

LAX

PROJECT ID: 1650-02-83

WITH: N/A

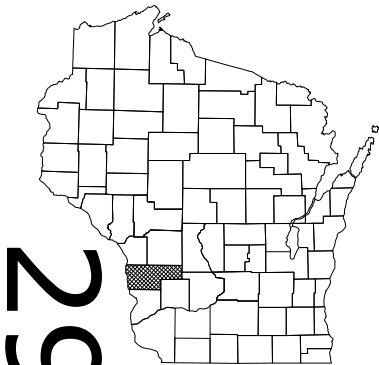
COUNTY: VERNON

SEPTEMBER 2022

ORDER OF SHEETS

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

TOTAL SHEETS = 48

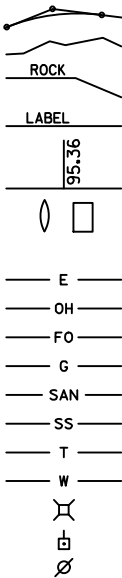


DESIGN DESIGNATION	USH61
A.A.D.T. (-)	= -
A.A.D.T. (-)	= -
D.H.V.	= -
D.D.	= -
T.	= -
DESIGN SPEED	= 55MPH
ESALS	= -

CONVENTIONAL SYMBOLS

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

- PROFILE
- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such)
- SPECIAL DITCH
- GRADE ELEVATION
- CULVERT (Profile View)
- UTILITIES
- ELECTRIC
- OVERHEAD UTILITY
- FIBER OPTIC
- GAS
- SANITARY SEWER
- STORM SEWER
- TELEPHONE
- WATER
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE



Exception to Net C/L Length
STA 1199+36 TO 1199+45 - B-62-0017

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

BOSCOBEL - READSTOWN

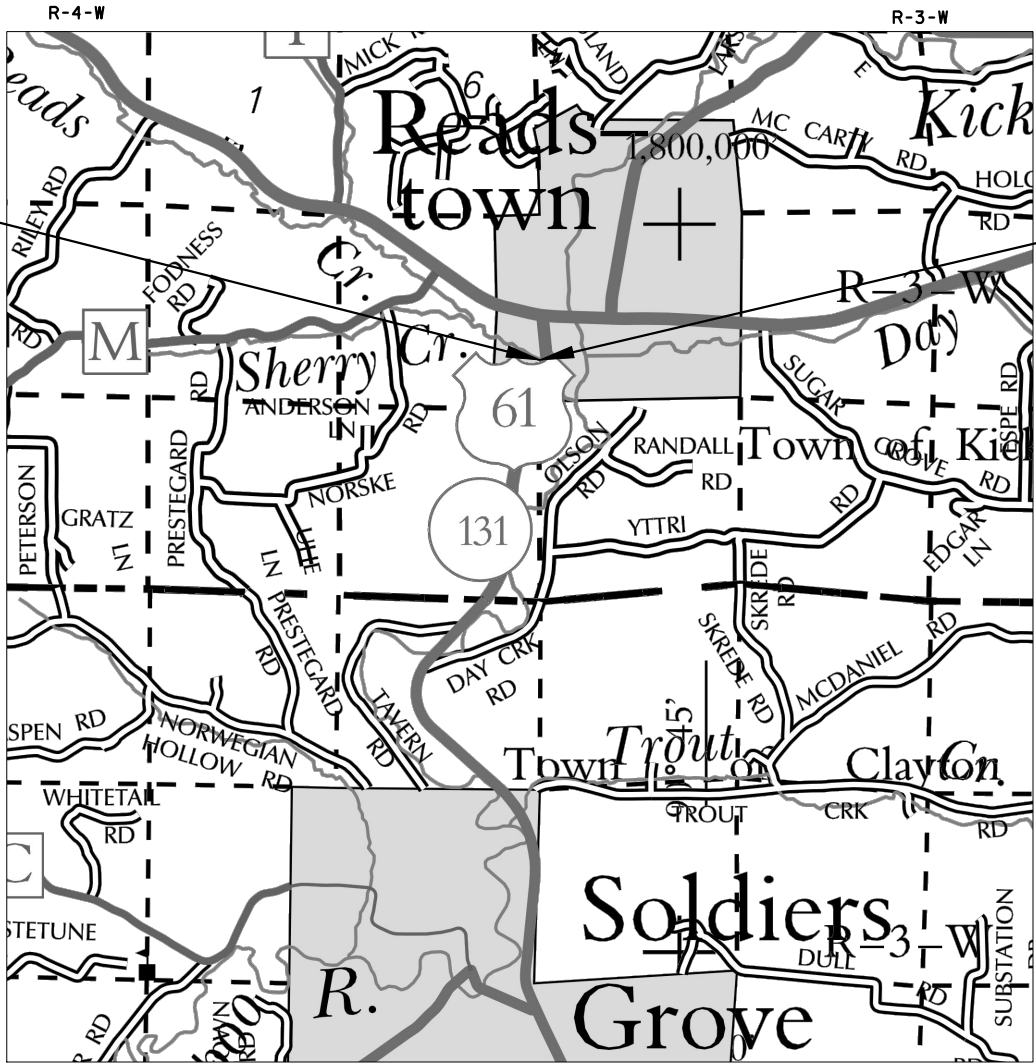
B-62-17 OVER READS CREEK

USH 61

VERNON COUNTY

STATE PROJECT NUMBER
1650-02-83

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1650-02-83		



PROJECT 1650-02-83
BEGIN STA 1198+55
END STA 1199+45
X = 734400.024
Y = 107010.279

VERNON COUNTY
CRAWFORD COUNTY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor WisDOT

Designer SHANE PETERSON

Project Manager JAY ADAMS

Regional Examiner REGIONAL EXAMINER

Regional Supervisor REINY YAHNKE

APPROVED FOR THE DEPARTMENT

DATE 8/1/2022

(Signature)

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GENERAL NOTES

- THERE ARE UTILITY FACILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL COORDINATE HIS CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE.
- THE ENGINEER SHALL ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH THE EXISTING UTILITY FACILITIES.
- RIGHT OF WAY LINES SHOWN ON THE PLAN ARE APPROXIMATE.
- CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVEWAYS AT ALL TIMES EXCEPT WHEN OPERATIONS REQUIRE THE DRIVEWAY TO BE CLOSED. ACCESS SHALL BE PROVIDED DURING ALL NON-WORKING HOURS.
- PRIOR TO THE PLACEMENT OF STEEL PLATE BEAM GUARD OR MGS GUARDRAIL, THE SHOULDERS SHALL BE IN PLACE, SHAPED AND COMPACTED UNLESS SHOWN OTHERWISE.
- ASPHALTIC SURFACE WEIGHT CALCULATIONS ARE BASED ON 112 LB/SY/IN.
- CONTRACTOR WILL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY HIS OPERATION OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS.
- THE QUANTITY OF THE ITEMS FOR EROSION PROTECTION INCLUDES AN UNDISTRIBUTED AMOUNT FOR PROTECTION, CONTROL AND ABATEMENT OF WATER POLLUTION RESULTING FROM SOIL EROSION. THE DISTRIBUTION AND LOCATION OF THESE MATERIALS ARE TO BE DETERMINED BY THE ENGINEER.

STANDARD ABBREVIATIONS

AGG	AGGREGATE	NB	NORTHBOUND
ASPH.	ASPHALTIC	NOR	NORMAL
BM	BENCHMARK	NO.	NUMBER
C/L	CENTER LINE	PAV'T	PAVEMENT
C.E.	COMMERCIAL ENTRANCE	PCC	PORTLAND CEMENT CONCRETE
CONST.	CONSTRUCTION	P.E.	PRIVATE ENTRANCE
CO.	COUNTY	PGL	PROFILE GRADE LINE
CTH	COUNTY TRUNK HIGHWAY	P.L.	PROPERTY LINE
CR.	CREEK	R	RADIUS OR RANGE
CABC	CRUSHED AGGREGATE BASE COURSE	R/L	REFERENCE LINE
CY	CUBIC YARD	R.C.C.P.	REINFORCED CONCRETE CULVERT PIPE
CP	CONTROL POINT OR CULVERT PIPE	REQ'D	REQUIRED
DIA.	DIAMETER	RT	RIGHT
EA	EACH	R/W	RIGHT OF WAY
E	EAST	RD.	ROAD
EB	EASTBOUND	SHLD.	SHOULDER(S)
ELEC.	ELECTRIC(AL), ELEC. CABLE	SHR.	SHRINKAGE
EL., ELEV.	ELEVATION	S	SOUTH
EXC.	EXCAVATION	SB	SOUTHBOUND
EXIST	EXISTING	S.F.	SQUARE FOOT (FEET)
FERT.	FERTILIZER	SDD	STANDARD DETAIL DRAWING(S)
F.E.	FIELD ENTRANCE	STH	STATE TRUNK HIGHWAY
F/L, F.L.	FLOW LINE	STA.	STATION
GALV.	GALVANIZE	S/L	SURVEY LINE
H.S.	HIGH STRENGTH	SYM	SYMMETRICAL
CWT	HUNDRED WEIGHT	TEL.	TELEPHONE
INL	INLET	TEMP.	TEMPORARY
JT.	JOINT	T.L.E.	TEMPORARY LIMITED EASEMENT
LT	LEFT	TYP	TYPICAL
L.F.	LINEAR FOOT(FEET)	U.G.	UNDERGROUND (CABLE)
LS	LUMP SUM	VAR	VARIABLE
MGAL	1000 GALLONS	Wt.	WEIGHT
N.C.	NORMAL CROWN	W	WEST
N	NORTH	WB	WESTBOUND

ORDER OF SECTION 2 SHEETS

GENERAL NOTES
TYPICAL SECTIONS
DETOUR
PLAN DETAILS



Dial 811 or (800) 242-8511

www.DiggersHotline.com

UTILITY CONTACTS

Jane Rossing Madison Gas And Electric Company - Electricity P.O. Box 1231 Madison, WI 53701-1231 (608) 252-7099 workplans@mge.com	Jane Rossing Madison Gas And Electric Company - Gas/Petroleum P.O. Box 1231 Madison, WI 53701-1231 (608) 252-7099 workplans@mge.com
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Randy Risen Midwest Natural Gas, Inc. - Gas/Petroleum 3600 State Highway 157 P.O. Box 429 La Crosse, WI 54602-0429 (608) 781-1011 randyr@midwestnaturalgas.com	Craig Eggert Mediacom Wisconsin LLC - Communication Line 1240 Highway 52 Chatfield, MN 55923 (563) 419-5160 ceggert@mediacomcc.com
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Susan Mueller Readstown Municipal Water Utility - Water 116 N 4th St Readstown, WI 54652 (608) 629-5627 clerk@vi.readstown.wi.gov	Chad Olmstead Scenic Rivers Energy Cooperative - Electricity 231 N Sheridan St Lancaster, WI 53813 (608) 723-2121 colmstead@srec.net
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Ryan Lucken Spectrum - Communication Line 1201 Mccann Drive Altoona, WI 54720 (715) 833-7390 CHTR_WI_CONST@charter.com	Scott Frederick Vernon Communications Cooperative - Communication Line 103 N Main St Westby, WI 54667 (608) 634-3136 sfrederick@vernoncom.coop
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Craig Buros
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DNR LIAISON

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(608) 785-9115

DESIGN CONTACTS

JAY ADAMS, P.E. PROJECT MANAGER WISDOT SW REGION PROJECT DEVELOPMENT 3550 MORMON COULEE RD LA CROSSE, WI 54601 (608) 785-9027	SHANE PETERSON, P.E. PROJECT DESIGNER WISDOT SW REGION PROJECT DEVELOPMENT 3550 MORMON COULEE RD LA CROSSE, WI 54601 (608) 789-5701
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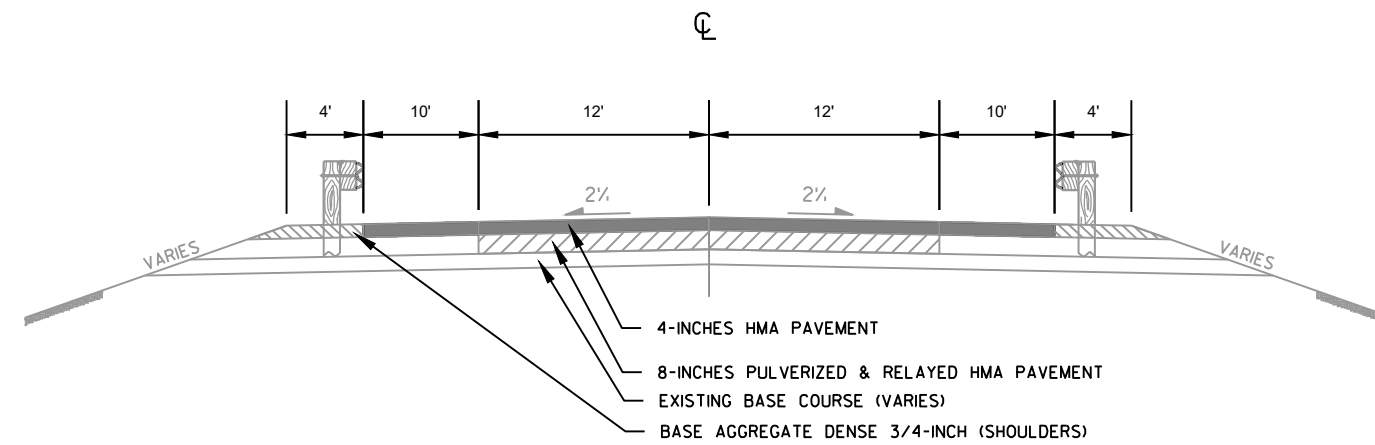
HWY: USH 61

COUNTY: VERNON

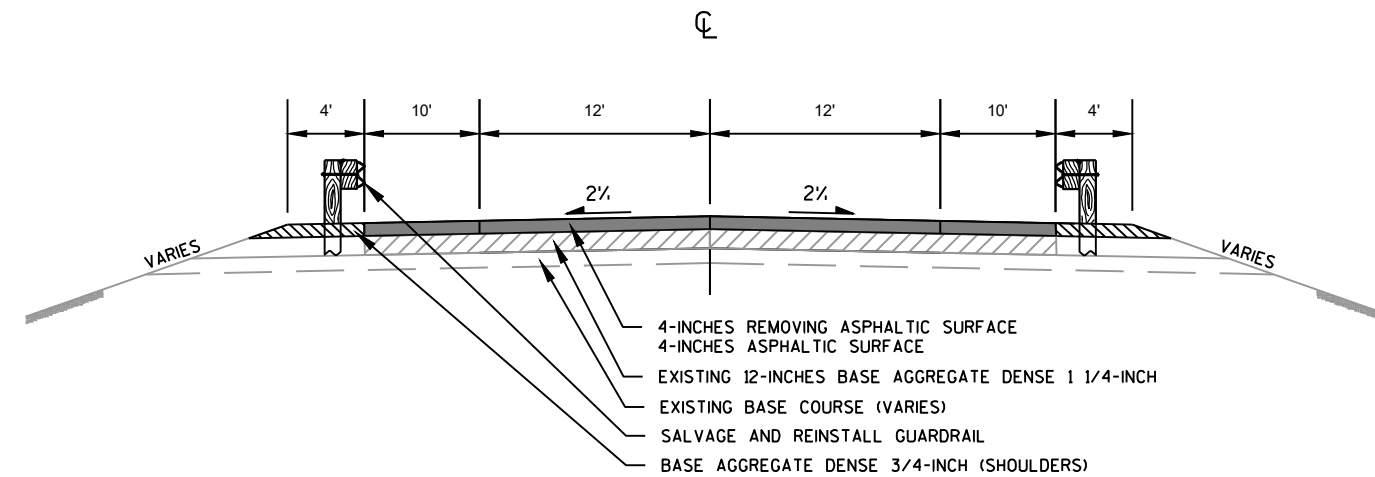
GENERAL NOTES

SHEET

E



EXISTING TYPICAL SECTION
STA 1198+70 TO STA 1199+10



PROPOSED TYPICAL SECTION
STA 1198+70 TO STA 1199+10

M4-8
24"x12"
M3-3
24"x12"
M1-4
24"x24"

DETOUR SOUTH
DETOUR SOUTH

M4-8
24"x12"
M3-3
24"x12"
M1-6
24"x24"

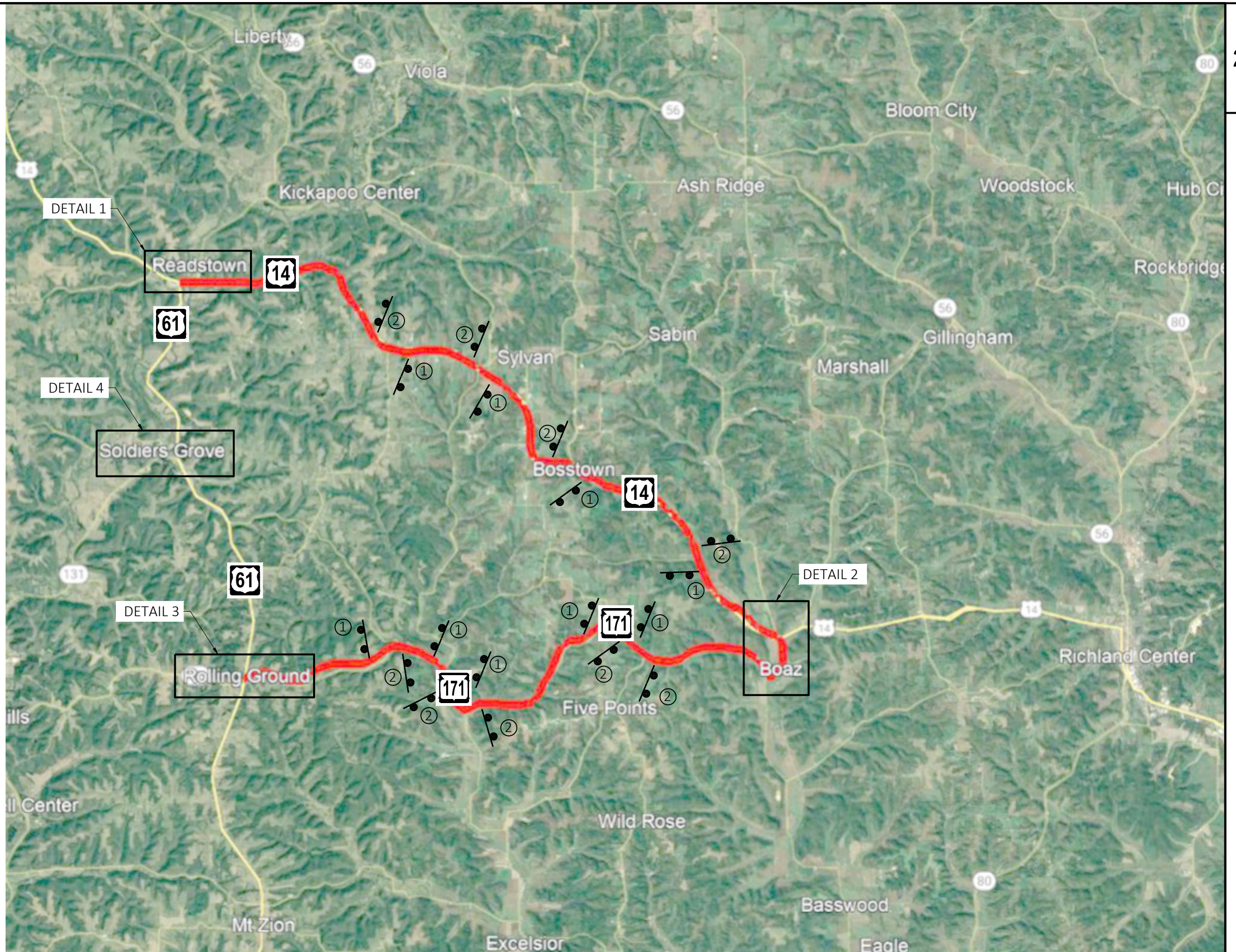
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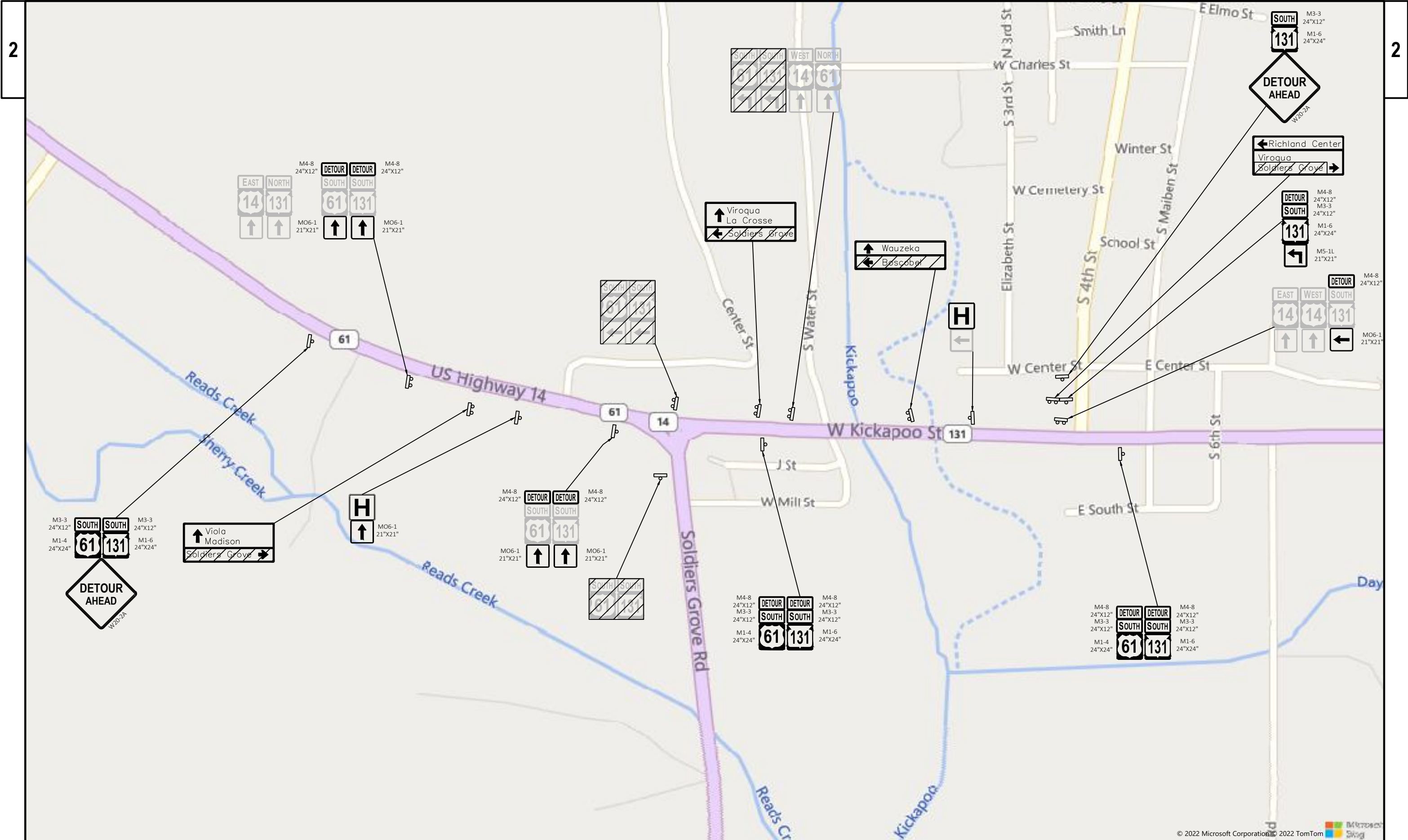
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24"x12"
M3-1
24"x12"
M1-4
24"x24"

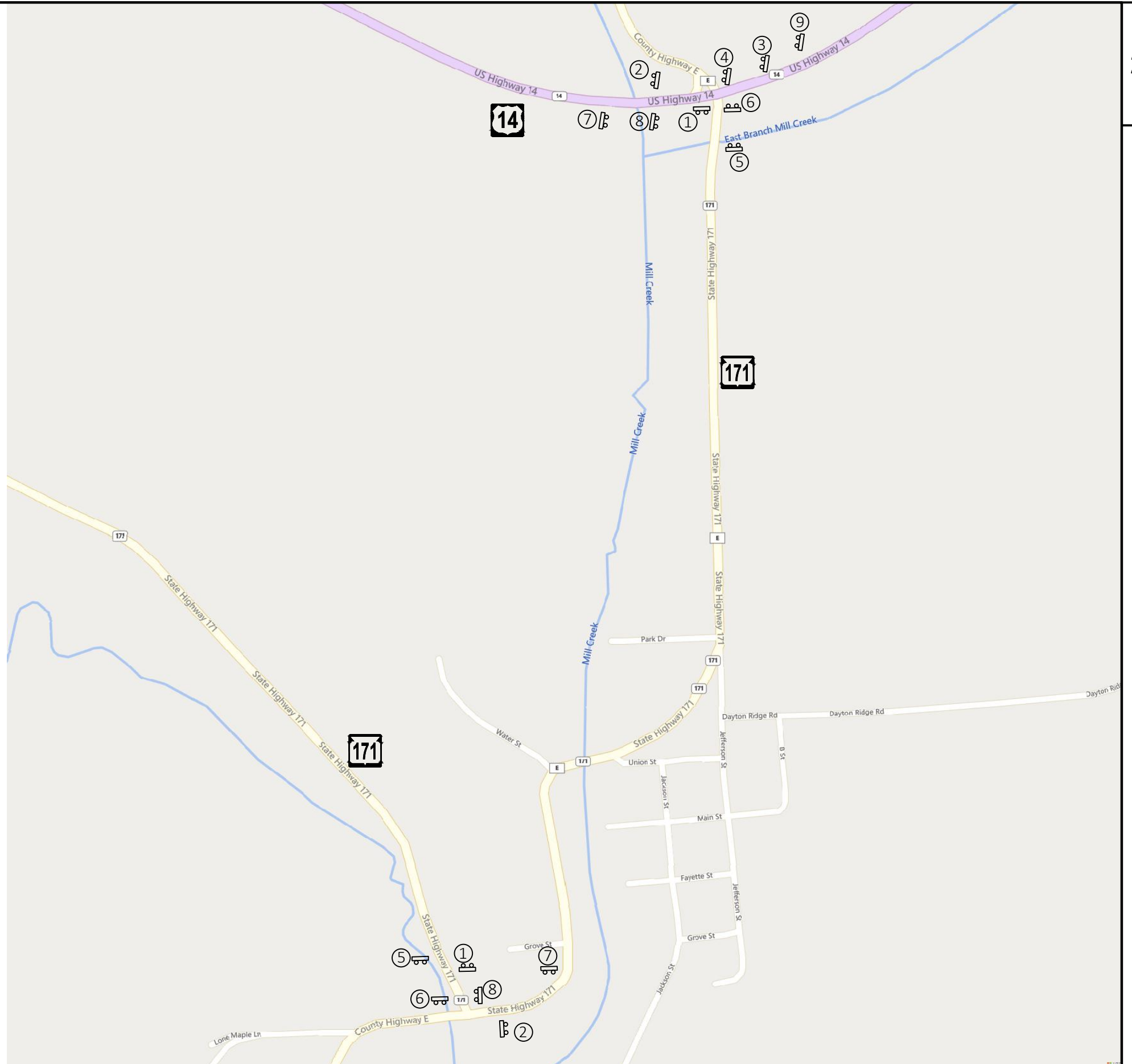
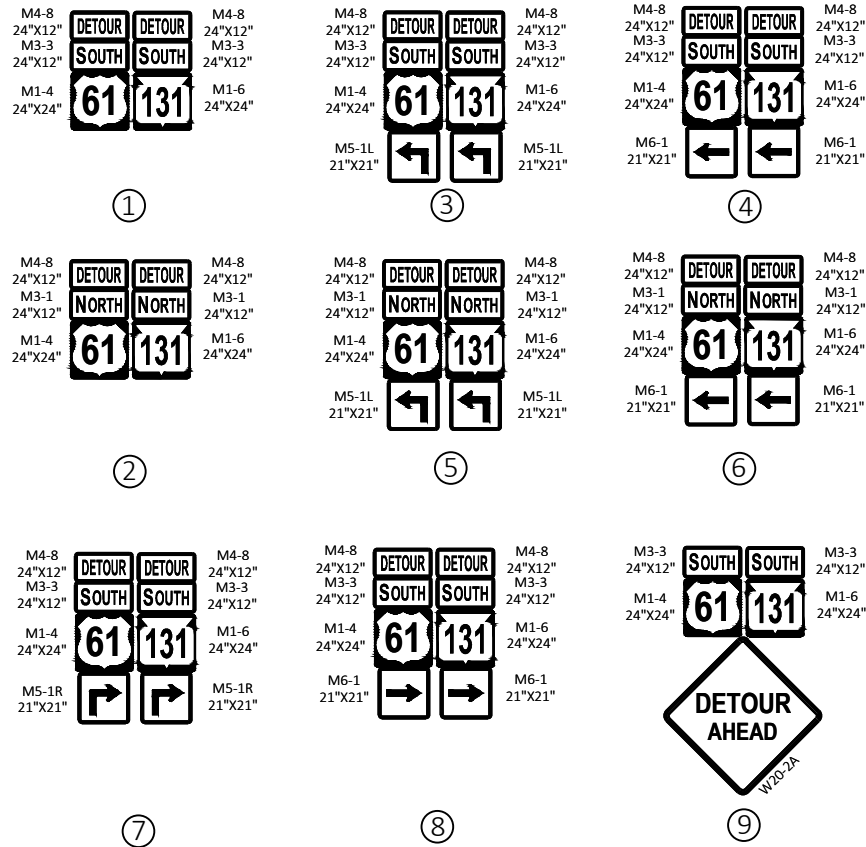
DETOUR NORTH
DETOUR NORTH

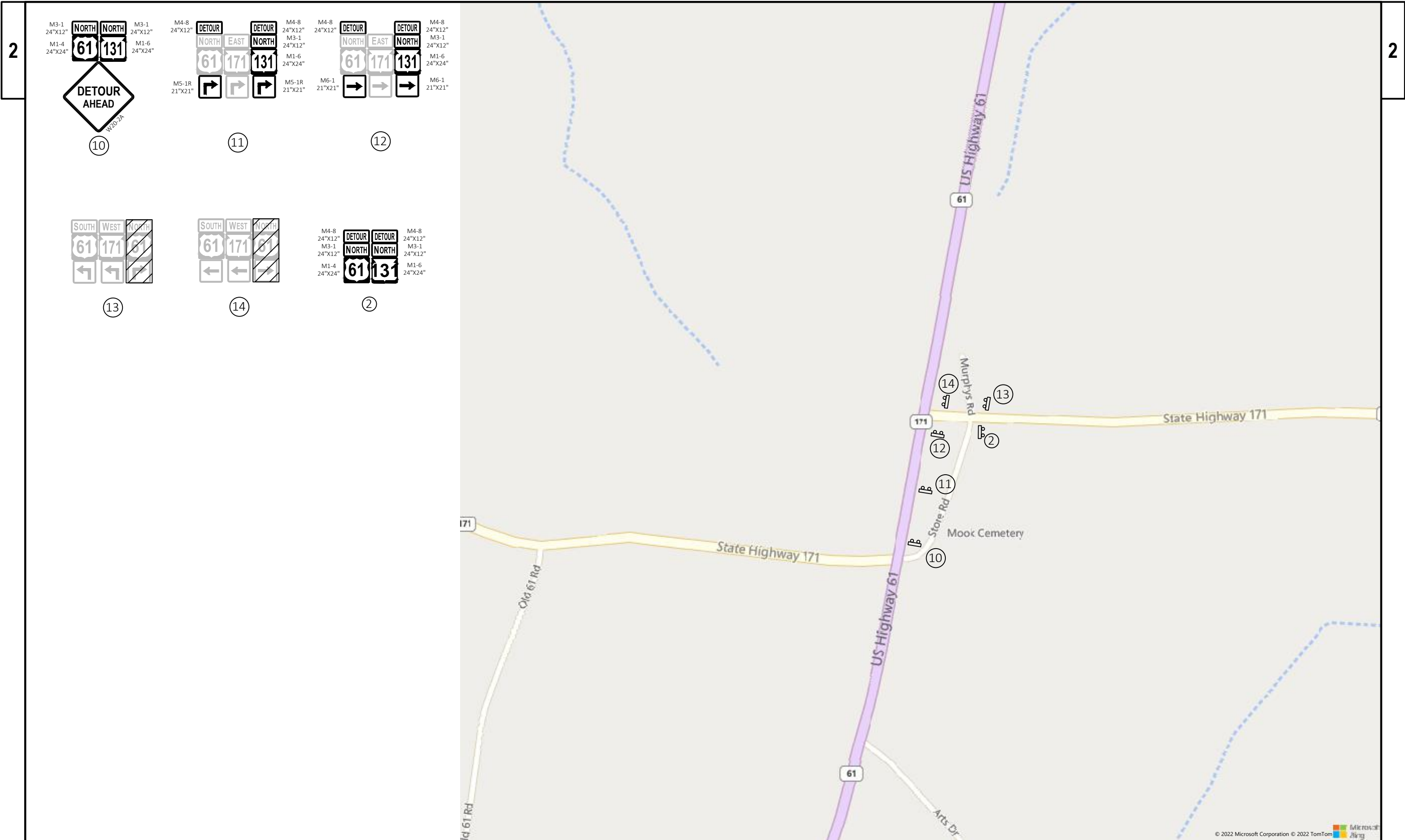
M4-8
24"x12"
M3-1
24"x12"
M1-6
24"x24"

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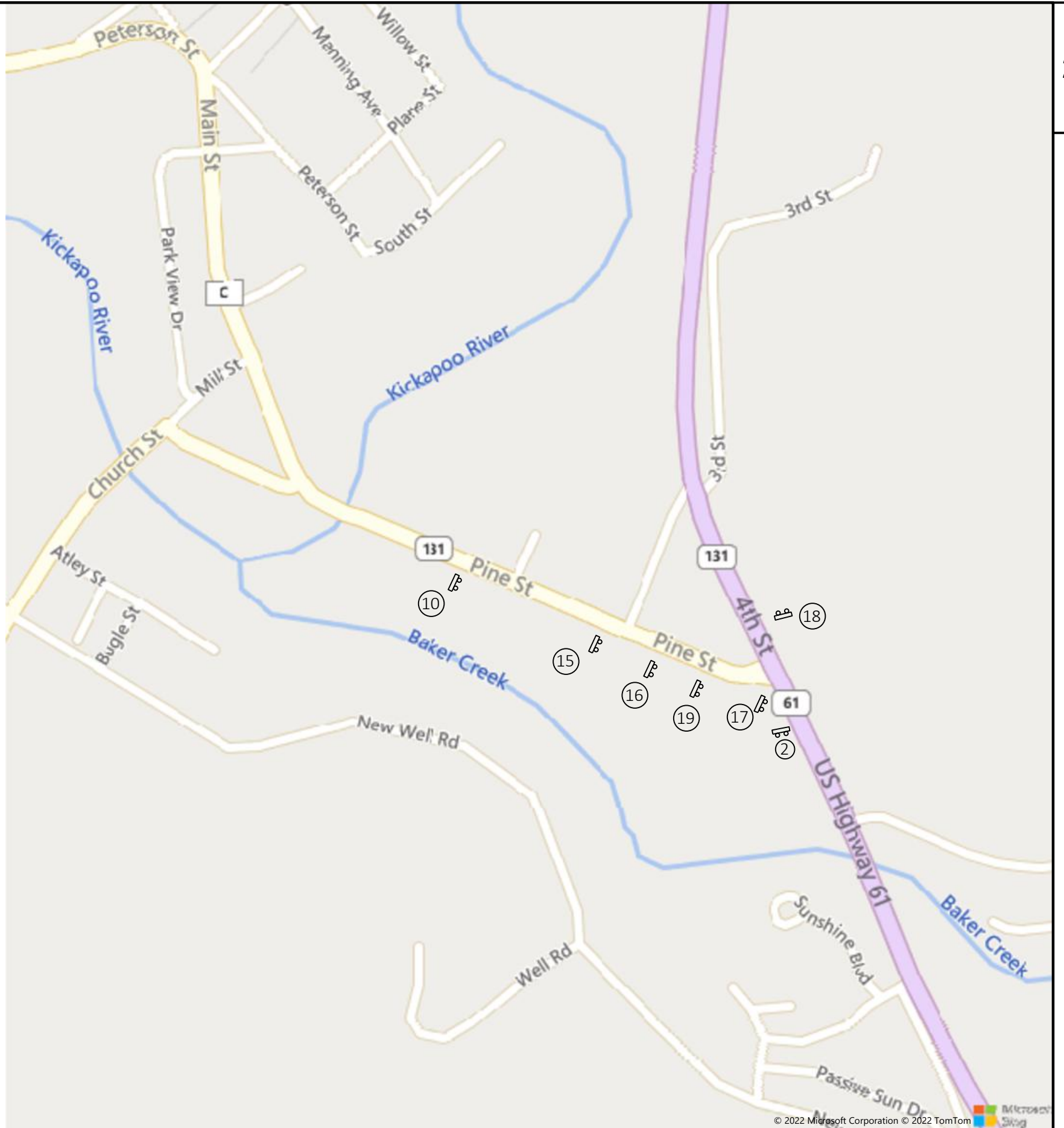
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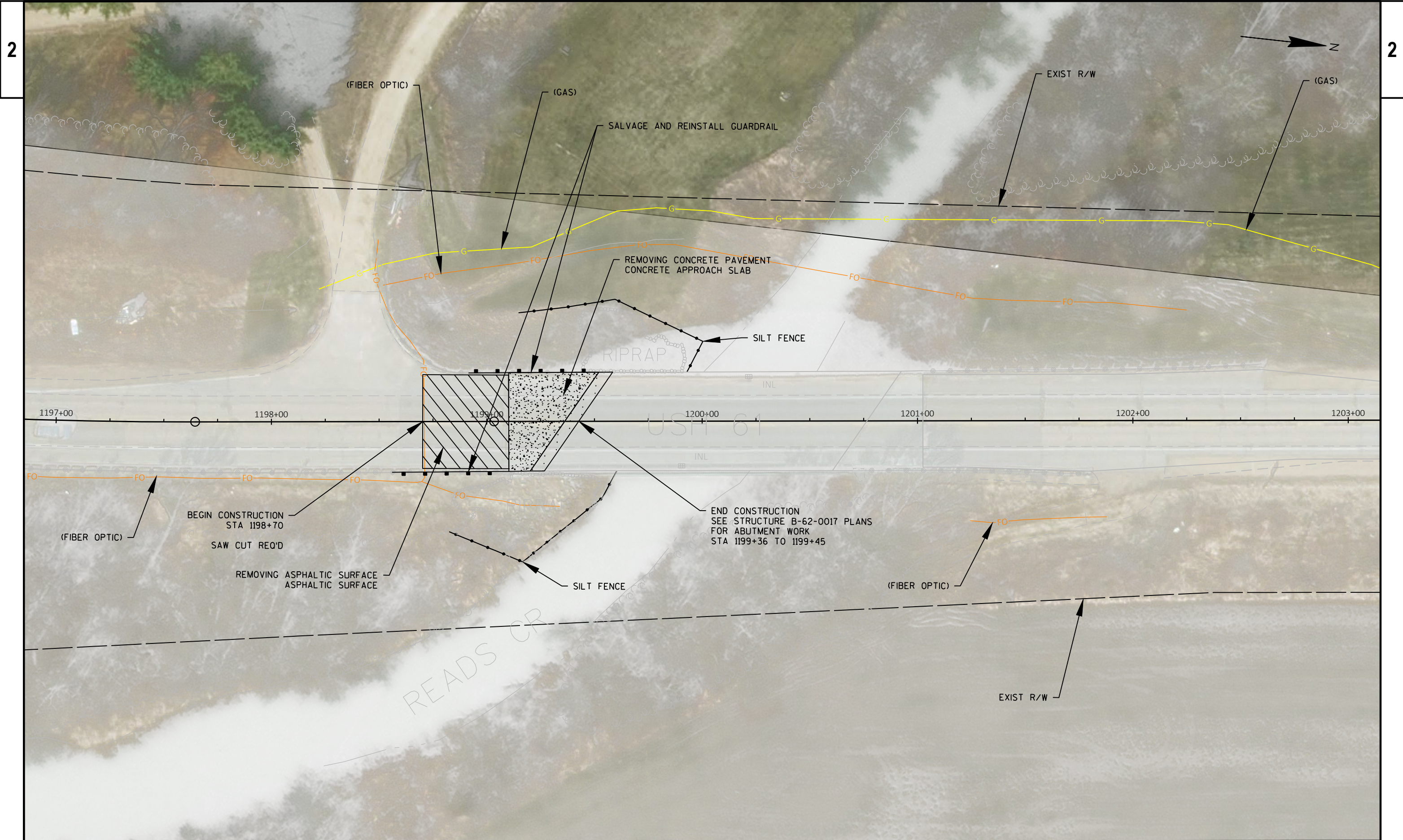


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PROJECT NO: 1650-02-83	HWY: USH 61	COUNTY: VERNON	PLAN DETAILS	SHEET	E
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Estimate Of Quantities

1650-02-83

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	1.000	1.000
0004	201.0205	Grubbing	STA	1.000	1.000
0006	203.0250	Removing Structure Over Waterway Remove Debris (structure) 01. B-62-17	EACH	1.000	1.000
0008	204.0100	Removing Concrete Pavement	SY	132.000	132.000
0010	204.0110	Removing Asphaltic Surface	SY	195.000	195.000
0012	206.1001	Excavation for Structures Bridges (structure) 01. B-62-17	EACH	1.000	1.000
0014	210.1500	Backfill Structure Type A	TON	353.000	353.000
0016	213.0100	Finishing Roadway (project) 01. 1650-02-83	EACH	1.000	1.000
0018	305.0110	Base Aggregate Dense 3/4-Inch	TON	20.000	20.000
0020	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	120.000	120.000
0022	312.0110	Select Crushed Material	TON	45.000	45.000
0024	415.0410	Concrete Pavement Approach Slab	SY	132.000	132.000
0026	455.0605	Tack Coat	GAL	14.000	14.000
0028	465.0105	Asphaltic Surface	TON	45.000	45.000
0030	465.0315	Asphaltic Flumes	SY	4.000	4.000
0032	502.0100	Concrete Masonry Bridges	CY	37.000	37.000
0034	502.3200	Protective Surface Treatment	SY	30.000	30.000
0036	502.3210	Pigmented Surface Sealer	SY	5.000	5.000
0038	502.4206	Adhesive Anchors No. 6 Bar	EACH	122.000	122.000
0040	505.0400	Bar Steel Reinforcement HS Structures	LB	1,680.000	1,680.000
0042	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	2,680.000	2,680.000
0044	513.9006.S	Removing and Resetting Tubular Railing (structure) 01. B-62-17	EACH	1.000	1.000
0046	516.0500	Rubberized Membrane Waterproofing	SY	10.000	10.000
0048	550.0010	Pre-Boring Unconsolidated Materials	LF	210.000	210.000
0050	550.2106	Piling CIP Concrete 10 3/4 X 0.365-Inch	LF	945.000	945.000
0052	606.0300	Riprap Heavy	CY	100.000	100.000
0054	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	70.000	70.000
0056	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1650-02-83	EACH	1.000	1.000
0058	619.1000	Mobilization	EACH	1.000	1.000
0060	624.0100	Water	MGAL	3.000	3.000
0062	625.0100	Topsoil	SY	1,000.000	1,000.000
0064	628.1504	Silt Fence	LF	250.000	250.000
0066	628.1520	Silt Fence Maintenance	LF	250.000	250.000
0068	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0070	628.1910	Mobilizations Emergency Erosion Control	EACH	1.000	1.000
0072	628.2002	Erosion Mat Class I Type A	SY	900.000	900.000
0074	629.0210	Fertilizer Type B	CWT	1.000	1.000
0076	630.0120	Seeding Mixture No. 20	LB	40.000	40.000
0078	630.0200	Seeding Temporary	LB	40.000	40.000
0080	642.5001	Field Office Type B	EACH	1.000	1.000
0082	643.0300	Traffic Control Drums	DAY	300.000	300.000
0084	643.0420	Traffic Control Barricades Type III	DAY	300.000	300.000
0086	643.0715	Traffic Control Warning Lights Type C	DAY	360.000	360.000
0088	643.0900	Traffic Control Signs	DAY	9,300.000	9,300.000
0090	643.0920	Traffic Control Covering Signs Type II	EACH	30.000	30.000
0092	643.1000	Traffic Control Signs Fixed Message	SF	24.000	24.000
0094	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0096	643.5000	Traffic Control	EACH	1.000	1.000
0098	645.0111	Geotextile Type DF Schedule A	SY	40.000	40.000

Estimate Of Quantities

1650-02-83

Line	Item	Item Description	Unit	Total	Qty
0100	645.0120	Geotextile Type HR	SY	150.000	150.000
0102	646.1020	Marking Line Epoxy 4-Inch	LF	265.000	265.000
0104	646.6464	Cold Weather Marking Epoxy 4-Inch	LF	265.000	265.000
0106	690.0150	Sawing Asphalt	LF	50.000	50.000
0108	715.0502	Incentive Strength Concrete Structures	DOL	500.000	500.000
0110	715.0720	Incentive Compressive Strength Concrete Pavement	DOL	500.000	500.000
0112	SPV.0060	Special 01. 1 1/4-Inch Diameter Cored Holes	EACH	45.000	45.000
0114	SPV.0090	Special 01. Salvage and Reinstall Guardrail	LF	110.000	110.000

3

CLEARING AND GRUBBING					
CATEGORY	STATION TO	STATION	LOCATION	201.0105 CLEARING STA	201.0205 GRUBBING STA
0010	1199+00 -	1199+50	MAINLINE	1	1
TOTAL 0010				1	1

ASPHALT								
CATEGORY	STATION TO	STATION	LOCATION	204.0110 REMOVING ASPHALTIC SURFACE SY	455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TON	465.0315 ASPHALTIC FLUMES SY	690.0150 SAWING ASPHALT LF
0010	1198+70 -	1199+10	MAINLINE	195	14	45	4	50
TOTAL 0010				195	14	45	4	50

GUARDRAIL				
CATEGORY	STATION TO	STATION	LOCATION	SPV.0090.01 SPECIAL (01. SALVAGE AND REINSTALL GUARDRAIL) LF
0010	1198+90 -	1199+45	LT	55
0010	1198+55 -	1199+10	RT	55
TOTAL 0010				110

3

BASE						
CATEGORY	STATION TO	STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	624.0100 WATER MGAL
0010	1198+75	- 1199+45	MAINLINE	20	120	3
TOTAL 0010				20	120	3

EROSION CONTROL														
CATEGORY	STATION TO	STATION	LOCATION	606.0300 RIPRAP HEAVY CY	625.0100 TOPSOIL SY	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANC E LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EROSION CONTROL EACH	628.2002 EROSION MAT CLASS I TYPE A SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0200 SEEDING TEMPORARY LB	645.0120 GEOTEXTILE TYPE HR SY
0010	1198+50 -	1199+50	MAINLINE	100	1,000	250	250	2	1	900	1	40	40	150
TOTAL 0010				100	1,000	250	250	2	1	900	1	40	40	150

APPROACH SLAB						
CATEGORY	STATION TO	STATION	LOCATION	204.0100 REMOVING CONCRETE PAVEMENT SY	415.0410 CONCRETE PAVEMENT APPROACH SLAB SY	REMARKS
0010	1199+10	- 1199+45	MAINLINE	132	132	INCLUDES PAVED SHOULDER LT & RT
TOTAL 0010				132	132	

MARKING					
CATEGORY	STATION TO	STATION	LOCATION	646.1020 MARKING LINE EPOXY 4-INCH LF	646.6464 COLD WEATHER MARKING EPOXY 4-INCH LF
0010	1198+55 -	1199+55	MAINLINE	265	265
TOTAL 0010				265	265

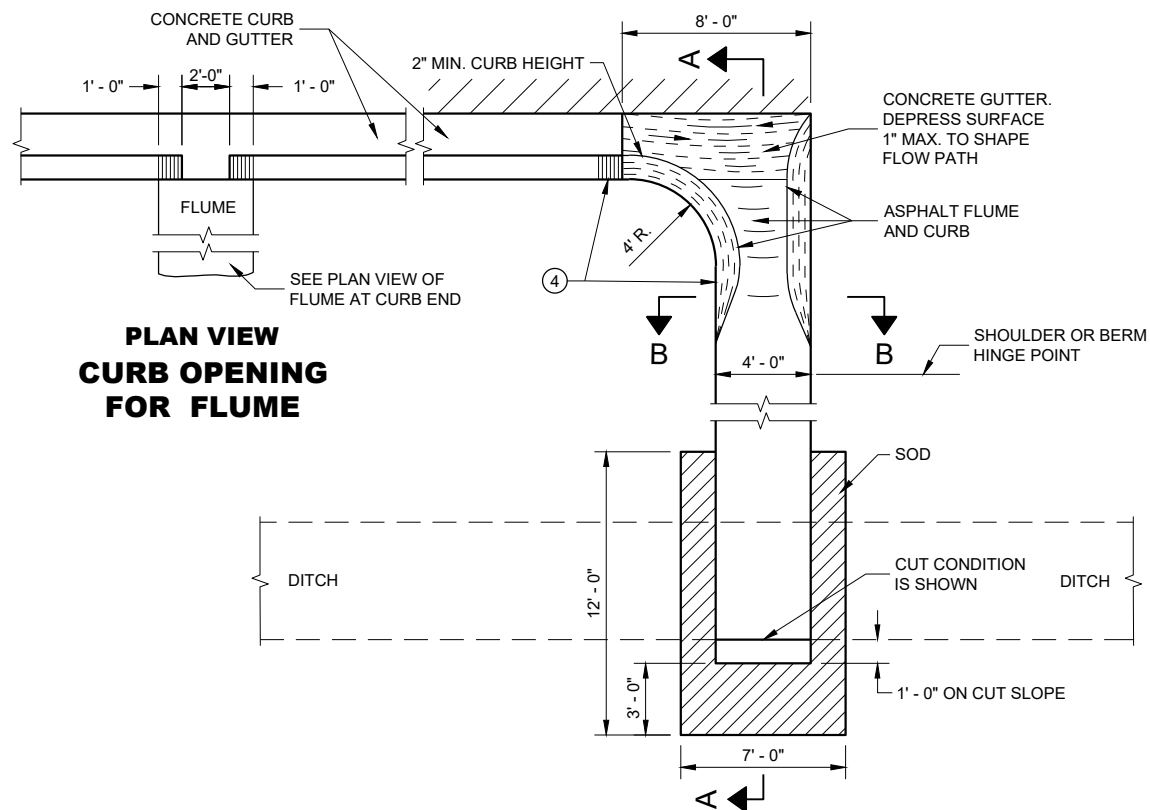
TRAFFIC CONTROL												
CATEGORY	LOCATION	643.0300 TRAFFIC CONTROL DRUMS DAY	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAY	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C DAY	643.0900 TRAFFIC CONTROL SIGNS DAY	643.0920 TRAFFIC CONTROL COVERING SIGNS TYPE II EACH	643.1000 TRAFFIC CONTROL SIGNS FIXED MESSAGE SF	643.1050 TRAFFIC CONTROL SIGNS PCMS DAY	643.5000 TRAFFIC CONTROL EACH	REMARKS		
0010	MAINLINE	300	300	360	9,300	130	24	14	1	CLOSURE & DETOUR		
TOTAL 0010		300	300	360	9,300	30	24	14	1			

Standard Detail Drawing List

08D04-06	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E09-06	SILT FENCE
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
14B15-11A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B20-11A	STEEL THRIE BEAM STRUCTURE APPROACH
14B20-11B	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END PARAPETS
15C02-08A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-08C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C06-10	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-21A	LONGITUDINAL MARKING (MAINLINE)
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS

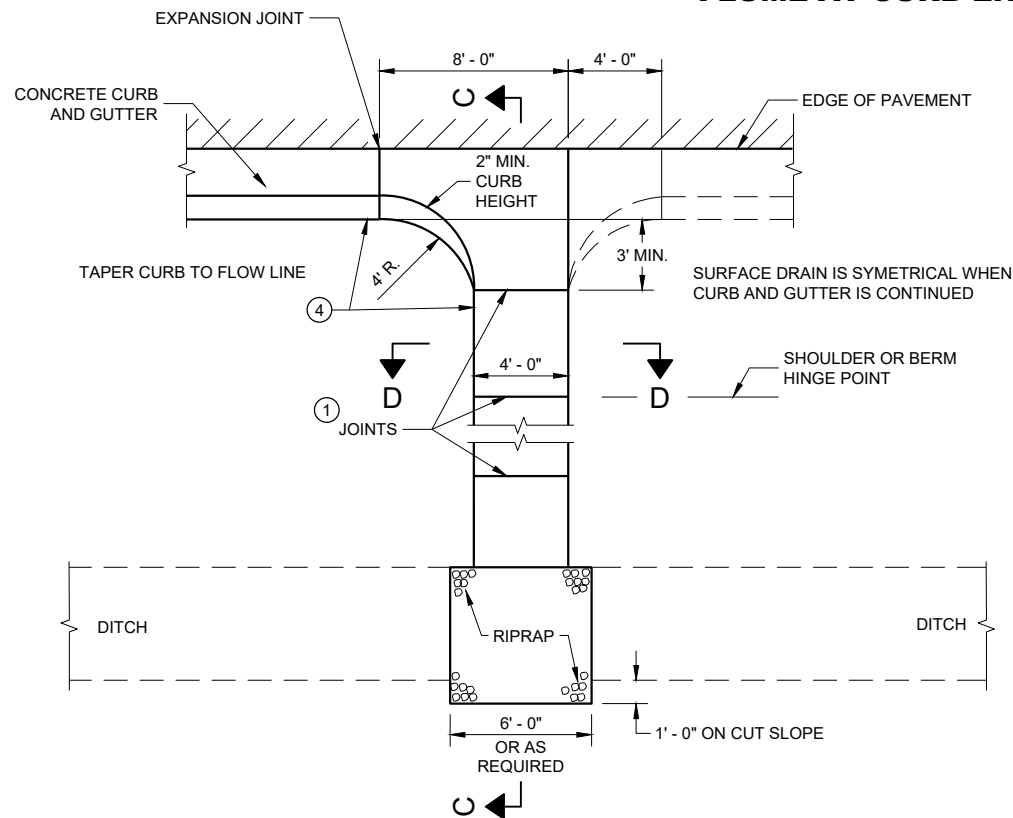
NOTE: TAPER CURB ENDS TO GUTTER IN 1' - 0"

ASPHALTIC FLUME



PLAN VIEW
CURB OPENING
FOR FLUME

PLAN VIEW
FLUME AT CURB END



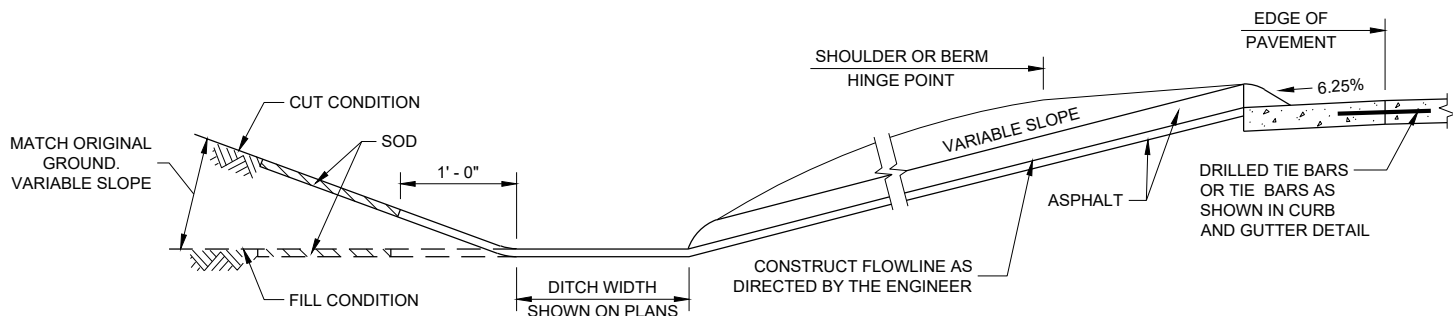
PLAN VIEW
CONCRETE SURFACE DRAIN

GENERAL NOTES

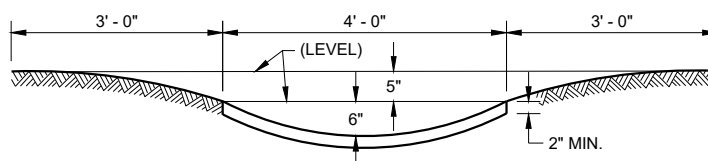
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

4" X 4" - W3.0 X W3.0 CONCRETE REINFORCEMENT SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

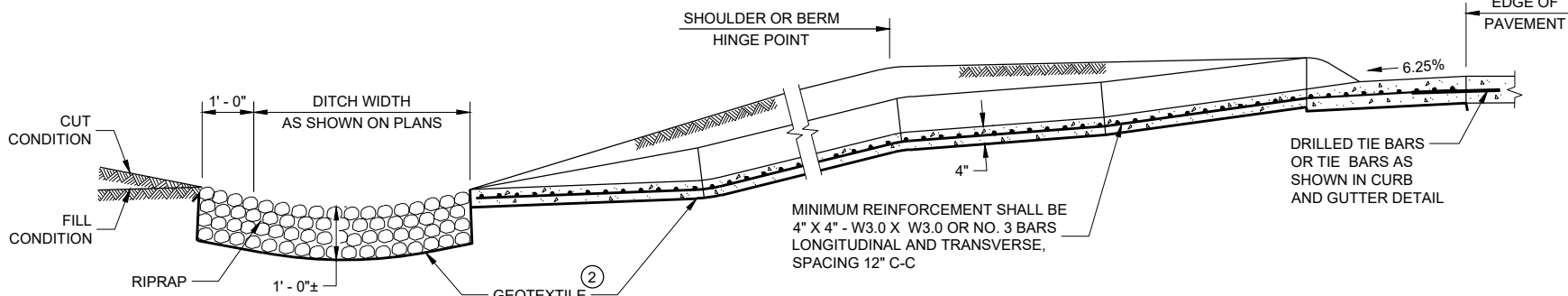
- JOINTS SHALL BE 1/8" TO 1/4" WIDE BY 1 1/2" DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
- GEOTEXTILE TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
- CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED.
- ANGLE OF FLUME IN RELATION TO BACK OF CURB TO BE CONSTRUCTED PER THE PLAN DETAILS OR AS DIRECTED BY THE ENGINEER. ANGLE OF FLUME MAY BE OTHER THAN 90 DEGREES AS SHOWN.



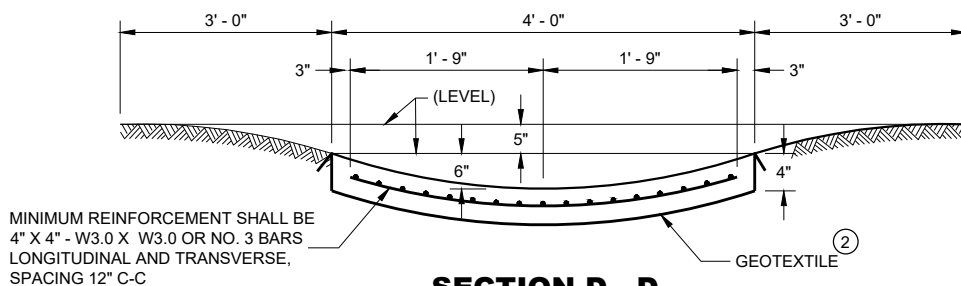
SECTION A - A



SECTION B - B



SECTION C - C



SECTION D - D

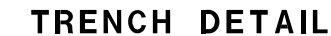
CONCRETE SURFACE
DRAINS AND
ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

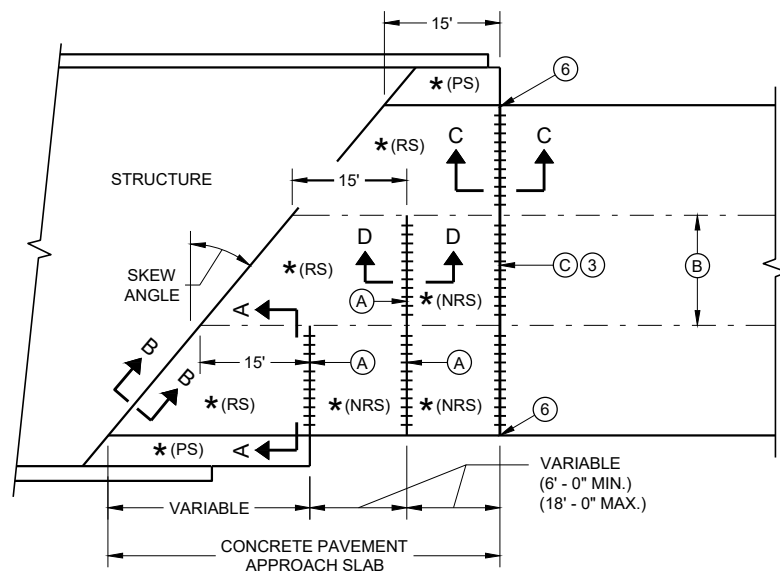
APPROVED
November 2021
DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



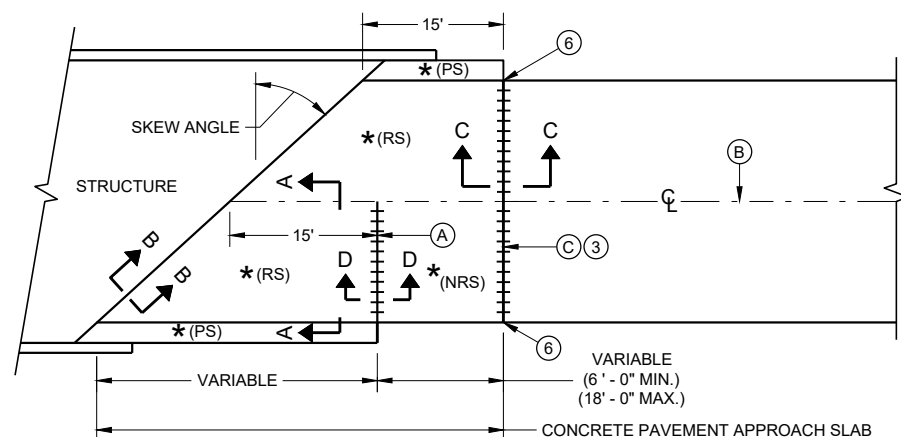
- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS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



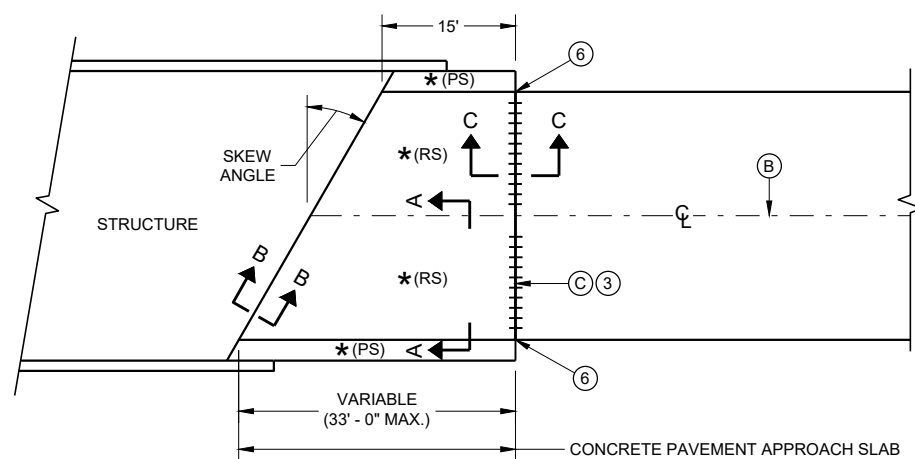
SILT FENCE	
STATE OF WISCONSIN	
DEPARTMENT OF TRANSPORTATION	
APPROVED	
<u>4-29-05</u>	<u>/S/ Beth Cannestra</u>
DATE	CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	



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



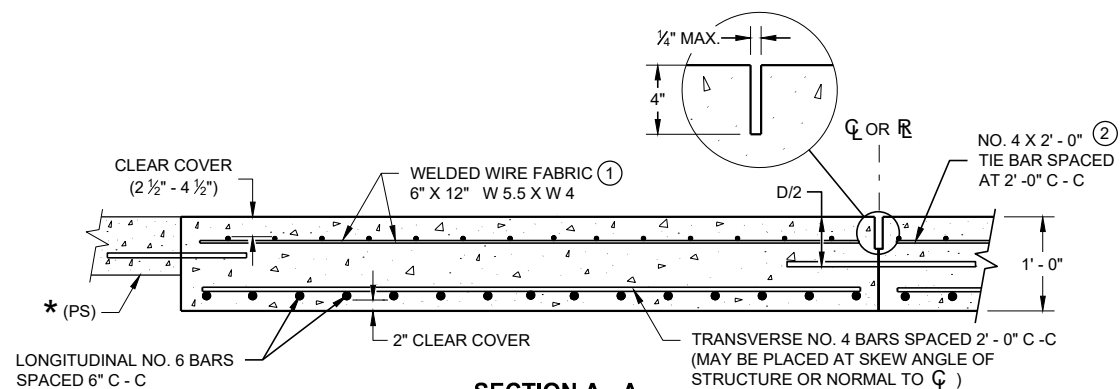
**SKews > 20°
(PAVEMENT WIDTH ≤ 30')**



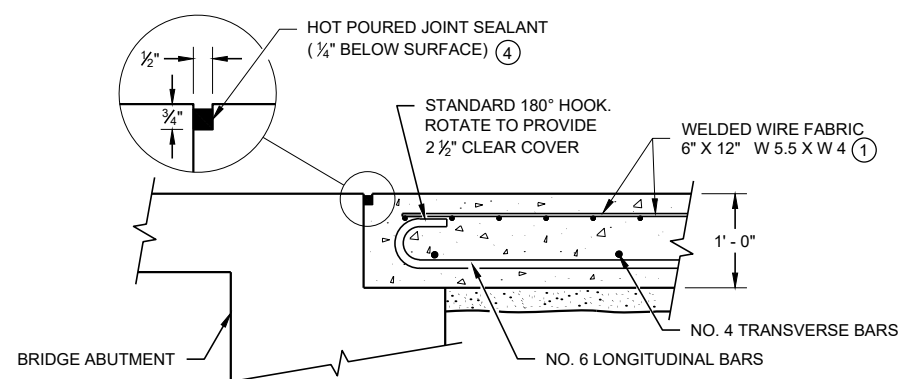
**SKews ≤ 20°
(PAVEMENT WIDTH ≤ 30')**

APPROACH SLAB AND ADJACENT PAVEMENT

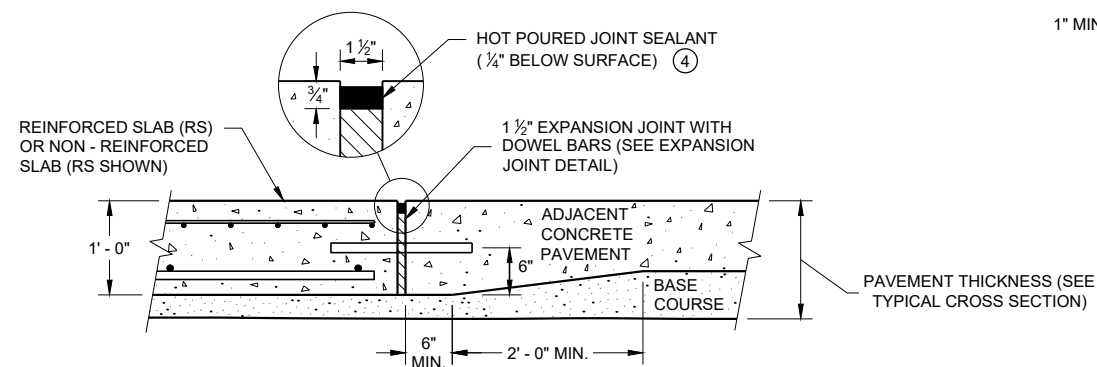
- * (RS) = REINFORCED CONCRETE SLAB
- * (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
- * (NRS) = NON - REINFORCED CONCRETE SLAB
- *** STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



**SECTION A - A
REINFORCEMENT POSITIONING DETAIL**



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



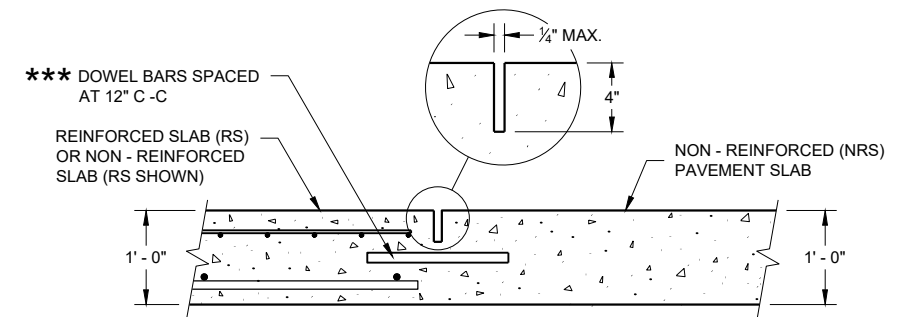
**SECTION C - C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT**

GENERAL NOTES

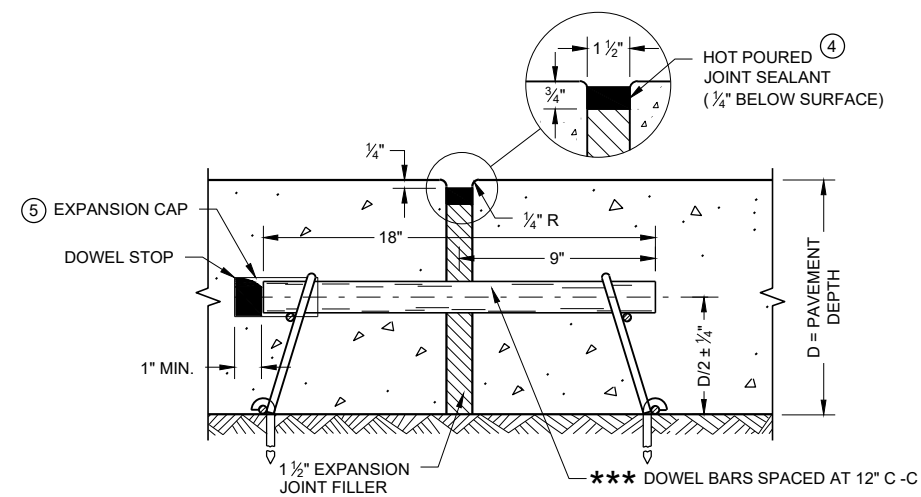
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

- ① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2' - 0" C - C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.
- ② THE CONTRACTOR MAY OMIT THE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.
- ③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.
- ④ USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- ⑤ PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.
- ⑥ EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.
- (A) STANDARD CONTRACTION JOINT NORMAL TO $\mathcal{C}$ OR $\mathcal{R}$.
- (B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.
- (C) 1 1/2" EXPANSION JOINT WITH DOWEL BARS NORMAL TO $\mathcal{C}$ OR $\mathcal{R}$.



**SECTION D - D
CONTRACTION JOINT**



EXPANSION JOINT DETAIL

CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

6

- S.D.D. 14 B 15-11a**

S.D.D. 14 B 15-11a



S.D.D. 14 B 15-11a



S.D.D. 14 B 15-11a



S.D.D. 14 B 15-11a



S.D.D. 14 B 15-11a



S.D.D. 14 B 15-11a



S.D.D. 14 B 15-11a

S.D.D. 14 B 15-11a



S.D.D. 14 B 15-11a



S.D.D. 14 B 15-11a



S.D.D. 14 B 15-11a



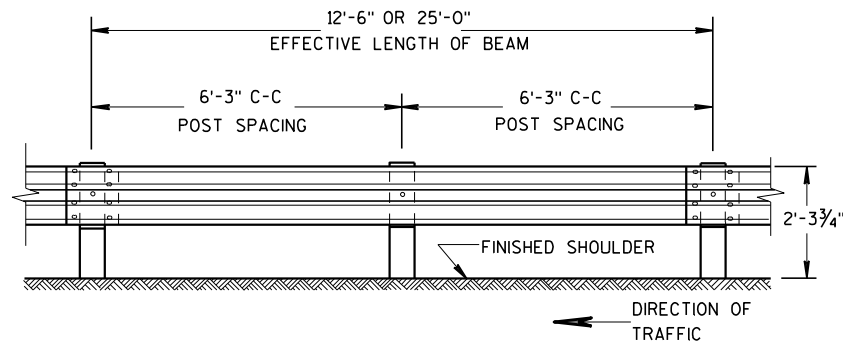
S.D.D. 14 B 15-11a



S.D.D. 14 B 15-11a

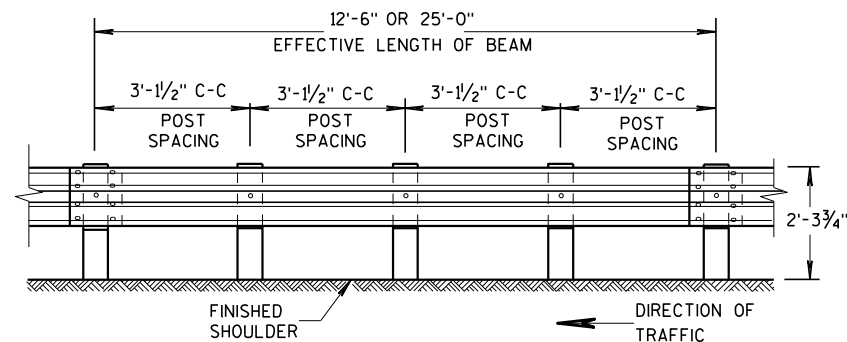
S.D.D. 14 B 15-11a

S.D.D. 14 B 15-11a



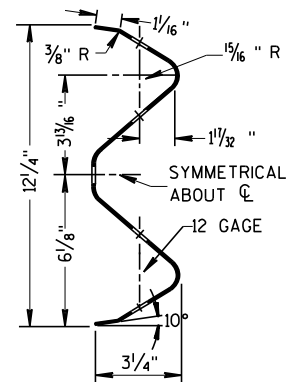
FRONT VIEW

POST SPACING STANDARD INSTALLATION

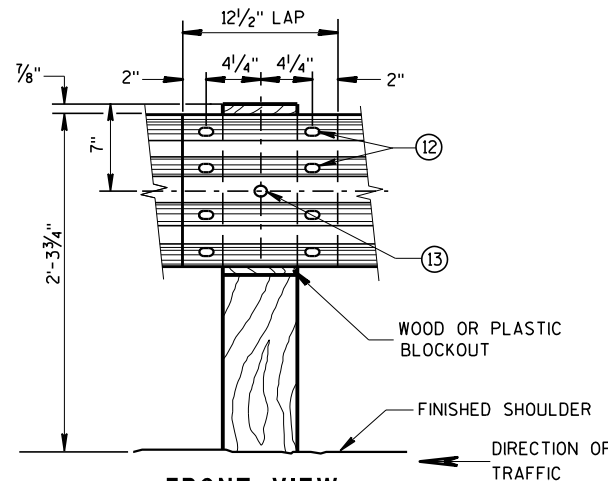


FRONT VIEW

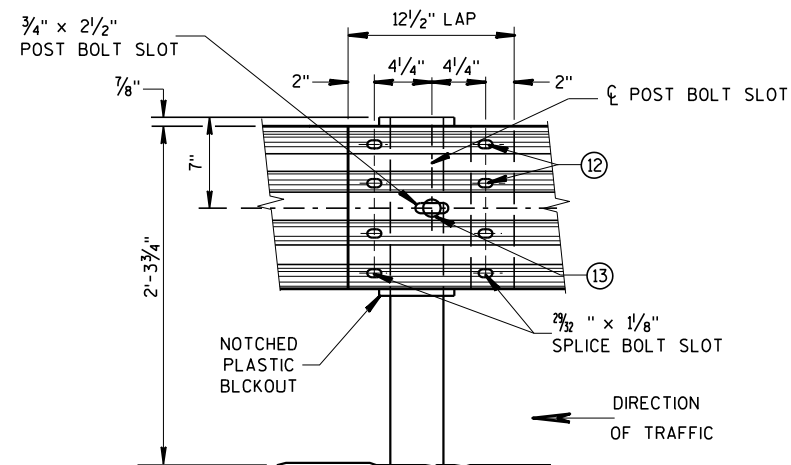
POST SPACING FOR LONGER POST
AT HALF POST SPACING W BEAM (LHW)



SECTION THRU W BEAM



FRONT VIEW
BEAM SPLICE AT WOOD POST
AND POST MOUNTING DETAIL



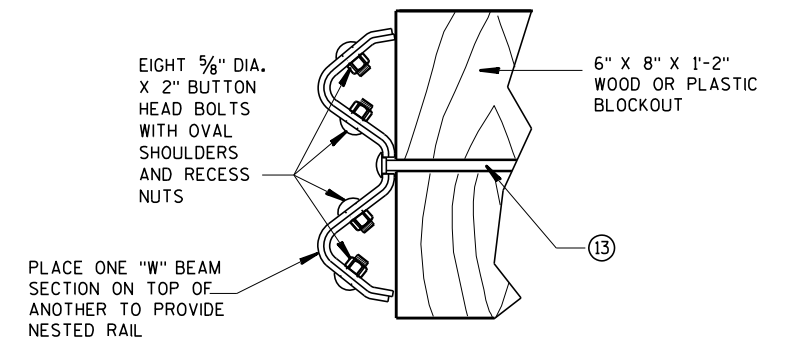
FRONT VIEW
BEAM SPLICE AT STEEL POST

TYPICAL SPLICING DETAILS
OF STEEL PLATE BEAM GUARD

GENERAL NOTES

FURNISH GUARDRAIL DEFLECTORS FROM APPROVED PRODUCTS LIST.

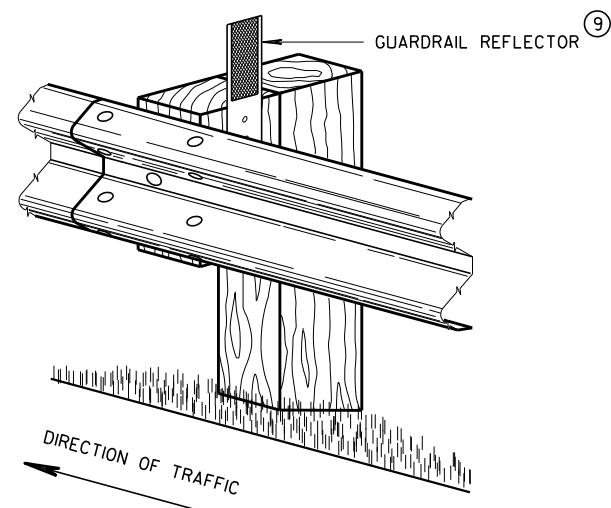
- ⑨ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINA. START REFLECTORS AT POST #9 AND SPACE EVENLY EVERY 100 FEET (MAX.) TO THE END OF GUARDRAIL RUN, USING A MINIMUM OF 3 REFLECTORS.
- ⑫ 8 - 5/8" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
- ⑬ 5/8" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH 5/8" DIA. F844 FLAT WASHER UNDER NUT.



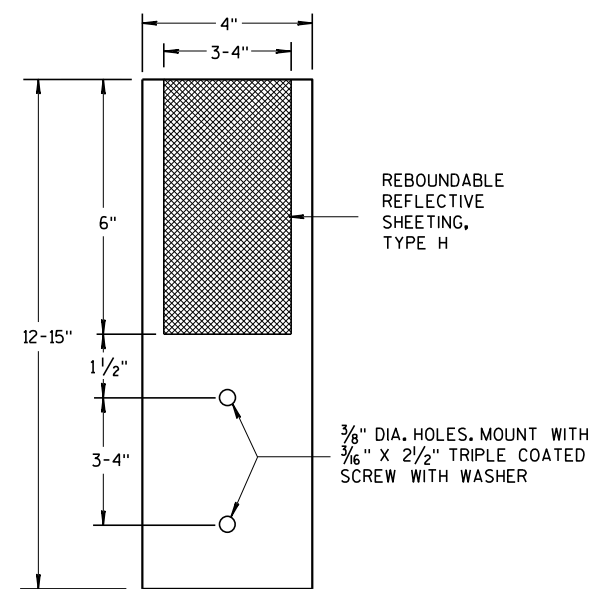
NESTED W BEAM (NW)

USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR
CONSTRUCTING NESTED W BEAM (NW)

* USE DOUBLE SIDED WHITE GUARDRAIL REFLECTORS ON ROADWAYS WITH BI-DIRECTIONAL TRAFFIC (NO MEDIAN). USE SINGLE SIDED WHITE (RIGHT SIDE) AND SINGLE SIDED YELLOW (LEFT SIDE) ON ROADWAYS WITH MEDIAN SEPARATION.



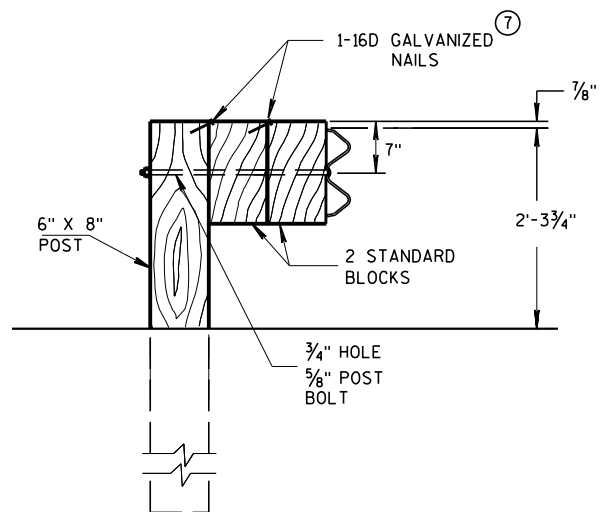
4" X 12" GUARDRAIL REFLECTOR DETAIL
AND TYPICAL INSTALLATION *



4"x 12" GUARDRAIL REFLECTOR

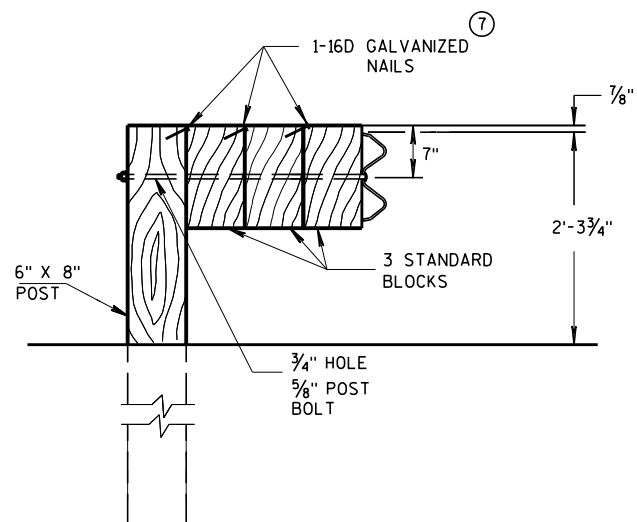
STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR DOUBLE BLOCKS

THE NUMBER OF DOUBLE BLOCK POSTS
WITHIN A BARRIER RUN IS UNLIMITED

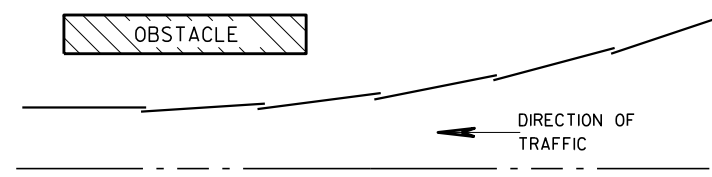


DETAIL FOR TRIPLE BLOCKS

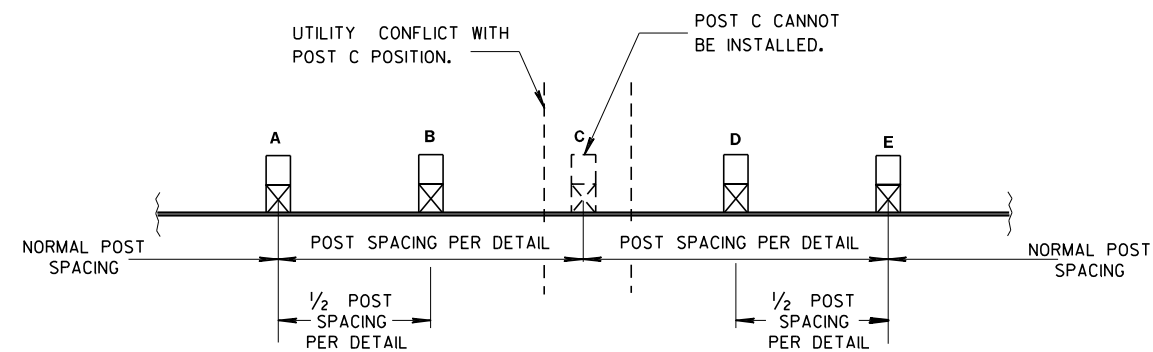
TRIPLE BLOCK DETAIL IS LIMITED TO ONE
LOCATION WITHIN A BEAM GUARD RUN.

NOTES: USE DOUBLE OR TRIPLE BLOCKS WHEN UNDERGROUND OBSTACLES
PREVENT THE POST FROM BEING INSTALLED.

DO NOT USE EXTRA 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.



PLAN VIEW BEAM LAPPING DETAIL

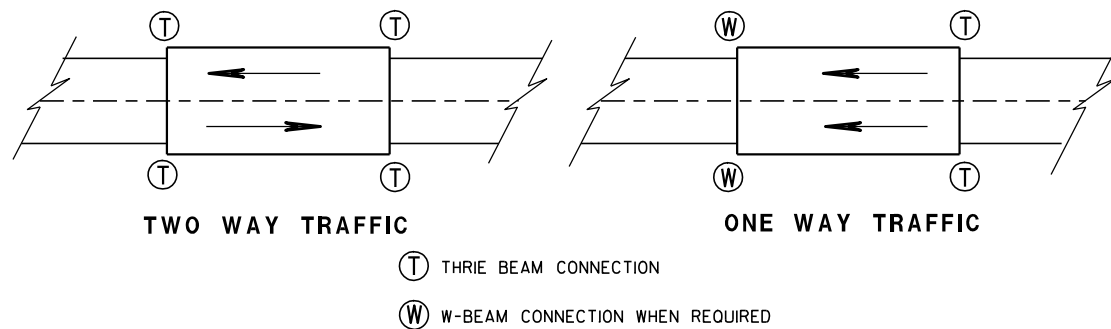
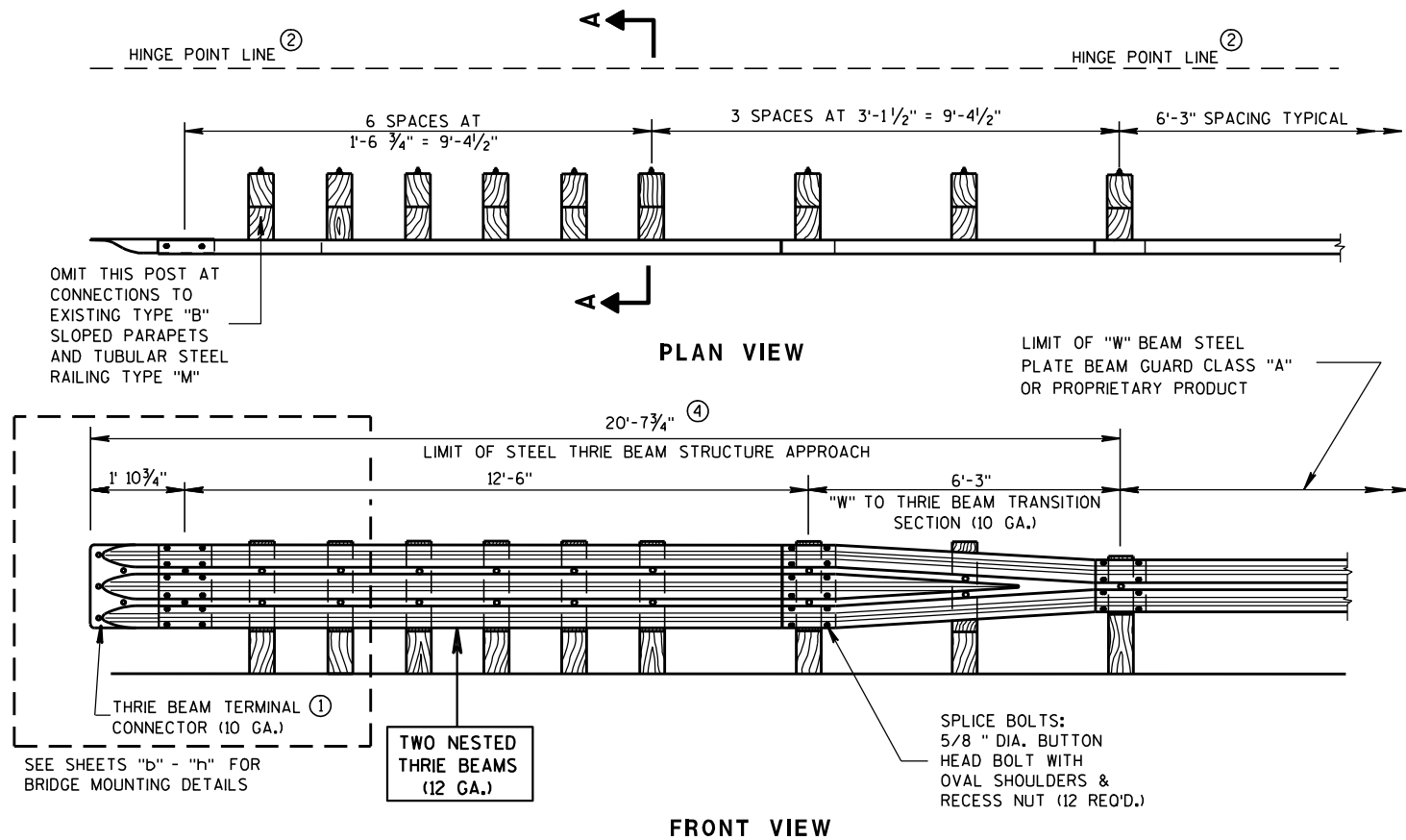


POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

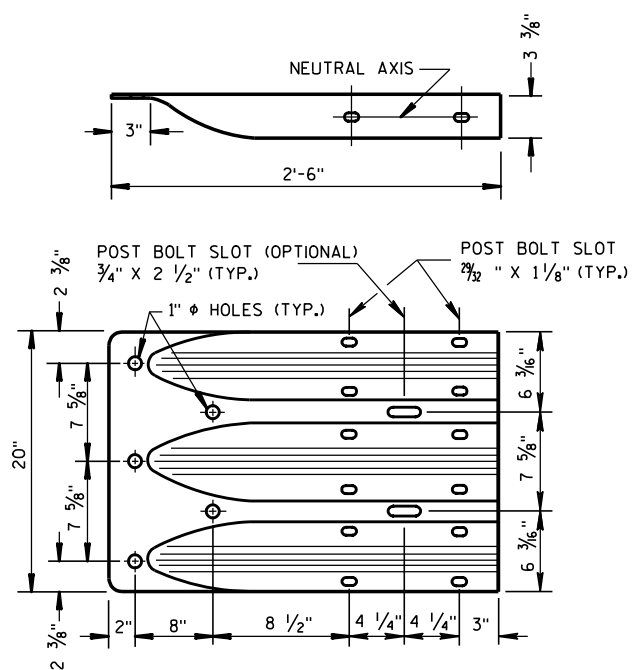
STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

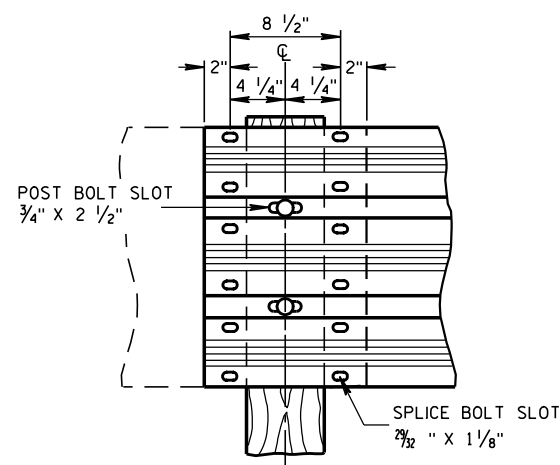
APPROVED	/S/ Rodney Taylor
June 2017	DATE
	ROADWAY STANDARDS DEVELOPMENT
	UNIT SUPERVISOR
FHWA	



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



THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE

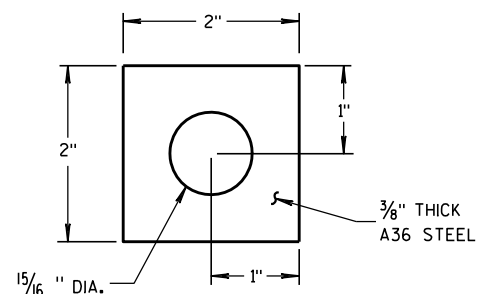
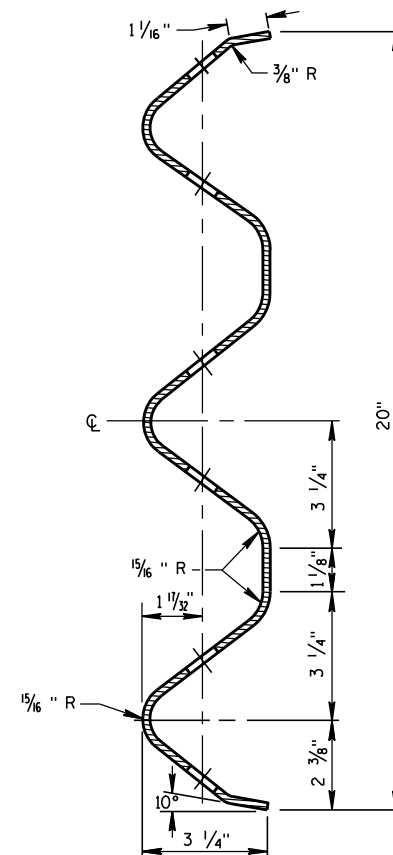


PLATE WASHER DETAIL



SECTION THRU THRIE BEAM RAIL ELEMENT

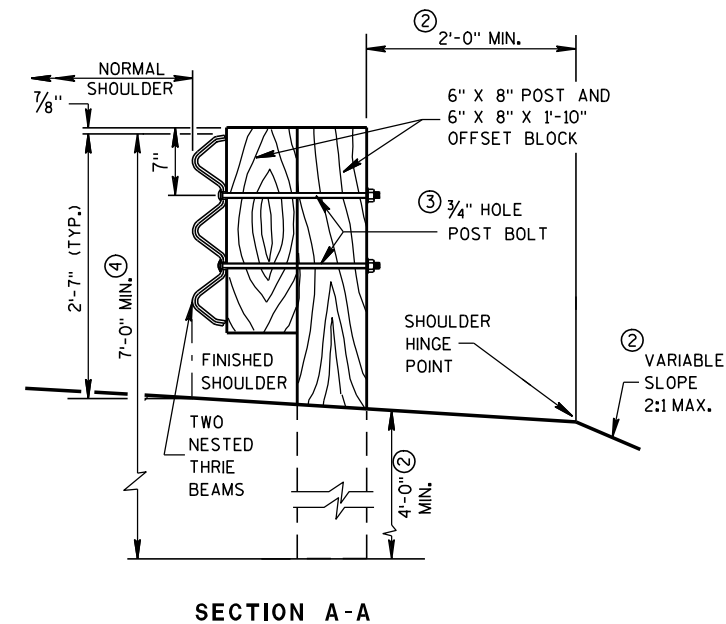
GENERAL NOTES

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

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.

IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B15 FOR MORE DETAILS.

- ① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.
- ② MINIMUM EMBEDMENT SHALL BE 4'-0". WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK SHOWN ON THE PLAN TYPICAL SECTIONS OR DETAILS, THE ENGINEER MAY ALLOW THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. OTHERWISE BUILD AS THE PLAN SHOWS OR AS THE ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST EMBEDMENT DEPTH TO 4'-6" OR MORE.
- ③ POST BOLTS ARE 5/8" DIAMETER ASTM A307 BUTTON HEAD BOLT. A POST BOLT REQUIRES A 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX AND A 5/8" DIAMETER F844 FLAT WASHER. LENGTH OF POST BOLT MAY VARY.
- ④ ALL WOOD POSTS MUST BE 6" X 8" AND AT LEAST 7'-0" LONG.



STEEL THRIE BEAM STRUCTURE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012

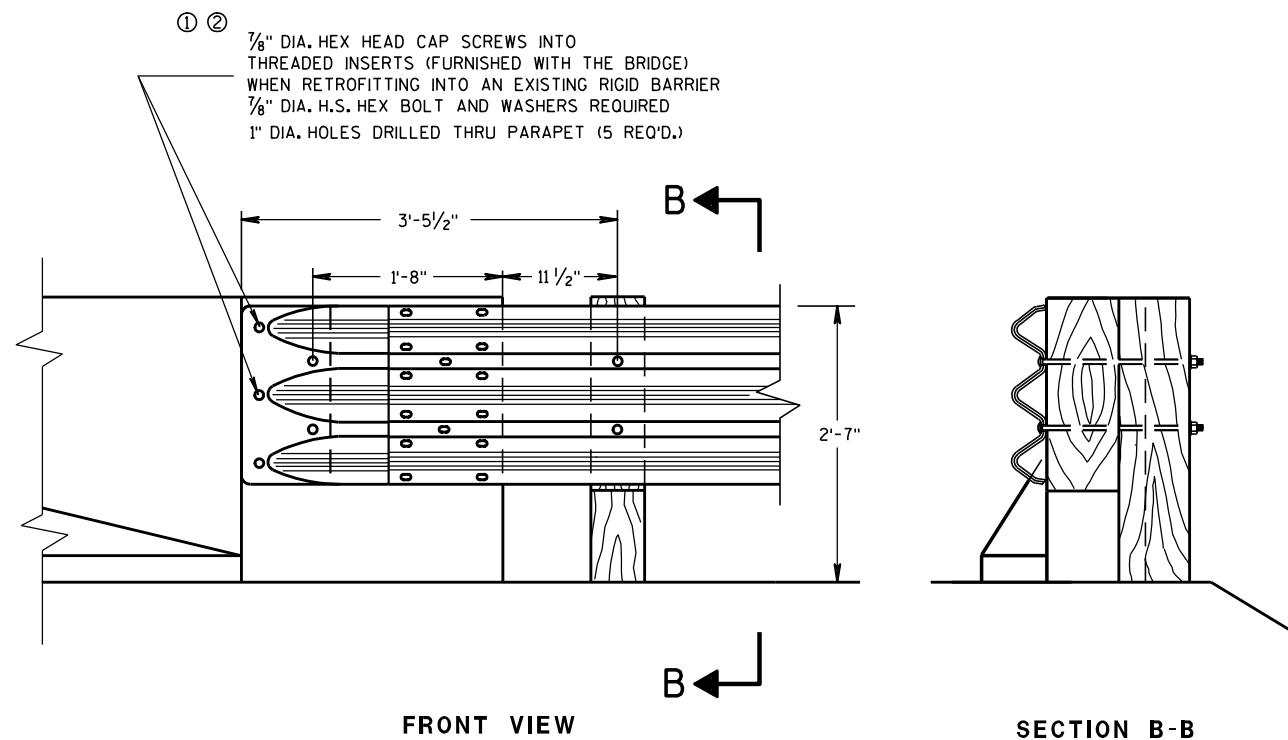
DATE

FHWA

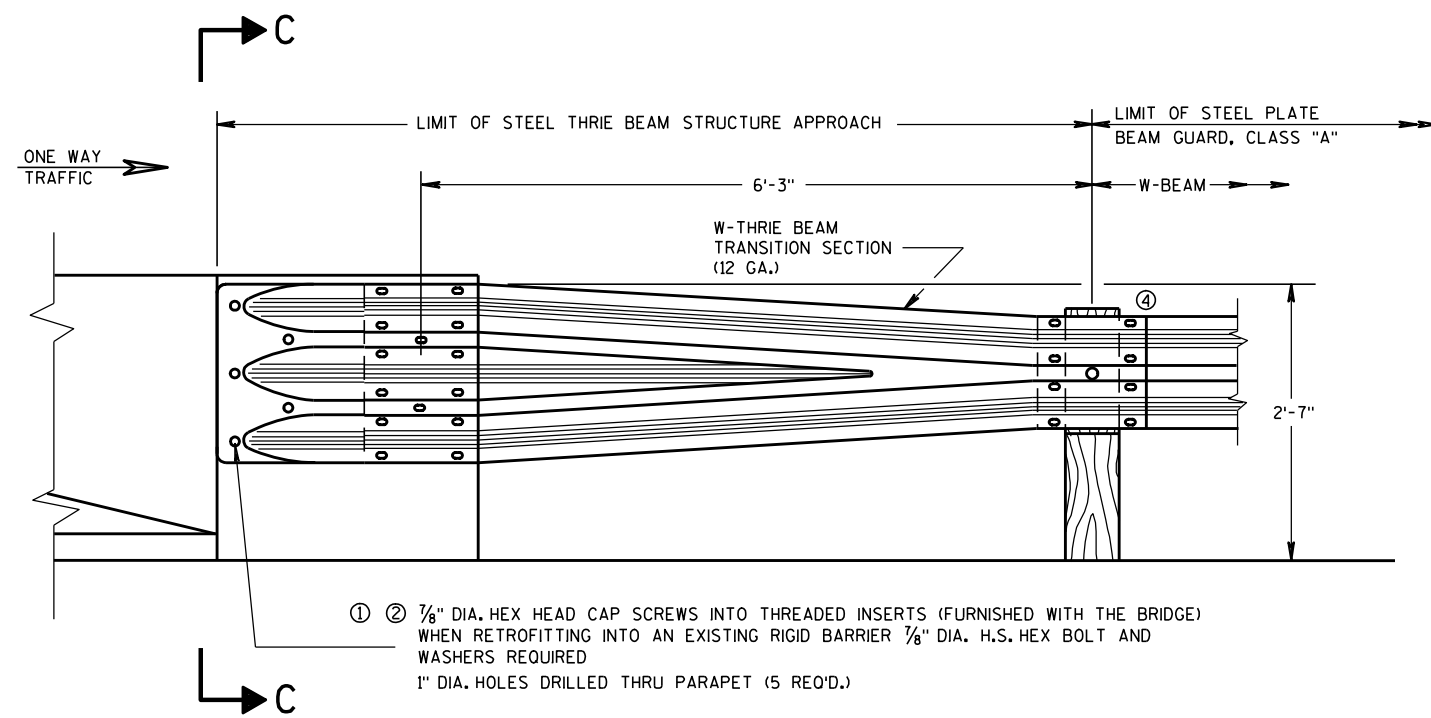
/s/ Jerry H. Zogg

ROADWAY STANDARDS DEVELOPMENT

ENGINEER



THRIE BEAM CONNECTION TO BRIDGE
PARAPET WITH SQUARE ENDS



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

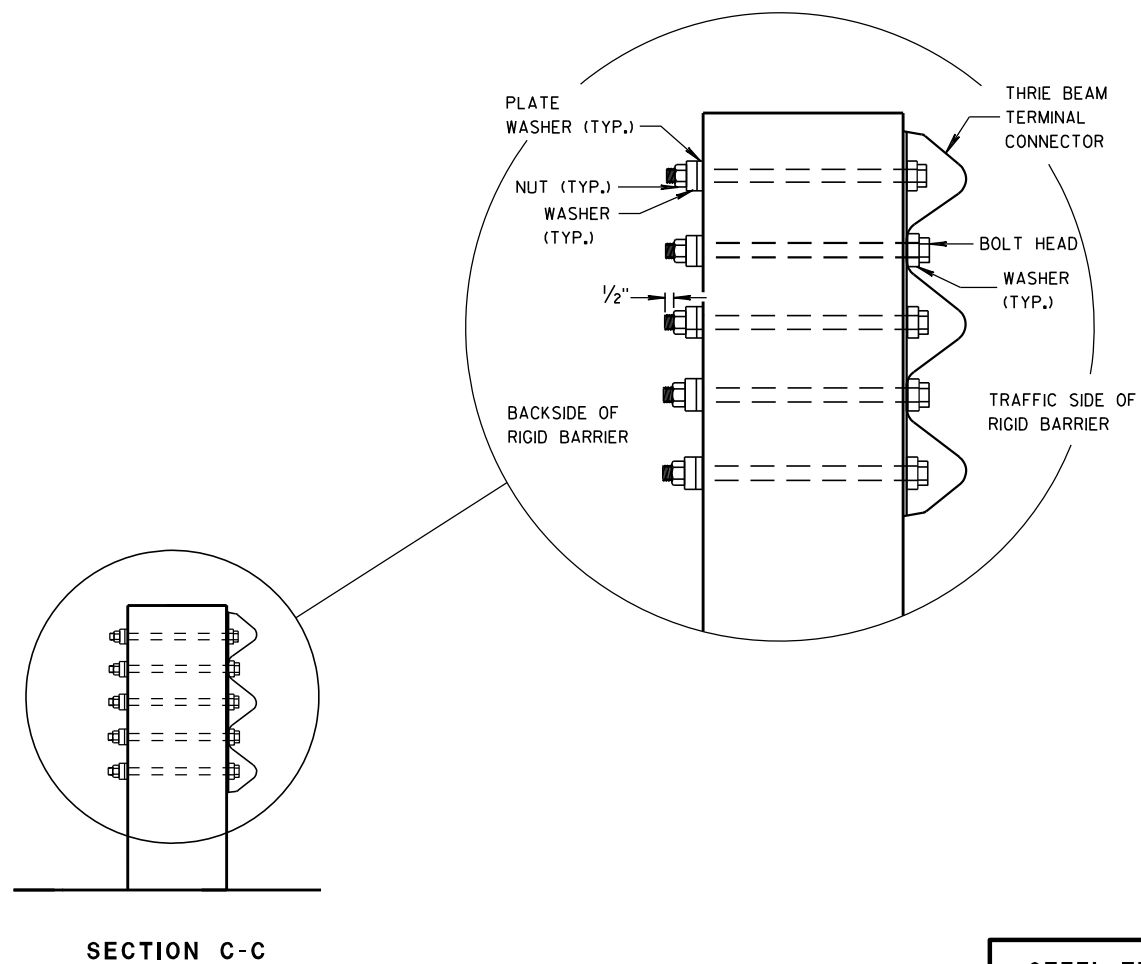
GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSITION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A325, A449 AND GALVANIZED PER STANDARD SPECIFICATIONS 614.

- ① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM TERMINAL CONNECTOR. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".
- ④ W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POST WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.



STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END PARAPETS

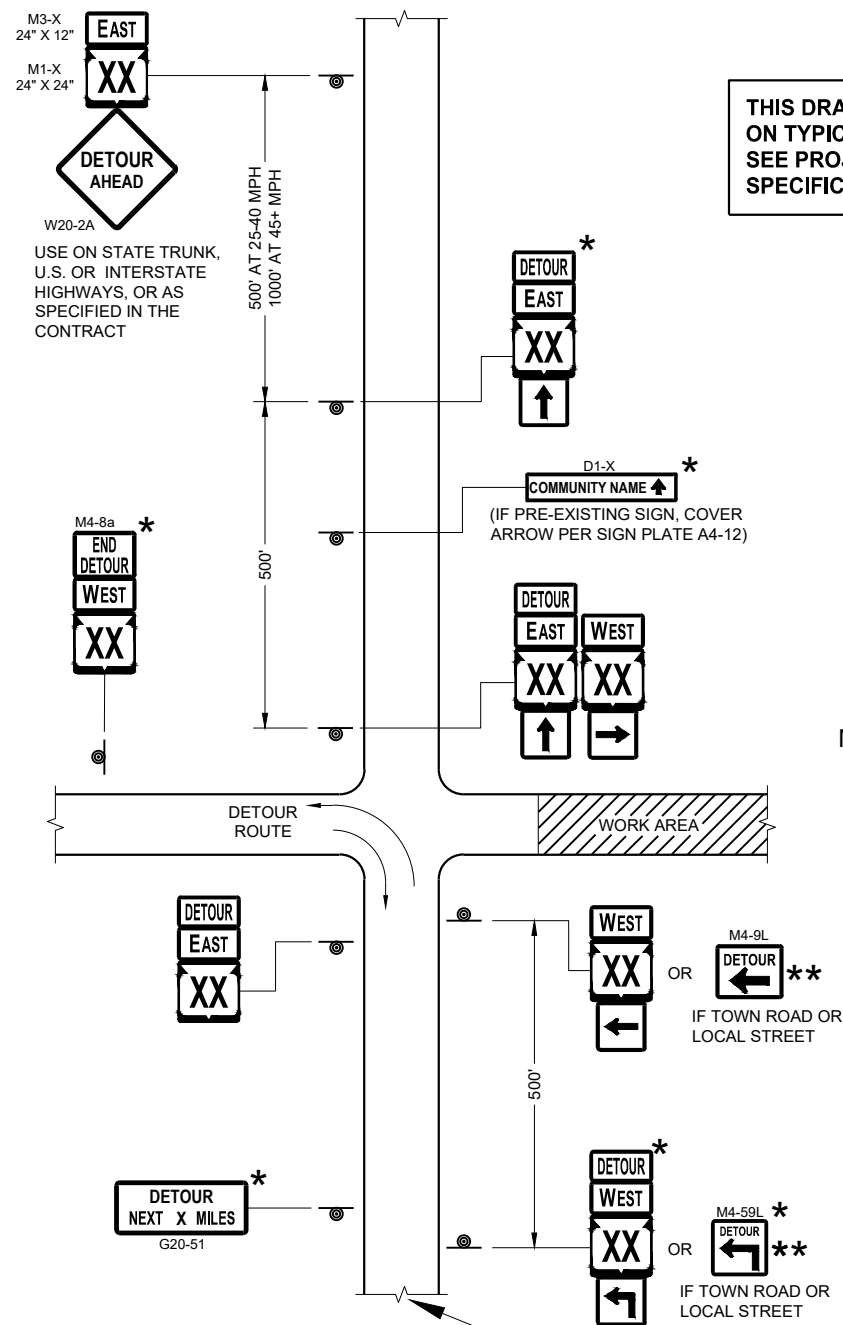
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012
DATE

FHWA

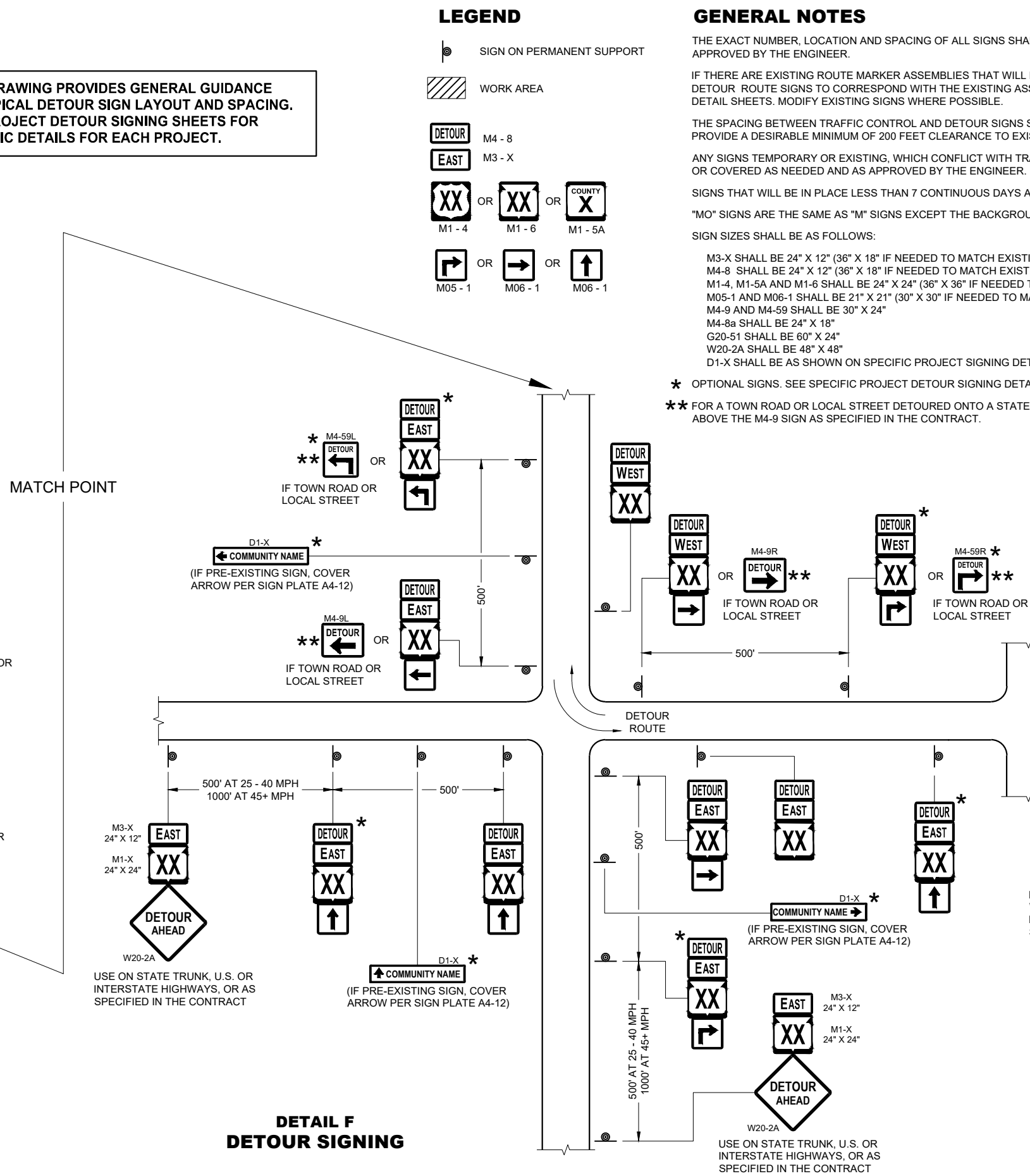
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



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

SEE SPECIFIC PROJECT DETOUR
SIGNING DETAIL SHEETS AND
DETAIL A OR B ON SDD SHEET 15C02 - SHEET "a"

SDD 15C02 - 08c



DETAIL F DETOUR SIGNING

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" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
M4-9 AND M4-59 SHALL BE 30" X 24"
M4-8a SHALL BE 24" X 18"
G20-51 SHALL BE 60" X 24"
W20-2A SHALL BE 48" X 48"
D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

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

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

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

DETOUR SIGNING FOR MAINLINE CLOSURES

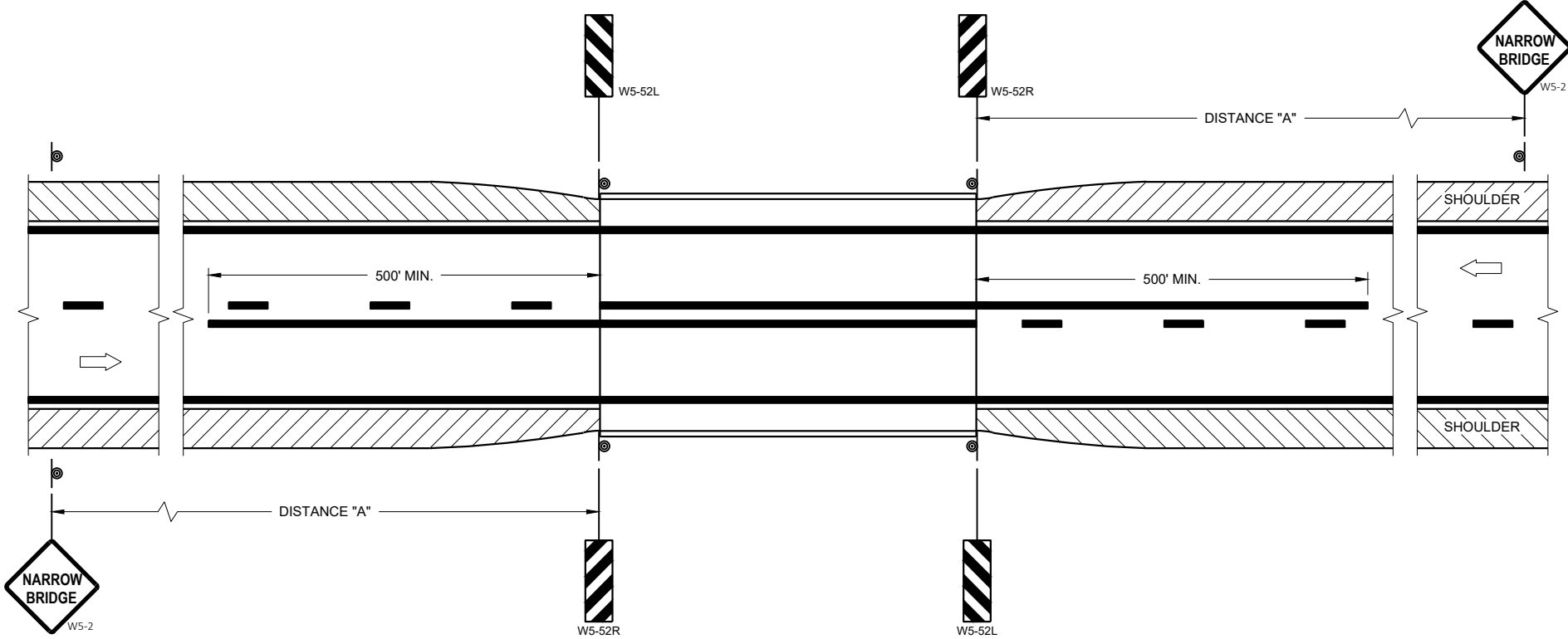
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020
DATE

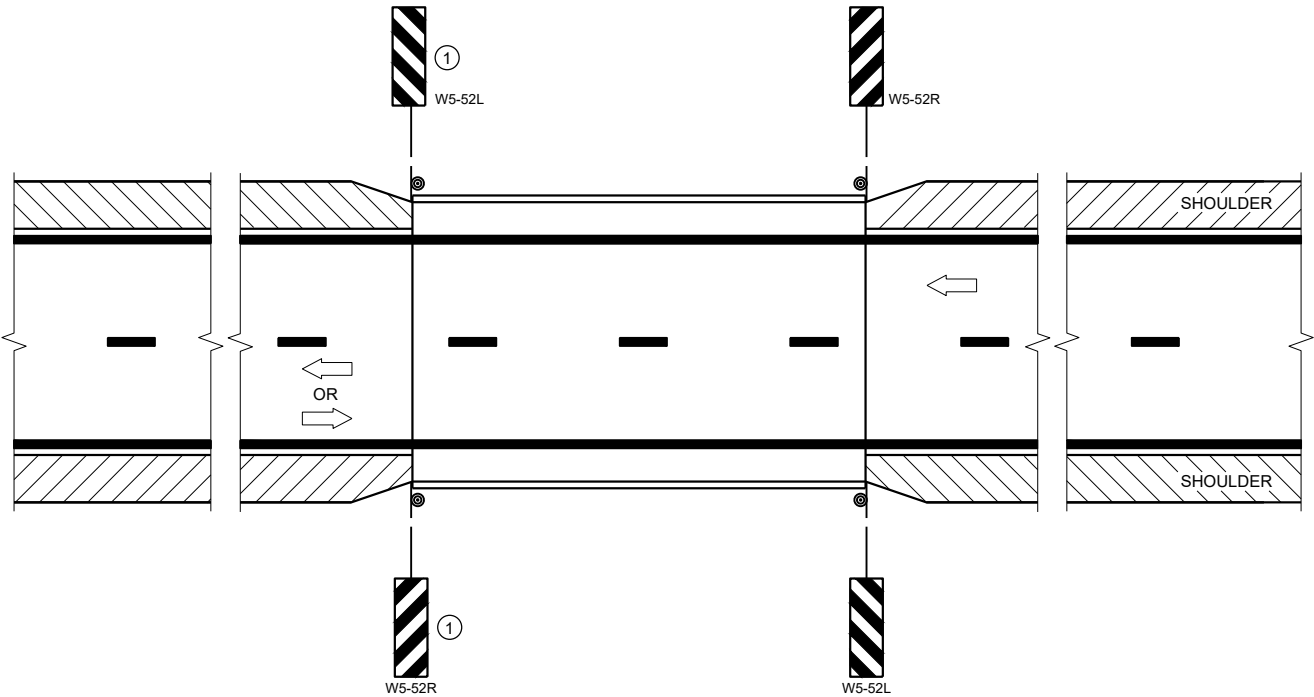
/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

SDD15C02 - 08c



SITUATION 1
WARRANTING CRITERIA:
BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET.



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

GENERAL NOTES

- DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THE DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- LOCATE W5-52 SIGN POST(S) BEHIND GUARDRAIL WHEN PRESENT.
- PLACE THE EDGE OF THE W5-52 SIGN IN LINE WITH FACE OF CURB OR PARAPET.
- ON BRIDGE ONLY PROJECTS, PLACE 300 FEET OF EDGELINE.
- OMIT EDGELINES ON ROADWAYS WITHOUT EXISTING EDGELINES.
- ① OMIT ON ONE-WAY TRAVELED WAYS.

LEGEND

- ⦿ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC

DISTANCE TABLE

POSTED OR 85TH PERCENTILE SPEED	DISTANCE "A"
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	700'

**SIGNING AND MARKING
FOR TWO LANE BRIDGES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022 /S/ Jeannie Silver
DATE STATE SIGNING AND MARKING
ENGINEER
FHWA



PERMANENT PAVEMENT MARKING

GENERAL NOTES

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

- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

-
- Diagram illustrating the dimensions and components of a 4" WHITE tape:
- 1 1/2" BLACK CONTRAST (Top and Bottom)
 - 1/2" MAX. GROOVE (Between Contrast and White)
 - 4" WHITE (Main Body)
 - 1/2" MAX. GROOVE (Between White and Contrast)
 - JOINT LINE (Indicated by a dashed line)

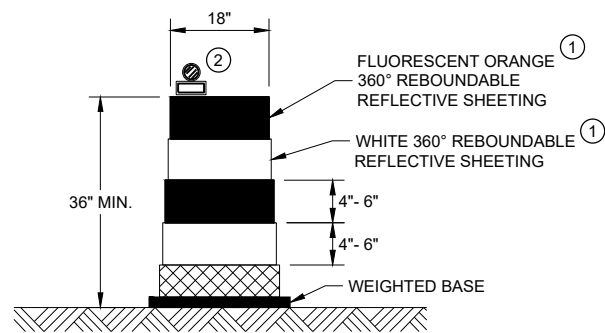
PERMANENT LONGITUDINAL PAVEMENT MARKINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

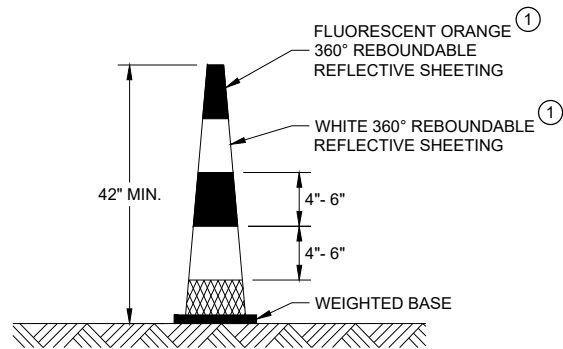
APPROVED
May 2022
DATE

/S/ Jeannie Silver
STATEWIDE SIGNING AND MARKING
ENGINEER

CHIMA

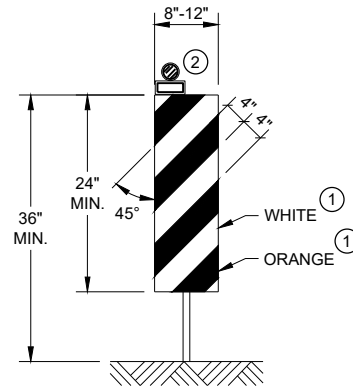


DRUM



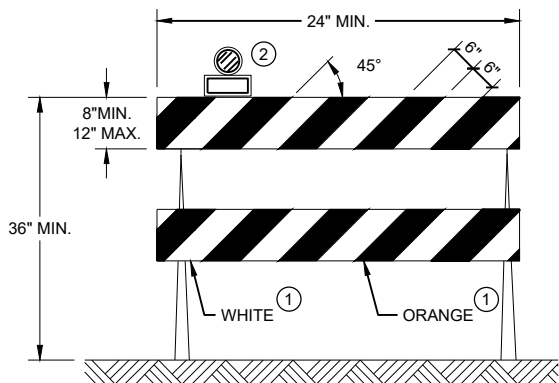
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



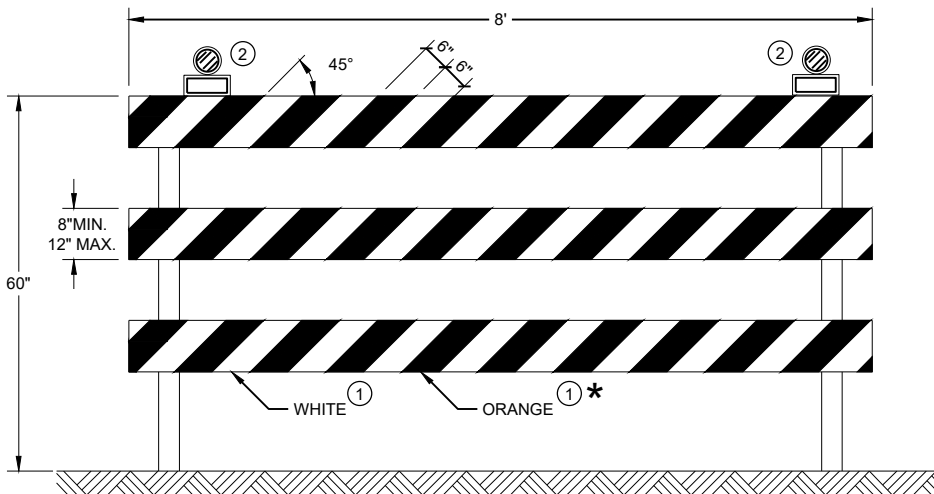
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

GENERAL NOTES

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

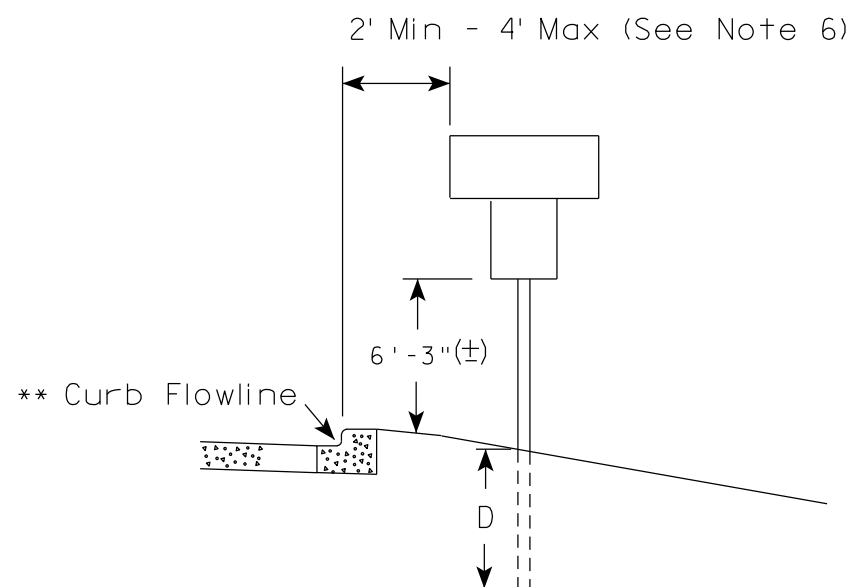
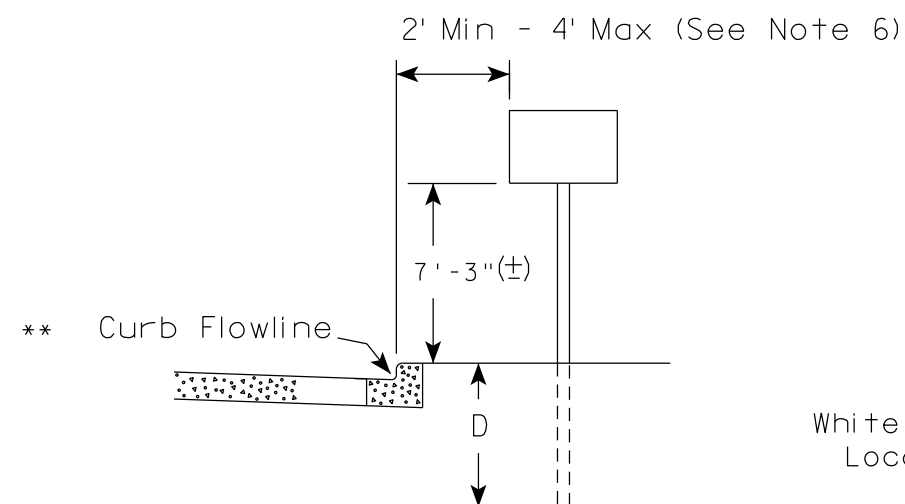
CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

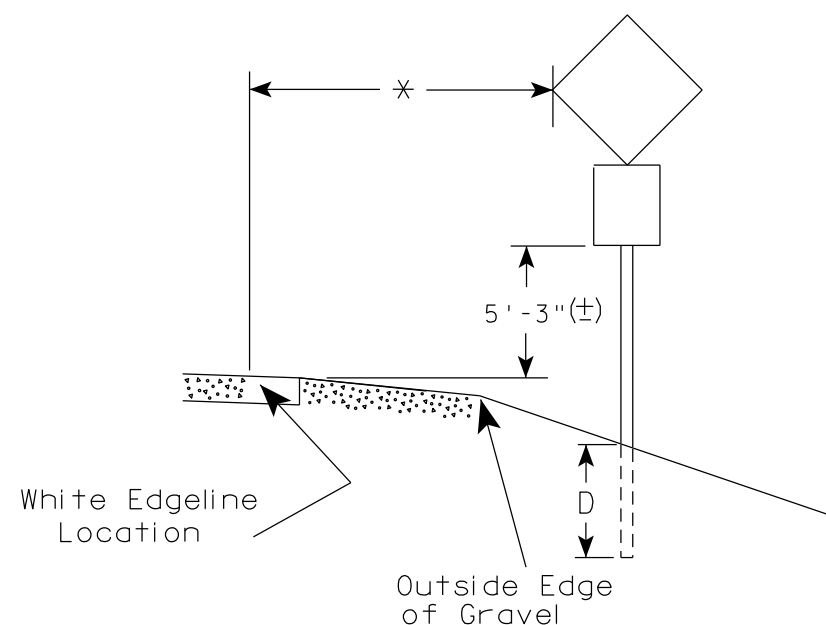
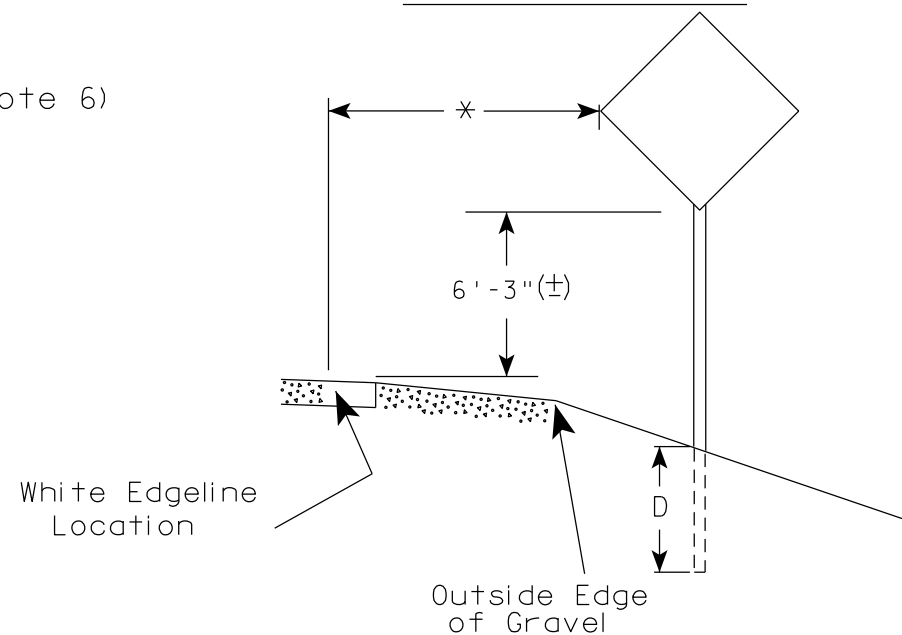
FHWA

URBAN AREA



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

RURAL AREA (See Note 2)



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

POST EMBEDMENT DEPTH

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

GENERAL NOTES

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

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

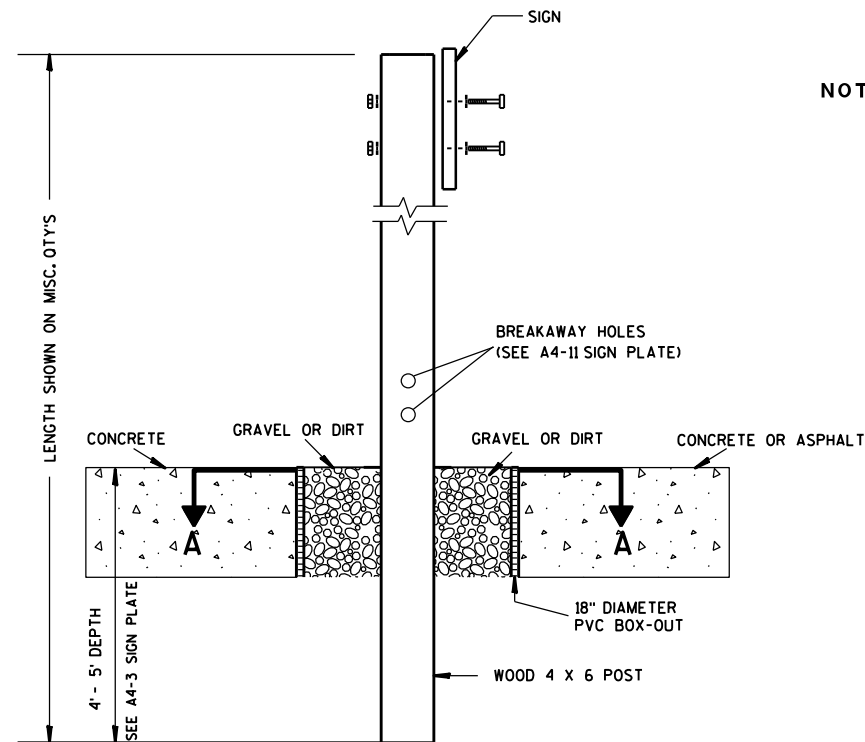
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

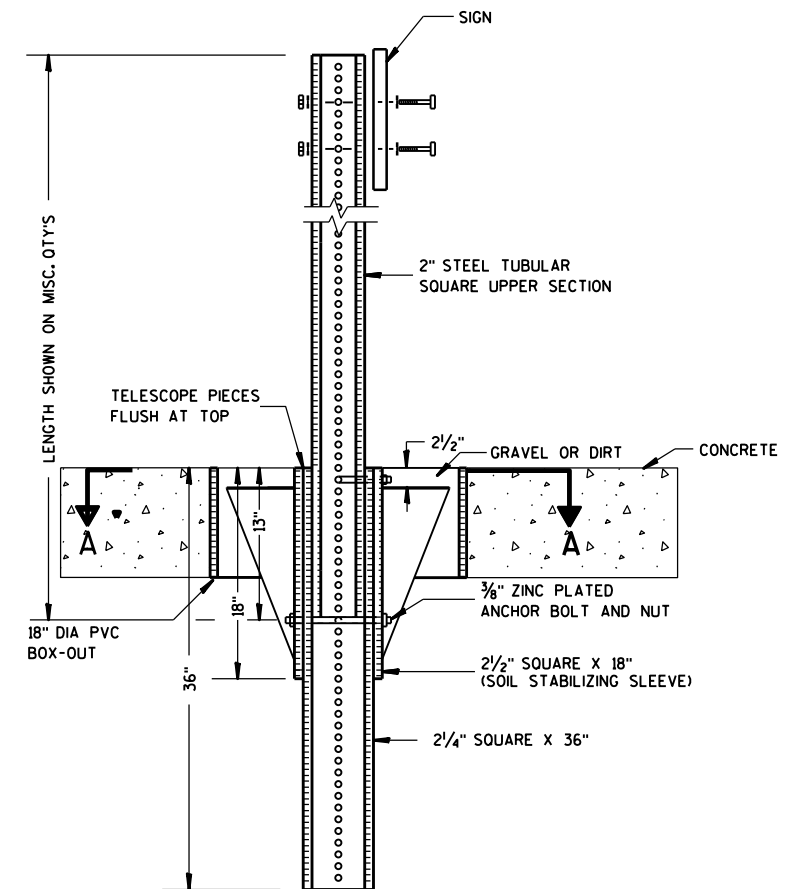
E



ELEVATION VIEW

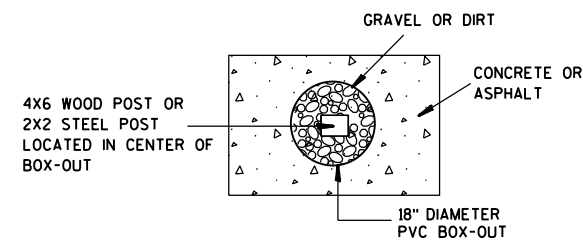
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

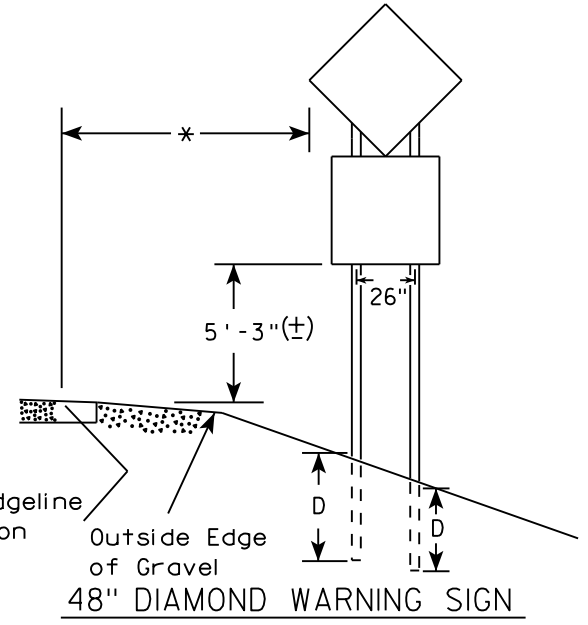
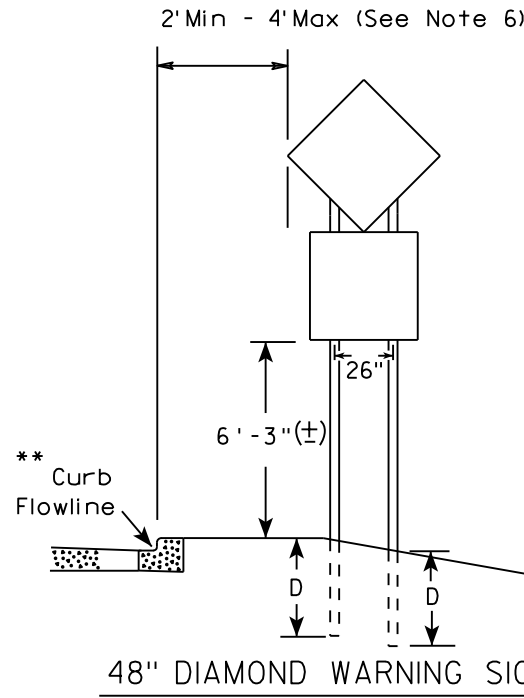
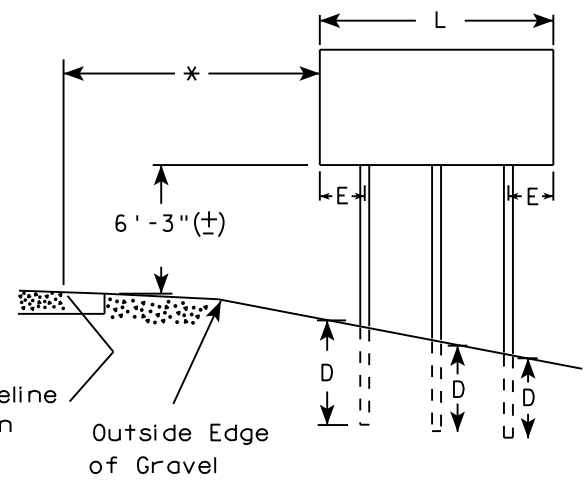
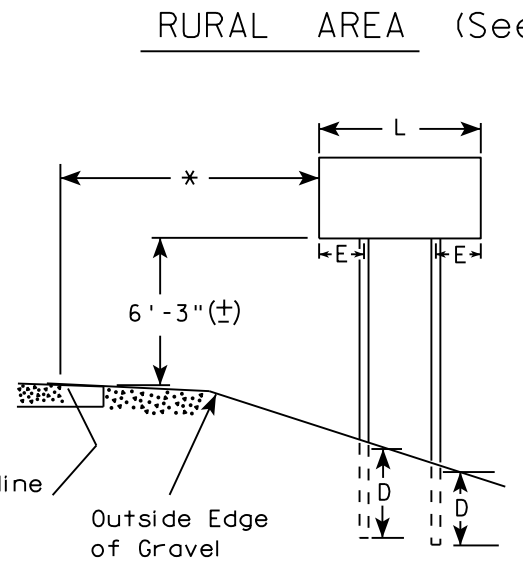
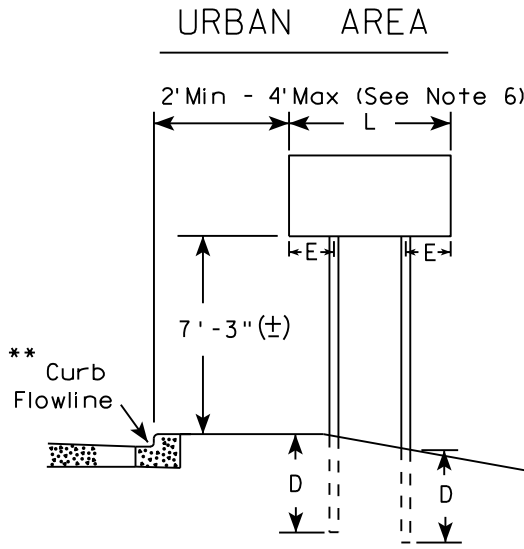
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



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

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

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

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

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

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

POST EMBEDMENT DEPTH

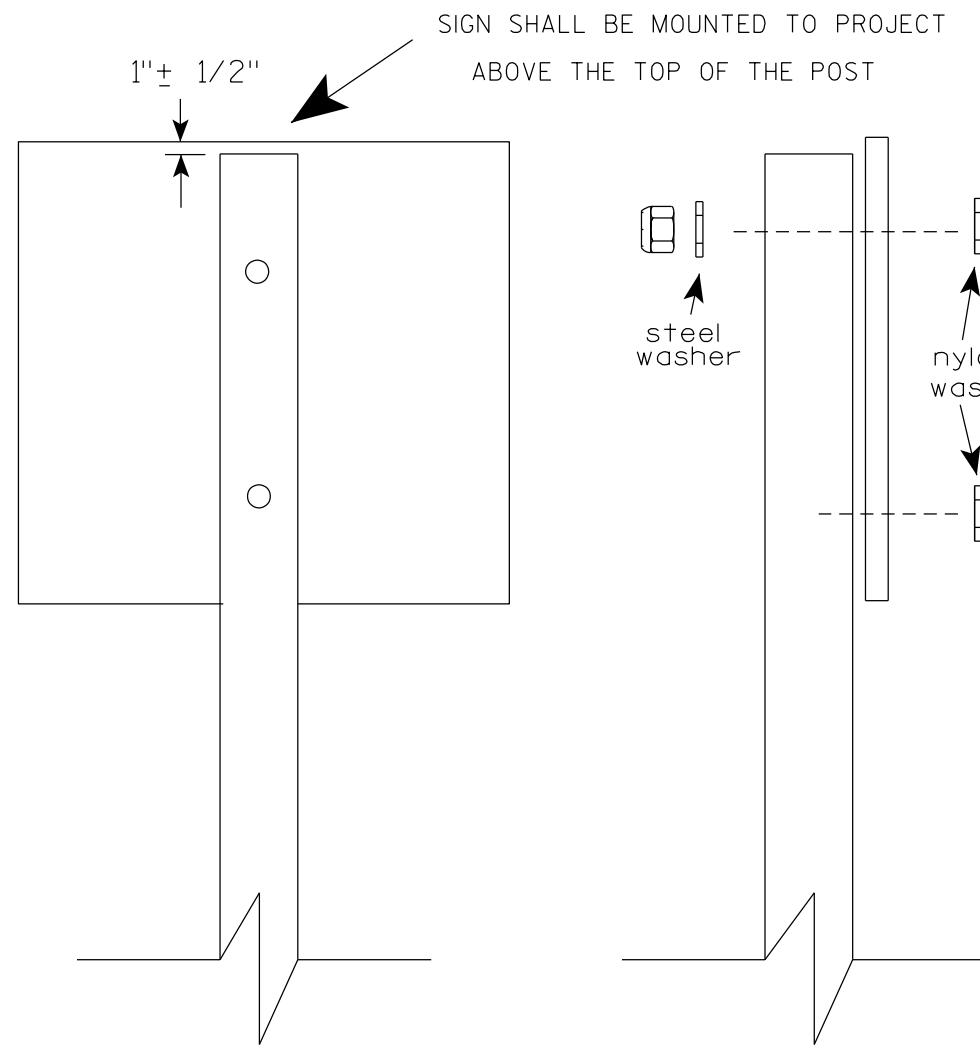
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



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

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

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

- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS - $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)
 $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - $\frac{3}{8}$ " X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
 $\frac{3}{8}$ " X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS - $\frac{9}{32}$ " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
 - 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON

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

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 4/1/2020	PLATE NO. A4-8.9

**2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH**

4" x 10" x 10 GA. ———→
STEEL PLATE (CUT
AS SHOWN) WELDED
TO ALL FOUR CORNERS
OF TELESPAR TUBE

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

2 1/2" TELES PAR TUBE

4"

2 1/2"

10"

3 1/2"

16"

4" x 10" x 10 GA. STEEL PLATE (CUT AS SHOWN) WELDED TO ALL FOUR CORNERS OF TELES PAR TUBE

LENGTH SHOWN ON MISC. QTY'S

TELESCOPE PIECES FLUSH AT TOP

18" DIA SCHEDULE 40 PVC BOX-OUT

36"

18"

13"

2 1/2"

2 1/4" SQUARE X 36"

2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)

3/8" ZINC PLATED ANCHOR BOLT AND NUT

2 1/2" GRAVEL OR DIRT

2" STEEL TUBULAR SQUARE UPPER SECTION

ALL HOLES 7/16" SPACED 1" C-C ALL FOUR SIDES

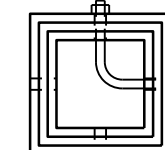
SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL

SIGN

TECHNICAL DRAWING OF A SIGNPOST ASSEMBLY:

- Dimensions:**
 - Overall height: LENGTH SHOWN ON MISC. QTY'S
 - Section 1 height: 36"
 - Section 2 height: 18"
 - Section 3 height: 12"
- Components and Labels:**
 - SIGN
 - SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL
 - 2" STEEL TUBULAR SQUARE UPPER SECTION
 - ALL HOLES $\frac{7}{16}$ " SPACED 1" C-C
 - ALL FOUR SIDES
 - $\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT
 - TELESCOPE PIECES FLUSH AT TOP
 - $\frac{3}{8}$ " ZINC PLATED ANCHOR BOLT AND NUT
 - 2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)
 - 2 1/4" SQUARE X 36"

3/8" ZINC PLATED CORNER
ANCHOR BOLT AND NUT



DIRECTION
OF TRAFFIC

SECTION A-A

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

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

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R. Rauch

for State Traffic Engineer

DATE 2/05/15 PLATE NO. A4-9.9

PROJECT NO:

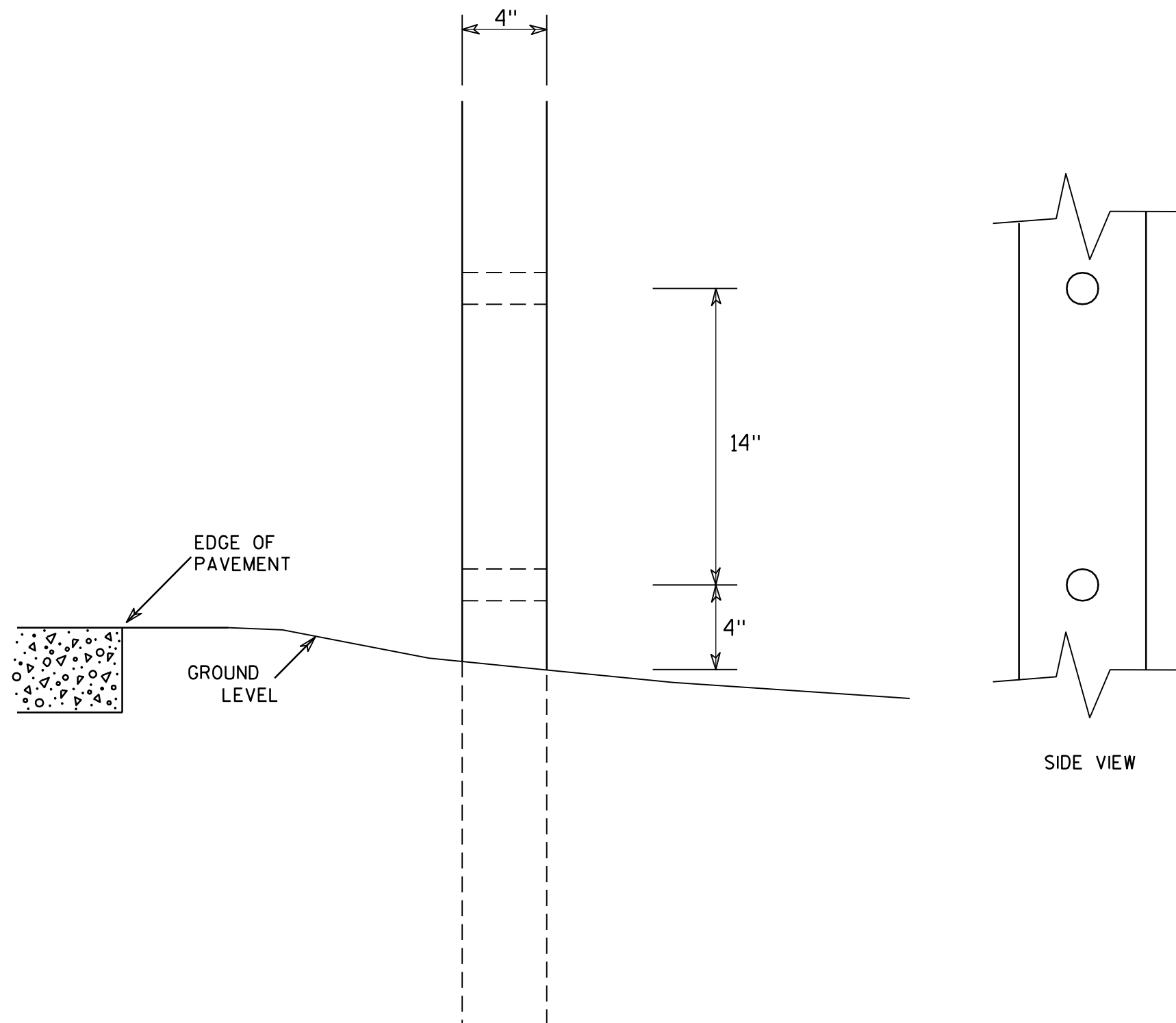
HWY:

COUNTY:

SHEET NO:

T

7



GENERAL NOTES

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

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

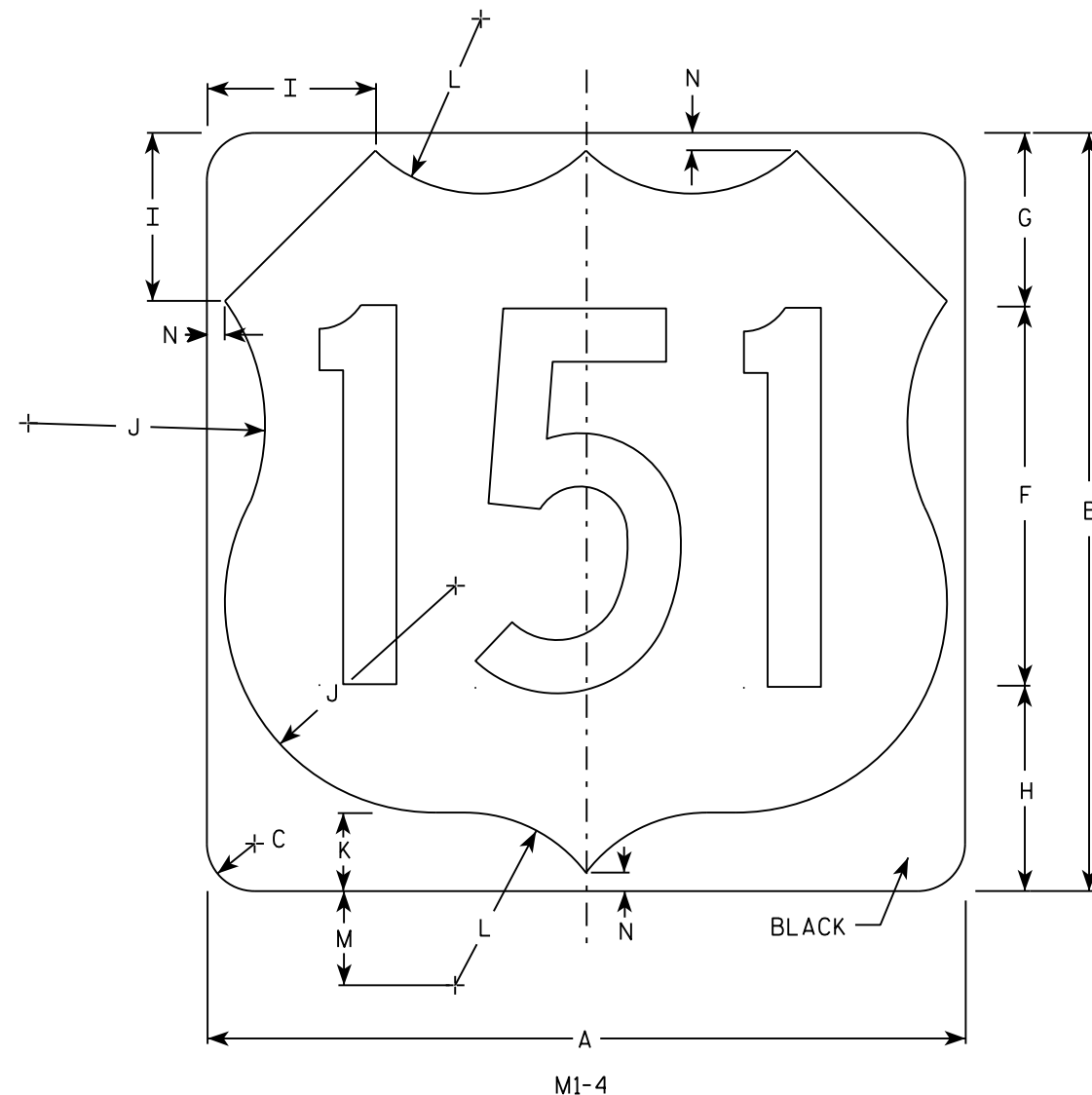
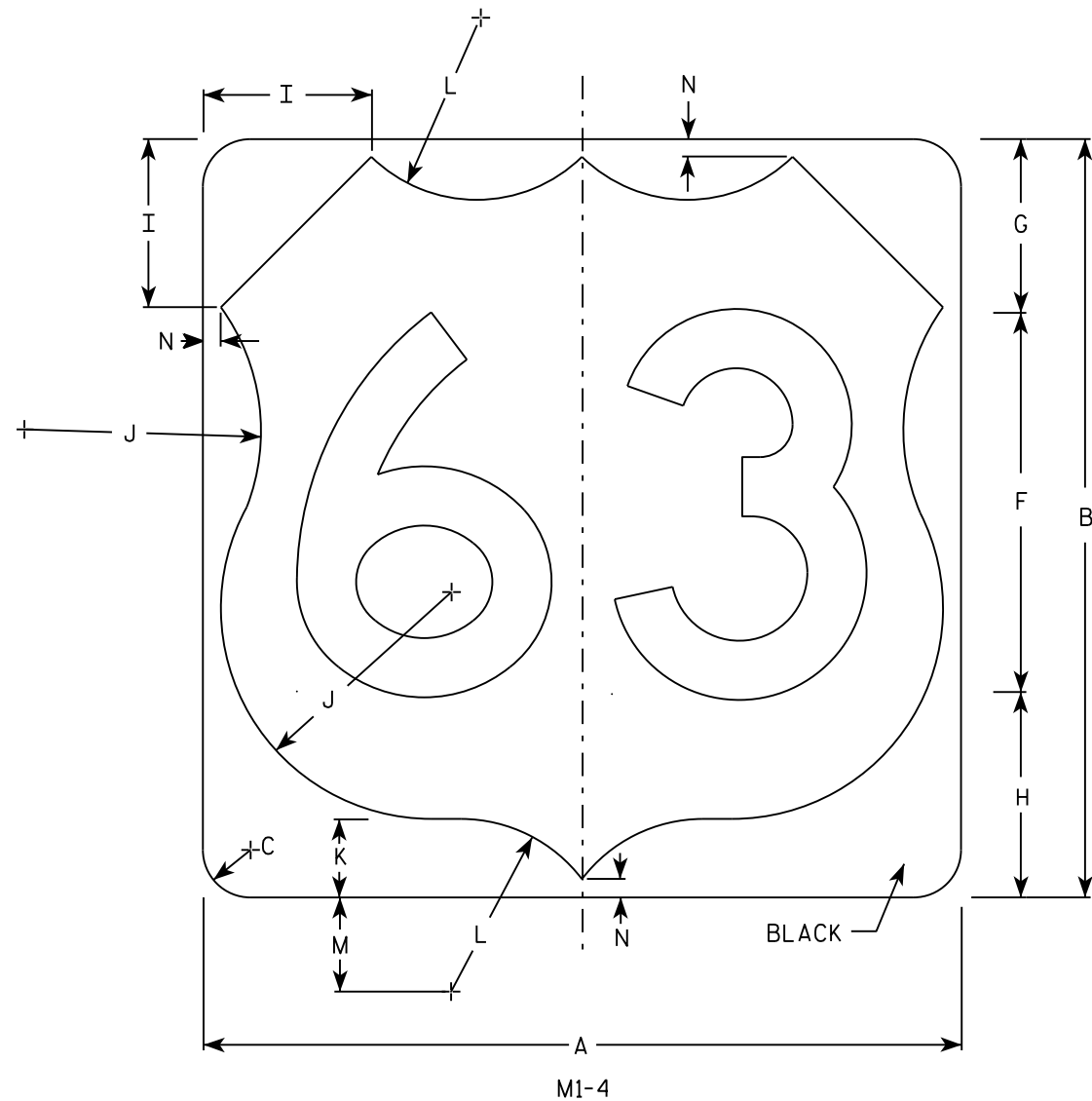
COUNTY:

SHEET NO:

E

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - D except 3 number signs 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	Areq. sq. ft.
1																											
2	24	24	1 1/2			12	5 1/2	6 1/2	5	7 1/2	2 1/2	5 1/2	3	1/2													4.0
3	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0
4	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0
5	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E
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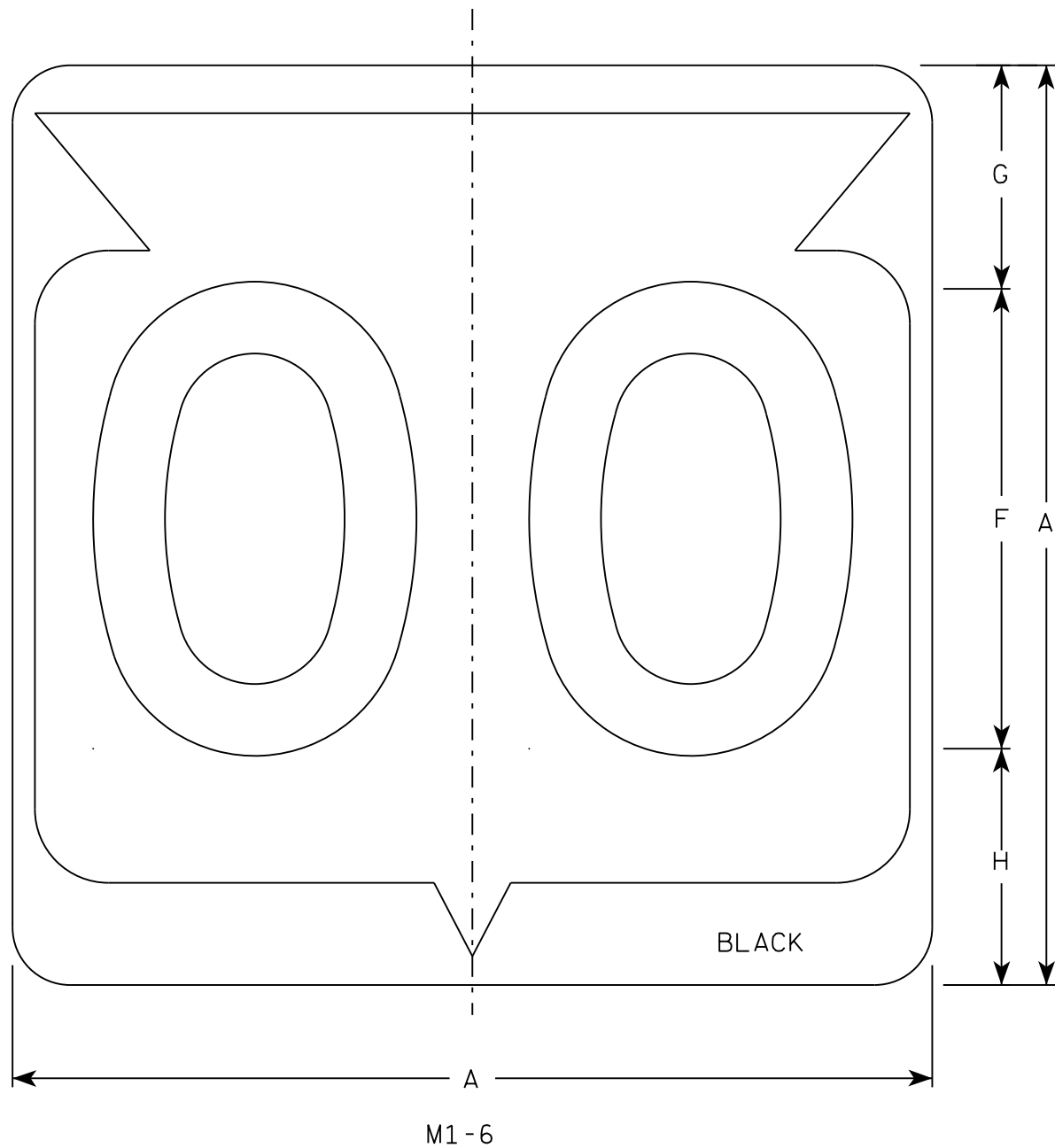
USH MARKER
M1-4 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

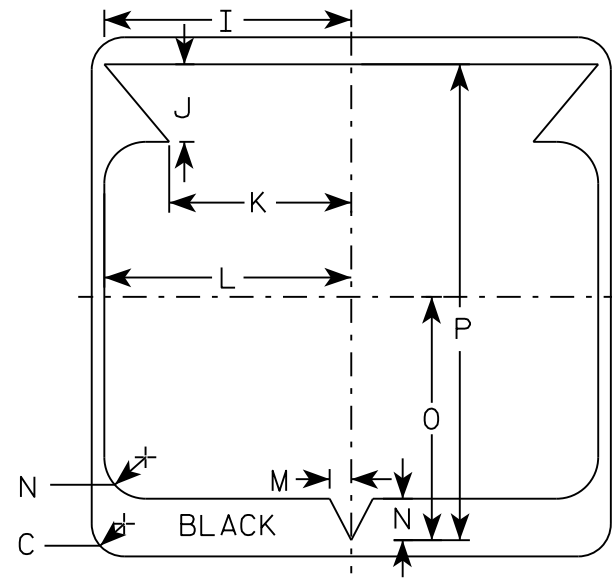
DATE 3/16/18 PLATE NO. M1-4.10

7



NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - White
Message - Black
- 3. Message Series - D except 3 number signs 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.



7

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

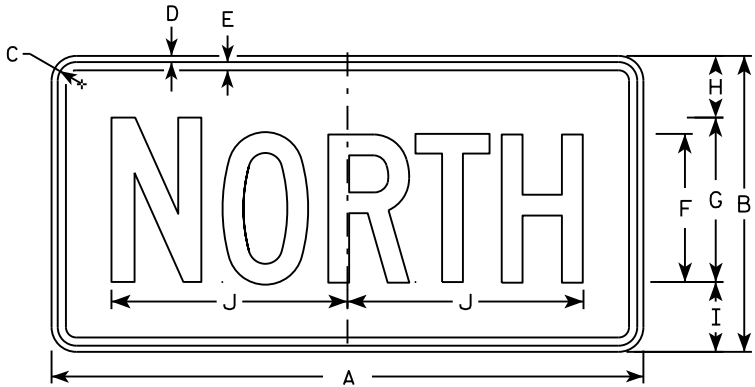
STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

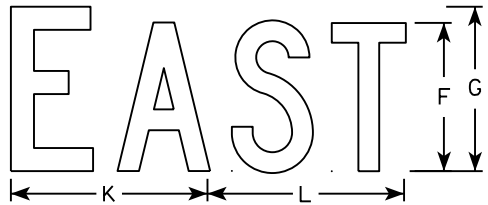
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/16/18 PLATE NO. M1-6.10

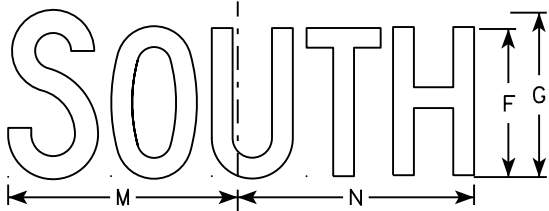
SHEET NO: E



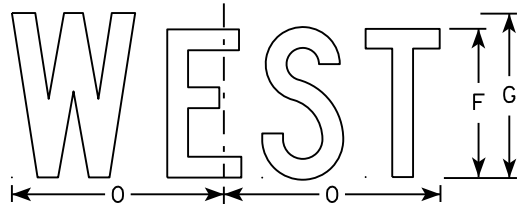
M3-1
MM3-1
MP3-1



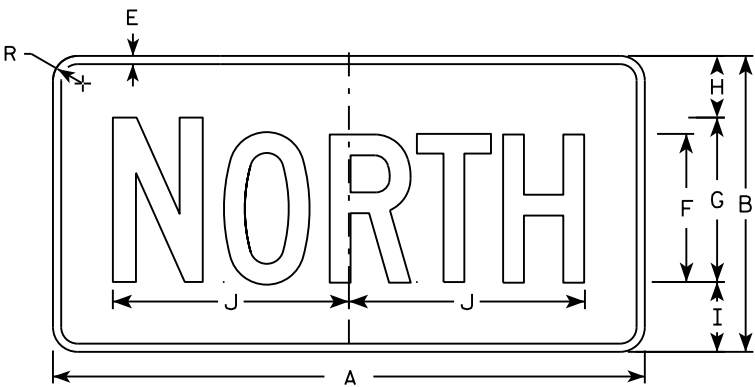
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MM3-2
MP3-2



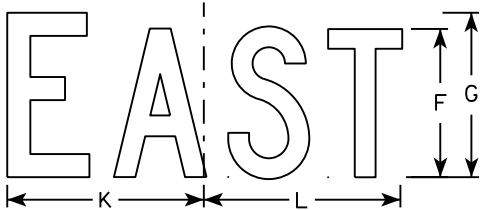
M3-3
MM3-3
MP3-3



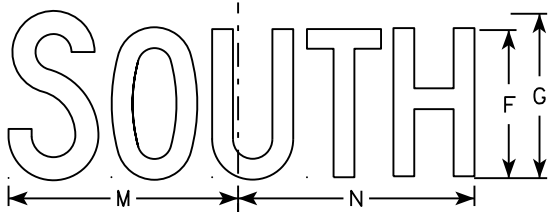
M3-4
MM3-4
MP3-4



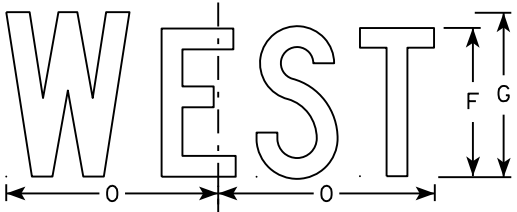
MB3-1
MK3-1
MN3-1



MB3-2
MK3-2
MN3-2



MB3-3
MK3-3
MN3-3



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 thru M3-4
SERIES

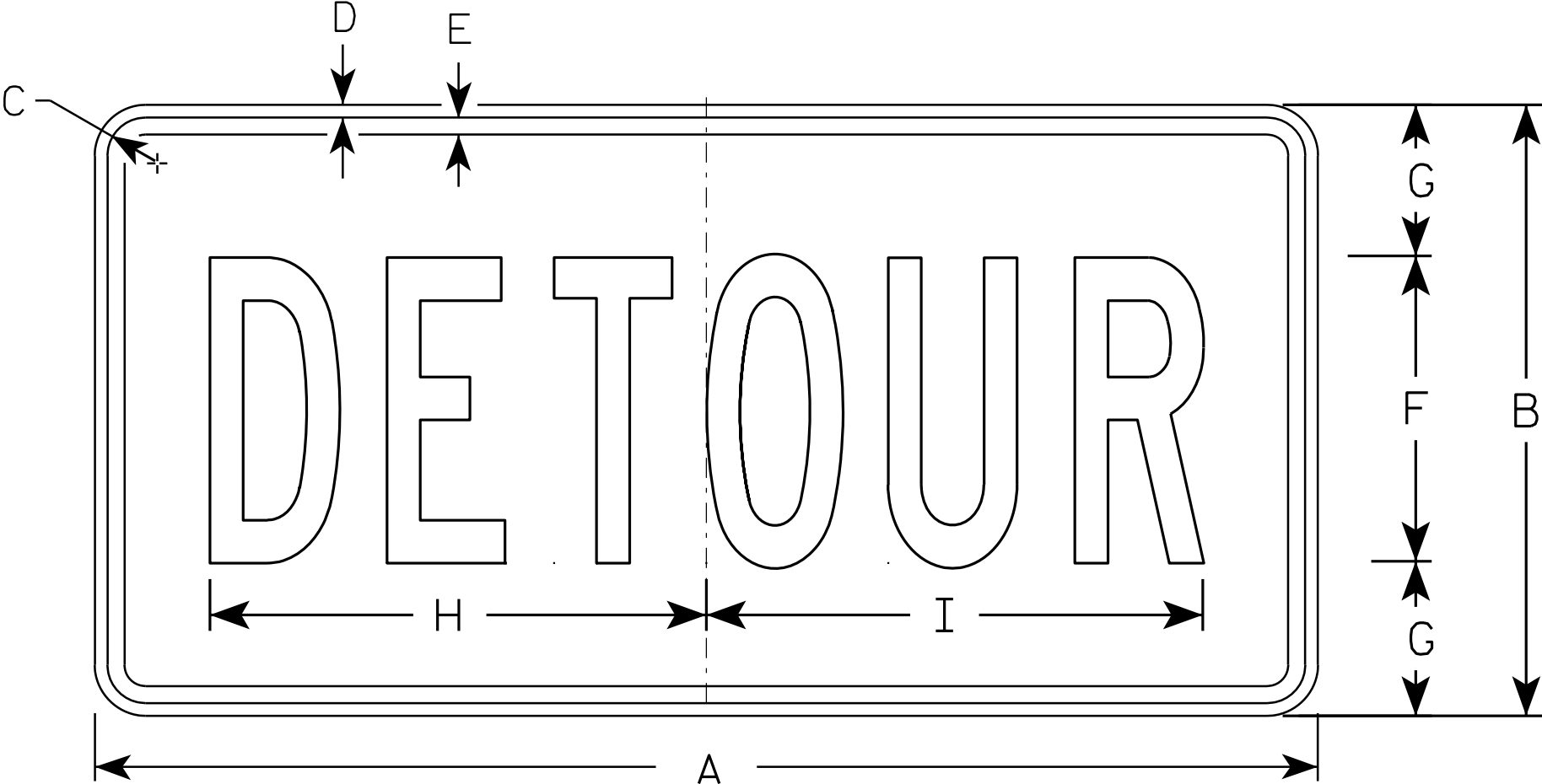
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

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

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.



M4 - 8

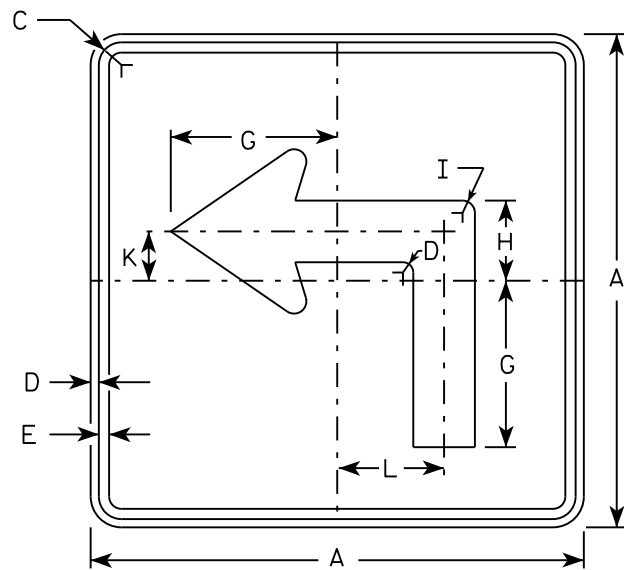
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	3	10	10 1/4																		2.0
3	36	18	1 1/8	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
4																											
5																											

STANDARD SIGN
M4 - 8

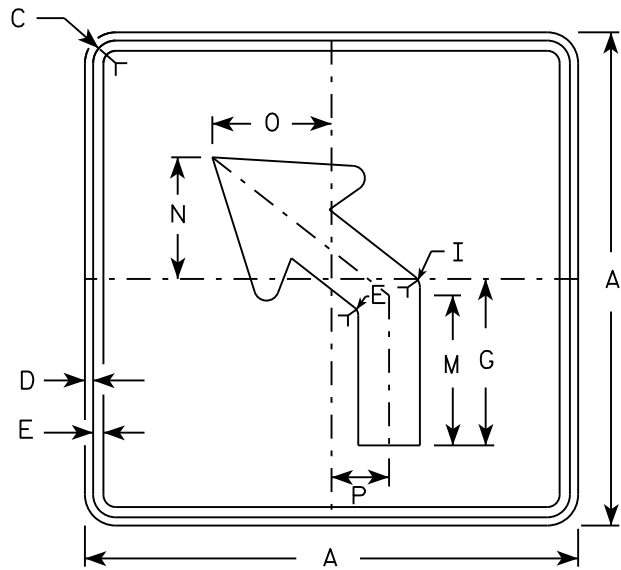
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

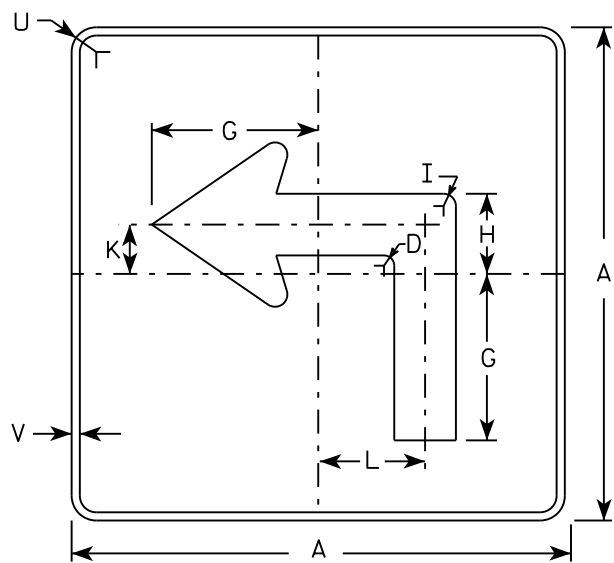
DATE 11/10/10 PLATE NO. M4-8.2



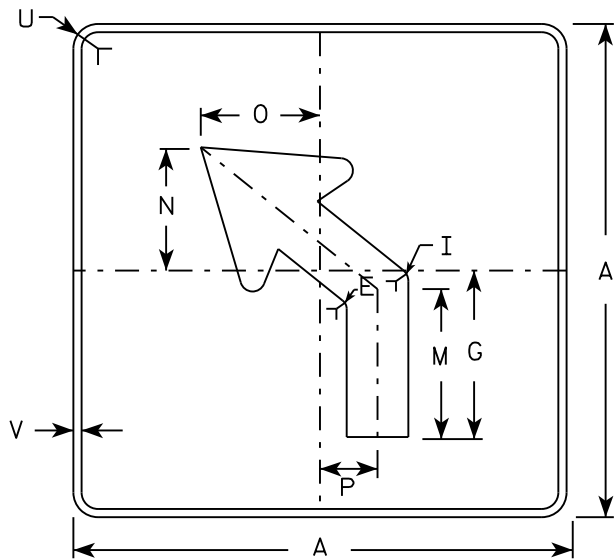
M5-1L
MM5-1L
M05-1L
MP5-1L



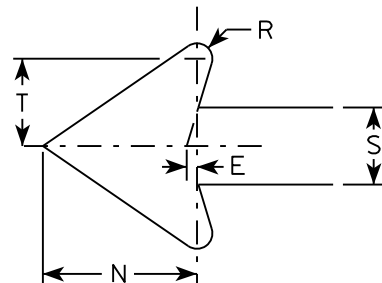
M5-2L
MM5-2L
M05-2L
MP5-2L



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



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



NOTES

- Signs are Type II - Type H reflective except as shown
- Color:
Background - See note 4
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 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
- M5-1R same as M5-1L except arrow points right.
- 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

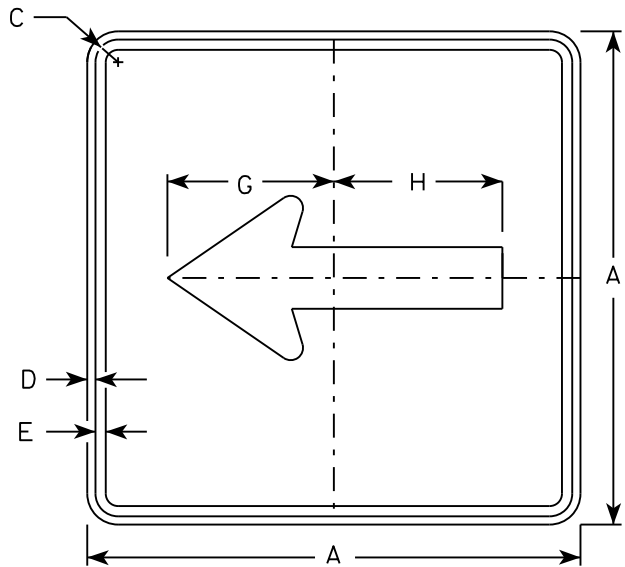
PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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STANDARD SIGN
M5-1 & M5-2

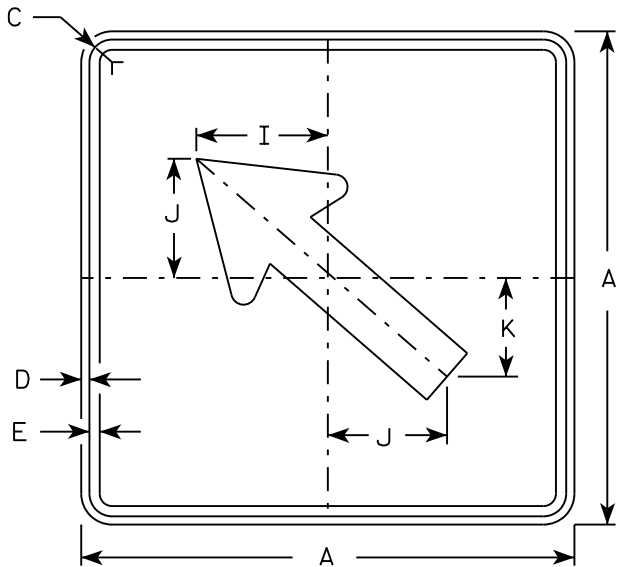
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

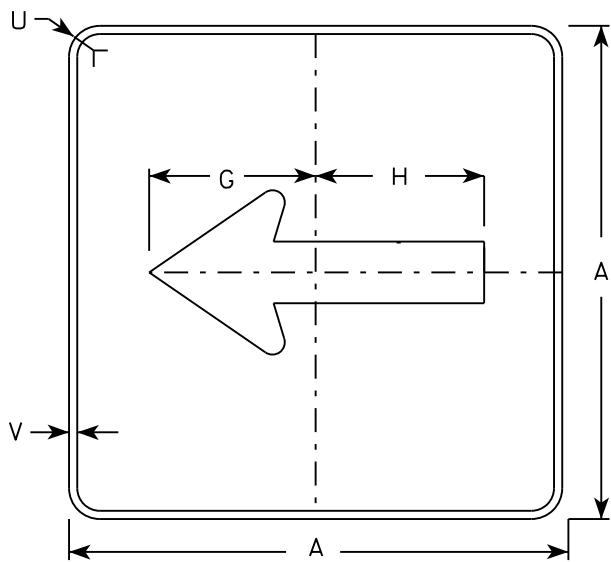
DATE 10/15/15 PLATE NO. M5-1.13



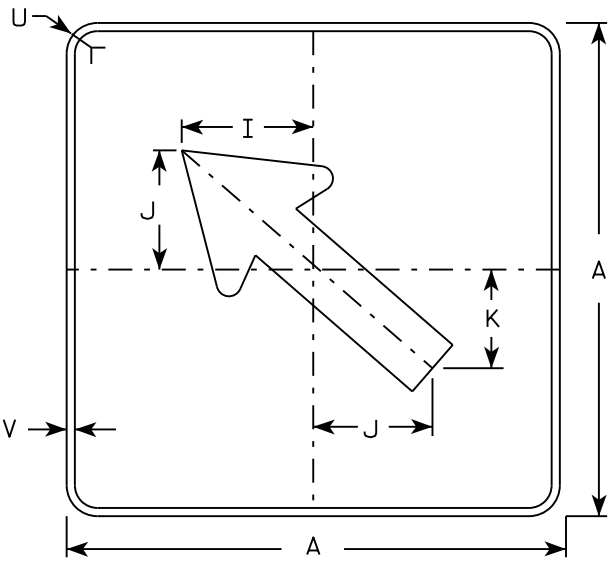
M6 - 1
MM6 - 1
M06 - 1
MP6 - 1



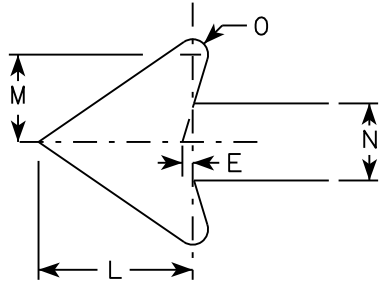
M6 - 2
MM6 - 2
M06 - 2
MP6 - 2



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



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



NOTES

- Signs are Type II - Type H except as Shown
- Color:
Background - See note 4
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M6-1 and M6-2 Background - White
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
M06-1 and M06-2 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

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

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

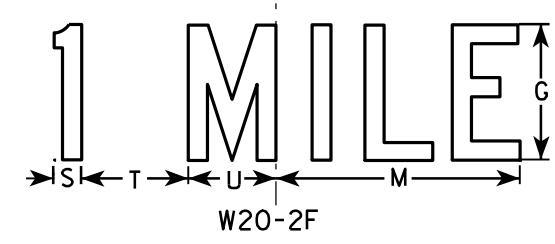
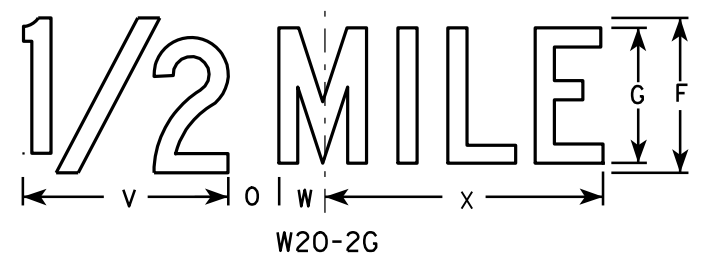
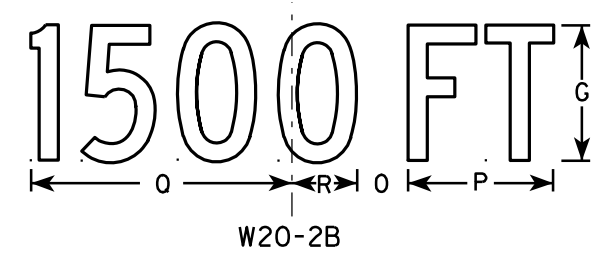
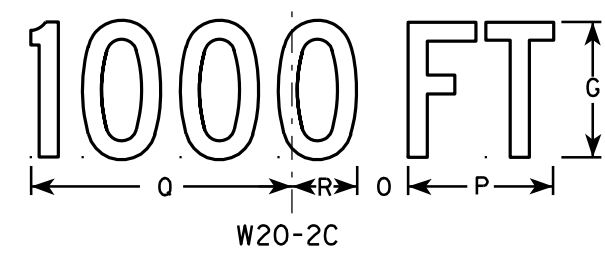
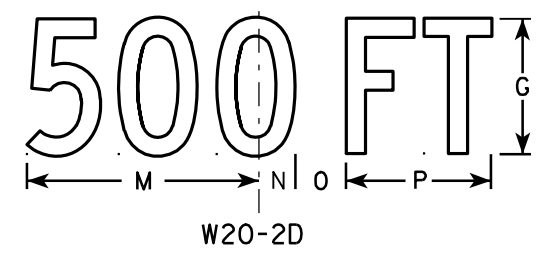
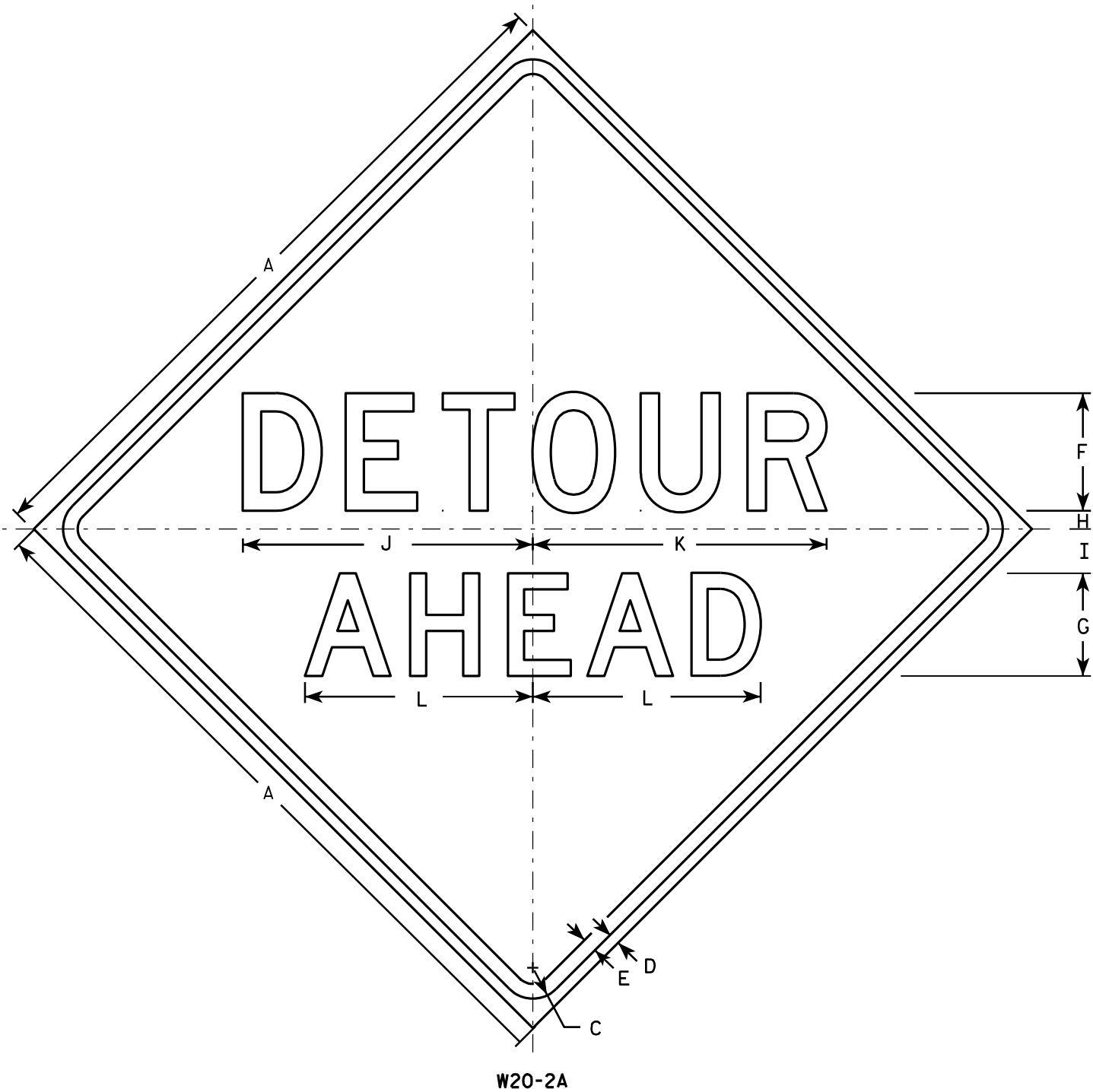
E

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



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:

HWY:

COUNTY:

SHEET NO:

E

DESIGN DATA

MATERIAL PROPERTIES:

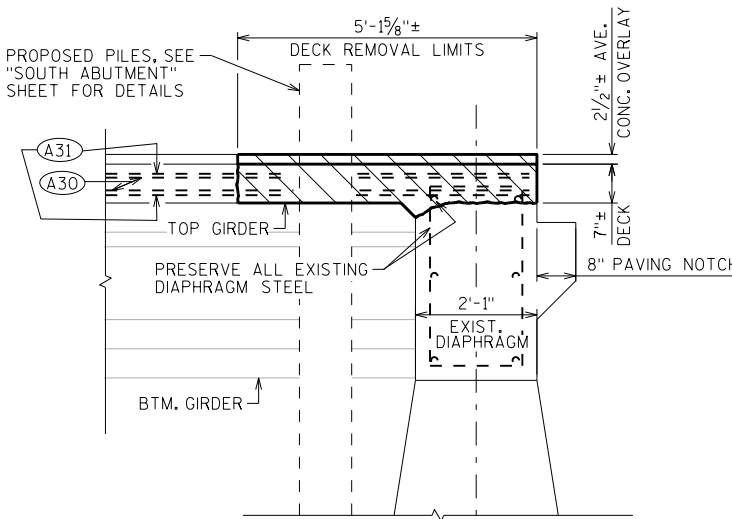
CONCRETE MASONRY: DECK, CURBS, & PARAPETS $f'_c = 4,000$ P.S.I.
ALL OTHER $f'_c = 3,500$ P.S.I.

BAR STEEL REINFORCEMENT: GRADE 60 $f_y = 60,000$ P.S.I.

FOUNDATION DATA

SOUTH ABUTMENT TO BE SUPPORTED ON $10\frac{3}{4}$ " X 0.375" WALL C.I.P. CONCRETE PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 60 TONS ** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 45'-0" LONG. PRE-BORE PILING A MINIMUM LENGTH OF 10 FEET BELOW THE ABUTMENT FOOTING. ADDITIONAL PRE-BORING LENGTH MAY BE NECESSARY, DEPENDING ON VIBRATION LEVELS ENCOUNTERED DURING PILE DRIVING.

** 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.



REMOVAL SECTION

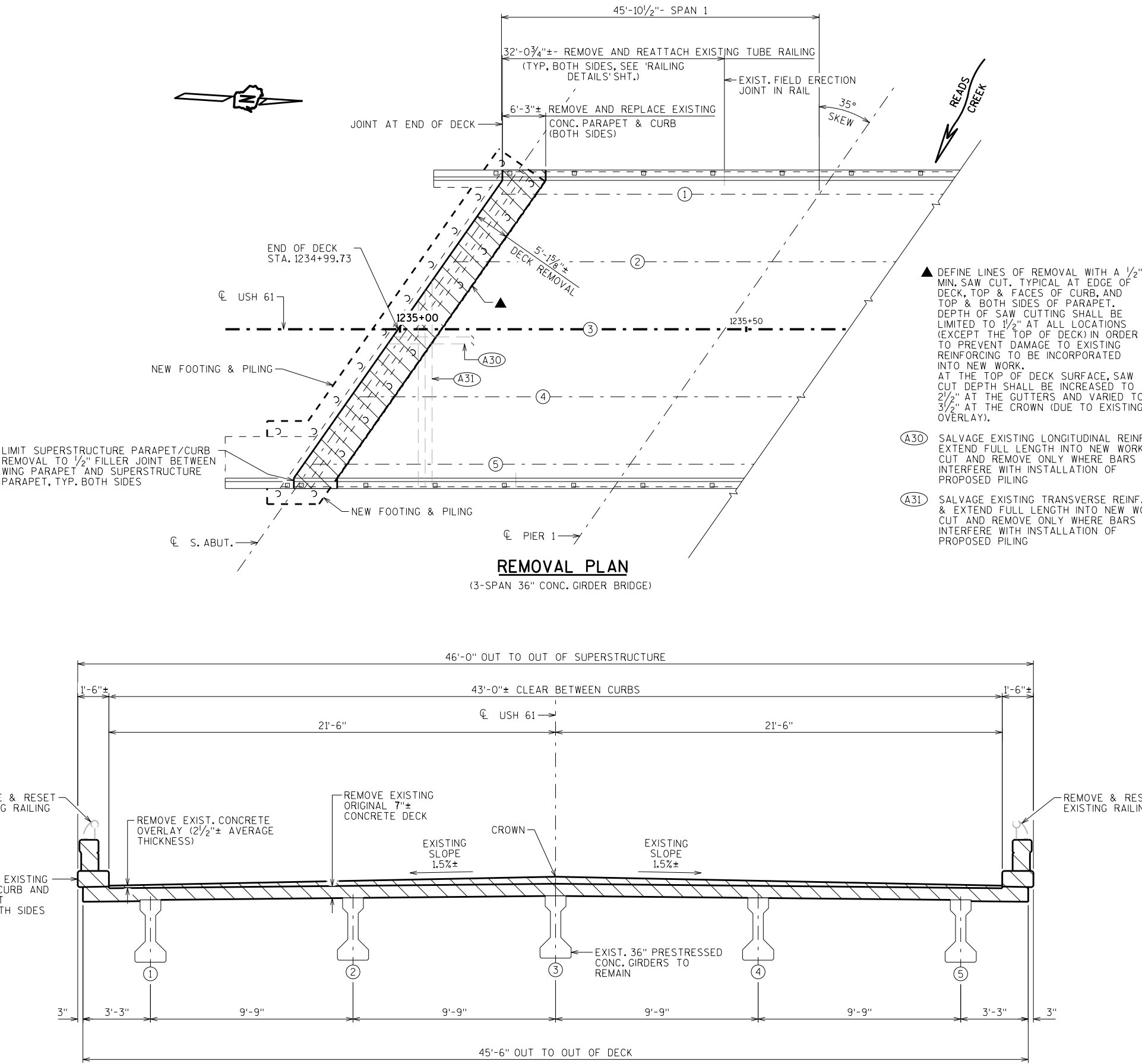
NORMAL TO U.S. 61 SUBSTRUCTURE

STRUCTURE DESIGN CONTACTS:
CHRISTOPHER DOLL (608) 266-3229
LAURA SHADEWALD (608) 267-9592

LIST OF DRAWINGS

1. GENERAL PLAN
2. GENERAL NOTES & QUANTITIES
3. SOUTH ABUTMENT
4. SOUTH ABUTMENT DETAILS
5. SUPERSTRUCTURE
6. RAILING DETAILS
7. SUBSURFACE EXPLORATION

CROSS SECTION THRU EXISTING ROADWAY - LOOKING NORTH (SHOWING REMOVAL)



NO.	DATE	REVISION	BY
 BUREAU OF STRUCTURES			
ACCEPTED		CHIEF STRUCTURES DESIGN ENGINEER	DATE
STRUCTURE B-62-17		08/01/22	
USH 61 OVER READS CREEK			
COUNTY	VERNON	VILLAGE	READSTOWN
DESIGN SPEC. N/A - REHABILITATION			
DESIGNED BY	DESIGNED CK'D.	DRAWN BY	PLANS CK'D.
CAD	ARC	CAD	ARC
GENERAL PLAN			SHEET 1 OF 7

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	SOUTH ABUT.	TOTALS
203.0250	REMOVING STRUCTURE OVER WATERWAY REMOVE DEBRIS B-62-17	EACH	—	—	1
206.1001	EXCAVATION FOR STRUCTURES BRIDGES B-62-17	EACH	—	—	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	—	353	353
312.0110	SELECT CRUSHED MATERIAL	TON	—	45	45
502.0100	CONCRETE MASONRY BRIDGES	CY	9.7	26.6	37
502.3200	PROTECTIVE SURFACE TREATMENT	SY	30	—	30
502.3210	PIGMENTED SURFACE SEALER	SY	5	—	5
502.4206	ADHESIVE ANCHORS NO. 6 BAR	EACH	—	122	122
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	1680	—	1680
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	—	2680	2680
513.9006.S	REMOVING AND RESETTING TUBULAR RAILING B-62-17	EACH	1	—	1
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	—	10	10
550.0010	PRE-BORING (UNCONSOLIDATED MATERIALS)	LF	—	210	210
550.2106	PILING CIP CONCRETE 10 3/4 X 0.365-INCH	LF	—	945	945
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	—	70	70
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	—	40	40
SPV.0060	1 1/4-INCH DIAMETER CORED HOLES	EACH	—	45	45
	NON-BID ITEMS				
	FILLER	SIZE	—	—	1/2"

— BID ITEM INCLUDES S.S. ANCHOR BOLT SETTINGS, SEE 'RAILING DETAILS' SHEET

GENERAL NOTES

PRIOR TO BEGINNING REMOVAL WORK, TAKE AND RECORD TOP OF DECK ELEVATIONS ALONG THE JOINT AT BOTH GUTTERS AND THE CROWN. NEW DECK TO MATCH THESE ELEVATIONS.

DRAWINGS SHALL NOT BE SCALED.

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

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

BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE NOTED.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-62-17" SHALL BE THE EXISTING GROUNDLINE.

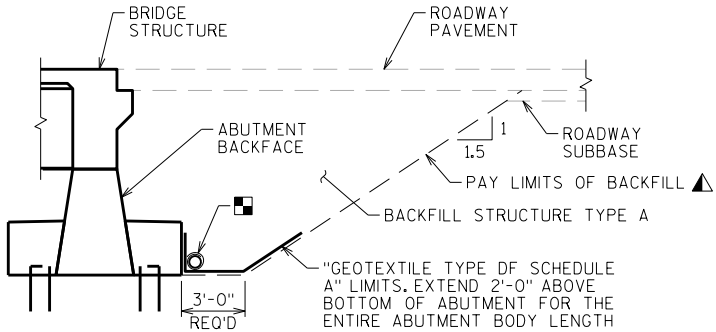
AT THE BACK FACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TYPE A.

THE QUANTITY FOR BACKFILL STRUCTURE IS CALCULATED BASED ON THE DETAIL SHOWN IN THE PLANS.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE EXPOSED TOP OF NEW DECK SURFACE.

PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND THE TOP OF THE NEW PARAPETS & CURBS.

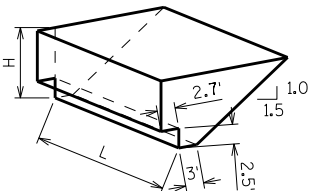
DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.



TYPICAL SECTION THRU ABUTMENT

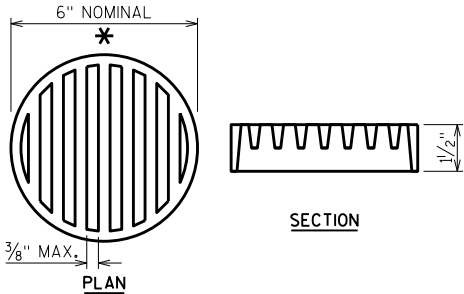
▲ BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

■ PIPE UNDERDRAIN WRAPPED (6 INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.



ABUTMENT BACKFILL DIAGRAM FOR WINGS PARALLEL TO ROADWAY

L = OUT TO OUT OF ABUTMENT, INCLUDING WINGS (FT)
H = AVERAGE ABUTMENT FILL HEIGHT (FT)
EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS AND 1.00 FOR TON BID ITEMS)
 $V_{CF} = (L)(2.7')(H - 2.5') + (L)(3.0')(H) + (L)(0.5)(1.5H)(H)$
 $V_{CY} = V_{CF} (EF) / 2.7$
 $V_{TON} = V_{CY} (2.0)$



RODENT SHIELD DETAIL

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

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

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

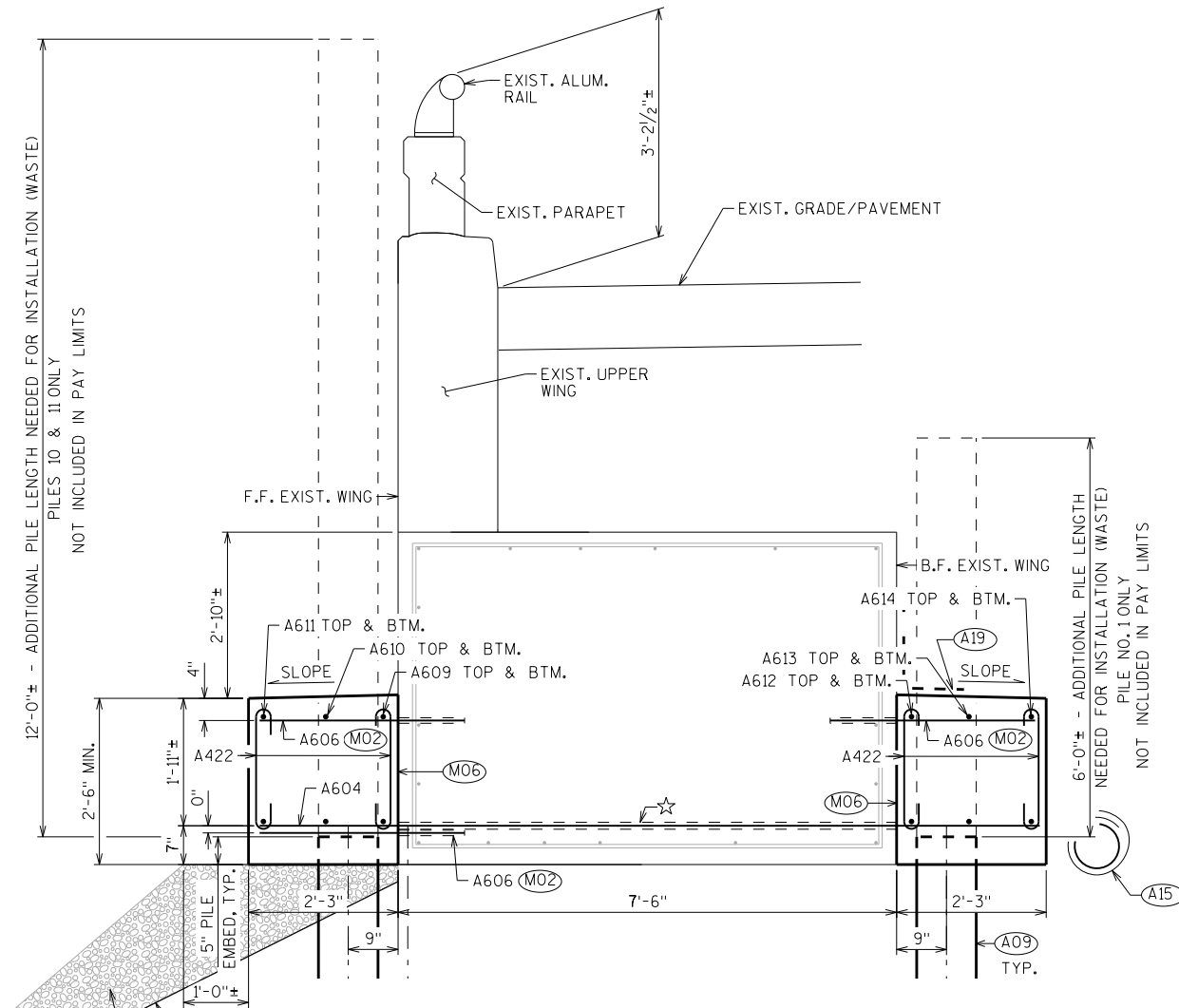
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-62-17			
		DRAWN BY	CAD PLANS CK'D. ARC
GENERAL NOTES & QUANTITIES		SHEET 2	

SCALE = 4.00



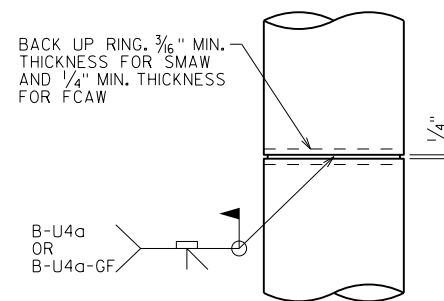
- ☆ 1/4" DIA. CORED HOLES THROUGH ABUTMENT. TYP. AT A601 THRU A604.
AFTER INSERTING BARS AND PRIOR TO POURING NEW CONCRETE, FILL COMPLETELY WITH NON-SHRINK GROUT. SEE "1/4-INCH DIAMETER CORED HOLES" SPECIAL PROVISION FOR REQUIREMENTS.
- (A09) SUPPORT ABUTMENT ON 10 3/4" DIA. X 0.365" CIP CONCRETE PILING, ESTIMATED 45'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 60 TONS PER PILE.
PRE-BORE EVERY PILE 10'-0" MIN. BELOW THE BOTTOM OF FOOTING PRIOR TO DRIVING.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE.
RODENT SHIELD REQUIRED.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (M02) "ADHESIVE ANCHORS NO. 6 BAR". EMBED 12" IN CONCRETE.
- (M06) ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MINIMUM AT ALL AREAS WHERE NEW CONCRETE CONTACTS EXISTING CONCRETE. CLEAN SURFACE WITH POTABLE WATER AND KEEP CONTINUOUSLY WET FOR 2 HOURS DIRECTLY PRIOR TO POURING NEW CONCRETE. INCIDENTAL TO "CONCRETE MASONRY BRIDGES" BID ITEM.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-62-17			
DRAWN BY		CAD	PLANS CK'D. ARC
SOUTH ABUTMENT		SHEET 3	

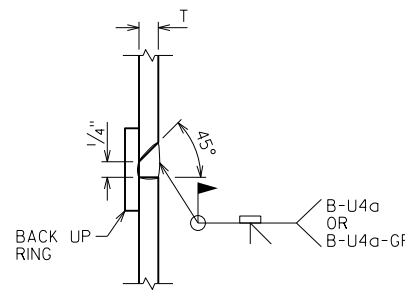


SECTION THRU EAST WING

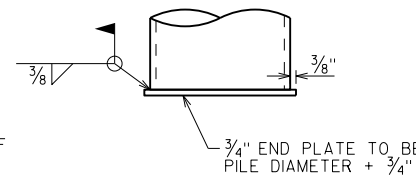
- ★ 1 1/4" DIA. CORED HOLES THROUGH ABUTMENT. TYP. AT A601 THRU A604. AFTER INSERTING BARS AND PRIOR TO POURING NEW CONCRETE, FILL COMPLETELY WITH NON-SHRINK GROUT. SEE "1/4-INCH DIAMETER CORED HOLES" SPECIAL PROVISION FOR REQUIREMENTS.
- (A09) SUPPORT ABUTMENT ON 10 3/4" DIA. X 0.365" CIP CONCRETE PILING, ESTIMATED 45'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 60 TONS PER PILE. PRE-BORE EVERY PILE 10'-0" MIN. BELOW THE BOTTOM OF FOOTING PRIOR TO DRIVING.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (M02) "ADHESIVE ANCHORS NO. 6 BAR". EMBED 12" IN CONCRETE.
- (M06) ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MINIMUM AT ALL AREAS WHERE NEW CONCRETE CONTACTS EXISTING CONCRETE. CLEAN SURFACE WITH POTABLE WATER AND KEEP CONTINUOUSLY WET FOR 2 HOURS DIRECTLY PRIOR TO POURING NEW CONCRETE. INCIDENTAL TO "CONCRETE MASONRY BRIDGES" BID ITEM.



CAST-IN-PLACE 'PIPE PILE'

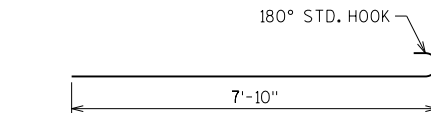


C.I.P. PILE WELD DETAIL

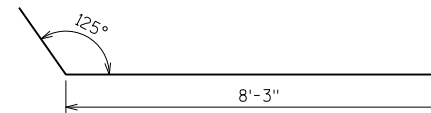


END PLATE DETAIL

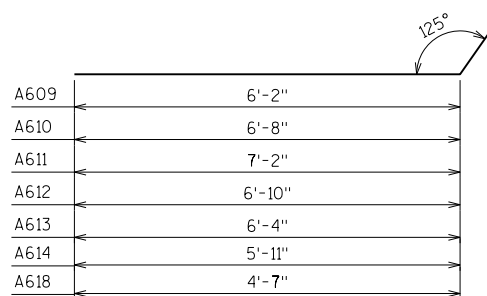
PILE DETAILS



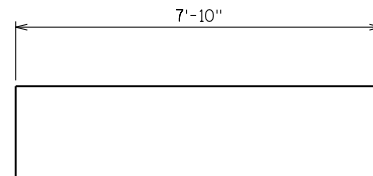
A602



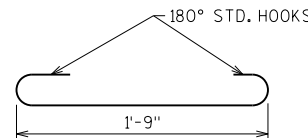
A603



A609, A610, A611, A612, A613, A614, A618



A617



A422

BILL OF BARS

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

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A601	X	41	7'-10"			FOOTING BTM.
A602	X	1	8'-6"	X		FOOTING BTM.
A603	X	1	10'-0"	X		FOOTING BTM.
A604	X	4	11'-8"			FOOTING BTM.
(M02) A605	X	6	3'-2"			FOOTING BTM. - MASONRY ANCHOR
(M02) A606	X	14	3'-1"			FOOTING TOP&BTM. - MASONRY ANCHOR
A607	X	6	55'-9"			FOOTING LONG.-TOP & BTM.-F.F.
A608	X	6	41'-4"			FOOTING LONG.-TOP & BTM.-B.F.
A609	X	2	9'-9"	X		FOOTING LONG.-TOP & BTM.-F.F.
A610	X	2	10'-8"	X		FOOTING LONG.-TOP & BTM.-F.F.
A611	X	2	11'-8"	X		FOOTING LONG.-TOP & BTM.-F.F.
A612	X	2	12'-6"	X		FOOTING LONG.-TOP & BTM.-B.F.
A613	X	2	11'-0"	X		FOOTING LONG.-TOP & BTM.-B.F.
A614	X	2	9'-4"	X		FOOTING LONG.-TOP & BTM.-B.F.
A615	X	3	2'-5"		▲	FOOTING TOP
(M02) A616	X	96	3'-4"			FOOTING TOP - MASONRY ANCHOR
A617	X	1	10'-6"	X		FOOTING TOP
A618	X	1	6'-2"	X		FOOTING TOP
A619	X	1	3'-3"			FOOTING TOP
(M02) A620	X	2	3'-3"			FOOTING TOP - MASONRY ANCHOR
(M02) A621	X	4	2'-0"			FOOTING TOP - MASONRY ANCHOR
A422	X	214	2'-9"	X		FOOTING VERTICAL

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

BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
A615	1 SERIES OF 3	1'-10" TO 3'-0"

BUNDLE AND TAG EACH SERIES SEPARATELY.

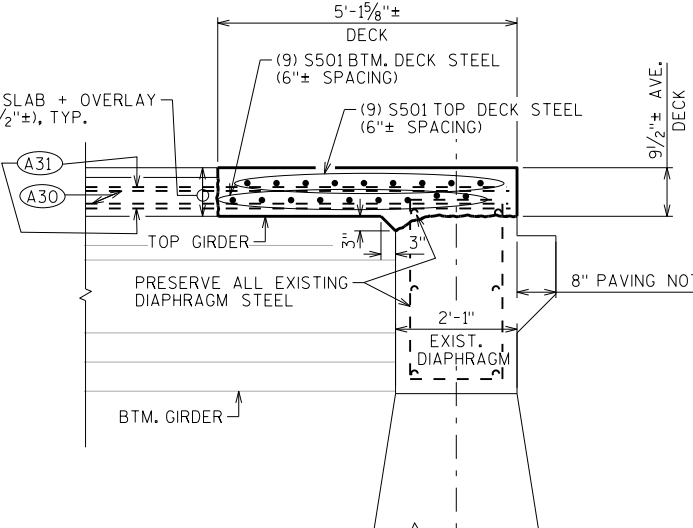
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-62-17			
DRAWN BY		CAD	PLANS CK'D. ARC
SOUTH ABUTMENT DETAILS		SHEET 4	

BILL OF BARS

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

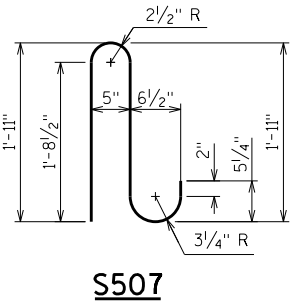
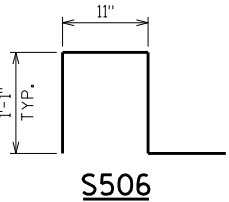
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S501		36	28'-5"			DECK TRANS- PLACE ALONG SKEW
S602		10	6'-1"	▲		DECK TRANS.
S603		10	6'-6"	▲		DECK TRANS.
S604		9	5'-11"	▲		DECK TRANS.
S605		9	5'-6"	▲		DECK TRANS.
S506		12	3'-7"	X		DECK/PARAPET VERT.
S507		12	5'-0"	X		PARAPET VERT.
S508		12	5'-9"			PARAPET/CURB HORIZ.
S409		32	4'-0"			LONG. AT PILES

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



SECTION A-A

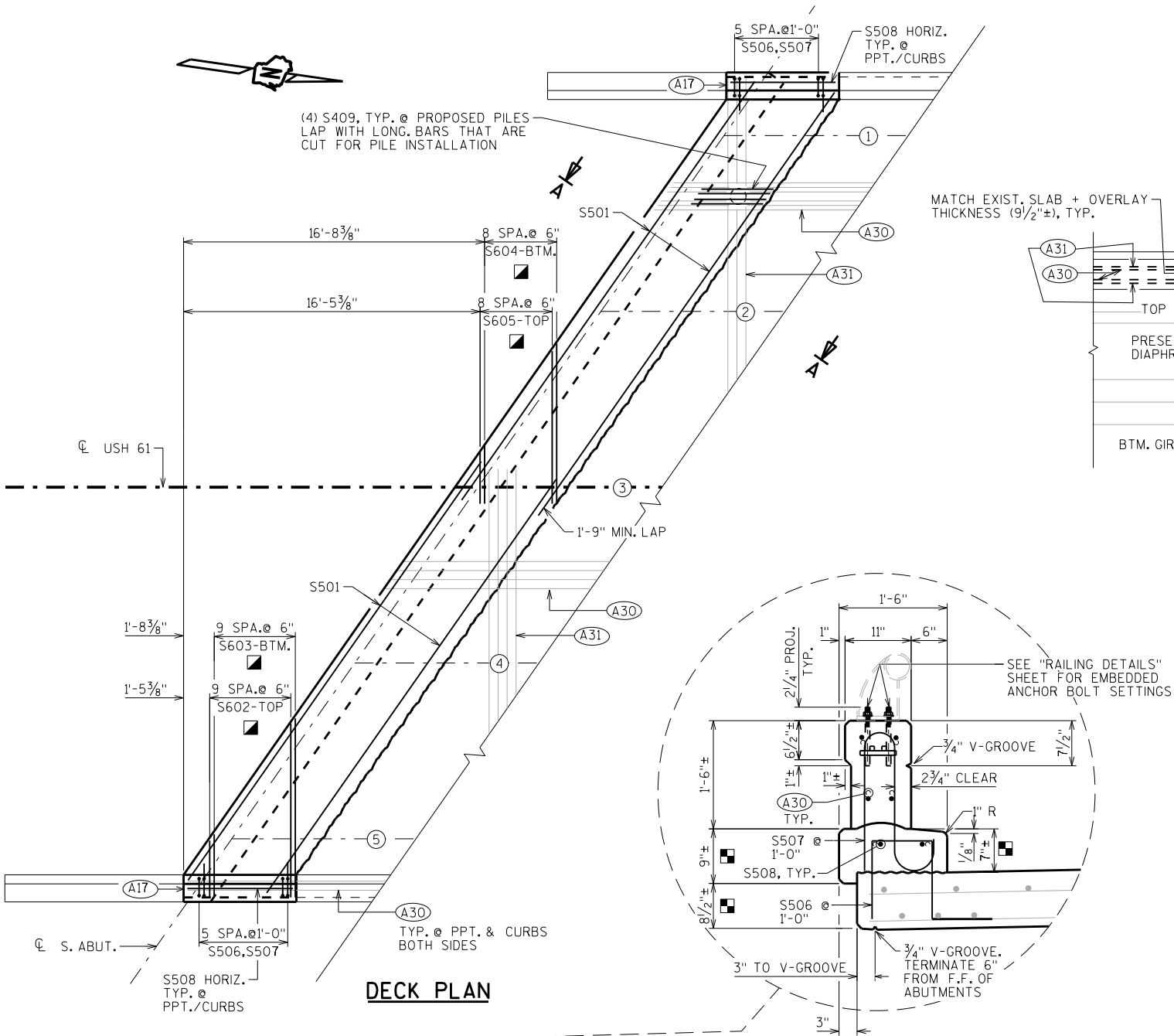
NORMAL TO U.S. 61



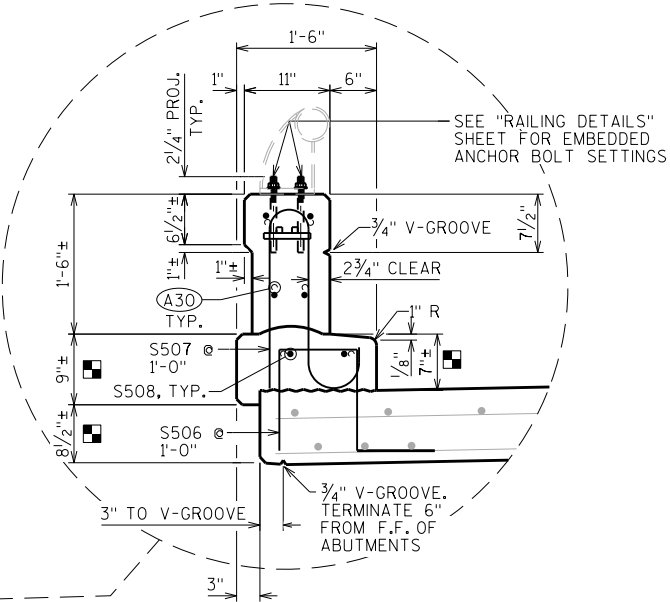
BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
S602	1 SERIES OF 10	2'-10" TO 9'-3"
S603	1 SERIES OF 10	3'-2" TO 9'-10"
S604	1 SERIES OF 9	3'-0" TO 8'-9"
S605	1 SERIES OF 9	2'-8" TO 8'-4"

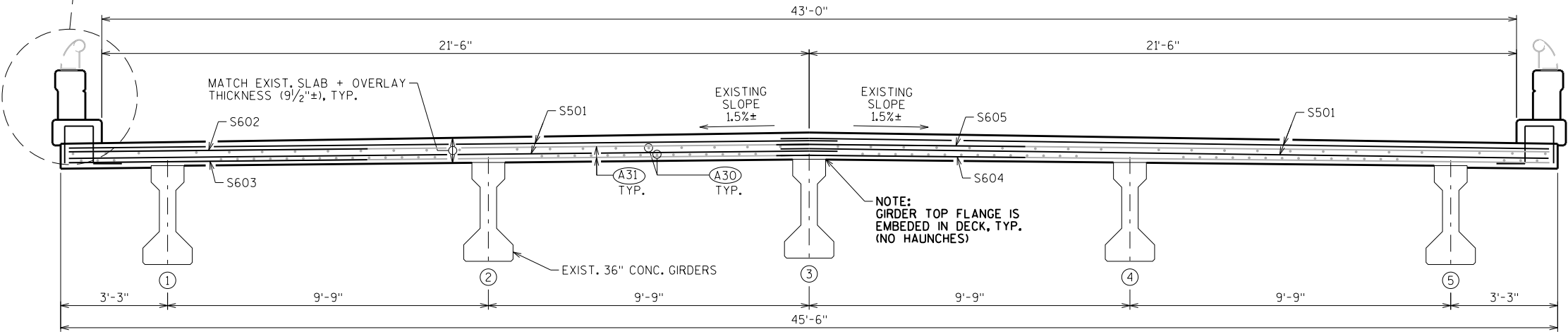
BUNDLE AND TAG EACH SERIES SEPARATELY.



DECK PLAN



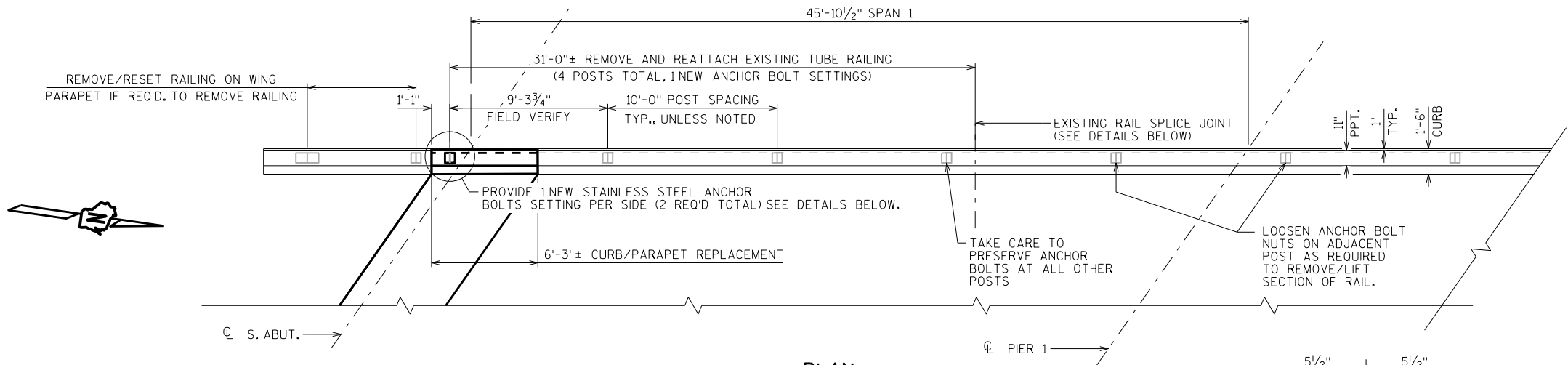
- BARS REPLACE EXISTING TRANSVERSE BARS THAT RESIDE ENTIRELY IN REMOVAL AREA (I.E. NO PORTION OF EXISTING BAR IS EMBEDDED IN AREA OF DECK TO REMAIN)
- ADJUST DIMENSIONS AS REQUIRED TO MATCH EXISTING ADJACENT CURBS
- (A17) 1/2" FILLER. SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A30) SALVAGE EXISTING LONGITUDINAL REINF. & EXTEND FULL LENGTH INTO NEW WORK. CUT AND REMOVE ONLY WHERE BARS INTERFERE WITH INSTALLATION OF PROPOSED PILING. REPLACE/LAP CUT BARS WITH S409 BARS.
- (A31) SALVAGE EXISTING TRANSVERSE REINF. & EXTEND FULL LENGTH INTO NEW WORK. CUT AND REMOVE ONLY WHERE BARS INTERFERE WITH INSTALLATION OF PROPOSED PILING



CROSS SECTION THRU NEW WORK

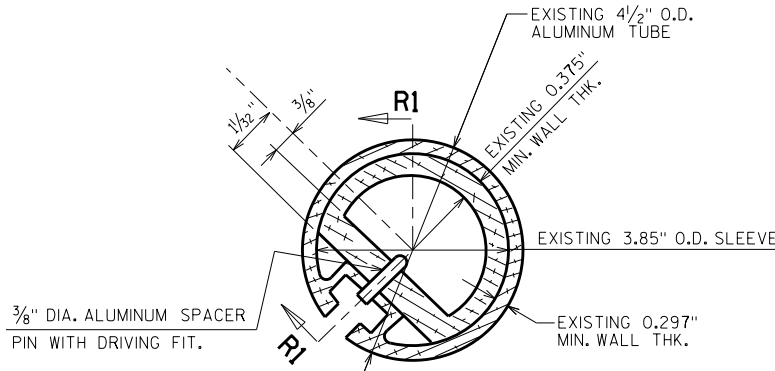
LOOKING NORTH, MATCH EXISTING SHAPE
ALL DIMENSIONS ARE PERP. TO U.S. 61

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-62-17			
DRAWN BY		CAD	PLANS CK'D. ARC
SUPERSTRUCTURE		SHEET 5	

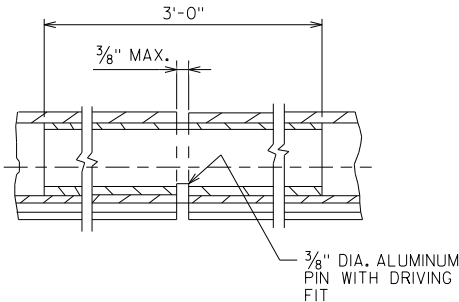


PLAN

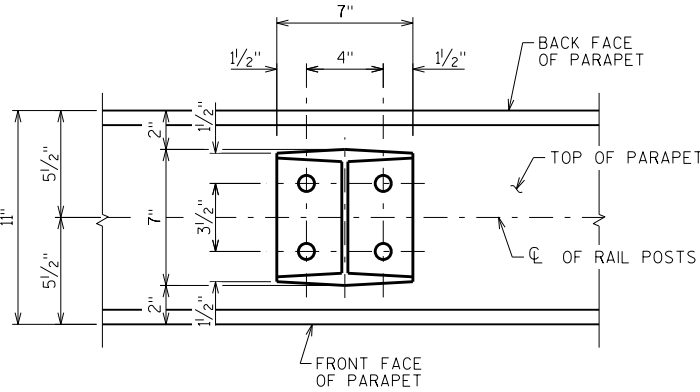
WEST SIDE SHOW, EAST SIDE SIMILAR



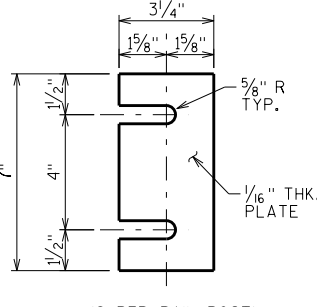
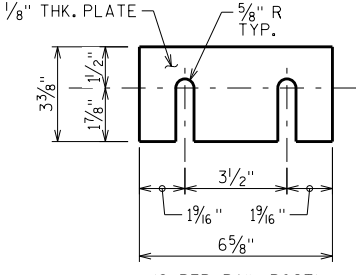
EXISTING RAIL SPLICE DETAIL



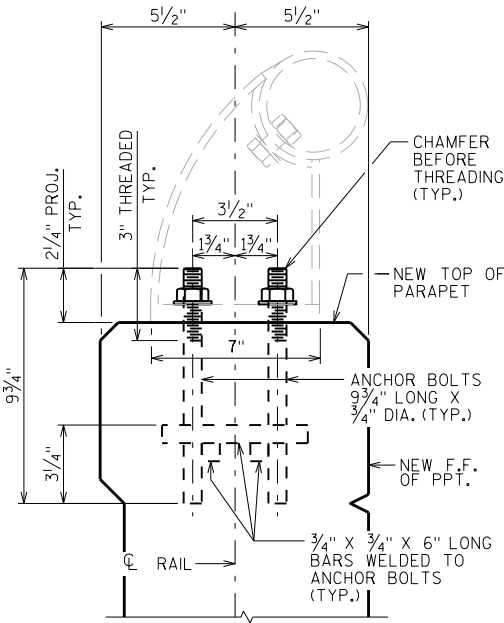
SECTION R1



TYPICAL EXISTING POST BASE PLATE LAYOUT

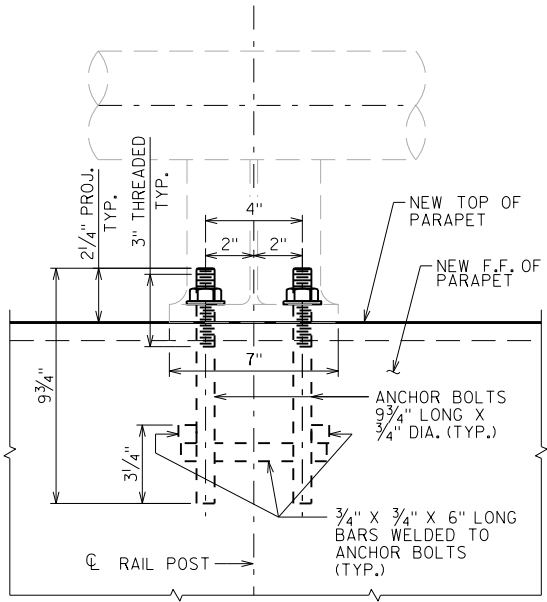


ALUMINUM RAIL POST SHIM DETAILS



SECTION THRU RAIL POST

SHOWING ANCHOR BOLT ORIENTATION



ELEVATION - RAIL POST

SHOWING ANCHOR BOLT ORIENTATION

NOTES

BID ITEM SHALL BE "REMOVING AND RESETTING TUBULAR RAILING B-62-17" WHICH INCLUDES ALL ITEMS SHOWN AT BOTH SIDES OF BRIDGE.

ANCHOR BOLTS, NUTS AND WASHERS SHALL BE STAINLESS STEEL.

SHIMS SHALL BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.

FILL ALL EXPOSED OPENINGS BETWEEN SHIMS AND POST ANCHOR BOLT HOLES WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

ANCHOR BOLTS MUST BE CAST-IN-PLACE WITH PARAPET CONCRETE. POST-INSTALLED EPOXY ANCHORS ARE NOT ALLOWED.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-62-17			
DRAWN BY		CAD	PLANS CK'D. ARC
RAILING DETAILS		SHEET 6	

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
3	11/11/1965	NA	NA
BORINGS COMPLETED BY: WISDOT			
REPORT COMPLETED BY: WISDOT			
ALL COORDINATES REFERENCED TO WCCS NAD 83 (91) VERNON COUNTY			
COORDINATES COLLECTED USING NON-SURVEY GRADE EQUIPMENT			

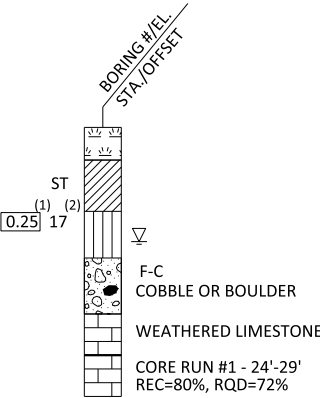
STATE PROJECT NUMBER

1650-02-83

MATERIAL SYMBOLS

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

LEGEND OF BORING



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

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

GROUND WATER ELEVATION

-  AT TIME OF DRILLING
-  END OF DRILLING
-  AFTER DRILLING

ABBREVIATIONS

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

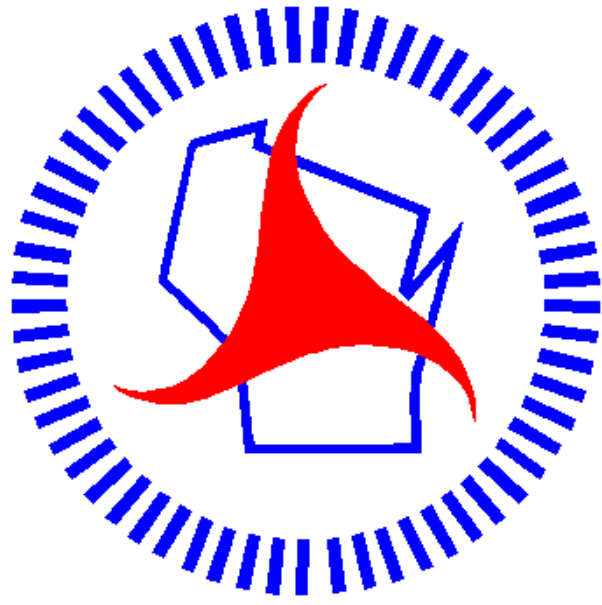
SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-62-17			
DRAWN BY JJ/CAD		PLANS CK'D. ARC	
SUBSURFACE EXPLORATION			SHEET 7

SCALE = 10.00

Notes



Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

<http://www.dot.wisconsin.gov>