SWL

NOV 2016

PROJECT ID: 5307-00-72

WITH: N/A

COUNTY: LAFAYETTE

ORDER OF SHEETS

TOTAL SHEETS = 68

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

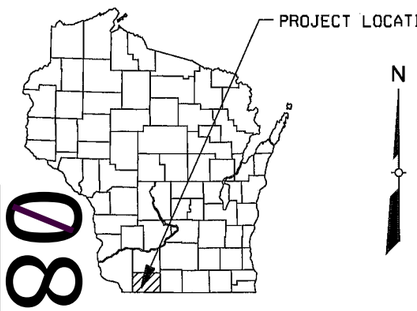
CITY OF SHULLSBURG, SEYMOUR ROAD

SHULLSBURG BRANCH BRIDGE B-33-129

CTH O

LAFAYETTE COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
5307-00-72	WISC 2016344	1

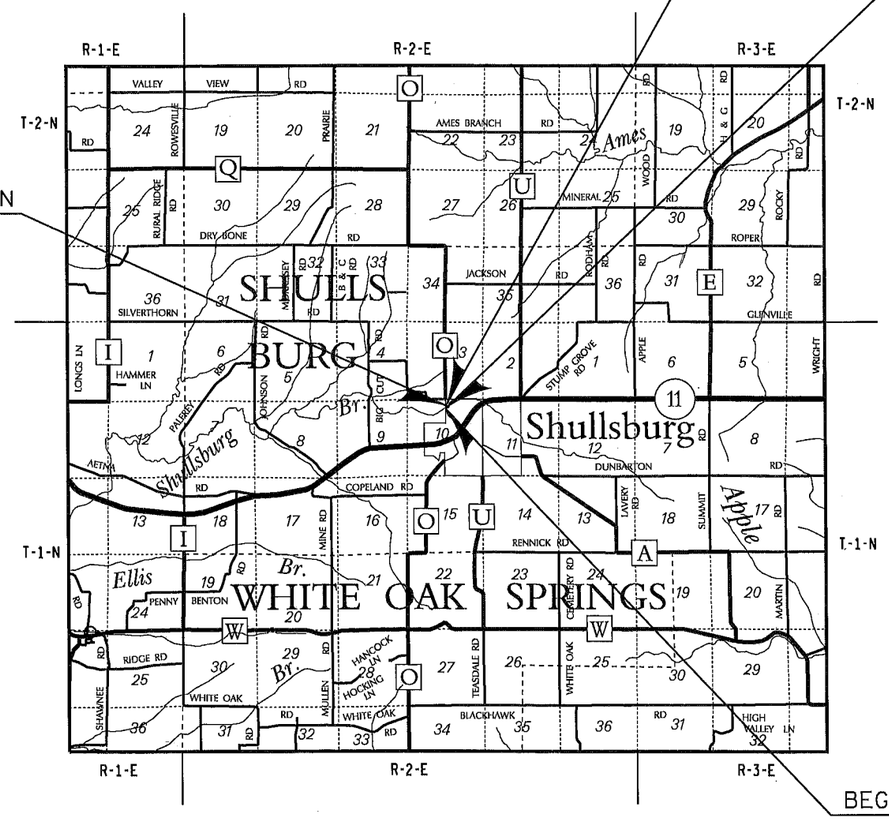


STATE PROJECT NUMBER
5307-00-72

END PROJECT 5307-00-72
STA. 25+62.00

EXISTING STRUCTURE B-33-850 (TO BE REPLACED)
STRUCTURE B-33-0129

END CONSTRUCTION
STA 26+50.00



BEGIN PROJECT 5307-00-72
STA. 22+37.50
Y=129,140.258
X=449,825.290

LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.061 MI.

ELEVATIONS ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 NAVD 88 (2007)
COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), LAFAYETTE COUNTY, NAD 1983 (91)

ACCEPTED FOR
COUNTY of LAFAYETTE

Apr. 11, 2016 (Date) — HIGHWAY COMMISSIONER

ORIGINAL PLANS PREPARED BY

AECOM

WISCONSIN
MATTHEW S. KRIPPNER
E-42470
VERONA
WI
PROFESSIONAL ENGINEER

4/18/16 (Date) — (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
Surveyor AECOM
Designer AECOM
Management Consultant KL ENGINEERING, INC.

APPROVED FOR THE DEPARTMENT
DATE: 4/26/16 (Management Consultant Signature)

E

DESIGN DESIGNATION

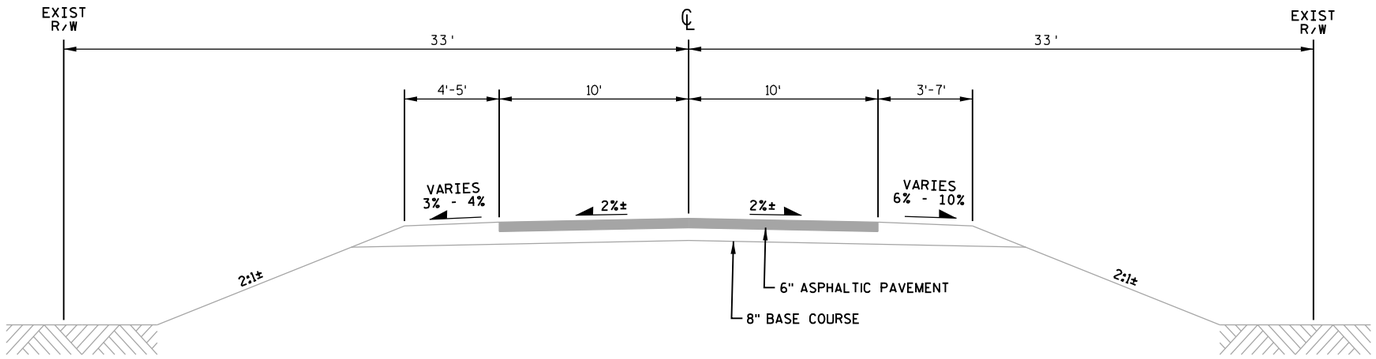
A.A.D.T.	2016	= 900
A.A.D.T.	2036	= 1,100
D.H.V.	(2036)	= 64
D.D.		= 60/40
T.		= 6.9%
DESIGN SPEED		= 30 MPH
ESALS		= 138,700

CONVENTIONAL SYMBOLS

PLAN
- CORPORATE LIMITS
- PROPERTY LINE (PL + 58.1)
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- MARSH AREA
- WOODED OR SHRUB AREA

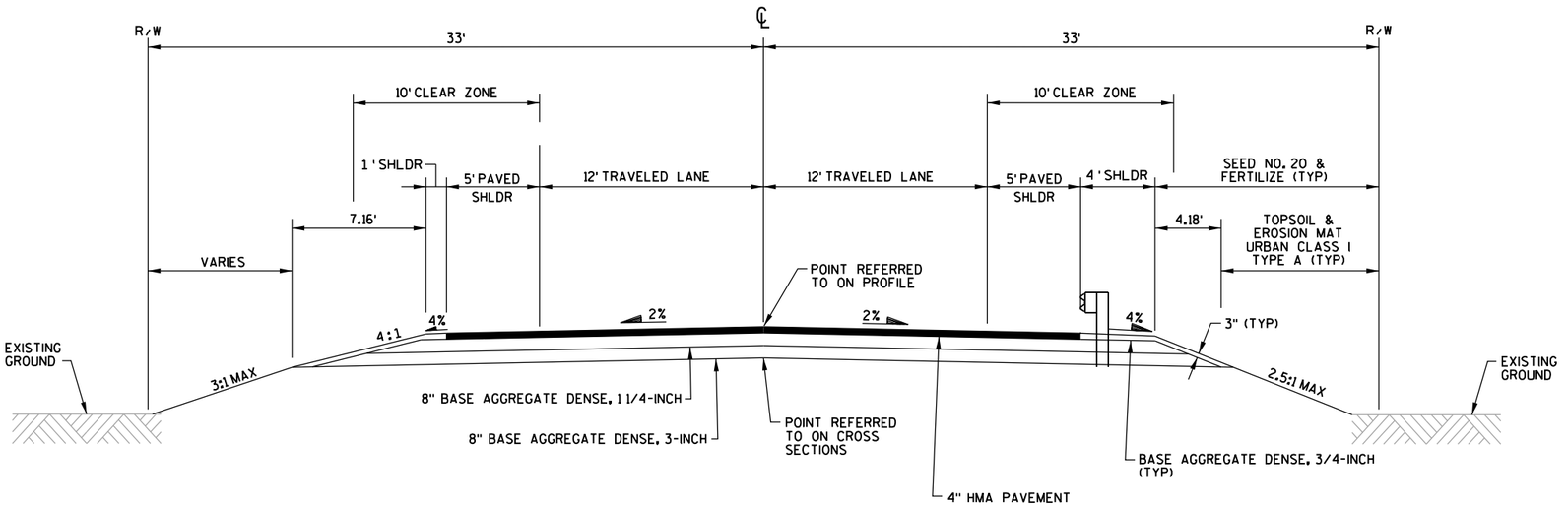
PROFILE
- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such) (ROCK)
- SPECIAL DITCH (LABEL)
- GRADE ELEVATION (95.36)
- CULVERT (Profile View)

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



TYPICAL EXISTING SECTION - CTH 0

STA 22+37.50 - STA 23+67.56
STA 24+29.33 - STA 25+62.00



TYPICAL FINISHED SECTION - CTH 0

STA 22+37.50 - STA 23+67.56
STA 24+29.33 - STA 25+62.00

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

** DENOTES UTILITIES THAT ARE NOT DIGGER'S HOTLINE MEMBERS

GENERAL NOTES

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

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

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

SECTIONS AS SHOWN ON THE CROSS SECTION SHEETS INCLUDE THE THICKNESS OF TOPSOIL.

FILL AS SHOWN ON THE PLAN SHEETS PERTAINS TO EMBANKMENTS CONSTRUCTED FROM EXCAVATION COMMON OR BORROW. THE EXPANSION ALLOWANCE USED TO COMPUTE THE VOLUME OF MATERIAL NECESSARY TO COMPLETE THE FILL IS 25 PERCENT.

THE WISCONSIN DEPARTMENT OF TRANSPORTATION WILL FURNISH THE CONTRACTOR AN ALUMINUM MONUMENT WHICH SHALL BE SET IN THE STRUCTURE AS DESIGNATED BY THE ENGINEER.

THE 4" HMA PAVEMENT 3 LT 58-28 S SHALL CONSIST OF A 1.75-INCH UPPER LAYER, & A 2.25-INCH LOWER LAYER 4 LT 58-28 S.

THE RUNOFF COEFFICIENTS OF SURFACE DRAINAGE AT THE PROJECT SITE WILL NOT BE CHANGED FROM BEFORE TO AFTER CONSTRUCTION.

WETLANDS ARE PRESENT WITHIN THE PROJECT LIMITS. DO NOT OPERATE EQUIPMENT OUTSIDE THE SLOPE INTERCEPTS.

USACE CONTACT

KERRIE HAUSER
U.S. ARMY CORPS OF ENGINEERS
1114 SOUTH OAK STREET
LA CRESCENT, MINNESOTA 55947
651-290-5903

DESIGNER CONTACT

AECOM

MATTHEW KRIPPNER
1350 DEMING WAY
MIDDLETON, WI 53562
(608)-828-8123
matthew.krippner@aecom.com
AECOM PROJECT NO. 60313105

WDNR CONTACT

LAURA BUB
WISCONSIN DEPARTMENT OF NATURAL RESOURCES
3911 FISH HATCHERY ROAD
FITCHBURG, WI 53711
(608) 275-3485
Laura.Bub@wisconsin.gov

LAFAYETTE COUNTY

TOM JEAN
12016 HILL STREET
PO BOX 100
DARLINGTON, WI 53530
608-776-4919
tom.jean@lafayettecountywi.org

UTILITIES

COMMUNICATION LINE:

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CENTURYLINK
130 FOURTH ST.
BARABOO WI 53913
608-355-7501
Steven.bishop@centurylink.com

PATRICK MCGRAW
MEDIACOM
6925 GARDEN PRAIRIE RD.
GARDEN PRAIRIE, IL 61038
815-597-5103
pmcgraw@mediacomcc.com

ELECTRIC:

TROY DAHL
SCENIC RIVER ENERGY COOPERATIVE
231 N. SHERIDAN ST.
LANCASTER, WI 53813
608-
tdahl@srec.net

JIM PAQUETTE
CITY OF SHULLSBURG ELECTRIC DEPT.
P.O. BOX 580
SHULLSBURG, WI 53586
(608) 965-3630

GAS:

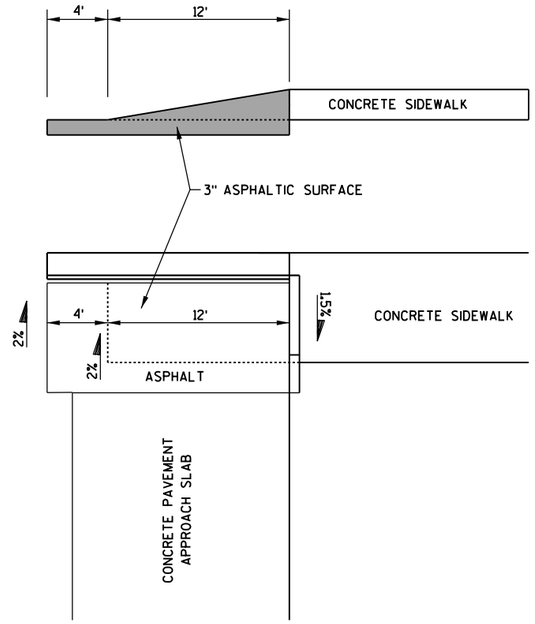
ADAM MARING
WE ENERGIES
N3025 14 AVE
MONROE, WI 53566
608-328-5679
adam.maring@we-energies.com

SEWER:

VERNE JACKSON
CITY OF SHULLSBURG SEWER DEPT.
190 N. JUDGEMENT ST.
SHULLSBURG, WI 53586
608-965-3258

WATER:

DON DICKINSON
CITY OF SHULLSBURG STREET DEPT.
190 N. JUDGEMENT ST.
SHULLSBURG, WI 53586
608-965-3839



ASPHALTIC TRANSITION TO SIDEWALK

PROJECT NUMBER: 5307-00-72	HWY: CTH O	COUNTY: LAFAYETTE	CONSTRUCTION DETAIL	SHEET 3	E

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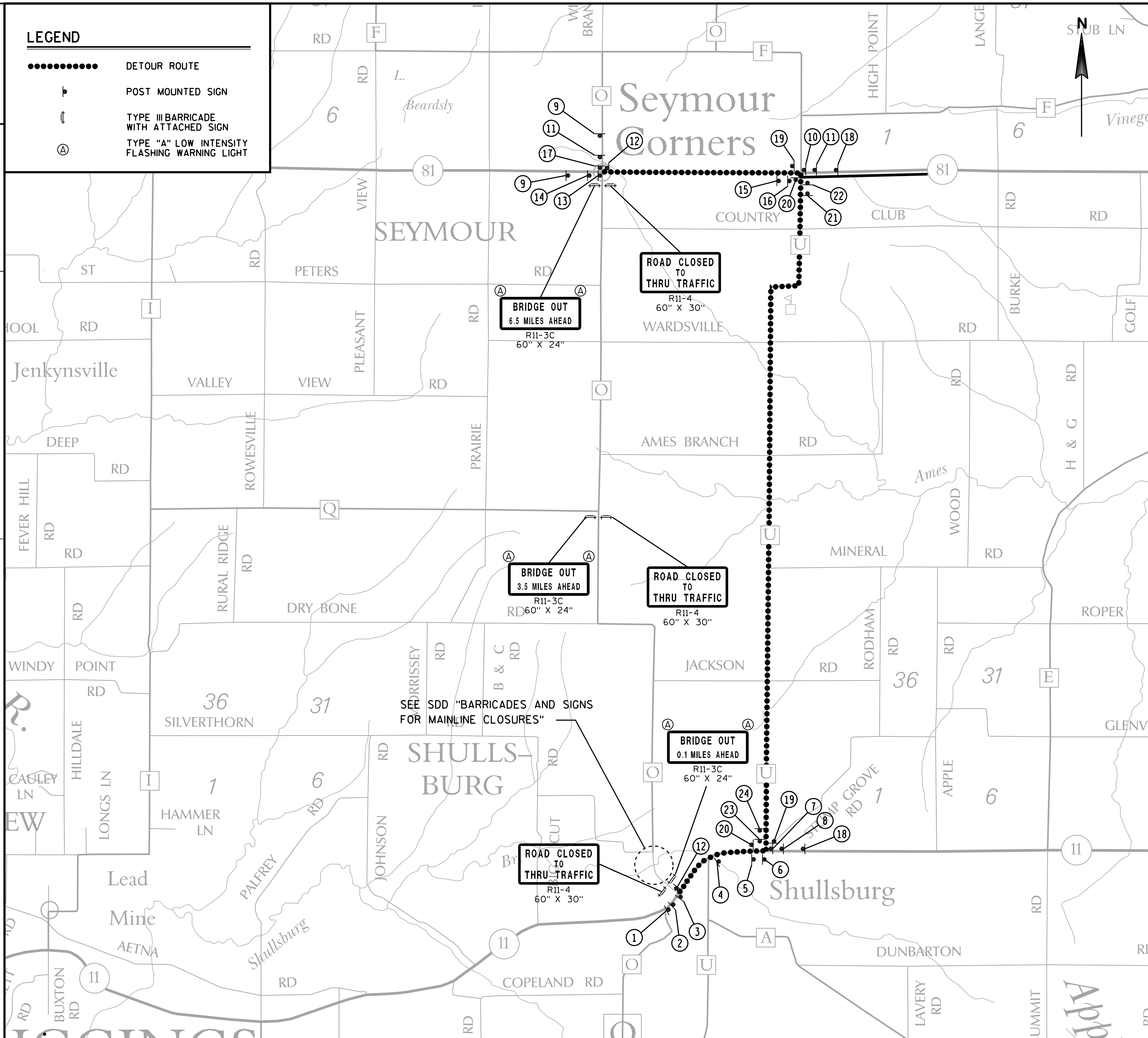
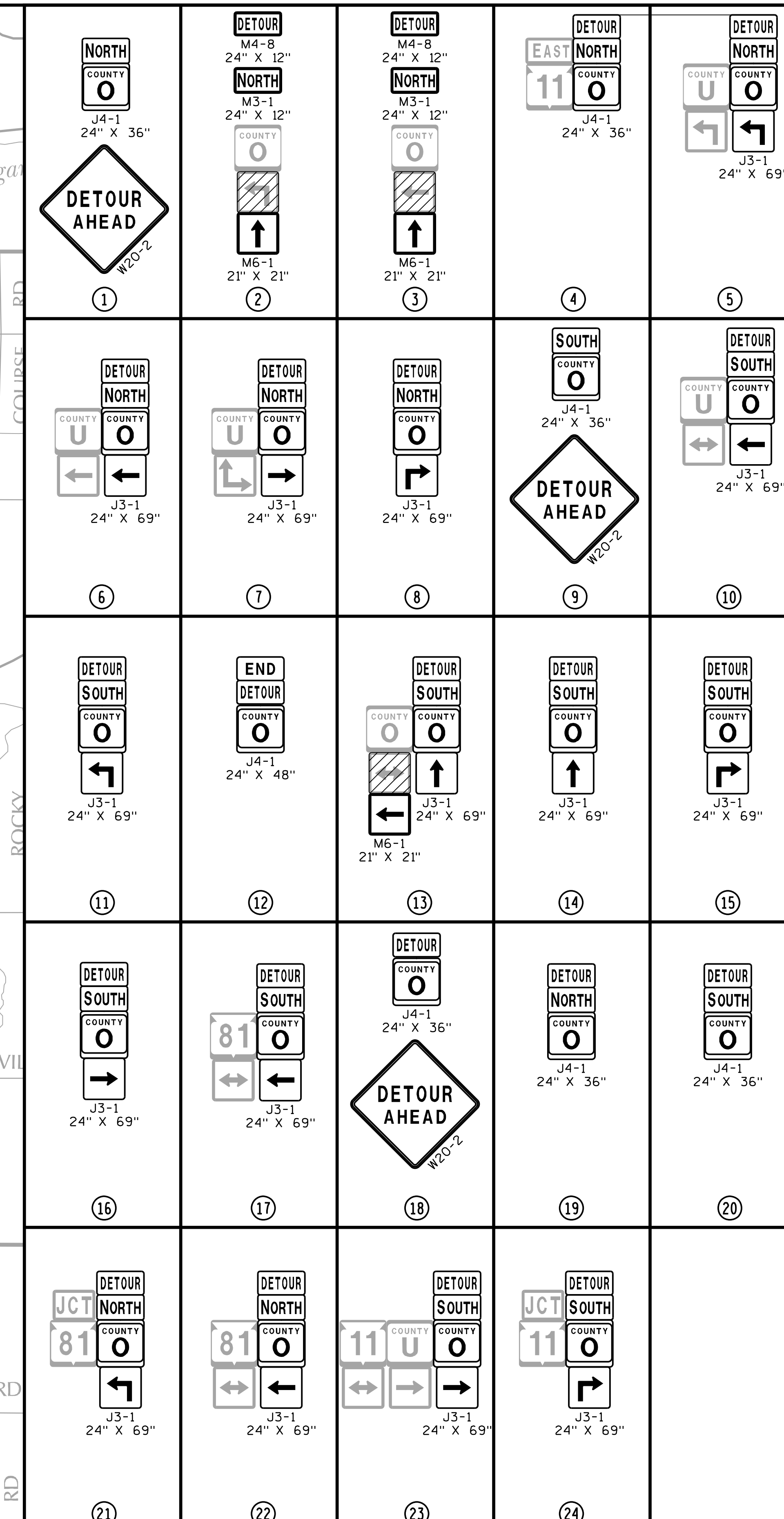
PLOT DATE: 2/26/2016
PLOT TIME: 11:27:48 AM
PLOT SCALE: 1:10
WISDOT/CADDS SHEET 42

LEGEND

- DETOUR ROUTE
- POST MOUNTED SIGN
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT





PROJECT NUMBER: 5307-00-72	HWY: CTH O	COUNTY: LAFAYETTE	DETOUR ROUTE	SHEET 4	E

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WISDOT/CADDS SHEET 42

DATE 16AUG16 — E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	5307-00-72 QUANTITY
0010	203.0600.S	Removing Old Structure Over Waterway With Minimal Debris (station) 01. 24+00	LS	1.000	1.000
0020	205.0100	Excavation Common	CY	670.000	670.000
0030	206.1000	Excavation for Structures Bridges (structure) 01. B-33-0129	LS	1.000	1.000
0040	210.0100	Backfill Structure	CY	400.000	400.000
0050	213.0100	Finishing Roadway (project) 01. 5307-00-72	EACH	1.000	1.000
0060	305.0110	Base Aggregate Dense 3/4-Inch	TON	120.000	120.000
0070	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	530.000	530.000
0080	305.0130	Base Aggregate Dense 3-Inch	TON	640.000	640.000
0090	415.0410	Concrete Pavement Approach Slab	SY	100.000	100.000
0100	440.5020	Incentive IRI Ride Bridge	DOL	250.000	250.000
0110	455.0605	Tack Coat	GAL	60.000	60.000
0120	460.2000	Incentive Density HMA Pavement	DOL	130.000	130.000
0130	460.5223	HMA Pavement 3 LT 58-28 S	TON	107.000	107.000
0140	460.5224	HMA Pavement 4 LT 58-28 S	TON	83.000	83.000
0150	465.0105	Asphaltic Surface	TON	6.000	6.000
0160	465.0315	Asphaltic Flumes	SY	9.000	9.000
0170	502.0100	Concrete Masonry Bridges	CY	235.000	235.000
0180	502.3200	Protective Surface Treatment	SY	362.000	362.000
0190	503.0128	Prestressed Girder Type I 28-Inch	LF	531.000	531.000
0200	505.0400	Bar Steel Reinforcement HS Structures	LB	6,240.000	6,240.000
0210	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	21,750.000	21,750.000
0220	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	18.000	18.000
0230	506.4000	Steel Diaphragms (structure) 01. B-33-0129	EACH	8.000	8.000
0240	513.4061	Railing Tubular Type M (structure) 01. B-33-0129	LF	94.000	94.000
0250	516.0500	Rubberized Membrane Waterproofing	SY	22.000	22.000
0260	550.0020	Pre-Boring Rock or Consolidated Materials	LF	208.000	208.000
0270	550.1100	Piling Steel HP 10-Inch X 42 Lb	LF	240.000	240.000
0280	606.0300	Riprap Heavy	CY	254.000	254.000
0290	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	150.000	150.000
0300	614.2300	MGS Guardrail 3	LF	25.000	25.000
0310	614.2500	MGS Thrie Beam Transition	LF	78.800	78.800
0320	614.2610	MGS Guardrail Terminal EAT	EACH	2.000	2.000
0330	619.1000	Mobilization	EACH	1.000	1.000
0340	624.0100	Water	MGAL	13.000	13.000
0350	625.0100	Topsoil	SY	980.000	980.000
0360	628.1504	Silt Fence	LF	879.000	879.000
0370	628.1520	Silt Fence Maintenance	LF	887.000	887.000
0380	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0390	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0400	628.2006	Erosion Mat Urban Class I Type A	SY	980.000	980.000
0410	628.6005	Turbidity Barriers	SY	100.000	100.000
0420	629.0210	Fertilizer Type B	CWT	1.000	1.000
0430	630.0120	Seeding Mixture No. 20	LB	40.000	40.000
0440	642.5001	Field Office Type B	EACH	1.000	1.000
0450	643.0100	Traffic Control (project) 01. 5307-00-72	EACH	1.000	1.000
0460	643.0420	Traffic Control Barricades Type III	DAY	670.000	670.000
0470	643.0705	Traffic Control Warning Lights Type A	DAY	760.000	760.000
0480	643.0900	Traffic Control Signs	DAY	480.000	480.000

3

DATE 16AUG16 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	5307-00-72 QUANTITY
0490	643.0920	Traffic Control Covering Signs Type II	EACH	3.000	3.000
0500	643.2000	Traffic Control Detour (project) 01. 5307-00-72	EACH	1.000	1.000
0510	643.3000	Traffic Control Detour Signs	DAY	5,050.000	5,050.000
0520	645.0120	Geotextile Type HR	SY	385.000	385.000
0530	646.0106	Pavement Marking Epoxy 4-Inch	LF	1,320.000	1,320.000
0540	650.4500	Construction Staking Subgrade	LF	232.000	232.000
0550	650.5000	Construction Staking Base	LF	232.000	232.000
0560	650.6500	Construction Staking Structure Layout (structure) 01. B-33-0129	LS	1.000	1.000
0570	650.9910	Construction Staking Supplemental Control (project) 01. 5307-00-72	LS	1.000	1.000
0580	650.9920	Construction Staking Slope Stakes	LF	232.000	232.000
0590	690.0150	Sawing Asphalt	LF	51.000	51.000
0600	715.0502	Incentive Strength Concrete Structures	DOL	1,410.000	1,410.000
0610	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	150.000	150.000
0620	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	230.000	230.000
0630	SPV.0090	Special 01. Railing Tubular Type M Modified B-33-0129	LF	94.000	94.000

EARTHWORK

From/To Station	Location	Excavation Common (1) (item # 205.0100) Cut (2)	Available Material (3)	Unexpanded Fill	Expanded Fill (4) Factor 1.25	Mass Ordinate +/- (5)	Waste	Borrow (item #208.0100)
22+38 - 23+68	South Approach	350	350	120	150	200	200	0
24+29 - 26+50	North Approach	320	320	400	500	-180	0	180
Grand Total		670	670	520	650	20	200	180
	Total Exc Common	670					Total Borrow	0

1) Excavation Common is the sum of the Cut and EBS Excavation columns. Item number 205.0100
2) Salvaged/Unsuable Pavement Material is included in Cut.
3) Available Material = Cut - Salvaged/Unusable Pavement Material
4) Expanded Fill. Factor = 1.25
Depending on selections: Expanded Fill = (Unexpanded Fill) * Fill Factor

5) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division.
Minus indicates a shortage of material within the Division.

BASE AGGREGATE DENSE

STATION	-	STATION	LOCATION	305.0110 3/4-INCH TON	305.0120 1 1/4-INCH TON	305.0130 3-INCH TON	624.0100 WATER MGAL	REMARKS
22+38	-	23+52	CTH O	40	250	300	6	SOUTH APPROACH
24+45	-	25+62	CTH O	70	250	310	6	NORTH APPROACH
UNDISTRIBUTED				10	30	30	1	
PROJECT 5307-00-72 TOTAL				120	530	640	13	

CONCRETE PAVEMENT APPROACH SLAB

STATION	-	STATION	LOCATION	415.0410 CONCRETE PAVEMENT APPROACH SLAB SY
23+53.17	-	23+68.17	SOUTH APPROACH	50
24+28.67	-	24+43.67	NORTH APPROACH	50
PROJECT 5307-00-72 TOTAL				100

ASPHALT PAVEMENT ITEMS

STATION	-	STATION	LOCATION	455.0605 TACK COAT GAL	460.5223 HMA PAVEMENT 3 LT 58-28 S TON	460.5224 HMA PAVEMENT 4 LT 58-28 S TON
22+38	-	23+52	CTH O	30	53	41
24+45	-	25+62	CTH O	30	54	42
PROJECT 5307-00-72 TOTAL				60	107	83

ASPHALT SURFACE

STATION	-	STATION	LOCATION	465.0105 ASPHALTIC SURFACE TON
23+51	-	23+68	SOUTH APPROACH	3
24+28	-	24+46	NORTH APPROACH	3
PROJECT 5307-00-72 TOTAL				6

ASPHALTIC FLUMES

STATION	OFFSET	LOCATION	465.0315 ASPHALTIC FLUMES SY
23+47	21' LT	SW QUADRANT OF BRIDGE	9
PROJECT 5307-00-72 TOTAL			9

GUARDRAIL

STATION	-	STATION	OFFSET	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
22+49.21	-	23+54.17	RT	12.5	39.4	1
24+42.84	-	25+48.34	RT	12.5	39.4	1
PROJECT 5307-00-72 TOTAL				25	78.8	2

LANDSCAPING

STATION	-	STATION	LOCATION	625.0100 TOPSOIL SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB
22+38	-	23+52	LT	210	0.2	9
22+38	-	23+52	RT	80	0.1	4
24+45	-	25+62	LT	230	0.2	9
24+45	-	25+62	RT	260	0.2	10
UNDISTRIBUTED				200	0.3	8
PROJECT 5307-00-72 TOTAL				**980**	**1.0**	**40**

EROSION CONTROL

STATION	-	STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	628.2006 EROSION MAT URBAN CLASS I TYPE A SY	628.6005 TURBIDITY BARRIERS SY
22+38	-	23+72	LT	147	147	---	---	210	---
22+38	-	23+72	RT	143	143	---	---	80	---
24+15	-	25+62	LT	170	170	---	---	230	---
24+15	-	26+50	RT	242	242	---	---	260	---
23+81			LT & RT	---	---	---	---	0	53
24+15			LT & RT	---	---	---	---	0	28
UNDISTRIBUTED				177	185	2	2	200	19
PROJECT 5307-00-72 TOTAL				**879**	**887**	**2**	**2**	**980**	**100**

TRAFFIC CONTROL

LOCATION	DAYS IN SERVICE	643.0420 TRAFFIC CONTROL BARRICADES TYPE III NO.	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAY	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A NO.	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	643.0900 TRAFFIC CONTROL SIGNS NO.	643.0900 TRAFFIC CONTROL SIGNS DAY	643.2000 TRAFFIC CONTROL DETOUR 5307-00-72 EACH	643.3000 TRAFFIC CONTROL DETOUR SIGNS NO.	643.3000 TRAFFIC CONTROL DETOUR SIGNS DAY
5307-00-72	45	14	630	16	720	10	450	1	107	4,815
UNDISTRIBUTED		----	40		40		30	----		235
PROJECT 5307-00-72 TOTAL			**670**		**760**		**480**	**1**		**5,050**

TRAFFIC CONTROL COVERING SIGNS

SIGN DETAIL NUMBER	PLAN SHEET	SIGN COVERED	NO. OF COVERING CYCLES	643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II EACH
2	DETOUR ROUTE	LEFT TURN ARROW	1	1
3	DETOUR ROUTE	LEFT ARROW	1	1
13	DETOUR ROUTE	DOUBLE ARROW	1	1
PROJECT 5307-00-72 TOTAL				**3**

PAVEMENT MARKING ITEMS

STATION	-	STATION	TYPE	646.0106 PAVEMENT MARKING EPOXY 4-INCH WHITE LF	646.0106 PAVEMENT MARKING EPOXY 4-INCH YELLOW LF
22+38	-	23+52	EDGELINE, CENTERLINE (DOUBLE SOLID)	230	230
23+52	-	24+45	EDGELINE, CENTERLINE (DOUBLE SOLID)	190	190
24+45	-	25+62	EDGELINE, CENTERLINE (DOUBLE SOLID)	240	240
PROJECT 5307-00-72 TOTAL				**1,320**	

CONSTRUCTION STAKING

STATION	-	STATION	LOCATION	650.4500 SUBGRADE LF	650.5000 BASE LF	650.9910 SUPPLEMENTAL CONTROL 5307-00-72 LS	650.9920 SLOPE STAKES LF
22+38	-	23+52	CTH O	115	115	---	115
24+45	-	25+62	CTH O	117	117	---	117
5307-00-72				---	---	1	---
PROJECT 5307-00-72 TOTAL				**232**	**232**	**1**	**232**

SAWING PAVEMENT

STATION	LOCATION	690.0150 SAWING ASPHALT LF
22+38	CTH O - MATCH EXISTING	28
25+62	CTH O - MATCH EXISTING	23
PROJECT 5307-00-72 TOTAL		**51**

CONVENTIONAL SIGNS AND ABBREVIATIONS

STATE LINE
COUNTY LINE
TOWNSHIP AND RANGE LINES
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
NEW REFERENCE LINE
NEW R/W LINE
EXISTING R/W LINE
PROPERTY LINE — P.L.
CORPORATE LIMITS — NAME
LOT, TIE AND OTHER MINOR LINES
SLOPE INTERCEPTS — SLOPE INTERCEPTS
UNDERGROUND FACILITY (Communications, Electric, Etc.) — C (Type)
UTILITY EASEMENT
FENCE
FEE INTEREST
TEMPORARY INTEREST
EASEMENT (Highway, Permanent Limited or Restricted Development)
BEAM GUARD
TRANSMISSION STRUCTURES (Line Optional)
RAIL LINE — (SMALL SCALE) (LARGE SCALE)

SECTION CORNER
NOTATION FOR COMBUSTIBLE FLUIDS — CAUTION
NOTATION FOR HIGH VOLTAGE TRANSMISSION LINES — CAUTION
BRIDGE
STREAM OR RIVER — NAME
LAKE — NAME
CULVERT (Box, Pipe Or Cattle Pass) — (Type)
SIGN — / SIGN

FOUNDATION OR RUIN — FDN.
BUILDING — TYPE
CEMETERY
R/W MONUMENT
NON-MONUMENTED R/W POINT
IRON PIN — I.P.
VALVE — Ø GAS (TYPE)
WINDMILL
MANHOLE, SEPTIC VENT, WELL, ETC. — M.H. (Type)
GAS PUMPS — G.P.
BUSHES
TREES (Deciduous) (Coniferous)
WOODS
ENCROACHING SIGN — E-1 / SIGN

	COMPENSABLE	NON-COMPENSABLE
ELECTRIC POLE	■	⌀
TELEPHONE POLE	◪	⌀
PEDESTAL (Label Type - Communications, Electric)	■	⌑

ACCESS RESTRICTED (By Acquisition)
ACCESS RESTRICTED (By Previous Acquisition/Control)
NO ACCESS (By Statutory Authority)

P.I. or PI	Point of Intersection	ST.	Street
°.	Deflection Angle	IP	Iron Pipe or Iron Pin
D.	Degree of Curve	C.S.M.	Certified Survey Map
T.	Tangent Length	COR.	Corner
L.	Length	L.C.	Long Chord
R.	Radius	L.C.B.	Long Chord Bearing
CATV	Cable Television Line	MI.	Miles
FO	Fiber Optic Cable	MISC	Miscellaneous
G	Gas Line	N/A	Not Available or Applicable
GUY	Guy Wire	P.L.	Property Line
GV	Gas Valve	P.L.E.	Permanent Limited Easement
SAN	Sanitary Sewer Line	P.O.B.	Point of Beginning
SEPV.	Septic Vent	PC	Point of Curvature
T	Telephone Line	PG.	Page
W	Water Line	PROP	Property Corner
ANT.	Antenna	PT	Point of Tangency
B	Barn or Building	R/W	Right of Way
G	Garage	RD.	Road
H	House	REM.	Remnant
S	Shed	S.F.	Square Feet
C.T.H.	County Trunk Highway	SEC.	Section
CORP	Corporation	STA.	Station
LLC	Limited Liability Corporation	T.L.E. or TLE	Temporary Limited Easement
RR.	Railroad	VOL.	Volume
S.T.H.	State Trunk Highway		

NOTES

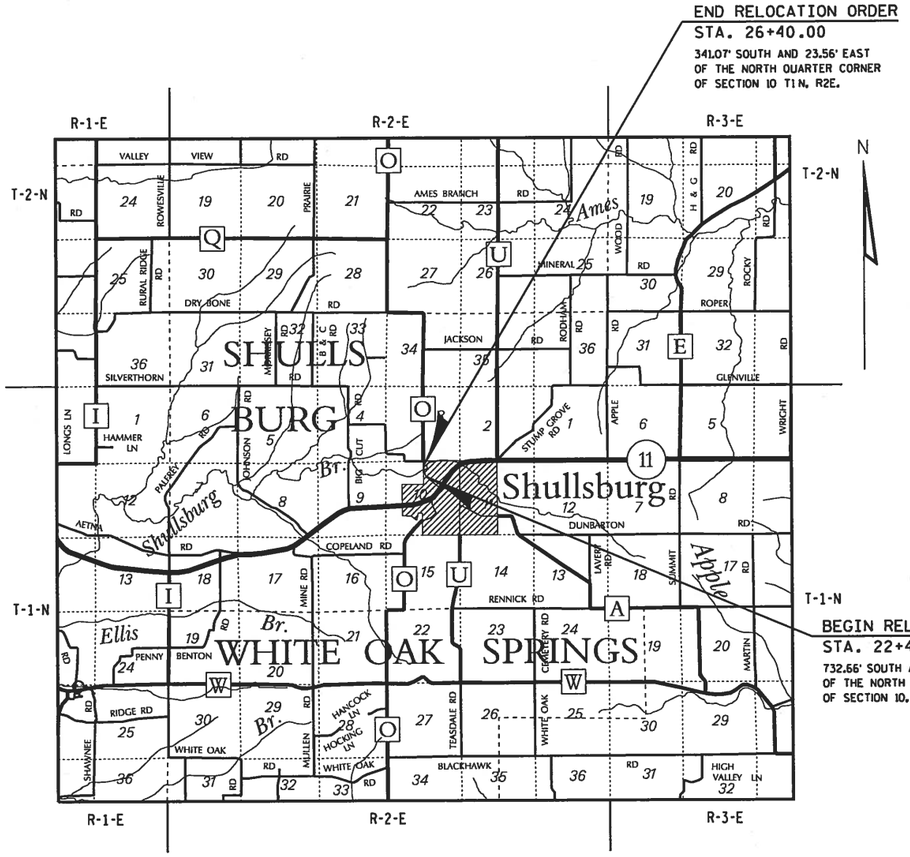
POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COUNTY COORDINATES, LAFAYETTE COUNTY, NAD 83 (2011) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS AND GRID DISTANCES. GRID DISTANCES MAY BE USED FOR GROUND DISTANCES.

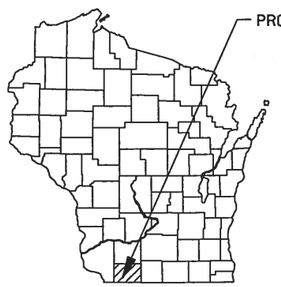
RIGHT OF WAY MONUMENTS ARE TYPE 2 MONUMENTS (TYPICALLY 3/4 " X 24" REBAR) AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

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

FOR CURRENT ACCESS/DRIVEWAY INFORMATION, CONTACT THE LAFAYETTE COUNTY HIGHWAY DEPARTMENT.

PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. EXCLUDING RIGHT OF WAY LINES, THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.





LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.076 MI.

R/W PROJECT NUMBER	SHEET NUMBER	TOTAL SHEETS
5307-00-01	4.01	2
FEDERAL PROJECT NUMBER		

PLAT OF RIGHT-OF-WAY REQUIRED FOR
CITY OF SHULLSBURG, SEYMOUR ROAD
SHULLSBURG BRANCH BRIDGE B-33-0129
CTH O — LAFAYETTE COUNTY

CONSTRUCTION PROJECT NUMBER
5307-00-72

ORIGINAL PLAT PREPARED BY
AECOM

WISCONSIN
LANCE J. HABECK S-1444 PLOVER, WI
LAND SURVEYOR

Lance J Habeck
DATE: 3/17/15

REVISION DATE	LAFAYETTE COUNTY HIGHWAY DEPARTMENT
	APPROVED FOR THE DEPARTMENT DATE: 4/20/15 Thomas R. Jean (Signature)

E

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 LAFAYETTE COUNTY.

PARCEL NUMBER	OWNER (S)	INTEREST REQUIRED	R/W ACRES REQUIRED			T.L.E. ACRES
			NEW	EXISTING	TOTAL	
1	EUGENE E. LOGAN & THE ELIZABETH A. HOMRICH TRUST, DATED JNAUARY 25, 2007	FEE & TLE	0.07	0.38	0.45	0.04
2	STEVEN H. CURRAN & GINA M. CURRAN	FEE & TLE	0.07	0.16	0.23	0.03
3	CITY OF SHULLSBURG	FEE & TLE	0.02	0.07	0.09	0.01

UTILITY INTERESTS REQUIRED

UTILITY NUMBER	OWNER (S)	INTEREST REQUIRED
50	CENTURYLINK (TELEPHONE)	RELEASE OF RIGHTS
51	CITY OF SHULLSBURG ELECTRIC	RELEASE OF RIGHTS
52	WE ENERGIES (GAS)	RELEASE OF RIGHTS
53	MEDIACOM	RELEASE OF RIGHTS

R/W CURVE TABLE

FROM - TO	RADIUS	LENGTH	CHORD	CHORD BEARING
606 - 615	1863.00'	66.10'	66.10'	N09°15'34"W

R/W COURSE TABLE

FROM - TO	BEARING	DISTANCE
602 - 603	N23°53'59"W	60.66'
603 - 604	N12°28'16"W	193.96'
604 - 606	N03°24'41"W	83.84'
606 - 615	CURVE	
615 - 614	N81°52'14"E	66.00'
614 - 611	S20°31'14"E	65.04'
611 - 612	S11°55'46"E	79.63'
612 - 610	S11°55'46"E	148.08'
610 - 609	S17°46'22"W	23.25'
609 - 616	S12°30'40"E	85.45'
616 - 602	S77°53'55"W	66.00'
621 - 602	S89°37'20"E	76.93'

R/W STATION & OFFSET TABLE

POINT	STATION	OFFSET
602	22+40.00	33.28'
603	23+00.00	45.00'
604	24+93.52	45.00'
606	25+75.00	33.70'
609	23+25.00	33.14'
610	23+45.00	45.00'
611	25+75.00	45.00'
612	24+93.52	46.07'
614	26+40.00	32.08'
615	26+40.00	33.92'
616	22+40.00	32.72'

R/W POINT COORDINATE TABLE

POINT	Y	X
602	129135.699	449792.233
603	129191.157	449767.657
604	129380.540	449725.772
606	129464.234	449720.783
609	129232.956	449838.257
610	129255.097	449845.354
611	129477.888	449798.285
612	129399.981	449814.744
614	129538.802	449775.485
615	129529.469	449710.148
616	129149.535	449856.768

TLE COURSE TABLE

FROM - TO	BEARING	DISTANCE
602 - 700	S77°53'55"W	5.11'
700 - 701	N23°53'59"W	60.12'
701 - 702	N12°28'16"W	194.86'
702 - 703	N03°23'19"W	83.67'
703 - 606	N80°00'30"E	5.00'
614 - 707	N81°52'14"E	5.12'
707 - 706	S20°31'14"E	64.32'
706 - 705	S11°55'46"E	239.50'
705 - 704	S17°46'22"W	32.93'
704 - 609	N12°30'40"W	19.83'

TLE STATION & OFFSET TABLE

POINT	STATION	OFFSET
700	22+40.00	38.39'
701	22+99.54	50.00'
702	24+93.89	50.00'
703	25+75.00	38.70'
704	23+05.17	33.01'
705	23+33.50	49.81'
706	25+75.56	49.98'
707	26+40.00	37.19'

TLE POINT COORDINATE TABLE

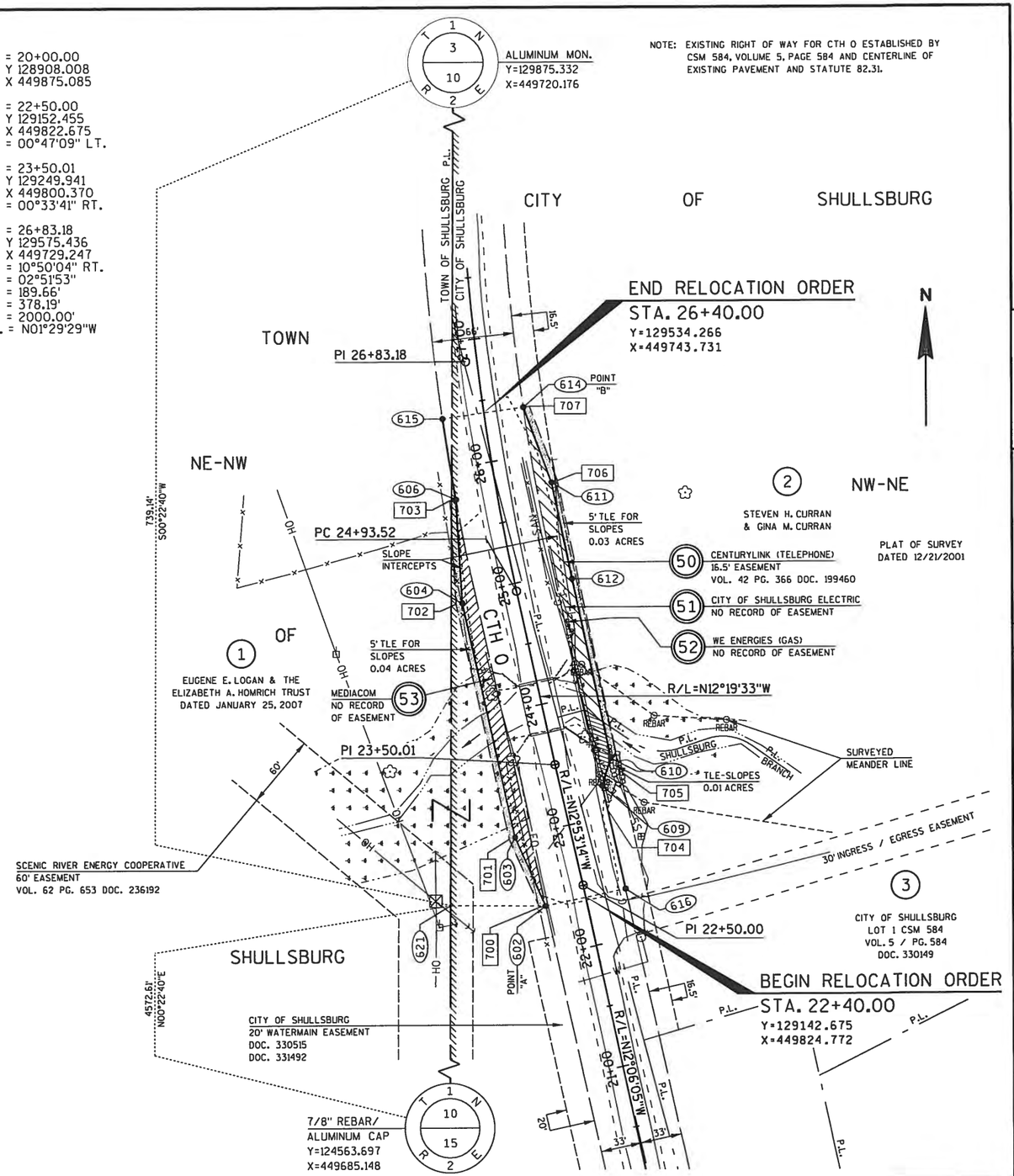
POINT	Y	X
700	129134.628	449787.238
701	129189.589	449762.883
702	129379.847	449720.804
703	129463.366	449715.859
704	129213.597	449842.552
705	129244.960	449852.606
706	129479.289	449803.099
707	129539.526	449780.552

P.I. = 20+00.00
Y 128908.008
X 449875.085

P.I. = 22+50.00
Y 129152.455
X 449822.675
Δ. = 00°47'09" LT.

P.I. = 23+50.01
Y 129249.941
X 449800.370
Δ. = 00°33'41" RT.

P.I. = 26+83.18
Y 129575.436
X 449729.247
Δ. = 10°50'04" RT.
D. = 02°51'53"
T. = 189.66'
L. = 378.19'
R. = 2000.00'
DA. = N01°29'29"W



REVISION DATE	DATE 4-16-15	SCALE: FEET 0 50 100	HWY: CTH O	STATE R/W PROJECT NUMBER 5307-00-01	PLAT SHEET 4.02	
	GRID FACTOR N/A		COUNTY: LAFAYETTE	CONSTRUCTION PROJECT NUMBER 5307-00-72	PS&E SHEET	E

PI STA 20+00.00
Y=128908.008
X=449875.085

PI STA 22+50.00
Y=129152.455
X=449822.675

PI STA 23+50.01
Y=129249.941
X=449800.370

PI STA 26+83.18
Y=129575.436
X=449729.247
T=189.66'
L=378.19'
D=2°51'53"
DELTA=10°50'04"
R=2000.00'
PC STA 24+93.52
Y=129390.147
X=449769.734
PT STA 28+71.71
Y=129765.033
X=449724.311

PI STA 30+61.25
Y=129954.511
X=449719.378

EROSION CONTROL LEGEND

- SILT FENCE
- EROSION MAT URBAN CLASS I, TYPE A
- TURBIDITY BARRIER

WETLAND BOUNDARY
REMOVE FENCE (BY OTHERS)
EXISTING STRUCTURE B-33-850 TO BE REMOVED
WETLAND BOUNDARY
REMOVE FENCE (BY OTHERS)
SLOPE INTERCEPT
STA 25+49.60, 17'LT
EXISTING UTILITY EASEMENT
MEDIACOM (FIBER OPTIC)
STA 22+49.86, 17'LT
TLE
PROPOSED R/W
TLE
PROPOSED R/W
EXISTING R/W
SOIL BORING 1
SEE DETAIL (ASPHALTIC TRANSITION TO SIDEWALK)
PI STA 26+83.18
PI STA 23+50.01
SOIL BORING 2
ASPHALT
CTH O
BM 1
EXISTING R/W
STA 25+47.90 17'RT
CENTURYLINK (TELEPHONE)
PI STA 22+50.00
WE ENERGIES (GAS)
SLOPE INTERCEPT
PROPOSED EXISTING UTILITY EASEMENT
R/W
TLE
PC STA 24+93.52
CITY OF SHULLSBURG (8" SAN FORCE MAIN)
STRUCTURE B-33-129 REQUIRED
CITY OF SHULLSBURG (ELECTRICAL)
SHULLSBURG BRANCH
WETLAND BOUNDARY

BEGIN PROJECT 5037-00-72
STA 22+37.50
MATCH EXISTING
(BEGIN ABRUPTLY)
SAWCUT REQ'D
Y=129,140.258
X=449,825.290

END CONSTRUCTION
STA 26+50.00
MATCH EXISTING

END PROJECT 5307-00-72
STA 25+62.00
MATCH EXISTING
(END ABRUPTLY)
SAWCUT REQ'D

STA 22+49.21, 19'RT - STA 23+02.11, 17'RT
MGS GUARDRAIL TERMINAL EAT

STA 23+02.11, 17'RT - STA 23+14.61, 17'RT
MGS GUARDRAIL 3

STA 23+14.61, 17'RT - STA 23+54.17, 17'RT
MGS THRIE BEAM TRANSITION

STA 24+42.84, 17'RT - STA 24+82.24, 17'RT
MGS THRIE BEAM TRANSITION

STA 24+82.24, 17'RT - STA 24+94.75, 17'RT
MGS GUARDRAIL 3

STA 24+94.75, 17'RT - STA 25+48.34, 19'RT
MGS GUARDRAIL TERMINAL EAT

SCALE, FEET 0 20 40

EXISTING GROUND
HIGH WATER EL. 910.63
OBSERVED WATER LEVEL EL. 902.90 3/18/2014
PROPOSED PROFILE ℄ REFERENCE LINE
TYPE M RAIL
P.I. 22+37.50 EL. 915.68
P.C. 22+95.00 EL. 915.27
LOW PT. 23+35.98 EL. 915.13
P.T. 23+65.00 EL. 915.20
P.C. 24+52.00 EL. 915.64
P.I. 25+62.00 EL. 917.24
SSD=1889' K=58 110' V.C.
-0.71%
0.50%
2.42%
SSD=285' K=58 70' V.C.
P.I. 23+30.00 EL. 915.03
P.I. 25+07.00 EL. 915.91
TOP OF BERM EL. 906.67
TOP OF BERM EL. 906.38
EL. 903.88
EL. 904.17
RIPRAP HEAVY (TYP)
PILING STEEL 10-INCH X 42 LB
STREAM BED EL. 898.37

925 920 915 910 905 900 895 890

916.9 916.3 915.9 915.6 915.60 915.4 915.24 915.4 915.12 903.3 915.32 915.6 915.60 916.1 916.13 916.9 916.90 918.3 920.1 922.3

21+00 22+00 23+00 24+00 25+00 26+00 27+00

STA 24+00.00
STRUCTURE B-33-129 REQUIRED
SINGLE SPAN PRESTRESSED CONCRETE
DECK GIRDER BRIDGE (28")
61'-10" OVERALL LENGTH
34'-0" CLEAR ROAD WIDTH
0° SKEW

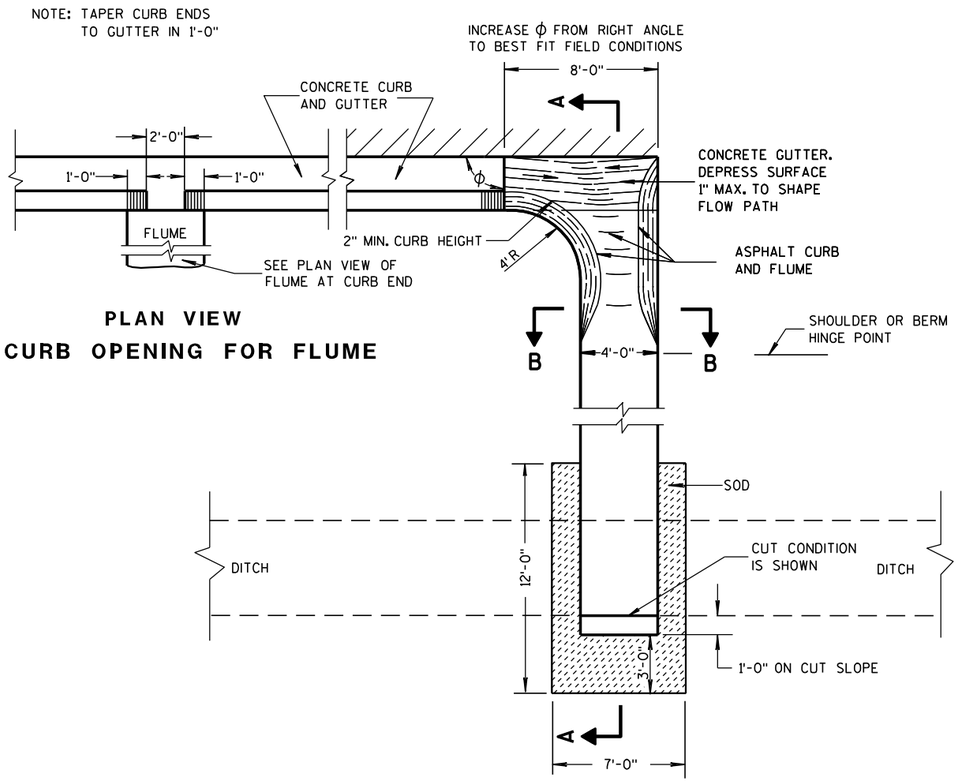
STA 24+00.00
REMOVE STRUCTURE B-33-850
SINGLE SPAN STEEL DECK GIRDER BRIDGE
43'OVERALL LENGTH
24'CLEAR ROADWAY WIDTH
0° SKEW

PROJECT NUMBER: 5307-00-72	HWY: CTH O	COUNTY: LAFAYETTE	PLAN AND PROFILE	SHEET 11	E

Standard Detail Drawing List

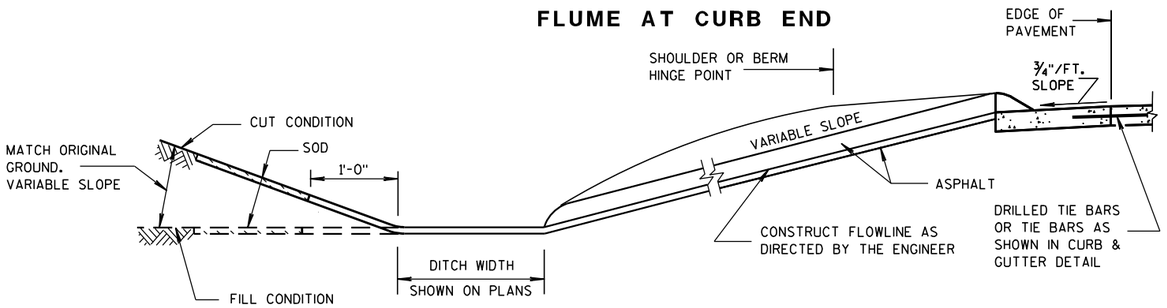
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
12A03-10	NAME PLATE (STRUCTURES)
13B02-08A	CONCRETE PAVEMENT APPROACH SLAB
13B02-08B	STRUCTURAL APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB
14B42-03A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-03C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-02A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-04A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C08-16A	PAVEMENT MARKING (MAINLINE)

ASPHALTIC FLUME

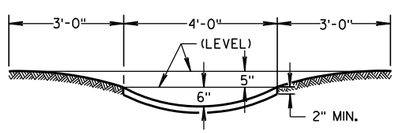


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

GENERAL NOTES

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

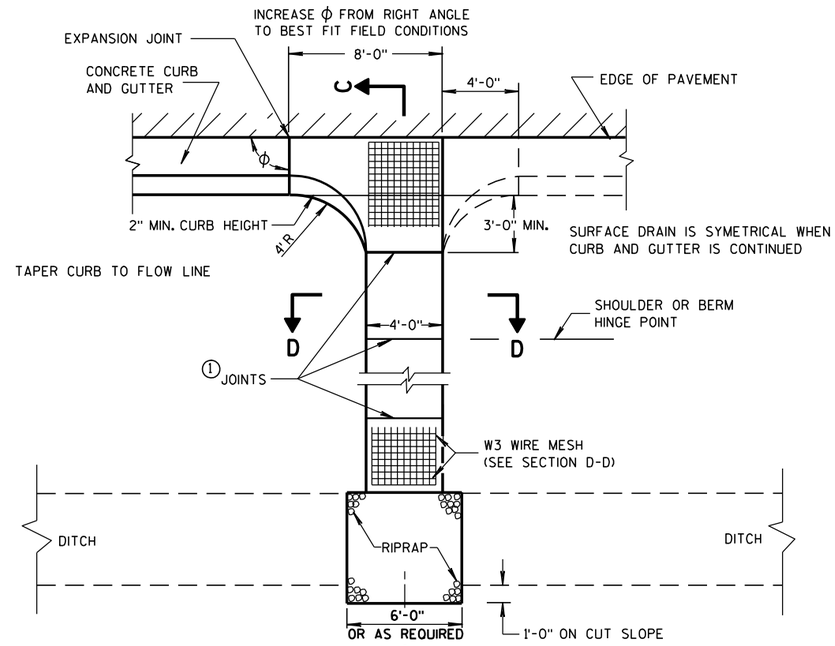
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

① JOINTS SHALL BE $\frac{1}{8}$ TO $\frac{1}{4}$ INCH WIDE BY $1\frac{1}{2}$ INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.

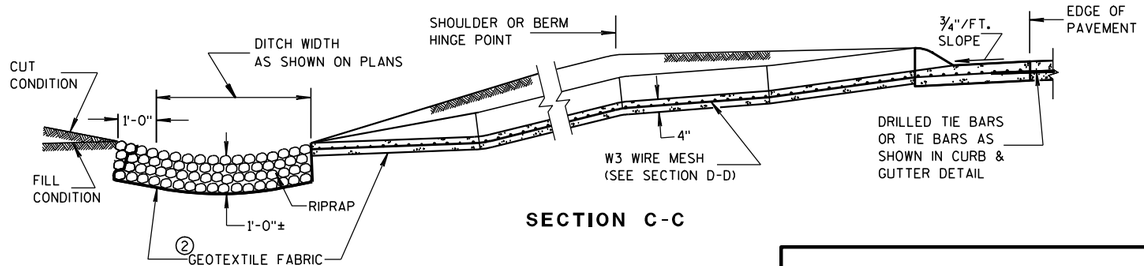
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

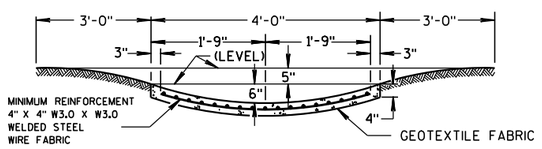
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

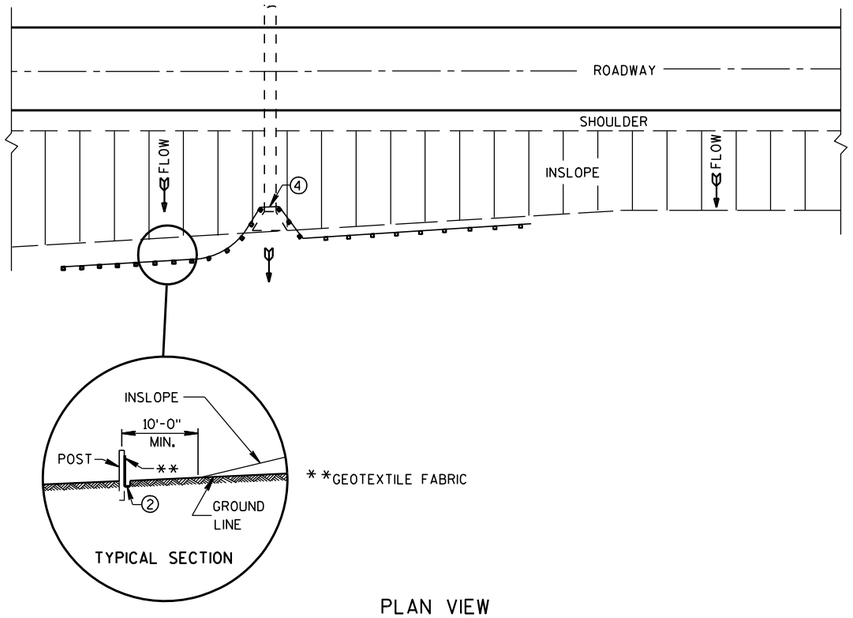
APPROVED
9-4-08 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
MENT
FHWA

6

S.D.D. 8 D 4-5

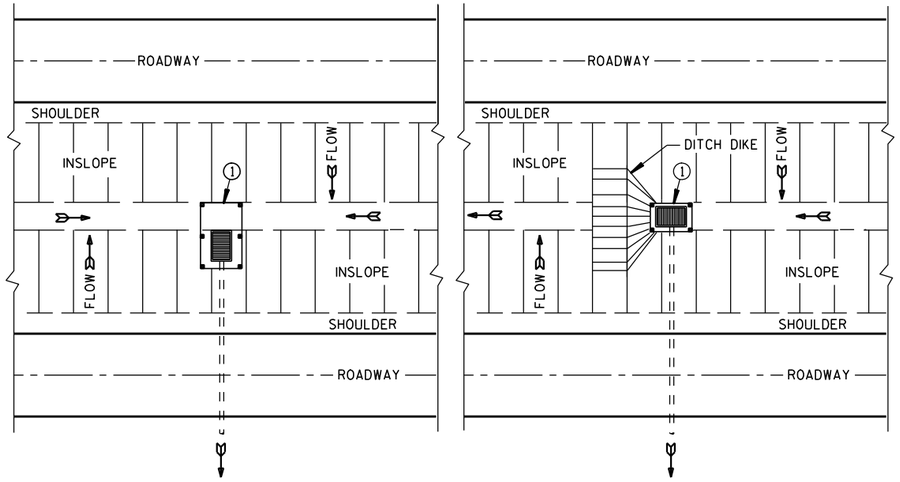
6

S.D.D. 8 D 4-5



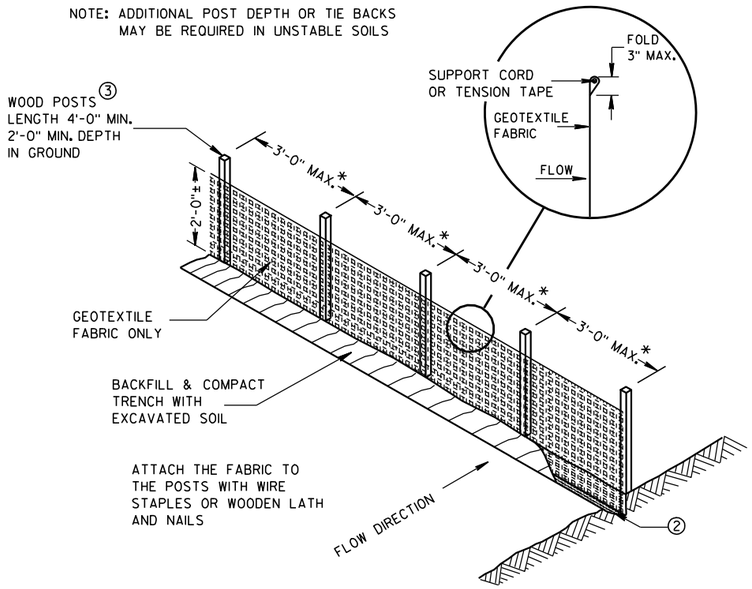
PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



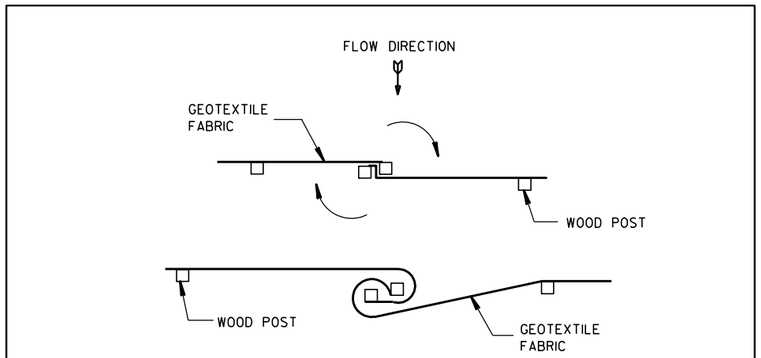
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS



*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE

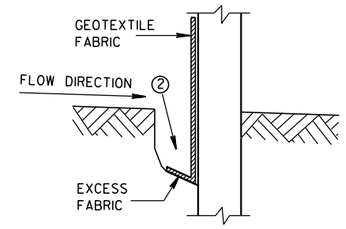


JOINING TWO LENGTHS OF SILT FENCE 5

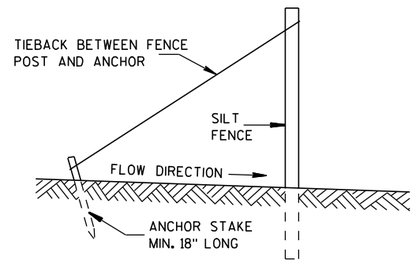
GENERAL NOTES

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

1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.
4. SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
5. CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



TRENCH DETAIL



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

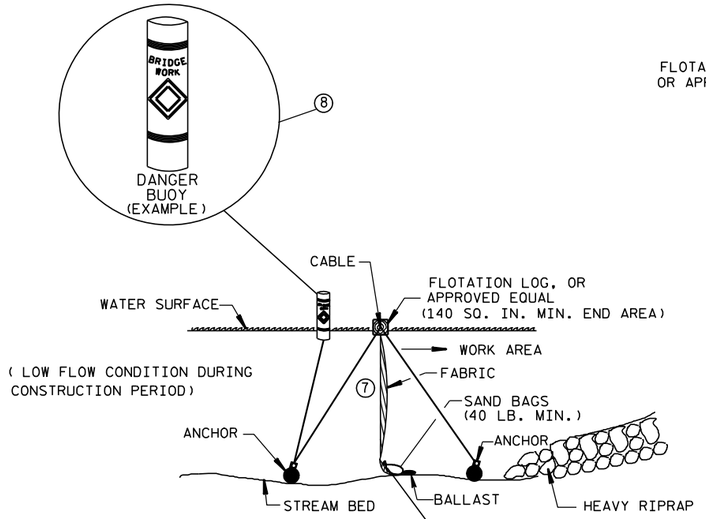
SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

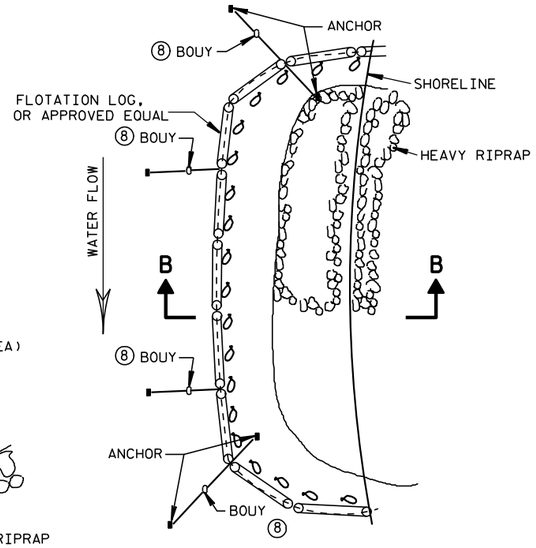
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

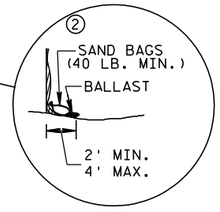
S.D.D. 8 E 9-6

S.D.D. 8 E 9-6

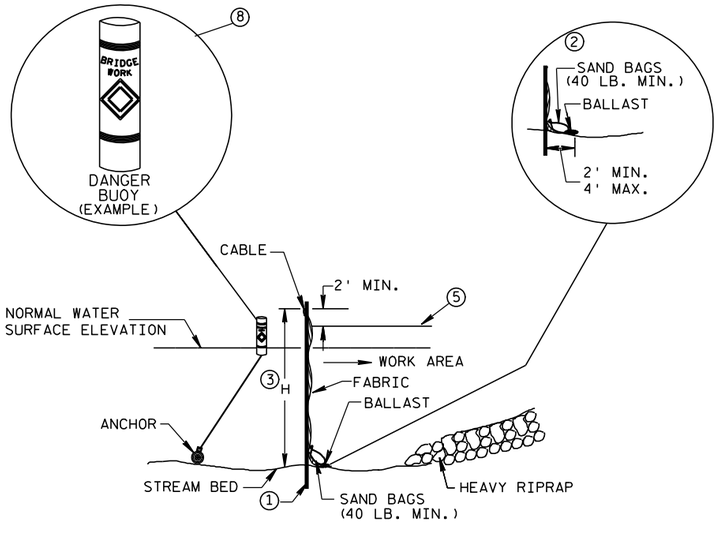


SECTION B-B

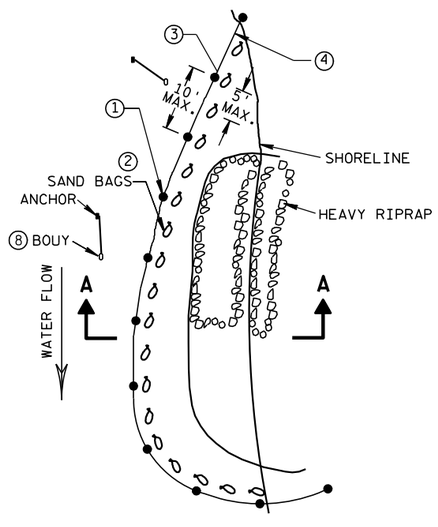




TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6



SECTION A-A



PLAN VIEW

TURBIDITY BARRIER STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT DETAILS

GENERAL NOTES

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

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

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

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

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

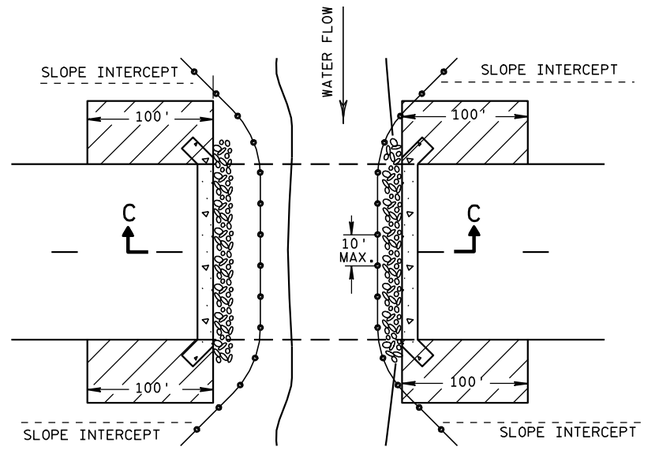
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MIMIMUM BARRIER HEIGHT SHALL BE 2'GREATER THAN EITHER THE O2 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WICHEVER IS GREATER.

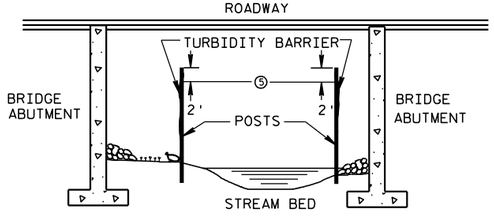
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

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

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



PLAN VIEW



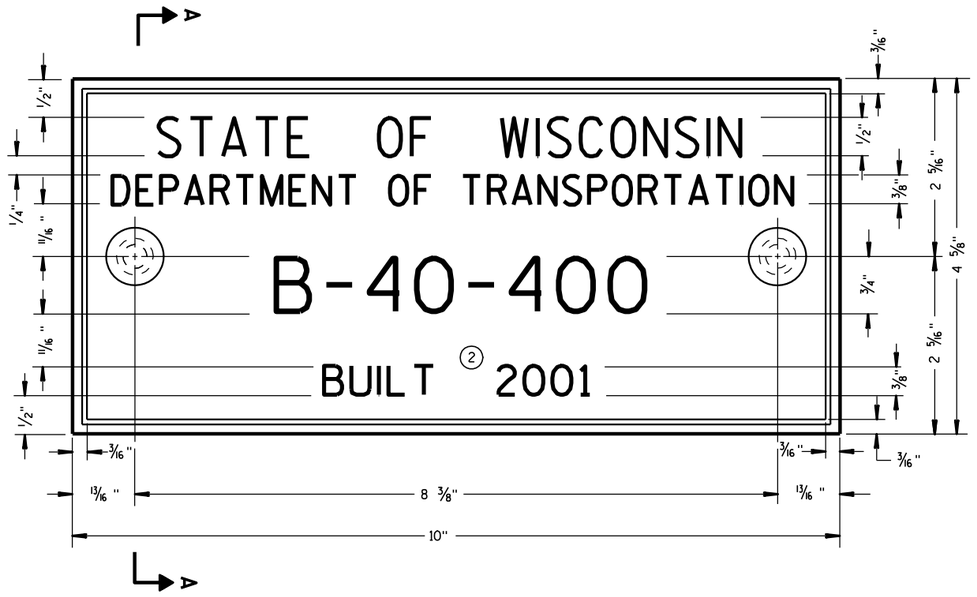
SECTION C-C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

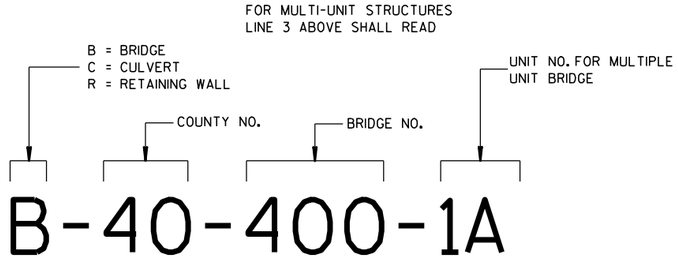
TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



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



NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

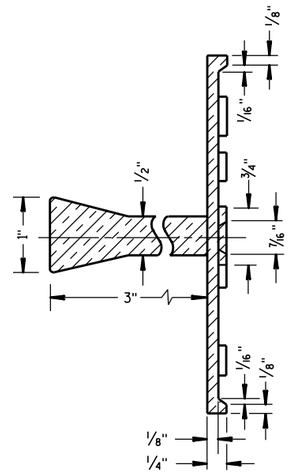
GENERAL NOTES

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.

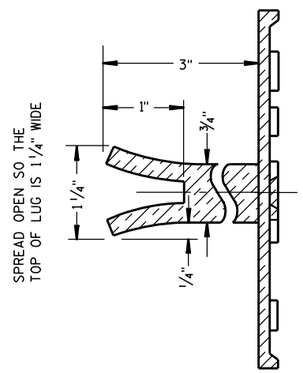
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

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

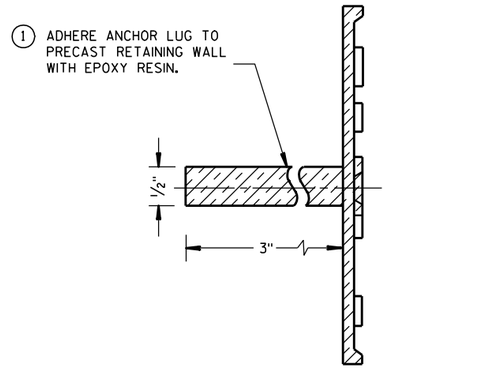
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10 DATE

/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOP ENGINEER

FHWA

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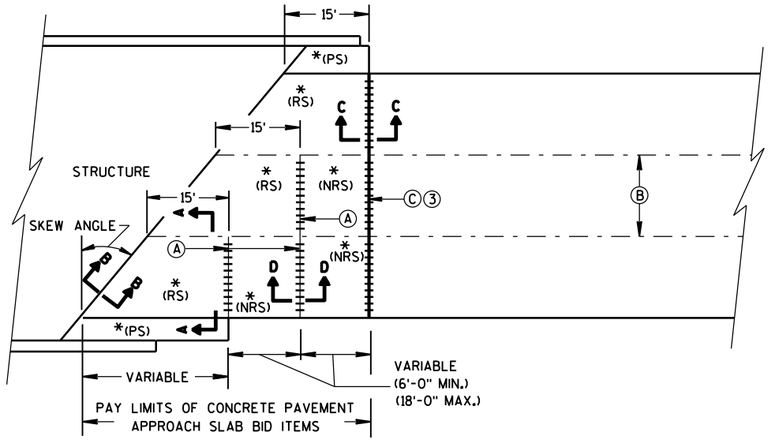
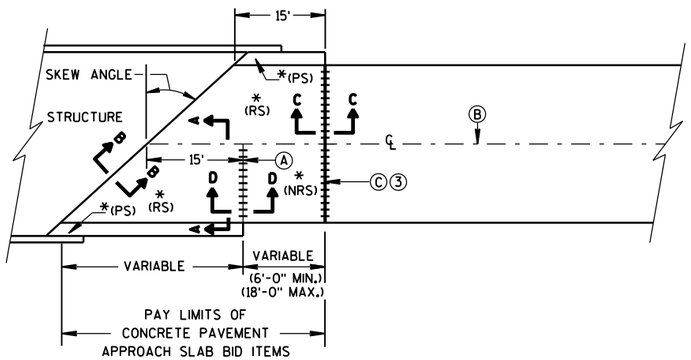
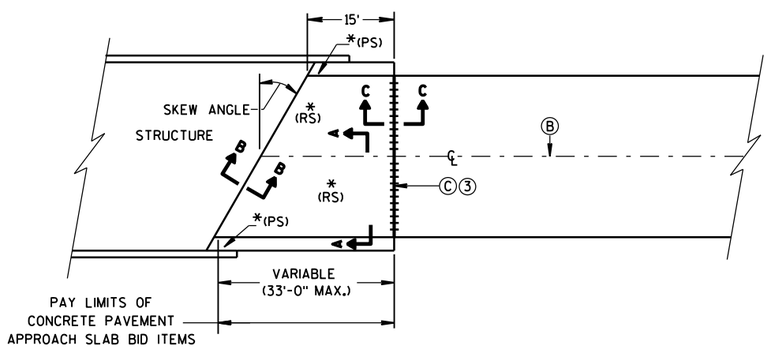
S.D.D. 12 A 3-10



SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >20°
(PAVEMENT WIDTH ≤30')



SKEWS ≤20°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

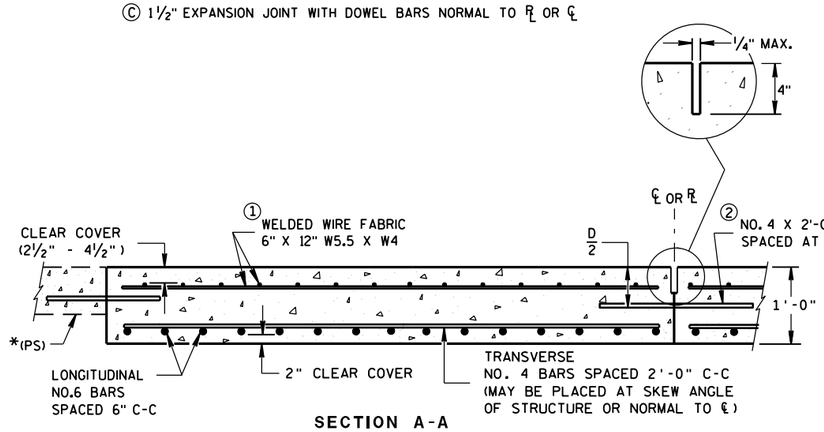
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
(SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

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

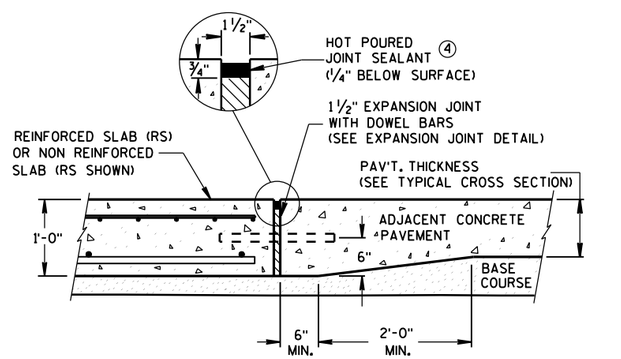
Ⓐ STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄

Ⓑ STANDARD LONGITUDINAL JOINT WITH TIE BARS.

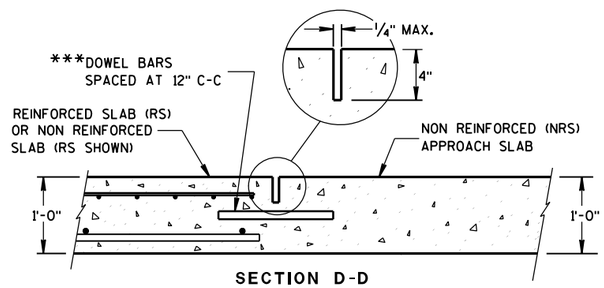
Ⓒ 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄



SECTION A-A
REINFORCEMENT POSITIONING DETAIL



SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT



SECTION D-D
CONTRACTION JOINT

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.

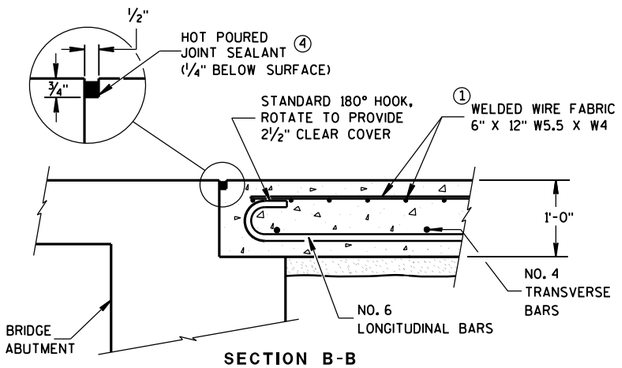
① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

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

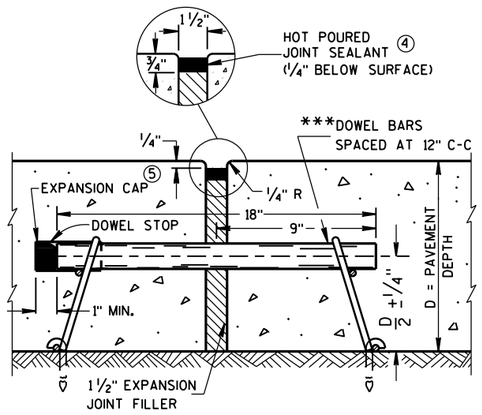
③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.

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

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



SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT



EXPANSION JOINT DETAIL

CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015
DATE
/S/ Peter Kemp, P.E.
PAVEMENT SUPE
FHWA

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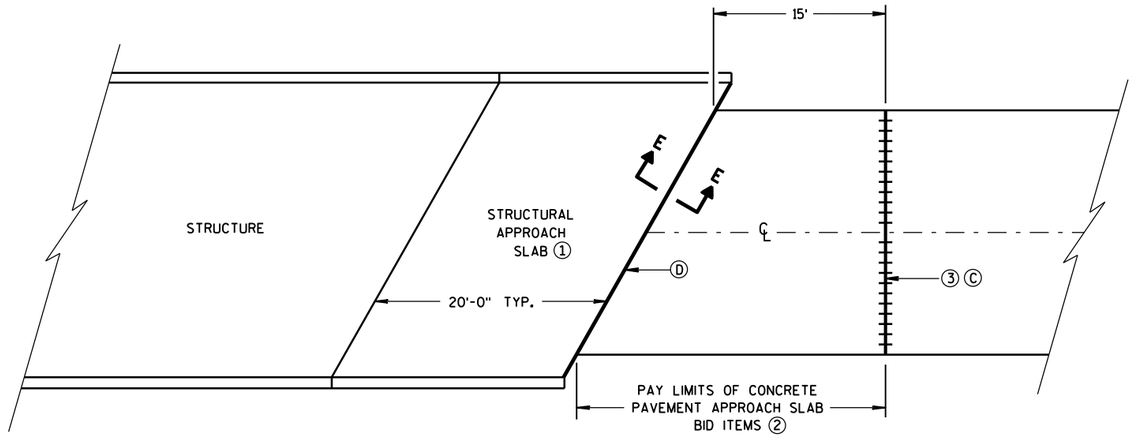
S.D.D. 13 B 2-8a

BRIDGE APPROACHES



GENERAL NOTES

ALL PROJECTS THAT INVOLVE A STRUCTURAL APPROACH SLAB WILL ALSO HAVE A CONCRETE PAVEMENT APPROACH SLAB.

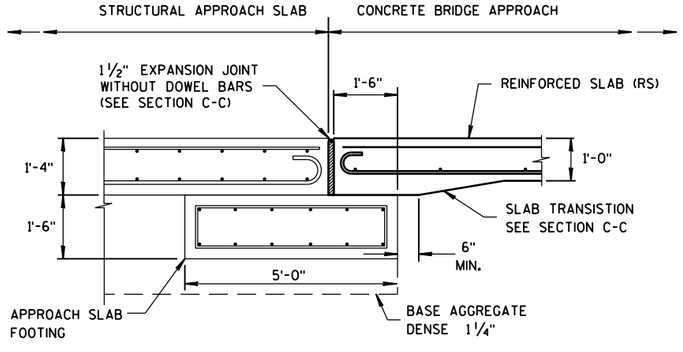
① SEE BRIDGE PLAN.

② CONFORM TO SHEET 13 B 2(A) FOR CONCRETE PAVEMENT APPROACH SLAB DETAILS.

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

Ⓒ 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄

Ⓓ 1½" EXPANSION JOINT (NO DOWELS)



SECTION E-E

FOOTING DETAIL

STRUCTURAL APPROACH SLAB TO CONCRETE BRIDGE APPROACH

STRUCTURAL APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 — DATE
/S/ Peter Kemp, P.E. — PAVEMENT SUPEF
FHWA

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S.D.D. 13 B 2-8b

GENERAL NOTES

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.

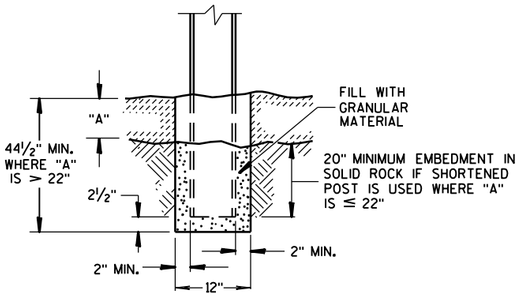
2. USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

3. IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2½ INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.

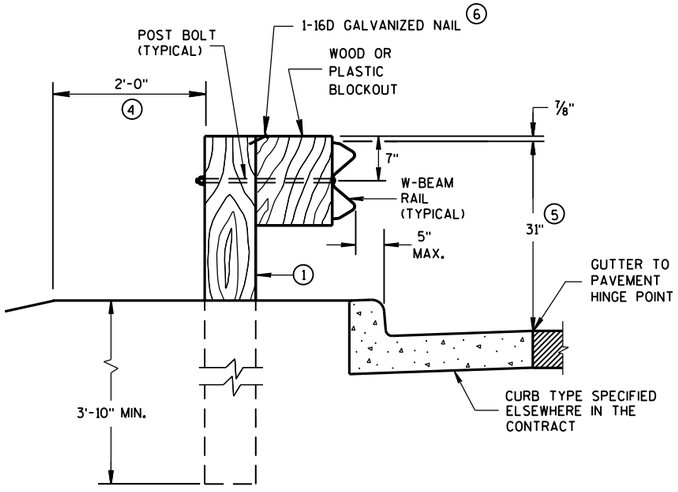
4. WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).

5. FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".

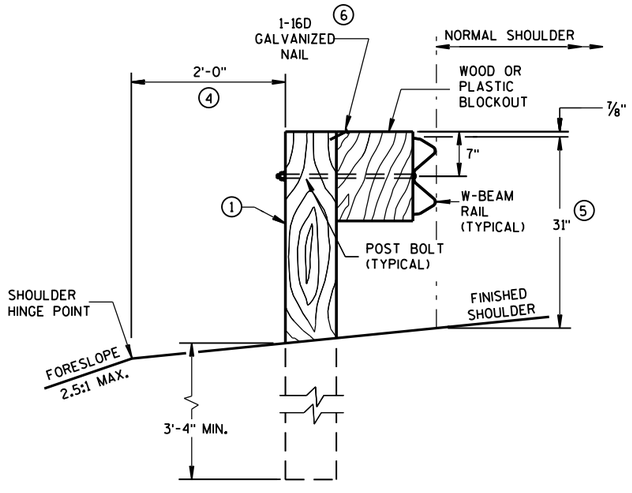
6. WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



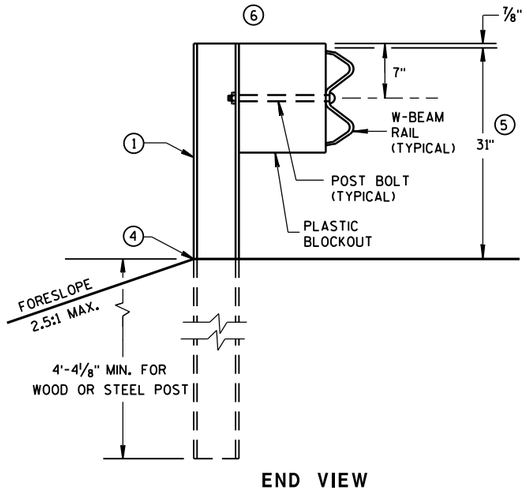
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (3)



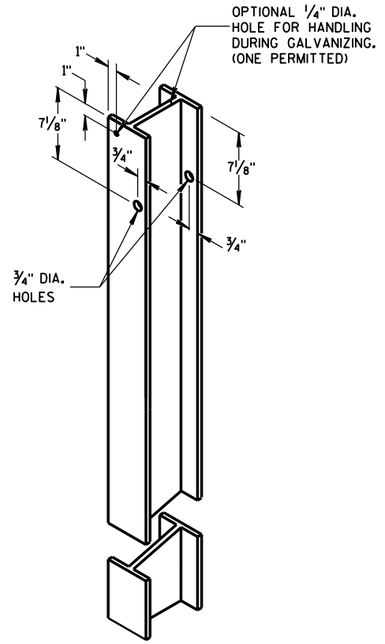
END VIEW
LOCATED ALONG A CURBED ROADWAY



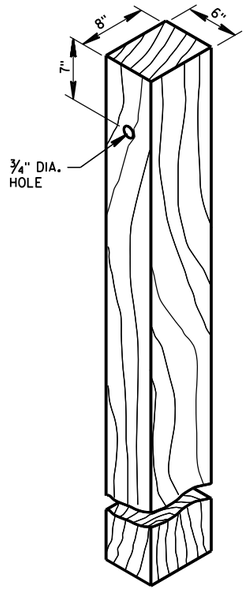
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



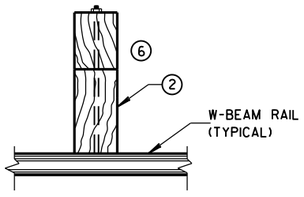
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



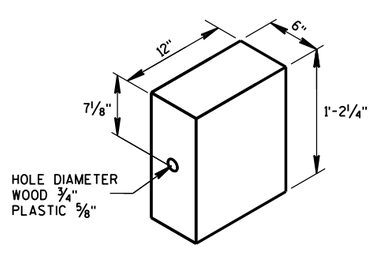
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) (1)



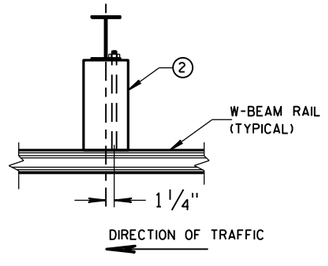
WOOD POST
(6" X 8") NOMINAL (1)



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT (2)



PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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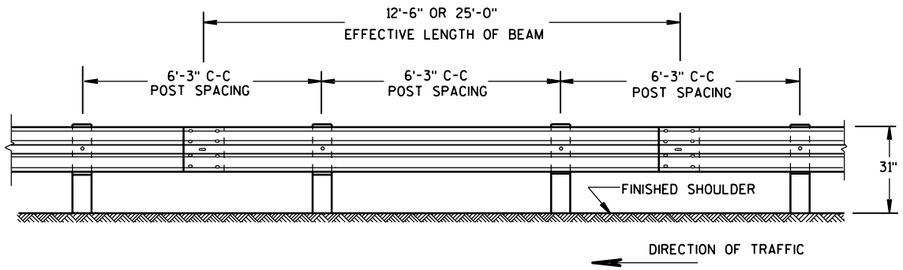
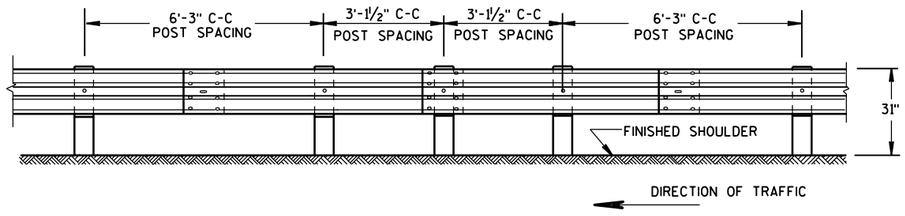
S.D.D. 14 B 42-3a



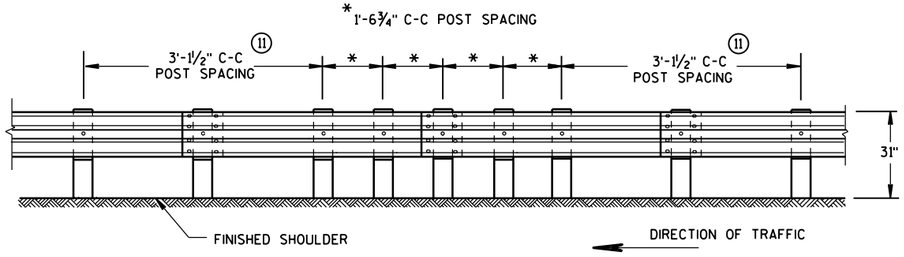
FRONT VIEW

POST SPACING STANDARD INSTALLATION



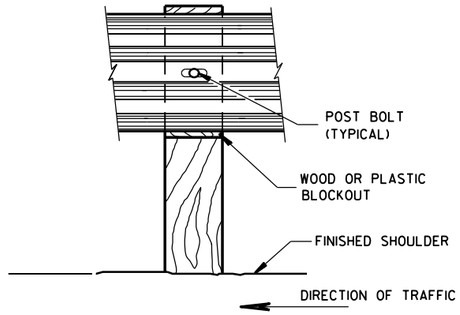
FRONT VIEW

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

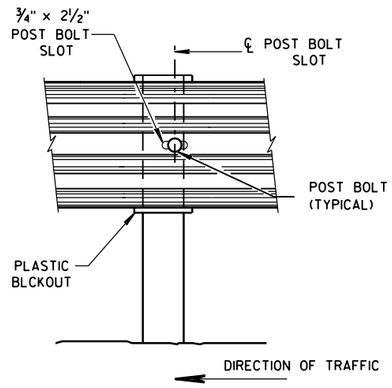


FRONT VIEW

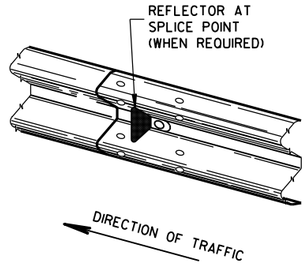
QUARTER POST SPACING (QS)

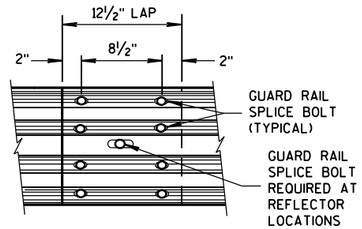


FRONT VIEW AT WOOD POST



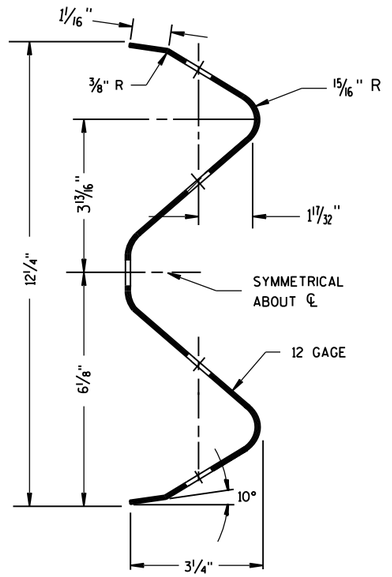
FRONT VIEW AT STEEL POST



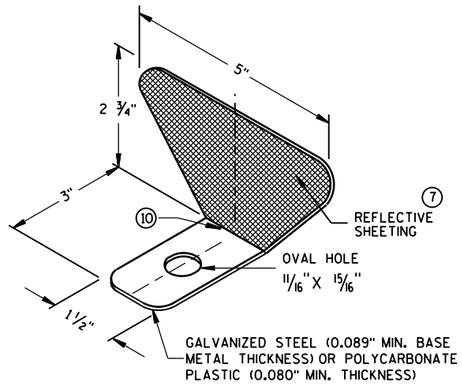


FRONT VIEW

MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION ⑦

GENERAL NOTES

⑦ PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.

⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.

⑨ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.

⑩ PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.

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

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

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

REFLECTOR SPACING ⑧

	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	1 1	3
TWO WAY TRAFFIC	< 200' > 200'	25' C-C 50' C-C	1 ⑨ 1	6
TWO WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	2 2 ⑩	3

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

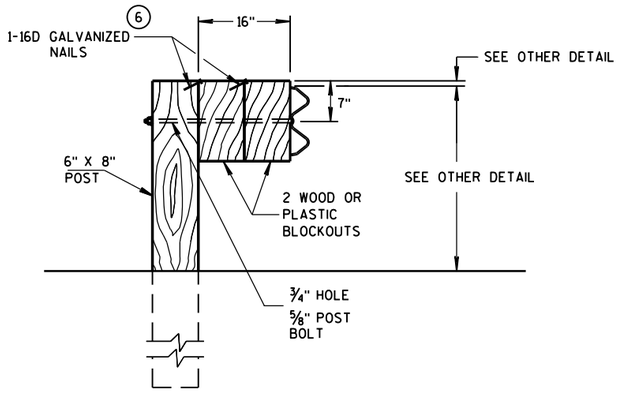
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO 20

6

S.D.D. 14 B 42-3b

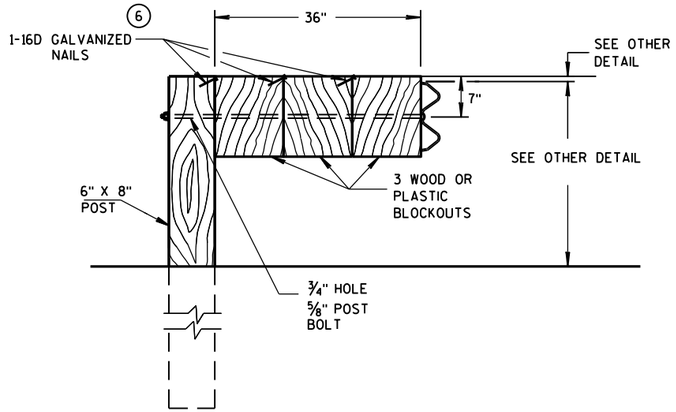
6

S.D.D. 14 B 42-3b



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.

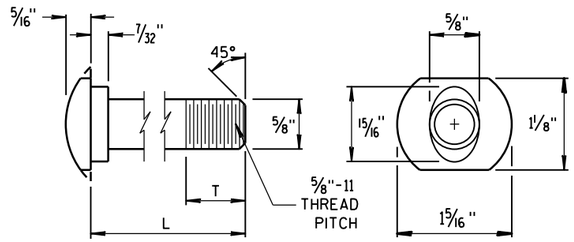


DETAIL FOR 36" BLOCKOUT DEPTH

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.

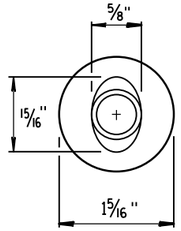
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

NOTE: 1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 1/16".
2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

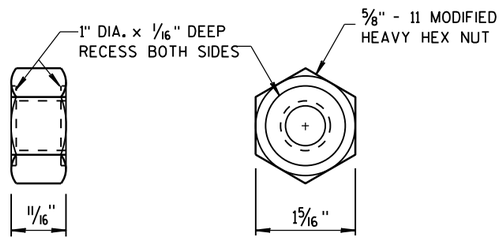


POST BOLT TABLE

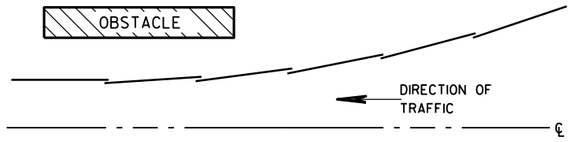
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

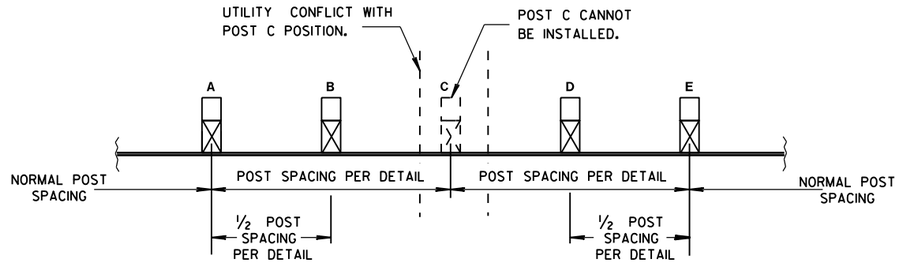


POST BOLT AND RECESS NUT

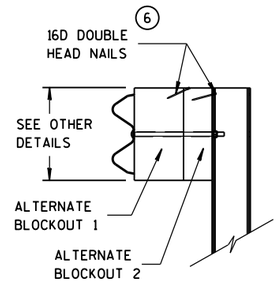


PLAN VIEW

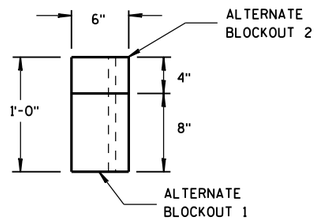
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
FHWA

6
S.D.D. 14 B 42-3c

GENERAL NOTES

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

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

(C) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.

(D) THE TOP OF THE STEEL TUBE ON POST 1 AND POST 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.

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

(G) ½" DIAMETER X 3" LONG LAG BOLT AND WASHER.

(H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.

(I) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

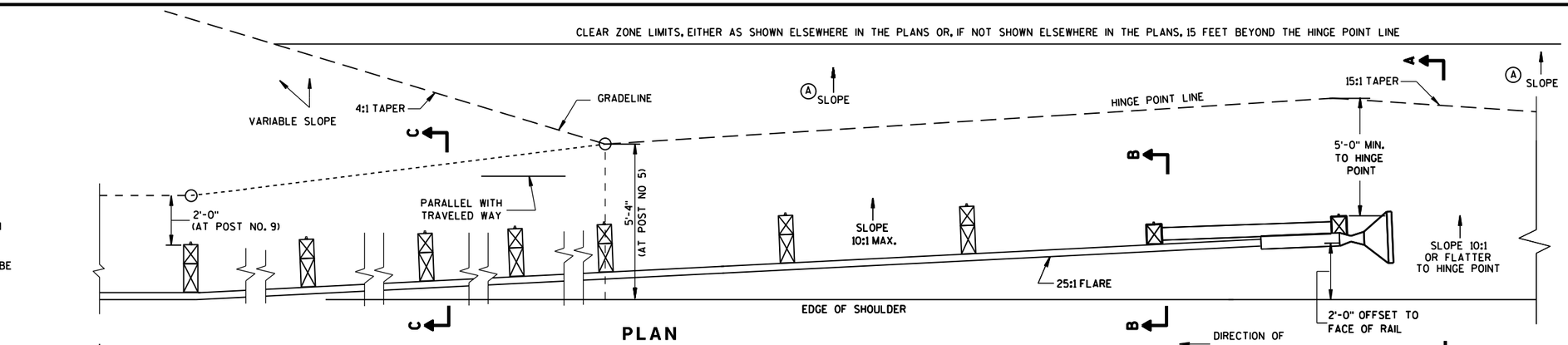
SEE SDD 14B42 FOR MORE INFORMATION.

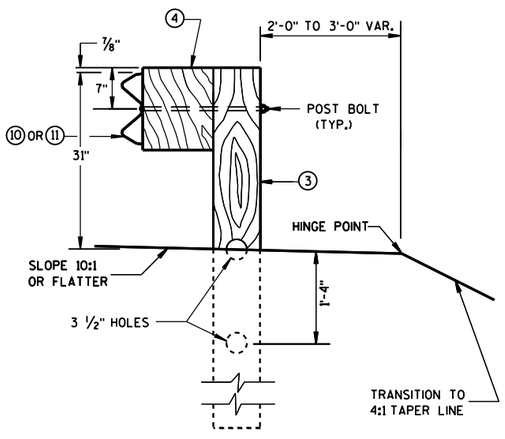
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

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

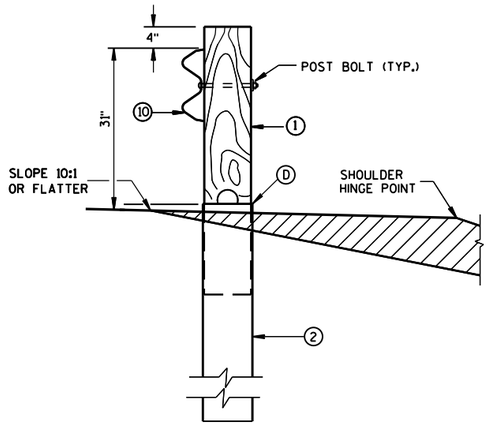
W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

THE CENTER OF THE UPPER 3½" 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.

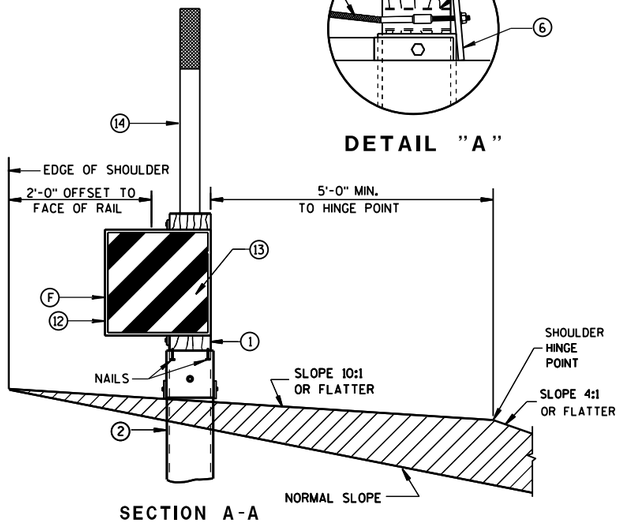




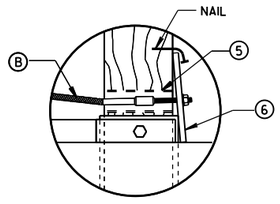
SECTION C-C
TYPICAL AT POST NOS. 3-9



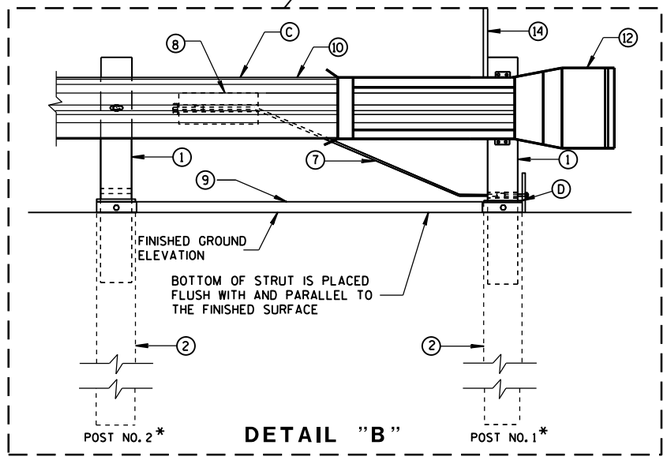
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"



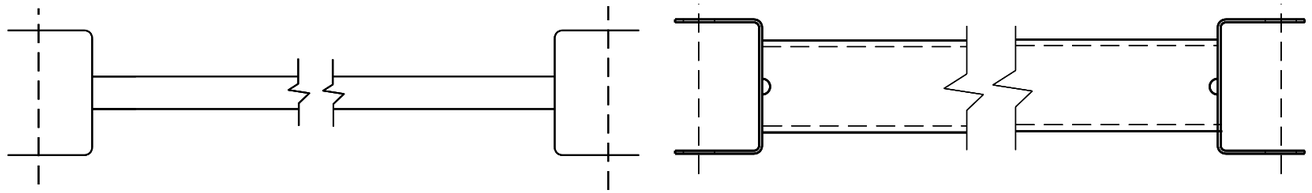
DETAIL "B"

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

S.D.D. 14 B 44-2a

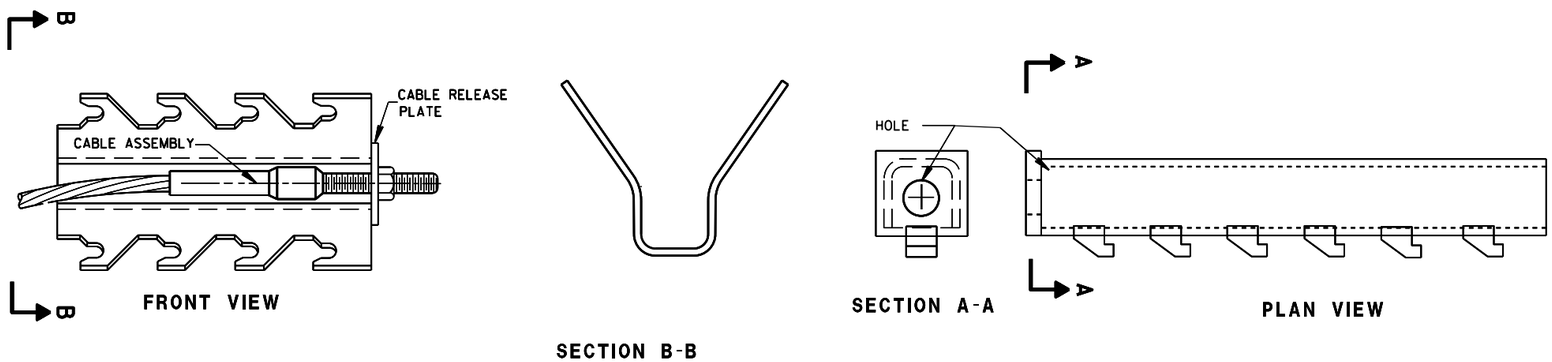
S.D.D. 14 B 44-2a



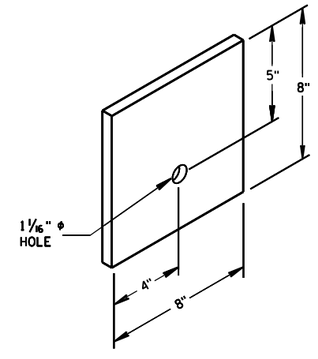
GENERIC GROUND STRUT (9) (H)

BILL OF MATERIALS

PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
(1)	WOOD BREAKAWAY POST
(2)	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
(3)	WOOD CRT
(4)	WOOD BLOCKOUT
(5)	PIPE SLEEVE
(6)	BEARING PLATE
(7)	BCT CABLE ASSEMBLY
(8)	ANCHOR CABLE BOX
(9)	GROUND STRUT
(10)	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
(11)	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
(12)	END SECTION EAT
(13)	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS
(14)	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



GENERIC ANCHOR CABLE BOX (8) (H)



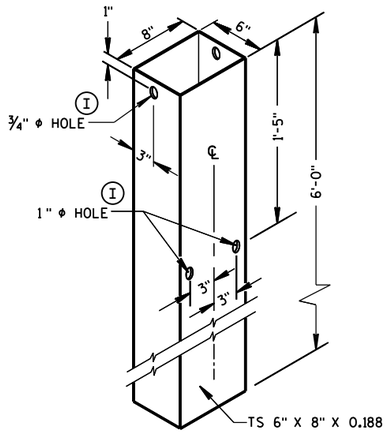
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

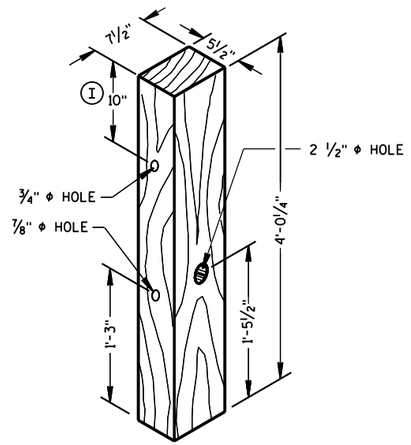
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 14 B 44-2b

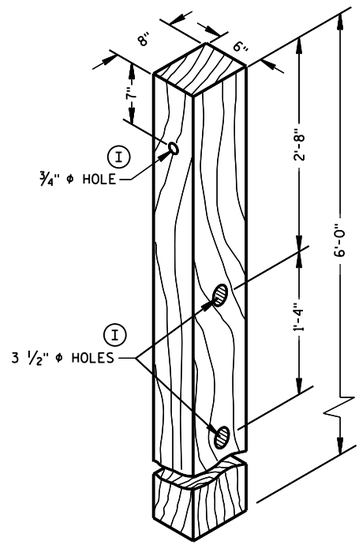


FOUNDATION TUBE (2)



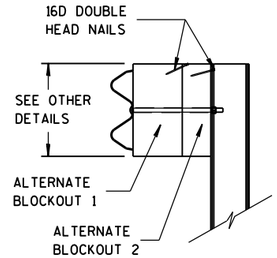
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

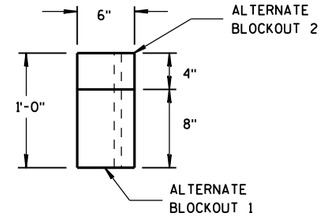


POSTS NUMBER 3-9

WOOD CRT POST (3)

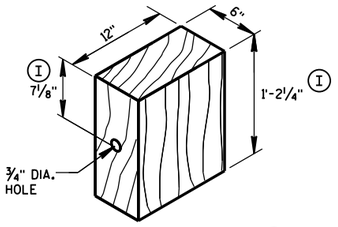


SIDE VIEW



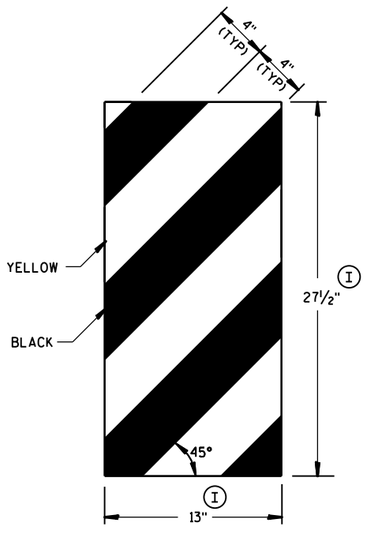
TOP VIEW

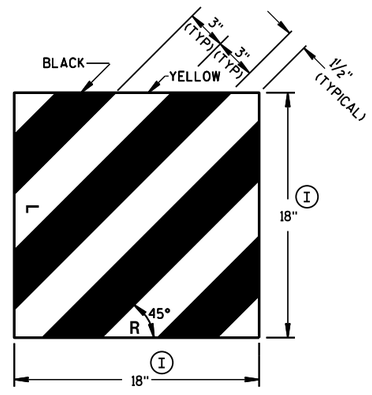
ALTERNATE WOOD BLOCKOUT DETAIL



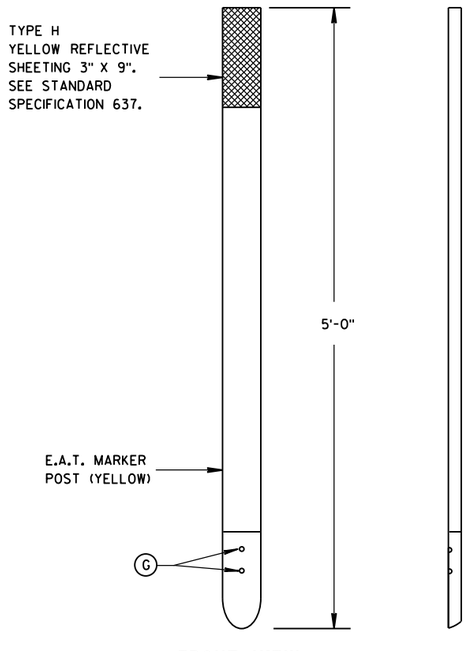
WOOD BLOCKOUT (4)

REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2





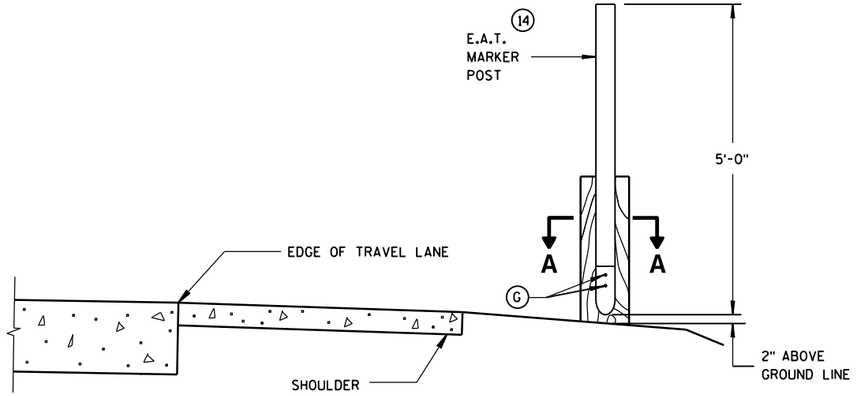
GENERIC REFLECTIVE SHEETING (13) (H)



FRONT VIEW

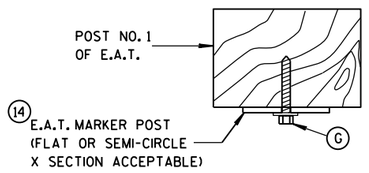
SIDE VIEW

E.A.T. MARKER POST (14)



TYPICAL INSTALLATION OF E.A.T. MARKER POST BACKSIDE OF POST NO. 1

(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

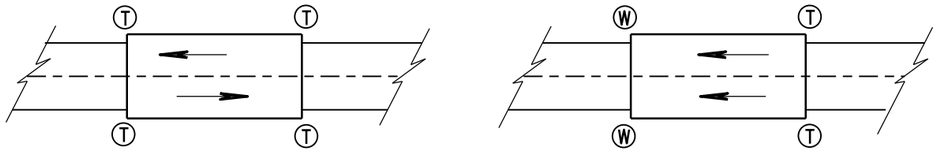
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

FHWA

6

S.D.D. 14 B 44-2c



TWO WAY TRAFFIC

ONE WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

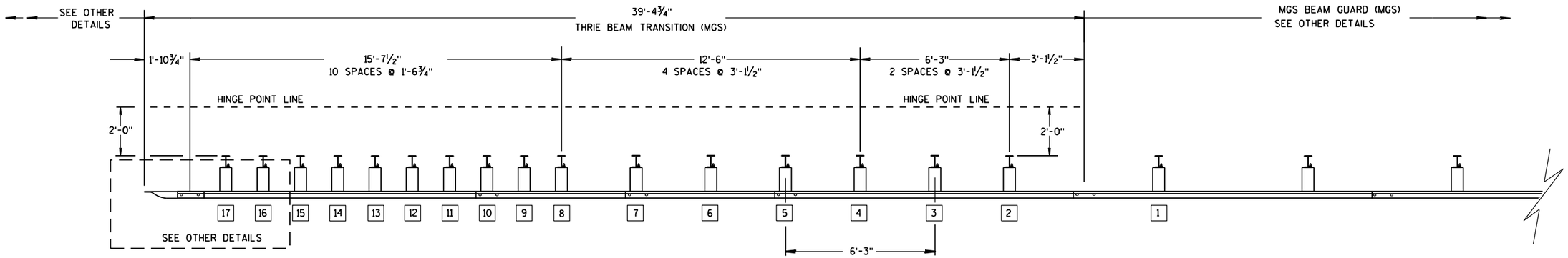
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

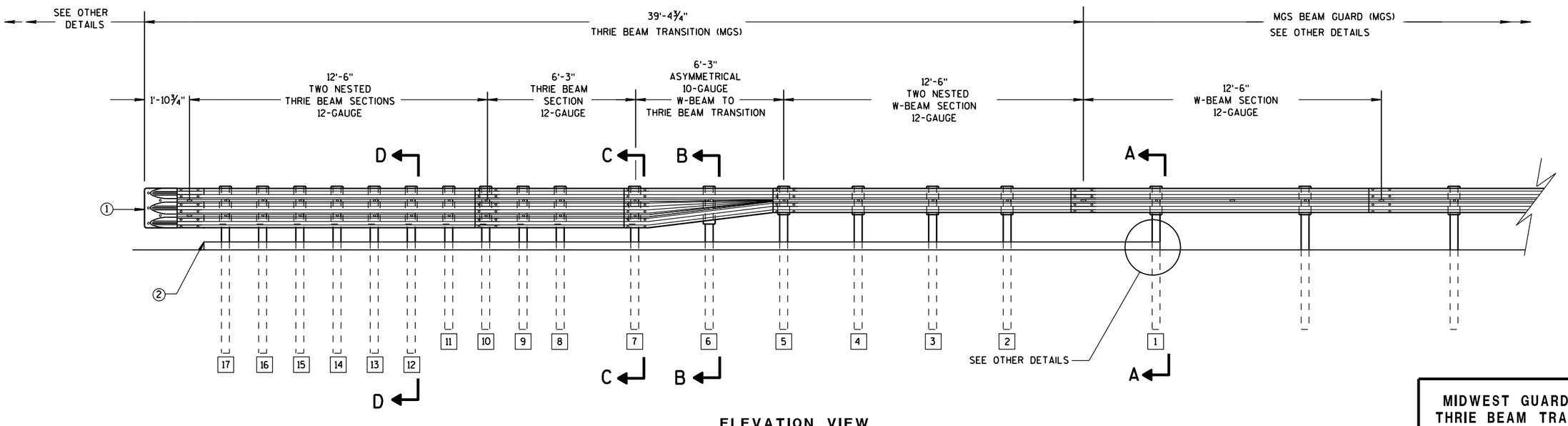
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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

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



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 14 B 45-4a

6

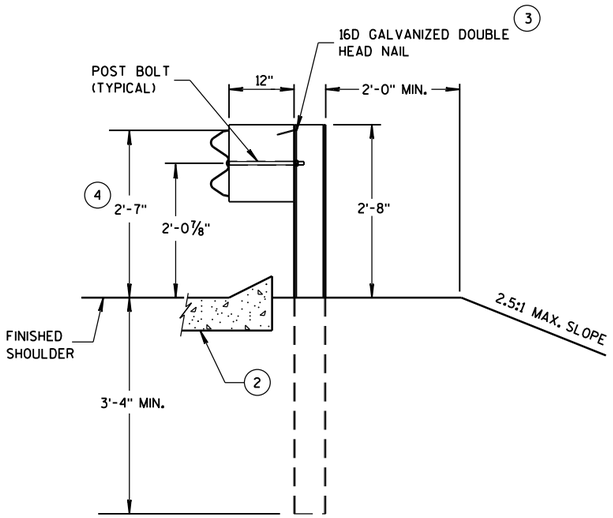
S.D.D. 14 B 45-4a

GENERAL NOTES

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

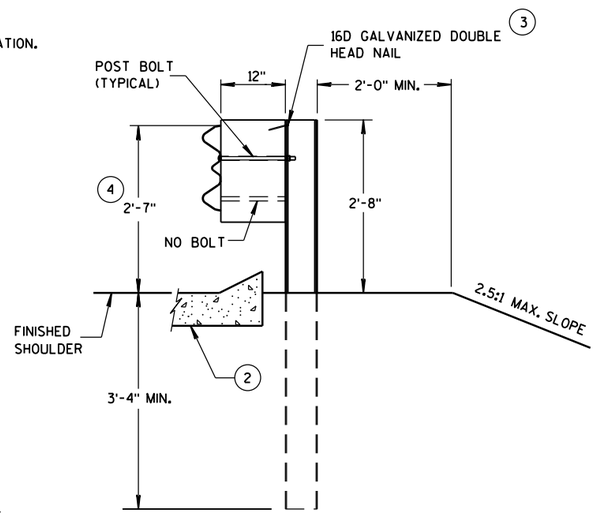
(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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



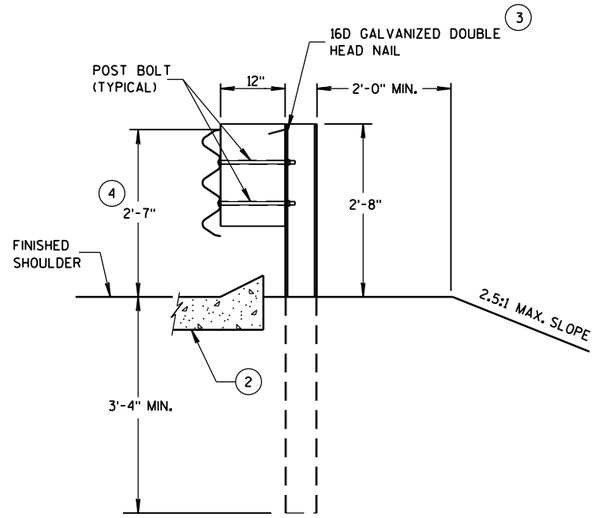
SECTION A-A

POSTS 1-5



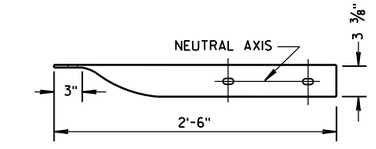
SECTION B-B

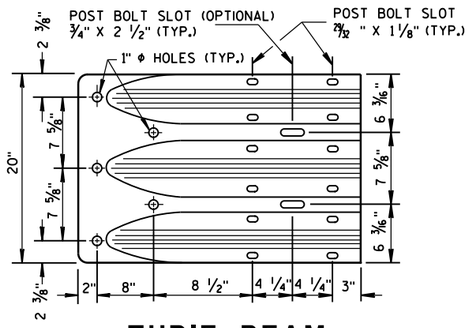
POST 6



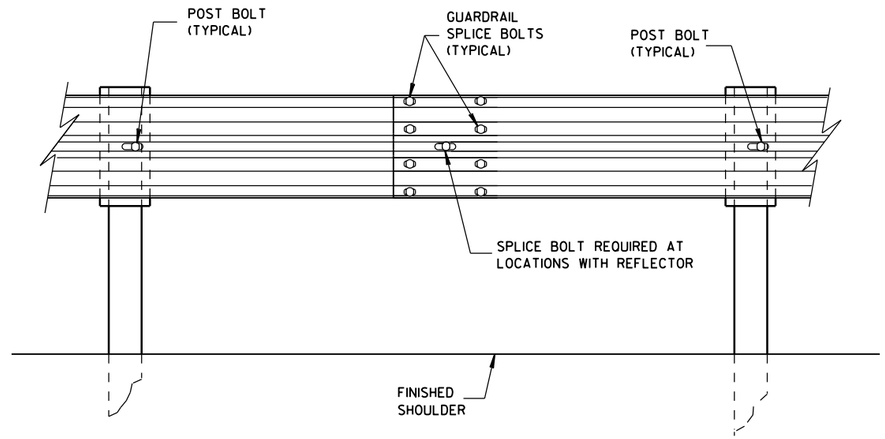
SECTION C-C

POSTS 7-11





THRIE BEAM TERMINAL CONNECTOR



SPLICE DETAIL

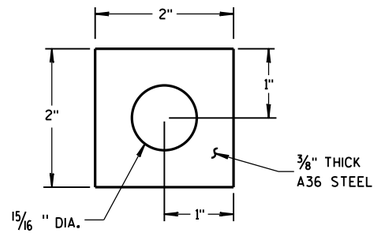
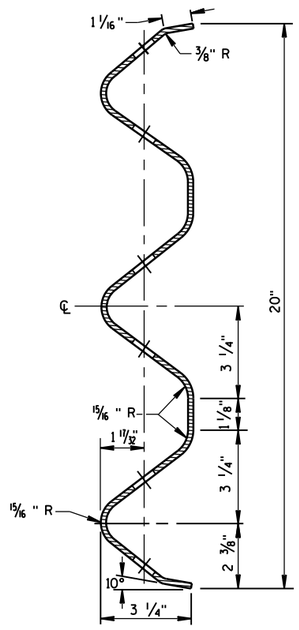
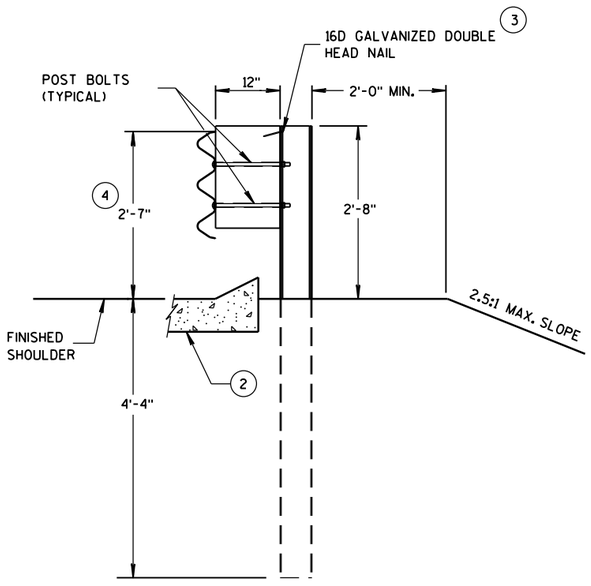


PLATE WASHER DETAIL



SECTION THRU THRIE BEAM RAIL ELEMENT



SECTION D-D

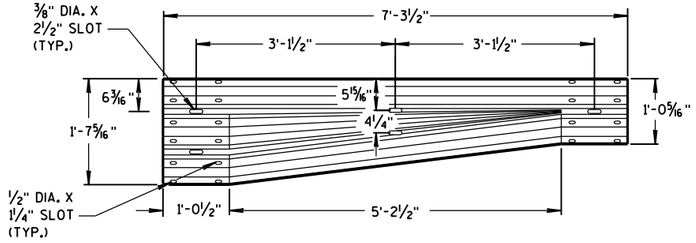
POSTS 12-17

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

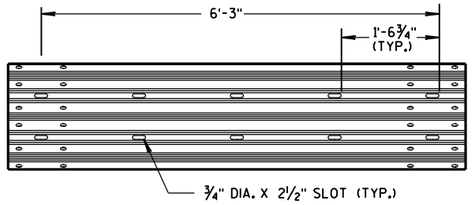
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6

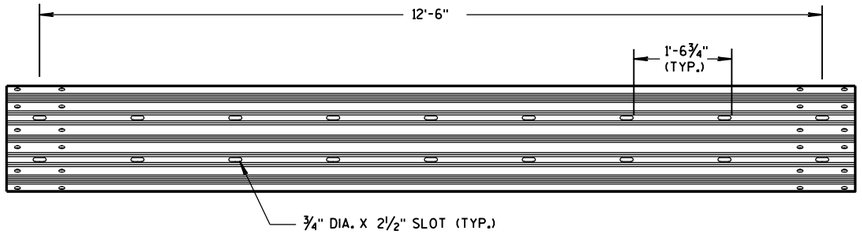
S.D.D. 14 B 45-4b



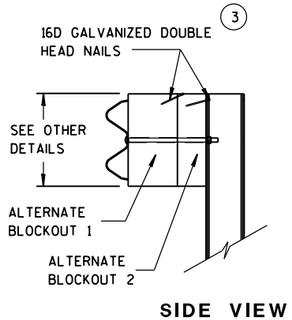
W-BEAM TO THRIE BEAM TRANSITION SECTION



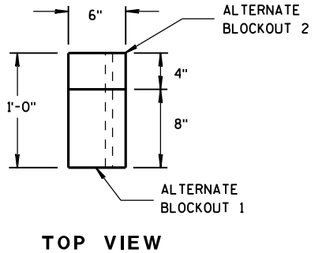
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

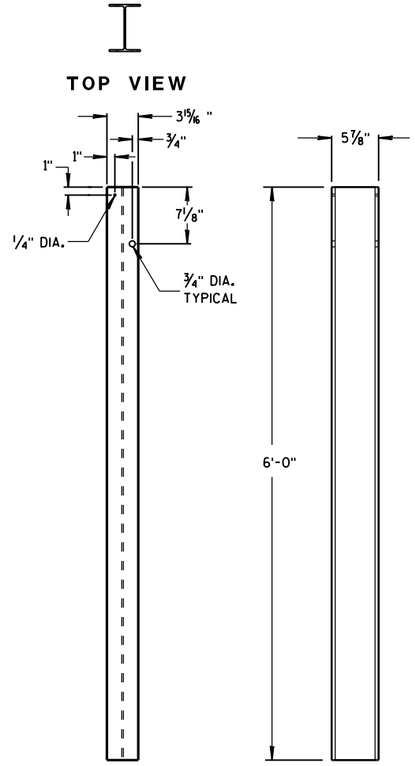


SIDE VIEW

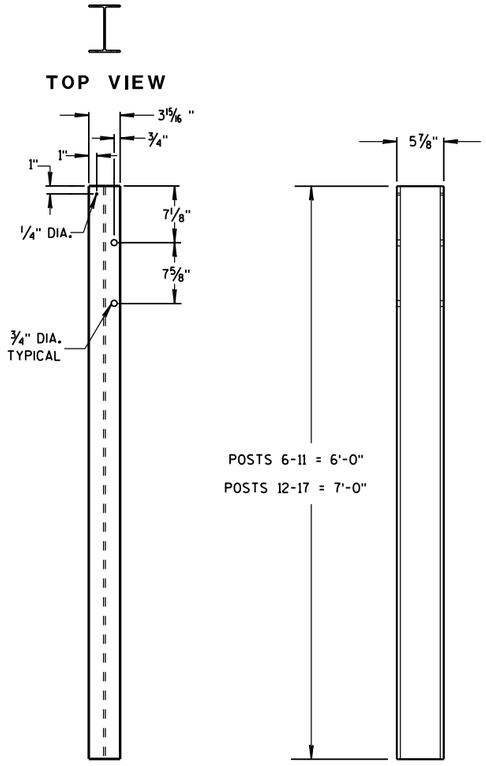


TOP VIEW

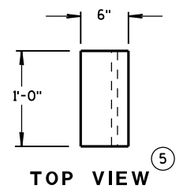
ALTERNATE WOOD BLOCKOUT DETAIL



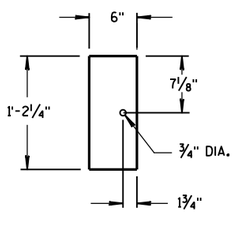
STEEL POSTS 1-5



STEEL POSTS 6-17

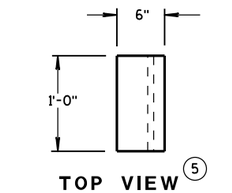


TOP VIEW

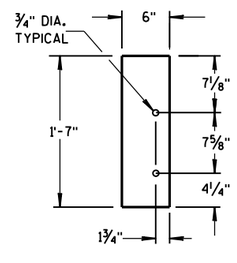


FRONT VIEW

BLOCKOUT POSTS 1-5



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.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

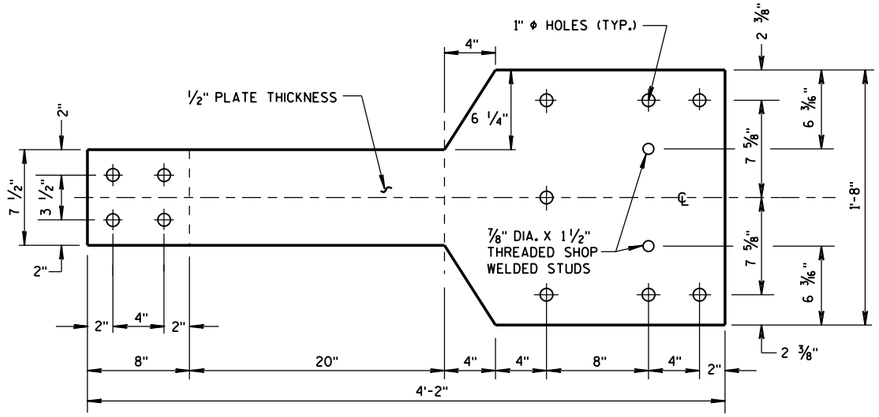
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

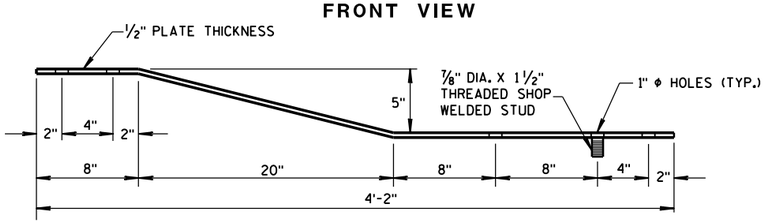
S.D.D. 14 B 45-4c
S.D.D. 14 B 45-4c

GENERAL NOTES

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

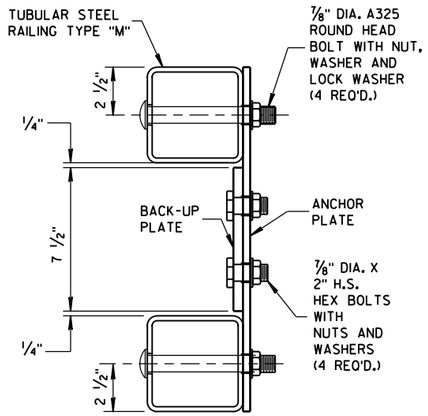


FRONT VIEW

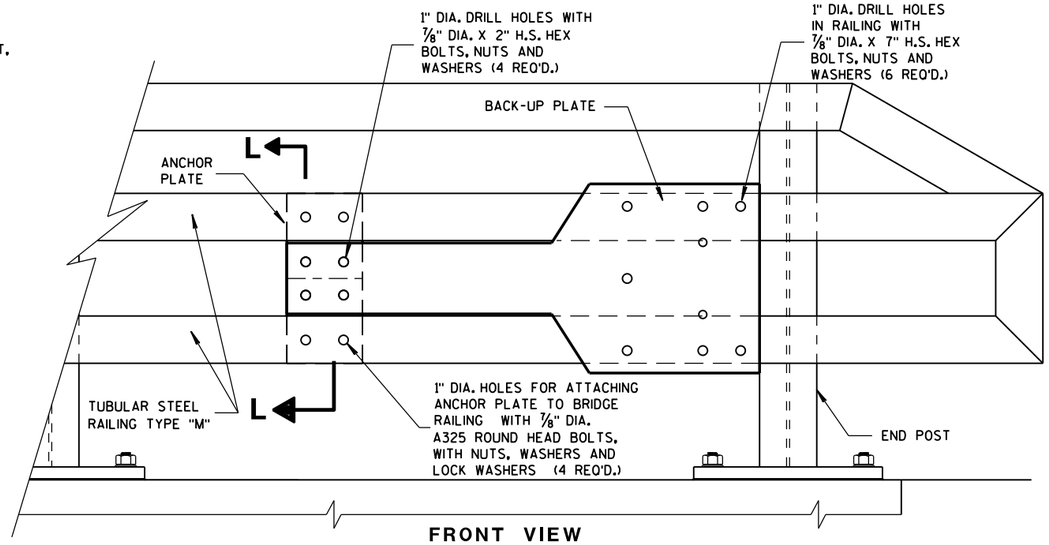


PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

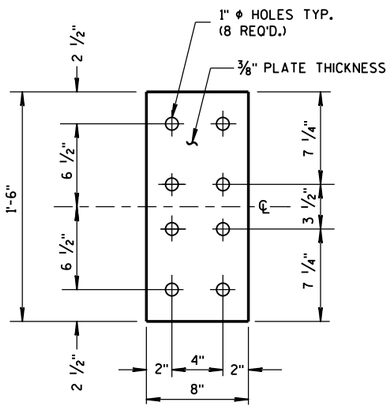


SECTION L-L



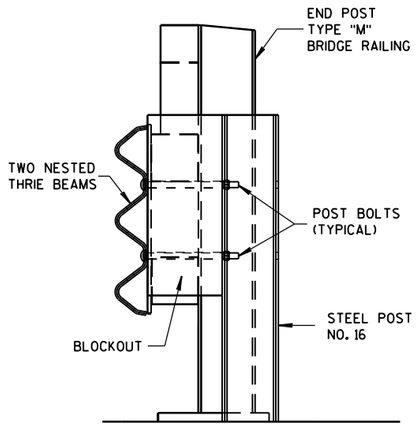
FRONT VIEW

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

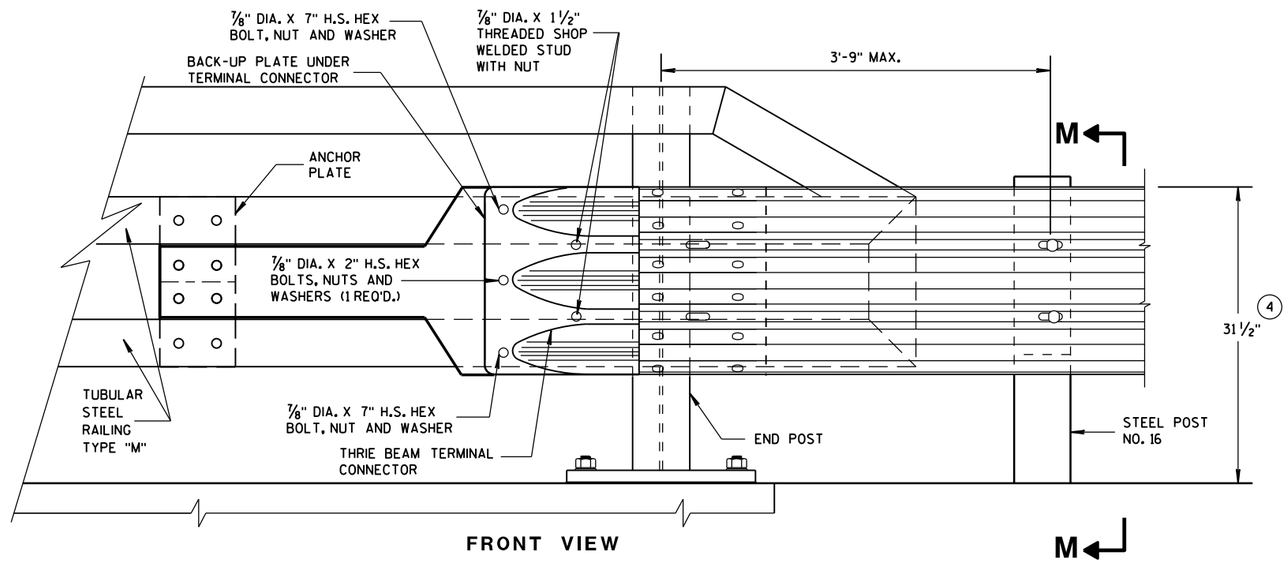


FRONT VIEW

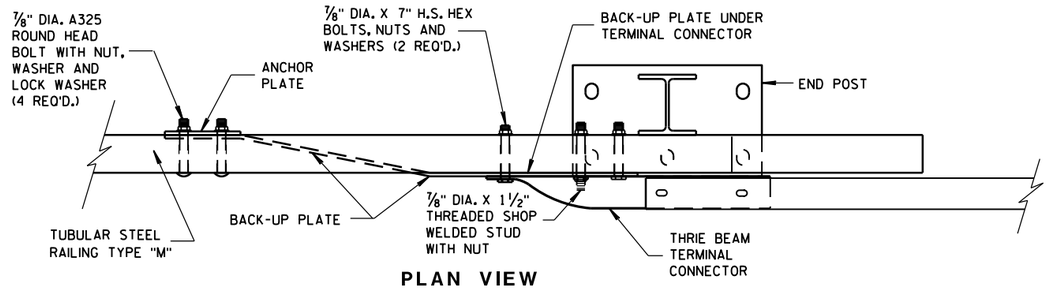
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

6

S.D.D. 14 B 45-4h

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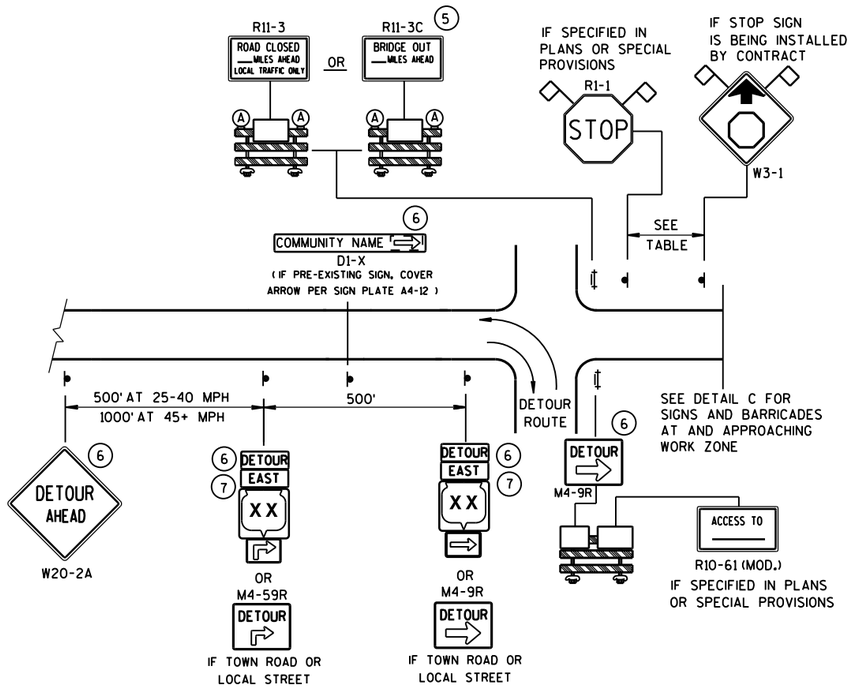
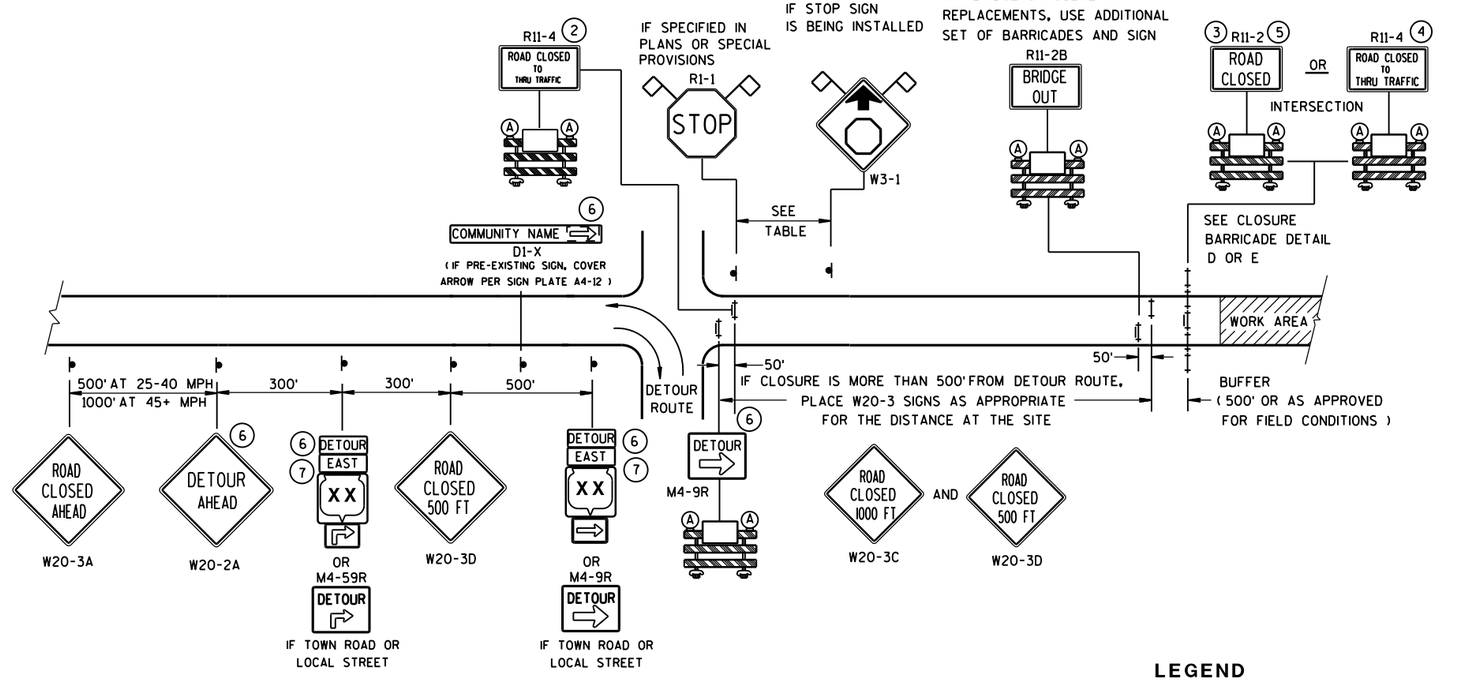
S.D.D. 14 B 45-4h



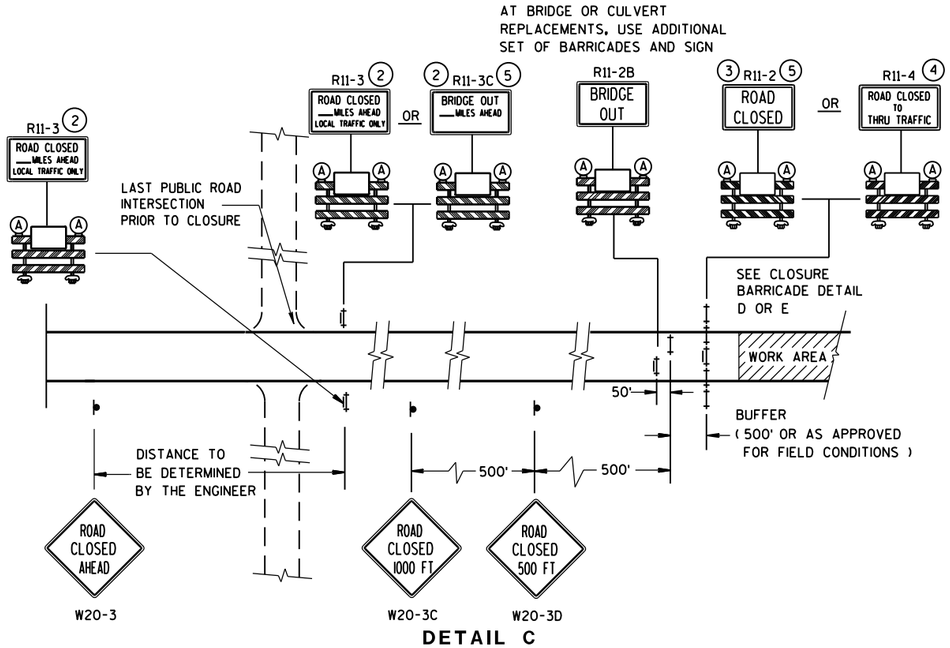
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

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

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

LEGEND

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

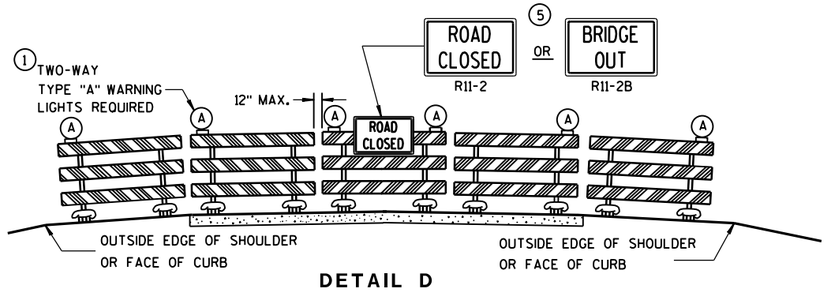
BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

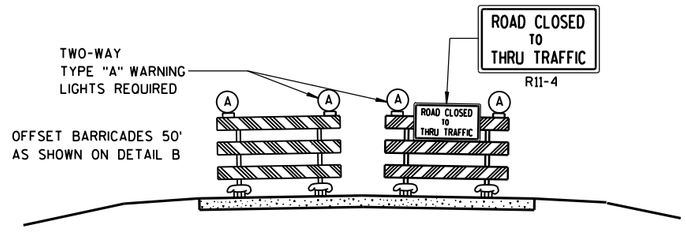
S.D.D. 15 C 2-6a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-SHEET "**a**" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1-1 SHALL BE 36" X 36".

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

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

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

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

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

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

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Sept. 2015 — DATE

/S/ Peter Amakobe Atepe
STATEWIDE WORK ZO SAFETY ENGI

FHWA

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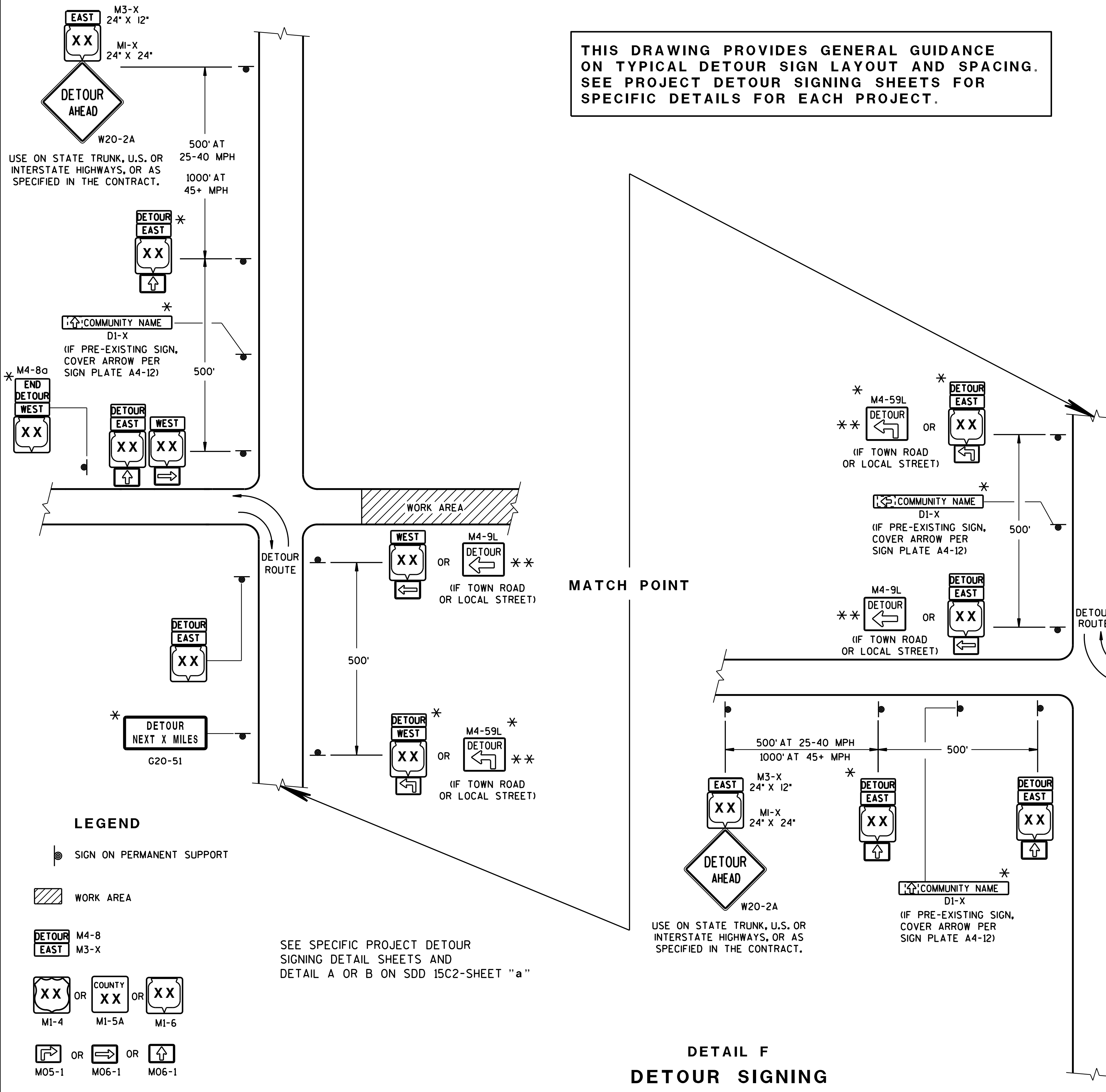
S.D.D. 15 C 2-6b

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



GENERAL NOTES

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

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

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

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

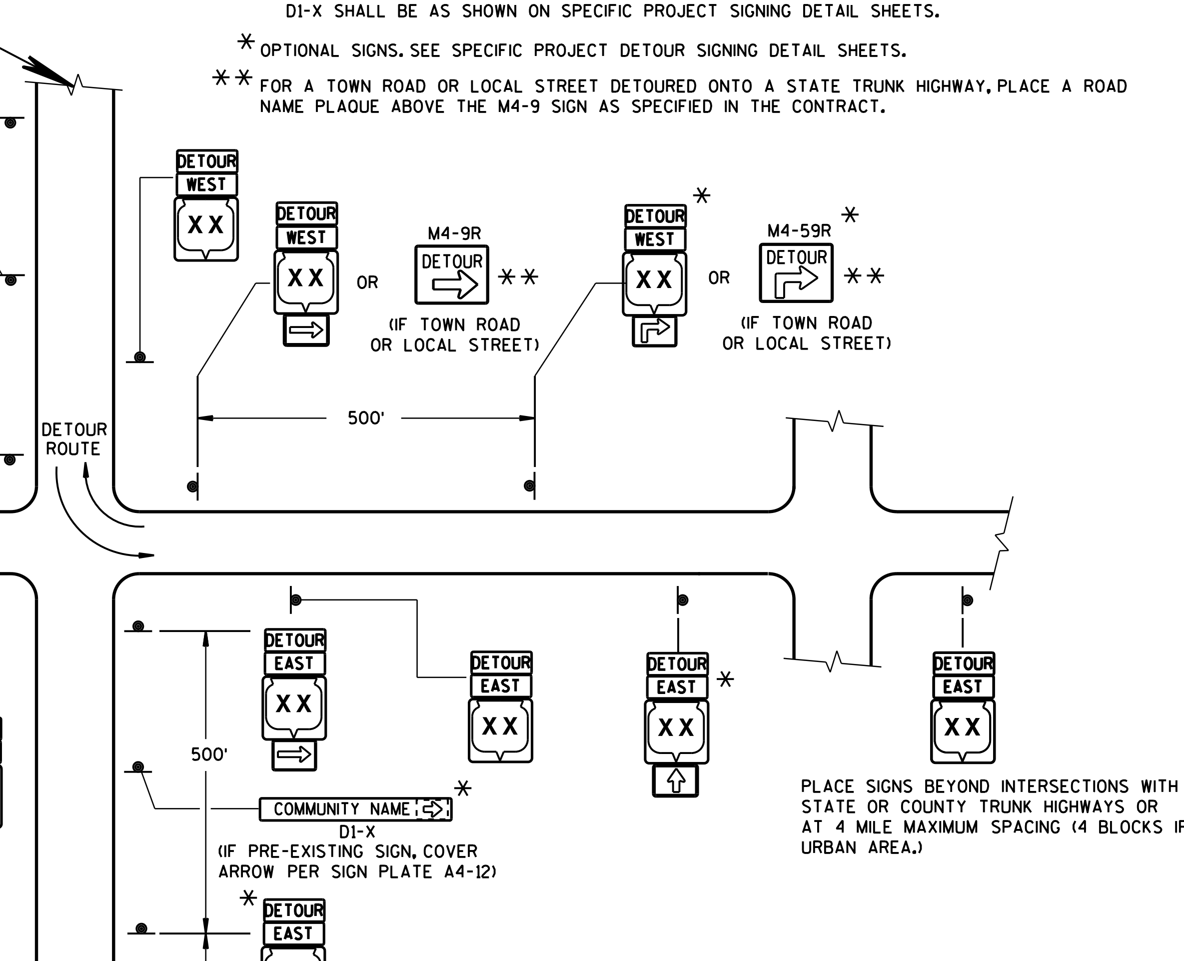
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

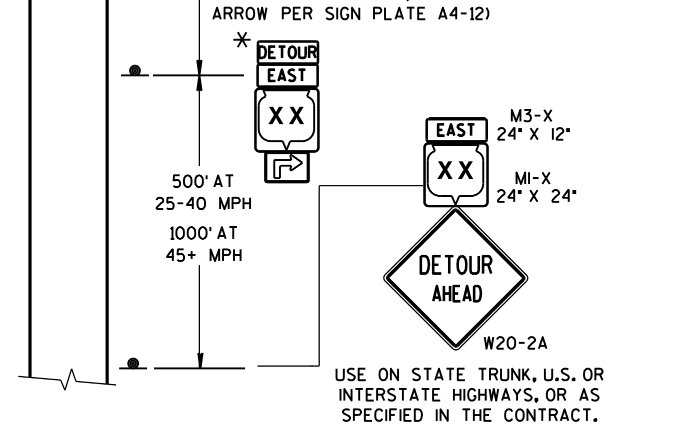
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-9 SHALL BE 30" X 24".
- M4-8a SHALL BE 24" X 18".
- G20-51 SHALL BE 60" X 24".
- W20-2 SHALL BE 48" X 48".
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

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

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





DETAIL F
DETOUR SIGNING

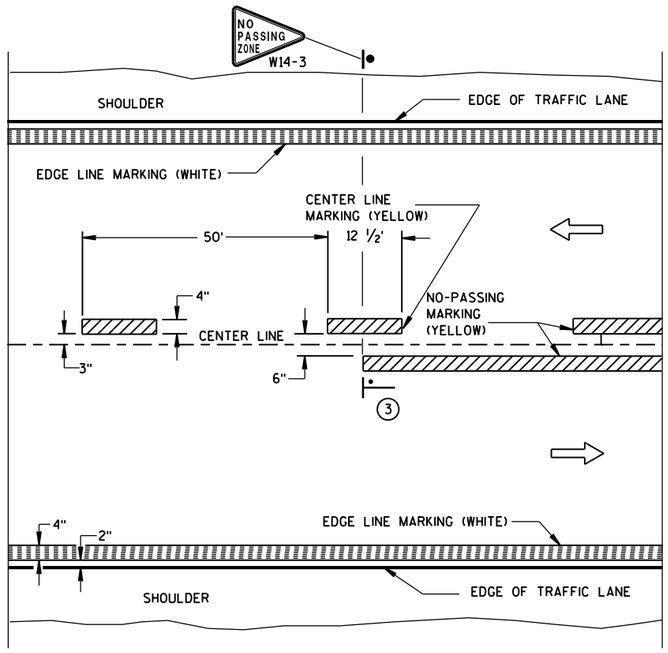
6

DETOUR SIGNING FOR MAINLINE CLOSURES

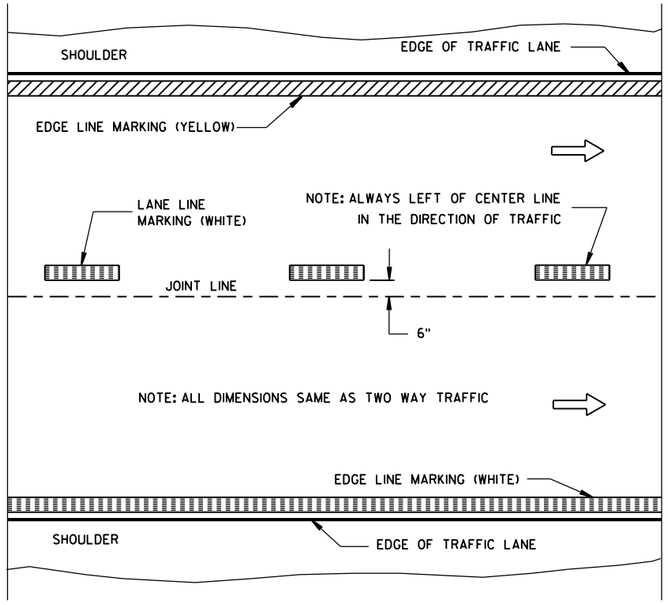
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2015 — DATE
/S/ Peter Amakobe Atepe — STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA

S.D.D. 15 C 2-6c

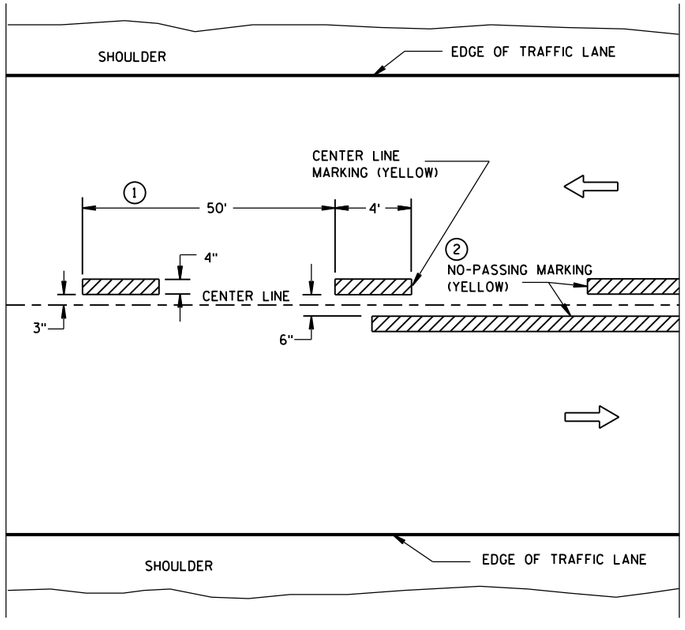


TWO WAY TRAFFIC

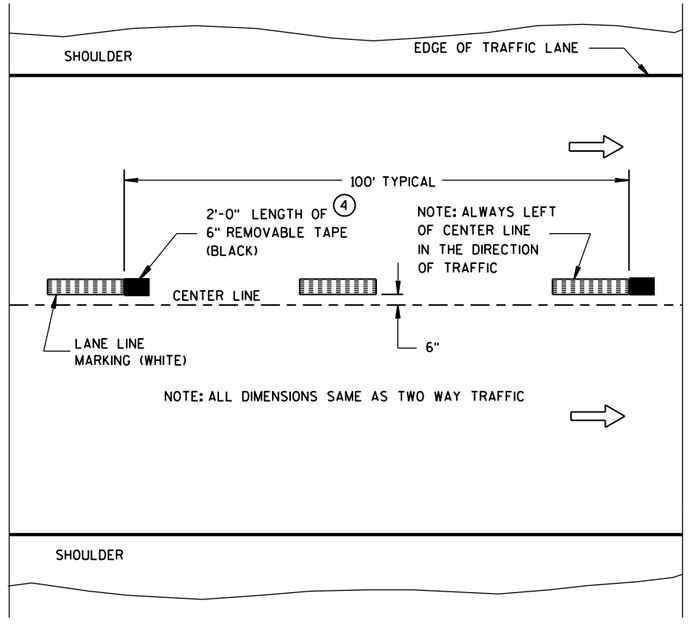


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

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

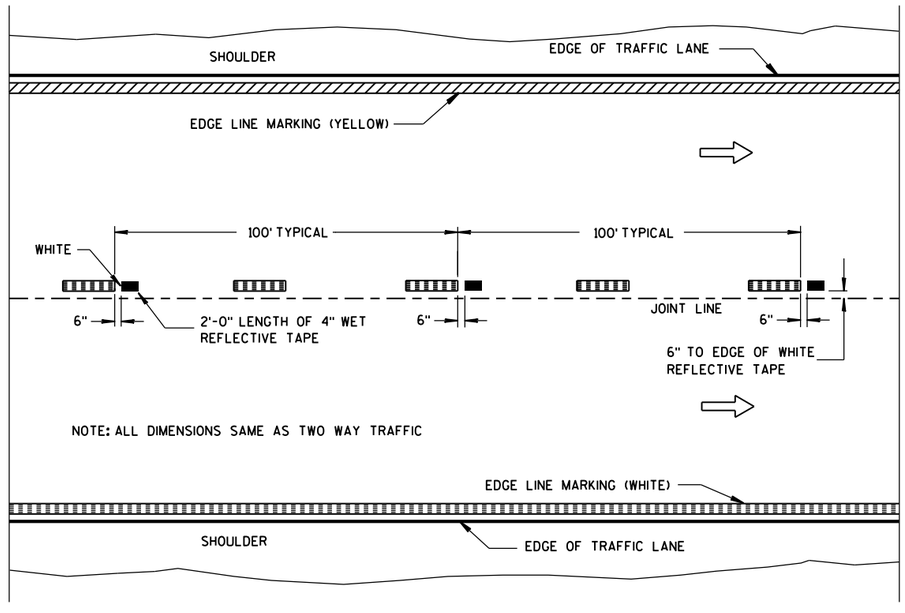
GENERAL NOTES

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

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

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



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

LEGEND

"T" MARKING

POST MOUNTED SIGN

PAVEMENT MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5-13-2013 DATE
/S/ Travis Feltes STATE TRAFFIC E
FHWA

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S.D.D. 15 C 8-16a

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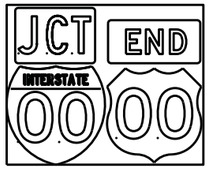
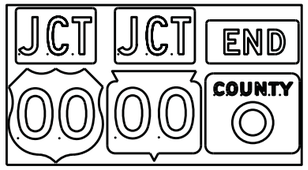
S.D.D. 15 C 8-16a

TYPICAL ASSEMBLIES

J1-1

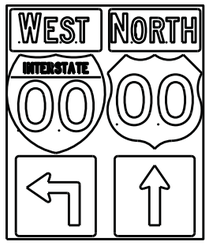


J1-2

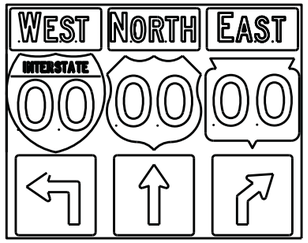


J1-3

J2-1



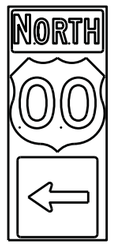
J2-2



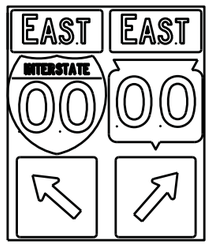
J2-3

JV

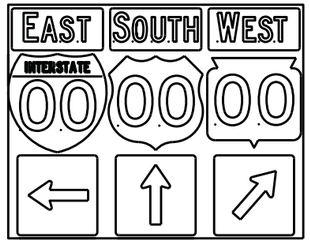
(Typical Vertical J-Assembly
See Note 10 and 11)



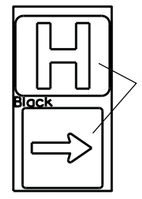
J3-1



J3-2



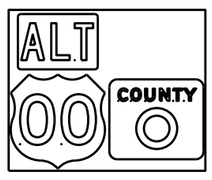
J3-3



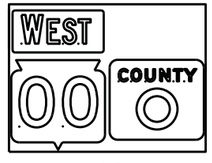
Blue Background

JH-1

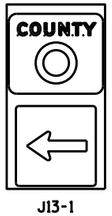
J4-1



J4-2



J4-2



J13-1

J12-1

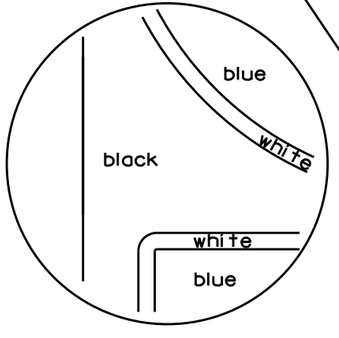
J32-1

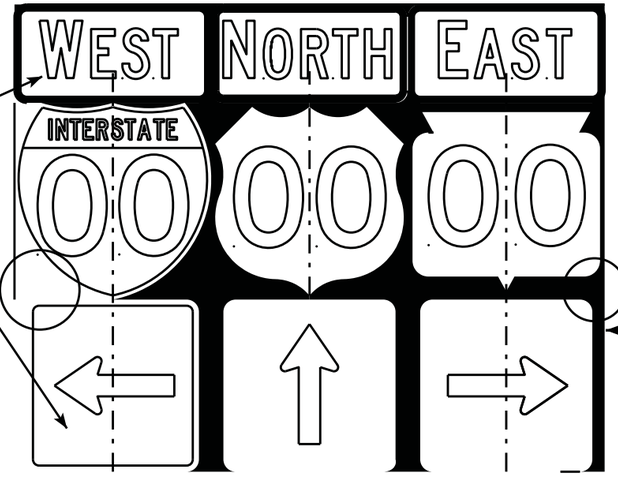
J33-1

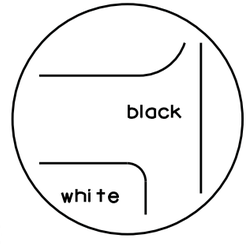
J23-1

J22-1

blue background
with interstate







black background

NOTES

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

ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

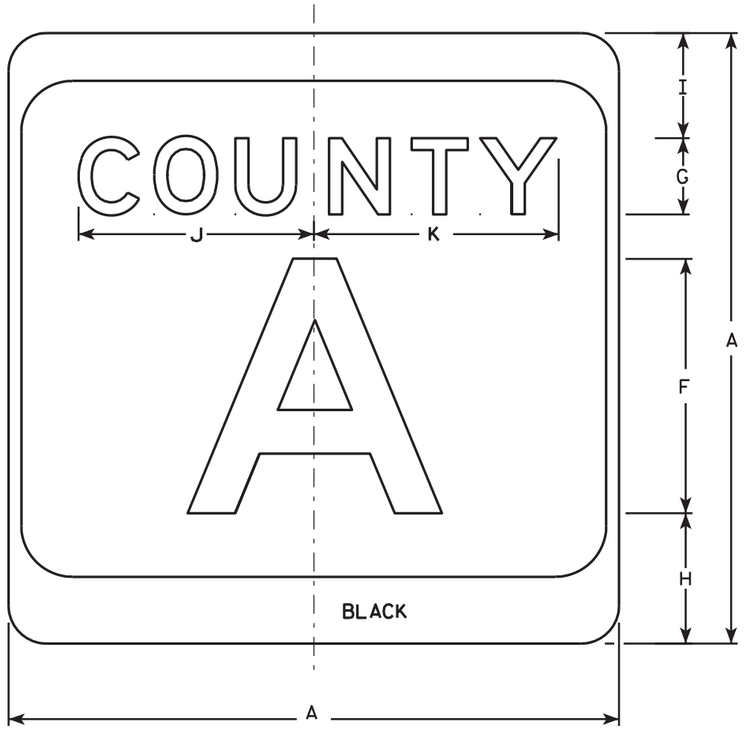
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

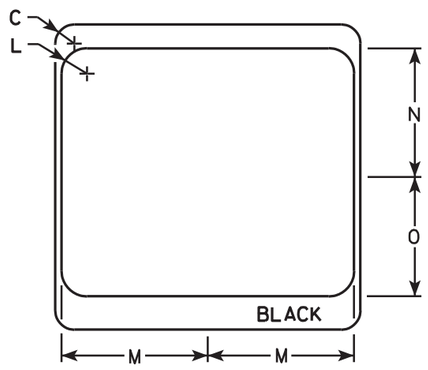
DATE 2/06/14 PL... A2-1S.8

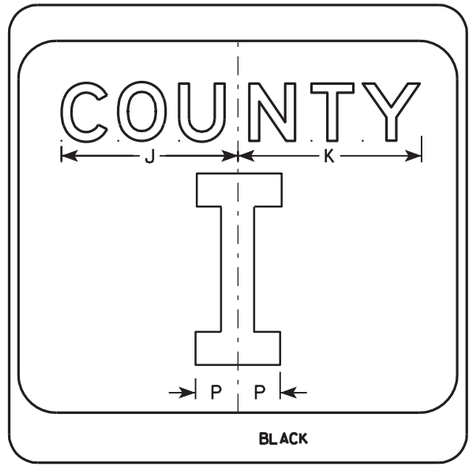
PROJECT NO: 5307-00-72	HWY: CTH O	COUNTY: LAFAYETTE	SIGN PLATE	SHEET NO:	E

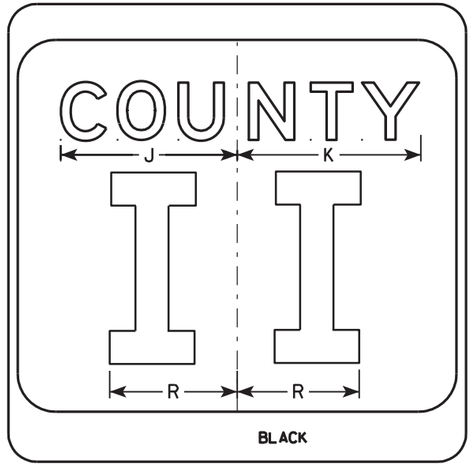
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A21S.DGN PLOT DATE : 06-FEB-2014 14:10 PLOT BY : mscsja PLOT NAME :
WISDOT/CADDS SHEET 42



M1-5A







NOTES

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

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

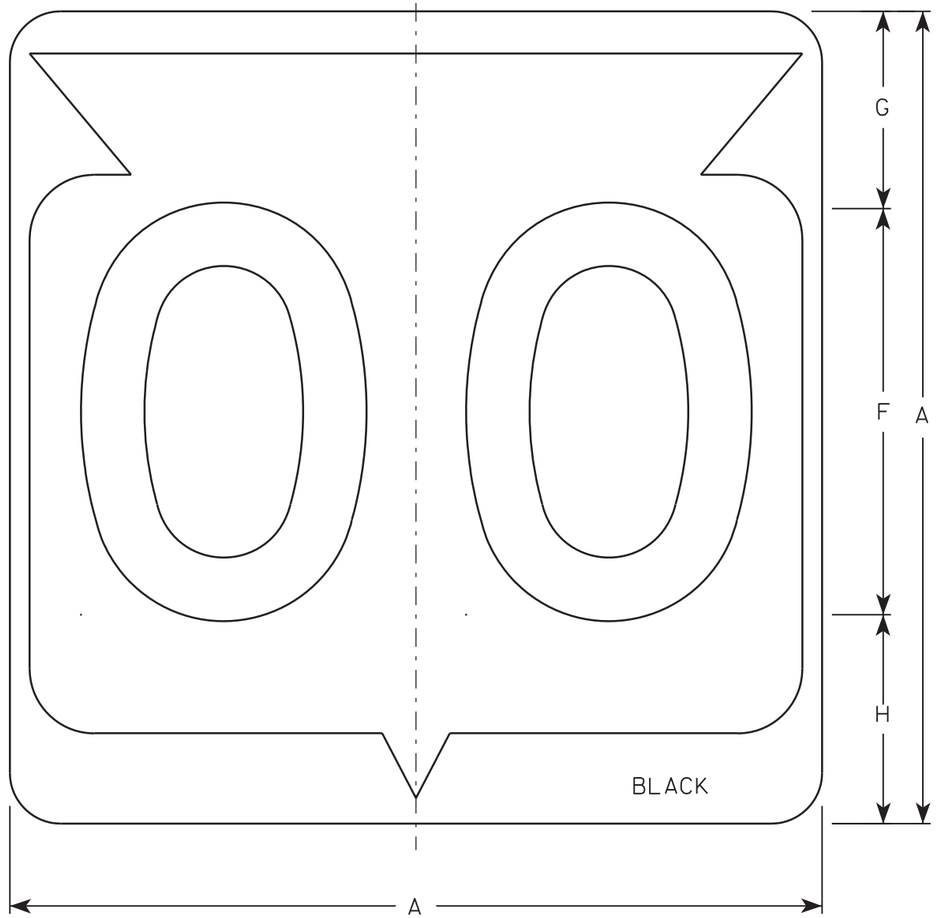
CTH MARKER
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

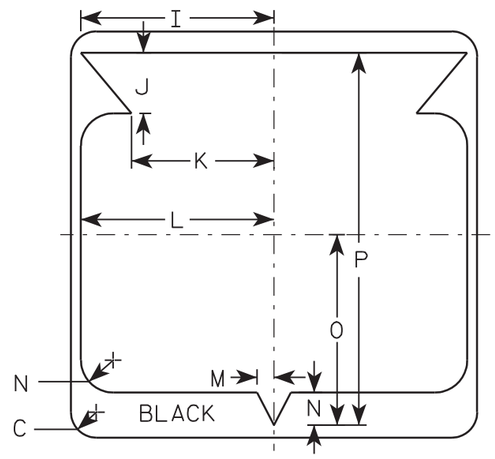
PROJECT NO: 5307-00-72	HWY: CTH O	COUNTY: LAFAYETTE	SIGN PLATE	SHEET NO: 34	E



M1-6

NOTES

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



Metric equivalent for this sign is:

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1																												
2	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0	.36
3	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
4	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
5	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81

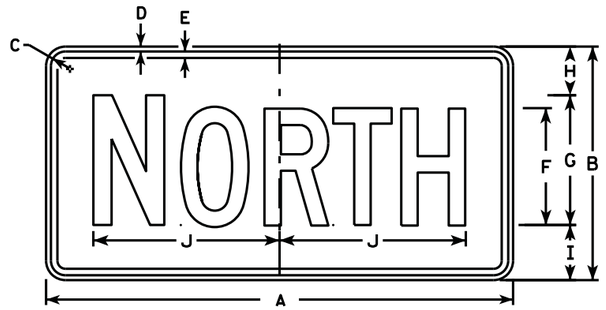
STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

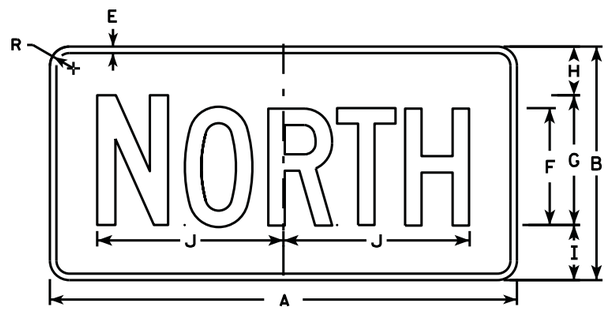
APPROVED Chester J Spang for State Traffic Engineer

DATE 3/20/02 PLATE NO. M1-6.9

PROJECT NO: 5307-00-72	HWY: CTH O	COUNTY: LAFAYETTE	SIGN PLATE	SHEET NO: 35	E



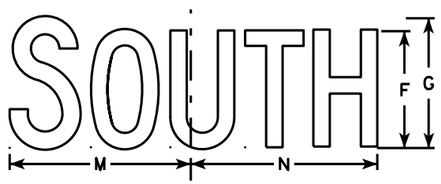
M3-1
MM3-1
MP3-1



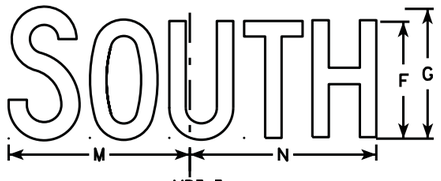
MB3-1
MK3-1
MN3-1

M3-2
MM3-2
MP3-2

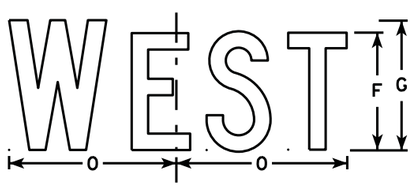
MB3-2
MK3-2
MN3-2



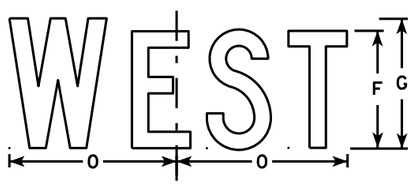
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

NOTES

1. All Signs Type II - Type H
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M3-1 thru M3-4 Background - White
   Message - Black
   MB3-1 thru MB3-4 Background - Blue
   Message - White
   MK3-1 thru MK3-4 Background - Green
   Message - White
   MM3-1 thru MM3-4 Background - White
   Message - Green
   MN3-1 thru MN3-4 Background - Brown
   Message - White
   MP3-1 thru MP3-4 Background - White
   Message - Blue
6. Note the first letter of each direction is larger than the remainder of the message.

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

STANDARD SIGNS
M3-1 thur M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

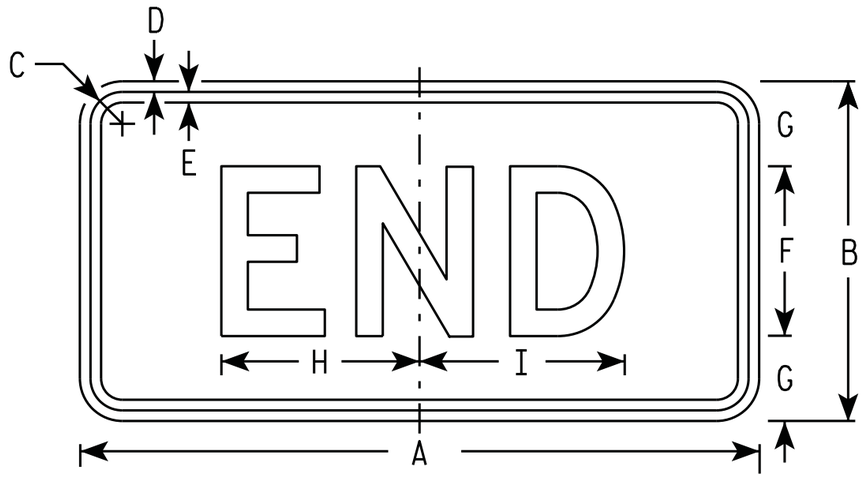
APPROVED Matthew R Rauch for State Traffic Engineer

DATE 10/15/15 PLATE NO. M3-1.14

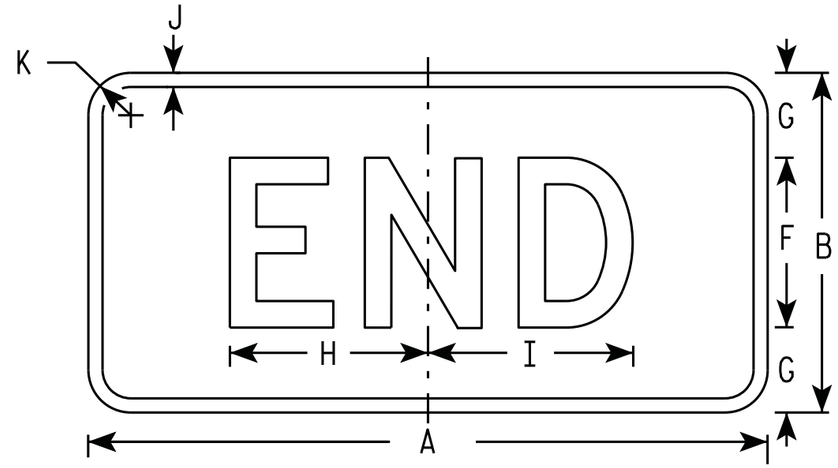
PROJECT NO: 5307-00-72 | HWY: CTH O | COUNTY: LAFAYETTE | SIGN PLATE | SHEET NO. 36 | E

7

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M31.DGN PLOT DATE : 15-OCT-2015 12:16 PLOT BY : ss...plotuser...ss PLOT NAME : PLOT SCALE : 18.607113:1.000000 WISDOT/CADDS SHEET 42



M4-6
MM4-6
MP4-6



MB4-6
MK4-6
MN4-6
MR4-6

NOTES

1. Sign is Type II - Type H
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-6 Background - White
   Message - Black

   MB4-6 Background - Blue
   Message - White

   MK4-6 Background - Green
   Message - White

   MM4-6 Background - White
   Message - Green

   MN4-6 Background - Brown
   Message - White

   MP4-6 Background - White
   Message - Blue

   MR4-6 Background - Brown
   Message - Yellow

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	3	7	7 1/4	1/2	1 1/2																2.00
3	36	18	1 1/8	3/8	1/2	9	4 1/2	12	11 7/8	1/2	1 1/2																4.5
4	36	18	1 1/8	3/8	1/2	9	4 1/2	12	11 7/8	1/2	1 1/2																4.5
5	36	18	1 1/8	3/8	1/2	9	4 1/2	12	11 7/8	1/2	1 1/2																4.5

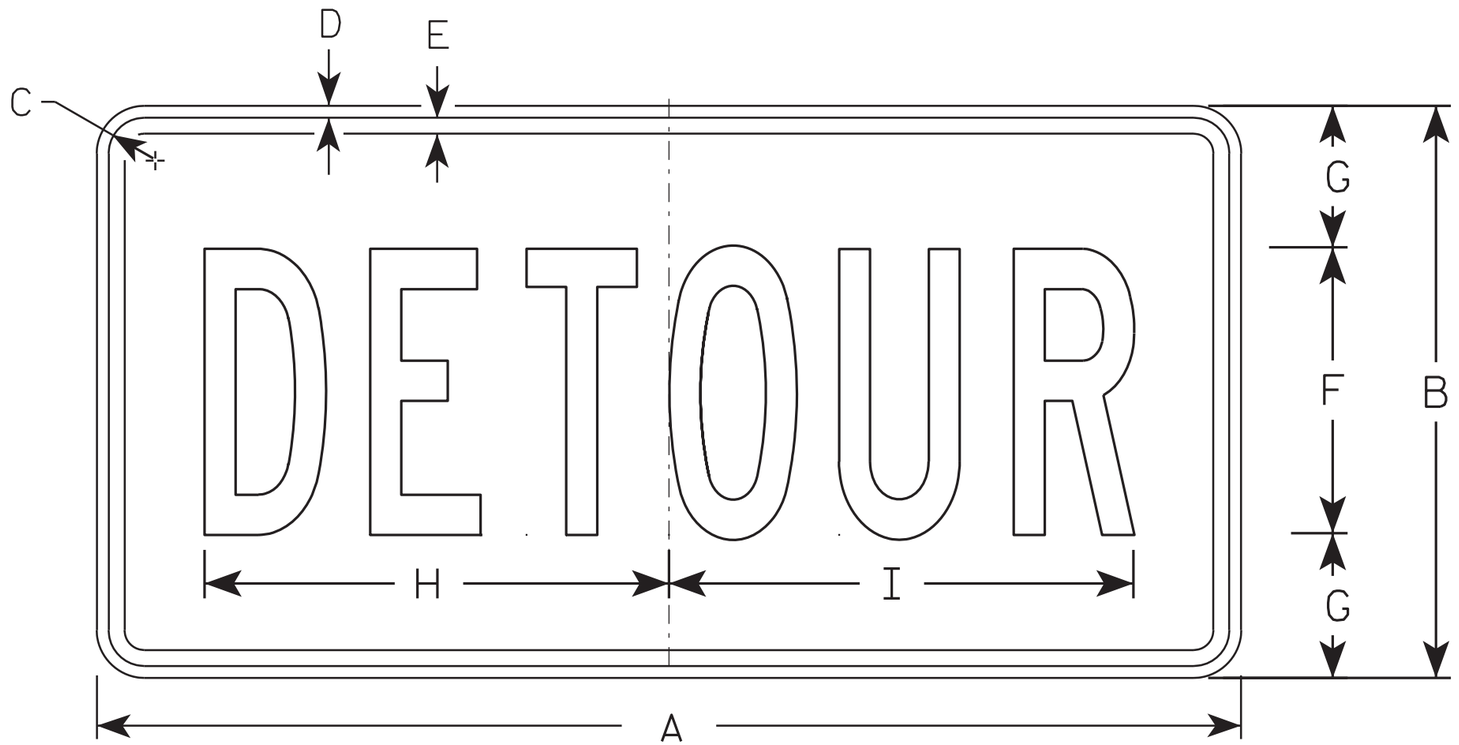
STANDARD SIGN
M4-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M4-7.9

PROJECT NO: 5307-00-72	HWY: CTH O	COUNTY: LAFAYETTE	SIGN PLATE	SHEET NO. 37	E



M4-8

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	3	10	10 1/4																		2.0
3	36	18	1 1/8	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
4																											
5																											

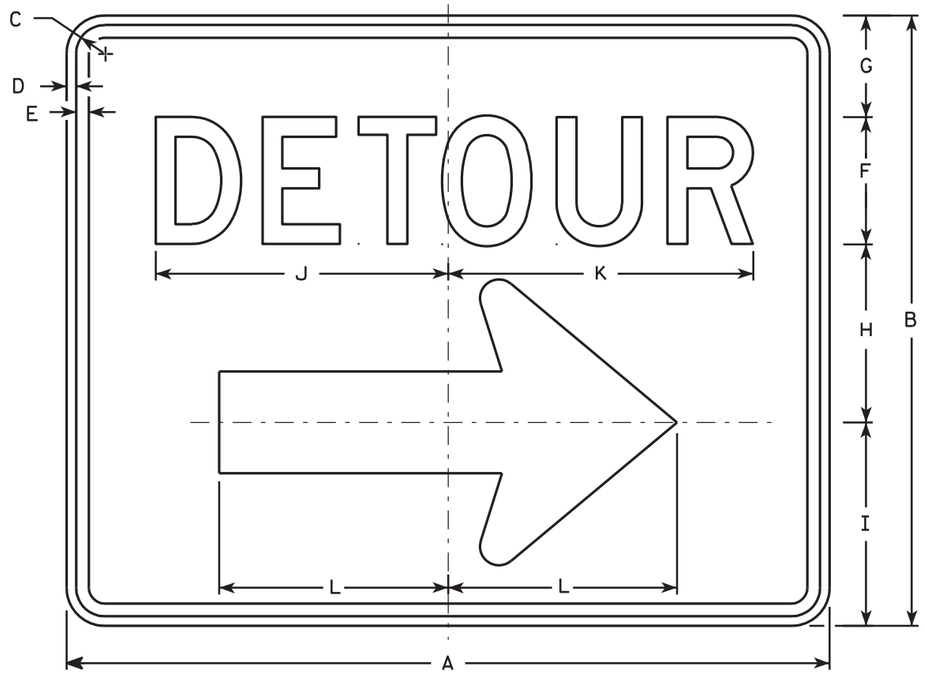
STANDARD SIGN
M4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-8.2

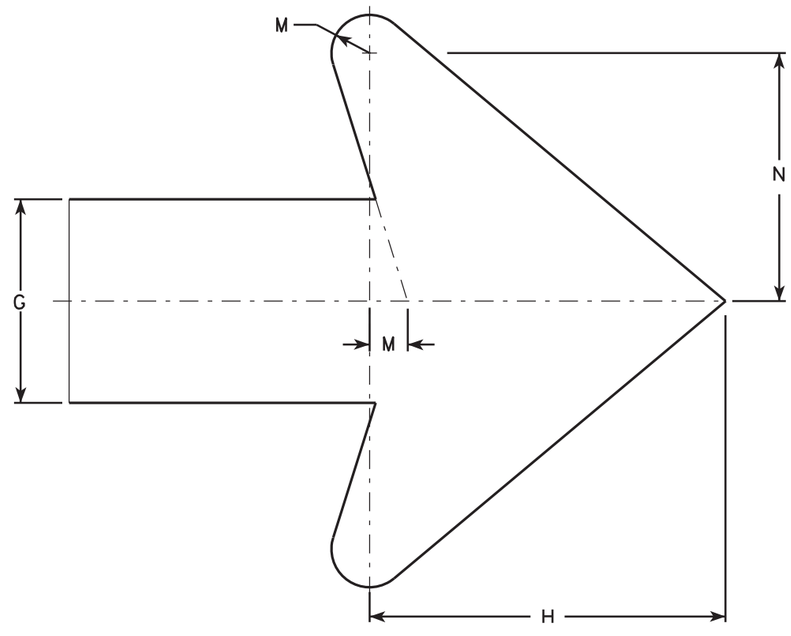
PROJECT NO: 5307-00-72	HWY: CTH O	COUNTY: LAFAYETTE	SIGN PLATE	SHEET NO: 38	E



M4-9R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-9L is the same as M4-9R except the arrow is reversed.



Arrow Detail

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	30	24	1 1/8	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
3	30	24	1 1/8	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
4	48	36	1 3/8	1/2	5/8	8	6	10 1/2	11 5/8	20 5/8	20 1/2	13 1/4	1 1/8	6 7/8													12.0
5	48	36	1 3/8	1/2	5/8	8	6	10 1/2	11 5/8	20 5/8	20 1/2	13 1/4	1 1/8	6 7/8													12.0

STANDARD SIGN
M4-9 R & L

WISCONSIN DEPT OF TRANSPORTATION

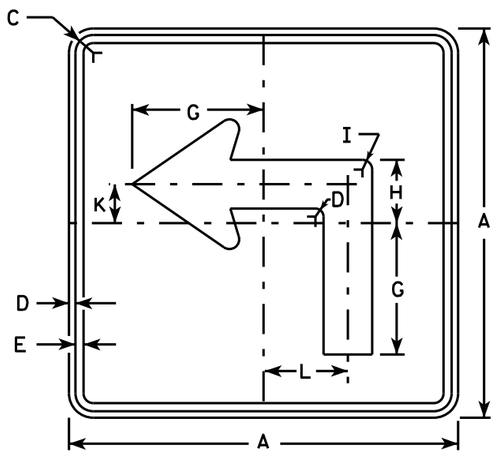
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/9/11 PLATE NO. M4-9R.4

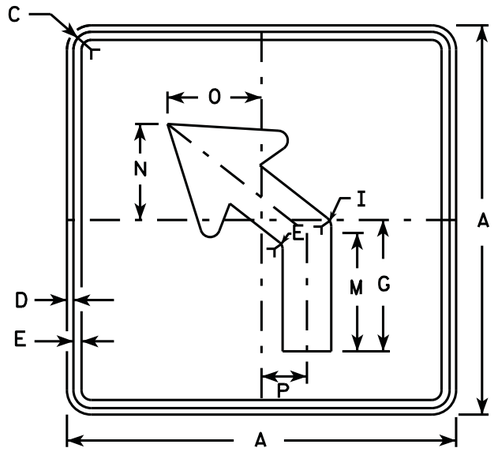
PROJECT NO: 5307-00-72 | HWY: CTH O | COUNTY: LAFAYETTE | SIGN PLATE | SHEET NO: 39 | E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\M49R.DGN PLOT DATE : 09-MAR-2011 11:17 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 5.959043:1.000000

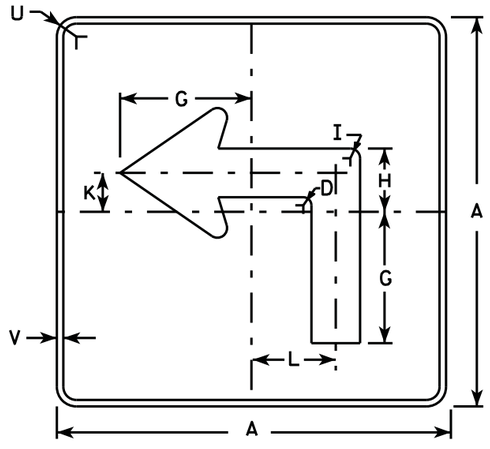
WISDOT/CADDS SHEET 42



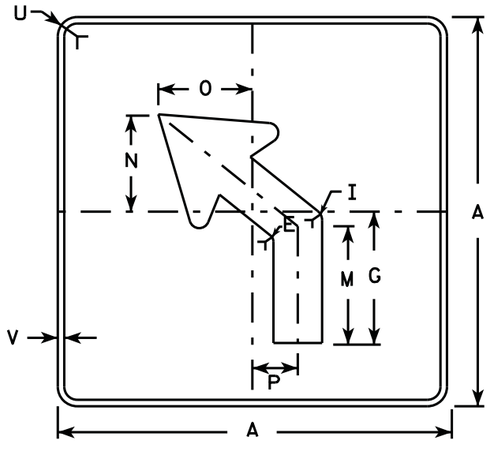
M5-1L
MM5-1L
M05-1L
MP5-1L



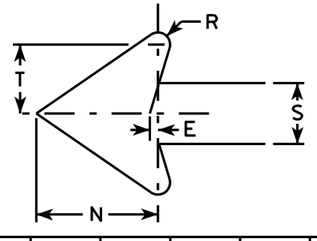
M5-2L
MM5-2L
M05-2L
MP5-2L



MB5-1L
MK5-1L
MN5-1L
MR5-1L



MB5-2L
MK5-2L
MN5-2L
MR5-2L



NOTES

1. Signs are Type II - Type H reflective except as shown
2. Color:
   Background - See note 4
   Message - See note 4
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. M5-1 and M5-2 Background - White
   Message - Black
   MB5-1 and MB5-2 Background - Blue
   Message - White
   MK5-1 and MK5-2 Background - Green
   Message - White
   MM5-1 and MM5-2 Background - White
   Message - Green
   MN5-1 and MN5-2 Background - Brown
   Message - White
   M05-1 and M05-2 Background - Orange - Type F Reflective
   Message - Black
   MP5-1 and MP5-2 Background - White - Type H Reflective
   Message - Blue
   MR5-1 and MR5-2 Background - Brown
   Message - Yellow
5. M5-1R same as M5-1L except arrow points right.
6. M5-2R same as M5-2L except arrow tilts right.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25

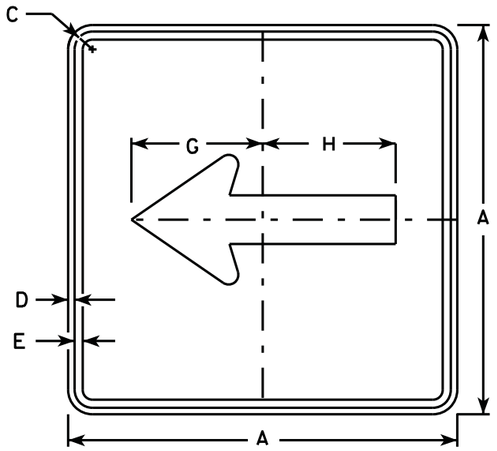
STANDARD SIGN
M5-1 & M5-2

WISCONSIN DEPT OF TRANSPORTATION

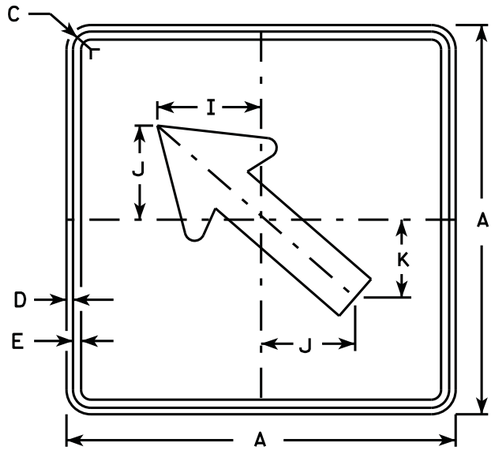
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M5-1.13

PROJECT NO: 5307-00-72 | HWY: CTH O | COUNTY: LAFAYETTE | SIGN PLATE | SHEET NO. 40 | E



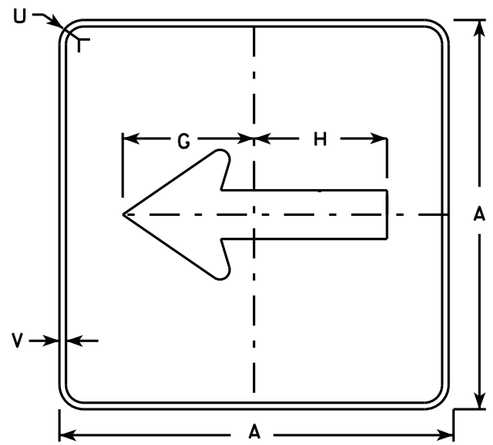
M6-1
MM6-1
MO6-1
MP6-1



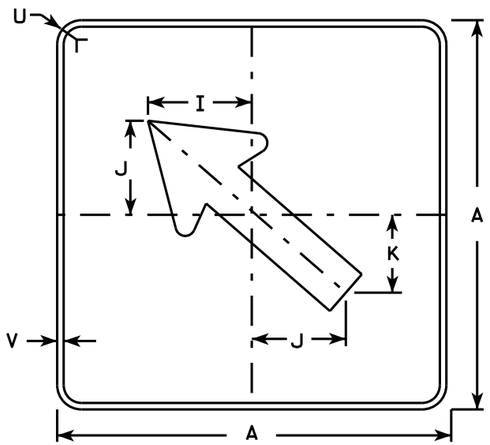
M6-2
MM6-2
MO6-2
MP6-2

NOTES

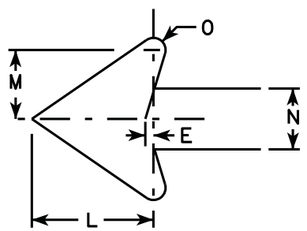
1. Signs are Type II - Type H except as Shown
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-1 and M6-2 Background - White
   Message - Black
   MB6-1 and MB6-2 Background - Blue
   Message - White
   MK6-1 and MK6-2 Background - Green
   Message - White
   MM6-1 and MM6-2 Background - White
   Message - Green
   MN6-1 and MN6-2 Background - Brown
   Message - White
   MO6-1 and MO6-2 Background - Orange - Type F Reflective
   Message - Black
   MP6-1 and MP6-2 Background - White
   Message - Blue
   MR6-1 and MR6-2 Background - Brown
   Message - Yellow



MB6-1
MK6-1
MN6-1
MR6-1



MB6-2
MK6-2
MN6-2
MR6-2



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

STANDARD SIGN
M6-1 & M6-2
SERIES

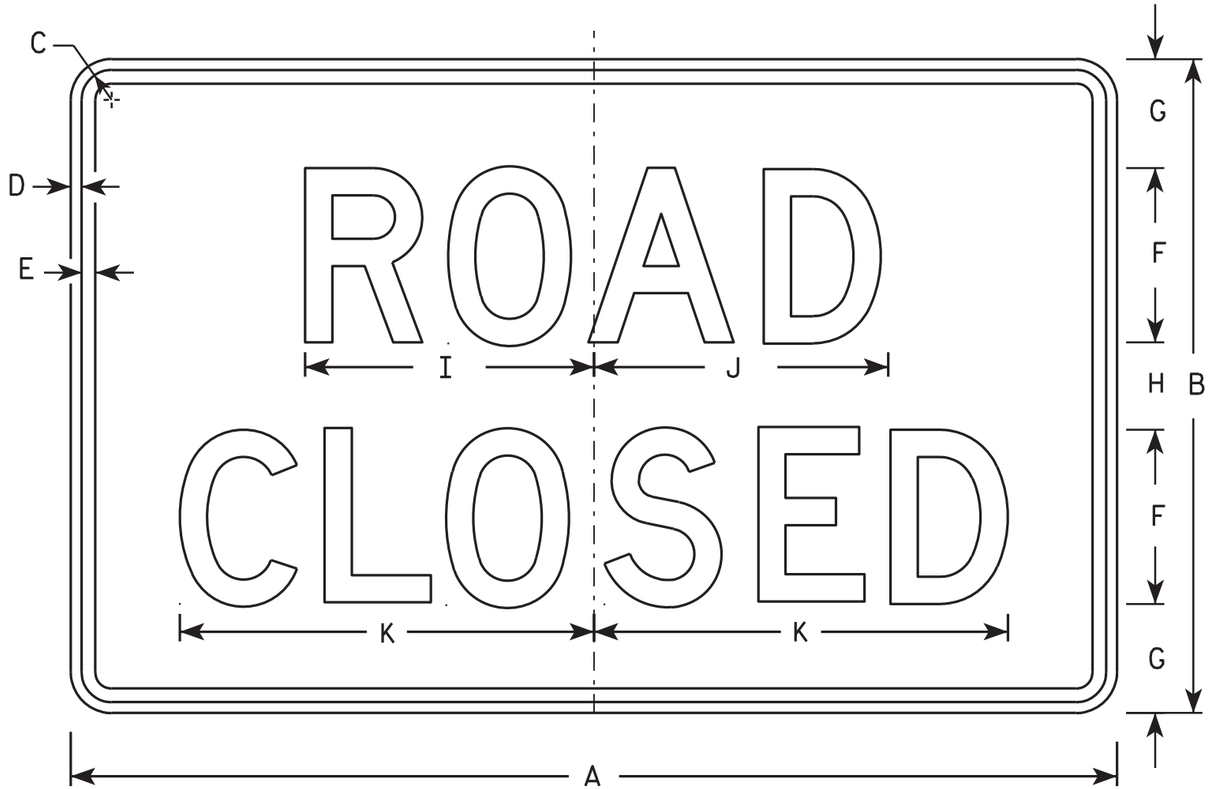
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M6-1.15

PROJECT NO: 5307-00-72 | HWY: CTH O | COUNTY: LAFAYETTE | SIGN PLATE | SHEET NO. 41 | E

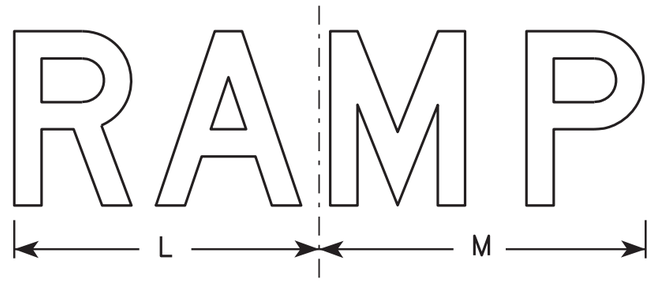
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M61.DGN PLOT DATE : 15-OCT-2015 13:17 PLOT BY : ss...plotuser...ss PLOT NAME : PLOT SCALE : 18.607113:1.000000
WISDOT/CADDS SHEET 42



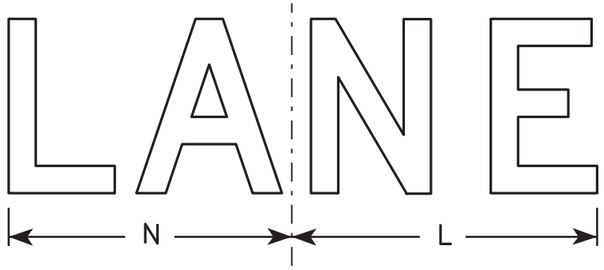
R11-2

NOTES

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



R11-2R



R11-2L

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

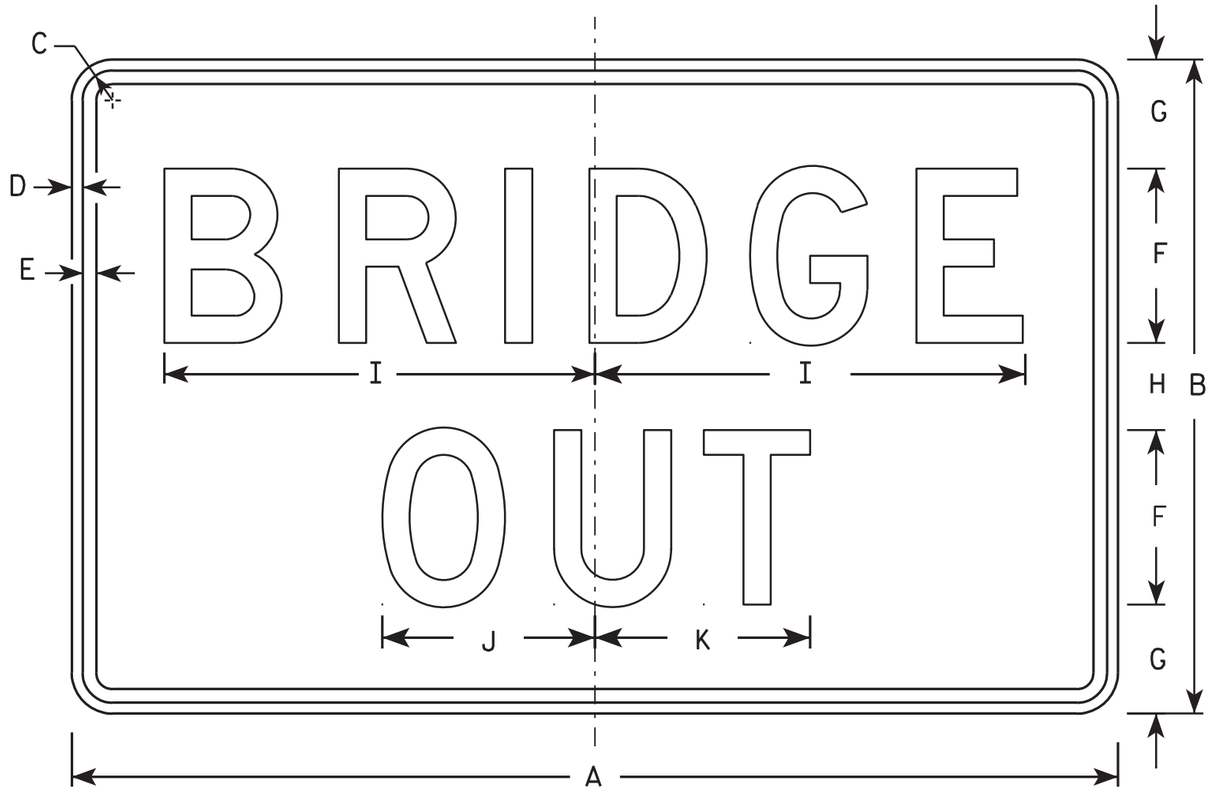
STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-2.10

PROJECT NO: 5307-00-72	HWY: CTH O	COUNTY: LAFAYETTE	SIGN PLATE	SHEET NO: 42	E



R11-2B

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
2M	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
3	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
4	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
5	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0

STANDARD SIGN
R11-2B

WISCONSIN DEPT OF TRANSPORTATION

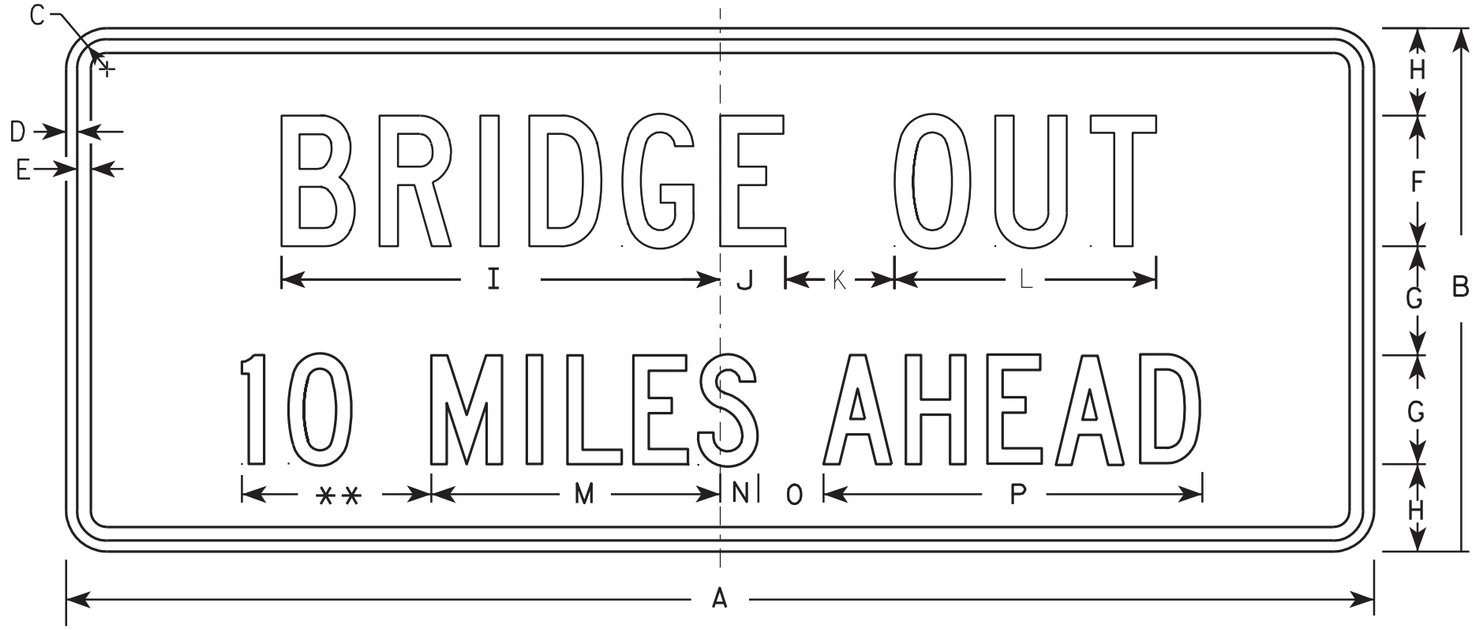
APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-2B.2

PROJECT NO: 5307-00-72	HWY: CTH O	COUNTY: LAFAYETTE	SIGN PLATE	SHEET NO: 43	E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\R112B.DGN PLOT DATE : 01-APR-2011 14:23 PLOT BY : mscj9h

7



R11-3C

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

** See Note 5

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	15	1 3/8	1/2	5/8	4	3	2 1/2	13 1/4	2 1/4	3	8	8	1 1/2	2	10 3/4											3.75
2S	60	24	1 3/8	1/2	5/8	6	5	4	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8											10.0
2M	60	24	1 3/8	1/2	5/8	6	5	4	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8											10.0
3																											
4																											
5																											

STANDARD SIGN
R11-3C

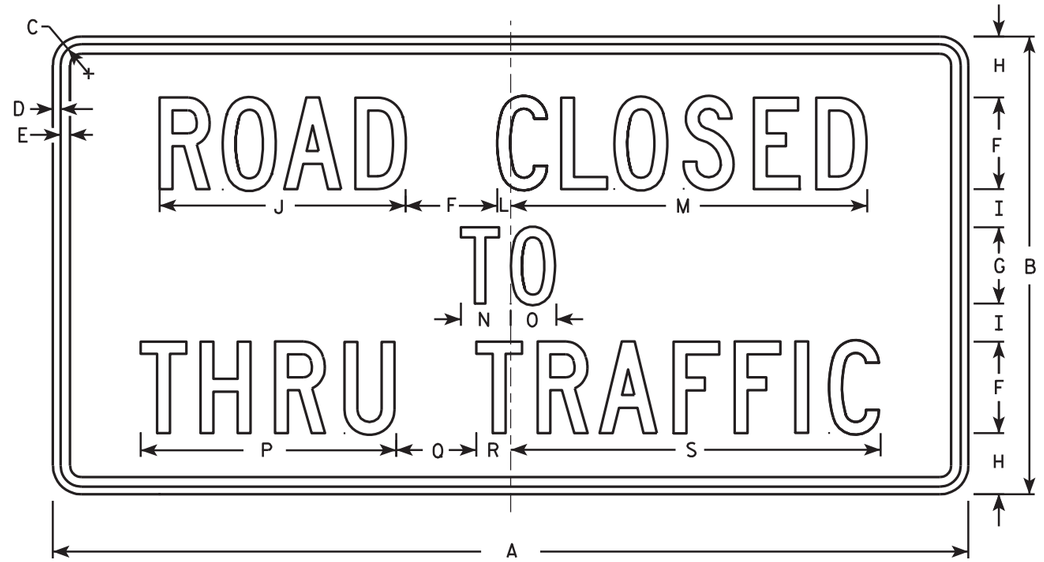
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-3C.2

PROJECT NO: 5307-00-72 | HWY: CTH O | COUNTY: LAFAYETTE | SIGN PLATE | SHEET NO: 44 | E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\R113C.DGN PLOT DATE : 01-APR-2011 14:15 PLOT BY : mscj9h



R11-4

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	60	30	1 3/8	1/2	5/8	6	5	4	2 1/2	16 1/8		7/8	23 3/8	3 1/4	3	16 3/4	5 1/4	2 1/4	24 1/4								12.5
2M	60	30	1 3/8	1/2	5/8	6	5	4	2 1/2	16 1/8		7/8	23 3/8	3 1/4	3	16 3/4	5 1/4	2 1/4	24 1/4								12.5
3																											
4																											
5																											

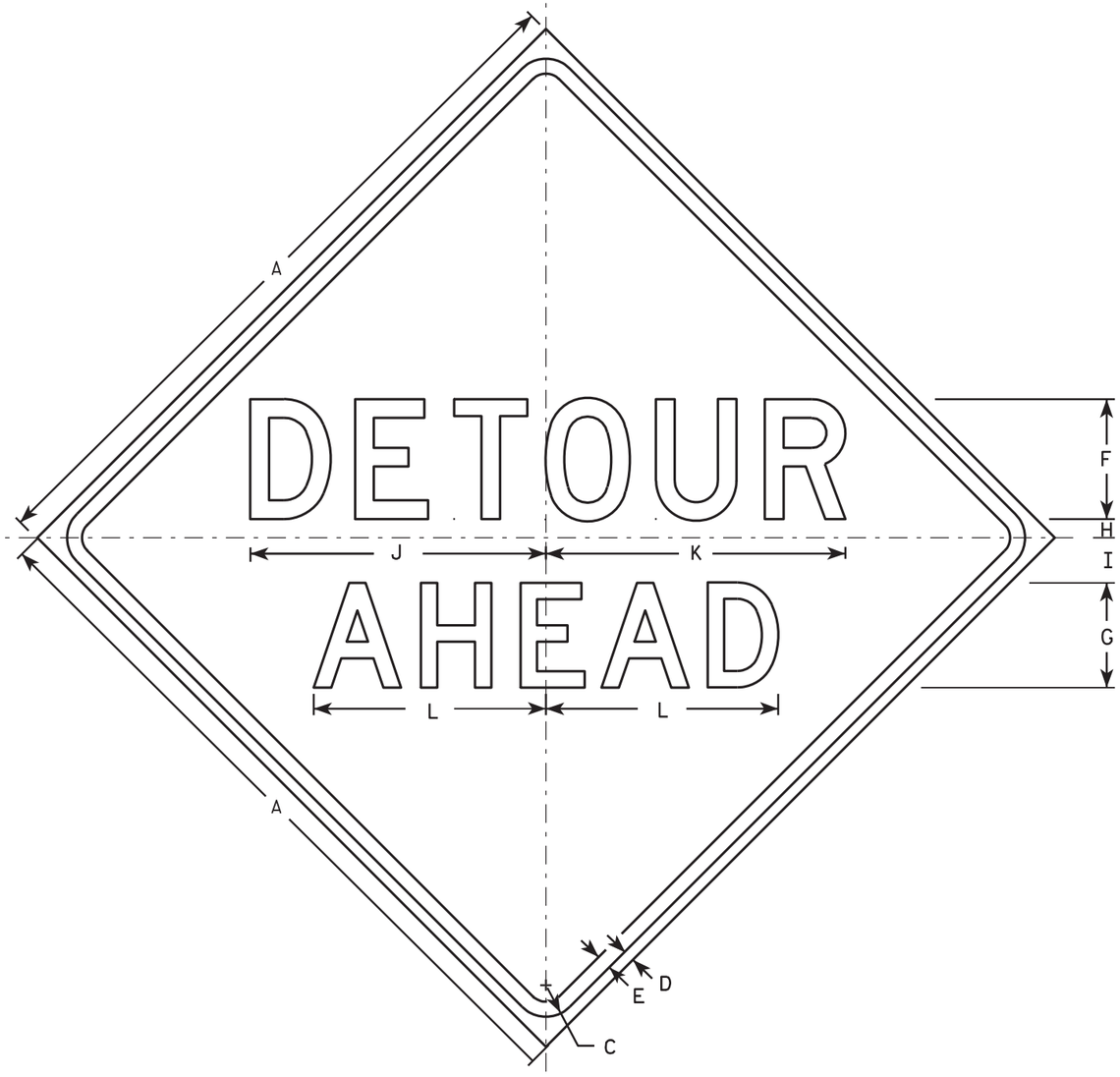
STANDARD SIGN
R11 - 4

WISCONSIN DEPT OF TRANSPORTATION

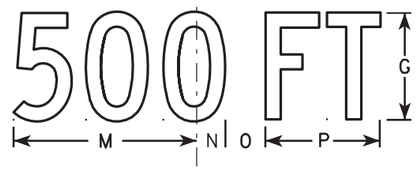
APPROVED Matthew R Rauch for State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-4.3

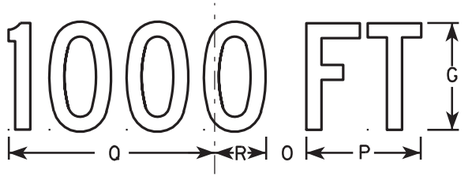
PROJECT NO: 5307-00-72 | HWY: CTH O | COUNTY: LAFAYETTE | SIGN PLATE | SHEET NO: 45 | E



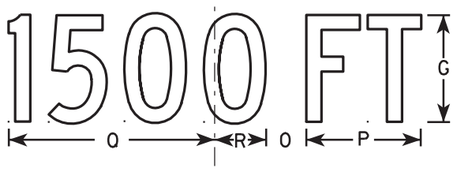
W20-2A



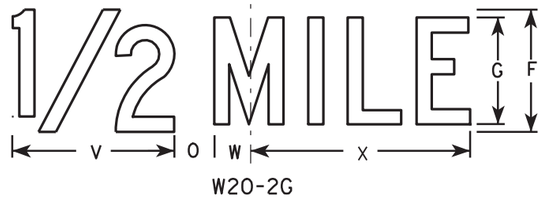
W20-2D



W20-2C



W20-2B



W20-2G

W20-2F

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Line 1 is Series D.
   Line 2 is Series D for AHEAD and Series C for all other distances.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	6	5	1	2 1/4	14 3/4	15	11 5/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	8	1 3/4	10 3/4			9.0
2S	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
2M	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
3	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
4	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
5	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0

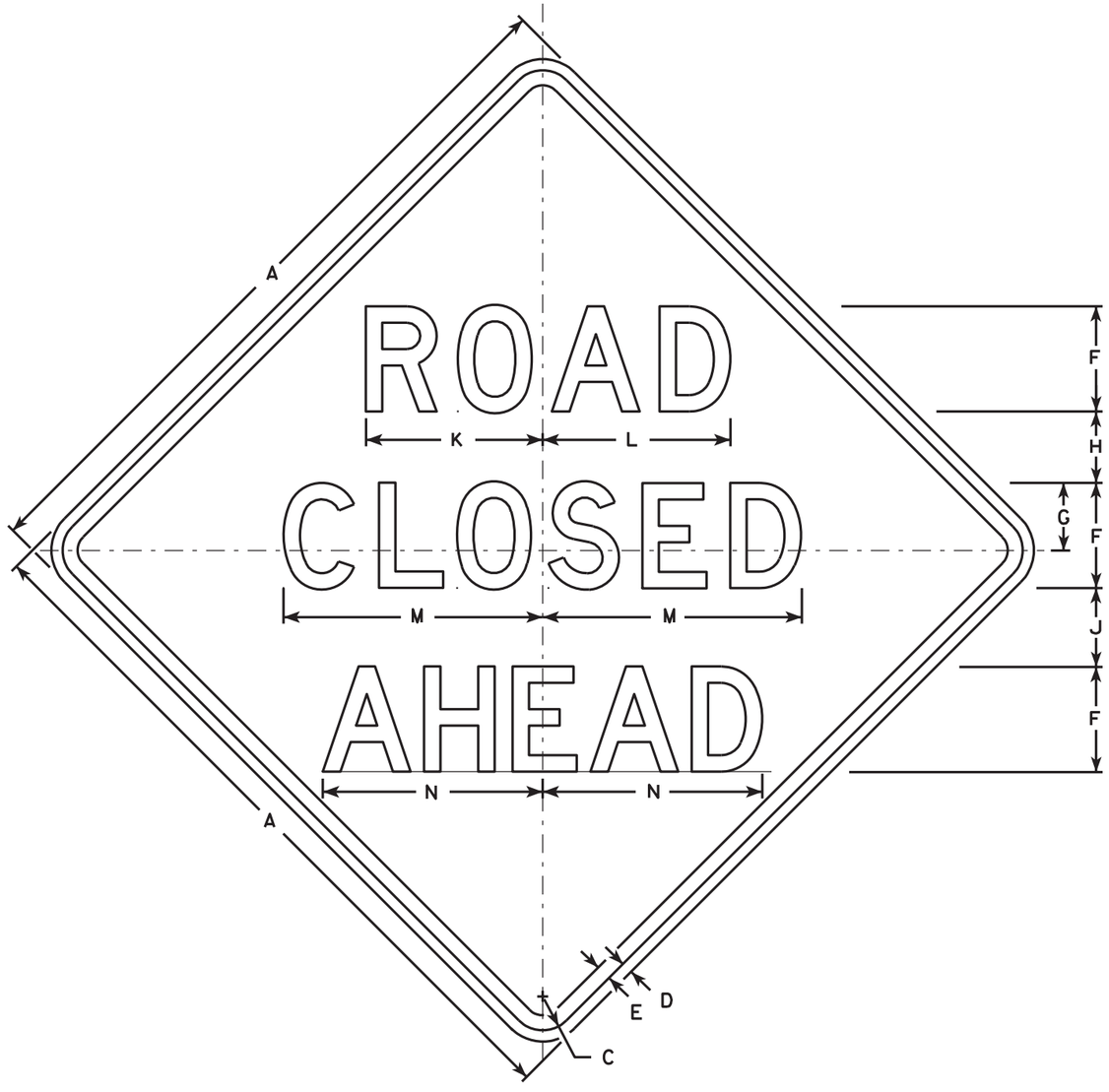
STANDARD SIGN
W20-2A,B,C,D,F & G

WISCONSIN DEPT OF TRANSPORTATION

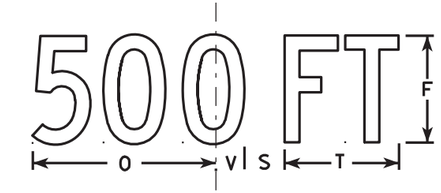
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-2.6

PROJECT NO: 5307-00-72	HWY: CTH O	COUNTY: LAFAYETTE	SIGN PLATE	SHEET NO: 46	E



W20-3A



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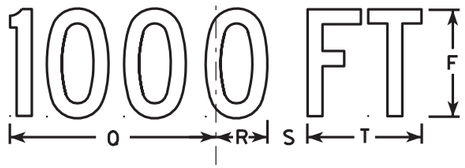

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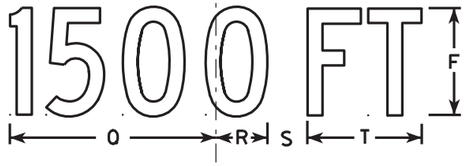

W20-3B

W20-3G

W20-3F

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Message Series - see note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1 and 2 are Series D.
   Line 3 is Series D for AHEAD and Series C for all other distances.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5	3 3/8	3 1/2	1 1/8	4	8 3/8	8 7/8	12 1/2	11	9	6	10 1/8	2 1/2	1 7/8	5 5/8	8	1 3/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
3	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
4	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
5	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0

STANDARD SIGN
W20-3A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer
DATE 3/18/11 PLATE NO. W20-3.7

PROJECT NO: 5307-00-72	HWY: CTH O	COUNTY: LAFAYETTE	SIGN PLATE	SHEET NO: 47	E

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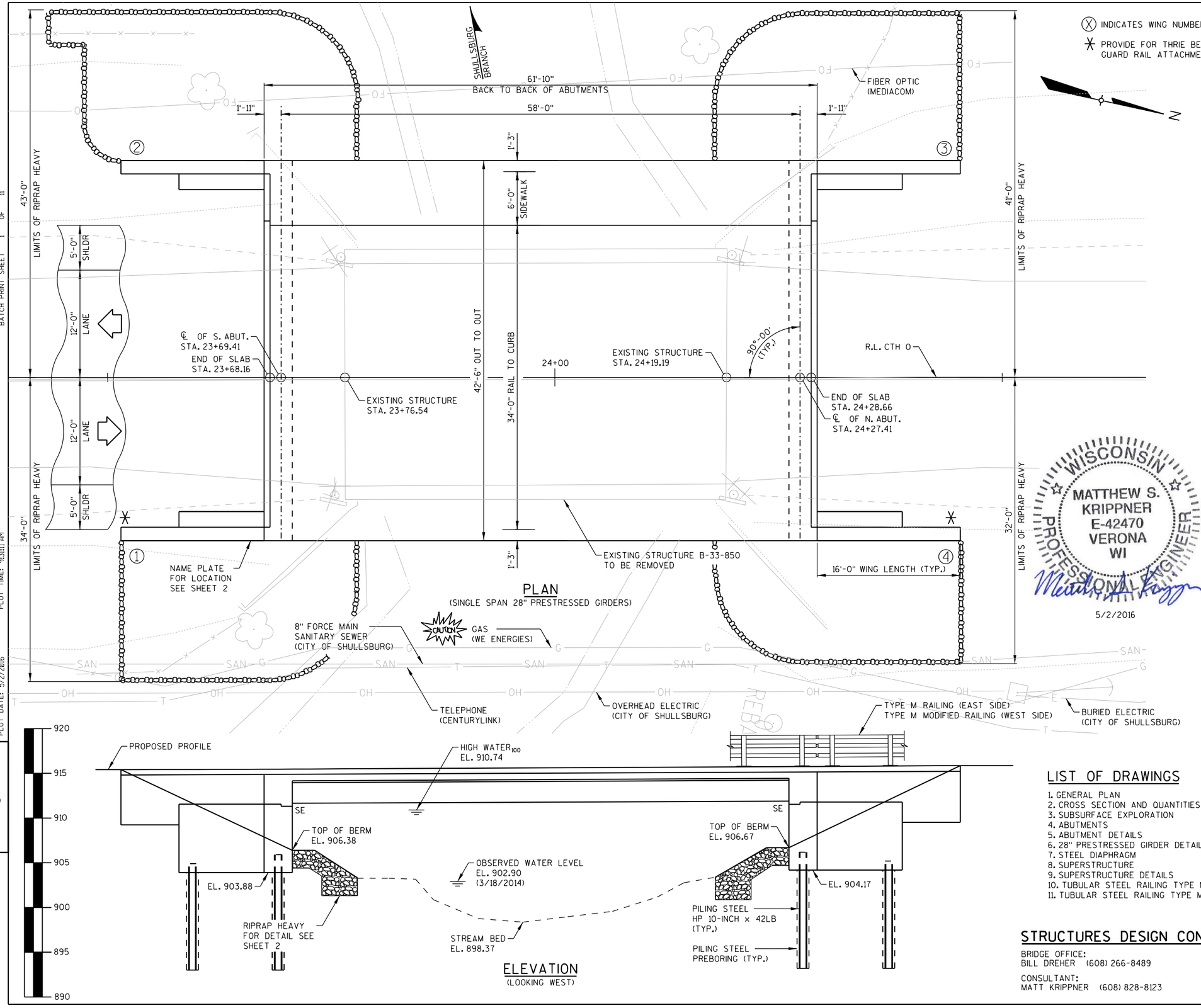

PLAN
(SINGLE SPAN 28" PRESTRESSED GIRDERS)

ELEVATION
(LOOKING WEST)

(X) INDICATES WING NUMBER

✳ PROVIDE FOR THRIE BEAM GUARD RAIL ATTACHMENT

STATE PROJECT NUMBER

5307-00-72

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: 1.14
OPERATIONAL RATING FACTOR: 1.54
MAX STANDARD PERMIT VEHICLE LOAD: 250 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 PSF.

MATERIAL PROPERTIES:

CONCRETE MASONRY - SLAB ——— f'c = 4,000 PSI
- ALL OTHER ——— f'c = 3,500 PSI
BAR STEEL REINFORCEMENT, GRADE 60 — fy = 60,000 PSI
28" PRE-STRESSED GIRDER
CONCRETE MASONRY ——— fy = 8,000 PSI
STRANDS 0.5-INCH DIA.
ULTIMATE TENSILE STRENGTH —— fy = 270,000 PSI

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON PILING STEEL HP 10-INCH X 42 LB PLACE PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 15 FEET LONG AT BOTH ABUTMENTS. PREBORING ESTIMATED TO BE 13 FEET AT BOTH ABUTMENTS.

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

HYDRAULIC DATA

100 YEAR FREQUENCY

DRAINAGE AREA	7.2	SQ. MI.
Q_{100}	3,100	CFS
VELOCITY	8.8	FPS
WATERWAY AREA	352	SQ. FT.
HIGH WATER Q_{100} ELEVATION	910.74	±

2 YEAR FREQUENCY

Q2	525	CFS
HIGH WATER Q2 ELEVATION	906.36	±

TRAFFIC DATA

CTH O
A.D.T. (2016) = 900
A.D.T. (2026) = 1,000
R.D.S. = 30 MPH

WISCONSIN
MATTHEW S. KRIPPNER
E-42470
VERONA
WI
PROFESSIONAL ENGINEER

5/2/2016

LIST OF DRAWINGS

STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
BILL DREHER (608) 266-8489

CONSULTANT:
MATT KRIPPNER (608) 828-8123

NO.	DATE	REVISION	BY

AECOM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher SDR 05/03/16
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-33-129

CTH O OVER SHULLSBURG BRANCH

COUNTY	~~TOWN~~/CITY/~~VILLAGE~~
LAFAYETTE	SHULLSBURG

DESIGN SPEC.
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	MSK	DESIGN CK'D.	MAH	DRAWN BY	MJK	PLANS CK'D.	MSK

GENERAL PLAN

SHEET 1 OF 11
48

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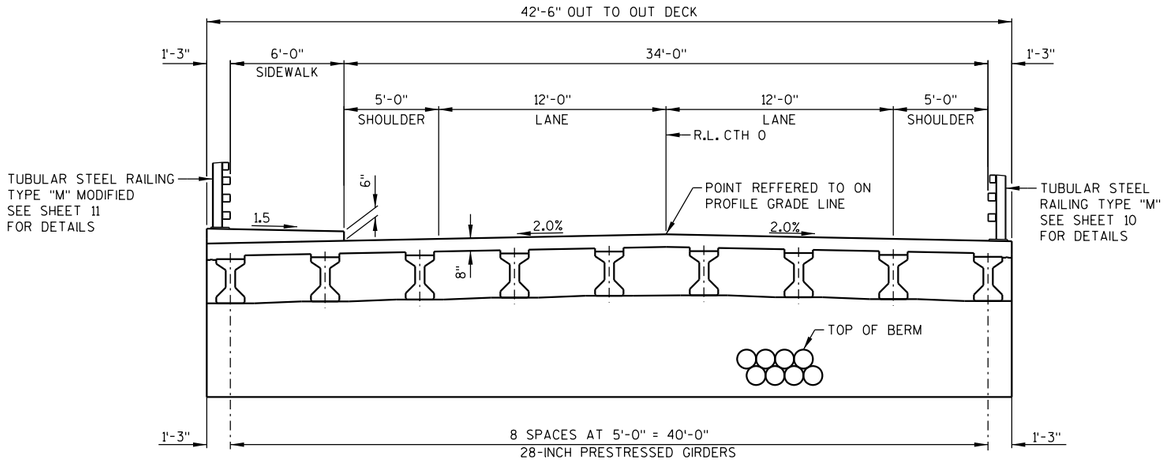
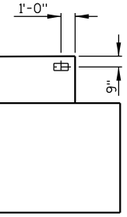
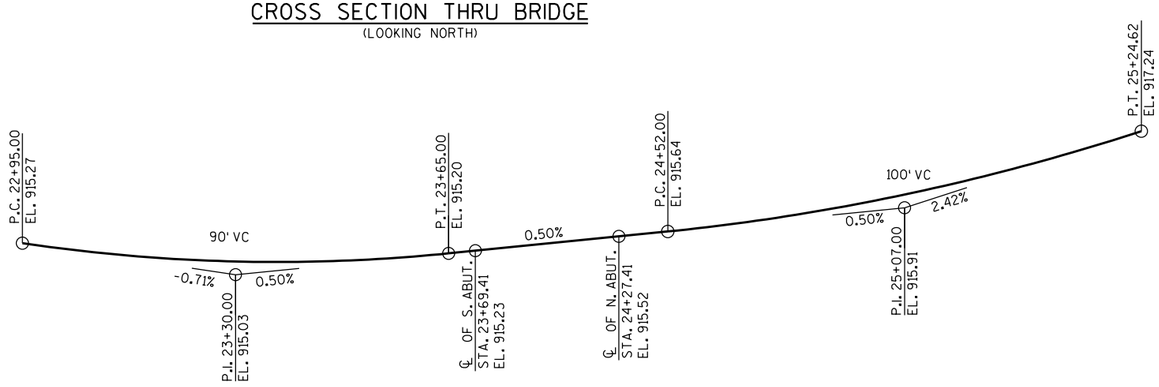


CROSS SECTION THRU BRIDGE
(LOOKING NORTH)



NAME PLATE LOCATION
(WING 1 ONLY)



PROFILE GRADE LINE, CTH 0

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEM	UNIT	SOUTH ABUTMENT	NORTH ABUTMENT	SUPER.	TOTALS
203.0600.S.01	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS, STATION 24+00	LS	———	———	———	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-33-129	LS	———	———	———	1
210.0100	BACKFILL STRUCTURE	CY	200	200	———	400
502.0100	CONCRETE MASONRY BRIDGES	CY	65	65	105	235
502.3200	PROTECTIVE SURFACE TREATMENT	SY	———	———	362	362
503.0128	PRESTRESSED GIRDER TYPE I 28-INCH	LF	———	———	531	531
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	3,120	3,120	———	6,240
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	2,365	2,365	17,020	21,750
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	9	9	———	18
506.4000	STEEL DIAPHRAGMS B-33-129	EACH	———	———	8	8
513.4061	RAILING TUBULAR TYPE M B-33-129	LF	16	16	62	94
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	11	11	———	22
550.0020	PRE-BORING ROCK OR CONSOLIDATED MATERIALS	LF	104	104	———	208
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	120	120	———	240
606.0300	RIPRAP HEAVY	CY	130	125	———	255
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	75	75	———	150
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	200	185	———	385
SPV.0090.01	RAILING TUBULAR TYPE M MODIFIED B-33-129	LF	16	16	62	94
	NON-BID ITEMS					
	FILLER	SIZE				1/2" & 3/4"

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

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

THE EXISTING STRUCTURE (B-33-850) IS A SINGLE SPAN CONCRETE DECK GIRDER STRUCTURE, 43.0' LONG x 28.0' WIDE.

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

THE EXISTING GROUND LINE SHALL BE THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES.

EXCAVATION REQUIRED UNDER THE BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES B-33-129" IS NOT USED TO BALANCE THE EARTHWORK.

ALL EXISTING UTILITIES IN CONFLICT WITH PROPOSED STRUCTURE TO BE RELOCATED PRIOR TO CONSTRUCTION (BY OTHERS).

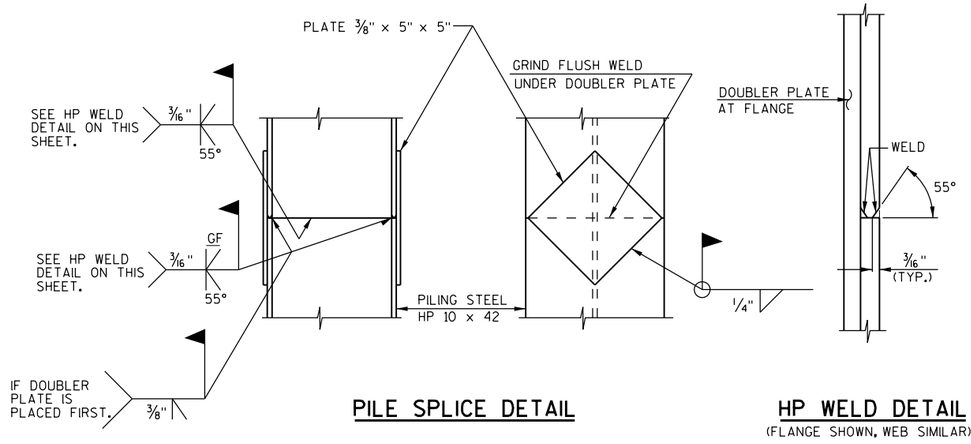
PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE TOP OF DECK SURFACE, SIDE OF DECK AND UNDERSIDE OF OVERHANG.

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

FILLER SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M153, TYPES I, II OR III, OR M213.

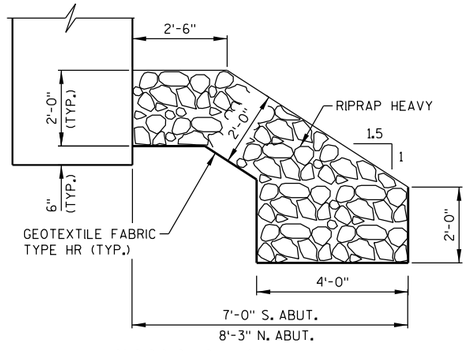
ALL REQUIRED REMOVAL OF THE EXISTING SUBSTRUCTURES IS INCLUDED IN THE BID ITEM "REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS, STATION 24+00".

THE QUANTITY OF BACKFILL STRUCTURE, BID ITEM 210.0100, IS CALCULATED BASED ON THE APPLICABLE FIGURES 12.6-1 AND 12.6-2 IN THE WISCONSIN DEPARTMENT OF TRANSPORTATION BRIDGE MANUAL.



PILE SPLICE DETAIL

HP WELD DETAIL
(FLANGE SHOWN, WEB SIMILAR)



RIPRAP DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-33-129

DRAWN BY MJK | PLANS CK'D. MSK

CROSS SECTION AND QUANTITIES

SHEET 2 OF 11
49

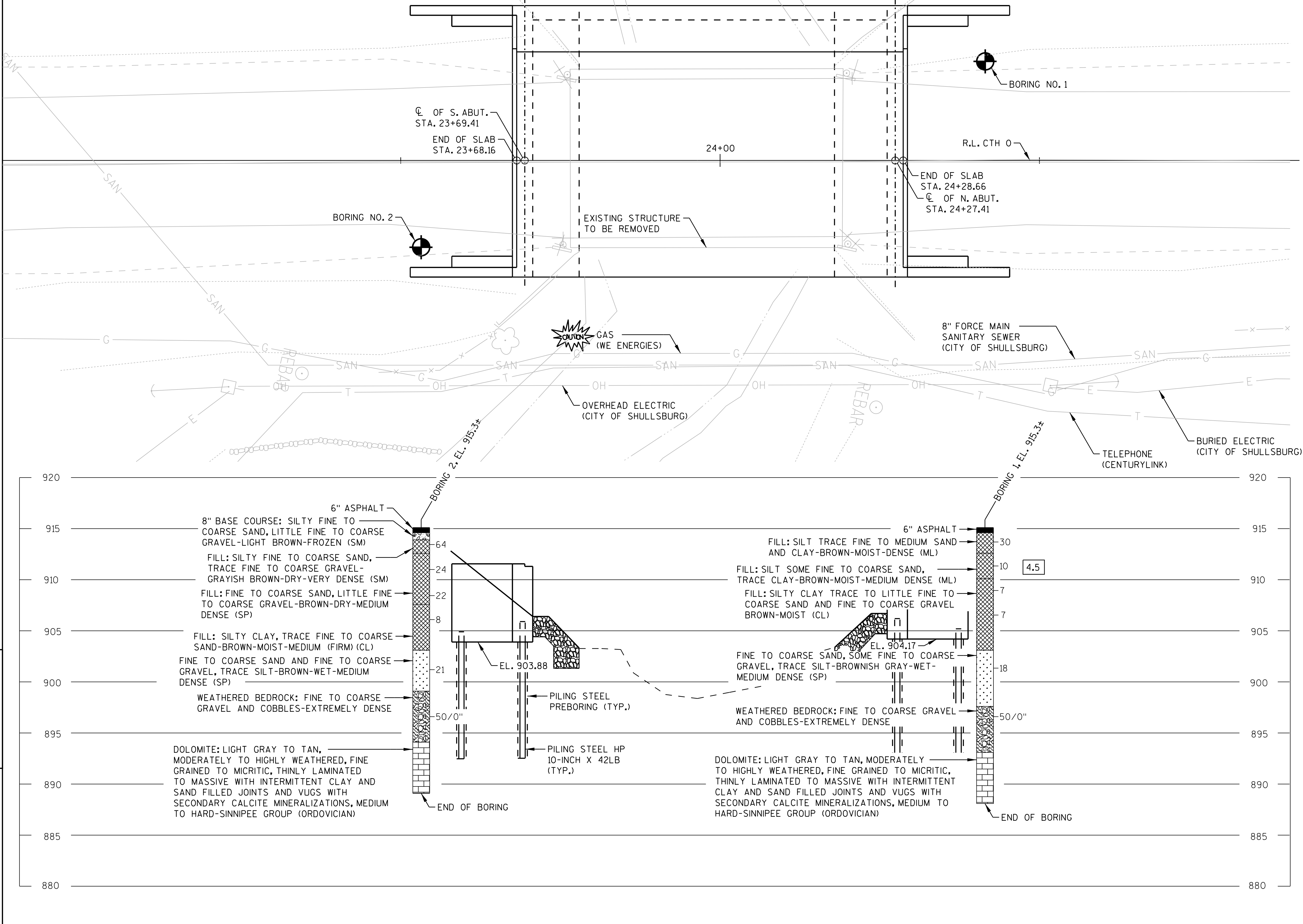
8

8

BORINGS BY:
BADGER DRILLING STATE CO., INC.
360 BUSINESS PARK CIRCLE
STOUGHTON, WI 53589

BORINGS WERE PERFORMED ON FEBRUARY 24 AND 25, 2014

REPORT BY:
AECOM
1350 DEMING WAY
SUITE 100
MIDDLETON, WI 53562



STATE PROJECT NUMBER

5307-00-72

ABBREVIATIONS

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

MATERIAL SYMBOLS

TOPSOIL, SILT, SANDSTONE, SAND, PEAT, LIMESTONE, GRAVEL, CLAY, IGNEOUS ROCK

LEGEND OF PROBING

PROBING NO.
STA.
ELEVATION
95/6=95 BLOWS FOR 6" PENETRATION PROBING TAKEN WITH A 350# WT. FALLING 18" ON A 2" O.D. POINT.
7 AVERAGE BLOWS PER FOOT
REFUSAL 95/6

LEGEND OF BORING

BORING NO.
ELEV. STA.
UNCONFINED STRENGTH 7.7
BLOWS PER FT. USING 140# WT. FALLING 30"
SANDY GRAVEL
F. BOULDERS OR COBBLES
WASH SAMPLE
SAND
SHELBY TUBE — S.T.
GROUND WATER ELEVATION
SILTY CLAY
NO GROUND WATER OBSERVED ABOVE THIS ELEVATION
SO LIMESTONE

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-33-129

DRAWN BY MJK PLANS CK'D. MSK

SUBSURFACE EXPLORATION

SHEET 3 OF 11

FILE= SCALE =

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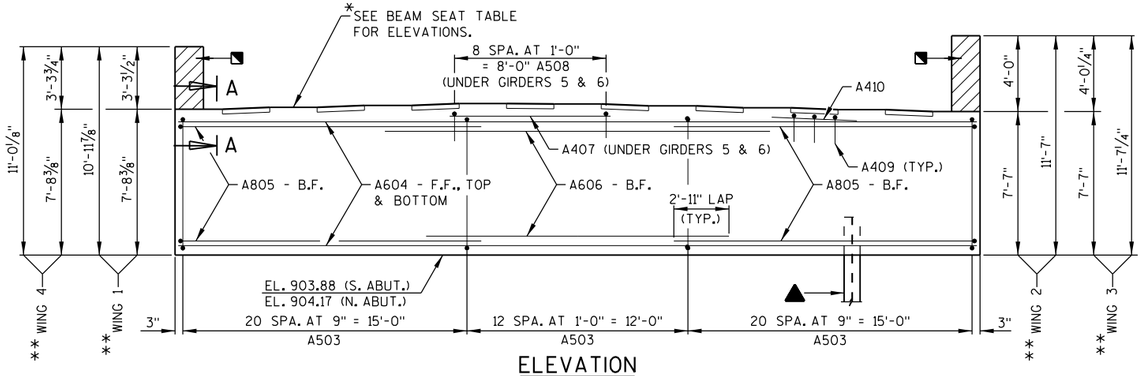
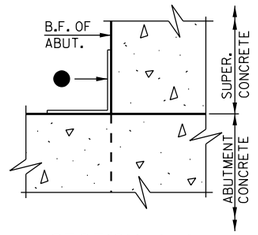
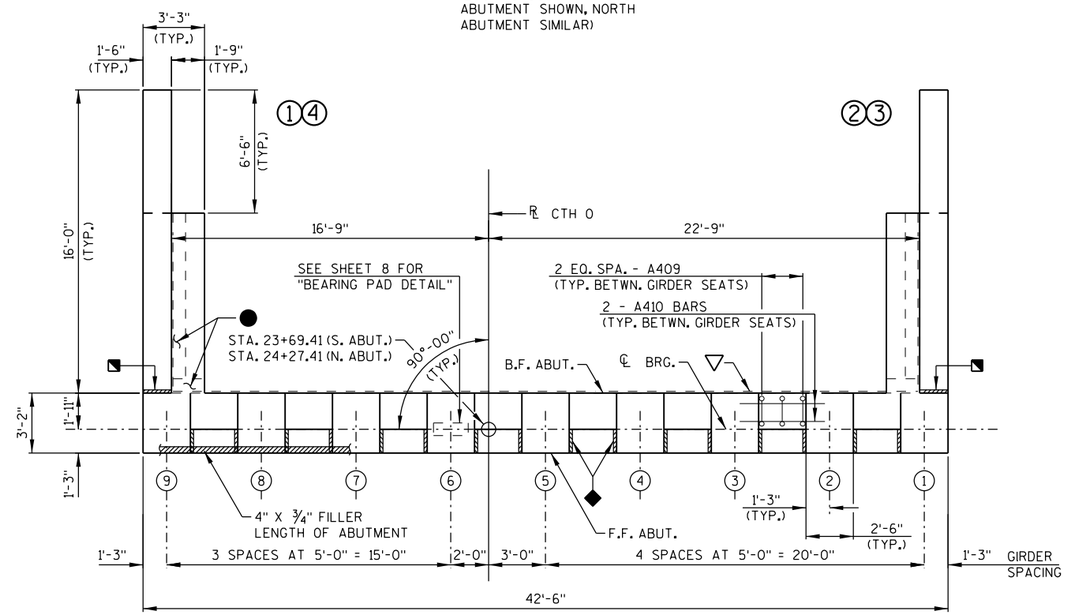


ELEVATION

(LOOKING SOUTH AT SOUTH ABUTMENT SHOWN, NORTH ABUTMENT SIMILAR)

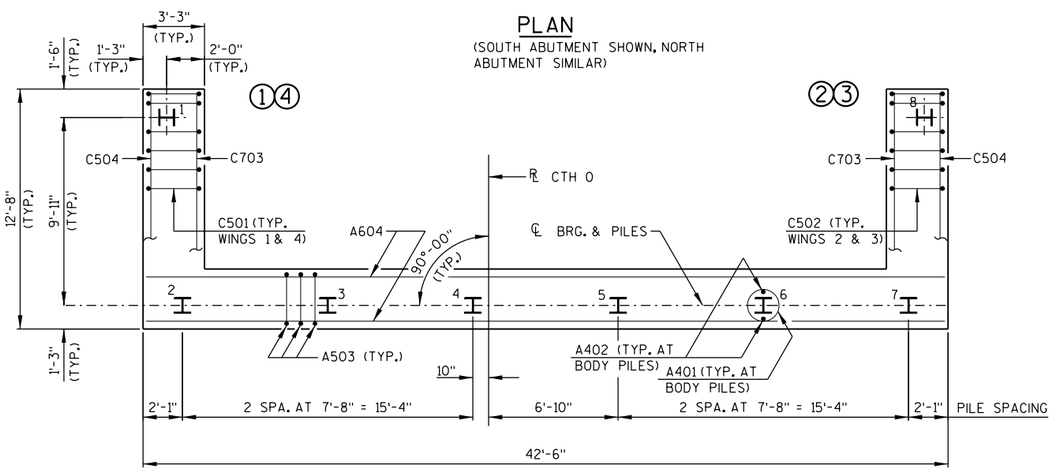


SECTION A-A



PLAN

(SOUTH ABUTMENT SHOWN, NORTH ABUTMENT SIMILAR)



PILE PLAN

LEGEND

* ELEVATIONS ARE GIVEN AT THE TOP OF CONCRETE AT THE ℄ OF BEARING.

** DIMENSIONS ARE GIVEN AT THE B.F. OF ABUTMENT. FOR WING DETAILS AND ELEVATIONS, SEE SHEET 5.

(X) INDICATES WING NUMBER.

▲ ABUTMENTS TO BE SUPPORTED ON HP 10 x 42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES FORMULA. ESTIMATED 15'-0" LONG AT BOTH ABUTMENTS.

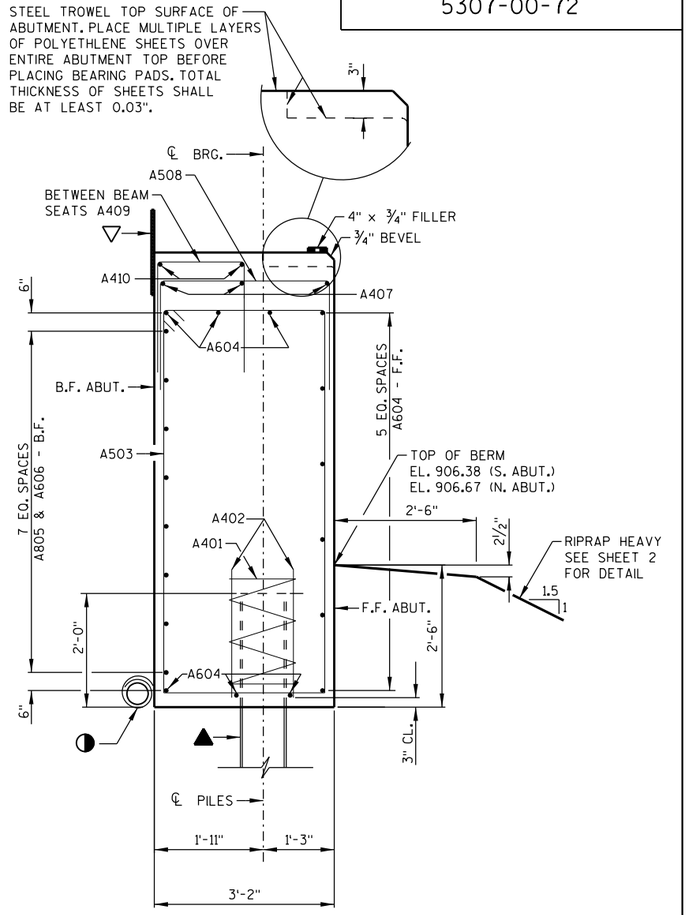
◑ PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. SEE RODENT SHIELD DETAIL ON THIS SHEET.

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

● PLACE BOTTOM HALF OF RUBBERIZED MEMBRANE WATERPROOFING HORIZONTAL IN THIS AREA. SEE SECTION A-A ON THIS SHEET.

◪ 1/2" FILLER-TO EXTEND FROM BRIDGE SEAT TO TOP OF WING. FILLER INCLUDED IN WING LENGTH.

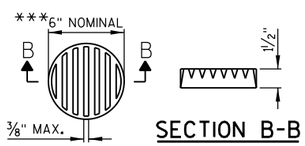
◆ 3/4" CORK FILLER ON VERTICAL BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.



TYPICAL SECTION THRU BODY

*BEAM SEAT TABLE

GIRDER NO.	SOUTH ABUTMENT ELEVATIONS	NORTH ABUTMENT ELEVATIONS
1	911.46	911.75
2	911.56	911.85
3	911.66	911.95
4	911.76	912.05
5	911.86	912.15
6	911.88	912.17
7	911.78	912.07
8	911.68	911.97
9	911.58	911.87



SECTION B-B

RODENT SHIELD DETAIL

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

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

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY 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.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-33-129

DRAWN BY MJK | PLANS CK'D. MSK

ABUTMENTS

SHEET 4 OF 11
51

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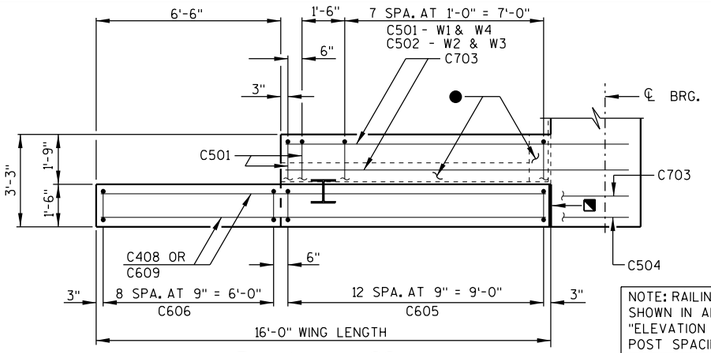
STATE PROJECT NUMBER

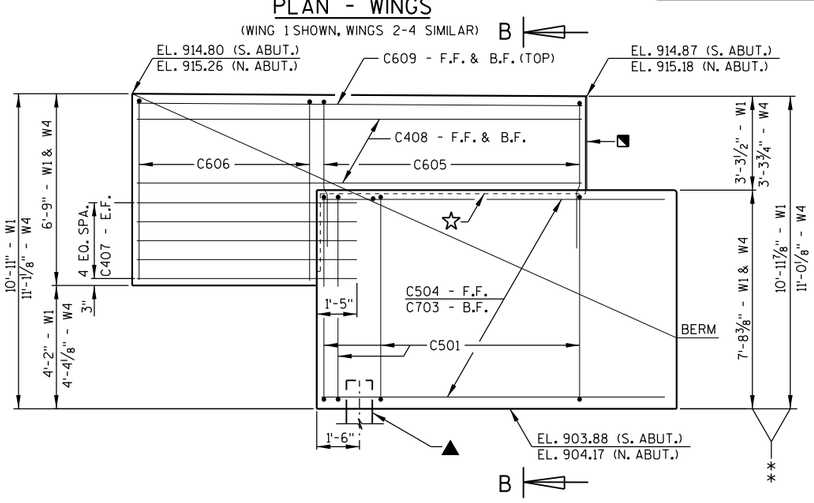
5307-00-72



NOTE: RAILING, POSTS & BASE PLATES NOT SHOWN IN ALL VIEWS FOR CLARITY. SEE "ELEVATION - WING 2" BELOW FOR RAIL POST SPACING ON WINGS.

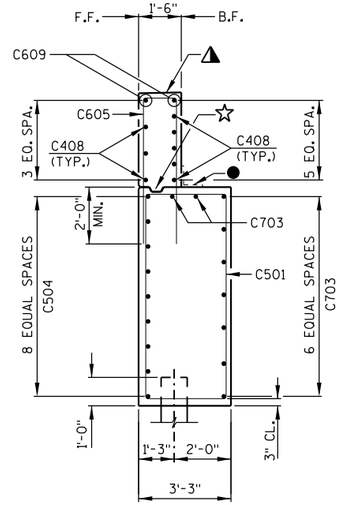
PLAN - WINGS

(WING 1 SHOWN, WINGS 2-4 SIMILAR)



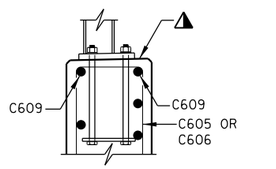
ELEVATION - WING 1

(WING 4 SIMILAR)



SECTION B-B

(WING 1 SHOWN, WING 4 SIMILAR)



PART SECTION AT TOP OF WING

(SHOWING RAIL POST ANCHORAGE)

LEGEND

☆ OPTIONAL CONST. JOINT KEYWAY FORMED BY BEVELED 2" x 6". (18" R.M.W. AT B.F. AND ¾" "V" GROOVE AT F.F. IF JOINT IS USED)

▲ SLOPE SAME AS SUPERSTRUCTURE. (ELEVATION IS GIVEN AT TOP OF WING AT B.F. POINT)

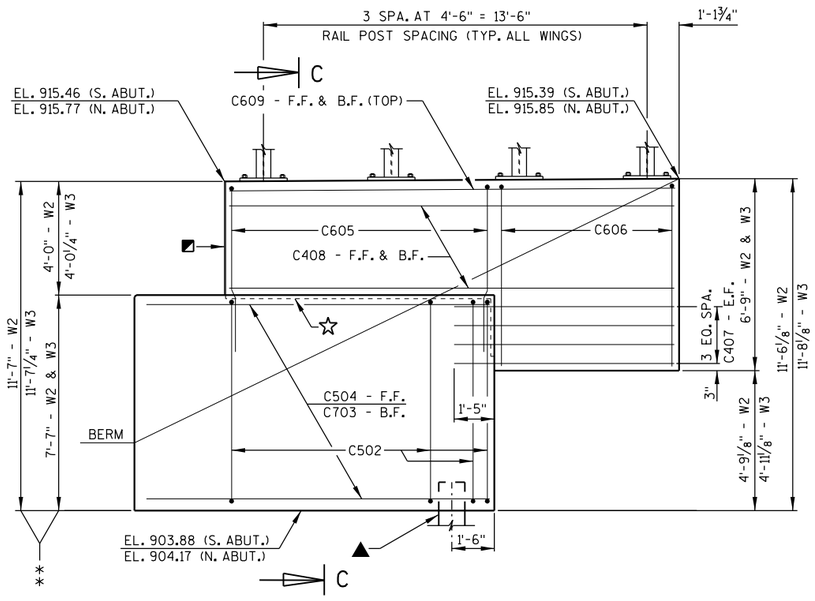
W1 = WING 1, W2 = WING 2, W3 = WING 3, W4 = WING 4

** ◥ ● FOR SYMBOL DESCRIPTION, SEE SHEET 4.

BILL OF BARS

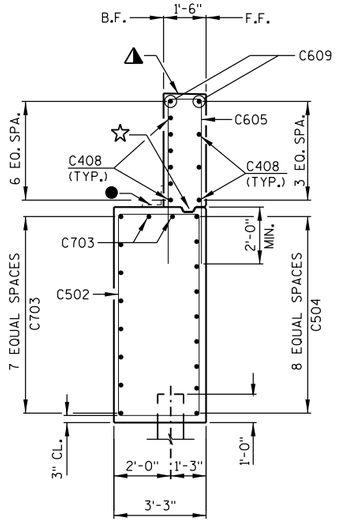
DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
NON-COATED BARS					TOTAL WEIGHT = 6,240 LBS
A401	12	28-0	X		ABUTMENT BODY - PILES VERT.
A402	24	2-3			ABUTMENT BODY - PILES VERT.
A503	106	20-2	X		ABUTMENT BODY VERT.
A604	24	42-2			ABUTMENT BODY HORIZ.
A805	32	16-11	X		ABUTMENT BODY HORIZ.
A606	16	16-0			ABUTMENT BODY HORIZ.
A407	6	8-6			ABUTMENT BODY HORIZ.
A508	18	5-7	X		ABUTMENT BODY VERT.
A409	48	4-11	X		ABUTMENT BODY - BTWN BEAM SEATS VERT.
A410	32	4-6			ABUTMENT BODY - BTWN BEAM SEATS HORIZ.
COATED BARS					TOTAL WEIGHT = 4,730 LBS
C501	20	21-0	X		WINGWALL BODY - WINGS 1 & 4 VERT.
C502	20	20-10	X		WINGWALL BODY - WINGS 2 & 3 VERT.
C703	38	12-1			WINGWALL BODY - B.F. HORIZ.
C504	36	12-4			WINGWALL BODY - F.F. HORIZ.
C605	52	12-8	X		WINGWALL - F.F. & B.F. VERT.
C606	36	13-6	X		WINGWALL - F.F. & B.F. VERT.
C407	36	7-9			WINGWALL - F.F. & B.F. HORIZ.
C408	34	15-8			WINGWALL - F.F. & B.F. HORIZ.
C609	8	15-8			WINGWALL - F.F. & B.F. - TOP HORIZ.



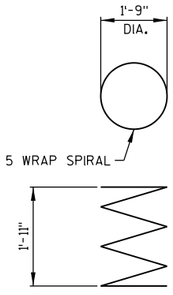
ELEVATION - WING 2

(WING 3 SIMILAR)

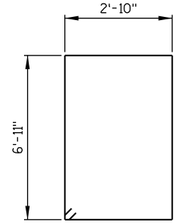


SECTION C-C

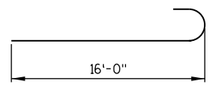
(WING 2 SHOWN, WING 3 SIMILAR)



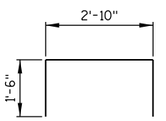
A401



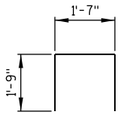
A503



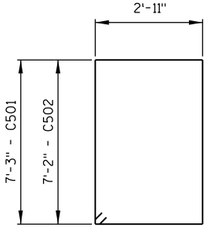
A805



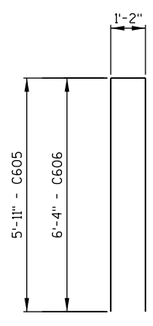
A508



A409



C501 & C502



C605 & C606

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-33-129

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ABUTMENT DETAILS

SHEET 5 OF 11
52

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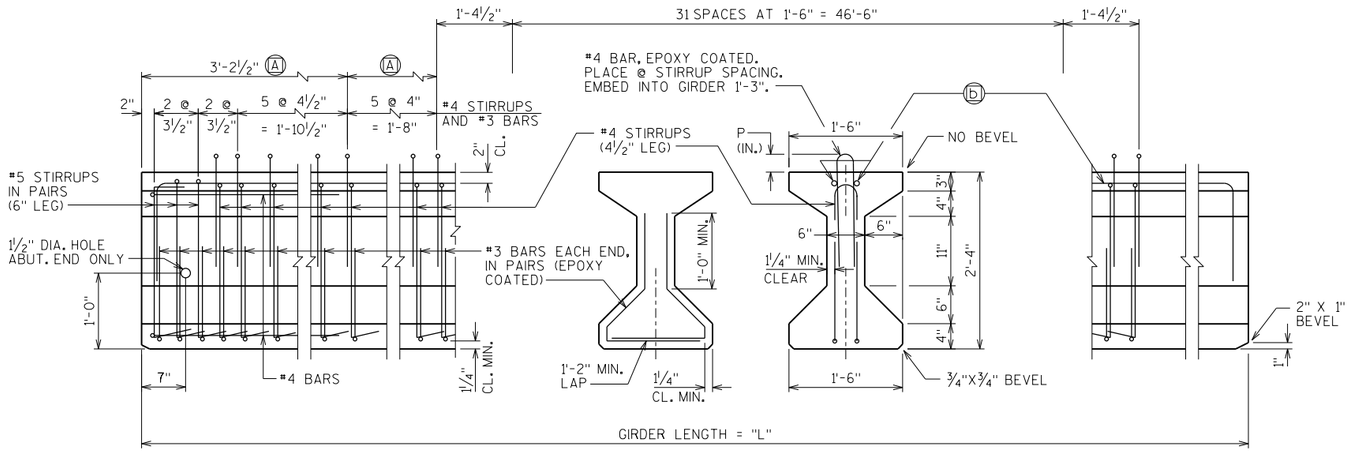
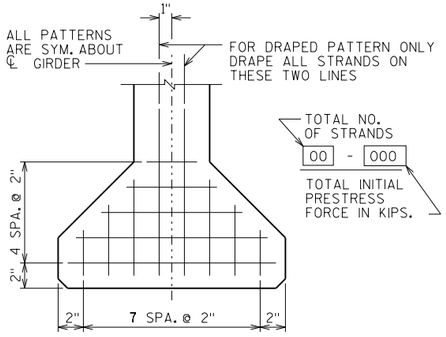


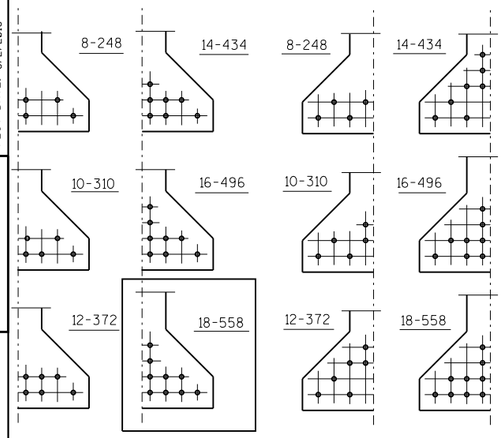
SIDE VIEW & TYPICAL SECTION IN SPAN

Ⓐ DETAIL TYP. AT EACH END

Ⓑ 2 - no. 4 BARS BEND DOWN 16 BAR DIA. AT ENDS



TYP. STRAND PATTERN

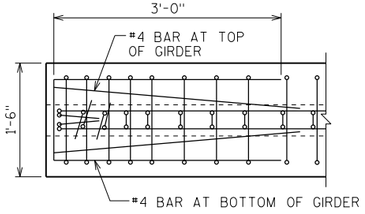


DRAPED PATTERN

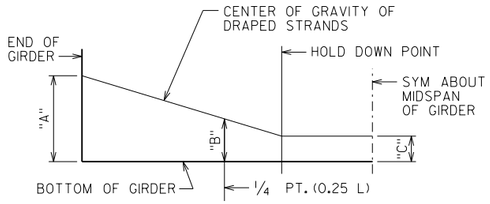
0.5"ϕ STRANDS

UNDRAPED PATTERN

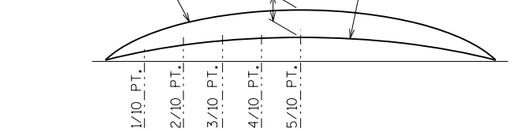
0.5"ϕ STRANDS



TOP VIEW OF GIRDER ENDS



DRAPED STRAND PROFILE



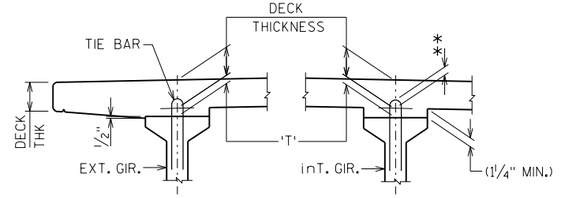
DEAD LOAD DEFLECTION DIAGRAM

* 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	1.78

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

THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.



DECK HAUNCH DETAIL

IF 1¼" 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 ½" OR,

** IF 3" MINIMUM DECK EMBEDMENT OF TIE BAR CANNOT BE OBTAINED.

TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT ℄ 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 2½" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".

NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE OUTSIDE 2" OF GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH. AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING THE OUTSIDE 2" OF THE TOP FLANGE.

DO NOT APPLY CONCRETE SEALER TO SURFACES RECEIVING APPLICATION OF CONCRETE STAINING.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS.

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.

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

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

AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A497 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT SECTION.

PRESTRESSING STRANDS SHALL BE (0.5" DIA.)-7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 PSI.

BEND EACH END OF #4 STIRRUPS 4½" AND #5 STIRRUPS 6".

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

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

GIRDER DATA

SPAN	GIRDER	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.) 1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	CONC. STRGTH. f'c (p.s.i.)	"P" 1st 1/3 OF GIRDER	"P" MID 1/3 OF GIRDER	"P" END 1/3 OF GIRDER	DIA. OF STRAND (IN.)	DRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) *	(IN.) "A"	"B" MIN.	"B" MAX.	"C"	UNDRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) *
1	1-9	59'-0"	0.24	0.49	0.66	0.78	0.82	0.78	0.66	0.49	0.24	8,000	6	6	6	0.5	18	6,800	23	9.5	12.5	5.0		

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DEPARTMENT OF TRANSPORTATION

STRUCTURE B-33-129

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28" PRESTRESSED GIRDER DETAILS

SHEET 6 OF 11
53

7-13
g28

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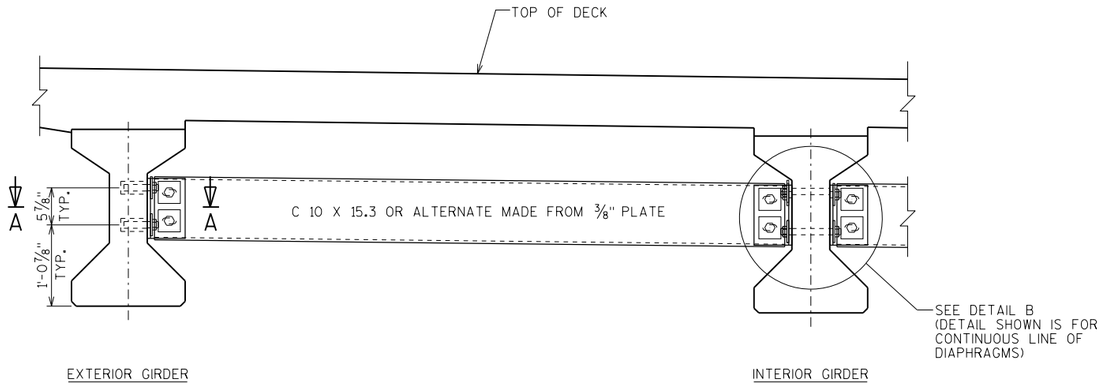


PART TRANSVERSE SECTION AT DIAPHRAGM

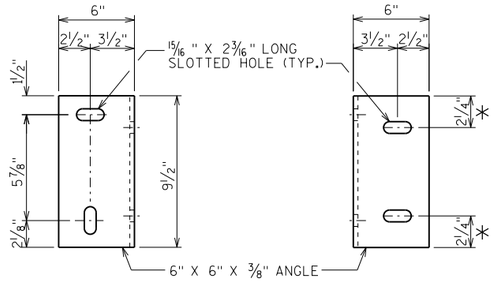
NOTES

ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-33-129", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

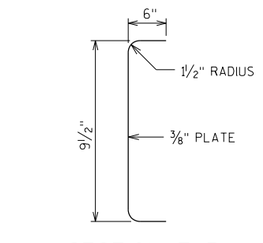
ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36. ALL BOLTS, NUTS AND WASHERS SHALL BE ASTM A325 TYPE 1.

ALL DIAPHRAGM STRUCTURAL STEEL SHOWN SHALL BE HOT-DIPPED GALVANIZED. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. GALVANIZED NUTS SHALL BE TAPPED OVERSIZED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A563 AND SHALL MEET THE REQUIREMENTS OF SUPPLEMENTARY REQUIREMENT S1 OF ASTM A563, LUBRICANT AND TEST FOR COATED NUTS.

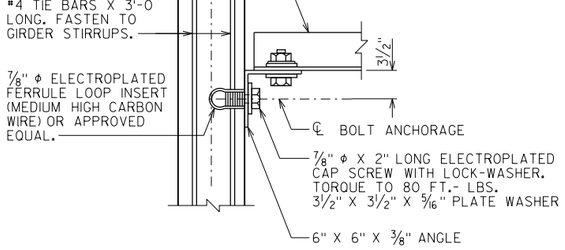


DIAPHRAGM SUPPORT

* 2½" FOR ALTERNATE PLATE DIAPHRAGM

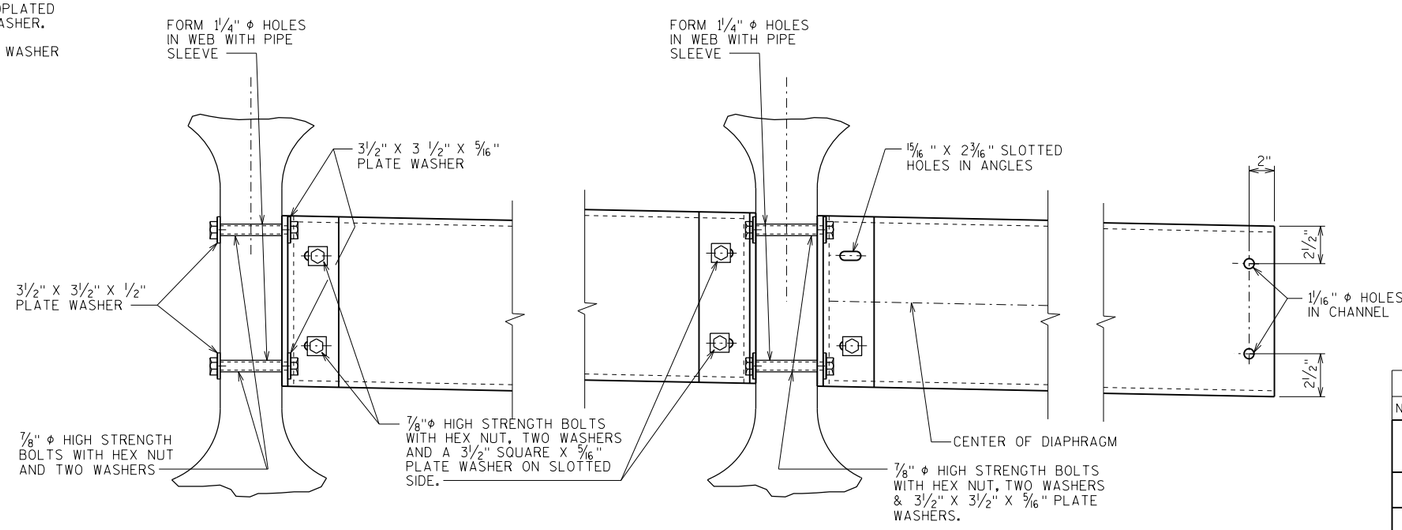


SECTION THRU ALTERNATE DIAPHRAGM



SECTION A-A

(FOR EXTERIOR ATTACHMENT)



DETAIL B

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-33-129

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STEEL DIAPHRAGM

SHEET 7 OF 11
54

GSTDIA
7-13

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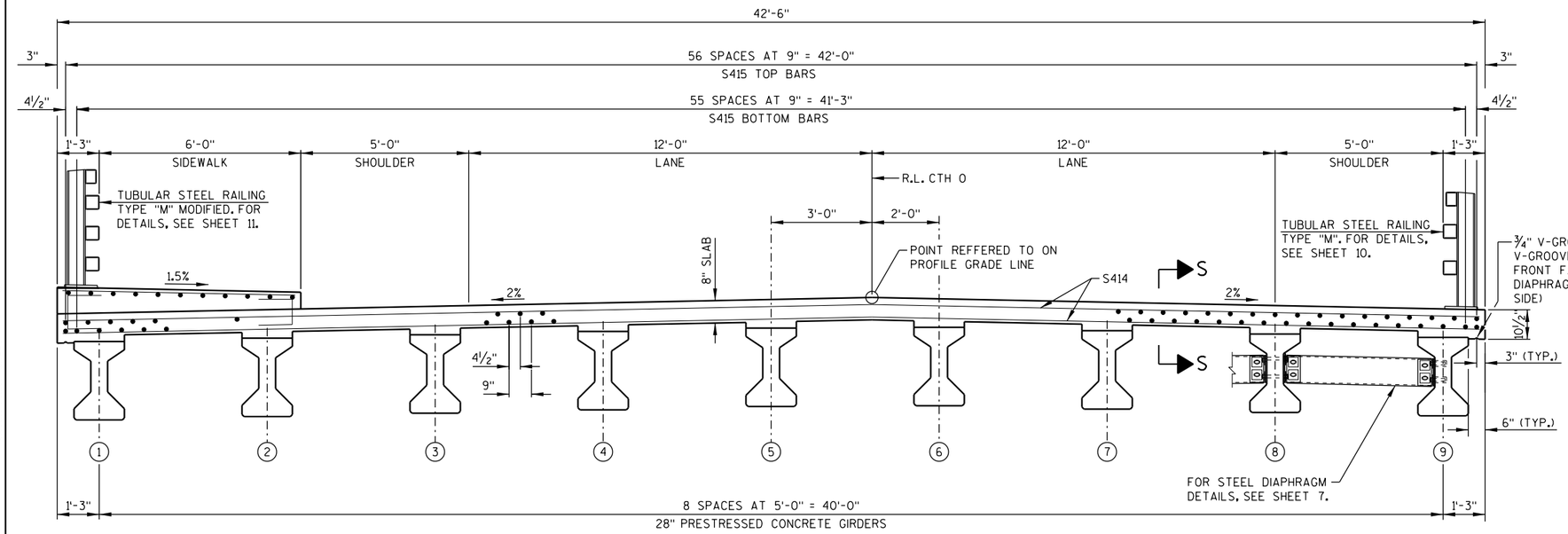
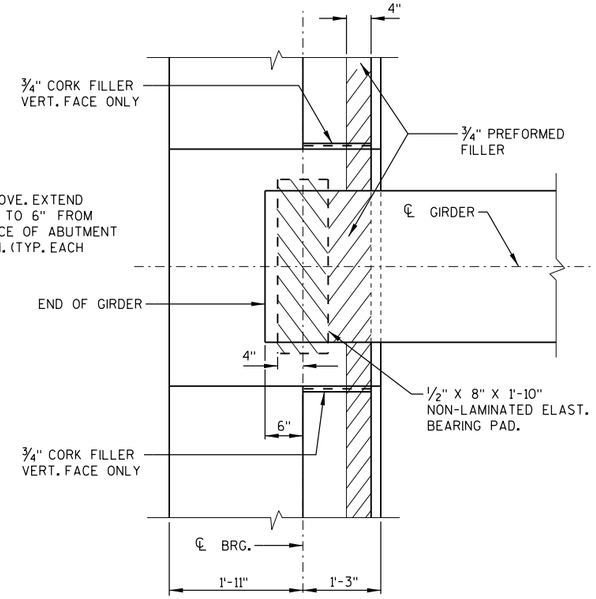


CROSS SECTION THRU ROADWAY

(LOOKING NORTH)



BEARING PAD DETAIL

TOP OF DECK ELEVATIONS

	C.L. BRG. S. ABUT.	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	C.L. BRG. N. ABUT.
EOD	914.74	914.77	914.80	914.82	914.85	914.88	914.91	914.94	914.97	915.00	915.03
GIR. 1	914.76	914.79	914.82	914.85	914.88	914.91	914.94	914.97	914.99	915.02	915.05
GIR. 2	914.86	914.89	914.92	914.95	914.98	915.01	915.04	915.07	915.09	915.12	915.15
GIR. 3	914.96	914.99	915.02	915.05	915.08	915.11	915.14	915.17	915.19	915.22	915.25
GIR. 4	915.06	915.09	915.12	915.15	915.18	915.21	915.24	915.27	915.29	915.32	915.35
GIR. 5	915.16	915.19	915.22	915.25	915.28	915.31	915.34	915.37	915.39	915.42	915.45
GIR. 6	915.18	915.21	915.24	915.27	915.30	915.33	915.36	915.39	915.41	915.44	915.47
GIR. 7	915.08	915.11	915.14	915.17	915.20	915.23	915.26	915.29	915.31	915.34	915.37
GIR. 8	914.98	915.01	915.04	915.07	915.10	915.13	915.16	915.19	915.21	915.24	915.27
GIR. 9	914.88	914.91	914.94	914.97	915.00	915.03	915.06	915.09	915.11	915.14	915.17
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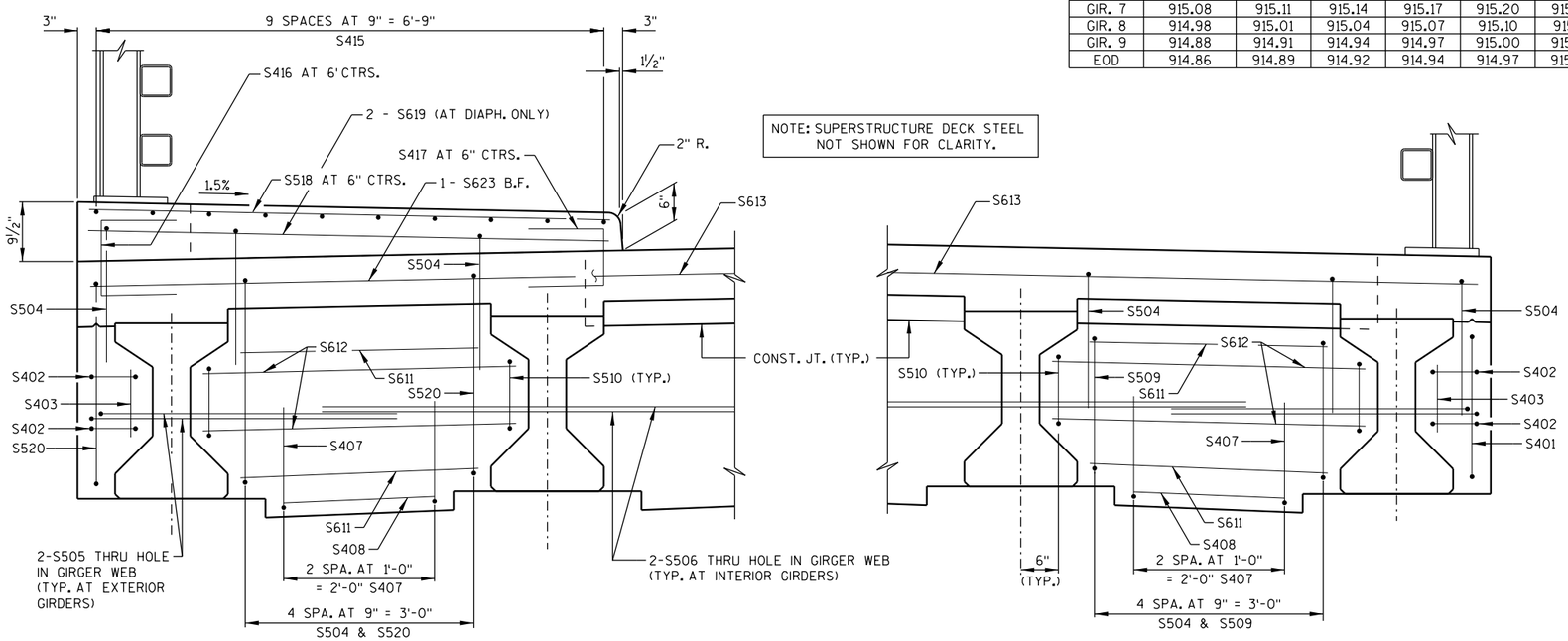
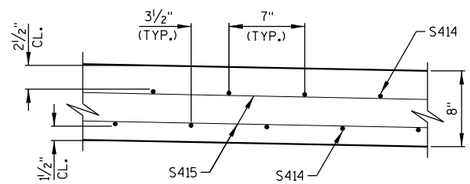


ABUTMENT DIAPHRAGM DETAILS

(LOOKING NORTH AT NORTH ABUTMENT, SOUTH ABUTMENT SIMILAR)



SECTION S-S

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-33-129

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SUPERSTRUCTURE

SHEET 8 OF 11
55

8

8

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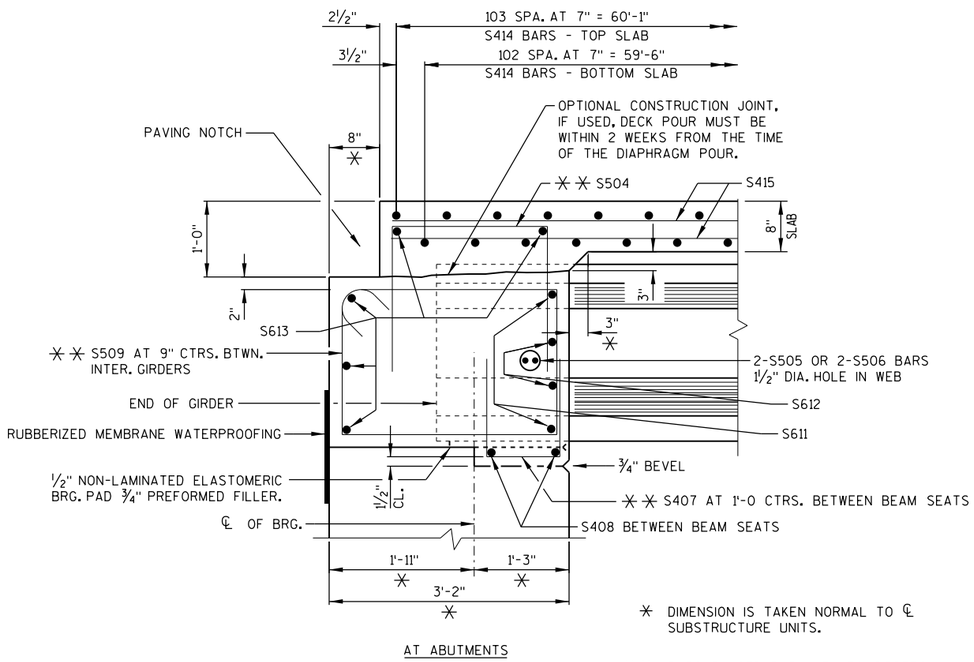
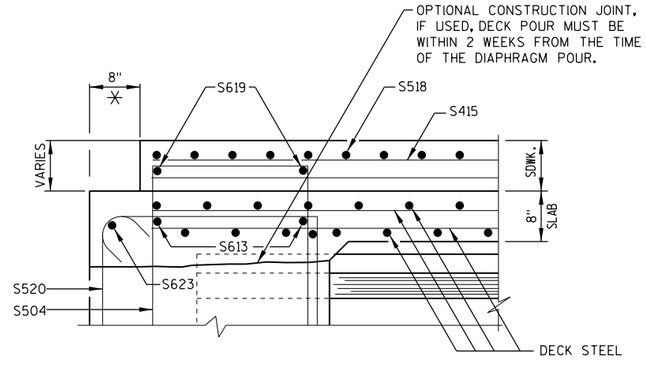


AT ABUTMENTS

PART LONGIT. SECTION

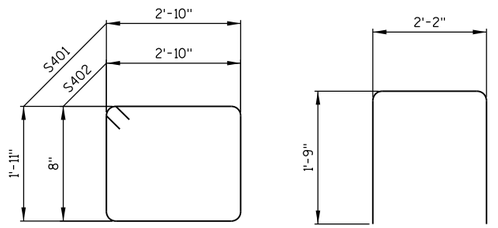
* DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.

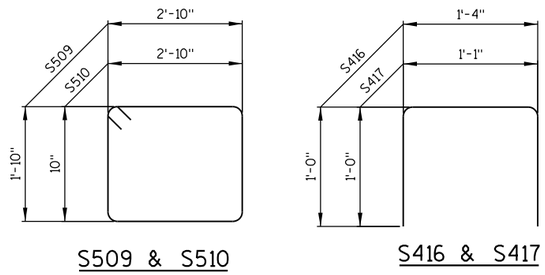
** BARS PLACED PARALLEL TO GIRDERS SPACING PERPENDICULAR TO ℄ GIRDERS.

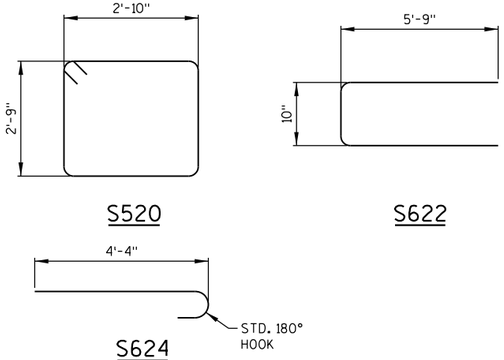


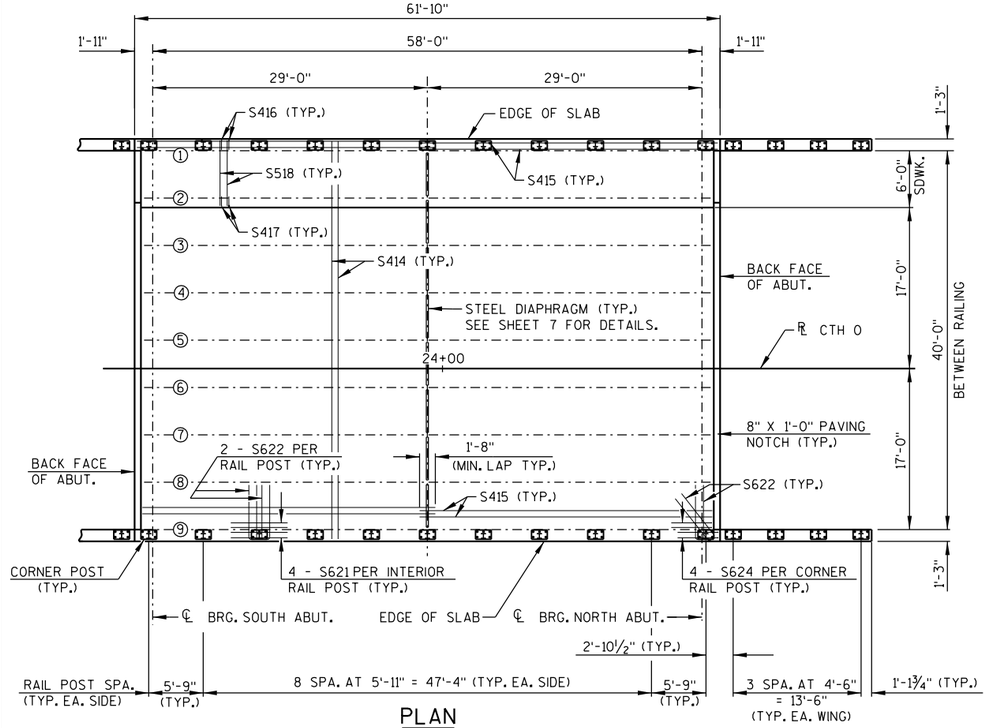
AT ABUTMENTS WITH SIDEWALK

PART LONGIT. SECTION









PLAN

BILL OF BARS

DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.

MARK	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION	
COATED BARS					TOTAL WEIGHT = 17,020 LBS	
S401	2	10-0	X		ABUT. DIAPH. - EAST ENDS	VERT.
S402	8	7-6	X		ABUT. DIAPH. - ENDS	HORIZ.
S403	8	1-0			ABUT. DIAPH. - ENDS	VERT.
S504	84	5-5	X		ABUT. DIAPH.	VERT.
S505	8	4-8	X		ABUT. DIAPH. - THRU EXT. GIRDER WEB	HORIZ.
S506	28	6-0			ABUT. DIAPH. - THRU INT. GIRDER WEB	HORIZ.
S407	48	3-6	X		ABUT. DIAPH. - BTWN. BEAM SEATS	VERT.
S408	32	2-2			ABUT. DIAPH. - BTWN. BEAM SEATS	HORIZ.
S509	70	10-0	X		ABUT. DIAPH.	VERT.
S510	32	8-0	X		ABUT. DIAPH.	VERT.
S611	32	3-2			ABUT. DIAPH. - F.F.	HORIZ.
S612	32	4-2			ABUT. DIAPH. - F.F.	HORIZ.
S613	10	42-2			ABUT. DIAPH. - B.F. AND SLAB	HORIZ.
S414	207	42-2			SLAB - TOP & BOTTOM	TRANS.
S415	250	30-11			SLAB - TOP & BOTTOM & SIDEWALK TOP	LONGIT.
S416	121	3-2	X		SIDEWALK	VERT.
S417	121	2-11	X		SIDEWALK	VERT.
S518	121	6-11			SIDEWALK	TRANS.
S619	4	6-11			SIDEWALK - ABUT. DIAPH.	TRANS.
S520	12	11-10	X		SIDEWALK - ABUT. DIAPH.	TRANS.
S621	72	6-0			SLAB & SIDEWALK - 4 PER INTERIOR RAIL POST	LONGIT.
S622	44	12-0	X		SLAB & SIDEWALK - 2 PER RAIL POST	TRANS.
S623	2	6-6			SIDEWALK - ABUT. DIAPH.	TRANS.
S624	16	5-0	X		SLAB & SIDEWALK - 4 PER CORNER RAIL POST	LONGIT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-33-129

DRAWN BY MJK | PLANS CK'D. MSK

SUPERSTRUCTURE DETAILS

SHEET 9 OF 11
56

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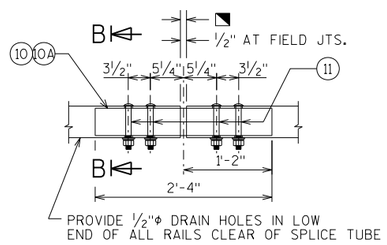
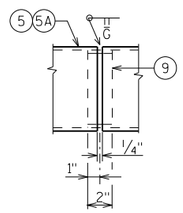
BATCH PRINT SHEET 10 OF 11

SECTION THRU RAILING ON DECK

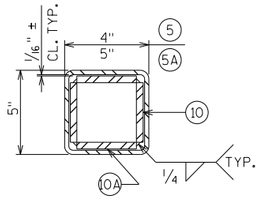


FIELD ERECTION JOINT DETAIL

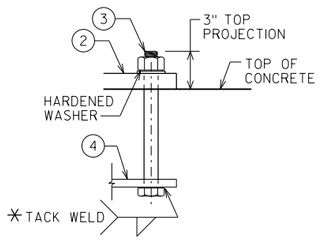


SHOP RAIL SPLICE DETAIL

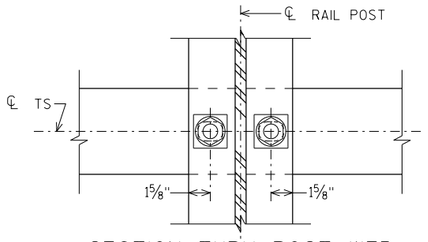
LOCATION MUST BE SHOWN ON SHOP DRAWINGS



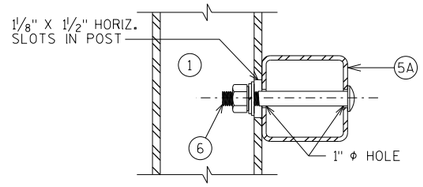
SECTION B-B



ANCHOR BOLTS



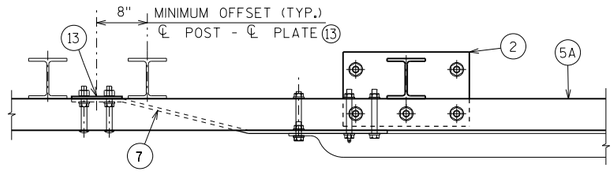
SECTION THRU POST WEB



SECTION THRU RAIL

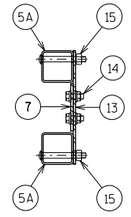
NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

TYPICAL RAIL TO POST CONNECTIONS

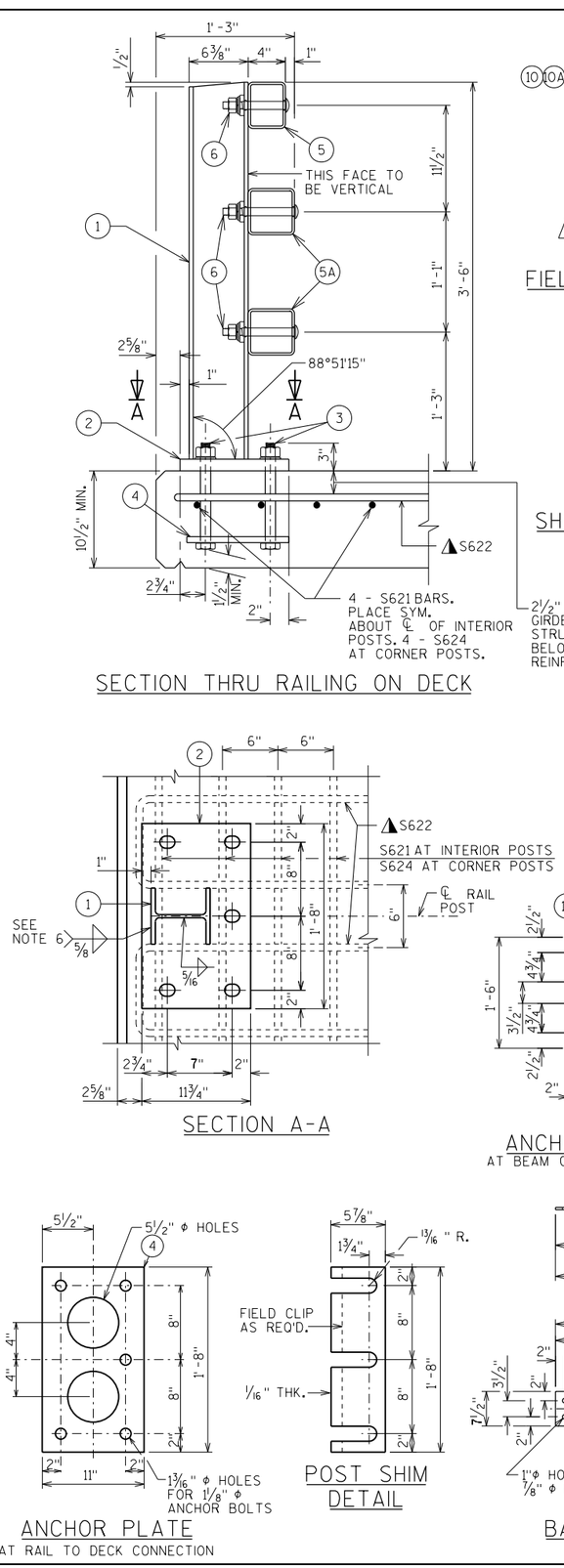


TOP VIEW AT END POST

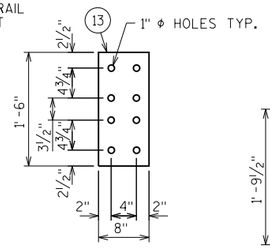
THRIE BEAM RAIL ATTACHMENT



SECTION C-C

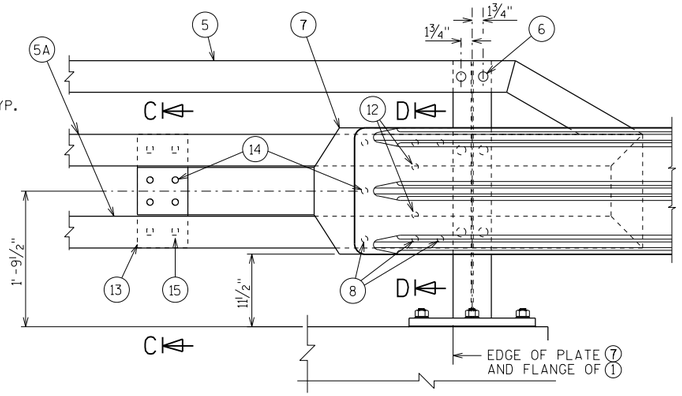


SECTION A-A



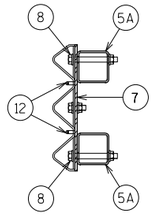
ANCHOR PLATE

AT BEAM GUARD ATTACHMENT



DETAIL AT END POST

THRIE BEAM RAIL ATTACHMENT

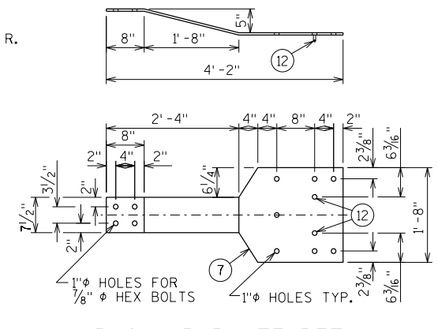


SECTION D-D

ANCHOR PLATE

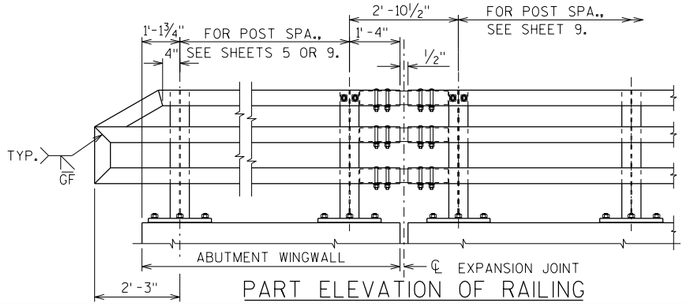
AT RAIL TO DECK CONNECTION

POST SHIM DETAIL



BACK-UP PLATE DETAIL

AT BEAM GUARD ATTACHMENT



PART ELEVATION OF RAILING

LEGEND

① W6 x 25 WITH 1 1/8" X 1 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 1/4" × 11 3/4" × 1'-8" WITH 15/16" 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 1/8" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED). 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-9" LONG IN ABUTMENT WINGS. AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-3" LONG. USE 10 3/4" LONG AT ALL OTHER LOCATIONS. (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTIBILITY.)

④ 5/8" × 11" × 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1 3/16" DIA. HOLES FOR ANCHOR BOLTS NO. 3

⑤ TS 5 × 4 × 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.

⑤A TS 5 × 5 × 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.

⑥ 7/8" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/16" X 1 5/16" 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 THRIE 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 15/16 " X 1 1/4" LONGIT. SLOTTED HOLES AT FIELD JOINTS AND 15/16 " X 2 1/4" MIN. LONGIT. SLOTTED HOLES AT EXP. 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" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE 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 REQ'D.).

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-33-129" 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. RAILS SHALL BE SPLICED IN A PANEL OVER EXPANSION JOINTS.
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 SSPC SPECIFICATIONS.
10. WHEN PAINTING IS REQUIRED, ALL MATERIAL EXCEPT ANCHORAGE DETAIL (NO. 3 & 4) SHALL BE PAINTED OVER GALVANIZING WITH APPROVED TIE COAT AND TOP COAT.
11. THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (TL-4).
12. PLACE FIRST BOTTOM LONGITUDINAL BAR CLEAR OF DRIP GROOVE.

⚠ TIE TO TOP MAT OF STEEL. ROTATE S622 BARS AT CORNER POSTS TO FIT.

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-33-129

DRAWN BY MJK | PLANS CK'D. MSK

TUBULAR STEEL RAILING TYPE M

SHEET 10 OF 11
57

RAILM
7-14

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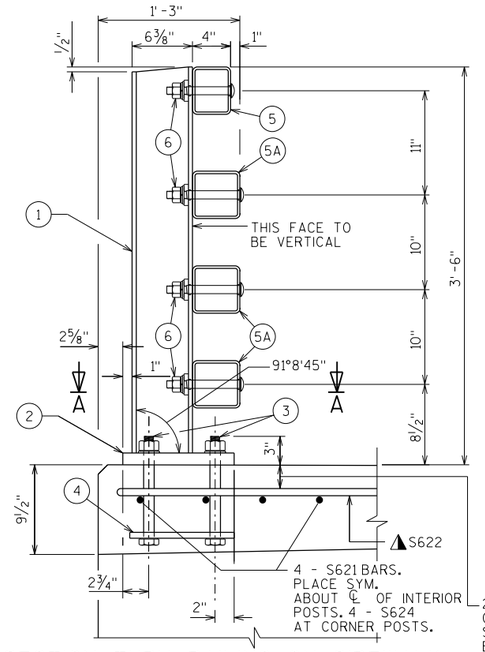
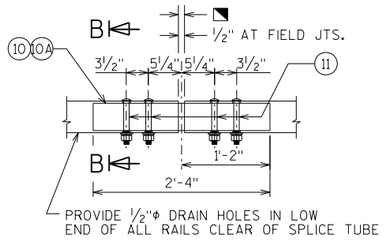


SECTION THRU RAILING ON SIDEWALK



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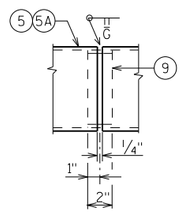
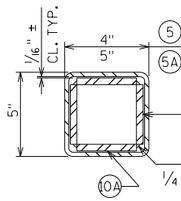
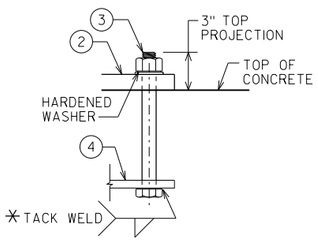


SHOP RAIL SPLICE DETAIL

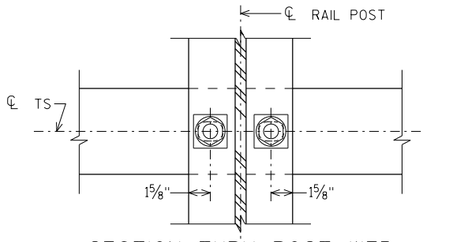
LOCATION MUST BE SHOWN ON SHOP DRAWINGS



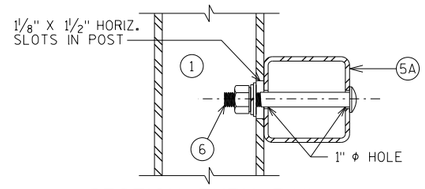
SECTION B-B



ANCHOR BOLTS



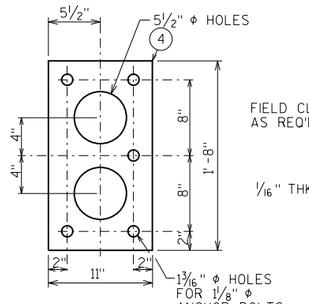
SECTION THRU POST WEB



SECTION THRU RAIL

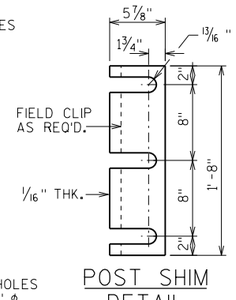
NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

TYPICAL RAIL TO POST CONNECTIONS

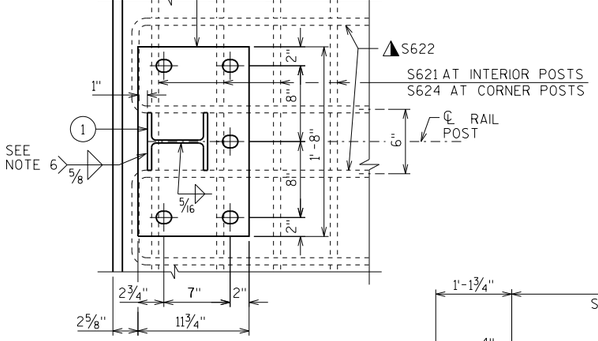


ANCHOR PLATE

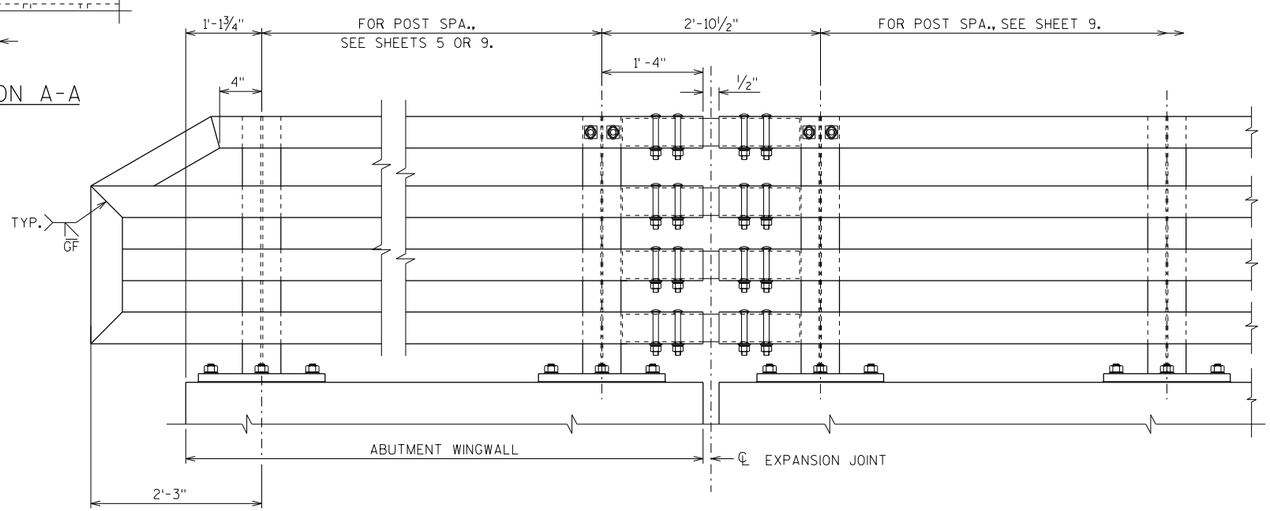
AT RAIL TO DECK CONNECTION



POST SHIM DETAIL



SECTION A-A



PART ELEVATION OF RAILING

LEGEND

(1) W6 x 25 WITH 1 1/8" X 1 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 1/4" × 11 3/4" × 1'-8" WITH 15/16" 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" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED). 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-9" LONG IN ABUTMENT WINGS. AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-3" LONG. USE 10 3/4" LONG AT ALL OTHER LOCATIONS. (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTIBILITY.)

(4) 5/16" × 11" × 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1 3/16" 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, 3/16" X 1 5/16" X 1 5/8" WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)

(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" ℄ A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 15/16 " X 1 1/4" LONGIT. SLOTTED HOLES AT FIELD JOINTS AND 15/16 " X 2 1/4" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A.

GENERAL NOTES

1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M MODIFIED B-33-129" 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. RAILS SHALL BE SPLICED IN A PANEL OVER EXPANSION JOINTS.
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 SSPC SPECIFICATIONS.
10. WHEN PAINTING IS REQUIRED, ALL MATERIAL EXCEPT ANCHORAGE DETAIL (NO. 3 & 4) SHALL BE PAINTED OVER GALVANIZING WITH APPROVED TIE COAT AND TOP COAT.
11. THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (TL-4).
12. PLACE FIRST BOTTOM LONGITUDINAL BAR CLEAR OF DRIP GROOVE.

▲ TIE TO TOP MAT OF STEEL. ROTATE S622 BARS AT CORNER POSTS TO FIT.

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

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-33-129

DRAWN BY MJK | PLANS CK'D. MSK

TUBULAR STEEL RAILING TYPE M MODIFIED

SHEET 11 OF 11
58

RAILM
7-14

8

8

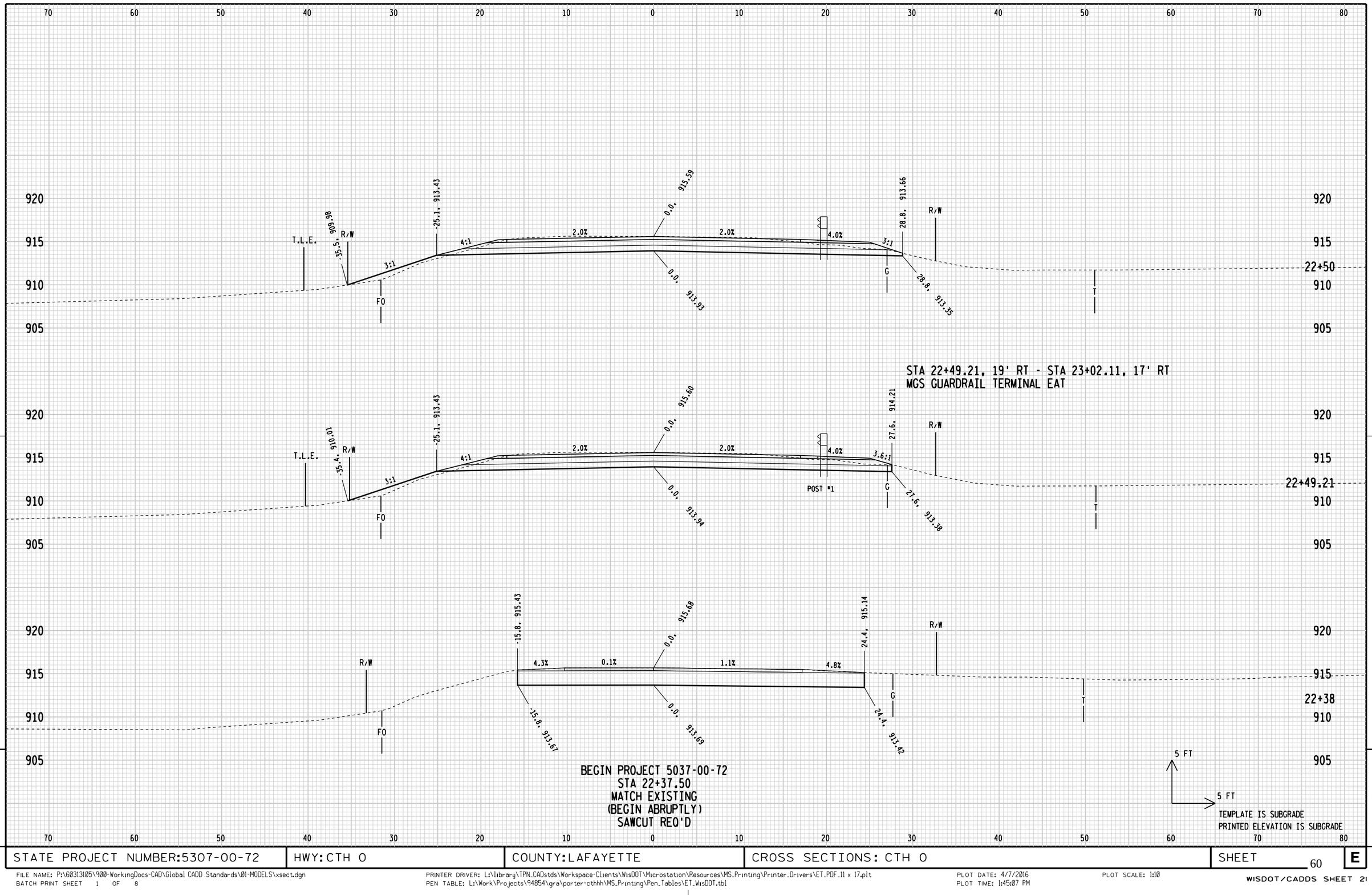
STATION	Real Station	Distance	AREA (SF) Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Incremental Vol (CY) (Unadjusted) Cut Note 1	Salvaged/Unusable Pavement Material Note 2	Fill Note 3	Marsh Exc	Rock Exc	EBS	Cumulative Vol (CY) Cut 1.00 Note 1	Expanded Fill 1.25	Expanded Marsh Backfill 1.50 Note 4	Expanded Rock 1.10	Expanded EBS Backfill 1.30 Note 5	Reduced Marsh in Fill 0.60 Note 6	Reduced EBS In Fill 0.80 Note 7	Mass Ordinate Note 8
22+37.50	2238		87.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22+49.21	2249	11	75.16	0	4.61	0	0	0	15	0	1	0	0	0	15	1	0	0	0	0	0	14
22+50.00	2250	1	74.99	0	4.73	0	0	0	3	0	0	0	0	0	18	1	0	0	0	0	0	17
22+73.93	2274	24	79.71	0	8.37	0	0	0	69	0	6	0	0	0	87	9	0	0	0	0	0	79
22+98.98	2299	25	71.86	0	9.14	0	0	0	70	0	8	0	0	0	157	19	0	0	0	0	0	139
23+00.00	2300	1	71.48	0	9.91	0	0	0	3	0	0	0	0	0	160	19	0	0	0	0	0	141
23+36.40	2336	36	72.99	0	54.2	0	0	0	96	0	43	0	0	0	256	73	0	0	0	0	0	184
23+50.00	2350	14	70.42	0	66.78	0	0	0	37	0	31	0	0	0	293	112	0	0	0	0	0	182
23+51.50	2352	2	69.69	0	59.25	0	0	0	5	0	5	0	0	0	299	118	0	0	0	0	0	181
23+53.17	2353	1	68.92	0	62.82	0	0	0	3	0	2	0	0	0	301	120	0	0	0	0	0	181
23+68.17	2368	15	95.5	0	16.74	0	0	0	46	0	22	0	0	0	347	148	0	0	0	0	0	200
					South Approach Earthwork Totals				350	0	120	0	0	0								

STATION	Real Station	Distance	AREA (SF) Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Incremental Vol (CY) (Unadjusted) Cut Note 1	Salvaged/Unusable Pavement Material Note 2	Fill Note 3	Marsh Exc	Rock Exc	EBS	Cumulative Vol (CY) Cut 1.00 Note 1	Expanded Fill 1.25	Expanded Marsh Backfill 1.50 Note 4	Expanded Rock 1.10	Expanded EBS Backfill 1.30 Note 5	Reduced Marsh in Fill 0.60 Note 6	Reduced EBS In Fill 0.80 Note 7	Mass Ordinate Note 8
24+28.67	2429		95.97	0	8.37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24+43.67	2444	15	58.12	0	49.44	0	0	0	16	0	14	0	0	0	16	17	0	0	0	0	0	-1
24+45.34	2445	1	58.96	0	45.15	0	0	0	3	0	1	0	0	0	19	18	0	0	0	0	0	1
24+50.00	2450	5	62.51	0	67.03	0	0	0	11	0	10	0	0	0	30	31	0	0	0	0	0	-1
24+60.34	2460	10	62.18	0	66.84	0	0	0	23	0	25	0	0	0	53	62	0	0	0	0	0	-9
24+97.91	2498	38	57.24	0	71.7	0	0	0	84	0	97	0	0	0	137	184	0	0	0	0	0	-47
25+00.00	2500	2	57.06	0	71.26	0	0	0	4	0	5	0	0	0	142	191	0	0	0	0	0	-49
25+23.12	2523	23	60.33	0	66.28	0	0	0	50	0	59	0	0	0	192	264	0	0	0	0	0	-72
25+50.00	2550	27	56.96	0	68.5	0	0	0	59	0	67	0	0	0	250	348	0	0	0	0	0	-98
25+62.00	2562	12	55.1	0	47.13	0	0	0	25	0	26	0	0	0	275	380	0	0	0	0	0	-105
26+00.00	2600	38	0.7	0	34.57	0	0	0	40	0	57	0	0	0	315	452	0	0	0	0	0	-137
26+50.00	2650	50	2.04	0	0.04	0	0	0	3	0	32	0	0	0	318	492	0	0	0	0	0	-170
					North Approach Earthwork Totals				320	0	400	0	0	0								

9

9

PROJECT NUMBER: 5307-00-72 | HWY: CTH O | COUNTY: LAFAYETTE | EARTHWORK | SHEET 59 | E



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9

STATE PROJECT NUMBER:5307-00-72	HWY:CTH O	COUNTY:LAFAYETTE	CROSS SECTIONS: CTH O	SHEET 60	E

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PLOT DATE: 4/7/2016
PLOT TIME: 1:45:07 PM
PLOT SCALE: 1:10
WISDOT/CADDS SHEET 21

STA 23+02.11, 17' RT - STA 23+14.61, 17' RT
MGS GUARDRAIL 3

STA 23+14.61, 17' RT - STA 23+54.17, 17' RT
MGS THRIE BEAM TRANSITION

STATE PROJECT NUMBER:5307-00-72	HWY: CTH O	COUNTY:LAFAYETTE	CROSS SECTIONS: CTH O	SHEET 61 E

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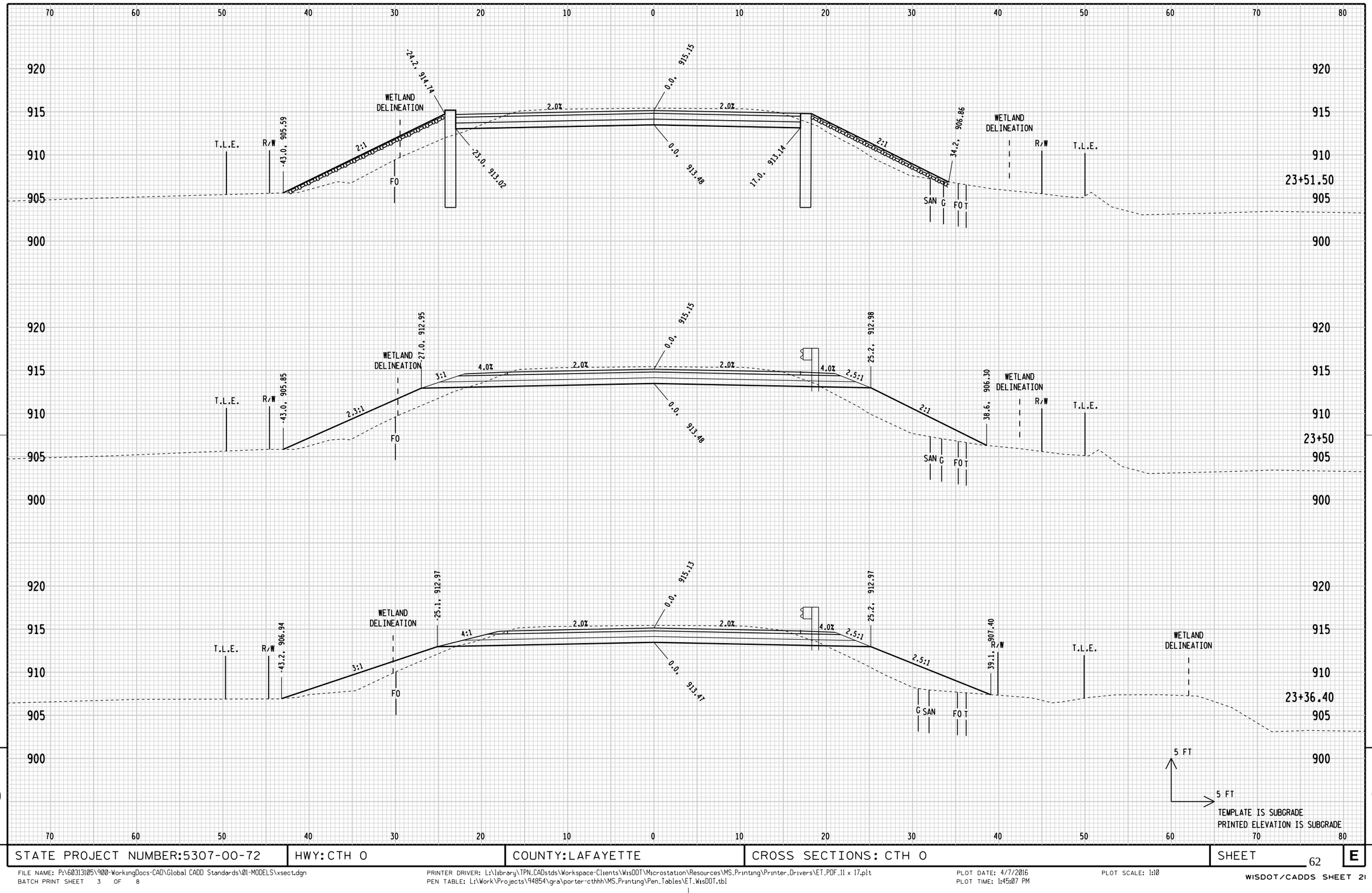
WISDOT/CADDS SHEET 21



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STATE PROJECT NUMBER:5307-00-72	HWY: CTH O	COUNTY: LAFAYETTE	CROSS SECTIONS: CTH O	SHEET 62	E

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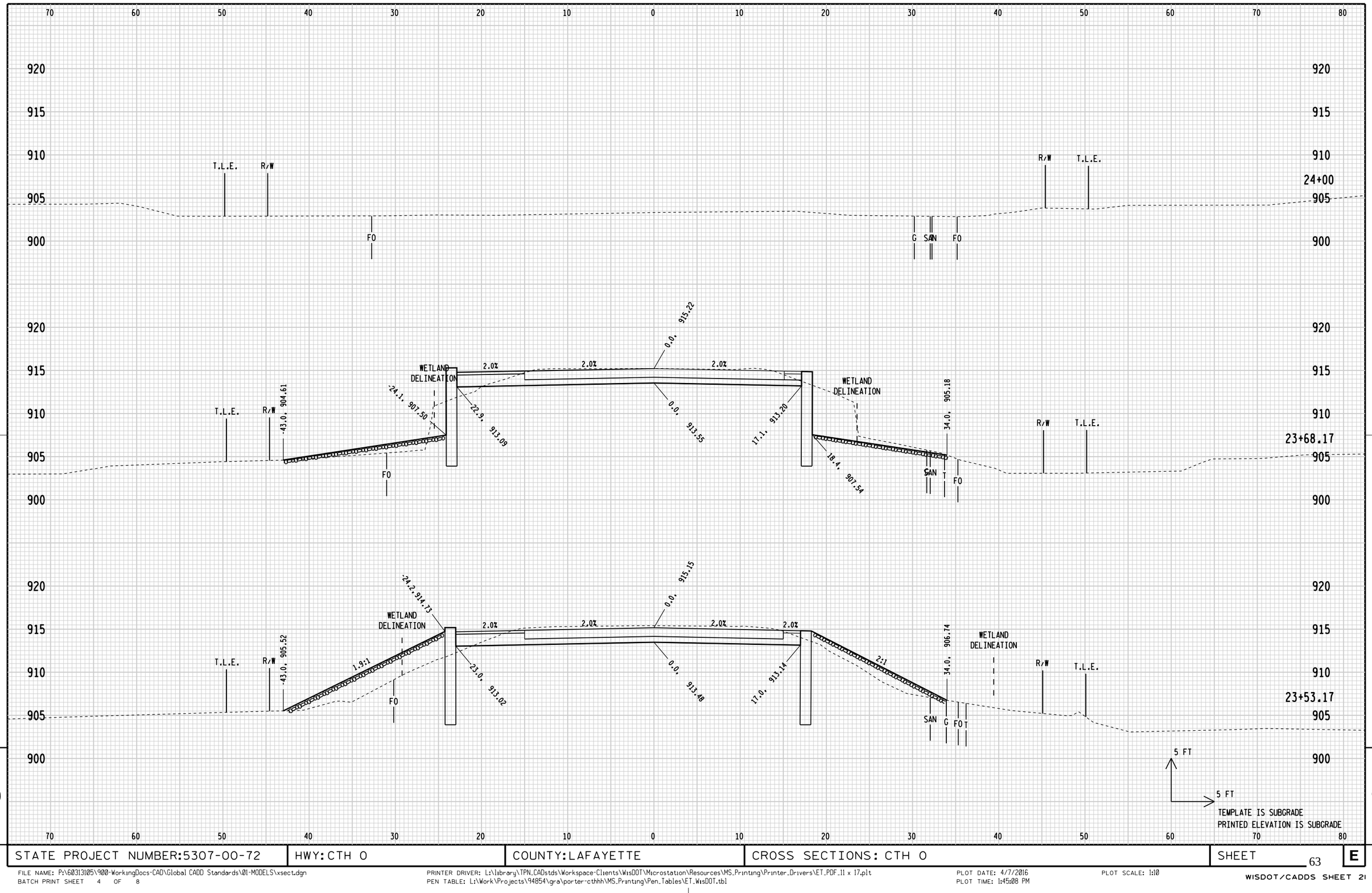
WISDOT/CADDS SHEET 21



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PLOT TIME: 1:45:08 PM
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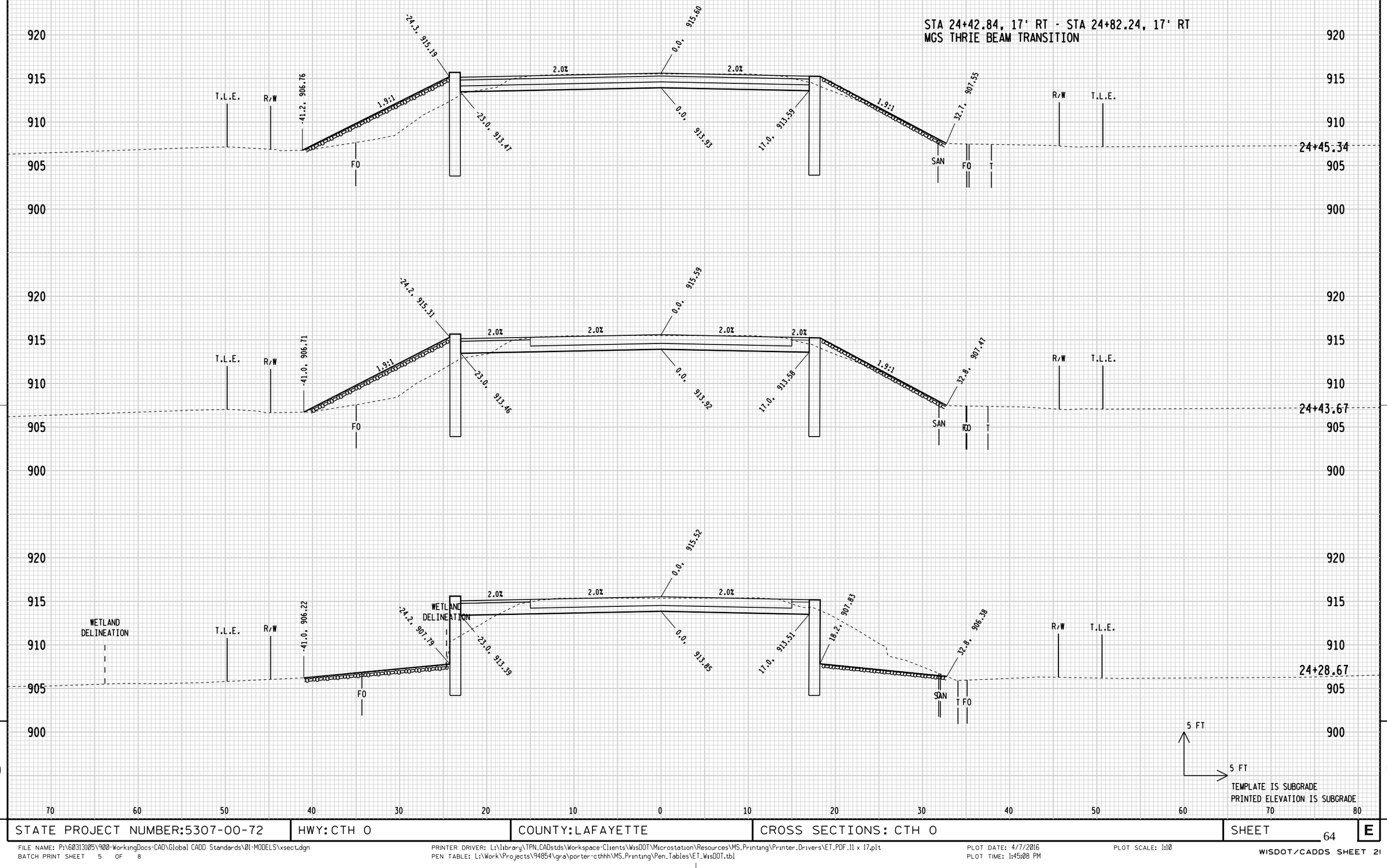
WISDOT/CADDS SHEET 21

STA 24+42.84, 17' RT - STA 24+82.24, 17' RT
MGS THRIE BEAM TRANSITION



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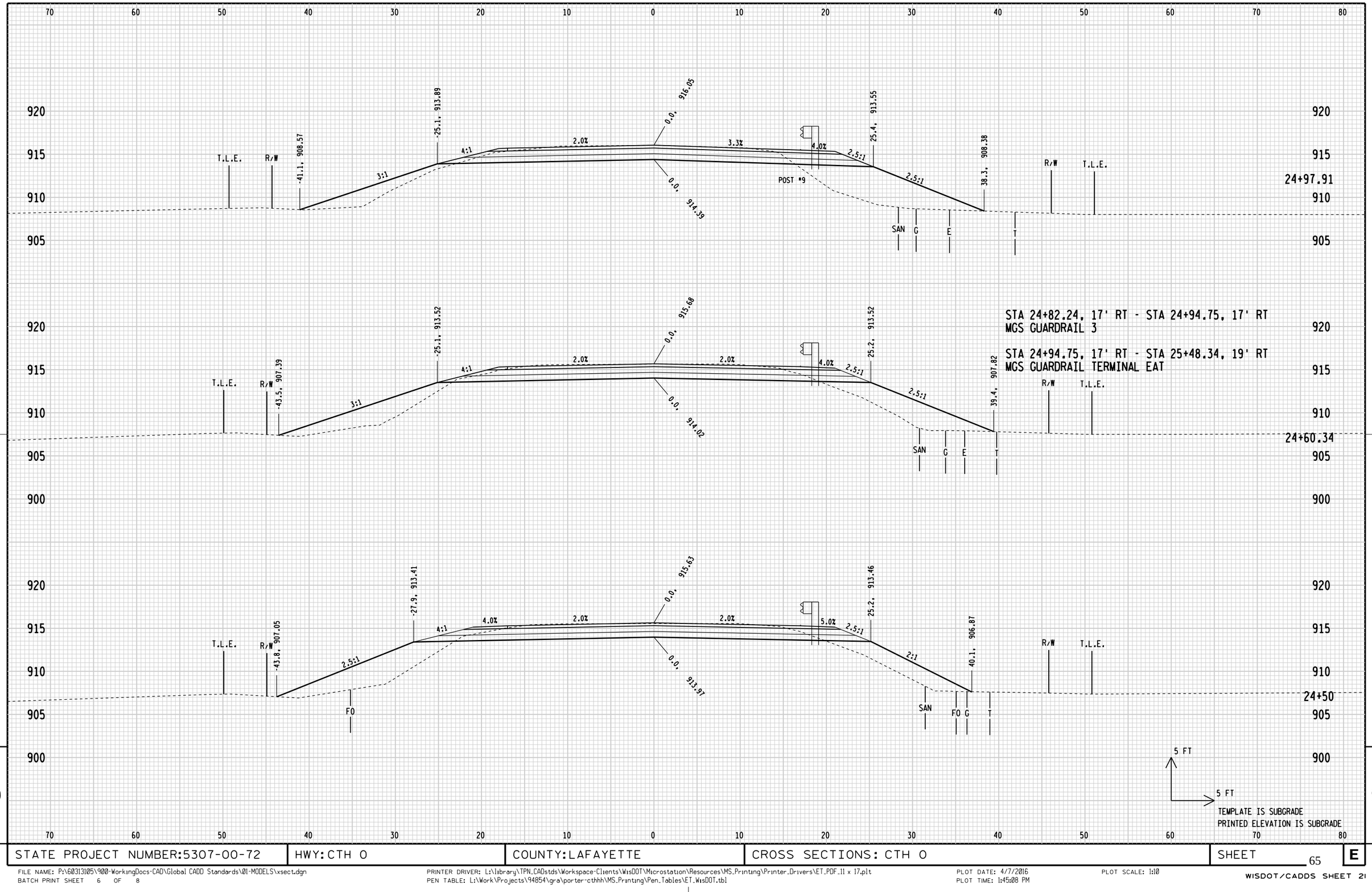
WISDOT/CADDS SHEET 21



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STATE PROJECT NUMBER:5307-00-72	HWY:CTH O	COUNTY:LAFAYETTE	CROSS SECTIONS: CTH O	SHEET 65	E

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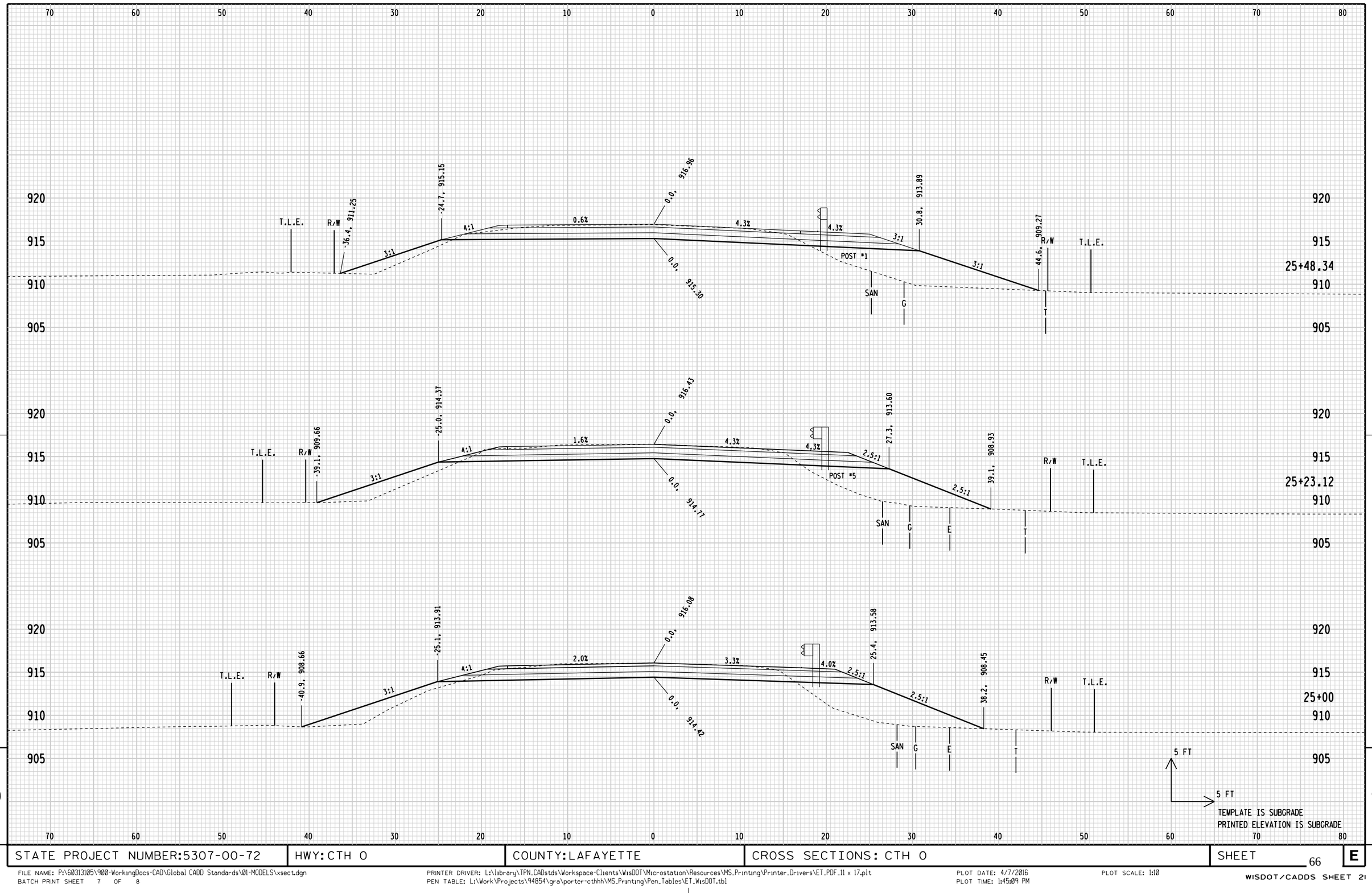
WISDOT/CADDS SHEET 21



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PLOT DATE: 4/7/2016
PLOT TIME: 1:45:09 PM
PLOT SCALE: 1:10
WISDOT/CADDS SHEET 21

END CONSTRUCTION
STA 26+50.00
MATCH EXISTING

R/W
13.5, 919.32
18.75
18.65
19.2,
20.5,
9.7%
13.5, 918.82
19.2, 918.25
R/W
26+50

R/W
13.3, 917.34
10.0:1
24.8, 915.69
911.29
38.1,
R/W
T.L.E.
3:1
13.3, 916.84
26+00

END PROJECT 5037-00-72
STA 25+62.00
MATCH EXISTING
(END ABRUPTLY)
SAWCUT REQ'D

T.L.E.
R/W
-17.2, 916.79
8.1%
0.0%
0.0, 917.24
4.6%
10.8, 916.24
10.0%
26.7, 914.66
3:1
41.1, 909.85
R/W
T.L.E.
-17.2, 915.25
0.0, 915.24
10.8, 914.75
SAN
G
T
25+62

5 FT
5 FT
TEMPLATE IS SUBGRADE
PRINTED ELEVATION IS SUBGRADE

STATE PROJECT NUMBER:5307-00-72	HWY: CTH O	COUNTY: LAFAYETTE	CROSS SECTIONS: CTH O	SHEET 67	E

FILE NAME: P:\60313105\900-WorkingDocs-CAD\Global CADD Standards\01-MODELS\xsect.dgn
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PLOT DATE: 4/7/2016
PLOT TIME: 1:45:09 PM
PLOT SCALE: 1:10
WISDOT/CADDS SHEET 21

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov