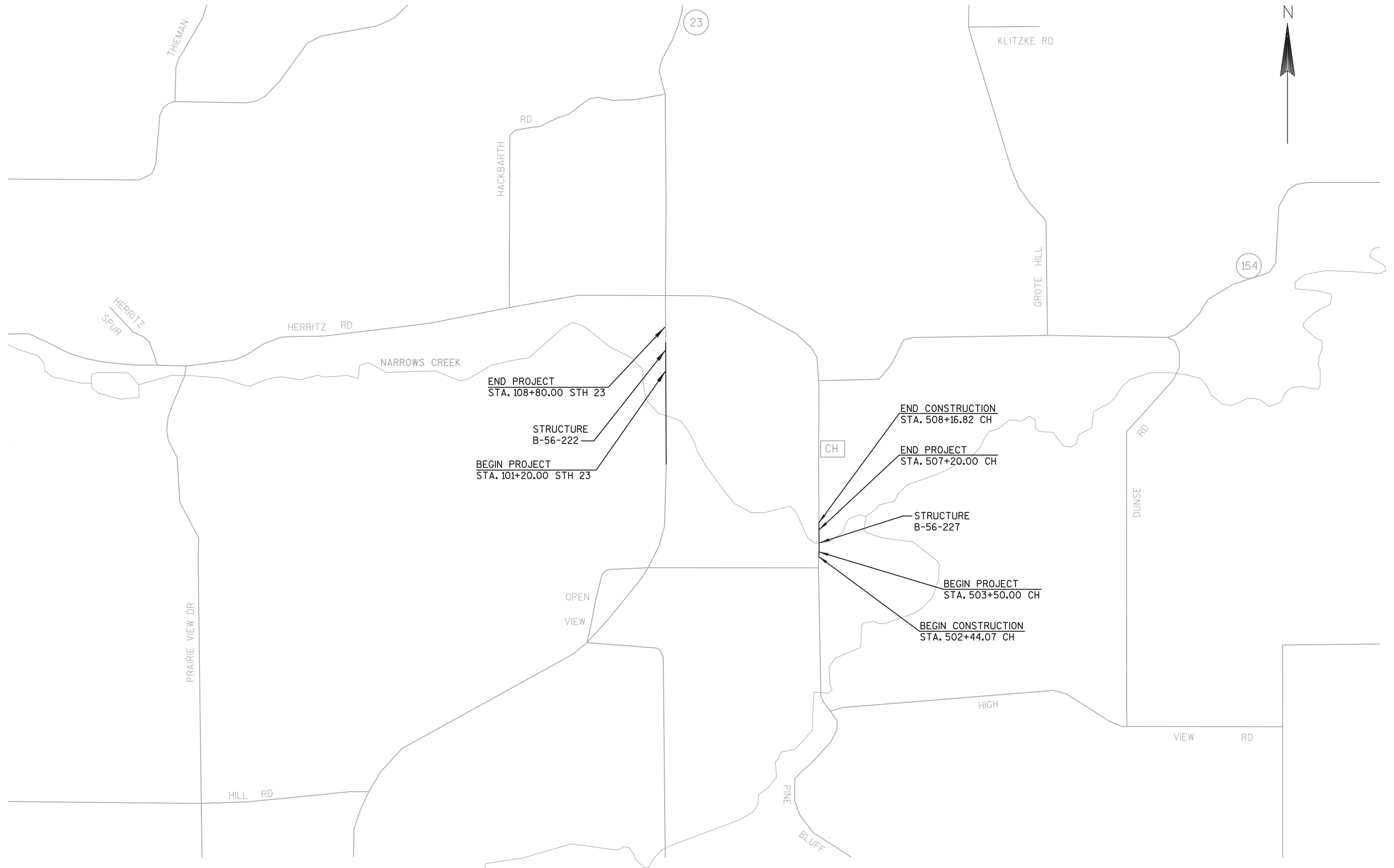


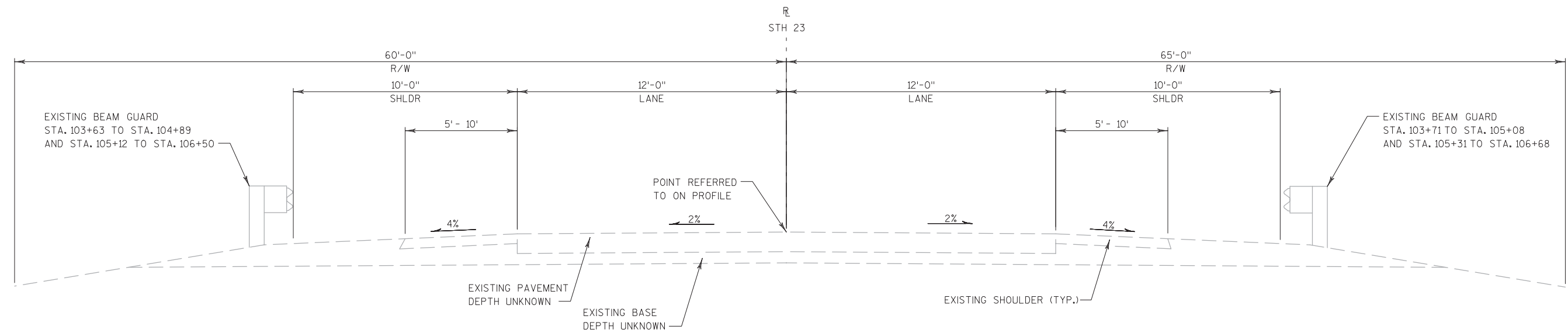
MICHAEL BAKER JR., INC.
7633 GANSER WAY, SUITE 206
MADISON, WI 53719

MICHAEL BAKER JR.
SUSAN BARKER
PH: 608-821-8712
SUSAN.BARKER@MBAKERCORP.COM



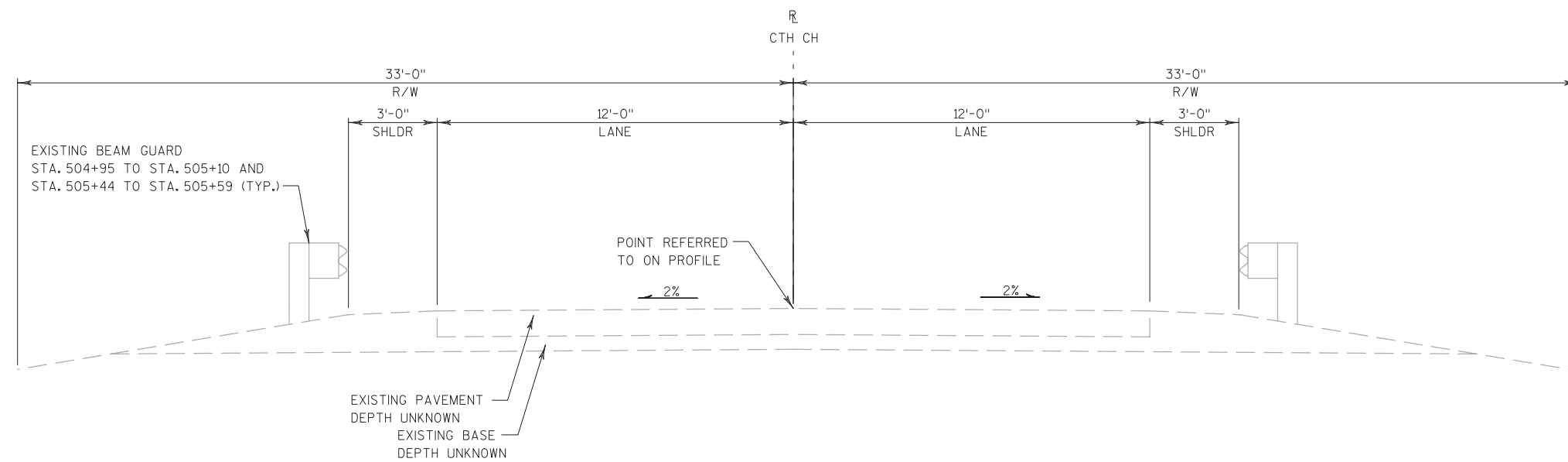
Dial 811 or (800) 242-8511
www.DiggersHotline.com





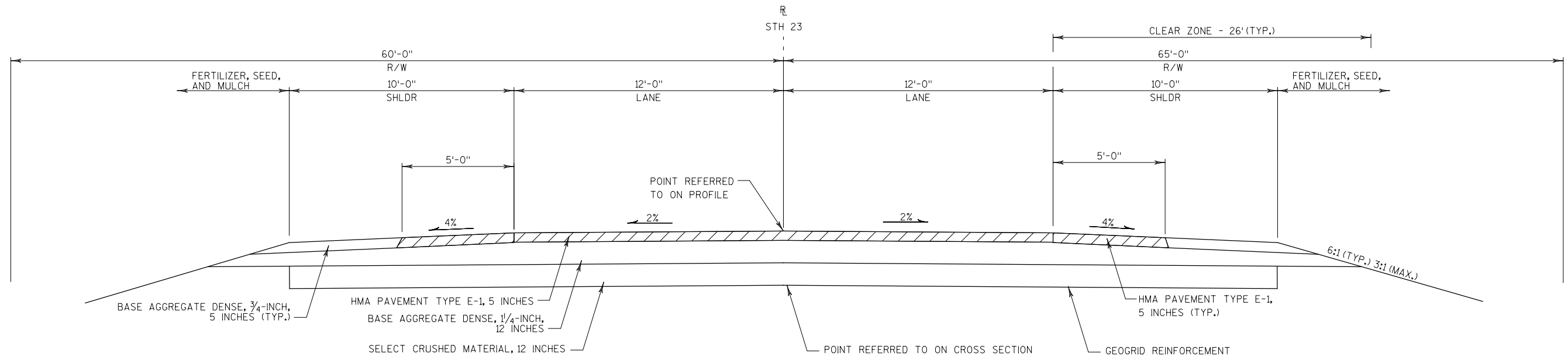
TYPICAL EXISTING SECTION - STH 23

STA. 101+20.00 TO STA. 104+98.80
STA. 105+20.70 TO STA. 108+80.00



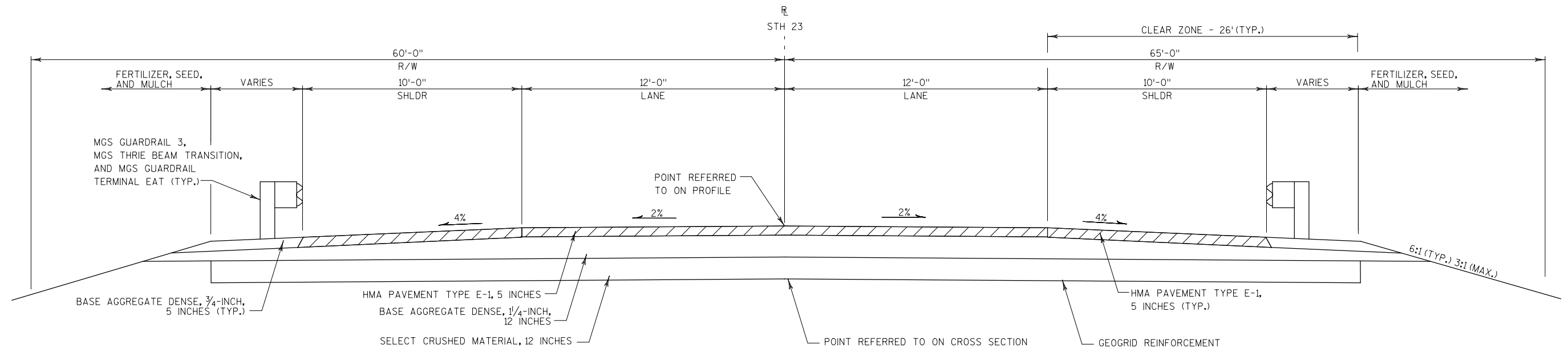
TYPICAL EXISTING SECTION - CTH CH

STA. 503+50.00 TO STA. 505+10.90
STA. 505+43.10 TO STA. 507+20.00



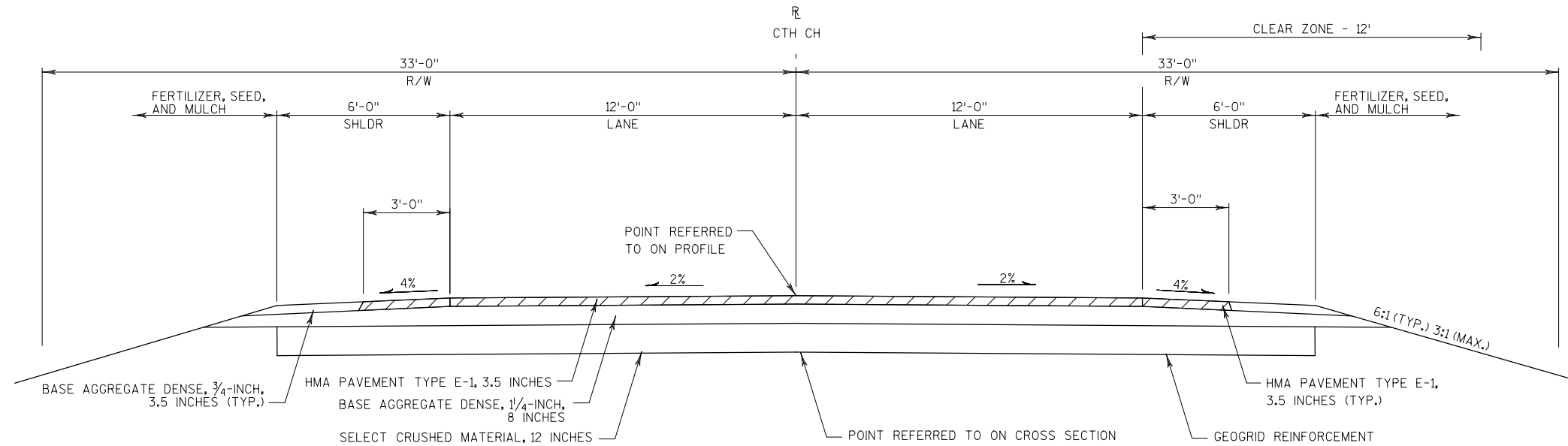
TYPICAL FINISHED SECTION - STH 23

STA. 101+20.00 TO STA. 103+50.80
STA. 107+04.93 TO STA. 108+80.00



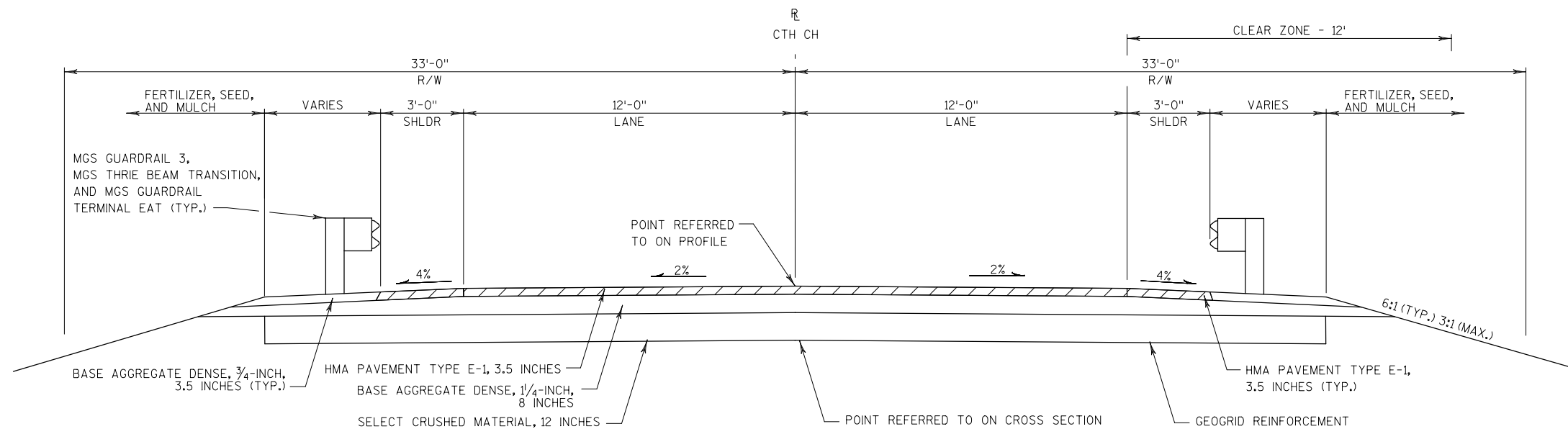
TYPICAL FINISHED SECTION - STH 23

STA. 103+15.21 TO STA. 104+68.54 AND
STA. 105+50.61 TO STA. 107+04.93



TYPICAL FINISHED SECTION - CTH CH

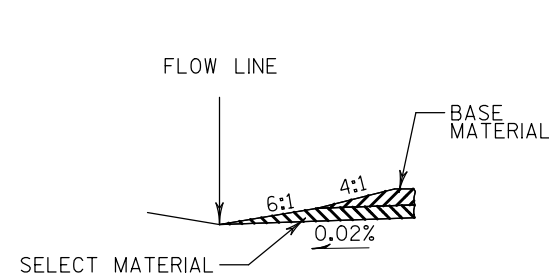
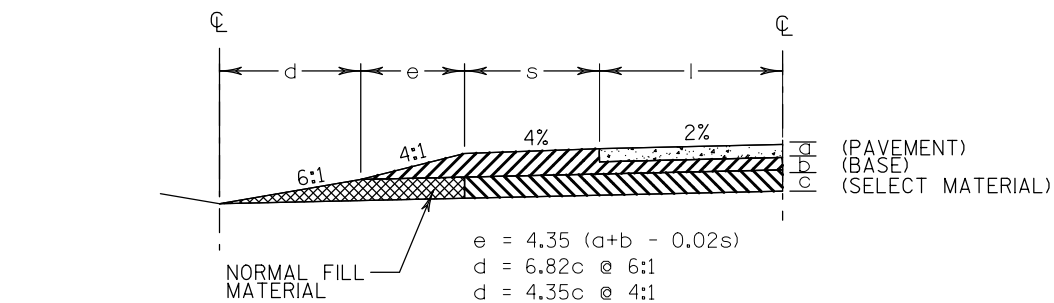
STA. 503+50.00 TO STA. 503+80.13
STA. 506+73.88 TO STA. 507+20.00



TYPICAL FINISHED SECTION - CTH CH

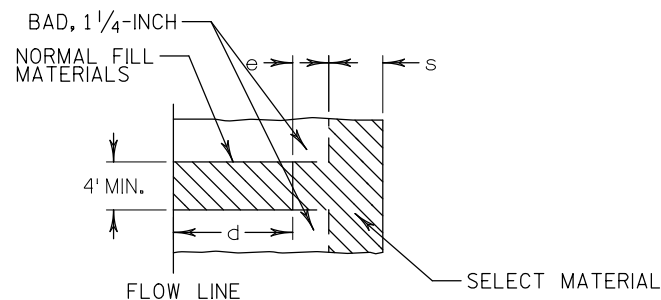
STA. 503+80.13 TO STA. 504+95.75 AND
STA. 505+58.25 TO STA. 506+73.88

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RELIEF TRENCH DETAIL*
PROFILE VIEW

* CONSTRUCT RELIEF TRENCH
AT SAG POINT OR EVERY 250'



RELIEF TRENCH DETAIL*
PLAN VIEW

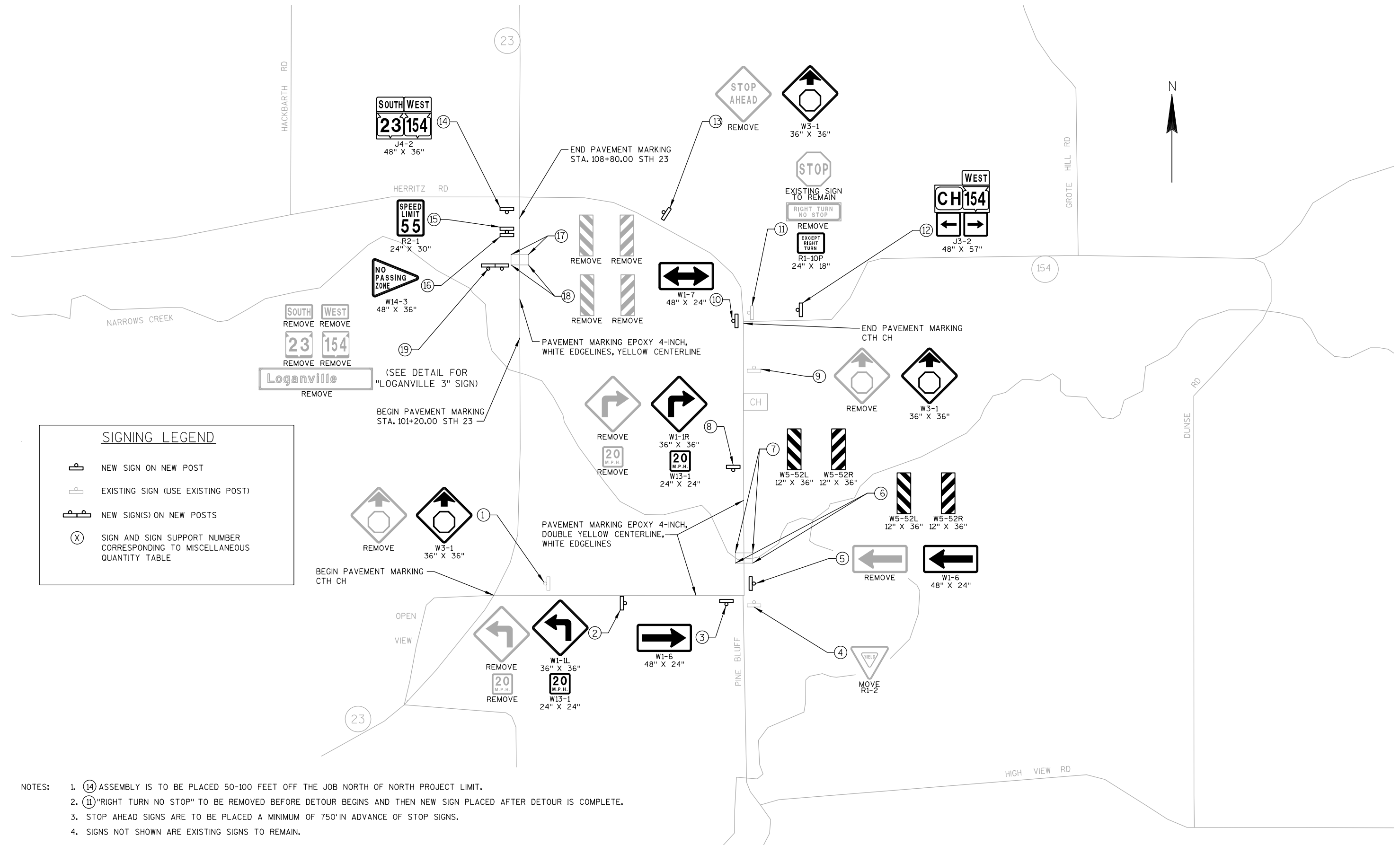
TYPICAL HALF-SECTION WITH SELECT MATERIALS - DAYLIGHT SECTION

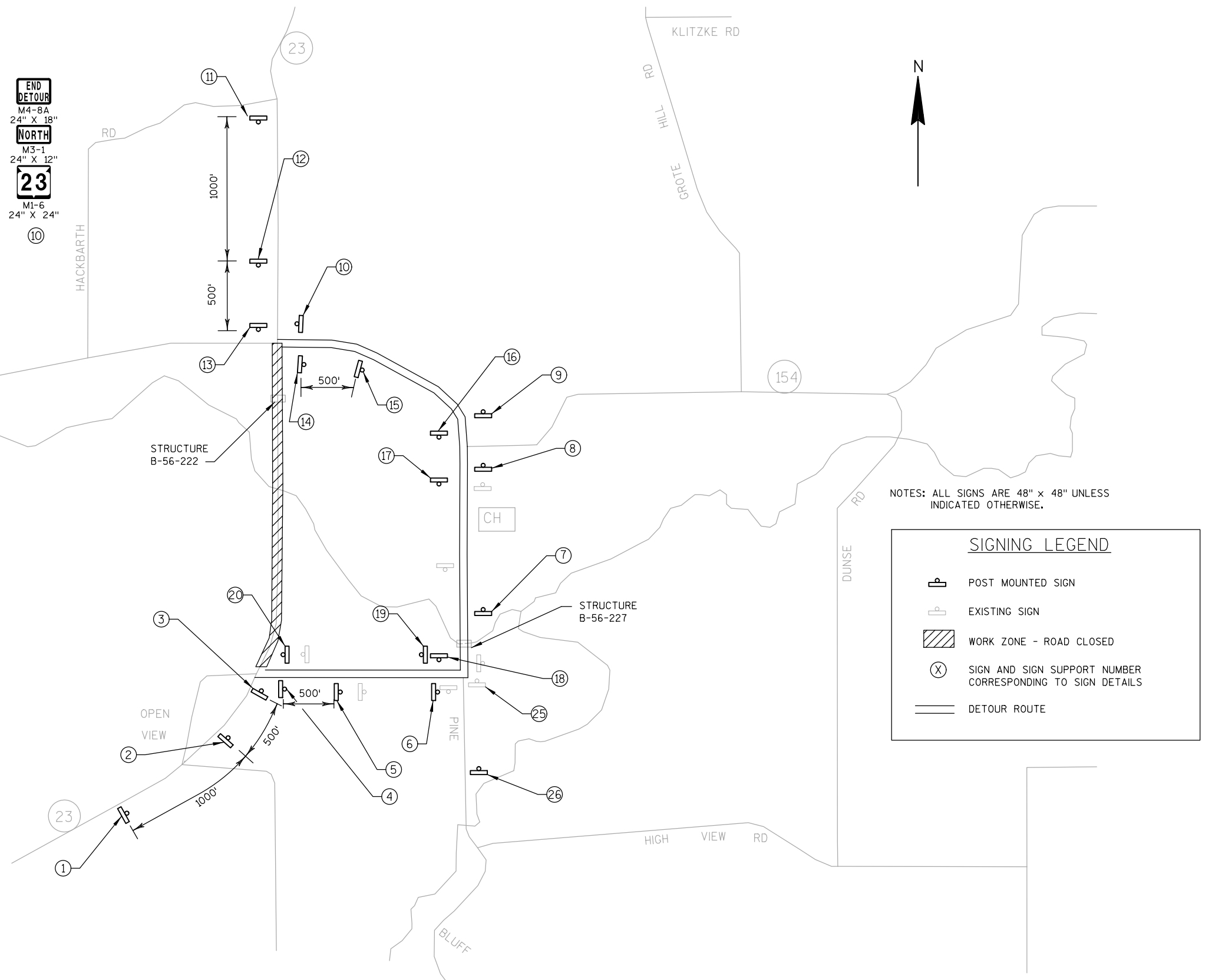
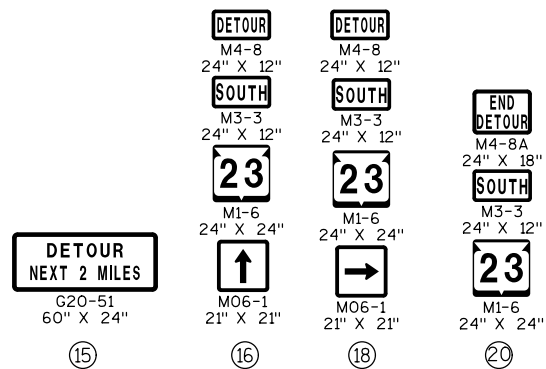
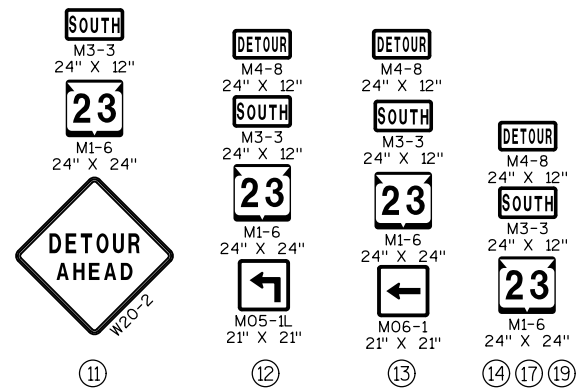
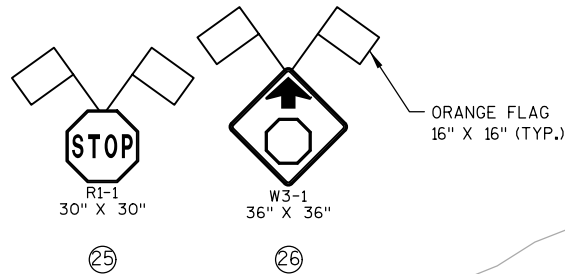
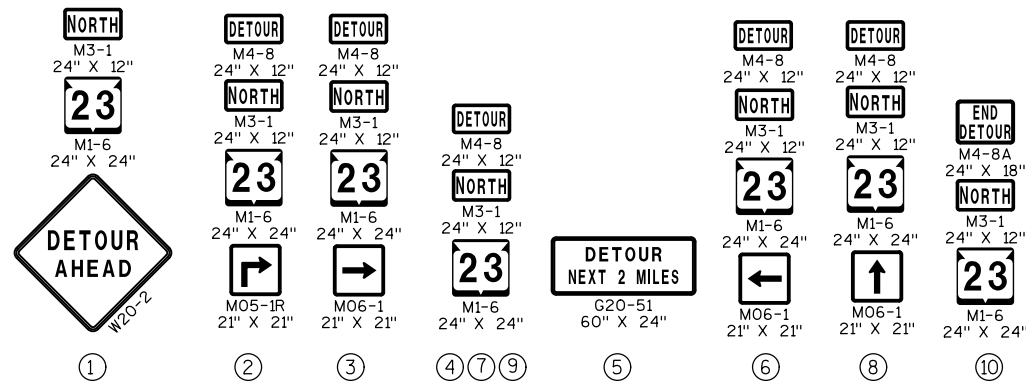
STA. 102+80.00 STH 23, STA. 106+75.00 STH 23,
STA. 504+25.00 CH, STA. 506+25.00 CH

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

TOTAL PROJECT AREA = 3.2 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 1.9 ACRES

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DATE 03APR14		E S T I M A T E O F Q U A N T I T I E S			
LINE					5080-09-82
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	201.0105	CLEARING	STA	3.000	3.000
0020	201.0205	GRUBBING	STA	3.000	3.000
0030	203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STATION) 01. 104+98	LS	1.000	1.000
0040	203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STATION) 02. 505+27	LS	1.000	1.000
0050	204.0165	REMOVING GUARDRAIL	LF	600.000	600.000
0060	205.0100	EXCAVATION COMMON	CY	3,893.000	3,893.000
0070	206.1000	EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 01. B-56-222	LS	1.000	1.000
0080	206.1000	EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 02. B-56-227	LS	1.000	1.000
0090	210.0100	BACKFILL STRUCTURE	CY	500.000	500.000
0100	213.0100	FINISHING ROADWAY (PROJECT) 01. 5080-09-82	EACH	1.000	1.000
0110	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	360.000	360.000
0120	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	3,350.000	3,350.000
0130	312.0110	SELECT CRUSHED MATERIAL	TON	3,070.000	3,070.000
0140	415.0410	CONCRETE PAVEMENT APPROACH SLAB	SY	221.000	221.000
0150	416.0610	DRILLED TIE BARS	EACH	24.000	24.000
0160	416.1010	CONCRETE SURFACE DRAINS	CY	4.000	4.000
0170	455.0105	ASPHALTIC MATERIAL PG58-28	TON	70.000	70.000
0180	455.0605	TACK COAT	GAL	502.000	502.000
0190	460.1101	HMA PAVEMENT TYPE E-1	TON	1,280.000	1,280.000
0200	460.2000	INCENTIVE DENSITY HMA PAVEMENT	DOL	1,280.000	1,280.000
0210	465.0120	ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES	TON	3.000	3.000
0220	502.0100	CONCRETE MASONRY BRIDGES	CY	420.000	420.000
0230	502.3200	PROTECTIVE SURFACE TREATMENT	SY	463.000	463.000
0240	505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	11,630.000	11,630.000
0250	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	48,080.000	48,080.000
0260	513.4060	RAILING TUBULAR TYPE M (STRUCTURE) 02. B-56-227	LS	1.000	1.000
0270	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	38.000	38.000
0280	521.1012	APRON ENDWALLS FOR CULVERT PIPE STEEL 12-INCH	EACH	2.000	2.000
0290	550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	456.000	456.000
0300	606.0200	RIPRAP MEDIUM	CY	2.000	2.000
0310	606.0300	RIPRAP HEAVY	CY	305.000	305.000
0320	612.0212	PIPE UNDERDRAIN UNPERFORATED 12-INCH	LF	28.000	28.000
0330	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	382.000	382.000
0340	614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	4.000	4.000
0350	614.2300	MGS GUARDRAIL 3	LF	325.000	325.000
0360	614.2500	MGS THRIE BEAM TRANSITION	LF	315.200	315.200
0370	614.2610	MGS GUARDRAIL TERMINAL EAT	EACH	8.000	8.000
0380	619.1000	MOBILIZATION	EACH	1.000	1.000
0390	625.0500	SALVAGED TOPSOIL	SY	5,956.000	5,956.000
0400	627.0200	MULCHING	SY	5,956.000	5,956.000
0410	628.1104	EROSION BALES	EACH	8.000	8.000
0420	628.1504	SILT FENCE	LF	3,170.000	3,170.000
0430	628.1520	SILT FENCE MAINTENANCE	LF	6,320.000	6,320.000
0440	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	6.000	6.000
0450	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	4.000	4.000

DATE 03APR14		E S T I M A T E O F Q U A N T I T I E S			
LINE					5080-09-82
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0460	628.2004	EROSION MAT CLASS I TYPE B	SY	270.000	270.000
0470	629.0210	FERTILIZER TYPE B	CWT	4.000	4.000
0480	630.0130	SEEDING MIXTURE NO. 30	LB	107.000	107.000
0490	630.0200	SEEDING TEMPORARY	LB	33.000	33.000
0500	634.0614	POSTS WOOD 4X6-INCH X 14-FT	EACH	11.000	11.000
0510	637.2210	SIGNS TYPE II REFLECTIVE H	SF	75.000	75.000
0520	637.2230	SIGNS TYPE II REFLECTIVE F	SF	101.000	101.000
0530	638.2102	MOVING SIGNS TYPE II	EACH	1.000	1.000
0540	638.2602	MOVING SIGNS TYPE II	EACH	20.000	20.000
0550	643.0100	TRAFFIC CONTROL (PROJECT) 01. 5080-09-82	EACH	1.000	1.000
0560	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	530.000	530.000
0570	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	636.000	636.000
0580	643.0900	TRAFFIC CONTROL SIGNS	DAY	104.000	104.000
0590	643.0920	TRAFFIC CONTROL COVERING SIGNS TYPE II	EACH	2.000	2.000
0600	643.2000	TRAFFIC CONTROL DETOUR (PROJECT) 01. 5080-09-82	EACH	1.000	1.000
0610	643.3000	TRAFFIC CONTROL DETOUR SIGNS	DAY	2,808.000	2,808.000
0620	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	512.000	512.000
0630	645.0130	GEOTEXTILE FABRIC TYPE R	SY	6.000	6.000
0640	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	27,440.000	27,440.000
0650	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	2,190.000	2,190.000
0660	650.5000	CONSTRUCTION STAKING BASE	LF	2,190.000	2,190.000
0670	650.6500	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 01. B-56-222	LS	1.000	1.000
0680	650.6500	CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 02. B-56-227	LS	1.000	1.000
0690	650.7000	CONSTRUCTION STAKING CONCRETE PAVEMENT	LF	60.000	60.000
0700	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 5080-09-82	LS	1.000	1.000
0710	650.9920	CONSTRUCTION STAKING SLOPE STAKES	LF	1,340.000	1,340.000
0720	690.0150	SAWING ASPHALT	LF	128.000	128.000
0730	715.0502	INCENTIVE STRENGTH CONCRETE STRUCTURES	DOL	2,520.000	2,520.000
0740	ASP.1TOA	ON-THE-JOB TRAINING APPRENTICE AT \$5.00/HR	HRS	375.000	375.000
0750	ASP.1TOG	ON-THE-JOB TRAINING GRADUATE AT \$5.00/HR	HRS	200.000	200.000
0760	SPV.0180	SPECIAL 01. GEOGRID REINFORCEMENT	SY	4,600.000	4,600.000

ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

STATION	TO	STATION	LOCATION	Common Excavation (1)		Salvaged/ Unusable Pavement Material (4)	Available Material (5)	Unexpanded Fill	Expanded Fill (13)	Mass Ordinate +/- (14)
				Cut (2)	EBS Excavation (3)				Factor 1.50	
101+20 STH 23 502+44 CH	- -	108+80 STH 23 508+16 CH	STH 23 CTH CH	2615 1278	0 0	0 0	2615 1278	662 1457	994 2185	1622 -907
				3893	0					
				Total Common Exc	3893	0	3893	2119	3178	714

- 1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
- 2) Salvaged/Unsuable Pavement Material is included in Cut.
- 3) EBS Excavation to be backfilled with Select Borrow material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well.
- 4) Salvaged/Unusable Pavement Material
- 5) Available Material = Cut - Salvaged/Unusuable Pavement Material
- 13) Expanded Fill. Factor = 1.50
- 14) 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.

REMOVING GUARDRAIL			
LOCATION	STATION	STATION	204.0165 LF
STRUCTURE B-22-220	105+12 STH 23	106+50 STH 23	138
STRUCTURE B-22-220	105+31 STH 23	106+68 STH 23	138
STRUCTURE B-22-220	103+71 STH 23	105+08 STH 23	137
STRUCTURE B-22-220	103+63 STH 23	104+89 STH 23	126
STRUCTURE P-56-943	504+95 CH	505+10 CH	15
STRUCTURE P-56-943	504+95 CH	505+10 CH	15
STRUCTURE P-56-943	505+44 CH	505+59 CH	15
STRUCTURE P-56-943	505+44 CH	505+59 CH	15
PROJECT TOTAL			600

CLEARING AND GRUBBING					
STREET	STATION	TO	STATION	CLEARING 201.0105 STA	GRUBBING 201.0205 STA
STH 23	106+00 STH 23 RT	-	108+80 STH 23 RT	3	3
PROJECT TOTAL				3	3

SELECT MATERIALS AND GEOGRID REINFORCEMENT						
STREET	STATION	TO	STATION	SELECT CRUSHED MATERIAL 312.0110 TON	GEOGRID REINFORCEMENT SPV.0180.01 SY	
STH 23	101+20 STH 23	-	104+91 STH 23	1141	1711	
STH 23	105+28 STH 23	-	108+80 STH 23	1075	1610	
CTH CH	503+50 CH	-	505+06 CH	403	604	
CTH CH	505+48 CH	-	507+20 CH	451	675	
PROJECT TOTAL				3070	4600	

BASE AGGREGATE DENSE							
STREET	STATION	TO	STATION	LOCATION	BASE AGGREGATE DENSE 3/4" 305.0110 TON	BASE AGGREGATE DENSE 1 1/4" 305.0120 TON	
STH 23	101+20 STH 23	-	104+91 STH 23	MAINLINE PAVEMENT	--	660	
STH 23	105+28 STH 23	-	108+80 STH 23	MAINLINE PAVEMENT	--	626	
STH 23	101+20 STH 23	-	108+80 STH 23	SHOULDERS	304	1466	
CTH CH	503+50 CH	-	505+06 CH	MAINLINE PAVEMENT	--	184	
CTH CH	505+48 CH	-	507+20 CH	MAINLINE PAVEMENT	--	204	
CTH CH	503+50 CH	-	507+20 CH	SHOULDERS	56	210	
PROJECT TOTAL					360	3350	

3

ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE NOTED						EACH ITEMS		
CONCRETE PAVEMENT APPROACH SLAB						213.0100	619.1000	
						FINISHING	MOBILIZATION	
						ROADWAY		
STREET	STATION	TO	STATION		415.0410	PROJECT	EACH	EACH
STH 23	104+68.54	STH 23	104+91.13	STH 23	110.5	5080-09-82	1	1
STH 23	105+28.01	STH 23	105+50.61	STH 23	110.5			
PROJECT TOTAL						PROJECT TOTAL	1	1

CONSTRUCTION STAKING ITEMS											
						650.4500	650.5000	650.6500	650.7000	650.9910	650.9920
STREET	STATION	TO	STATION	OFFSET		CONSTRUCTION STAKING SUBGRADE	CONSTRUCTION STAKING BASE	CONSTRUCTION STAKING STRUCTURE LAYOUT	CONSTRUCTION STAKING CONCRETE PAVEMENT	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL	CONSTRUCTION STAKING SLOPE STAKES
						LF	LF	LS	LF	LS	LF
STH 23	101+20	STH 23	-	104+91	STH 23	LT & RT	371	371	--	--	--
STH 23	105+28	STH 23	-	108+80	STH 23	LT & RT	352	352	--	--	--
STH 23	101+20	STH 23	-	108+80	STH 23	LT & RT	769	769	--	--	768
CTH CH	503+50	CH	-	505+06	CH	LT & RT	156	156	--	--	--
CTH CH	505+48	CH	-	507+20	CH	LT & RT	172	172	--	--	--
CTH CH	503+50	CH	-	507+20	CH	LT & RT	370	370	--	--	--
CTH CH	502+44	CH	-	508+16	CH	LT & RT	--	--	--	--	572
STH 23	B-56-222						--	--	1	60	--
CTH CH	B-56-227						--	--	1	--	--
PROJECT	5080-09-82						--	--	--	1	--
PROJECT TOTAL						2190	2190	2	60	1	1340

3

ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

TRAFFIC CONTROL											
				643.0100 TRAFFIC CONTROL (PROJECT)	643.0420 TRAFFIC CONTROL BARRICADES TYPE III	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A	643.0900 TRAFFIC CONTROL SIGNS	643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II	643.2000 TRAFFIC CONTROL DETOUR (PROJECT)	643.3000 TRAFFIC CONTROL DETOUR SIGNS	
STATION	TO	STATION	DAYS	EACH	DAYS	DAYS	DAYS	EACH	EACH	DAYS	
101+20 STH 23 - 108+80 STH 23			53	1	530	636	--	--	--	--	
DETOUR ROUTE - CTH CH			52	--	--	--	104	--	1	2808	
UNDISTRIBUTED				--	--	--	--	2	--	--	
PROJECT TOTAL				1	530	636	104	2	1	2808	

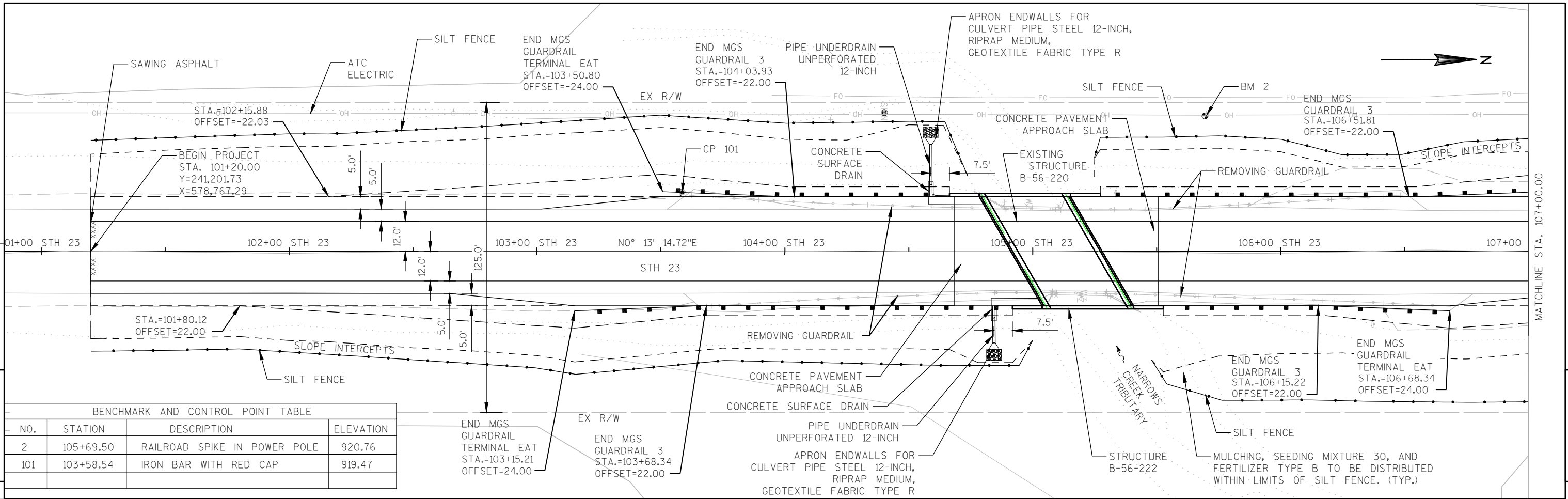
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PAVEMENT MARKING				
646.0106				
STREET STATION (O/S) - STATION (O/S)	DESCRIPTION OF MARKING	PAVEMENT MARKING EPOXY 4-INCH	TYPE OF LINE	
101+20 STH 23 - 108+80 STH 23	CENTERLINE	1520	DOUBLE YELLOW	
DETOUR ROUTE - CTH CH	EDGE LINE	1520	WHITE - SOLID	
	CENTERLINE	12200	DOUBLE YELLOW	
	EDGE LINE	12200	WHITE - SOLID	
PROJECT TOTAL		27440		

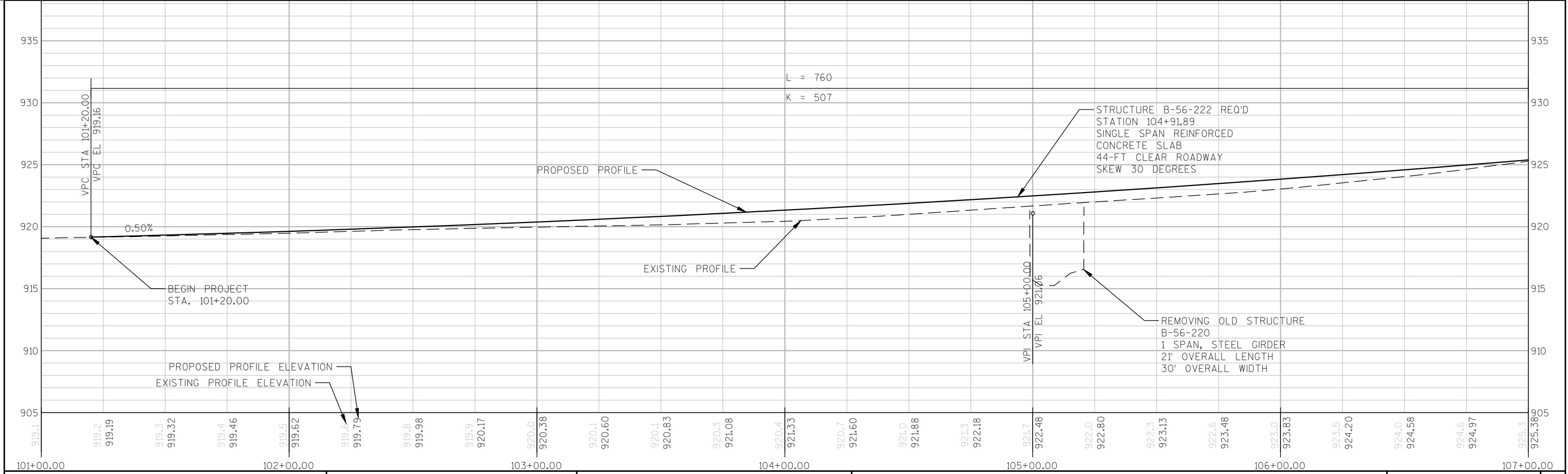
PERMANENT SIGN ITEMS									
		637.2210 SIGNS TYPE II REFLECTIVE H		637.2230 SIGNS TYPE II REFLECTIVE F		638.2602 REMOVING SIGNS TYPE II	638.2102 MOVING SIGNS TYPE II	634.0614 POSTS WOOD 4X6-INCH X 14 FT	
LOCATION	SIGN CODE	SIZE INCHES	SF	SF	EA	EA	EA		
1	W3-1	36 X 36	--	9	1	--	--		
2	W1-1L	36 X 36	--	9	2	--	--		
	W13-1	24 X 24	--	4	--	--	--		
3	W1-6	48 X 24	--	8	--	--	--		
4	R1-2	--	--	--	--	1	--		
5	W1-6	48 X 24	--	8	1	--	--		
6	W5-52L	12 X 36	--	3	--	--	--		
	W5-52R	12 X 36	--	3	--	--	--		
7	W5-52L	12 X 36	--	3	--	--	--		
	W5-52R	12 X 36	--	3	--	--	--		
8	W1-1R	36 X 36	--	9	2	--	--		
	W13-1	24 X 24	--	4	--	--	--		
9	W3-1	36 X 36	--	9	1	--	--		
10	W1-7	48 X 24	--	8	--	--	--		
11	R1-10P	24 X 18	3	--	1	--	--		
12	J3-2	48 X 57	19	--	--	--	--		
	M1-6	24 X 24	4	--	--	--	--		
	M6-1	21 X 21	3	--	--	--	--		
	M6-1	21 X 21	3	--	--	--	--		
	M3-4	24 X 12	2	--	--	--	--		
	M1-5	24 X 24	4	--	--	--	--		
13	W3-1	36 X 36	--	9	1	--	--		
14	J4-2	48 X 36	12	--	--	--	--		
	M1-6	24 X 24	4	--	--	--	--		
	M1-6	24 X 24	4	--	--	--	--		
	M3-4	24 X 12	2	--	--	--	--		
	M3-3	24 X 12	2	--	--	--	--		
15	R2-1	24 X 30	5	--	--	--	--		
16	W14-3	48 X 36	--	12	--	--	--		
17		--	--	--	2	--	--		
18		--	--	--	2	--	--		
19	D2-1	78 X 15	8	--	5	--	--		
20		--	--	--	2	--	--		
PROJECT TOTAL			75	101	20	1	11		

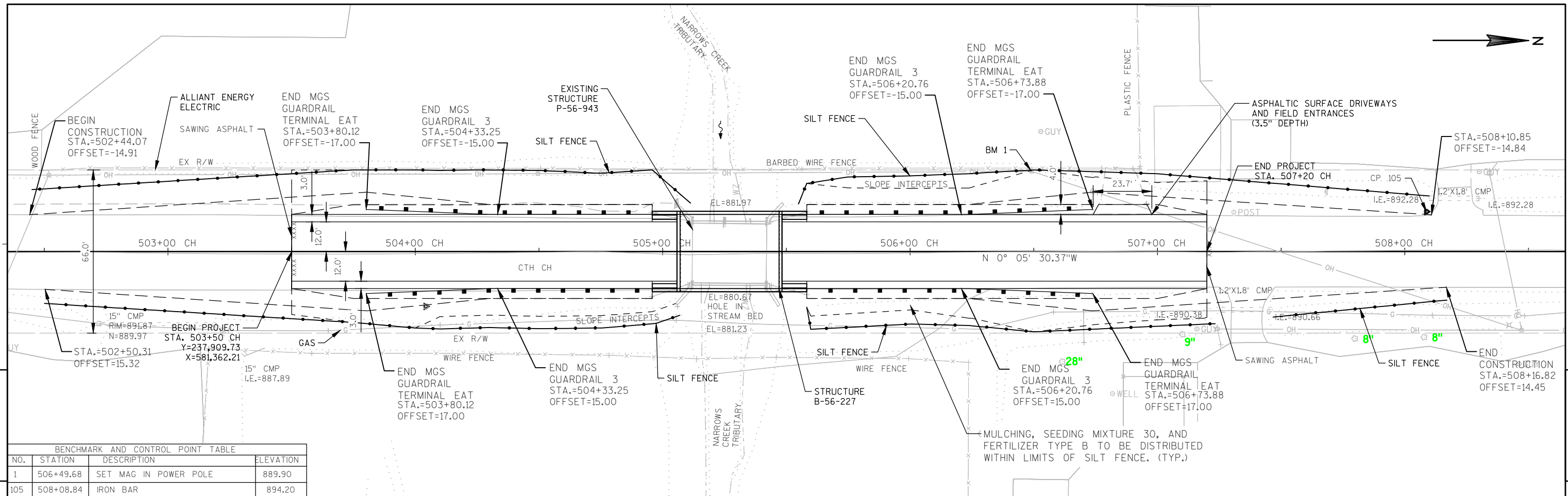
CONCRETE SURFACE DRAINS ITEMS									
		DRILLED TIE BARS	CONCRETE SURFACE DRAINS	APRON ENDWALLS FOR CULVERT PIPE STEEL 12-INCH	RIPRAP MEDIUM	PIPE UNDERDRAIN UNPERFORATED 12-INCH	GEOTEXTILE FABRIC TYPE R		
STREET	STATION	AT STRUCTURE	Type	416.0610 EACH	416.1010 CY	521.1012 EACH	606.0200 CY	612.0212 LF	645.0130 SY
STH 23	104+85 NB	B-56-222	A	12	2	1	1	11	3
STH 23	104+60 SB	B-56-222	A	12	2	1	1	17	3
PROJECT TOTAL				24	4	2	2	28	6

SAWING ASPHALT							
690.0150							
STREET	STATION	TO	STATION	LOCATION	LF		
STH 23	101+20 STH 23 - 108+80 STH 23			LT/RT	34		
CTH CH	503+50 CH - 507+20 CH			LT/RT	30		
CTH CH	507+20 CH			LT/RT	30		
PROJECT TOTAL					128		

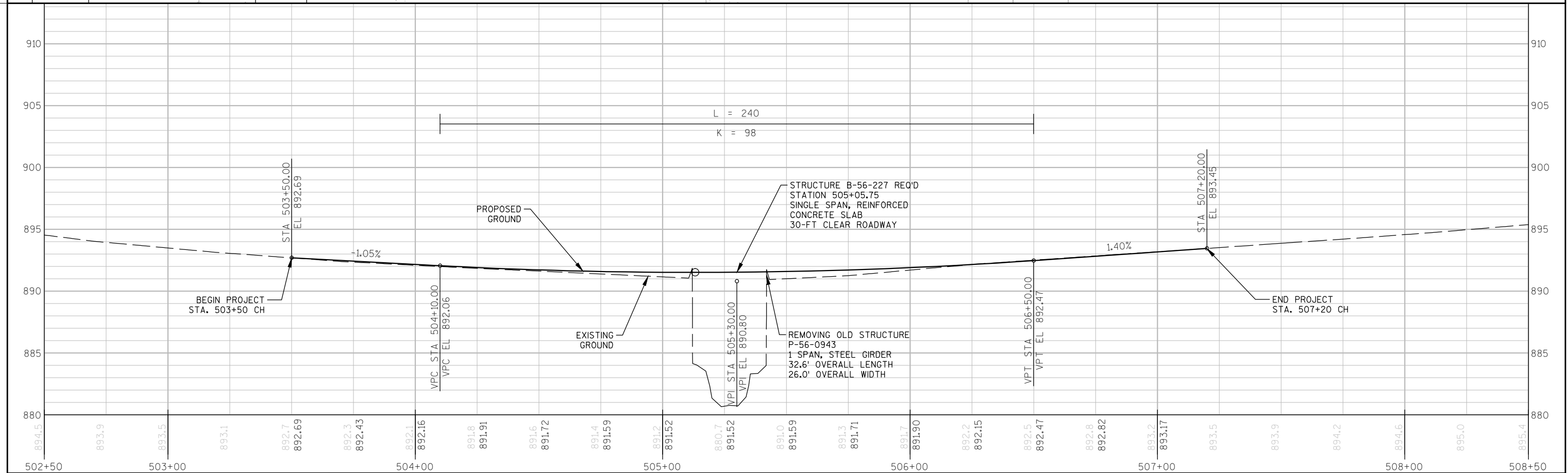


BENCHMARK AND CONTROL POINT TABLE			
NO.	STATION	DESCRIPTION	ELEVATION
2	105+69.50	RAILROAD SPIKE IN POWER POLE	920.76
101	103+58.54	IRON BAR WITH RED CAP	919.47



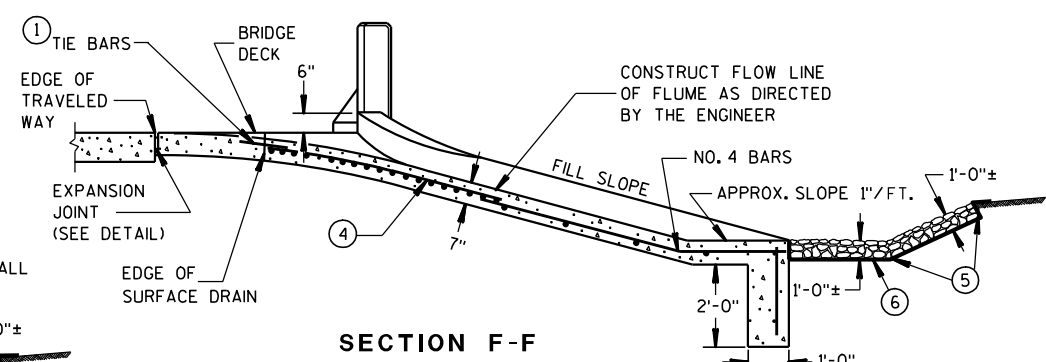


BENCHMARK AND CONTROL POINT TABLE			
NO.	STATION	DESCRIPTION	ELEVATION
1	506+49.68	SET MAG IN POWER POLE	889.90
105	508+08.84	IRON BAR	894.20

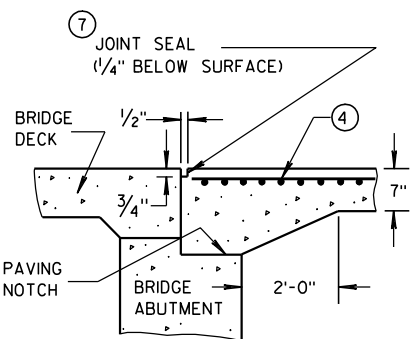


Standard Detail Drawing List

08D02-06	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
12A03-10	NAME PLATE (STRUCTURES)
13B02-06	CONCRETE PAVEMENT APPROACH SLAB
14B42-02A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-01A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-03A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-05A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-02	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C06-06	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-16A	PAVEMENT MARKING (MAINLINE)

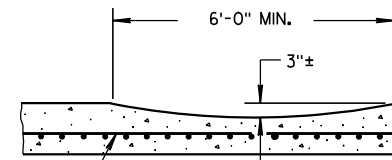


SECTION F-F

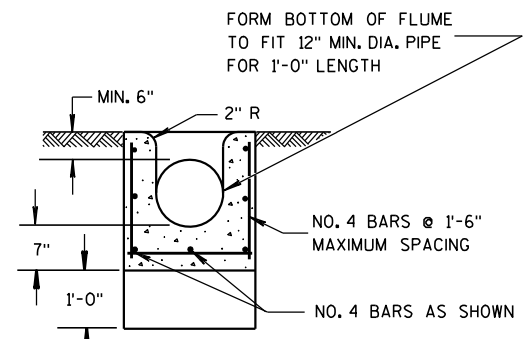


EXPANSION JOINT DETAIL

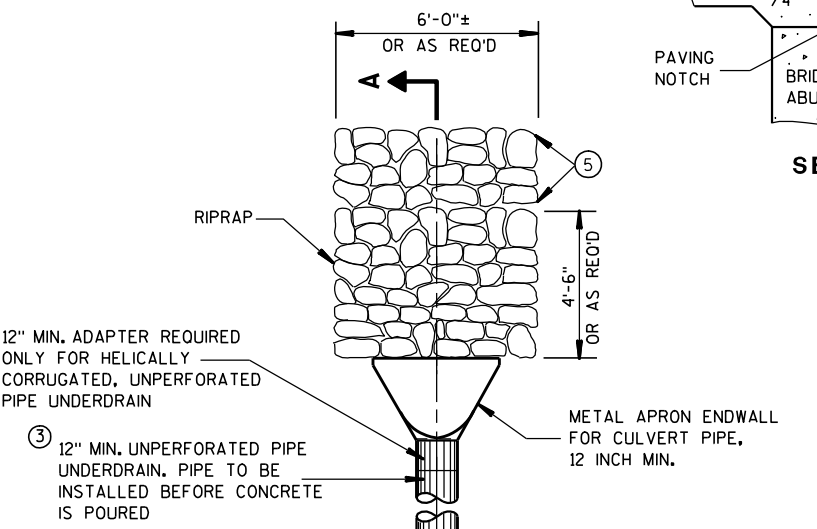
SECTION H-H



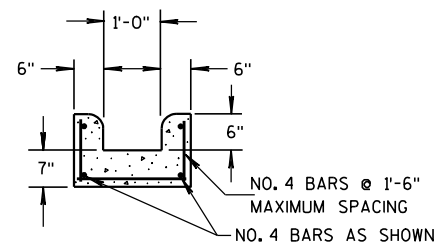
SECTION D-D



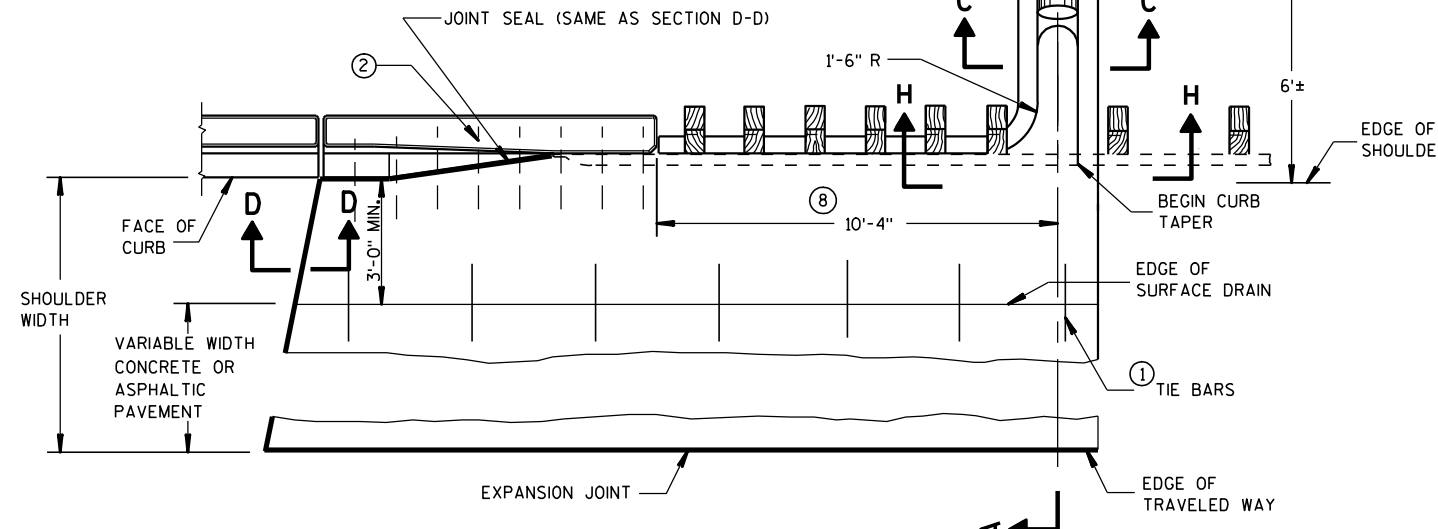
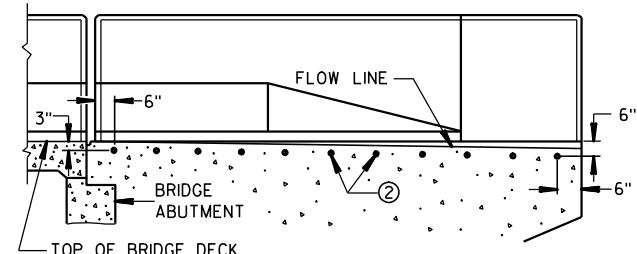
SECTION C-C



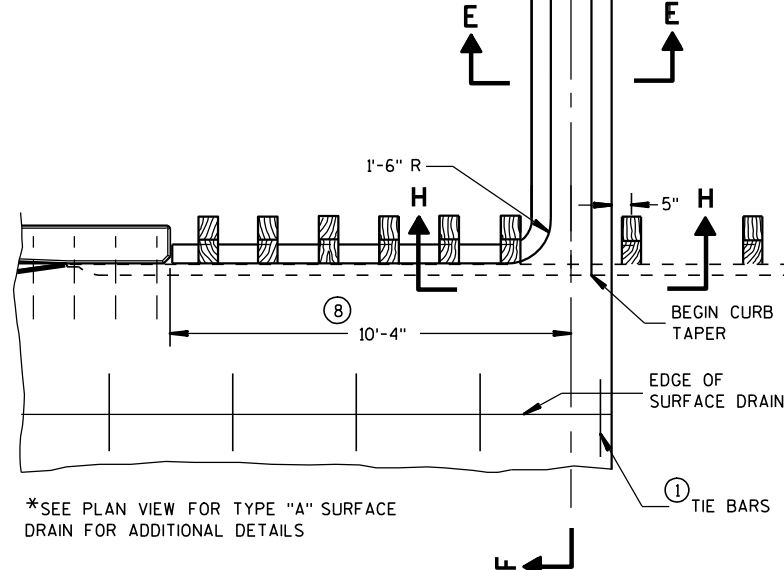
SECTION E-E



LOCATION OF TIE BARS IN WINGWALL



PLAN VIEW
SURFACE DRAIN WITH PIPE
TYPE "A"



*SEE PLAN VIEW FOR TYPE "A" SURFACE
DRAIN FOR ADDITIONAL DETAILS

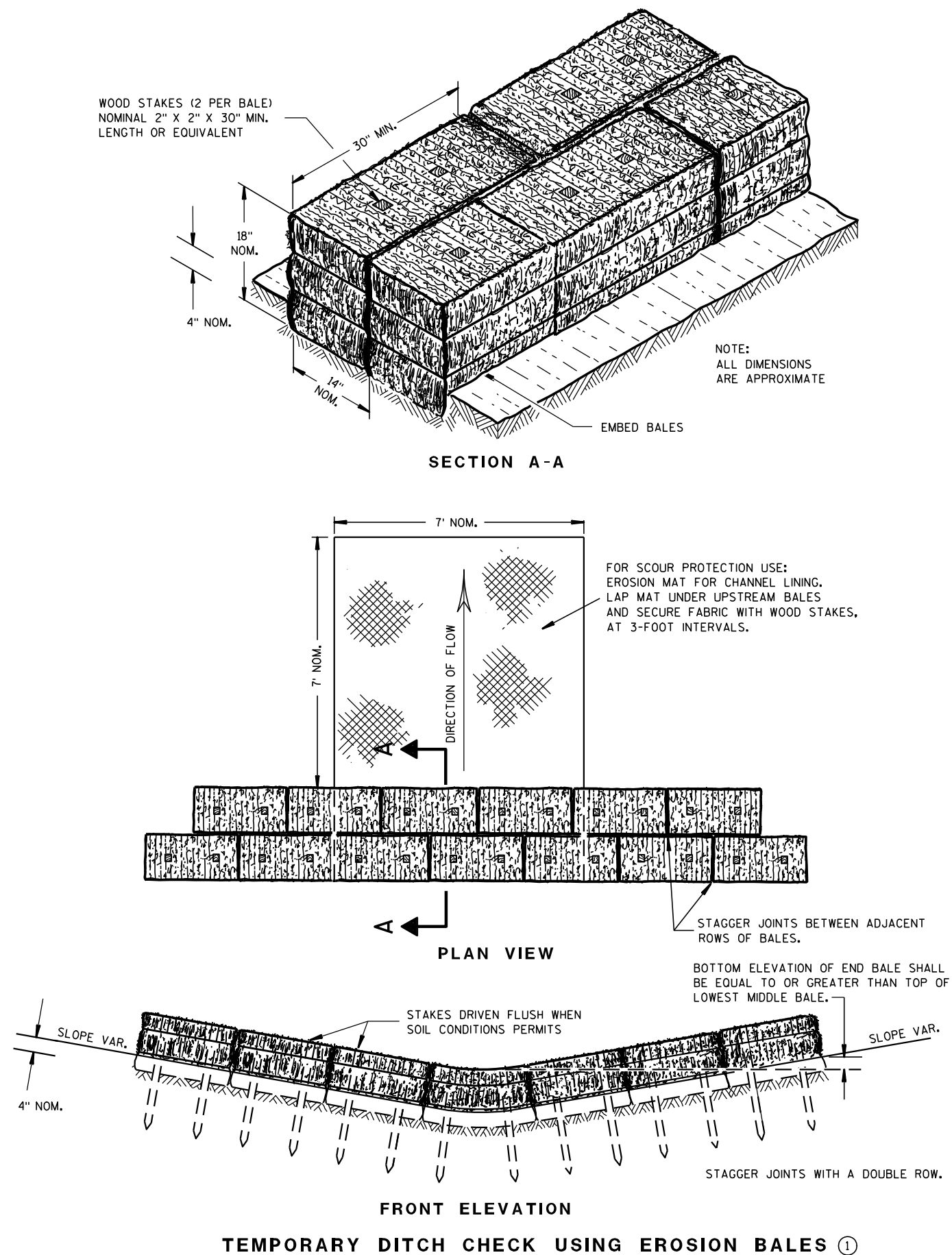
* PARTIAL PLAN VIEW
SURFACE DRAIN WITHOUT PIPE
TYPE "B"

- ## GENERAL NOTES
- DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.
- ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.
1. NO. 4 X 2'-0" TIE BARS SPACED AT 3'-0" CENTERS TO BE USED ONLY WHEN ADJACENT TO P.C. CONCRETE.
 2. NO. 4 X 2'-0" TIE BARS SPACED AT 12" CENTERS TO BE PLACED BY BRIDGE CONTRACTOR, OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
 3. PIPE UNDERDRAIN MAY BE ANY OF THE MATERIALS LISTED IN SECTION 612.2 OF THE STANDARD SPECIFICATIONS EXCEPT DRAIN TILE.
 4. MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
 5. LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.
 6. GEOTEXTILE FABRIC, TYPE 'R'
 7. HOT POURED SEALANT UNLESS OTHERWISE SPECIFIED.
 8. THIS DIMENSION MAY VARY DEPENDENT ON THE SPACING OF POSTS FOR THE STEEL PLATE BEAM GUARD, THE TYPICAL LOCATION FOR THE SURFACE DRAIN IS WHERE THE POST SPACING WIDENS TO 3'-1/2".

CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

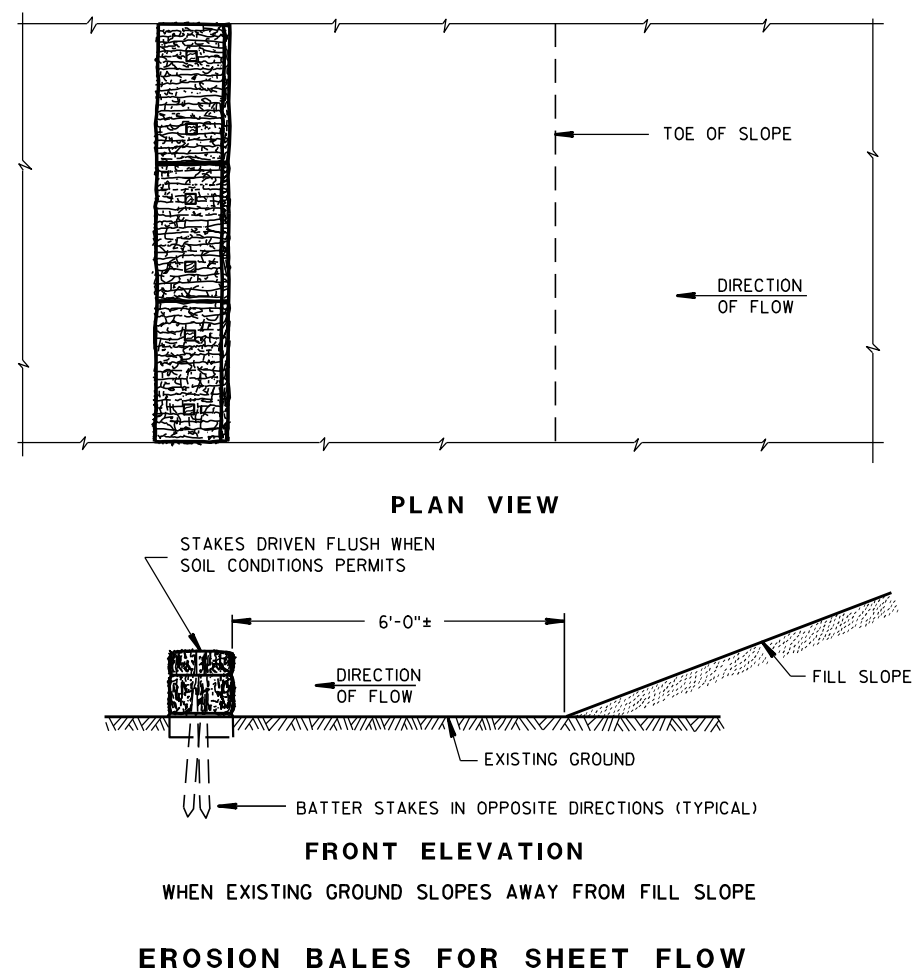
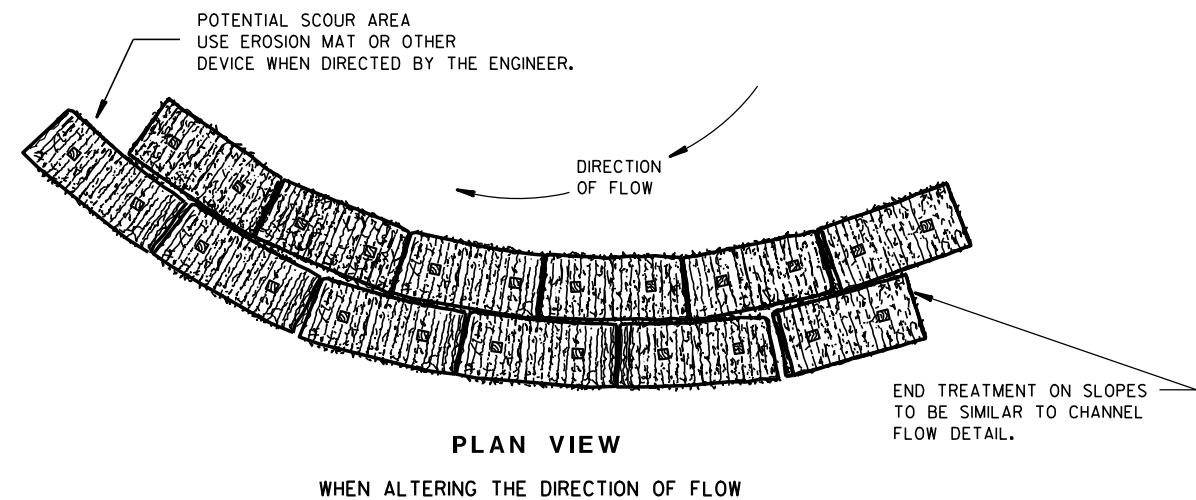
APPROVED
9/4/08 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



GENERAL NOTES

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

- 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



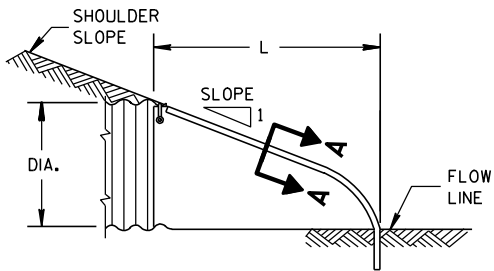
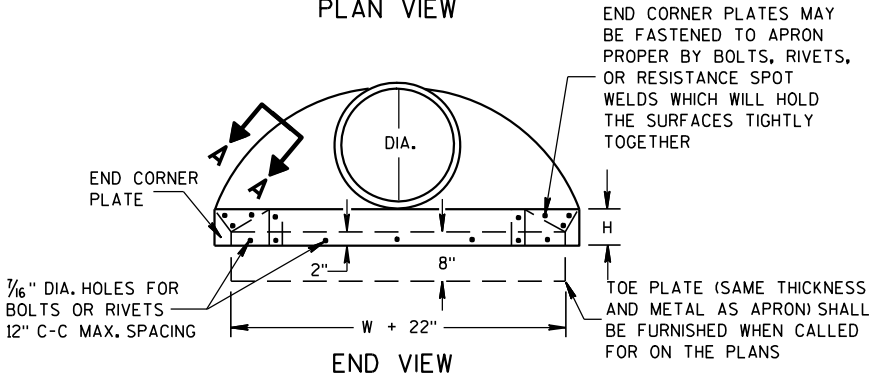
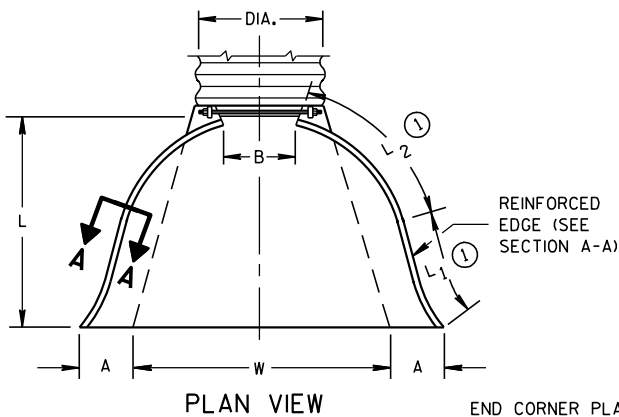
- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1½" X 1½" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



<div style="text-align: center;">SILT FENCE</div>	
<div style="text-align: center;">STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION</div>	
<div>APPROVED <u>4-29-05</u> DATE</div>	<div><u>/S/ Beth Cannestra</u> CHIEF ROADWAY DEVELOPMENT ENGINEER</div>

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.

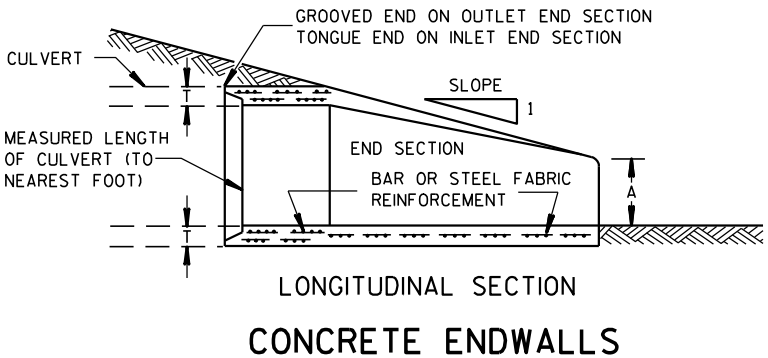
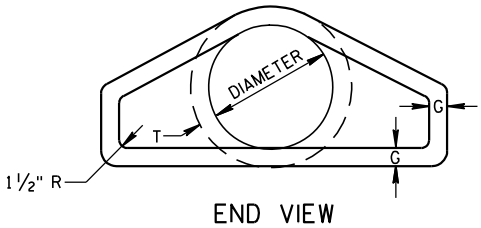
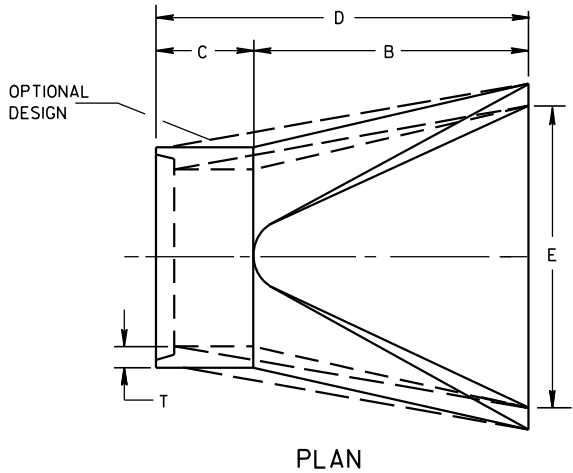
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



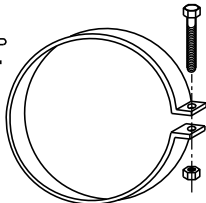
METAL ENDWALLS

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			

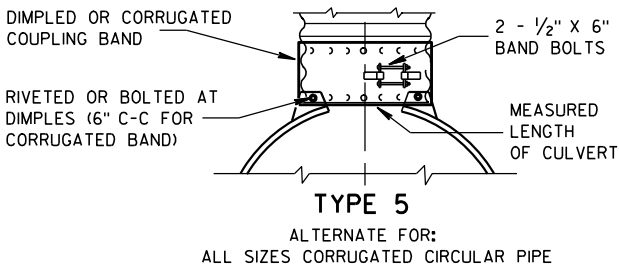
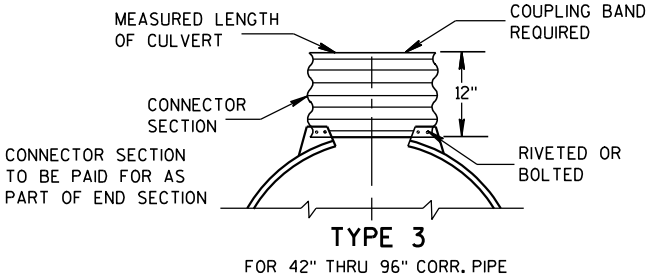
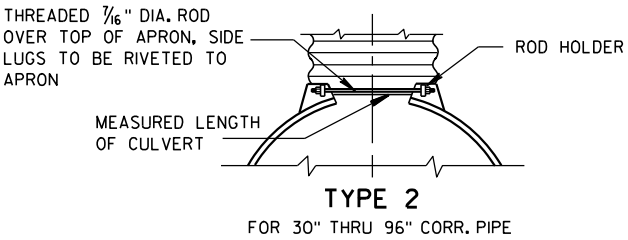
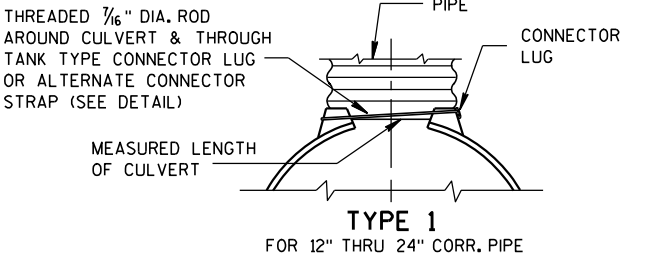
* MINIMUM
** MAXIMUM



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



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



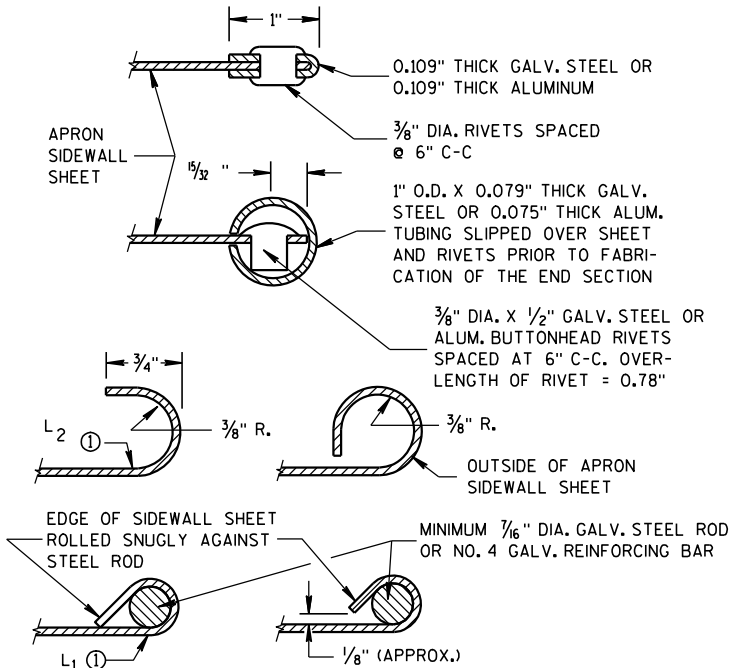
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



GENERAL NOTES

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

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

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

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

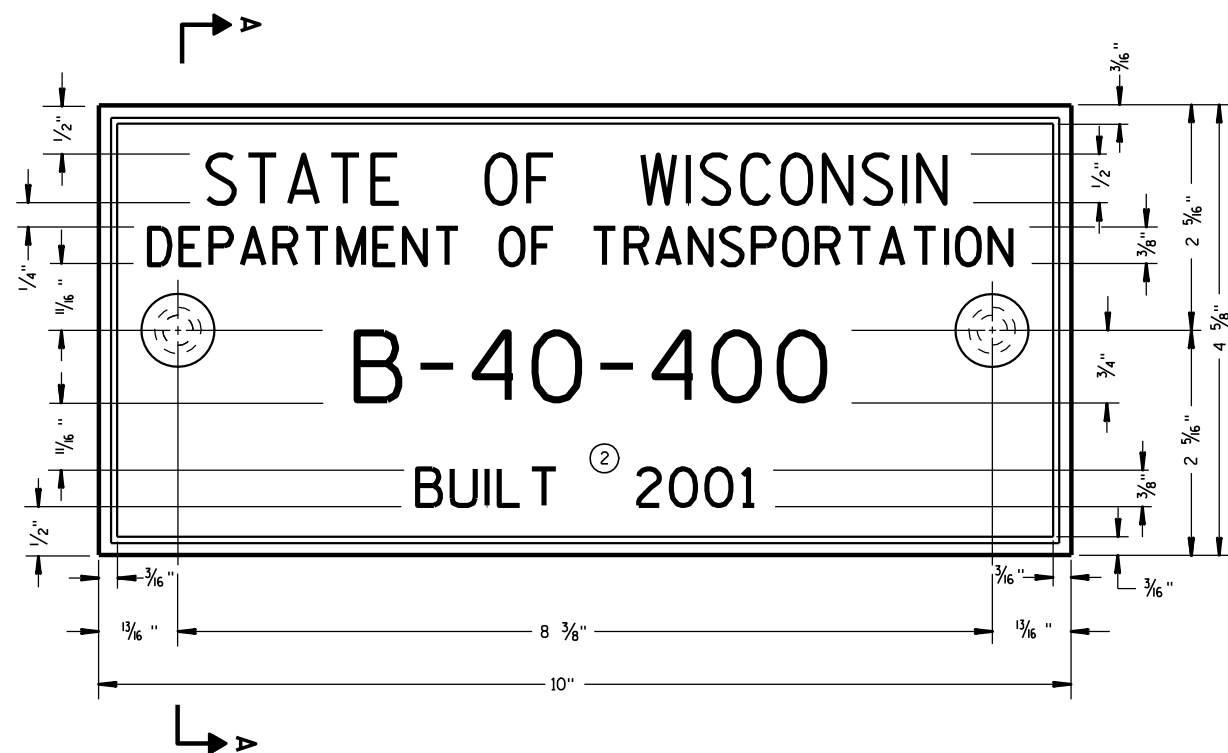
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

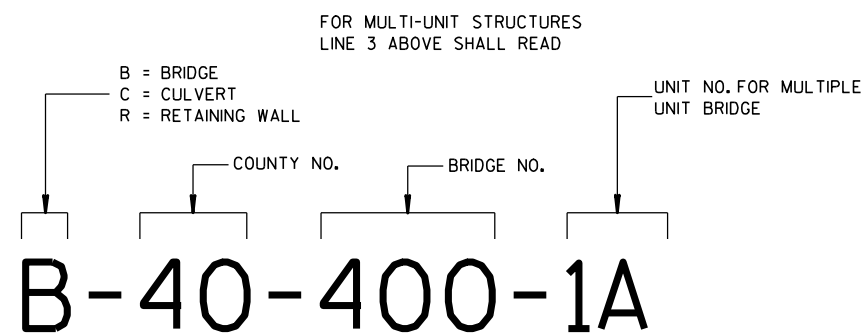
APRON ENDWALLS FOR
CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



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



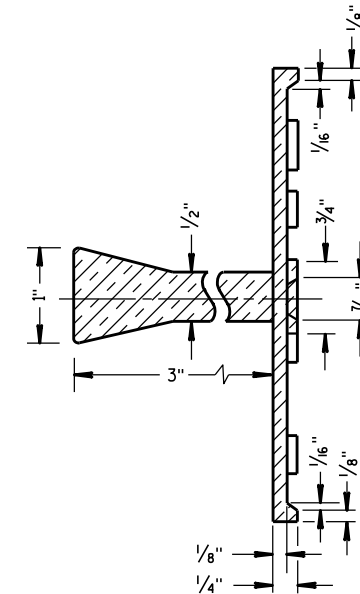
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

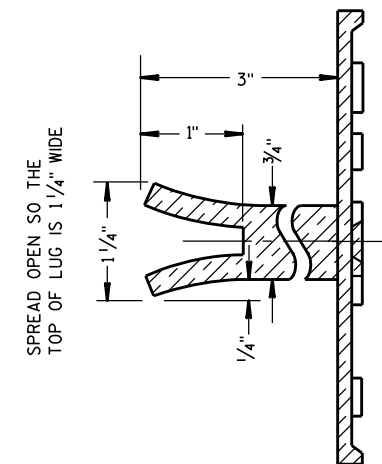
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

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

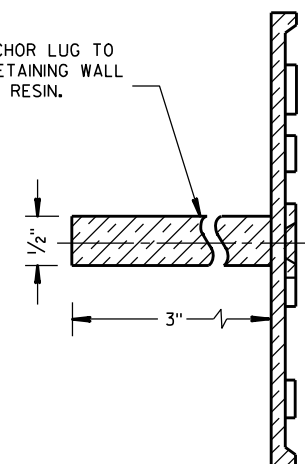


SECTION A-A



ALTERNATE LUG

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



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE
(STRUCTURES)**

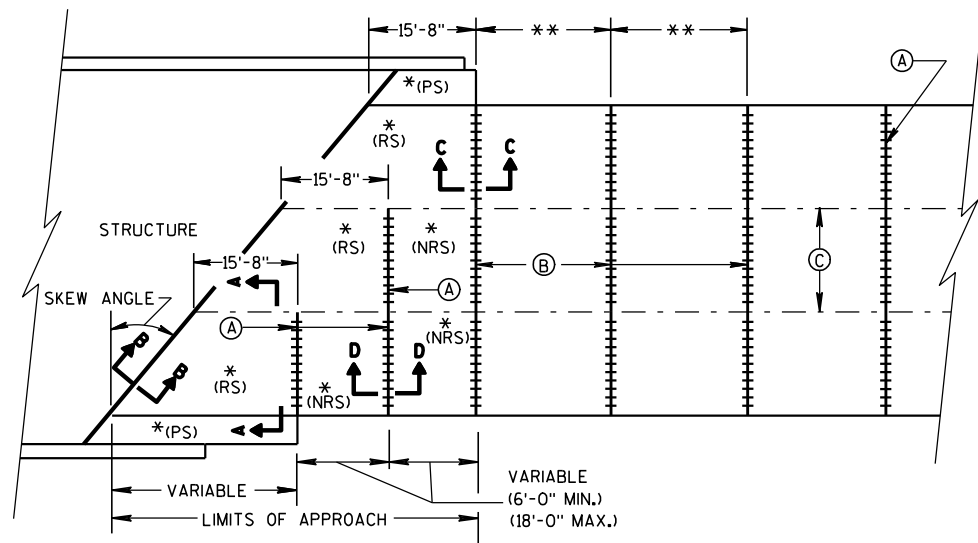
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

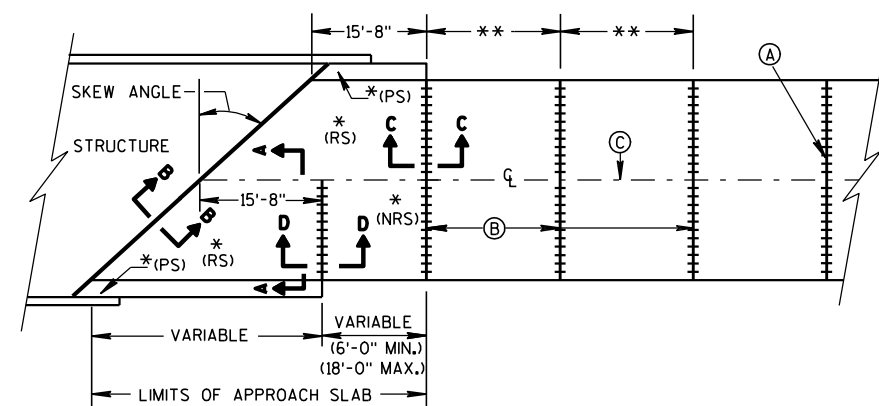
3/26/10
DATE

FHWA

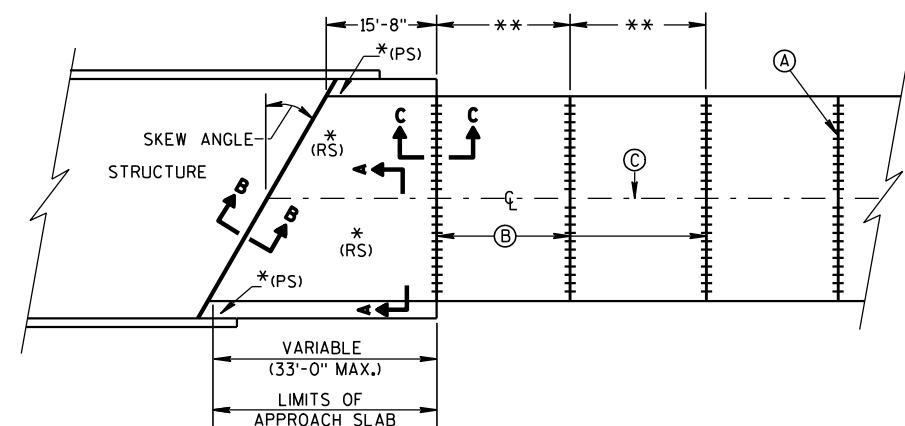
/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER



**SKewed APPROACH
(PAVEMENT MORE THAN 2 LANES)**

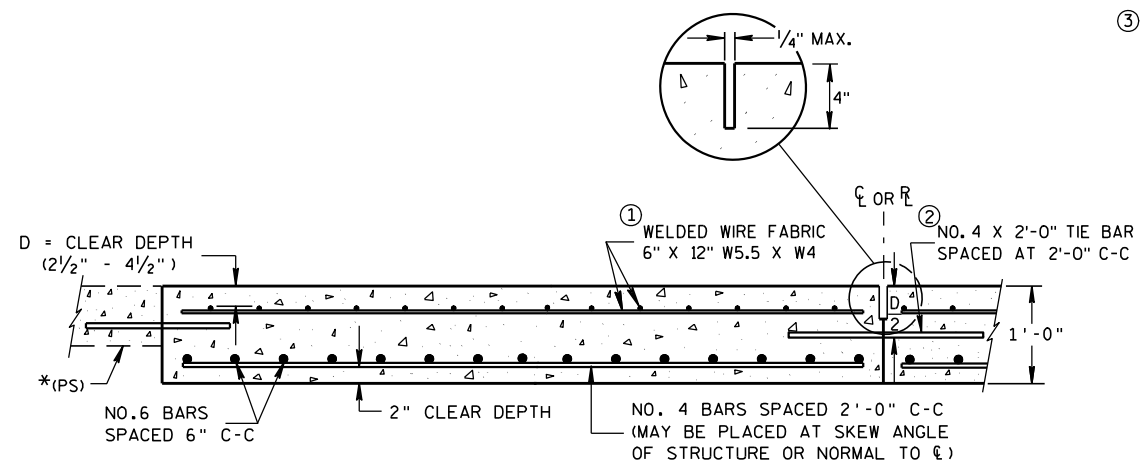


**SKews >30°
(PAVEMENT WIDTH ≤ 30')**

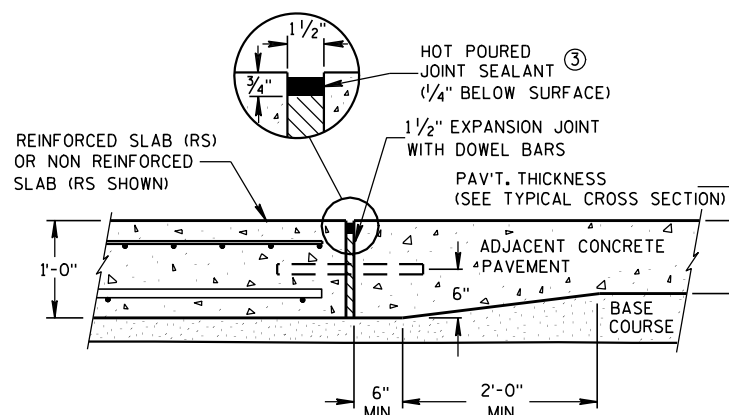


**SKews ≤ 30°
(PAVEMENT WIDTH ≤ 30')**
APPROACH SLAB AND ADJACENT PAVEMENT

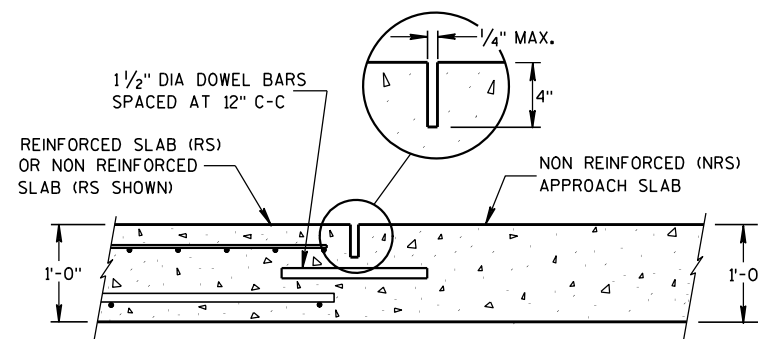
- * (RS) = REINFORCED CONCRETE SLAB
 * (PS) = PAVED CONCRETE SHOULDER: CONCRETE PAVEMENT, OR CONCRETE SURFACE DRAIN
 (SEE DETAILS ELSEWHERE IN THE PLAN)
 * (NRS) = NON-REINFORCED CONCRETE SLAB
 ** STANDARD TRANSVERSE JOINT SPACING
 (SEE SDD 13C4, SDD 13C11, & SDD 13C13)
 (A) STANDARD CONTRACTION JOINT NORMAL TO R_L OR R_C
 (B) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO R_L OR R_C
 (C) STANDARD LONGITUDINAL JOINT AND TIE BARS.



**SECTION A-A
REINFORCEMENT POSITIONING DETAIL**



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



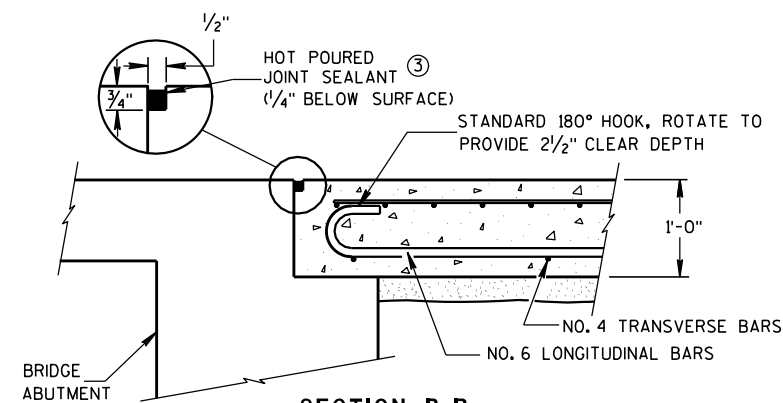
**SECTION D-D
CONTRACTION JOINT**

GENERAL NOTES

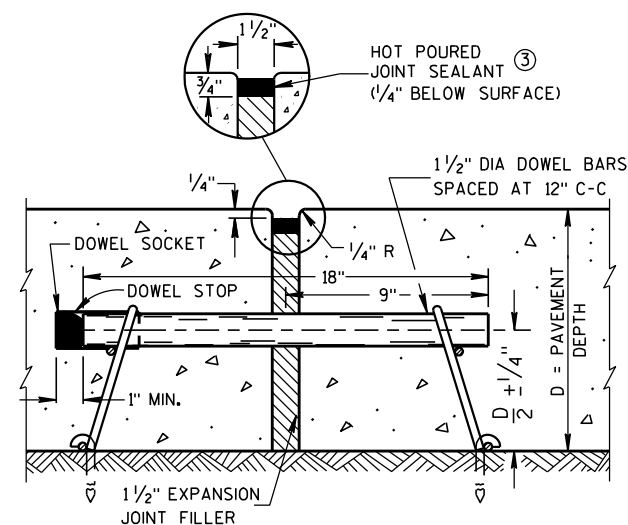
APPROACH SLABS ABUTTING AN HMA PAVEMENT OVER BASE COURSE DO NOT NEED TO BE DOWELED.

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

- THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.
- THE CONTRACTOR MAY OMIT TIE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.
- USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.



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



EXPANSION JOINT

CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

12/11/2009

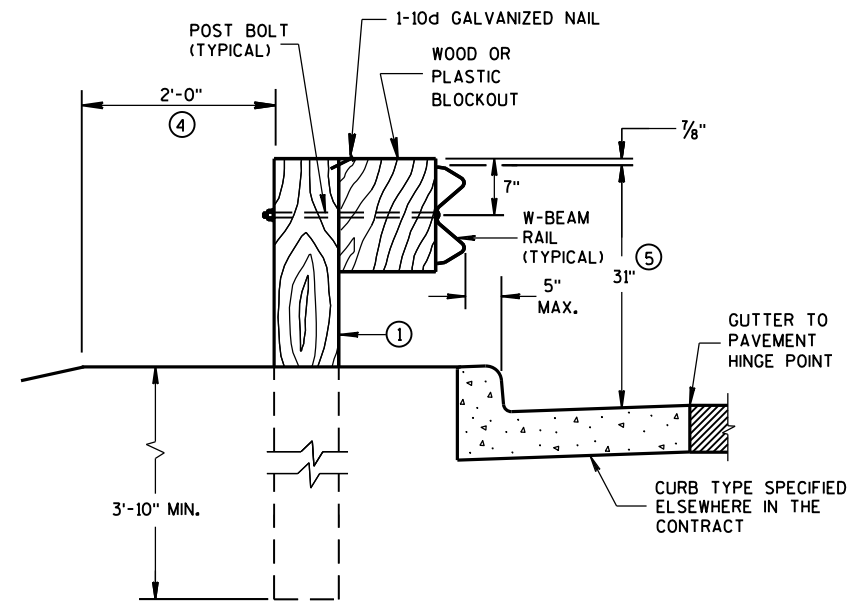
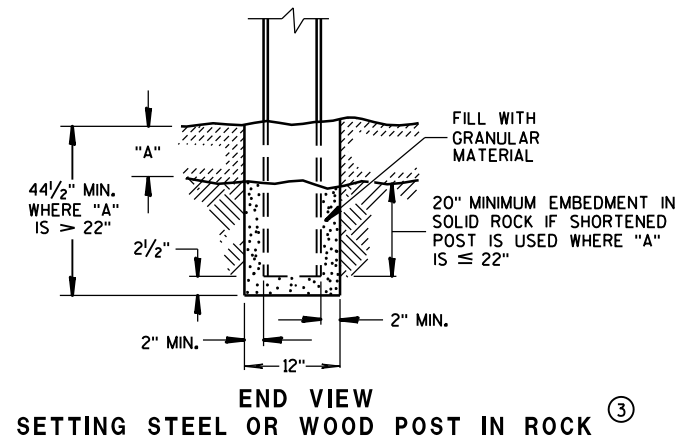
DATE

FHWA

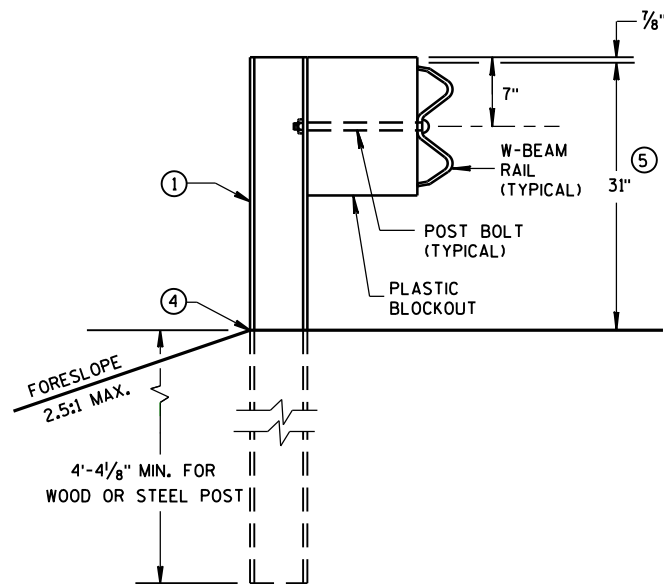
/S/ Deb Bischoff
PAVEMENT POLICY & DESIGN ENGINEER

S.D.D. 14 B 42-2a

- S.D.D. 14 B 42-2a**

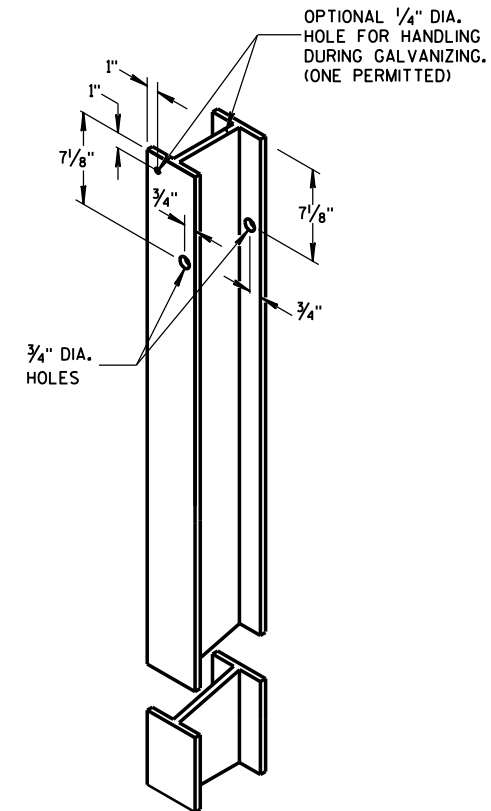


END VIEW
LOCATED ALONG A CURBED ROADWAY

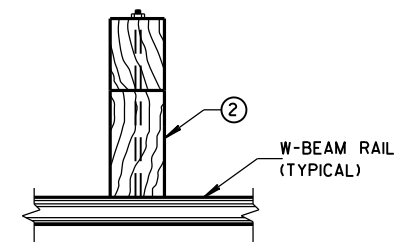


END VIEW

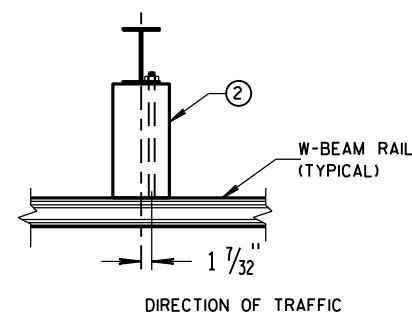
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



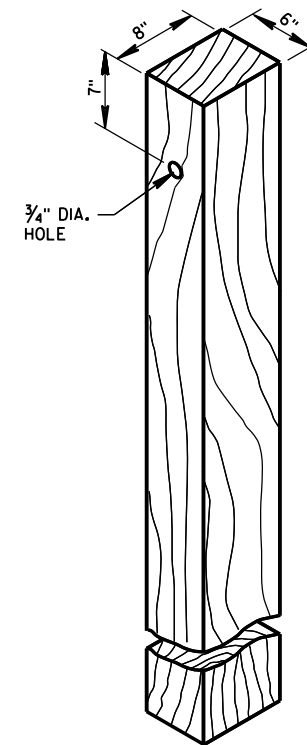
**STEEL POST &
HOLE PUNCHING DETAIL
(w6X9)^①**



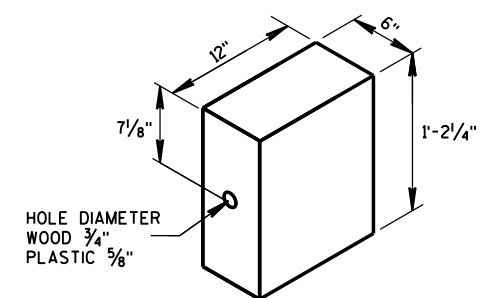
**PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM**



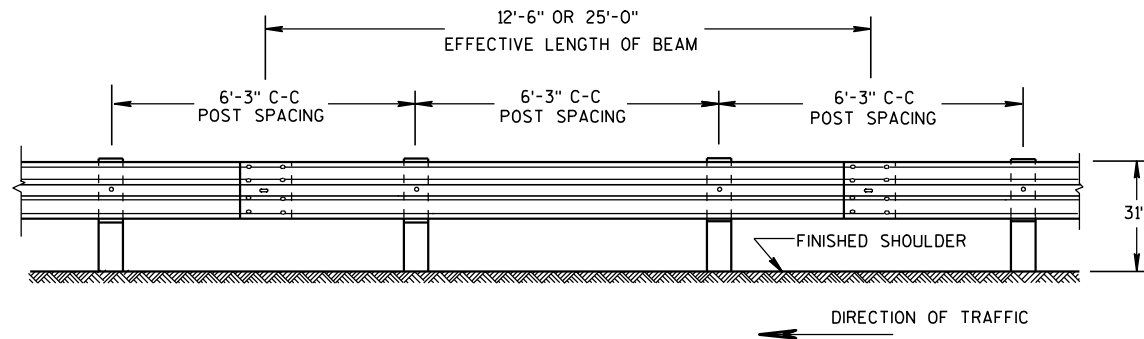
PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM



WOOD POST
(6" X 8") NOMINAL ^①

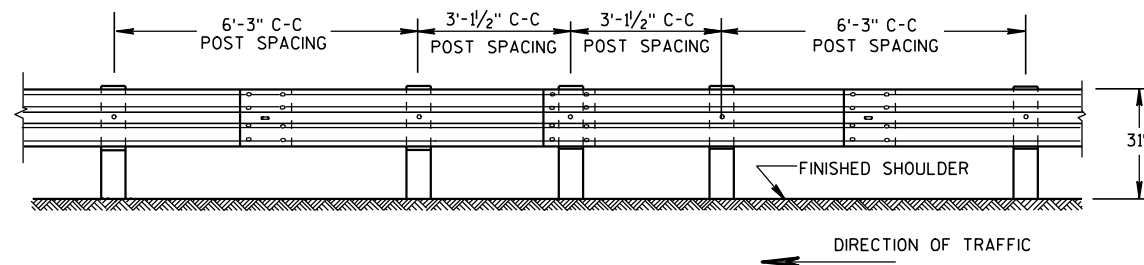


**WOOD OR
PLASTIC BLOCKOUT** ②



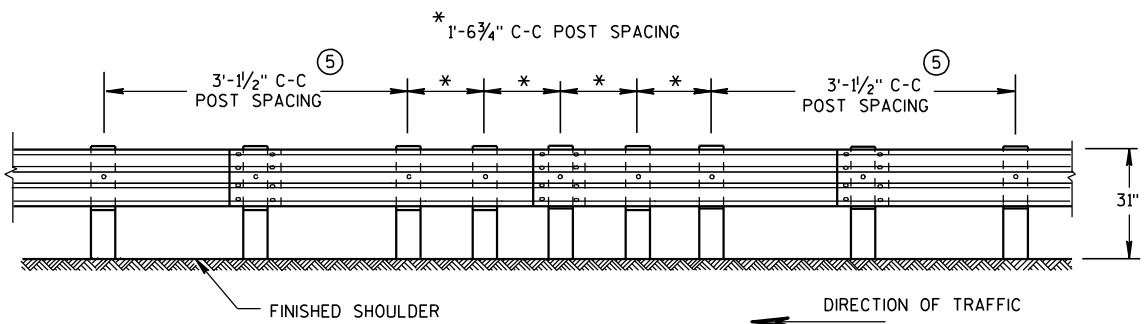
FRONT VIEW

POST SPACING STANDARD INSTALLATION



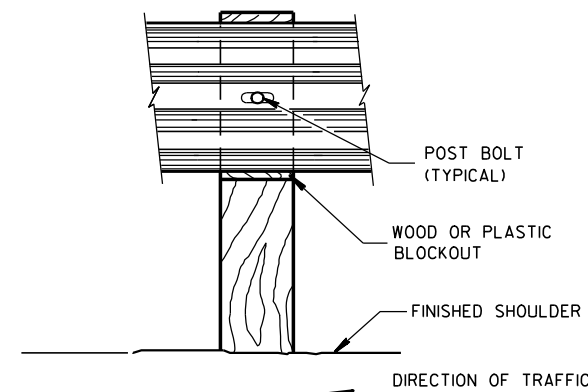
FRONT VIEW

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

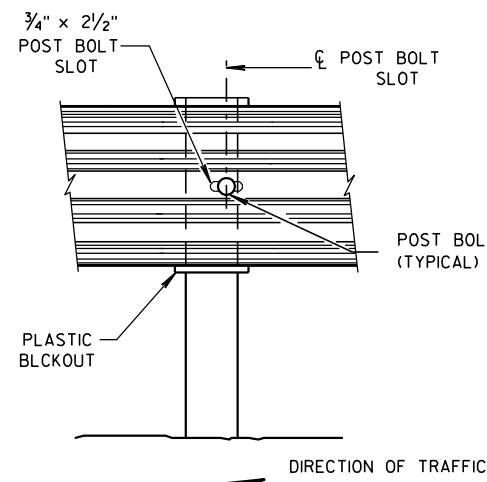


FRONT VIEW

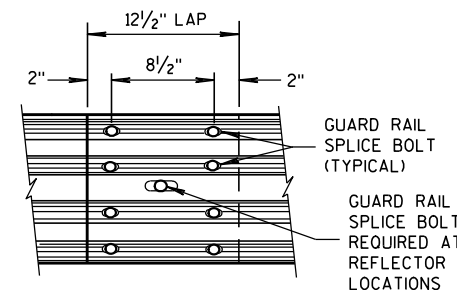
QUARTER POST SPACING (QS)



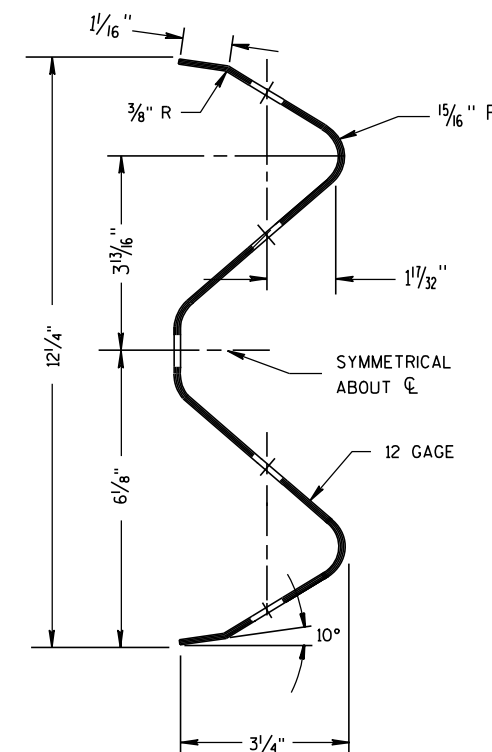
FRONT VIEW AT WOOD POST



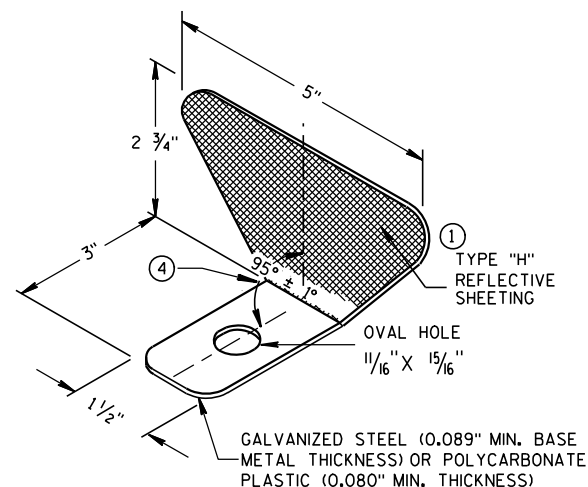
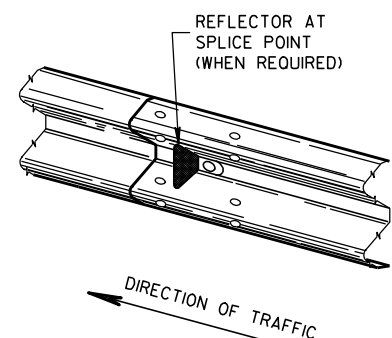
FRONT VIEW AT STEEL POST



FRONT VIEW
MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

GENERAL NOTES

- 1 PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.
- 2 DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
- 3 REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
- 4 PROVIDE AN ANGLE OF BEND OF $90^\circ \pm 1^\circ$ FOR TWO-SIDED REFLECTORS.
- 5 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND $\frac{5}{8}$ " DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

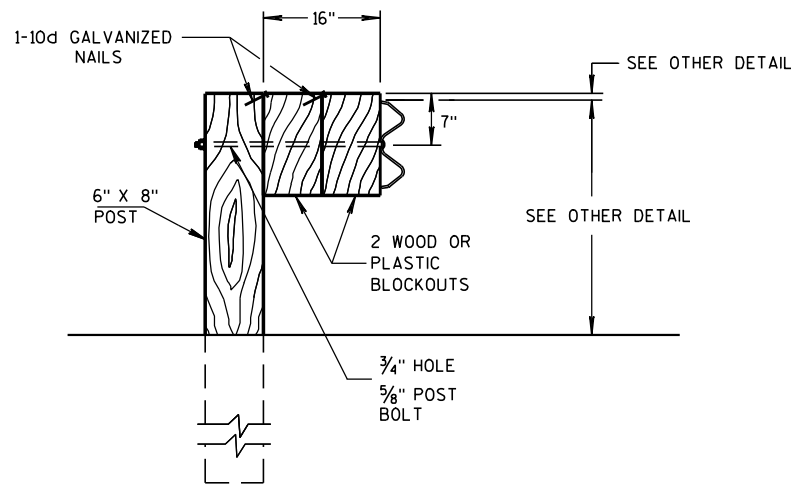
GUARD RAIL SPLICE BOLTS ARE A $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

REFLECTOR SPACING

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

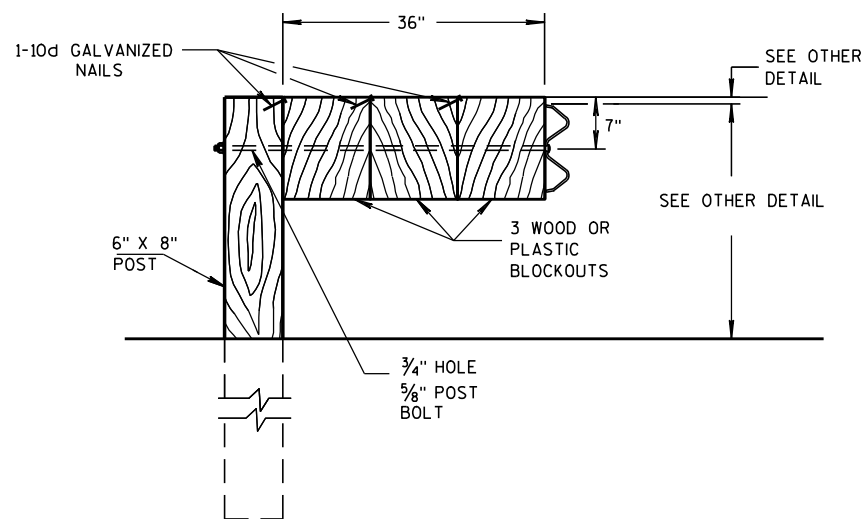
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR 16" BLOCKOUT DEPTH

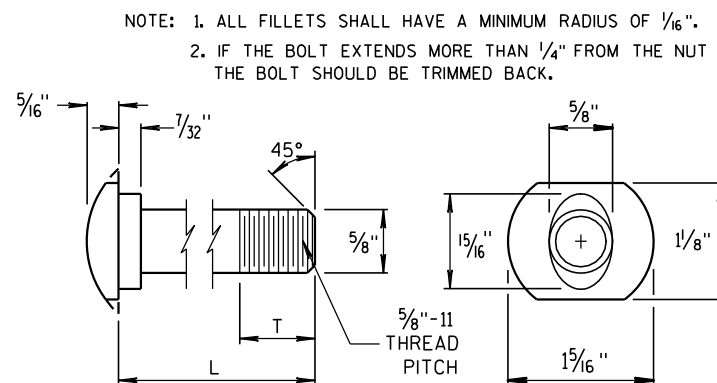
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



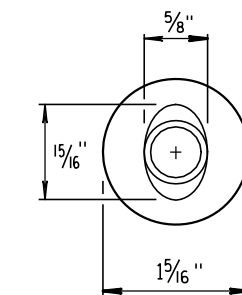
DETAIL FOR 36" BLOCKOUT DEPTH

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

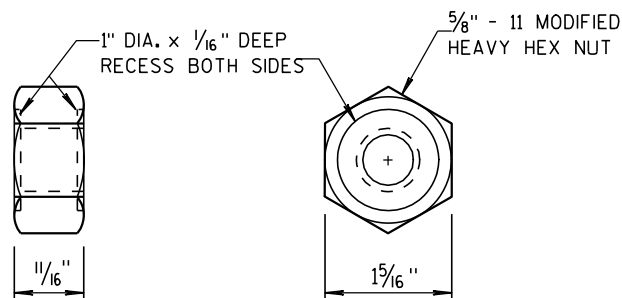
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.



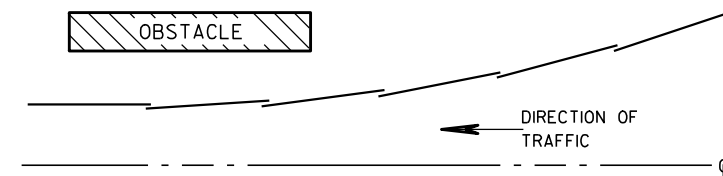
POST BOLT TABLE



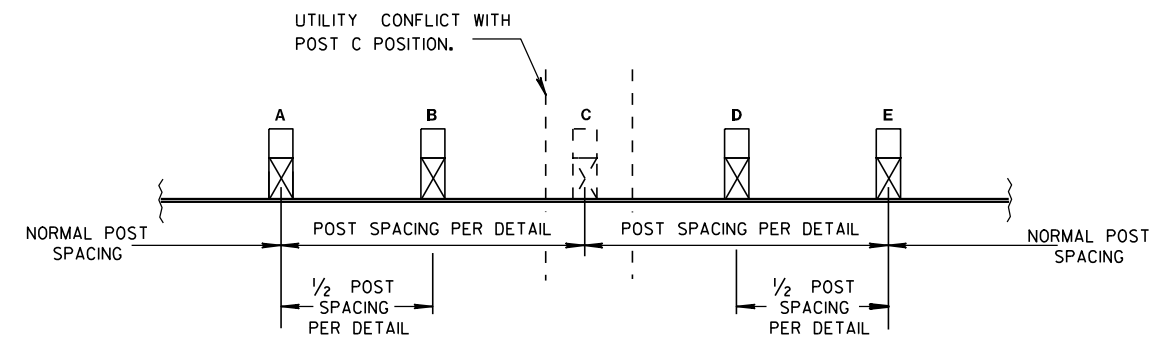
ALTERNATE BOLT HEAD



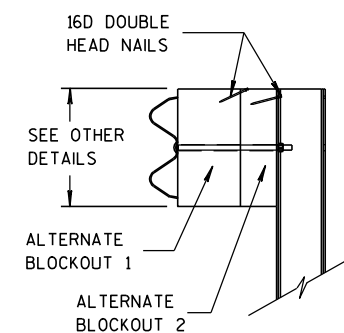
POST BOLT AND RECESS NUT



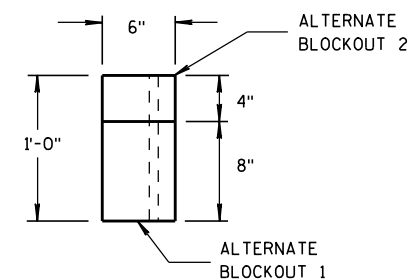
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/15/2011
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA

GENERAL NOTES

- (A) THE SLOPE IN THE AREA BOUNDED BY THE EXTENDED VEHICLE RUNOUT PATH (EVRP), THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.
- (C) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.
- (D) THE TOP OF THE STEEL TUBE ON POST 1 AND POST 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.
- (F) SHEETING IS ATTACHED TO 0.040 ALUMINUM SHEET AND ATTACHED TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER OF E.A.T.
- (G) 1/2" DIAMETER X 3" LONG LAG BOLT AND WASHER.
- (H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.
- (I) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

SEE SDD 14B42 FOR MORE INFORMATION.

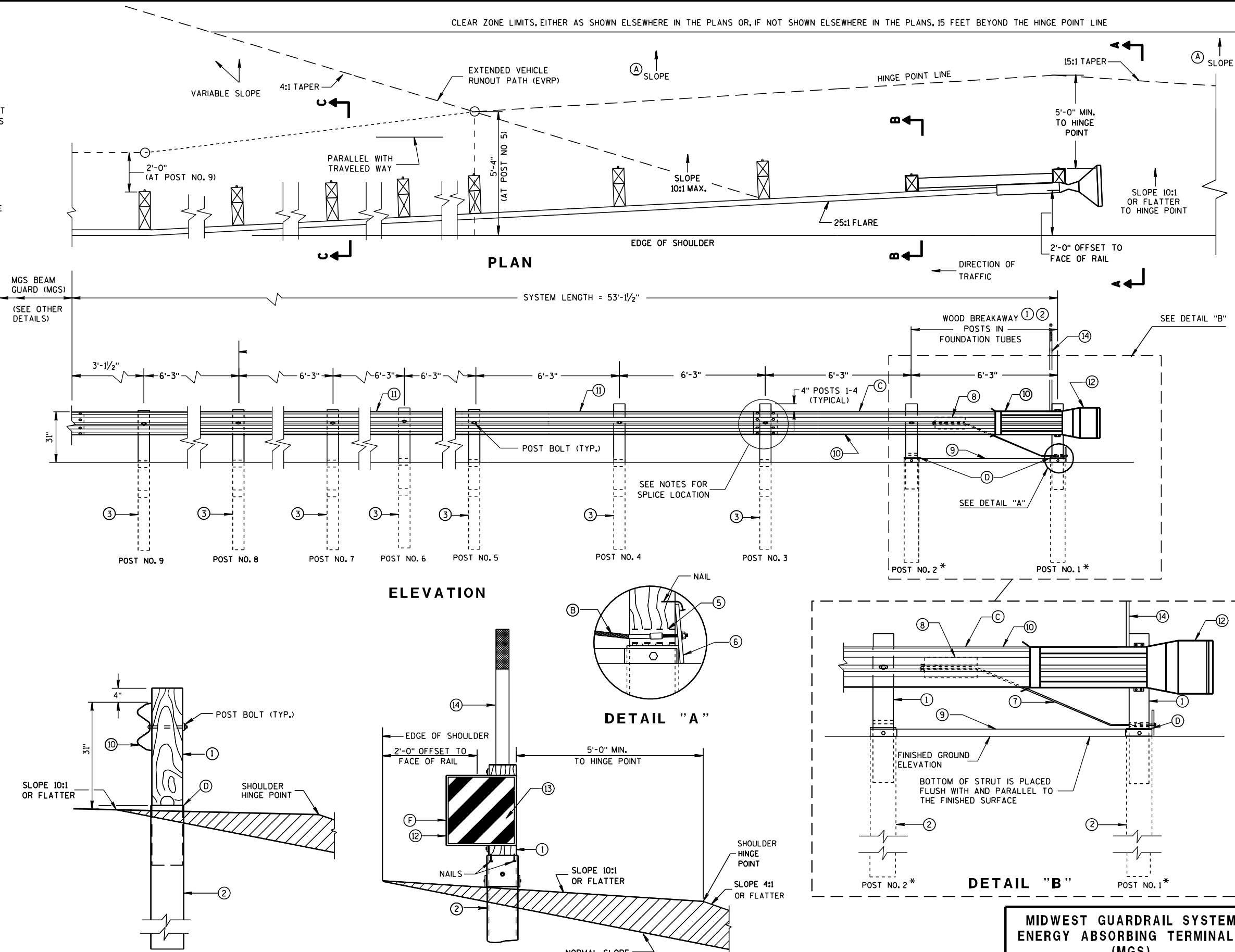
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

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

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

PATTERN AND COLORS ON REFLECTIVE SHEETING TYPE H ARE TO CONFORM TO OM3-L OR OM3-R OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

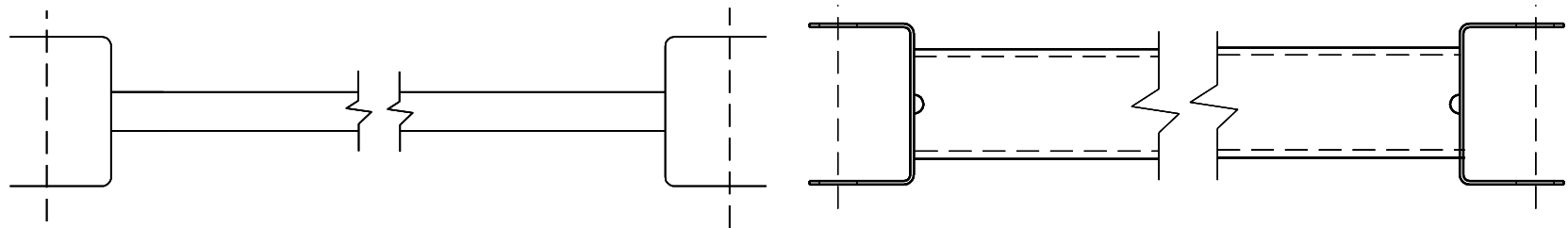
THE CENTER OF THE UPPER 3/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE ($\pm \frac{3}{4}$ ")



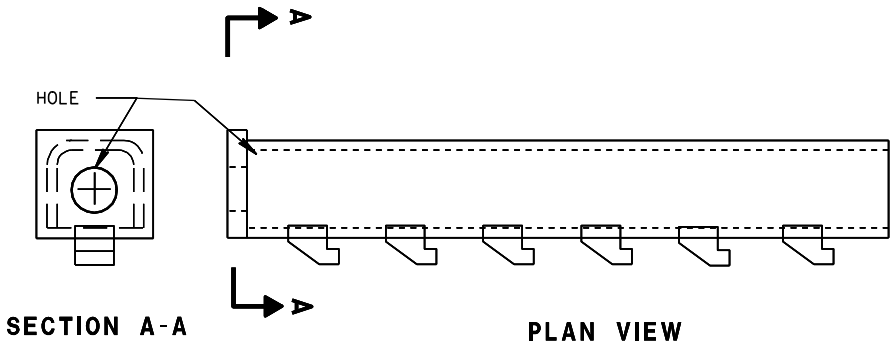
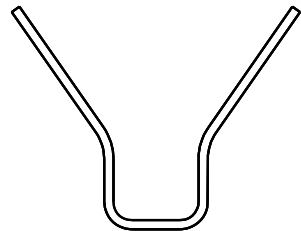
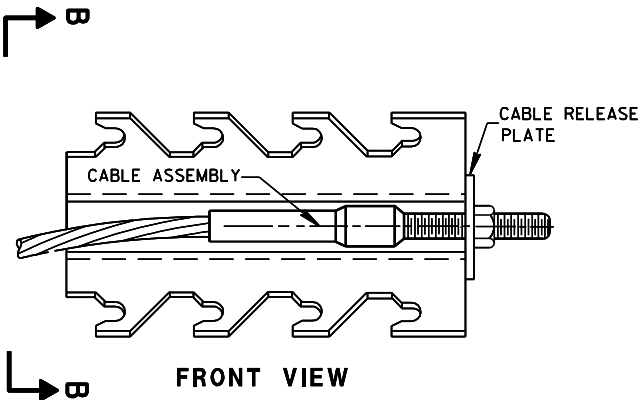
MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

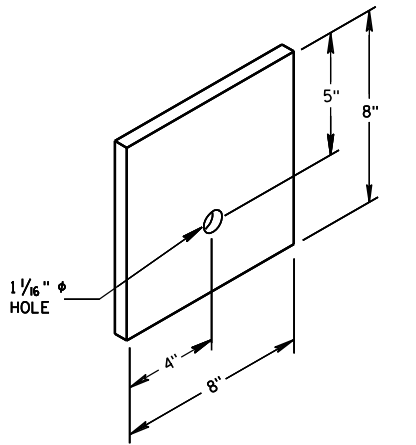
BILL OF MATERIALS	
PART NO.	DESCRIPTION
MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.	
①	WOOD BREAKAWAY POST
②	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR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



⑨ ⑨
GENERIC GROUND STRUT



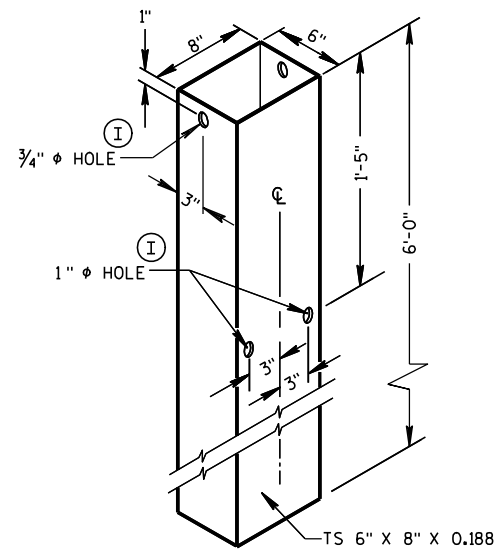
⑧ ⑧
GENERIC ANCHOR CABLE BOX



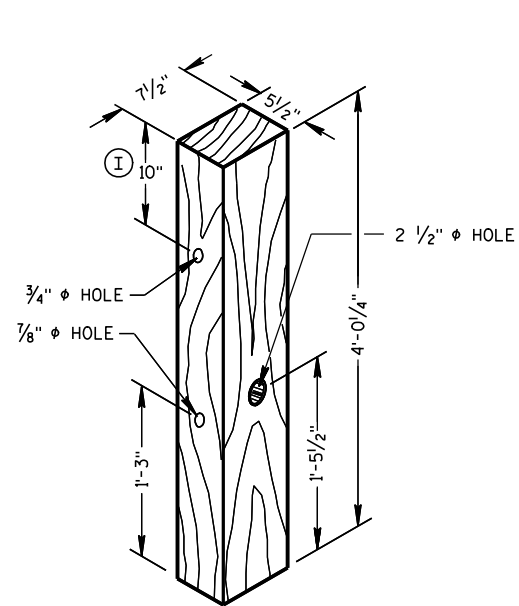
⑥
BEARING PLATE

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

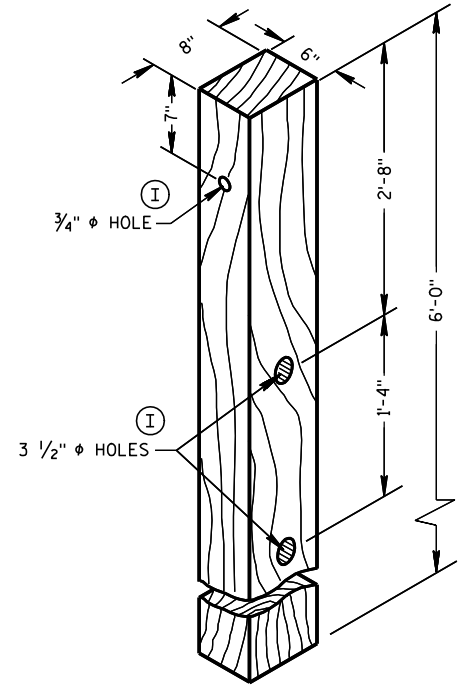
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



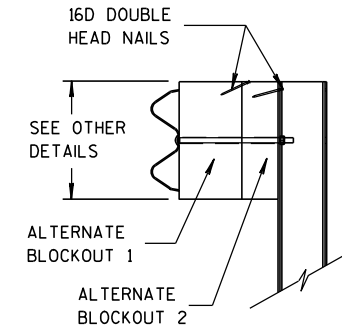
FOUNDATION TUBE ②



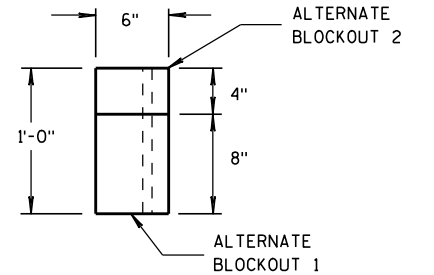
WOOD BREAKAWAY POST ①



WOOD CRT POST ③

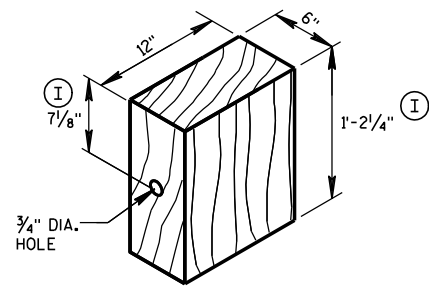


SIDE VIEW



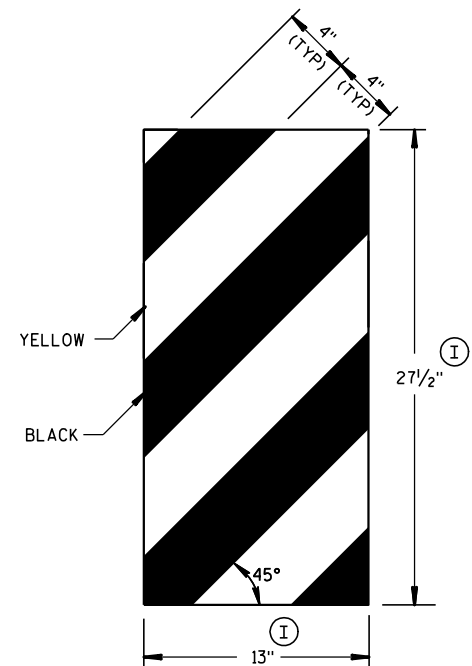
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

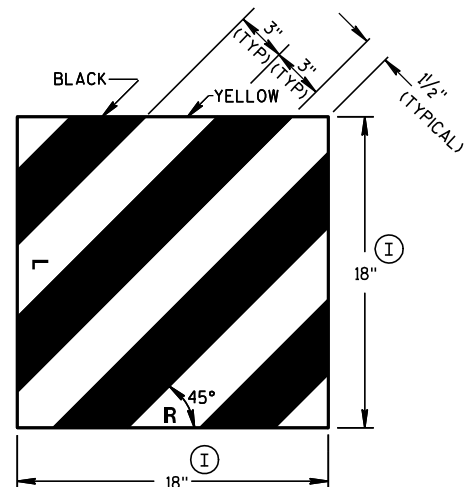


WOOD BLOCKOUT ④

YELLOW REFLECTIVE TAPE
3" X 9" TYPE H
REFLECTIVE SHEETING



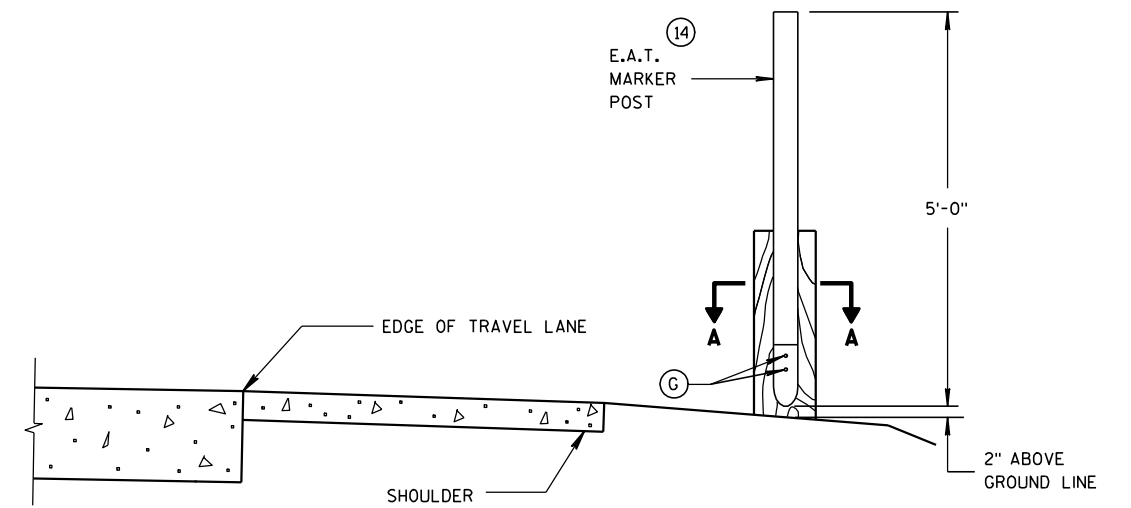
GENERIC REFLECTIVE SHEETING ⑬ ④



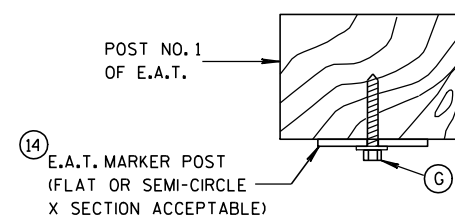
FRONT VIEW

SIDE VIEW

E.A.T. MARKER POST ⑭



TYPICAL INSTALLATION OF E.A.T.
MARKER POST BACKSIDE OF POST NO. 1
(E.A.T. AND RAIL REMOVED FOR CLARITY)

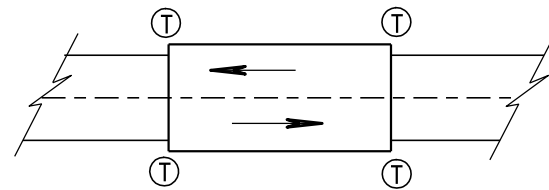


SECTION A-A

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

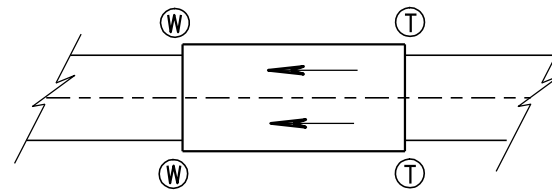
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/2011 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



TWO WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION



ONE WAY TRAFFIC

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

GENERAL NOTES

BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3".

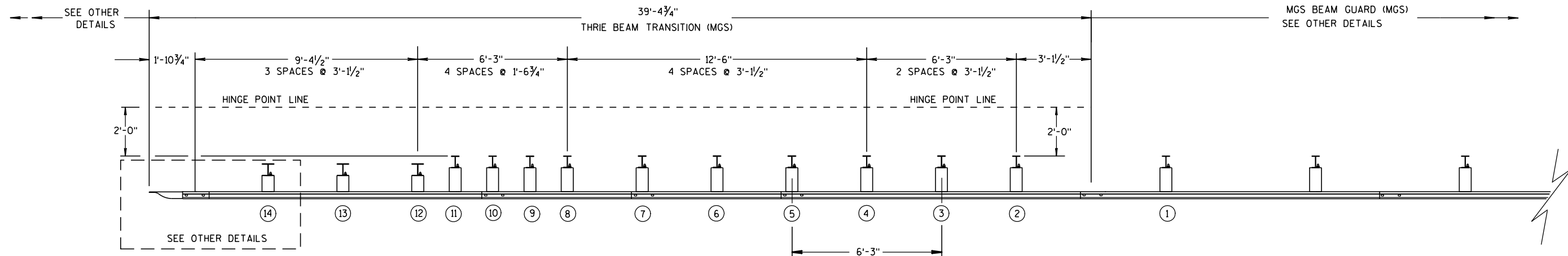
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

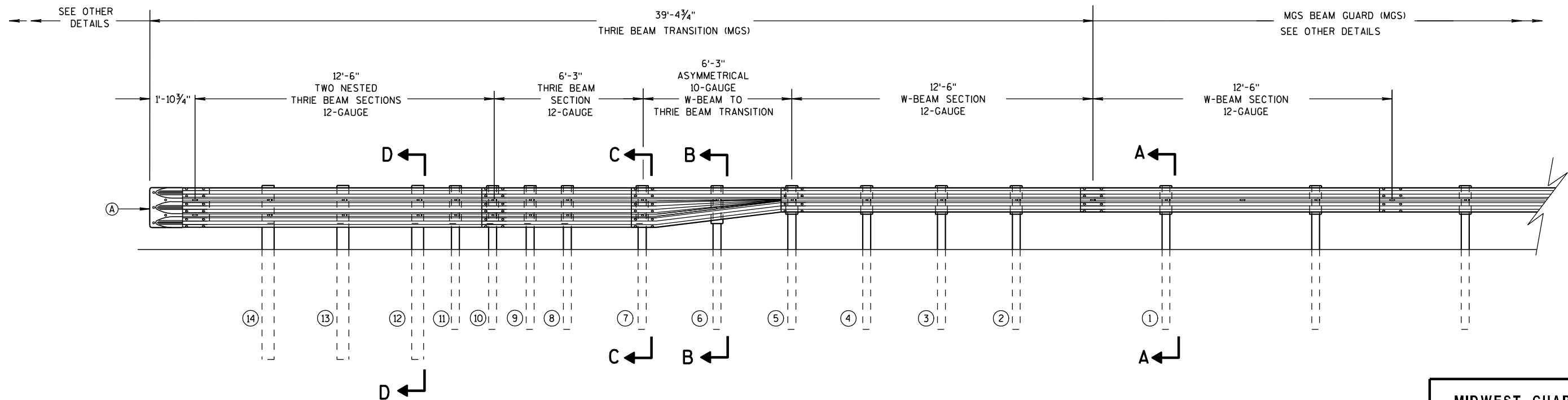
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

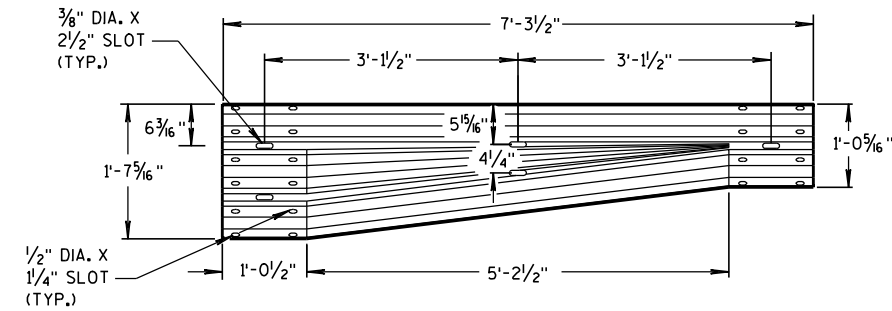
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

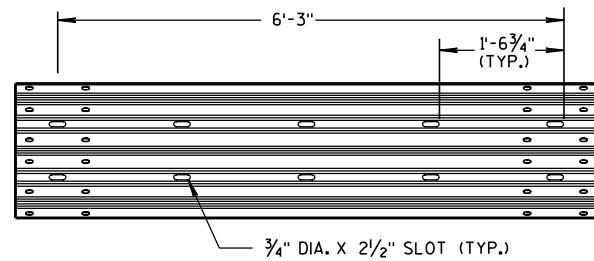
S.D.D. 14 B 45-3b



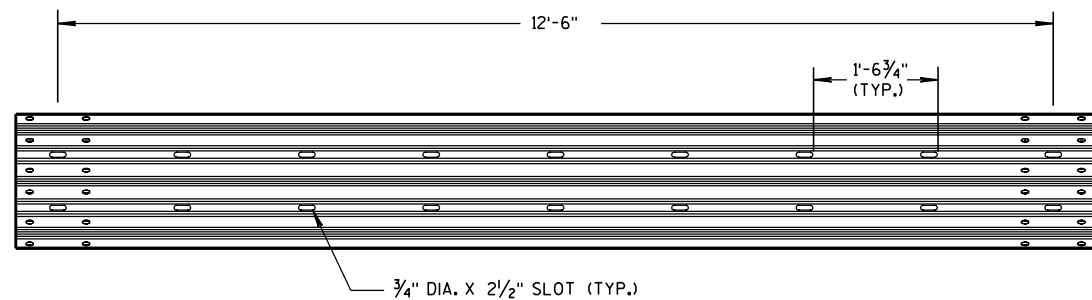
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



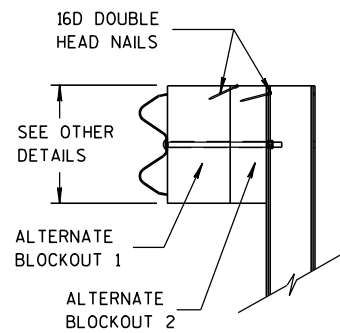
W-BEAM TO THRIE BEAM TRANSITION SECTION



6'-3" THRIE BEAM SECTION

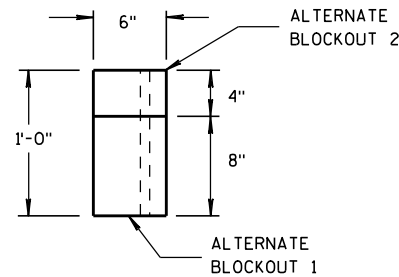


12'-6" THRIE BEAM SECTION

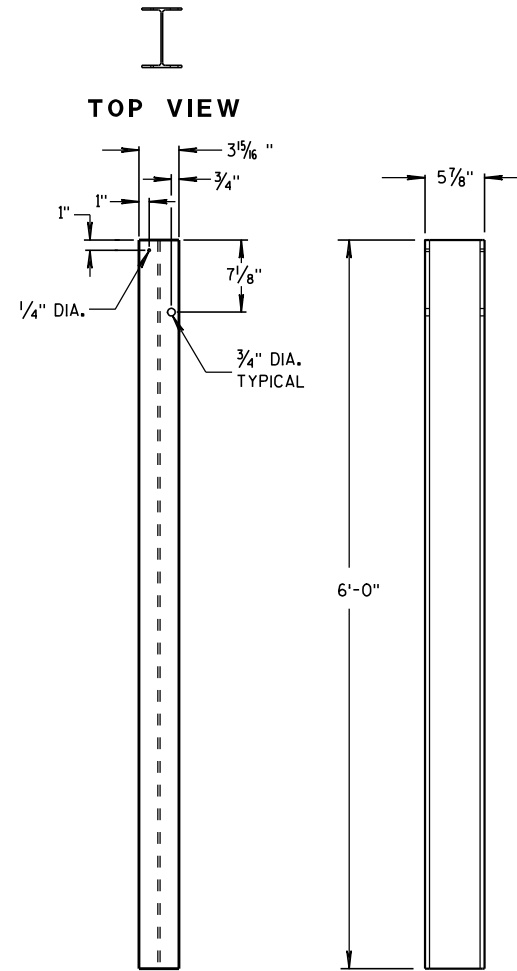


SIDE VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL



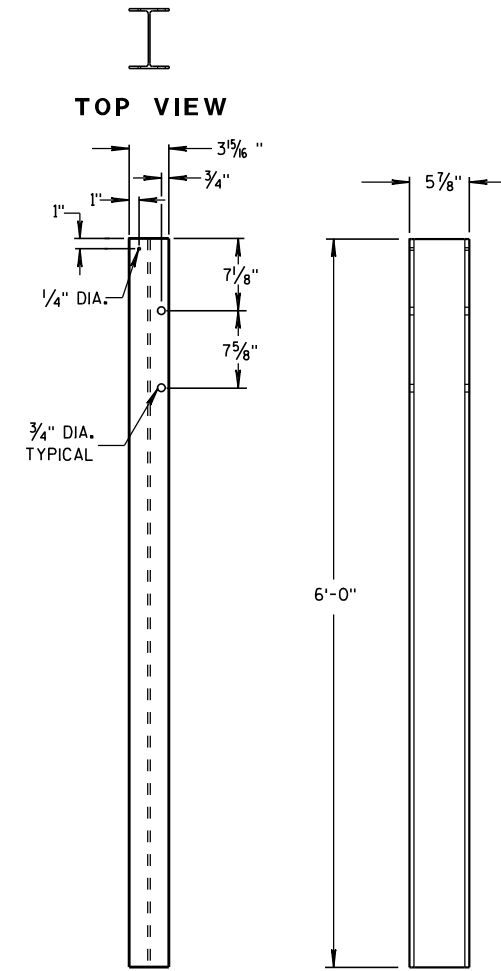
TOP VIEW



FRONT VIEW

SIDE VIEW

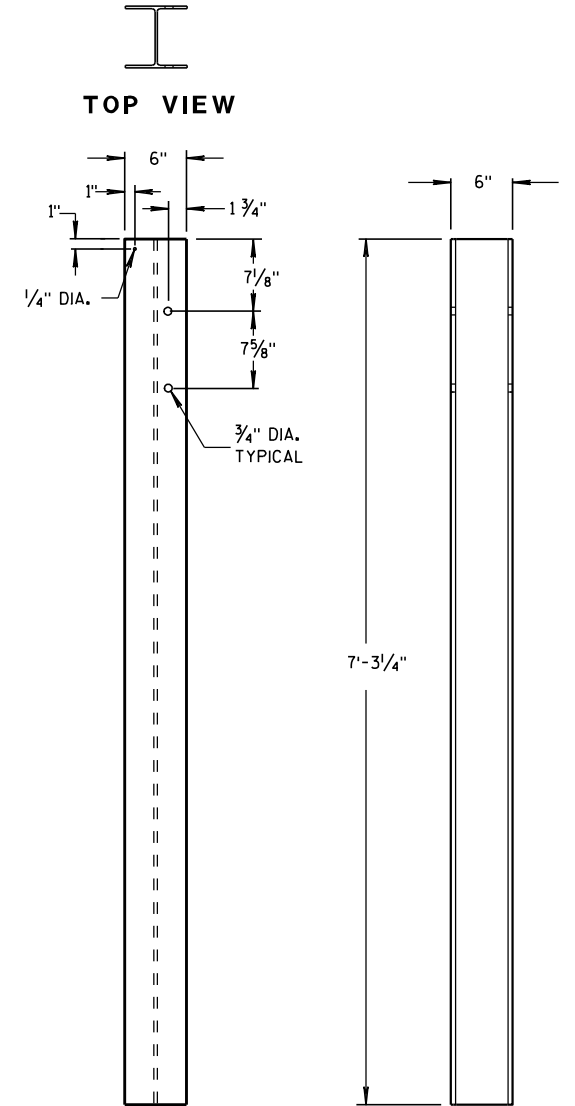
STEEL POSTS 1-5



FRONT VIEW

SIDE VIEW

STEEL POSTS 6-11



FRONT VIEW

SIDE VIEW

STEEL POSTS 12-14

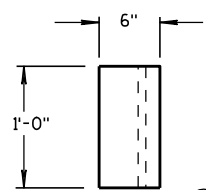
STEEL POST SIZES

POST NUMBER	SECTION TYPE	LENGTH
①	W6x9	72"
②	W6x9	72"
③	W6x9	72"
④	W6x9	72"
⑤	W6x9	72"
⑥	W6x9	72"
⑦	W6x9	72"
⑧	W6x9	72"
⑨	W6x9	72"
⑩	W6x9	72"
⑪	W6x9	72"
⑫	W6x15	87 7/8"
⑬	W6x15	87 7/8"
⑭	W6x15	87 7/8"

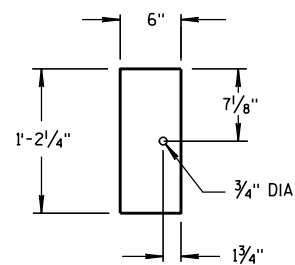
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

① WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

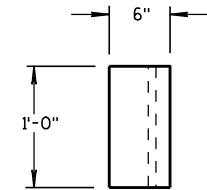


TOP VIEW

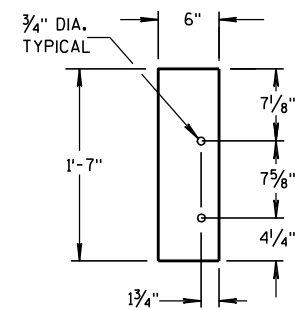


FRONT VIEW

BLOCKOUT
POSTS 1-5

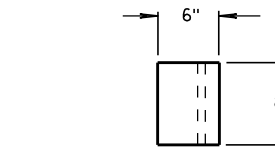


TOP VIEW

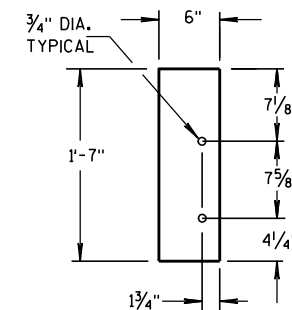


FRONT VIEW

BLOCKOUT
POSTS 6-11

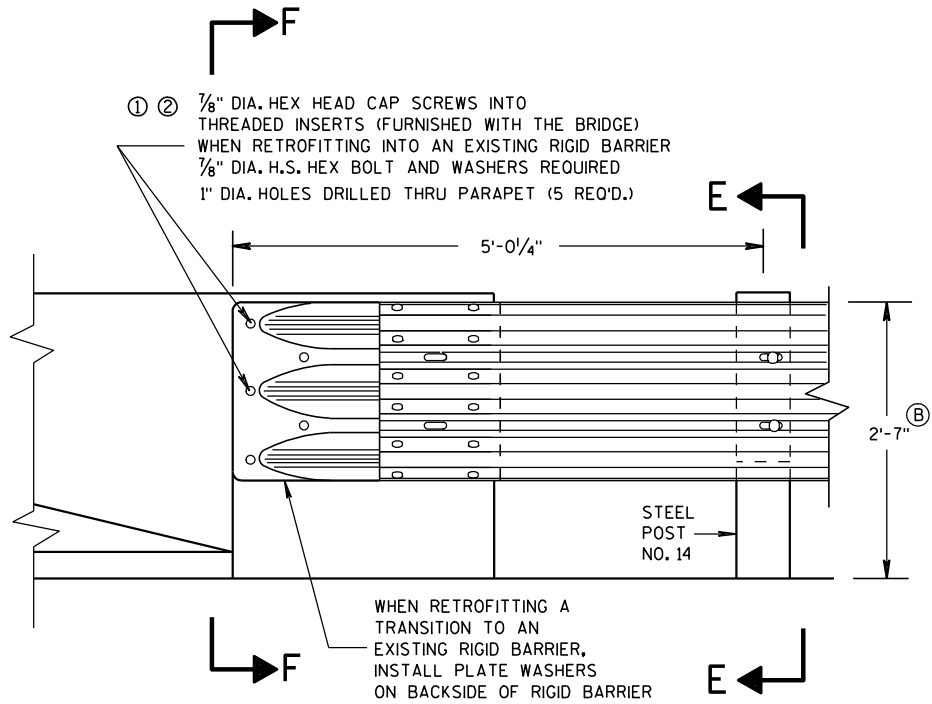


TOP VIEW



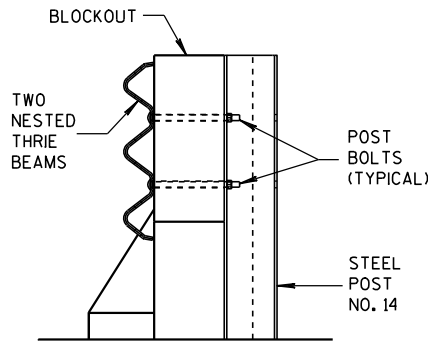
FRONT VIEW

BLOCKOUT
POSTS 12-14



FRONT VIEW

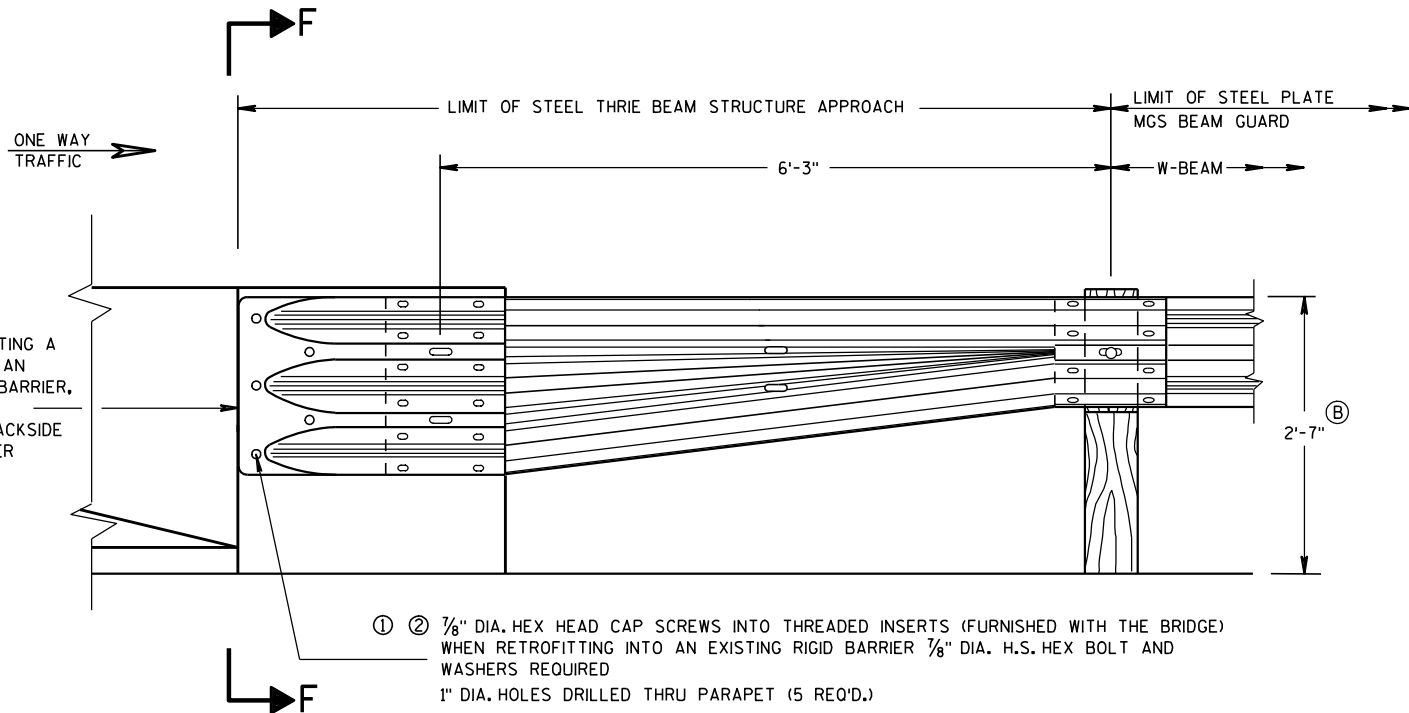
THRIE BEAM CONNECTION TO BRIDGE
PARAPET WITH SQUARE ENDS



SECTION E-E

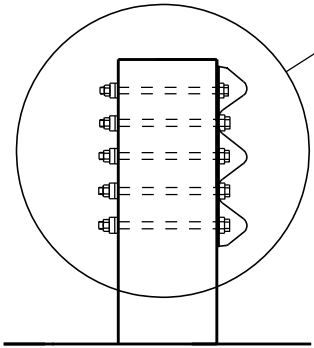
GENERAL NOTES

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

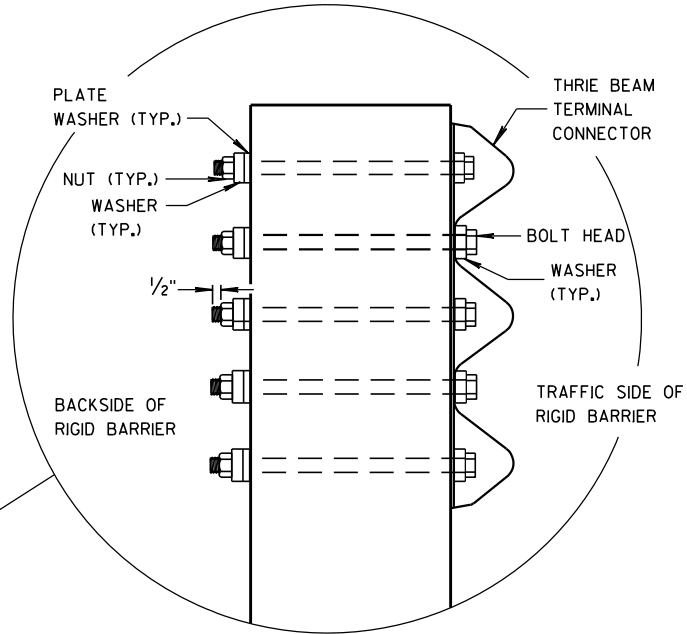


FRONT VIEW

W BEAM TRANSITION AND CONNECTION TO
BRIDGE PARAPETS WITH SQUARE ENDS
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)



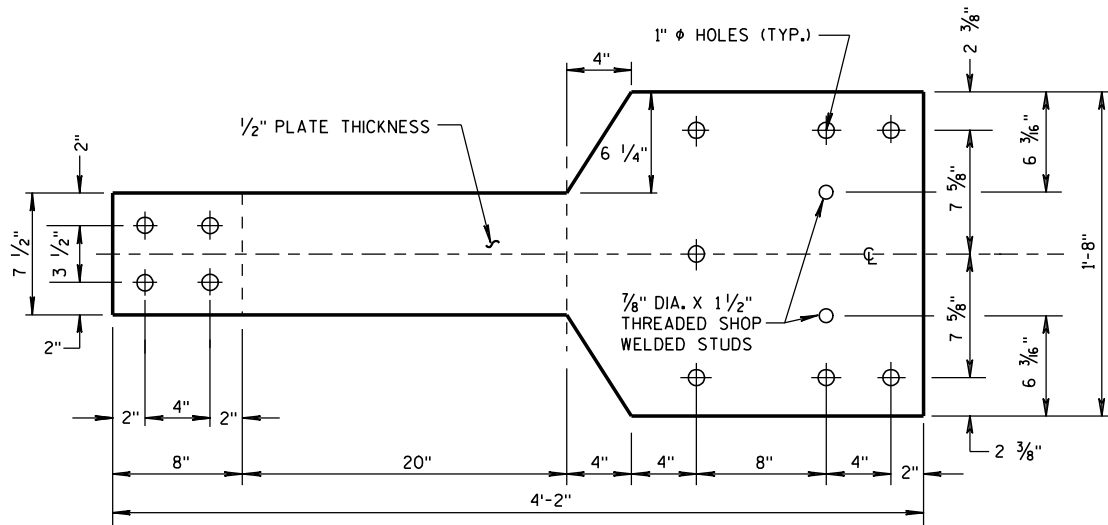
SECTION F-F



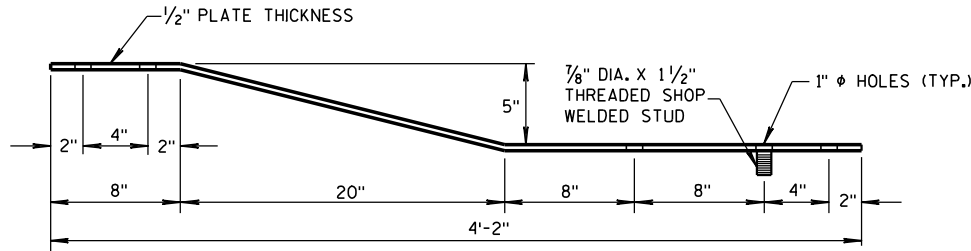
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 8/31/2012 DATE	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	

GENERAL NOTES

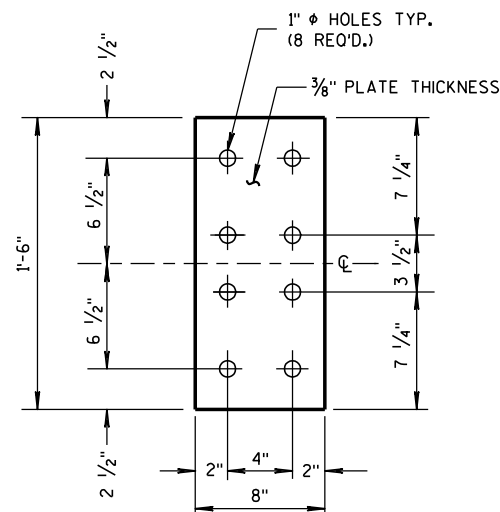
(B) TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.



FRONT VIEW

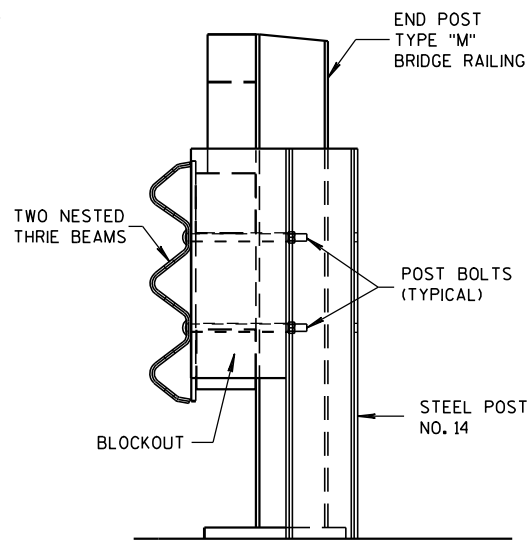


PLAN VIEW
BACK-UP PLATE DETAIL, TYPE "M"

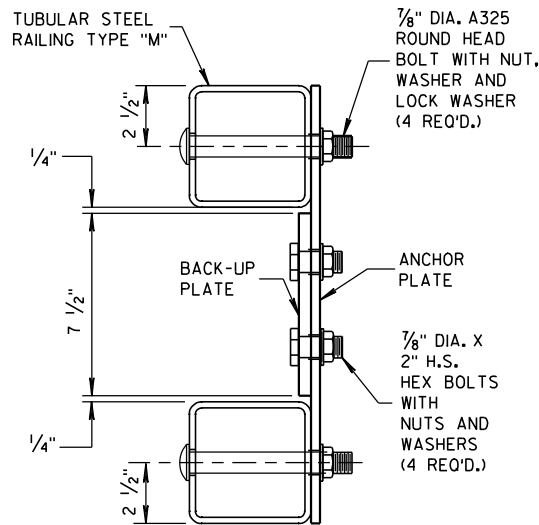


FRONT VIEW

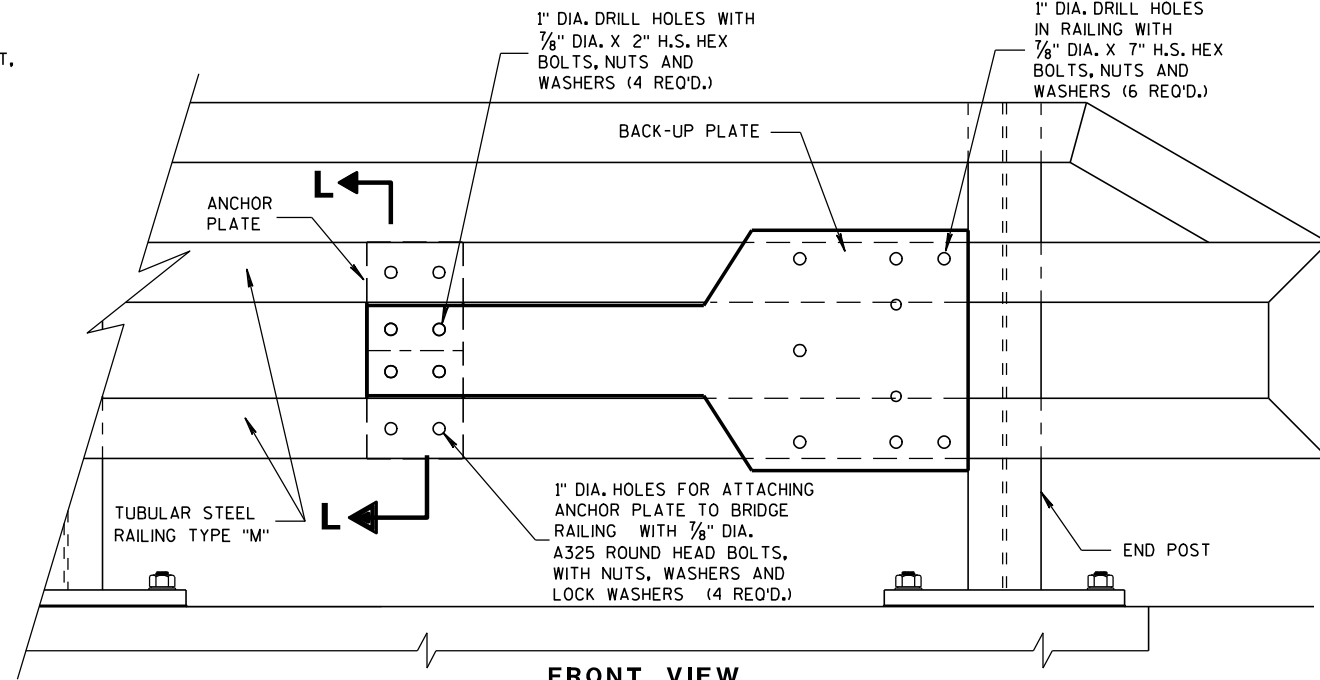
ANCHOR
PLATE DETAIL,
TYPE "M"



SECTION M-M

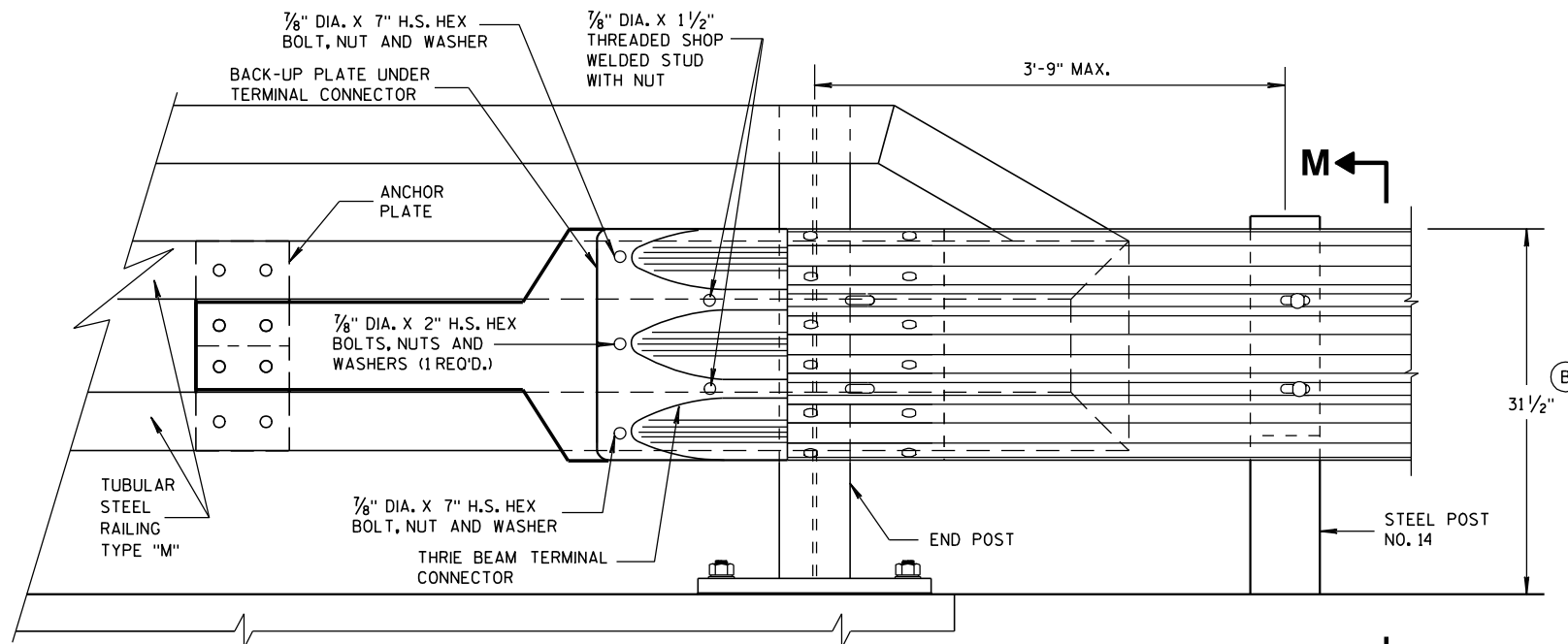


SECTION L-L

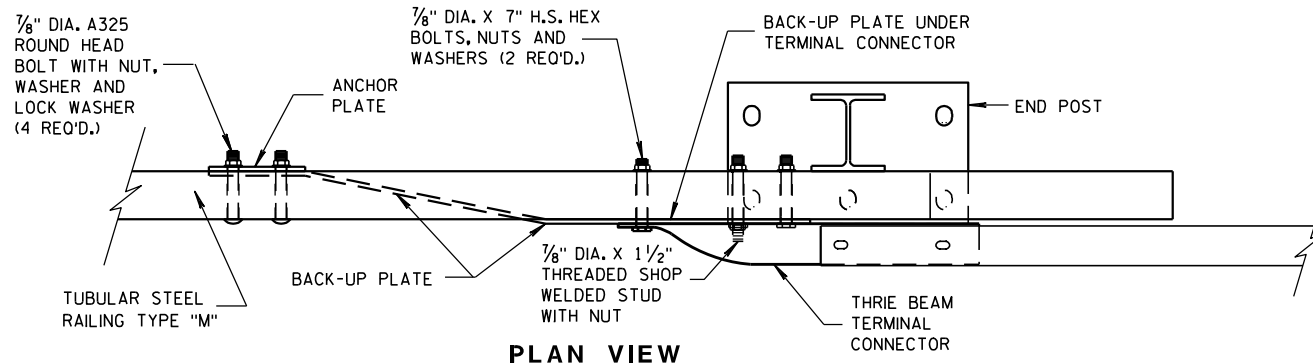


FRONT VIEW

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



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

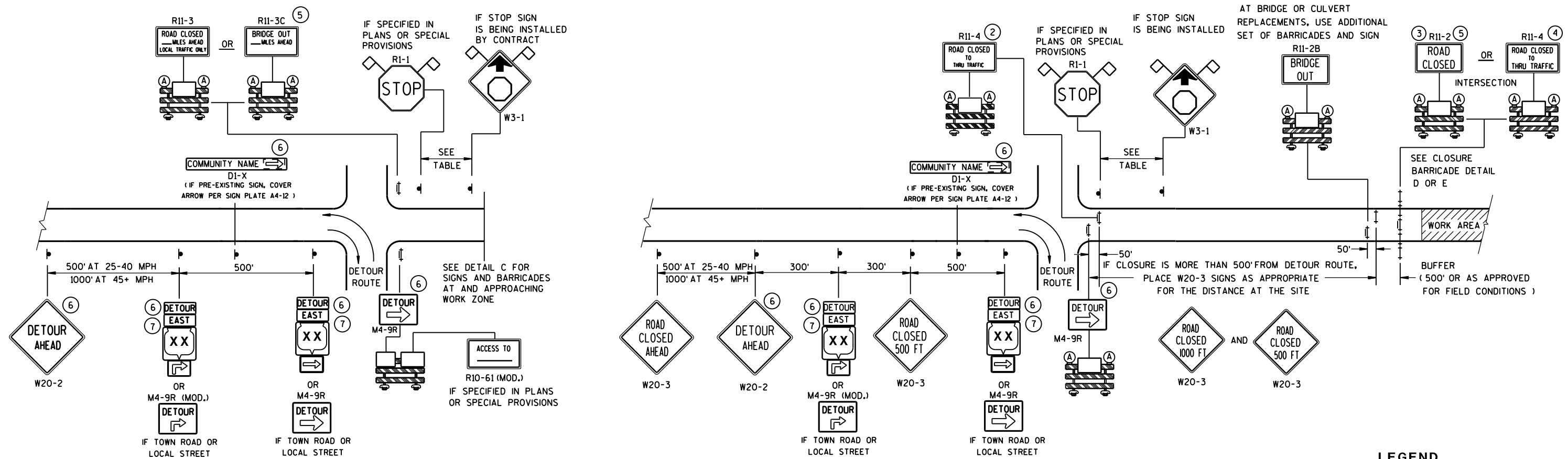
APPROVED

8-31-2012

DATE

FHWA

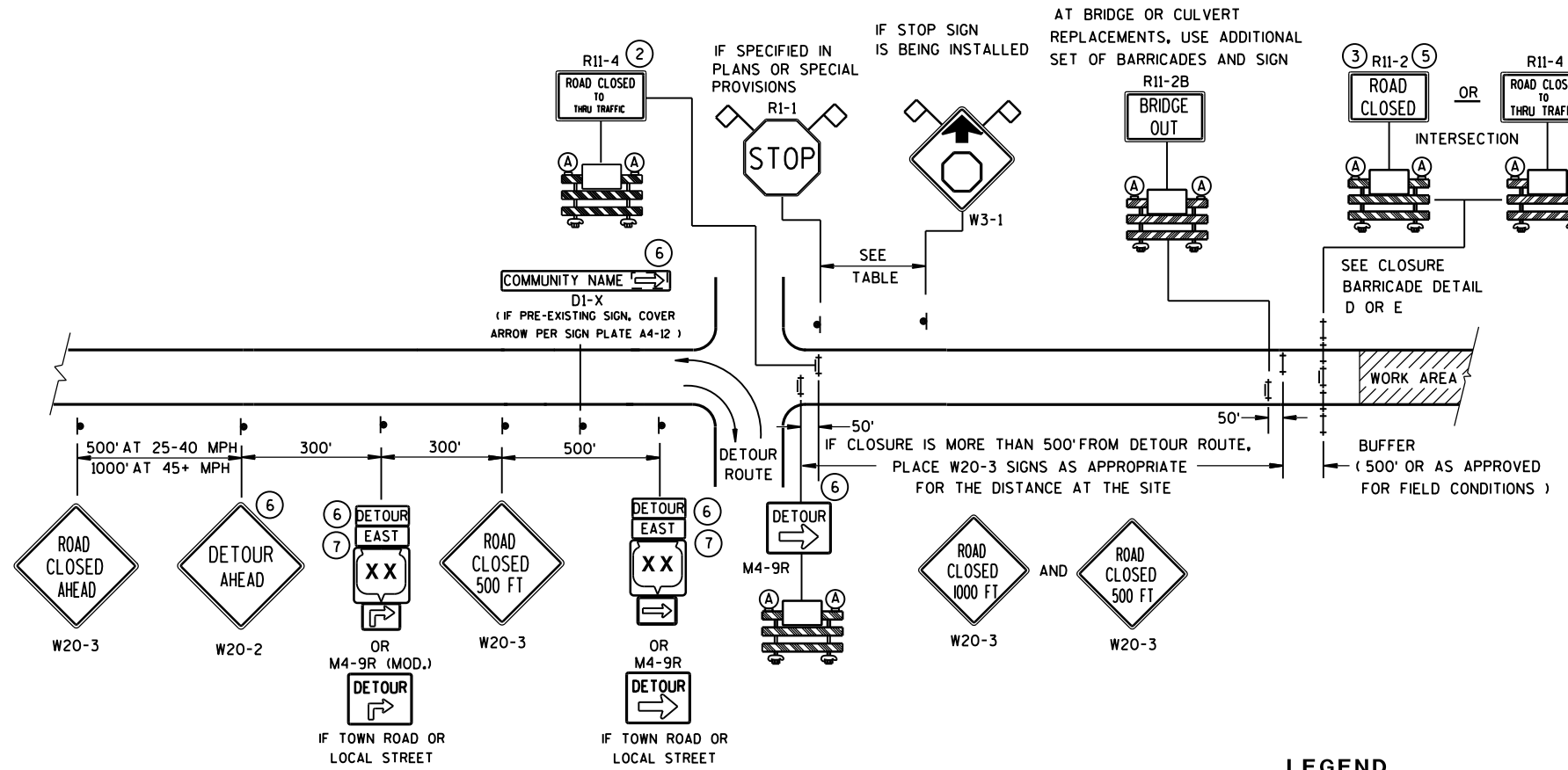
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



DETAIL A

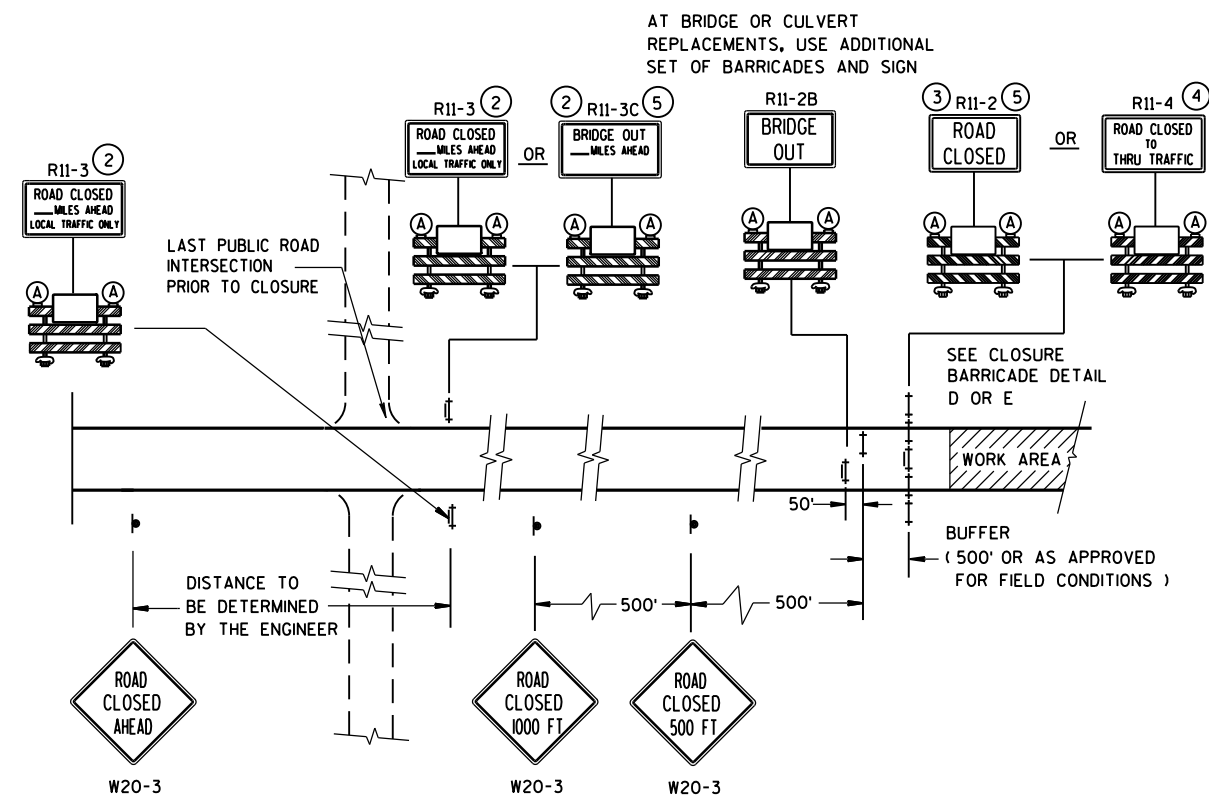
MAINLINE CLOSURE WITH POSTED DETOUR

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







DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR


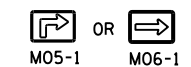
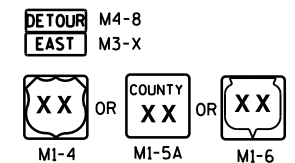
WORK ZONE LESS THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)




DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

LEGEND

- | | |
|---|---------------------------------------|
|  | SIGN ON PERMANENT SUPPORT |
|  | TYPE III BARRICADE |
|  | TYPE III BARRICADE WITH ATTACHED SIGN |
|  | TYPE "A" WARNING LIGHT (FLASHING) |

 WORK AREA

 FLAGS, 16" X 16" MIN., (ORANGE)

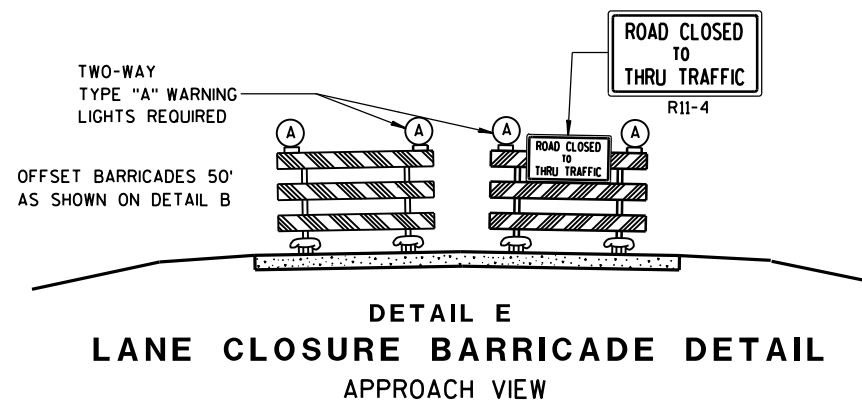
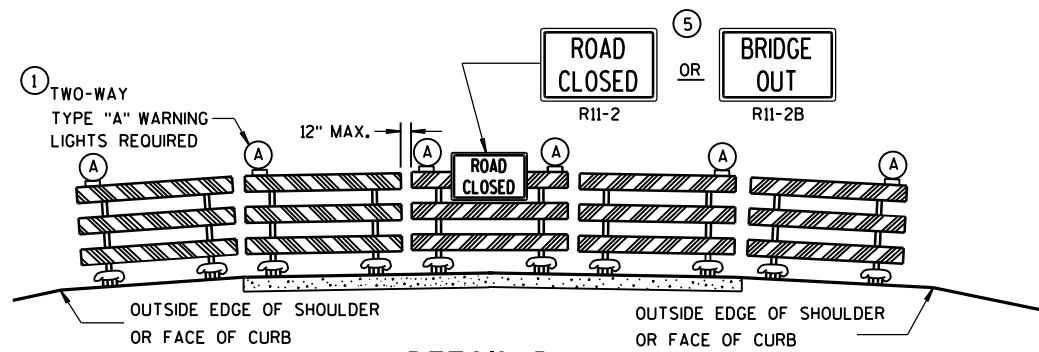
SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

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

8/2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER OF DESIGN
FHWA



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.

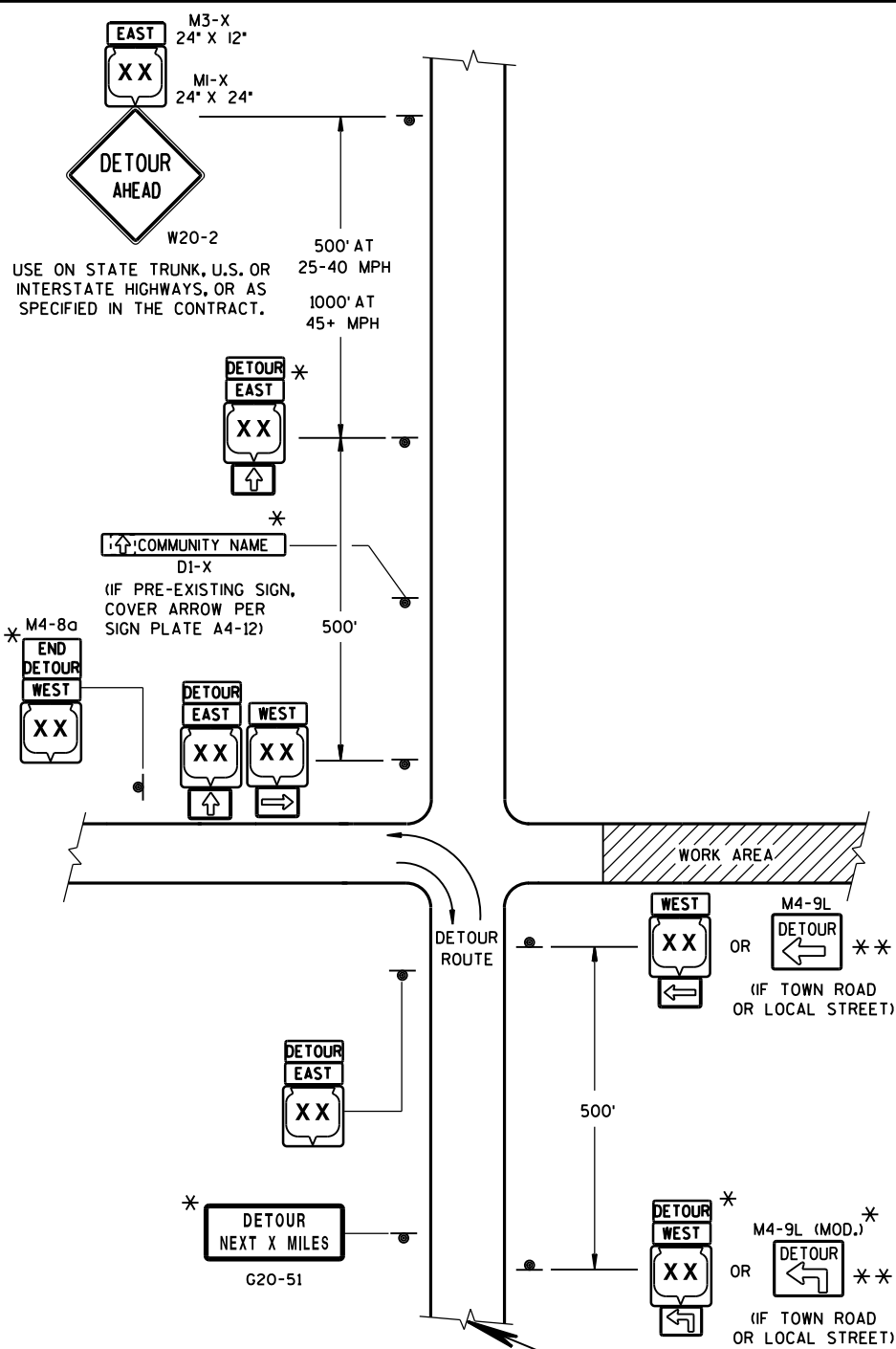
R1-1 SHALL BE 36" X 36".

- 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

8/2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER OF DESIGN
FHWA



LEGEND

● SIGN ON PERMANENT SUPPORT

▨ WORK AREA

DETOUR EAST M4-8 M3-X

MI-4 OR COUNTY MI-5A OR MI-6

M05-1 OR M06-1 OR M06-1

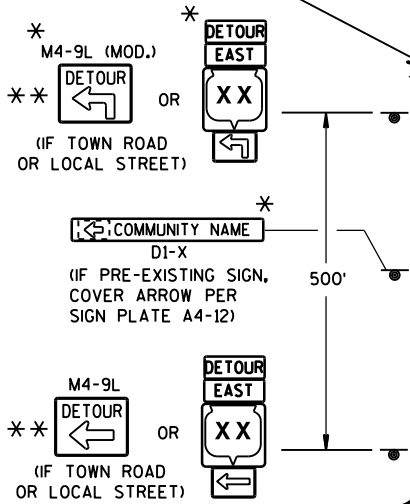
SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS AND DETAIL A OR B ON SDD 15C2-SHEET "a"

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

MATCH POINT

DETAIL F
DETOUR SIGNING

USE ON STATE TRUNK, U.S. OR INTERSTATE HIGHWAYS, OR AS SPECIFIED IN THE CONTRACT.



GENERAL NOTES

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

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

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

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

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

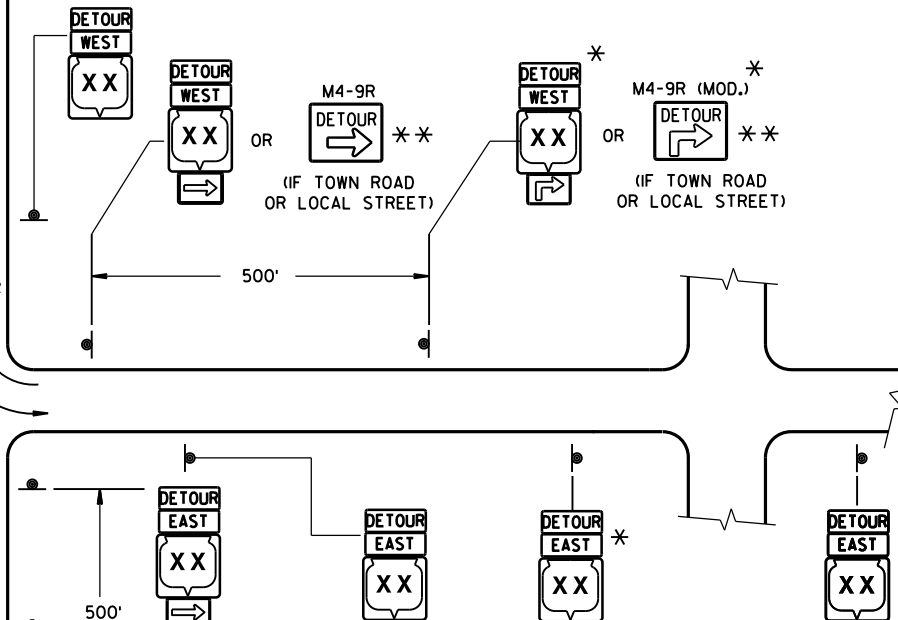
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (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.)
- M4-9 SHALL BE 30" X 24".
- M4-8a SHALL BE 24" X 18".
- G20-51 SHALL BE 60" X 24".
- W20-2 SHALL BE 48" X 48".
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.



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






DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

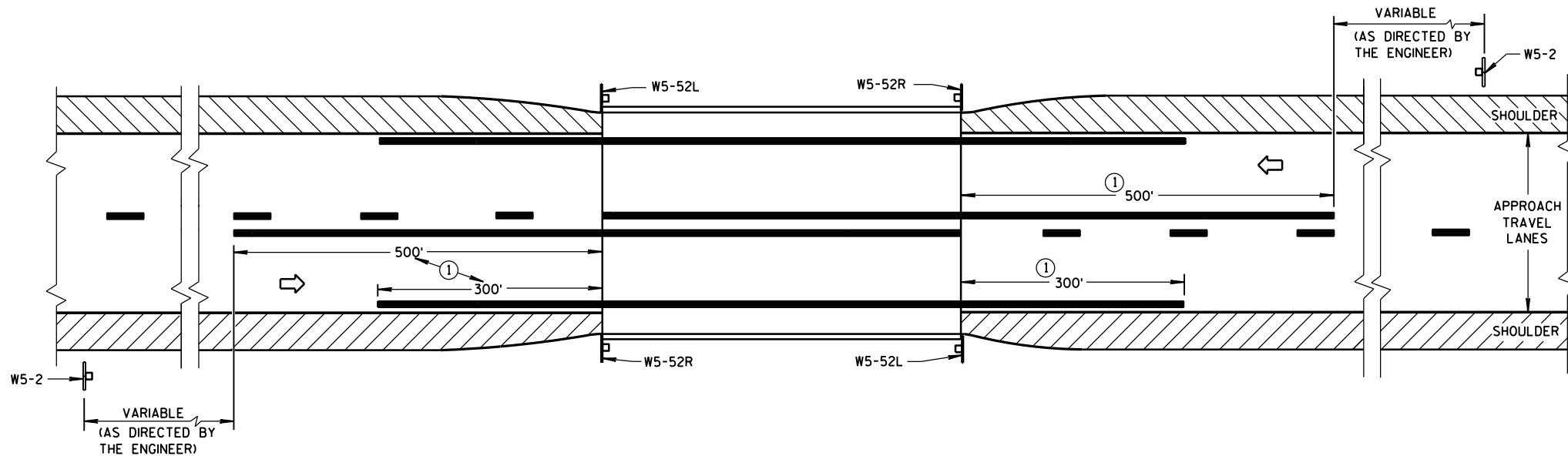
APPROVED
8/2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER OF DESIGN
FHWA



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

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

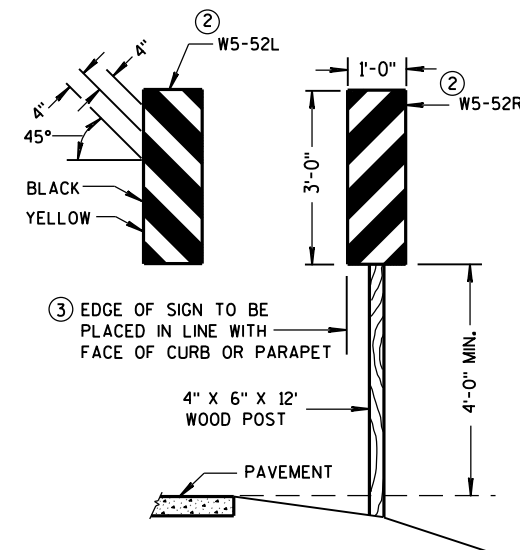
<p>BARRICADES AND SIGNS FOR SIDEROAD CLOSURES</p>	
<p>STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION</p>	
<p>APPROVED 8/2013 DATE</p>	<p><u>/S/ Travis Feltes</u> STATE TRAFFIC ENGINEER OF DESIGN</p>



SITUATION 1

WARRANTING CRITERIA:

BRIDGE WIDTH IS AT LEAST 18 FEET BUT LESS THAN 24 FEET



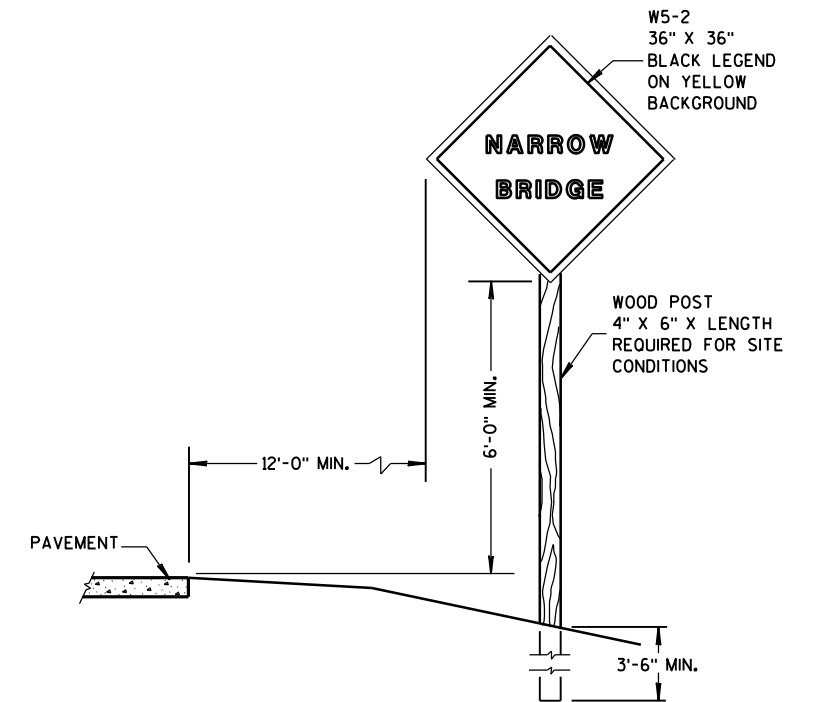
OBJECT MARKER PLACEMENT

GENERAL NOTES

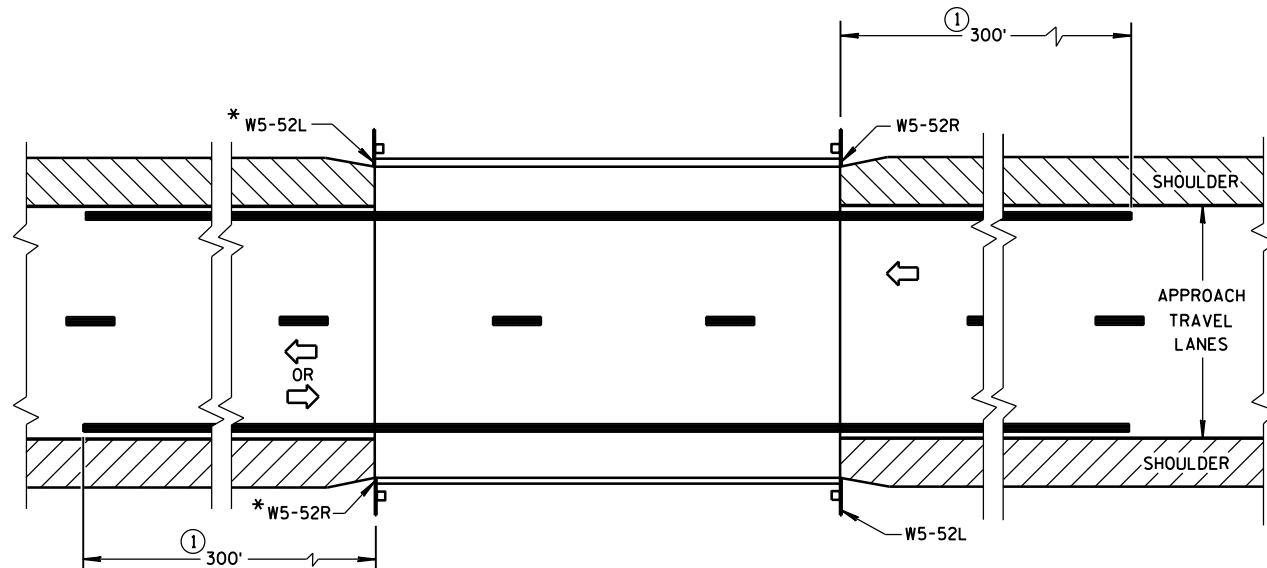
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

PAVEMENT MARKING SHOWN ON THIS DRAWING IS NOT REQUIRED UNLESS OTHERWISE SPECIFIED IN THE CONTRACT. WHEN SPECIFIED, PAVEMENT MARKING SHALL CONFORM TO THIS DRAWING AND OTHER CONTRACT REQUIREMENTS.

- ① MINIMUM DISTANCE UNLESS OTHERWISE SHOWN ON THE PLAN.
- ② FACE OF OBJECT MARKERS W5-52R, AND W5-52L SHALL BE COVERED WITH TYPE F REFLECTIVE SHEETING.
- ③ LOCATE OBJECT MARKER POST(S) BEHIND GUARDRAIL WHEN PRESENT.



SIGN PLACEMENT



*OMIT ON ONE-WAY TRAVELLED WAYS

SITUATION 2

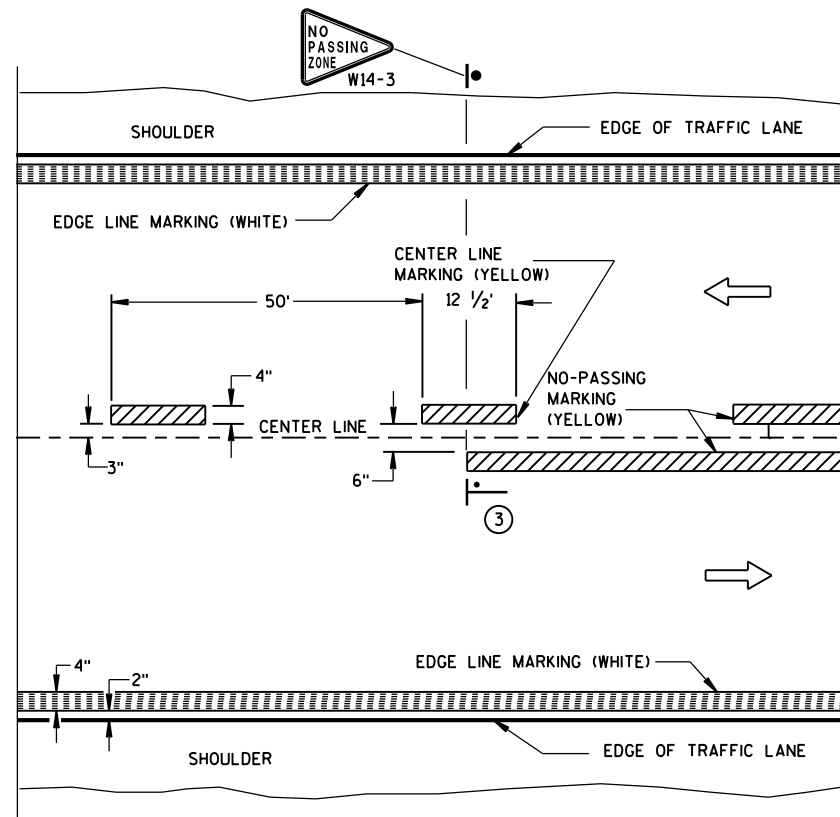
WARRANTING CRITERIA:

- 1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
- 2. BRIDGE IS LESS THAN 6 FEET WIDER (ON EACH SIDE) THAN APPROACH TRAVEL LANES.

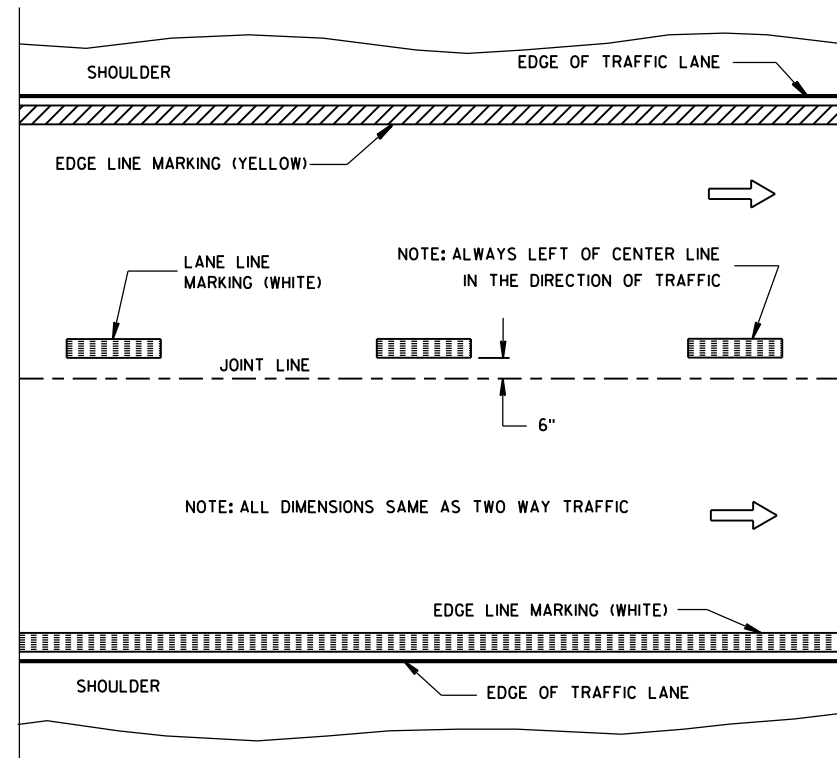
SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/4/2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER OF DESIGN
FHWA

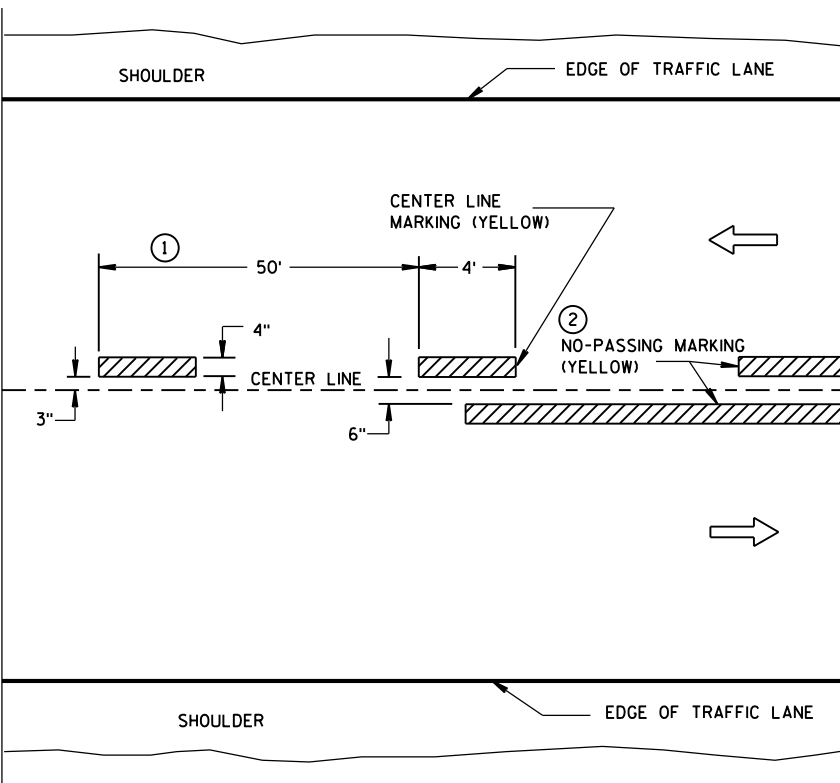


TWO WAY TRAFFIC

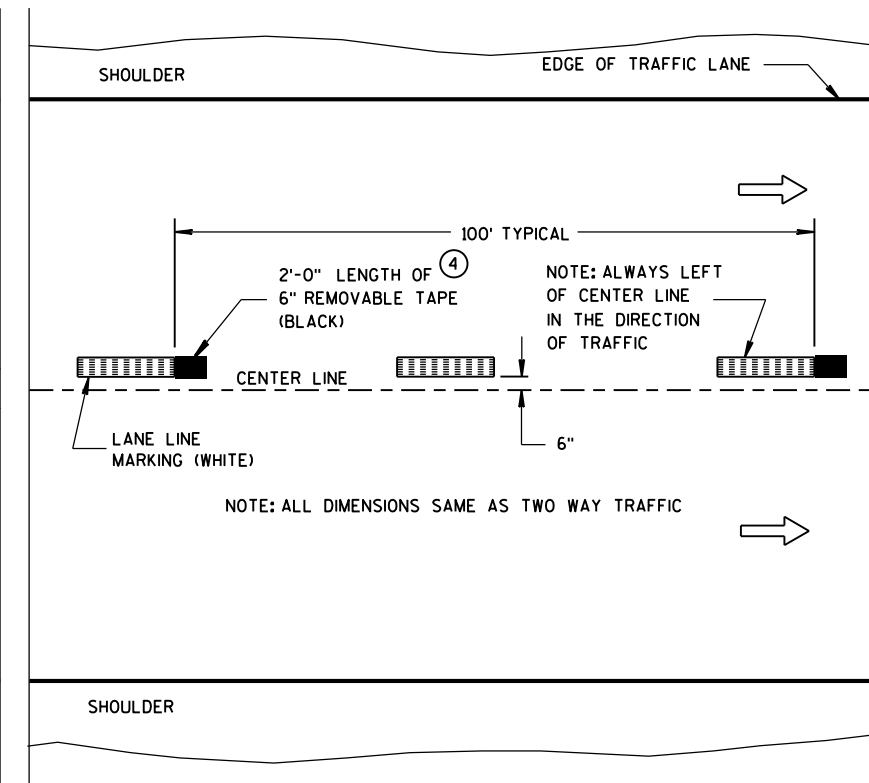


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING
(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

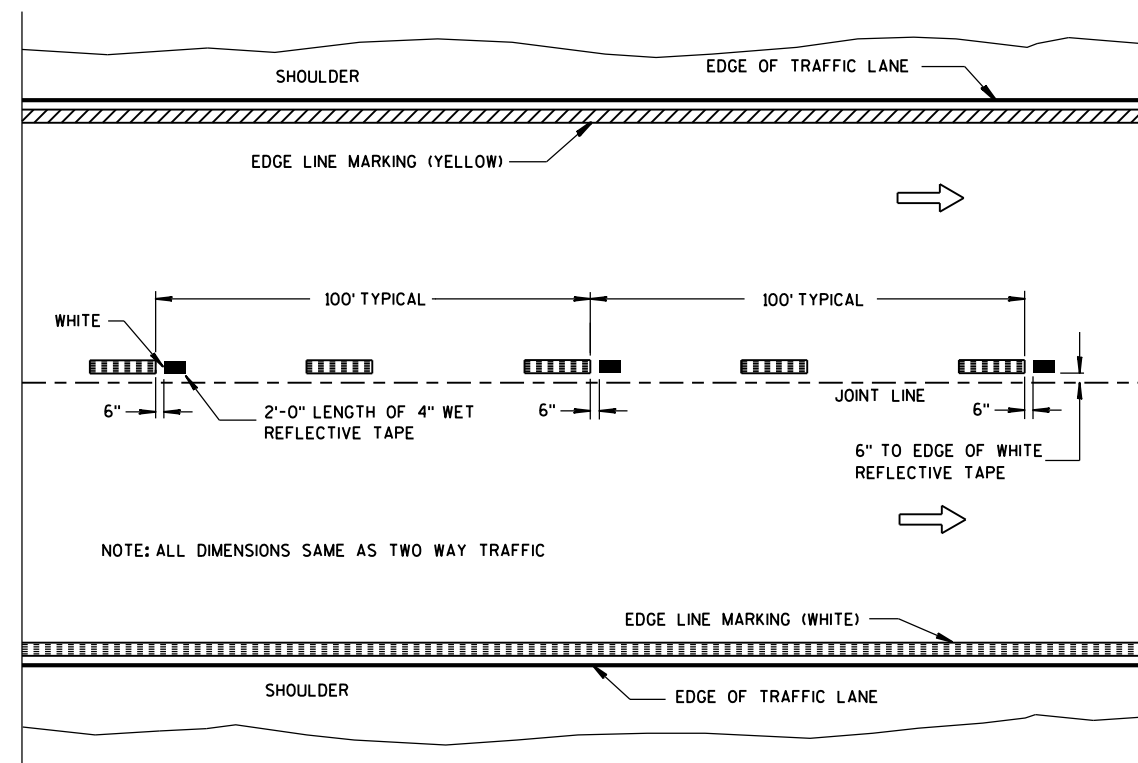
GENERAL NOTES

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

- ① HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
- ② NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.
- ③ NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
- ④ CONCRETE ONLY.

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL



WET REFLECTIVE TAPE SUPPLEMENT TO
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

LEGEND

- "T" MARKING
- POST MOUNTED SIGN

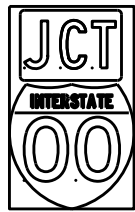
PAVEMENT MARKING
(MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

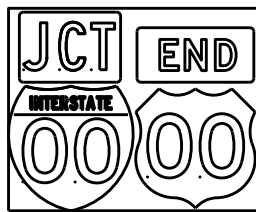
APPROVED
5-13-2013
DATE
FHWA

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

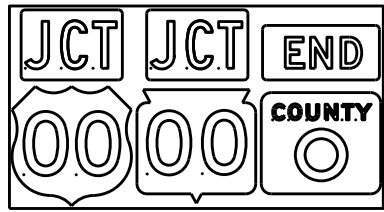
TYPICAL ASSEMBLIES



J1-1



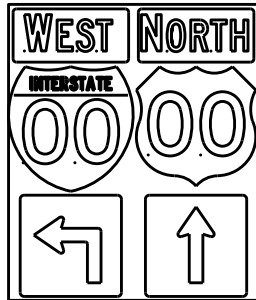
J1-2



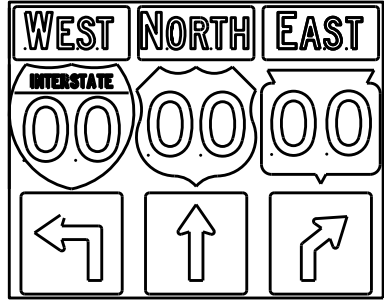
J1-3



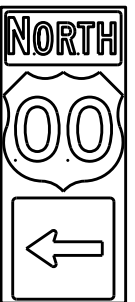
J2-1



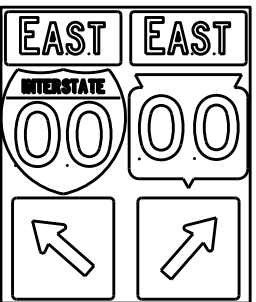
J2-2



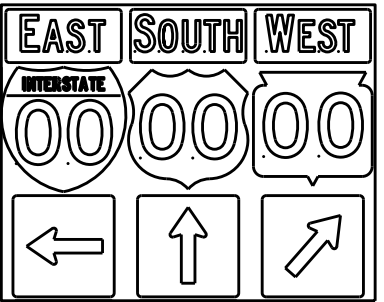
J2-3



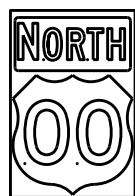
J3-1



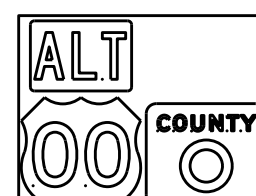
J3-2



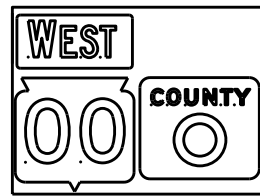
J3-3



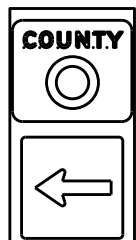
J4-1



J4-2



J4-2



J13-1



J12-1



J32-1



J33-1



J23-1

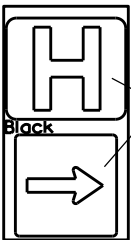


J22-1



JV

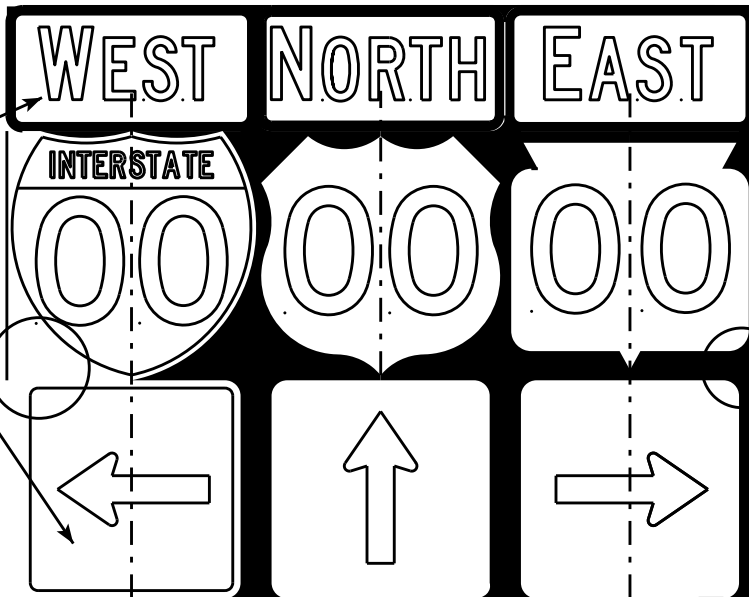
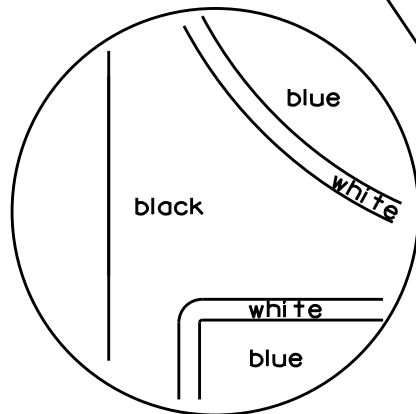
(Typical Vertical J-Assembly
See Note 10 and 11)



JH-1

Blue Background

[blue background
with interstate]



[black background]

ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

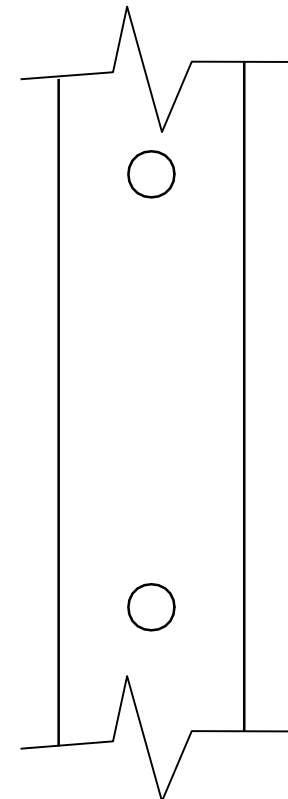
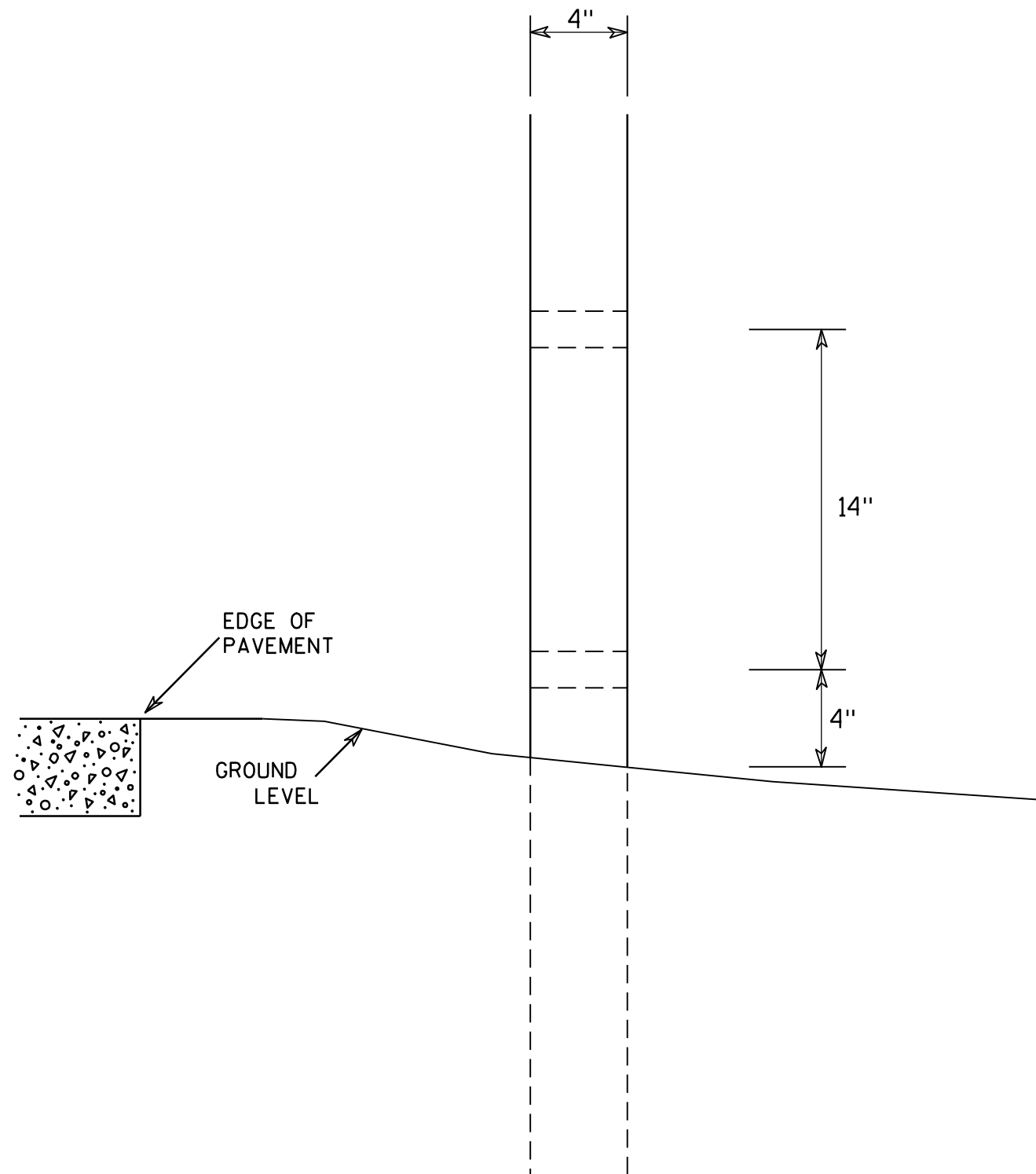
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 2/06/14 PLATE NO. A2-1S.8

NOTES

1. Signs are Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Black Non-reflective
Message - see Note 5
3. Message Series - See Note 5
4. Corners shall be square or rounded if base material is plywood. If base material is metal the corners shall be rounded.
5. The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
6. Certain marker heads require the component pieces to be the same color. As an example, all the components used with an M1-1 Interstate marker shall be blue.
7. Single panel j-assemblies shall only be used with route marker shields that are same size. If the route marker shields are different size use multiple piece component.
8. Route assemblies that have 24 inch route shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have one horizontal splice between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 inches or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
9. Route assemblies that have 36 inch shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have two horizontal splices. One horizontal splice shall be between the cardinal direction and route shields and the other horizontal splice shall be between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
10. All Vertical J Assemblies are given a Sign Code of JV
11. For JV Assemblies that have a mixture of Interstate and non Interstate shields, arrows and cardinals shall be white on blue.



SIDE VIEW

GENERAL NOTES

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

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

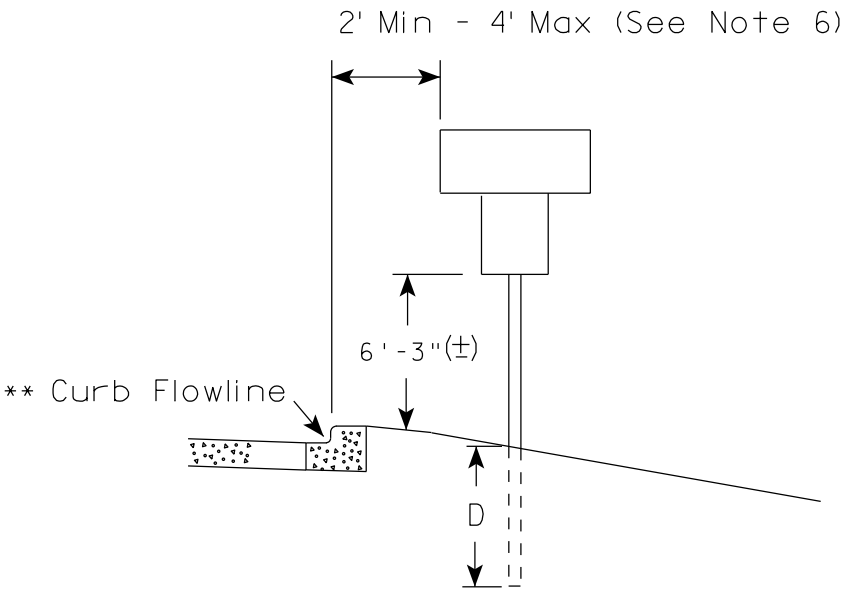
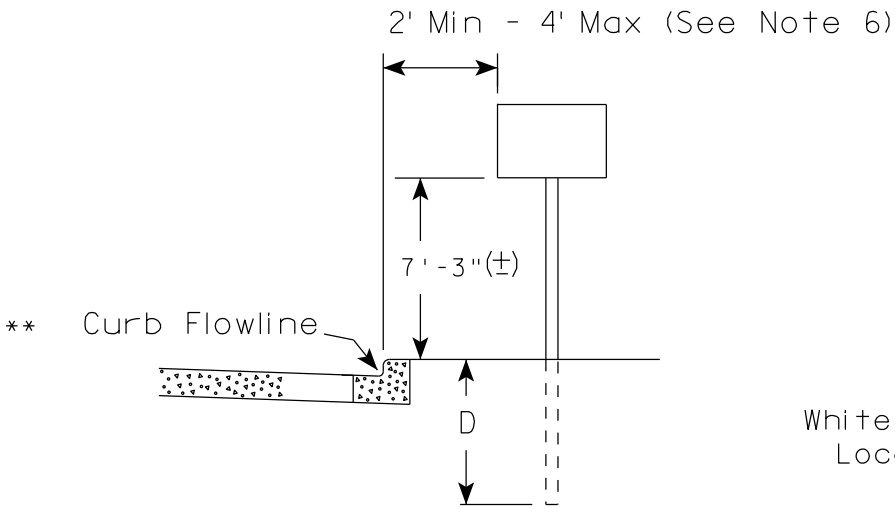
HWY:

COUNTY:

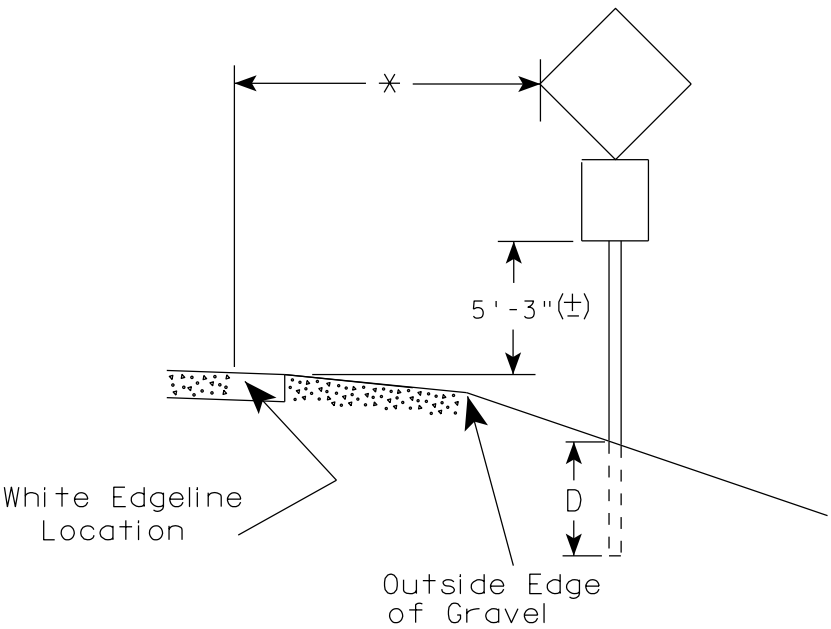
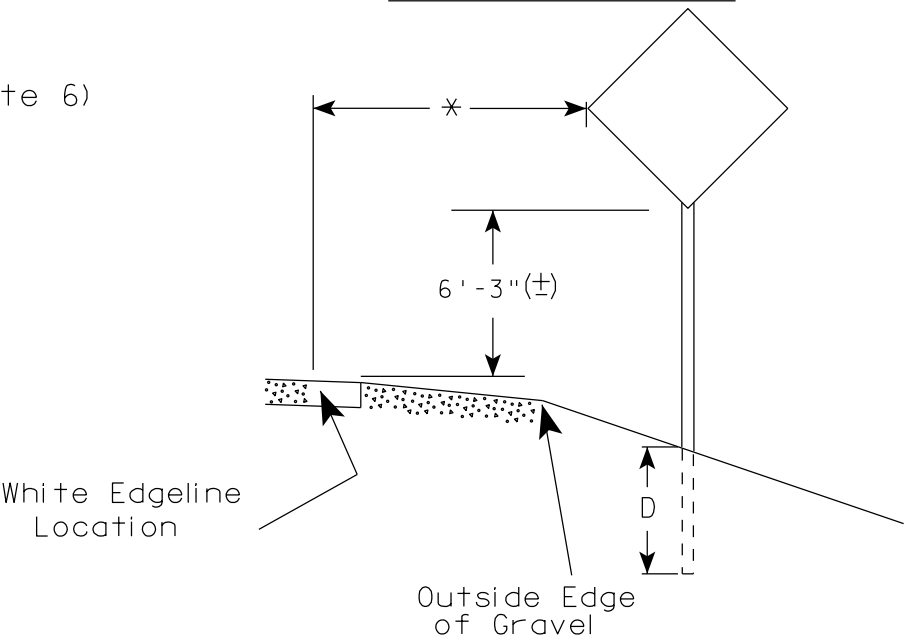
SHEET NO:

E

URBAN AREA



RURAL AREA (See Note 2)



GENERAL NOTES

1. Signs wider than 4 feet, 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding stop signs (R1-1F) 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) & End of Rod Markers (W5-56 & W5-56A) shall be mounted at a height of 4'-3" (+).

POST EMBEDMENT DEPTH

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

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

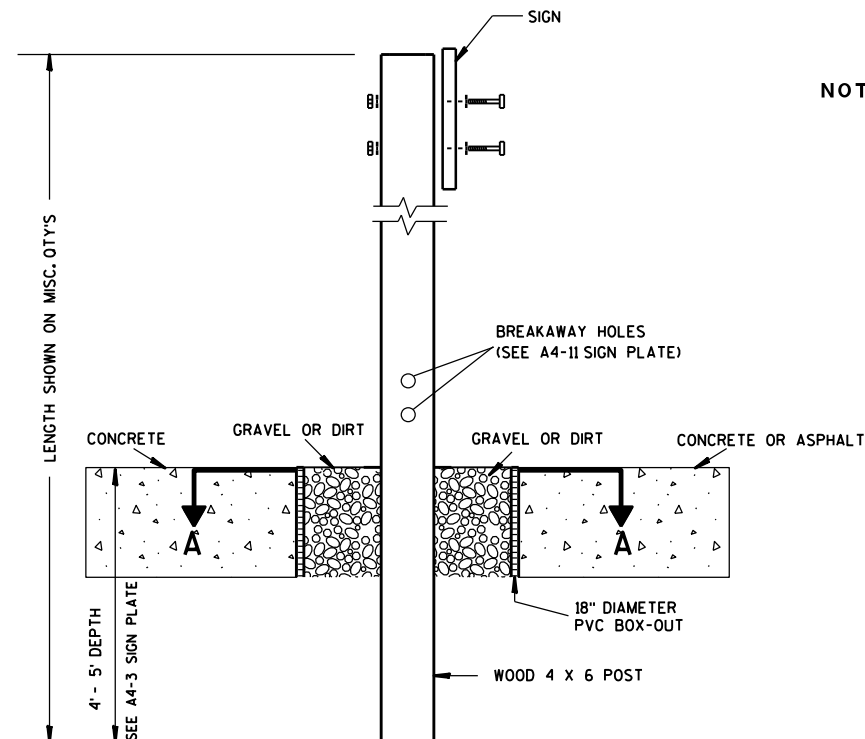
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

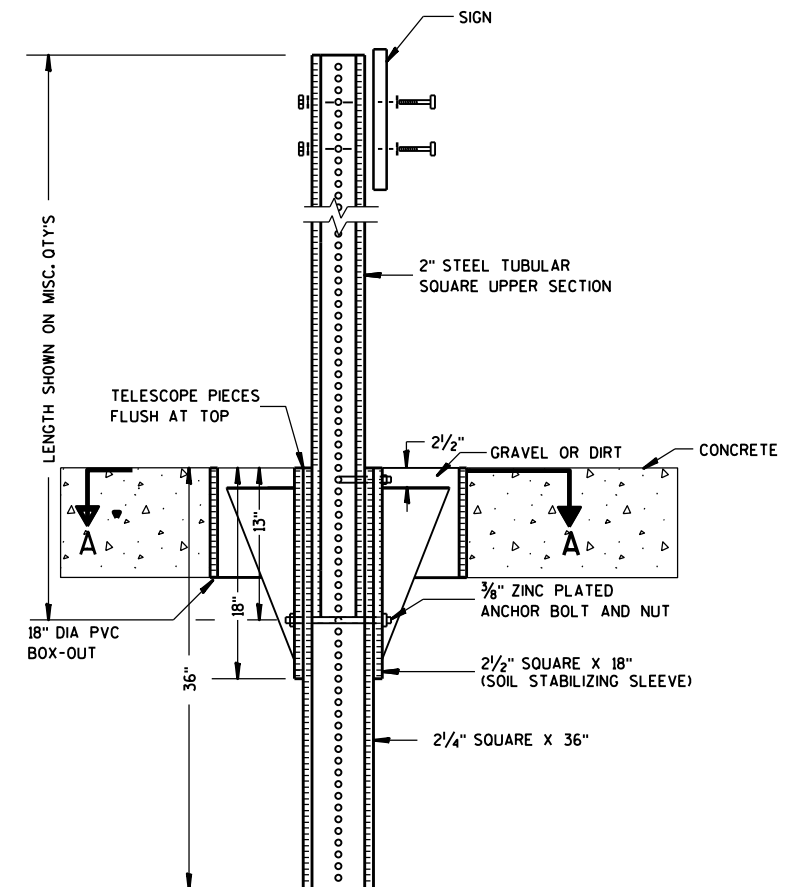
DATE 9/30/13 PLATE NO. A4-3.18



ELEVATION VIEW

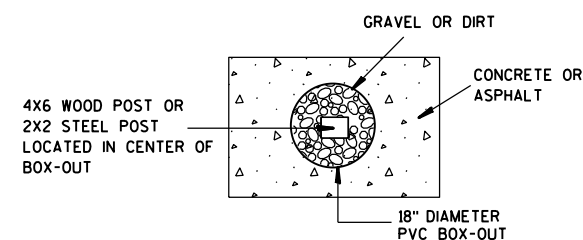
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

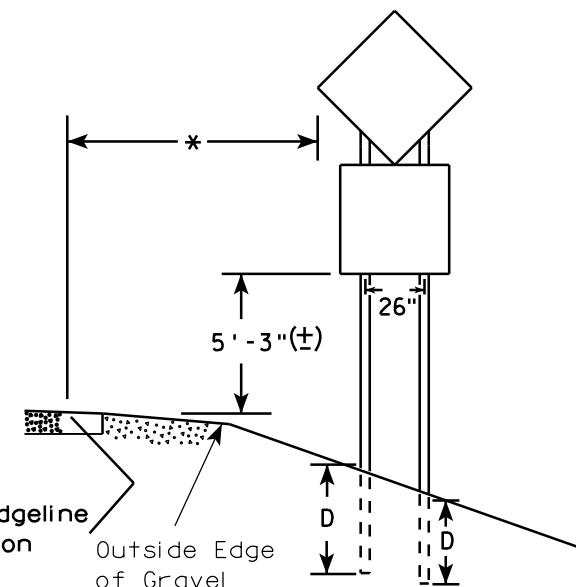
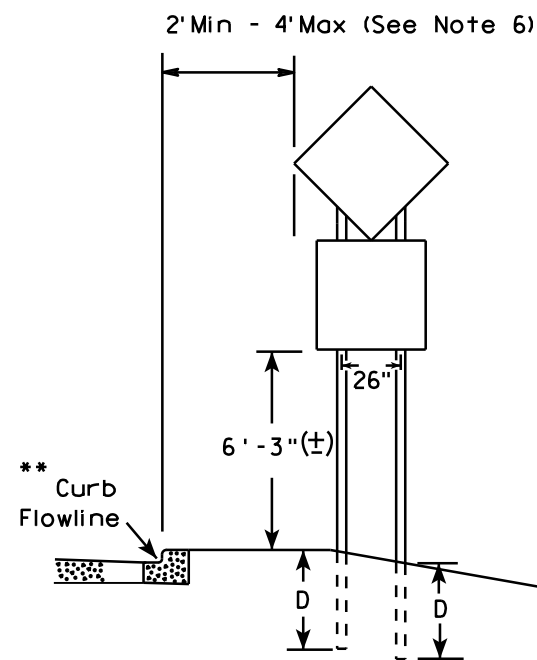
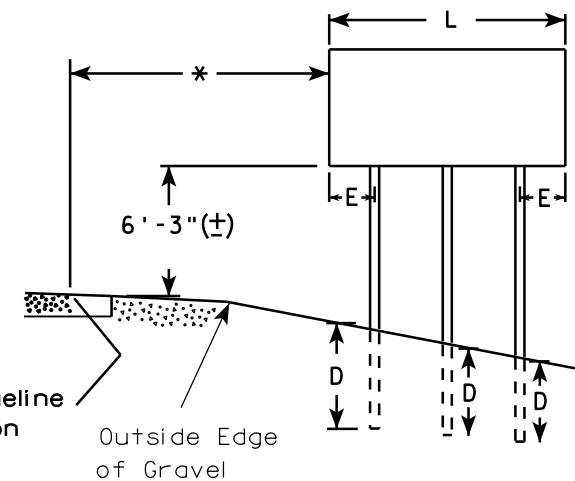
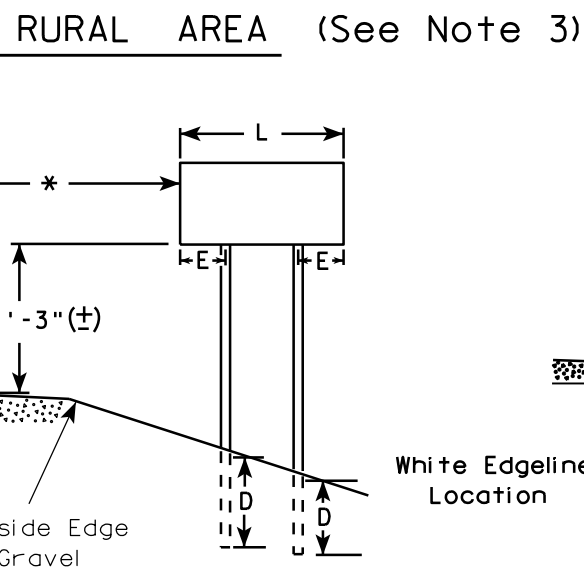
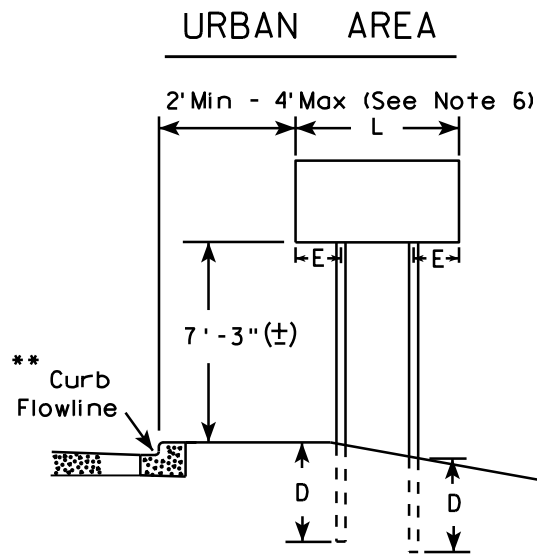
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



48" DIAMOND WARNING SIGN

48" DIAMOND WARNING SIGN

- GENERAL NOTES**
- For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
 - See tables below for required number of posts.
 - For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
 - The (±) tolerance for mounting height is 3 inches.
 - Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
 - Offset distance shall be consistent with existing signs or consistent throughout length of project.
 - Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
 - The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series) & End of Road Markers (W5-56 & W5-56A) shall be mounted at a height of 4'-3" (±).

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

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

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

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 120"	L/5

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

SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" and greater	12"

POST EMBEDMENT DEPTH

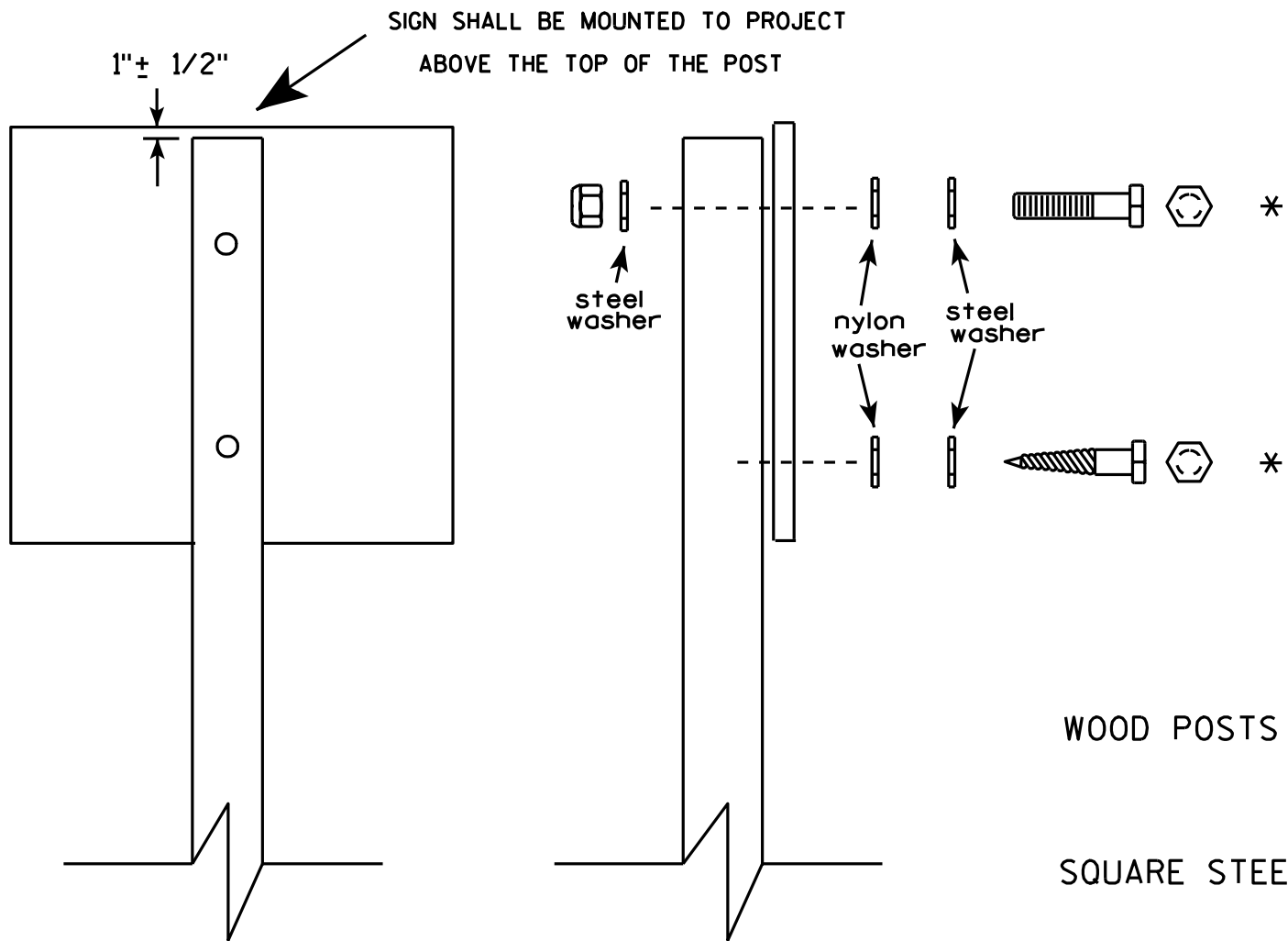
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 9/30/13 PLATE NO. A4-4.12

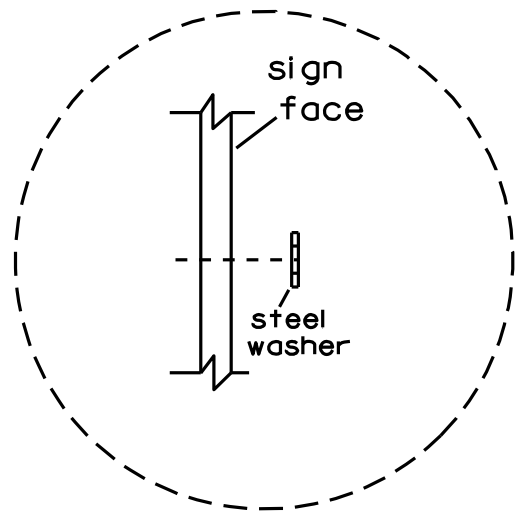


Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

- 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.

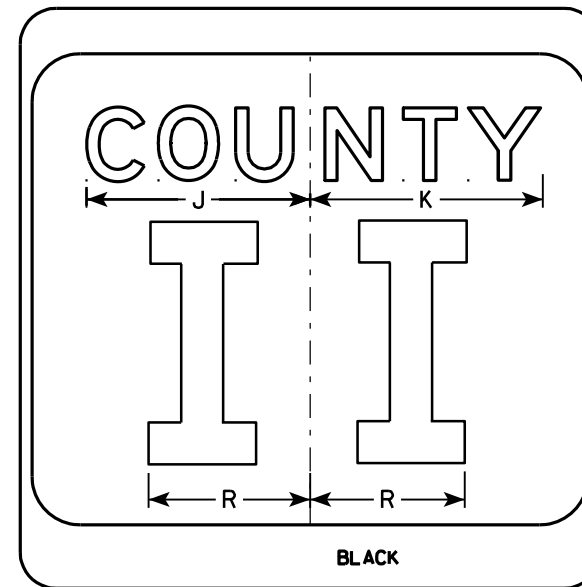
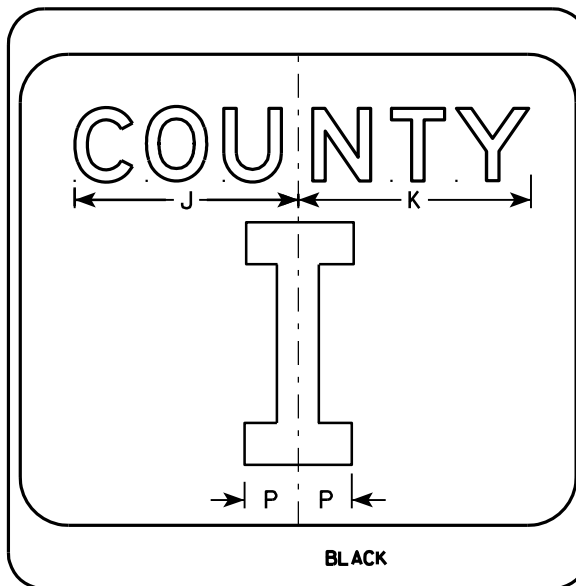
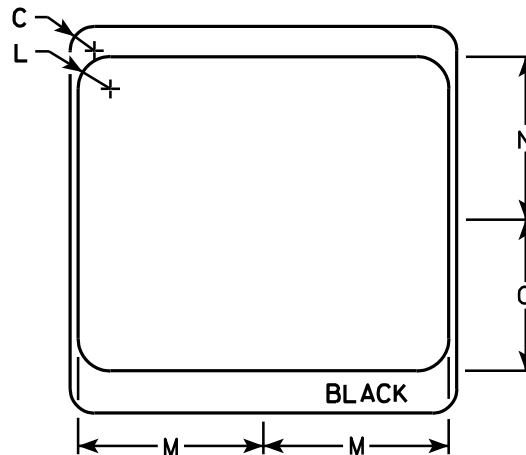
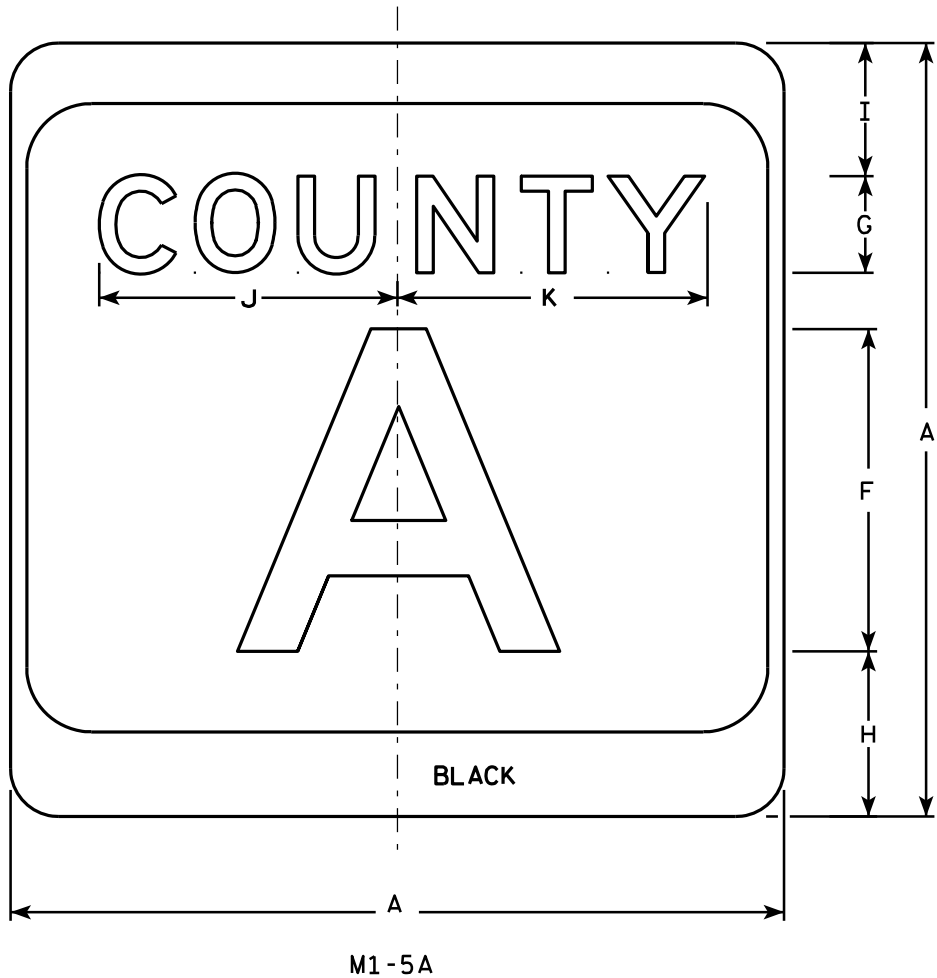


Washer Placement when Sign Has Other Than Type H or Type F Face

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

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 3/23/10	PLATE NO. A4-8.7

7



NOTES

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

7

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

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
-------------	------	---------	-----------	---

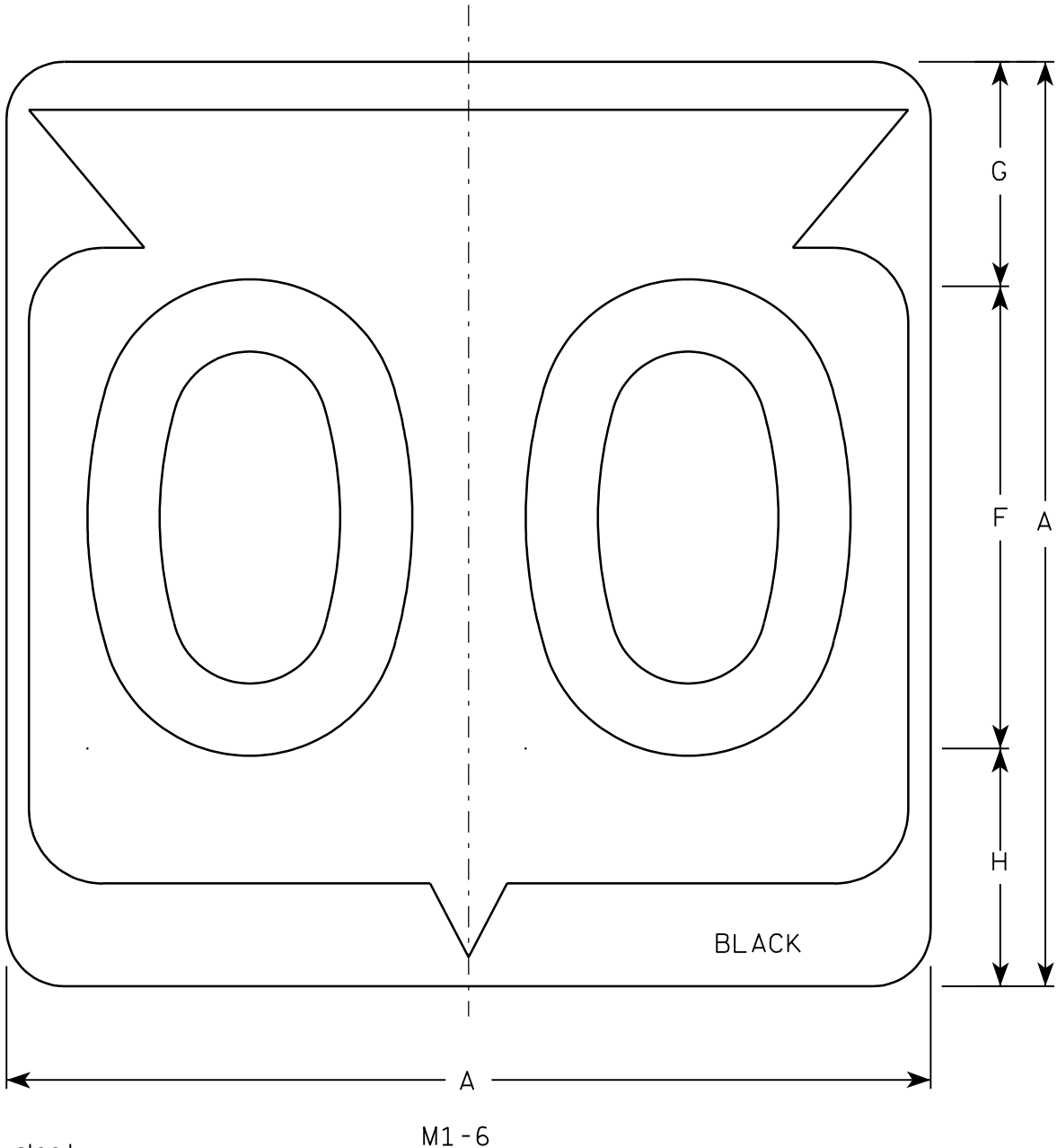
CTH MARKER
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 9/27/11 PLATE NO. M1-5A.8

7



Metric equivalent
for this sign is:

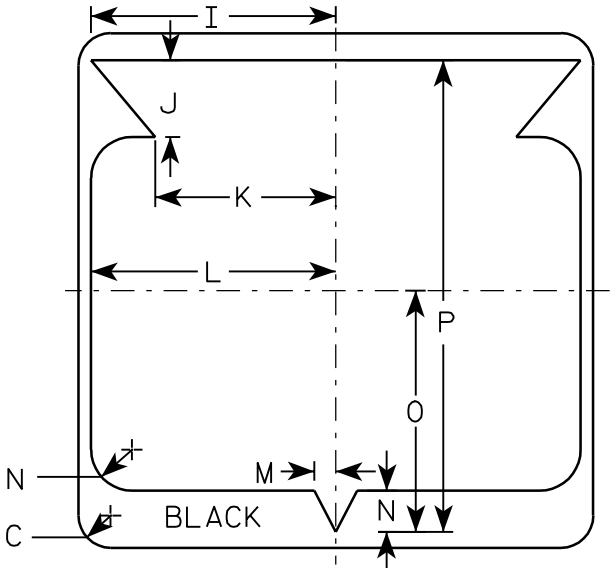
SIZE	
1	
2	600 mm X 600 mm
3	900 mm X 900 mm
4	900 mm X 900 mm
5	900 mm X 900 mm

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 m ²
1																												
2	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0	.36
3	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
4	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
5	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81

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

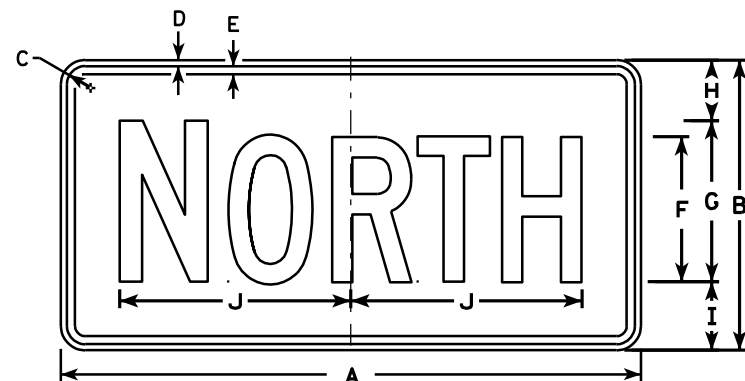
- Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - White & Black - See Note 6
Message - Black
- Message Series - See note 5
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- Substitute appropriate Series numerals and adjust spacing as per plate A10-1.
- Permanent Signs
Background - Type H Reflective
Detour or temporary Signs
Background - Reflective



STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

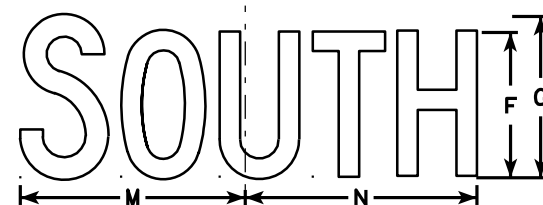
APPROVED
Chester J. Spang
for State Traffic Engineer
DATE 3/20/02 PLATE NO. M1-6.9



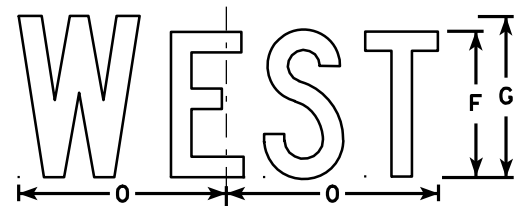
M3-1
MK3-1
M03-1



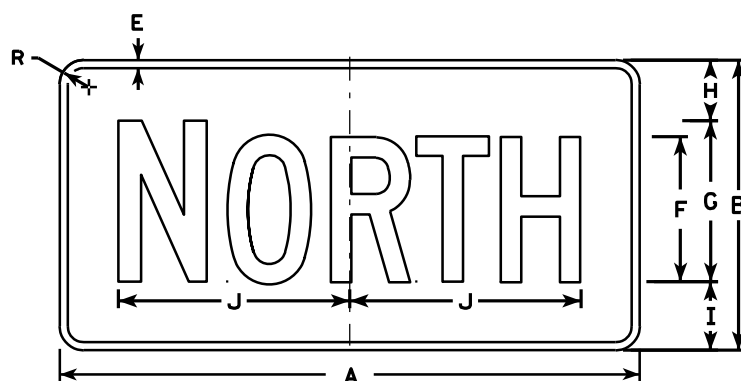
M3-2
MK3-2
M03-2



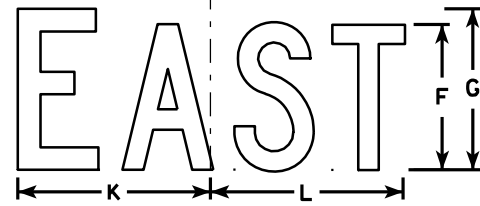
M3-3
MK3-3
M03-3



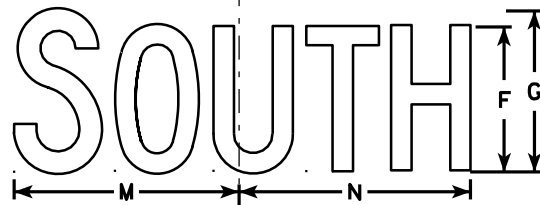
M3-4
MK3-4
M03-4



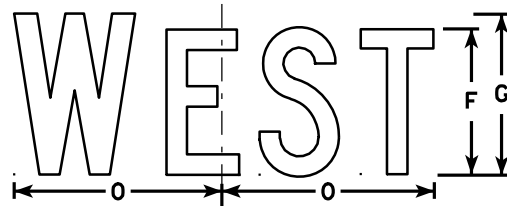
MB3-1
MG3-1
MM3-1
MN3-1



MB3-2
MG3-2
MM3-2
MN3-2



MB3-3
MG3-3
MM3-3
MN3-3



MB3-4
MG3-4
MM3-4
MN3-4

NOTES

1. All Signs Type II - See Note 5 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - See note 5
Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M3-1 thru M3-4 Background - White - Type H Reflective (Detour or temporary signs - Reflective)
Message - Black
MB3-1 thru MB3-4 Background - Blue
Message - White - Type H Reflective (Detour or temporary signs - Reflective)
MG3-1 thru MG3-4 Background - Green
Message - White - Type H Reflective
MK3-1 thru MK3-4 Background - Green
Message - White - Type H Reflective
MM3-1 thru MM3-4 Background - White - Type H Reflective
Message - Green
MN3-1 thru MN3-4 Background - Brown
Message - White - Type H Reflective
M03-1 thru M03-4 Background - Orange - Reflective
Message - Black
6. Note the first letter of each direction is larger than the remainder of the message.

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

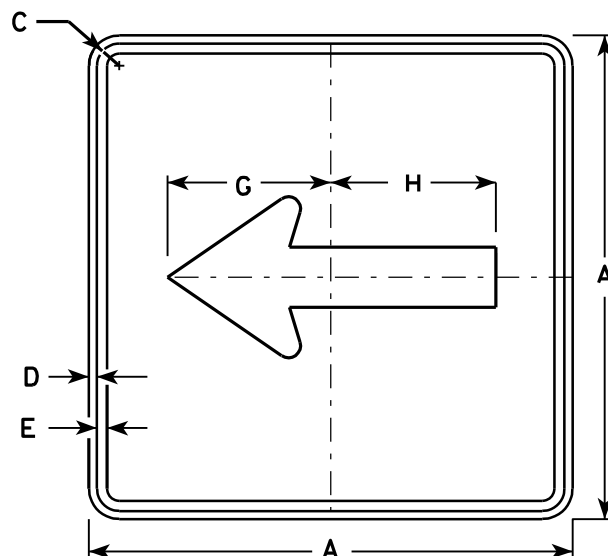
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E

STANDARD SIGNS M3-1 thru M3-4 SERIES

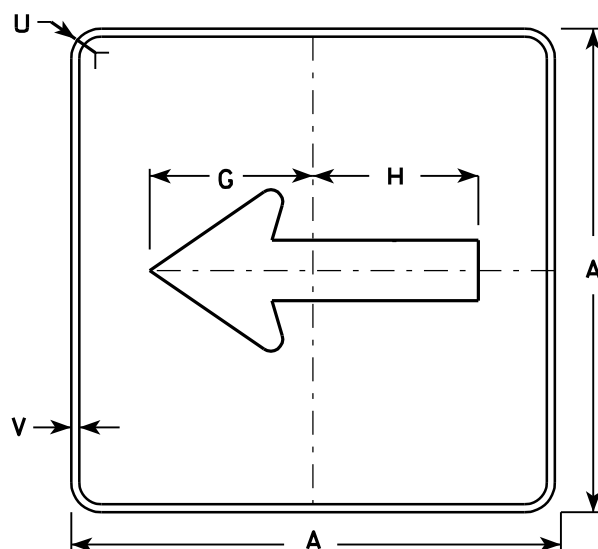
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

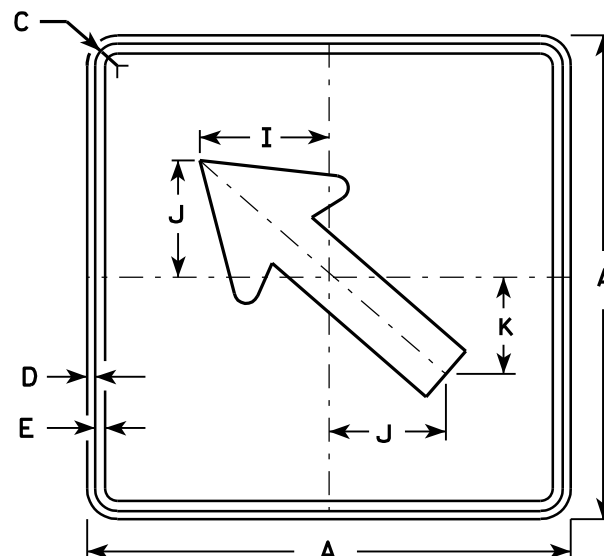
DATE 11/10/10 PLATE NO. M3-1.12



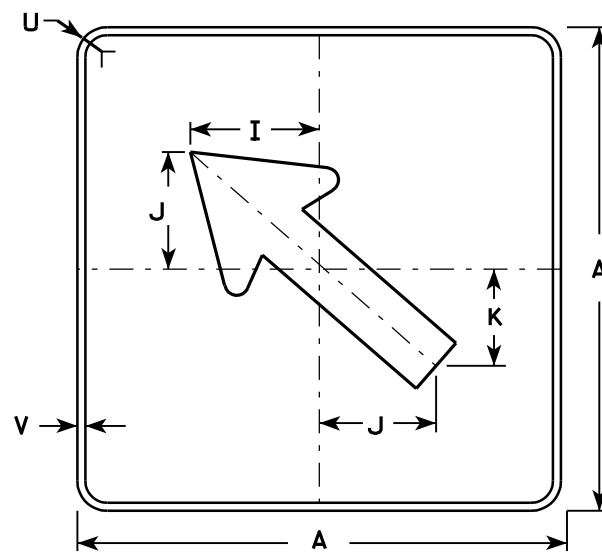
M6-1
MK6-1
MM6-1
MO6-1
MP6-1
MR6-1



MB6-1
MG6-1
MN6-1



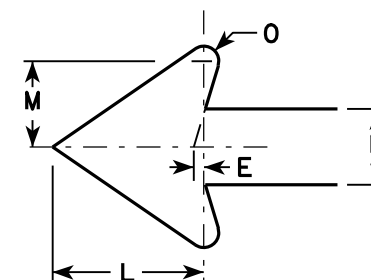
M6-2
MK6-2
MM6-2
MO6-2
MP6-2
MR6-2



MB6-2
MG6-2
MN6-2

NOTES

- Signs are Type II - See Note 4 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - See note 4
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M6-1 and M6-2 Background - White - Type H Reflective
Message - Black
MB6-1 and MB6-2 Background - Blue
Message - White - Type H Reflective
MG6-1 and MG6-2 Background - Green
Message - White - Type H Reflective
MK6-1 and MK6-2 Background - Green
Message - White - Type H Reflective
MM6-1 and MM6-2 Background - White - Type H Reflective
Message - Green
MN6-1 and MN6-2 Background - Brown
Message - White - Type H Reflective
MO6-1 and MO6-2 Background - Orange - Type F Reflective
Message - Black
MP6-1 and MP6-2 Background - White - Type H Reflective
Message - Blue
MR6-1 and MR6-2 Background - Brown
Message - Yellow - Type H Reflective



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

STANDARD SIGN M6-1 & M6-2 SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 7/29/13 PLATE NO. M6-1.13

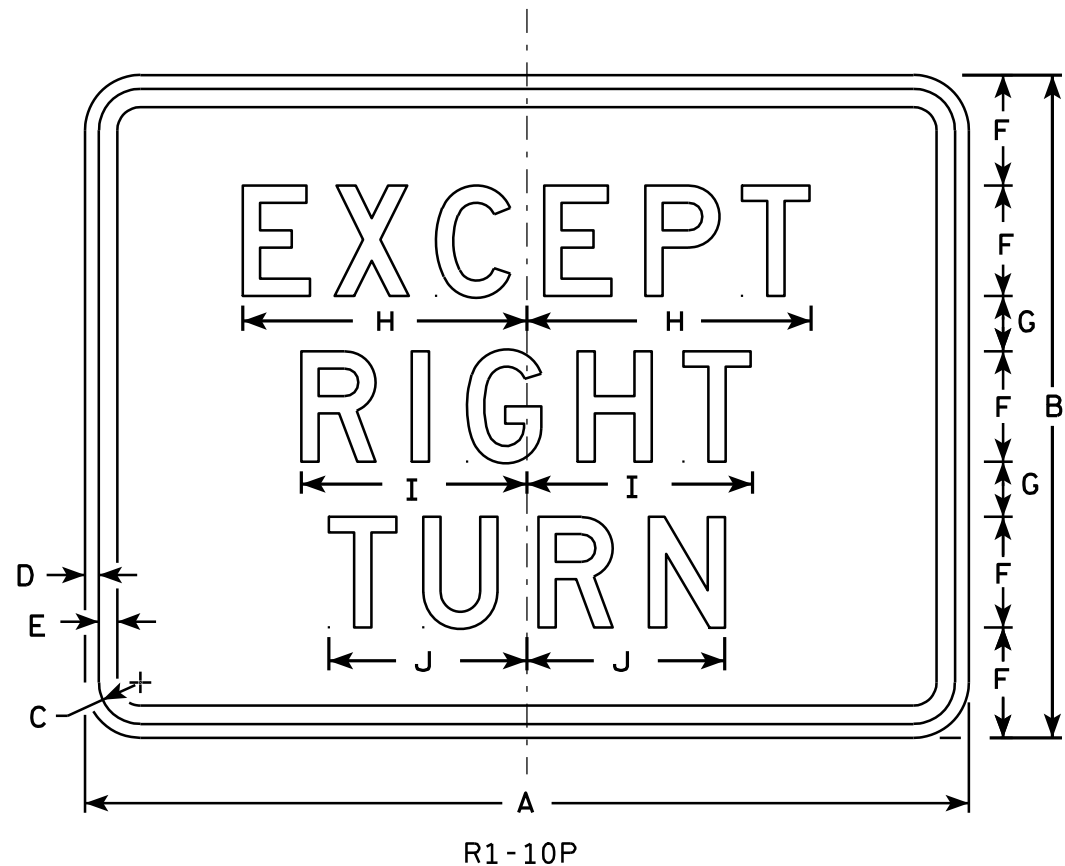
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	18	1 1/8	3/8	1/2	3	1 1/2	7 3/4	6 1/8	5 3/8																	3.0
2M	24	18	1 1/8	3/8	1/2	3	1 1/2	7 3/4	6 1/8	5 3/8																	3.0
3																											
4																											
5																											

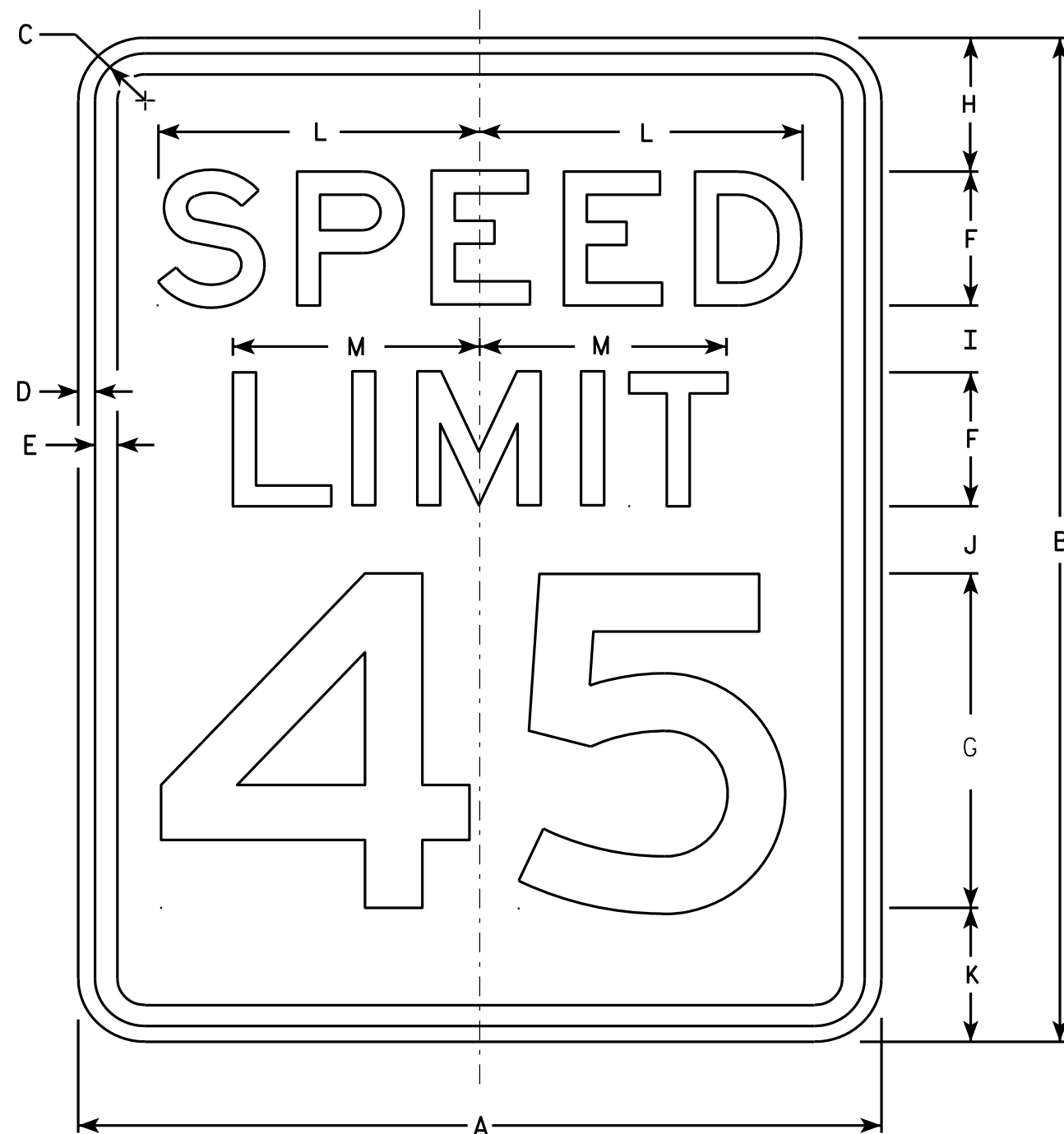
STANDARD SIGN

R1-10P

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/2/10 PLATE NO. R1-10P.1



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 - E
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 and optically adjust spacing to achieve proper balance.

R2-1

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	18	24	1 1/8	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/8	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 3/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	2 1/4	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 5/26/10 PLATE NO. R2-1.13

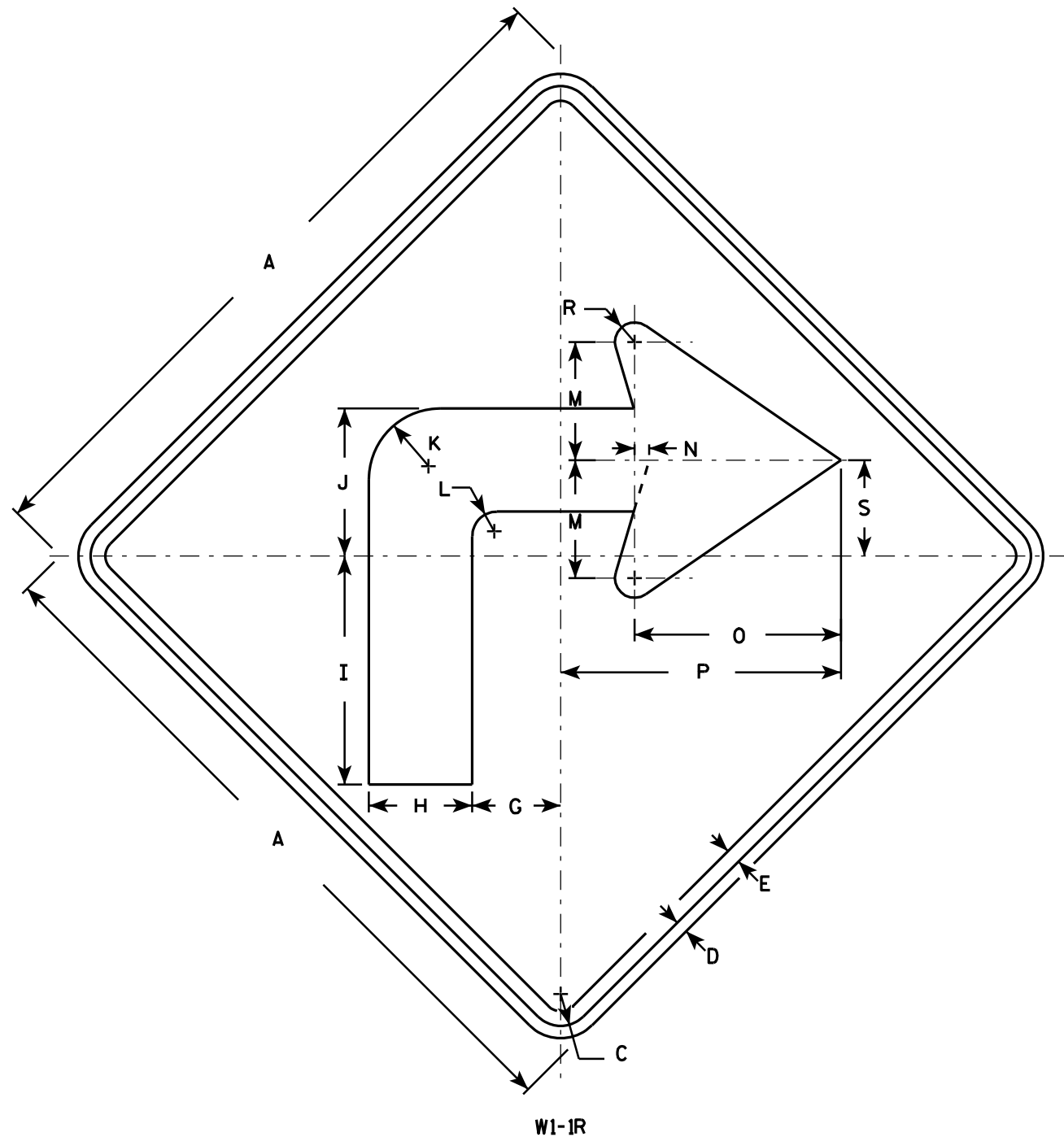
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W1-1L is the same as W1-1R except the arrow is reversed along the vertical centerline.

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

STANDARD SIGN

W1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

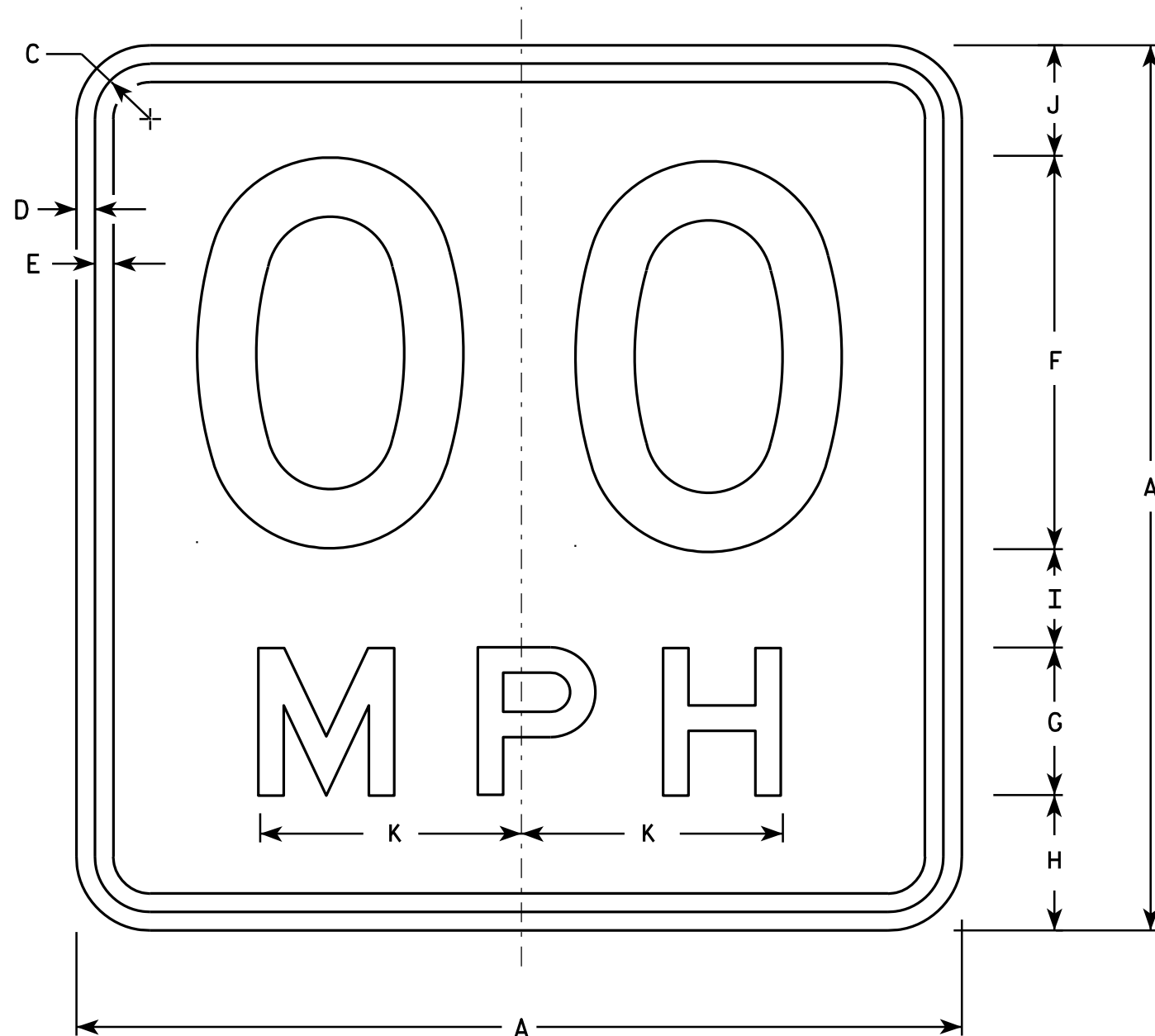
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. Message Series - See Note 6
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 and optically space about centerline to achieve proper balance.
6. Line 1 is Series D
Line 2 is Series E

W13-1

- * For 30" x 30" Warning Signs, use 18" x 18" W13-1 signs.
For 36" x 36" Warning Signs, use 24" x 24" W13-1 signs.

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	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
* 2S	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
* 2M	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
3	24		1 1/8	3/8	1/2	10	4	4	2 3/4	3 1/4	6 5/8																4.00
4	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
5	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00

STANDARD SIGN

W13-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 5/31/12 PLATE NO. W13-1.16

PROJECT NO:

HWY:

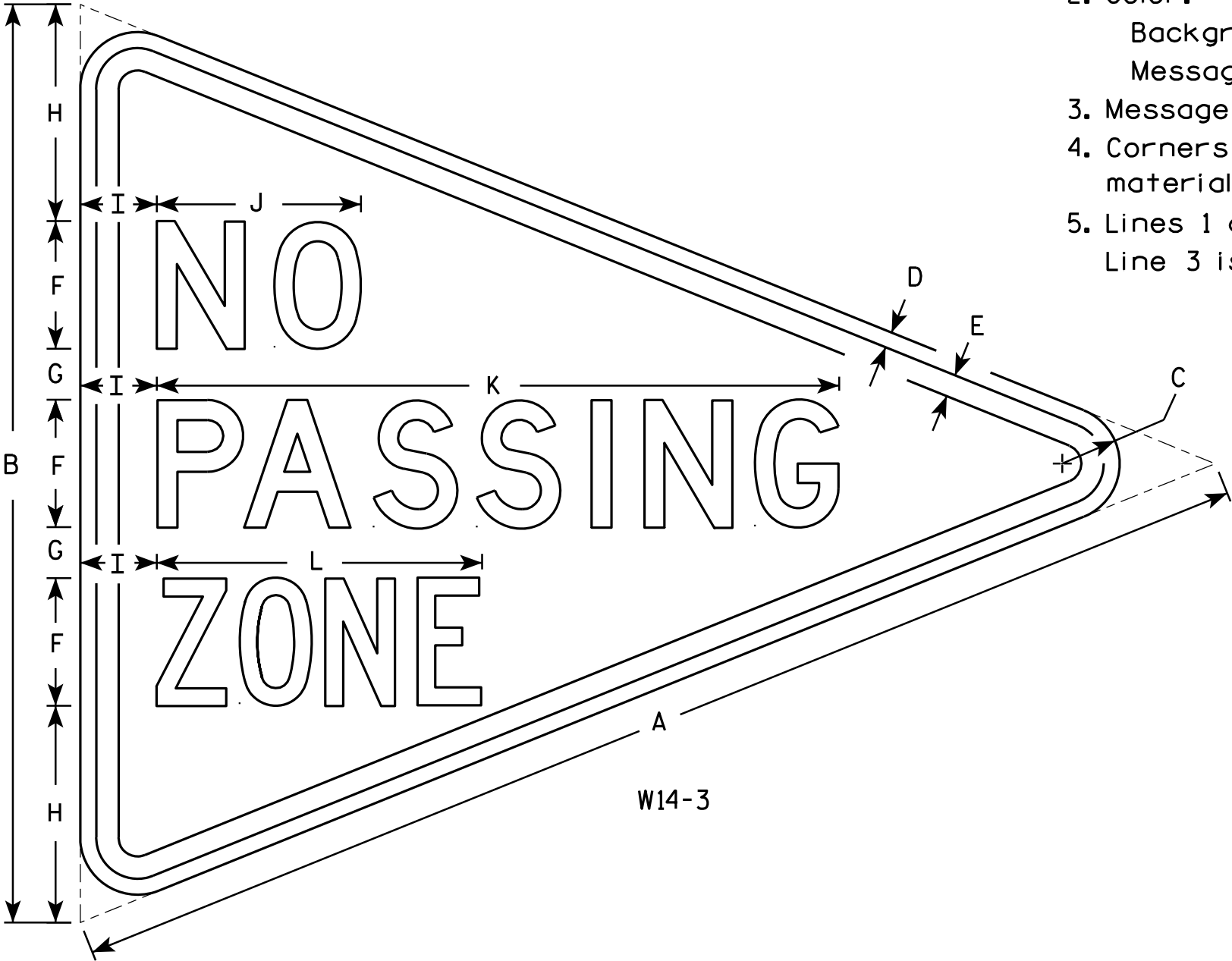
COUNTY:

SHEET NO:

E

NOTES

- 1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
Background - Yellow
Message - Black
- 3. Message Series - See note 5
- 4. Corners and borders shall be rounded on all base materials for this sign.
- 5. Lines 1 and 2 are Series D.
Line 3 is series C.



W14-3

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	36	2 1/4	5/8	7/8	5	2	8 1/2	3	8	26 3/4	12 3/4															6.0
2M	48	36	2 1/4	5/8	7/8	5	2	8 1/2	3	8	26 3/4	12 3/4															6.0
3	64	48	3	3/4	1 1/4	6	3	12	4	10 3/4	33 5/8	16 1/2															10.7
4																											
5																											

STANDARD SIGN
W14-3

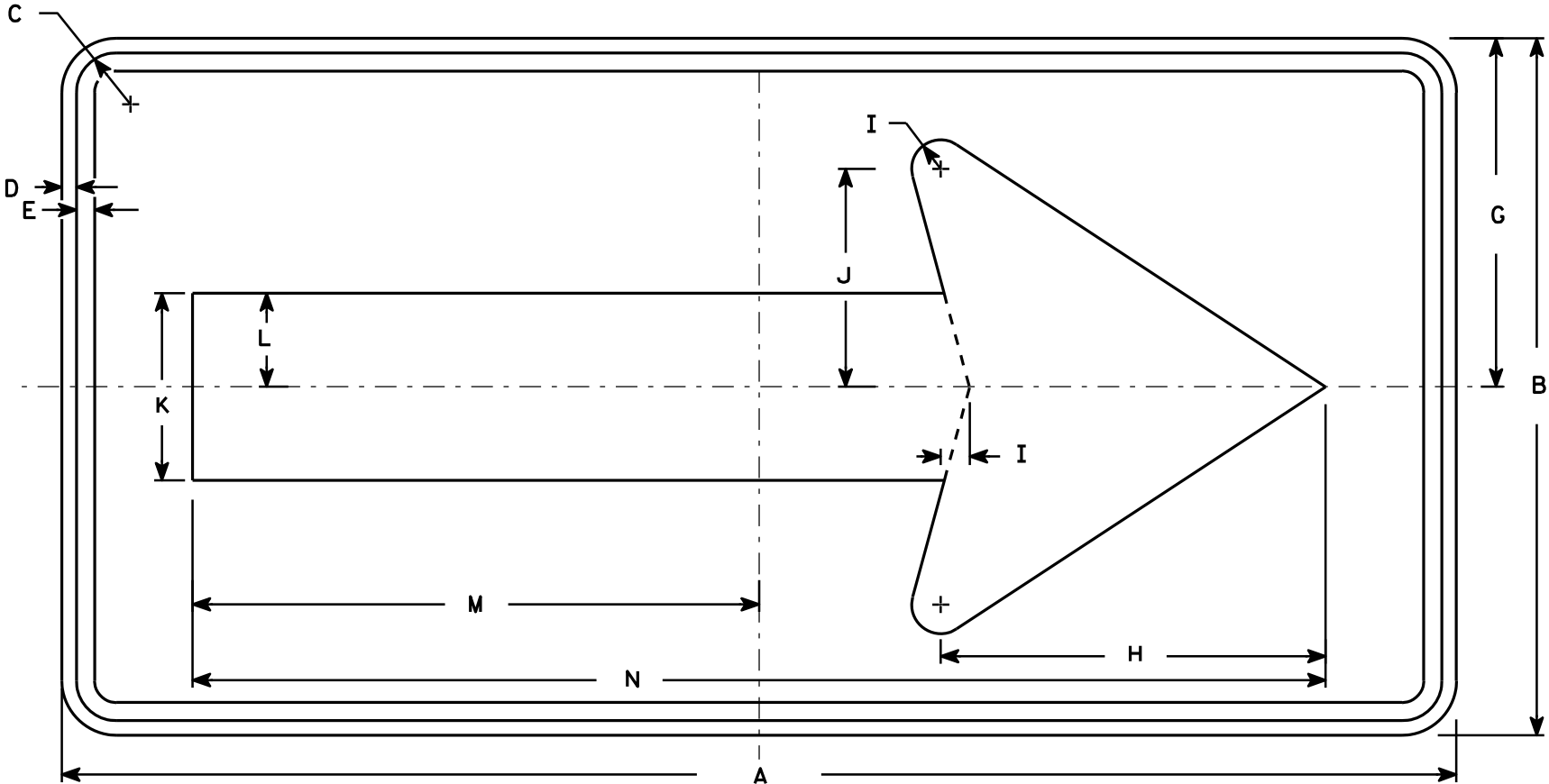
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 6/7/10 PLATE NO. W14-3.9

NOTES

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



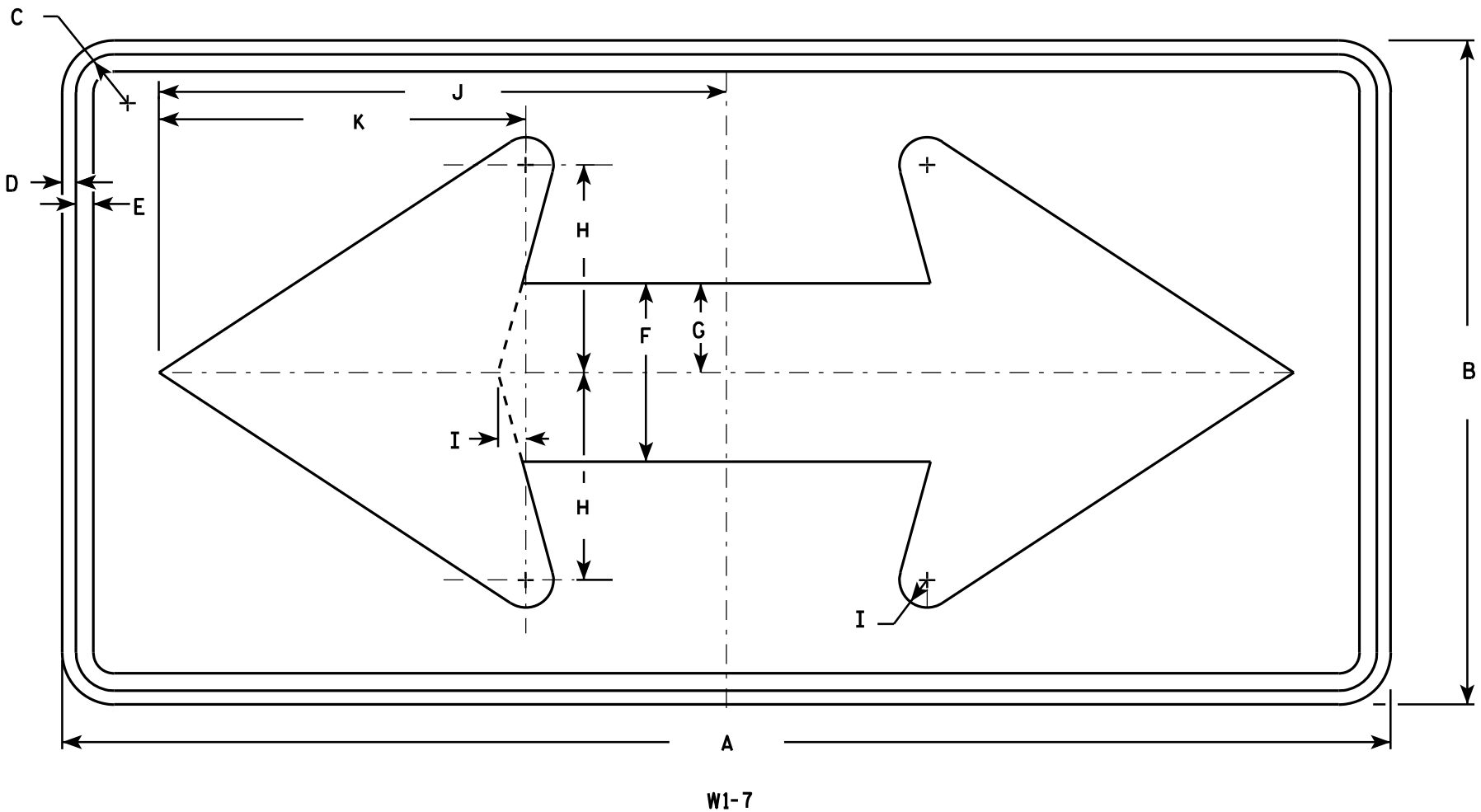
W1-6

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 1/8	3/8	3/8		9	10	3/4	5 5/8	4 3/4	2 3/8	14 5/8	29 1/4													4.5
2S	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
2M	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
3	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
4	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
5	96	48	2 1/4	3/4	1		24	26 1/2	2	15	13	6 1/2	39	78													32.0

STANDARD SIGN
W1-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/7/10 PLATE NO. W1-6.8



NOTES

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

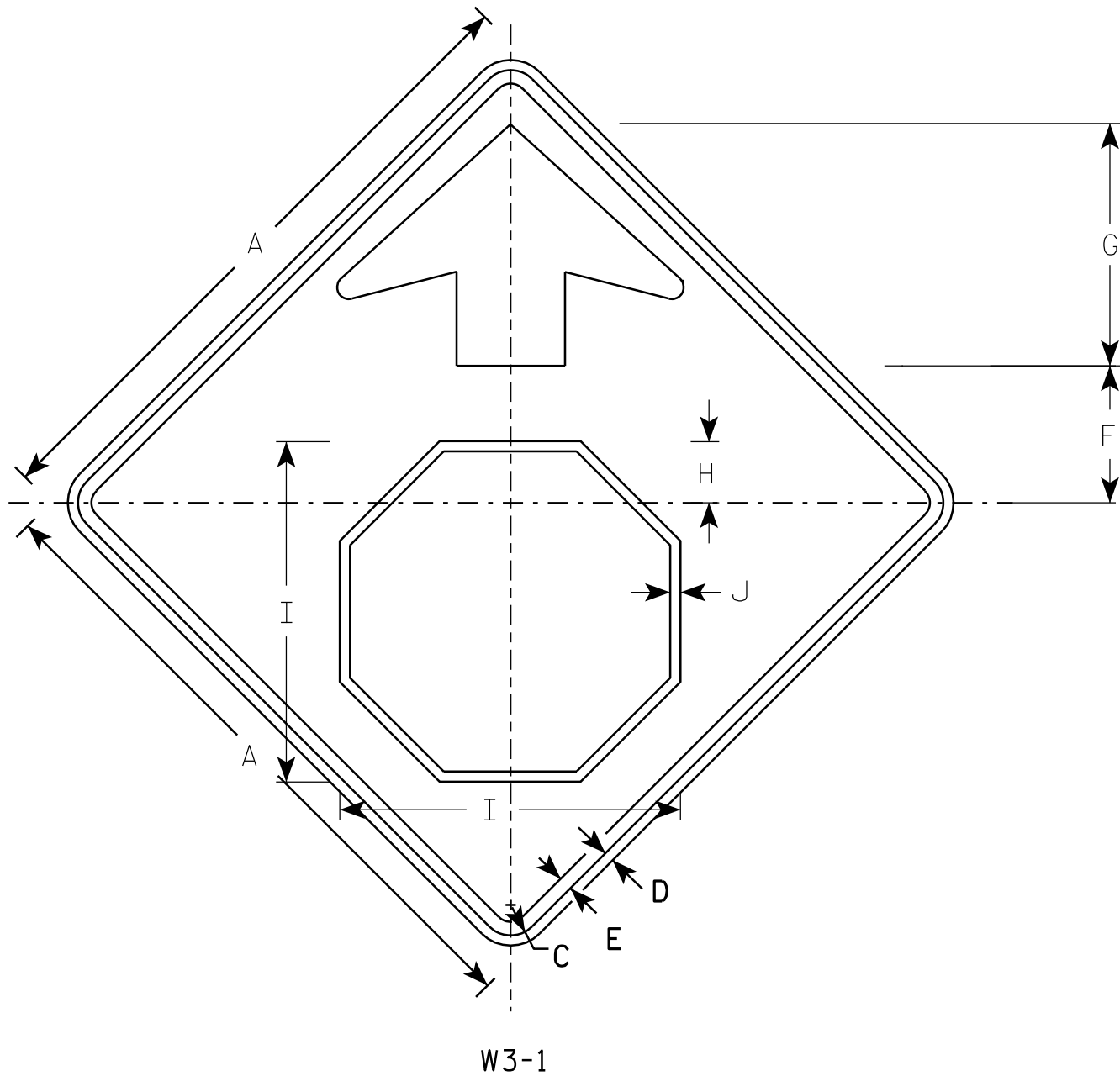
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 1/8	3/8	1/2	5	2 1/2	5 3/4	3/4	15 5/8	10 1/8																4.5
2S	48	24	1 3/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
2M	48	24	1 3/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
3	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5
4	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5
5	96	48	2 1/4	3/4	1	13	6 1/2	15	2	41	26 1/2																32.0

STANDARD SIGN
W1 - 7

WISCONSIN DEPT OF TRANSPORTATION

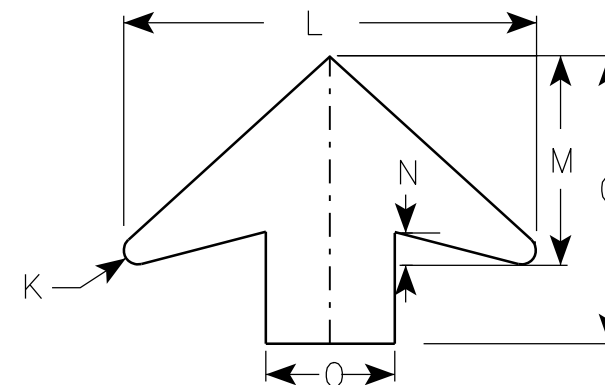
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W1-7.7



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

STANDARD SIGN W3-1

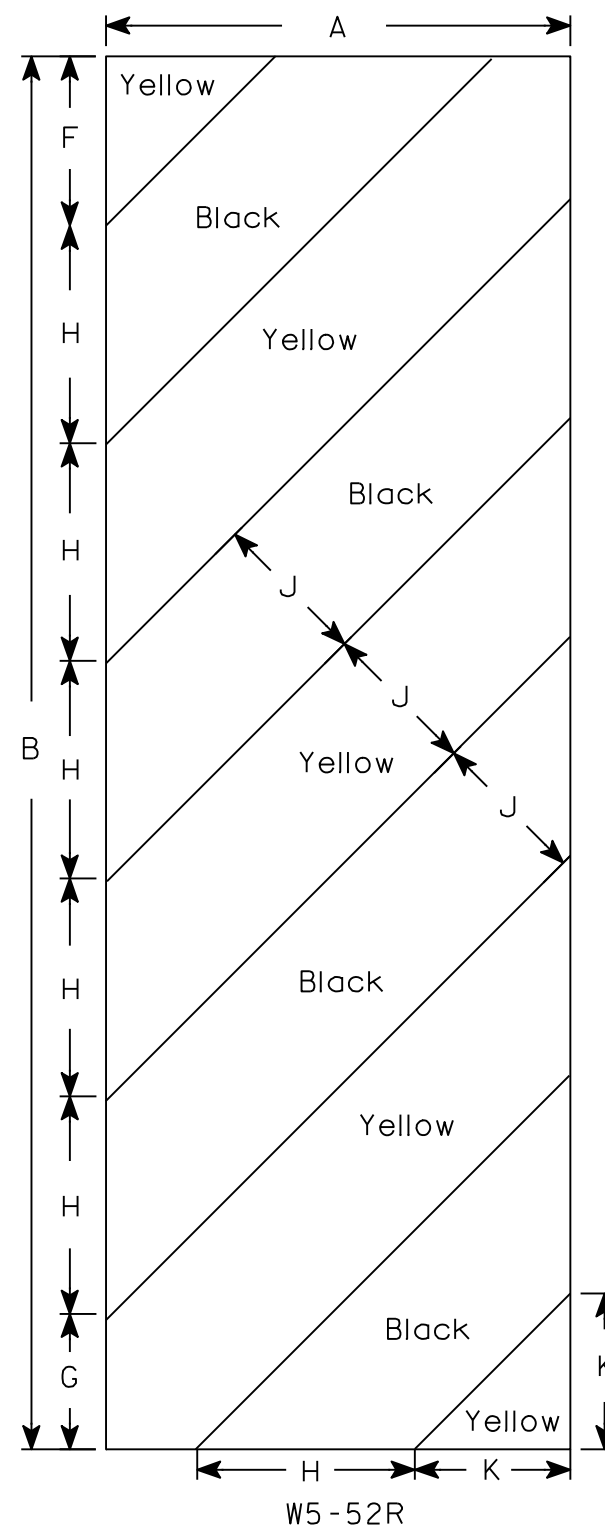
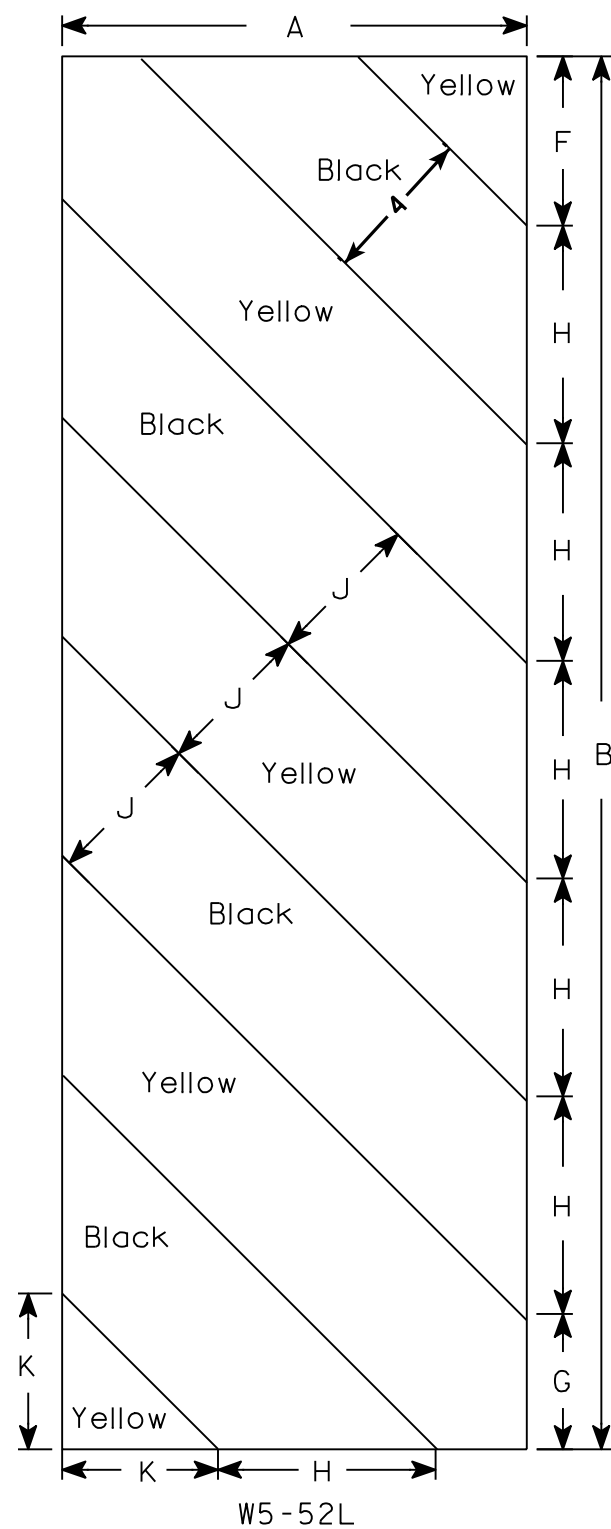
WISCONSIN DEPT OF TRANSPORTATION

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

PROJECT NO:

SHEET NO:

E



NOTES

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

[illegible]

STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

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

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

DESIGN DATA

LIVE LOAD:

DESIGN LOADING; HL-93
INVENTORY RATING FACTOR: RF=1.08
OPERATING RATING FACTOR: RF=1.40
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 250 (KIPS)

STRUCTURE IS DESIGNED FOR A FUTURE WEARING
SURFACE OF 20 POUNDS PER SQUARE FOOT.

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY SLAB — f'_c = 4,000 P.S.I. ALL OTHER — f'_c = 3,500 P.S.I.
BAR STEEL REINFORCEMENT, GRADE 60 — f_y = 60,000 P.S.I.

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10X42 STEEL PILING
DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 115 TONS ** PER PILE
AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.
ESTIMATED 16' LONG.

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

HYDRAULIC DATA

100 YEAR FREQUENCY

Q_{100} = 321 C.F.S.
VEL. = 4.6 F.P.S.
HW. = EL. 919.7
WATERWAY AREA = 70.4 SQ. FT.
DRAINAGE AREA = 0.44 SQ. MI.
ROAD OVERTOPPING = NA
SCOUR CRITICAL CODE = 8

2 YEAR FREQUENCY

Q_2 = 53 C.F.S.
HW.₂ = EL. 918.0

TRAFFIC VOLUME

STH 23


A.D.T. = 5,700 (2035)
R.D.S. = 60 M.P.H.

STRUCTURE DESIGN CONTACTS:

TIM BOROWSKI (608) 266-4547
LAURA SHADEWALD (608) 267-9592

LIST OF DRAWINGS

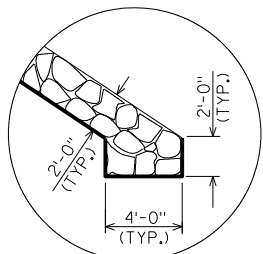
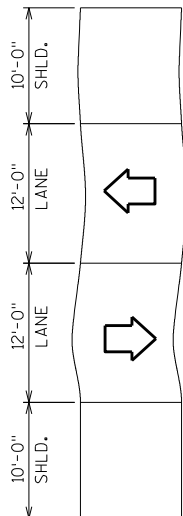
1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. SOUTH ABUTMENT
5. SOUTH ABUTMENT DETAILS
6. NORTH ABUTMENT
7. NORTH ABUTMENT DETAILS
8. SUPERSTRUCTURE
9. SUPERSTRUCTURE DETAILS
10. SINGLE SLOPE PARAPET SS32
11. ALTERNATE CONSTRUCTION JOINT

NO.	DATE	REVISION	BY
ACCEPTED  Plans Prepared By WISDOT BUREAU OF STRUCTURES ACCEPTED <i>William C. Dreher</i> 4/2/14 CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-56-222			
STH 23 OVER TRIBUTARY TO NARROWS CREEK			
COUNTY	SAUK	TOWN/CITY/VILLAGE	REEDSBURG
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	TAB	DESIGN CKD. JDL	DRAWN BY TAB PLANS CKD. JDL
GENERAL PLAN			SHEET 1 OF 11

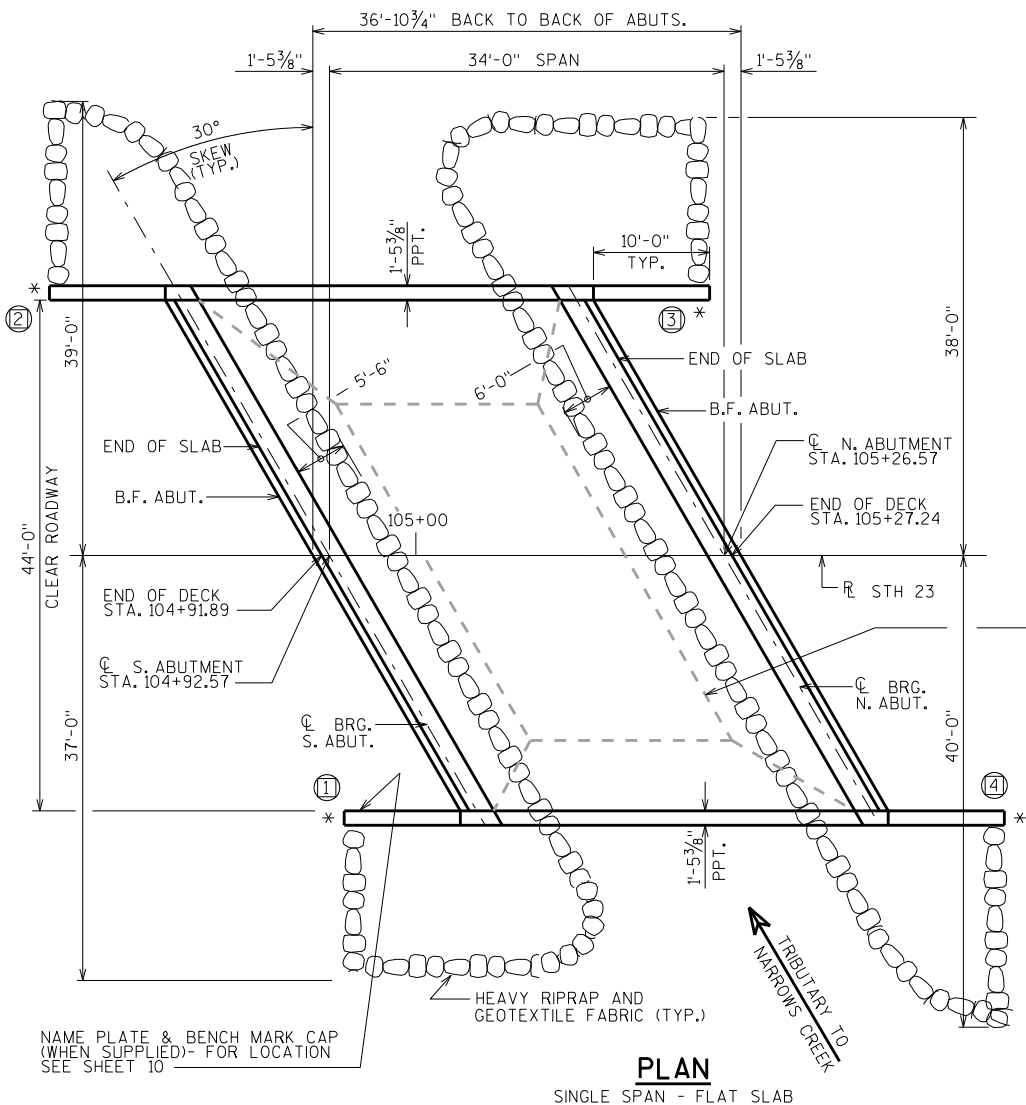


* PROVIDE FOR THREE BEAM
GUARD RAIL ATTACHMENT
AT UNUSED ANCHOR ASSEMBLIES
CAULK HOLES SHUT WITH
"100% SILICONE CAULK".

⊙ INDICATES WING NUMBER

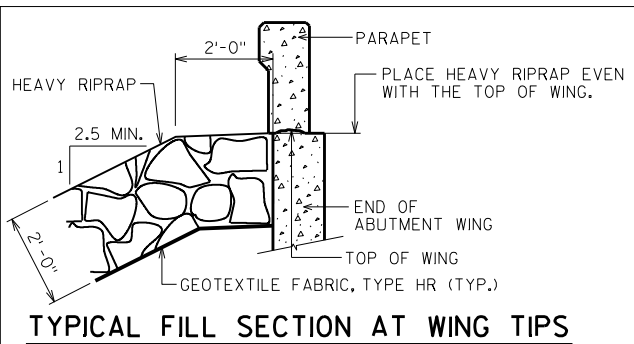


RIPRAP TOE DETAIL

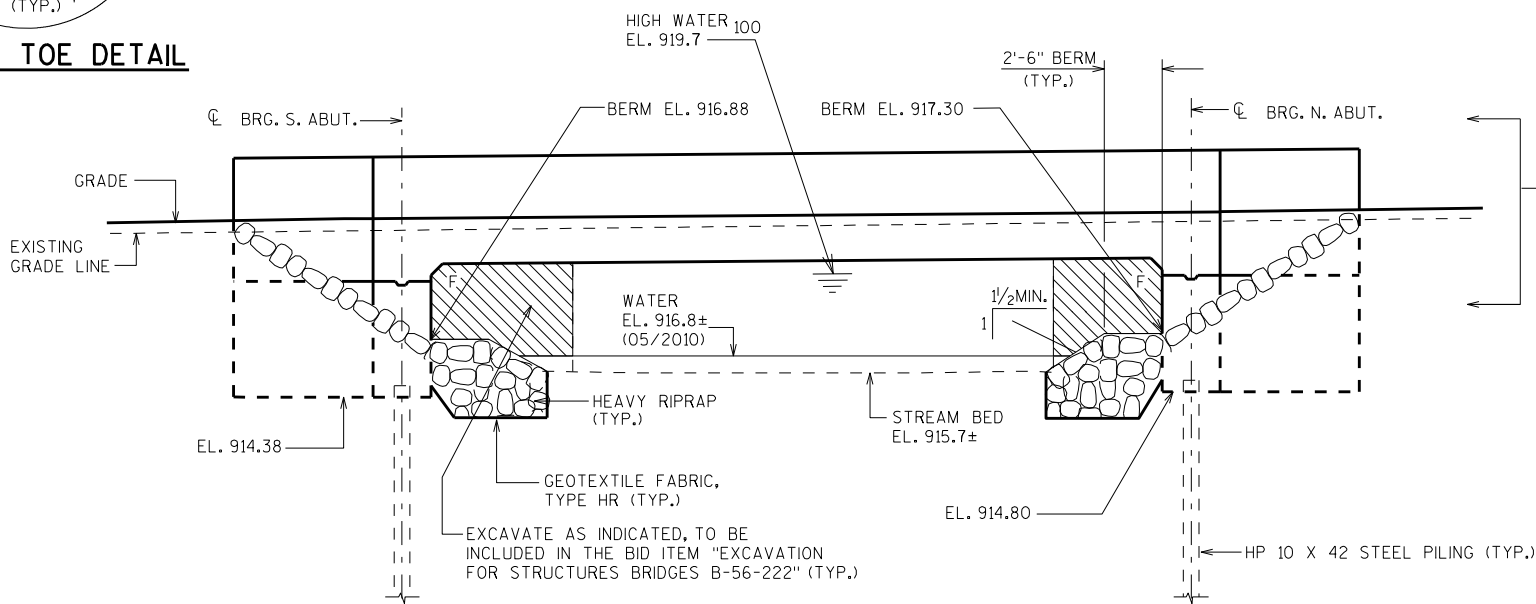


PLAN

SINGLE SPAN - FLAT SLAB



TYPICAL FILL SECTION AT WING TIPS

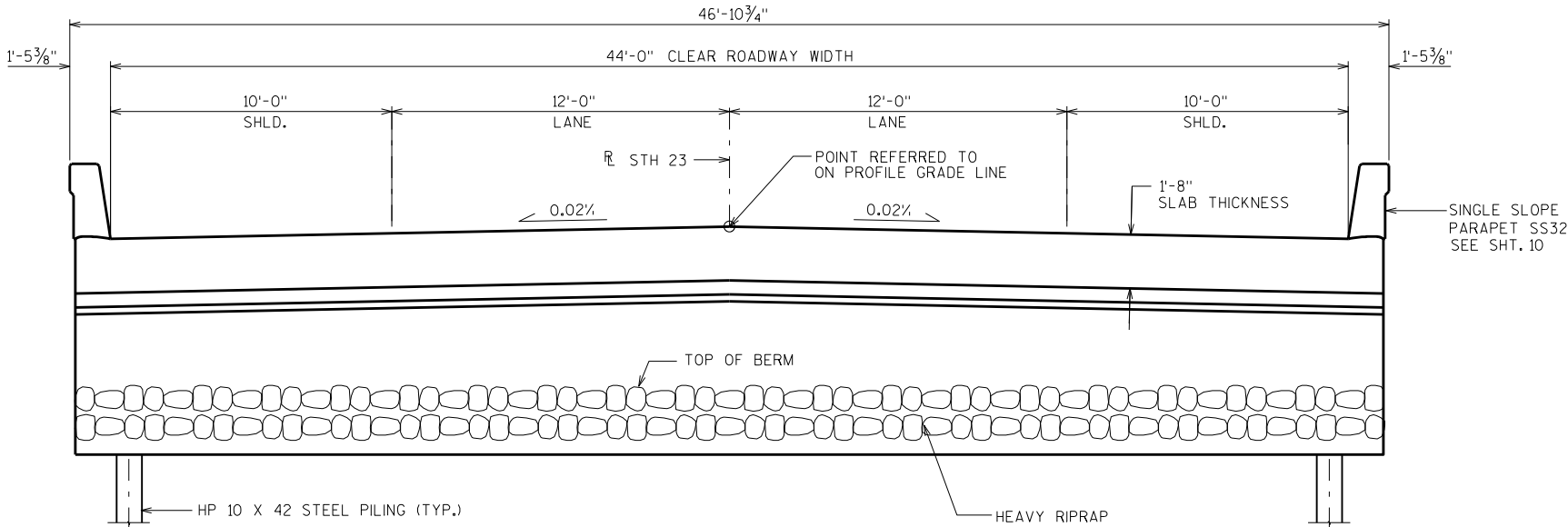


ELEVATION

LOOKING WEST

GENERAL NOTES

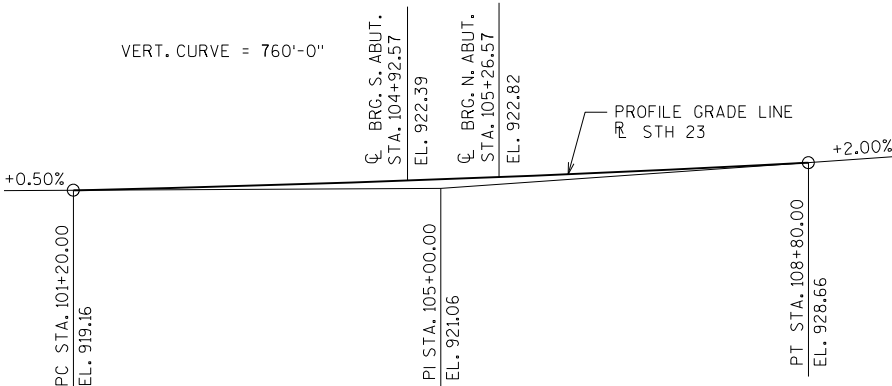
DRAWINGS SHALL NOT BE SCALED.
BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.
THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.
AT THE BACKFACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.
SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE, UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.
THE GRADATION OF THE STRUCTURE BACKFILL SHALL MEET THE REQUIREMENTS OF SECTION 209.2.2 OF THE STANDARD SPECIFICATIONS FOR GRADE 1 MATERIAL.
PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE TOP OF DECK SURFACE AND THE FRONT FACE AND THE TOP OF THE PARAPET, INCLUDING PARAPETS ON ABUTMENT WINGS.
THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE FABRIC TYPE 'HR' TO THE EXTENT SHOWN ON SHEET 1 AND IN THE ABUTMENT DETAILS.



CROSS SECTION THRU ROADWAY LOOKING NORTH

TOTAL ESTIMATED QUANTITIES

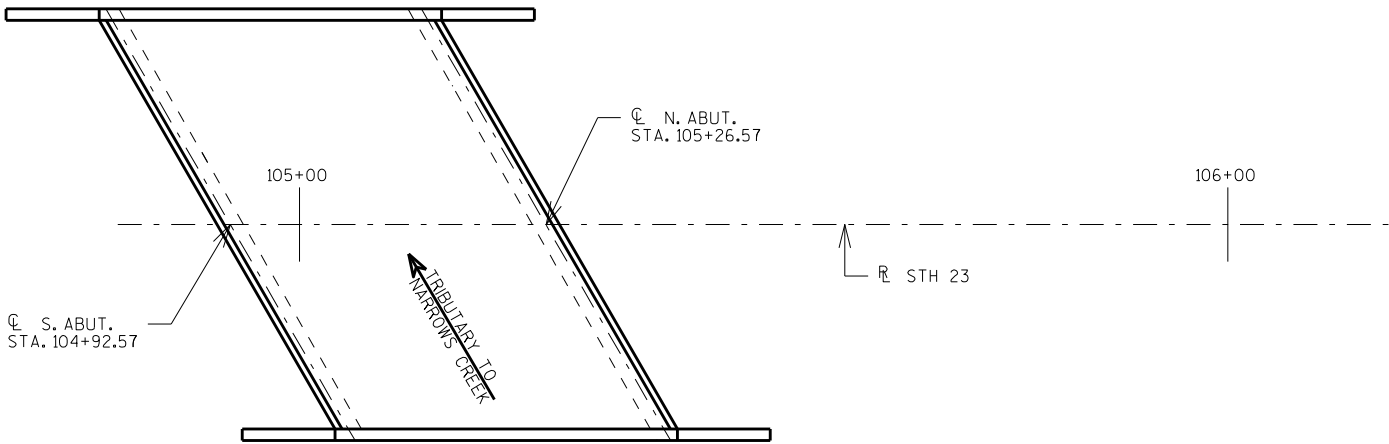
BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	SOUTH ABUT.	NORTH ABUT.	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA. 104+98.00	LS	—	—	—	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-56-222	LS	—	—	—	1
210.0100	BACKFILL STRUCTURE	CY	—	130	130	260
502.0100	CONCRETE MASONRY BRIDGES	CY	120	43	43	206
502.3200	PROTECTIVE SURFACE TREATMENT	SY	204	8	8	220
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	—	3,470	3,480	6,950
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	21,140	1,950	1,950	25,040
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	—	13	13	26
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	—	128	128	256
606.0300	RIPRAP HEAVY	CY	—	80	85	165
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	—	85	85	170
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	—	2	2	4
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	—	150	160	310
	NON-BID ITEMS					
	FILLER	SIZE	—	—	—	1/2" & 3/4"



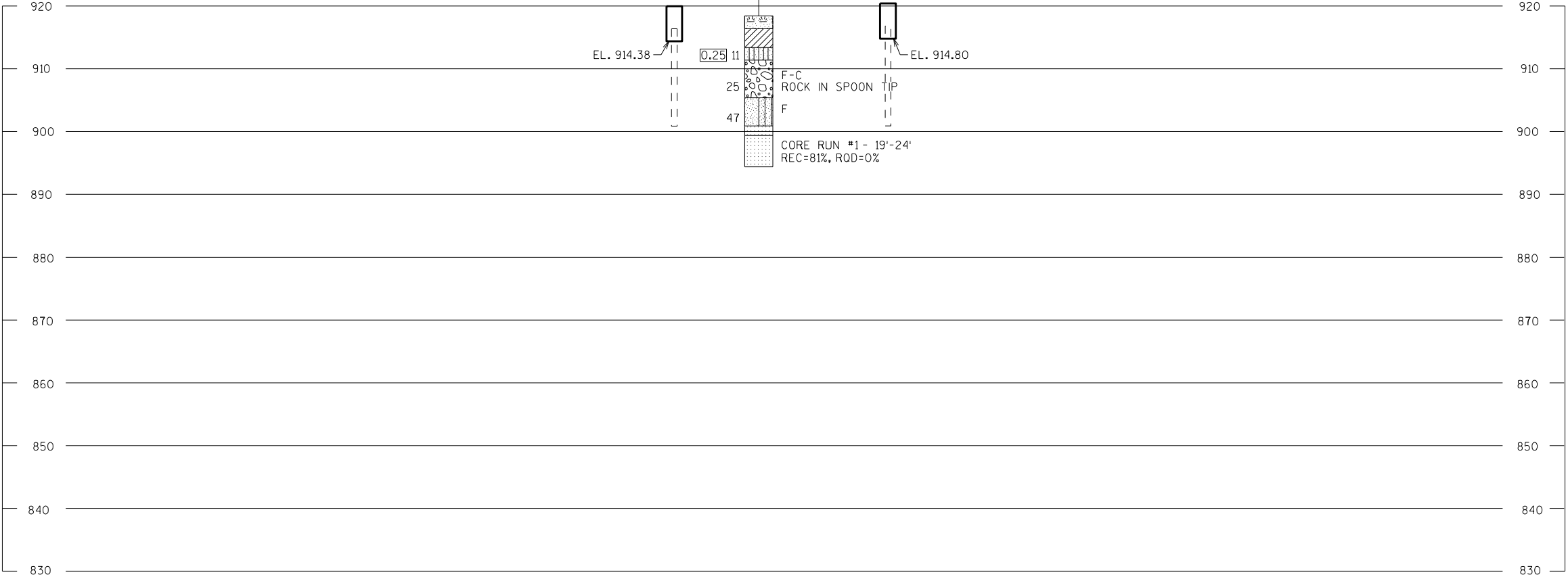
PROFILE GRADE LINE - R STH 23

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-56-222			
DRAWN BY		TAB	PLANS CK'D. JDL
CROSS SECTION & QUANTITIES			SHEET 2

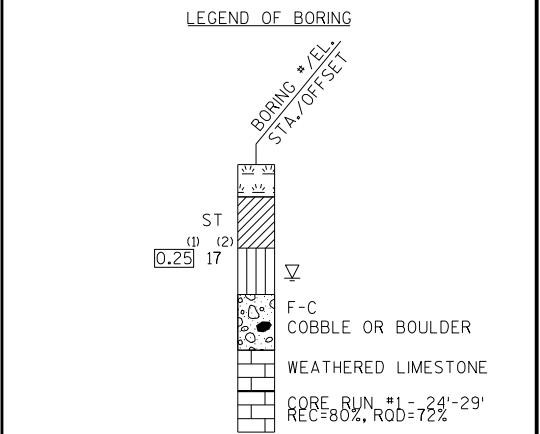
BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	9/26/2013	241587.581	578817.945
BORINGS COMPLETED BY: WISDOT			
REPORT COMPLETED BY: WISDOT			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) SAUK COUNTY			



BOR B-1, EL. 918.4
STA. 105+06.36 RT OF STH 23 CL



STATE PROJECT NUMBER			
5080-09-82			
MATERIAL SYMBOLS			
ASPHALT	TOPSOIL	PEAT	
CONCRETE	FILL	GRAVEL	
SAND	CLAY	SILT	
BOULDERS OR COBBLES	LIMESTONE	BEDROCK (UNKNOWN)	
SHALE	SANDSTONE	IGNEOUS/META	



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

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

GROUND WATER ELEVATION	
▽	AT TIME OF DRILLING
▼	END OF DRILLING
▽	AFTER DRILLING

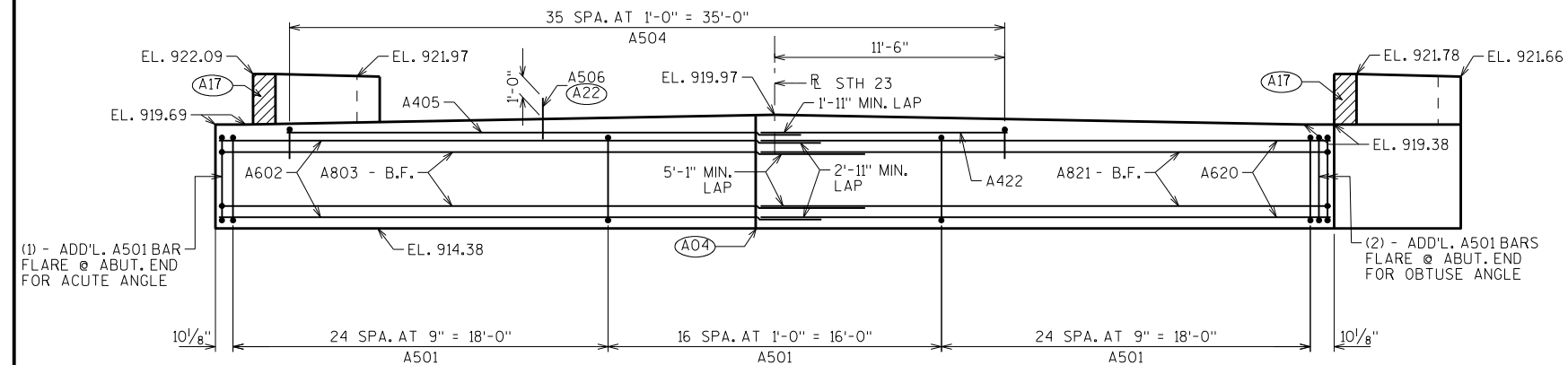
ABBREVIATIONS	
F-FINE	M-MEDIUM
C-COARSE	ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

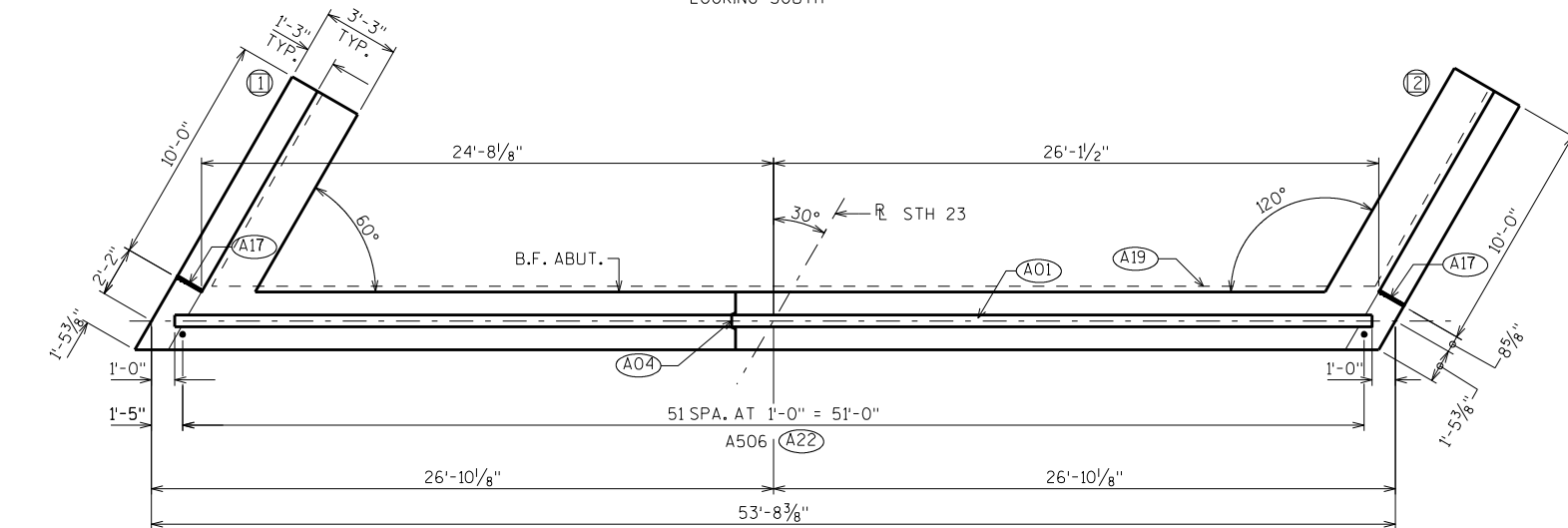
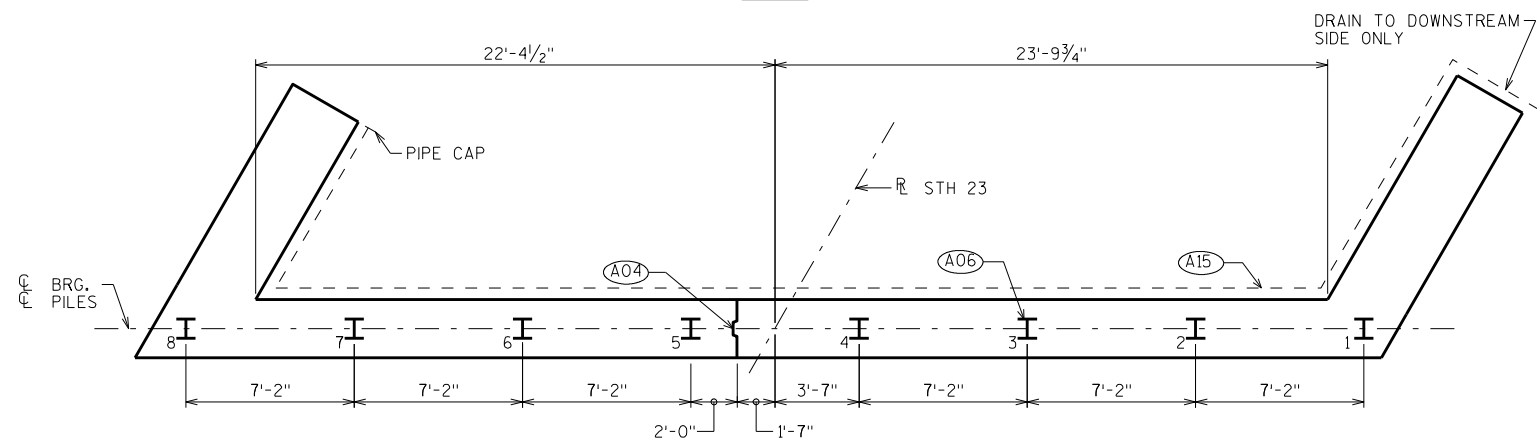
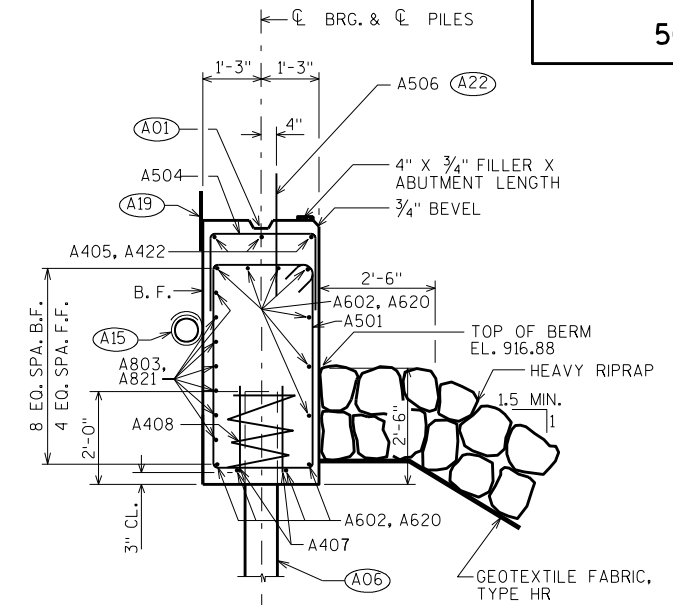
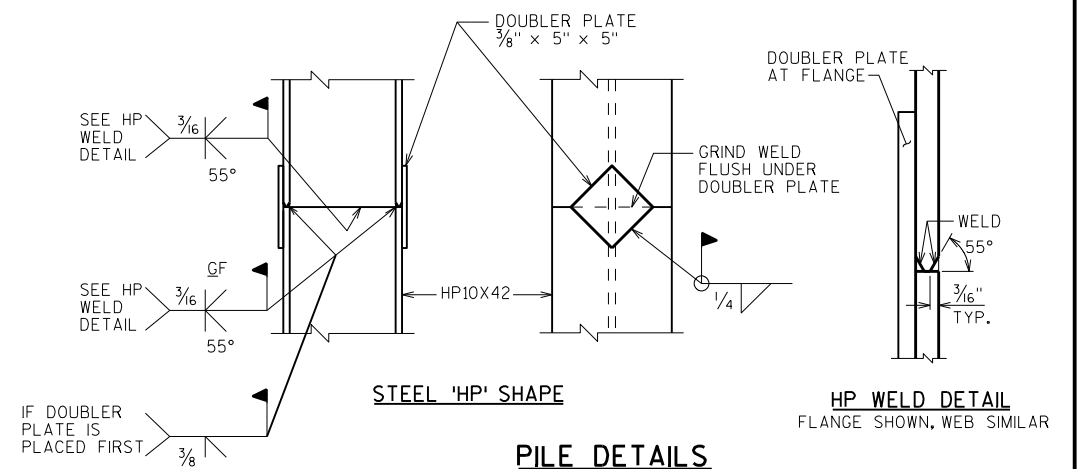
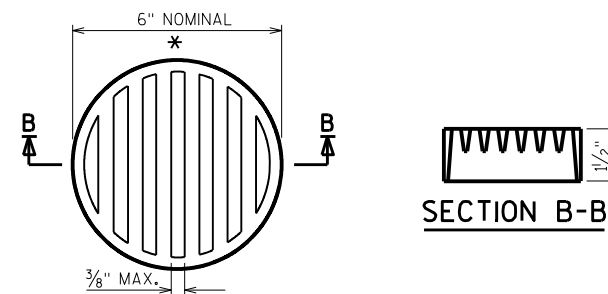
BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-56-222			
DRAWN BY PR/TAB		PLANS CKD.	JDL
SUBSURFACE EXPLORATION		SHEET	3

SCALE = 10:0

**ELEVATION**

LOOKING SOUTH

**PLAN****PILE PLAN****SECTION THRU BODY****STEEL 'HP' SHAPE****PILE DETAILS****RODENT SHIELD DETAIL**

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

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

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

- (A01) CONSTRUCTION JOINT: KEYWAY FORMED BY A BEVELED 2 x 6.
- (A04) VERT. CONSTRUCTION JOINT: KEYWAY FORMED BY A BEVELED 2 x 8, 3/4" "V" GROOVE @ THE FRONT FACE AND 18" R.M.W. @ BACKFACE. FOR OPTIONAL DETAILS SEE "ALTERNATE CONSTRUCTION JOINT" SHEET.
- (A06) SUPPORT ABUTMENT ON HP 10 x 42 STEEL PILING, ESTIMATED 16' LONG WITH A REQUIRED DRIVING RESISTANCE OF 115 TONS PER PILE.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. DISCHARGE PIPE @ EL. 917.8 OR ABOVE. RODENT SCREEN REQUIRED.

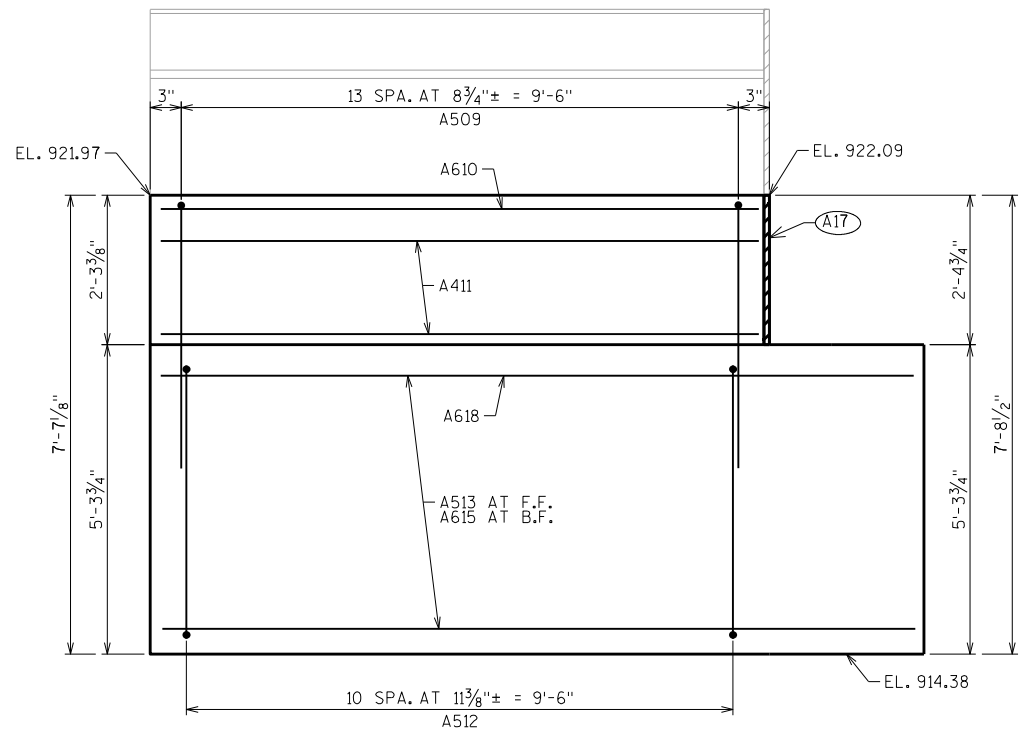
- (A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (A22) BARS @ 1'-0" CTRS. BETWEEN BEAM SEATS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-56-222			
DRAWN BY		TAB	PLANS CKD. JDL
SOUTH ABUTMENT			SHEET 4

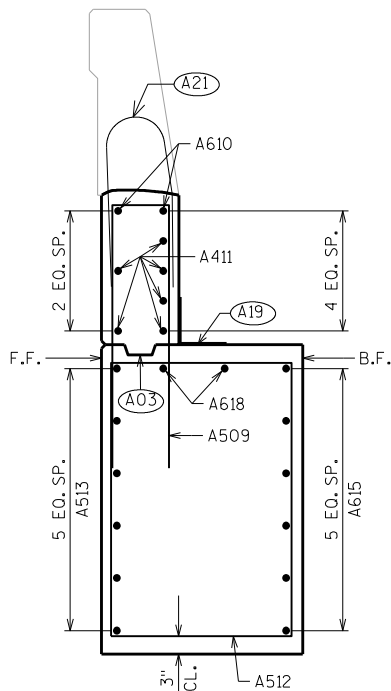
BILL OF BARS

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

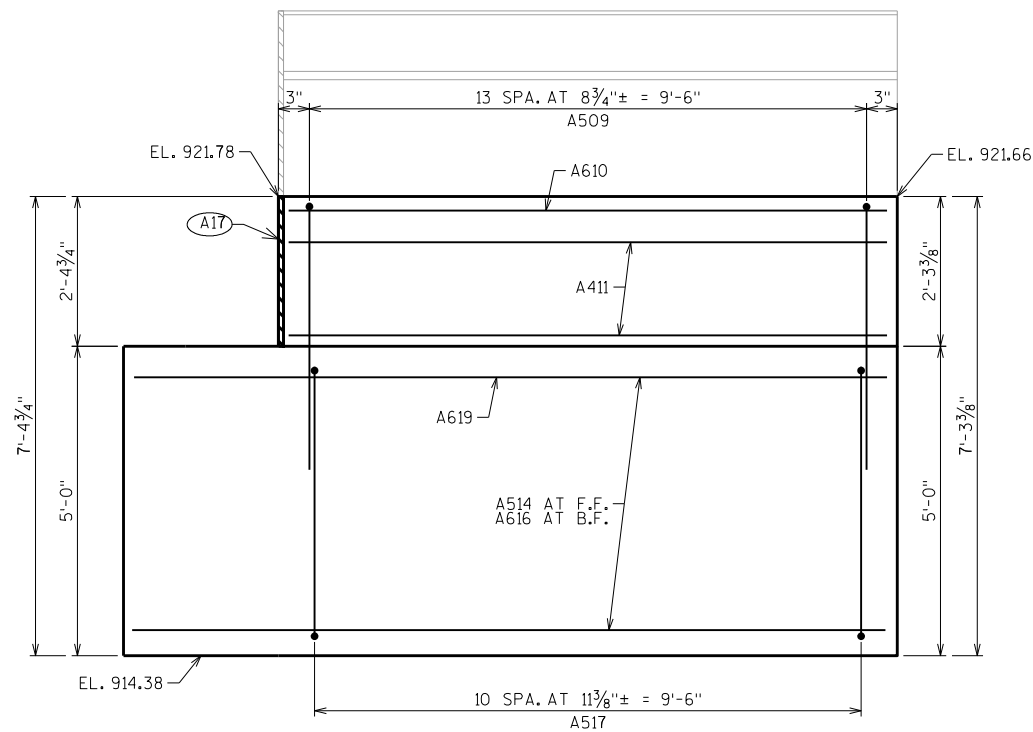
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A501		68	14'-0"	X		BODY - STIRRUPS
A602		11	29'-3"			BODY - HORIZ.
A803		7	30'-3"	X		BODY - HORIZ. - B.F.
A504		36	5'-1"	X		BODY - VERT. - TOP U-BARS
A405		3	24'-9"			BODY - HORIZ. - TOP
A506	X	52	2'-0"			BODY - VERT. - TOP
A407		16	2'-3"			BODY - 2 PER PILE
A408		8	28'-0"	X		BODY - 1 PER PILE
A509	X	28	9'-2"	X		WING - VERT. - TOP U-BARS
A610	X	4	9'-7"			WING - HORIZ. - TOP
A411	X	12	9'-7"			WING - HORIZ. - F.F. & B.F.
A512	X	11	16'-1"	X		WING 1 - STIRRUPS
A513	X	6	13'-1"			WING 1 - HORIZ. - F.F.
A514	X	6	11'-10"			WING 2 - HORIZ. - F.F.
A615	X	6	10'-10"			WING 1 - HORIZ. - B.F.
A616	X	6	13'-1"			WING 2 - HORIZ. - B.F.
A517	X	11	15'-6"	X		WING 2 - STIRRUPS
A618	X	2	11'-9"			WING 1 - HORIZ. TOP
A619	X	2	12'-3"			WING 2 - HORIZ. TOP
A620		11	27'-3"			BODY - HORIZ.
A821		7	28'-6"			BODY - HORIZ. - B.F.
A422		3	13'-6"			BODY - HORIZ. - TOP



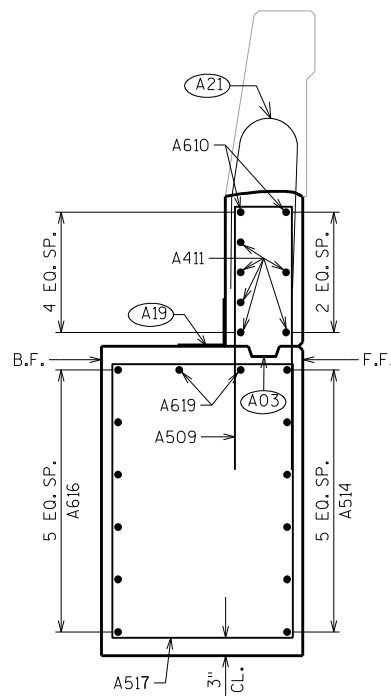
WING ELEVATION 1



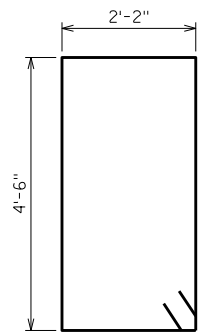
SECTION THRU WING 1



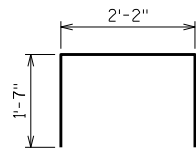
WING ELEVATION 2



SECTION THRU WING 2

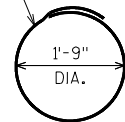


A501

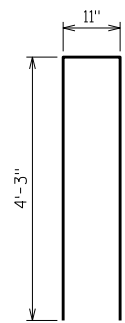


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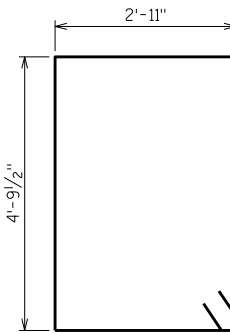
5 WRAP SPIRAL



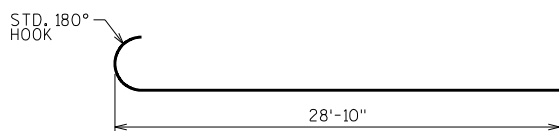
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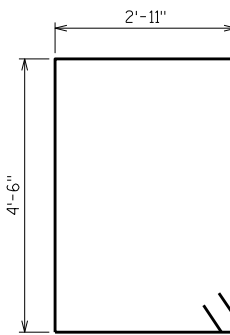
A509



A512



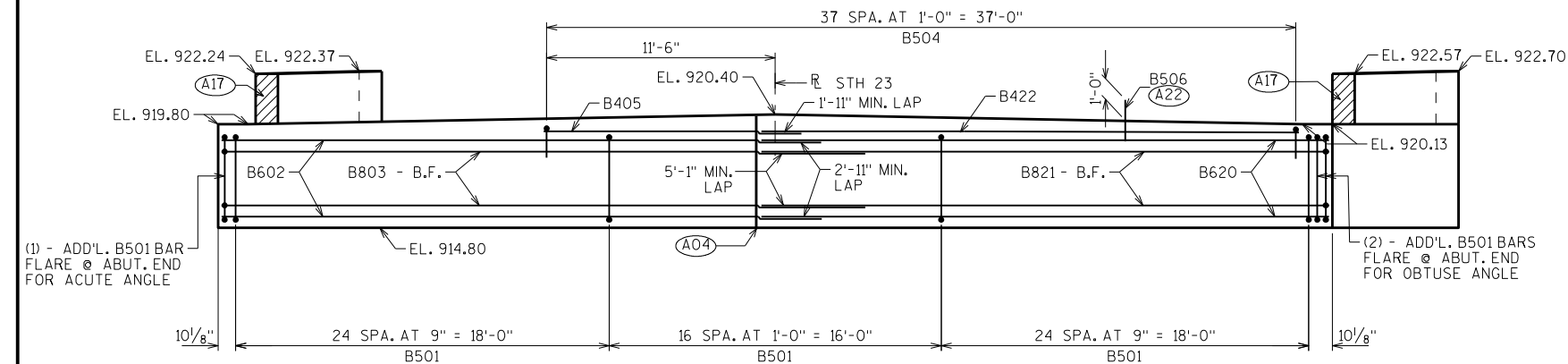
A803



A517

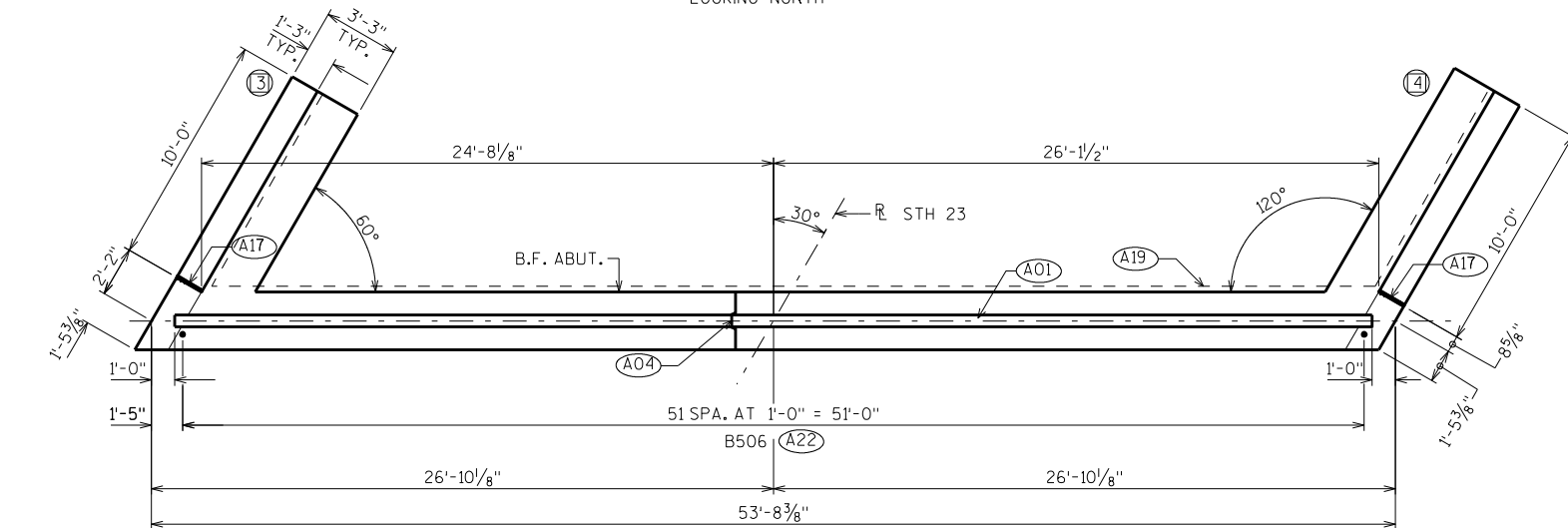
- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 X 6. (18" R.M.W. @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (A21) FOR PPT. BARS & DIMENSION SEE PARAPET SHT.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-56-222			
DRAWN BY		TAB	PLANS CK'D. JDL
SOUTH ABUTMENT DETAILS		SHEET 5	

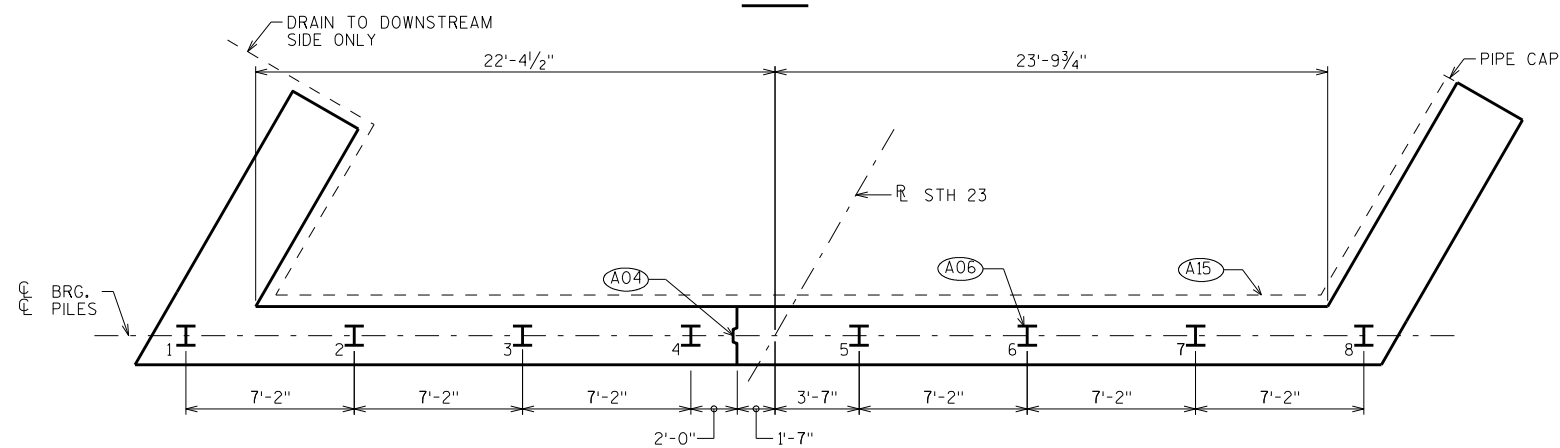


ELEVATION

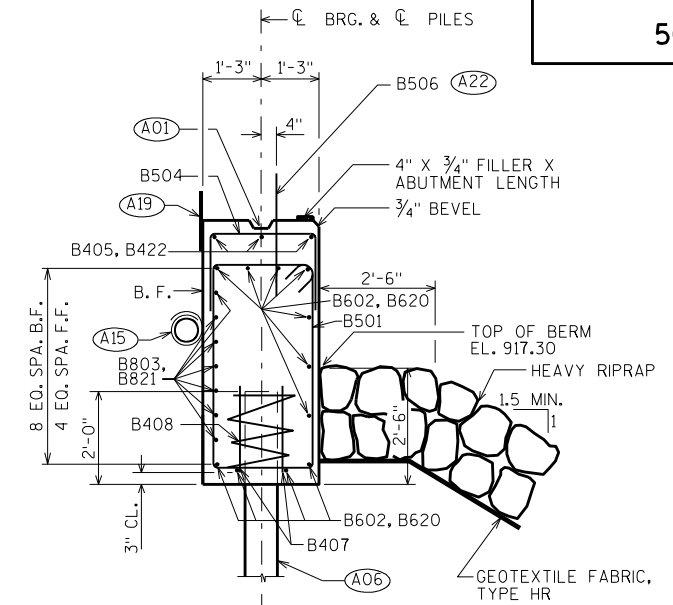
LOOKING NORTH



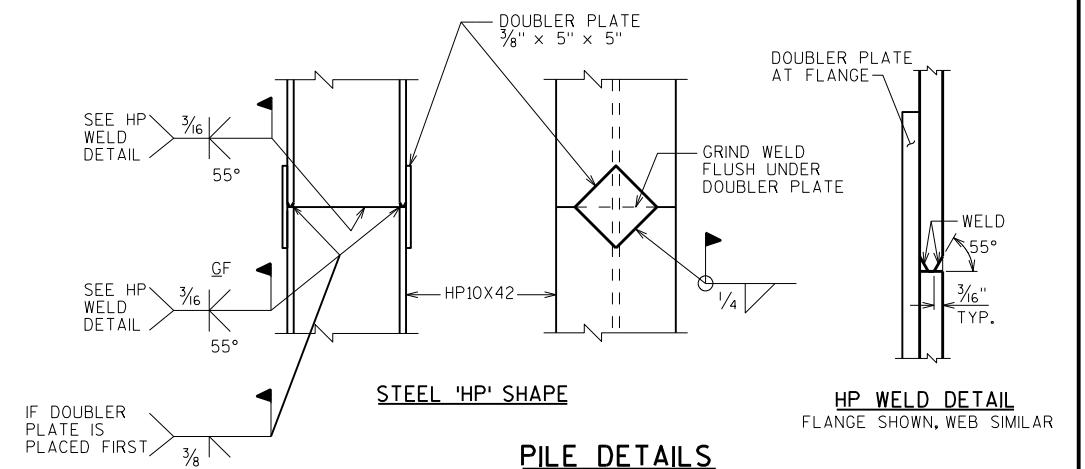
PLAN



PILE PLAN

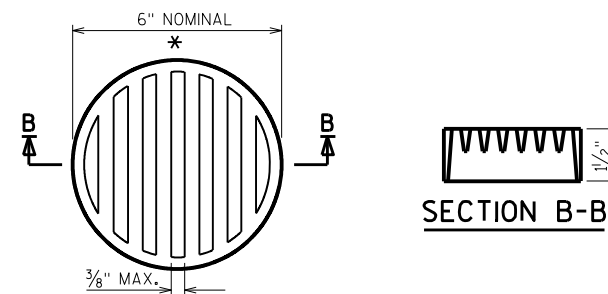


SECTION THRU BODY



STEEL 'HP' SHAPE

PILE DETAILS



RODENT SHIELD DETAIL

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

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

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

(A01) CONSTRUCTION JOINT: KEYWAY FORMED BY A BEVELED 2 x 6.

(A04) VERT. CONSTRUCTION JOINT: KEYWAY FORMED BY A BEVELED 2 x 8, 3/4" "V" GROOVE @ THE FRONT FACE AND 18" R.M.W. @ BACKFACE. FOR OPTIONAL DETAILS SEE "ALTERNATE CONSTRUCTION JOINT" SHEET.

(A06) SUPPORT ABUTMENT ON HP 10 x 42 STEEL PILING, ESTIMATED 16' LONG WITH A REQUIRED DRIVING RESISTANCE OF 115 TONS PER PILE.

(A15) PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. DISCHARGE PIPE @ EL. 917.8 OR ABOVE. RODENT SCREEN REQUIRED.

(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

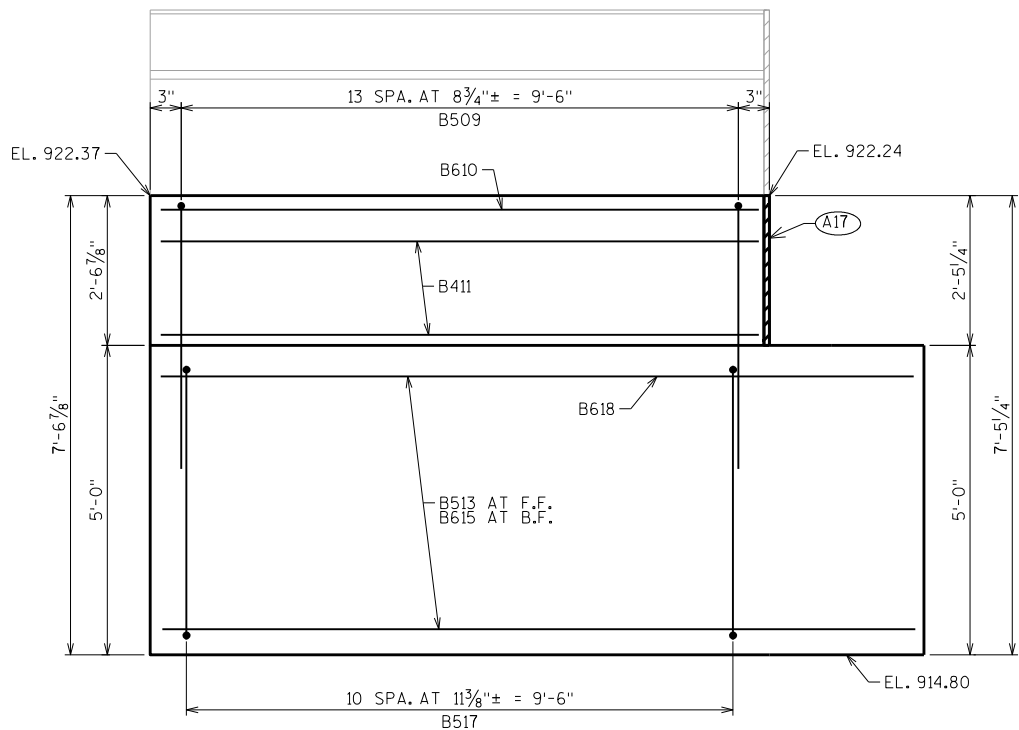
(A22) BARS @ 1'-0" CTRS. BETWEEN BEAM SEATS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-56-222			
DRAWN BY		TAB	PLANS CKD. JDL
NORTH ABUTMENT			SHEET 6

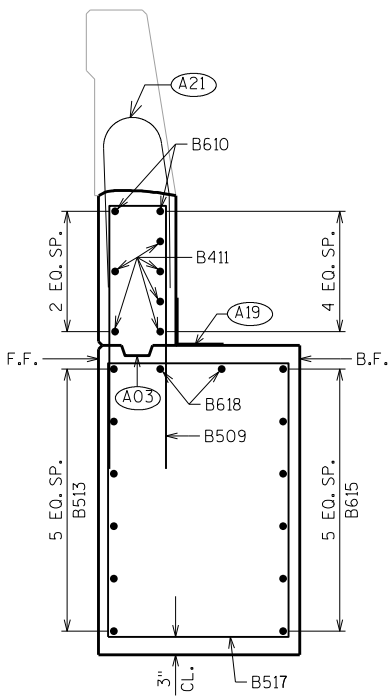
BILL OF BARS

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

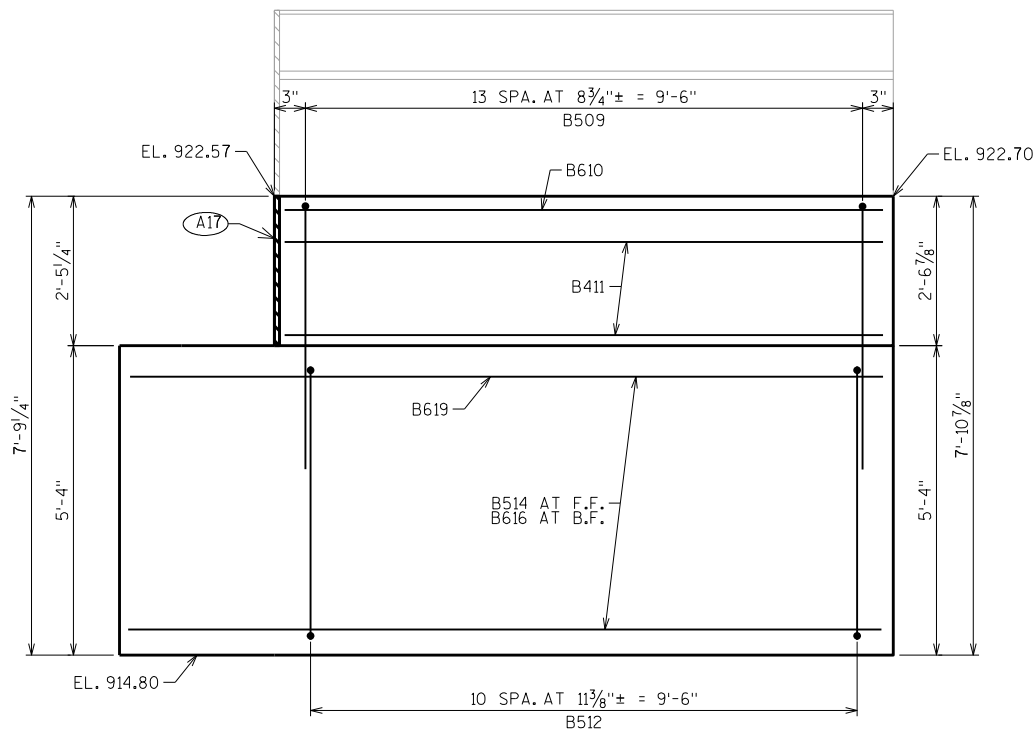
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B501		68	14'-0"	X		BODY - STIRRUPS
B602		11	29'-3"			BODY - HORIZ.
B803		7	30'-3"	X		BODY - HORIZ. - B.F.
B504		38	5'-1"	X		BODY - VERT. - TOP U-BARS
B405		3	12'-9"			BODY - HORIZ. - TOP
B506	X	52	2'-0"			BODY - VERT. - TOP
B407		16	2'-3"			BODY - 2 PER PILE
B408		8	28'-0"	X		BODY - 1 PER PILE
B509	X	28	9'-2"	X		WING - VERT. - TOP U-BARS
B610	X	4	9'-7"			WING - HORIZ. - TOP
B411	X	12	9'-7"			WING - HORIZ. - B.F. & F.F.
B512	X	11	16'-1"	X		WING 4 - STIRRUPS
B513	X	6	13'-1"			WING 3 - HORIZ. - F.F.
B514	X	6	11'-10"			WING 4 - HORIZ. - F.F.
B615	X	6	10'-10"			WING 3 - HORIZ. - B.F.
B616	X	6	13'-1"			WING 4 - HORIZ. - B.F.
B517	X	11	15'-6"	X		WING 3 - STIRRUPS
B618	X	2	11'-9"			WING 3 - HORIZ. - TOP
B619	X	2	12'-3"			WING 4 - HORIZ. - TOP
B620		11	27'-3"			BODY - HORIZ.
B821		7	28'-6"			BODY - HORIZ. - B.F.
B422		3	27'-6"			BODY - HORIZ. - TOP



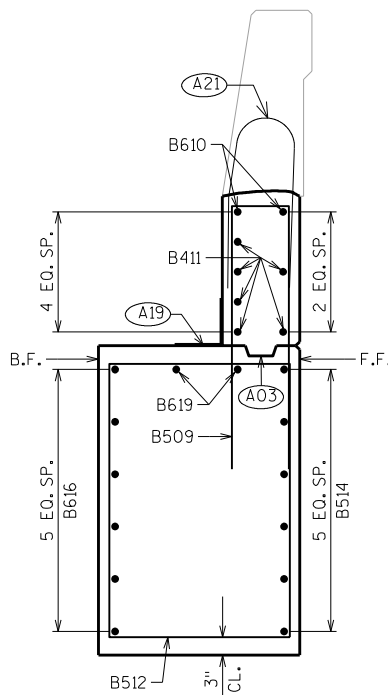
WING ELEVATION 3



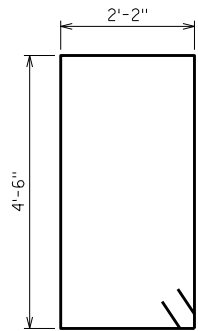
SECTION THRU WING 3



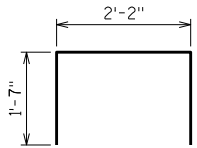
WING ELEVATION 4



SECTION THRU WING 4

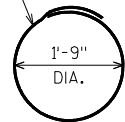


B501

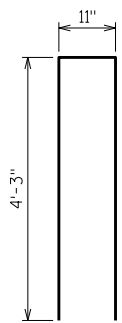


B504

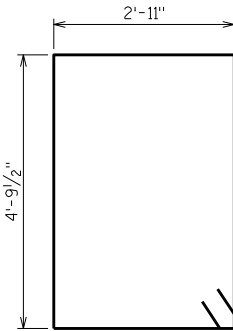
5 WRAP SPIRAL



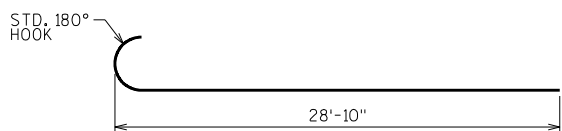
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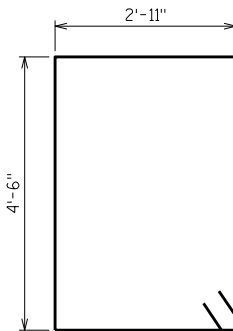
B509



B512



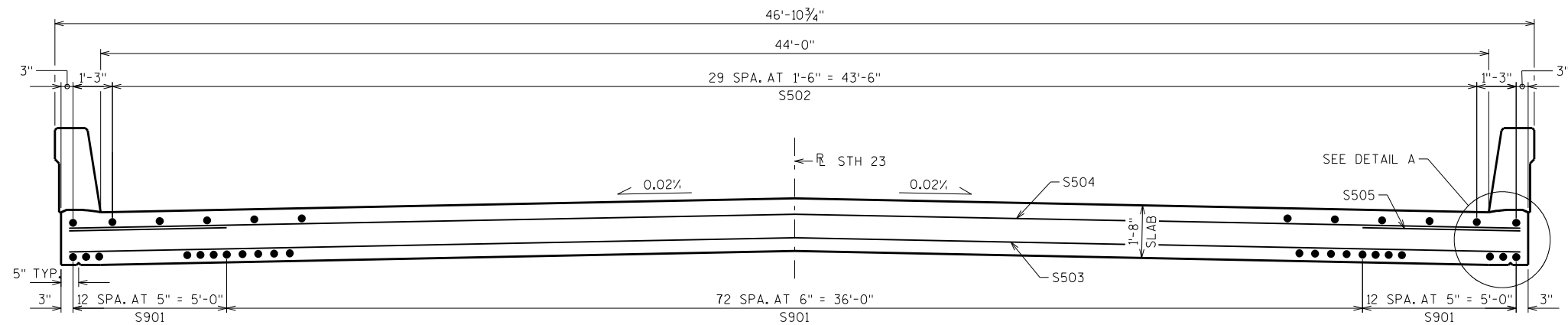
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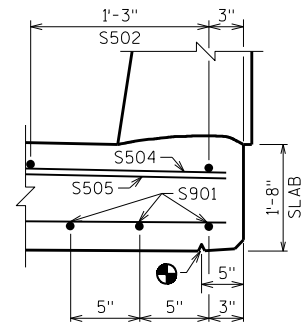
B517

- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 X 6, (18" R.M.W. @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER, (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE), EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (A21) FOR PPT. BARS & DIMENSION SEE PARAPET SHT.

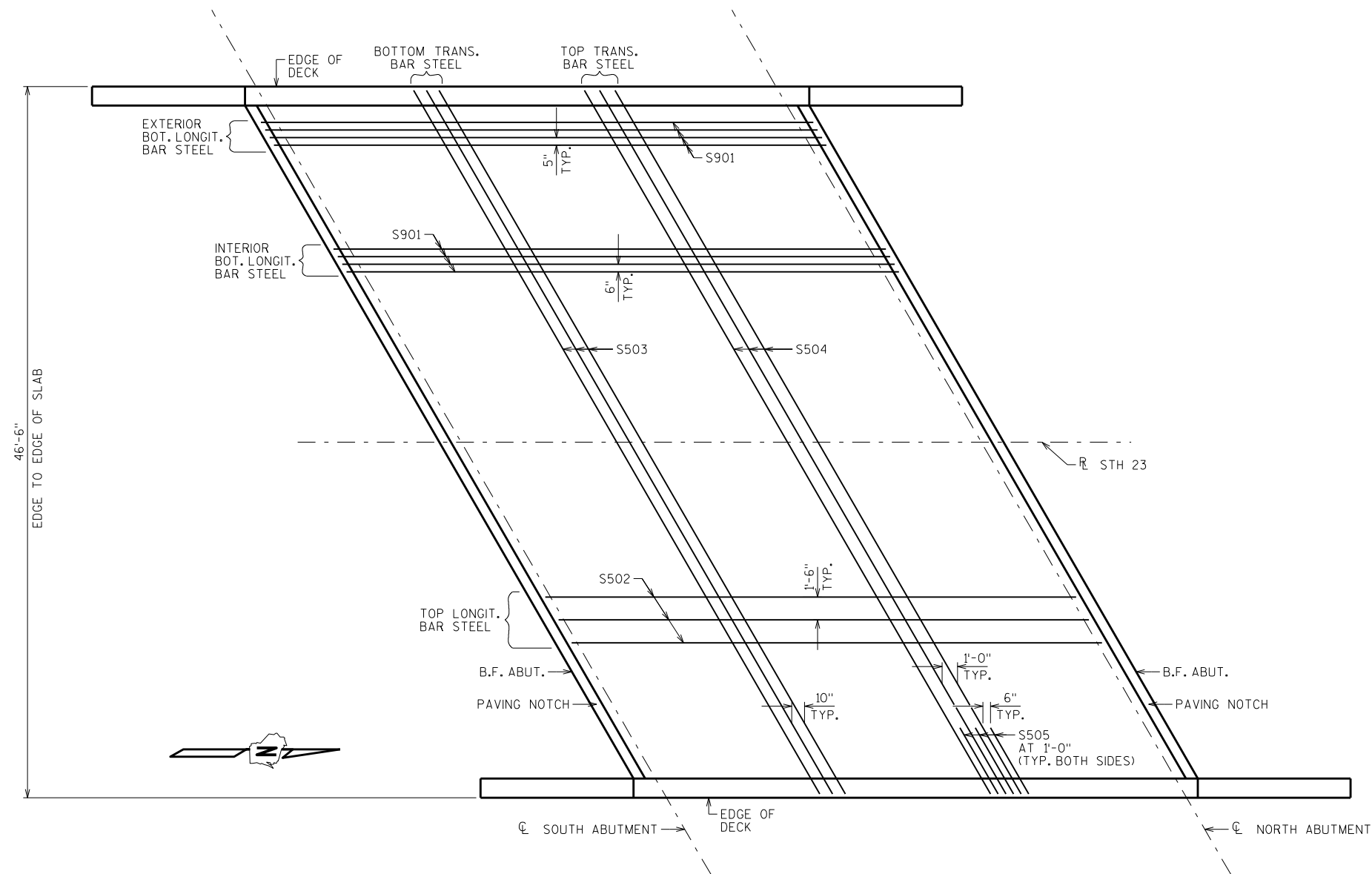
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-56-222			
DRAWN BY		TAB	PLANS CK'D. JDL
NORTH ABUTMENT DETAILS		SHEET	7



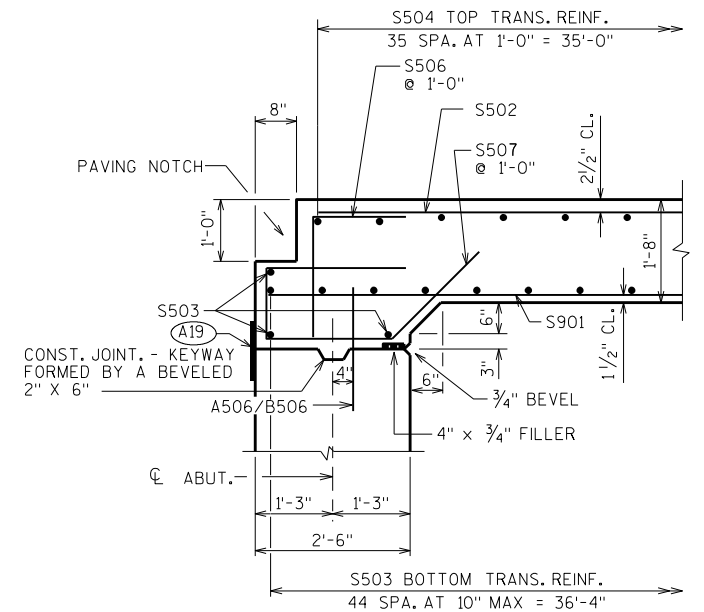
CROSS SECTION THRU ROADWAY LOOKING NORTH



DETAIL A



PLAN



ABUTMENT DETAIL

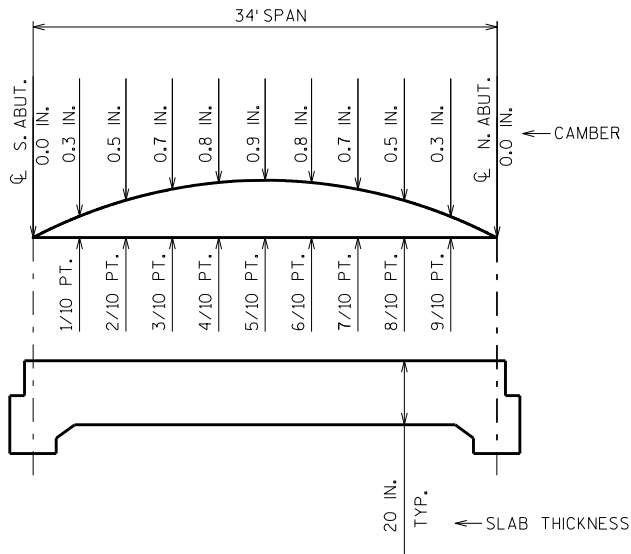
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- 3/4" V-GROOVE, EXTEND V-GROOVE TO 3" FROM FRONT FACE OF ABUTMENT DIAPHRAGM. (TYP) V-GROOVES ARE REQUIRED.

NOTES

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

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

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SUPERSTRUCTURE		SHEET 8	



CAMBER AND SLAB THICKNESS DIAGRAM

CAMBER SHOWN IS BASED ON 3 TIMES DEAD LOAD DEFLECTIONS. CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT. PARAPETS, SIDEWALKS AND MEDIANS PLACED ON TOP OF THE SLAB SHALL BE POURED AFTER FALSEWORK HAS BEEN RELEASED.

TO DETERMINE FALSEWORK ELEVATION AT EDGE OF SLAB, CROWN OR REFERENCE LINE FOLLOW THIS PROCEDURE:

LESS TOP OF SLAB ELEVATION AT FINAL GRADE
PLUS SLAB THICKNESS
PLUS CAMBER
PLUS FORM SETTLEMENT/DEFLECTION DUE TO PLACEMENT OF SLAB CONCRETE (TO BE COMPUTED BY THE CONTRACTOR)
EQUALS TOP OF SLAB FALSEWORK ELEVATION.

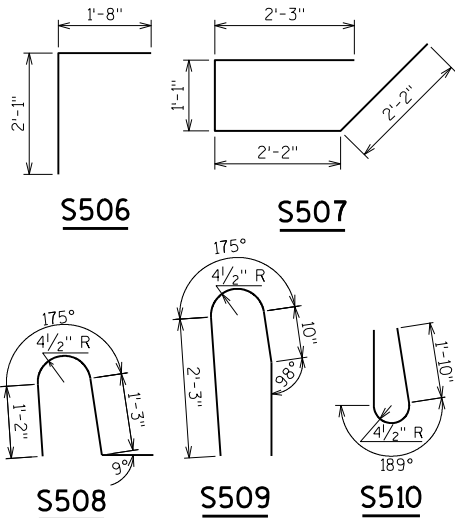
TOP OF DECK ELEVATIONS

	CL BRG. S. ABUT.	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	CL BRG. N. ABUT.
W. EDGE OF DECK	921.79	921.83	921.87	921.91	921.95	922.00	922.04	922.08	922.12	922.17	922.21
CL STH 23	922.39	922.43	922.48	922.52	922.56	922.61	922.65	922.69	922.74	922.78	922.82
E. EDGE OF DECK	922.12	922.16	922.21	922.25	922.29	922.34	922.38	922.43	922.47	922.52	922.56

SURVEY TOP OF SLAB ELEVATIONS

	ABUTMENT	5/10 PT.	ABUTMENT
W. GUTTER			
CL STH 23			
E. GUTTER			

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF DECK ELEVATIONS AT THE CL OF ABUTMENTS, THE CL OF PIERS AND AT 5/10 PTS. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG GUTTER LINES AND CROWN OR CL. RECORD THE ELEVATIONS IN THE ABOVE TABLE FOR THE "AS BUILT" PLANS.



BILL OF BARS

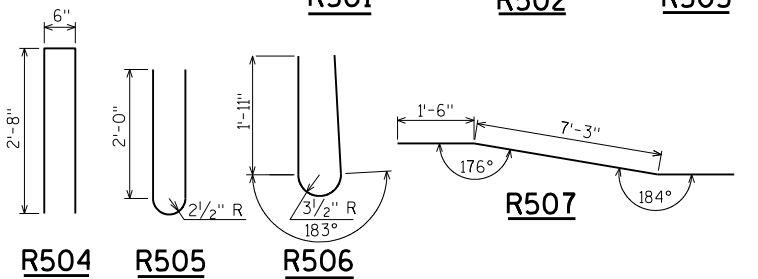
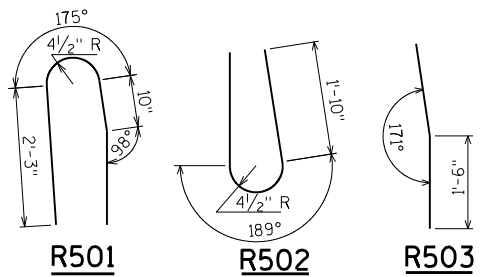
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S901	X	97	36'-6"			SLAB BOTTOM LONGIT.
S502	X	32	34'-11"			SLAB TOP LONGIT.
S503	X	51	53'-3"			SLAB BOTTOM TRANS.
S504	X	36	53'-3"			SLAB TOP TRANS.
S505	X	70	5'-0"			SLAB TOP TRANS. - AT EDGES OF SLAB
S506	X	102	3'-8"	X		SLAB AT ABUTMENTS
S507	X	102	7'-5"	X		SLAB AT ABUTMENTS
S508	X	108	4'-5"	X		PARAPET - VERT.
S509	X	4	5'-10"	X		PARAPET - VERT. - AT PVG. NOTCH
S510	X	112	5'-0"	X		PARAPET - VERT.
S511	X	12	36'-6"			PARAPET - HORIZ.

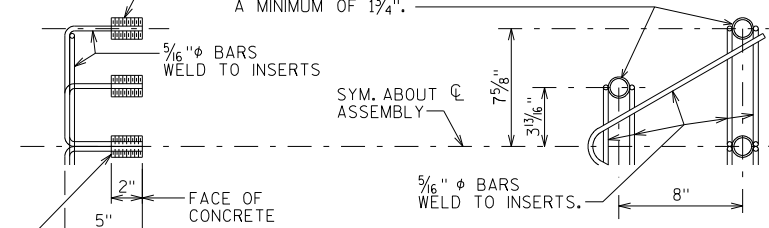
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-56-222			
DRAWN BY		TAB	PLANS CK'D. JDL
SUPERSTRUCTURE DETAILS		SHEET	9

FOR ABUTMENT PARAPETS

BAR MARK	COAT	S. ABUT.	N. ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	6	6	5'-10"	X		PARAPET VERT.
R502	X	6	6	5'-0"	X		PARAPET VERT.
R503	X	24	24	3'-0"	X		PARAPET VERT.
R504	X	34	34	5'-7"	X		PARAPET VERT.
R505	X	22	22	4'-9"	X		PARAPET VERT.
R506	X	12	12	4'-10"	X		PARAPET VERT.
R507	X	2	2	9'-7"	X		PARAPET HORIZ.
R508	X	10	10	9'-7"			PARAPET HORIZ.



THREADED INSERTS FOR $\frac{7}{8}$ " ϕ X 2" LONG GALVANIZED HEX HEAD CAP SCREWS. CAP SCREWS TO BE THREADED A MIN. OF $1\frac{1}{8}$ " AND SHALL BE SUPPLIED, INCLUDING WASHERS, WITH ASSEMBLY. INSERTS TO BE THREADED A MINIMUM OF $1\frac{3}{4}$ ".

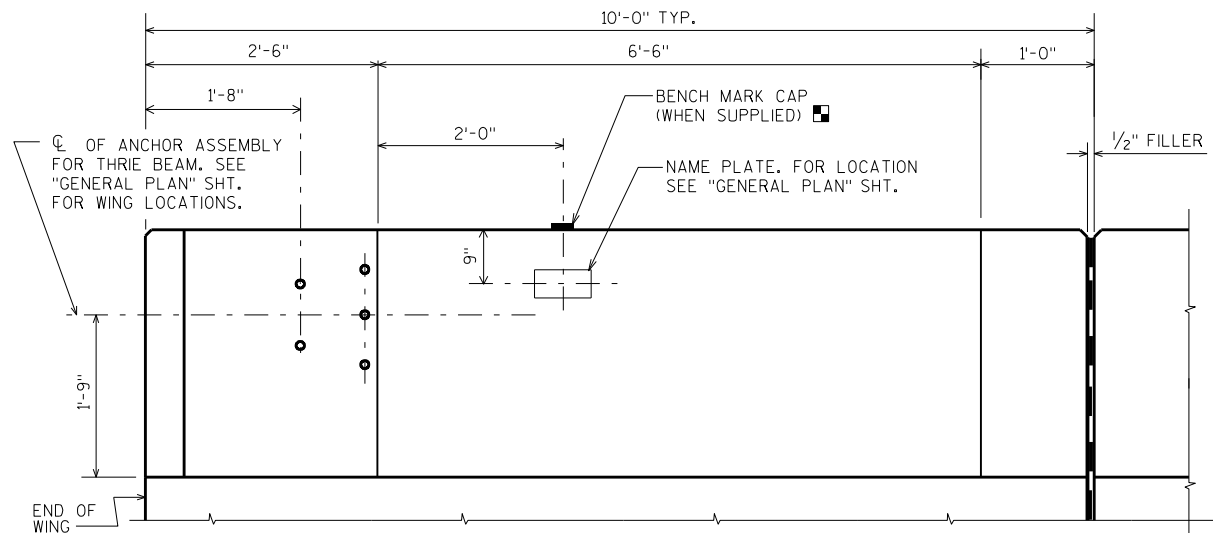


NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED
IN ACCORDANCE WITH AASHTO M232 CLASS C.

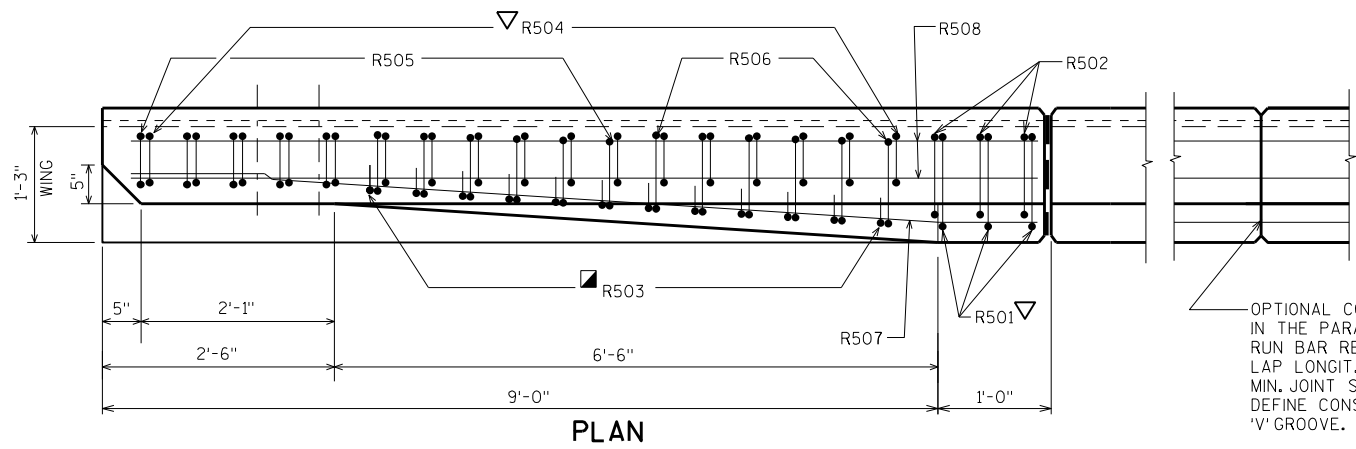
ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES
FOR STEEL PLATE BEAM GUARD", EACH.

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STRUCTURE B-56-222					
		DRAWN BY	TAB	PLANS CK'D.	JDL
SINGLE SLOPE PARAPET SS32			SHEET 10		

32SSWIN

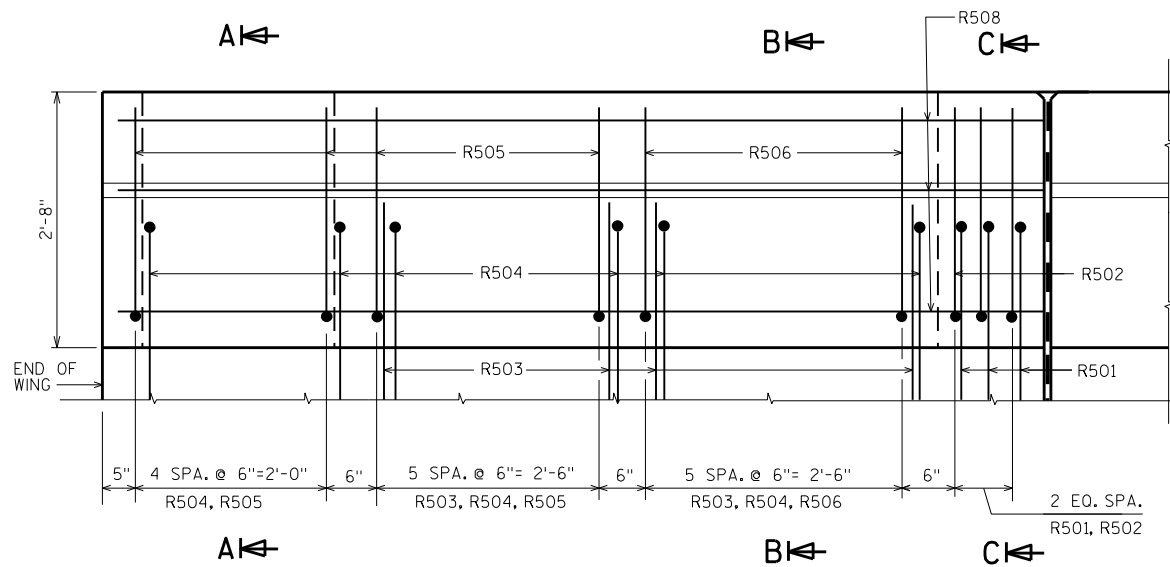


INSIDE ELEVATION

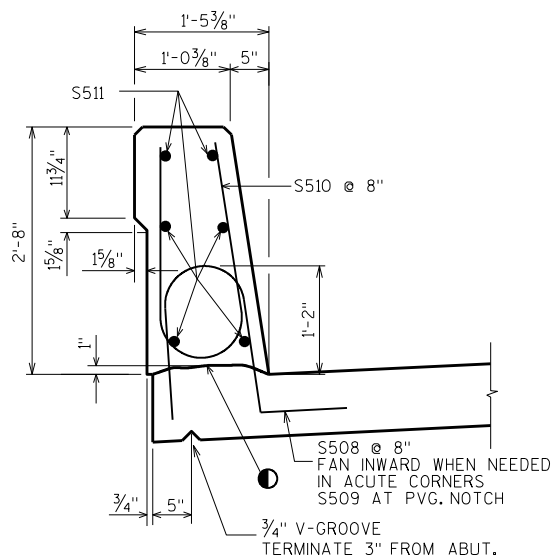


PLAN

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



OUTSIDE ELEVATION

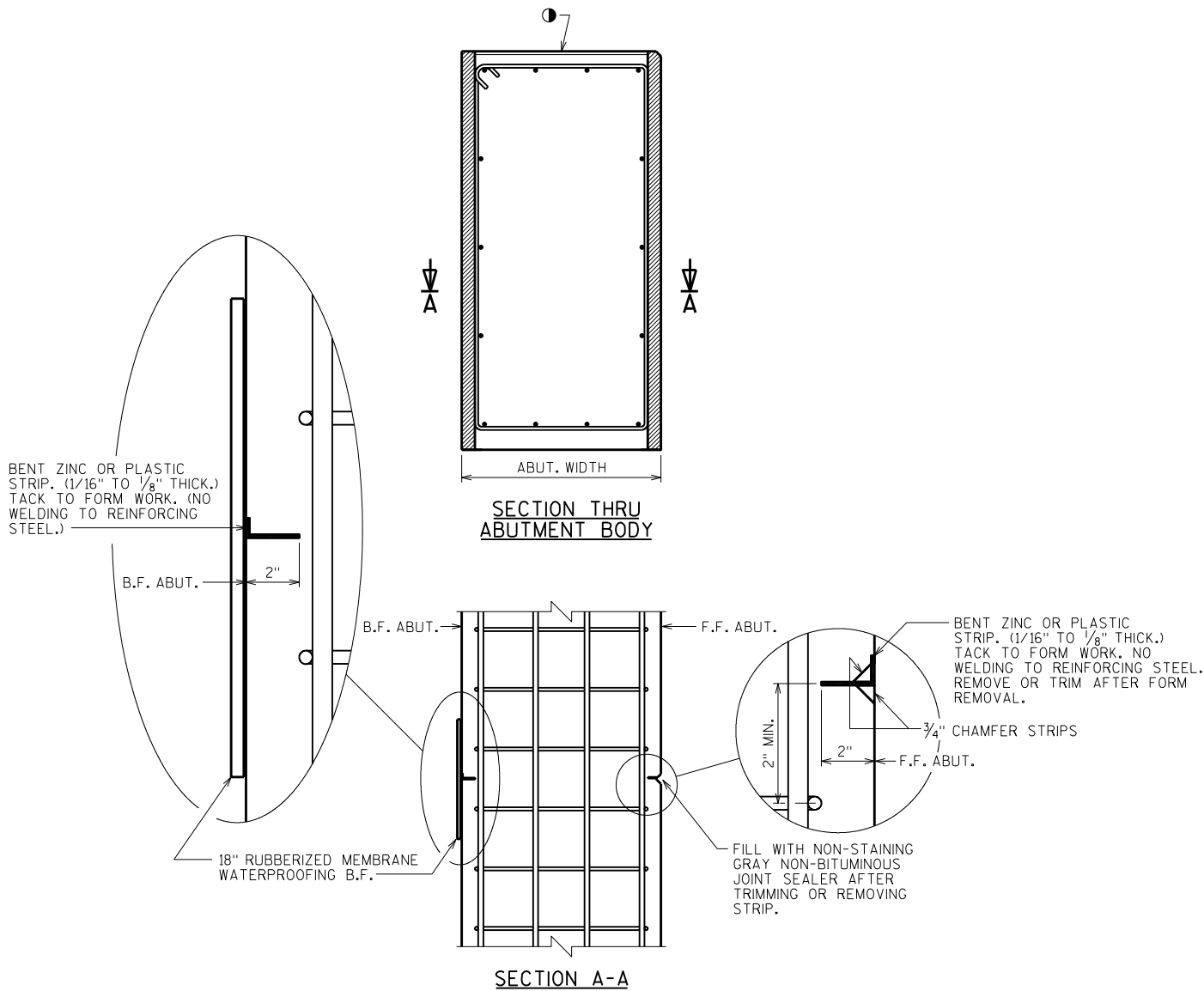


SECTION THRU PARAPET ON BRIDGE

● CONST. JOINT - STRIKE OFF AS SHOWN.

■ R503 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE R503 OR S503 BARS CORRECTLY ALONG TRANSITION OF PARAPET.

▽ R501 AND R504 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED.



ALTERNATE CONSTRUCTION JOINT AT ABUTMENT

NOTES

PARTIAL ZINC OR PLASTIC BULKHEAD MAY BE USED AS ALTERNATE CONSTRUCTION JOINT, WITH THE PERMISSION OF THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.

VERTICAL CONSTRUCTION JOINT KEYWAY IS NOT REQUIRED WHEN USING ALTERNATE CONSTRUCTION JOINT.

CARE IS TO BE USED IN CASTING CONCRETE AROUND BULKHEAD TO PREVENT DISLOCATION OR MISALIGNMENT OF THE BULKHEAD.

1 USE A JOINT TOOL TO CONSTRUCT A CONTRACTION JOINT APPROXIMATELY 1/2" DEEP.

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STRUCTURE B-56-222			
DRAWN BY		TAB	PLANS CK'D. JDL
ALTERNATE CONSTRUCTION JOINT		SHEET 11	

Ⓢ INDICATES WING NUMBER
✱ PROVIDE FOR THREE BEAM
GUARD RAIL ATTACHMENT

STATE PROJECT NUMBER

5080-09-82

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: 1.29
OPERATING RATING FACTOR: 1.67
WISCONSIN STANDARD PERMIT VEHICLE RATING: 250 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY, SLAB _____ $f'_c = 4,000$ p.s.i.
ALL OTHER _____ $f'_c = 4,000$ p.s.i.
HIGH-STRENGTH BAR STEEL _____ $f_y = 60,000$ p.s.i.

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10X42 STEEL PILING WITH A REQUIRED DRIVING RESISTANCE OF 120 TONS ** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATE 20 FT PILE LENGTHS AT BOTH ABUTMENTS.

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

TRAFFIC VOLUME

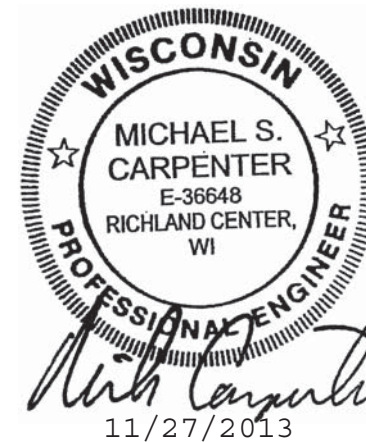
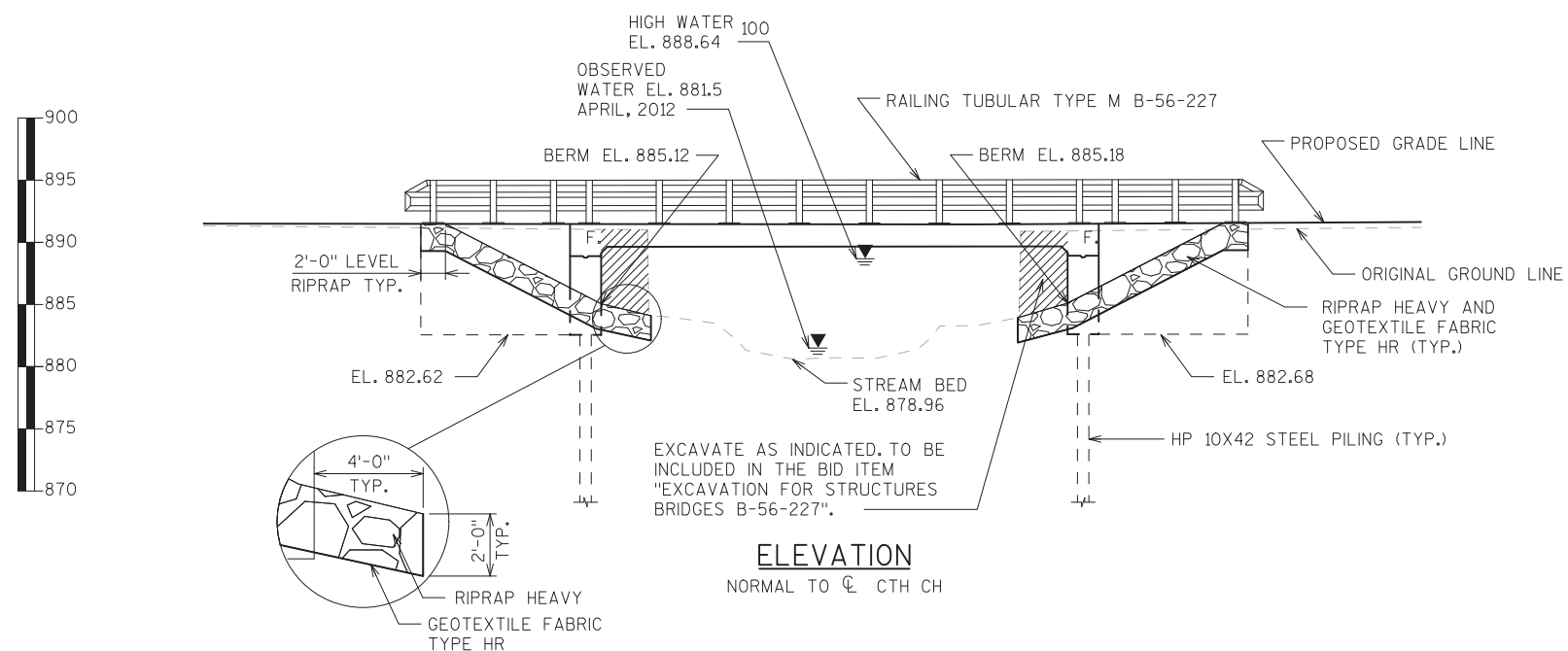
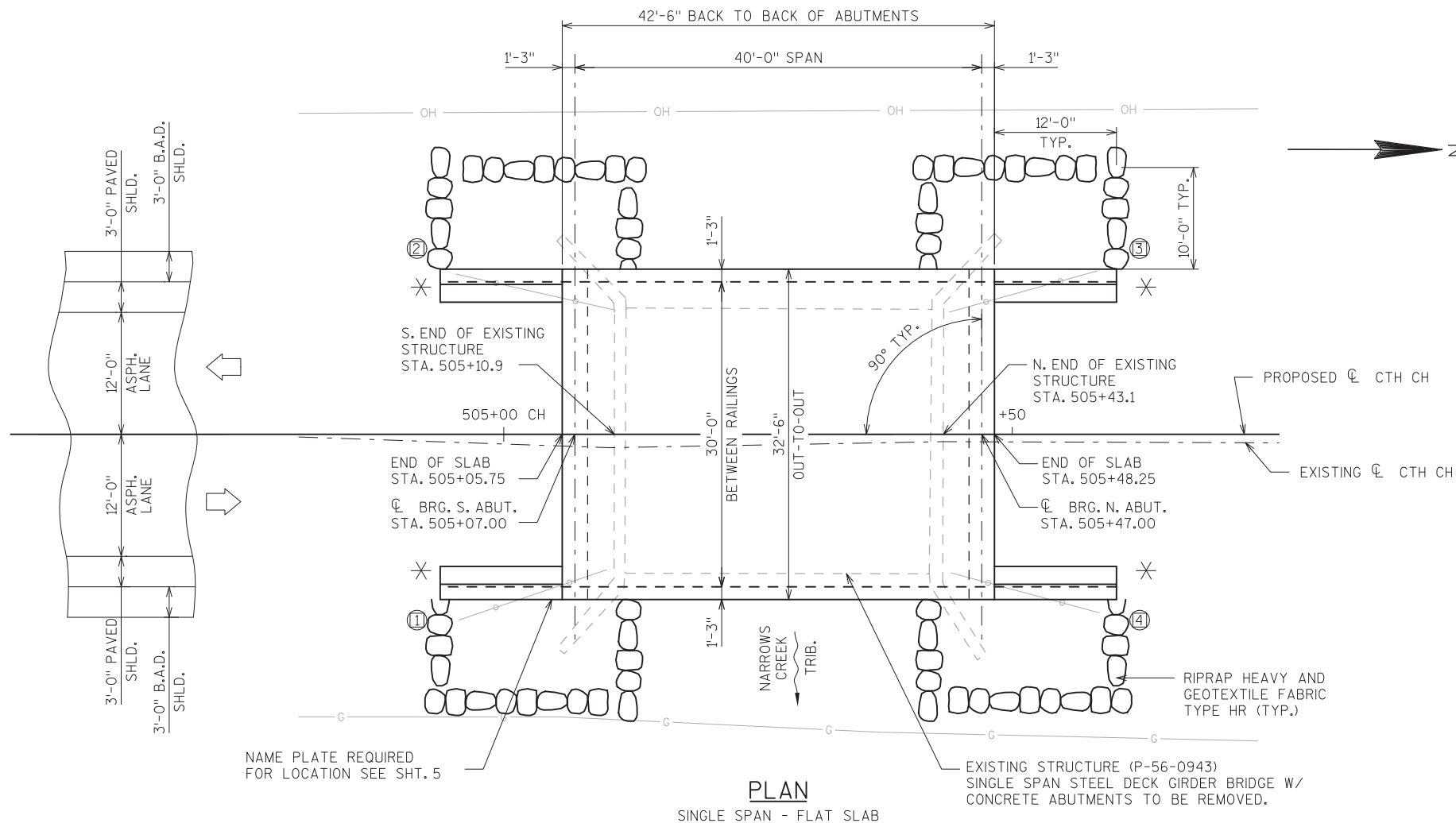
A.A.D.T. (2015) _____ 740
A.A.D.T. (2035) _____ 880
DESIGN SPEED _____ 50 M.P.H.

HYDRAULIC DATA

Q_{100} _____ 900 c.f.s.
 Q_{100} (THRU BRIDGE) _____ 900 c.f.s.
 Q_{100} (ROAD) _____ N/A c.f.s.
DRAINAGE AREA _____ 4.6 SQ. MI.
WATERWAY AREA @ Q_{100} _____ 213 SQ. MI.
VELOCITY _____ 4.23 f.p.s.
HIGH WATER₁₀₀ELEVATION _____ 888.64 ft
SCOUR CRITICAL CODE _____ 8
 Q_2 _____ 270 c.f.s.
 Q_2 ELEVATION _____ 886.61 ft

STRUCTURE DESIGN CONTACTS

BRIDGE OFFICE: WILLIAM DREHER (608) 266-8489
CONSULTANT: MIKE CARPENTER (608) 821-8713



LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. ABUTMENTS
5. WING DETAILS
6. SUPERSTRUCTURE
7. SUPERSTRUCTURE DETAILS
8. TUBULAR STEEL RAILING TYPE 'M'

NO.	DATE	REVISION	BY
Baker		MICHAEL BAKER JR., INC 7633 GANSER WAY, SUITE 206 MADISON, WI 53719	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	William C. Dreher, KAR	04/02/14	DATE
CHIEF STRUCTURES DESIGN ENGINEER			
STRUCTURE B-56-227			
CTH CH OVER NARROWS CREEK TRIBUTARY			
COUNTY	SAUK	TOWN/CITY/VILLAGE	REEDSBURG
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	MSC	DESIGN CK'D.	LMK
DRAWN BY	ABP	PLANS CK'D.	MSC
GENERAL PLAN			SHEET 1 OF 8

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.

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

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE FABRIC TYPE 'HR' TO THE EXTENT SHOWN ON SHEET 1 AND IN THE ABUTMENT DETAILS.

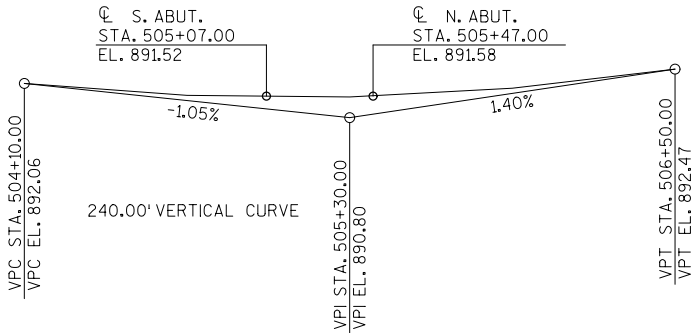
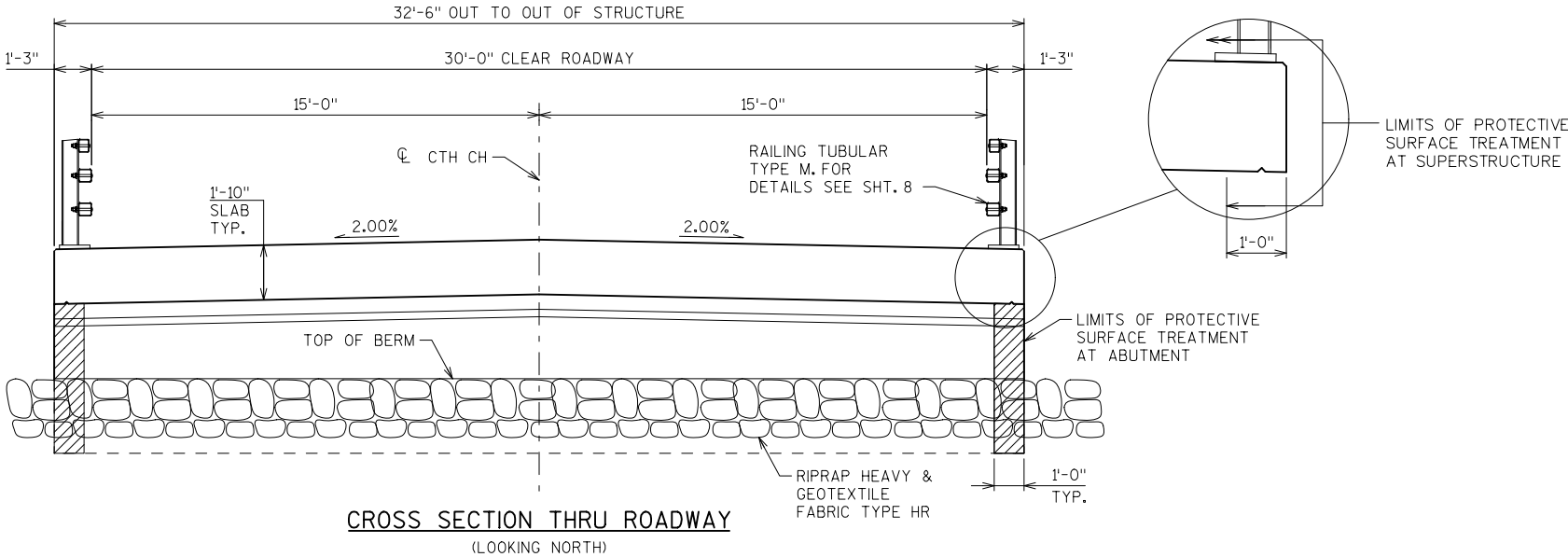
THE EXISTING GROUNDLINE SHALL BE THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES.

AT THE BACKFACE OF THE ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.

THE EXISTING STRUCTURE (P-56-0943) IS A SINGLE SPAN STEEL DECK GIRDER STRUCTURE WITH AN OVERALL LENGTH OF 32.6' AND A CLEAR ROADWAY WIDTH OF 24.0'. THE STRUCTURE IS TO BE REMOVED ENTIRELY.

THE PROPOSED SUBSTRUCTURE UNITS ARE LOCATED OVER THE EXISTING SUBSTRUCTURE UNITS. NO ADDITIONAL COMPENSATION WILL BE MADE FOR REMOVALS, DEWATERING, OR OTHER INCIDENTAL WORK REQUIRED FOR NEW SUBSTRUCTURE PLACEMENT.

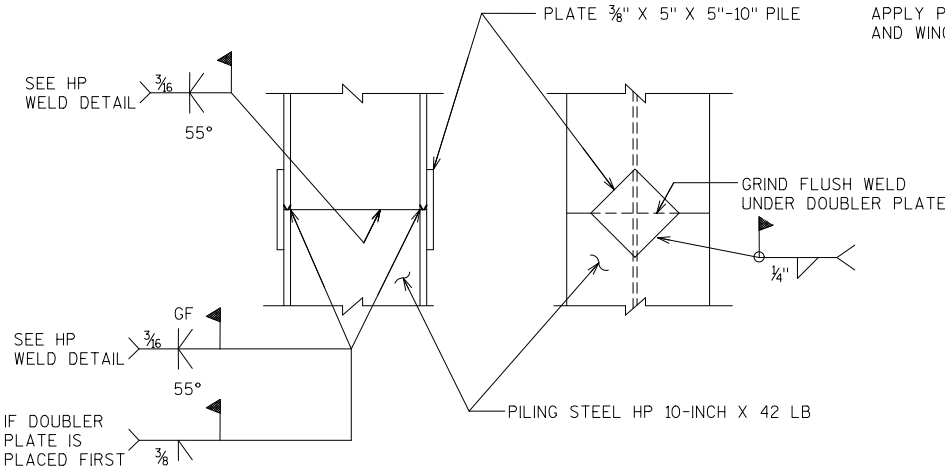
APPLY PROTECTIVE SURFACE TREATMENT TO SLAB, ABUTMENT, AND WINGS AS SHOWN.



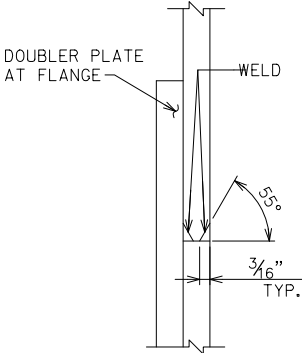
PROFILE GRADE LINE CTH CH

TOTAL ESTIMATED QUANTITIES

	BID ITEMS	UNIT	S. ABUT.	N. ABUT.	SUPER	TOTALS
203.0600.S.02	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS, STATION 505+27	LS	--	--	1	1
206.1000.02	EXCAVATION FOR STRUCTURES BRIDGES B-56-227	LS	--	--	--	1
210.0100	BACKFILL STRUCTURE	CY	120	120	--	240
502.0100	CONCRETE MASONRY BRIDGES	CY	57.8	57.8	98.4	214
502.3200	PROTECTIVE SURFACE TREATMENT	SY	33	33	177	243
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	2,340	2,340	--	4,680
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	1,690	1,690	19,660	23,040
513.4060	RAILING TUBULAR TYPE M B-56-227	LS	--	--	1	1
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	6	6	--	12
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	100	100	--	200
606.0300	RIPRAP HEAVY	CY	70	70	--	140
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	106	106	--	212
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	101	101	--	202
(NON-BID ITEM)	FILLER	SIZE	--	--	--	1/2" & 3/4"

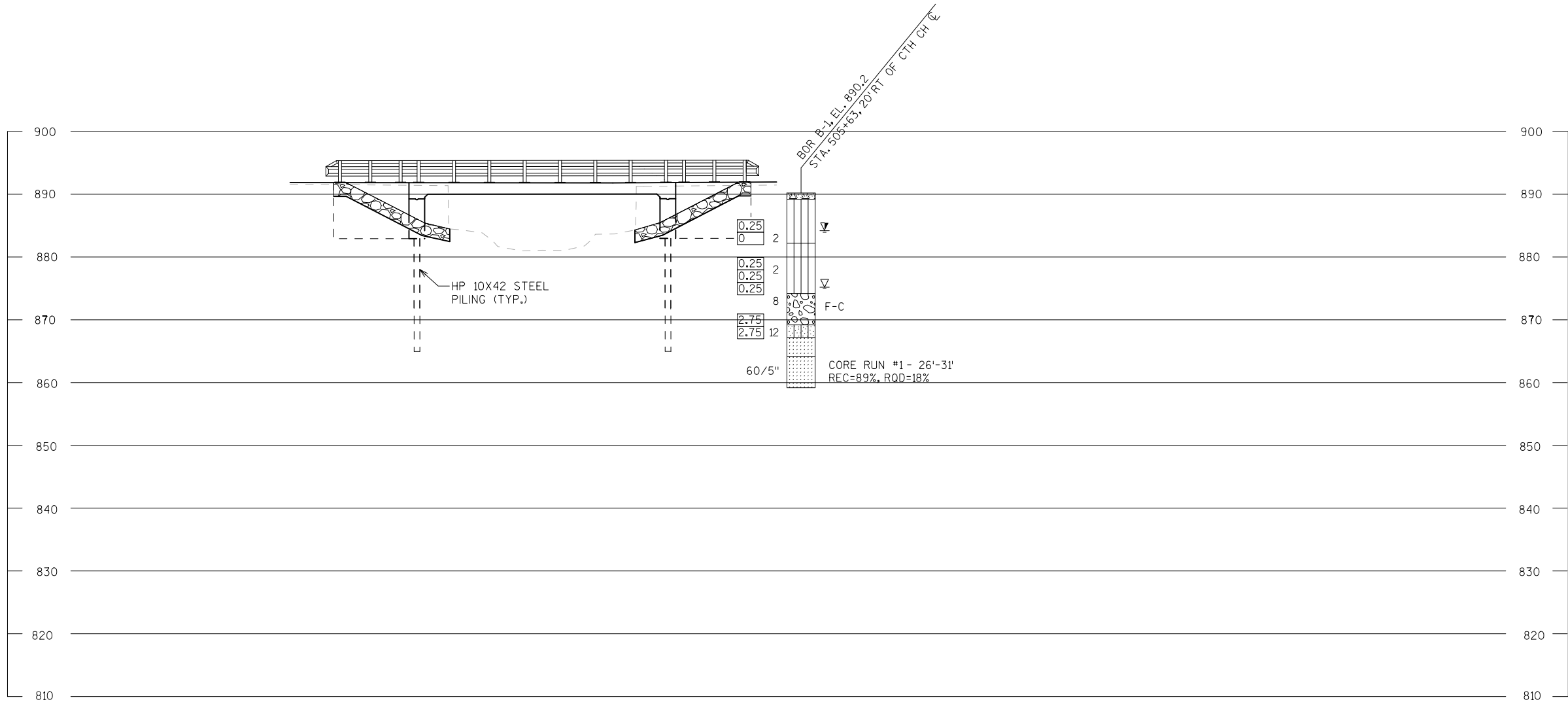
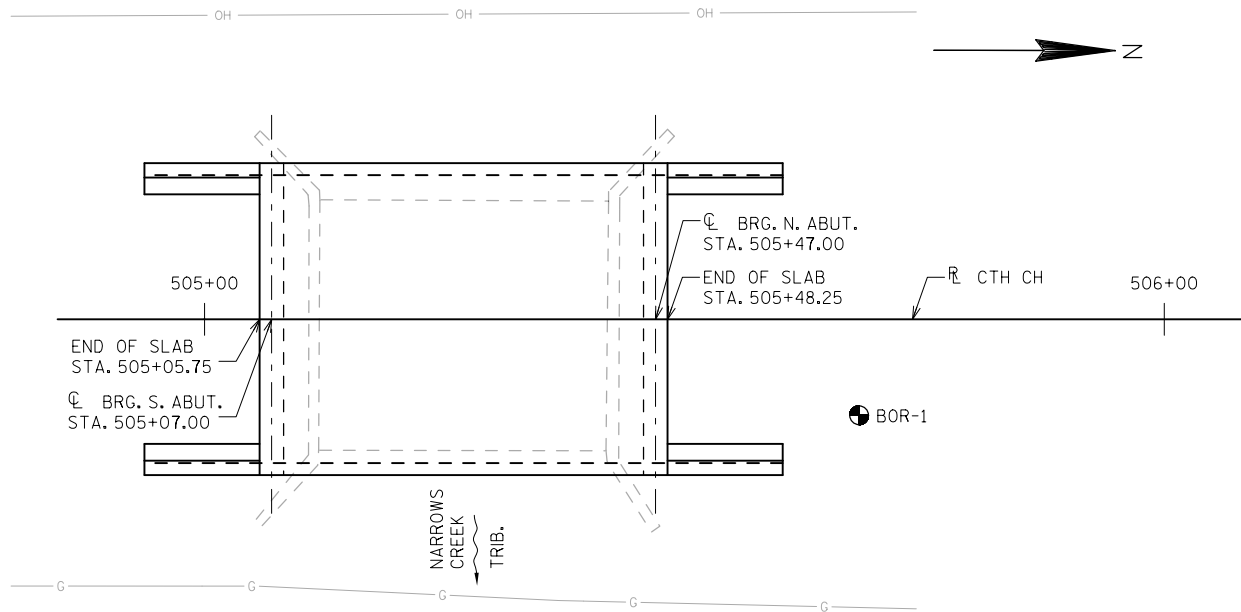


PILE SPLICE DETAILS



HP WELD DETAIL
FLANGE SHOWN, WEB SIMILAR

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-56-227			
DRAWN BY ABP		PLANS CK'D. MSC	
CROSS SECTION & QUANTITIES			SHEET 2 OF 8



BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	9/25/2013	238125.456	581396.027
BORINGS COMPLETED BY: WISDOT			
REPORT COMPLETED BY: WISDOT			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) SAUK COUNTY			

STATE PROJECT NUMBER

5080-09-82

ABBREVIATIONS

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

MATERIAL SYMBOLS

TOPSOIL

SAND

GRAVEL

SILT

PEAT

CLAY

SANDSTONE

LIMESTONE

IGNEOUS ROCK

LEGEND OF PROBING

PROBING NO.
STA.
ELEVATION
7 AVERAGE BLOWS PER FOOT
REFUSAL 95/6

95/6=95 BLOWS FOR 6" PENETRATION
PROBING TAKEN WITH A 350# WT. FALLING 18" ON A 2" O.D. POINT.

LEGEND OF BORING

ELEV. BORING NO. STA.

UNCONFINED STRENGTH → 7.7
BLOWS PER FT. USING 140# WT. FALLING 30"

WASH SAMPLE

SHELBY TUBE — S.T.

GROUND WATER ELEVATION

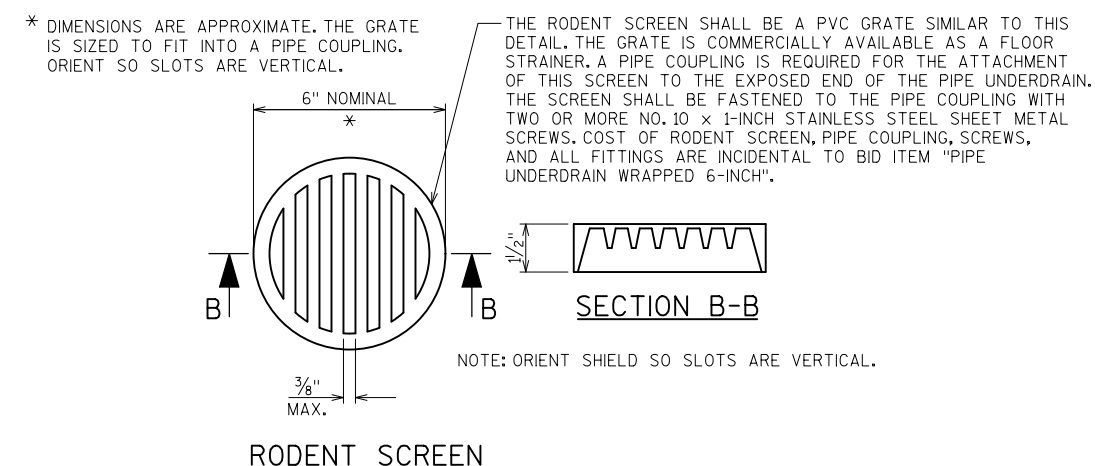
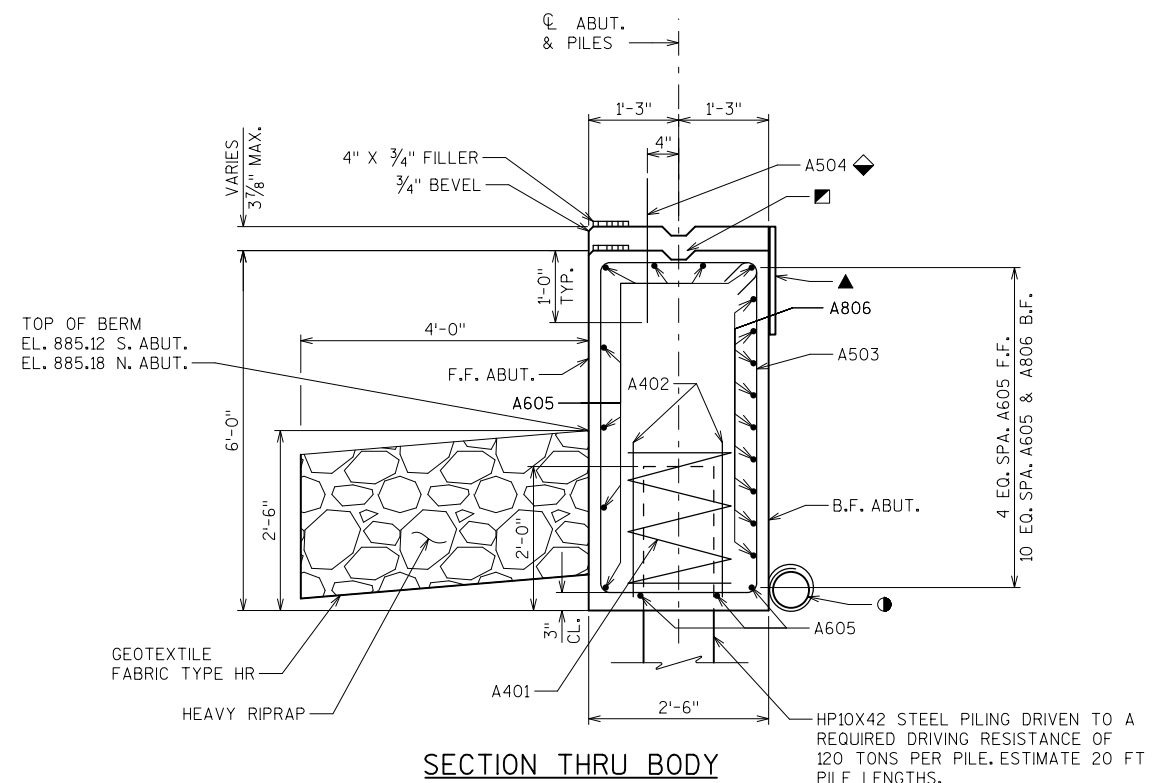
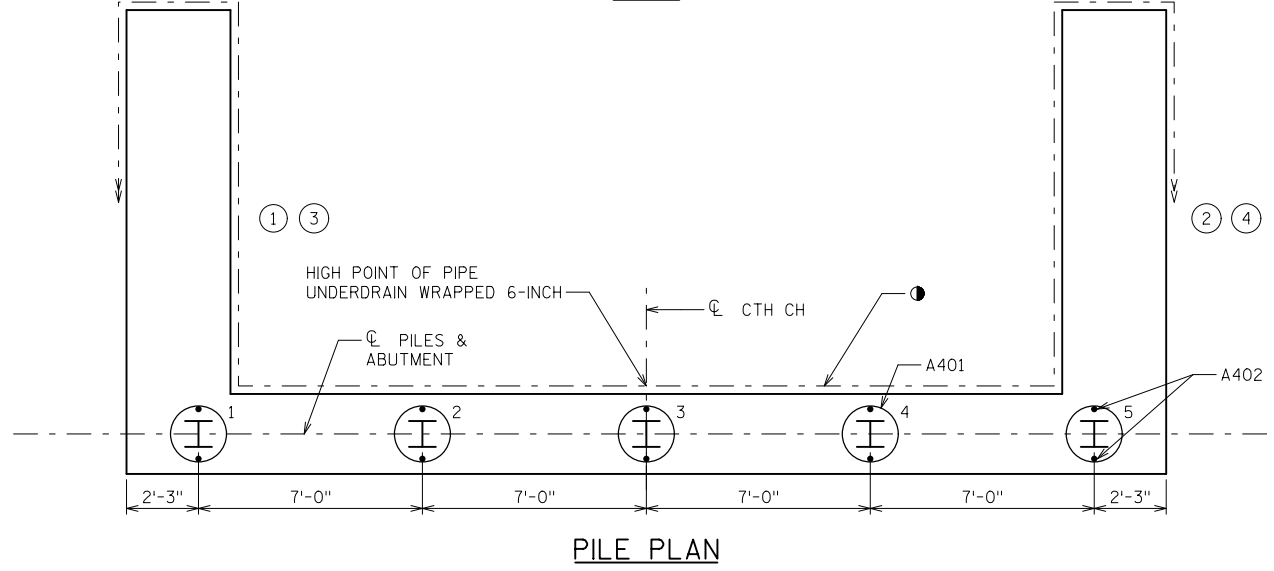
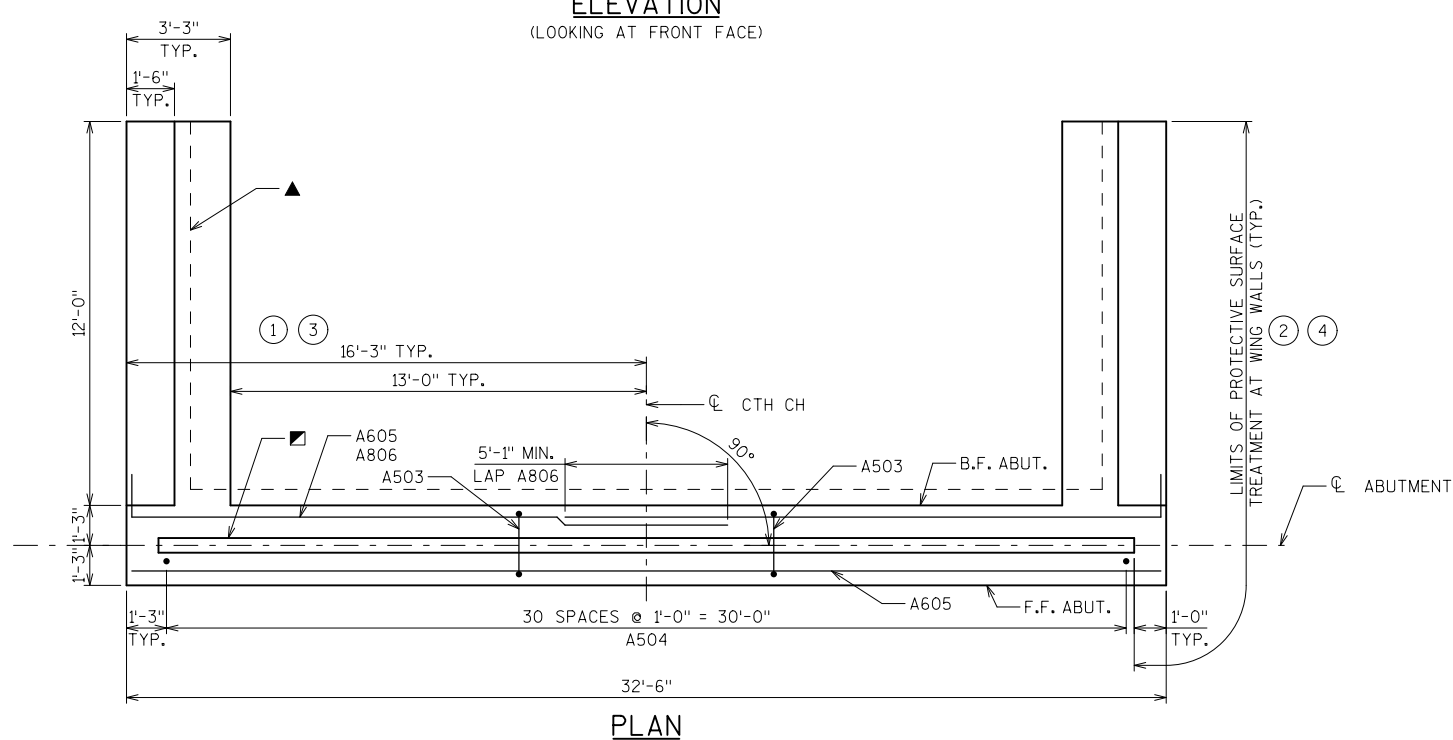
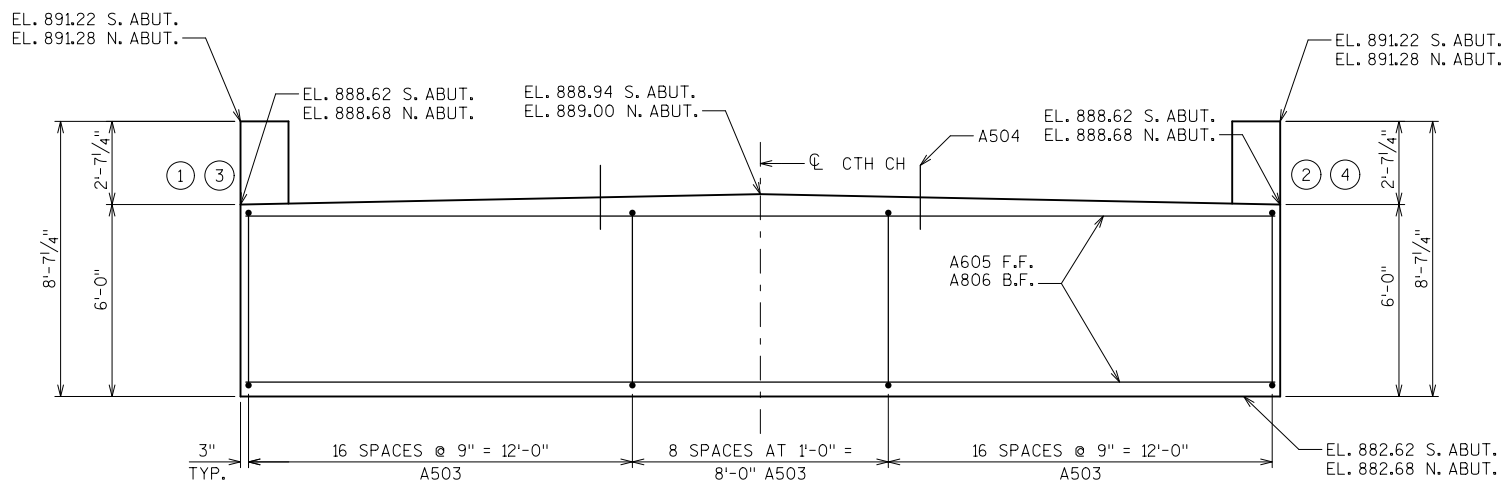
NO GROUND WATER OBSERVED ABOVE THIS ELEVATION

SANDY GRAVEL
F. BOULDERS OR COBBLES
SAND
SILTY CLAY
SO LIMESTONE

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

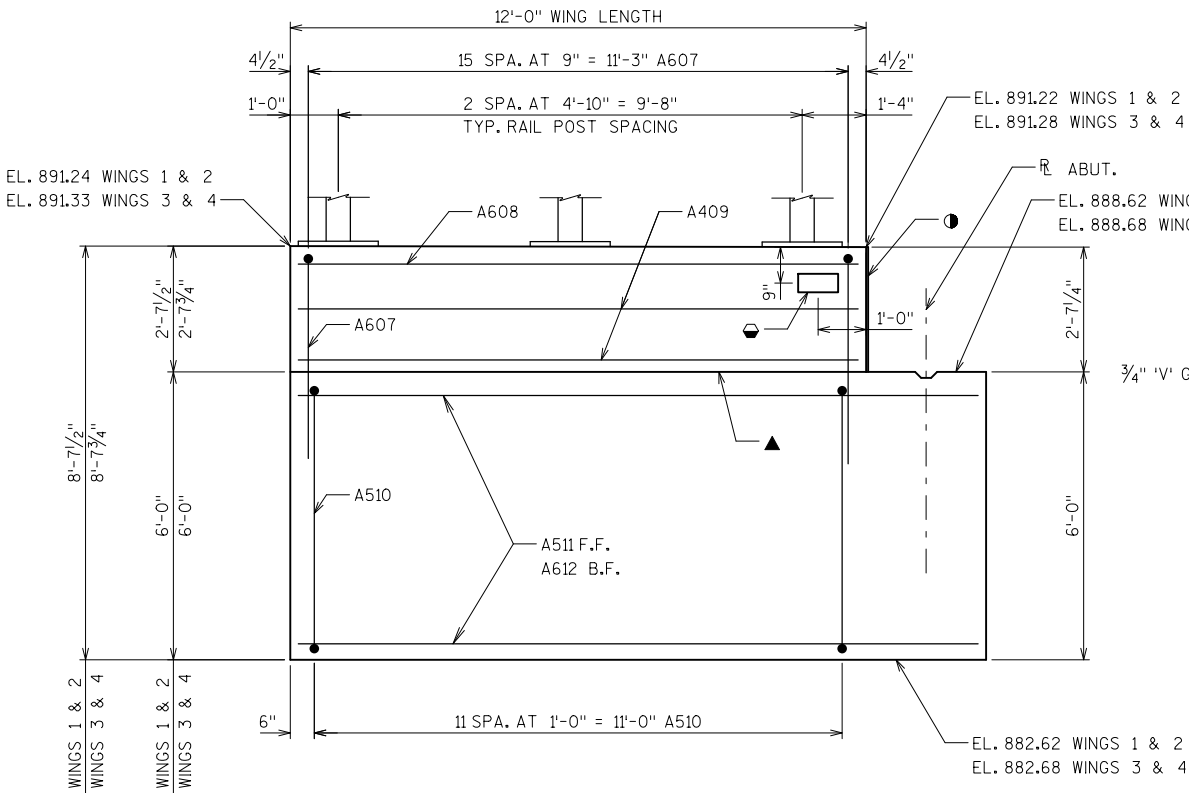
TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE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



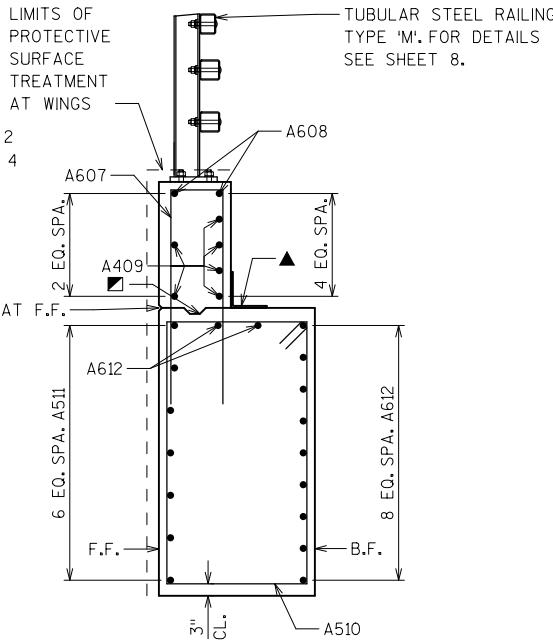
LEGEND

- ① INDICATES WING NUMBER
- ▲ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS AT BACKFACE.
- KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6".
- ◆ A504 BARS MAY BE PLACED AFTER CONCRETE IS POURED, BUT BEFORE INITIAL SET HAS TAKEN PLACE.
- PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SCREEN AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON RODENT SCREEN DETAIL, THIS SHEET.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-56-227			
DRAWN BY ABP		PLANS CK'D. MSC	
ABUTMENTS			SHEET 4 OF 8



WING ELEVATION



SECTION THROUGH WING

BILL OF BARS

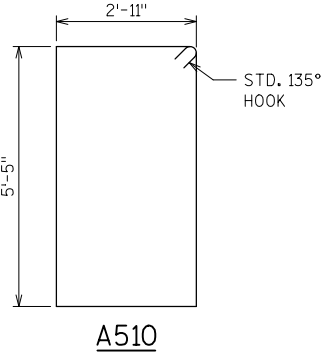
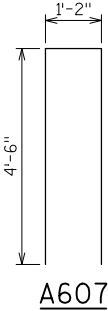
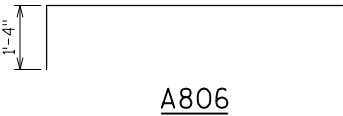
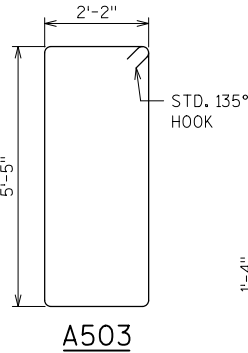
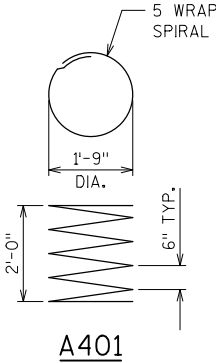
ABUTMENTS

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
A401		10	28'-0"	X	BODY - 1 PER PILE
A502		20	2'-3"		BODY - 2 PER PILE
A503		82	15'-9"	X	BODY - STIRRUPS
A504		62	2'-0"		BODY - TOP - VERT.
A605		22	32'-2"		BODY - F.F. - HORIZ.
A806		36	19'-9"	X	BODY - B.F. - HORIZ.
A607	X	64	9'-10"	X	WING - TOP - VERT.
A608	X	8	11'-8"		WING - TOP - HORIZ.
A409	X	24	11'-8"		WING - TOP - HORIZ.
A510	X	48	17'-3"	X	WING - STIRRUPS
A511	X	28	13'-11"		WING - F.F. - HORIZ.
A612	X	40	13'-11"		WING - B.F. - HORIZ.

TOTAL COATED = 3,380 LBS

TOTAL UNCOATED = 4,680 LBS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.
ALL BAR BEND DIMESIONS ARE OUT-TO-OUT OF BAR.



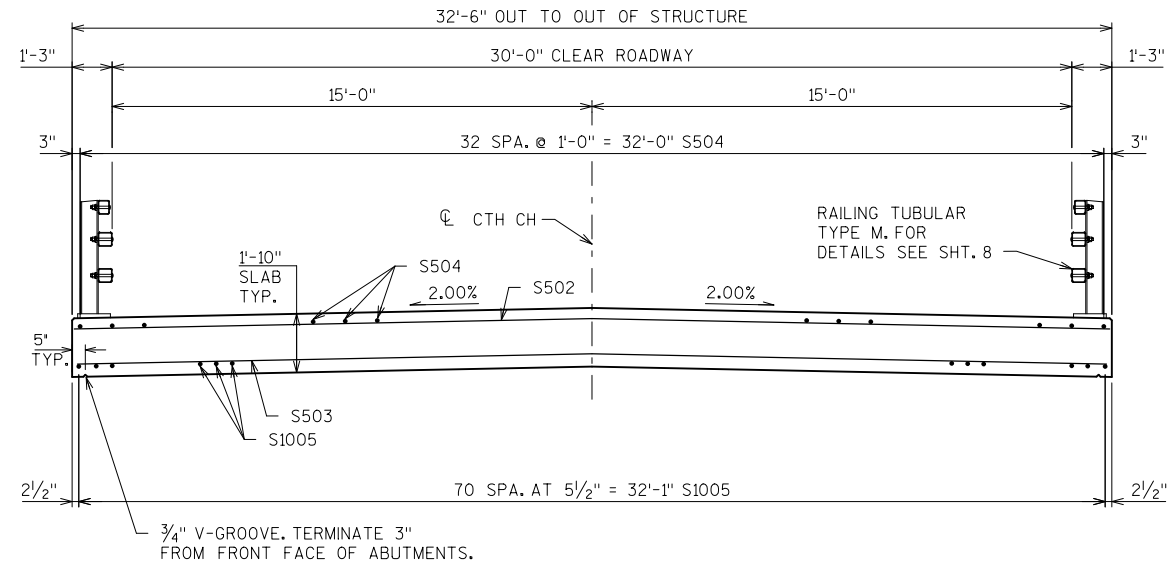
LEGEND

- ▲ 18" RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZONTAL AND VERTICAL JOINTS AT BACKFACE.
- OPTIONAL CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6" KEYWAY WITH MEMBRANE ON BACKFACE.
- 1/2" FILLER (INCLUDED IN WING LENGTH). SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE).
- ☉ NAME PLATE ON WING 1.

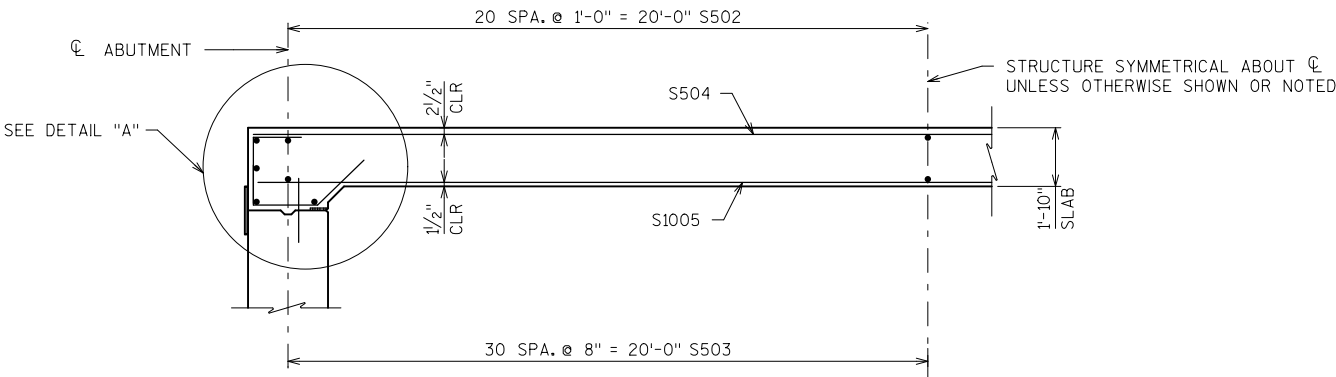
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-56-227			
DRAWN BY ABP		PLANS CK'D. MSC	
WING DETAILS		SHEET 5 OF 8	



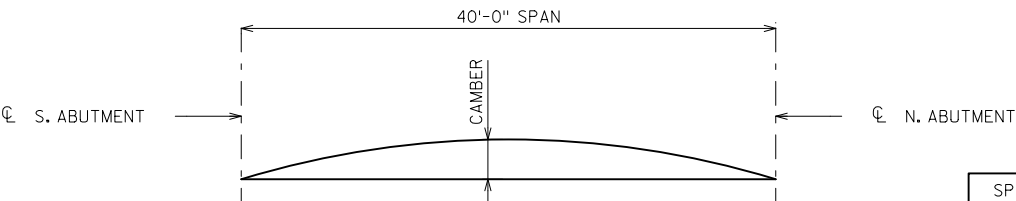
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-56-227			
DRAWN BY		ABP	PLANS CK'D. MSC
SUPERSTRUCTURE		SHEET 6 OF 8	



CROSS SECTION THRU ROADWAY
(LOOKING NORTH)



LONGITUDINAL SECTION THROUGH ROADWAY



SLAB CAMBER DIAGRAM
CAMBER IS BASED ON 3 TIMES DEAD LOAD DEFLECTIONS. CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION & FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

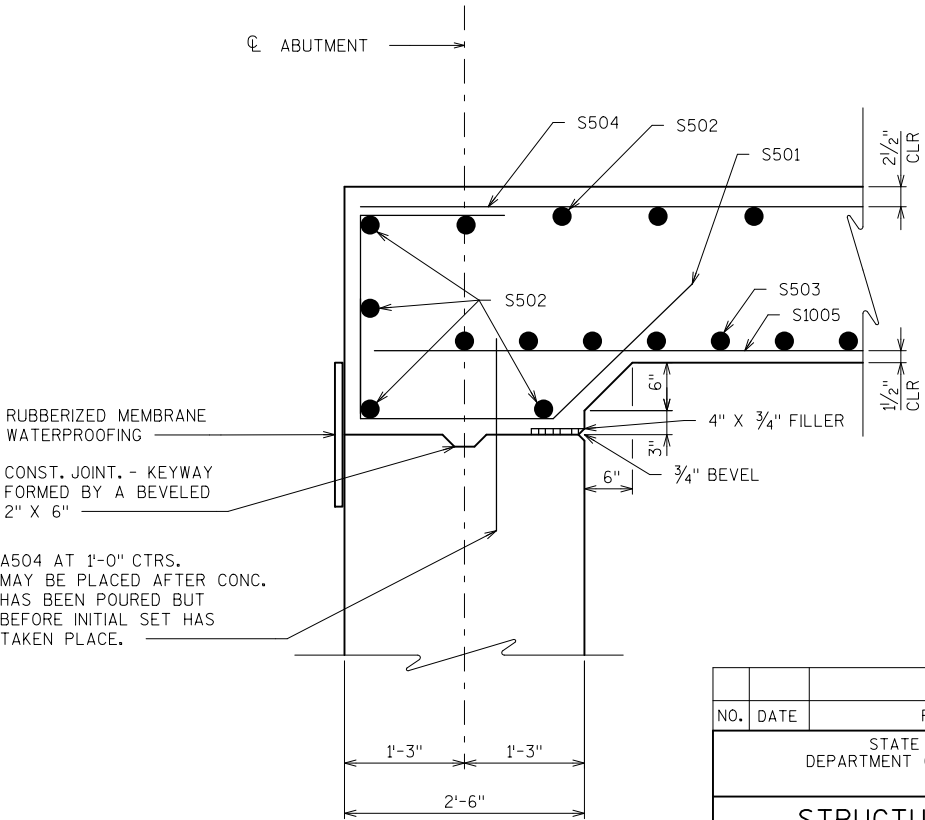
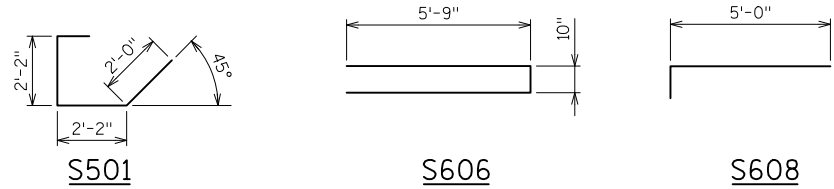
SPAN POINT	W SLAB EDGE ELEV.	R ELEV.	E SLAB EDGE ELEV.	CAMBER (INCHES)
S. ABUT.	891.20	891.52	891.20	0.0
0.1	891.20	891.52	891.20	0.4
0.2	891.20	891.52	891.20	0.7
0.3	891.20	891.52	891.20	1.0
0.4	891.20	891.52	891.20	1.2
0.5	891.21	891.53	891.21	1.3
0.6	891.21	891.53	891.21	1.2
0.7	891.22	891.54	891.22	1.0
0.8	891.23	891.55	891.23	0.7
0.9	891.24	891.56	891.24	0.4
N. ABUT.	891.26	891.58	891.26	0.0

BILL OF BARS
SUPERSTRUCTURE

TOTAL COATED = 19,660 LBS

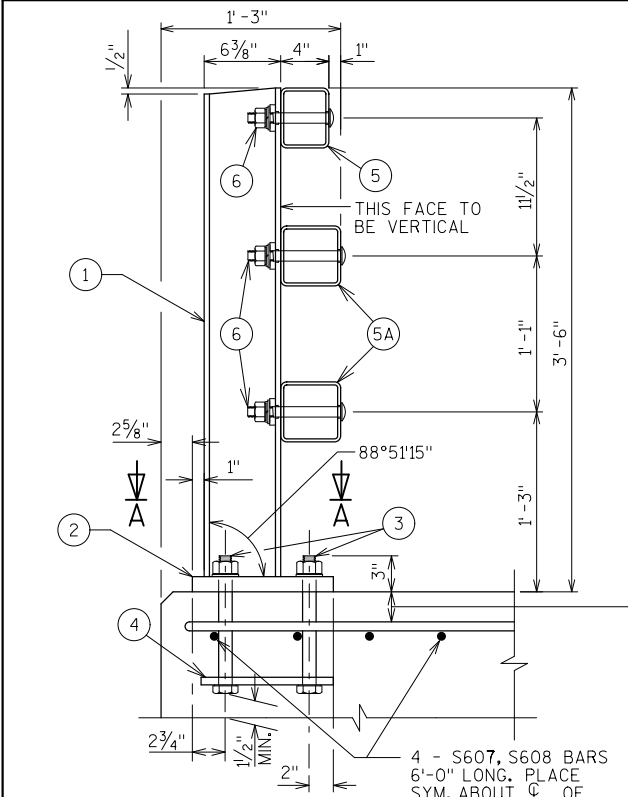
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
S501	X	66	7'-0"	X	SLAB AT ABUTMENT - VERT.
S502	X	49	32'-2"		SLAB TOP - TRANS.
S503	X	61	32'-2"		SLAB BOTTOM - TRANS.
S504	X	33	42'-2"		SLAB TOP - LONGIT.
S1005	X	71	42'-2"		SLAB BOTTOM - LONGIT.
S606	X	32	12'-0"	X	SLAB AT RAIL POSTS - TRANS.
S607	X	48	6'-0"		SLAB AT INTERIOR RAIL POSTS - LONGIT.
S608	X	16	6'-0"	X	SLAB AT EXTERIOR RAIL POSTS - LONGIT.

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.
ALL BAR BEND DIMESIONS ARE OUT-TO-OUT OF BAR.

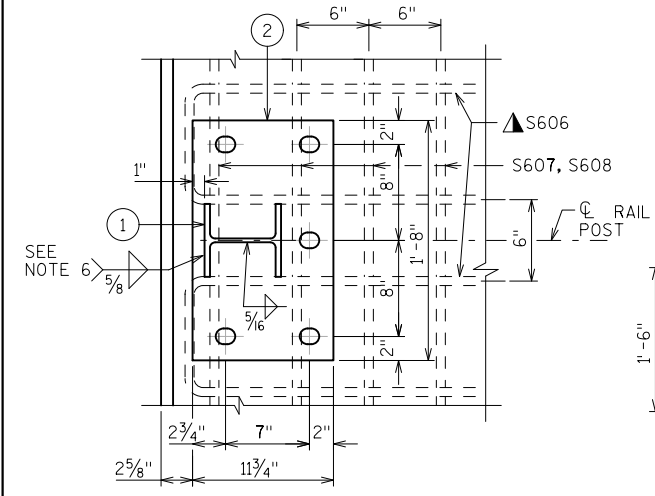


DETAIL 'A'

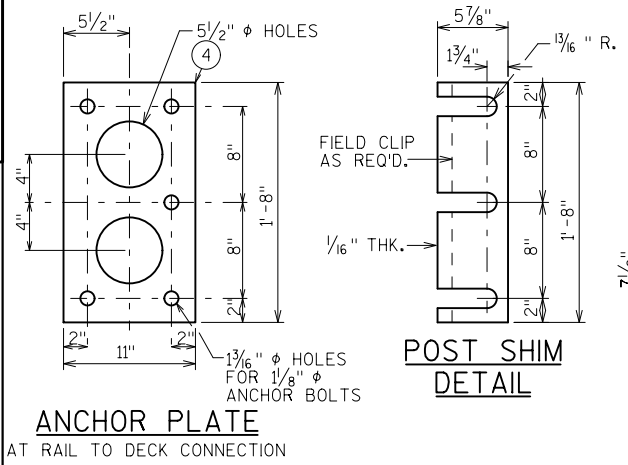
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-56-227			
DRAWN BY ABP		PLANS CK'D. MSC	
SUPERSTRUCTURE DETAILS		SHEET 7 OF 8	



SECTION THRU RAILING ON DECK

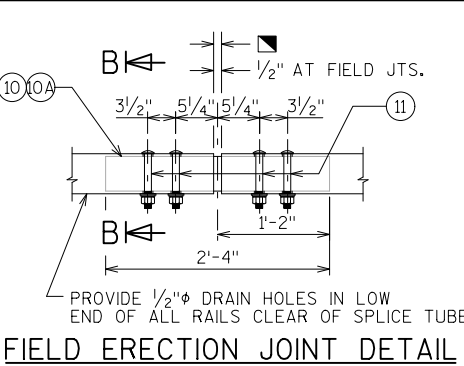


SECTION A-A

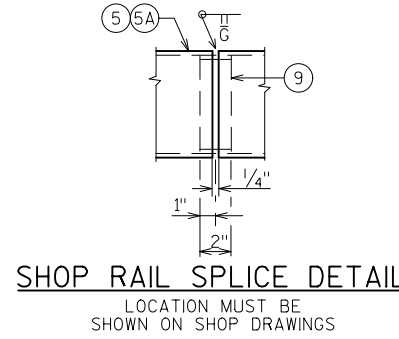


ANCHOR PLATE

AT RAIL TO DECK CONNECTION

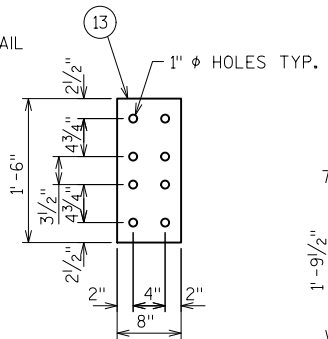


FIELD ERECTION JOINT DETAIL

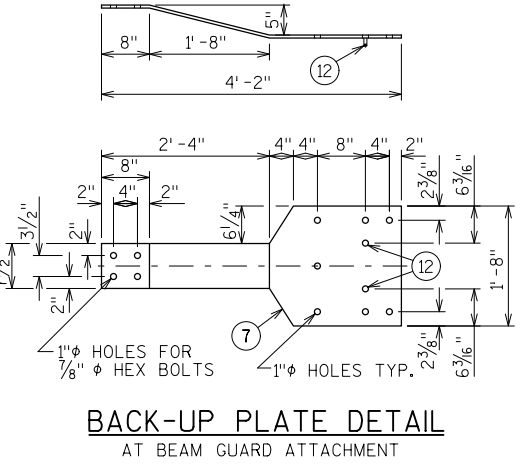


SHOP RAIL SPLICE DETAIL

LOCATION MUST BE SHOWN ON SHOP DRAWINGS

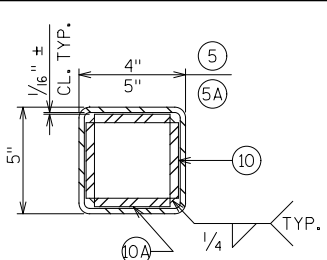


ANCHOR PLATE AT BEAM GUARD ATTACHMENT

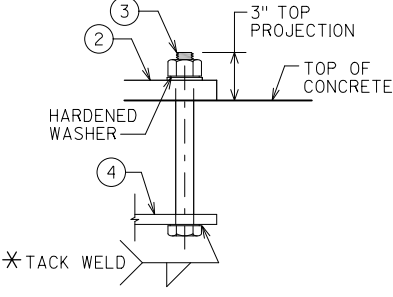


BACK-UP PLATE DETAIL

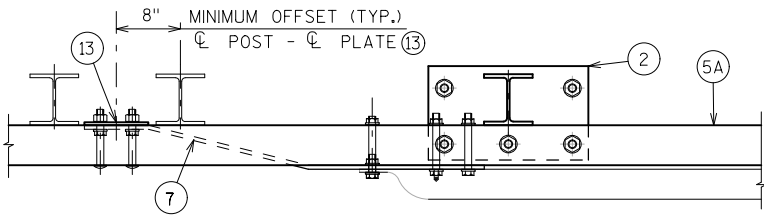
AT BEAM GUARD ATTACHMENT



SECTION B-B

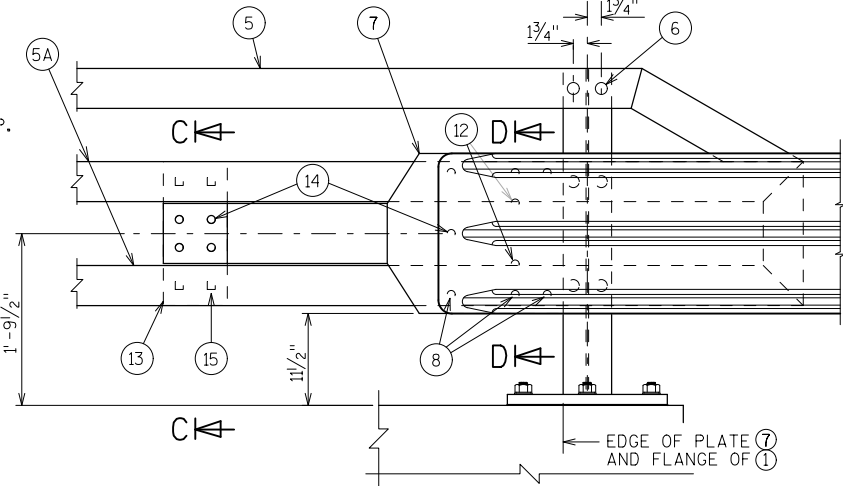


ANCHOR BOLTS



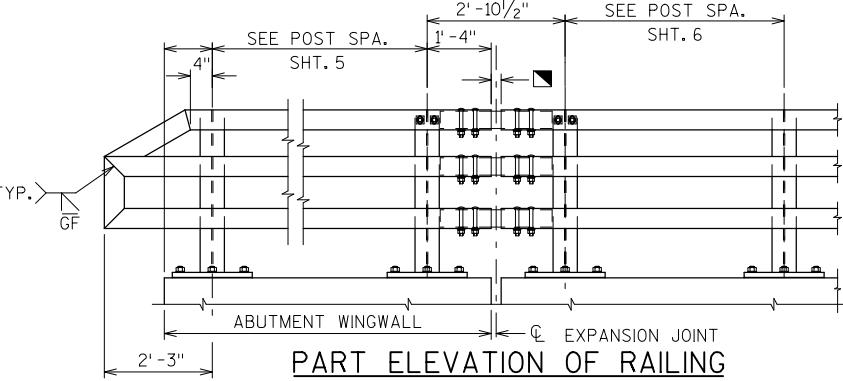
TOP VIEW AT END POST

THREE BEAM RAIL ATTACHMENT

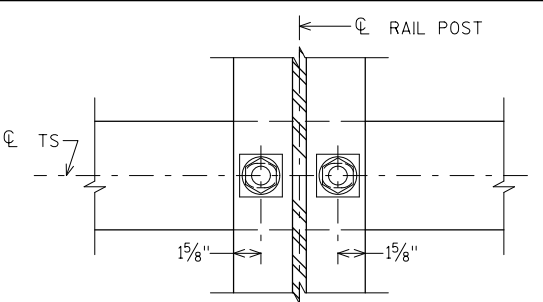


DETAIL AT END POST

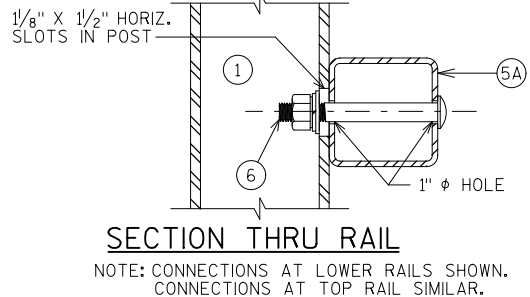
THREE BEAM RAIL ATTACHMENT



PART ELEVATION OF RAILING



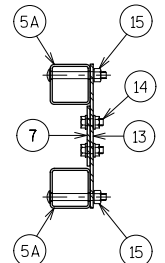
SECTION THRU POST WEB



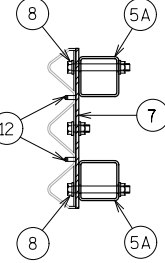
SECTION THRU RAIL

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

TYPICAL RAIL TO POST CONNECTIONS



SECTION C-C



SECTION D-D

LEGEND

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

GENERAL NOTES

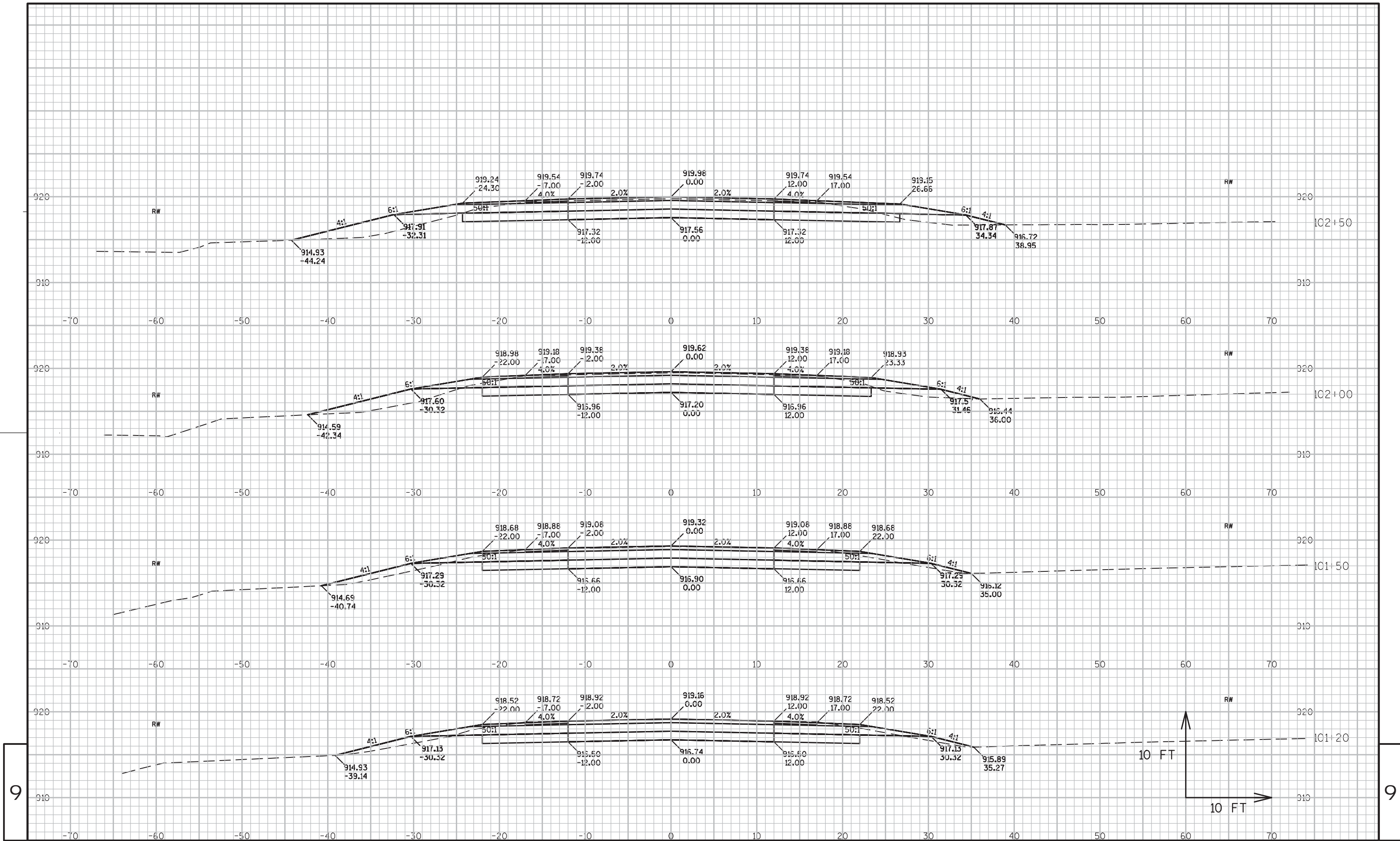
- BID ITEM SHALL BE "RAILING TUBULAR TYPE M B-56-227" WHICH INCLUDES ALL ITEMS SHOWN.
- RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
- THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN.
- RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE. RAILS SHALL BE SPLICED IN A PANEL OVER EXPANSION JOINTS.
- ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
- WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
- FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
- POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
- ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY SSPC SPECIFICATIONS.
- WHEN PAINTING IS REQUIRED, ALL MATERIAL EXCEPT ANCHORAGE DETAIL (NO. 3 & 4) SHALL BE PAINTED OVER GALVANIZING WITH APPROVED TIE COAT AND TOP COAT.
- THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (TL-4).
- PLACE FIRST BOTTOM LONGITUDINAL BAR CLEAR OF DRIP GROOVE.

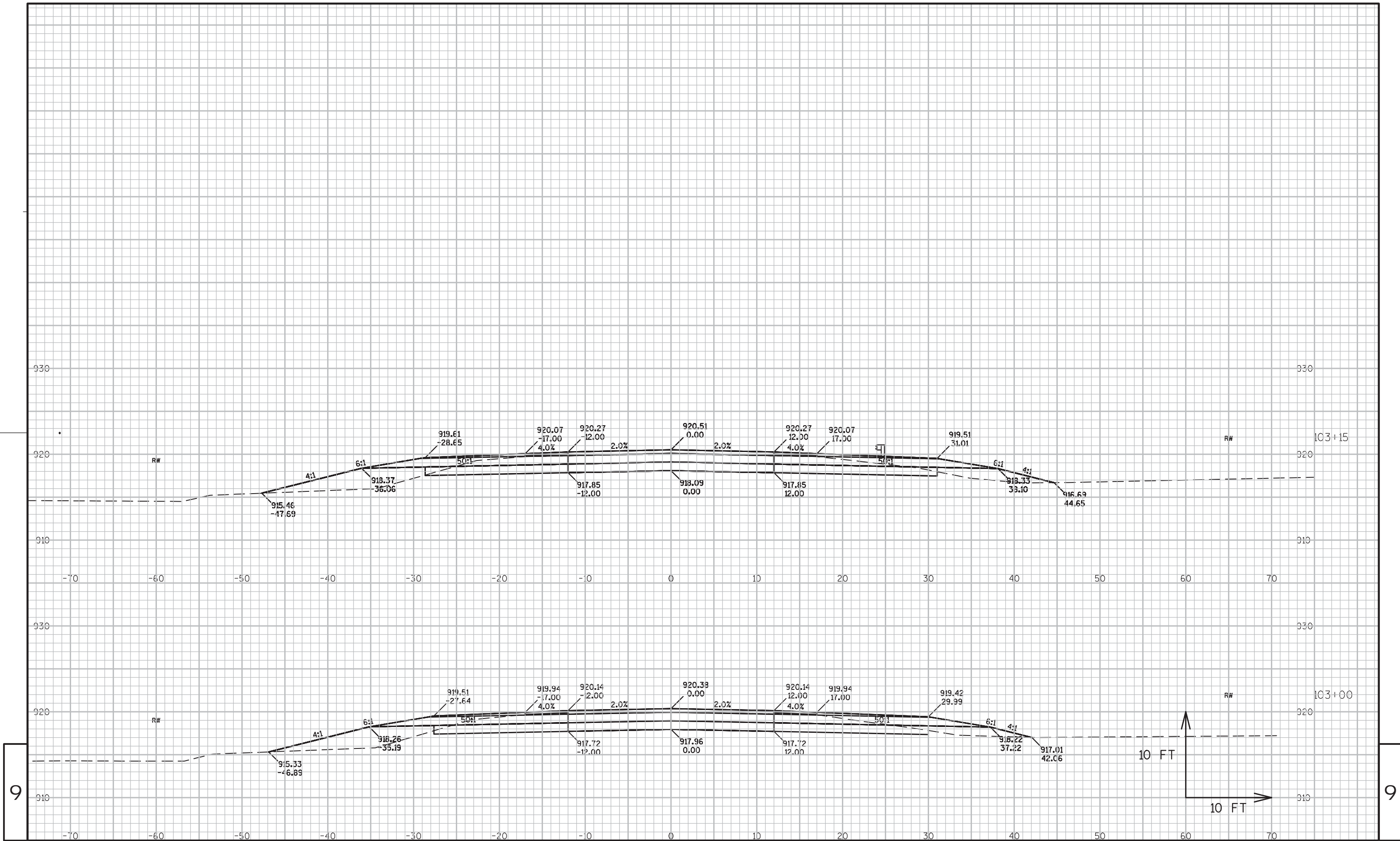
▲ TIE TO TOP MAT OF STEEL.

* FOR ANCHOR BOLTS IN WINGS, TACK WELD MAY BE USED IN FIELD AFTER ANCHOR PLATE IS IN POSITION IF REQ'D. FOR CONSTRUCTIBILITY.

■ 1/2" OPENING FOR A1 ABUTMENT.

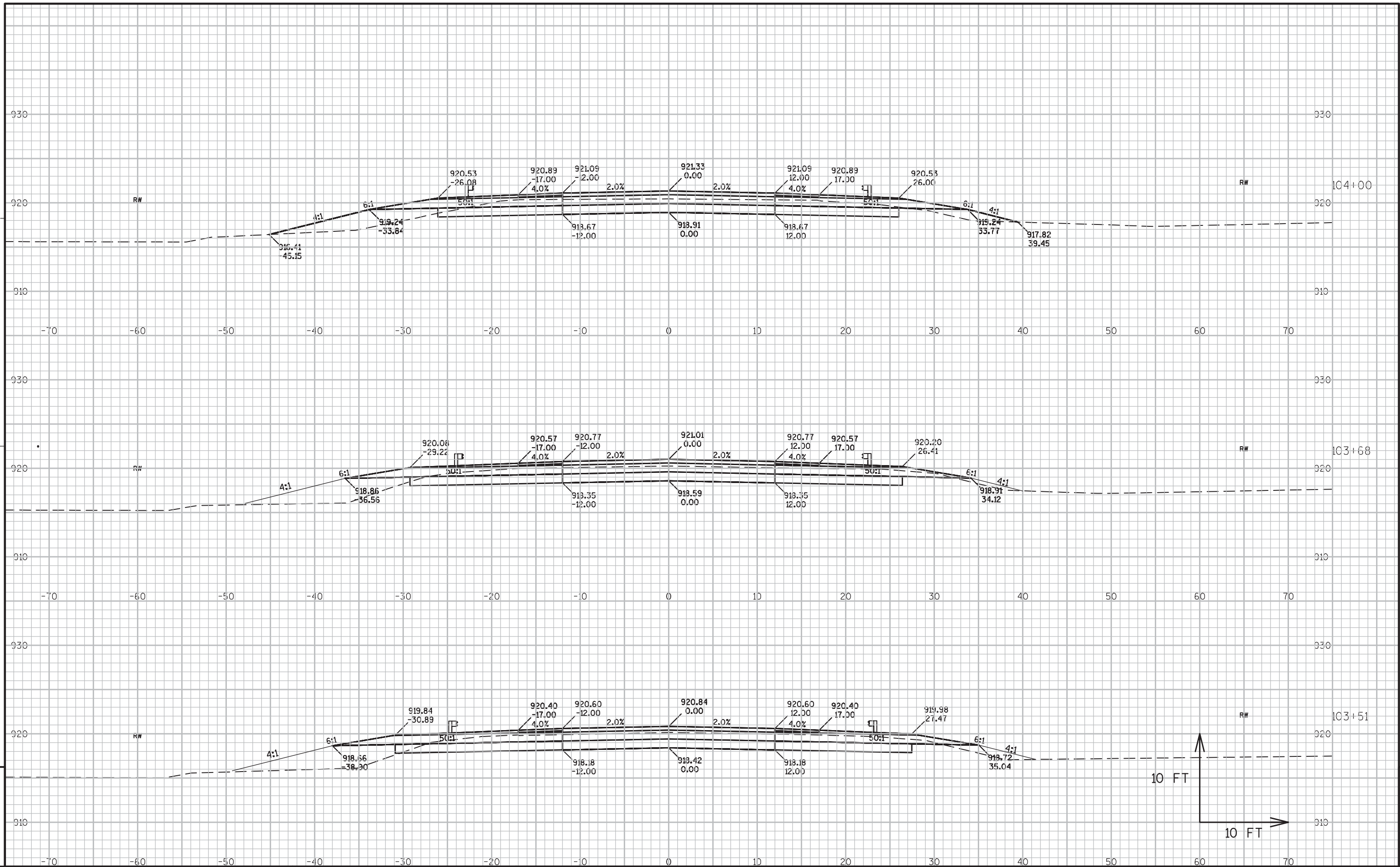
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5080-09-82			
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-56-227			
DRAWN BY		ABP	PLANS CK'D. MSC
TUBULAR STEEL RAILING TYPE M			SHEET 8 OF 8

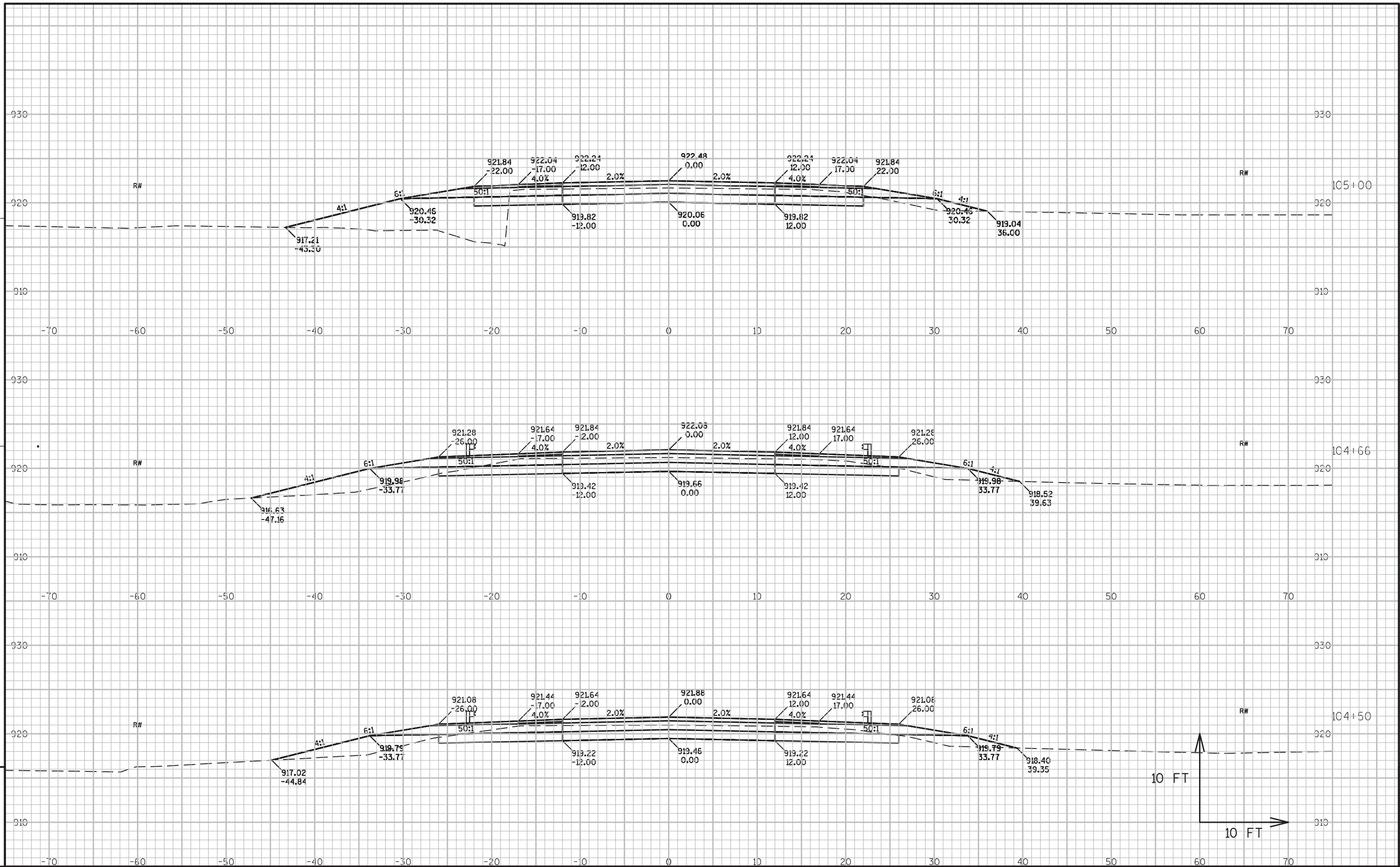


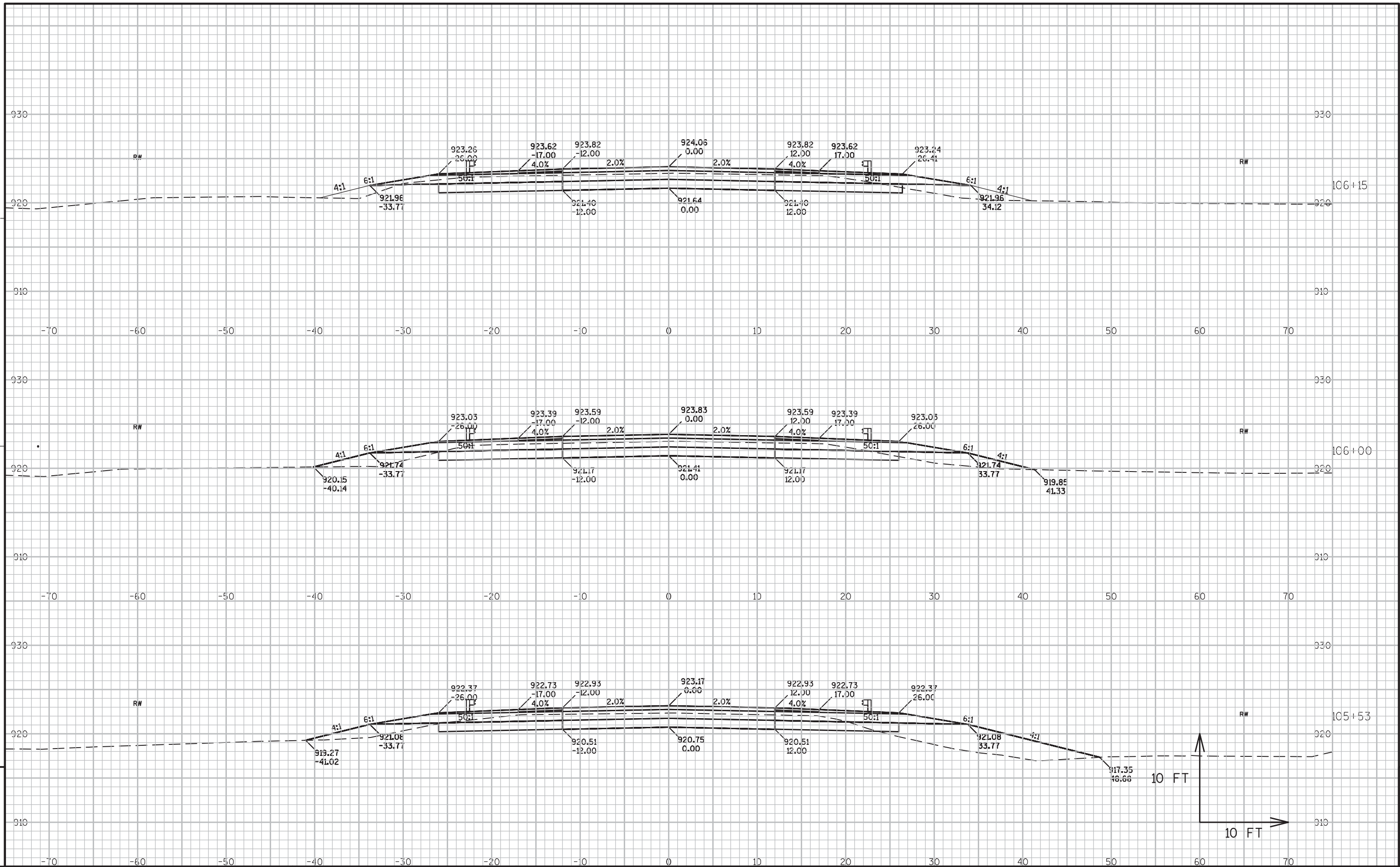


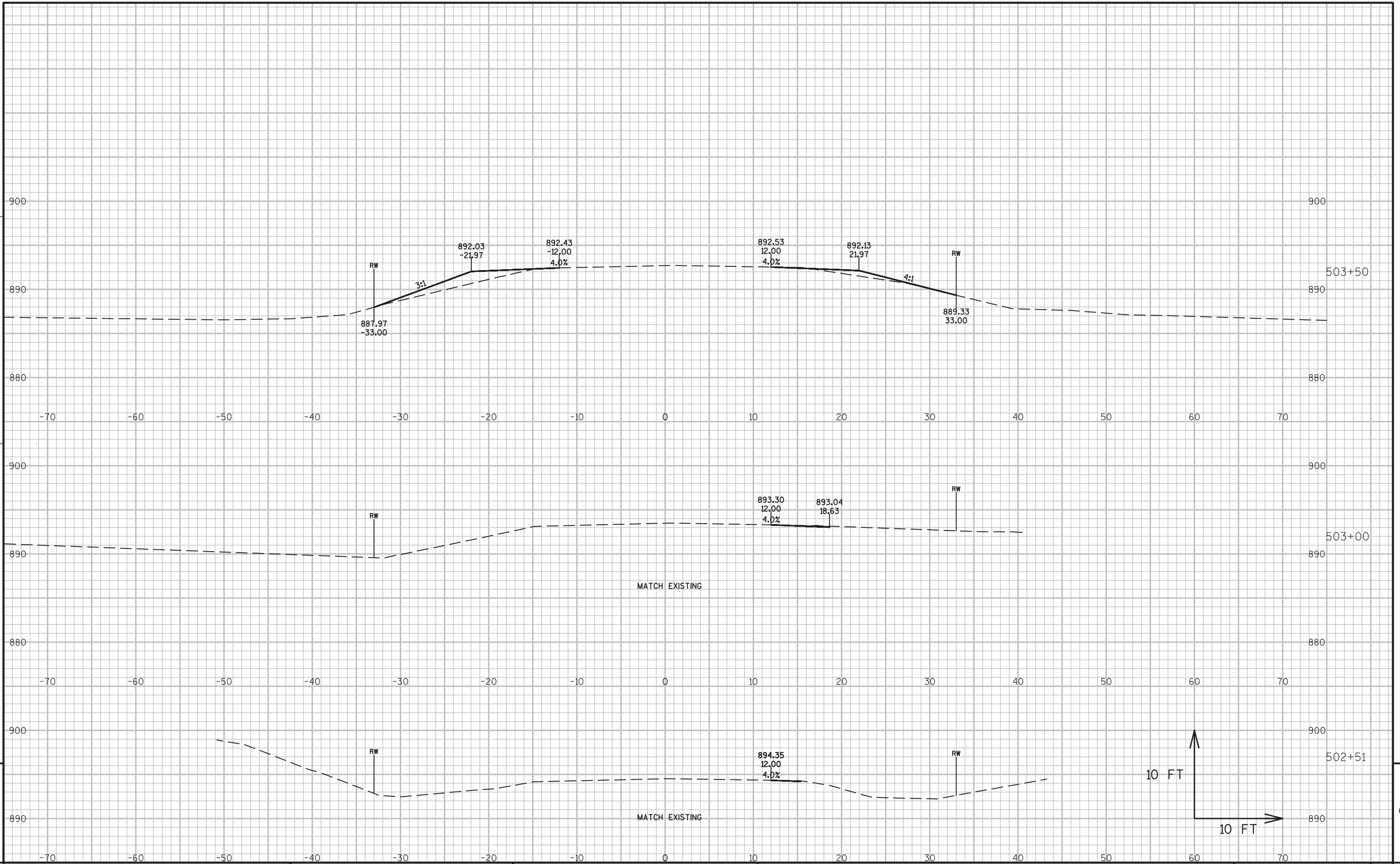
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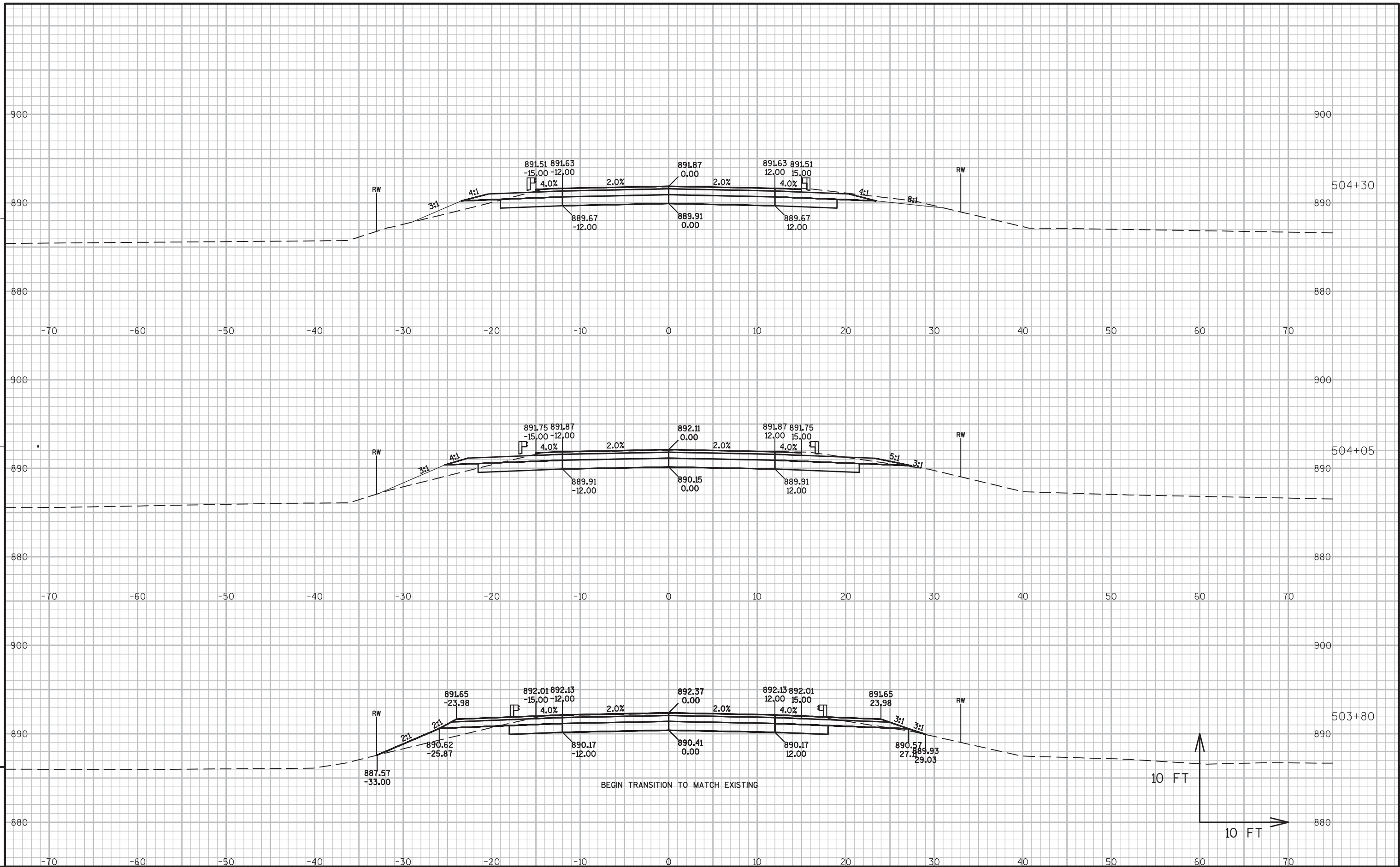
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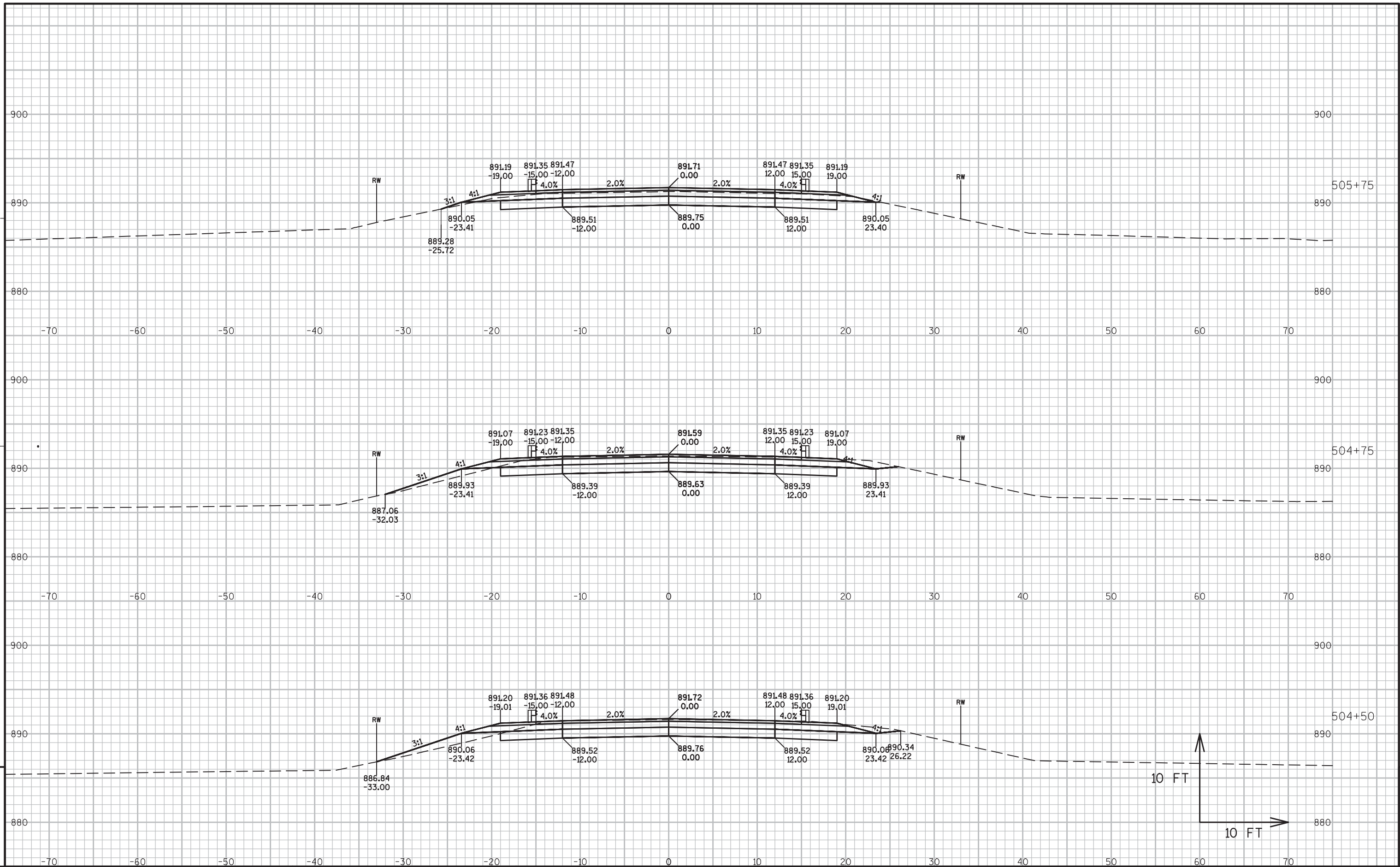


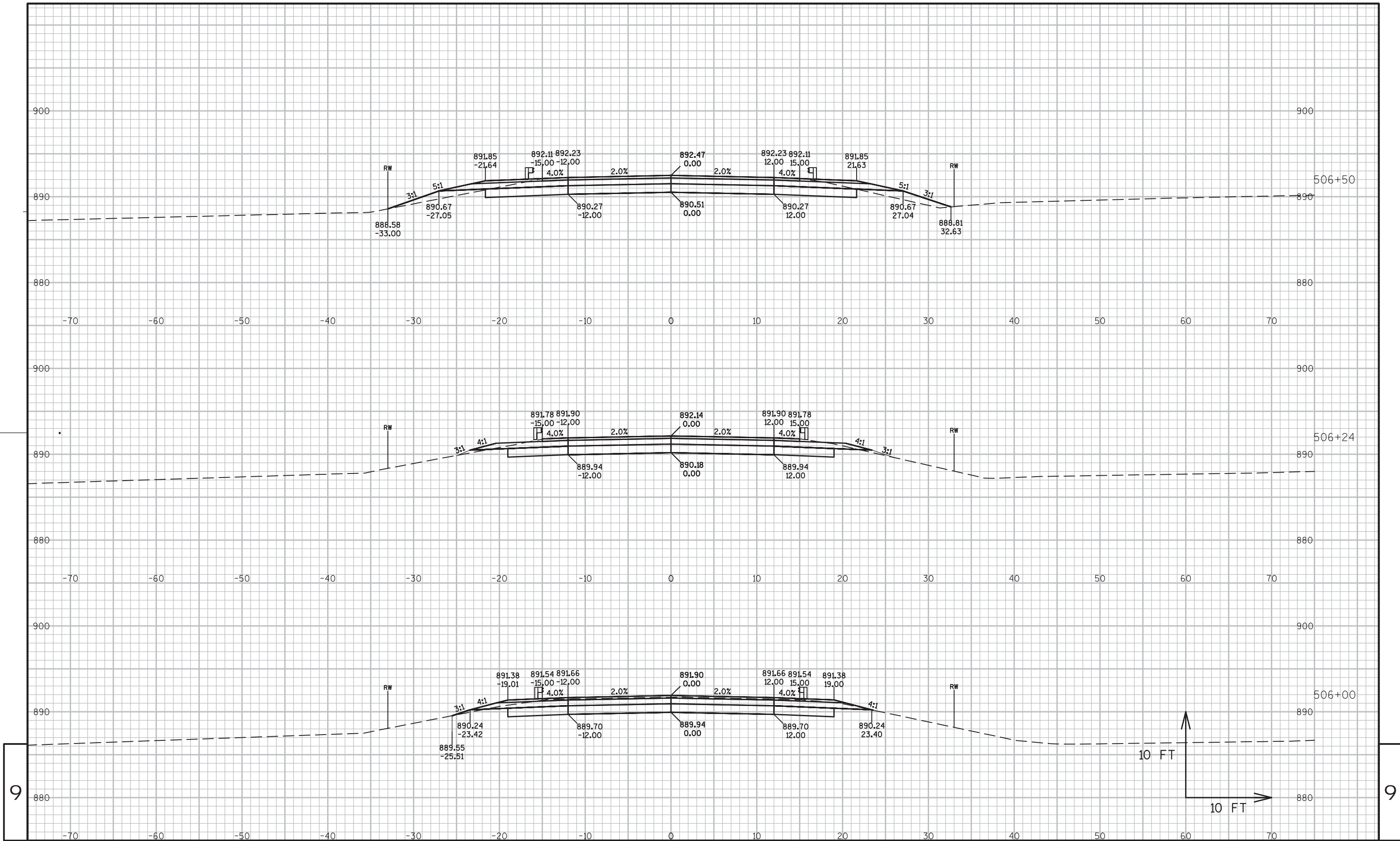


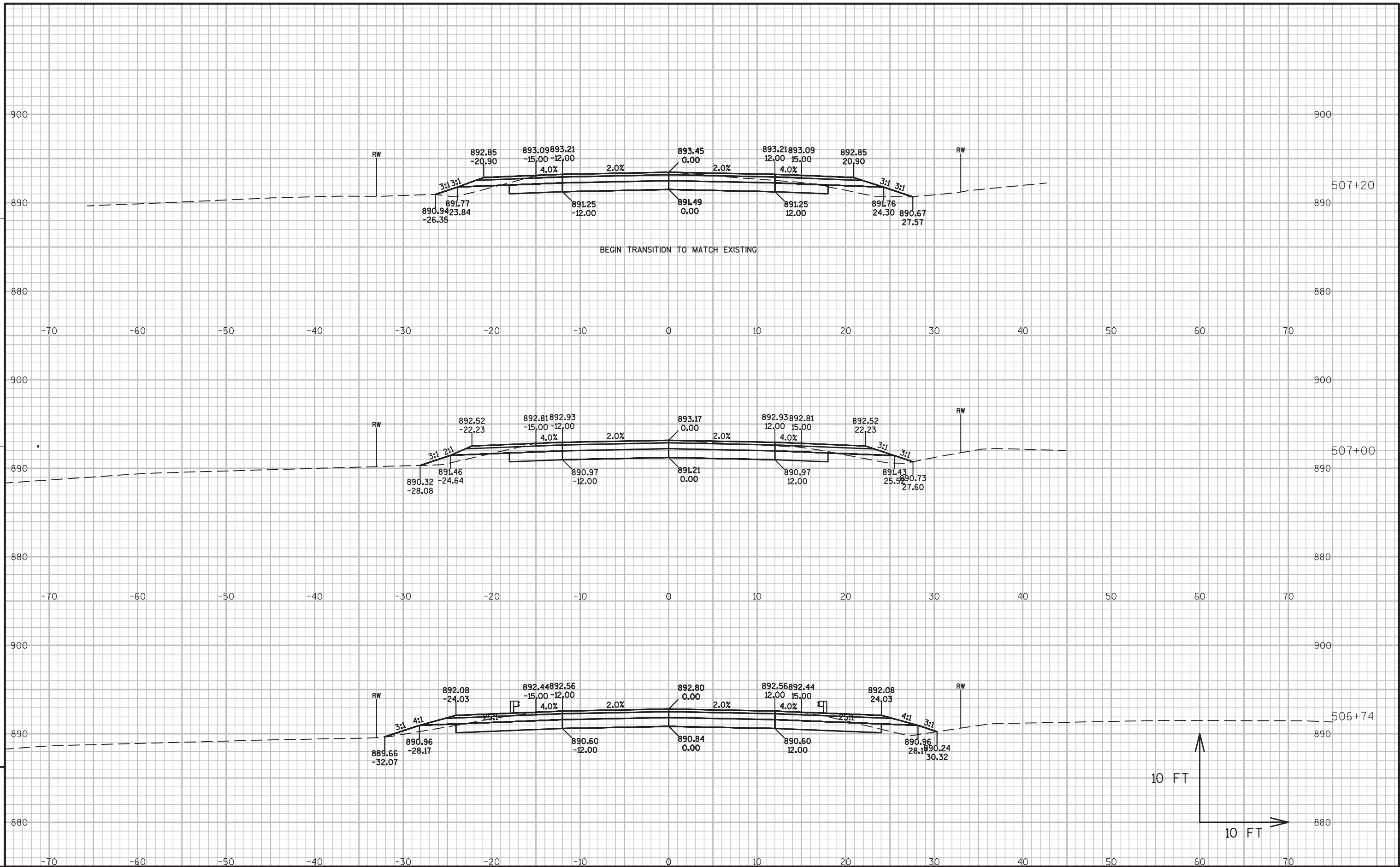


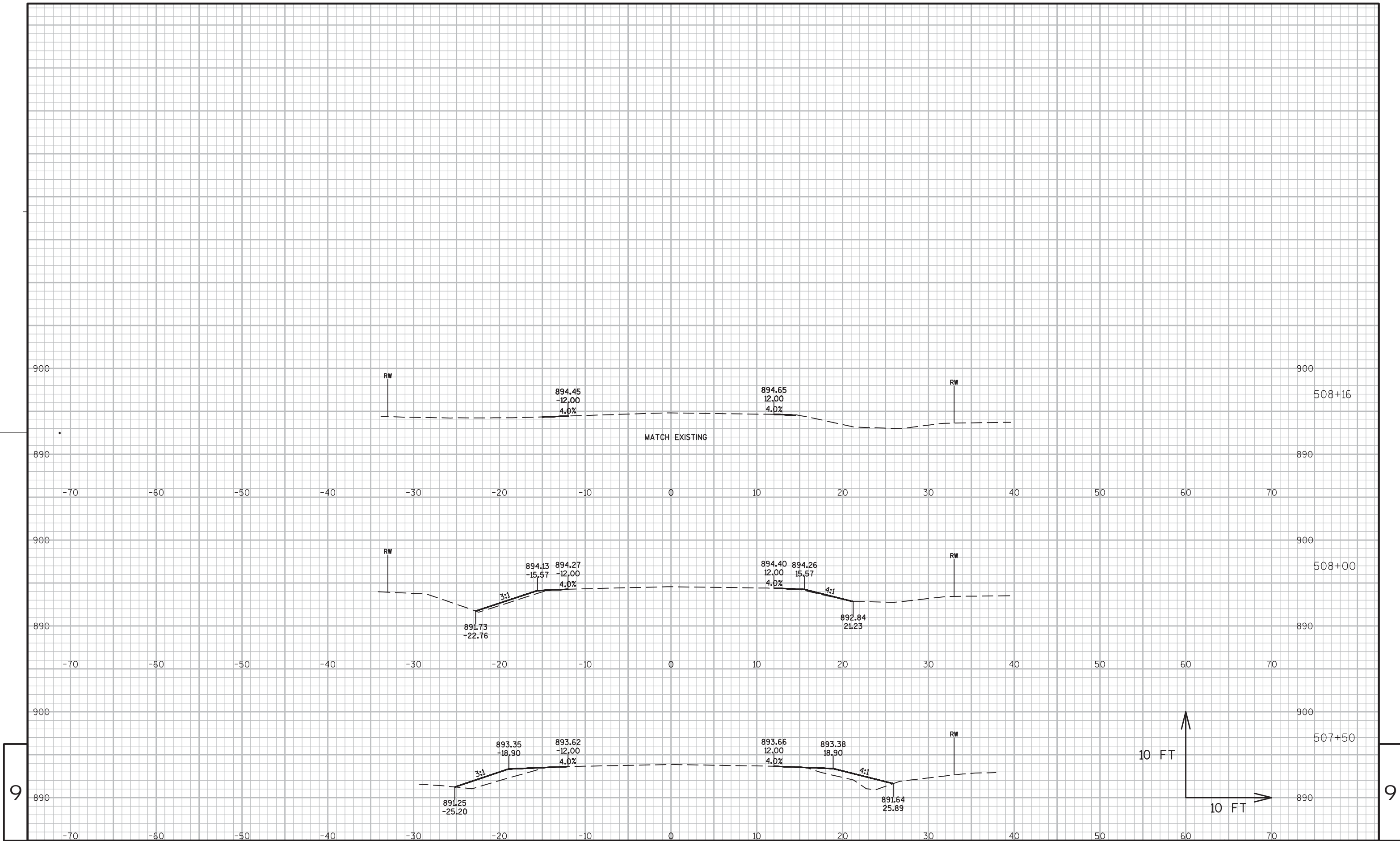












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PROJECT NO: 5080-09-82	HWY: STH 23	COUNTY: SAUK	CROSS SECTIONS: CTH CH	SHEET 28	E
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Notes



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