

GRE Feb 14, 2023

PROJECT ID: 4677-10-71  
WITH: N/A

ORDER OF SHEETS

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

TOTAL SHEETS = 172



30

DESIGN DESIGNATION	CTH 00	FRENCH RD
A.A.D.T. (2023)	= 18,300	6,800
A.A.D.T. (2043)	= 22,800	9,700
D.H.V.	= 1,830	680
D.D.	= 50/50	50/50
T.	= 6.0	4.0
DESIGN SPEED	= 50 MPH	50 MPH
ESALS	= 2,600,000	940,000

CONVENTIONAL SYMBOLS

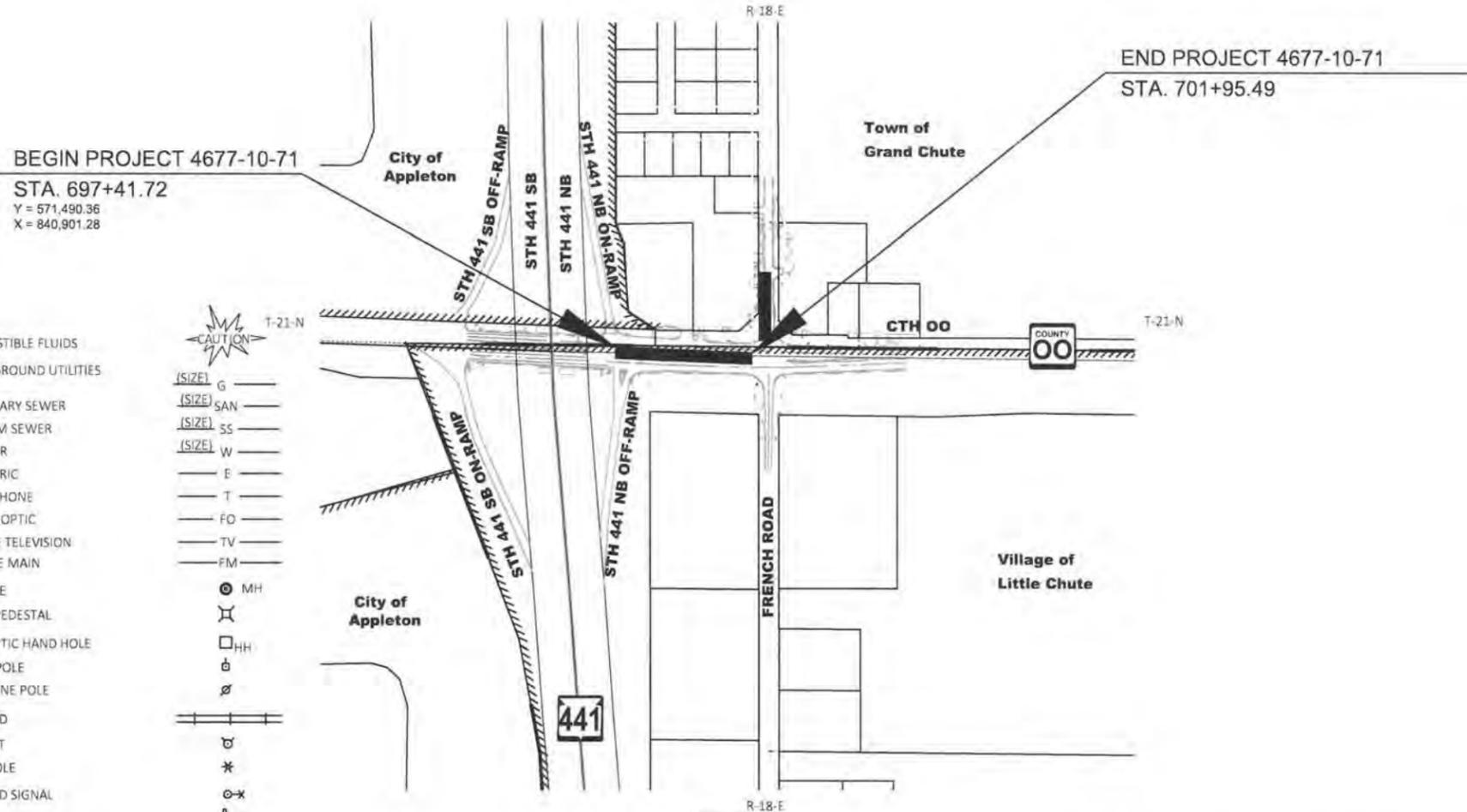
COUNTY LINE	---
CORPORATE LIMITS	///
PROPERTY LINE	---
LIMITED EASEMENT	---
EXISTING RIGHT OF WAY	---
PROPOSED OR NEW R/W LINE	---
FENCE	---x---
GUARD RAIL	---o---
SLOPE INTERCEPT	---/---
ORIGINAL GROUND	---
MARSH OR ROCK PROFILE (To be noted as such)	---ROCK---
MARSH AREA	---o---
WOODED OR SHRUB AREA	---o---
STREAM OR WATER EDGE	---
BUSH	---o---
PINE TREE	(SIZE) ---o---
TREE	(SIZE) ---o---
TRAFFIC SIGNAL CONTROL CABINET	---o---
TRAFFIC SIGNAL	---o---
TRAFFIC SIGNAL MAST-ARM	---o---
TRAFFIC SIGNAL WITH LIGHT	---o---
EXISTING PULL BOX	---o---
BOLLARD	---o---

COMBUSTIBLE FLUIDS	---
UNDERGROUND UTILITIES	---
GAS	---
SANITARY SEWER	---
STORM SEWER	---
WATER	---
ELECTRIC	---
TELEPHONE	---
FIBER OPTIC	---
CABLE TELEVISION	---
FORCE MAIN	---
MANHOLE	---MH---
UTILITY PEDESTAL	---UH---
FIBER OPTIC HAND HOLE	---FH---
POWER POLE	---P---
TELEPHONE POLE	---T---
RAILROAD	---
HYDRANT	---H---
LIGHT POLE	---L---
RAILROAD SIGNAL SIGN	---
TRANSMISSION TOWER	---
VALVE	---V---
CURB STOP	---
EXISTING CULVERT	---
PROPOSED CULVERT (Box or Pipe)	---

(SIZE) G	---
(SIZE) SAN	---
(SIZE) SS	---
(SIZE) W	---
E	---
T	---
FO	---
TV	---
FM	---
MH	---
UH	---
FH	---
P	---
T	---
(TYPE)	---
CS	---
(SIZE, TYPE)	---

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION  
PLAN OF PROPOSED IMPROVEMENT  
T GRAND CHUTE - V LITTLE CHUTE  
FRENCH ROAD INTERSECTION  
CTH 00  
OUTAGAMIE COUNTY

STATE PROJECT NUMBER  
4677-10-71



LAYOUT  
SCALE 0 500 FT  
TOTAL NET LENGTH OF CENTERLINE = 0.130 MI

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

ELEVATIONS ARE REFERENCED TO NAVD 88 (2012). GEOID 12A IN US SURVEY FOOT

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
4677-10-71	WISC 2023232	1

ACCEPTED FOR  
COUNTY of OUTAGAMIE  
10/25/2022 (Date)  
*[Signature]* (Signature & Title of Official)

ORIGINAL PLANS PREPARED BY  
**raSmith**  
CREATIVITY BEYOND ENGINEERING  
rasmith.com  
WISCONSIN PROFESSIONAL ENGINEER  
JOHN P. BRUGGEMAN  
E-39737  
BAYSIDE, WI  
10/31/2022 (Date)  
*[Signature]* (Signature)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION  
PREPARED BY  
Surveyor: raSmith  
Designer: raSmith  
Project Manager: JODI JAROSINSKI  
Regional Examiner: BRIAN EDWARDS  
Regional Supervisor: BRIAN EDWARDS

APPROVED FOR THE DEPARTMENT:  
DATE: 10/25/2022  
*[Signature]* (Signature)

E

UTILITIES

COMMUNICATION LINE

APPLETON AREA METRO FIBER OPTIC NETWORK  
MR. JEFF ZEINERT  
1345 NORTH ROAD, SUITE B  
GREEN BAY, WI 54313  
(920) 655-5135  
JZEINERT@MI-TECH.US

COMMUNICATION LINE

AT&T  
MR. KYLE WEBER  
221 W. WASHINGTON STREET  
APPLETON, WI 54911  
(920) 221-5969  
KW715W@ATT.COM

COMMUNICATION LINE

CHARTER COMMUNICATIONS  
MR. VINCE ALBIN  
3520 E DESTINATION DRIVE  
APPLETON, WI 54915  
(920) 831-9249  
VINCE.ALBIN@CHARTER.COM

SEWER

HEART OF THE VALLEY METRO SEWERAGE DISTRICT  
MR. KEVIN SKOGMAN  
801 THILMANY ROAD  
KAUKAUNA, WI 54130  
(920) 766-5731  
KEVIN.SKOGMAN@HVMSD.ORG

ELECTRICITY

WE ENERGIES - ELECTRIC  
MR. ZACH DUGA  
800 S LYNNDALE DRIVE  
PO BOX 1699  
APPLETON, WI 54914  
(920) 380-3458  
ZACHARY.DUGA@WE-ENERGIES.COM

GAS

WE ENERGIES - GAS  
MS. HEATHER DEUTH  
800 S LYNNDALE DRIVE  
PO BOX 1699  
APPLETON, WI 54914  
(920) 242-5633  
HEATHER.DEUTH@WE-ENERGIES.COM

TRAFFIC SIGNALS (STH 441 RAMP)

WISDOT TRAFFIC SIGNALS  
MR. RANDY ASMAN  
944 VANDERPERREN WAY  
GREEN BAY, WI 54304  
(920) 360-3107  
RANDY.ASMAN@DOT.WI.GOV

TRAFFIC SIGNALS (FRENCH ROAD)

COUNTY SIGNALS  
MR. JOE ZELLMER  
1313 HOLLAND ROAD  
APPLETON, WI 54911  
(920) 832-5673  
JOSEPH.ZELLMER@OUTAGAMIE.ORG

DESIGN CONSULTANT

raSmith  
MR. JOHN BRUGGEMAN  
16745 W BLUEMOUND ROAD  
BROOKFIELD, WI 53005-5938  
(262) 781-1000  
JOHN.BRUGGEMAN@RASMITH.COM

WDNR LIAISON

DNR NORTHEAST REGIONAL HQ  
MR. MATTHEW SCHAEVE  
2984 SHAWANO AVE  
GREEN BAY, WI 54313  
(920) 366-1544  
MATTHEW.SCHAEVE@WISCONSIN.GOV

PROJECT CONTACTS

WISDOT PROJECT MANAGER  
MS. JODI JAROSINSKI  
944 VANDERPERREN WAY  
GREEN BAY, WI 54304  
(920) 492-4129  
JODI.JAROSINSKI@DOT.WI.GOV

PROJECT CONTACTS

OUTAGAMIE COUNTY HIGHWAY DEPARTMENT  
MR. JOE ZELLMER, HIGHWAY ENGINEER  
1313 HOLLAND ROAD  
APPLETON, WI 54911-8947  
(920) 209-9807  
JOSEPH.ZELLMER@OUTAGAMIE.ORG

ORDER OF SECTION 2 SHEETS

- GENERAL NOTES
- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- PLAN DETAILS
- PAVEMENT GRADES
- STORM SEWER & EROSION CONTROL
- TRAFFIC SIGNALS
- PAVEMENT MARKING & SIGNING
- TRAFFIC CONTROL

GENERAL NOTES

1. NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.
2. THERE ARE UTILITY FACILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL COORDINATE 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.
3. A SAWED JOINT IS REQUIRED WHERE INDICATED IN THE PLANS.
4. EROSION CONTROL DEVICES SHALL BE PLACED IN SEQUENCE WITH CONSTRUCTION OPERATIONS OR AS DETERMINED BY THE ENGINEER.
5. FOR SOIL BORING AND GEOTECHNICAL REPORT INFORMATION, CONTACT JODI JAROSINSKI AT (920) 492-4129.
6. ALL CURB & GUTTER STATIONS, OFFSETS, AND RADII ARE GIVEN TO THE FACE OF CURB UNLESS OTHERWISE NOTED.

**RUNOFF COEFFICIENT TABLE**

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

TOTAL PROJECT AREA = 3.55 ACRES  
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.49 ACRES

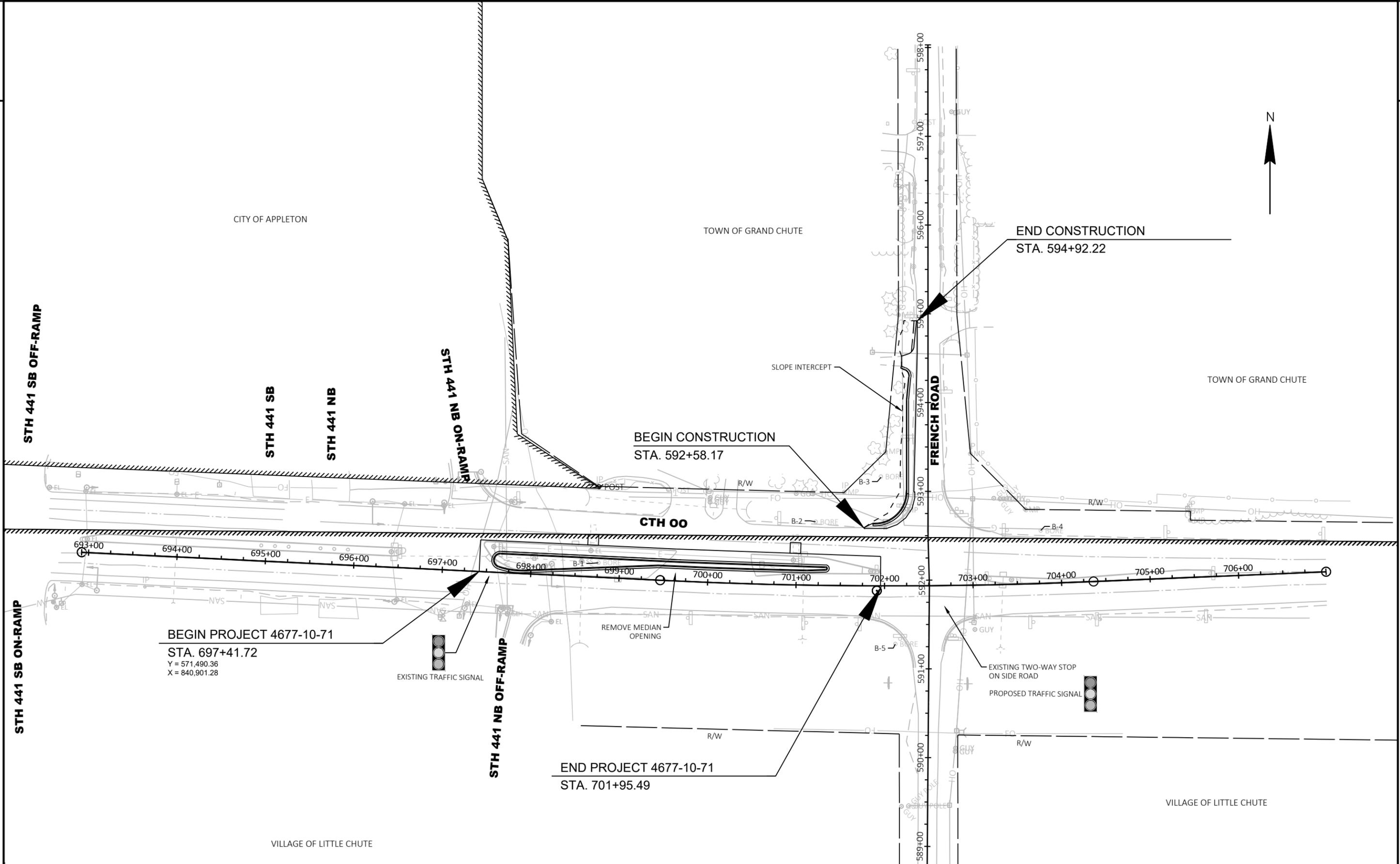
BORING LOG SUMMARY  
(APPROXIMATE LOCATIONS)

BORING NUMBER	STATION	OFFSET
B-1	698+76	16' LT
B-2	701+21	71' LT
B-3	701+95	123' LT
B-4	703+78	60' LT
B-5	702+12	65' RT

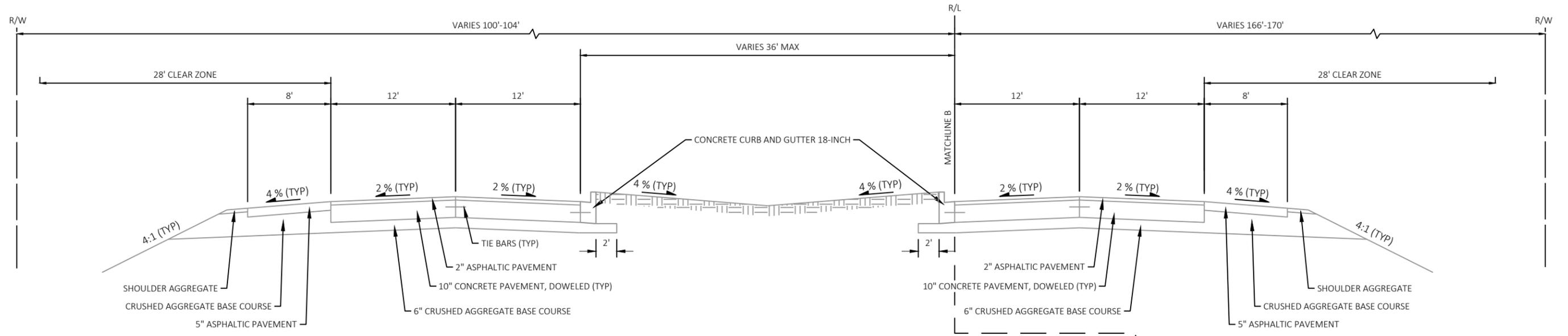


Dial **811** or (800)242-8511

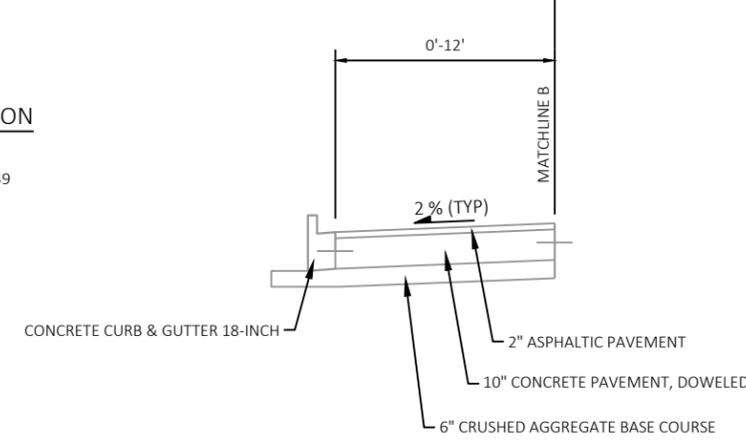
www.DiggersHotline.com



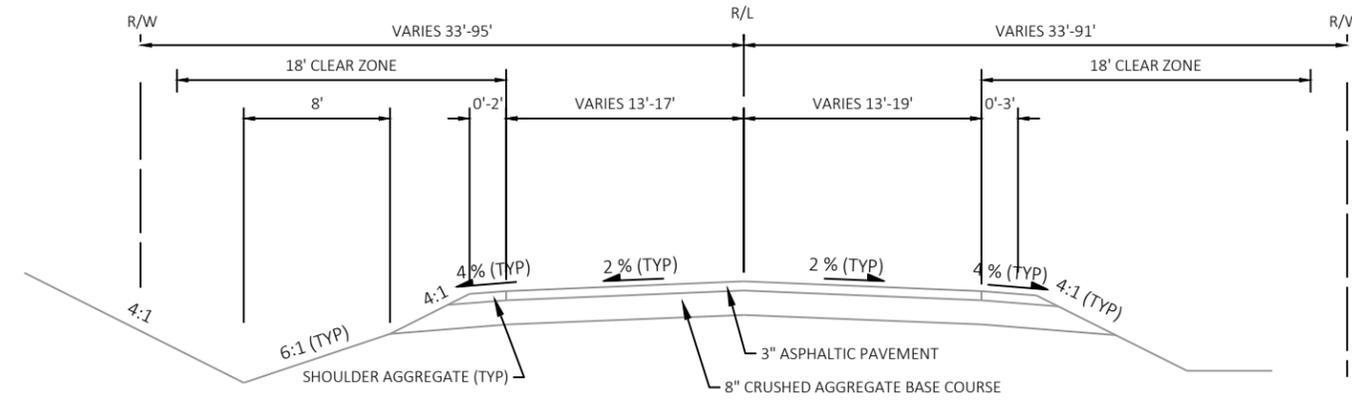
PROJECT NO: 4677-10-71	HWY: CTH 00	COUNTY: OUTAGAMIE	PROJECT OVERVIEW	SHEET	<b>E</b>
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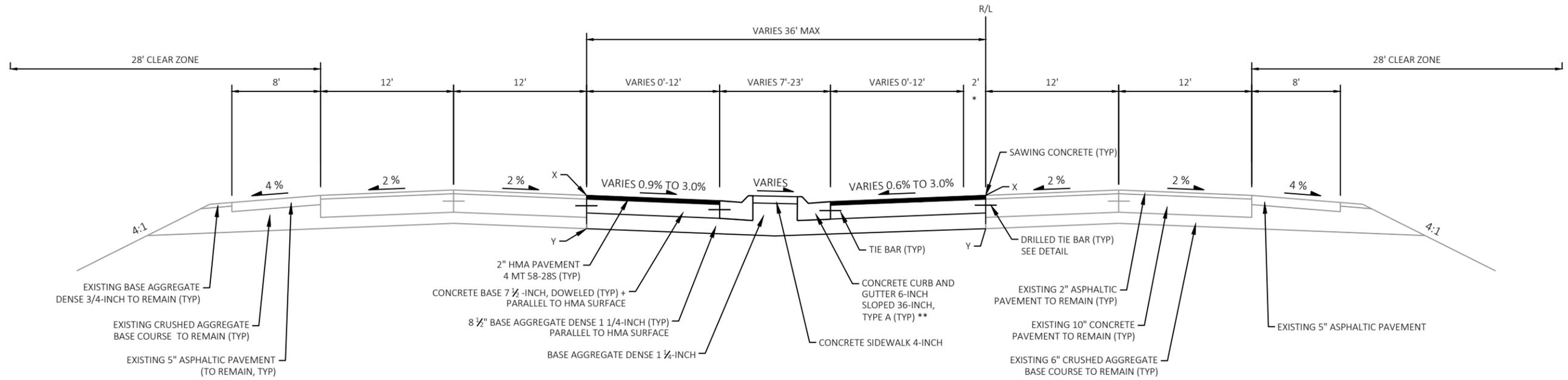
EXISTING TYPICAL SECTION  
 CTH OO  
 STA 697+41.72 TO STA 701+95.49



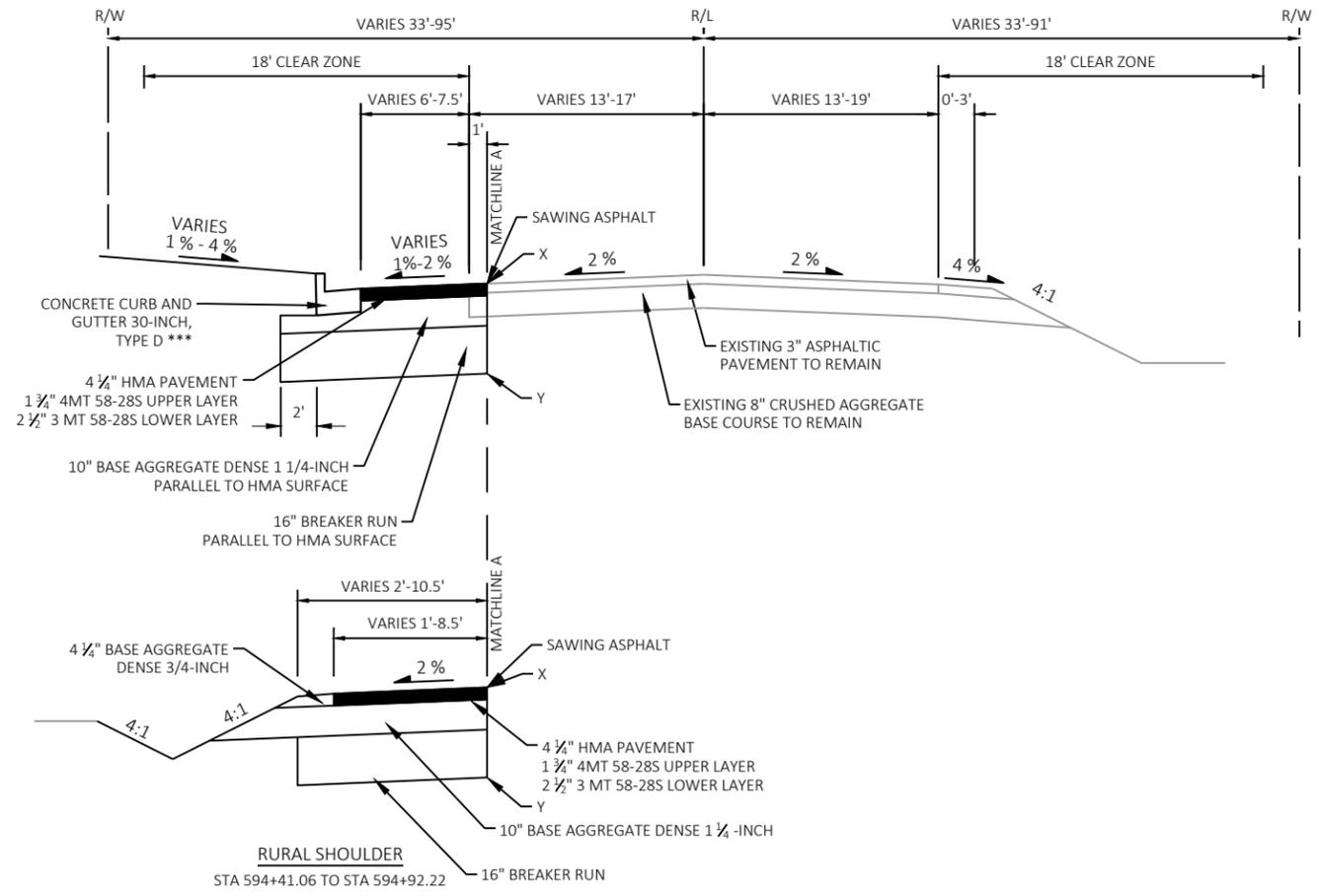
LEFT TURN LANE  
 STA 699+75 TO STA 701+95



EXISTING TYPICAL SECTION  
 FRENCH ROAD  
 STA 592+58.17 TO STA 594+92.22



**FINISHED TYPICAL SECTION**  
**CTH OO**  
 STA 697+41.72 TO STA 701+95.49



**FINISHED TYPICAL SECTION**  
**FRENCH ROAD**  
 STA 592+58.17 TO STA 594+92.22

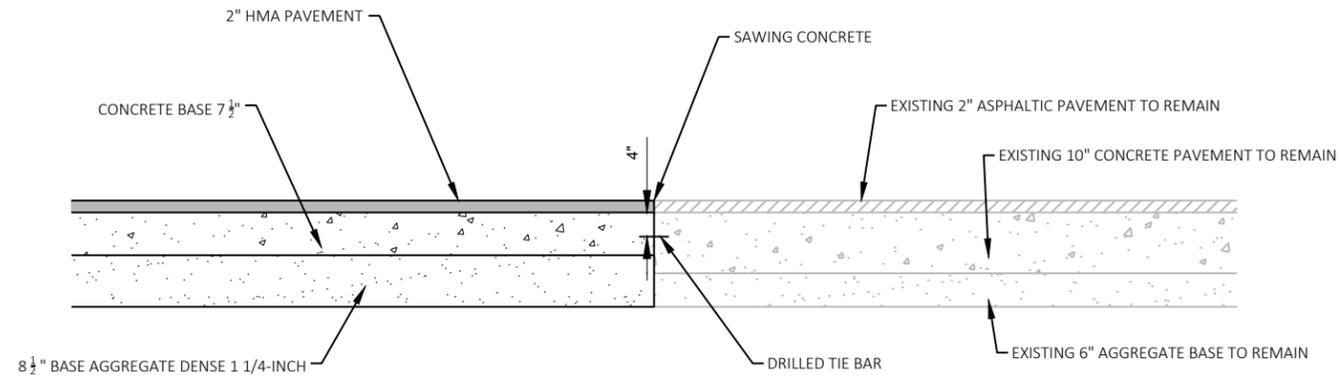
\* 2'-5" WIDE PAINTED SEPARATOR STA 699+19.39 TO STA 701+88.44

\*\* CONSTRUCT BOTTOM OF CURB FLANGE AT SAME ELEVATION AS BOTTOM OF CONCRETE BASE

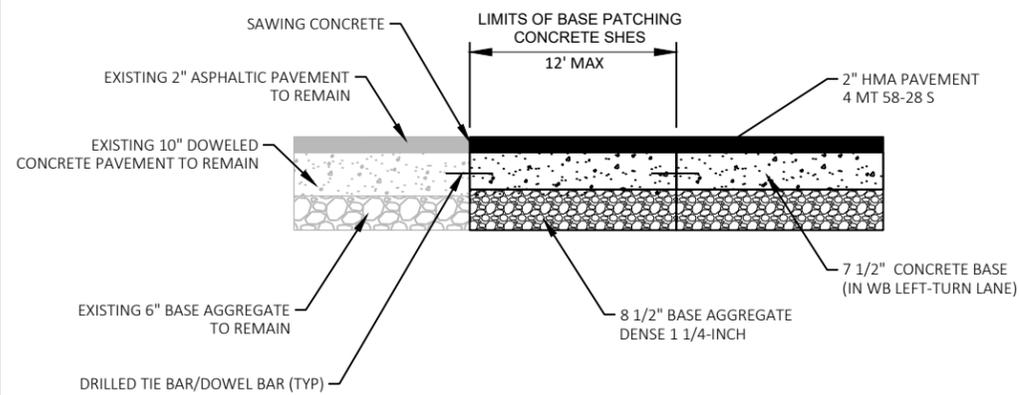
\*\*\* CONCRETE CURB & GUTTER 6-INCH SLOPED 36-INCH TYPE A ALONG CTH OO / FRENCH RD NW CORNER RADIUS

+ CONCRETE PAVEMENT REPLACEMENT SHES STA 697+41.72 TO STA 697+65.32 PAVE FLUSH WITH TOP OF ADJACENT HMA PAVEMENT 2" REMOVING CONCRETE SURFACE PARTIAL DEPTH PRIOR TO PAVING 2" HMA

X = POINT REFERRED TO ON PLAN DETAILS  
 Y = POINT REFERRED TO ON CROSS SECTIONS

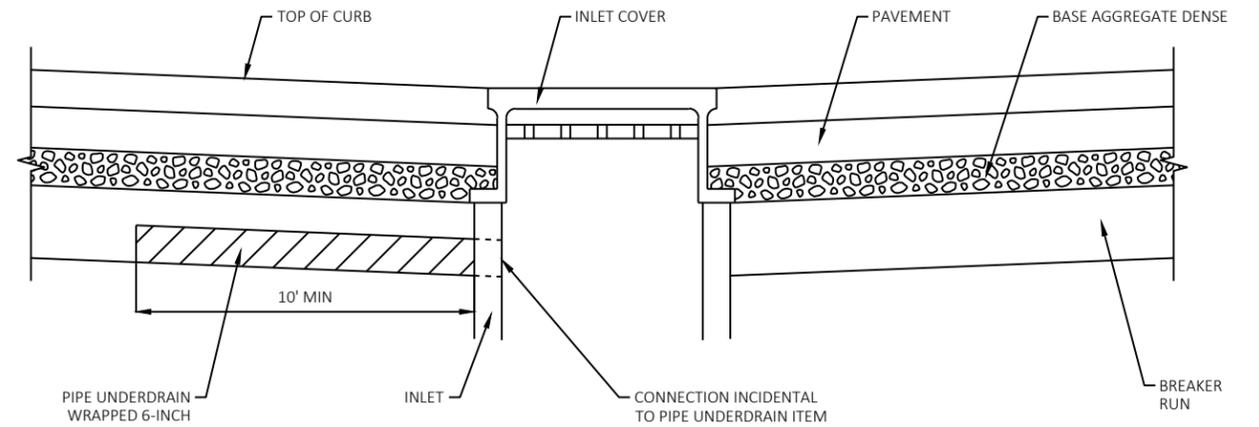


**DRILLED TIE BAR EMBEDMENT DETAIL**  
 CTH OO EB LEFT TURN LANE AND WB LOOK-AHEAD LANE  
 SEE SDD "CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES" FOR MORE INFORMATION



**BASE PATCHING CONCRETE SHES**  
 CTH OO

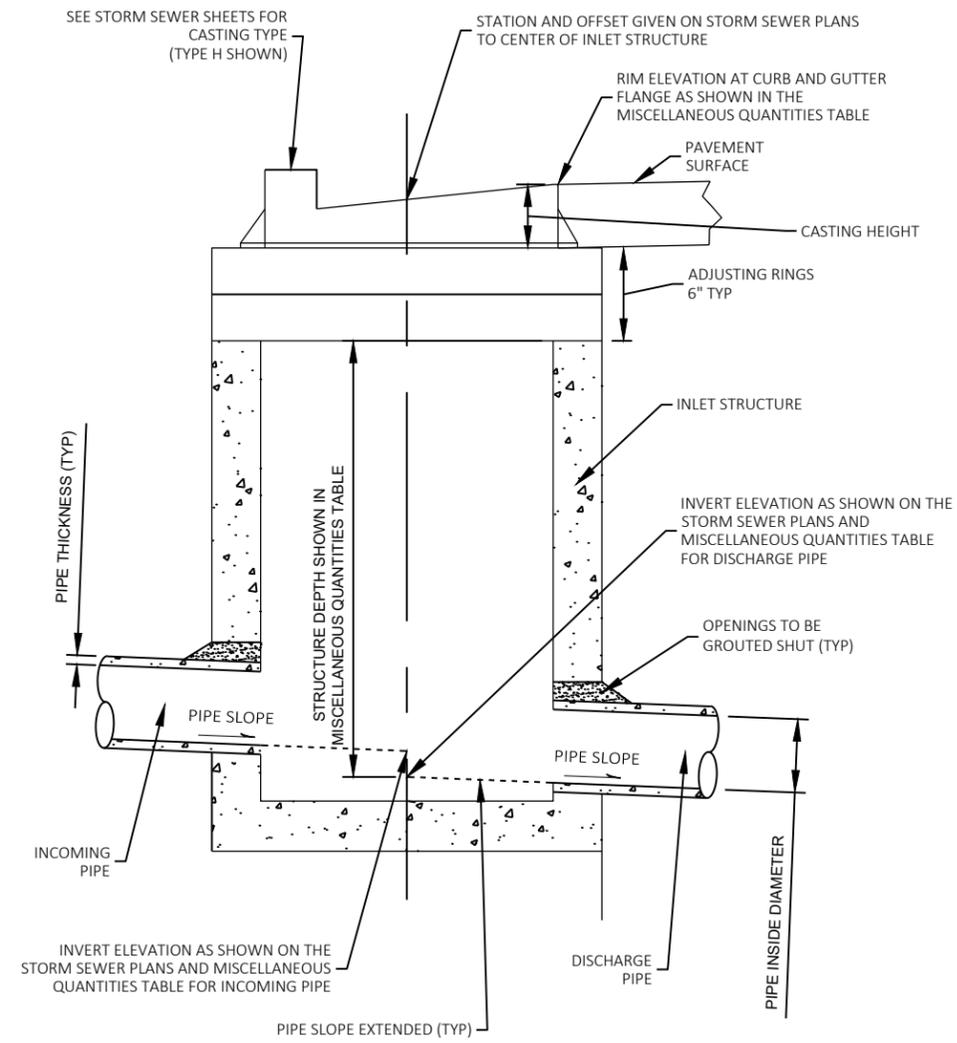
SEE PLAN DETAILS FOR LOCATIONS. SEE SDD "LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPICE) BOX OFF ROADWAY (OPTION 2)" FOR ADDITIONAL INFORMATION.



**PIPE UNDERDRAIN DETAIL**  
 AT STORM SEWER STRUCTURE 4A

NOTES:

DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE REQUIREMENTS OF SDD FOR INLETS 2X2-FT, 2X2.5-FT, 2X3 FT, AND 2.5X3-FT, AND SDD FOR INLETS 3-FT AND 4-FT DIAMETER.



INLETS

INLETS 2X3-FT and 4-FT DIAMETER

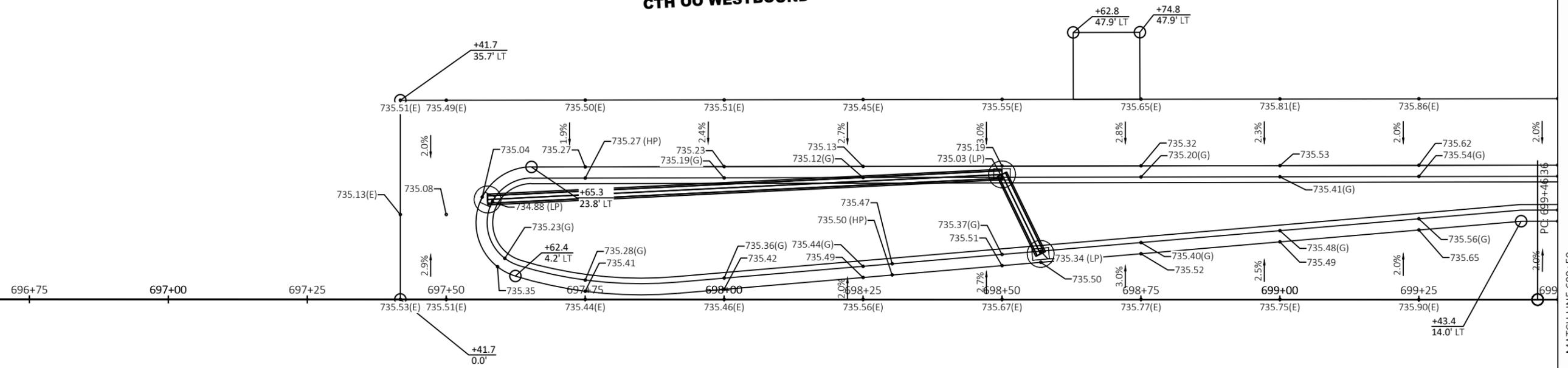
STRUCTURE DEPTH DEFINITION

LEGEND	
XXX.XX	PAVEMENT ELEVATION
(LP)	LOW POINT
(HP)	HIGH POINT
(E)	EXISTING
(G)	GUTTER GRADE



**CTH OO WESTBOUND**

**CTH OO EASTBOUND**

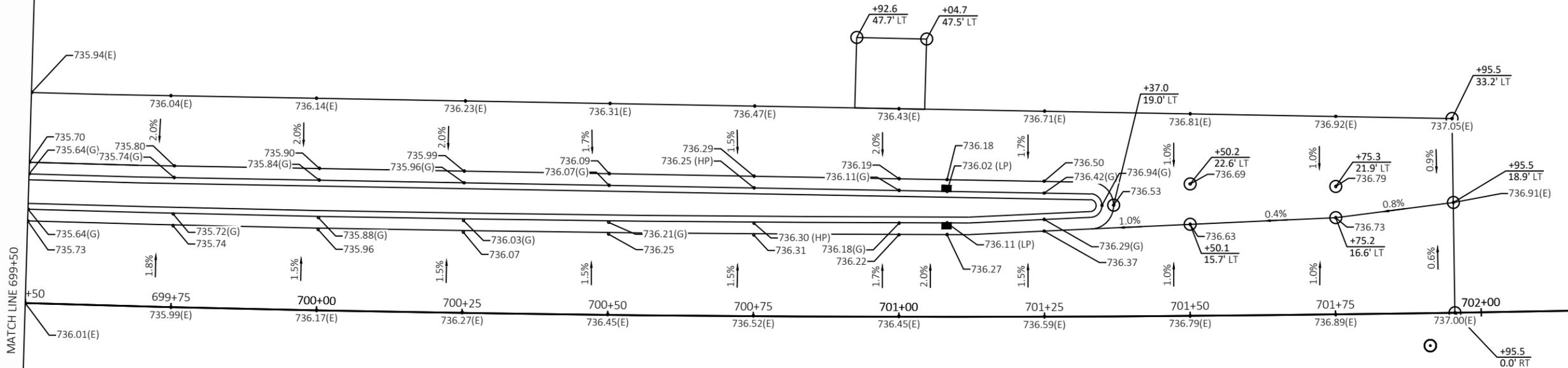


MATCH LINE 699+50

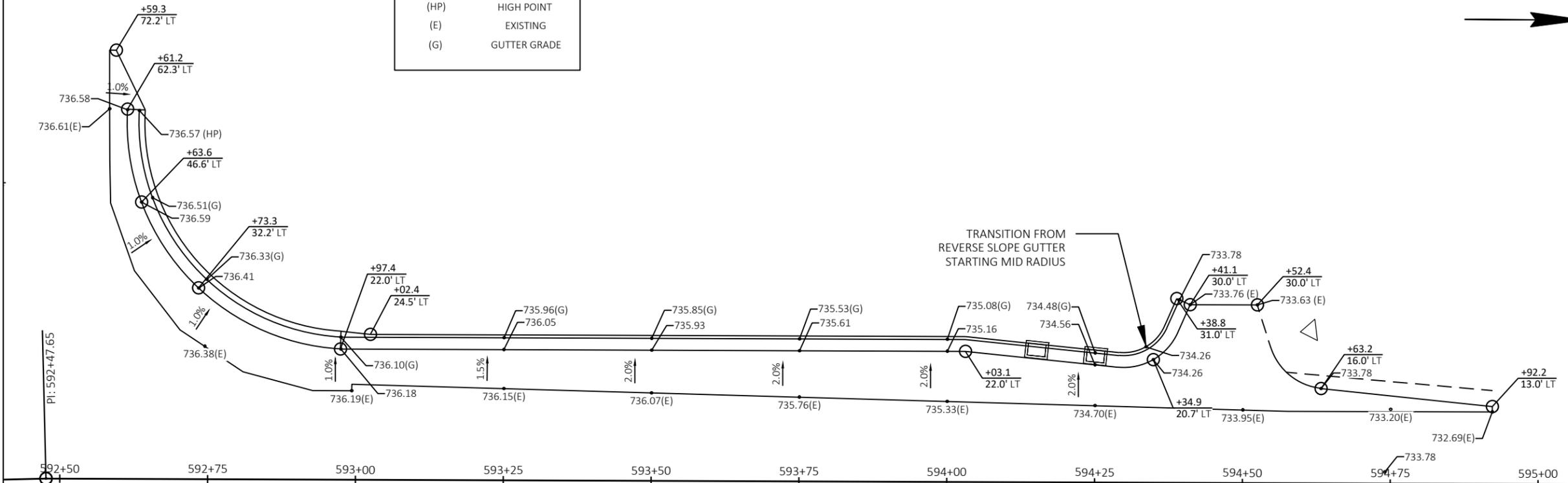
LEGEND	
XXX.XX	PAVEMENT ELEVATION
(LP)	LOW POINT
(HP)	HIGH POINT
(E)	EXISTING
(G)	GUTTER GRADE

CTH OO WESTBOUND

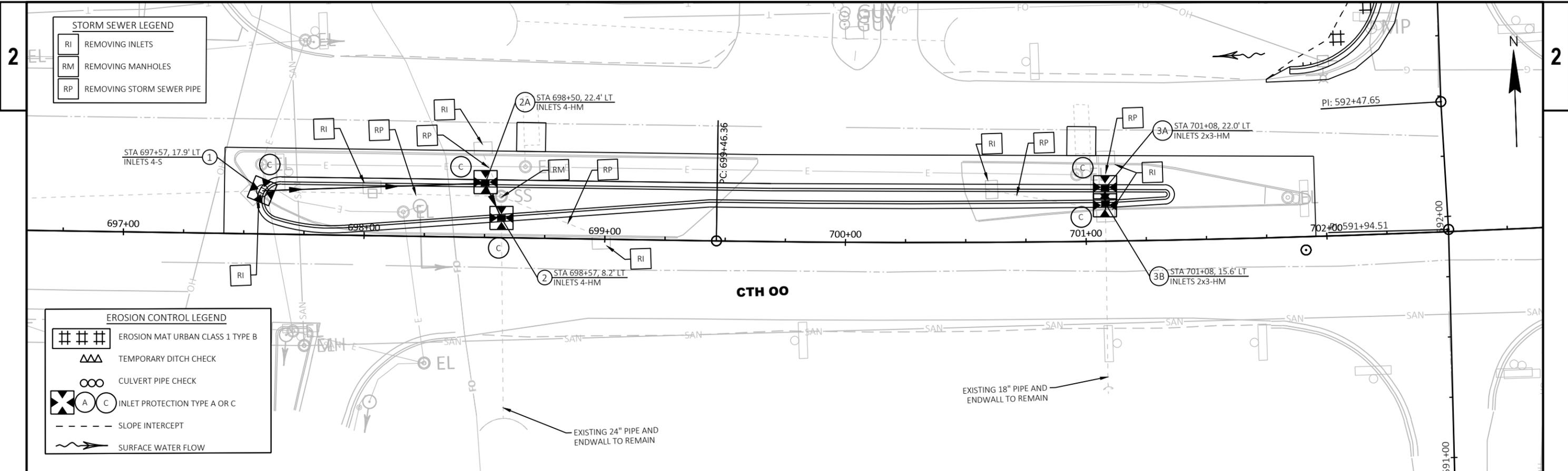
CTH OO EASTBOUND



LEGEND	
XXX.XX	PAVEMENT ELEVATION
(LP)	LOW POINT
(HP)	HIGH POINT
(E)	EXISTING
(G)	GUTTER GRADE



FRENCH RD

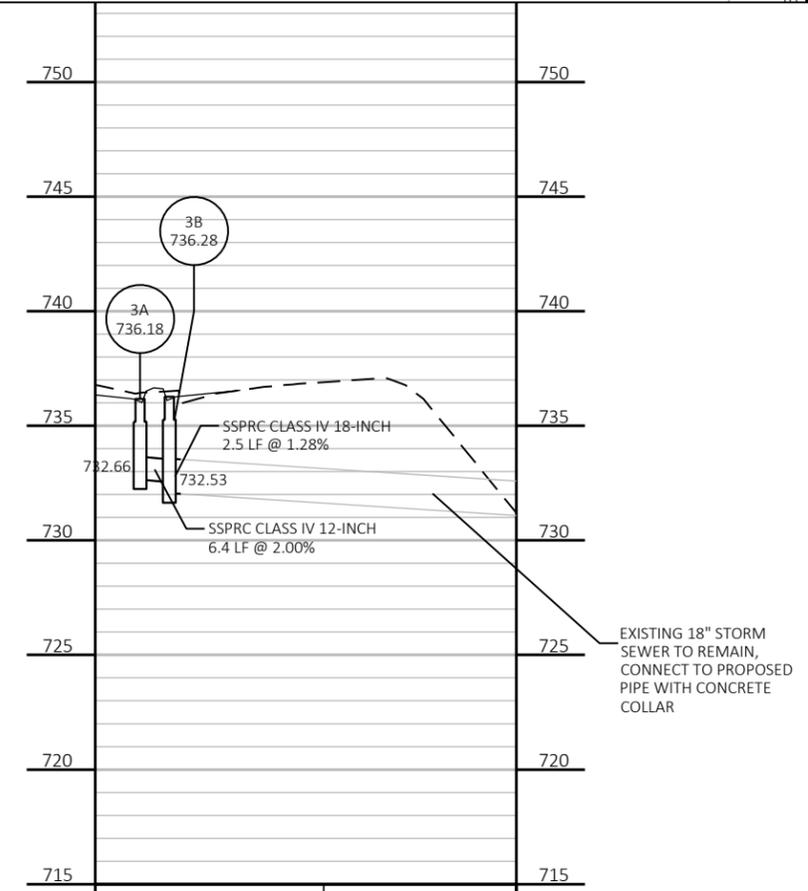
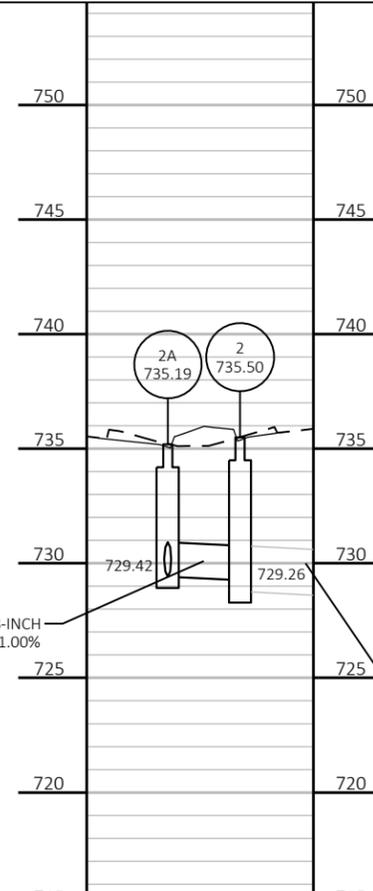
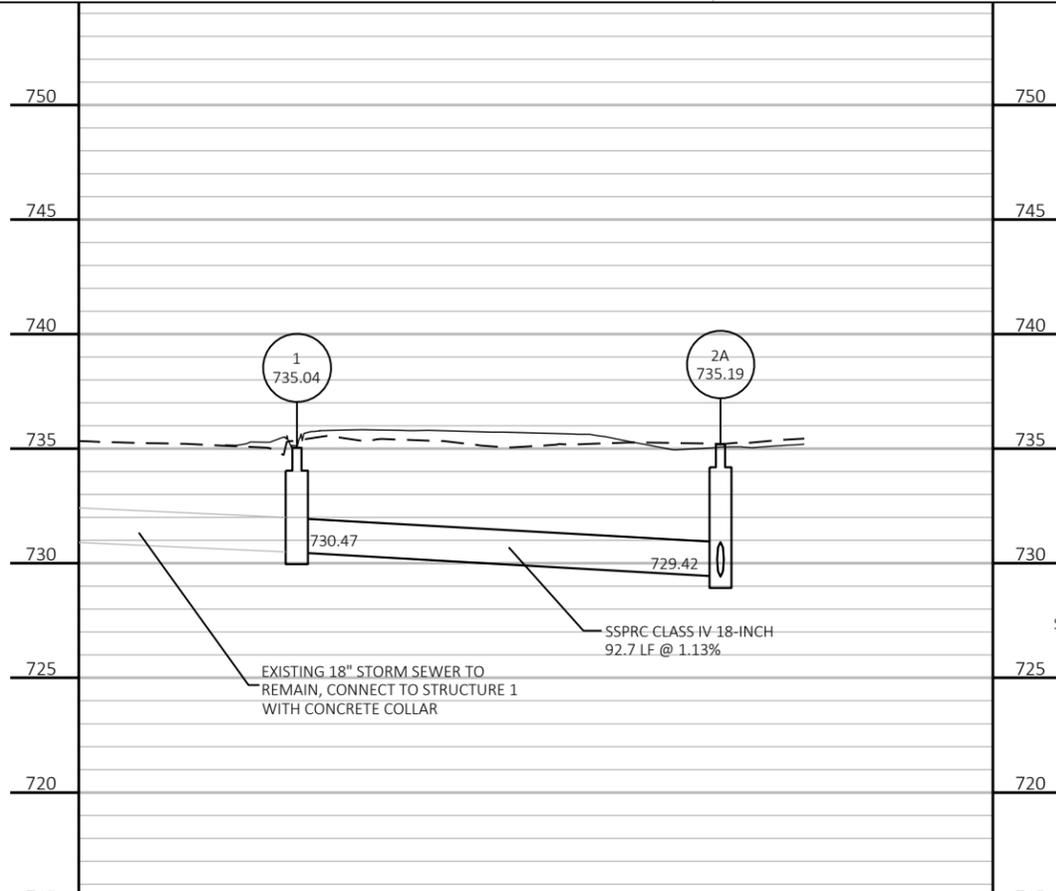


**STORM SEWER LEGEND**

- RI REMOVING INLETS
- RM REMOVING MANHOLES
- RP REMOVING STORM SEWER PIPE

**EROSION CONTROL LEGEND**

- ### EROSION MAT URBAN CLASS 1 TYPE B
- AAA TEMPORARY DITCH CHECK
- OO CULVERT PIPE CHECK
- X A C INLET PROTECTION TYPE A OR C
- - - SLOPE INTERCEPT
- ~> SURFACE WATER FLOW



PROJECT NO: 4677-10-71

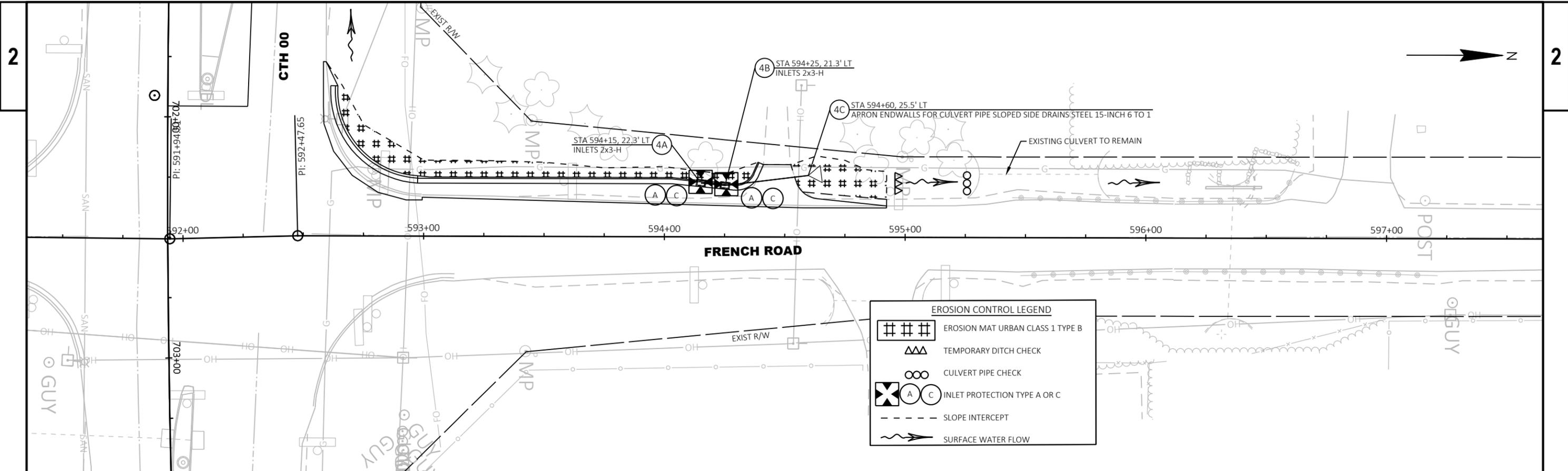
HWY: CTH 00

COUNTY: OUTAGAMIE

STORM SEWER AND EROSION CONTROL

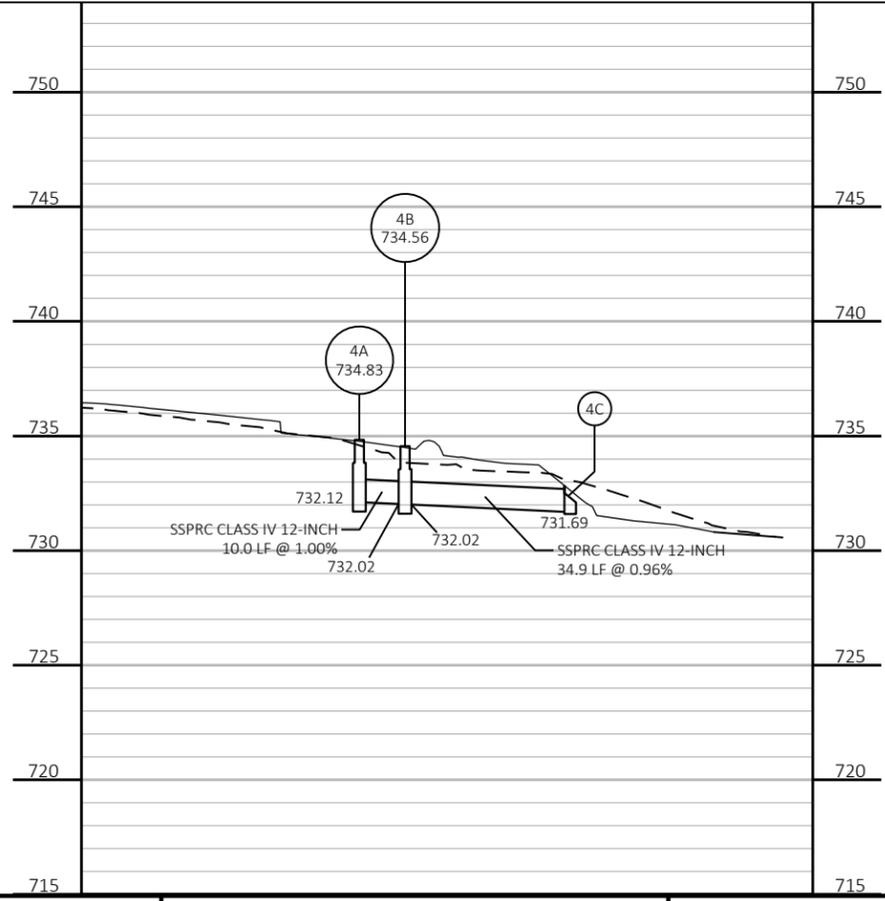
SHEET

E



**EROSION CONTROL LEGEND**

- # # # EROSION MAT URBAN CLASS 1 TYPE B
- △△△ TEMPORARY DITCH CHECK
- CULVERT PIPE CHECK
- ⊗ ⊙ ⊙ INLET PROTECTION TYPE A OR C
- - - SLOPE INTERCEPT
- ~> SURFACE WATER FLOW



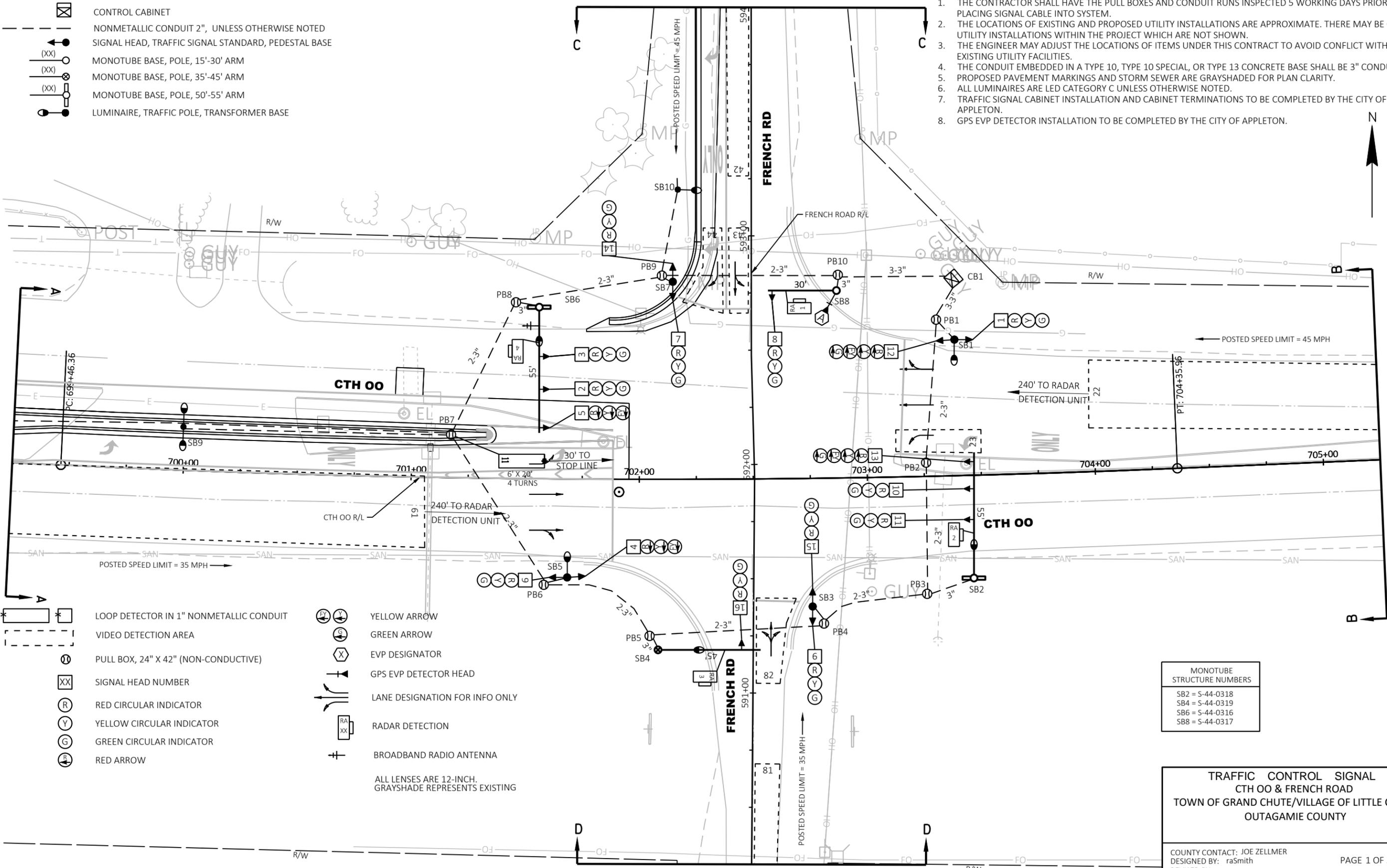
SHEET 2 OF 2

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- MONOTUBE BASE, POLE, 15'-30' ARM
- MONOTUBE BASE, POLE, 35'-45' ARM
- MONOTUBE BASE, POLE, 50'-55' ARM
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO SYSTEM.
2. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
3. THE ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.
4. THE CONDUIT EMBEDDED IN A TYPE 10, TYPE 10 SPECIAL, OR TYPE 13 CONCRETE BASE SHALL BE 3" CONDUIT.
5. PROPOSED PAVEMENT MARKINGS AND STORM SEWER ARE GRAYSHADED FOR PLAN CLARITY.
6. ALL LUMINAIRES ARE LED CATEGORY C UNLESS OTHERWISE NOTED.
7. TRAFFIC SIGNAL CABINET INSTALLATION AND CABINET TERMINATIONS TO BE COMPLETED BY THE CITY OF APPLETON.
8. GPS EVP DETECTOR INSTALLATION TO BE COMPLETED BY THE CITY OF APPLETON.



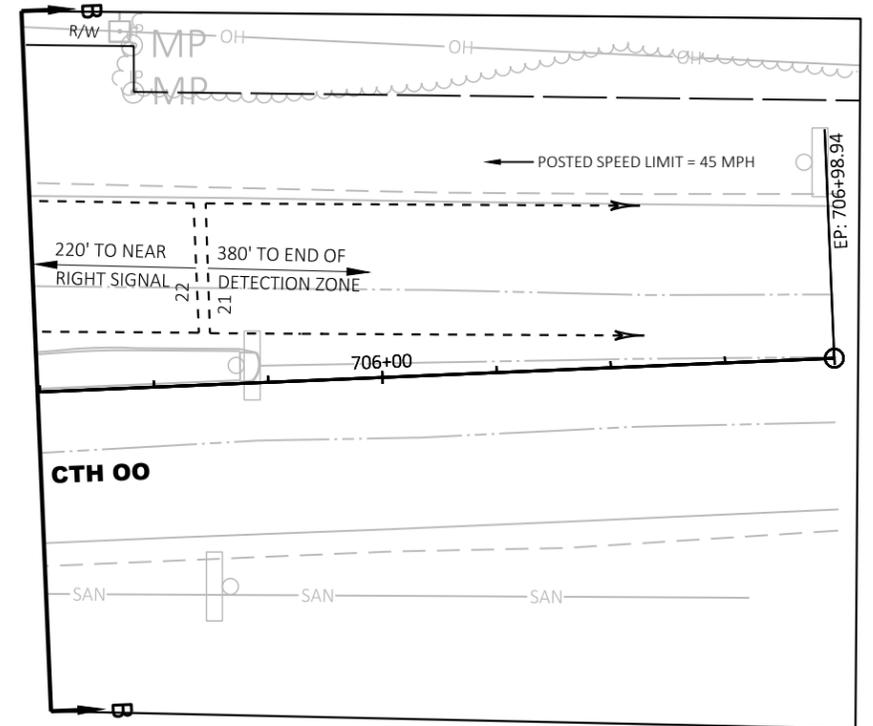
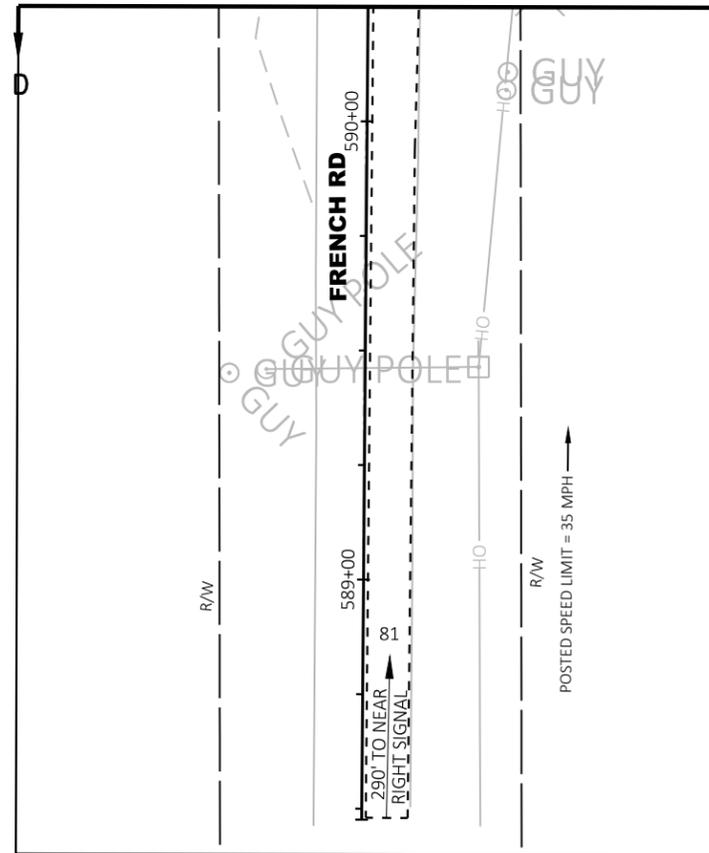
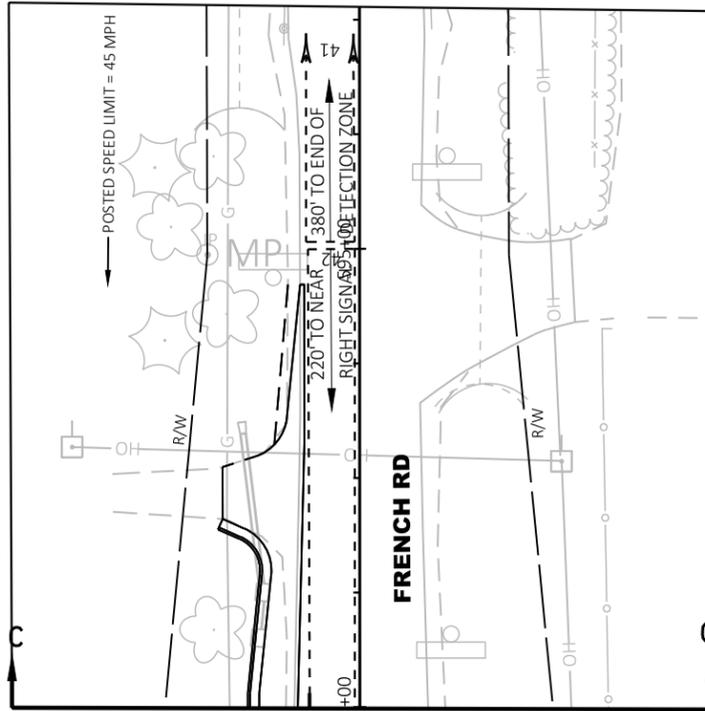
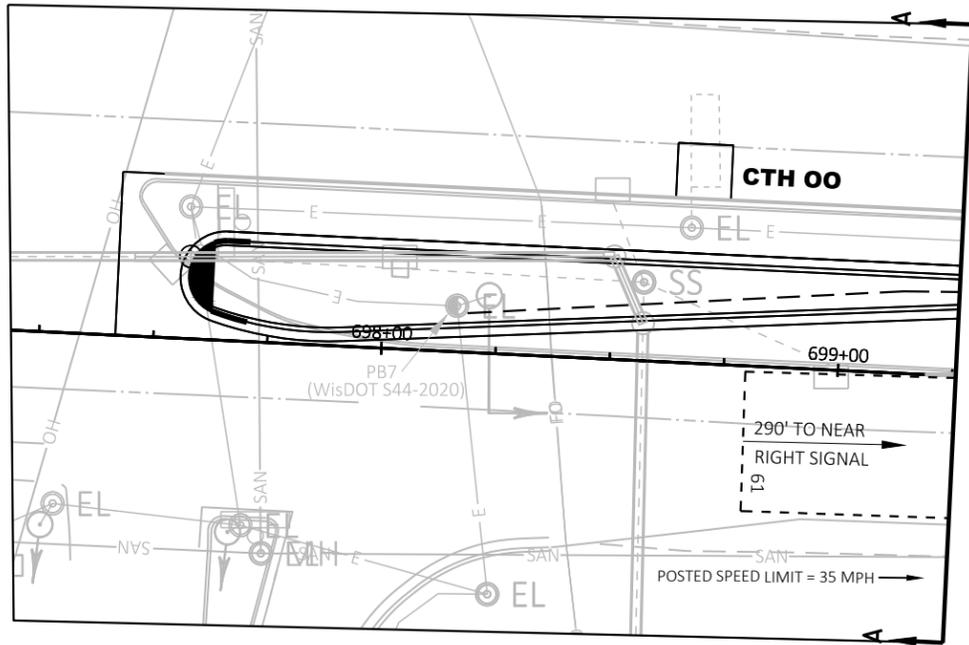
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- VIDEO DETECTION AREA
- PULL BOX, 24" X 42" (NON-CONDUCTIVE)
- SIGNAL HEAD NUMBER
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR
- RED ARROW

- YELLOW ARROW
  - GREEN ARROW
  - EVP DESIGNATOR
  - GPS EVP DETECTOR HEAD
  - LANE DESIGNATION FOR INFO ONLY
  - RADAR DETECTION
  - BROADBAND RADIO ANTENNA
- ALL LENSES ARE 12-INCH.  
GRAYSHADE REPRESENTS EXISTING

MONOTUBE STRUCTURE NUMBERS	
SB2	= S-44-0318
SB4	= S-44-0319
SB6	= S-44-0316
SB8	= S-44-0317

**TRAFFIC CONTROL SIGNAL**  
**CTH 00 & FRENCH ROAD**  
**TOWN OF GRAND CHUTE/VILLAGE OF LITTLE CHUTE**  
**OUTAGAMIE COUNTY**

COUNTY CONTACT: JOE ZELLMER  
 DESIGNED BY: raSmith  
 REVISED BY:  
 PAGE 1 OF 3

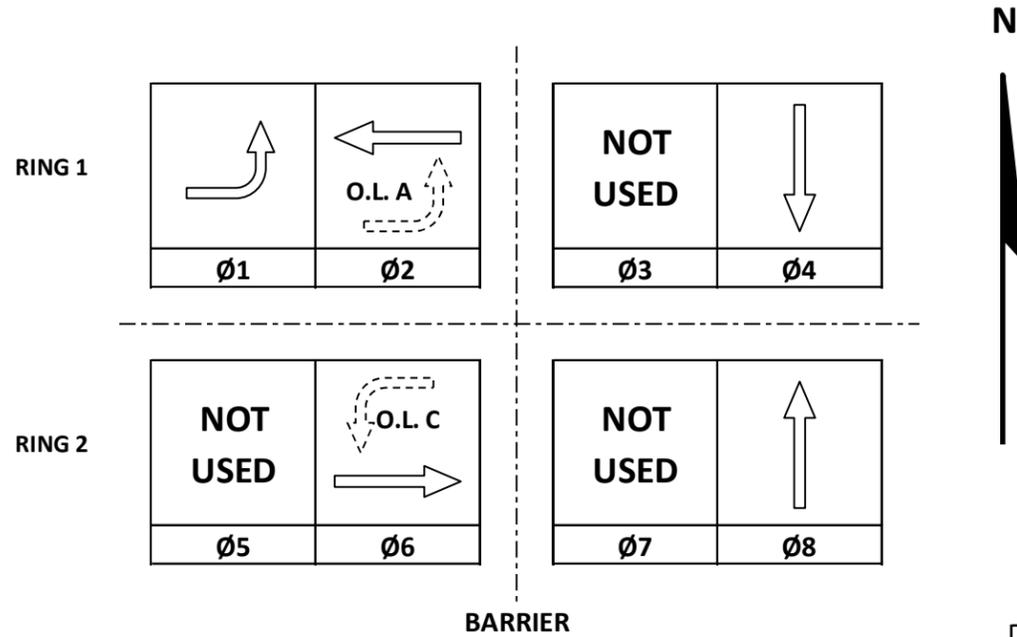


TRAFFIC CONTROL SIGNAL  
 CTH 00 & FRENCH ROAD  
 TOWN OF GRAND CHUTE/VILLAGE OF LITTLE CHUTE  
 OUTAGAMIE COUNTY

COUNTY CONTACT: JOE ZELLMER  
 DESIGNED BY: raSmith  
 REVISED BY:

PAGE 2 OF 3

	HEAD NUMBERS	FLASH
Ø1	12,13	-
Ø2	1,2,3	R
Ø3		
Ø4	14,15,16	R
Ø5		
Ø6	9,10,11	R
Ø7		
Ø8	6,7,8	R
Ø2P		
Ø4P		
Ø6P		
Ø8P		
OLA	12,13	R ←
OLB		
OLC	4,5	R ←
OLD		



**CONTROLLER LOGIC**

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1		6		X
2	X	6	MIN	X
3				
4		8		X
5				
6	X	2	MIN	X
7				
8		4		X

TYPE OF INTERCONNECT/COMMUNICATION	
NONE	
CLOSED LOOP	
TWISTED PAIR	
FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	
RADIO	X
CELL MODEM	

TYPE OF COORDINATION	
NONE	
TBC	X
TRAFFIC RESPONSIVE	
ADAPTIVE	
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM NO:	SS-

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC CABINET	X
IN SEPARATE DOT LIGHTING CABINET	

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	X
GTT	
TOMAR	
HARDWIRE	
OTHER	
CONFIRMATION LIGHTS	
LIFT BRIDGE	
QUEUE DETECTION	

**EMERGENCY VEHICLE PREEMPTION SEQUENCE**

EMERGENCY VEHICLE PREEMPTOR	A	B	C	D
MOVEMENT				
PHASE	2 + 6			

AFTER PREEMPTION SEQUENCE 2+6, CONTROLLER SHALL RETURN TO PHASES 2+6.

**DETECTOR LOGIC**

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR*(S)	11	21	23	41	43	61	81	
ASSIGNED PHASE	1	2	2	4	4	6	8	
OPERATION MODE	VEH							
SWITCH								
EXTEND		X		X		X	X	
DELAY								

DETECTOR INPUT	19	17	23	21	27	25	31	29
PLAN LOOP DETECTOR*(S)								
ASSIGNED PHASE								
OPERATION MODE	VEH							
SWITCH								
EXTEND								
DELAY								

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR*(S)		22		42	44		82	
ASSIGNED PHASE		2		4	4		8	
OPERATION MODE	VEH							
SWITCH								
EXTEND								
DELAY				X				

DETECTOR INPUT	20	18	24	22	28	26	32	30
PLAN LOOP DETECTOR*(S)								
ASSIGNED PHASE								
OPERATION MODE	VEH							
SWITCH								
EXTEND								
DELAY								

CTH OO & FRENCH ROAD	
TOWN OF GRAND CHUTE/VILLAGE OF LITTLE CHUTE	
OUTAGAMIE COUNTY	
SIGNAL NO:	CABINET TYPE: TS2-S
CONTROLLER TYPE: EPAC	
DATE: 11/22	PAGE NUMBER: 3 OF 3

PROJECT ID:	4677-10-71
INTERSECTION:	CTH OO & FRENCH ROAD

Signal Wire Color Coding	BLK - black	RED - red	GRN - green
	WHT - white	BLU - blue	ORG - orange

DATE	11/22
------	-------

CB1 TO	# OF COND.	HEAD NO.	SIGNAL INDICATION WIRE COLOR								PED BUTTON	APS	
			RED	YELLOW	GREEN	<RED>	<YELLOW>	<GREEN>	<FLASHING YELLOW>	D/WALK			WALK
SB1	16	1	RED	ORG	GRN								
		12				RED/BLK	ORG/BLK	BLK/RED	GRN/BLK				
SB2	16	10	RED/BLK	ORG/BLK	GRN/BLK								
		11	RED/BLK	ORG/BLK	GRN/BLK								
		13				RED	ORG	BLK/RED	GRN				
SB3	16	6	RED	ORG	GRN								
		15	RED/BLK	ORG/BLK	GRN/BLK								
SB4	16	16	RED/BLK	ORG/BLK	GRN/BLK								
SB5	16	4				RED	ORG		GRN				
		9	RED/BLK	ORG/BLK	GRN/BLK								
SB6	16	2	RED	ORG	GRN								
		3	RED	ORG	GRN								
		5				RED/BLK	ORG/BLK		GRN/BLK				
SB7	16	7	RED	ORG	GRN								
		14	RED/BLK	ORG/BLK	GRN/BLK								
SB8	16	8	RED	ORG	GRN								

Equipment Grounding Conductor 10 AWG Green XLP	
From	To
CB1	SB1
CB1	SB2
CB1	SB3
CB1	SB4
CB1	SB5
CB1	SB6
CB1	SB7
CB1	SB8
CB1	SB9
CB1	SB10

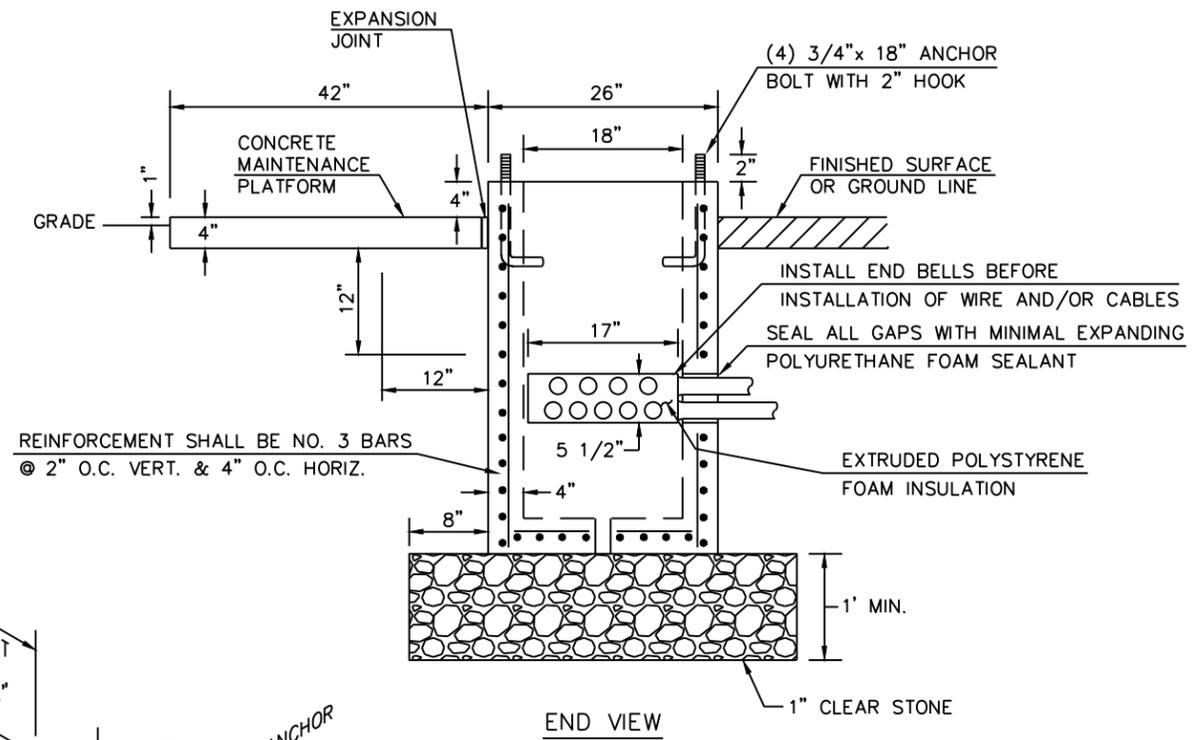
Lighting Tray Cable 3 Cond. 12 AWG Grounded	
From	To
CB1	SB1
CB1	SB2
CB1	SB4
CB1	SB5
CB1	SB6
CB1	SB9
CB1	SB10

Emergency Vehicle Preemption (EVP) CAT6 Cable	
From	To
CB1	HEAD A (SB8)

Radar Detection Cable	
From	To
CB1	RA1 (SB8)
CB1	RA2 (SB2)
CB1	RA3 (SB4)
CB1	RA4 (SB6)

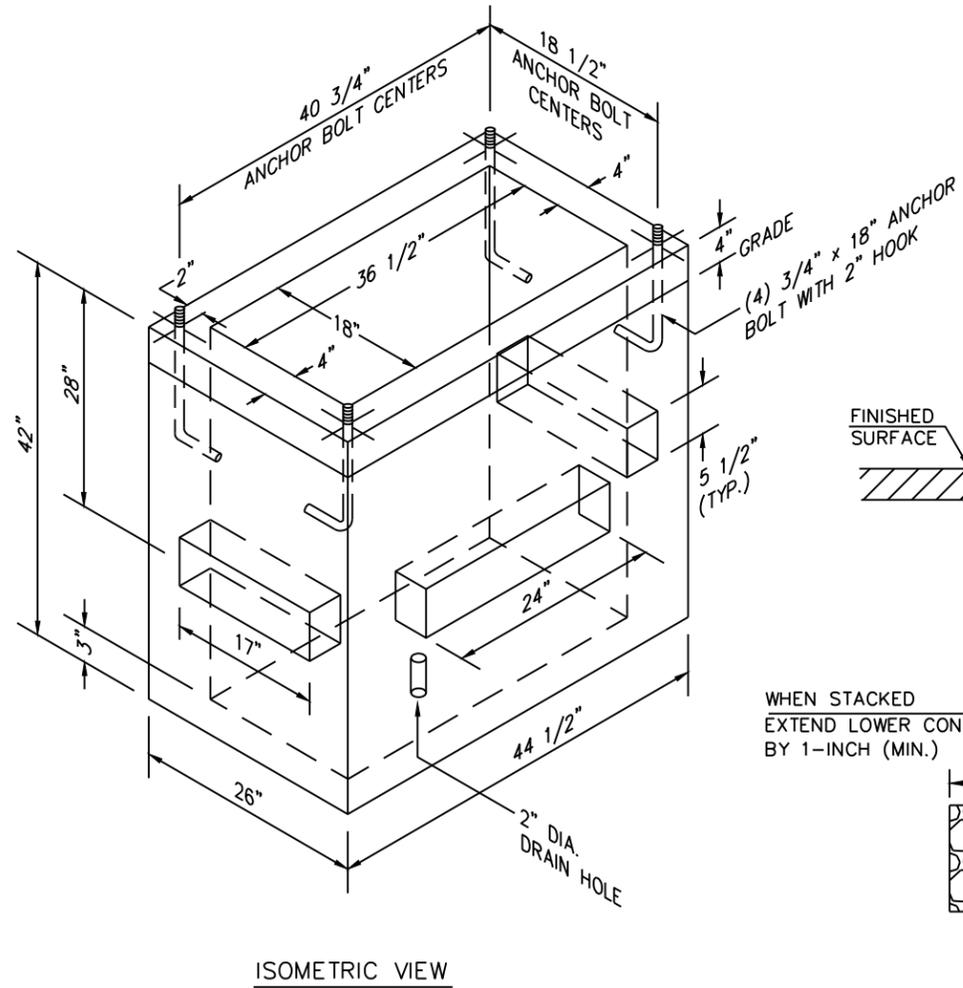
Broadband Radio CAT6 Cable	
From	To
CB1	RADIO (SB6)

\*Use the white conductor in the cable assembly as the grounded conductor for all traffic signal indications  
 \*Ensure the grounded conductor in the feeder cable and the pole cables are both 18" longer than the ungrounded conductors.  
 \*Reconnect the grounding conductors wherever the circuit has been interrupted to ensure the grounding circuit is complete.

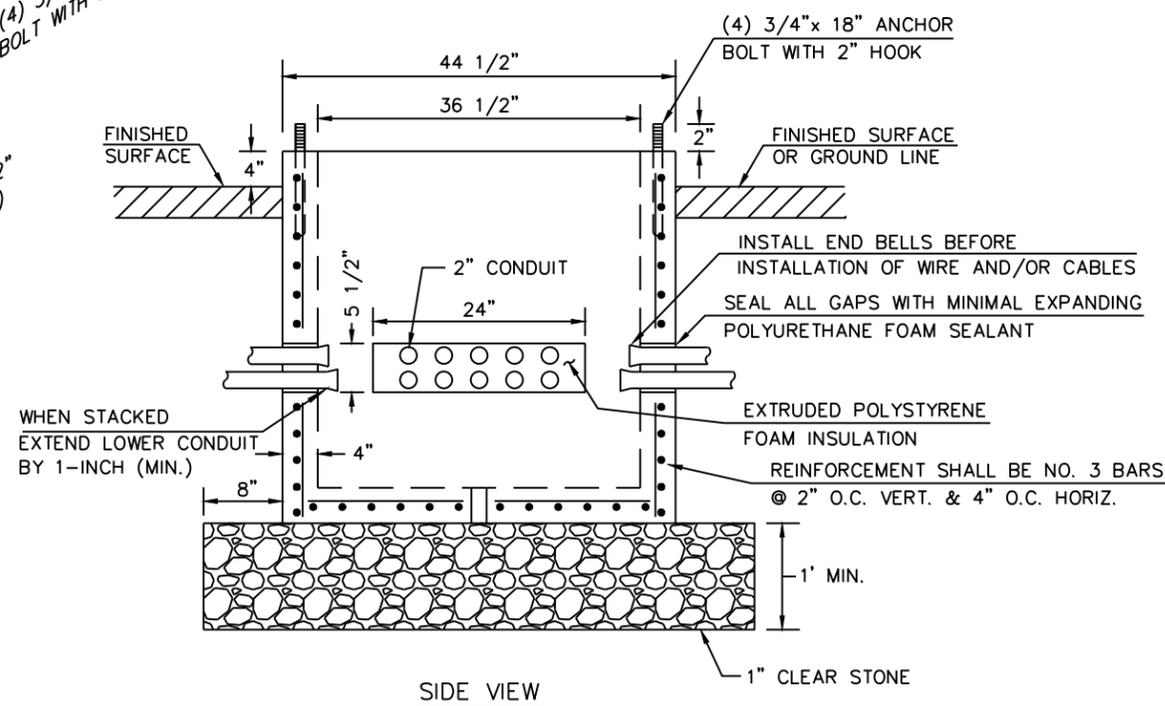


REINFORCEMENT SHALL BE NO. 3 BARS  
 @ 2" O.C. VERT. & 4" O.C. HORIZ.

END VIEW



ISOMETRIC VIEW

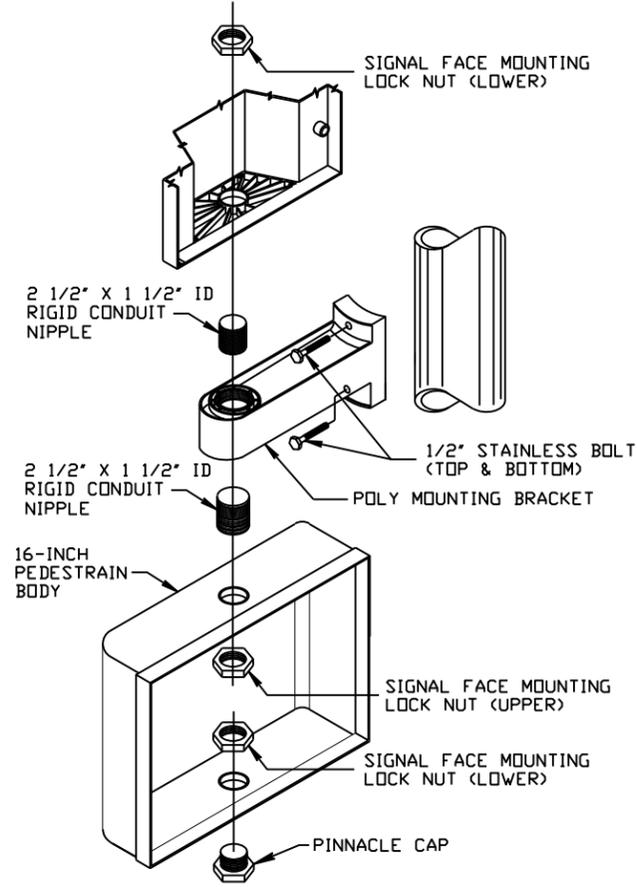


SIDE VIEW

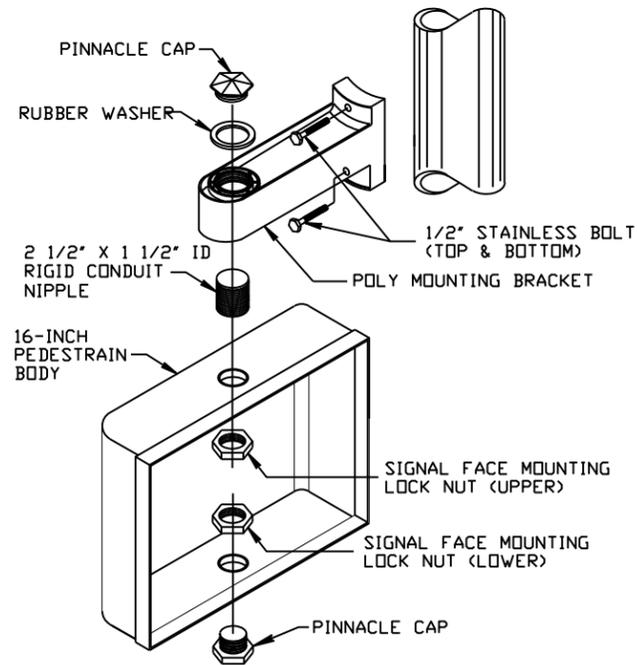
GENERAL NOTES

- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
- CONDUITS SHALL EXTEND BEYOND FACE OF CONCRETE WALL 1 INCH.
- DEPTH OF CONDUIT INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES MINIMUM AND 36 INCHES MAXIMUM.
- DEPTH OF CONDUIT INSTALLED THAT IS NOT BELOW THE TRAVELED WAY SHALL BE 18 INCHES MINIMUM AND 36 INCHES MAXIMUM.
- ANY EXCEPTION TO THE MAXIMUM DEPTH SHALL BE ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER.
- CONTROL CABINET BASE TOP SURFACE SHALL BE TROWEL FINISHED AND LEVEL.
- MAINTENANCE PLATFORM SHALL BE FLOAT OR BROOM FINISHED AND BE LEVEL.
- MAINTENANCE PLATFORMS ARE NOT REQUIRED WHEN THE SURROUNDING AREA IS PAVED.
- PLUG ALL BELOW GRADE NONMETALLIC CONDUIT ENDS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED.
- ALL CONDUIT ENDS AT THE CONCRETE BASE WALLS SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.
- A TWO-INCH DIAMETER DRAIN HOLE IS REQUIRED AT THE BOTTOM OF THE BASE.
- BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE WALL OF THE CONCRETE BASE BEFORE INSTALLATION OF CABLE OR WIRE.

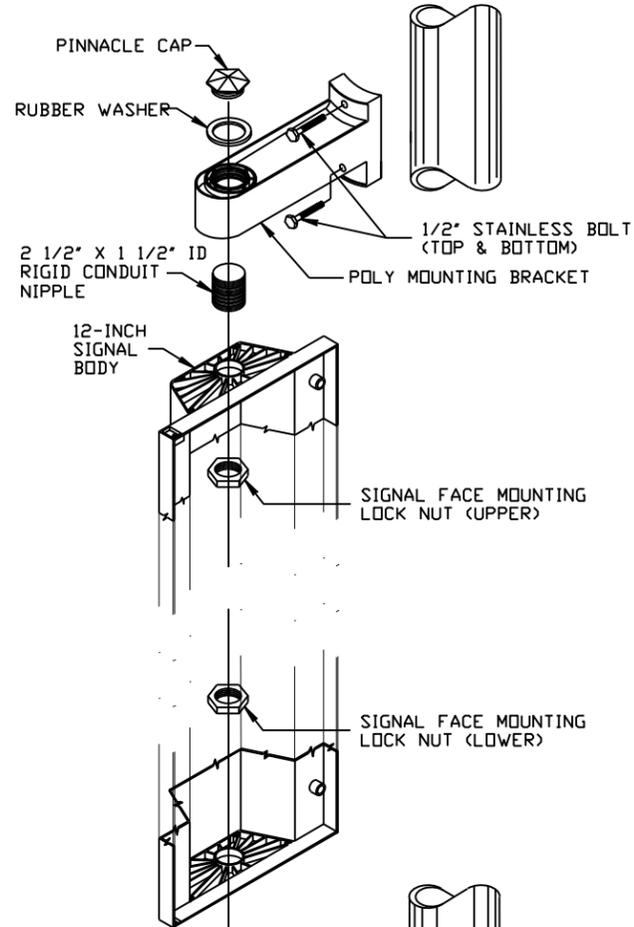
CONCRETE CABINET BASEMENT PRECAST SPECIAL



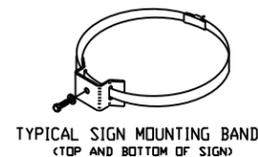
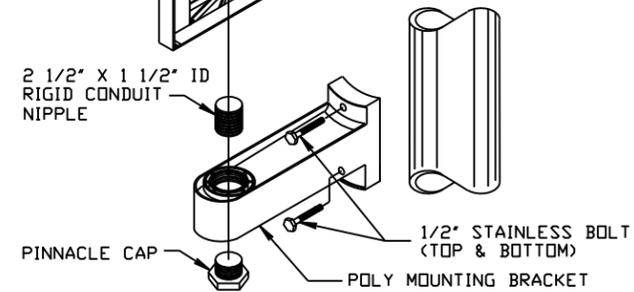
VEHICLE DISPLAY WITH INLINE PEDESTRIAN DISPLAY MOUNTING



PEDESTRIAN SIGNAL DISPLAY MOUNTING



VEHICLE SIGNAL DISPLAY MOUNTING



GENERAL NOTES

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

THE SIGNAL MOUNTINGS SHOWN HER SUPERSEDE THOSE IN THE STANDARD DETAIL DRAWINGS.

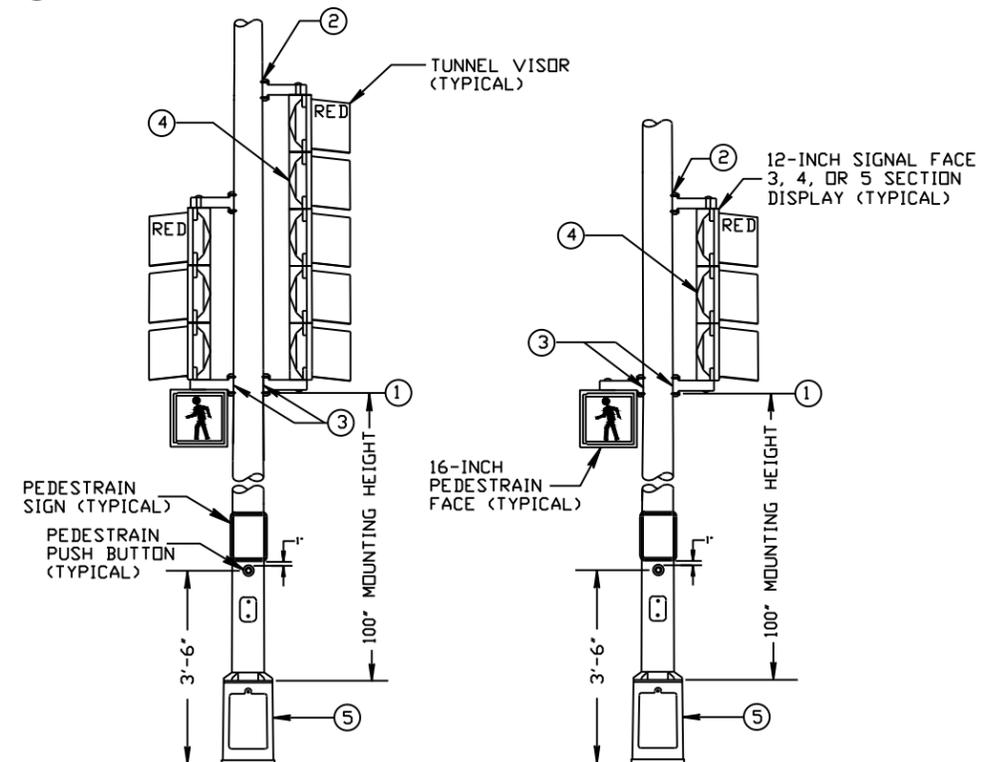
SIGNAL FACE SIZES TO BE 12-INCH.

PEDESTRIAN FACE SIZES TO BE 16-INCH.

MOUNTING HARDWARE SHALL BE FURNISHED BY THE CONTRACTOR.

THE SIZE, NUMBER AND ORIENTATION OF TRAFFIC SIGNAL DISPLAYS SHALL BE AS SHOWN ON THE PLANS.

- ① MOUNTING HEIGHT FOR BOTTOM POLY BRACKET OF THE VEHICLE SIGNAL DISPLAY, DIMENSIONED FROM BOTTOM OF POLE SHOE PLATE TO BOTTOM BOLT OF POLY ARM. ADJUST HEIGHT IF NO TRANSFORMER BASE OR DIFFERENT SIZE.
- ② SIGNAL FACE MOUNTING BRACKETS. MOUNT WITH 1/2" STAINLESS BOLTS (ALL BRACKETS). DO NOT USE BANDING.
- ③ RUBBER GROMMET, TYPE 2 (1/4") OR TYPE 3 (3/8"), BASED ON POLE THICKNESS. SHALL BE PROVIDED FOR 1 3/8" HOLE IN POLE SHAFT FOR WIRING.
- ④ THE NUMBER AND SIZE OF VEHICLE DISPLAYS MAY VARY. SEE SIGNAL PLAN SHEETS FOR ACTUAL PLACEMENT AND ORIENTATION. SECURELY MOUNT DULL BLACK POLYCARBONATE BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURER'S RECOMMENDATIONS.
- ⑤ CAST ALUMINUM TRANSFORMER BASE, 17-INCH.

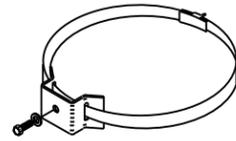


TYPICAL MOUNTING OF VEHICLE AND PEDESTRIAN SIGNAL DISPLAYS (ACTUAL DISPLAYS MAY VARY IN SIZE AND ORIENTATION)

SIGNAL MOUNTING CONFIGURATIONS ON TYPE 2, 3 AND 4 POLES

TRAFFIC SIGNAL STANDARDS  
SIGNAL DISPLAYS ON  
TYPE 2, 3 AND 4 POLES

CITY OF APPLETON  
TRAFFIC SECTION



TYPICAL SIGN MOUNTING BAND  
(TOP AND BOTTOM OF SIGN)

GENERAL NOTES

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

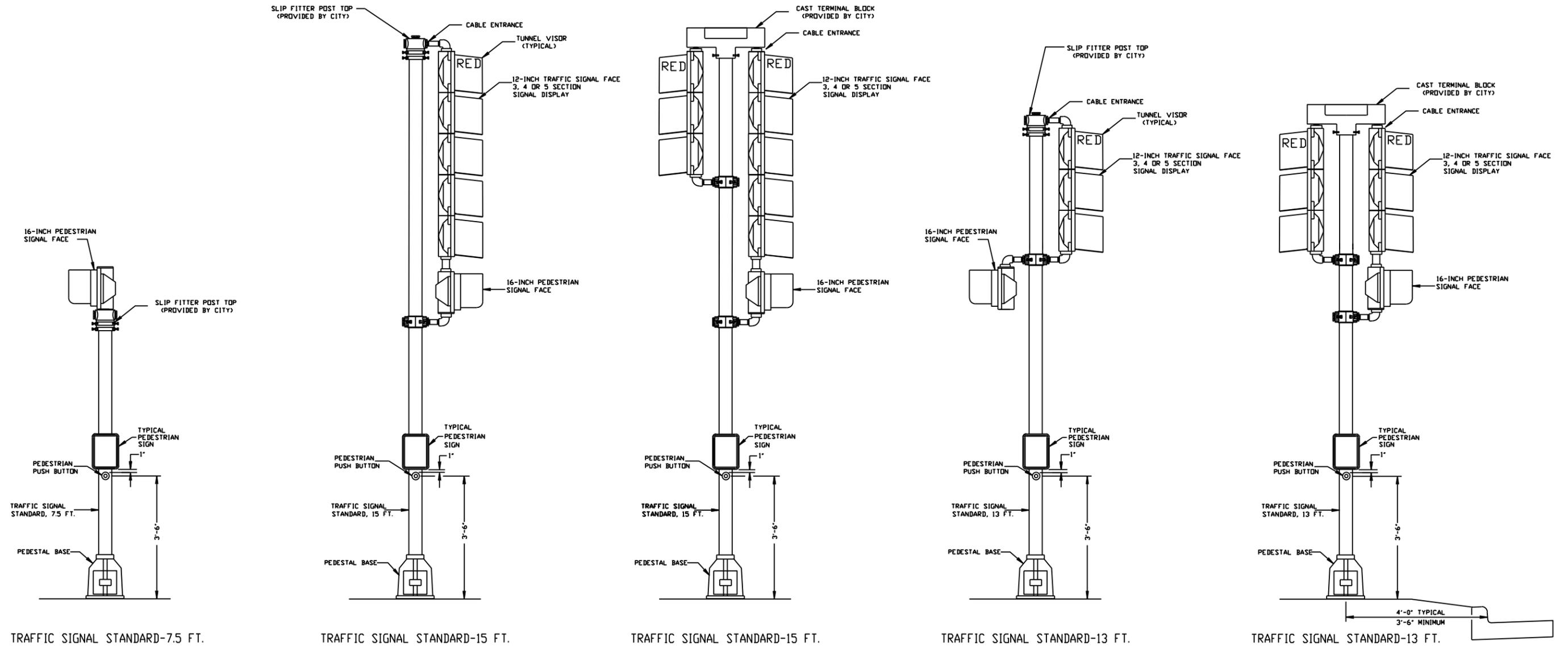
ALL PEDESTAL BASES SHALL BE MOUNTED ON CONCRETE BASE - TYPE 1.

ORNAMENTAL MOUNTING HARDWARE WILL BE FURNISHED BY OTHERS AND PROVIDED TO THE CONTRACTOR.

SEE SEPARATE DETAIL FOR MOUNTING HARDWARE AND ASSEMBLY.

LENGTH, LOCATION AND ORIENTATION OF TRAFFIC SIGNAL STANDARDS SHALL BE AS SHOWN ON THE PLANS.

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.



TRAFFIC SIGNAL STANDARD  
ORNAMENTAL MOUNTINGS  
7.5-FT, 13-FT AND 15-FT POLES

CITY OF APPLETON  
TRAFFIC SECTION

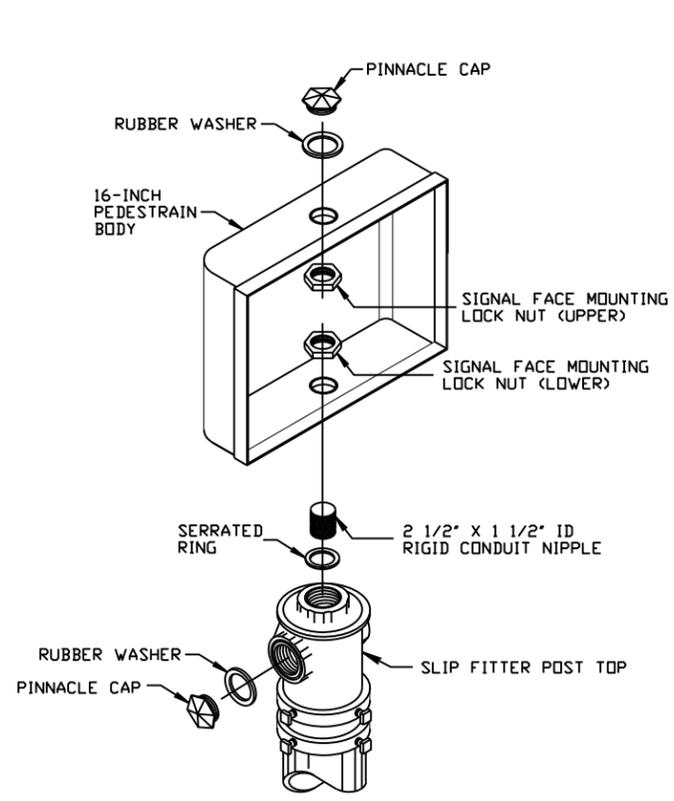
### GENERAL NOTES

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

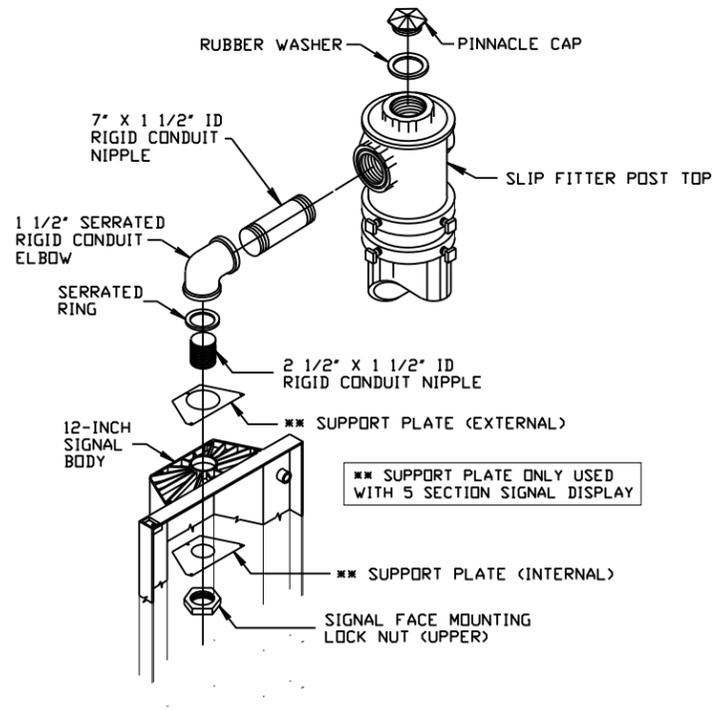
ORNAMENTAL MOUNTING HARDWARE WILL BE FURNISHED BY OTHERS AND PROVIDED TO THE CONTRACTOR.

SEE SEPARATE DETAIL FOR COMPLETE TYPE 1 SIGNAL ASSEMBLIES.

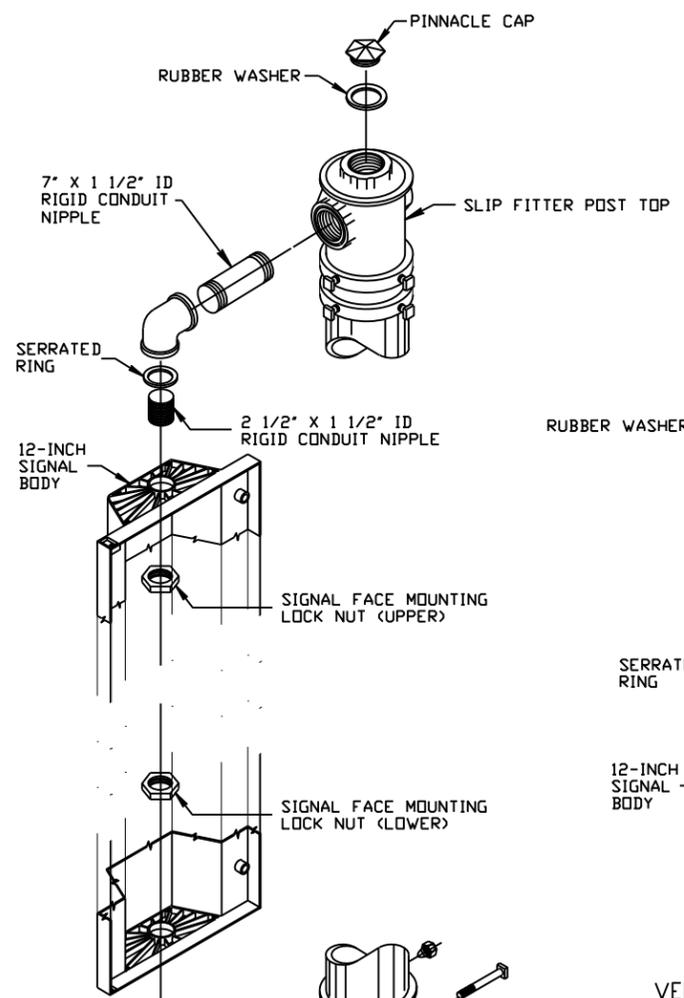
THE SIZE, NUMBER AND ORIENTATION OF TRAFFIC SIGNAL DISPLAYS SHALL BE AS SHOWN ON THE PLANS.



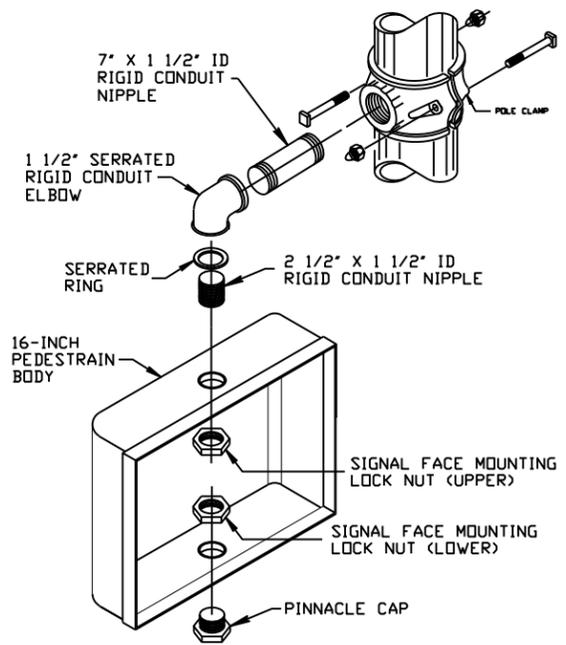
PEDESTRIAN DISPLAY MOUNTING DETAIL (POST TOP)



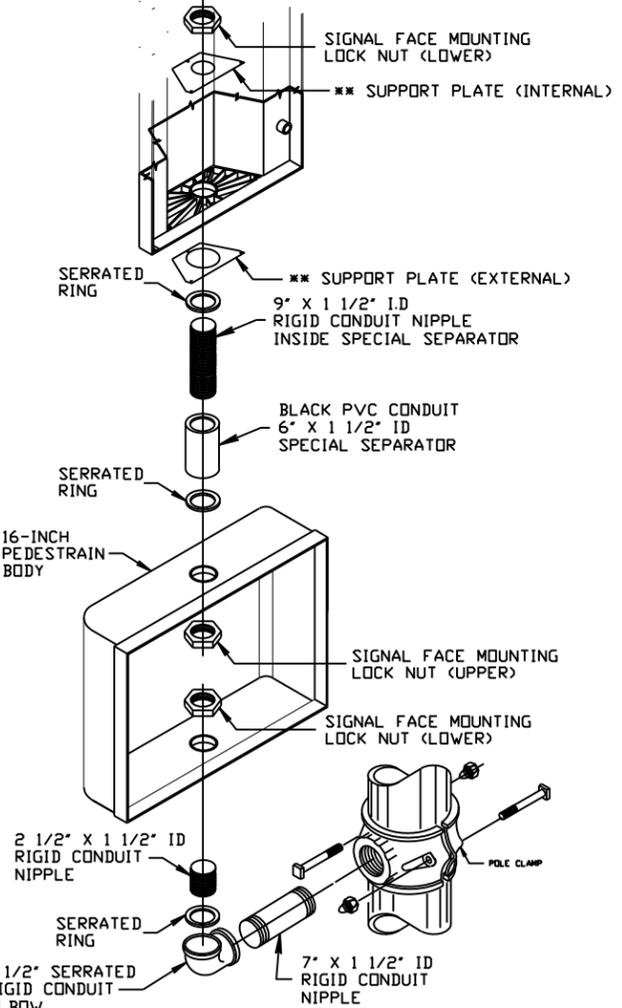
VEHICLE DISPLAY WITH INLINE PEDESTRIAN DISPLAY MOUNTING DETAIL



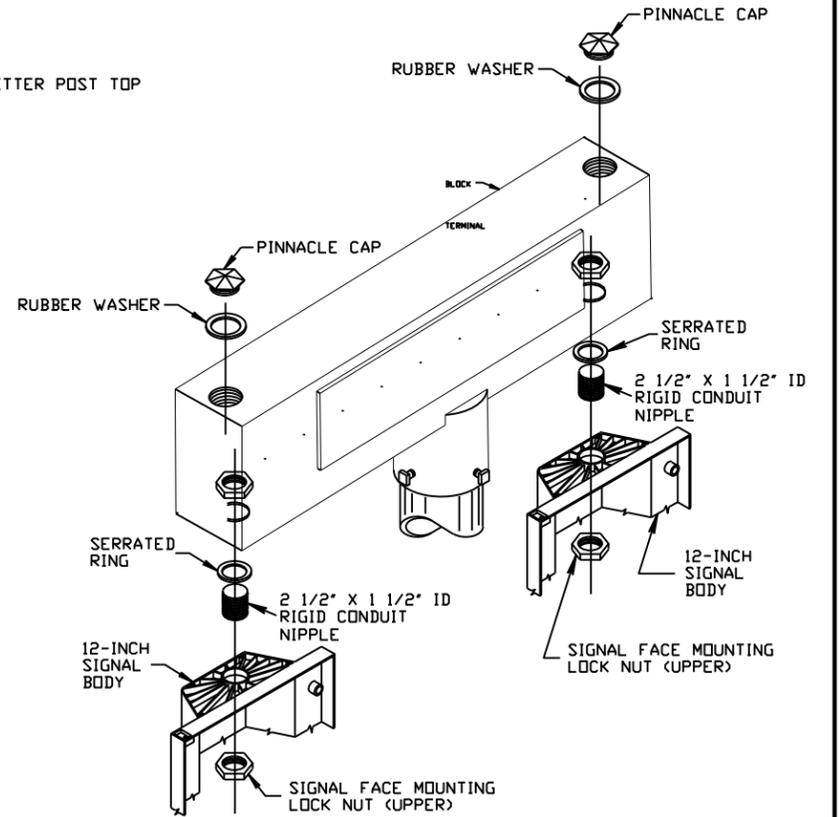
VEHICLE DISPLAY MOUNTING DETAIL (SLIP FITTER)



PEDESTRIAN DISPLAY MOUNTING DETAIL (POLE CLAMP)



VEHICLE DISPLAY WITH INLINE PEDESTRIAN DISPLAY MOUNTING DETAIL



VEHICLE DISPLAY MOUNTING DETAIL (TERMINAL BLOCK)

TRAFFIC SIGNAL ASSEMBLIES  
ORNAMENTAL HARDWARE DETAIL  
7.5-FT, 13-FT AND 15-FT POLES

CITY OF APPLETON  
TRAFFIC SECTION

TRAFFIC SIGNAL WIRE COLOR CODE (CABINET TO POLE)

TRAFFIC SIGNAL WIRE COLOR CODE (UP THE POLE)

16 CONDUCTOR IMSA 20-1 CABLE		
R	RED	TRAFFIC NB & WB DIRECTION
Y	ORANGE	
G	GREEN	
R-ARROW	RED	ADJACENT ARROW PHASE
Y-ARROW	ORANGE	TRAFFIC NB & WB
FY-ARROW	GREEN	
G-ARROW	BLACK/RED	
R	RED/BLACK	TRAFFIC SB & EB DIRECTION
Y	ORANGE/BLACK	
G	GREEN/BLACK	
R-ARROW	RED/BLACK	ADJACENT ARROW PHASE
Y-ARROW	ORANGE/BLACK	TRAFFIC SB & EB
FY-ARROW	GREEN/BLACK	
G-ARROW	BLACK/RED	
W	BLUE	PEDESTRIAN CROSSING SIDE ST
DW	BLACK	(WITH PHASE 2 & 6)
W	BLUE/BLACK	PEDESTRIAN CROSSING MAIN ST
DW	WHITE/BLACK	(WITH PHASE 4 & 8)
PED BUTTON	BLUE/WHITE	PED BUTTONS
PED BUTTON	BLACK/WHITE	
R	RED/WHITE	SPECIAL MOVEMENTS
G	GREEN/WHITE	
NEUTRAL	WHITE	

3 SECTION DISPLAY	
5 CONDUCTOR IMSA 20-1 CABLE	
RED	RED BALL
ORANGE	YELLOW BALL
GREEN	GREEN BALL
BLACK	NOT USED
WHITE	NEUTRAL

4 SECTION FYA DISPLAY	
5 CONDUCTOR IMSA 20-1 CABLE	
RED	RED ARROW
ORANGE	YELLOW ARROW
GREEN	F-YELLOW ARROW
BLACK	GREEN ARROW
WHITE	NEUTRAL

USE ANY COLOR, TWO (2) INDIVIDUAL 14 AWG THHN CONDUCTORS FOR PUSH BUTTON, TAPED FOR CIRCUIT ID

TAPE COLORS FOR CIRCUIT IDENTIFICATION

WHITE	N.B.
YELLOW	W.B.
ORANGE	S.B.
BLUE	E.B.
RED	PED BUTTON

WIRE ASSIGNMENT TRAFFIC SIGNALS	
CITY OF APPLETON TRAFFIC SECTION	
09/15/2020 DATE	MICHAEL S. HARDY, PE ASSISTANT CITY TRAFFIC ENGINEER

GENERAL NOTE

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. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION.

NOTE

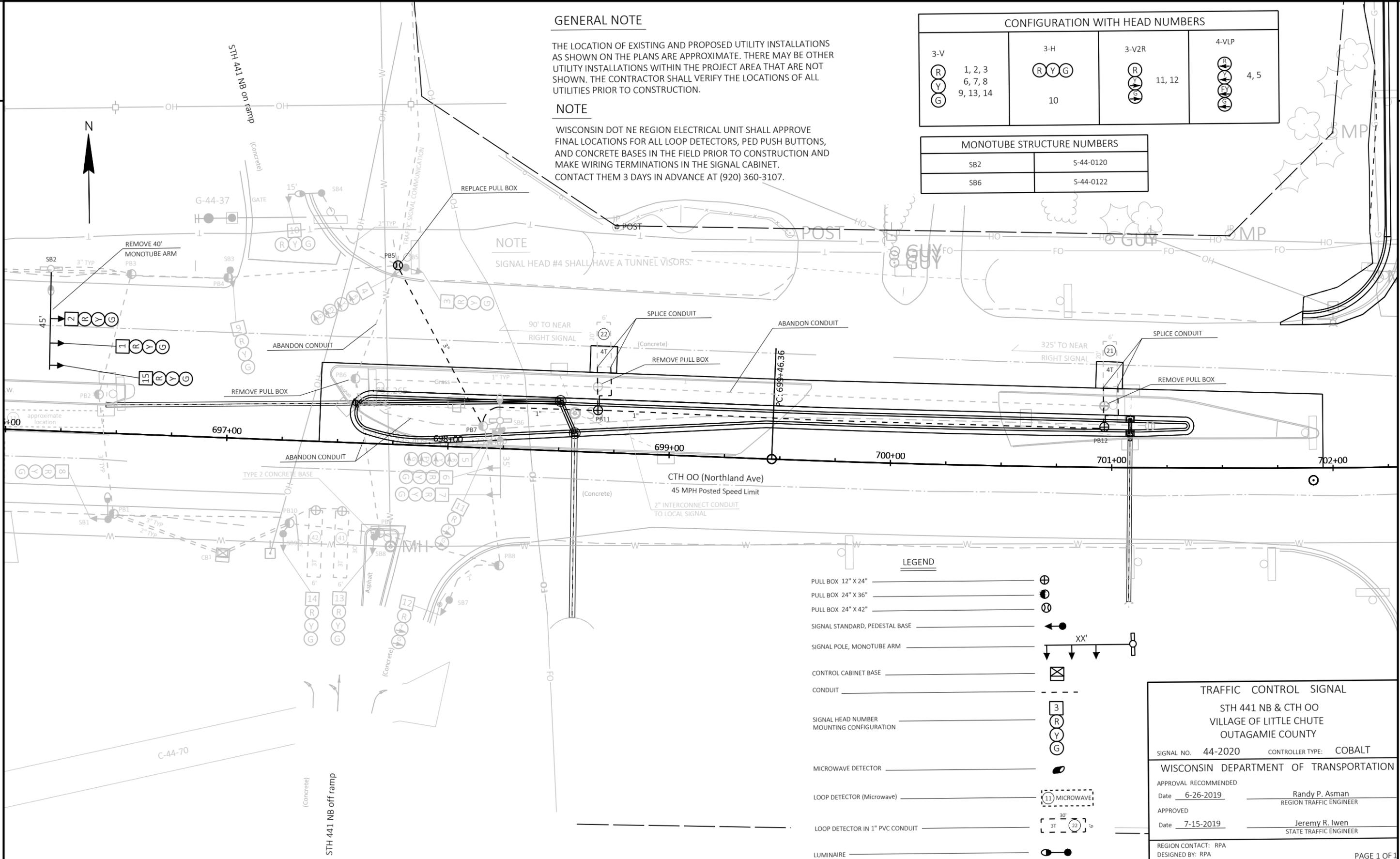
WISCONSIN DOT NE REGION ELECTRICAL UNIT SHALL APPROVE FINAL LOCATIONS FOR ALL LOOP DETECTORS, PED PUSH BUTTONS, AND CONCRETE BASES IN THE FIELD PRIOR TO CONSTRUCTION AND MAKE WIRING TERMINATIONS IN THE SIGNAL CABINET. CONTACT THEM 3 DAYS IN ADVANCE AT (920) 360-3107.

CONFIGURATION WITH HEAD NUMBERS

3-V R Y G	1, 2, 3 6, 7, 8 9, 13, 14	3-H R Y G	10	3-V2R R Y G	11, 12	4-VLP R Y G	4, 5
--------------------	---------------------------------	--------------------	----	----------------------	--------	----------------------	------

MONOTUBE STRUCTURE NUMBERS

SB2	S-44-0120
SB6	S-44-0122



NOTE

SIGNAL HEAD #4 SHALL HAVE A TUNNEL VISOR.

LEGEND

- PULL BOX 12" X 24"
- PULL BOX 24" X 36"
- PULL BOX 24" X 42"
- SIGNAL STANDARD, PEDESTAL BASE
- SIGNAL POLE, MONOTUBE ARM
- CONTROL CABINET BASE
- CONDUIT
- SIGNAL HEAD NUMBER MOUNTING CONFIGURATION
- MICROWAVE DETECTOR
- LOOP DETECTOR (Microwave)
- LOOP DETECTOR IN 1" PVC CONDUIT
- LUMINAIRE

TRAFFIC CONTROL SIGNAL

STH 441 NB & CTH OO  
VILLAGE OF LITTLE CHUTE  
OUTAGAMIE COUNTY

SIGNAL NO. 44-2020 CONTROLLER TYPE: COBALT

WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVAL RECOMMENDED

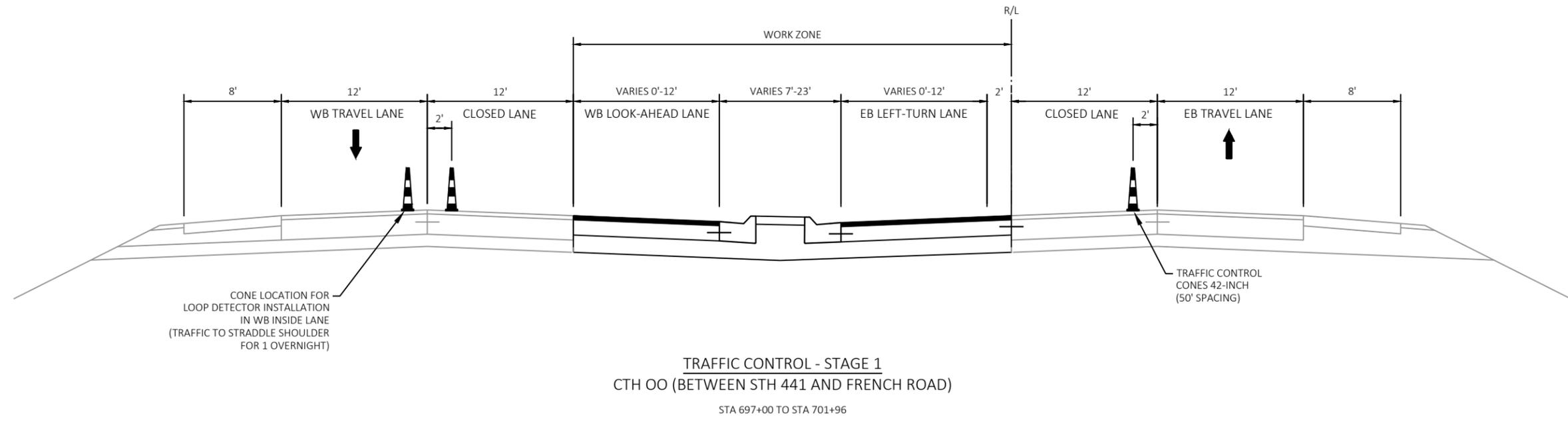
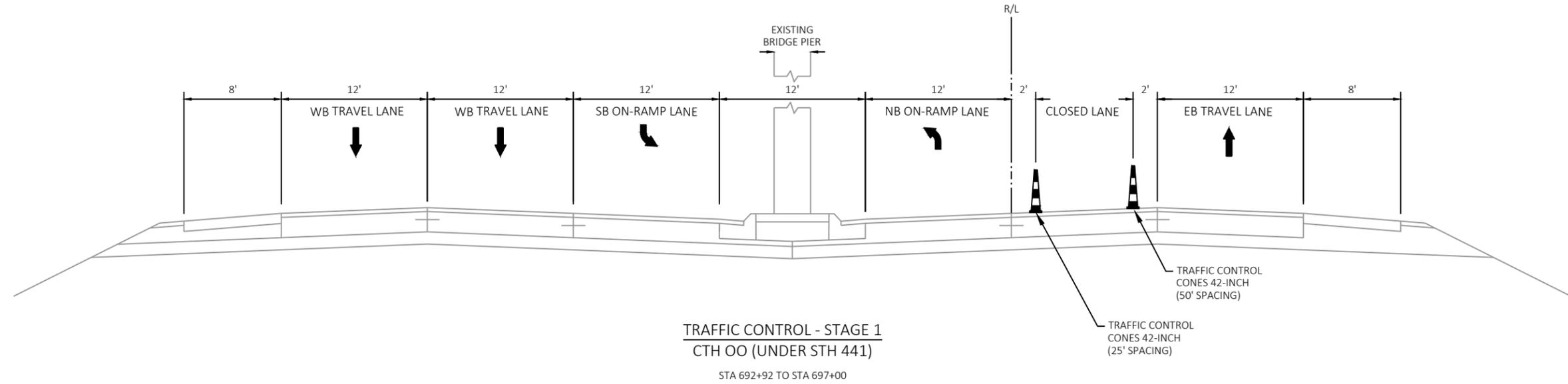
Date 6-26-2019 Randy P. Asman  
REGION TRAFFIC ENGINEER

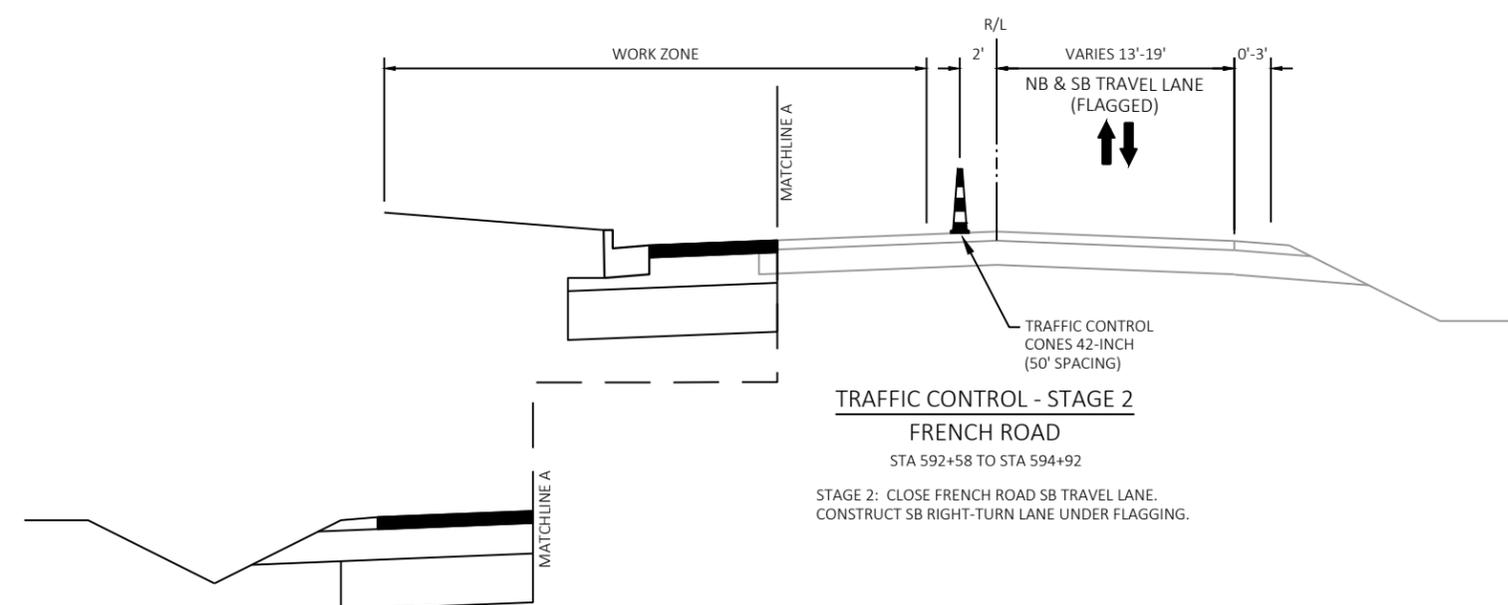
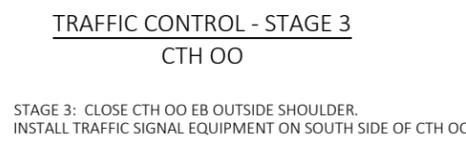
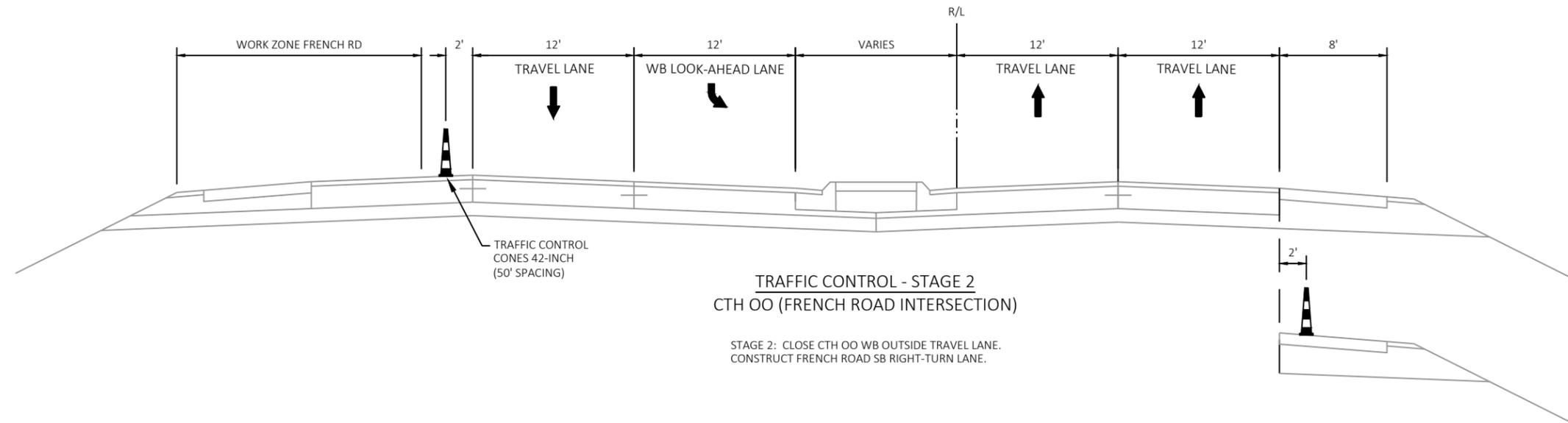
APPROVED

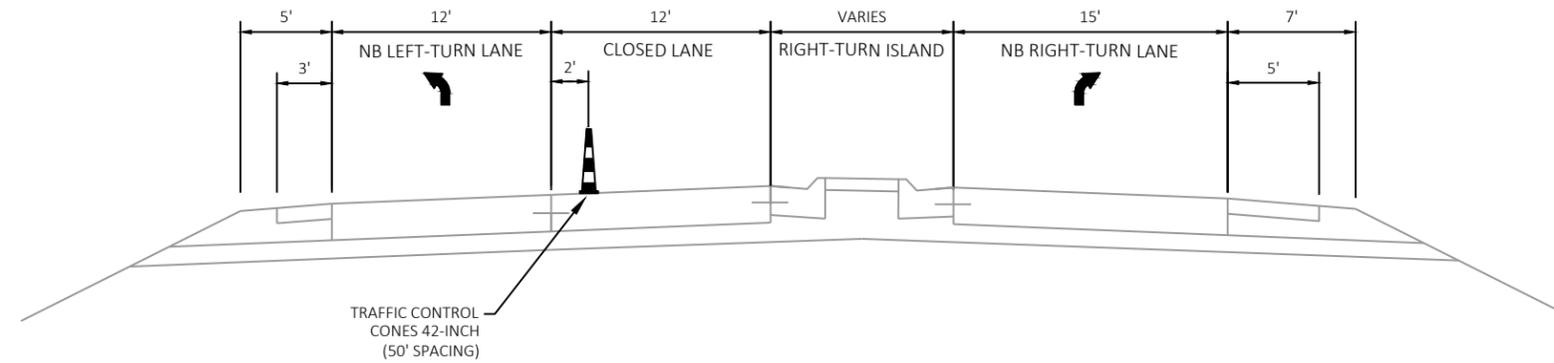
Date 7-15-2019 Jeremy R. Iwen  
STATE TRAFFIC ENGINEER

REGION CONTACT: RPA  
DESIGNED BY: RPA  
REVISED BY: RPA









TRAFFIC CONTROL - STAGE 1  
STH 441 NB OFF-RAMP

STAGE 1: CLOSE RIGHT LANE OF DUAL NB LEFT-TURN LANES.  
 CONSTRUCT WEST END OF CTH OO MEDIAN TO THE STAGE  
 NECESSARY TO REOPEN BOTH NB OFF-RAMP DUAL  
 LEFT-TURN LANES.

LEGEND

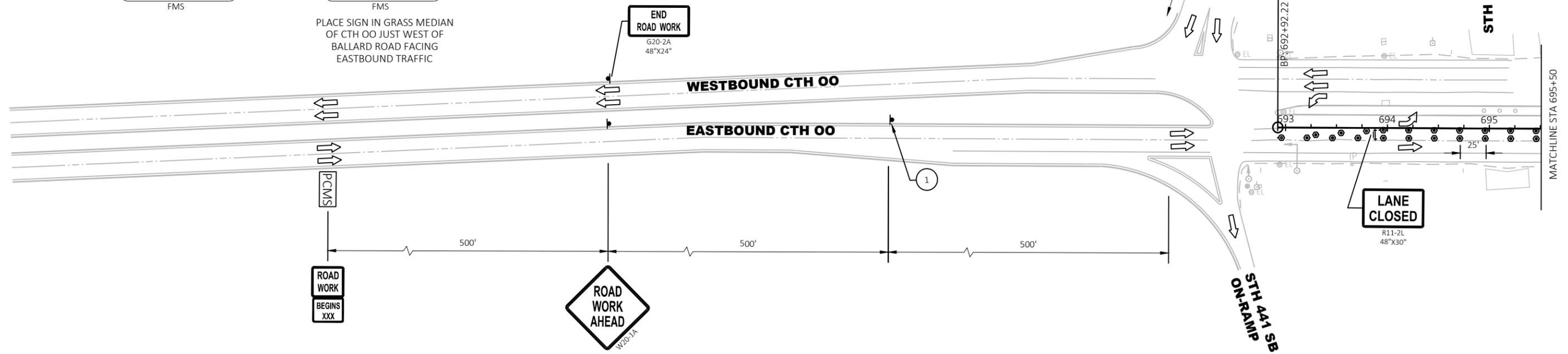
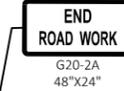
-  WORK ZONE
-  TRAFFIC CONTROL COVERING SIGNS
-  TRAFFIC FLOW
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
-  TRAFFIC CONTROL CONES 42-INCH
-  FLASHING ARROW BOARD
-  TRAFFIC CONTROL SIGN MOUNTED ON TEMPORARY SUPPORT
-  POST MOUNTED TRAFFIC CONTROL SIGNS
-  TRAFFIC CONTROL BARRICADE TYPE III WITH TWO TYPE A WARNING LIGHTS WITH/WITHOUT SIGN
-  TRAFFIC CONTROL SIGNS PCMS
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE

NOTES:

1. TRAFFIC CONTROL DRUMS IN TAPERS SHALL BE EQUIPPED WITH WARNING LIGHTS, TYPE "C", ONE WAY LIGHTS IN TAPERS ONLY, UNLESS OTHERWISE SHOWN.
2. SIGN LOCATIONS ARE APPROXIMATE. THE ACTUAL LOCATION AND SPACING MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER TO MEET FIELD CONDITIONS.
3. "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS REFLECTIVE ORANGE.
4. ALL TRAFFIC CONTROL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED IN THE PLANS.
5. A FLAGGER MAY BE REQUIRED WHERE CONSTRUCTION VEHICLES ENTER OR LEAVE "WORK/CLOSED" AREAS IF WARRANTED BY CONDITIONS AND/OR AS DIRECTED BY THE ENGINEER.
6. ADEQUATE TURNING PROVISIONS SHALL BE MAINTAINED FOR ALL VEHICLES, INCLUDING TRUCKS AND BUSES, AS DIRECTED BY THE ENGINEER.
7. BARRICADE STRIPES ARE TO SLOPE DOWNWARD IN THE DIRECTION OF TRAFFIC FLOW.
8. PERMANENT SIGNING TO BE INSTALLED IN STAGES DURING CONSTRUCTION.
9. IF A DROP OFF GREATER THAN 6 INCHES WILL OCCUR WITHIN 4 FEET OF AN OPEN TRAVEL LANE A 3:1 SLOPE OR FLATTER SHALL BE CONSTRUCTED USING BASE AGGREGATE DENSE 1 1/4-INCH. THIS SLOPE AND ALL MATERIAL NEEDED FOR CONSTRUCTION AND MAINTENANCE OF THE SLOPE IS INCIDENTAL TO CONSTRUCTION.



PLACE SIGN IN GRASS MEDIAN OF CTH 00 JUST WEST OF BALLARD ROAD FACING EASTBOUND TRAFFIC

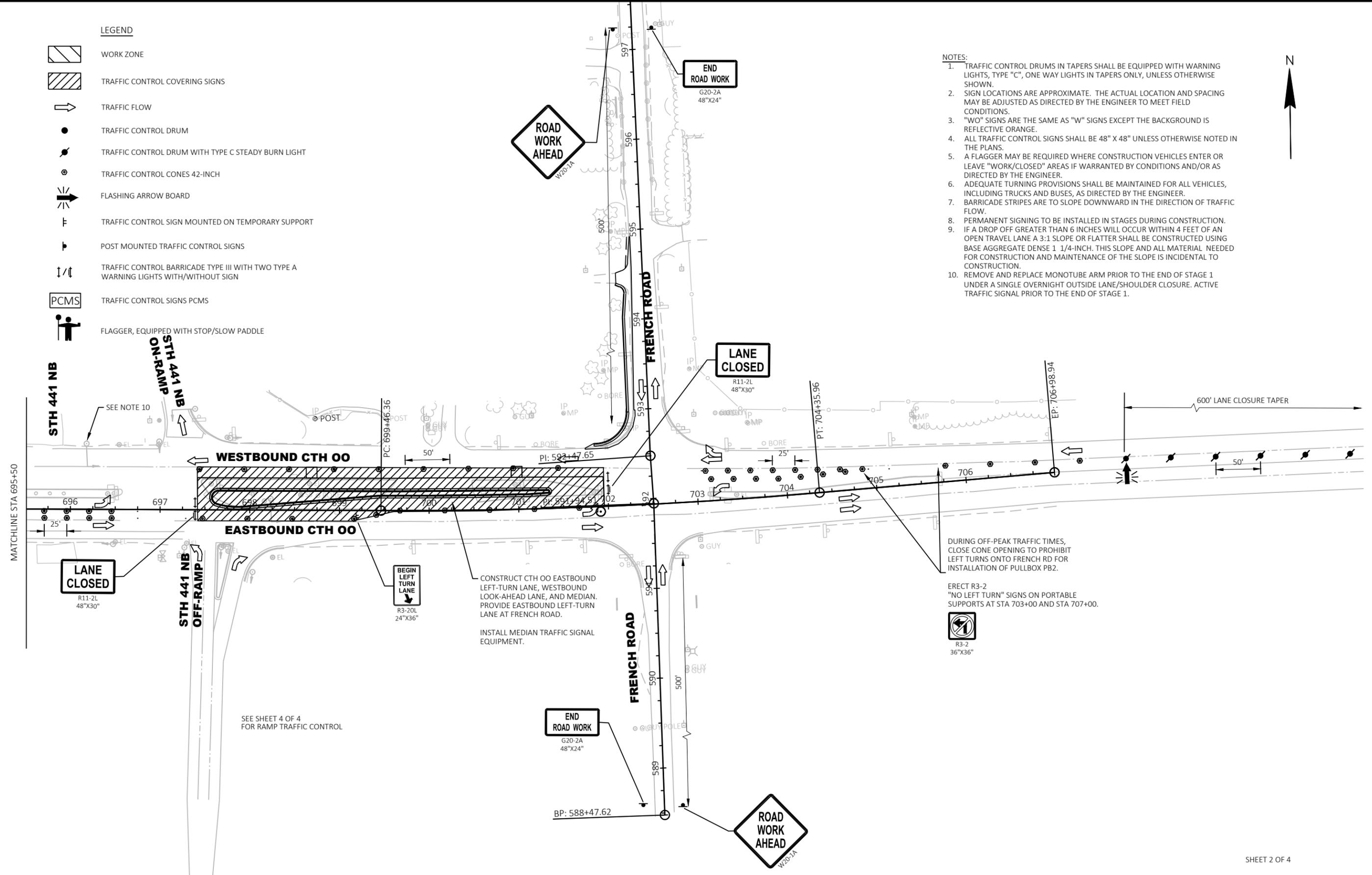


LEGEND

-  WORK ZONE
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-  TRAFFIC FLOW
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
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10. REMOVE AND REPLACE MONOTUBE ARM PRIOR TO THE END OF STAGE 1 UNDER A SINGLE OVERNIGHT OUTSIDE LANE/SHOULDER CLOSURE. ACTIVE TRAFFIC SIGNAL PRIOR TO THE END OF STAGE 1.



DURING OFF-PEAK TRAFFIC TIMES, CLOSE CONE OPENING TO PROHIBIT LEFT TURNS ONTO FRENCH RD FOR INSTALLATION OF PULLBOX PB2.

ERECT R3-2 "NO LEFT TURN" SIGNS ON PORTABLE SUPPORTS AT STA 703+00 AND STA 707+00.



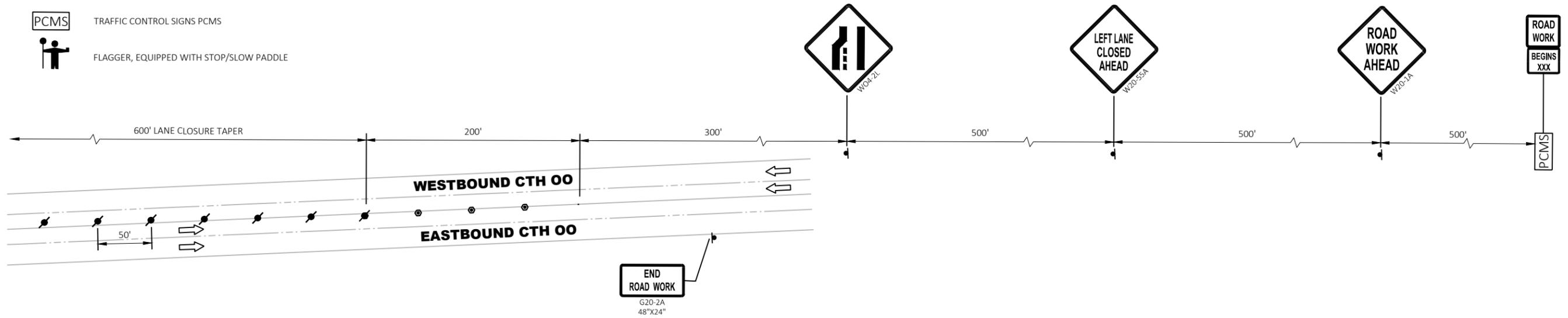
SEE SHEET 4 OF 4 FOR RAMP TRAFFIC CONTROL

LEGEND

-  WORK ZONE
-  TRAFFIC CONTROL COVERING SIGNS
-  TRAFFIC FLOW
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
-  TRAFFIC CONTROL CONES 42-INCH
-  FLASHING ARROW BOARD
-  TRAFFIC CONTROL SIGN MOUNTED ON TEMPORARY SUPPORT
-  POST MOUNTED TRAFFIC CONTROL SIGNS
-  TRAFFIC CONTROL BARRICADE TYPE III WITH TWO TYPE A WARNING LIGHTS WITH/WITHOUT SIGN
-  TRAFFIC CONTROL SIGNS PCMS
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE

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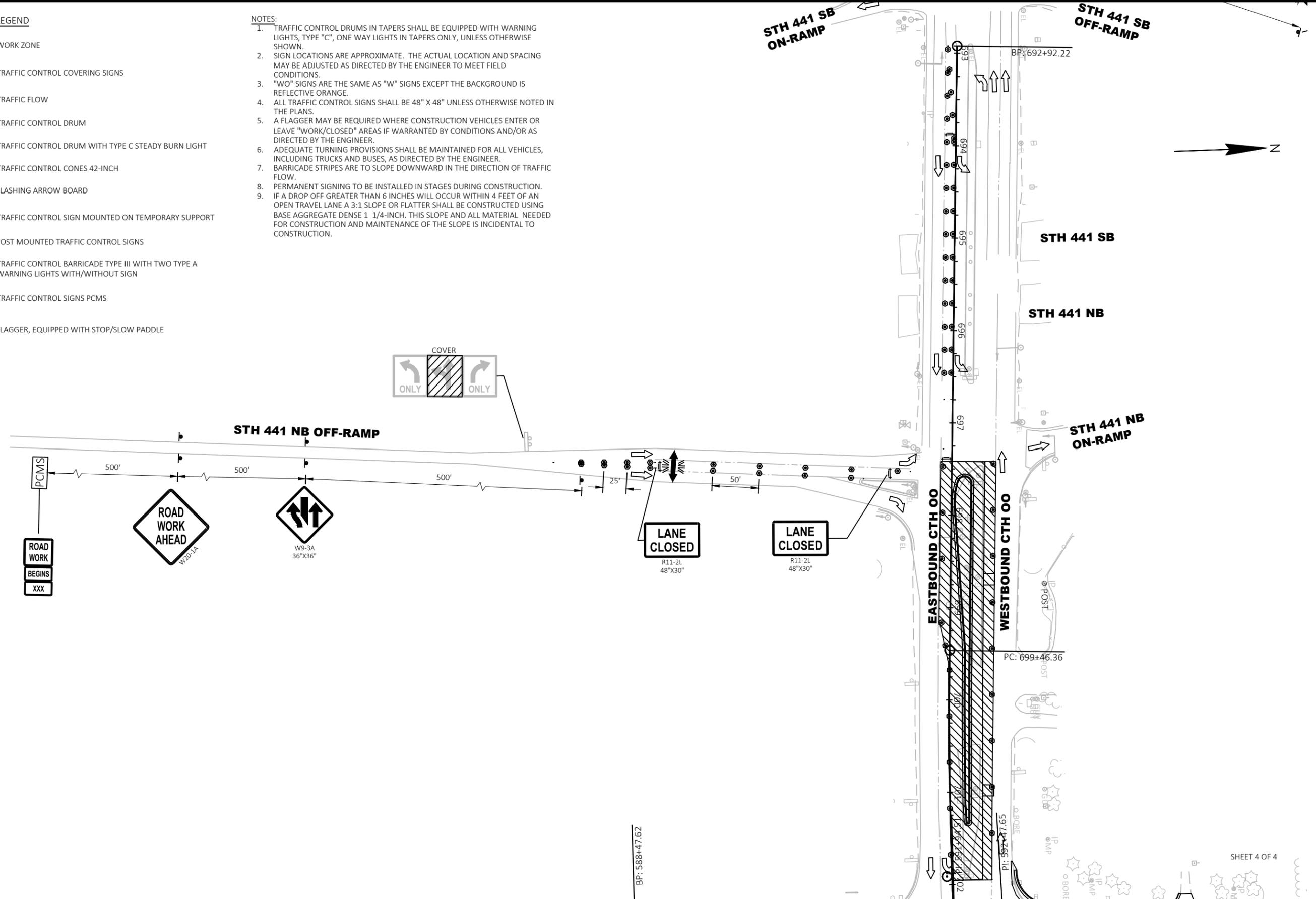


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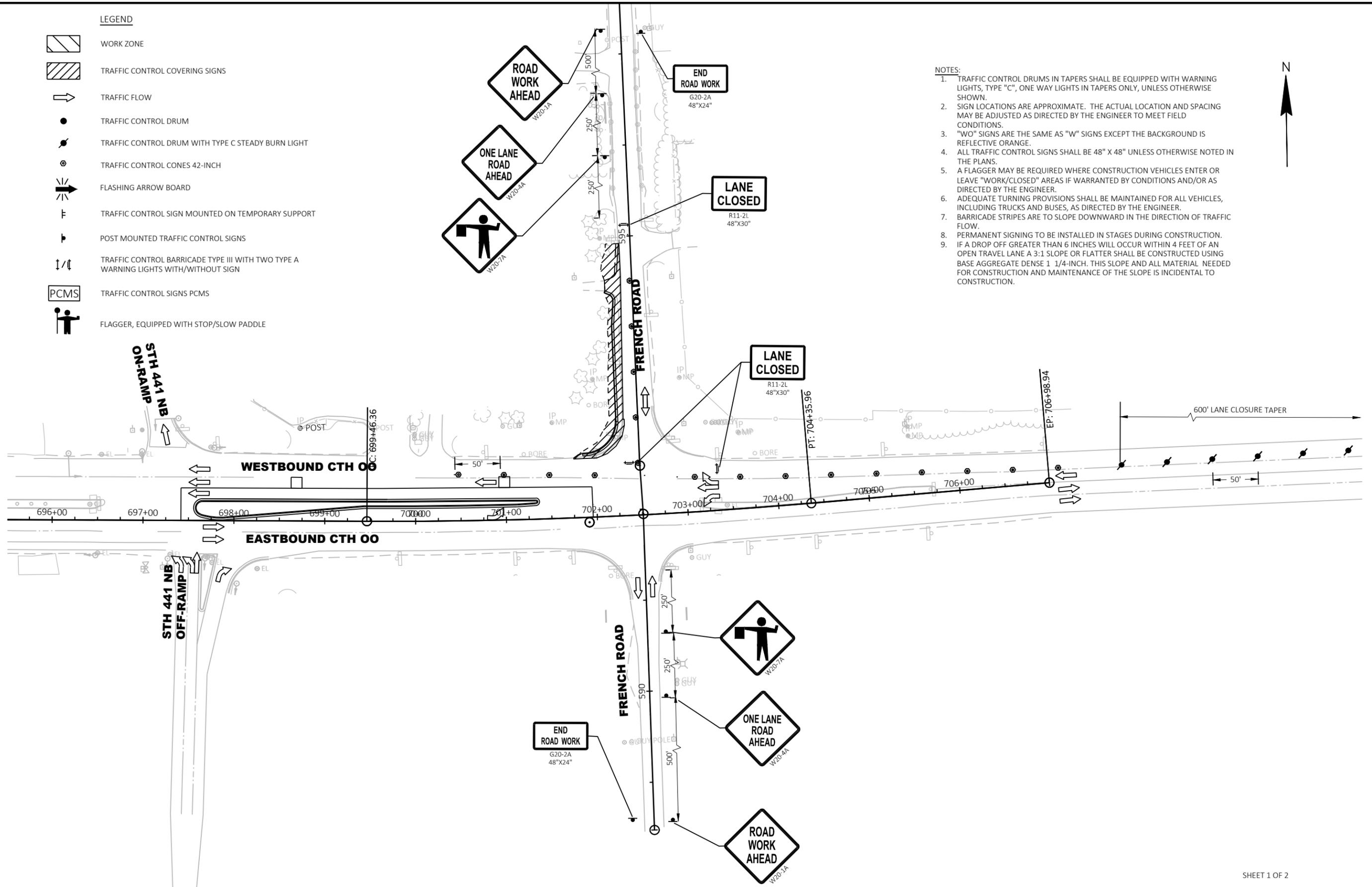


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SHEET 1 OF 2

PROJECT NO: 4677-10-71

HWY: CTH 00

COUNTY: OUTAGAMIE

TRAFFIC CONTROL - STAGE 2

SHEET

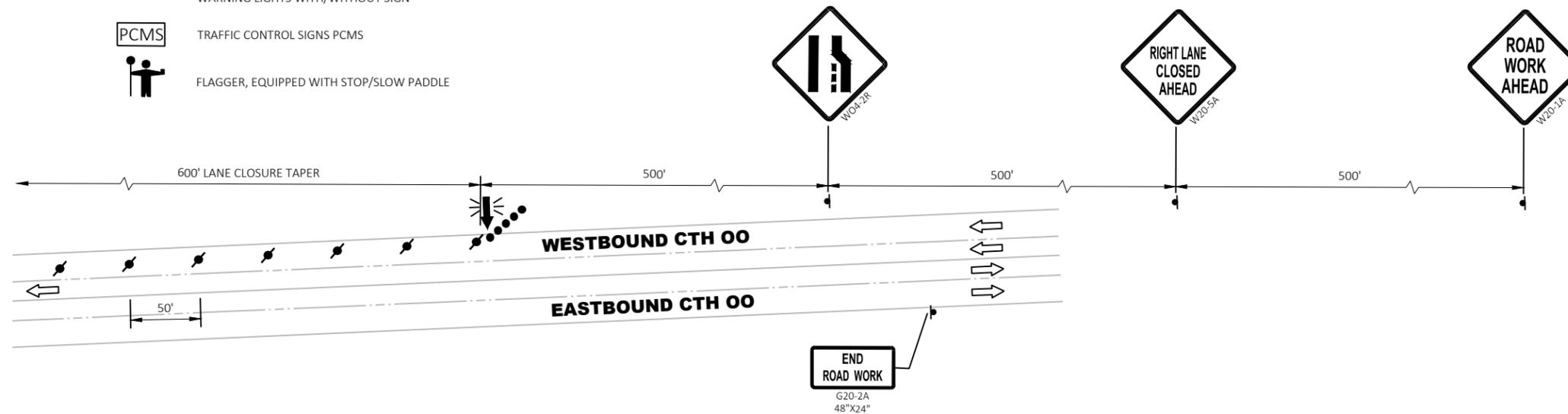
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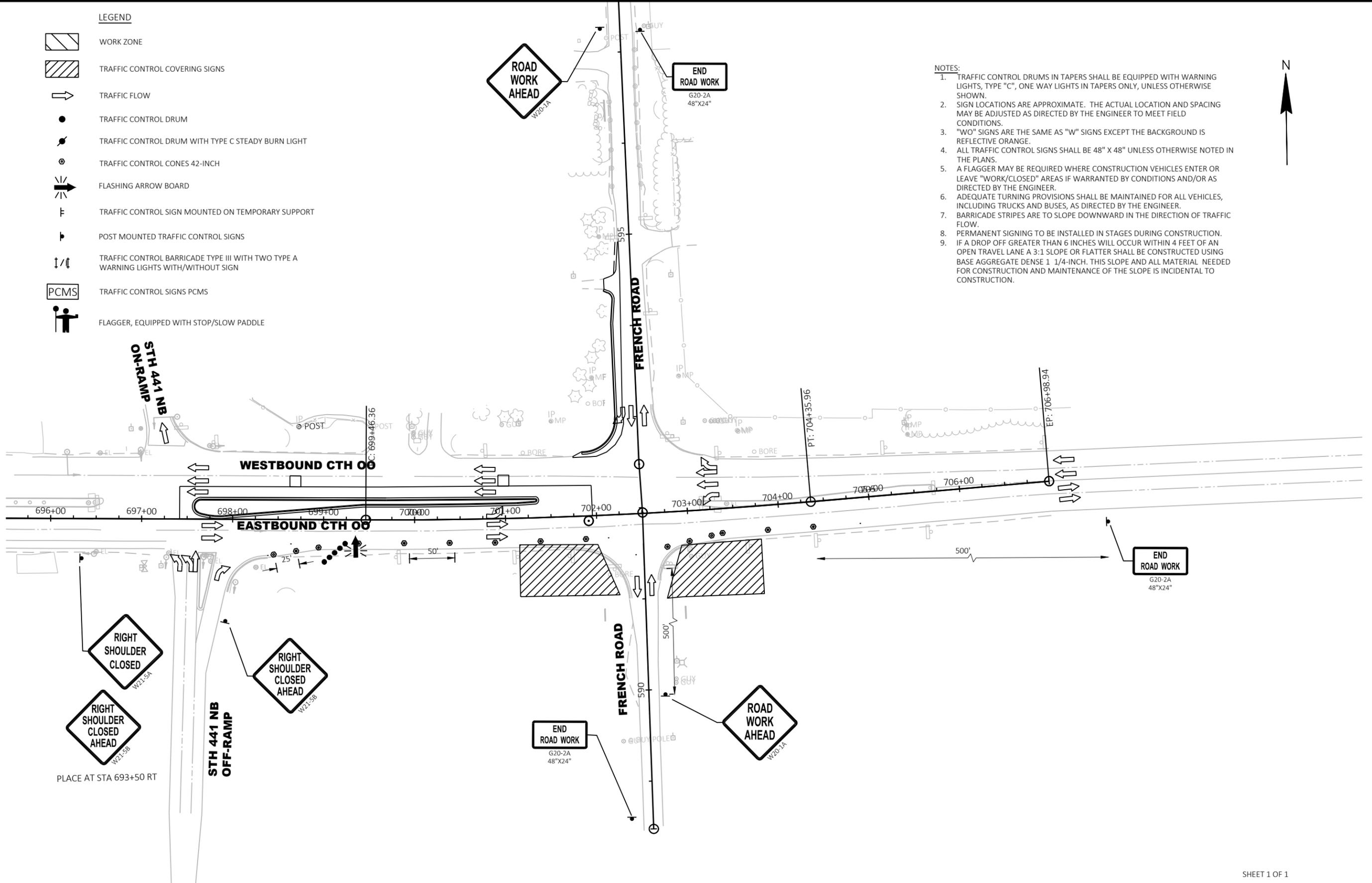


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Estimate Of Quantities

4677-10-71

Line	Item	Item Description	Unit	Total	Qty
0002	201.0205	Grubbing	STA	1.000	1.000
0004	204.0100	Removing Concrete Pavement	SY	530.000	530.000
0006	204.0109.S	Removing Concrete Surface Partial Depth	SF	683.000	683.000
0008	204.0150	Removing Curb & Gutter	LF	192.000	192.000
0010	204.0220	Removing Inlets	EACH	7.000	7.000
0012	204.0245	Removing Storm Sewer (size) 12. 12-Inch	LF	135.000	135.000
0014	204.0245	Removing Storm Sewer (size) 18. 18-Inch	LF	104.000	104.000
0016	204.0245	Removing Storm Sewer (size) 24. 24-Inch	LF	8.000	8.000
0018	204.9060.S	Removing (item description) 01. Traffic Signals STH 441 & CTH OO	EACH	1.000	1.000
0020	205.0100	Excavation Common	CY	1,257.000	1,257.000
0022	211.0301	Prepare Foundation for Concrete Base (project) 01. 4677-10-71	EACH	1.000	1.000
0024	213.0100	Finishing Roadway (project) 01. 4677-10-71	EACH	1.000	1.000
0026	305.0110	Base Aggregate Dense 3/4-Inch	TON	3.000	3.000
0028	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,350.000	1,350.000
0030	311.0110	Breaker Run	TON	353.000	353.000
0032	320.0140	Concrete Base 7 1/2-Inch	SY	1,155.000	1,155.000
0034	390.0403	Base Patching Concrete Shes	SY	35.000	35.000
0036	416.0610	Drilled Tie Bars	EACH	360.000	360.000
0038	416.0620	Drilled Dowel Bars	EACH	90.000	90.000
0040	416.1725	Concrete Pavement Replacement SHES	SY	80.000	80.000
0042	455.0605	Tack Coat	GAL	105.000	105.000
0044	460.2000	Incentive Density HMA Pavement	DOL	140.000	140.000
0046	460.6223	HMA Pavement 3 MT 58-28 S	TON	30.000	30.000
0048	460.6224	HMA Pavement 4 MT 58-28 S	TON	175.000	175.000
0050	520.8000	Concrete Collars for Pipe	EACH	1.000	1.000
0052	521.1515	Apron Endwalls for Culvert Pipe Sloped Side Drains Steel 15-Inch 6 to 1	EACH	1.000	1.000
0054	601.0411	Concrete Curb & Gutter 30-Inch Type D	LF	150.000	150.000
0056	601.0555	Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type A	LF	792.000	792.000
0058	602.0405	Concrete Sidewalk 4-Inch	SF	2,763.000	2,763.000
0060	608.0412	Storm Sewer Pipe Reinforced Concrete Class IV 12-Inch	LF	52.000	52.000
0062	608.0418	Storm Sewer Pipe Reinforced Concrete Class IV 18-Inch	LF	112.000	112.000
0064	611.0624	Inlet Covers Type H	EACH	2.000	2.000
0066	611.0627	Inlet Covers Type HM	EACH	4.000	4.000
0068	611.0651	Inlet Covers Type S	EACH	1.000	1.000
0070	611.3004	Inlets 4-FT Diameter	EACH	3.000	3.000
0072	611.3230	Inlets 2x3-FT	EACH	4.000	4.000
0074	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	10.000	10.000
0076	619.1000	Mobilization	EACH	1.000	1.000
0078	620.0300	Concrete Median Sloped Nose	SF	151.000	151.000
0080	624.0100	Water	MGAL	30.000	30.000
0082	625.0100	Topsoil	SY	190.000	190.000
0084	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0086	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0088	628.2008	Erosion Mat Urban Class I Type B	SY	190.000	190.000
0090	628.7005	Inlet Protection Type A	EACH	2.000	2.000
0092	628.7015	Inlet Protection Type C	EACH	7.000	7.000
0094	628.7504	Temporary Ditch Checks	LF	30.000	30.000
0096	628.7555	Culvert Pipe Checks	EACH	4.000	4.000
0098	629.0210	Fertilizer Type B	CWT	0.120	0.120

Estimate Of Quantities

4677-10-71

Line	Item	Item Description	Unit	Total	Qty
0100	630.0140	Seeding Mixture No. 40	LB	4.000	4.000
0102	630.0500	Seed Water	MGAL	4.300	4.300
0104	633.5200	Markers Culvert End	EACH	1.000	1.000
0106	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	6.000	6.000
0108	634.0620	Posts Wood 4x6-Inch X 20-FT	EACH	1.000	1.000
0110	637.2215	Signs Type II Reflective H Folding	SF	45.000	45.000
0112	637.2230	Signs Type II Reflective F	SF	122.500	122.500
0114	638.2602	Removing Signs Type II	EACH	10.000	10.000
0116	638.3000	Removing Small Sign Supports	EACH	10.000	10.000
0118	642.5001	Field Office Type B	EACH	1.000	1.000
0120	643.0300	Traffic Control Drums	DAY	1,301.000	1,301.000
0122	643.0420	Traffic Control Barricades Type III	DAY	414.000	414.000
0124	643.0705	Traffic Control Warning Lights Type A	DAY	827.000	827.000
0126	643.0715	Traffic Control Warning Lights Type C	DAY	1,065.000	1,065.000
0128	643.0800	Traffic Control Arrow Boards	DAY	125.000	125.000
0130	643.0900	Traffic Control Signs	DAY	1,623.000	1,623.000
0132	643.0920	Traffic Control Covering Signs Type II	EACH	1.000	1.000
0134	643.1000	Traffic Control Signs Fixed Message	SF	39.000	39.000
0136	643.1050	Traffic Control Signs PCMS	DAY	21.000	21.000
0138	643.1070	Traffic Control Cones 42-Inch	DAY	4,482.000	4,482.000
0140	643.5000	Traffic Control	EACH	1.000	1.000
0142	646.1020	Marking Line Epoxy 4-Inch	LF	110.000	110.000
0144	646.3020	Marking Line Epoxy 8-Inch	LF	1,055.000	1,055.000
0146	646.5020	Marking Arrow Epoxy	EACH	5.000	5.000
0148	646.5120	Marking Word Epoxy	EACH	3.000	3.000
0150	646.6120	Marking Stop Line Epoxy 18-Inch	LF	157.000	157.000
0152	646.7120	Marking Diagonal Epoxy 12-Inch	LF	37.000	37.000
0154	646.8120	Marking Curb Epoxy	LF	20.000	20.000
0156	646.8220	Marking Island Nose Epoxy	EACH	2.000	2.000
0158	650.4000	Construction Staking Storm Sewer	EACH	8.000	8.000
0160	650.4500	Construction Staking Subgrade	LF	686.000	686.000
0162	650.5000	Construction Staking Base	LF	686.000	686.000
0164	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	942.000	942.000
0166	650.8501	Construction Staking Electrical Installations (project) 01. 4677-10-71	EACH	1.000	1.000
0168	650.9500	Construction Staking Sidewalk (project) 01. 4677-10-71	EACH	1.000	1.000
0170	650.9911	Construction Staking Supplemental Control (project) 01. 4677-10-71	EACH	1.000	1.000
0172	650.9920	Construction Staking Slope Stakes	LF	232.000	232.000
0174	652.0210	Conduit Rigid Nonmetallic Schedule 40 1-Inch	LF	285.000	285.000
0176	652.0325	Conduit Rigid Nonmetallic Schedule 80 2-Inch	LF	500.000	500.000
0178	652.0335	Conduit Rigid Nonmetallic Schedule 80 3-Inch	LF	590.000	590.000
0180	652.0615	Conduit Special 3-Inch	LF	913.000	913.000
0182	652.0800	Conduit Loop Detector	LF	210.000	210.000
0184	653.0105	Pull Boxes Steel 12x24-Inch	EACH	2.000	2.000
0186	653.0164	Pull Boxes Non-Conductive 24x42-Inch	EACH	11.000	11.000
0188	653.0905	Removing Pull Boxes	EACH	4.000	4.000
0190	654.0105	Concrete Bases Type 5	EACH	2.000	2.000
0192	654.0110	Concrete Bases Type 10	EACH	1.000	1.000
0194	654.0113	Concrete Bases Type 13	EACH	2.000	2.000
0196	654.0120	Concrete Bases Type 10-Special	EACH	1.000	1.000

Estimate Of Quantities

4677-10-71

Line	Item	Item Description	Unit	Total	Qty
0198	655.0230	Cable Traffic Signal 5-14 AWG	LF	952.000	952.000
0200	655.0515	Electrical Wire Traffic Signals 10 AWG	LF	2,459.000	2,459.000
0202	655.0700	Loop Detector Lead In Cable	LF	1,022.000	1,022.000
0204	655.0800	Loop Detector Wire	LF	1,146.000	1,146.000
0206	656.0201	Electrical Service Meter Breaker Pedestal (location) 01. CTH OO & French Road	EACH	1.000	1.000
0208	657.0100	Pedestal Bases	EACH	2.000	2.000
0210	657.0255	Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	EACH	4.000	4.000
0212	657.0322	Poles Type 5-Aluminum	EACH	2.000	2.000
0214	657.0420	Traffic Signal Standards Aluminum 13-FT	EACH	2.000	2.000
0216	657.0610	Luminaire Arms Single Member 4 1/2-Inch Clamp 6-FT	EACH	2.000	2.000
0218	657.0614	Luminaire Arms Single Member 4-Inch Clamp 8-FT	EACH	2.000	2.000
0220	657.0615	Luminaire Arms Single Member 4 1/2-Inch Clamp 8-FT	EACH	1.000	1.000
0222	658.0173	Traffic Signal Face 3S 12-Inch	EACH	17.000	17.000
0224	658.0174	Traffic Signal Face 4S 12-Inch	EACH	2.000	2.000
0226	658.5070	Signal Mounting Hardware (location) 01. CTH OO & French Road	EACH	1.000	1.000
0228	658.5070	Signal Mounting Hardware (location) 02. STH 441 & CTH OO	EACH	1.000	1.000
0230	659.1125	Luminaires Utility LED C	EACH	8.000	8.000
0232	659.5000.S	Lamp, Ballast, LED, Switch Disposal by Contractor	EACH	3.000	3.000
0234	690.0150	Sawing Asphalt	LF	310.000	310.000
0236	690.0250	Sawing Concrete	LF	1,050.000	1,050.000
0238	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,200.000	1,200.000
0240	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	600.000	600.000
0242	SPV.0060	Special 01. Concrete Bases Type 1 Special	EACH	2.000	2.000
0244	SPV.0060	Special 02. Concrete Bases Type 2 Special	EACH	2.000	2.000
0246	SPV.0060	Special 03. Concrete Bases Cabinet Basement Precast Special	EACH	1.000	1.000
0248	SPV.0060	Special 04. Radar Vehicle Detection System Cth OO & French Road	EACH	1.000	1.000
0250	SPV.0060	Special 05. Radio Communication System Special Cth OO & French Road	EACH	1.000	1.000
0252	SPV.0060	Special 06. Traffic Signal Controller and Cabinet Assembly Special Cth OO & French Road	EACH	1.000	1.000
0254	SPV.0060	Special 07. Install Signal Mounting Hardware CTH OO & French Road	EACH	1.000	1.000
0256	SPV.0060	Special 08. Poles Type 4 Short	EACH	2.000	2.000
0258	SPV.0060	Special 09. Install Poles Type 9	EACH	1.000	1.000
0260	SPV.0060	Special 10. Install Poles Type 10 Special	EACH	1.000	1.000
0262	SPV.0060	Special 11. Intall Poles Type 13	EACH	2.000	2.000
0264	SPV.0060	Special 12. Install Monotube Arms 30-Ft	EACH	1.000	1.000
0266	SPV.0060	Special 13. Install Monotube Arms 45-Ft	EACH	1.000	1.000
0268	SPV.0060	Special 14. Install Monotube Arms 45-Ft Special	EACH	1.000	1.000
0270	SPV.0060	Special 15. Install Monotube Arms 55-Ft	EACH	2.000	2.000
0272	SPV.0060	Special 16. Install Luminaire Arms Steel 12-Ft	EACH	3.000	3.000
0274	SPV.0090	Special 01. Tray Cable For Street Lighting 3 Conductor 12 AWG	LF	2,964.000	2,964.000
0276	SPV.0090	Special 02. Cable Traffic Signal 16-14 AWG	LF	1,799.000	1,799.000

REMOVAL ITEMS						
LOCATION	STATION TO STATION	STA	SY	SF	LF	
CTH OO	697+42 - 701+95	--	530	683	130	201.0205 204.0100 204.0109.S 204.0150 REMOVING CONCRETE SURFACE CURB & GUTTER * GRUBBING PAVEMENT PARTIAL DEPTH
FRENCH RD	592+60 - 592+99	1	--	--	62	
<b>PROJECT TOTALS</b>		<b>1</b>	<b>530</b>	<b>683</b>	<b>192</b>	

REMOVING STORM SEWER					
LOCATION	STATION TO STATION	INLETS EACH	12-INCH LF	18-INCH LF	24-INCH LF
CTH OO	697+42 - 701+95	7	135	104	8
FRENCH RD	592+60 - 592+99	--	--	--	--
<b>PROJECT TOTALS</b>		<b>7</b>	<b>135</b>	<b>104</b>	<b>8</b>

\* TREE STUMP LOCATED AT STA 594+85, 29' LT.  
 \*\* THE CTH OO REMOVAL IS FOR OVERLAID DRIVEWAY CURB IN THE MEDIAN.

EARTHWORK SUMMARY											
DIVISION	STATION TO STATION	205.0100 EXCAVATION COMMON (CY)		SALVAGED/ UNUSABLE PAVEMENT MATERIAL * (CY) (2)	AVAILABLE MATERIAL * (CY) (4)	311.0110 BREAKER RUN ** (TON)	UNEXPANDED FILL * (CY)	EXPANDED FILL * (CY) (5)		MASS ORDINATE * +/- (CY) (6)	WASTE * (CY) (7)
		CUT (2)	EBS EXCAVATION (3)					FACTOR 1.25			
CTH OO	697+42 TO 701+96	965	0	194	771	0	0	0		771	771
FRENCH ROAD	592+61 TO 594+92	232	0	4	228	0	3	4		225	225
UNDISTRIBUTED			60								60
DIVISION TOTALS		1,197	60	198	999	108	3	4		996	1,055
SUBTOTALS		1,197	60	198	999	108	3	4		996	1,055
PROJECT TOTALS		1,257									

**NOTES:**

- (1) COMMON EXCAVATION (ITEM 205.0100) = CUT + EBS EXCAVATION
- (2) SALVAGED / UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN THE CUT VALUE.
- (3) EBS MATERIAL IS UNDISTRIBUTED AT THE DISCRETION OF THE ENGINEER AND SHALL BE WASTED OFFSITE. EBS TO BE BACKFILLED WITH BREAKER RUN (ITEM 311.0110).
- (4) AVAILABLE MATERIAL = CUT - SALVAGED / UNUSABLE PAVEMENT MATERIAL.
- (5) EXPANDED FILL FACTOR = UNEXPANDED FILL x EXPANSION FACTOR.
- (6) THE MASS ORDINATE +/- QTY CALCULATED FOR THE DIVISION. A "PLUS" QTY INDICATES AN EXCESS OF MATERIAL. A "MINUS" QTY INDICATES A SHORTAGE OF MATERIAL.
- (7) WASTE = MASS ORDINATE (IF POSITIVE VALUE) + EBS.
- \* NOT A BID ITEM (FOR INFORMATION ONLY)
- \*\* ADDITIONAL QUANTITY SHOWN IN BASE AGGREGATE ITEMS TABLE

ALL ITEMS CATEGORY 0010 UNLESS NOTED

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CONCRETE ITEMS											
LOCATION	STATION	TO	STATION	211.0301	320.0140	390.0403	416.1725	601.0411	601.0555	602.0405	620.0300
				PREPARE	CONCRETE	BASE	CONCRETE	CONCRETE CURB & GUTTER		CONCRETE	CONCRETE
				FOUNDATION	CONCRETE	PATCHING	PAVEMENT	6-INCH SLOPED		CONCRETE	CONCRETE
				FOR CONCRETE	BASE	CONCRETE	REPLACEMENT	30-INCH	36-INCH	4-INCH	MEDIAN
BASE	7 1/2-INCH	SHES	SHES	TYPE D	TYPE A	SLOPED NOSE					
	EACH	SY	SY	SY	LF	LF	SF	SF			
CTH OO	697+42	-	701+95	1	1,155	35	80	--	735	2,763	151
STAGE 1											
FRENCH RD	592+60	-	592+99	--	--	--	--	150	57	--	--
STAGE 2											
<b>PROJECT TOTALS</b>				<b>1</b>	<b>1,155</b>	<b>35</b>	<b>80</b>	<b>150</b>	<b>792</b>	<b>2,763</b>	<b>151</b>

DRILLED BARS					
LOCATION	STATION	TO	STATION	416.0610	416.0620
				DRILLED	DRILLED
				TIE BARS	DOWEL BARS
				EACH	EACH
CTH OO	697+42	-	701+95	360	90
STAGE 1					
FRENCH RD	592+60	-	592+99	--	--
STAGE 2					
<b>PROJECT TOTALS</b>				<b>360</b>	<b>90</b>

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BASE AGGREGATE ITEMS							
LOCATION	STATION	TO	STATION	305.0110	305.0120	*	**
				BASE AGGREGATE DENSE		BREAKER	
				3/4-INCH	1 1/4-INCH	RUN	WATER
	TON	TON	TON	MGAL			
CTH OO	697+42	-	701+95	--	1,180	0	25
STAGE 1							
FRENCH RD	592+60	-	592+99	3	170	245	5
STAGE 2							
<b>PROJECT TOTALS</b>				<b>3</b>	<b>1,350</b>	<b>245</b>	<b>30</b>

HMA PAVEMENT ITEMS						
LOCATION	STATION	TO	STATION	455.0605	460.6223	460.6224
				TACK COAT	HMA PAVEMENT	
				GAL	3 MT 58-28 S	4 MT 58-28 S
	TON	TON	TON			
CTH OO	697+42	-	701+95	90	--	150
STAGE 1						
FRENCH RD	592+60	-	592+99	15	30	25
STAGE 2						
<b>PROJECT TOTALS</b>				<b>105</b>	<b>30</b>	<b>175</b>

\* ADDITIONAL QUANTITY SHOWN IN EARTHWORK SUMMARY TABLE  
 \*\* QUANTITY SHOWN FOR BASE COMPACTION AND DUST CONTROL

ALL ITEMS CATEGORY 0010 UNLESS NOTED

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STORM SEWER STRUCTURES															
STRUCTURE		RIM		INVERT		DEPTH	521.1515	611.0624	611.0627	611.0651	611.3004	611.3230	612.0406	633.5200	COMMENTS
NUMBER	STATION	OFFSET	ELEVATION	ELEVATION	FT	STEEL 15-INCH 6 TO 1	INLET COVERS			INLETS 4-FT	INLETS	WRAPPED	UNDERDRAIN	MARKERS	
						EACH	TYPE H	TYPE HM	TYPE S	DIAMETER	2X3-FT	6-INCH	6-INCH	CULVERT	
							EACH	EACH	EACH	EACH	EACH	LF	LF	EACH	
1	697+57	17.9' LT	735.04	730.47	3.57	--	--	--	1	1	--	--	--	--	FLAT TOP SLAB WITH 2' x 2' OPENING REQ'D
2A	698+50	22.4' LT	735.19	729.42	4.77	--	--	1	--	1	--	--	--	--	
2	698+57	8.2' LT	735.50	729.26	5.24	--	--	1	--	1	--	--	--	--	
3A	701+08	22.0' LT	736.18	732.66	2.52	--	--	1	--	--	1	--	--	--	
3B	701+08	15.6' LT	736.28	732.53	2.75	--	--	1	--	--	1	--	--	--	
4A	594+15	22.3' LT	734.83	732.12	1.71	--	1	--	--	--	1	10	--	--	
4B	594+25	21.3' LT	734.56	732.02	1.54	--	1	--	--	--	1	--	--	--	
4C	594+60	25.5' LT	--	731.69	--	1	--	--	--	--	--	--	--	1	
<b>PROJECT TOTALS</b>						<b>1</b>	<b>2</b>	<b>4</b>	<b>1</b>	<b>3</b>	<b>4</b>	<b>10</b>	<b>1</b>		

STRUCTURE DEPTH = RIM ELEVATION - INVERT ELEVATION - CASTING HEIGHT - ADJUSTMENT  
 CASTING HEIGHT = 6" FOR TYPE H, HM, AND S COVERS  
 ADJUSTMENT = 6" TYPICAL

STORM SEWER PIPES							
STRUCTURE		INLET	DISCHARGE	SLOPE	520.8000	608.0412	608.0418
FROM	TO	ELEVATION	ELEVATION	FT/FT	CONCRTE	STORM SEWER PIPE	
					COLLARS	REINFORCED CONCRETE	
					FOR	CLASS IV	CLASS IV
					PIPE	12-INCH	18-INCH
					EACH	LF	LF
1	2A	730.47	729.42	1.00	--	--	93
2A	2	729.42	729.26	1.00	--	--	16
3A	3B	732.66	732.53	2.00	--	7	--
3B	EXIST	735.53	EXIST	EXIST	1	--	3
4A	4B	732.12	732.02	1.00	--	10	--
4B	4C	732.02	731.69	0.96	--	35	--
<b>PROJECT TOTALS</b>					<b>1</b>	<b>52</b>	<b>112</b>

ALL ITEMS CATEGORY 0010 UNLESS NOTED

<u>RESTORATION ITEMS</u>						
LOCATION	STATION	TO STATION	625.0100 TOPSOIL SY	629.0210 FERTILIZER TYPE B CWT	630.0140 SEEDING MIXTURE NO. 40 LB	630.0500 SEED WATER MGAL
CTH OO STAGE 1	697+42	- 701+95	--	--	--	--
FRENCH RD STAGE 2	592+60	- 592+99	190	0.12	4	4.3
<b>PROJECT TOTALS</b>			<b>190</b>	<b>0.12</b>	<b>4</b>	<b>4.3</b>

<u>EROSION CONTROL</u>									
LOCATION	STATION	TO STATION	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	628.2008 EROSION MAT URBAN CLASS I TYPE B SY	628.7005 628.7015 INLET PROTECTION TYPE A TYPE C EACH		628.7504 TEMPORARY DITCH CHECKS LF	628.7555 CULVERT PIPE CHECKS EACH
CTH OO STAGE 1	697+42	- 701+95	1	1	--	--	5	--	--
FRENCH RD STAGE 2	592+60	- 592+99	2	1	190	2	2	30	4
<b>PROJECT TOTALS</b>			<b>3</b>	<b>2</b>	<b>190</b>	<b>2</b>	<b>7</b>	<b>30</b>	<b>4</b>

ALL ITEMS CATEGORY 0010 UNLESS NOTED

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PERMANENT SIGNING										
SIGN NUMBER	SIGN CODE	SIGN SIZE	SIGN SIZE (IN)	POSTS WOOD		SIGN TYPE II REFLECTIVE		SIGN MOUNTED ON SAME POST AS NUMBER	DESCRIPTION	
				4x6-INCH x	16-FT EACH	20-FT EACH	H FOLDING SF			F SF
				634.0616	634.0620	637.2215	637.2230			
1-01	J2-2 M3-1 M1-6 M6-1 M4-5	3	72x84	--	1	--	39.5	--	DIRECTIONAL ASSEMBLY "NORTH" CARDINAL ROUTE MARKER STH ROUTE MARKER DIRECTIONAL ARROW "TO" ROUTE MARKER	
	M1-1 M6-1								INTERSTATE ROUTE MARKER DIRECTIONAL AROW	
1-02	R1-1F	3	36x36	--	--	9	--	1-01	FOLDING STOP SIGN	
1-03	R3-2	3	36x36	--	--	--	9	1-01	NO LEFT TURN	
1-04	R1-1F	3	36x36	--	--	9	--	--	FOLDING STOP SIGN, MOUNT ON SIGNAL POLE	
1-05	R1-1F	3	36x36	--	--	9	--	--	FOLDING STOP SIGN, MOUNT ON SIGNAL POLE	
1-06	R5-1	3	36x36	--	--	--	9	--	DO NOT ENTER, MOUNT ON SIGNAL POLE	
1-07	R1-1F	3	36x36	--	--	9	--	--	FOLDING STOP SIGN, MOUNT ON SIGNAL POLE	
1-08	R1-1F	3	36x36	--	--	9	--	--	FOLDING STOP SIGN, MOUNT ON SIGNAL POLE	
1-09	R5-1	3	36x36	--	--	--	9	--	DO NOT ENTER, MOUNT ON SIGNAL POLE	
1-10	R3-8ER	3	48x36	1	--	--	12	--	LANE ASSIGNMENT	
1-11	W3-3	3	36x36	1	--	--	9	--	TRAFFIC SIGNAL (16x16 FLAGS INCIDENTAL)	
1-12	R7-1D	3	24x30	1	--	--	5	--	NO PARKING ANY TIME	
1-13	W3-3	3	36x36	1	--	--	9	--	TRAFFIC SIGNAL (16x16 FLAGS INCIDENTAL)	
1-14	W3-3	3	36x36	1	--	--	9	--	TRAFFIC SIGNAL (16x16 FLAGS INCIDENTAL)	
1-15	R4-7	3	36x48	1	--	--	12	--	KEEP RIGHT	
<b>PROJECT TOTALS</b>				<b>6</b>	<b>1</b>	<b>45</b>	<b>122.5</b>			

SIGN REMOVALS			
SIGN NUMBER	REMOVING		DESCRIPTION
	TYPE II	SMALL SIGN SUPPORTS	
	EACH	EACH	
R1-01	1	1	DIRECTIONAL ASSEMBLY, STOP, NO LEFT
R1-02	1	1	DIRECTIONAL ASSEMBLY
R1-03	1	1	KEEP RIGHT
R1-04	1	1	STOP
R1-05	1	1	ONE WAY (2 SIGNS)
R1-06	1	1	NO PARKING
R1-07	1	1	STOP
R1-08	1	1	ONE WAY (2 SIGNS)
R1-09	1	1	DO NOT ENTER
R1-10	1	1	DO NOT ENTER
<b>PROJECT TOTALS</b>		<b>10</b>	<b>10</b>

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PERMANENT PAVEMENT MARKING											
LOCATION	STATION	TO	STATION	646.1020	646.3020	646.5020	646.5120	646.6120	646.7120	646.8120	646.8220
				MARKING	MARKING	MARKING	MARKING	MARKING	MARKING	MARKING	
				LINE EPOXY	LINE EPOXY	ARROW	WORD	STOP LINE	DIAGONAL	CURB	ISLAND NOSE
				4-INCH (YELLOW)	8-INCH (WHITE)	EPOXY	EPOXY	EPOXY 18-INCH	EPOXY 12-INCH	EPOXY	EPOXY
				LF	LF	EACH	EACH	LF	LF	LF	EACH
CTH OO	697+42	-	701+95	110	920	3	2	103	37	20	2
STAGE 1											
FRENCH RD	592+60	-	592+99	--	135	2	1	54	--	--	--
STAGE 2											
<b>PROJECT TOTALS</b>				<b>110</b>	<b>1,055</b>	<b>5</b>	<b>3</b>	<b>157</b>	<b>37</b>	<b>20</b>	<b>2</b>

ALL ITEMS CATEGORY 0010 UNLESS NOTED

PROJECT NO: 4677-10-71

HWY: CTH OO

COUNTY: OUTAGAMIE

MISCELLANEOUS QUANTITIES

SHEET:

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<b>TRAFFIC CONTROL</b>																			
	643.5000	643.0300	643.0420		643.0705		643.0715		643.0800		643.0900		643.0920	643.1000	643.1050		643.1070		
	*	TRAFFIC CONTROL	TRAFFIC CONTROL BARRICADES		TRAFFIC CONTROL WARNING LIGHTS				TRAFFIC CONTROL ARROW BOARDS				TRAFFIC CONTROL COVERING SIGNS TYPE II	TRAFFIC CONTROL SIGNS		TRAFFIC CONTROL CONES 42-INCH			
STAGE	DURATION (CALENDAR DAYS)	TRAFFIC CONTROL EACH	QTY* DAY	QTY* DAY	QTY* DAY	QTY* DAY	QTY* DAY	QTY* DAY	QTY* DAY	QTY* DAY	QTY* DAY	QTY* DAY	EACH	SF MESSAGE	QTY* DAY	QTY* DAY	QTY* DAY	QTY* DAY	
STAGE 1	40	0.3	13 520	7 280	14 560	13 520	2 80	23 920	1 38	15 570	1 7	8 56	1	39	3 21	87 3,480			
STAGE 2	38	0.3	18 684	3 114	6 228	13 494	1 38	15 570	--	--	--	--	--	--	--	18 684			
STAGE 3	7	0.3	5 35	-- --	-- --	-- --	1 7	8 56	--	--	--	--	--	--	--	15 105			
<b>TOTALS</b>		<b>1</b>	<b>1,239</b>	<b>394</b>	<b>788</b>	<b>1,014</b>	<b>125</b>	<b>1,546</b>	<b>1</b>	<b>39</b>	<b>21</b>	<b>4,269</b>							
UNDISTRIBUTED		--	62	20	39	51	--	77	--	--	--	213							
<b>PROJECT TOTALS</b>		<b>1</b>	<b>1,301</b>	<b>414</b>	<b>827</b>	<b>1,065</b>	<b>125</b>	<b>1,623</b>	<b>1</b>	<b>39</b>	<b>21</b>	<b>4,482</b>							
* FOR INFORMATION ONLY																			

<b>CONSTRUCTION STAKING ITEMS</b>									
	650.4000	650.4500	650.5000	650.5500	650.8501	650.9500	650.9911	650.9920	
	CONSTRUCTION STAKING								
	STORM SEWER	SUBGRADE	BASE	CURB GUTTER AND	ELECTRICAL INSTALLATIONS	SIDEWALK	SUPPLEMENTAL CONTROL	SLOPE STAKES	
LOCATION	STATION TO STATION	EACH	LF	LF	LF	EACH	EACH	EACH	LF
CTH OO STAGE 1	697+42 - 701+95	5	454	454	735	0.5	1	0.5	--
FRENCH RD STAGE 2	592+60 - 594+92	3	232	232	207	0.5	--	0.5	232
<b>PROJECT TOTALS</b>		<b>8</b>	<b>686</b>	<b>686</b>	<b>942</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>232</b>

<b>SAWING PAVEMENT</b>				
LOCATION	STATION TO STATION	SAWING ASPHALT LF	SAWING CONCRETE LF	
CTH OO STAGE 1	697+42 - 701+95	--	1,050	
CTH OO STAGE 3	703+25 - 703+50	30	--	
FRENCH RD STAGE 2	592+60 - 592+99	280	--	
<b>PROJECT TOTALS</b>		<b>310</b>	<b>1,050</b>	

ALL ITEMS CATEGORY 0010 UNLESS NOTED

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CONCRETE BASES

LOCATION	SIGNAL BASE NO.	ALIGNMENT	STATION	OFFSET	SPV.0060.01	SPV.0060.02	654.0105	654.0110	654.0120	654.0113	SPV.0060.03
					CONCRETE BASES TYPE 1 SPECIAL EACH	CONCRETE BASES TYPE 2 SPECIAL EACH	CONCRETE BASES TYPE 5 EACH	CONCRETE BASES TYPE 10 EACH	CONCRETE BASES TYPE 10 SPECIAL EACH	CONCRETE BASES TYPE 13 EACH	CONCRETE BASES CABINET BASEMENT PRECAST SPECIAL EACH
CTH OO & FRENCH ROAD	CB1	CTH OO	703+39.0	85.6' LT	--	--	--	--	--	--	1
	SB1	CTH OO	703+39.6	59.5' LT	--	1	--	--	--	--	--
	SB2	CTH OO	703+45.6	44.9' RT	--	--	--	--	--	1	--
	SB3	FRENCH ROAD	591+38.1	25.9' RT	1	--	--	--	--	--	--
	SB4	FRENCH ROAD	591+18.5	41.8' LT	--	--	--	--	1	--	--
	SB5	CTH OO	701+68.8	43.1' RT	--	1	--	--	--	--	--
	SB6	CTH OO	701+55.4	75.1' LT	--	--	--	--	--	1	--
	SB7	FRENCH ROAD	592+79.9	34.4' LT	1	--	--	--	--	--	--
	SB8	FRENCH ROAD	592+76.1	37.3' RT	--	--	--	1	--	--	--
	SB9	CTH OO	699+99.4	19.0' LT	--	--	1	--	--	--	--
SB10	FRENCH ROAD	593+20.2	32.3' LT	--	--	1	--	--	--	--	
INTERSECTION TOTAL					2	2	2	1	1	2	1

SIGNAL BASES, POLES, AND MAST ARMS

LOCATION	SIGNAL BASE NO.	657.0100	657.0255	SPV.0060.08	657.0322	657.0420	SPV.0060.09	SPV.0060.10	SPV.0060.11	SPV.0060.12	SPV.0060.14	SPV.0060.15	657.0614	657.0615	657.0610	SPV.0060.16	659.1125	
		PEDESTAL BASE EACH	TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE EACH	POLES TYPE 4 SHORT EACH	POLES TYPE 5 ALUMINUM EACH	TRAFFIC SIGNAL STANDARDS ALUMINUM 13-FT EACH	INSTALL POLES TYPE 9 EACH	INSTALL POLES TYPE 10 SPECIAL EACH	INSTALL POLES TYPE 13 EACH	INSTALL MONOTUBE ARMS 30-FT EACH	INSTALL MONOTUBE ARMS 45-FT SPECIAL EACH	INSTALL MONOTUBE ARMS 55-FT EACH	INSTALL MONOTUBE ARMS EACH	LUMINAIRE ARMS SINGLE MEMBER 4-INCH CLAMP 8-FT EACH	LUMINAIRE ARMS SINGLE MEMBER 4 1/2-INCH CLAMP 8-FT EACH	LUMINAIRE ARMS SINGLE MEMBER 4 1/2-INCH CLAMP 6-FT EACH	INSTALL LUMINAIRE ARMS STEEL 12-FT EACH	LUMINAIRE UTILITY LED C EACH
CTH OO & FRENCH ROAD	SB1	--	1	1	--	--	--	--	--	--	--	--	1	--	--	--	1	
	SB2	--	--	--	--	--	--	1	--	--	1	--	--	--	--	1	1	
	SB3	1	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	
	SB4	--	--	--	--	--	1	--	--	1	--	--	--	--	--	1	1	
	SB5	--	1	1	--	--	--	--	--	--	--	1	--	--	--	--	1	
	SB6	--	--	--	--	--	--	1	--	--	--	1	--	--	--	1	1	
	SB7	1	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	
	SB8	--	--	--	--	--	1	--	--	1	--	--	--	--	--	--	--	
	SB9	--	1	--	1	--	--	--	--	--	--	--	--	--	--	2	--	2
	SB10	--	1	--	1	--	--	--	--	--	--	--	--	1	--	--	--	1
INTERSECTION TOTAL		2	4	2	2	2	1	1	2	1	1	2	2	1	2	3	8	

CTH OO & FRENCH ROAD  
TOWN OF GRAND CHUTE/  
VILLAGE OF LITTLE CHUTE  
OUTAGAMIE COUNTY

ALL TRAFFIC SIGNAL QUANTITIES ARE CATEGORY 0010

PAGE 1 OF 6

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CONDUIT ITEMS

LOCATION	FROM	TO	652.0325	652.0335	*	CONSTRUCTION METHOD
			CONDUIT RIGID NONMETALLIC SCHEDULE 80 2-INCH LF	CONDUIT RIGID NONMETALLIC SCHEDULE 80 3-INCH LF	CONDUIT SPECIAL 3-INCH LF	
CTH OO & FRENCH ROAD	CB1	PB1	--	57	--	TRENCH
	PB1	SB1	11	--	--	TRENCH
	PB1	PB2	--	--	126	BORE
	PB2	PB3	--	--	114	BORE
	PB3	SB2	--	21	--	TRENCH
	PB3	PB4	--	96	--	TRENCH
	PB4	SB3	9	--	--	TRENCH
	PB4	PB5	--	--	152	BORE
	PB5	SB4	--	7	--	TRENCH
	PB5	PB6	--	112	--	TRENCH
	PB6	SB5	10	--	--	TRENCH
	PB6	PB7	--	--	154	BORE
	PB7	PB8	--	--	128	BORE
	PB7	WISDOT PB	300	--	--	TRENCH
	PB7	SB9	117	--	--	TRENCH
	PB8	SB6	--	10	--	TRENCH
	PB8	PB9	--	130	--	TRENCH
	PB9	SB7	5	--	--	TRENCH
	PB9	SB10	38	--	--	TRENCH
	SB10	STUB	10	--	--	TRENCH
PB9	PB10	--	--	154	BORE	
PB10	SB8	--	7	--	TRENCH	
PB10	CB1	--	150	--	TRENCH	
INTERSECTION TOTAL			500	590	828	

\* ADDITIONAL QUANTITIES SHOWN IN STH 441 CONDUIT ITEMS TABLE.

PULL BOXES

LOCATION	PULL BOX NO.	ALIGNMENT	STATION	OFFSET	*
					653.0164 PULL BOXES NON-CONDUCTIVE 24 x 42-INCH EACH
CTH OO & FRENCH ROAD	PB1	CTH OO	703+31.7	68.5' LT	1
	PB2	CTH OO	703+25.8	6.0' LT	1
	PB3	CTH OO	703+25.1	51.4' RT	1
	PB4	FRENCH ROAD	591+30.6	30.9' RT	1
	PB5	FRENCH ROAD	591+24.6	45.5' LT	1
	PB6	CTH OO	701+58.5	46.4' RT	1
	PB7	CTH OO	701+17.2	18.8' LT	1
	PB8	CTH OO	701+45.0	77.1' LT	1
	PB9	FRENCH ROAD	592+82.6	39.2' LT	1
	PB10	FRENCH ROAD	592+82.9	37.9' RT	1
INTERSECTION TOTAL					10

\* ADDITIONAL QUANTITIES SHOWN IN STH 441 PULL BOXES TABLE.

ELECTRICAL SERVICE METER BREAKER PEDESTAL

LOCATION	656.0201.01 ELECTRICAL SERVICE METER BREAKER PEDESTAL CTH OO & FRENCH ROAD EACH
CTH OO & FRENCH ROAD	1
TOTAL	1

**CTH OO & FRENCH ROAD  
TOWN OF GRAND CHUTE/  
VILLAGE OF LITTLE CHUTE  
OUTAGAMIE COUNTY**

ALL TRAFFIC SIGNAL QUANTITIES ARE CATEGORY 0010

3

3

SIGNAL FACES

\*

LOCATION	SIG. BASE NO	SIG. HEAD NO	TYPE OF MOUNT	SIGNAL FACES									
				658.0173 TRAFFIC SIGNAL FACE 3S 12-INCH	658.0174 TRAFFIC SIGNAL FACE 4S 12-INCH	+ BACKPLATE 3-SEC	+ BACKPLATE 4-SEC	+ LED RED BALL	+ LED YELLOW BALL	+ LED GREEN BALL	+ LED RED ARROW	+ LED YELLOW ARROW	+ LED GREEN ARROW
				EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
CTH OO & FRENCH ROAD	SB1	1	POST MOUNT VERTICAL	1	--	1	--	1	1	1	--	--	--
	SB1	12	POST MOUNT VERTICAL	--	1	--	1	--	--	--	1	2	1
	SB2	10	MONOTUBE ARM MOUNT VERTICAL	1	--	1	--	1	1	1	--	--	--
	SB2	11	MONOTUBE ARM MOUNT VERTICAL	1	--	1	--	1	1	1	--	--	--
	SB2	13	MONOTUBE ARM MOUNT VERTICAL	--	1	--	1	--	--	--	1	2	1
	SB3	6	POST MOUNT VERTICAL	1	--	1	--	1	1	1	--	--	--
	SB3	15	POST MOUNT VERTICAL	1	--	1	--	1	1	1	--	--	--
	SB4	16	MONOTUBE ARM MOUNT VERTICAL	1	--	1	--	1	1	1	--	--	--
	SB5	4	POST MOUNT VERTICAL	1	--	1	--	--	--	--	1	2	--
	SB5	9	POST MOUNT VERTICAL	1	--	1	--	1	1	1	--	--	--
	SB6	2	MONOTUBE ARM MOUNT VERTICAL	1	--	1	--	1	1	1	--	--	--
	SB6	3	MONOTUBE ARM MOUNT VERTICAL	1	--	1	--	1	1	1	--	--	--
	SB6	5	MONOTUBE ARM MOUNT VERTICAL	1	--	1	--	--	--	--	1	2	--
	SB7	7	POST MOUNT VERTICAL	1	--	1	--	1	1	1	--	--	--
	SB7	14	POST MOUNT VERTICAL	1	--	1	--	1	1	1	--	--	--
	SB8	8	MONOTUBE ARM MOUNT VERTICAL	1	--	1	--	1	1	1	--	--	--
INTERSECTION TOTAL				14	2	14	2	12	12	12	4	8	2

\* ADDITIONAL QUANTITIES SHOWN IN STH 441 SIGNAL FACE ITEMS TABLE.

+INCIDENTAL TO 658.0173 OR 658.0174

TRAFFIC DETECTOR LOOPS

LOCATION	LOOP NO.	HOME RUN PB	ALIGNMENT	** STATION/OFFSET	SDD INSTALLATION SIZE (FT)	SDD INSTALLATION REFERENCE	NO. OF TURNS	* 652.0800 CONDUIT LOOP	* 655.0700 LOOP DETECTOR	* 655.0800 LOOP DETECTOR
								DETECTOR LF	LEAD IN CABLE LF	WIRE LF
CTH OO & FRENCH ROAD	11	PB7	CTH OO	701+58.3, 7.8' LT	6X20	9F15-4B	4	98	236	266
INTERSECTION TOTAL								98	236	266

\* ADDITIONAL QUANTITIES SHOWN IN STH 441 TRAFFIC DETECTOR LOOPS TABLE

\*\* MEASURED TO CENTER OF LOOP ON THE SIDE CLOSEST TO THE INTERSECTION

CTH OO & FRENCH ROAD  
TOWN OF GRAND CHUTE/  
VILLAGE OF LITTLE CHUTE  
OUTAGAMIE COUNTY

ALL TRAFFIC SIGNAL QUANTITIES ARE CATEGORY 0010 (UNLESS NOTED)

PAGE 3 OF 6

SUMMARY OF COUNTY FURNISHED MATERIALS

QUANTITY	UNIT	DESCRIPTION
1	EACH	POLES TYPE 9
1	EACH	POLES TYPE 10 SPECIAL
2	EACH	POLES TYPE 13
1	EACH	MONOTUBE ARMS 30-FT
1	EACH	MONOTUBE ARMS 45-FT SPECIAL
2	EACH	MONOTUBE ARMS 55-FT
3	EACH	LUMINAIRE ARMS STEEL 12-FT

SUMMARY OF CITY FURNISHED MATERIALS

QUANTITY	UNIT	DESCRIPTION
1	EACH	SIGNAL MOUNTING HARDWARE
129	LF	EVP CABLE
1	EACH	GPS EVP DETECTOR

TRAFFIC SIGNAL CABLE AND ELECTRICAL WIRE

LOCATION	FROM	TO	* 655.0230 SPV.0090.02 655.0515 (BY OTHERS) SPV.0090.01 + ++ CABLE CABLE ELECTRICAL INSTALL TRAY CABLE RADAR RADIO TRAFFIC TRAFFIC WIRE TRAFFIC CITY-FURNISHED FOR STREET DETECTOR RADIO SIGNAL SIGNAL WIRE TRAFFIC CITY-FURNISHED FOR STREET DETECTOR RADIO 5-14 AWG 16-14 AWG 10 AWG EVP CABLE 3 CONDUCTOR CABLE CABLE 12 AWG						
			LF	LF	LF	LF	LF	LF	LF
CTH OO & FRENCH ROAD	CB1	SB1	--	45	45	--	45	--	--
	CB1	SB2	--	210	210	--	210	--	--
	CB1	SB3	--	261	261	--	--	--	--
	CB1	SB4	--	354	354	--	354	--	--
	CB1	SB5	--	431	431	--	431	--	--
	CB1	SB6	--	256	256	--	256	--	--
	CB1	SB7	--	168	168	--	--	--	--
	CB1	SB8	--	74	74	--	--	--	--
	CB1	SB9	--	--	456	--	456	--	--
	CB1	SB10	--	--	204	--	204	--	--
CB1	HEAD A (SB8)	--	--	--	129	--	--	--	--
CB1	RA1 (SB8)	--	--	--	--	--	129	--	--
CB1	RA2 (SB2)	--	--	--	--	--	290	--	--
CB1	RA3 (SB4)	--	--	--	--	--	424	--	--
CB1	RA4 (SB6)	--	--	--	--	--	336	--	--
CB1	RADIO (SB6)	--	--	--	--	--	--	--	336

(CONTINUED ON NEXT PAGE)

CTH OO & FRENCH ROAD  
TOWN OF GRAND CHUTE/  
VILLAGE OF LITTLE CHUTE  
OUTAGAMIE COUNTY

+ INCIDENTAL TO ITEM SPV.0060.04  
++ INCIDENTAL TO ITEM SPV.0060.05

\* ADDITIONAL QUANTITIES SHOWN IN STH 441  
TRAFFIC SIGNAL CABLE AND ELECTRICAL WIRE TABLE

ALL TRAFFIC SIGNAL QUANTITIES ARE CATEGORY 0010

PAGE 4 OF 6

(CONTINUED FROM PREVIOUS PAGE)

TRAFFIC SIGNAL CABLE AND ELECTRICAL WIRE

LOCATION	FROM	TO	* 655.0230 CABLE TRAFFIC SIGNAL 5-14 AWG		SPV.0090.02 CABLE TRAFFIC SIGNAL 16-14 AWG		655.0515 ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG		(BY OTHERS) CITY-FURNISHED INSTALL EVF CABLE		SPV.0090.01 TRAY CABLE FOR STREET LIGHTING 3 CONDUCTOR 12 AWG		+ RADAR DETECTOR CABLE		++ RADIO CABLE	
			LF	LF	LF	LF	LF	LF	LF	LF	LF	LF				
CTH OO & FRENCH ROAD	SB1	HEAD 1	21	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB1	HEAD 12	22	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB1	LUMINAIRE	--	--	--	--	--	--	--	123	--	--	--	--	--	--
	SB2	HEAD 10	80	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB2	HEAD 11	80	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB2	HEAD 13	81	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB2	LUMINAIRE	--	--	--	--	--	--	--	135	--	--	--	--	--	--
	SB3	HEAD 6	19	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB3	HEAD 15	19	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB4	HEAD 16	70	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB4	LUMINAIRE	--	--	--	--	--	--	--	135	--	--	--	--	--	--
	SB5	HEAD 4	19	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB5	HEAD 9	19	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB5	LUMINAIRE	--	--	--	--	--	--	--	123	--	--	--	--	--	--
	SB6	HEAD 2	80	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB6	HEAD 3	80	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB6	HEAD 5	80	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB6	LUMINAIRE	--	--	--	--	--	--	--	135	--	--	--	--	--	--
	SB7	HEAD 7	19	--	--	--	--	--	--	--	--	--	--	--	--	--
	SB7	HEAD 14	19	--	--	--	--	--	--	--	--	--	--	--	--	--
SB8	HEAD 8	55	--	--	--	--	--	--	--	--	--	--	--	--	--	
SB9	LUMINAIRES	--	--	--	--	--	--	--	234	--	--	--	--	--	--	
SB10	LUMINAIRE	--	--	--	--	--	--	--	123	--	--	--	--	--	--	
INTERSECTION TOTAL			763	1799	2459	129	2964	1179	336							

+ INCIDENTAL TO ITEM SPV.0060.04  
 ++ INCIDENTAL TO ITEM SPV.0060.05

\* ADDITIONAL QUANTITIES SHOWN IN STH 441  
 TRAFFIC SIGNAL CABLE AND ELECTRICAL WIRE TABLE

INSTALL SIGNAL MOUNTING HARDWARE

LOCATION	SPV.0060.07 INSTALL SIGNAL MOUNTING HARDWARE CTH OO & FRENCH ROAD EACH
CTH OO & FRENCH ROAD	1
TOTAL	1

CTH OO & FRENCH ROAD  
 TOWN OF GRAND CHUTE/  
 VILLAGE OF LITTLE CHUTE  
 OUTAGAMIE COUNTY

ALL TRAFFIC SIGNAL QUANTITIES ARE CATEGORY 0010

PAGE 5 OF 6

3

SIGNAL MOUNTING HARDWARE

658.5070.01  
SIGNAL MOUNTING  
HARDWARE  
CTH OO & FRENCH ROAD  
EACH

LOCATION	
CTH OO & FRENCH ROAD	1
TOTAL	1

RADAR VEHICLE DETECTION SYSTEM SPECIAL

SPV.0060.04  
RADAR VEHICLE  
DETECTION SYSTEM SPECIAL  
CTH OO & FRENCH ROAD  
EACH

LOCATION	
CTH OO & FRENCH ROAD	1
TOTAL	1

3

RADIO COMMUNICATION SYSTEM SPECIAL

SPV.0060.05  
RADIO COMMUNICATION  
SYSTEM SPECIAL  
CTH OO & FRENCH ROAD  
EACH

LOCATION	
CTH OO & FRENCH ROAD	1
TOTAL	1

TRAFFIC SIGNAL CONTROLLER AND CABINET ASSEMBLY SPECIAL  
CTH OO & FRENCH ROAD

SPV.0060.06  
TRAFFIC SIGNAL CONTROLLER  
AND CABINET ASSEMBLY SPECIAL  
CTH OO & FRENCH ROAD  
EACH

LOCATION	
CTH OO & FRENCH ROAD	1
TOTAL	1

**CTH OO & FRENCH ROAD  
TOWN OF GRAND CHUTE/  
VILLAGE OF LITTLE CHUTE  
OUTAGAMIE COUNTY**

ALL TRAFFIC SIGNAL QUANTITIES ARE CATEGORY 0010

REMOVAL QUANTITIES

LOCATION	EACH
STH 441 & CTH OO (S44-2020)	4
<b>INTERSECTION TOTAL</b>	<b>4</b>

SIGNAL BASES, POLES, AND MAST ARMS

LOCATION	SIGNAL BASE NO	EACH
STH 441 & CTH OO (S44-2020)	SB2	1
<b>INTERSECTION TOTAL</b>		<b>1</b>

CONDUIT ITEMS

LOCATION	FROM	TO	652.0210	* 652.0615
			CONDUIT RIGID NONMETALLIC SCHEDULE 40 1-INCH	CONDUIT SPECIAL 3-INCH
			LF	LF
STH 441 & CTH OO (S44-2020)	PB5	PB7	--	85
	PB7	PB11	55	--
	PB11	PB12	230	--
<b>INTERSECTION TOTAL</b>			<b>285</b>	<b>85</b>

\* ADDITIONAL QUANTITIES SHOWN IN CTH OO CONDUIT ITEMS TABLE

PULL BOXES

LOCATION	PULL BOX NO.	ALIGNMENT	STATION	OFFSET	653.0105	* 653.0164
					PULL BOXES STEEL 12 X 24-INCH EACH	PULL BOXES NON-CONDUCTIVE 24 x 42-INCH EACH
STH 441 & CTH OO (S44-2020)	PB5	CTH OO	697+74	80.6' LT	--	1
	PB11	CTH OO	698+67	18.9' LT	1	--
	PB12	CTH OO	700+96	18.0' LT	1	--
<b>INTERSECTION TOTAL</b>					<b>2</b>	<b>1</b>

\* ADDITIONAL QUANTITIES SHOWN IN CTH OO PULL BOXES TABLE.

**STH 441 NB & CTH OO  
VILLAGE OF LITTLE CHUTE  
OUTAGAMIE COUNTY**

ALL TRAFFIC SIGNAL QUANTITIES ARE CATEGORY 0010

PAGE 1 OF 4

3

3

SIGNAL FACES

LOCATION	SIG. BASE NO	SIG. HEAD NO	TYPE OF MOUNT	* 658.0173 + + + + TRAFFIC BACKPLATE LED LED LED SIGNAL 3-SEC RED YELLOW GREEN FACE BALL BALL BALL 3S 12-INCH				
				EACH	EACH	EACH	EACH	EACH
STH 441 & CTH OO (S44-2020)	SB2	1	MONOTUBE ARM MOUNT VERTICAL	1	1	1	1	1
	SB2	2	MONOTUBE ARM MOUNT VERTICAL	1	1	1	1	1
	SB2	15	MONOTUBE ARM MOUNT VERTICAL	1	1	1	1	1
<b>INTERSECTION TOTAL</b>				<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>

\* ADDITIONAL QUANTITIES SHOWN IN CTH OO SIGNAL FACE ITEMS TABLE  
 +INCIDENTAL TO 658.0173

TRAFFIC DETECTOR LOOPS

LOCATION	LOOP NO.	NO. OF TURNS	* 652.0800 CONDUIT LOOP DETECTOR	* 655.0700 LOOP DETECTOR LEAD IN CABLE	* 655.0800 LOOP DETECTOR WIRE
			LF	LF	LF
STH 441 & CTH OO (S44-2020)	21	4	56	508	440
	22	4	56	278	440
<b>INTERSECTION TOTAL</b>			<b>112</b>	<b>786</b>	<b>880</b>

\* ADDITIONAL QUANTITIES SHOWN IN CTH OO TRAFFIC DETECTOR LOOPS TABLE

**STH 441 NB & CTH OO  
 VILLAGE OF LITTLE CHUTE  
 OUTAGAMIE COUNTY**

ALL TRAFFIC SIGNAL QUANTITIES ARE CATEGORY 0010

PAGE 2 OF 4

TRAFFIC SIGNAL CABLE AND ELECTRICAL WIRE

\*  
655.0230  
CABLE  
TRAFFIC  
SIGNAL  
5-14 AWG

LOCATION	FROM	TO	LF
STH 441 & CTH OO (S44-2020)	SB2	HEAD 1	63
	SB2	HEAD 2	53
	SB2	HEAD 15	73
<b>INTERSECTION TOTAL</b>			<b>189</b>

\* ADDITIONAL QUANTITIES SHOWN IN CTH OO TRAFFIC SIGNAL CABLE AND ELECTRICAL WIRE TABLE

SIGNAL MOUNTING HARDWARE

658.5070.02  
SIGNAL MOUNTING  
HARDWARE  
STH 441 & CTH OO  
EACH

LOCATION	EACH
STH 441 & CTH OO (S44-2020)	1
<b>TOTAL</b>	<b>1</b>

SUMMARY OF COUNTY FURNISHED MATERIALS

QUANTITY	UNIT	DESCRIPTION
1	EACH	MONOTUBE ARMS 45-FT

REMOVING TRAFFIC SIGNALS STH 441 & CTH OO

204.9060.S.01  
REMOVING  
TRAFFIC SIGNALS  
STH 441 & CTH OO  
EACH

LOCATION	EACH
STH 441 & CTH OO (S44-2020)	1
<b>TOTAL</b>	<b>1</b>

**STH 441 NB & CTH OO  
VILLAGE OF LITTLE CHUTE  
OUTAGAMIE COUNTY**

ALL TRAFFIC SIGNAL QUANTITIES ARE CATEGORY 0010

LAMP, BALLAST, LED, SWITCH DISPOSAL

659.5000.S  
LAMP, BALLAST, LED,  
SWITCH DISPOSAL  
BY CONTRACTOR

FIXTURE TYPE	EACH
TRAFFIC SIGNAL, THREE SECTION	3
TOTAL	3

LAMP, BALLAST, LED, SWITCH DISPOSAL (FOR INFORMATION ONLY)

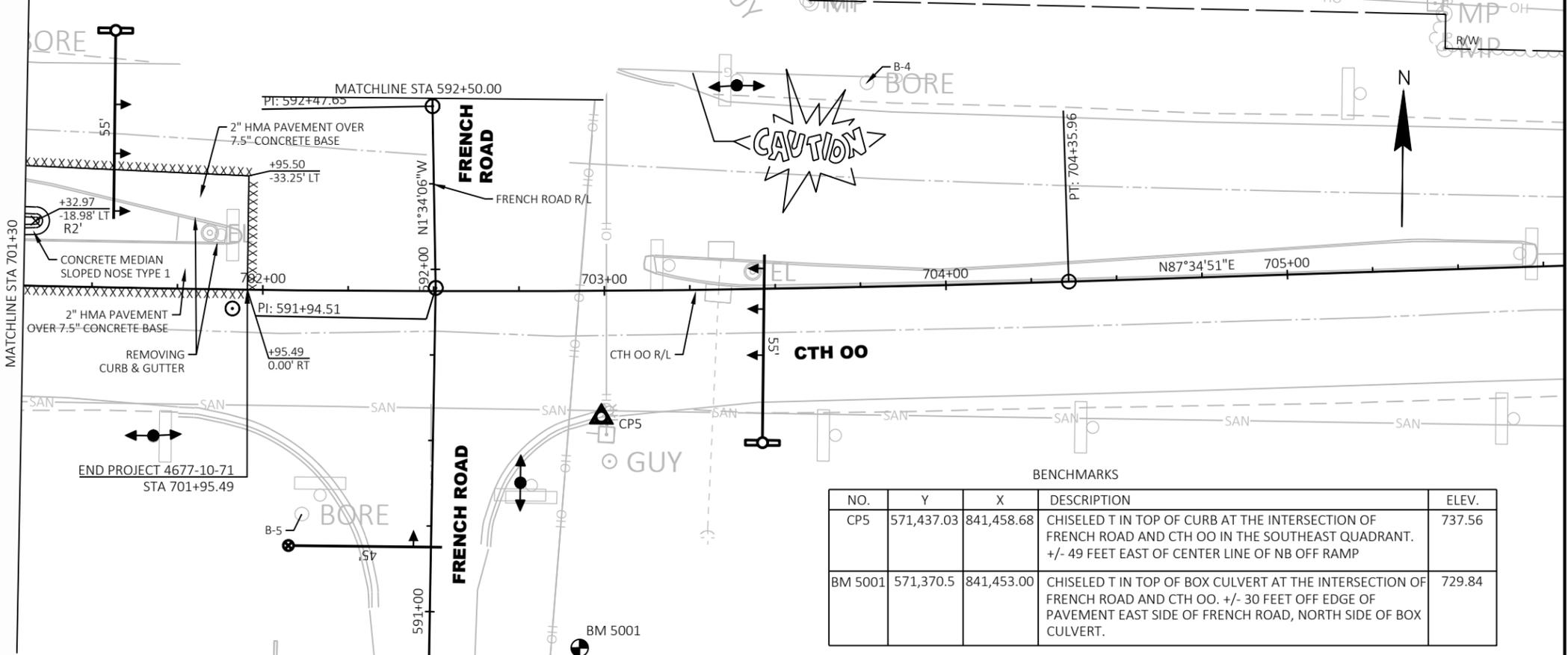
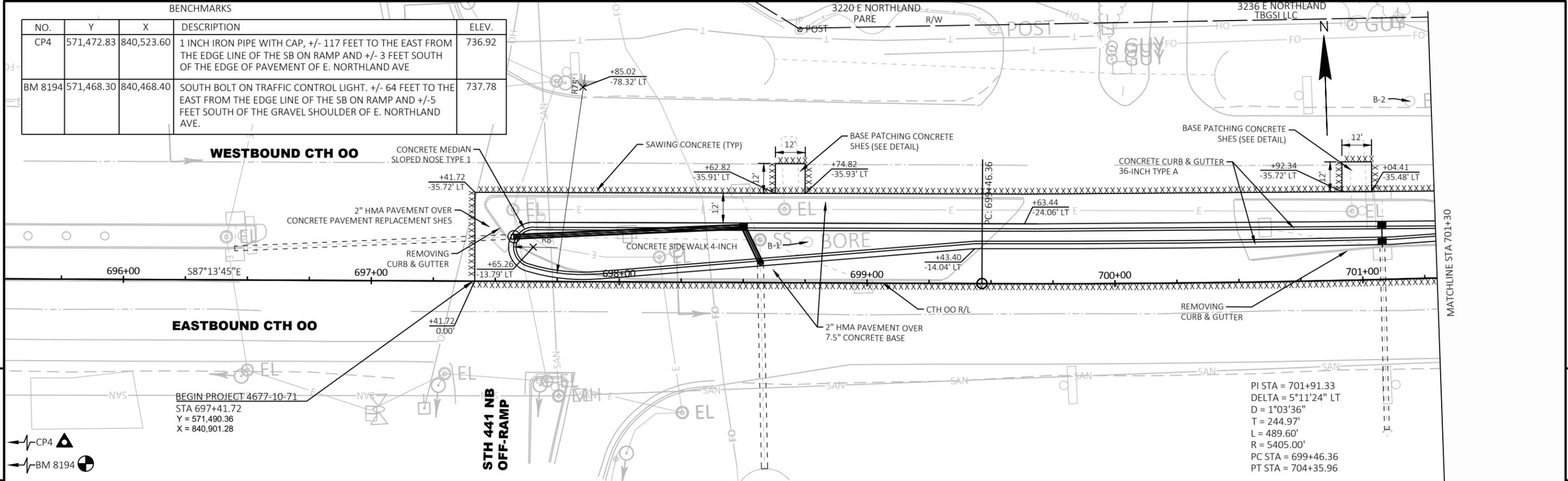
TRAFFIC  
SIGNAL,  
THREE SECTION  
EACH

SIGNAL BASE NO.	EACH
SB2	3
TOTAL	3

STH 441 NB & CTH OO  
VILLAGE OF LITTLE CHUTE  
OUTAGAMIE COUNTY

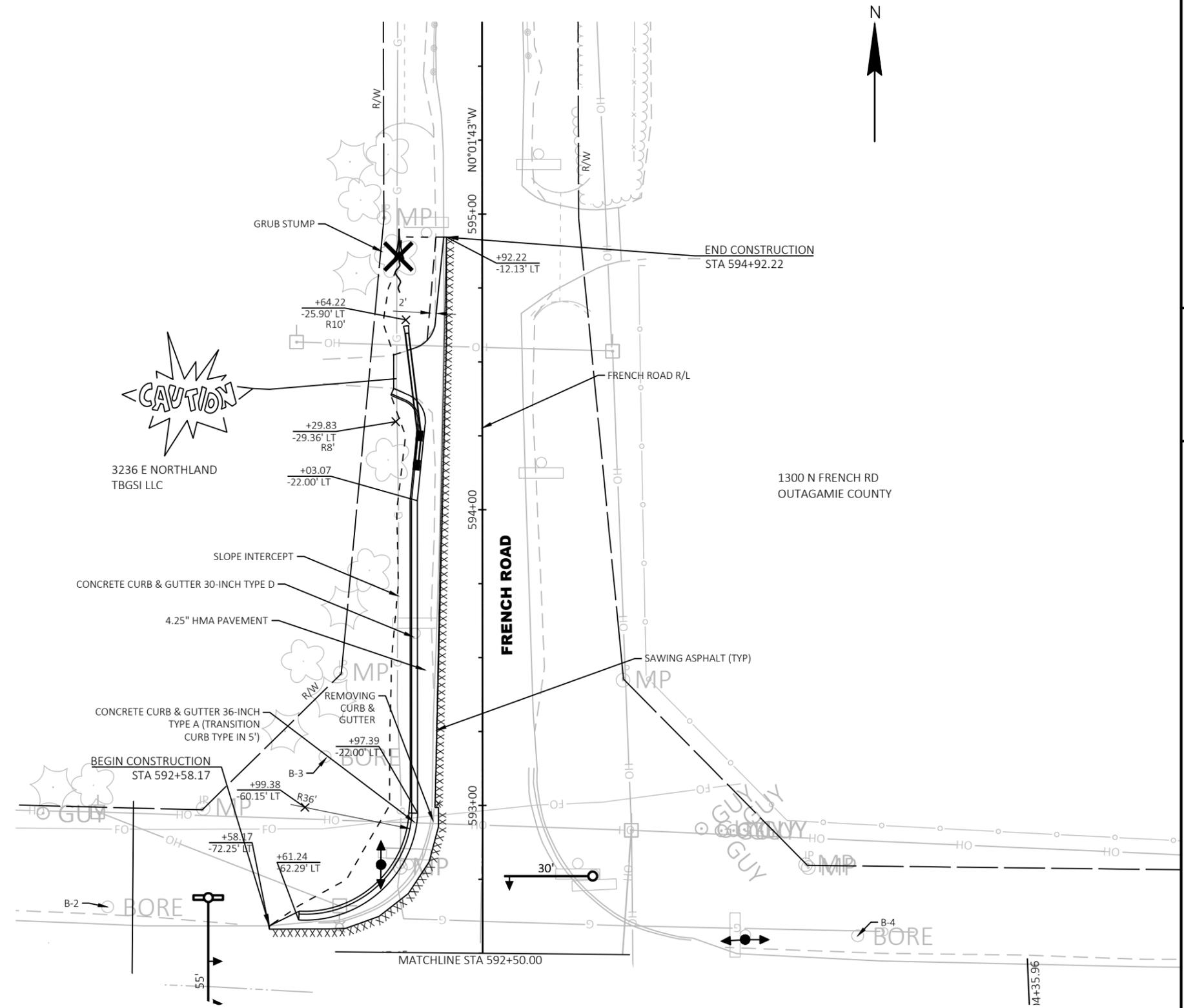
ALL TRAFFIC SIGNAL QUANTITIES ARE CATEGORY 0010

BENCHMARKS				
NO.	Y	X	DESCRIPTION	ELEV.
CP4	571,472.83	840,523.60	1 INCH IRON PIPE WITH CAP, +/- 117 FEET TO THE EAST FROM THE EDGE LINE OF THE SB ON RAMP AND +/- 3 FEET SOUTH OF THE EDGE OF PAVEMENT OF E. NORTHLAND AVE.	736.92
BM 8194	571,468.30	840,468.40	SOUTH BOLT ON TRAFFIC CONTROL LIGHT. +/- 64 FEET TO THE EAST FROM THE EDGE LINE OF THE SB ON RAMP AND +/- 5 FEET SOUTH OF THE GRAVEL SHOULDER OF E. NORTHLAND AVE.	737.78



BENCHMARKS

NO.	Y	X	DESCRIPTION	ELEV.
CP5	571,437.03	841,458.68	CHISELED T IN TOP OF CURB AT THE INTERSECTION OF FRENCH ROAD AND CTH OO IN THE SOUTHEAST QUADRANT. +/- 49 FEET EAST OF CENTER LINE OF NB OFF RAMP	737.56
BM 5001	571,370.5	841,453.00	CHISELED T IN TOP OF BOX CULVERT AT THE INTERSECTION OF FRENCH ROAD AND CTH OO. +/- 30 FEET OFF EDGE OF PAVEMENT EAST SIDE OF FRENCH ROAD, NORTH SIDE OF BOX CULVERT.	729.84

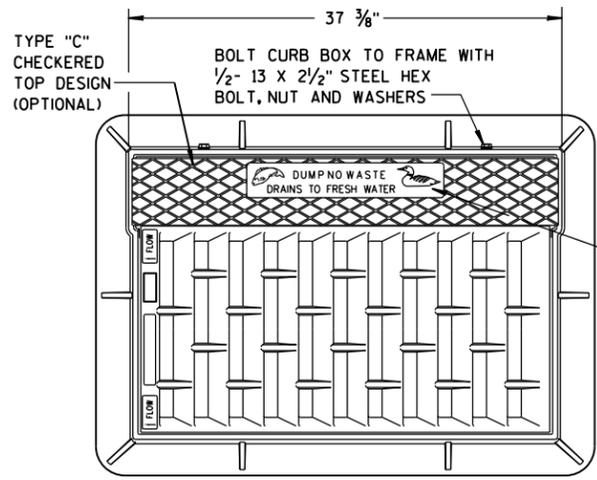


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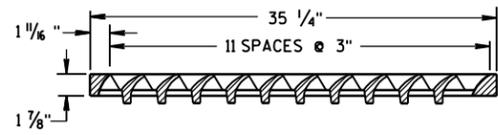
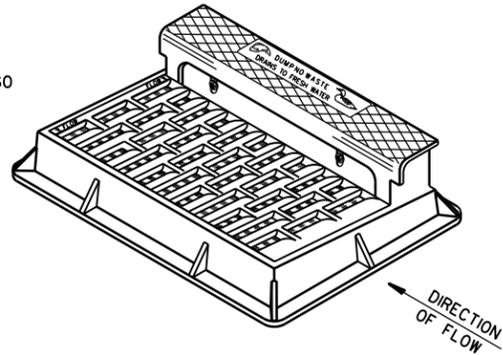
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## Standard Detail Drawing List

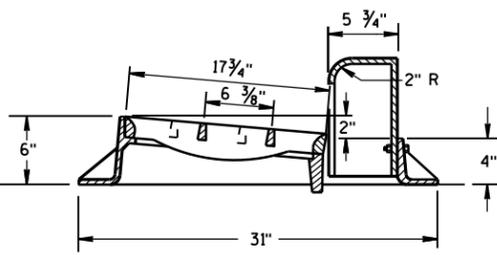
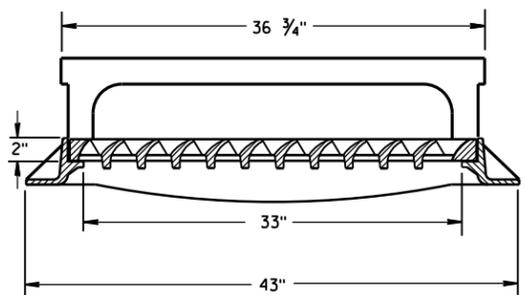
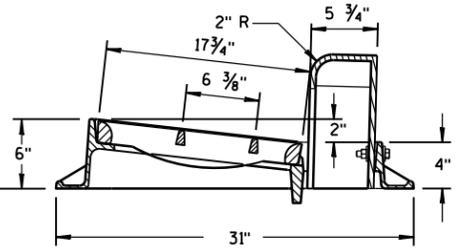
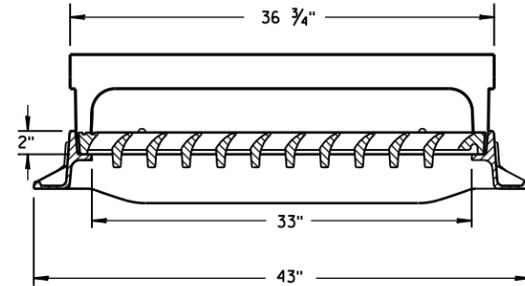
08A05-19A	INLET COVERS TYPE A, H, A-S, H-S & Z
08A05-19C	INLET COVERS TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S
08C06-02	INLETS 3-FT AND 4-FT DIAMETER
08C07-02	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08D01-22A	CONCRETE CURB & GUTTER
08D01-22B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D20-01	DRIVEWAYS WITH CURB & GUTTER RETURNS
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E15-01	CULVERT PIPE CHECK
08F04-08	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
08F07-05	STEEL APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH SLOPED SIDE DRAINS
09B02-10	CONDUIT
09B04-12	PULL BOX
09B16-02	PULL BOX NON-CONDUCTIVE
09C02-09	CONCRETE BASES, TYPES 1, 2, 5, & 6
09C03-04	TRANSFORMER/PEDESTAL BASES
09C11-10	CONCRETE BASE TYPE 10
09C12-09A	CONCRETE BASE TYPE 13
09C12-09B	CONCRETE BASE TYPE 13
09C15-01	CONCRETE BASE TYPE 10 SPECIAL
09D01-05	CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)
09D02-03	SIGNAL CONTROL CABINET
09E01-15C	POLE MOUNTINGS FOR TRAFFIC SIGNALS AND LIGHTING UNITS, TYPE 4
09E01-15D	POLE MOUNTINGS FOR LIGHTING UNITS, TYPE 5 (30 FEET)
09E01-15G	HARDWARE DETAILS FOR POLE MOUNTINGS
09E03-06	NON-FREEWAY LIGHTING UNIT POLE WIRING
09E08-09E	TYPE 10 POLE 15'-30' MONOTUBE ARM
09E08-09G	TYPE 10 SPECIAL POLE 40' MONOTUBE ARM
09E08-09J	TYPE 13 POLE 35'-55' MONOTUBE ARM
09E08-09K	GENERAL NOTES, HARDWARE DETAILS FOR TYPE 9/10, 9/10 SPECIAL, 12 & 13 POLES W/MONOTUBE ARMS
09F15-04B	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2)
11B02-02	CONCRETE MEDIAN NOSE
13C01-19	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C09-16A	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-16B	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-16C	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C14-07A	BASE PATCHING CONCRETE
13C14-07B	BASE PATCHING CONCRETE
13C14-07C	BASE PATCHING CONCRETE
13C15-07A	CONCRETE BASE
13C15-07B	CONCRETE BASE
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C07-15B	PAVEMENT MARKING WORDS
15C07-15C	PAVEMENT MARKING ARROWS
15C08-22A	LONGITUDINAL MARKING (MAINLINE)
15C08-22D	PAVEMENT MARKING (TURN LANES)
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-09A	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C18-06B	MEDIAN ISLAND MARKING MEDIAN ISLAND NOSE
15C33-04	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D20-06B	TRAFFIC CONTROL, SINGLE RIGHT LANE CLOSURE, UNDIVIDED NON-FREEWAY/EXPRESSWAY
15D20-06C	TRAFFIC CONTROL, SINGLE LEFT LANE CLOSURE, UNDIVIDED NON-FREEWAY/EXPRESSWAY
15D27-03	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH



**NOTE:  
GRATE IS REVERSIBLE.**

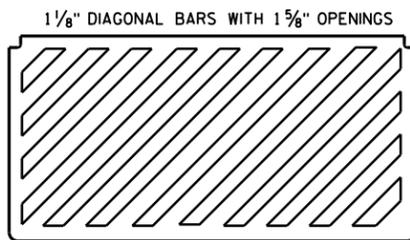


**NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"**

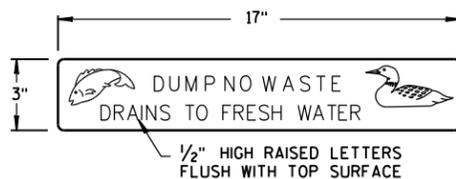


**TYPE "H"**

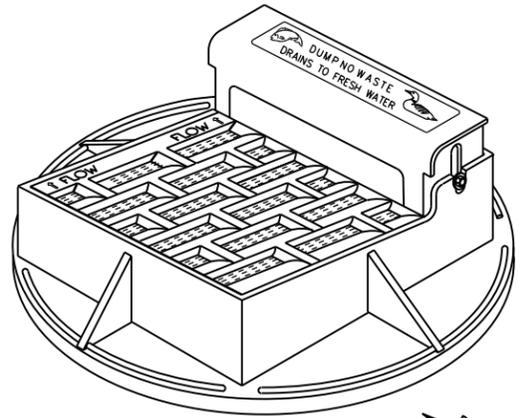
**NOTE: EITHER CASTING IS ACCEPTABLE**



**SPECIAL GRATE FOR  
TYPE "H" COVER**  
(MEASURES 35 1/4" X 17 3/4" X 2")  
(NOTED AS TYPE H-S ON DRAINAGE TABLE)

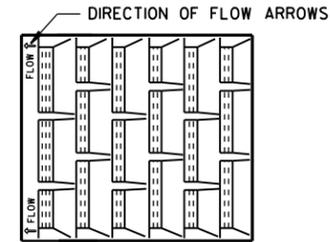


**LOGO DETAIL**

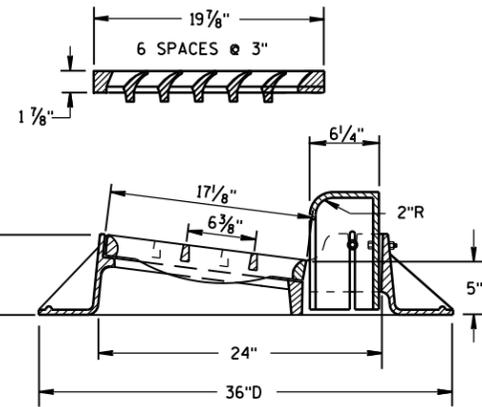
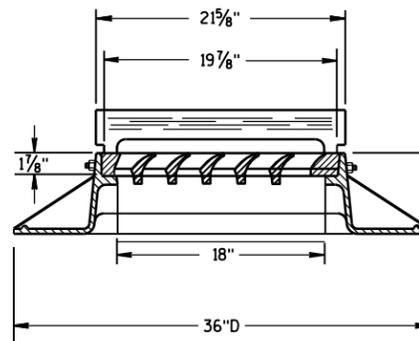


**NOTE: CURB BOX ADJUSTABLE 4" TO 9"**

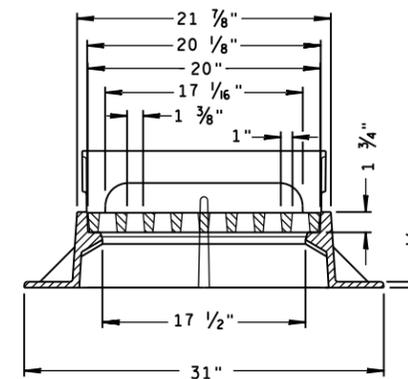
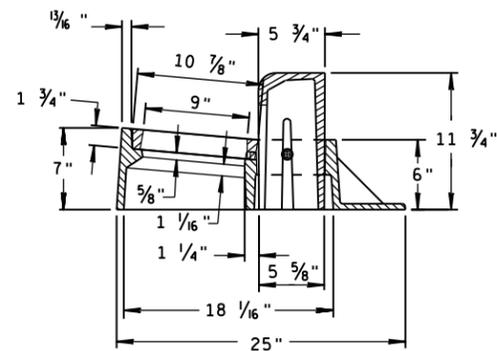
**NOTE:  
GRATE IS REVERSIBLE.**



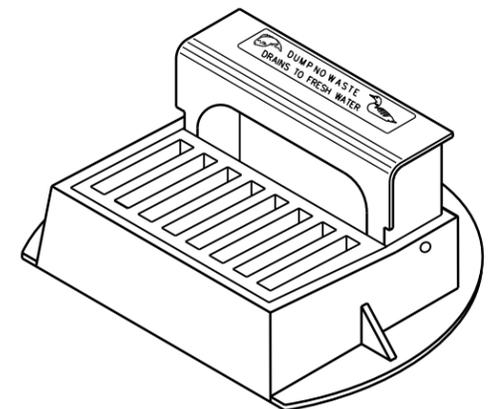
**SPECIAL GRATE FOR  
TYPE "A" COVER**  
(MEASURES 19 3/4" X 17" X 1 1/8")  
(NOTED AS TYPE A-S ON DRAINAGE TABLE)



**TYPE "A"**



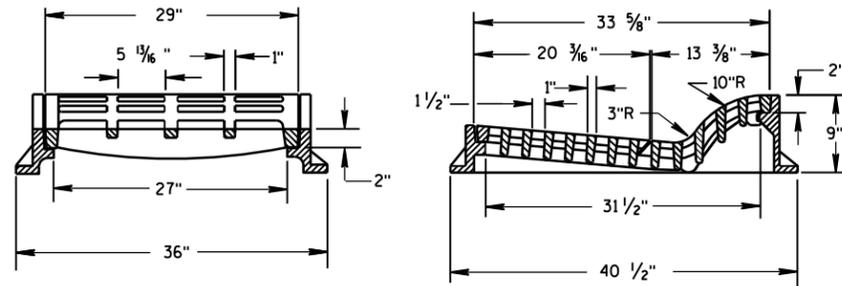
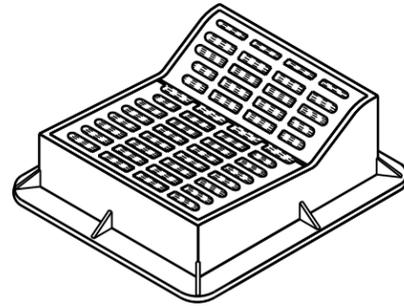
**TYPE "Z"**



**INLET COVERS  
TYPE A, H, A-S, H-S & Z**

**STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION**

**APPROVED**  
DATE: 11-27-13  
DATE: /S/ Jerry H. Zogg  
ROADWAY STANDARDS DEVELOPMENT ENGINEER  
FHWA



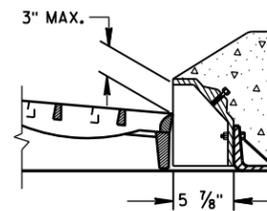
**TYPE "F"**

USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.

**GENERAL NOTES**

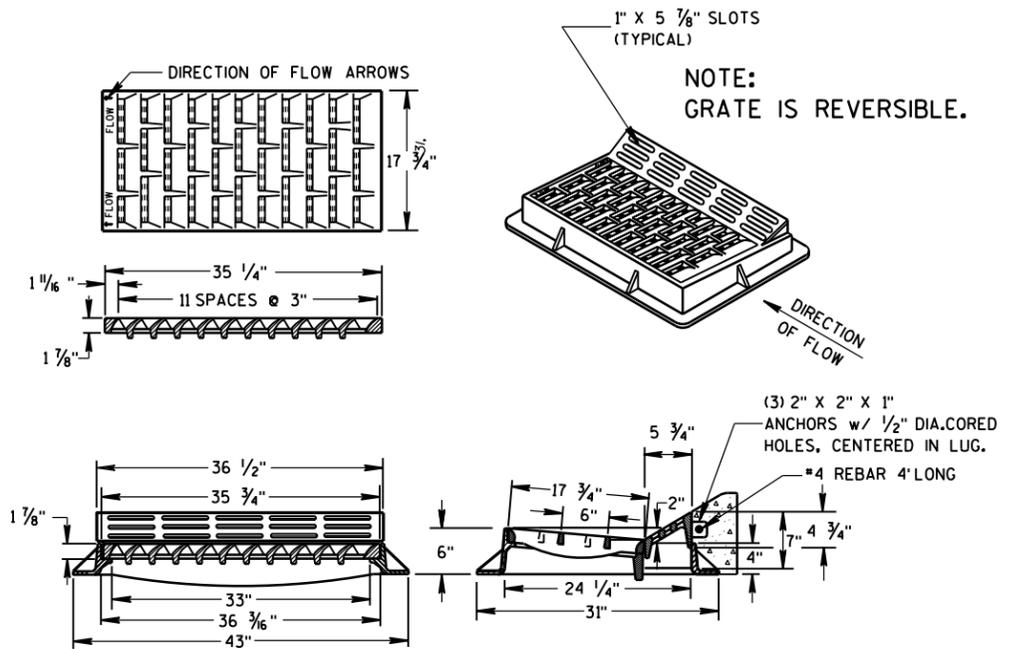
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.



**ALTERNATIVE CURB BOX FOR TYPE "HM" COVER**

USE WITH TYPES G & J CONCRETE CURB & GUTTER, 30 INCH NOTED AS TYPE HM-GJ ON DRAINAGE TABLE



**TYPE "HM"**

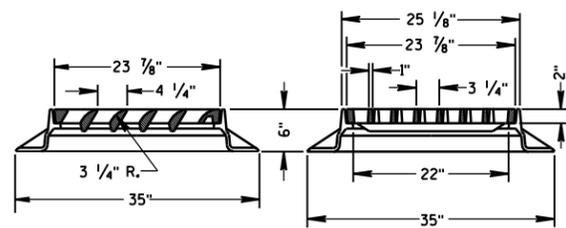
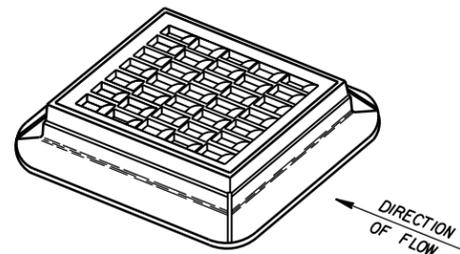
USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.

NOTE: SPECIAL GRATE FOR THE TYPE "H" COVER MAY ALSO BE USED FOR THE TYPE "HM" COVER NOTED AS TYPE HM-S ON DRAINAGE TABLE

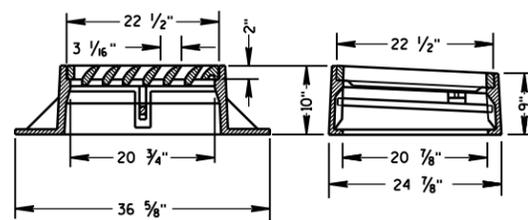
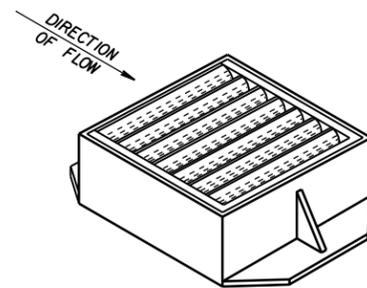
NOTE: SPECIAL GRATE FOR THE TYPE "H" COVER MAY ALSO BE USED FOR THE TYPE "HM-GJ" COVER NOTED AS TYPE HM-GJ-S ON DRAINAGE TABLE

6

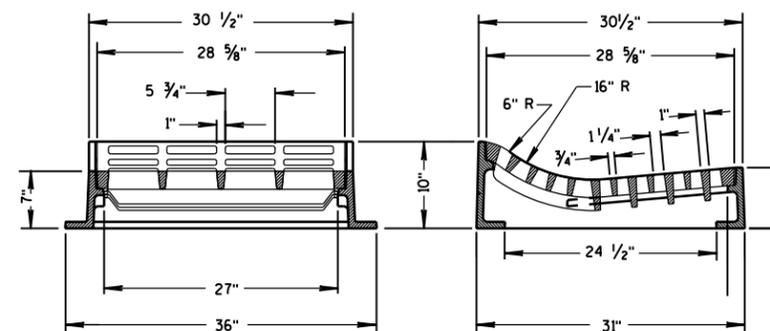
6



**TYPE "S"**

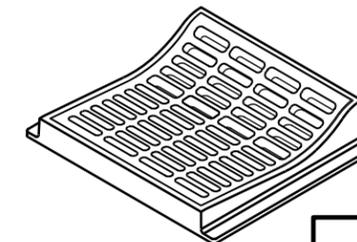


**TYPE "V"**



**TYPE "T"**

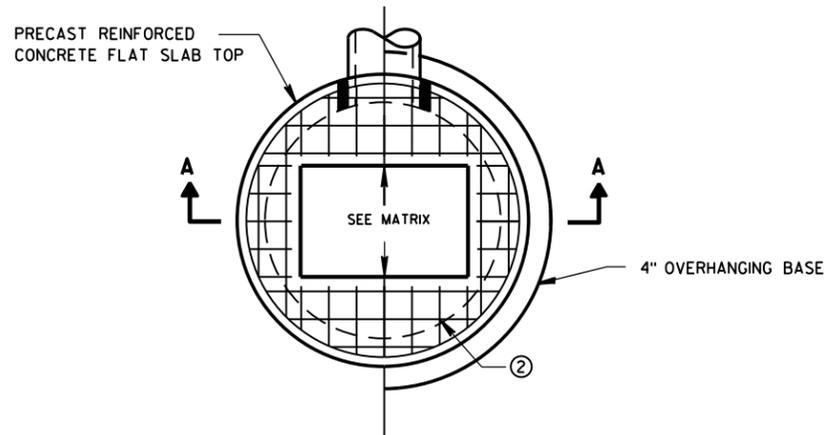
USE WITH TYPES R & T CONCRETE CURB & GUTTER, 36 INCH.



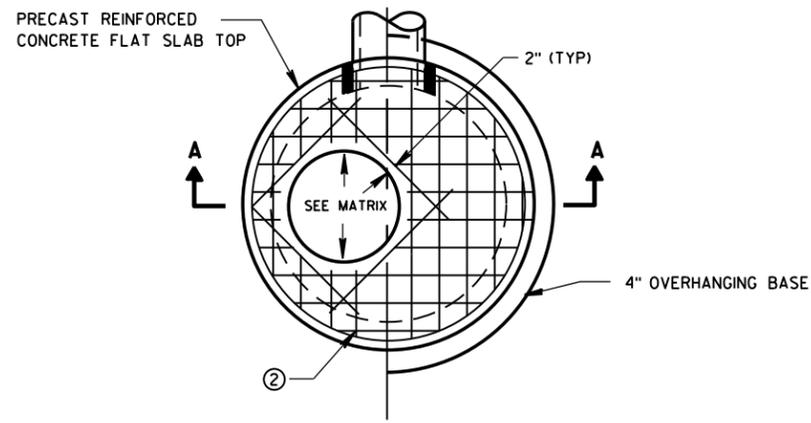
**INLET COVERS**  
TYPE F, HM, HM-S, S, T, V,  
HM-GJ, & HM-GJ-S

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
11/27/2013 DATE /s/ Jerry H. Zogg  
ROADWAY STANDARDS DEVELOPMENT ENGINEER  
FHWA



PLAN VIEW RECTANGULAR OPENING



PLAN VIEW CIRCULAR OPENING

**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.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST INLET UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATE THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF FOUNDATION BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

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

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M199.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

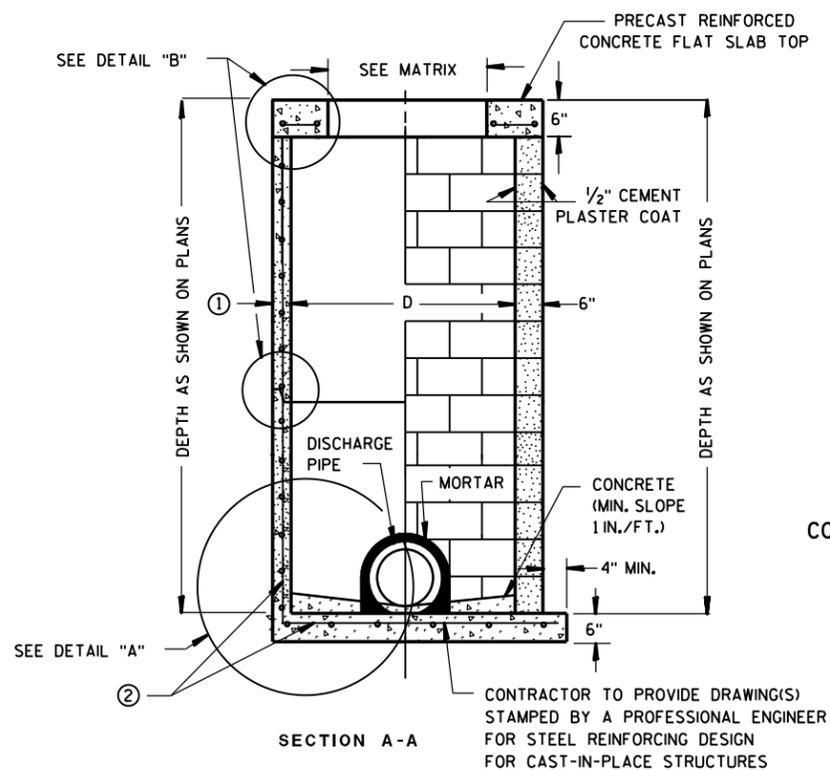
4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

- ① MINIMUM WALL THICKNESS SHALL BE 4-IN FOR 3-FT DIAMETER AND 5-IN FOR 4-FT DIAMETER PRECAST INLETS.
- ② FOR PRECAST CATCH BASINS PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

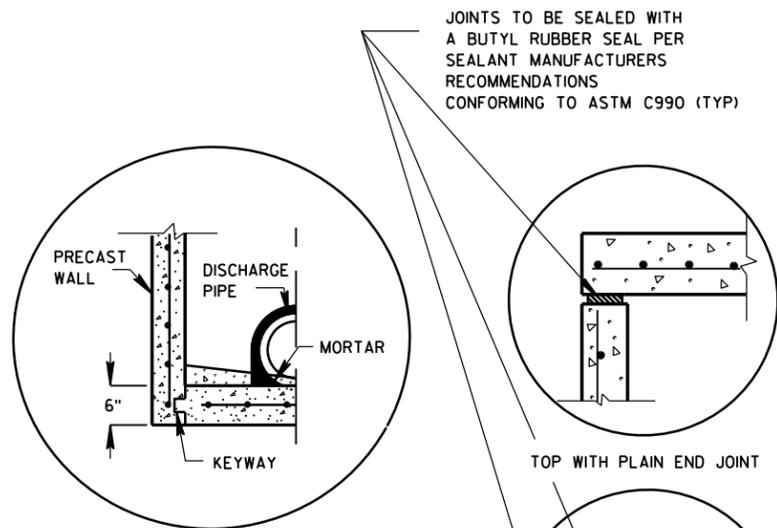
**INLET COVER OPENING MATRIX**

	INLET COVER TYPE	ALL A'S	ALL B'S	BW	C	F	ALL H'S	S	T	V	WM	Z
3-FT	2 DIA.				X							X
	2X2	X	X					X		X		
4-FT	2 DIA.				X							X
	2X2	X	X					X		X	X	
	2X2.5			X								
	2X3						X					
	2.5X3					X						

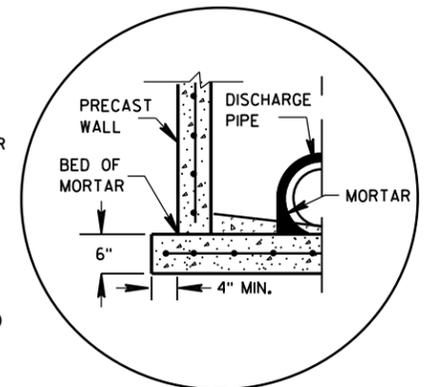


PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE OR CONCRETE BLOCK WITH CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ②

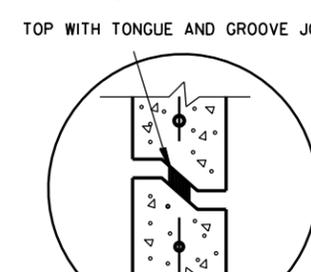
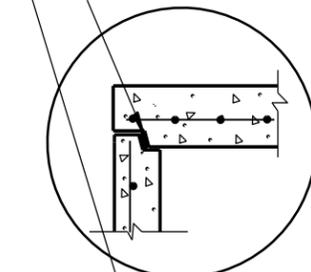
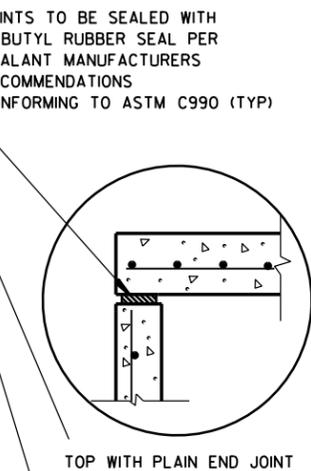
CIRCULAR INLETS W/ FLAT TOP



PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

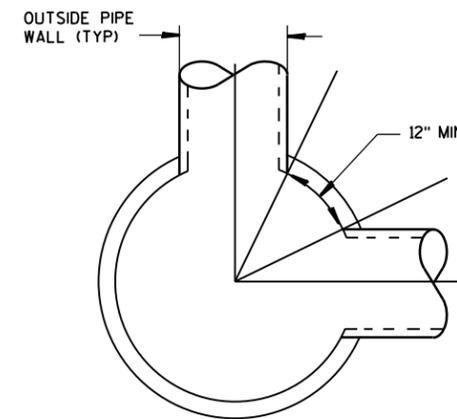


RISER WITH TONGUE AND GROOVE JOINT

DETAIL "A"

DETAIL "B"

INLETS 3-FT AND 4-FT DIAMETER



DETAIL "C"

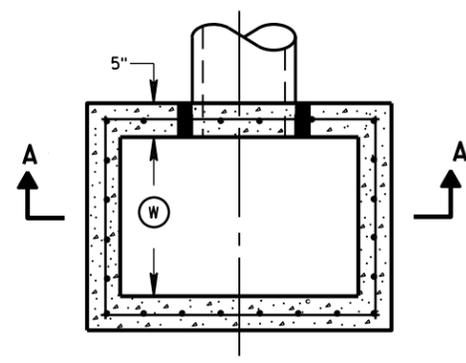
**PIPE MATRIX**

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18

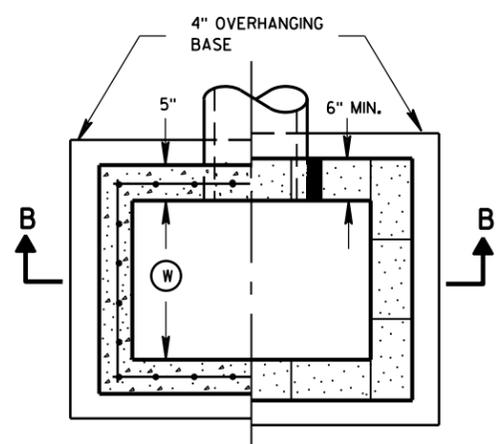
INLETS 3-FT AND 4-FT DIAMETER

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

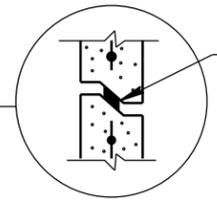
APPROVED  
 Sept., 2016 /S/ Rodney Taylor  
 DATE ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR  
 FHWA



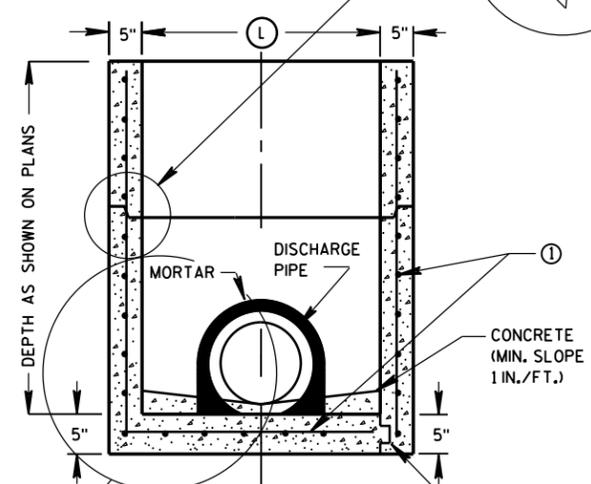
PLAN VIEW



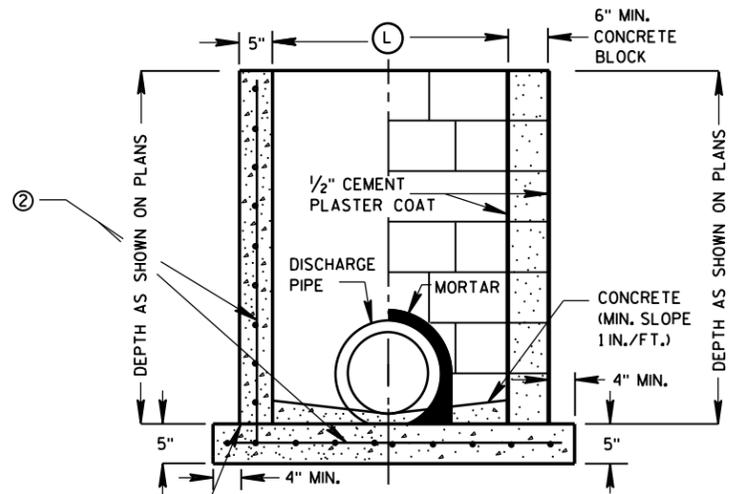
PLAN VIEW



RISER JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP)



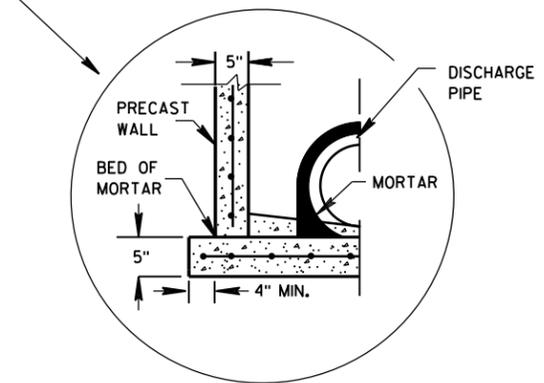
SECTION A-A



SECTION B-B

PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE  
 PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE  
 KEYWAY

CAST-IN-PLACE REINFORCED CONCRETE  
 CONCRETE BLOCK WITH CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ①



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

**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.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST INLET UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATES THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF FOUNDATION BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

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

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

4" OVERHANGING BASES ARE REQUIRED FOR CAST-IN-PLACE REINFORCED CONCRETE AND CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3 INCH CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

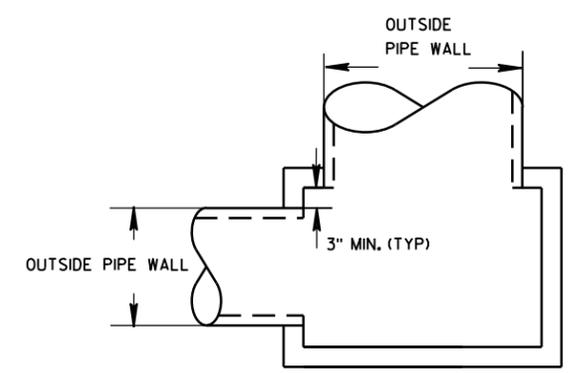
- ① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.
- ② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

**INLET COVER MATRIX**

INLET SIZE	INLET COVER TYPE		ALL A'S	ALL B'S	BW	F	ALL H'S	S	T	V	WM
	WIDTH (W) (FT)	LENGTH (L) (FT)									
2X2-FT	2	2	X	X				X		X	
2X2.5-FT	2	2.5			X			X	X	X	X
2X3-FT	2	3					X				
2.5X3-FT	2.5	3				X					

**PIPE MATRIX**

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER	
	WIDTH (IN)	LENGTH (IN)
2X2-FT	12	12
2X2.5-FT	12	18
2X3-FT	12	24
2.5X3-FT	18	24



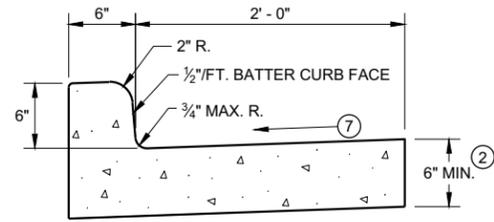
DETAIL "A"

**INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT**

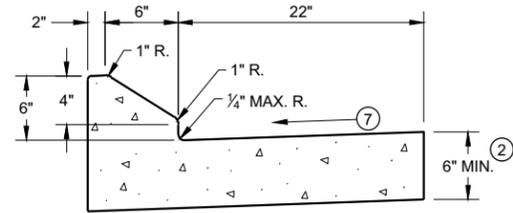
**INLETS 2X2-FT, 2X2.5-FT,  
2X3-FT AND 2.5X3-FT**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

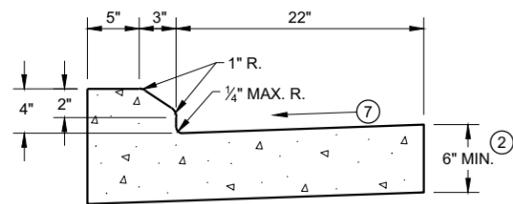
APPROVED  
 Sep 1, 2016 /S/ Rodney Taylor  
 DATE ROADWAY STANDARDS DEVELOPMENT  
 FHWA UNIT SUPERVISOR



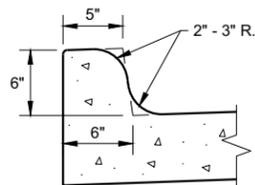
TYPES A<sup>①</sup> & D



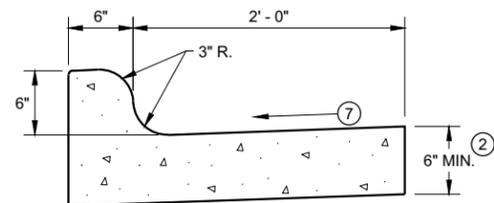
6" SLOPED CURB TYPES G<sup>①</sup> & J



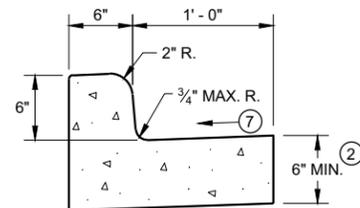
4" SLOPED CURB TYPES G<sup>①</sup> & J



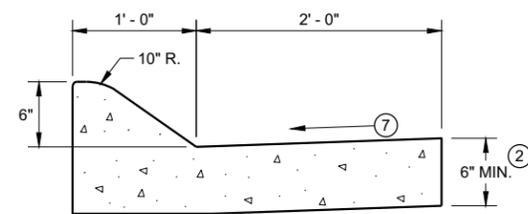
TYPES K<sup>①</sup> & L  
(OPTIONAL CURB SHAPE)



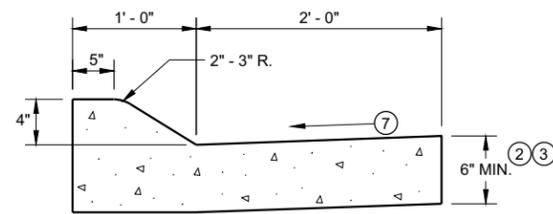
TYPES K<sup>①</sup> & L  
CONCRETE CURB AND GUTTER 30"



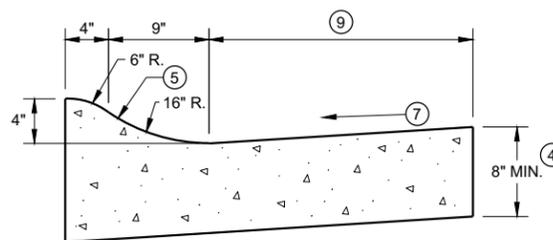
TYPES A<sup>①</sup> & D  
CONCRETE CURB AND GUTTER 18"



6" SLOPED CURB TYPES A<sup>①</sup> & D

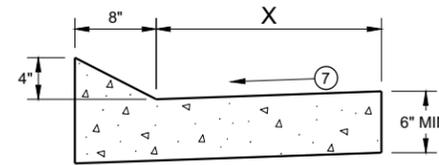


4" SLOPED CURB TYPES A<sup>①</sup> & D  
CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R<sup>①</sup> & T

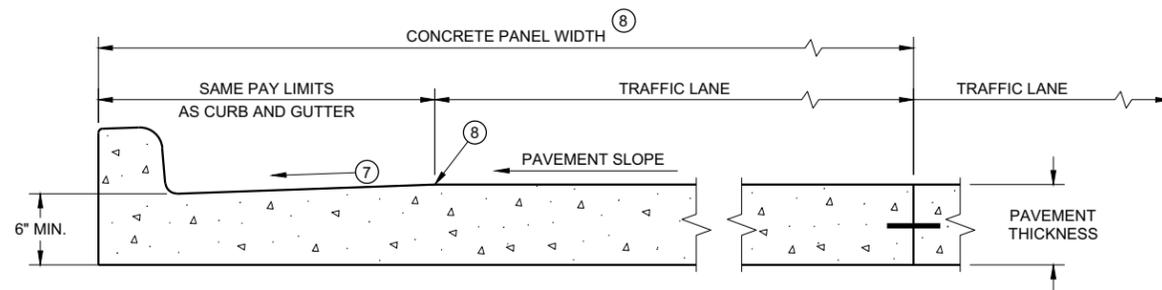
TBT & TBTT	X
30"	22"
36"	28"



TYPES TBT & TBTT<sup>①</sup>  
CONCRETE CURB AND GUTTER

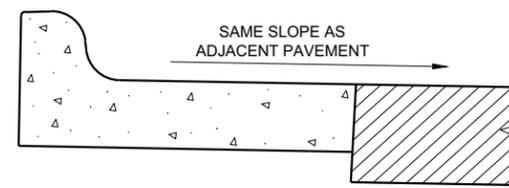
PAVEMENT THICKNESS  
AND MAXIMUM CONCRETE  
PANEL WIDTH TABLE

PAVEMENT THICKNESS	MAXIMUM PANEL WIDTH
LESS THAN 10"	12'
10" & ABOVE	15'



PARTIAL SECTION OF PAVEMENT \*  
WITH INTEGRAL CURB AND GUTTER

\* BIKE LANE IS NOT SHOWN



REVERSE SLOPE GUTTER<sup>⑥</sup>  
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

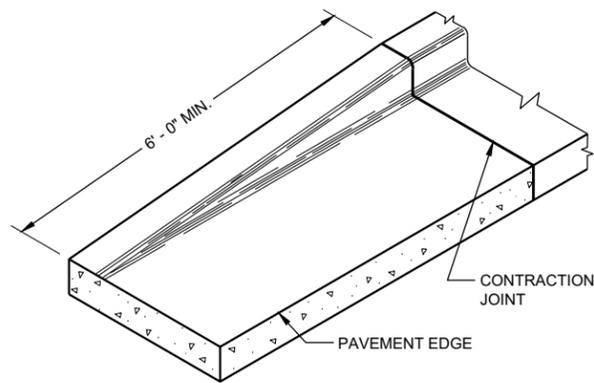
DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

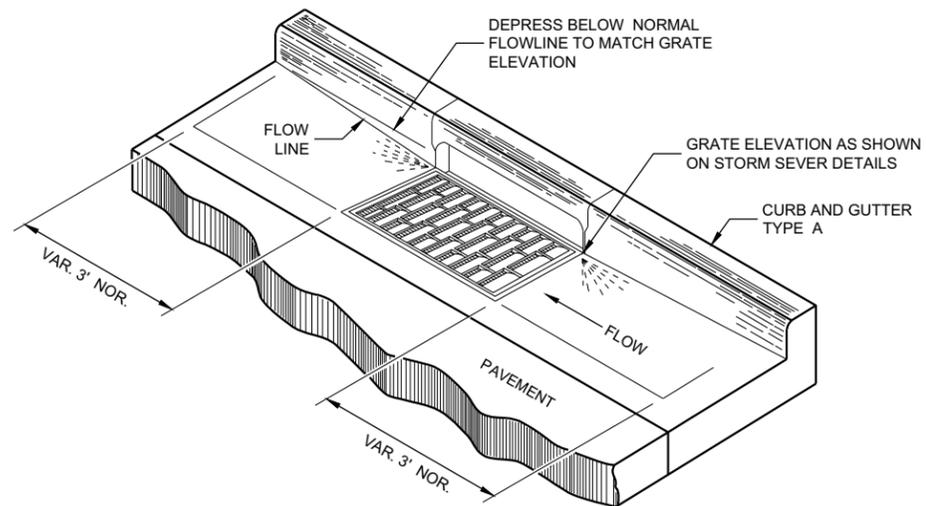
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.
- ④ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑤ UNLESS OTHERWISE NOTED, FOR STAKING PURPOSES THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- ⑥ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.
- ⑦ USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.
- ⑧ INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.
- ⑨ CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE "R" AND "T" = 17 INCHES  
CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE "R" AND "T" = 23 INCHES



**END SECTION CURB AND GUTTER**



**DETAIL OF CURB AND GUTTER AT INLETS**  
(TYPICAL H INLET COVER SHOWN)

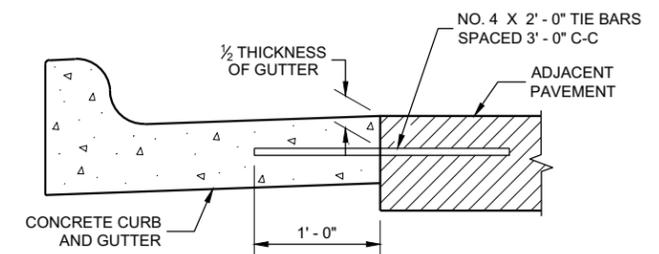
**GENERAL NOTES**

DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

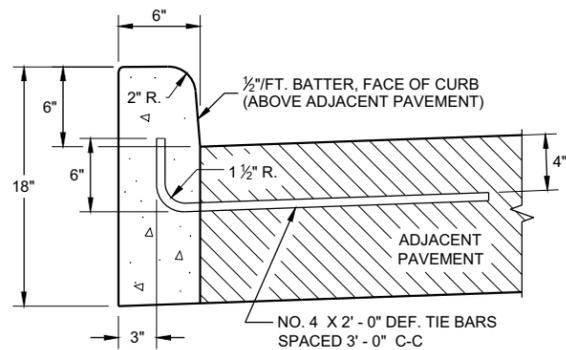
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

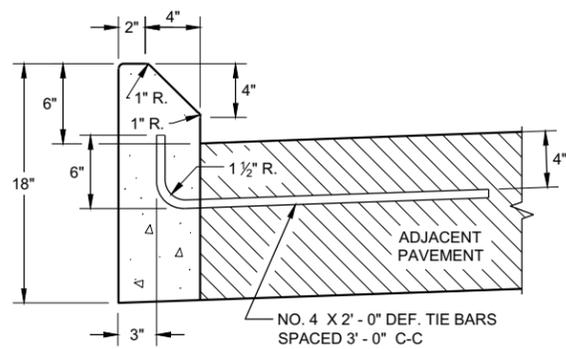
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑨ REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.



**TYPICAL TIE BAR LOCATION** ①

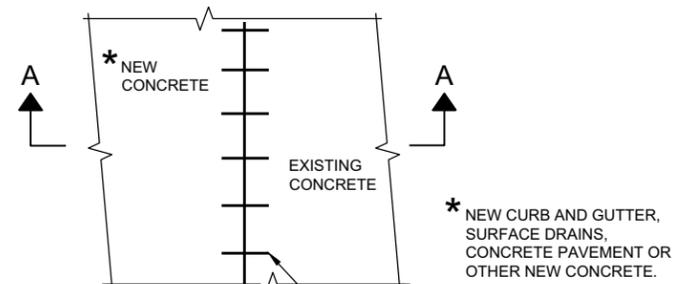


**TYPES A ① & D**

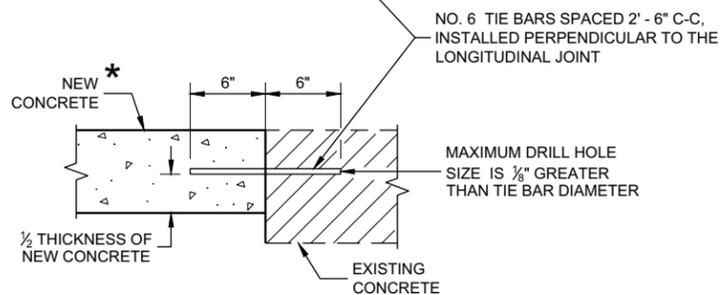


**TYPES G ① & J**

**CONCRETE CURB**

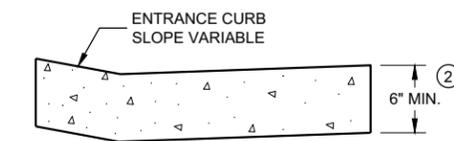


**PLAN VIEW**



**SECTION A - A**

**TIE BARS DRILLED INTO EXISTING PAVEMENT**



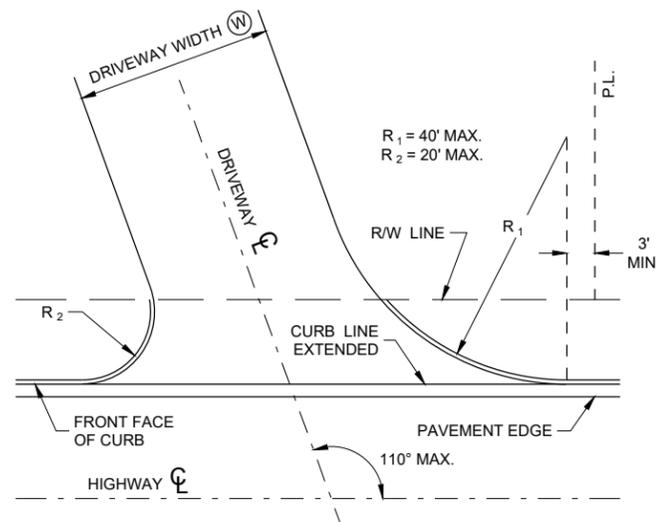
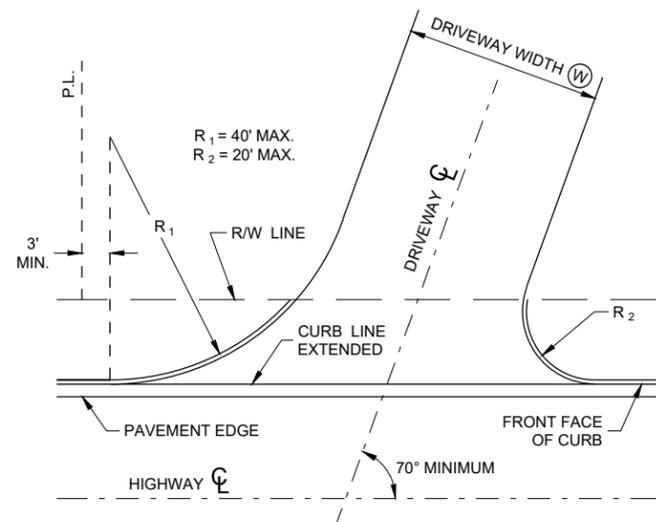
**DRIVEWAY ENTRANCE CURB** ⑨  
(WHEN DIRECTED BY THE ENGINEER)

**CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2021 /S/ Rodney Taylor  
DATE ROADWAY STANDARDS DEVELOPMENT  
ENGINEER

FHWA



**SKewed DRIVEWAY DETAILS  
(COMMERCIAL AND NON-COMMERCIAL)  
SIDEWALK NOT SHOWN**

**GENERAL NOTES**

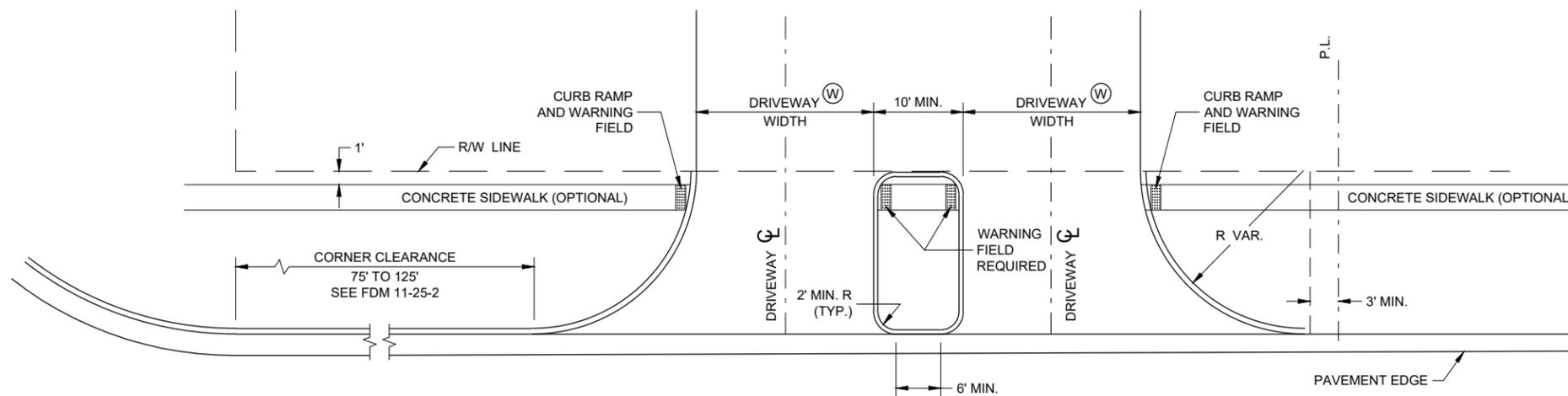
A MAXIMUM RADIUS OF 10 FEET SHALL BE USED FOR NON-COMMERCIAL PRIVATE ENTRANCES. RADII FOR COMMERCIAL DRIVEWAYS SHALL BE DETERMINED BY THE ENGINEER BASED ON TRAFFIC AND DRIVEWAY PERMIT RESTRICTIONS.

THE MINIMUM ANGLE OF INTERSECTION BETWEEN THE DRIVEWAY AND HIGHWAY CENTERLINES SHALL BE 70°.

ALL CURVILINEAR PRIVATE ENTRANCE OUTLINES SHALL BE CONTAINED WITHIN THE HIGHWAY R/W.

NO DRIVEWAY SHALL BE BUILT WITHIN 3 FEET OF THE PROPERTY LINE EXCEPT FOR EXISTING JOINT DRIVEWAY SHARED BY TWO OWNERS.

Ⓜ: 12' MIN. - 24' MAX. RESIDENTIAL AND NON-COMMERCIAL (PE & FE)  
16' MIN. - 35' MAX. COMMERCIAL (CE)



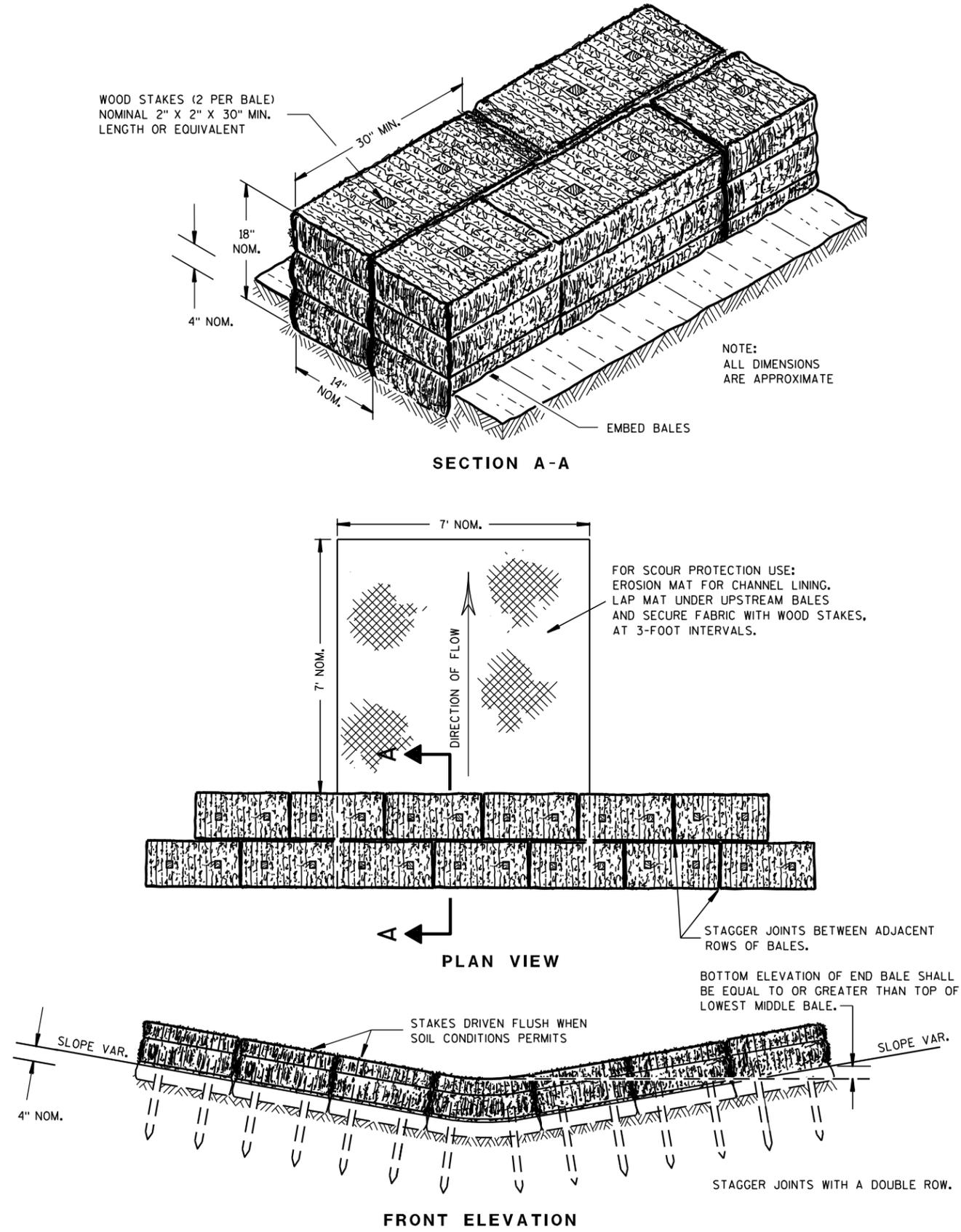
**DRIVEWAY LOCATION AND SPACING DETAILS  
SIDEWALK SHOWN**

**DRIVEWAYS WITH  
CURB AND GUTTER  
RETURNS**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
00-00-00 DATE /S/ <AUTHOR>  
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

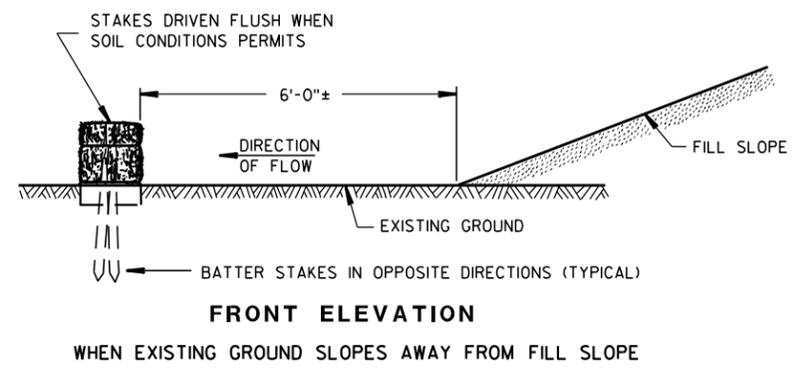
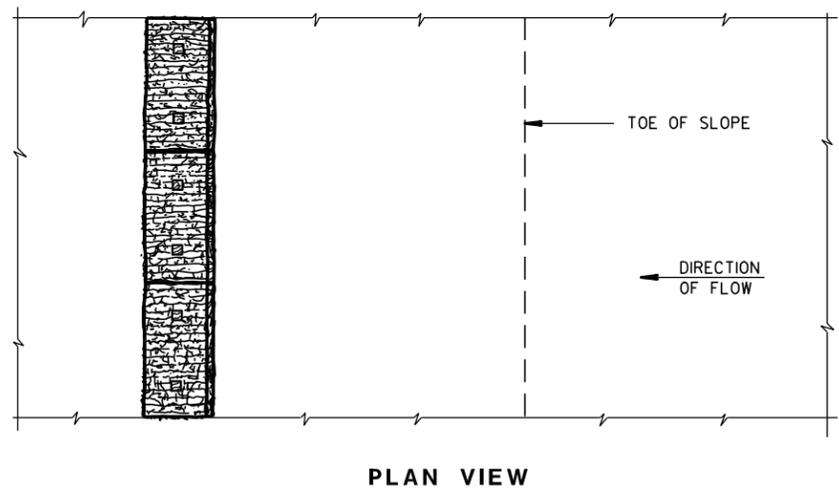
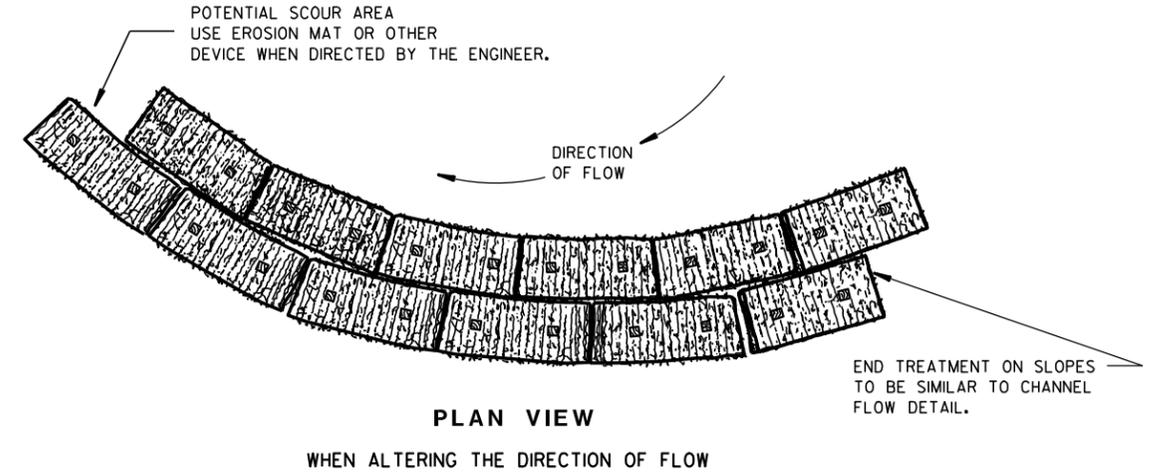


TEMPORARY DITCH CHECK USING EROSION BALES ①

**GENERAL NOTES**

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

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

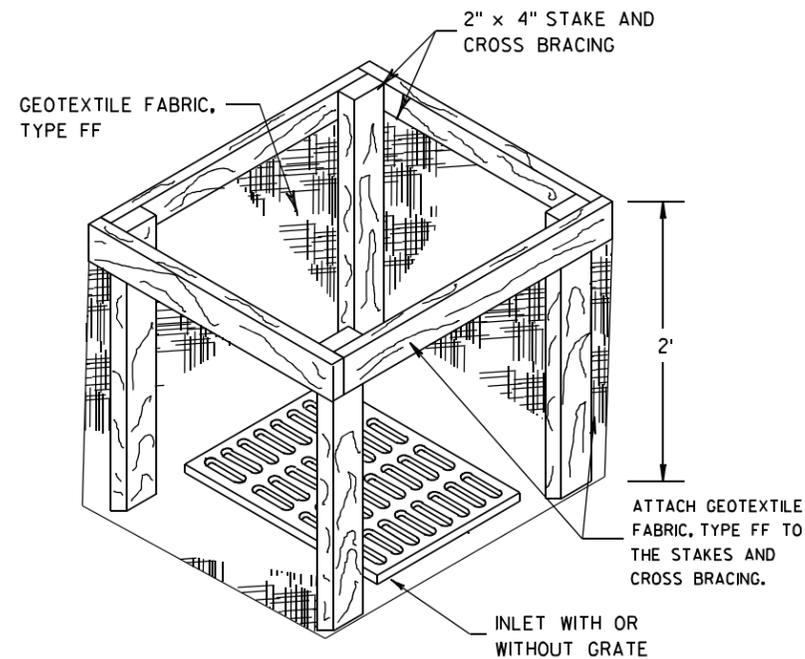
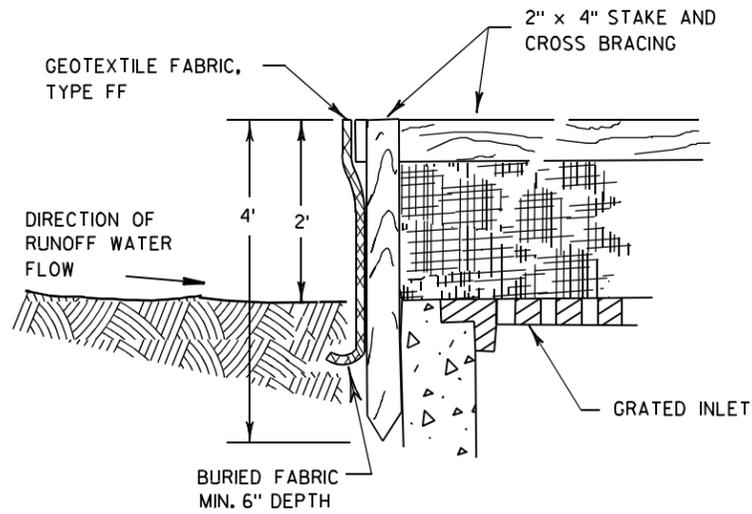


EROSION BALES FOR SHEET FLOW

**TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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



**INLET PROTECTION, TYPE A**

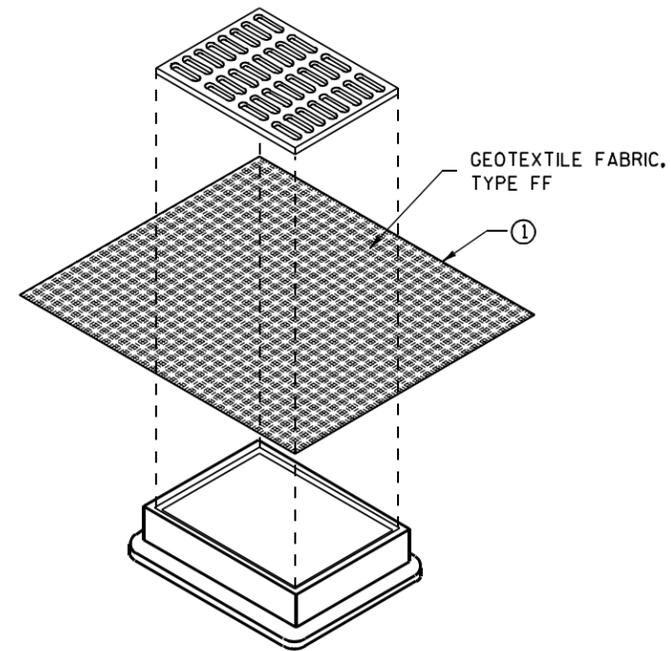
**GENERAL NOTES**

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

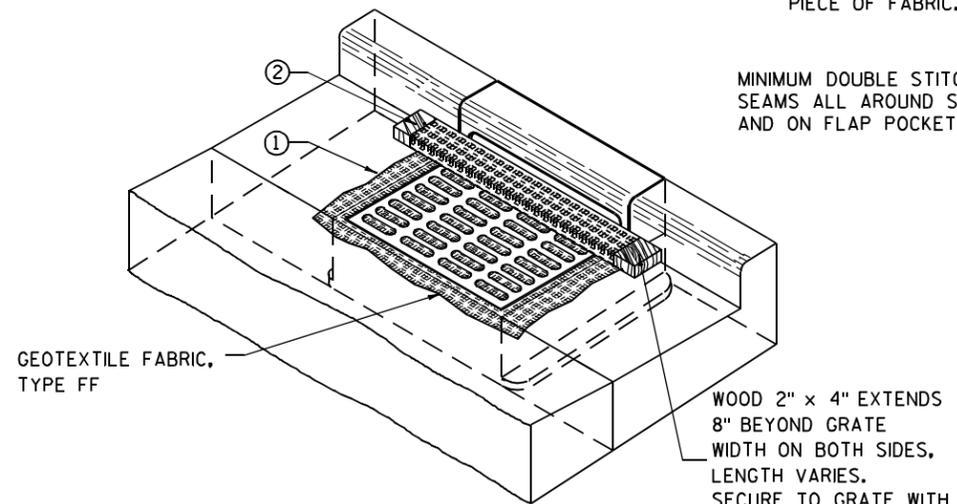
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- ① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
- ③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.



**INLET PROTECTION, TYPE B  
(WITHOUT CURB BOX)**

(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



**INLET PROTECTION, TYPE C (WITH CURB BOX)**

**INSTALLATION NOTES**

**TYPE B & C**

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

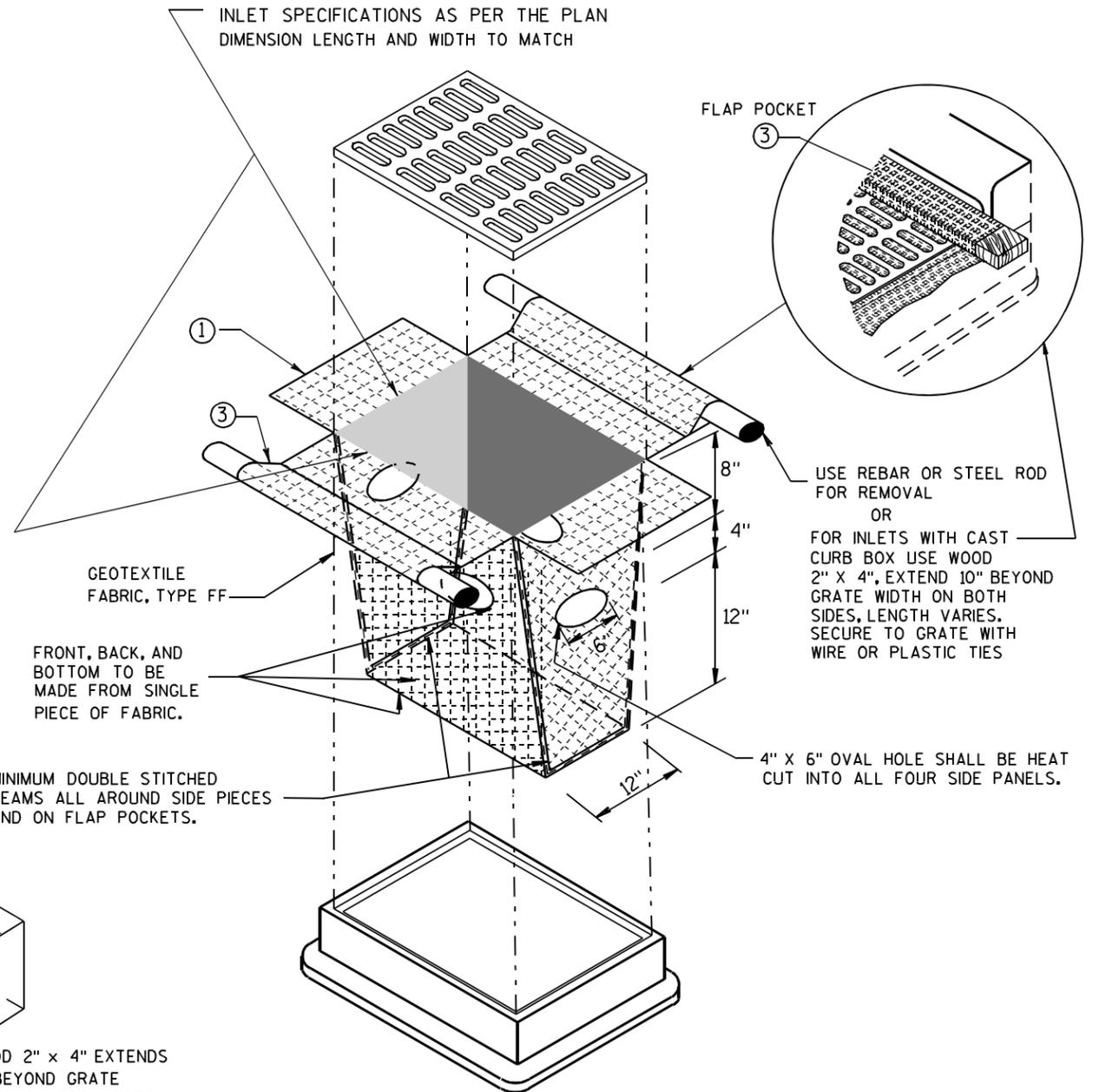
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

**TYPE D**

DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

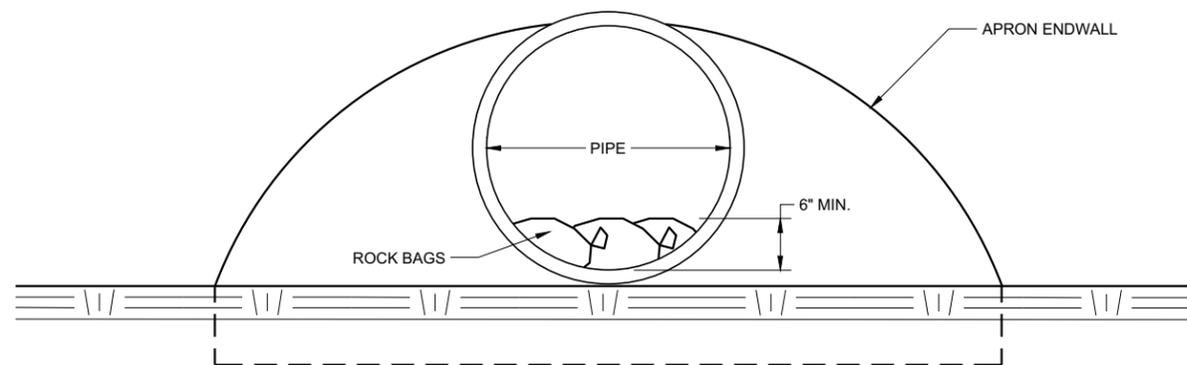
THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.



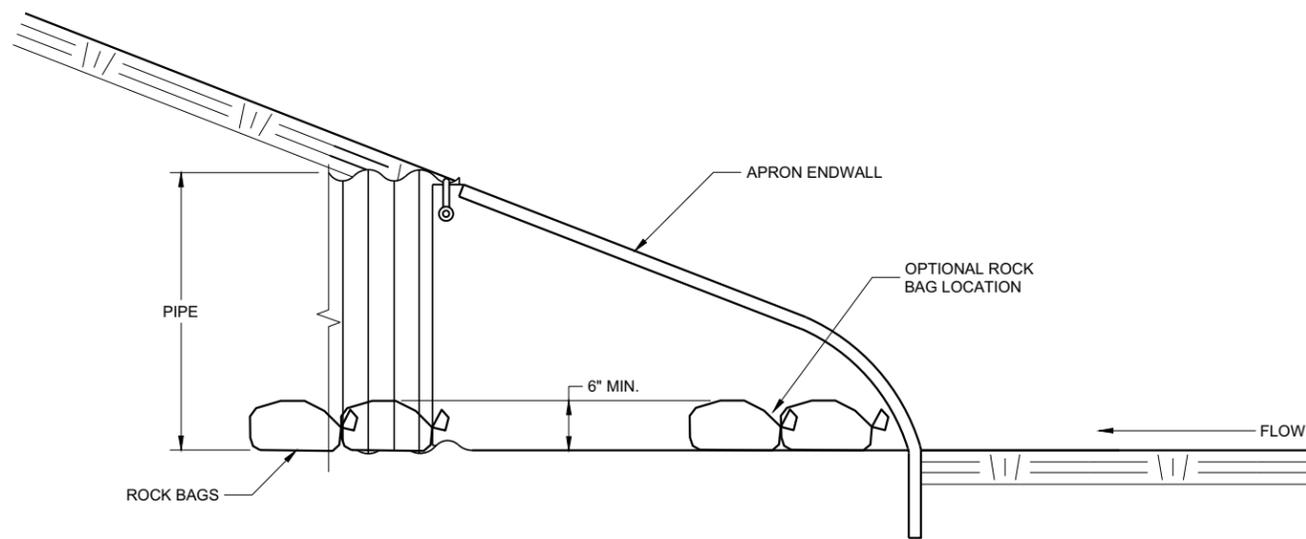
**INLET PROTECTION, TYPE D**

(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX AS PER NOTE ②)

<b>INLET PROTECTION TYPE A, B, C, AND D</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 10/16/02 DATE	/s/ Beth Conestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	



END VIEW



SIDE VIEW

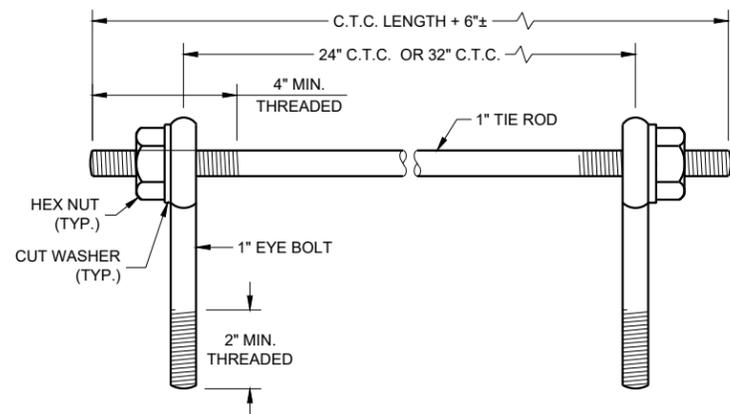
**CULVERT PIPE CHECK**  
 (INSTALL ON INLET END ONLY)

**CULVERT PIPE CHECK**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

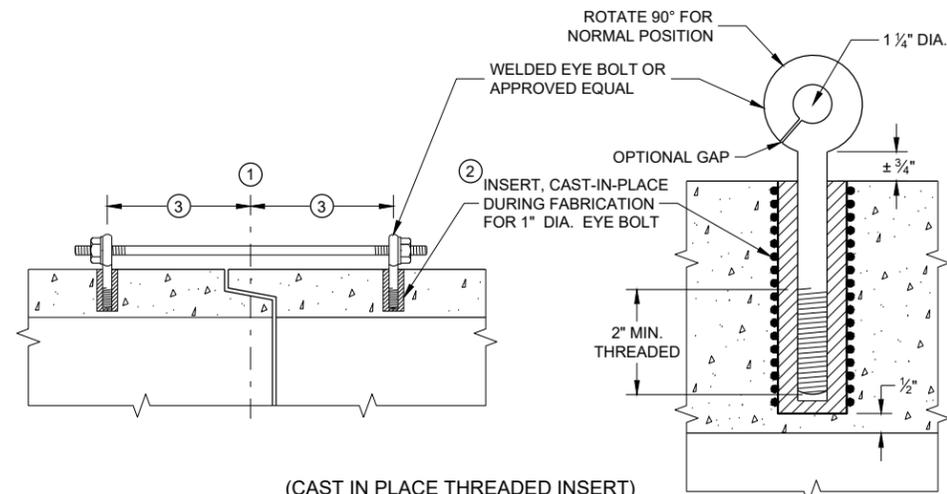
APPROVED  
 May 2019 /S/ Daniel Schave  
 DATE EROSION CONTROL ENGINEER

FHWA



**EYE BOLTS AND TIE ROD**

**EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 1)**



(CAST IN PLACE THREADED INSERT)  
**LONGITUDINAL SECTIONS**

**GENERAL NOTES**

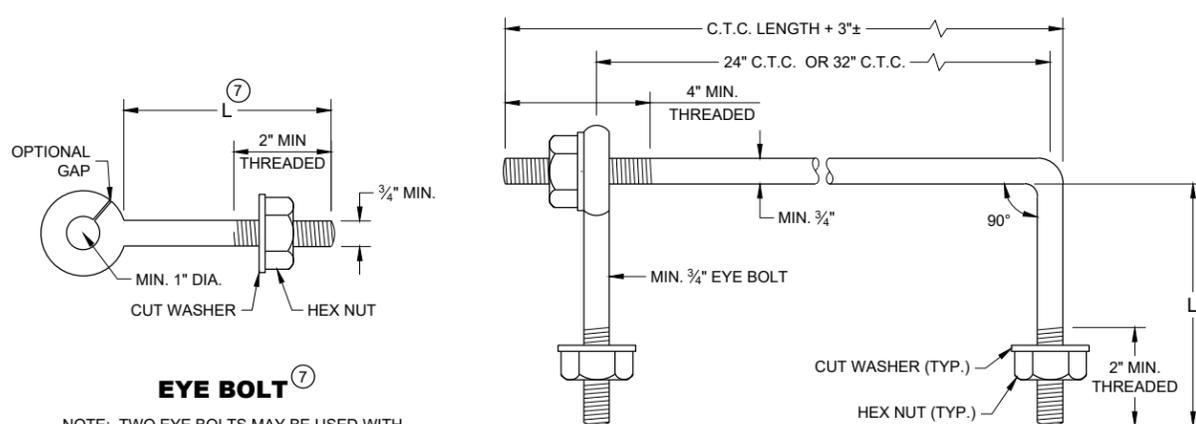
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE STANDARD SPECIFICATIONS AND THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1 AND 3 MAY BE USED FOR CATTLE PASSES, UNLESS OTHERWISE STATED IN THE CONTRACT. THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON ENDWALLS IF REQUIRED.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

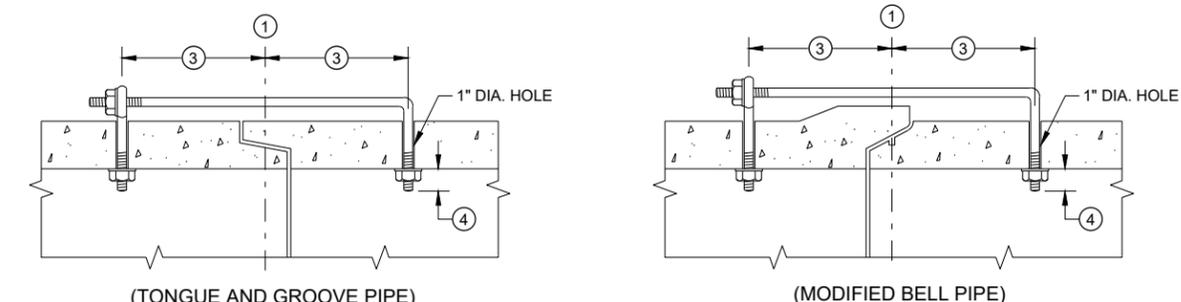
- ① CENTER LINE OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.
- ② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.
- ③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED PER THE APPLICABLE DETAIL, AND EQUAL DISTANCE FROM THE CENTERLINE OF THE JOINT.
- ④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.
- ⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.
- ⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.
- ⑦ EYE BOLT LENGTH DETERMINED BY WALL THICKNESS, BELL THICKNESS AND BOLT PROJECTION INSIDE PIPE.



**EYE BOLT** ⑦

NOTE: TWO EYE BOLTS MAY BE USED WITH A 30\"/>

**EYE BOLT AND TIE ROD**



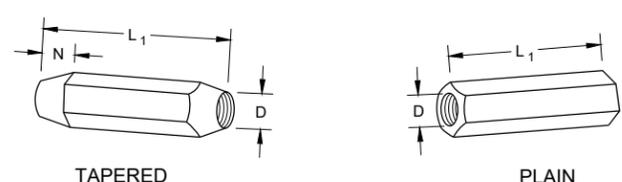
**LONGITUDINAL SECTION**  
(JOINT TIES FOR 18\"/>

**EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)**

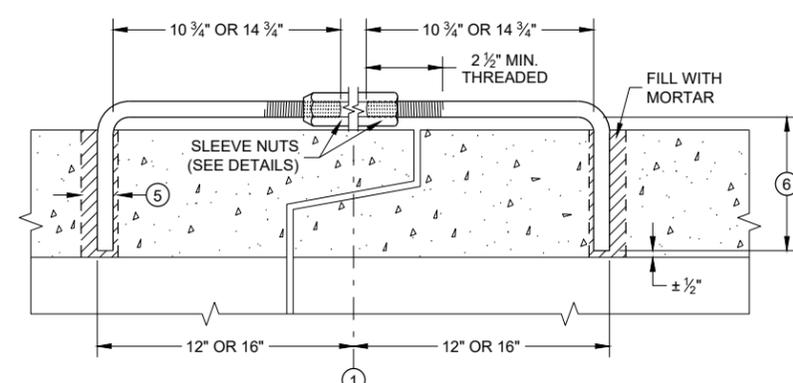
**ADJUSTABLE TIE ROD TABLE**

PIPE DIAMETER	TIE ROD DIAMETER	D	L <sub>1</sub>	N
12 - 60	5/8	5/8	5	1/2
66 - 84	3/4	3/4	5	1/2
90 - 144	1	1	7	1 7/16

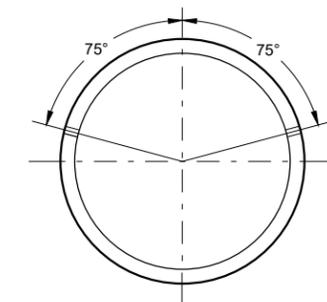
DIMENSIONS SHOWN ARE IN INCHES



**RIGHT AND LEFT THREADS SLEEVE NUTS**

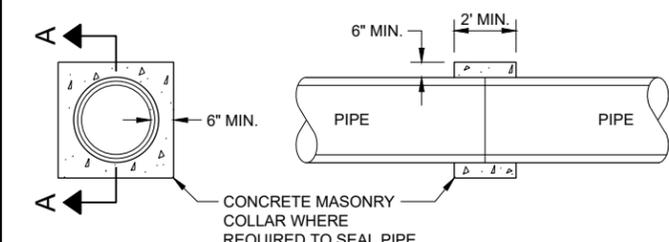


**LONGITUDINAL SECTION**  
**ADJUSTABLE TIE ROD (ALTERNATE NO. 3)**



PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

**TRANSVERSE SECTION**



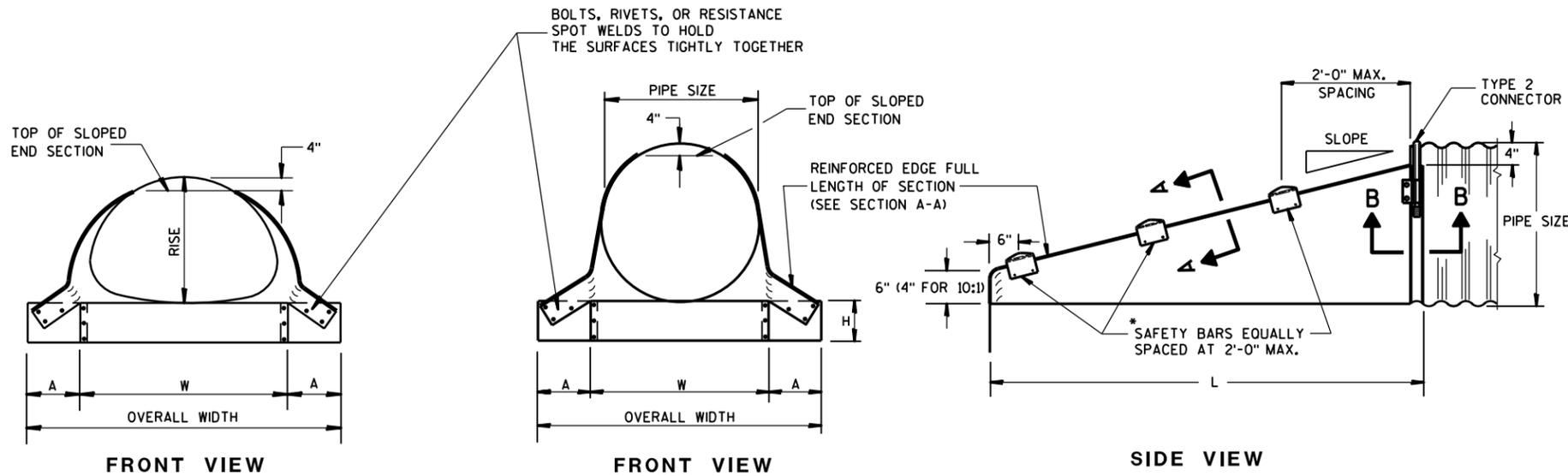
**SECTION A - A**  
**CONCRETE COLLAR DETAIL**

**JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

FHWA



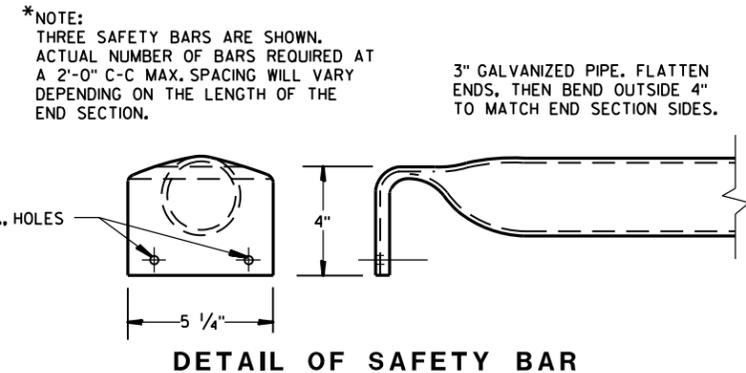
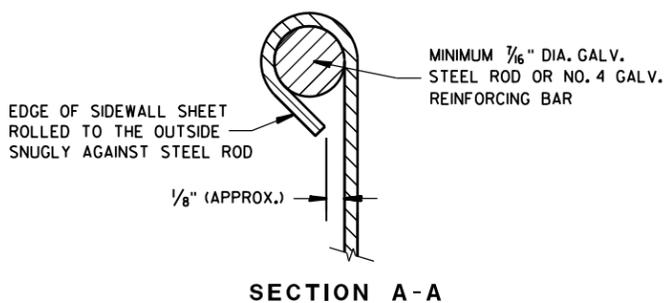
**GENERAL NOTES**

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

SLOPED END SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS, SECTION 521 FOR STEEL APRON ENDWALLS.

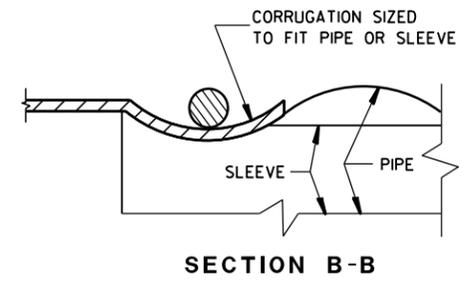
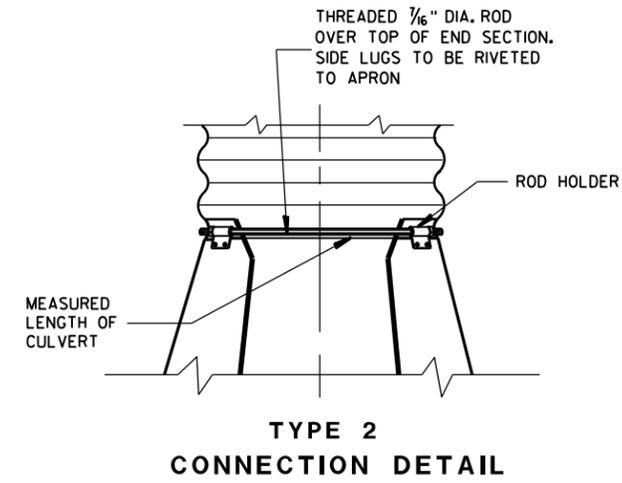
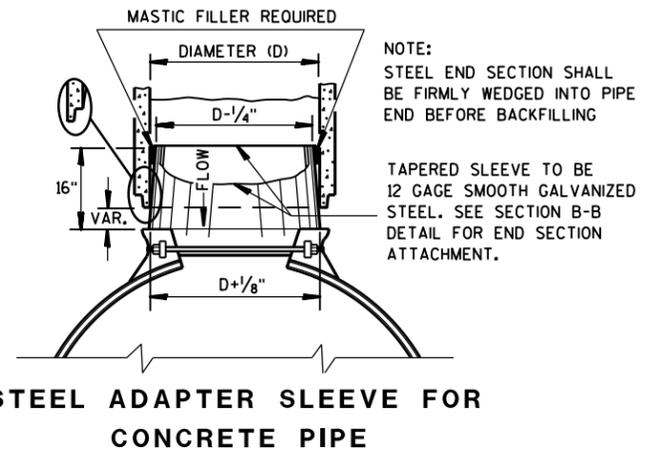
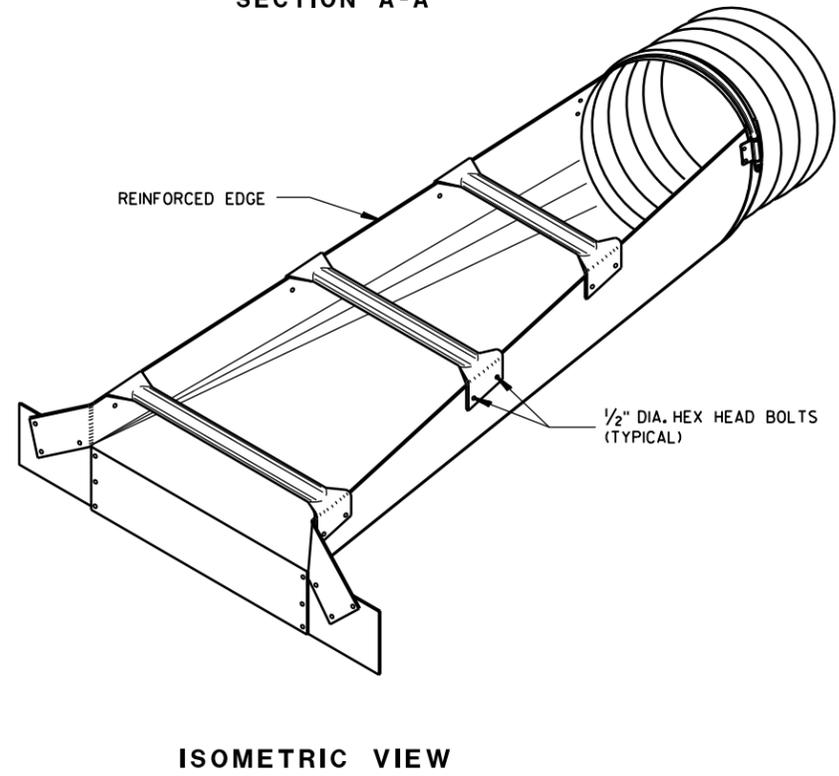
SAFETY BARS SHALL BE FABRICATED FROM GALVANIZED STEEL PIPE MEETING THE REQUIREMENTS OF ASTM A-53, GRADE B, SCHEDULE 40 OR APPROVED EQUAL.

STEEL APRON ENDWALLS FOR CULVERT PIPE SLOPED SIDE DRAINS											
PIPE DIA. (IN.)	MIN. THICK. (Inches)	DIMENSIONS (Inches)				L DIMENSIONS					
		A	H	W	OVERALL WIDTH	SLOPE	LENGTH INCHES	SLOPE	LENGTH INCHES	SLOPE	LENGTH INCHES
15	.064	8	6	21	37	4:1	20	6:1	30	10:1	70
18	.064	8	6	24	40	4:1	32	6:1	48	10:1	100
21	.064	8	6	27	43	4:1	44	6:1	66	10:1	130
24	.064	8	6	30	46	4:1	56	6:1	84	10:1	160
30	.109	12	9	36	60	4:1	80	6:1	120	10:1	220
36	.109	12	9	42	66	4:1	104	6:1	156	10:1	280
42	.109	16	12	48	80	4:1	128	6:1	192	—	—
48	.109	16	12	54	86	4:1	152	6:1	228	—	—
54	.109	16	12	60	92	4:1	176	6:1	264	—	—
60	.109	16	12	66	98	4:1	200	6:1	300	—	—



STEEL APRON ENDWALLS FOR PIPE ARCH SLOPED SIDE DRAINS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches) ①	DIMENSIONS (Inches)				L DIMENSIONS					
	SPAN	RISE		A	H	W	OVERALL WIDTH	SLOPE	LENGTH INCHES	SLOPE	LENGTH INCHES	SLOPE	LENGTH INCHES
15	17	13	.064 *	7	6	30	44	4:1	19	6:1	30	10:1 ②	70
18	21	15	.064 *	8	6	27	43	4:1	20	6:1	30	10:1	70
21	24	18	.064 *	8	6	30	46	4:1	32	6:1	48	10:1	100
24	28	20	.064 *	8	6	34	50	4:1	40	6:1	60	10:1	120
30	35	24	.079 *	12	9	41	65	4:1	56	6:1	84	10:1	160
36	42	29	.109 *	12	9	48	72	4:1	76	6:1	114	10:1	210
42	49	33	.109	16	12	55	87	4:1	92	6:1	138	—	—
48	57	38	.109	16	12	63	95	4:1	112	6:1	168	—	—
54	64	43	.109	16	12	70	102	4:1	132	6:1	198	—	—

① \* MINIMUM THICKNESS OF ALL 10:1 SLOPED SIDE DRAINS IS 0.109".  
 ② ACTUAL SLOPE GREATER THAN 10:1.

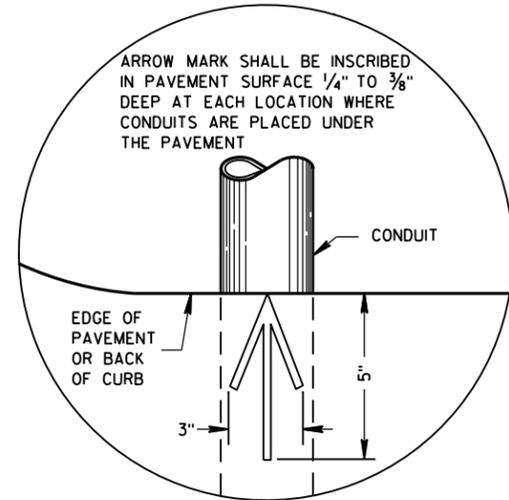


**STEEL APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH SLOPED SIDE DRAINS**

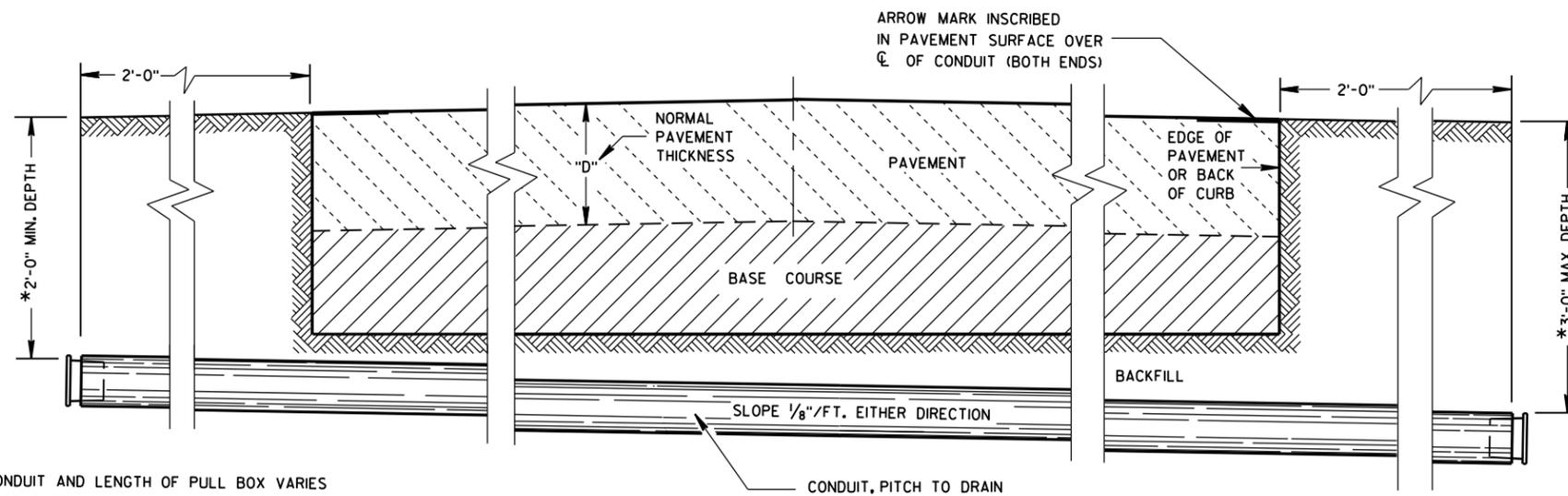
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
DATE 9/14/2012 /S/ Jerry H. Zogg  
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA



PLAN VIEW  
ARROW MARK



SIDE ELEVATION  
DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

\*DEPTH OF CONDUIT AND LENGTH OF PULL BOX VARIES WITH HEIGHT OF CURB USED. ALSO SEE PULL BOX S.D.D. 9B4

### GENERAL NOTES

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

METALLIC (STANDARD SPECIFICATION 652.2.2) OR NONMETALLIC (STANDARD SPECIFICATION 652.2.3) CONDUIT SHALL BE FURNISHED AND PLACED AS SHOWN.

DEPTH OF CONDUIT INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES MINIMUM AND 36 INCHES MAXIMUM.

DEPTH OF CONDUIT INSTALLED THAT IS NOT BELOW THE TRAVELED WAY SHALL BE 18 INCHES MINIMUM AND 36 INCHES MAXIMUM.

ANY EXCEPTION TO THE MAXIMUM DEPTH SHALL BE ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER.

THE TRENCH SHALL NOT BE BACKFILLED PRIOR TO INSPECTION OF THE CONDUIT.

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

ALL METALLIC CONDUIT IN WHICH WIRE OR CABLE IS TO BE INSTALLED SHALL BE BUSHED WITH APPROVED THREADED BUSHINGS BEFORE INSTALLATION OF THE WIRE OR CABLE.

ALL METALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT TO BE INSTALLED SHALL BE CAPPED WITH THREADED PROTECTIVE CAPS, AS APPROVED BY THE ENGINEER.

ALL NONMETALLIC CONDUIT SHALL BE CAPPED OR PLUGGED IMMEDIATELY AFTER INSTALLATION AND SHALL REMAIN CAPPED OR PLUGGED UNTIL WIRE/CABLES ARE INSTALLED.

NONMETALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BENDING OF PVC ELECTRICAL CONDUIT SHALL BE ACCOMPLISHED BY USING A BLANKET OR EMERSON TYPE TANK DESIGNED FOR THE PURPOSE OF BENDING PVC ELECTRICAL CONDUIT.

ALL CUT ENDS SHALL BE TRIMMED INSIDE AND OUTSIDE TO REMOVE ALL ROUGH EDGES ON NONMETALLIC CONDUIT. (SEE NEC 347.5)

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY U.L. LISTED ADAPTER FITTINGS SHALL BE USED.

PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

ALL CONDUIT BEING FURNISHED AND INSTALLED SHALL HAVE THE U.L. LABEL FIRMLY ATTACHED.

CONDUIT RUNS SHALL BE THE SAME SIZE OF CONDUIT FROM ONE END TO THE OTHER (FROM PULL BOX TO PULL BOX-OR-JUNCTION BOX TO JUNCTION BOX-OR-BASE TO BASE, ETC.).

TRACER WIRE SHALL BE INSTALLED AS STATED IN THE STANDARD SPECIFICATION, ITEM 652.3.1.1.

ALL CONDUIT RUNS SHALL BE STRAIGHT (WITHOUT BENDS) FROM PULL BOX TO PULL BOX, PULL BOX TO BASE AND BASE TO BASE AS SHOWN ON THE PLANS.

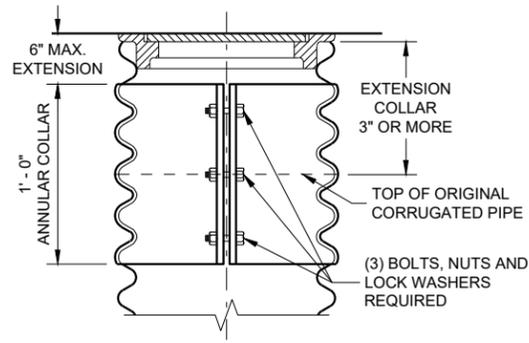
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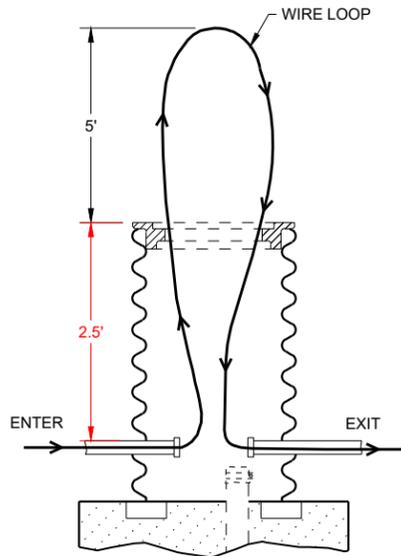
S.D.D. 9 B 2-10

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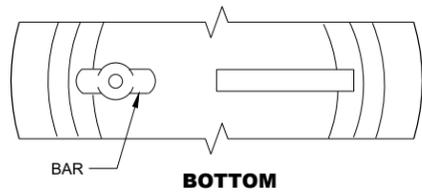
<b>CONDUIT</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March, 2017 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER
FHWA	



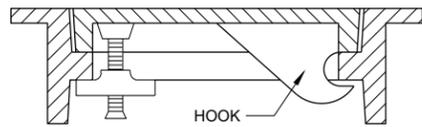
**CORRUGATED PIPE EXTENDER**



**MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX**



**BOTTOM**



**SECTION**

**ALTERNATE COVER (LOCKING)  
TIGHTENING BAR TYPE**

**GENERAL NOTES**

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

ALL FRAMES AND COVERS SHALL BE HEAVY DUTY TYPE, SUITABLE FOR VEHICULAR TRAFFIC LOADS.

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/4".

THE CONTRACTOR SHALL NOT INSTALL WIRE IN ANY PULL BOX UNTIL ITS INSTALLATION HAS BEEN INSPECTED AND ACCEPTED BY THE ENGINEER.

GROUNDING LUGS (MECHANICAL CONNECTORS) SHALL BE U.L. LISTED AND APPROVED FOR USE WITH COPPER WIRE.

ALL METALLIC CONDUIT IN WHICH WIRE AND/OR CABLE IS TO BE INSTALLED, SHALL BE BUSHED BEFORE INSTALLATION OF THE WIRE AND/OR CABLE.

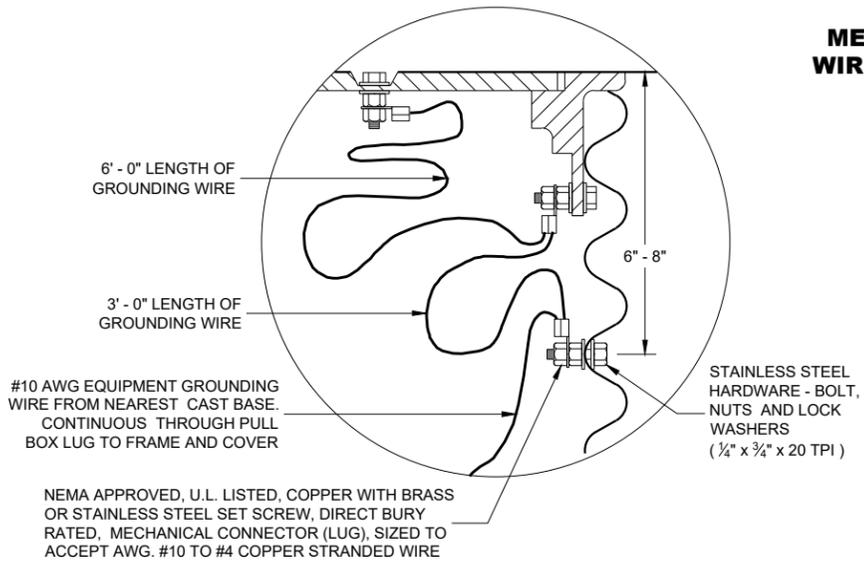
WHEN PULL BOXES ARE INSTALLED FOR FUTURE USE, DO NOT INSTALL THE EQUIPMENT GROUNDING LUG. THE EQUIPMENT GROUNDING LUG, THE EQUIPMENT GROUNDING ELECTRODE AND THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE REQUIRED AND INSTALLED UNDER A FUTURE WIRING CONTRACT.

**TABLE OF NOMINAL DIMENSIONS AND WEIGHTS**

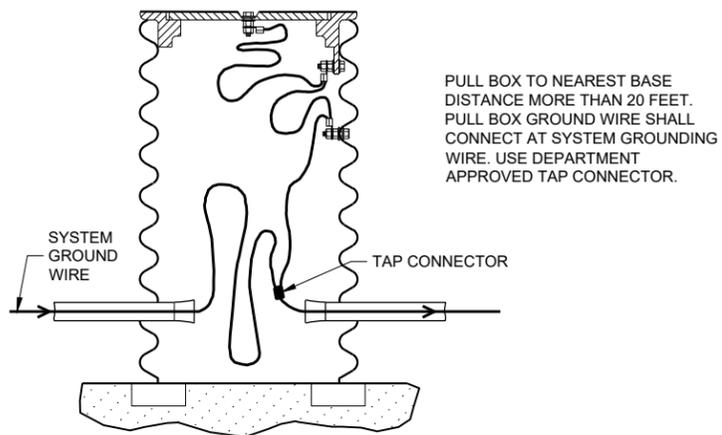
DIMENSION IN INCHES	CORRUGATED STEEL PIPE									
	PIPE DIAMETER (INSIDE)	12	12	12	18	18	18	24	24	24
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24
PIPE LENGTH**	B	24	30	36	24	30	36	36	42	48
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
COVER	D	10 1/4	10 1/4	10 1/4	16 1/4	16 1/4	16 1/4	22 1/4	22 1/4	22 1/4
FRAME	E	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2	26 1/2	26 1/2	26 1/2
FRAME	F	8 1/2	8 1/2	8 1/2	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2
FRAME	G	11 1/2	11 1/2	11 1/2	17 1/2	17 1/2	17 1/2	23 1/2	23 1/2	23 1/2
WEIGHT IN POUNDS*										
FRAME AND COVER		60	60	60	110	110	110	155	155	155

\* THE ACTUAL WEIGHT OF THE MANHOLE FRAME AND COVER MAY VARY WITHIN 5 PERCENT PLUS OR MINUS OF THE WEIGHTS SHOWN.

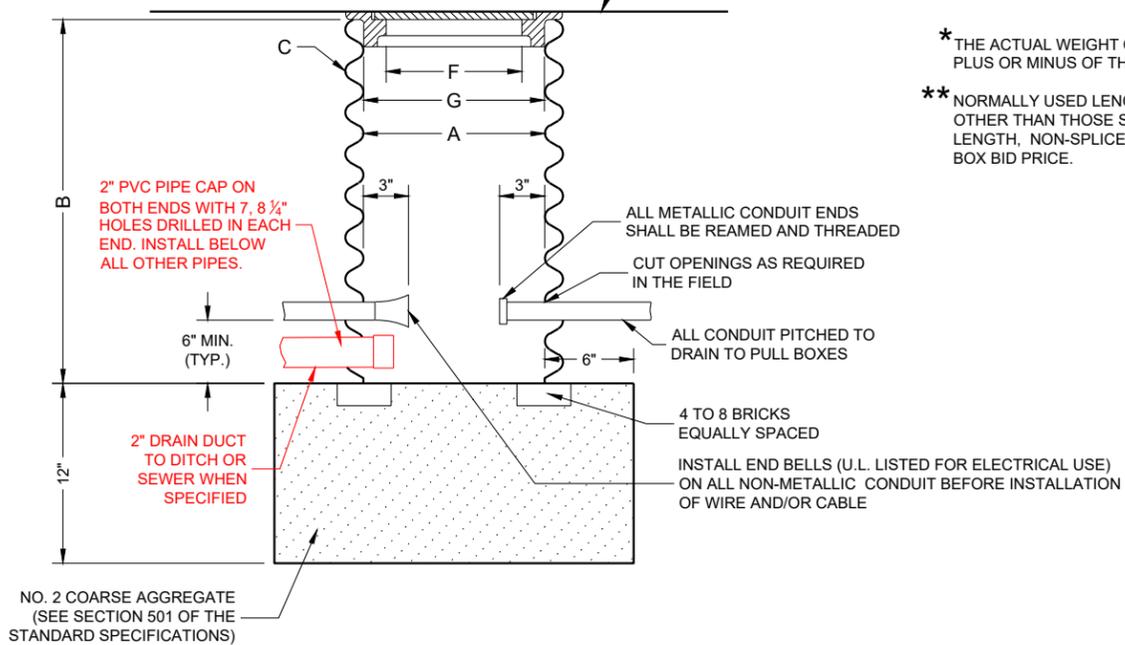
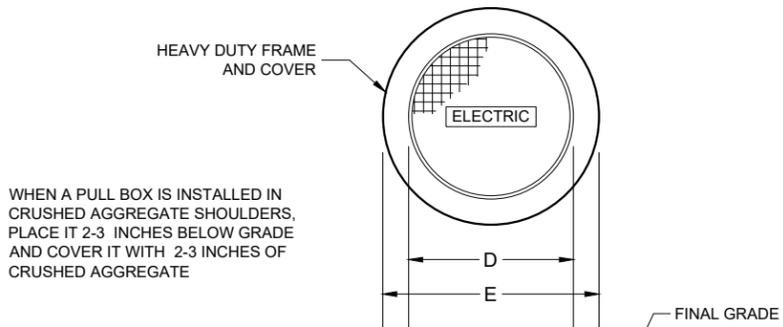
\*\* NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.



**EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES**



**EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES**



**PULL BOX**

**PULL BOX**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2022 /S/ Ahmet Demirbilek  
DATE STATE ELECTRICAL ENGINEER

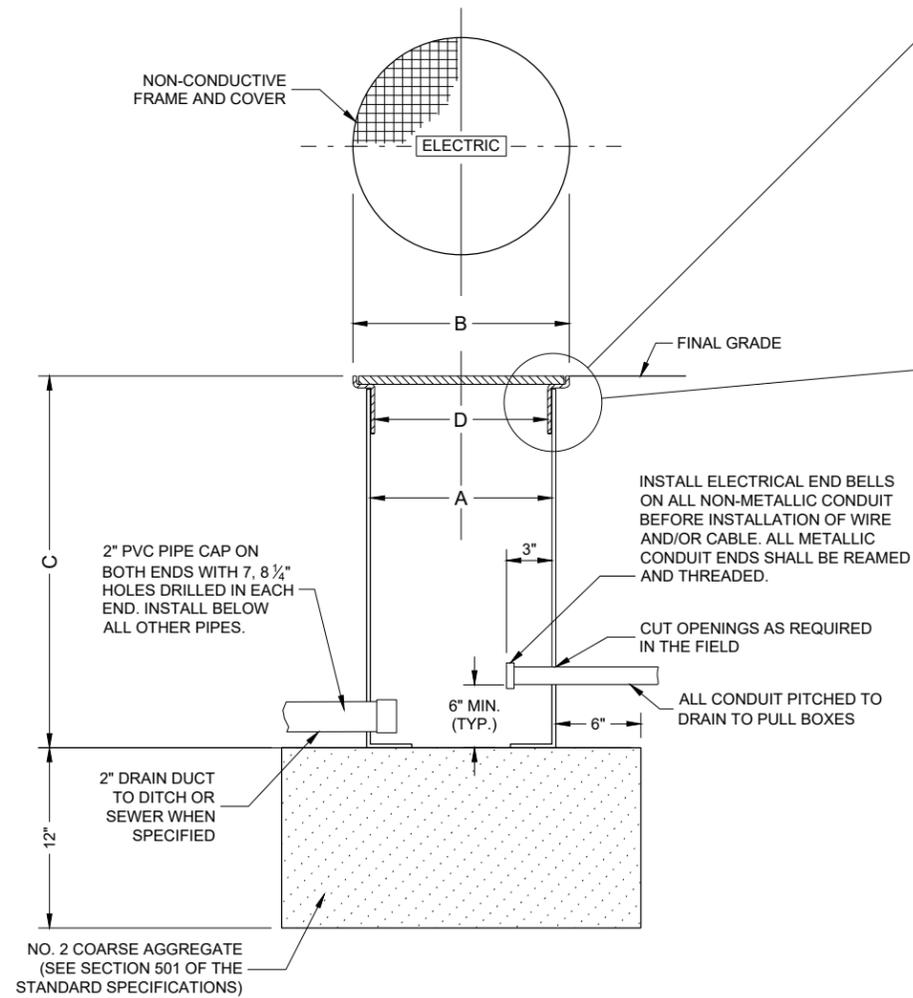
FHWA

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

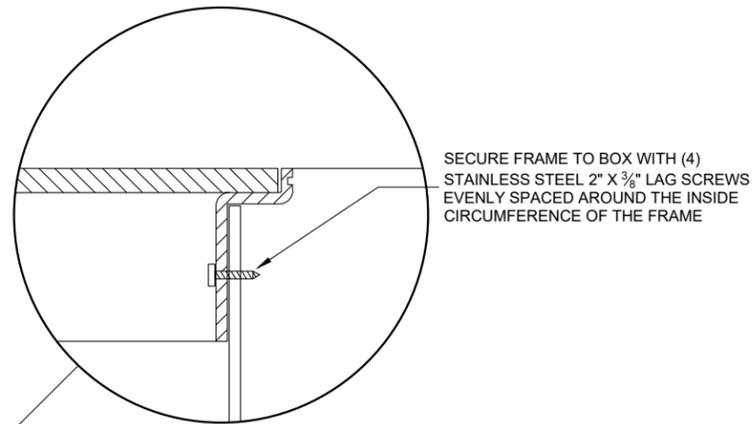
DIMENSION IN INCHES		NON- CONDUCTIVE PULL BOX	
BOX DIAMETER ** (INSIDE)	A	24	24
BOX OVERALL OUTSIDE DIAMETER	B	27	27
BOX LENGTH	C	36	42
FRAME OPENING	D	22 1/2	22 1/2
WEIGHT IN POUNDS *			
COVER		50	50
BOX ONLY		75	85

\* THE ACTUAL WEIGHT OF THE COVER OR BOX ONLY MAY VARY NOT TO EXCEED 100 LBS INDIVIDUALLY.

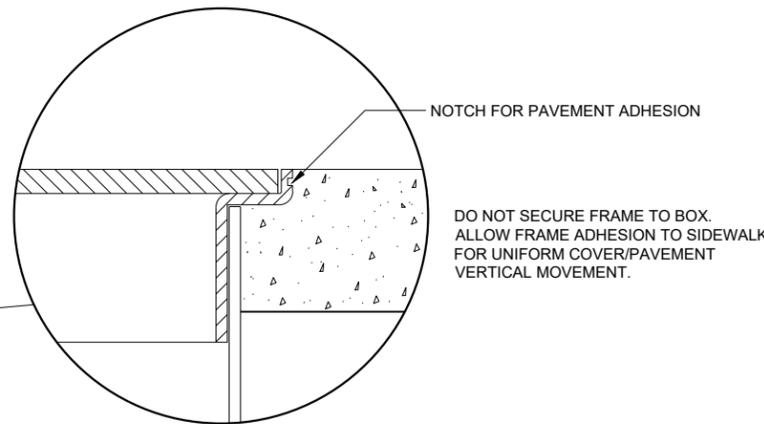
\*\* DIAMETER VARIES FROM TOP TO BOTTOM WITH THE DIAMETER LARGER AT THE BOTTOM TO PREVENT FROST HEAVE.



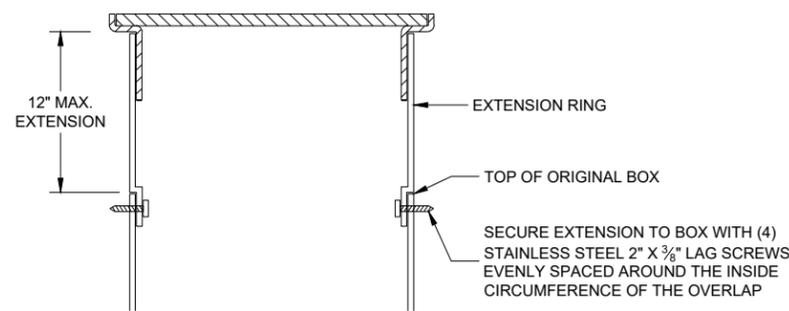
NON-CONDUCTIVE PULL BOX



INSTALLED IN SOD OR CRUSHED AGGREGATE



INSTALLED IN SIDEWALK



BOX EXTENSION

GENERAL NOTES

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

ALL BOXES, FRAMES AND COVERS SHALL BE SUITABLE FOR TIER 15 LOADING AS SPECIFIED IN ANSI/SCTE 77.

PROVIDE AN OPENING FOR TOOL ASSISTED COVER REMOVAL NOT LARGE ENOUGH TO PERMIT PASSAGE OF A SPHERE MORE THAN 1/2" DIAMETER

ENSURE COVER SURFACE IS SKID RESISTANT WITH A COEFFICIENT OF FRICTION OF AT LEAST 0.5 AND VERTICAL SURFACE DISCONTINUITIES LESS THAN 1/4".

COVER SHALL BE MAGNETICALLY LOCATABLE.

BOXES AND EXTENSIONS ARE TRIMMABLE FOR CUSTOM LENGTHS. TRIMMED PIECES SHALL MAINTAIN A UNIFORM LENGTH.

ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/4".

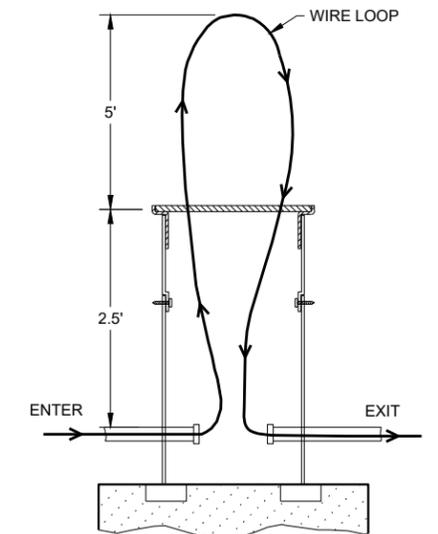
THE CONTRACTOR SHALL NOT INSTALL WIRE IN ANY PULL BOX UNTIL ITS INSTALLATION HAS BEEN INSPECTED AND ACCEPTED BY THE ENGINEER.

ALL METALLIC CONDUIT IN WHICH WIRE AND/OR CABLE IS TO BE INSTALLED, SHALL BE BUSHED BEFORE INSTALLATION OF THE WIRE AND/OR CABLE.

ENTIRE BOX MUST BE CONSTRUCTED OF NON-CONDUCTIVE MATERIALS WITH THE EXCEPTION OF STAINLESS STEEL FASTENERS AND MAGNETIC LOCATABLE DEVICE.

WHEN A PULL BOX IS INSTALLED IN CRUSHED AGGREGATE SHOULDERS, PLACE IT 2-3 INCHES BELOW GRADE AND COVER IT WITH 2-3 INCHES OF CRUSHED AGGREGATE.

LABEL ON COVER SHALL READ "ELECTRIC" FOR SIGNAL AND LIGHTING SYSTEMS, "WISDOT ITS" FOR COMMUNICATIONS AND ITS EQUIPMENT SYSTEMS.



MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX

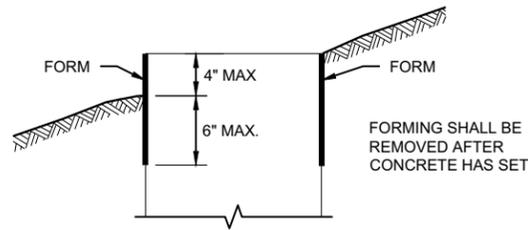
PULL BOXES NON-CONDUCTIVE

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVED May 2022 /S/ Ahmet Demirelek DATE STATE ELECTRICAL ENGINEER

FHWA

FORM DEPTH SHALL BE NO MORE THAN 6" BELOW GRADE ON THE LOWER SIDE OF BASE



**FORMING DETAIL**

QUANTITY REQUIREMENTS	CONCRETE BASE TYPE		
	1	2	5 & 6
APPROX. CUBIC YARDS OF CONCRETE	0.40	0.57	0.40
LBS. OF HOOP BAR STEEL	NONE	23	16
LBS. OF VERTICAL BAR STEEL	NONE	60	18

**GENERAL NOTES**

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

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

TOP SURFACES OF CONCRETE BASES SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

CONDUIT SIZES AND LOCATIONS SHALL BE SHOWN ON THE PLANS

THE FINAL OR TERMINATING CONCRETE BASE IN A CONDUIT RUN SHALL HAVE A 6" EXIT STUB INSTALLED FOR FUTURE CABLING USE. THE EXIT STUB SHALL BE SIZED AS USED THROUGHOUT THE CONDUIT RUN AS SHOWN AT THE ENTRANCE OF THE BASE.

ENDS OF CONDUIT INSTALLED BELOW GRADE FOR FUTURE USE SHALL BE CAPPED IF METALLIC OR PLUGGED IF NON-METALLIC.

MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6X THE DIAMETER.

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 1 INCH. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NON-METALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION.

WHEN REQUIRED TO CONNECT NON-METALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.

IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE DIRT OR FILL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUND THE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1 FOOT OR LESS.

A NO. 4 AWG STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD) FOR TYPE 2, TYPE 5 AND TYPE 6 BASES.

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER ALL BASE TYPES THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

ANCHOR RODS SHALL BE THREADED 12" IN LENGTH ON EACH END OF THE ROD. ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2.1 OF THE STANDARD SPECIFICATIONS.

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

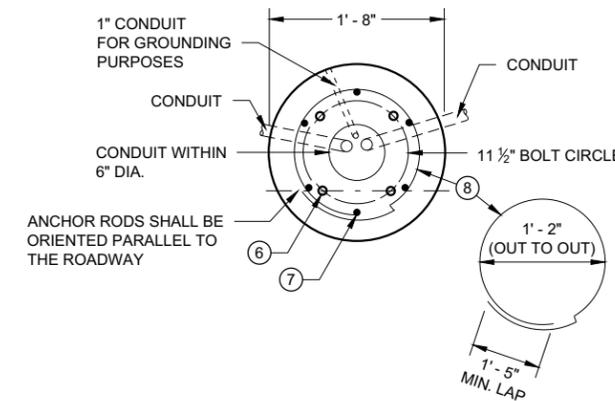
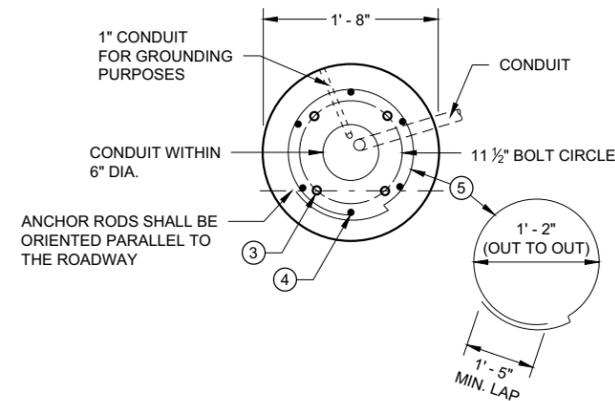
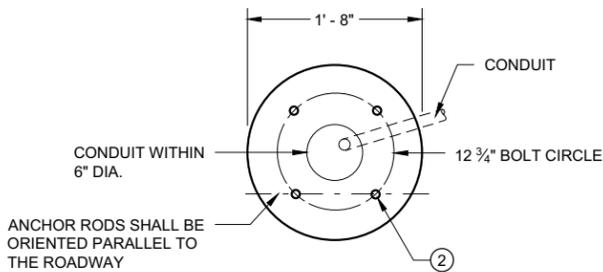
WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4 INCH "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND SHALL NOT BE THREADED.

ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

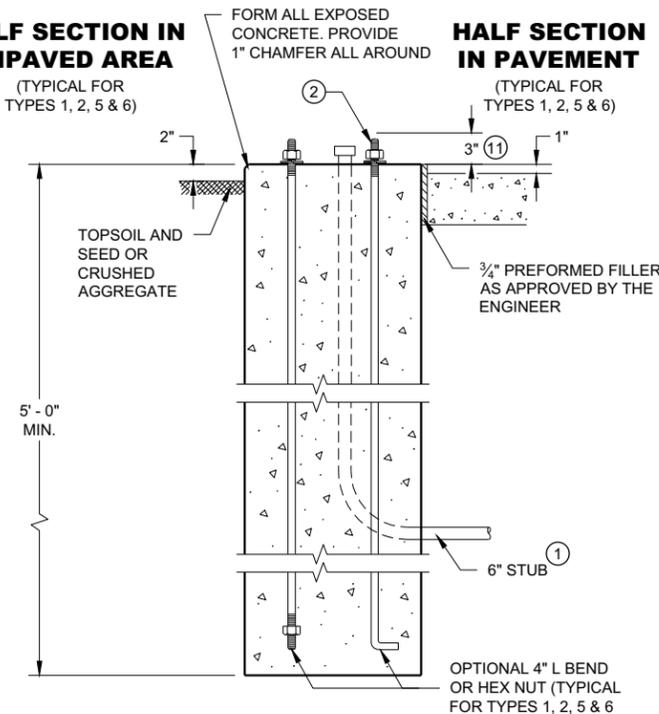
WELDING OF THE ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TIE WIRES SHALL BE USED.

BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS (LATEST EDITION).

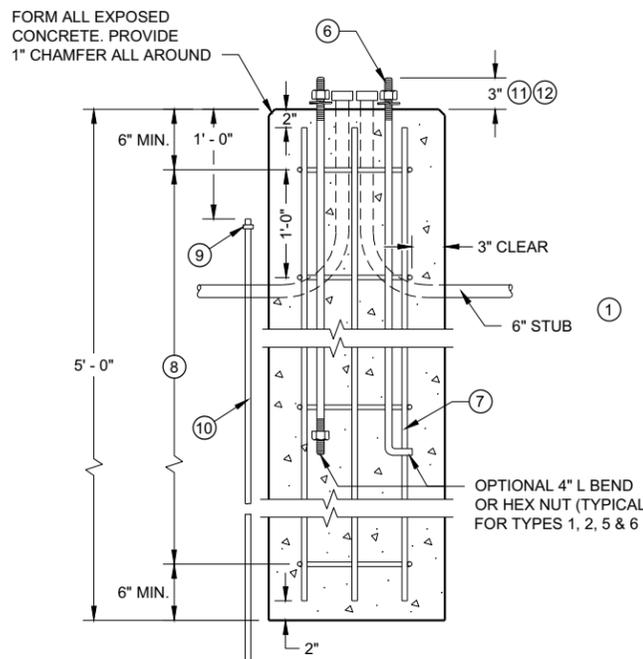
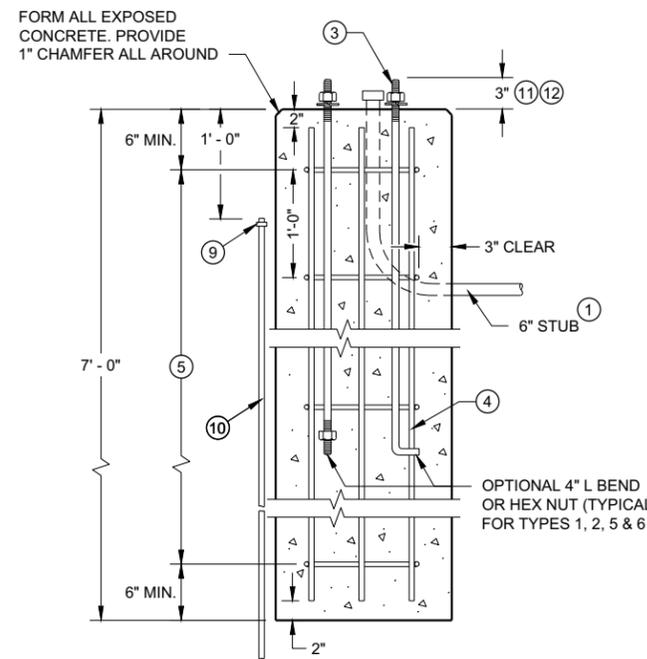
- ① THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN APPROVAL OF THE ENGINEER.
- ② (4) 1" DIA. X 3' - 6" ANCHOR RODS.
- ③ (4) 1" DIA. X 5' - 0" ANCHOR RODS.
- ④ (6) NO. 6 X 6' - 8" BAR STEEL REINFORCEMENT.
- ⑤ (7) NO. 4 X 5' - 1" BAR STEEL REINFORCEMENT @ 1' - 0" C - C.
- ⑥ (4) 1" DIA. X 3' - 6" ANCHOR RODS.
- ⑦ (6) NO. 4 X 4' - 8" BAR STEEL REINFORCEMENT.
- ⑧ (5) NO. 4 X 5' - 1" BAR STEEL REINFORCEMENT @ 1' - 0" C - C.
- ⑨ EXOTHERMIC CONNECTION TO EQUIPMENT GROUNDING CONDUCTOR
- ⑩ 5/8" DIA. X 8' - 0" COPPERCLAD EQUIPMENT GROUNDING ELECTRODE REQUIRED
- ⑪ ANY ANCHOR ROD PROJECTION SHORTER THAN 2 3/4" OR LONGER THAN 3 1/4" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.
- ⑫ FOR NON - BREAKAWAY INSTALLATIONS, 4 1/2" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.



**HALF SECTION IN UNPAVED AREA**



**HALF SECTION IN PAVEMENT**



**CONCRETE BASES**

**CONCRETE BASES  
TYPES 1, 2, 5, & 6**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2019 /S/ Ahmet Demirelek  
DATE STATE ELECTRICAL ENGINEER

FHWA

**GENERAL NOTES**

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

FOUR (4) BOLTS SHALL BE FURNISHED WITH EACH TRANSFORMER BASE. BOLTS SHALL BE 1" DIAMETER, 4" IN LENGTH, WITH WASHERS, LOCK WASHERS AND NUTS. BOLTS, NUTS AND WASHERS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 531.2.2 OF THE STANDARD SPECIFICATIONS.

LEVELING SHIMS, IF NEEDED, SHALL BE DESIGNED FOR THE PURPOSE AND USED UNDER CAST BASES WHEN PLUMBING POLES OR STANDARDS DURING INSTALLATION. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE.

SHIM LENGTH SHALL BE LONG ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

A NEMA APPROVED, U.L. LISTED, COPPER WITH BRASS OR STAINLESS STEEL SET SCREW, DIRECT BURY RATED, MECHANICAL CONNECTOR (LUG), SIZED TO ACCEPT AWG. #10 TO #4 COPPER STRANDED WIRE SHALL BE FURNISHED AND INSTALLED IN THE PEDESTAL AND TRANSFORMER BASES.

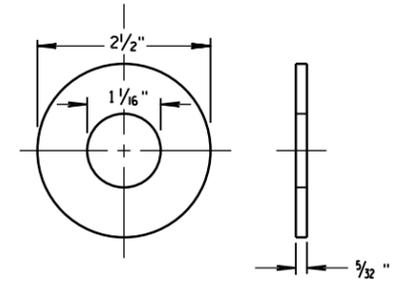
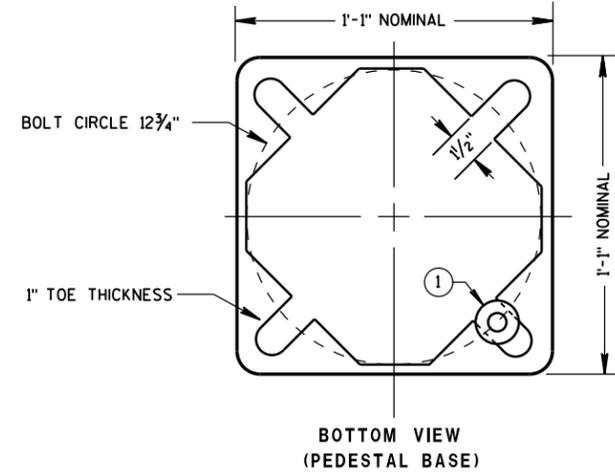
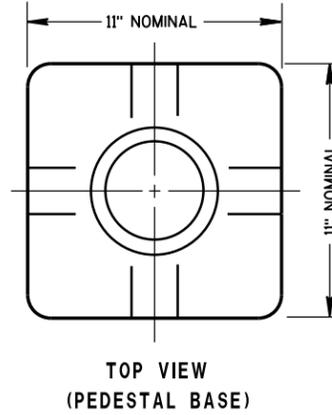
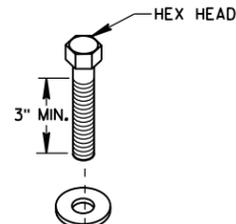
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

SHOULD THE MANNER OF ATTACHMENT OF THE LUG REQUIRE WASHERS, HEX NUTS, LOCK WASHER - THEY SHALL BE STAINLESS STEEL AS IS THE BOLT. THE MANNER OF ATTACHMENT SHALL NOT BLOCK ACCESSIBILITY TO WIRE PLACEMENT IN THE CONNECTOR.

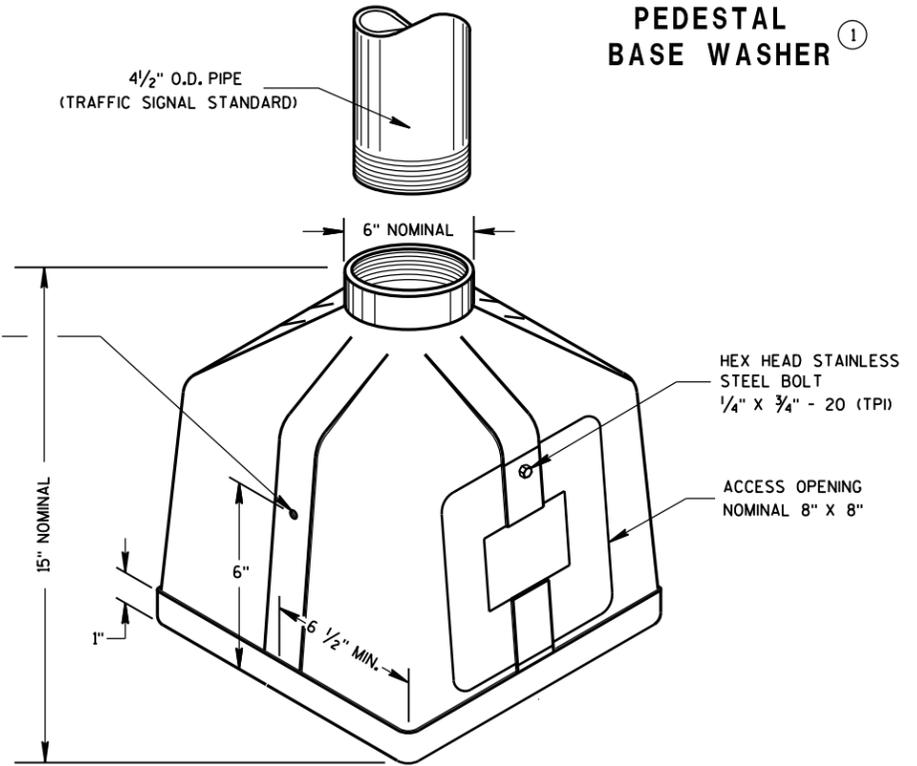
PEDESTAL BASE COLLAR THREADING SHALL BE TAPERED AND IN ACCORDANCE WITH NATIONAL PIPE THREADING DIMENSIONS.

BASE COLLAR THREADING SHALL EXTEND INTO THE BASE COLLAR WITH SUFFICIENT DEPTH TO ACCEPT THE INSTALLATION OF TRAFFIC SIGNAL STANDARDS TO A DEPTH OF 1/2", THEN TIGHTENING TO A POINT OF BEING IMMOVABLE.

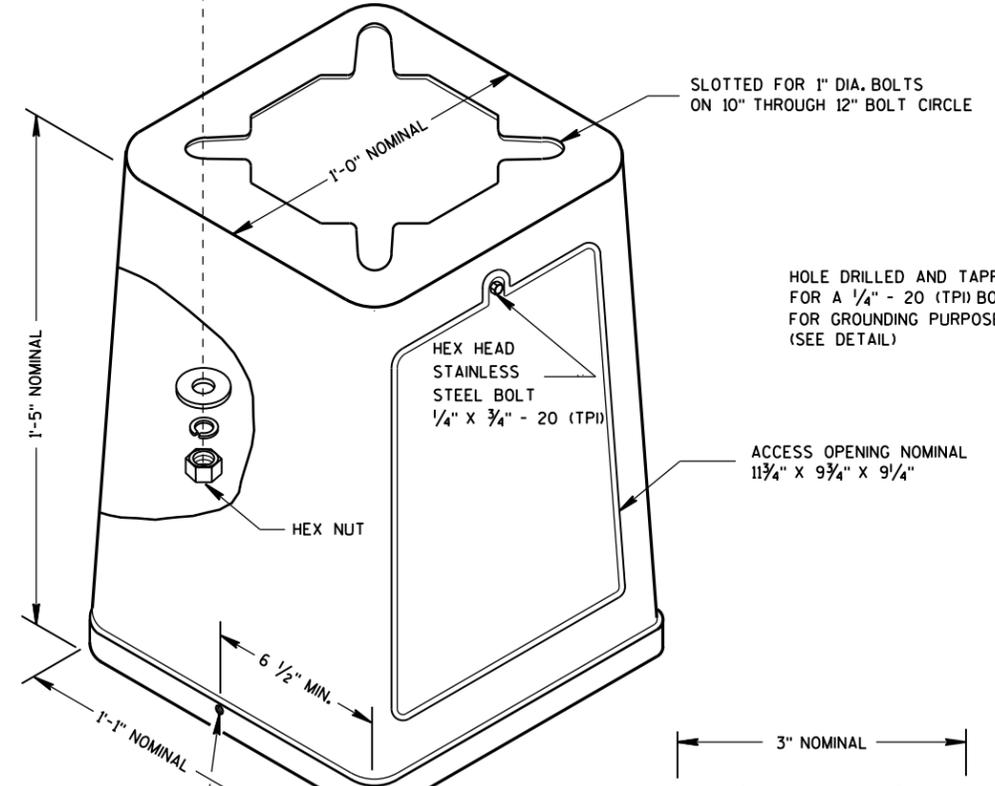
THE ACCESS DOOR SHALL BE OF THE SAME MATERIAL AS THE BASE.



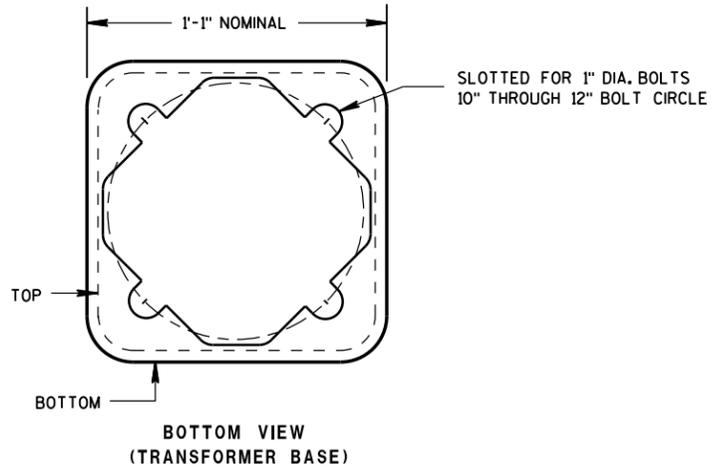
ZINC COATED STEEL WASHER TO BE PROVIDED BY THE CONTRACTOR  
**PEDESTAL BASE WASHER** ①



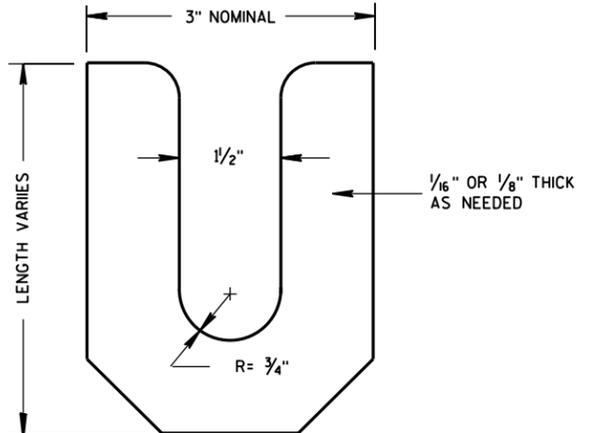
**ISOMETRIC VIEW PEDESTAL BASE**



**ISOMETRIC VIEW**

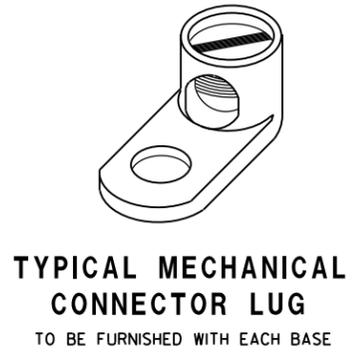


**BOTTOM VIEW (TRANSFORMER BASE)**



**LEVELING SHIM**

**TRANSFORMER BASE**  
INTENDED FOR USE WITH TYPE 2, 3, 4, 5 & 6 POLES



**TYPICAL MECHANICAL CONNECTOR LUG**  
TO BE FURNISHED WITH EACH BASE

<b>TRANSFORMER/PEDESTAL BASES</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED Sept. 2014 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER
FHWA	

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S.D.D. 9 C 3-4

S.D.D. 9 C 3-4

## GENERAL NOTES

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

BASES (SHAFT) SHALL BE EXCAVATED BY THE USE OF A CIRCULAR AUGER. IF BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE SOIL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING. A STEEL CASING OR CORRUGATED METAL PIPE IS ALLOWED TO REMAIN. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BASE IN LAYERS OF ONE FOOT OR LESS.

TOP SURFACE OF THE CONCRETE BASE SHALL BE TROWEL FINISHED AND LEVEL.

ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS (LATEST EDITION).

WELDING OF ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TEMPLATES SHALL BE USED.

CONDUIT SIZES AND LOCATIONS SHALL BE SHOWN ON THE PLANS.

MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6 TIMES THE DIAMETER.

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 4" INCHES. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED. NON-METALLIC CONDUIT SHALL HAVE BELL ENDS INSTALLED. ALL CONDUIT SHALL SLOPE TO PULL BOX.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NON-METALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION OF CABLE OR WIRE.

WHEN REQUIRED TO CONNECT NON-METALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.

ENDS OF CONDUIT INSTALLED BELOW GRADE FOR FUTURE USE SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC.

A NO. 4 AWG STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD).

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER THE BASE THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

THE FINAL OR TERMINATING CONCRETE BASE IN A CONDUIT RUN SHALL HAVE A 6" EXIT STUB INSTALLED FOR FUTURE CABLING USE. THE EXIT STUB SHALL BE SIZED AS USED THROUGHOUT THE CONDUIT RUN AS SHOWN AT THE ENTRANCE OF THE BASE.

① THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES (GREATER THAN 36 INCHES IF INSTALLED IN BREAKER RUN) EXCEPT WITH WRITTEN APPROVAL OF THE ENGINEER.

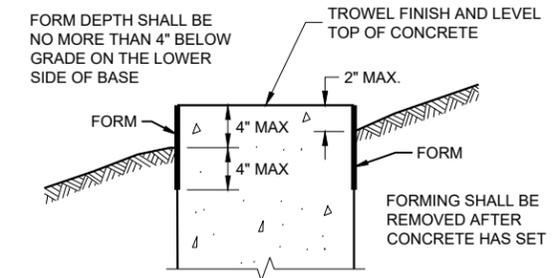
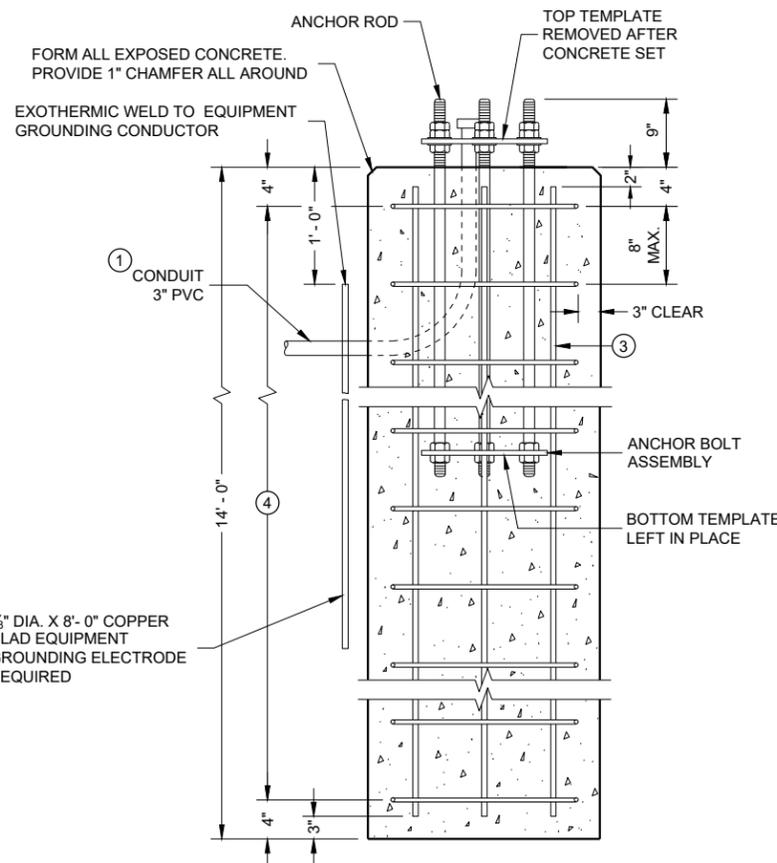
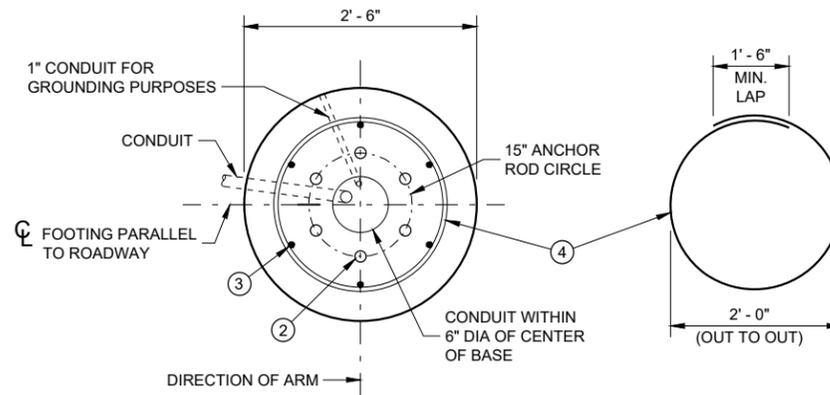
② (6) 1 1/2" DIA. X 4' - 4" ANCHOR RODS

③ (6) NO. 6 X 13' - 7" BAR STEEL REINFORCEMENT.

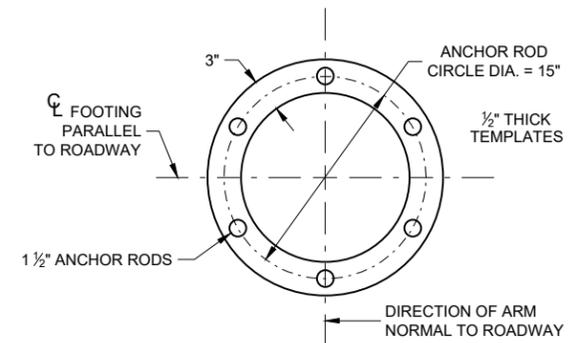
④ (21) NO. 5 X 7'-10" BAR STEEL REINFORCEMENT @ 8" MAX. C-C.

CONCRETE MASONRY.....fc = 3,500 p.s.i.  
 HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60.....fy = 60,000 p.s.i.  
 ANCHOR RODS, ASTM F1554 GRADE 55 ( IN ACCORDANCE WITH SECTION 531.2.2 OF THE STANDARD SPECIFICATION).....fy = 55,000 p.s.i.  
 TEMPLATES, ASTM A709, GRADE 36.....fy = 36,000 p.s.i.

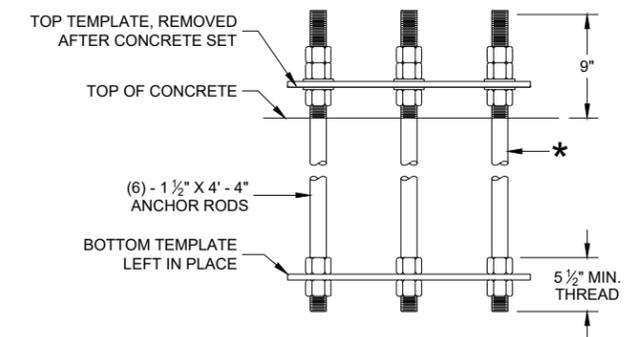
QUANTITY REQUIREMENTS	
APPROX. CUBIC YARDS OF CONCRETE	2.5
LBS. OF HOOP BAR STEEL	172
LBS. OF VERTICAL BAR STEEL	122



## FORMING DETAIL



## TOP AND BOTTOM TEMPLATE



## ANCHOR ROD ASSEMBLY DETAILS

\* THREAD TOP 10" OF ANCHOR ROD FOR 3 NUTS AND 2 WASHERS AND BOTTOM 5 1/2" FOR 2 NUTS PER ANCHOR ROD. HOT DIP GALVANIZE THE ENTIRE LENGTH OF THE ANCHOR ROD (ASTM A123) AND HOT DIP NUTS AND WASHERS (ASTM A153). USE ZINC COATED NUTS MANUFACTURED WITH SUFFICIENT ALLOWANCE TO ALLOW NUTS TO RUN FREELY ON THE THREADS.

## CONCRETE BASE, TYPE 10 (FOR TYPE 9, TYPE 10 AND OVER HEIGHT (OH) POLES)

TO BE USED WHEN GROUND ELEVATION AT BASE EQUALS OR IS GREATER THAN HIGH POINT OF ROADWAY ELEVATION. SEE SDD 9C13 WHEN GROUND ELEVATION AT BASE IS LOWER THAN HIGH POINT OF ROADWAY ELEVATION.

## CONCRETE BASE TYPE 10

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2017 /S/ Ahmet Demerbilek  
DATE WIND LOADED STRUCTURES PROGRAM LEADER

FHWA

**GENERAL NOTES**

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

BASES (SHAFT), BELOW THE WING, SHALL BE EXCAVATED BY THE USE OF A CIRCULAR AUGER. IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE SOIL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUND THE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1 FOOT OR LESS.

TOP SURFACE OF THE CONCRETE BASE SHALL BE TROWEL FINISHED AND LEVEL.

USE 3" CLEAR FOR ALL REINFORCEMENT UNLESS NOTED OTHERWISE.

BENDING DIMENSIONS FOR REINFORCING BARS ARE OUT TO OUT.

BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS.

ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

WELDING OF ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TEMPLATES SHALL BE USED.

ORIENT ANCHOR RODS IN FOOTING AND PROVIDE ANCHOR ROD PROJECTION ABOVE TOP OF CONCRETE FOOTING BASE PER THIS SHEET.

CONDUIT SIZE AND LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6 X THE DIAMETER.

CONDUIT HEIGHT ABOVE CONCRETE BASE SHALL BE 4 1/2" INCHES. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED. NONMETALLIC CONDUIT SHALL HAVE BELL ENDS INSTALLED. ALL CONDUIT SHALL SLOPE TO PULL BOX.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION OF CABLE OR WIRE.

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTOR FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.

A NO. 4 AWG, STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD).

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER THE BASE THROUGH A 1-INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4-FOOT COIL OF WIRE ABOVE THE CONCRETE BASE, THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF THE UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO.

① THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVEL WAY SHALL BE 24-INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18-INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36-INCHES, (GREATER THAN 36-INCHES IF INSTALLED IN BREAKER-RUN), EXCEPT WITH THE WRITTEN APPROVAL OF THE ENGINEER.

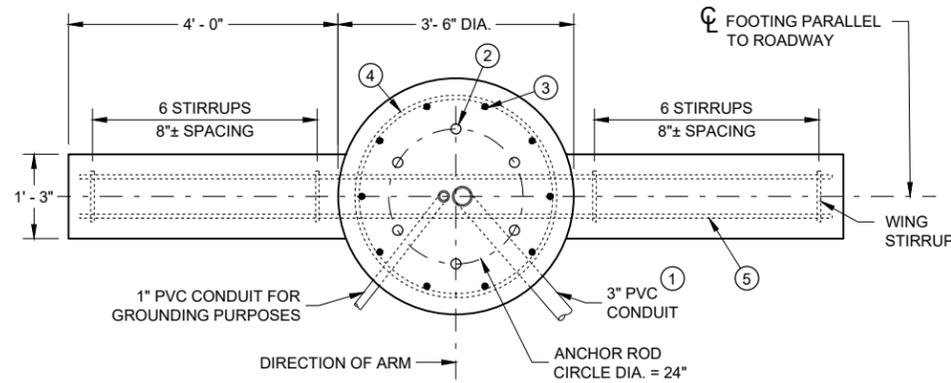
② (6) 1 3/4" DIA. X 7' - 2" ANCHOR RODS

③ (10) NO. 6 X 14' - 1" BAR STEEL VERTICAL REINFORCEMENT.

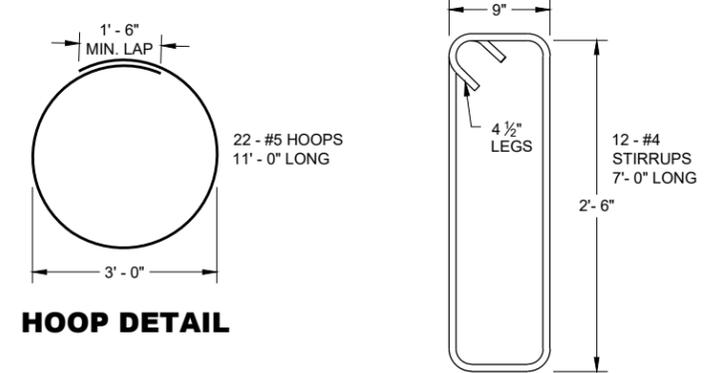
④ (22) NO. 5 X 11' - 0" BAR STEEL REINFORCEMENT @ 8" MAX. C-C.

⑤ (10) NO. 5 X 11' - 0" BAR STEEL HORIZONTAL REINFORCEMENT

CONCRETE MASONRY.....fc = 3,500 p.s.i.  
 HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60.....fy = 60,000 p.s.i.  
 ANCHOR RODS, ASTM F1554 GRADE 55 ( IN ACCORDANCE WITH SECTION 531.2.2 OF THE STANDARD SPECIFICATION).....fy = 55,000 p.s.i.  
 TEMPLATES, ASTM A709, GRADE 36.....fy = 36,000 p.s.i.

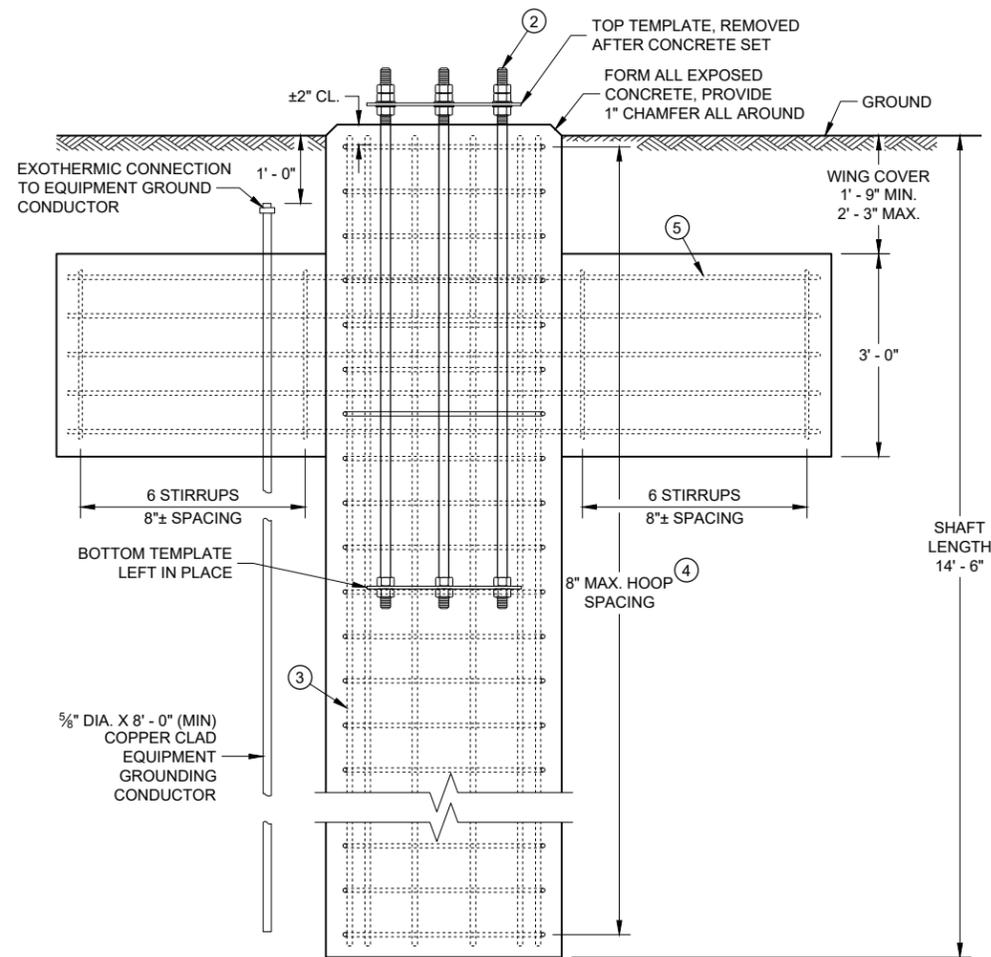


**PLAN VIEW**

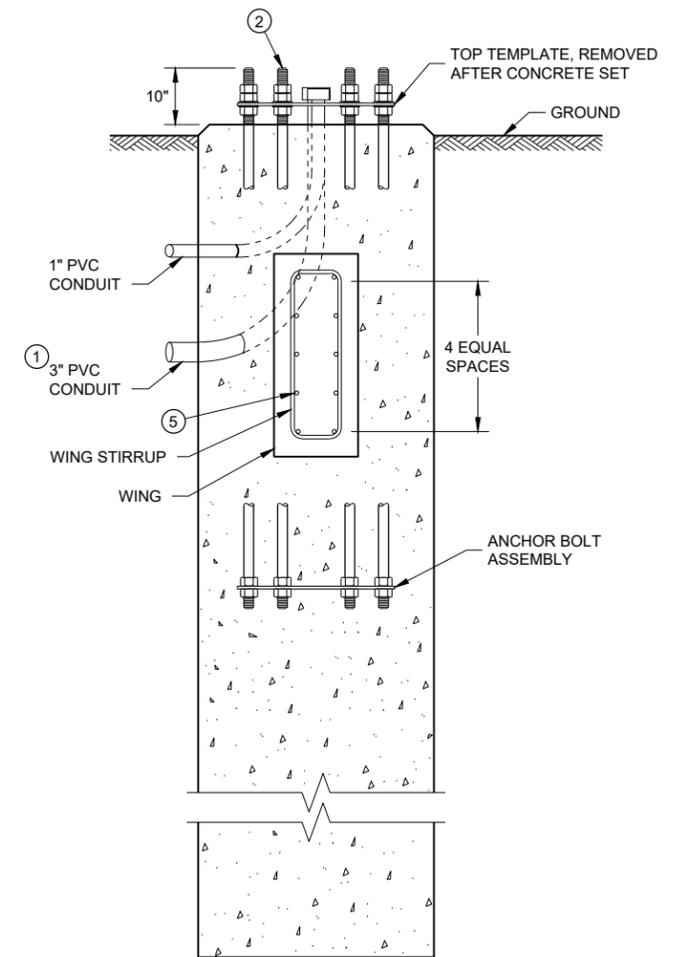


**HOOP DETAIL**

**WING STIRRUP DETAIL**



**ELEVATION VIEW**  
(CONDUITS NOT SHOWN ON THIS VIEW FOR CLARITY)



(HOOPS AND VERTICAL SHAFT REINFORCEMENT NOT SHOWN ON THIS VIEW FOR CLARITY)

**CONCRETE BASE, TYPE 13**  
(FOR TYPE 12, TYPE 13 AND OVER HEIGHT (OH) POLES)

CONCRETE = 6.3 CUBIC YARD  
 H.S. REINFORCEMENT = 635 LBS.

TO BE USED WHEN GROUND ELEVATION AT BASE EQUALS OR IS GREATER THAN HIGH POINT OF ROADWAY ELEVATION. SEE 9C13 WHEN GROUND ELEVATION AT BASE IS LOWER THAN HIGH POINT OF ROADWAY ELEVATION

**CONCRETE BASE TYPE 13**

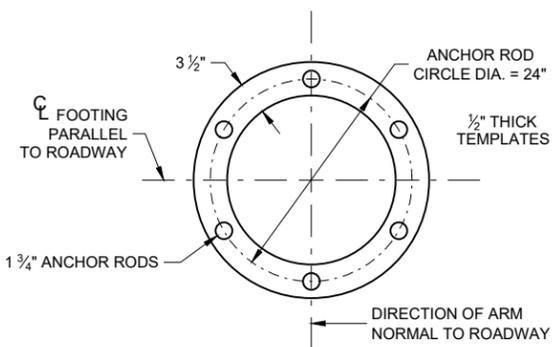
STATE OF WISCONSIN  
 DEPARTMENT OF TRANSPORTATION

6

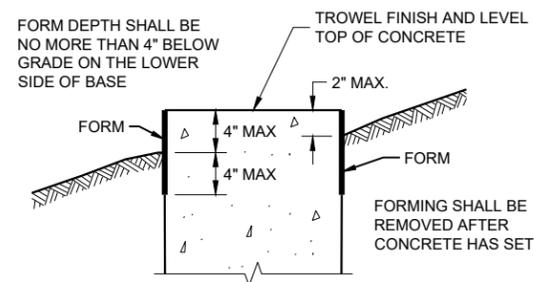
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SDD 09C12 - 09a

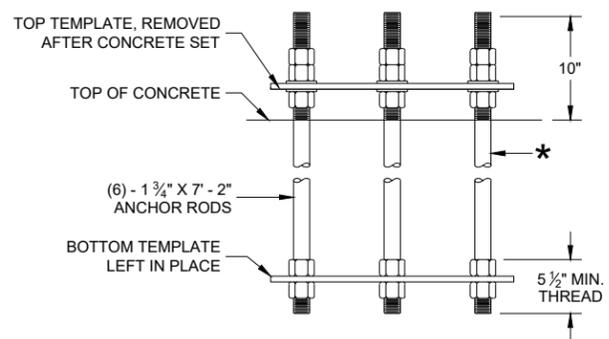
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**TOP AND BOTTOM TEMPLATE**



**FORMING DETAIL**



**ANCHOR ROD ASSEMBLY DETAILS**

\* THREAD TOP 11" OF ANCHOR ROD FOR 3 NUTS AND 2 WASHERS AND BOTTOM 5 1/2" FOR 2 NUTS PER ANCHOR ROD. HOT DIP GALVANIZE THE ENTIRE LENGTH OF THE ANCHOR ROD (ASTM A123) AND HOT DIP NUTS AND WASHERS (ASTM A153. USE ZINC COATED NUTS MANUFACTURED WITH SUFFICIENT ALLOWANCE TO ALLOW NUTS TO RUN FREELY ON THE THREADS.

**CONCRETE BASE TYPE 13**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
DATE: May 2017 /S/ Ahmet Demirbilek  
WIND LOADED STRUCTURES PROGRAM LEADER

**GENERAL NOTES**

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

THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO.

BASES (SHAFT) SHALL BE EXCAVATED BY THE USE OF A CIRCULAR AUGER. IF BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE SOIL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING. A STEEL CASING OR CORRUGATED METAL PIPE IS ALLOWED TO REMAIN. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BASE IN LAYERS OF ONE FOOT OR LESS.

TOP SURFACE OF THE CONCRETE BASE SHALL BE TROWEL FINISHED AND LEVEL.

ANY DAMAGE TO THE CONCRETE BASE AND ANCHOR RODS DURING CONSTRUCTION OPERATIONS SHALL BE REPAIRED AT THE ENGINEER'S DIRECTION, AT THE EXPENSE OF THE CONTRACTOR.

THE REINFORCEMENT AND ANCHOR RODS SHALL BE ADEQUATELY SUPPORTED IN THE PROPER POSITIONS SO NO MOVEMENT OCCURS DURING CONCRETE PLACEMENT.

ORIENT ANCHOR RODS IN FOOTING AND PROVIDE ANCHOR RODS STICK OUT ABOVE TOP OF CONCRETE FOOTING BASE PER THIS SHEET.

ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS (LATEST EDITION).

BENDING DIMENSIONS FOR REINFORCING BARS ARE OUT TO OUT.

WELDING OF ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TEMPLATES SHALL BE USED.

USE 3" CLEAR FOR ALL REINFORCEMENT UNLESS NOTED OTHERWISE.

FORM ALL EXPOSED CONCRETE CORNERS WITH 1" CHAMFER ALL AROUND. TOP OF THE CONCRETE BASE SHALL BE TROWEL FINISHED AND LEVEL.

CONDUIT SIZES AND LOCATIONS SHALL BE SHOWN ON THE PLANS.

MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6 TIMES THE DIAMETER.

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 4 1/2" INCHES. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED. NON-METALLIC CONDUIT SHALL HAVE BELL ENDS INSTALLED. ALL CONDUIT SHALL SLOPE TO PULL BOX.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NON-METALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION OF CABLE OR WIRE.

WHEN REQUIRED TO CONNECT NON-METALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.

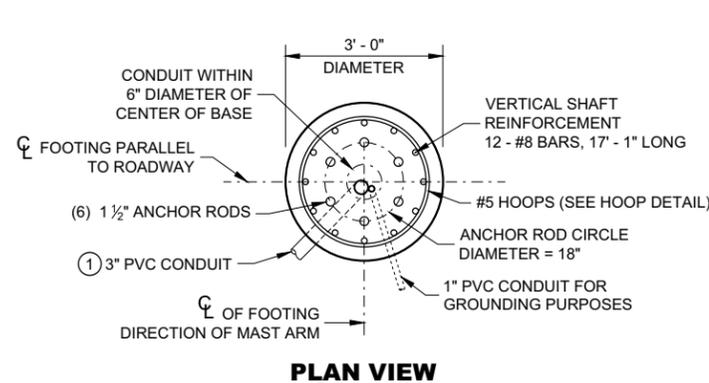
A NO. 4 AWG STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD).

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER THE BASE THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

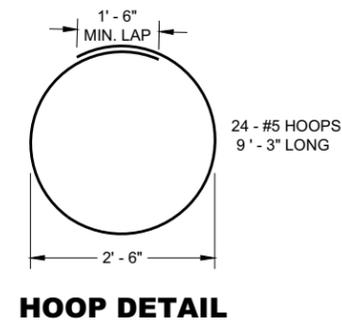
THE FINAL OR TERMINATING CONCRETE BASE IN A CONDUIT RUN SHALL HAVE A 6" EXIT STUB INSTALLED FOR FUTURE CABLING USE. THE EXIT STUB SHALL BE SIZED AS USED THROUGHOUT THE CONDUIT RUN AS SHOWN AT THE ENTRANCE OF THE BASE.

① THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES (GREATER THAN 36 INCHES IF INSTALLED IN BREAKER RUN) EXCEPT WITH WRITTEN APPROVAL OF THE ENGINEER.

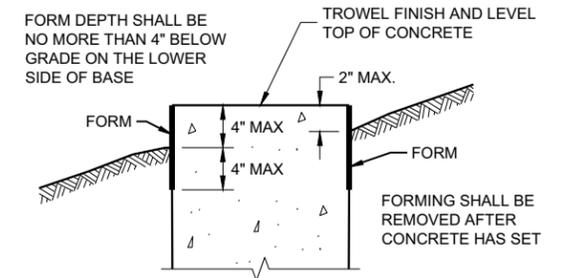
CONCRETE MASONRY.....fc = 3,500 p.s.i.  
 HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60.....fy = 60,000 p.s.i.  
 ANCHOR RODS, ASTM F1554 GRADE 55 (IN ACCORDANCE WITH SECTION 531.2.2 OF THE STANDARD SPECIFICATION).....fy = 55,000 p.s.i.  
 TEMPLATES, ASTM A709, GRADE 36.....fy = 36,000 p.s.i.



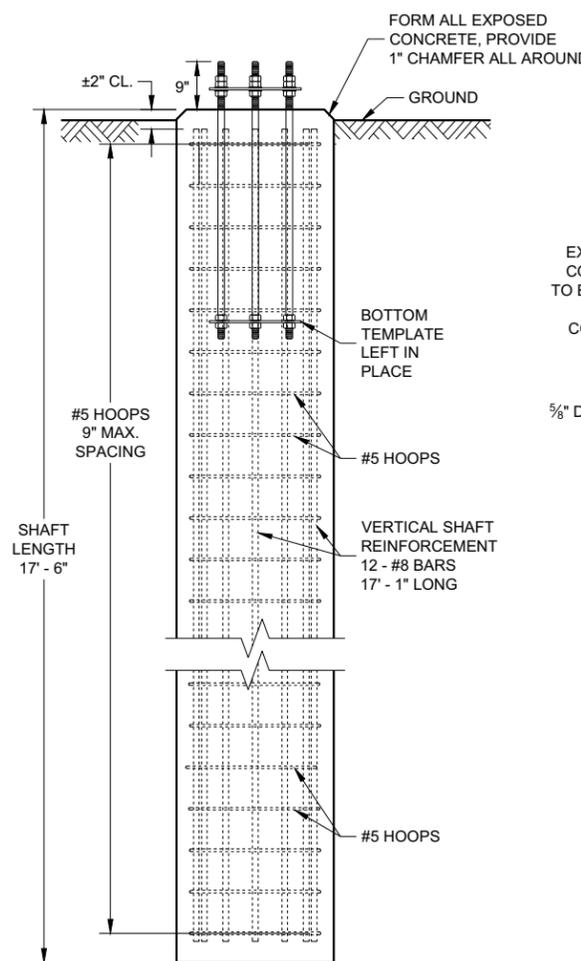
**PLAN VIEW**



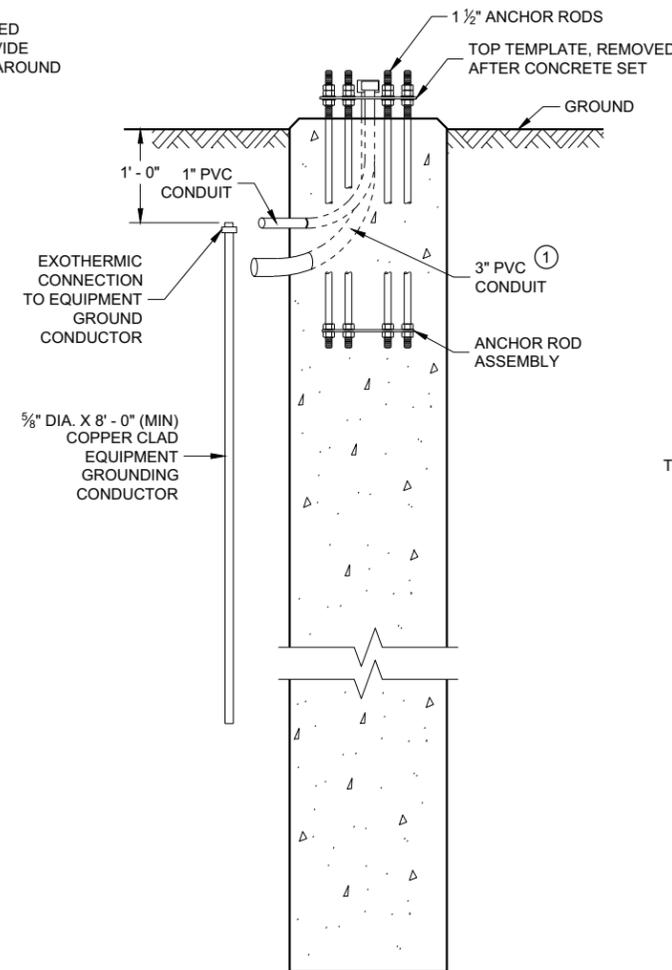
**HOOP DETAIL**



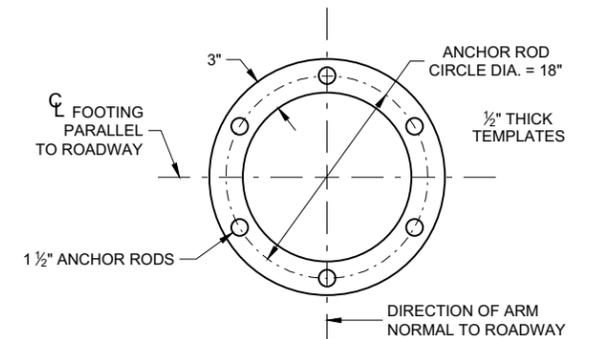
**FORMING DETAIL**



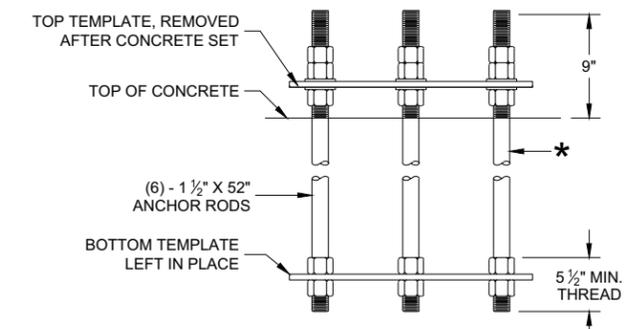
**ELEVATION VIEW**  
(CONDUITS NOT SHOWN ON THIS VIEW FOR CLARITY)



**SIDE VIEW**  
(HOOPS AND VERTICAL SHAFT REINFORCEMENT NOT SHOWN ON THIS VIEW FOR CLARITY)



**TOP AND BOTTOM TEMPLATE**



**ANCHOR ROD ASSEMBLY DETAILS**

\* THREAD TOP 10" OF ANCHOR ROD FOR 3 NUTS AND 2 WASHERS AND BOTTOM 5 1/2" FOR 2 NUTS PER ANCHOR ROD. HOT DIP GALVANIZE THE ENTIRE LENGTH OF THE ANCHOR ROD (ASTM A123) AND HOT DIP NUTS AND WASHERS (ASTM A153. USE ZINC COATED NUTS MANUFACTURED WITH SUFFICIENT ALLOWANCE TO ALLOW NUTS TO RUN FREELY ON THE THREADS.

**CONCRETE BASE, TYPE 10 SPECIAL  
(FOR TYPE 9 SPECIAL AND TYPE 10 SPECIAL POLES)**

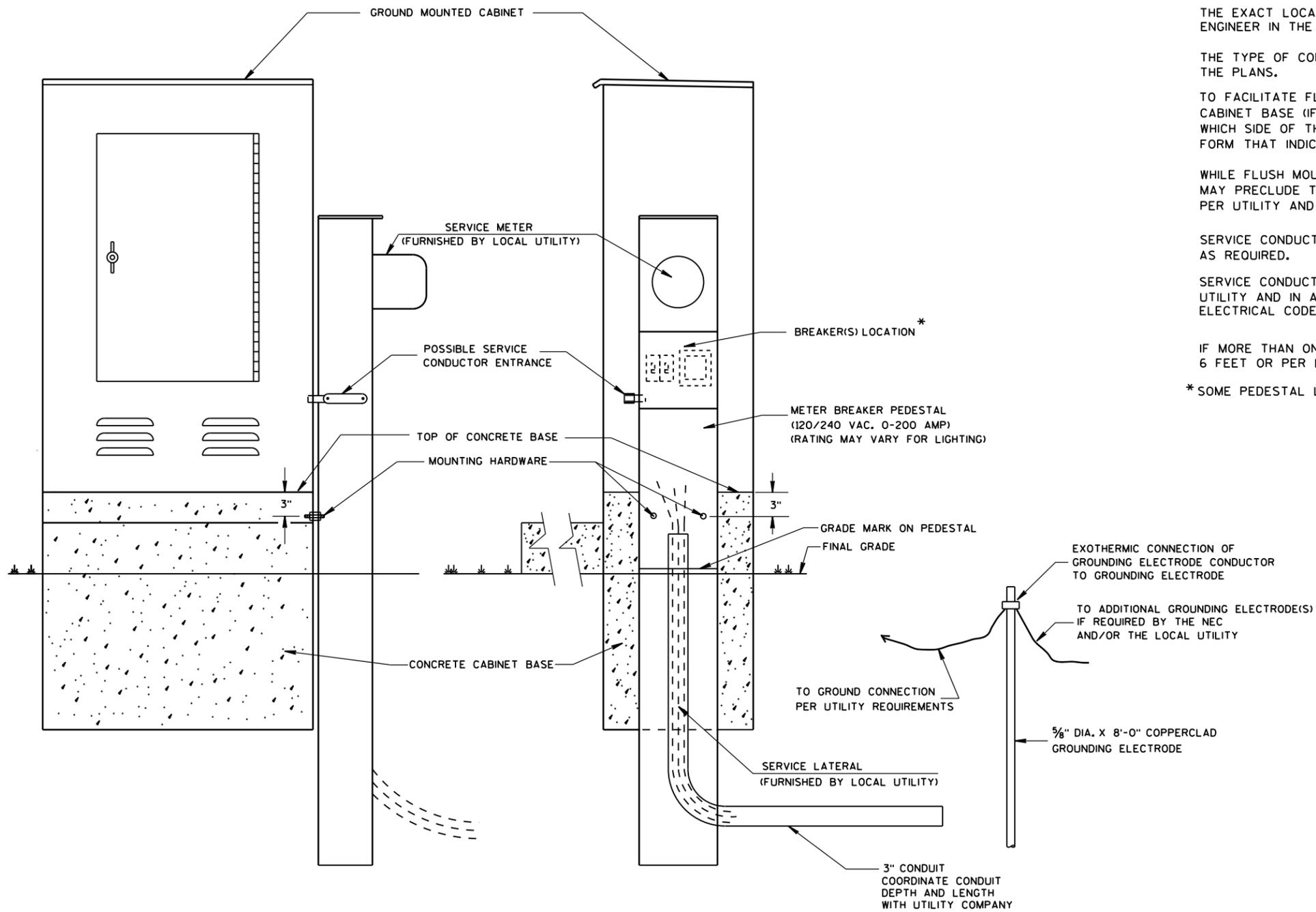
CONCRETE = 4.6 CUBIC YARD  
 H.S. REINFORCEMENT = 779 LBS.

FOR USE WHEN GROUND ELEVATION AT BASE EQUALS OR IS GREATER THAN HIGH POINT OF ROADWAY ELEVATION.

**CONCRETE BASE  
TYPE 10 SPECIAL**

STATE OF WISCONSIN  
 DEPARTMENT OF TRANSPORTATION

APPROVED  
 August 2020 /S/ Alex Crabtree  
 DATE WIND LOADED STRUCTURES PROGRAM LEADER  
 FHWA



TYPICAL CABINET SERVICE INSTALLATION

GENERAL NOTES

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

THE EXACT LOCATION OF THE METER BREAKER PEDESTAL SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

THE TYPE OF CONCRETE CABINET BASE TO BE INSTALLED SHALL BE AS CALLED FOR IN THE PLANS.

TO FACILITATE FLUSH MOUNTING OF THE METER BREAKER PEDESTAL AGAINST THE SIDE OF THE CABINET BASE (IF FLUSH MOUNTING POSSIBLE, CONFER WITH THE LOCAL UTILITY TO DETERMINE WHICH SIDE OF THE CONCRETE BASE THE ELECTRICAL SERVICE LATERAL WILL APPROACH, THEN FORM THAT INDICATED SIDE FOR FULL SIDE DEPTH.

WHILE FLUSH MOUNTING IS THE MOST DESIRABLE MOUNTING CONFIGURATION UTILITY REQUIREMENTS MAY PRECLUDE THIS OPTION. CONTRACTOR MUST PROVIDE UTILITY APPROVED PEDESTAL AND INSTALL PER UTILITY AND MANUFACTURERS REQUIREMENTS.

SERVICE CONDUCTOR ENTRANCES SHALL BE RIGID METALLIC CONDUIT, NIPPLES AND/OR CONDULETS AS REQUIRED.

SERVICE CONDUCTOR ENTRANCES SHALL BE SIZED AND LOCATED AS REQUIRED BY THE LOCAL UTILITY AND IN ACCORDANCE WITH APPROPRIATE ARTICLES OF THE LATEST ACCEPTED NATIONAL ELECTRICAL CODE.

IF MORE THAN ONE GROUNDING ELECTRODE IS REQUIRED, THE DISTANCE APART SHALL BE 6 FEET OR PER LOCAL UTILITY REGULATIONS.

\* SOME PEDESTAL LIGHTING PLANS SHOW MAIN LUGS ONLY.

CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE FHWA	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER



**GENERAL NOTES**

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

ALL TYPE 4 POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.

POLES SHALL BE GALVANIZED STEEL WITH A MINIMUM WALL THICKNESS OF U.S. STANDARD 11 GAGE (.1196").

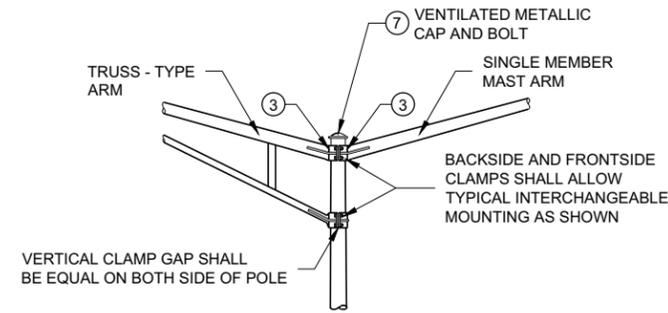
SECTION 657, POLES, OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

A PULL WIRE / ROPE SHALL BE INSTALLED IN EACH TROMBONE ARM RACEWAY DURING THE MANUFACTURING PROCESS.

THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2 3/8 INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

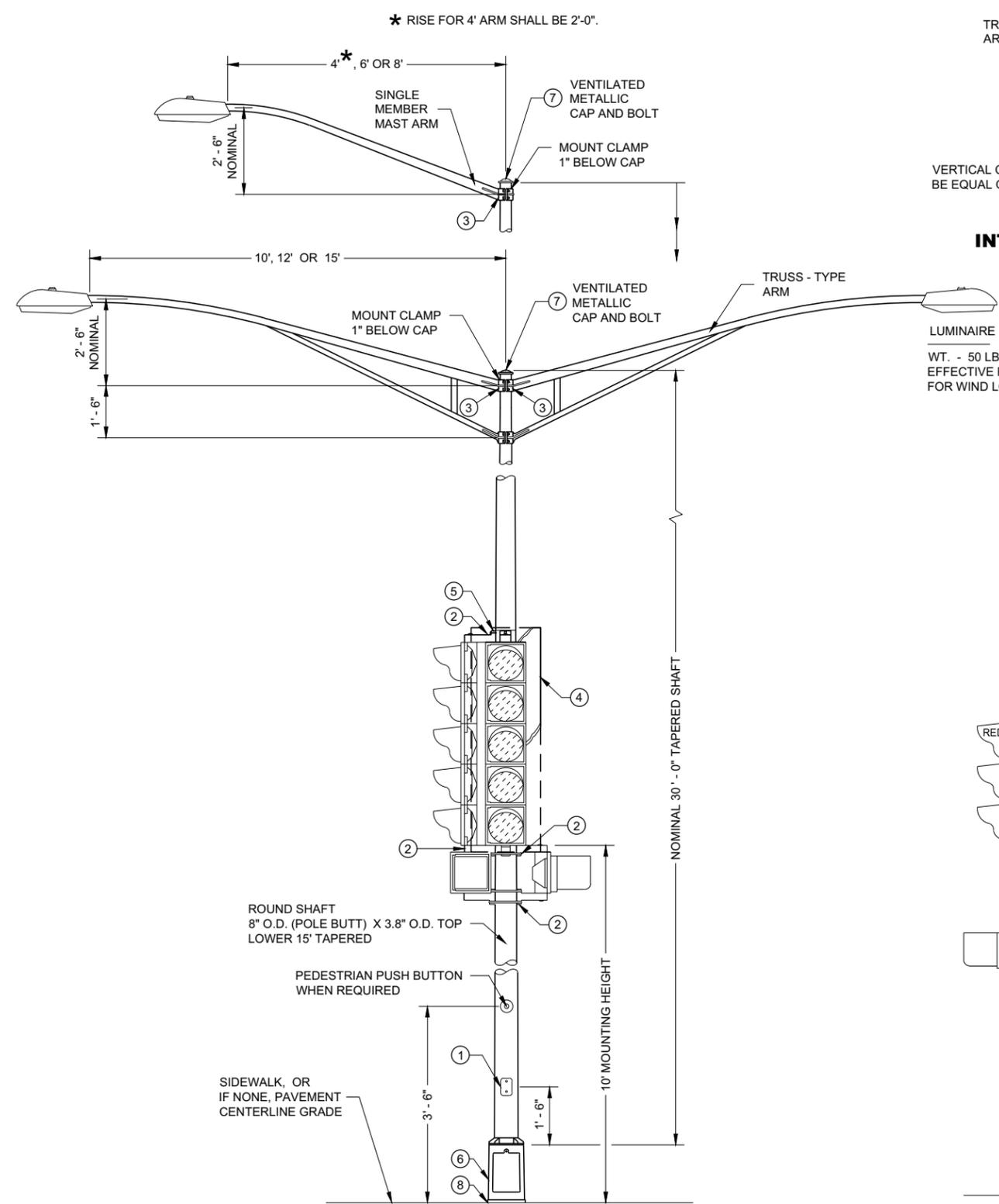
WHEN TRANSFORMER BASES ARE USED, WIRE CONNECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

- ① 4" X 6" REINFORCED HANDHOLE AND COVER ASSEMBLY WITH TWO (2) 1/2" X 3/4" - 20 TPI, STAINLESS STEEL, HEX HEAD BOLTS.
- ② SIGNAL FACE MOUNTING BRACKETS. MOUNT WITH CAP SCREWS AND BANDING.
- ③ GROMMETS. 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 3/8" HOLE IN POLE SHAFT FOR WIRING.
- ④ SECURELY MOUNT DULL BLACK POLYCARBONATE BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURER'S RECOMMENDATIONS.
- ⑤ POLE MOUNTED SIGNAL FACES SHALL REQUIRE ONE OR MORE MOUNTING SPACERS UNDER THE TOP MOUNTING BRACKET(S) AS REQUIRED, TO PLUMB THE SIGNAL FACE.
- ⑥ CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.
- ⑦ FURNISH AND INSTALL VENTILATED, CAST METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) 1/2" X 3/4" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.
- ⑧ SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND POLE.
- ⑨ USE 1 1/2" ID NIPPLES ZINC-COATED RIGID METAL CONDUIT, LONG ENOUGH TO ACCOMMODATE FULL DEPTH THREADING INTO THE HEAD MOUNTING LOCK NUT IN ORDER TO TIGHTEN THE FACE, BUT THAT DO NOT INTERFERE WITH REFLECTOR CLOSURE. THREAD THE NIPPLE INTO THE MOUNTING BRACKET/ELBOW UNTIL TIGHT. USE APPROVED PINNACLE TYPE HARDWARE FROM A DEPARTMENT APPROVED MANUFACTURER TO CLOSE THE UNUSED 1 1/2" OPENING IN SIGNAL FACES AND BRACKET ENDS.

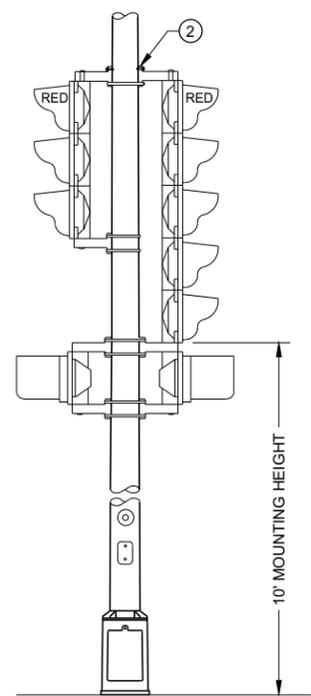


**INTERCHANGEABLE MOUNTING DETAIL**

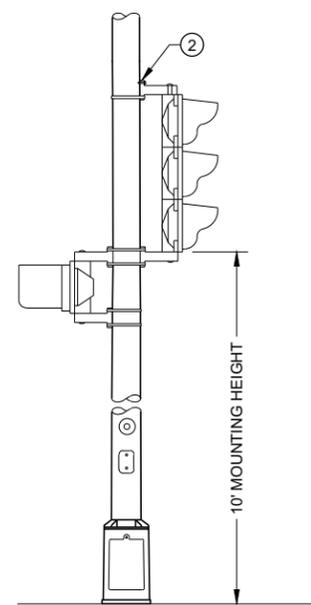
LUMINAIRE  
WT. - 50 LBS.  
EFFECTIVE PROJECTED AREA  
FOR WIND LOADING = 1.5 SQ. FT.



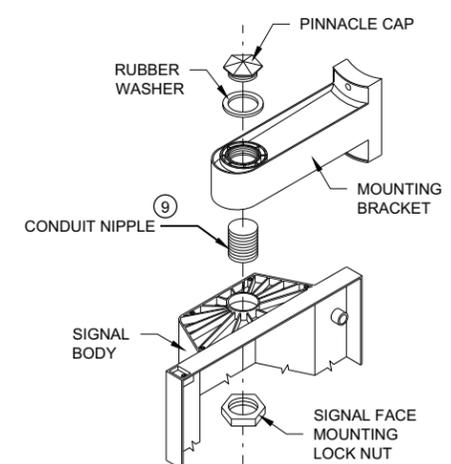
**(MAXIMUM LOAD)**



**TYPICAL MOUNTING OF BACK TO BACK 3 AND 5 SECTION SIGNAL FACES**



**TYPICAL MOUNTING OF 3 SECTION SIGNAL FACE**

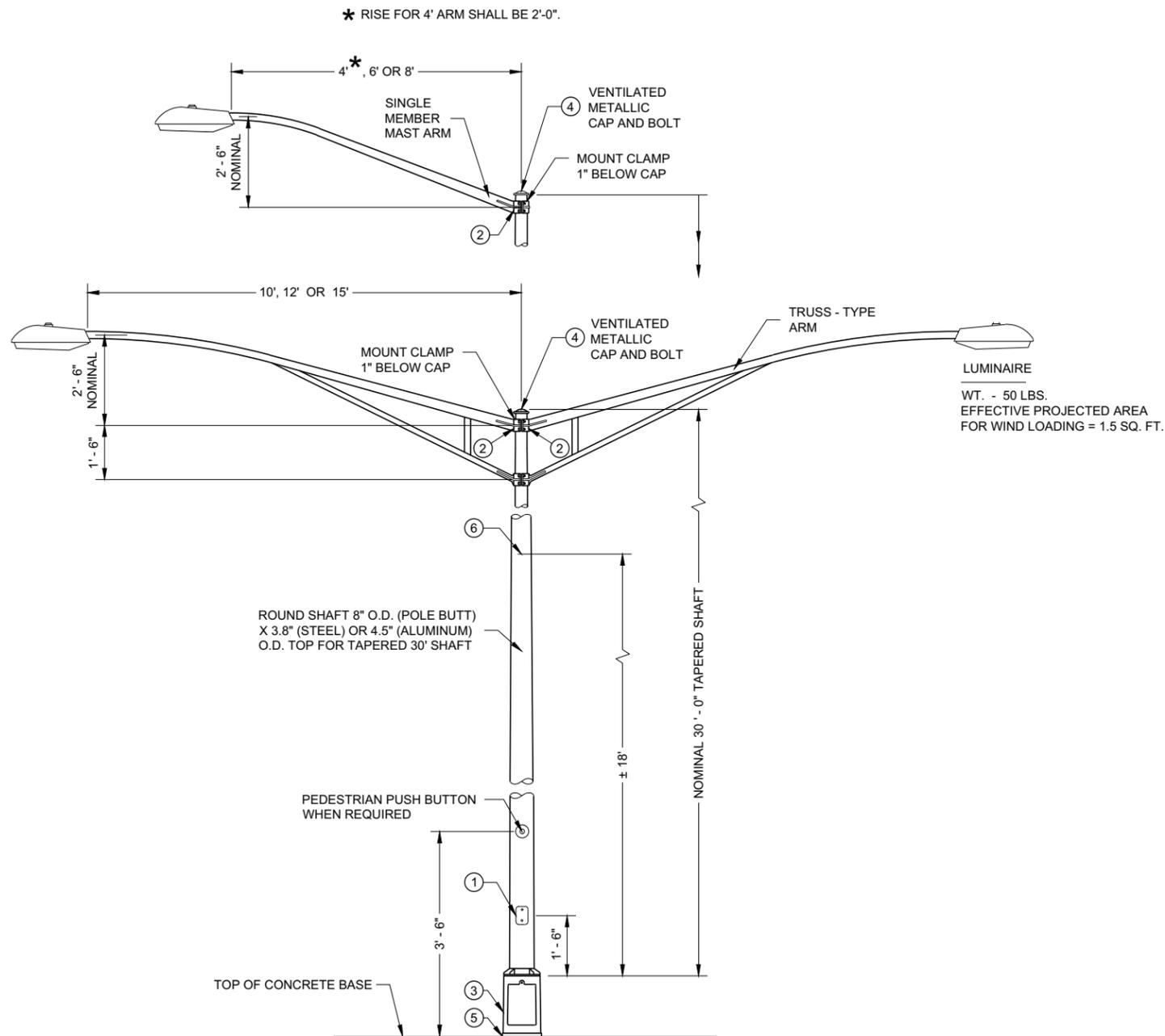


**SIGNAL FACE MOUNTING DETAIL (BANDED)**

**POLE MOUNTINGS FOR TRAFFIC SIGNALS AND LIGHTING UNITS, TYPE 4**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

**TYPE 4 POLE MOUNTING CONFIGURATION**



**TYPE 5 POLE MOUNTING CONFIGURATION  
(MAXIMUM LOAD)  
LIGHTING ONLY**

**GENERAL NOTES**

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

SECTION 657, POLES, OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

ALL TYPE 5 POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.

POLES SHALL BE GALVANIZED STEEL OR ALUMINUM, AS CALLED FOR IN THE CONTRACT.

TYPE 5 ALUMINUM POLES SHALL BE CONSTRUCTED OF 6063 - T6 ALUMINUM ALLOY. SLEEVING INSIDE THE POLE IS NOT ACCEPTABLE.

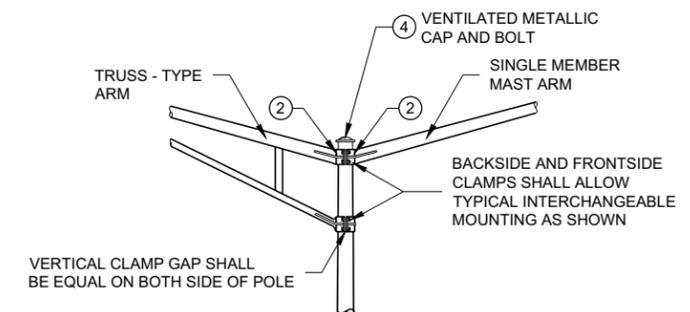
TYPE 5 ALUMINUM POLES SHALL HAVE A MINIMUM WALL THICKNESS OF 0.1888".

TYPE 5 STEEL POLES SHALL HAVE A MINIMUM WALL THICKNESS OF U.S. STANDARD 11 GAGE (0.1196").

THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2 3/8 INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

WHEN TRANSFORMER BASES ARE USED, WIRE CONNECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

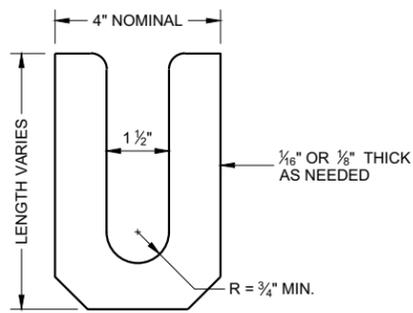
- ① 4" X 6" REINFORCED HANDHOLE AND COVER ASSEMBLY WITH TWO (2) 1/4" X 3/4" - 20 TPI, STAINLESS STEEL, HEX HEAD BOLTS.
- ② GROMMETS. 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 3/8" HOLE IN POLE SHAFT FOR WIRING.
- ③ CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.
- ④ FURNISH AND INSTALL VENTILATED, CAST METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) 1/4" X 3/4" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.
- ⑤ SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND POLE.
- ⑥ INTERNAL DUMBBELL - TYPE VIBRATION DAMPER.



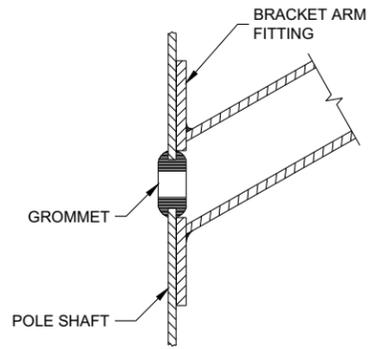
**INTERCHANGEABLE MOUNTING DETAIL**

**POLE MOUNTINGS FOR  
LIGHTING UNITS, TYPE 5  
( 30 FEET )**

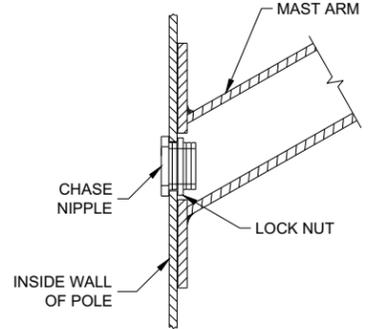
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



**LEVELING SHIM**  
SHALL BE ALUMINUM



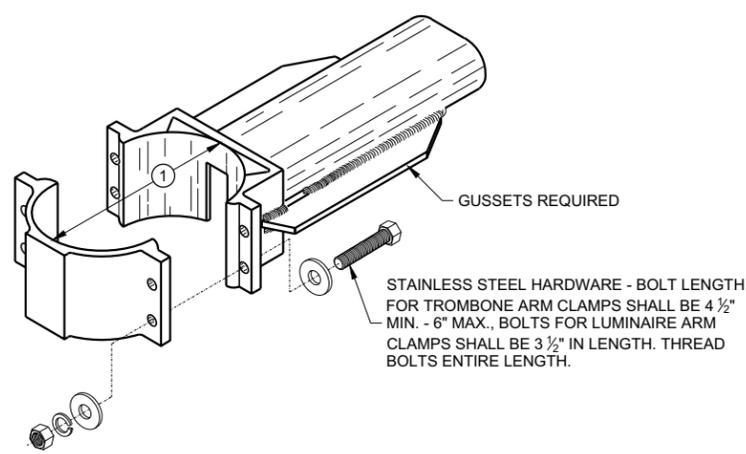
**TYPICAL APPLICATION OF GROMMET IN POLE SHAFT**



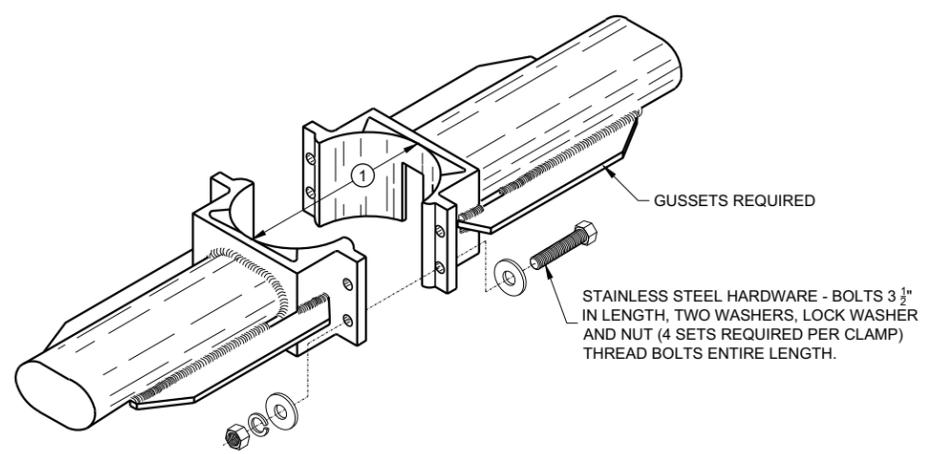
**TYPICAL APPLICATION OF CHASE NIPPLE IN POLE SHAFT**

**GENERAL NOTES**

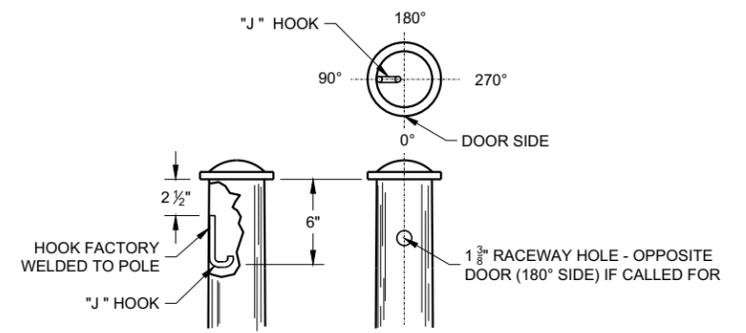
- CLAMP BOLT-NUT TIGHTENING TORQUE SHALL BE INDICATED BY INDENT STAMPING (1/2 INCH NUMERALS AND LETTERS) OR WEATHERPROOF PRINTING ON THE INSIDE OF THE CLAMP THAT IS WELDED TO THE ARM MEMBER.
- ① 4.5" I.D. FOR LUMINAIRE MAST ARM CLAMP. 6.625" I.D. FOR TROMBONE MAST ARM CLAMP.
  - ② INDIVIDUAL BASE PLATE ANCHOR ROD COVERS. (4 REQUIRED)
  - ③ BASE PLATE SLOTTED TO ACCEPT 11" THROUGH 12" BOLT CIRCLE USING 1" DIAMETER ANCHOR RODS.
  - ④ LEVELING SHIMS, DESIGNED FOR THE PURPOSE, SHALL BE USED WHEN PLUMBING POLES. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE. LEVELING SHIMS SHALL BE USED ONLY BETWEEN THE TOP OF THE CONCRETE BASE AND A METALLIC BASE PLATE.
- SHIMS SHALL BE LONG ENOUGH AND WIDE ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.



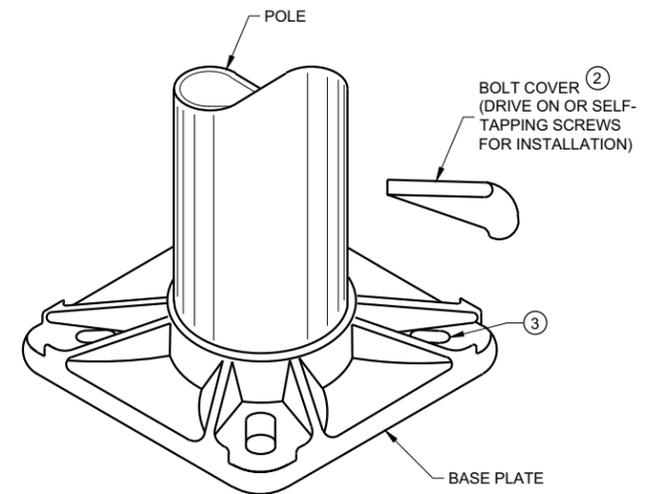
**TYPICAL TROMBONE MAST ARM AND SINGLE LUMINAIRE MAST ARM MOUNTING CLAMP**



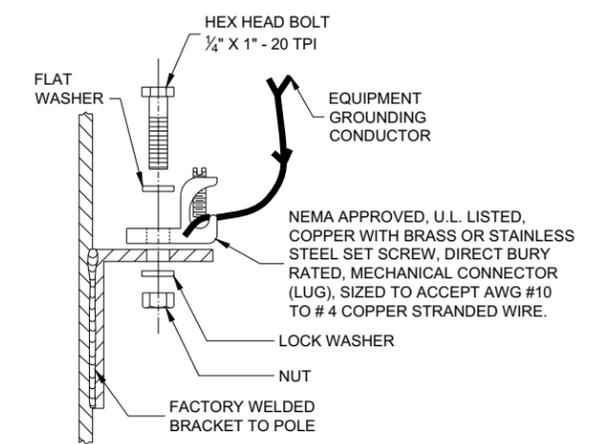
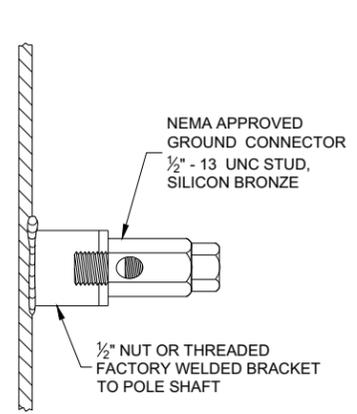
**TYPICAL LUMINAIRE MAST ARM (DOUBLE) MOUNTING BRACKETS**



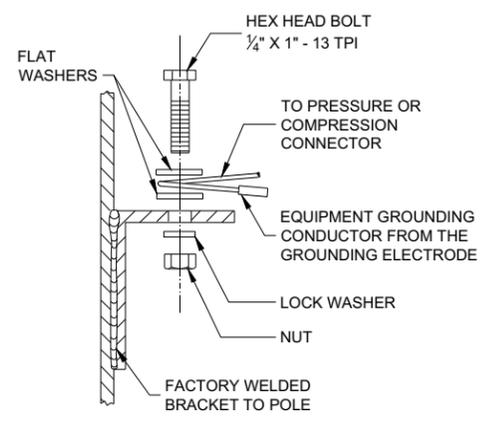
**TYPICAL "J" HOOK LOCATION**



**BASE PLATE**



**TYPICAL GROUNDING CONNECTIONS**  
NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL



**HARDWARE DETAILS FOR POLE MOUNTING**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

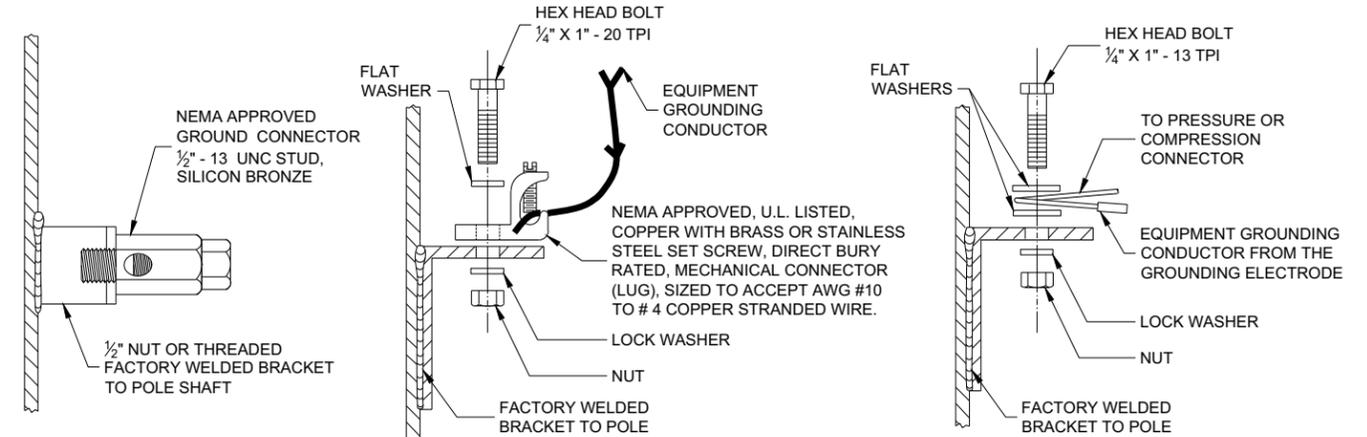
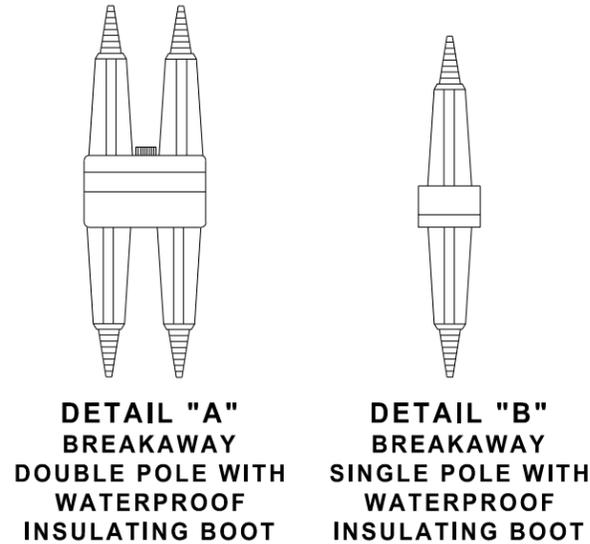
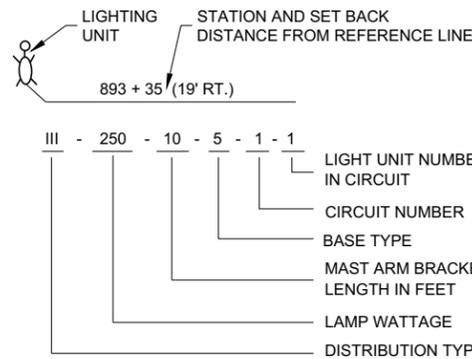
APPROVED  
November 2018 /S/ Ahmet Demirelek  
DATE STATE ELECTRICAL ENGINEER  
FHWA

**GENERAL NOTES**

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

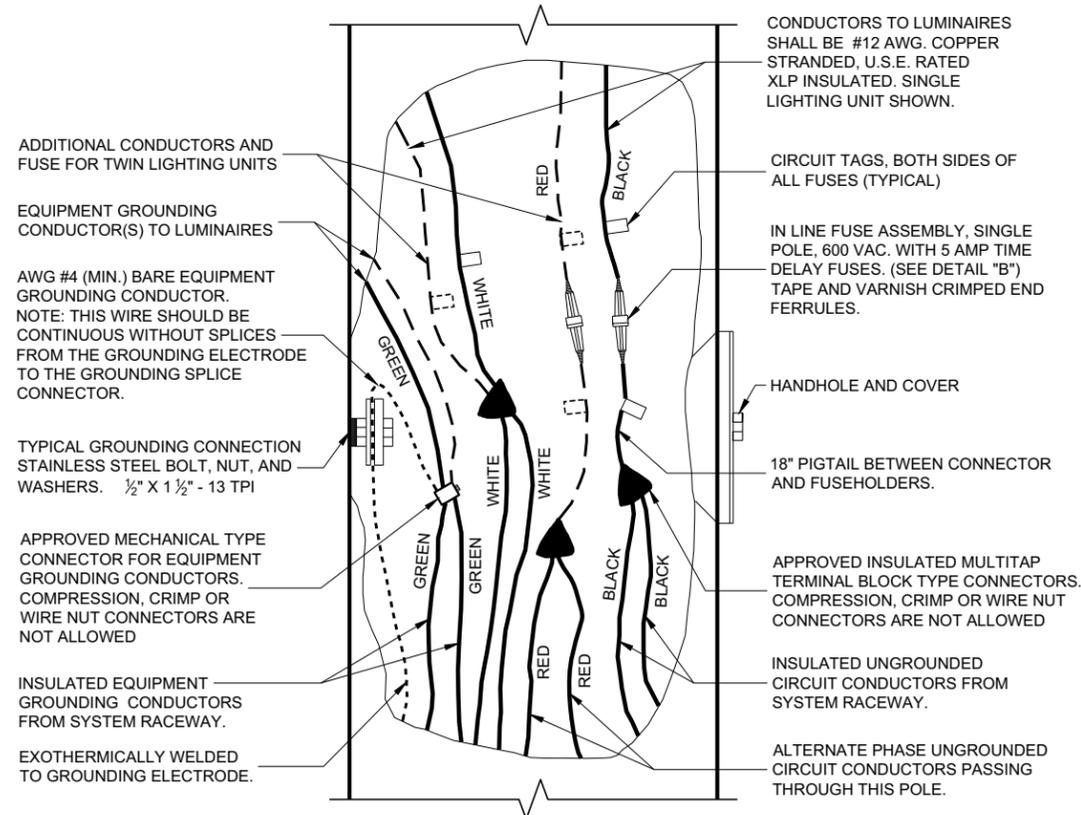
THE EQUIPMENT GROUND CONNECTOR SHALL BE TAPED WITH 3 WRAPS (MINIMUM) OF APPROVED RUBBER TAPE AND 3 WRAPS (MINIMUM) OF APPROVED VINYL TAPE TO COVER SHARP WIRE ENDS AFTER THE CONNECTION IS COMPLETED.

WHEN TRANSFORMER BASES ARE USED, ALL WIRING CONNECTIONS SHALL OCCUR WITHIN THE TRANSFORMER BASES.

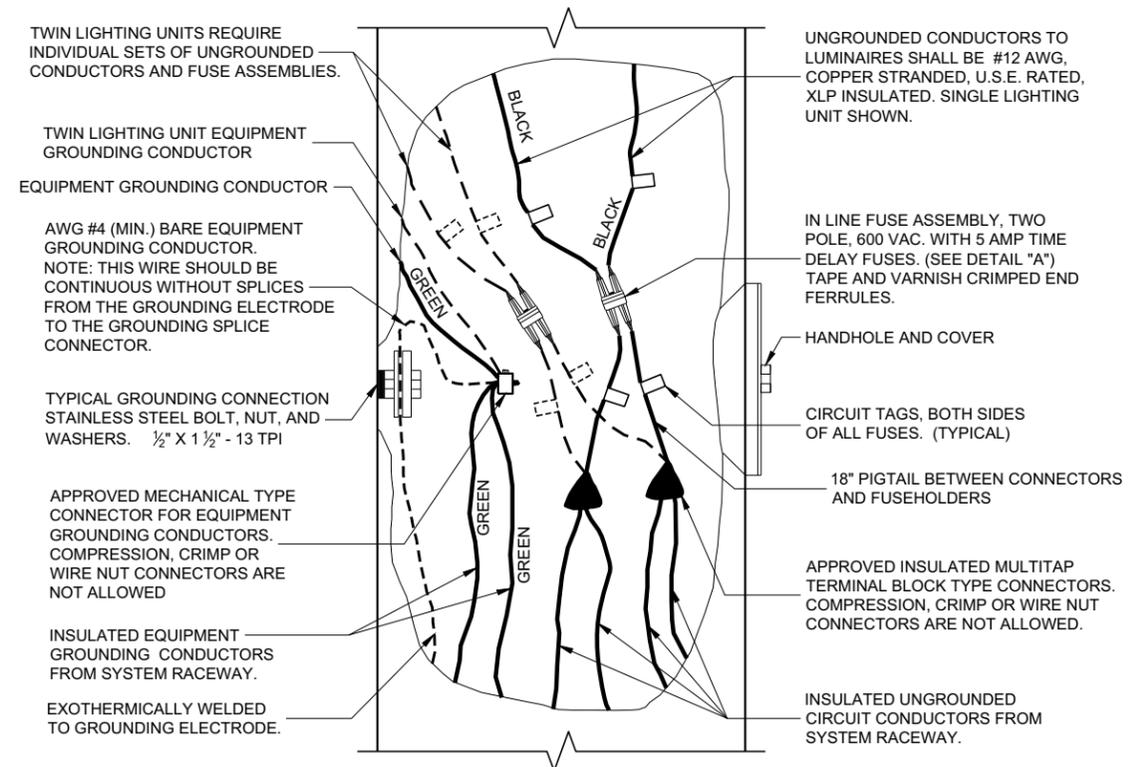


**TYPICAL GROUNDING CONNECTIONS**  
NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL

**LIGHTING UNIT CODE (TYPICAL)**



**3 WIRE - 120, 240 OR 480 VAC (UNGROUNDING CONDUCTORS) WITH GROUNDING CONDUCTOR AND EQUIPMENT GROUNDING CONDUCTOR**



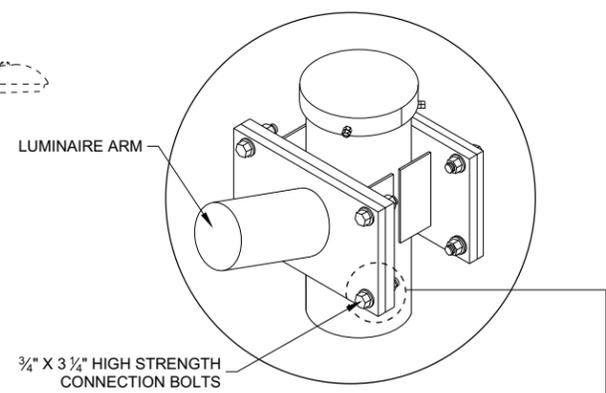
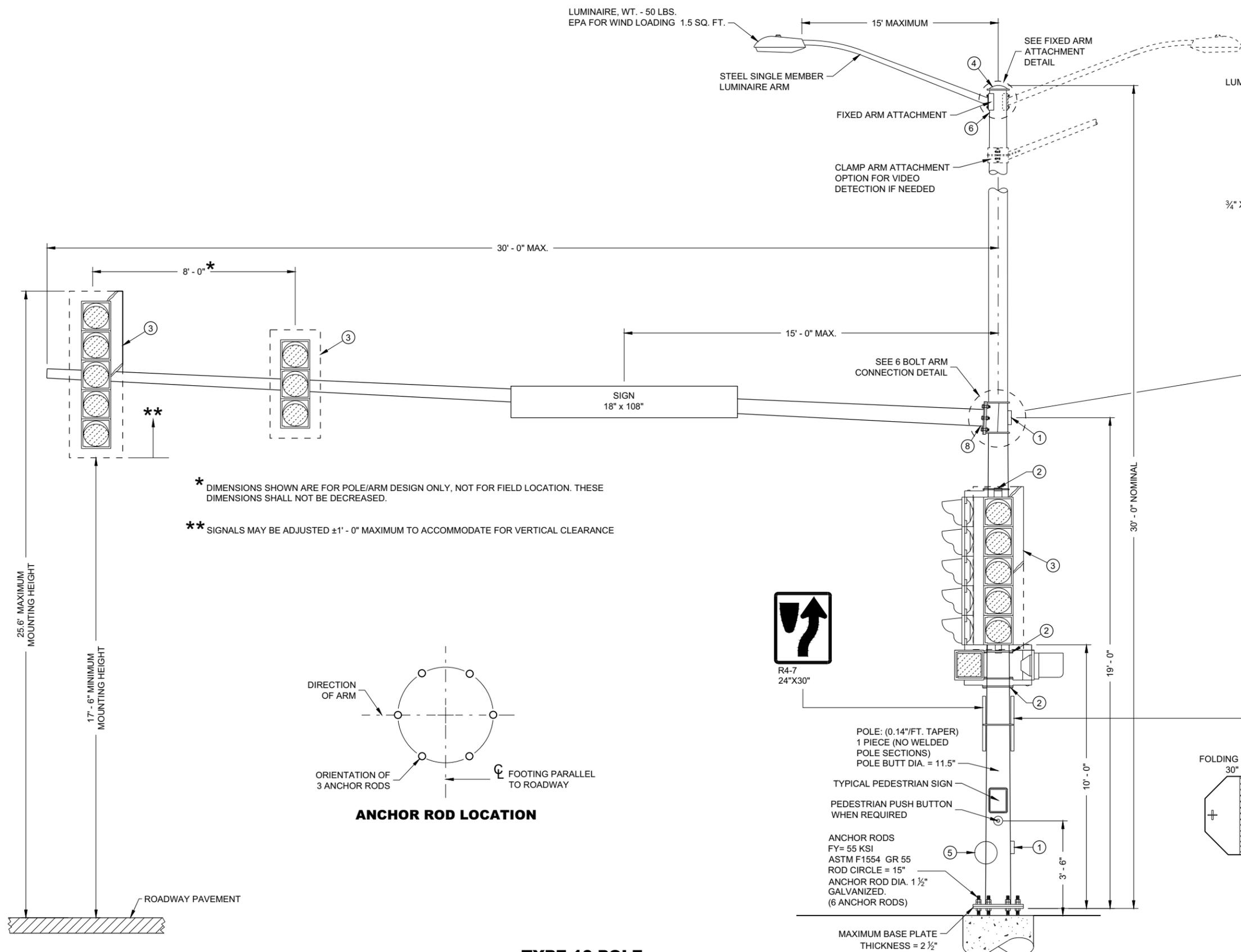
**2 WIRE - 240 OR 480 VAC (UNGROUNDING CONDUCTORS) WITH EQUIPMENT GROUNDING CONDUCTOR**

**NON - FREEWAY LIGHTING UNIT POLE WIRING**

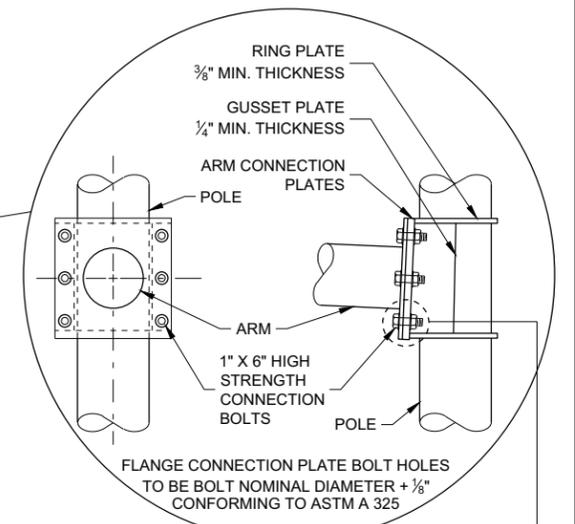
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
November 2018 /S/ Ahmet Demirelek  
DATE STATE ELECTRICAL ENGINEER

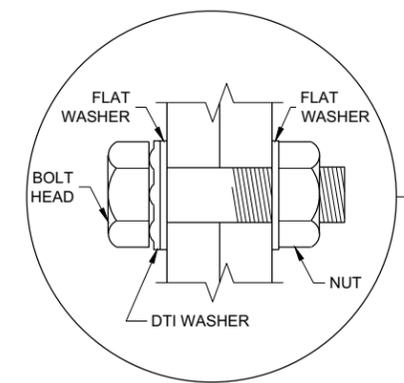
FHWA



**FIXED ARM ATTACHMENT DETAIL**



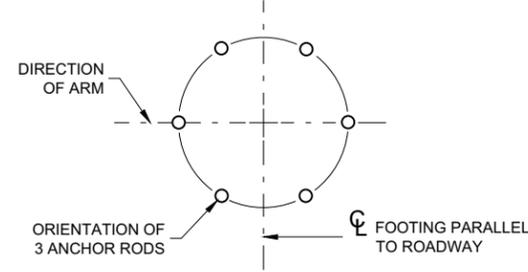
**6 BOLT ARM CONNECTION DETAIL**



**RECOMMENDED BOLT ASSEMBLY DETAIL**

\* DIMENSIONS SHOWN ARE FOR POLE/ARM DESIGN ONLY, NOT FOR FIELD LOCATION. THESE DIMENSIONS SHALL NOT BE DECREASED.

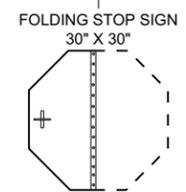
\*\* SIGNALS MAY BE ADJUSTED ±1' - 0" MAXIMUM TO ACCOMMODATE FOR VERTICAL CLEARANCE



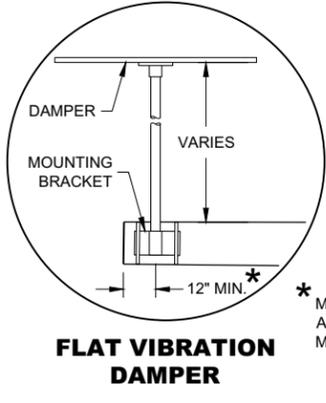
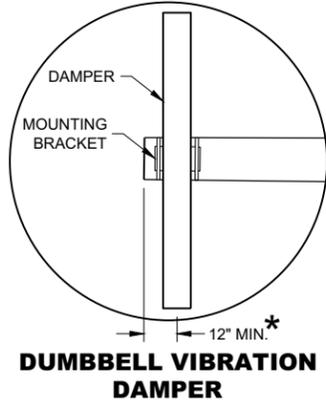
**ANCHOR ROD LOCATION**

**TYPE 10 POLE**  
**15' - 30' MONOTUBE ARM**  
 (MAXIMUM LOAD)

- POLE: (0.14"/FT. TAPER)  
1 PIECE (NO WELDED POLE SECTIONS)  
POLE BUTT DIA. = 11.5"
- TYPICAL PEDESTRIAN SIGN
- PEDESTRIAN PUSH BUTTON WHEN REQUIRED
- ANCHOR RODS  
FY= 55 KSI  
ASTM F1554 GR 55  
ROD CIRCLE = 15"  
ANCHOR ROD DIA. 1 1/2"  
GALVANIZED.  
(6 ANCHOR RODS)
- MAXIMUM BASE PLATE THICKNESS = 2 1/2"

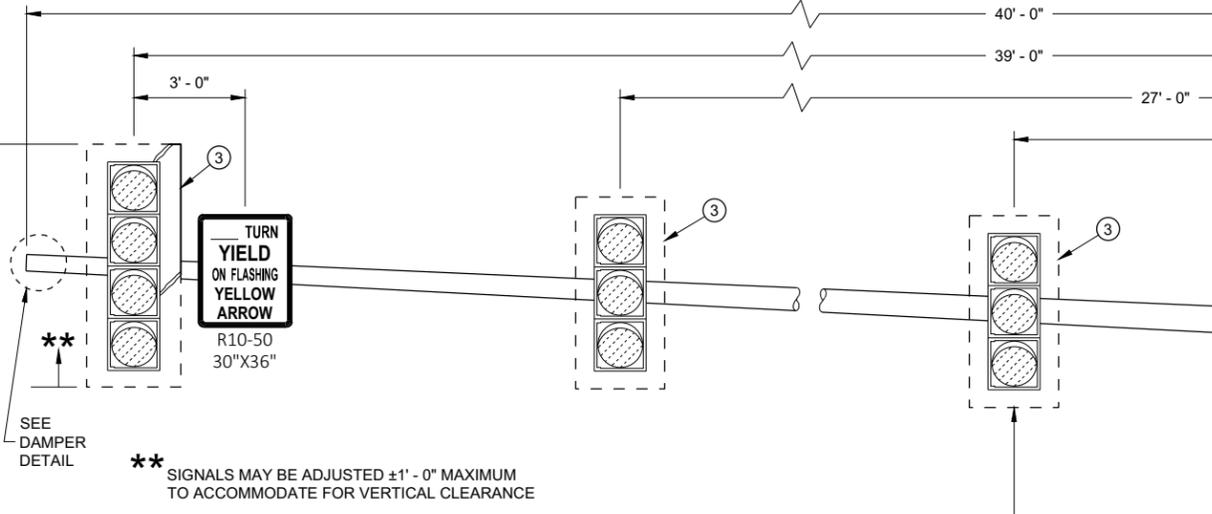
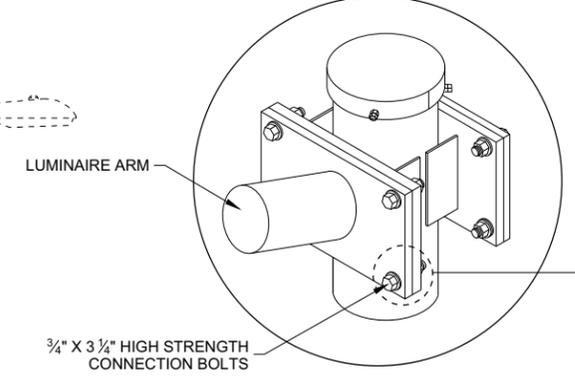
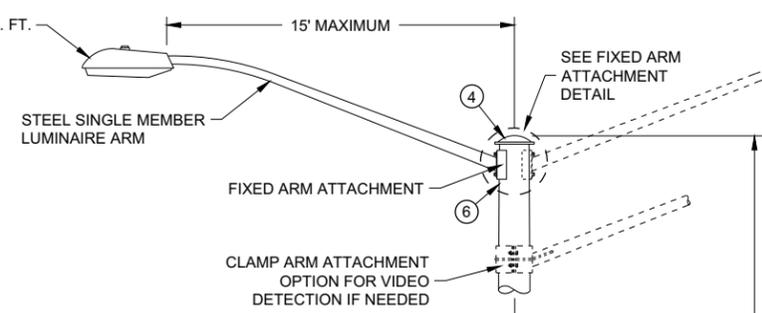


<b>TYPE 10 POLE</b> <b>15' - 30' MONOTUBE ARM</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED August 2020 DATE	/S/ Ahmet Demirebilek STATE ELECTRICAL ENGINEER
FHWA	



\* MOUNT AS CLOSE TO END OF MAST ARM FOR MAXIMUM DAMPING PER MANUFACTURER'S RECOMMENDATIONS.

LUMINAIRE, WT. - 50 LBS.  
EPA FOR WIND LOADING 1.5 SQ. FT.

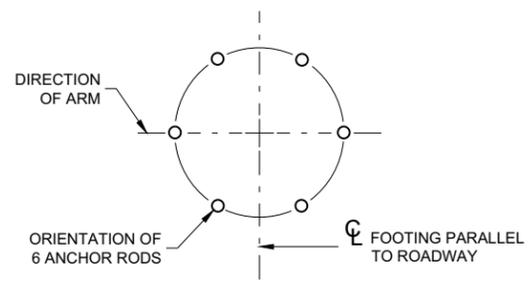
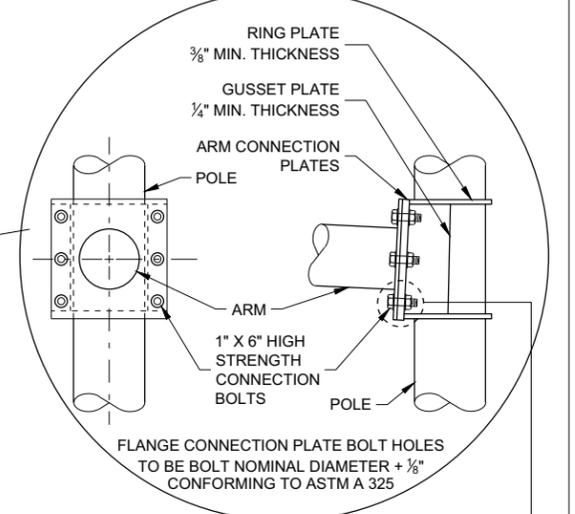


\*\* SIGNALS MAY BE ADJUSTED ±1' - 0" MAXIMUM TO ACCOMMODATE FOR VERTICAL CLEARANCE

SEE DAMPER DETAIL



SEE 6 BOLT ARM CONNECTION DETAIL



**ANCHOR ROD LOCATION**



R5-1  
36"X36"

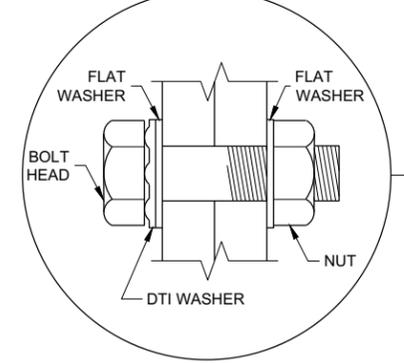
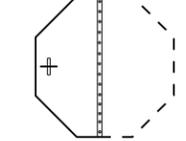
POLE: (0.14"/FT. TAPER), 1 PIECE (NO WELDED POLE SECTIONS)  
POLE BUTT DIA. = 13"

TYPICAL PEDESTRIAN SIGN  
PEDESTRIAN PUSH BUTTON WHEN REQUIRED

ANCHOR RODS  
FY= 55 KSI  
ASTM F1554 GR 55  
ROD CIRCLE = 18"  
ANCHOR ROD DIA. 1 1/2"  
GALVANIZED.  
(MIN. 6 ANCHOR RODS)

MAXIMUM BASE PLATE THICKNESS = 2 1/2"

FOLDING STOP SIGN  
30" X 30"



**RECOMMENDED BOLT ASSEMBLY DETAIL**

<b>TYPE 10 SPECIAL POLE 40' MONOTUBE ARM</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED August 2020 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER
FHWA	

SDD 09E08 - 09g

SDD 09E08 - 09g

LUMINAIRE, WT. - 50 LBS.  
EPA FOR WIND LOADING 1.5 SQ. FT.

STEEL SINGLE MEMBER  
LUMINAIRE ARM

SEE FIXED ARM  
ATTACHMENT  
DETAIL

FIXED ARM ATTACHMENT

CLAMP ARM ATTACHMENT  
OPTION FOR VIDEO  
DETECTION IF NEEDED

LUMINAIRE ARM

3/4" X 3 1/2" HIGH STRENGTH  
CONNECTION BOLTS

**FIXED ARM ATTACHMENT DETAIL**

RING PLATE  
3/8" MIN. THICKNESS

GUSSET PLATE  
1/4" MIN. THICKNESS

ARM CONNECTION  
PLATES

POLE

ARM

1 1/2" X 7 1/2" HIGH  
STRENGTH  
CONNECTION  
BOLTS

POLE

FLANGE CONNECTION PLATE BOLT HOLES  
TO BE BOLT NOMINAL DIAMETER +1/8"  
CONFORMING TO ASTM A 325

**8 BOLT ARM CONNECTION DETAIL**

FLAT WASHER

FLAT WASHER

BOLT  
HEAD

DTI WASHER

NUT

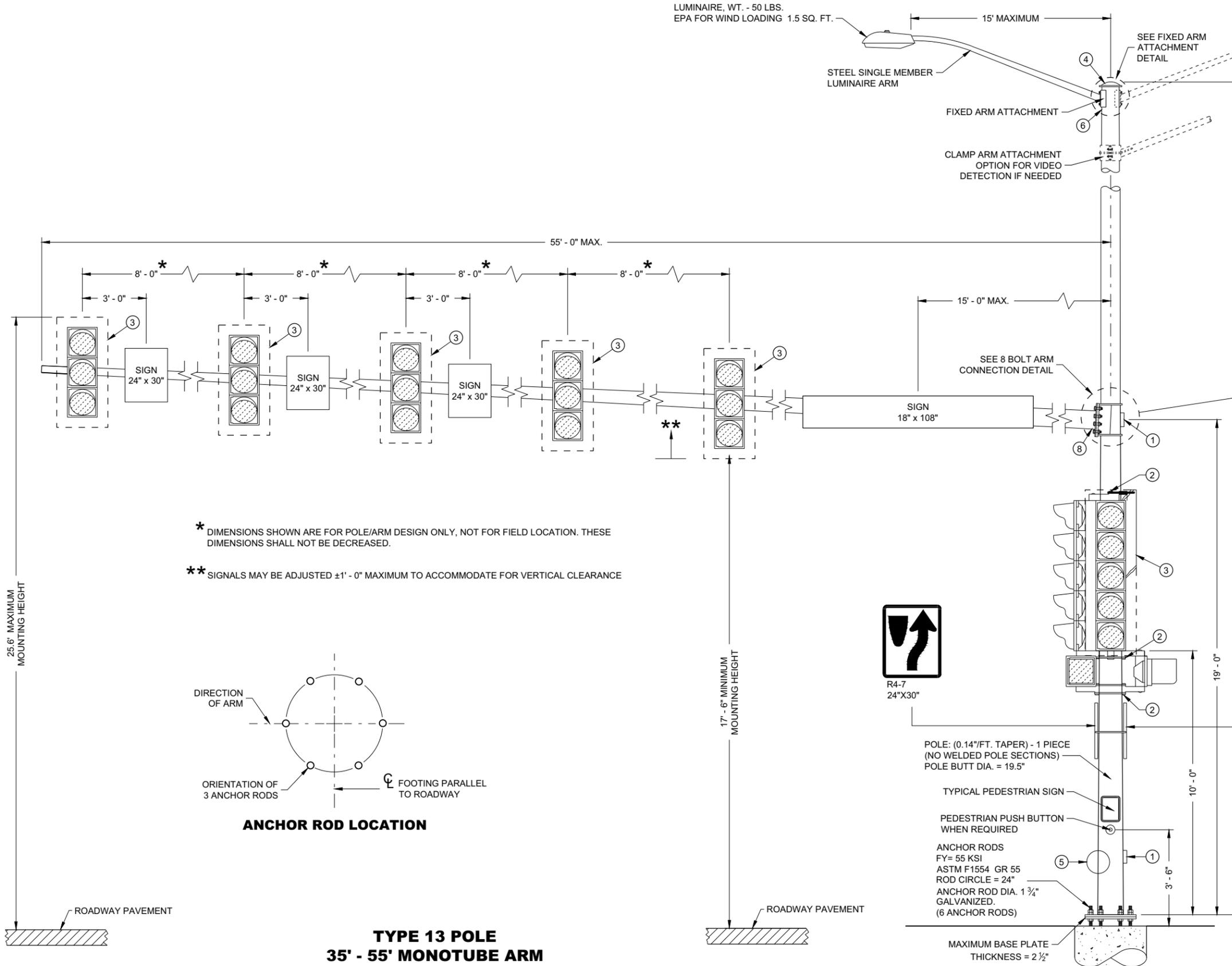
**RECOMMENDED BOLT  
ASSEMBLY DETAIL**

**TYPE 13 POLE  
35' - 55' MONOTUBE ARM**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

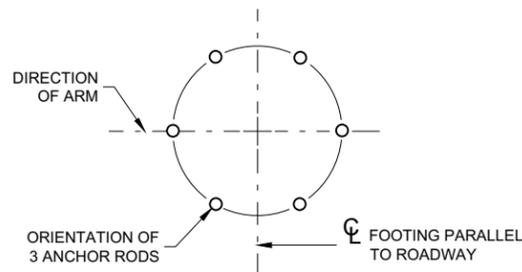
APPROVED  
August 2020 /S/ Ahmet Demirelek  
DATE STATE ELECTRICAL ENGINEER

FHWA



\* DIMENSIONS SHOWN ARE FOR POLE/ARM DESIGN ONLY, NOT FOR FIELD LOCATION. THESE DIMENSIONS SHALL NOT BE DECREASED.

\*\* SIGNALS MAY BE ADJUSTED ±1' - 0" MAXIMUM TO ACCOMMODATE FOR VERTICAL CLEARANCE



**ANCHOR ROD LOCATION**

**TYPE 13 POLE  
35' - 55' MONOTUBE ARM  
(MAXIMUM LOAD)**



R4-7  
24"X30"

POLE: (0.14"/FT. TAPER) - 1 PIECE  
(NO WELDED POLE SECTIONS)  
POLE BUTT DIA. = 19.5"

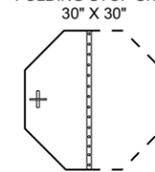
TYPICAL PEDESTRIAN SIGN

PEDESTRIAN PUSH BUTTON  
WHEN REQUIRED

ANCHOR RODS  
FY= 55 KSI  
ASTM F1554 GR 55  
ROD CIRCLE = 24"  
ANCHOR ROD DIA. 1 3/4"  
GALVANIZED.  
(6 ANCHOR RODS)

MAXIMUM BASE PLATE  
THICKNESS = 2 1/2"

FOLDING STOP SIGN  
30" X 30"



## GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

POLE TYPES 9 AND 10 ARE FOR ARM LENGTHS 15 FOOT TO 30 FOOT.

POLE TYPES 9 SPECIAL AND 10 SPECIAL ARE FOR ARM LENGTHS 35 FOOT, 40 FOOT, AND 45 FOOT.

POLE TYPES 12 AND 13 ARE FOR ARM LENGTHS 35 FOOT TO 55 FOOT.

MONOTUBE POLES AND ARMS SHALL BE GALVANIZED STEEL.

RING STIFFENED BUILT UP BOX TYPE OF ATTACHMENT FOR TRAFFIC SIGNAL ARM.

ONE PIECE POLE CONSTRUCTION (NO WELDED POLE SECTIONS).

STANDARD STRAIGHT ARM DESIGN (3% ± RISE).

SECTION 657, POLES OF THE STANDARD SPECIFICATION SHALL APPLY TO THIS DRAWING.

PROVIDE WIREWAY THRU POLE WALL AND ARM CONNECTION PLATES. PROVIDE ROUND, SMOOTH INSIDE SURFACE.

MANUFACTURER'S SUBMITTED POLE DESIGNS AND DRAWINGS SHALL BE SIGNED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER AND CERTIFIED AS BEING IN COMPLIANCE WITH THE AASHTO "LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNAL 2015 1ST EDITION (INCLUDING INTERIM REVISIONS)" AND ALL PERTINENT WISDOT SPECIFICATIONS AND DRAWINGS FOR THE LIGHTING STRUCTURES AS FOLLOWS:

CATEGORY III FATIGUE LOADS OF GALLOPING, TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 9 AND TYPE 10 STRUCTURES.

CATEGORY II FATIGUE LOADS OF TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 9 SPECIAL AND TYPE 10 SPECIAL STRUCTURES. IN LIEU OF DESIGNING FOR GALLOPING, A VIBRATION DAMPER MITIGATION DEVICE IS REQUIRED TO BE SUPPLIED AND INSTALLED AT THE END OF THE MAST ARM.

CATEGORY II FATIGUE LOADS OF GALLOPING, TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 12 AND TYPE 13 STRUCTURES.

115 MPH (700 YEAR MRI BASIC WIND SPEED).

SECURE THE OPENING BELOW THE BASE PLATE WITH STAINLESS STEEL OR GALVANIZED STEEL MESH AND SECURE THE MESH WITH 3/4" STAINLESS STEEL BANDING AROUND THE LEVELING NUTS.

INDENT PRINT (NOMINAL 1/2" HIGH) THE POLE LENGTH AND FIRST TWO LETTERS OF THE MANUFACTURERS NAME ON TWO SIDES OF THE BASE PLATE 180 DEGREES APART, BEFORE GALVANIZING. THE ARM SHALL BE IDENTIFIED WITH THE SAME INFORMATION BY INDENT PRINT.

SIGNAL FACE SHALL BE MOUNTED 6 INCHES (NOMINAL) FROM THE END OF THE MONOTUBE ARM OR AS SHOWN ON THE PLAN CONSTRUCTION DETAIL OR AS DIRECTED BY THE PROJECT ENGINEER/ELECTRICAL OPERATIONS PERSONNEL. MOUNT ALL LIKE HEAD AT SAME ELEVATION.

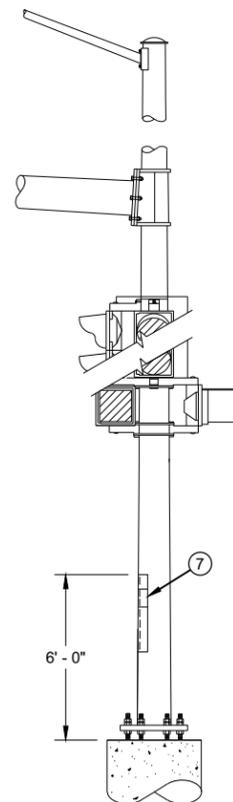
SIGN MOUNTING BRACKETS SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 637 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.

- ① DESIGN FOR MAXIMUM ALLOWABLE HAND HOLE WITH COVER ASSEMBLY WITH TWO 1/4" X 3/4" - 20 TPI STAINLESS STEEL HEX HEAD BOLTS.
- ② SIGNAL MOUNTING BRACKETS FOR POLE MOUNTING, MOUNT WITH CAP SCREW AND BANDING (SEE SPECIFICATION SECTION 658).
- ③ SECURELY MOUNT BACK PLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURERS RECOMMENDATIONS.
- ④ THE TOP OF THE POLE SHAFT AND THE MONOTUBE ARM SHALL BE EQUIPPED WITH A REMOVABLE, VENTILATED CAP HELD SECURELY IN PLACE WITH SET SCREWS.
- ⑤ FACTORY WELDED BRACKET FOR GROUNDING LUG, OPPOSITE HAND HOLD, (LUG AND HARDWARE PAID UNDER SEPARATE ITEM). PROVIDE HOLE IN BRACKET FOR 1/4" X 3/4" - 20 TPI STAINLESS STEEL HEX HEAD BOLT.
- ⑥ FACTORY WELDED "J" HOOK FOR STRAIN RELIEF FOR POLE LUMINAIRE WIRE.
- ⑦ INSTALL STRUCTURAL IDENTIFICATION PLAQUES.

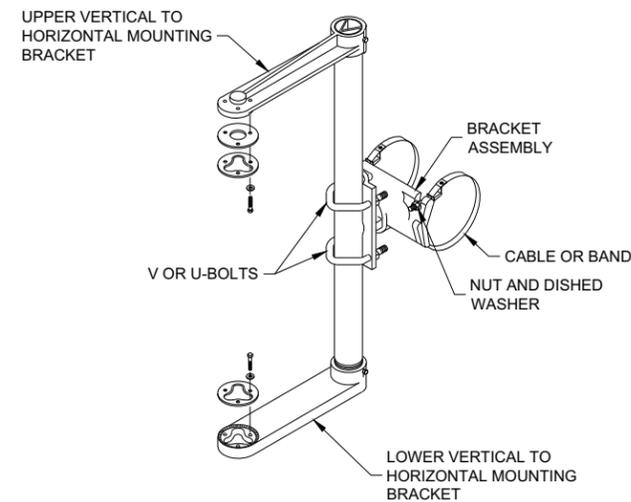
STRUCTURAL IDENTIFICATION PLAQUES SHALL BE PLACED ON THE POLES IN THE SAME DIRECTION AS THE ARM.

MOUNTING HEIGHT SHALL BE 6' - 0" ABOVE THE CURB OR SHOULDER. ADJUST IF IT IS KNOWN THAT REQUIRED TRAFFIC SIGNS WILL BE OBSTRUCTED.

- ⑧ FACTORY DRILLED 1/2" DRAIN HOLE 2" FROM FLANGE CONNECTION PLATE.

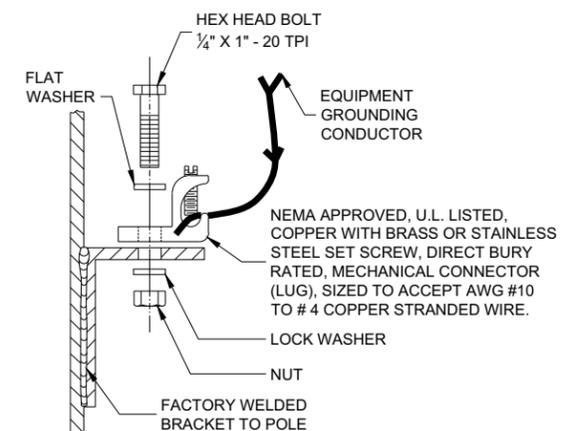


**STRUCTURAL IDENTIFICATION  
PLAQUE PLACEMENT**



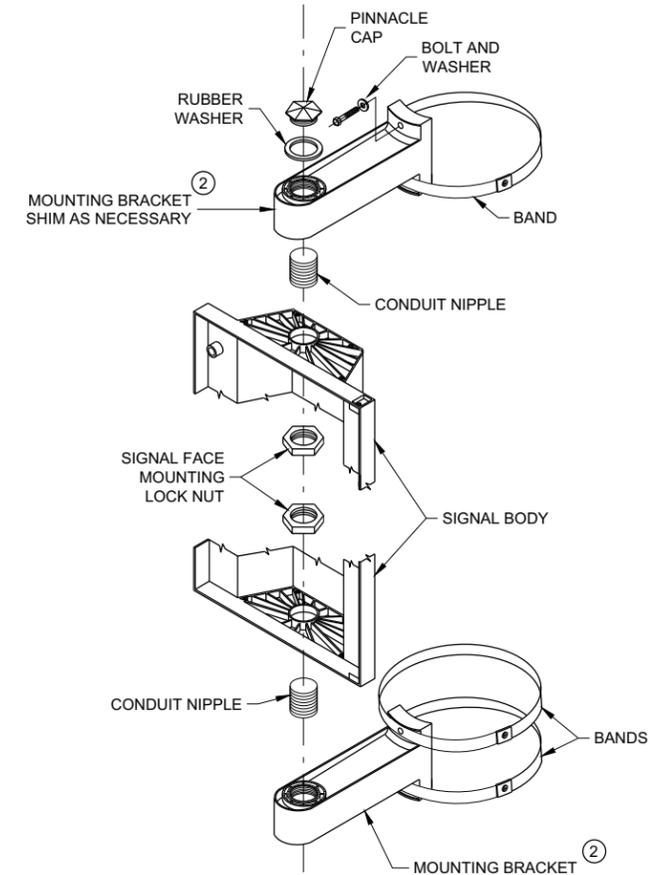
**SIGNAL FACE MOUNTING BRACKET  
DETAIL FOR MONOTUBE ARM**

(MOUNT PER MANUFACTURER'S RECOMMENDATION)

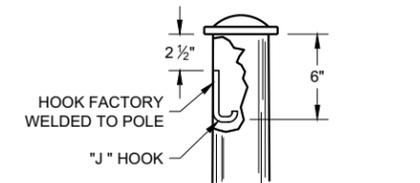


**TYPICAL GROUNDING  
CONNECTIONS**

NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL



**SIGNAL FACE VERTICAL  
MOUNTING DETAIL**



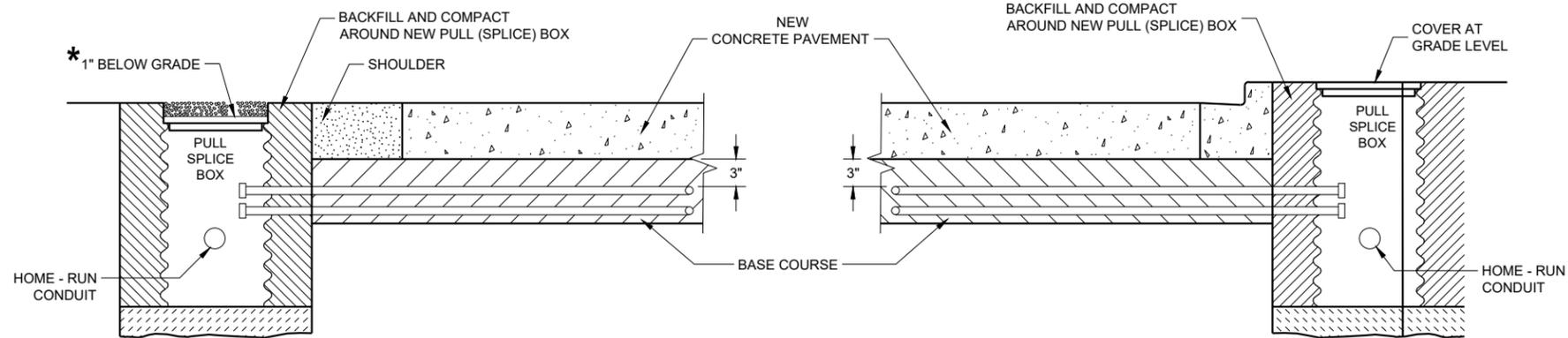
**TYPICAL "J" HOOK  
WIRE SUPPORT**

**GENERAL NOTES AND  
HARDWARE FOR TYPES 9,10,  
9/10 SPECIAL, 12 AND 13  
POLES WITH MONOTUBE ARMS**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
August 2020 /S/ Ahmet Demirbilek  
DATE STATE ELECTRICAL  
ENGINEER

FHWA



**SECTION A - A  
NO CURB AND GUTTER**

**SECTION B - B  
CURB AND GUTTER**

\* RECESS PULL (SPLICE) BOX SO THAT THE COVER IS 3" BELOW GRADE IN SHOULDER AREAS OF CRUSHED AGGREGATE. BACKFILL OVER COVER WITH THE CRUSHED AGGREGATE TO BRING THE AREA TO GRADE LEVEL.

**LOOP DETECTOR INSTALLATION DETAIL**

**GENERAL NOTES**

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

PITCH LEAD OUT CONDUIT TO DRAIN TO ROADSIDE PULL (SPLICE) BOX.

LOOP SIZE, LOCATION, NUMBER OF TURNS OF WIRE AND ASSOCIATED SIGNAL PHASE SHALL BE AS SHOWN ON THE PLANS.

SPLICES SHALL BE INSTALLED BY USING CAST IN PLACE SPLICE KITS LISTED ON THE DEPARTMENTS APPROVED PRODUCTS LIST OR AN ENGINEER APPROVED EQUAL. NON-INSULATED BUTT SPLICES TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPLICES SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPLICE KIT.

MEASURE GROUND RESISTANCE USING A MEGGER. REPLACE LOOP WIRE NOT ATTAINING A READING OF INFINITY TO GROUND.

AFTER SPLICING THE LOOP WIRE TO THE LOOP LEAD-IN CABLE, THE CONTRACTOR SHALL MEASURE INDUCTANCE, GROUND RESISTANCE AND WIRE RESISTANCE AT THE CABINET END OF THE LEAD-IN CABLE AND FURNISH A COPY OF THE READING TO THE PROJECT ENGINEER FOR EVALUATION.

LOOP DETECTOR LEADS SHALL BE IDENTIFIED WITH THEIR ASSOCIATED LOOP BY USE OF WATERPROOF TAGS AT BOTH ENDS OF THE CABLE. A LISTING OF THE CABLE IDENTIFICATION PER INDIVIDUAL LOOP LEAD-IN SHALL BE PLACED IN THE CABINET.

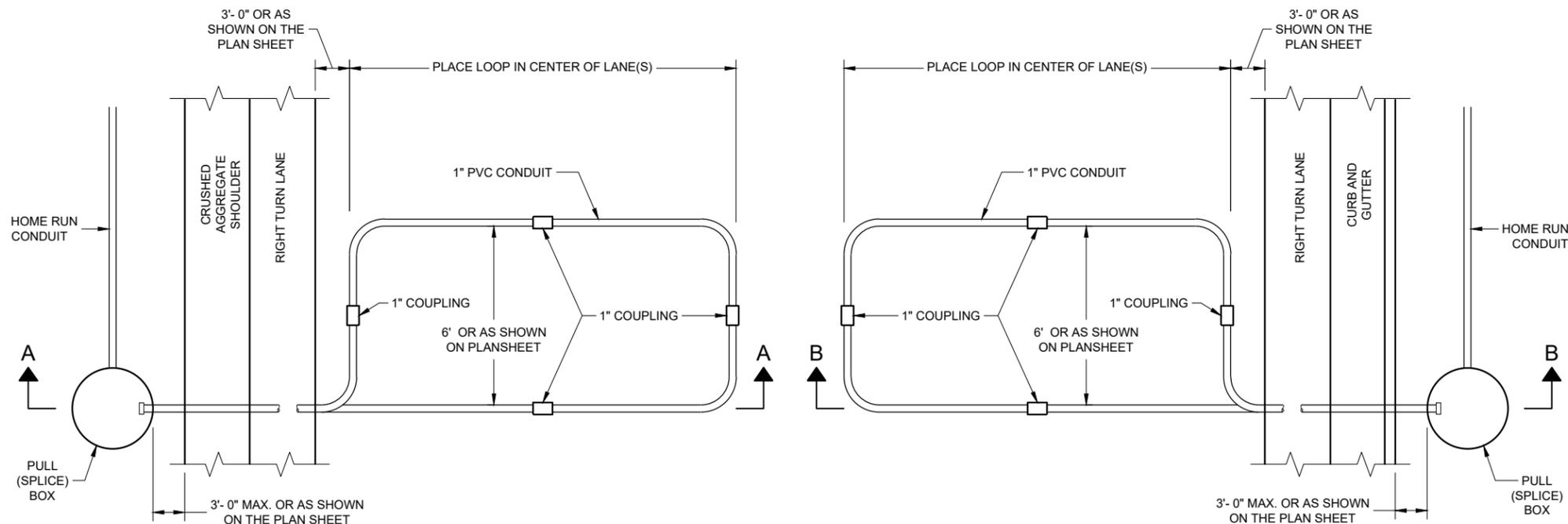
THE #12 AWG LOOP WIRE IN THE PULL (SPLICE) BOX SHALL BE HAND TWISTED AT LEAST 3 TWISTS PER FOOT BEFORE BEING SPLICED TO THE LOOP LEAD-IN CABLE.

SPLICES OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL (SPLICE) BOXES AT THE SIDE OF THE ROAD.

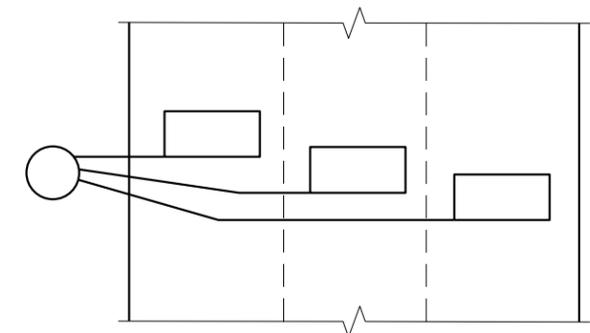
THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROADSIDE PULL (SPLICE) BOX, THROUGH THE LOOP CONDUIT, BACK TO THE ROADSIDE PULL (SPLICE) BOX, AND BE INSTALLED IN ONE NON-SPLICED, CONTINUOUS LENGTH.

PROTECTION OF THE CONDUIT IN THE BASE COURSE SHALL BE REQUIRED AFTER INSTALLATION AND BEFORE NEW PAVEMENT IS INSTALLED.

SHOULD INSTALLATION REPAIR BE REQUIRED, IT SHALL BE DONE UNDER THE DIRECTION OF THE PROJECT ENGINEER.



**TYPICAL PLAN LOOP DETECTOR  
WITH 24" PULL (SPLICE) BOX**

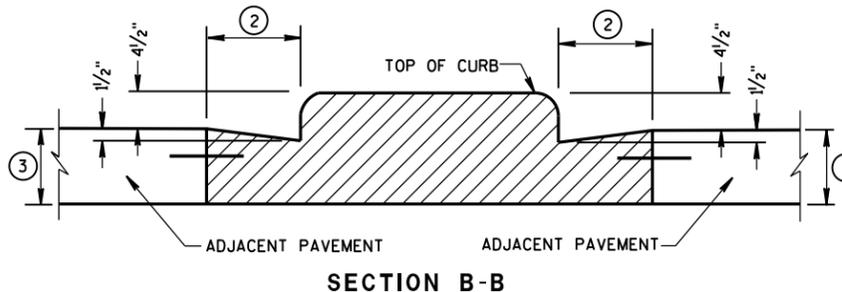
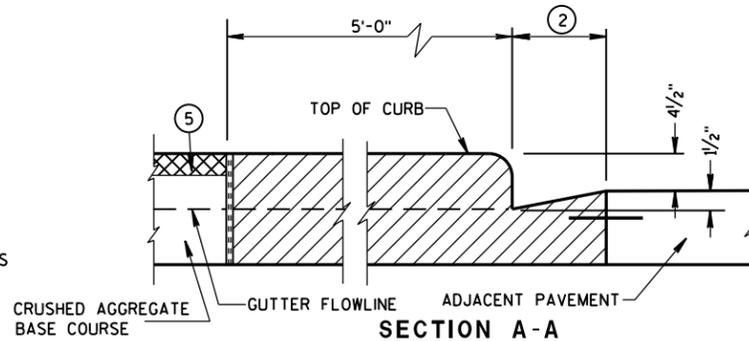
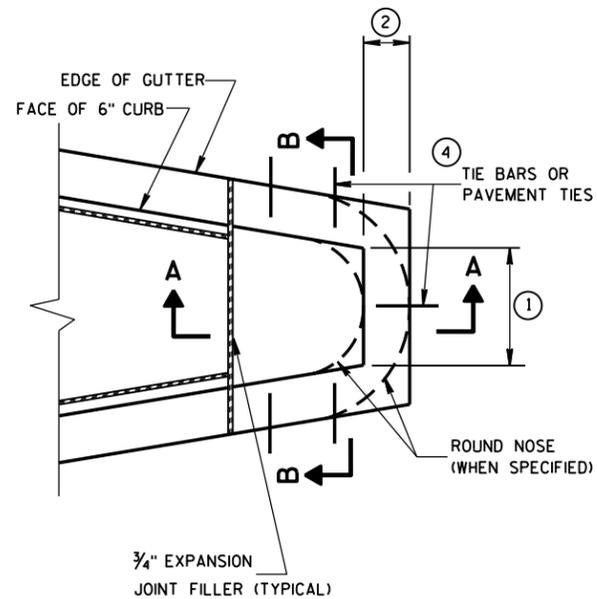
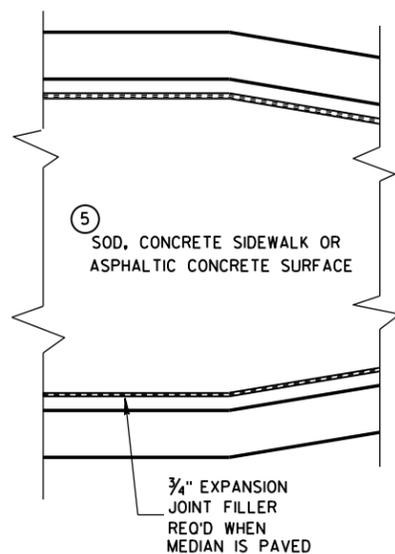


**MULTI-LANE  
INSTALLATION**

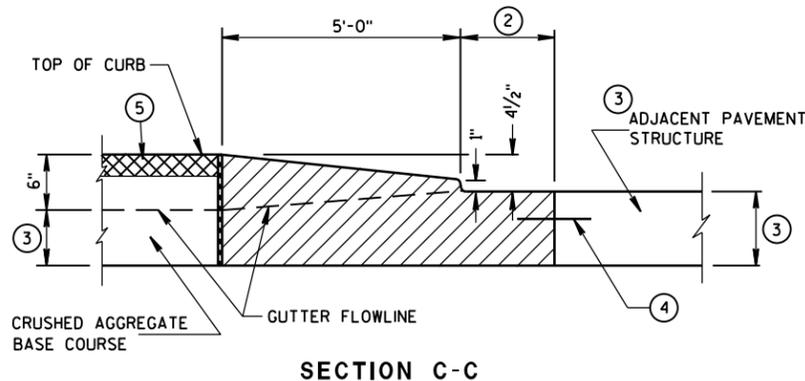
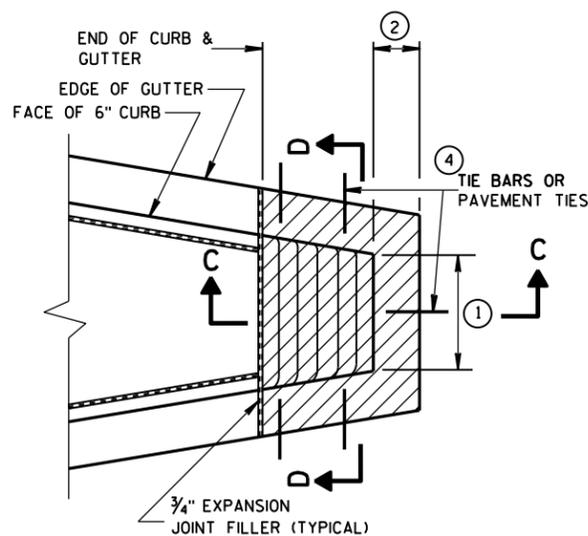
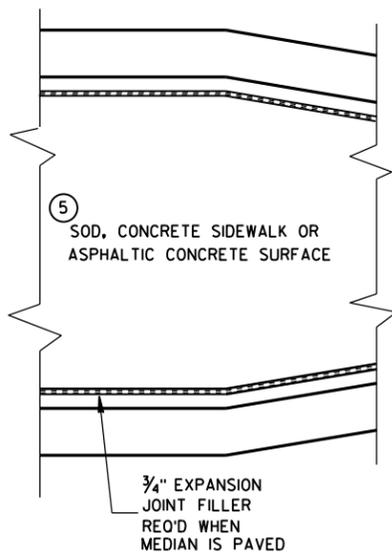
**LOOP DETECTOR INSTALLED  
IN BASE COURSE WITH  
PULL (SPLICE) BOX OFF  
ROADWAY (OPTION 2)**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

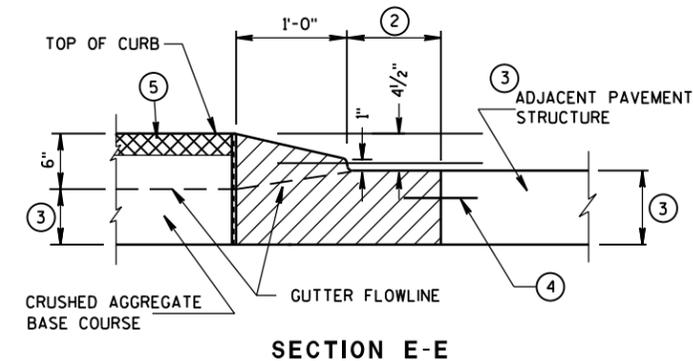
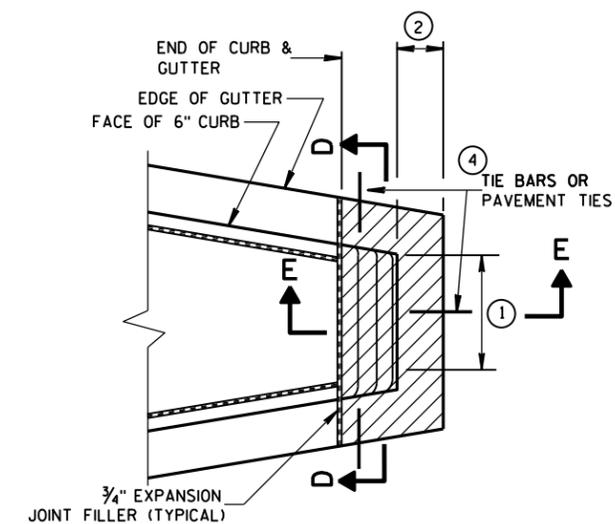
APPROVED  
September 2014 /S/ Ahmet Demirelek  
DATE STATE ELECTRICAL ENGINEER  
FHWA



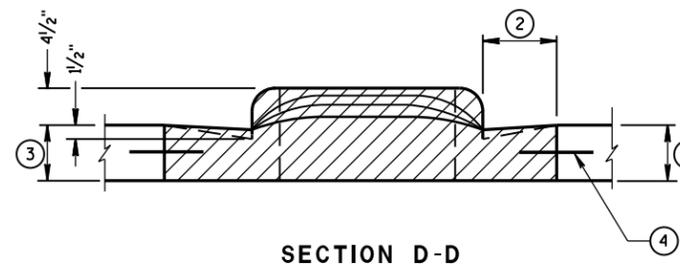
CONCRETE MEDIAN BLUNT NOSE DETAIL



CONCRETE MEDIAN SLOPED NOSE TYPE 1



CONCRETE MEDIAN SLOPED NOSE TYPE 2

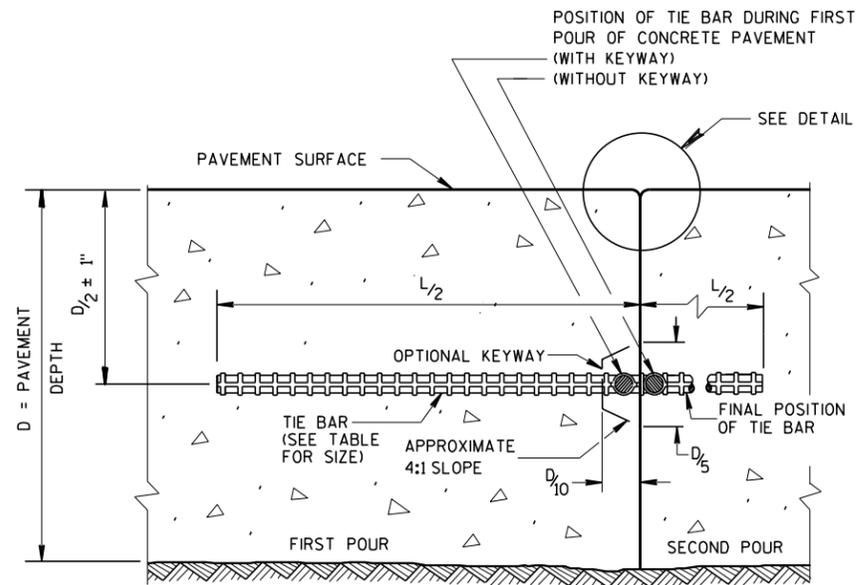


**GENERAL NOTES**

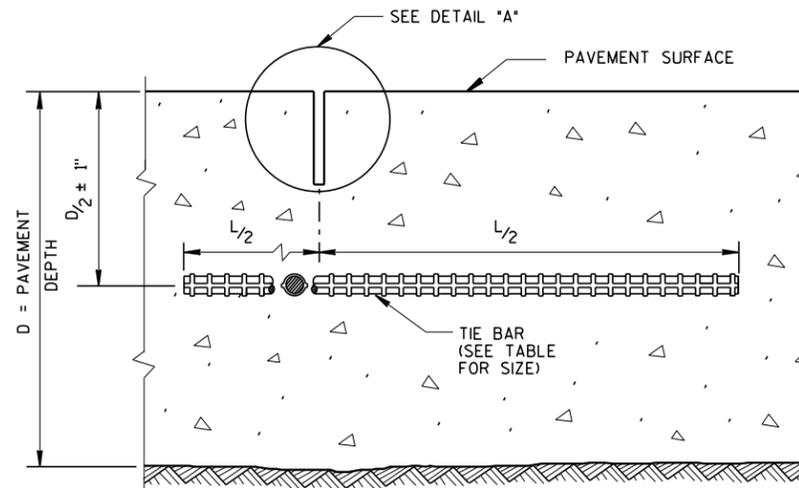
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- ① SEE PLAN FOR MEDIAN NOSE WIDTH AND RADIUS (FOR ROUND NOSE ALTERNATE).
- ② WIDTH OF GUTTER TO MATCH EXISTING ADJACENT GUTTER OR AS SPECIFIED ELSEWHERE IN THE PLAN.
- ③ DEPTH EQUAL TO ADJACENT PAVEMENT. ADJACENT PAVEMENT STRUCTURE DETAILS ARE SHOWN ON THE PLAN. TYPICAL OPTIONS ARE:
  - (1) NEW OR EXISTING CONCRETE PAVEMENT.
  - (2) ASPHALTIC CONCRETE PAVEMENT OVER NEW OR EXISTING CONCRETE BASE COURSE.
  - (3) ASPHALTIC CONCRETE PAVEMENT OVER CRUSHED AGGREGATE BASE COURSE.
- ④ TIE BARS OR PAVEMENT TIES REQUIRED IN NEW CONCRETE PAVEMENT OR CONCRETE BASE COURSE. TIE BARS SHALL BE NO. 4 X 2'-0" SPACED AT 2'-0" C-C.
- PAVEMENT TIES REQUIRED IN EXISTING CONCRETE BASE COURSE. PAVEMENT TIES SHALL BE NO. 6 X 1'-0" SPACED AT 3'-0" C-C INSTALLED ON A HORIZONTAL SKEW OF 6:1. THE DIRECTION OF SKEW SHALL ALTERNATE AFTER EVERY ONE OR TWO BARS.
- ⑤ SURFACE TYPE AND DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

<b>CONCRETE MEDIAN NOSE</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 6/8/2006 DATE	/s/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	



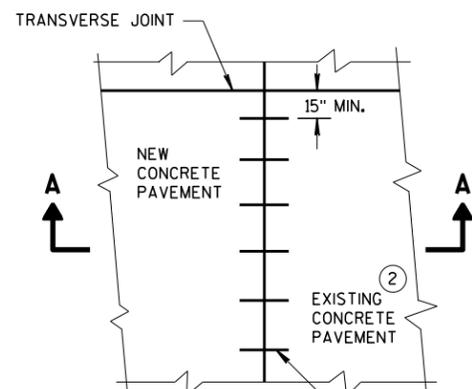
**CONSTRUCTION JOINT**



**SAWED JOINT**

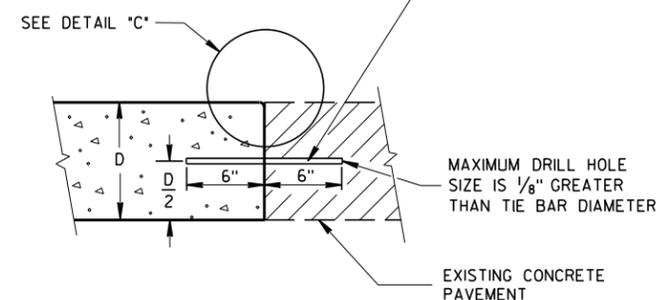
**GENERAL NOTES**

- CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.
- CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.
- ① ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.
- ② PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.

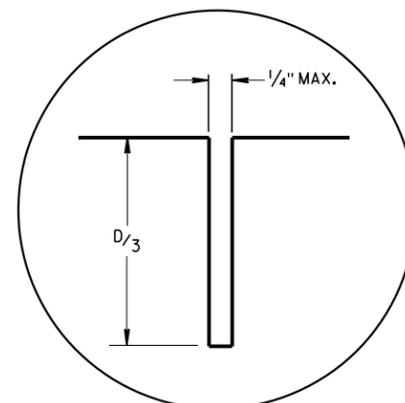


**PLAN VIEW**

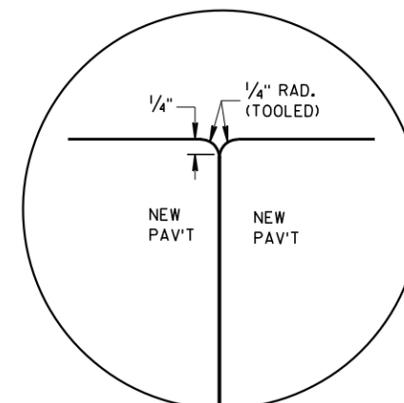
NO. 6 TIE BARS SPACED 30" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT. ①



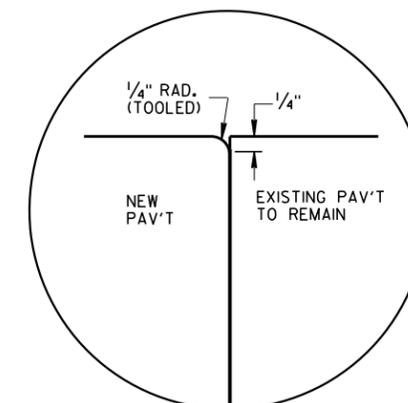
**SECTION A-A  
LONGITUDINAL CONSTRUCTION JOINT  
TIE BARS ANCHORED  
INTO EXISTING PAVEMENT**



**DETAIL "A"**



**DETAIL "B"**



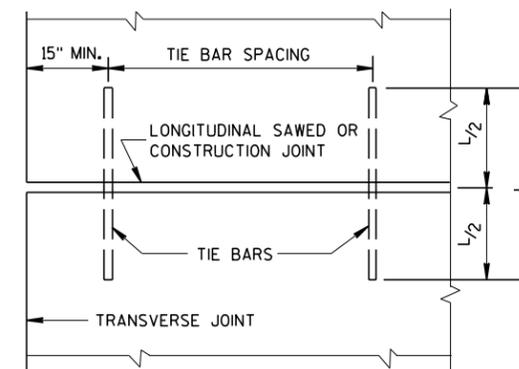
**DETAIL "C"**

**TIE BAR TABLE**

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

\* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

\*\* CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.



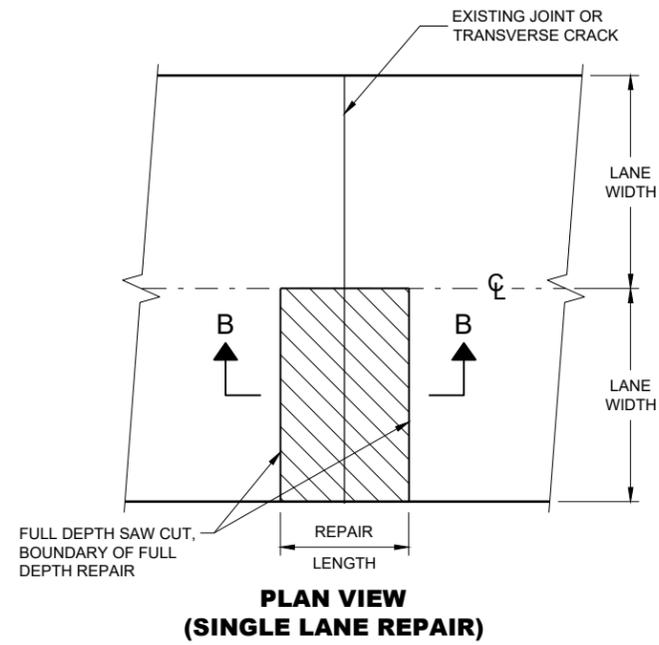
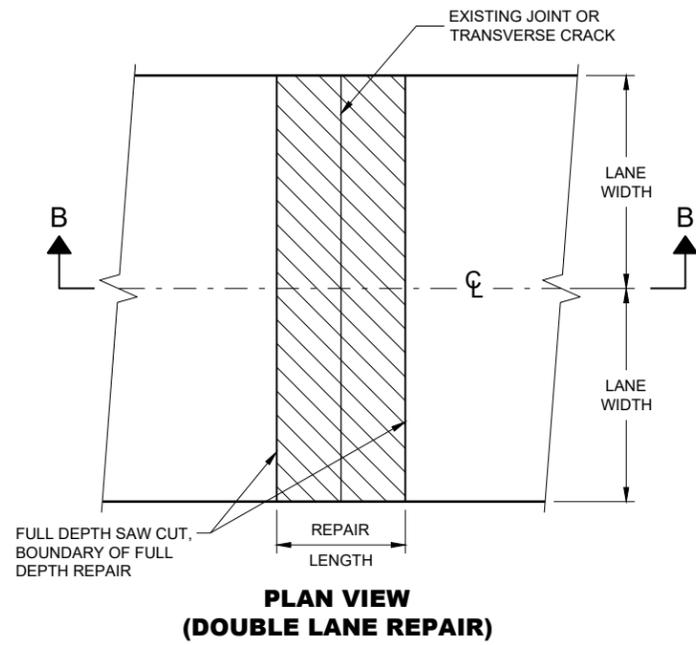
**PLAN VIEW  
SHOWING LOCATION OF TIE BARS**

**CONCRETE PAVEMENT  
LONGITUDINAL JOINTS AND TIES**

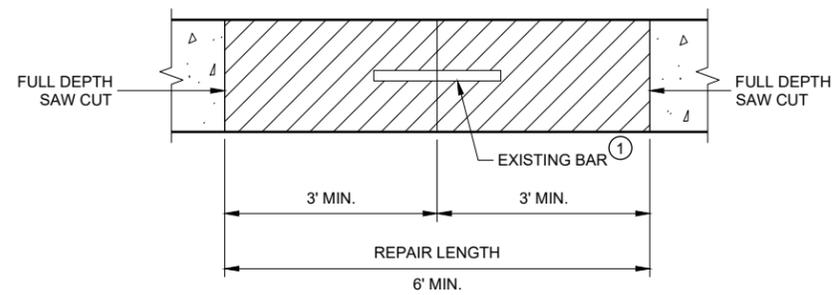
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

FHWA



**FULL DEPTH CONCRETE PAVEMENT REMOVAL**



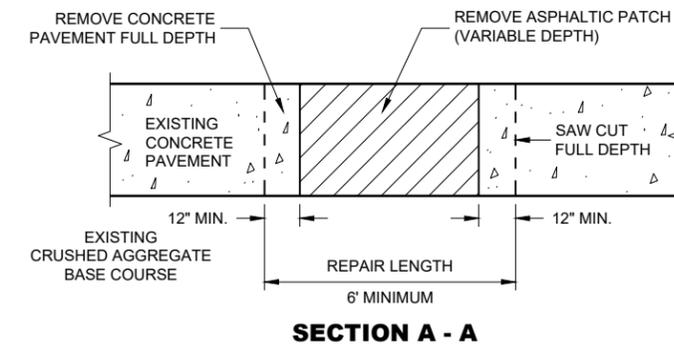
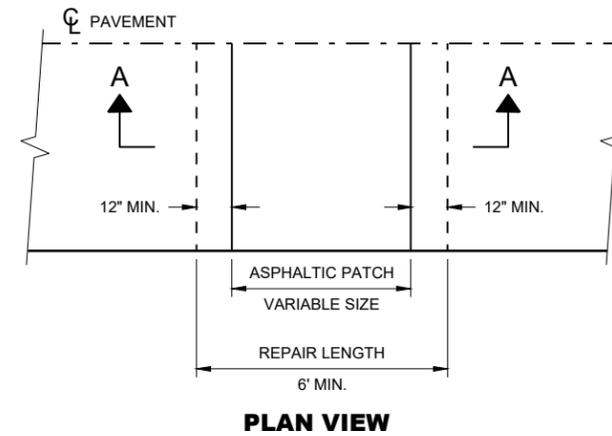
**GENERAL NOTES**

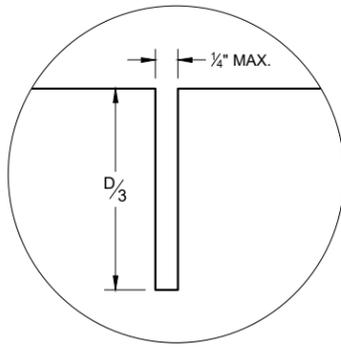
SAW CUT, DRILL, AND LIFT OUT EXISTING CONCRETE PAVEMENT WITHIN THE BOUNDARIES OF CONCRETE REPAIR AREAS. THE CONTRACTOR MAY MAKE ADDITIONAL SAW CUTS INSIDE THE REPAIR LIMITS TO REDUCE WEIGHT AND SIZE OF CONCRETE PIECES.

PROVIDE A 6 FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREA TO ADJACENT TRANSVERSE JOINT OR CRACK.

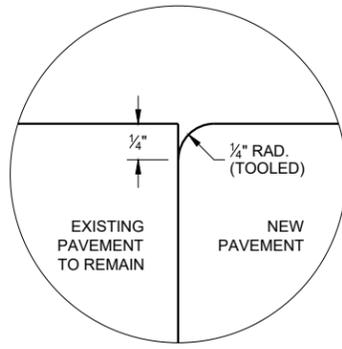
THE LENGTH OF THE REPAIRS MAY VARY FROM THE DIMENSIONS SHOWN IF THE EXISTING CONCRETE PAVEMENT IS NON-DOWELED AND THE PAVEMENT IS TO BE OVERLAID AFTER REPAIRING.

① DOWEL BARS MAY NOT BE PRESENT.



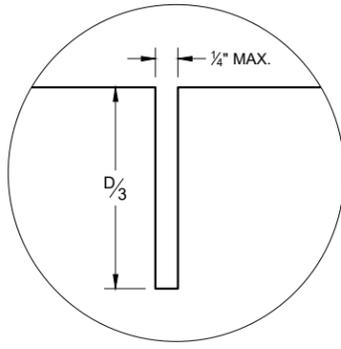


C1

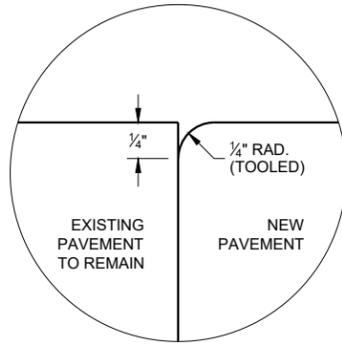


C2

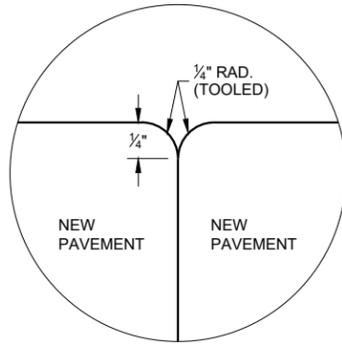
**TRANSVERSE JOINTS**



L1

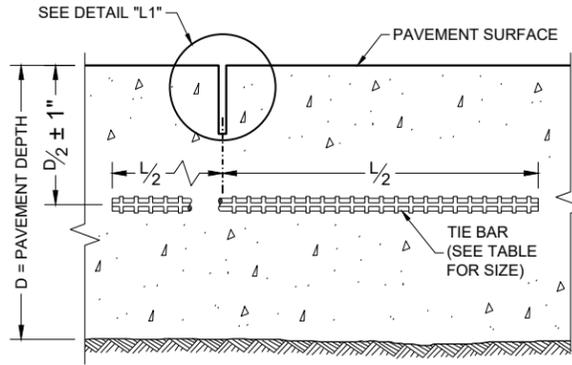


L2

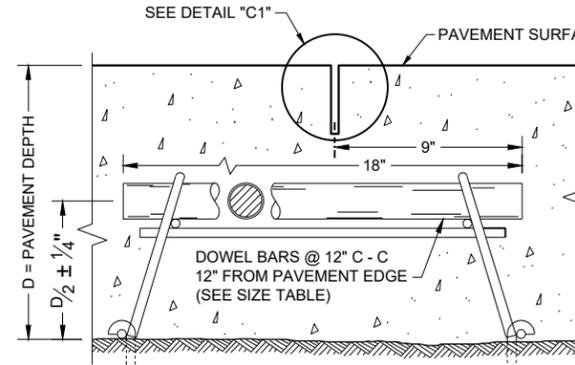


L3

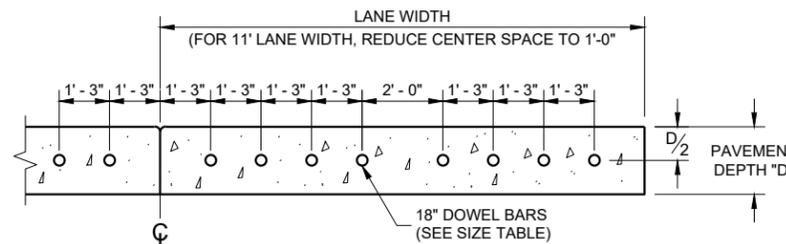
**LONGITUDINAL JOINTS**



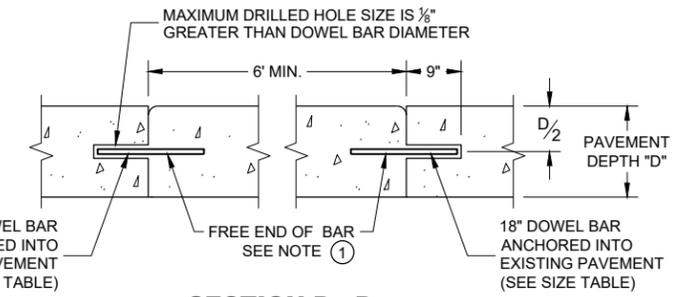
**SECTION C - C  
SAWED LONGITUDINAL JOINT**



**SECTION F - F  
DOWELED CONTRACTION JOINT**



**SECTION E - E  
DRILLED DOWEL BAR CONSTRUCTION JOINT**



**SECTION D - D**

**GENERAL NOTES**

INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

CONCRETE PAVEMENT REPAIRS OF EXISTING NON-DOWELED CONCRETE PAVEMENTS DO NOT NEED TO BE DOWELED.

ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

FOR MULTI-LANE CONCRETE PAVEMENT REPLACEMENTS, PROVIDE A MINIMUM DISTANCE OF 15 INCHES FROM ALL TRANSVERSE JOINTS OR EDGES OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

- ① APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.

**TIE BAR TABLE**

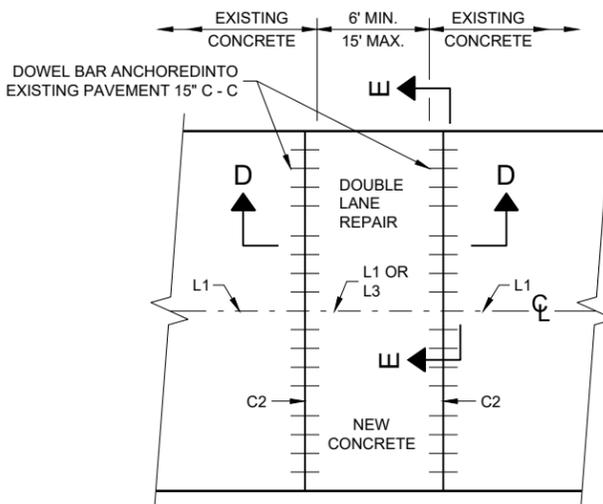
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4*	30"	24" **

\* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

\*\* CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

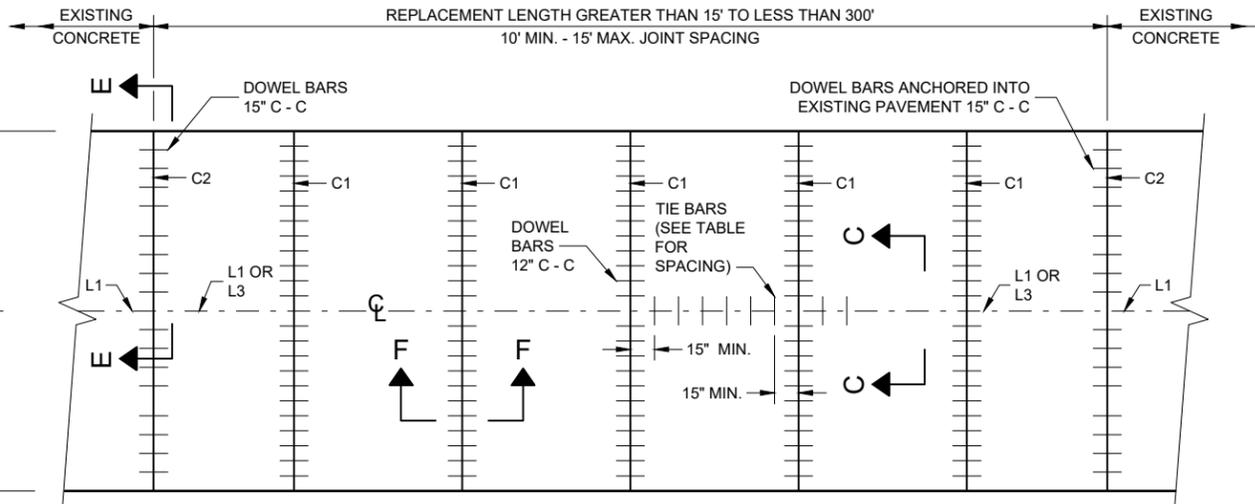
**PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE**

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	DRILLED DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 1/2", 6", 6 1/2"	NONE	NONE	12'
7", 7 1/2"	1"	1"	14'
8", 8 1/2"	1 1/4"	1 1/4"	15'
9" & ABOVE	1 1/4"	1 1/4"	15'



**PLAN VIEW**

**MULTILANE CONCRETE PAVEMENT REPAIR**

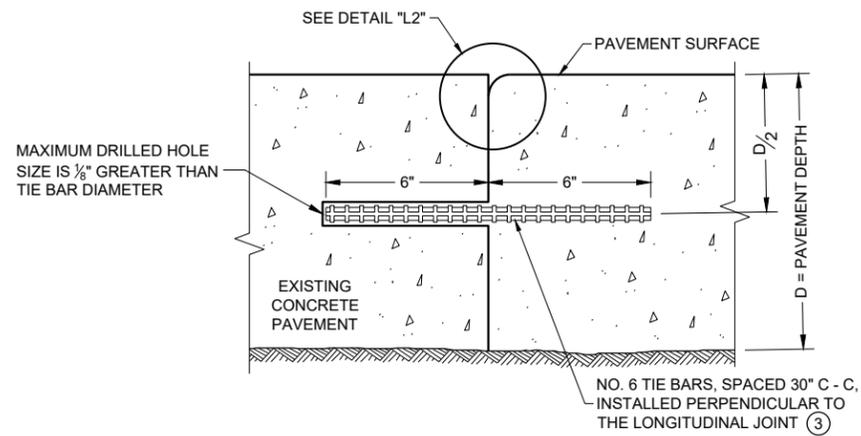


**PLAN VIEW**

**MULTILANE CONCRETE PAVEMENT REPLACEMENT**

**CONCRETE PAVEMENT REPAIR AND REPLACEMENT**

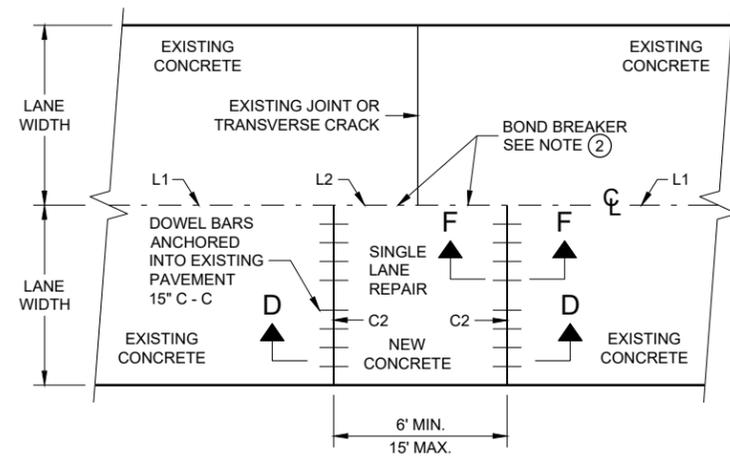
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



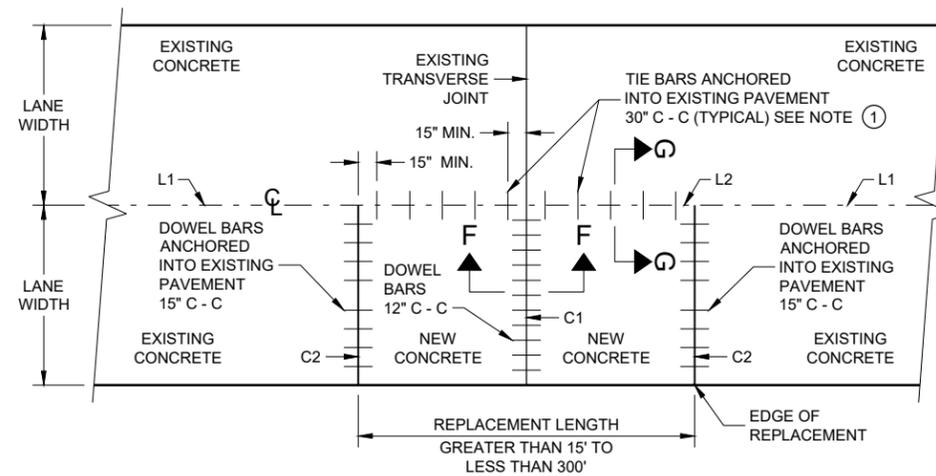
**SECTION G - G**  
**TIE BARS ANCHORED INTO EXISTING PAVEMENT**

**GENERAL NOTES**

- ① WITH THE APPROVAL OF THE ENGINEER, FOR SINGLE LANE PAVEMENT REPLACEMENTS LESS THAN 30 FEET IN LENGTH, THE CONTRACTOR MAY INSTALL DRILLED TIE BARS ON 6:1 SKEW HORIZONTALLY, DIRECTION OF SKEW ALTERNATING WITH EACH SUCCESSIVE BAR. DRIVE SKEWED TIE BARS TO A DEPTH OF 6 INCHES IN A HOLE OF SUCH A DIAMETER AS TO PROVIDE A TIGHT DRIVEN FIT.
- ② USE AN ENGINEER APPROVED BOND BREAKER (E.G. RELEASE AGENT, CURING COMPOUND) FOR SINGLE LANE REPAIRS UP TO 15 FEET IN LENGTH.
- ③ ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



**PLAN VIEW**  
**SINGLE LANE CONCRETE PAVEMENT REPAIR**



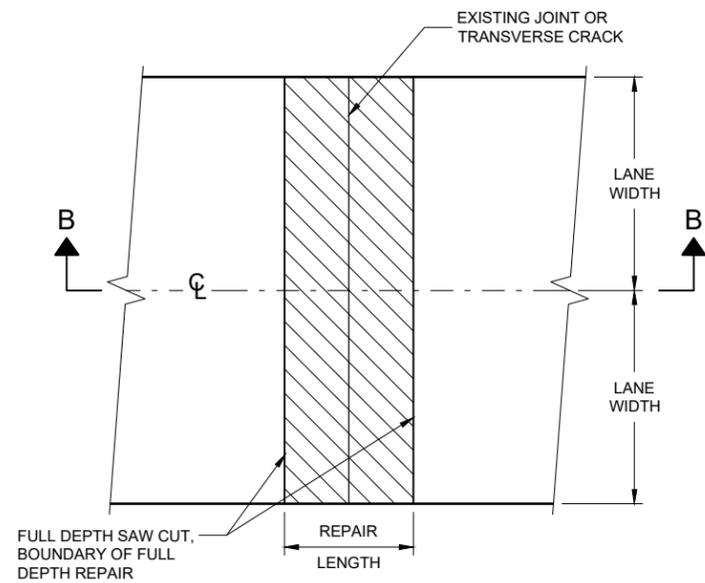
**PLAN VIEW**  
**SINGLE LANE CONCRETE PAVEMENT REPLACEMENT**

**CONCRETE REPAIR AND REPLACEMENT**

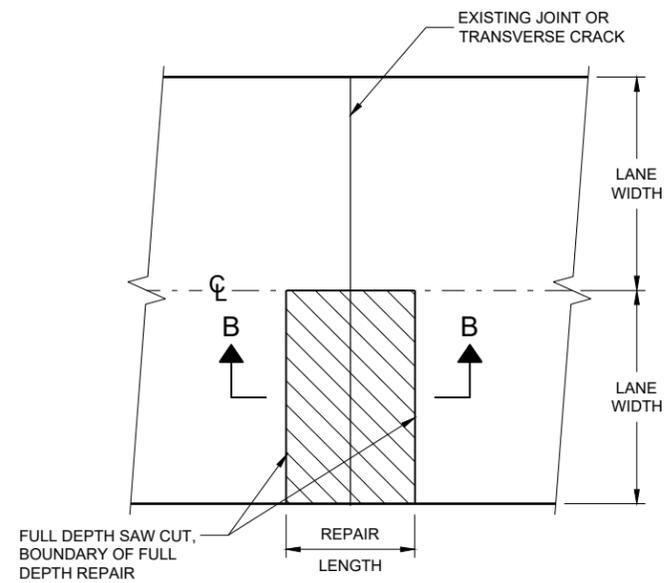
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
DATE: May 2022 /S/ Peter Kemp P.E.  
PAVEMENT SUPERVISOR

FHWA

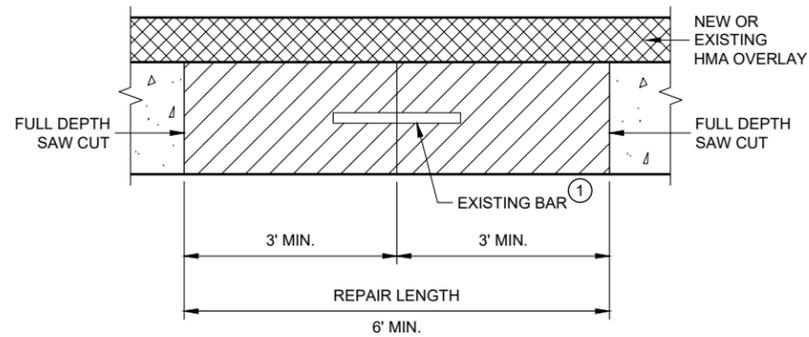


**PLAN VIEW  
DOUBLE LANE REPAIR**



**PLAN VIEW  
SINGLE LANE REPAIR**

**FULL DEPTH CONCRETE PAVEMENT REMOVAL**



**SECTION B - B  
CONCRETE REMOVAL**

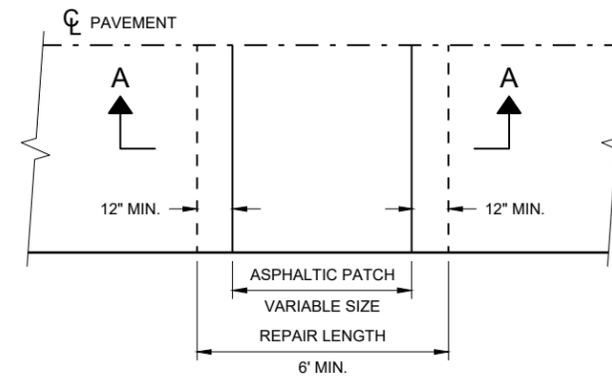
**GENERAL NOTES**

SAW CUT, DRILL, AND LIFT OUT EXISTING CONCRETE PAVEMENT WITHIN THE BOUNDARIES OF CONCRETE REPAIR AREAS. THE CONTRACTOR MAY MAKE ADDITIONAL SAW CUTS INSIDE THE REPAIR LIMITS TO REDUCE WEIGHT AND SIZE OF CONCRETE PIECES.

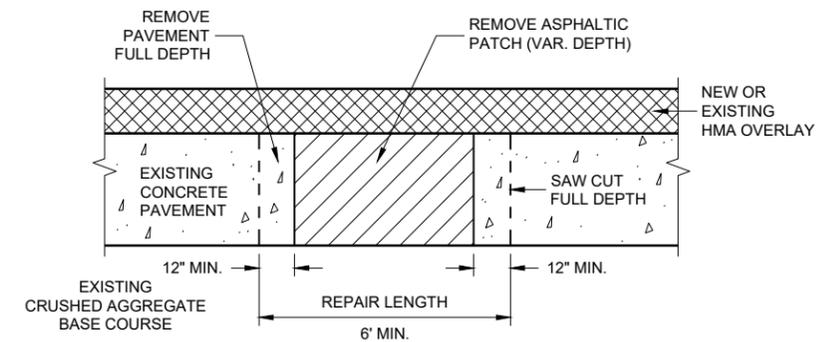
PROVIDE A 6 FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREA TO ADJACENT TRANSVERSE JOINT OR CRACK.

THE LENGTH OF THE REPAIRS MAY VARY FROM THE DIMENSIONS SHOWN IF THE EXISTING CONCRETE PAVEMENT IS NON-DOWELED AND THE PAVEMENT IS TO BE OVERLAID AFTER REPAIRING.

① DOWEL BARS MAY NOT BE PRESENT.



**PLAN VIEW**

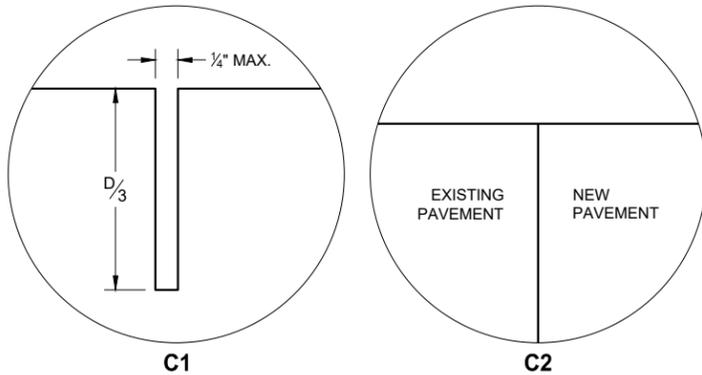


**SECTION A - A**

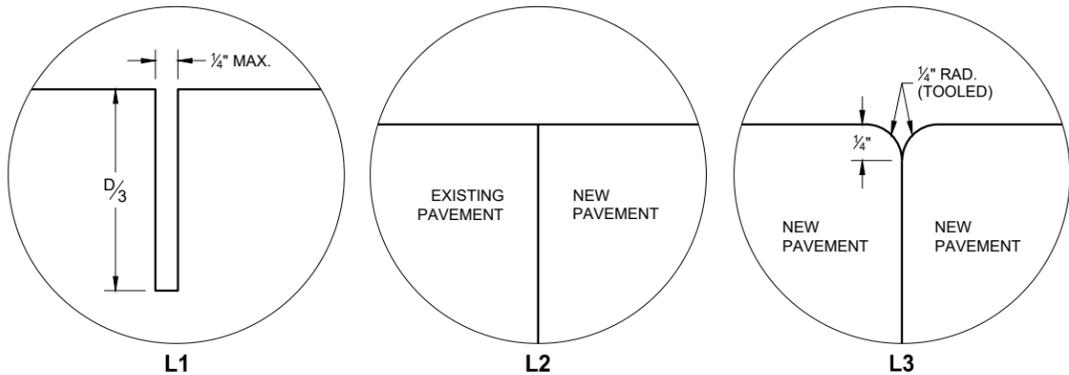
**HMA PATCH REMOVAL**

**BASE PATCHING CONCRETE**

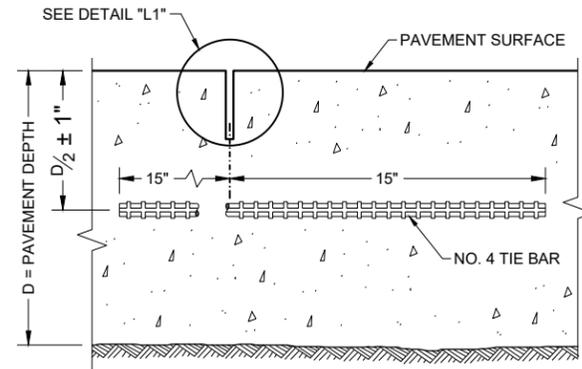
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



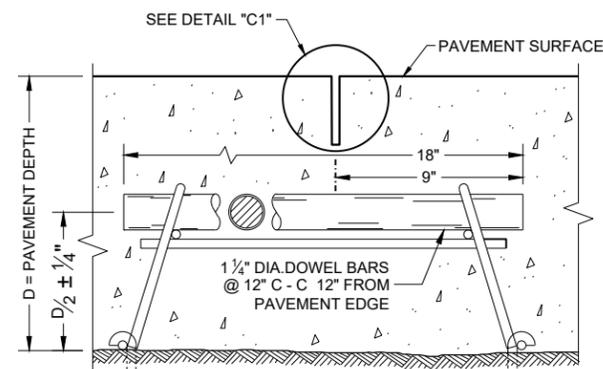
**TRANSVERSE JOINTS**



**LONGITUDINAL JOINTS**



**SECTION C - C  
SAWED LONGITUDINAL JOINT**



**SECTION F - F  
CONTRACTION JOINT**

**GENERAL NOTES**

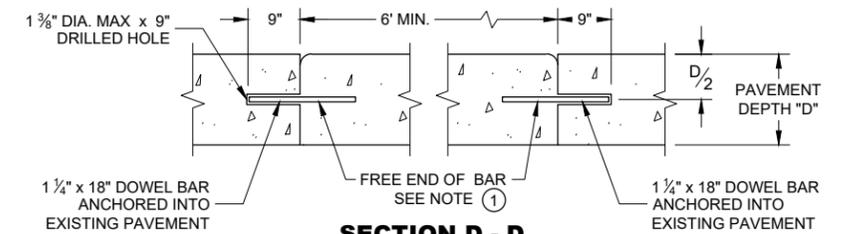
INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

CONCRETE BASE PATCHES OF EXISTING NON-DOWELED CONCRETE PAVEMENTS DO NOT NEED TO BE DOWELED.

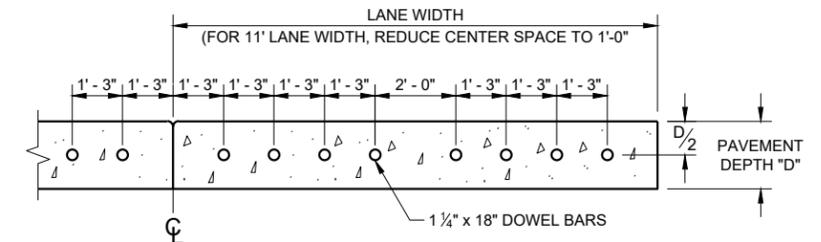
ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

PROVIDE A MINIMUM DISTANCE OF 15 INCHES FROM ALL TRANSVERSE JOINTS OR EDGES OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

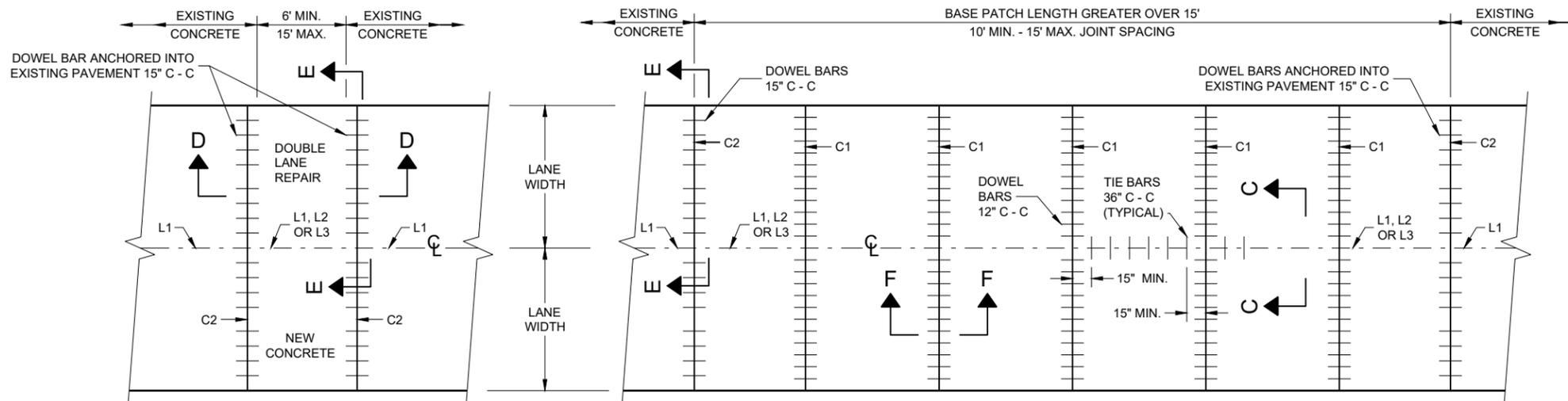
- ① APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.



**SECTION D - D**



**SECTION E - E  
SPACING OF DOWEL BARS  
ANCHORED INTO EXISTING PAVEMENT**

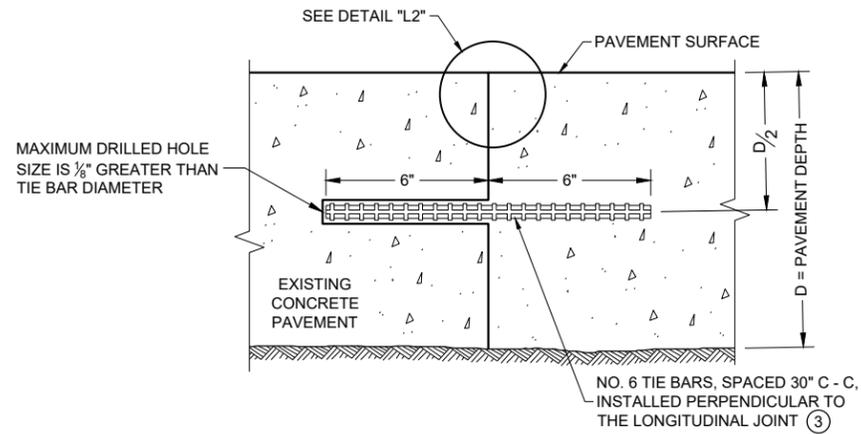


**PLAN VIEW  
MULTILANE CONCRETE BASE PATCH  
15' MAXIMUM LENGTH**

**PLAN VIEW  
MULTILANE CONCRETE BASE PATCH  
GREATER THAN 15' IN LENGTH**

**BASE PATCHING CONCRETE**

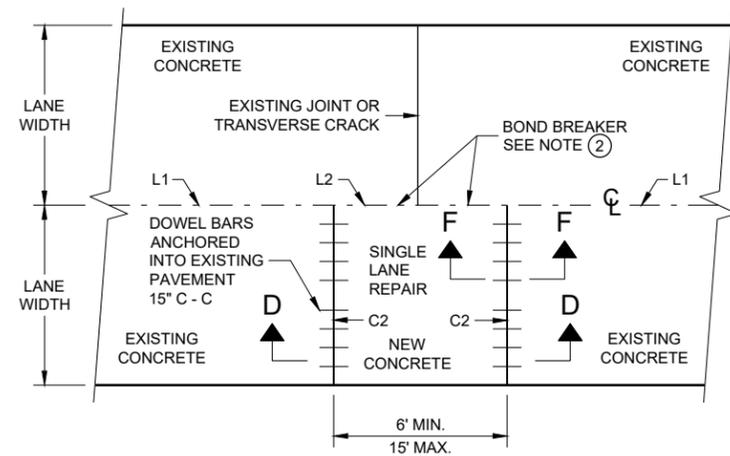
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



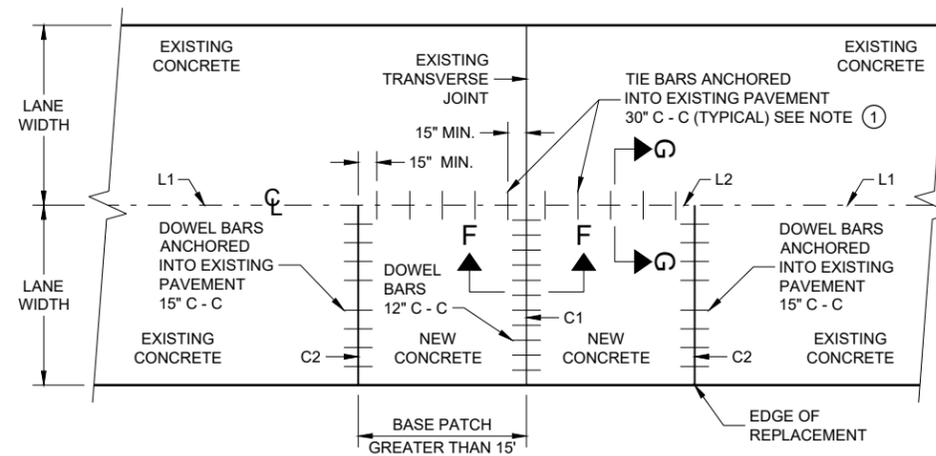
**SECTION G - G**  
**TIE BARS ANCHORED INTO EXISTING PAVEMENT**

**GENERAL NOTES**

- ① WITH THE APPROVAL OF THE ENGINEER, FOR SINGLE LANE PAVEMENT REPLACEMENTS LESS THAN 30 FEET IN LENGTH, THE CONTRACTOR MAY INSTALL DRILLED TIE BARS ON 6:1 SKEW HORIZONTALLY, DIRECTION OF SKEW ALTERNATING WITH EACH SUCCESSIVE BAR. DRIVE SKEWED TIE BARS TO A DEPTH OF 6 INCHES IN A HOLE OF SUCH A DIAMETER AS TO PROVIDE A TIGHT DRIVEN FIT.
- ② USE AN ENGINEER APPROVED BOND BREAKER (E.G. RELEASE AGENT, CURING COMPOUND) FOR SINGLE LANE REPAIRS UP TO 15 FEET IN LENGTH.
- ③ ANCHOR TIE BARS INTO DRILLED HOES WITH AN EPOXY.



**PLAN VIEW**  
**SINGLE LANE CONCRETE BASE PATCH**  
**15' MAXIMUM LENGTH**



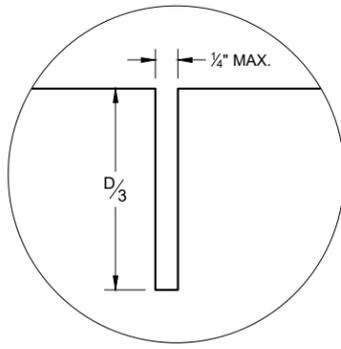
**PLAN VIEW**  
**SINGLE LANE CONCRETE BASE PATCH**  
**GREATER THAN 15' LENGTH**

**BASE PATCHING CONCRETE**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

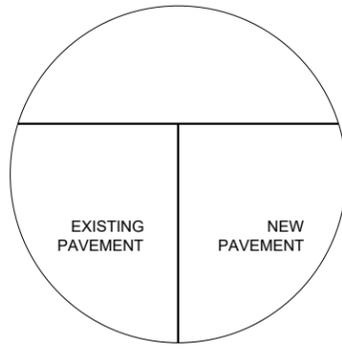
APPROVED  
March 2018 /S/ Peter Kemp, P.E.  
DATE PAVEMENT SUPERVISOR

FHWA

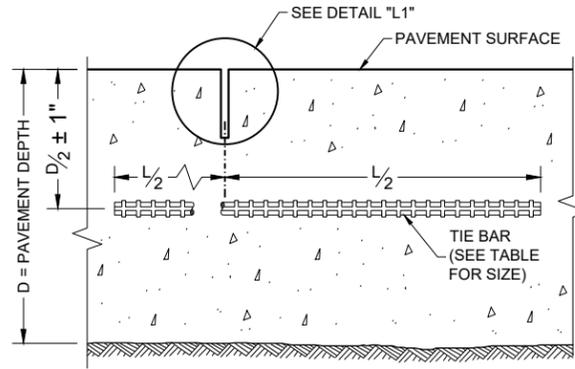


C1

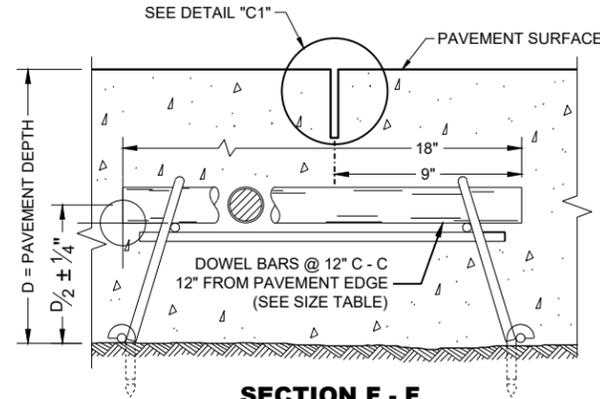
**TRANSVERSE JOINTS**



C2



**SECTION C - C  
SAWED JOINT**

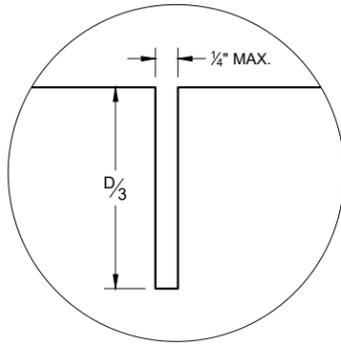


**SECTION F - F  
CONTRACTION JOINT**

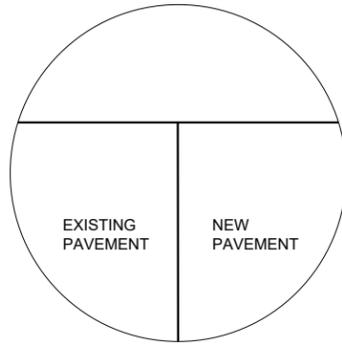
**GENERAL NOTES**

ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.  
 PROVIDE A MINIMUM DISTANCE OF 15 INCHES FROM AN EXISTING TRANSVERSE JOINT OR EDGE OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

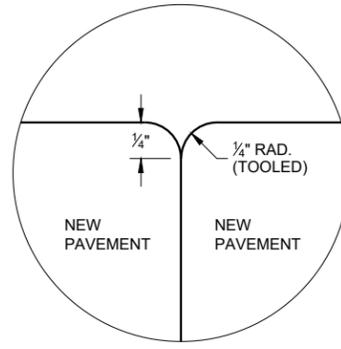
- ① INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.
- ② APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.



L1

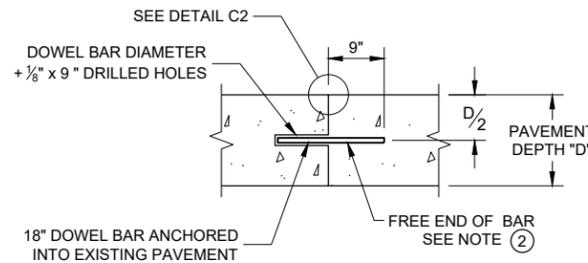


L2

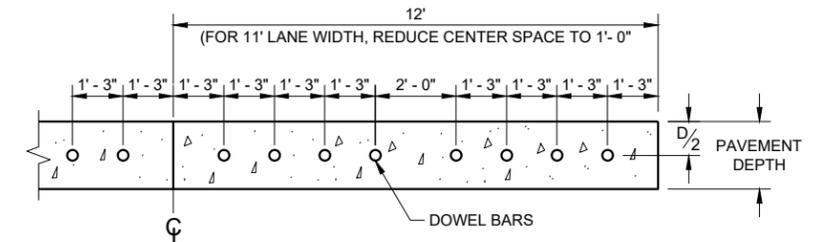


L3

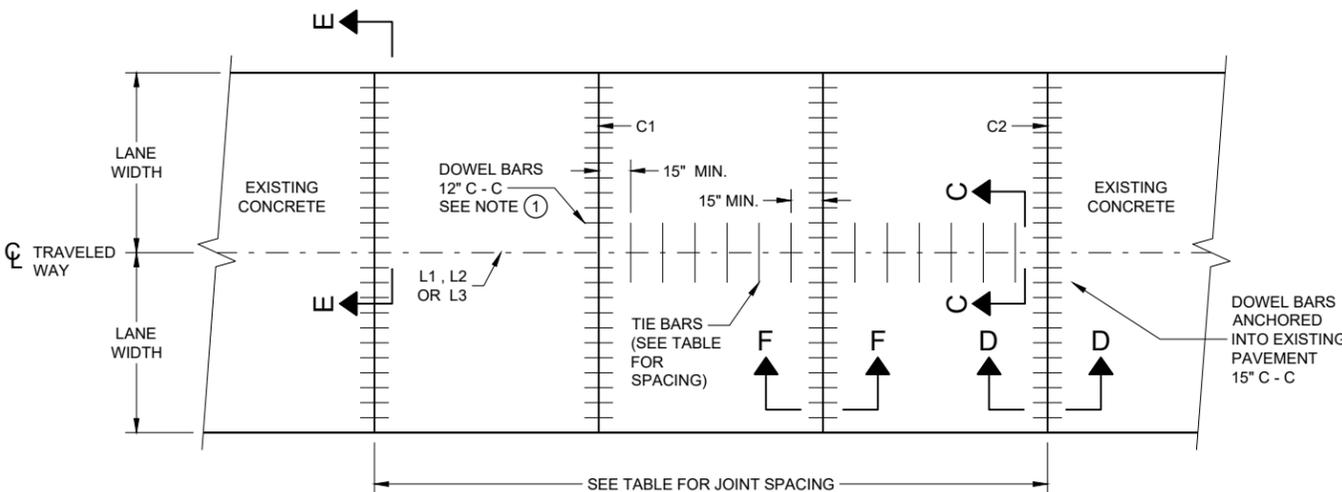
**LONGITUDINAL JOINTS**



**SECTION D - D**



**SECTION E - E  
SPACING OF DOWEL BARS  
ANCHORED INTO EXISTING PAVEMENT**



**PLAN VIEW  
CONCRETE BASE  
CONTRACTION JOINT LOCATIONS**

**TIE BAR TABLE**

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4*	30"	24" **

\* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

\*\* CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

**PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE**

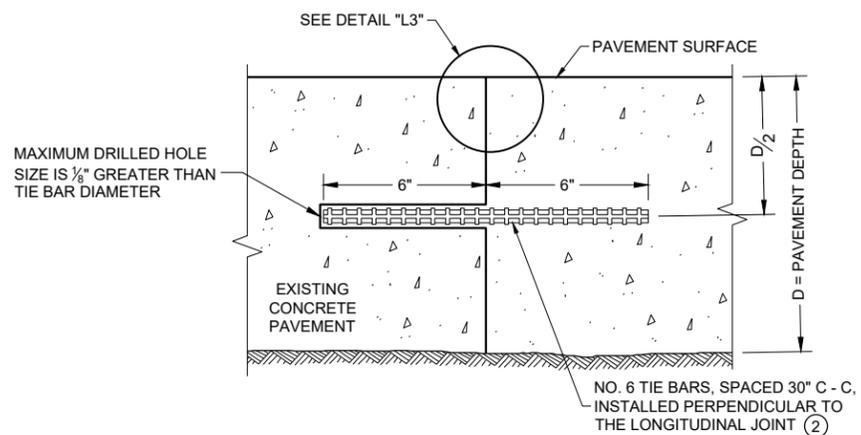
PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 1/2", 6", 6 1/2"	NONE	12'
7", 7 1/2"	1"	14'
8", 8 1/2"	1 1/4"	15'
9" & ABOVE	1 1/4"	15'

**CONCRETE BASE**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

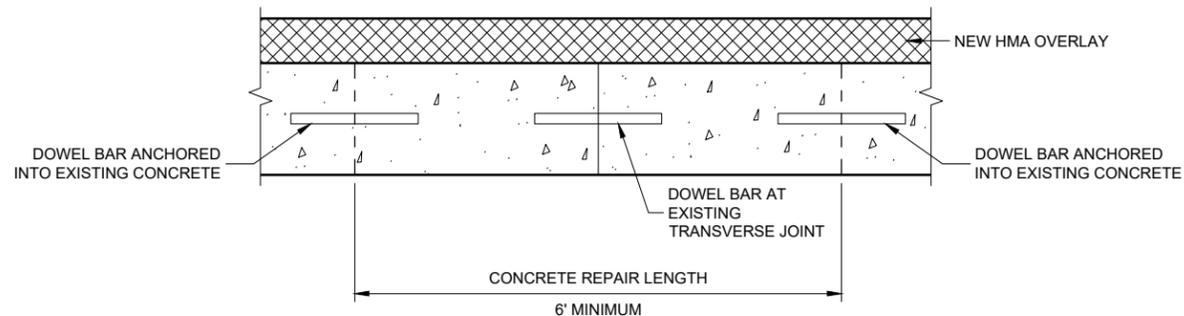
**GENERAL NOTES**

- ① USE AN ENGINEER APPROVED BOND BREAKER (E.G. RELEASE AGENT, CURING COMPOUND) AT THE LONGITUDINAL JOINT IN LIEU OF TIE BARS FOR SINGLE LANE CONCRETE BASE REPAIRS UP TO 15 FEET IN LENGTH.
- ② ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.
- ③ PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.

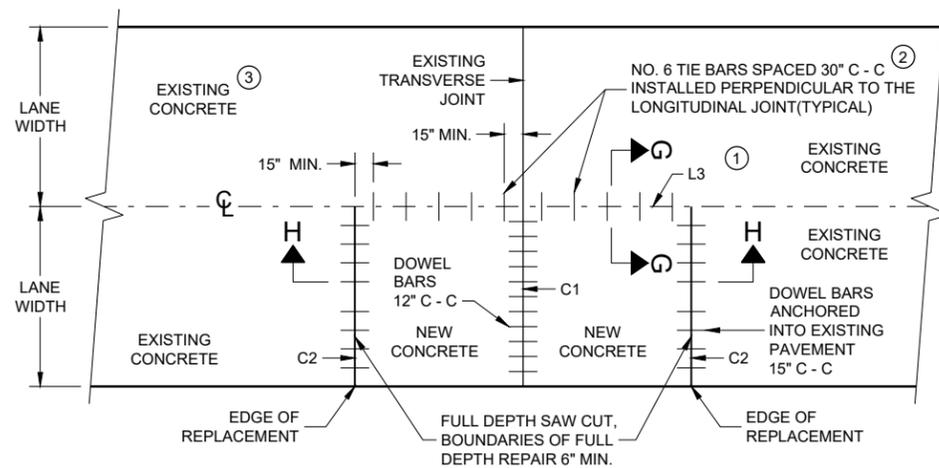


**SECTION G - G**

**TIE BARS ANCHORED INTO EXISTING PAVEMENT**



**SECTION H - H**



**PLAN VIEW**

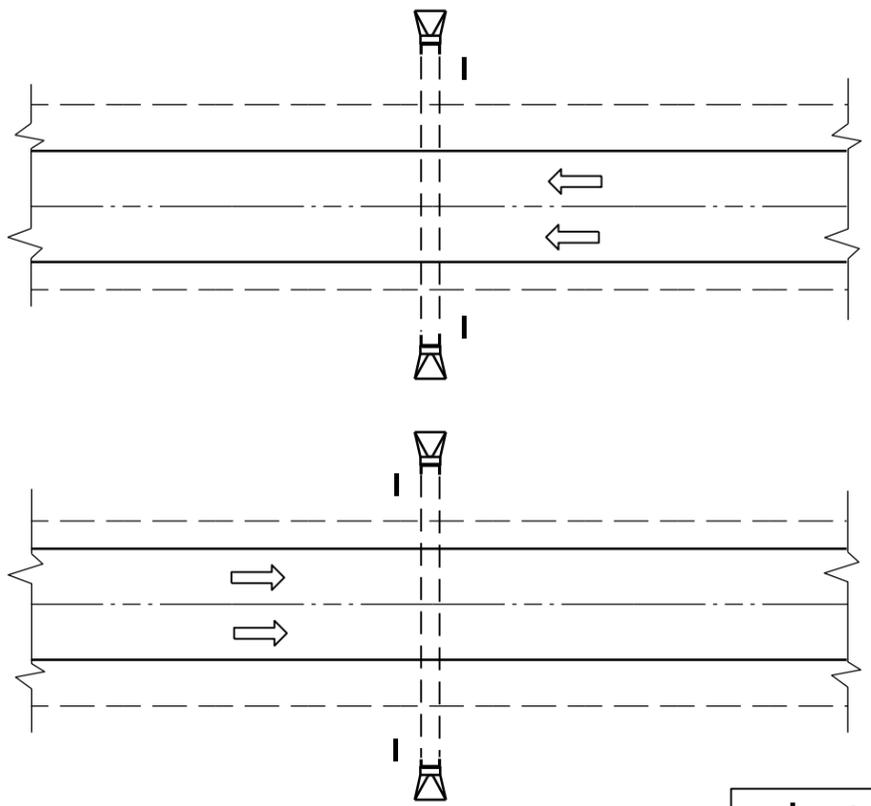
**SINGLE LANE CONCRETE BASE REPAIR**

**CONCRETE BASE**

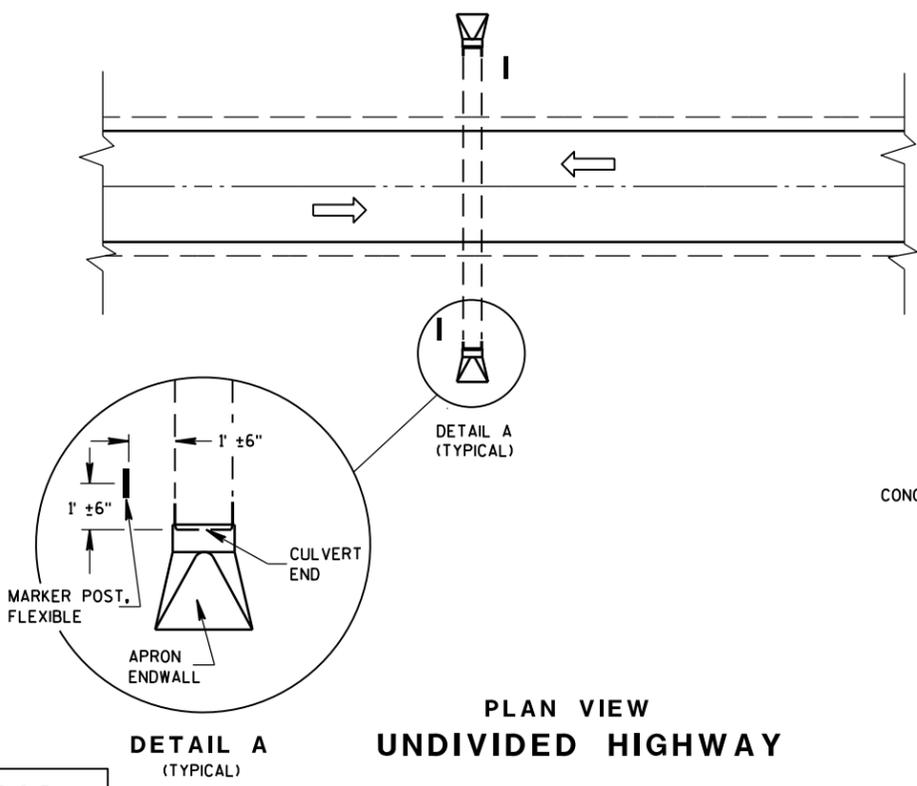
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2022 /S/ Peter Kemp P.E.  
DATE PAVEMENT SUPERVISOR

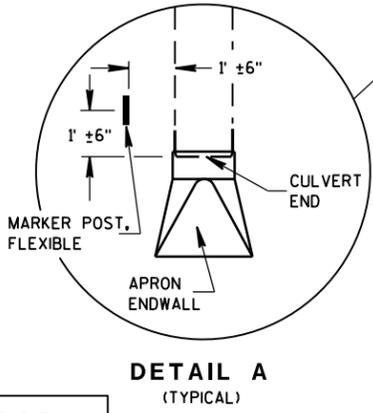
FHWA



PLAN VIEW  
DIVIDED HIGHWAY



PLAN VIEW  
UNDIVIDED HIGHWAY

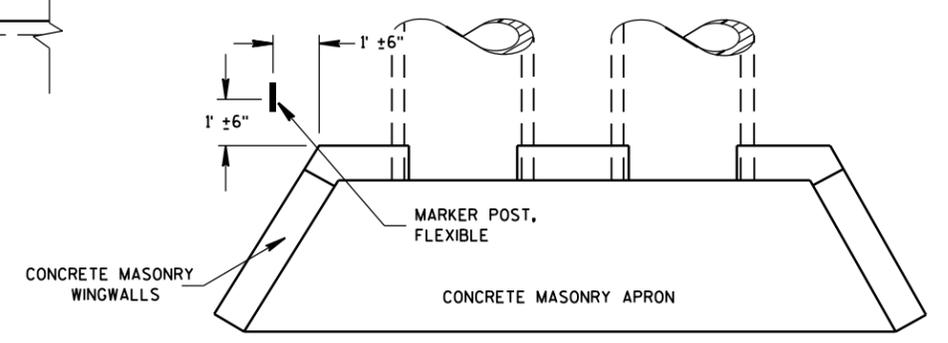


MARKER POST, FLEXIBLE  
DIRECTION OF TRAFFIC FLOW

FLEXIBLE MARKER POST LOCATION

GENERAL NOTES

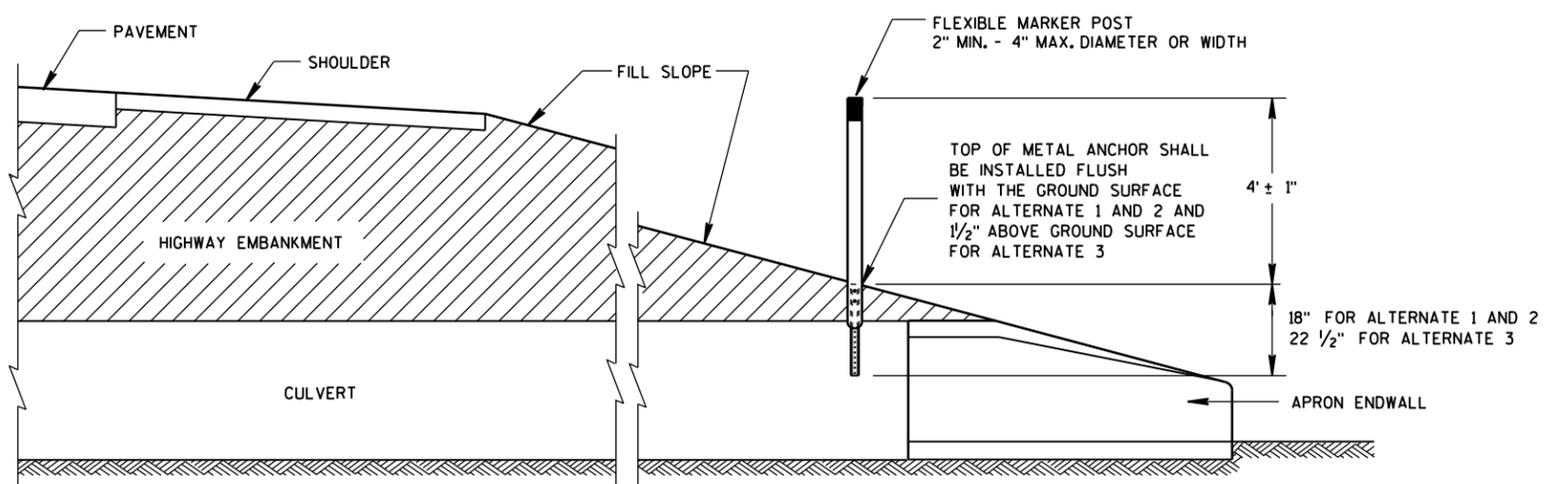
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



PLAN VIEW  
CONCRETE MASONRY ENDWALLS FOR  
CULVERT PIPE AND PIPE ARCH

6

6

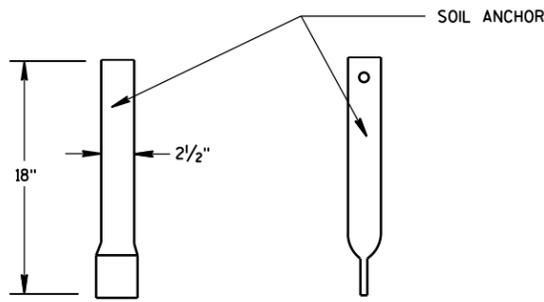
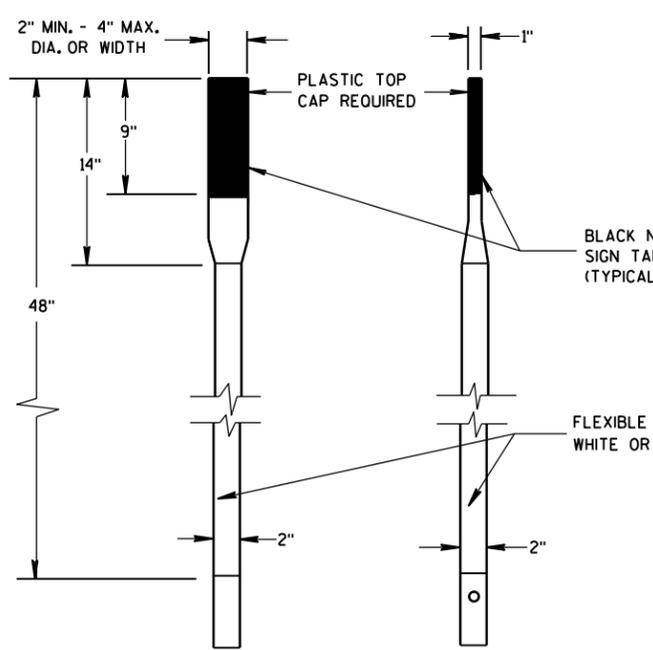


CROSS SECTION  
FLEXIBLE MARKER POST

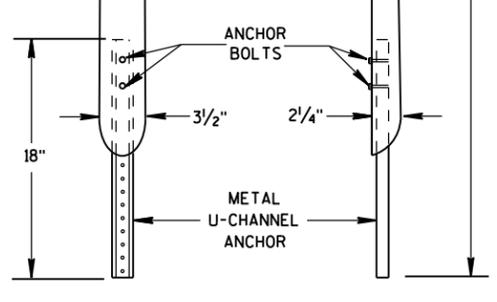
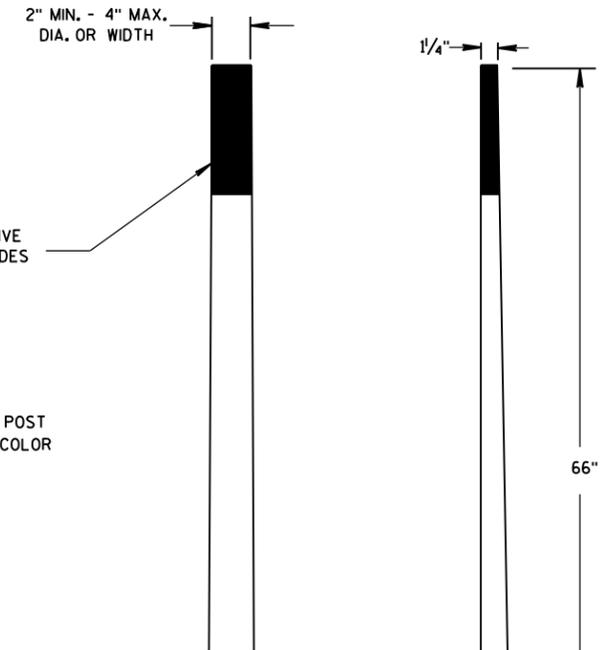
FLEXIBLE MARKER POST  
FOR CULVERT END  
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

S.D.D. 15 A 3-2a

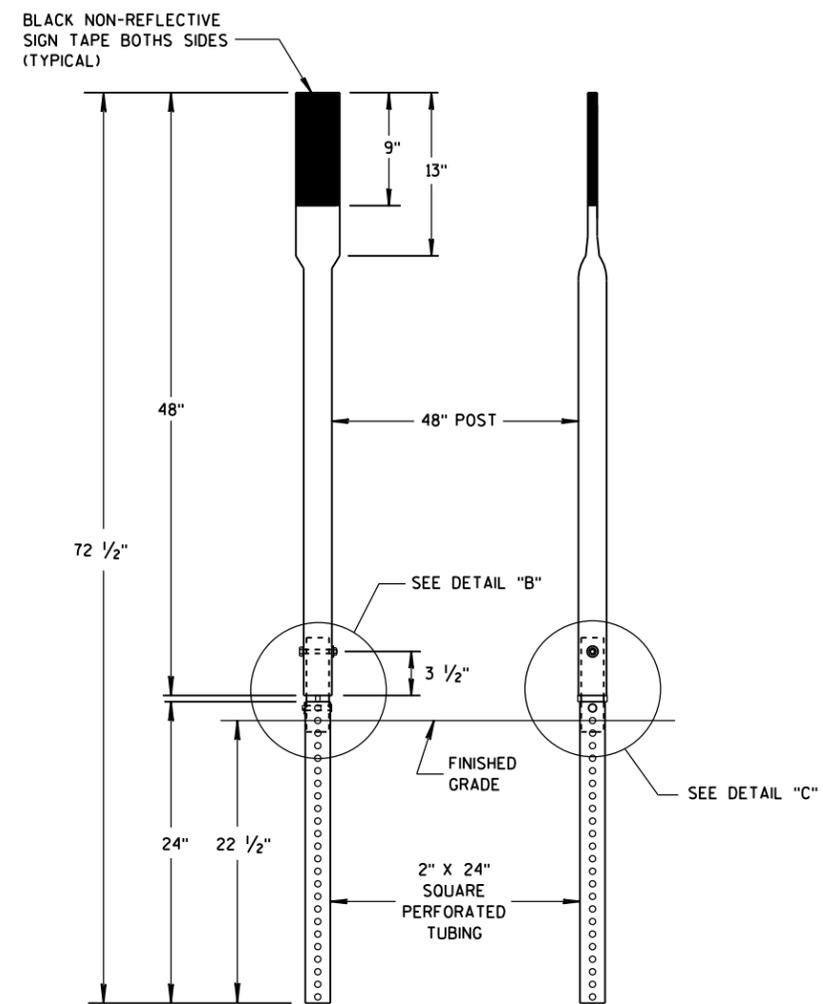
S.D.D. 15 A 3-2a



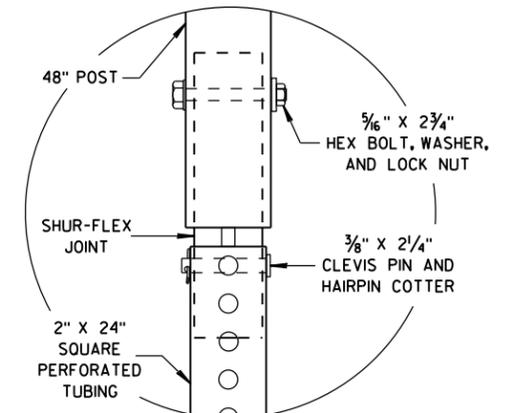
FRONT VIEW SIDE VIEW  
ALTERNATE 1



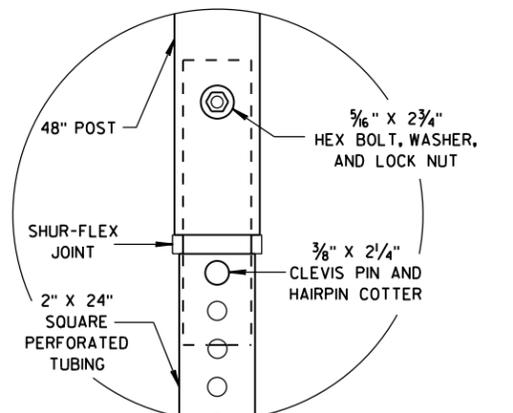
FRONT VIEW SIDE VIEW  
ALTERNATE 2



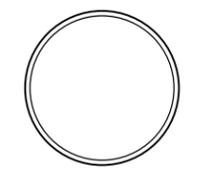
FRONT VIEW SIDE VIEW  
ALTERNATE 3



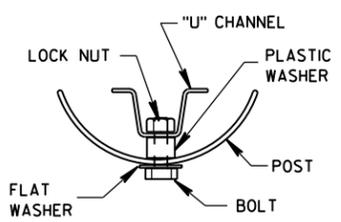
DETAIL B



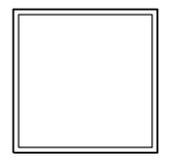
DETAIL C



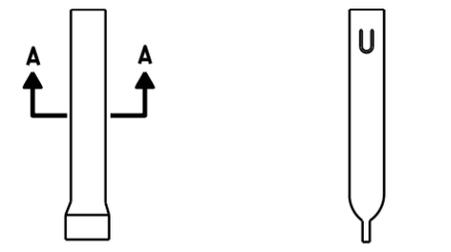
SECTION A-A



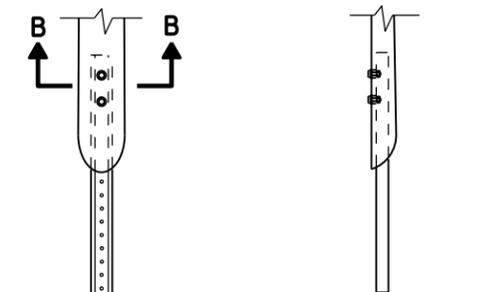
SECTION B-B



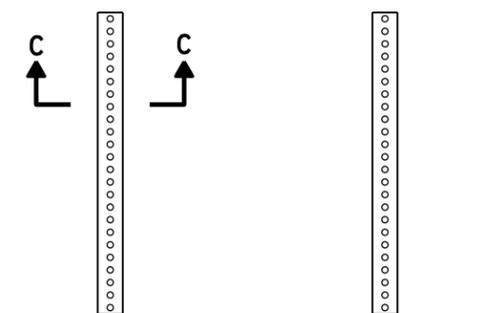
SECTION C-C



FRONT VIEW SIDE VIEW  
ALTERNATE 1



FRONT VIEW SIDE VIEW  
ALTERNATE 2



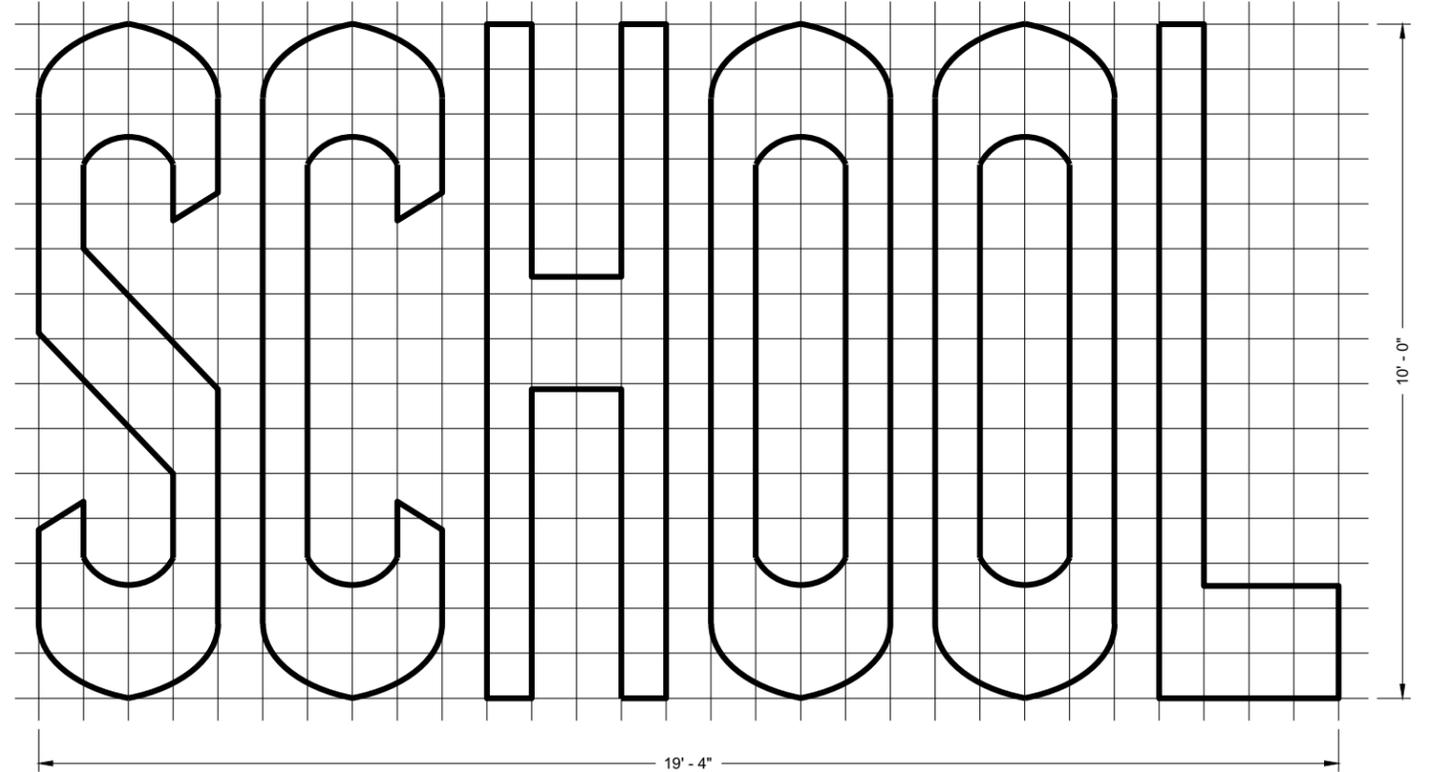
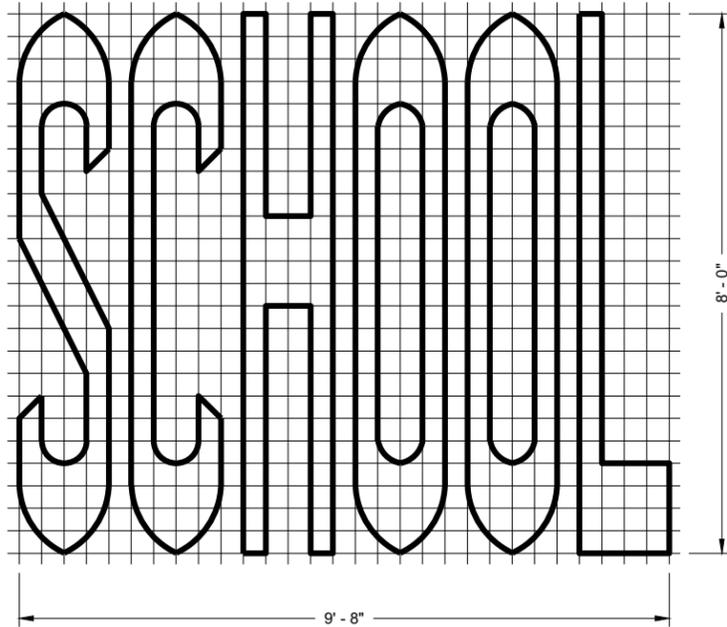
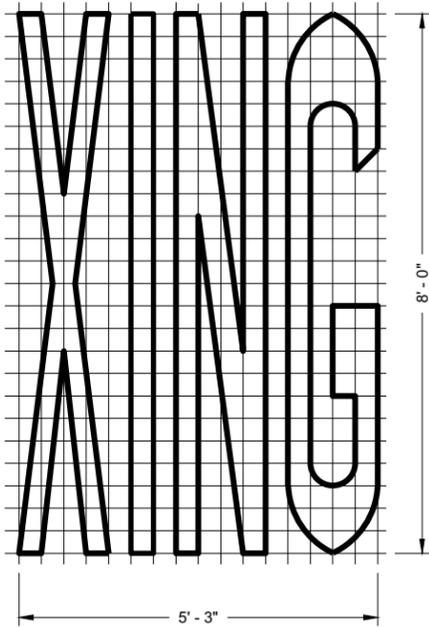
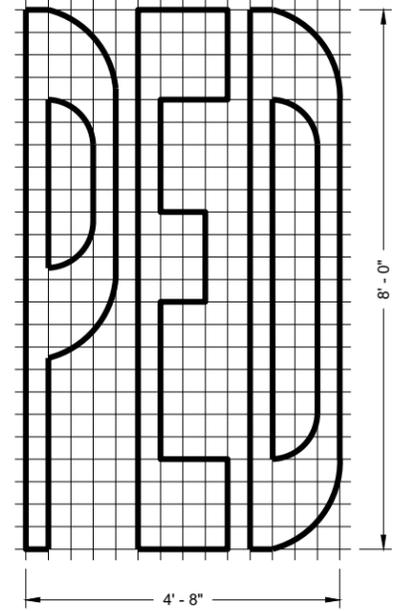
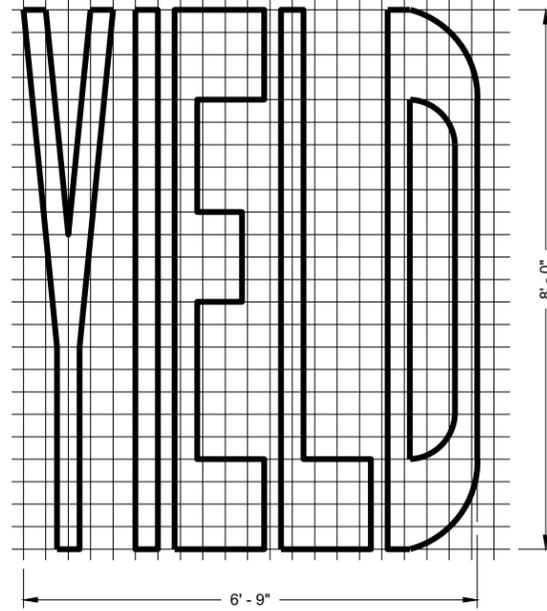
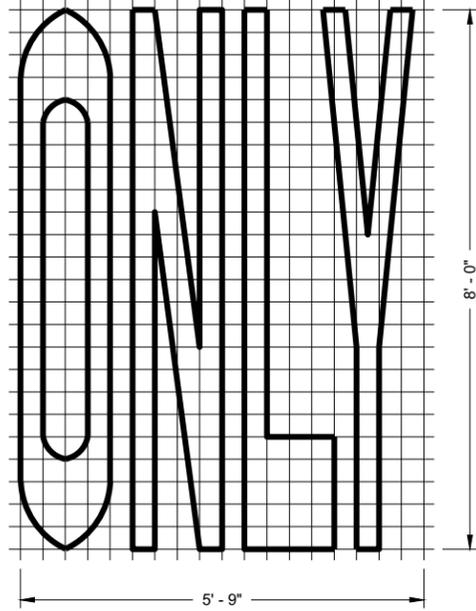
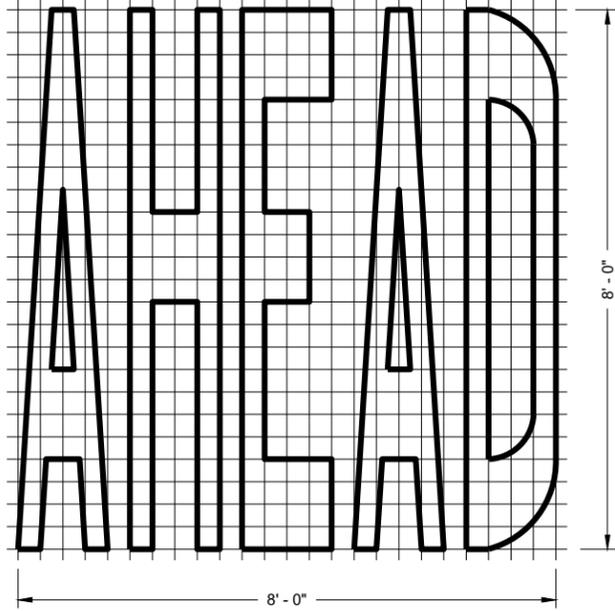
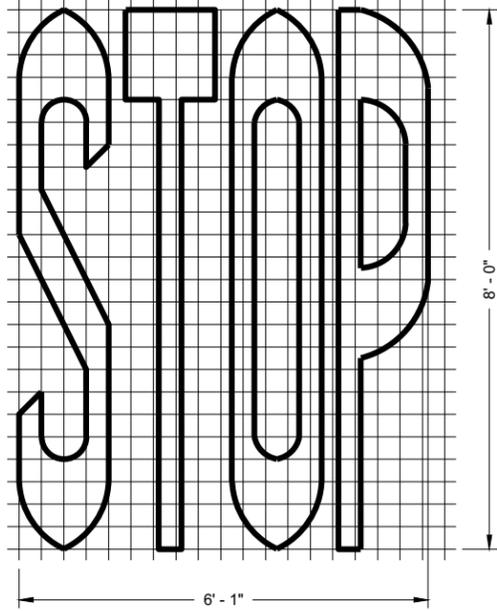
FRONT VIEW SIDE VIEW  
ALTERNATE 3

**FLEXIBLE MARKER POST ANCHORS**

**FLEXIBLE MARKER POST FOR CULVERT END**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
10/1/2012 DATE /S/ Travis Feltes  
STATE TRAFFIC ENGINEER OF DESIGN  
FHWA



SINGLE LANE

TWO - LANE

**GENERAL NOTES**

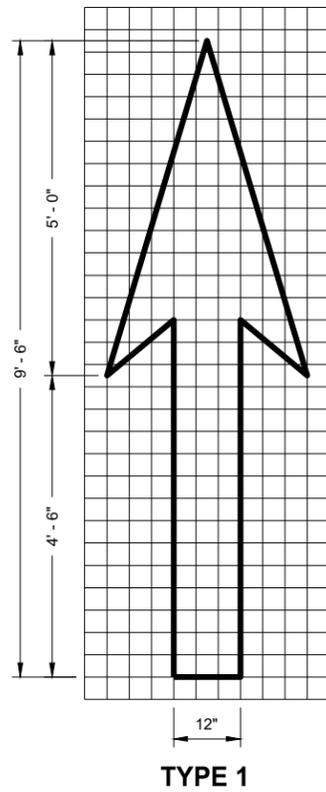
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

**PAVEMENT MARKING WORDS**

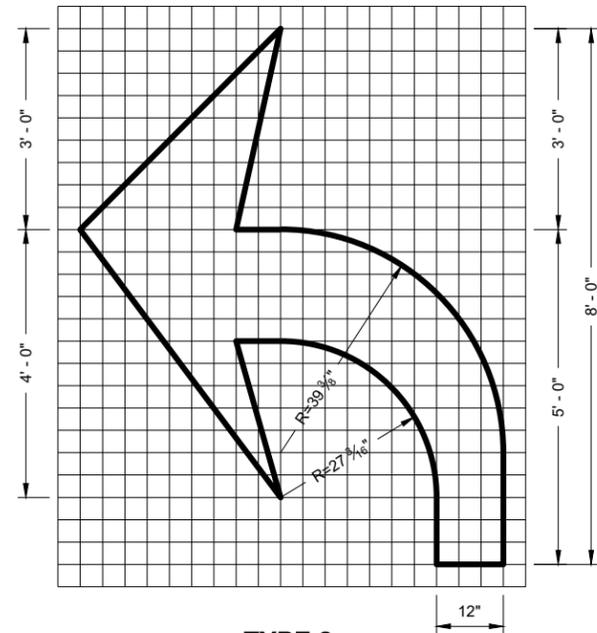
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
November 2019 /S/ Matthew Rauch  
DATE STATE SIGNING AND MARKING  
ENGINEER

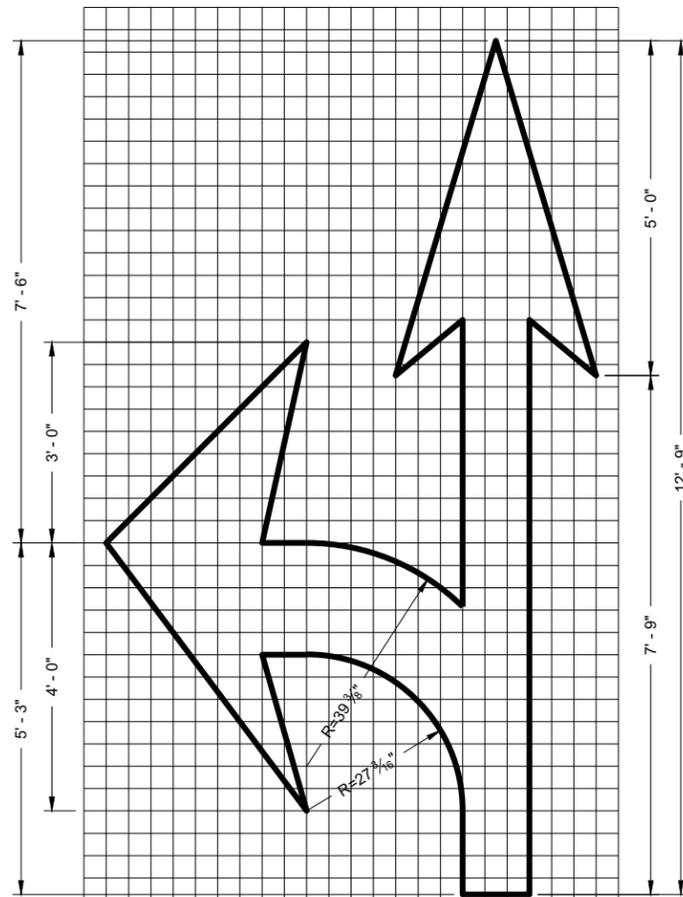
FHWA



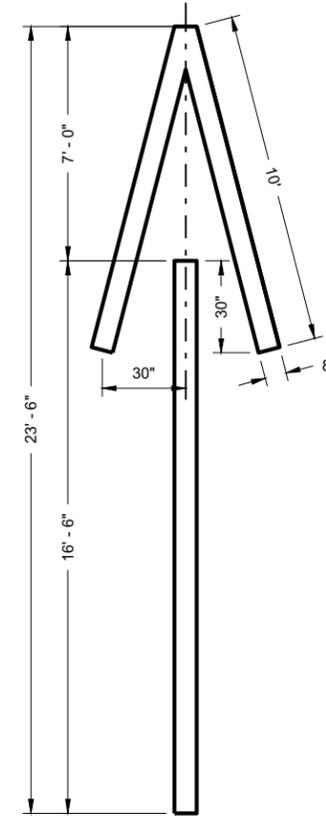
TYPE 1



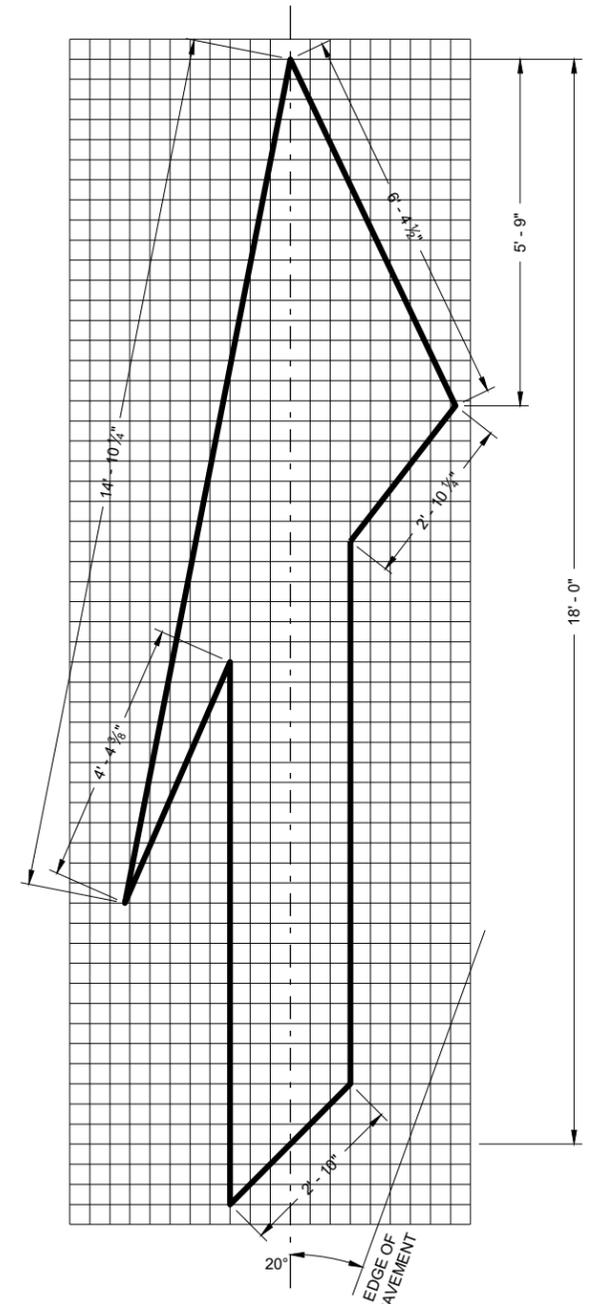
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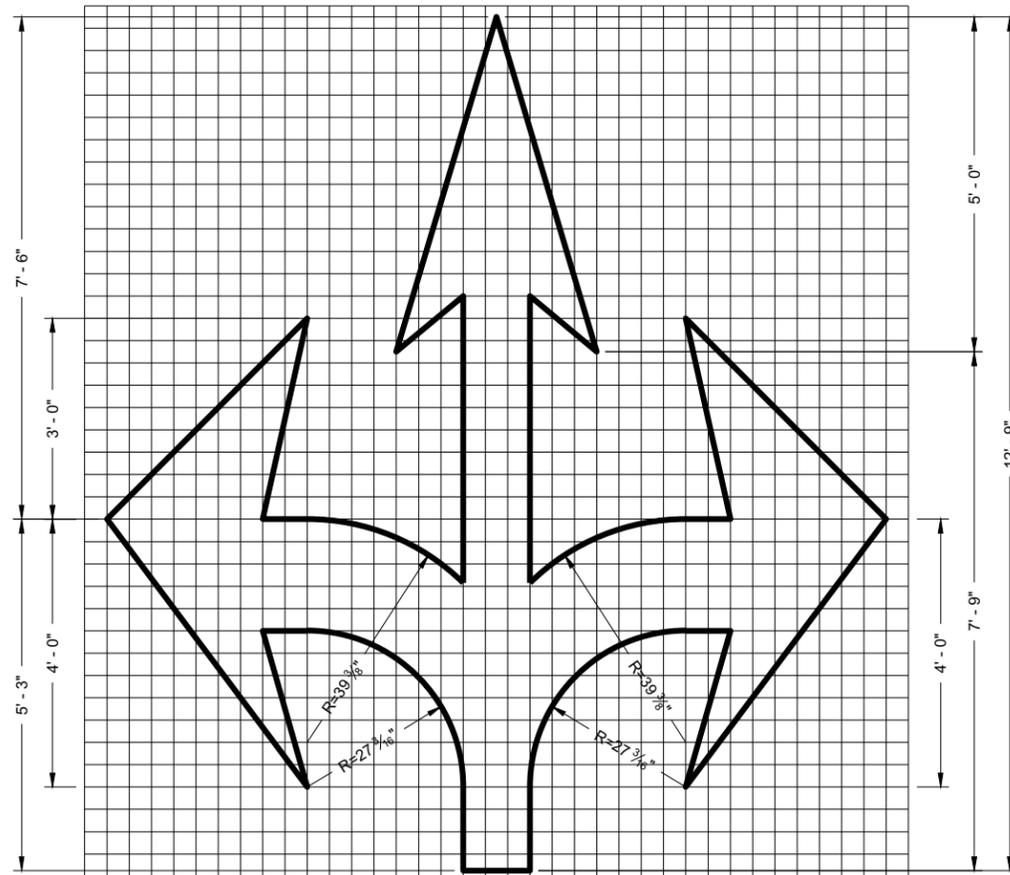
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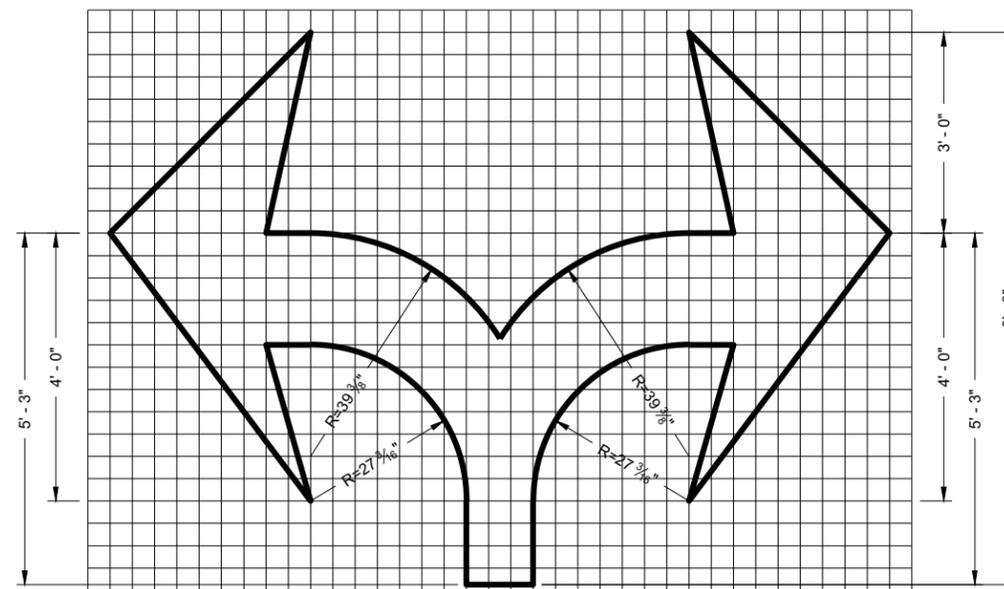
TYPE 4



TYPE 5 LANE DROP ARROW



TYPE 6



TYPE 7

GENERAL NOTES

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

PAVEMENT MARKING ARROWS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

November 2019

DATE

FHWA

/s/ Matthew Rauch  
STATE SIGNING AND MARKING  
ENGINEER

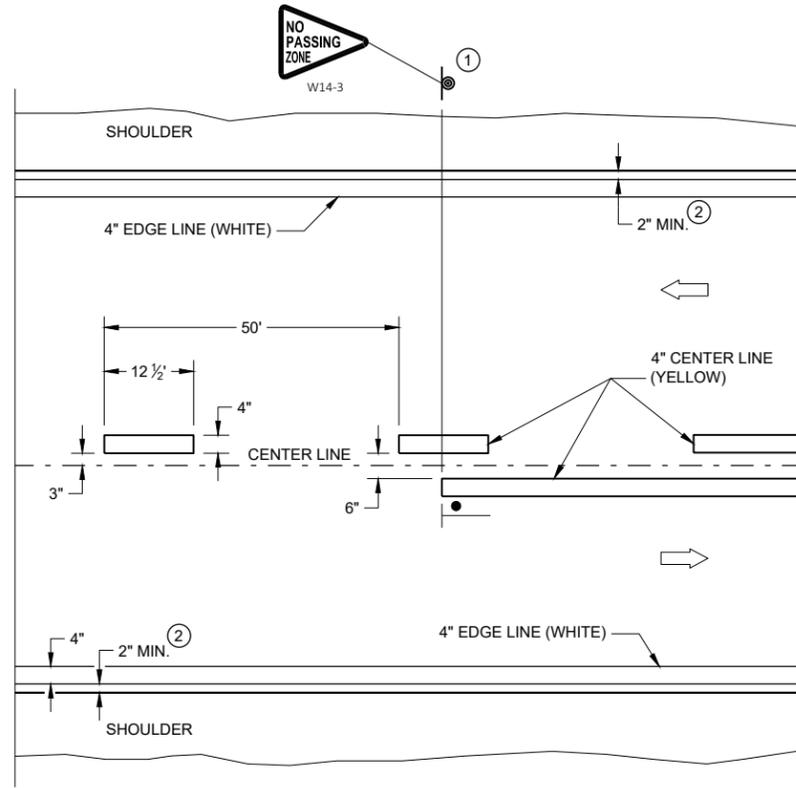
**GENERAL NOTES**

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

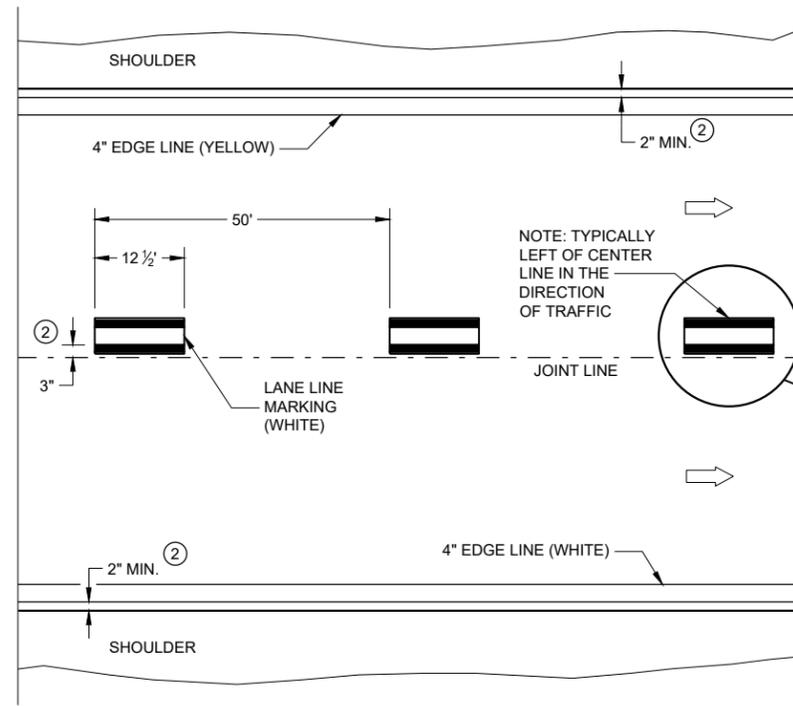
- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

**LEGEND**

-  "T" MARKING
-  SIGN ON PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC

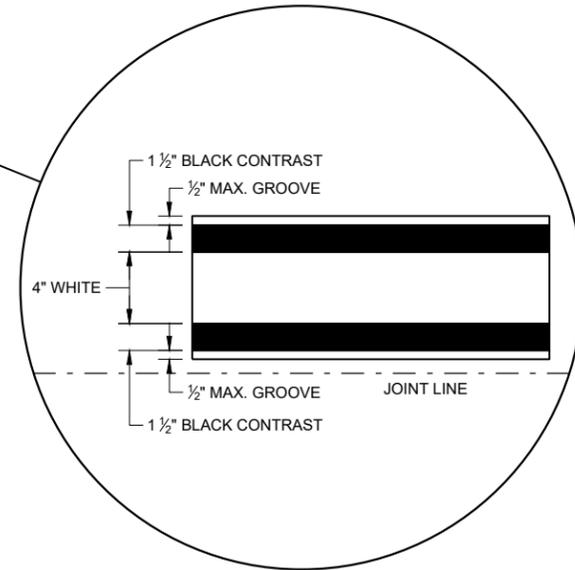


**TWO WAY TRAFFIC**



**ONE WAY TRAFFIC**

**PERMANENT PAVEMENT MARKING**



6

6

SDD 15C08 - 22a

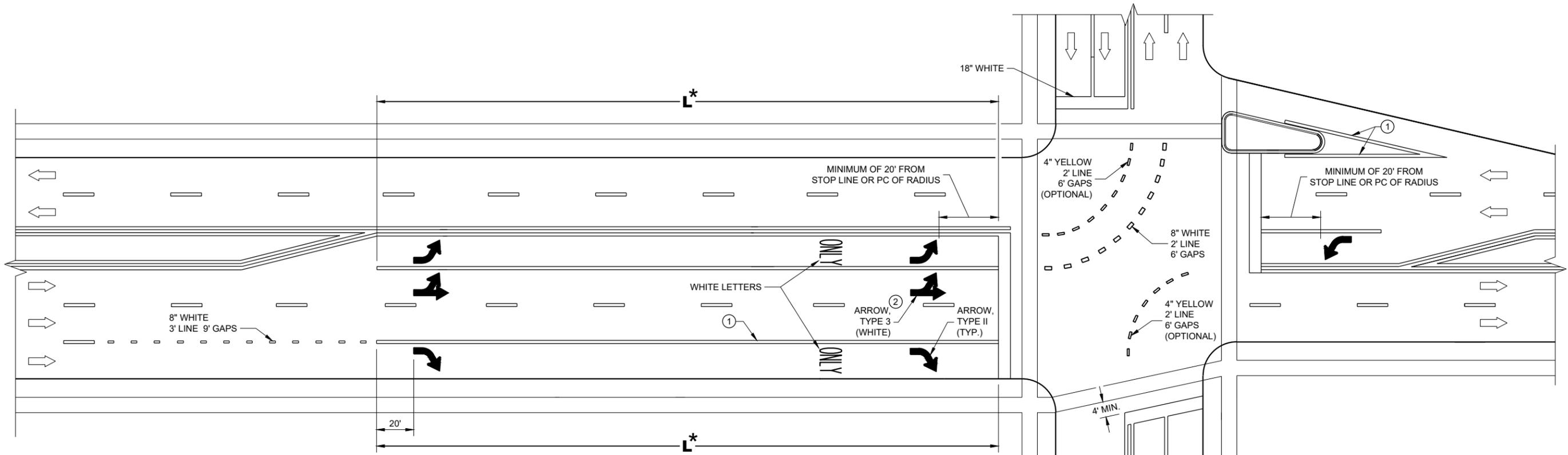
SDD 15C08 - 22a

**PERMANENT LONGITUDINAL PAVEMENT MARKINGS**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

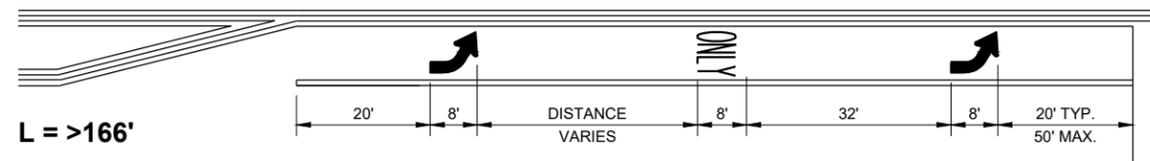
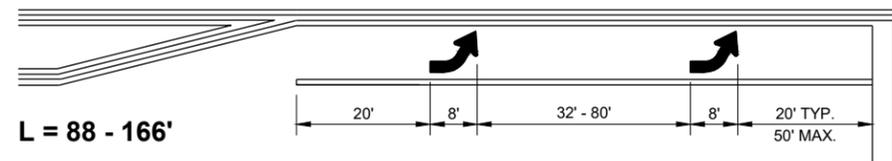
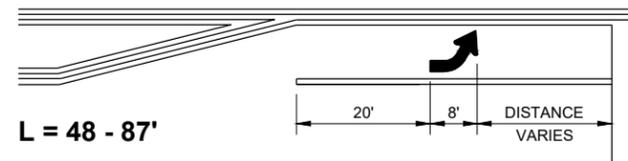
APPROVED  
DATE: May 2022 /S/ Jeannie Silver  
STATEWIDE SIGNING AND MARKING ENGINEER

FHWA



**TURN LANE OPTIONS**

LENGTH OF TURN BAY ( **L** ) OF 0 - 47' DOES NOT REQUIRE PAVEMENT MARKING ARROWS OR WORDS



\*(SEE TURN LANE OPTIONS FOR PLACEMENT OF PAVEMENT MARKING ARROWS AND WORDS)

**GENERAL NOTES**

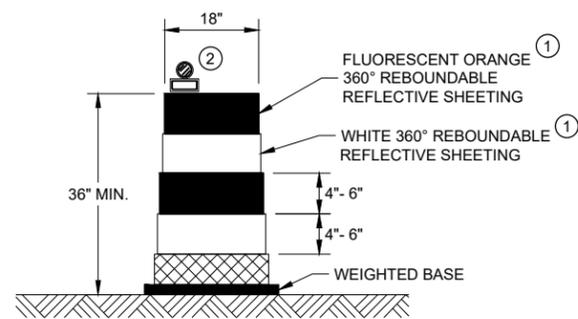
- ① 8" WHITE
- ② QUANTITY AND LOCATION OF TYPE 3 ARROWS ARE THE SAME AS THE TYPE II ARROWS IN THE ADJACENT TURN LANE. FOR TURN LANES WITH A PHYSICAL SEPARATION IN THE SAME DIRECTION OF TRAVEL, THE ARROWS AND "ONLY" MARKING MAY BE ELIMINATED.

➡ DIRECTION OF TRAFFIC

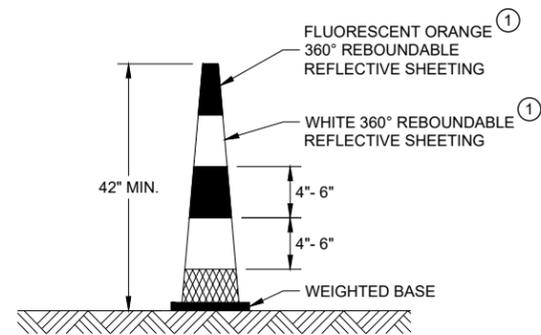
**L** = LENGTH OF TURN BAY

**PAVEMENT MARKING (TURN LANES)**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

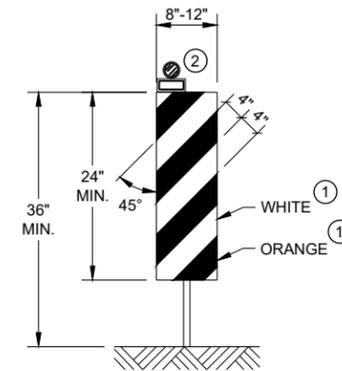


**DRUM**



**42" CONE**

DO NOT USE IN TAPERS  
 1/2 SPACING OF DRUMS

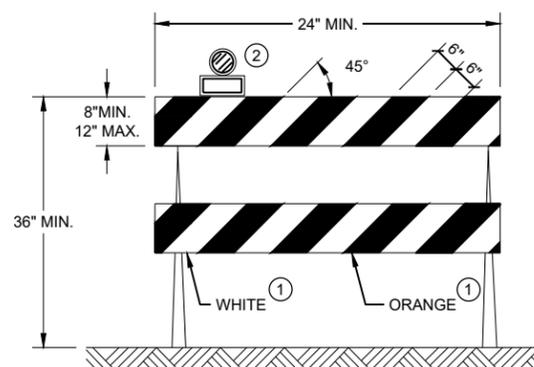


**VERTICAL PANEL**

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

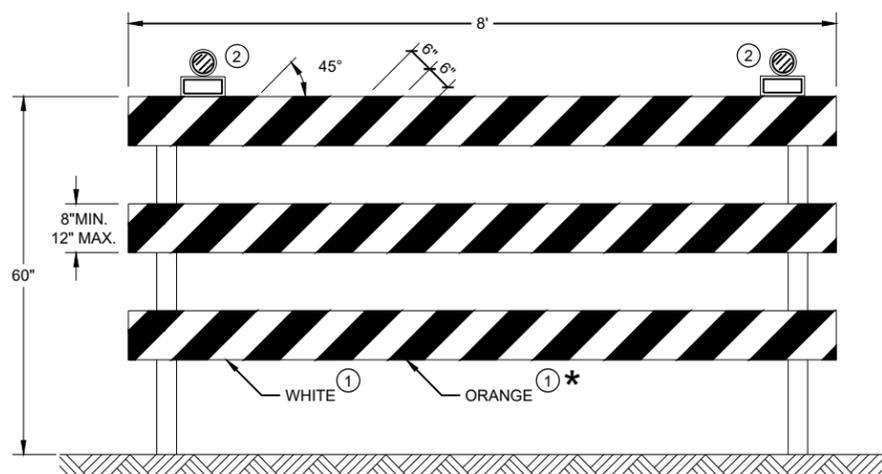
**GENERAL NOTES**

- 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.



**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.

<b>CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2021 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

**LEGEND**

-  SIGN ON PORTABLE OR PERMANENT SUPPORT
-  TEMPORARY PORTABLE RUMBLE STRIP ARRAY
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

**GENERAL NOTES**

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

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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

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

THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

**FLAGGING**

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

- ① FOR MOVING WORK OPERATIONS, POST ADDITIONAL W20-7A FLAGGER SIGNS AT APPROXIMATELY 3,500' INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
- ② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.

**TEMPORARY PORTABLE RUMBLE STRIPS**

UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.

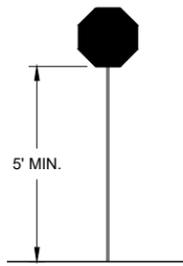
- ③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSE ACROSS THE LANE AT THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER

ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FROM THE APPROVED PRODUCTS LIST.

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.



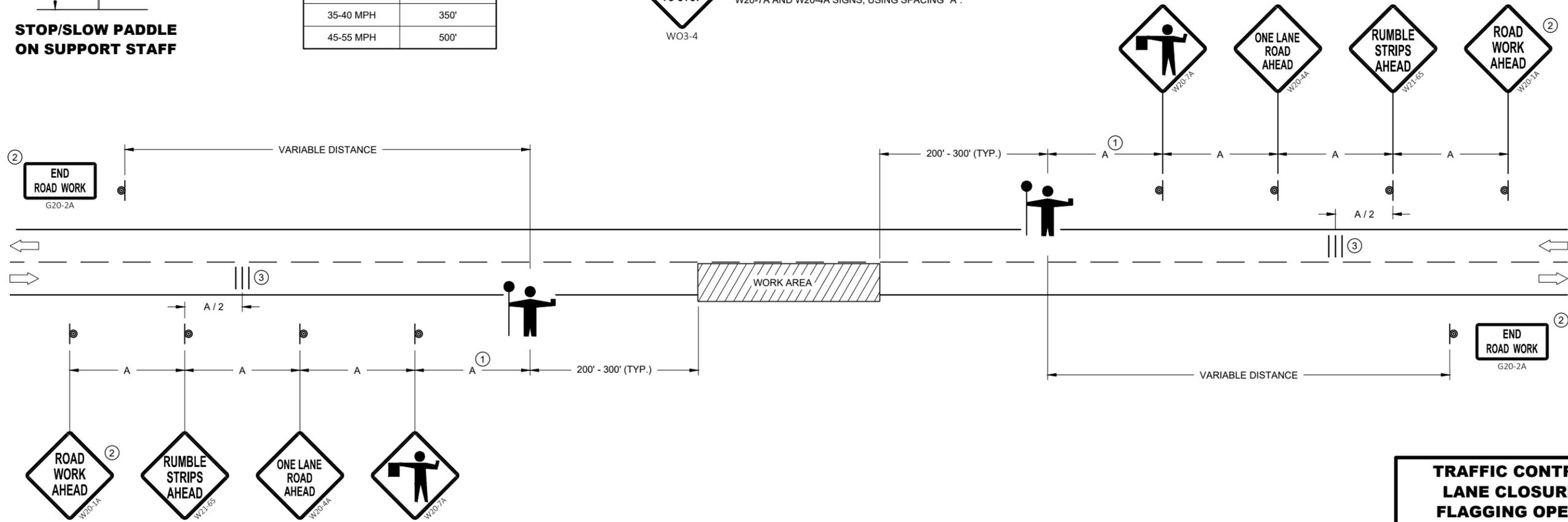
**STOP/SLOW PADDLE ON SUPPORT STAFF**

**SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE**

SPEED LIMIT	SPACING "A"
25-30 MPH	200'
35-40 MPH	350'
45-55 MPH	500'



USE OF W03-4 SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7A AND W20-4A SIGNS, USING SPACING "A".



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SDD 15C12 - 09a

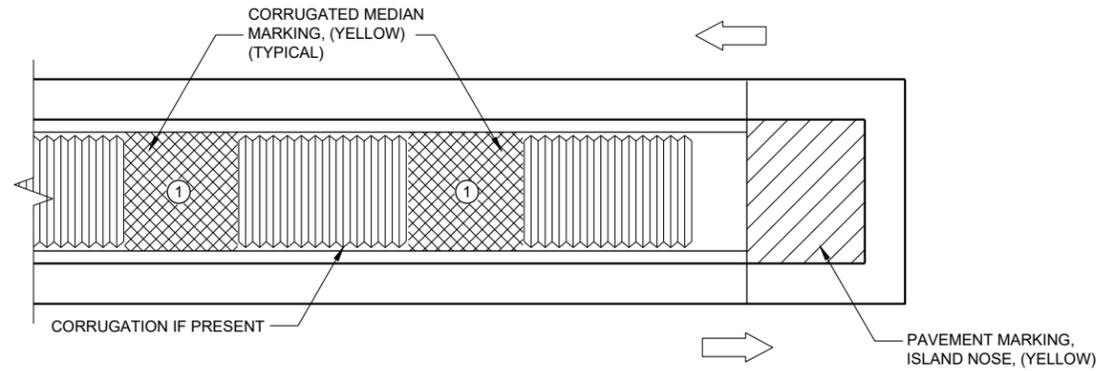
SDD 15C12 - 09a

**TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION**

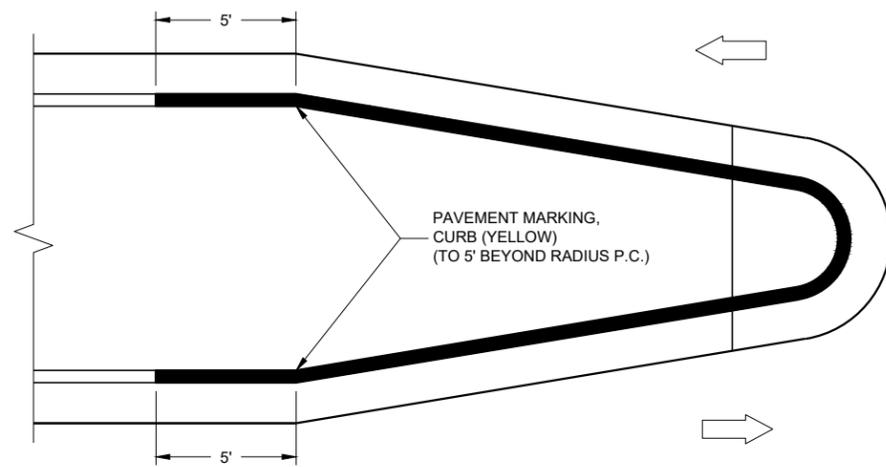
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
DATE: May 2022 /S/ Andrew Heidtke  
WORK ZONE ENGINEER

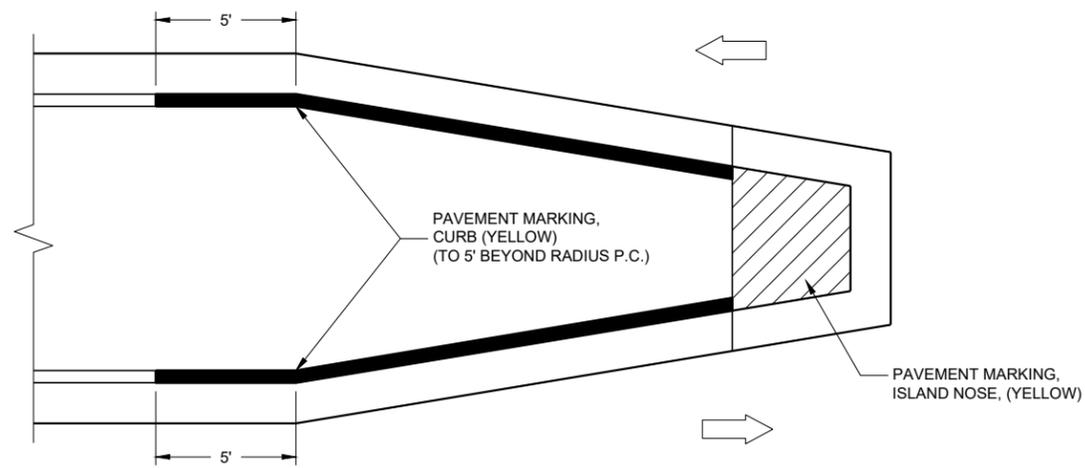
FHWA



**MEDIAN ISLAND WITH SQUARE BLUNT NOSE**



**MEDIAN ISLAND WITH ROUND BLUNT NOSE**



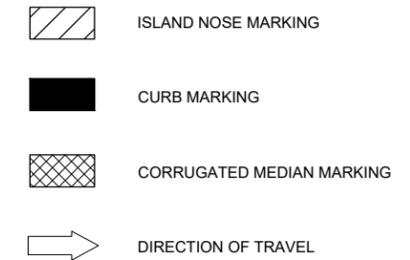
**MEDIAN ISLAND WITH SLOPED NOSE**

**TYPICAL PLACEMENT OF PAVEMENT MARKING ON MEDIAN ISLANDS**

**GENERAL NOTES**

WHEN CONCRETE CORRUGATED MEDIAN IS CONSTRUCTED TO SEPARATE TRAFFIC OPERATING IN THE OPPOSING DIRECTION, YELLOW PAVEMENT MARKING SHALL BE APPLIED TO THE FLAT PORTION OF THE CONCRETE CORRUGATED MEDIAN. THE ITEM OF PAVEMENT MARKING, CONCRETE CORRUGATED MEDIAN, WILL BE MEASURED IN PLACE AND ACCEPTED IN ACCORDANCE WITH THE CONTRACT AND PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT.

- ① APPLY PAVEMENT MARKING TO THE FLAT PORTION OF CORRUGATED MEDIAN.

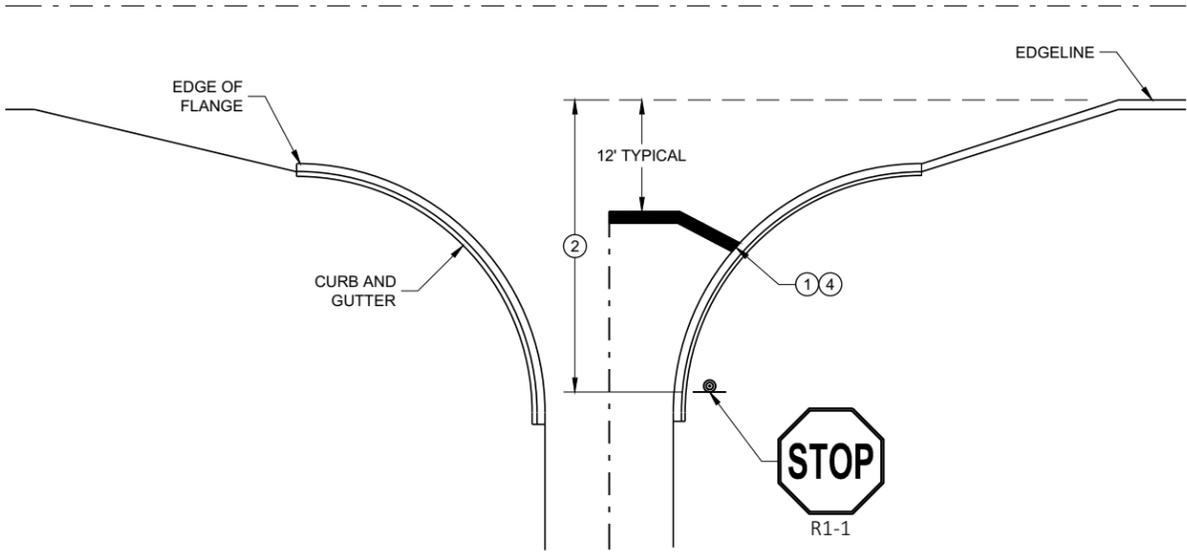


<b>PAVEMENT MARKINGS, MEDIAN ISLAND NOSE</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2022 DATE	/S/ Jeannie Silver STATE SIGNING AND MARKING ENGINEER
<small>FHWA</small>	

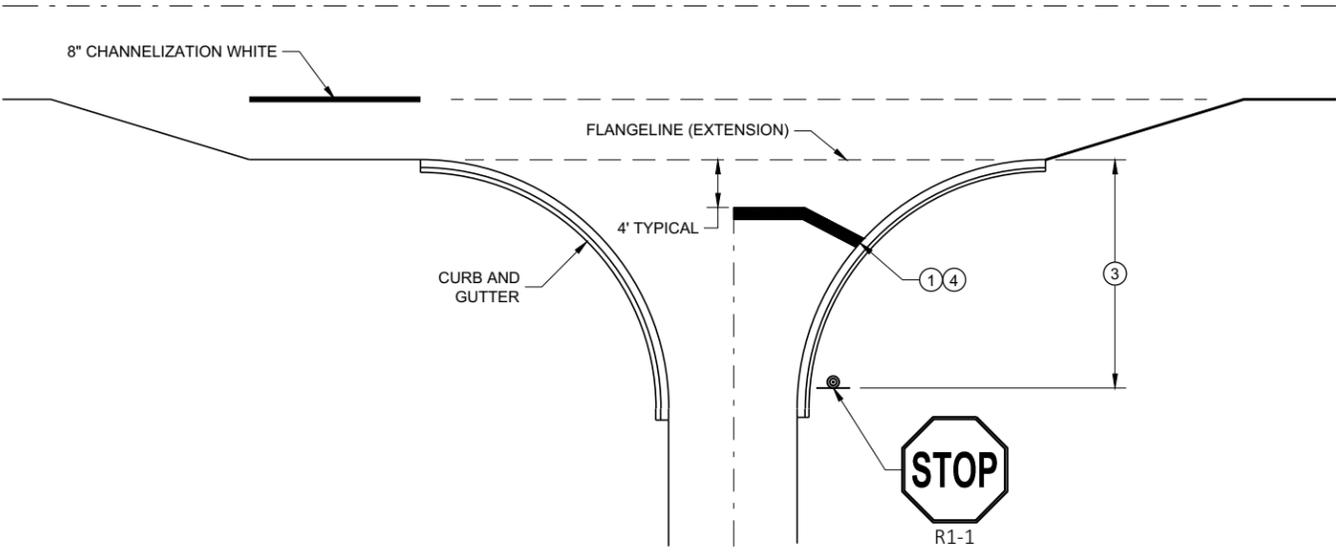
**GENERAL NOTES**

STOP SIGN SHALL BE PLACED A MINIMUM OF 6 FEET TO A MAXIMUM OF 50 FEET FROM THE EDGELINE LOCATION.

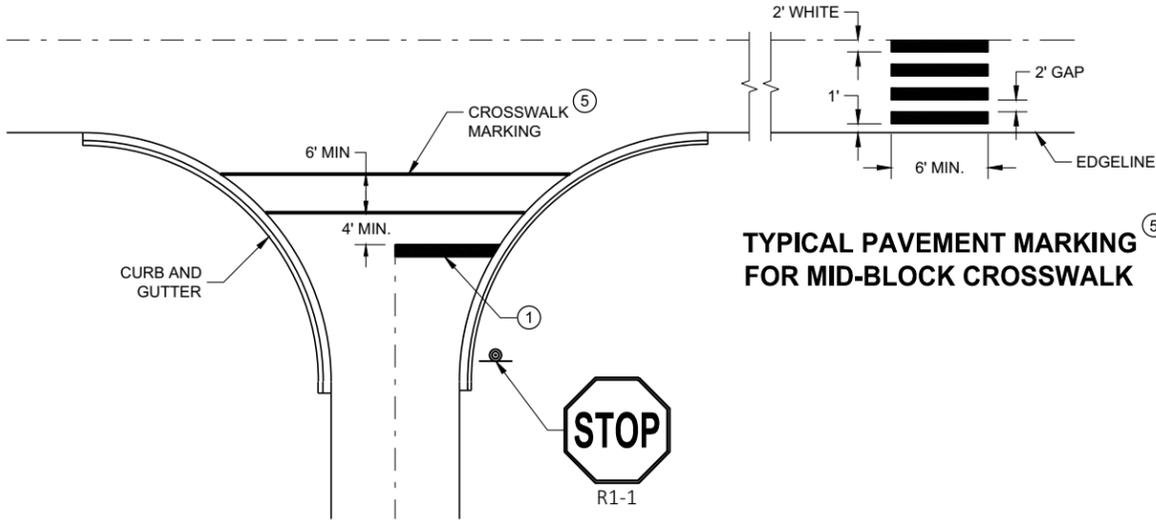
- ① 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- ② NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE.
- ③ NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION.
- ④ MOVE CLOSER TO THE EDGE OF TRAVEL LINE AS NEEDED FOR VISIBILITY AND SIGHT LINES (NO CLOSER THAN 4 FEET).
- ⑤ LADDER BAR CROSSWALKS SHOULD ONLY BE USED FOR MID BLOCK CROSSINGS. USE 2 - 6" TRANSVERSE LINES INSTEAD.



**TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER**

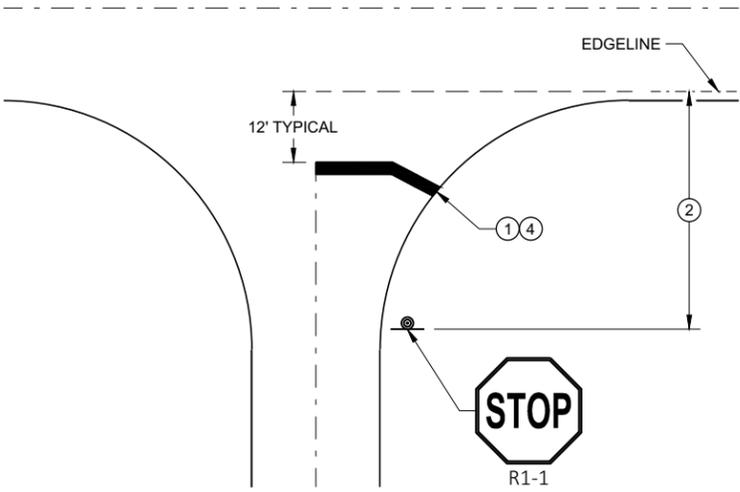


**TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE**



**TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING**

**TYPICAL PAVEMENT MARKING FOR MID-BLOCK CROSSWALK**



**TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER**

**STOP LINE AND CROSSWALK PAVEMENT MARKING**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
November 2019 /S/ Matthew Rauch  
DATE STATE SIGNING AND MARKING ENGINEER

FHWA

**LEGEND**

-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TYPE "A" WARNING LIGHT (FLASHING)
-  FLASHING ARROW BOARD
-  DIRECTION OF TRAFFIC
-  REMOVE PAVEMENT MARKING (SEE GENERAL NOTES)
-  WORK AREA

**GENERAL NOTES**

THIS DETAIL MAY BE USED FOR ROADWAYS WITH EITHER TWO OR THREE LANES IN EACH DIRECTION.

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36"X 36" SIGNS MAY BE USED IF APPROVED BY REGIONAL TRAFFIC UNIT.

"WO" SIGN IS THE SAME AS "W" SIGN EXCEPT THE BACKGROUND IS ORANGE.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON COVERED OR "DOWNED" SIGNS.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE MAY BE MOUNTED ON TEMPORARY SUPPORTS.

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

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500' DESIRABLE) DISTANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE

W20-1A, G20-1 AND G20-2A SIGNS ARE NOT REQUIRED IF THE LANE CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING LINE IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROW BOARDS AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY REESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

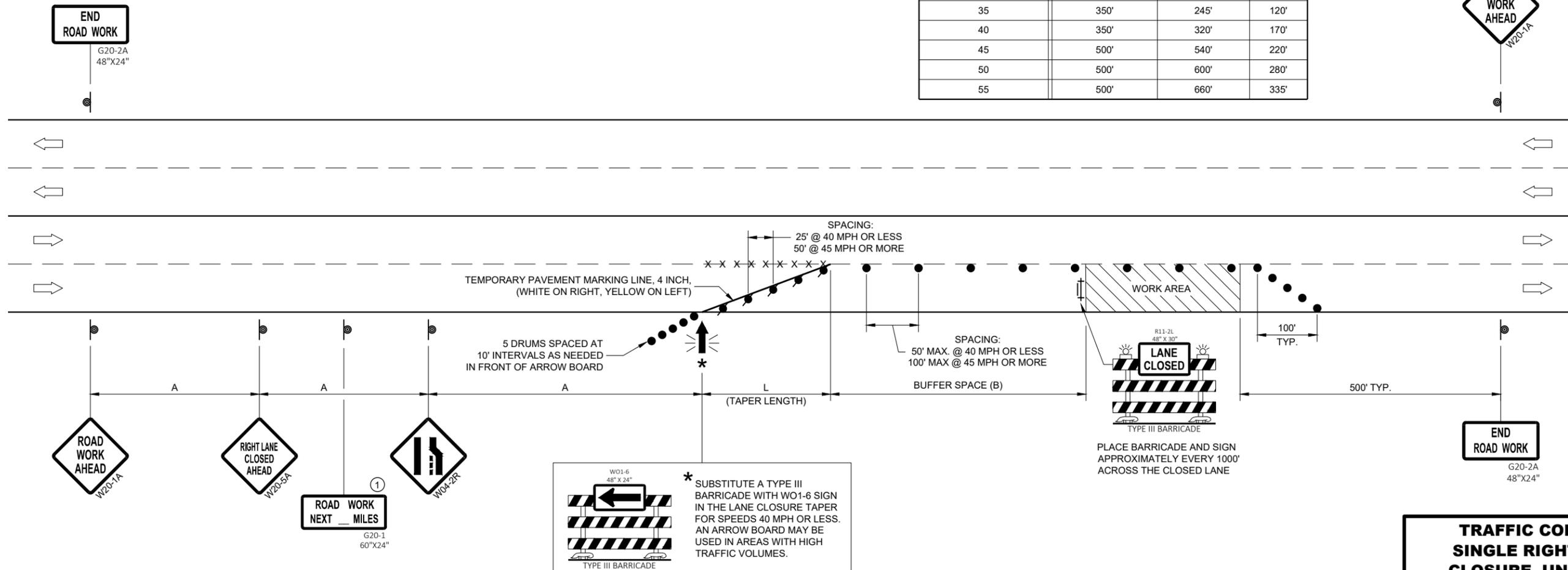
① OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	TAPER LENGTH (12 FT. LANE) (L) FEET	BUFFER SPACE (B) FEET
25	200'	125'	55'
30	200'	180'	85'
35	350'	245'	120'
40	350'	320'	170'
45	500'	540'	220'
50	500'	600'	280'
55	500'	660'	335'



6

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SDD 15D20 - 06b

SDD 15D20 - 06b

**TRAFFIC CONTROL,  
SINGLE RIGHT LANE  
CLOSURE, UNDIVIDED  
NON-FREEWAY/EXPRESSWAY**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2022 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER

FHWA

**LEGEND**

-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TYPE "A" WARNING LIGHT (FLASHING)
-  FLASHING ARROW BOARD
-  DIRECTION OF TRAFFIC
-  REMOVE PAVEMENT MARKING (SEE GENERAL NOTES)
-  WORK AREA

**GENERAL NOTES**

THIS DETAIL MAY BE USED FOR ROADWAYS WITH EITHER TWO OR THREE LANES IN EACH DIRECTION.

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36"X 36" SIGNS MAY BE USED IF APPROVED BY REGIONAL TRAFFIC UNIT.

"WO" SIGN IS THE SAME AS "W" SIGN EXCEPT THE BACKGROUND IS ORANGE.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON COVERED OR "DOWNED" SIGNS.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE MAY BE MOUNTED ON TEMPORARY SUPPORTS.

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

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500' DESIRABLE) DISTANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

W20-1A, G20-1 AND G20-2A SIGNS ARE NOT REQUIRED IF THE LANE CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING LINE IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROW BOARDS AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

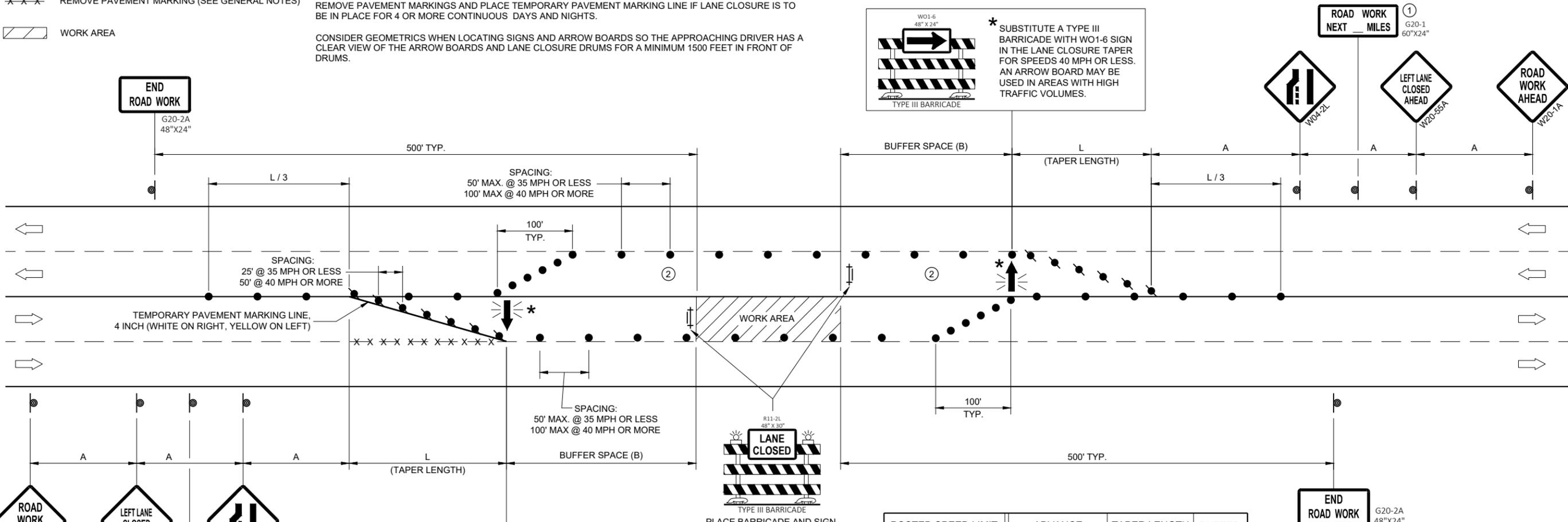
DUE TO LACK OF SHOULDER/MEDIAN, ARROW BOARD IS PLACED AT THE THE END OF THE TAPER.

BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY REESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

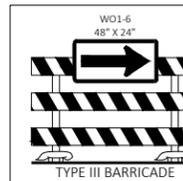
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

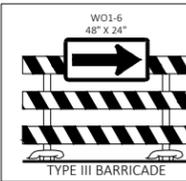
- ① OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.
- ② LANE MAY BE OPENED WHEN WORKERS ARE NOT PRESENT IN THE WORK AREA.



**\* SUBSTITUTE A TYPE III BARRICADE WITH WO1-6 SIGN IN THE LANE CLOSURE TAPER FOR SPEEDS 40 MPH OR LESS. AN ARROW BOARD MAY BE USED IN AREAS WITH HIGH TRAFFIC VOLUMES.**



**\* SUBSTITUTE A TYPE III BARRICADE WITH WO1-6 SIGN IN THE LANE CLOSURE TAPER FOR SPEEDS 40 MPH OR LESS. AN ARROW BOARD MAY BE USED IN AREAS WITH HIGH TRAFFIC VOLUMES.**



**R11-2L 48"X30"**



PLACE BARRICADE AND SIGN APPROXIMATELY EVERY 1000' ACROSS THE CLOSED LANE.

POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	TAPER LENGTH (12 FT. LANE) (L) FEET	BUFFER SPACE (B) FEET
25	200'	125'	55'
30	200'	180'	85'
35	350'	245'	120'
40	350'	320'	170'
45	500'	540'	220'
50	500'	600'	280'
55	500'	660'	335'

**TRAFFIC CONTROL,  
SINGLE LEFT LANE  
CLOSURE, UNDIVIDED  
NON-FREEWAY/EXPRESSWAY**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2022 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER

FHWA

SDD 15D20 - 06C

SDD 15D20 - 06C

### GENERAL NOTES

THIS DETAIL IS TYPICAL FOR CLOSING THE RIGHT SHOULDER. FOR CLOSING THE LEFT SHOULDER, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR DIVIDED ROADWAYS WITH ANY NUMBER OF TRAVEL LANES.

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

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

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

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.

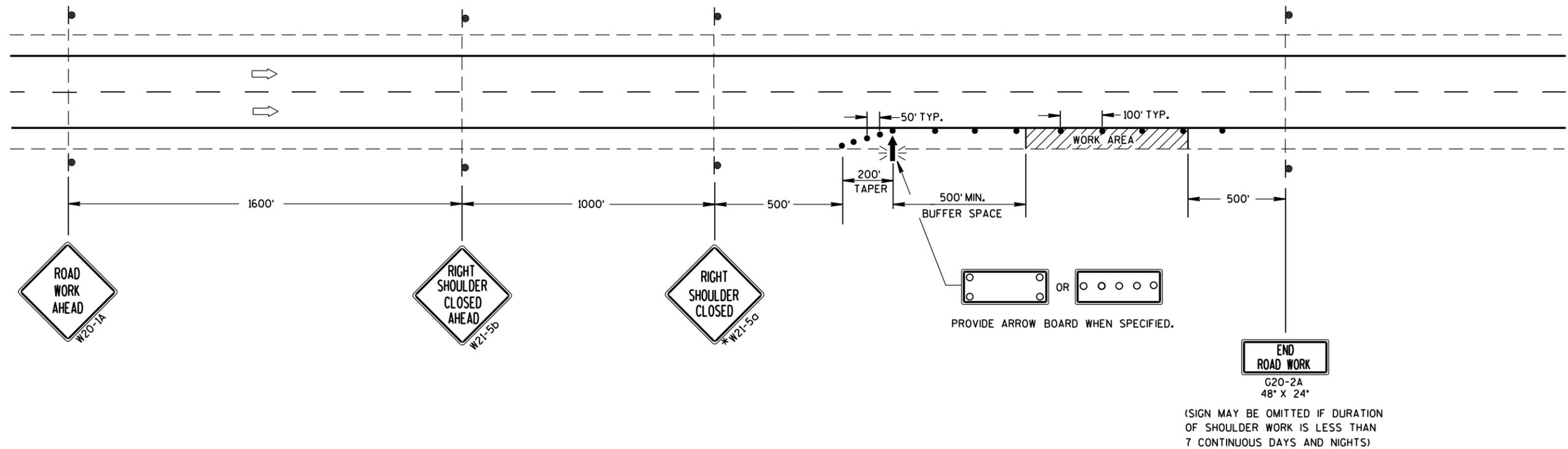
CHANNELIZING DEVICES PLACED ADJACENT TO THE WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

\*FOR SHORT DURATION SHOULDER WORK OF LESS THAN ONE HOUR, THE W21-50 SIGN MAY BE OMITTED.

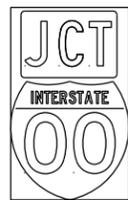
### LEGEND

- TRAFFIC CONTROL DRUM
- ⊙ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ⚡ FLASHING ARROW BOARD
- ▨ WORK AREA

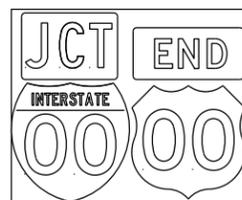


<b>TRAFFIC CONTROL SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2016 DATE	/s/ Peter Amakobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA	

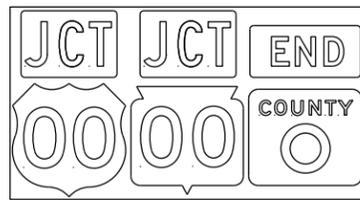
# TYPICAL ASSEMBLIES



J1-1



J1-2



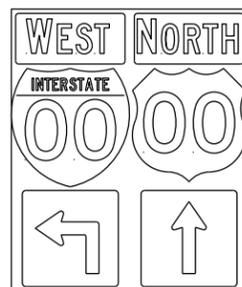
J1-3



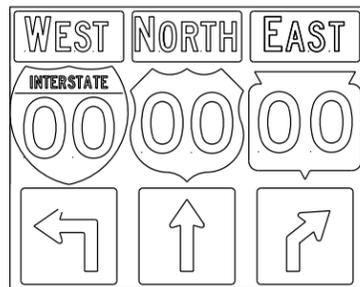
JR1-1



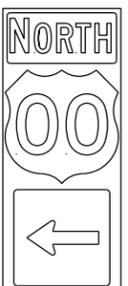
J2-1



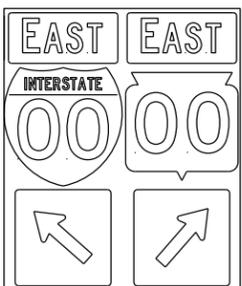
J2-2



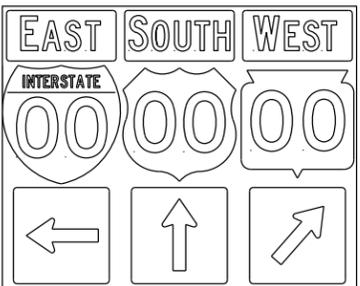
J2-3



J3-1



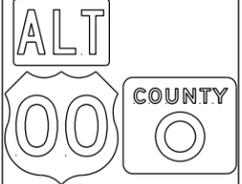
J3-2



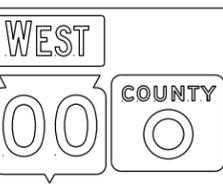
J3-3



J4-1



J4-2



J4-2



J12-1



J13-1



J32-1



J33-1



J22-1



J23-1



JR13-1



JR23-1

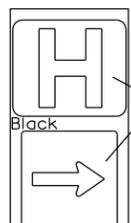


JR99-1



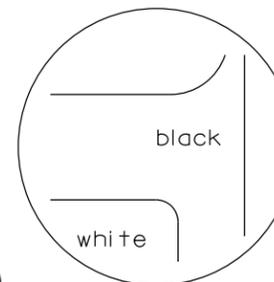
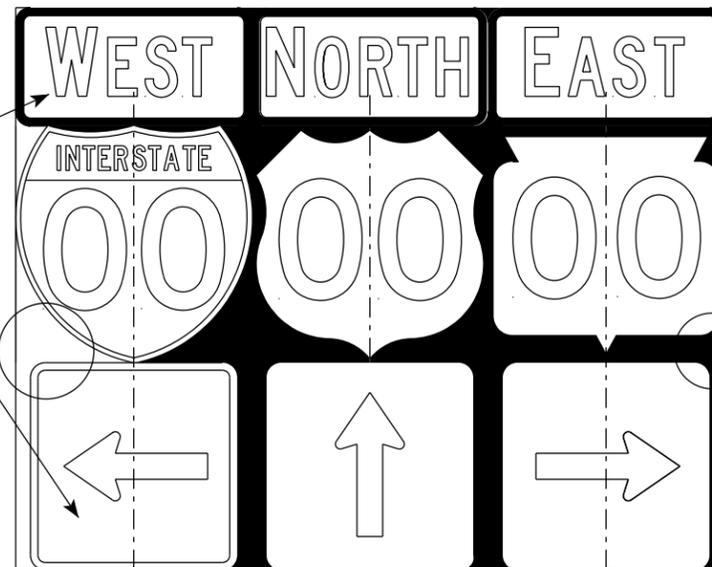
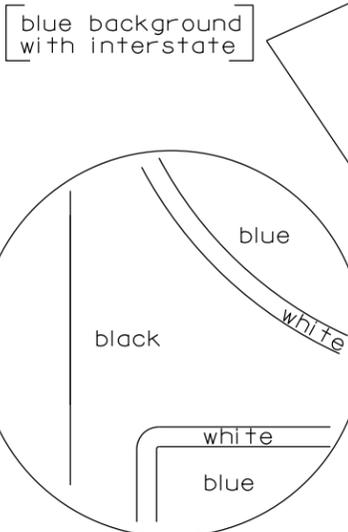
JV

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



JH-1

Blue Background



black background

## NOTES

- Signs are Type II - Type H Reflective
- Color:
  - Background - Black Non-reflective
  - Message - see Note 5
- Message Series - See Note 5
- Corners shall be square or rounded if base material is plywood. If base material is metal the corners shall be rounded.
- The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
- Certain marker heads require the component pieces to be the same color. As an example, all the components used with an MI-1 Interstate marker shall be blue.
- 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.
- 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.
- Route assemblies that have 36 inch shields and have dimensions greater than 48 inches (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.
- All Vertical J Assemblies are given a Sign Code of JV
- 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 3/18/21

PLATE NO. A2-1S.9

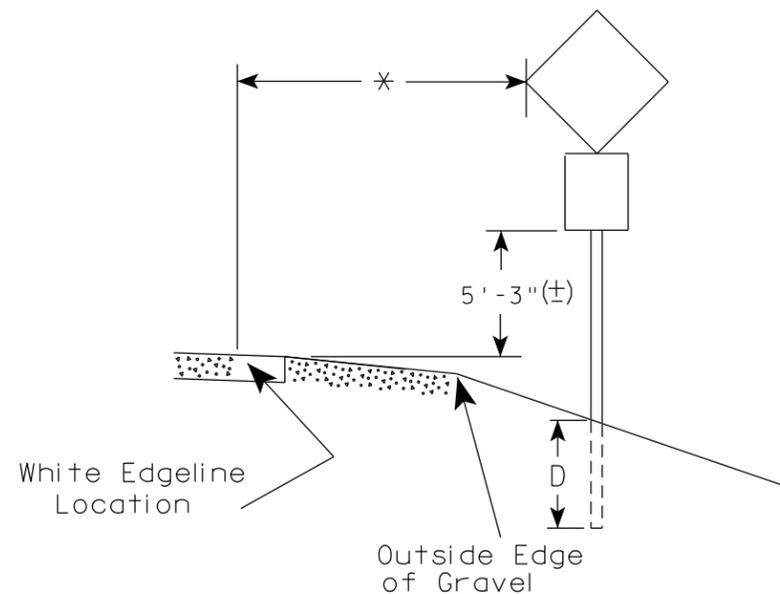
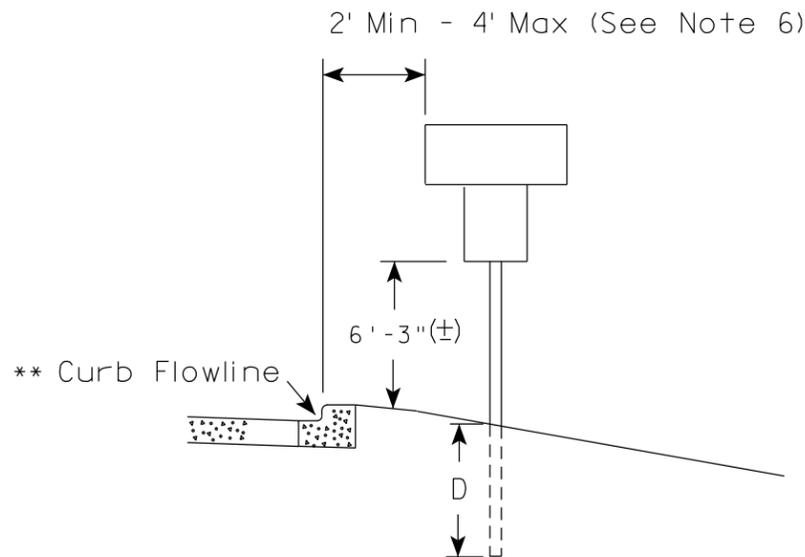
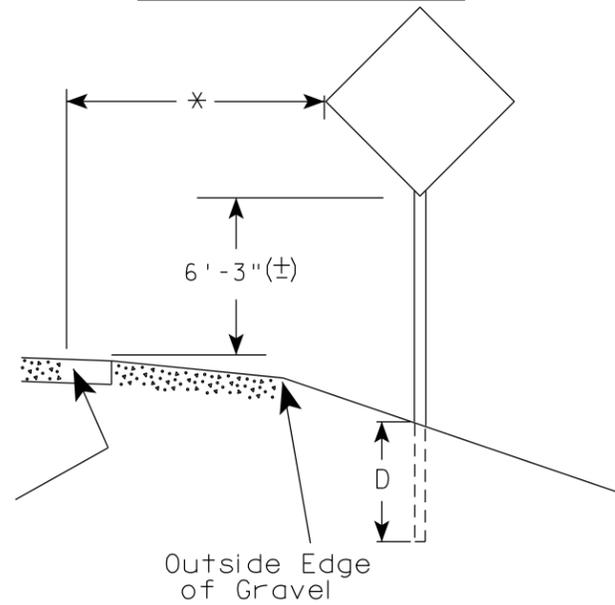
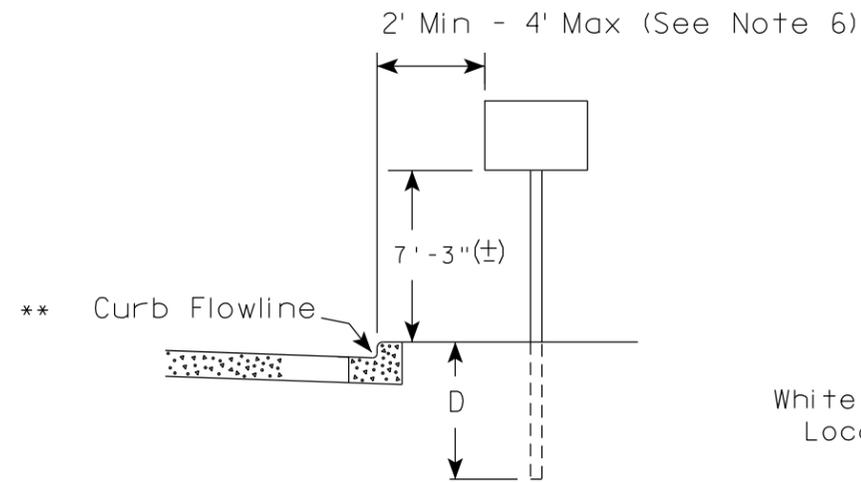
PROJECT NO:

SHEET NO:

E

URBAN AREA

RURAL AREA (See Note 2)



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.

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

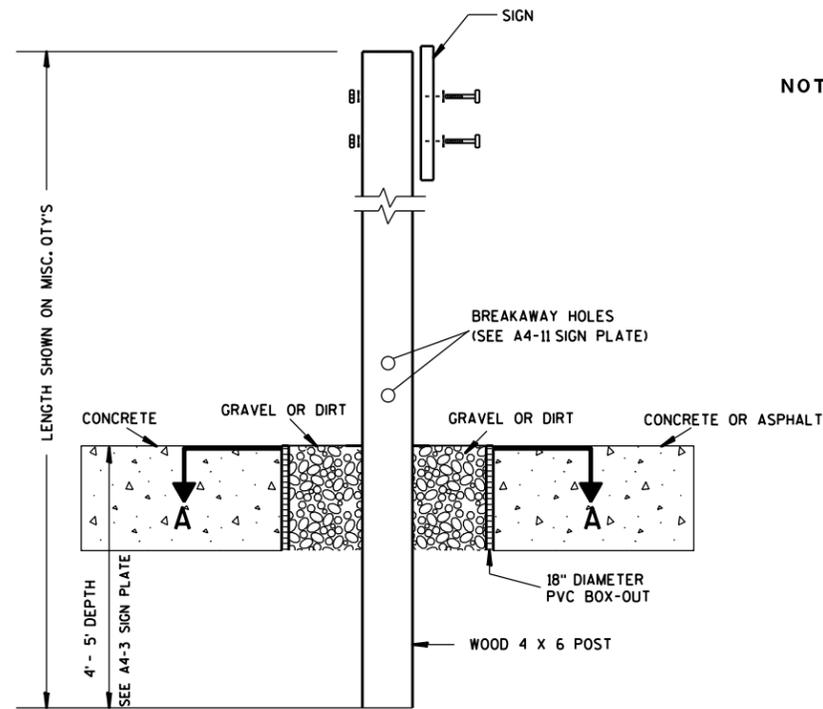
\* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

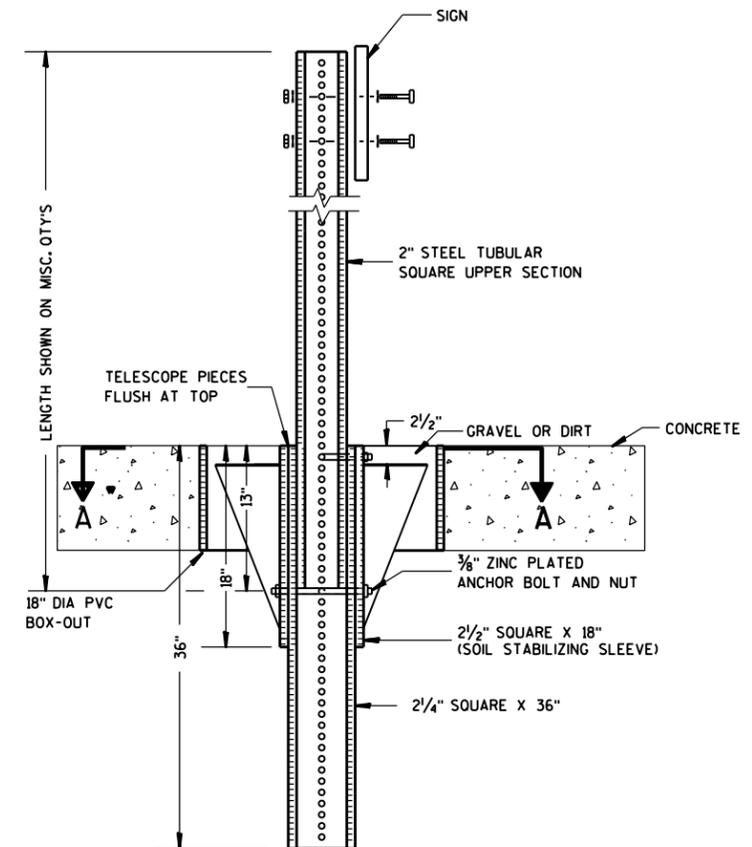
DATE 5/13/2020 PLATE NO. A4-3.22



**ELEVATION VIEW**

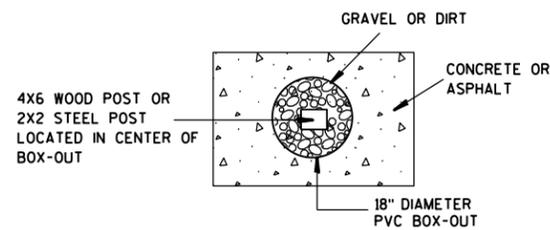
**DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT**

- 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

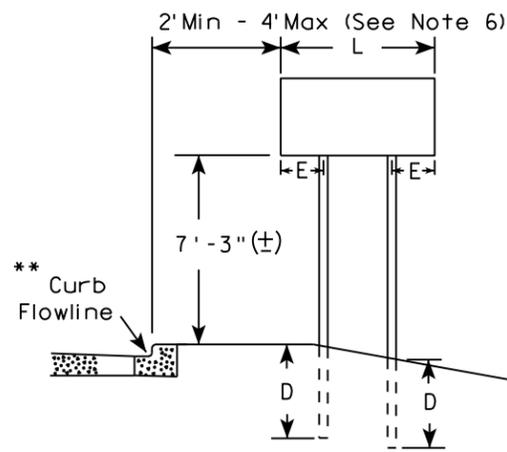
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

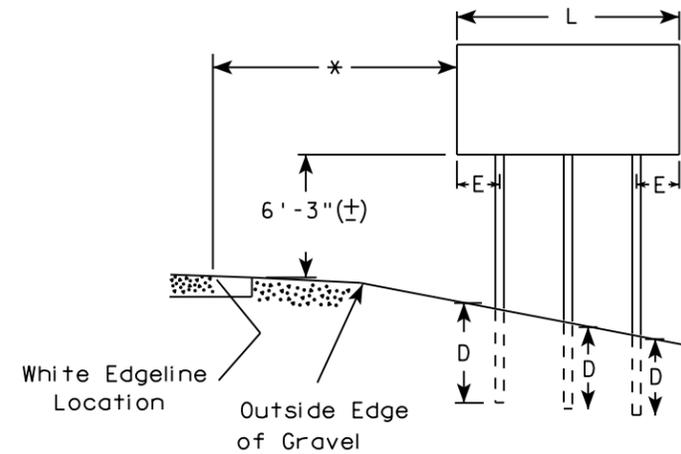
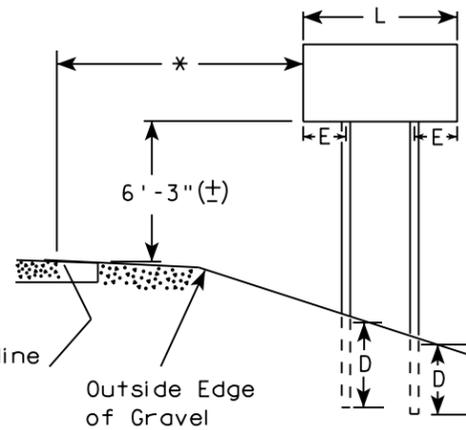
GENERAL NOTES

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" (±).

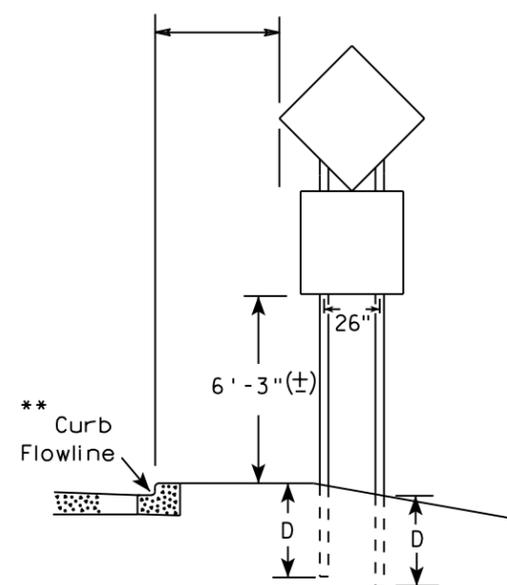
URBAN AREA



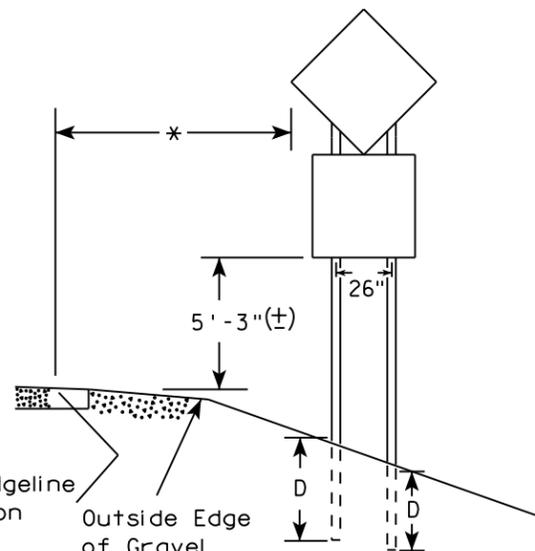
RURAL AREA (See Note 3)



2' Min - 4' Max (See Note 6)



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

\* 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

\*\*\*

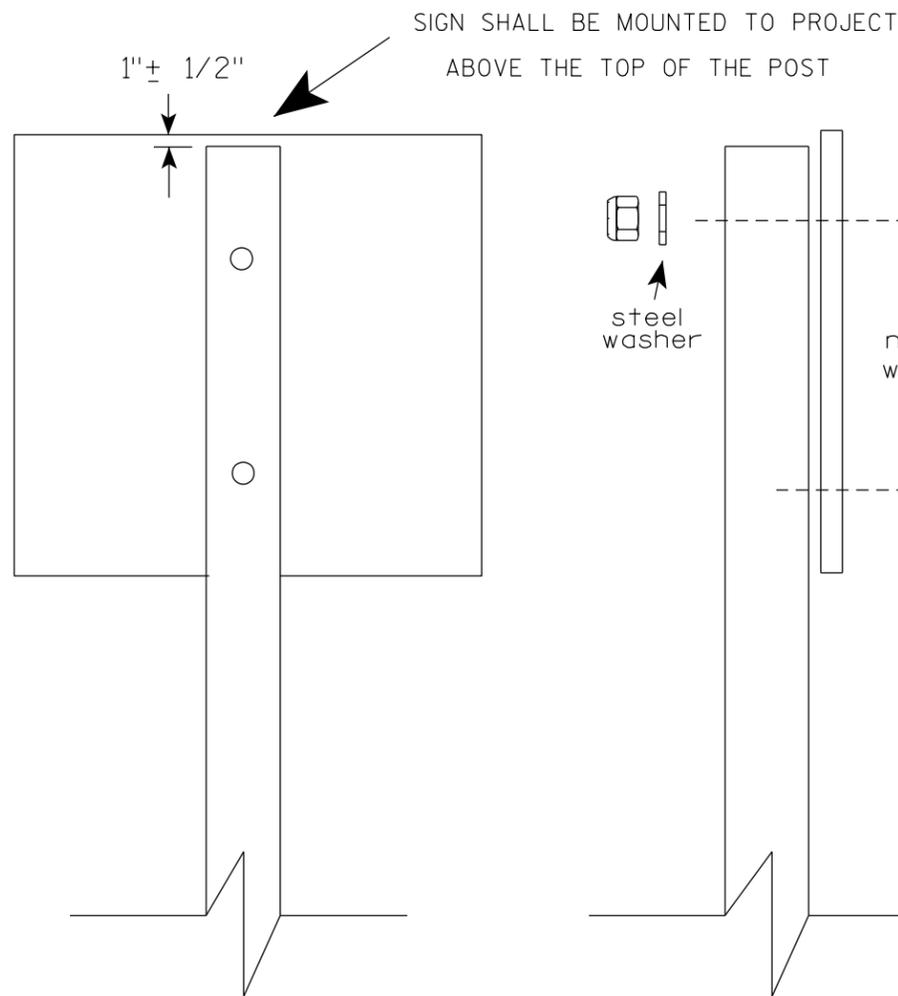
SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

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

WOOD POSTS (4" x 6")

LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)  
3/8" X 4" (STRINGERS ON BACK OF SIGN)

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)  
3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)

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

WASHERS (ALL POSTS) -

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

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

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

ATTACHMENT OF SIGNS  
TO POSTS

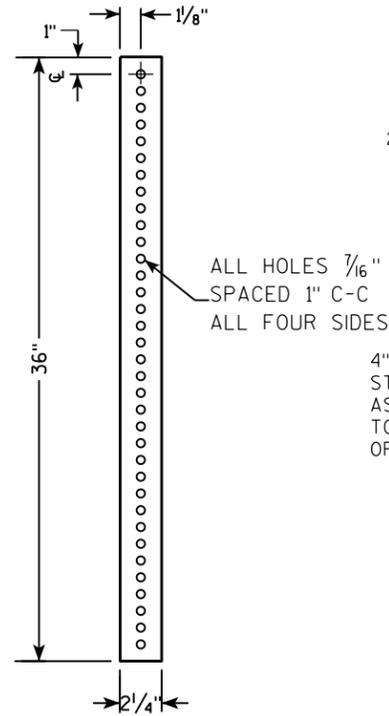
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*  
For State Traffic Engineer

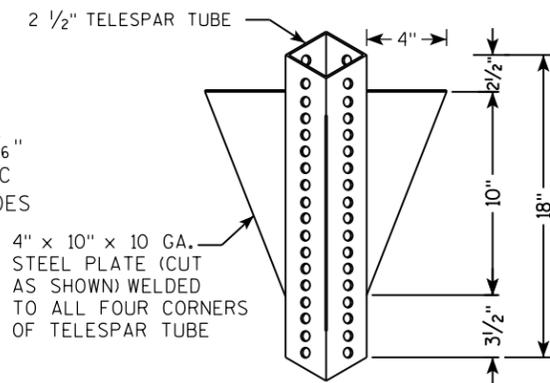
DATE 4/1/2020 PLATE NO. A4-8.9

**TELESCOPIC TUBING ANCHORS  
TWO PIECE SYSTEM**

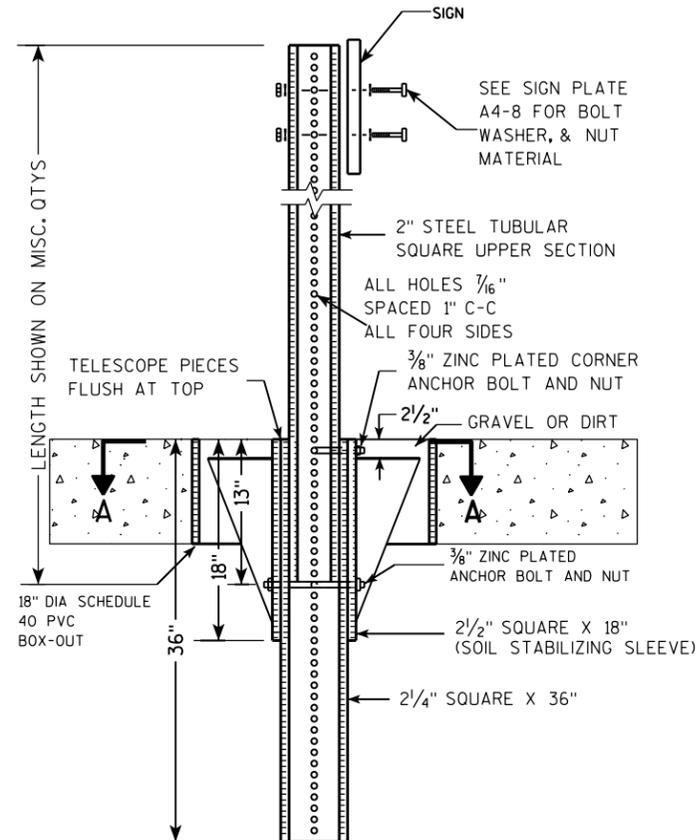
**2 1/4" SQUARE  
12 GAUGE  
PERFORATED  
GALVANIZED FINISH**



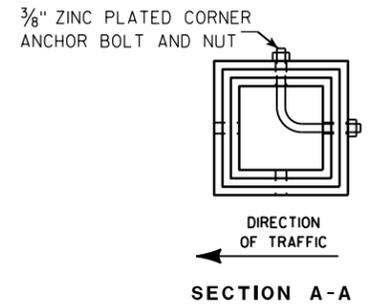
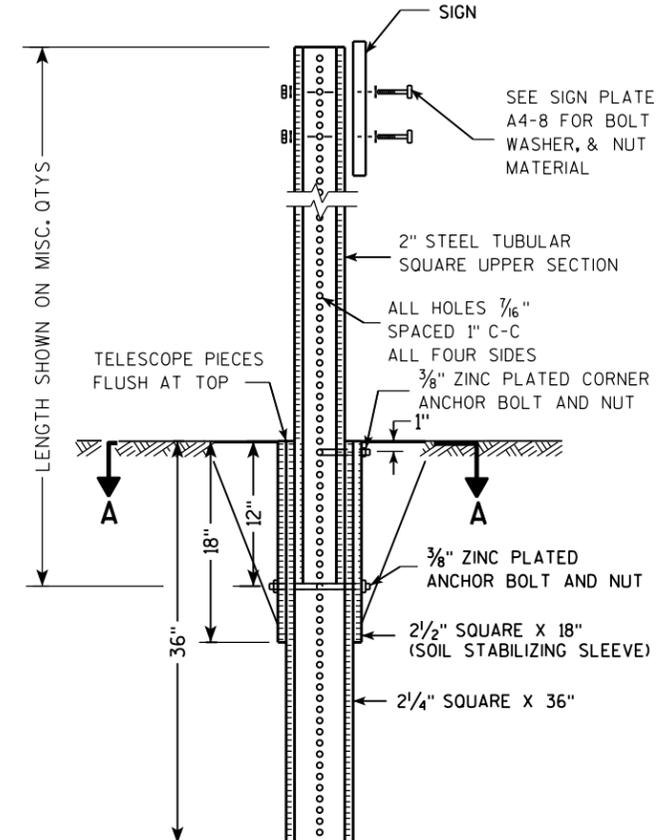
**2 1/2" SQUARE  
12 GAUGE  
OMNI-DIRECTIONAL  
PERFORATED  
SOIL STABILIZING SLEEVE  
GALVANIZED FINISH**



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



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



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

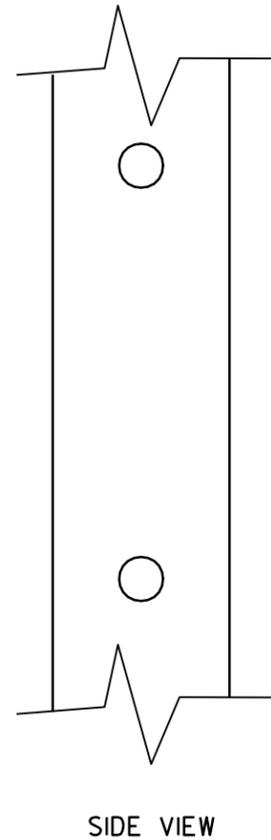
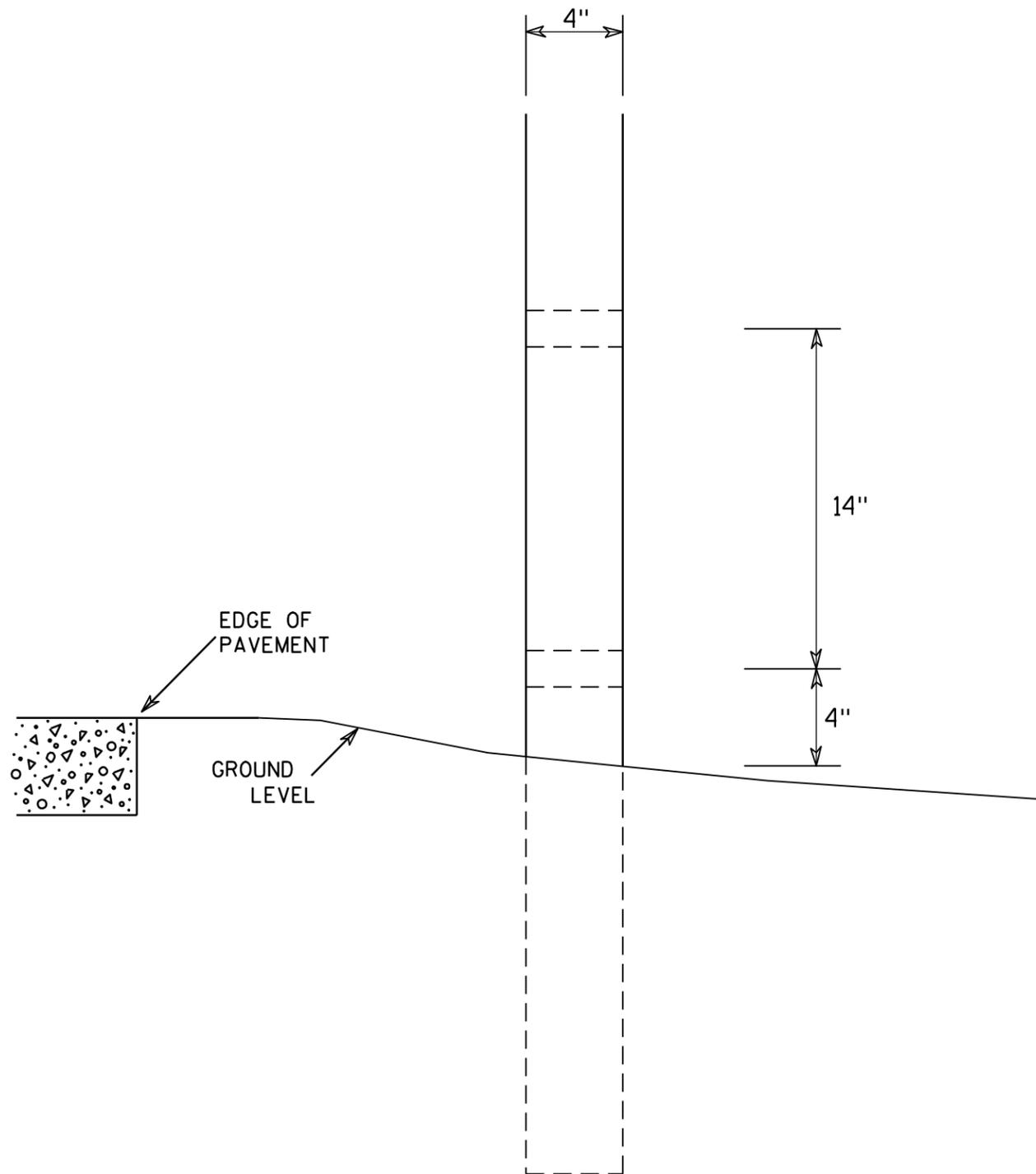
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



GENERAL NOTES

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

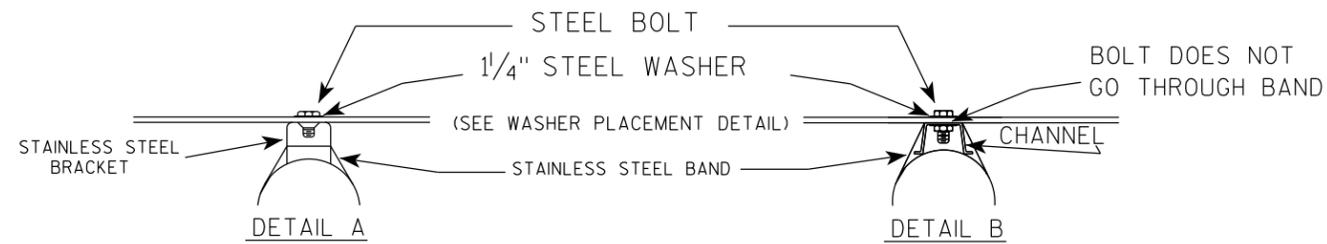
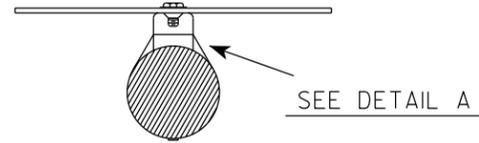
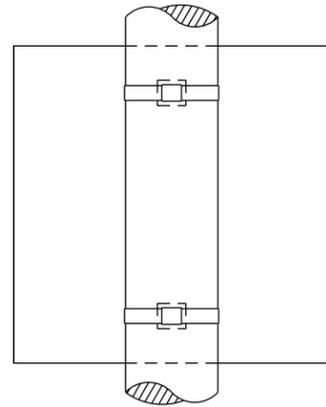
7

7

4 X 6 WOOD POST MODIFICATIONS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Chester J. Spang</i> for State Traffic Engineer
DATE 3/27/97	PLATE NO. A4-11.2

# BANDING

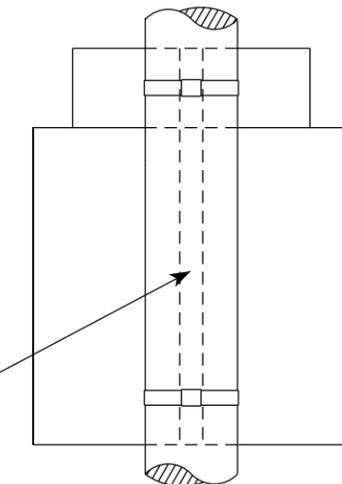
SINGLE SIGN



## GENERAL NOTES

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

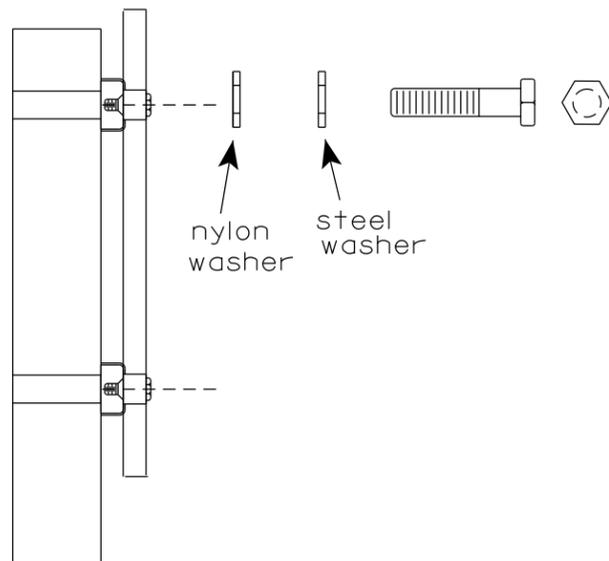
"J" ASSEMBLY



CHANNEL  
SEE TYPICAL PANEL  
INSTALLATION SHEET



WASHER PLACEMENT



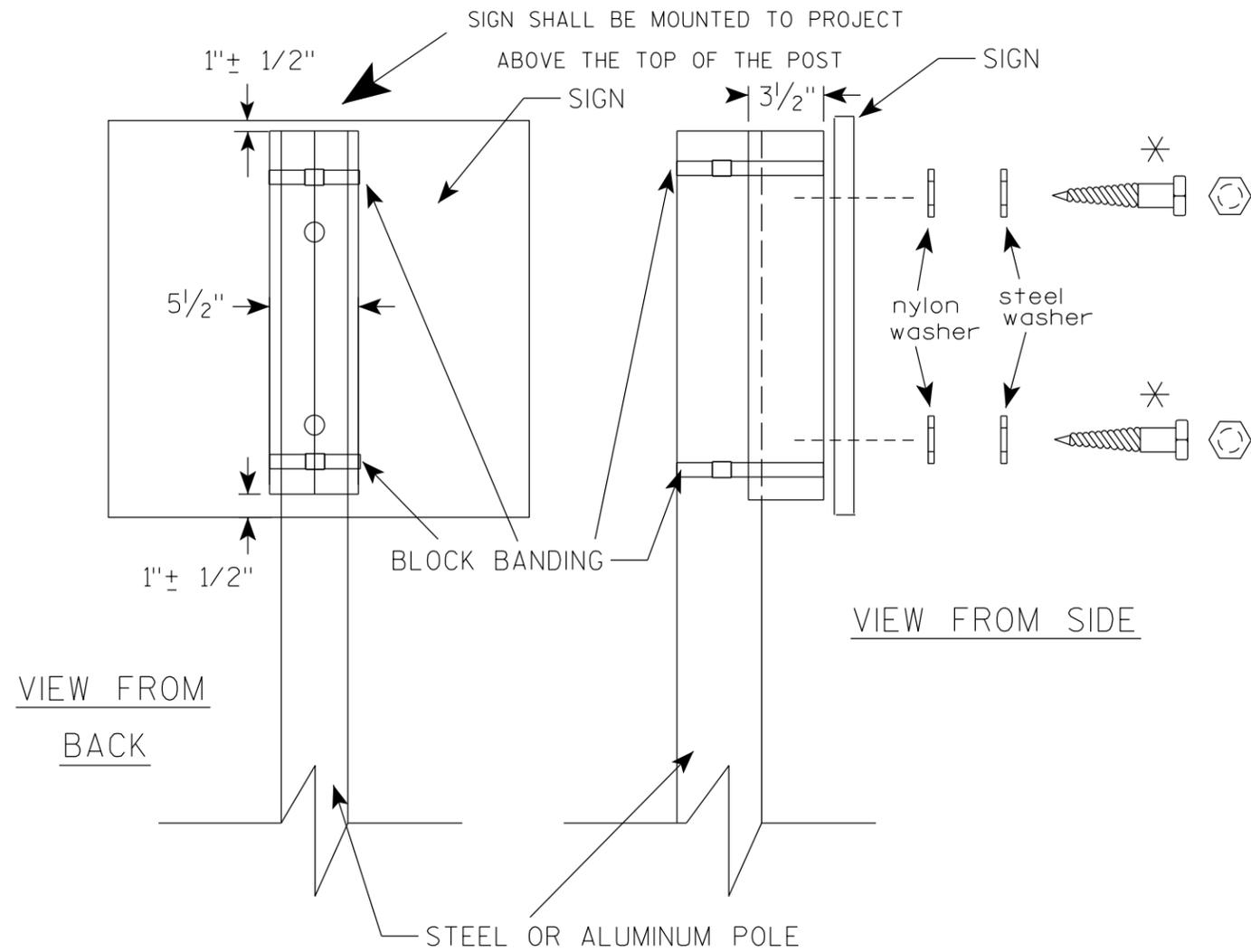
WASHERS (ALL POSTS) -  
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL  
1-1/4" O.D. X 3/8" I.D. X .080 NYLON  
FOR ALL TYPE H SIGNS

STANDARD SIGN  
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

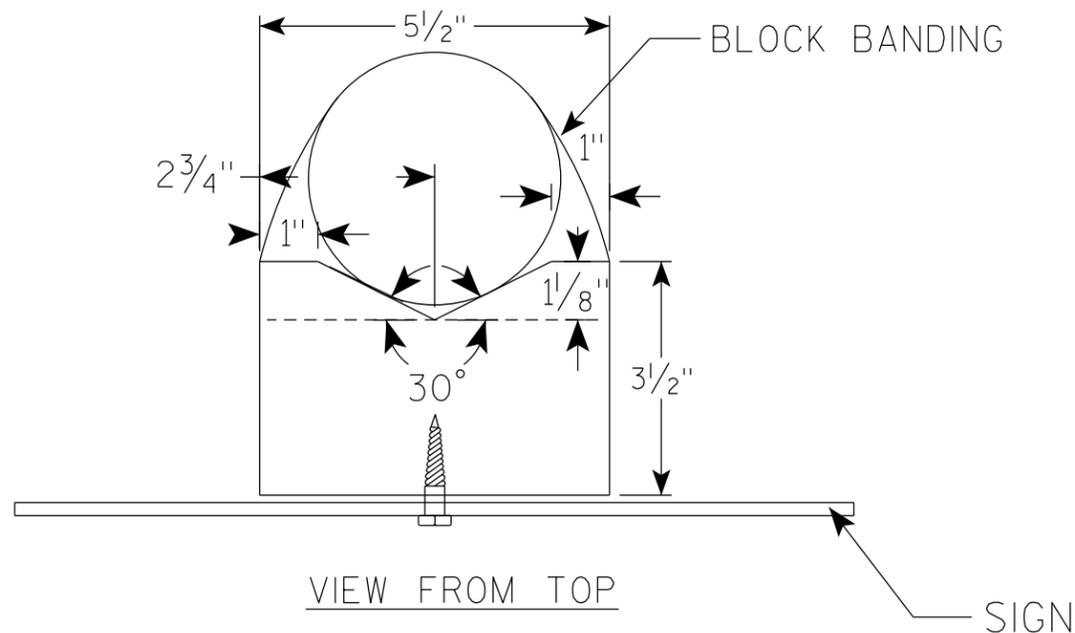
DATE 6/10/19 PLATE NO. A5-9.4



GENERAL NOTES

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

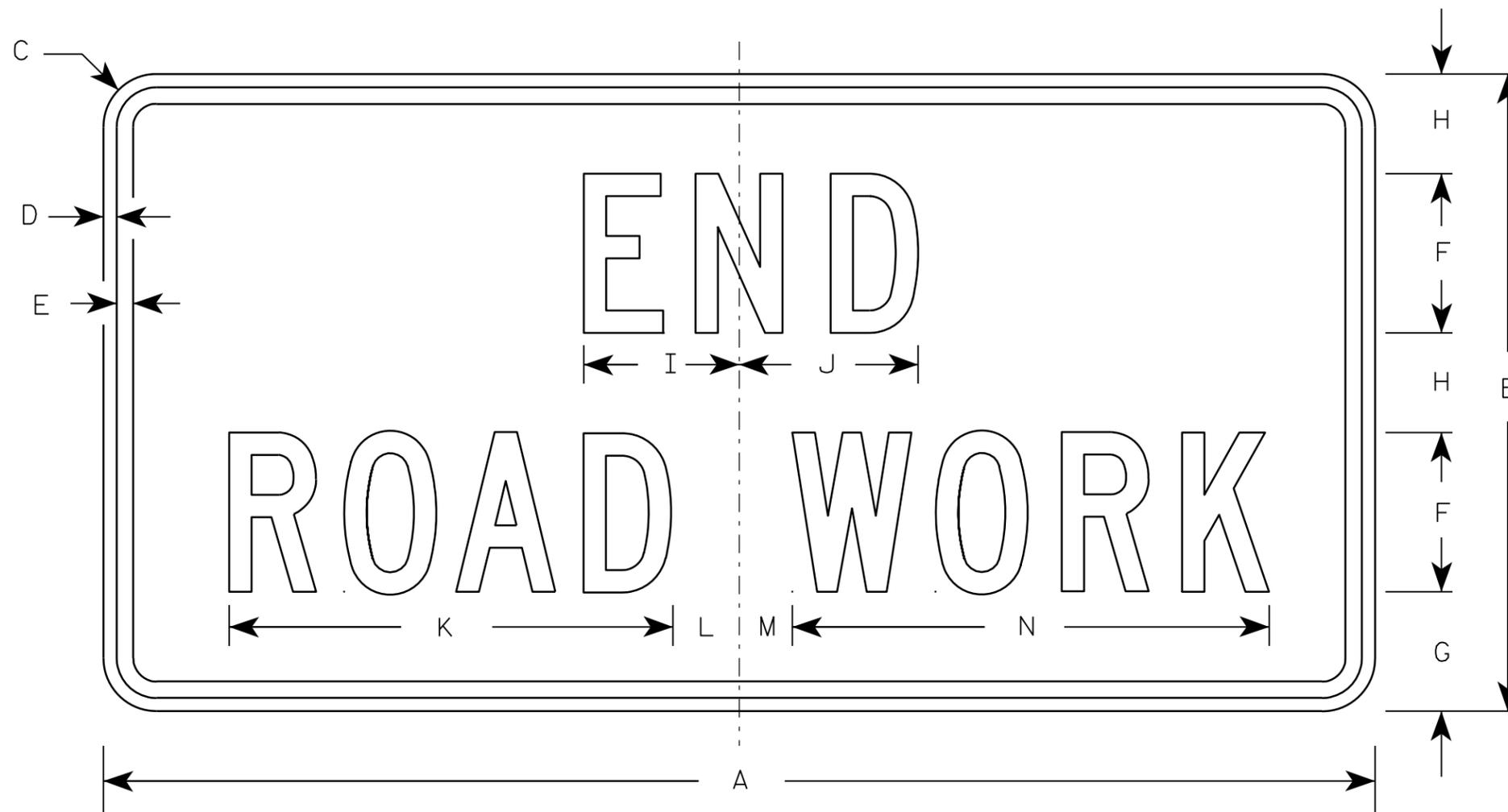
\* LAG BOLTS SHALL BE 3/8" X 2 1/2"



BLOCK BANDING DETAIL ( V-BLOCK OPTION )	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R Rauch</i> for State Traffic Engineer
DATE 4/19/2022	PLATE NO. A5-10.3

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 - 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.



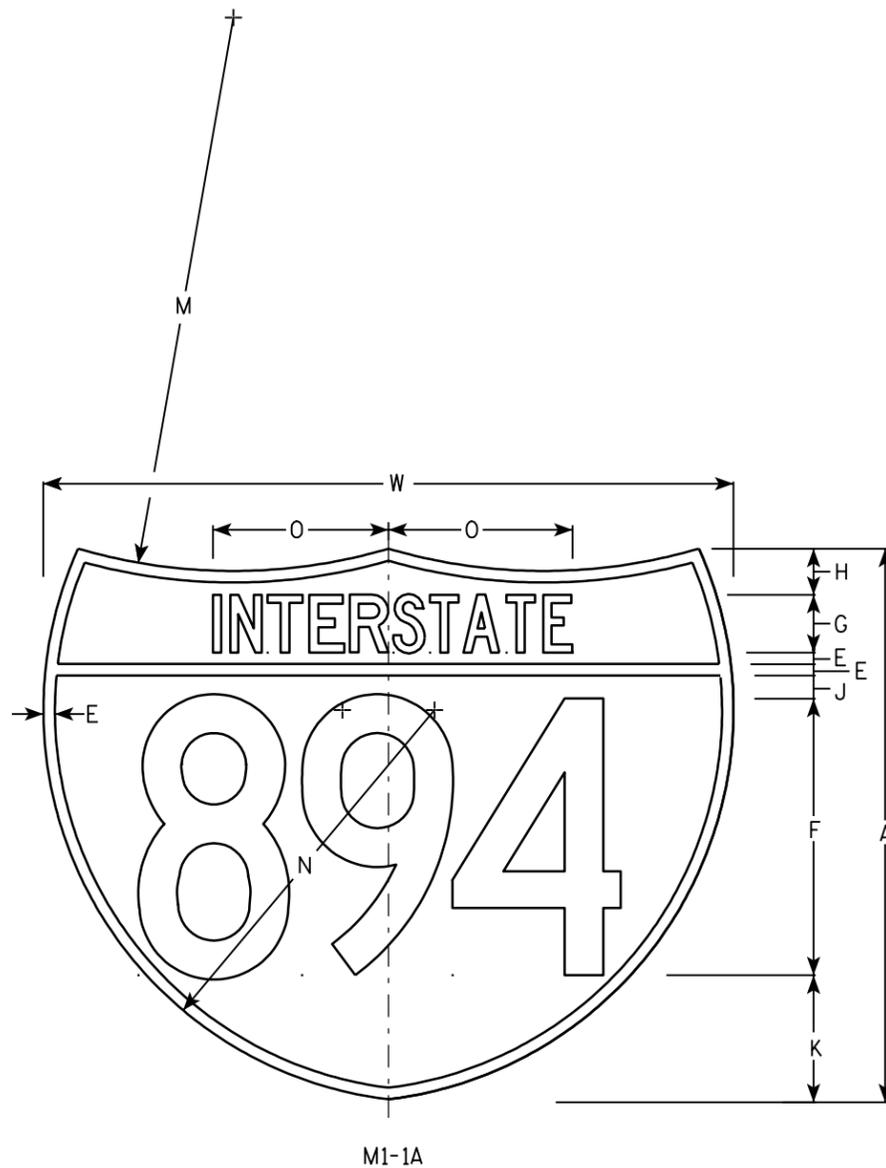
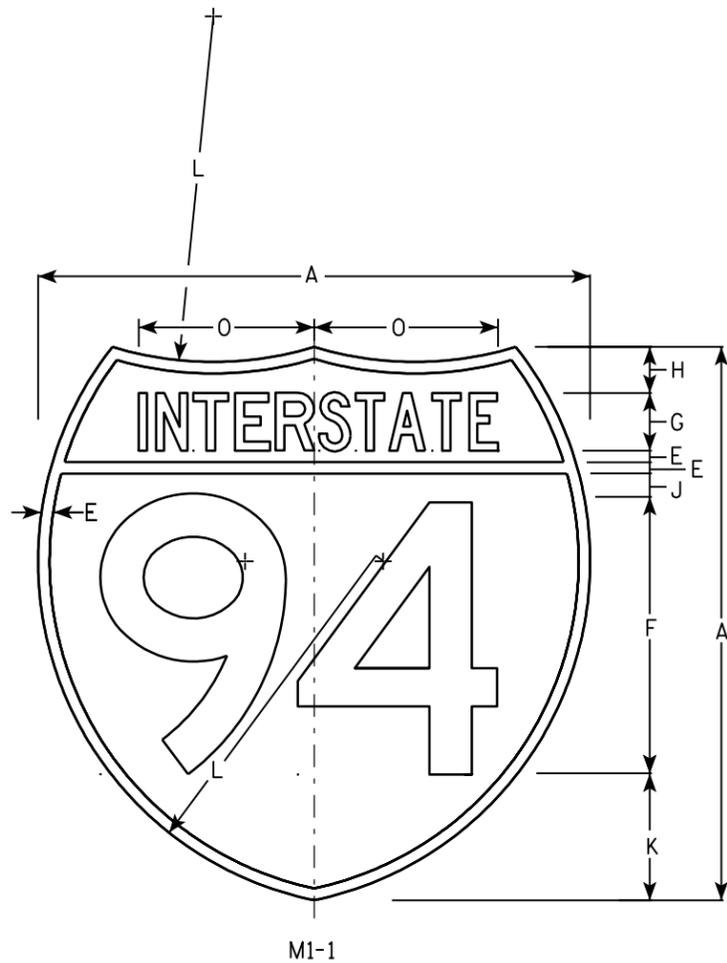
G20-2A

Metric equivalent  
for this sign is:

SIZE	
1	900 mm X 450 mm
2	1200 mm X 600 mm
3	1200 mm X 600 mm
4	1200 mm X 600 mm
5	1200 mm X 600 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 sq.
1	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
4	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
5	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72

STANDARD SIGN G20-2A	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 9/30/09	PLATE NO. G20-2A.8



**NOTES**

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - Top Red - Bottom Blue (See Note 6)  
Message - White - See Note 6
3. Message Series - See note 5
4. Substitute appropriate numerals & adjust spacing as per plate A10-1.
5. M1-1 - Numerals - D  
Interstate - C  
M1-1A - All copy - C
6. Permanent Signs  
Message - Type H Reflective  
Detour or other temporary signs  
Background - Reflective  
Message - Reflective

7

Metric equivalent for these signs are:

SIZE	M1-1	SIZE	M1-1A
1			
2	600 mm X 600 mm	2	600 mm X 750 mm
3	900 mm X 900 mm	3	900 mm X 1125 mm
4	900 mm X 900 mm	4	900 mm X 1125 mm
5	900 mm X 900 mm	5	900 mm X 1125 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	M1-1 Area sq. ft.	M1-1A Area sq. ft.	M1-1 Area m <sup>2</sup>	M1-1A Area m <sup>2</sup>
1																													
2	24				1/2	12	2 1/2	2		1	5 1/2	15	24	17	7 7/8								30			3.13	3.91	.36	.46
3	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05
4	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05
5	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79	.81	1.05

**INTERSTATE ROUTE MARKER  
M1-1 FOR ASSEMBLIES**

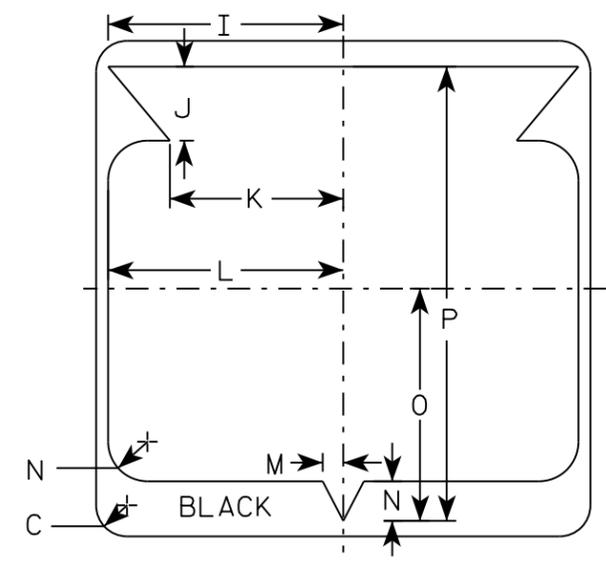
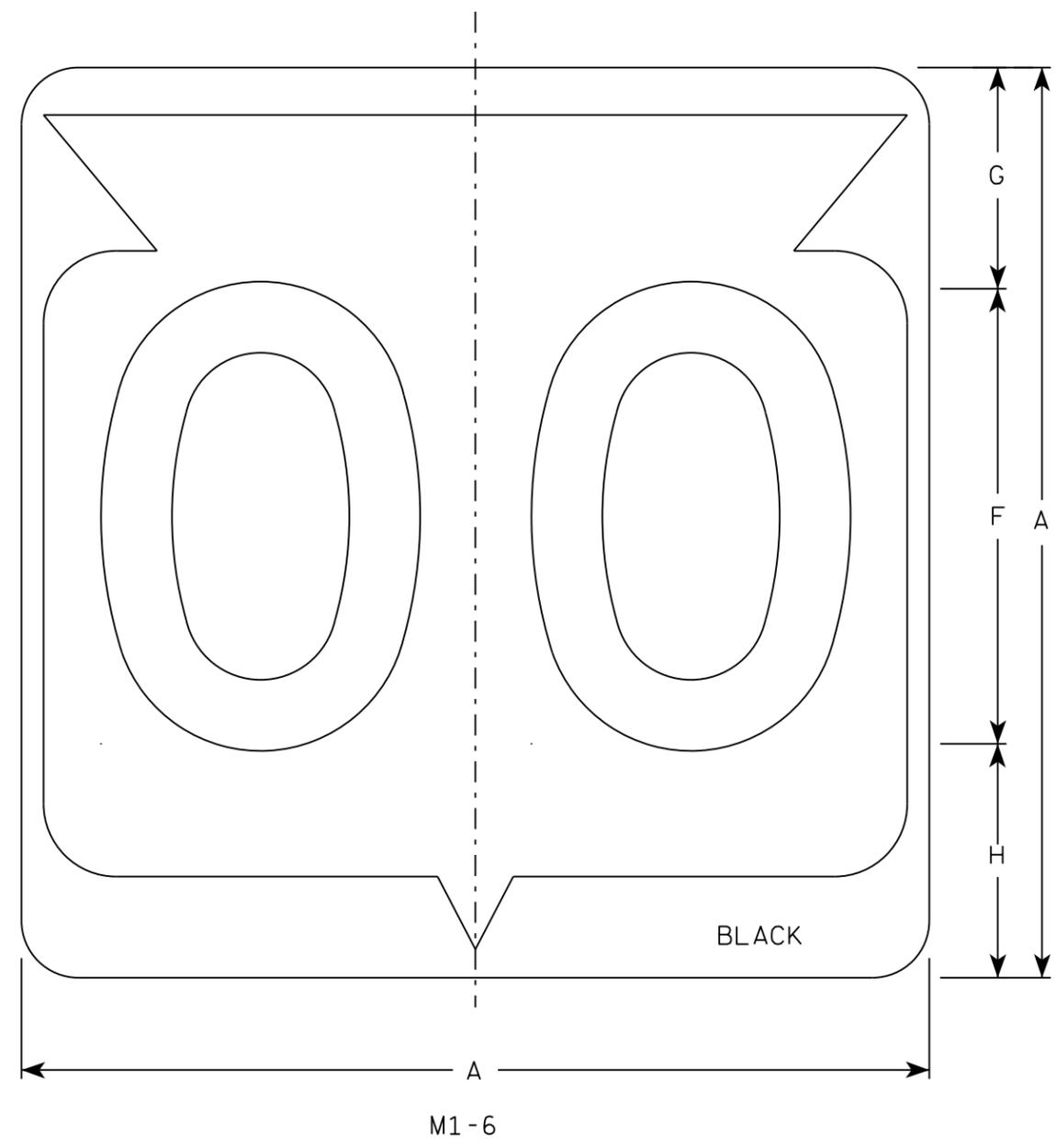
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*  
for State Traffic Engineer

DATE 08/23/05 PLATE NO. M1-1.8

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

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

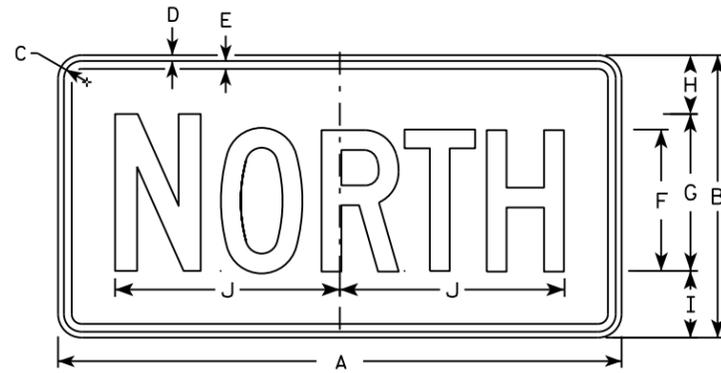
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

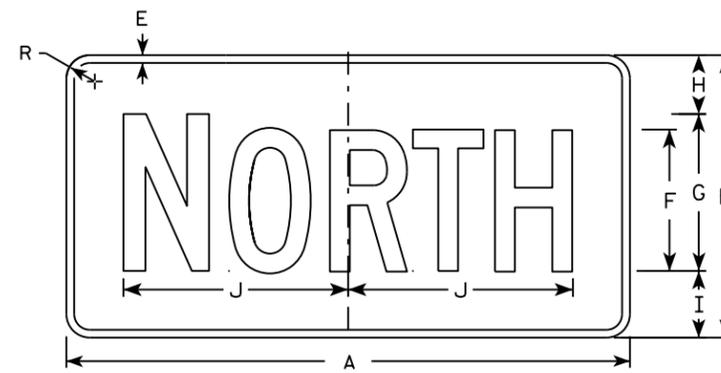
PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: \_\_\_\_\_ E

NOTES

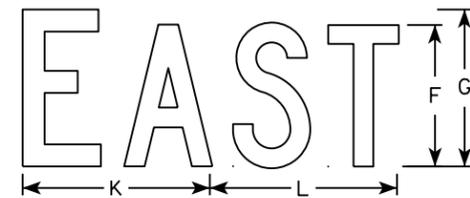
- All Signs Type II - Type H
- Color:
  - Background - See note 5
  - Message - See note 5
- Message Series - C
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M3-1 thru M3-4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



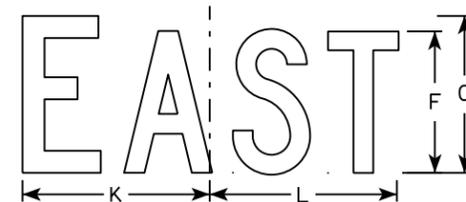
M3-1  
MM3-1  
MP3-1



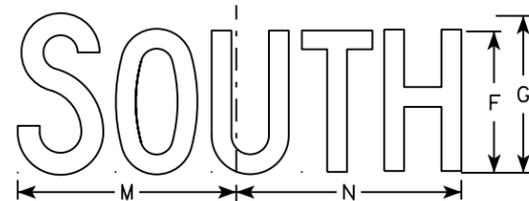
MB3-1  
MK3-1  
MN3-1



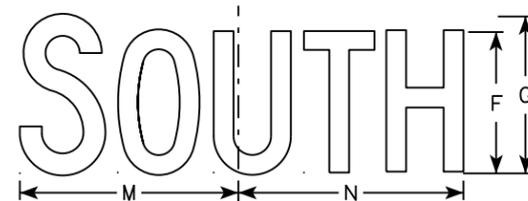
M3-2  
MM3-2  
MP3-2



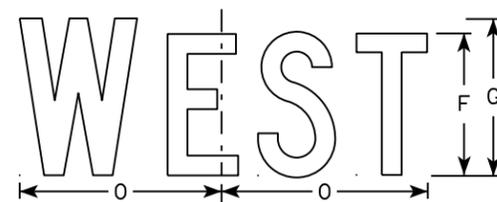
MB3-2  
MK3-2  
MN3-2



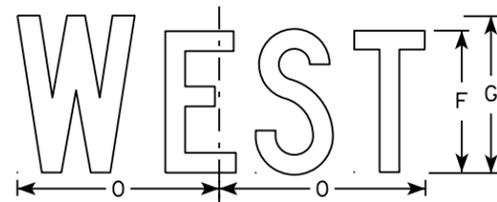
M3-3  
MM3-3  
MP3-3



MB3-3  
MK3-3  
MN3-3



M3-4  
MM3-4  
MP3-4



MB3-4  
MK3-4  
MN3-4

7

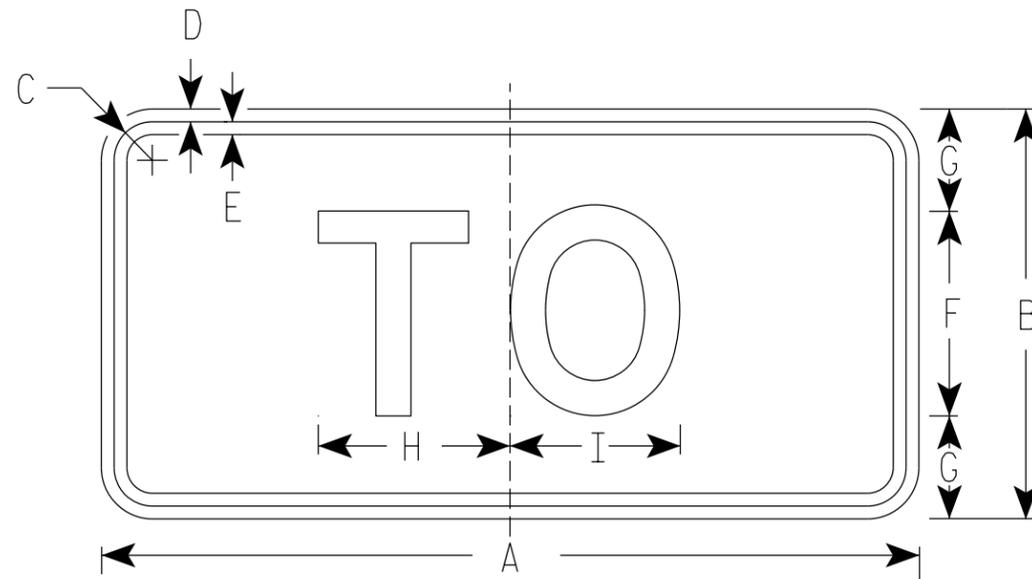
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8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

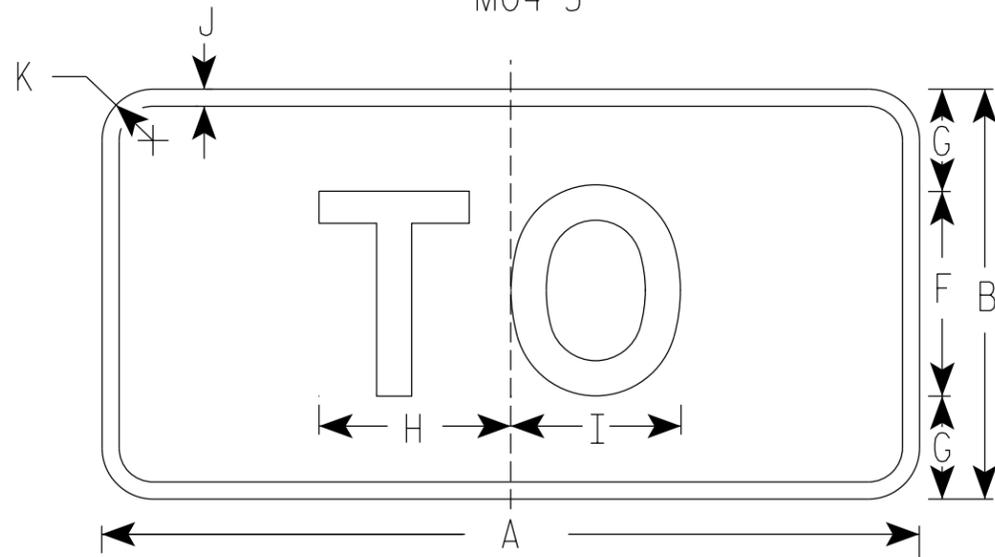
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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



M4-5  
MM4-5  
MP4-5  
M04-5



MB4-5  
MK4-5  
MN4-5

NOTES

1. Sign is Type II - Type H Reflective
2. Color:  
Background - See note 5  
Message - See note 5
3. Message Series - E
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. M4-5 Background - White  
Message - Black  
MB4-5 Background - Blue  
Message - White  
MK4-5 Background - Green  
Message - White  
MM4-5 Background - White  
Message - Green  
MN4-5 Background - Brown  
Message - White  
MP4-5 Background - White  
Message - Blue  
M04-5 Background - Orange Type F Reflective  
Message - Black

7

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	12	1 1/8	3/8	3/8	6	3	5 3/8	5 1/4	1/2	1 1/2																2.00
3	36	18	1 3/8	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2	1 1/2																4.5
4	36	18	1 3/8	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2	1 1/2																4.5
5	36	18	1 3/8	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2	1 1/2																4.5

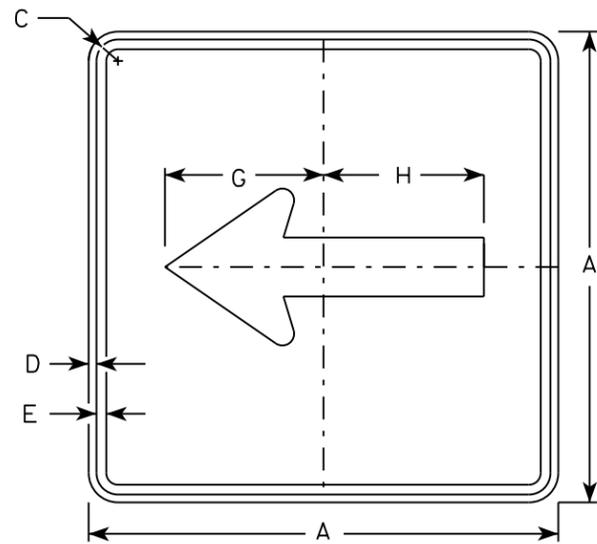
STANDARD SIGN  
M4-5

WISCONSIN DEPT OF TRANSPORTATION

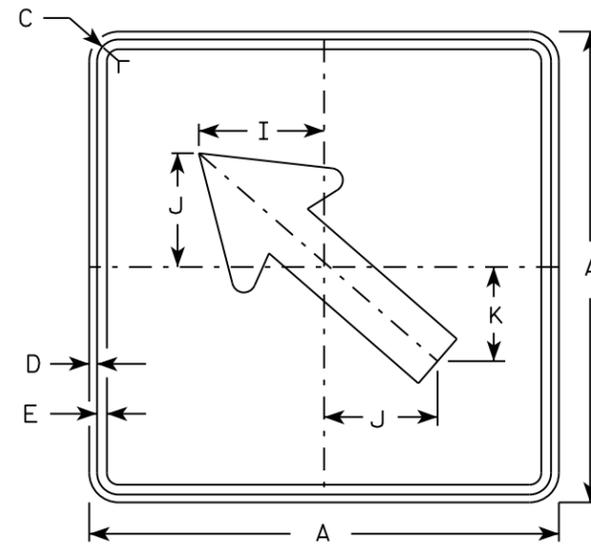
APPROVED *Matthew R. Rauch*  
State Traffic Engineer

DATE 03/7/19 PLATE NO. M4-5.9

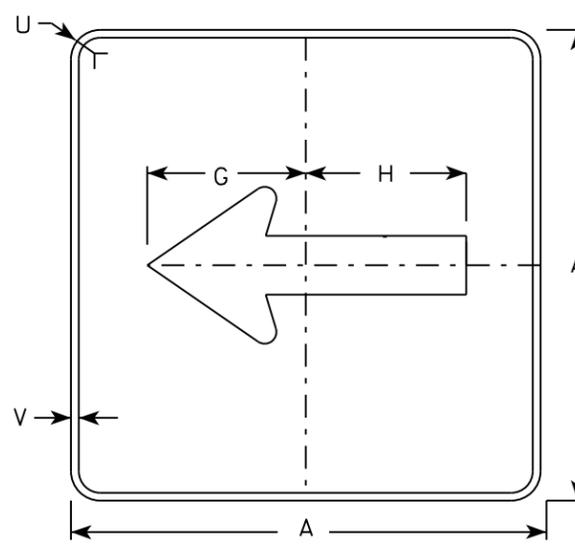
PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: **E**



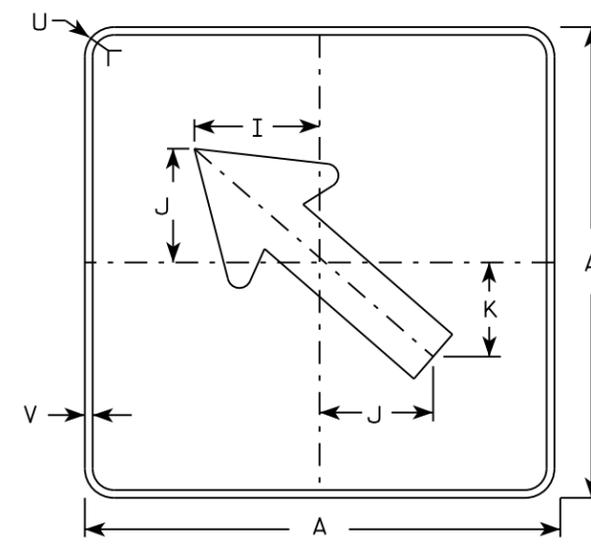
M6-1  
MM6-1  
M06-1  
MP6-1



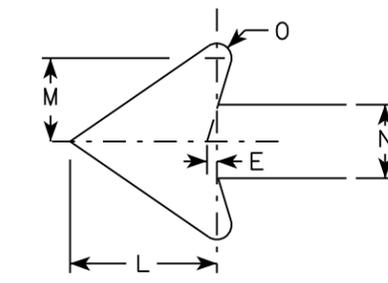
M6-2  
MM6-2  
M06-2  
MP6-2



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

7

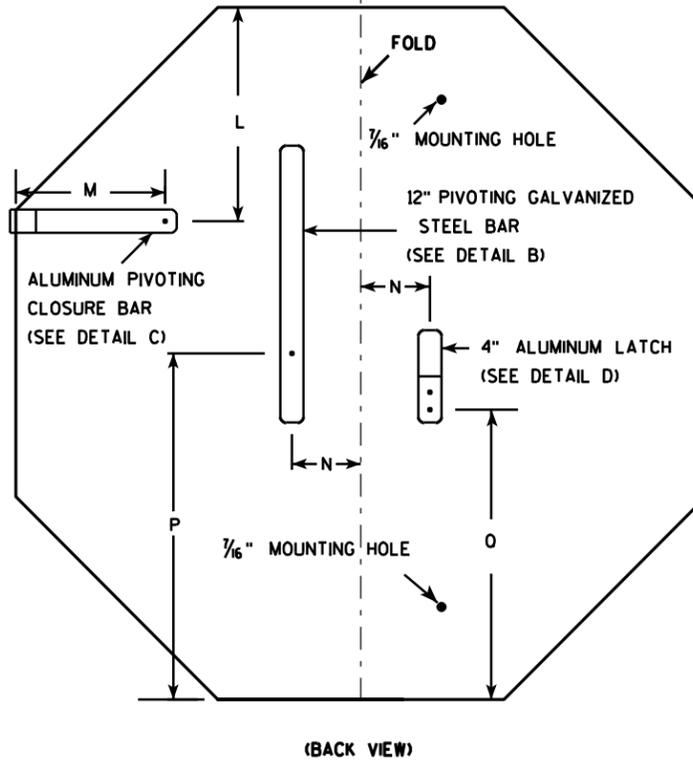
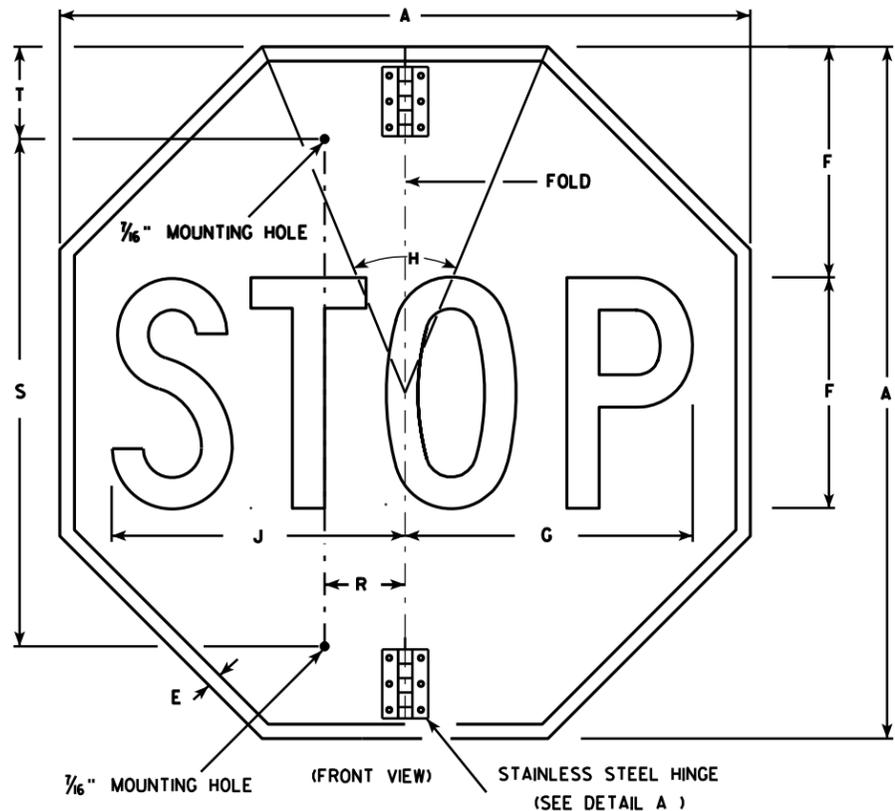
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10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

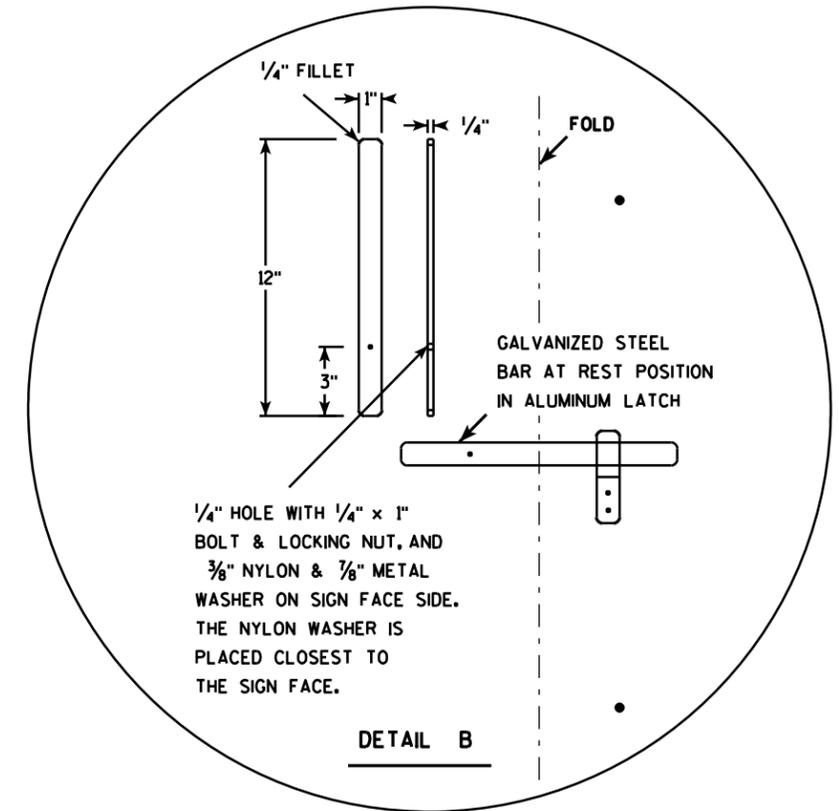
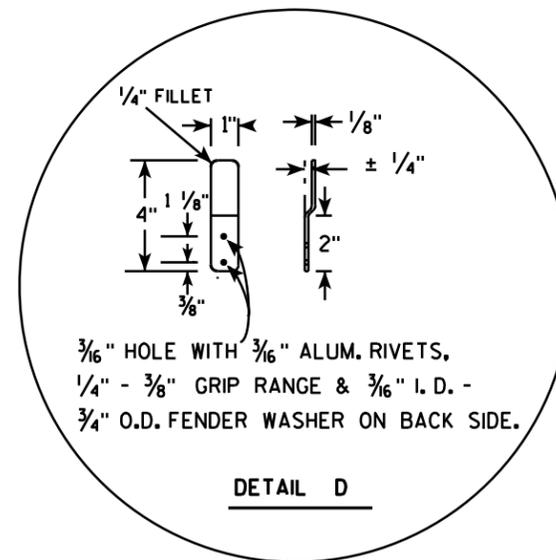
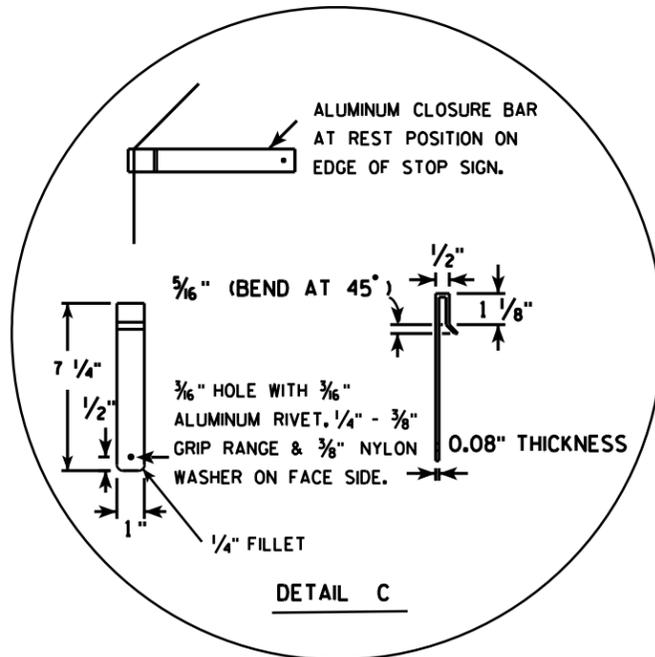
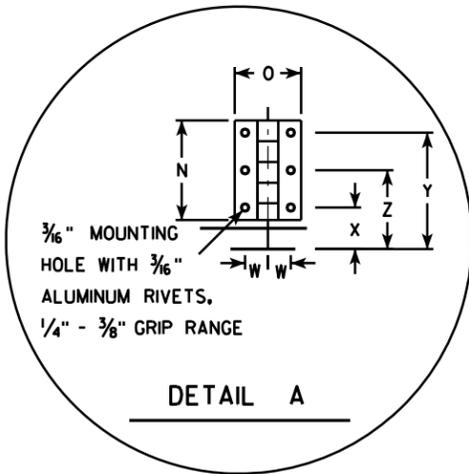
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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



**NOTES**

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - Red  
Message - White
3. Message Series - C
4. All hardware used on the folding STOP sign installation shall conform to 637.2.4 of the WIS DOT Standard Specification.



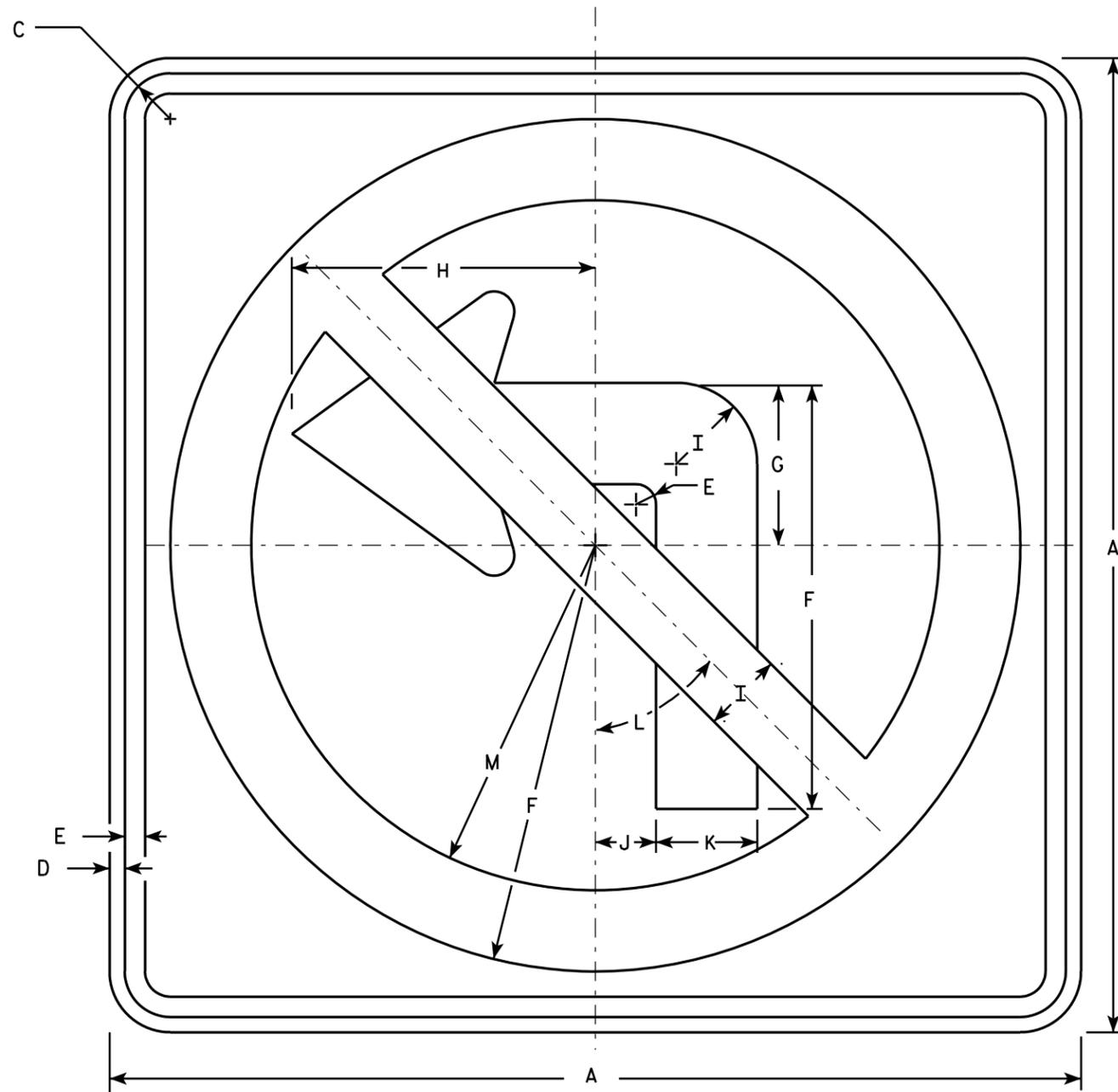
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30				5/8	10	12 1/2	45		12 3/4		9 1/4	6 1/2	3	2	15	12 3/8	2 1/2	22	5			1 1/8	1 1/4	3 1/2	2 3/8	5.18
2M	36				3/4	12	15	45		15 3/8		11	6 1/2	3	2	18	15 3/8	2 1/2	26	5			1 1/8	1 1/4	3 1/2	2 3/8	7.46
3	36				3/4	12	15	45		15 3/8		11	6 1/2	3	2	18	15 3/8	2 1/2	26	5			1 1/8	1 1/4	3 1/2	2 3/8	7.46
4																											
5																											

STANDARD SIGN  
R1-1F

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

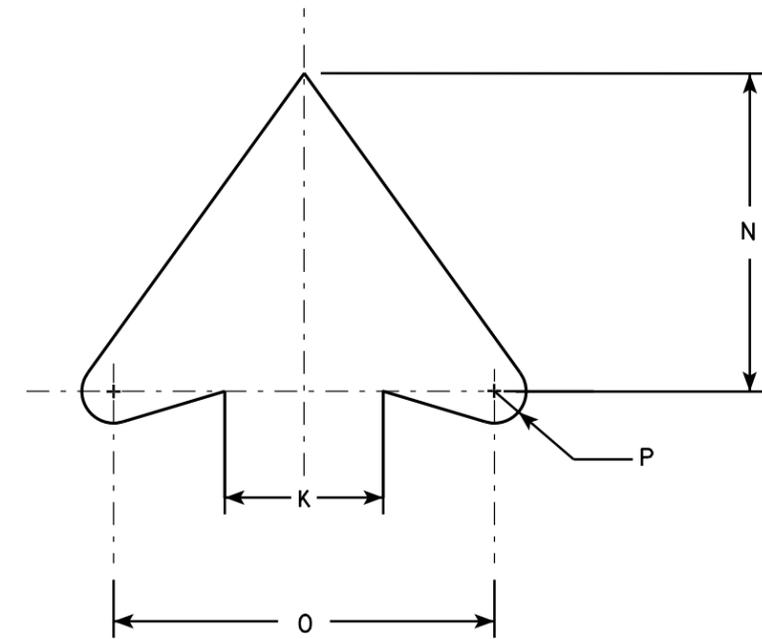
DATE 12/03/10 PLATE NO. R1-1F.3



R3-2

**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 - 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. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



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	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2											4.0
2S	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2											4.0
2M	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
3	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
4	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1											16.0

**STANDARD SIGN**  
**R3-2**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-2.10

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: **E**

NOTES

1. Sigs are Type II - Type H Reflective
2. Color:  
Background - White  
Message - Black
3. Message Series - D
4. Use appropriate Letter for Sign Code  
Each letter added makes sign wider. Example R3-8EAR
5. Square footage of sign varies by letters

1 Letter = 3.75 sq ft for Size 2  
6.0 sq ft for Size 3  
10.0 sq ft for Size 4 or 5

2 Letters = 7.5 sq ft for Size 2  
12.0 sq ft for Size 3  
20.0 sq ft for Size 4 or 5

3 Letters = 11.25 sq ft for Size 2  
18.0 sq ft for Size 3  
30.0 sq ft for Size 4 or 5

4 Letters = 15.0 sq ft for Size 2  
24.0 sq ft for Size 3  
40.0 sq ft for Size 4 or 5

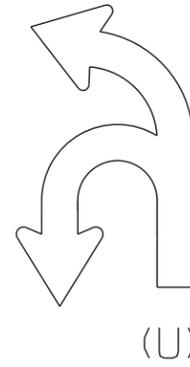
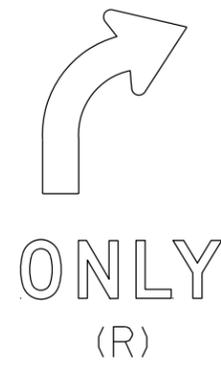
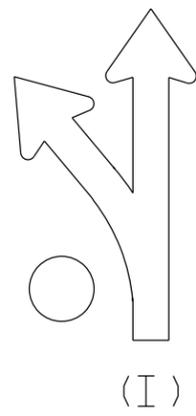
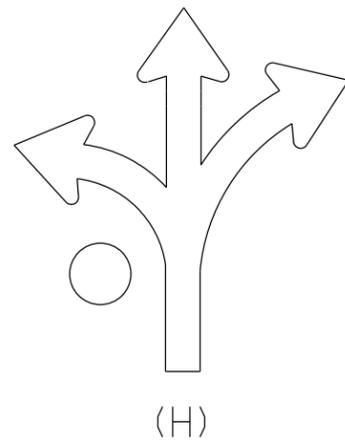
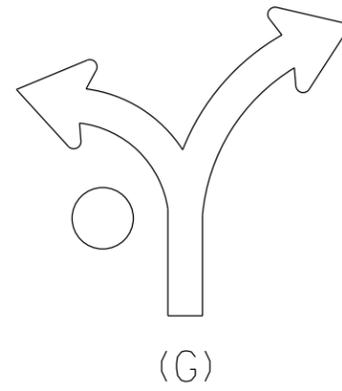
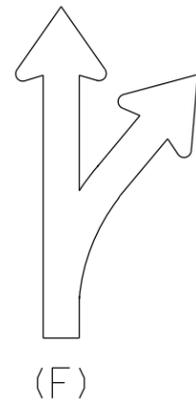
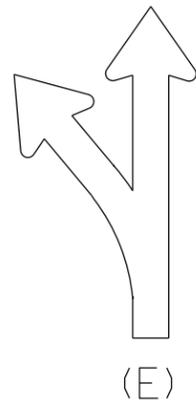
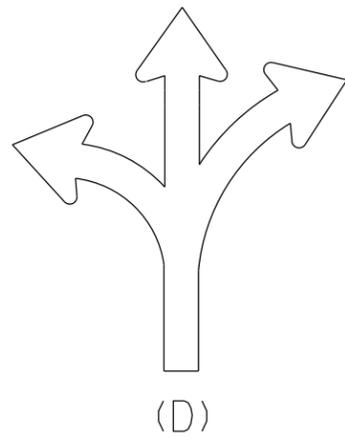
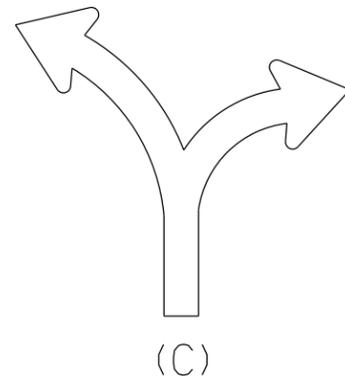
5 Letters = 18.75 sq ft for Size 2  
30.0 sq ft for Size 3  
50.0 sq ft for Size 4 or 5

6 Letters = 22.5 sq ft for Size 2  
36.0 sq ft for Size 3  
60.0 sq ft for Size 4 or 5

6. When letters C,D,G,H are used on the Left or Right end of the sign the Sq.Ft. changes.

Add the amounts when these letters are used:

1.25 sq ft for Size 2  
1.5 sq ft for Size 3  
2.0 sq ft for Size 4 or 5



STANDARD SIGN  
R3-8 Series

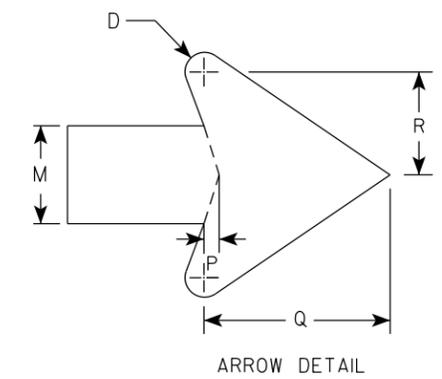
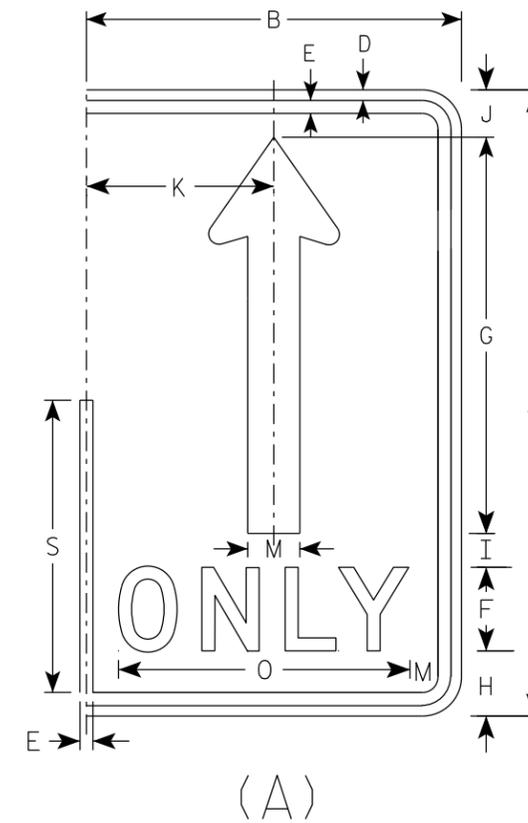
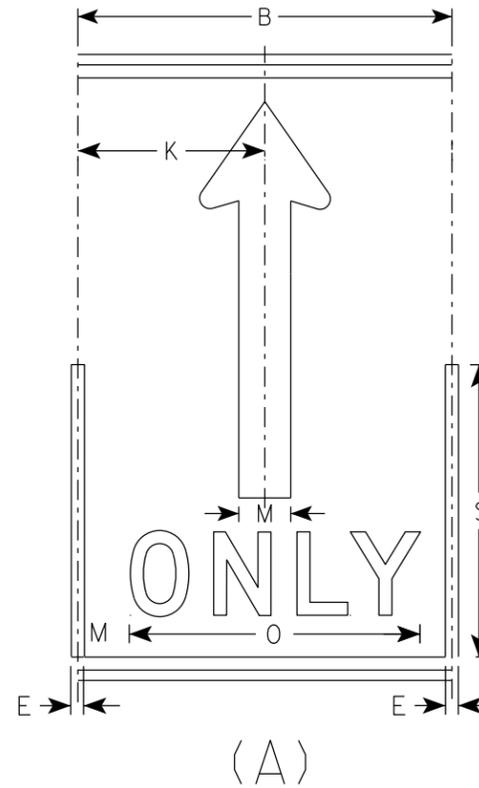
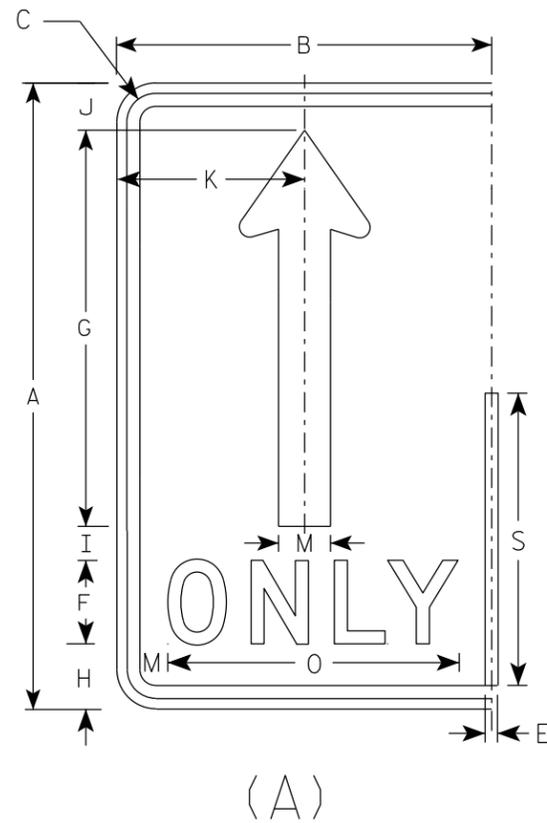
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 5/21/19 PLATE NO. R3-8.1

NOTES

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



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	30	18	1 3/8	1/2	5/8	4	19	3 1/8	1 5/8	2 1/4	9		2 1/2		14	3/8	4 3/4	2 5/8	14								3.75
2M	30	18	1 3/8	1/2	5/8	4	19	3 1/8	1 5/8	2 1/4	9		2 1/2		14	3/8	4 3/4	2 5/8	14								3.75
3	36	24	1 3/8	1/2	5/8	5	22 3/4	3 3/4	1 3/4	2 3/4	12		3		17 5/8	1/2	5 3/4	3 1/8	16 3/4								6.0
4	48	30	2 1/4	3/4	1	6	30 3/8	5 1/8	2 7/8	3 5/8	15		4		21 3/4	5/8	7 5/8	4 1/4	22 3/8								10.0
5	48	30	2 1/4	3/4	1	6	30 3/8	5 1/8	2 7/8	3 5/8	15		4		21 3/4	5/8	7 5/8	4 1/4	22 3/8								10.0

STANDARD SIGN  
R3-8 (A) Arrow

WISCONSIN DEPT OF TRANSPORTATION

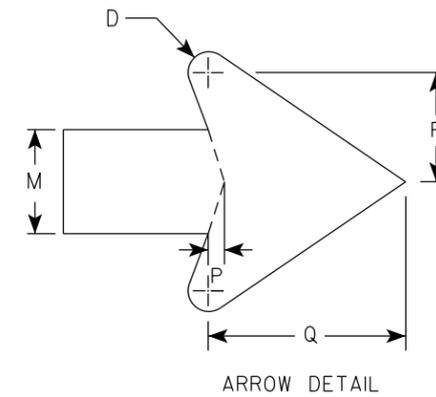
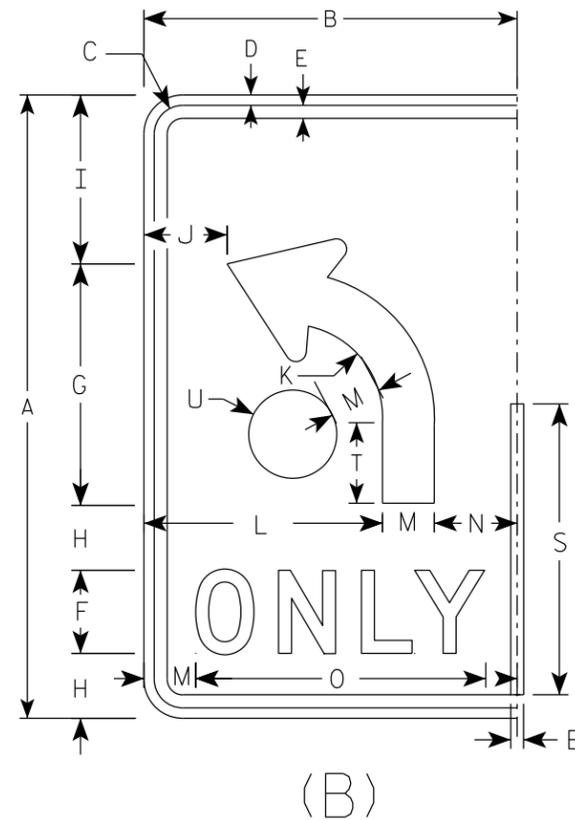
APPROVED *Matthew R Rauch*  
for State Traffic Engineer

DATE 5/21/19 PLATE NO. R3-8.1

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: **E**

NOTES

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



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	30	18	1 3/8	1/2	5/8	4	11 5/8	3 1/8	8 1/8	4	4 1/2	11 1/2	2 1/2	4	14	3/8	4 3/4	2 5/8	14	3 7/8	2 1/8						3.75
2M	30	18	1 3/8	1/2	5/8	4	11 5/8	3 1/8	8 1/8	4	4 1/2	11 1/2	2 1/2	4	14	3/8	4 3/4	2 5/8	14	3 7/8	2 1/8						3.75
3	36	24	1 3/8	1/2	5/8	5	14	3 1/2	9 3/4	6	5 3/8	15	3	6	17 5/8	1/2	5 3/4	3 1/8	16 3/4	4 5/8	2 1/2						6.0
4	48	30	2 1/4	3/4	1	6	18 5/8	5 1/8	13 1/8	6 1/8	7 1/4	18	4	8	21 3/4	5/8	7 5/8	4 1/4	22 3/8	6 1/4	3 3/8						10.0
5	48	30	2 1/4	3/4	1	6	18 5/8	5 1/8	13 1/8	6 1/8	7 1/4	18	4	8	21 3/4	5/8	7 5/8	4 1/4	22 3/8	6 1/4	3 3/8						10.0

STANDARD SIGN  
R3-8 (B) Arrow

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 5/21/19 PLATE NO. R3-8.1

PROJECT NO:

SHEET NO:

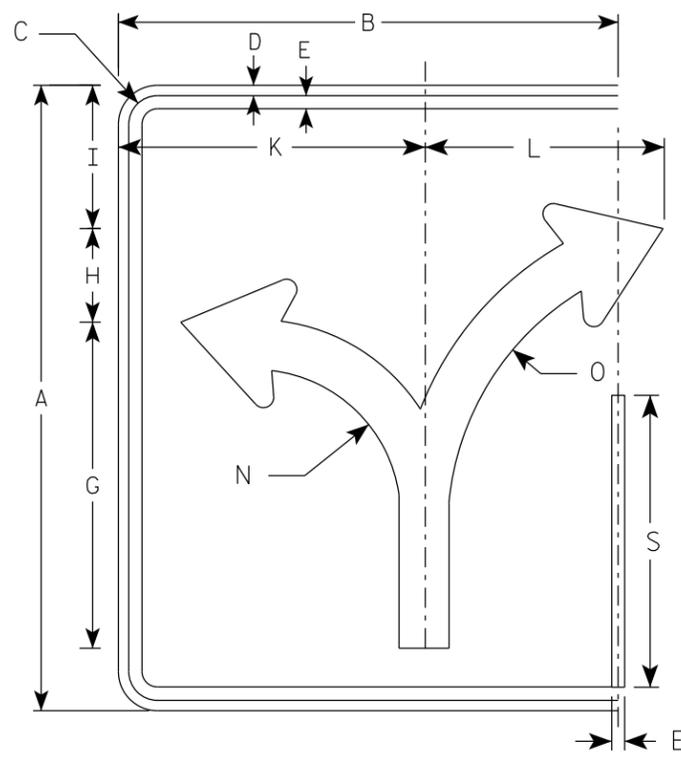
E

7

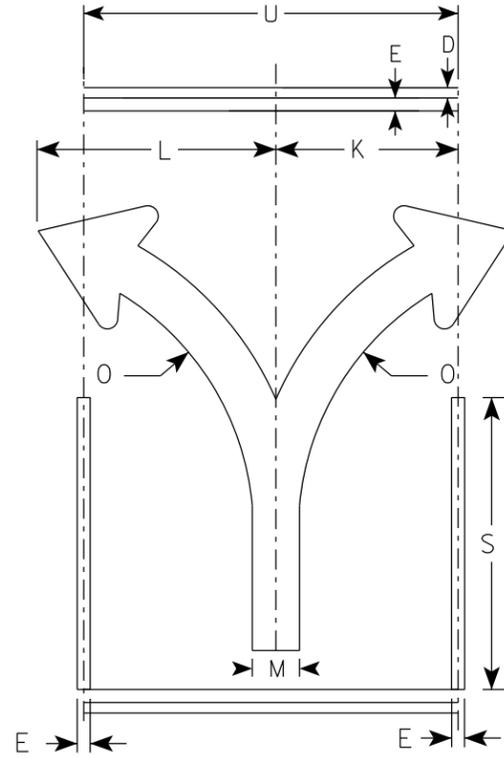
7

NOTES

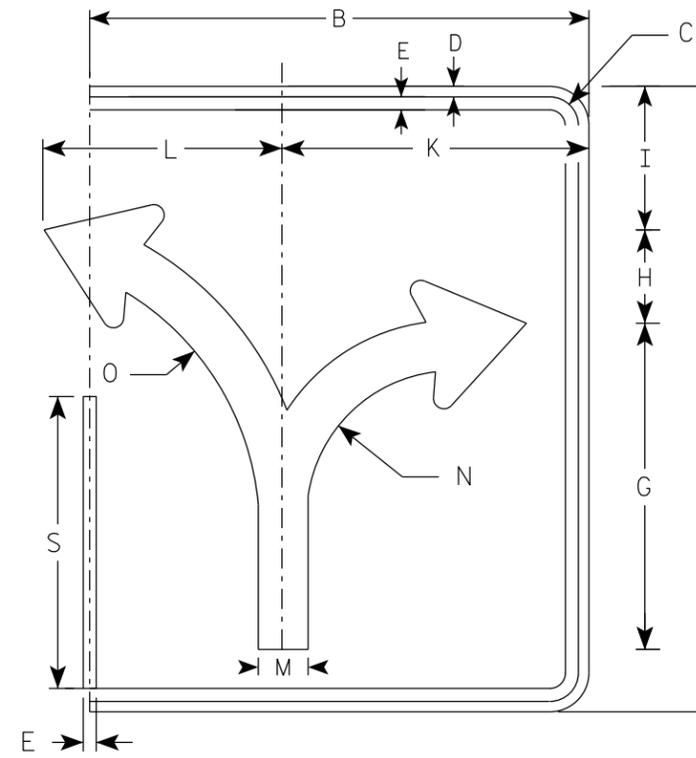
1. Sign is Type II - Type H Reflective
2. Color:  
Background - White  
Message - Black
3. Message Series - None



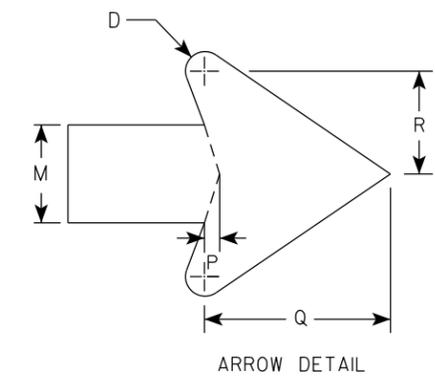
(C)



(C)



(C)



7

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	ENDS	MIDDLE
																											Area sq. ft.	Area sq. ft.
1																												
2S	30	24	1 3/8	1/2	5/8		15 5/8	4 1/2	6 7/8		14 3/4	11 1/2	2 3/8	7	13 1/4	3/8	4 1/2	2 1/2	14		18						5.0	3.75
2M	30	24	1 3/8	1/2	5/8		15 5/8	4 1/2	6 7/8		14 3/4	11 1/2	2 3/8	7	13 1/4	3/8	4 1/2	2 1/2	14		18						5.0	3.75
3	36	30	1 3/8	1/2	5/8		18 3/4	5 1/2	8 1/4		17 1/4	17 1/4	2 7/8	8 3/8	16	1/2	5 1/2	3	16 3/4		24						7.5	6.0
4	48	36	2 1/4	3/4	1		24 7/8	7 1/4	11		23 1/8	18	3 3/4	11 1/8	21 1/4	5/8	7 1/8	4	22 3/8		30						12.0	10.0
5	48	36	2 1/4	3/4	1		24 7/8	7 1/4	11		23 1/8	18	3 3/4	11 1/8	21 1/4	5/8	7 1/8	4	22 3/8		30						12.0	10.0

STANDARD SIGN  
R3-8 (C) Arrow

WISCONSIN DEPT OF TRANSPORTATION

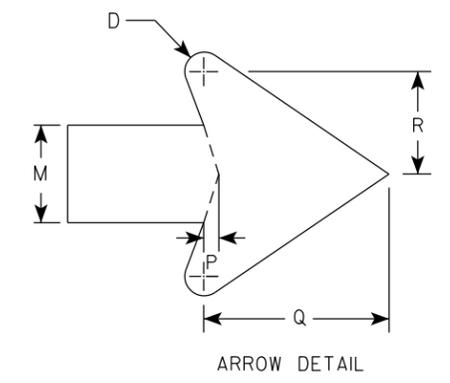
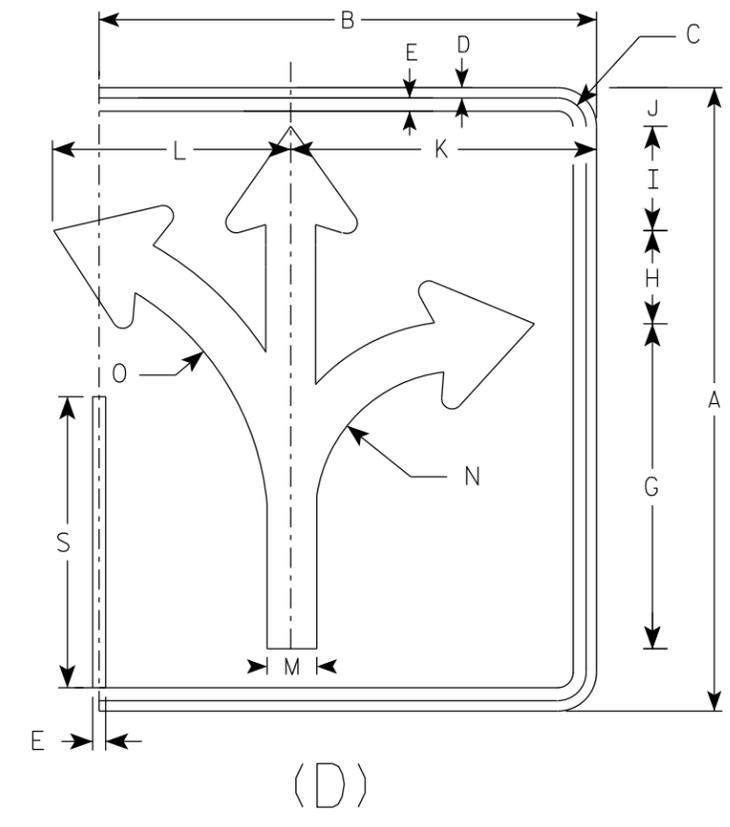
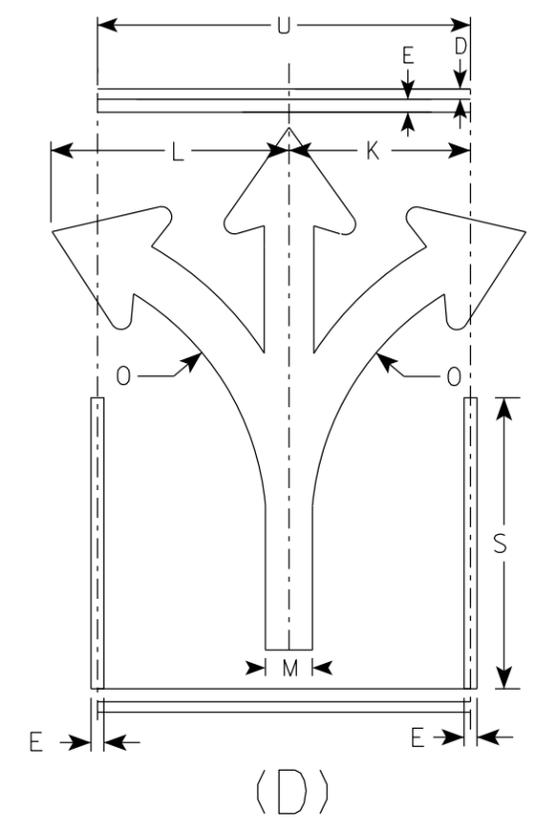
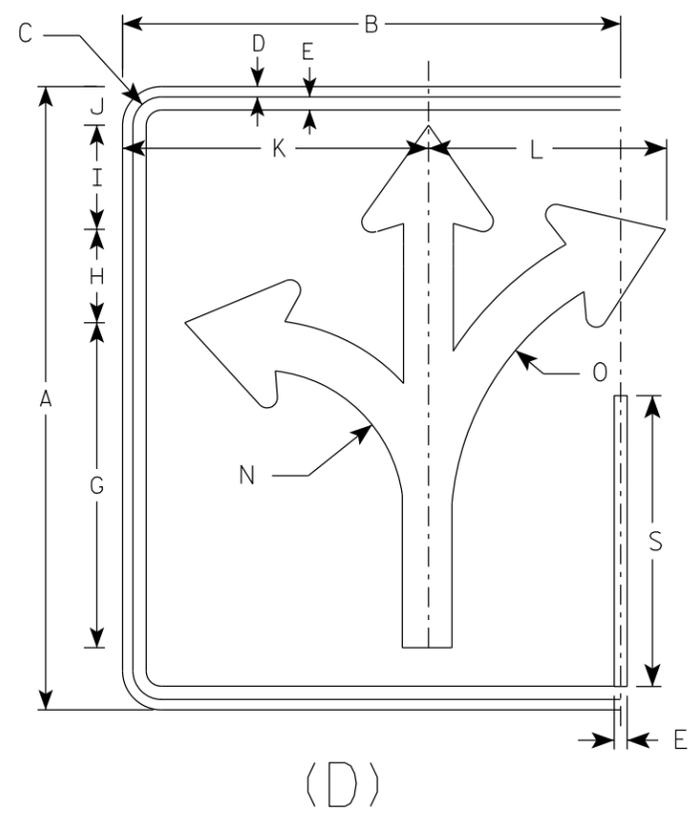
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 5/21/19 PLATE NO. R3-8.1

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 - None



7

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	ENDS	MIDDLE
																											Area sq. ft.	Area sq. ft.
1																												
2S	30	24	1 3/8	1/2	5/8		15 5/8	4 1/2	5	1 7/8	14 3/4	11 1/2	2 3/8	7	13 1/4	3/8	4 1/2	2 1/2	14		18						5.0	3.75
2M	30	24	1 3/8	1/2	5/8		15 5/8	4 1/2	5	1 7/8	14 3/4	11 1/2	2 3/8	7	13 1/4	3/8	4 1/2	2 1/2	14		18					5.0	3.75	
3	36	30	1 3/8	1/2	5/8		18 3/4	5 1/2	6	2 1/4	17 1/4	17 1/4	2 7/8	8 3/8	16	1/2	5 1/2	3	16 3/4		24					7.5	6.0	
4	48	36	2 1/4	3/4	1		24 7/8	7 1/4	7 7/8	3 1/8	23 1/8	18	3 3/4	11 1/8	21 1/4	5/8	7 1/8	4	22 3/8		30					12.0	10.0	
5	48	36	2 1/4	3/4	1		24 7/8	7 1/4	7 7/8	3 1/8	23 1/8	18	3 3/4	11 1/8	21 1/4	5/8	7 1/8	4	22 3/8		30					12.0	10.0	

STANDARD SIGN  
R3-8 (D) Arrow

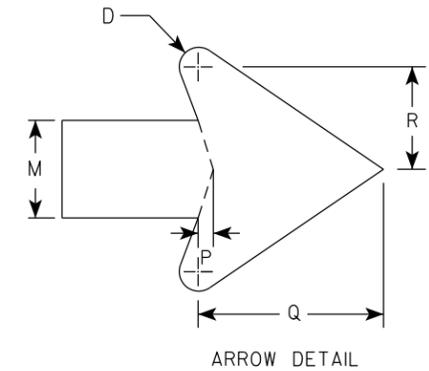
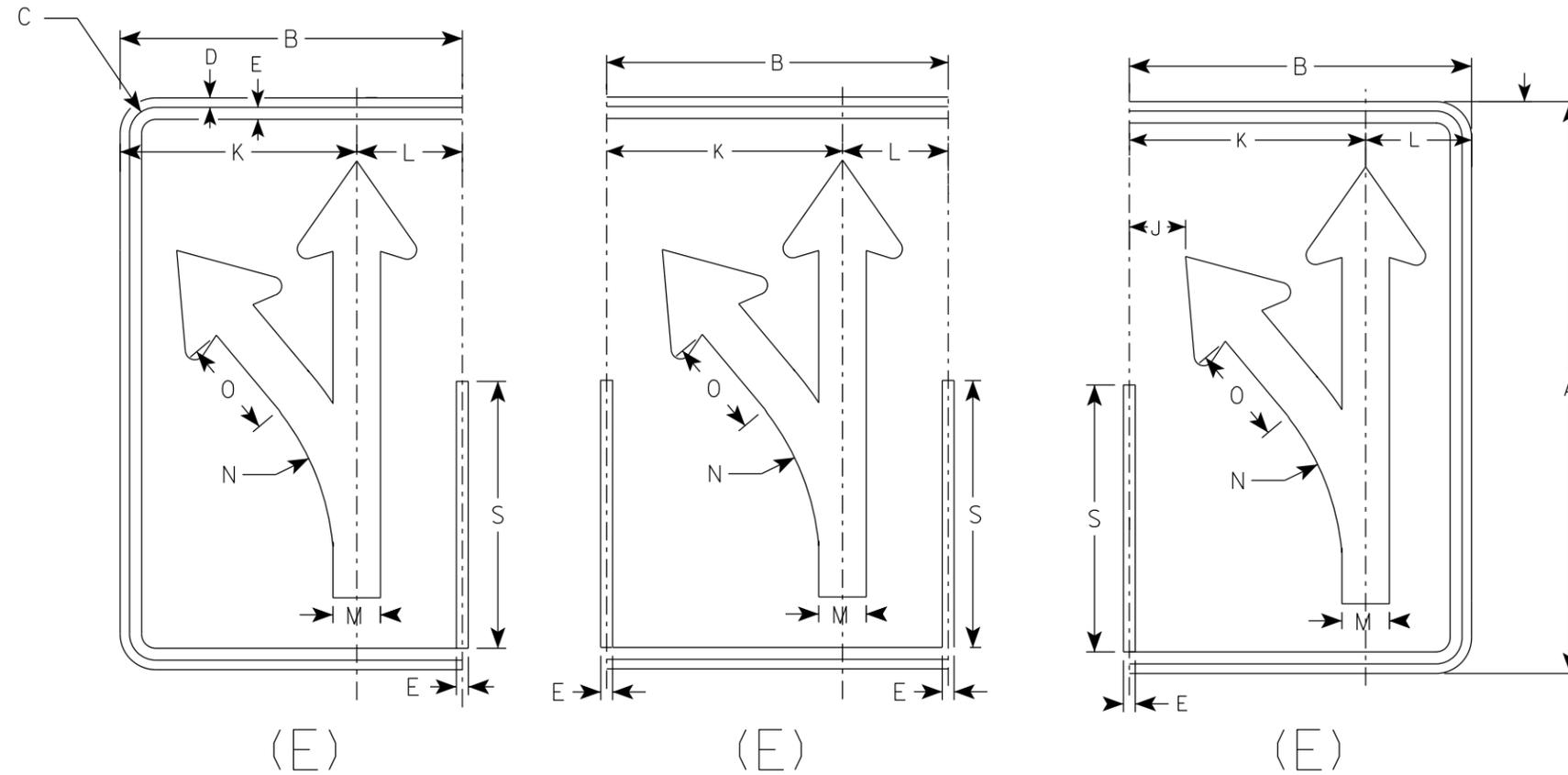
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 5/21/19 PLATE NO. R3-8.1

NOTES

1. Sign is Type II - Type H Reflective
2. Color:  
Background - White  
Message - Black
3. Message Series - None



7

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																											
2S	30	18	1 3/8	1/2	5/8		18 1/4	4 3/4	3 1/4	3	12 1/2	5 1/2	2 1/2	13 1/4	5 1/8	3/8	4 3/4	2 5/8	14								3.75
2M	30	18	1 3/8	1/2	5/8		18 1/4	4 3/4	3 1/4	3	12 1/2	5 1/2	2 1/2	13 1/4	5 1/8	3/8	4 3/4	2 5/8	14								3.75
3	36	24	1 3/8	1/2	5/8		21 7/8	5 5/8	4	4 7/8	16 1/8	7 3/4	3	15 7/8	6 1/8	1/2	5 3/4	3 1/8	16 3/4								6.0
4	48	30	2 1/4	3/4	1		29 1/8	7 1/2	5 1/4	5 3/8	20 1/2	9 1/2	4	21 1/4	8 1/4	5/8	7 5/8	4 1/4	22 3/8								10.0
5	48	30	2 1/4	3/4	1		29 1/8	7 1/2	5 1/4	5 3/8	20 1/2	9 1/2	4	21 1/4	8 1/4	5/8	7 5/8	4 1/4	22 3/8								10.0

STANDARD SIGN  
R3-8 (E) Arrow

WISCONSIN DEPT OF TRANSPORTATION

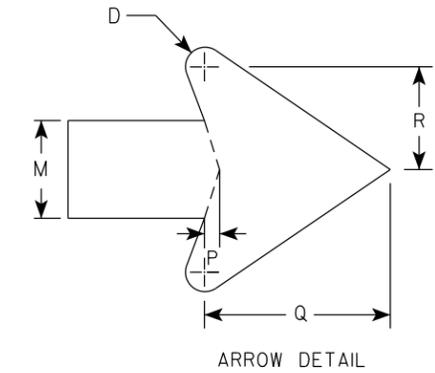
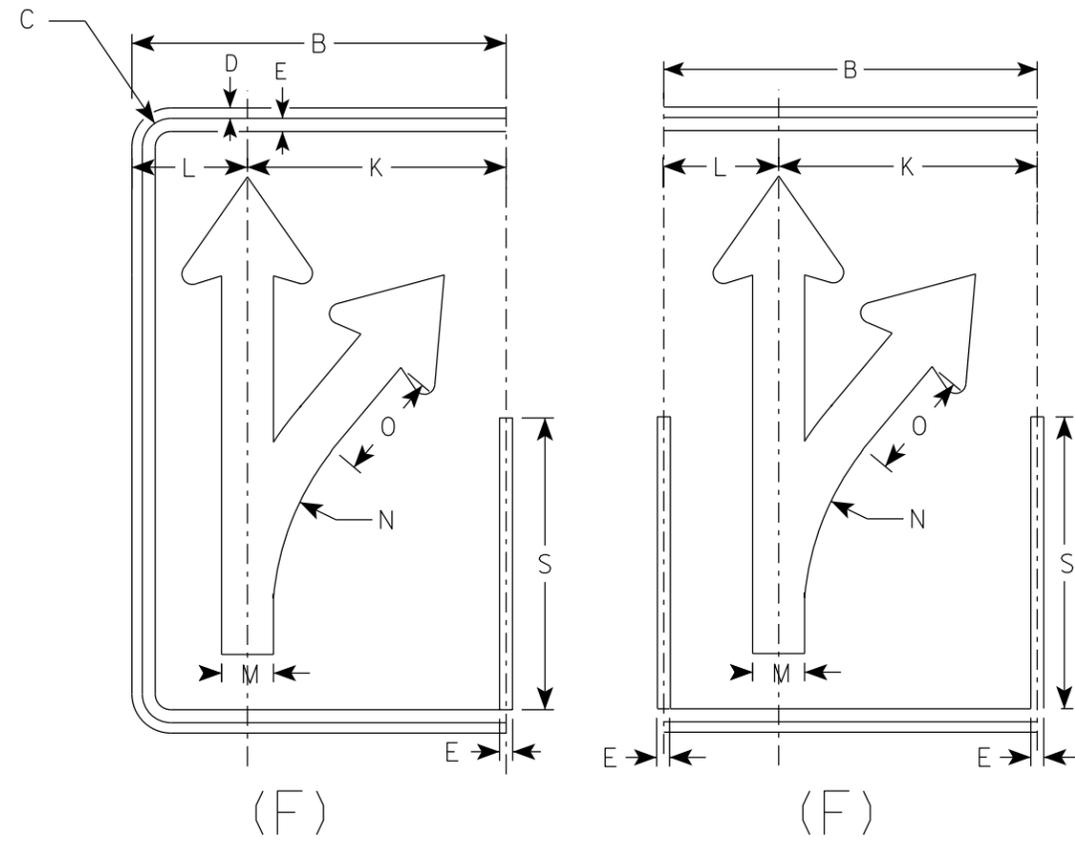
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 5/21/19 PLATE NO. R3-8.1

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 - None



7

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																											
2S	30	18	1 3/8	1/2	5/8		18 1/4	4 3/4	3 1/4	3	12 1/2	5 1/2	2 1/2	13 1/4	5 1/8	3/8	4 3/4	2 5/8	14								3.75
2M	30	18	1 3/8	1/2	5/8		18 1/4	4 3/4	3 1/4	3	12 1/2	5 1/2	2 1/2	13 1/4	5 1/8	3/8	4 3/4	2 5/8	14								3.75
3	36	24	1 3/8	1/2	5/8		21 7/8	5 5/8	4	4 7/8	16 1/8	7 3/4	3	15 7/8	6 1/8	1/2	5 3/4	3 1/8	16 3/4								6.0
4	48	30	2 1/4	3/4	1		29 1/8	7 1/2	5 1/4	5 3/8	20 1/2	9 1/2	4	21 1/4	8 1/4	5/8	7 5/8	4 1/4	22 3/8								10.0
5	48	30	2 1/4	3/4	1		29 1/8	7 1/2	5 1/4	5 3/8	20 1/2	9 1/2	4	21 1/4	8 1/4	5/8	7 5/8	4 1/4	22 3/8								10.0

STANDARD SIGN  
R3-8 (F) Arrow

WISCONSIN DEPT OF TRANSPORTATION

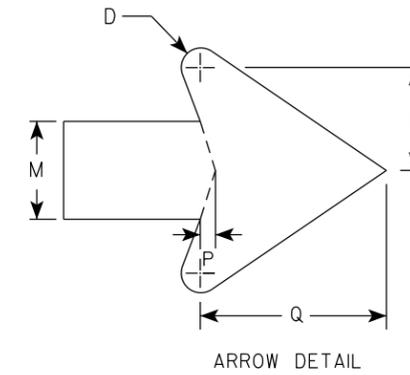
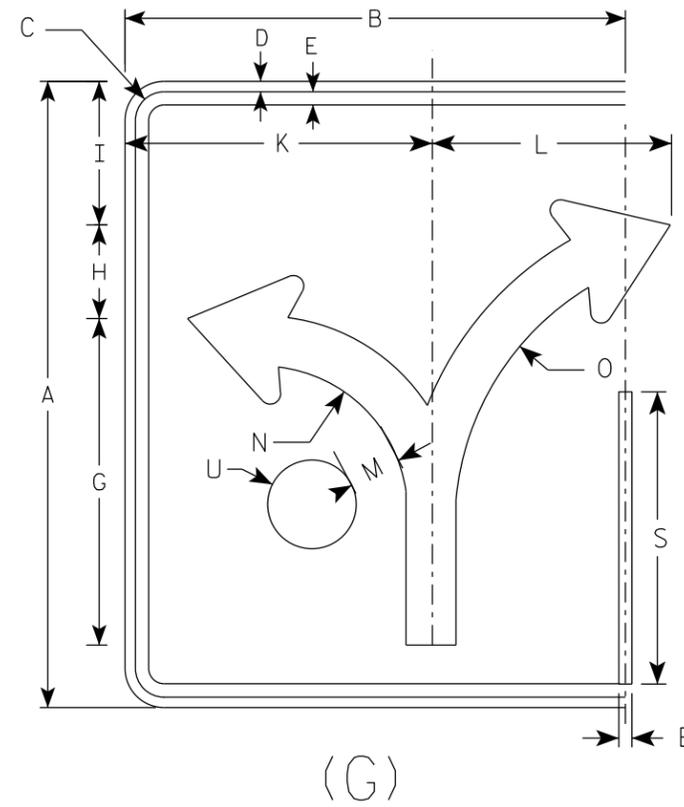
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 5/21/19 PLATE NO. R3-8.1

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 - None



7

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																											
2S	30	24	1 3/8	1/2	5/8		15 5/8	4 1/2	6 7/8		14 3/4	11 1/2	2 3/8	7	13 1/4	3/8	4 1/2	2 1/2	14		2 1/8						5.0
2M	30	24	1 3/8	1/2	5/8		15 5/8	4 1/2	6 7/8		14 3/4	11 1/2	2 3/8	7	13 1/4	3/8	4 1/2	2 1/2	14		2 1/8						5.0
3	36	30	1 3/8	1/2	5/8		18 3/4	5 1/2	8 1/4		17 1/4	17 1/4	2 7/8	8 3/8	16	1/2	5 1/2	3	16 3/4		2 1/2						7.5
4	48	36	2 1/4	3/4	1		24 7/8	7 1/4	11		23 1/8	18	3 3/4	11 1/8	21 1/4	5/8	7 1/8	4	22 3/8		3 3/8						12.0
5	48	36	2 1/4	3/4	1		24 7/8	7 1/4	11		23 1/8	18	3 3/4	11 1/8	21 1/4	5/8	7 1/8	4	22 3/8		3 3/8						12.0

STANDARD SIGN  
R3-8 (G) Arrow

WISCONSIN DEPT OF TRANSPORTATION

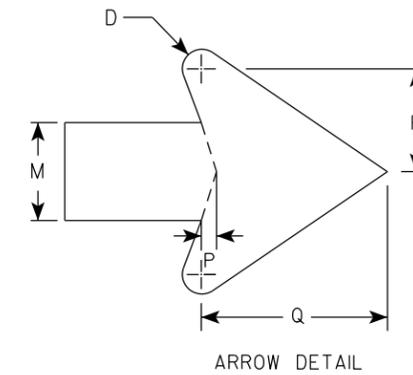
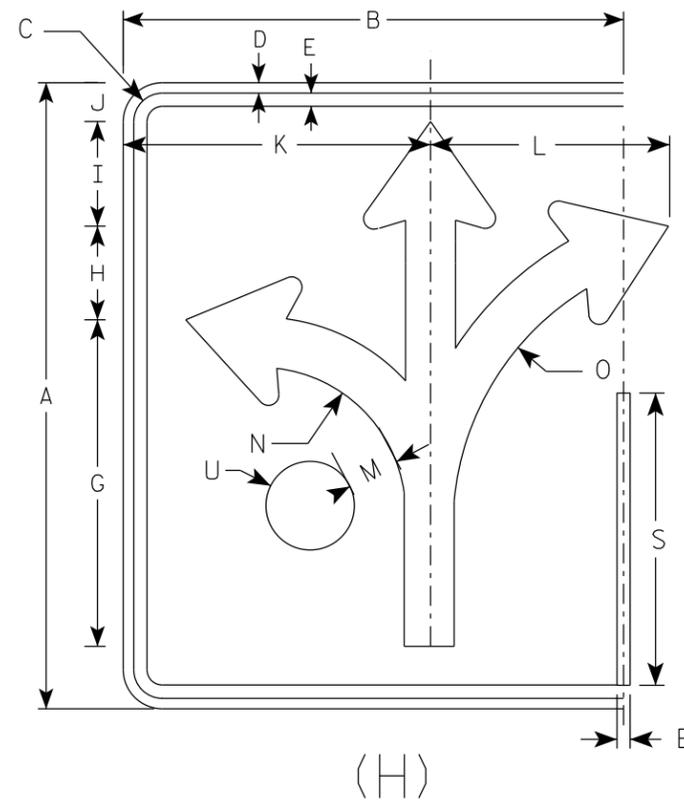
APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

DATE 5/21/19 PLATE NO. R3-8.1

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 - None



7

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																											
2S	30	24	1 3/8	1/2	5/8		15 5/8	4 1/2	5	1 7/8	14 3/4	11 1/2	2 3/8	7	13 1/4	3/8	4 1/2	2 1/2	14		2 1/8						5.0
2M	30	24	1 3/8	1/2	5/8		15 5/8	4 1/2	5	1 7/8	14 3/4	11 1/2	2 3/8	7	13 1/4	3/8	4 1/2	2 1/2	14		2 1/8						5.0
3	36	30	1 3/8	1/2	5/8		18 3/4	5 1/2	6	3 1/8	17 1/4	17 1/4	2 7/8	8 3/8	16	1/2	5 1/2	3	16 3/4		2 1/2						7.5
4	48	36	2 1/4	3/4	1		24 7/8	7 1/4	7 7/8	3 1/8	23 1/8	18	3 3/4	11 1/8	21 1/4	5/8	7 1/8	4	22 3/8		3 3/8						12.0
5	48	36	2 1/4	3/4	1		24 7/8	7 1/4	7 7/8	3 1/8	23 1/8	18	3 3/4	11 1/8	21 1/4	5/8	7 1/8	4	22 3/8		3 3/8						12.0

STANDARD SIGN  
R3-8 (H) Arrow

WISCONSIN DEPT OF TRANSPORTATION

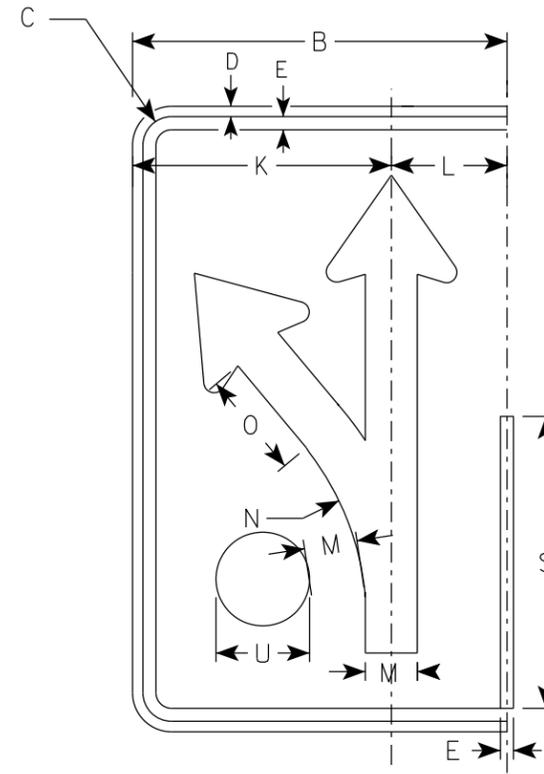
APPROVED *Matthew R Rauch*  
For State Traffic Engineer

DATE 5/21/19 PLATE NO. R3-8.1

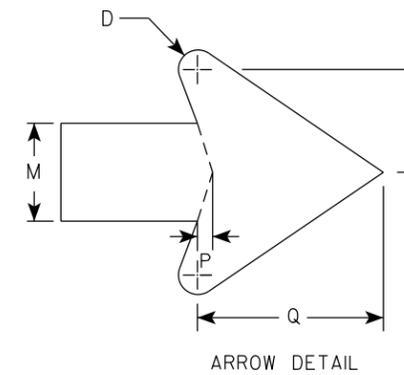
PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: **E**

NOTES

1. Sign is Type II - Type H Reflective
2. Color:  
Background - White  
Message - Black
3. Message Series - None



( I )



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																											
2S	30	18	1 3/8	1/2	5/8		18 1/4	4 3/4	3 1/4	3	12 1/2	5 1/2	2 1/2	13 1/4	5 1/8	3/8	4 3/4	2 5/8	14		2 1/8						3.75
2M	30	18	1 3/8	1/2	5/8		18 1/4	4 3/4	3 1/4	3	12 1/2	5 1/2	2 1/2	13 1/4	5 1/8	3/8	4 3/4	2 5/8	14		2 1/8						3.75
3	36	24	1 3/8	1/2	5/8		21 7/8	5 5/8	4	4 7/8	16 1/8	7 3/4	3	15 7/8	6 1/8	1/2	5 3/4	3 1/8	16 3/4		2 1/2						6.0
4	48	30	2 1/4	3/4	1		29 1/8	7 1/2	5 1/4	5 3/8	20 1/2	9 1/2	4	21 1/4	8 1/4	5/8	7 5/8	4 1/4	22 3/8		3 3/8						10.0
5	48	30	2 1/4	3/4	1		29 1/8	7 1/2	5 1/4	5 3/8	20 1/2	9 1/2	4	21 1/4	8 1/4	5/8	7 5/8	4 1/4	22 3/8		3 3/8						10.0

STANDARD SIGN  
R3-8 (I) Arrow

WISCONSIN DEPT OF TRANSPORTATION

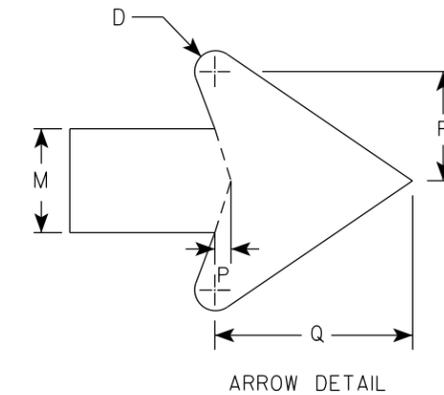
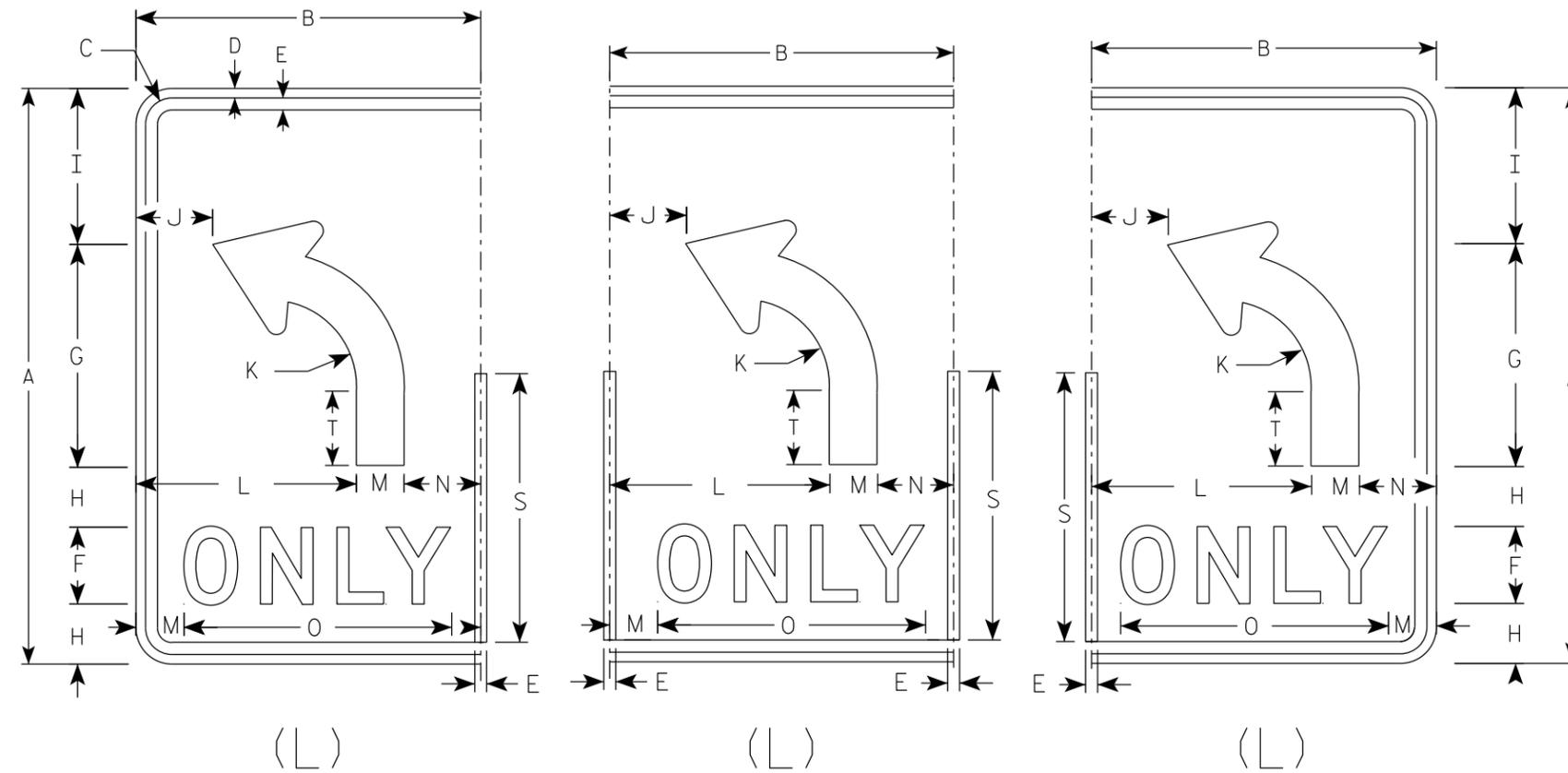
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 5/21/19 PLATE NO. R3-8.1

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



7

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																											
2S	30	18	1 3/8	1/2	5/8	4	11 5/8	3 1/8	8 1/8	4	4 1/2	11 1/2	2 1/2	4	14	3/8	4 3/4	2 5/8	14	3 7/8							3.75
2M	30	18	1 3/8	1/2	5/8	4	11 5/8	3 1/8	8 1/8	4	4 1/2	11 1/2	2 1/2	4	14	3/8	4 3/4	2 5/8	14	3 7/8							3.75
3	36	24	1 3/8	1/2	5/8	5	14	3 1/2	9 3/4		5 3/8	15	3	6	17 5/8	1/2	5 3/4	3 1/8	16 3/4	4 5/8							6.0
4	48	30	2 1/4	3/4	1	6	18 5/8	5 1/8	13 1/8	6 1/8	7 1/4	18	4	8	21 3/4	5/8	7 5/8	4 1/4	22 3/8	6 1/4							10.0
5	48	30	2 1/4	3/4	1	6	18 5/8	5 1/8	13 1/8	6 1/8	7 1/4	18	4	8	21 3/4	5/8	7 5/8	4 1/4	22 3/8	6 1/4							10.0

STANDARD SIGN  
R3-8 (L) Arrow

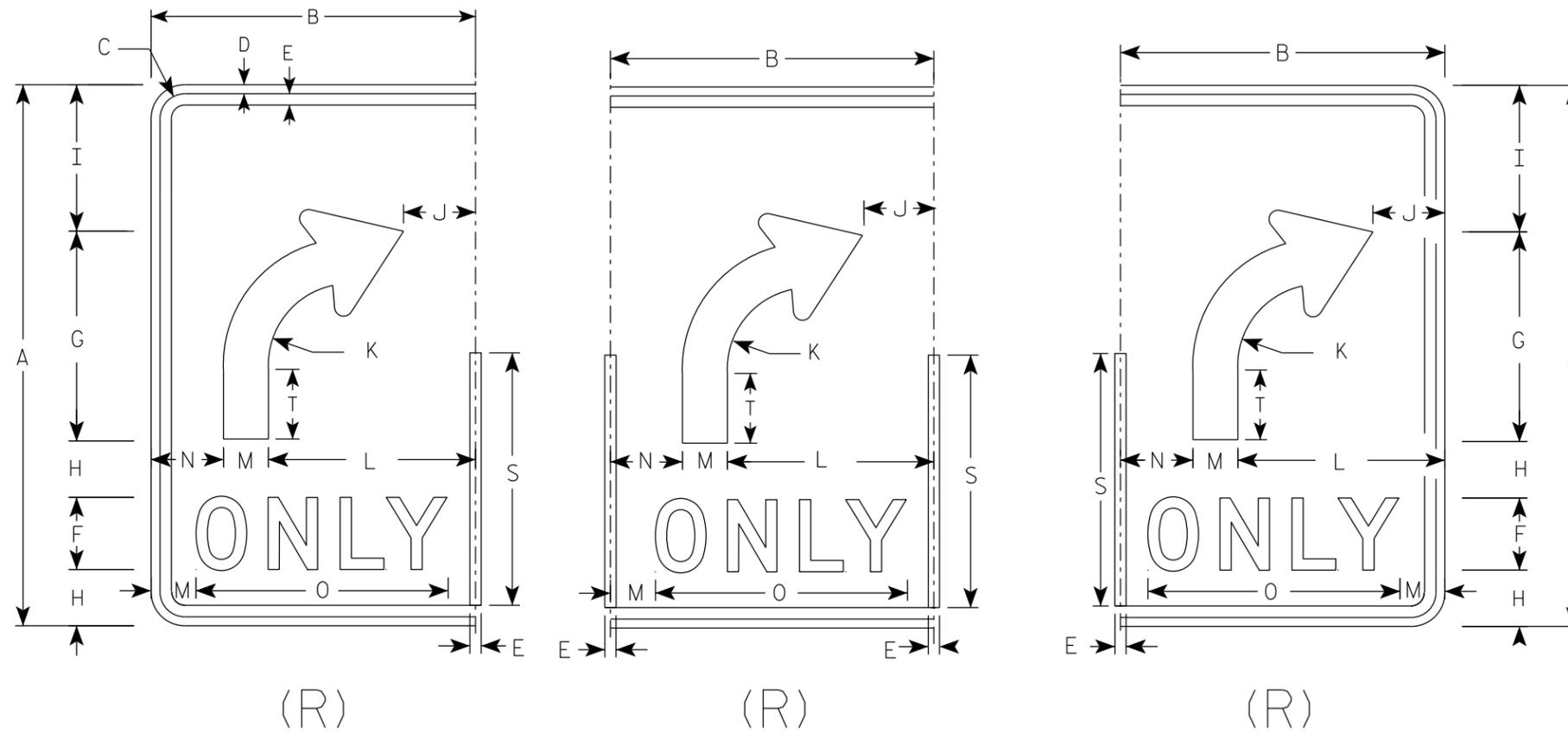
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 5/21/19 PLATE NO. R3-8.1

NOTES

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



7

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																											
2S	30	18	1 3/8	1/2	5/8	4	11 5/8	3 1/8	8 1/8	4	4 1/2	11 1/2	2 1/2	4	14	3/8	4 3/4	2 5/8	14	3 7/8							3.75
2M	30	18	1 3/8	1/2	5/8	4	11 5/8	3 1/8	8 1/8	4	4 1/2	11 1/2	2 1/2	4	14	3/8	4 3/4	2 5/8	14	3 7/8							3.75
3	36	24	1 3/8	1/2	5/8	5	14	3 1/2	9 3/4	6	5 3/8	15	3	6	17 5/8	1/2	5 3/4	3 1/8	16 3/4	4 5/8							6.0
4	48	30	2 1/4	3/4	1	6	18 5/8	5 1/8	13 1/8	6 1/8	7 1/4	18	4	8	21 3/4	5/8	7 5/8	4 1/4	22 3/8	6 1/4							10.0
5	48	30	2 1/4	3/4	1	6	18 5/8	5 1/8	13 1/8	6 1/8	7 1/4	18	4	8	21 3/4	5/8	7 5/8	4 1/4	22 3/8	6 1/4							10.0

STANDARD SIGN  
R3-8 (R) Arrow

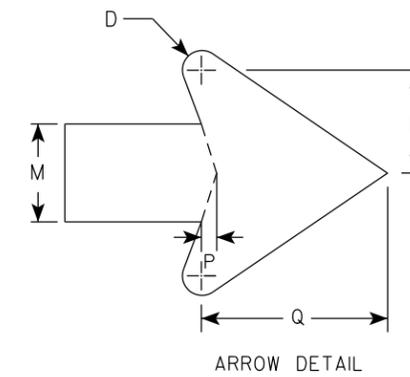
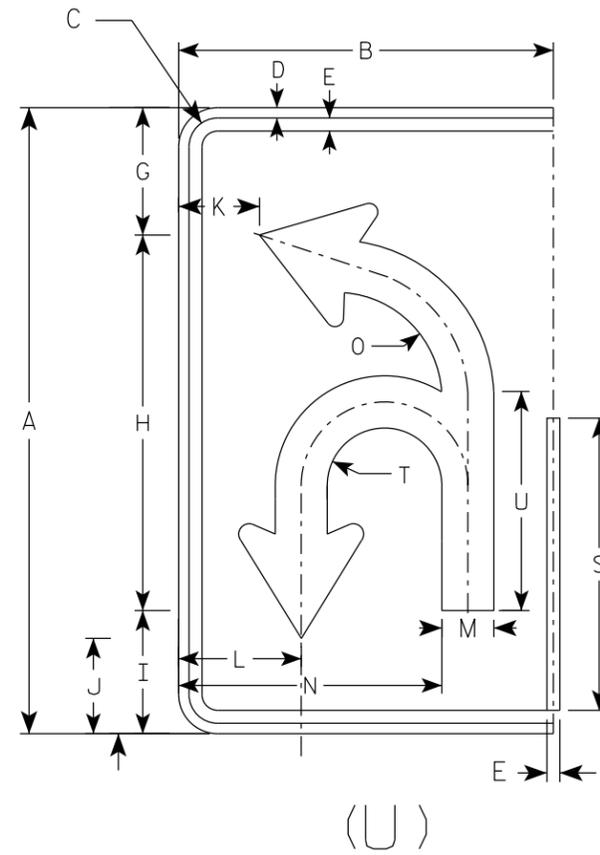
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 5/21/19 PLATE NO. R3-8.1

NOTES

1. Sign is Type II - Type H Reflective
2. Color:  
Background - White  
Message - Black
3. Message Series - None



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	30	18	1 3/8	1/2	5/8		6 1/8	18	5 7/8	4 5/8	3 7/8	5 7/8	2 1/2	12 5/8	5 1/8	3/8	4 3/4	2 5/8	14	2 3/4	10 1/2						3.75
2M	30	18	1 3/8	1/2	5/8		6 1/8	18	5 7/8	4 5/8	3 7/8	5 7/8	2 1/2	12 5/8	5 1/8	3/8	4 3/4	2 5/8	14	2 3/4	10 1/2						3.75
3	36	24	1 3/8	1/2	5/8		21 7/8	21 5/8	7 1/8	5 1/2	5 7/8	8 1/4	3	16 3/8	6 1/8	1/2	5 3/4	3 1/8	16 3/4	3 1/4	12 5/8						6.0
4	48	30	2 1/4	3/4	1		29 1/8	28 3/4	9 3/8	7 1/4	6 7/8	10	4	20 7/8	8 1/8	5/8	7 5/8	4 1/4	22 3/8	4 3/8	16 3/4						10.0
5	48	30	2 1/4	3/4	1		29 1/8	28 3/4	9 3/8	7 1/4	6 7/8	10	4	20 7/8	8 1/8	5/8	7 5/8	4 1/4	22 3/8	4 3/8	16 3/4						10.0

STANDARD SIGN  
R3-8 (U) Arrow

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*  
for State Traffic Engineer

DATE 5/21/19 PLATE NO. R3-8.1

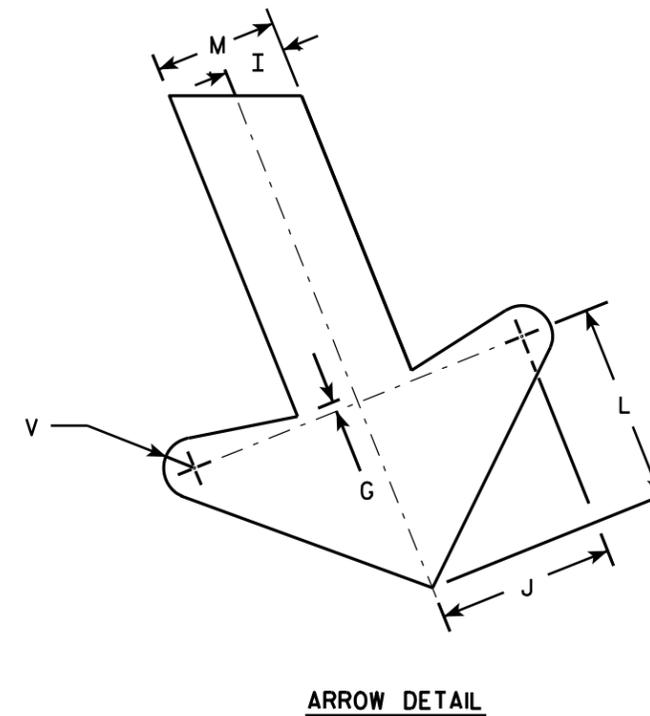
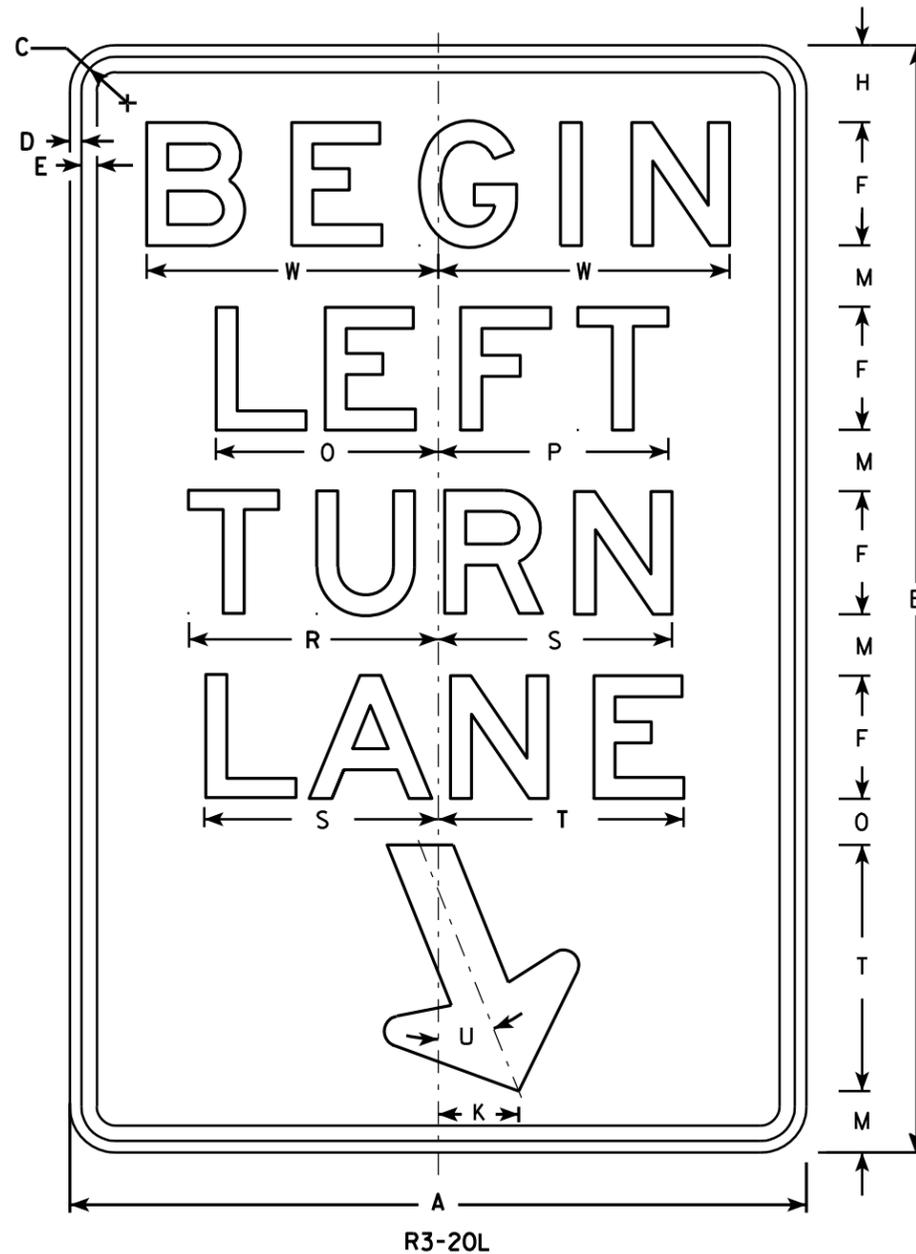
PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: **E**

7

7

**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 - E
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

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																											
2S	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	7 1/4	7 1/2		8 1/8	7 5/8	8	22°	1/2	9 1/2			6.0	
2M	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	7 1/4	7 1/2		8 1/8	7 5/8	8	22°	1/2	9 1/2			6.0	
3	36	54	1 3/4	1/2	5/8	6	3/8	3 3/4	1 1/2	4 1/4	4	4 7/8	3	2 1/4	10 7/8	11 1/4		12 1/4	11 1/2	12	22°	3/4	13 1/4			13.5	
4																											
5																											

**STANDARD SIGN**  
R3-20L

WISCONSIN DEPT OF TRANSPORTATION

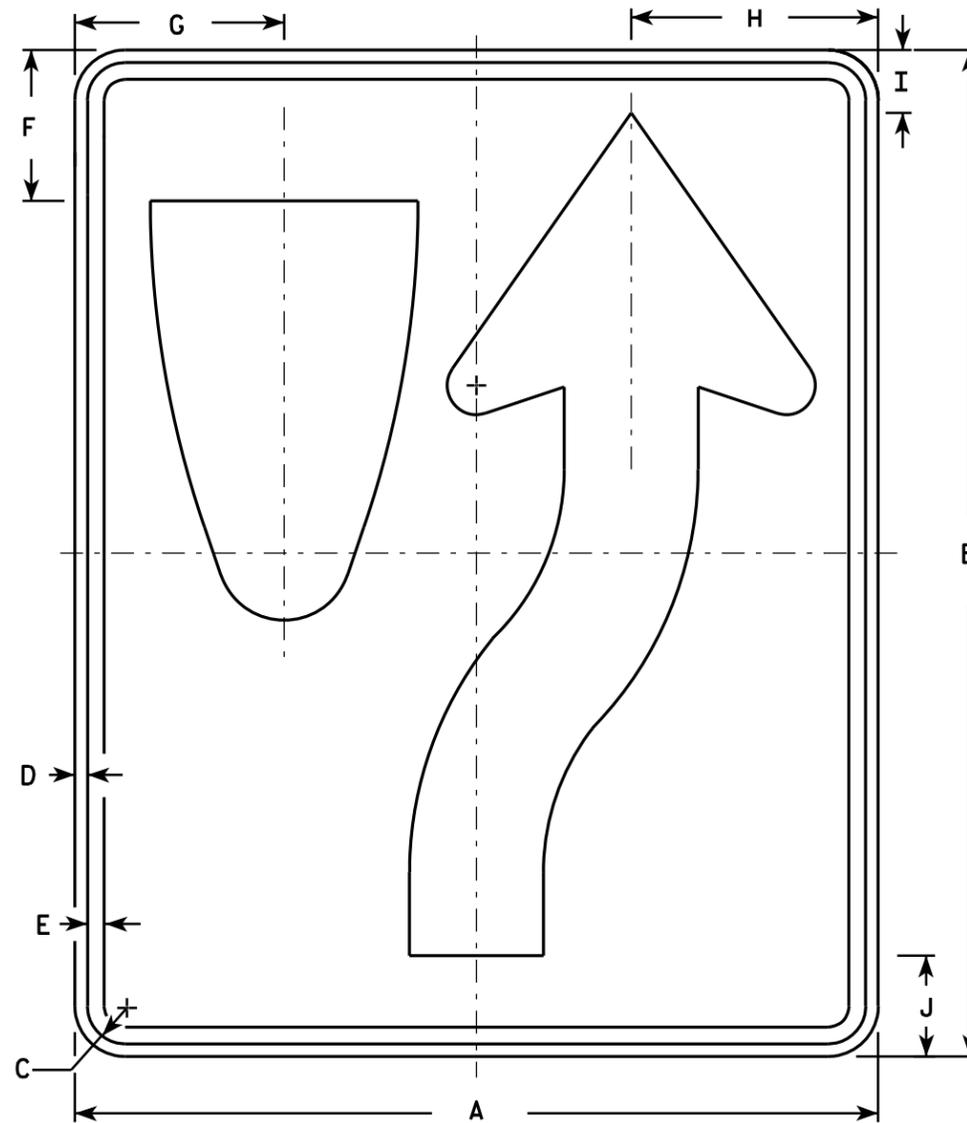
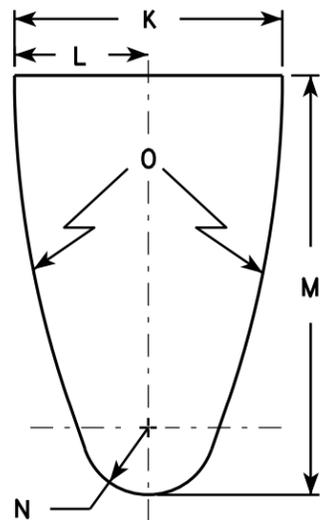
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 10/18/10 PLATE NO. R3-20L.7

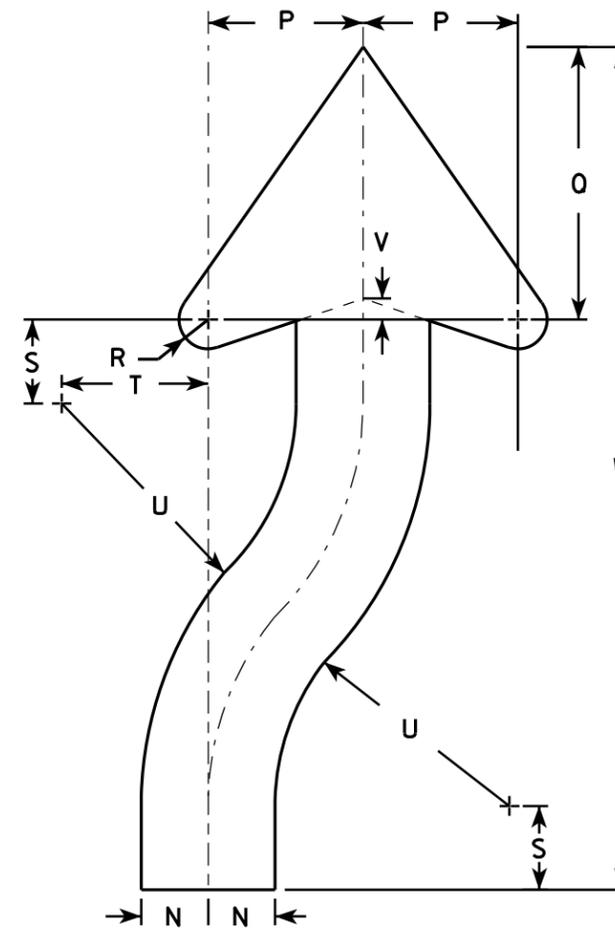
PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: \_\_\_\_\_ E

**NOTES**

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition. material is plywood but borders shall be rounded
2. Color:  
Background - White  
Message - Black
3. Corners may be square or rounded when base as shown. When base material is metal, the corners and borders shall be rounded.
4. R4-8 is the same as R4-7 except Legend is reversed.



R4-7



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	18	24	1 1/8	3/8	1/2	3 3/8	4 3/4	5 1/2	1 3/8	2 1/4	6	3	9 3/8	1 1/2	22 1/2	3 1/2	6 1/8	5/8	1 7/8	3 1/4	6 3/4	1/2	20 3/8				3.0
2S	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
2M	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
3	36	48	1 3/4	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
4	36	48	1 3/4	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
5	48	60	2 1/4	3/4	1	9	12 1/2	14 3/4	3 3/4	6	16	8	25	4	60	9 1/4	16 1/4	1 5/8	5	8 3/4	18	1 1/4	50 1/4				20.0

**STANDARD SIGN**  
R4-7 & R4-8

WISCONSIN DEPT OF TRANSPORTATION

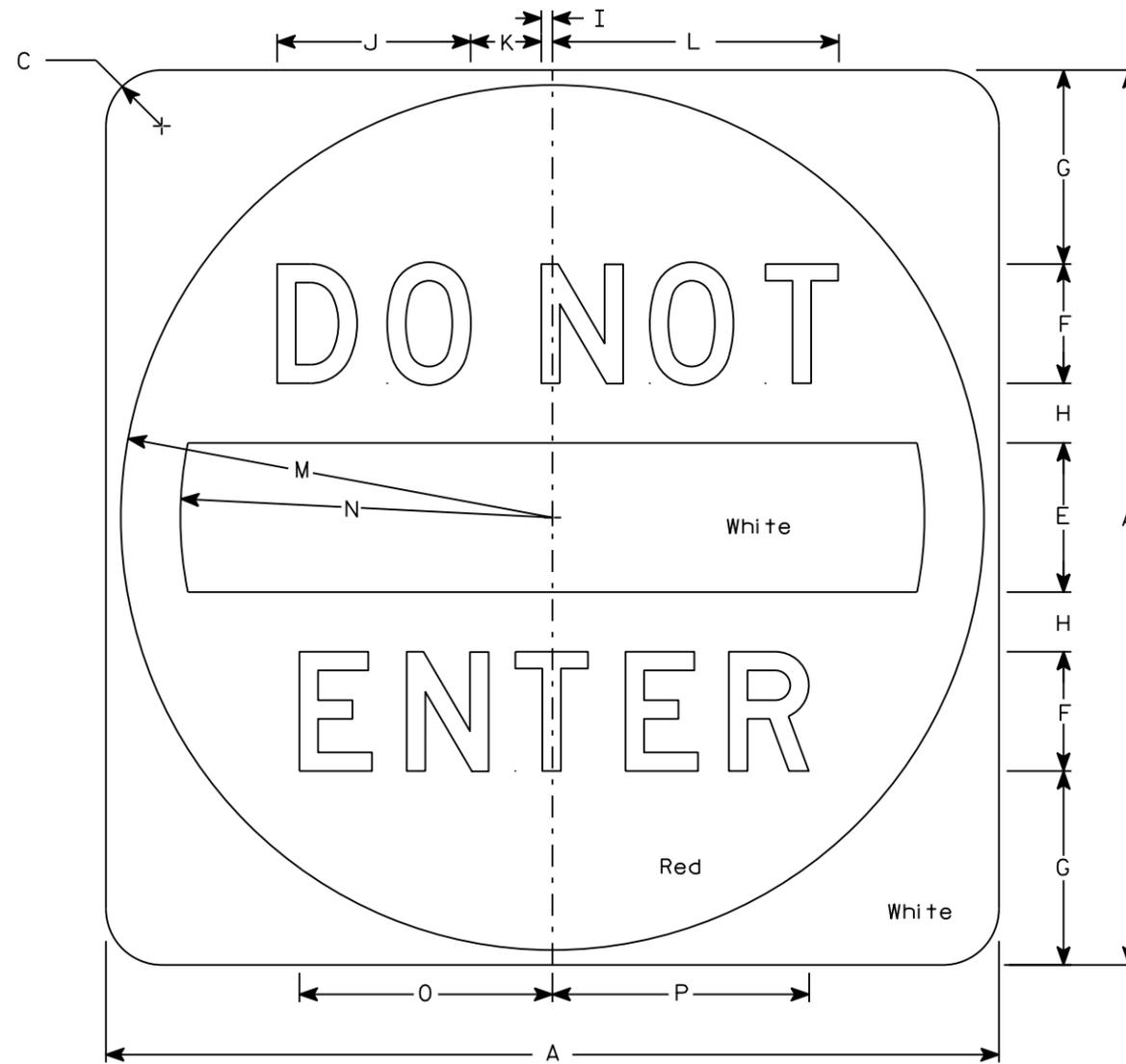
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 3/25/2011 PLATE NO. R4-7.8

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: \_\_\_\_\_ E

NOTES

1. Sign is Type II - Type H Reflective
2. Color:  
Background - See detail  
Message - White
3. Message Series - D



R5-1

7

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																											
2S	30		1 7/8		5	4	6 1/2	2	3/8	6 1/2	2 3/8	9 5/8	14 1/2	12 1/2	8 1/2	8 5/8											6.25
2M	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4											9.0
3	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4											9.0
4	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4											9.0
5	48		3		8	6	11	3	5/8	9 3/4	3 5/8	14 1/2	23 1/2	20	12 3/4	12 7/8											16.0

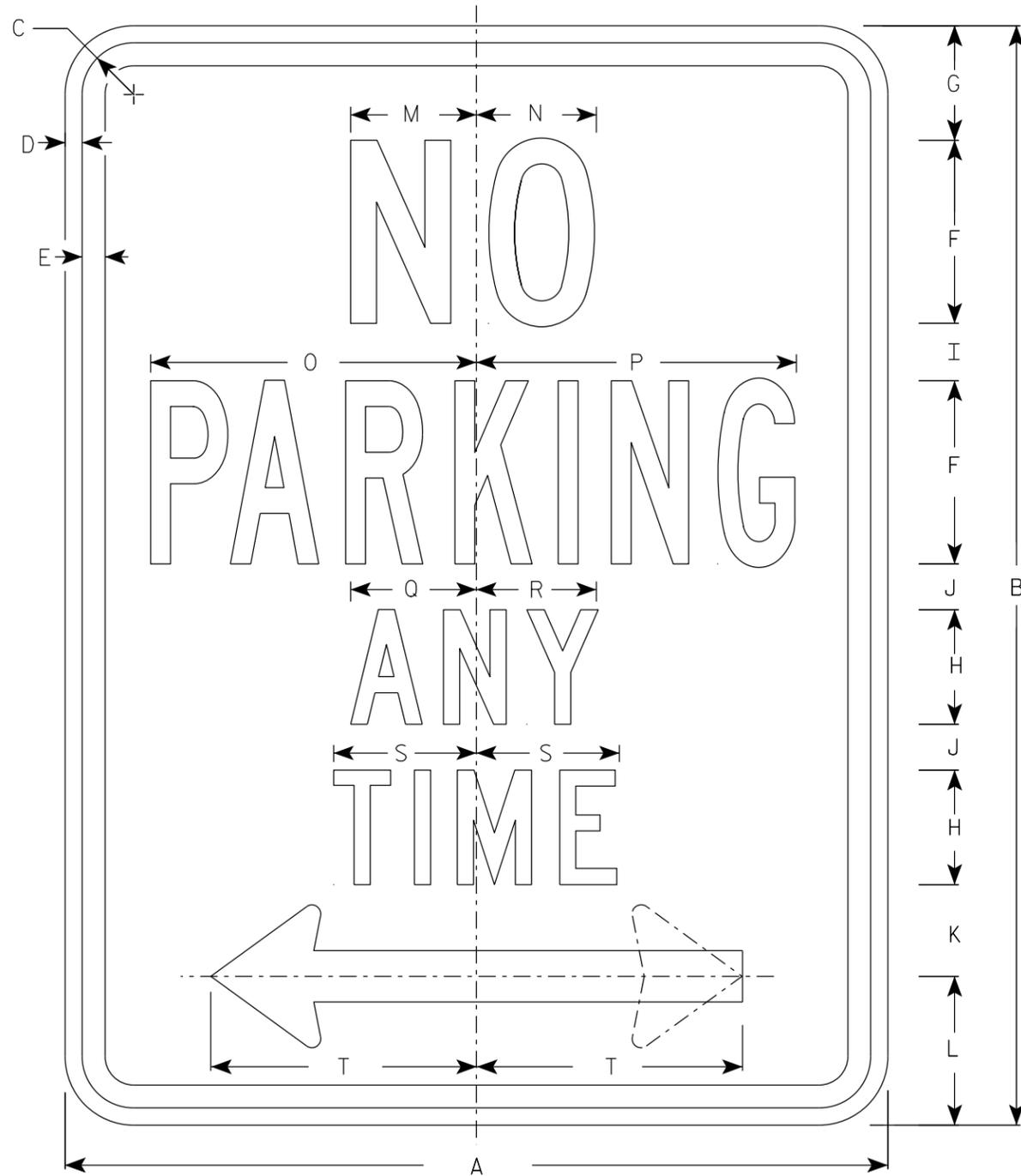
STANDARD SIGN  
R5-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 3/15/18 PLATE NO. R5-1.16

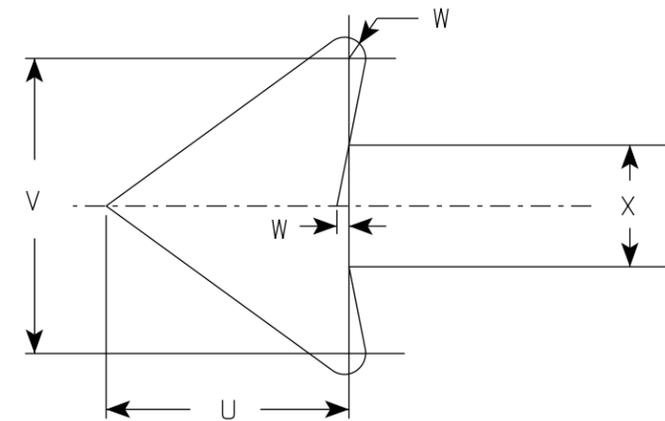
PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: **E**



R7-1

NOTES

1. Sign is Type II - Type H Reflective
2. Color:  
Background - White  
Message - Red
3. Message Series - See Note 5
4. Lines 1, 3 and 4 are series C, line 2 is series B.
5. R7-1D (double arrow)  
R7-1L (left arrow)  
R7-1R (right arrow)



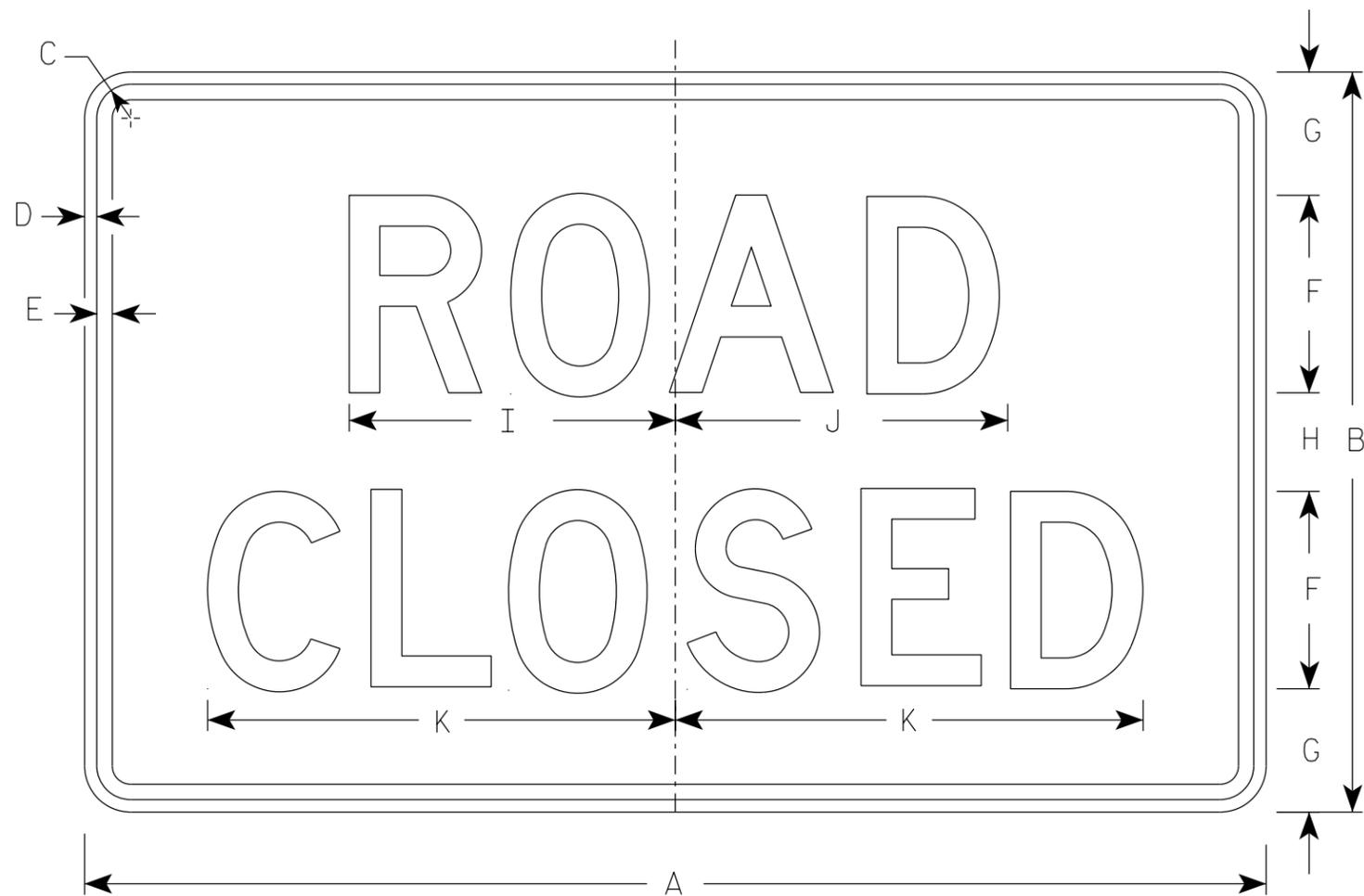
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	12	18	1 1/8	3/8	3/8	3	1 7/8	2	7/8	5/8	1 1/2	2 1/2	2	2	4 7/8	4 7/8	2 1/4	2 1/8	2 1/2	3 7/8	1 1/2	1 3/4	1/8	3/4			1.5
2S	18	24	1 1/8	3/8	1/2	4	2 1/2	2 1/2	1 1/4	1	2	3 1/4	2 3/4	2 5/8	7 1/8	7	2 3/4	2 5/8	3 1/8	5 7/8	2 1/4	2 5/8	1/4	1 1/8			3.0
2M	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
3	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
4																											
5																											

STANDARD SIGN  
R7-1

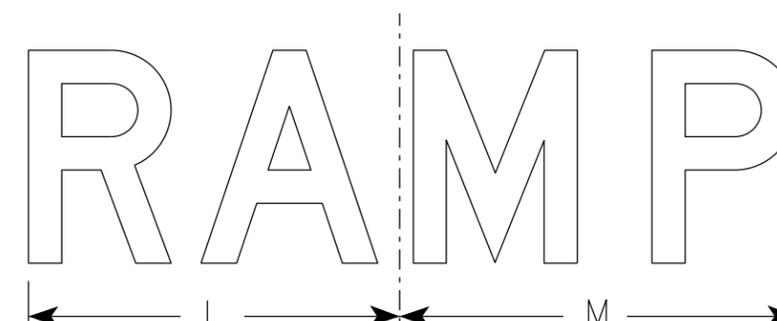
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*  
For State Traffic Engineer

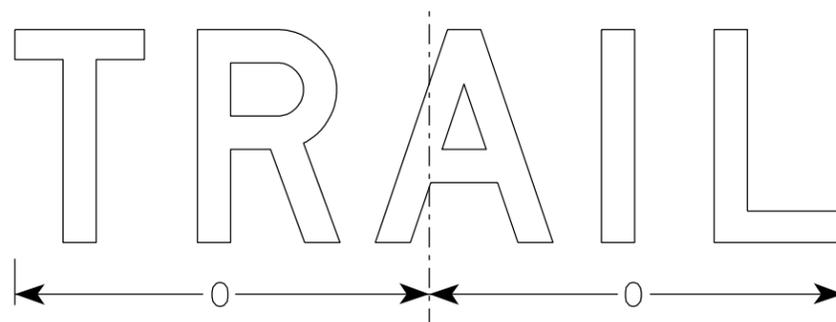
DATE 3/31/2021 PLATE NO. R7-1.10



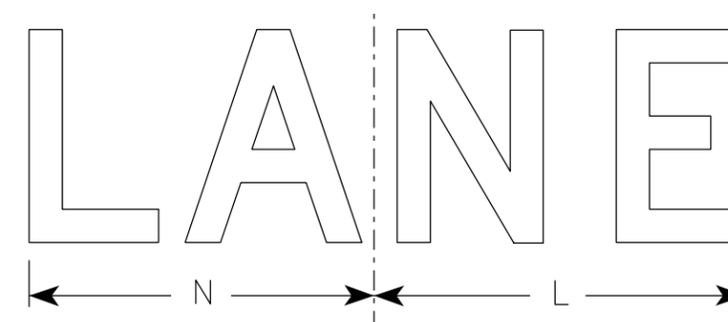
R11-2



R11-2R



R11-2T



R11-2L

NOTES

1. Sign is Type II - Type H Reflective
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.

7

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																											
2S	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												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	15 5/8												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	15 5/8												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	15 5/8												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	15 5/8												10.0

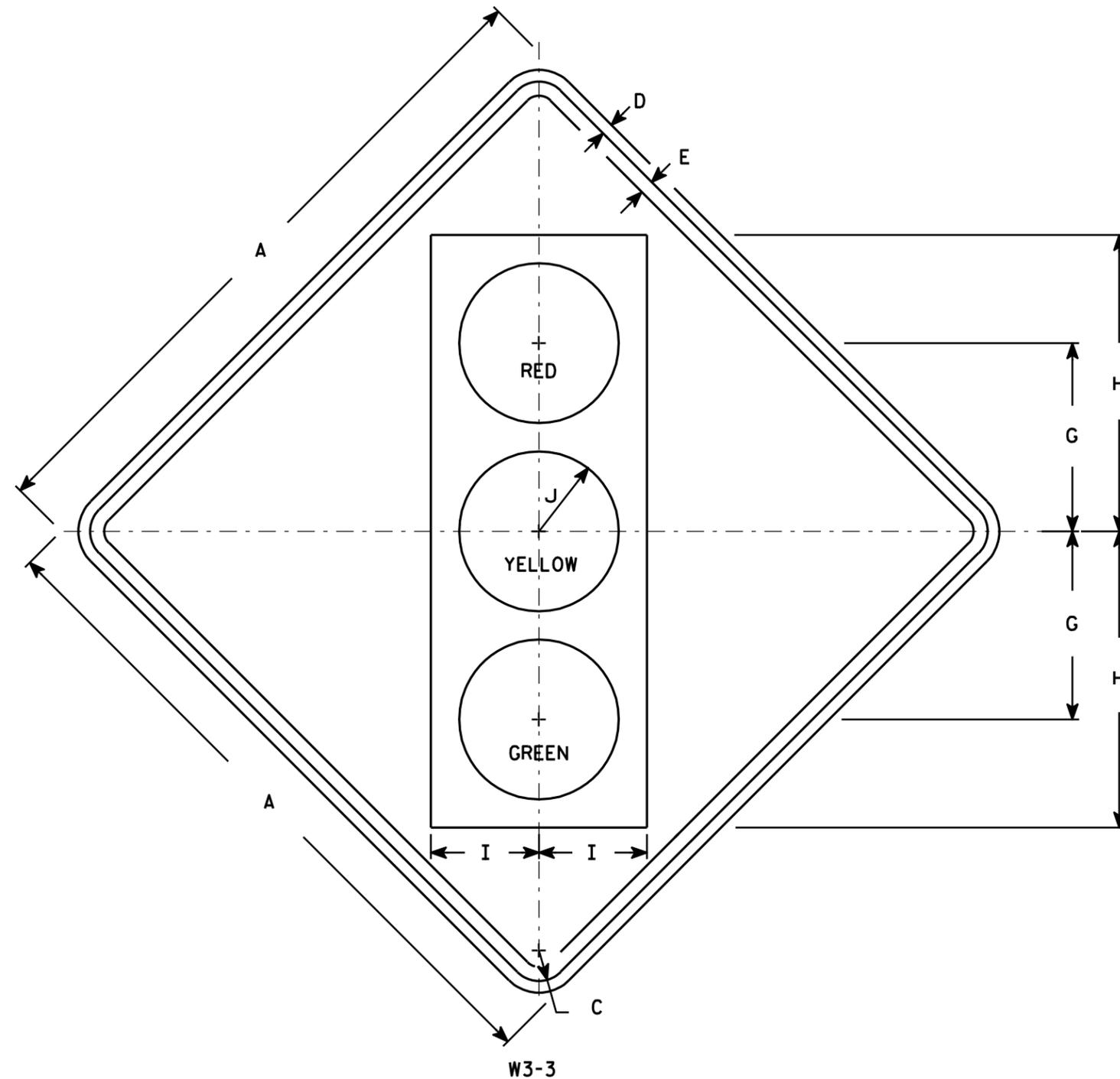
STANDARD SIGN  
R11-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*  
For State Traffic Engineer

DATE 3/29/2021 PLATE NO. R11-2.11

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: **E**



**NOTES**

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - Yellow  
Message - 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. Symbol and border are non-reflective black.  
Top circle - Type H ReflectORIZED Red  
Center circle - Same as background  
Bottom circle - Type H ReflectORIZED Green

7

7

W3-3

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	30		1 3/8	1/2	5/8		8 3/4	13 3/4	5	3 3/4																	6.25
2S	36		1 5/8	5/8	3/4		10	15 3/4	5 3/4	4 1/4																	9.0
2M	36		1 5/8	5/8	3/4		10	15 3/4	5 3/4	4 1/4																	9.0
3	36		1 5/8	5/8	3/4		10	15 3/4	5 3/4	4 1/4																	9.0
4	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5																	16.0
5	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5																	16.0

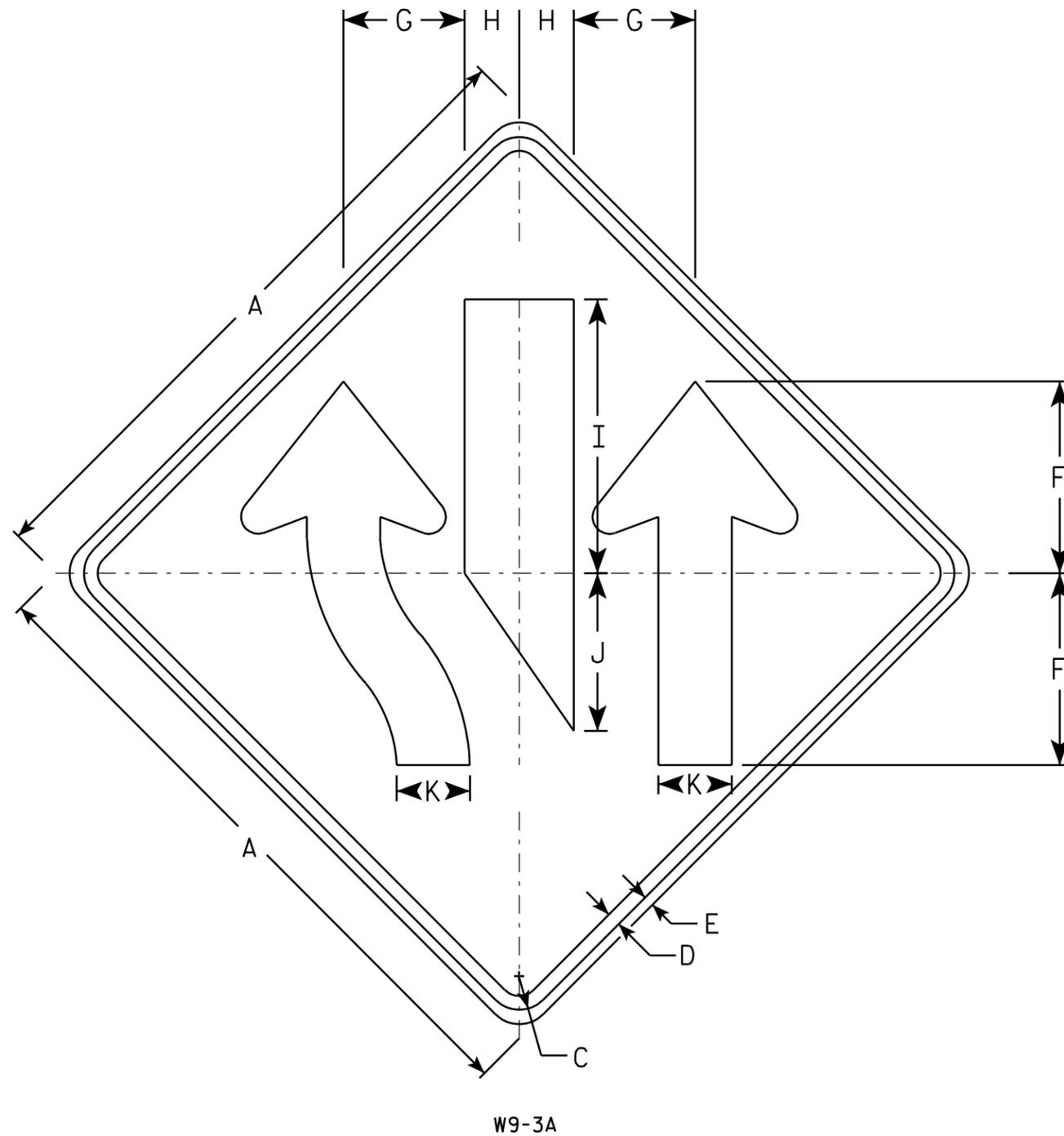
**STANDARD SIGN**  
W3-3

*WISCONSIN DEPT OF TRANSPORTATION*

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

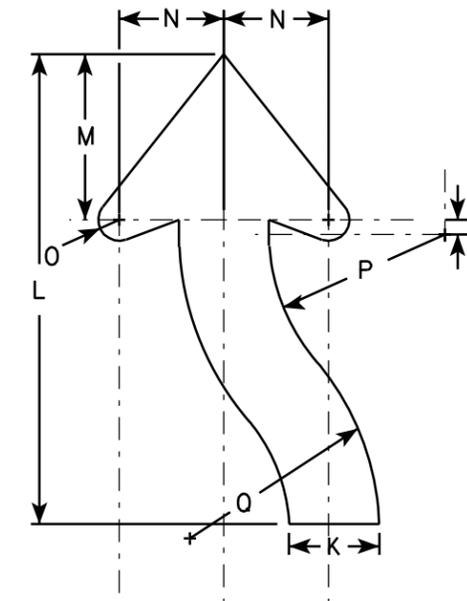
DATE 6/7/10 PLATE NO. W3-3.11

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: \_\_\_\_\_ E



**NOTES**

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



ARROW DETAIL

W9-3A

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	36		1 3/8	1/2	5/8	10 1/2	6 5/8	3	15	8 5/8	4	21	7 3/8	4 3/4	7/8	8	12	3/4									9
2M	36		1 3/8	1/2	5/8	10 1/2	6 5/8	3	15	8 5/8	4	21	7 3/8	4 3/4	7/8	8	12	3/4									9
3	48		2 1/4	3/4	1	14	9	4	20	11 1/2	5 3/8	28	9 7/8	6 1/4	1 1/4	10 5/8	16	7/8									16
4	48		2 1/4	3/4	1	14	9	4	20	11 1/2	5 3/8	28	9 7/8	6 1/4	1 1/4	10 5/8	16	7/8									16
5	48		2 1/4	3/4	1	14	9	4	20	11 1/2	5 3/8	28	9 7/8	6 1/4	1 1/4	10 5/8	16	7/8									16

**STANDARD SIGN**  
**W9-3A**

WISCONSIN DEPT OF TRANSPORTATION

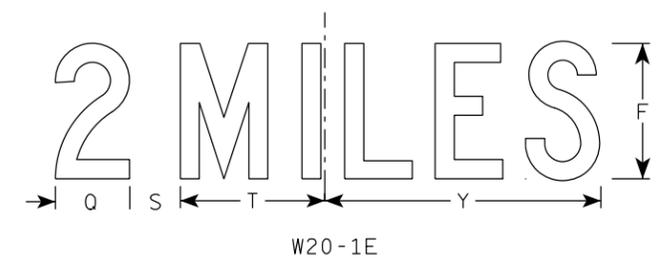
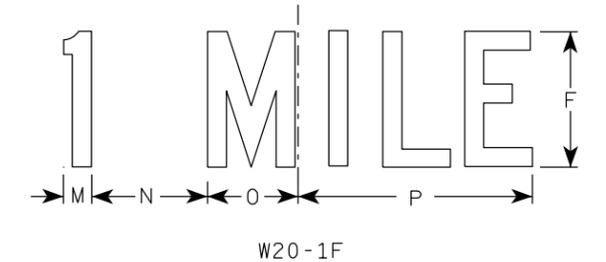
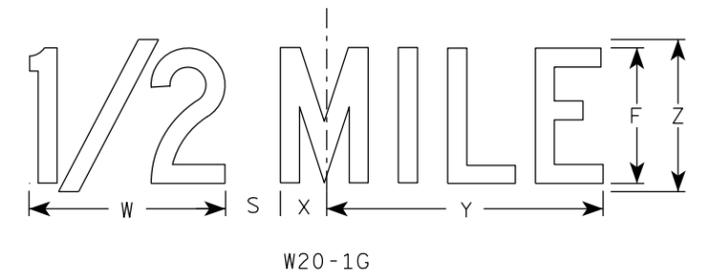
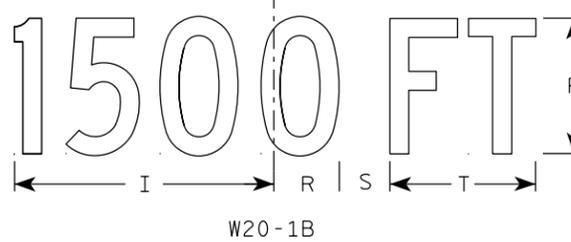
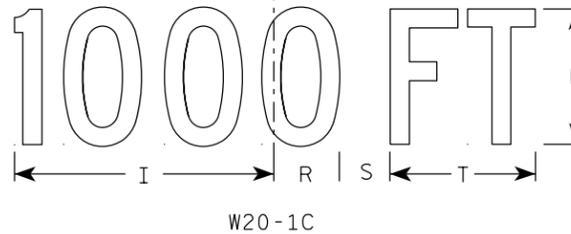
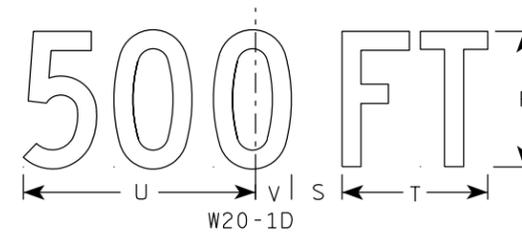
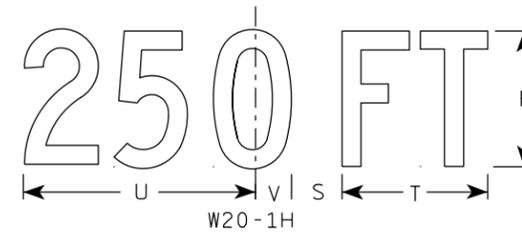
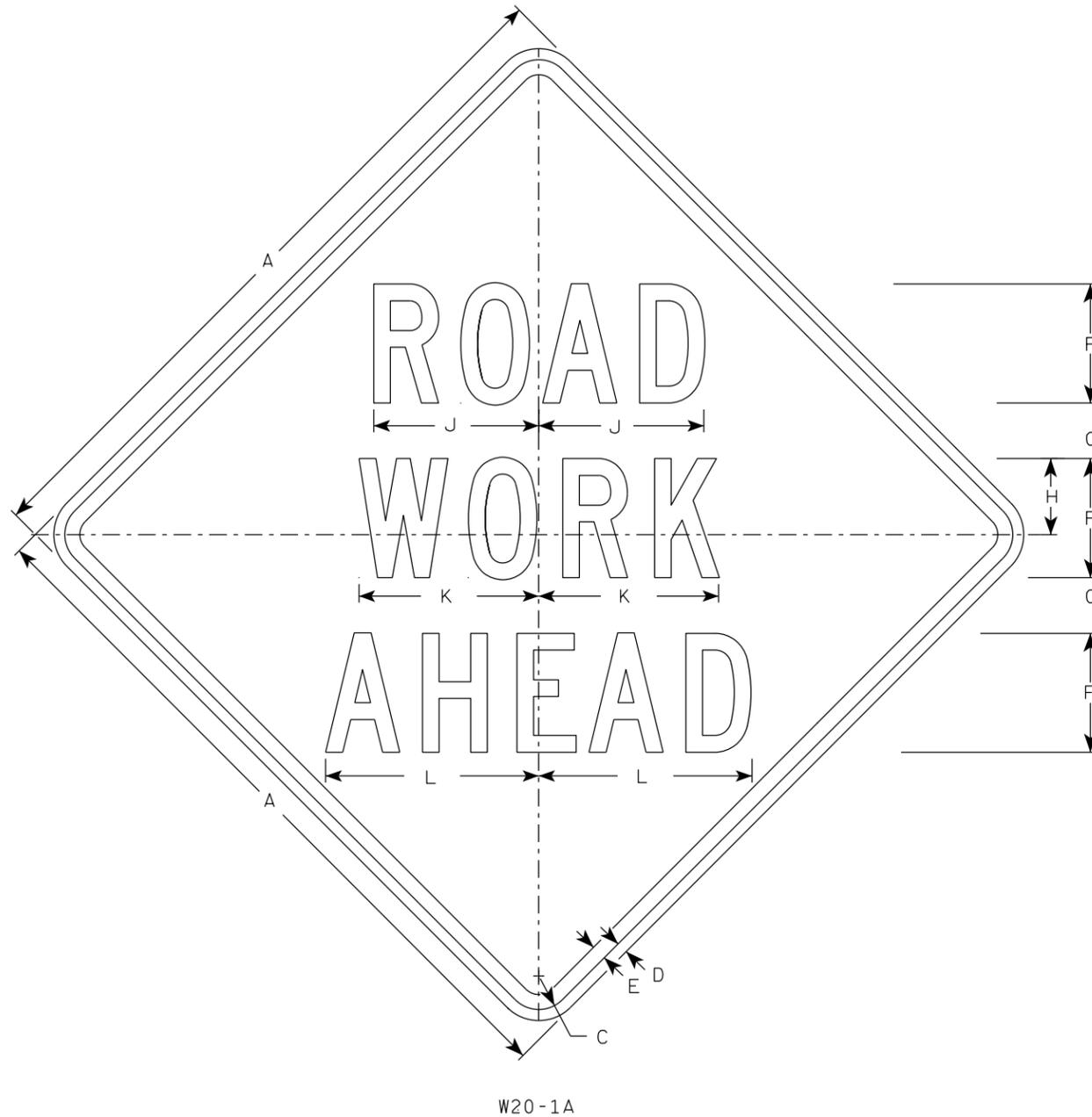
APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

DATE 5/02/11 PLATE NO. W9-3A.2

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: **E**

**NOTES**

1. Sign is Type II - Type F Reflective
2. Color:  
Background - Orange  
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.



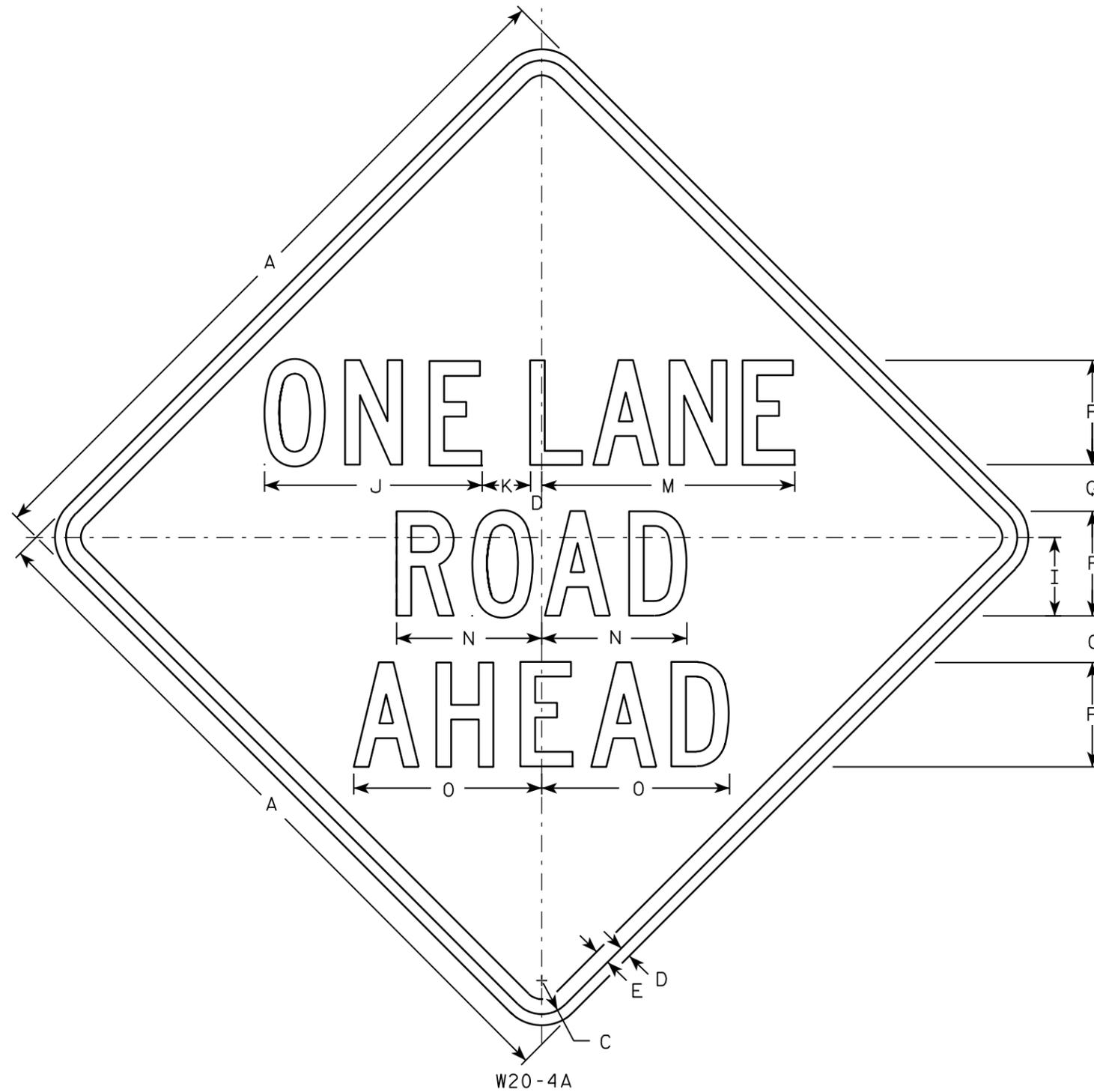
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9	3 1/4	2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
2M	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
3	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
4	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
5	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0

STANDARD SIGN  
W20-1A, B, C, D, E, F, G & H

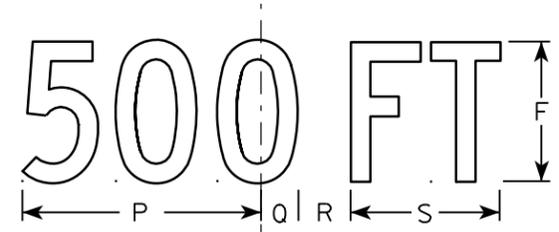
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

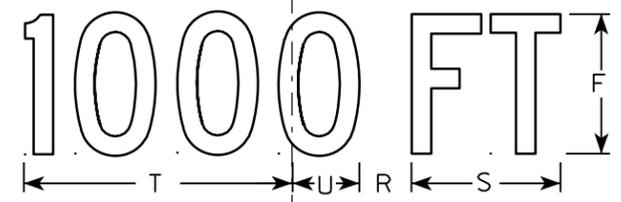
DATE 3/25/2020 PLATE NO. W20-1.11



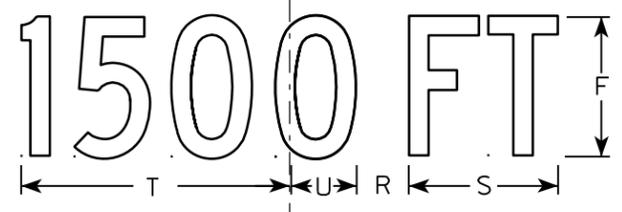
W20-4A



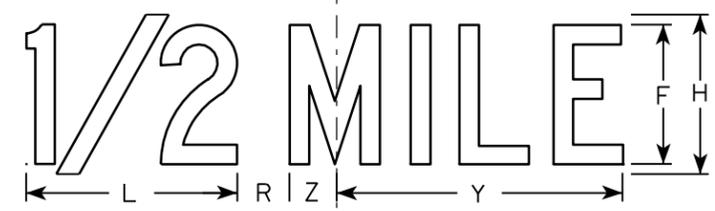
W20-4D



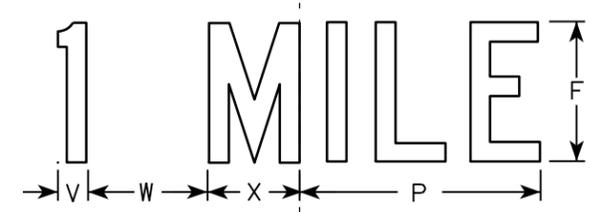
W20-4C



W20-4B



W20-4G



W20-4F

**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 - 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

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	36		1 5/8	5/8	3/4	5	2 3/8	6	3 3/4	10 3/8	2 3/8	8	13 1/2	7	8 7/8	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	10 3/4	1 3/4	9.0
2S	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0
3	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0
4	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0
5	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0

STANDARD SIGN  
W20-4A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-4.9

PROJECT NO:

SHEET NO:

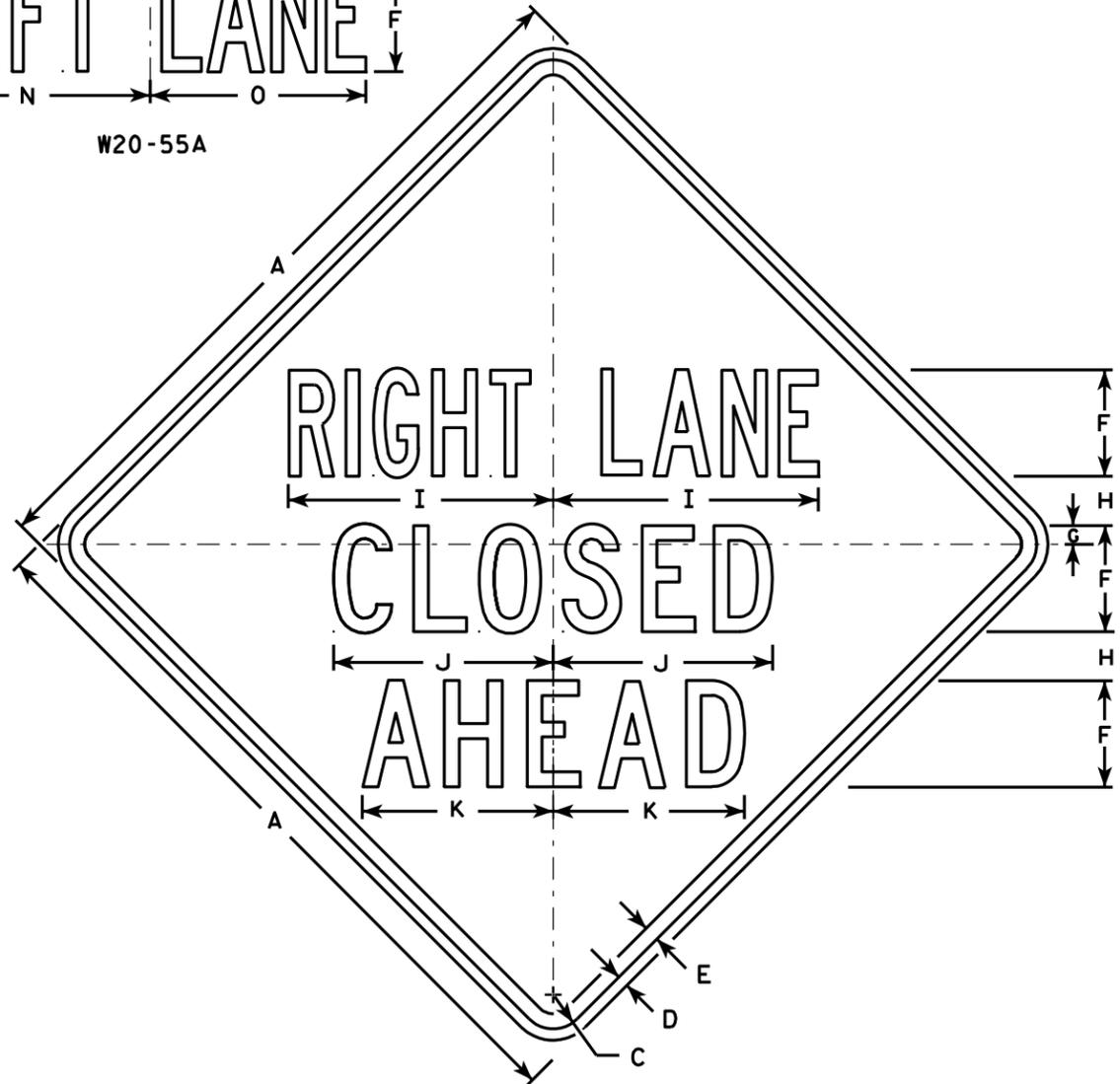
E

CENTER LANE

W20-56A

LEFT LANE

W20-55A



W20-5A

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. "-----LANE" is Series B.  
All other copy is Series C.

500 FT

W20-5D

1000 FT

W20-5C

1500 FT

W20-5B

1/2 MILE

W20-5G

1 MILE

W20-5F

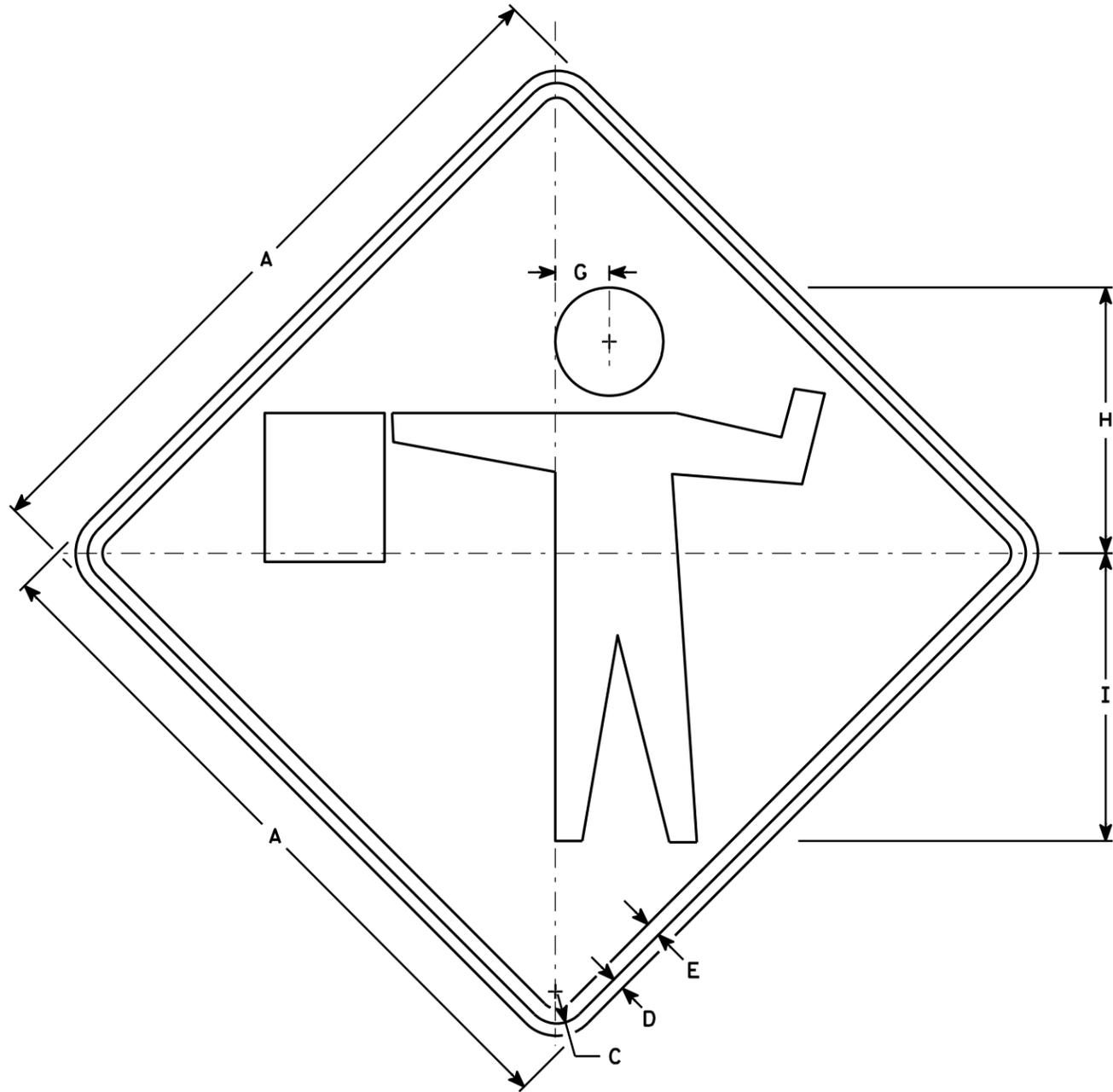
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	6	1 5/8	5/8	3/4	5	7/8	2 1/2	13 1/8	10 3/4	9 1/2	14 1/4	13 5/8	12	12	1 3/8	1 1/8	4 1/2	3 1/2	9	1 7/8	5 5/8	10 1/8	2 1/2	1 3/4	8	9.0
2S	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
2M	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
3	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
4	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
5	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: \_\_\_\_\_ E

7

7

STANDARD SIGN  
W20-5A, B, C, D, F & G  
WISCONSIN DEPT OF TRANSPORTATION  
APPROVED *Matthew R Rauch*  
For State Traffic Engineer  
DATE 3/18/11 PLATE NO. W20-5.11



W20-7A

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. 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

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	36		1 5/8	5/8	3/4		2 3/4	13 1/2	14 5/8																		9.00
2S	48		2 1/4	3/4	1		3 3/4	18	19 1/2																		16.00
2M	48		2 1/4	3/4	1		3 3/4	18	19 1/2																		16.00
3	48		2 1/4	3/4	1		3 3/4	18	19 1/2																		16.00
4	48		2 1/4	3/4	1		3 3/4	18	19 1/2																		16.00
5	48		2 1/4	3/4	1		3 3/4	18	19 1/2																		16.00

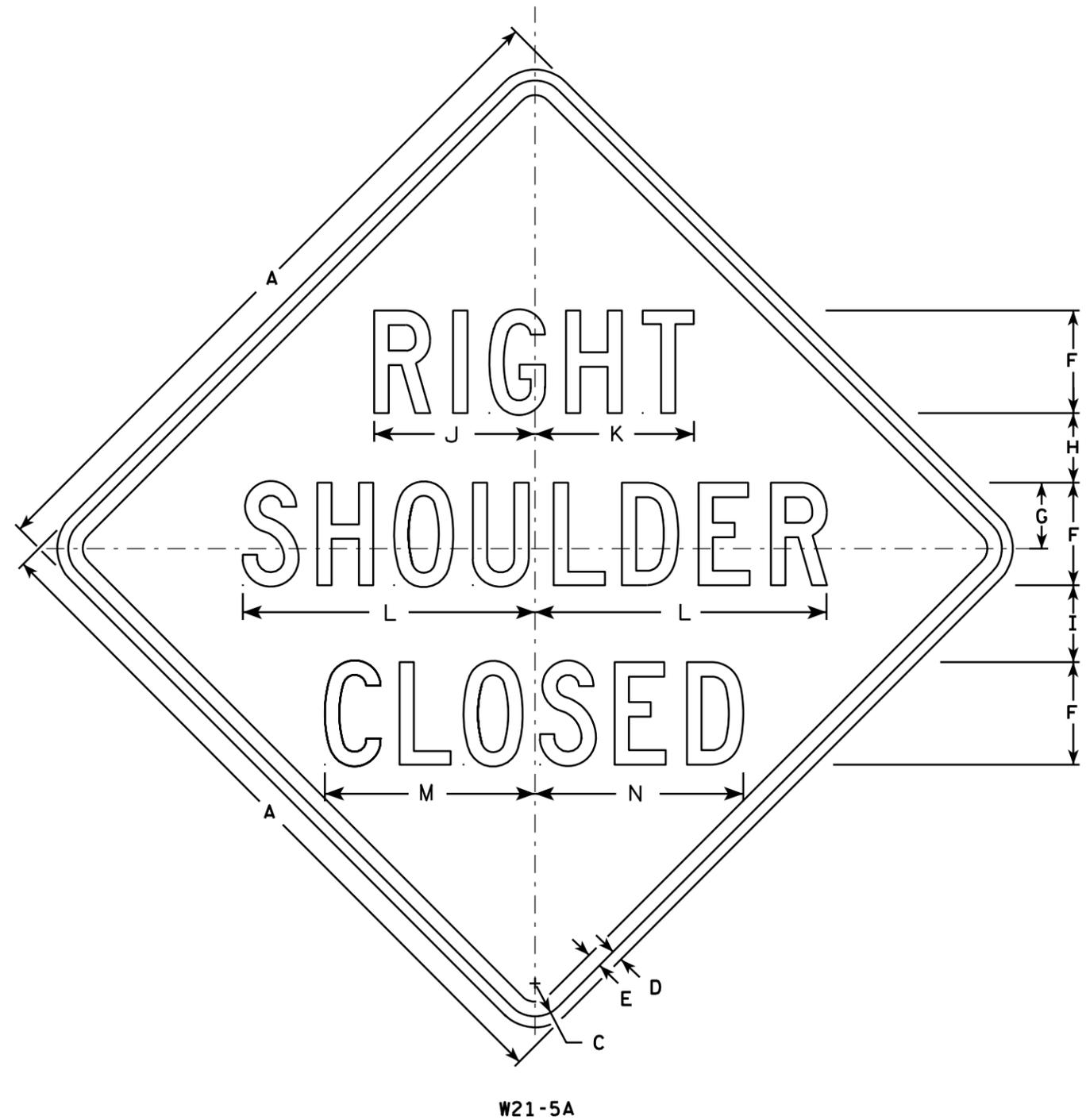
**STANDARD SIGN**  
W20-7A

*WISCONSIN DEPT OF TRANSPORTATION*

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-7A.5

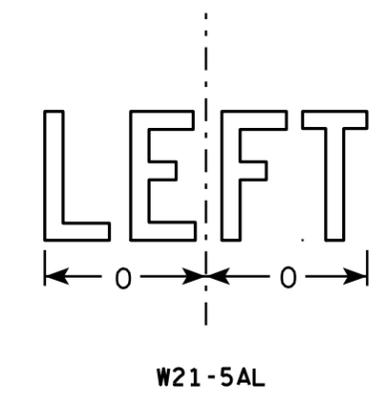
PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: \_\_\_\_\_ E



W21-5A

**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.



W21-5AL

7

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	36		1 5/8	5/8	3/4	5	3 3/8	3 1/2	4	7 7/8	7 3/4	14 1/4	10 1/4	10 1/8	6 1/4												9.0
2S	48		2 1/4	3/4	1	7	4 1/2	4 3/4	5 1/4	11	10 7/8	20	14 3/8	14 1/4	8 3/4												16.0
2M	48		2 1/4	3/4	1	7	4 1/2	4 3/4	5 1/4	11	10 7/8	20	14 3/8	14 1/4	8 3/4												16.0
3	48		2 1/4	3/4	1	7	4 1/2	4 3/4	5 1/4	11	10 7/8	20	14 3/8	14 1/4	8 3/4												16.0
4	48		2 1/4	3/4	1	7	4 1/2	4 3/4	5 1/4	11	10 7/8	20	14 3/8	14 1/4	8 3/4												16.0
5	48		2 1/4	3/4	1	7	4 1/2	4 3/4	5 1/4	11	10 7/8	20	14 3/8	14 1/4	8 3/4												16.0

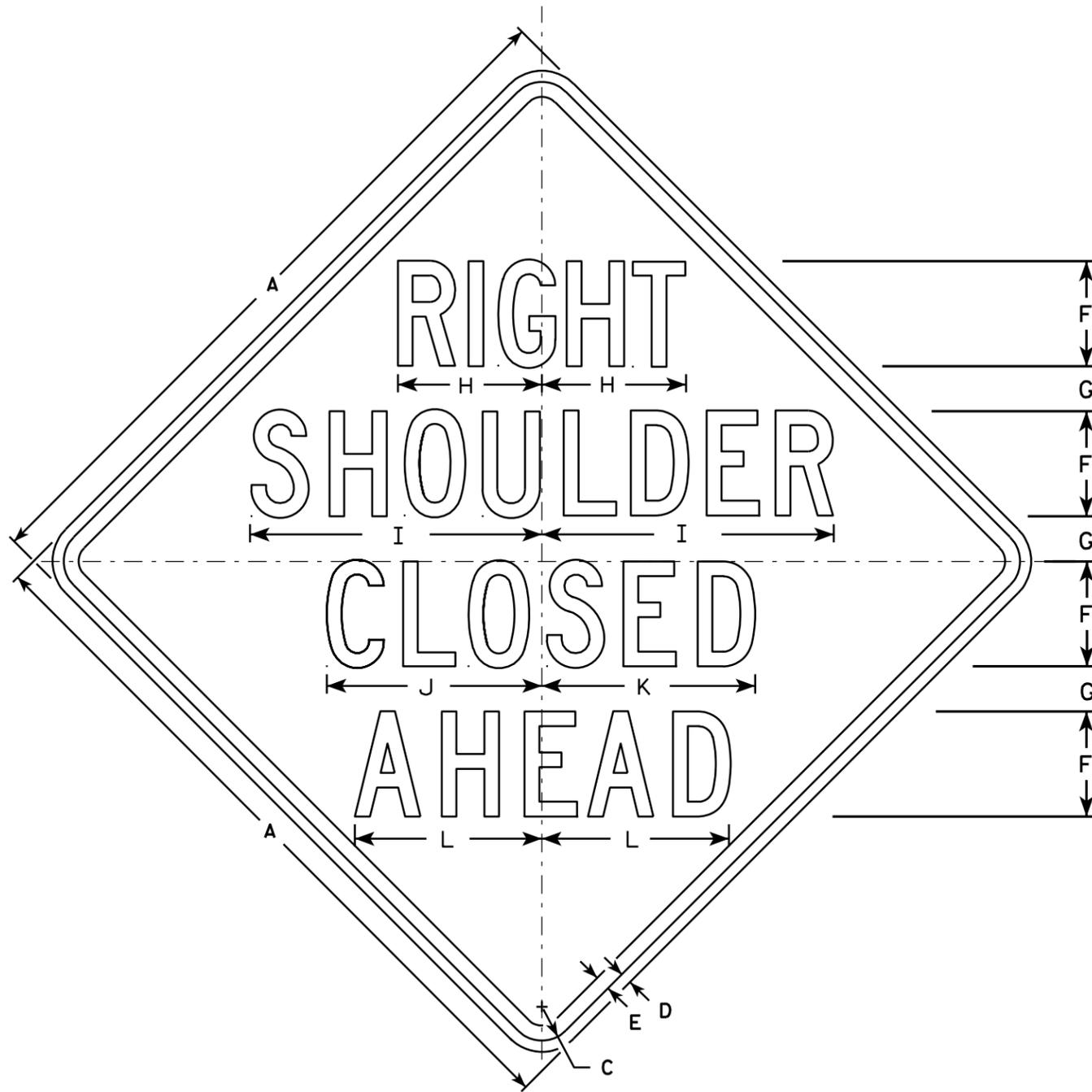
**STANDARD SIGN**  
W21-5A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 3/21/11 PLATE NO. W21-5A.3

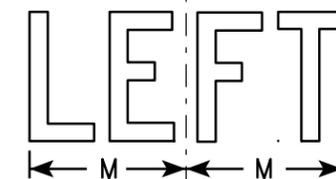
PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: \_\_\_\_\_ E



W21-5B

**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 - 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.



W21-5BL

7

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	36		1 5/8	5/8	3/4	5	2 1/4	7 3/8	14 1/4	10 1/4	10 1/8	8 7/8	6 1/4														9.0
2S	48		2 1/4	3/4	1	7	3	9 5/8	19 1/2	14 3/8	14 1/4	12 1/2	8 1/2														16.0
2M	48		2 1/4	3/4	1	7	3	9 5/8	19 1/2	14 3/8	14 1/4	12 1/2	8 1/2														16.0
3	48		2 1/4	3/4	1	7	3	9 5/8	19 1/2	14 3/8	14 1/4	12 1/2	8 1/2														16.0
4	48		2 1/4	3/4	1	7	3	9 5/8	19 1/2	14 3/8	14 1/4	12 1/2	8 1/2														16.0
5	48		2 1/4	3/4	1	7	3	9 5/8	19 1/2	14 3/8	14 1/4	12 1/2	8 1/2														16.0

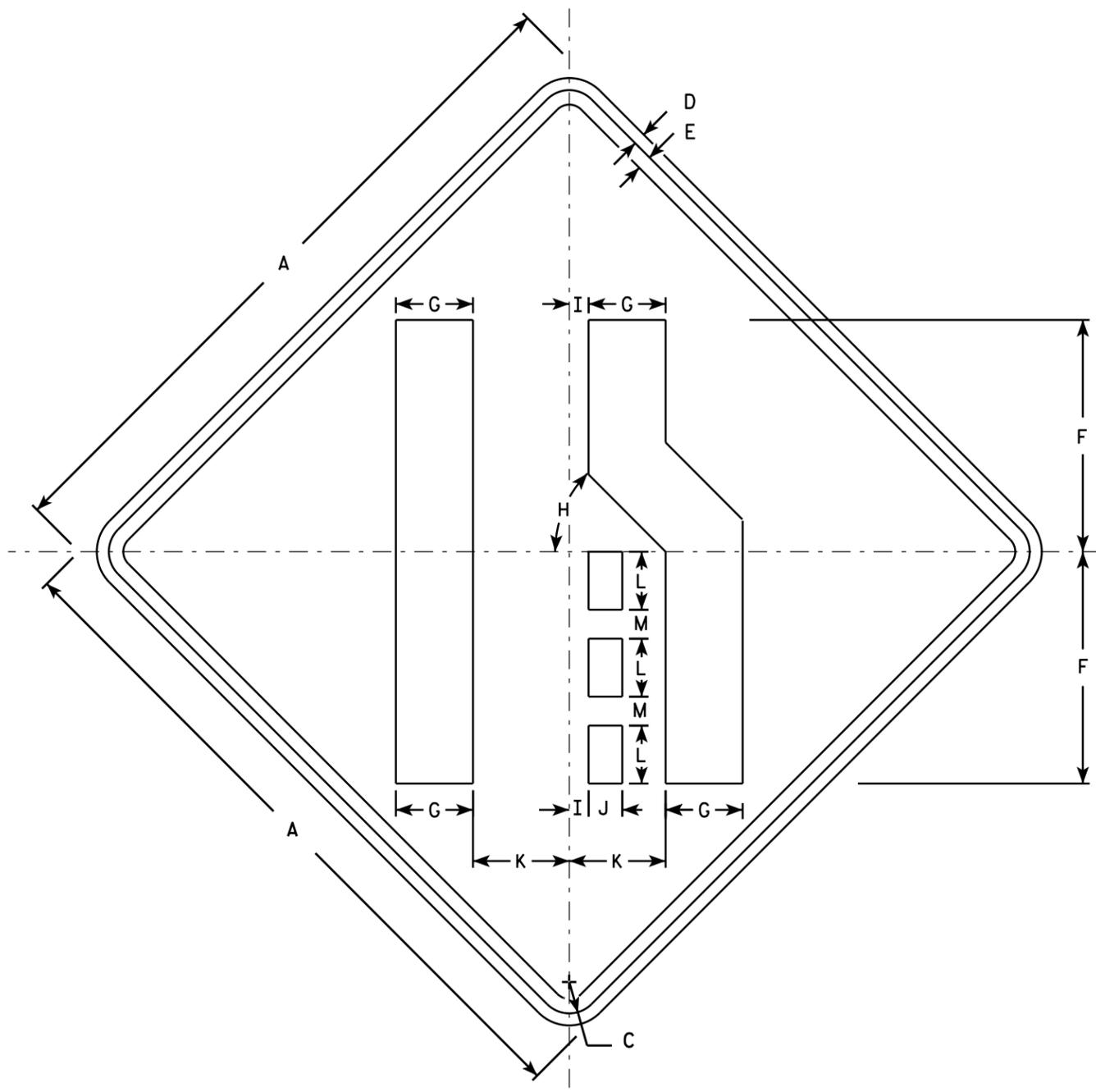
**STANDARD SIGN**  
**W21-5B**

*WISCONSIN DEPT OF TRANSPORTATION*

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 3/21/11 PLATE NO. W21-5B.3

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: **E**



W04-2R

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. 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. W04-2L is the same as W04-2R except the symbols is reversed along the vertical centerline.

7

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	36		1 5/8	5/8	3/4	12	4	45°	1	1 3/4	5	3	1 1/2														9.0
2S	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
2M	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
3	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
4	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
5	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0

**STANDARD SIGN**  
**W04-2**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

DATE 11/20/13 PLATE NO. W04-2.1

DIVISION 1 - CTH OO

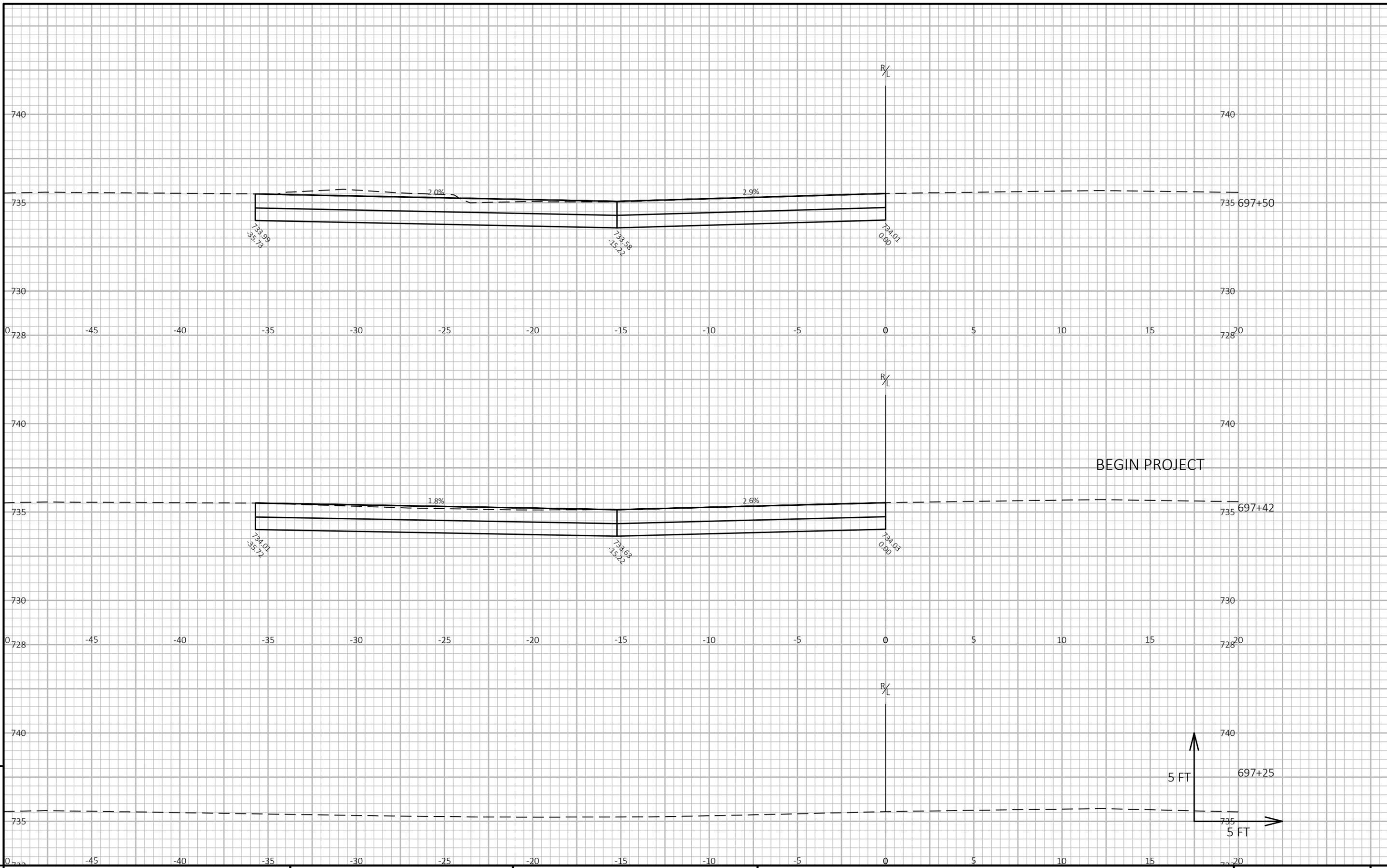
STATION	REAL STATION	DISTANCE	AREA (SF)		INCREMENTAL VOLUME (CY)		CUMULATIVE VOLUME (CY)		
			CUT	FILL	UNADJUSTED		CUT 1.00	EXPANDED FILL 1.25	MASS ORDINATE
					CUT	FILL			
697+42	69742.00	0.00	52.00	0.00	0	0	0	0	0
697+50	69750.00	8.00	55.33	0.00	16	0	16	0	16
697+75	69775.00	25.00	58.32	0.00	53	0	69	0	69
698+00	69800.00	25.00	57.77	0.00	54	0	122	0	122
698+25	69825.00	25.00	62.22	0.00	56	0	178	0	178
698+50	69850.00	25.00	58.03	0.00	56	0	234	0	234
698+75	69875.00	25.00	61.12	0.00	55	0	289	0	289
699+00	69900.00	25.00	58.91	0.00	56	0	344	0	344
699+25	69925.00	25.00	60.16	0.00	55	0	399	0	399
699+50	69950.00	25.00	60.18	0.00	56	0	455	0	455
699+75	69975.00	25.00	60.36	0.00	56	0	511	0	511
700+00	70000.00	25.00	58.04	0.00	55	0	566	0	566
700+25	70025.00	25.00	57.31	0.00	53	0	619	0	619
700+50	70050.00	25.00	55.02	0.00	52	0	671	0	671
700+75	70075.00	25.00	55.45	0.00	51	0	722	0	722
701+00	70100.00	25.00	58.11	0.00	53	0	775	0	775
701+25	70125.00	25.00	55.45	0.00	53	0	827	0	827
701+50	70150.00	25.00	53.03	0.00	50	0	878	0	878
701+75	70175.00	25.00	52.21	0.00	49	0	926	0	926
701+96	70196.00	21.00	49.59	0.00	39	0	965	0	965

DIVISION 1 - FRENCH RD

STATION	REAL STATION	DISTANCE	AREA (SF)		INCREMENTAL VOLUME (CY)		CUMULATIVE VOL (CY)		
			CUT	FILL	UNADJUSTED		CUT 1.00	EXPANDED FILL 1.25	MASS ORDINATE
					CUT	FILL			
592+61	59261.24	0.00	59.63	0.00	0	0	0	0	0
592+75	59275.00	13.76	41.75	1.09	26	0	26	0	26
593+00	59300.00	25.00	30.70	0.23	34	1	60	1	59
593+25	59325.00	25.00	27.41	0.90	27	1	87	3	85
593+50	59350.00	25.00	26.64	0.80	25	1	112	4	108
593+75	59375.00	25.00	27.29	0.25	25	0	137	4	133
594+00	59400.00	25.00	29.78	0.00	26	0	163	4	159
594+25	59425.00	25.00	24.60	0.48	25	0	188	4	184
594+50	59450.00	25.00	13.02	0.00	17	0	205	4	201
594+75	59475.00	25.00	20.70	0.00	16	0	221	4	217
594+92	59492.22	17.22	13.77	0.00	11	0	232	4	228

9

9



BEGIN PROJECT

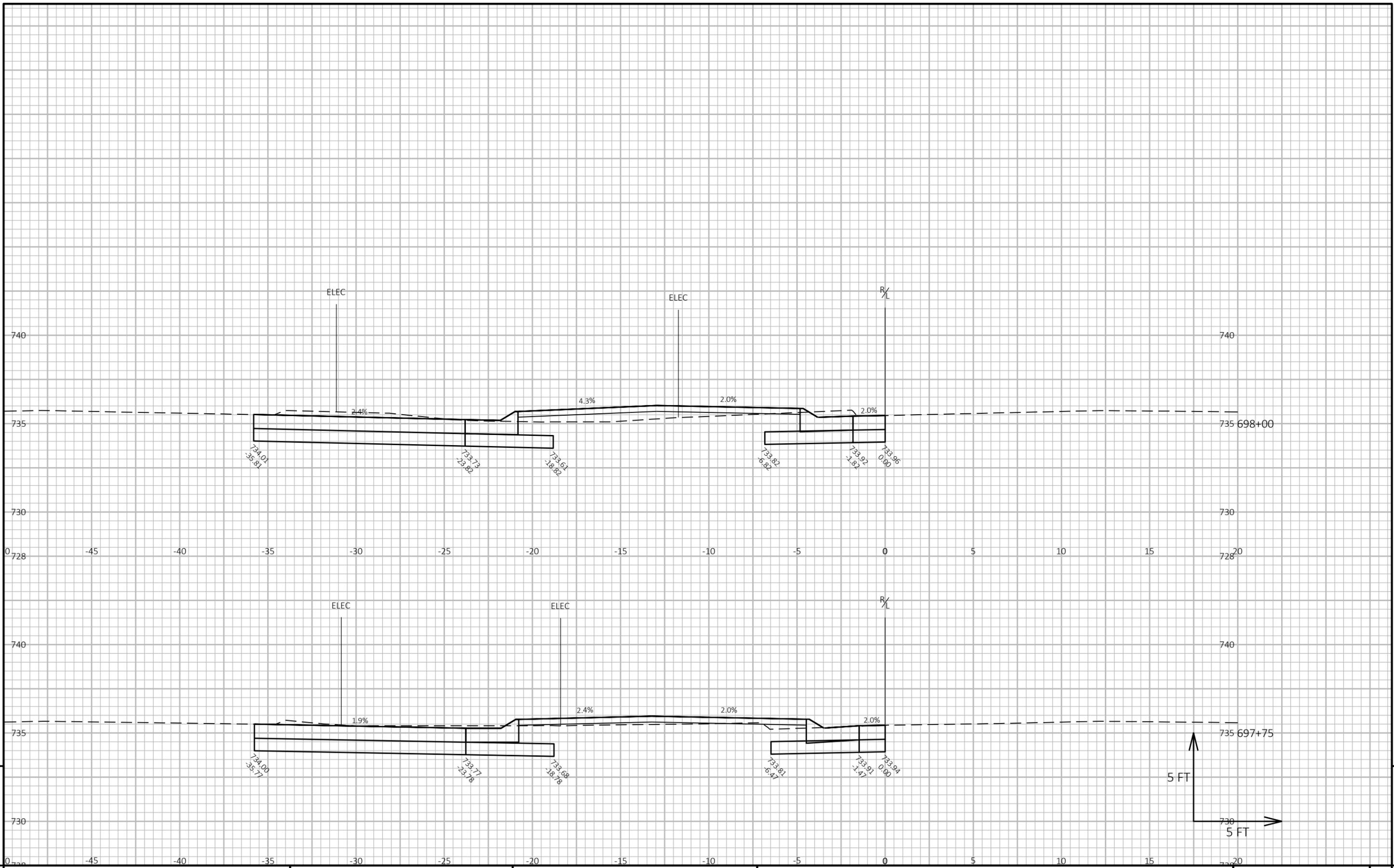
9

9

PROJECT NO: 4677-10-71	HWY: CTH OO	COUNTY: OUTAGAMIE	CROSS SECTIONS: CTH OO	SHEET	E
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FILE NAME : T:\1210023\CIVIL3D\46771071\SHEETSPLAN\090201-XS.DWG PLOT DATE : 10/20/2022 8:44 AM PLOT BY : GUILLAMA, TINA PLOT NAME : PLOT SCALE : 1 IN:5 FT HORZ. / 1 IN:5 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 01



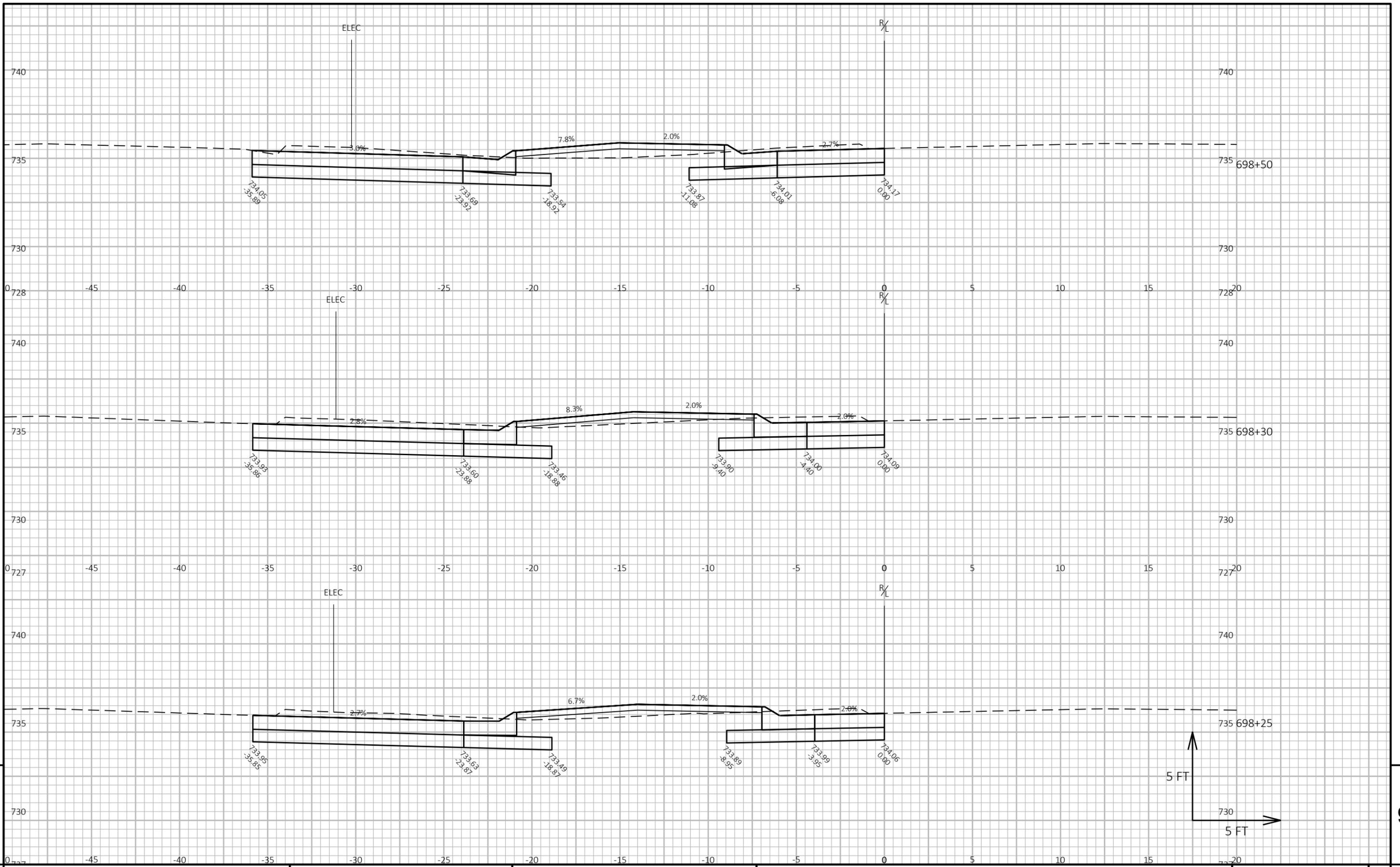
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PROJECT NO: 4677-10-71	HWY: CTH OO	COUNTY: OUTAGAMIE	CROSS SECTIONS: CTH OO	SHEET	E
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FILE NAME : T:\1210023\CIVIL3D\46771071\SHEETSPLAN\090201-XS.DWG PLOT DATE : 10/20/2022 8:44 AM PLOT BY : GUILLAMA, TINA PLOT NAME : PLOT SCALE : 1 IN:5 FT HORZ. / 1 IN:5 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 02



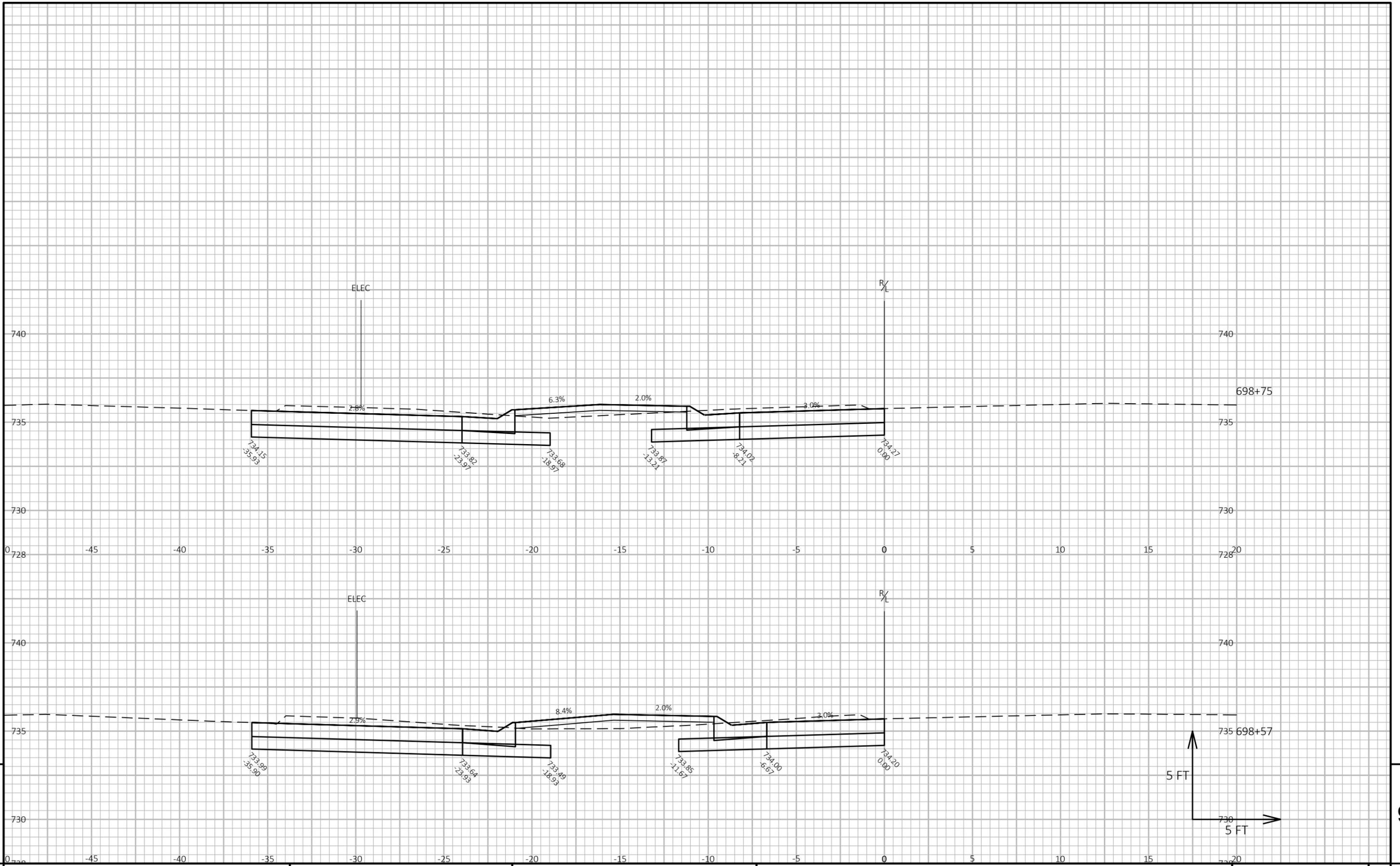
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PROJECT NO: 4677-10-71      HWY: CTH OO      COUNTY: OUTAGAMIE      CROSS SECTIONS: CTH OO      SHEET      E

FILE NAME : T:\1210023\CIVIL3D\46771071\SHEETSPLAN\090201-XS.DWG      PLOT DATE : 10/20/2022 8:44 AM      PLOT BY : GUILLAMA, TINA      PLOT NAME :      PLOT SCALE : 1 IN:5 FT HORZ. / 1 IN:5 FT VERT.      WISDOT/CADD SHEET 49

LAYOUT NAME - 03

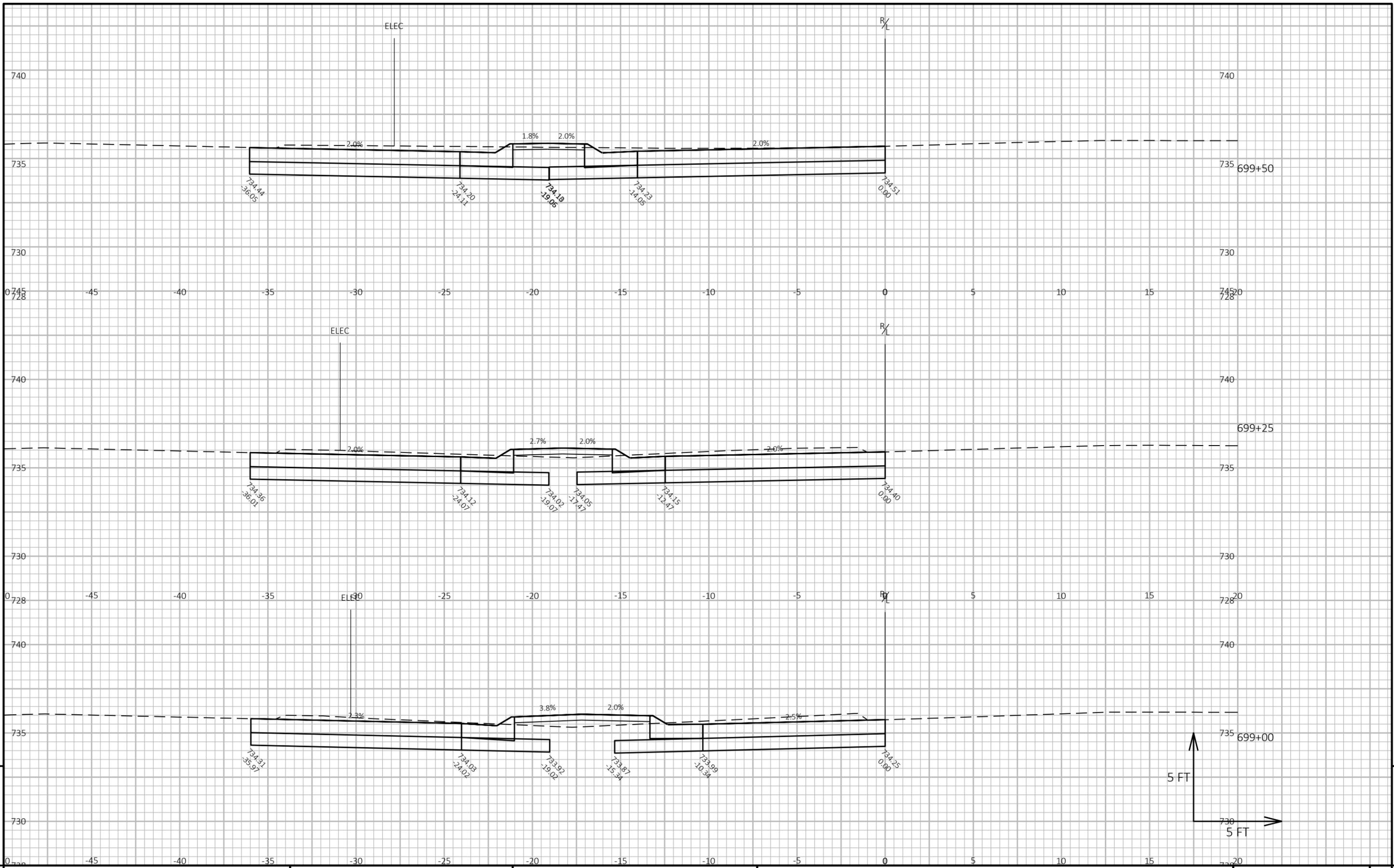


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PROJECT NO: 4677-10-71	HWY: CTH OO	COUNTY: OUTAGAMIE	CROSS SECTIONS: CTH OO	SHEET	E
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FILE NAME : T:\1210023\CIVIL3D\46771071\SHEETSPLAN\090201-XS.DWG PLOT DATE : 10/20/2022 8:44 AM PLOT BY : GUILLAMA, TINA PLOT NAME : PLOT SCALE : 1 IN:5 FT HORZ. / 1 IN:5 FT VERT. WISDOT/CADDs SHEET 49



PROJECT NO: 4677-10-71

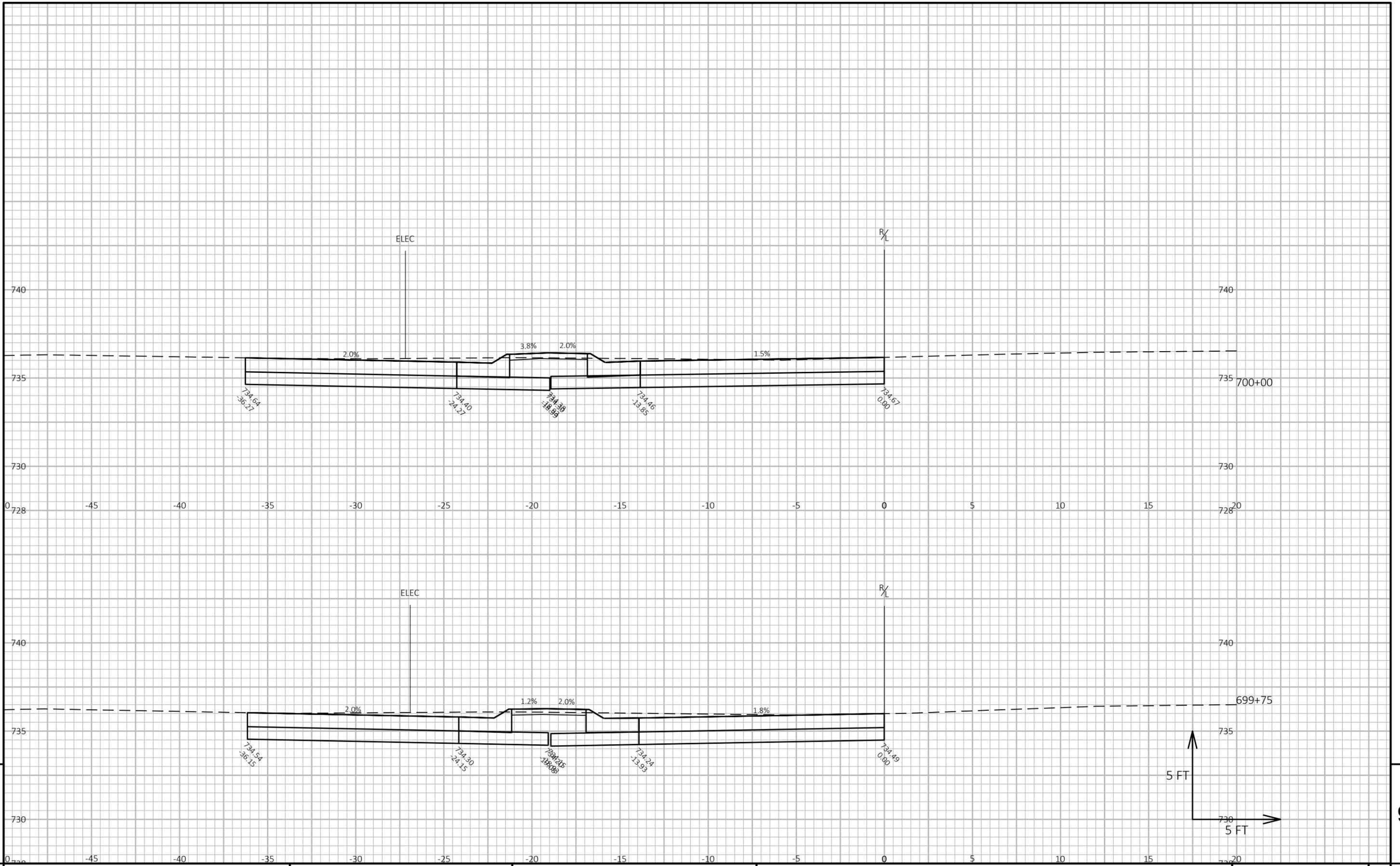
HWY: CTH OO

COUNTY: OUTAGAMIE

CROSS SECTIONS: CTH OO

SHEET

E



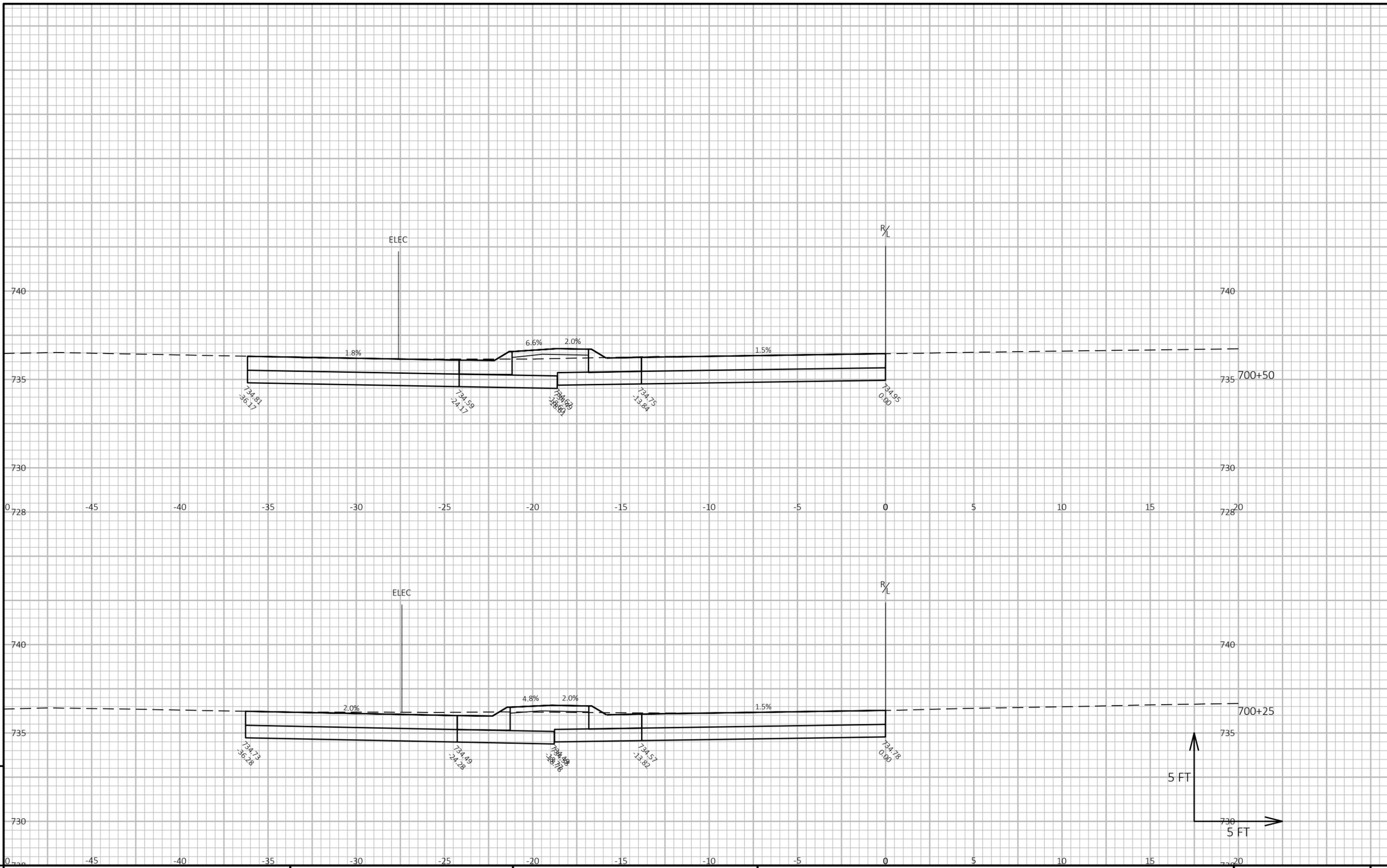
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PROJECT NO: 4677-10-71      HWY: CTH OO      COUNTY: OUTAGAMIE      CROSS SECTIONS: CTH OO      SHEET      E

FILE NAME : T:\1210023\CIVIL3D\46771071\SHEETSPLAN\090201-XS.DWG      PLOT DATE : 10/20/2022 8:44 AM      PLOT BY : GUILLAMA, TINA      PLOT NAME :      PLOT SCALE : 1 IN:5 FT HORZ. / 1 IN:5 FT VERT.      WISDOT/CADD SHEET 49

LAYOUT NAME - 06



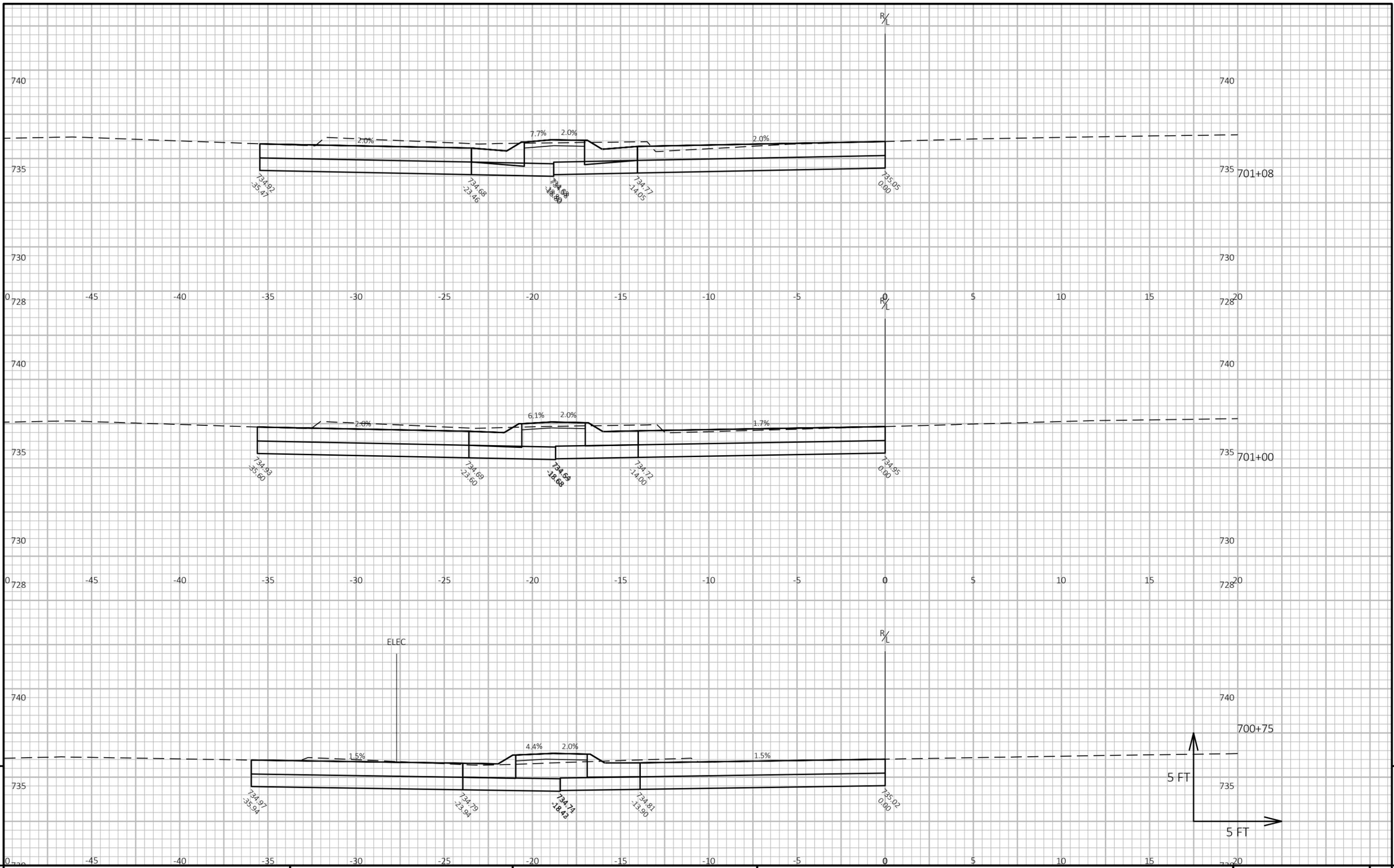
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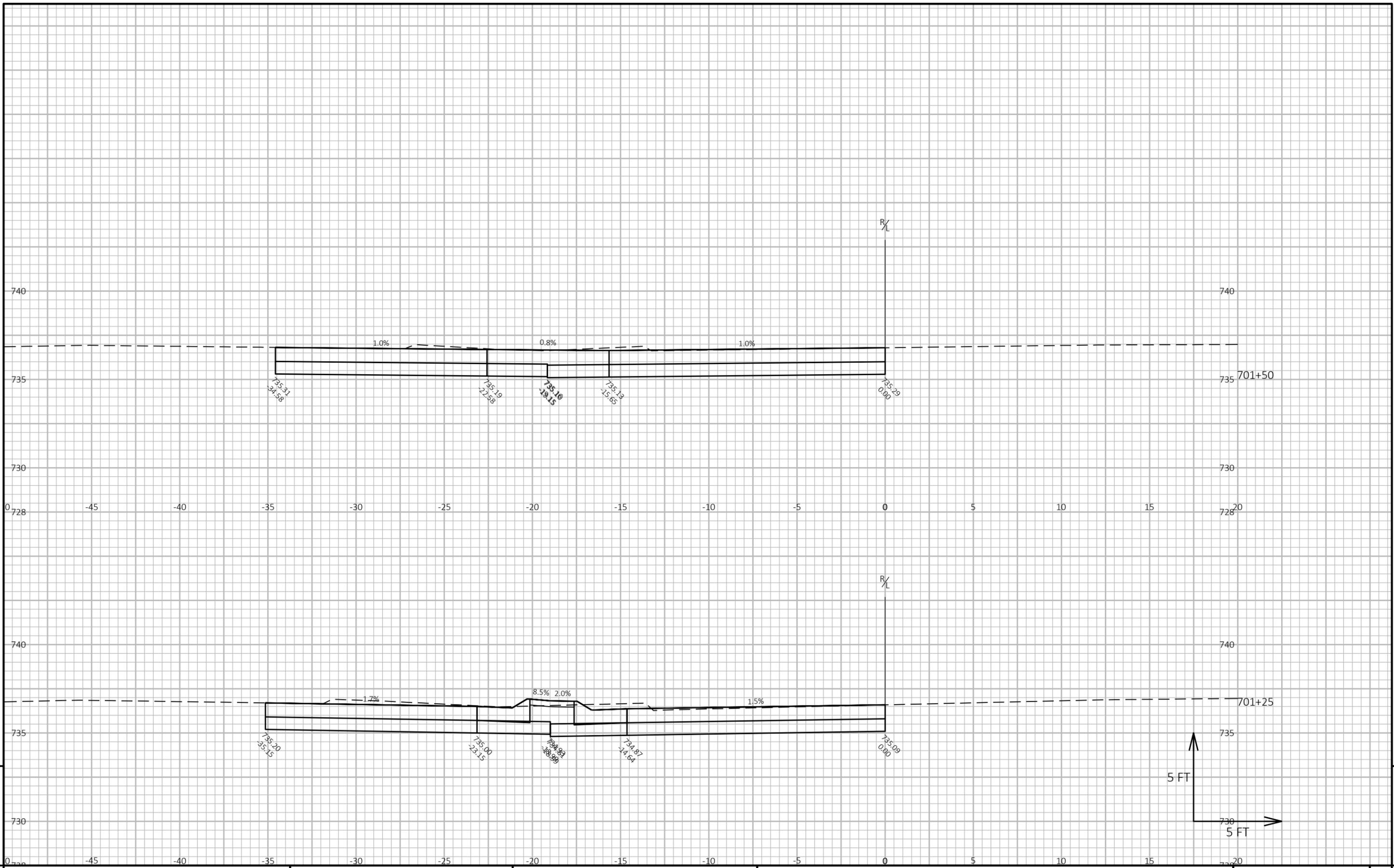
PROJECT NO: 4677-10-71      HWY: CTH OO      COUNTY: OUTAGAMIE      CROSS SECTIONS: CTH OO      SHEET      E

FILE NAME : T:\1210023\CIVIL3D\46771071\SHEETSPLAN\090201-XS.DWG      PLOT DATE : 10/20/2022 8:44 AM      PLOT BY : GUILLAMA, TINA      PLOT NAME :      PLOT SCALE : 1 IN:5 FT HORZ. / 1 IN:5 FT VERT.      WISDOT/CADD SHEET 49

LAYOUT NAME - 07



PROJECT NO: 4677-10-71      HWY: CTH OO      COUNTY: OUTAGAMIE      CROSS SECTIONS: CTH OO      SHEET      E

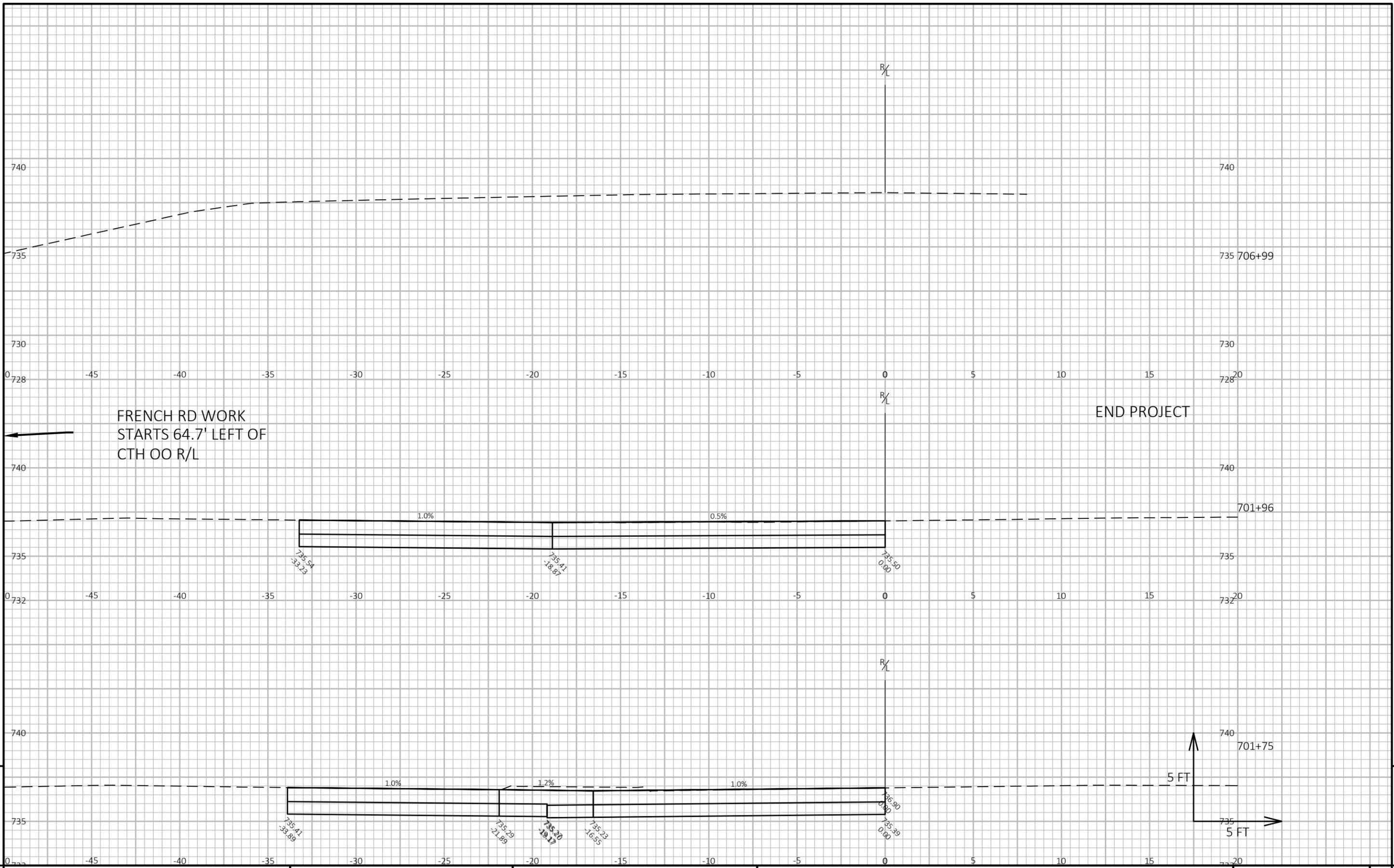


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PROJECT NO: 4677-10-71 HWY: CTH OO COUNTY: OUTAGAMIE CROSS SECTIONS: CTH OO SHEET E

FILE NAME: T:\1210023\CIVIL3D\46771071\SHEETSPLAN\090201-XS.DWG PLOT DATE: 10/20/2022 8:44 AM PLOT BY: GUILLAMA, TINA PLOT NAME: PLOT SCALE: 1 IN:5 FT HORZ. / 1 IN:5 FT VERT. WISDOT/CADD SHEET 49



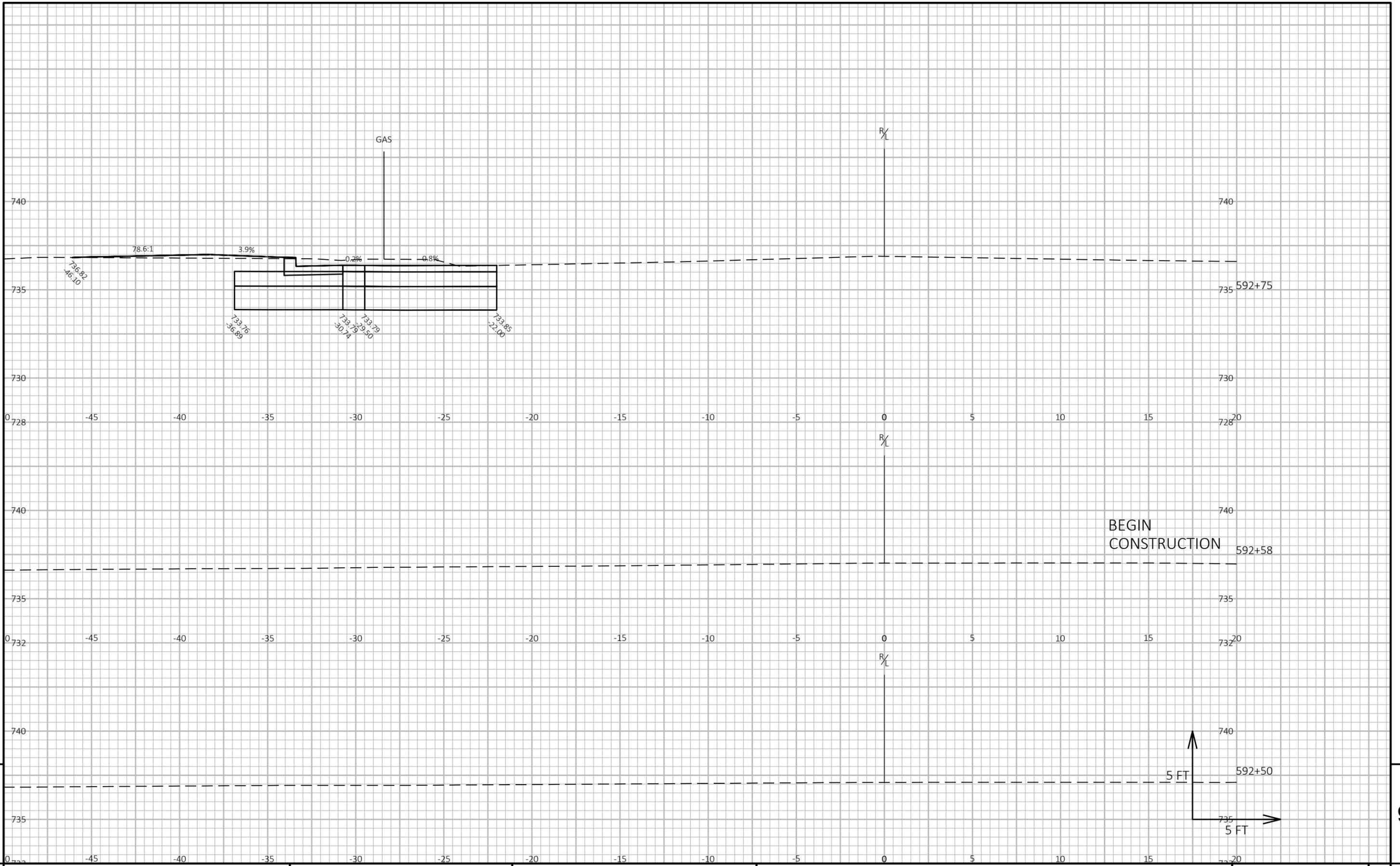
FRENCH RD WORK  
STARTS 64.7' LEFT OF  
CTH OO R/L

END PROJECT

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PROJECT NO: 4677-10-71	HWY: CTH OO	COUNTY: OUTAGAMIE	CROSS SECTIONS: CTH OO	SHEET E
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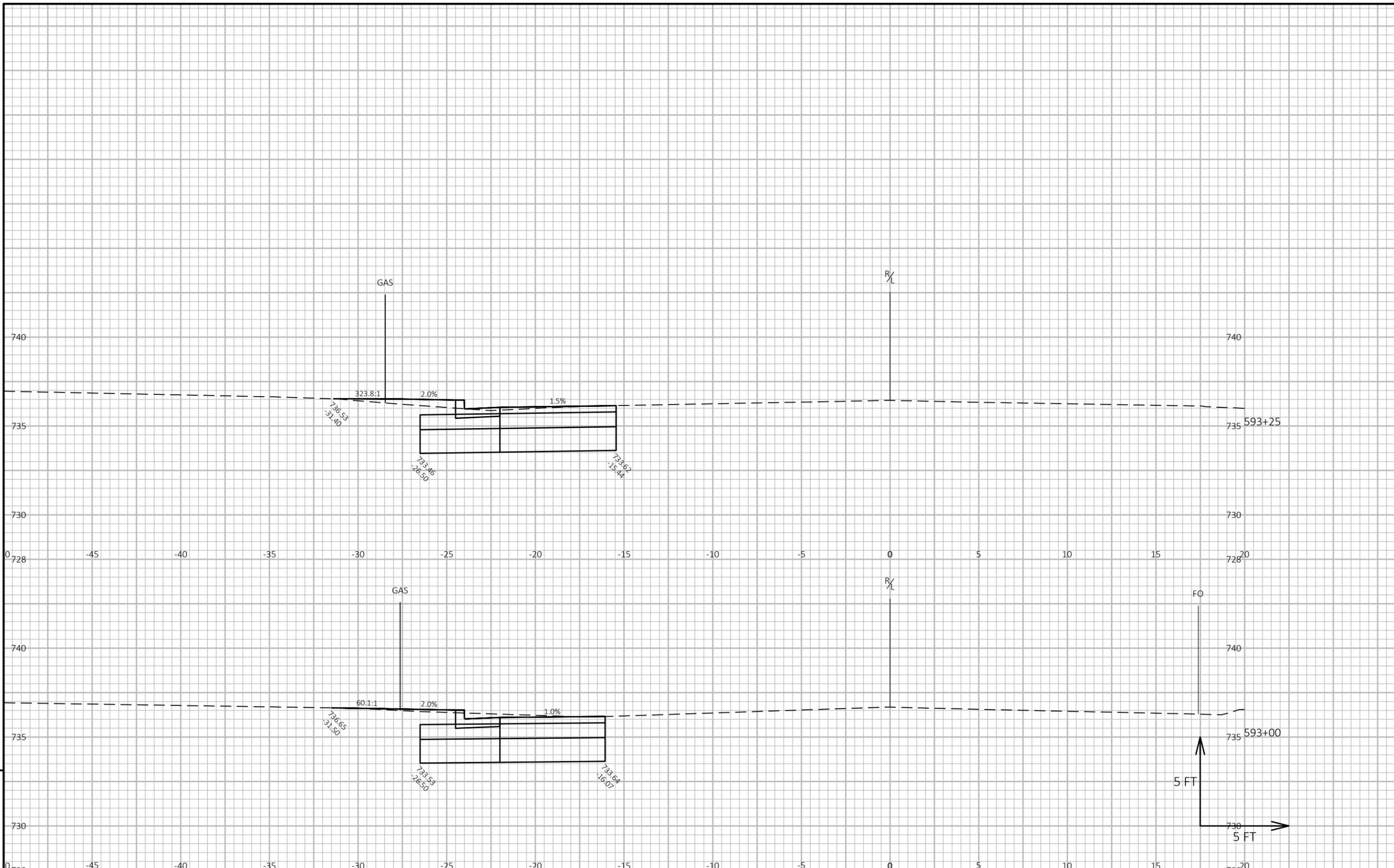
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PROJECT NO: 4677-10-71      HWY: CTH OO      COUNTY: OUTAGAMIE      CROSS SECTIONS: FRENCH ROAD      SHEET      E

FILE NAME : T:\1210023\CIVIL3D\46771071\SHEETSPLAN\090201-XS.DWG      PLOT DATE : 10/20/2022 8:44 AM      PLOT BY : GUILLAMA, TINA      PLOT NAME :      PLOT SCALE : 1 IN:5 FT HORZ. / 1 IN:5 FT VERT.      WISDOT/CADD SHEET 49

LAYOUT NAME - 13



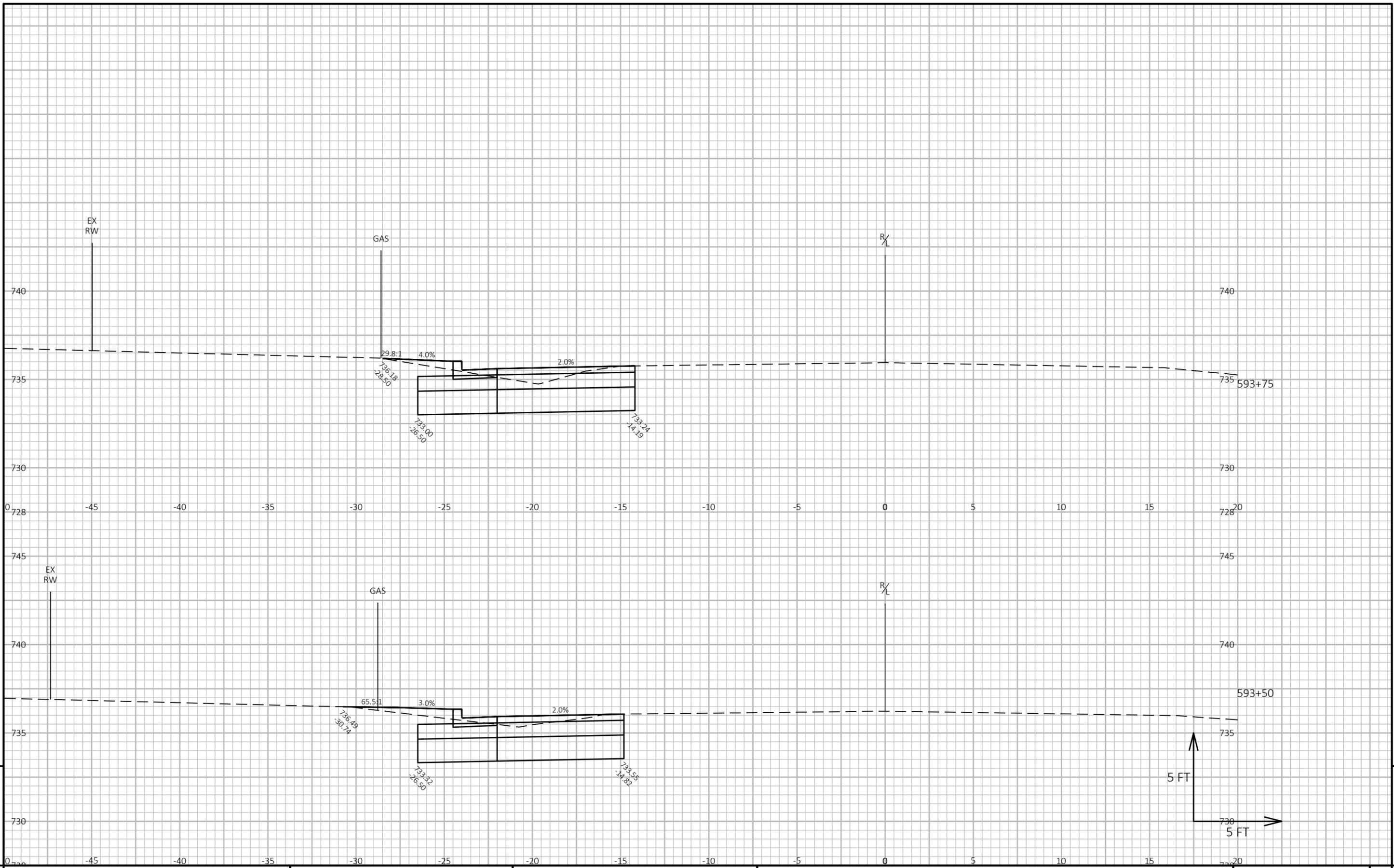
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PROJECT NO: 4677-10-71      HWY: CTH OO      COUNTY: OUTAGAMIE      CROSS SECTIONS: FRENCH ROAD      SHEET E

FILE NAME : T:\1210023\CIVIL3D\46771071\SHEETSPLAN\090201-XS.DWG      PLOT DATE : 10/20/2022 8:44 AM      PLOT BY : GUILLAMA, TINA      PLOT NAME :      PLOT SCALE : 1 IN:5 FT HORZ. / 1 IN:5 FT VERT.      WISDOT/CADD SHEET 49

LAYOUT NAME - 14

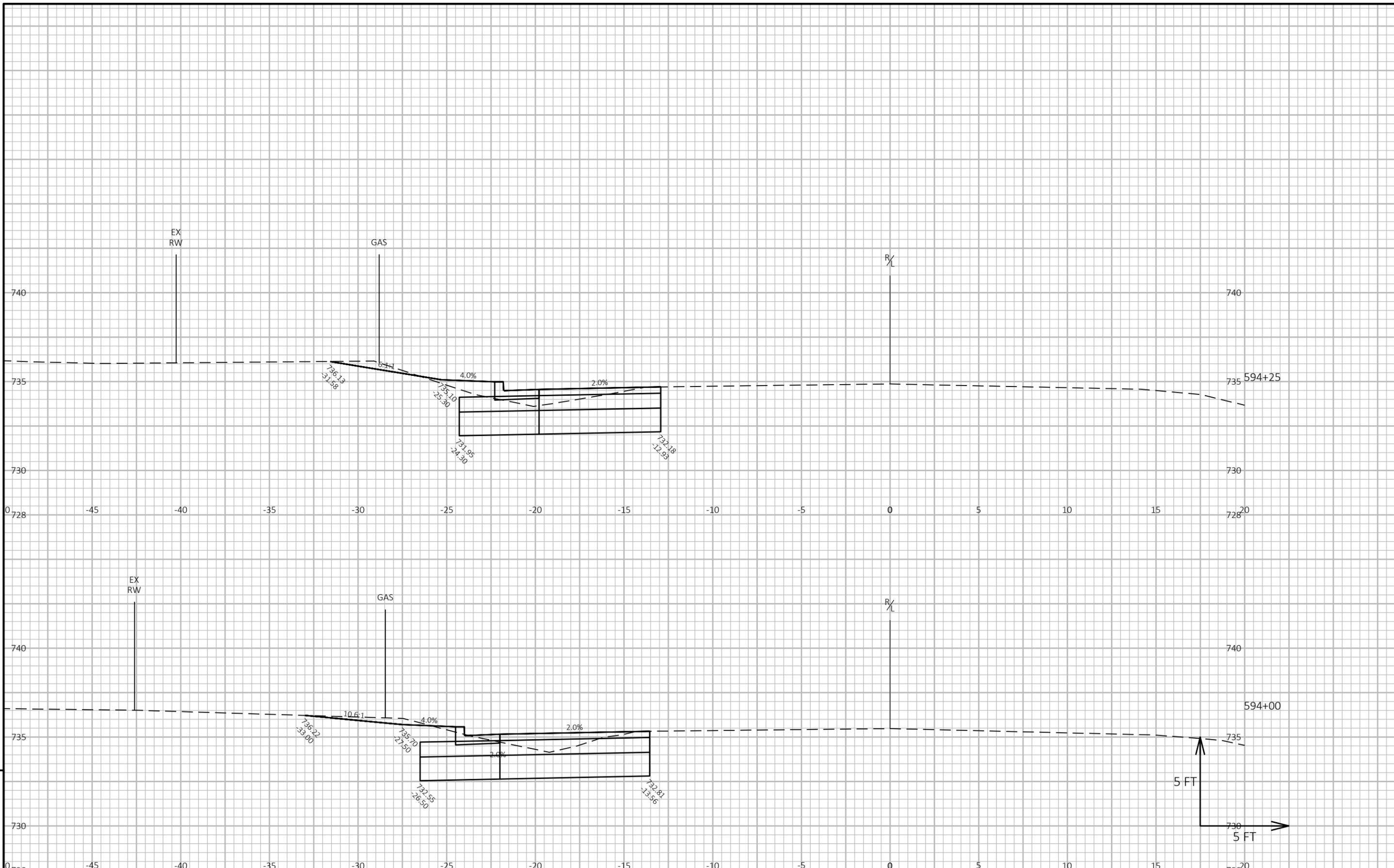


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PROJECT NO: 4677-10-71	HWY: CTH OO	COUNTY: OUTAGAMIE	CROSS SECTIONS: FRENCH ROAD	SHEET	E
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FILE NAME : T:\1210023\CIVIL3D\46771071\SHEETSPLAN\090201-XS.DWG  
 LAYOUT NAME - 15  
 PLOT DATE : 10/20/2022 8:44 AM  
 PLOT BY : GUILLAMA, TINA  
 PLOT NAME :  
 PLOT SCALE : 1 IN:5 FT HORZ. / 1 IN:5 FT VERT.  
 WISDOT/CADD SHEET 49



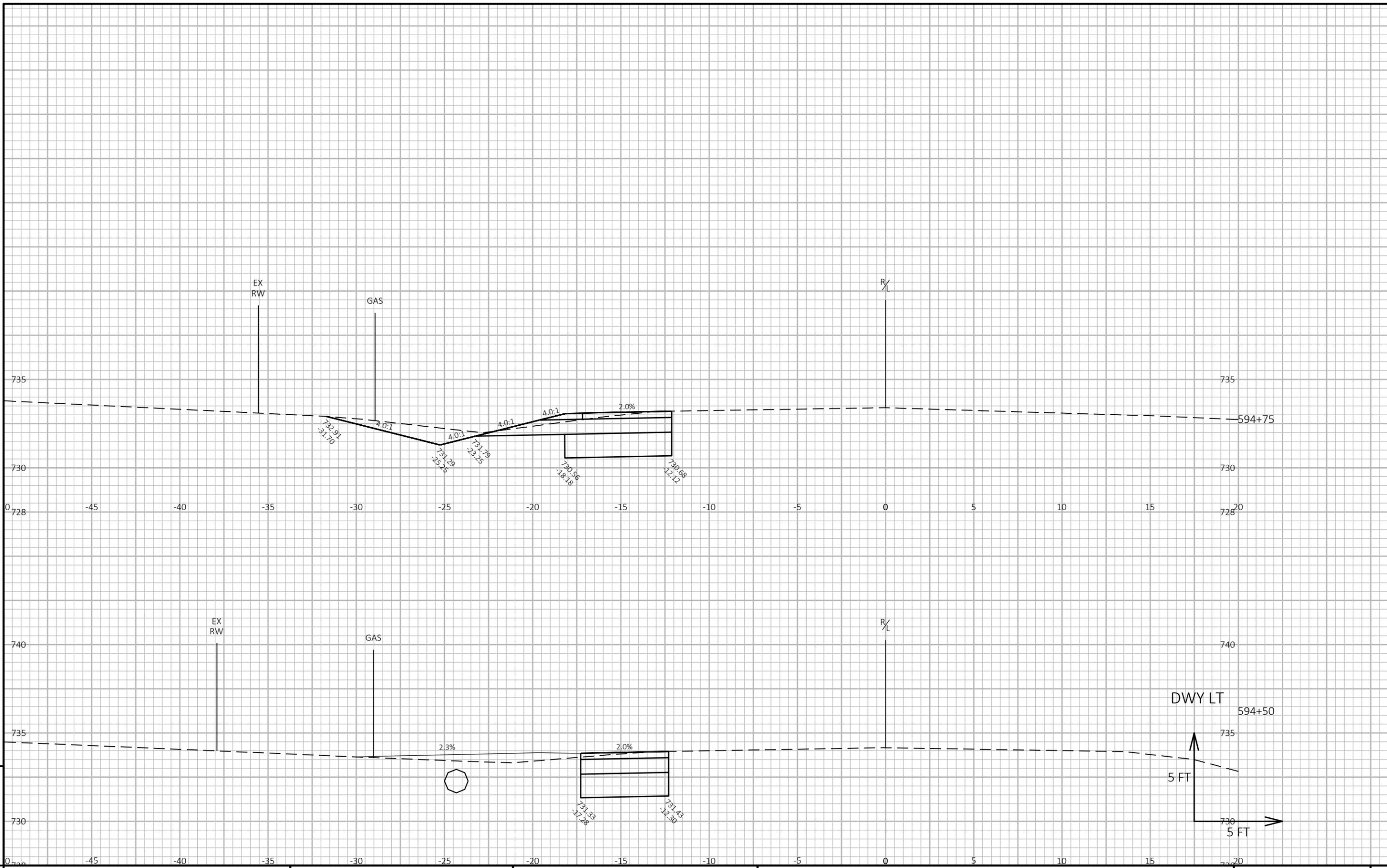
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PROJECT NO: 4677-10-71      HWY: CTH OO      COUNTY: OUTAGAMIE      CROSS SECTIONS: FRENCH ROAD      SHEET      E

FILE NAME : T:\1210023\CIVIL3D\46771071\SHEETSPLAN\090201-XS.DWG      PLOT DATE : 10/20/2022 8:44 AM      PLOT BY : GUILLAMA, TINA      PLOT NAME :      PLOT SCALE : 1 IN:5 FT HORZ. / 1 IN:5 FT VERT.      WISDOT/CADD SHEET 49

LAYOUT NAME - 16



PROJECT NO: 4677-10-71

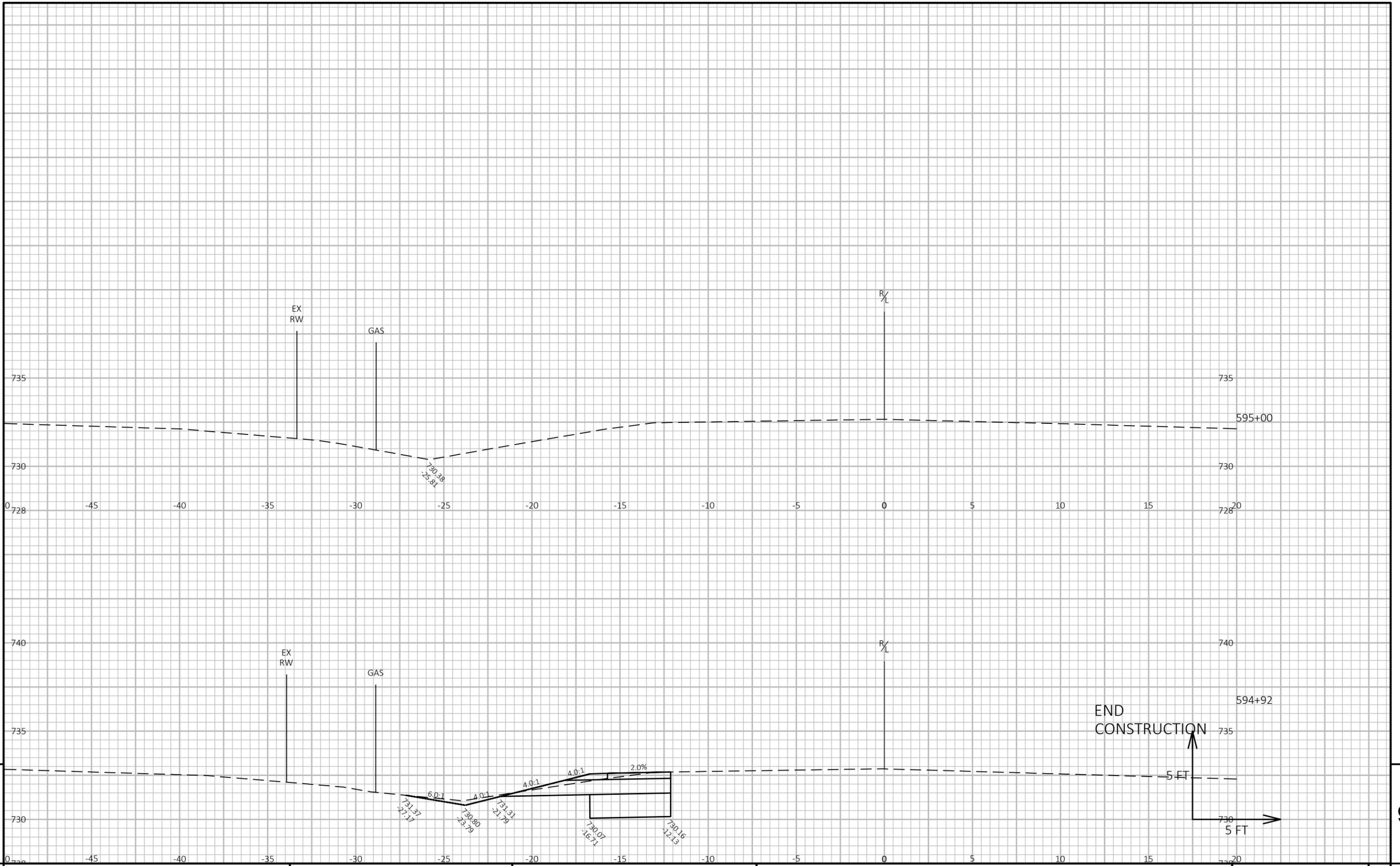
HWY: CTH OO

COUNTY: OUTAGAMIE

CROSS SECTIONS: FRENCH ROAD

SHEET

E



PROJECT NO: 4677-10-71

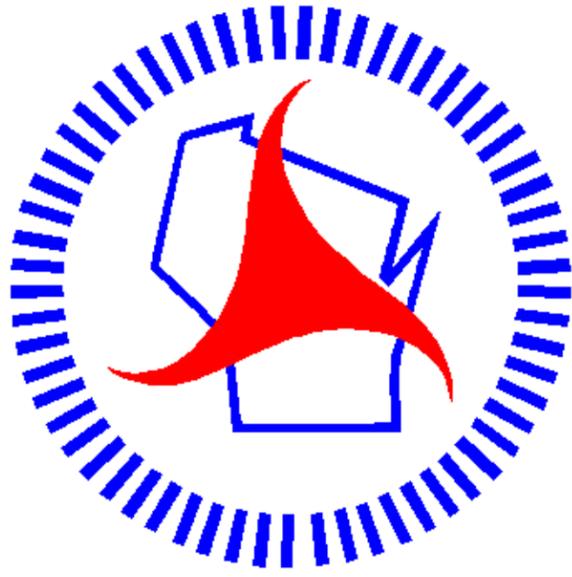
HWY: CTH OO

COUNTY: OUTAGAMIE

CROSS SECTIONS: FRENCH ROAD

SHEET

E



## ***Wisconsin Department of Transportation***

Dedicated people creating transportation solutions through innovation and exceptional service.

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