

MAD PROJECT ID: 3804-00-74 WITH: N/A COUNTY: DODGE

MARCH 2021

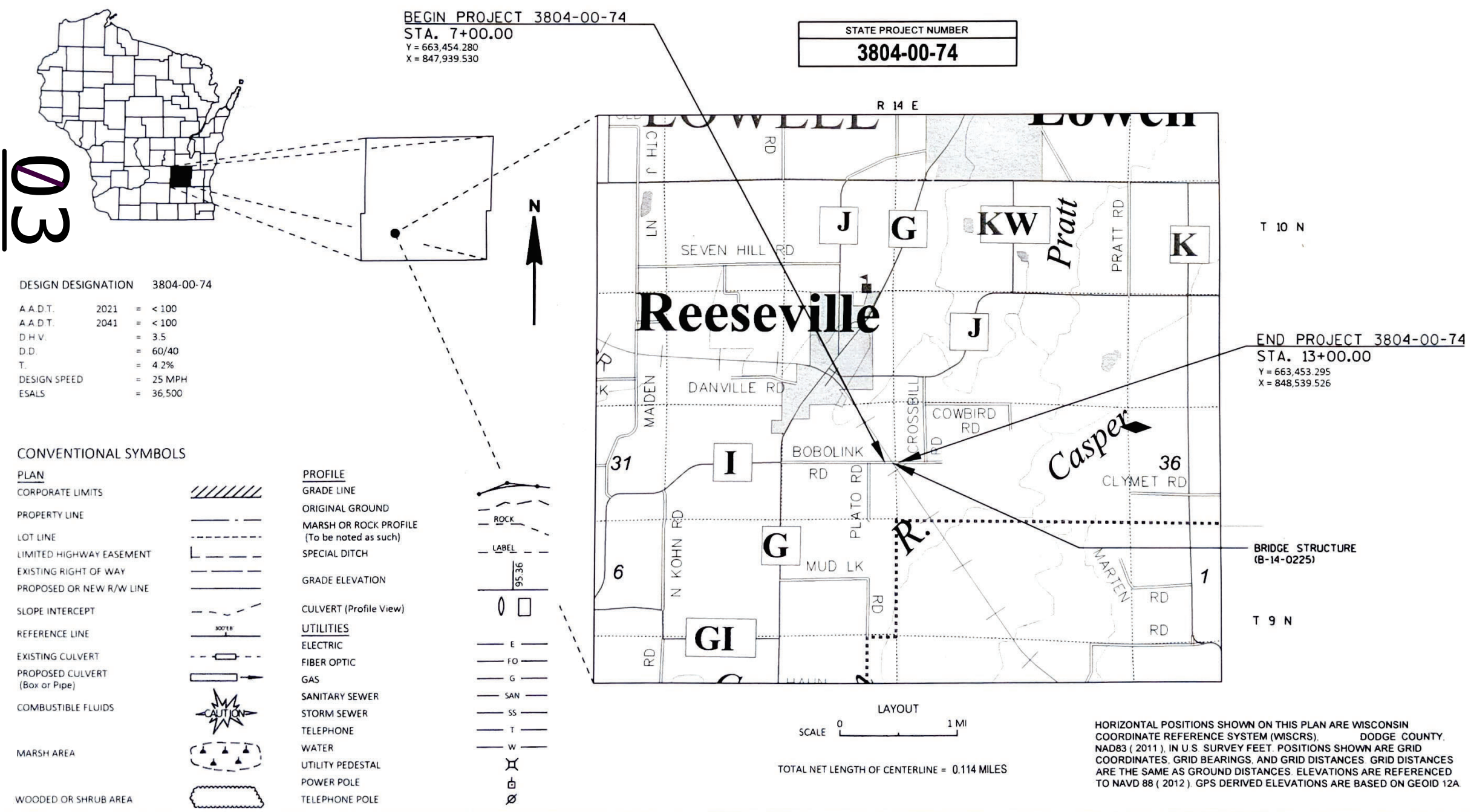
ORDER OF SHEETS

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

TOTAL SHEETS = 78

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PLAN OF PROPOSED IMPROVEMENT
TOWN OF LOWELL, BOBOLINK RD
CPRS RAIL ROAD BRIDGE, B-14-0225
LOCAL STREET
DODGE COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
3804-00-74	WISC 2021218	1



ACCEPTED FOR

TOWN of LOWELL

DATE: 10/20/20

John H. Schmitt, Jr.
(TOWN CHAIRMAN)

ORIGINAL PLANS PREPARED BY

AYRES

AMANDA M. INMAN
44690 OREGON WI
PROFESSIONAL ENGINEER
10/26/2020

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor AYRES ASSOCIATES

Designer AYRES ASSOCIATES

Regional Examiner

Regional Supervisor

APPROVED FOR THE DEPARTMENT

10/28/20

DATE (Signature)

E

GENERAL NOTES

NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY UTILITY WHICH IS NOT A MEMBER OF DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT LOCATION THAT ARE NOT SHOWN. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING DIGGERS HOTLINE TO LOCATE UTILITIES.

A SAWED JOINT WILL BE REQUIRED WHERE NEW PAVEMENT IS TO MEET AN EXISTING PAVED SURFACE.

REFER TO SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" FOR ROAD CLOSURE SIGNAGE DETAILS.

EXACT TRAFFIC CONTROL LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

ALL SIGN LOCATIONS SHALL BE REVIEWED BY THE ENGINEER PRIOR TO INSTALLATION.

NO TREES OR SHRUBS SHALL BE REMOVED UNLESS DESIGNATED FOR REMOVAL BY THE ENGINEER.

PROTECT FROM DAMAGE AND COMPLETE SHOULDER WORK AROUND ANY EXISTING SIGNS OR MAILBOXES THAT ARE TO REMAIN IN PLACE.

RESTORATION OF EXPOSED SLOPES AND DITCHES SHALL TAKE PLACE WITHIN 7 CALENDAR DAYS AFTER FINISHED GRADING IS COMPLETE.

IF AN EXISTING SIGN IS TO BE REMOVED AND REPLACED WITH A NEW SIGN, DO NOT REMOVE THE EXISTING SIGN PRIOR TO INSTALLATION OF THE NEW SIGN.

THE LOCATIONS OF EROSION CONTROL ITEMS SHALL BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL SUCH TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY.

ASSUMED ASPHALT UNIT WEIGHT: 112 LBS/SY/INCH
ASSUMED TACK COAT APPLICATION RATE: 0.07GAL/SY

ASPHALT PAVEMENT SUGGESTED LAYERS:
-UPPER: 1.75 - INCH
-LOWER: 2.25 - INCH

ABBREVIATIONS

A.D.T.	AVERAGE DAILY TRAFFIC
ATMS	ARTERIAL TRAFFIC MANAGEMENT SYSTEM
BM	BENCHMARK
BOC	BACK OF CURB
BTWN	BETWEEN
C&G	CURB AND GUTTER
C.E.	COMMERCIAL ENTRANCE
CONST	CONSTRUCTION
CP	CONTROL POINT
CTR.	CENTER
D.D.	DIRECTIONAL DISTRIBUTION
D.H.V.	DESIGN HOURLY VOLUME
DMS	DYNAMIC MESSAGE SIGN
EB	EASTBOUND
EXIST	EXISTING
GALV.	GALVANIZED
HMA	HOT MIX ASPHALT
H.S.	HIGH STRENGTH
ITS	INTELLIGENT TRAFFIC SYSTEM
MAX	MAXIMUM
MIN	MINIMUM
NB	NORTHBOUND
NOR	NORMAL
PC	POINT OF CURVATURE
PCC	POINT OF COMMON CURVATURE
PGL	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
PRC	POINT OF REVERSE CURVATURE
PT	POINT OF TANGENCY
PVT	PAVEMENT
R/L	REFERENCE LINE
REQ'D	REQUIRED
SB	SOUTHBOUND
SYM	SYMMETRICAL
T.	PERCENT TRUCKS
TCC	TRAFFIC CONDITION CAMERA
TYP	TYPICAL
VAR	VARIABLE
WB	WESTBOUND
Wt.	WEIGHT
X-WALK	CROSS WALK

PROJECT CONTACTS

DODGE COUNTY PUBLIC WORKS

NATHAN KEMPKE
ASST. COMMISSIONER
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TOWN OF LOWELL

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WISCONSIN DEPARTMENT OF NATURAL RESOURCES

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WISDOT RAILROAD COORDINATOR

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DESIGNER

AMANDA INMAN, PE
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UTILITIES

TDS
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216 WEST WALWORTH STREET
ELKHORN, WI 53121
C: (608) 692-5063
E: MARK.FOX@TDSMETRO.COM

WE ENERGIES

NICK KICKHAVER
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WEST ALLIS, WI 53214
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C: (414) 588-7472
F: (414) 944-5552
E: ERIC.KICKHAVER@WE-ENERGIES.COM

** DENOTES UTILITIES THAT ARE NOT DIGGERS HOTLINE MEMBERS



Dial 811 or (800)242-8511

www.DiggersHotline.com



STA. 7+00 - STA. 8+92
STA. 11+07 - STA. 13+00

* LIMITS OF SALVAGED TOPSOIL
& EROSION MAT



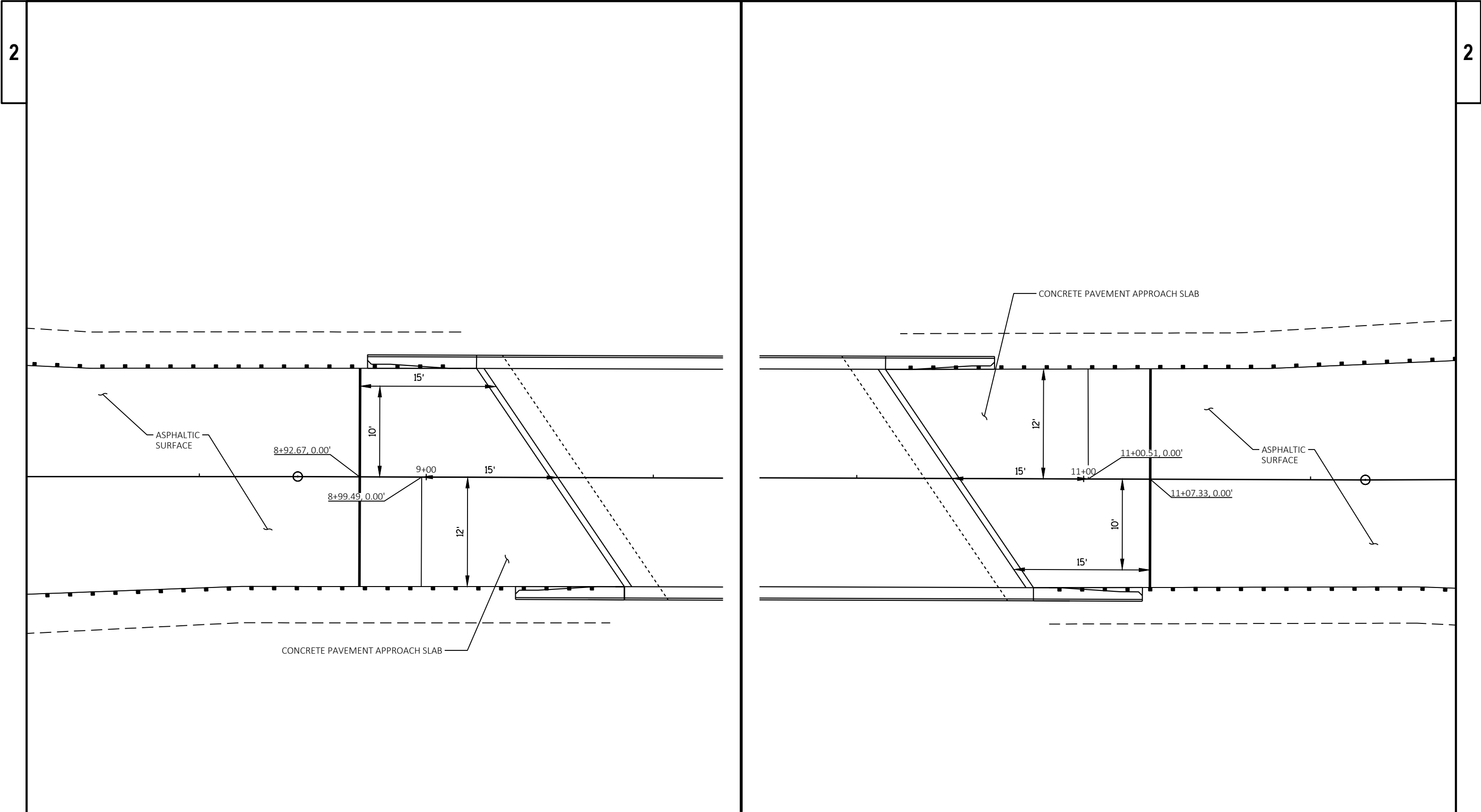
STA. 8+92 - STA. 9+14
STA. 10+85 - STA. 11+07

* LIMITS OF SALVAGED TOPSOIL
& EROSION MAT

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

TOTAL PROJECT AREA = 1.091 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 1.354 ACRES

CONTROL / BENCHMARK POINT DATA					
POINT NO.	FEATURE	NORTHING	EASTING	ELEVATION	DESCRIPTION
100	CP	663474.829	847254.128	831.87	SET 5/8" X 18" REBAR W / YPC
101	CP	663439.196	848060.956	846.29	SET 12" HUB W / DIMPLE
102	CP	663398.889	848223.381	841.08	SET 15" HUB W / DIMPLE
103	CP	663440.381	848374.152	847.45	SET 15" HUB W / DIMPLE
104	CP	663514.170	848236.476	830.50	SET 15" HUB W / DIMPLE
105	CP	663479.855	849120.479	832.78	SET 5/8" X 18" REBAR W / YPC
200	BM	663442.733	848324.812	851.03	SET SURVEY NAIL IN SE CORNER BRIDGE DECK
201	BM	663422.564	847687.022	832.23	SET RR SPK IN PP 92-00977



CONCRETE PAVEMENT APPROACH SLAB LAYOUT

PROJECT NO: 3804-00-74	HWY: BOBOLINK ROAD	COUNTY: DODGE	CONSTRUCTION DETAILS	SHEET	E
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Estimate Of Quantities

3804-00-74

Line	Item	Item Description	Unit	Total	Qty
0002	203.0200	Removing Old Structure (station) 01. 10+00	LS	1.000	1.000
0004	203.0225.S	Debris Containment (structure) 01. P-14-0095	LS	1.000	1.000
0006	205.0100	Excavation Common	CY	205.000	205.000
0008	206.1000	Excavation for Structures Bridges (structure) 01. B-14-0225	LS	1.000	1.000
0010	208.0100	Borrow	CY	4,037.000	4,037.000
0012	210.1500	Backfill Structure Type A	TON	300.000	300.000
0014	213.0100	Finishing Roadway (project) 01. 3804-00-74	EACH	1.000	1.000
0016	305.0110	Base Aggregate Dense 3/4-Inch	TON	102.000	102.000
0018	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,505.000	1,505.000
0020	415.0410	Concrete Pavement Approach Slab	SY	123.000	123.000
0022	455.0605	Tack Coat	GAL	82.000	82.000
0024	465.0105	Asphaltic Surface	TON	261.000	261.000
0026	502.0100	Concrete Masonry Bridges	CY	586.000	586.000
0028	502.3200	Protective Surface Treatment	SY	505.000	505.000
0030	502.3210	Pigmented Surface Sealer	SY	200.000	200.000
0032	503.0137	Prestressed Girder Type I 36W-Inch	LF	674.000	674.000
0034	505.0400	Bar Steel Reinforcement HS Structures	LB	20,960.000	20,960.000
0036	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	76,150.000	76,150.000
0038	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	24.000	24.000
0040	506.4000	Steel Diaphragms (structure) 01. B-14-0225	EACH	12.000	12.000
0042	511.1200	Temporary Shoring (structure) 01. B-14-0225	SF	3,600.000	3,600.000
0044	516.0500	Rubberized Membrane Waterproofing	SY	16.000	16.000
0046	550.0500	Pile Points	EACH	14.000	14.000
0048	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	385.000	385.000
0050	604.0500	Slope Paving Crushed Aggregate	SY	420.000	420.000
0052	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	140.000	140.000
0054	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0056	614.2500	MGS Thrie Beam Transition	LF	158.000	158.000
0058	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0060	618.0100	Maintenance And Repair of Haul Roads (project) 01. 3804-00-74	EACH	1.000	1.000
0062	619.1000	Mobilization	EACH	1.000	1.000
0064	624.0100	Water	MGAL	25.000	25.000
0066	625.0500	Salvaged Topsoil	SY	2,615.000	2,615.000
0068	628.1504	Silt Fence	LF	1,640.000	1,640.000
0070	628.1520	Silt Fence Maintenance	LF	3,280.000	3,280.000
0072	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0074	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0076	628.2008	Erosion Mat Urban Class I Type B	SY	3,270.000	3,270.000

Estimate Of Quantities

3804-00-74

Line	Item	Item Description	Unit	Total	Qty
0078	628.7504	Temporary Ditch Checks	LF	30.000	30.000
0080	629.0210	Fertilizer Type B	CWT	4.000	4.000
0082	630.0120	Seeding Mixture No. 20	LB	75.000	75.000
0084	630.0200	Seeding Temporary	LB	75.000	75.000
0086	630.0300	Seeding Borrow Pit	LB	18.700	18.700
0088	630.0500	Seed Water	MGAL	48.000	48.000
0090	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0092	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	2.000	2.000
0094	637.2210	Signs Type II Reflective H	SF	10.000	10.000
0096	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0098	638.2602	Removing Signs Type II	EACH	8.000	8.000
0100	638.3000	Removing Small Sign Supports	EACH	8.000	8.000
0102	642.5001	Field Office Type B	EACH	1.000	1.000
0104	643.0420	Traffic Control Barricades Type III	DAY	2,160.000	2,160.000
0106	643.0705	Traffic Control Warning Lights Type A	DAY	3,360.000	3,360.000
0108	643.0900	Traffic Control Signs	DAY	1,680.000	1,680.000
0110	643.5000	Traffic Control	EACH	1.000	1.000
0112	645.0111	Geotextile Type DF Schedule A	SY	60.000	60.000
0114	650.4500	Construction Staking Subgrade	LF	516.000	516.000
0116	650.5000	Construction Staking Base	LF	516.000	516.000
0118	650.6500	Construction Staking Structure Layout (structure) 01. B-14-0225	LS	1.000	1.000
0120	650.7000	Construction Staking Concrete Pavement	LF	44.000	44.000
0122	650.9910	Construction Staking Supplemental Control (project) 01. 3804-00-74	LS	1.000	1.000
0124	650.9920	Construction Staking Slope Stakes	LF	516.000	516.000
0126	690.0150	Sawing Asphalt	LF	52.000	52.000
0128	715.0415	Incentive Strength Concrete Pavement	DOL	35.000	35.000
0130	715.0502	Incentive Strength Concrete Structures	DOL	3,516.000	3,516.000
0132	801.0117	Railroad Flagging Reimbursement	DOL	15,000.000	15,000.000
0134	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,200.000	1,200.000
0136	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	600.000	600.000
0138	SPV.0105	Special 01. Settlement Monitoring	LS	1.000	1.000
0140	SPV.0165	Special 01. Temporary Shoring Railroad	SF	850.000	850.000

BOBOLINK ROAD EARTHWORK SUMMARY								
From/To Station	Location	Common Excavation (1) (item # 205.0100)	Unexpanded Fill	Expanded Fill (2)	Mass Ordinate +/- (3)	Waste (4)	Borrow (item #208.0100)	Comment:
		Cut		Factor 1.30				
7+00 to 13+00	PROJECT LIMITS	205	3263	4242	-4037		4037	

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

FINISHING ROADWAY (ID 3804-00-74)	
213.0100.01	
LOCATION	EACH
MAINLINE	1
TOTAL	1

PAVING AND BASE QUANTITIES

				305.0110	305.0120	415.0410	455.0605	465.0105	624.0100
				BASE AGGREGATE	BASE AGGREGATE	CONCRETE	TACK	ASPHALTIC SURFACE	WATER
				DENSE 3/4-INCH	DENSE 1 1/4-INCH	PAVEMENT	COAT		
APPROACH SLAB									
STA	TO	STA	OFFSET	TON	TON	SY	GAL	TON	MGAL
7+00	--	8+93	LT/RT	38	665	-	40	127	10.5
8+93	--	9+23	LT/RT	5	45	58	-	-	0.8
10+77	--	11+07	LT/RT	5	45	58	-	-	0.8
11+07	--	13+00	LT/RT	43	680	-	38	122	10.8
UNDISTRIBUTED				11	70	6	4	12	1.2
TOTALS				102	1,505	123	82	261	25

		614.2500		614.2610	
		MGS		MGS	
		THRIE BEAM		GUARDRAIL	
		GUARDRAIL 3		TERMINAL EAT	
STATION	TO	STATION	OFFSET	LF	EACH
8+13	-	9+04	LT	39.4	1
8+30	-	9+21	RT	39.4	1
10+80	-	11+70	LT	39.4	1
10+96	-	11+87	RT	39.4	1
TOTALS				158	4

STAKING ITEMS

MAINTENANCE AND REPAIR
OF HAUL ROADS
ID 3804-00-74

618.0100.01	
CATEGORY	EACH
0030	1
TOTAL	1

		650.4500	650.5000	650.6500.01	650.7000	650.9910.01	650.9920
		CONSTRUCTION	CONSTRUCTION	CONSTRUCTION	CONSTRUCTION	CONSTRUCTION STAKING	CONSTRUCTION
		STAKING	STAKING	STAKING	STAKING	SUPPLEMENTAL CONTROL	STAKING
		SUBGRADE	BASE	STRUCTURE LAYOUT	CONCRETE	(ID 3804-00-74)	SLOPE
				(B-14-0225)	PAVEMENT		
						STAKES	
CATEGORY	LOCATION	LF	LF	LS	LF	LS	LF
0010	7+00 - 13+00	516	516	--	44	1	516
0020	B-14-0225	--	--	1	--	--	--
TOTALS		516	516	1	44	1	516

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

EROSION CONTROL ITEMS

				625.0500	628.1504	628.1520	628.2008	629.0210	630.0120	630.0200	630.0300	630.0500
				SALVAGED	SILT FENCE	SILT FENCE	EROSION MAT	FERTILIZER	SEEDING	SEEDING	SEEDING	SEED
				TOPSOIL		MAINTENANCE	URBAN	TYPE B	MIXTURE	TEMPORARY	BORROW	WATER
							CLASS I TYPE B		NO. 20		PIT	
STA	TO	STA	LOCATION	SY	LF	LF	SY	CWT	LB	LB	LB	MGAL
7+00	--	10+00	LT	345	270	540	345	0.6	13	13	4.8	10
7+00	--	10+00	RT	595	390	780	595	0.9	19	19	--	15
10+00	--	13+00	LT	930	370	740	930	1.3	28	28	13.4	22
10+00	--	13+00	RT	745	280	560	745	1.1	1	1	--	1
UNDISTRIBUTED				--	330	660	655	0.1	14	14	0.5	--
TOTALS				2,615	1,640	3,280	3,270	4.0	75	75	18.7	48

EROSION CONTROL MOBILIZATION ITEMS

			628.1905	628.1910
			MOBILIZATIONS	MOBILIZATIONS
			EROSION	EMERGENCY
			CONTROL	EROSION
				CONTROL
LOCATION			EACH	EACH
ID 3804-00-74			4	4
TOTALS			4	4

TRAFFIC CONTROL ITEMS

				643.0420	643.0705	643.0900	643.5000
				BARRICADES	WARNING LIGHTS	SIGNS	TRAFFIC
							CONTROL
				DURATION	TYPE III	TYPE A	
				DAYS	NO.	DAY	EACH
TEMPORARY DITCH CHECKS							
				628.7504			
				LOCATION	LF		
UNDISTRIBUTED				30			
TOTAL				30			
					2,160	3,360	1,680
							1
TOTALS					2,160	3,360	1,680
							1

TRAFFIC CONTROL PLACEMENT SUBJECT TO ENGINEER APPROVAL

RAILROAD ITEMS

		203.0225.S**	801.0117	SPV.0105.01	SPV.0165.01**
		DEBRIS	RAILROAD	SETTLEMENT	TEMPORARY
		CONTAINMENT	FLAGGING	MONITORING	SHORING RAILROAD
		P-14-0095	REIMBURSEMENT		
CATEGORY	LOCATION	LS	DOL	LS	SF
0010	7+00 - 13+00	--	15,000	1	--
0020	B-14-0225	1	--	--	850
TOTALS		1	15,000	1	850

**SHOWN IN STRUCTURE PLAN QUANTITIES

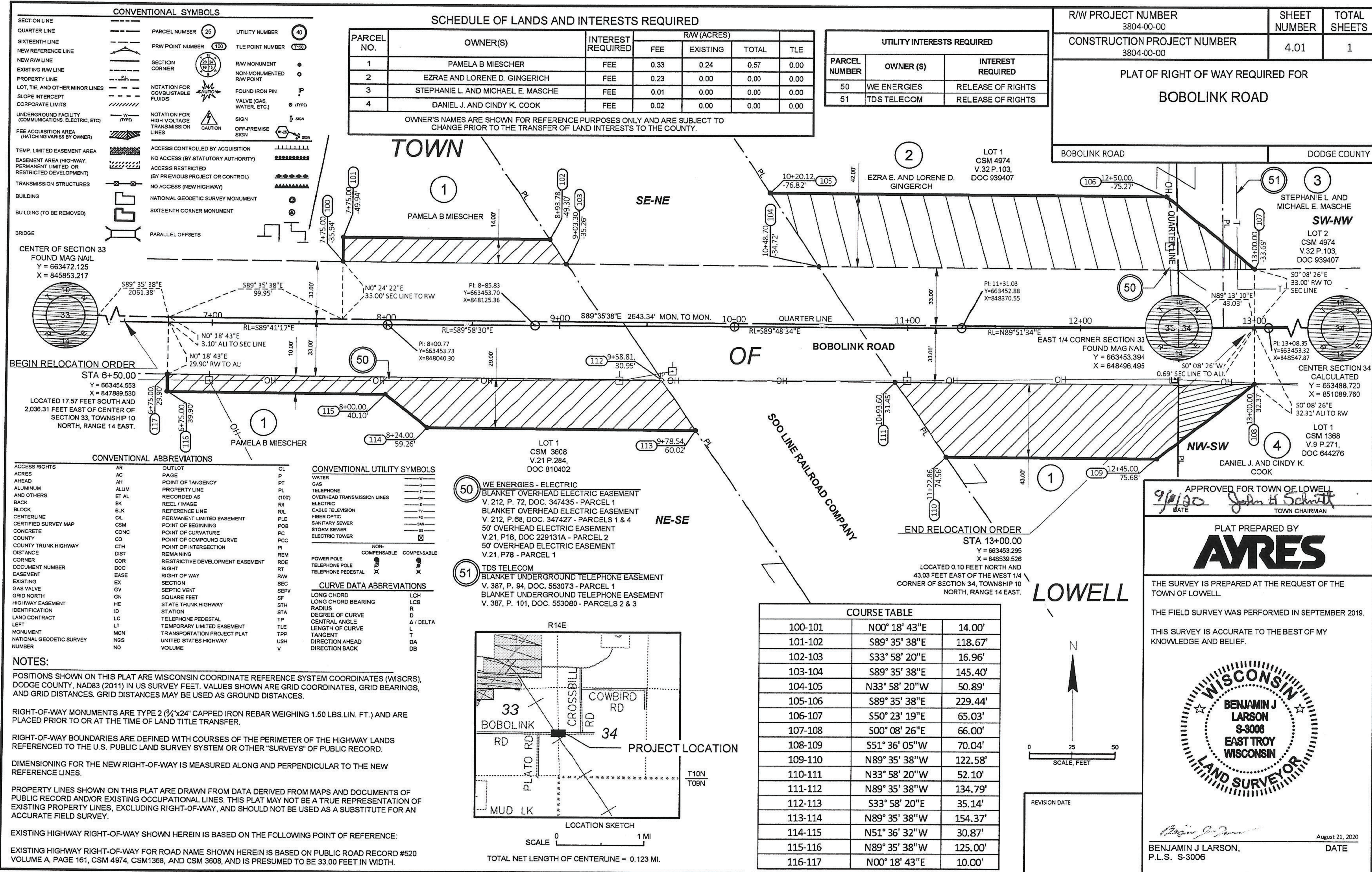
SIGNS

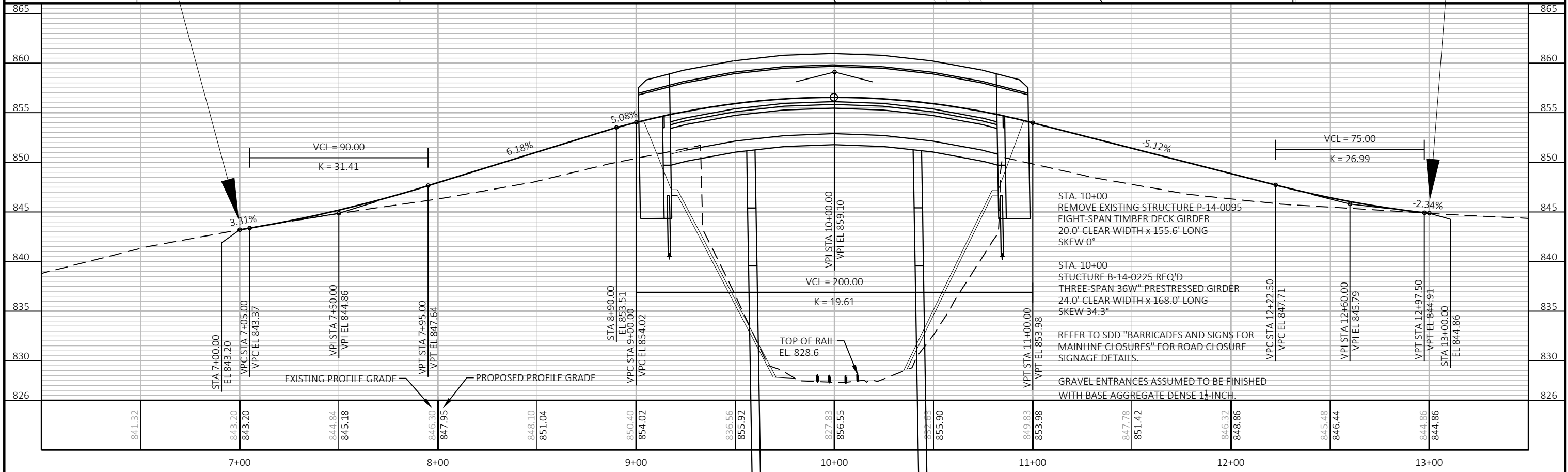
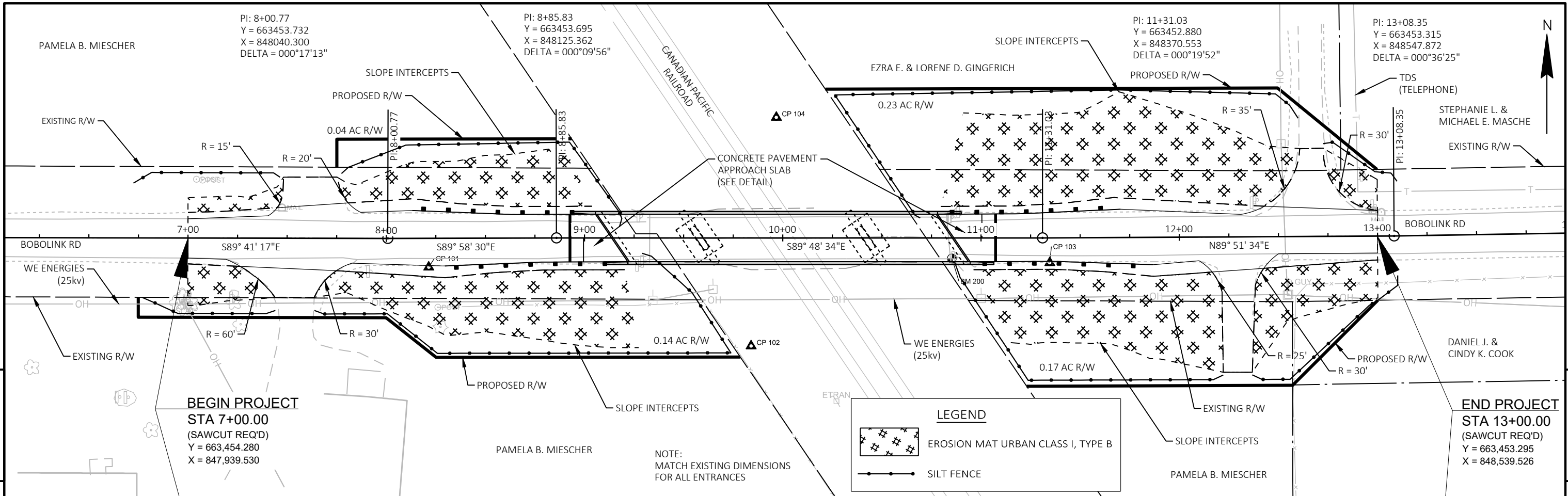
		634.0612	634.0614	637.2210	637.2230	638.2602	638.3000
		POSTS WOOD	POSTS WOOD	SIGNS TYPE II	SIGNS TYPE II	REMOVING	REMOVING
		4X6-INCH X 12-FT	4X6-INCH X 14-FT	REFLECTIVE H	REFLECTIVE F	SIGNS TYPE II	SMALL SIGN
							SUPPORTS
STATION	LOC	EACH	EACH	SF	SF	EACH	EACH
7+92	RT	--	1	5	--	1	1
9+28	RT	--	--	--	--	1	1
9+29	LT	1	--	--	3	1	1
9+30	RT	1	--	--	3	1	1
10+85	LT	1	--	--	3	1	1
10+87	RT	1	--	--	3	1	1
10+90	LT	--	--	--	--	1	1
12+38	LT	--	1	5	--	1	1
TOTALS		4	2	10	12	8	8

SAWING ASPHALT

			690.0150
STATION	LOCATION	LF	
7+00	LT & RT	26	
13+00	LT & RT	26	
TOTAL			52

ALL QUANTITIES CATEGORY 0010 UNLESS OTHERWISE NOTED

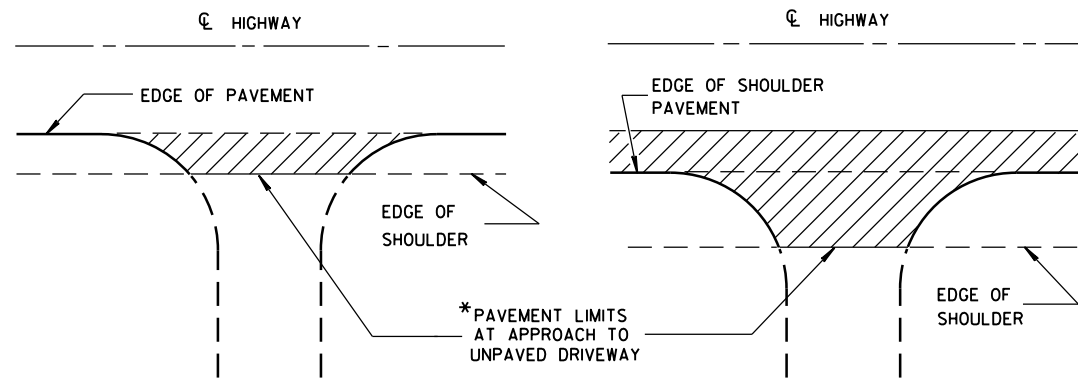




PROJECT NO:	3804-00-04	HWY:	BOBOLINK ROAD	COUNTY:	DODGE	PLAN AND PROFILE:	SHEET	5
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Standard Detail Drawing List

08D21-01	DRIVEWAYS WITHOUT CURB & GUTTER
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
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)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS

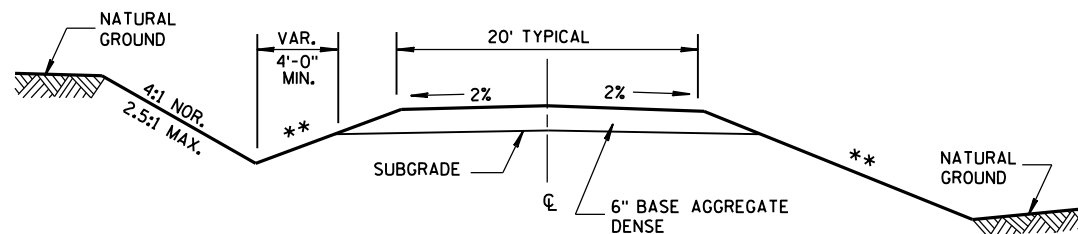


*WHERE DRIVEWAY IS PAVED, APPROACH PAVEMENT SHOULD BE EXTENDED TO MATCH DRIVEWAY PAVEMENT.

PLAN VIEW
(UNPAVED SHOULDER ON HIGHWAY)

PLAN VIEW
(PAVED SHOULDER ON HIGHWAY)

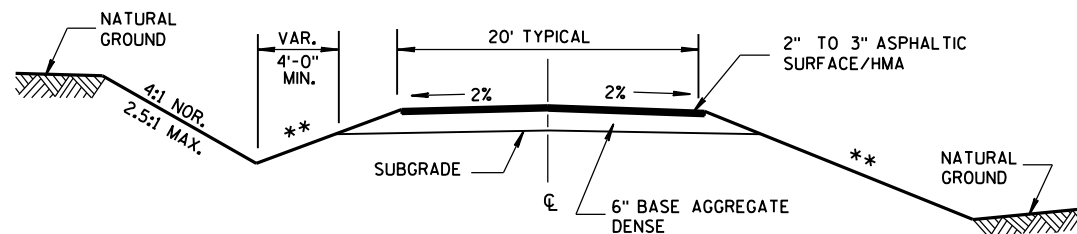
RURAL DRIVEWAY INTERSECTION DETAIL
(NO CURB & GUTTER OR SIDEWALK)



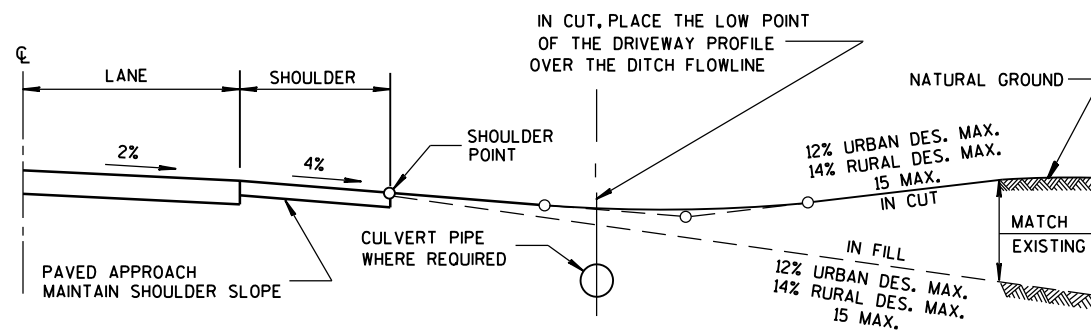
**TYPICAL CROSS SECTION FOR
PRIVATE DRIVE OR FIELD ENTRANCE
AGGREGATE SURFACE**

** SLOPE CAN VARY WITH SPEED. SEE 11-45-2.6.2.

POSTED SPEED MPH	MAX. SLOPE
<35	4:1
≥35 TO <60	6:1
≥60	10:1

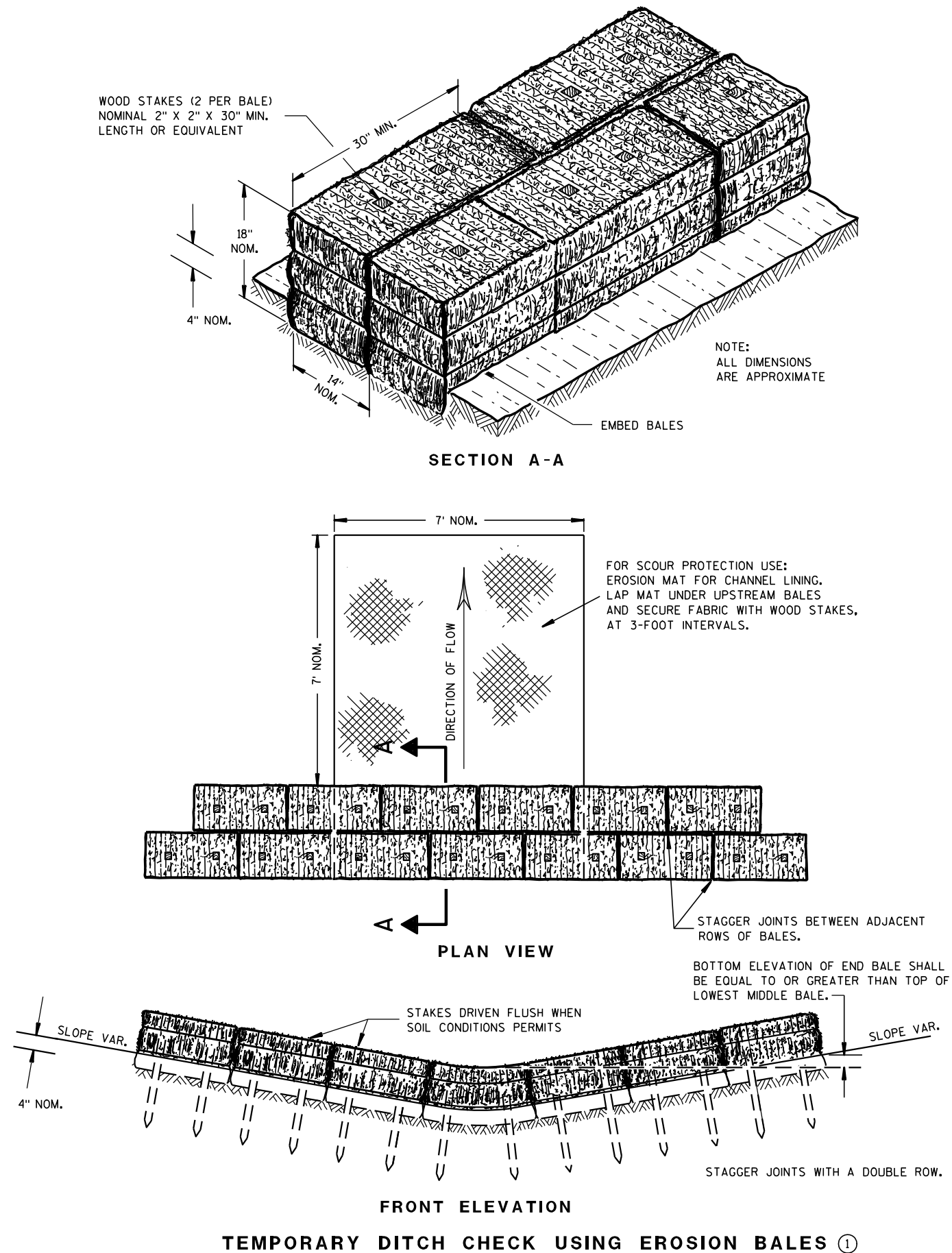


**TYPICAL CROSS SECTION FOR
PRIVATE DRIVE OR FIELD ENTRANCE
ASPHALTIC SURFACE**



TYPICAL DRIVEWAY PROFILES

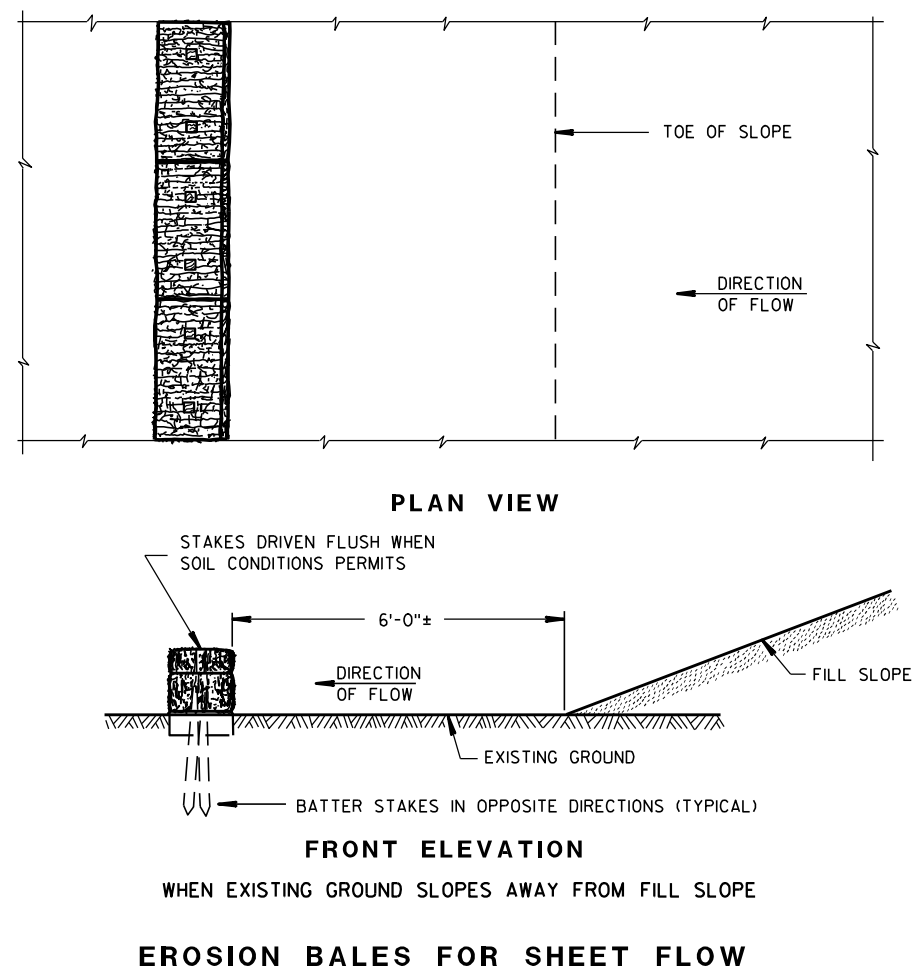
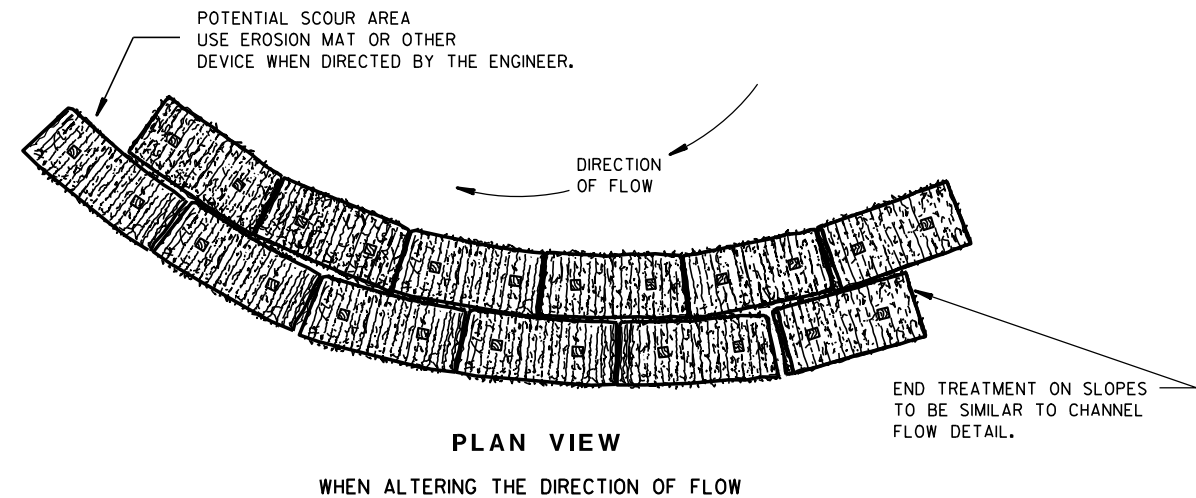
DRIVEWAYS WITHOUT CURB & GUTTER	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED December, 2016 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	



GENERAL NOTES

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

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

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

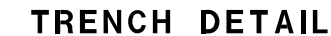
6/04/02
DATE

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

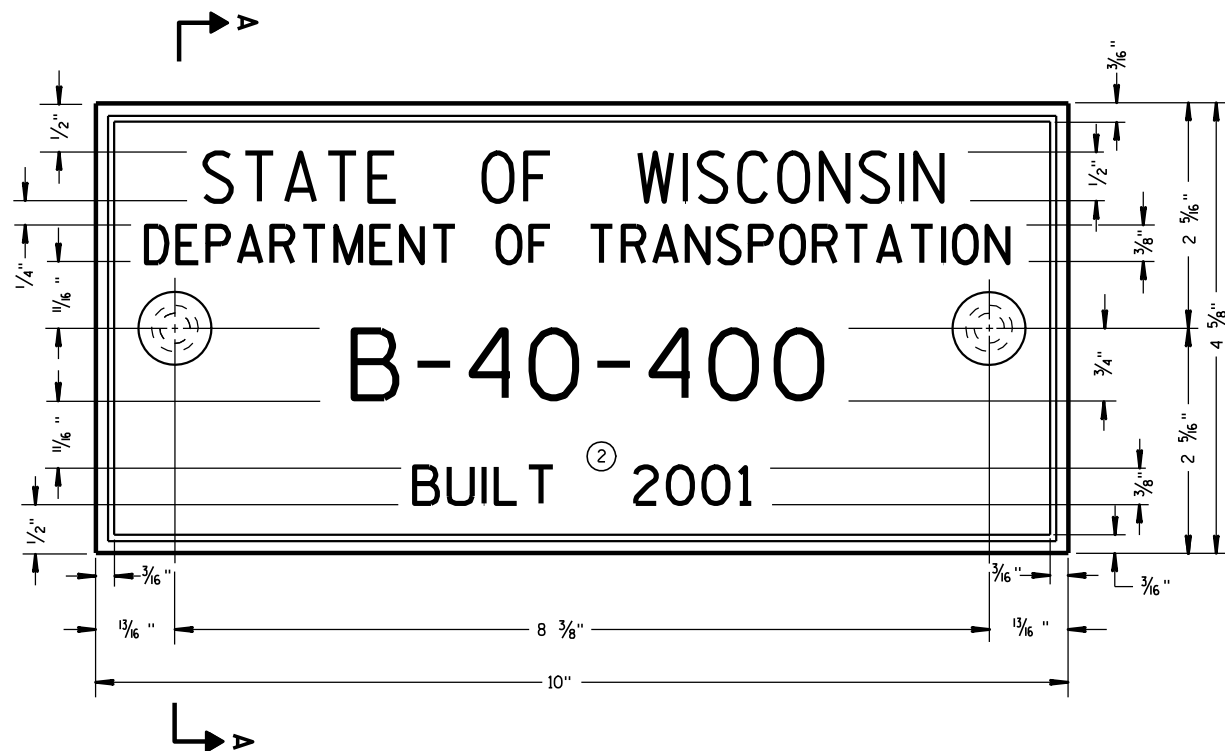
FHWA



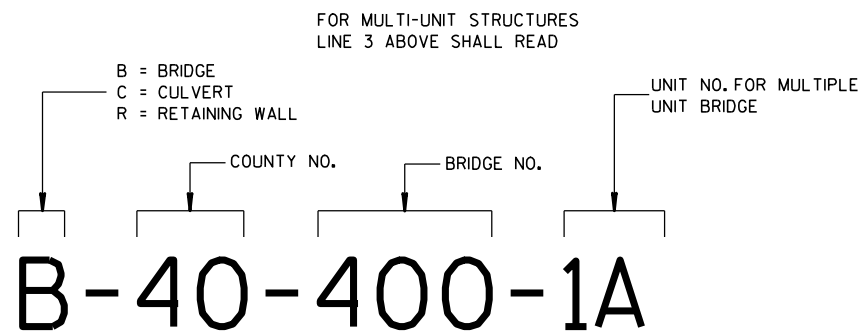
- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS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



SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED <u>4-29-05</u> DATE	<u>/S/ Beth Cannestra</u> CHIEF ROADWAY DEVELOPMENT ENGINEER



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



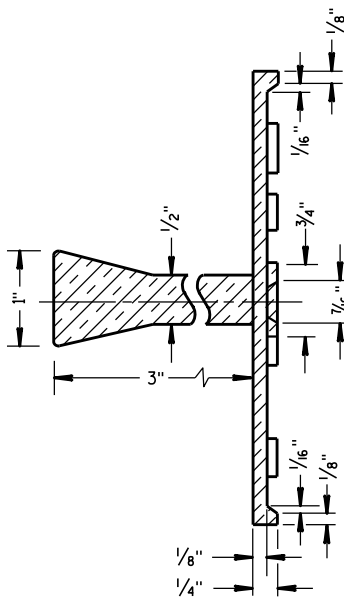
NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

GENERAL NOTES

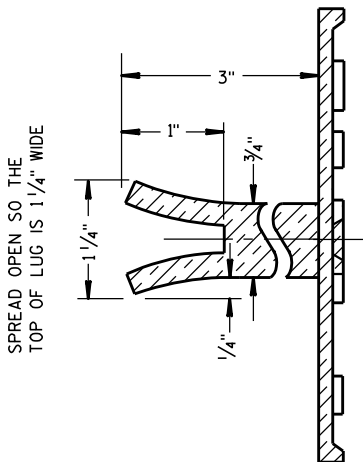
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

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

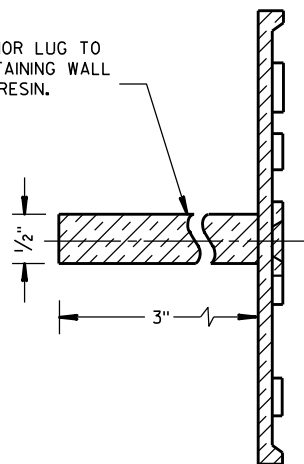


SECTION A-A



ALTERNATE LUG

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

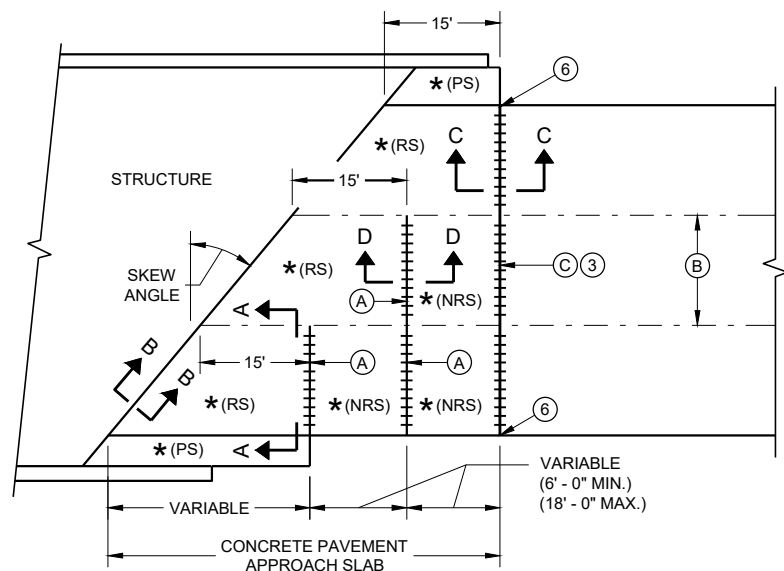


ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

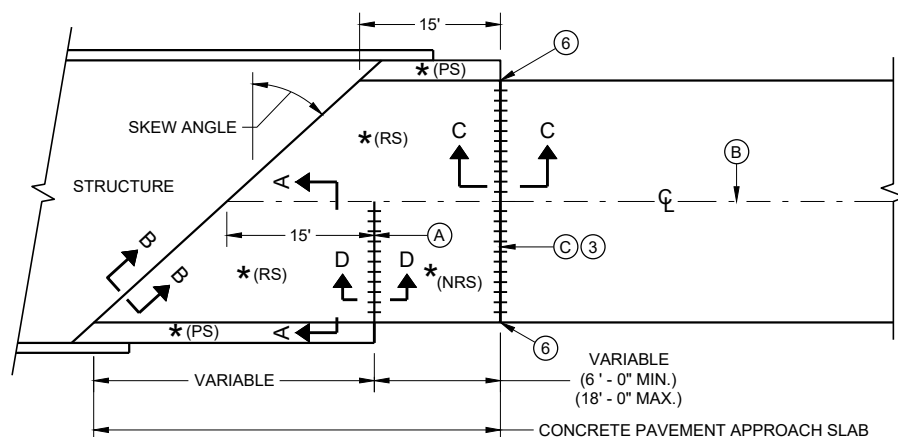
NAME PLATE
(STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

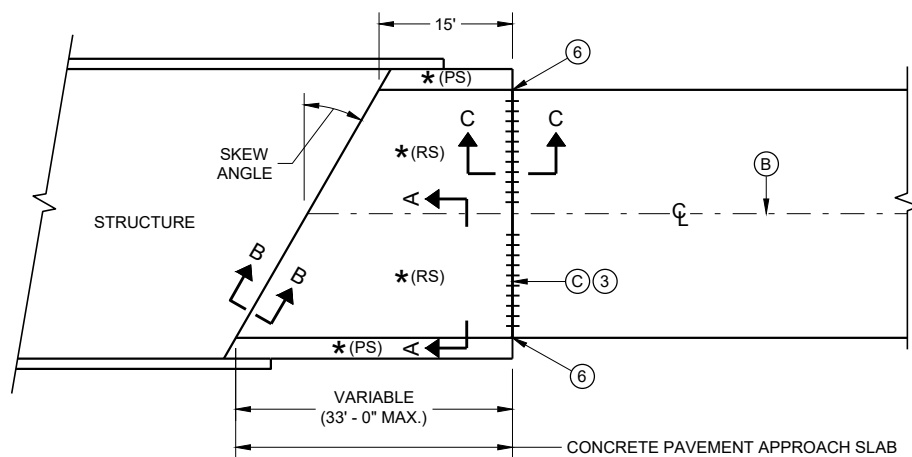
APPROVED
3/26/10
DATE
/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER
FHWA



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



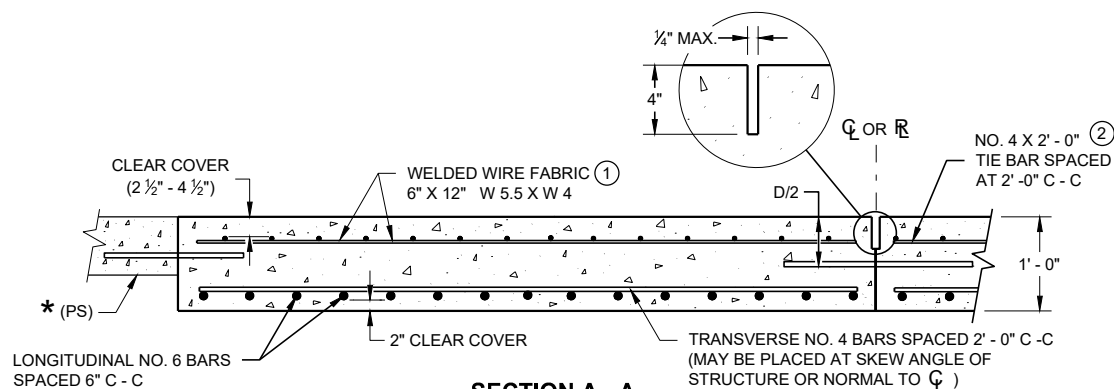
**SKews > 20°
(PAVEMENT WIDTH ≤ 30')**



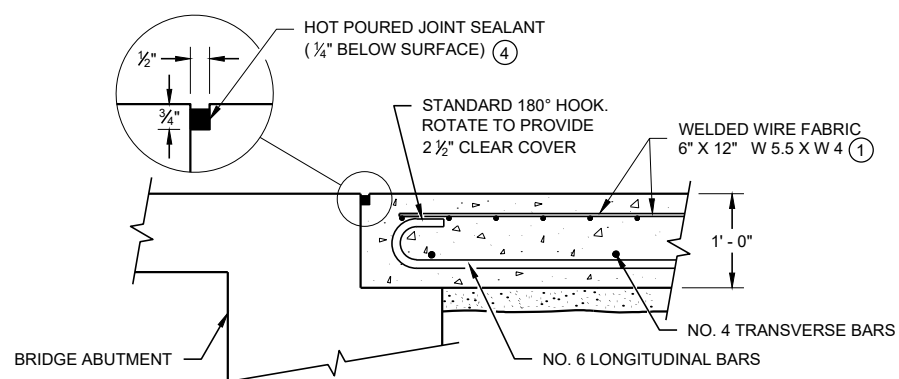
**SKews ≤ 20°
(PAVEMENT WIDTH ≤ 30')**

APPROACH SLAB AND ADJACENT PAVEMENT

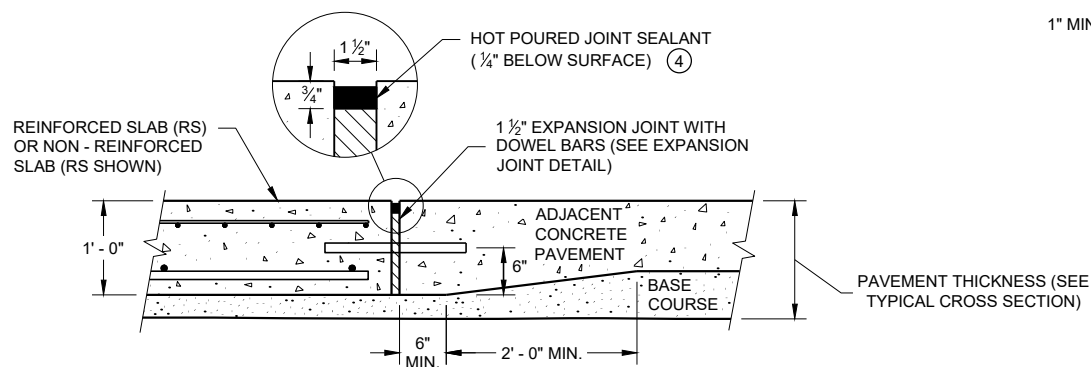
- * (RS) = REINFORCED CONCRETE SLAB
- * (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
- * (NRS) = NON - REINFORCED CONCRETE SLAB
- *** STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



**SECTION A - A
REINFORCEMENT POSITIONING DETAIL**



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



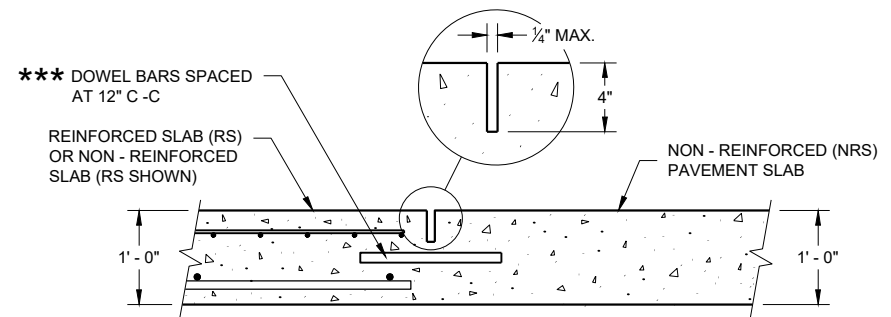
**SECTION C - C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT**

GENERAL NOTES

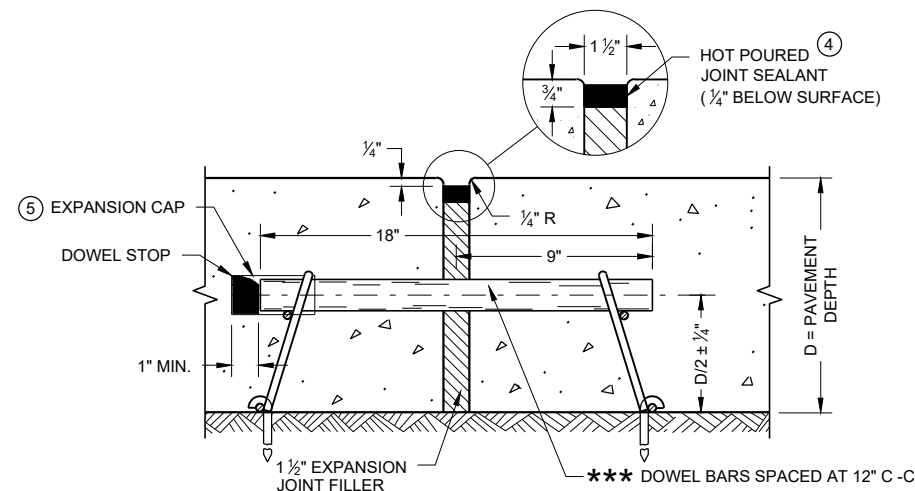
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

- ① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2' - 0" C - C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.
- ② THE CONTRACTOR MAY OMIT THE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.
- ③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.
- ④ USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- 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 $\mathcal{C}$ OR $\mathcal{R}$.
- (B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.
- (C) 1 1/2" EXPANSION JOINT WITH DOWEL BARS NORMAL TO $\mathcal{C}$ OR $\mathcal{R}$.



**SECTION D - D
CONTRACTION JOINT**



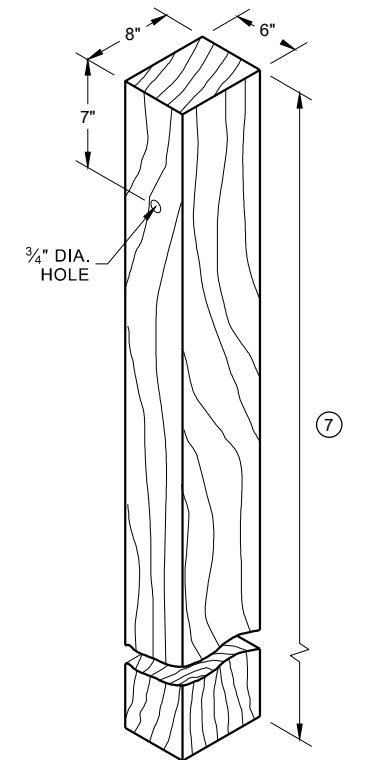
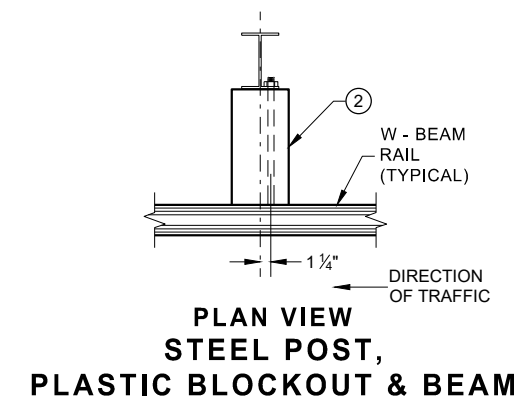
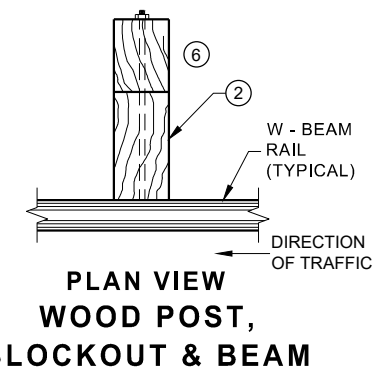
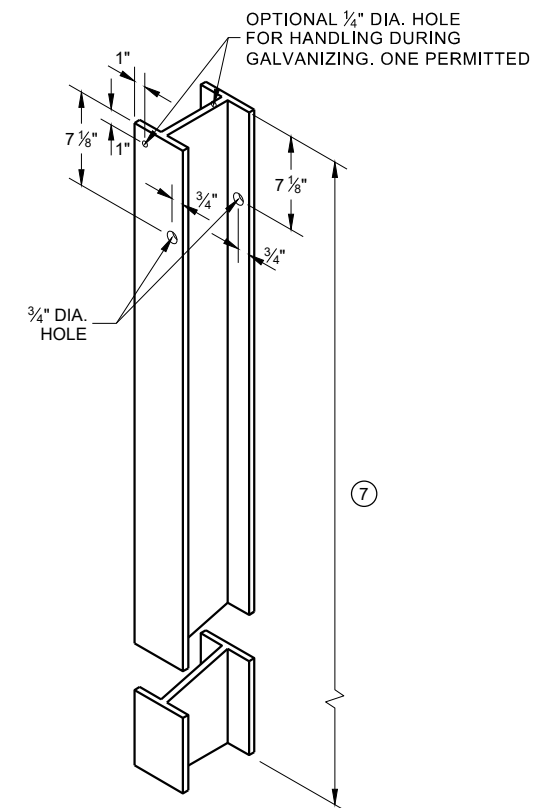
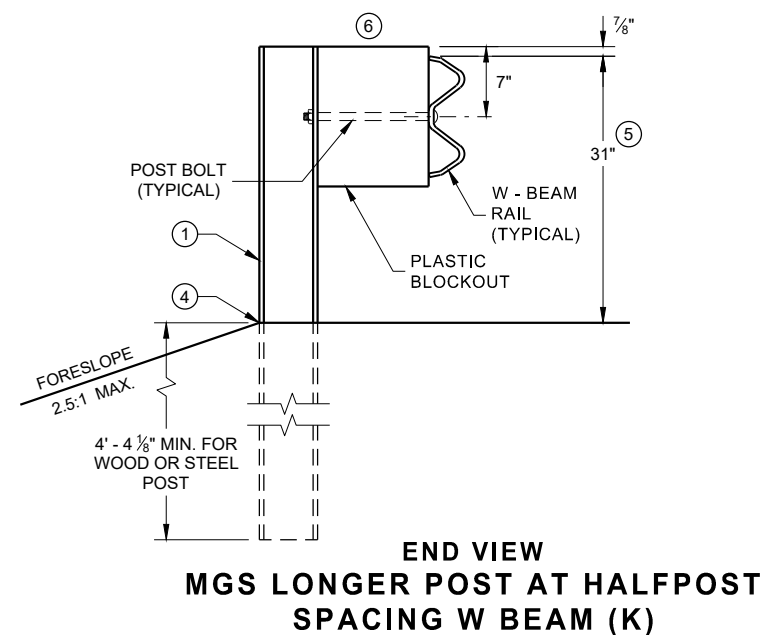
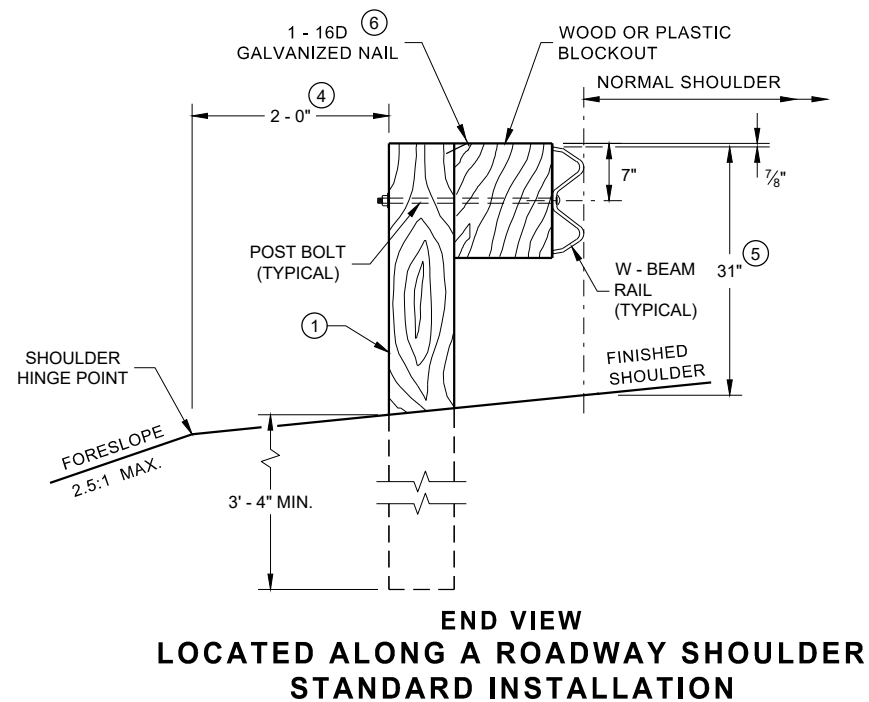
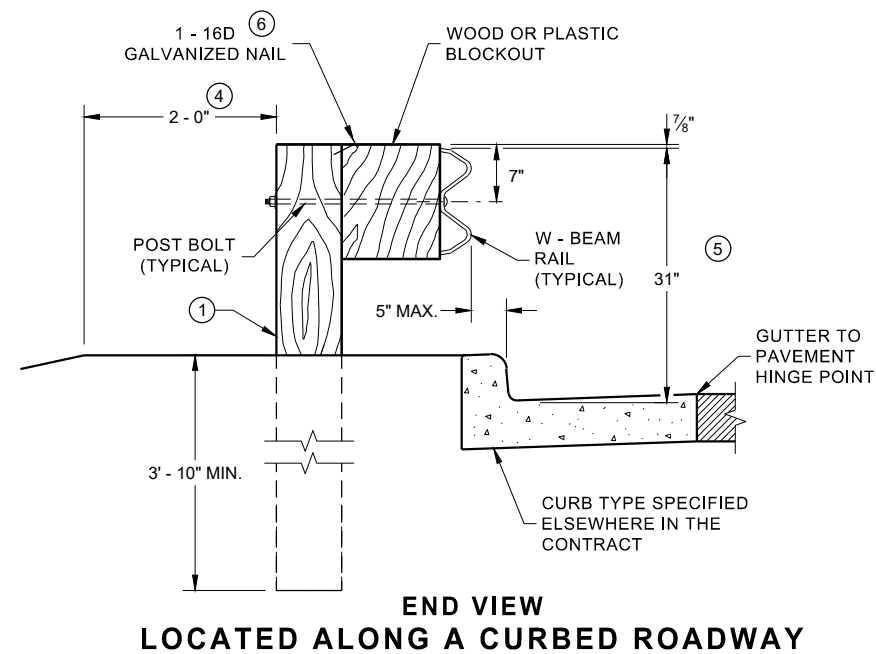
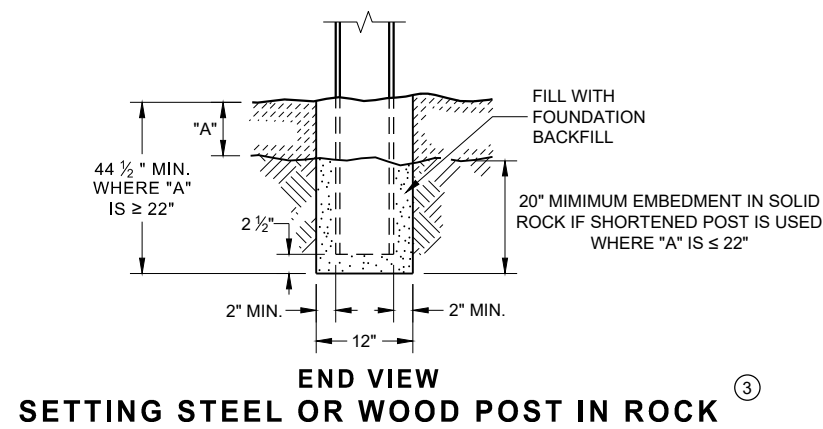
EXPANSION JOINT DETAIL

CONCRETE PAVEMENT APPROACH SLAB

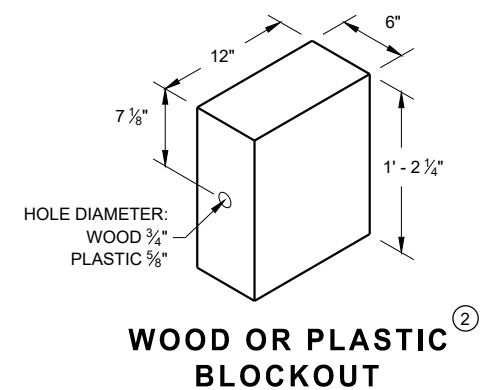
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- ③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AND INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- ④ WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- ⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS +1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 3/4" TO 32".
- ⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ⑦ TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



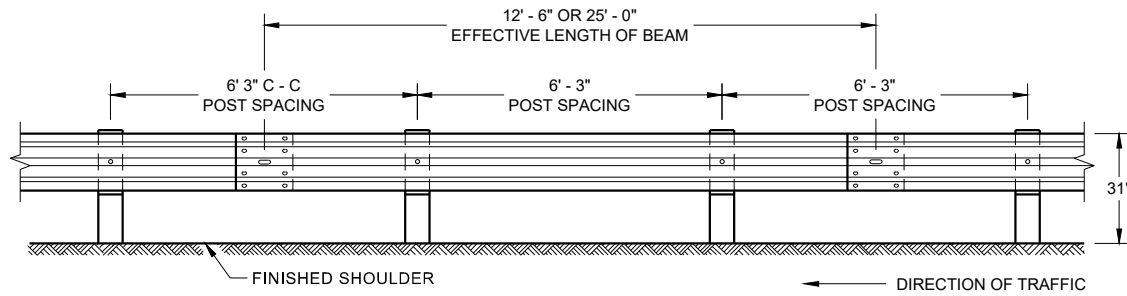
WOOD POST (6" X 8") NOMINAL ⁽¹⁾



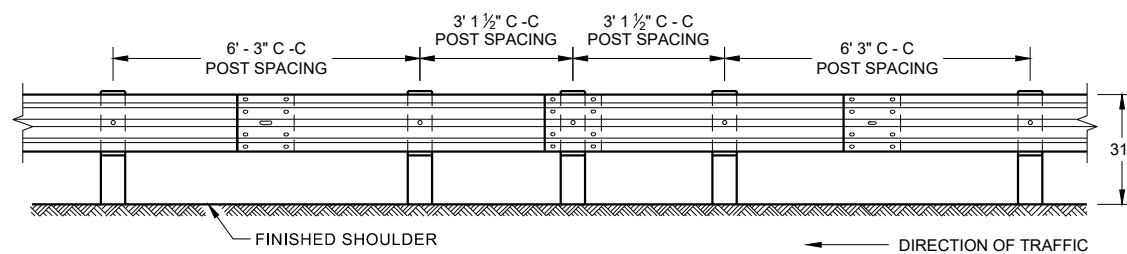
**WOOD OR PLASTIC
BLOCKOUT**

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

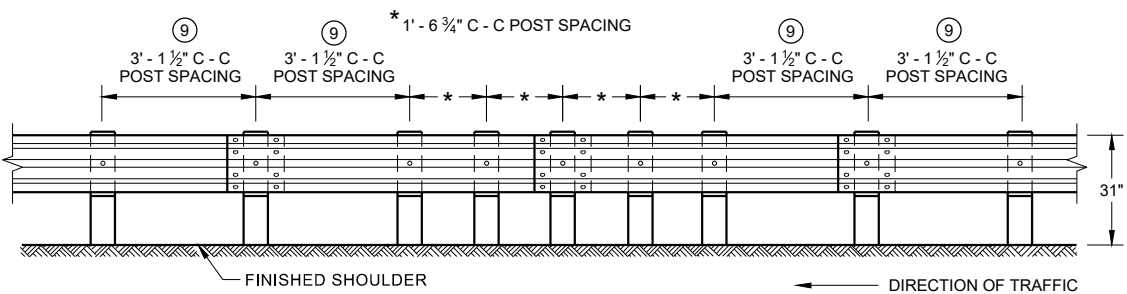
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



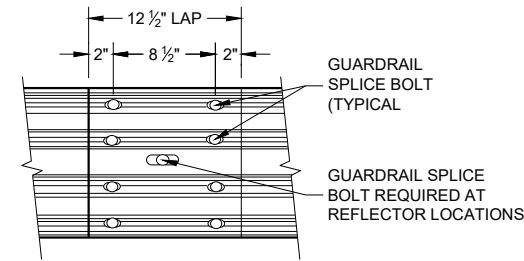
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



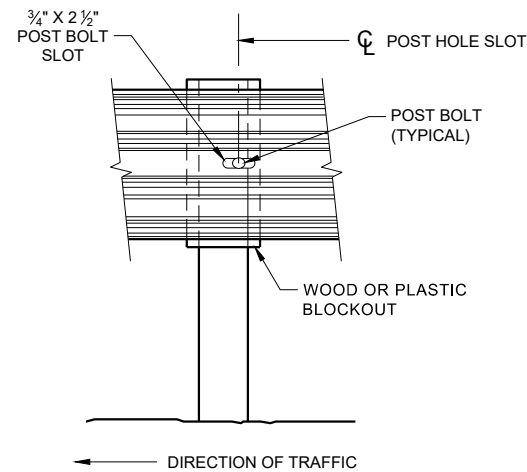
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



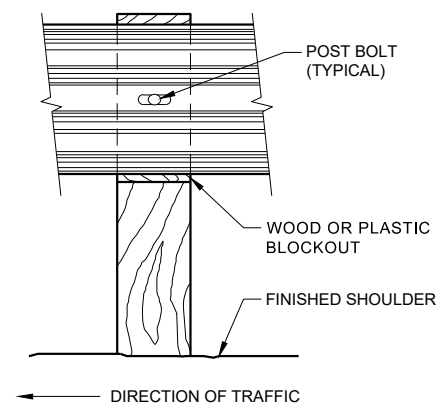
**FRONT VIEW
QUARTER POST SPACING (QS)**



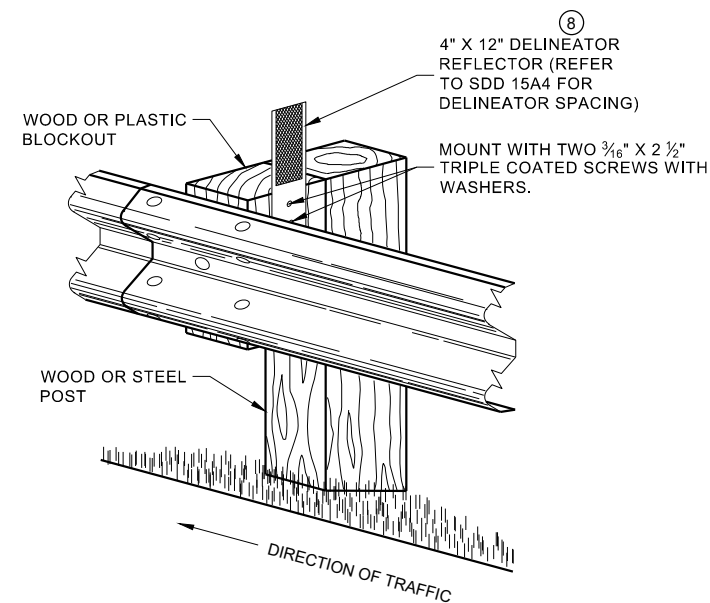
**FRONT VIEW
MID-SPAN BEAM SPLICE**



FRONT VIEW AT STEEL POST



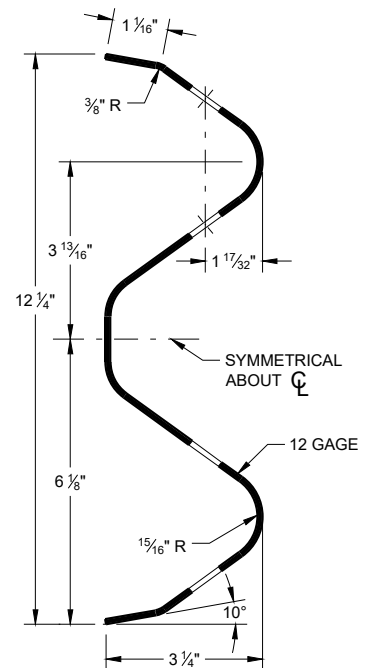
FRONT VIEW AT WOOD POST



**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

GENERAL NOTES

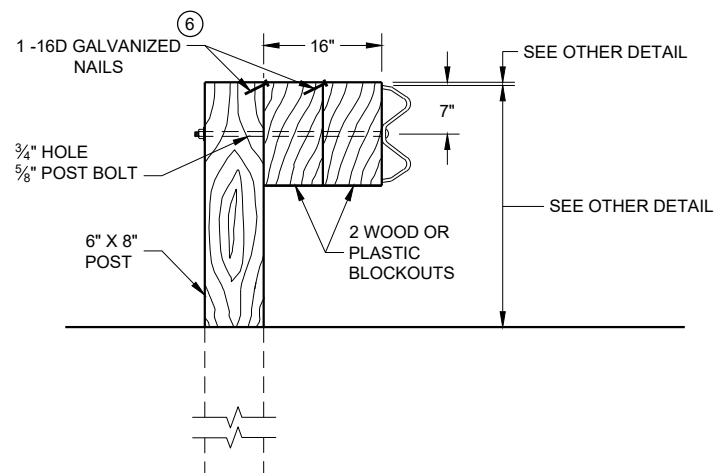
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
 - ⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER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



SECTION THRU W-BEAM RAIL

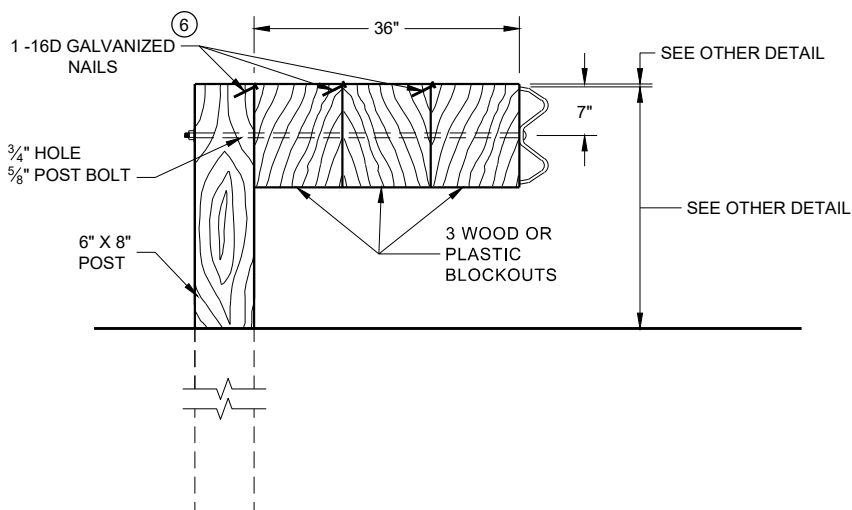
**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR 16" BLOCKOUT DEPTH

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



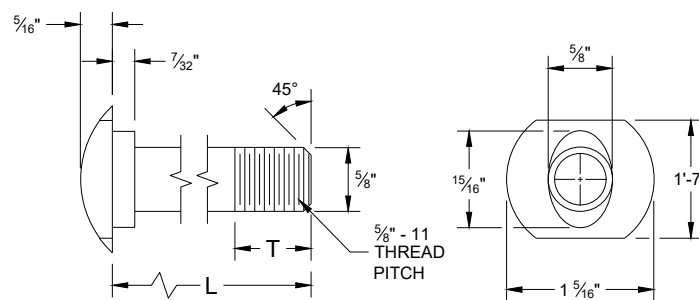
DETAIL FOR 36" BLOCKOUT DEPTH

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

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

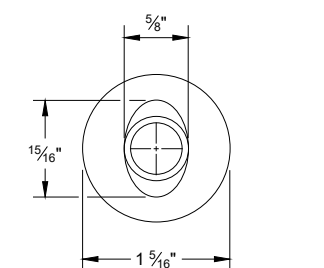
NOTE:

- ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF $\frac{3}{16}$ ".
- IF THE BOLT EXTENDS MORE THAN $\frac{1}{4}$ " FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

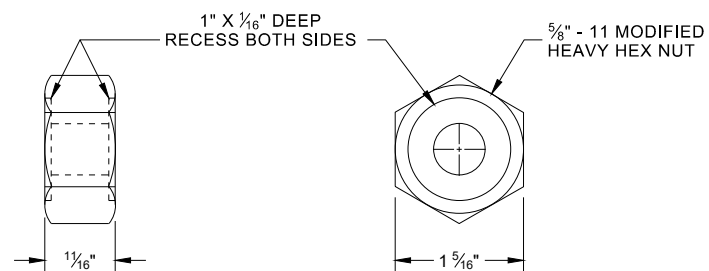


POST BOLT TABLE

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

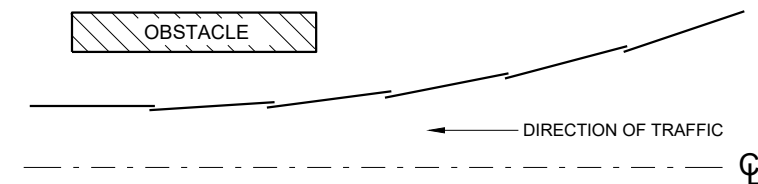


ALTERNATE BOLT HEAD

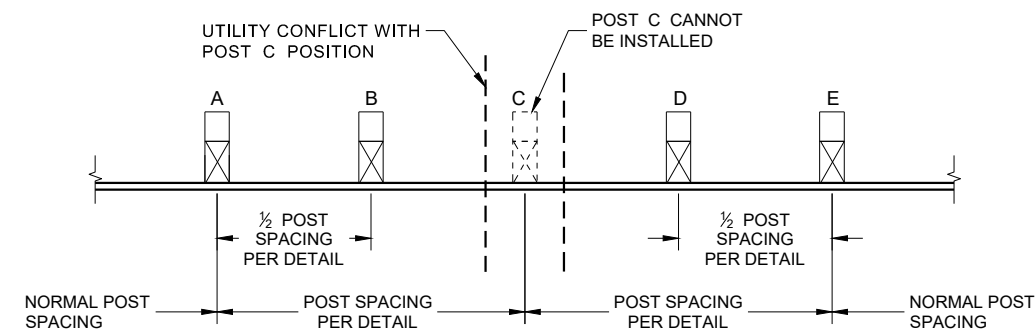


POST BOLT, SPLICE BOLT AND RECESS NUT

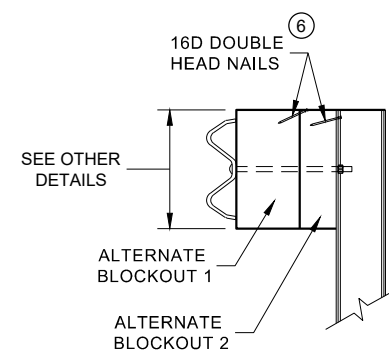
- ⑥ WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



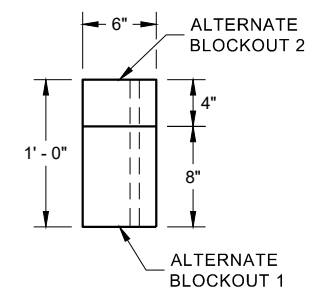
PLAN VIEW BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW

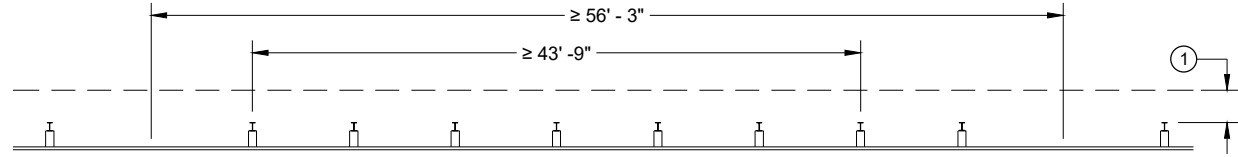


PLAN VIEW

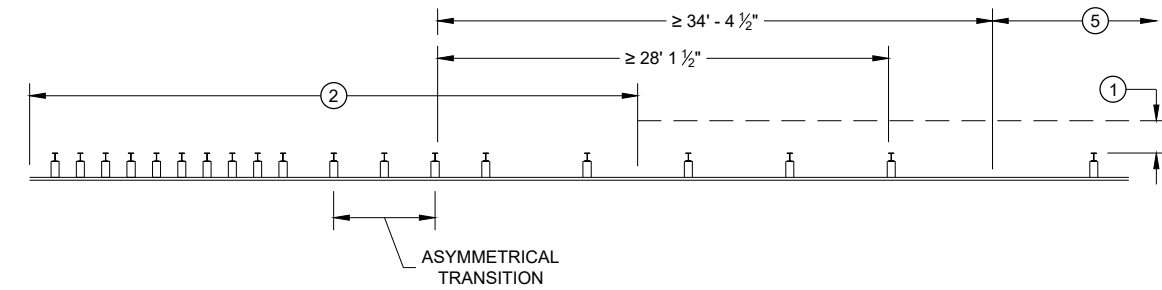
ALTERNATE WOOD BLOCKOUT DETAIL

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

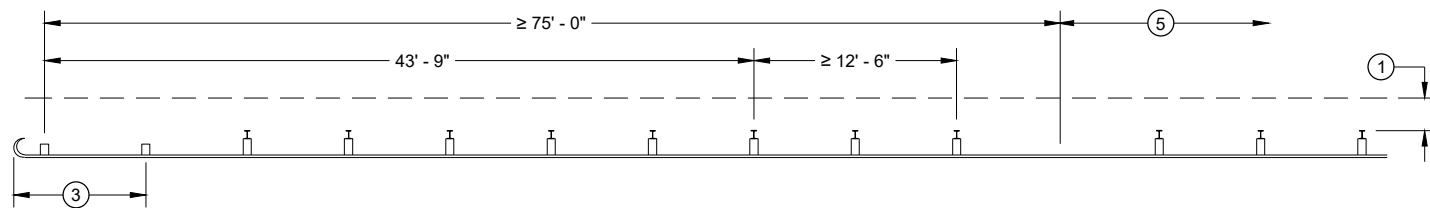
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



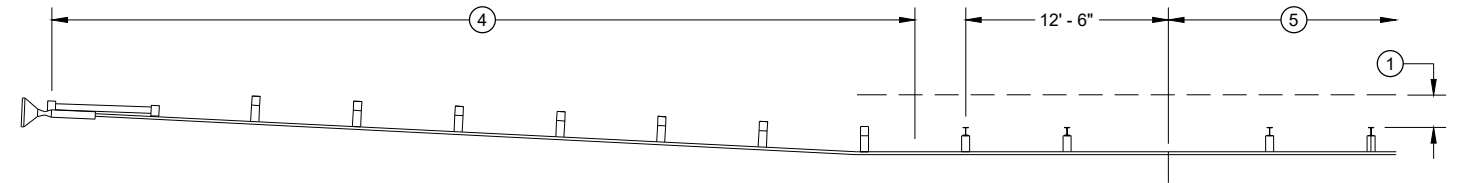
MISSING POST IN NORMAL BEAM GUARD RUN



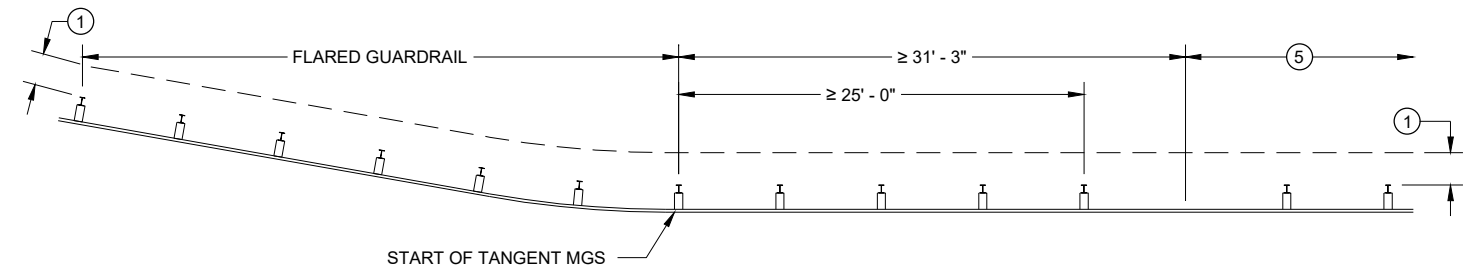
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



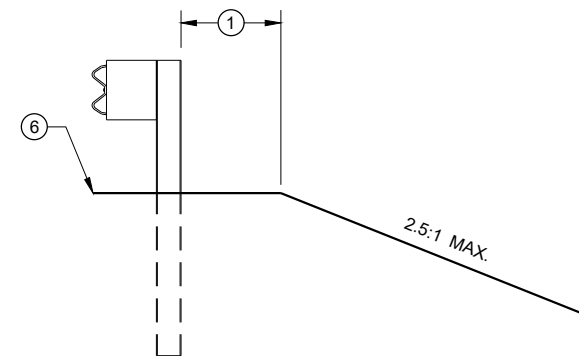
MISSING POST IN NORMAL BEAM GUARD RUN
NEAR TYPE 2 TERMINAL



MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



MISSING POST IN NORMAL BEAM GUARD RUN
NEAR FLARED BEAM GUARD



CROSS SECTION VIEW

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

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

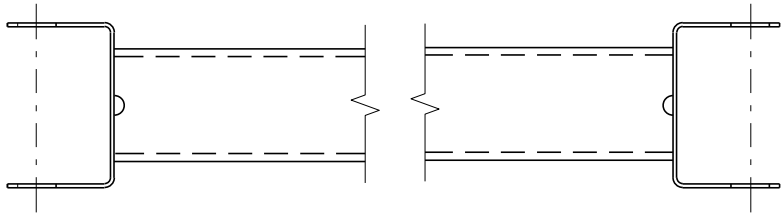
- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED
- (C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS. 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.

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

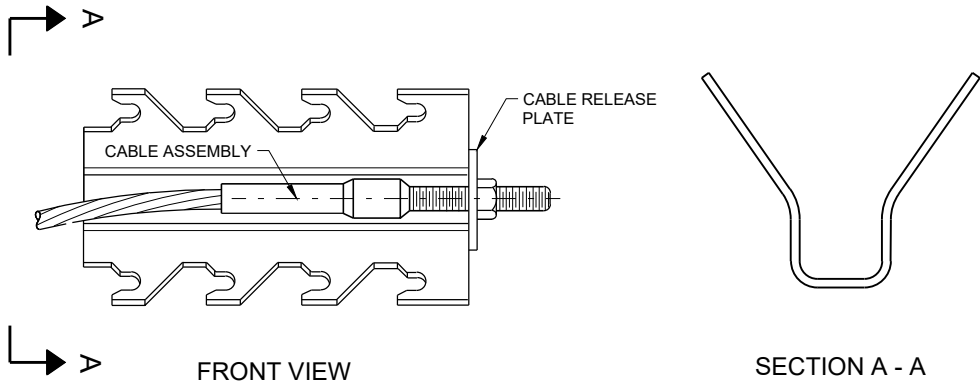


STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

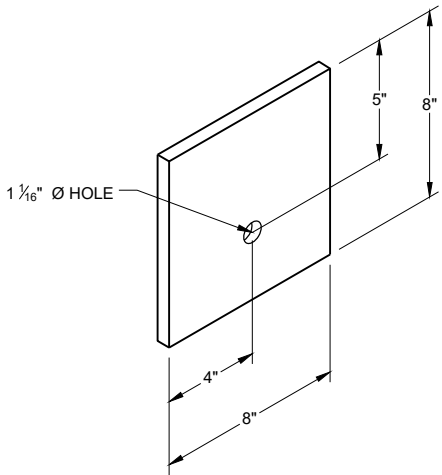


GENERIC GROUND STRUT⁹ (E)

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



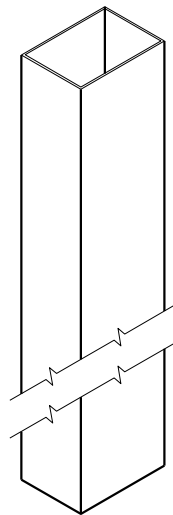
GENERIC ANCHOR CABLE BOX⁹ (E)



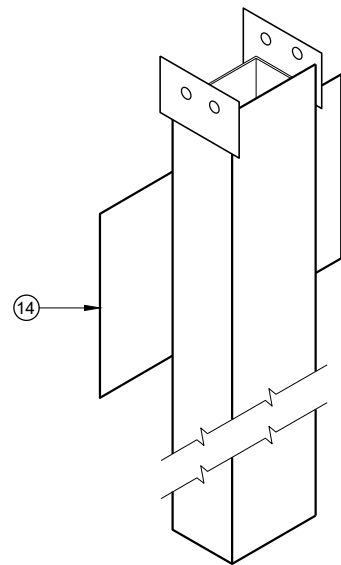
BEARING PLATE⁶ (E)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

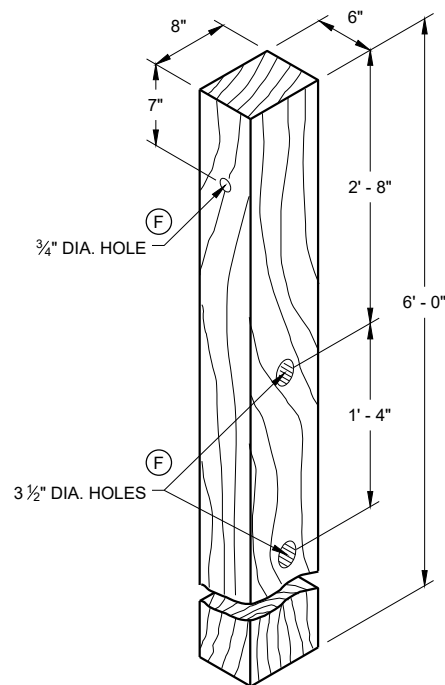
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



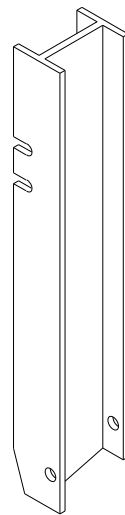
UPPER POST NO. 1 ⁽¹⁾ (E)



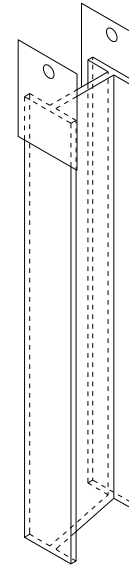
LOWER POST NO. 1 ⁽²⁾ (E)



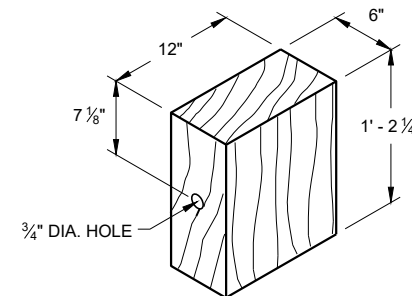
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



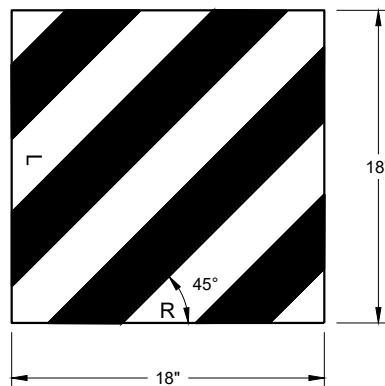
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



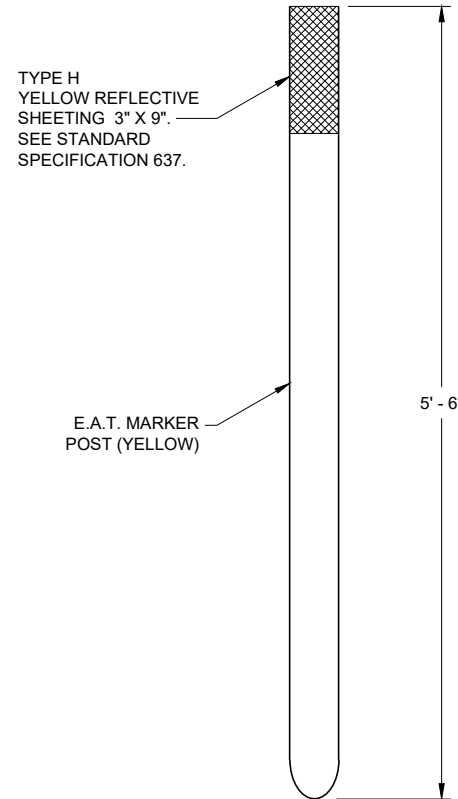
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



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



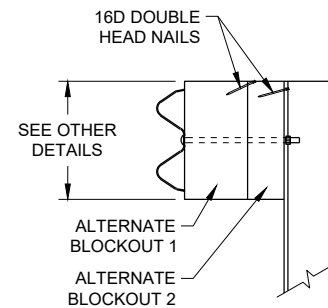
REFLECTIVE SHEETING DETAIL ^(E)



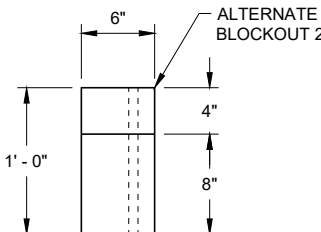
FRONT VIEW

SIDE VIEW

E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW



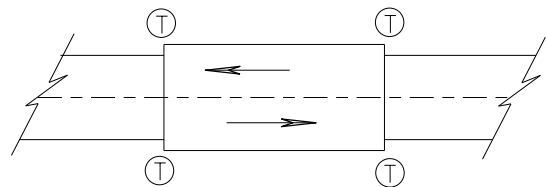
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

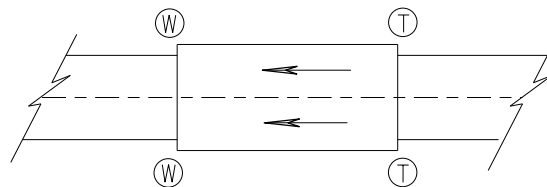
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

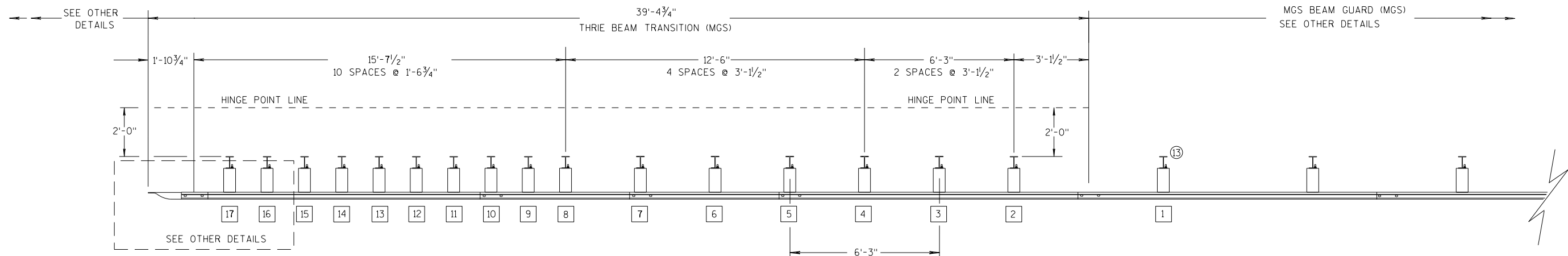
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

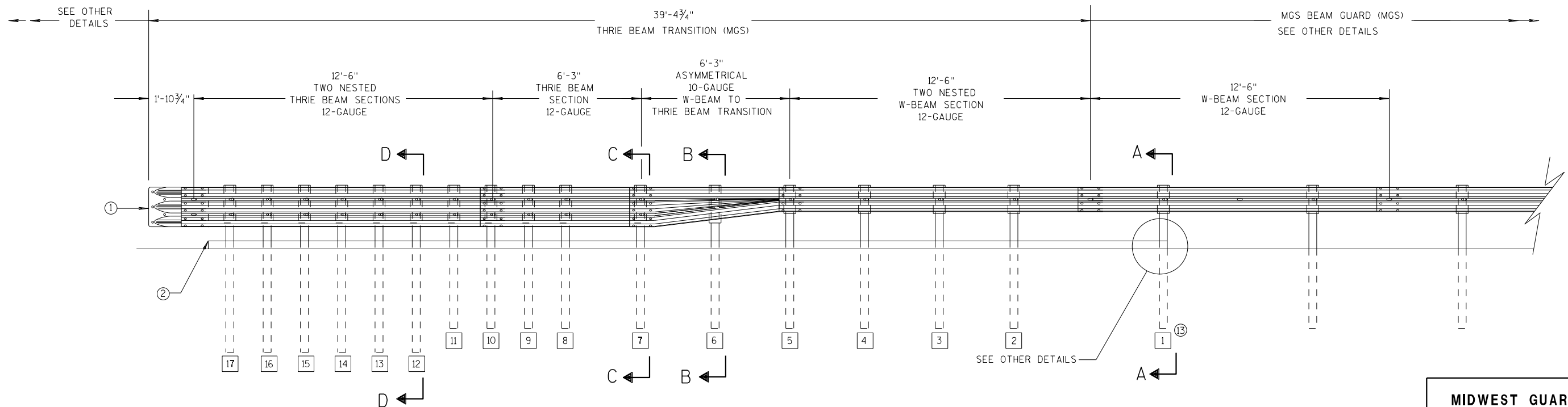
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

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



PLAN VIEW



ELEVATION VIEW

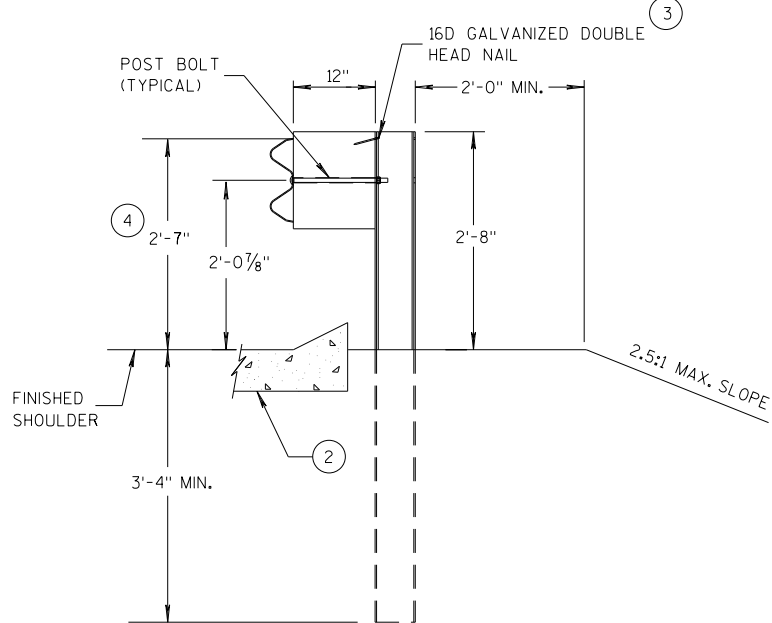
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

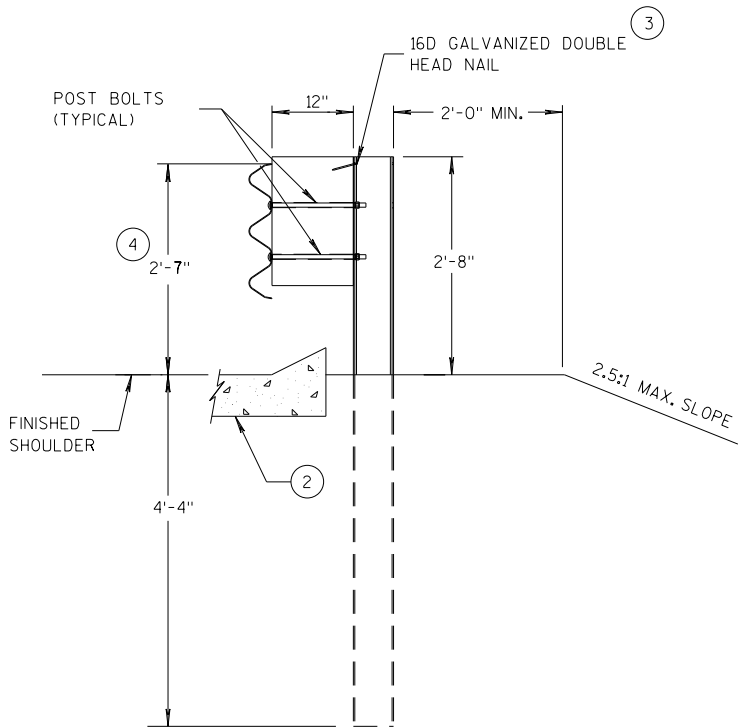
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

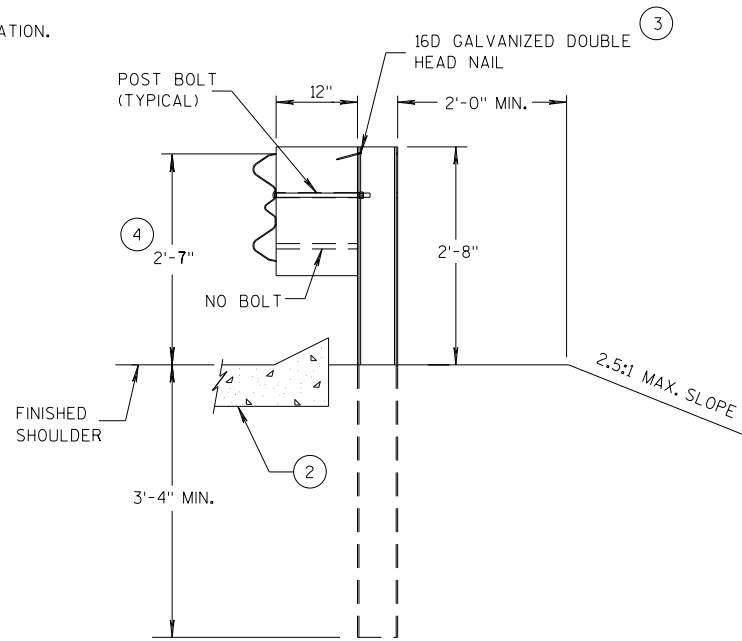
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm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



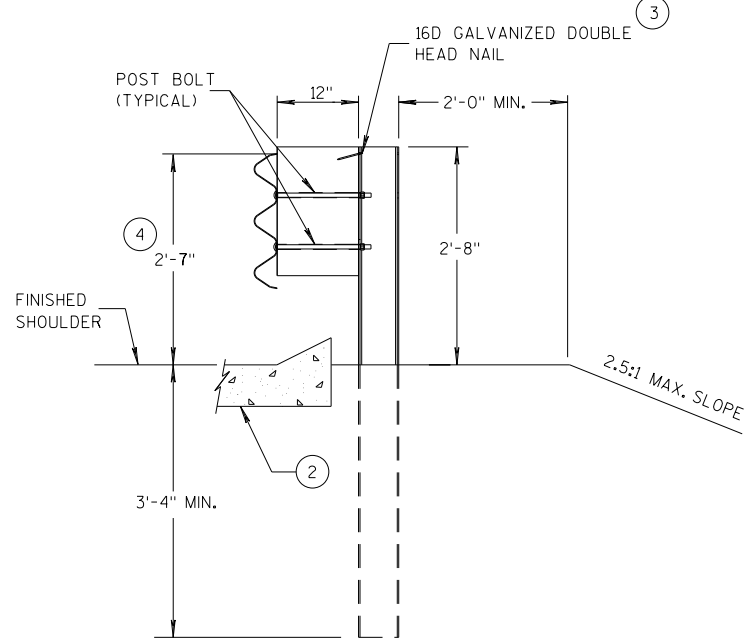
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

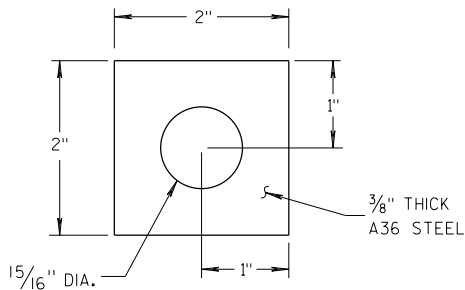
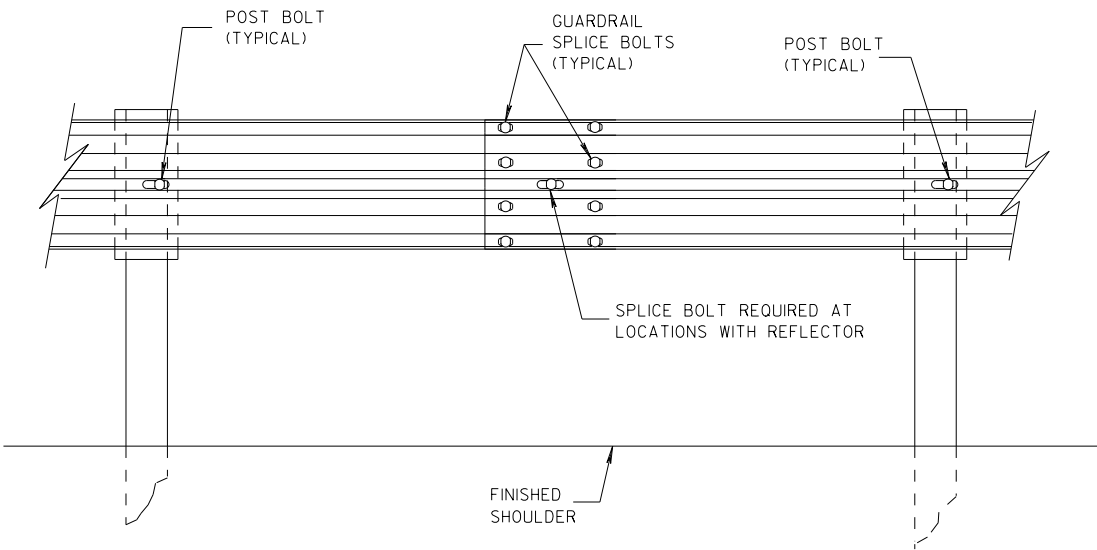
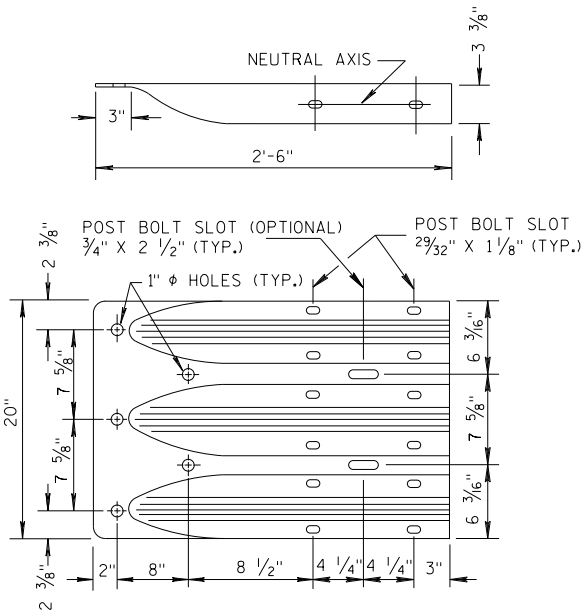


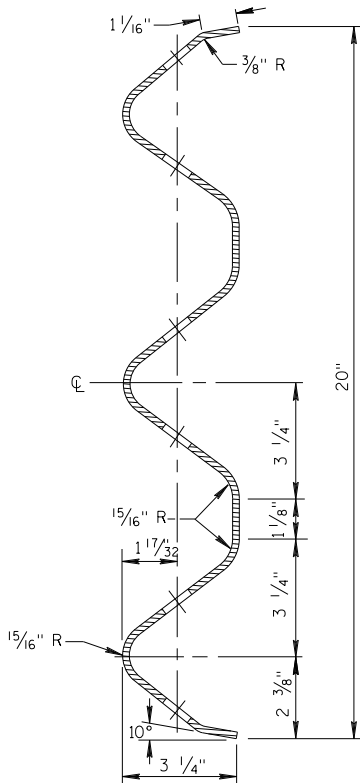
PLATE WASHER DETAIL



SPLICE DETAIL



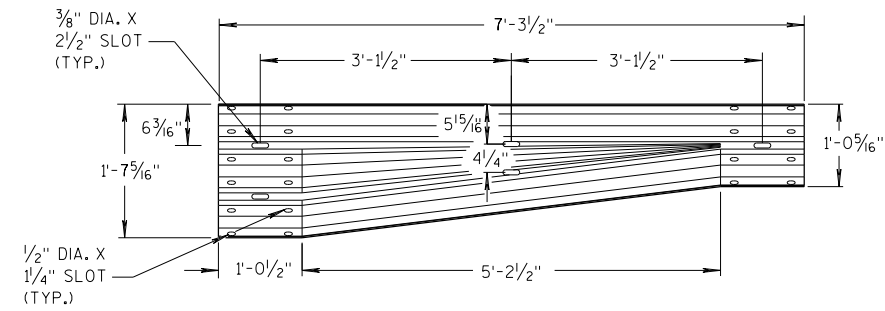
THRIE BEAM
TERMINAL CONNECTOR



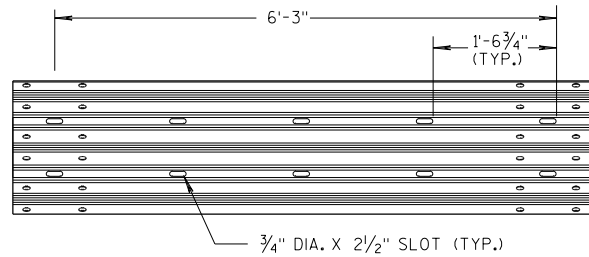
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

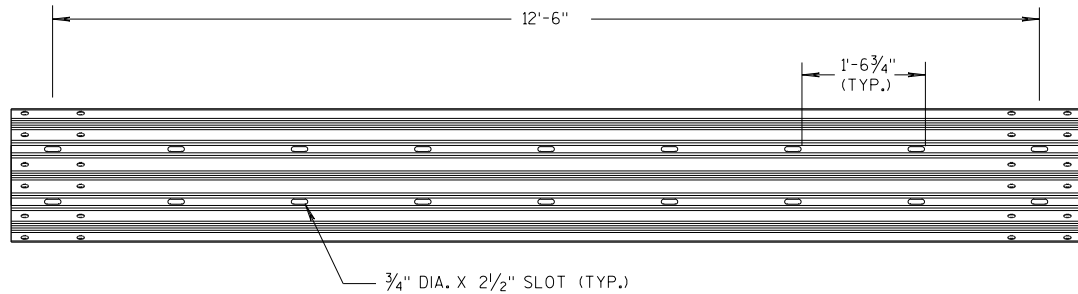
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



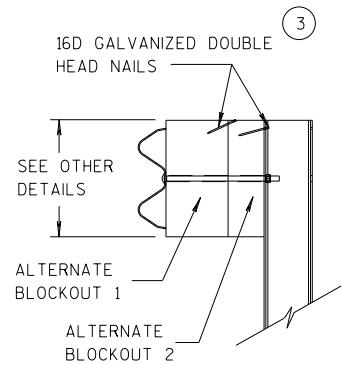
W-BEAM TO THRIE BEAM TRANSITION SECTION



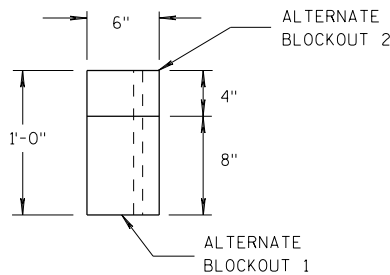
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

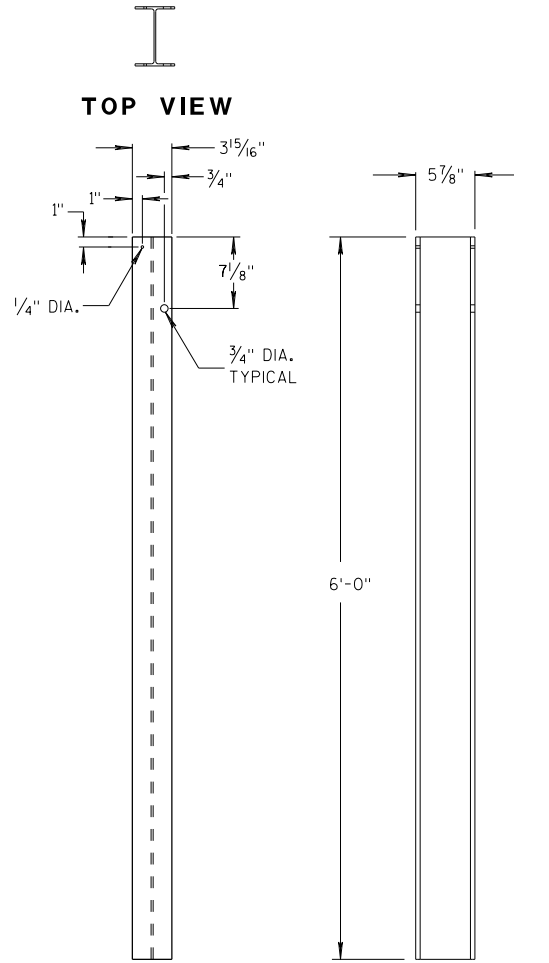


SIDE VIEW



TOP VIEW

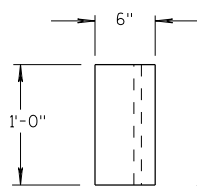
ALTERNATE WOOD BLOCKOUT DETAIL



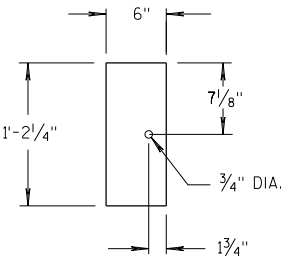
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

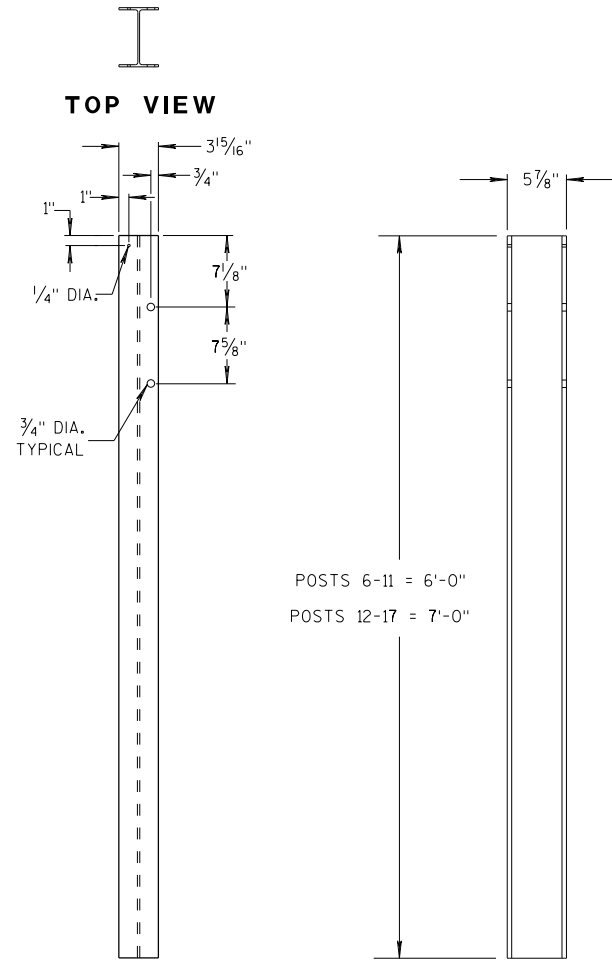


TOP VIEW



FRONT VIEW

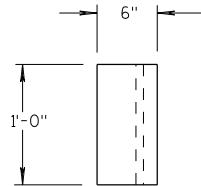
**BLOCKOUT
POSTS 1-5**



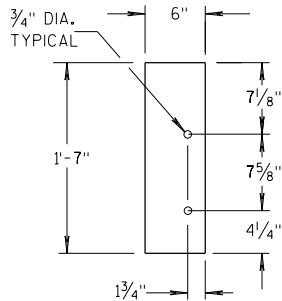
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17



TOP VIEW



FRONT VIEW

**BLOCKOUT
POSTS 6-17**

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

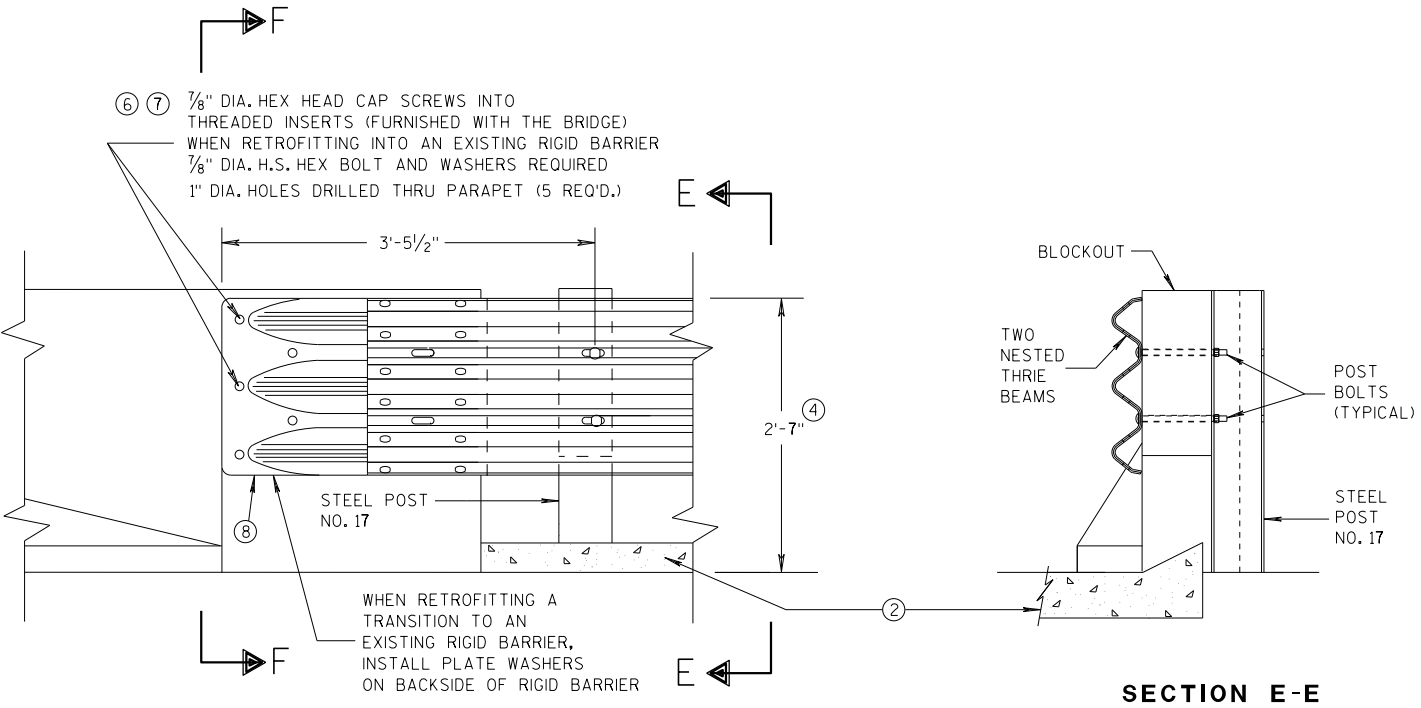
③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

⑤ WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

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

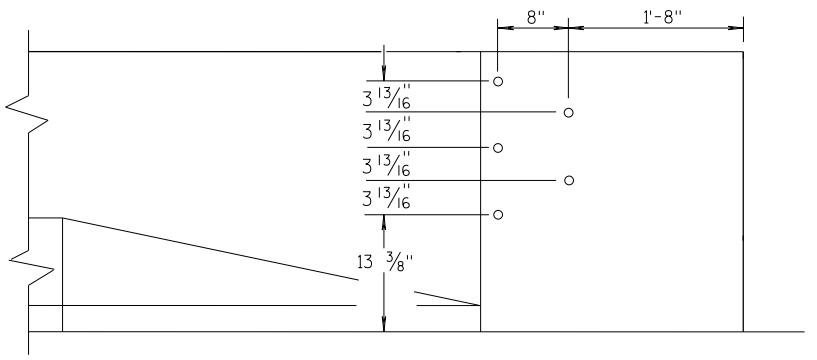
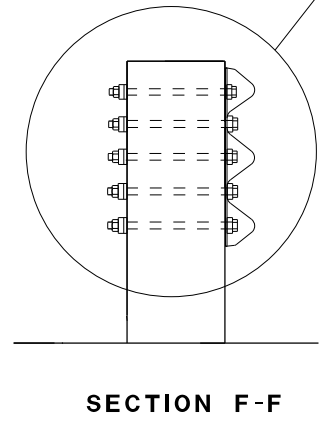
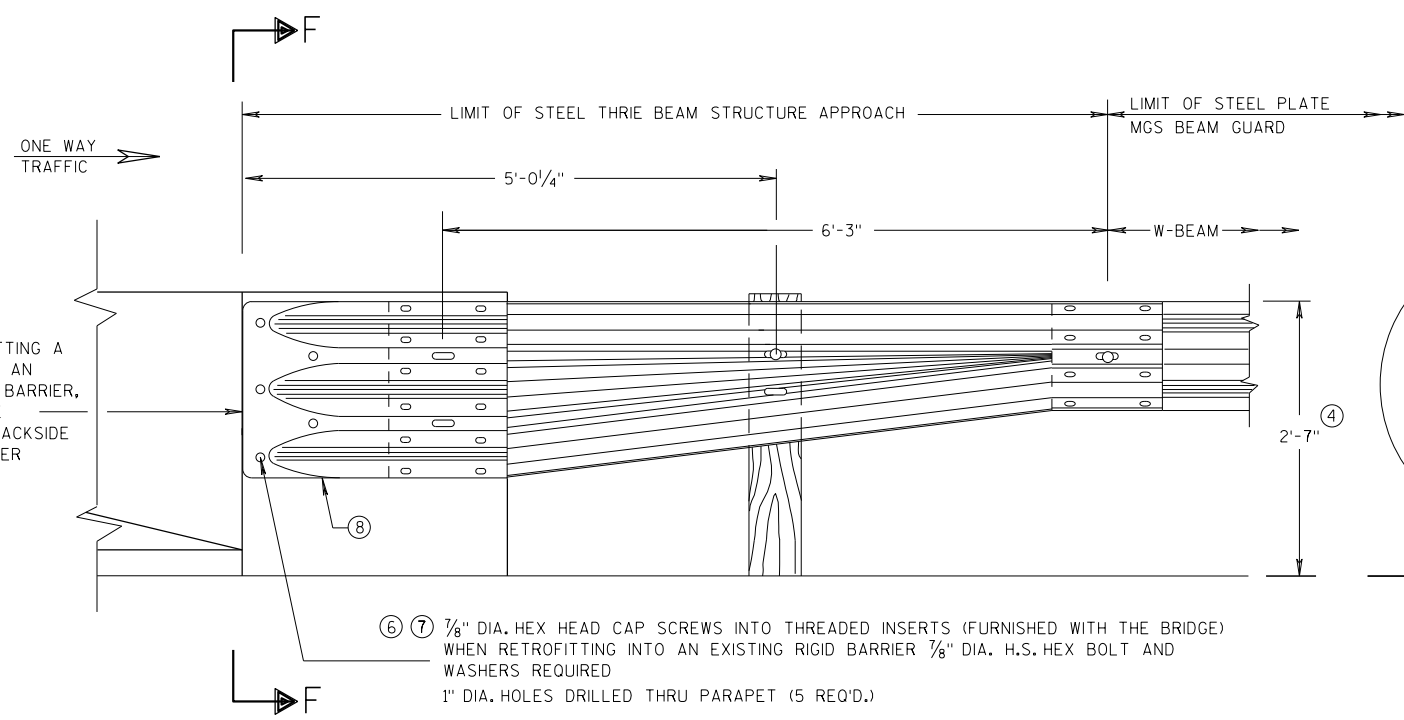
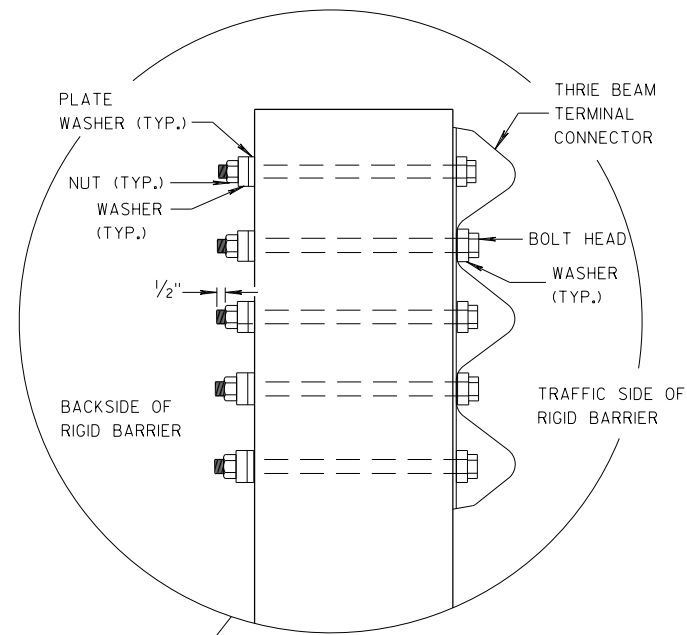
**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

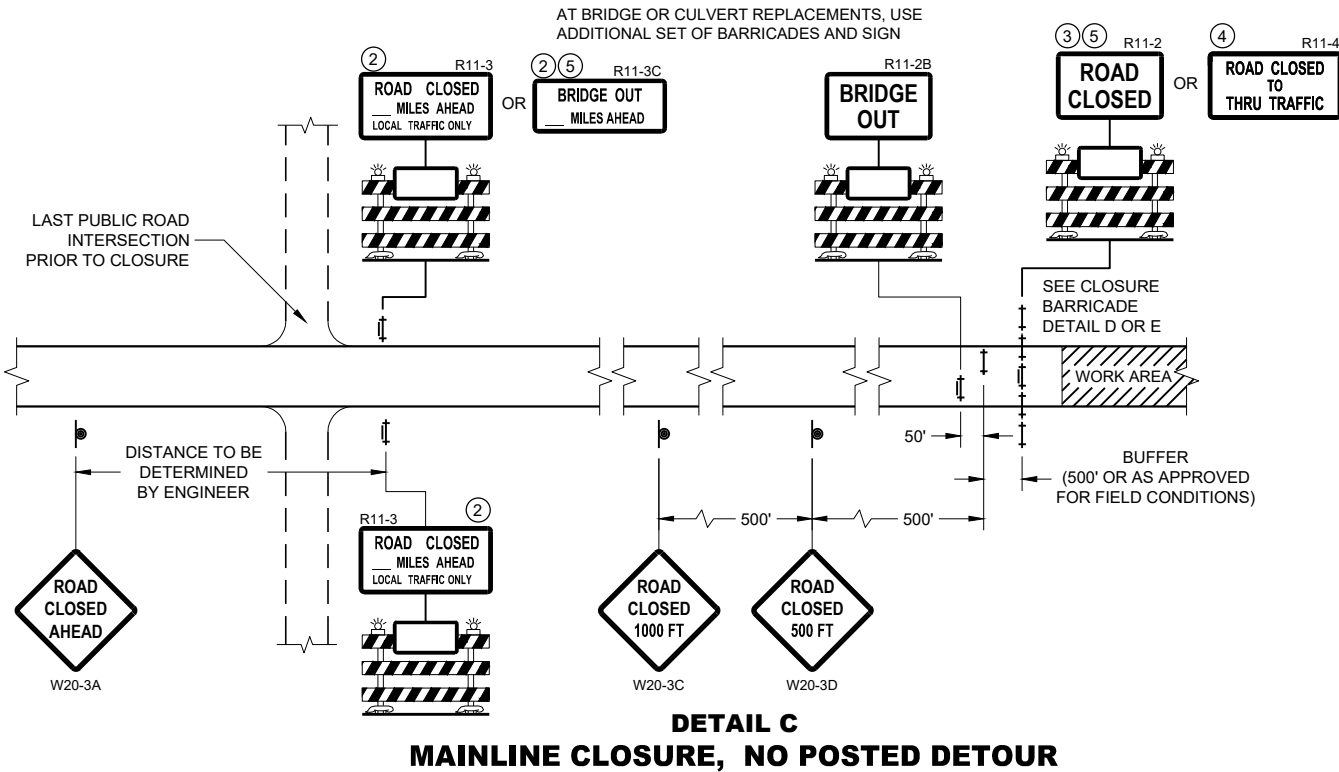
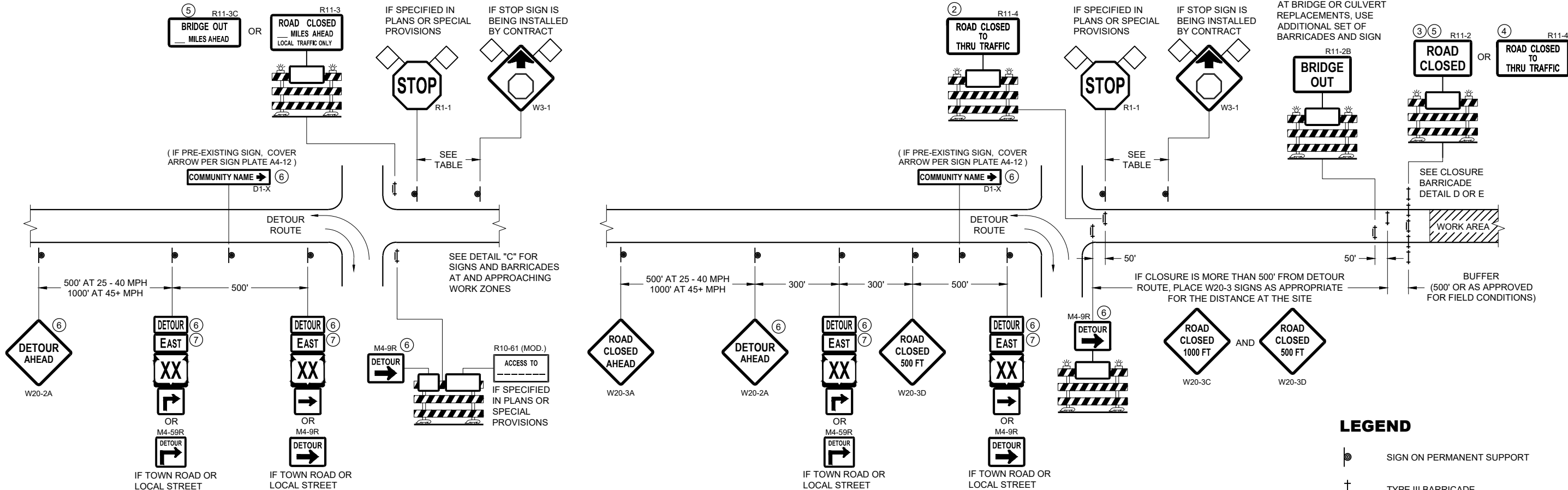


GENERAL NOTES

- THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ⑧ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".



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



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
February 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA



SEE SDD 15C2 - SHEET "a" FOR LEGEND

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:

LESS 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)

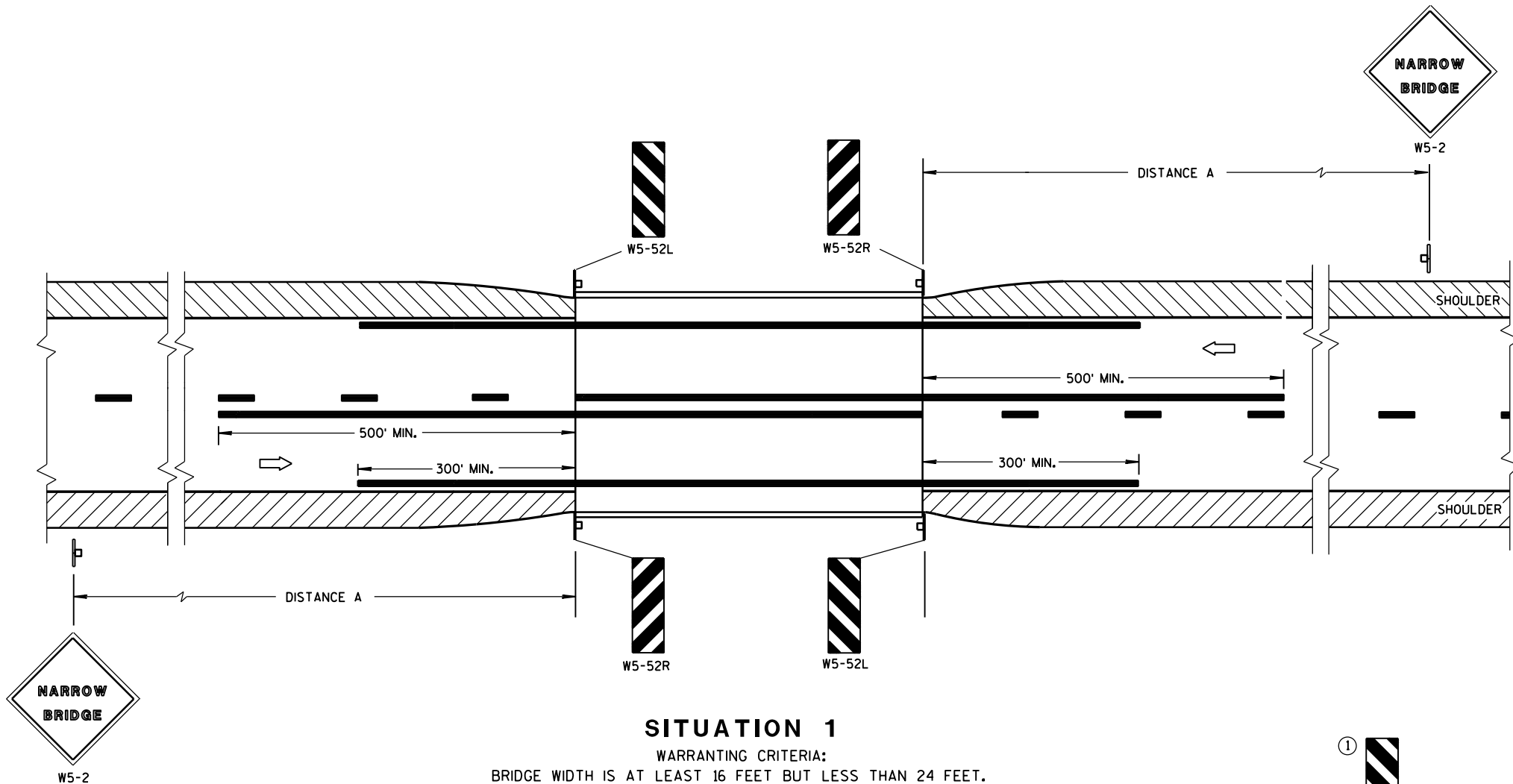
M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)

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"

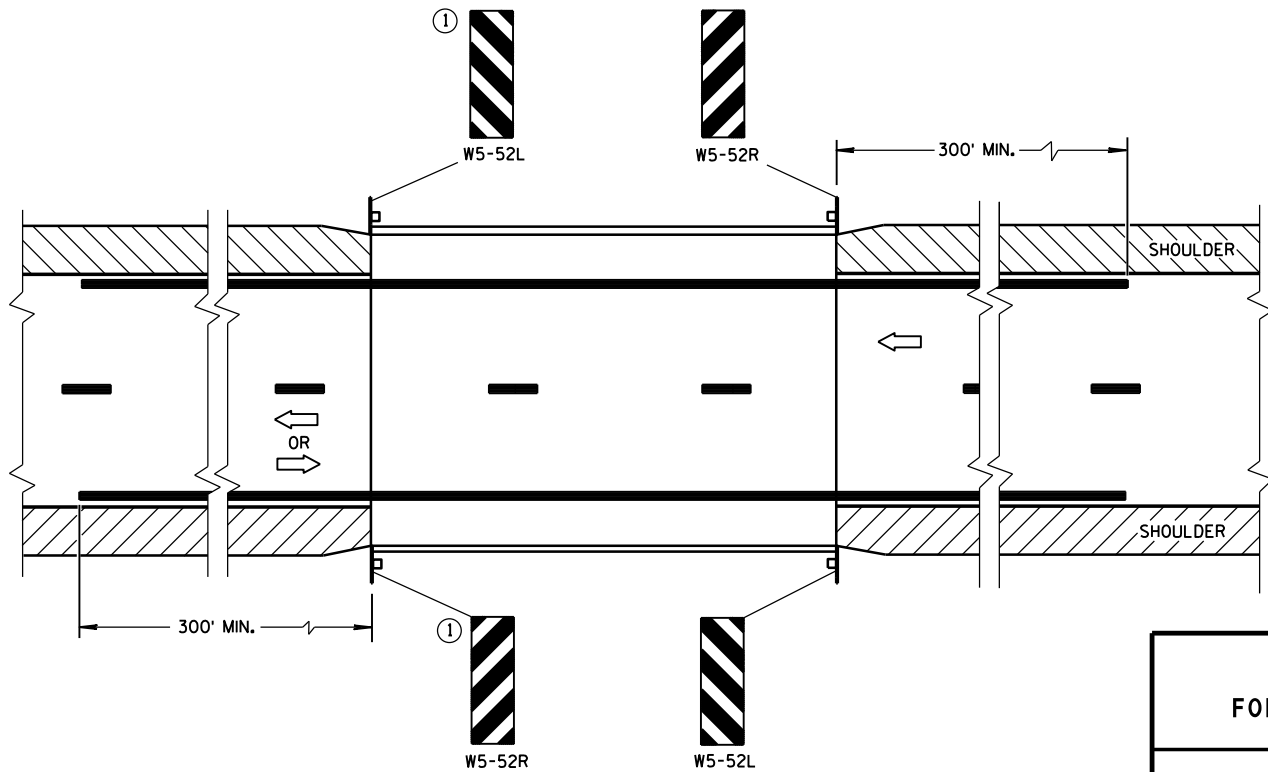
- ① TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- ② THESE SIGNS 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.



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'



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

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.

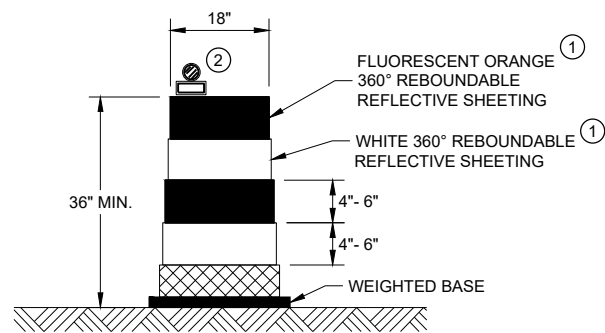
① OMIT ON ONE-WAY TRAVELLED WAYS.

➡ DIRECTION OF TRAFFIC

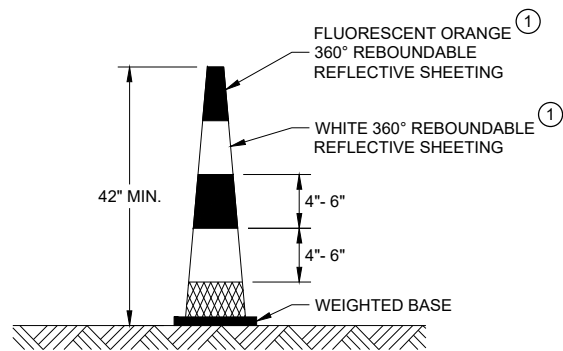
**SIGNING & MARKING
FOR TWO LANE BRIDGES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

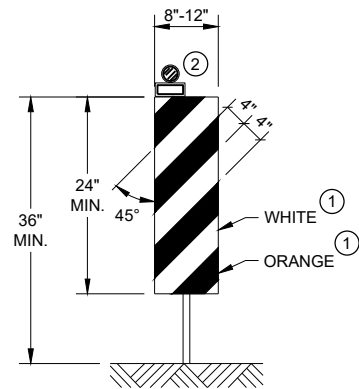


DRUM



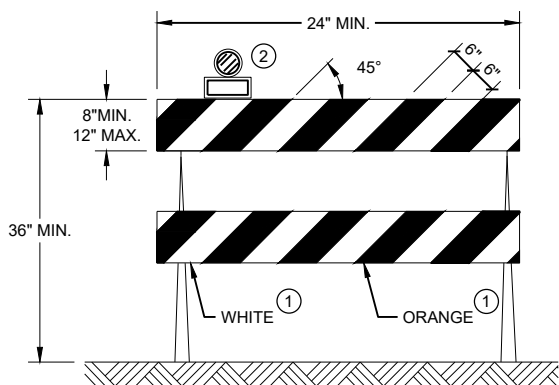
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



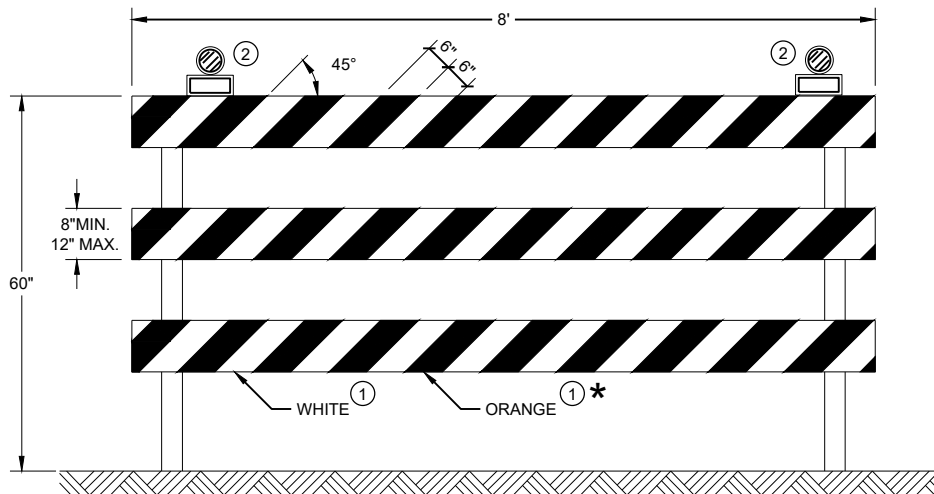
VERTICAL PANEL

THE STRIPES SHALL SLOPE DOWNWARD TO
THE TRAFFIC SIDE FOR CHANNELIZATION.



TYPE II BARRICADE

FOR RAILS LESS THAN 36" LONG, 4" WIDE STRIPES
MAY BE USED. ALL STRIPES SHALL SLOPE DOWNWARD
TO THE TRAFFIC SIDE FOR CHANNELIZATION.



TYPE III BARRICADE

IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP
TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

GENERAL NOTES

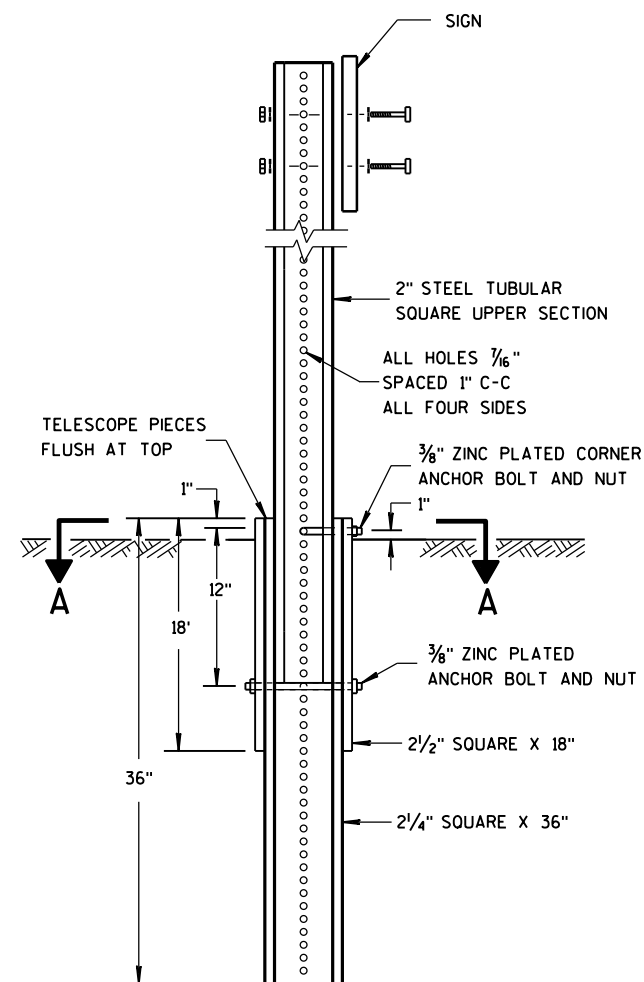
- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
- ② LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

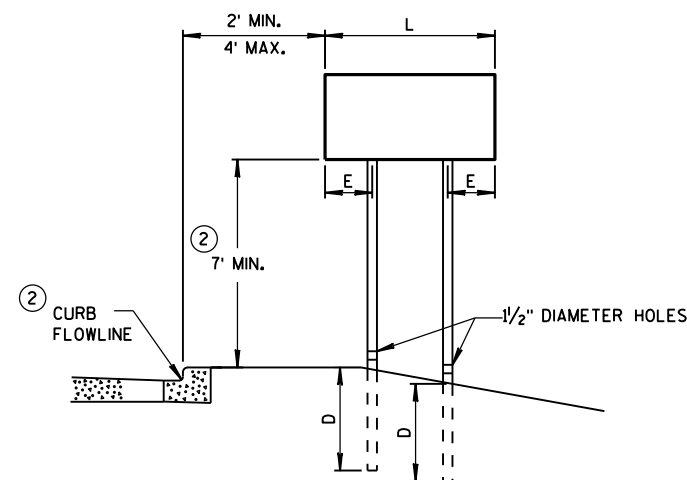
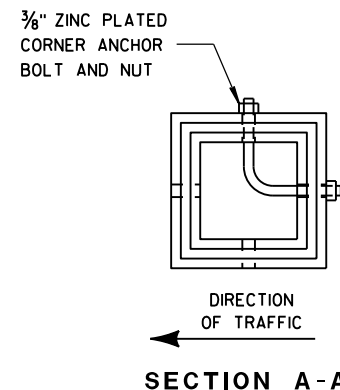


DETAIL OF TUBULAR
STEEL SIGN POST

TUBULAR STEEL POSTS

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

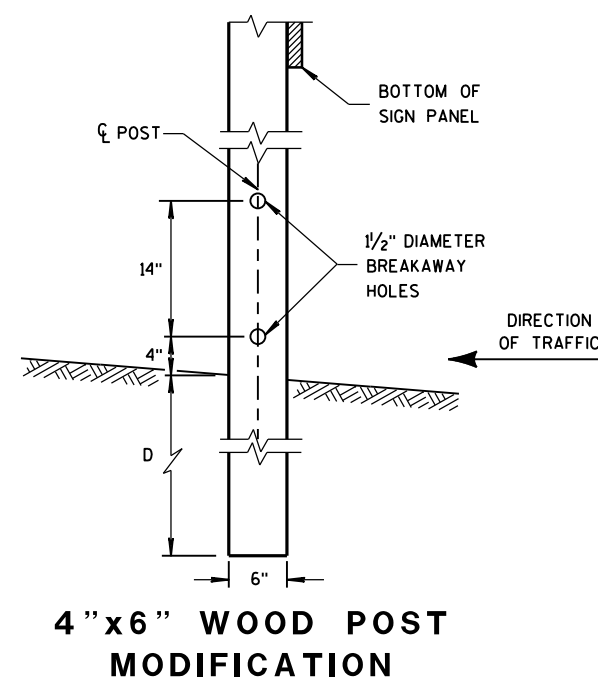
SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL
BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).
SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED
ON TUBULAR STEEL POSTS.



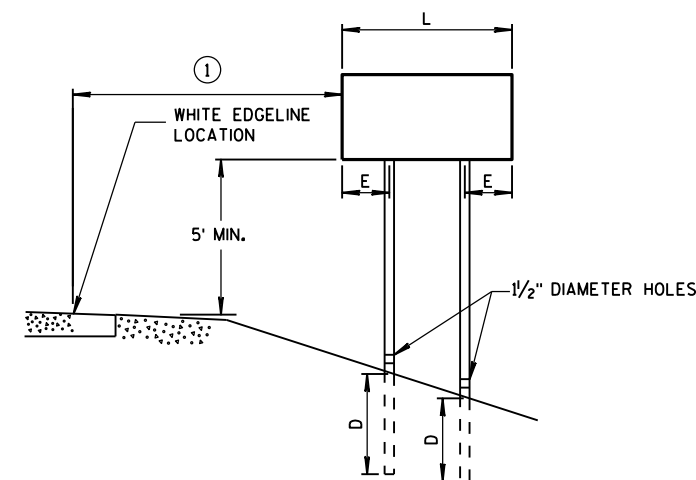
URBAN AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

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



4 "x6 " WOOD POST
MODIFICATION



RURAL AREA

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

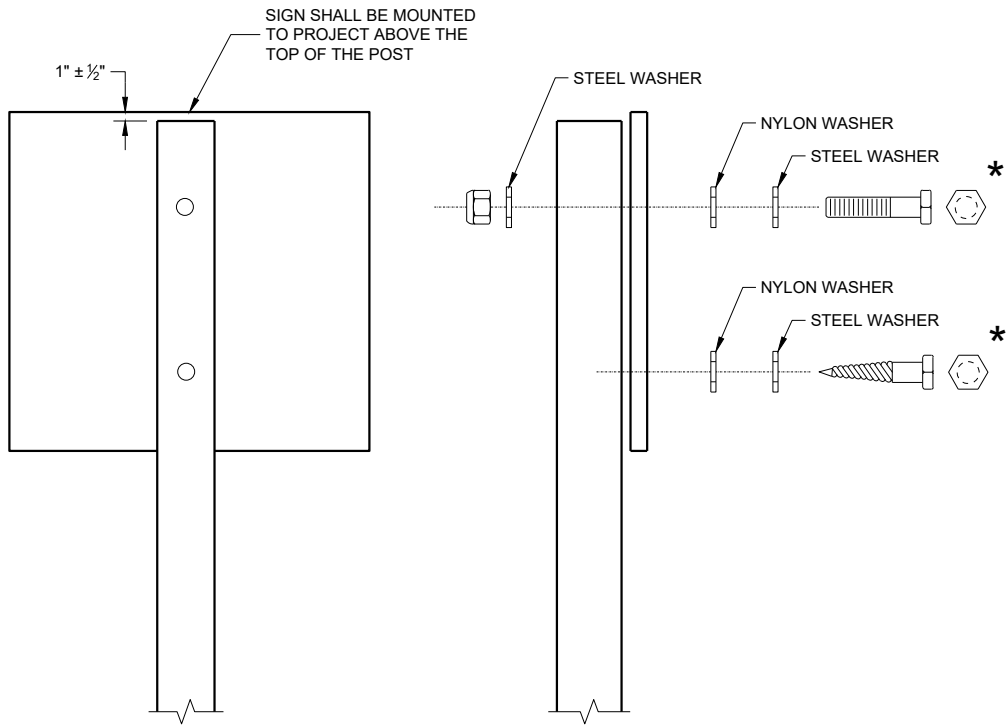
SEE NOTE ③

GENERAL NOTES

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

TEMPORARY TRAFFIC CONTROL
SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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

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

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

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

SQUARE STEEL POST (2" x 2")
MACHINE BOLTS - 3/8" x 3 1/4" LENGTH W/NUTS
RIVETS - 3/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM
BODY/MANDREL O.D. FLANGE 0.720 - 0.765 INCH,
GRIP RANGE 0.042 - 0.375 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 0.080 NYLON

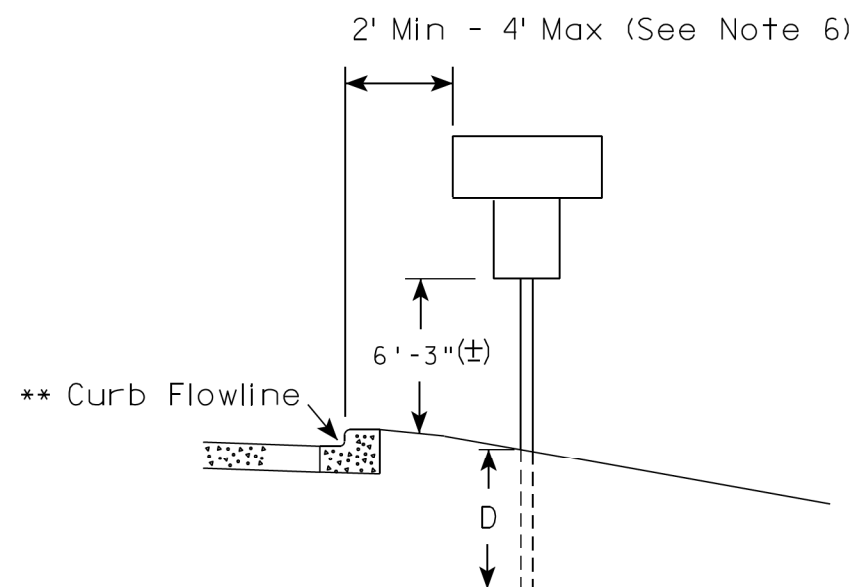
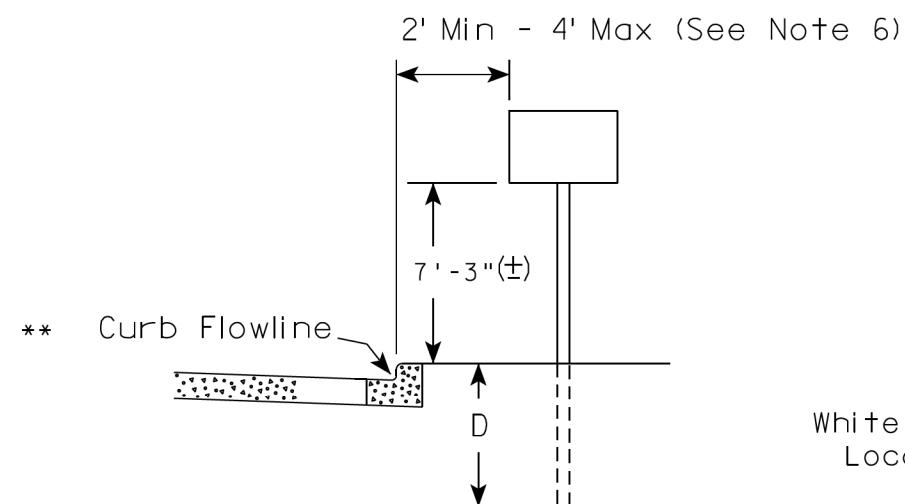
* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION
PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM
SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH
THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER
THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

ATTACHMENT OF SIGNS
TO POSTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

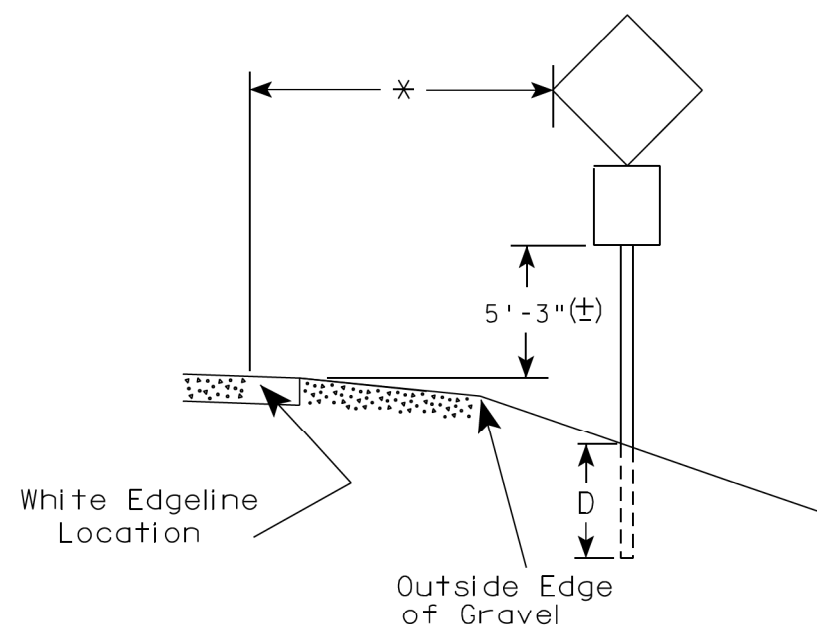
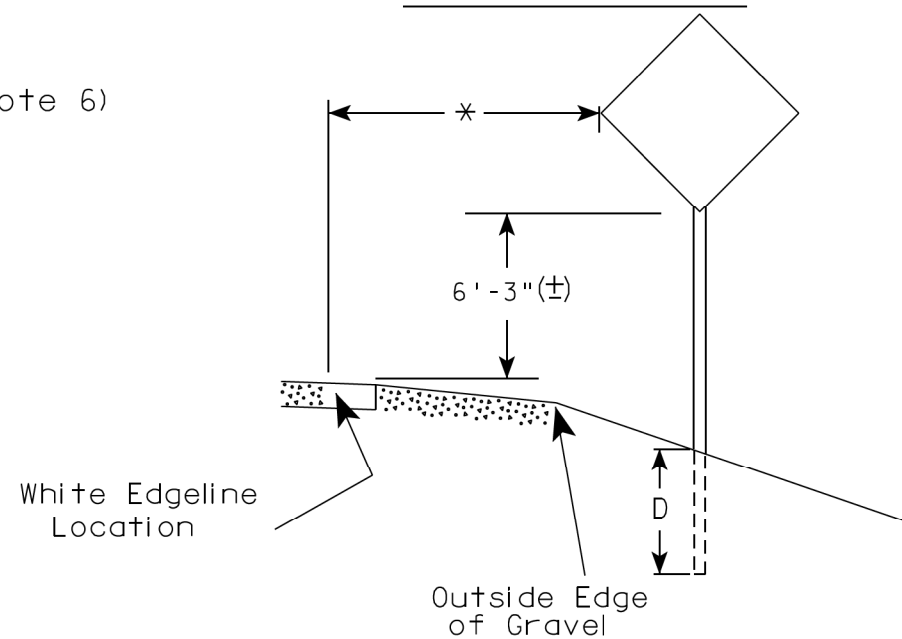
APPROVED
June 2017 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA

URBAN AREA



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

RURAL AREA (See Note 2)



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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

- Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
- If signs are mounted on or behind barrier wall, see A4-10 sign plate.
The Double Arrow sign (W12-1D) 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" (±).
- For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
- Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
- Offset distance shall be consistent with existing signs or consistent throughout length of project.
- The (±) tolerance for mounting height is 3 inches.
- Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/13/2020 PLATE NO. A4-3.22

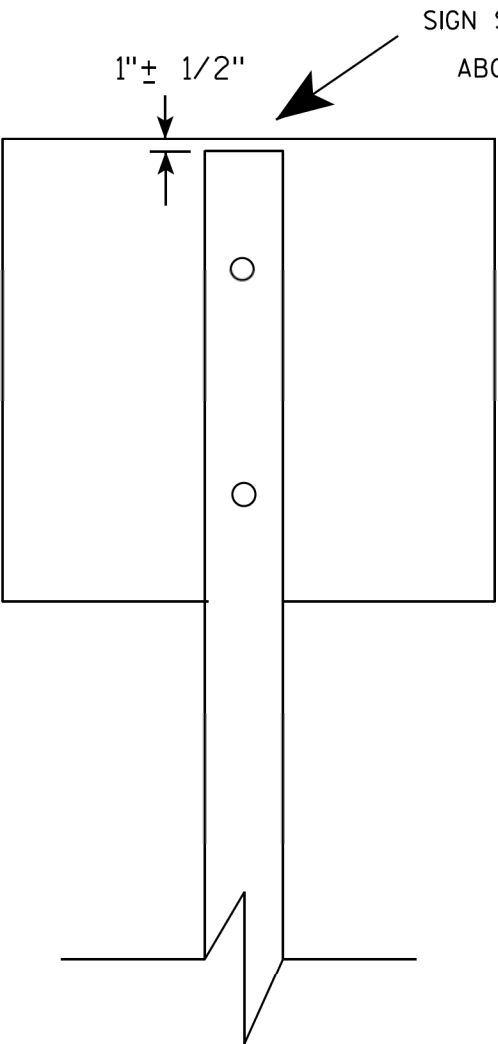
PROJECT NO:

HWY:

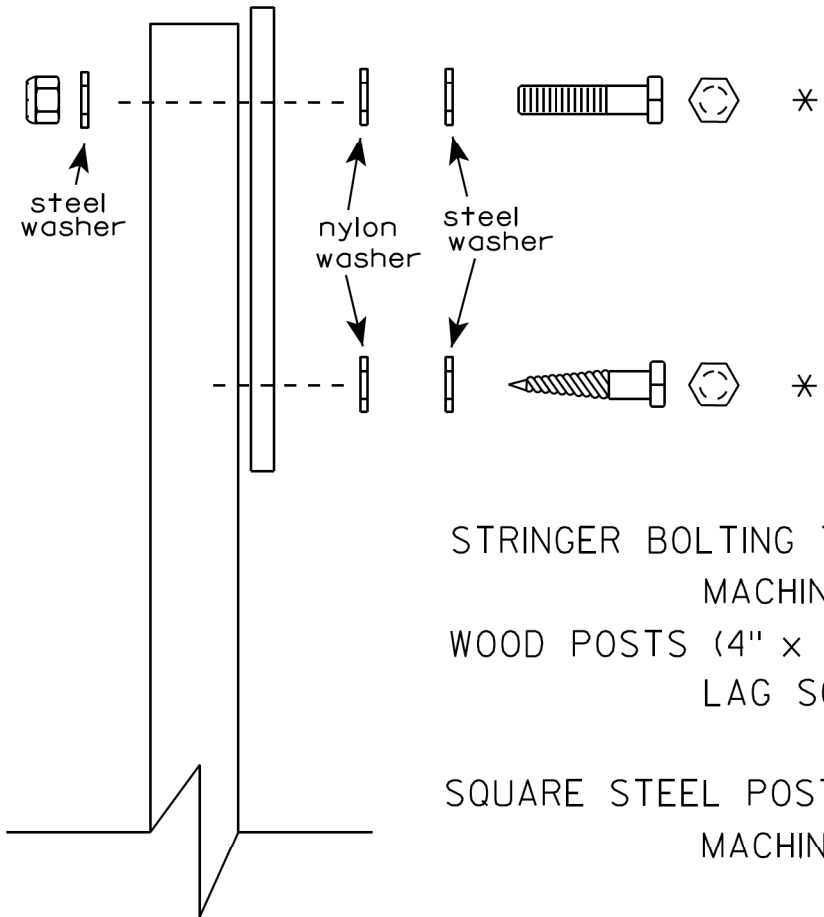
COUNTY:

SHEET NO:

E



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



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

- 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

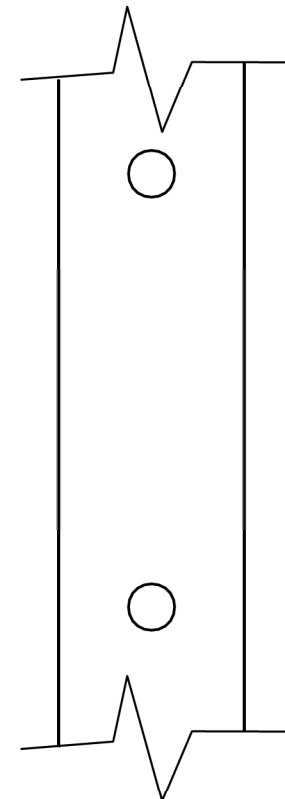
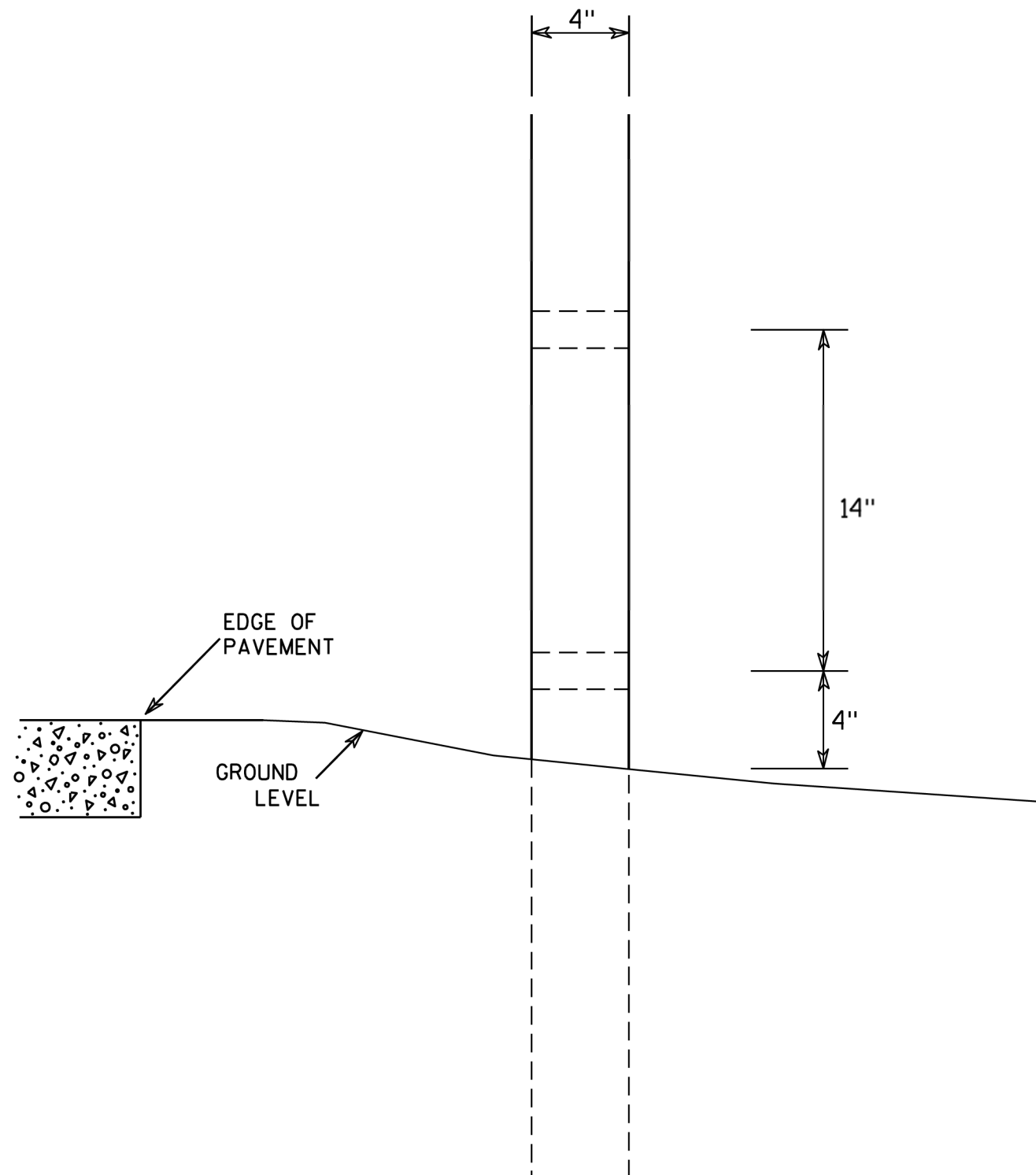
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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



SIDE VIEW

GENERAL NOTES

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

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

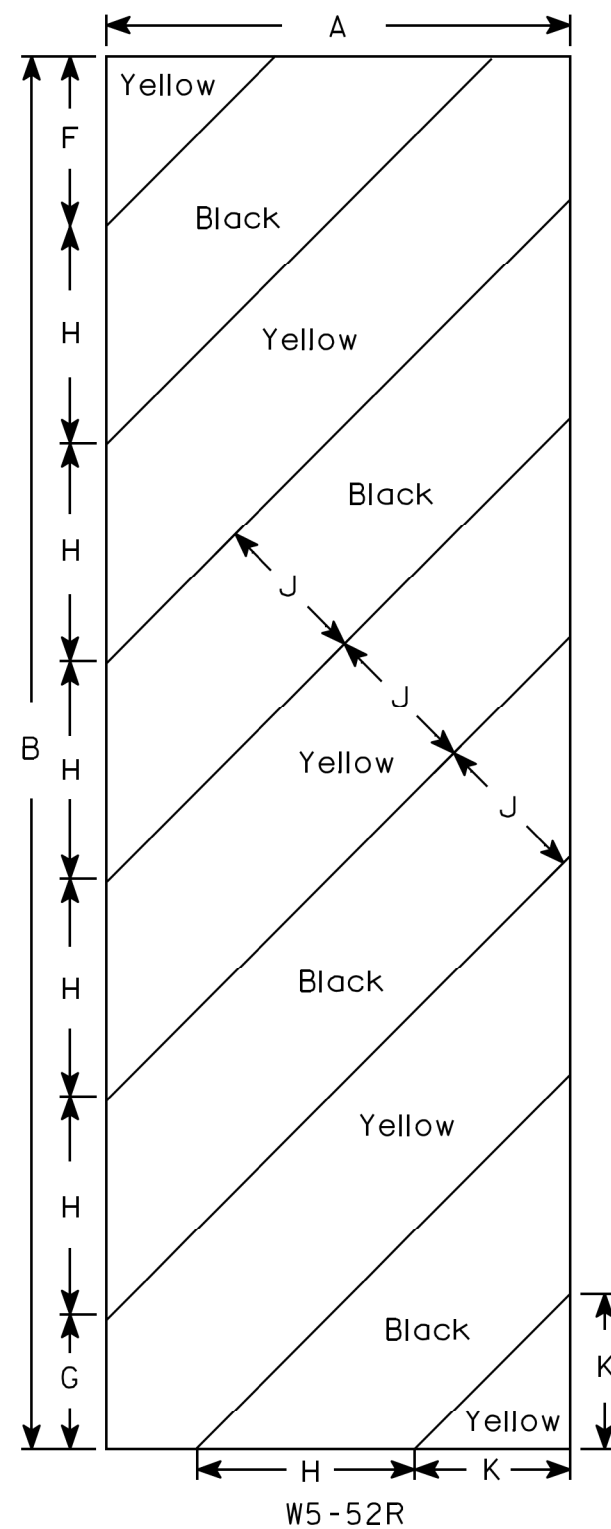
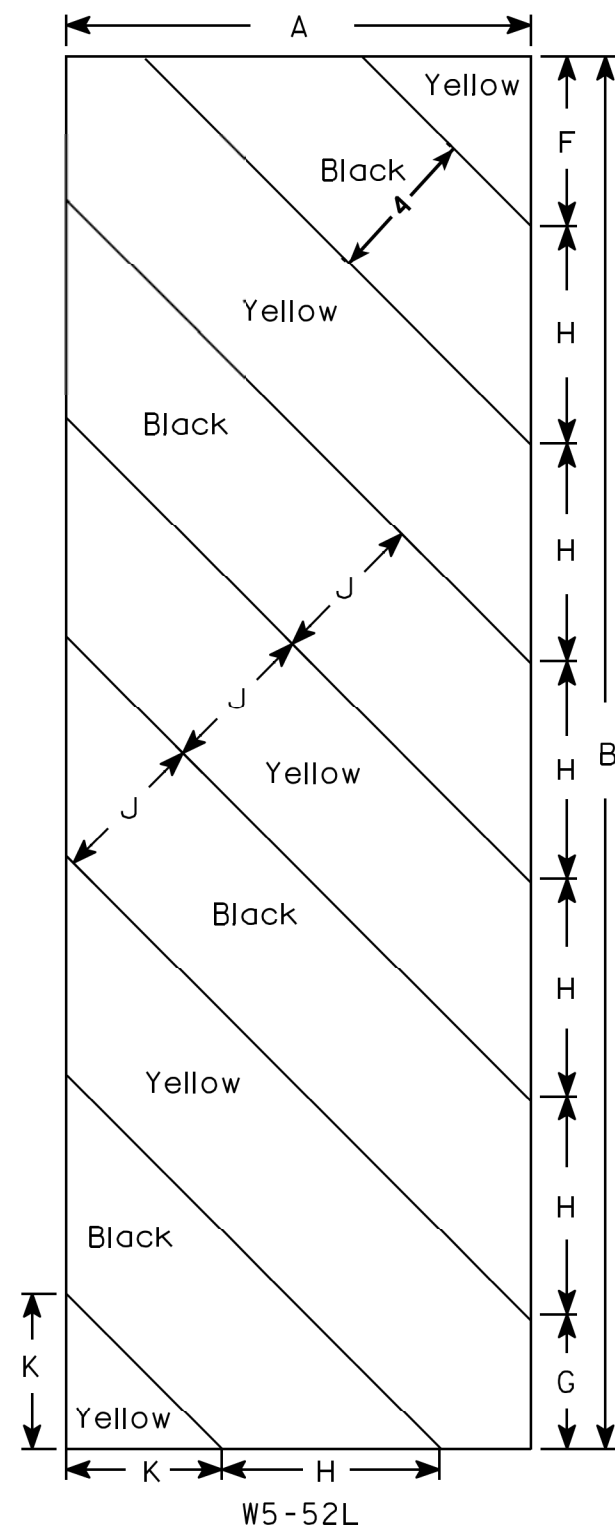
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



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 5/16																6.75
4																											
5																											

STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

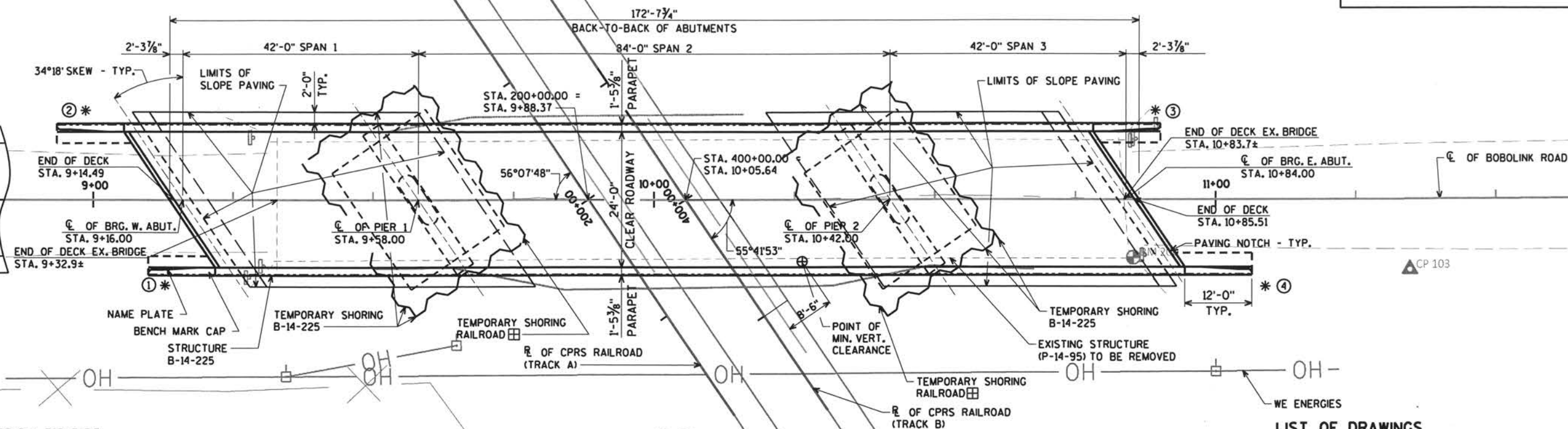
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



PLAN

THREE-SPAN 36W" PRESTRESSED CONCRETE GIRDER BRIDGE

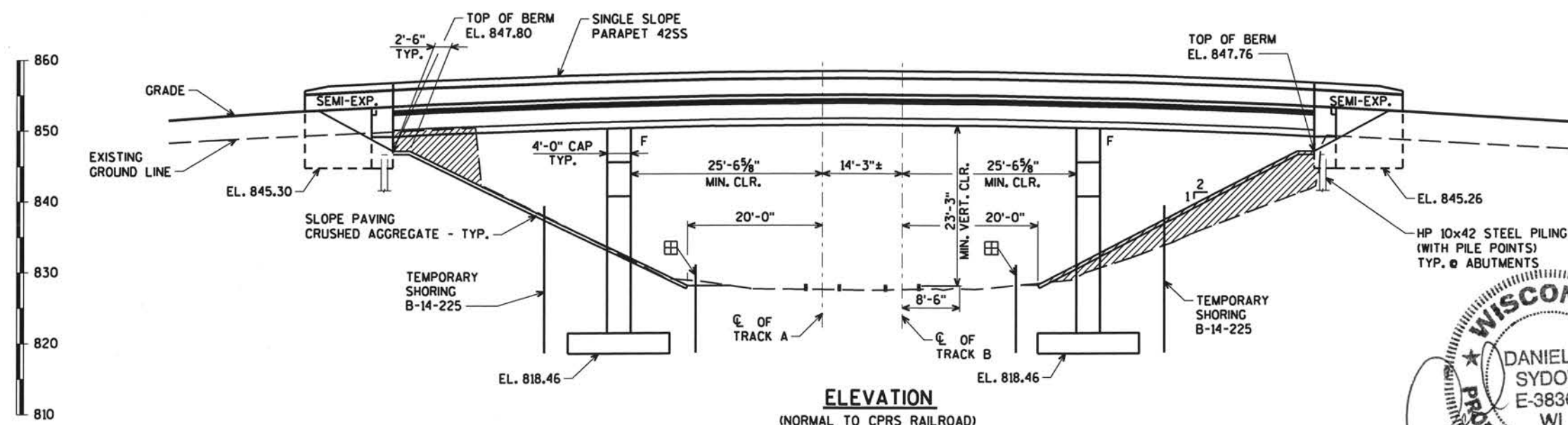
* ANCHOR ASSEMBLY FOR THRIE BEAM TYPE GUARDRAIL.

○ DENOTES WING NUMBER.

⊞ DESIGN TEMPORARY SHORING RAILROAD FOR ZONE A AND B SHORING IN ACCORDANCE WITH THE SPECIAL PROVISIONS FOR SHORING DESIGN REQUIREMENTS. PLAN ON THE PRESENCE OF COBBLES AND BOULDERS WHEN DESIGNING AND PLANNING THE INSTALLATION OF THE SHORING.

LIST OF DRAWINGS

1. GENERAL PLAN
2. QUANTITIES, NOTES, & DESIGN DATA
3. TYPICAL SECTION & MISCELLANEOUS DETAILS
4. SUBSURFACE EXPLORATION
5. WEST ABUTMENT
6. WEST ABUTMENT PILE LAYOUT
7. WEST ABUTMENT WING 1 DETAILS
8. WEST ABUTMENT WING 2 DETAILS
9. WEST ABUTMENT DETAILS AND BILL OF BARS
10. EAST ABUTMENT
11. EAST ABUTMENT PILE LAYOUT
12. EAST ABUTMENT WING 3 DETAILS
13. EAST ABUTMENT WING 4 DETAILS
14. EAST ABUTMENT DETAILS AND BILL OF BARS
15. PIER 1
16. PIER 1 DETAILS AND BILL OF BARS
17. PIER 2
18. PIER 2 DETAILS AND BILL OF BARS
19. 36W" PRESTRESSED GIRDER DETAILS
20. 36W" PRESTRESSED GIRDER DETAILS
21. STEEL INTER. DIAPHRAGM DETAILS
22. SUPERSTRUCTURE
23. SUPERSTRUCTURE PLAN
24. SUPERSTRUCTURE TRANSVERSE SLAB STEEL LAYOUT
25. SUPERSTRUCTURE DETAILS
26. BEARING PAD DETAILS
27. SINGLE SLOPE PARAPET 42SS
28. SLOPE PAVING CRUSHED AGGREGATE



ELEVATION

(NORMAL TO CPRS RAILROAD)

⊞ COST OF EXCAVATION AND FILL IN THE HATCHED AREAS SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES B-14-225".

REMOVE EXISTING SUBSTRUCTURES AS NEEDED. COST INCIDENTAL TO "REMOVING OLD STRUCTURE" ITEM. TYPICAL AT ALL SUBSTRUCTURES.

FOR GENERAL NOTES AND DESIGN DATA, SEE SHEET 2. FOR TYPICAL SECTIONS, SEE SHEET 3.



BRIDGE OFFICE CONTACT:
AARON BONK
(608)-261-0261

CONSULTANT CONTACT:
DAN SYDOW
(715)-834-3161

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY			
AYRES 3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	SDR 11/30/20		DATE
CHIEF STRUCTURES DESIGN ENGINEER			
STRUCTURE B-14-225			
BOBOLINK ROAD OVER CPRS RAILROAD			
COUNTY	DODGE	TOWN/CITY/VILLAGE	LOWELL
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	CJM	CK'D. JLB	PLANS BY CJM/JLB
GENERAL PLAN			SHEET 1 OF 28

9/21/2020
PENTABLE:BRequ-shd_u.tif.tbi

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	W. ABUT.	PIER 1	PIER 2	E. ABUT.	SUPER.	TOTAL
203.0200	REMOVING OLD STRUCTURE STATION 10+00	LS	-----	-----	-----	-----	-----	1
203.0225.S	DEBRIS CONTAINMENT STRUCTURE P-14-95	LS	-----	-----	-----	-----	-----	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-14-225	LS	-----	-----	-----	-----	-----	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	150	-----	-----	150	-----	300
502.0100	CONCRETE MASONRY BRIDGES	CY	38	140	138	38	232	586
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-----	-----	-----	-----	505	505
502.3210	PIGMENTED SURFACE SEALER	SY	15	-----	-----	15	170	200
503.0137	PRESTRESSED GIRDER TYPE I 36W-INCH	LF	-----	-----	-----	-----	674	674
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	1,860	8,620	8,620	1,860	-----	20,960
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	2,000	13,690	13,460	2,000	45,000	76,150
506.2605	BEARING PADS ELASOMERIC NON-LAMINATED	EACH	-----	-----	-----	-----	24	24
506.4000	STEEL DIAPHRAGMS B-14-225	EACH	-----	-----	-----	-----	12	12
511.1200	TEMPORARY SHORING B-14-225	SF	-----	1,800	1,800	-----	-----	3,600
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	8	-----	-----	8	-----	16
550.0500	PILE POINTS	EA	7	-----	-----	7	-----	14
550.1100	PILING STEEL HP 10-INCH x 42 LB	LF	175	-----	-----	210	-----	385
604.0500	SLOPE PAVING CRUSHED AGGREGATE	SY	210	-----	-----	210	-----	420
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	70	-----	-----	70	-----	140
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	2	-----	-----	2	-----	4
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	30	-----	-----	30	-----	60
SPV.0165.01	TEMPORARY SHORING RAILROAD	SF	-----	425	425	-----	-----	850
	NON-BID ITEMS							
	FILLER	SIZE	-----	-----	-----	-----	-----	1/2" & 3/4"

☆ IF THE CENTER OF THE PROPOSED PILE IS WITHIN 2'-6" FROM CENTER OF AN EXISTING PILE, THE EXISTING PILE CAN BE REMOVED OR THE PROPOSED PILE SPACING CAN BE ADJUSTED, WITH PRIOR APPROVAL FROM THE ENGINEER. THE COST OF REMOVING EXISTING PILES AND ADJUSTING THE SPACING IS INCIDENTAL TO "REMOVING OLD STRUCTURE STA. 10+00".

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: 1.12
OPERATING RATING FACTOR: 1.56
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

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

MATERIAL PROPERTIES:

CONCRETE MASONRY { SUPERSTRUCTURE _____ f'c = 4,000 p.s.i.
ALL OTHER _____ f'c = 3,500 p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60) _____ fy = 60,000 p.s.i.

36W" PRESTRESSED GIRDER
CONCRETE MASONRY _____ f'c = 8,000 p.s.i.
STRANDS - 0.6" DIA. WITH ULTIMATE TENSILE STRENGTH OF _____ = 270,000 p.s.i.

FOUNDATION DATA:

WEST ABUTMENT TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 150 TONS * PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 25'-0".

EAST ABUTMENT TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 150 TONS * PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 30'-0".

PIERS TO BE SUPPORTED ON A SPREAD FOOTING WITH A REQUIRED FACTORED BEARING RESISTANCE OF 10,000 P.S.F.*** A GEOTHECNICAL ENGINEER, WITH THREE DAYS NOTICE, WILL DETERMINE THE FACTORED BEARING RESISTANCE BY VISUAL INSPECTION PRIOR TO CONSTRUCTION OF THE PIER FOOTINGS.

***THE FACTORED BEARING RESISTANCE IS THE VALUE USED IN DESIGN.

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

TRAFFIC DATA:

A.A.D.T. = <100 (2021)
A.A.D.T. = <100 (2041)
R.D.S. = 25 M.P.H.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS SHOWN OR NOTED OTHERWISE.

THE FIRST DIGIT OF A THREE DIGIT BAR NO. AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR NO. SIGNIFIES THE BAR SIZE.

JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M 153, TYPE I, II OR III OR A.A.S.H.T.O. DESIGNATION M 213.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH SLOPE PAVING MATERIAL TO THE EXTENT SHOWN ON THE GENERAL PLAN SHEET AND IN THE ABUTMENT DETAILS.

ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.

THE EXISTING GROUND LINE SHALL BE THE UPPER LIMIT FOR EXCAVATION FOR STRUCTURES.

THE EXISTING STRUCTURE, P-14-95, TO BE REMOVED, IS AN EIGHT-SPAN TIMBER DECK GIRDER AND STEEL THRU GIRDER BRIDGE, 150.8 FT. LONG WITH A 20 FT. CLEAR ROADWAY WIDTH, ON TIMBER PILE BENT PIERS AND TIMBER ABUTMENTS.

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

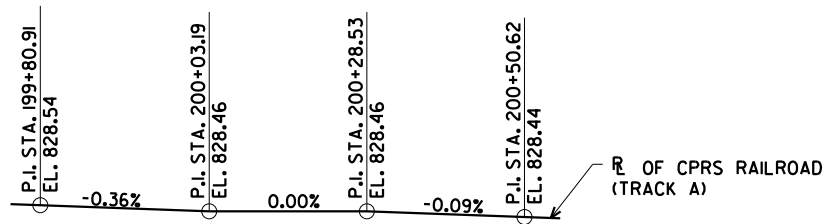
PROTECTIVE SURFACE TREATMENT AND PIGMENTED SURFACE SEALER IS TO BE APPLIED AS SHOWN IN DETAIL ON SHEET 3.

EXCAVATION BELOW THE ABUTMENT AND ABUTMENT BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT.

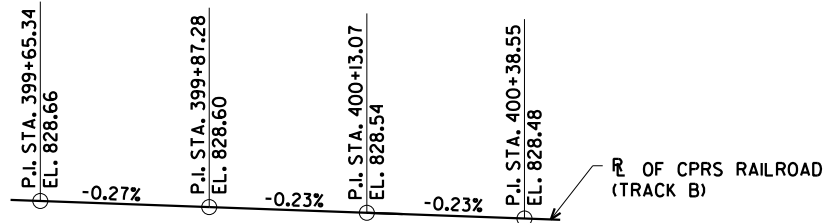
THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES. "BACKFILL STRUCTURE TYPE A" REQUIRED DIRECTLY BEHIND ABUTMENTS AND ABUTMENT WINGS FOR 3 FEET. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES.

THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON THE PRESTRESSED GIRDER DETAILS SHEET.

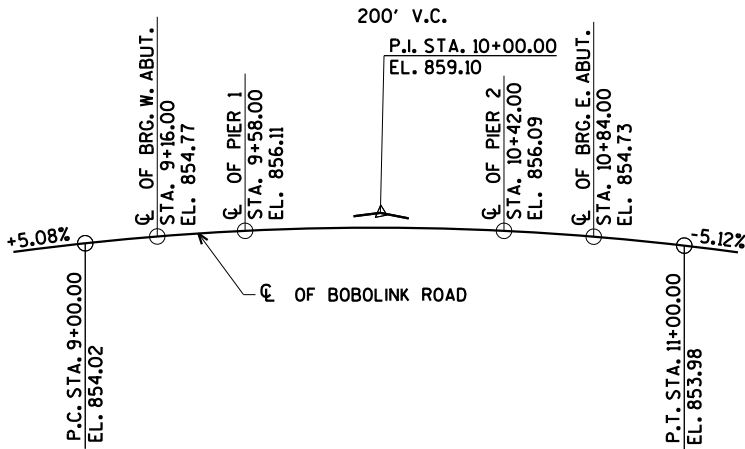
BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE NOTED. REMOVE EXISTING SUBSTRUCTURES AS NEEDED. COST INCIDENTAL TO "REMOVING OLD STRUCTURE" ITEM. (TYPICAL AT ALL SUBSTRUCTURES)



PROFILE GRADE LINE
(CPRS RAILROAD, TRACK A)



PROFILE GRADE LINE
(CPRS RAILROAD, TRACK B)



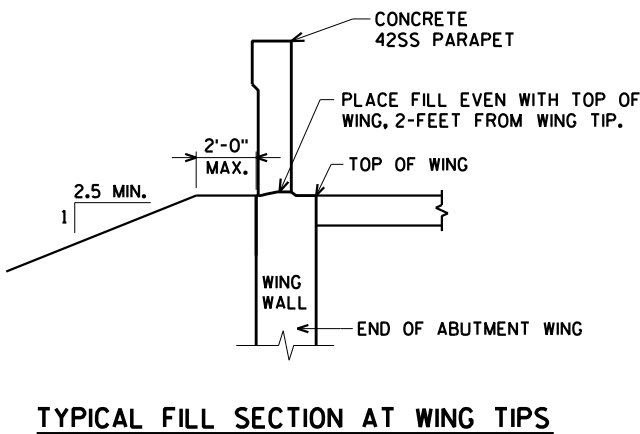
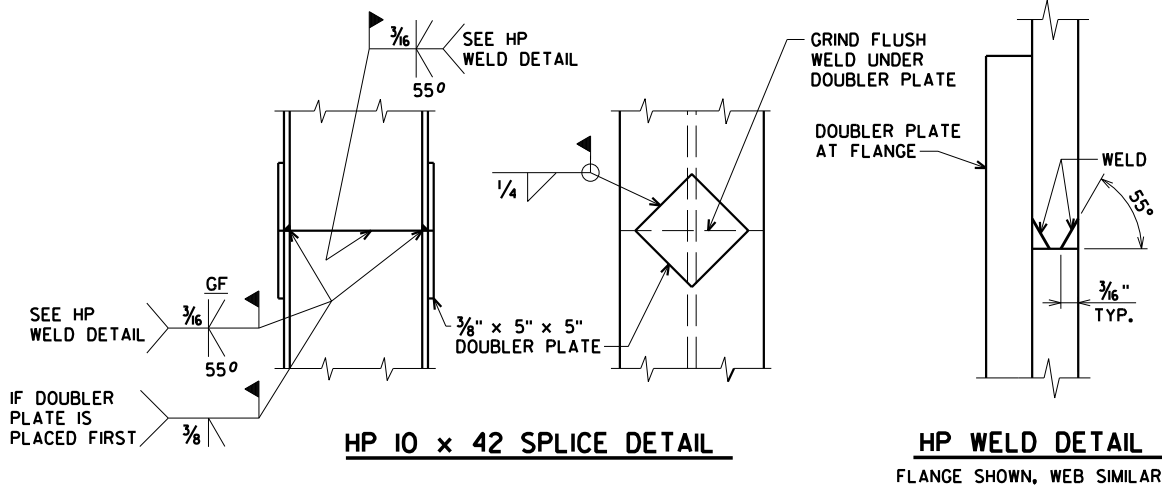
PROFILE GRADE LINE
(BOBOLINK ROAD)

BENCH MARK:

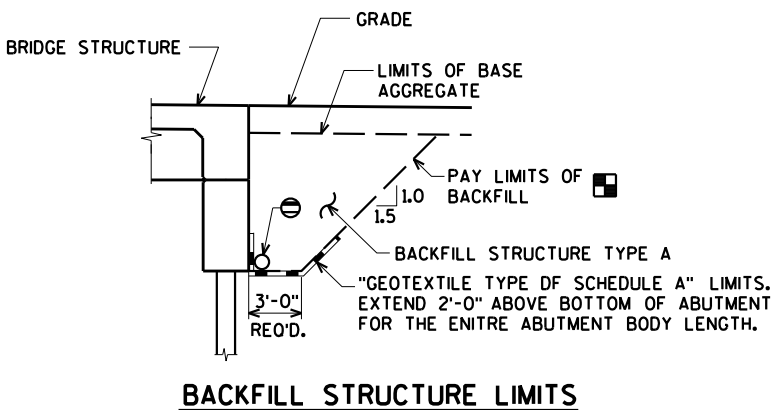
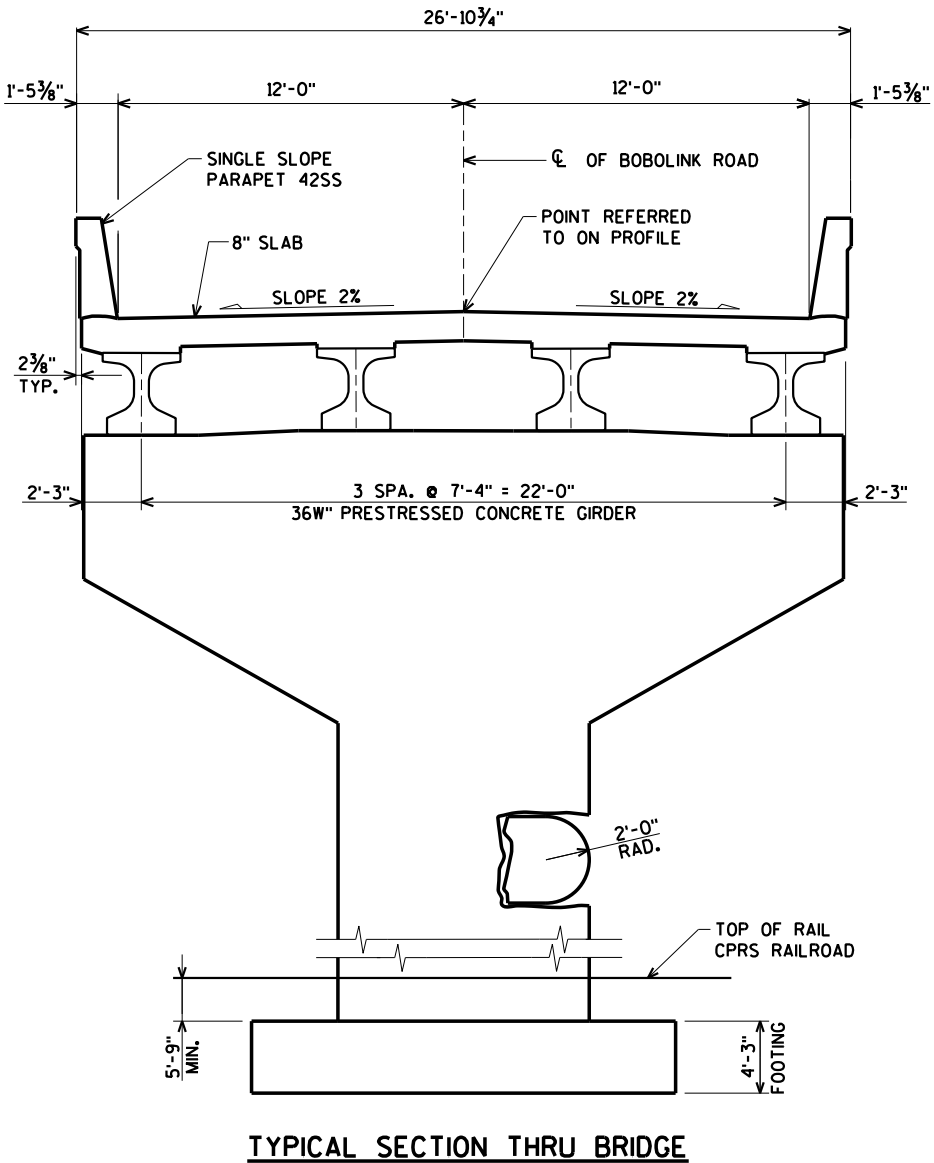
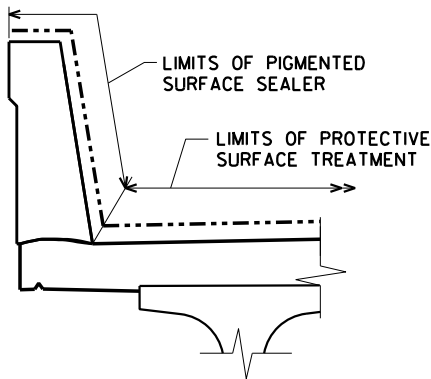
NAIL IN SE CORNER OF BRIDGE DECK
STA. 10+85, 10.3-FT. RT.
EL. 851.03

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-14-225			
		DRAWN BY JLB	PLANS CK'D. AEB
QUANTITIES, NOTES, & DESIGN DATA			SHEET 2 OF 28

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



PROTECTIVE SURFACE TREATMENT AND PIGMENTED SURFACE SEALER DETAIL



- BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 9.

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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-14-225			
DRAWN BY JLB		PLANS CK'D. AEB	
TYPICAL SECTION & MISCELLANEOUS DETAILS			SHEET 3 OF 28

\$PRNAME\$
C:\Users\marcum\Desktop\410810_soils_final.dgn

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	8/15/19	663446.92	848158.09
2	11/26/19	663462.82	848191.16
3	11/26/19	663462.48	848289.91
4	8/15/19	663462.34	848329.91

BORINGS COMPLETED BY:

ECS MIDWEST LLC.

REPORT COMPLETED BY:

ECS MIDWEST LLC.

ALL COORDINATES REFERENCED TO WCCS NAD 83(91) DODGE COUNTY

N

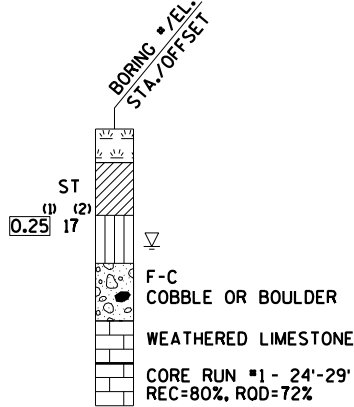
STATE PROJECT NUMBER

3804-00-74

MATERIAL SYMBOLS

	ASPHALT		TOPSOIL		PEAT
	CONCRETE		FILL		GRAVEL
	SAND		CLAY		SILT
	BOULDERS OR COBBLES		LIMESTONE		BEDROCK (UNKNOWN)
	SHALE		SANDSTONE		IGNEOUS/META

LEGEND OF BORING



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

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

GROUND WATER ELEVATION

- ▽ AT TIME OF DRILLING
- ▼ END OF DRILLING
- ▼ AFTER DRILLING

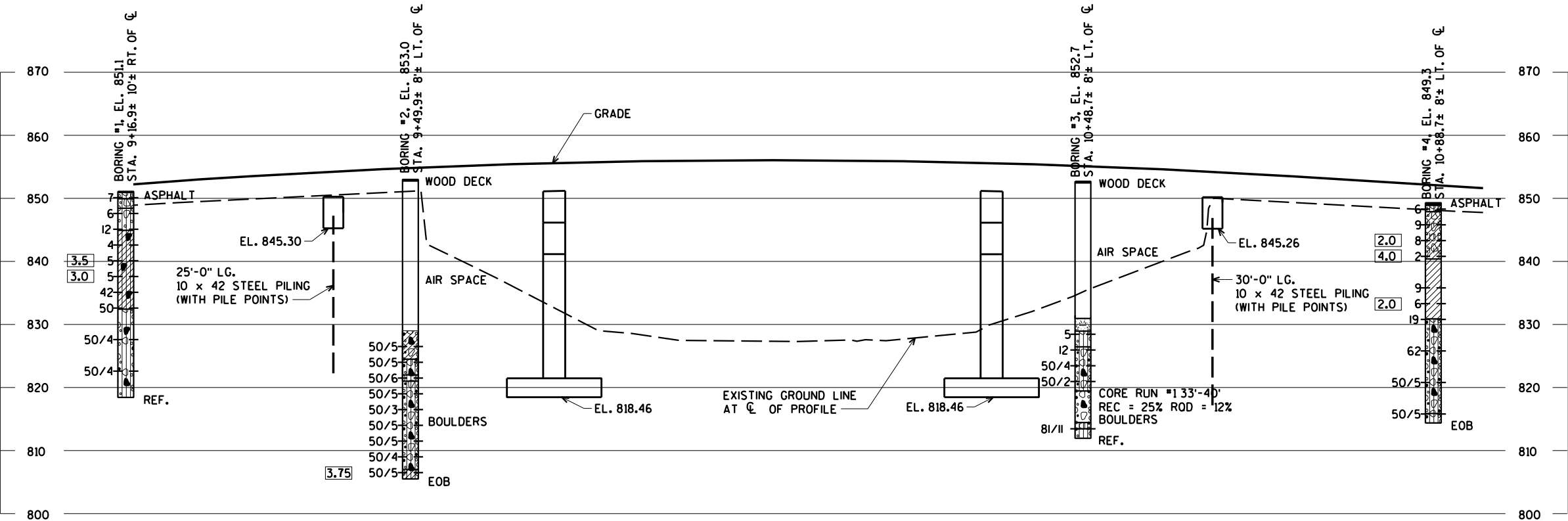
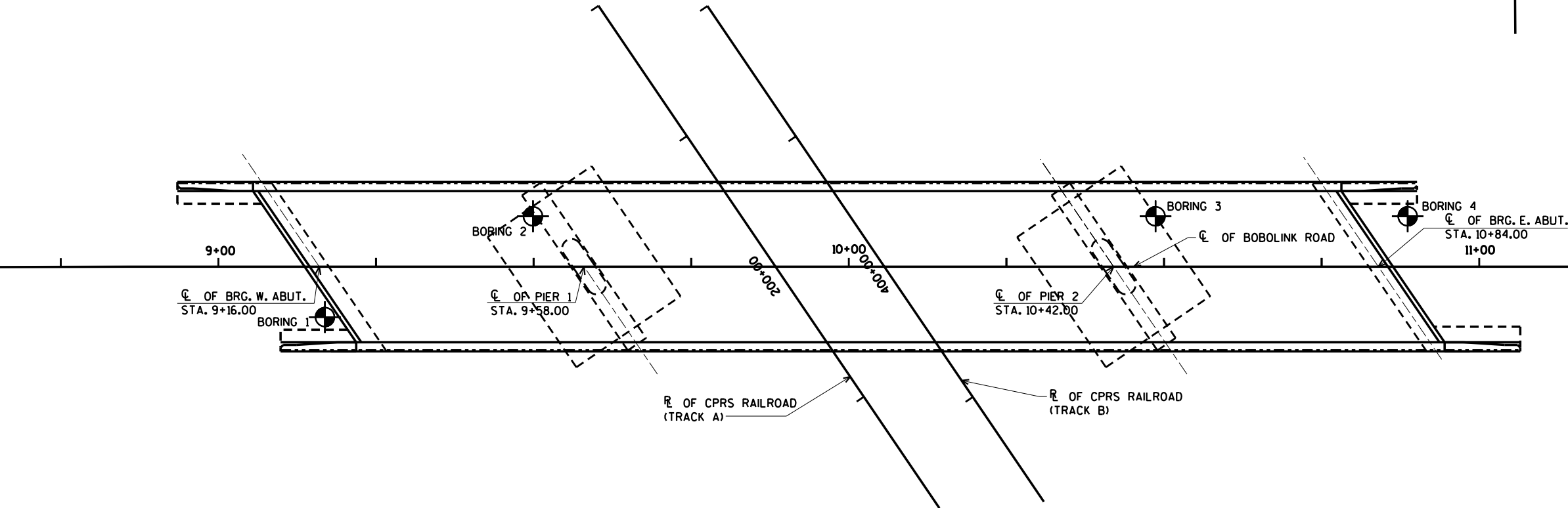
ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-14-225			
DRAWN BY JLB/CJM		PLANS CK'D. AEB	
SUBSURFACE EXPLORATION		SHEET 4 OF 28	

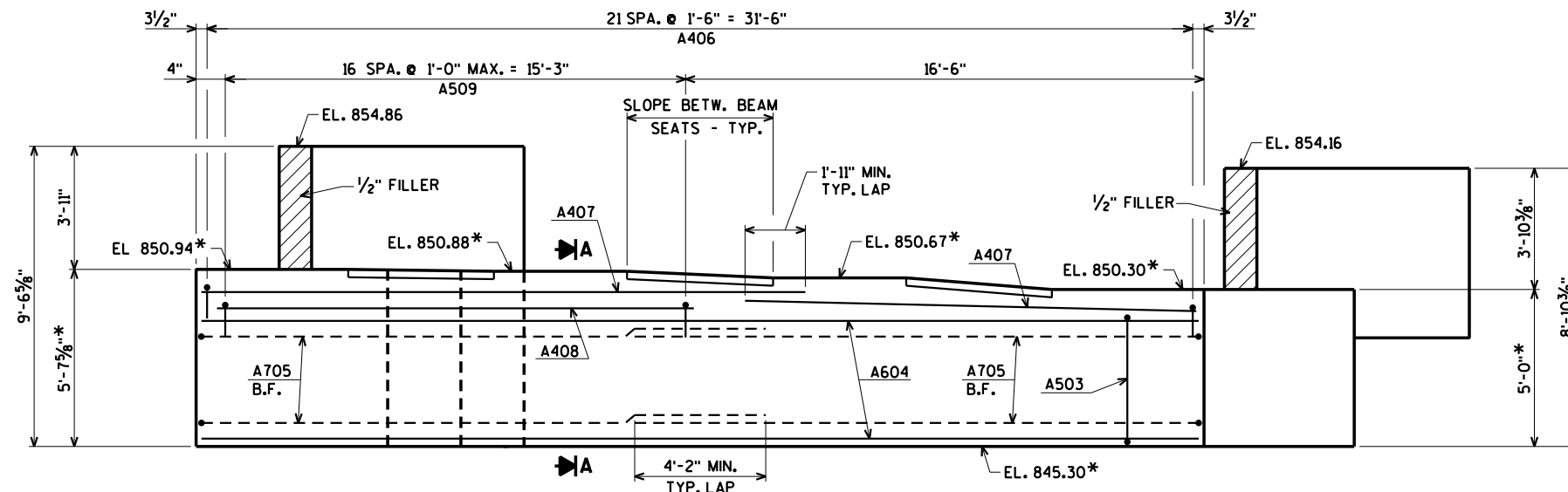


NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF
1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT
SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.)

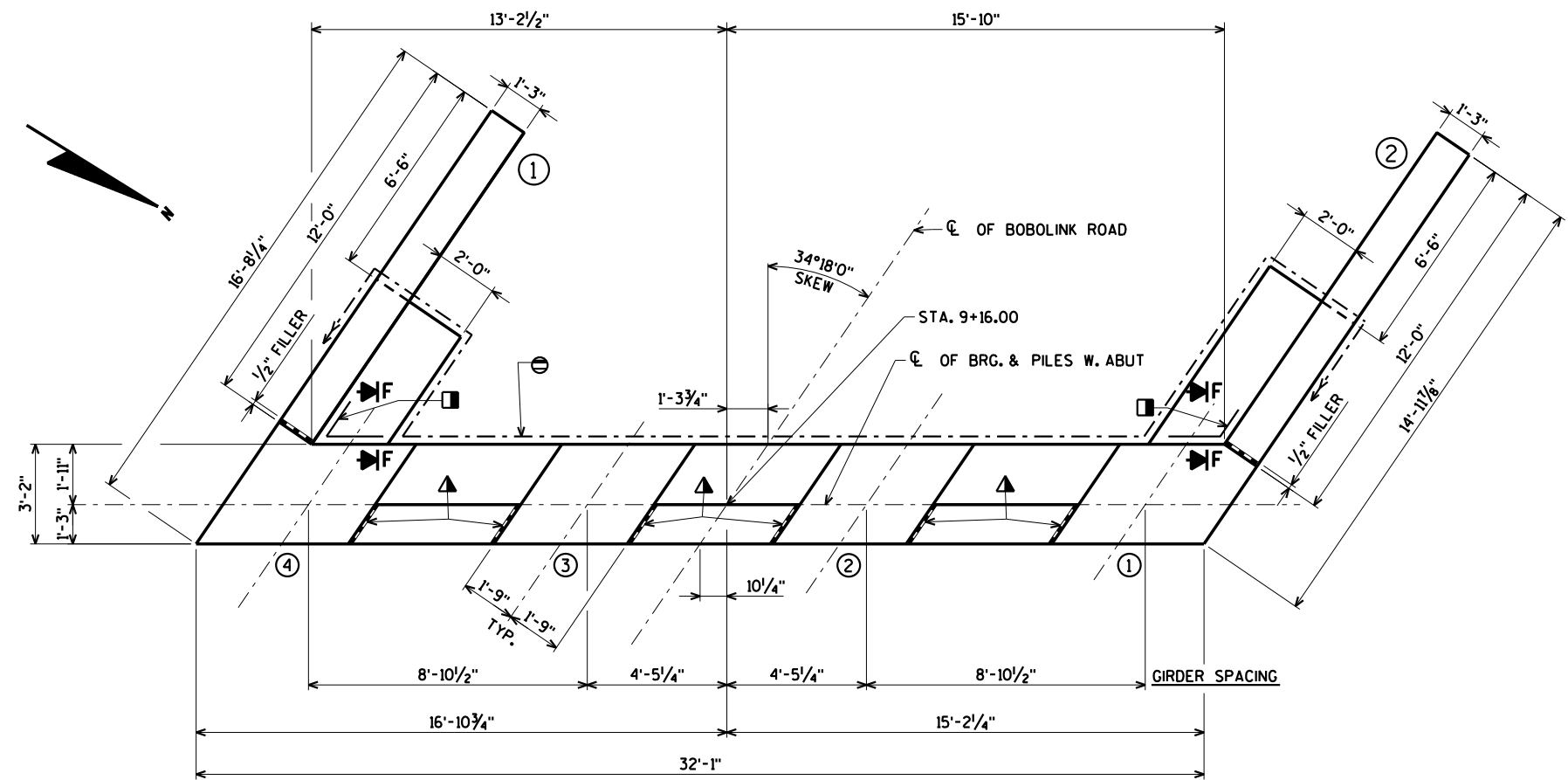
*ELEVATIONS AND DIMENSIONS TAKEN
AT CL OF BRG. & PILES S. ABUT.

STATE PROJECT NUMBER

3804-00-74



ELEVATION
(LOOKING WEST)
FOR SECTION A SEE SHEET 9



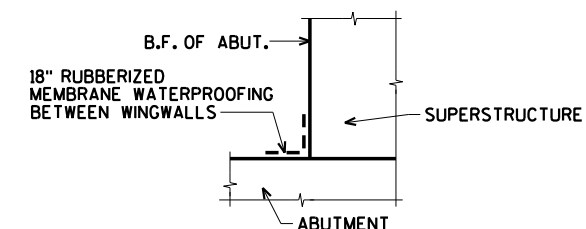
PLAN

PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT END OF PIPE UNDERDRAIN. SEE DETAIL ON SHEET 9.

B.F. DENOTES BACK FACE

18" RUBBERIZED MEMBRANE WATERPROOFING FROM BRIDGE SEAT TO TOP OF WING.

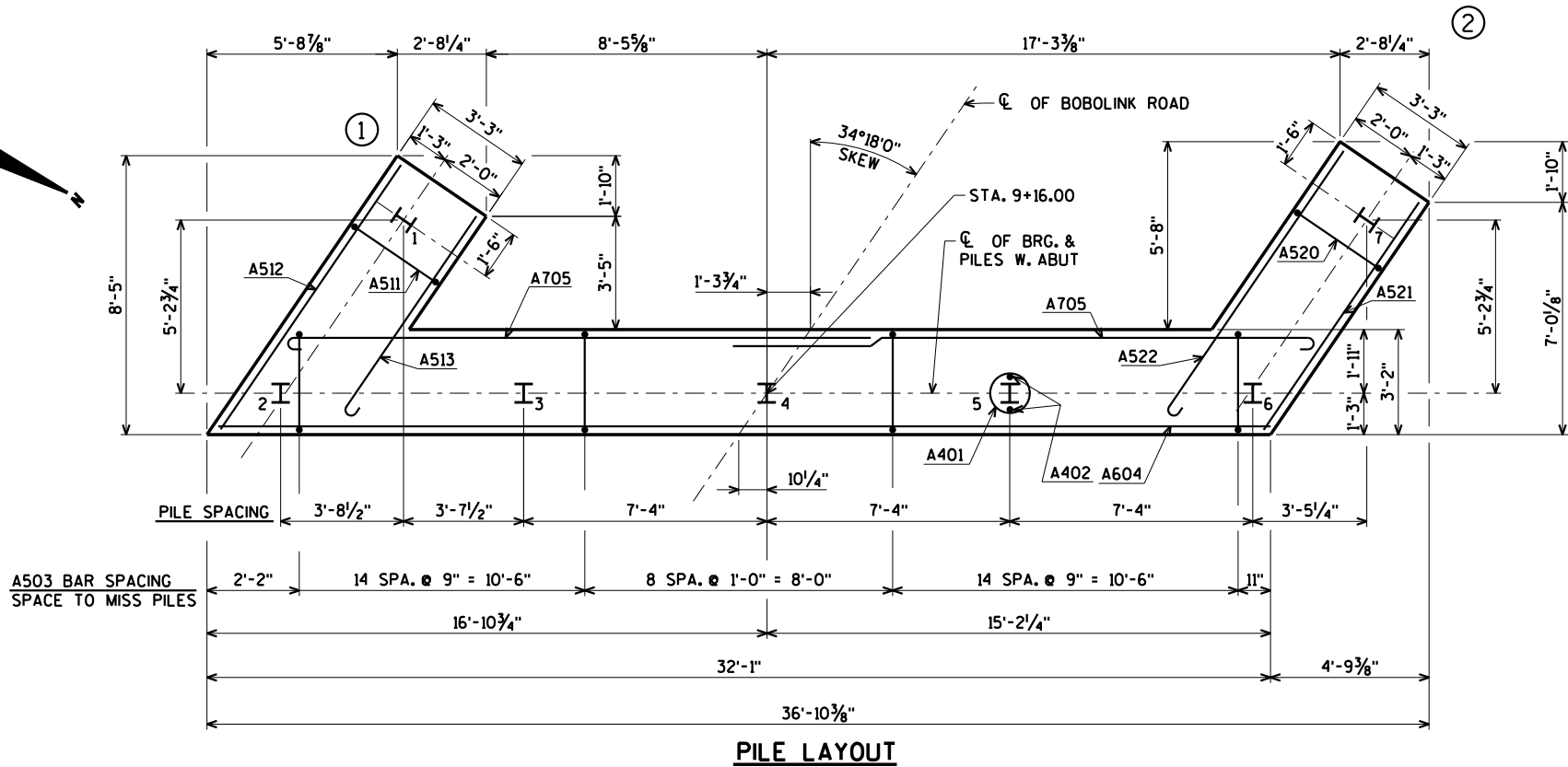
3/4" CORK FILLER ON VERTICAL BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.



SECTION F

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-14-225			
DRAWN BY CJM		PLANS CK'D. AEB	
WEST ABUTMENT		SHEET 5 OF 28	

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9/2/2020
PENTABLE:BRedu_shd_util.tbl

FOR PILE SPLICE DETAIL SEE SHEET 3.

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Eau Claire, WI 54701
www.AyresAssociates.com

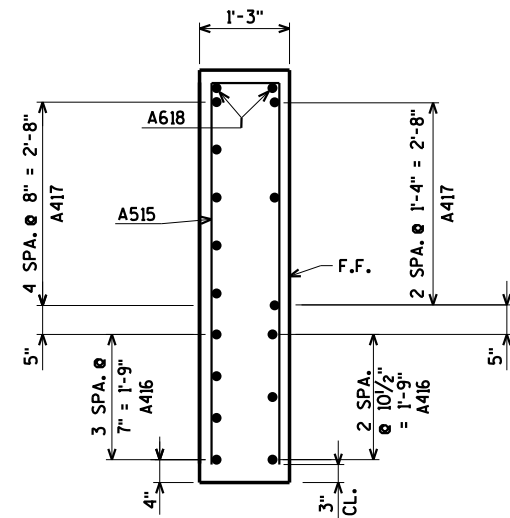
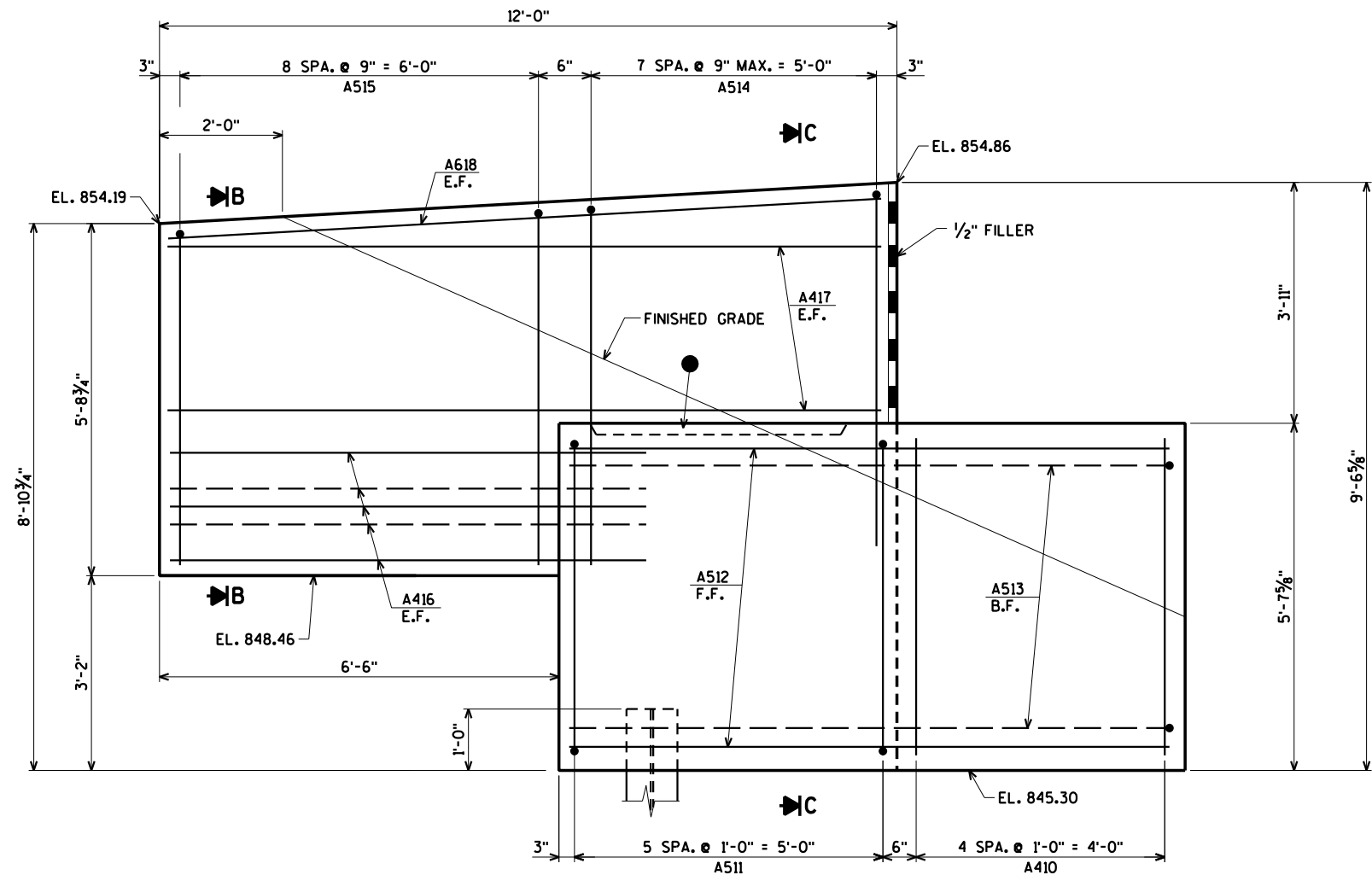
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-14-225			
DRAWN BY CJM		PLANS CK'D. AEB	
WEST ABUTMENT PILE LAYOUT			SHEET 6 OF 28

9/2/2020
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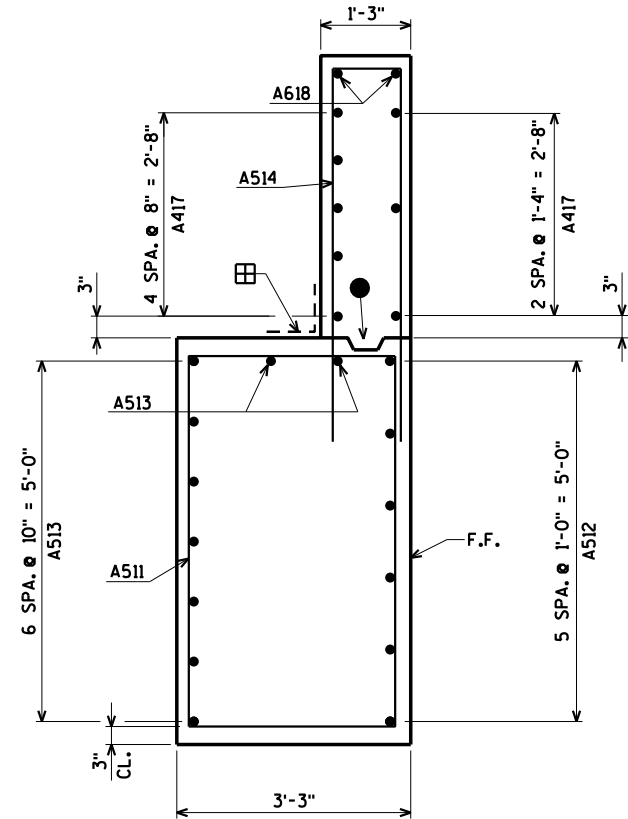
8

- FOR PILE SPLICE DETAIL SEE SHEET 3.
- OPT. CONST. JOINT FORMED BY A BEVELED 2" x 6" KEYWAY.
- ▣ 18" RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE OF ABUTMENT.
- F.F. DENOTES FRONT FACE
- B.F. DENOTES BACK FACE
- E.F. DENOTES EACH FACE.

ELEVATION - WING 1



SECTION B



SECTION C

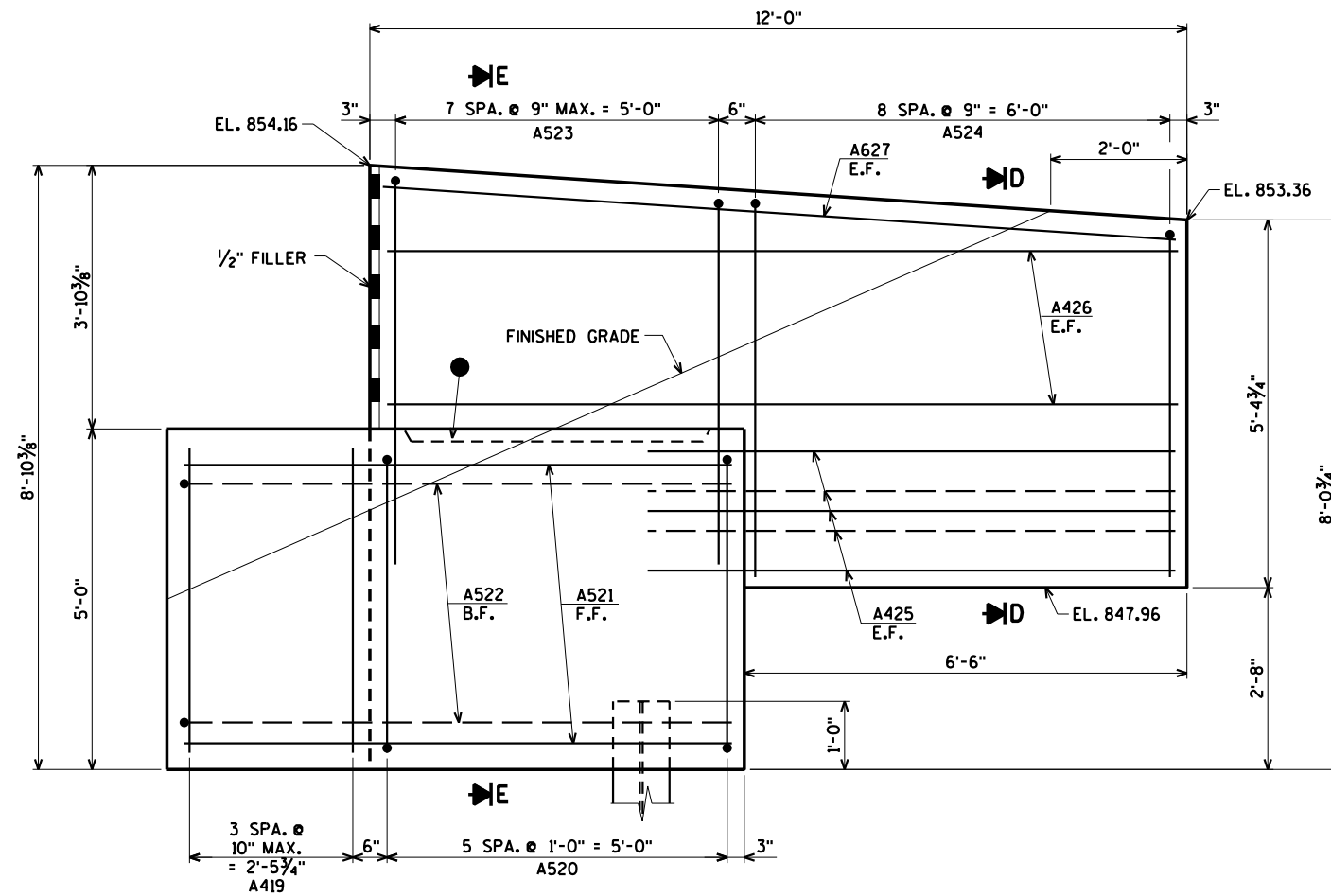
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-14-225			
DRAWN BY CJM		PLANS CK'D. AEB	
WEST ABUTMENT WING 1 DETAILS			SHEET 7 OF 28

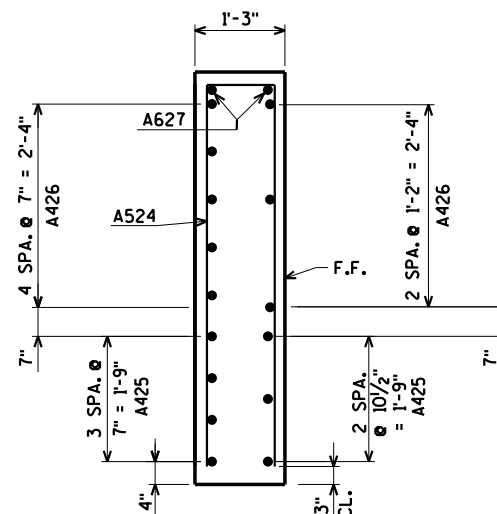
ORIGINAL PLANS PREPARED BY
AYRES 3433 Oakwood Hills Parkway
Eau Claire, WI 54701
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9/2/2020
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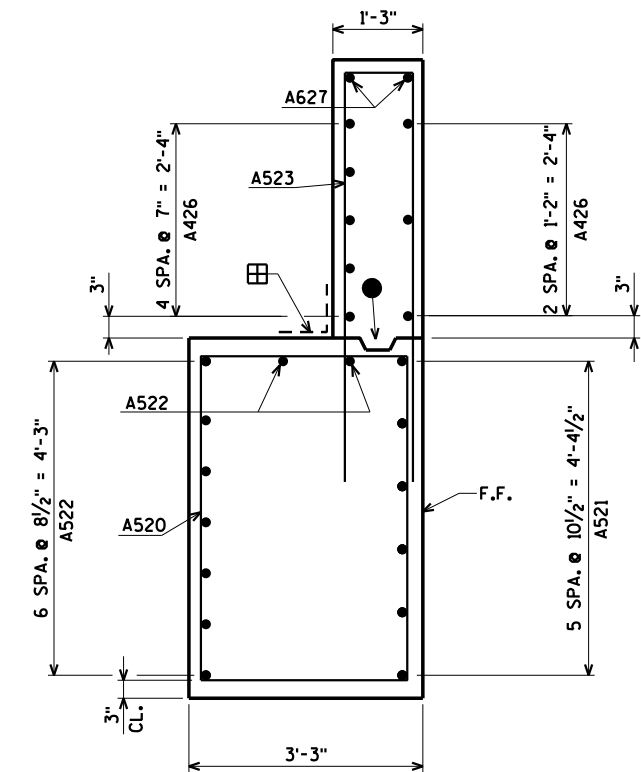
8



ELEVATION - WING 2



SECTION D



SECTION E

FOR PILE SPLICE DETAIL SEE SHEET 3.

● OPT. CONST. JOINT FORMED
BY A BEVELED 2" x 6" KEYWAY.

▣ 18" RUBBERIZED MEMBRANE WATERPROOFING
SEAL ALL HORIZONTAL AND VERTICAL JOINTS
ON BACKFACE OF ABUTMENT.

F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE.

STATE PROJECT NUMBER

3804-00-74

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-14-225			
DRAWN BY CJM		PLANS CK'D. AEB	
WEST ABUTMENT WING 2 DETAILS			SHEET 8 OF 28

ORIGINAL PLANS PREPARED BY

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8

9/21/2020
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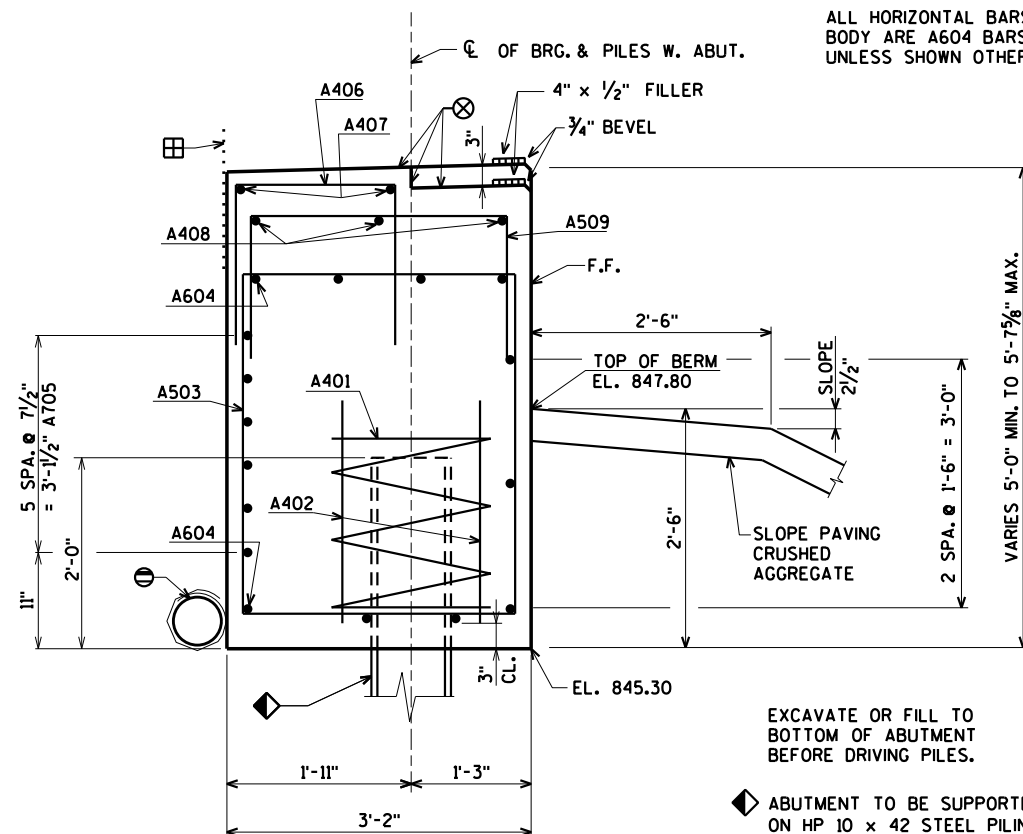
STATE PROJECT NUMBER

3804-00-74

BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLE BAR SERIES	2,000# COATED 1,860# UNCOATED
						LOCATION
A401		5	28-0	X		BODY @ PILES
A402		10	2-3			BODY @ PILES
A503		37	14-11	X		BODY VERT.
A604		10	31-9			BODY HORIZ.
A705		12	18-10	X		BODY HORIZ. B.F.
A406		22	4-9	X		BODY VERT.
A407		4	16-10			BODY HORIZ.
A408		2	15-7			BODY HORIZ.
A509		17	5-11	X		BODY VERT.
A410	X	5	5-3			BODY VERT. END @ WING 1
A511	X	6	16-5	X		WING 1 VERT.
A512	X	6	9-10			WING 1 HORIZ. F.F.
A513	X	9	8-3	X		WING 1 HORIZ. B.F.
A514	X	8	12-2	X		WING 1 VERT.
A515	X	9	11-4	X		WING 1 VERT.
A416	X	7	7-9			WING 1 HORIZ. E.F.
A417	X	8	11-8			WING 1 HORIZ. E.F.
A618	X	2	11-8			WING 1 HORIZ. TOP E.F.
A419	X	4	4-7			BODY VERT. END @ WING 2
A520	X	6	15-7	X		WING 2 VERT.
A521	X	6	8-2			WING 2 HORIZ. F.F.
A522	X	9	10-11	X		WING 2 HORIZ. B.F.
A523	X	8	12-2	X		WING 2 VERT.
A524	X	9	10-6	X		WING 2 VERT.
A425	X	7	7-9			WING 2 HORIZ. E.F.
A426	X	8	11-8			WING 2 HORIZ. E.F.
A627	X	2	11-8			WING 2 HORIZ. TOP E.F.

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



SECTION A

EXCAVATE OR FILL TO
BOTTOM OF ABUTMENT
BEFORE DRIVING PILES.

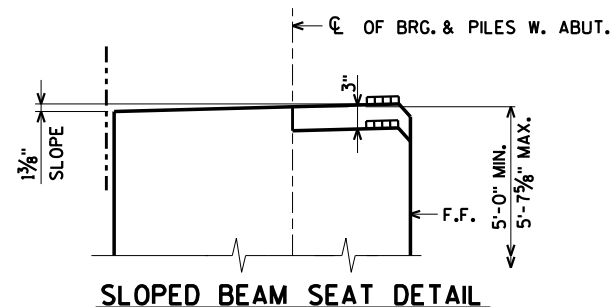
ABUTMENT TO BE SUPPORTED
ON HP 10 x 42 STEEL PILING
(WITH PILE POINTS) DRIVEN TO
A REQUIRED DRIVING RESISTANCE
OF 150 TONS PER PILE.
ESTIMATED LENGTH 25'-0".

FOR LOCATION OF SECTION A SEE SHEET 5

ABUTMENT BEAM SEAT ELEVATION CORRECTIONS

GIRDER	ELEVATION CORRECTION AT POINTS			
	1	2	3	4
1 - 4	-0.14	+0.01	+0.11	-0.05

VALUES ARE IN FEET. ADD THESE VALUES TO
THE SEAT ELEVATIONS SHOWN TO OBTAIN
ELEVATIONS OF POINTS 1, 2, 3 & 4.



SLOPED BEAM SEAT DETAIL

18" RUBBERIZED MEMBRANE WATERPROOFING
SEAL ALL HORIZONTAL AND VERTICAL JOINTS
ON BACKFACE OF ABUTMENT.

FOR PILE SPlice DETAIL
SEE SHEET 3

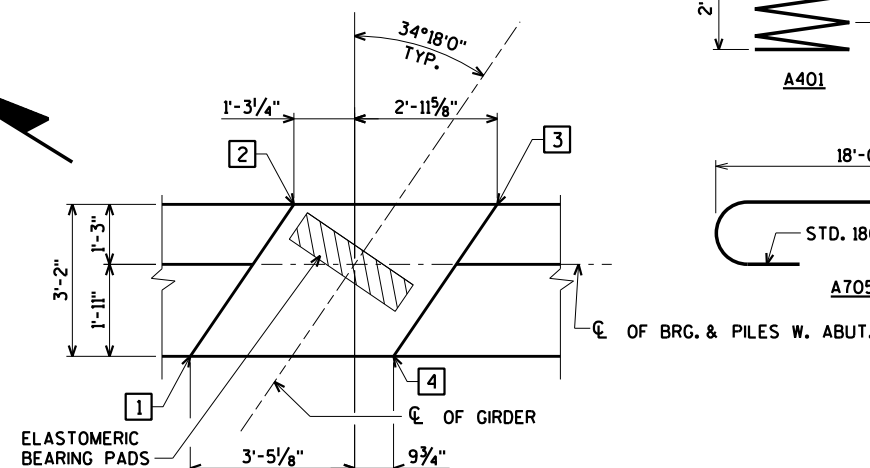
F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

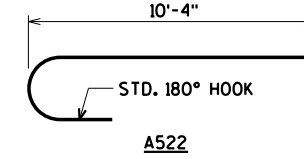
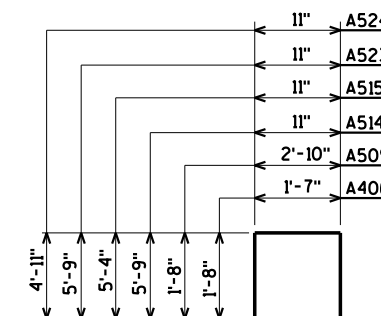
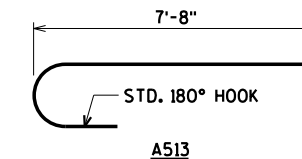
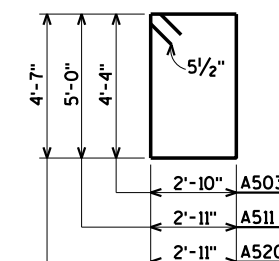
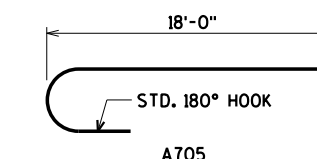
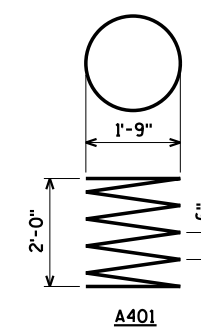
PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5%
MIN. TO SUITABLE DRAINAGE. ATTACH RODENT
SHIELD AT END OF PIPE UNDERDRAIN. SEE
DETAIL ON THIS SHEET.

STEEL TROWEL TOP SURFACE OF ABUTMENT.
PLACE MULTIPLE LAYERS OF POLYETHYLENE
SHEETS OVER ENTIRE ABUTMENT TOP BEFORE
PLACING BEARING AND/OR SUPERSTRUCTURE.
TOTAL THICKNESS OF SHEETS SHALL BE AT
LEAST 0.03".



SLOPING BEAM SEAT DETAILS

(SEATS @ GIRDER 2 SHOWN, GIRDERS 1, 3, & 4 SIMILAR)



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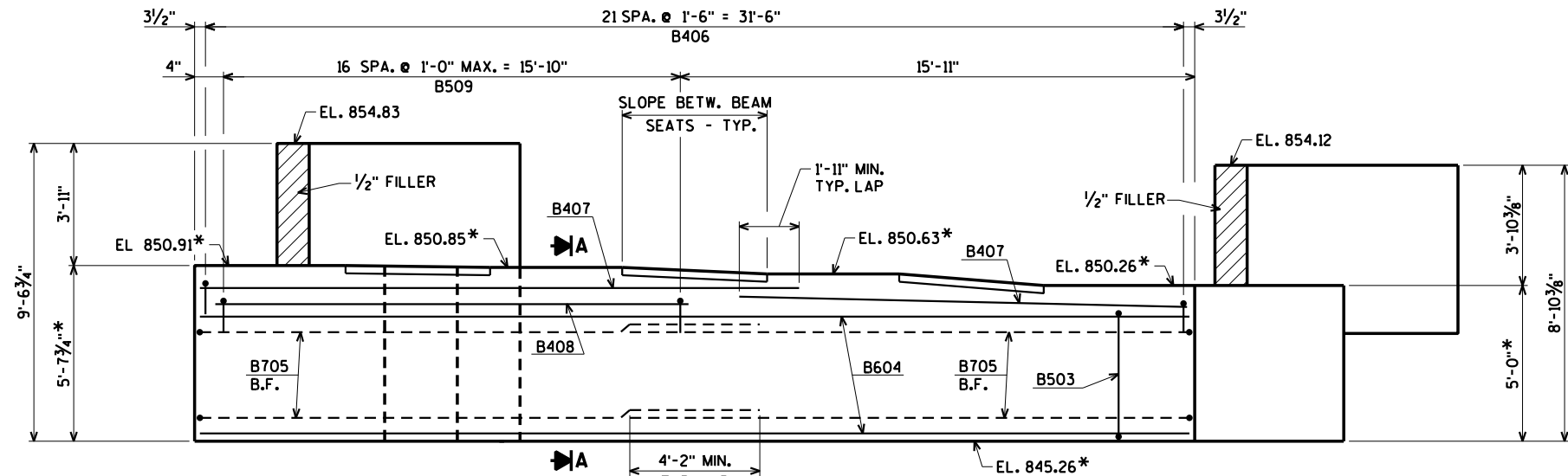
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-14-225			
DRAWN BY CJM		PLANS CK'D. AEB	
WEST ABUTMENT DETAILS AND BILL OF BARS			
SHEET 9 OF 28			

NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.)

*ELEVATIONS AND DIMENSIONS TAKEN AT CL OF BRG. & PILES S. ABUT.

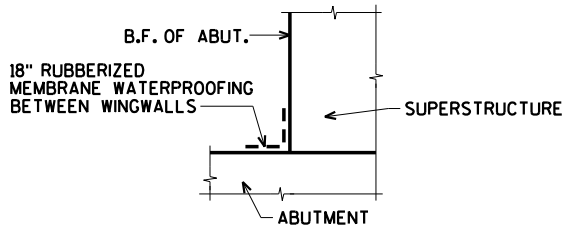
STATE PROJECT NUMBER

3804-00-74

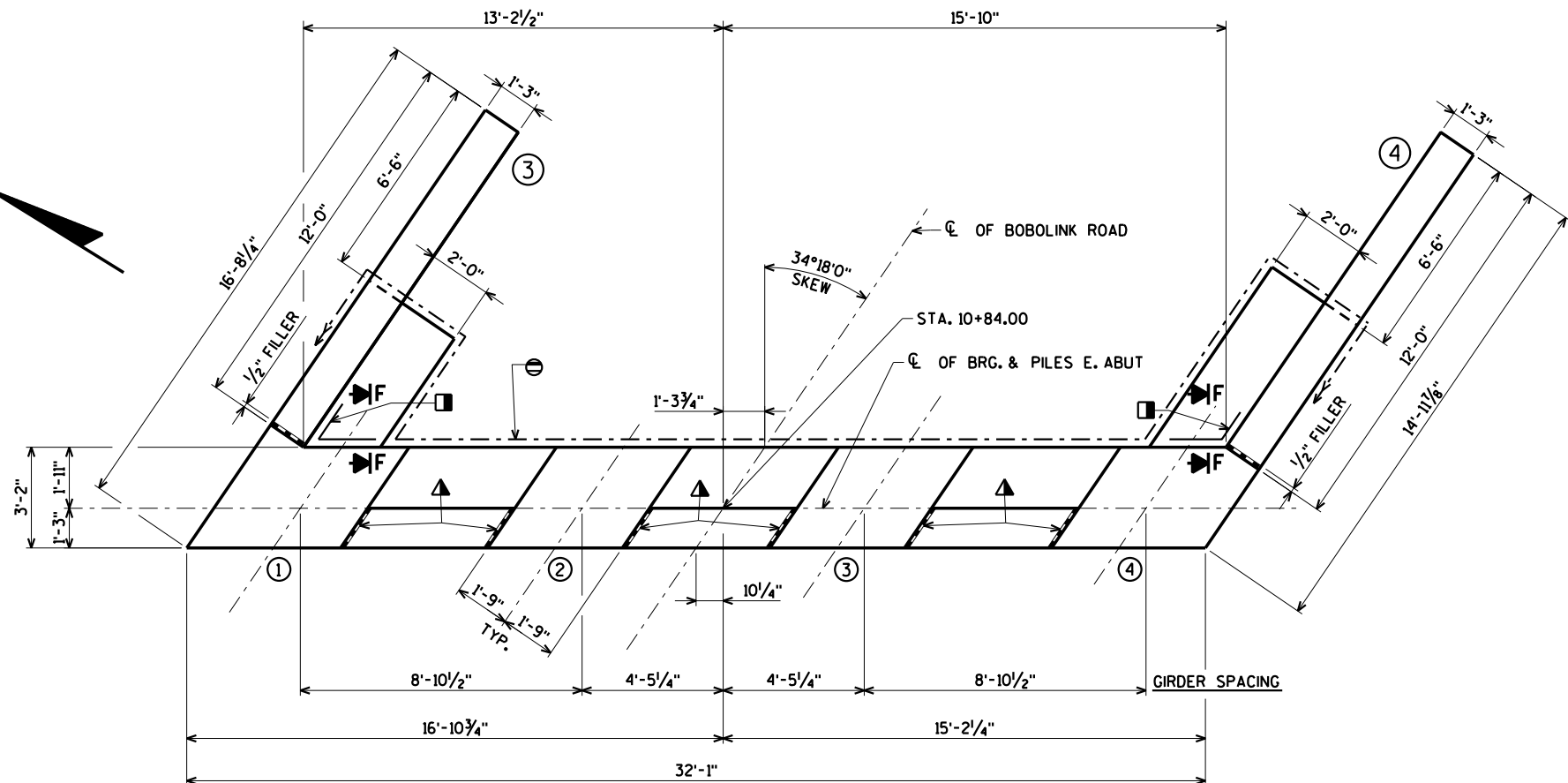


ELEVATION
(LOOKING EAST)
FOR SECTION A SEE SHEET 14

- PIPE UNDERDRAIN WRAPPED 6-INCH, SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT END OF PIPE UNDERDRAIN. SEE DETAIL ON SHEET 9.
- B.F. DENOTES BACK FACE
- 18" RUBBERIZED MEMBRANE WATERPROOFING FROM BRIDGE SEAT TO TOP OF WING.
- 3/4" CORK FILLER ON VERTICAL BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.



SECTION F



PLAN

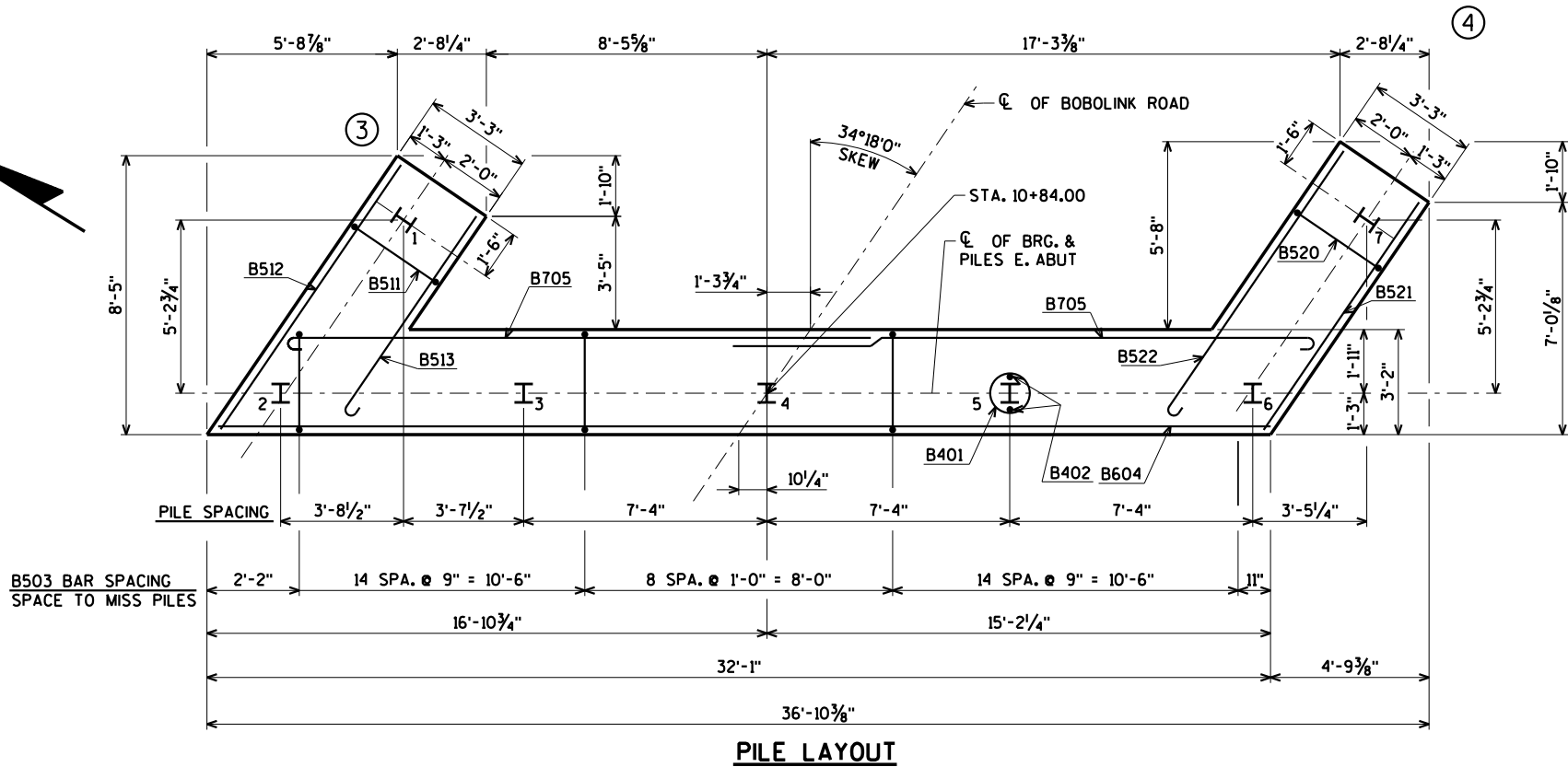
ORIGINAL PLANS PREPARED BY
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-14-225			
DRAWN BY CJM		PLANS CK'D. AEB	
EAST ABUTMENT		SHEET 10 OF 28	

9/2/2020
PENTABLE:BRedu_shd_util.tbl

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8



FOR PILE SPLICE DETAIL SEE SHEET 3.

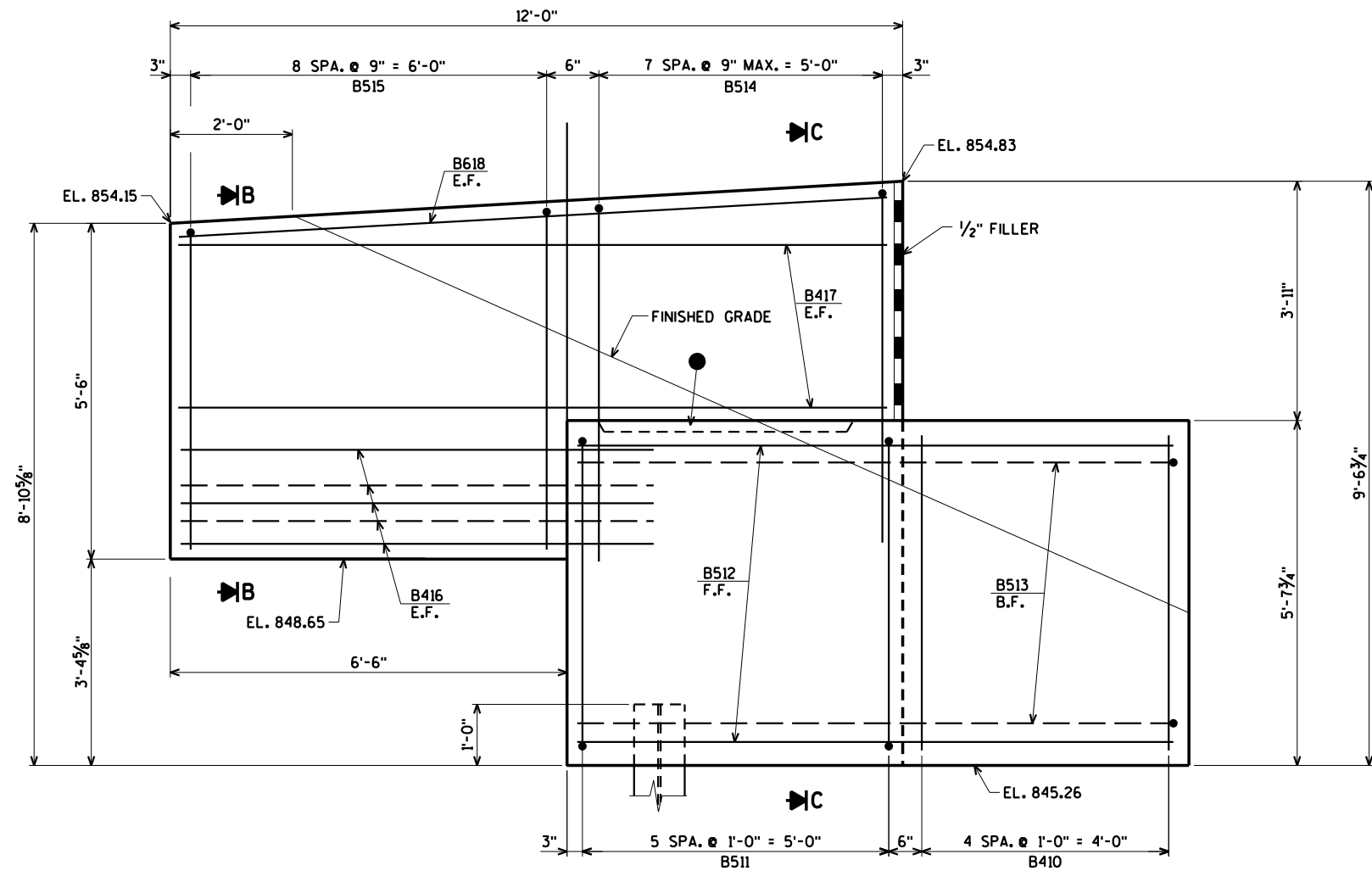
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STRUCTURE B-14-225			
DRAWN BY CJM		PLANS CK'D. AEB	
EAST ABUTMENT PILE LAYOUT			SHEET 11 OF 28

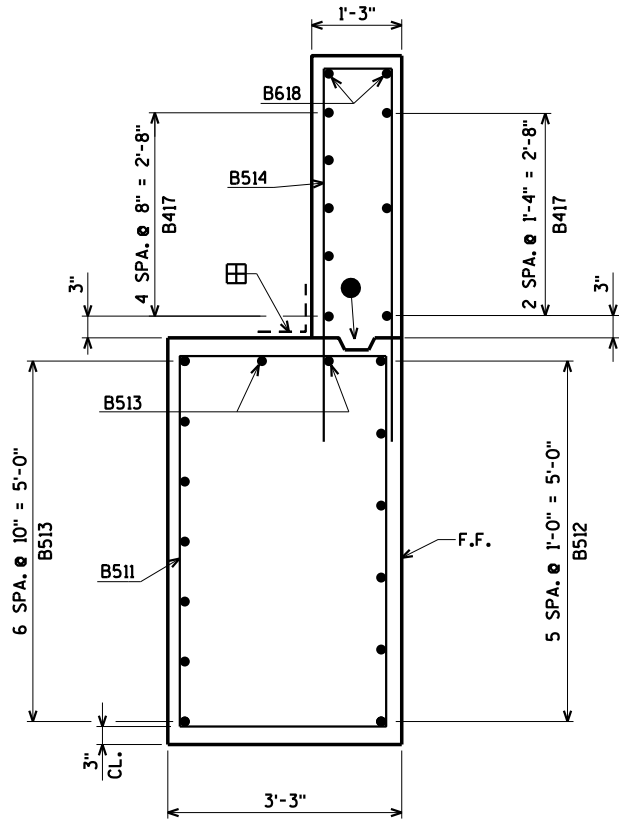
9/2/2020
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STATE PROJECT NUMBER

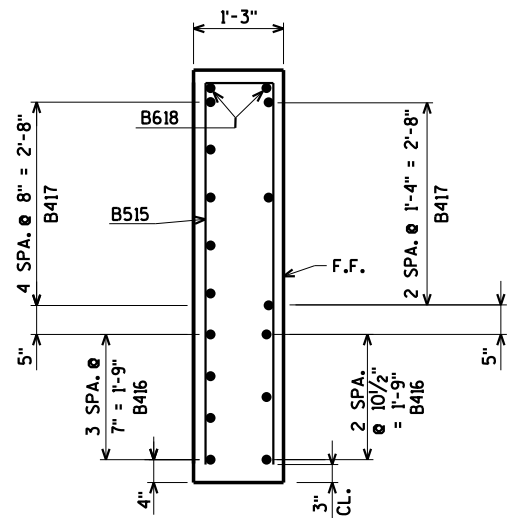
3804-00-74



ELEVATION - WING 3



SECTION C



SECTION B

FOR PILE SPLICE DETAIL SEE SHEET 3.

● OPT. CONST. JOINT FORMED BY A BEVELED 2" x 6" KEYWAY.

▣ 18" RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE OF ABUTMENT.

F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

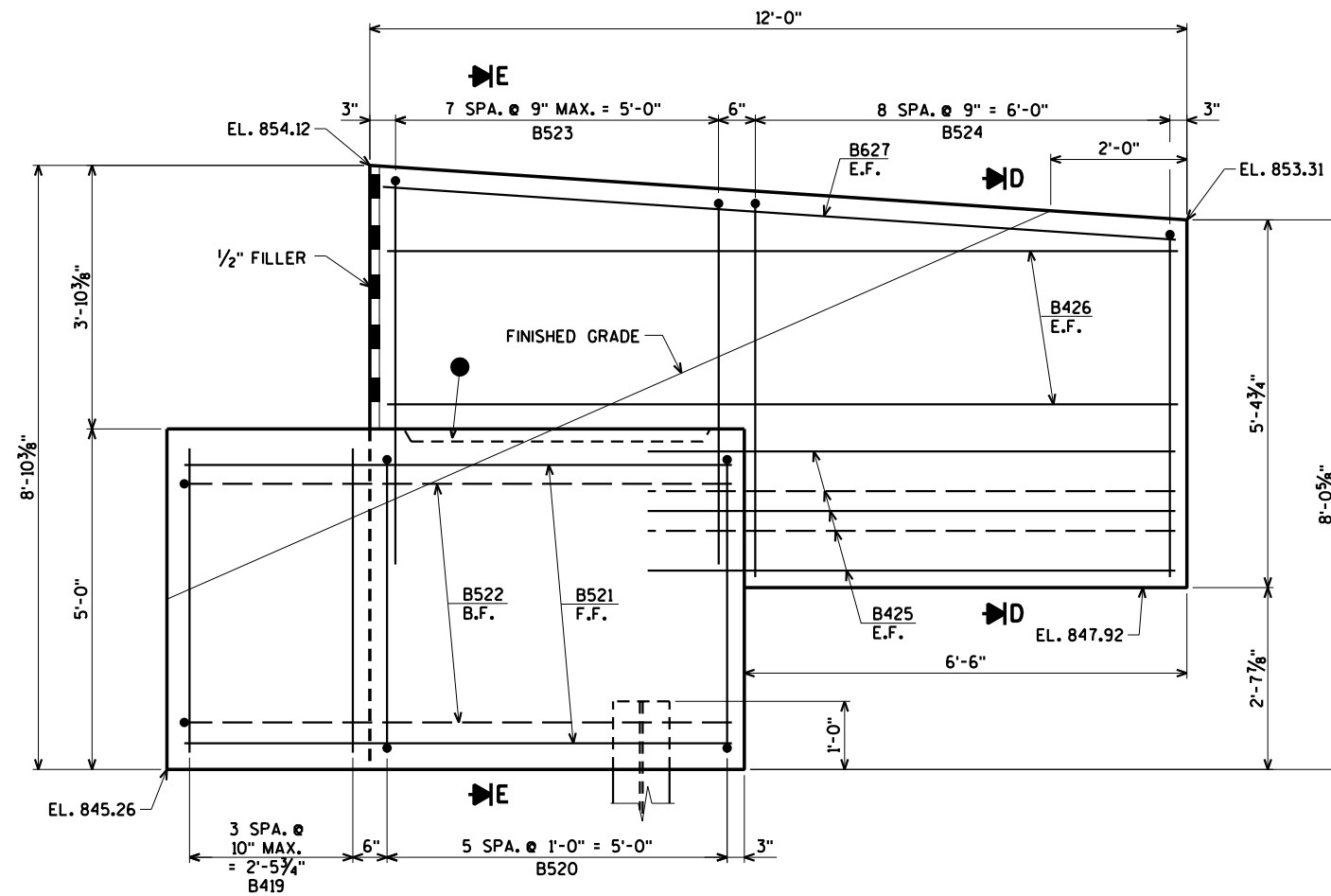
E.F. DENOTES EACH FACE.

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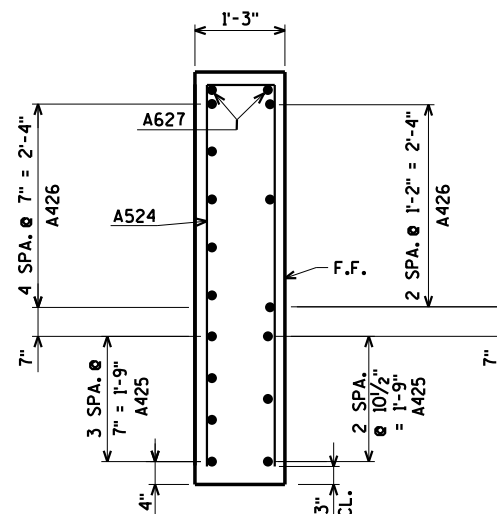
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-14-225			
DRAWN BY CJM		PLANS CK'D. AEB	
EAST ABUTMENT WING 3 DETAILS			SHEET 12 OF 28

9/2/2020
PENTABLE:BRedu_shd_util.tbl

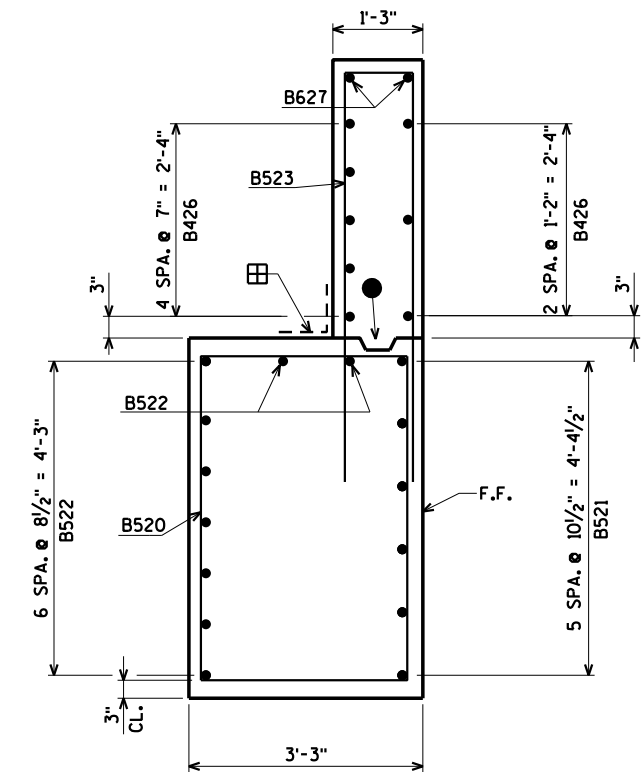
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ELEVATION - WING 4



SECTION D



SECTION E

FOR PILE SPLICE DETAIL SEE SHEET 3.

● OPT. CONST. JOINT FORMED BY A BEVELED 2" x 6" KEYWAY.

▣ 18" RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACKFACE OF ABUTMENT.

F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE.

STATE PROJECT NUMBER

3804-00-74

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-14-225			
DRAWN BY CJM		PLANS CK'D. AEB	
EAST ABUTMENT WING 4 DETAILS			SHEET 13 OF 28

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9/21/2020
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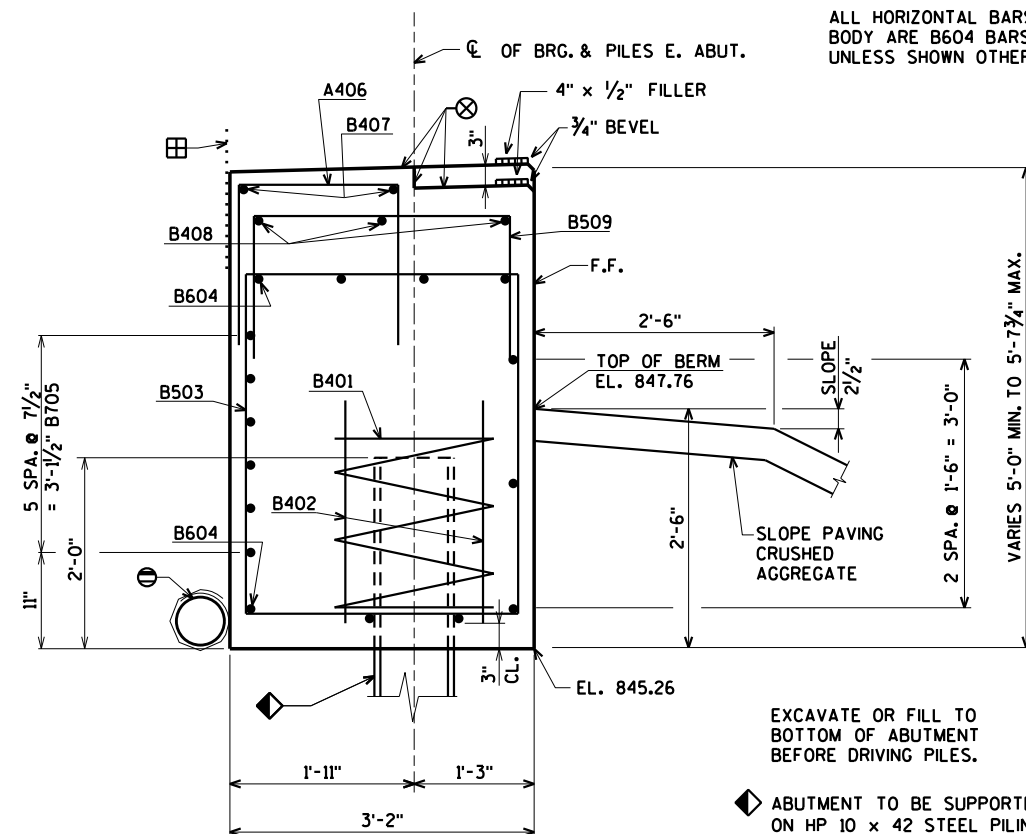
STATE PROJECT NUMBER

3804-00-74

BILL OF BARS

BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLE BAR SERIES	2,000# COATED 1,860# UNCOATED
						LOCATION
B401		5	28-0	X		BODY @ PILES
B402		10	2-3			BODY @ PILES
B503		37	14-11	X		BODY VERT.
B604		10	31-9			BODY HORIZ.
B705		12	18-10	X		BODY HORIZ. B.F.
B406		22	4-9	X		BODY VERT.
B407		4	16-10			BODY HORIZ.
B408		2	16-0			BODY HORIZ.
B509		17	5-11	X		BODY VERT.
B410	X	5	5-3			BODY VERT. END @ WING 3
B511	X	6	16-5	X		WING 3 VERT.
B512	X	6	9-10			WING 3 HORIZ. F.F.
B513	X	9	8-3	X		WING 3 HORIZ. B.F.
B514	X	8	12-2	X		WING 3 VERT.
B515	X	9	11-4	X		WING 3 VERT.
B416	X	7	7-9			WING 3 HORIZ. E.F.
B417	X	8	11-8			WING 3 HORIZ. E.F.
B618	X	2	11-8			WING 3 HORIZ. TOP E.F.
B419	X	4	4-7			BODY VERT. END @ WING 4
B520	X	6	15-7	X		WING 4 VERT.
B521	X	6	8-2			WING 4 HORIZ. F.F.
B522	X	9	10-11	X		WING 4 HORIZ. B.F.
B523	X	8	12-2	X		WING 4 VERT.
B524	X	9	10-6	X		WING 4 VERT.
B425	X	7	7-9			WING 4 HORIZ. E.F.
B426	X	8	11-8			WING 4 HORIZ. E.F.
B627	X	2	11-8			WING 4 HORIZ. TOP E.F.

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.



SECTION A

EXCAVATE OR FILL TO
BOTTOM OF ABUTMENT
BEFORE DRIVING PILES.

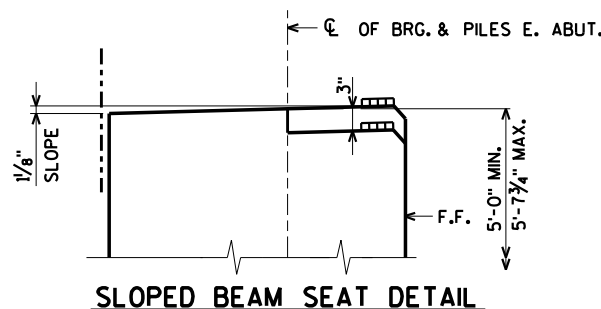
ABUTMENT TO BE SUPPORTED
ON HP 10 x 42 STEEL PILING
(WITH PILE POINTS) DRIVEN TO
A REQUIRED DRIVING RESISTANCE
OF 150 TONS PER PILE.
ESTIMATED LENGTH 30'-0".

FOR LOCATION OF SECTION A SEE SHEET 10

ABUTMENT BEAM SEAT ELEVATION CORRECTIONS

GIRDER	ELEVATION CORRECTION AT POINTS			
	1	2	3	4
1 - 4	-0.11	+0.01	+0.09	-0.04

VALUES ARE IN FEET. ADD THESE VALUES TO
THE SEAT ELEVATIONS SHOWN TO OBTAIN
ELEVATIONS OF POINTS 1, 2, 3 & 4.



SLOPED BEAM SEAT DETAIL

18" RUBBERIZED MEMBRANE WATERPROOFING
SEAL ALL HORIZONTAL AND VERTICAL JOINTS
ON BACKFACE OF ABUTMENT.

FOR PILE SPlice DETAIL
SEE SHEET 3

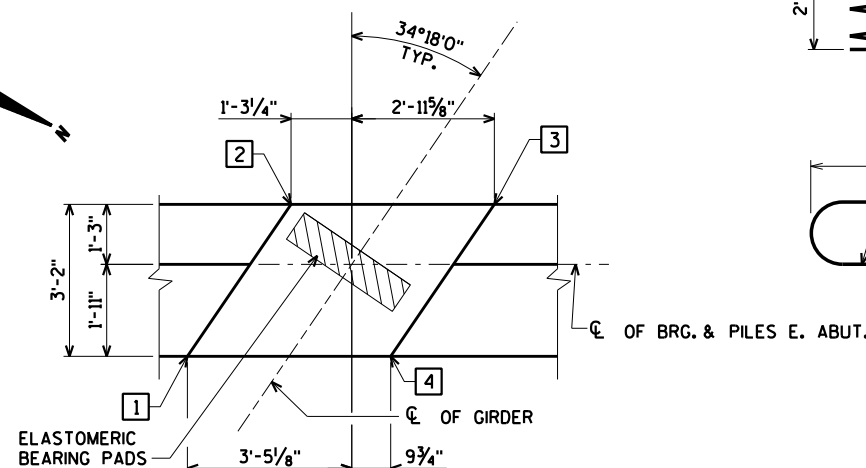
F.F. DENOTES FRONT FACE

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

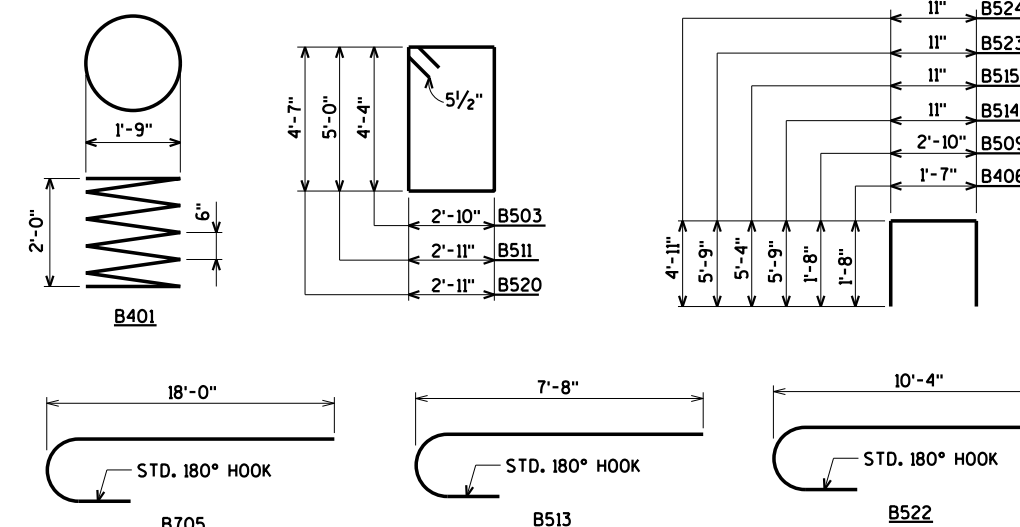
PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5%
MIN. TO SUITABLE DRAINAGE. ATTACH RODENT
SHIELD AT END OF PIPE UNDERDRAIN. SEE
DETAIL ON SHEET 9.

STEEL TROWEL TOP SURFACE OF ABUTMENT.
PLACE MULTIPLE LAYERS OF POLYETHYLENE
SHEETS OVER ENTIRE ABUTMENT TOP BEFORE
PLACING BEARING AND/OR SUPERSTRUCTURE.
TOTAL THICKNESS OF SHEETS SHALL BE AT
LEAST 0.03".



SLOPING BEAM SEAT DETAILS

(SEATS @ GIRDER 2 SHOWN, GIRDERS 1, 3, & 4 SIMILAR)



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-14-225			
		DRAWN BY	CJM
		PLANS CK'D.	AEB
EAST ABUTMENT DETAILS AND BILL OF BARS		SHEET 14 OF 28	

ORIGINAL PLANS PREPARED BY

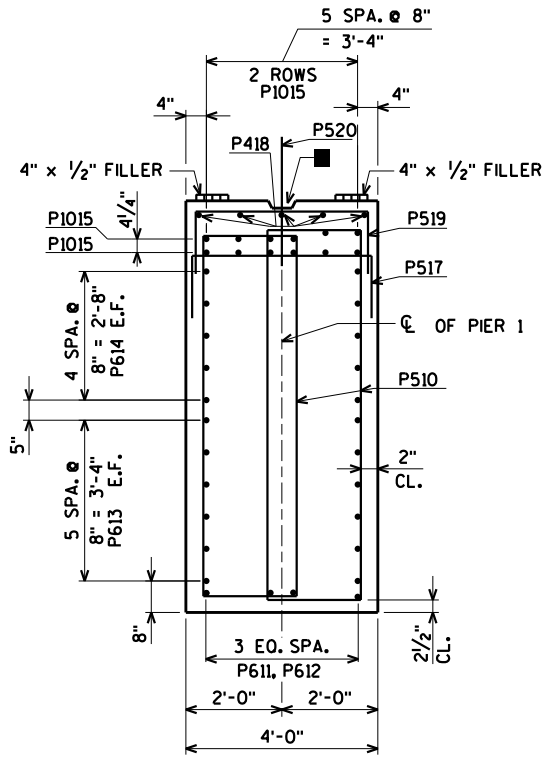
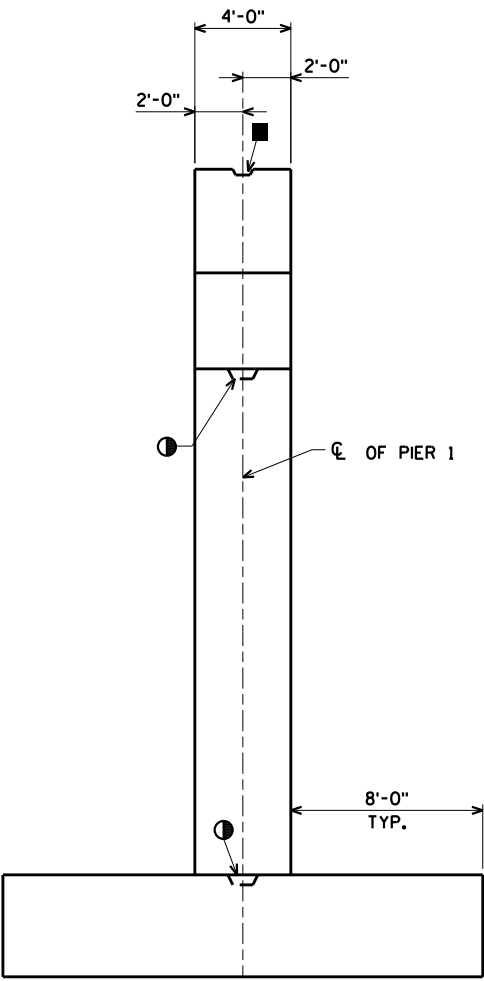
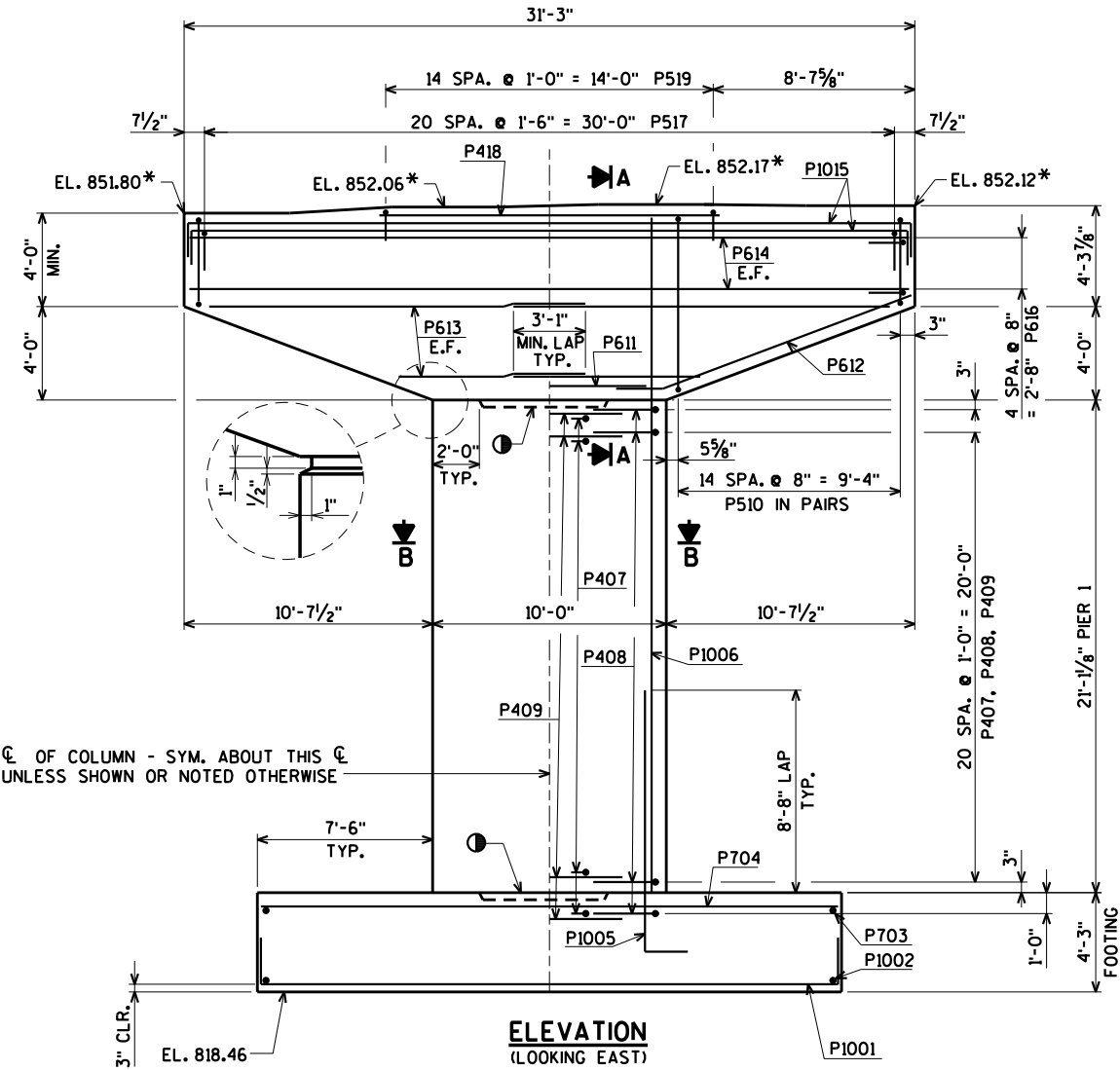
AYRES

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* ELEVATIONS AND DIMENSIONS
TAKEN AT CL OF PIER.

STATE PROJECT NUMBER

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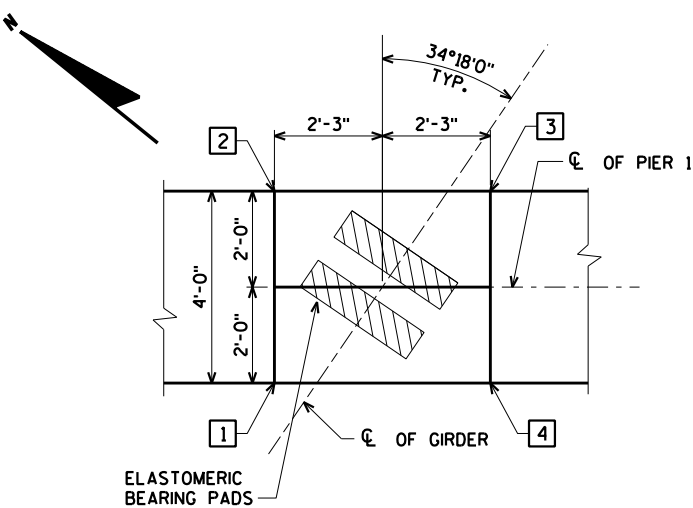
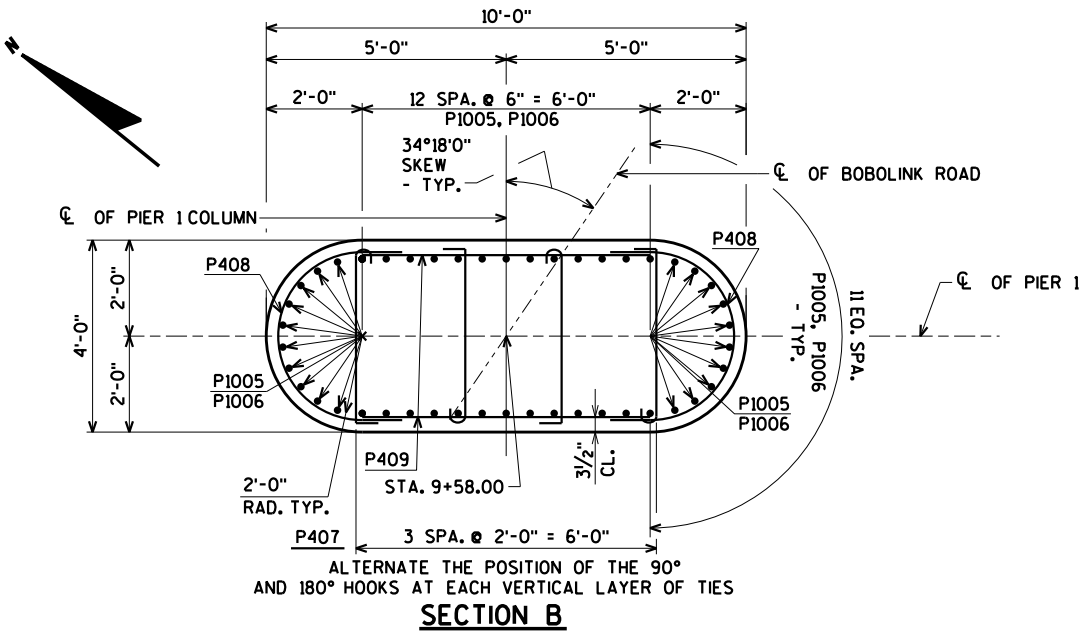
SECTION A

P520 BARS MAY BE PLACED AFTER
CONCRETE HAS BEEN POURED BUT
BEFORE INITIAL SET HAS TAKEN PLACE.

PIER BEAM SEAT
ELEVATION CORRECTIONS

GIRDER	ELEVATION CORRECTION AT POINTS			
	1	2	3	4
1 - 4	-0.09	-0.00	-0.00	-0.01

VALUES ARE IN FEET. ADD THESE VALUES TO
THE SEAT ELEVATIONS SHOWN TO OBTAIN
ELEVATIONS OF POINTS 1, 2, 3 & 4.



SLOPING BEAM SEAT DETAILS

(SEATS @ GIRDER 2 SHOWN, GIRDERS 1, 3, & 4 SIMILAR)

CONST. JT. FORMED BY
BEVELED 2" x 6" KEYWAY.

KEYED CONST. JOINT FORMED BY
A SURFACED BEVELED KEYWAY
4" DEEP x 1'-1" WIDE x 8'-0" LONG

FOR PILE SPLICE DETAIL SEE SHEET 3

E.F. DENOTES EACH FACE.

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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-14-225			
DRAWN BY CJM		PLANS CK'D. AEB	
PIER 1			SHEET 15 OF 28

9/15/2020
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⊗ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

BAR MARK	NO REQ'D.	LENGTH
P510	4 SERIES OF 15	12'-1" TO 19'-3"
P613	2 SERIES OF 12	6'-5" TO 17'-1"

BUNDLE AND TAG EACH SERIES SEPARATELY.

● KEYED CONSTRUCTION JOINT FORMED BY A SURFACED BEVELED 2" x 6" BETWEEN BEAM SEATS.

▲ EMBED P520 BARS 1'-0" INTO CAP CONCRETE.

E.F. DENOTES EACH FACE

NO.	DATE	REVISION	BY

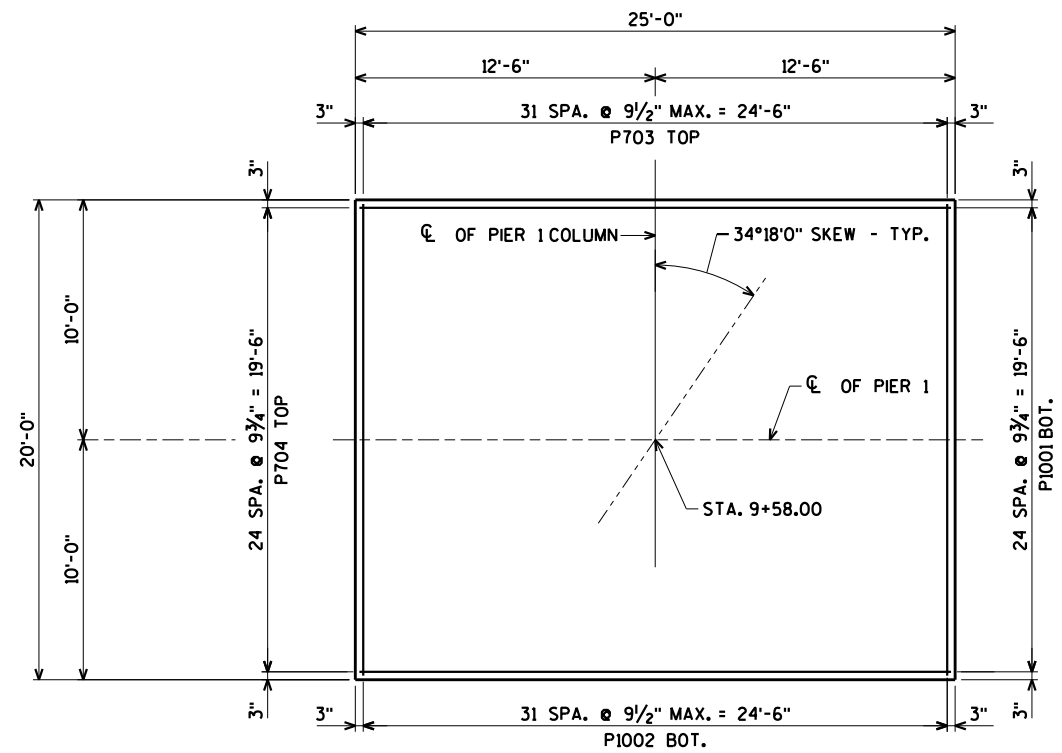
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-14-225

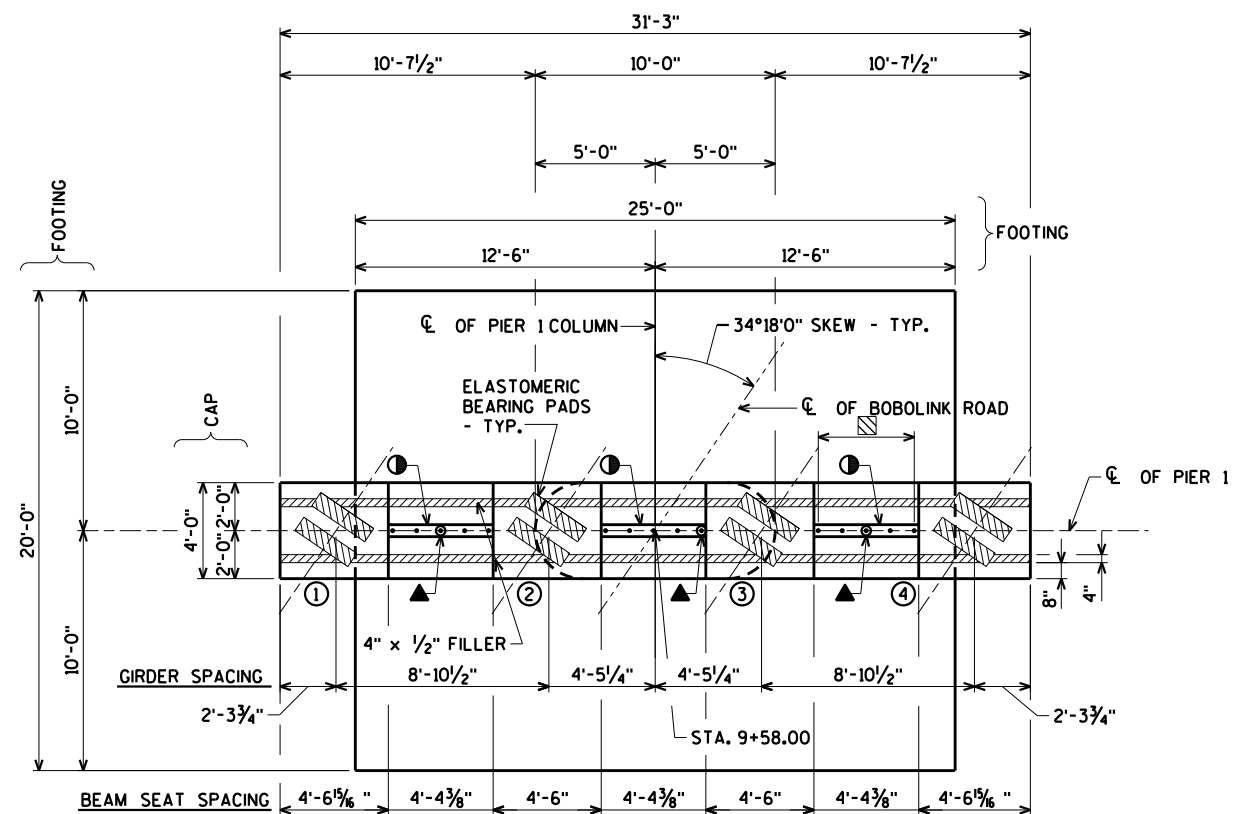
DRAWN BY	CJM	PLANS CK'D.	AEB
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PIER 1
DETAILS AND
BILL OF BARS

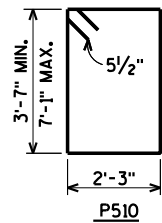
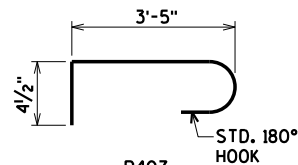
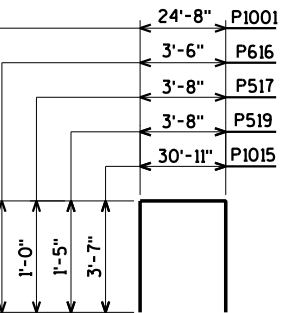
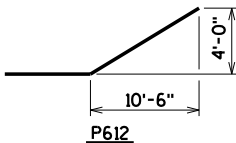
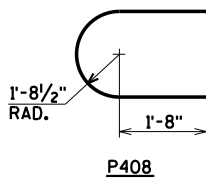
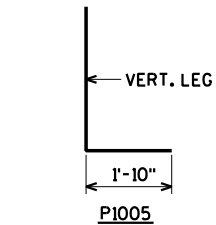
SHEET 16 OF 28



FOOTING PLAN



PLAN

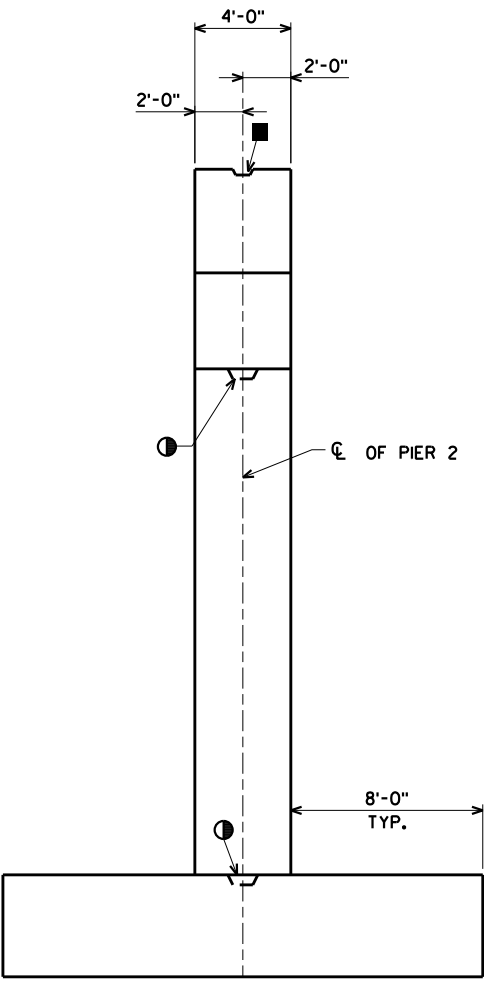
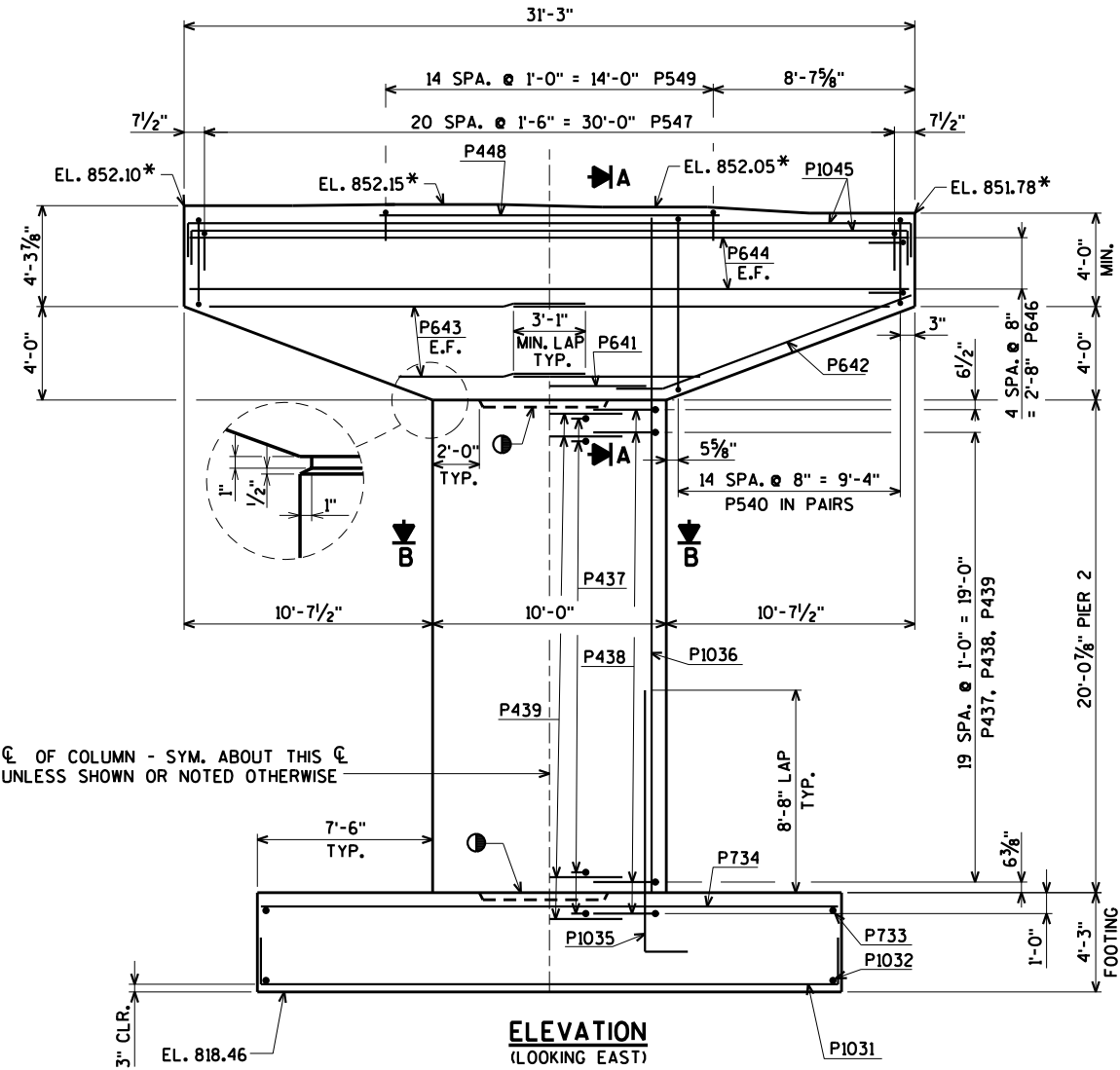


4 SPA. @ 1'-0" = 4'-0" P520
TYP. BETWEEN GIRDERS 1 THRU 4

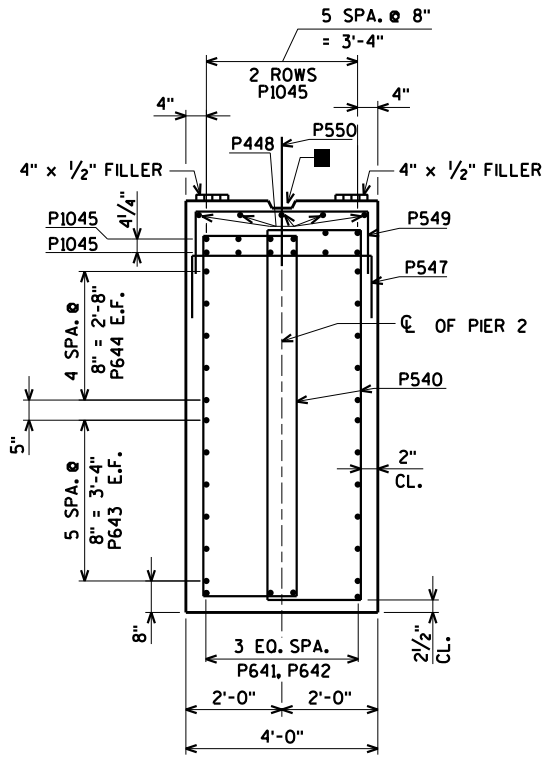
* ELEVATIONS AND DIMENSIONS
TAKEN AT CL OF PIER.

STATE PROJECT NUMBER

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END VIEW



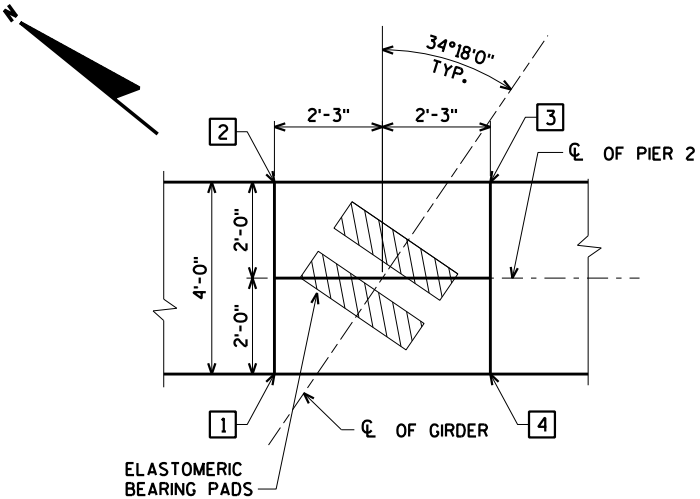
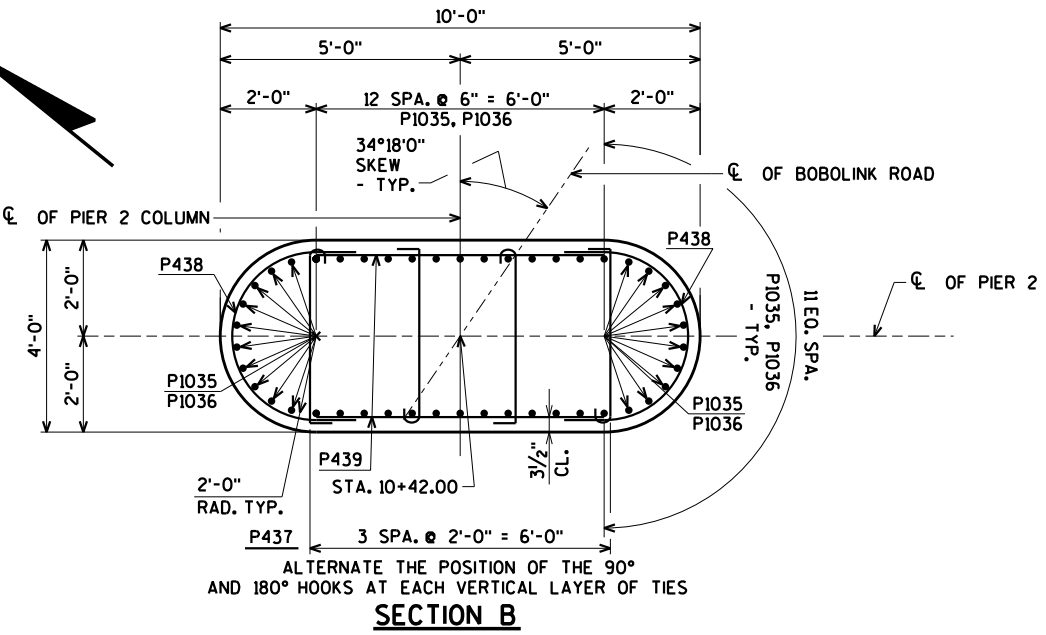
SECTION A

P550 BARS MAY BE PLACED AFTER CONCRETE HAS BEEN POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE.

PIER BEAM SEAT
ELEVATION CORRECTIONS

GIRDER	ELEVATION CORRECTION AT POINTS			
	1	2	3	4
1 - 4	+0.00	-0.01	-0.10	+0.00

VALUES ARE IN FEET. ADD THESE VALUES TO THE SEAT ELEVATIONS SHOWN TO OBTAIN ELEVATIONS OF POINTS 1, 2, 3 & 4.



SLOPING BEAM SEAT DETAILS

(SEATS @ GIRDER 2 SHOWN, GIRDERS 1, 3, & 4 SIMILAR)

CONST. JT. FORMED BY BEVELED 2" x 6" KEYWAY.

KEYED CONST. JOINT FORMED BY A SURFACED BEVELED KEYWAY 4" DEEP x 1'-1" WIDE x 8'-0" LONG

FOR PILE SPLICE DETAIL SEE SHEET 3

E.F. DENOTES EACH FACE.

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STRUCTURE B-14-225			
DRAWN BY CJM		PLANS CK'D. AEB	
PIER 2			SHEET 17 OF 28

9/17/2020
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BAR MARK	NO REQ'D.	LENGTH
P540	4 SERIES OF 15	12' - 1" TO 19' - 3"
P643	2 SERIES OF 12	6' - 5" TO 17' - 1"

NO.	DATE	REVISION	BY
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DRAWN BY	CJM	PLANS CK'D.	AEE
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SHEET 18 OF 28

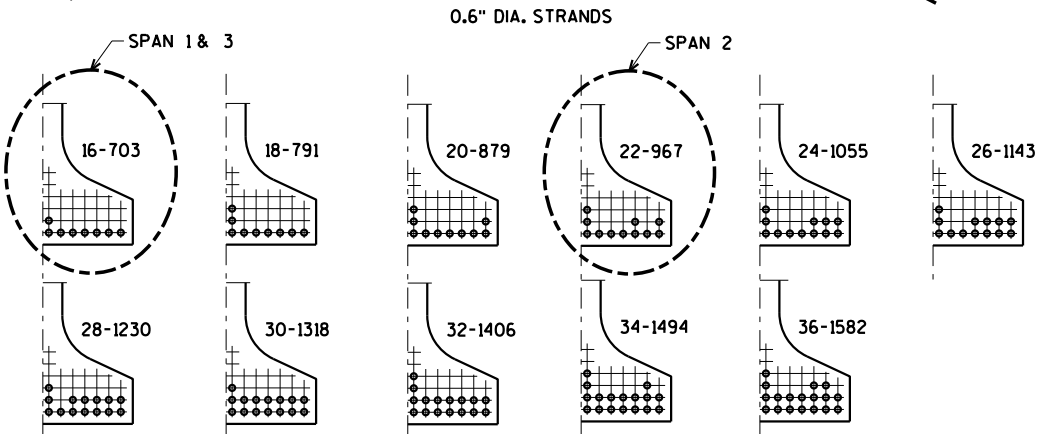
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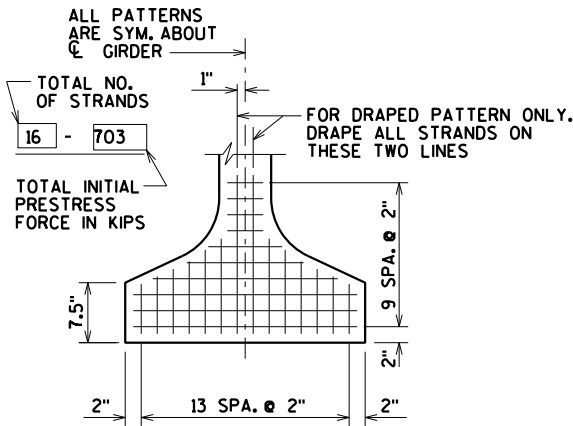
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STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY
TO AVOID DRAPING OF STRANDS

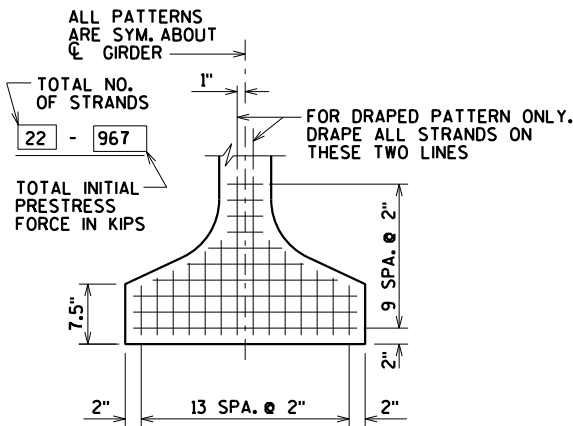


ARRANGEMENT AT ϕ SPAN - FOR GIRDERS WITH DRAPED STRANDS

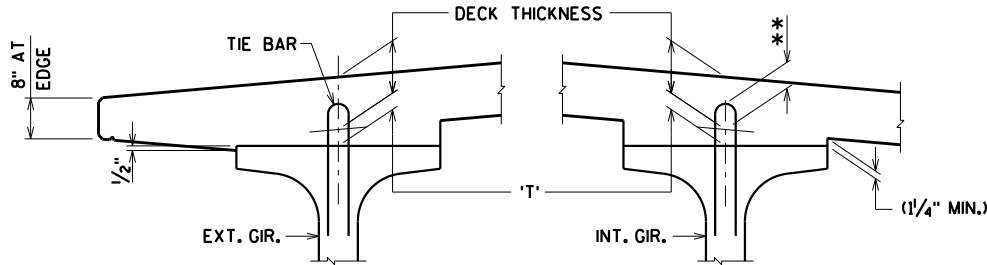
0.6" DIA. STRANDS



TYP. STRAND PATTERN
SPANS 1 & 3



TYP. STRAND PATTERN
SPAN 2



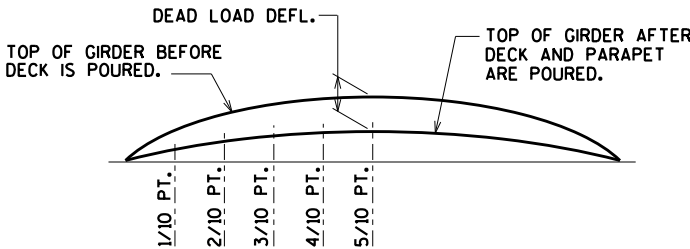
DECK HAUNCH DETAIL

IF $1/4$ " MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR, THE PLAN DECK THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN $1/2$ " OR, ** IF 3" MINIMUM DECK EMBEDMENT OF TIE BAR CANNOT BE OBTAINED.

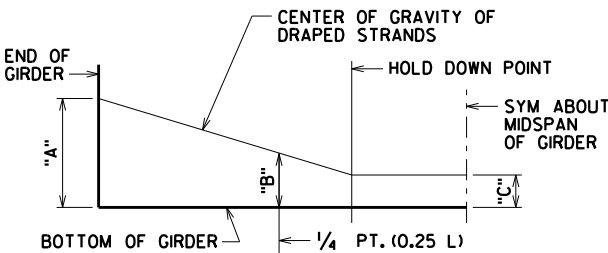
TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT ϕ OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

- TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
- + DEAD LOAD DEFLECTION
- DECK THICKNESS
- = HAUNCH HEIGHT 'T'

NOTE: AN AVERAGE HAUNCH ('T') OF 5" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".



DEAD LOAD DEFLECTION DIAGRAM



DRAPED STRAND PROFILE

*THE THEORETICAL INITIAL CAMBER VALUE AT THE TIME OF STRAND RELEASE AT MIDSPAN MULTIPLIED BY A FACTOR OF 1.4 TO ACCOUNT FOR CAMBER GROWTH FROM THE TIME OF STRAND RELEASE TO JOBSITE PLACEMENT.

SPAN	CAMBER (IN.) *
1	0.7
2	1.9
3	0.7

THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T', USE ACTUAL GIRDER SHOTS. THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.

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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-14-225			
DRAWN BY CJM		PLANS CK'D. AEB	
36W" PRESTRESSED GIRDER DETAILS			SHEET 19 OF 28

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE OUTSIDE 8" OF GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH. AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING THE OUTSIDE 8" OF THE TOP FLANGE.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS. SEE SECT. 503.3.3 OF STANDARD SPECIFICATIONS FOR GUIDANCE.

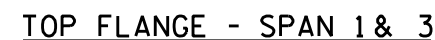
STRANDS SHALL BE FLUSH WITH END OF GIRDER. FOR GIRDER ENDS EMBEDDED COMPLETELY IN CONCRETE, END OF STRANDS SHALL BE COATED WITH NON-BITUMINOUS JOINT SEALER. FOR GIRDER ENDS THAT ARE FINALLY EXPOSED, COAT THE GIRDER ENDS, EXPOSED STRAND ENDS AND ALL NON-BONDING SURFACES WITHIN 2 FEET OF THE GIRDER ENDS WITH A NON-PIGMENTED EPOXY CONFORMING TO AASHTO M-235 TYPE III, GRADE 2, CLASS B OR C. THE EPOXY SHALL BE APPLIED AT LEAST 3 DAYS AFTER MOIST CURING HAS CEASED AND PRIOR TO THE APPLICATION OF THE SEALER.

SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT.

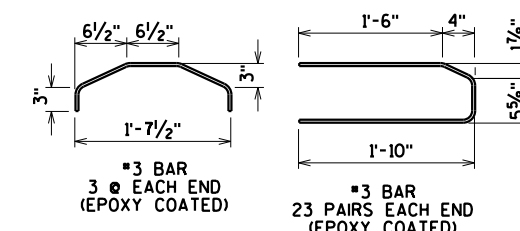
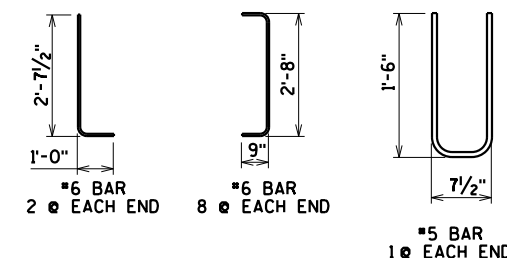
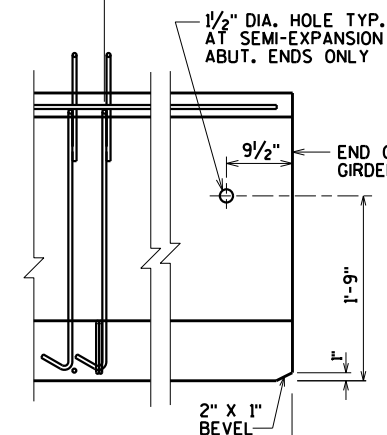
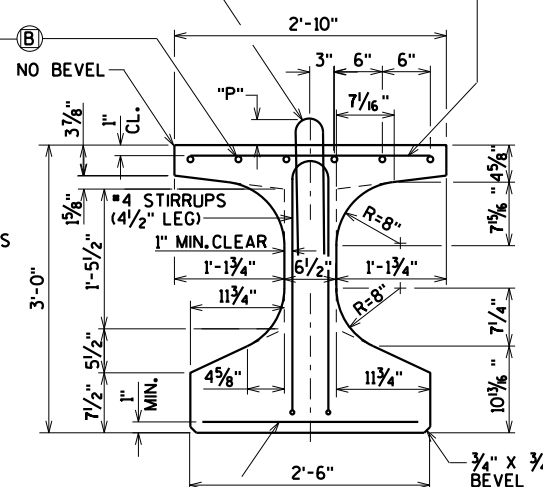
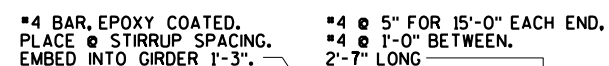
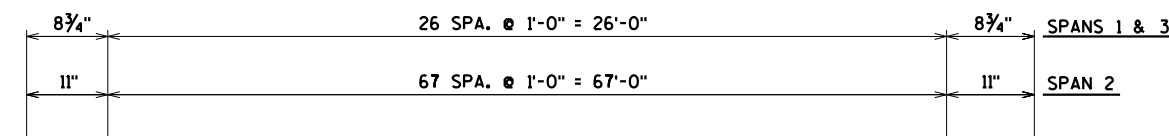
AN EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A1064
MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT
SHOWN, UPON ACCEPTANCE OF THE STRUCTURES MAINTENANCE
SECTION, IF USED, WWF SUBSTITUTION DETAILS SHALL BE
SUBMITTED ELECTRONICALLY TO THE WISDOT FABRICATION
LIBRARY AND ACCEPTED PRIOR TO SHOP DRAWING SUBMITTAL.

PRESTRESSING STRANDS SHALL BE (0.6" DIA.)-7 WIRE
LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF
270,000 PSI.

FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE
"STEEL INTR. DIAPHRAGM DETAILS" SHEET.



TOP FLANGE - SPAN 2



SIDE VIEW & TYPICAL SECTION IN SPAN

- Ⓐ DETAIL TYP. AT EACH END
- Ⓑ 6 #5 BARS, FULL LENGTH, MIN. LAP = 2'-11"

* MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

[illegible]

ORIGINAL PLANS PREPARED BY

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Eau Claire, WI 54701
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NO.	DATE	REVISION	BY
-----	------	----------	----

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-14-225

DRAWN BY	CJM	PLANS CHK'D	AEB
-------------	-----	----------------	-----

36W" PRESTRESSED GIRDER DETAILS

SHEET 20 OF 28

NOTES

ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-14-225", EACH.

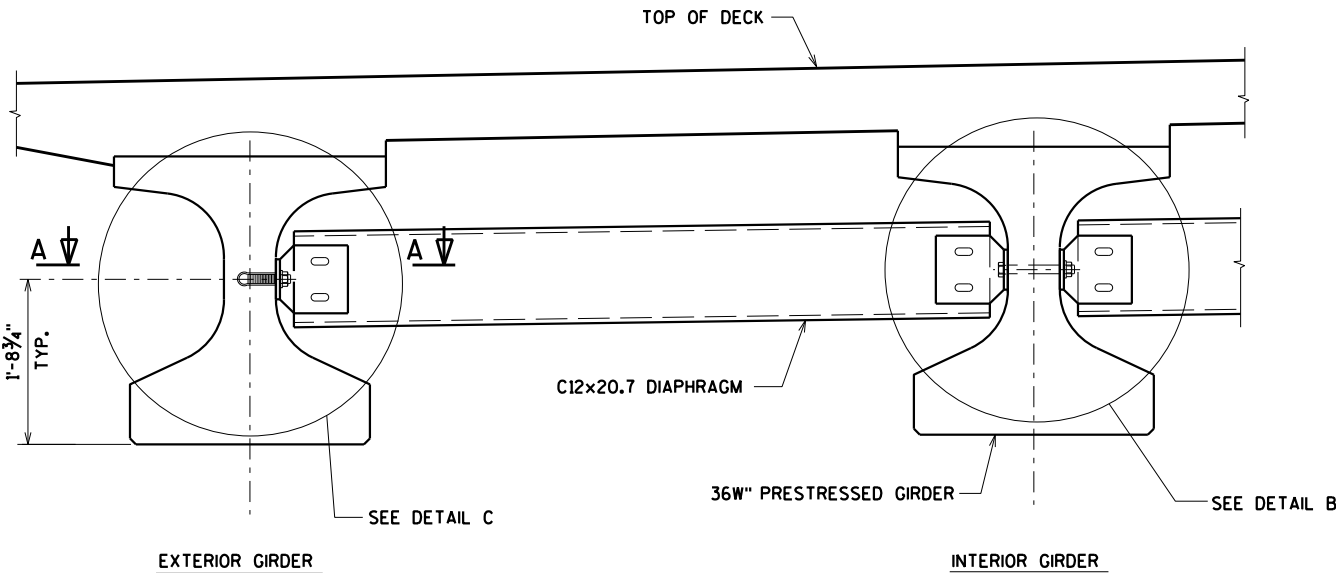
EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

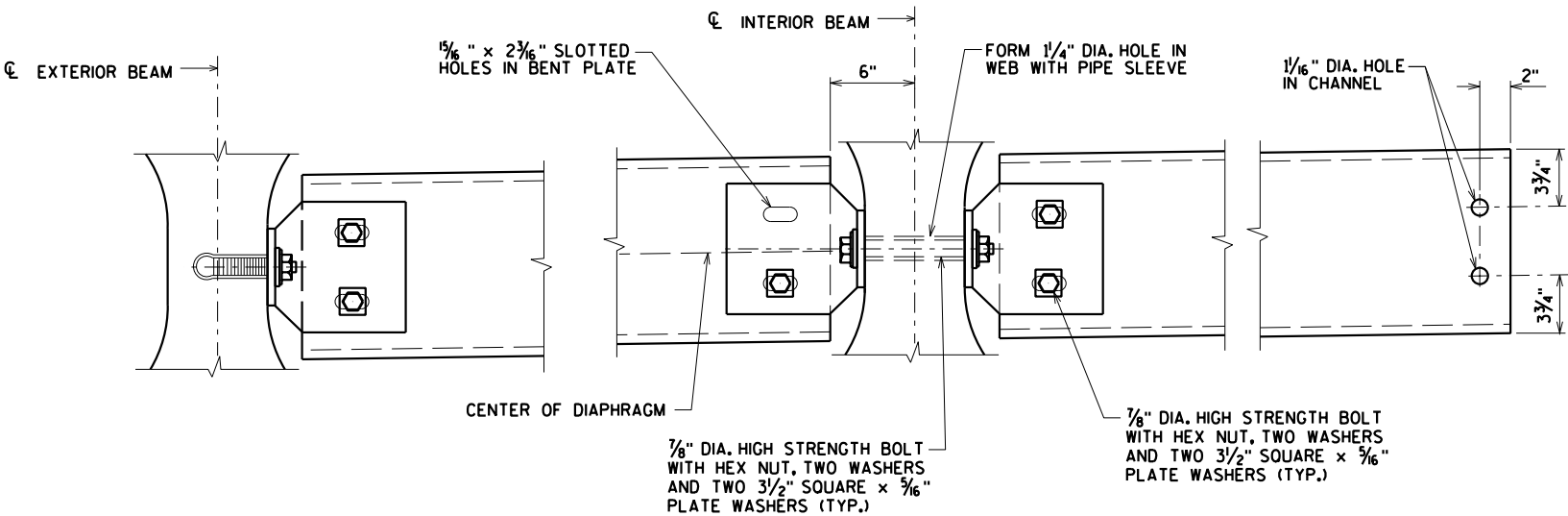
ALL DIAPHRAGM MATERIAL INCLUDING BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AFTER FABRICATION.

STEEL DIAPHRAGM TO CONCRETE WEB CONNECTION SHALL BE SNUG-TIGHT PLUS 1/4 TURN, UNLESS NOTED OTHERWISE. HIGH STRENGTH BOLTS FOR WEB CONNECTION SHALL MEET THE REQUIREMENTS FOR ASTM A325 OR ASTM A449.

FOR DIAPHRAGM SPACING SEE SHEET 23.



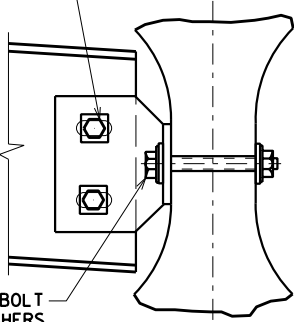
PART TRANSVERSE SECTION AT DIAPHRAGM



DETAIL C

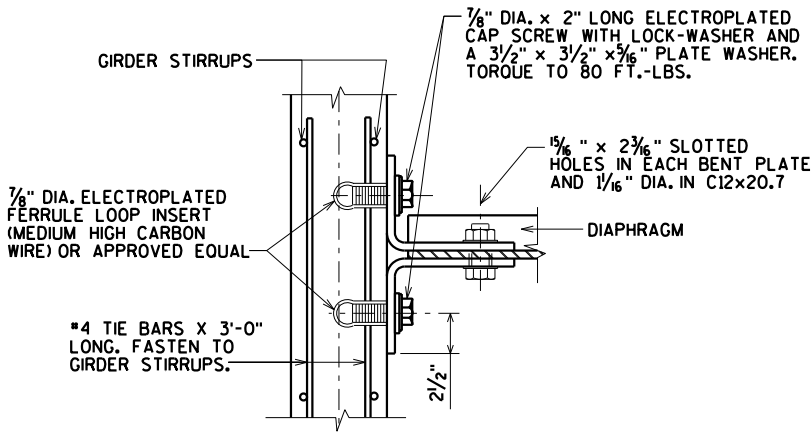
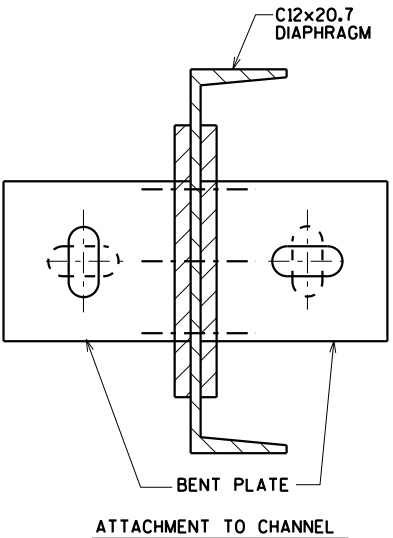
DETAIL B

7/8" DIA. HIGH STRENGTH BOLT WITH HEX NUT, TWO WASHERS AND TWO 3 1/2" SQUARE x 5/16" PLATE WASHERS (TYP.)

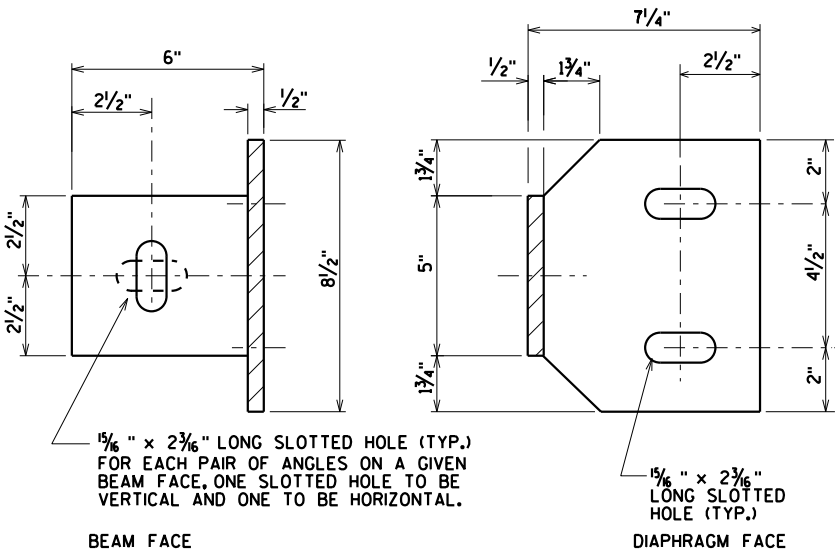


7/8" DIA. HIGH STRENGTH BOLT WITH HEX NUT, TWO WASHERS AND TWO 3 1/2" SQUARE x 5/16" PLATE WASHERS (TYP.)

SECTION AT INTERIOR GIRDERS THRU DIAPHRAGM FOR SKEW ANGLES > 10°



SECTION A-A
(FOR EXTERIOR ATTACHMENT)



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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-14-225			
DRAWN BY CJM		PLANS CK'D. AEB	
STEEL INTER. DIAPHRAGM DETAILS			SHEET 21 OF 28

9/18/2020
PENTABLE:BRoad_shd_util.tbl

STATE PROJECT NUMBER

3804-00-74

BILL OF BARS

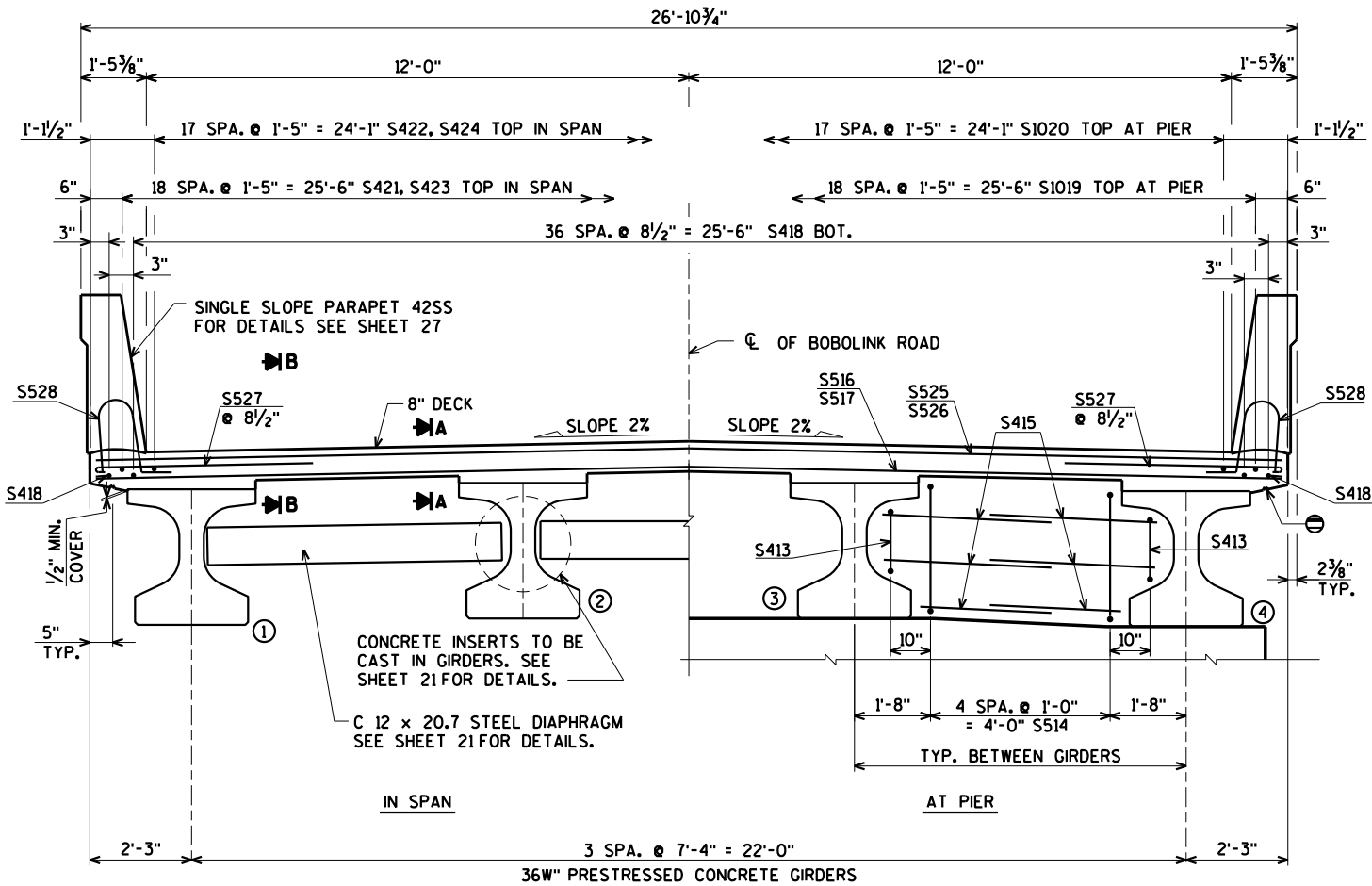
BAR NO.	COATED BAR	NO. REQ'D.	LENGTH	BENT BAR	BUNDLE SERIES	45,000* COATED
						LOCATION
S401	X	30	3-4	X		DIAPH. @ ABUT. VERT. @ NOTCH
S402	X	12	5-5			DIAPH. @ ABUT. HORIZ. @ NOTCH
S503	X	44	6-9	X		DIAPH. @ ABUT. VERT.
S504	X	16	10-6	X		DIAPH. @ ABUT. VERT.
S505	X	36	5-7	X		DIAPH. @ ABUT. VERT.
S506	X	4	5-3	X		DIAPH. @ ABUT. VERT. WINGS 2 & 4
S507	X	4	6-1	X		DIAPH. @ ABUT. VERT. WINGS 1 & 3
S608	X	10	31-8			DIAPH. @ ABUT. HORIZ.
S609	X	30	6-6			DIAPH. @ ABUT. HORIZ. BETW. GDRS.
S610	X	4	0-8			DIAPH. @ ABUT. HORIZ. @ EXT. GDRS.
S611	X	8	1-4			DIAPH. @ ABUT. HORIZ. @ EXT. GDRS.
S512	X	16	6-0			DIAPH. @ ABUT. HORIZ. THRU GDRS.
S513	X	12	10-2	X		DIAPH. @ PIER VERT.
S514	X	30	12-9	X		DIAPH. @ PIER VERT.
S415	X	36	4-8			DIAPH. @ PIER HORIZ.
S516	X	44	13-6			DECK TRANS. BOT. ENDS
S517	X	218	26-2			DECK TRANS. BOT.
S418	X	156	44-4			DECK LONG. BOT.
S1019	X	38	38-4			DECK LONG. TOP @ PIER
S1020	X	36	30-10			DECK LONG. TOP @ PIER
S421	X	38	17-5			DECK LONG. TOP SPANS 1 & 3
S422	X	36	33-10			DECK LONG. TOP SPANS 1 & 3
S423	X	38	33-9			DECK LONG. TOP SPAN 2
S424	X	36	24-10			DECK LONG. TOP SPAN 2
S525	X	46	13-6			DECK TRANS. TOP ENDS
S526	X	217	26-2			DECK TRANS. TOP
S527	X	490	4-2	X		DECK TRANS. TOP @ EDGE
S528	X	520	4-5	X		DECK @ PARAPET VERT.
S529	X	520	6-8	X		DECK @ PARAPET VERT.
S530	X	48	59-2			PARAPET HORIZ.

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.
⊗ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

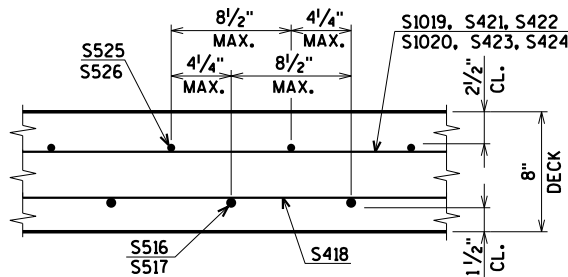
BAR SERIES TABLE

BAR MARK	NO REQ'D.	LENGTH
S516	2 SERIES OF 22	2'-7" TO 24'-5"
S525	2 SERIES OF 23	2'-1" TO 24'-11"

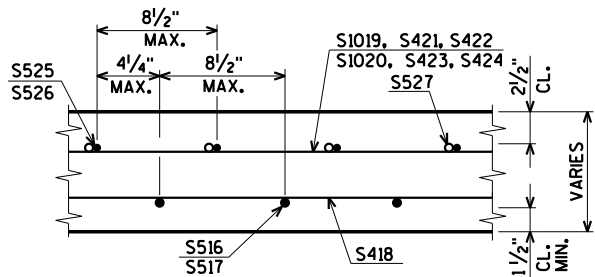
BUNDLE AND TAG EACH SERIES SEPARATELY.



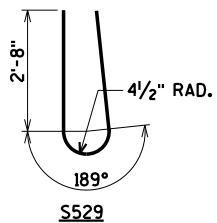
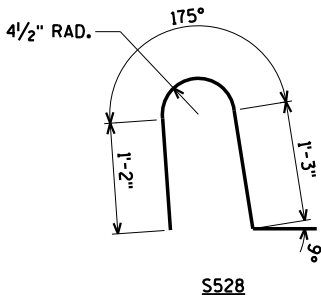
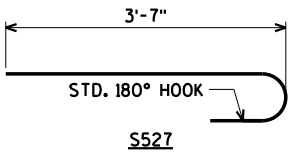
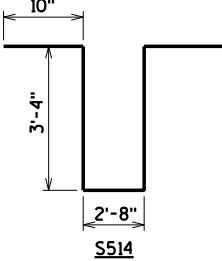
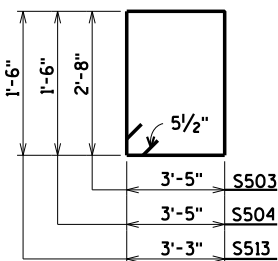
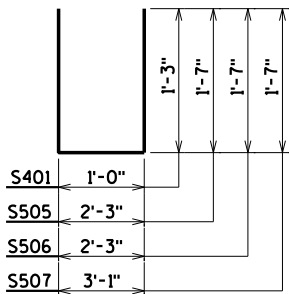
CROSS SECTION THRU BRIDGE
(LOOKING EAST)



SECTION A



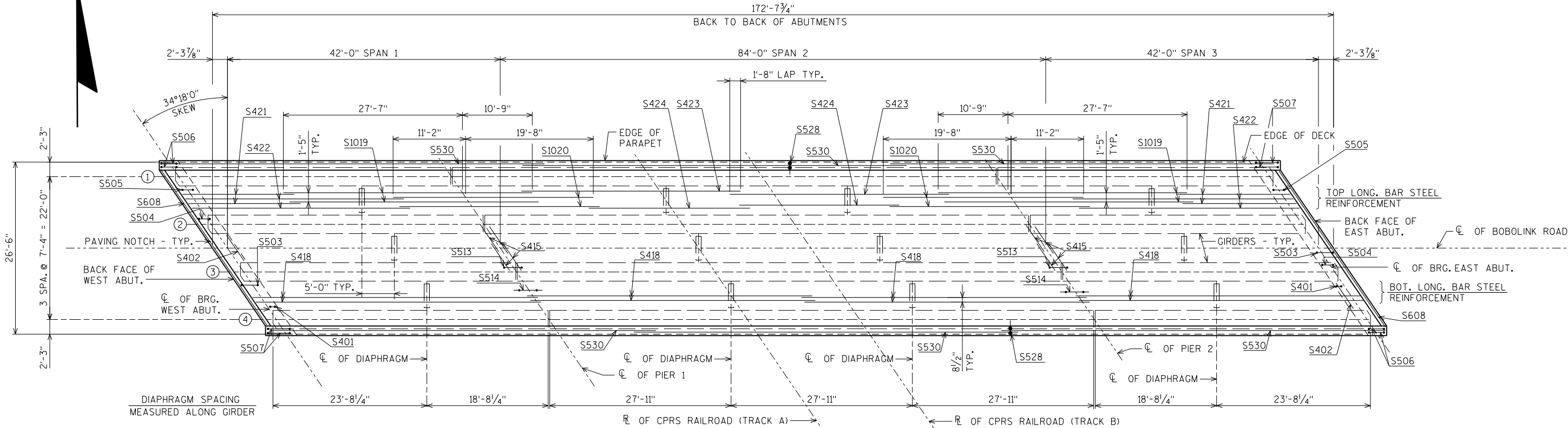
SECTION B



⊗ 3/4" V - GROOVE. EXTEND V - GROOVE TO 6" FROM FRONT FACE OF ABUTMENT DIAPHRAGMS - TYP.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-14-225			
DRAWN BY CJM		PLANS CK'D. AEB	
SUPERSTRUCTURE			SHEET 22 OF 28

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PLAN

TOP OF DECK ELEVATIONS

	SPAN 1										
	CL OF BRG. WEST ABUT.	0.1 PT.	0.2 PT.	0.3 PT.	0.4 PT.	0.5 PT.	0.6 PT.	0.7 PT.	0.8 PT.	0.9 PT.	CL OF PIER 1
NORTH FLOWLINE	854.16	854.35	854.54	854.71	854.88	855.03	855.18	855.32	855.45	855.57	855.68
GIRDER 1	854.21	854.40	854.59	854.76	854.92	855.08	855.22	855.36	855.49	855.61	855.72
GIRDER 2	854.59	854.77	854.94	855.10	855.25	855.40	855.53	855.66	855.77	855.88	855.98
CL OF BOBOLINK ROAD	854.77	854.94	855.11	855.26	855.41	855.55	855.68	855.80	855.91	856.01	856.11
GIRDER 3	854.80	854.97	855.13	855.28	855.42	855.56	855.68	855.79	855.90	856.00	856.09
GIRDER 4	854.85	855.01	855.16	855.30	855.43	855.56	855.67	855.77	855.87	855.96	856.03
SOUTH FLOWLINE	854.86	855.02	855.16	855.30	855.43	855.55	855.67	855.77	855.86	855.95	856.03

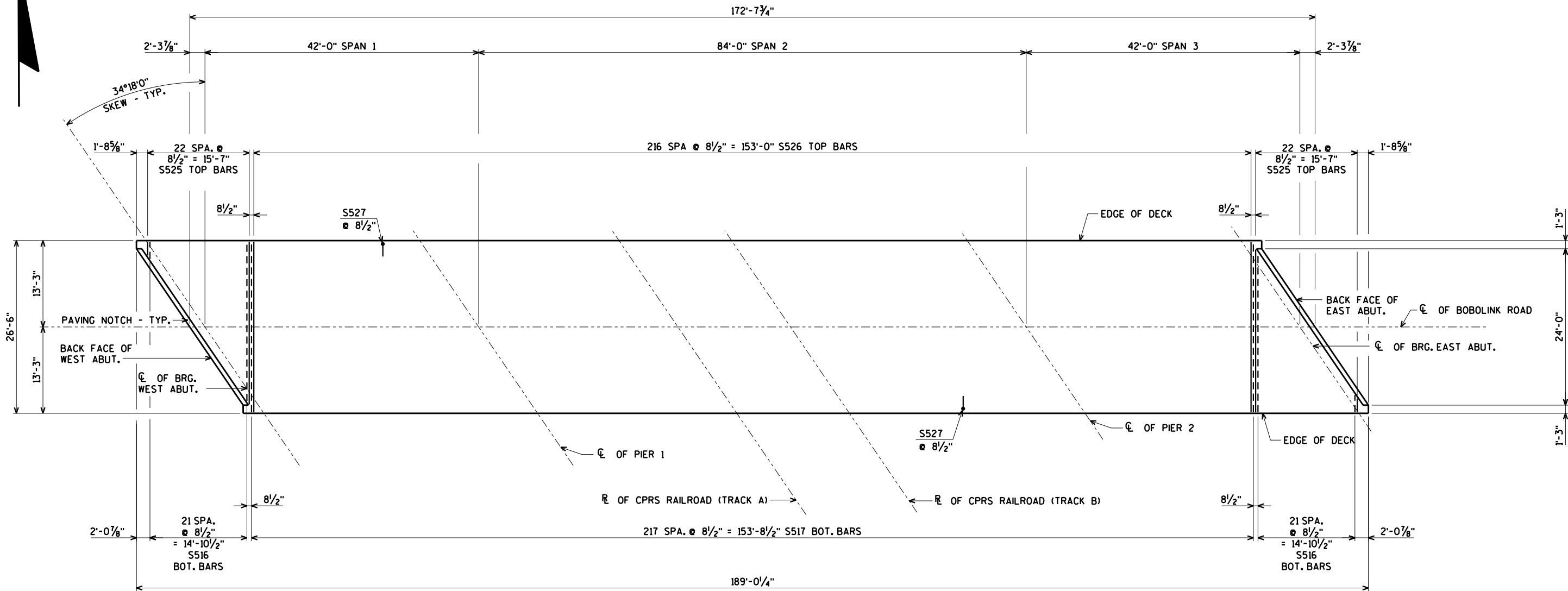
	SPAN 2										
	CL OF PIER 1	0.1 PT.	0.2 PT.	0.3 PT.	0.4 PT.	0.5 PT.	0.6 PT.	0.7 PT.	0.8 PT.	0.9 PT.	CL OF PIER 2
NORTH FLOWLINE	855.68	855.87	856.03	856.16	856.24	856.29	856.31	856.29	856.23	856.14	856.01
GIRDER 1	855.72	855.91	856.06	856.18	856.27	856.32	856.33	856.31	856.25	856.15	856.02
GIRDER 2	855.98	856.15	856.29	856.39	856.45	856.48	856.47	856.42	856.34	856.22	856.07
CL OF BOBOLINK ROAD	856.11	856.27	856.39	856.48	856.53	856.55	856.53	856.47	856.38	856.26	856.09
GIRDER 3	856.09	856.24	856.35	856.43	856.47	856.47	856.44	856.38	856.28	856.14	855.96
GIRDER 4	856.03	856.16	856.25	856.31	856.33	856.31	856.26	856.17	856.05	855.89	855.70
SOUTH FLOWLINE	856.03	856.15	856.24	856.29	856.31	856.29	856.24	856.15	856.02	855.86	855.66

	SPAN 3										
	CL OF PIER 2	0.1 PT.	0.2 PT.	0.3 PT.	0.4 PT.	0.5 PT.	0.6 PT.	0.7 PT.	0.8 PT.	0.9 PT.	CL OF BRG. EAST ABUT.
NORTH FLOWLINE	856.01	855.93	855.85	855.75	855.65	855.53	855.41	855.28	855.14	854.99	854.83
GIRDER 1	856.02	855.94	855.85	855.75	855.65	855.53	855.41	855.28	855.13	854.98	854.82
GIRDER 2	856.07	855.98	855.88	855.77	855.66	855.53	855.40	855.25	855.10	854.94	854.77
CL OF BOBOLINK ROAD	856.09	856.00	855.89	855.78	855.66	855.53	855.39	855.24	855.08	854.91	854.73
GIRDER 3	855.96	855.86	855.75	855.63	855.51	855.37	855.22	855.07	854.91	854.73	854.55
GIRDER 4	855.70	855.58	855.46	855.33	855.20	855.05	854.89	854.73	854.55	854.37	854.18
SOUTH FLOWLINE	855.66	855.54	855.42	855.29	855.15	855.00	854.85	854.68	854.50	854.32	854.12

9/15/2020
PENTABLE:BRQU.shd_util.tbl

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-14-225			
DRAWN BY		CJM	PLANS CK'D. AEB
SUPERSTRUCTURE PLAN			SHEET 23 OF 28

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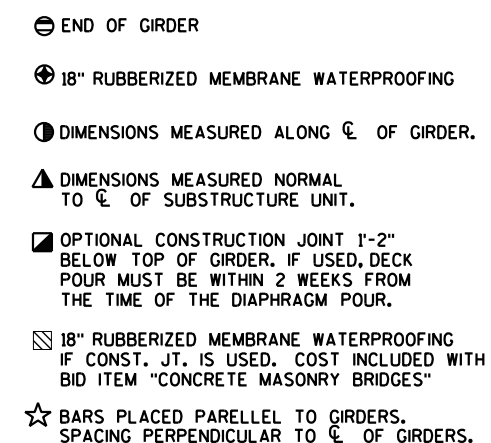


TRANSVERSE BAR STEEL LAYOUT

9/15/2020
PENTABLE:BRedu_shd_util.tbl

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-14-225			
DRAWN BY		CJM	PLANS CK'D. AEB
SUPERSTRUCTURE TRANSVERSE SLAB STEEL LAYOUT			SHEET 24 OF 28

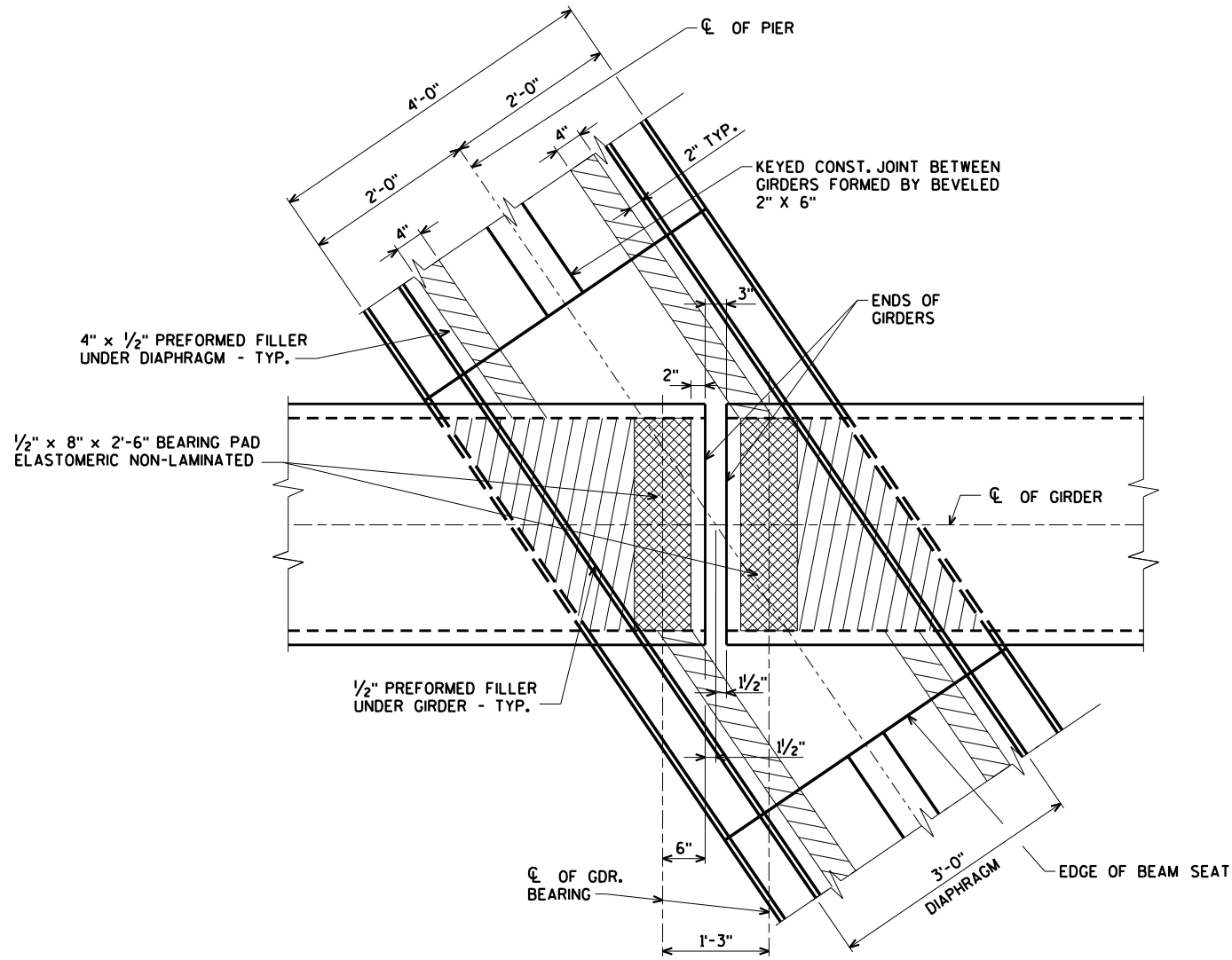
ORIGINAL PLANS PREPARED BY
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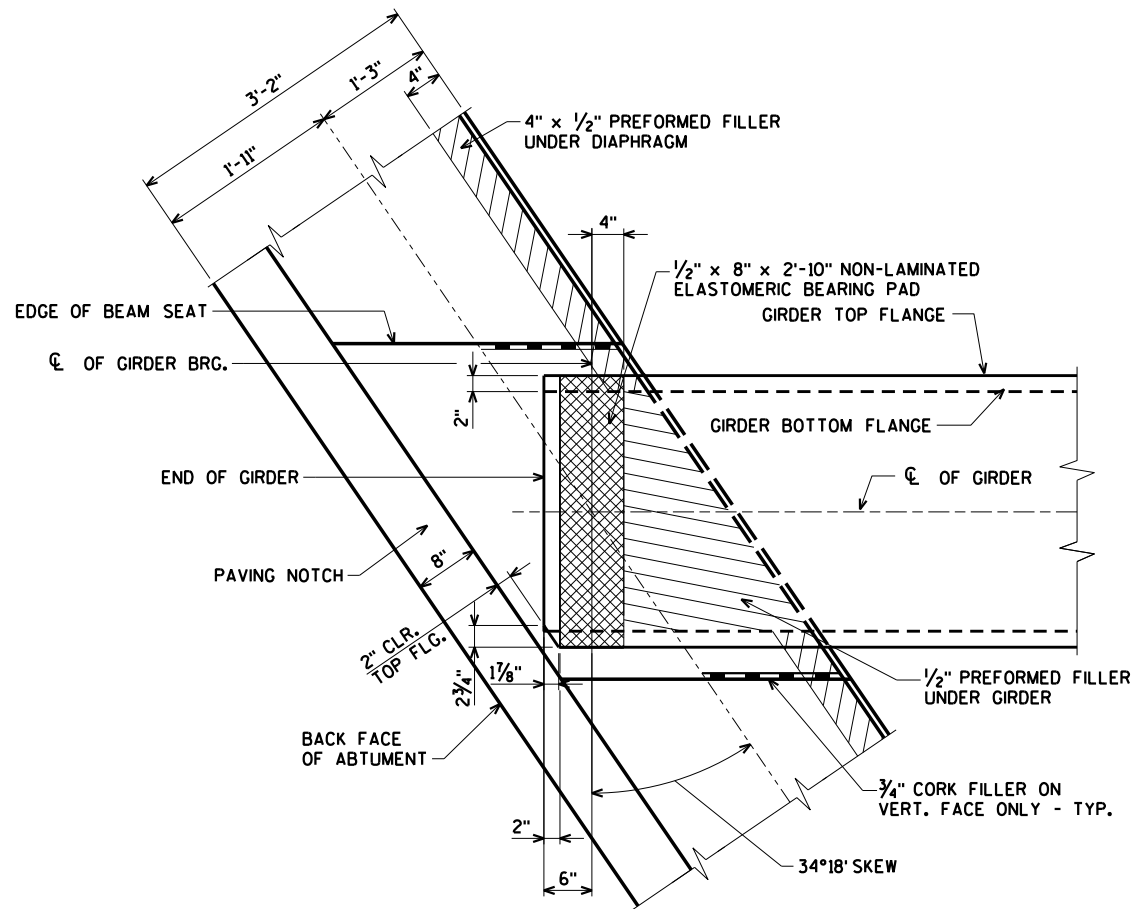
PART LONGITUDINAL SECTION



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-14-225			
		DRAWN BY	CJM
		PLANS CK'D.	AEB
SUPERSTRUCTURE DETAILS		SHEET 25 OF 2	



BEARING PAD DETAIL AT PIER

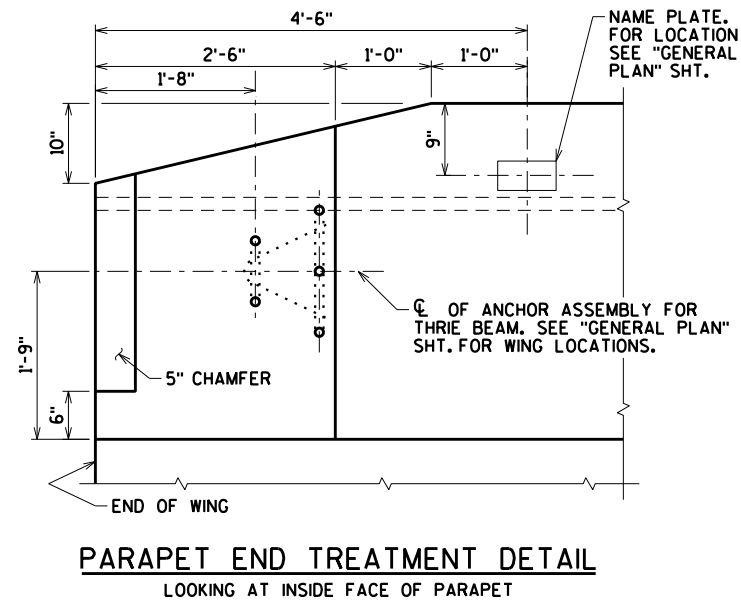
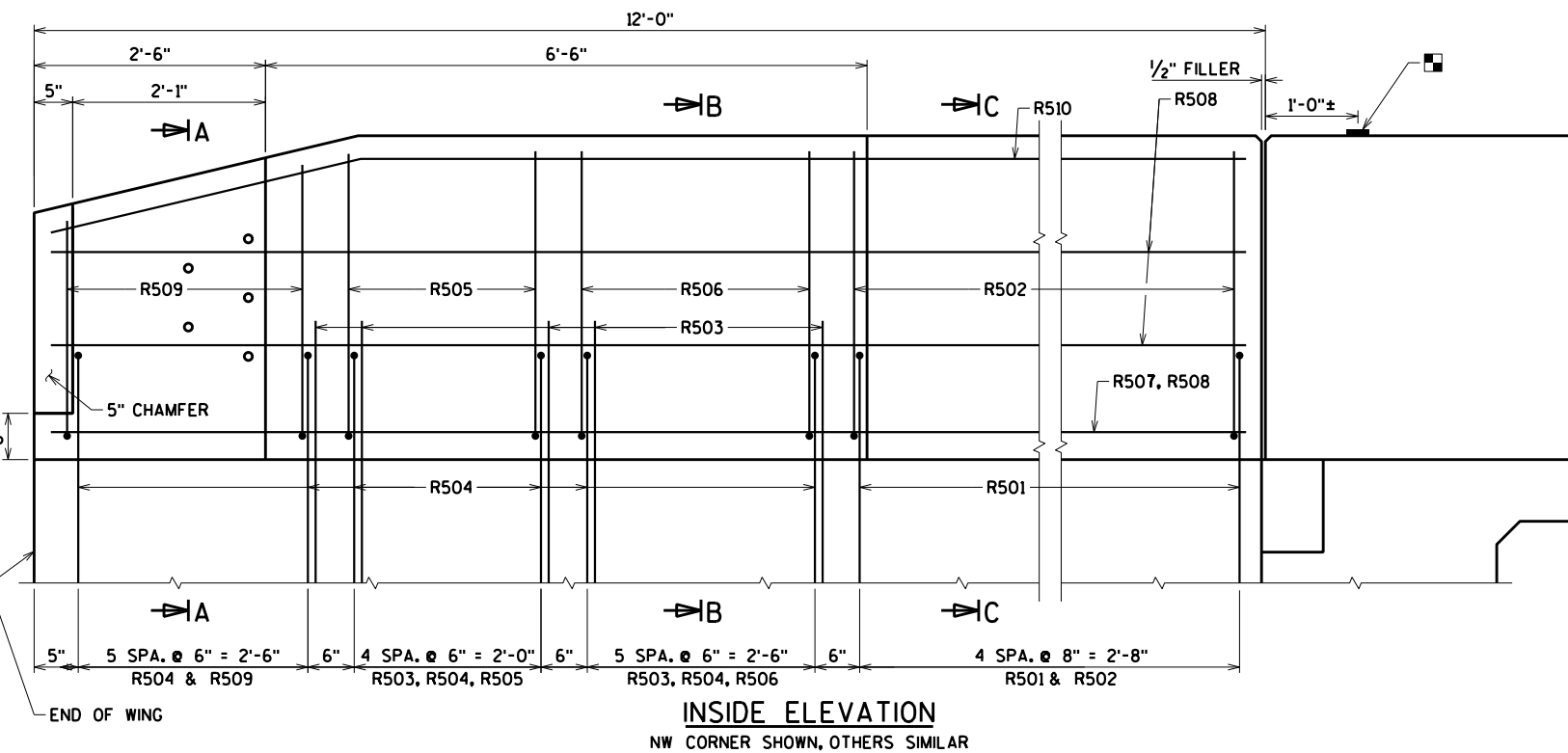
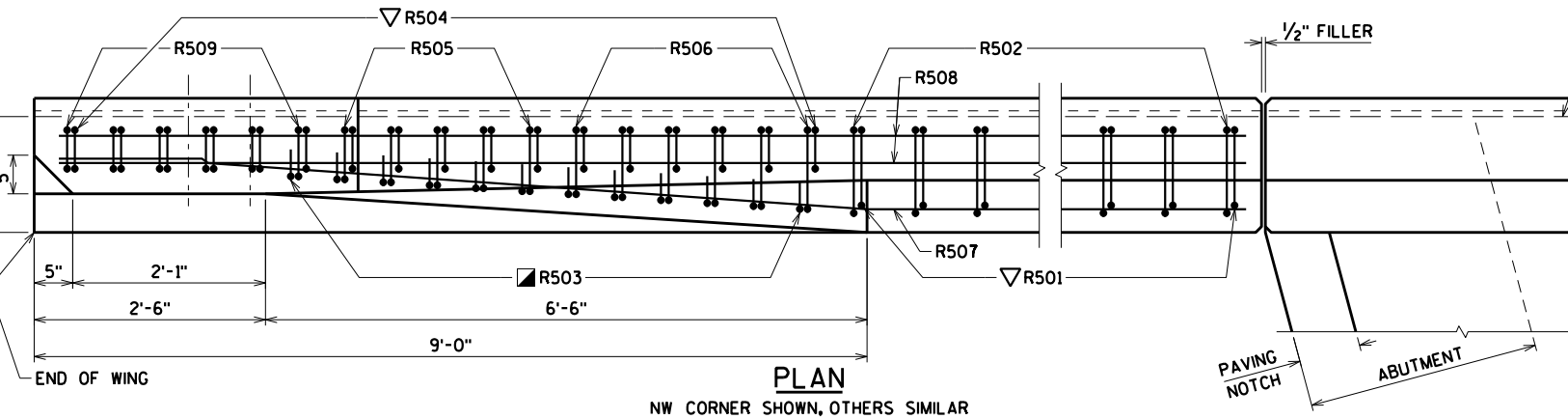
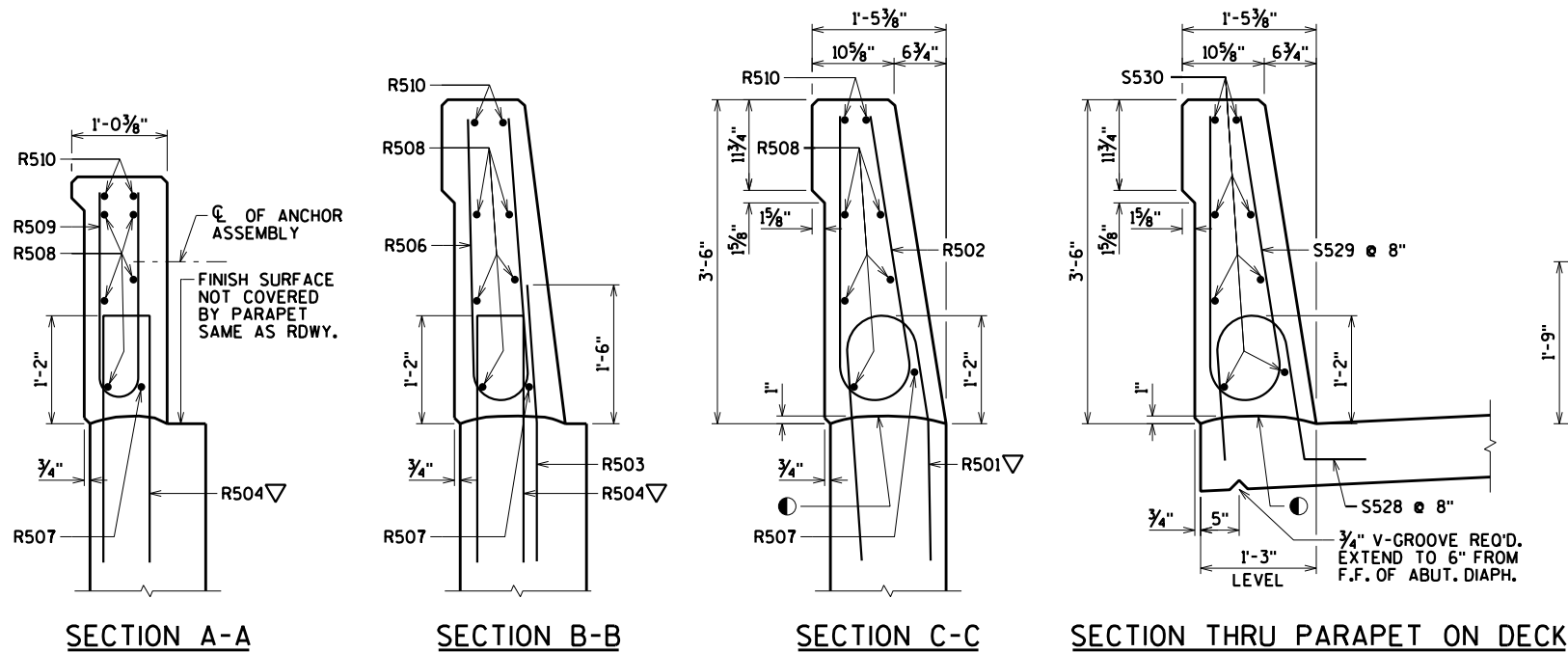


BEARING PAD DETAIL AT ABUT.

9/15/2020
PENTABLE:BRedu_shd_util.tbl

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-14-225			
DRAWN BY		CJM	PLANS CK'D. AEB
BEARING PAD DETAILS			SHEET 26 OF 28

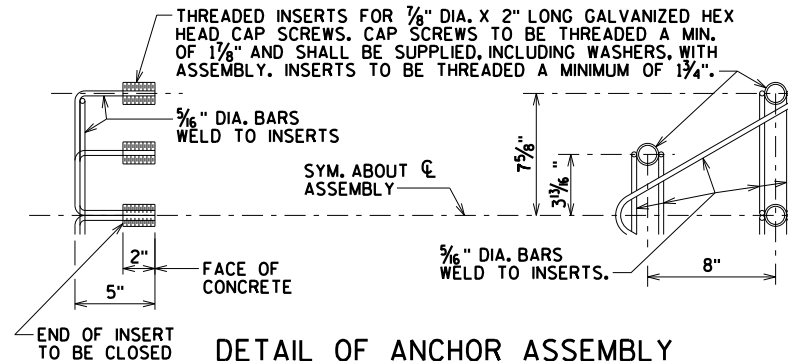
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OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF. THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 1'-9". MIN. JOINT SPACING OF 80'-0". DEFINE CONST. JOINT WITH A 3/4" V-GROOVE.

- CONST. JOINT - STRIKE OFF AS SHOWN
- R503 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE R503 BARS CORRECTLY ALONG TRANSITION OF PARAPET.
- ▽ R501 AND R504 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED.

■ BENCH MARK CAP (WHEN SUPPLIED). AVOID PLACING A BENCH MARK CAP BELOW A RAIL OR FENCE SYSTEM THAT IS ATTACHED TO THE TOP OF THE PARAPET.



BILL OF BARS
FOR ABUTMENT PARAPETS

810* COATED WEST ABUTMENT
810* COATED EAST ABUTMENT

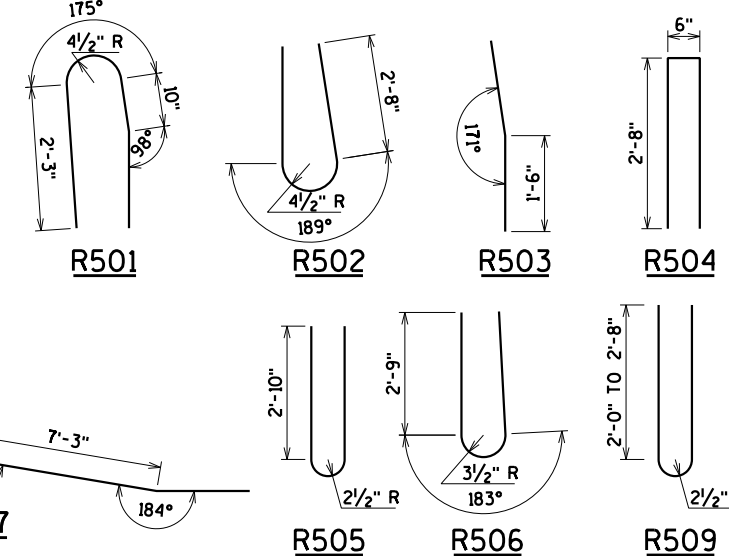
BAR MARK	COAT	WEST ABUT.	EAST ABUT.	LENGTH	BEND	BAR SERIES	LOCATION
R501	X	10	10	5'-10"	X		PARAPET VERT.
R502	X	10	10	6'-8"	X		PARAPET VERT.
R503	X	22	22	3'-0"	X		PARAPET VERT.
R504	X	34	34	5'-7"	X		PARAPET VERT.
R505	X	10	10	6'-5"	X		PARAPET VERT.
R506	X	12	12	6'-6"	X		PARAPET VERT.
R507	X	2	2	11'-6"	X		PARAPET HORIZ.
R508	X	10	10	11'-8"			PARAPET HORIZ.
R509	X	12	12	5'-5"	X	▲	PARAPET VERT.
R510	X	4	4	11'-9"	X		PARAPET HORIZ.

▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

BAR SERIES TABLE

BAR MARK	NO. REQ'D	LENGTH
R509	2 SERIES OF 6	4'-9" TO 6'-1"

BUNDLE AND TAG EACH SERIES SEPARATELY.



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NO. DATE REVISION BY

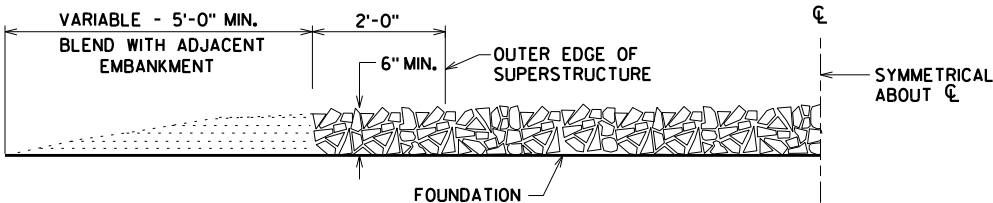
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-14-225

DRAWN BY CJM PLANS CK'D. AEB

**SINGLE SLOPE
PARAPET 42SS**

SHEET 27 OF 28

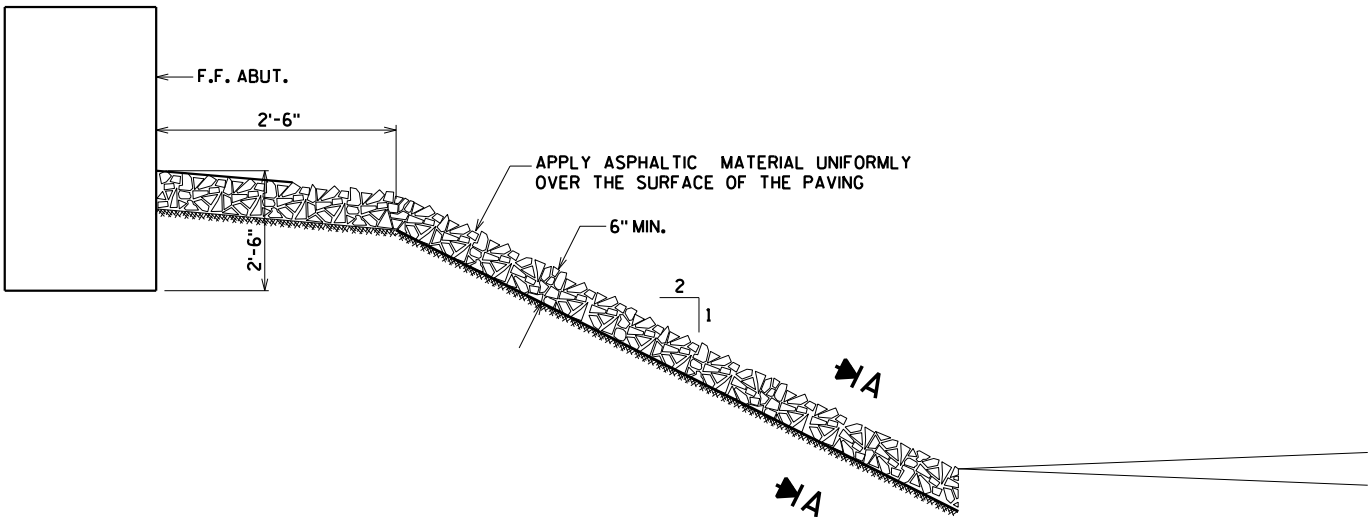


SECTION A

GENERAL NOTES

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

WOOD FORMS MAY BE LEFT IN PLACE WHEN OF A QUALITY ACCEPTABLE TO THE ENGINEER.



STANDARD CROSS SECTION
ROUND STONE WILL NOT BE ACCEPTED

9/18/2020
PENTABLE:BRedu_shd_util.tbl

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-14-225			
DRAWN BY		CJM	PLANS CK'D. AEB
SLOPE PAVING CRUSHED AGGREGATE			SHEET 28 OF 28

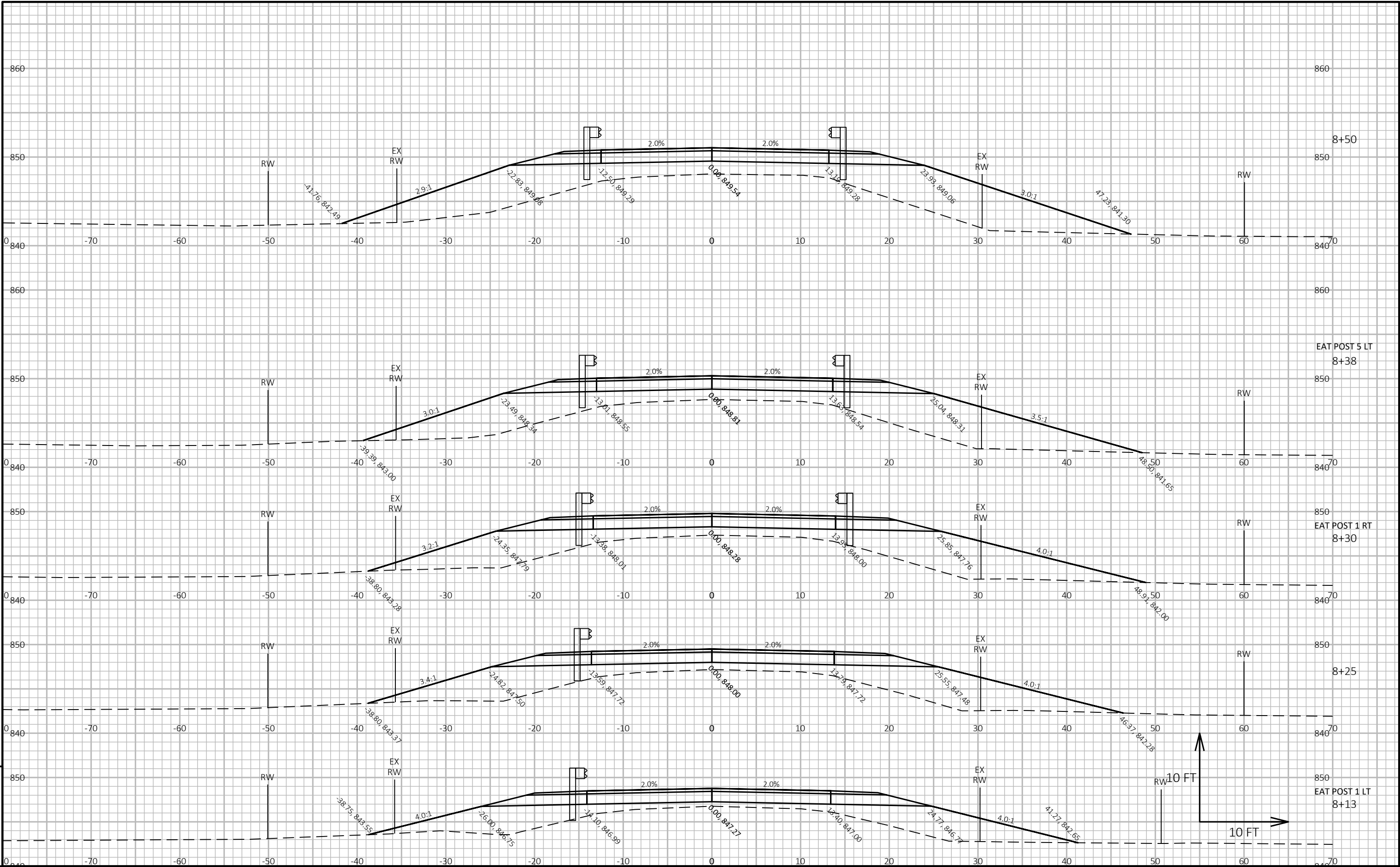
ORIGINAL PLANS PREPARED BY

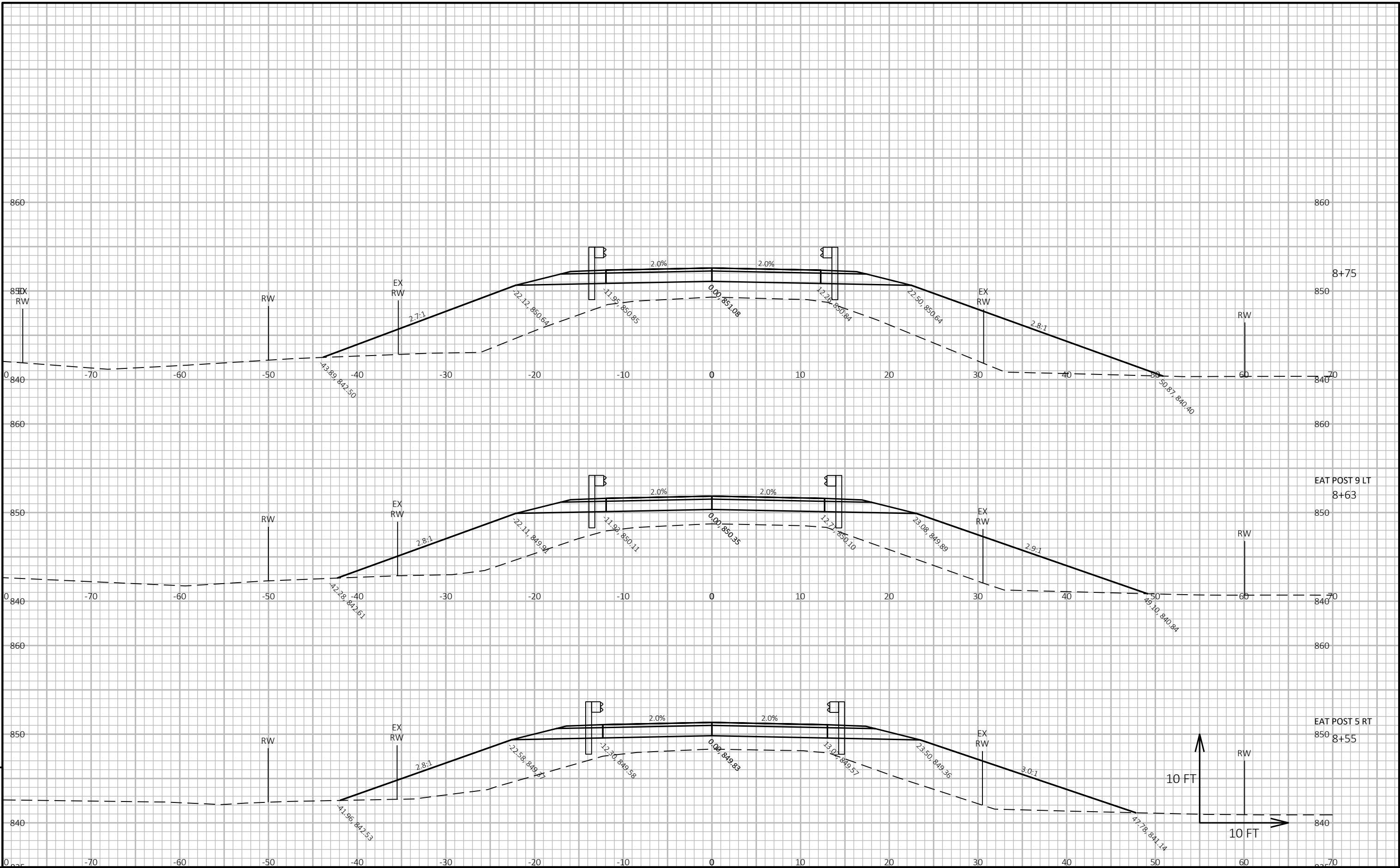
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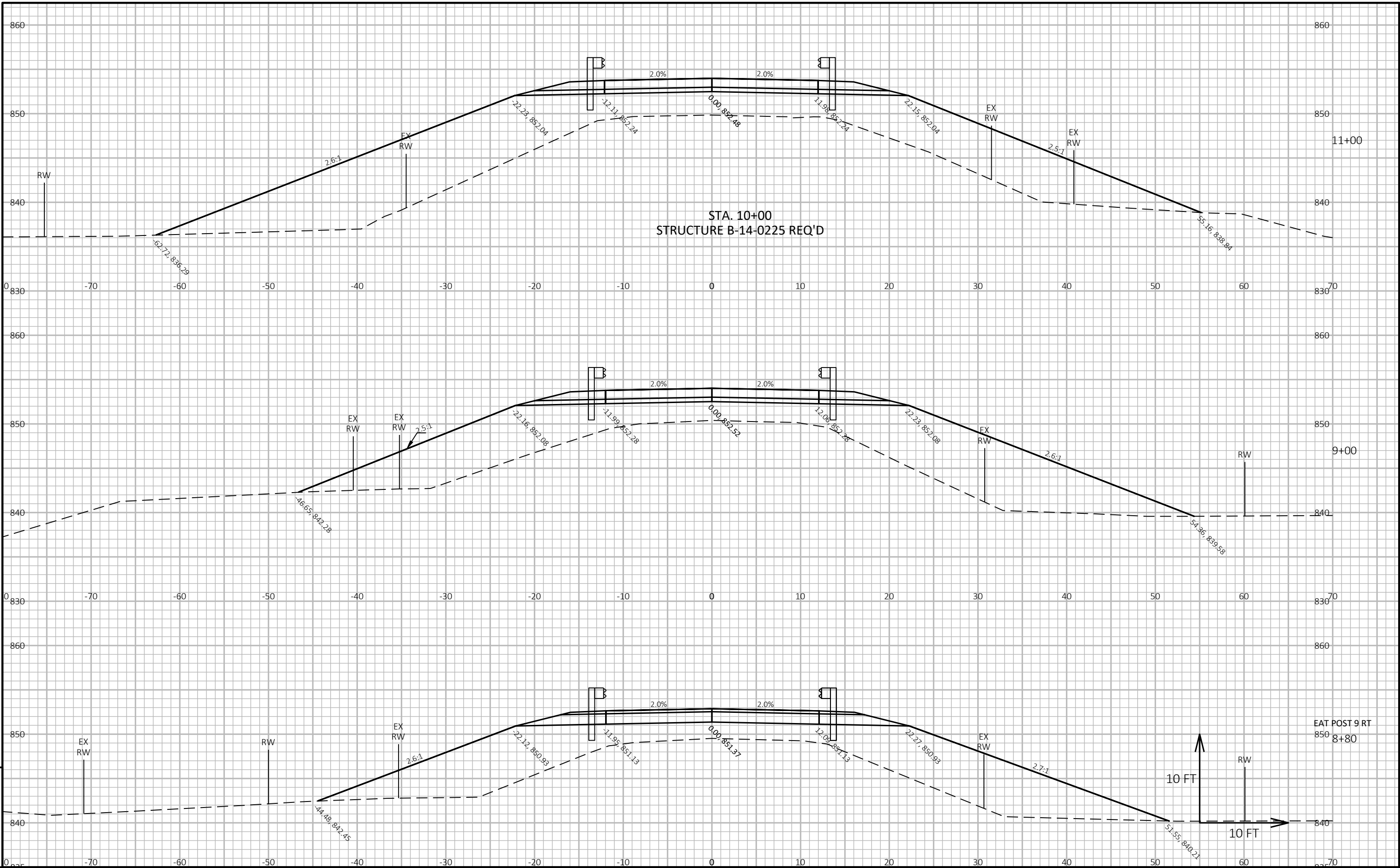
BOBOLINK ROAD COMPUTER EARTHWORK								
Station	Distance	Area (SF)		Incremental Vol (CY) (Unadjusted)		Cumulative Vol (CY)		Mass Ordinate
		Cut	Fill	Cut	Fill	Cut 1.00	Expanded Fill 1.30	
7+00	--	58.8	0.0	--	--			
7+25	25	58.8	0.0	54	0	54	0	54
7+50	25	42.0	1.1	47	1	101	1	100
7+55	5	38.9	1.0	7	0	109	1	108
7+75	20	18.8	4.3	21	2	130	3	126
8+00	25	0.0	69.1	9	34	139	48	91
8+13	13	0.0	123.1	0	46	139	108	31
8+25	12	0.0	165.1	0	64	139	191	-52
8+30	5	0.0	185.8	0	32	139	233	-95
8+38	8	0.0	210.0	0	59	139	310	-171
8+50	12	0.0	236.5	0	99	139	439	-300
8+55	5	0.0	248.7	0	45	139	497	-358
8+63	8	0.0	271.6	0	77	139	597	-459
8+75	12	0.0	317.4	0	131	139	767	-629
8+80	5	0.0	340.5	0	61	139	846	-708
9+00	20	0.0	405.4	0	276	139	1206	-1067
NEW BRIDGE	--	--	--	--	--	--	--	--
11+00	--	0.0	522.4	--	--	--	--	--
11+20	20	0.0	501.7	0	379	139	1699	-1560
11+25	5	0.0	503.2	0	93	139	1820	-1681
11+37	12	0.0	493.0	0	221	139	2107	-1969
11+45	8	0.0	487.5	0	145	139	2296	-2158
11+50	5	0.0	483.4	0	90	139	2413	-2274
11+62	12	0.0	497.5	0	218	139	2696	-2558
11+70	8	0.0	513.1	0	150	139	2891	-2752
11+75	5	0.0	503.1	0	94	139	3013	-2875
11+87	12	0.0	478.6	0	218	139	3297	-3158
12+00	13	0.0	395.8	0	211	139	3571	-3432
12+25	25	0.8	250.4	0	299	139	3960	-3821
12+50	25	12.5	62.7	6	145	145	4148	-4003
12+67	17	29.1	39.1	13	32	158	4190	-4031
12+75	8	39.5	31.8	10	11	168	4203	-4035
13+00	25	39.5	31.8	37	29	205	4242	-4037
				205	3263			

Note 1 - Cut	Cut includes existing asphalt pavement. Assumed to be reused as fill outside the 1:1 road core.
Note 2 - Fill	Volume needed to be filled.
Note 3 - Mass Ordinate	(Cut) - (Fill * 1.30)

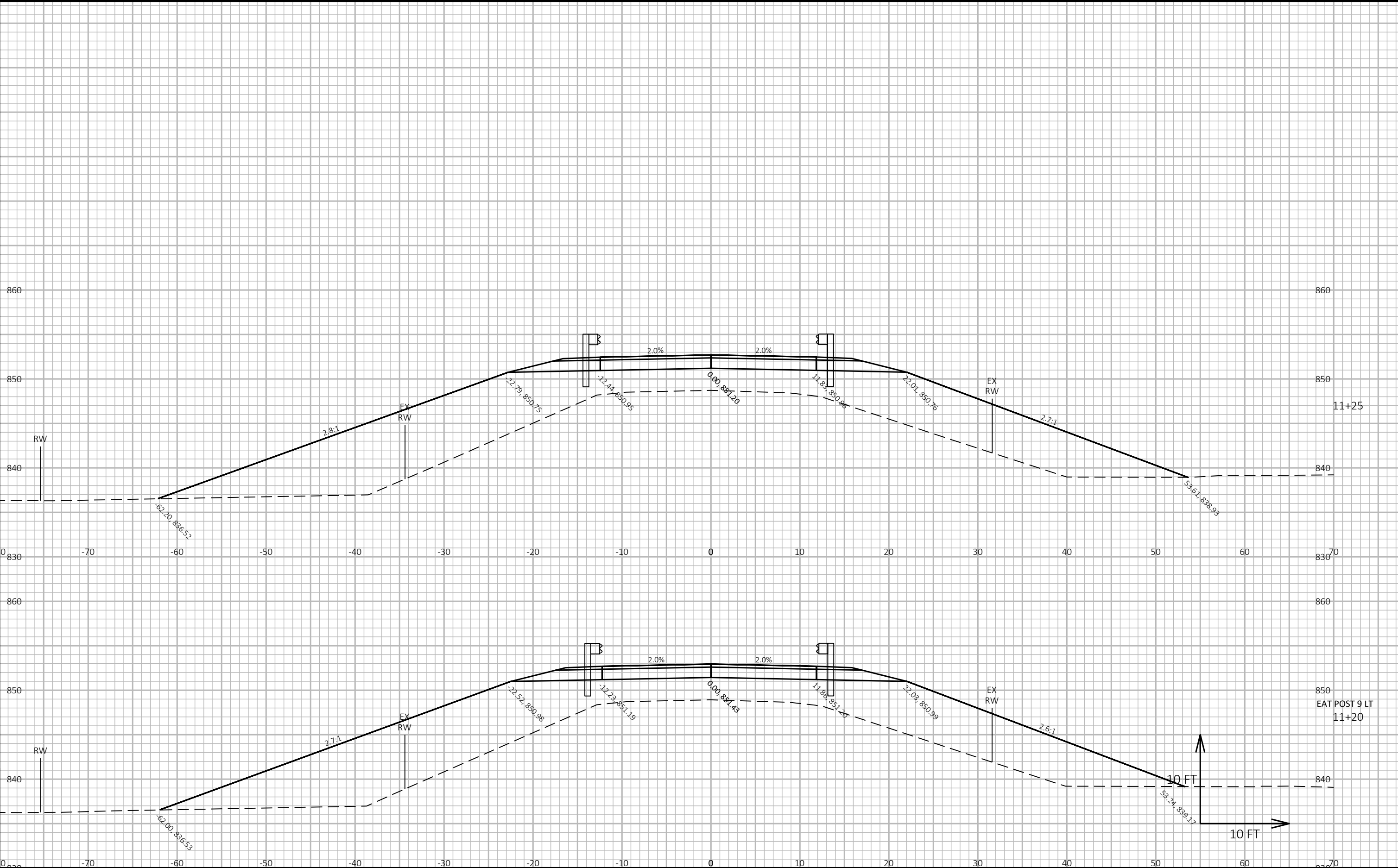


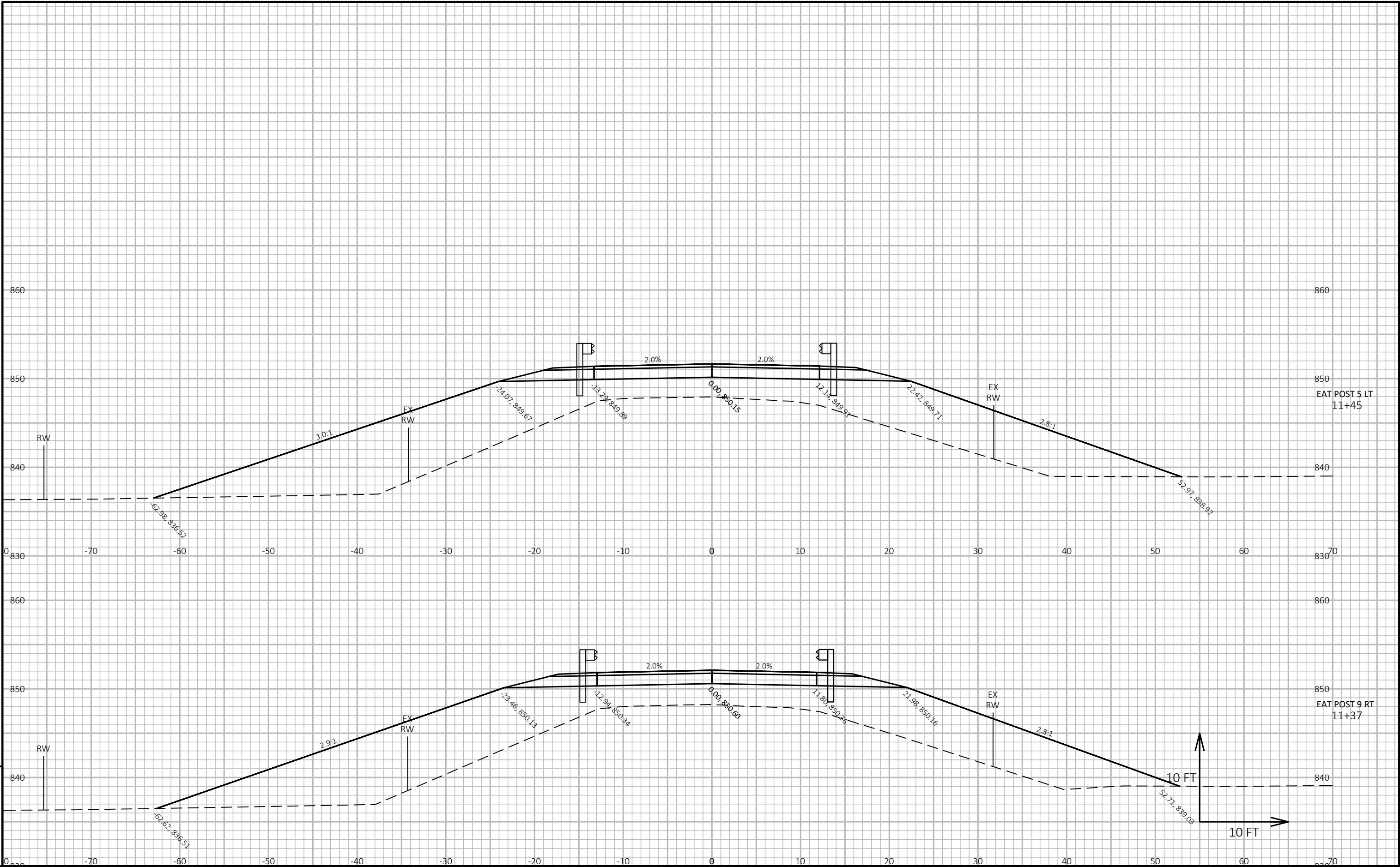


PROJECT NO: 3804-00-74	HWY: BOBOLINK ROAD	COUNTY: DODGE	CROSS SECTIONS: CROSS SECTIONS	SHEET	E
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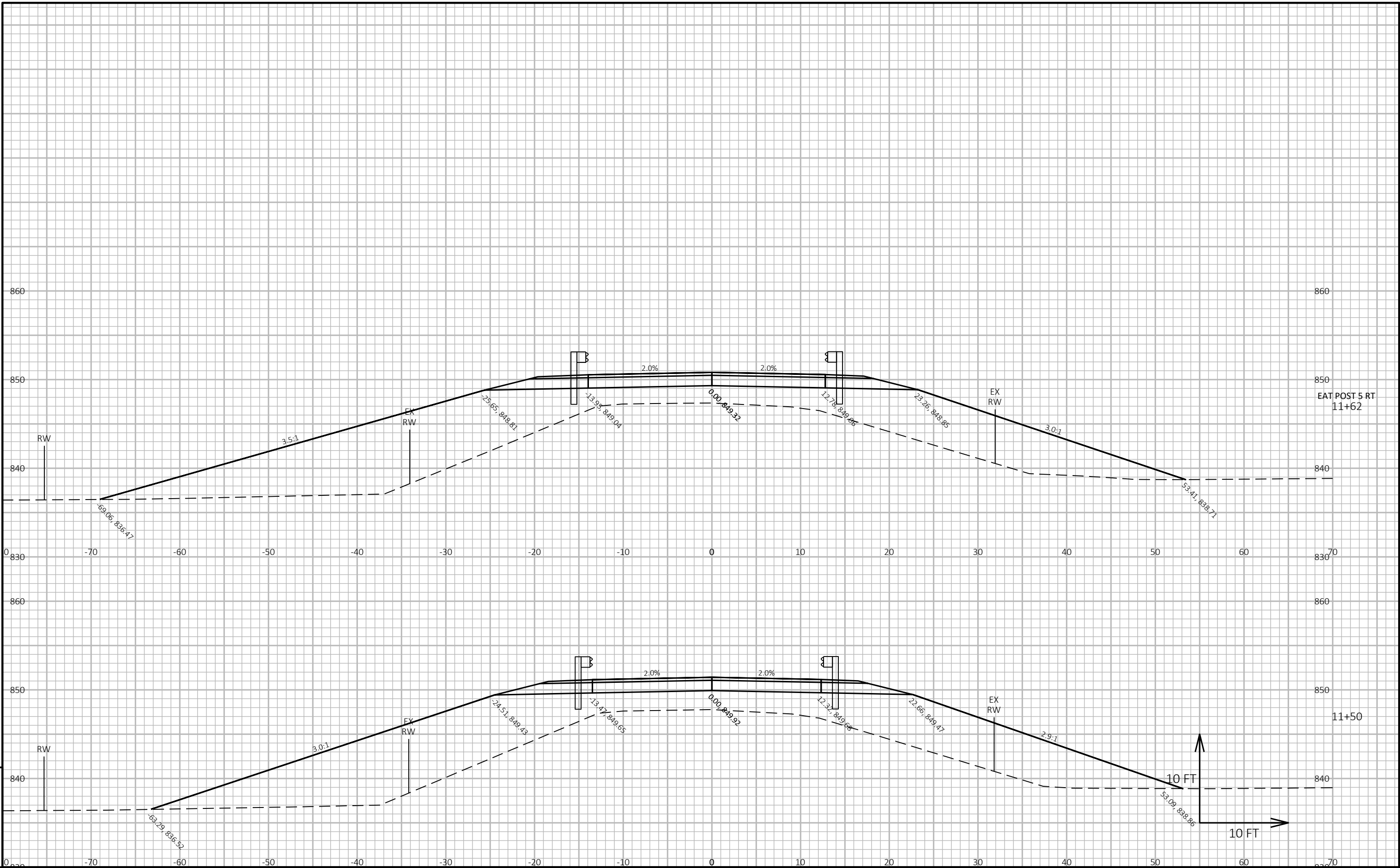


PROJECT NO: 3804-00-74	HWY: BOBOLINK ROAD	COUNTY: DODGE	CROSS SECTIONS: CROSS SECTIONS	SHEET	E
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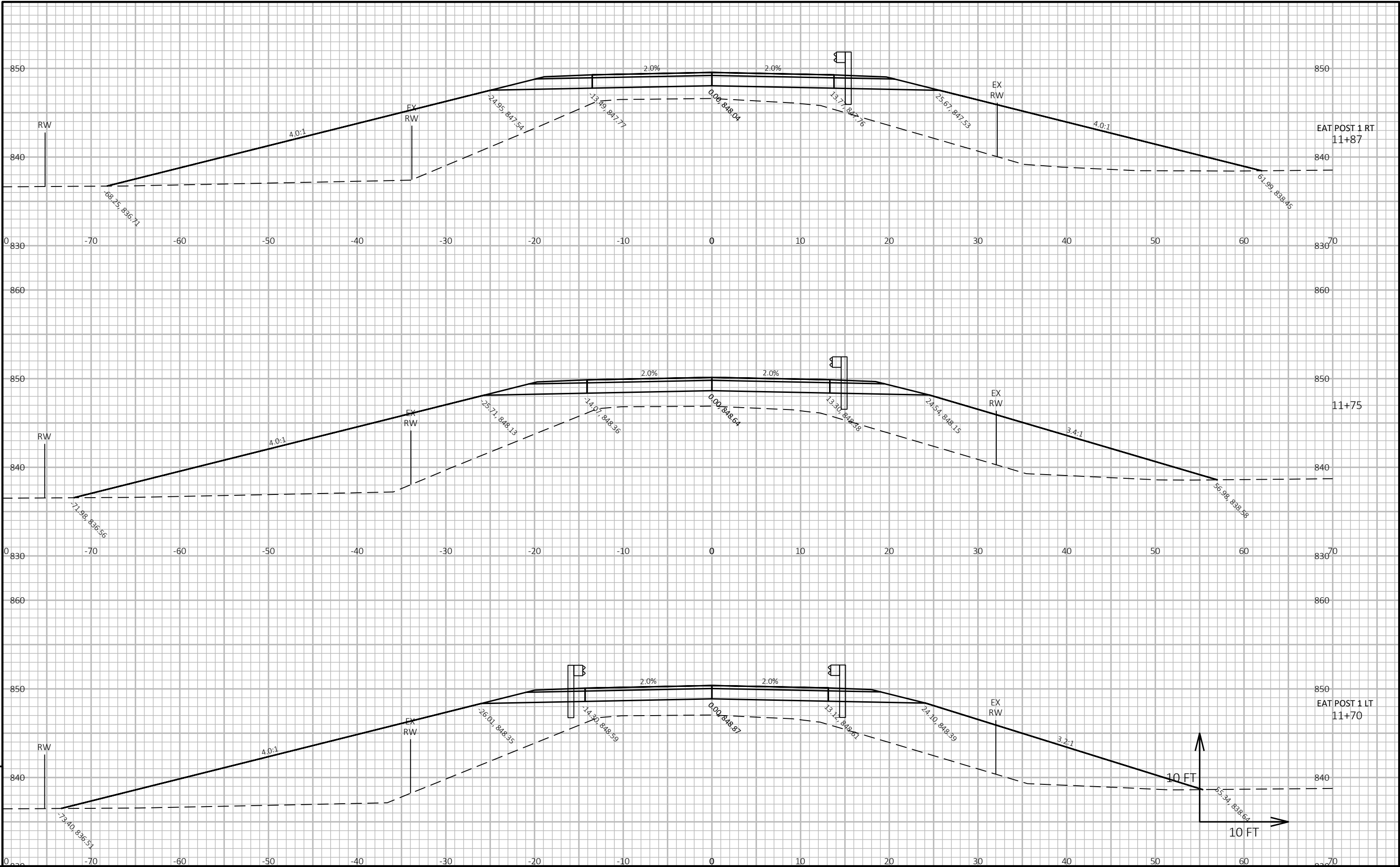


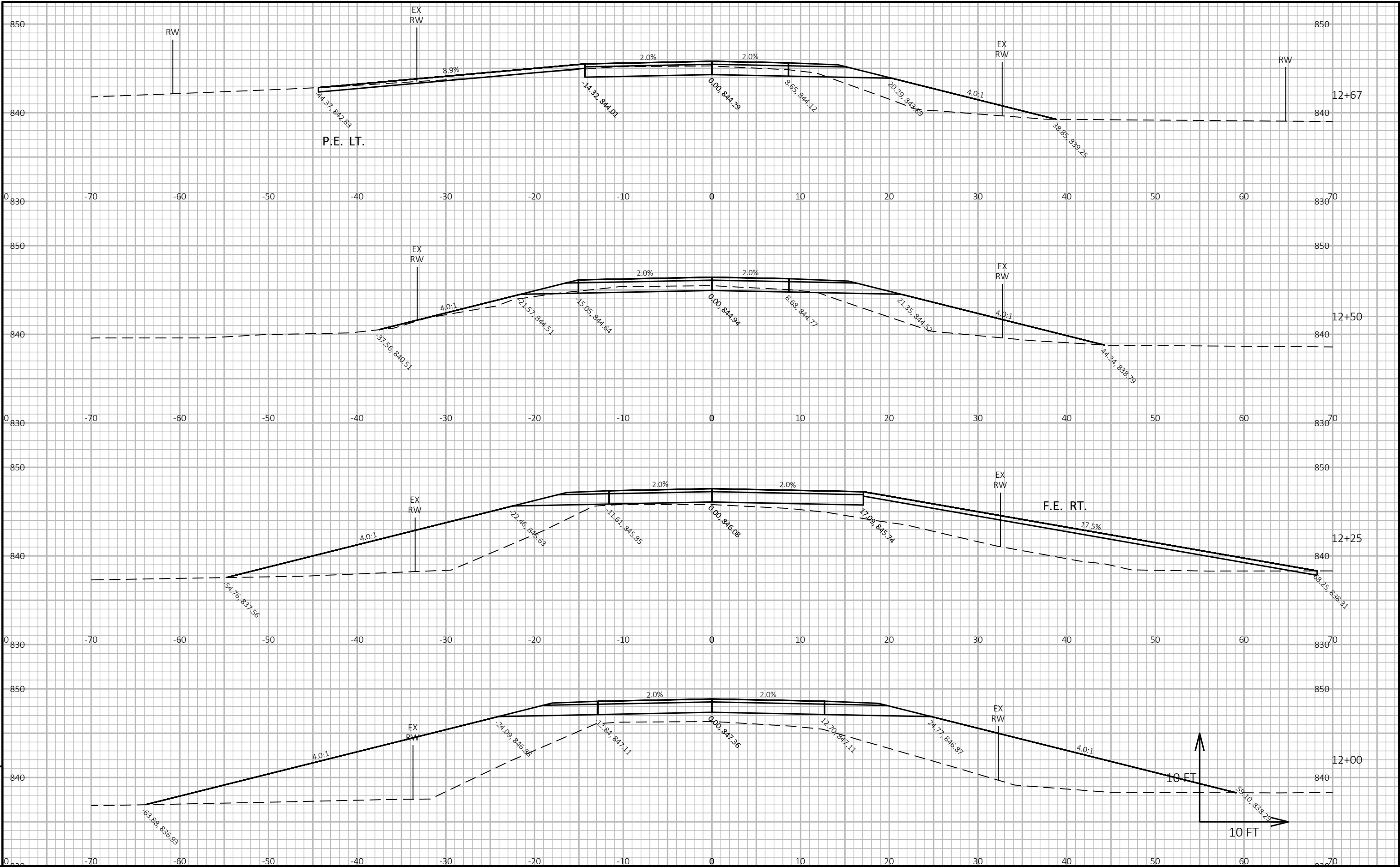


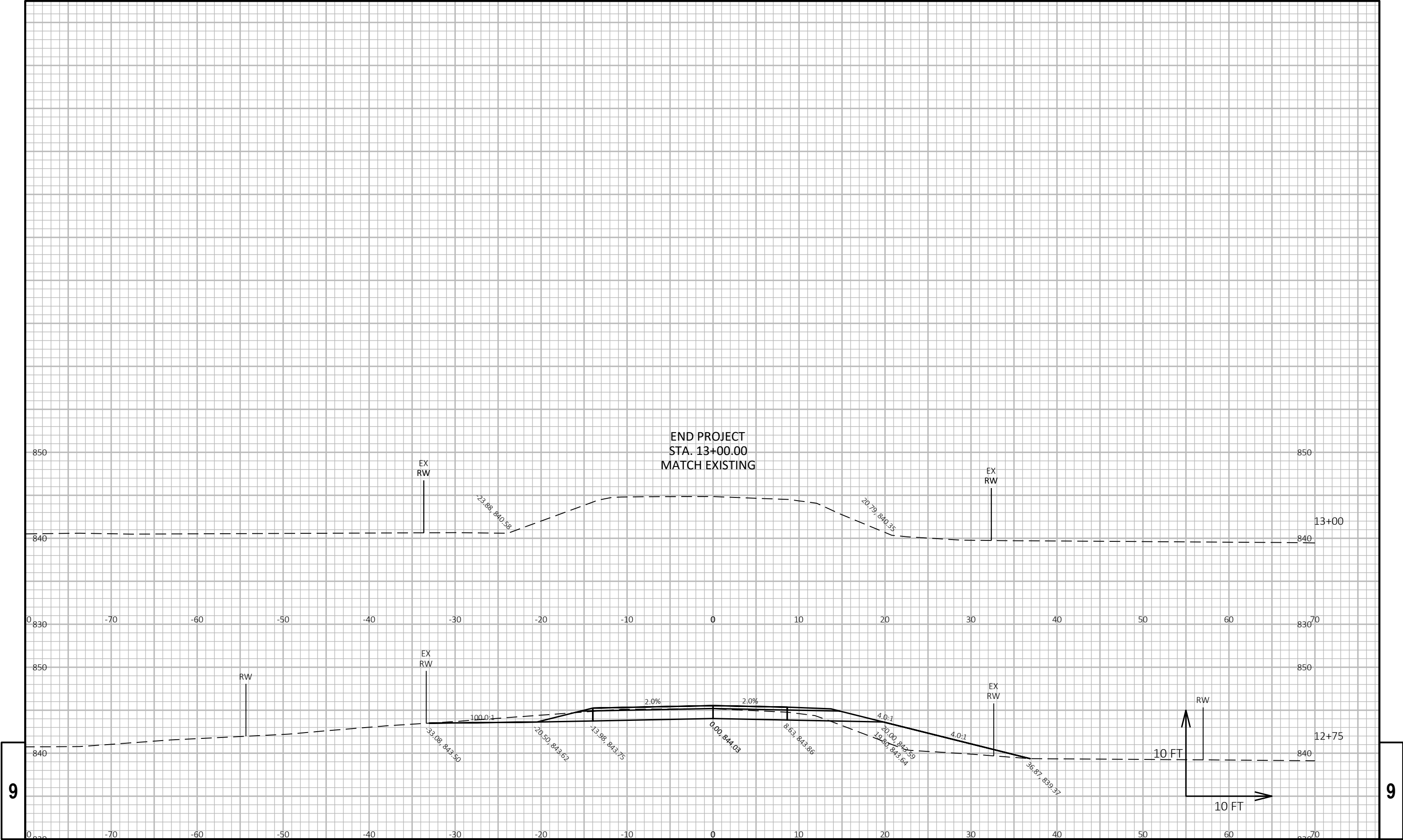
PROJECT NO: 3804-00-74	HWY: BOBOLINK ROAD	COUNTY: DODGE	CROSS SECTIONS: CROSS SECTIONS	SHEET	E
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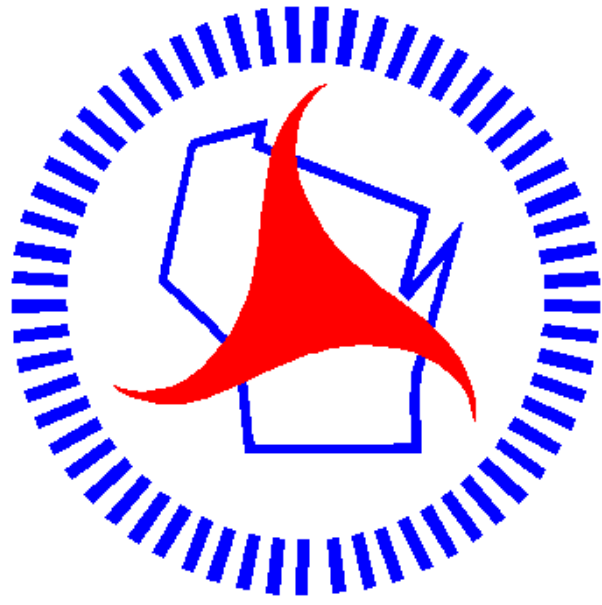
PROJECT NO: 3804-00-74	HWY: BOBOLINK ROAD	COUNTY: DODGE	CROSS SECTIONS: CROSS SECTIONS	SHEET E
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9		PROJECT NO: 3804-00-74		HWY: BOBOLINK ROAD		COUNTY: DODGE		CROSS SECTIONS: CROSS SECTIONS		SHEET		E
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