LAX

MAY 2020

PROJECT ID: 5328-00-70

WITH: N/A

COUNTY: CRAWFORD

ORDER OF SHEETS

TOTAL SHEETS = 68

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

V OF BELL CENTER, SAND HILL ROAD

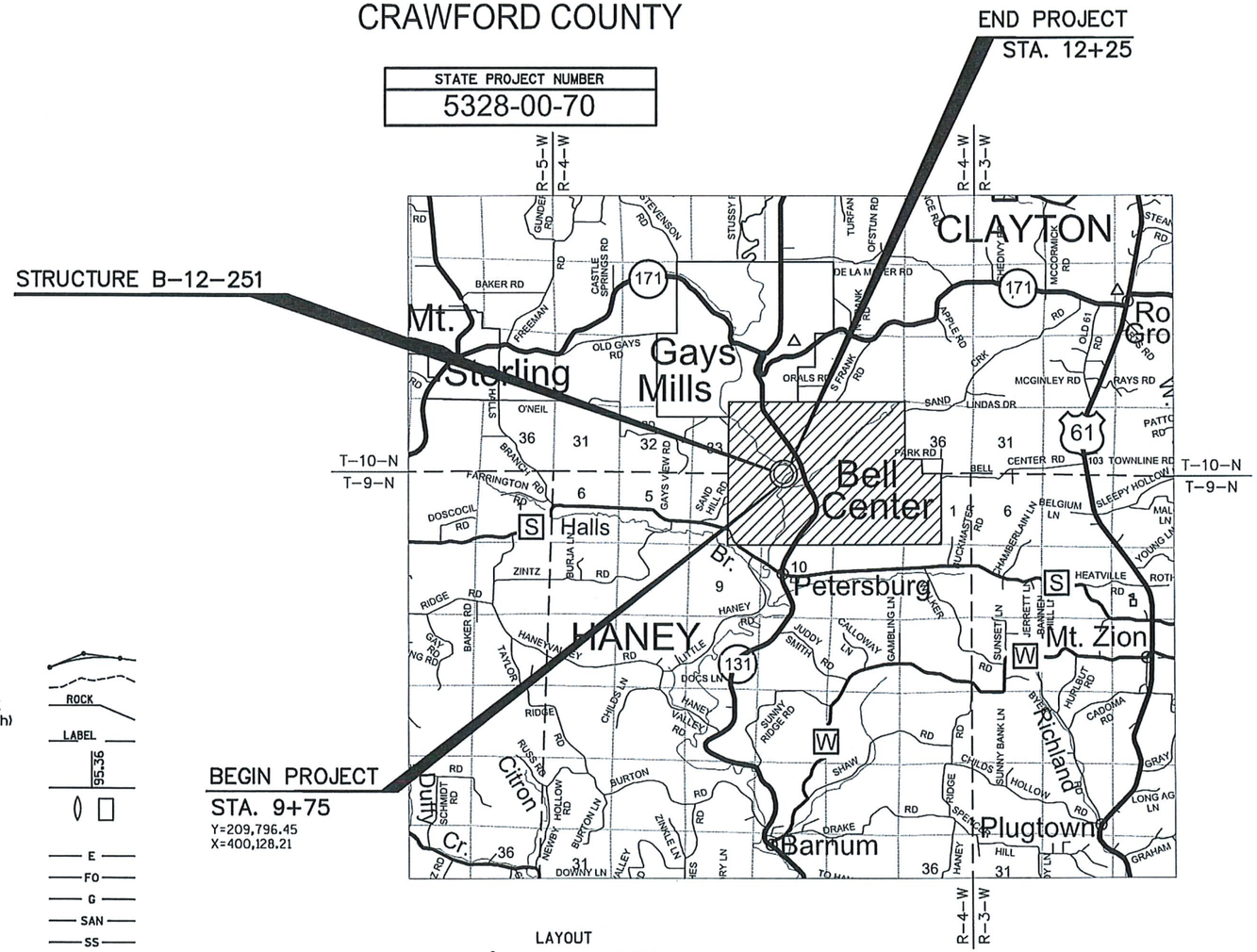
KICKAPOO RIVER BRIDGE B-12-251

LOC STR

CRAWFORD COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
5328-00-70	WISC 2020241	1

STATE PROJECT NUMBER
5328-00-70



LAYOUT
SCALE 0 2 MILE

TOTAL NET LENGTH OF CENTERLINE = 0.047 MILES

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

ELEVATION SHOWN ON THIS PLAN ARE REFERENCE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988, NAVD (2012).

DESIGN DESIGNATION

A.A.D.T.	(2020)	= 390
A.A.D.T.	(2040)	= 580
D.H.V.	(2040)	= 53
D.D.		= 60/40
T.		= 10% (ASSUMED)
DESIGN SPEED		= 50 MPH
ESALS		= 120,000

CONVENTIONAL SYMBOLS

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

PROFILE
- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such) (ROCK)
- SPECIAL DITCH (LABEL)
- GRADE ELEVATION (95.36)
- CULVERT (Profile View)

UTILITIES
- ELECTRIC (E)
- FIBER OPTIC (FO)
- GAS (G)
- SANITARY SEWER (SAN)
- STORM SEWER (SS)
- TELEPHONE (T)
- WATER (W)
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

ACCEPTED FOR
VILLAGE of BELL CENTER
1-27-2020 (Date) (Village President)

ACCEPTED FOR
COUNTY of CRAWFORD
1/14/2020 (Date) (Highway Commissioner)

ORIGINAL PLANS PREPARED BY
JEWELL associates engineers, inc.
Engineers - Architects - Surveyors

WISCONSIN PROFESSIONAL ENGINEER
ELLERY A. SCHAFFER
E-41742-6
SPRING GREEN, WI

1/20/2020 (Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
- Surveyor: JEWELL ASSOCIATES ENGINEERS, INC.
- Designer: JEWELL ASSOCIATES ENGINEERS, INC.
- Project Manager: ALEIGHA BURG, P.E.
- Regional Examiner: SW REGION
- Regional Supervisor: OSCAR I. WINGER

APPROVED FOR THE DEPARTMENT
DATE: 1/30/2020 (Signature)

E

LIST OF STANDARD ABBREVIATIONS

ABUT	Abutment	INV	Invert	SALV	Salvaged
AC	Acre	IP	Iron Pipe or Pin	SAN S	Sanitary Sewer
AGG	Aggregate	IRS	Iron Rod Set	SEC	Section
AH	Ahead	JT	Joint	SHLDR	Shoulder
<	Angle	JCT	Junction	SHR	Shrinkage
ASPH	Asphaltic	LHF	Left–Hand Forward	SW	Sidewalk
AVG	Average	L	Length of Curve	S	South
ADT	Average Daily Traffic	LIN FT or LF	Linear Foot	SQ	Square
BAD	Base Aggregate Dense	LC	Long Chord of Curve	SF or SQ FT	Square Feet
BK	Back	MH	Manhole	SY or SQ YD	Square Yard
BF	Back Face	MB	Mailbox	STD	Standard
BM	Bench Mark	ML or M/L	Match Line	SDD	Standard Detail Drawings
BR	Bridge	N	North	STH	State Trunk Highways
C or C/L	Center Line	Y	North Grid Coordinate	STA	Station
CC	Center to Center	O.A.L.	Overall Length	SS	Storm Sewer
CTH	County Trunk Highway	OD	Outside Diameter	SG	Subgrade
CR	Creek	PLE	Permanent Limited Easement	SE	Superelevation
CR	Crushed			SL or S/L	Survey Line
CY or CU YD	Cubic Yard	PT	Point	SV	Septic Vent
CP	Culvert Pipe	PC	Point of Curvature	T	Tangent
C & G	Curb and Gutter	PI	Point of Intersection	TEL	Telephone
D	Degree of Curve	PRC	Point of Reverse Curvature	TEMP	Temporary
DHV	Design Hour Volume	PT	Point of Tangency	TI	Temporary Interest
DIA	Diameter	POC	Point On Curve	TLE	Temporary Limited Easement
E	East	POT	Point on Tangent		
X	East Grid Coordinate	PVC	Polyvinyl Chloride	t	Ton
ELEC	Electric (al)	PCC	Portland Cement Concrete	T or TN	Town
EL or ELEV	Elevation	LB	Pound	TRANS	Transition
ESALS	Equivalent Single Axle Loads	PSI	Pounds Per Square Inch	TL or T/L	Transit Line
		PE	Private Entrance	T	Trucks (percent of)
EBS	Excavation Below Subgrade	R	Radius	TYP	Typical
ESTR	Existing Sign to Remain	RR	Railroad	UNCL	Unclassified
FF	Face to Face	R	Range	UG	Underground Cable
FE	Field Entrance	RL or R/L	Reference Line	USH	United States Highway
F	Fill	RP	Reference Point	VAR	Variable
FG	Finished Grade	RCCP	Reinforced Concrete Culvert Pipe	V	Velocity or Design Speed
FL or F/L	Flow Line			VERT	Vertical
FT	Foot	REQ'D	Required	VC	Vertical Curve
FTG	Footing	RES	Residence or Residential	VOL	Volume
GN	Grid North	RW	Retaining Wall	WM	Water Main
HT	Height	RT	Right	WV	Water Valve
CWT	Hundredweight	RHF	Right–Hand Forward	W	West
HYD	Hydrant	R/W	Right–of–Way	WB	Westbound
INL	Inlet	R	River	YD	Yard
ID	Inside Diameter	RD	Road		
		RDWY	Roadway		

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

TOTAL PROJECT AREA= 0.89 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.53 ACRES

GENERAL NOTES

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

NO TREES OR SHRUBS ARE TO BE REMOVED UNLESS SUCH TREES OR SHRUBS HAVE FIRST BEEN INDICATED FOR REMOVAL BY THE ENGINEER IN THE FIELD.

EXCAVATION BELOW SUBGRADE (EBS) IS NOT USED TO BALANCE YARDAGE, AND IS NOT SHOWN ON THE CROSS SECTIONS BUT IS MEASURED AND PAID FOR AS COMMON EXCAVATION. EXACT LOCATIONS OF EBS WILL BE DETERMINED BY THE ENGINEER.

DISTURBED AREAS SHOWN WITHIN THE RIGHT–OF–WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER HINGE POINTS ARE TO BE FERTILIZED (TYPE B), SEEDED (USE SEED MIX NO. 20), AND MULCHED AS DIRECTED BY THE ENGINEER. ALL POST CONSTRUCTION WET AREAS SHALL BE SEEDED WITH SEEDING MIXTURE NO. 60.

WHEN THE QUANTITY OF THE ITEM OF BREAKER RUN, BASE AGGREGATE DENSE OR ASPHALTIC SURFACE IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE COURSE SHOWN ON THE PLAN IS APPROXIMATE, AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER IN THE FIELD.

SILT FENCE, TURBIDITY BARRIER, AND TEMPORARY DITCH CHECKS SHALL BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER IN THE FIELD. SILT FENCE AND TURBIDITY BARRIER SHALL BE PLACED PRIOR TO CONSTRUCTION AND IN PLACE PRIOR TO STRUCTURE REMOVAL.

MULCH ALL MAINLINE SLOPES AS DIRECTED BY THE ENGINEER IN THE FIELD.

FILL EXPANSION IS VARIABLE AND IS ESTIMATED AT 25%.

ADJUST DITCH GRADING AS NECESSARY TO FIT FIELD CONDITIONS AND AS DIRECTED BY THE ENGINEER.

ASPHALTIC SURFACE QUANTITIES WERE CALCULATED USING 112 LB/SY/IN. 4–INCH OF ASPHALTIC SURFACE SHALL BE CONSTRUCTED WITH A 1¾–INCH UPPER LAYER AND A 2¼–INCH LOWER LAYER.

REMOVAL OF ASPHALTIC SURFACES (TO BE PAID FOR AS EXCAVATION COMMON) WHERE AN ABUTTING ASPHALTIC SURFACE IS TO REMAIN IN PLACE SHALL REQUIRE A SAWCUT MEETING THE APPROVAL OF THE ENGINEER IN THE FIELD.

THE LOCATION OF ALL PERMANENT SIGNING SHALL BE VERIFIED BY THE ENGINEER IN THE FIELD PRIOR TO PLACEMENT.

WETLANDS ARE PRESENT IN THE PROJECT LIMITS. THE CONTRACTOR SHALL NOT OPERATE OR STOCKPILE EQUIPMENT BEYOND THE EXISTING TOE OF SLOPE AT STA. 9+32 – STA. 11+46, LT., STA. 9+08 – STA. 10+45, RT., STA. 11+57 – STA. 12+67, RT., STA. 12+42 – STA. 12+85, LT.

CURVE DATA IS BASED ON THE ARC DEFINITION.

CONTACTS

DESIGN CONSULTANT
JEWELL ASSOCIATES ENGINEERS, INC.
560 SUNRISE DRIVE
SPRING GREEN, WI 53588
ATTN: ELLERY SCHAFFER, P.E.
PHONE: (608) 588-7484
CELL: (608) 341-8159
EMAIL: ellery.schaffer@jewellassoc.com

DNR LIAISON
STATE OF WISCONSIN
DNR SERVICE CENTER
3550 MORMON COULEE ROAD
LA CROSSE, WI 54601
ATTN: KAREN KALVELAGE
PH: (608) 406–7880
E–MAIL: karen.kalvelage@wisconsin.gov

CRAWFORD COUNTY HIGHWAY DEPARTMENT
KYLE KOZELKA, COMMISSIONER
21515 STATE HIGHWAY 27
P.O. BOX 39
SENECA, WI 54654
PH: (608) 734–9500
CELL: (608) 412–3774
E–MAIL: kkozelka@crawfordcountywi.org

VILLAGE OF BELL CENTER
JEFF CHRISTIE, PRESIDENT
49204 WALNUT POND LANE
GAYS MILLS, WI 54631
PH: (608) 606–2244
E–MAIL: christie@mwt.net

UTILITIES

COMMUNICATIONS*
RICHLAND–GRANT TELEPHONE COOPERATIVE, INC.
ATTN: JOHN BARTZ
202 N. EAST ST.
P.O. BOX 67
BLUE RIVER, WI 53518
OFFICE: (608) 537–2461
EMAIL: jbartz@mwt.net

ELECTRIC*
ALLIANT ENERGY
ATTN: AI MUMM
2200 EAST CHAMPION BLVD.
PRARIE DU CHIEN, WI 53821
OFFICE: (608) 732–7925
EMAIL: allanmumm@alliantenergy.com

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

* DENOTES UTILITY IS NOT A MEMBER OF DIGGERS HOTLINE

FILE NAME : S:\PROJECTS\C54545 CRAWFORD CO – SAND HILL ROAD BRIDGE REPLACEMENT\SHEETSPLAN\TYPICALS\53280000_GENERAL NOTES.DWG
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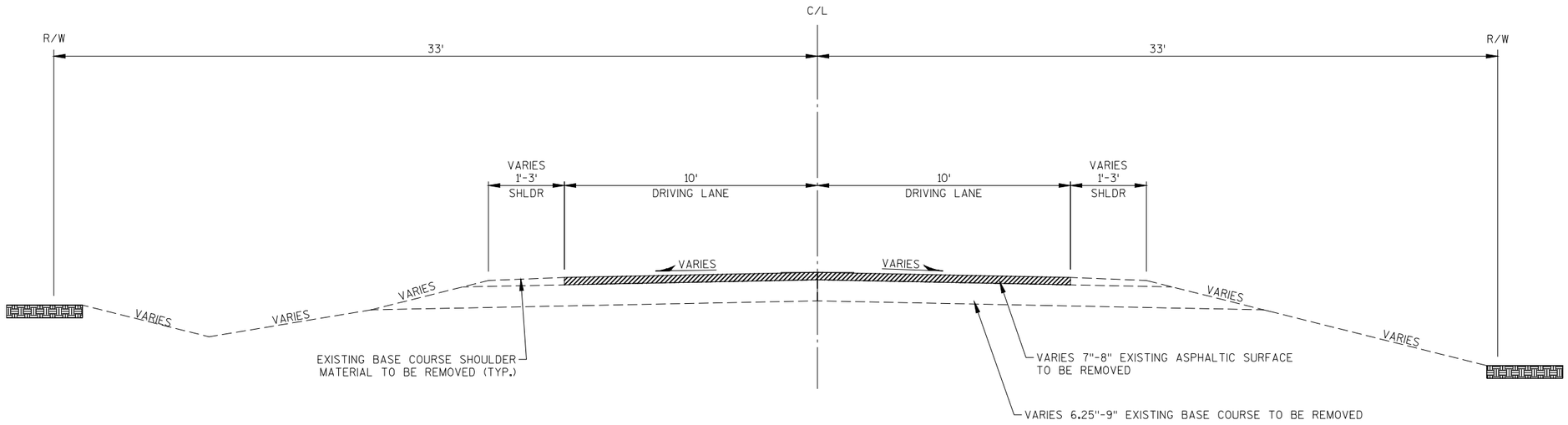
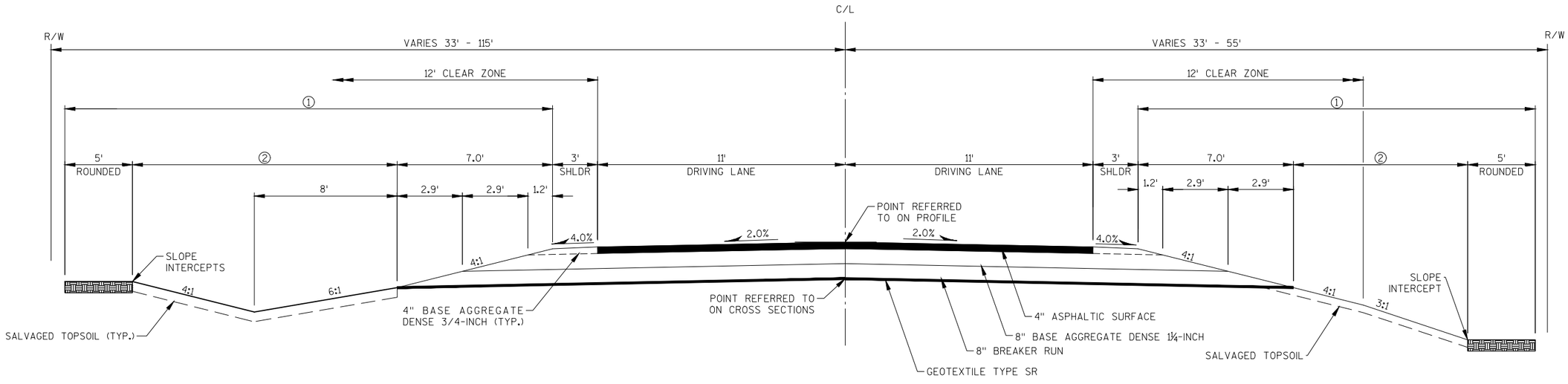
PLOT TIME : 1:29:45 PM
PLOT BY : THEODORE HERBERS
PLOT SCALE : 1" = 1'



TYPICAL EXISTING SECTION

STA. 9+75 - STA. 12+25



CUT

FILL

① LIMITS OF SEEDING MIXTURE NO. 20 OR SEEDING MIXTURE NO. 60, MULCHING, & FERTILIZER TYPE B (AS DIRECTED BY ENGINEER)

② LIMITS OF SALVAGED TOPSOIL (AS DIRECTED BY ENGINEER)

TYPICAL FINISHED SECTION

STA. 9+75 - STA. 12+25

PROJECT NO: 5328-00-70	HWY: SAND HILL ROAD	COUNTY: CRAWFORD	TYPICAL EXISTING SECTION & TYPICAL FINISHED SECTION	SHEET 3	E

FILE NAME : S:\PROJECTS\C54545 CRAWFORD CO - SAND HILL ROAD BRIDGE REPLACEMENT\SHEETSPLAN\TYPICALS\53280000_TYPICALS.DWG
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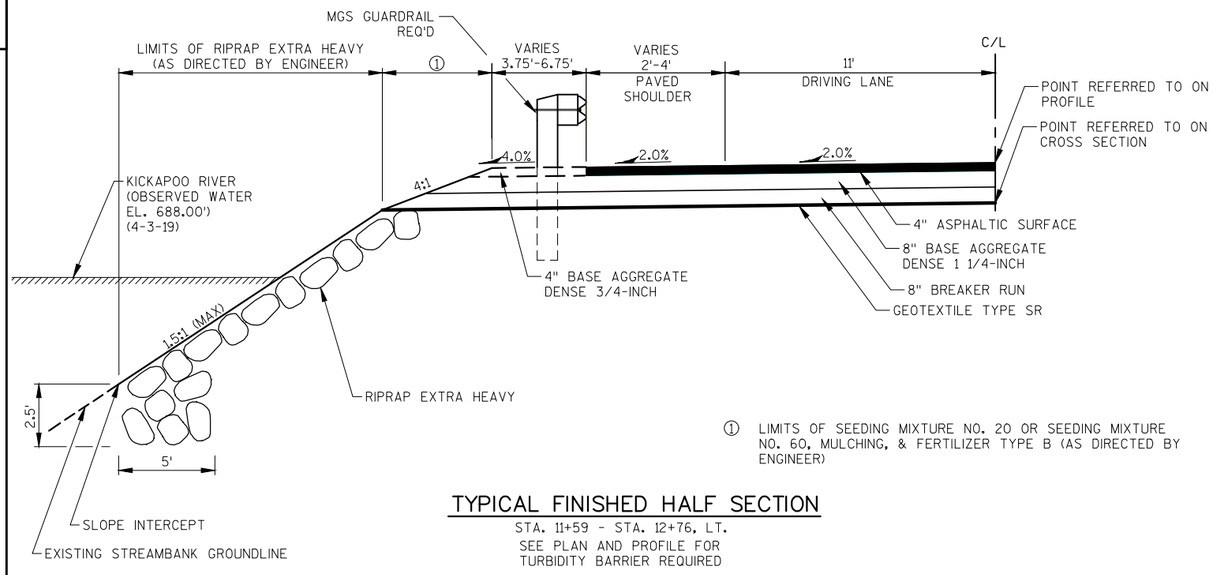
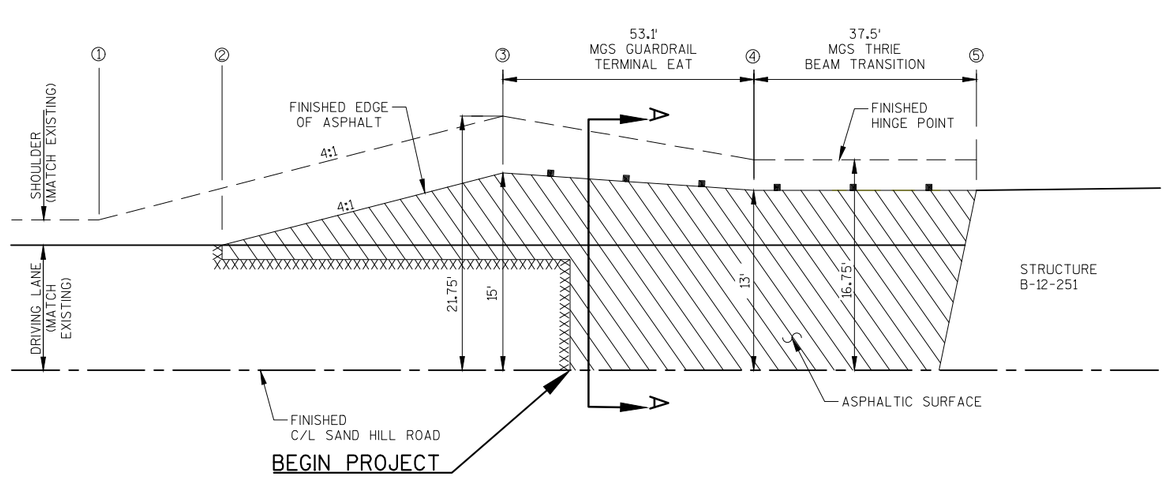


① LIMITS OF SEEDING MIXTURE NO. 20 OR SEEDING MIXTURE NO. 60, MULCHING, & FERTILIZER TYPE B (AS DIRECTED BY ENGINEER)

TYPICAL FINISHED HALF SECTION

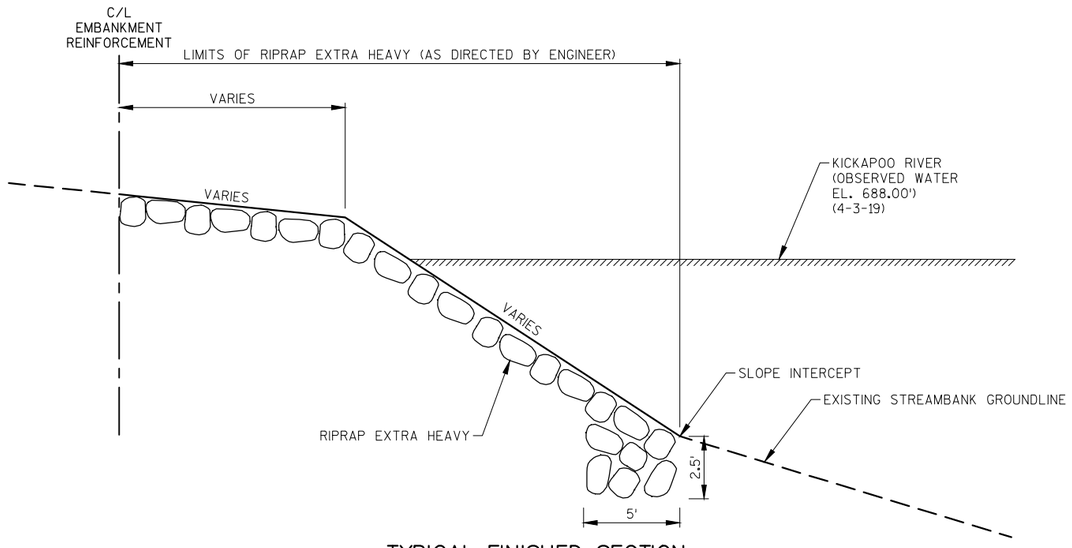
STA. 11+59 - STA. 12+76, LT.
SEE PLAN AND PROFILE FOR
TURBIDITY BARRIER REQUIRED



BEAMGUARD LAYOUT TABLE

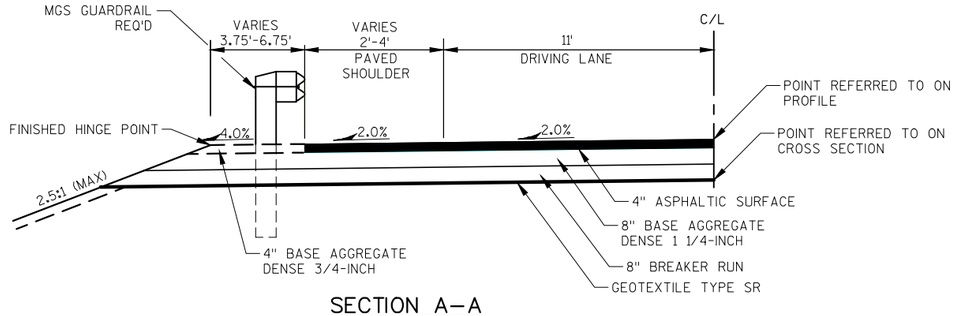
QUADRANT	LOCATION	STATION ①	②	③	④	⑤
SOUTHWEST	MAINLINE, RT.	9+08	9+23	9+43	9+96	10+34
NORTHWEST	MAINLINE, LT.	9+20	9+40	9+58	10+11	10+49
SOUTHEAST	MAINLINE, RT.	12+72	12+61	12+42	11+88	11+51
NORTHEAST	MAINLINE, LT.	12+83	12+76	12+56	12+03	11+66

BEAMGUARD LAYOUT DETAIL



TYPICAL FINISHED SECTION
EMBANKMENT REINFORCEMENT

STA. 50+00 - STA. 51+18.31, RT.
SEE PLAN AND PROFILE FOR
TURBIDITY BARRIER REQUIRED



SECTION A–A

PROJECT NO: 5328-00-70	HWY: SAND HILL ROAD	COUNTY: CRAWFORD	CONSTRUCTION DETAILS	SHEET 4	E

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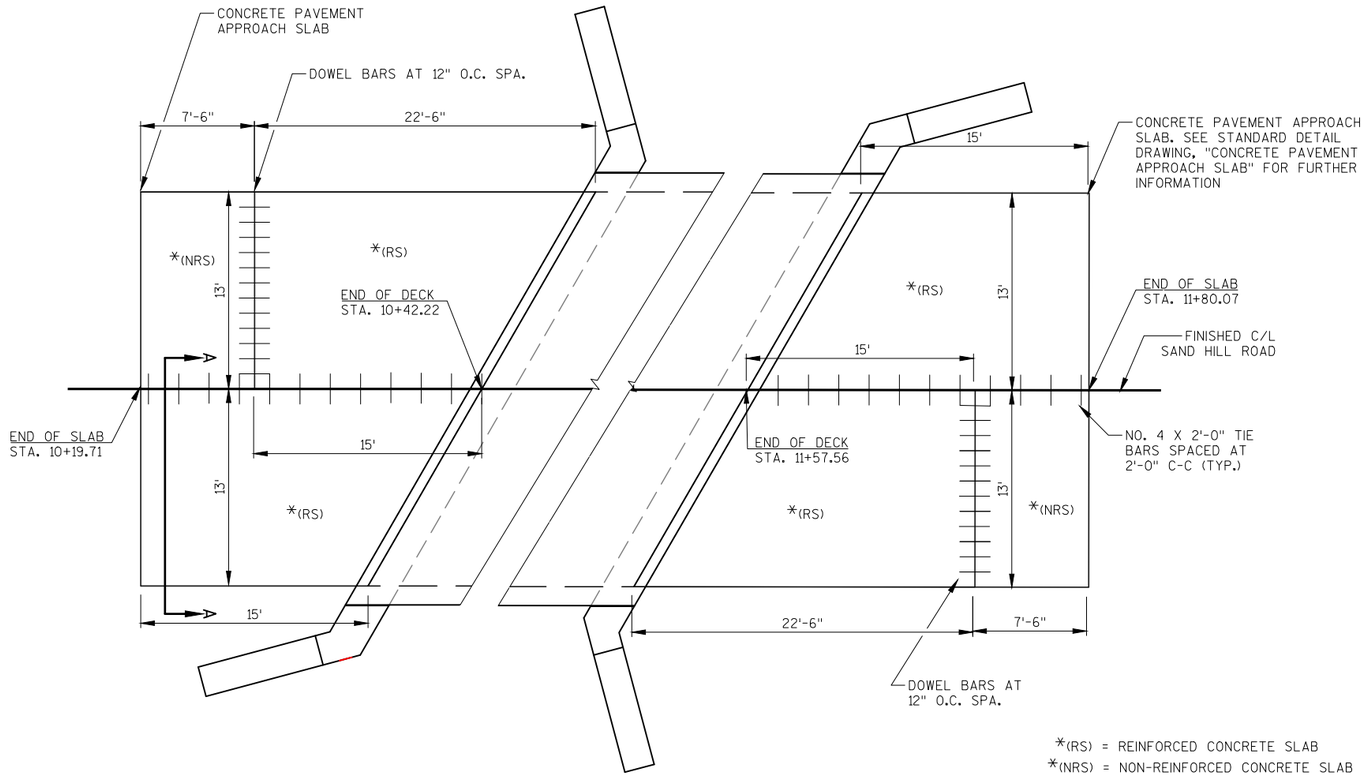
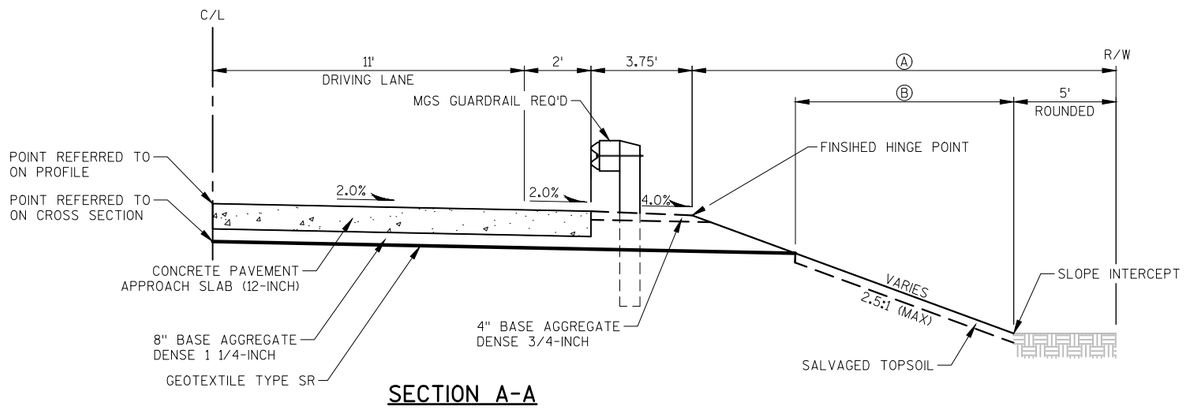
PLOT TIME : 2:16:38 PM
PLOT BY : KARTER ZAJICEK
PLOT SCALE : 1" = 1'



STRUCTURE APPROACH DETAILS

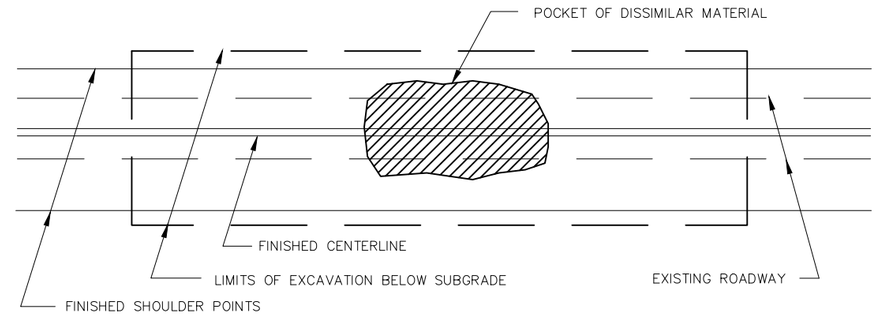


SECTION A-A

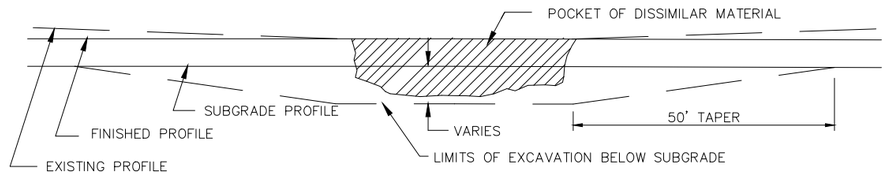
FILL

Ⓐ LIMITS OF SEEDING MIXTURE NO. 20, OR SEEDING MIXTURE NO. 60, MULCHING & FERTILIZER TYPE B (AS DIRECTED BY ENGINEER)

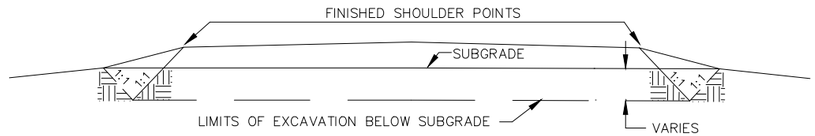
Ⓑ LIMITS OF SALVAGED TOPSOIL (AS DIRECTED BY ENGINEER)



PLAN VIEW



PROFILE VIEW

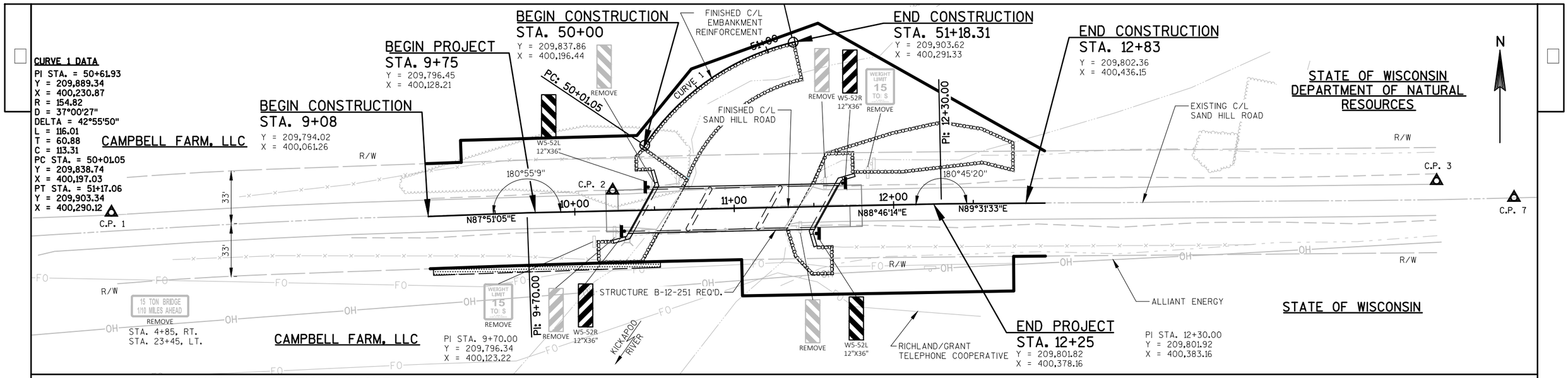


CROSS SECTION VIEW

1. EXACT LOCATION OF E.B.S. (EXCAVATION BELOW SUBGRADE) SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
2. E.B.S. AREA TO BE BACKFILLED WITH MATERIAL ACCEPTABLE TO THE ENGINEER. BACKFILL MUST BE HOMOGENEOUS WITH ADJOINING FILL MATERIAL.
3. THE FILL SECTION WITHIN 100' OF THE MOUTH OF THE CUT MUST BE KEPT 2' BELOW SUBGRADE UNTIL E.B.S. IS COMPLETED. LATERAL LIMITS OF EXCAVATION SHALL BE THE SUBGRADE SHOULDER POINTS.

EXCAVATION BELOW SUBGRADE (E.B.S.)

PROJECT NO: 5328-00-70	HWY: SAND HILL ROAD	COUNTY: CRAWFORD	CONSTRUCTION DETAILS	SHEET 5	E



MAINLINE STATION LAYOUT

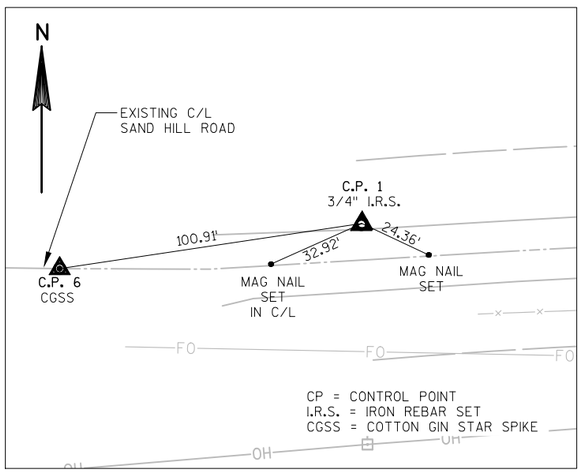
STATION	Y	X	COMMENTS
9+08.00	209,794.02	400,061.26	BEGIN CONSTRUCTION
9+25.00	209,794.66	400,078.25	–
9+50.00	209,795.60	400,103.23	–
9+75.00	209,796.45	400,128.21	BEGIN PROJECT
10+00.00	209,796.99	400,153.21	–
10+41.45	209,797.88	400,194.65	END DECK
10+50.00	209,798.06	400,203.20	–
11+00.00	209,799.13	400,253.19	–
11+50.00	209,800.21	400,303.17	–
11+58.83	209,800.40	400,312.00	END DECK
12+00.00	209,801.28	400,353.16	–
12+25.00	209,801.82	400,378.16	END PROJECT
12+50.00	209,802.09	400,403.16	–
12+75.00	209,802.30	400,428.15	–
12+83.00	209,802.36	400,436.15	END CONSTRUCTION

EMBANKMENT REINFORCEMENT STATION LAYOUT

STATION	Y	X	COMMENTS
50+00	209,837.86	400,196.44	BEGIN CONSTRUCTION
50+50	209,874.48	400,230.17	–
51+00	209,898.51	400,273.77	–
51+18.31	209,903.62	400,291.33	END CONSTRUCTION

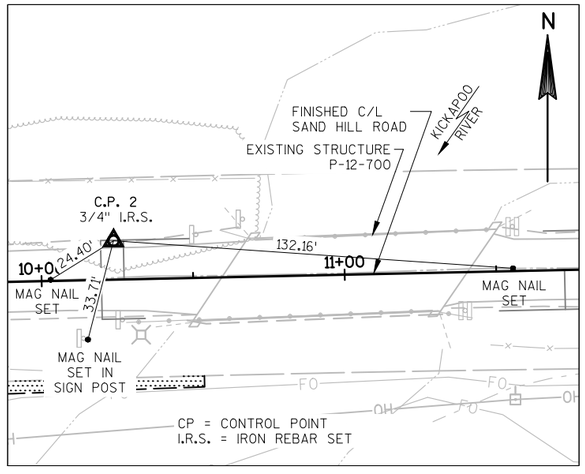
▲ CONTROL POINTS

NO.	STA.	DESCRIPTION	Y	X
1	7+09.70	¾" I.R.S., 11.78' LT.	209,796.55	399,862.46
2	10+23.97	¾" I.R.S., 12.84' LT.	209,810.38	400,176.89
3	15+40.86	¾" I.R.S., 11.76' LT.	209,816.31	400,693.76



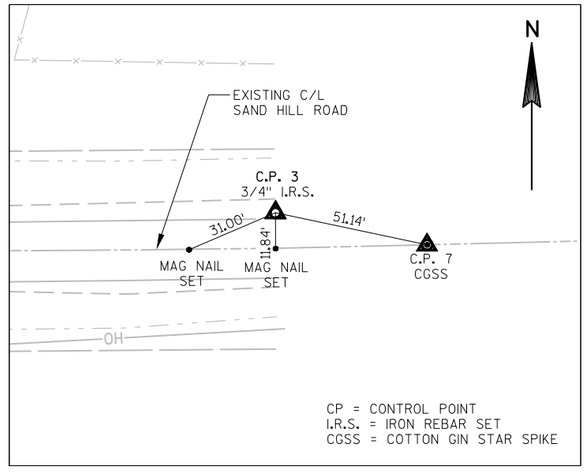
TIES TO C.P.#1

STA. 7+09.70; 11.78' LT.
Y = 209,796.55
X = 399,862.46



TIES TO C.P.#2

STA. 10+23.97; 12.84' LT.
Y = 209,810.38
X = 400,176.89



TIES TO C.P.#3

STA. 15+40.86; 11.76' LT.
Y = 209,816.31
X = 400,693.76

PROJECT NO: 5328-00-70	HWY: SAND HILL ROAD	COUNTY: CRAWFORD	ALIGNMENT AND TIES	SHEET 6	E

Estimate Of Quantities

5328-00-70

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	2.000	2.000
0004	201.0205	Grubbing	STA	2.000	2.000
0006	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 11+00	LS	1.000	1.000
0008	205.0100	Excavation Common	CY	230.000	230.000
0010	206.1000	Excavation for Structures Bridges (structure) 01. B-12-251	LS	1.000	1.000
0012	206.5000	Cofferdams (structure) 01. B-12-251	LS	1.000	1.000
0014	210.1500	Backfill Structure Type A	TON	280.000	280.000
0016	213.0100	Finishing Roadway (project) 01. 5328-00-70	EACH	1.000	1.000
0018	305.0110	Base Aggregate Dense 3/4-Inch	TON	64.000	64.000
0020	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	455.000	455.000
0022	311.0110	Breaker Run	TON	365.000	365.000
0024	415.0410	Concrete Pavement Approach Slab	SY	130.000	130.000
0026	455.0605	Tack Coat	GAL	25.000	25.000
0028	465.0105	Asphaltic Surface	TON	92.000	92.000
0030	502.0100	Concrete Masonry Bridges	CY	396.000	396.000
0032	502.1100	Concrete Masonry Seal	CY	104.000	104.000
0034	502.3200	Protective Surface Treatment	SY	430.000	430.000
0036	505.0400	Bar Steel Reinforcement HS Structures	LB	11,080.000	11,080.000
0038	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	46,180.000	46,180.000
0040	513.4061	Railing Tubular Type M	LF	234.000	234.000
0042	516.0500	Rubberized Membrane Waterproofing	SY	14.000	14.000
0044	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	1,800.000	1,800.000
0046	606.0400	Riprap Extra-Heavy	CY	1,215.000	1,215.000
0048	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	200.000	200.000
0050	614.2500	MGS Thrie Beam Transition	LF	160.000	160.000
0052	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0054	618.0100	Maintenance And Repair of Haul Roads (project) 01. 5328-00-70	EACH	1.000	1.000
0056	619.1000	Mobilization	EACH	1.000	1.000
0058	624.0100	Water	MGAL	10.000	10.000
0060	625.0500	Salvaged Topsoil	SY	330.000	330.000
0062	627.0200	Mulching	SY	590.000	590.000
0064	628.1504	Silt Fence	LF	450.000	450.000
0066	628.1520	Silt Fence Maintenance	LF	900.000	900.000
0068	628.1905	Mobilizations Erosion Control	EACH	5.000	5.000
0070	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0072	628.6005	Turbidity Barriers	SY	560.000	560.000
0074	628.7504	Temporary Ditch Checks	LF	13.000	13.000

5328-00-70

Line	Item	Item Description	Unit	Total	Qty
0076	629.0210	Fertilizer Type B	CWT	1.000	1.000
0078	630.0120	Seeding Mixture No. 20	LB	10.000	10.000
0080	630.0160	Seeding Mixture No. 60	LB	3.000	3.000
0082	630.0200	Seeding Temporary	LB	16.000	16.000
0084	630.0500	Seed Water	MGAL	35.000	35.000
0086	633.5100	Markers Row	EACH	14.000	14.000
0088	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0090	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0092	638.2602	Removing Signs Type II	EACH	8.000	8.000
0094	638.3000	Removing Small Sign Supports	EACH	8.000	8.000
0096	642.5001	Field Office Type B	EACH	1.000	1.000
0098	643.0420	Traffic Control Barricades Type III	DAY	1,530.000	1,530.000
0100	643.0705	Traffic Control Warning Lights Type A	DAY	2,380.000	2,380.000
0102	643.0900	Traffic Control Signs	DAY	1,190.000	1,190.000
0104	643.5000	Traffic Control	EACH	1.000	1.000
0106	645.0111	Geotextile Type DF Schedule A	SY	100.000	100.000
0108	645.0120	Geotextile Type HR	SY	450.000	450.000
0110	645.0135	Geotextile Type SR	SY	1,090.000	1,090.000
0112	650.4500	Construction Staking Subgrade	LF	133.000	133.000
0114	650.5000	Construction Staking Base	LF	133.000	133.000
0116	650.6500	Construction Staking Structure Layout (structure) 01. B-12-251	LS	1.000	1.000
0118	650.9910	Construction Staking Supplemental Control (project) 01. 5328-00-70	LS	1.000	1.000
0120	650.9920	Construction Staking Slope Stakes	LF	376.000	376.000
0122	690.0150	Sawing Asphalt	LF	215.000	215.000
0124	715.0415	Incentive Strength Concrete Pavement	DOL	500.000	500.000
0126	715.0502	Incentive Strength Concrete Structures	DOL	3,000.000	3,000.000

ALL BID ITEMS ARE CATEGORY 010 UNLESS OTHERWISE NOTED

CLEARING & GRUBBING

STATION-STATION	LOCATION	201.0105 CLEARING (STA)	201.0205 GRUBBING (STA)
9+08 - 10+70	MAINLINE, LT.	2	2
	TOTALS =	2	2

EARTHWORK SUMMARY

CATEGORY	FROM/TO STA	LOCATION	205.0100 COMMON EXCAVATION CUT (2) (CY)	AVAILABLE MATERIAL (CY) (1)	UNEXPANDED FILL (CY)	EXPANDED FILL (CY) FACTOR 1.25 (2)	MASS ORDINATE +/- (CY) (3)	WASTE (CY)
010	9+75 - 12+25	MAINLINE	230	230	92	115	115	115
		TOTALS =	230	230	92	115	115	115

NOTES:
1.) AVAILABLE MATERIAL=CUT
2.) EXPANDED FILL FACTOR 1.25: EXPANDED FILL = (UNEXPANDED FILL)*1.25
3.) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE CATEGORY. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE CATEGORY.

BASE AGGREGATE DENSE / BREAKER RUN/ GEOTEXTILE TYPE SR

STATION - STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH (TON)	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH (TON)	311.0110 BREAKER RUN (TON)	645.0135 GEOTEXTILE TYPE SR (SY)
9+08 - 10+41	MAINLINE	32	230	185	555
11+59 - 12+83	MAINLINE	32	225	180	535
	TOTALS =	64	455	365	1090

CONCRETE PAVEMENT APPROACH SLAB

STATION - STATION	LOCATION	415.041 (SY)
10+20 - 10+42	MAINLINE	65
11+58 - 11+80	MAINLINE	65
	TOTALS =	130

ASPHALTIC SURFACE

STATION - STATION	LOCATION	455.0605 TACK COAT (GAL)	465.0105 ASPHALTIC SURFACE (TON)
9+08 - 10+20	MAINLINE	13	46
11+80 - 12+83	MAINLINE	12	46
	TOTALS =	25	92

RIPRAP EXTRA-HEAVY

STATION - STATION	LOCATION	606.0400 RIPRAP EXTRA-HEAVY (CY)
11+58 - 12+83	MAINLINE, LT.	435
11+49 - 11+62	MAINLINE, RT.	10
50+00 - 51+18	EMBANKMENT	430
	TOTALS =	875

BEAM GUARD

STATION - STATION	LOCATION	614.2500 MGS THRIE BEAM TRANSITION (LF)	614.2610 MGS GUARDRAIL TERMINAL EAT (EACH)
9+43 - 10+33	SW QUADRANT	40	1
9+58 - 10+48	NW QUADRANT	40	1
11+51 - 12+42	SE QUADRANT	40	1
11+66 - 12+56	NE QUADRANT	40	1
	TOTALS =	160	4

WATER

PROJECT	624.0100 (MGAL)
5328-00-70	10
TOTAL =	10

TEMPORARY DITCH CHECKS

STATION	LOCATION	628.7504 (EACH)
12+00	MAINLINE, RT.	10
-	UNDISTRIBUTED	3
	TOTALS =	13

FINISHING ITEMS

STATION - STATION	LOCATION	625.0500 SALVAGED TOPSOIL (SY)	627.0200 MULCHING (SY)	629.0210 FERTILIZER TYPE B (CWT)	630.0120 SEEDING MIXTURE NO. 20 (LB)	630.0160 SEEDING MIXTURE NO. 60 (LB)	630.0200 SEEDING TEMPORARY (LB)	630.0500 SEED WATER (MGAL)
9+08 - 12+25	MAINLINE	260	470	0.75	8	*2.5	-	35
-	UNDISTRIBUTED	70	120	0.25	2	0.5	16	-
	TOTALS =	330	590	1.0	10	3	16	35

* STA. 9+32 - STA. 11+46, LT.
STA. 9+08 - STA. 10+45, RT.
STA. 11+57 - STA. 12+67, RT.
STA. 12+42 - STA. 12+85, LT.

MOBILIZATION EROSION CONTROL

PROJECT	628.1905 MOBILIZATION EROSION CONTROL (EACH)	628.1910 MOBILIZATION EMERGENCY EROSION CONTROL (EACH)
5328-00-70	5	3
TOTALS =	5	3

FILE NAME : S:\PROJECTS\C54545 CRAWFORD CO – SAND HILL ROAD BRIDGE REPLACEMENT\SHEETSPLAN\DETAILS\SAND HILL ROAD – MISC QUANTITIES.DWG
LAYOUT :
PLOT DATE : 1/22/2020
PLOT TIME : 8:02:45 AM
PLOT BY : KARTER ZAJICEK
PLOT SCALE : 1" = 1'

ALL BID ITEMS ARE CATEGORY 010 UNLESS OTHERWISE NOTED

SILT FENCE

STATION - STATION	LOCATION	628.1504 SILT FENCE (LF)	628.1520 SILT FENCE MAINTENANCE (LF)
9+08 - 10+42	MAINLINE, LT.	130	260
9+08 - 10+42	MAINLINE, RT.	103	206
50+00 - 51+18	EMBANKMENT	130	260
-	UNDISTRIBUTED	87	174
TOTALS =		450	900

TURBIDITY BARRIER

STATION	LOCATION	628.6005 (S.Y.)
10+61	MAINLINE/EMBANKMENT	246
14+80	MAINLINE	314
	TOTAL =	560

MARKERS ROW

PT. NO.	STATION	OFFSET FROM FINISHED C/L	633.5100 (EACH)
100	9+08	33.21 LT.	1
101	9+30	33.18 LT.	1
102	9+30	47.00 LT	1
103	10+40	47.00 LT	1
104	10+75	88.00 LT.	1
105	11+55	115.00 LT.	1
106	12+95	32.73 LT	1
107	12+95	33.27 RT.	1
108	12+75	33.28 RT.	1
109	12+75	55.00 RT.	1
110	11+04	55.00 RT.	1
111	11+04	32.28 RT.	1
112	9+38.52	32.83 RT.	1
113	9+08	32.79 RT.	1
		TOTALS =	14

PERMANENT SIGNING

APPROX. STATION	POSITION	SITE ID	SIGN CODE	SIGN DESCRIPTION	ORDER LINES	SIGN SIZE	634.0612 POSTS WOOD 4X6-INCH X 12-FT (EACH)	637.2230 SIGNS TYPE II REFLECTIVE F (SF)	638.2602 REMOVING SIGNS TYPE II (EACH)	638.3000 REMOVING SMALL SIGN SUPPORTS (EACH)
4+85	RIGHT	MAINLINE	R12-55	15 TON BRIDGE1/10 MILES AHEAD		48X18	---	---	1	1
10+13	RIGHT	MAINLINE	R12-1	WEIGHT LIMIT	15	24X30	---	---	1	1
10+26	RIGHT	MAINLINE	W5-52R	BRIDGE HASH MARKS		12X36	---	---	1	1
10+31	RIGHT	MAINLINE	W5-52R	BRIDGE HASH MARKS		12X36	1	3.00	---	---
10+46	LEFT	MAINLINE	W5-52L	BRIDGE HASH MARKS		12X36	1	3.00	---	---
10+51	RIGHT	MAINLINE	W5-52L	BRIDGE HASH MARKS		12X36	---	---	1	1
11+40	RIGHT	MAINLINE	W5-52L	BRIDGE HASH MARKS		12X36	---	---	1	1
11+51	RIGHT	MAINLINE	W5-52L	BRIDGE HASH MARKS		12X36	1	3.00	---	---
11+56	LEFT	MAINLINE	W5-52R	BRIDGE HASH MARKS		12X36	---	---	1	1
11+68	LEFT	MAINLINE	W5-	BRIDGE HASH MARKS		12X36	1	3.00	---	---
11+83	LEFT	MAINLINE	R12-1	WEIGHT LIMIT	15	24X30	---	---	1	1
23+45	LEFT	MAINLINE	R12-55	15 TON BRIDGE 1/10 MILES AHEAD		48X18	---	---	1	1
						TOTALS =	4	12.00	8	8

TRAFFIC CONTROL

	TRAFFIC CONTROL			
LOCATION	643.0420 BARRICADES TYPE III (DAY)	643.0705 WARNING LIGHTS TYPE A (DAY)	643.0900 TRAFFIC CONTROL SIGNS (DAY)	643.5000 TRAFFIC CONTROL (EACH)
PROJECT	1,530	2,380	1,190	1
TOTALS =	1,530	2,380	1,190	1

CONSTRUCTION STAKING

		CONSTRUCTION STAKING				
STATION -STATION	LOCATION	650.4500 SUBGRADE (L.F.)	650.5000 BASE (L.F.)	*650.6500 STRUCTURE LAYOUT (L.S.)	650.9910 SUPPLEMENTAL CONTROL (5921-00-74) (L.S.)	650.9920 SLOPES STAKES (L.F.)
9+75 - 10+41	MAINLINE	66	66	-	-	-
9+08 - 10+44	MAINLINE	-	-	-	-	133
11+58 - 12+25	MAINLINE	67	67	-	-	-
11+58 - 12+83	MAINLINE	-	-	-	-	125
50+00 - 51+18	EMBANKMENT	-	-	-	-	118
-	MAINLINE	-	-	1	1	-
	TOTAL =	133	133	1	1	376

*CATEGORY 020

SAWING ASPHALT

STATION	LOCATION	690.0150 (L.F.)
9+75	MAINLINE	108
12+25	MAINLINE	107
	TOTAL =	215

R/W PROJECT NUMBER	SHEET NUMBER	TOTAL SHEETS
5328-00-00		
FEDERAL PROJECT NUMBER	4.01	2

PLAT OF RIGHT-OF-WAY REQUIRED FOR

V OF BELL CENTER, SAND HILL ROAD

KICKAPOO RIVER BRIDGE B-12-0251

LOC STR — CRAWFORD COUNTY

CONSTRUCTION PROJECT NUMBER
5328-00-70

CONVENTIONAL ABBREVIATIONS

ACCESS POINT/ DRIVEWAY CONNECTION	AP	PROPERTY LINE	PL
ACCESS RIGHTS	AR	RECORDED AS	(100')
ACRES	AC.	REFERENCE LINE	R/L
AND OTHERS	ET.AL.	RELEASE OF RIGHTS	ROR
BARN	B.	REMAINING	REM.
CENTERLINE	C/L	RIGHT-OF-WAY	R/W
CERTIFIED SURVEY MAP	CSM	SECTION	SEC.
CORNER	COR.	SHED	S.
CONVEYANCE OF RIGHTS	CR	STATION	STA.
DOCUMENT	DOC.	TEMPORARY LIMITED EASEMENT	TLE
EASEMENT	EASE.	VOLUME	V.
GARAGE	G.	**CURVE DATA**	
HIGHWAY EASEMENT	H.E.	LONG CHORD	LCH
HOUSE	H.	LONG CHORD BEARING	LCB
HOUSE TRAILER	H.T.	RADIUS	R
LAND CONTRACT	LC	DEGREE OF CURVE	D
MONUMENT	MON.	CENTRAL ANGLE OR DELTA	DELTA
PAGE	P.	LENGTH OF CURVE	L
PERMANENT LIMITED EASEMENT	PLE	TANGENT	TAN

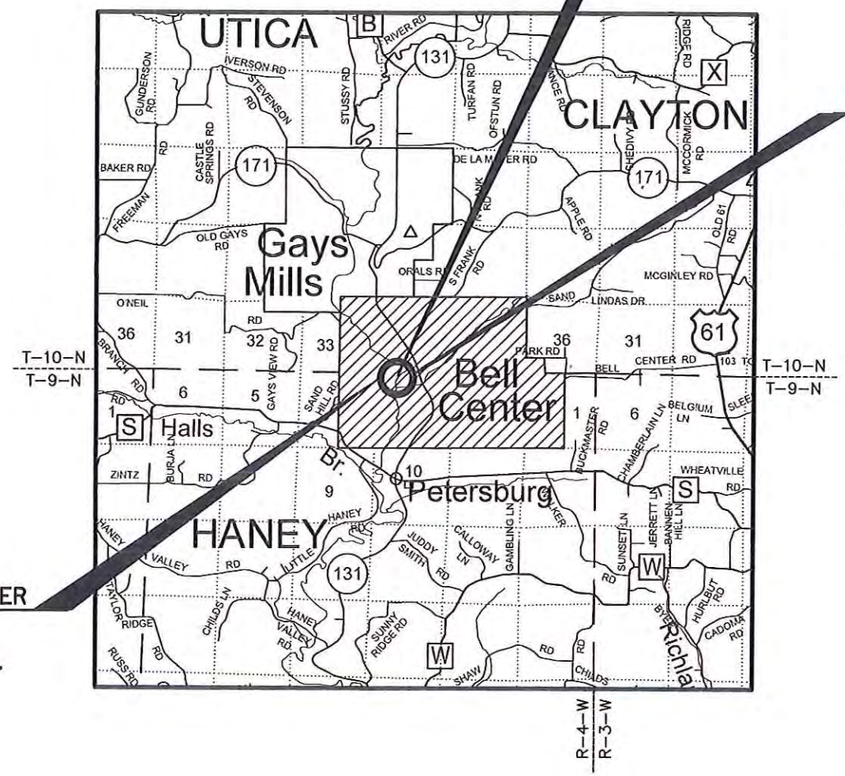
CONVENTIONAL SYMBOLS

FOUND SURVEY MONUMENT (WITH POINT NUMBER)	o 1040	PROPOSED R/W LINE	
R/W MONUMENT	o ● (SET)	EXISTING H.E. LINE	
R/W STANDARD	△ ▲ (SET)	PROPERTY LINE	
SIGN	ISIGN	LOT & TIE LINES	
SECTION CORNER MONUMENT	⊕	SLOPE INTERCEPTS	
SECTION CORNER SYMBOL		CORPORATE LIMITS	
FEE (HATCH VARIES)		NO ACCESS (BY PREVIOUS ACQUISITION/CONTROL)	
TEMPORARY LIMITED EASEMENT		NO ACCESS (BY ACQUISTION)	
PERMANENT LIMITED EASEMENT		NO ACCESS (BY STATUTORY AUTHORITY)	
R/W BOUNDARY POINT	RWB20	SECTION LINE	
PARCEL NUMBER	8	QUARTER LINE	
UTILITY PARCEL NUMBER	92	SIXTEENTH LINE	
SIGN NUMBER (OFF PREMISE)	21	EXISTING CENTERLINE	
BUILDING		PROPOSED REFERENCE LINE	
		PARALLEL OFFSET	
		ENCROACHMENT	E TYPE
		HIGHWAY EASEMENT	

CONVENTIONAL UTILITY SYMBOLS

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

STRUCTURE B-12-0251



END RELOCATION ORDER

STA. 12+95

3.05' SOUTH AND 1980.65' EAST OF THE NW CORNER OF SECTION 3, T.9N., R.4W., VILLAGE OF BELL CENTER, CRAWFORD COUNTY, WI
Y= 209,802.46
X= 400,448.15

BEGIN RELOCATION ORDER

STA. 9+08

11.49' SOUTH AND 1593.76' EAST OF THE NW CORNER OF SECTION 3, T.9N., R.4W., VILLAGE OF BELL CENTER, CRAWFORD COUNTY, WI
Y= 209,794.02
X= 400,061.26

NOTES

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), CRAWFORD COUNTY, NAD 83 (2011) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

RIGHT-OF-WAY MONUMENTS ARE TYPE 2 MONUMENTS (TYPICALLY 3/4" X 24" REBAR) AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

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

N

LAYOUT

SCALE 0 — 2 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.073 MI.

FILED

JAN [illegible] 2020

County Clerk
Crawford County, WI

REVISION DATE

JEWELL
associates engineers, inc.
Engineers - Architects - Surveyors

560 SUNRISE DRIVE
SPRING GREEN, WI 53588
PHONE : 608.588.7484
www.jewellssoc.com

I HEREBY CERTIFY THAT THIS PLAT WAS MADE FOR THE VILLAGE OF BELL CENTER, CRAWFORD COUNTY, WISCONSIN AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

WISCONSIN SCOTT D. WARNER S-2524 RICHLAND CENTER, WI 12-03-2019 LAND SURVEYOR

APPROVED FOR THE VILLAGE OF BELL CENTER

DATE: 1-13-2020 (NAME/TITLE)

F

WISDOT/CADDS SHEET 50

FILE NAME : S:\Projects\C54545 Crawford Co - Sand Hill Road Bridge Replacement\RW\53280070_RW Title.dwg PLOT DATE : 11/18/2019 2:58 PM PLOT BY : Scott Warner PLOT NAME : PLOT SCALE : 1:1

EASEMENT TABLE			
OWNER	RECORDING INFORMATION	LOCATED IN R/W PARCEL #	REMARKS
WISCONSIN DEPARTMENT OF NATURAL RESOURCES	DOC. #171069, VOL. 244, PG. 172	1	CONSERVATION EASEMENT (HUNTING & FISHING)
WISCONSIN DEPARTMENT OF NATURAL RESOURCES	DOC. #172605, VOL. 251, PG. 336	2	EASEMENT (HUNTING & FISHING)
WISCONSIN DEARTMENT OF NATURAL RESOURCES	DOC. #172328, VOL. 250, PG. 677	2	EASEMENT (HUNTING & FISHING)
RICHLAND-GRANT TELEPHONE COOPERATIVE, INC.	DOC. #299338,	1	EASEMENT (16.5 WIDE)
RICHLAND-GRANT TELEPHONE COOPERATIVE, INC.	DOC. #187264, VOL. 310, PG. 46 RE-RECORDED AFF. #300678	2	RIGHT-OF-WAY EASEMENT(BLANKET)

NOTE: EXISTING C/L OF SAND HILL ROAD WAS BASED ON CENTERLINE OF EXISTING PAVEMENT.

BASIS OF EXISTING RIGHT-OF-WAY FOR SAND HILL ROAD WAS BASED ON COUNTY RECORDS, THE CENTERLINE OF EXISTING PAVEMENT, AND WIS. STATUTE 82.31(2).

TLE LINE TABLE		
POINT TO POINT	BEARING	DISTANCE
500 TO 501	S01°13'46"E	3.68'
501 TO 502	S87°58'58"W	142.41'
502 TO 503	N02°08'55"W	4.21'
503 TO 113	S87°55'53"W	2.00'

SCHEDULE OF LANDS & INTERESTS REQUIRED

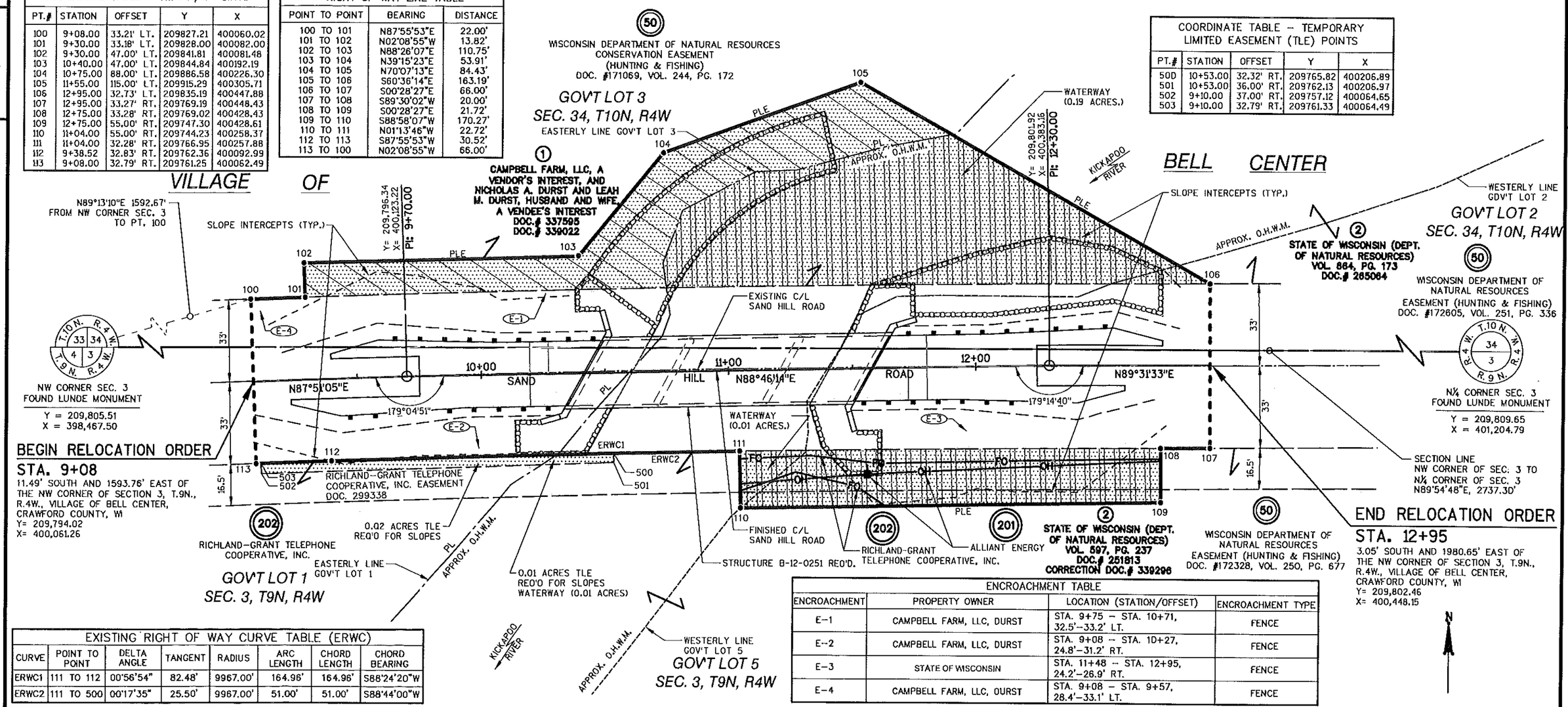
PARCEL NUMBER	OWNER (S)	INTEREST REQUIRED	PLE ACRES REQ.	TLE ACRES REQ.
1	CAMPBELL FARM, LLC, A VENDOR'S INTEREST, AND NICHOLAS A. DURST AND LEAH M. DURST, HUSBAND AND WIFE, A VENDEE'S INTEREST	PLE, TLE	0.12	0.02
2	STATE OF WISCONSIN (DEPT. OF NATURAL RESOURCES)	PLE, TLE	0.28	0.01
50	WISCONSIN DEPARTMENT OF NATURAL RESOURCES	TEMPORARY RELEASE OF RIGHTS		
201	ALLIANT ENERGY	RELEASE OF RIGHTS		
202	RICHLAND-GRANT TELEPHONE COOPERATIVE, INC.	RELEASE OF RIGHTS		

NOTE: AREAS SHOWN IN THE TOTAL ACRES COLUMN MAY BE APPROXIMATE AND ARE DERIVED FROM THE TAX ROLLS OR OTHER AVAILABLE SOURCES AND MAY NOT INCLUDE LANDS OF THE OWNER WHICH ARE NOT CONTIGUOUS TO THE AREA TO BE ACQUIRED. OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE VILLAGE OF BELL CENTER.

COORDINATE TABLE - NEW R/W POINTS				
PT.#	STATION	OFFSET	Y	X
100	9+08.00	33.21' LT.	209827.21	400060.02
101	9+30.00	33.18' LT.	209828.00	400082.00
102	9+30.00	47.00' LT.	209841.81	400081.48
103	10+40.00	47.00' LT.	209844.84	400192.19
104	10+75.00	88.00' LT.	209886.58	400226.30
105	11+55.00	115.00' LT.	209915.29	400305.71
106	12+95.00	32.73' LT.	209835.19	400447.88
107	12+95.00	33.27' RT.	209769.19	400448.43
108	12+75.00	33.28' RT.	209769.02	400428.43
109	12+75.00	55.00' RT.	209747.30	400428.61
110	11+04.00	55.00' RT.	209744.23	400258.37
111	11+04.00	32.28' RT.	209766.95	400257.88
112	9+38.52	32.83' RT.	209762.36	400092.99
113	9+08.00	32.79' RT.	209761.25	400062.49

RIGHT OF WAY LINE TABLE		
POINT TO POINT	BEARING	DISTANCE
100 TO 101	N87°55'53"E	22.00'
101 TO 102	N02°08'55"W	13.82'
102 TO 103	N88°26'07"E	110.75'
103 TO 104	N39°15'23"E	53.91'
104 TO 105	N70°07'13"E	84.43'
105 TO 106	S60°36'14"E	163.19'
106 TO 107	S00°28'27"E	66.00'
107 TO 108	S89°30'02"W	20.00'
108 TO 109	S00°28'27"E	21.72'
109 TO 110	S88°58'07"W	170.27'
110 TO 111	N01°13'46"W	22.72'
112 TO 113	S87°55'53"W	30.52'
113 TO 100	N02°08'55"W	66.00'

COORDINATE TABLE - TEMPORARY LIMITED EASEMENT (TLE) POINTS				
PT.#	STATION	OFFSET	Y	X
500	10+53.00	32.32' RT.	209765.82	400206.89
501	10+53.00	36.00' RT.	209762.13	400206.97
502	9+10.00	37.00' RT.	209757.12	400064.65
503	9+10.00	32.79' RT.	209761.33	400064.49



EXISTING RIGHT OF WAY CURVE TABLE (ERWC)							
CURVE	POINT TO POINT	DELTA ANGLE	TANGENT	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING
ERWC1	111 TO 112	00°56'54"	82.48'	9967.00'	164.96'	164.96'	S88°24'20"W
ERWC2	111 TO 500	00°17'35"	25.50'	9967.00'	51.00'	51.00'	S88°44'00"W

ENCROACHMENT TABLE			
ENCROACHMENT	PROPERTY OWNER	LOCATION (STATION/OFFSET)	ENCROACHMENT TYPE
E-1	CAMPBELL FARM, LLC, DURST	STA. 9+75 - STA. 10+71, 32.5'-33.2' LT.	FENCE
E-2	CAMPBELL FARM, LLC, DURST	STA. 9+08 - STA. 10+27, 24.8'-31.2' RT.	FENCE
E-3	STATE OF WISCONSIN	STA. 11+48 - STA. 12+95, 24.2'-26.9' RT.	FENCE
E-4	CAMPBELL FARM, LLC, DURST	STA. 9+08 - STA. 9+57, 28.4'-33.1' LT.	FENCE

REVISION DATE	DATE 1-13-20	SCALE, FEET 0 20 40	HWY: SAND HILL ROAD	R/W PROJECT NUMBER: 5328-00-00	PLAT SHEET 4.02
	GRID FACTOR		COUNTY: CRAWFORD	CONSTRUCTION PROJECT NUMBER: 5328-00-70	PS&E SHEET F

FILE NAME : S:\Projects\C54545 Crawford Co - Sand Hill Road Bridge Replacement\RW\53280070_Plat Sheets.dwg PLOT DATE : 12/2/2019 9:41 AM PLOT BY : Scott Warner PLOT NAME : PLOT SCALE : 1:1

LEGEND

- DIRECTION OF FLOW
- XXXXXXXXX SAWING ASPHALT
- SILT FENCE
- EDGE OF WATER
- WETLANDS
- TURBIDITY BARRIER
- TEMPORARY DITCH CHECK
- RIPRAP EXTRA HEAVY (CATEGORY 010)
- RIPRAP EXTRA HEAVY (CATEGORY 020)
- TLE

NOTE: SEE TYPICAL FINISHED SECTION FOR LIMITS OF SEEDING, MULCH, FERTILIZER, AND SALVAGED TOPSOIL

CURVE 1 DATA
PI STA. = 50+61.93
Y = 209,889.34
X = 400,230.87
R = 154.82
D = 37°00'27"
DELTA = 42°55'50"
L = 116.01
T = 60.88
C = 113.31
PC STA. = 50+01.05
Y = 209,838.74
X = 400,197.03
PT STA. = 51+17.06
Y = 209,903.34
X = 400,290.12

CAMPBELL FARM, LLC

END CONSTRUCTION
STA. 51+18.31
Y=209,903.62
X=400,291.33

PI STA 9+70.00
Y=209,796.34
X=400,123.22

PLE REQ'D.

FINISHED C/L EMBANKMENT REINFORCMENT

CURVE 1

51+00

BEGIN CONSTRUCTION
STA. 50+00
Y=209,837.86
X=400,196.44

CONCRETE PAVEMENT APPROACH SLAB (TYP.)

PI STA 12+30.00
Y=209,801.92
X=400,383.16

KICKAPOO RIVER

REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS
STA. 11+00 (P-12-700)
SINGLE-SPAN STEEL DECK GIRDER STRUCTURE
25.8' CLEAR ROADWAY WIDTH
26.4' OVERALL DECK WIDTH
82.5' OVERALL LENGTH

PLE REQ'D.

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

STA. 12+76, 9.0' LT.

END CONSTRUCTION
STA. 12+83
Y=209,802.36
X=400,436.15

SAND HILL ROAD
(ASPHALT)

R/W
33'

STA. 9+40, 9.0' LT.

BM 2

BM 4

180°55'9"

STA. 9+75, 9.0' LT.

10+00

11+00

12+00

N87°51'05"E

N88°46'14"E

STA. 12+25, 9.0' LT.

180°45'20"

N89°31'33"E

STA. 12+25, 9.0' RT.

STA. 12+61, 9.0' RT.

EXISTING C/L SAND HILL ROAD

BM 1 (ASPHALT)

BM 3

STA. 9+23, 9.0' RT.

PI: 9+70.00

PI: 12+30.00

BEGIN CONSTRUCTION
STA. 9+08
Y=209,794.02
X=400,061.26

CAMPBELL FARM, LLC

BEGIN PROJECT
STA. 9+75
Y=209,796.45
X=400,128.21

FINISHED C/L SAND HILL ROAD

STRUCTURE B-12-251 REQ'D.

TLE REQ'D.

KICKAPOO RIVER

BM 5

SLOPE INTERCEPTS

PLE REQ'D.

RICHLAND GRANT TELEPHONE COOPERATIVE

END PROJECT
STA. 12+25
Y=209,801.82
X=400,378.16

ALLIANT ENERGY

STATE OF WISCONSIN

EXISTING C/L PROFILE SAND HILL ROAD

FINISHED C/L PROFILE SAND HILL ROAD

PI STA 11+05.00
EL 700.27

HIGH WATER100
EL = 698.06

L=240.00'
K=52.81

PT STA 12+25.00
EL 696.94

L 7.7%

MATCH EXISTING
STA. 9+75
EL. = 697.97

PC STA 9+85.00
EL 698.15

HIGH WATER02
EL = 692.98

MATCH EXISTING
STA. 12+25
EL. = 696.94

STA. 11+00.14
STRUCTURE B-12-251 REQ'D.
THREE-SPAN REINFORCED CONCRETE HAUNCHED SLAB STRUCTURE
CLEAR ROADWAY WIDTH = 26.0'
O.A.L. = 116.88'
SKEW = 30°
STREAMBED = 676.52'

STA. 9+75

STA. 12+25

OBSERVED WATER
EL = 688.00
(4-3-19)

EXISTING C/L ELEVATION

FINISHED C/L ELEVATION

700 / 698 / 696 / 694 / 692 / 690 / 688 / 686 / 685

694.45 694.91 695.48 696.05 696.61 697.16 697.70 698.06 698.06 698.42 698.39 698.71 698.65 698.84 698.83 698.63 698.94 698.66 698.97 698.68 698.93 698.61 698.81 698.52 698.61 698.34 698.34 698.06 698.00 697.63 697.57 697.08 697.08 696.52 696.05 695.57 695.21 694.98 694.75 694.58 694.41 694.26

8+40 8+60 8+80 9+00 9+20 9+40 9+60 9+80 10+00 10+20 10+40 10+60 10+80 11+00 11+20 11+40 11+60 11+80 12+00 12+20 12+40 12+60 12+80 13+00 13+20 13+40 13+60 13+80 14+00

BENCH MARKS

NO.	STA.	DESCRIPTION	ELEV.
1	7+10	3/4-INCH IRS, 11.78' LT.	693.02'
2	10+24	3/4-INCH IRS, 12.84' LT.	698.63'
3	15+41	3/4-INCH IRS, 11.76' LT.	693.02'
4	10+67	3/4-INCH IRF MEANDER COR ABUTMENT, 9.4' LT.	698.71'
5	11+55	CGSS IN POWER POLE, 42.52' RT.	694.14'

PROJECT NO: 5328-00-70	HWY: SAND HILL ROAD	COUNTY: CRAWFORD	PLAN AND PROFILE	SHEET 13	E

FILE NAME : S:\PROJECTS\C54545 CRAWFORD CO – SAND HILL ROAD BRIDGE REPLACEMENT\SHEETSPLAN\PLAN & PROFILE SHEETS\PLAN & PROFILE.DWG
LAYOUT : PLAN & PROFILE

PLOT DATE : 1/22/2020
PLOT TIME : 2:27:09 PM

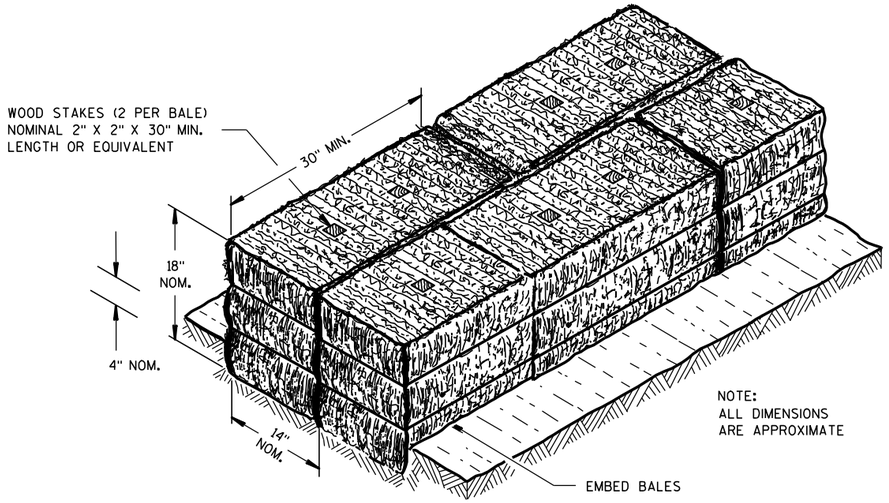
PLOT BY : KARTER ZAJICEK

PLOT SCALE : 1" = 1'

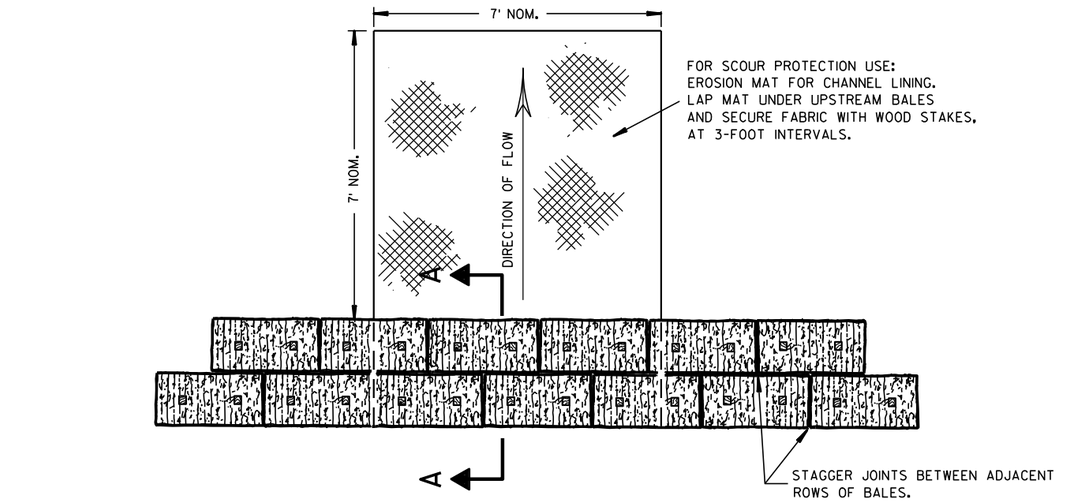
Standard Detail Drawing List

08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
14B42-06A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-06D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15A01-13A	MARKER POST FOR RIGHT-OF-WAY
15C02-07A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-07B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS

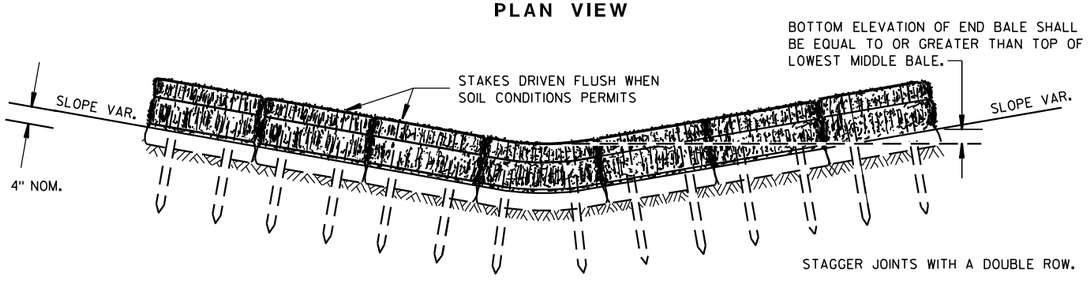
6



SECTION A-A



PLAN VIEW



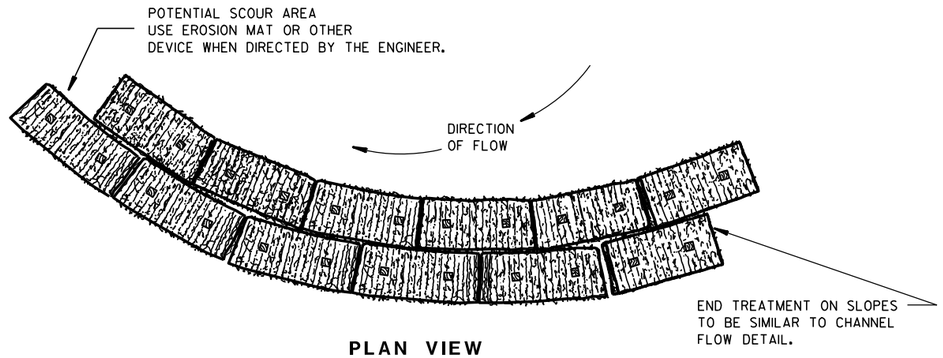
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

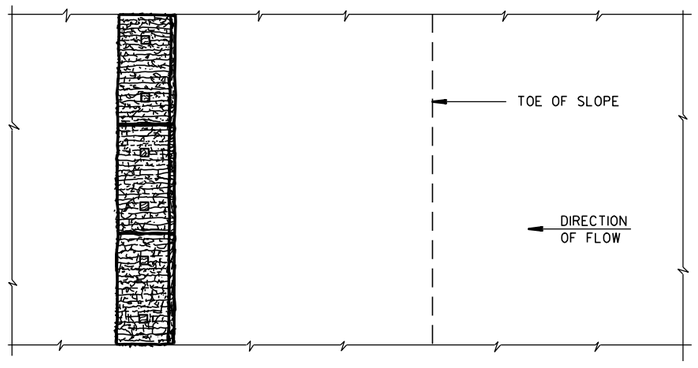
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

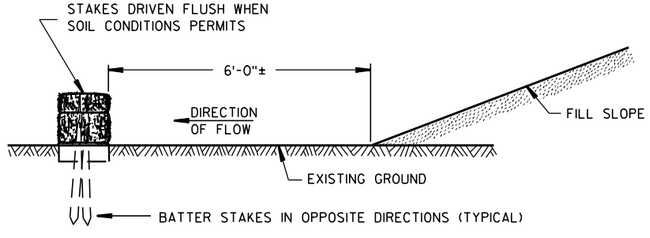


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

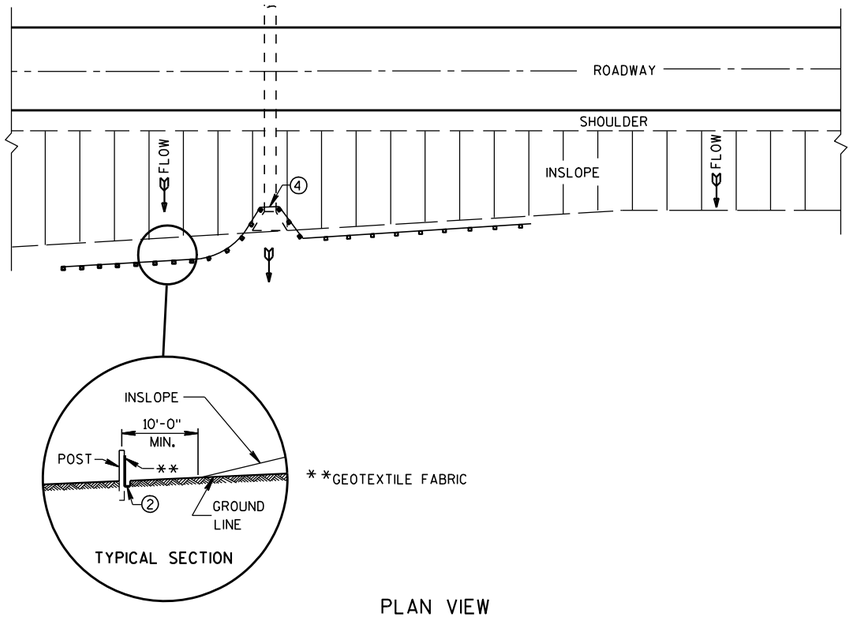
WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

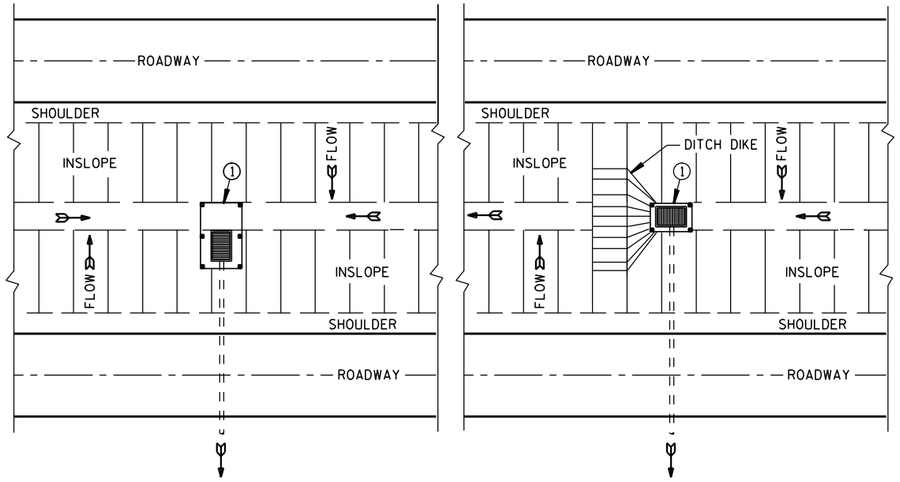
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

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

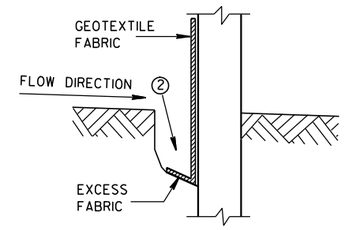
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.

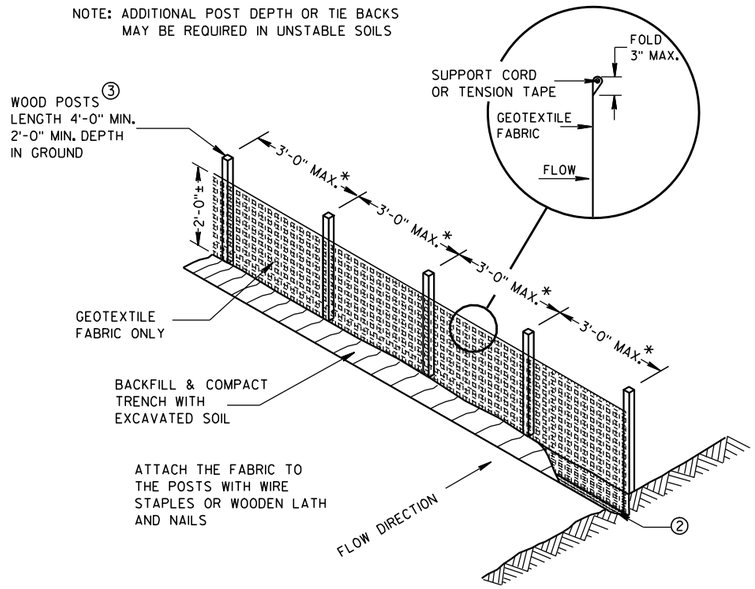
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.

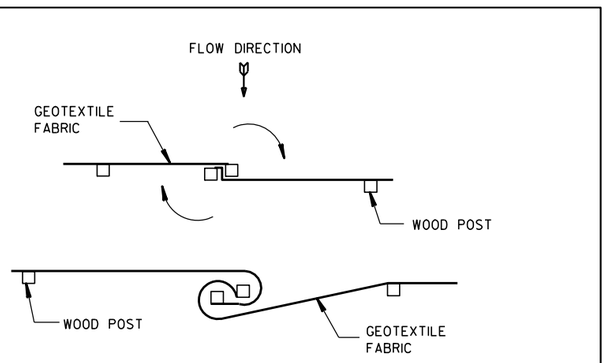
⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



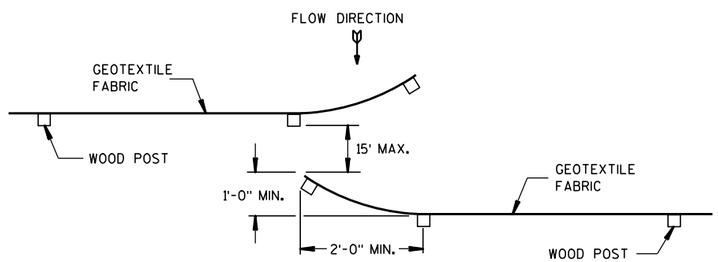
TRENCH DETAIL



SILT FENCE

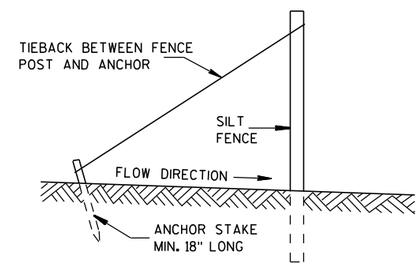


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

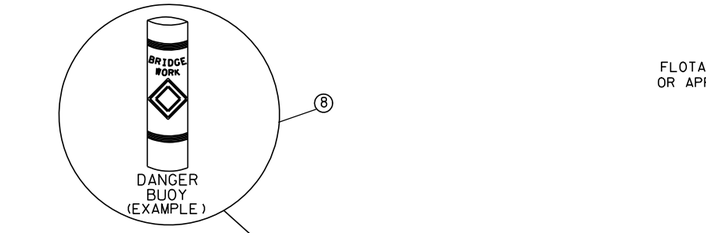
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

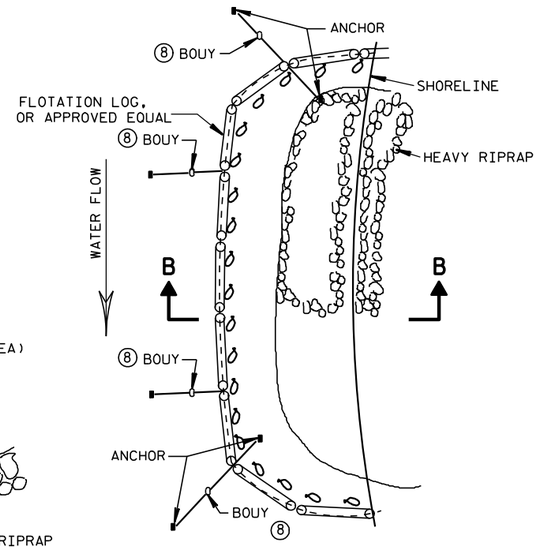
S.D.D. 8 E 9-6

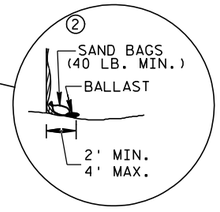
6

S.D.D. 8 E 9-6

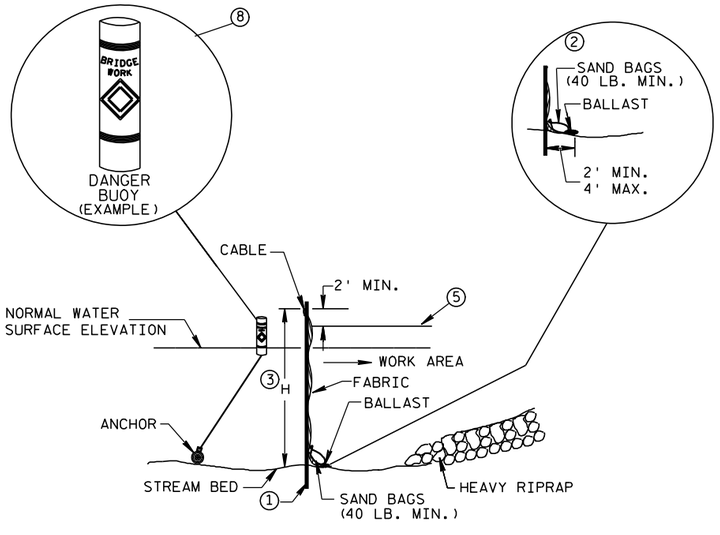


SECTION B-B

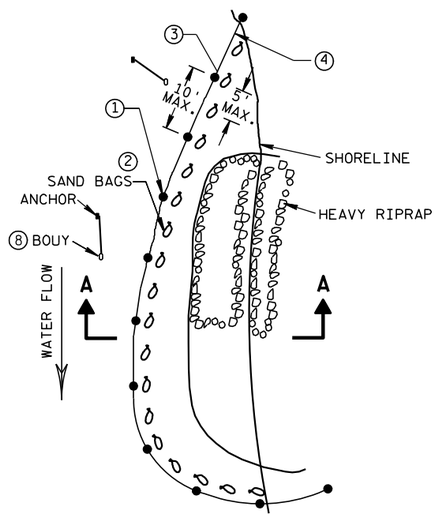




TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



SECTION A-A



PLAN VIEW

TURBIDITY BARRIER STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT 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.

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

① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.

② SANDBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.

③ WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.

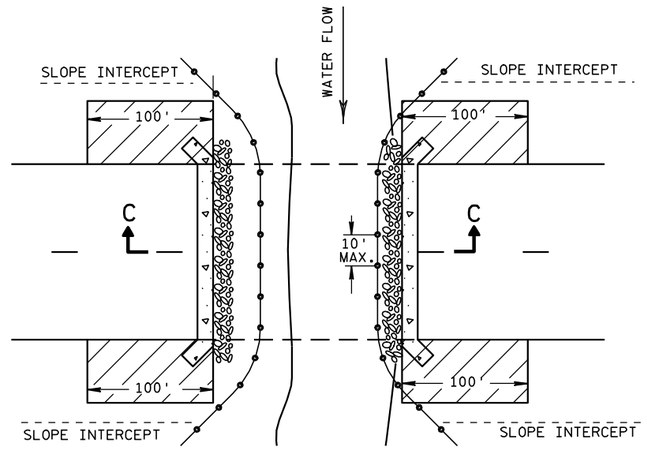
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MIMIMUM BARRIER HEIGHT SHALL BE 2'GREATER THAN EITHER THE 02 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WICHEVER IS GREATER.

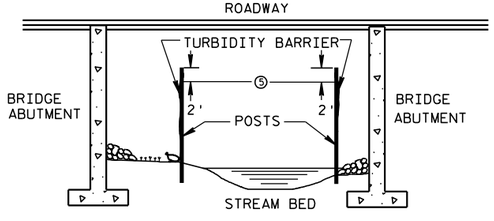
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.

⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



PLAN VIEW



SECTION C-C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

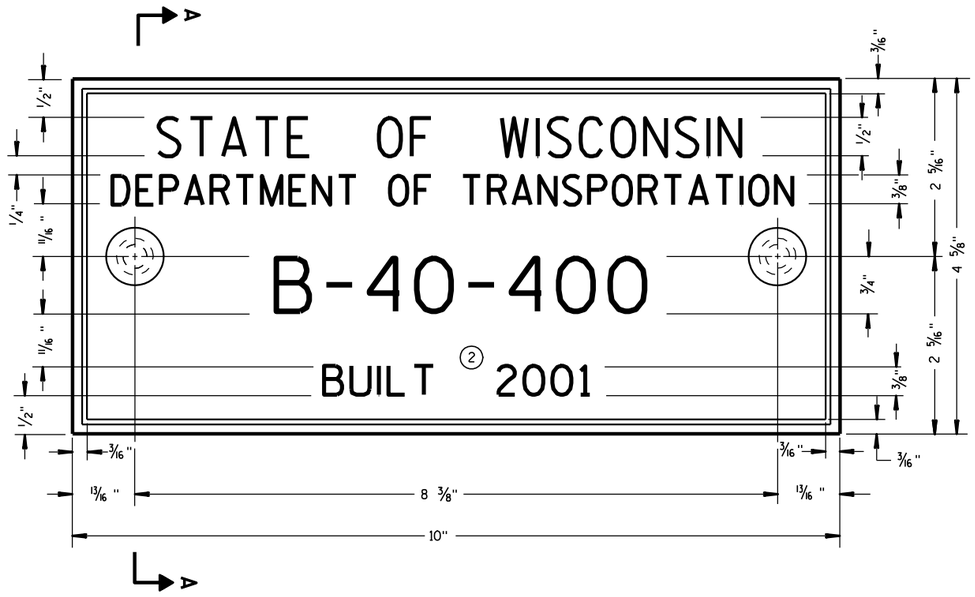
APPROVED
6/04/02 DATE
/S/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 E 11-2

6

S.D.D. 8 E 11-2



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

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

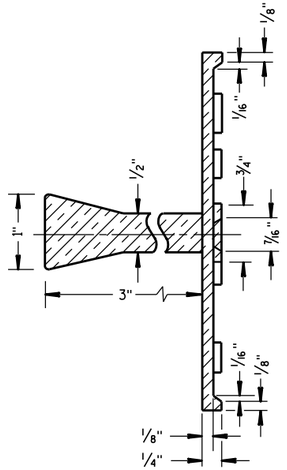
GENERAL NOTES

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.

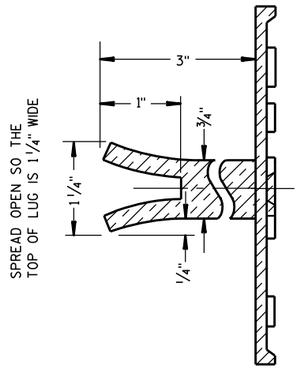
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

(1) EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

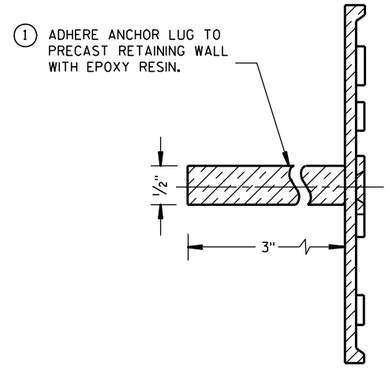
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10 DATE

/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOP ENGINEER

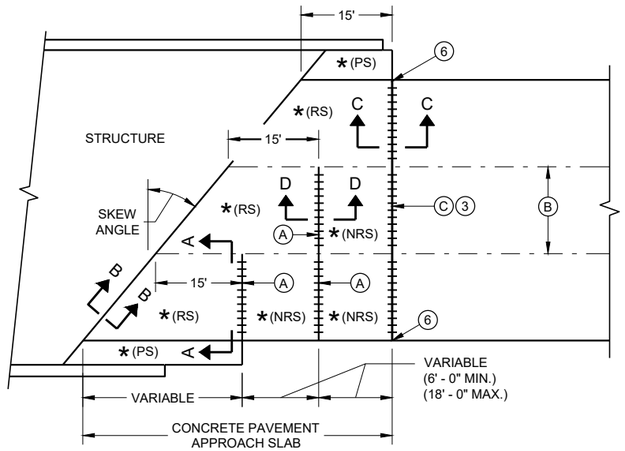
FHWA

6

S.D.D. 12 A 3-10

6

S.D.D. 12 A 3-10



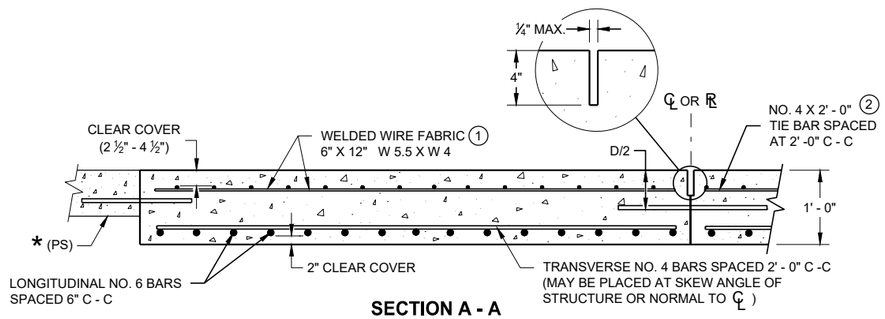
SKEWED APPROACH
(PAVEMENT MORE THAN TWO LANES)

* (RS) = REINFORCED CONCRETE SLAB

* (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB

* (NRS) - NON - REINFORCED CONCRETE SLAB

*** STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



SECTION A - A
REINFORCEMENT POSITIONING DETAIL

GENERAL NOTES

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

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

(1) THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2' - 0 " C - C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

(2) THE CONTRACTOR MAY OMIT THE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.

(3) DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.

(4) USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.

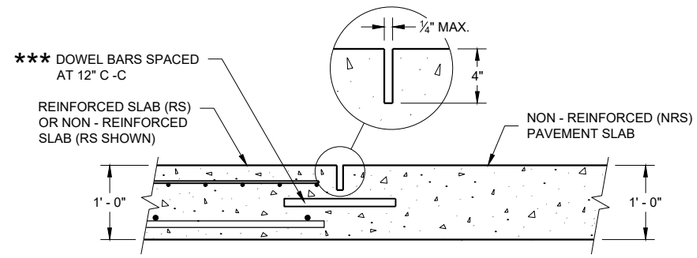
(5) PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.

(6) EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.

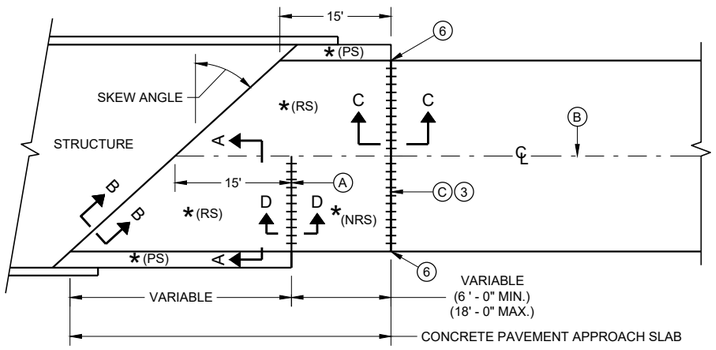
(A) STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℞.

(B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.

(C) 1 ½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℞

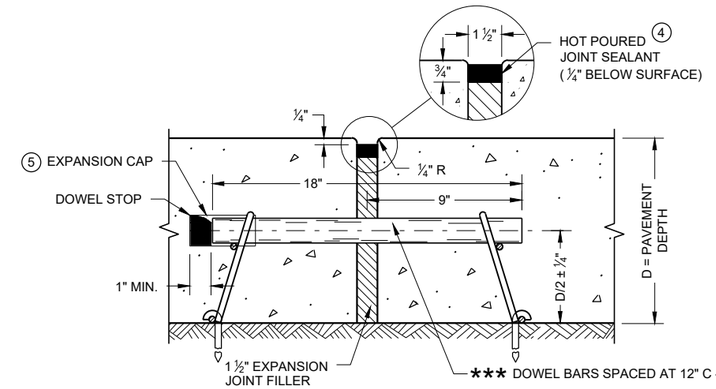


SECTION D - D
CONTRACTION JOINT

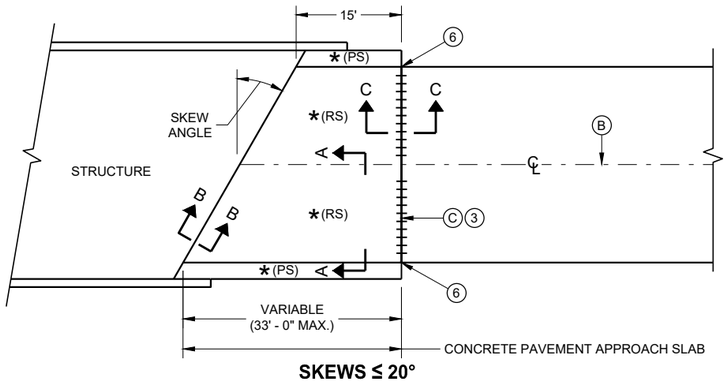


SKEWS > 20°
(PAVEMENT WIDTH ≤ 30')

SECTION B - B
BEND DETAIL
BOTTOM REINFORCEMENT

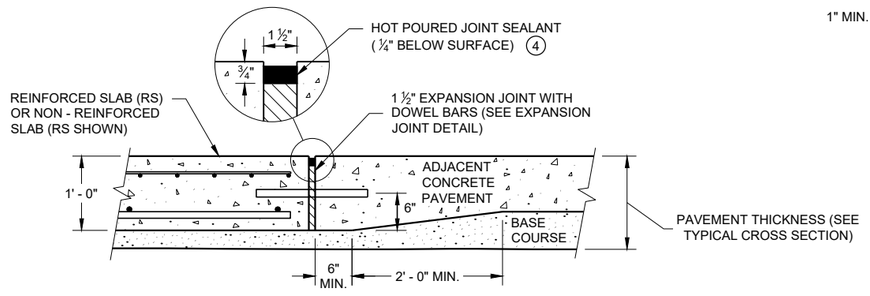


EXPANSION JOINT DETAIL



SKEWS ≤ 20°
(PAVEMENT WIDTH ≤ 30')

APPROACH SLAB AND ADJACENT PAVEMENT



SECTION C - C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT

CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE

/S/ Peter Kemp P.E.
PAVEMENT SUPERVIS

FHWA

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SDD 13B02 - 09a

(1) WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

(2) USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

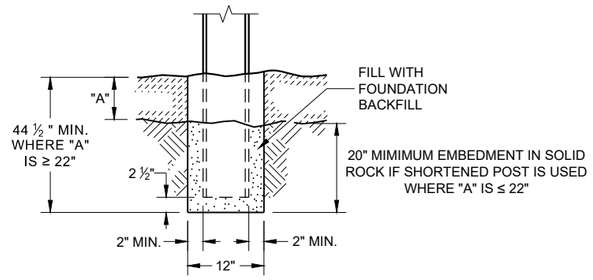
(3) IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.

(4) WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).

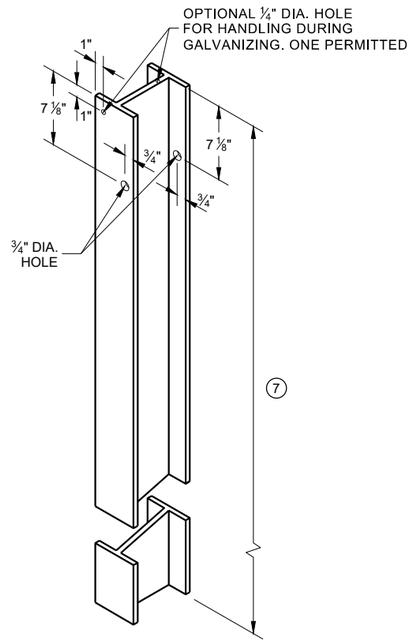
(5) FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS +1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 ¾" TO 32".

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

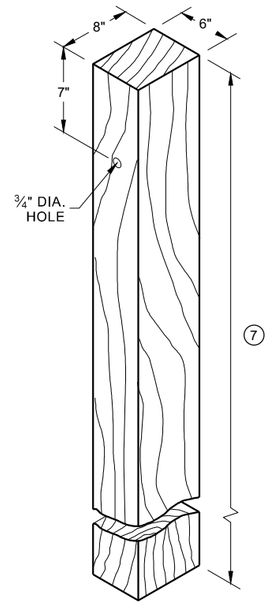
(7) TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



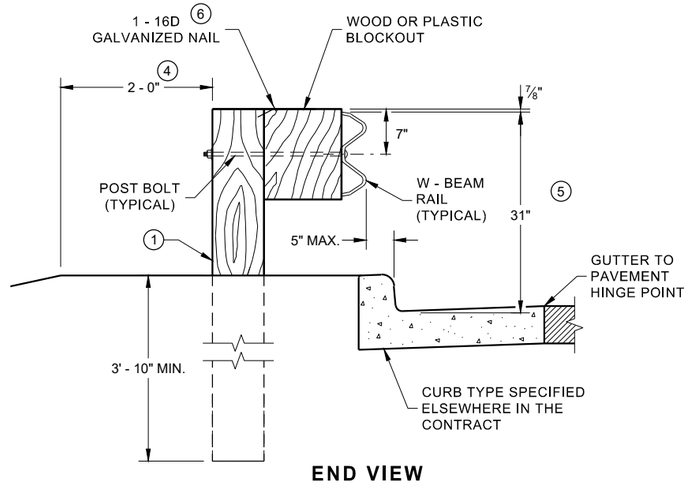
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



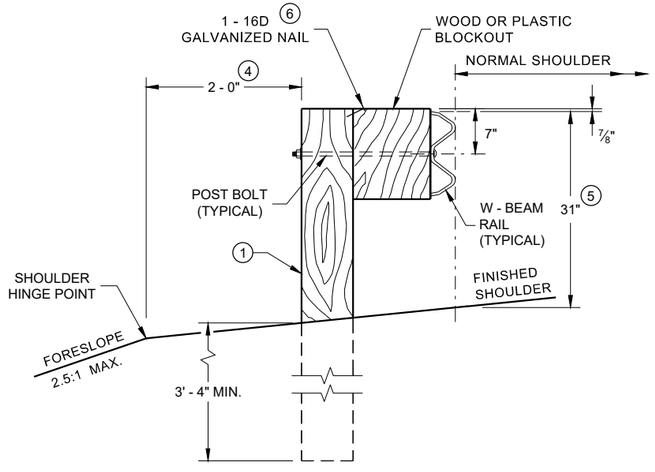
STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) (1)



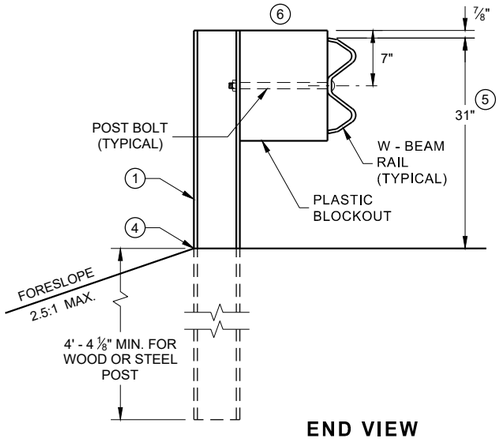
WOOD POST (6" X 8") NOMINAL (1)



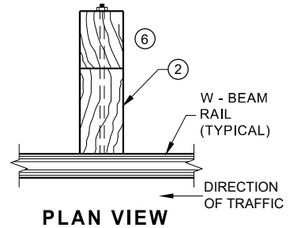
END VIEW
LOCATED ALONG A CURBED ROADWAY



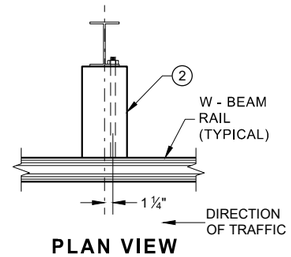
END VIEW
LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION



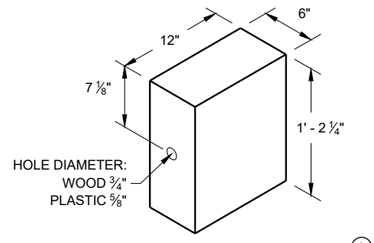
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, PLASTIC BLOCKOUT & BEAM

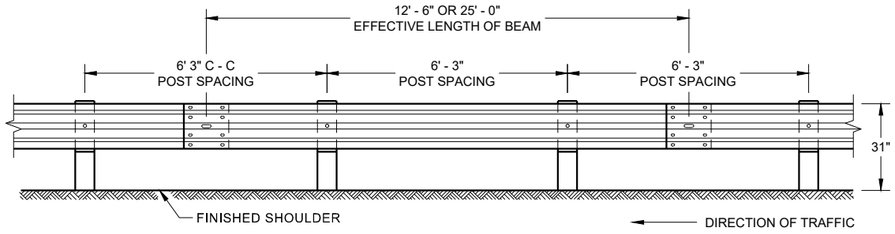


WOOD OR PLASTIC BLOCKOUT (2)

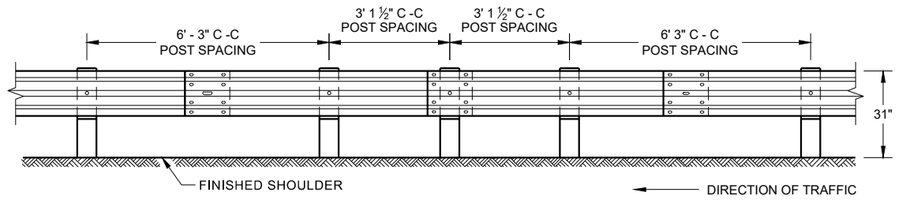
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

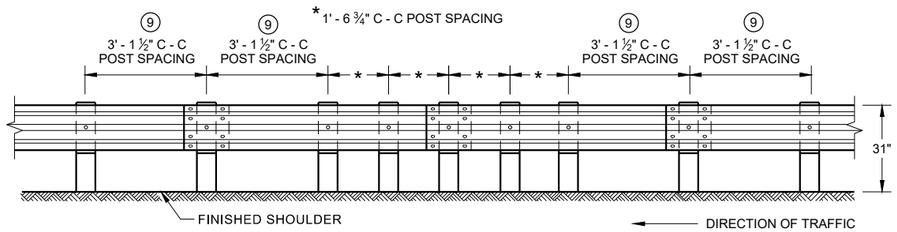
6
SDD 14B42 - 06a



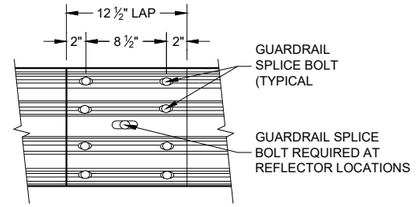
FRONT VIEW
POST SPACING STANDARD INSTALLATION



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



FRONT VIEW
QUARTER POST SPACING (QS)



FRONT VIEW
MID-SPAN BEAM SPLICE

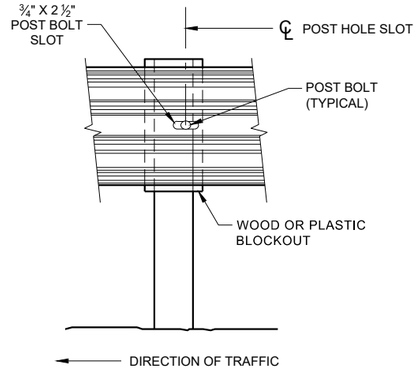
GENERAL NOTES

⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

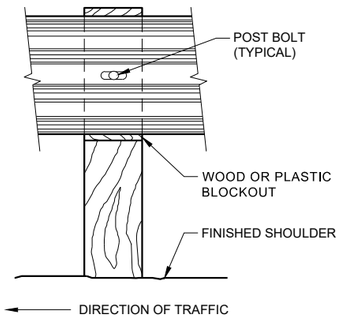
⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND ⅝" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

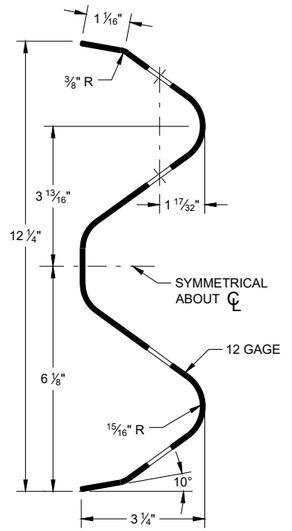
GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



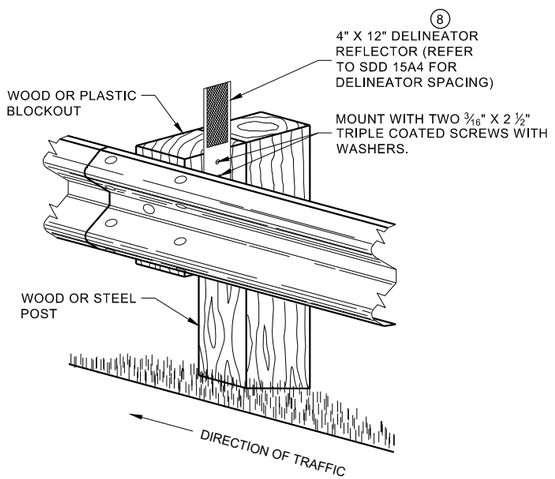
FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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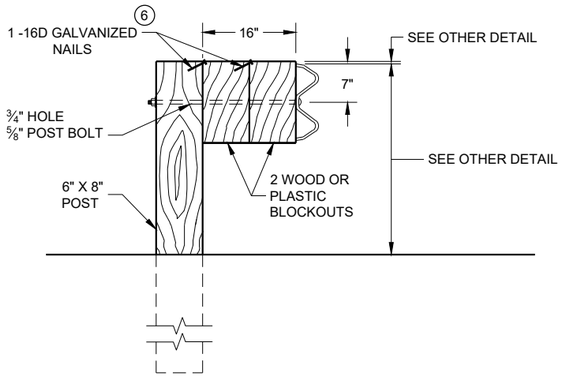
SDD 14B42 - 06b

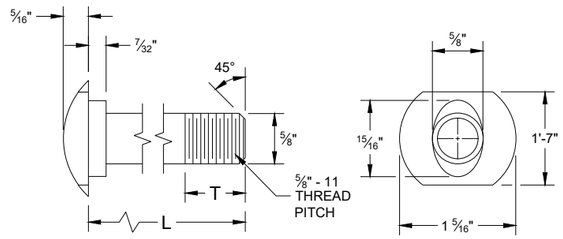


DETAIL FOR 16" BLOCKOUT DEPTH

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

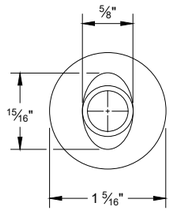
NOTE:

1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 3⁄16".
2. IF THE BOLT EXTENDS MORE THAN ¼" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

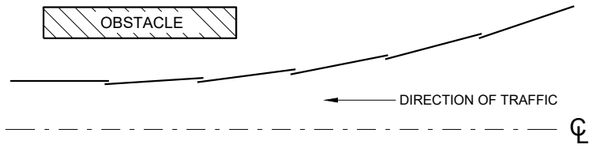


POST BOLT TABLE

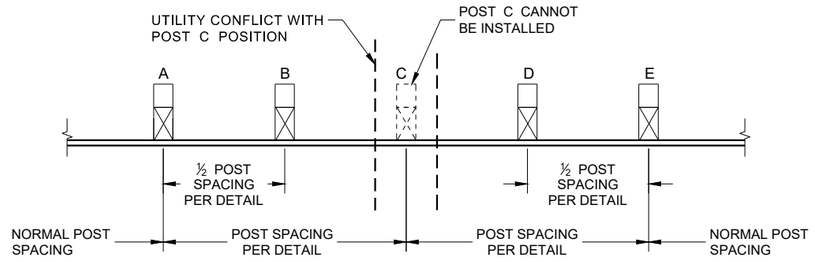
L	T (MIN.)
1 ¼"	1 ⅛"
2"	1 ¾"
10"	4"
14"	4 1⁄16"
18"	4"
21"	4 1⁄16"
25"	4"



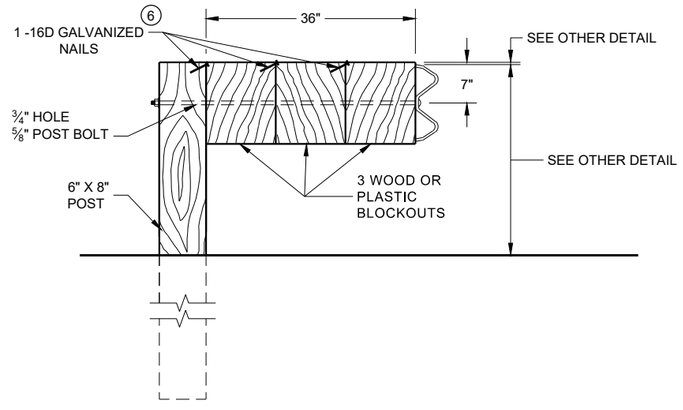
ALTERNATE BOLT HEAD



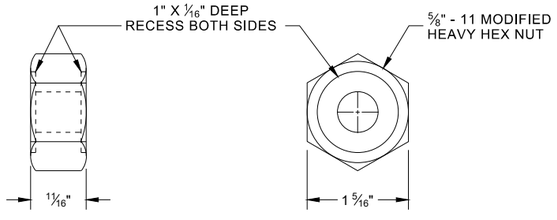
PLAN VIEW
BEAM LAPPING DETAIL



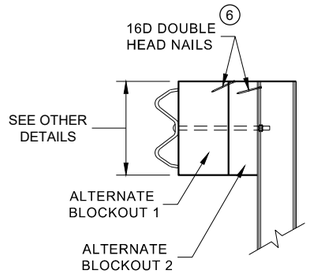
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



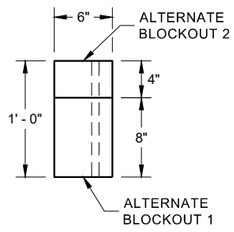
DETAIL FOR 36" BLOCKOUT DEPTH



POST BOLT, SPLICE BOLT AND RECESS NUT



SIDE VIEW



PLAN VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

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.

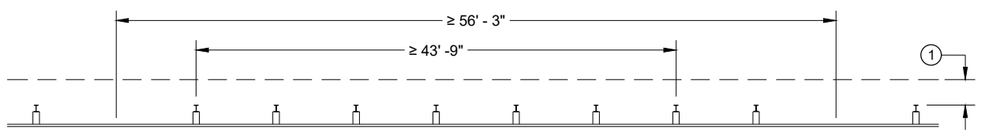
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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

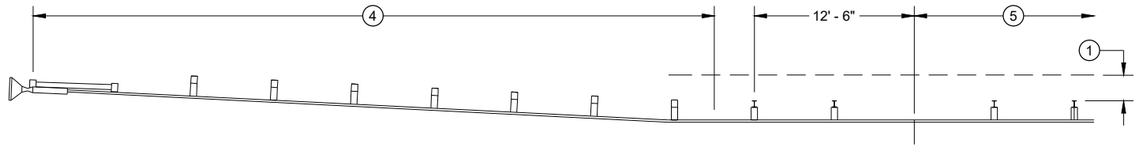
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

6

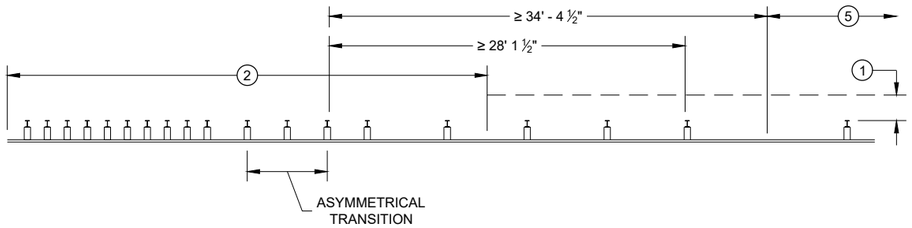
SDD 14B42 - 06c



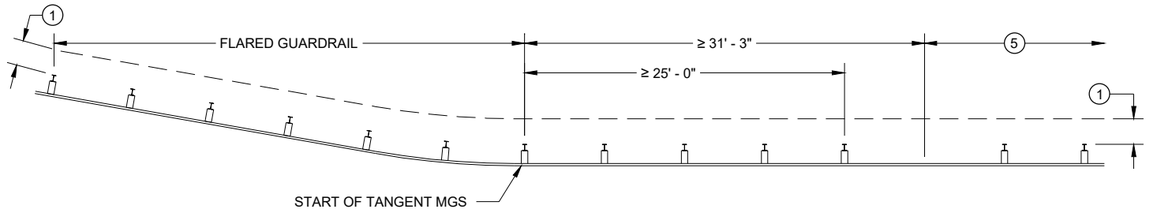
MISSING POST IN NORMAL BEAM GUARD RUN



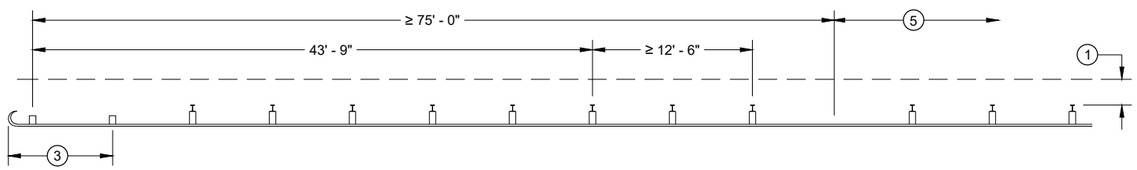
MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



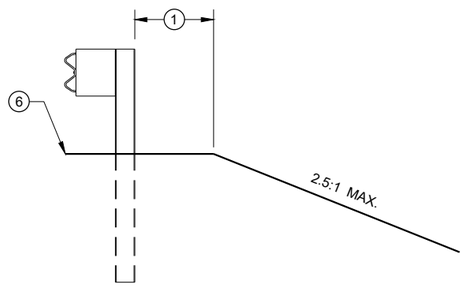
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



MISSING POST IN NORMAL BEAM GUARD RUN NEAR FLARED BEAM GUARD



MISSING POST IN NORMAL BEAM GUARD RUN NEAR TYPE 2 TERMINAL



CROSS SECTION VIEW

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

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE UNIT SUPERVISOR
FHWA

6

SDD 14B42 - 06d

GENERAL NOTES

(A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.

(B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED

(C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS. SEE MANUFACTURER'S INFORMATION.

(D) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF - TAPPING SCREWS. ONE SCREW PER CORNER.

(E) HARDWARE MAY VARY BETWEEN MANUFACTURER. SEE MANUFACTURER'S DRAWING FOR INFORMATION.

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

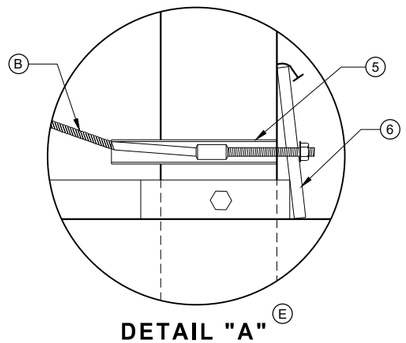
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

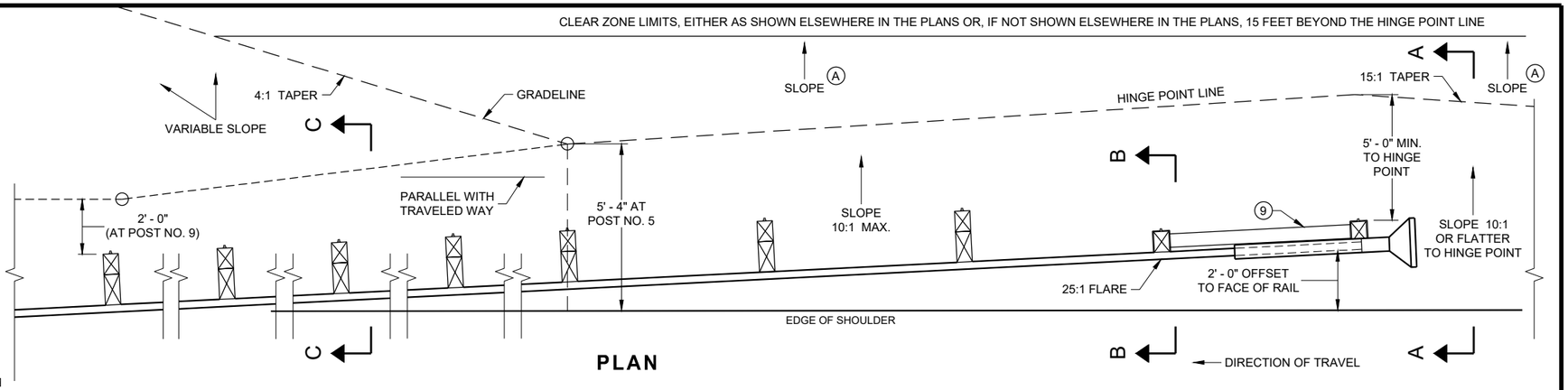
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

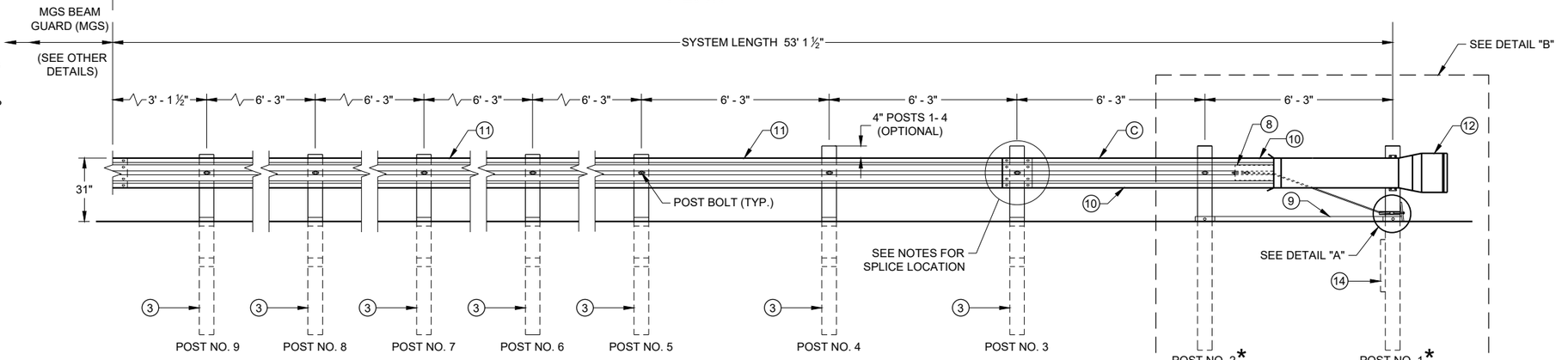
THE CENTER OF THE UPPER 3 ½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



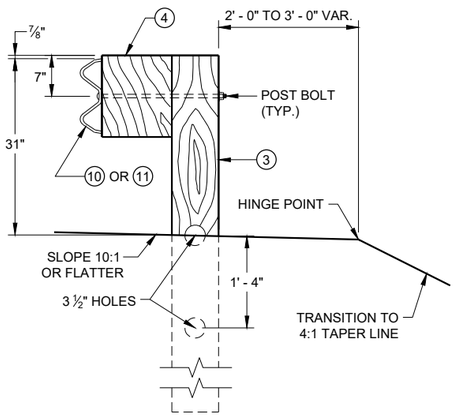
DETAIL "A" (E)



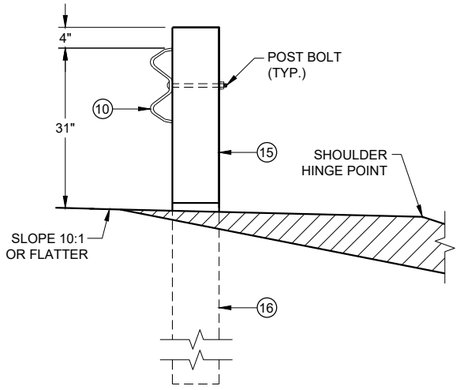
PLAN



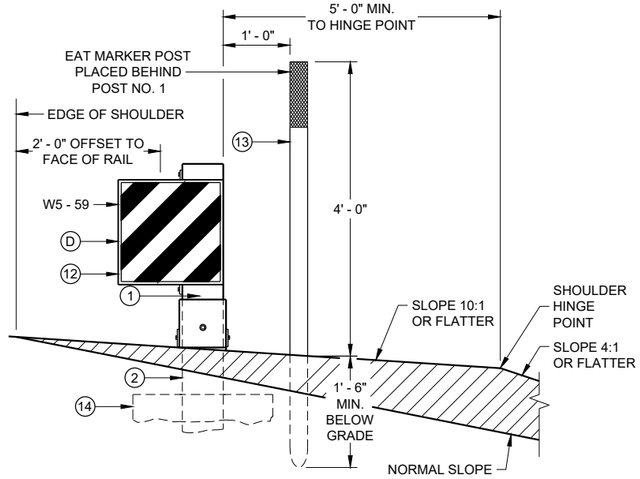
ELEVATION



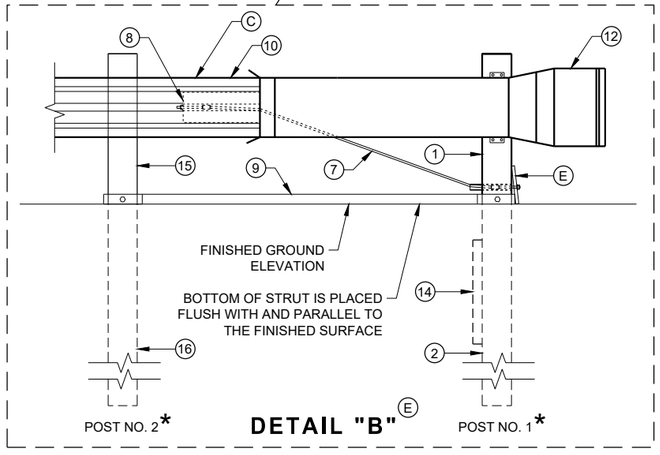
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*



SECTION A - A
TYPICAL AT POST NO. 1*



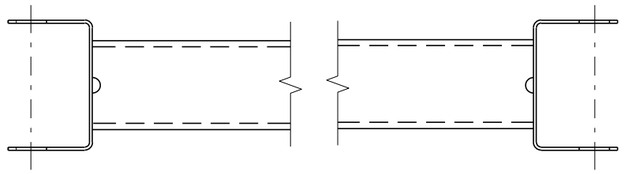
DETAIL "B" (E)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 14B44 - 04a

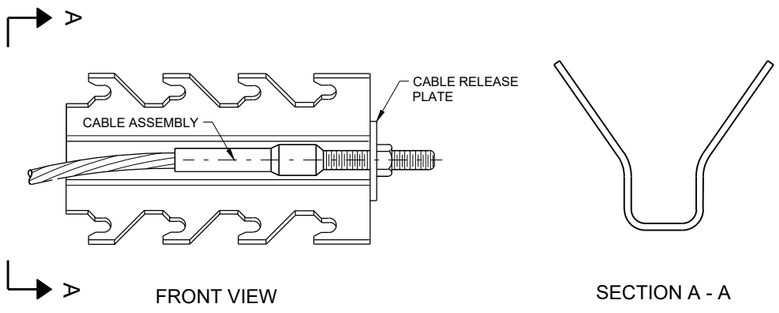
SDD 14B44 - 04a



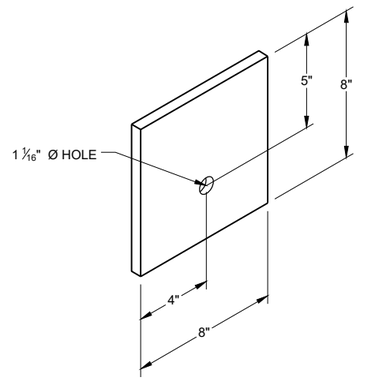
GENERIC GROUND STRUT ⑨ Ⓔ

BILL OF MATERIALS

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



GENERIC ANCHOR CABLE BOX ⑧ Ⓔ



BEARING PLATE ⑥ Ⓔ

6

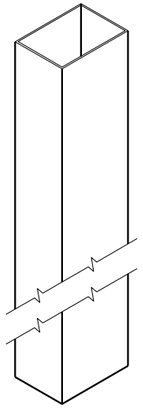
6

SDD 14B44 - 04b

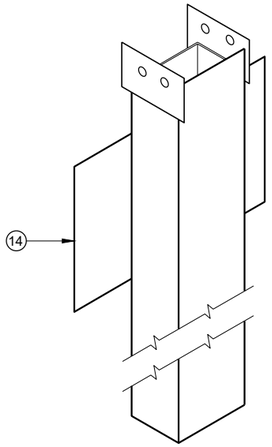
SDD 14B44 - 04b

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

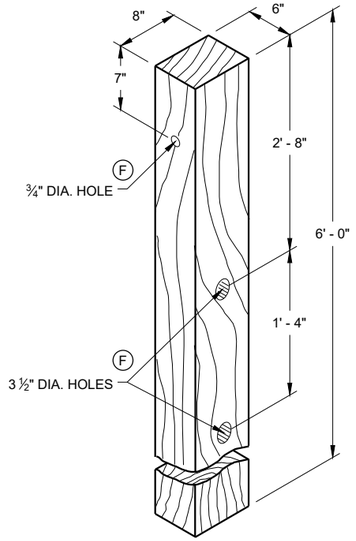
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



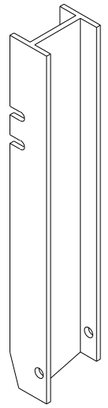
UPPER POST NO. 1 (1) (E)



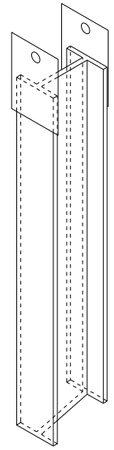
LOWER POST NO. 1 (2) (E)



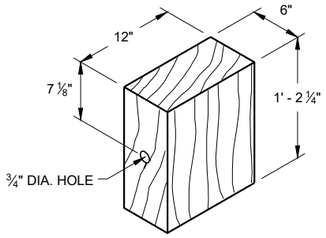
WOOD CRT POST (3) (E)
POSTS NUMBER 3-9



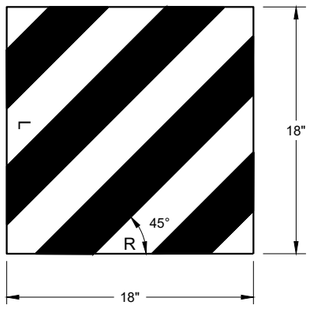
UPPER POST NO. 2 (15) (E)



LOWER POST NO. 2 (16) (E)

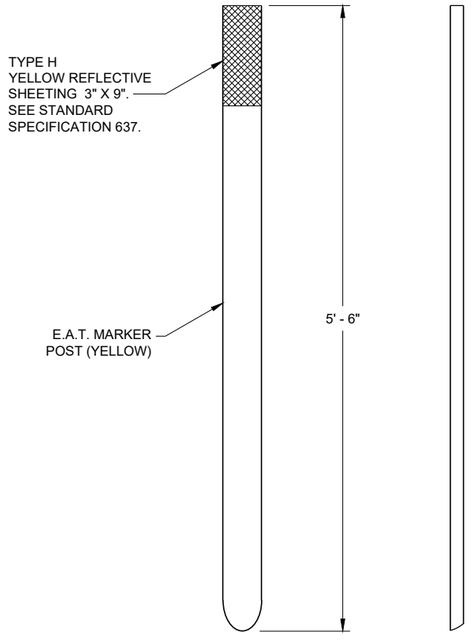


WOOD BLOCKOUT (4)
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



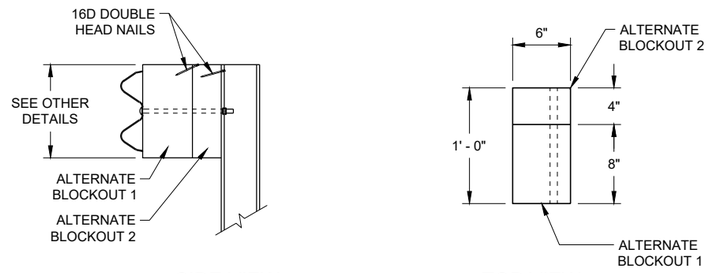
W5 - 59

REFLECTIVE SHEETING DETAIL (E)



FRONT VIEW SIDE VIEW

E.A.T. MARKER POST (13)



SIDE VIEW TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

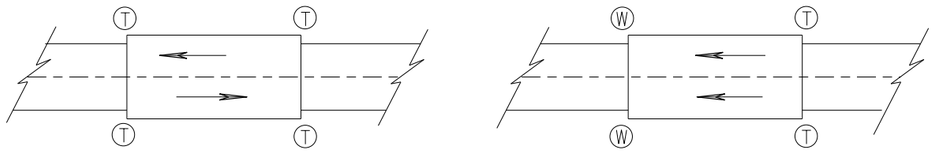
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

6

SDD 14B44 - 04c



TWO WAY TRAFFIC

ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

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

TRANSITION USES STEEL POSTS ONLY.

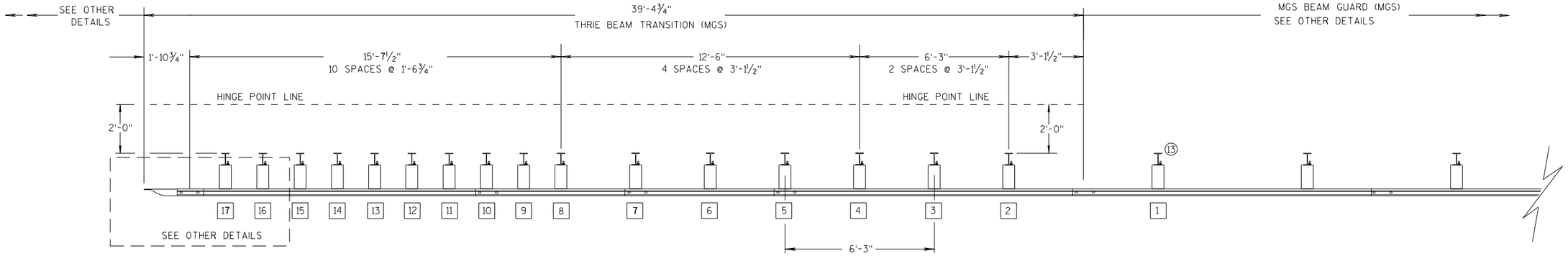
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

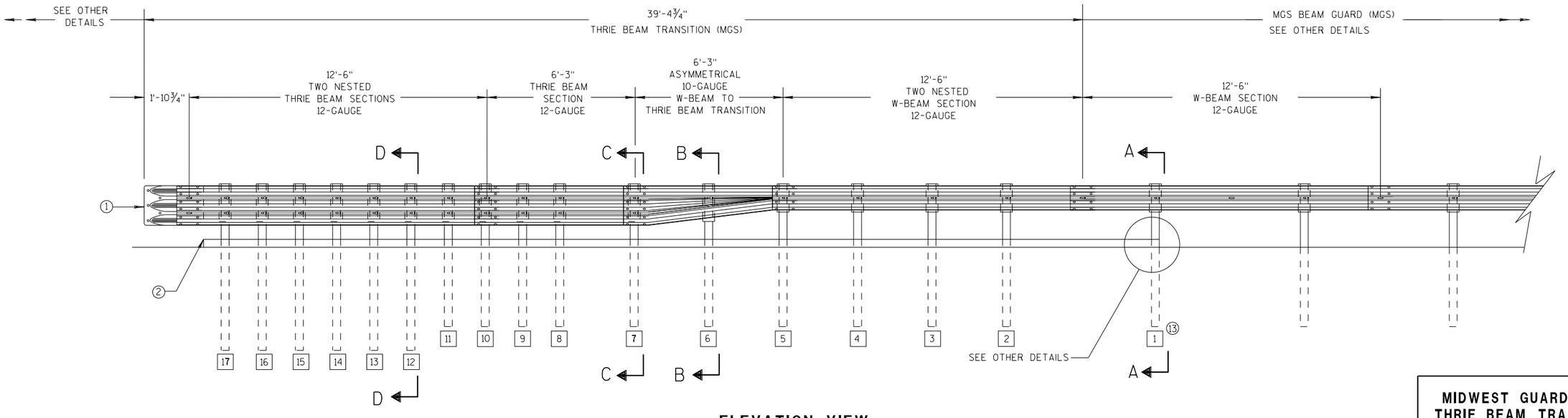
(1) BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

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

(13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD14B42



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

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

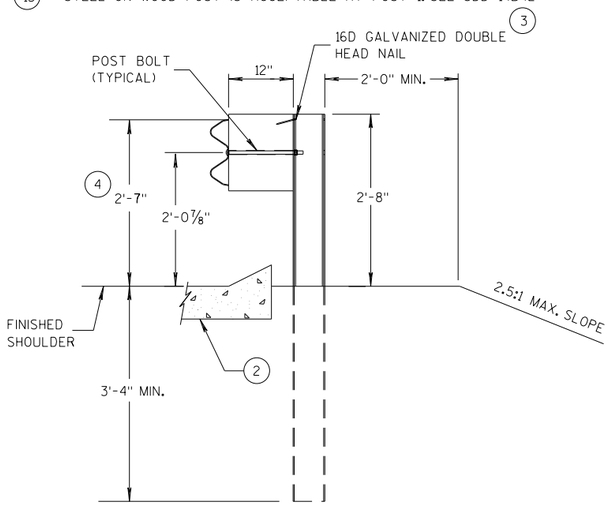
GENERAL NOTES

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

(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

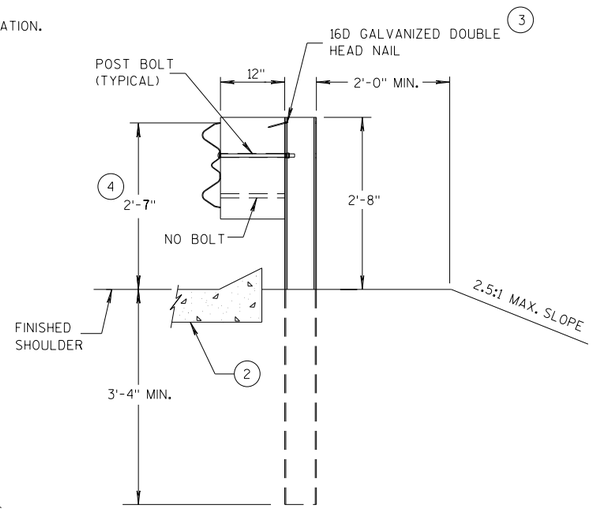
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

(13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42



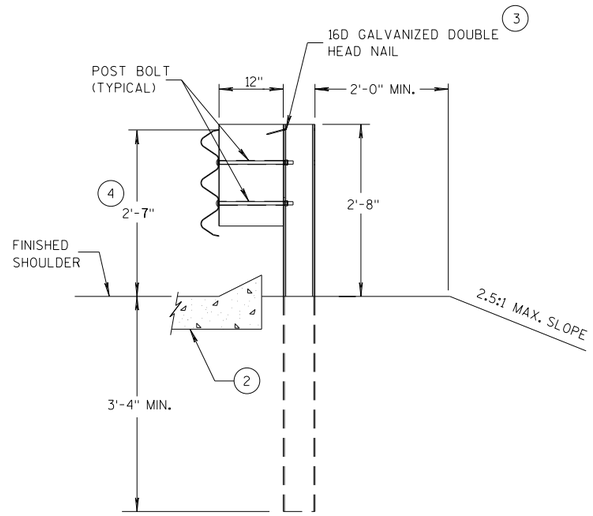
SECTION A-A (13)

POSTS 1-5



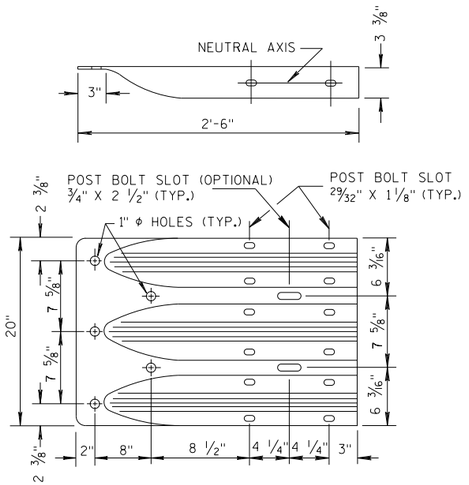
SECTION B-B

POST 6

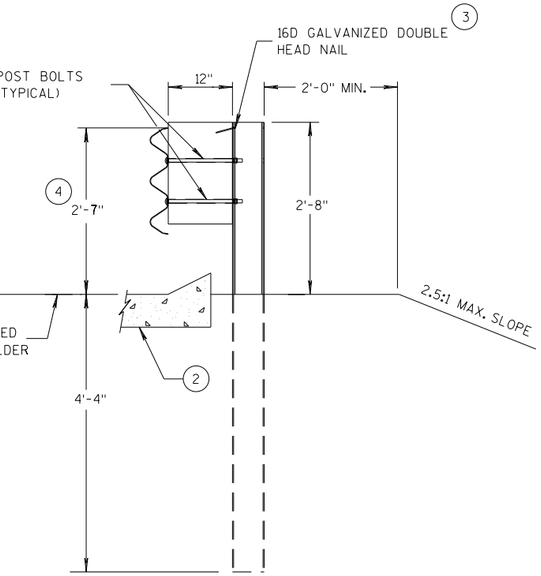


SECTION C-C

POSTS 7-11

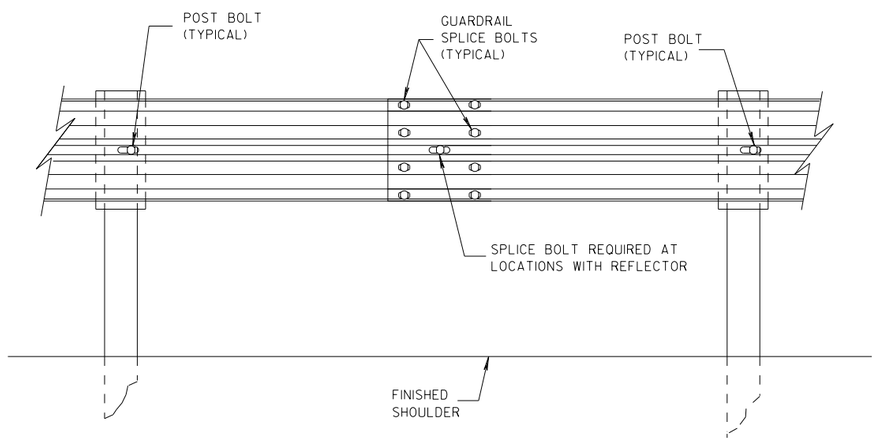


THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-17



SPLICE DETAIL

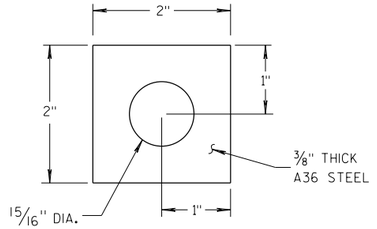
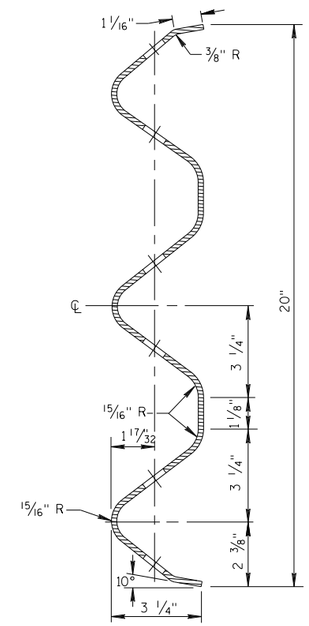


PLATE WASHER DETAIL



SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 28

6

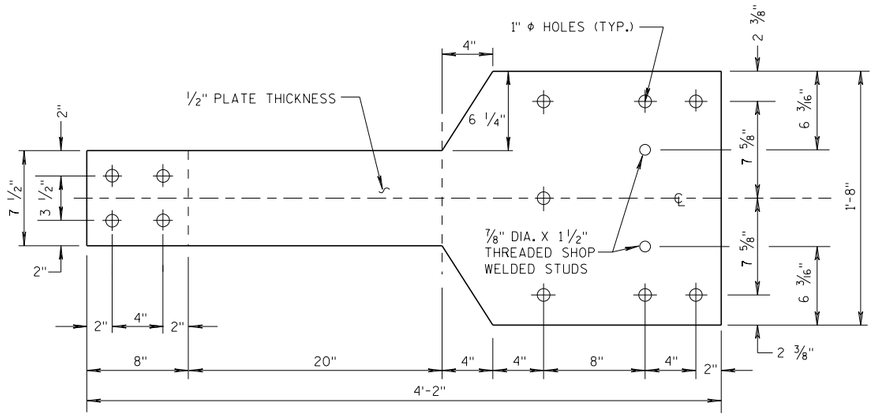
S.D.D. 14 B 45-5b

6

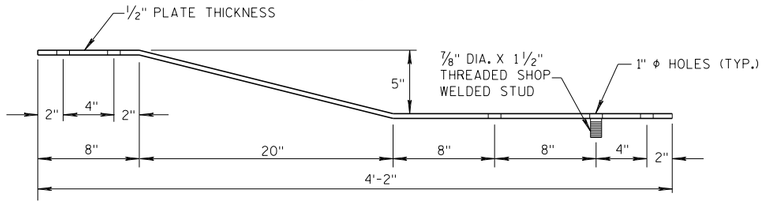
S.D.D. 14 B 45-5b

GENERAL NOTES

(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".

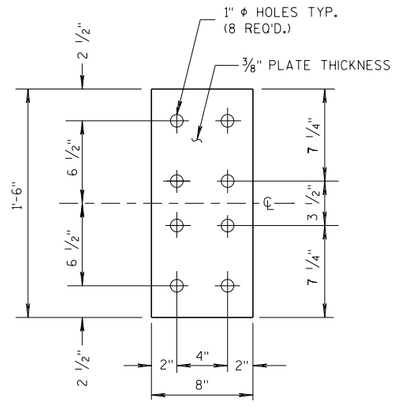


FRONT VIEW

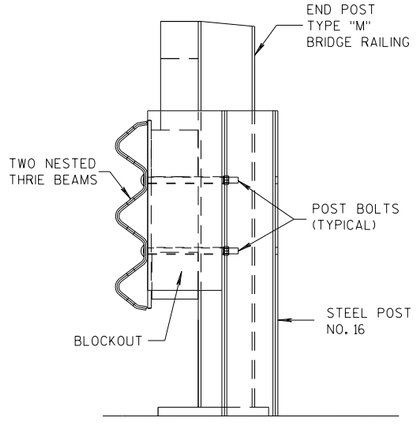


PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

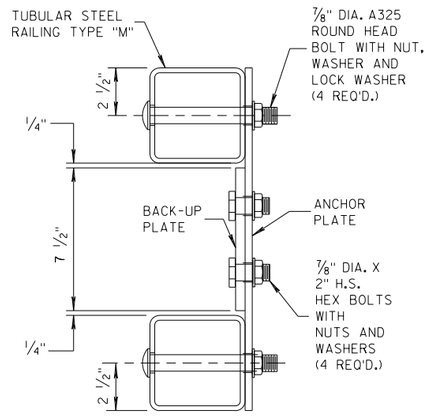


FRONT VIEW

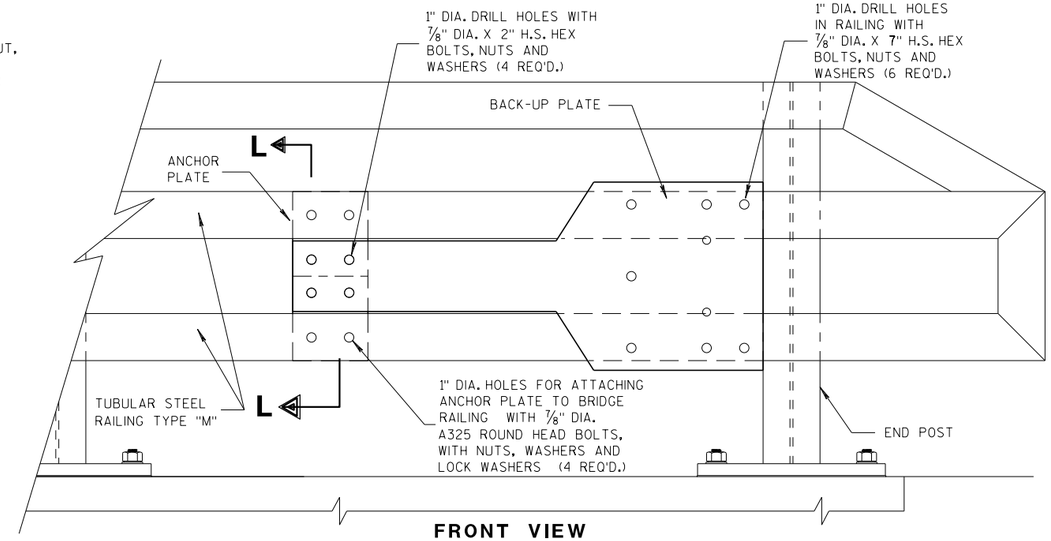


SECTION M-M

ANCHOR PLATE DETAIL, TYPE "M"

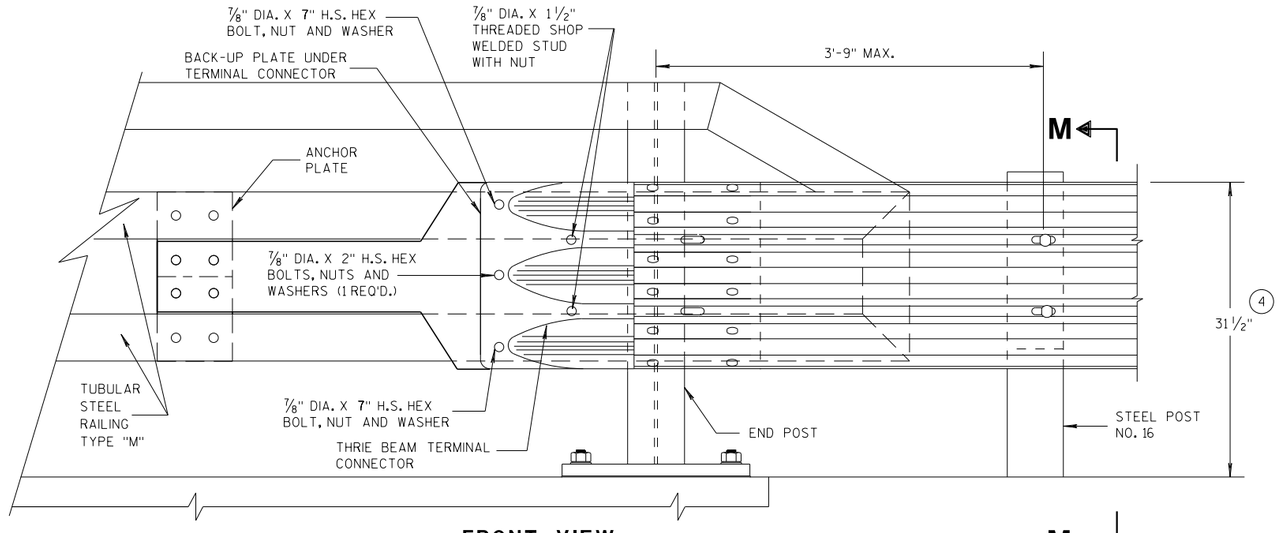


SECTION L-L

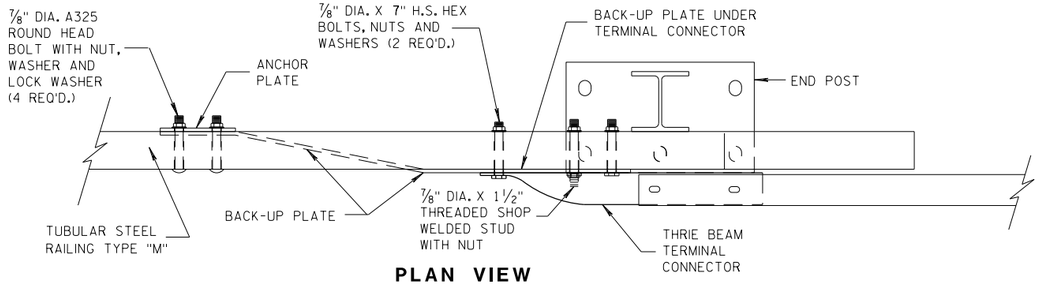


FRONT VIEW

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

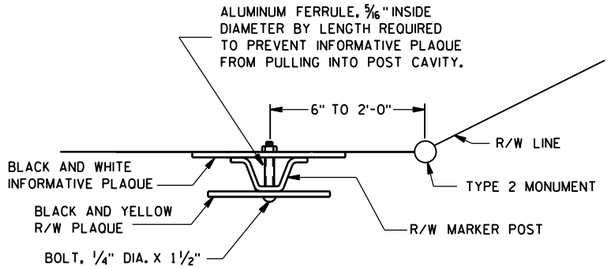
APPROVED
07/2018 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS UNIT SUPERVISOR
FHWA

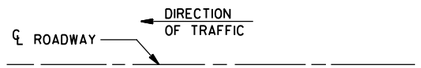
6

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

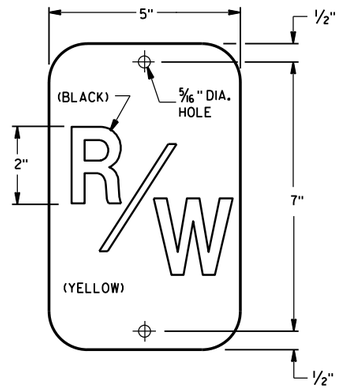
6

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



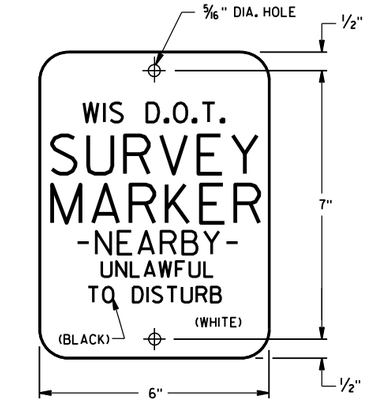


PLAN VIEW



R/W PLAQUE

THE RIGHT-OF-WAY PLAQUE AND INFORMATIVE PLAQUE WILL BE FURNISHED BY THE WISCONSIN DEPARTMENT OF TRANSPORTATION.



INFORMATIVE PLAQUE

GENERAL NOTES

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

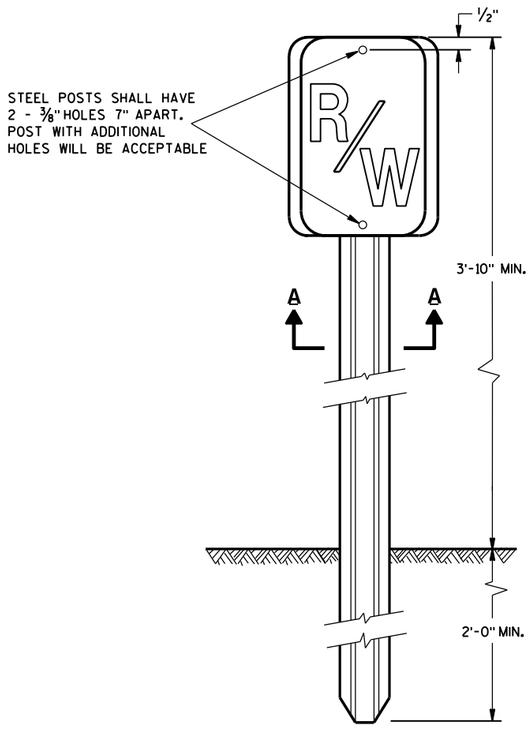
A STEEL MARKER POST FOR RIGHT-OF-WAY SHALL BE PLACED IN THE RIGHT-OF-WAY, WITH THE BACK OF THE POST ON THE LONGER RIGHT-OF-WAY TANGENT, 6 INCHES TO 24 INCHES FROM EACH TYPE 2 MONUMENT TO SERVE AS A GUARD POST, AND AT OTHER LOCATIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

THE "R/W" PLAQUE SHALL FACE THE ROADWAY AND THE INFORMATIVE PLAQUE SHALL FACE AWAY FROM THE ROADWAY. R/W AND INFORMATIVE PLAQUES WILL BE FURNISHED BY THE DEPARTMENT OF TRANSPORTATION.

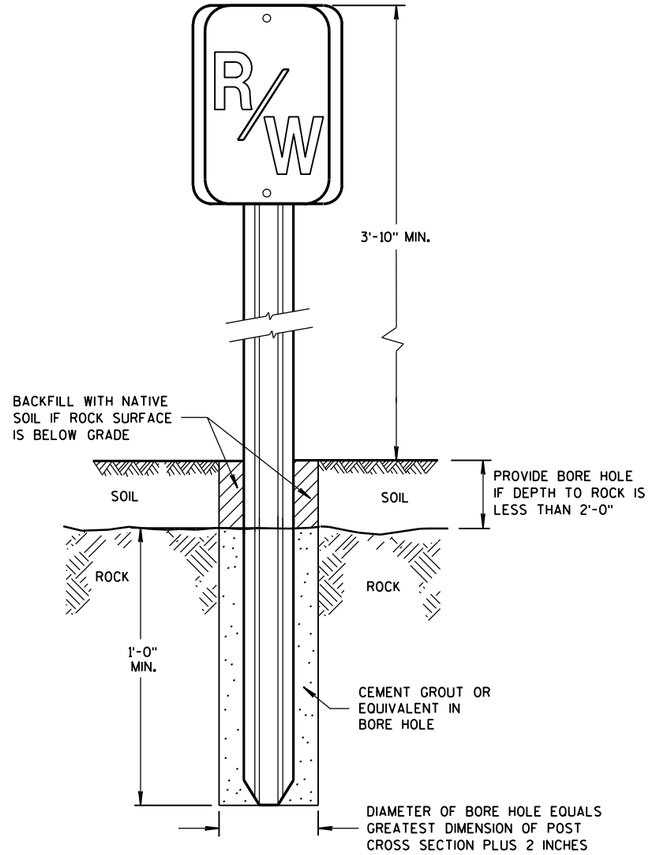
STEEL MARKER POSTS SHALL MEET THE MINIMUM MATERIAL REQUIREMENTS FOR STEEL DELINEATOR POSTS; EXCEPT POSTS PAINTED WITH FEDERAL YELLOW ENAMEL NEED NOT BE ZINC COATED.

(1) IN AREAS OF SOLID ROCK, DRILL A BORE HOLE 2" GREATER THAN THE WIDEST DIMENSION OF THE POST CROSS SECTION INTO THE ROCK TO A MINIMUM DEPTH OF 12 INCHES. CUT OR SPLICE THE POST SO THAT A MINIMUM LENGTH OF 3'10" PROTRUDES ABOVE THE GROUND. BLOW OUT THE BORE HOLE IN THE ROCK USING COMPRESSED AIR.

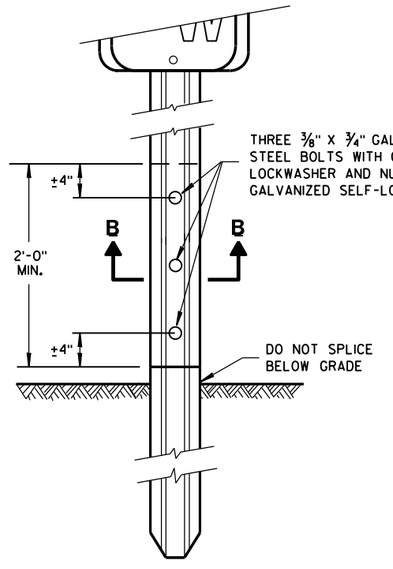
FILL THE BORE HOLE WITH CEMENT GROUT, OR EQUIVALENT. DEPENDING ON THE STABILITY OF THE ROCK.



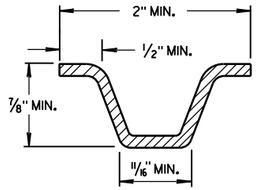
FRONT VIEW
STEEL MARKER POST



FRONT VIEW
ROCK INSTALLATION (1)

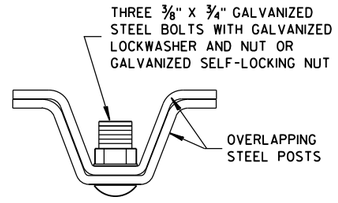


FRONT VIEW
SPLICE DETAIL



MIN. WEIGHT 1.12 LB./FT.

SECTION A-A



SECTION B-B

MARKER POST FOR RIGHT-OF-WAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
2/18/2016 — DATE
/S/ Ray Kumapayi — CHIEF SURVEYING AND MA[illegible]INEER
FHWA

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S.D.D. 15 A 1-13a

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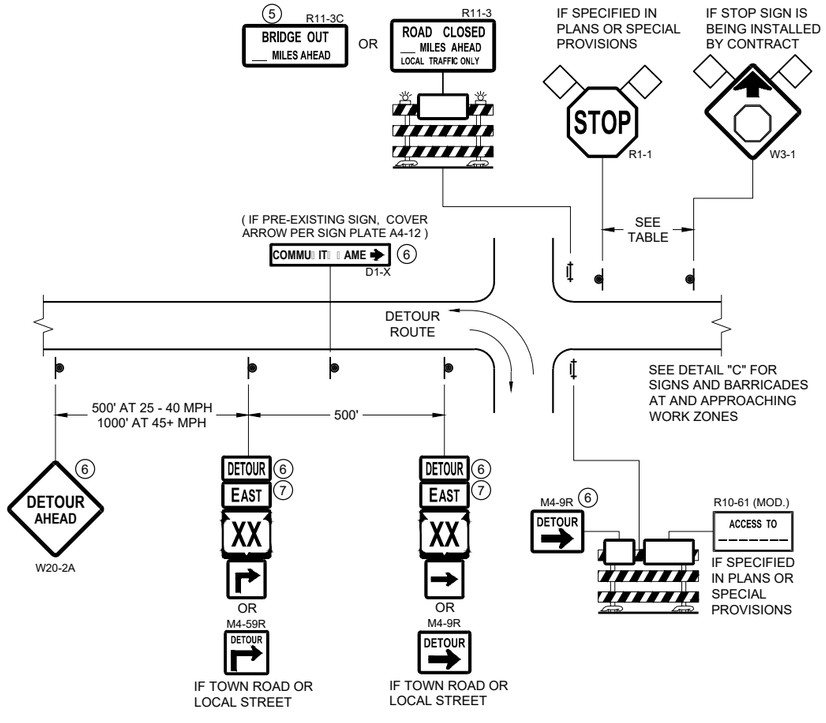
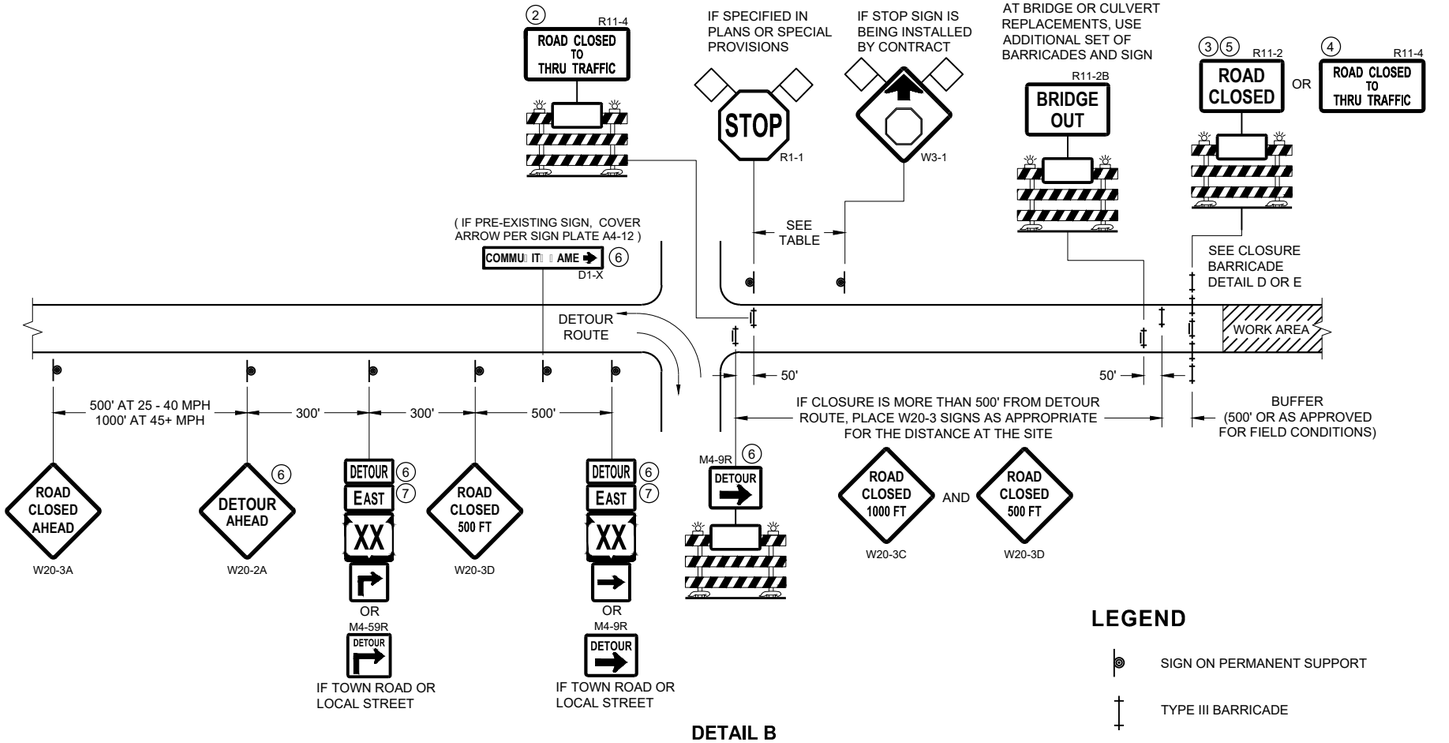
S.D.D. 15 A 1-13a





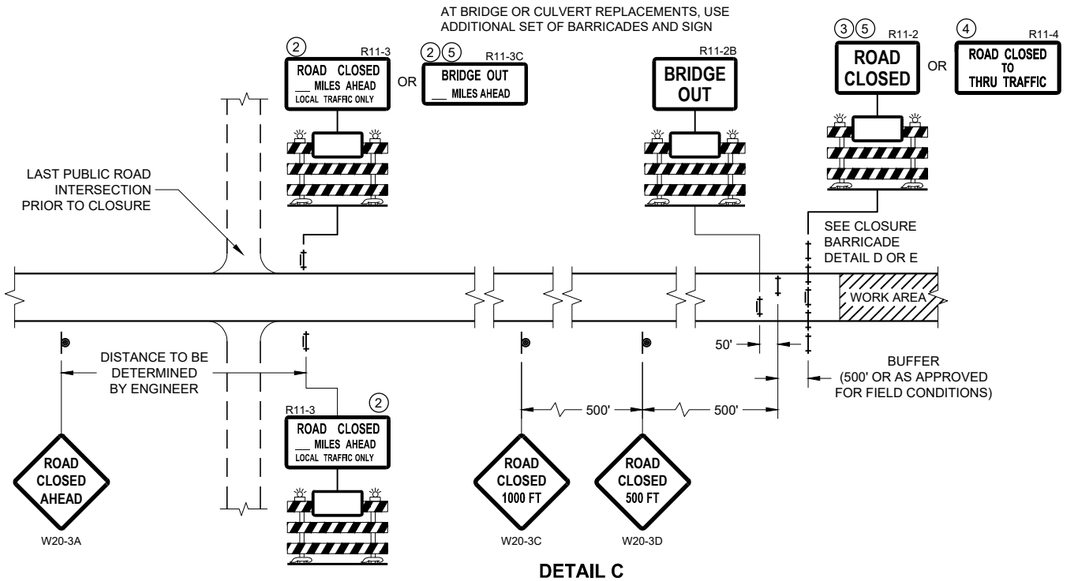
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE GREATER THAN OR EQUAL TO ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

LEGEND

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

DETOUR M4 - 8
EAST M3 - X
XX M1 - 4 OR XX M1 - 6 OR COUNTY X M1 - 5A
M05 - 1 OR M06 - 1



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

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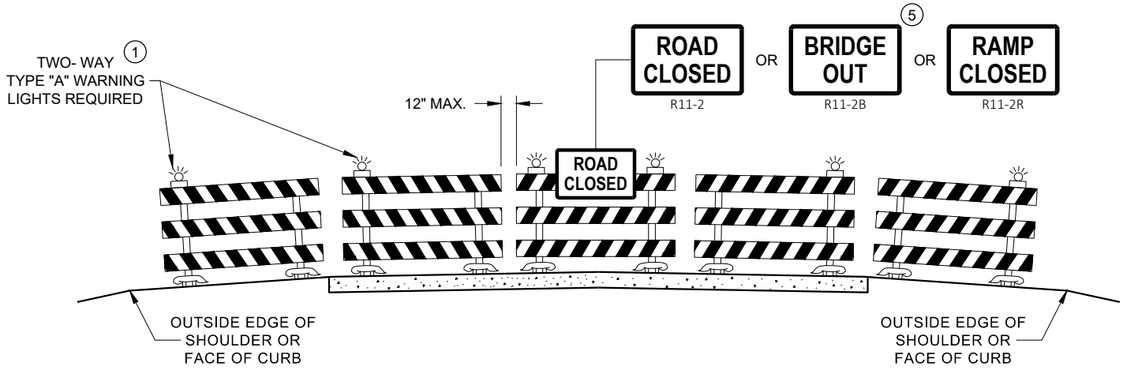
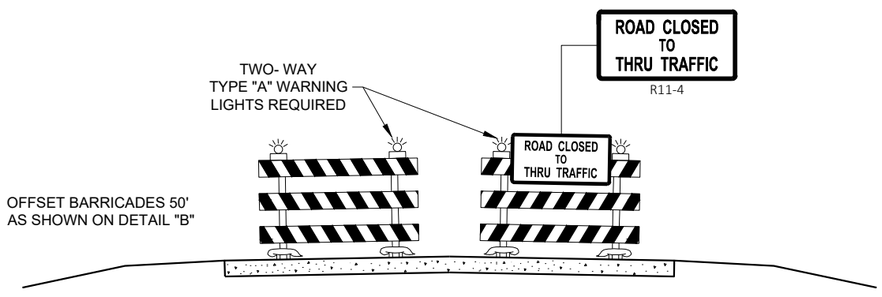
SDD 15C02 - 07a

SDD 15C02 - 07a



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

(1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING.

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT AN INTERSECTION.

(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "D".

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "E".

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11 - 2 AND R11 - 3 SIGNS.

(6) INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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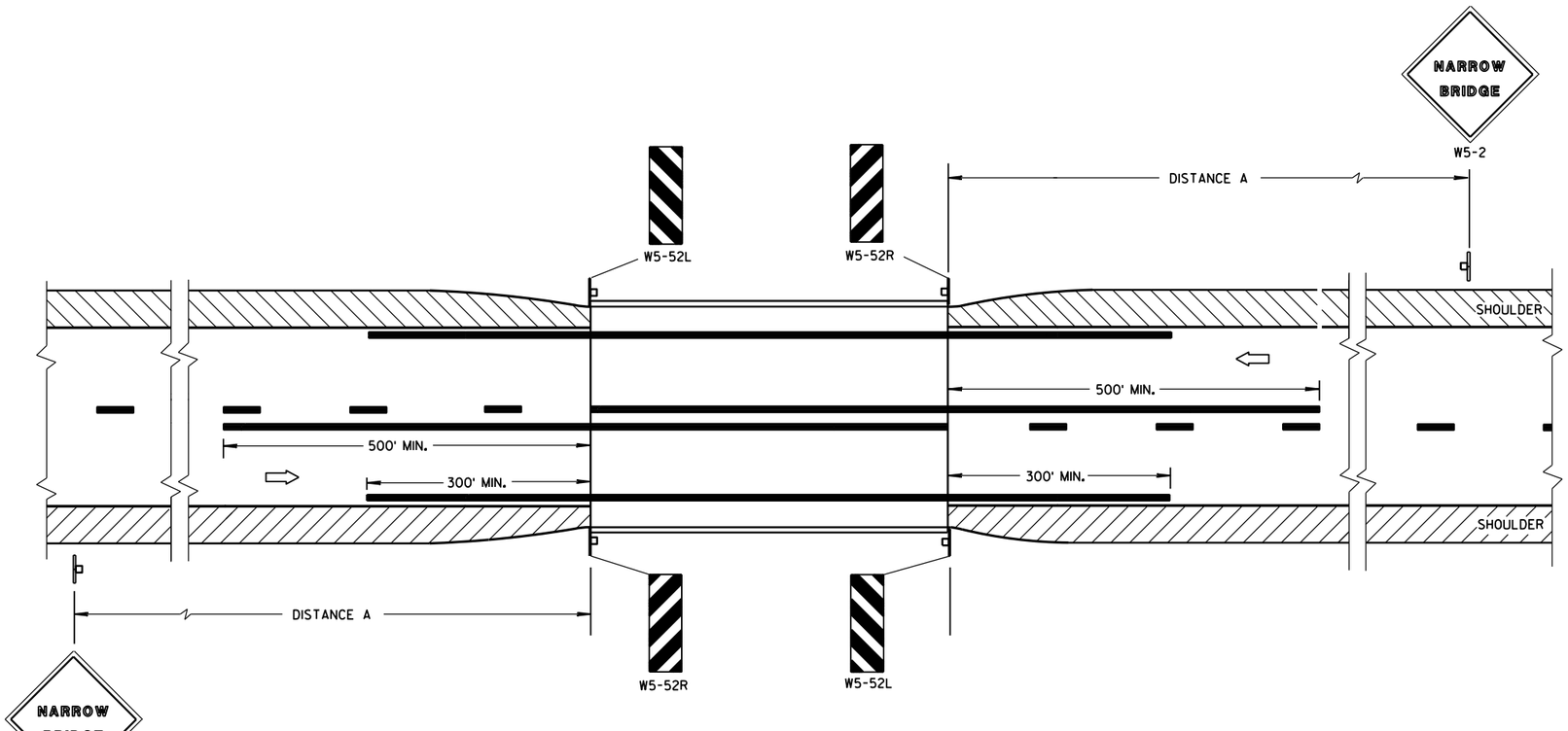
SDD 15C02 - 07b



SITUATION 1

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

DISTANCE TABLE

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

GENERAL NOTES

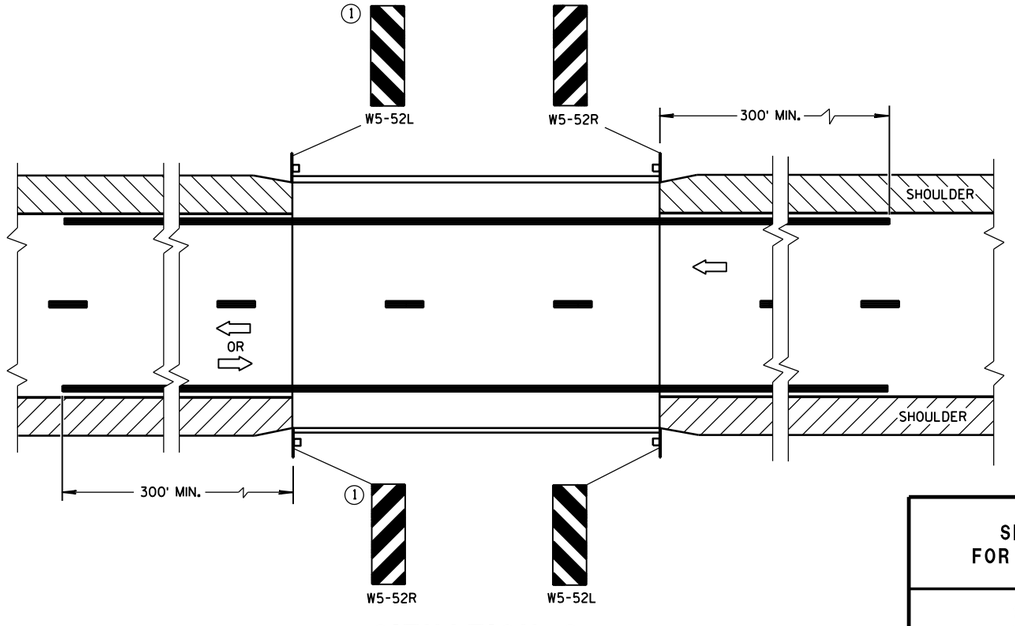
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

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

(1) OMIT ON ONE-WAY TRAVELLED WAYS.

⇨ DIRECTION OF TRAFFIC



SITUATION 2

WARRANTING CRITERIA:

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

SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MAR[illegible]EER
FHWA

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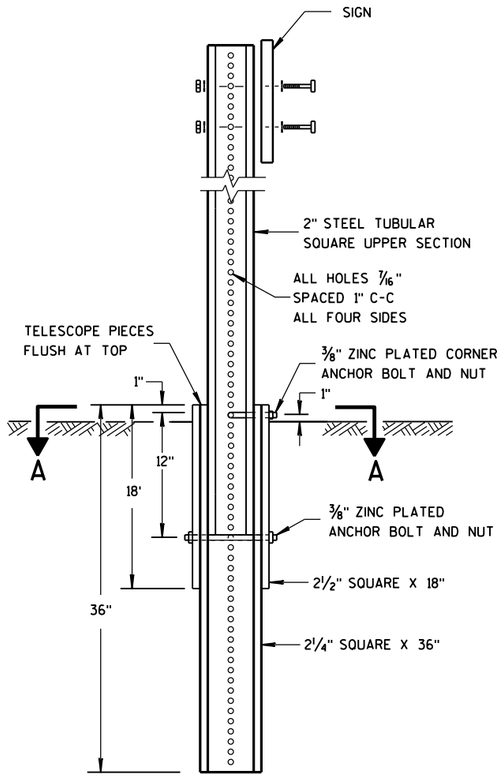
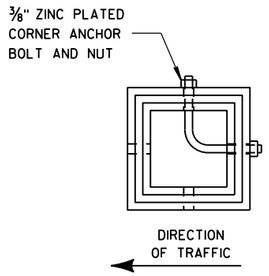
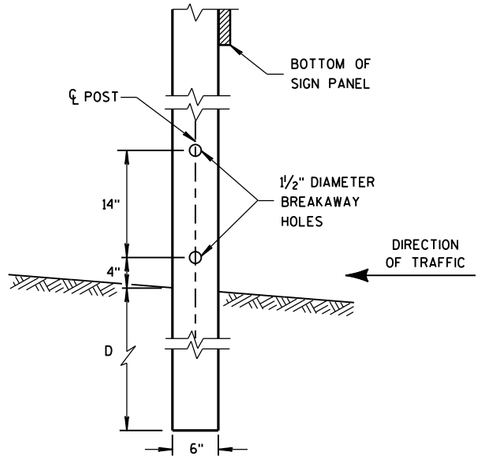
S.D.D. 15 C 6-9



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



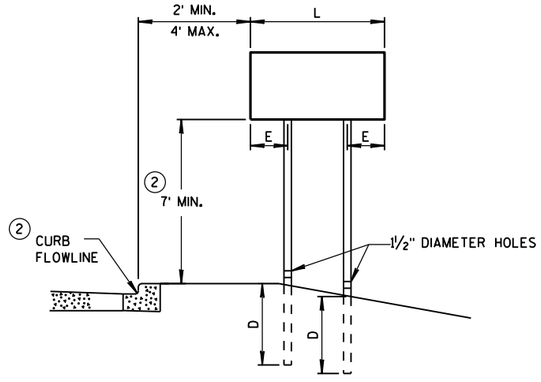
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

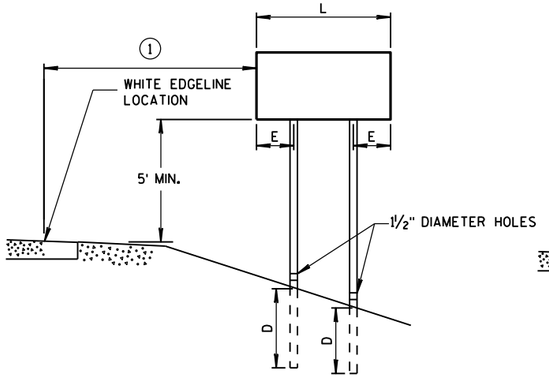
1. 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

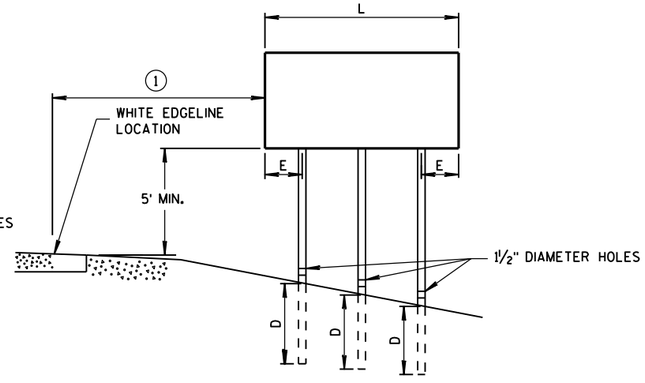
2. THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.

3. FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.



URBAN AREA





RURAL AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

TUBULAR STEEL POSTS

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

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

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

WOOD POST EMBEDMENT DEPTH

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

4" X 6" WOOD POST

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

SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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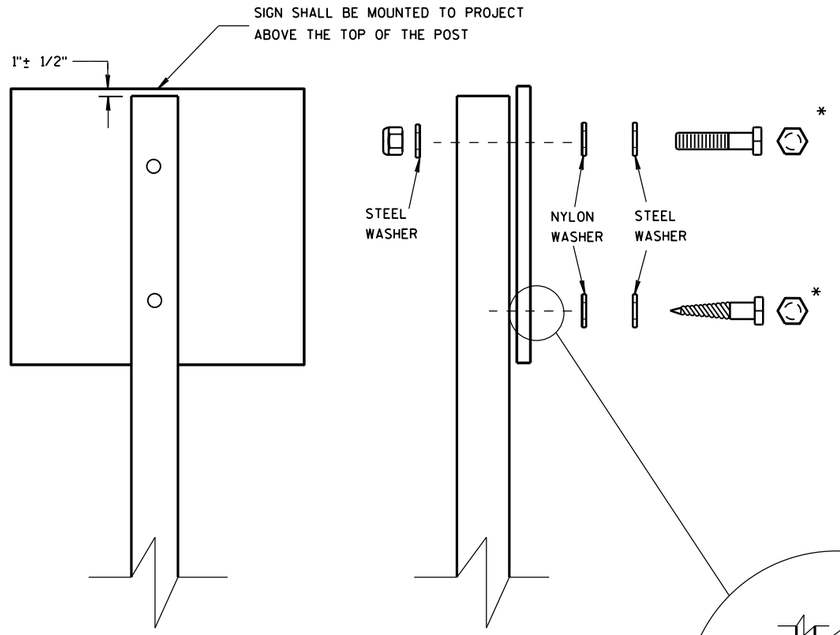
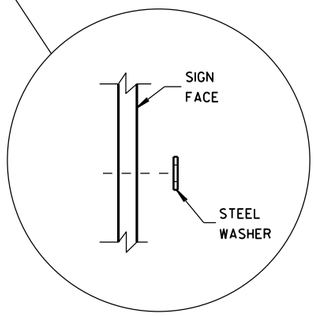
S.D.D. 15 D 38-2a
S.D.D. 15 D 38-2a





WASHER PLACEMENT WHEN SIGN HAS OTHER THAN TYPE H OR TYPE F FACE

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

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

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

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

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

LAG SCREWS - 3/8" X 3"

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

SQUARE STEEL POSTS (2" x 2")

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

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

WASHERS (ALL POSTS) -

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

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

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

6

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S.D.D. 15 D 38-2b

S.D.D. 15 D 38-2b

ATTACHMENT OF SIGNS TO POSTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

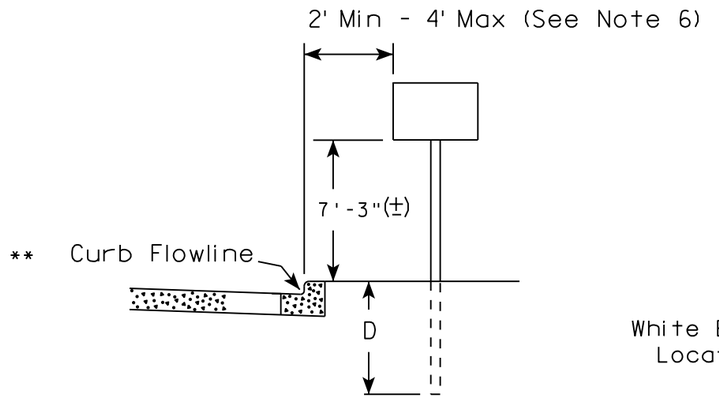
APPROVED

June 2017
DATE

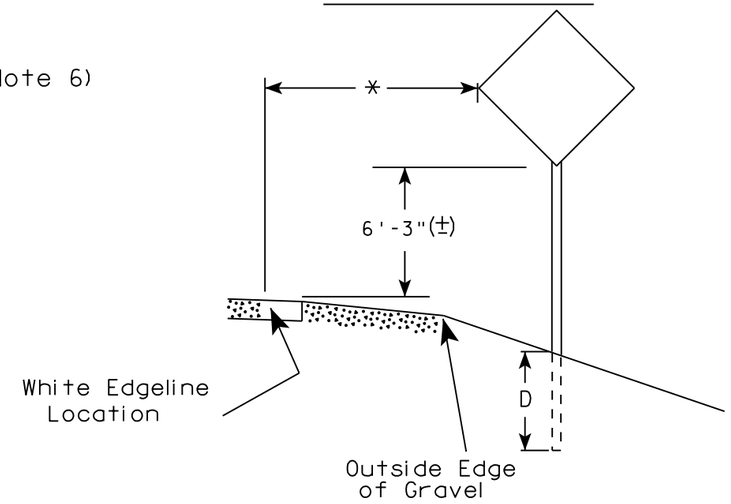
/S/ Andrew Heldtke
WORK ZONE ENG

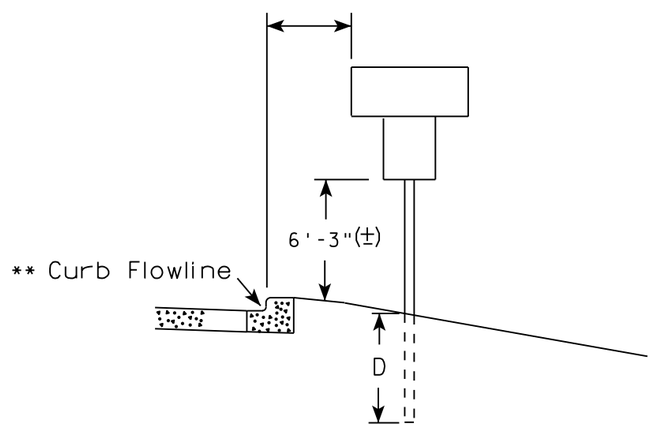
FHWA

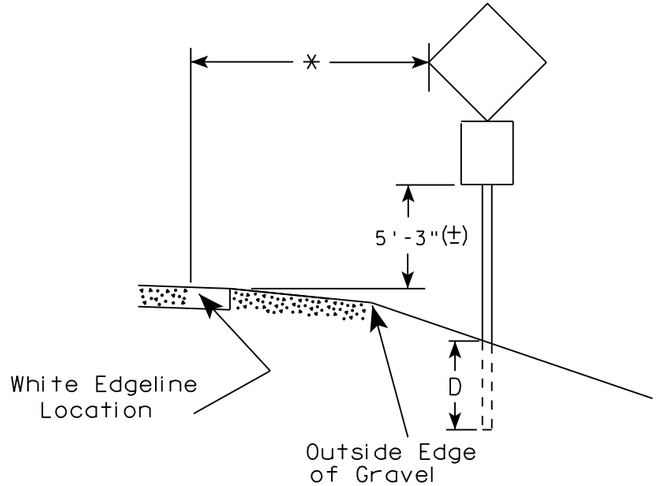
URBAN AREA



RURAL AREA (See Note 2)







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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

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

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

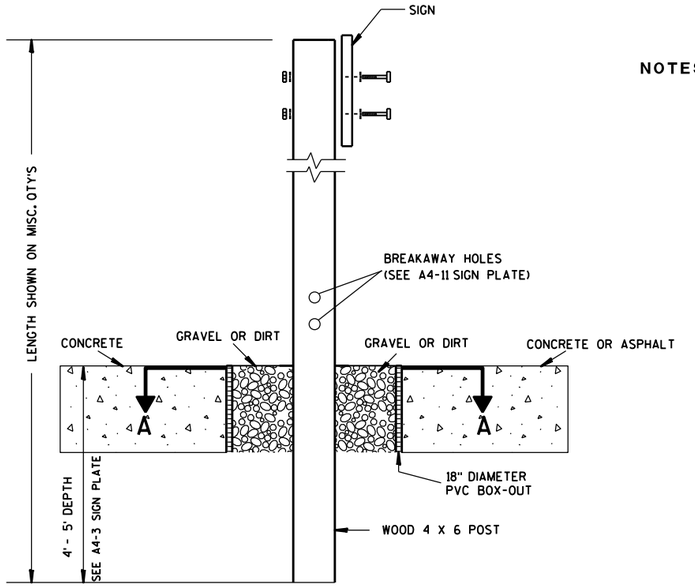
APPROVED Matthew R Rauch
for State Traffic Engineer

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

7

7

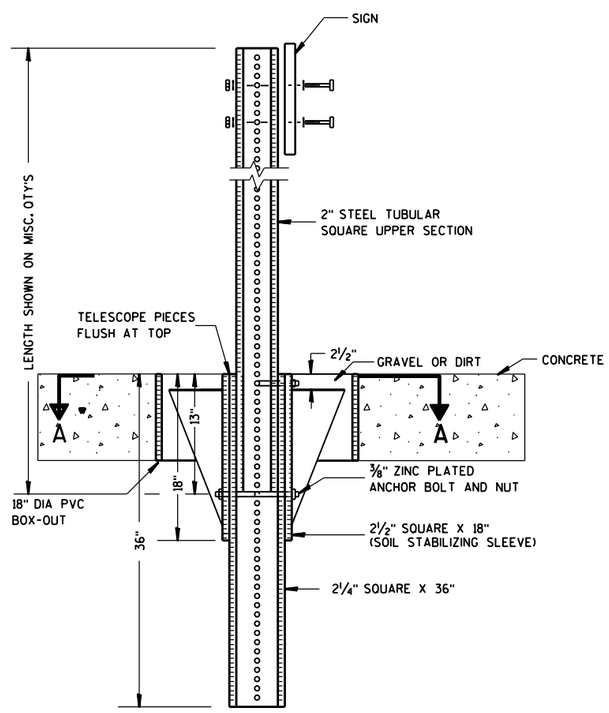
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 36	E



ELEVATION VIEW

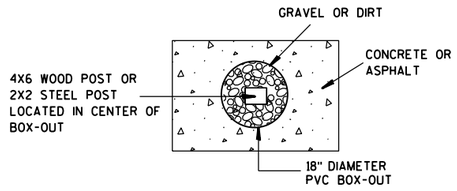
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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

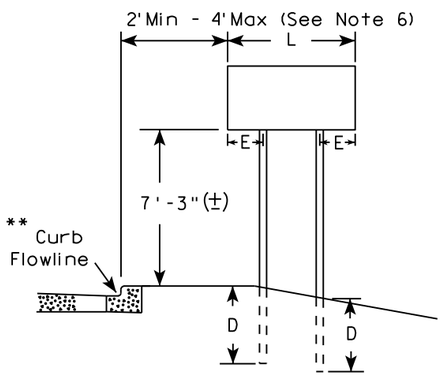
APPROVED Matthew R Rauch
for State Traffic Engineer

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

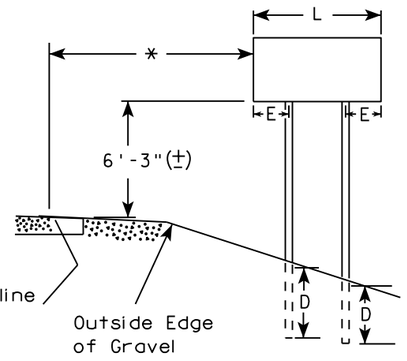
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

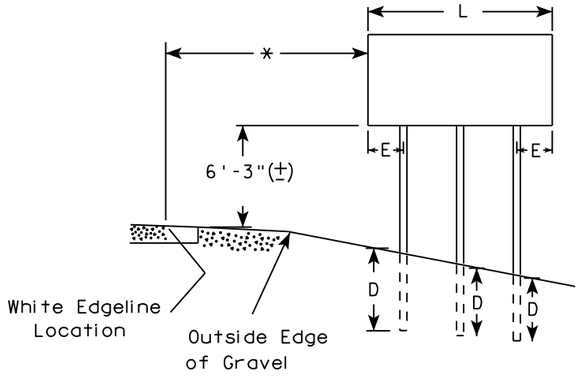
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

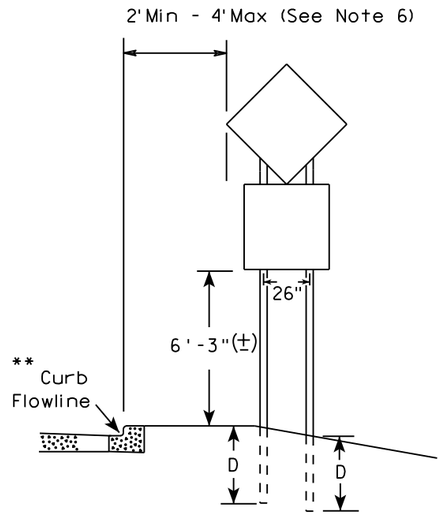
URBAN AREA



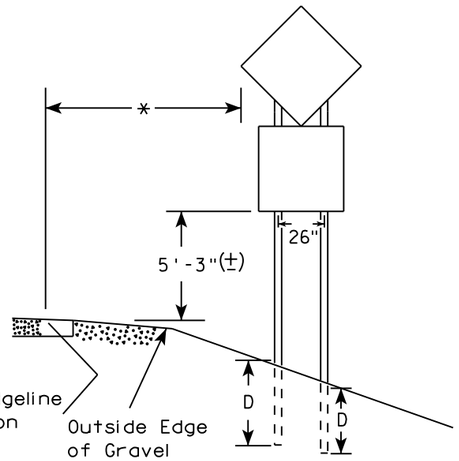
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

GENERAL NOTES

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

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

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

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

POST EMBEDMENT DEPTH

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

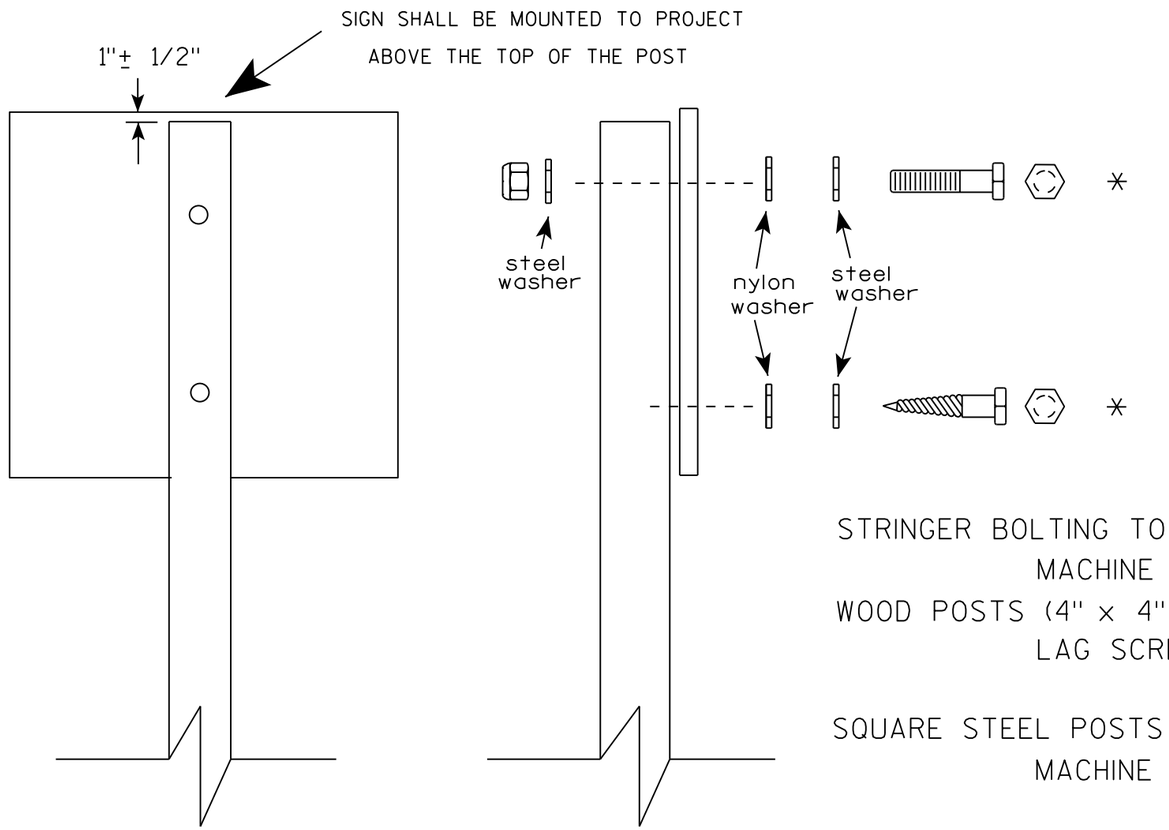
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-4.15

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 38	E



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

a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3

b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

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

MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts

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

LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)

3/8" X 4" (STRINGERS ON BACK OF SIGN)

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)

3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)

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

WASHERS (ALL POSTS) -

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

1-1/4" O.D. X 3/8" I.D. X .080 NYLON

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

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

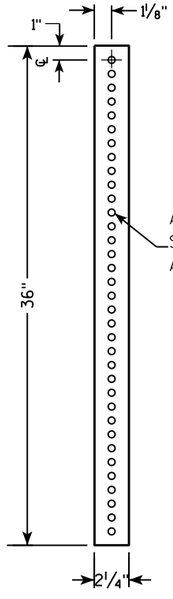
DATE 8/11/16 PLATE NO. A4-8.8

PROJECT NO: SHEET NO: E

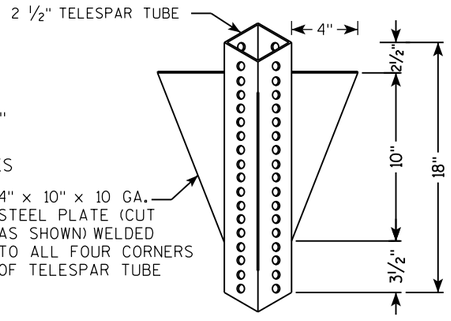
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A48.DGN PLOT DATE : 11-AUG-2016 11:35 PLOT BY : $$ plotuser $$

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

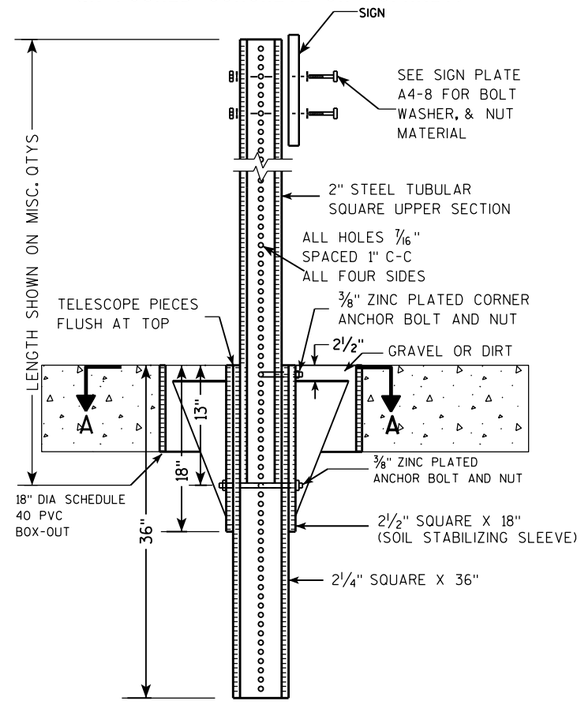
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



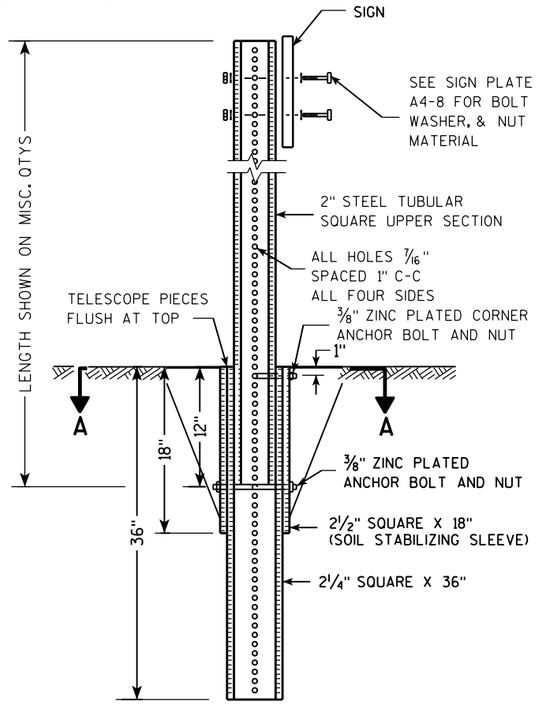
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

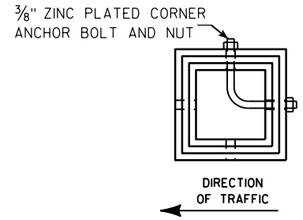


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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





SECTION A-A

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

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

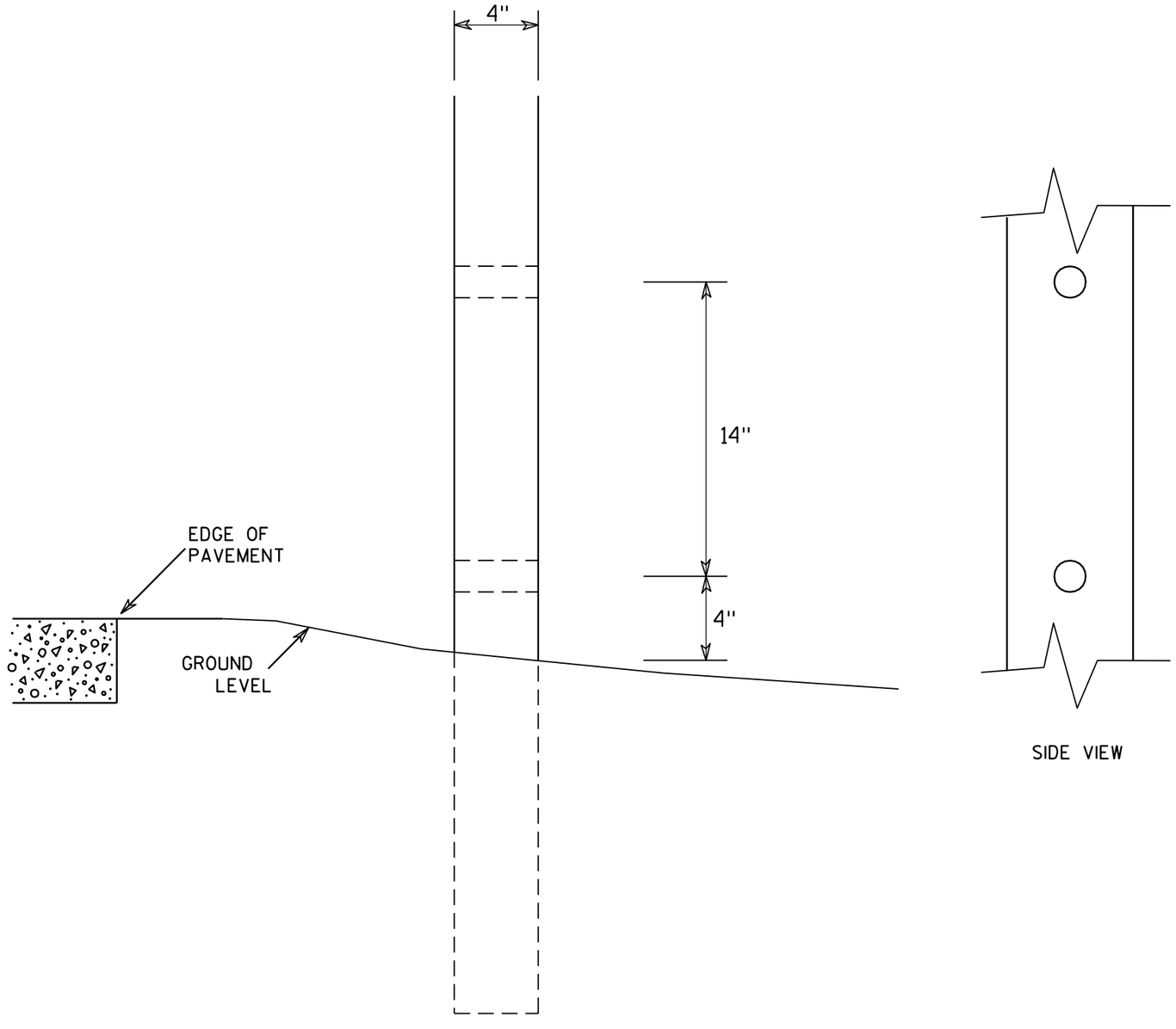
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE 40 A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



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.

7

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

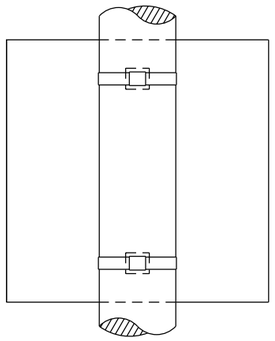
APPROVED Chester J Spang for State Traffic Engineer

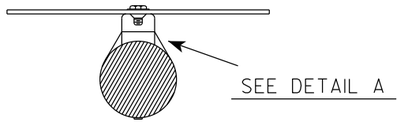
DATE 3/27/97 PLATE NO. A4-11.2

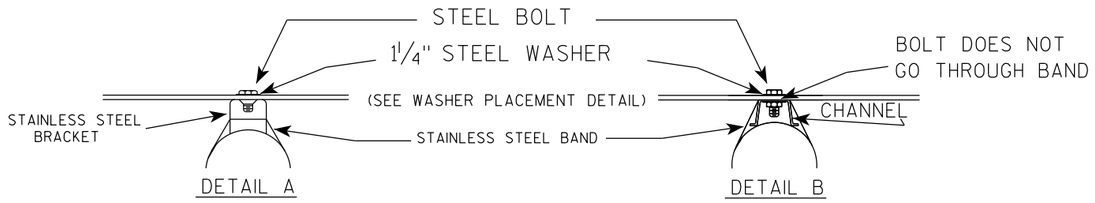
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 41	E

BANDING

SINGLE SIGN



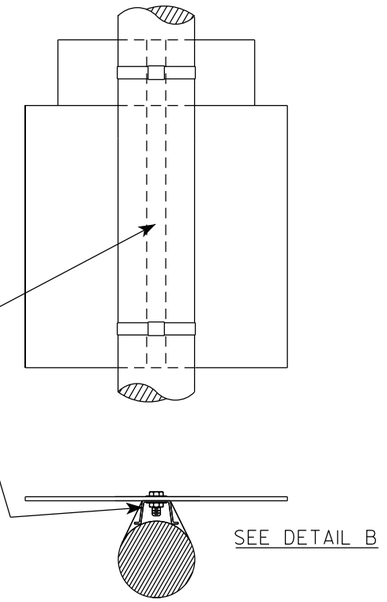




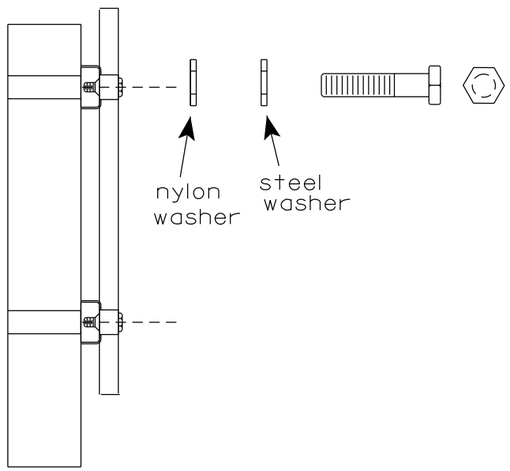
GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be ¾" in width and 0.025" thickness.
4. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
   a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
   b. Electro-galvanized in accordance with ASTM designation: B 633, Type III, SC 3

"J" ASSEMBLY



WASHER PLACEMENT



WASHERS (ALL POSTS) -
1-1/4" O.D. X ⅜" I.D. X 1/16" STEEL
1-1/4" O.D. X ⅜" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

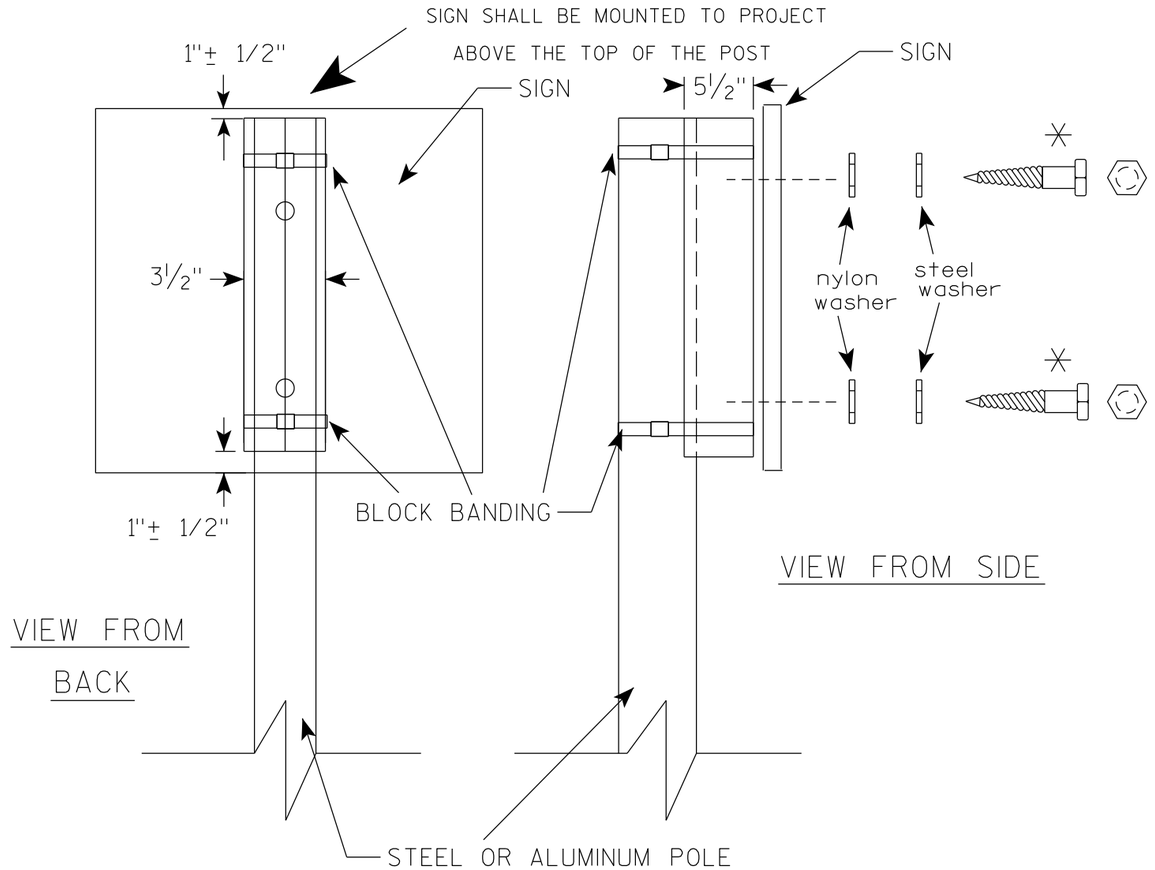
WISCONSIN DEPT OF TRANSPORTATION

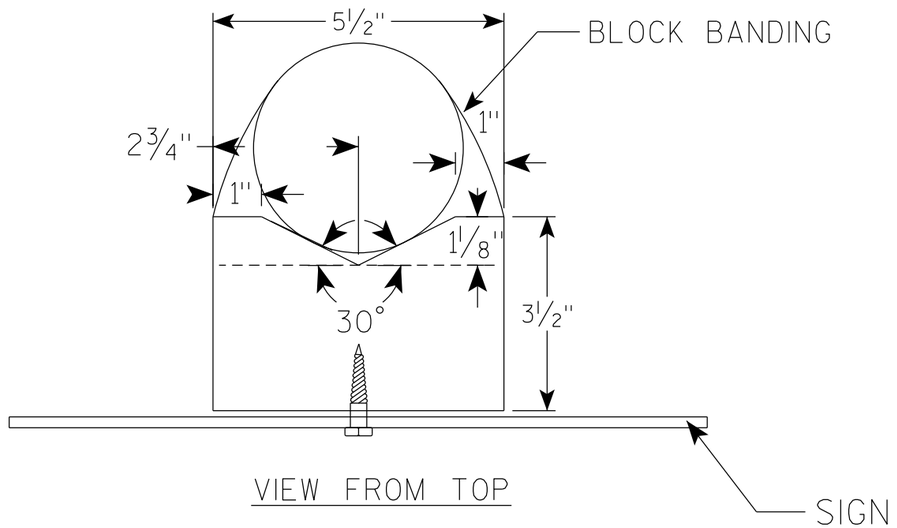
APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 42	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A59.dgn PLOT DATE : 10-JUN 2019 4:10 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42





GENERAL NOTES

1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WisDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, ¾" WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORNALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
   a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
   b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE 1¼" O.D. X ⅜" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1¼" O.D. X ⅜" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✳ LAG BOLTS SHALL BE ⅜" X 2½"

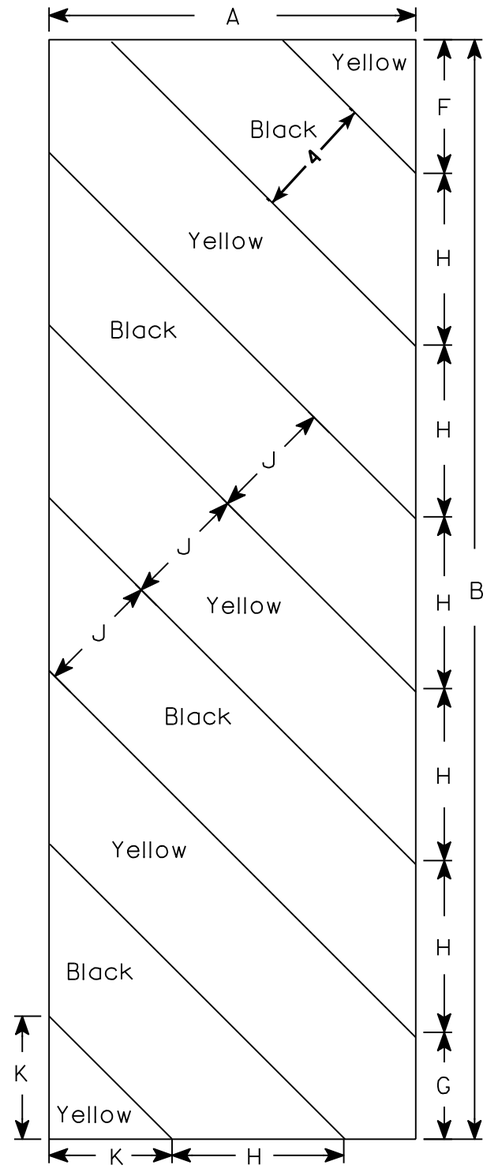
BLOCK BANDING DETAIL (V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

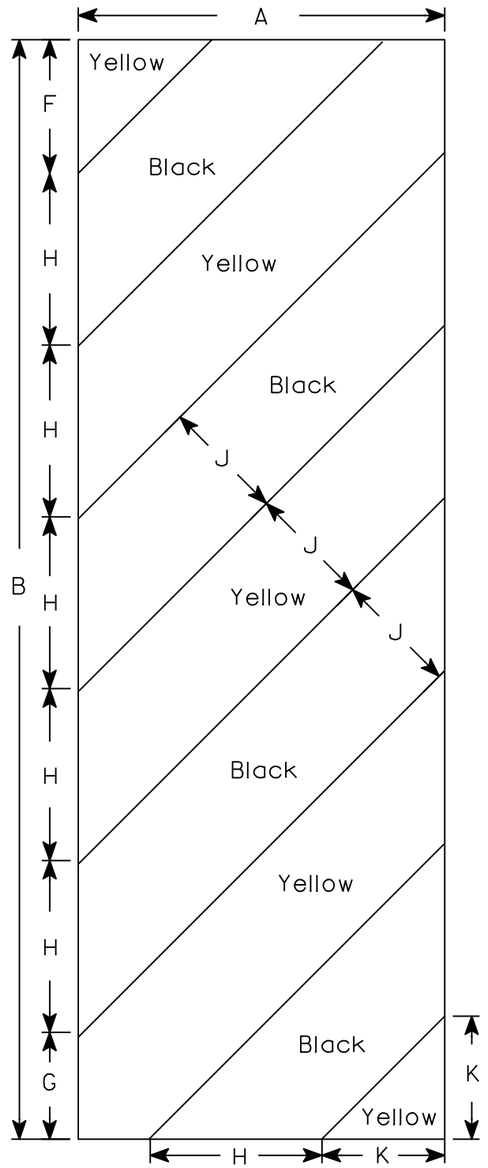
APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 6/10/19 PLATE NO. A5-10.2

PROJECT NO: | SHEET NO: 43 | E



W5-52L



W5-52R

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.

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

STANDARD SIGN

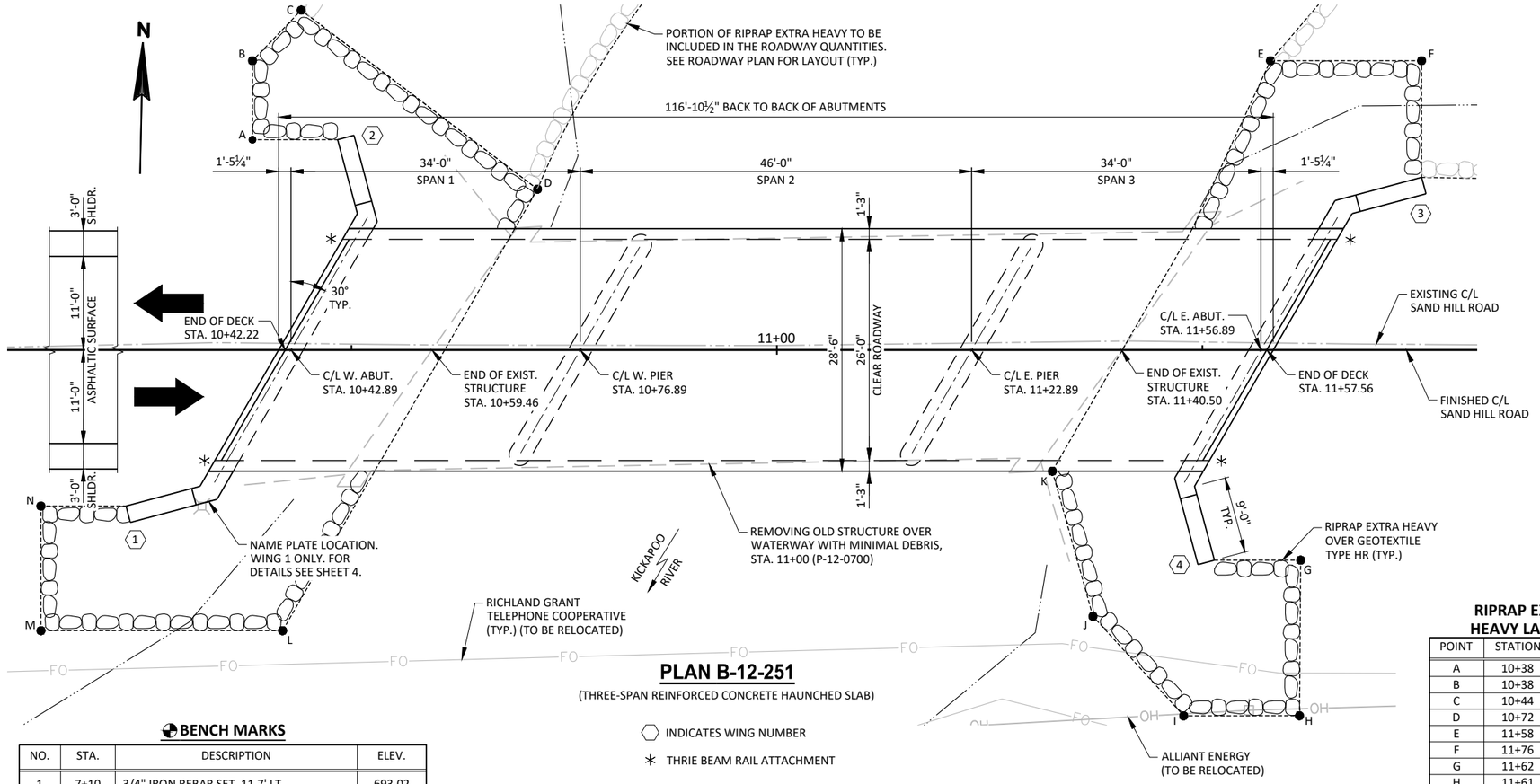
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 44	E



PLAN B-12-251

(THREE-SPAN REINFORCED CONCRETE HAUNCHED SLAB)

⬡ INDICATES WING NUMBER

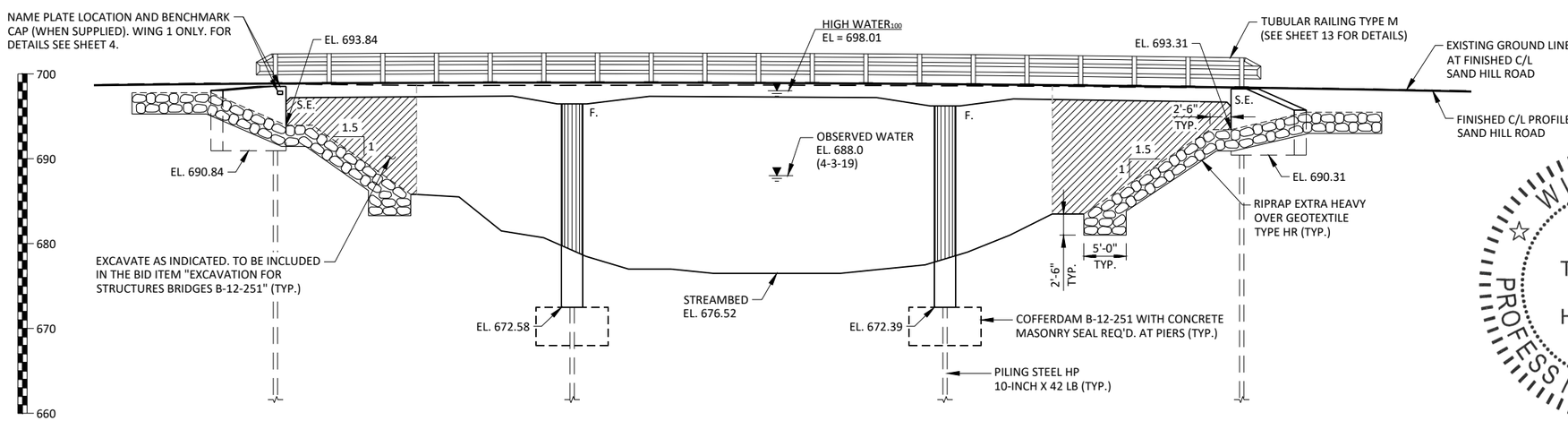
✳ THRIE BEAM RAIL ATTACHMENT

BENCH MARKS

NO.	STA.	DESCRIPTION	ELEV.
1	7+10	3/4" IRON REBAR SET, 11.7' LT.	693.02
2	10+24	3/4" IRON REBAR SET, 12.9' LT.	698.63
3	15+41	3/4" IRON REBAR SET, 11.8' LT.	693.02
5	11+55	COTTON GIN SPINDLE IN PPOL, 42.5' RT.	694.14

RIPRAP EXTRA HEAVY LAYOUT

POINT	STATION	OFFSET
A	10+38	25' LT.
B	10+38	34' LT.
C	10+44	40' LT.
D	10+72	19' LT.
E	11+58	34' LT.
F	11+76	34' LT.
G	11+62	25' RT.
H	11+61	43' RT.
I	11+48	43' RT.
J	11+37	31' RT.
K	11+32	14' RT.
L	10+42	33' RT.
M	10+14	33' RT.
N	10+14	18' RT.



ELEVATION

(NORMAL TO KICKAPOO RIVER)

STATE PROJECT NUMBER

5328-00-70

DESIGN DATA

LIVE LOAD:

DESIGN LOADING — HL-93
INVENTORY RATING FACTOR — RF=1.41
OPERATING RATING FACTOR — RF=1.82
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) — 250 KIPS

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

MATERIAL PROPERTIES:

CONCRETE MASONRY, SUPERSTRUCTURE — f'c = 4,000 P.S.I.
ALL OTHER — f'c = 3,500 P.S.I.
HIGH-STRENGTH BAR STEEL REINFORCEMENT, GRADE 60 — fy = 60,000 P.S.I.

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON PILING STEEL HP 10-INCH X 42 LB DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 90 TONS** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA AND PIERS TO BE SUPPORTED ON PILING STEEL HP 10-INCH X 42 LB DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 170 TONS** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATE 60 FT PILE LENGTHS AT ABUTMENTS AND PIERS.

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

TRAFFIC DATA

A.D.T. (2020) — 390
A.D.T. (2040) — 580
DESIGN SPEED — 40 M.P.H.

HYDRAULIC DATA

100 YEAR FREQUENCY
DRAINAGE AREA — 632 SQ. MI.
Q_{100} TOTAL — 15,200 C.F.S.
THROUGH STRUCTURE — 5,417 C.F.S.
OVERTOPPING ROADWAY — 9,783 C.F.S.
VELOCITY - THROUGH STRUCTURE — 4.3 F.P.S.
WATERWAY AREA - THROUGH STRUCTURE — 1271 SQ. FT.
HIGH WATER100 ELEVATION — 698.01
SCOUR CRITICAL CODE — 5

DESIGN ROADWAY OVERFLOW FREQUENCY
$Q_{1.2}$ — 1703 C.F.S.
HIGH WATER$_{1.2}$ ELEVATION — 692.98

EROSION CONTROL/COFFERDAM SEAL DESIGN
Q_2 — 3,230 C.F.S.
VELOCITY$_2$ — 1.78 F.P.S.
HIGH WATER$_2$ ELEVATION — 693.62

LIST OF DRAWINGS

NO.	DATE	REVISION	BY

JEWELL associates engineers, inc. — Engineers · Architects · Surveyors
560 SUNRISE DRIVE
SPRING GREEN, WI 53588
OFFICE: (608) 588-7484
www.jewellassoc.com

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR — 02/10/20
CHIEF STRUCTURES DESIGN ENGINEER — DATE

PATRICK T. BOLAND E-36303 HILLPOINT WIS PROFESSIONAL ENGINEER
Patrick Boland 1-7-2020

STRUCTURE B-12-251

SAND HILL ROAD OVER THE KICKAPOO RIVER

COUNTY: CRAWFORD — ~~TOWN/CITY~~/VILLAGE: BELL CENTER
DESIGN SPEC.: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
PTB	RBH	PTB	RBH

GENERAL PLAN

SHEET 1 OF 13
45

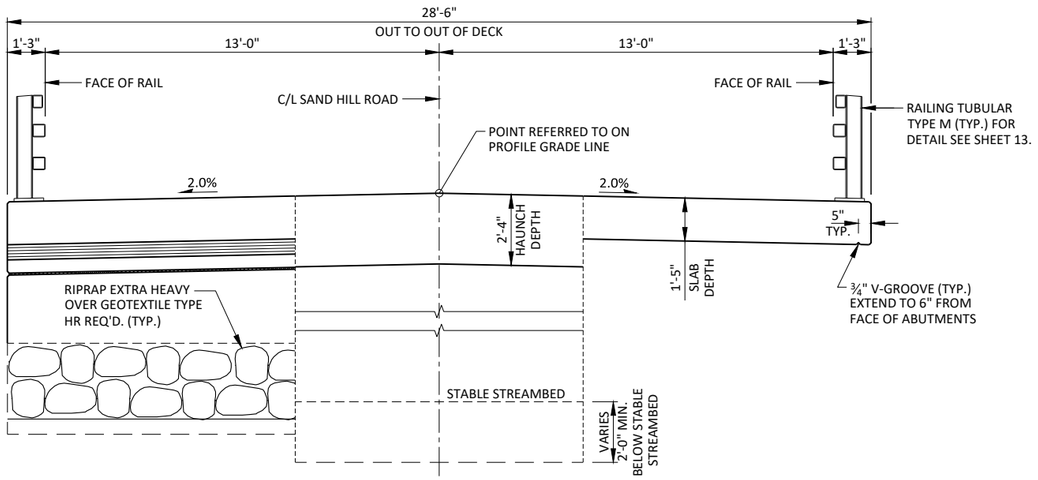
DESIGN CONSULTANT
PATRICK BOLAND, PE
(608) 588-7484

BRIDGE OFFICE CONTACT
WILLIAM DREHER, PE
(608) 266-8489

FILE NAME : S:\PROJECTS\C54545 CRAWFORD CO - SAND HILL ROAD BRIDGE REPLACEMENT\STRUCTURE\CAD FILES\FINALS\01 GENERAL PLAN.DWG
PLOT DATE : 1/7/2020 3:24:37 PM
PLOT BY : BOLAND, PATRICK
PLOT SCALE : 1" = 1'
LAYOUT : LAYOUT1

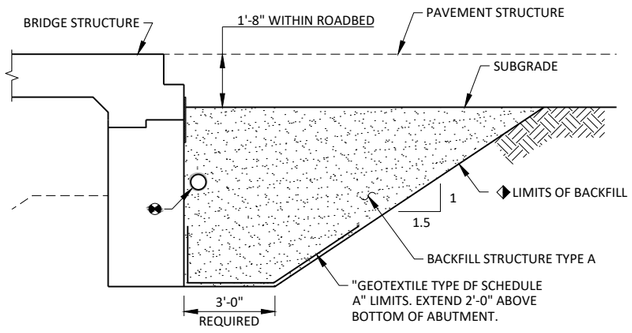
STATE PROJECT NUMBER

5328-00-70



PROPOSED CROSS-SECTION THROUGH ROADWAY

LOOKING EAST

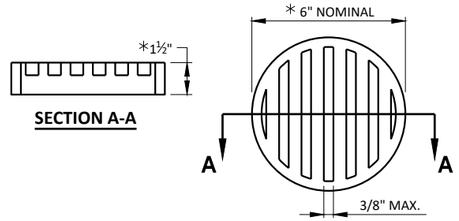


BACKFILL STRUCTURE DETAIL

(TYPICAL AT ABUTMENTS. ABUTMENT BODY SHOWN - WING WALLS SIMILAR)

◆ BACKFILL STRUCTURE TYPE A PAY LIMITS. BACKFILL BEYOND PAY LIMITS SHALL BE INCIDENTAL TO THE BID ITEM "EXCAVATION FOR STRUCTURES B-12-251". LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

◆ PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPED 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SCREEN AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON THIS SHEET. RODENT SCREEN TO BE INCLUDED IN THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH."



RODENT SCREEN

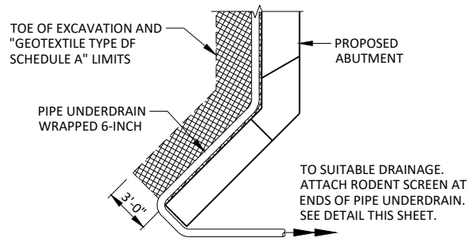
NOTES:

* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.

ORIENT SCREEN SO SLOTS ARE VERTICAL.

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

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



PIPE UNDERDRAIN DETAIL

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

JOINT FILLER SHALL CONFORM TO A.A.S.H.T.O. DESIGNATION MI53, TYPE I, II OR III OR A.A.S.H.T.O. DESIGNATION M213.

THE SLOPE OF FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP EXTRA HEAVY AND GEOTEXTILE TYPE HR TO THE EXTENT SHOWN ON SHEET 1 AND IN THE ABUTMENT DETAILS, OR AS DIRECTED BY THE ENGINEER IN THE FIELD.

AT THE BACK FACE OF ABUTMENTS, ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH BACKFILL STRUCTURE TYPE A. SEE THIS SHEET FOR DETAIL.

ANY EXCAVATION BELOW THE ABUTMENT AND ASSOCIATED ABUTMENT BEDDING MATERIALS REQUIRE THE APPROVAL OF THE ENGINEER IN THE FIELD.

APPLY PROTECTIVE SURFACE TREATMENT TO THE TOP OF THE DECK, THE SIDES OF THE DECK AND EXTERIOR 12" OF THE UNDERSIDE OF THE DECK (CONCRETE MATERIAL ONLY).

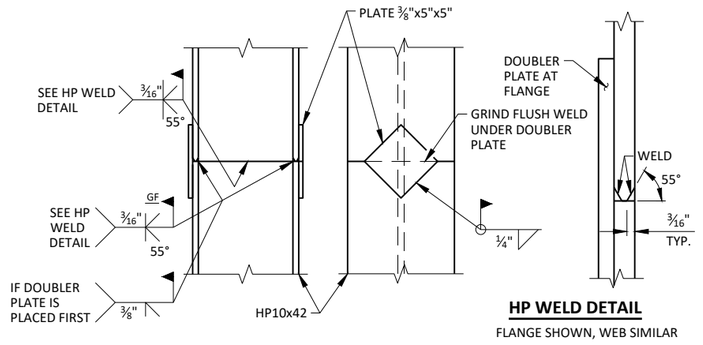
ALL STATIONS AND ELEVATIONS SHOWN ARE IN FEET.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-12-251" SHALL BE THE EXISTING GROUNDLINE.

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

THE FIRST DIGIT OF A BAR MARK SIGNIFIES THE BAR SIZE.

THE EXISTING STRUCTURE (P-12-700) IS A SINGLE SPAN STEEL DECK GIRDER STRUCTURE SUPPORTED ON TIMBER ABUTMENTS. THE STRUCTURE HAS A 26.4' BRIDGE WIDTH AND IS 81.0' LONG AND SHALL BE REMOVED.



PILE SPLICE DETAIL

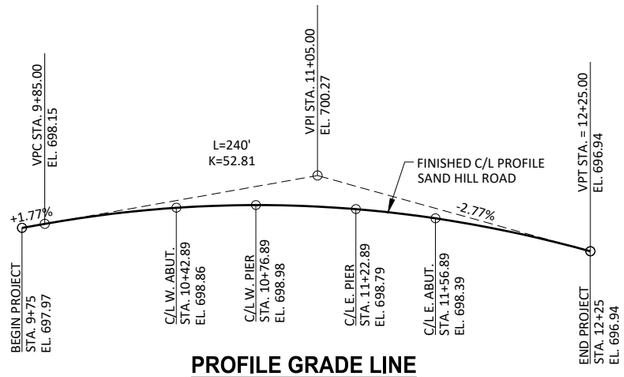
STEEL "HP" PILE MATERIAL SHALL BE ASTM A 572 GRADE 50.

HP WELD DETAIL

FLANGE SHOWN, WEB SIMILAR

TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	ITEM DESCRIPTION	UNIT	WEST ABUT.	WEST PIER	EAST PIER	EAST ABUT.	SUPER	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA. 11+00	LS	--	--	--	--	--	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-12-251	LS	--	--	--	--	--	1
206.5000	COFFERDAMS B-12-251	LS	--	--	--	--	--	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	140	--	--	140	--	280
502.0100	CONCRETE MASONRY BRIDGES	CY	31	67	67	31	200	396
502.1100	CONCRETE MASONRY SEAL	CY	--	52	52	--	--	104
502.3200	PROTECTIVE SURFACE TREATMENT	SY	--	--	--	--	430	430
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2,470	3,070	3,070	2,470	--	11,080
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,340	60	60	1,340	43,380	46,180
513.4061	RAILING TUBULAR TYPE M	LF	--	--	--	--	234	234
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	7	--	--	--	7	14
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	420	480	480	420	--	1,800
606.0400	RIPRAP EXTRA-HEAVY	CY	172	--	--	168	--	340
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	100	--	--	100	--	200
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	50	--	--	50	--	100
645.0120	GEOTEXTILE TYPE HR	SY	230	--	--	220	--	450
	NON-BID ITEMS							
	FILLER	SIZE						½" & ¾"
	NAME PLATE							



PROFILE GRADE LINE

SAND HILL ROAD

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-12-251

DRAWN BY PTB | PLANS CK'D. RBH

CROSS SECTIONS AND QUANTITIES

SHEET 2 OF 13

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8

8

STATE PROJECT NUMBER

5328-00-70

SOIL BORINGS

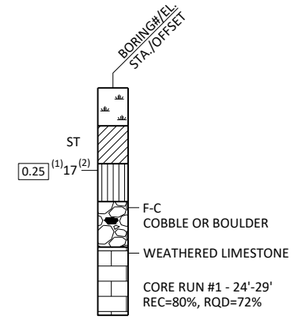
BORING NUMBER	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	05/28/19	209,806.21	400,303.05
2	05/30/19	209,792.99	400,293.33
3	05/29/19	209,805.27	400,213.05
4	05/29/19	209,791.96	400,198.33

BORINGS & REPORT COMPLETED BY: NUMMELIN TESTING SERVICES, INC.
5620 WOODLAND DRIVE
WAUNAKEE, WI 53597

MATERIAL SYMBOLS

Asphalt, Topsoil, Peat, Concrete, Fill, Gravel, Sand, Clay, Silt, Boulders or Cobbles, Limestone, Bedrock (unknown), Shale, Sandstone, Igneous/ meta

LEGEND OF BORING



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

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

GROUND WATER ELEVATIONS

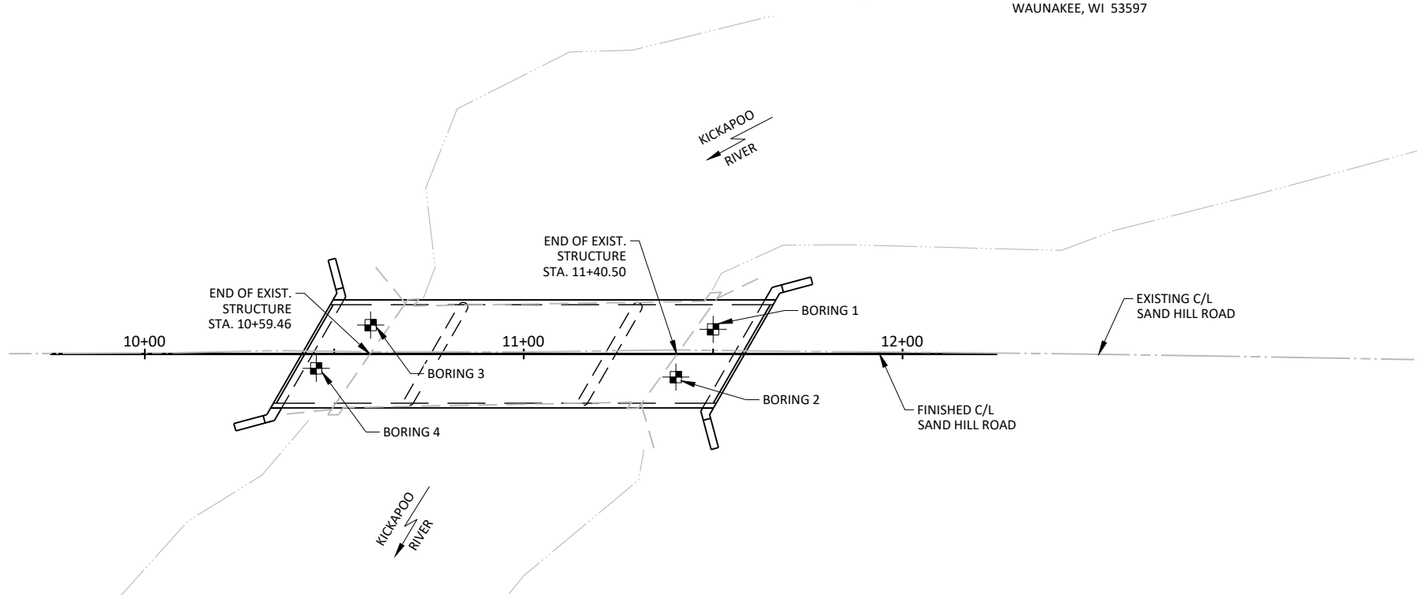
AT TIME OF DRILLING
END OF DRILLING
AFTER DRILLING

ABBREVIATIONS

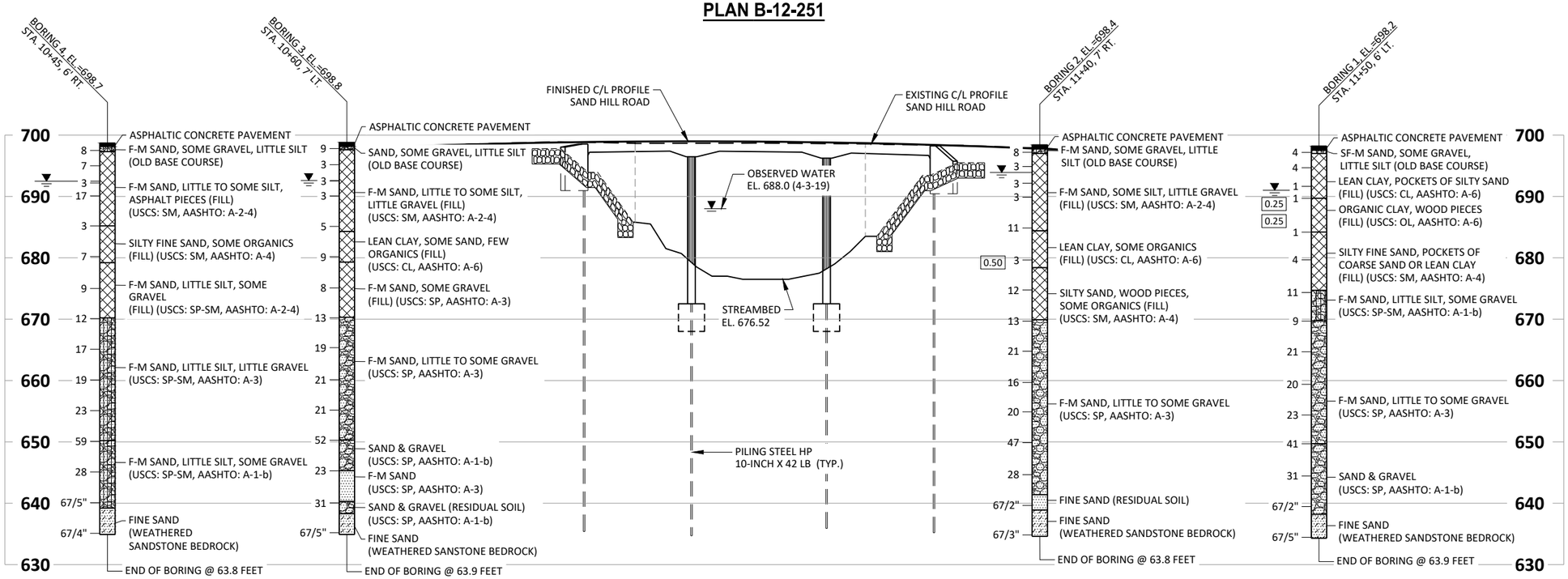
F-FINE M-MEDIUM C-COURSE ST-SHELBY TUBE

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.



PLAN B-12-251



NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-12-251

DRAWN BY PTB | PLANS CK'D. RBH

SUBSURFACE EXPLORATION

SHEET 3 OF 13

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8

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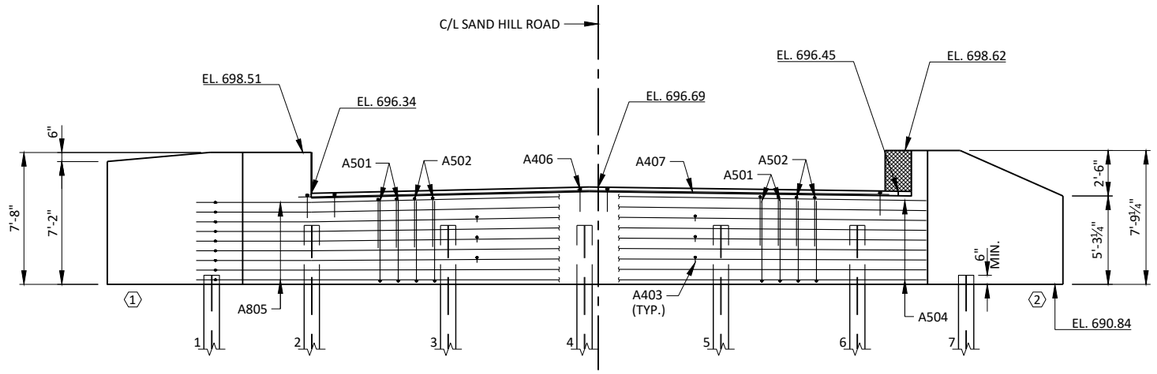
FILE NAME : S:\PROJECTS\C54545 CRAWFORD CO - SAND HILL ROAD BRIDGE REPLACEMENT\STRUCTURE\CAD FILES\FINALS\03 SUBSURFACE EXPLORATION.DWG

PLOT SCALE : 1" = 1'

LAYOUT : LAYOUT1

STATE PROJECT NUMBER

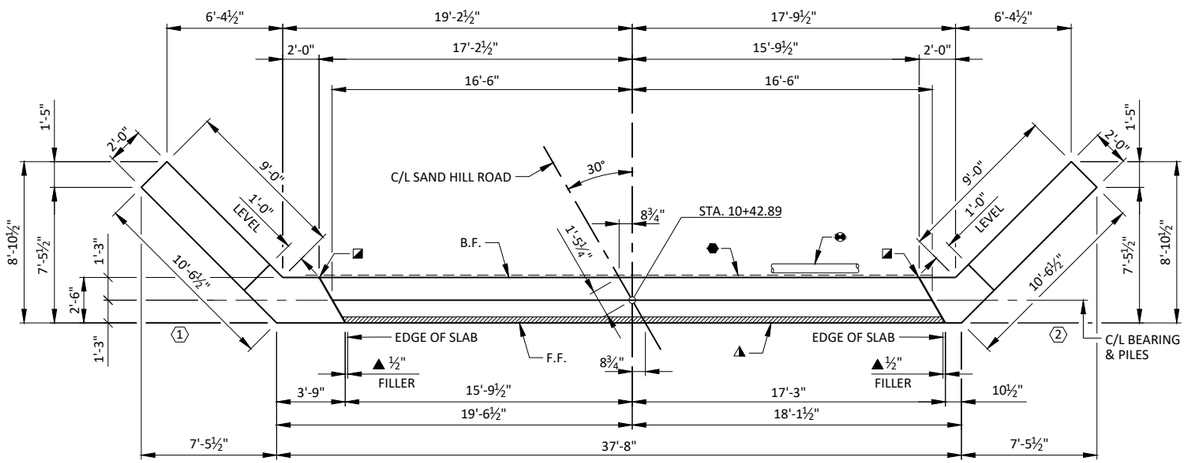
5328-00-70



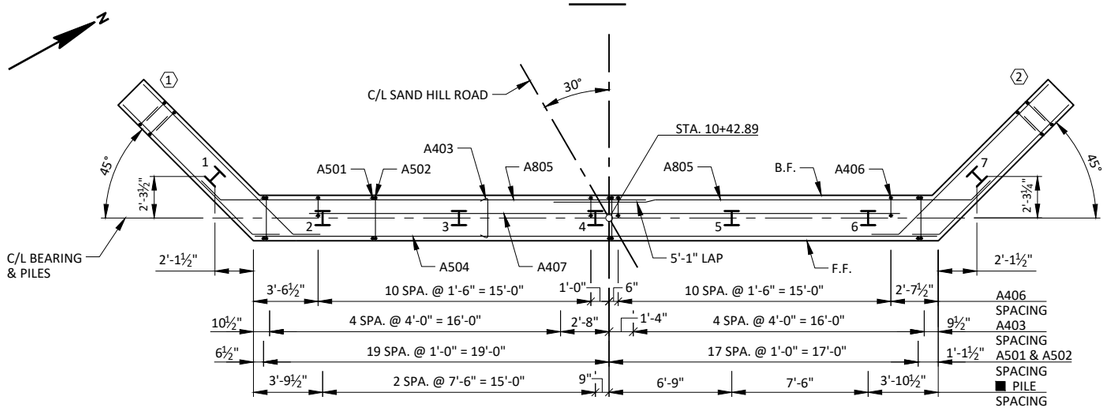
BACK FACE BAR STEEL REINF. **FRONT FACE BAR STEEL REINF.**

ELEVATION

(WEST ABUTMENT LOOKING WEST)



PLAN



LAYOUT

NOTES

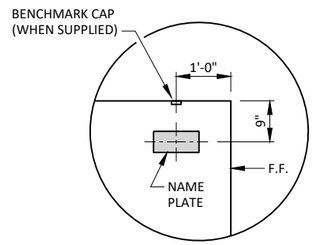
SOME BARS HAVE BEEN OMITTED FOR CLARITY. SEE SHEET 5 FOR BILL OF BARS.

DO NOT PLACE FILL HIGHER THAN 3 FEET FROM BOTTOM OF ABUTMENT UNTIL SUPERSTRUCTURE IS IN PLACE.

SPACE REINFORCEMENT TO MISS PILING

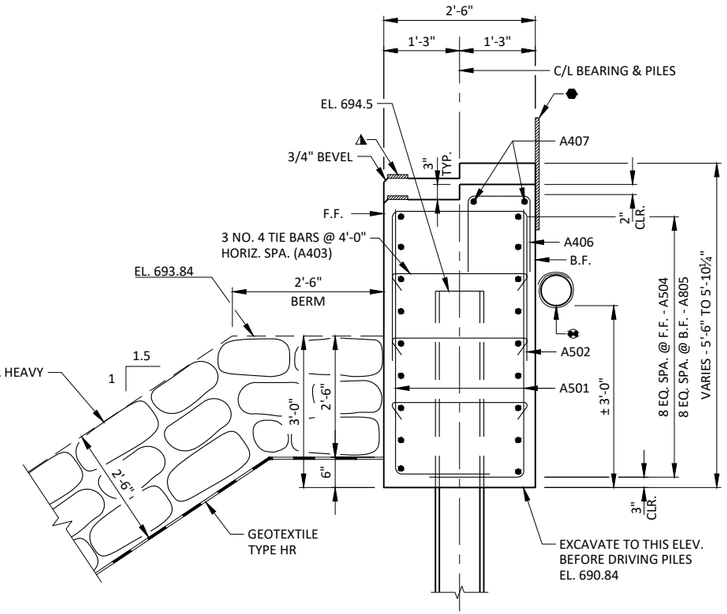
F.F. - FRONT FACE

B.F. - BACK FACE



NAME PLATE AND BENCHMARK CAP DETAIL

(WING 1 ONLY)



ABUTMENTS TO BE SUPPORTED ON PILING STEEL HP 10-INCH X 42 LB DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 90 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATE 60 FT PILE LENGTHS AT BOTH ABUTMENTS.

TYPICAL SECTION THROUGH ABUTMENT BODY

LEGEND

- ◪ VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING EXTEND FROM 9" BELOW BRIDGE SEAT TO 1" BELOW TOP OF WINGS.
- ⬣ 18" RUBBERIZED MEMBRANE WATERPROOFING. (HORIZONTAL)
- ▲ ½" FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINUOS JOINT SEALER. (1" DEEP & HOLD ⅛" BELOW SURFACE OF CONCRETE)
- ◭ ¾" x 4" PREFORMED FILLER, EXTEND FULL LENGTH OF ABUTMENTS BETWEEN EDGES OF SLAB.
- ■ PILE SPACING MEASURED AT BASE OF ABUTMENT BODY.
- ⬌ PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPED 0.5% MIN. TO SUITABLE DRAINAGE. SEE SHEET 2 FOR PIPE UNDERDRAIN DETAIL. ATTACH RODENT SCREEN AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 2. RODENT SCREEN TO BE INCLUDED IN THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH."

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-12-251

DRAWN BY PTB | PLANS CK'D. RBH

WEST ABUTMENT

SHEET 4 OF 13

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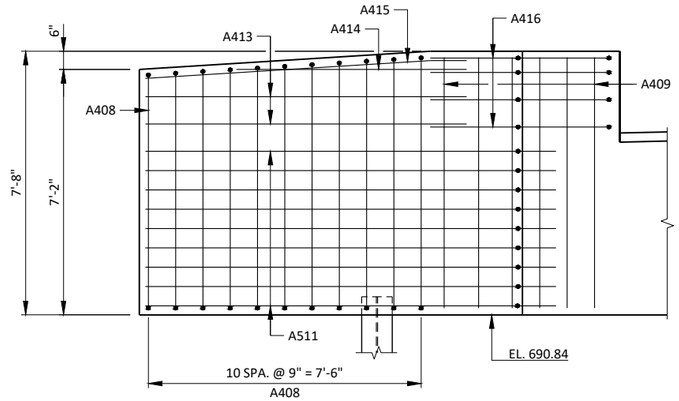
8

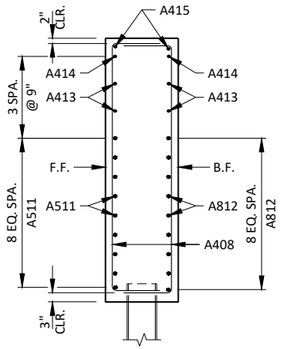
8

STATE PROJECT NUMBER

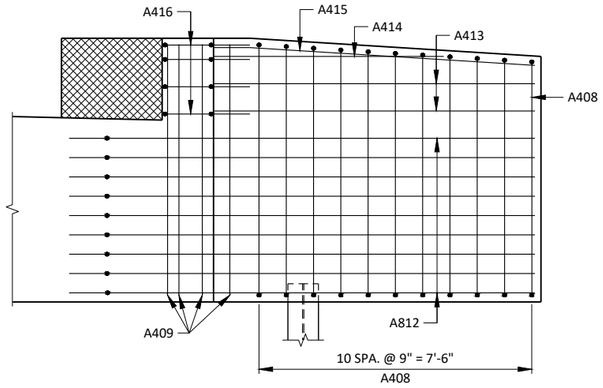
5328-00-70



F.F. ELEVATION - WING 1



SECTION A-A



B.F. ELEVATION - WING 1

BILL OF BARS
WEST ABUTMENT

1,340 LB (COATED)
2,470 LB (UNCOATED)

BAR MARK	NO. REQ'D.	LENGTH	BENT	COAT	BAR SERIES	LOCATION
A501	74	6-4	X			BODY - VERT. - F.F & B.F.
A502	37	7-3	X			BODY - VERT. - TOP
A403	30	2-8	X			TIE BARS
A504	9	37-6				BODY - HORIZ. - F.F.
A805	18	25-0	X			BODY - HORIZ. - B.F.
A406	22	3-3	X			BODY - VERT. - TOP
A407	2	32-6				BODY - HORIZ. - TOP
A408	22	9-6	X	X	⚹	WING 1 - VERT. - F.F. & B.F.
A409	10	7-3		X		WING 1 - VERT.
A410	1	3-4		X		WING 1 - VERT. - TOP
A511	9	11-9	X	X		WING 1 - HORIZ. - F.F.
A812	9	13-4	X	X		WING 1 - HORIZ. - B.F.
A413	4	8-10		X		WING 1 -HORIZ. - F.F. & B.F.
A414	2	5-0		X		WING 1 -HORIZ. - F.F. & B.F.
A415	2	8-10	X	X		WING 1 - HORIZ. - F.F. & B.F. - TOP
A416	4	11-3	X	X		WING 1 - HORIZ. - TOP
A417	22	8-7	X	X	⚹	WING 2 - VERT. - F.F. & B.F.
A418	7	7-4		X		WING 2 - VERT.
A419	1	3-4		X		WING 2 - VERT. - TOP
A520	9	11-9	X	X		WING 2 - HORIZ. - F.F.
A821	9	13-4	X	X		WING 2 - HORIZ. - B.F.
A422	2	6-7		X		WING 2 -HORIZ. - F.F. & B.F.
A423	2	4-2		X		WING 2 -HORIZ. - F.F. & B.F.
A424	2	1-10		X		WING 2 -HORIZ. - F.F. & B.F.
A425	2	9-3	X	X		WING 2 - HORIZ. - F.F. & B.F. - TOP
A426	4	8-4	X	X		WING 2 - HORIZ. - TOP

NOTES: THE FIRST DIGIT OF A BAR MARK SIGNIFIES THE BAR SIZE.

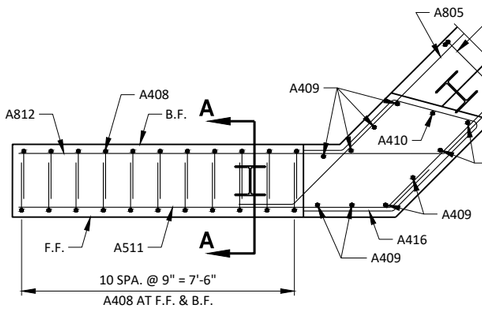
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

⚹ LENGTH SHOWN IS AN AVERAGE LENGTH ONLY. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
A408	2 SERIES OF 11	9-9 TO 9-3
A417	2 SERIES OF 11	9-9 TO 7-5

BUNDLE AND TAG EACH SERIES SEPARATELY.



PLAN VIEW - WING 1

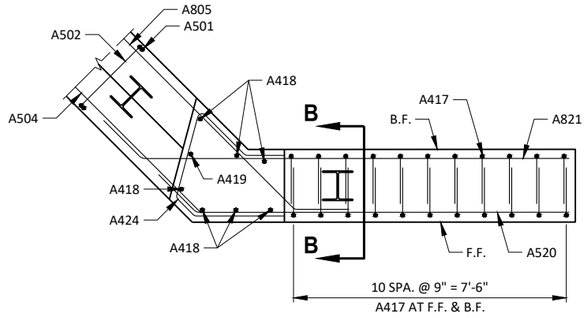
NOTES

SOME BARS HAVE BEEN OMITTED FOR CLARITY. SEE THIS SHEET FOR BILL OF BARS.

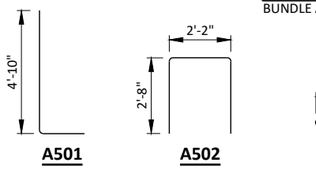
SPACE REINFORCEMENT TO MISS PILING

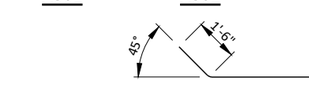
F.F. - FRONT FACE

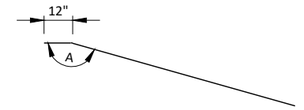
B.F. - BACK FACE



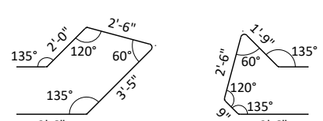
PLAN VIEW - WING 2

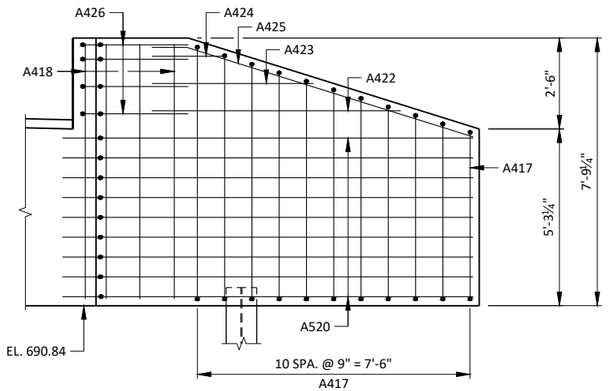




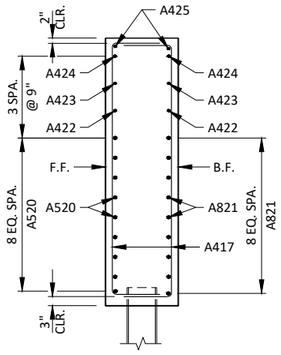


MARK	'A'
A415	176°25'
A425	162°39'

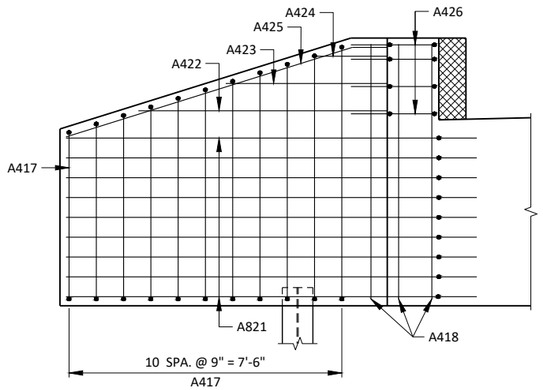




F.F. ELEVATION - WING 2



SECTION B-B



B.F. ELEVATION - WING 2

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-12-251

DRAWN BY PTB | PLANS CK'D. RBH

WEST ABUTMENT DETAILS

SHEET 5 OF 13

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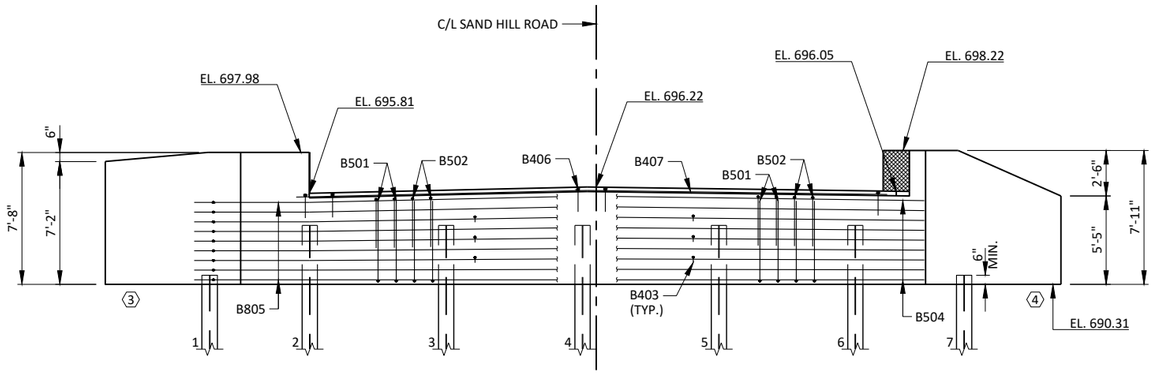
8

STATE PROJECT NUMBER

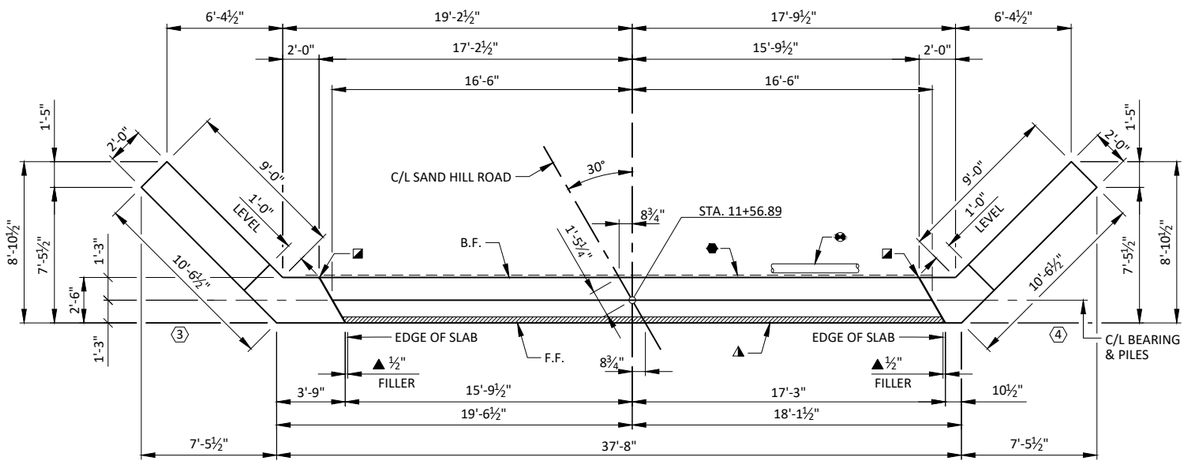
5328-00-70



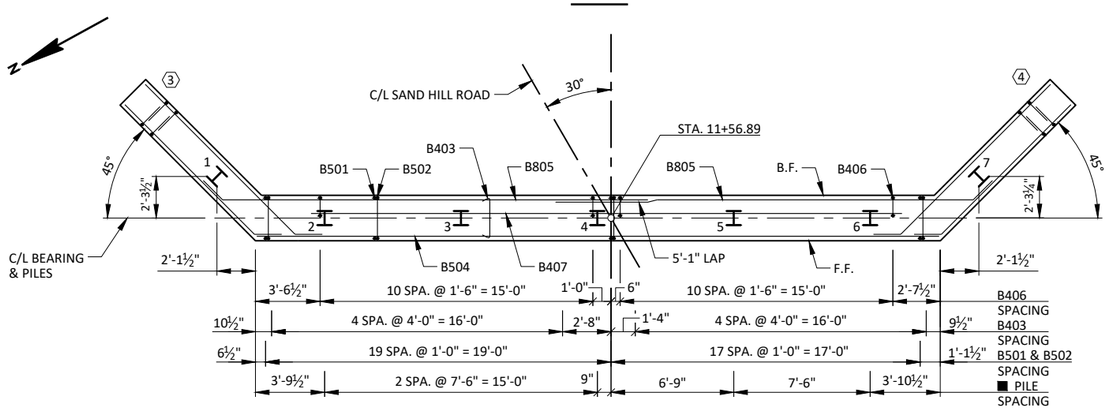
BACK FACE BAR STEEL REINF. **FRONT FACE BAR STEEL REINF.**

ELEVATION

(EAST ABUTMENT LOOKING EAST)



PLAN



LAYOUT

NOTES

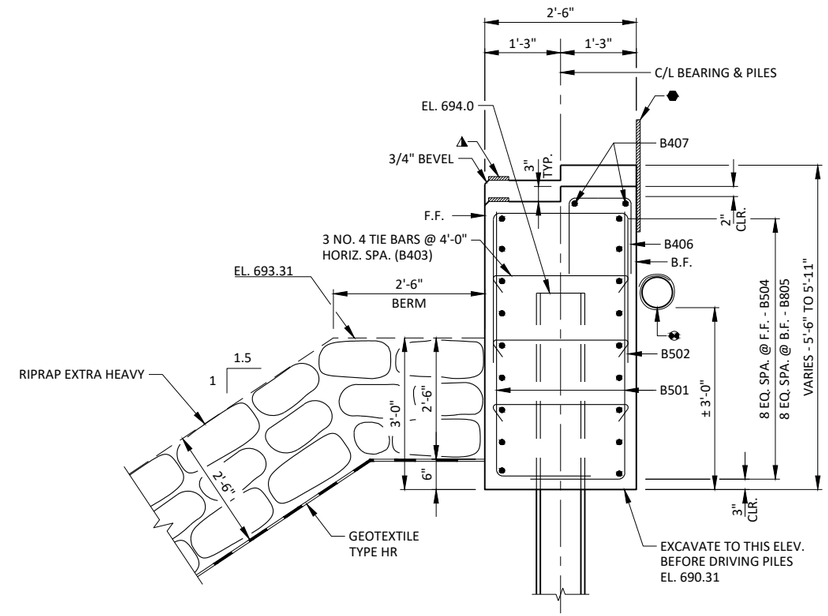
SOME BARS HAVE BEEN OMITTED FOR CLARITY. SEE SHEET 7 FOR BILL OF BARS.

DO NOT PLACE FILL HIGHER THAN 3 FEET FROM BOTTOM OF ABUTMENT UNTIL SUPERSTRUCTURE IS IN PLACE.

SPACE REINFORCEMENT TO MISS PILING

F.F. - FRONT FACE

B.F. - BACK FACE



ABUTMENTS TO BE SUPPORTED ON PILING STEEL HP 10-INCH X 42 LB DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 90 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATE 60 FT PILE LENGTHS AT BOTH ABUTMENTS.

TYPICAL SECTION THROUGH ABUTMENT BODY

LEGEND

- ◪ VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING EXTEND FROM 9" BELOW BRIDGE SEAT TO 1" BELOW TOP OF WINGS.
- ⬣ 18" RUBBERIZED MEMBRANE WATERPROOFING. (HORIZONTAL)
- ▲ ½" FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINUOS JOINT SEALER. (1" DEEP & HOLD ⅛" BELOW SURFACE OF CONCRETE)
- ◭ ¾" x 4" PREFORMED FILLER, EXTEND FULL LENGTH OF ABUTMENTS BETWEEN EDGES OF SLAB.
- ■ PILE SPACING MEASURED AT BASE OF ABUTMENT BODY.
- ⬌ PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPED 0.5% MIN. TO SUITABLE DRAINAGE. SEE SHEET 2 FOR PIPE UNDERDRAIN DETAIL. ATTACH RODENT SCREEN AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 2. RODENT SCREEN TO BE INCLUDED IN THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH."

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-12-251

DRAWN BY PTB | PLANS CK'D. RBH

EAST ABUTMENT

SHEET 6 OF 13

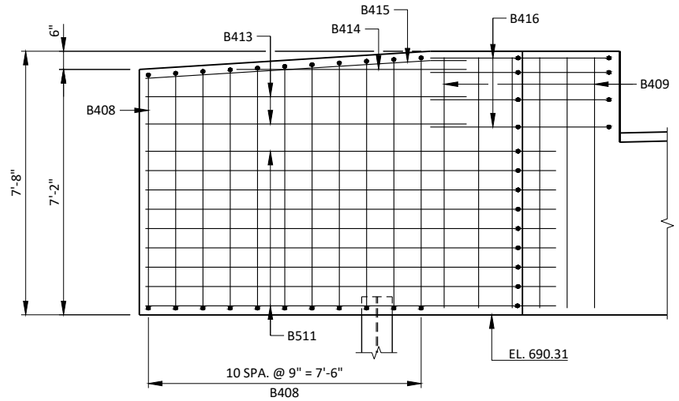
50

8

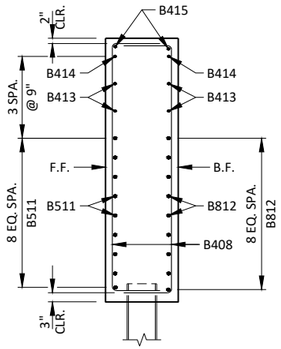
8

STATE PROJECT NUMBER

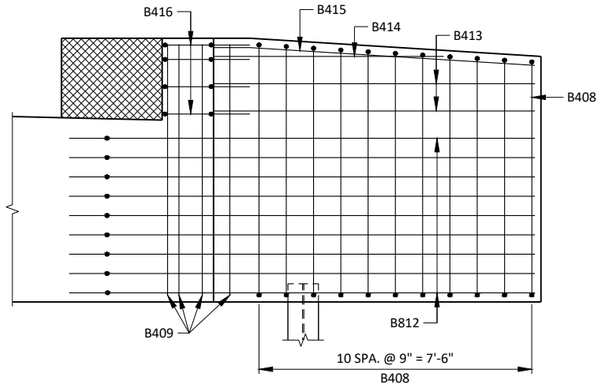
5328-00-70



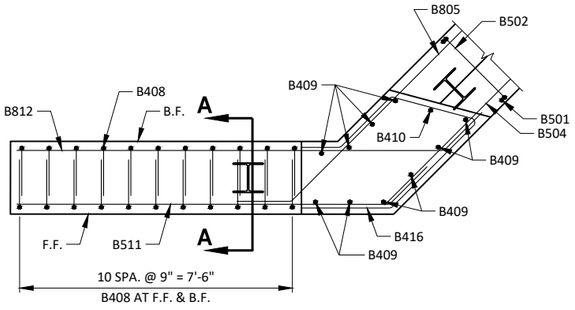
F.F. ELEVATION - WING 3



SECTION A-A



B.F. ELEVATION - WING 3



PLAN VIEW - WING 3

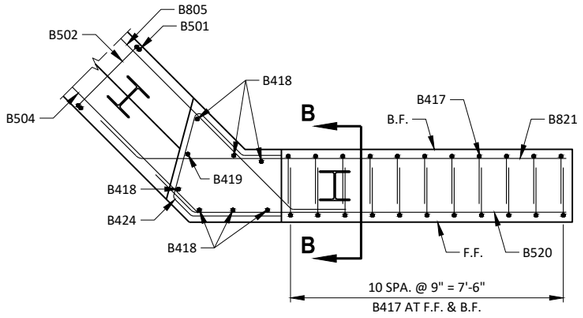
NOTES

SOME BARS HAVE BEEN OMITTED FOR CLARITY. SEE THIS SHEET FOR BILL OF BARS.

SPACE REINFORCEMENT TO MISS PILING

F.F. - FRONT FACE

B.F. - BACK FACE



PLAN VIEW - WING 4

BILL OF BARS
EAST ABUTMENT

1,340 LB (COATED)
2,470 LB (UNCOATED)

BAR MARK	NO. REQ'D.	LENGTH	BENT	COAT	BAR SERIES	LOCATION
B501	74	6-4	X			BODY - VERT. - F.F & B.F.
B502	37	7-3	X			BODY - VERT. - TOP
B403	30	2-8	X			TIE BARS
B504	9	37-6				BODY - HORIZ. - F.F.
B805	18	25-0	X			BODY - HORIZ. - B.F.
B406	22	3-3	X			BODY - VERT. - TOP
B407	2	32-6				BODY - HORIZ. - TOP
B408	22	9-6	X	X	⚹	WING 3 - VERT. - F.F. & B.F.
B409	10	7-3		X		WING 3 - VERT.
B410	1	3-4		X		WING 3 - VERT. - TOP
B511	9	11-9	X	X		WING 3 - HORIZ. - F.F.
B812	9	13-4	X	X		WING 3 - HORIZ. - B.F.
B413	4	8-10		X		WING 3 -HORIZ. - F.F. & B.F.
B414	2	5-0		X		WING 3 -HORIZ. - F.F. & B.F.
B415	2	8-10	X	X		WING 3 - HORIZ. - F.F. & B.F. - TOP
B416	4	11-3	X	X		WING 3 - HORIZ. - TOP
B417	22	8-9	X	X	⚹	WING 4 - VERT. - F.F. & B.F.
B418	7	7-6		X		WING 4 - VERT.
B419	1	3-4		X		WING 4 - VERT. - TOP
B520	9	11-9	X	X		WING 4 - HORIZ. - F.F.
B821	9	13-4	X	X		WING 4 - HORIZ. - B.F.
B422	2	7-1		X		WING 4 -HORIZ. - F.F. & B.F.
B423	2	4-9		X		WING 4 -HORIZ. - F.F. & B.F.
B424	2	2-4		X		WING 4 -HORIZ. - F.F. & B.F.
B425	2	9-3	X	X		WING 4 - HORIZ. - F.F. & B.F. - TOP
B426	4	8-4	X	X		WING 4 - HORIZ. - TOP

NOTES: THE FIRST DIGIT OF A BAR MARK SIGNIFIES THE BAR SIZE.

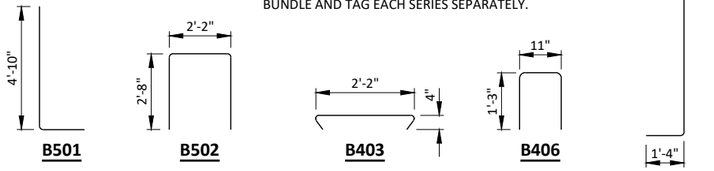
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

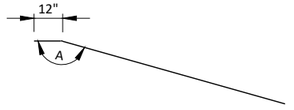
⚹ LENGTH SHOWN IS AN AVERAGE LENGTH ONLY. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

BAR SERIES TABLE

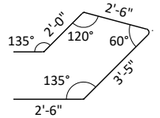
BAR MARK	NO. REQ'D.	LENGTH
B408	2 SERIES OF 11	9-9 TO 9-3
B417	2 SERIES OF 11	9-11 TO 7-7

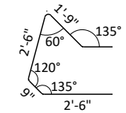
BUNDLE AND TAG EACH SERIES SEPARATELY.

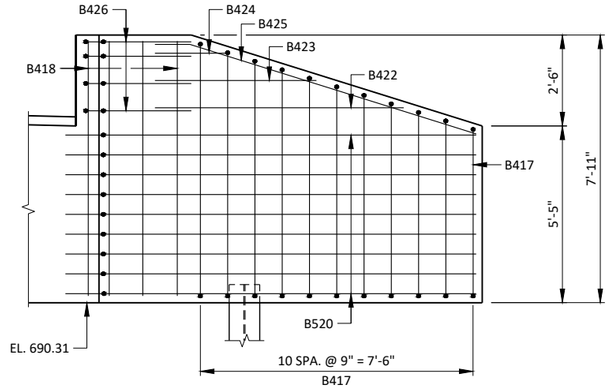




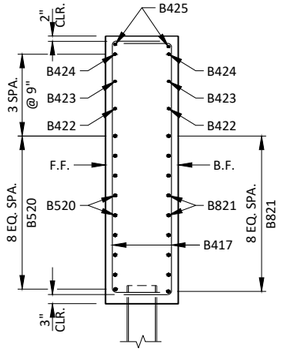
MARK	'A'
B415	176°25'
B425	162°39'



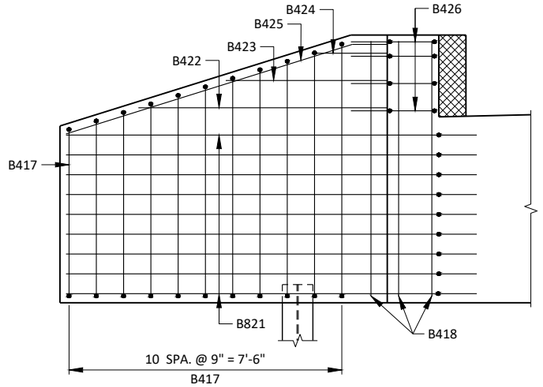




F.F. ELEVATION - WING 4



SECTION B-B



B.F. ELEVATION - WING 4

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-12-251

DRAWN BY PTB | PLANS CK'D. RBH

EAST ABUTMENT DETAILS

SHEET 7 OF 13

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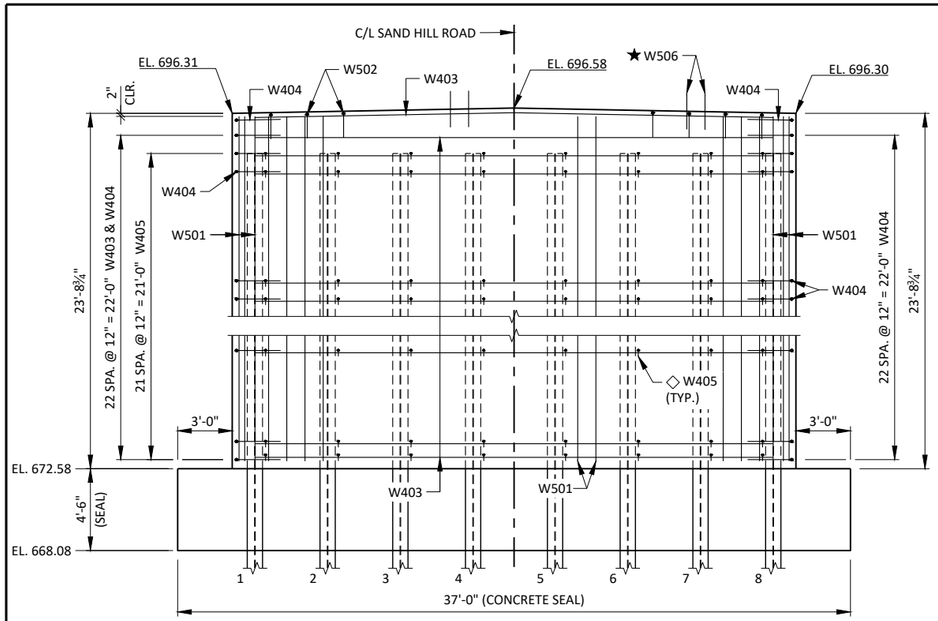
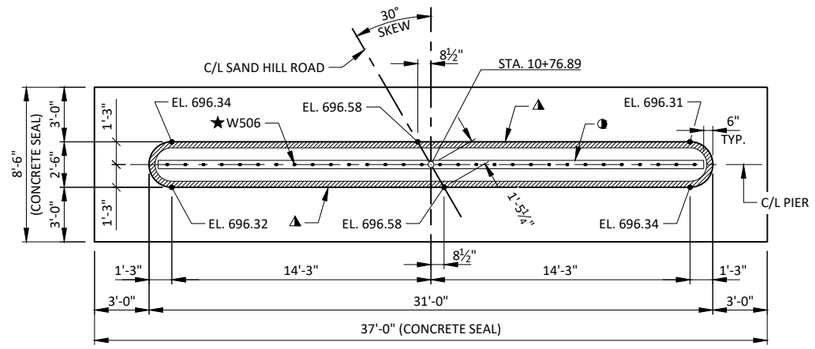
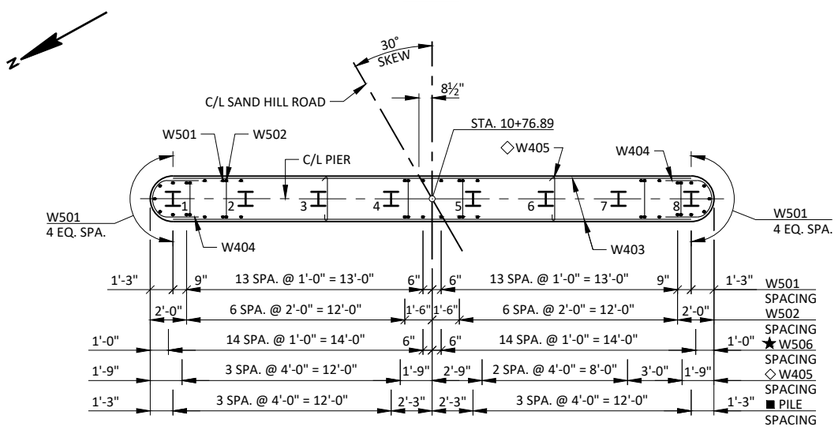


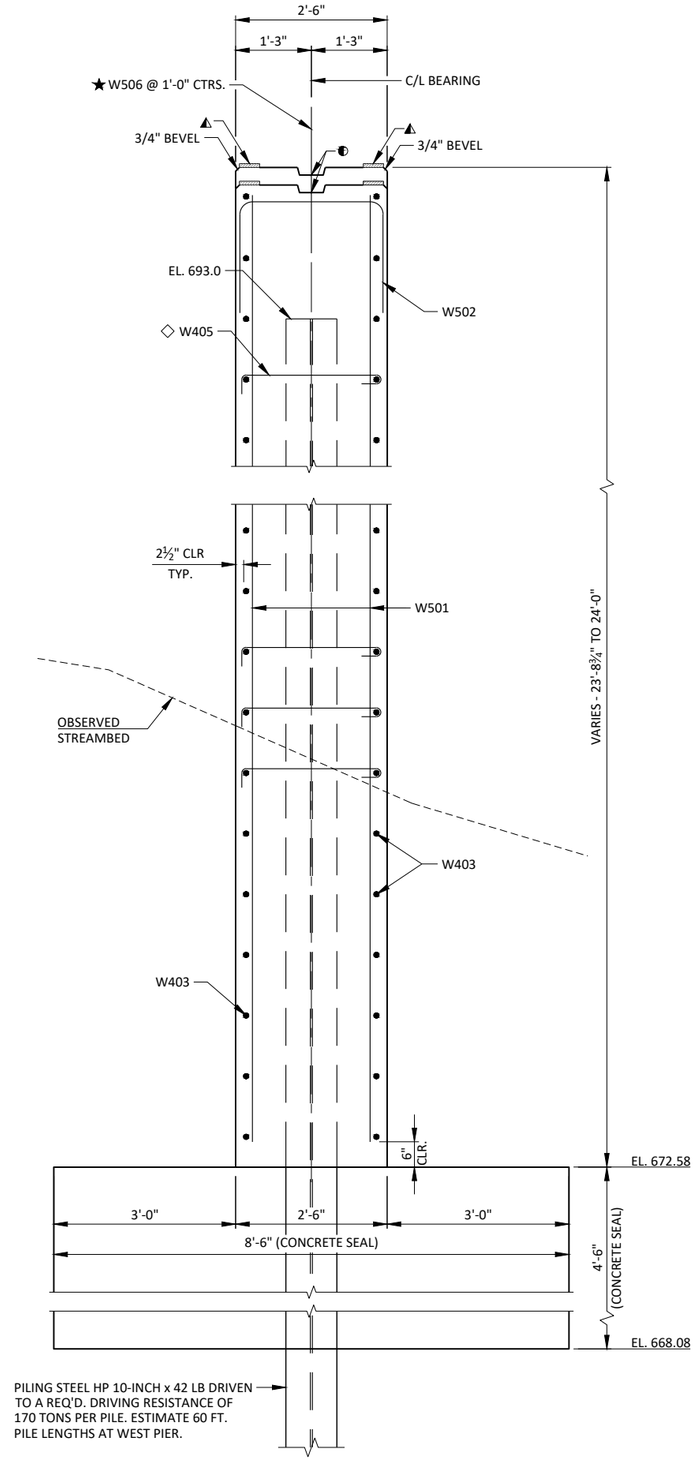
ELEVATION
(PIER LOOKING EAST)



PLAN



LAYOUT



TYPICAL SECTION THROUGH PIER

STATE PROJECT NUMBER

5328-00-70

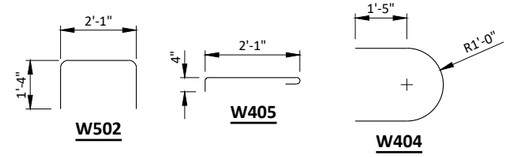
BILL OF BARS
WEST PIER

60 LB (COATED)
3,070 LB (UNCOATED)

	BAR MARK	NO. REQ'D.	LENGTH	BENT	COAT	LOCATION
	W501	66	23-0			BODY - VERT. - E.F. & ENDS
	W502	14	4-6	X		BODY - VERT. - TOP
	W403	48	28-6			BODY - HORIZ. - E.F.
	W404	48	6-0	X		BODY - HORIZ. - ENDS
◇	W405	176	2-8	X		TIE BARS
★	W506	30	2-0		X	BODY - VERT. - DOWELS

NOTES: THE FIRST DIGIT OF A BAR MARK SIGNIFIES THE BAR SIZE.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.



NOTES

AT WEST PIER COFFERDAM AND COFFERDAM DEWATERING REQUIRED. COFFERDAM SHALL BE DEWATERED PRIOR TO PLACING PIER CONCRETE.

SOME BARS HAVE BEEN OMITTED FOR CLARITY. SEE THIS SHEET FOR BILL OF BARS.

SEAT ELEVATIONS SHOWN IN THE ELEVATION VIEW ARE TAKEN AT THE C/L OF BEARING, NEGLECTING THE KEYED CONSTRUCTION JOINT.

TOP OF PIER ELEVATIONS ARE ¾" BELOW BOTTOM OF DECK TO ALLOW FOR FILLER.

E.F. - EACH FACE

LEGEND

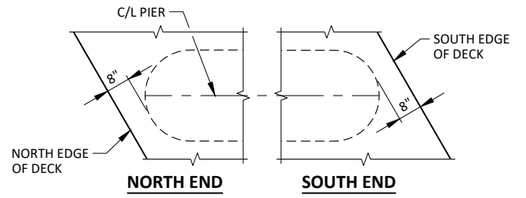
◑ KEYED CONSTRUCTION JOINT FORMED BY SURFACED & BEVELED 2x6.

◭ ¾"x4" PREFORMED FILLER, EXTEND FULL LENGTH OF PIER AS SHOWN.

★ W506 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE IT HAS TAKEN ITS INITIAL SET. EMBED BAR 1'-0".

■ PILE SPACING MEASURED AT BASE OF SHAFT.

◇ PLACE W405 BARS ADJACENT TO PILING @ 12" VERTICAL SPACING FROM BASE OF SHAFT TO TOP OF PILING.



PLAN AT END OF PIER

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-12-251

DRAWN BY PTB | PLANS CK'D. RBH

WEST PIER

SHEET 8 OF 13

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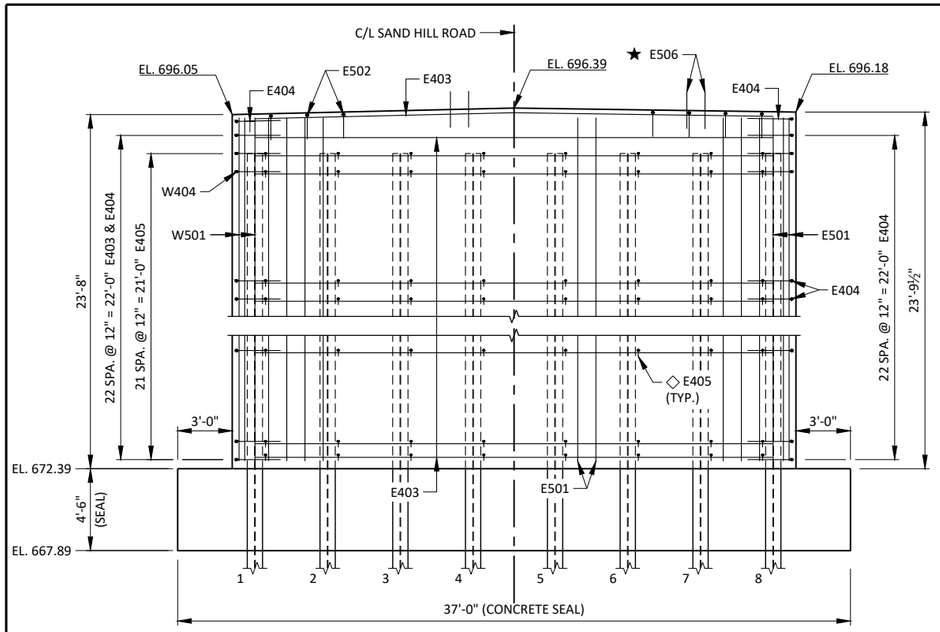
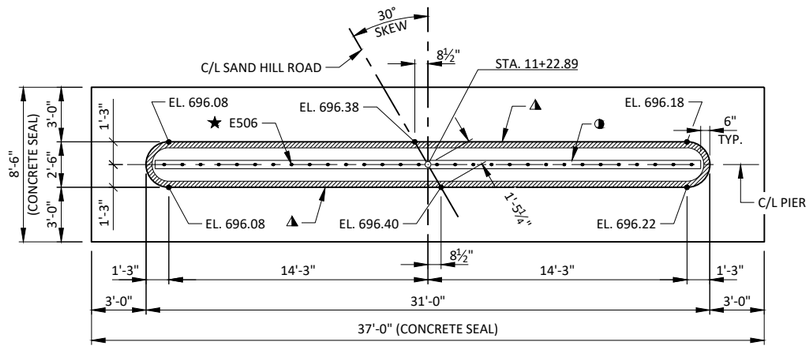
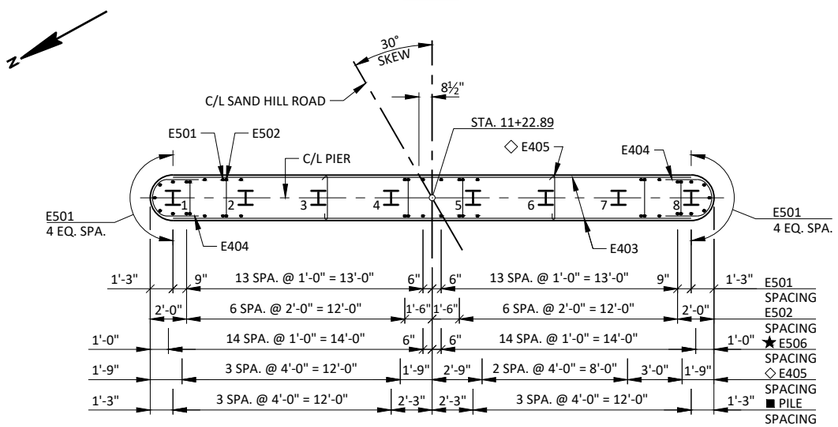


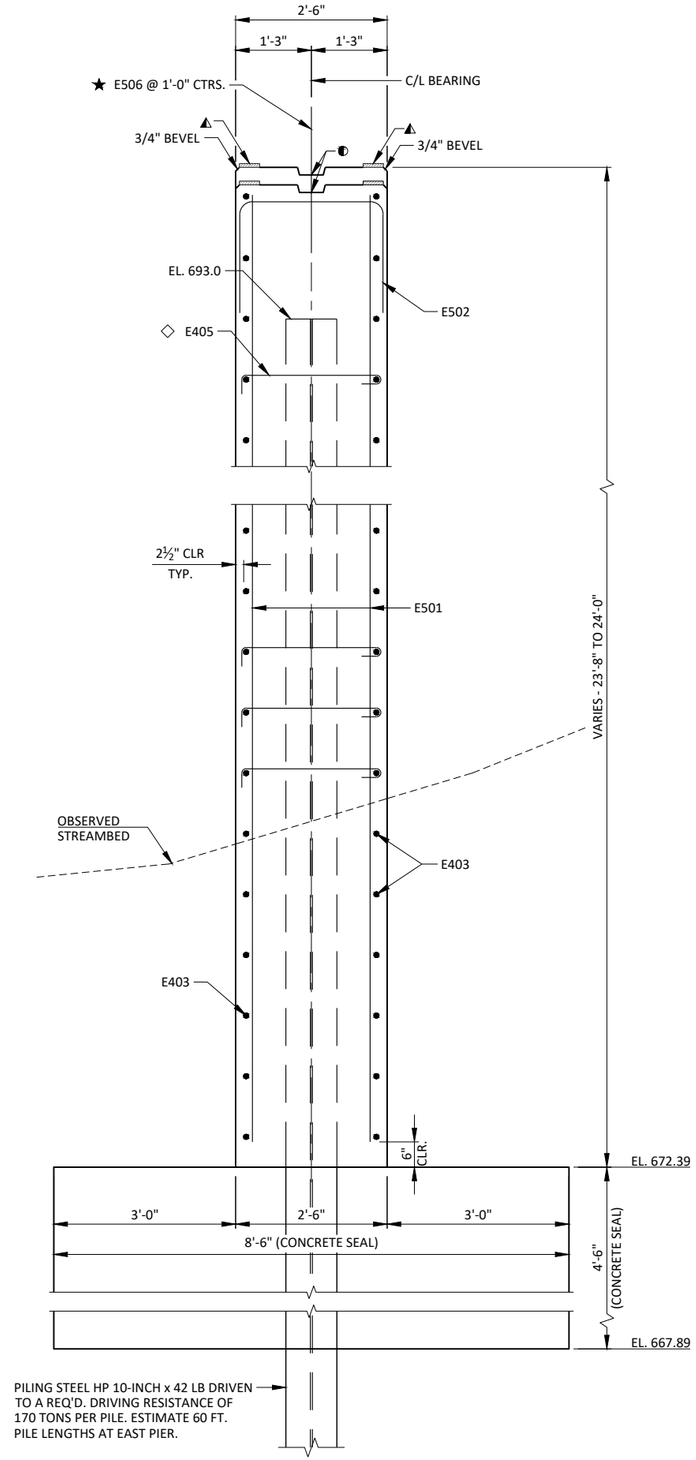
ELEVATION
(PIER LOOKING EAST)



PLAN



LAYOUT



TYPICAL SECTION THROUGH PIER

STATE PROJECT NUMBER

5328-00-70

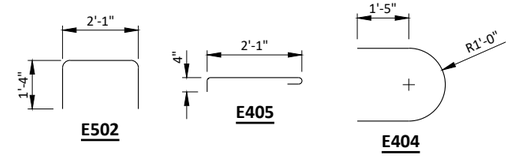
BILL OF BARS
EAST PIER

60 LB (COATED)
3,070 LB (UNCOATED)

	BAR MARK	NO. REQ'D.	LENGTH	BENT	COAT	LOCATION
	E501	66	23-0			BODY - VERT. - E.F. & ENDS
	E502	14	4-6	X		BODY - VERT. - TOP
	E403	48	28-6			BODY - HORIZ. - E.F.
	E404	48	6-0	X		BODY - HORIZ. - ENDS
◇	E405	176	2-8	X		TIE BARS
★	E506	30	2-0		X	BODY - VERT. - DOWELS

NOTES: THE FIRST DIGIT OF A BAR MARK SIGNIFIES THE BAR SIZE.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.



NOTES

AT EAST PIER COFFERDAM AND COFFERDAM DEWATERING REQUIRED. COFFERDAM SHALL BE DEWATERED PRIOR TO PLACING PIER CONCRETE.

SOME BARS HAVE BEEN OMITTED FOR CLARITY. SEE THIS SHEET FOR BILL OF BARS.

SEAT ELEVATIONS SHOWN IN THE ELEVATION VIEW ARE TAKEN AT THE C/L OF BEARING, NEGLECTING THE KEYED CONSTRUCTION JOINT.

TOP OF PIER ELEVATIONS ARE ¾" BELOW BOTTOM OF DECK TO ALLOW FOR FILLER.

E.F. - EACH FACE

LEGEND

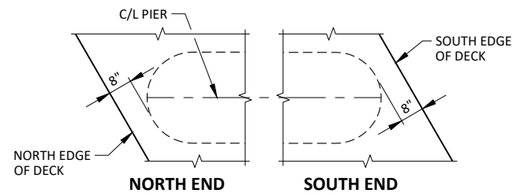
◑ KEYED CONSTRUCTION JOINT FORMED BY SURFACED & BEVELED 2x6.

◭ ¾"x4" PREFORMED FILLER, EXTEND FULL LENGTH OF PIER AS SHOWN.

★ E506 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE IT HAS TAKEN ITS INITIAL SET. EMBED BAR 1'-0".

■ PILE SPACING MEASURED AT BASE OF SHAFT.

◇ PLACE E405 BARS ADJACENT TO PILING @ 12" VERTICAL SPACING FROM BASE OF SHAFT TO TOP OF PILING.



PLAN AT END OF PIER

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-12-251

DRAWN BY: PTB | PLANS CK'D.: RBH

EAST PIER

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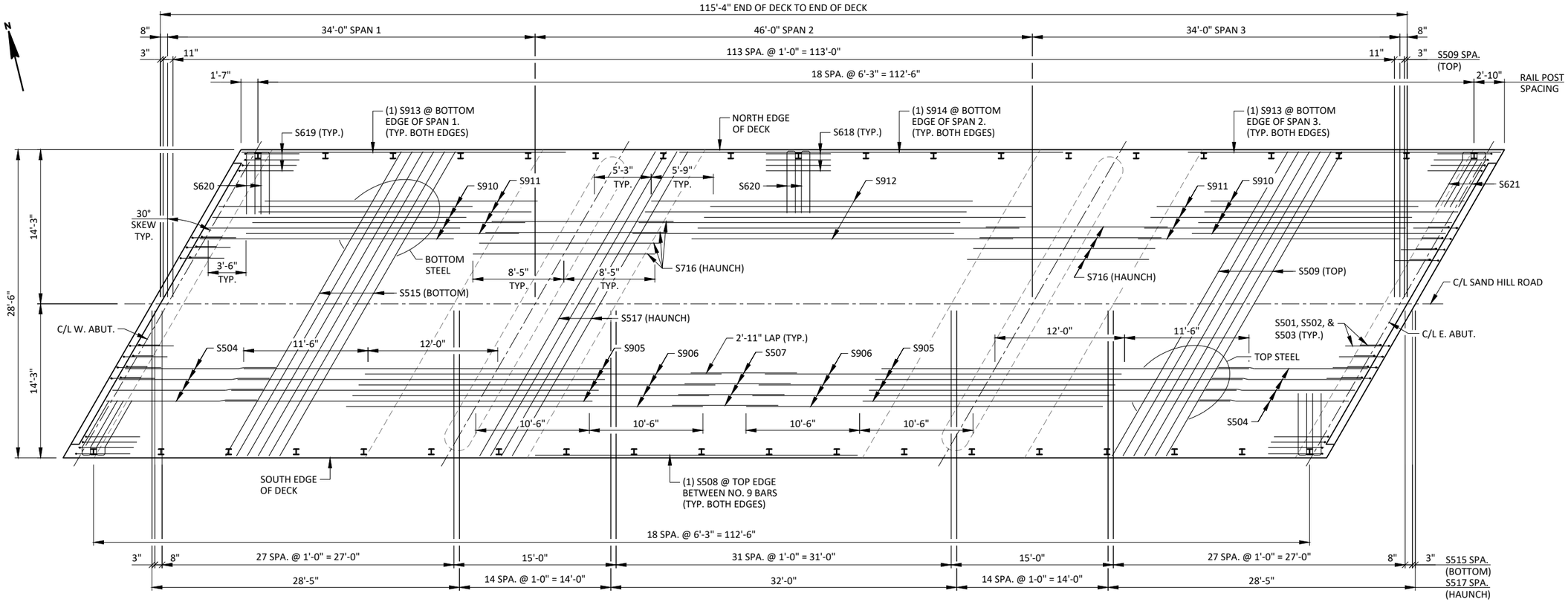
STATE PROJECT NUMBER

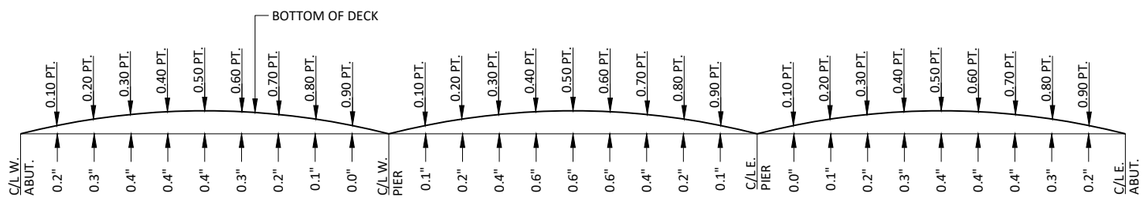
5328-00-70

TOP OF DECK ELEVATIONS

	C/L W. ABUT.	0.10 PNT.	0.20 PNT.	0.30 PNT.	0.40 PNT.	0.50 PNT.	0.60 PNT.	0.70 PNT.	0.80 PNT.	0.90 PNT.	C/L W. PIER	0.10 PNT.	0.20 PNT.	0.30 PNT.	0.40 PNT.	0.50 PNT.	0.60 PNT.	0.70 PNT.	0.80 PNT.	0.90 PNT.	C/L E. PIER	0.10 PNT.	0.20 PNT.	0.30 PNT.	0.40 PNT.	0.50 PNT.	0.60 PNT.	0.70 PNT.	0.80 PNT.	0.90 PNT.	C/L E. ABUT.
N. EDGE OF DECK	698.62	698.63	698.65	698.66	698.67	698.68	698.68	698.69	698.69	698.69	698.68	698.67	698.66	698.65	698.63	698.60	698.58	698.54	698.51	698.47	698.42	698.39	698.35	698.31	698.27	698.23	698.18	698.13	698.08	698.03	697.98
C/L	698.86	698.88	698.90	698.92	698.93	698.94	698.95	698.96	698.97	698.97	698.98	698.98	698.97	698.96	698.95	698.93	698.91	698.89	698.86	698.83	698.79	698.76	698.73	698.69	698.66	698.62	698.58	698.54	698.49	698.44	698.39
S. EDGE OF DECK	698.51	698.53	698.56	698.58	698.60	698.62	698.63	698.65	698.66	698.67	698.68	698.68	698.69	698.69	698.68	698.67	698.66	698.64	698.62	698.59	698.56	698.54	698.51	698.48	698.45	698.42	698.38	698.35	698.31	698.26	698.22



PLAN



CAMBER DIAGRAM

CAMBER SPAN AS SHOWN TO PROVIDE FOR THEORETICAL DEADLOAD DEFLECTION AND FUTURE PLASTIC FLOW. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT.

NOTES

SOME BARS HAVE BEEN OMITTED FOR CLARITY. SEE SHEET 12 FOR BILL OF BARS.

SEE SUPERSTRUCTURE DETAILS SHEETS (SHEETS 11 & 12) FOR BAR SPACINGS NOT SHOWN ON THIS SHEET.

SUPPORT ALTERNATE TOP TRANSVERSE BARS IN SLAB BY INDIVIDUAL BAR CHAIRS AT APPROX. 3'-0" CENTERS. SUPPORT BOTTOM LONGITUDINAL BARS BY CONTINUOUS BAR CHAIRS AT APPROX. 4'-0" CENTERS.

PLACE TRANSVERSE BARS PARALLEL TO THE CENTERLINE OF SUBSTRUCTURE UNITS.

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-12-251

DRAWN BY PTB | PLANS CK'D. RBH

SUPERSTRUCTURE

SHEET 10 OF 13

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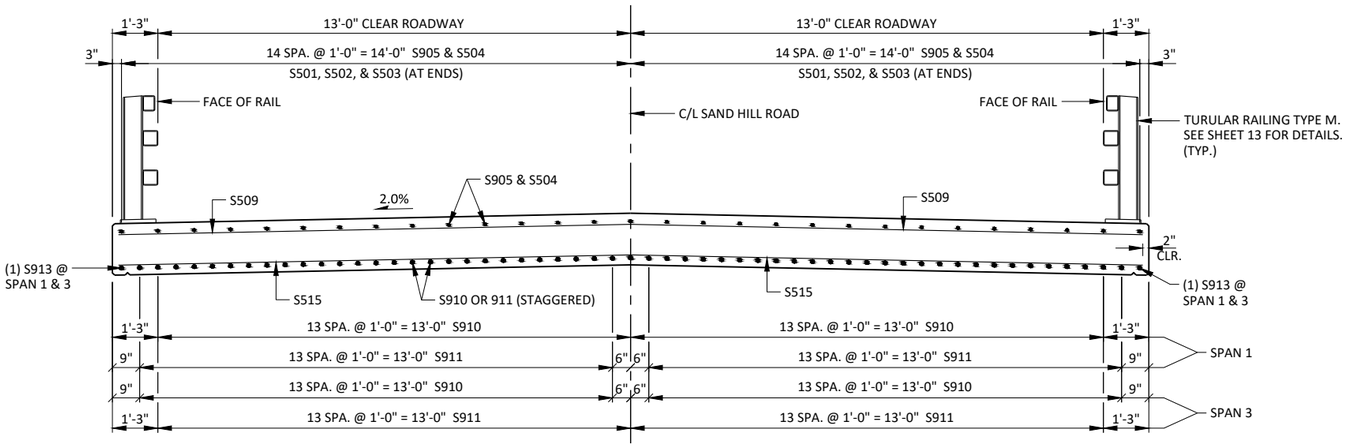
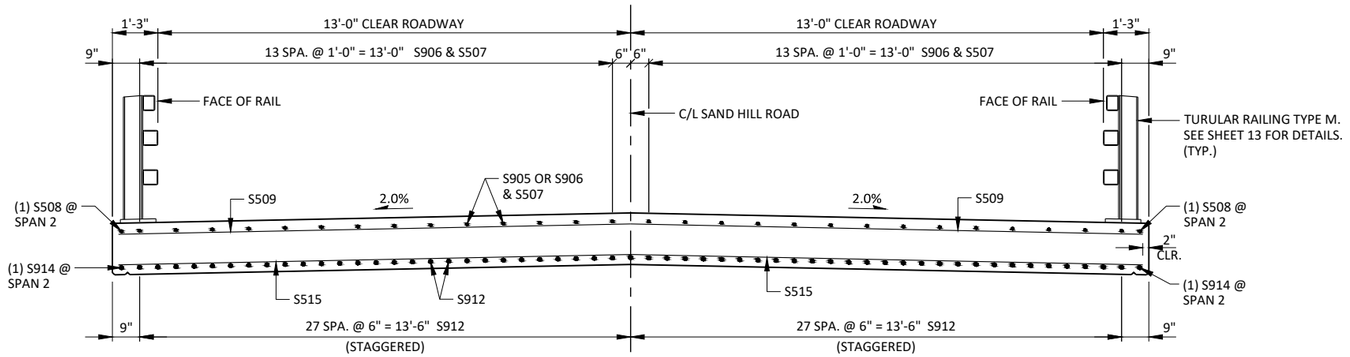


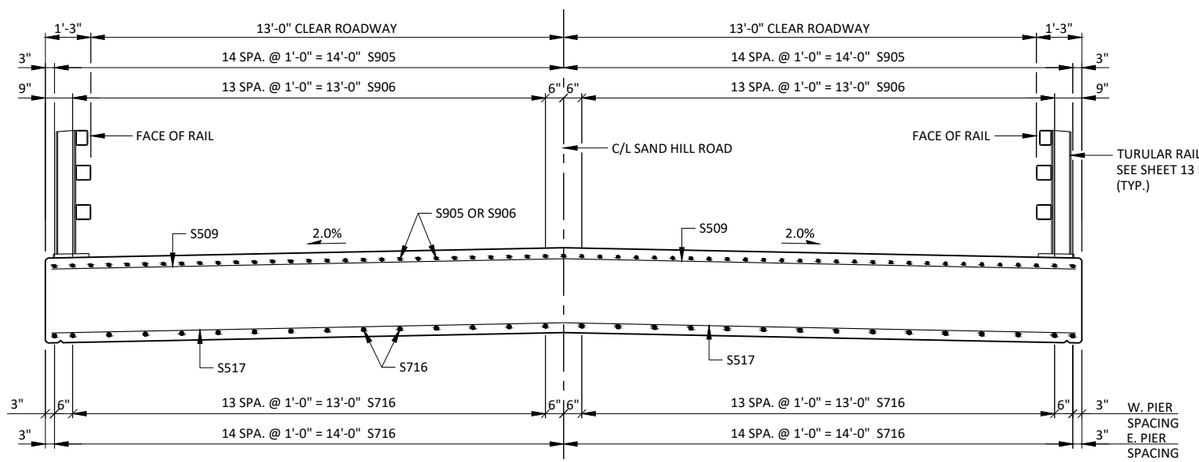
CROSS SECTION THROUGH ROADWAY

SPANS 1 & 3 (IN SPAN LOOKING EAST)



CROSS SECTION THROUGH ROADWAY

SPAN 2 (IN SPAN LOOKING EAST)



CROSS SECTION THROUGH ROADWAY

PIERS (AT PIERS LOOKING EAST)

NOTES

SEE SHEET 12 FOR BILL OF BARS.

SUPPORT ALTERNATE TOP TRANSVERSE BARS IN SLAB BY INDIVIDUAL BAR CHAIRS AT APPROX. 3'-0" CENTERS. SUPPORT BOTTOM LONGITUDINAL BARS BY CONTINUOUS BAR CHAIRS AT APPROX. 4'-0" CENTERS.

PLACE TRANSVERSE BARS PARALLEL TO THE CENTERLINE OF SUBSTRUCTURE UNITS.

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

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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-12-251

DRAWN BY PTB | PLANS CK'D. RBH

SUPERSTRUCTURE DETAILS (1 OF 2)

SHEET 11 OF 13

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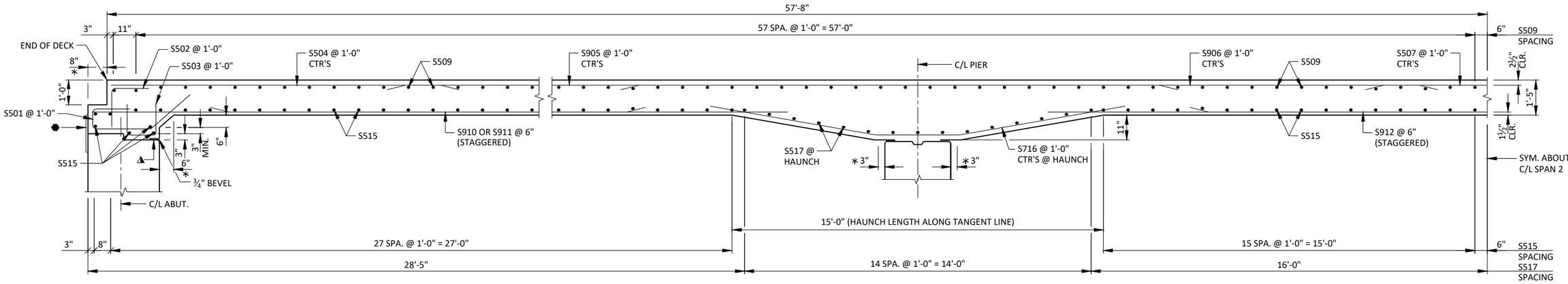
STATE PROJECT NUMBER
5328-00-70



PARTIAL LONGITUDINAL SECTION THROUGH ROADWAY

LEGEND

- ⬣ 18" RUBBERIZED MEMBRANE WATERPROOFING. (HORIZONTAL)
- ∗ DIMENSION IS NORMAL TO THE C/L OF SUBSTRUCTURE UNITS.
- ◮ ¾"x4" PREFORMED FILLER, EXTEND FULL LENGTH OF ABUTMENT BETWEEN EDGES OF SLAB.

NOTES

SUPPORT ALTERNATE TOP TRANSVERSE BARS IN SLAB BY INDIVIDUAL BAR CHAIRS AT APPROX. 3'-0" CENTERS. SUPPORT BOTTOM LONGITUDINAL BARS BY CONTINUOUS BAR CHAIRS AT APPROX. 4'-0" CENTERS.

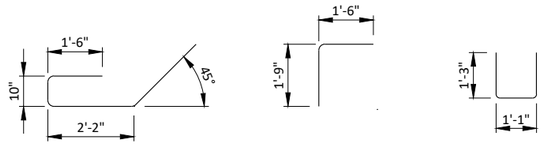
PLACE TRANSVERSE BARS PARALLEL TO THE CENTERLINE OF SUBSTRUCTURE UNITS.

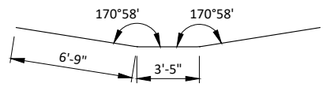
THE SLAB THICKNESS DIMENSION IS MINIMUM. ANY TOLERANCES NECESSARY TO CORRECT CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).

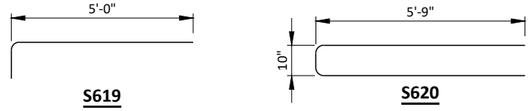
SURVEY TOP OF DECK ELEVATIONS

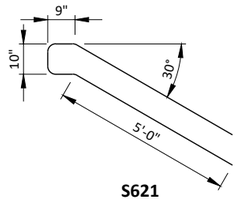
	W. ABUT.	0.50 PT.	PIER 1	0.50 PT.	PIER 2	0.50 PT.	E. ABUT.
NORTH EDGE OF DECK							
CENTER LINE							
SOUTH EDGE OF DECK							

PRIOR TO RELEASING SLAB FASLEWORK, TAKE TOP OF DECK ELEVATIONS AT THE C/L OF THE ABUTMENTS AND AT 0.50 PTS. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG THE EDGE OF DECK AND CENTER LINE. RECORD THE ELEVATIONS IN THE ABOVE TABLE FOR THE "AS BUILT" PLANS.









BILL OF BARS SUPERSTRUCTURE

43,380 LB (COATED)

BAR MARK	NO. REQ'D.	LENGTH	BENT	COAT	LOCATION
S501	58	6-8	X	X	END OF DECK
S502	58	3-2	X	X	END OF DECK
S503	58	3-4	X	X	END OF DECK - BOTTOM
S504	58	14-0		X	SLAB - TOP - LONG. - SPAN 1 & 3
S905	58	34-0		X	SLAB - TOP - LONG. - SPANS 1, 2 & 3
S906	56	33-0		X	SLAB - TOP - LONG. - SPANS 1, 2 & 3
S507	28	9-10		X	SLAB - TOP - LONG. - SPAN 2
S508	2	30-10		X	SLAB - TOP - LONG. - SPAN 2 - EDGES
S509	116	32-6		X	SLAB - TOP - TRANS.
S910	55	23-6		X	SLAB - BOTTOM - LONG. - SPAN 1 & 3
S911	55	25-3		X	SLAB - BOTTOM - LONG. - SPAN 1 & 3
S912	55	29-9		X	SLAB - BOTTOM - LONG. - SPAN 2
S913	4	30-0		X	SLAB - BOTTOM - LONG. - SPAN 1 & 3 - EDGES
S914	2	35-6		X	SLAB - BOTTOM - LONG. - SPAN 2 - EDGES
S515	98	32-6		X	SLAB - BOTTOM - TRANS.
S716	59	17-0	X	X	SLAB - BOTTOM - HAUNCH - LONG.
S517	30	32-6		X	SLAB - BOTTOM - HAUNCH - TRANS.
S618	136	6-0		X	RAIL POSTS - INTERIOR
S619	16	6-0	X	X	RAIL POSTS - CORNERS
S620	72	12-1	X	X	RAIL POSTS
S621	4	12-1	X	X	RAIL POSTS - CORNERS

NOTES: THE FIRST DIGIT OF A BAR MARK SIGNIFIES THE BAR SIZE.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-12-251

DRAWN BY PTB | PLANS CK'D. RBH

SUPERSTRUCTURE DETAILS (2 OF 2)

SHEET 12 OF 13

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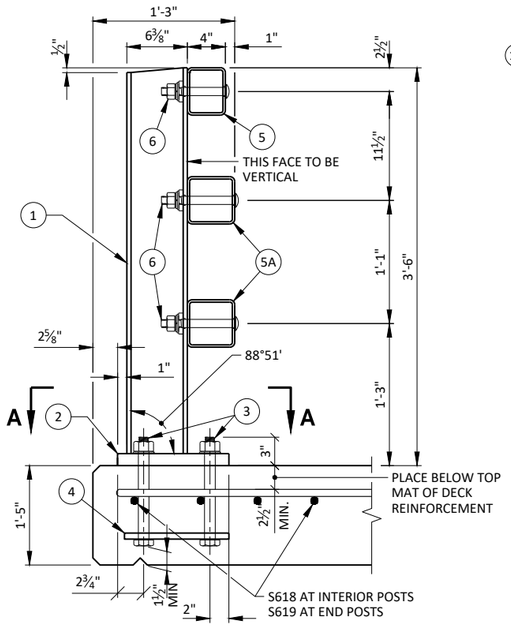
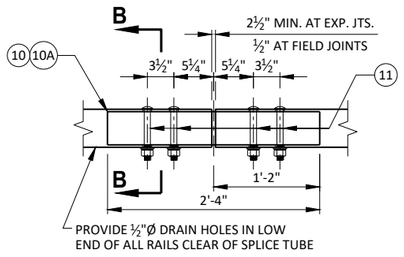
FILE NAME : S:\PROJECTS\C54545 CRAWFORD CO - SAND HILL ROAD BRIDGE REPLACEMENT\STRUCTURE\CAD FILES\FINALS\10 SUPERSTRUCTURE.DWG
PLOT DATE : 1/7/2020 3:25:15 PM
PLOT BY : BOLAND, PATRICK
PLOT SCALE : 1" = 1'
LAYOUT : LAYOUT3

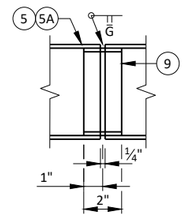
STATE PROJECT NUMBER
5328-00-70



SECTION THROUGH RAILING ON DECK

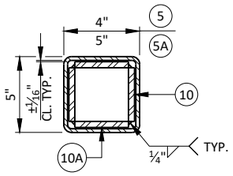


FIELD ERECTION JOINT DETAIL

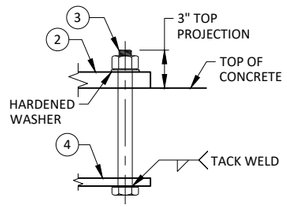


SHOP RAIL SPLICE DETAIL

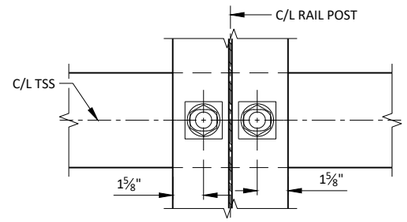
(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)



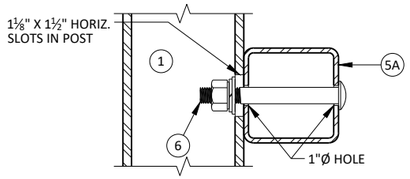
SECTION B-B



ANCHOR BOLTS



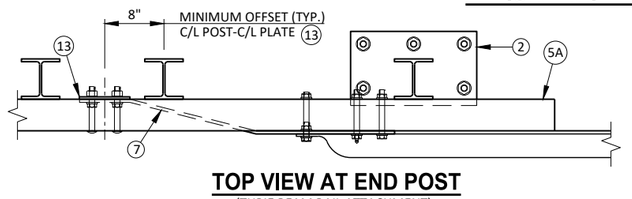
SECTION THROUGH POST WEB



SECTION THROUGH RAIL

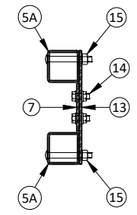
NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

TYPICAL RAIL TO POST CONNECTIONS

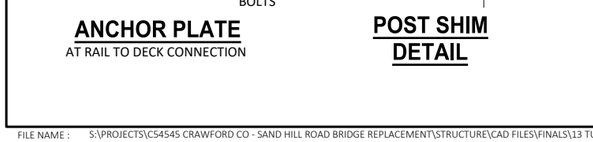


TOP VIEW AT END POST

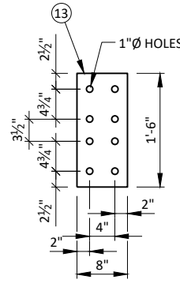
(THRIE BEAM RAIL ATTACHMENT)



SECTION C-C

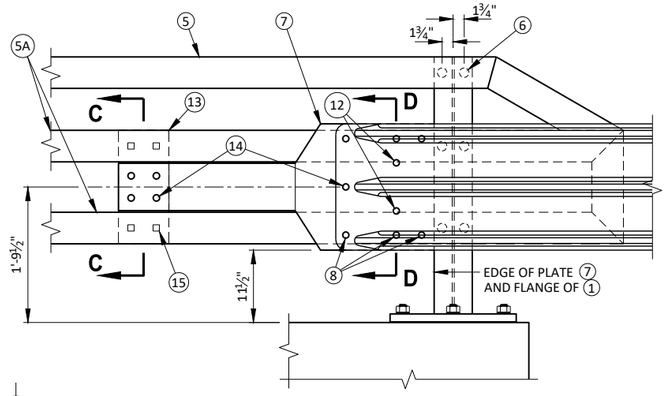


SECTION A-A



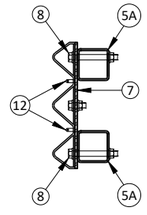
ANCHOR PLATE

AT BEAM GUARD ATTACHMENT

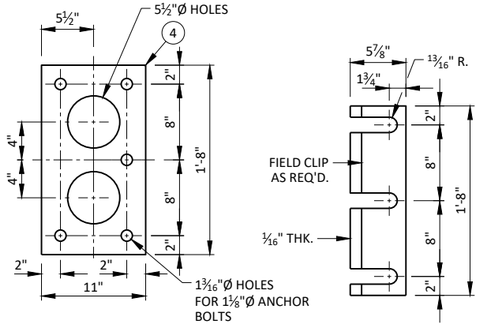


DETAIL AT END POST

(THRIE BEAM RAIL ATTACHMENT)



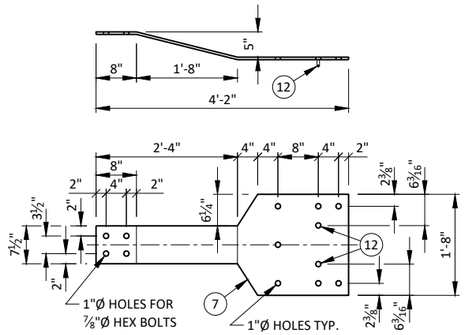
SECTION D-D



ANCHOR PLATE

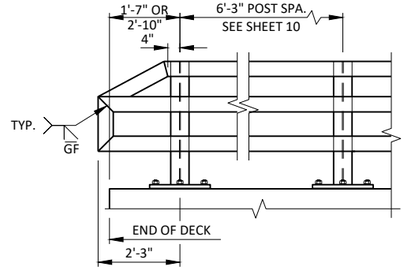
AT RAIL TO DECK CONNECTION

POST SHIM DETAIL



BACK-UP PLATE DETAIL

AT BEAM GUARD ATTACHMENT



PART ELEVATION OF RAILING

LEGEND

① W6x25 WITH 1⅛" x 1½" HORIZONTAL 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.

② PLATE 1½"x11¾"x1'-8" WITH 1⁵⁄₁₆"x1⅝" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.

③ ASTM A449 - 1⅛" 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. AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-3" LONG. USE 10¾" LONG AT ALL OTHER LOCATIONS.

④ ⅝"x11"x1'-8" ANCHOR PLATE (GALVANIZED) WITH 1³⁄₁₆" DIA. HOLES FOR ANCHOR BOLTS NO. 3.

⑤ TSS 5x4x0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.

⑤A TSS 5x5x0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.

⑥ ⅞" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, ³⁄₁₆"x1⅝"x1⅝" WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION).

⑦ ½" THK. BACK-UP PLATE WITH 2 - ⅞"x1½" THREADED SHOP WELDED STUDS (NO. 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.

⑧ 1" DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5A FOR ⅞" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.

⑨ SPLICE SLEEVE FABRICATED FROM ¼" PLATE. PROVIDE "SLIDING FIT".

⑩ ⅜"x3⅜"x2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.

⑩A ⅜"x2⅜"x2'-4" PLATE USED IN NO. 5, ⅜"x3⅜"x2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.

⑪ ⅞" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE ¹⁵⁄₁₆"x1¼" LONGIT. SLOTTED HOLES AT FIELD JOINTS AND ¹⁵⁄₁₆"x2½" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A.

⑫ ⅞" DIA. BY 1½" LONG THREADED SHOP WELDED STUDS (2 REQ'D).

⑬ ⅜"x8"x1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.

⑭ ⅞" DIA. x 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).

⑮ 1" DIA. HOLES IN TUBES NO. 5A FOR ⅞" A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

GENERAL NOTES

1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M" WHICH INCLUDES ALL ITEMS SHOWN.
2. 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.
3. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ⅛ TURN.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
7. 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.
8. 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.
9. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.
10. THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (TL-4).

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-12-251

DRAWN BY PTB | PLANS CK'D. RBH

TUBULAR RAILING TYPE M

SHEET 13 OF 13

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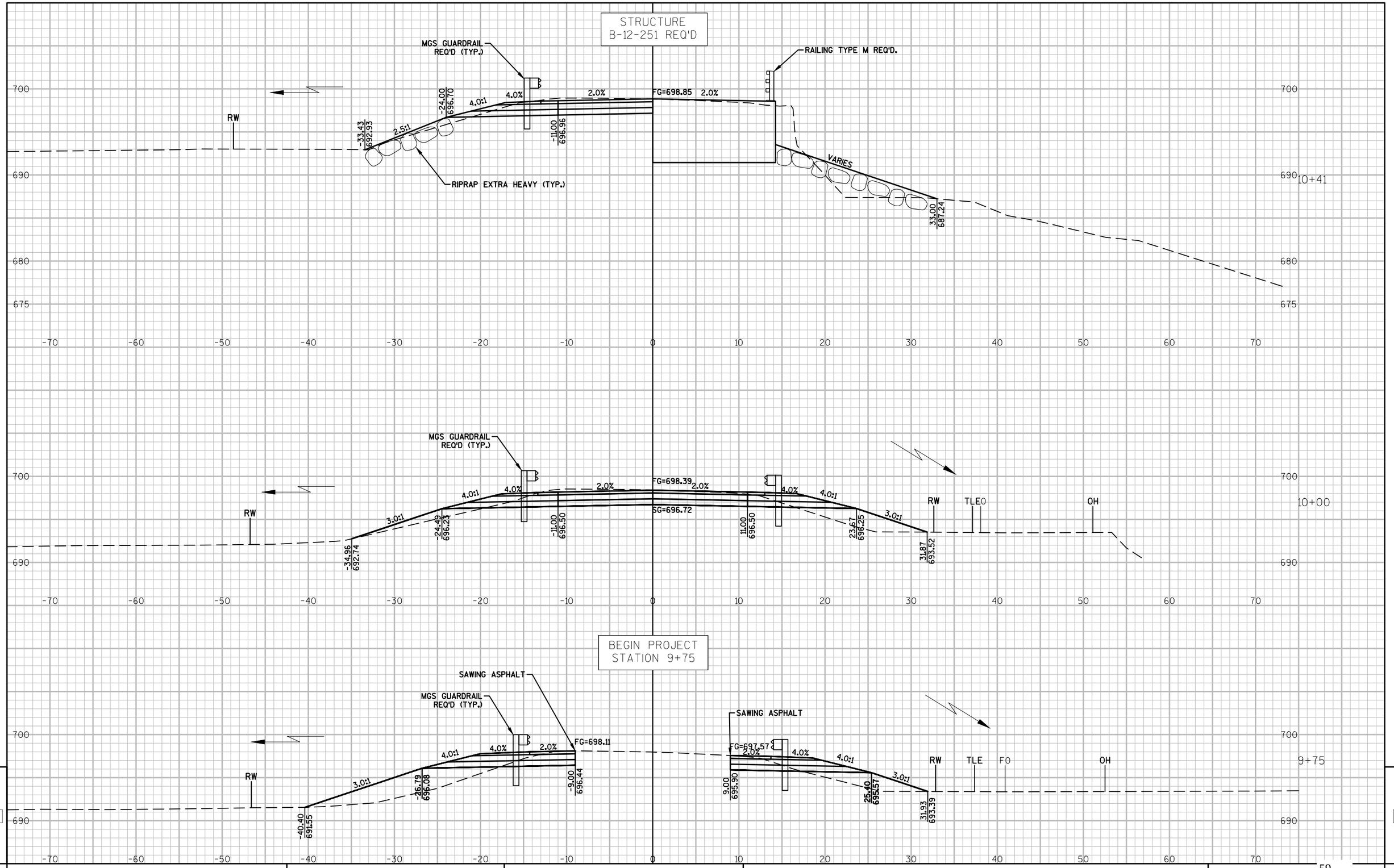
EARTHWORK-MAINLINE

STATION	AREA (SF) CUT	AREA (SF) FILL	INCREMENTAL VOL (CY) CUT NOTE 1	INCREMENTAL VOL (CY) FILL NOTE 2	INCREMENTAL VOL (CY) FILL (25%)	CUMMULATIVE VOLUME (CY) CUT 1.00 NOTE 1	CUMMULATIVE VOLUME (CY) FILL	CUMMULATIVE VOLUME (CY) FILL (25%) NOTE 3	CUMMULATIVE VOLUME (CY) MASS ORDINATE NOTE 4
9+75	19	52	0	0	0	0	0	0	0
10+00	51	27	32	37	46	32	37	46	-14
10+41	32	1	64	21	26	96	58	73	24
10+41	0	0	0	0	0	96	58	73	24
11+58	0	0	0	0	0	96	58	73	24
11+58	44	2	0	0	0	96	58	73	24
12+00	67	18	86	16	20	182	74	93	90
12+25	36	20	48	18	23	230	92	115	115
	COLUMN TOTALS =		230	92	115	230	92	115	115

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
3 - EXPANDED ROCK FACTOR	EXPANDED ROCK FACTOR = 1.1
4 - FILL (25%)	FILL 25%: (UNEXPANDED FILL - (ROCK * ROCK FACTOR))*1.25
5 - MASS ORDINATE	(CUT - FILL (25%))

STRUCTURE
B-12-251 REQ'D



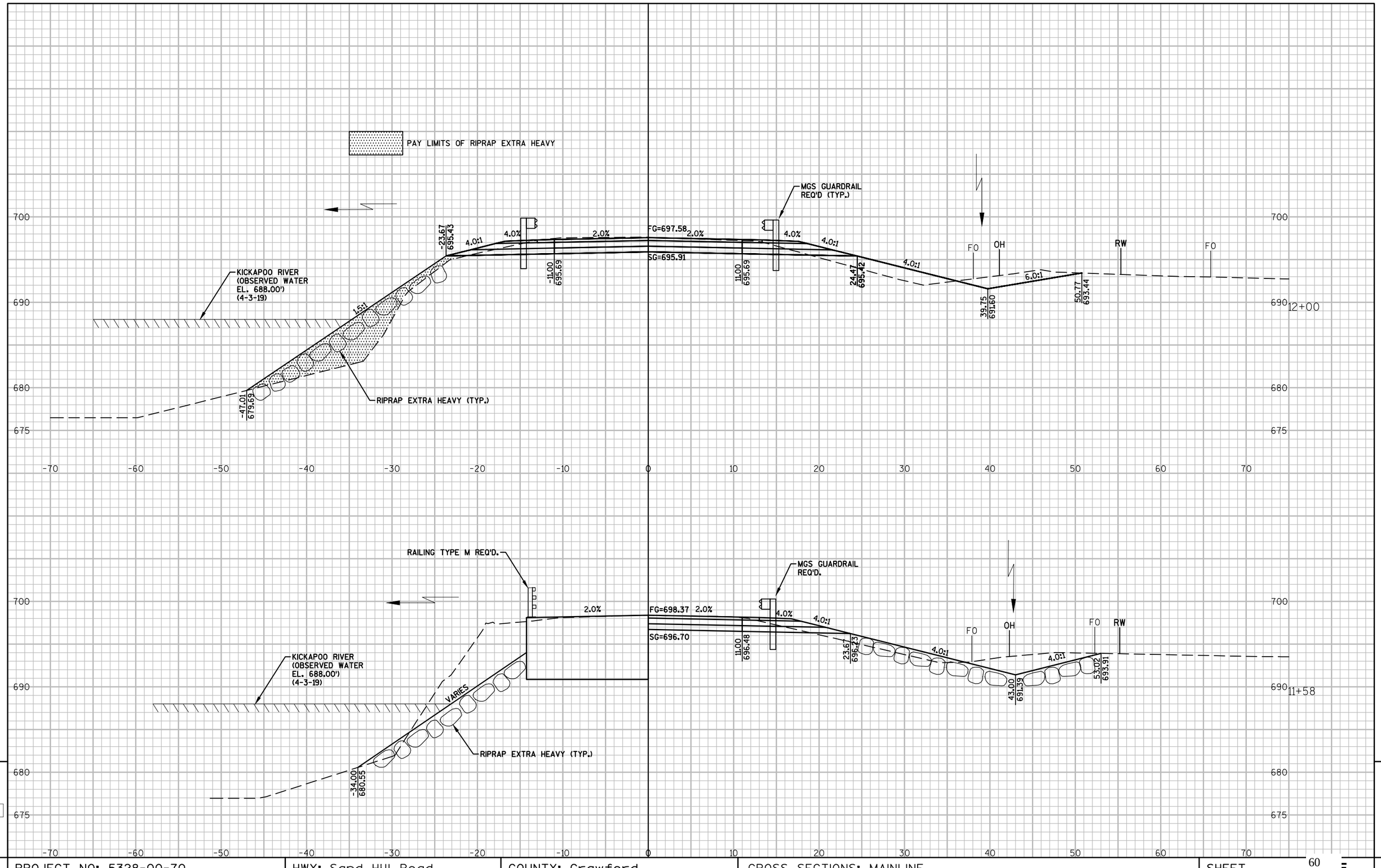
PROJECT NO: 5328-00-70	HWY: Sand Hill Road	COUNTY: Crawford	CROSS SECTIONS: MAINLINE	SHEET

FILE NAME : S:\PROJECTS\C54545 CRAWFORD CO - SAND HILL ROAD BRIDGE REPLACEMENT\DESIGN\CORRIDORS\SAND HILL ROAD CORRIDOR.DWG
LAYOUT : MAINLINE - (1)

PLOT DATE : 12/17/2019
PLOT TIME : 1:30:28 PM

PLOT BY : THEODORE HERBERS

PLOT SCALE : 1" = 1'



PROJECT NO: 5328-00-70	HWY: Sand Hill Road	COUNTY: Crawford	CROSS SECTIONS: MAINLINE	SHEET

FILE NAME : S:\PROJECTS\C54545 CRAWFORD CO – SAND HILL ROAD BRIDGE REPLACEMENT\DESIGN\CORRIDORS\SAND HILL ROAD CORRIDOR.DWG
LAYOUT : MAINLINE – (2)

PLOT DATE : 1/22/2020
PLOT TIME : 8:17:54 AM

PLOT BY : KARTER ZAJICEK

PLOT SCALE : 1" = 1'

END PROJECT
STATION 12+25

PAY LIMITS OF RIPRAP EXTRA HEAVY

SAWING ASPHALT

SAWING ASPHALT

MGS GUARDRAIL
REQ'D (TYP.)

KICKAPOO RIVER
(OBSERVED WATER
EL. 688.00')
(4-3-19)

RIPRAP EXTRA HEAVY

-25.44
694.87

FG=696.87

FG=696.67

-9.00
695.20

9.00
695.00

26.89
694.55

38.57
691.73

50.79
693.76

FO

OH

RW

FO

4.0%

2.0%

4.0%

4.0:1

4.0:1

4.0:1

6.0:1

1.5:1

-51.00
677.97

700

690

680

675

-70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70

12+25

PROJECT NO: 5328-00-70	HWY: Sand Hill Road	COUNTY: Crawford	CROSS SECTIONS: MAINLINE	SHEET

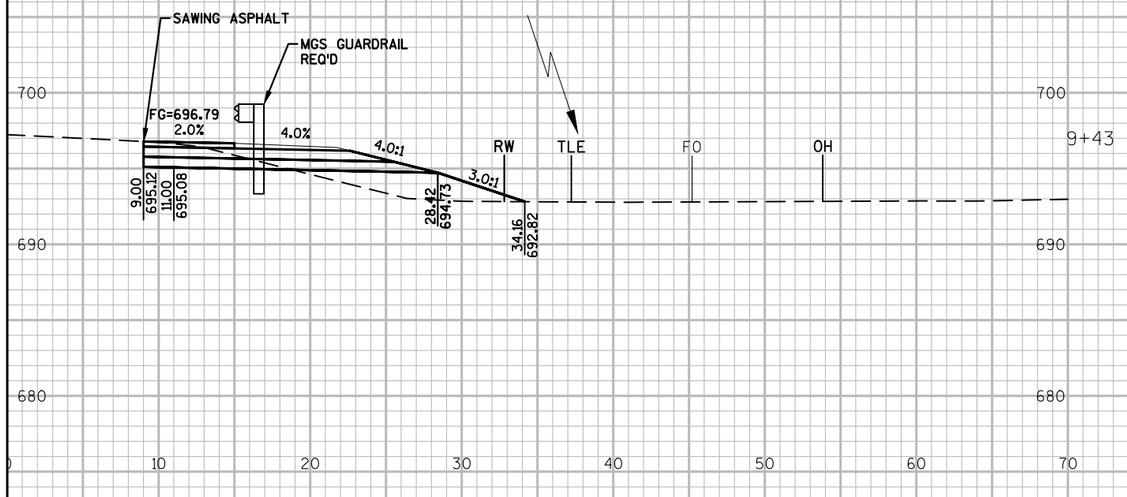
FILE NAME : S:\PROJECTS\C54545 CRAWFORD CO - SAND HILL ROAD BRIDGE REPLACEMENT\DESIGN\CORRIDORS\SAND HILL ROAD CORRIDOR.DWG
LAYOUT : MAINLINE - (3)

PLOT DATE : 12/17/2019
PLOT TIME : 1:30:29 PM

PLOT BY : THEODORE HERBERS

PLOT SCALE : 1" = 1'

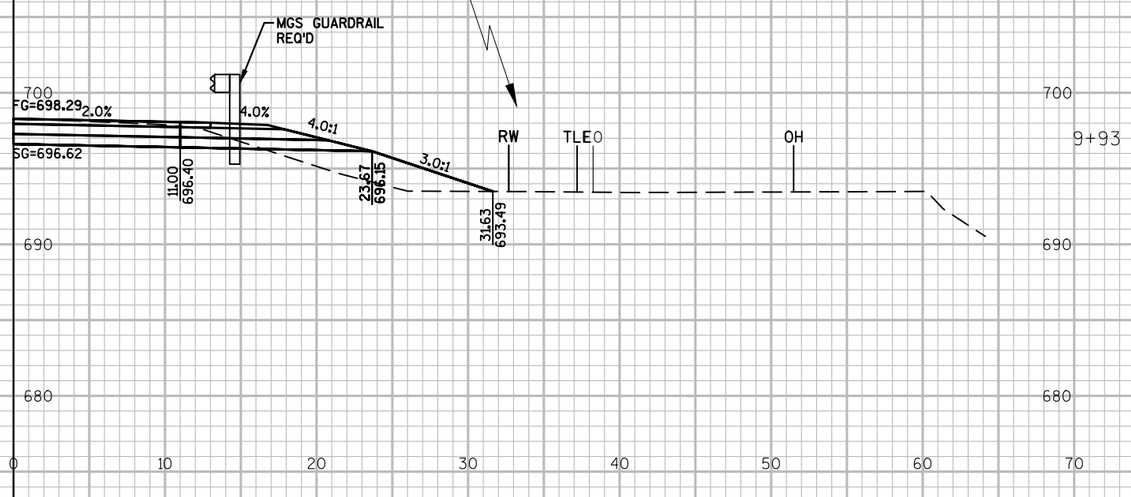
POST 1



END TAPER

BEGIN CONSTRUCTION
STATION 9+08
MATCH EXISTING

POST 9



POST 5

PROJECT NO: 5328-00-70	HWY: Sand Hill Road	COUNTY: Crawford	CROSS SECTIONS: MAINLINE (ENERGY ABSORBING TERMINAL SECTIONS)	SHEET

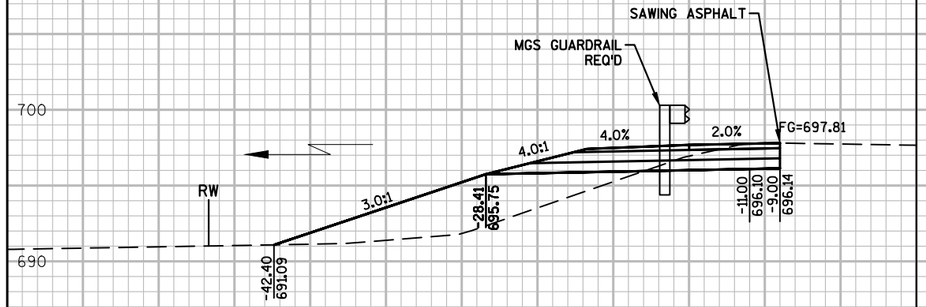
FILE NAME : S:\PROJECTS\C54545 CRAWFORD CO - SAND HILL ROAD BRIDGE REPLACEMENT\DESIGN\CORRIDORS\SAND HILL ROAD CORRIDOR.DWG
LAYOUT : SW BEAMGUARD - (1)

PLOT DATE : 12/17/2019
PLOT TIME : 1:30:30 PM

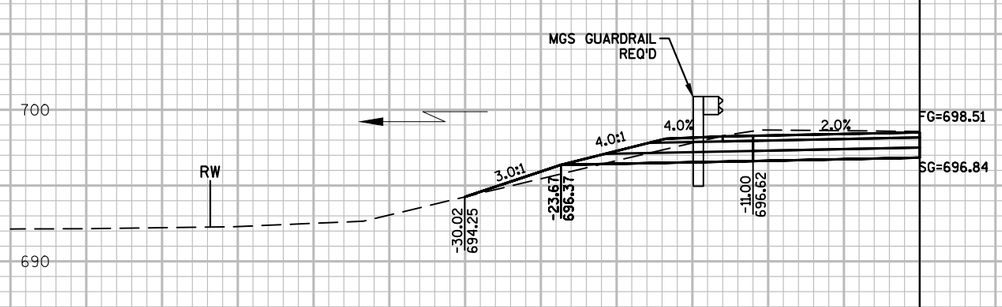
PLOT BY : THEODORE HERBERS

PLOT SCALE : 1" = 1'

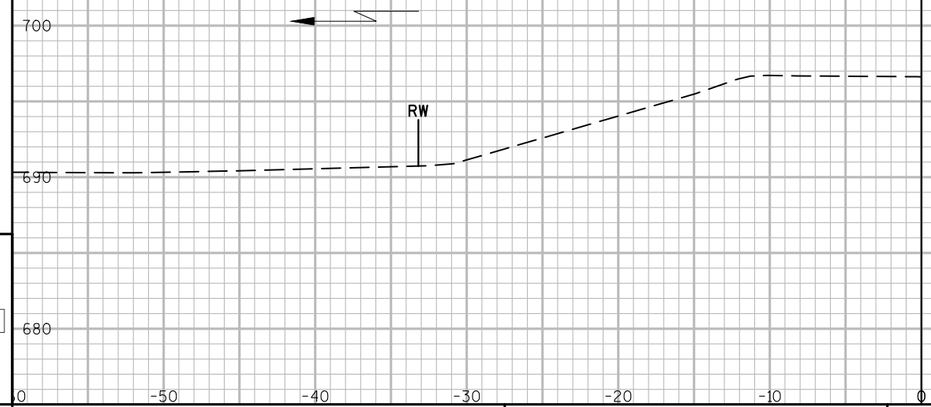
POST 1



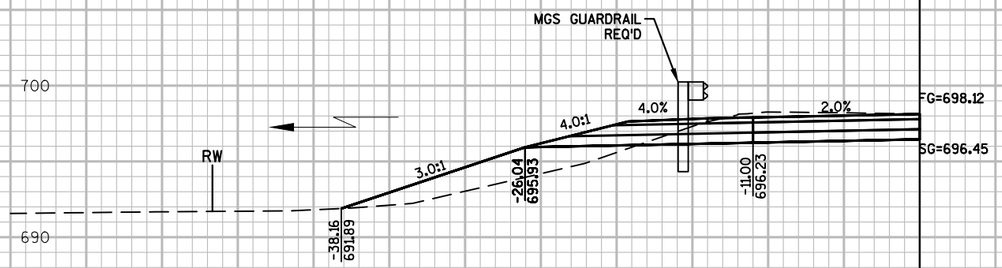
POST 9



END TAPER

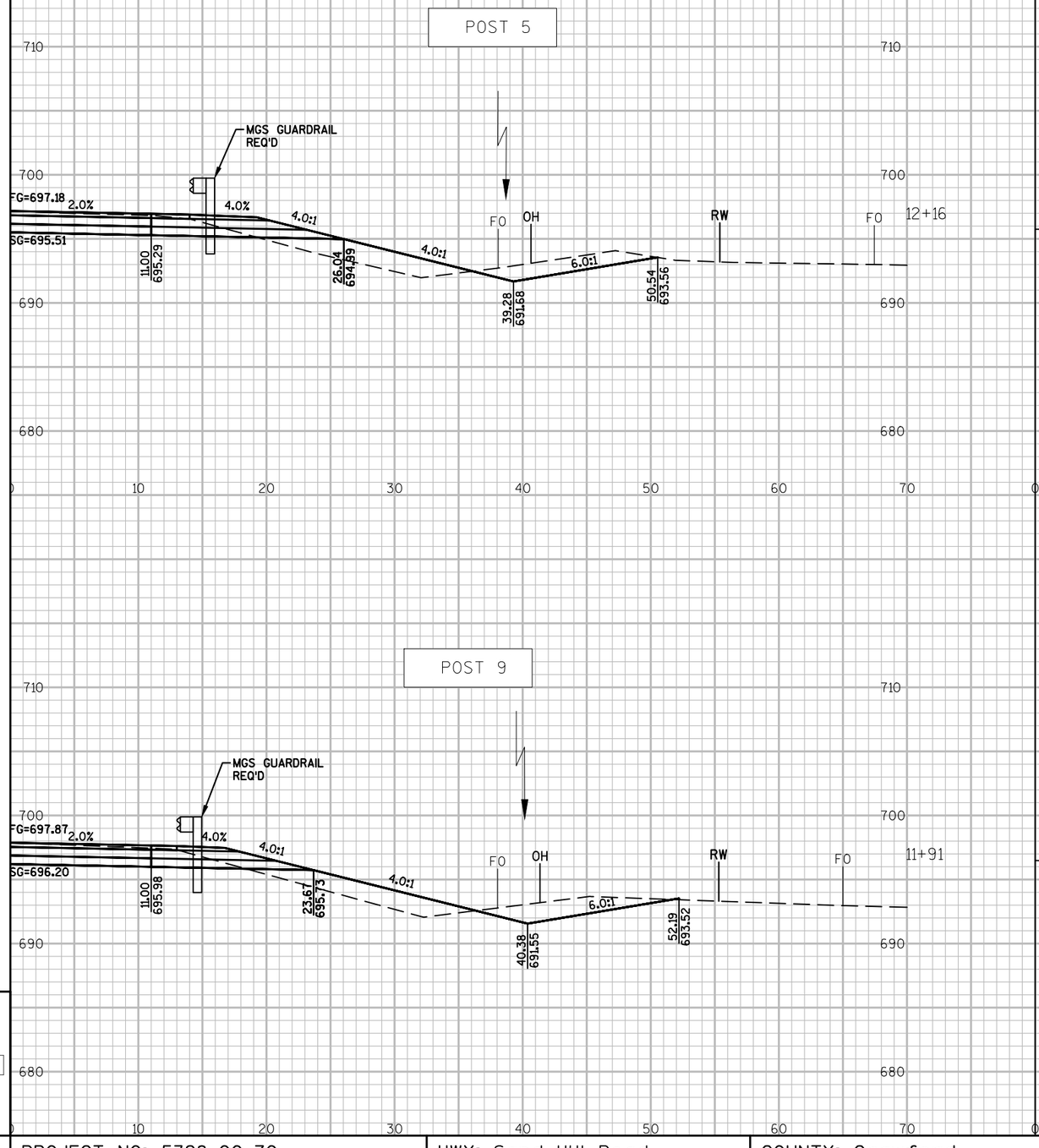


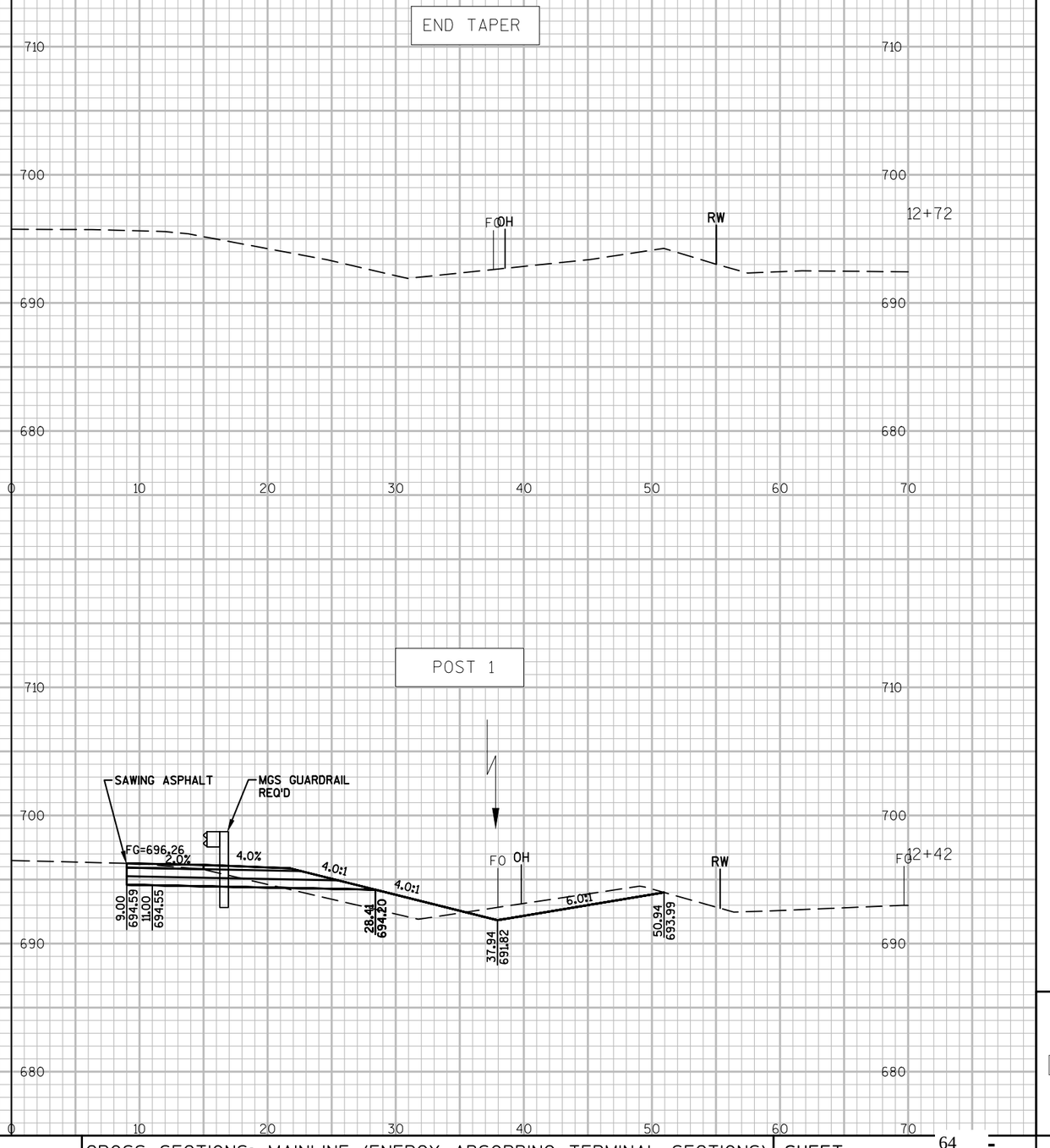
POST 5



PROJECT NO: 5328-00-70	HWY: Sand Hill Road	COUNTY: Crawford	CROSS SECTIONS: MAINLINE (ENERGY ABSORBING TERMINAL SECTIONS)	SHEET

FILE NAME : S:\PROJECTS\C54545 CRAWFORD CO - SAND HILL ROAD BRIDGE REPLACEMENT\DESIGN\CORRIDORS\SAND HILL ROAD CORRIDOR.DWG
LAYOUT : NW BEAMGUARD
PLOT DATE : 12/17/2019
PLOT TIME : 1:30:31 PM
PLOT BY : THEODORE HERBERS
PLOT SCALE : 1" = 1'





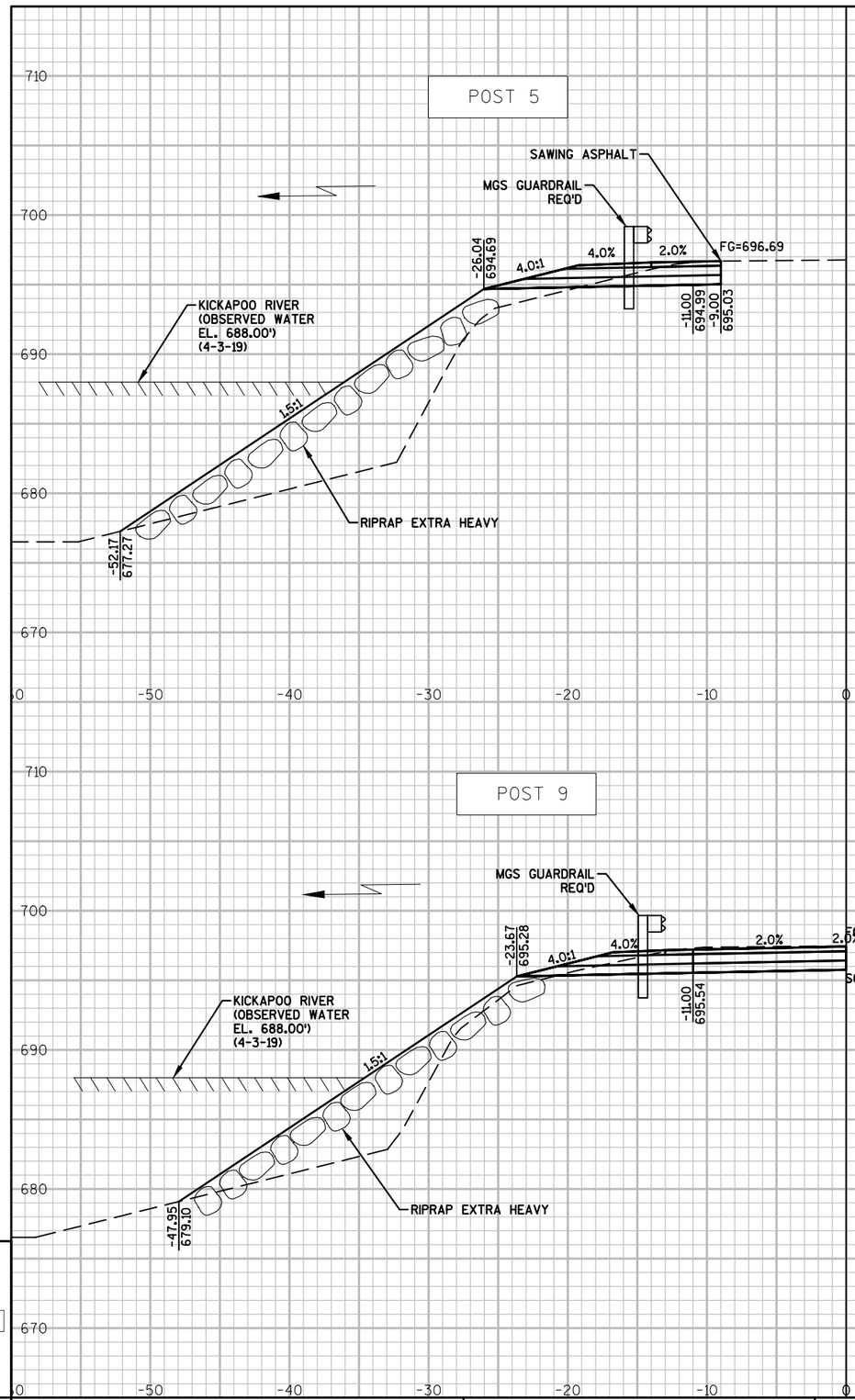
PROJECT NO: 5328-00-70	HWY: Sand Hill Road	COUNTY: Crawford	CROSS SECTIONS: MAINLINE (ENERGY ABSORBING TERMINAL SECTIONS)	SHEET

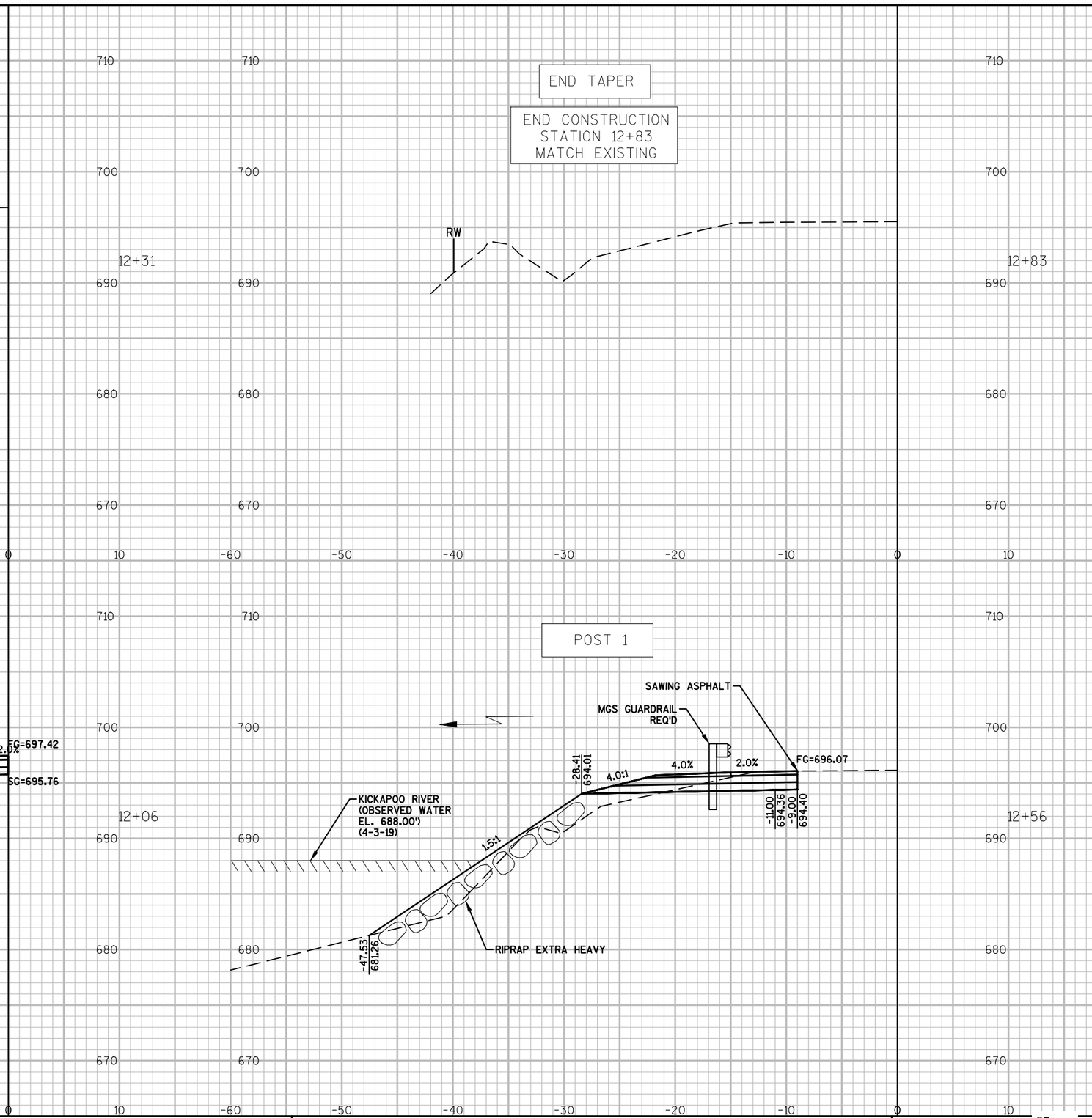
FILE NAME : S:\PROJECTS\C54545 CRAWFORD CO – SAND HILL ROAD BRIDGE REPLACEMENT\DESIGN\CORRIDORS\SAND HILL ROAD CORRIDOR.DWG
LAYOUT : SE BEAMGUARD

PLOT DATE : 12/17/2019
PLOT TIME : 1:30:32 PM

PLOT BY : THEODORE HERBERS

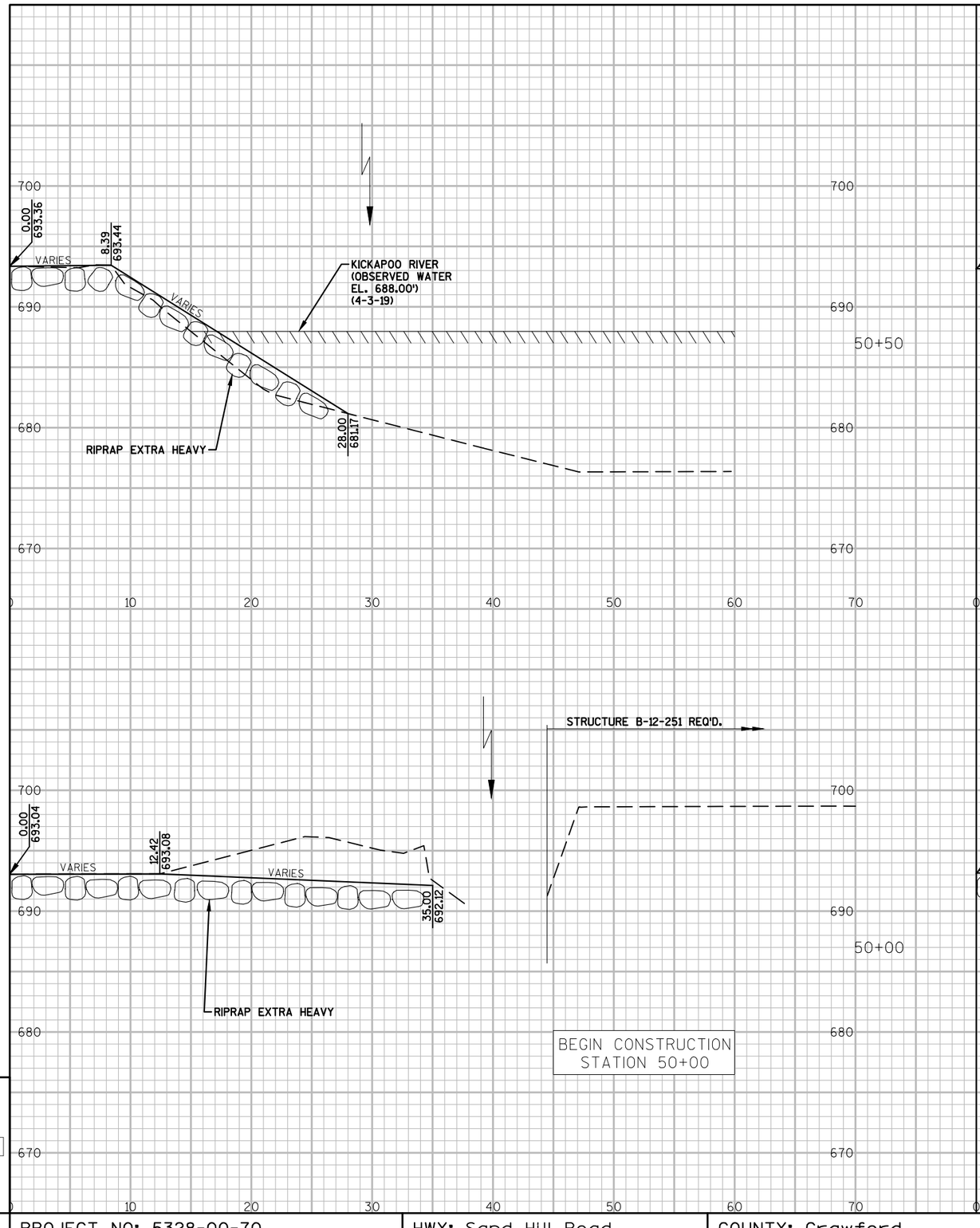
PLOT SCALE : 1" = 1'

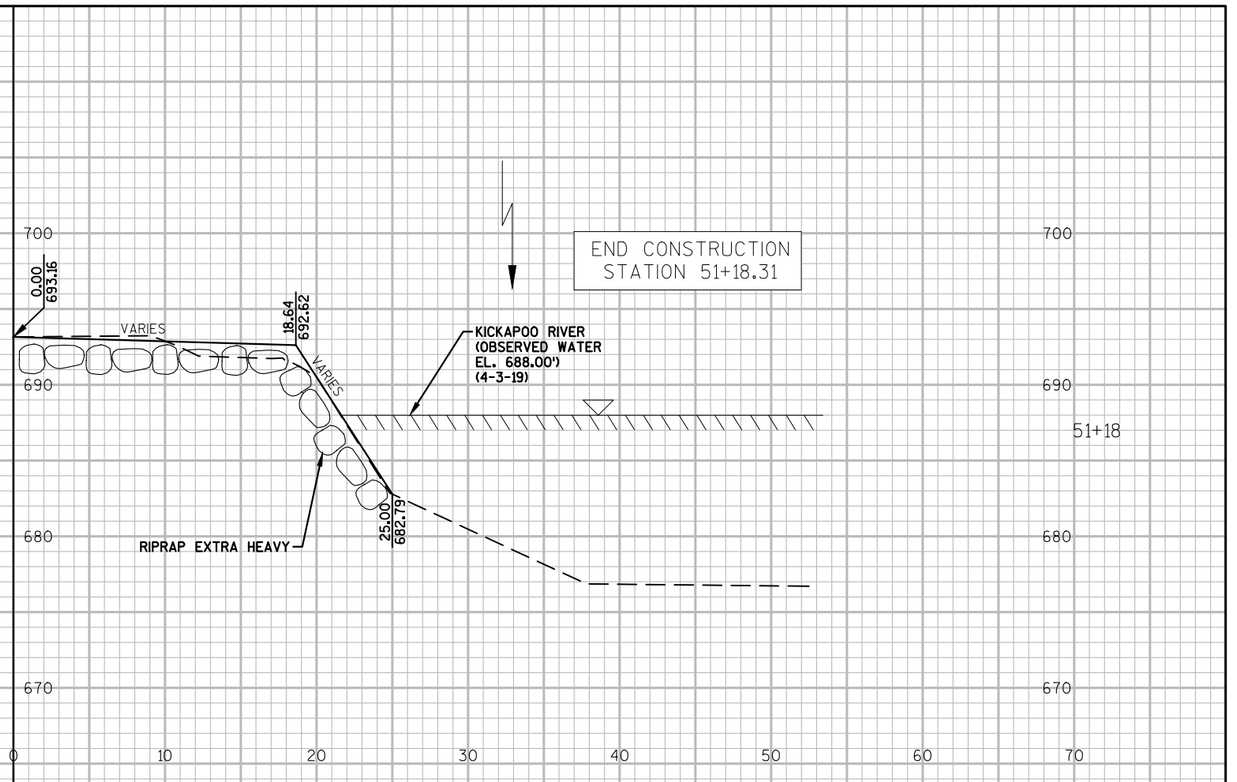


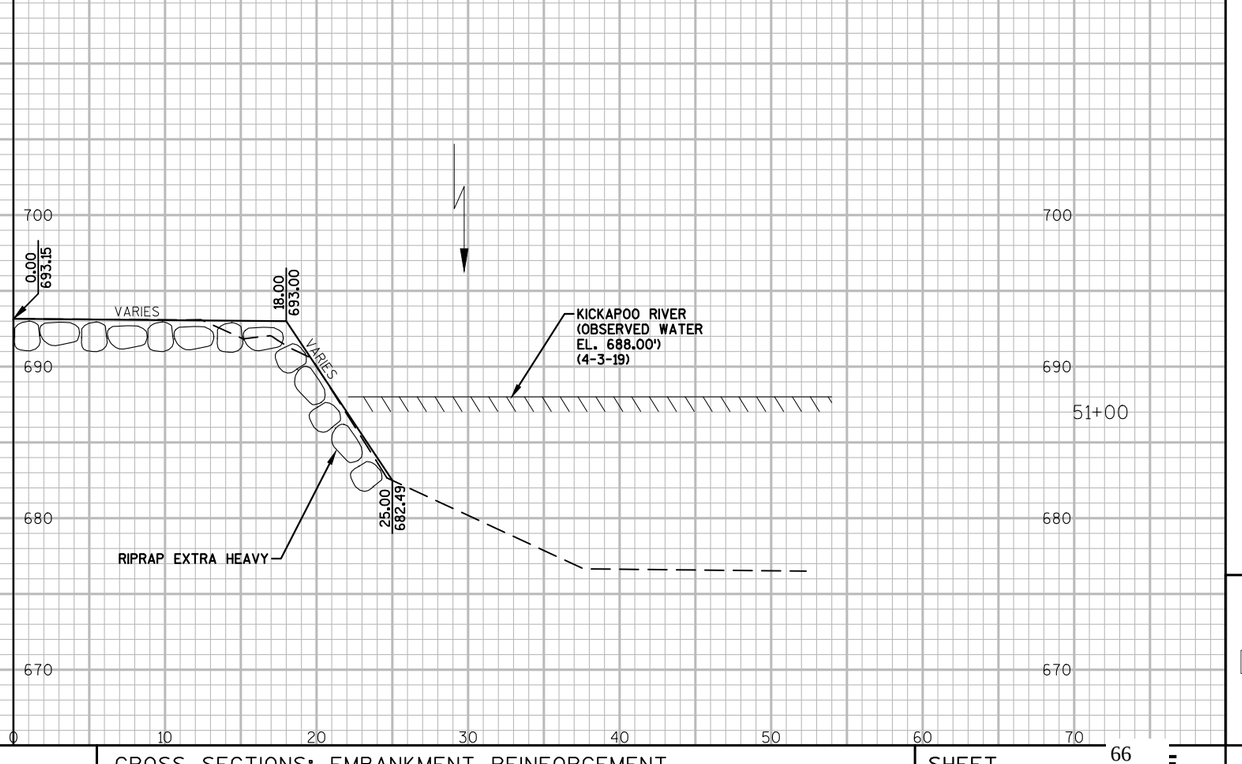


PROJECT NO: 5328-00-70	HWY: Sand Hill Road	COUNTY: Crawford	CROSS SECTIONS: MAINLINE (ENERGY ABSORBING TERMINAL SECTIONS)	SHEET

FILE NAME : S:\PROJECTS\C54545 CRAWFORD CO - SAND HILL ROAD BRIDGE REPLACEMENT\DESIGN\CORRIDORS\SAND HILL ROAD CORRIDOR.DWG
LAYOUT : NE BEAMGUARD
PLOT DATE : 12/17/2019
PLOT TIME : 1:30:33 PM
PLOT BY : THEODORE HERBERS
PLOT SCALE : 1" = 1'







PROJECT NO: 5328-00-70	HWY: Sand Hill Road	COUNTY: Crawford	CROSS SECTIONS: EMBANKMENT REINFORCEMENT	SHEET

FILE NAME : S:\PROJECTS\C54545 CRAWFORD CO – SAND HILL ROAD BRIDGE REPLACEMENT\DESIGN\CORRIDORS\SAND HILL ROAD CORRIDOR.DWG
LAYOUT : EMBANKMENT REINFORCEMENT

PLOT DATE : 12/17/2019
PLOT TIME : 1:30:34 PM

PLOT BY : THEODORE HERBERS

PLOT SCALE : 1" = 1'

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

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