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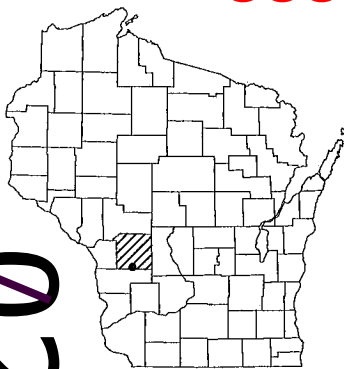
SEPTEMBER 2017

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 (Includes Erosion Control Plans)
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 = 44

Sheets revised: 1, 4,
10-12, 26, 27, 33



DESIGN DESIGNATION

A.A.D.T.	2018	=	100
A.A.D.T.	2038	=	120
D.H.V.		=	20
D.D.		=	50/50
T.		=	10.0%
DESIGN SPEED		=	25 MPH
ESALS		=	N/A

Subcontractor List
Arbor Green, Inc.
Hard Rock Sawing and Drilling
Jewell Associates Engineers, Inc.
Mathy Construction Co.
Safemark, LLC
St. Joseph Construction Co., Inc

CONVENTIONAL SYMBOLS

PLAN
CORPORATE LIMITS

PROPERTY LINE

LOT LINE

LIMITED HIGHWAY EASEMENT

EXISTING RIGHT OF WAY

PROPOSED OR NEW R/W LINE

SLOPE INTERCEPT

REFERENCE LINE

EXISTING CULVERT

PROPOSED CULVERT
(Box or Pipe)

COMBUSTIBLE FLUIDS

MARSH AREA

WOODED OR SHRUB AREA

PROFILE

GRADE LINE

ORIGINAL GROUND

MARSH OR ROCK PROFILE
(To be noted as such)

SPECIAL DITCH

GRADE ELEVATION

CULVERT (Profile View)

UTILITIES

ELECTRIC

FIBER OPTIC

GAS

SANITARY SEWER

STORM SEWER

TELEPHONE

WATER

UTILITY PEDESTAL

POWER POLE

TELEPHONE POLE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

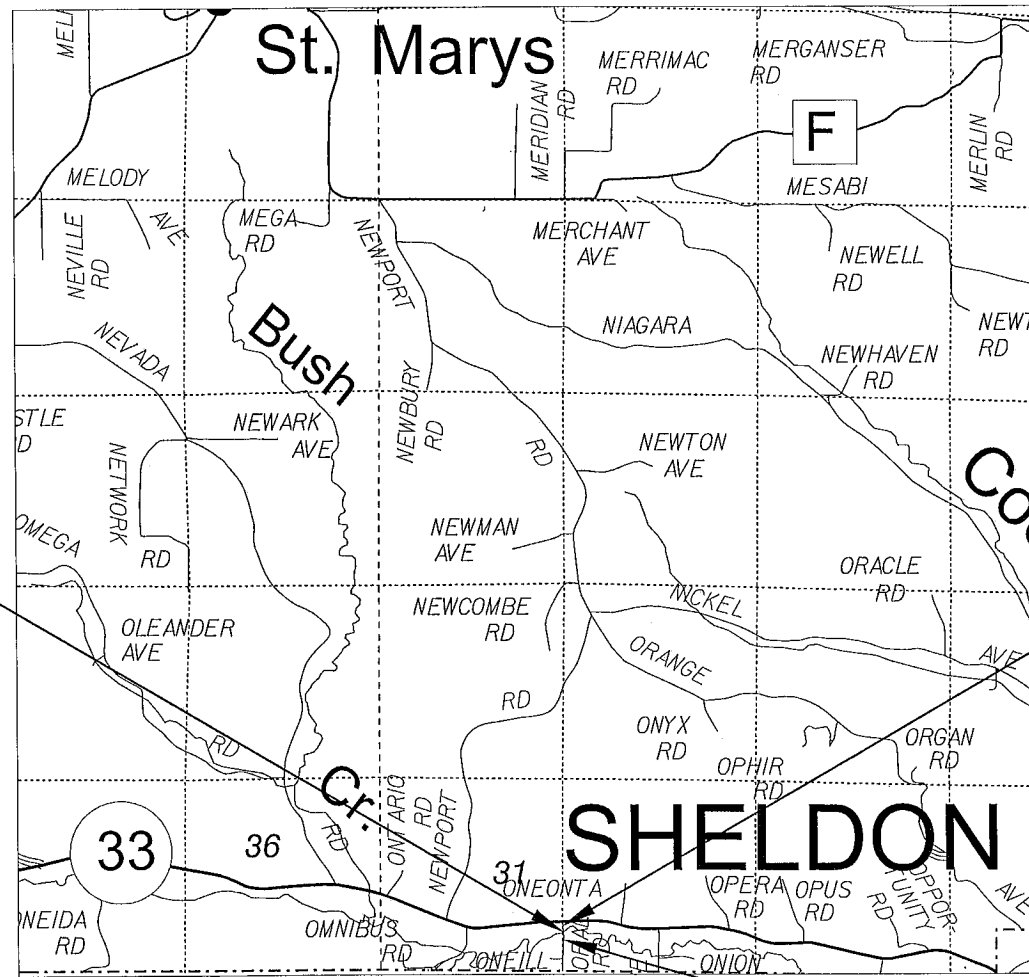
TOWN OF SHELDON, OPAL ROAD

(BRUSH CREEK BRIDGE B-41-0313)

TOWN ROAD
MONROE COUNTY

STATE PROJECT NUMBER

5018-00-71



R-3-W

R-2-W

SCALE 0 1 MILE

TOTAL NET LENGTH OF CENTERLINE = 0.045 MI

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

STATE PROJECT

5018-00-71

FEDERAL PROJECT

PROJECT

WISC 2017450

CONTRACT

1

ACCEPTED FOR

TOWN of SHELDON

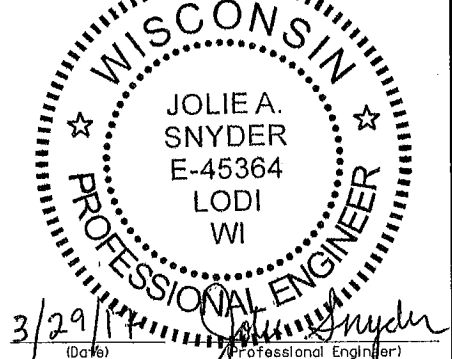
4/26/2017 *Lucy Bardin*
(Date) (Signature)

ACCEPTED FOR

COUNTY of MONROE

04/10/17 *[Signature]*
(Date) (HIGHWAY COMMISSIONER)

ORIGINAL PLANS PREPARED BY



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor

MSA PROFESSIONAL SERVICES, INC.

Designer

MSA PROFESSIONAL SERVICES, INC.

Management Consultant

KL ENGINEERING, INC.

APPROVED FOR THE DEPARTMENT *Med For*

DATE: 4/28/17 *Jeff Melville*
(Management Consultant Signature)

E

STANDARD ABBREVIATIONS

AC	ACRE	F/L	FLOW LINE	SALV	SALVAGED
AGG	AGGREGATE	FT	FOOT	SAN	SANITARY SEWER
<	ANGLE	GN	GRID NORTH	SECT	SECTION
ASPH	ASPHALTIC	HR	HANDICAP RAMP	SHLDR	SHOULDER
AC	ASPHALT CEMENT	HT	HEIGHT	SW	SIDEWALK
ADT	AVERAGE DAILY TRAFFIC	CWT	HUNDREDWEIGHT	S	SOUTH
B & B	BALLED AND BURLAPPED	HYD	HYDRANT	SB	SOUTHBOUND
BM	BENCH MARK	IN DIA	INCH DIAMETER	SPECS	SPECIFICATIONS
CB	CATCH BASIN	INL	INLET	SQ	SQUARE
℄ OR C/L	CENTER LINE	ID	INSIDE DIAMETER	SF OR SQ FT	SQUARE FEET
C-C	CENTER TO CENTER	I	INTERSECTION ANGLE	SY	SQUARE YARD
CONC	CONCRETE	IE	INVERT ELEVATION	SSPRC	STORM SEWER
CO	COUNTY	IP	IRON PIPE OR PIN		PIPE REINFORCED CONCRETE
CTH	COUNTY TRUNK HIGHWAY	JCT	JUNCTION	STD	STANDARD
CY	CUBIC YARD	L	LENGTH OF CURVE	SDD	STANDARD DETAIL DRAWINGS
CULV	CULVERT	LF	LINEAR FOOT	STH	STATE TRUNK HIGHWAYS
CP	CULVERT PIPE	LC	LONG CHORD OF CURVE	STA	STATION
CPRC	CULVERT PIPE	LCB	LONG CHORD BEARING	SS	STORM SEWER
	REINFORCED CONCRETE	LS	LUMP SUM	T	TANGENT
C & G	CURB AND GUTTER	MH	MANHOLE	TEL	TELEPHONE
D	DEGREE OF CURVE	N	NORTH	TEMP	TEMPORARY
DHV	DESIGN HOUR VOLUME	Y	NORTH GRID COORDINATE	TLE	TEMPORARY LIMITED EASEMENT
DIA OR ϕ	DIAMETER	OE	OUTLET ELEVATION	T	TON
DIST	DISTRICT	OL	OUT LOT	TC	TOP OF CURB
DWY	DRIVEWAY	OD	OUTSIDE DIAMETER	TN	TOWN
E	EAST	OH	OVERHEAD LINES	TRANS	TRANSITION
X	EAST GRID COORDINATE	PAVT	PAVEMENT	T	TRUCKS (percent of)
EB	EASTBOUND	PLE	PERMANENT LIMITED EASEMENT	TYP	TYPICAL
ELEC	ELECTRIC	PC	POINT OF CURVATURE	UNCL	UNCLASSIFIED
EL OR ELEV	ELEVATION	PI	POINT OF INTERSECTION	USH	UNITED STATES HIGHWAY
EMB	EMBANKMENT	PT	POINT OF TANGENCY	VAR	VARIABLE
EW	ENDWALL	PCC	PORTLAND CEMENT CONCRETE	VERT	VERTICAL
ESALS	EQUIVALENT SINGLE	LB	POUND	VC	VERTICAL CURVE
	AXLE LOADS	PE	PRIVATE ENTRANCE	VOL	VOLUME
EXC	EXCAVATION	R OR RAD	RADIUS	WM	WATER MAIN
EBS	EXCAVATION BELOW	RR	RAILROAD	WV	WATER VALVE
	SUBGRADE	R	RANGE	W	WEST
EXIST	EXISTING	℄ OR R/L	REFERENCE LINE	WB	WESTBOUND
EXP	EXPANSION	REQD	REQUIRED	YD	YARD
F-F	FACE TO FACE	RT	RIGHT		
FERT	FERTILIZER	R/W	RIGHT-OF-WAY		
FE	FIELD ENTRANCE	RD	ROAD		

DESIGN CONTACT

MSA PROFESSIONAL SERVICES, INC.
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BARABOO, WI 53913
608-355-8945
LRHODES@MSA-PS.COM

UTILITIES

COMMUNICATION:
CENTURYLINK
ATTN: BRET CLARK
311 SOUTH COURT STREET
SPARTA, WI 54656
608-269-0819
BRET.CLARK@CENTURYLINK.COM

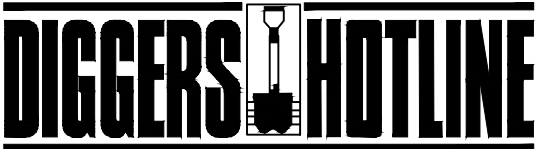
COUNTY CONTACT

MONROE COUNTY
ATTN: DAVID OHNSTAD, HIGHWAY COMMISSIONER
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SPARTA, WI 54656
608-269-8740
DAVID.OHNSTAD@CO.MONROE.WI.US

DNR LIAISON

WISCONSIN DEPARTMENT OF
NATURAL RESOURCES
ATTN: KAREN KALVELAGE
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LA CROSSE, WI 54601
608-785-9115
KAREN.KALVELAGE@WISCONSIN.GOV

* NOT A MEMBER OF
DIGGERS HOTLINE



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

GENERAL NOTES

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE FERTILIZED, SEEDED AND MULCHED AS DIRECTED BY THE ENGINEER. OVERSOW PERMANENT SEEDING AREAS WITH TEMPORARY SEED.

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

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

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO USGS NAVD 88 (2012 ADJUSTED). BENCHMARKS WERE LOCATED IN THE FIELD USING GPS TECHNOLOGY.

THE 3½" ASPHALTIC SURFACE SHALL CONSIST OF A 1¾" UPPER LAYER WITH 12.5MM NOMINAL SIZE AGGREGATE AND A 1¾" LOWER LAYER WITH 12.5MM NOMINAL SIZE AGGREGATE.

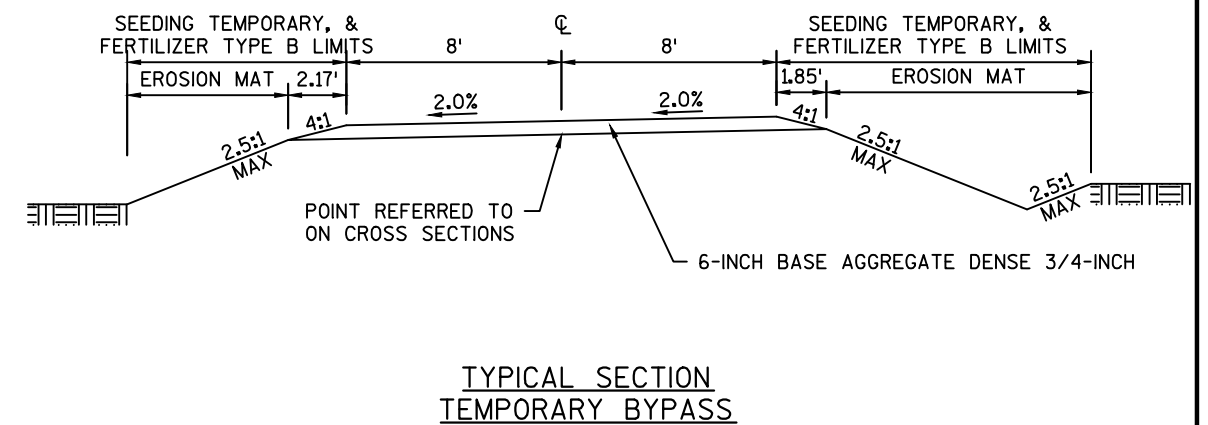
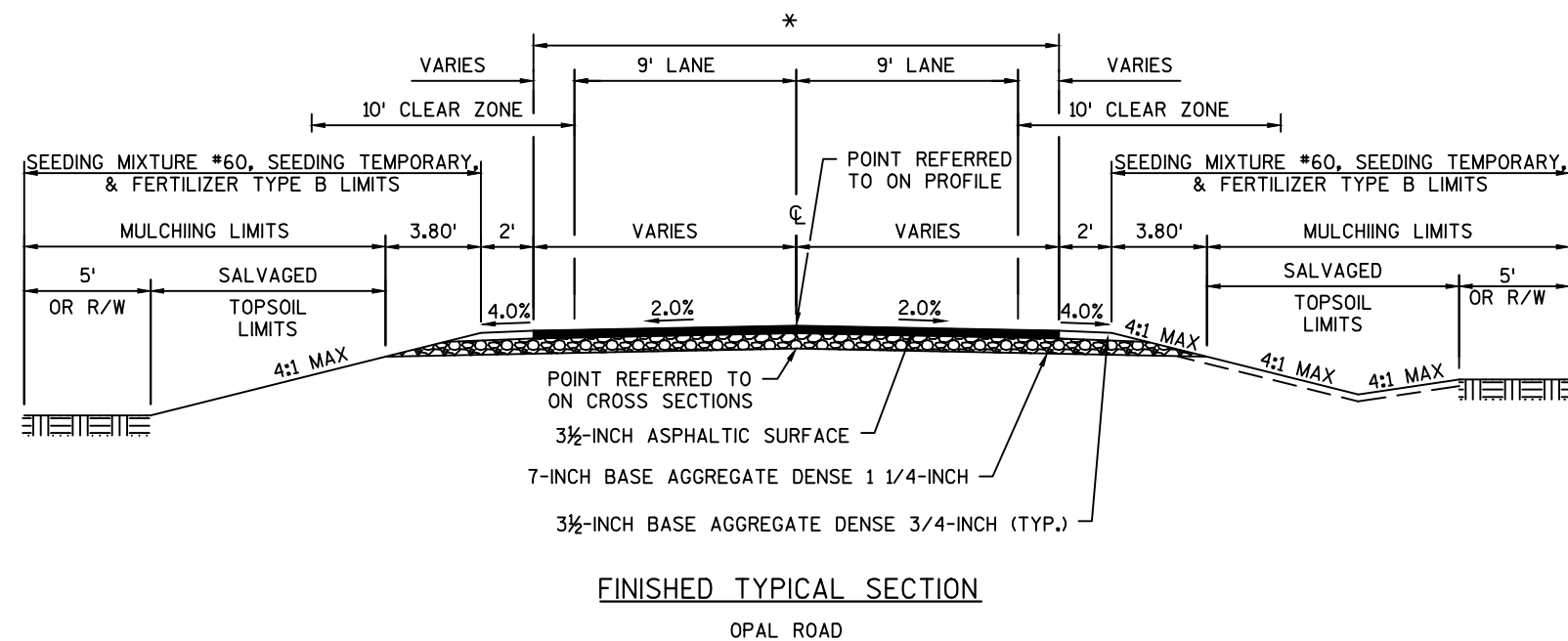
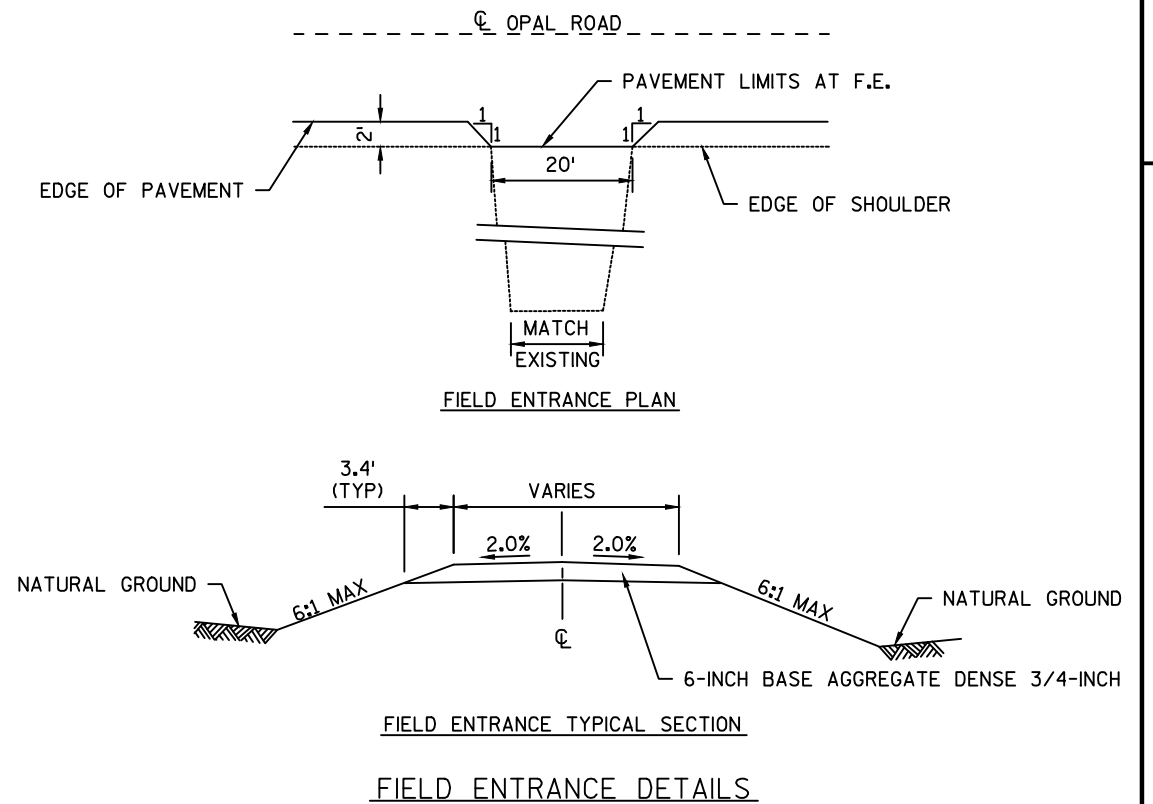
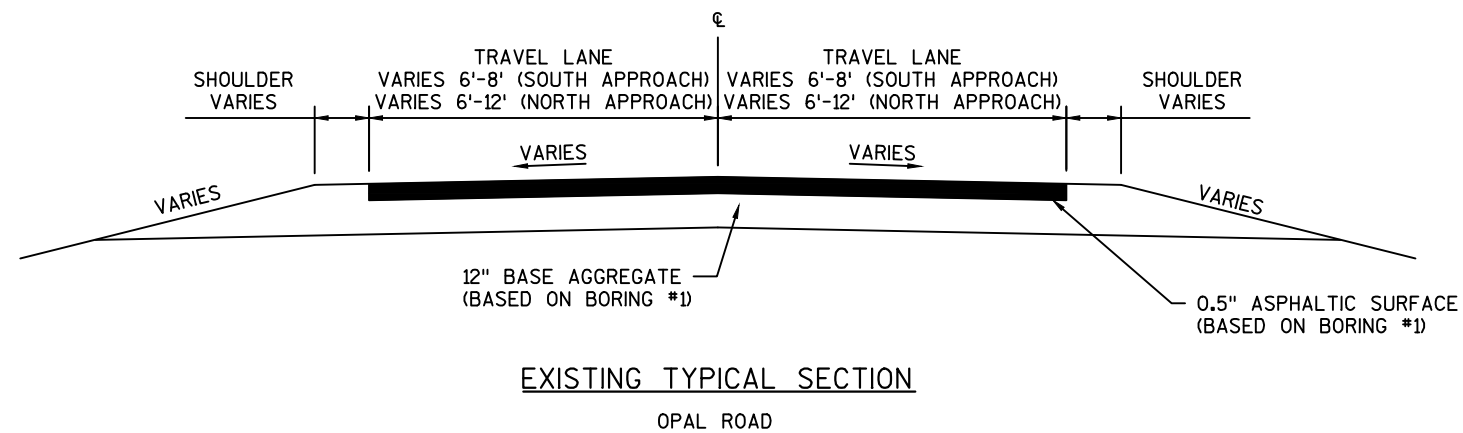
SILT FENCE AND TURBIDITY BARRIER TO BE PLACED AS SHOWN ON THE PLAN OR AS DIRECTED BY THE ENGINEER AND IN PLACE PRIOR TO CONSTRUCTION OR BRIDGE REMOVAL.

WETLANDS ARE PRESENT OUTSIDE THE EXISTING TOE OF SLOPE. AREAS OUTSIDE THE SLOPE INTERCEPTS SHALL NOT BE DISTURBED.

RUNOFF COEFFICIENT TABLE

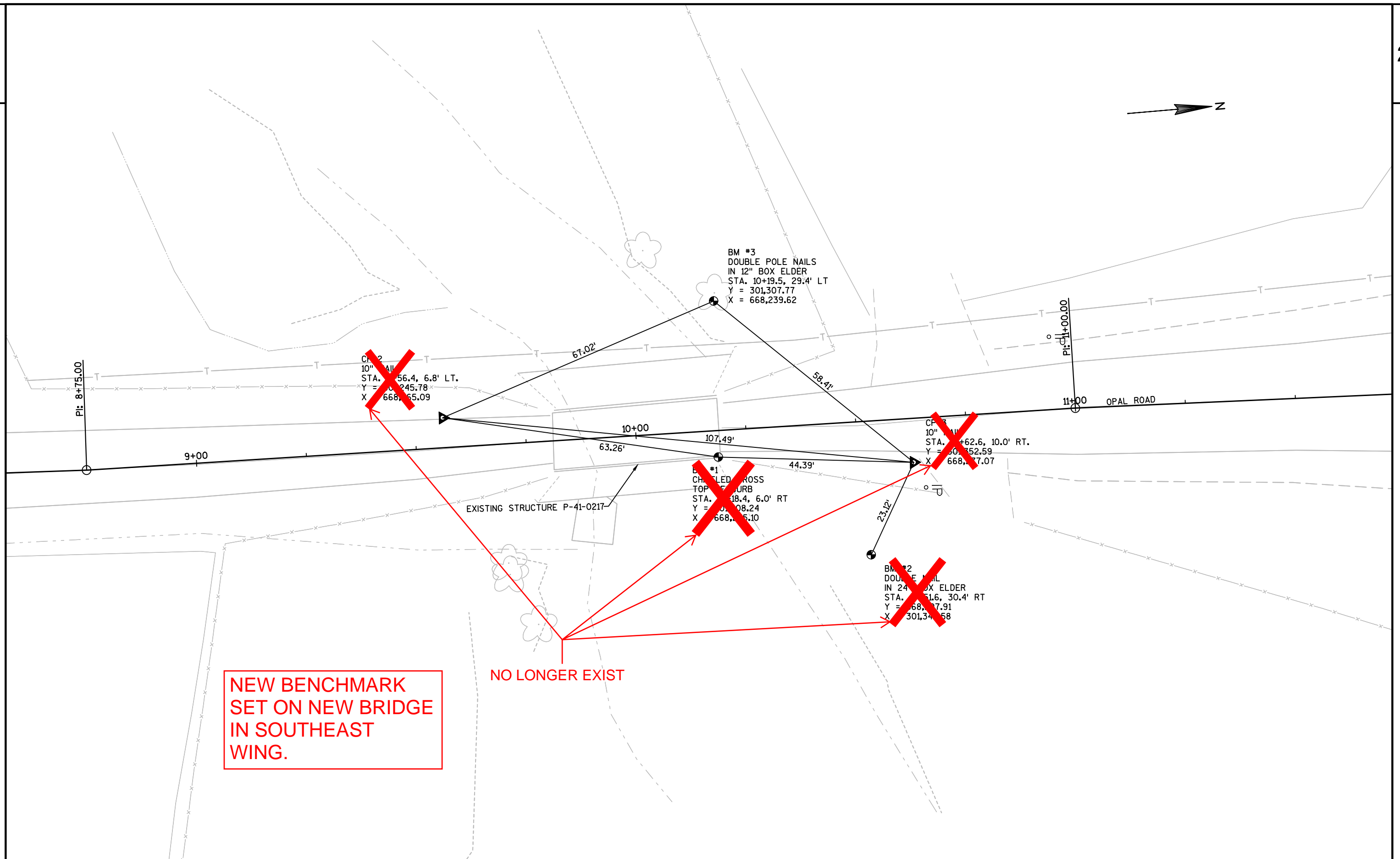
	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08	.16	.22	.12	.20	.27	.15	.24	.33	.19	.28	.38
	.22	.30	.38	.26	.34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

TOTAL PROJECT AREA = 0.82 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.56 ACRES



NOTE: UNNAMED TRIBUTARY STREAM REALIGNMENT DETAILS ARE AS SHOWN ON THE CROSS SECTIONS.

* - TAPER PAVEMENT WIDTH FROM 26.5' AT ENDS OF BRIDGE TO MATCH THE EXISTING PAVEMENT WIDTH AT THE PROJECT LIMITS. EXISTING PAVEMENT WIDTH IS 15.9' AT STA. 9+00 AND 23.6' AT STA. 11+40.



Estimate Of Quantities

5018-00-71					
Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	2.000	2.000
0004	201.0205	Grubbing	STA	2.000	2.000
0006	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 10+00	LS	1.000	1.000
0008	205.0100	Excavation Common	CY	1,628.000	1,628.000
0010	206.1000	Excavation for Structures Bridges (structure) 01. B-41-0313	LS	1.000	1.000
0012	208.0100	Borrow	CY	1,518.000	1,518.000
0014	210.1500	Backfill Structure Type A	TON	380.000	380.000
0016	213.0100	Finishing Roadway (project) 01. 5018-00-71	EACH	1.000	1.000
0018	305.0110	Base Aggregate Dense 3/4-Inch	TON	50.000	50.000
0020	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	240.000	240.000
0022	305.0410	Aggregate Detours	TON	195.000	195.000
0024	455.0605	Tack Coat	GAL	25.000	25.000
0026	465.0105	Asphaltic Surface	TON	95.000	95.000
0028	502.0100	Concrete Masonry Bridges	CY	183.000	183.000
0030	502.3200	Protective Surface Treatment	SY	229.000	229.000
0032	505.0400	Bar Steel Reinforcement HS Structures	LB	4,580.000	4,580.000
0034	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	22,970.000	22,970.000
0036	513.4061	Railing Tubular Type M (structure) 01. B-41-0313	LF	105.000	105.000
0038	516.0500	Rubberized Membrane Waterproofing	SY	13.000	13.000
0040	526.0100	Temporary Structure (station) 01. 20+35	LS	1.000	1.000
0042	550.0500	Pile Points	EACH	14.000	14.000
0044	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	280.000	280.000
0046	606.0300	Riprap Heavy	CY	358.000	358.000
0048	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	190.000	190.000
0050	619.1000	Mobilization	EACH	1.000	1.000
0052	624.0100	Water	MGAL	70.000	70.000
0054	625.0500	Salvaged Topsoil	SY	1,585.000	1,585.000
0056	627.0200	Mulching	SY	1,865.000	1,865.000
0058	628.1504	Silt Fence	LF	300.000	300.000
0060	628.1520	Silt Fence Maintenance	LF	300.000	300.000
0062	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0064	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0066	628.2008	Erosion Mat Urban Class I Type B	SY	505.000	505.000
0068	628.6005	Turbidity Barriers	SY	400.000	400.000
0070	628.7504	Temporary Ditch Checks	LF	40.000	40.000
0072	629.0210	Fertilizer Type B	CWT	1.700	1.700
0074	630.0160	Seeding Mixture No. 60	LB	28.000	28.000
0076	630.0200	Seeding Temporary	LB	70.000	70.000

Estimate Of Quantities

5018-00-71

Line	Item	Item Description	Unit	Total	Qty
0078	633.1100	Delineators Temporary	EACH	32.000	32.000
0080	633.5100	Markers Row	EACH	6.000	6.000
0082	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0084	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0086	638.2602	Removing Signs Type II	EACH	8.000	8.000
0088	638.3000	Removing Small Sign Supports	EACH	8.000	8.000
0090	642.5001	Field Office Type B	EACH	1.000	1.000
0092	643.0100	Traffic Control (project) 01. 5018-00-71	EACH	1.000	1.000
0094	643.0300	Traffic Control Drums	DAY	2,376.000	2,376.000
0096	643.0420	Traffic Control Barricades Type III	DAY	990.000	990.000
0098	643.0705	Traffic Control Warning Lights Type A	DAY	396.000	396.000
0100	643.0715	Traffic Control Warning Lights Type C	DAY	990.000	990.000
0102	643.0900	Traffic Control Signs	DAY	2,772.000	2,772.000
0104	645.0111	Geotextile Type DF Schedule A	SY	100.000	100.000
0106	645.0120	Geotextile Type HR	SY	674.000	674.000
0108	650.4500	Construction Staking Subgrade	LF	550.000	550.000
0110	650.5000	Construction Staking Base	LF	550.000	550.000
0112	650.6500	Construction Staking Structure Layout (structure) 01. B-41-0313	LS	1.000	1.000
0114	650.9910	Construction Staking Supplemental Control (project) 01. 5018-00-71	LS	1.000	1.000
0116	650.9920	Construction Staking Slope Stakes	LF	550.000	550.000
0118	690.0150	Sawing Asphalt	LF	40.000	40.000
0120	715.0502	Incentive Strength Concrete Structures	DOL	1,098.000	1,098.000
0122	SPV.0105	Special 01. Temporary Water Diversion, Unnamed Tributary to Brush Creek	LS	1.000	1.000

3

201.0105 CLEARING
201.0205 GRUBBING

STATION	-	STATION	LOCATION	CLEARING STA	GRUBBING STA
9+00	-	11+00	RT. & LT.	2	2
TOTALS:				2	2

205.0100 EXCAVATION COMMON
208.0100 BORROW

STAGE 1: PLACING TEMPORARY BYPASS AND APPROACHES

LOCATION	EXC. COMMON CY	FILL CY (1)	EXPANDED FILL CY (2)	WASTE CY	BORROW CY
STA 18+68 - STA 20+12	18	767	998	-980	980
STA 20+58 - STA 21+92	2	416	540	-538	538
TOTALS STAGE 1:	20	1183	1538	-1518	1518

STAGE 2: OPAL ROAD BRIDGE APPROACHES

LOCATION	EXC. COMMON CY (3)	FILL CY (1)	EXPANDED FILL CY (2)	WASTE CY
STA 9+00 - STA. 9+77.62	197	123	160	37
STA 10+28.38 - STA 11+40	137	7	9	128
TOTALS STAGE 2:	334	130	169	165

STAGE 3: REMOVING TEMPORARY BYPASS & APPROACHES

LOCATION	EXC. COMMON CY (4)	FILL CY (1)	EXPANDED FILL CY (2)	WASTE CY
STA 18+68 - STA 20+12	813	18	24	789
STA 20+58 - STA 21+92	461	2	2	459
TOTALS STAGE 3:	1274	20	26	1248

- (1) - NOT A BID ITEM - FOR INFORMATIONAL PURPOSES ONLY.
(2) - FILL EXPANSION 30%
(3) - EXISTING ASPHALTIC PAVEMENT IS INCLUDED IN COMMON EXCAVATION TOTALS. SEE EARTHWORK TABLE.
(4) - BASE AGGREGATE DENSE 3/4-INCH IS INCLUDED IN COMMON EXCAVATION TOTALS.

305.0110 BASE AGGREGATE DENSE 3/4-INCH
305.0120 BASE AGGREGATE DENSE 1 1/4-INCH
305.0410 AGGREGATE DETOURS
624.0100 WATER

STATION	-	STATION	BASE AGGREGATE DENSE 3/4-INCH TON	BASE AGGREGATE DENSE 1 1/4-INCH TON	AGGREGATE DETOURS TON	WATER* MGAL
9+00.00	-	9+77.62	8	95	0	2
10+28.38	-	11+40.00	42	145	0	4
18+68.00	-	20+12.00	0	0	101	2
20+58.00	-	21+92.00	0	0	94	2
TOTALS:			50	240	195	10

*ADDITIONAL QUANTITY INCLUDED WITH EROSION CONTROL ITEMS

455.0605 TACK COAT
465.0105 ASPHALTIC SURFACE

STATION	-	STATION	TACK COAT GAL	ASPHALTIC SURFACE TON
9+00.00	-	9+77.62	9	35
10+28.38	-	11+40.00	16	60
TOTALS:			25	95

NOTE:
ALL ITEMS AND QUANTITIES ON THIS SHEET ARE
FOR ENGINEER ESTIMATE CATEGORY 0010.

526.0100.01 TEMPORARY STRUCTURE STATION 20+35

	LS
TEMPORARY STRUCTURE STATION 20+35	1
TOTAL:	1

606.0300 RIPRAP HEAVY
645.0120 GEOTEXTILE TYPE HR

STATION	-	STATION	LOCATION	RIPRAP CY	GEOTEXTILE TYPE HR SY
9+00	-	9+65	CHANNEL REALIGNMENT	138	269
TOTALS:				138	269

625.0500 SALVAGED TOPSOIL
627.0200 MULCHING
629.0210 FERTILIZER TYPE B
630.0160 SEEDING MIXTURE NO. 60
630.0200 SEEDING TEMPORARY
624.0100 WATER

STATION	-	STATION	LOCATION	SALVAGED TOPSOIL SY	MULCHING SY	FERTILIZER CWT	SEEDING #60 LB	SEEDING TEMPORARY LB	WATER* MGAL
8+40	-	10+00	RT	615	705	0.45	10	20	17
9+00	-	9+70	LT	25	25	0.05	1	1	1
10+35	-	12+00	RT	605	680	0.45	10	19	16
10+20	-	11+40	LT	20	80	0.05	1	2	1
18+40	-	20+10	RT	---	---	0.15	---	6	5
18+85	-	20+00	LT	---	---	0.05	---	2	2
20+60	-	22+05	RT	---	---	0.10	---	5	4
20+60	-	21+80	LT	---	---	0.05	---	2	2
UNDISTRIBUTED				320	375	0.35	6	13	12
TOTALS:				1585	1865	1.70	28	70	60

*ADDITIONAL QUANTITY INCLUDED WITH BASE AGGREGATE ITEMS.

3

628.1504 SILT FENCE
628.1520 SILT FENCE MAINTENANCE

STATION - STATION		LOCATION	FENCE LF	MAINT. LF
10+20	- 11+40	LT	105	105
10+60	- 11+98	RT	150	150
UNDISTRIBUTED		-	45	45
TOTALS:			300	300

628.6005 TURBIDITY BARRIERS

LOCATION	SY
SOUTH ABUT	175
NORTH ABUT	140
UNDISTRIBUTED	85
TOTAL:	400

628.2008 EROSION MAT URBAN CLASS I TYPE B

STATION - STATION		LOCATION	URBAN CLASS I TYPE B SY
18+50	20+10	RT	195
18+90	19+95	LT	64
20+60	22+00	RT	149
20+60	21+75	LT	50
UNDISTRIBUTED			47
TOTALS:			505

628.7504 TEMPORARY DITCH CHECKS

STATION	LOCATION	TEMPORARY DITCH CHECKS LF
19+55	RT	11
19+75	RT	11
19+95	RT	11
UNDISTRIBUTED		7
TOTAL:		40

633.5100 MARKERS ROW

STATION	OFFSET	LOCATION	EACH
8+80.00	10.64	RT	1
8+80.00	22.42	LT	1
8+95.00	40.00	LT	1
9+50.00	45.00	RT	1
11+54.31	43.96	RT	1
11+65.53	41.27	LT	1
TOTAL:			6

NOTE:
ALL ITEMS AND QUANTITIES ON THIS SHEET ARE
FOR ENGINEER ESTIMATE CATEGORY 0010.

634.0612 POSTS WOOD 4x6-INCH x 12-FT
637.2230 SIGNS TYPE II REFLECTIVE F
638.2602 REMOVING SIGNS TYPE II
638.3000 REMOVING SMALL SIGN SUPPORTS

STATION	LOCATION	SIGN CODE	SIZE	SIGNS TYPE II REFLECTIVE F SF	WOOD POSTS EACH	REMOVING SIGNS TYPE II EACH	REMOVING SMALL SIGN SUPPORTS EACH	COMMENTS
9+70	RT	-	-	-	-	1	1	EXISTING BUMP SIGN
9+76	RT	-	-	-	-	1	1	EXISTING WEIGHT LIMIT POSTING SIGN
9+70	LT	W5-52L	12"x36"	3	1	-	-	OBJECT MARKER
9+81	RT	-	-	-	-	1	1	EXISTING OBJECT MARKER
9+83	RT	W5-52R	12"x36"	3	1	-	-	OBJECT MARKER
9+81	LT	-	-	-	-	1	1	EXISTING OBJECT MARKER
10+23	LT	W5-52R	12"x36"	3	1	-	-	OBJECT MARKER
10+19	RT	-	-	-	-	1	1	EXISTING OBJECT MARKER
10+35	RT	W5-52L	12"x36"	3	1	-	-	OBJECT MARKER
10+19	LT	-	-	-	-	1	1	EXISTING OBJECT MARKER
10+27	LT	-	-	-	-	1	1	EXISTING WEIGHT LIMIT POSTING SIGN
10+34	LT	-	-	-	-	1	1	EXISTING BUMP SIGN
TOTALS:				12	4	8	8	

633.1100 DELINEATORS TEMPORARY
643.0300 TRAFFIC CONTROL DRUMS
643.0420 TRAFFIC CONTROL BARRICADES TYPE III
643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A
643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C
643.0900 TRAFFIC CONTROL SIGNS

DESCRIPTION	DAYS	DELINEATORS TEMPORARY EACH	TRAFFIC CONTROL DRUMS EACH	TRAFFIC CONTROL DRUMS DAYS	TRAFFIC CONTROL BARRICADES EACH	TRAFFIC CONTROL BARRICADES DAYS	WARNING LIGHTS TYPE A EACH	WARNING LIGHTS TYPE A DAYS	WARNING LIGHTS TYPE C EACH	WARNING LIGHTS TYPE C DAYS	TRAFFIC CONTROL SIGNS EACH	TRAFFIC CONTROL SIGNS DAYS
PROJECT 5018-00-71	99	32	24	2376	10	990	4	396	10	990	28	2772
TOTALS		32		2376		990		396		990		2772

650.4500 CONSTRUCTION STAKING SUBGRADE
650.5000 CONSTRUCTION STAKING BASE
650.9920 CONSTRUCTION STAKING SLOPE STAKES
650.9910 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL 5018-00-71

STATION	-	STATION	SUBGRADE LF	BASE LF	SLOPE STAKES LF	SUPPLEMENTAL CONTROL LS
9+00	-	9+77.62	78	78	78	-
10+28.38	-	11+40	112	112	112	-
18+33.19	-	20+12	179	179	179	-
20+58	-	22+38.48	181	181	181	-
TOTALS:			550	550	550	1

690.0150 SAWING ASPHALT

STATION	LF
9+00	16
11+40	24
TOTAL:	40

628.1905 MOBILIZATION EROSION CONTROL
628.1910 MOBILIZATION EMERGENCY EROSION CONTROL

MOBILIZATION EACH	EMERGENCY MOB. EACH
2	2

CONVENTIONAL SYMBOLS

SECTION LINE		SECTION CORNER SYMBOL		R/W MONUMENT (TO BE SET)	
QUARTER LINE		SECTION CORNER MONUMENT		NON-MONUMENTED R/W POINT	
SIXTEENTH LINE		GEODETIC SURVEY MONUMENT		FOUND IRON PIN (1-INCH UNLESS NOTED)	
NEW REFERENCE LINE		SIXTEENTH CORNER MONUMENT		SIGN	
NEW R/W LINE		SIGN		OFF-PREMISE SIGN	
EXISTING R/W OR HE LINE		COMPENSABLE		NON-COMPENSABLE	
PROPERTY LINE		ELECTRIC POLE		TELEPHONE POLE	
LOT, TIE & OTHER MINOR LINES		PEDESTAL (LABEL TYPE) (TV, TEL, ELEC, ETC.)			
SLOPE INTERCEPT		ACCESS RESTRICTED BY ACQUISITION		NO ACCESS (BY STATUTORY AUTHORITY)	
CORPORATE LIMITS		ACCESS RESTRICTED (BY PREVIOUS PROJECT OR CONTROL)		NO ACCESS (NEW HIGHWAY)	
UNDERGROUND FACILITY (COMMUNICATIONS, ELECTRIC, ETC.)		PARCEL NUMBER		UTILITY NUMBER	
NEW R/W (FEE OR HE) (HATCHING VARIES BY OWNER)		PARALLEL OFFSETS			
TEMPORARY LIMITED EASEMENT AREA					
EASEMENT AREA (PERMANENT LIMITED OR RESTRICTED DEVELOPMENT)					
TRANSMISSION STRUCTURES					
BUILDING					
TO BE REMOVED					
BRIDGE					

CONVENTIONAL ABBREVIATIONS

ACCESS RIGHTS	AR	POINT OF INTERSECTION	PI
ACRES	AC	PROPERTY LINE	PL
AHEAD	AH	RECORDED AS	(100')
ALUMINUM	ALUM	REEL / IMAGE	R/I
AND OTHERS	ET AL	REFERENCE LINE	R/L
BACK	BK	REMAINING	REM
BLOCK	BLK	RESTRICTIVE DEVELOPMENT	RDE
CENTERLINE	C/L	EASEMENT	
CERTIFIED SURVEY MAP	CSM	RIGHT	RT
CONCRETE	CONC	RIGHT OF WAY	R/W
COUNTY	CO	SECTION	SEC
COUNTY TRUNK HIGHWAY	CTH	SEPTIC VENT	SEP
DISTANCE	DIST	SQUARE FEET	SF
CORNER	COR	STATE TRUNK HIGHWAY	STH
DOCUMENT NUMBER	DOC	STATION	STA
EASEMENT	EASE	TELEPHONE PEDESTAL	TP
EXISTING	EX	TEMPORARY LIMITED	TLE
GAS VALVE	GV	EASEMENT	
GRID NORTH	GN	TRANSPORTATION PROJECT	TPP
HIGHWAY EASEMENT	HE	PLAT	
IDENTIFICATION	ID	UNITED STATES HIGHWAY	USH
LAND CONTRACT	LC	VOLUME	V
LEFT	LT		
MONUMENT	MON		
NATIONAL GEODETIC SURVEY	NGS		
NUMBER	NO		
OUTLOT	OL		
PAGE	P		
POINT OF TANGENCY	PT		
PERMANENT LIMITED	PLE		
EASEMENT			
POINT OF BEGINNING	POB		
POINT OF CURVATURE	PC		
POINT OF COMPOUND CURVE	PCC		

CURVE DATA

LONG CHORD	LCH
LONG CHORD BEARING	LCB
RADIUS	R
DEGREE OF CURVE	D
CENTRAL ANGLE	Δ/DELTA
LENGTH OF CURVE	L
TANGENT	T
DIRECTION AHEAD	DA
DIRECTION BACK	DB

NOTES:

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

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

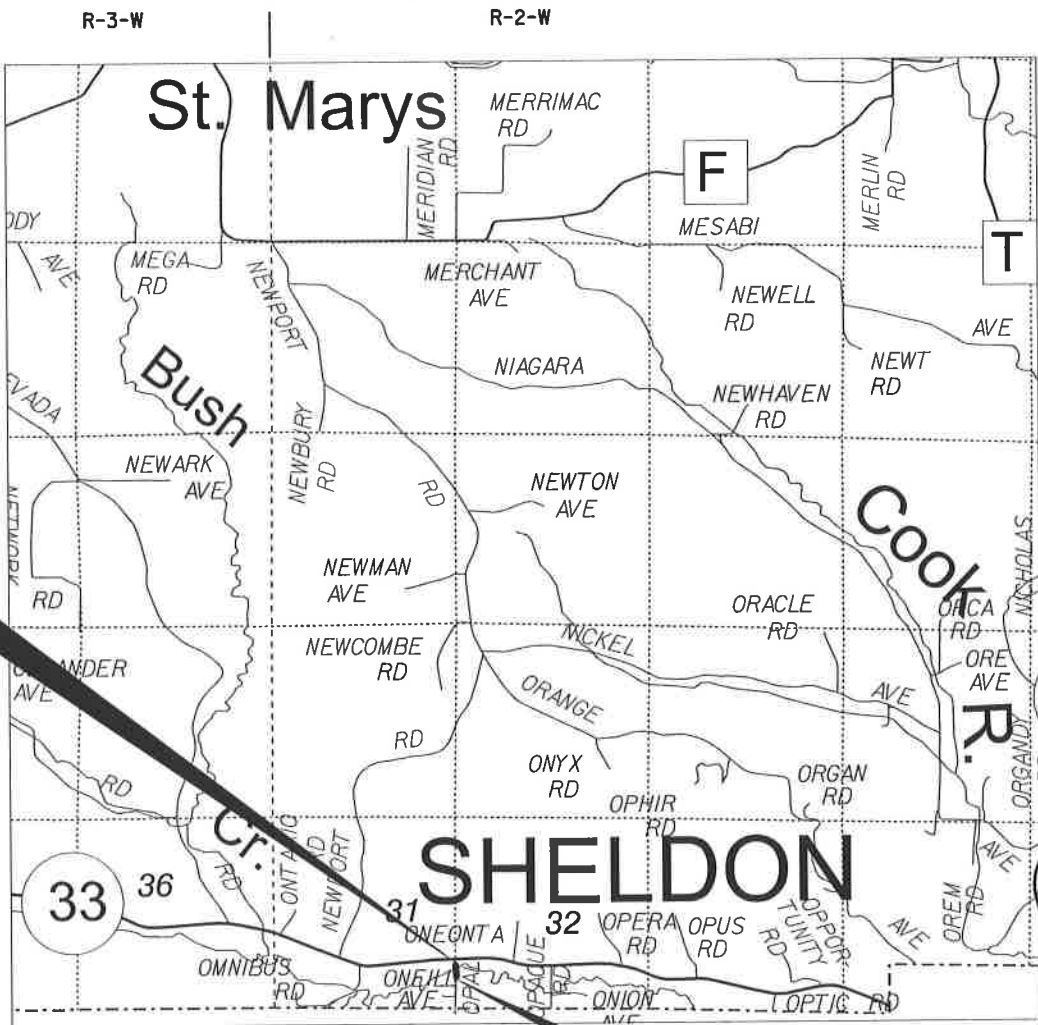
RIGHT OF WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY OR OTHER SURVEYS OF PUBLIC RECORD.

CONVENTIONAL UTILITY SYMBOLS

WATER	
GAS	
TELEPHONE	
OVERHEAD	
TRANSMISSION LINES	
ELECTRIC	
CABLE TELEVISION	
FIBER OPTIC	
SANITARY SEWER	
STORM SEWER	



CAUTION
THIS PLAT IS FOR ILLUSTRATIVE PURPOSES ONLY. DEEDS MUST BE CHECKED TO DETERMINE PROPERTY BOUNDARIES.



END RELOCATION
ORDER STA. 11+65.53

Y = 301,455.01
X = 668,263.63
1,384.67 FEET SOUTH OF AND 27.16 FEET WEST OF THE EAST QUARTER CORNER OF SECTION 31, T-15-N, R-2-W, TOWN OF SHELDON, MONROE COUNTY, WI

BEGIN RELOCATION
ORDER STA. 8+80.00

Y = 301,169.73
X = 668,275.35
956.87 FEET NORTH OF AND 18.09 FEET EAST OF THE SOUTHEAST CORNER OF SECTION 31, T-15-N, R-2-W, TOWN OF SHELDON, MONROE COUNTY, WI

LAYOUT
SCALE 0 1 MILE
TOTAL NET LENGTH OF CENTERLINE = 0.054

R/W PROJECT NUMBER 5018-00-01	SHEET NUMBER 4.01	TOTAL SHEETS 2
CONSTRUCTION PROJECT NUMBER 5018-00-71		
PLAT OF RIGHT OF WAY REQUIRED FOR TOWN OF SHELDON, OPAL ROAD (BRUSH CREEK BRIDGE B-41-0313) TOWN ROAD MONROE COUNTY		

ORIGINAL PLAT PREPARED BY

MSA

PROFESSIONAL SERVICES

TRANSPORTATION • MUNICIPAL
DEVELOPMENT • ENVIRONMENTAL
1230 South Boulevard Baraboo, WI 53913
608-356-2771 1-800-362-4505 Fax: 608-356-2770
Web Address: www.msa-ps.com
© MSA Professional Services, Inc.



12-16-2016
(Date)

Gregory P. Rhinehart
(Professional Land Surveyor)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED FOR TOWN OF SHELDON

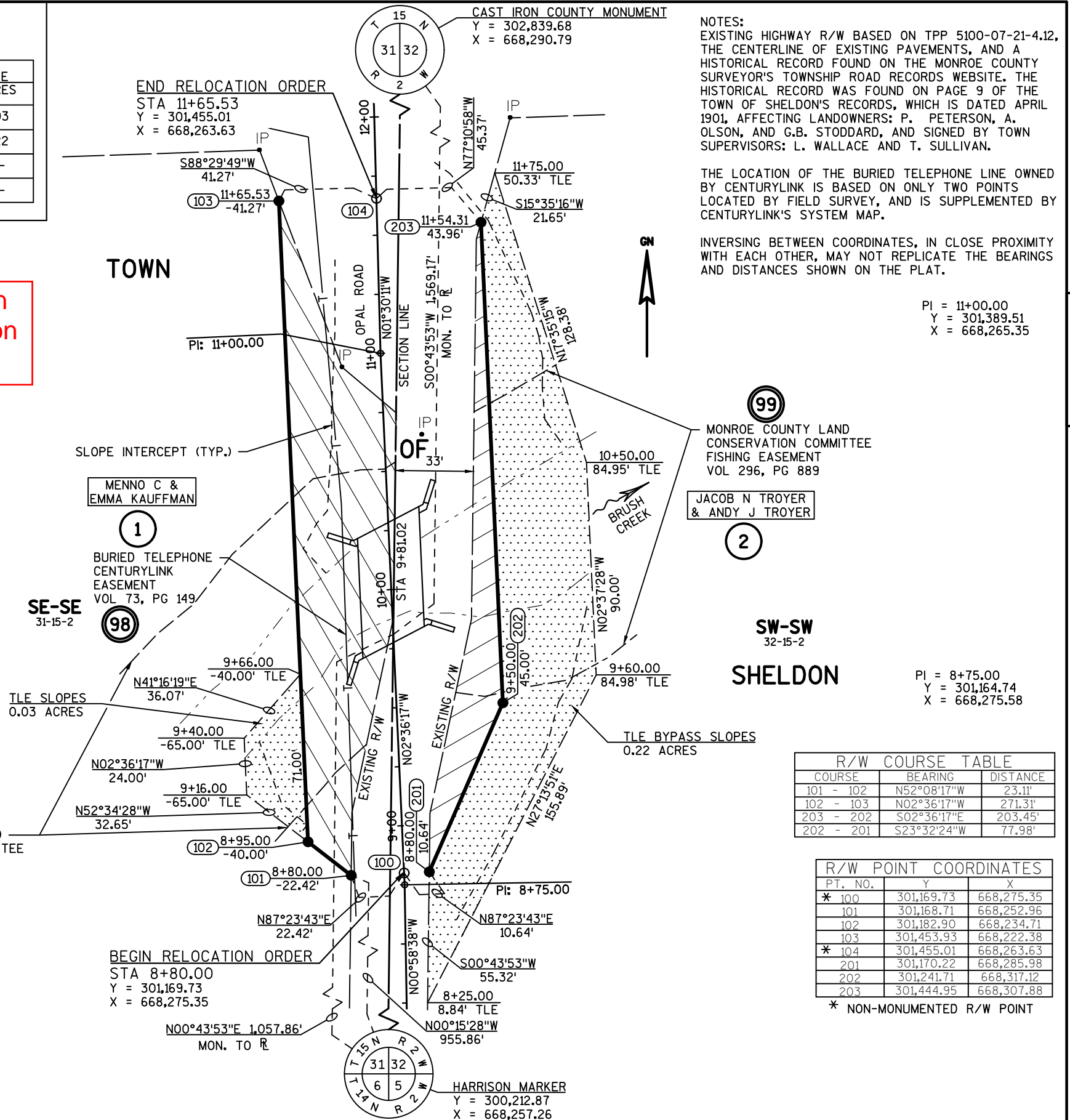
DATE: 12-21-16 *Terry Borden*
(Signature)

SCHEDULE OF LANDS & INTERESTS REQUIRED

OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE TOWN.

PARCEL NUMBER	OWNER(S)	INTEREST REQUIRED	R/W ACRES REQUIRED			TLE ACRES
			NEW	EXISTING	TOTAL	
1	MENNO C & EMMA KAUFFMAN	FEE & TLE	0.18	0.03	0.21	0.03
2	JACOB N TROYER & ANDY J TROYER	FEE & TLE	0.06	0.14	0.20	0.22
98	CENTURYLINK	RELEASE OF RIGHTS	---	---	---	---
99	MONROE COUNTY LAND CONSERVATOIN COMMITTEE	RELEASE OF RIGHTS	---	---	---	---

The most current Right of Way information should be viewed in DOTView using the Real Estate Project ID. The Plat information contained in this AsBuilt Plan may not be the final records.



REVISION DATE	-----	-----	-----	DATE 12-16-2016	SCALE, FEET <div>02550</div>	HWY: OPAL ROAD	STATE R/W PROJECT NUMBER 5018-00-01	PLAT SHEET 4.02	
	-----	-----	-----	GRID FACTOR N/A		COUNTY: MONROE	CONSTRUCTION PROJECT NUMBER 5018-00-71	PS&E SHEET -----	

BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
1	10+18.4, 6.0' RT	CHIS + ON NE CORNER OF BRIDGE	928.71
2	10+51.6, 30.4' RT	2 POLE NAILS IN 24" BOX ELDER	924.82
3	10+19.5, 29.4' LT	2 POLE NAILS IN 12" BOX ELDER	925.22

PI = 8+75.00
Y = 301,164.74
X = 668,275.58

BURIED TELEPHONE
(CENTURYLINK)
(TO BE DISCONTINUED)

EXISTING R/W

SECTION LINE

N00°-58'-38"W

EXISTING R/W

BEGIN CONSTRUCTION
STA 8+39.75

BEGIN PROJECT
STA 9+00
Y = 301,189.71
X = 668,274.44

- LEGEND
- ##### EROSION MAT URBAN CLASS I TYPE B
 - SILT FENCE
 - RIPRAP HEAVY
 - ▲— TURBIDITY BARRIER
 - △△△ TEMPORARY DITCH CHECK

RIPRAP EXTENDED
TO PROTECT BANK.

WATER DEPTH UP
TO 14'. ADDED
RIPRAP TO PREVENT
SCOUR UPSTREAM.

RIPRAP ADDED TO
PREVENT SCOUR
AFTER EXISTING
FLOOR SLAB
REMOVAL.

RIPRAP EXTENDED
TO PROTECT BANK.

STA 10+03, STRUCTURE B-41-0313, REQ'D
SINGLE SPAN CONCRETE SLAB BRIDGE
24.0 FT CLEAR ROADWAY WIDTH
50.8 FT OVERALL LENGTH
25 DEGREE SKEW (RHF)

STA. 10+00, STRUCTURE P-41-0217, REMOVE
SINGLE SPAN STEEL DECK GIRDER BRIDGE
WITH CONCRETE SLAB FLOOR
13.0 FT CLEAR ROADWAY WIDTH
37.7 FT OVERALL LENGTH
NO SKEW

PI = 11+00.00
Y = 301,389.51
X = 668,265.35

MENNO C. &
EMMA KAUFFMAN

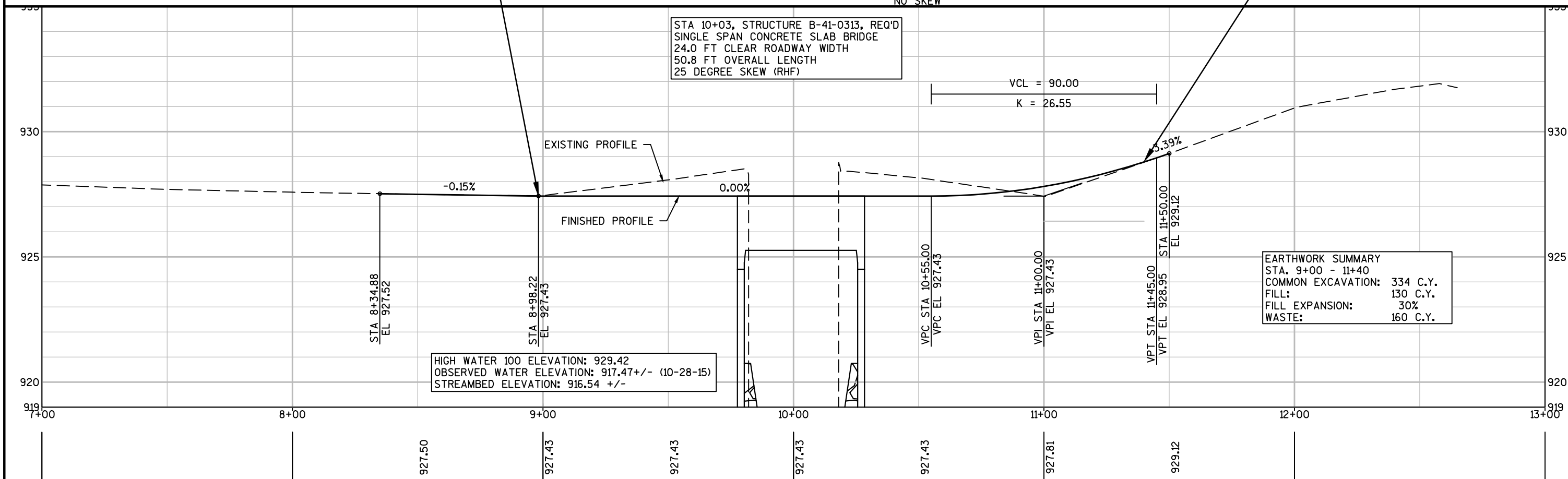
JACOB N. TROYER
& ANDY J. TROYER

END PROJECT
STA 11+40
Y = 301,429.49
X = 668,264.30

END CONSTRUCTION
STA 11+90.30

EARTHWORK SUMMARY
STA. 9+00 - 11+40
COMMON EXCAVATION: 334 C.Y.
FILL: 130 C.Y.
FILL EXPANSION: 30%
WASTE: 160 C.Y.

HIGH WATER 100 ELEVATION: 929.42
OBSERVED WATER ELEVATION: 917.47+/- (10-28-15)
STREAMBED ELEVATION: 916.54 +/-



PROJECT NO: 5018-00-71

HWY: OPAL ROAD

COUNTY: MONROE

PLAN AND PROFILE: OPAL ROAD

SHEET

E

PI STA = 18+50.00
Y = 301139.741
X = 668276.005
DELTA = 25°15'52"
D = 76°23'40"
T = 16.81'
L = 33.07'
R = 75.00'
PC STA = 18+33.19
PT STA = 18+66.26

PI STA = 19+61.57
Y = 301241.933
X = 668322.119
DELTA = 26°53'31"
D = 76°23'40"
T = 17.93'
L = 35.20'
R = 75.00'
PC STA = 19+43.64
PT STA = 19+78.84

PI STA = 21+10.91
Y = 301391.778
X = 668315.302
DELTA = 25°40'52"
D = 76°23'40"
T = 17.10'
L = 33.62'
R = 75.00'
PC STA = 20+93.81
PT STA = 21+27.43

PI STA = 22+21.27
Y = 301489.471
X = 668262.730
DELTA = 26°46'59"
D = 76°23'40"
T = 17.86'
L = 35.06'
R = 75.00'
PC STA = 22+03.42
PT STA = 22+38.48

LEGEND

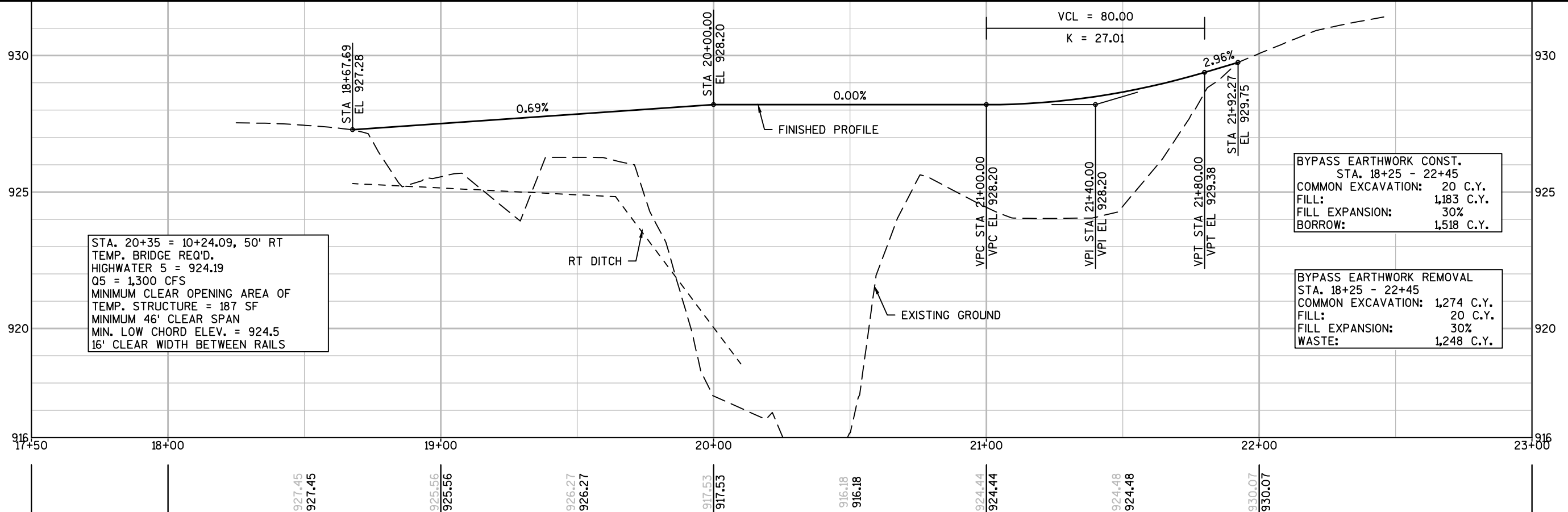
- ##### EROSION MAT URBAN CLASS I TYPE B
- SILT FENCE
- RIPRAP HEAVY
- ▲— TURBIDITY BARRIER
- △△△ TEMPORARY DITCH CHECK

TEMPORARY BYPASS
GRADE TEMPORARY DITCH TO
DRAIN TOWARD BRUSH CREEK,
0.5% MIN. GRADE

BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
1	10+18.4, 6.0' RT	CHIS + ON NE CORNER OF BRIDGE	928.71
2	10+51.6, 30.4' RT	2 POLE NAILS IN 24" BOX ELDER	924.82
3	10+19.5, 29.4' LT	2 POLE NAILS IN 12" BOX ELDER	925.22

NO LONGER
EXISTS.



PROJECT NO: 5018-00-71

HWY: OPAL ROAD

COUNTY: MONROE

PLAN AND PROFILE: TEMPORARY BYPASS

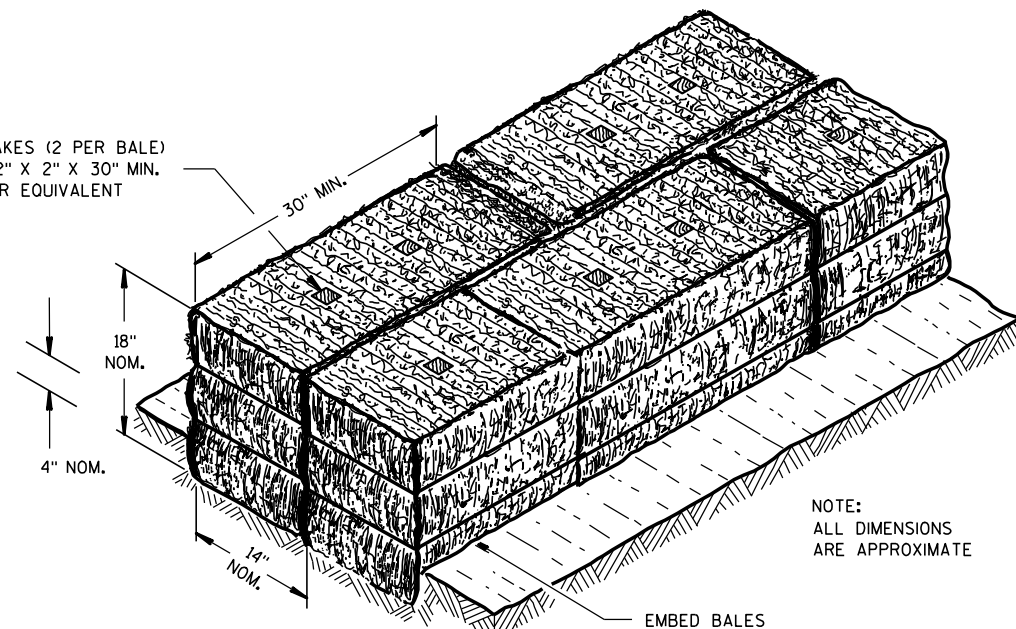
SHEET

5

Standard Detail Drawing List

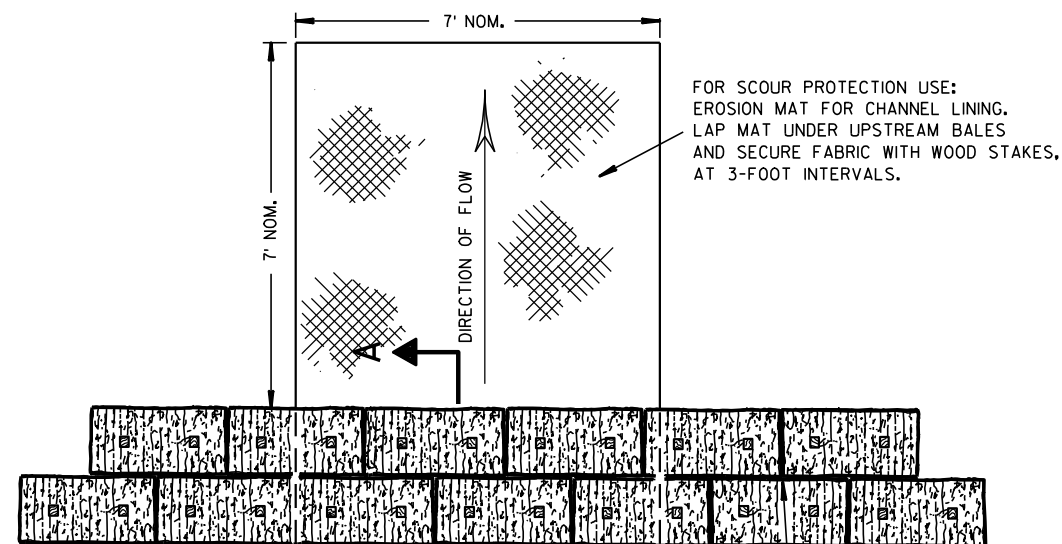
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
15A01-13A	MARKER POST FOR RIGHT-OF-WAY
15A02-09	DELINEATOR POST, DELINEATOR REFLECTOR AND DELINEATOR BRACKET WITH REFLECTIVE SHEETING
15C06-08	SIGNING & MARKING FOR TWO LANE BRIDGES
15D31-03	TRAFFIC CONTROL, TEMPORARY BYPASS ROADWAY

WOOD STAKES (2 PER BALE)
NOMINAL 2" X 2" X 30" MIN.
LENGTH OR EQUIVALENT



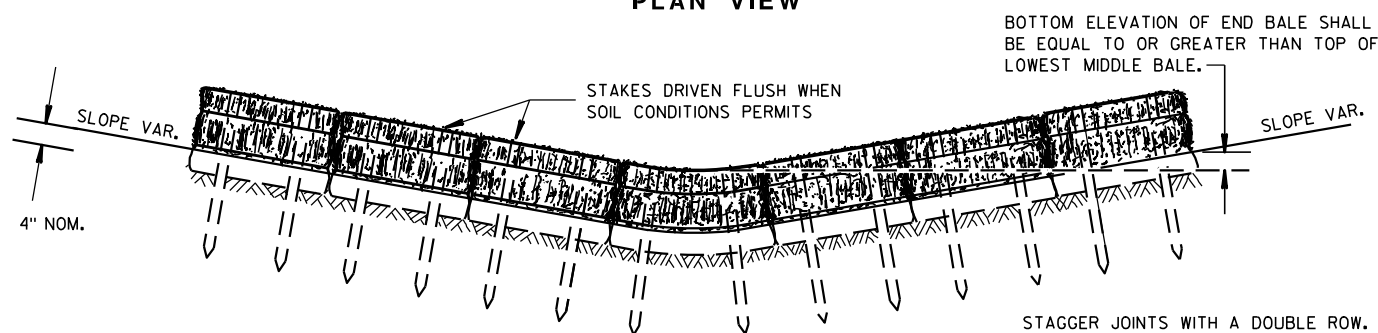
NOTE:
ALL DIMENSIONS
ARE APPROXIMATE

SECTION A-A



FOR SCOUR PROTECTION USE:
EROSION MAT FOR CHANNEL LINING.
LAP MAT UNDER UPSTREAM BALES
AND SECURE FABRIC WITH WOOD STAKES,
AT 3-FOOT INTERVALS.

PLAN VIEW



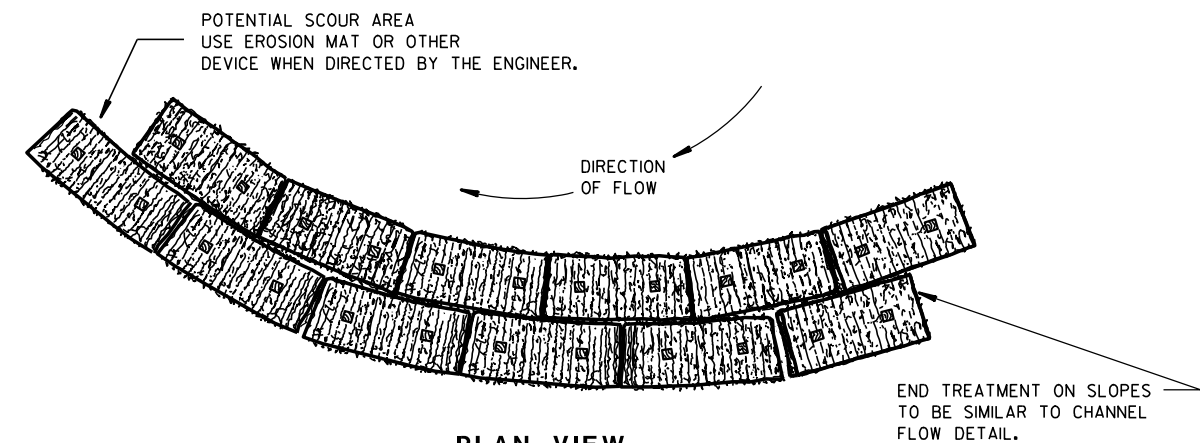
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

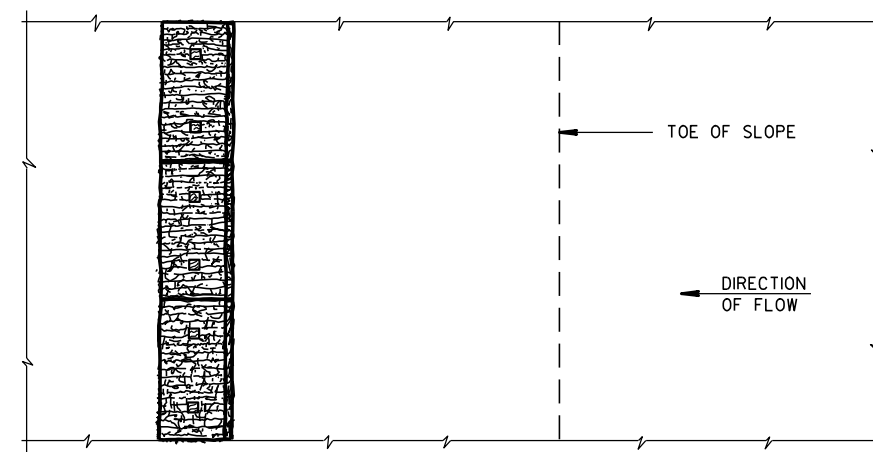
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

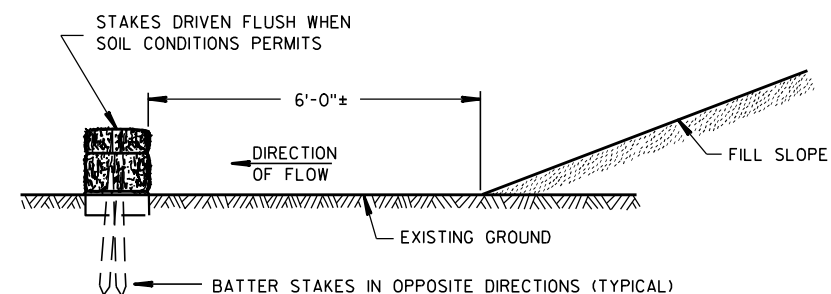


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

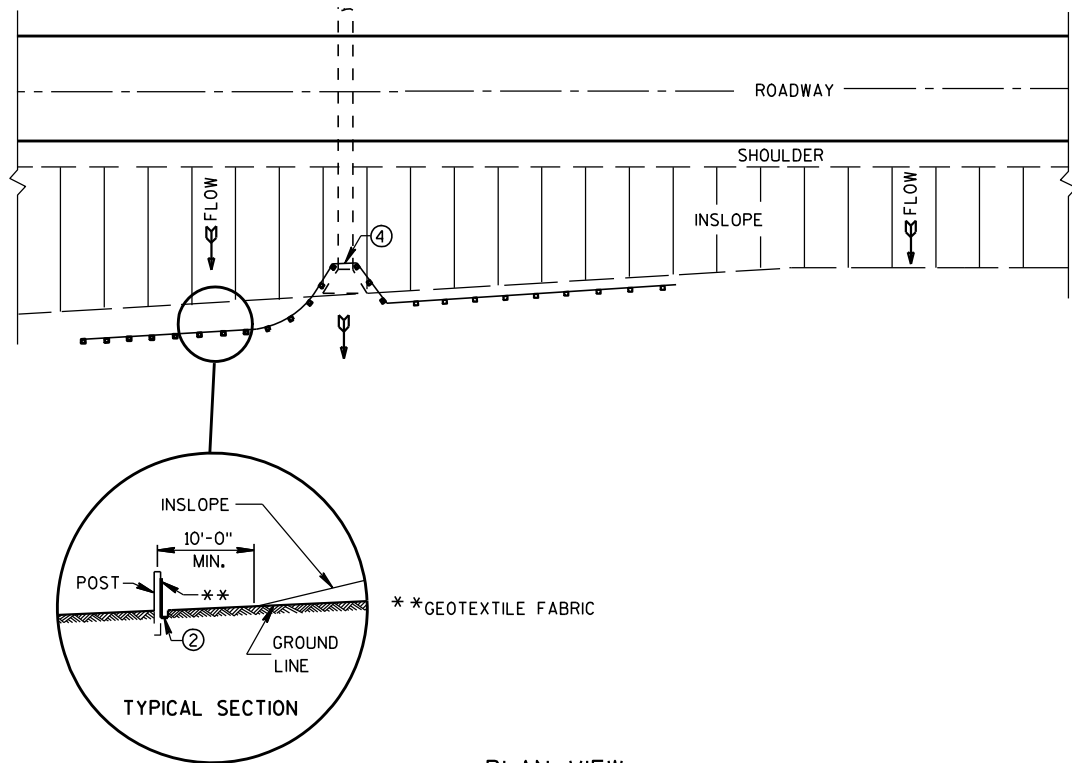
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

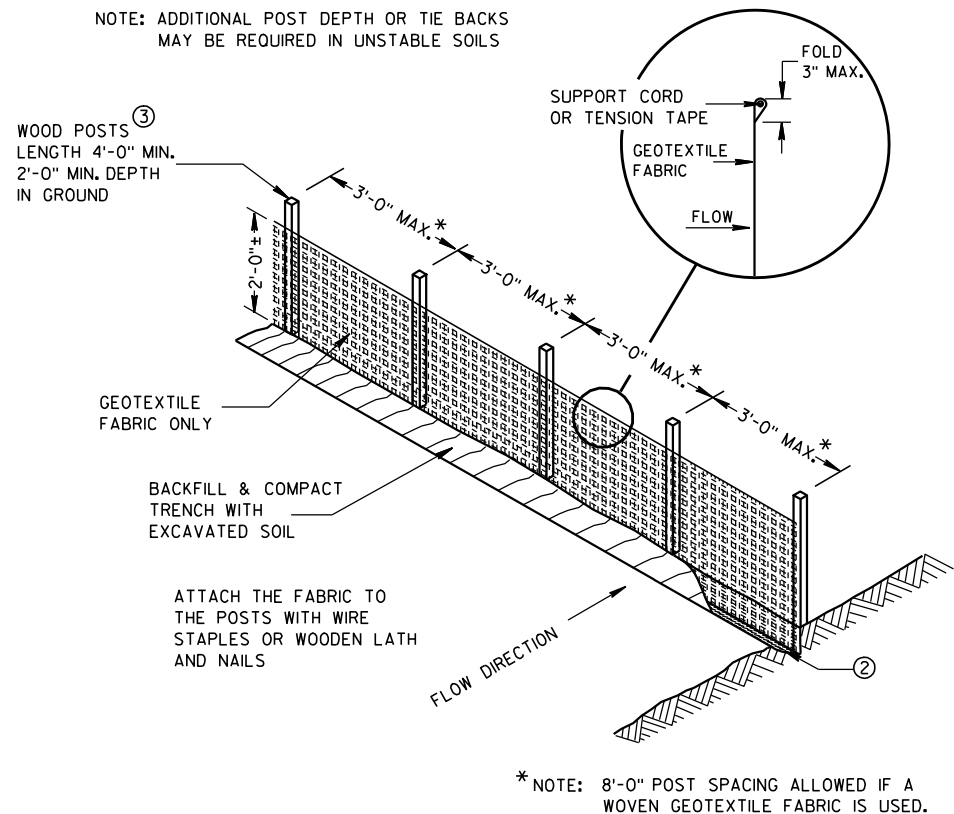
6/04/02
DATE

FHWA

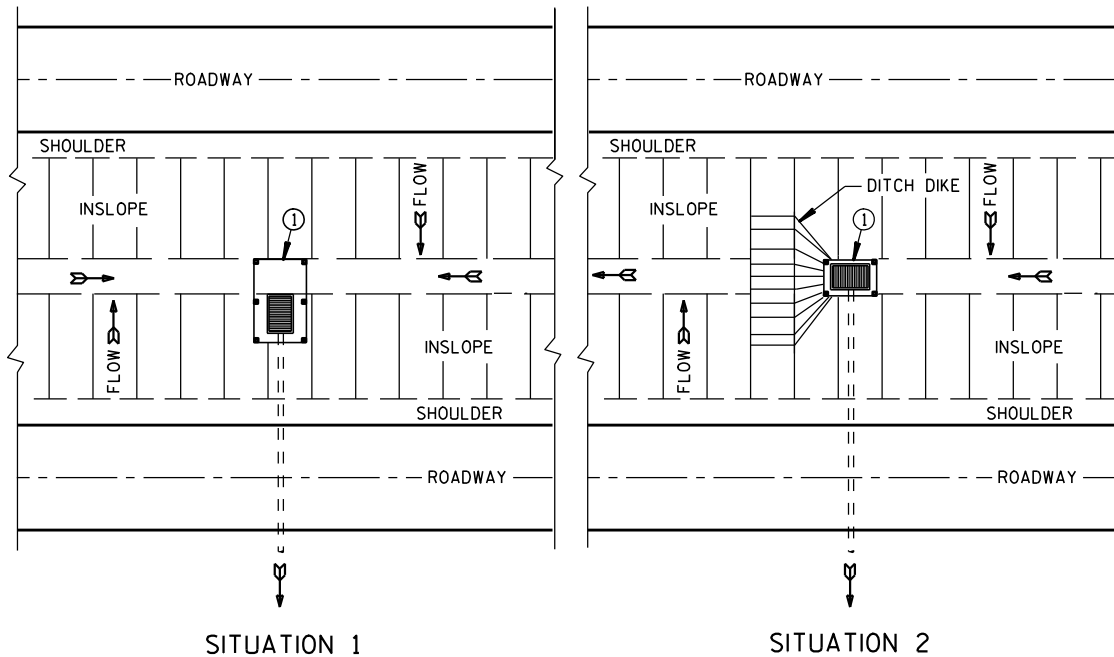
/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



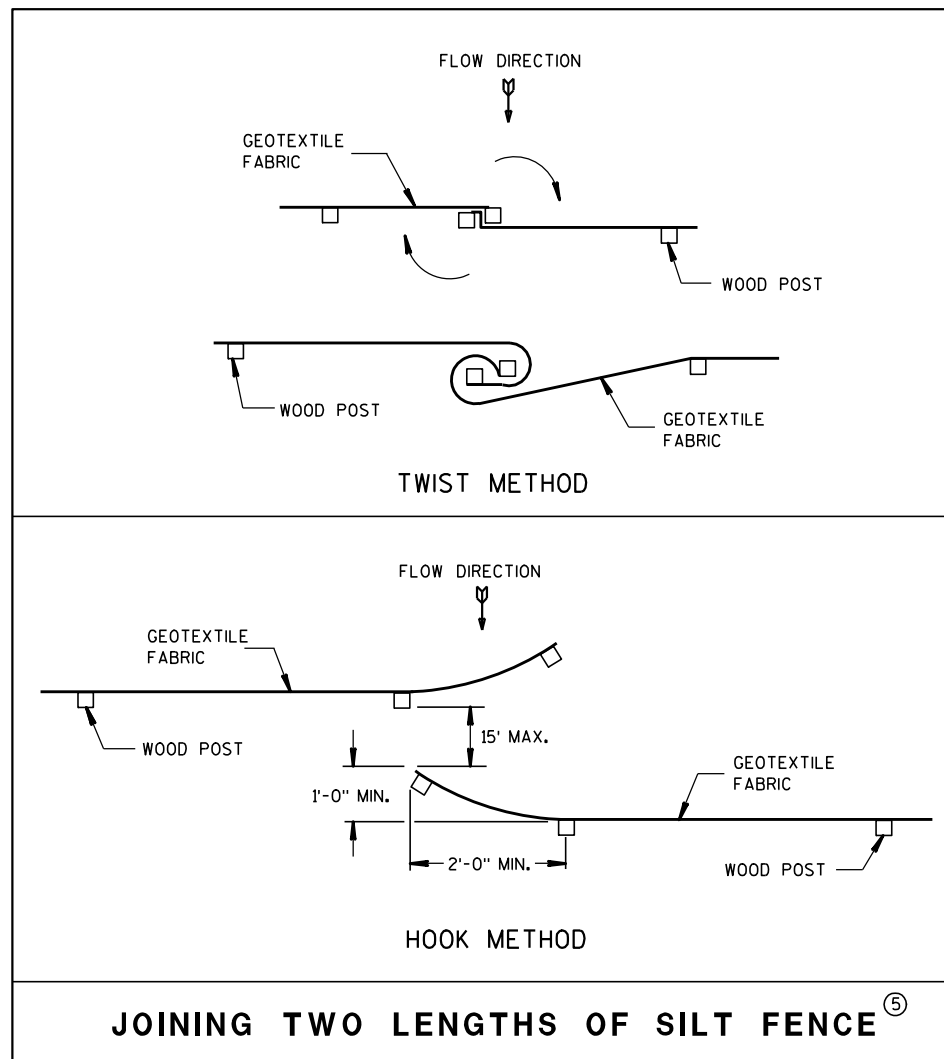
PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE



SILT FENCE



PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

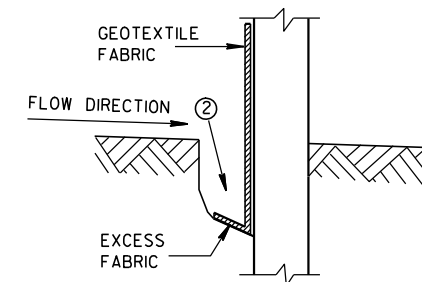


JOINING TWO LENGTHS OF SILT FENCE

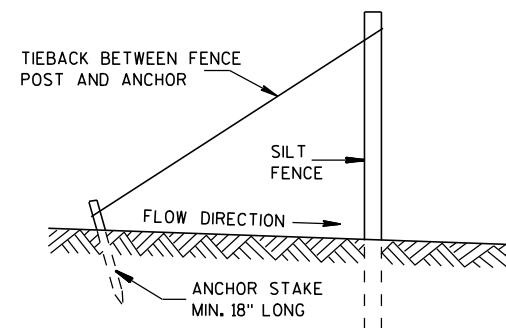
GENERAL NOTES

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

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

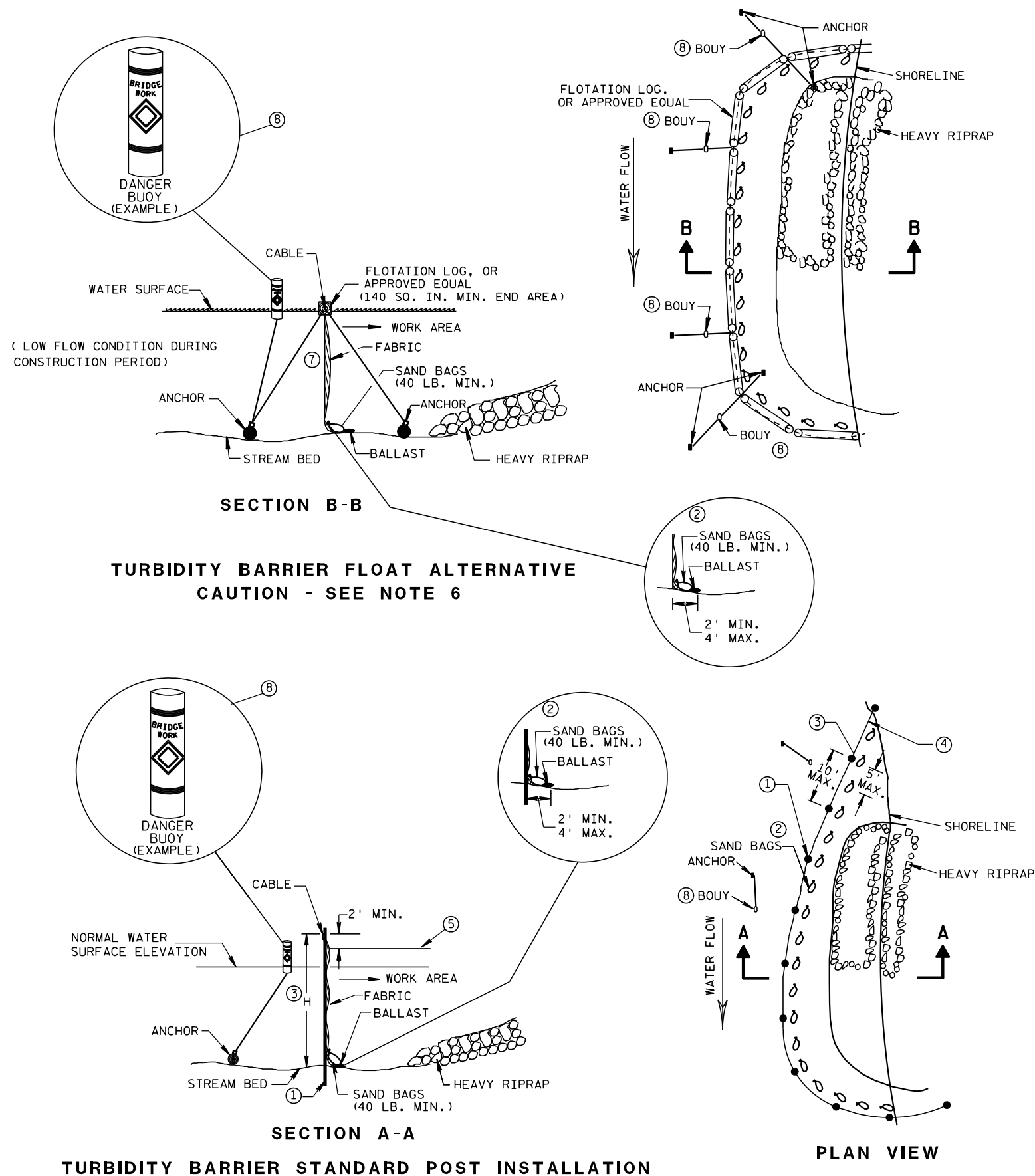


TRENCH DETAIL



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 DATE	/S/ Beth Canestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	

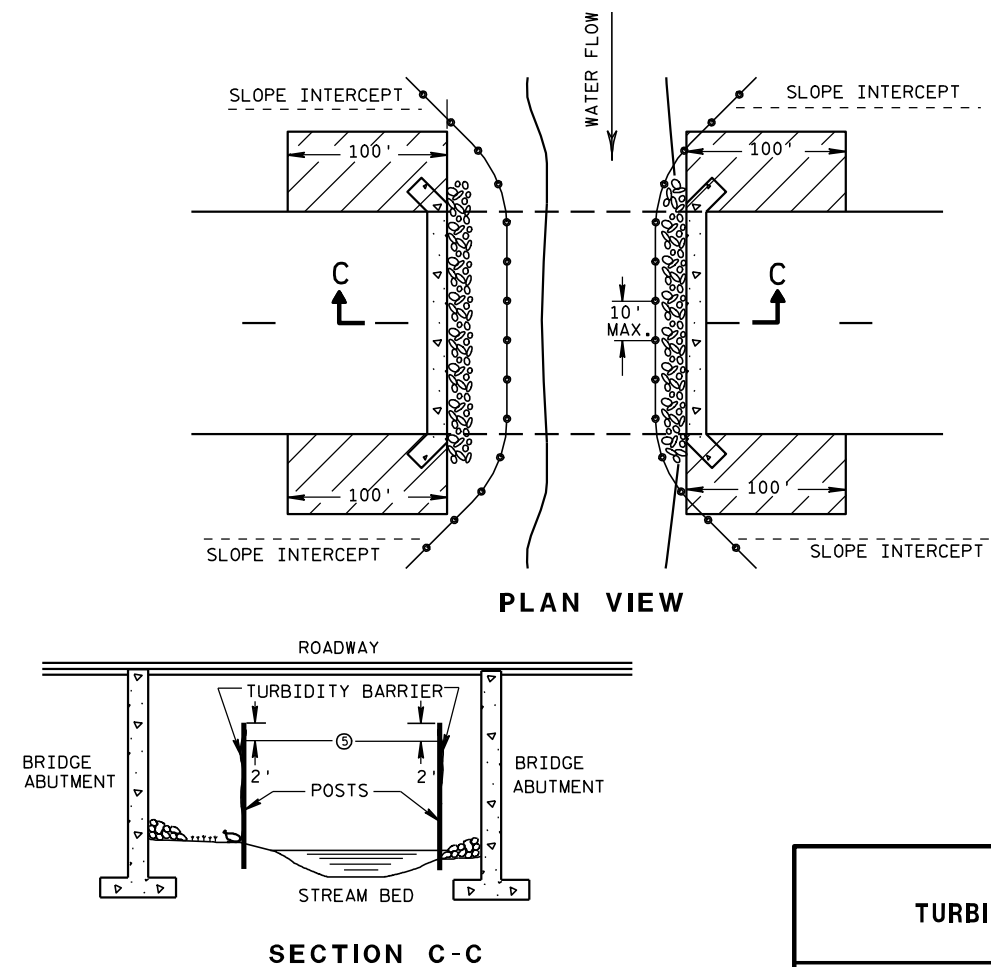


GENERAL NOTES

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

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

- ① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.
- ② SANDBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.
- ③ WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.
- ④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.
- ⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MINIMUM BARRIER HEIGHT SHALL BE 2' GREATER THAN EITHER THE 02 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WHICHEVER IS GREATER.
- ⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.
- ⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.
- ⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

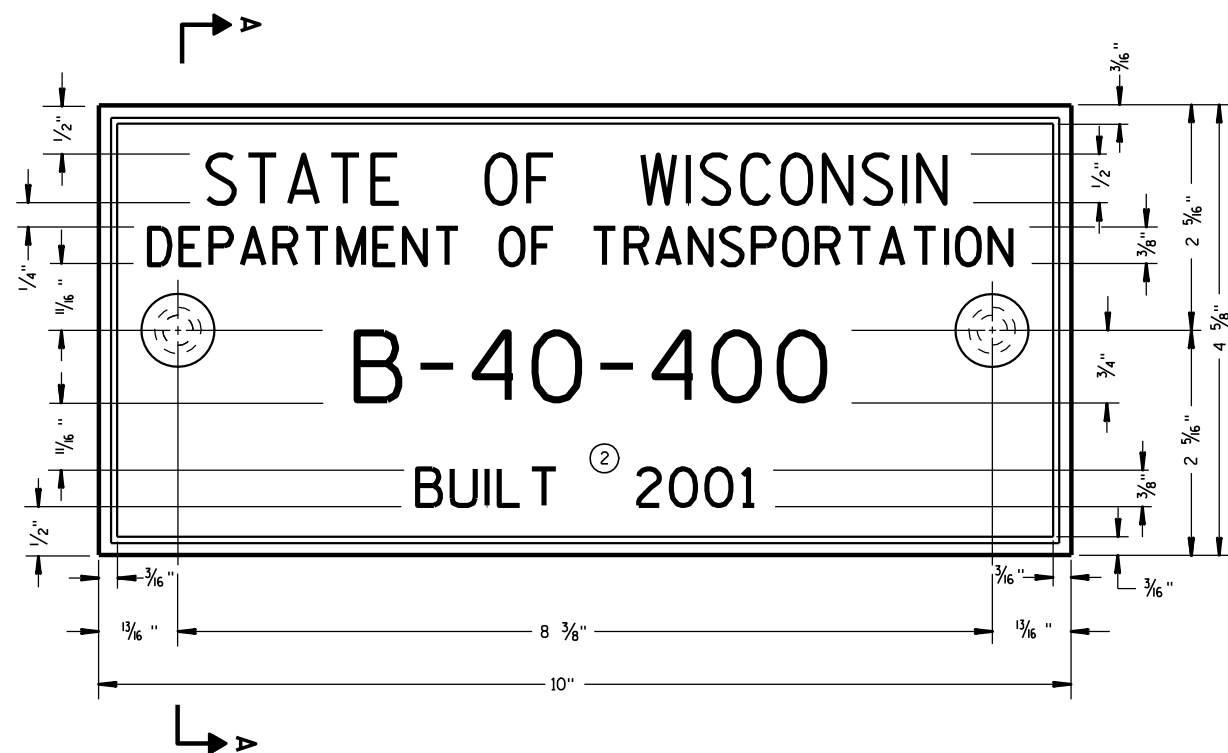
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

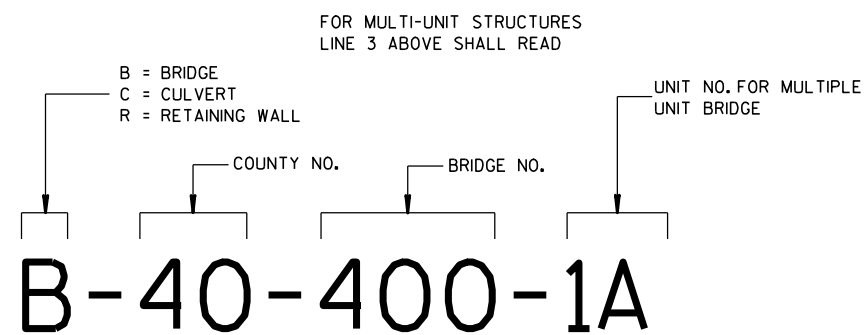
6/04/02
DATE

FWHA

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



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



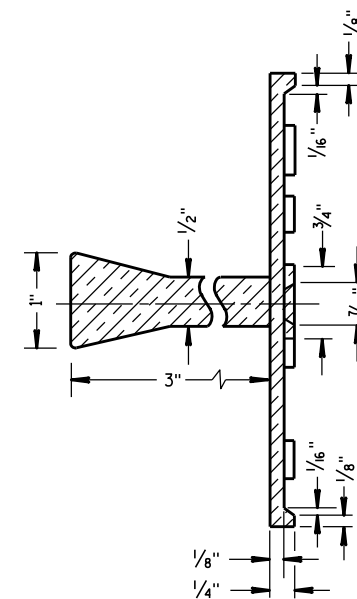
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

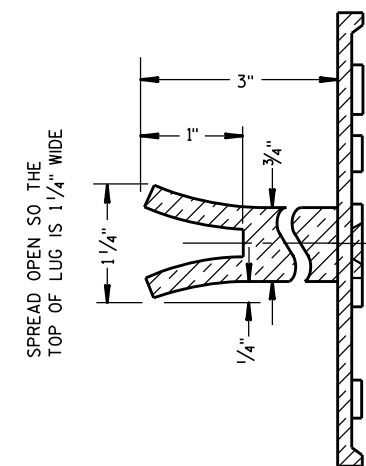
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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.

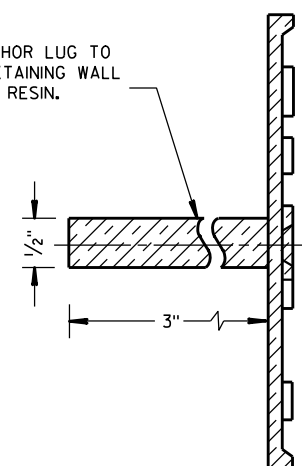


SECTION A-A



ALTERNATE LUG

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



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE
(STRUCTURES)**

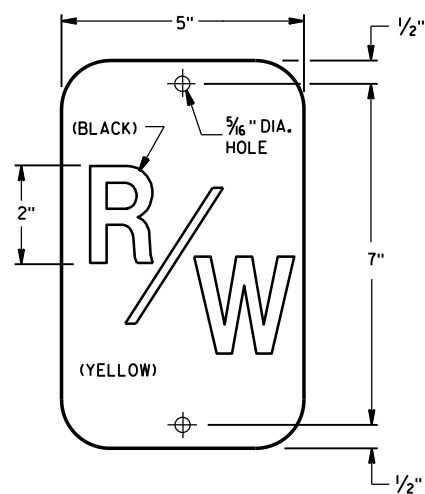
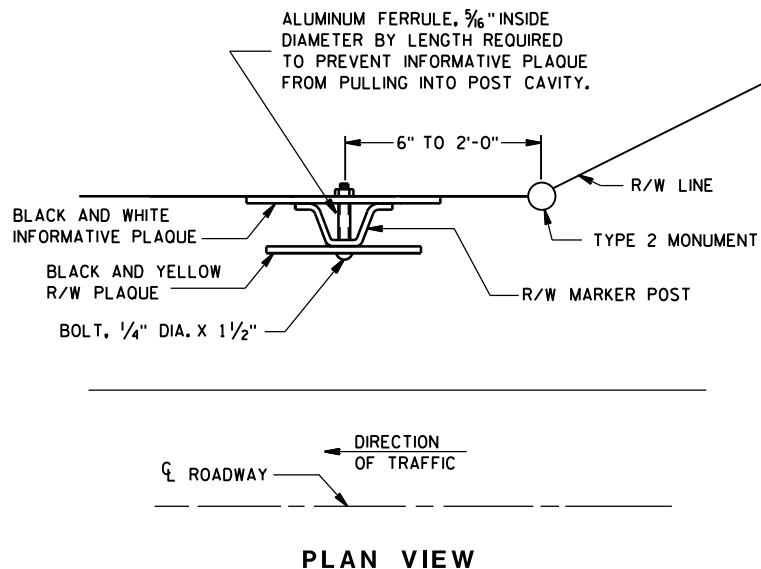
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

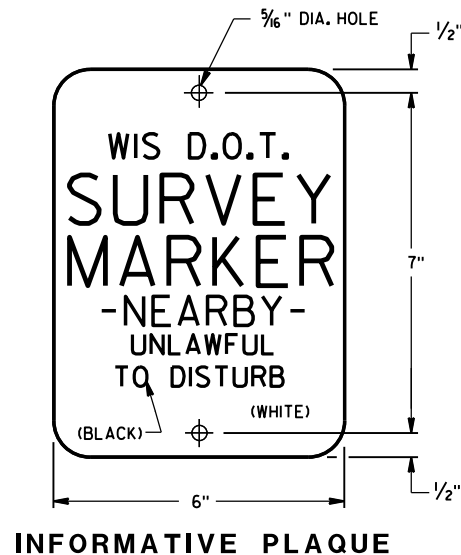
3/26/10
DATE

FHWA

/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER



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



GENERAL NOTES

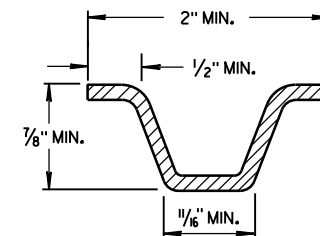
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

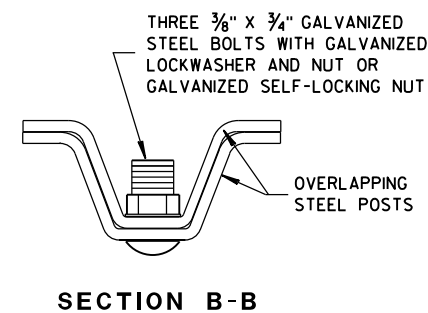
THE "R/W" PLAQUE SHALL FACE THE ROADWAY AND THE INFORMATIVE PLAQUE SHALL FACE AWAY FROM THE ROADWAY. R/W AND INFORMATIVE PLAQUES WILL BE FURNISHED BY THE DEPARTMENT OF TRANSPORTATION.

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

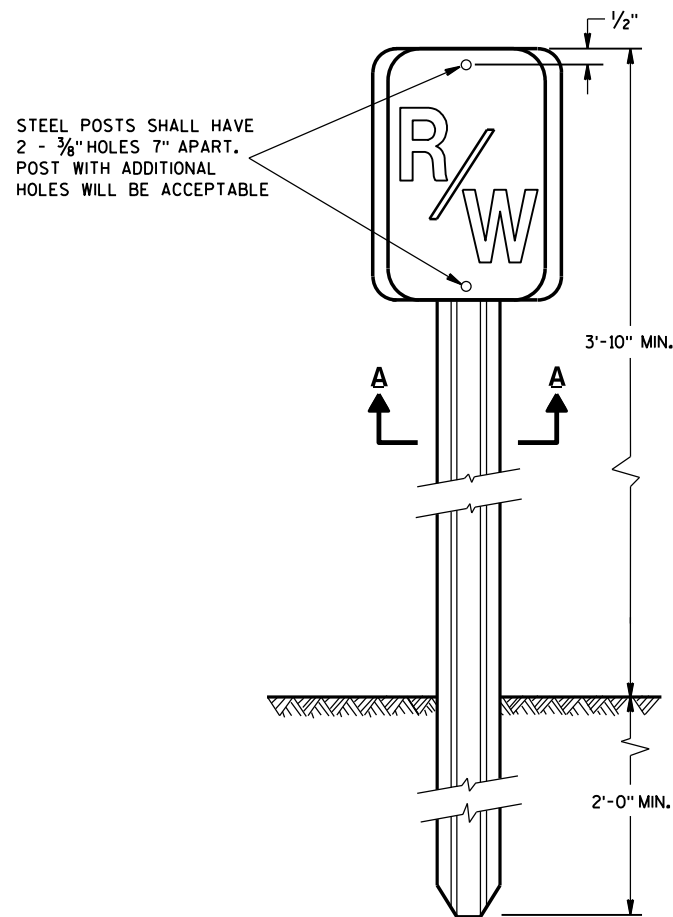
- ① IN AREAS OF SOLID ROCK, DRILL A BORE HOLE 2" GREATER THAN THE WIDEST DIMENSION OF THE POST CROSS SECTION INTO THE ROCK TO A MINIMUM DEPTH OF 12 INCHES. CUT OR SPLICE THE POST SO THAT A MINIMUM LENGTH OF 3' 10" PROTRUDES ABOVE THE GROUND. BLOW OUT THE BORE HOLE IN THE ROCK USING COMPRESSED AIR. FILL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



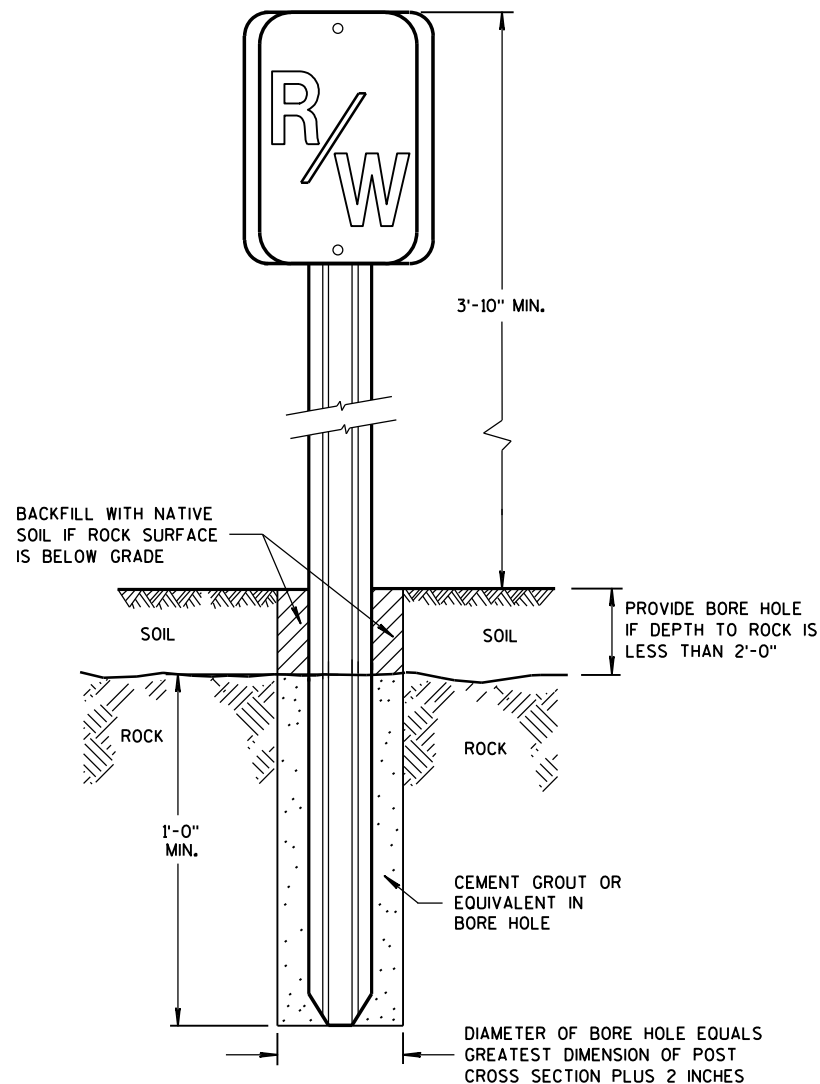
MIN. WEIGHT 1.12 LB./FT.
SECTION A-A



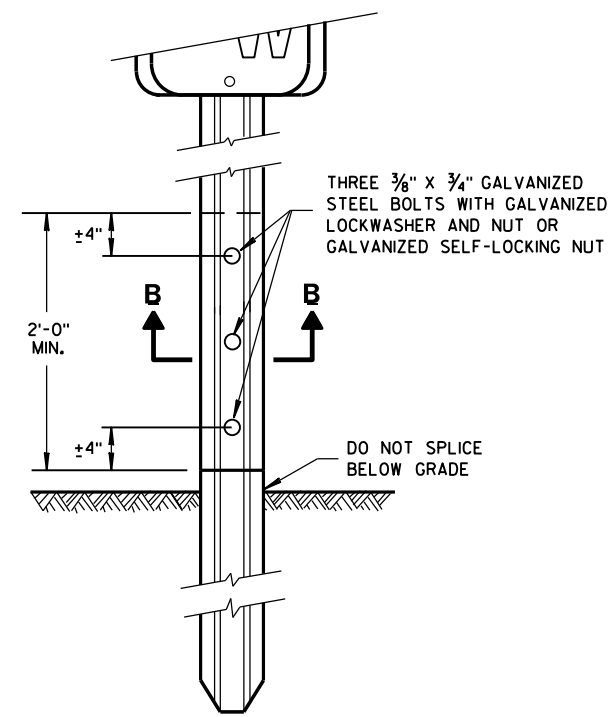
SECTION B-B



**FRONT VIEW
STEEL MARKER POST**



**FRONT VIEW
ROCK INSTALLATION** ①



**FRONT VIEW
SPLICE DETAIL**

**MARKER POST
FOR RIGHT-OF-WAY**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

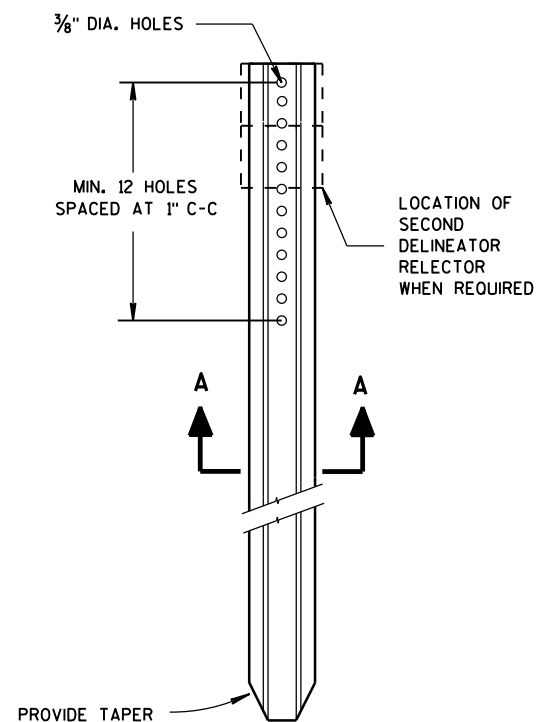
APPROVED

2/18/2016

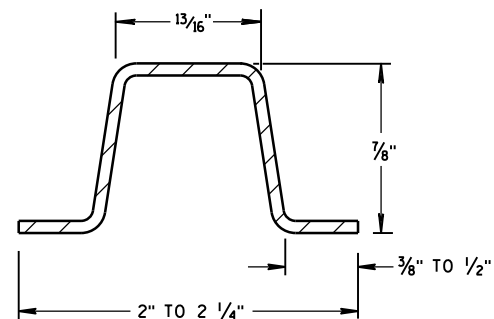
DATE

FHWA

/S/ Ray Kumapayi
CHIEF SURVEYING AND MAPPING ENGINEER

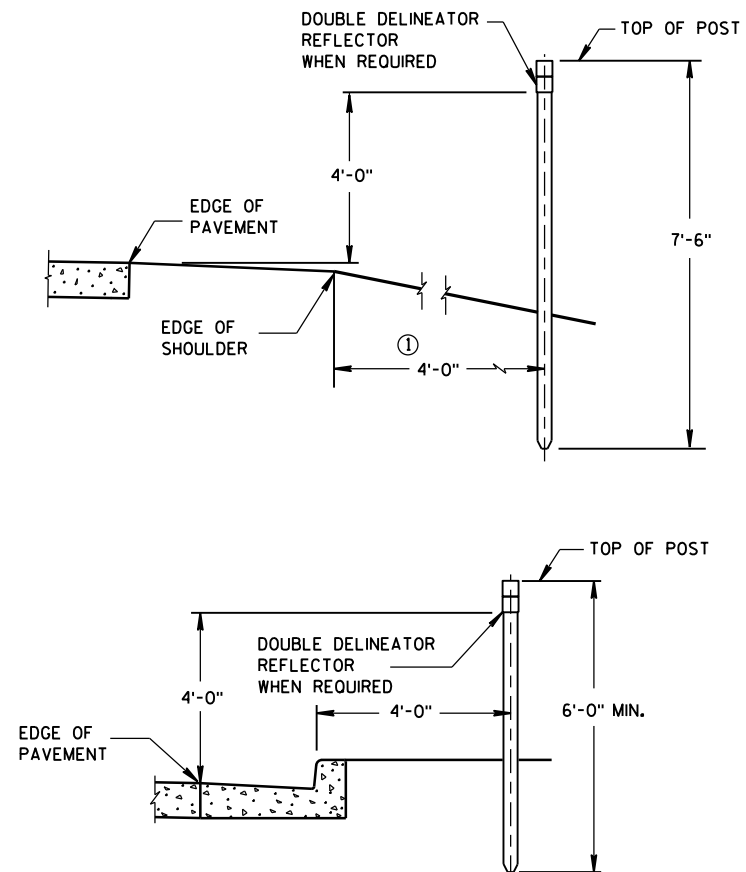


DELINEATOR POST

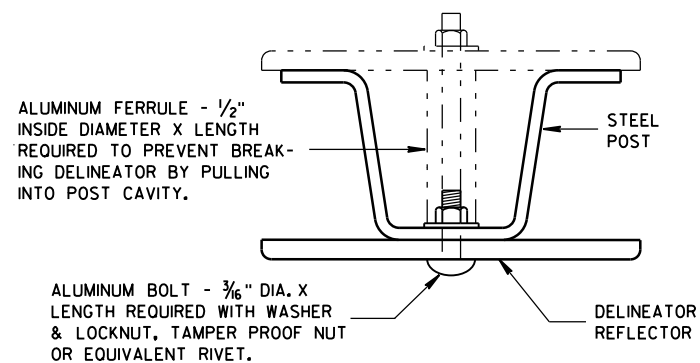
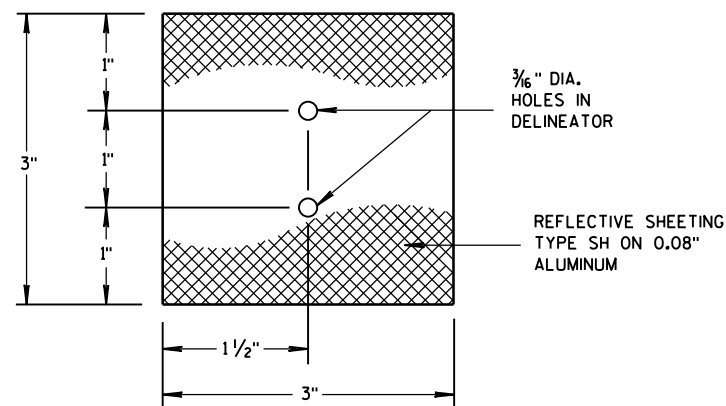


SECTION A-A

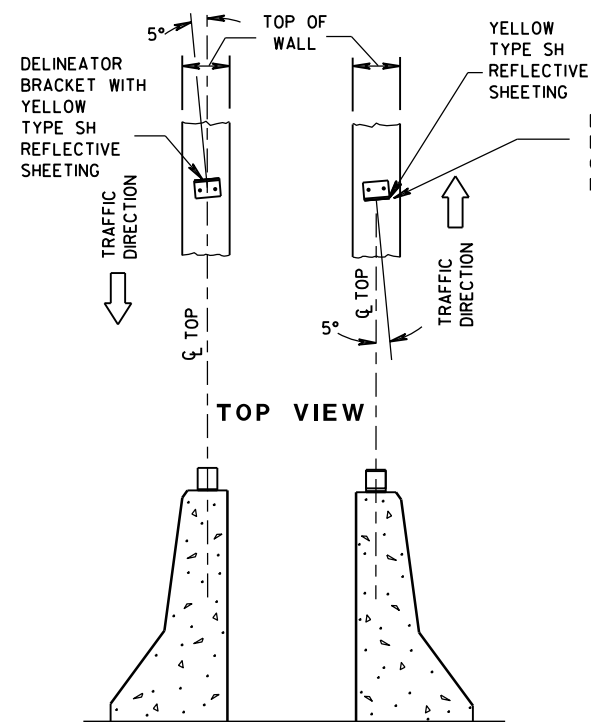
WEIGHT 1.12 LBS PER FT. ± 0.1 LB.



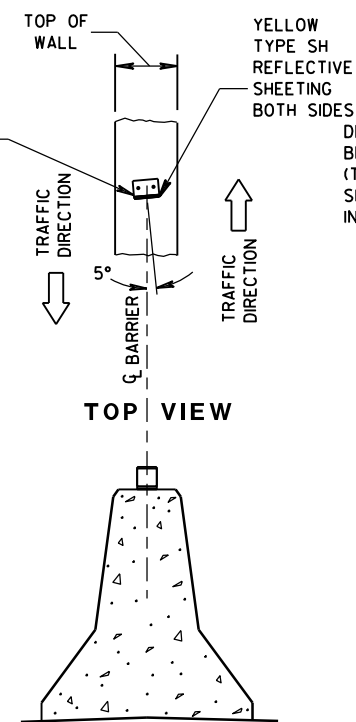
TYPICAL INSTALLATIONS OF DELINEATOR POSTS

MOUNTING DETAIL
FOR DELINEATOR REFLECTOR

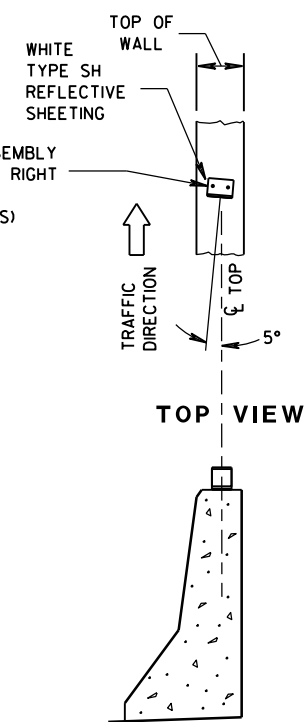
3" x 3" DELINEATOR REFLECTOR



DOUBLE BARRIERS IN MEDIAN



MEDIAN BARRIER

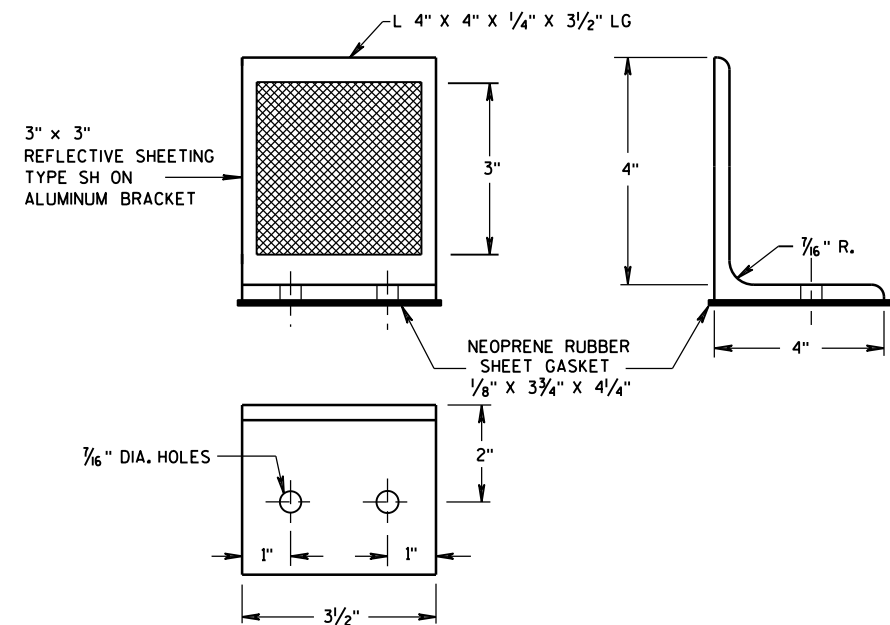
BARRIER LOCATED
TO RT. OF TRAFFIC FLOW

LOCATION AND AIMING DETAILS FOR DELINEATOR BRACKETS MOUNTED ON CONCRETE BARRIERS

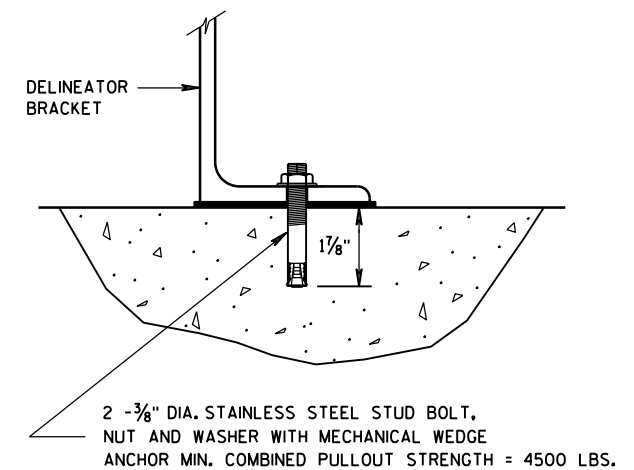
GENERAL NOTES

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

- ① DELINEATORS SHALL BE PLACED AT A CONSTANT DISTANCE FROM THE EDGE OF THE SHOULDER FOR THE LENGTH OF THE INSTALLATION.



DELINEATOR BRACKET

DELINEATOR BRACKET
MOUNTING DETAIL

DELINEATOR POST,
DELINEATOR REFLECTOR AND
DELINEATOR BRACKET
WITH REFLECTIVE SHEETING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

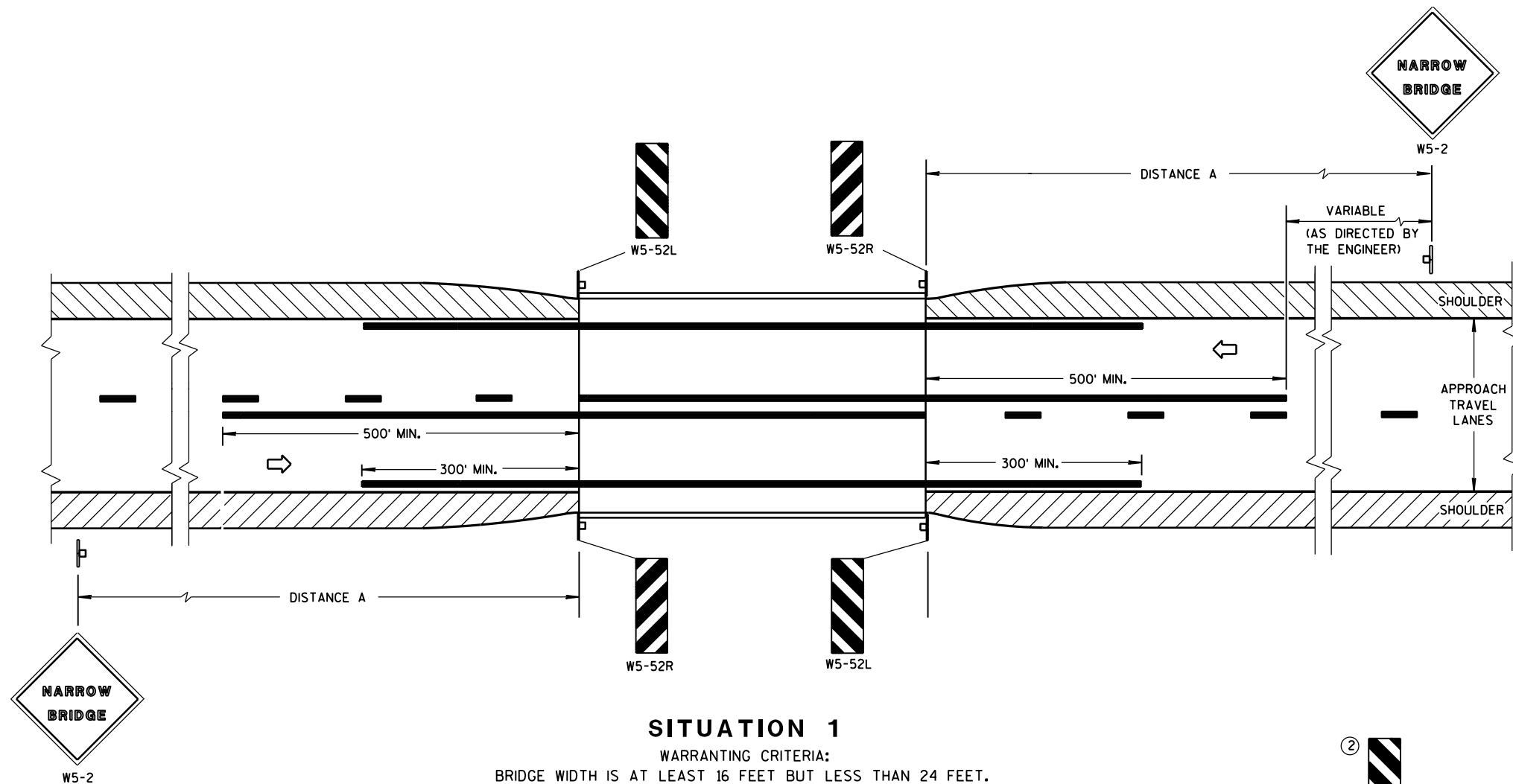
APPROVED

4-18-16

DATE

FHWA

/S/ Matthew R. Rauch
STATE SIGNING AND MARKING ENGINEER



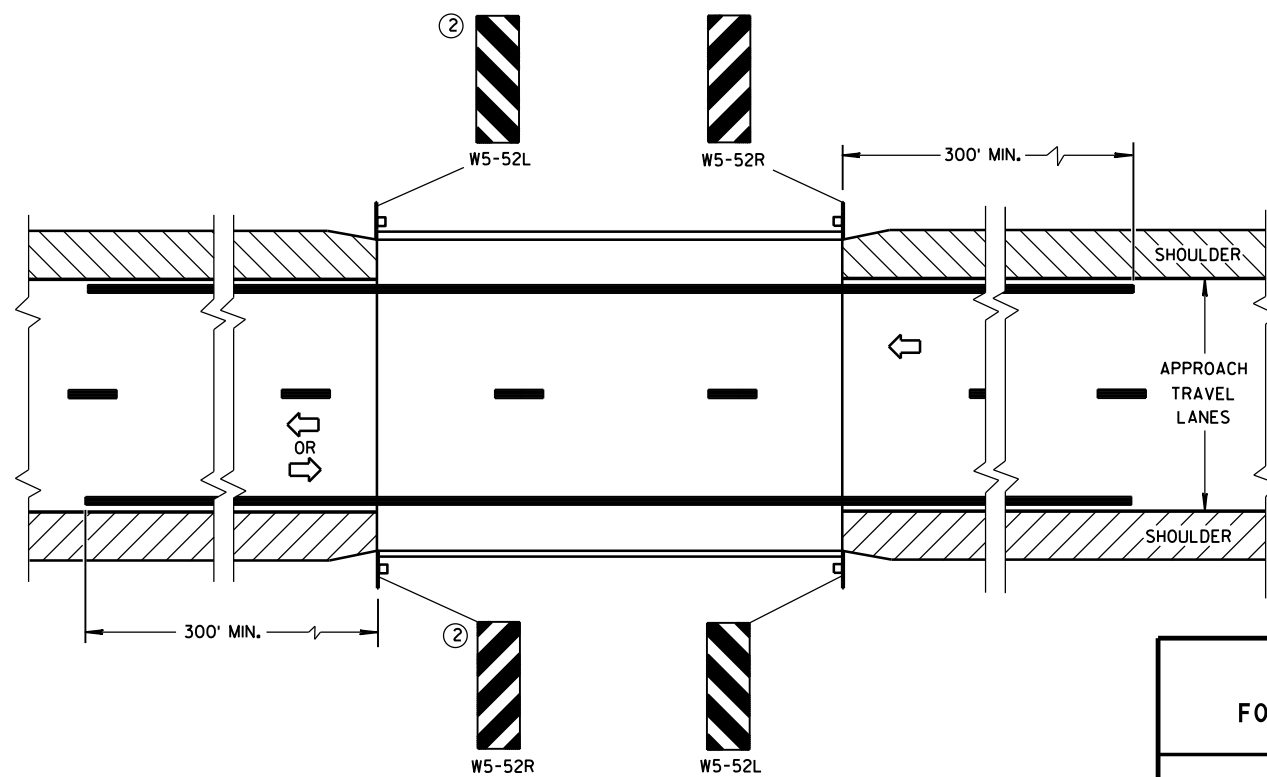
DISTANCE TABLE

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

GENERAL NOTES

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

- ① LOCATE W5-52 SIGN POST(S) BEHIND GUARDRAIL WHEN PRESENT.
- ② OMIT ON ONE-WAY TRAVELLED WAYS.
- ③ EDGE OF W5-52 SIGN SHALL BE PLACED IN LINE WITH FACE OF CURB OR PARAPET.

SIGNING & MARKING
FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

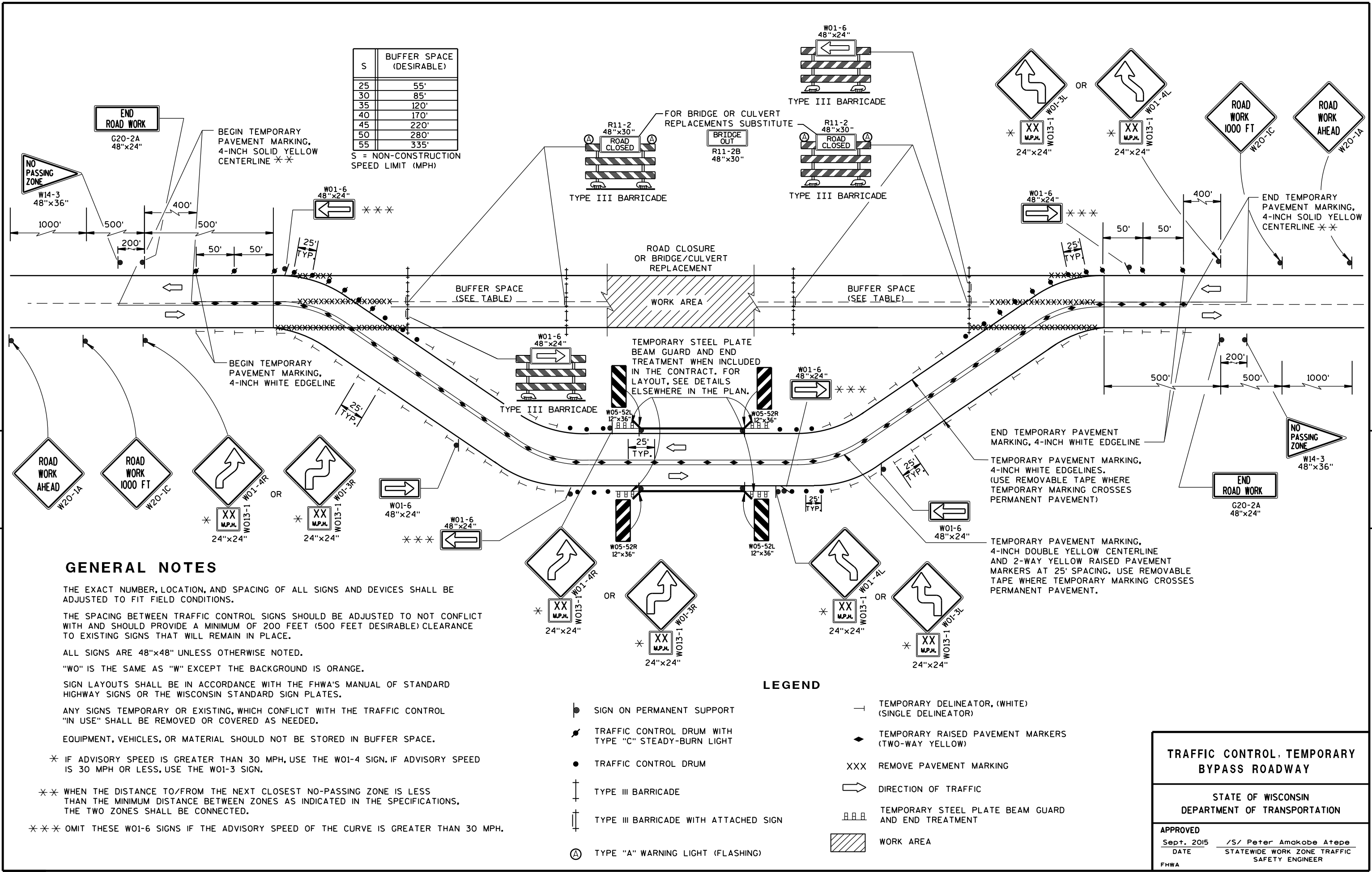
APPROVED

4-18-16

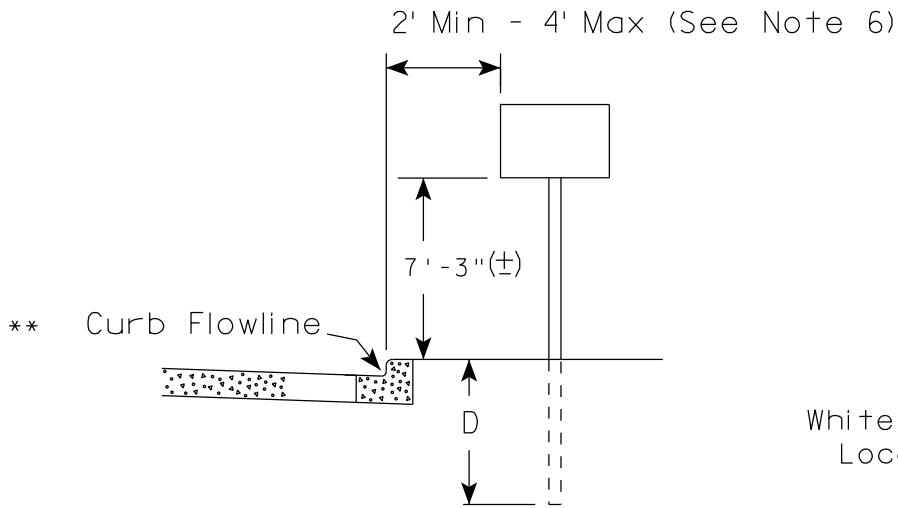
DATE

FHWA

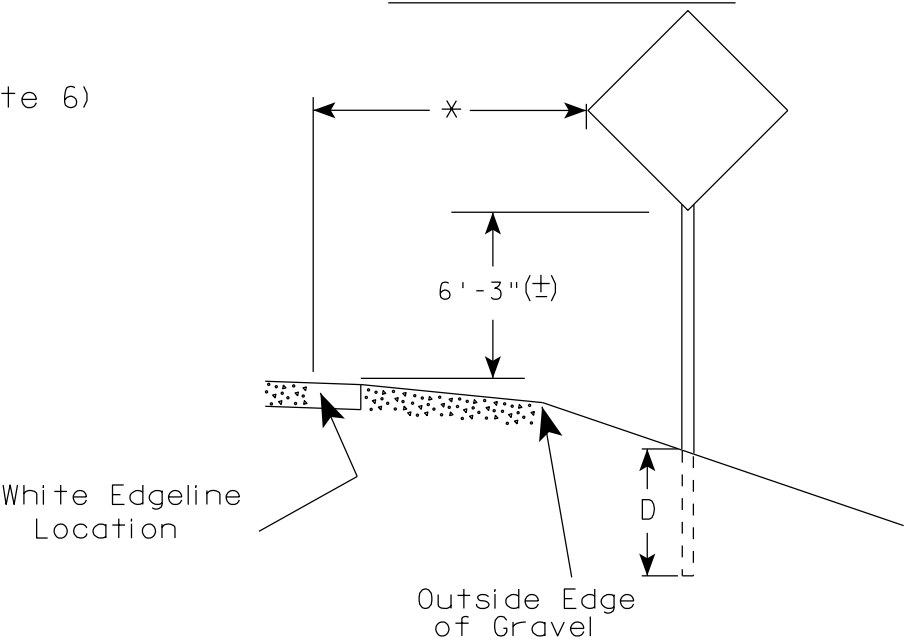
/S/ Matthew R. Rauch
STATE SIGNING AND MARKING ENGINEER



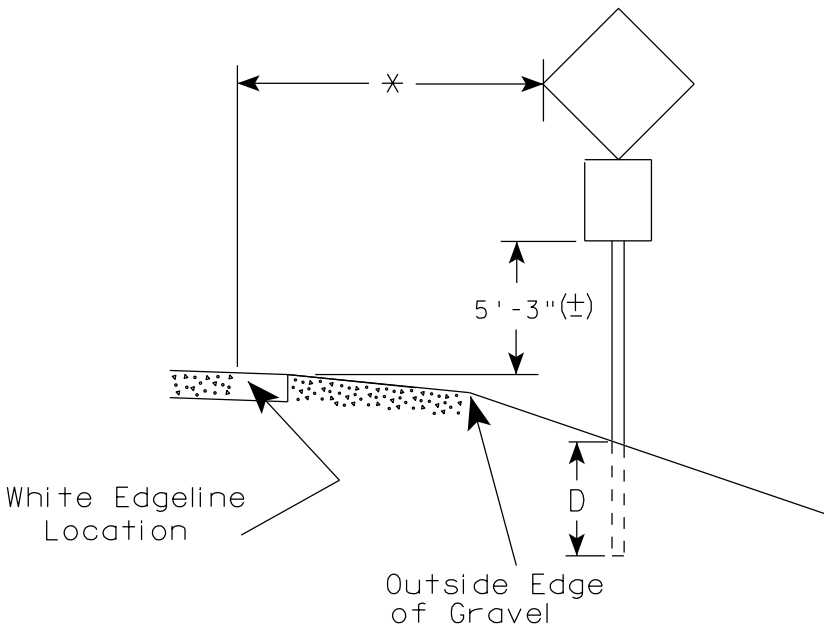
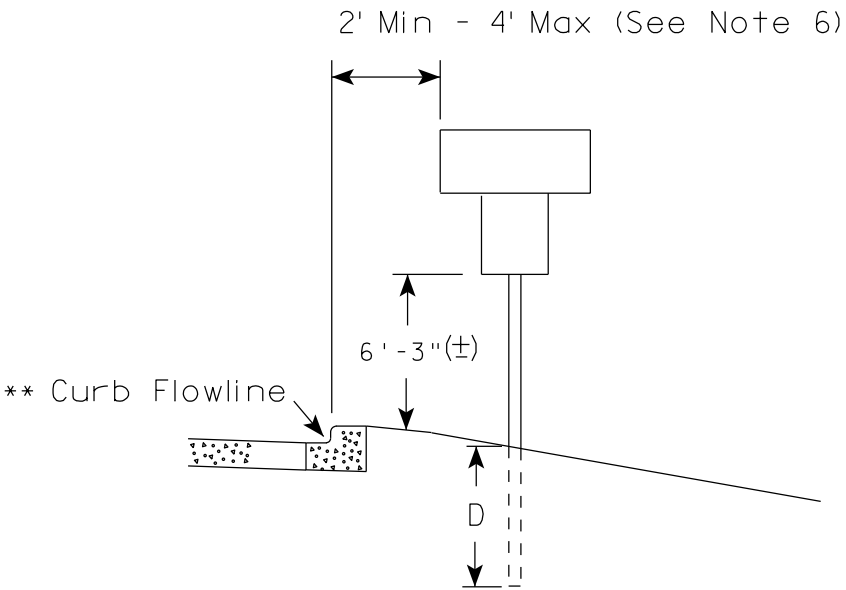
URBAN AREA



RURAL AREA (See Note 2)



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



POST EMBEDMENT DEPTH

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

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

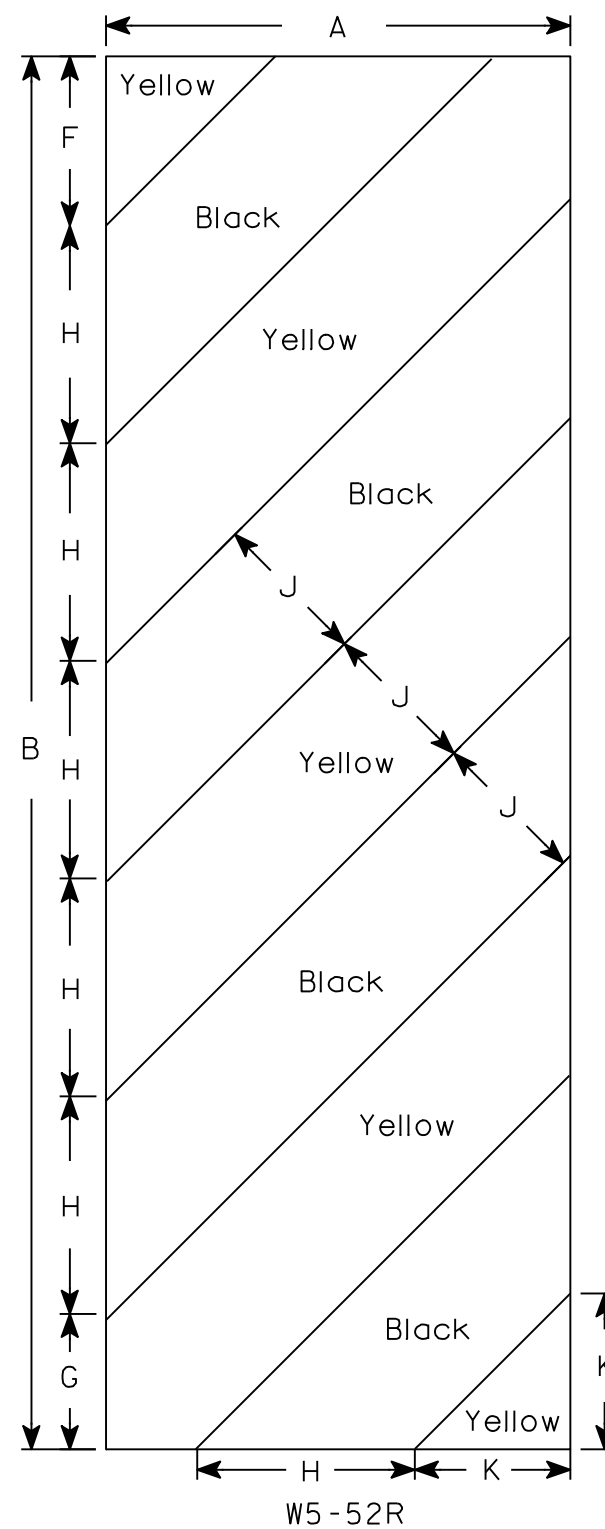
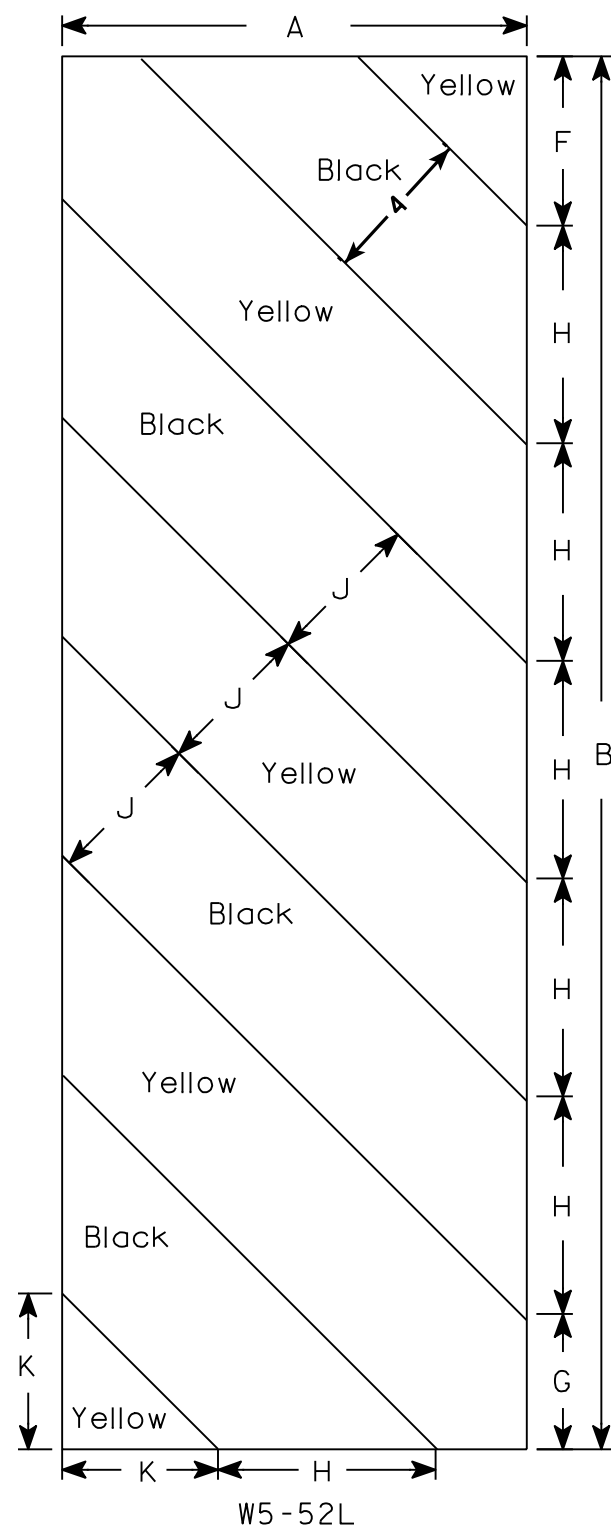
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

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



NOTES

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

[illegible]

STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

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

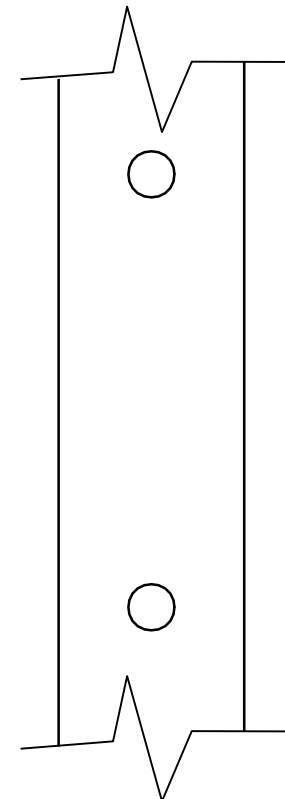
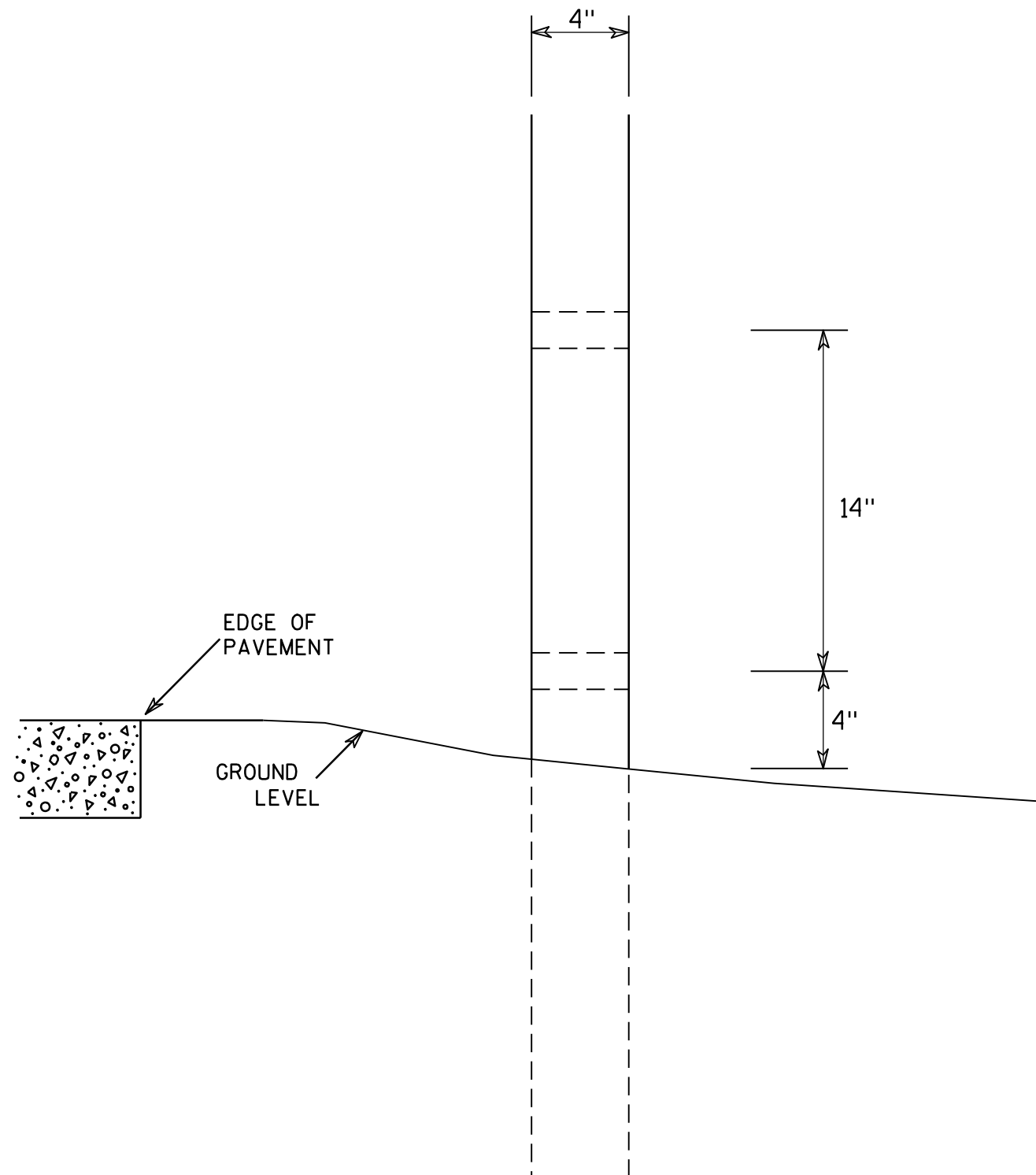
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



SIDE VIEW

GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1 1/2" 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

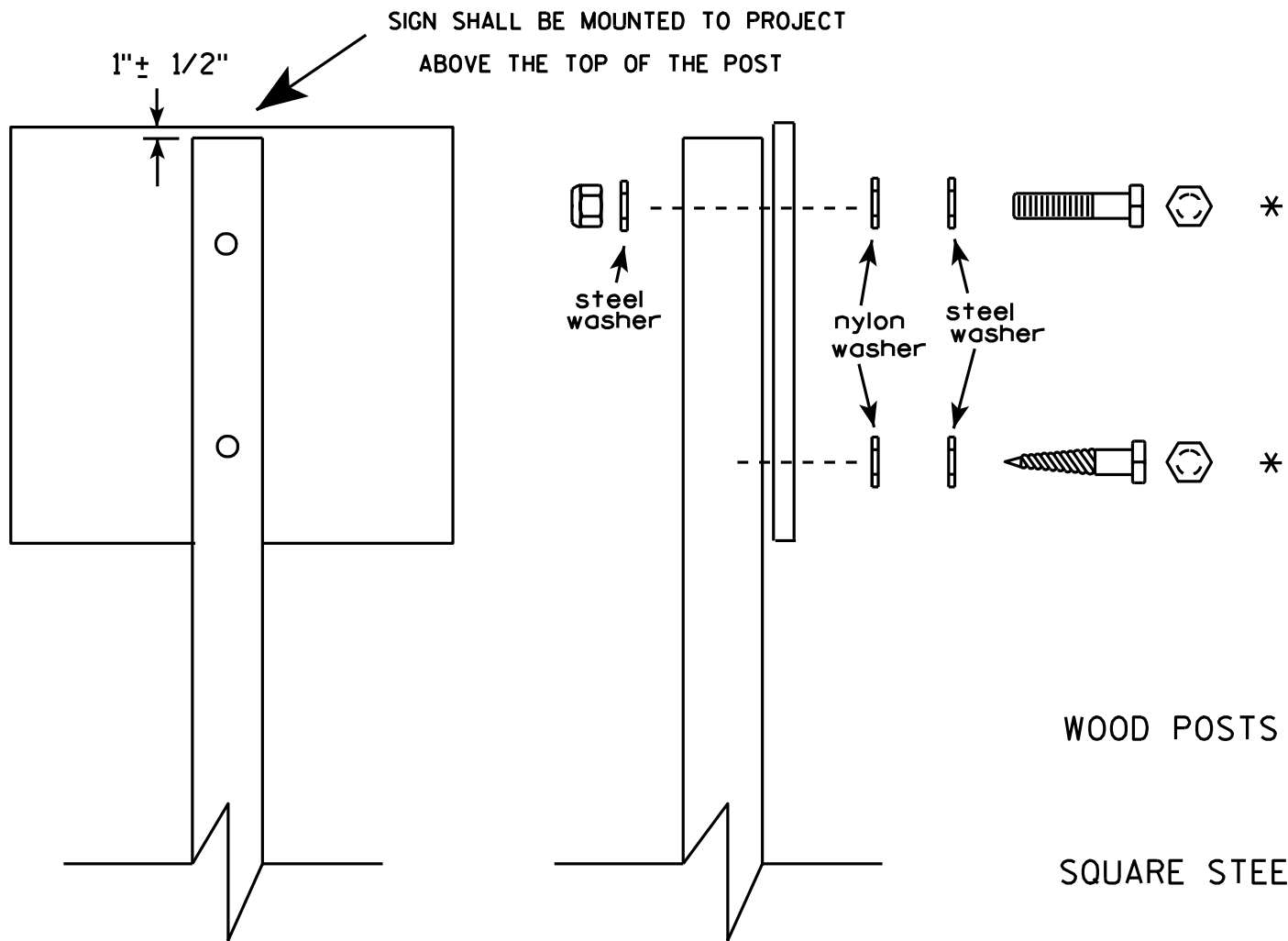
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

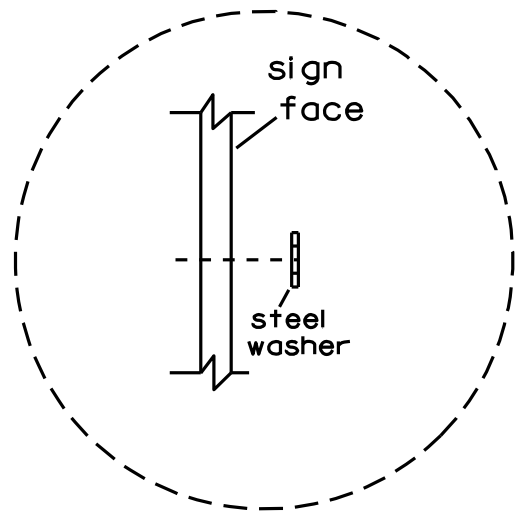


Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

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

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

- WOOD POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3"
MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts
- SQUARE STEEL POSTS (2" x 2")
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts
RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON for all Type H signs.



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

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

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

5018-00-71

BENCHMARKS

NAVD 88

NO.	STA./OFFSET	DESCRIPTION	ELEV.
1	10+18.4, 6.0 RT.	CHIS + ON NE CORNER OF BRIDGE	928.71
2	10+51.6, 30.4 RT.	2 POLE NAILS IN 24" BOX ELDER	924.82
3	10+19.5, 29.4 LT.	2 POLE NAILS IN 12" BOX ELDER	925.22

DESIGN DATA

LIVE LOAD:

DESIGN LOADING : HL-93
INVENTORY RATING FACTOR : 1.18
OPERATIONAL RATING FACTOR : 1.53
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS.
STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

TRAFFIC DATA:

A.A.D.T. (2018) = 100
A.A.D.T. (2038) = 120
RDS = 25 MPH

MATERIAL PROPERTIES:

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

FOUNDATION DATA:

ABUTMENTS TO BE SUPPORTED ON PILING STEEL HP 10-INCH X 42 LB. WITH PILE POINTS DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 140 TONS * PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED PILE LENGTHS ARE 20'-0" AT BOTH ABUTMENT BODIES. ESTIMATED PILE LENGTHS ARE 20'-0" AT ALL WINGS.

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

HYDRAULIC DATA:

100 YEAR FREQUENCY

DRAINAGE AREA 24.9 SQ. MI.
Q₁₀₀ - TOTAL 5,200 C.F.S.
- THRU BRIDGE 1,489 C.F.S.
- OVERTOPPING ROADWAY 3,711 C.F.S.
VELOCITY - THRU BRIDGE 5.03 FT./SEC.
WATERWAY AREA - THRU BRIDGE 296 SQ. FT.
SCOUR CRITICAL CODE 8
HIGH WATER₁₀₀ ELEVATION 929.42
Q₂ ELEVATION (570 CFS) 921.23

ROADWAY OVERFLOW DESIGN

OVERTOPPING FREQUENCY 15 YEARS
Q₁₅ 2,325 C.F.S.
HIGH WATER₁₅ ELEVATION 927.44

CONSULTANT DESIGN CONTACT:
LEAH RHODES
(608) 355-8945

BRIDGE OFFICE CONTACT:
WILLIAM DREHER
(608) 266-8489

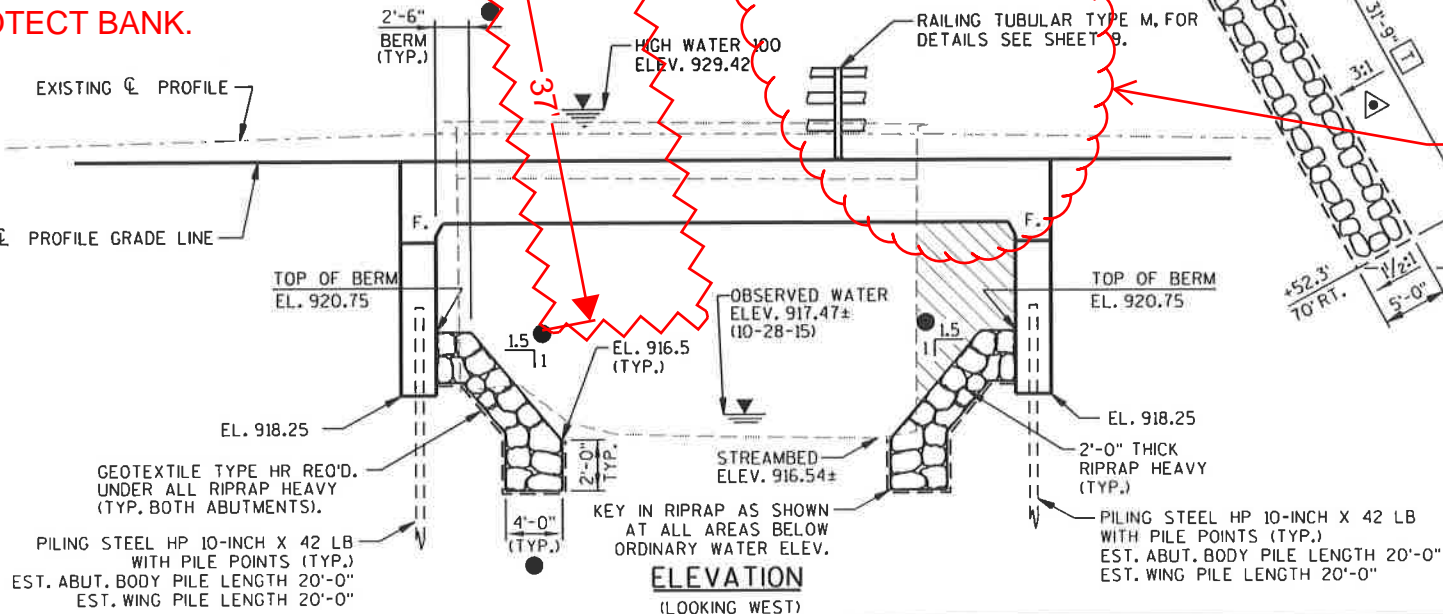
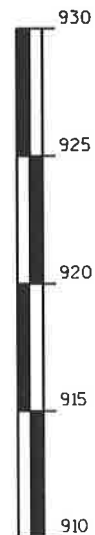
NO LONGER EXIST.

WATER DEPTH UP TO 14'. ADDED HEAVY RIPRAP TO PREVENT SCOUR UPSTREAM.

HEAVY RIPRAP EXTENDED TO PROTECT BANK.

HEAVY RIPRAP ADDED TO PREVENT SCOUR AFTER EXISTING FLOOR SLAB REMOVAL.

- - INDICATES WING NUMBER
- - NORMAL TO ϕ OF SUBSTRUCTURES
- R - LIMITS OF RIPRAP HEAVY AND GEOTEXTILE TYPE HR INCLUDED IN ROAD QUANTITIES.
- T - PLACE RIPRAP HEAVY AND GEOTEXTILE TYPE HR IN THIS AREA AFTER TEMPORARY BYPASS IS REMOVED AND SLOPES ARE RESTORED TO THE EXISTING CONDITION.
- REMOVAL OF THIS MATERIAL IS INCLUDED IN THE BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES B-41-313".
- △ - BLEND DISTURBED GROUND NOT COVERED BY RIPRAP HEAVY AT 3:1 SLOPES AFTER TEMPORARY BYPASS IS REMOVED.



LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION, QUANTITIES & NOTES
3. SUBSURFACE EXPLORATION
4. SOUTH ABUTMENT
5. SOUTH ABUTMENT DETAILS
6. NORTH ABUTMENT
7. NORTH ABUTMENT DETAILS
8. SUPERSTRUCTURE
9. RAILING TUBULAR TYPE M

NO.	DATE	REVISION	BY
MSA TRANSPORTATION • MUNICIPAL DEVELOPMENT • ENVIRONMENTAL 1230 South Boulevard Baraboo, WI 53913 608-356-2771 1-800-362-4505 Fax: 608-356-2770			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION ACCEPTED <i>William C. Dreher</i> 05/12/17 CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-41-313			
OPAL ROAD OVER BRUSH CREEK			
COUNTY	MONROE	TOWN/CITY/VILLAGE	SHELDON
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	JAS	DESIGN CK'D.	LJR
DRAWN BY	RLR	PLANS CK'D.	JAS
GENERAL PLAN			SHEET 1 OF 9

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 MARK AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR MARK SIGNIFY THE BAR SIZE.

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

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

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

THIS STRUCTURE WILL REPLACE EXISTING STRUCTURE P-41-217, A 13 FT. WIDE BY 37.7 FT. LONG STEEL DECK GIRDER BRIDGE SUPPORTED ON FULL RETAINING CONCRETE ABUTMENTS. THE EXISTING STRUCTURE INCLUDES AN EXISTING CONCRETE FLOOR SLAB WHICH SHALL BE REMOVED. REMNANTS OF A CONCRETE FOOTING FROM A PREVIOUS STRUCTURE LOCATED NEAR THE SOUTHEAST WINGWALL SHALL ALSO BE REMOVED. REMOVAL OF THE SLAB AND FOOTING SHALL BE INCLUDED IN THE BID ITEM "REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 10+00".

Ⓑ BACKFILL PAY LIMITS, BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

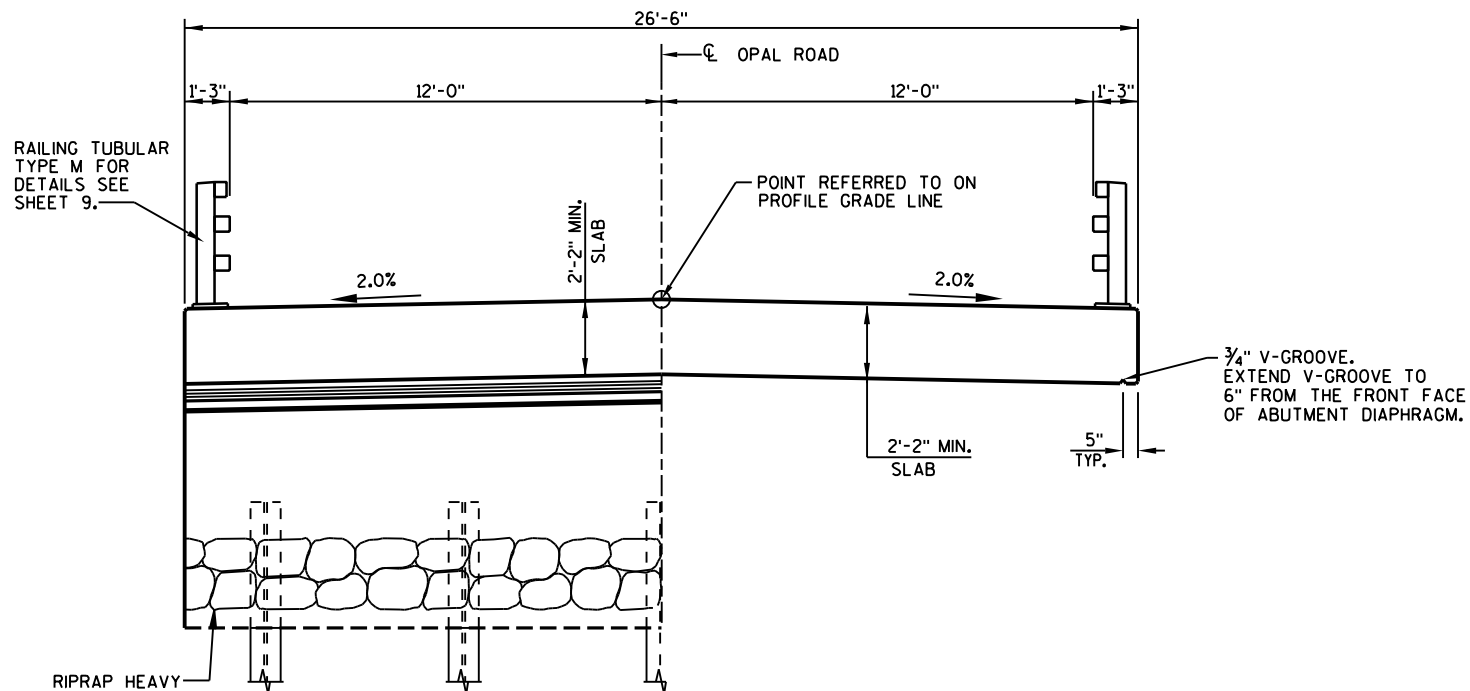
AT THE BACKFACE OF ABUTMENTS ALL EXCAVATED VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH BACKFILL STRUCTURE TYPE A.

DO NOT PLACE FILL ABOVE 3'-0" FROM THE BOTTOM OF ABUTMENT UNTIL THE SUPERSTRUCTURE IS IN PLACE.

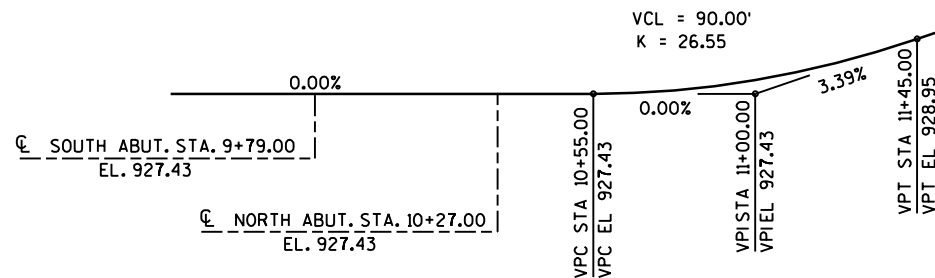
AFTER PLACEMENT OF SUPERSTRUCTURE CONCRETE, FOG THE SLAB AND CONTINUOUSLY WET IT IN ACCORDANCE TO STANDARD SPECIFICATIONS SUBSECTION 502.3.8.2.3(2) FOR CURING STRUCTURES 100 FEET OR GREATER IN LENGTH.

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE TOP AND EDGES OF SLAB, TO THE OUTSIDE 1'-0" OF THE UNDERSIDE OF SLAB, TO THE TOPS OF WINGS, AND TO THE EXPOSED FRONT FACES OF WINGS.

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO USGS NAVD 88 (2012 ADJUSTED). BENCHMARK REFERENCES AT THE PROJECT SITE WERE SET BY THE CONSULTANT USING GPS TECHNOLOGY.

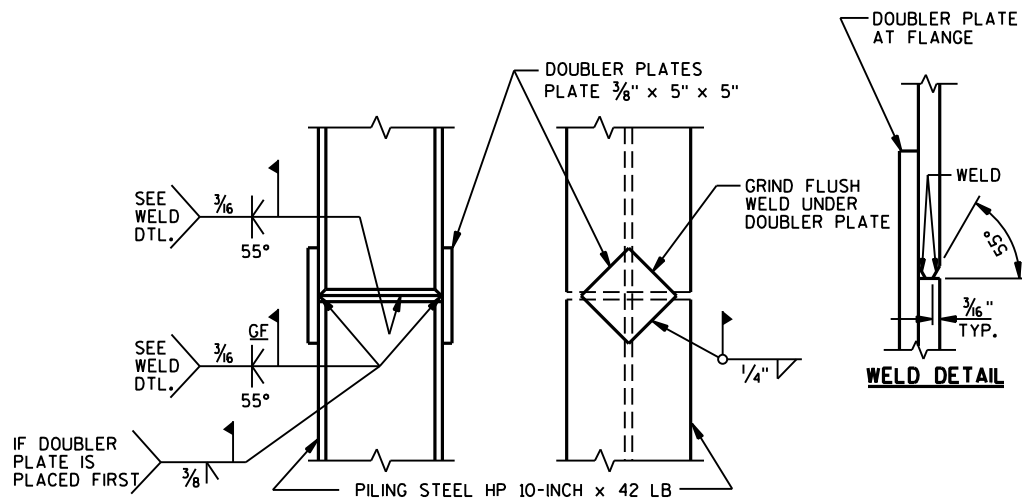
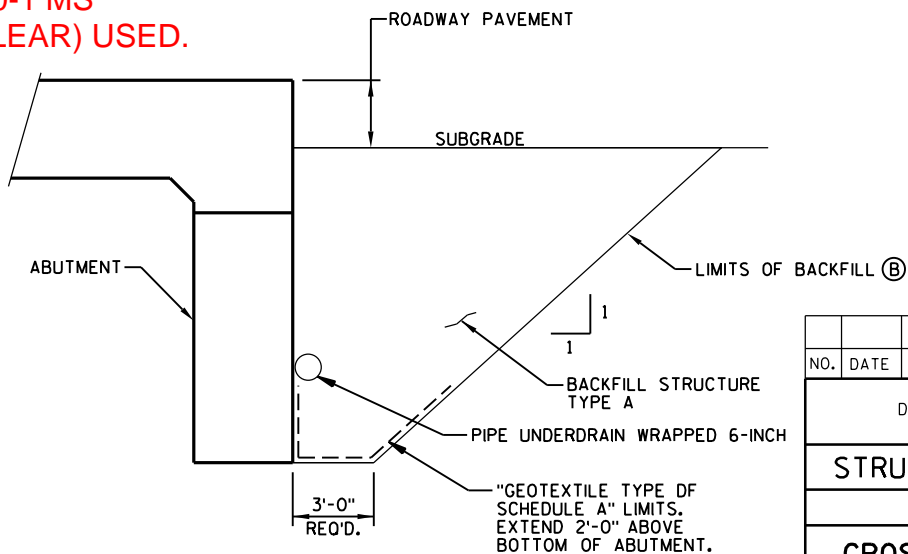
**AT ABUTMENTS****IN SPAN****CROSS SECTION THRU BRIDGE**

(LOOKING NORTH)

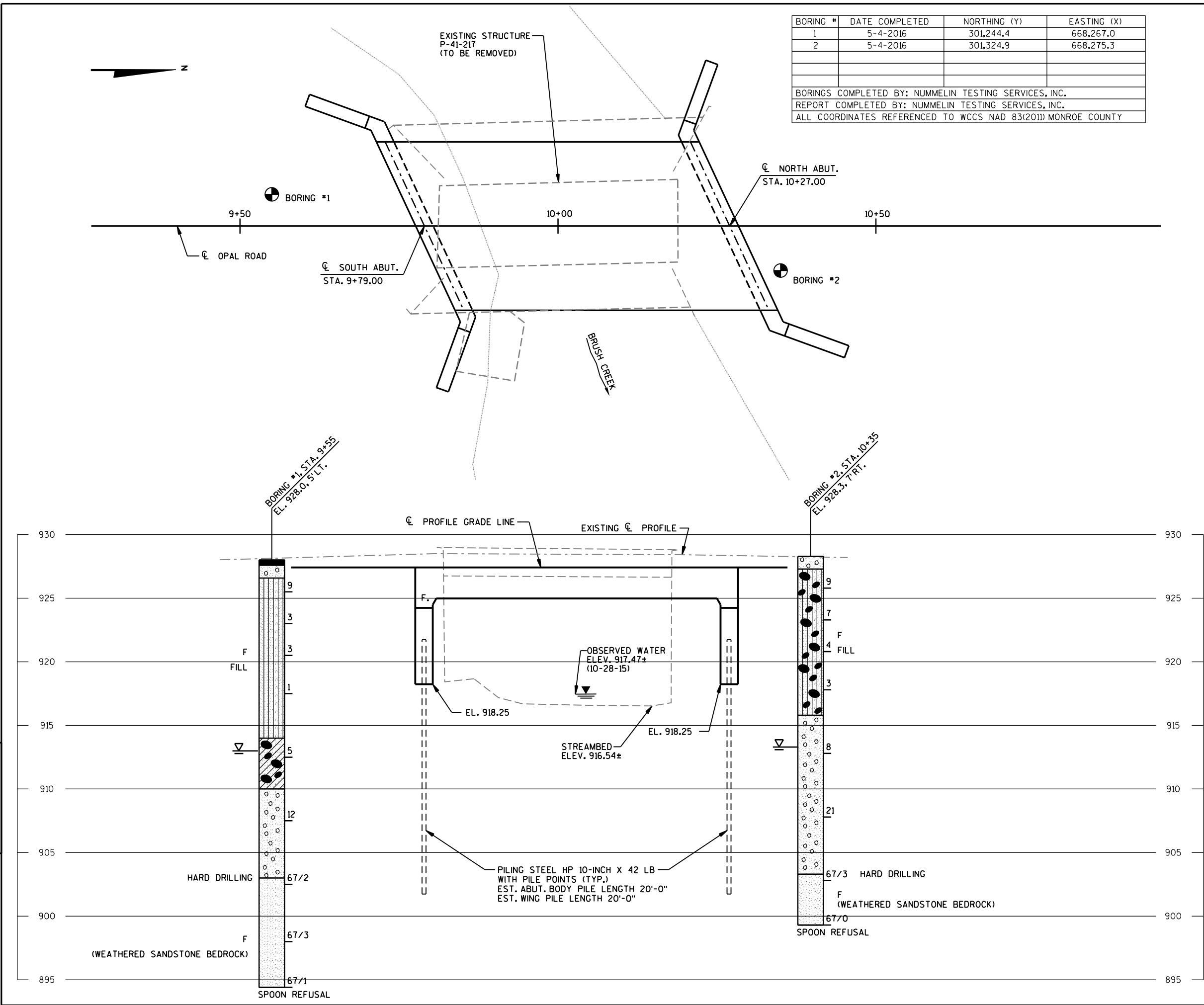
**PROFILE GRADE LINE - OPAL ROAD****TOTAL ESTIMATED QUANTITIES**

ITEM NUMBER	BID ITEM	UNIT	SOUTH ABUT.	NORTH ABUT.	SUPER	TOTAL
203.0600.S.01	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 10+00	LS	-	-	-	1
206.1000.01	EXCAVATION FOR STRUCTURES BRIDGES B-41-313	LS	-	-	-	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	190	190	-	380
502.0100	CONCRETE MASONRY BRIDGES	CY	35	35	113	183
502.3200	PROTECTIVE SURFACE TREATMENT	SY	22	22	185	229
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	2290	2290	-	4580
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1735	1735	19500	22970
513.4061.01	RAILING TUBULAR TYPE M B-41-313	LF	-	-	105	105
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	6.5	6.5	-	13
550.0500	PILE POINTS	EACH	7	7	-	14
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	140	140	-	280
606.0300	RIPRAP HEAVY	CY	100	120	-	220
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	95	95	-	190
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	50	50	-	100
645.0120	GEOTEXTILE TYPE HR	SY	180	225	-	405
SPV.0105.01	TEMPORARY WATER DIVERSION, UNNAMED TRIBUTARY TO BRUSH CREEK	LS	-	-	-	1
NON-BID ITEMS						
	PREFORMED FILLER	SIZE				1/2" & 3/4"

TK PRODUCTS
590-1 MS
(CLEAR) USED.

**PILE SPLICE DETAILS****STRUCTURE BACKFILL DETAIL**

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-41-313			
DRAWN BY RLR		PLANS CK'D. JAS	
CROSS SECTION, QUANTITIES & NOTES		SHEET 2 OF 9	



BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	5-4-2016	301,244.4	668,267.0
2	5-4-2016	301,324.9	668,275.3
BORINGS COMPLETED BY: NUMMELIN TESTING SERVICES, INC.			
REPORT COMPLETED BY: NUMMELIN TESTING SERVICES, INC.			
ALL COORDINATES REFERENCED TO WCCS NAD 83(2011) MONROE COUNTY			

STATE PROJECT NUMBER
5018-00-71

MATERIAL SYMBOLS

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

LEGEND OF BORING

BORING #1 EL. STA./OFF-SET

ST (1) 0.25 (2) 17

F-C

COBBLE OR BOULDER

WEATHERED LIMESTONE

CORE RUN #1 - 24'-29'

REC=80%, ROD=72%

(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-41-313			
DRAWN BY		RLR	PLANS CK'D. JAS
SUBSURFACE EXPLORATION		SHEET 3 OF 9	

This elevation drawing shows a bridge structure from a southward perspective. Key features include:

- Wings:** Wing 1 on the left and Wing 2 on the right, separated by a central body.
- Dimensions:**
 - Wing 1 width: 6" MIN. (TYP.)
 - Body width: 3'-6" TYP.
 - Wing 2 width: 6" MIN. (TYP.)
 - Minimum lap for A801 B.F.: 5'-1" MIN. LAP
- Reinforcement:**
 - A506 BARS @ 1'-0" CENTERS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE.
 - A502 (F.F.) reinforcement in the body.
 - A503 and A404 reinforcement in the wings.
- Elevations:**
 - EL. 924.75 (top left corner)
 - EL. 927.17 (top of Wing 1)
 - EL. 924.25 (top of Wing 1 body)
 - EL. 924.51 (top of Wing 1 body)
 - EL. 924.25 (top of Wing 2 body)
 - EL. 927.17 (top of Wing 2)
 - EL. 926.42 (top of Wing 2)
 - EL. 918.25 (bottom of Wing 2)
- Other Labels:**
 - NAME PLATE WING 1 ONLY.
 - BENCHMARK CAP (WHEN SUPPLIED) WING 1 ONLY
 - OPAL ROAD
 - CL OF ABUT.
 - NOTE: FOR WING DE

ELEVATION
 (LOOKING SOUTH)

51'-7 1/2"

1'-5" 7'-9 3/8" 16'-0 3/8" 17'-2 3/8" 7'-9 3/8" 1'-5"

1'-5" 7'-9 3/8" 2'-0" 10'-0" 45° (TYP.) 1'-9 1/4" 1'-3" 1'-2" 1'-7" 16'-4 3/8" 17'-6 3/8" 1'-3" 7'-7 3/8"

2'-6" 2'-0" 7 7/8" 2'-0" 1'-0" (LEVEL (TYP.)) 2'-0" 10'-0" 1'-3" 1'-9 1/4" 1'-3"

CL OPAL ROAD

CL ABUT. STA. 9+79.00

B.F.

A502 F.F. A506

27 SPACES @ 1'-0" = 27'-0" A506 BAR SPACING

CL OF ABUT.

7 7/8" 3'-5 7/8" 1'-3" 7'-7 3/8"

PLAN

The image contains two technical drawings of a bridge structure, labeled 'PLAN' and 'PILE PLAN'.

PLAN: This drawing shows the top-down view of the bridge. It features two abutments, labeled 1 and 2, which are angled at 45 degrees. The bridge deck is represented by a horizontal line with a dashed centerline. A north arrow points towards the top-left. Various dimensions and labels are provided:

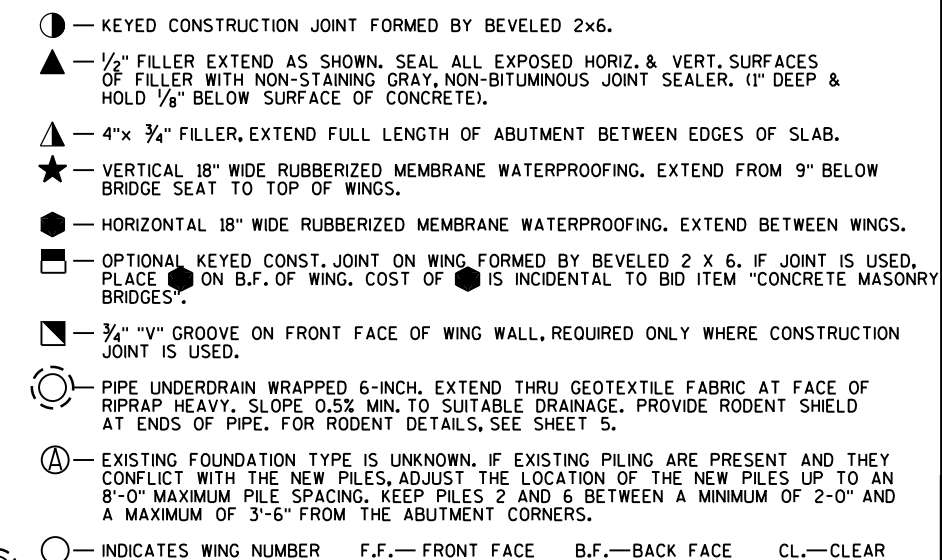
- Abutment 1: 1'-0" width, 4'-0" (TYP.) height.
- Abutment 2: 1'-0" width, 2'-3 3/8" (TYP.) height.
- Bridge Deck: 16 SPACES @ 1'-0" = 16'-0" (A503, A505 BAR SPACING), 3 SPACES @ 4'-0" = 12'-0" (A404 BAR SPACING).
- Dimensions: 3'-0", 1'-6", 6", 7", 2'-11 3/8", 2'-1 1/2" (TYP.).
- Labels: STRUCTURE REINF. & DETAILS SYM. ABOUT THIS LINE, CL OF ABUT., B.F., F.F., CL OPAL ROAD.

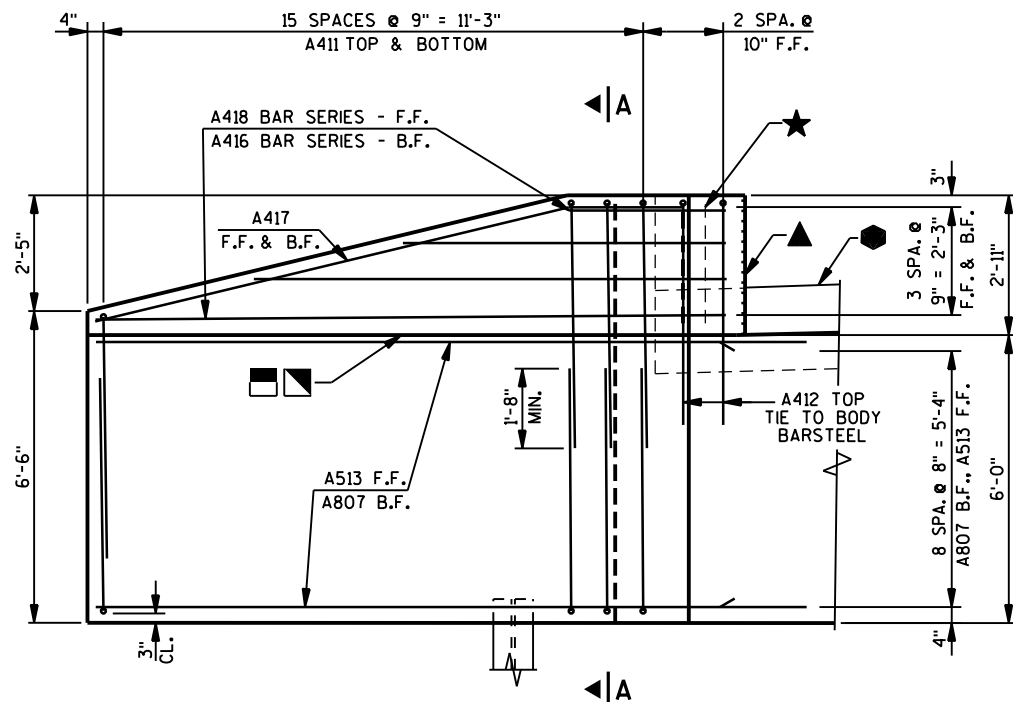
PILE PLAN: This drawing shows the side view of the bridge, focusing on the pile layout. It includes the following details:

- Pile Spacing: 2 SPACES @ 7'-0" = 14'-0" (A404).
- Dimensions: 2'-11 3/8", 7", 2'-11 3/8", 2'-1 1/2" (TYP.).
- Labels: A503, A505, A404, CL OPAL ROAD, ABUTMENT CORNER (TYP.).

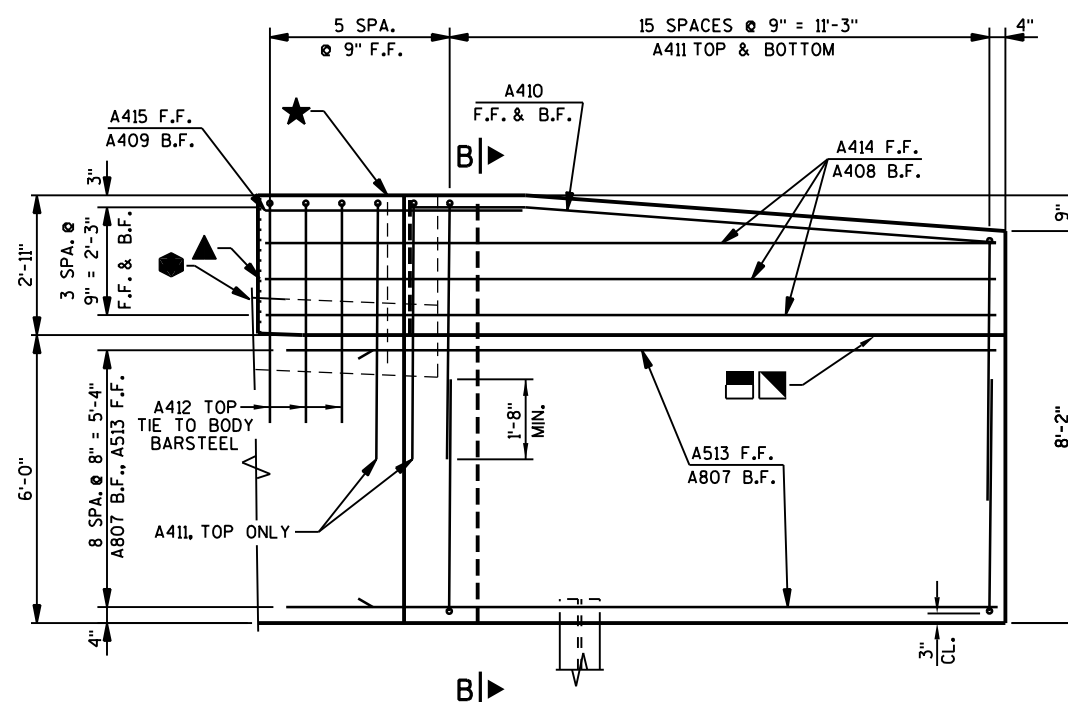
[illegible]

- ### LEGEND

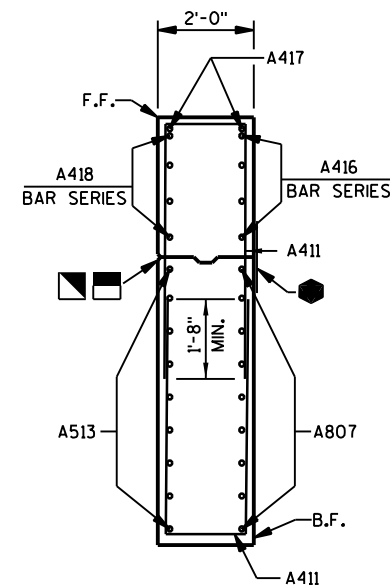




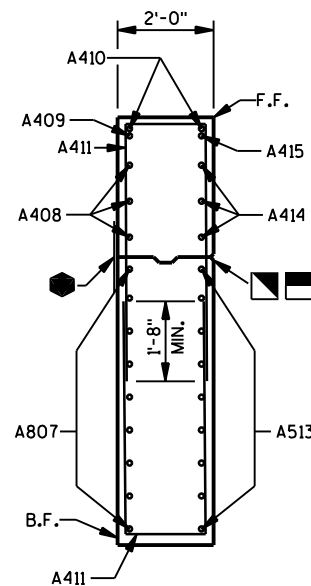
ELEVATION - WING 1
(LOOKING AT F.F. OF WING)



ELEVATION - WING 2
(LOOKING AT F.F. OF WING)



**SECTION A-A
THRU WING 1**



**SECTION B-B
THRU WING 2**

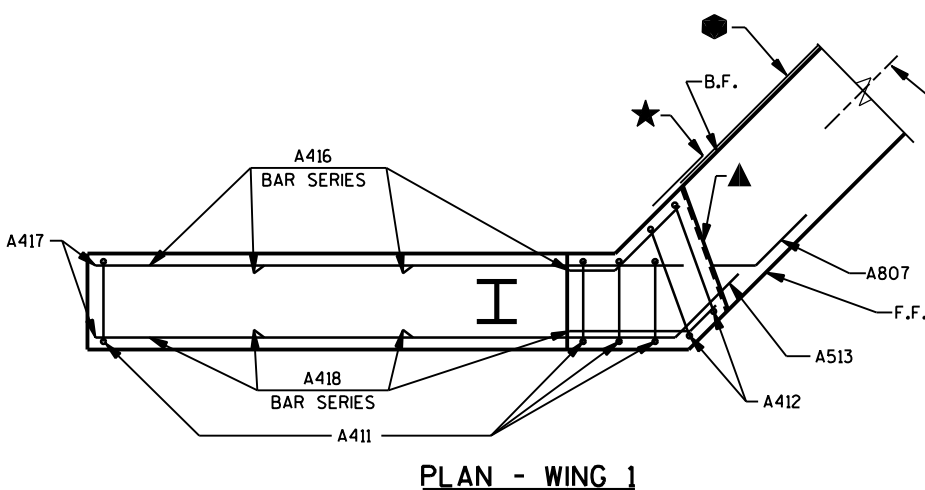
**UNCOATED 2290 LBS.
COATED 1735 LBS.**

BILL OF BARS (1 ABUTMENT)

MARK	NUMBER COATED	REQUIRED UNCOATED	LENGTH	BENT	BAR SERIES	LOCATION
A801	-	18	22'-11"	X		ABUTMENT BODY - B.F. - HORIZ.
A502	-	9	33'-10"			ABUTMENT BODY - F.F. - HORIZ.
A503	-	68	7'-0"	X		ABUTMENT BODY - F.F. & B.F. - VERT.
A404	-	30	2'-9"	X		ABUTMENT BODY - TIES - HORIZ.
A505	-	34	8'-11"	X		ABUTMENT BODY - TOP - VERT.
A506	28	-	2'-0"			ABUTMENT BODY - TOP DOWELS - VERT.
A807	18	-	15'-2"	X		WINGS - B.F. - HORIZ.
A408	3	-	12'-9"	X		WING 2 - B.F. - HORIZ.
A409	1	-	4'-0"	X		WING 2 - B.F. - HORIZ.
A410	2	-	12'-3"	X		WING 2 - F.F. & B.F. - TOP - HORIZ.
A411	66	-	11'-8"	X		WINGS - TOP & BOTTOM - VERT.
A412	5	-	11'-6"	X		WINGS - TOP - VERT.
A513	18	-	13'-8"	X		WINGS - F.F. - HORIZ.
A414	3	-	15'-2"	X		WING 2 - F.F. - HORIZ.
A415	1	-	5'-4"	X		WING 2 - F.F. - HORIZ.
A416	4	-	7'-9"	X	⊙	WING 1 - B.F. - HORIZ.
A417	2	-	12'-4"	X		WING 1 - F.F. & B.F. - TOP - HORIZ.
A418	4	-	8'-3"	X	⊙	WING 1 - F.F. - HORIZ.

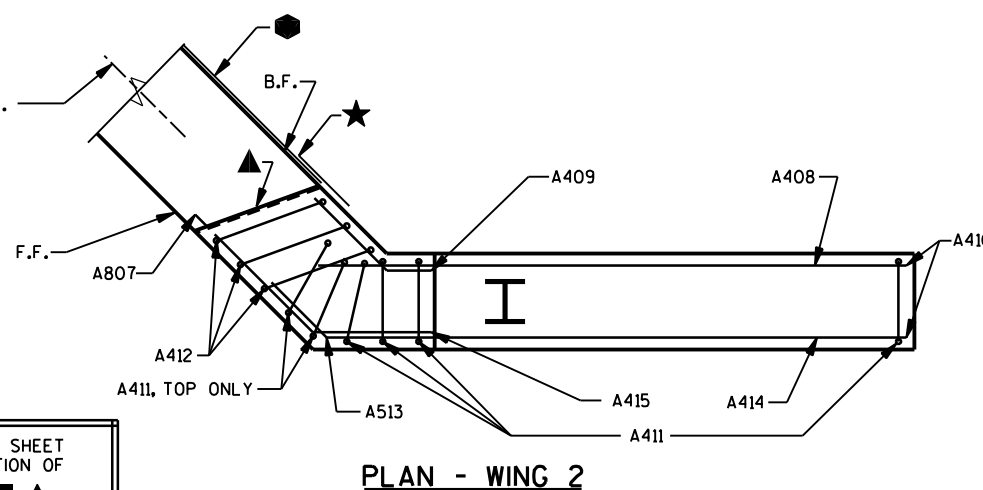
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

⊙ - LENGTH SHOWN FOR BAR IS AN AVERAGE AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS. BENT BARS USED IN BAR SERIES TABLE SHALL BE BENT AFTER CUTTING.



PLAN - WING 1

SEE LEGEND ON SHEET 4 FOR DESCRIPTION OF
★ ● ▣ ▢ ▲



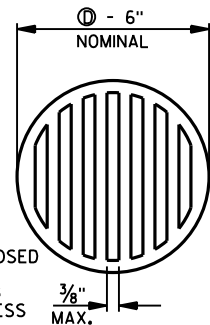
PLAN - WING 2

8

RODENT SHIELD NOTES:

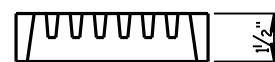
ORIENT SHIELD SO SLOTS ARE VERTICAL.

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 x 1-INCH STAINLESS STEEL SHEET METAL SCREWS. THE RODENT SHIELD, PIPE COUPLING AND SCREWS, SHALL BE INCLUDED IN THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

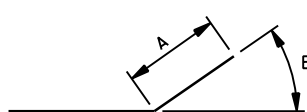


RODENT SHIELD

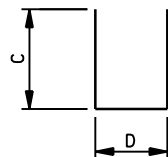
⊙ - DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.



SECTION C-C

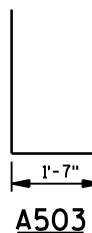


MARK	A	B
A801		
A807	1'-6"	45°
A513		
A408	1'-10"	45°
A409		
A410	2'-5"	5°
A414	3'-0"	45°
A415		
A416	1'-9"	45°
A417	2'-5"	15°
A418	1'-0"	45°



STIRRUPS AND TIES

MARK	C	D
A404	4 1/2"	2'-2"
A505	3'-6"	2'-2"
A411	5'-1"	1'-8"
A412	4'-8"	2'-4"

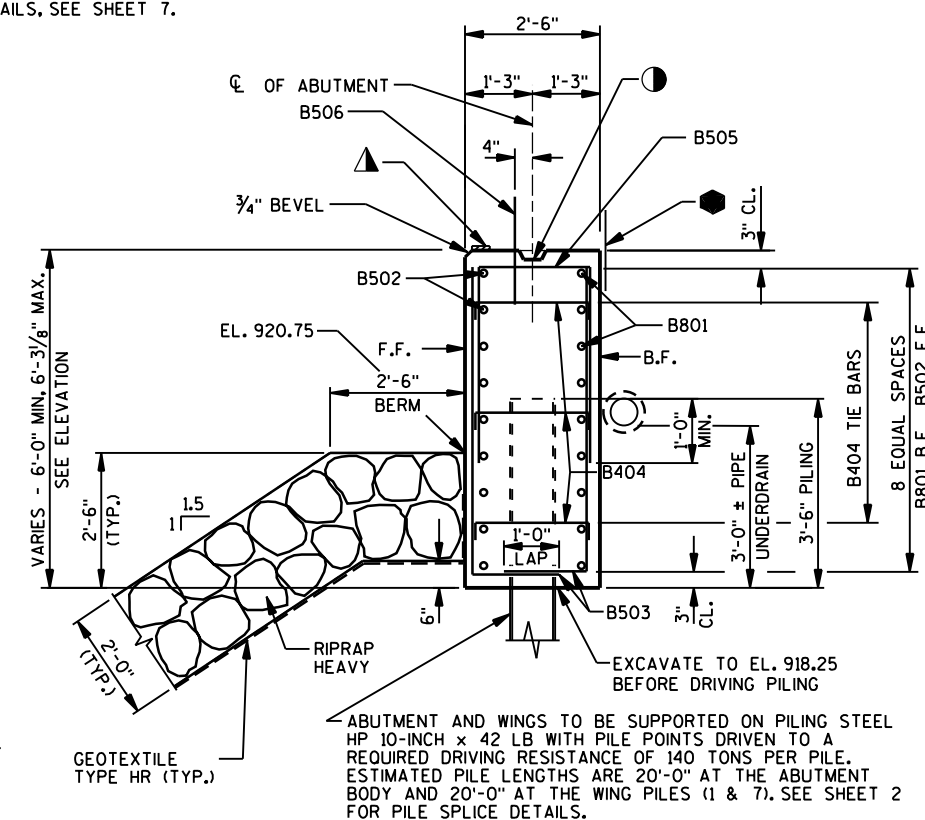


A503

BAR MARK	NO. REQ'D.	LENGTH
A416	1 SERIES OF 4	2'-10" TO 12'-8"
A418	1 SERIES OF 4	3'-4" TO 13'-2"

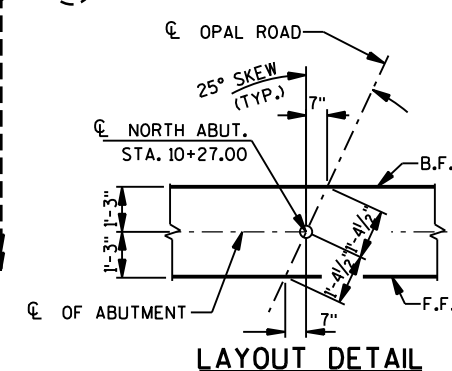
BAR SERIES TABLE

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-41-313	
DRAWN BY JDJ		PLANS CK'D. JAS	
SOUTH ABUTMENT DETAILS		SHEET 5 OF 9	

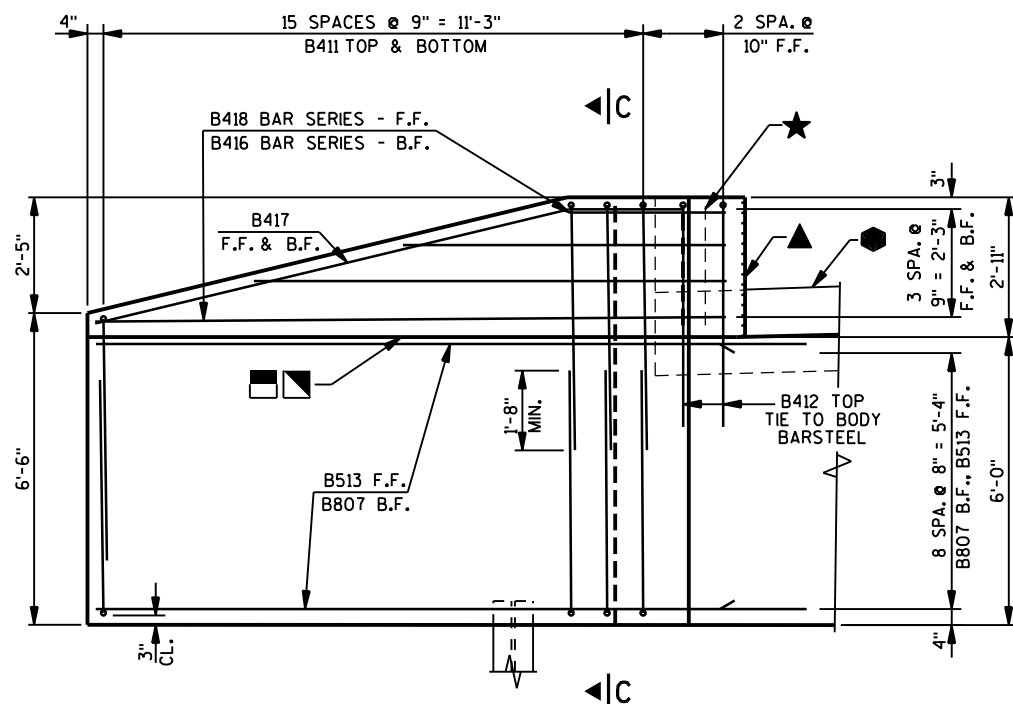


LEGEND

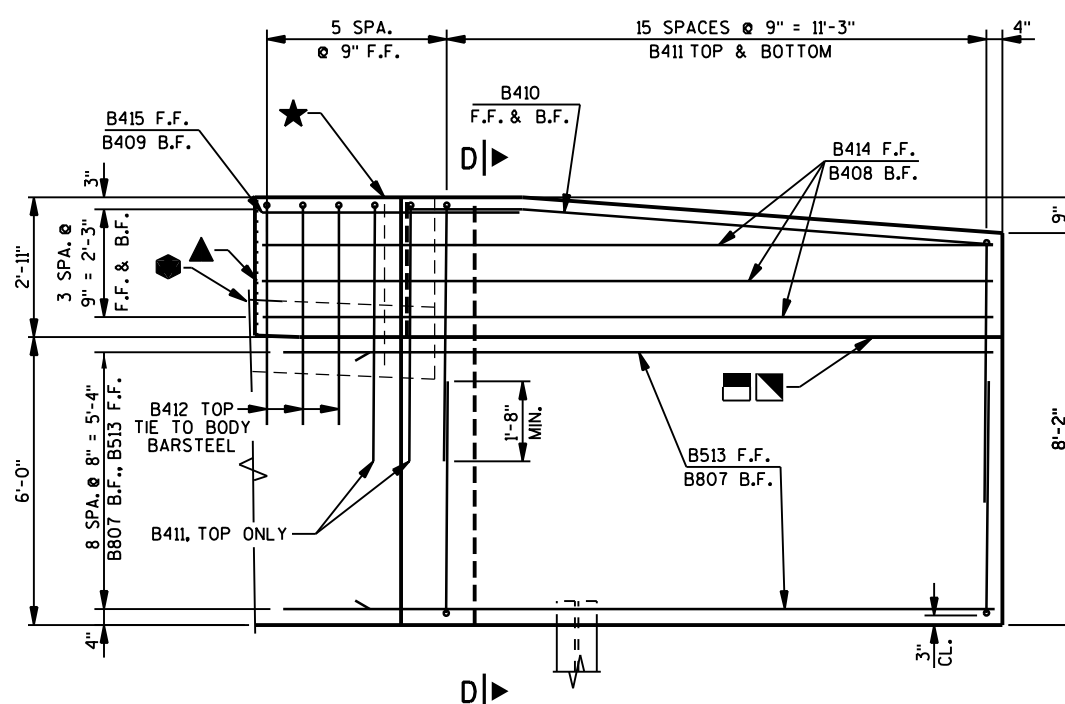
- ① — KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2x6.
- ▲ — 1/2" FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP & HOLD 1/8" BELOW SURFACE OF CONCRETE).
- ▲ — 4"x 3/4" FILLER, EXTEND FULL LENGTH OF ABUTMENT BETWEEN EDGES OF SLAB.
- ★ — VERTICAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. EXTEND FROM 9" BELOW BRIDGE SEAT TO TOP OF WINGS.
- ◆ — HORIZONTAL 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING. EXTEND BETWEEN WINGS.
- — OPTIONAL KEYED CONST. JOINT ON WING FORMED BY BEVELED 2 X 6. IF JOINT IS USED, PLACE ◆ ON B.F. OF WING. COST OF ◆ IS INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES".
- ▣ — 3/4" "V" GROOVE ON FRONT FACE OF WING WALL, REQUIRED ONLY WHERE CONSTRUCTION JOINT IS USED.
- ⊙ — PIPE UNDERDRAIN WRAPPED 6-INCH. EXTEND THRU GEOTEXTILE FABRIC AT FACE OF RIPRAP HEAVY. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. PROVIDE RODENT SHIELD AT ENDS OF PIPE. FOR RODENT DETAILS, SEE SHEET 5.
- Ⓐ — EXISTING FOUNDATION TYPE IS UNKNOWN. IF EXISTING PILING ARE PRESENT AND THEY CONFLICT WITH THE NEW PILES, ADJUST THE LOCATION OF THE NEW PILES UP TO AN 8'-0" MAXIMUM PILE SPACING. KEEP PILES 2 AND 6 BETWEEN A MINIMUM OF 2'-0" AND A MAXIMUM OF 3'-6" FROM THE ABUTMENT CORNERS.
- — INDICATES WING NUMBER F.F. — FRONT FACE B.F. — BACK FACE CL. — CLEAR



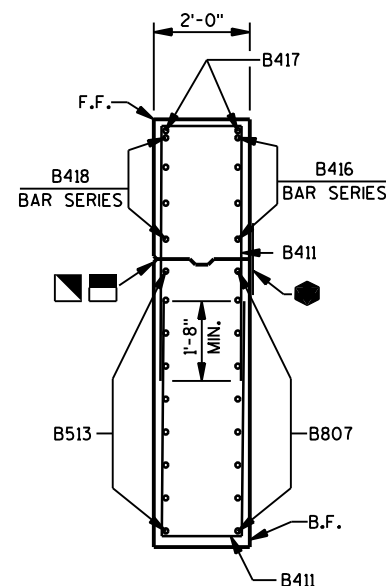
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-41-313	
DRAWN BY		JDJ	PLANS CK'D. JAS
NORTH ABUTMENT		SHEET 6 OF 9	



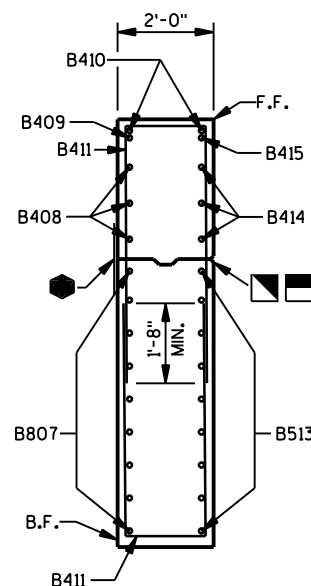
ELEVATION - WING 3
(LOOKING AT F.F. OF WING)



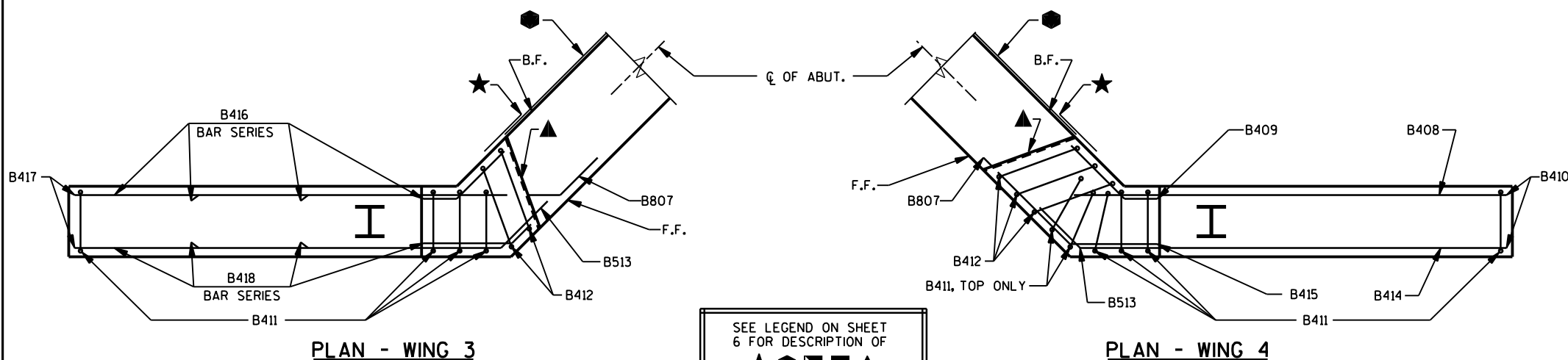
ELEVATION - WING 4
(LOOKING AT F.F. OF WING)



**SECTION C-C
THRU WING 3**



**SECTION D-D
THRU WING 4**



PLAN - WING 3

PLAN - WING 4

SEE LEGEND ON SHEET
6 FOR DESCRIPTION OF



BILL OF BARS (1 ABUTMENT)

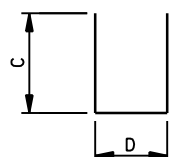
**UNCOATED 2290 LBS.
COATED 1735 LBS.**

MARK	NUMBER REQUIRED COATED UNCOATED	LENGTH	BENT	BAR SERIES	LOCATION
B801	- 18	22'-11"	X		ABUTMENT BODY - B.F. - HORIZ.
B502	- 9	33'-10"			ABUTMENT BODY - F.F. - HORIZ.
B503	- 68	7'-0"	X		ABUTMENT BODY - F.F. & B.F. - VERT.
B404	- 30	2'-9"	X		ABUTMENT BODY - TIES - HORIZ.
B505	- 34	8'-11"	X		ABUTMENT BODY - TOP - VERT.
B506	28 -	2'-0"			ABUTMENT BODY - TOP DOWELS - VERT.
B807	18 -	15'-2"	X		WINGS - B.F. - HORIZ.
B408	3 -	12'-9"	X		WING 4 - B.F. - HORIZ.
B409	1 -	4'-0"	X		WING 4 - B.F. - HORIZ.
B410	2 -	12'-3"	X		WING 4 - F.F. & B.F. - TOP - HORIZ.
B411	66 -	11'-8"	X		WINGS - TOP & BOTTOM - VERT.
B412	5 -	11'-6"	X		WINGS - TOP - VERT.
B513	18 -	13'-8"	X		WINGS - F.F. - HORIZ.
B414	3 -	15'-2"	X		WING 4 - F.F. - HORIZ.
B415	1 -	5'-4"	X		WING 4 - F.F. - HORIZ.
B416	4 -	7'-9"	X	Ⓢ	WING 3 - B.F. - HORIZ.
B417	2 -	12'-4"	X		WING 3 - F.F. & B.F. - TOP - HORIZ.
B418	4 -	8'-3"	X	Ⓢ	WING 3 - F.F. - HORIZ.

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

Ⓢ - LENGTH SHOWN FOR BAR IS AN AVERAGE AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS. BENT BARS USED IN BAR SERIES TABLE SHALL BE BENT AFTER CUTTING.

MARK	A	B
B801 B807 B513	1'-6"	45°
B408 B409	1'-10"	45°
B410	2'-5"	5°
B414 B415	3'-0"	45°
B416	1'-9"	45°
B417	2'-5"	15°
B418	1'-0"	45°



STIRRUPS AND TIES

MARK	C	D
B404	4 1/2"	2'-2"
B505	3'-6"	2'-2"
B411	5'-1"	1'-8"
B412	4'-8"	2'-4"

BAR MARK	NO. REQ'D.	LENGTH
B416	1 SERIES OF 4	2'-10" TO 12'-8"
B418	1 SERIES OF 4	3'-4" TO 13'-2"

BAR SERIES TABLE

B503

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-41-313	
DRAWN BY RLR		PLANS CK'D. JAS	
NORTH ABUTMENT DETAILS		SHEET 7 OF 9	

GENERAL NOTES

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

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

ALL TRANSVERSE BAR STEEL REINFORCEMENT SHALL BE PLACED ON THE SKEW.

BILL OF BARS (COATED) 19,500 LBS.

MARK	NO. REQ'D.	LENGTH	BENT	LOCATION
S501	54	7'-9"	X	DIAPHRAGM @ ABUTS. - LONGIT.
S1102	27	50'-4"		SLAB BOTTOM - LONGIT.
S1103	26	38'-5"		SLAB BOTTOM - LONGIT.
S504	132	28'-10"		SLAB TOP & BOTTOM - TRANS.
S405	72	26'-5"		SLAB TOP - LONGIT.
S606	36	12'-0"	X	SLAB TOP @ RAIL POST, 2 PER POST
S607	56	6'-0"		SLAB TOP @ RAIL POST, 4 PER POST
S608	16	6'-0"	X	SLAB TOP @ RAIL END POST AS NOTED

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.
EPOXY COAT ALL SUPERSTRUCTURE BAR STEEL REINFORCEMENT.

CAMBER DIAGRAM

CAMBER SPANS AS SHOWN ABOVE AND IN THE TABLE OF VALUES TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT. DEAD LOAD DEFLECTION APPROXIMATES 1/3 OF CAMBER VALUES SHOWN.

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

- TOP OF SLAB ELEVATION AT FINAL GRADE
- SLAB THICKNESS
- + CAMBER
- + FORM SETTLEMENT/DEFLECTION DUE TO PLACEMENT OF SLAB CONCRETE (TO BE COMPUTED BY THE CONTRACTOR)
- = TOP OF SLAB FALSEWORK ELEVATION

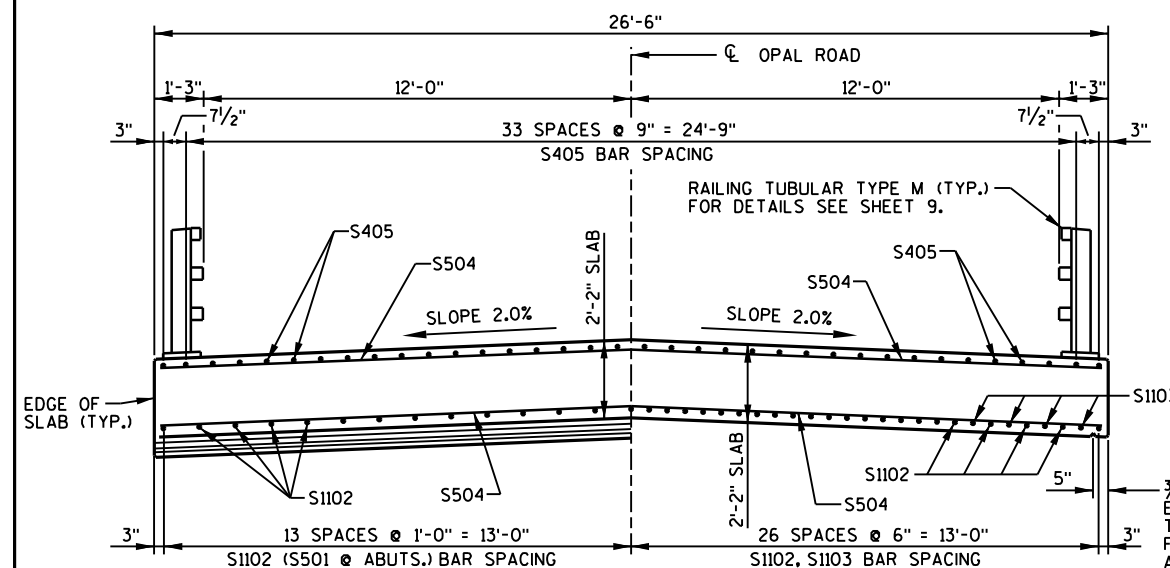
SURVEY TOP OF SLAB ELEVATIONS

LOCATION	SPAN POINT	WEST SLAB EDGE	C/L OPAL ROAD	EAST SLAB EDGE
SOUTH ABUT.	1.0	927.22	927.42	927.18
	1.5	927.41	927.62	927.36
NORTH ABUT.	2.0	927.18	927.39	927.11

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE C/L OF ABUTMENTS AND AT THE 0.5 PTS. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGE OF SLAB AND CROWN OR C/L. RECORD THE ELEVATIONS IN THE ABOVE TABLE FOR THE "AS BUILT" PLANS.

TOP OF SLAB ELEVATIONS AND CAMBER VALUES

LOCATION	SPAN POINT	EAST SLAB EDGE	C/L OPAL ROAD	WEST SLAB EDGE	CAMBER VALUE (INCHES)
SOUTH ABUT.	1.0	927.17	927.43	927.17	0.0
	1.1	927.17	927.43	927.17	0.6
	1.2	927.17	927.43	927.17	1.1
	1.3	927.17	927.43	927.17	1.5
	1.4	927.17	927.43	927.17	1.8
	1.5	927.17	927.43	927.17	1.9
	1.6	927.17	927.43	927.17	1.8
	1.7	927.17	927.43	927.17	1.5
	1.8	927.17	927.43	927.17	1.1
	1.9	927.17	927.43	927.17	0.6
NORTH ABUT.	2.0	927.17	927.43	927.17	0.0

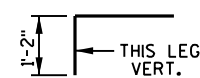


AT ABUTMENTS

IN SPAN

CROSS SECTION THRU BRIDGE

(LOOKING NORTH)

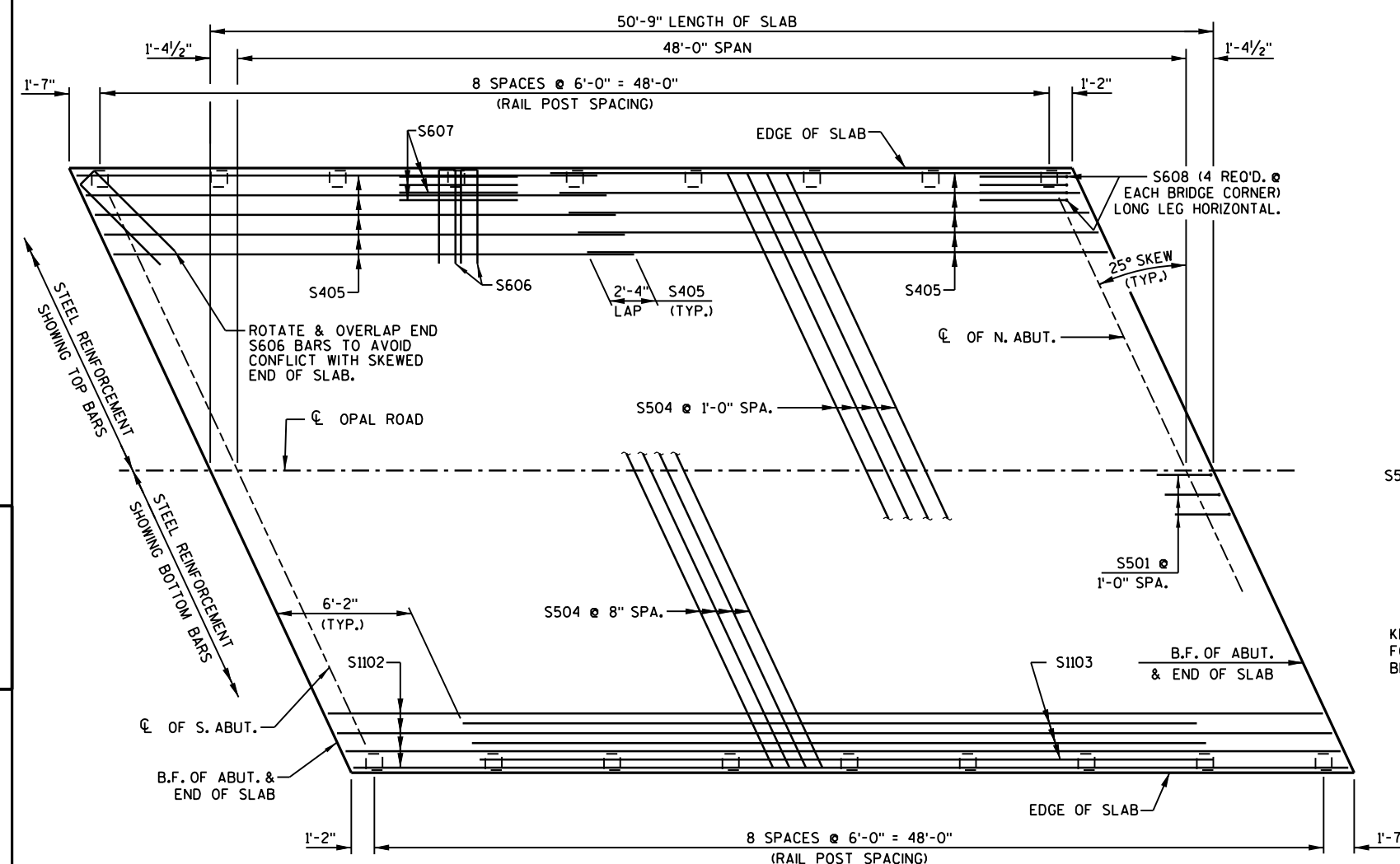


S608

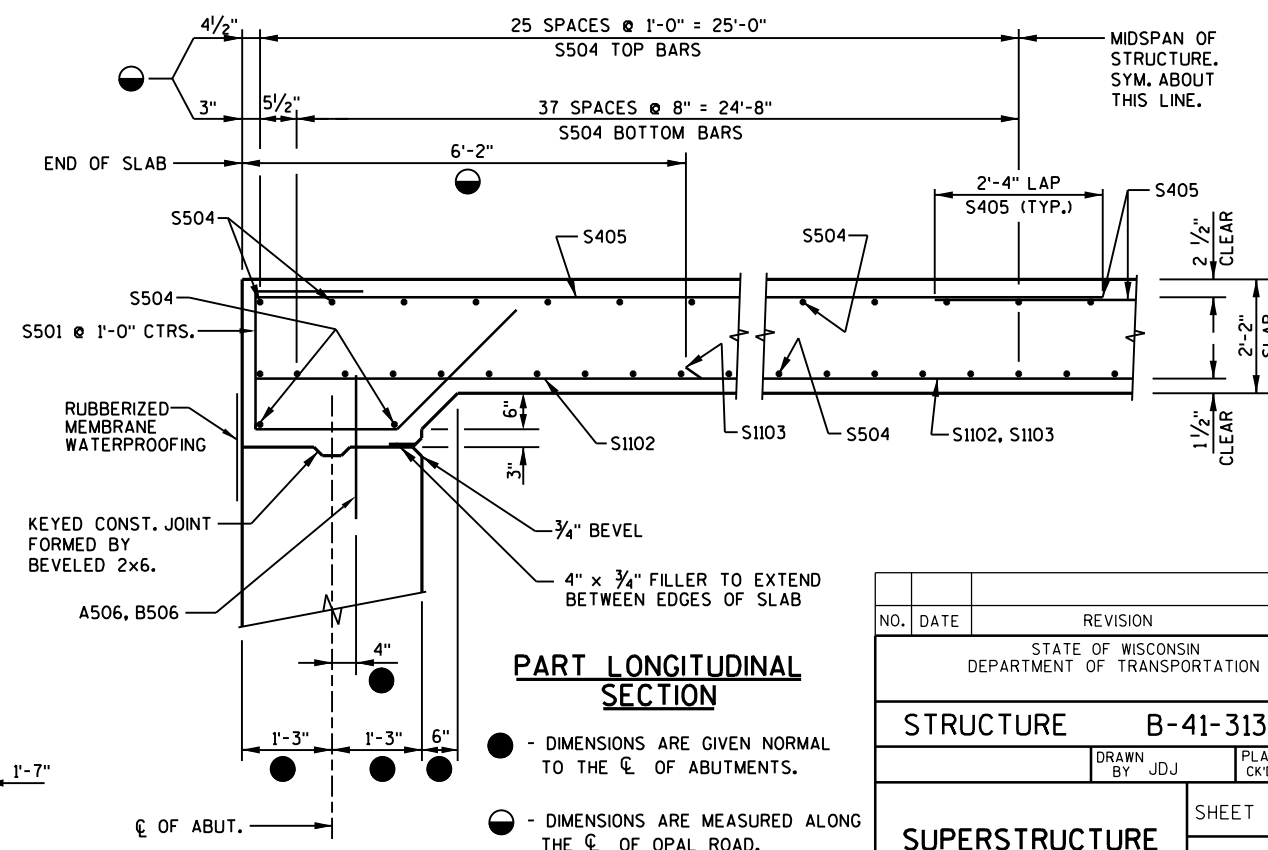


S501

S606



PLAN

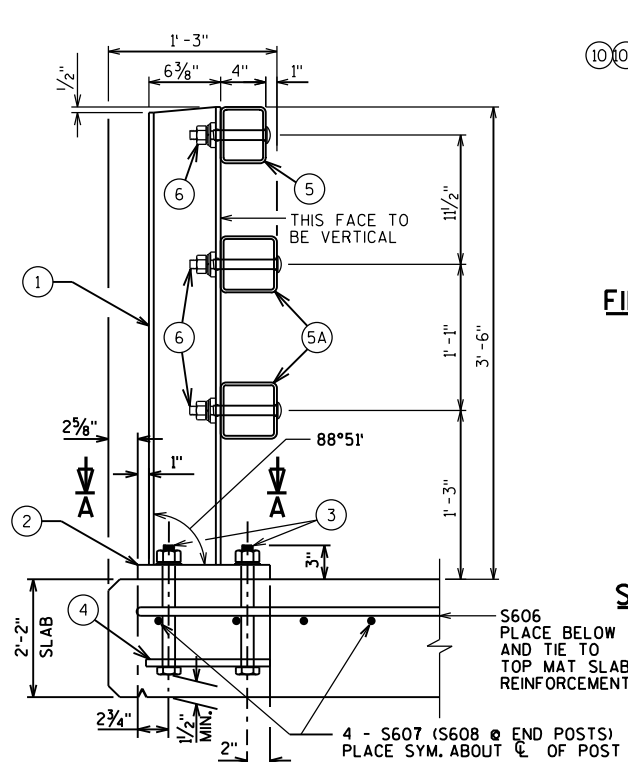


PART LONGITUDINAL SECTION

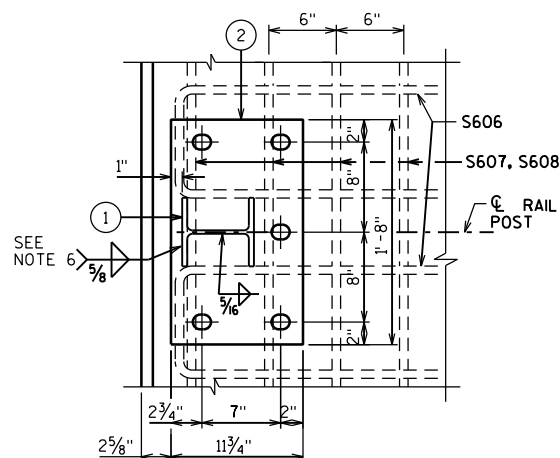
● - DIMENSIONS ARE GIVEN NORMAL TO THE C/L OF ABUTMENTS.

● - DIMENSIONS ARE MEASURED ALONG THE C/L OF OPAL ROAD.

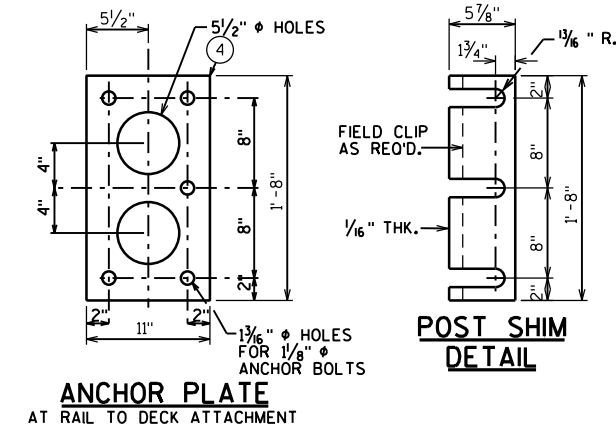
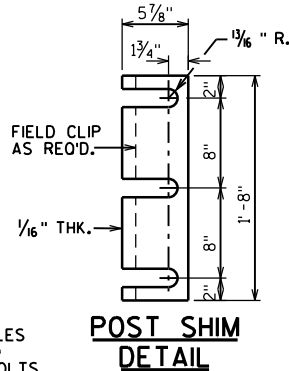
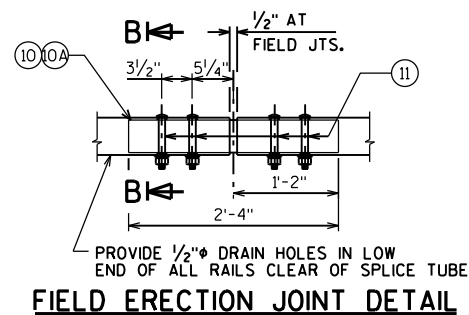
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-41-313			
DRAWN BY JDJ		PLANS CK'D. JAS	
SUPERSTRUCTURE			SHEET 8 OF 9



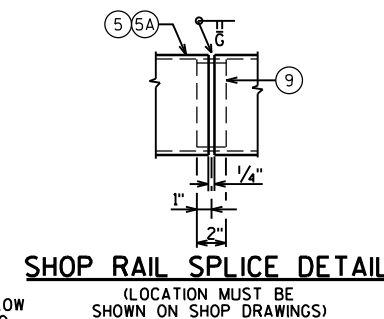
SECTION THRU RAILING ON SLAB



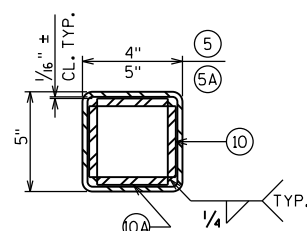
SECTION A-A

ANCHOR PLATE
AT RAIL TO DECK ATTACHMENTPOST SHIM
DETAIL

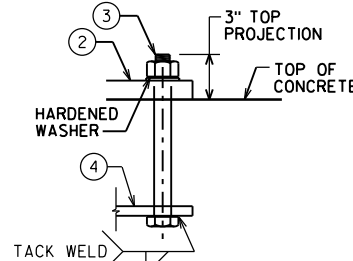
FIELD ERECTION JOINT DETAIL



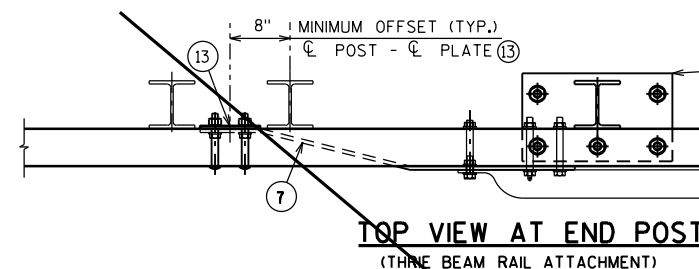
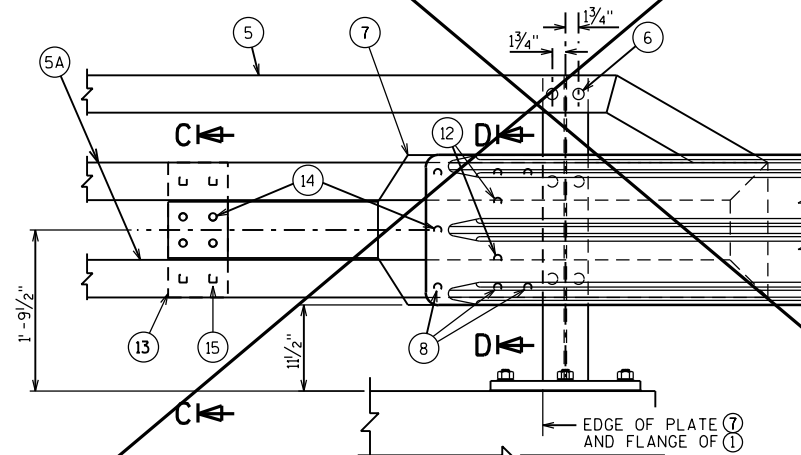
SHOP RAIL SPLICE DETAIL

(LOCATION MUST BE
SHOWN ON SHOP DRAWINGS)

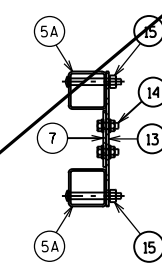
SECTION B-B



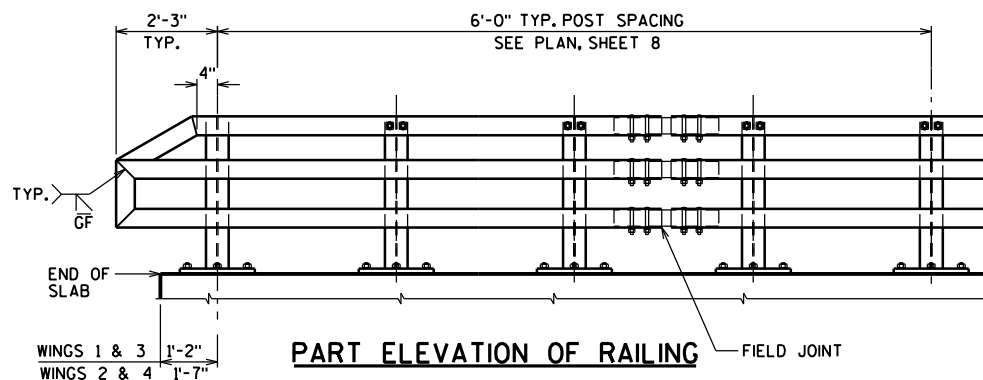
ANCHOR BOLTS

TOP VIEW AT END POST
(THREE BEAM RAIL ATTACHMENT)

SECTION C-C

DETAIL AT END POST
(THREE BEAM RAIL ATTACHMENT)

SECTION D-D



PART ELEVATION OF RAILING

LEGEND

- ① W6 x 25 WITH 1/8" x 1/2" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- ② PLATE 1/4" x 1 1/4" x 1-8" WITH 1 5/8" x 1 5/8" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.
- ③ ASTM A449 - 1/4" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED). 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-3" LONG.
- ④ 5/8" x 11" x 1-8" ANCHOR PLATE (GALVANIZED) WITH 1 5/8" DIA. HOLES FOR ANCHOR BOLTS NO. 3.
- ⑤ TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- ⑤A TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- ⑥ 7/8" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/4" x 1 5/8" x 1 5/8" WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION).
- * ⑦ 1/2" THK. BACK-UP PLATE WITH 2 - 7/8" x 1 1/2" THREADED SHOP WELDED STUDS (NO. 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THREE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.
- * ⑧ 1" DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5A FOR 7/8" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.
- ⑨ SPLICE SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE "SLIDING FIT".
- ⑩ 3/8" x 3 5/8" x 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.
- ⑩A 3/8" x 2 5/8" x 2'-4" PLATE USED IN NO. 5, 3/8" x 3 5/8" x 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.
- ⑪ 7/8" φ A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 1 5/8" x 1 1/4" LONGIT. SLOTTED HOLES AT FIELD JOINTS IN PLATE NO. 10A.
- * ⑫ 7/8" DIA. x 1 1/2" LONG THREADED SHOP WELDED STUDS (2 REQ'D).
- * ⑬ 3/8" x 8" x 1'-6" ANCHOR PLATE, BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THREE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.
- * ⑭ 7/8" DIA. x 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQUIRED).
- * ⑮ 1" φ HOLES IN TUBES NO. 5A FOR 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

GENERAL NOTES

1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M B-41-313" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
3. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
7. FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
8. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
9. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.
10. PAINTING IS NOT REQUIRED.
11. THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (TL-4).
- * 12. DO NOT FURNISH ITEMS 7, 8, 12, 13, 14 AND 15. THREE BEAM RAIL ATTACHMENT IS NOT INCLUDED.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE		B-41-313	
DRAWN BY JDJ		PLANS CK'D. JAS	
RAILING TUBULAR TYPE M		SHEET 9 OF 9	

PROJECT I.D. 5018-00-71 EARTHWORK SUMMARY

STAGE 1: PLACING TEMPORARY BYPASS AND APPROACHES						BORROW CY
STA	EXCAVATION COMMON CY	EXCAVATION ROCK CY	FILL (1) CY	EXPANDED FILL (2) CY	WASTE CY	
18+68.00	3	0	22	29	-26	26
19+00.00	9	0	71	92	-83	83
19+50.00	6	0	462	601	-595	595
20+00.00	0	0	212	276	-276	276
20+12.00	TEMPORARY BYPASS					
20+58.00	0	0	51	66	-66	66
20+70.00	0	0	198	257	-257	257
21+20.00	1	0	146	190	-189	189
21+70.00	1	0	21	27	-26	26
21+92.00	SUBTOTALS					
BYPASS SOUTH APPROACH	18	0	767	998	-980	980
BYPASS NORTH APPROACH	2	0	416	540	-538	538
TOTALS STAGE 1	20	0	1183	1538	-1518	1518

STAGE 2: OPAL ROAD BRIDGE APPROACHES						BORROW CY
STA	EXCAVATION COMMON CY	EXCAVATION ROCK CY	FILL (1) CY	EXPANDED FILL (2) CY	WASTE CY	
9+00.00	49	0	22	29	20	-20
9+25.00	75	0	51	66	9	-9
9+50.00	73	0	50	65	8	-8
9+77.62	STRUCTURE B-41-0313					
10+28.38	63	0	0	0	63	-63
10+68.00	48	0	4	5	43	-43
11+10.00	26	0	3	4	22	-22
11+40.00	SUBTOTALS					
SOUTH APPROACH	197	0	123	160	37	-37
NORTH APPROACH	137	0	7	9	128	-128
UNUSABLE PAVEMENT (3)						5
TOTALS STAGE 2	334	0	130	169	165	-160

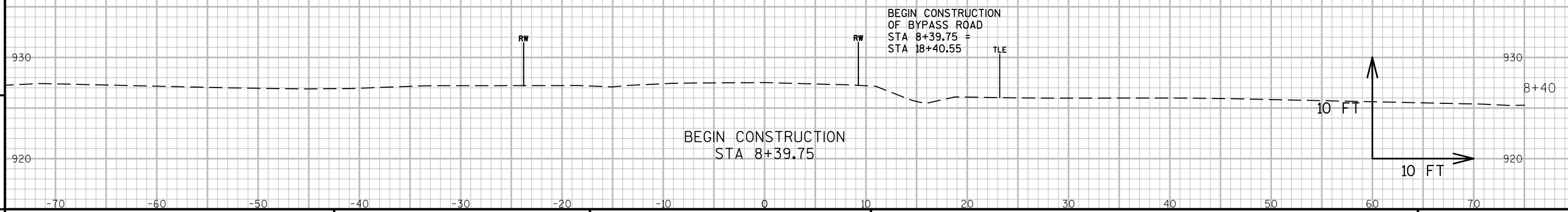
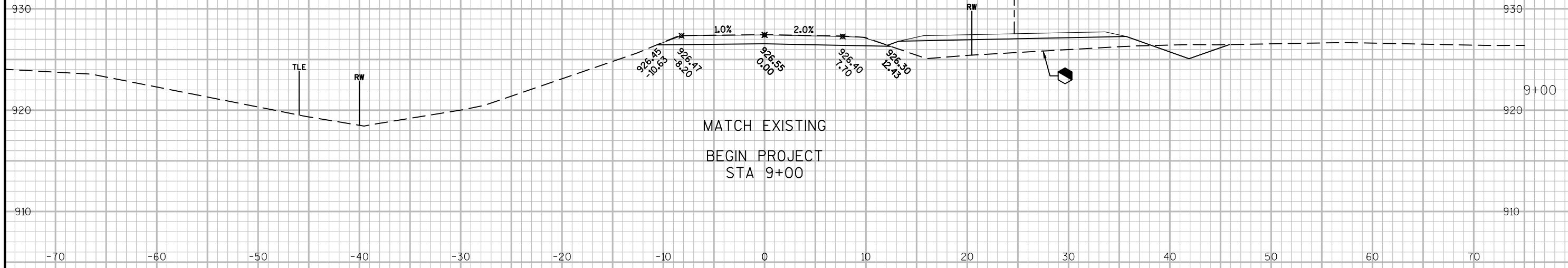
STAGE 3: REMOVING TEMPORARY BYPASS & APPROACHES						BORROW CY
STA	EXCAVATION COMMON CY	EXCAVATION ROCK CY	FILL (1) CY	EXPANDED FILL (2) CY	WASTE CY	
18+68.00	30	0	3	4	26	-26
19+00.00	88	0	9	12	76	-76
19+50.00	479	0	6	8	471	-471
20+00.00	216	0	0	0	216	-216
20+12.00	TEMPORARY BYPASS					
20+58.00	55	0	0	0	55	-55
20+70.00	215	0	0	0	215	-215
21+20.00	163	0	1	1	162	-162
21+70.00	28	0	1	1	27	-27
21+92.00	SUBTOTALS					
BYPASS SOUTH APPROACH	813	0	18	24	789	-789
BYPASS NORTH APPROACH	461	0	2	2	459	-459
TOTALS STAGE 3	1274	0	20	26	1248	-1248


- (1) - NOT A BID ITEM - FOR INFORMATIONAL PURPOSES ONLY.
- (2) - FILL EXPANSION 30%
- (3) - EXISTING PAVEMENT BASED ON AVE THK OF 0.5" OF ASPHALT PER BORING LOG.

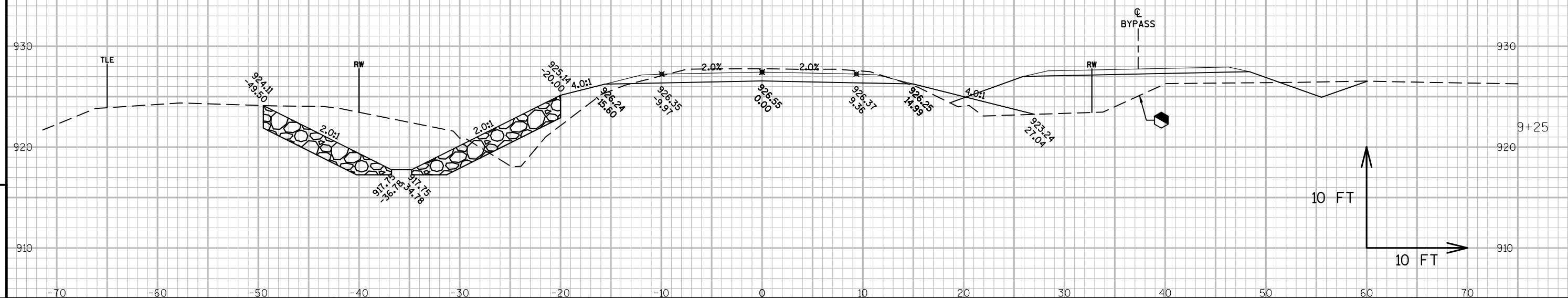
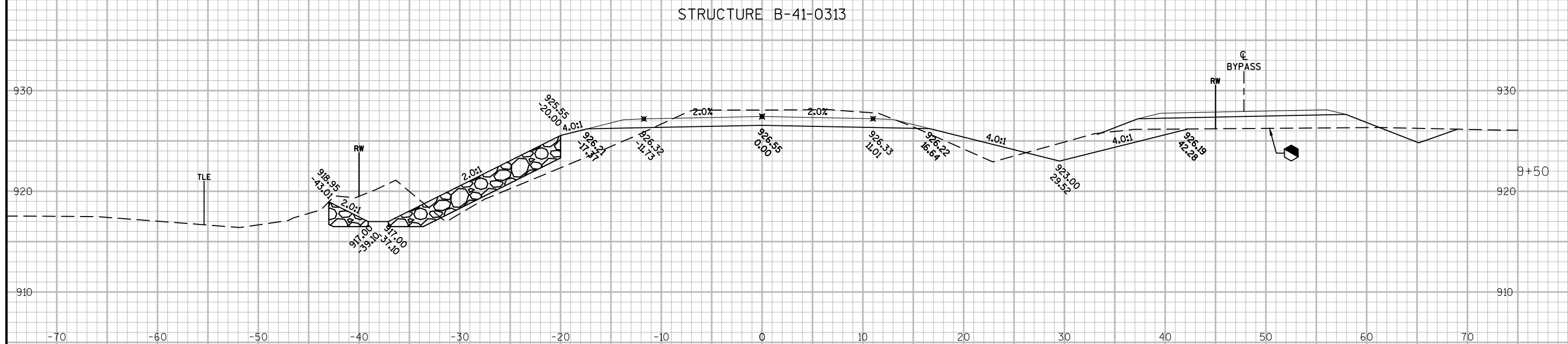
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9

◼ - FINAL GRADE TO MATCH EXISTING
AFTER REMOVAL OF BYPASS



 - FINAL GRADE TO MATCH EXISTING
AFTER REMOVAL OF BYPASS



PROJECT NO:5018-00-71

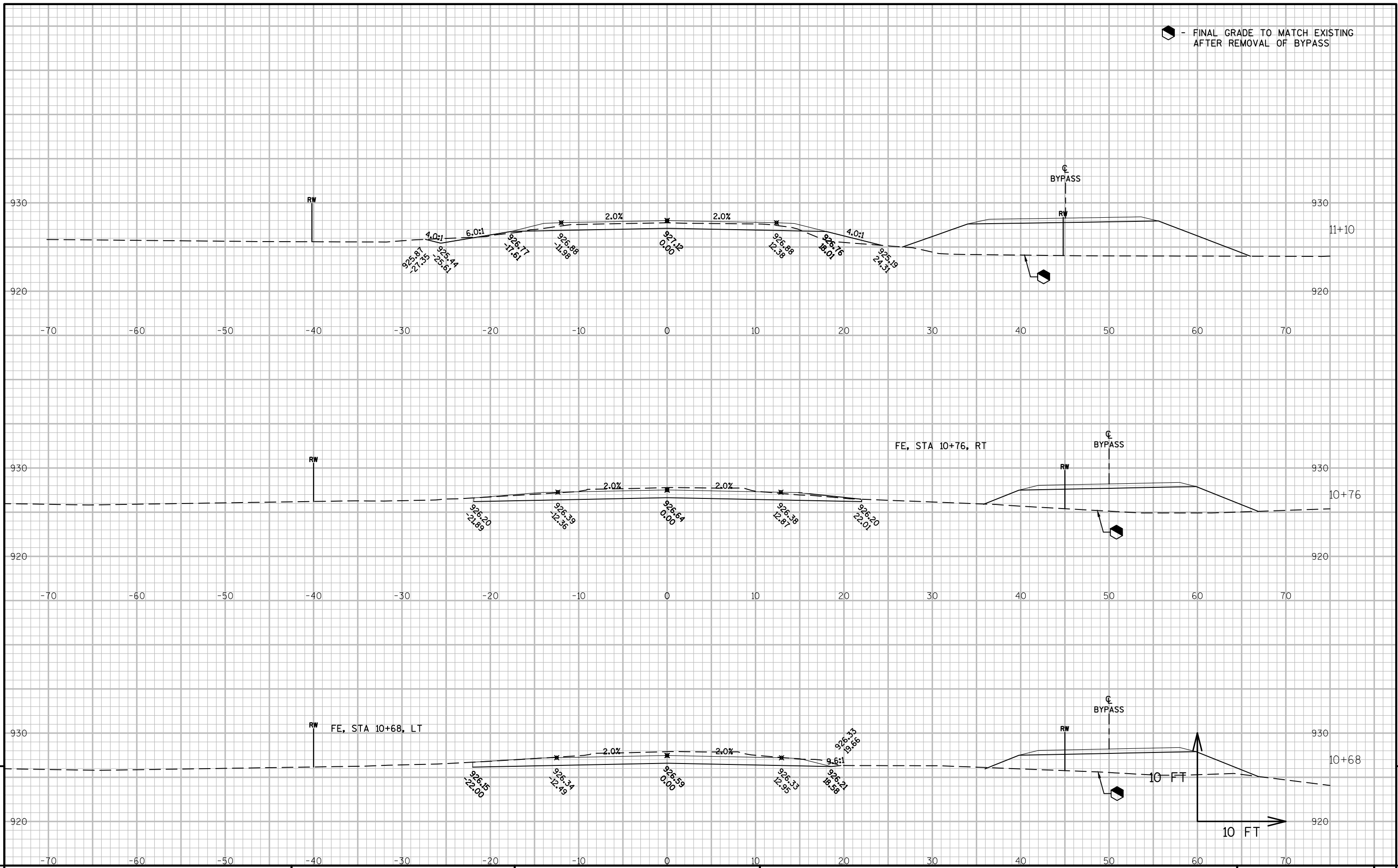
HWY: OPAL ROAD


COUNTY: MONROE

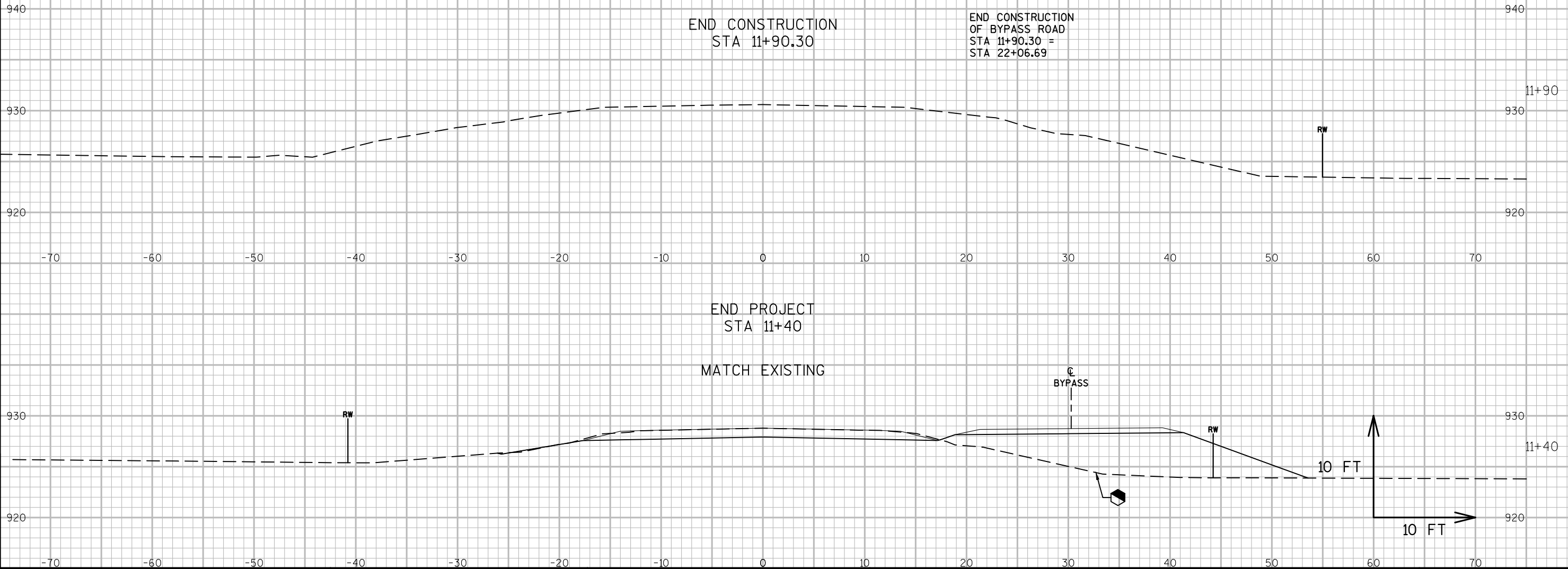
CROSS SECTIONS: OPAL ROAD

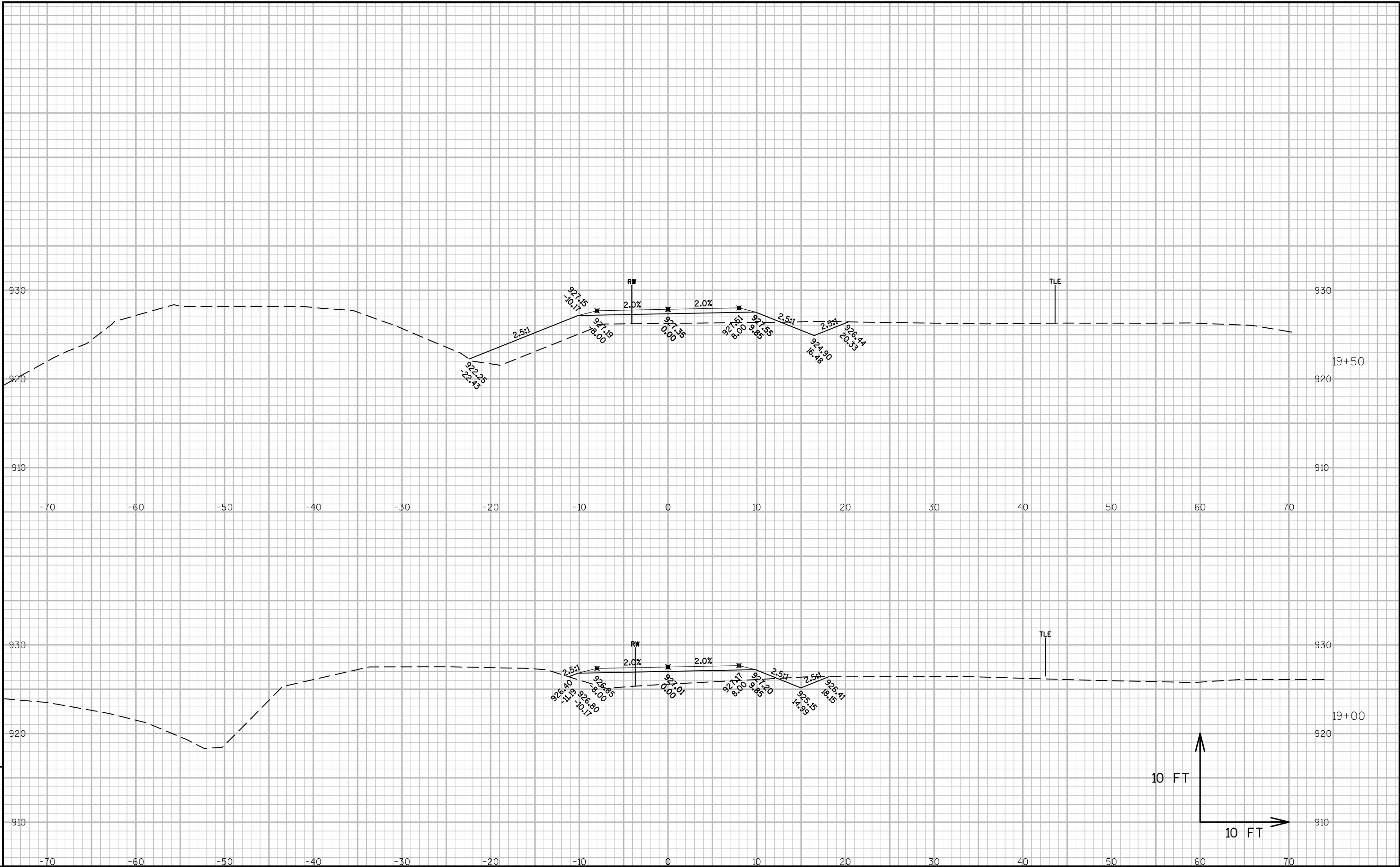
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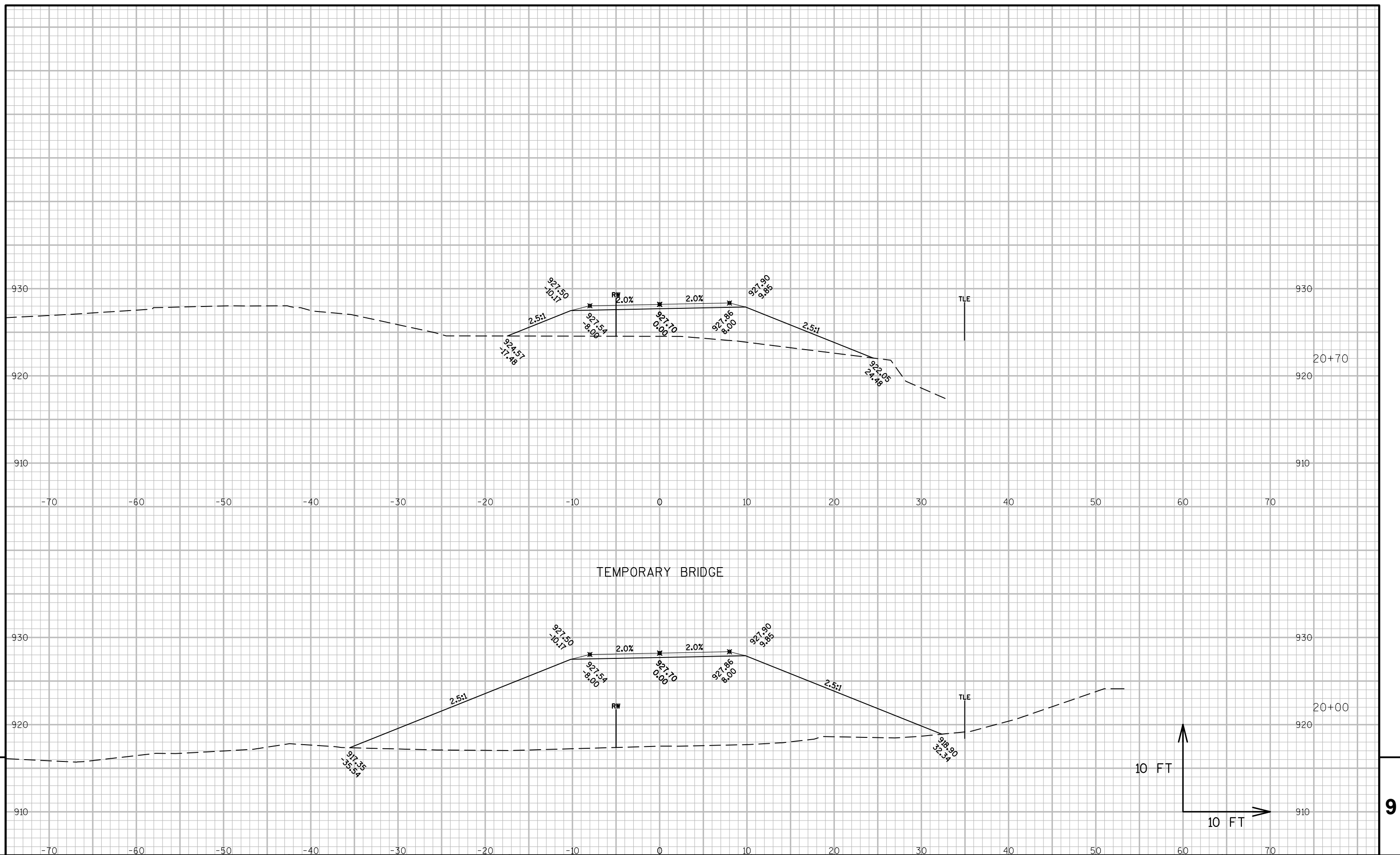
▣ - FINAL GRADE TO MATCH EXISTING
AFTER REMOVAL OF BYPASS

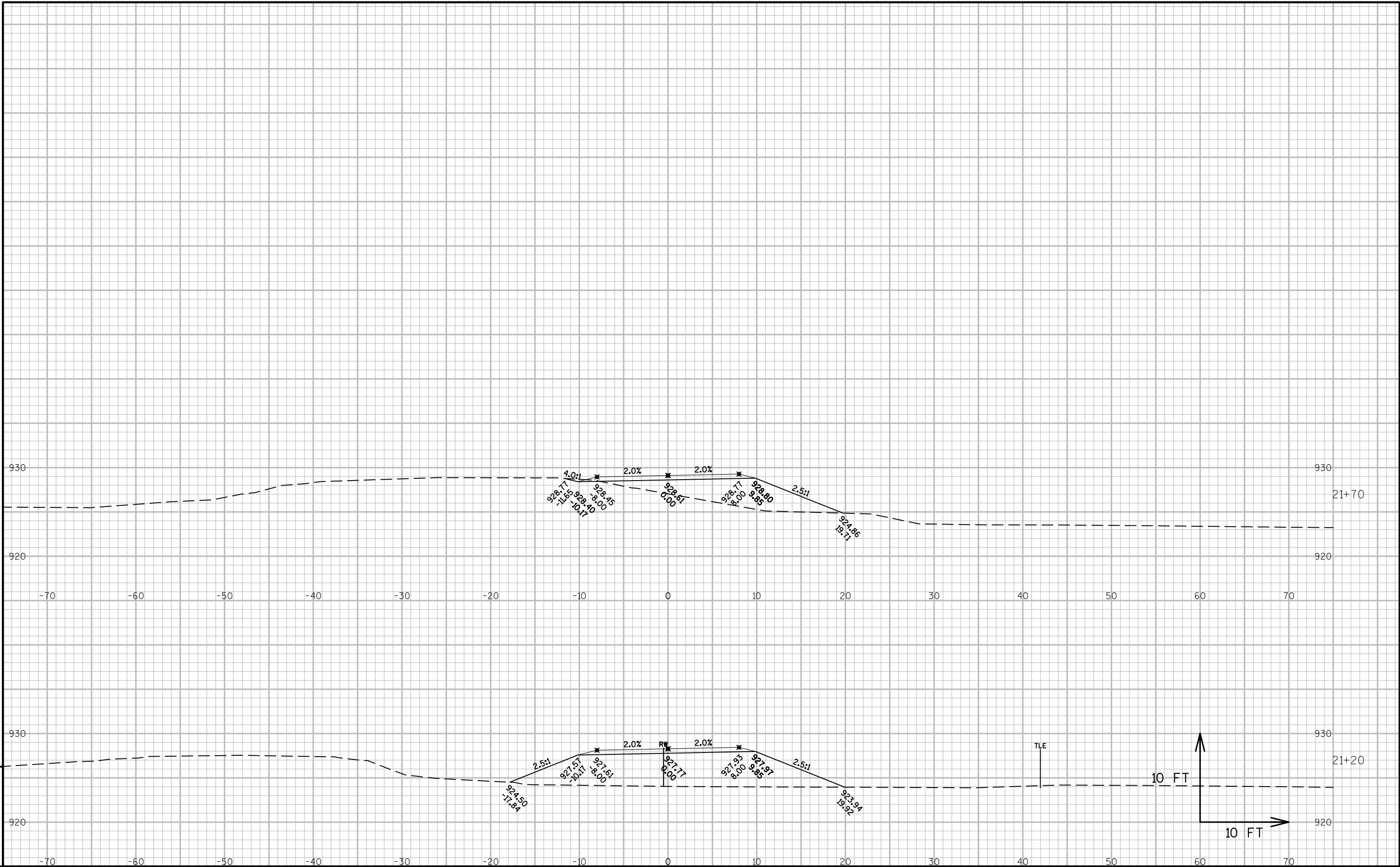


 - FINAL GRADE TO MATCH EXISTING
AFTER REMOVAL OF BYPASS









Notes



Wisconsin Department of Transportation

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