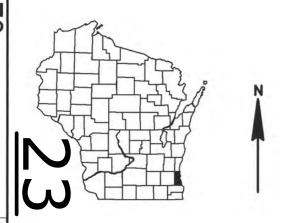
MAY 2015

ORDER OF SHEETS

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

TOTAL SHEETS = 158



DESIGN DESIGNATION

A.A.D.T.	2014	=	16,200
A.A.D.T.	2035	=	22,000
D.H.V.		=	N/A
D.D.		=	N/A
T.		=	4.8%
DESIGN SPI	EED	=	40 MPH
ESALS		=	N/A

CONVENTIONAL SYMBOLS

PLAN

MARSH AREA

WOODED OR SHRUB AREA

CORPORATE LIMITS	11/1/1/
PROPERTY LINE	
OT LINE JMITED HIGHWAY EASEMENT	
EXISTING RIGHT OF WAY PROPOSED OR NEW R/W LINE	
SLOPE INTERCEPT	
REFERENCE LINE	-
EXISTING CULVERT PROPOSED CULVERT (Box or Pipe)	==-
COMBUSTIBLE FLUIDS	-caution-
	V .

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

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

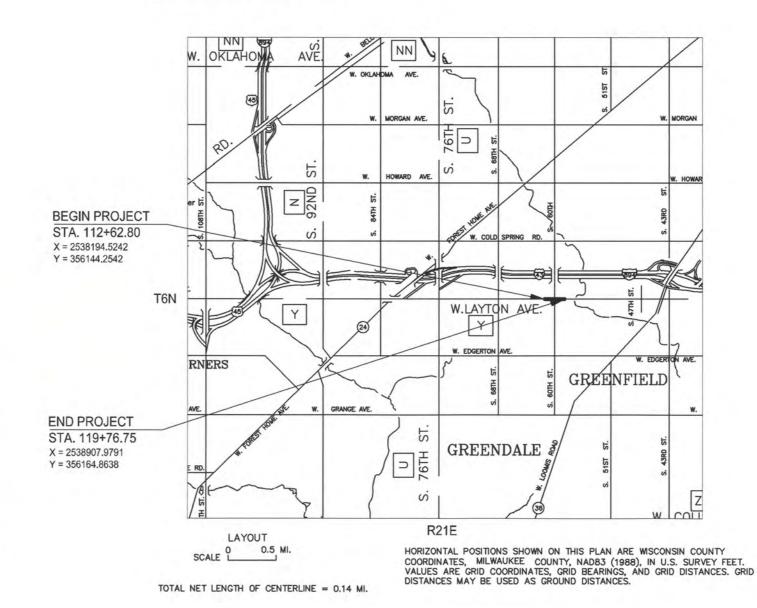
CTH Y

INTERSECTION WITH 60TH STREET

CTHY

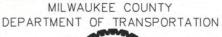
MILWAUKEE COUNTY

STATE PROJECT NUMBER 2070-09-70



FEDERAL PROJECT STATE PROJECT CONTRACT PROJECT WISC 2015287 2070-09-70 1

ORIGINAL PLANS PREPARED BY:







STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PREPARED BY

Designer

MILWAUKEE COUNTY DAAR ENGINEERING, INC.

MILWAUKEE COUNTY

E

STANDARD ABBRIVATIONS

	<u>317111371</u>	IND ABBILITATION	<u>5115</u>
AEW	APRON ENDWALL	PE	PRIVATE ENTRANCE
AGG	AGGREGATE	PI	POINT OF INTERSECTION
BAD	BASE AGGREGATE DENSE	PLE	PERMANENT LIMITED EASEMENT
BM	BENCHMARK	PT	POINT OF TANGENT
C&G	CURB AND GUTTER	R	RADIUS OF CURVE
CL OR		R/L	REFERENCE LINE
C L	CENTER OR CONSTRUCTION LINE	R/W	RIGHT OF WAY
CMCP	CULVERT PIPE CORRUGATED METAL	RC	REVERSE CROWN
CONC	CONCRETE	RCAEW	APRON END WALL FOR CULVERT PIPE REINFORCEI
СР	CULVERT PIPE		CONCRETE
CPRC	CULVERT PIPE REINFORCED CONCRETE	REQD	REQUIRED
CSD	CONCRETE SURFACE DRAIN	RHF	RIGHT HAND FORWARD
CY	CUBIC YARD	RO	RUN OFF LENGTH
DD	DEGREE OF CURVE DEGREE OF CURVE	RRSP	RAILROAD SPIKE RAILROAD SPIKE
Δ	DELTA	RT	RIGHT
DISCH	DISCHARGE	SLV	SALVAGED
FE	FIELD ENTRANCE	SAPBC	SALVAGED ASPHALTIC PAVEMENT BASE COURSE
HMA	HOT MIX ASPHALTIC	SB	SOUTHBOUND
INV	INVERT	SDD	STANDARD DETAIL DRAWING
L	LENGTH OF CURVE	SE	SUPER ELEVATION
LHF	LEFT HAND FORWARD	SF	SQUARE FOOT
LT	LEFT	STA	STATION
M/L	MAINLINE	SY	SQUARE YARD
NB	NORTHBOUND	Т	TANGENT LENGTH
NC	NORMAL CROWN	TLE	TEMPORARY LIMITED EASEMENT
PAVT	PAVEMENT	VCL	VERTICAL CURVE LENGTH
PC	POINT OF CURVE	VPC	POINT VERTICAL CURVE
PCC	POINT OF COMPOUND CURVE	VPI	POINT OF VERTICAL INTERSECTION

GENERAL NOTES

DO NOT REMOVE TREES OR SHRUBS WITHOUT THE CONSENT OF THE ENGINEER.

FILL ALL HOLES OR OPENINGS BELOW SUBGRADE RESULTING FROM ABANDONMENT OR REMOVAL OF EXISTING STRUCTURES WITH GRANULAR BACKFILL. GRANULAR MATERIAL IS INCIDENTAL TO REMOVAL ITEM.

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

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF EXCAVATION AND TO NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES.

TOPSOIL, SOD AND WATER DISTURBED AREAS WITHIN THE RIGHT OF WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS AS DIRECTED BY THE ENGINEER.

ADJUST TRAFFIC CONTROL DEVICES TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE AND MUST BE CONTACTED SEPARATELY.

CURB AND GUTTER JOINT SPACING SHALL BE 20 FEET UNLESS AUTHORIZED BY THE ENGINEER.

UTILITIES

AT&T 2005 Pewaukee Road Waukesha, WI 53188 ATTN: Mr. Mark Eder

Phone: (262) 896-7434

Time Warner Cable Communications 1320 N. Martin Luther King Dr.

Milwaukee, WI 53212 ATTN: Mr. Steve Storm Phone: (414) 908-4785

WE ENERGIES – ELECTRIC

500 S. 116th St. West Allis, WI 53214 ATTN: Mr. Ken Franecki Phone: (414) 944-5541

WE ENERGIES – GAS OPERATIONS

700 S. Kane St. Burlington, WI 53105 ATTN: Mr. Dan Warren Phone: (262) 763-1086

UTILITIES

City of Greenfield Department of Neighborhood Services 7325 W. Forest Home Ave. Greenfield, WI 53220

City of Milwaukee Water Works 841 N Broadway Milwaukee, WI 53202 ATTN: Dave Goldapp

Phone: (414) 286-6301

ATTN: Mr. Richard Sokol

Phone: (414) 329-5324

STATE AGENCIES

State of Wisconsin
Department of Natural Resources
2300 N. Martin Luther King Jr. Dr.
Milwaukee, WI 53212
ATTN: Ms. Kristina Betzold
(414) 263-8517

MILWAUKEE COUNTY

Milwaukee County Transit System 1942 N. 17th St. Milwaukee, WI 53205 ATTN: Mr. Christopher Fox

Phone: (414) 344-4550 ext.3500

Milwaukee County DOT Highway Maintenance Division 10190 W. Watertown Plank Rd. Wauwatosa, WI 53226

ATTN: Mr. Greg Heisel Phone: (414) 257-6566

Milwaukee County DOT Electrical Maintenance Division 10190 W. Watertown Plank Rd.

Wauwatosa, WI 53226 ATTN: Mr. Stanley Jackson Phone: (414) 257-6593

Milwaukee County DOT Transportation Services Division 10437 W. Innovation Dr., 5th Floor Wauwatosa, WI 53226

ATTN: Ms. Andrea Weddle-Henning

Phone: (414) 257-5934

Milwaukee County DOT Traffic Engineering 10437 W. Innovation Dr., 5th Floor Wauwatosa, WI 53226

ATTN: Mr. Daniel Murphy Phone: (414) 257-5942

SHEET INDEX

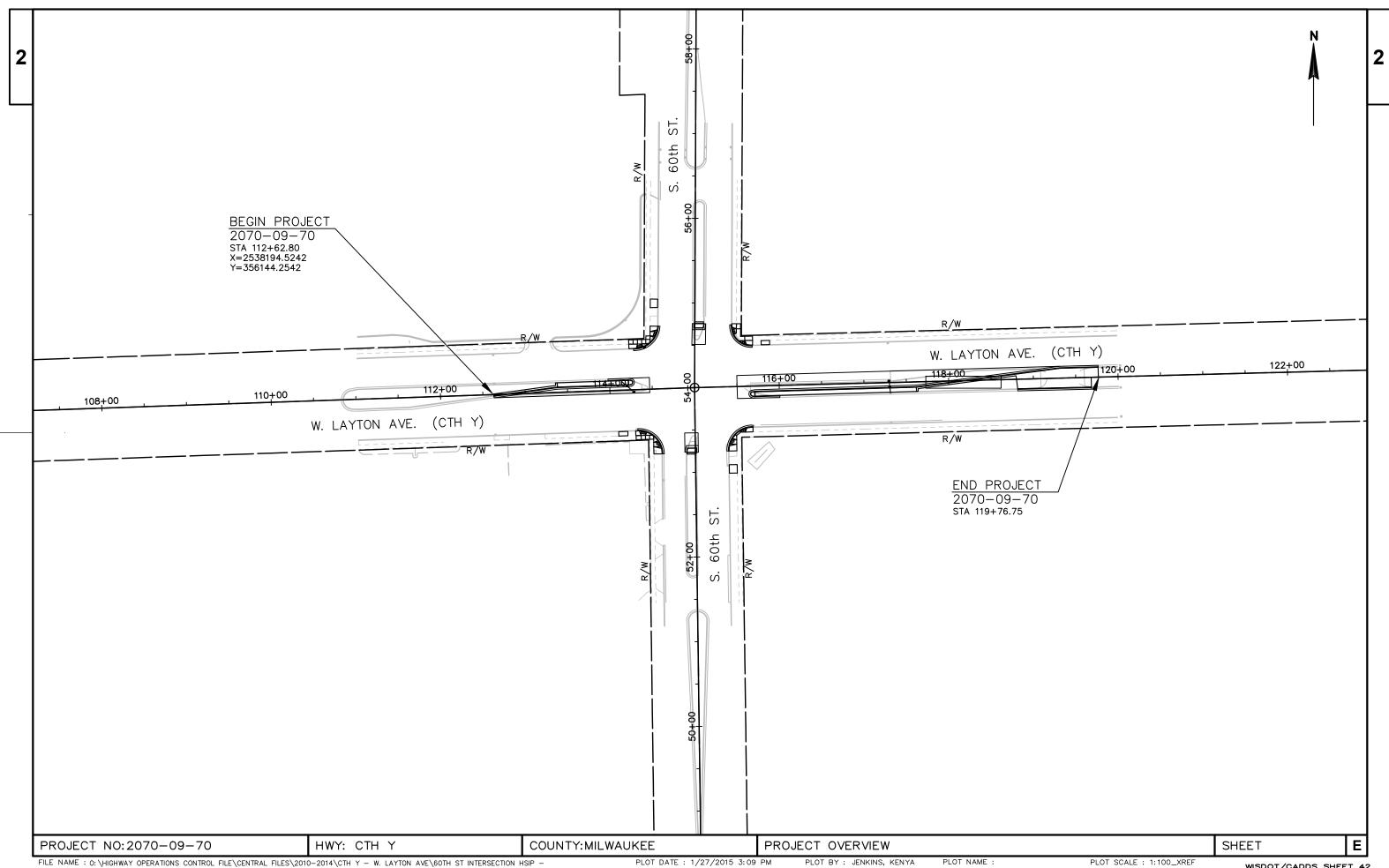
GENERAL NOTES

PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
PLAN DETAILS
PAVING GRADES
EROSION CONTROL
STORM SEWER
SIGNING & PAVEMENT MARKING
TEMPORARY SIGNAL PLAN
TRAFFIC SIGNAL PLAN
SEQUENCE OF OPERATIONS
COMMUNICATION PLAN
LIGHTING PLAN
TRAFFIC CONTROL
ALIGNMENT DIAGRAM

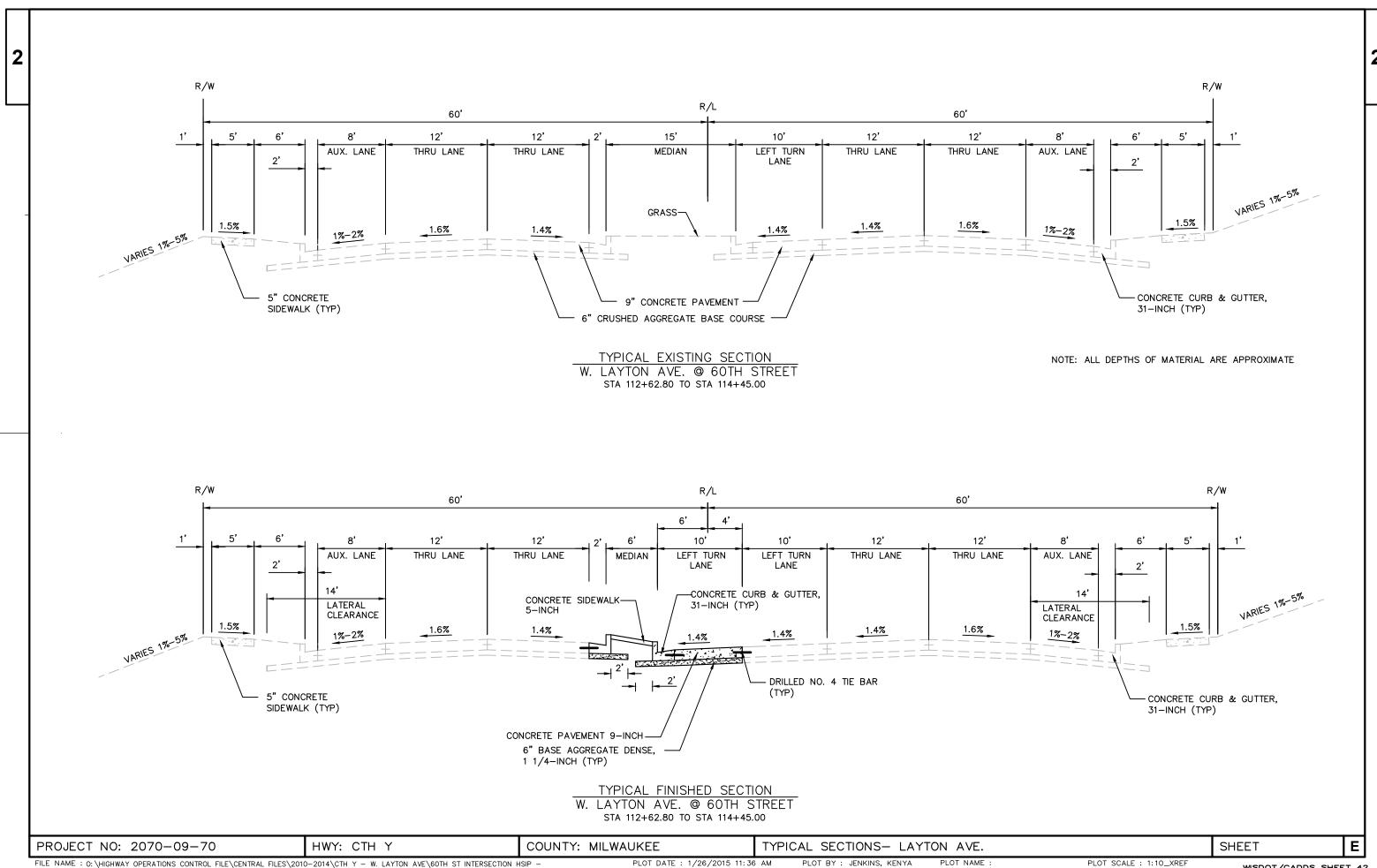


PROJECT NO: 2070-09-70 HWY: CTH Y COUNTY: MILWAUKEE GENERAL NOTES SHEET E

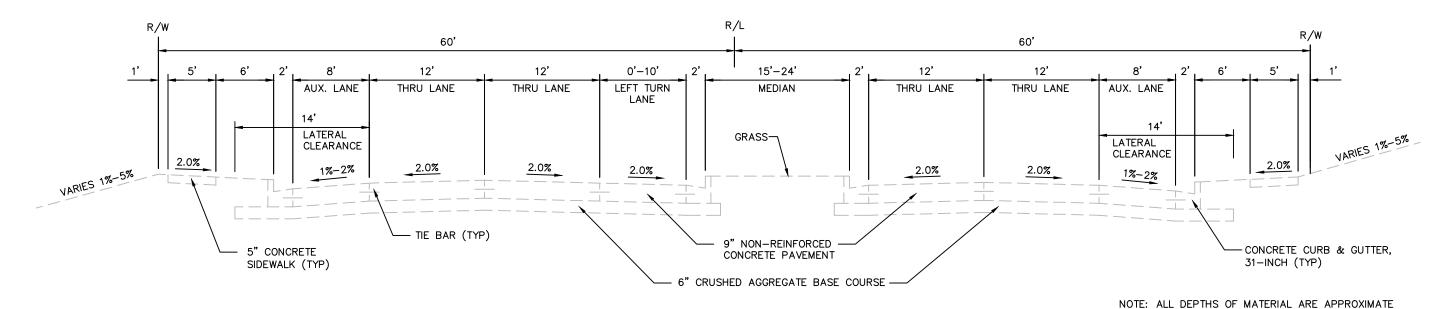
FILE NAME : PLOT DATE : PLOT BY :



FILE NAME : 0:\HIGHWAY OPERATIONS CONTROL FILE\CENTRAL FILES\2010-2014\CTH Y - W. LAYTON AVE\60TH ST INTERSECTION HSIP - 2070-09-\DESIGN-00\CADD\20700970-PO.DWG



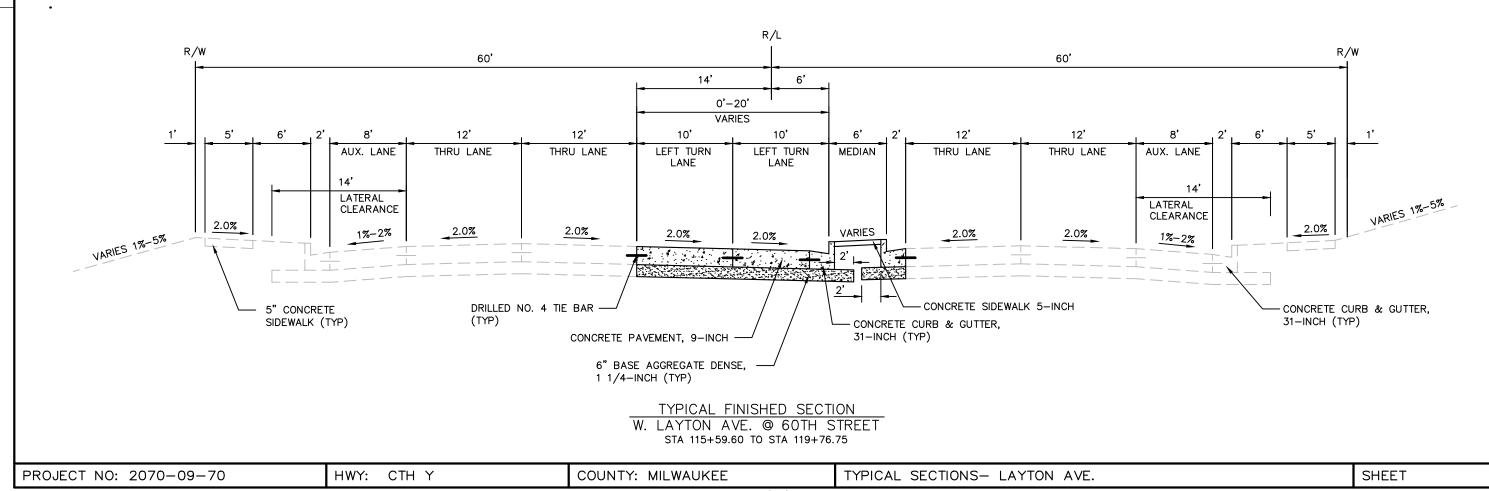




TYPICAL EXISTING SECTION

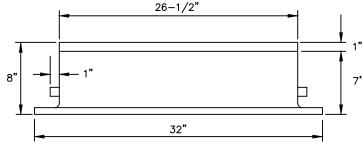
W. LAYTON AVE. @ 60TH STREET

STA 115+59.60 TO STA 119+76.75

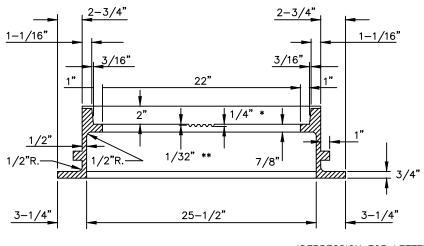


Ε

(SEE GENERAL NOTE 2) D 1-1/4"R.



FRAME



*DEPRESSION FOR LETTERS

SECTION D-D

**CLEARANCE FROM TOP OF
LETTERS TO FACE OF SEAT

GENERAL NOTES

ALL EDGES ARE TO BE GROUND

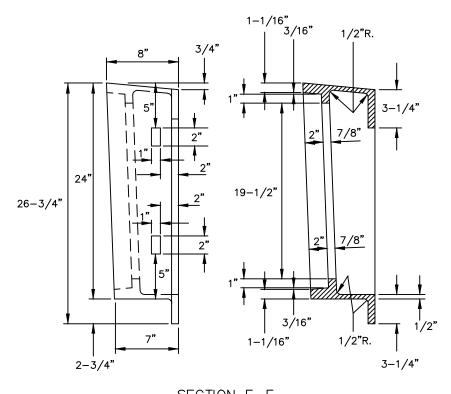
ALL CASTINGS SHALL BEAR THE FOLLOWING IDENTIFICATION MARKS IN THE FORM OF LEGIBLE LETTERS OR NUMERALS RAISED 1/8"

ON THE FRAME

- ON THE UPPER FACE OF THE FLANGE IN 1 INCH HIGH LETTERS
 THE INITIALS OR MONOGRAM OF THE FOUNDRY, THE YEAR MADE
 AND THE SERIAL NUMBER OF THE INDIVIDUAL CASTING.
- 2. ON THE SEAT OF THE FRAME IN 1 INCH HIGH LETTERS, THE CASTING IDENTIFICATION NUMBER (M.S.51).

ON THE GRATE

1. ON THE UPPER SIDE OF THE GRATE IN 1 INCH HIGH LETTERS, THE INITIALS OR MONOGRAM OF THE FOUNDRY, THE YEAR MADE, THE CASTING IDENTIFICATION NUMBER (M.S.57) AND THE SERIAL NUMBER OF THE INDIVIDUAL CASTING.



SECTION E-E

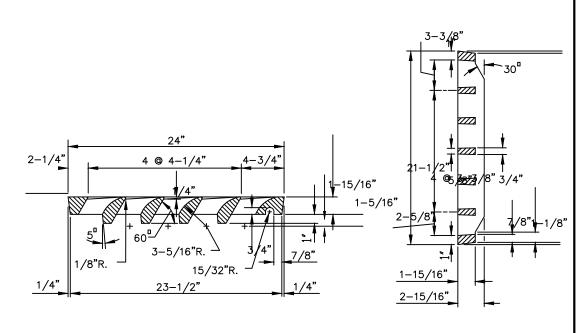
INLET COVER — TYPE 57 LID-145 LBS., FRAME-204 LBS. PAISED 1/8"

RAISED 1/8"

F

21"

<u>GRATE</u>



SECTION F-F

SECTION G-G

PROJECT NO: 2070-09-70

HWY: CTH Y

COUNTY: MILWAUKEE

CONSTRUCTION DETAILS

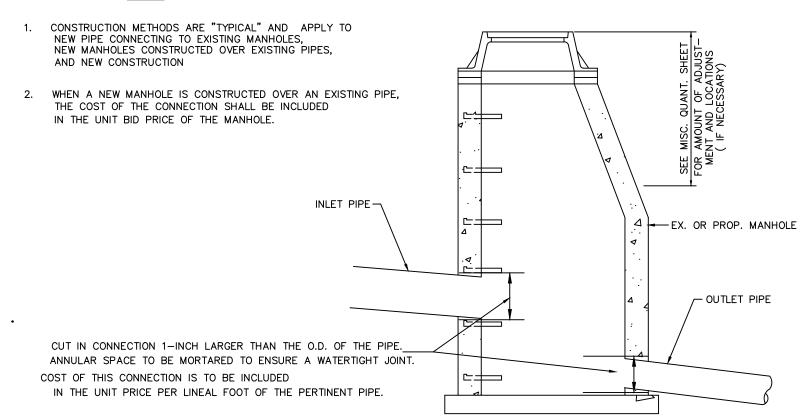
PLOT BY: JENKINS, KENYA

SHEET

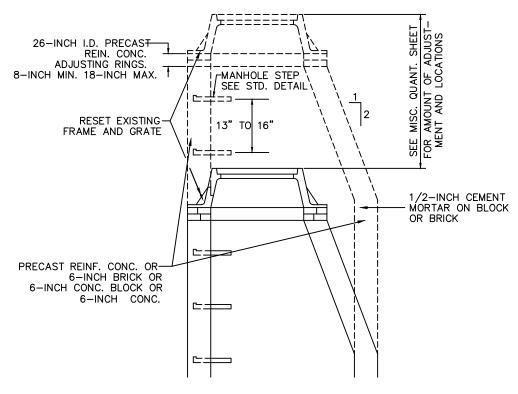
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NOTES:



DETAIL FOR CONNECTION TO MANHOLES



DETAIL FOR RECONSTRUCTING MANHOLES

NOTES:

- 1. SEE MISCELLANEOUS QUANTITY SHEET FOR ADJUSTMENT DEPTH.
- 2. CONSTRUCTION METHODS ARE "TYPICAL" AND MAY APPLY TO EITHER RECONSTRUCTING OR ADJUSTING MANHOLES.
- 3. ADJUST FRAME TO GRATE WITH PRECAST CONCRETE RINGS OF VARIABLE THICKNESS. MAXIMUM RING HEIGHT IS 18-INCHES. MINIMUM RING HEIGHT IS 8-INCHES. CONCRETE RINGS SHALL BE REINFORCED WITH ONE LINE OF STEEL CENTERED WITHIN THE RING. WHERE NECESSARY, RINGS SHALL BE GROOVED TO RECEIVE STEP.

CONCRETE AND STEEL REINFORCEMENT SHALL CONFORM TO DESIGNATION C-478 REQUIREMENTS OF ASTM SPECIFICATIONS. JOINTS SHALL BE WATERTIGHT AND SHALL BE MADE USING RUBBER GASKETS FOR SANITARY MANHOLES.

4. WHEN RESETTING EXISTING COVERS, REPAIRING BRICKWORK UP TO 12-INCH DEPTH IS PAID AS ADJUSTING COVERS, UNLESS THERE IS A RECONSTRUCT. WHERE NEW COVERS ARE PLACED, THE FIRST 6-INCHES OF ADJUSTMENT OR REPAIR IS PART OF THE NEW COVER. ADJUSTING OR REPAIRING GREATER THAN 6-INCH AND UP TO 12-INCHES SHALL BE PAID AS ADJUSTING COVERS. WHEN THE DEPTH OF THE WORK IS GREATER THAN 12-INCHES, ALL WORK SHALL BE PAID AS RECONSTRUCT.

PROJECT NO: 2070-09-70

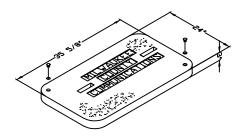
HWY: CTH Y

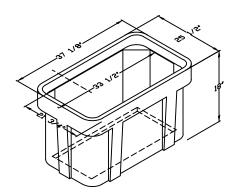
COUNTY: MILWAUKEE

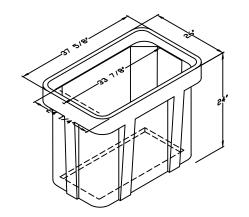
CONSTRUCTION DETAILS

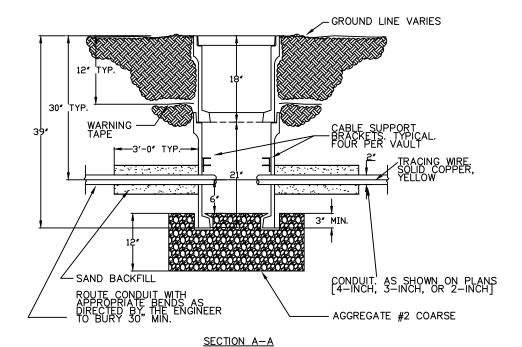
SHEET

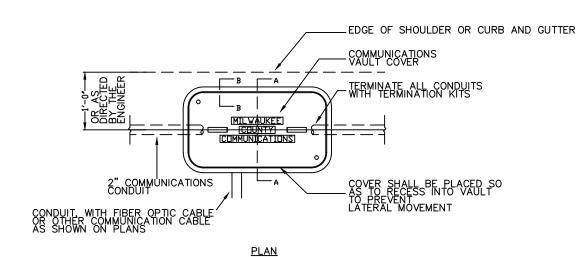
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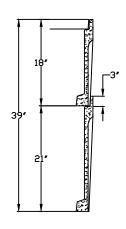




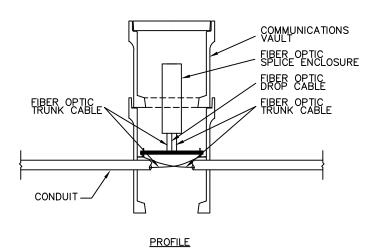
COMMUNICATIONS VAULT

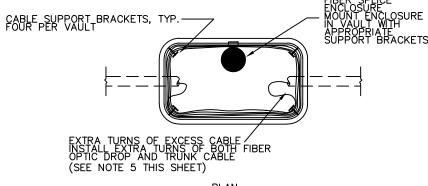
NOTES:

- 1. BOX SHALL HAVE OPEN BASE.
- 2. COVER SHALL HAVE MINIMUM DESIGN LOAD OF 15,000 LBS. AND SHALL LOCK.
- 3. ALL OPENING IN STRUCTURE MUST BE MACHINED AT TIME OF FABRICATION OR PUNCH DRIVEN AT TIME OF PLACEMENT
- 4. FIELD PLACEMENT OF COMMUNICATIONS VAULT SHALL BE DIRECTED BY THE ENGINEER
- 5. INSTALL EXTRA TURNS OF CABLE IN EACH COMMUNICATIONS VAULT ACCORDINGLY OR AS NOTED:
- COIL 60' OF EXTRA CABLE FOR BOTH DROP AND TRUNK CABLES AT SPLICE LOCATIONS
- COIL 30' OF EXTRA TRUNK CABLE AT NON-SPLICE LOCATIONS



SECTION B-B





<u>PLAN</u>

FIBER OPTIC DROP SPLICE IN COMMUNICATIONS VAULT

PROJECT NO: 2070-09-70

HWY: CTH Y

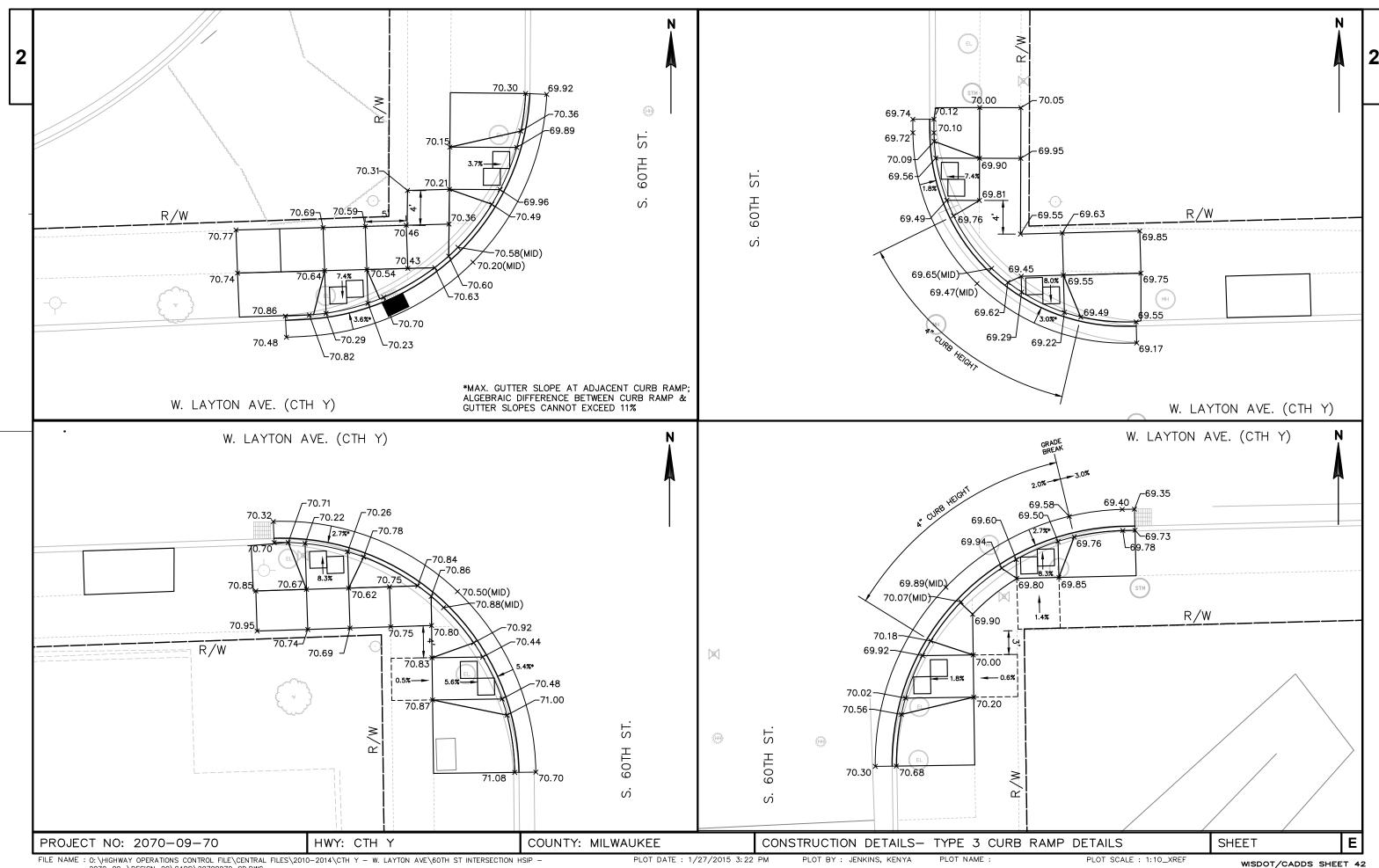
COUNTY: MILWAUKEE

CONSTRUCTION DETAILS

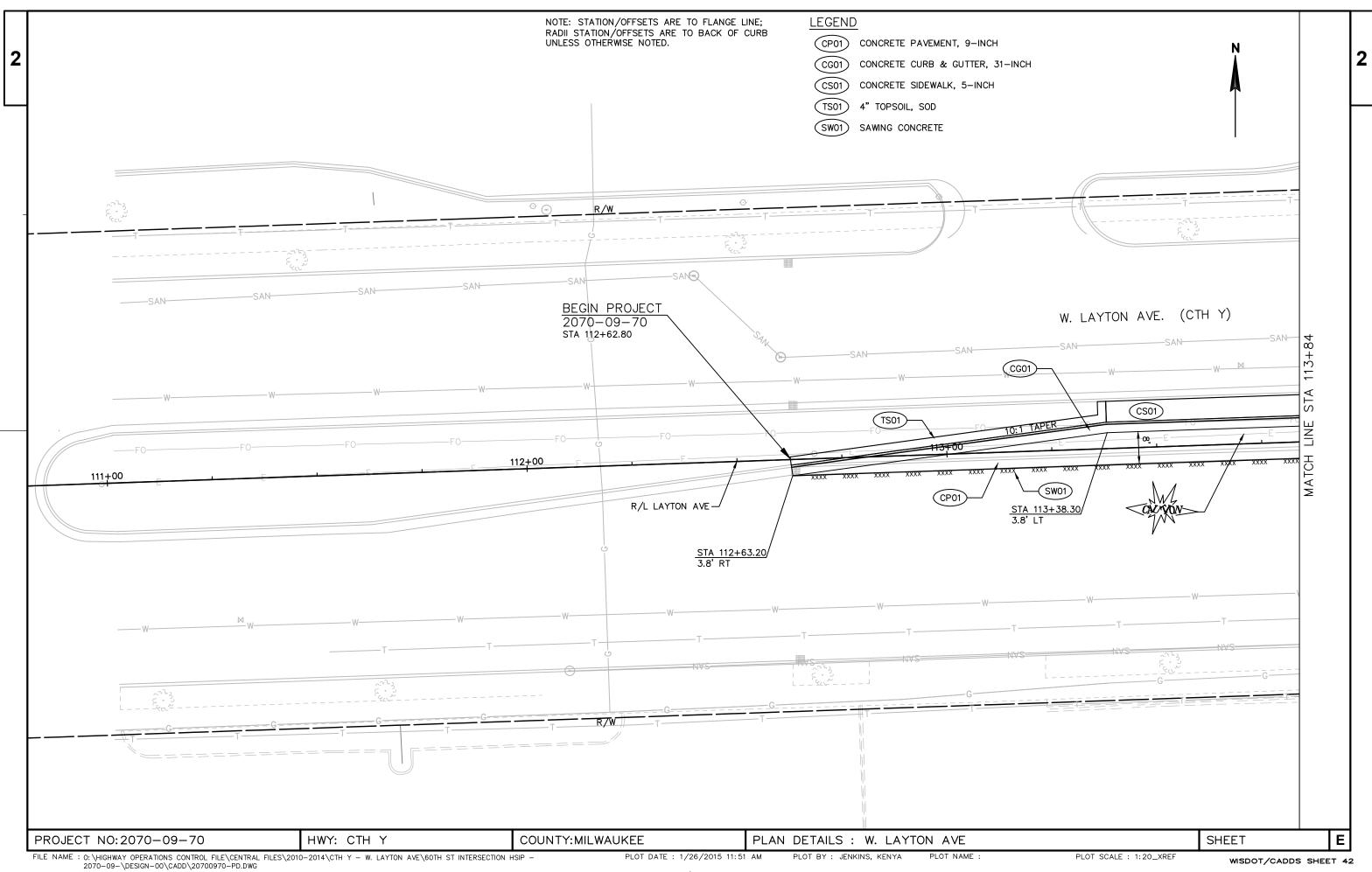
PLOT BY : JENKINS, KENYA

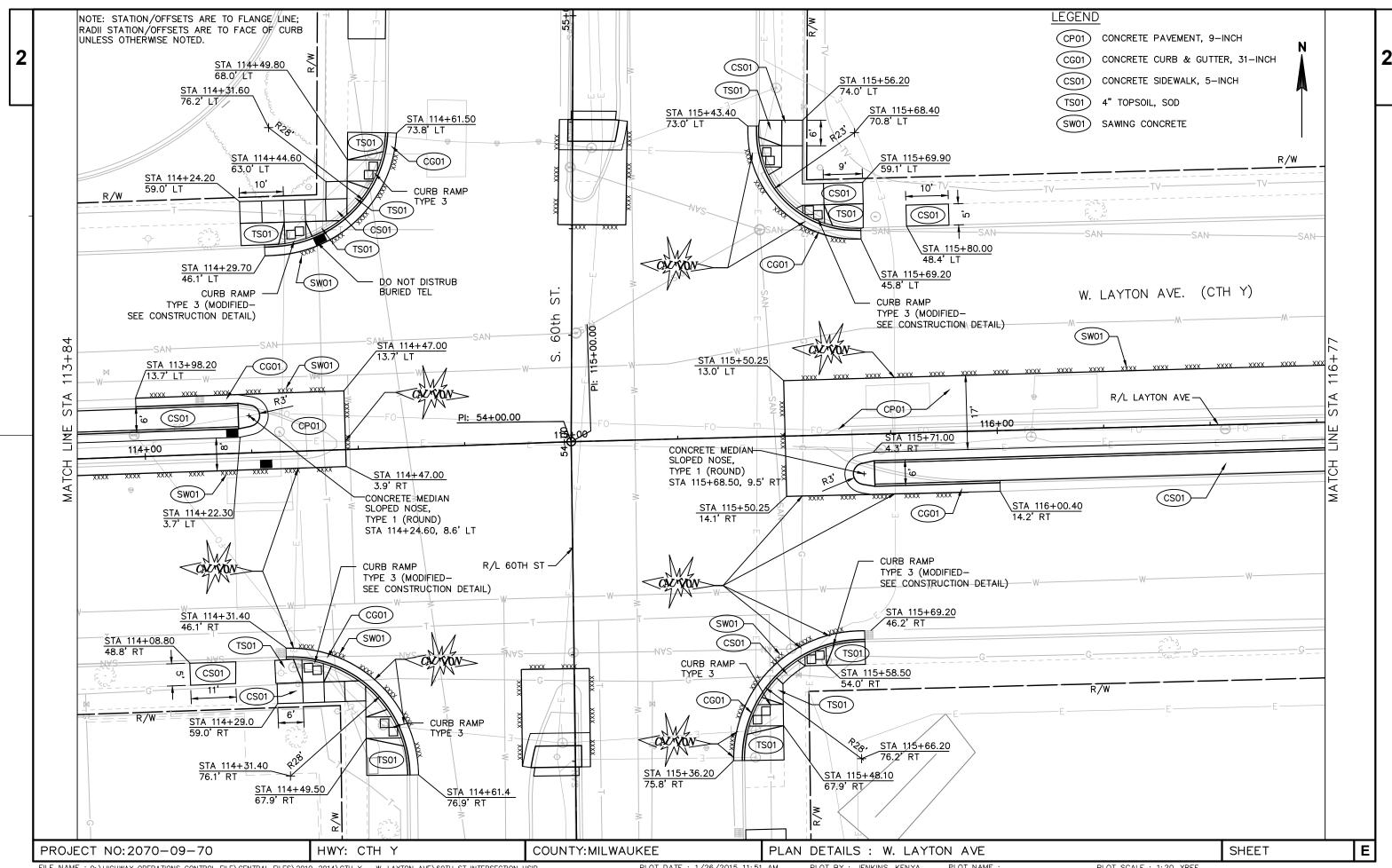
SHEET

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FILE NAME: 0:\HIGHWAY OPERATIONS CONTROL FILE\CENTRAL FILES\2010-2014\CTH Y - W. LAYTON AVE\60TH ST INTERSECTION HSIP - 2070-09-\DESIGN-00\CADD\20700970_CD.DWG





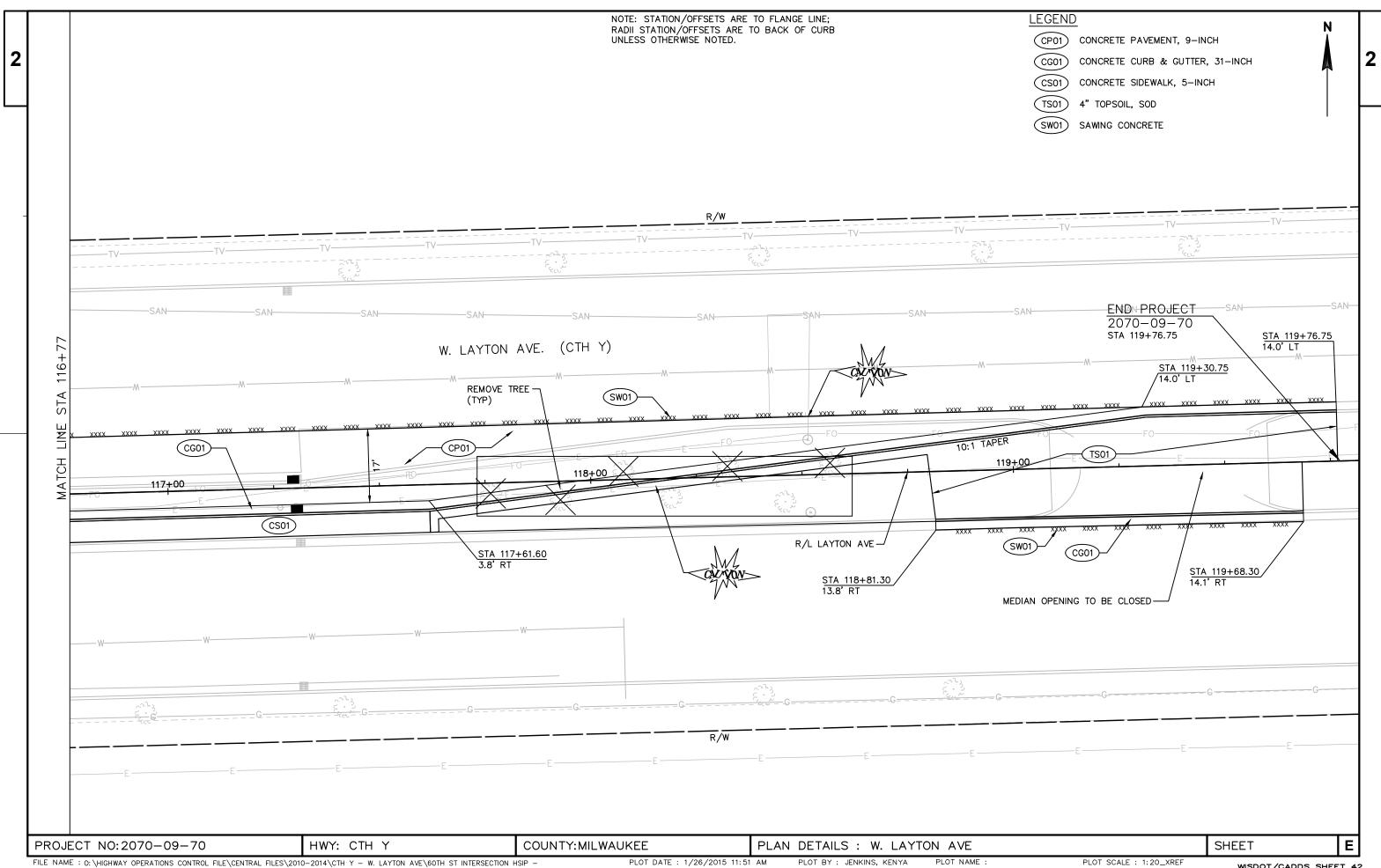
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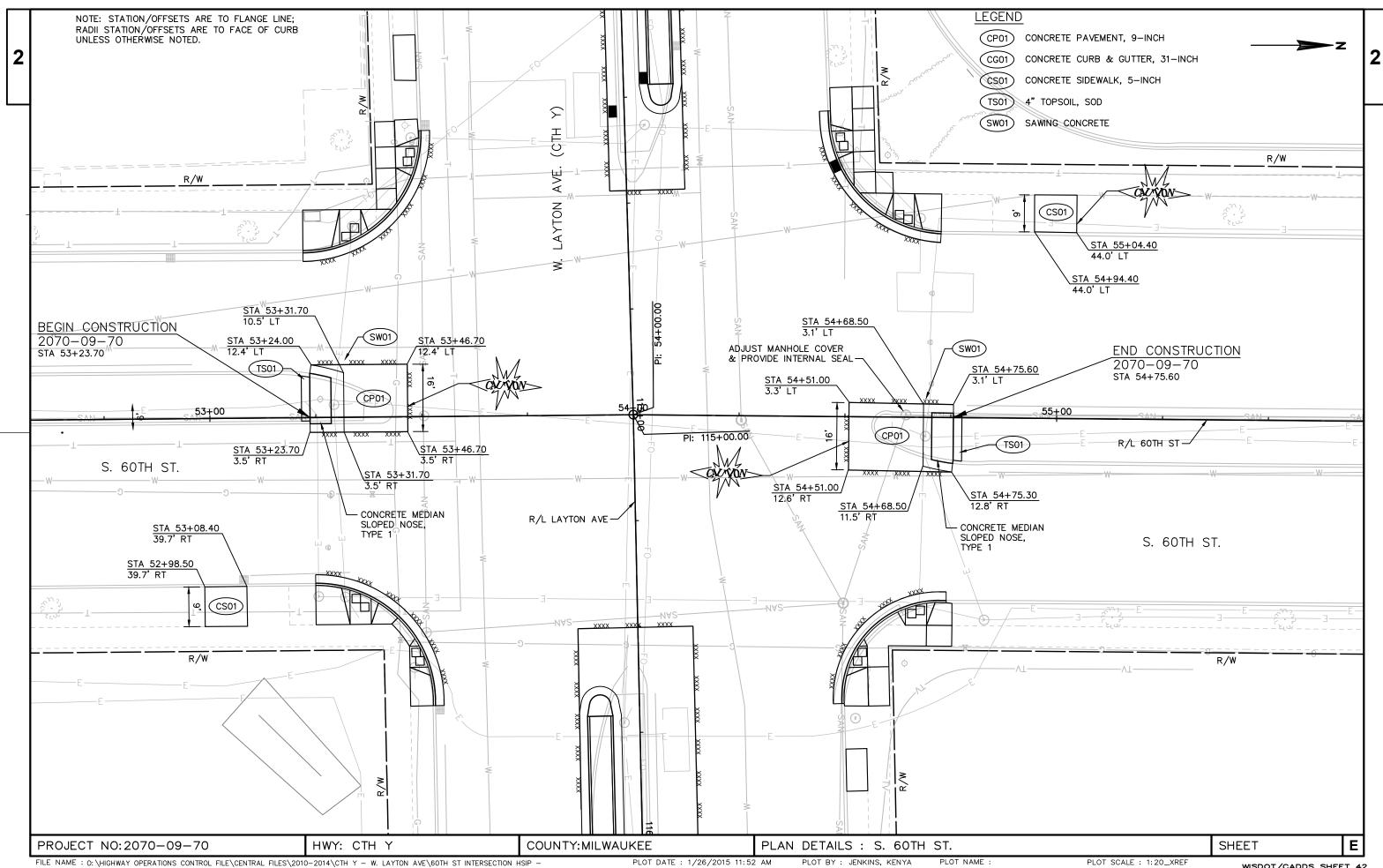
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PLOT BY: JENKINS, KENYA

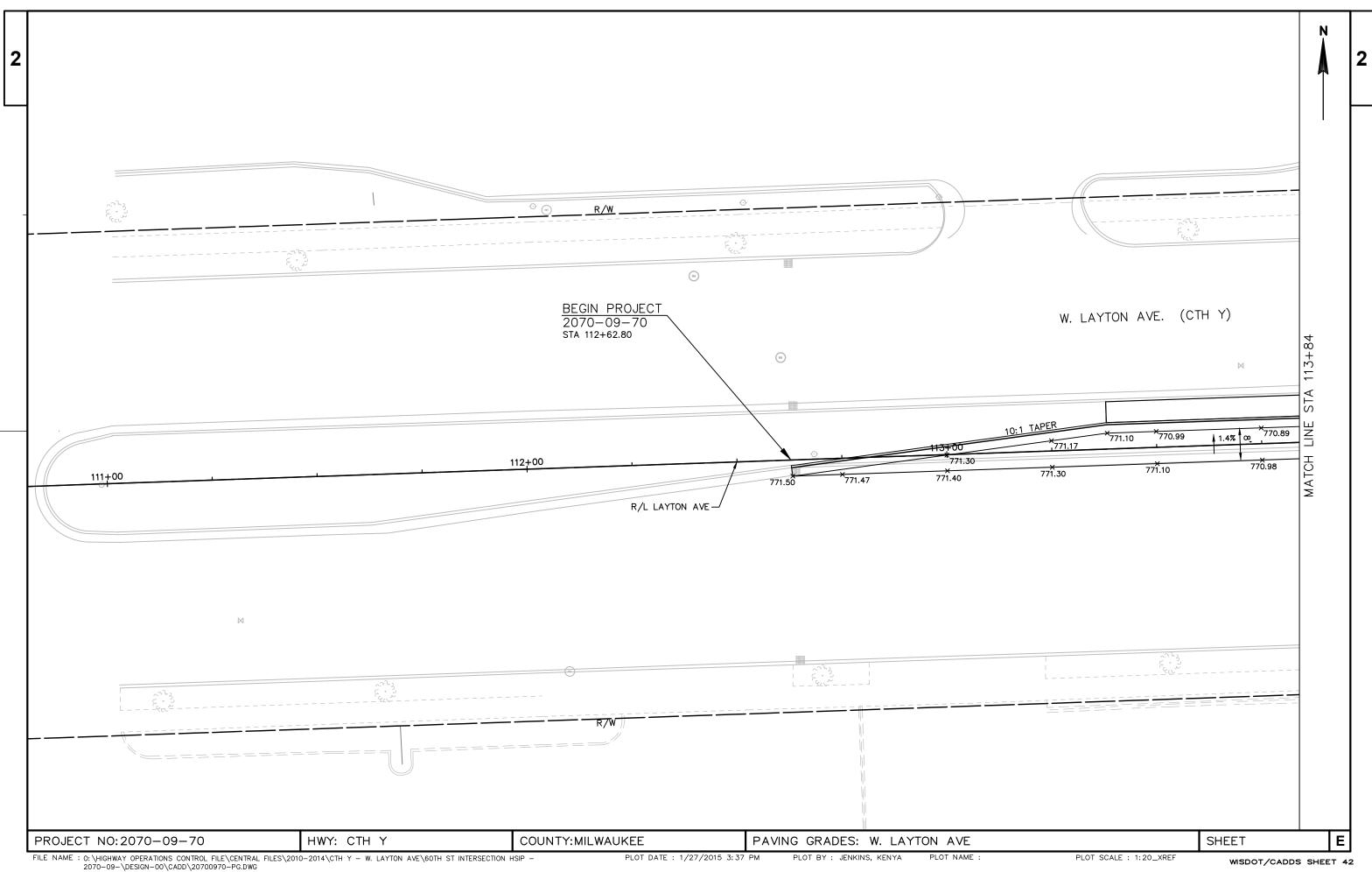
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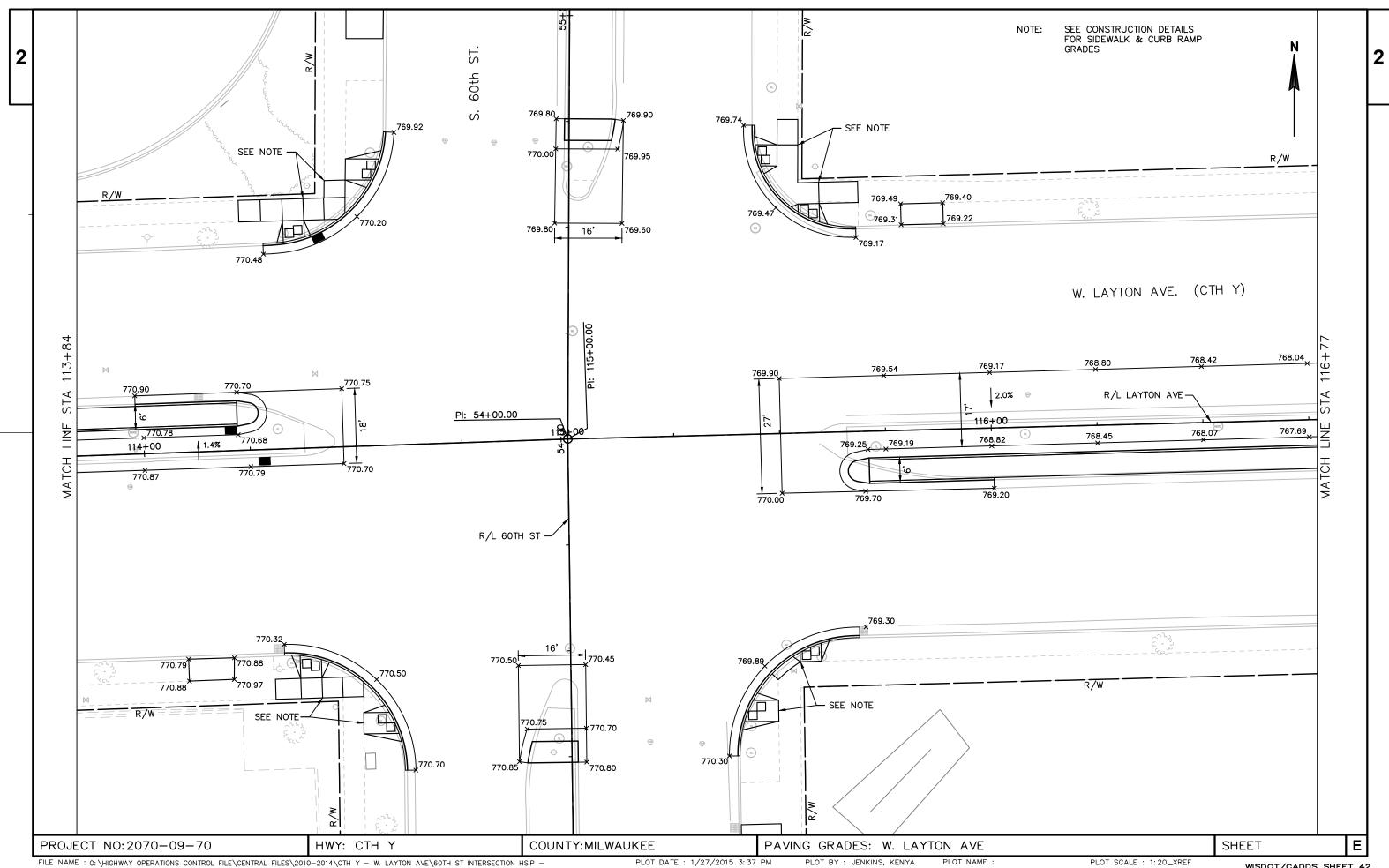
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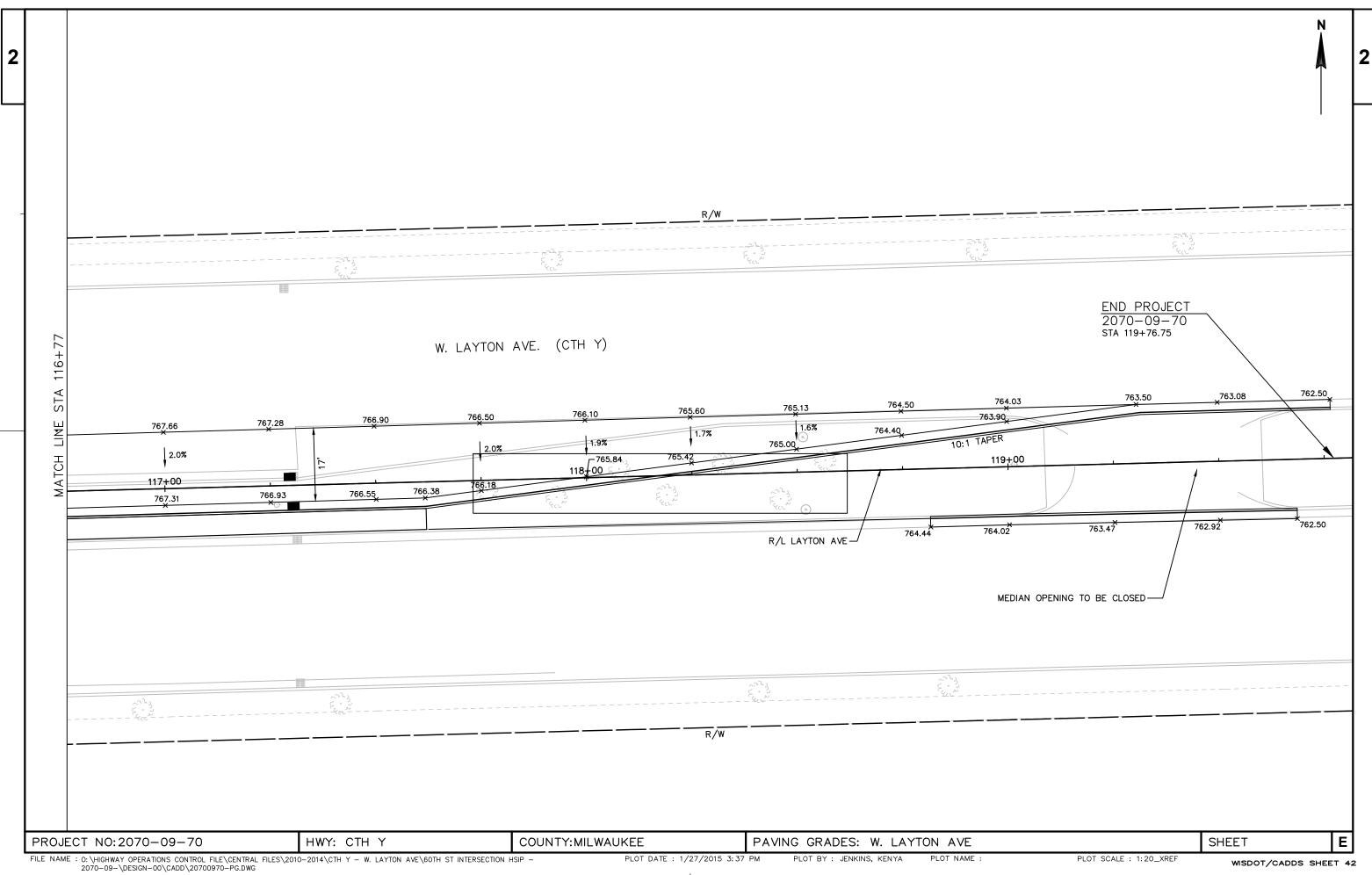


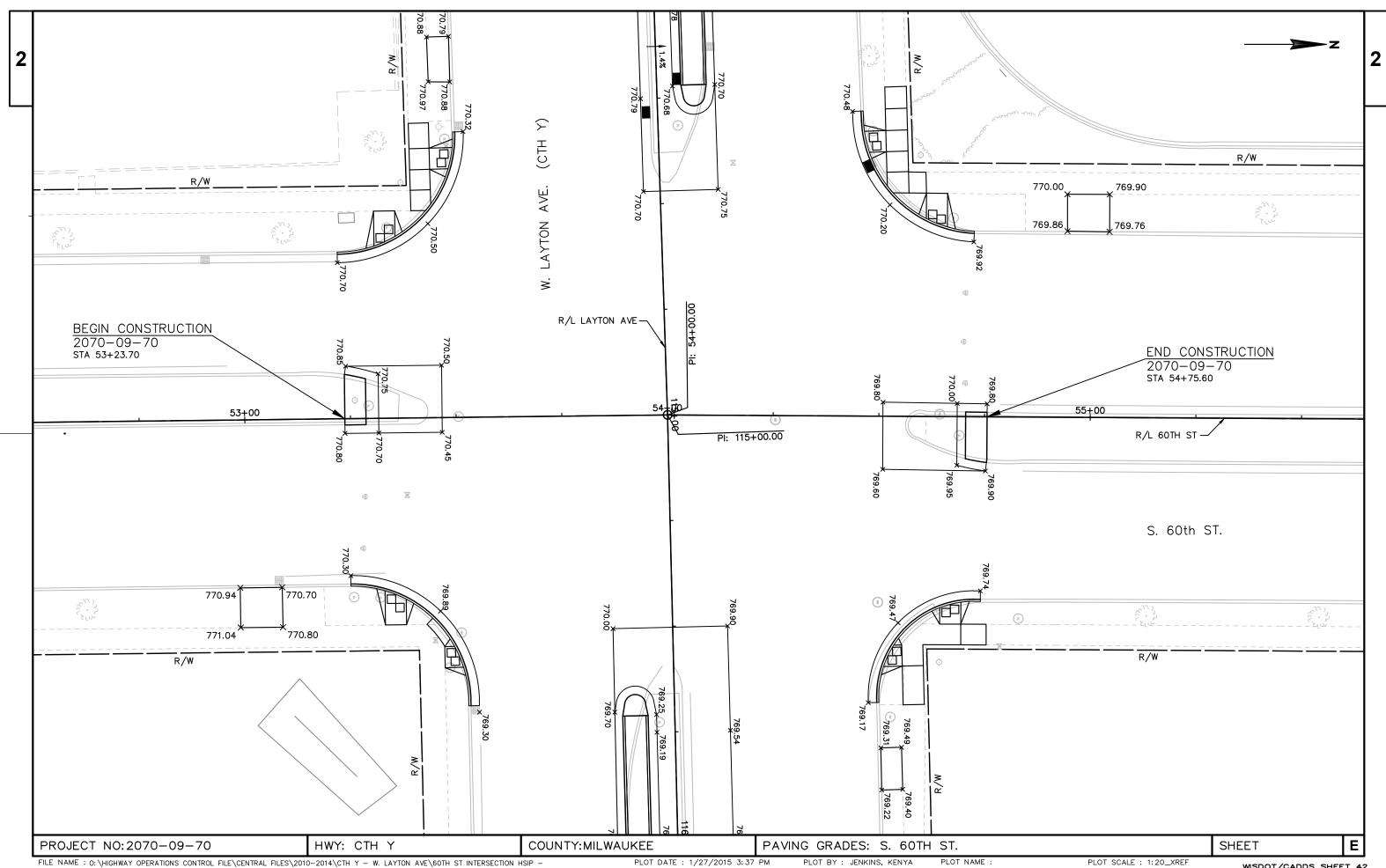
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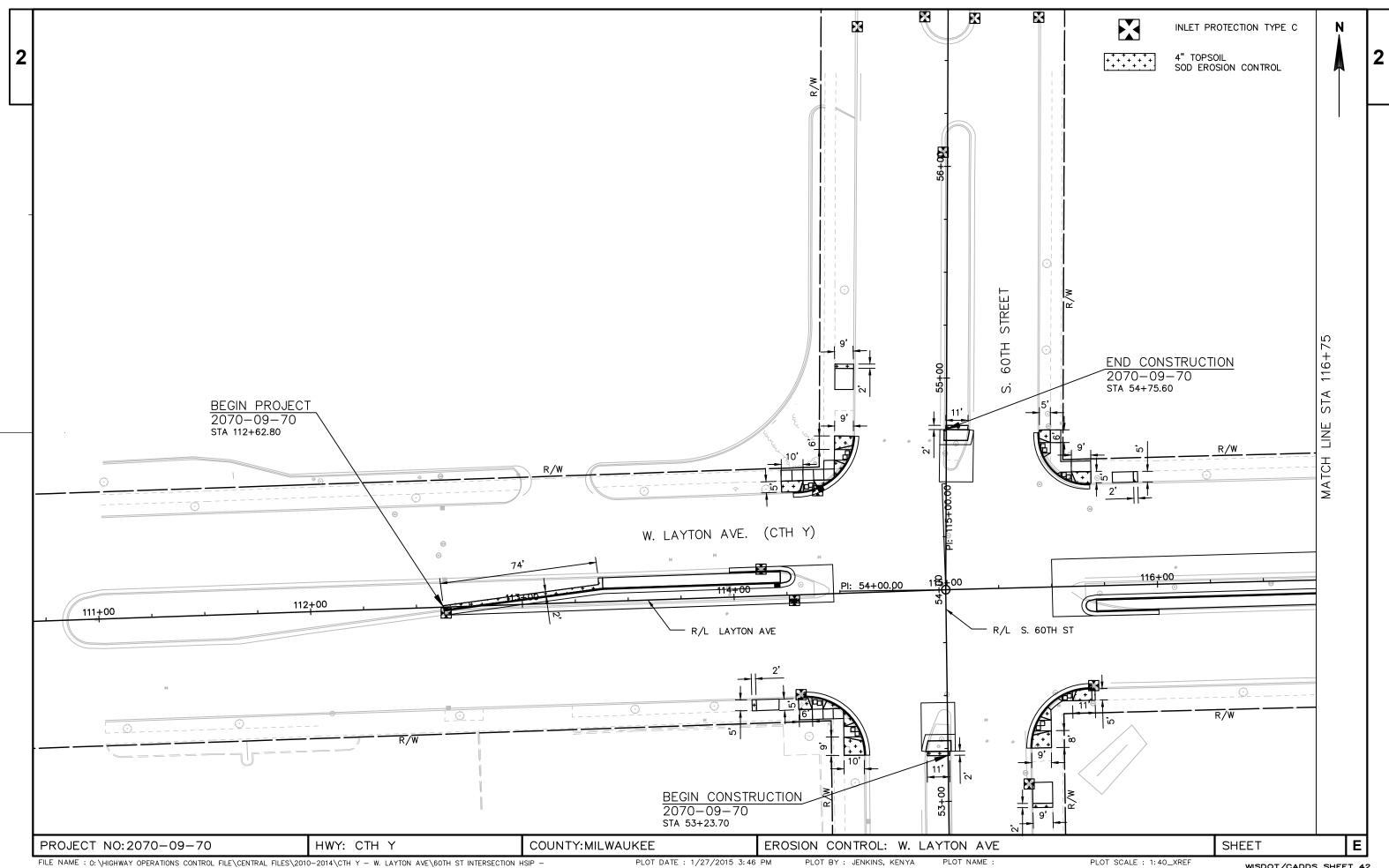


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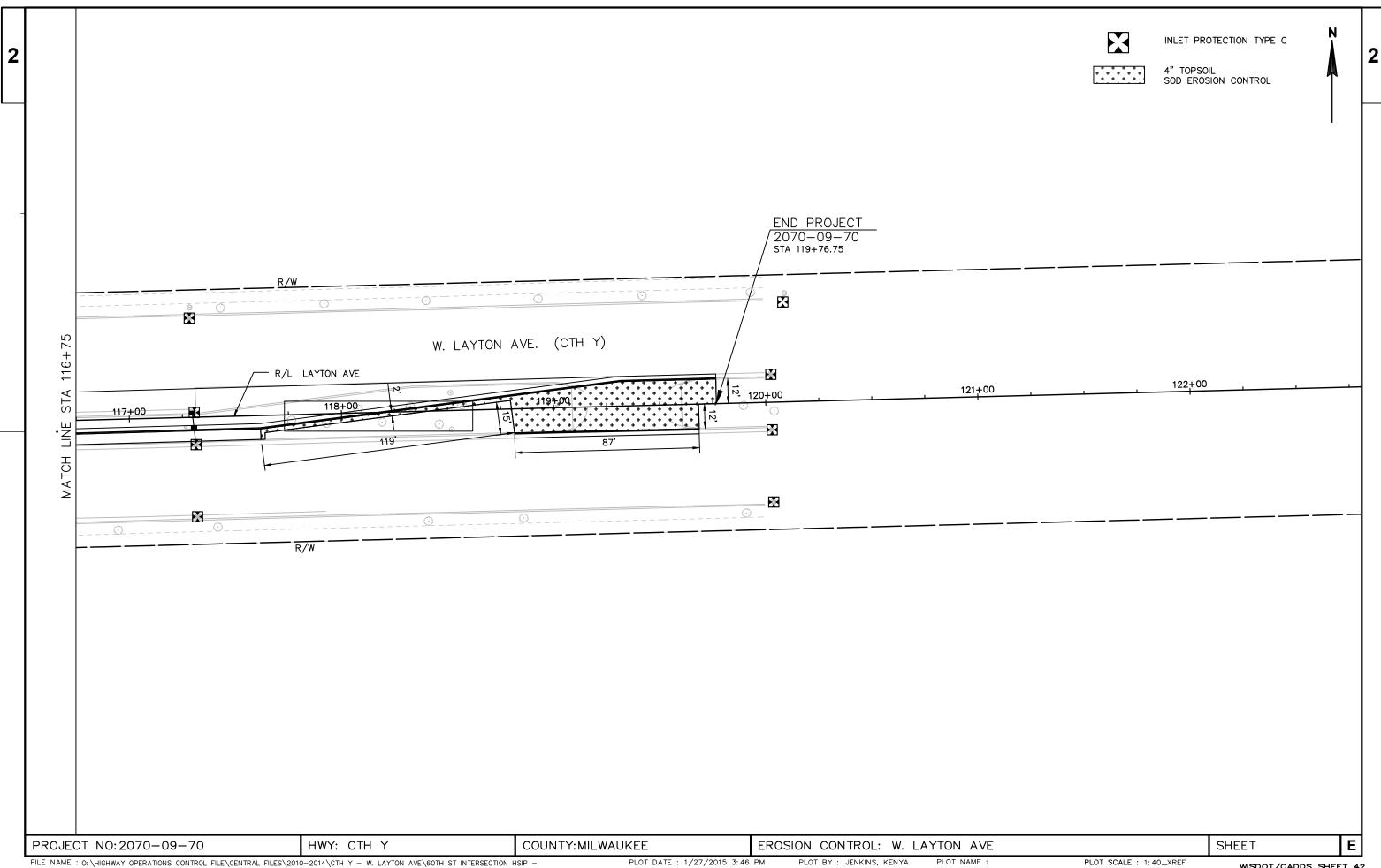


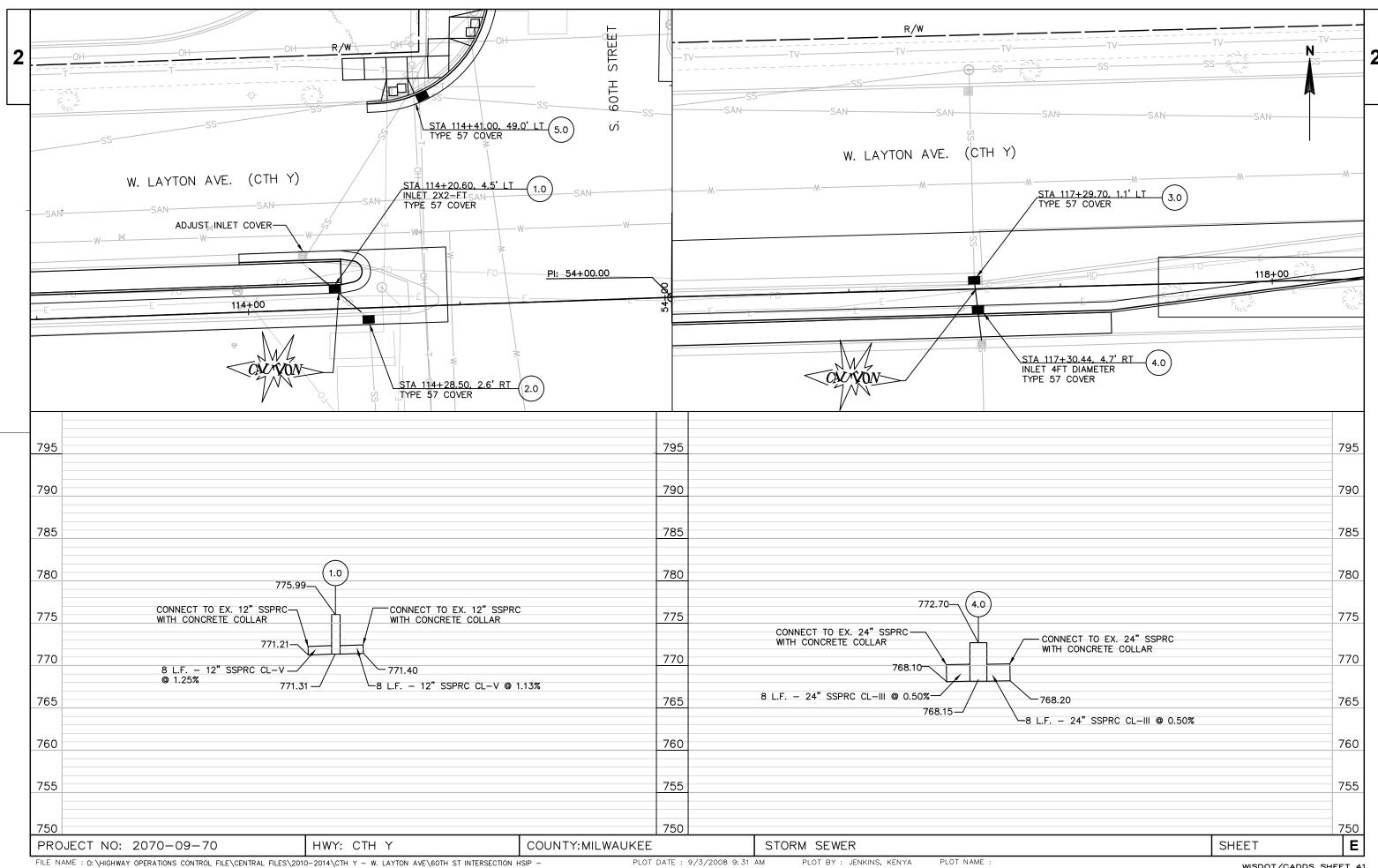


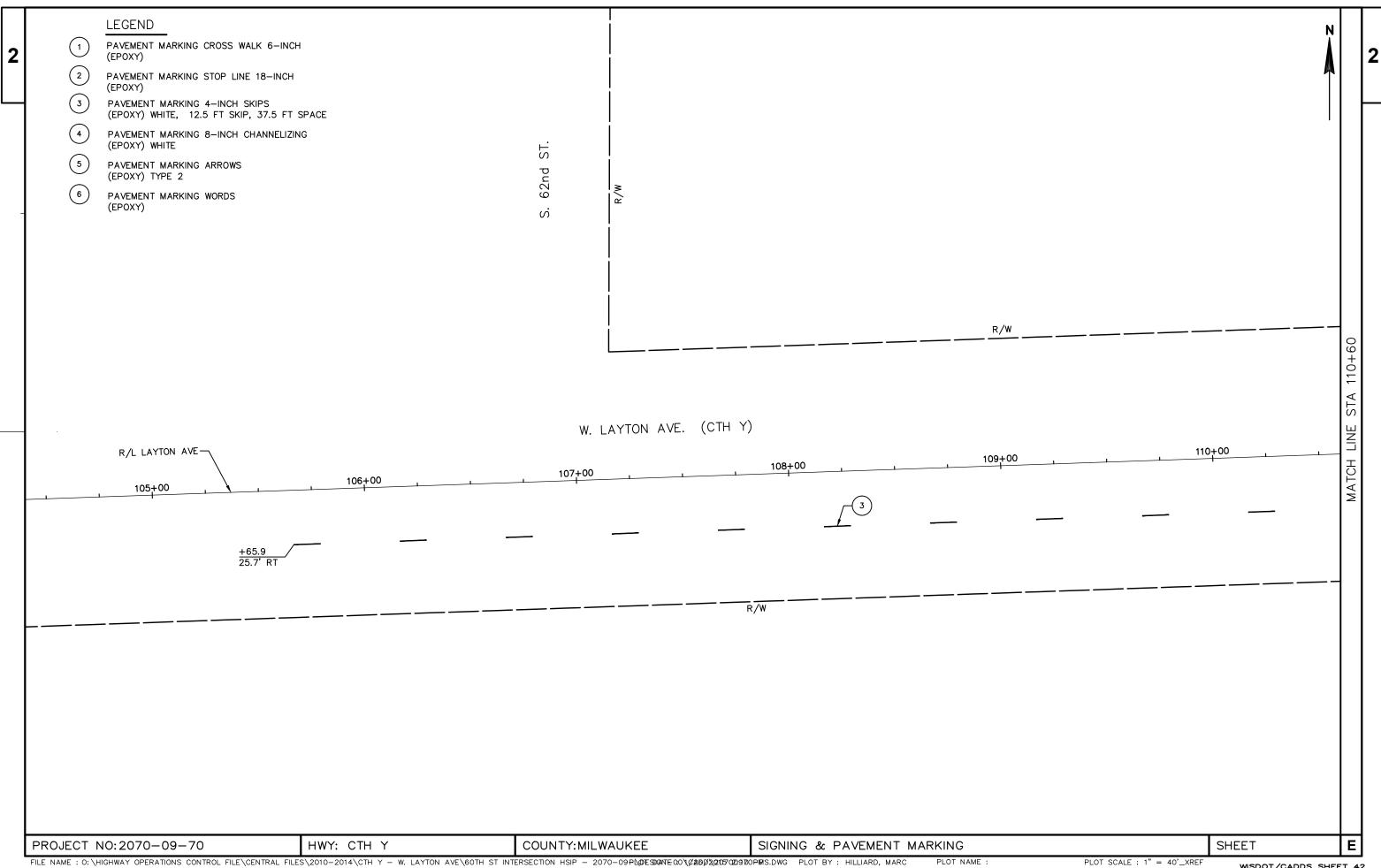
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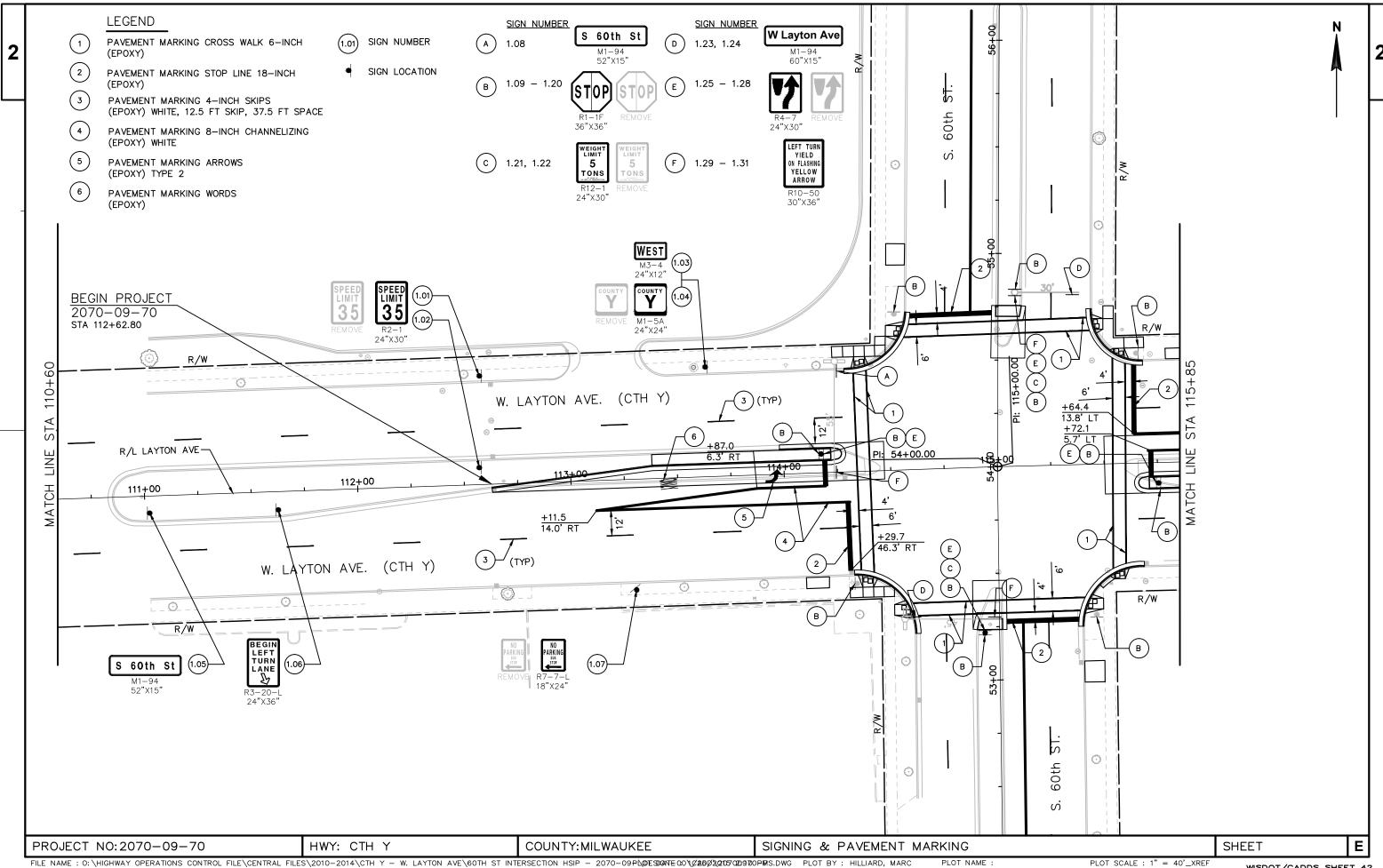


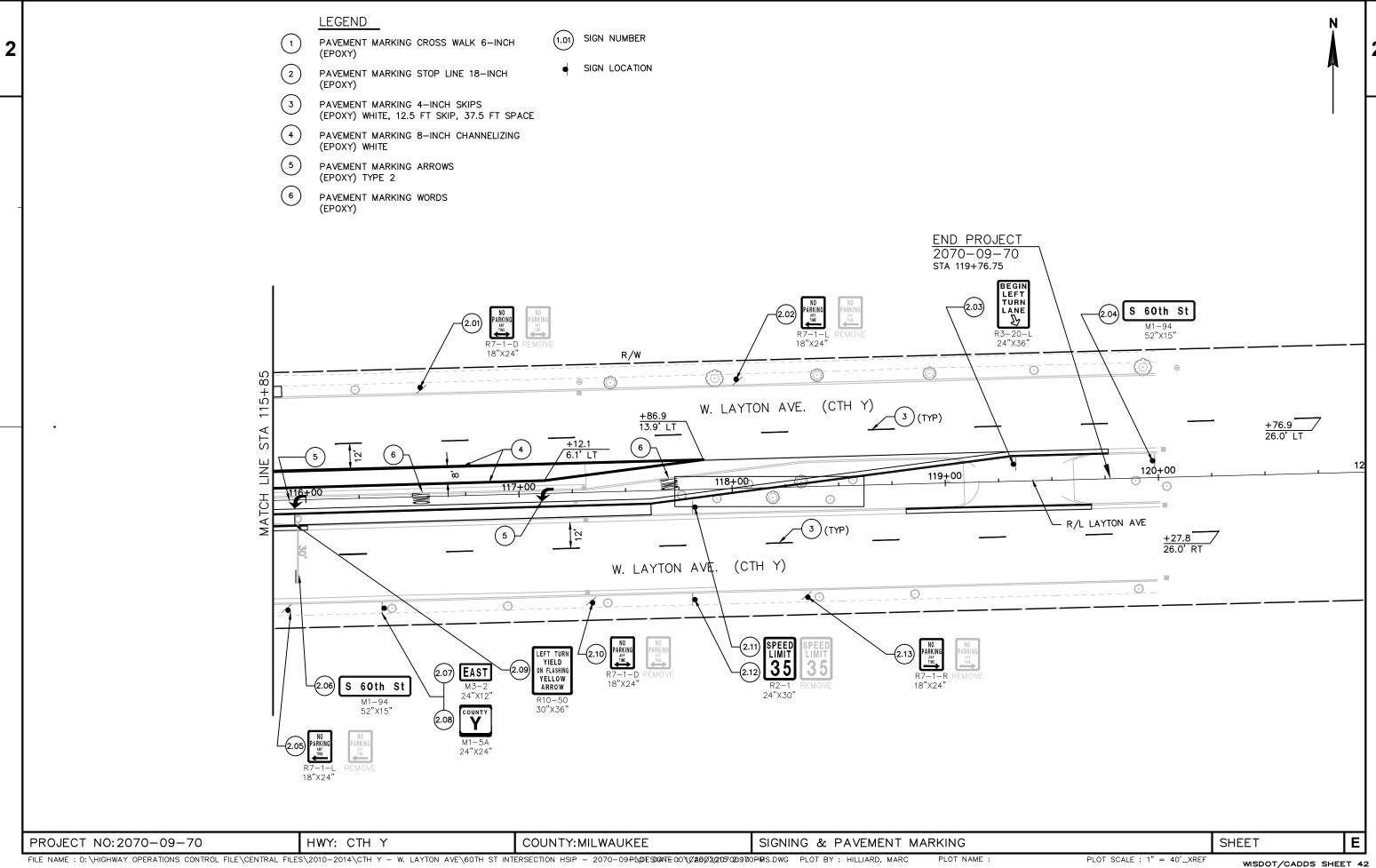
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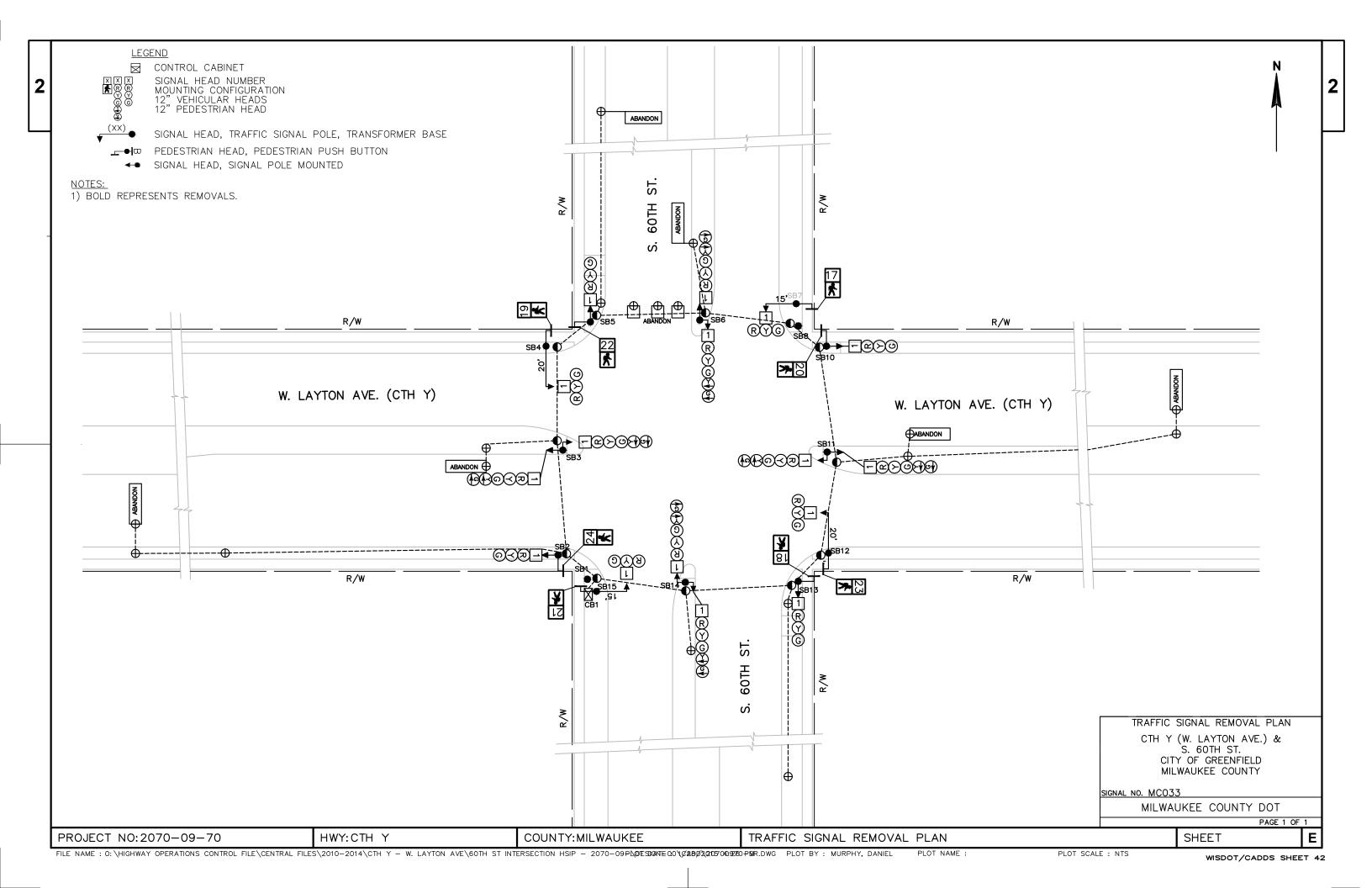


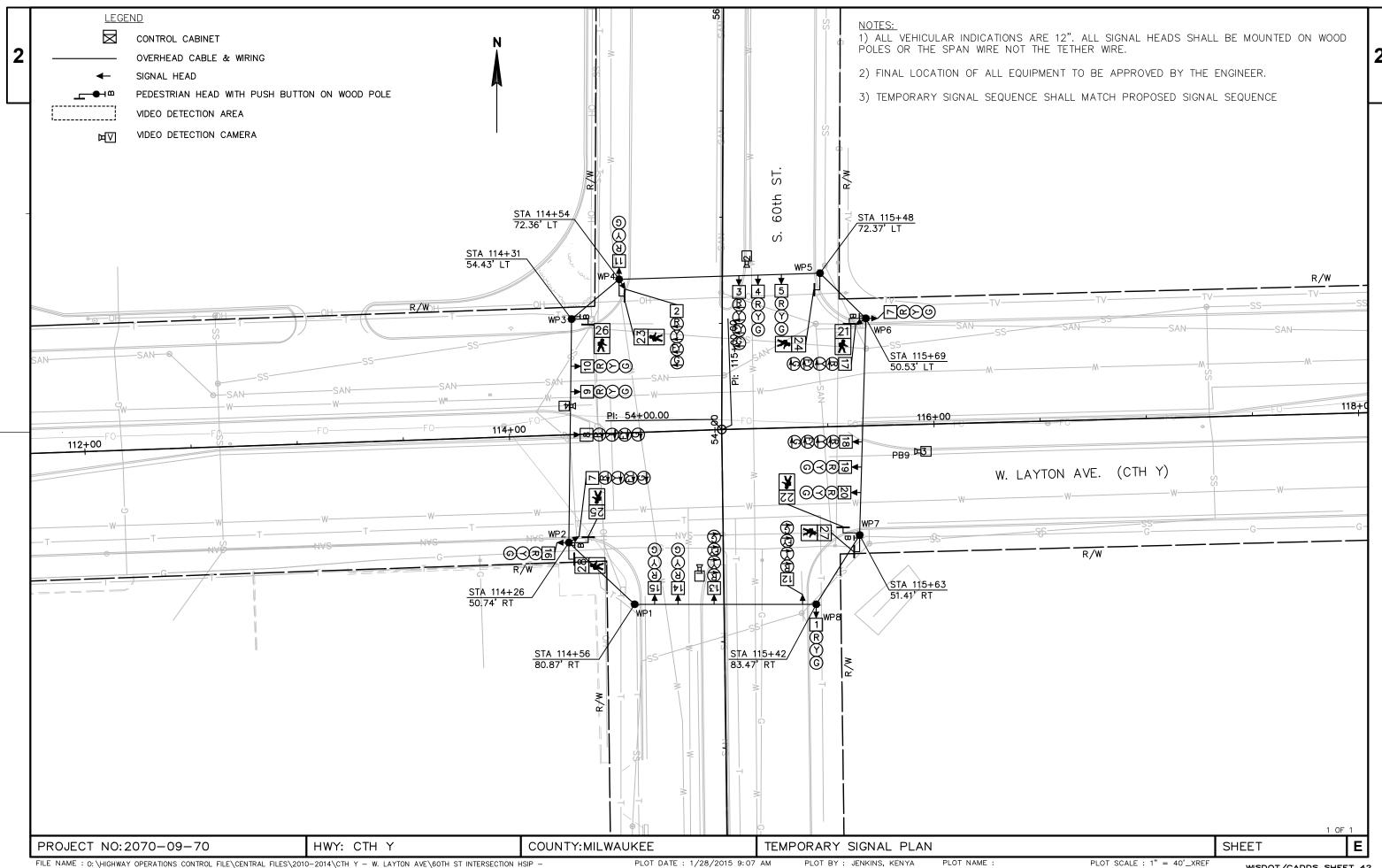


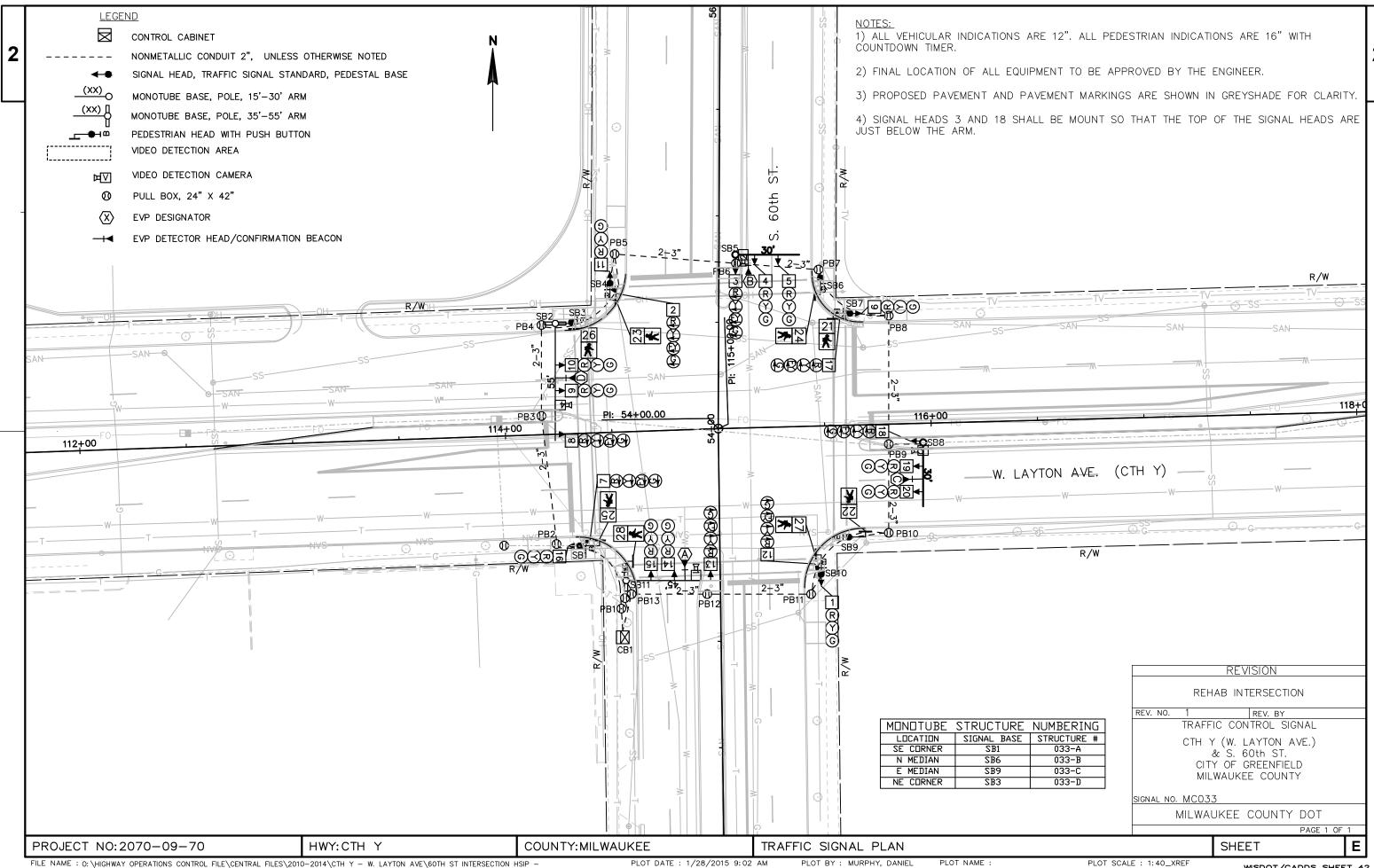




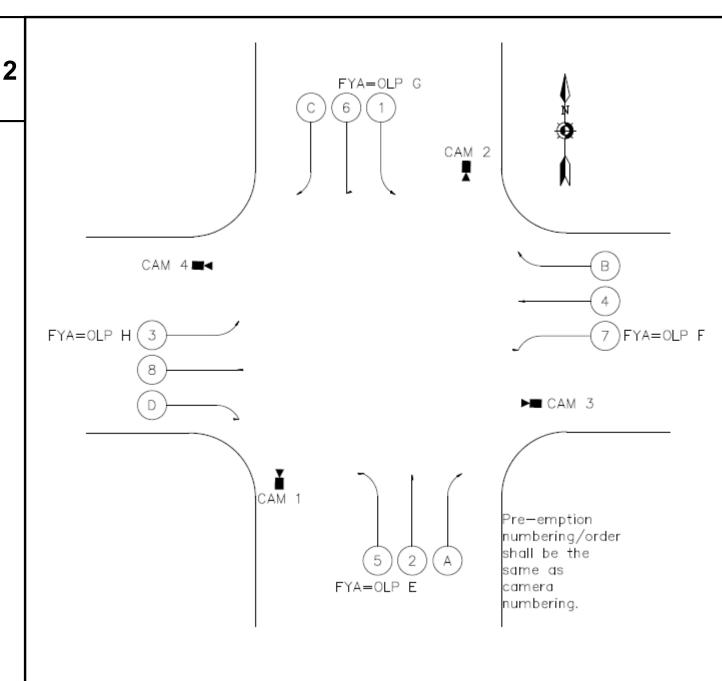












PHASES							
PHASE	VEHICLE	VEHICLE LEFT TURN TYPE					
1	Х	FYA					
2	Х		Х				
3	Х	FYA					
4	Х		Х				
5	Х	FYA					
6	X		Χ				
7	X	FYA					
8	Х		Х				
		•					

OVERLAPS					
OVLP	USED				
Α					
В					
С					
D					
Е					
F					
G					
Н					

INTERCONNECT	
ETHERNET SWITCH	Х
SM FIBER	
MM FIBER	Х
5.8 GHZ RADIO	
900 MHZ ETHERNET RADIO	
900 MHZ SERIAL RADIO	
TWISTED PAIR	
ETHERNET OVER COPPER	

PRE-EMPT			
EMERGENCY VEHICLE	Х		
W/ BEACONS			
RAILROAD			

	YES	NO
LIGHTING FROM CABINET		Х
BATTERY BACKUP	Х	
PTZ CAMERA		Х
AUDIBLE PEDESTRIAN HEADS		Х
AUDIBLE PEDESTRIAN BUTTONS	Х	

CTH Y (W. LAYTON AVE.) &
S. 60TH ST.
MC033
OPERATIONS AND AUX. EQUIPMENT

INSTALLED: REVISED:

PROJECT NO: 2070-09-70 HWY: CTH Y COUNTY: MILWAUKEE SEQUENCE OF OPERATIONS SHEET E

FILE NAME : PLOT DATE : 04-17-14 PLOT BY :

 PROJECT ID:
 2070-09-70

 INTERSECTION:
 CTH Y (W LAYTON AVE) & S 60TH ST

SIGNAL WIRE COLOR CODING

BLK-BLACK RED-RED GRN-GREEN
WHT-WHITE BLU-BLUE ORG-ORANGE

				SIGNAL INDICATION WIRE COLOR				PED					
CB1 TO	# OF COND.	HEAD NO.	PHASE	RED	YELLOW	GREEN	<red></red>	<yellow></yellow>	<fl ylw=""></fl>	<green></green>	D/WALK	WALK	BUTTON
SB1	15	16	8	RED	ORG	GRN							
		7	7				RED/BLK	ORG/BLK	BLU/BLK	GRN/BLK			
		25	6								BLU	BLK	
		В	6										WHT/BLK
SB2	19	9	4	RED	ORG	GRN							
		10	4	RED	ORG	GRN							
		8	7				RED/BLK	ORG/BLK	BLU/BLK	GRN/BLK			
		26	6								BLU	BLK	
SB3	5	В	6										RED
SB4	15	11	6	RED	ORG	GRN							
		2	5				RED/BLK	ORG/BLK	BLU/BLK	GRN/BLK			
		23	4								BLU	BLK	
		В	4										WHT/BLK
SB5	15	4	2	RED	ORG	GRN							
		5	2	RED	ORG	GRN							
		3	5				RED/BLK	ORG/BLK	BLU/BLK	GRN/BLK			
SB6	7	24	4								BLU	BLK	
		В	4										RED
SB7	15	6	4	RED	ORG	GRN							
		17	3				RED/BLK	ORG/BLK	BLU/BLK	GRN/BLK			
		21	2								BLU	BLK	
		В	2										WHT/BLK
SB8	15	19	8	RED	ORG	GRN							
		20	8	RED	ORG	GRN							
		18	3				RED/BLK	ORG/BLK	BLU/BLK	GRN/BLK			
SB9	7	22	2								BLU	BLK	
		В	2										RED
SB10	15	1	2	RED	ORG	GRN							
		12	5				RED/BLK	ORG/BLK	BLU/BLK	GRN/BLK			
		27	8								BLU	BLK	
		В	8										WHT/BLK
SB11	19	14	6	RED	ORG	GRN							
		15	6	RED	ORG	GRN							
		13	1				RED/BLK	ORG/BLK	BLU/BLK	GRN/BLK			
		28	8								BLU	BLK	
		В	8										WHT/BLK

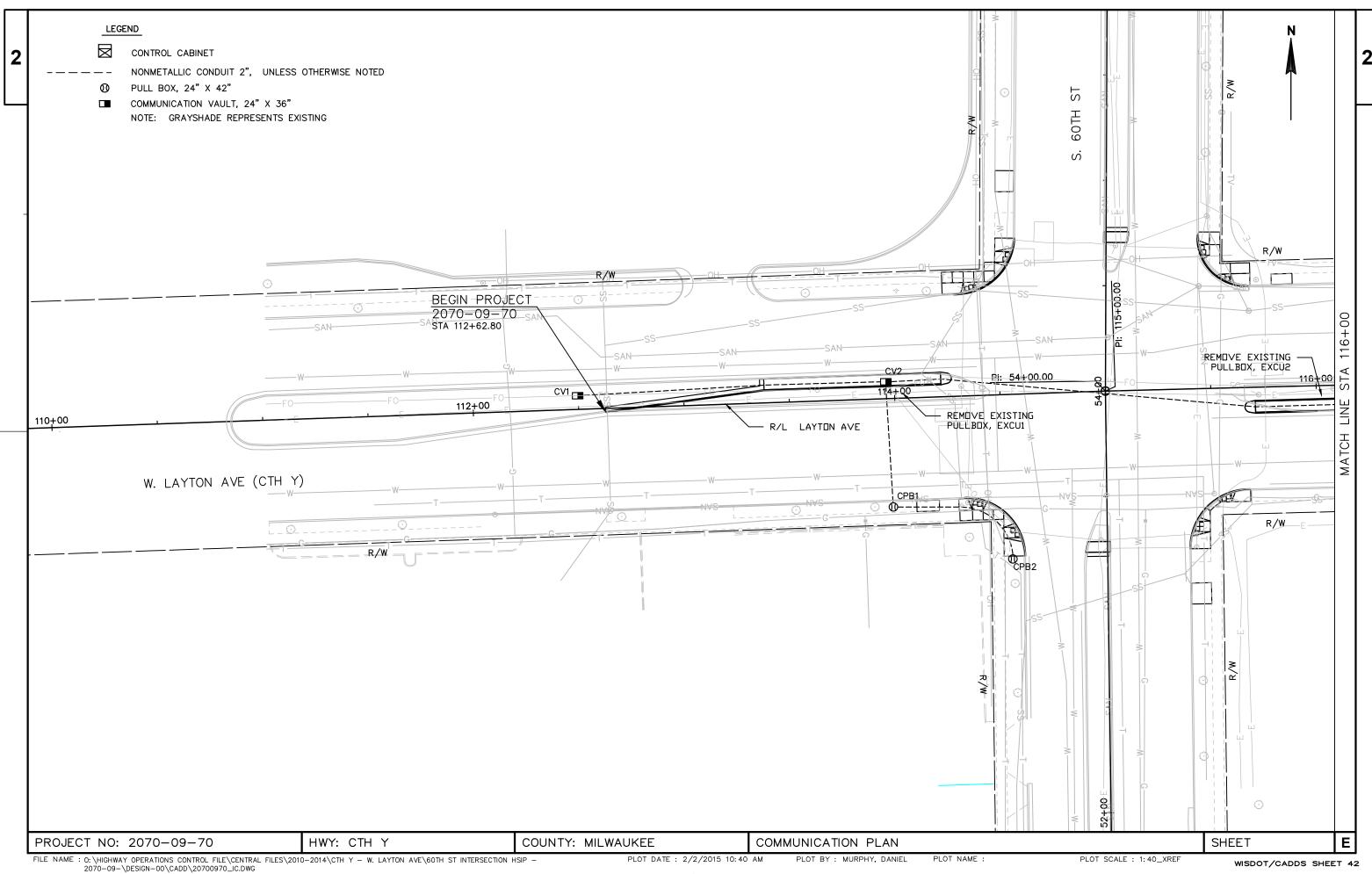
EQUIPMENT						
GROUNDING CONDUCTOR						
10 AWG (GRN XLP					
AND NEUTRAL	CONDUCTOR					
10 AWG	WHT XLP					
CB1	SB1					
SB1	SB2					
SB2	SB3					
SB3	SB4					
SB4	SB5					
SB5	SB6					
SB6	SB7					
SB7	SB8					
SB8	SB9					
SB9	SB10					
SB10	SB11					
SB11	CB1					
-						

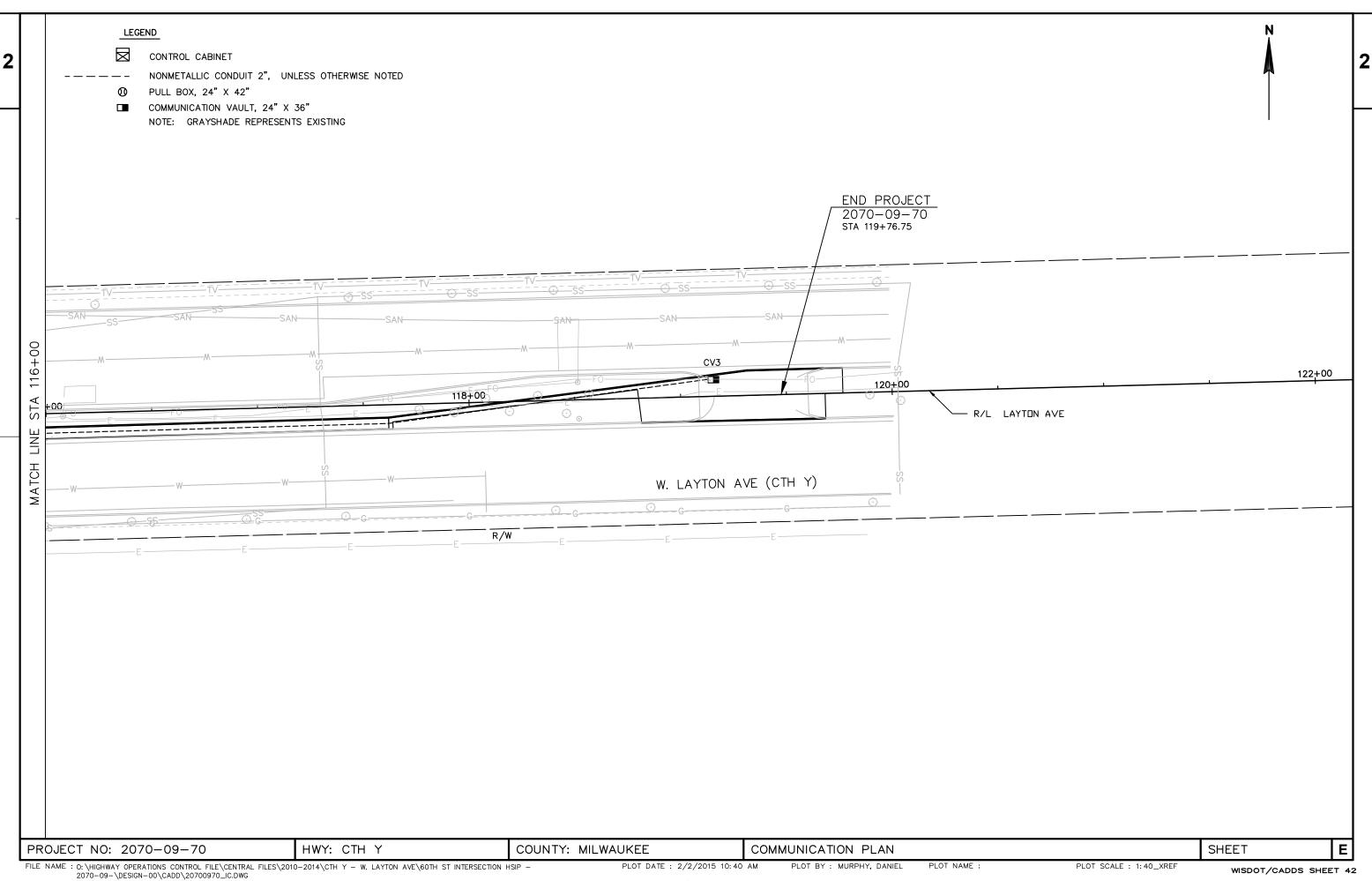
PULL BOX BONDING JUMPER					
10 AWG	GRN XLP				
PB1	SB1				
PB2	SB1				
PB3	SB2				
PB4	SB2				
PB5	SB4				
PB6	SB5				
PB7	SB6				
PB8	SB7				
PB9	SB8				
PB10	SB9				
PB11	SB10				
PB12	SB11				
PB13	SB11				

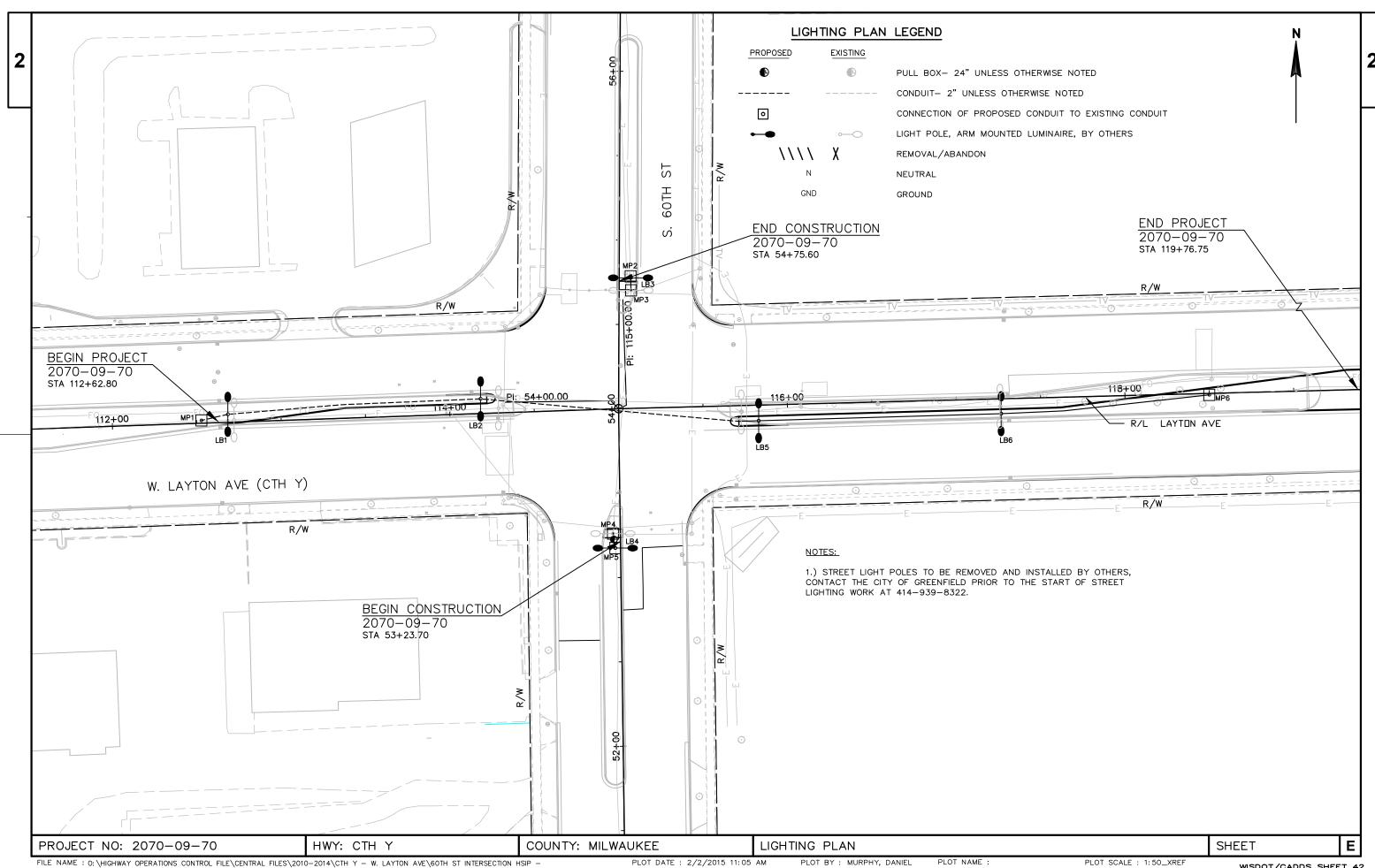
NOTES:

- 1. DO NOT USE THE WHITE CONDUCTOR IN THE SIGNAL CABLE AS THE GROUNDED CONDUCTOR FOR SIGNAL INDICATIONS.
- 2. ENSURE THE GROUNDED CONDUCTOR IN THE FEEDER CABLE AND THE POLE CABLES ARE BOTH 18" LONGER THAN THE UNGROUNDED CONDUCTORS.
- 3. AT THE SIGNAL BASES, CONNECT ONE TERMINAL OF THE PEDESTRIAN BUTTON TO THE COLOR INDICATED IN THE CHART, CONNECT THE OTHER TERMINAL TO THE WHITE CONDUCTOR IN THE SIGNAL CABLE

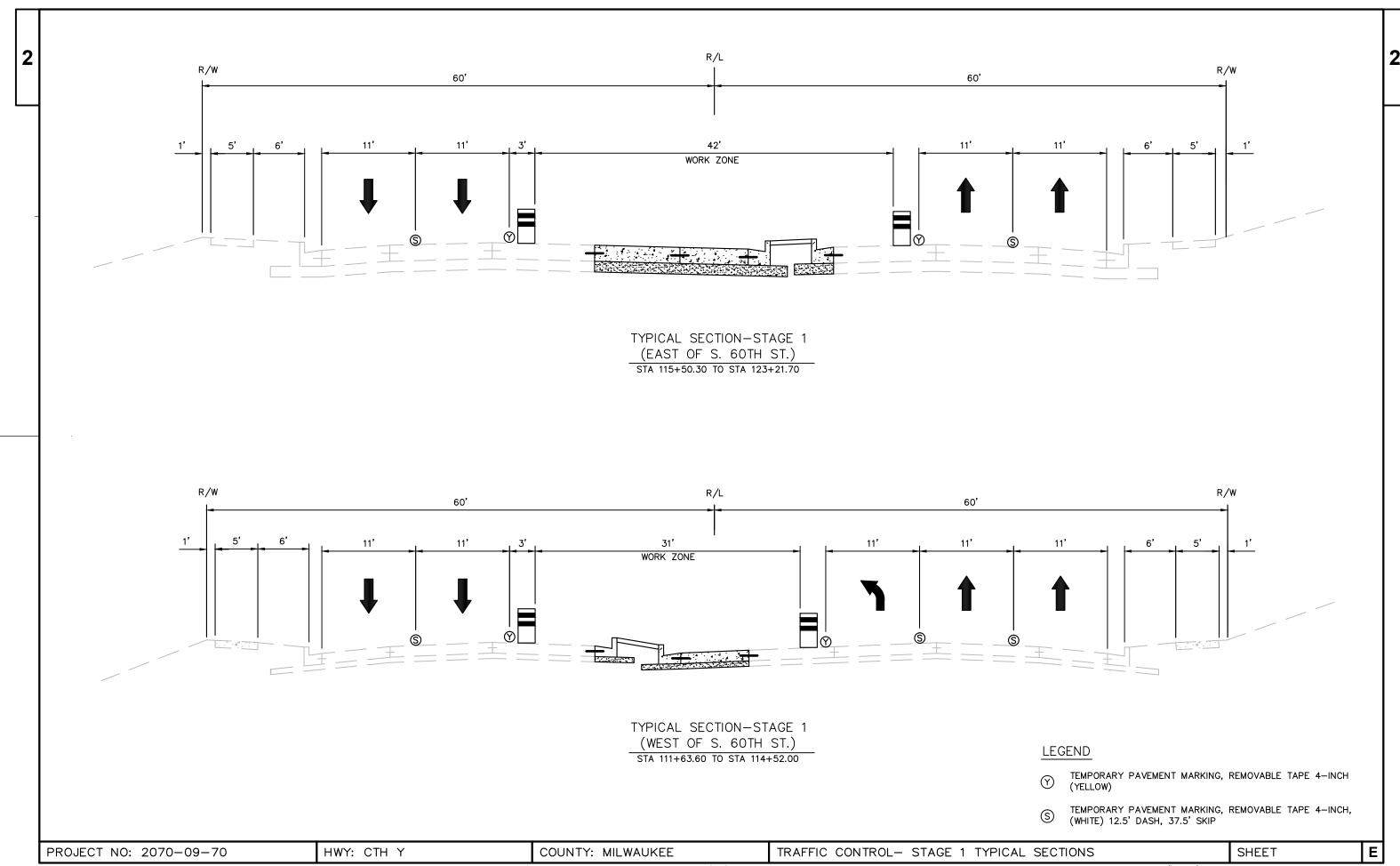
PROJECT NO: 2160-10-70 HWY: S. 76th ST. (CTH U) COUNTY: MILWAUKEE CABLE ROUTING SHEET E

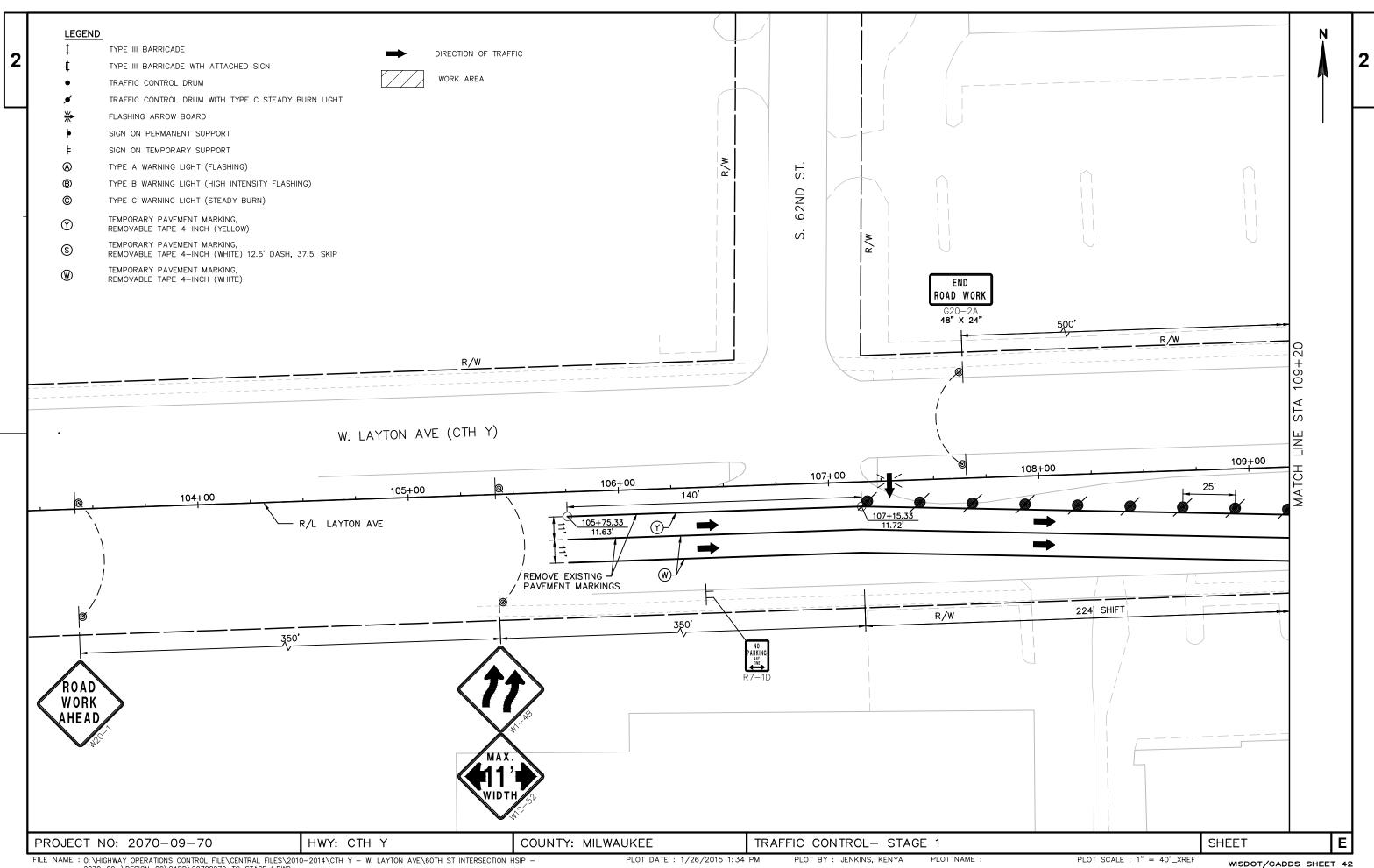


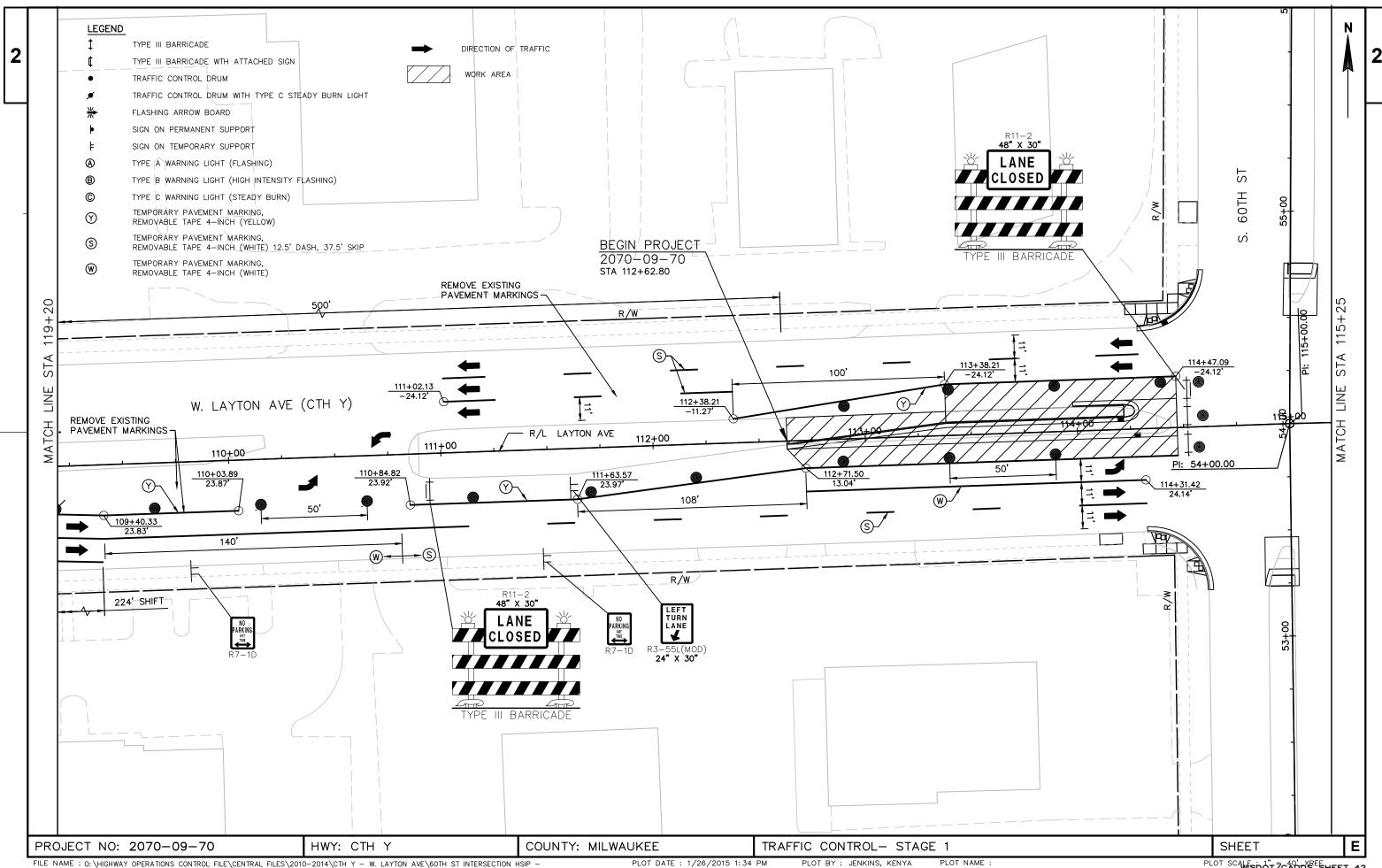




FILE NAME: 0:\Highway operations control file\central files\2010-2014\cth y - W. Layton ave\60th st intersection hsip - 2070-09-\Design-00\cadd\20700970_LP2.DWG



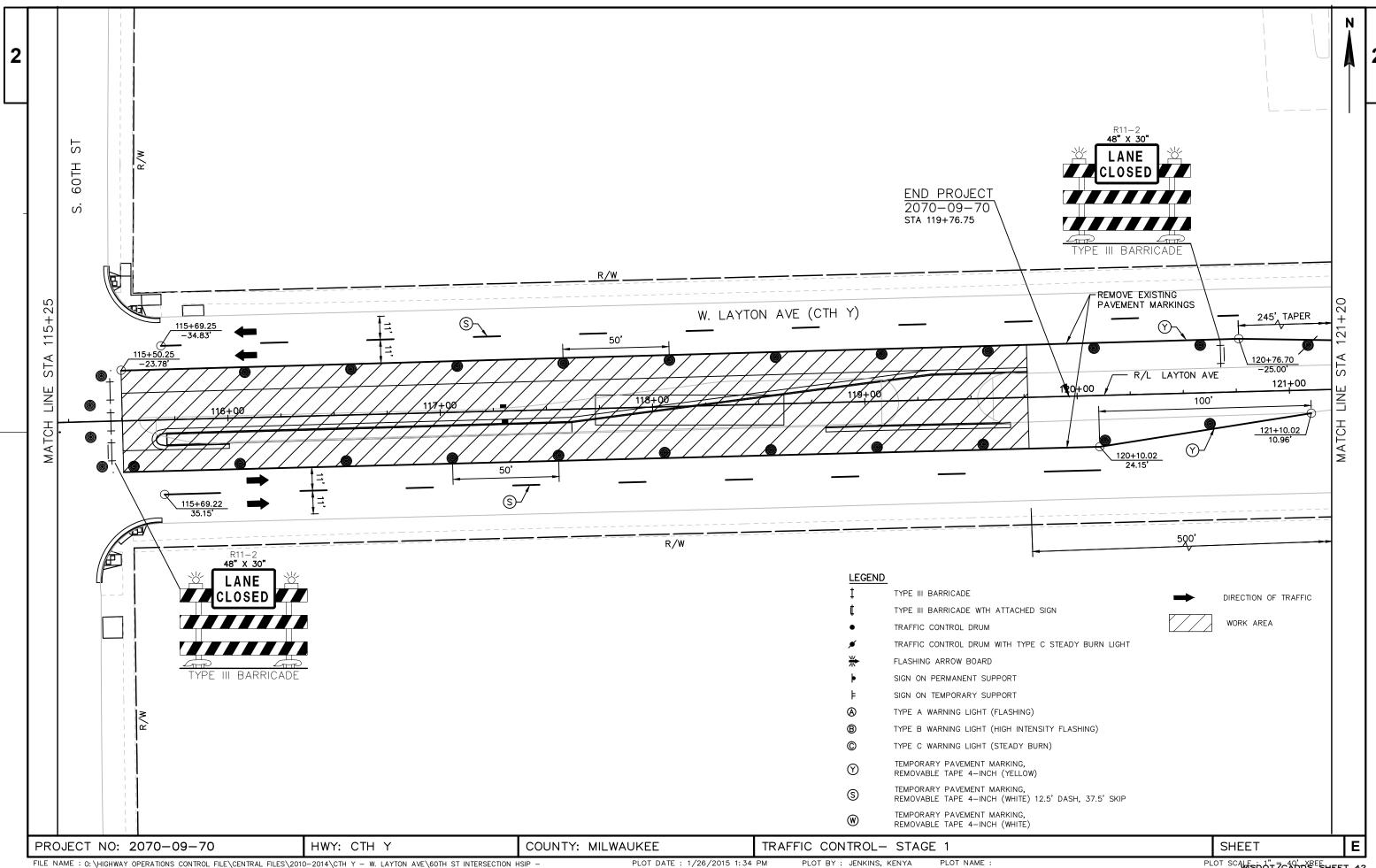


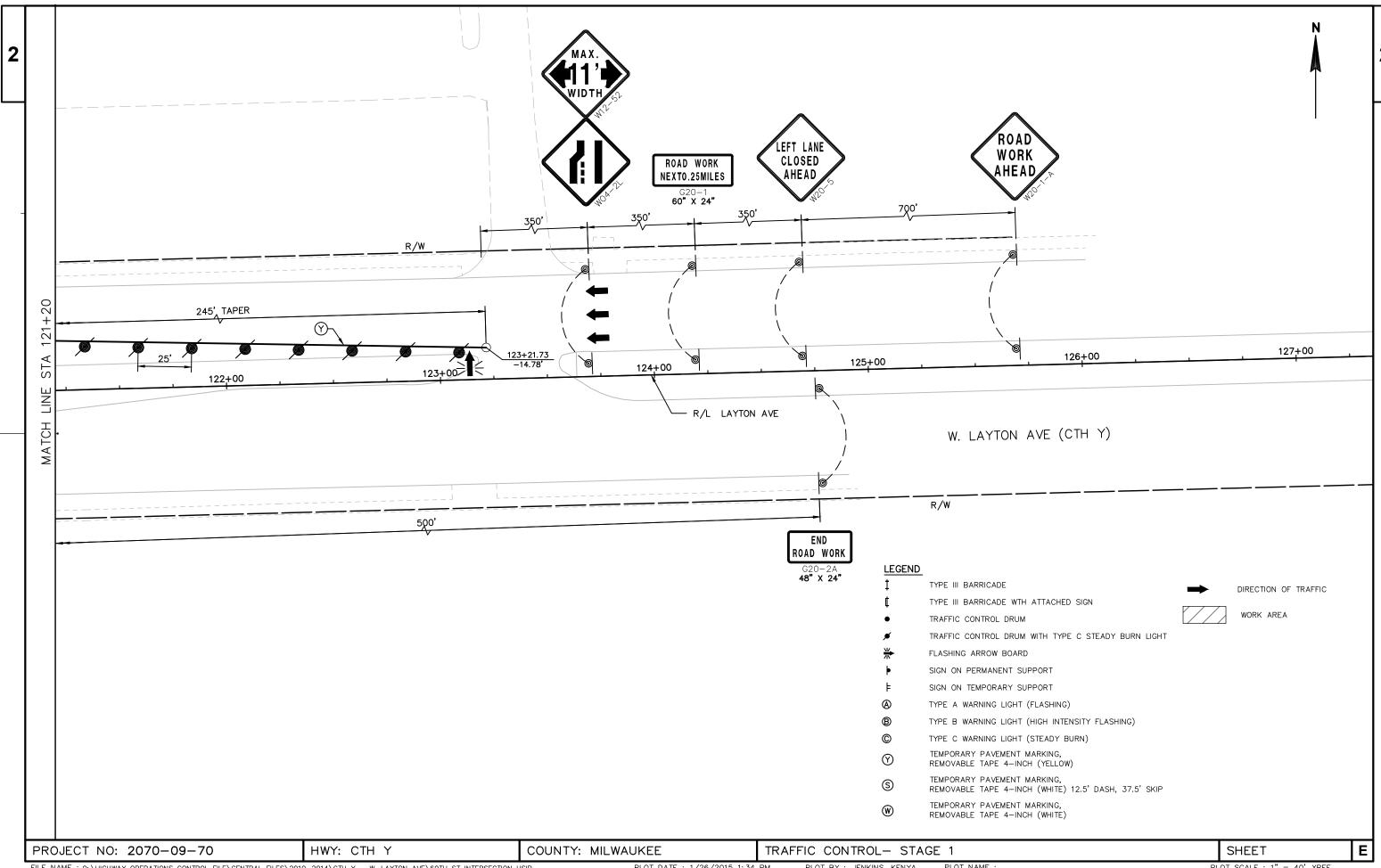


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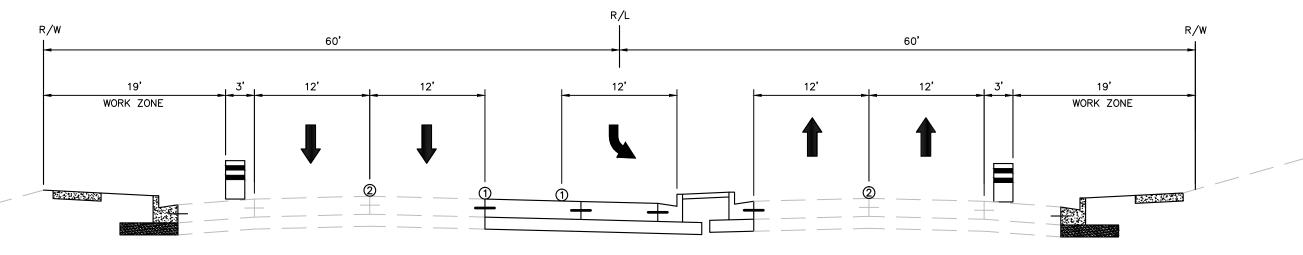
PLOT DATE: 1/26/2015 1:34 PM

PLOT SCALES OT CADOS SHEET 42





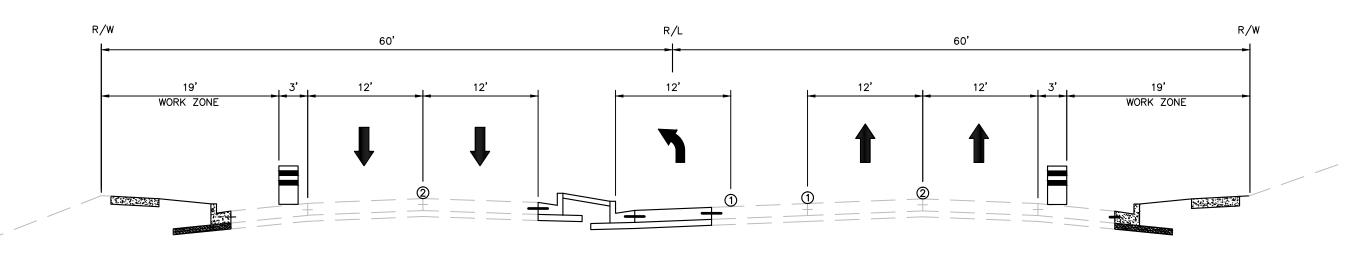




TYPICAL SECTION— STAGE 2
SIDEWALK WORK ON W.LAYTON AVE

(EAST OF S. 60TH STREET)

STA 111+00 TO STA 115+00



TYPICAL SECTION— STAGE 2
SIDEWALK WORK ON W.LAYTON AVE

(WEST OF S. 60TH STREET)

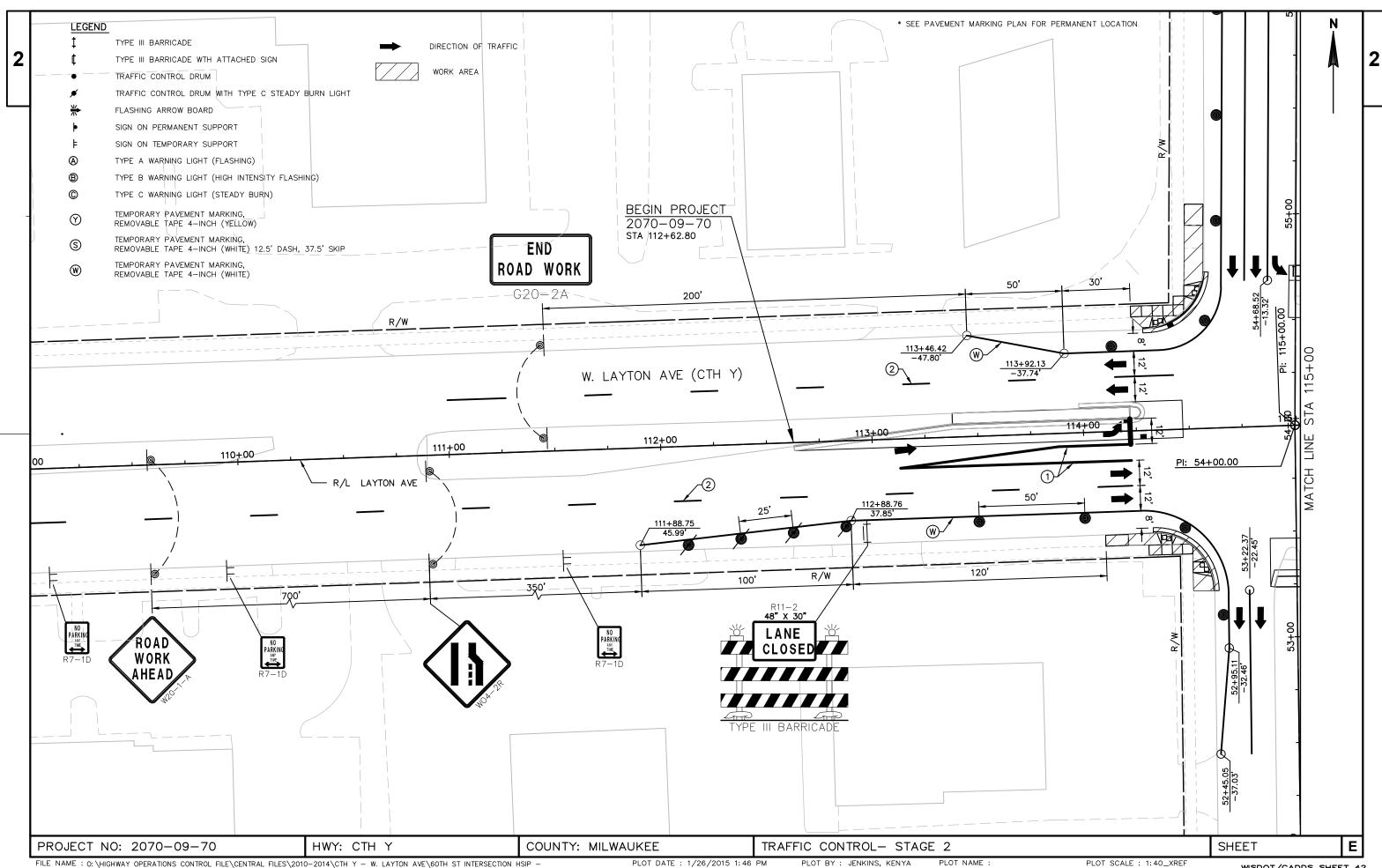
STA 115+00 TO STA 125+00

LEGEND

- 1 PAVEMENT MARKING EPOXY 8-INCH (WHITE)
- PAVEMENT MARKING EXPOXY 4-INCH (WHITE)
 12.5' DASH, 37.5' SKIP

PROJECT NO: 2070-09-70 HWY: CTH Y COUNTY: MILWAUKEE TRAFFIC CONTROL- STAGE 2 SHEET

Ε



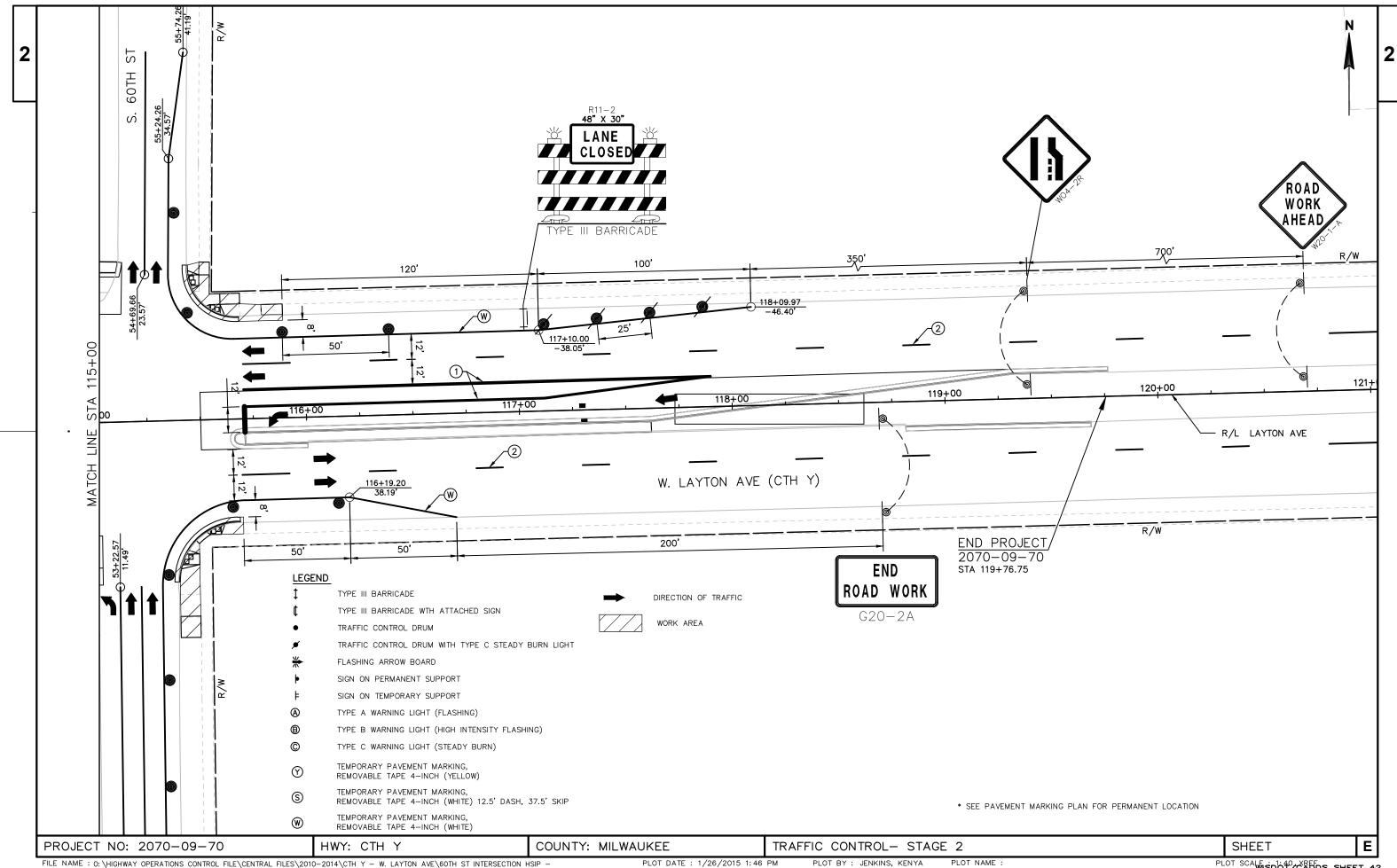
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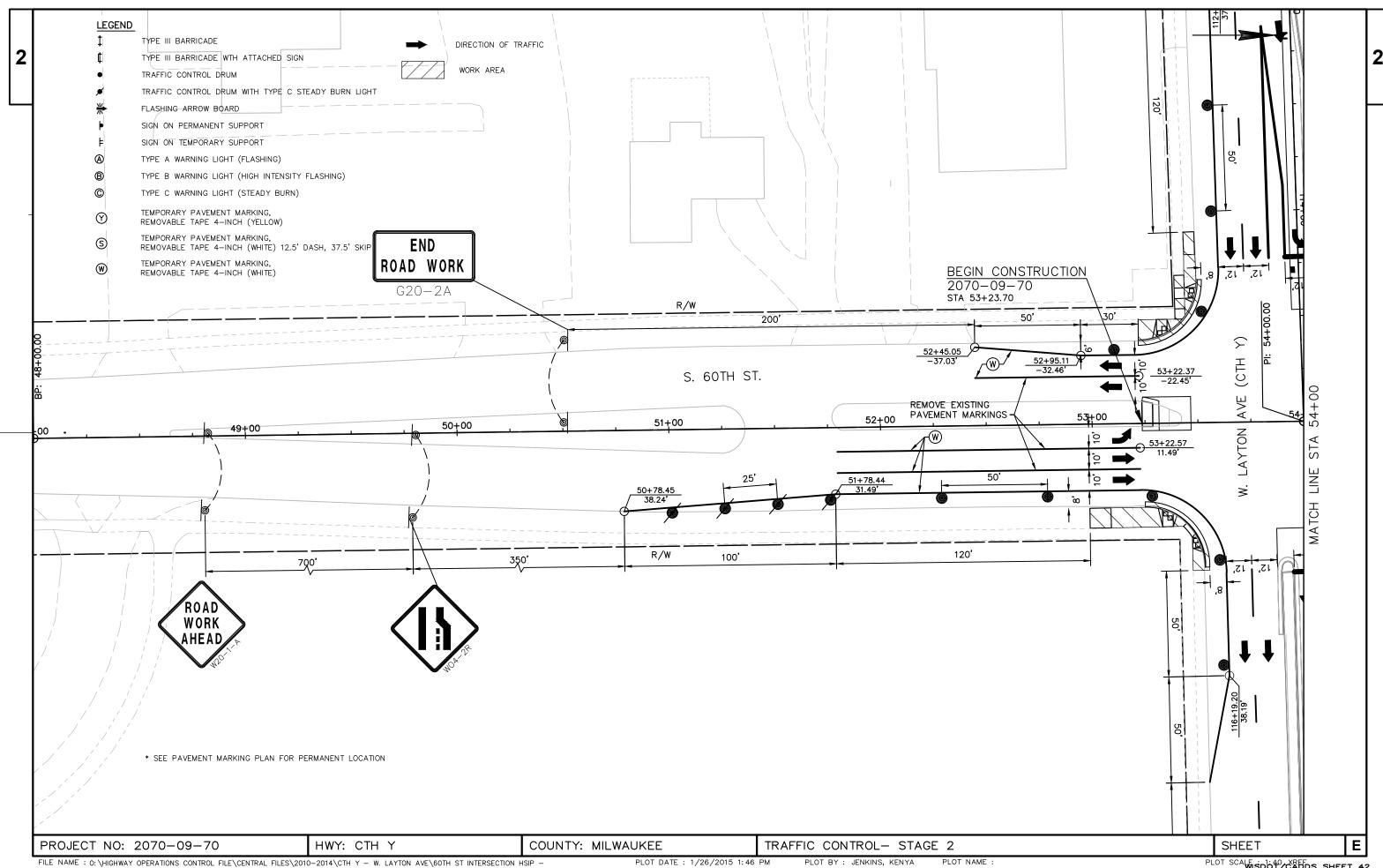
PLOT DATE: 1/26/2015 1:46 PM

PLOT BY : JENKINS, KENYA

PLOT SCALE : 1:40_XREF

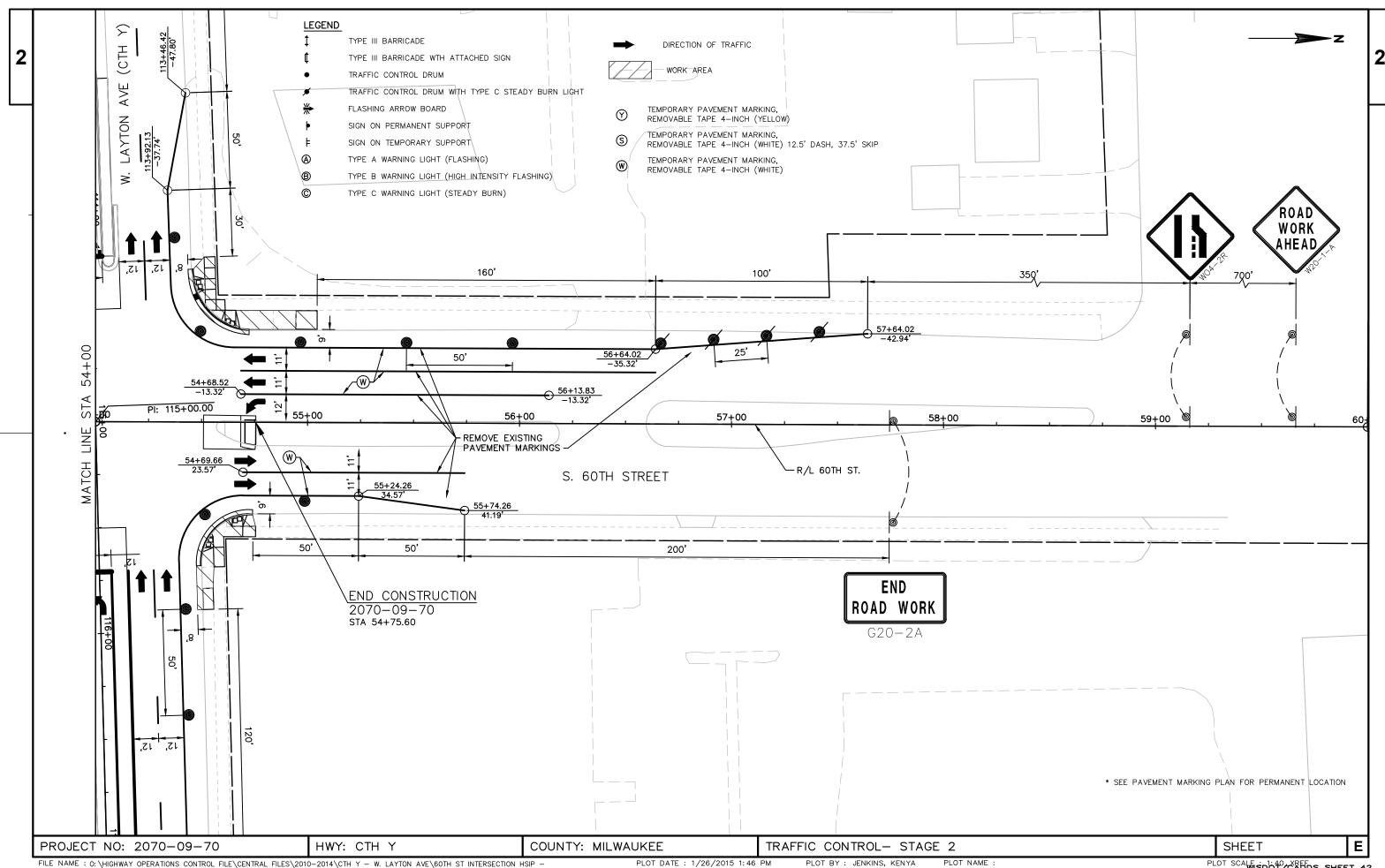
WISDOT/CADDS SHEET 42





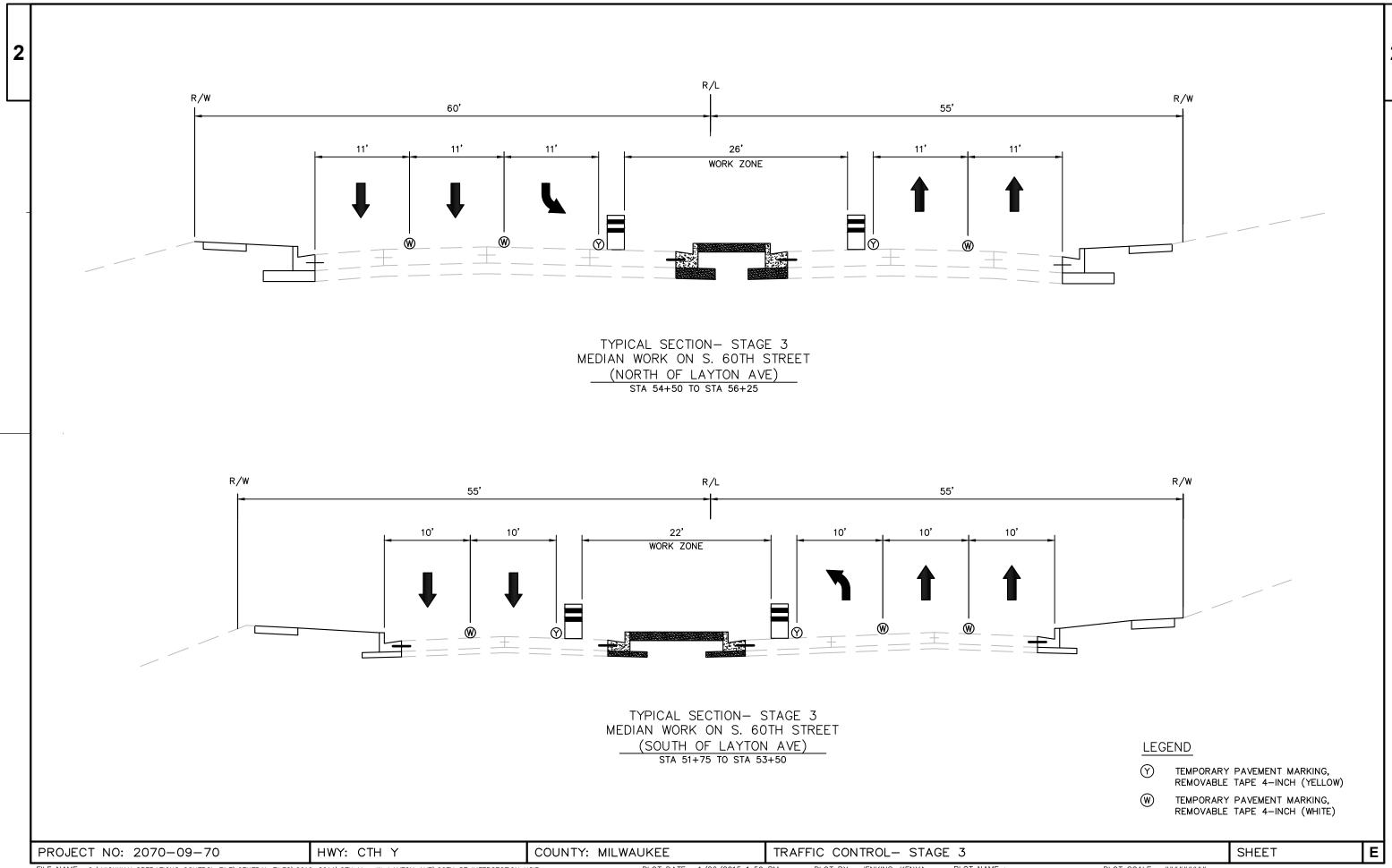
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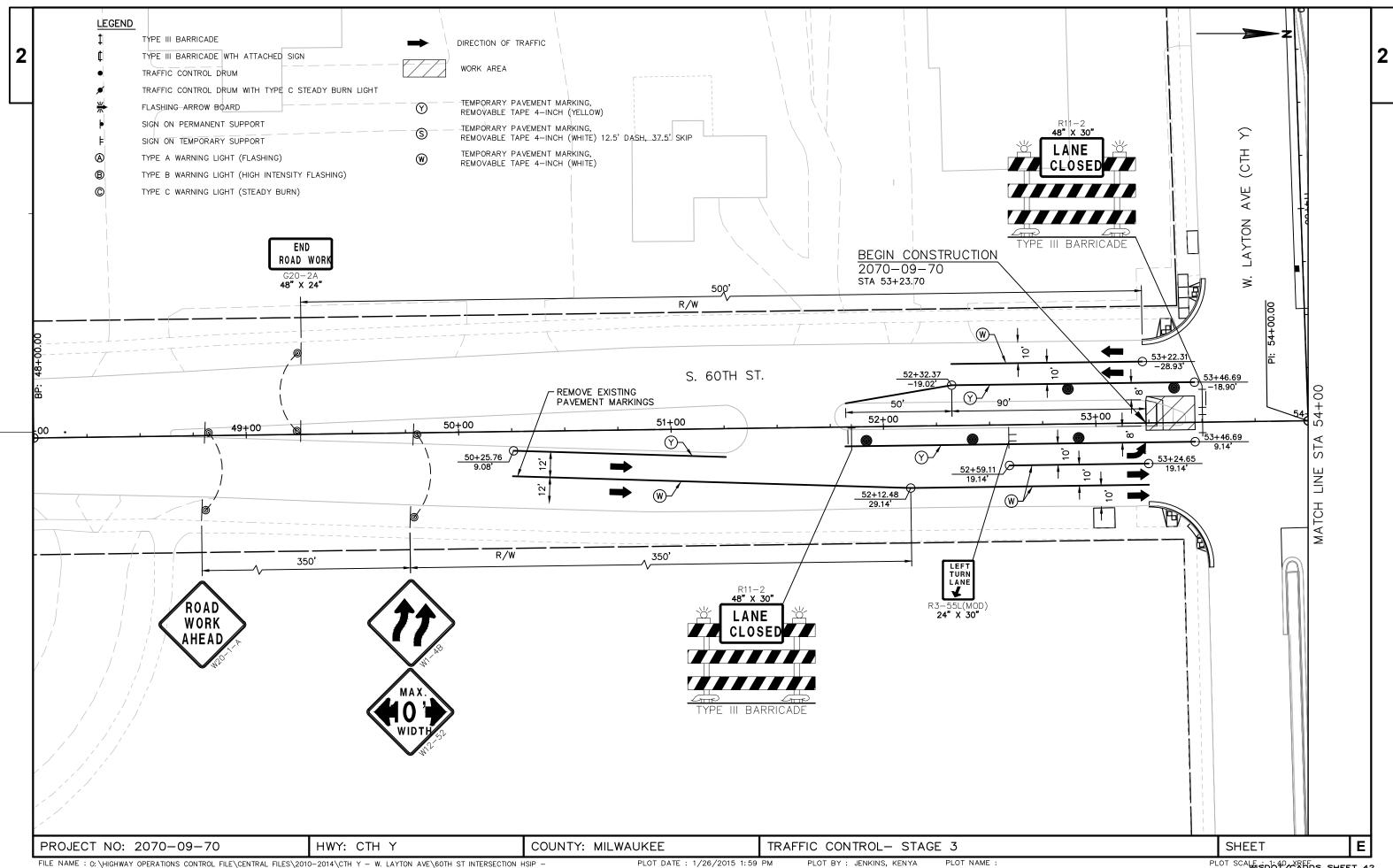
PLOT SCA WISDOT CAPODS SHEET 42



FILE NAME: 0:\HIGHWAY OPERATIONS CONTROL FILE\CENTRAL FILES\2010-2014\CTH Y - W. LAYTON AVE\60TH ST INTERSECTION HSIP - 2070-09-\DESIGN-00\CADD\20700970_TC_STAGE 2.DWG

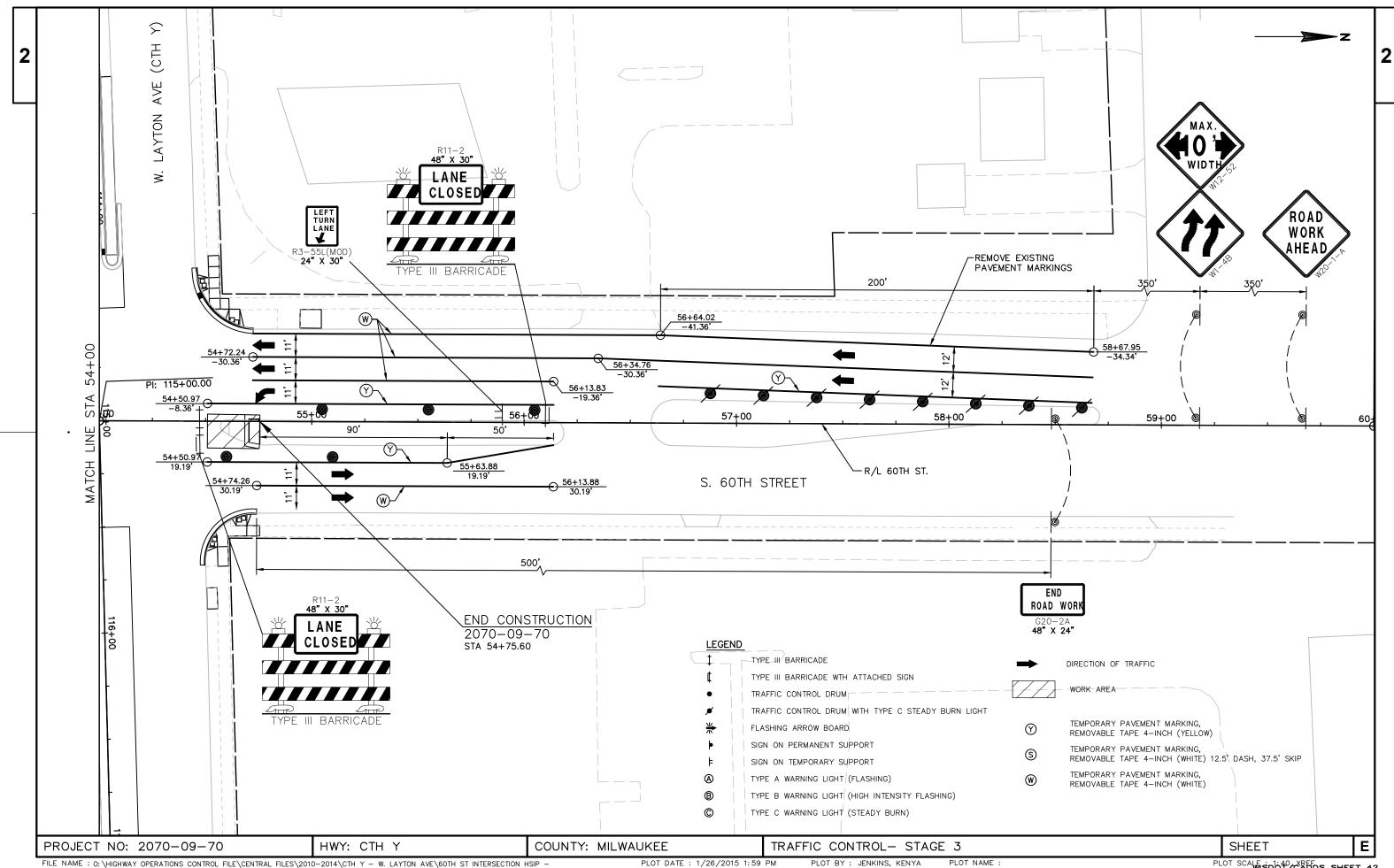
PLOT SCA WISDOT CAPODS SHEET 42





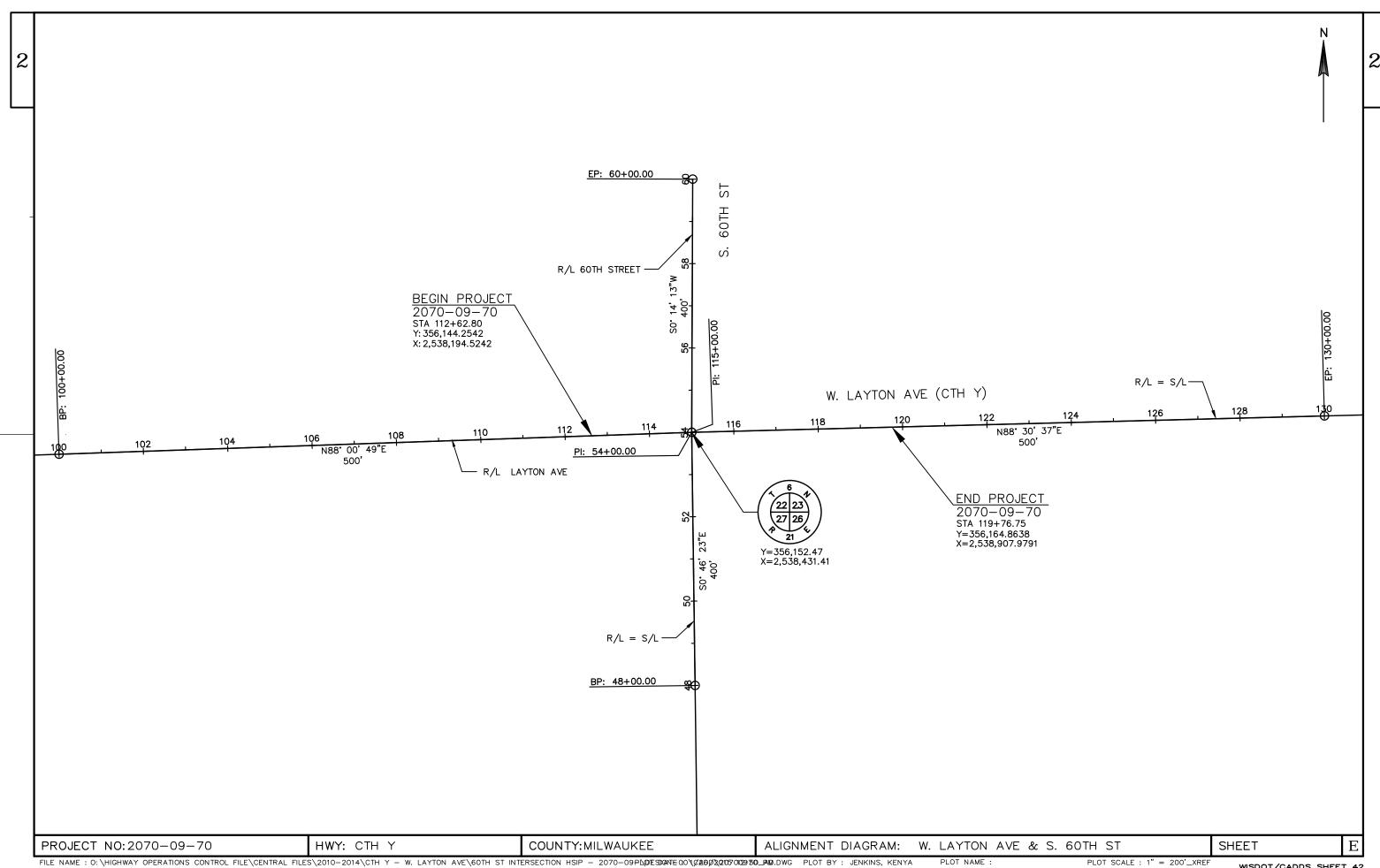
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PLOT SCA Wisdot/CADDS SHEET 42



FILE NAME : 0:\HIGHWAY OPERATIONS CONTROL FILE\CENTRAL FILES\2010-2014\CTH Y - W. LAYTON AVE\60TH ST INTERSECTION HSIP - 2070-09-\DESIGN-00\CADD\20700970_TC_STAGE 3.DWG

PLOT SCA Wisdot/CADDS SHEET 42



DATE 24 LINE	4MAR15	E S	TIMATE	OF QUAN	T I T I E S 2070-09-70	
NUMBER 0010 0020	201. 0110 201. 0210	I TEM DESCRIPTION Clearing Grubbing	UNI T SY SY	TOTAL 140. 000 140. 000	QUANTI TY 140. 000 140. 000	
0030 0040 0050	204. 0100 204. 0150 204. 0155	Removing Pavement Removing Curb & Gutter Removing Concrete Sidewalk	SY LF SY	370. 000 750. 000 70. 000	370. 000 750. 000 70. 000	
0060 0070 0080	204. 0195 204. 0245 204. 0245	Removing Concrete Bases Removing Storm Sewer (size) 01. 12-Inch Removing Storm Sewer (size) 02. 24-Inch	EACH LF LF	21. 000 16. 000 16. 000	21. 000 16. 000 16. 000	-
0090 0100	205. 0100 213. 0100	Excavation Common Finishing Roadway (project) 01. 2070-09-70	CY EACH	150. 000 1. 000	150. 000 1. 000	
0110 0120	305. 0120 415. 0090	Base Aggregate Dense 1 1/4-Inch Concrete Pavement 9-Inch	TON SY	250. 000 270. 000	250. 000 270. 000	-
0120	416. 0610	Drilled Tie Bars	EACH	290. 000	290. 000	
0140	416. 0620	Drilled Dowel Bars	EACH	77. 000	77. 000	
0150	520. 8000	Concrete Collars for Pipe	EACH	4. 000	4. 000	_
0160	601. 0331	Concrete Curb & Gutter 31-Inch	LF	900.000	900.000	
0170 0180	602. 0410 602. 0515	Concrete Sidewalk 5-Inch Curb Ramp Detectable Warning Field	SF SF	2, 410. 000 32. 000	2, 410. 000 32. 000	
0190	608. 0324	Natural Patina Storm Sewer Pipe Reinforced Concrete	LF	16. 000	16. 000	
0200	608. 0512	Class III 24-Inch Storm Sewer Pipe Reinforced Concrete Class V 12-Inch	LF	16.000	16. 000	
0210	611. 3004	Inlets 4-FT Diameter	EACH	1. 000	1.000	-
0220 0230	611. 3220 611. 8110	Inlets 2x2-FT	EACH EACH	1. 000 1. 000	1. 000 1. 000	
0230	611. 8115	Adjusting Manhole Covers Adjusting Inlet Covers	EACH	1. 000	1. 000	
0250	619. 1000	Mobilization	EACH	1. 000	1. 000	
0260	620. 0300	Concrete Median Sloped Nose	SF	350. 000	350. 000	-
0270 0280	624. 0100 625. 0100	Water Topsoi I	MGAL SY	0. 500 330. 000	0. 500 330. 000	
0280	628. 1905	Mobilizations Erosion Control	EACH	2. 000	2. 000	
0300	628. 1910	Mobilizations Emergency Erosion Control	EACH	2. 000	2. 000	
0310	628. 7015	Inlet Protection Type C	EACH	20. 000	20. 000	-
0320 0330	631. 1100 634. 0810	Sod Erosion Control Posts Tubular Steel 2x2-Inch X 10-FT	SY EACH	330. 000 14. 000	330. 000 14. 000	
0340	634. 0812	Posts Tubular Steel 2x2-Inch X 10-II	EACH	6. 000	6. 000	
0350	637. 2210	Signs Type II Reflective H	SF	156. 180	156. 180	
0360	637. 2215		SF	89. 520	89. 520	 -
0370 0380	638. 2602 638. 3000	Removing Signs Type II Removing Small Sign Supports	EACH EACH	17. 000 11. 000	17. 000 11. 000	
0390	643. 0200	Traffic Control Surveillance and	DAY	14. 000	14. 000	
0400	643. 0300	Maintenance (project) 01. 2070-09-70 Traffic Control Drums	DAY	1, 410. 000	1, 410. 000	
0410	643.0420	Traffic Control Barricades Type III	DAY	168. 000	168.000	•
0420 0430	643. 0705 643. 0715	Traffic Control Warning Lights Type A Traffic Control Warning Lights Type C	DAY DAY	185. 000 510. 000	185. 000 510. 000	
0440	643.0800	Traffic Control Arrow Boards	DAY	36. 000	36.000	
0450	643. 0900	Traffic Control Signs	DAY	690. 000	690. 000	
0460	646. 0106	Pavement Marking Epoxy 4-Inch	LF	800.000	800.000	 -
0470 0480	646. 0126 646. 0600	Pavement Marking Epoxy 8-Inch Removing Pavement Markings	LF LF	1, 000. 000 1, 900. 000	1, 000. 000 1, 900. 000	
0480	647. 0166	Pavement Marking Arrows Epoxy Type 2	EACH	3. 000	3. 000	
0500	647. 0356	Pavement Marking Words Epoxy	EACH	3. 000	3. 000	

Tape 4-Inch 0540 652.0225 Conduit Rigid Nonmetallic Schedule 40 LF 2-Inch 0550 652.0235 Conduit Rigid Nonmetallic Schedule 40 LF 3-Inch 0560 652.0605 Conduit Special 2-Inch 0570 652.0615 Conduit Special 3-Inch 0580 653.0140 Pull Boxes Steel 24x42-Inch 0590 653.0180 Pull Boxes Steel Communications (inch) 01. 24 X 42 -Inch	TOTAL 170. 000 730. 000 ,800. 000 ,150. 000 430. 000 370. 000 740. 000 13. 000	2070-09-70 QUANTI TY 170. 000 730. 000 8, 800. 000 1, 150. 000 430. 000
0520 647.0766 Pavement Marking Crosswalk Epoxy 6-Inch LF LF 0530 649.0400 Temporary Pavement Marking Removable LF 8 0540 652.0225 Conduit Rigid Nonmetallic Schedule 40 LF 1 0550 652.0235 Conduit Rigid Nonmetallic Schedule 40 LF LF 0560 652.0605 Conduit Special 2-Inch LF LF 0570 652.0615 Conduit Special 3-Inch LF LF 0580 653.0140 Pull Boxes Steel 24x42-Inch EACH EACH 0590 653.0180 Pull Boxes Steel Communications (inch) EACH 01 24 X 42 -Inch EACH	730. 000 , 800. 000 , 150. 000 430. 000 370. 000 740. 000	730. 000 8, 800. 000 1, 150. 000
0530 649.0400 Temporary Pavement Marking Removable Tape 4-Inch LF 8 0540 652.0225 Conduit Rigid Nonmetallic Schedule 40 LF 1 0550 652.0235 Conduit Rigid Nonmetallic Schedule 40 LF 0560 652.0605 Conduit Special 2-Inch LF 0570 652.0615 Conduit Special 3-Inch LF 0580 653.0140 Pull Boxes Steel 24x42-Inch EACH 0590 653.0180 Pull Boxes Steel Communications (inch) EACH 01. 24 X 42 -Inch EACH	, 800. 000 , 150. 000 430. 000 370. 000 740. 000	8, 800. 000 1, 150. 000
Tape 4-Inch 0540 652.0225 Conduit Rigid Nonmetallic Schedule 40 LF 1, 2-Inch 0550 652.0235 Conduit Rigid Nonmetallic Schedule 40 LF 3-Inch 0560 652.0605 Conduit Special 2-Inch LF 0570 652.0615 Conduit Special 3-Inch LF 0580 653.0140 Pull Boxes Steel 24x42-Inch EACH 0590 653.0180 Pull Boxes Steel Communications (inch) EACH	, 150. 000 430. 000 370. 000 740. 000	1, 150. 000
0550 652.0235 2-Inch Conduit Rigid Nonmetallic Schedule 40 LF 0560 652.0605 Conduit Special 2-Inch LF LF 0570 652.0615 Conduit Special 3-Inch LF LF 0580 653.0140 Pull Boxes Steel 24x42-Inch EACH EACH 0590 653.0180 Pull Boxes Steel Communications (inch) EACH 01. 24 X 42 -Inch 24 X 42 -Inch	370. 000 740. 000	430.000
3-Inch 0560 652.0605 Conduit Special 2-Inch LF 0570 652.0615 Conduit Special 3-Inch LF 0580 653.0140 Pull Boxes Steel 24x42-Inch EACH 0590 653.0180 Pull Boxes Steel Communications (inch) EACH 01. 24 X 42 -Inch	370. 000 740. 000	430.000
0570 652.0615 Conduit Special 3-Inch LF 0580 653.0140 Pull Boxes Steel 24x42-Inch EACH 0590 653.0180 Pull Boxes Steel Communications (inch) EACH 01. 24 X 42 -Inch EACH	740.000	
0580 653.0140 Pull Boxes Steel 24x42-Inch EACH 0590 653.0180 Pull Boxes Steel Communications (inch) EACH 01. 24 X 42 -Inch		370.000
0590 653.0180 Pull Boxes Steel Communications (inch) EACH 01. 24 X 42 -Inch	1.5. 0.00	740. 000 13. 000
	2. 000	2. 000
0600 653.0905 Removing Pull Boxes EACH	25. 000	25. 000
0610 654.0101 Concrete Bases Type 1 EACH	7.000	7.000
0620 654.0102 Concrete Bases Type 2 EACH 0630 654.0110 Concrete Bases Type 10 EACH	6. 000 2. 000	6. 000 2. 000
0640 654.0113 Concrete Bases Type 13 EACH	2.000	2. 000
0650 654.0217 Concrete Control Cabi net Bases Type 9 EACH Special	1. 000	1. 000
0660 655.0230 Cable Traffic Signal 5-14 AWG LF	750. 000	750. 000
0670 655.0240 Cable Traffic Signal 7-14 AWG LF	840.000	840.000
•	, 240. 000 240. 000	1, 240. 000 240. 000
	, 160. 000	2, 160. 000
0710 655.0900 Traffic Signal EVP Detector Cable LF 1	, 000. 000	1, 000. 000
0720 656.0200 Electrical Service Meter Breaker LS	1. 000	1.000
Pedestal (Iocation) 01. S 60TH ST & W Layton AVE (CTH Y)		
0730 657.0100 Pedestal Bases EACH	7.000	7.000
0740 657.0405 Traffic Signal Standards Aluminum 3.5-FT EACH	1.000	1.000
0750 657.0425 Traffic Signal Standards Aluminum 15-FT EACH	4. 000	4. 000
0760 657.0430 Traffic Signal Standards Aluminum 10-FT EACH	2.000	2.000
0770 658.0110 Traffic Signal Face 3-12 Inch Vertical EACH 0780 658.0120 Traffic Signal Face 5-12 Inch Vertical EACH	12. 000 8. 000	12. 000 8. 000
0780 658.0120 Traffic Signal Face 5-12 Inch Vertical EACH 0790 658.0215 Backplates Signal Face 3 Section 12-Inch EACH	12. 000	12. 000
0800 658. 0225 Backplates Signal Face 5 Section 12-Inch EACH	8. 000	8. 000
0810 658.0416 Pedestrian Signal Face 16-Inch EACH	8. 000	8. 000
0820 658.0600 Led Modules 12-Inch Red Ball EACH	12.000	12.000
0830 658.0605 Led Modules 12-Inch Yellow Ball EACH	12.000	12.000
0840 658.0610 Led Modules 12-Inch Green Ball EACH 0850 658.0615 Led Modules 12-Inch Red Arrow EACH	12. 000 8. 000	12. 000 8. 000
0860 658.0620 Led Modules 12-Inch Yellow Arrow EACH	16. 000	16. 000
0870 658.0625 Led Modules 12-Inch Green Arrow EACH	8. 000	8. 000
0880 658.0635 Led Modules Pedestrian Countdown Timer EACH	8. 000	8. 000
16-Inch 0890 658.5069 Signal Mounting Hardware (location) 01. LS	1. 000	1. 000
S ĞOTH ST & W Layton AVE (CTH Y)		
0900 661.0200 Temporary Traffic Signals for LS Intersections (location) 01. S 60TH ST	1. 000	1. 000
& W Layton AVE (CTH Y)		
0910 678.0200 Fiber Optic Splice Enclosure EACH	2. 000	2. 000
0920 678.0300 Fiber Optic Splice EACH	48.000	48. 000
0930 678.0400 Fiber Optic Termination EACH	4.000	4.000
0940 690.0250 Sawing Concrete LF 1	, 210. 000	1, 210. 000

DATE 24	IMAR15	EST	IMAT	E OF QUAN	
LINE NUMBER 0950	I TEM ASP. 1TOA	ITEM DESCRIPTION On-the-Job Training Apprentice at \$5. OO/HR	UNI T HRS	TOTAL 100. 000	2070-09-70 QUANTI TY 100. 000
0960 0970 0980	ASP. 1T0G SPV. 0060 SPV. 0060	On-the-Job Training Graduate at \$5.00/HR Special 01. Inlet Covers Type 57 Special 02. Communication Vault 24 X 36 X 39 - Inch	HRS EACH EACH	100. 000 5. 000 3. 000	100. 000 5. 000 3. 000
0990 1000	SPV. 0060 SPV. 0060	Special 03. Poles Type 10 Special 04. Poles Type 12	EACH EACH	2. 000 2. 000	2. 000 2. 000
1010 1020 1030 1040	SPV. 0060 SPV. 0060 SPV. 0060 SPV. 0060	Special 05. Monotube Arms 30-FT Special 06. Monotube Arms 45-FT Special 07. Monotube Arms 55-FT Special 08. Internal Sanitary Manhole	EACH EACH EACH EACH	2. 000 1. 000 1. 000 1. 000	2. 000 1. 000 1. 000 1. 000
1050	SPV. 0060	Seals Special 09. Utility Line Opening	EACH	4. 000	4. 000
1060	SPV. 0090	Special O1. Furnish and Install 12SM/12MM Fiber Optic Communicans Cable	LF	1, 070. 000	1, 070. 000
1070 1080 1090 1100	SPV. 0090 SPV. 0105 SPV. 0105 SPV. 0105	Special 02. Tracer Wire Special 01. Battery Backup System Special 02. Traffic Signal Controller and Cabinet Fully Actuated 16-Phase Special 03. Emergency Vehicle Preemption System	LF LS LS	840. 000 1. 000 1. 000 1. 000	840. 000 1. 000 1. 000 1. 000
1110	SPV. 0105	Special O4 Vehicular Video Detection System S 60TH ST & W Layton AVE (4	LS	1.000	1. 000
1120	SPV. 0105	Cameras) Special 05. Fiber Optic Communication System Intregation Documentation and	LS	1. 000	1. 000
1130	SPV. 0105	Test Special O6. Removing Traffic Signal Equiptment S 60TH ST & W Layton AVE	LS	1.000	1. 000
1140	SPV. 0105	Special 07. Accessible Pedestrian Push Button System	LS	1. 000	1. 000

																		CATEGORY 0010
		CLEA	RING & GRUBE	BING					REMOVING	PAVEMENT					RE	MOVING CURB	& GUTTER	
				201.0110 CLEARING								204.0100 REMOVING		LOGITION	STATION	STATION	05555	204.0150 REMOVING CURB & GUTTER
LOCATIO	ON	STATION	N - STATIO		SY						-	PAVEMEN ⁻	<u>T</u>	LOCATION STAGE 1	STATION	- STATION	OFFSET	LF
STAGE 1						_	LOCATION		STATION	- STATION	OFFSET	SY		MEDIAN	112+63	- 114+47	_	216
W. LAYTO	ON AVE				<u>.</u>	<u> </u>	STAGE 1		112 62	444 47				MEDIAN		- 120+00	_	330
MI	EDIAN	117+76	- 118+5	7 140	140		MEDI.			- 114+47 - 120+00		18 294		SUBTOTAL				546
SUBTOTA	AL STAGE 1			140	140	5	SUBTOTAL					312	_	STAGE 2				
GRAND '	TOTAL			140	140									MEDIAN NOSE	54+51	- 54+76	_	15
						9	STAGE 2							MEDIAN NOSE		- 53+47	_	17
							MEDIAN		54+51	54+76		31		NW CORNER	114+38	33.47	LT	42
							MEDIAN	NOSE	53+24	53+47		27		NE CORNER	115+69		LT	37
						-	SUBTOTAL					58		SW CORNER	114+31		RT	43
												38		SE CORNER	115+69		RT	50
							UNDISTRIBUTE TOTAL	D				370		SUBTOTAL				204
														TOTAL				750
LOCATION			CONCRETE SIDE		204.0155 IOVING CONCRETE SIDEWALK SY			R	EMOVING ST	ORM SEWER	F	204.0245 REMOVING			FINISHII	NG ROADWAY (
STAGE 2											12-IN	ORM SEWE	:K <u>-INCH</u>				213.0 FINISH	
NW CORN		114+28		LT	17	LOCATIO	ON	STATION -	STATION	OFFSET	LF		LF				ROAD\	
NE CORNE		115+70		LT	19	W. LAYT		<u> </u>		011021					PROJECT I.I	D.	EAC	
SW CORN		114+31		RT	16			114+14 -	114+26	LT	16				2070-09-70		1	
SE CORNE	EK	115+68		RT	19			117+30 -	117+30	LT-RT		1	16					
SUBTOTAL					70	TOTAL					16	1	16		TOTAL		1	
TOTAL					70													
PROJECT N	IO: 2070-	09-70		HWY: C	TH Y			col	JNTY: MII	WAUKEE			MISCE	LLANEOUS QU	ANTITIES		SHEE	T E

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J

STATION 112+63 115+50	<u>-</u>	STATION 114+47 120+00	205.0100 COMMON EXCAVATION CY 15 96
112+63	-	114+47	15
			_
			_
115+50	-	120+00	96
			110
114+38			6
115+69			6
114+31			5
115+69			6
			22
54+51	-	54+76	6
53+24	-	53+47	5
			11
			7
			150
	115+69 114+31 115+69 54+51	115+69 114+31 115+69 54+51 -	115+69 114+31 115+69 54+51 - 54+76

	AGGREGATE ITEMS													
	-		J		305.0120									
					BASE									
					AGGREGATE									
					DENSE									
					1 1/4 -INCH									
LOCATION	STATION	_	STATION	OFFSET	TON									
STAGE 1														
MEDIAN	112+63	-	114+47	-	43									
MEDIAN	115+50	-	120+00	-	172									
UNDISTRIBUTED					14									
SUBTOTAL					229									
STAGE 2														
				-										
UNDISTRIBUTED														
SUBTOTAL					0									
STAGE 3														
MEDIAN NOSE	53+32	-	53+47	-	9									
MEDIAN NOSE	54+51	-	54+69	-	10									
UNDISTRIBUTED					2									
SUBTOTAL					21									
TOTAL					250									

		CONC	RETE PAVEN	MENT ITEMS	CATFO	GORY 0010
				415.0090 CONCRETE PAVEMENT	416.0610 DRILLED TIE	416.0620 DRILLED DOWEL
				9-INCH	BARS	BARS
LOCATION	STATION -	STATION	OFFSET	SY	EACH	EACH
STAGE 1						
MEDIAN	112+63 -	114+47	-	149	88	18
MEDIAN	115+50 -	119+30	-	47	164	27
UNDISTRIBUTED				10		
SUBTOTAL				206	252	45
STAGE 2						
UNDISTRIBUTED						
SUBTOTAL				0		
STAGE 3						
MEDIAN NOSE	53+32 -	53+47	-	27	16	16
MEDIAN NOSE	54+51 -	54+69	-	31	18	16
UNDISTRIBUTED				7	4	
SUBTOTAL				65	38	32
GRAND TOTAL				270	290	77

CONCRETE CURB & GUTTER

						620.0300
					601.0331	CONCRETE MEDIAN
					CONCRETE CURB & GUTTER	SLOPED NOSE
					31-INCH	TYPE 1
LOCATION	STATION	-	STATION	OFFSET	LF	SF
STAGE 1						
MEDIAN	155+24	-	157+43	-	185	60
MEDIAN	158+55	-	163+31	-	524	60
SUBTOTAL					709	120
STAGE 2						
SE CORNER				RT	50	
NE CORNER				LT	43	
NW CORNER				LT	47	
SW CORNER				RT	51	
SUBTOTAL					191	
STAGE 3						
MEDIAN	53+24			-		120
MEDIAN	54+75			-		110
SUBTOTAL						230
GRAND TOTAL					900	350

CONCRETE SIDEWALK

					602.0410	602.0410
						CURB RAMP DECTECTABLE
					CONCRETE SIDEWALK	WARNING FIELD
				_	5-INCH	NATURAL PATINA
LOCATION	STATION	-	STATION	OFFSET	SF	SF
STAGE 1						
MEDIAN	113+38	-	114+22	LT	420	
MEDIAN	115+71	-	117+62	RT	950	
SUBTOTAL					1,370	
STAGE 2						
NW CORNER	114+24	-	114+49	LT	250	8
BUS STOP (NW)	54+95	-	55+05	LT	90	
NE CORNER	115+51	-	115+70	LT	230	8
BUS STOP (NE)	115+80	-	115+90	LT	50	
SW CORNER	114+29	-	114+50	RT	180	8
BUS STOP (SW)	114+09	-	114+20	RT	55	
SE CORNER	115+47	-	115+60	RT	85	8
BUS STOP (SE)	53+00	-	53+08	RT	100	
SUBTOTAL					1,040	32
					,	
TOTAL					2,410	32

COUNTY: MILWAUKEE MISCELLANEOUS QUANTITIES SHEET PROJECT NO: 2070-09-70 HWY: CTH Y PLOT BY : DMM

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				SEWERS									CATEGORY 0010
6	511.3220	611.3004	SPV.0060.01	608.0512 STORM SEWER PIPE	608.0324 STORM SEWER PIPE	611.8110**	611.8115		SPV.0060.08** INTERNAL				
	INLET	INLET	INLET COVER	REINFORCED CONCRETE CLASS V	REINFORCED CONCRETE CLASS III	ADJUSTING MANHOLE COVERS	ADJUSTING INLET COVERS	CONCRETE	SANITARY MANHOLE			МОВІ	LIZATION
·	2x2-FT EACH	4-FT DIA EACH	TYPE 57 EACH	12-INCH LF	24-INCH LF	EACH	EACH	FOR PIPE EACH	SEALS EACH	_			619.1000
AYTON AVE	EACH	EACH	EACH	Lr	LF	EACH	EACH	EACH	EACH	-			013.1000
114+21 4.5' LT	1		1	16				1					MOBILIZATION
114+29 2.6' RT			1					1				PROJECT I.D.	EACH
117+30 1.1' LT			1					1				2070-09-70	1
117+30 4.7' RT		1	1		16			1				TOTAL	1
114+41 49.0' LT			1									TOTAL	1
IL 114+13 12.5' LT							1						
H 54+65 1.0' LT			<u></u>			1			1	∃			
	1	1	5	16	16	1	1	4	1				
DUST CONTR		00			INLET PROTECTION	20 701E					SOD		
	624.010	00				28.7015 PROTECTION						625.0100	631.1100
	WATER	2				TYPE C						023.0100	SOD EROSION
LOCATION OFFS				LOCATION	· · · · · · · · · · · · · · · · · · ·	EACH						TOPSOIL	CONTROL
W. LAYTON AVE	.50			W. LAYTON AVE				LOCATIO		STATION	- STATION	SY	SY
				112+63	3' RT	1		STAGE 1					
TOTAL	.50			114+13	13' LT	1		W. LAYTO	<u>JN AVE</u> IEDIAN	112+63	- 113+38	10	10
				114+28	3' RT	1			IEDIAN	117+62	- 115+36 - 119+77		18 247
				114+30	47' RT	1		141		117.02	113.77	247	247
MOBILIZATIONS EROS	SION CONTROL			114+39 115+69	49' LT	1		SUBTOTA	AL			265	265
	628.1905			117+30	47' RT 47' LT	1							
	MOBILIZATIO	NS		117+30	2' LT	1		STAGE 2					
	ROSION CONT			117+32	13' RT	1		W. LAYTO	<u>ON AVE</u> CORNER	112+63	- 113+38	17	17
PROJECT I.D.	EACH			117+32	47' RT	1			CORNER	112+63 114+07			17 16
2070-09-70	2			120+03	47' RT	1			CORNER	115+46			9
				120+03	13' RT	1			CORNER	115+39			17
TOTAL	2			120+03	13' LT	1							
				120+10	47' LT	1		SUBTOTA	AL			59	59
				SUBTOTAL		14							
MOBILIZATIONS EMERGENCY	Y EROSION CO	NTROL		<u>S. 60TH ST.</u>				STAGE 3					
				<u>3. 00111 31.</u> 53+08	38' RT	1		S. 60TH S		E2:22	F2 2:	•	2
	628.1910			56+07	2' LT	1			IEDIAN	53+22 54+75	- 53+24	3	3
	MOBILIZATIO EMERGENC			56+66	42' LT	1		IV	IEDIAN	54+/5	- 54+77	3	3
F	ENIERGENC EROSION CONT			56+70	11' LT	1		SUBTOTA	AL			6	6
L	- INDOING COINT	NOL.	[56+70	12' RT		ı					-	-

PROJECT NO: 2070-09-70 HWY: CTH Y COUNTY: MILWAUKEE MISCELLANEOUS QUANTITIES SHEET E

20

12' RT

42' RT

56+70

56+72

SUBTOTAL

TOTAL

EACH

2

2

PROJECT I.D.

2070-09-70

TOTAL

330

330

TOTAL

			TRAFFIC CONT	ROL ITEMS				
		643.0200	643.0300	643.0420	643.0705	643.0715	643.0800	643.0900
		TRAFFIC CONTROL SURVEILLANCE & MAINTENANCE 2070-09-70	TRAFFIC CONTROL DRUMS	TRAFFIC CONTROL BARRICADES TYPE III	TRAFFIC CONTROL WARNING LIGHTS TYPE A	TRAFFIC CONTROL WARNING LIGHTS TYPE C	TRAFFIC CONTROL ARROW BOARDS	TRAFFIC CONTROL SIGNS
L	OCATION	DAY	DAY	DAY	DAY	DAY	DAY	DAY
STAGE 1								
W. LAYTON AVE W. LAYTON AVE	EASTBOUND WESTBOUND	12	578 493	68 68	68 68	170 170	17 17	221 221
SUBTOTAL STAGE 1		12	1,071	136	136	340	34	442
STAGE 2								
W. LAYTON AVE	EASTBOUND		66	6	12	30		60
W. LAYTON AVE	WESTBOUND	1	60	6	12	30		42
S. 60TH ST.	NORTHBOUND		54			30		36
S. 60TH ST.	SOUTHBOUND		54			30		36
SUBTOTAL STAGE 2		1	234	12	24	120		174
STAGE 3								
S. 60TH ST.	NORTHBOUND		14	6	8	18		20
S. 60TH ST.	SOUTHBOUND		24	6	8			20
SUBTOTAL STAGE 3			38	12	16	18		40
UNDISTRIBUTED		1	67	8	9	32	2	34
TOTAL		14	1,410	168	185	510	36	690

PROJECT NO: 2070-09-70 HWY: CTH Y COUNTY: MILWAUKEE MISCELLANEOUS QUANTITIES SHEET E

CATEGORY 0010

	TAVEMENT INJAMING							
	646.0106 PAVEMENT MARKING EPOXY 4-INCH		646.0126 PAVEMENT MARKING EPOXY 8-INCH	646.0600 647.0166 REMOVING PAVEMENT MARKIN PAVEMENT ARROWS	PAVEMENT MARKING	647.0356 PAVEMENT MARKING WORDS	647.0566 PAVEMENT MARKING STOP LINE	647.0766 PAVEMENT MARKING CROSS WALK
				MARKINGS	EPOXY	EPOXY	18-INCH	6-INCH
	WHITE	YELLOW	WHITE		TYPE 2		EPOXY	EPOXY
LOCATION	LF	LF	LF	LF	EACH	EACH	LF	LF
STAGE 1								
LAYTON (WEST LEG)				619				
LAYTON (EAST LEG)				409				
SUBTOTAL STAGE 1	-			1,028				
STAGE 2								
LAYTON (WEST LEG)	307		229		1	1	45	190
LAYTON (EAST LEG)	244		441		2	2	45	200
60TH (SOUTH LEG)				208				
60TH (NORTH LEG)				613				
SUBTOTAL STAGE 2	5!	51	670	821	3	3	90	390
STAGE 3								
60TH (SOUTH LEG)	98		150				34	160
60TH (NORTH LEG)	135		142				40	174
SUBTOTAL STAGE 3	23	33	292				74	334
UNDISTRIBUTED	1	.7	38	51			6	6

1,900

PAVEMENT MARKING

TEMPORARY PAVEMENT MARKING

GRAND TOTAL

649.0400 TEMPORARY PAVEMENT MARKING REMOVABLE TAPE

800

4-INCH

	WHITE	YELLOW
LOCATION	LF	<u>LF</u>
STAGE 1		
LAYTON (WEST LEG)	1,234	1,004
LAYTON (EAST LEG)	237	1,334
SUBTOTAL STAGE 1	3,80)9
STAGE 2		
LAYTON (WEST LEG)	442	
LAYTON (EAST LEG)	457	
60TH (SOUTH LEG)	691	
60TH (NORTH LEG)	853	
SUBTOTAL STAGE 2	2,44	13
STAGE 3		
60TH (SOUTH LEG)	554	331
60TH (NORTH LEG)	1,074	531
SUBTOTAL STAGE 3	2,49	90
UNDISTRIBUTED	58	3
GRAND TOTAL	8,80	00

SAW CUTTING

170

690.0250 SAWING CONCRETE

730

				CONCRETE
LOCATION	STATION	- STATION	OFFSET	LF
STAGE 1				
MEDIAN	155+24	- 157+43	-	256
MEDIAN	158+55	- 163+31	-	600
SUBTOTAL				856
STAGE 2				
NW CORNER	114+38		LT	52
NE CORNER	115+69		LT	48
SW CORNER	114+31		RT	54
SE CORNER	115+69		RT	55
SUBTOTAL				209
STAGE 3				
MEDIAN NOSE	54+51	54+76	-	71
MEDIAN NOSE	53+24	53+47	-	74
SUBTOTAL				145
TOTAL				1210

PROJECT NO: 2070-09-70

HWY: CTH Y

COUNTY: MILWAUKEE

MISCELLANEOUS QUANTITIES

SHEET

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1,000

	SIGN SUMMARY												
							638.2602	638.3000	637.2210	637.2215	634.0810	634.0812	
					П			REMOVING		SIGNS TYPE II	POSTS TUBULAR	POSTS TUBULAR	
							REMOVING	SMALL SIGN	SIGNS TYPE II	REFLECTIVE H	STEEL 2x2-INCH x	STEEL 2x2-INCH x	
S	IGN				SIZE		SIGNS TYPE II	SUPPORTS	REFLECTIVE H	FOLDING	10-FT	12-FT	
	١٥.	SIGN CODE	DESCRIPTION	INCHES	Х	INCHES	EACH	EACH	SF	SF	EACH	EACH	NOTES
01	. 01		SPEED LIMIT 35	24	Х	30	1	1	5.00		1		
01	. 02		SPEED LIMIT 35	24	x	30			5.00		1		
01	. 03		WEST	24	x	12			2.00			1	
01	. 04	M1-5A	CTH "Y"	24	x	24	1	1	4.00				ON SAME POST AS 01-03
01	. 05	M1-94	S. 60TH ST	52	х	15			5.42		2		
01	. 06		BEGIN LEFT TURN LANE	24	х	36			6.00			1	
01	. 07		NO PARKING (BUS STOP)	18	х	24	1	1	3.00		1		
01	. 08	M1-94	S. 60TH ST	52	х	15			5.42				ON SIGNAL ARM
01	. 09	R1-1F	STOP (Folding)	36	х	36				7.46			ON SIGNAL POLE
01	. 10	R1-1F	STOP (Folding)	36	х	36				7.46			ON SIGNAL POLE
01	. 11	R1-1F	STOP (Folding)	36	х	36				7.46			ON SIGNAL POLE
01	. 12	R1-1F	STOP (Folding)	36	х	36				7.46			ON SIGNAL POLE
01	. 13	R1-1F	STOP (Folding)	36	х	36				7.46			ON SIGNAL POLE
01	. 14	R1-1F	STOP (Folding)	36	х	36				7.46			ON SIGNAL POLE
01	. 15		STOP (Folding)	36	х	36				7.46			ON SIGNAL POLE
01	. 16		STOP (Folding)	36	х	36				7.46			ON SIGNAL POLE
01	. 17		STOP (Folding)	36	x	36				7.46			ON LIGHT POLE
01	. 18		STOP (Folding)	36	x	36				7.46			ON LIGHT POLE
01	. 19		STOP (Folding)	36	x	36				7.46		1	
01	. 20		STOP (Folding)	36	x	36				7.46		1	
01	. 21		WEIGHT LIMIT (5 TONS)	24	x	30	1		5.00				ON LIGHT POLE
01	. 22		WEIGHT LIMIT (5 TONS)	24	x	30	1		5.00				ON LIGHT POLE
01	. 23		W. LAYTON AVE	15	x	60			6.25				ON SIGNAL ARM
01	. 24		W. LAYTON AVE	15	x	60			6.25				ON SIGNAL ARM
01	. 25		KEEP RIGHT	24	x	30	1		5.00				ON LIGHT POLE
01	. 26		KEEP RIGHT	24	х	30	1		5.00				ON LIGHT POLE
01	. 27		KEEP RIGHT	24	x	30	1		5.00				ON SAME POST AS 01-19
01	. 28	R4-7	KEEP RIGHT	24	x	30	1		5.00				ON SAME POST AS 01-20
01			LEFT TURN YIELD ON FLASHING ARROW	30	x	36			7.50				ON SIGNAL ARM
01			LEFT TURN YIELD ON FLASHING ARROW	30	х	36			7.50				ON SIGNAL POLE
01			LEFT TURN YIELD ON FLASHING ARROW	30	х	36			7.50				ON SIGNAL ARM
					Ħ								
02	. 01	R7-1-D	NO PARKING (ANYTIME)	18	х	24	1	1	3.00		1		
02	. 02		NO PARKING (ANYTIME)	18	х	24	1	1	3.00		1		
02	. 03		BEGIN LEFT TURN LANE	24	х	36			6.00			1	
02	. 04	M1-94	S. 60TH ST	52	х	15			5.42		2		
02	. 05		NO PARKING (ANYTIME)	18	Х	24	1	1	3.00		1		
02	06	M1-94	S. 60TH ST	52	Х	15			5.42				ON SIGNAL ARM
02	. 07	M3-2	EAST	12	х	24			2.00			1	
02	. 08		CTH "Y"	24	х	24	1	1	4.00				ON SAME POST AS 02-07
02	09	R10-50	LEFT TURN YIELD ON FLASHING ARROW	30	х	36			7.50				ON SIGNAL POLE
02	. 10	R7-1-D	NO PARKING (ANYTIME)	18	х	24	1	1	3.00		1		ON SIGNAL POLE
02	. 11		SPEED LIMIT 35	24	х	30	1	1	5.00		1		ON SIGNAL POLE
02	. 12		SPEED LIMIT 35	24	Х	30	1	1	5.00		1		ON SIGNAL POLE
02	. 13	R7-1-R	NO PARKING (ANYTIME)	18	Х	24	1	1	3.00		1		ON SIGNAL POLE
				PR	OJE	CT TOTAL:	17	11	156.18	89.52	14	6	

PROJECT NO: 2070-09-70 HWY: CTH Y COUNTY: MILWAUKEE MISCELLANEOUS QUANTITIES SHEET E

FILE NAME: PLOT DATE: 1/28/2015 PLOT BY: DMM

CATEGORY 0010

REMOVING CONCRETE BASES - 60TH & LAYTON AVE

204.0195 REMOVING CONCRETE

BASES

EACH	REMARKS
1	SW CORNER
1	SW CORNER
1	WEST MEDIAN
1	NW CORNER
1	NW CORNER
1	NORTH MEDIAN
1	NE CORNER
1	NE CORNER
1	NE CORNER
1	EAST MEDIAN
1	SE CORNER
1	SE CORNER
1	SOUTH MEDIAN
1	SW CORNER
1	SW CORNER
15	
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

REMOVING PULL BOXES - 60TH & LAYTON AVE

653.0905

REMOVING

PULL

BOXES

PULL BOX NO.	EACH	REMARKS
EXPB1	1	SW CORNER
EXPB2	1	SW CORNER
EXPB3	1	SW CORNER
EXPB4	1	SW CORNER
EXPB6	1	WEST MEDIAN
EXPB7	1	WEST MEDIAN
EXPB9	1	NW CORNER
EXPB10	1	NW CORNER
EXPB11	1	NW CORNER
EXPB15	1	NW CORNER
EXPB16	1	NORTH MEDIAN
EXPB17	1	NORTH MEDIAN
EXPB18	1	NE CORNER
EXPB19	1	NE CORNER
EXPB20	1	EAST MEDIAN
EXPB21	1	EAST MEDIAN
EXPB23	1	EAST MEDIAN
EXPB25	1	SE CORNER
EXPB26	1	SE CORNER
EXPB27	1	SE CORNER
EXPB28	1	SE CORNER
EXPB29	1	SOUTH MEDIAN
EXPB30	1	SOUTH MEDIAN
EXCV1	1	WEST MEDIAN
EXCV2	1	EAST MEDIAN
ΓΟΤΑL	25	

REMOVE TRAFFIC SIGNAL EQUIPMENT - 60TH & LAYTON AVE

LOCATION	BID ITEM	LS	REMARKS
S. 60TH ST. & W. LAYTON AVE (CTY Y).	SPV.0105.06	1	

SIGNAL MOUNTING HARDWARE

	SIGNAL MOONTING HANDWARE						
	LOCATION	BID ITEM	LS	REMARKS			
S.	. 60TH ST. & W. LAYTON AVE (CTH Y)	658.5069.01	1				

CONCRETE CONTROL CABINET BASE TYPE 9 SPECIAL

LOCATION	BID ITEM	EACH	REMARKS
S. 60TH ST. & W. LAYTON AVE (CTH Y)	654.0217	1	

ELECTRICAL SERVICE METER BREAKER PEDESTAL

LOCATION	BID ITEM	EACH	REMARKS
S. 60TH ST. & W. LAYTON AVE (CTH Y)	656.0200.01	1	

TEMPORARY TRAFFIC SIGNALS FOR INTERSECTIONS

LOCATION	BID ITEM	LS	REMARKS
S. 60TH ST. & W. LAYTON AVE (CTH Y)	661.0200.01	1	

VEHICULAR VIDEO DETECTION SYSTEM

TRAFFIC SIGNAL CONTROLLER AND CABINET FULLY ACTUATED 16-PHASE

BID ITEM

SPV.0105.02

LOCATION

S. 60TH ST. & W. LAYTON AVE (CTH Y)

VEHICOEAR VIDEO DETECTION STSTEM						
LOCATION	BID ITEM	LS	REMARKS			
S. 60TH ST. & W. LAYTON AVE (CTH Y)	SPV.0105.04	1	4-CAMERA			

ACCESSIBLE PEDESTRIAN PUSH BUTTON SYSTEM

LOCATION	BID ITEM	LS	REMARKS
S. 60TH ST. & W. LAYTON AVE (CTH Y)	SPV.0105.07	1	8-BUTTONS

UTILITY LINE OPENING

LOCATION	BID ITEM	EACH	REMARKS
UNDISTRIBUTED	SPV.0060.09	4	_
	ITEM TOTAL:	4	_

HWY: CTH Y

COUNTY: MILWAUKEE

MISCELLANEOUS QUANTITIES

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SHEET

REMARKS

FILE NAME :

PROJECT NO: 2070-09-70

PLOT DATE: 2/2/2015

PLOT BY: DMM

PLOT SCALE: 1:1

LS

CONDIT RIGID NONMETALLIC - 60TH & LAYTON AVE					
		652.0225 SCHEDULE 40	652.0235 SCHEDULE 40	652.0615 SPECIAL	
		2-INCH*	3-INCH	3-INCH	
FROM	ТО	LF	LF	LF	REMARKS
CB1	PB1		20		2 RUNS
PB1	PB2		100		
PB2	SB1	10			
PB2	PB3			120	2 RUNS
PB3	PB4			80	2 RUNS
PB4	PB5		100		2 RUNS
PB5	SB4	10			
PB5	SB5			110	
PB6	SB5	5			
PB6	PB7			80	2 RUNS
PB7	SB6	10			
PB7	PB8		80		2 RUNS
PB8	SB7	20			
PB8	PB9			120	2 RUNS
PB9	SB8	15			
PB9	PB10			80	2 RUNS
PB10	SB9	20			
PB10	PB11		100		2 RUNS
PB11	SB10	10			
PB11	PB12			90	2 RUNS
PB12	PB13			60	2 RUNS
PB13	SB11	10			
PB13	CB1		30		
	TOTAL:	110	430	740	

BATTERY BACK-UP SYSTEM

EMERGENCY VEHICLE PREEMPTION SYSTEM

BID ITEM

SPV.0105.03

BID ITEM

SPV.0105.01

LS

LS

*ADDITIONAL	OLIVNITIES	CHUMAI	EICE/M/HEDE
ADDITIONAL	QUANTIES	SHOWN	ET2EMN LEKE

LOCATION

LOCATION

S. 60TH ST. & W. LAYTON AVE (CTH Y)

S. 60TH ST. & W. LAYTON AVE (CTH Y)

		-
CONDIT	RIGID	NONMETALLIC

LIGHTING	
652.0225	652.0605

SPECIAL SCHEDULE 40 2-INCH 2-INCH

FROM	ТО	LF	LF	REMARKS
MP1	LB1	15		
LB1	LB2	150		
LB2	LB5		160	
LB5	LB6	145		
LB6	MP6	110		
MP2	LB3	5		
LB3	MP3	5		
MP4	LB4	5		
LB4	MP5	5		
TOTAL*:		440	160	
*ADDITIONA	AL QUANTITE			

CONCRETE BASES - LIGHTING

204.0195 654.0102

REMOVING CONCRETE CONCRETE BASES **BASES** TYPE 2

NO.	EACH	EACH	REMARKS		
LB1	1	1			
LB2	1	1			
LB3	1	1			
LB4	1	1			
LB5	1	1			
LB6	1	1			
SUBTOTAL*:	6	6			
ROJECT TOTA	21	6			
*ADDITIONAL QUANTITES ELSEWHERE					

PULL BOXES

OFFSET

82 LT

51 RT

8 LT

51 LT

83 LT

77 LT

73 LT

50 LT

9 RT

51 RT

78 RT

77 RT

76 RT

LOCATION

STA.

114+51

114+22

114+17

114+18

114+54

115+10

115+49

115+81

115+79

115+78

115+41

114+92

114+56

ENGINEER IN THE FIELD

* FINAL LOCATION TO BE DETERMINED BY

NO.

PB1

PB2

PB3

PB4

PB5

PB6

PB7

PB8

PB9

PB10

PB11

PB12

PB13

TOTAL:

653.0140

STEEL

24X42 - INCH

EACH*

Ε

PLOT DATE: 1/28/2015

PLOT SCALE: 1:1

FILE NAME :

PLOT BY: DMM

REMARKS

REMARKS

PROJECT NO: 2070-09-70

*ADDITIONAL QUANTITIES ELSEWHERE

FIBER OPTIC INTERCONNECT						
		652.0225	652.0605	SPV.0090.01	SPV.0090.02	
		CONDUIT		FURNISH AND		
		RIGID		INSTALL 12SM/12MM		
		NONMETALLIC	CONDUIT	FIBER OPTIC		
		SCHEDULE 40	SPECIAL	COMMUNICATIONS	TRACER WIRE	
		2-INCH*	2-INCH*	CABLE	12 AWG	
FROM	то	LF	LF	LF	LF	REMARKS
CV1	CV2	150		180	155	
CV2	CPB1		60	120	65	
CPB1	CPB2	70		100	75	
CPB2	CB1	10		70	15	
CV2	CV3	370	150	600	530	
	SUBTOTAL:	600	210	1070	840	
	ITEM TOTAL:	1150	370	1070	840	

COMMUNICATION VAULTS &

PULL BOXES

	LOCA	ATION	653.0180 PULL BOXES STEEL COMMUNICATIONS (24x42-INCH)	SPV.0060.02 COMMUNICATION VAULT 24x36x39-INCH
NO.	STA.	OFFSET	EACH*	EACH*
CV1				1
CV2				1
CV3				1
CPB1			1	
CPB2			1	
	•	ITEM TOTAL:	2	3

^{*} FINAL LOCATION TO BE DETERMINED BY ENGINEER IN THE FIELD

FIBER OPTIC SPLICE ENCLOSURE, SPLICE AND TERMINATION

	678.0200 FIBER OPTIC SPLICE ENCLOSURE	678.0300 FIBER OPTIC SPLICE	678.0400 FIBER OPTIC TERMINATION
LOCATION	EACH	EACH	EACH
CB1			4
CV2	1	24	
CV3	1	24	
ITEM TOTAL:	2	48	4

FIBER OPTIC COMMUNICATION SYSTEM INTEGRATION, DOCUMENTATION AND TESTING

	BID ITEM	LS
FIBER OPTIC COMMUNICATION SYSTEM		_
INTEGRATION, DOCUMENTATION AND	SPV.0105.05	1
TESTING		
	ITEM TOTAL:	1

PROJECT NO: 2070-09-70 HWY: CTH Y COUNTY: MILWAUKEE MISCELLANEOUS QUANTITIES SHEET E

TRAFFIC SIGNAL BASES, STANDARDS, POLES, MAST ARMS

	654.0101	654.0110	654.0113	657.0100	657.0405	657.0425	657.0430	SPV.0060.03	SPV.0060.04	SPV.0060.05	SPV.0060.06	SPV.0060.07
	CONCRETE	CONCRETE	CONCRETE	PEDESTAL	TRAFFIC SIGNAL	TRAFFIC SIGNAL	TRAFFIC SIGNAL	POLES	POLES	MONOTUBE	MONOTUBE	MONOTUBE
NO LOCATIONS	BASES	BASES	BASES	BASES	STANDARDS	STANDARDS	STANDARDS	TYPE 10	TYPE 12	ARMS	ARMS	ARMS
NO. LOCATION*	TYPE 1	TYPE 10	TYPE 13		ALUMINUM	ALUMINUM	ALUMINUM			30-FT	45-FT	55-FT
					3.5-FT	15-FT	10-FT					
	EACH*	EACH*	EACH*	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
SB1	1			1		1						
SB2			1						1			1
SB3	1			1	1							
SB4	1			1		1						
SB5		1						1		1		
SB6	1			1			1					
SB7	1			1		1						
SB8		1						1		1		
SB9	1			1			1					
SB10	1			1		1						
SB11			1						1		1	
INTERSECTION TOTA	L: 7	2	2	7	1	4	2	2	2	2	1	1

^{*} FINAL LOCATION TO BE DETERMINED BY ENGINEER IN THE FIELD

TRAFFIC SIGNAL FACES AND EQUIPMENT

	658.0110	658.0115	658.0215	658.0220	658.0416	658.0600	658.0605	658.0610	658.0615	658.0620	658.0625	658.0635
	TRAFFIC	TRAFFIC	BACKPLATES	BACKPLATES	PEDESTRIAN	LED MODULES	LED MODULE					
NO.	SIGNAL FACE	RED	YELLOW	GREEN	RED	YELLOW	GREEN	PEDESTRIAN				
NO.	3-12 INCH	4-12 INCH	3-12	4-12	COUNTDOWN	BALL	BALL	BALL	ARROW	ARROW	ARROW	COUNTDOWN TIMER
	VERTICAL	VERTICAL			16-INCH	12-INCH	12-INCH	12-INCH	12-INCH	12-INCH	12-INCH	16-INCH
	EACH											
SB1	1	1	1	1	1	1	1	1	1	2	1	1
SB2	2	1	2	1	1	2	2	2	1	2	1	1
SB3												
SB4	1	1	1	1	1	1	1	1	1	2	1	1
SB5	2	1	2	1		2	2	2	1	2	1	-
SB6					1	-				-		1
SB7	1	1	1	1	1	1	1	1	1	2	1	1
SB8	2	1	2	1		2	2	2	1	2	1	
SB9					1							1
SB10	1	1	1	1	1	1	1	1	1	2	1	1
SB11	2	1	2	1	1	2	2	2	1	2	1	1
INTERSECTION TOTAL:	12	8	12	8	8	12	12	12	8	16	8	8

PROJECT NO: 2070-09-70 HWY: CTH Y COUNTY: MILWAUKEE MISCELLANEOUS QUANTITIES SHEET E

FILE NAME : PLOT DATE : 1/28/2015 PLOT BY : DMM

^{**} FOR INFORMATION ONLY

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CATEGORY 0010

			TRA	AFFIC SIGNAL CABLE AN	D ELECTRICAL WIRING				
			655.0230	655.0260	655.0270	655.0280	655.0515	655.0515	655.0900
							ELECTRICAL WIRE	ELECTRICAL WIRE	TRAFFIC
			CABLE	CABLE	CABLE	CABLE	TRAFFIC SIGNALS	TRAFFIC SIGNALS	SIGNAL
			TRAFFIC	TRAFFIC	TRAFFIC	TRAFFIC		(EQUIPMENT	EVP
			SIGNAL	SIGNAL	SIGNAL	SIGNAL	(NEUTRAL)	GROUNDING)	DETECTOR
			5-14 AWG	7-14 AWG	15-14 AWG	19-14 AWG	10 AWG	10 AWG	CABLE
							WHITE	GREEN	
FROM	THROUGH	ТО	LF	LF	LF	LF	LF	LF	LF
CB1	PB1, PB2	SB1			80				
CB1	PB1, PB2, PB3, PB4	SB2				210			280
CB1	PB1, PB2, PB3, PB4	SB3	220						
CB1	PB1, PB2, PB3, PB4, PB5	SB4			280				
CB1	PB1, PB2, PB3, PB4, PB5, PB6	SB5			340				370
CB1	PB1, PB2, PB3, PB4, PB5, PB6, PB7	SB6		390					
CB1	PB13, PB12, PB11, PB10, PB9, PB8	SB7			300				
CB1	PB13, PB12, PB11, PB10, PB9	SB8			240				270
CB1	PB13, PB12, PB11, PB10	SB9		190					
CB1	PB13, PB12, PB11	SB10							
CB1	PB13	SB11				30			80
CB1	PB1, PB2	SB1					80	80	
SB1	PB2, PB3, PB4	SB2					150	150	
SB2	PB4	SB3					40	40	
SB3	PB4, PB5	SB4					80	80	
SB4	PB5, PB6	SB5					130	130	
SB5	PB6, PB7	SB6					80	80	
SB6	PB7, PB8	SB7					110	110	
SB7	PB8, PB9	SB8					90	90	
SB8	PB9, PB10	SB9					90	90	
SB9	PB10, PB11	SB10					30	30	
SB10	PB13, PB12, PB11	SB11					90	90	
SB11	PB13	CB1					30	30	
PB2		SB1						10	
PB4		SB2						10	
PB4		SB3						20	
PB5		SB4						20	
PB6		SB5						10	
PB7		SB6						10	
PB8		SB7						20	
PB9		SB8						20	
PB10		SB9						20	
PB11		SB10						10	
PB13		SB11						10	
	BASE TO SIGNAL HEAD CABLING		530	260					<u></u>
	SUBTOTAL:	-	750	840	1240	240	1000	1160	1000
	INTERSECTION TOTAL:		750	840	1240	240	21		1000
		-	LF	LF	LF	LF	L	F	LF

COUNTY: MILWAUKEE

HWY: CTH Y

PROJECT NO: 2070-09-70

MISCELLANEOUS QUANTITIES

SHEET

Standard Detail Drawing List

08B09-01	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER
08C06-01	INLETS 3-FT AND 4-FT DIAMETER
08C07-01	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08D05-15A	CURB RAMPS TYPES 1 AND 1-A
08D05-15B	CURB RAMPS TYPES 2 AND 3
08D05-15C	CURB RAMPS TYPES 4A AND 4A1
08D05-15D	CURB RAMPS TYPE 4B AND 4B1
08D05-15E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08D16-10	CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09B02-08	CONDUIT UNDER PAVED HIGHWAYS
09B04-11	PULL BOX
09C02-07	CONCRETE BASES, TYPES 1, 2, 5, & 6
09006-07	CONCRETE CONTROL CABINET BASE, TYPE 9, SPECIAL
09C11-05	CONCRETE BASE TYPE 10
09C12-05A	CONCRETE BASE TYPE 13
09C12-05B	CONCRETE BASE TYPE 13
09D01-05	CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL) SIGNAL CONTROL CABINET
09D02-03 09E01-13G	HARDWARE DETAILS FOR POLE MOUNTINGS
09E05-06	TRAFFIC SIGNAL STANDARD ORNAMENTAL BRACKET MOUNTINGS TYPICAL FOR 13 FT. OR 15 FT.
09E07-05	TRAFFIC SIGNAL STANDARD PEDESTRIAN AND FLASHER TYPICAL MOUNTING DETAILS
09E08-06B	TYPE 10 POLE 15' -30' MONOTUBE ARM
09E08-06C	TYPE 12 POLE 35' -55' MONOTUBE ARM
09E08-06E	GENERAL NOTES AND HARDWARE DETAILS FOR TYPE 9, 10, 12 & 13 POLES WITH MONOTUBE ARMS
09G01-03B	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-03D	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-03E	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-03F	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
09G01-03G	SPAN WIRE TEMPORARY TRAFFIC SIGNAL
11B02-02	CONCRETE MEDI AN NOSE
13C01-17	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C14-04A	BASE PATCHING CONCRETE
13C14-04B	BASE PATCHING CONCRETE
13C14-04C	BASE PATCHING CONCRETE
13C15-05A	CONCRETE BASE
13C15-05B 13C18-02A	CONCRETE BASE CONCRETE PAVEMENT JOINTING
13C18-02B	CONCRETE PAVEMENT SOLVITING CONCRETE PAVEMENT STEEL REINFORCEMENT
13C18-02D	CONCRETE PAVEMENT JOINT TIES
13C18-02D	CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES
14A02-01	TREE PLANTING DETAIL
14B07-14A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14B	CONCRETE BARRI ER TEMPORARY PRECAST, 12'-6"
14B07-14C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-14H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B44-02A	MI DWEST GUARDRALL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02B	MIDWEST GUARDRALL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02C 14B45-03A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-03B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS) MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C05-02	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
15C07-12A	PAVEMENT MARKING SYMBOLS
15C07-12B	PAVEMENT MARKING WORDS
15C07-12C	PAVEMENT MARKING ARROWS

Standard Detail Drawing List

I5C08-16A	PAVEMENT MARKING (MAINLINE)
15C08-16E	PAVEMENT MARKING (LEFT TURN LANE)
I5C33-01	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D20-02	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY
I5D21-02	TRAFFIC CONTROL INTERSECTION WITHIN SINGLE LANE CLOSURE

6

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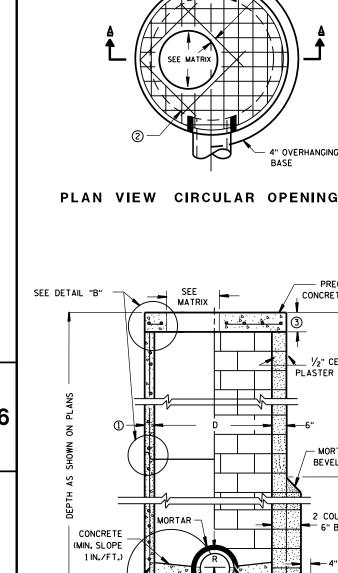






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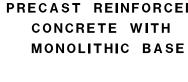
SEE

MORTAR -

MATRIX

• 4° • •

PRECAST REINFORCED — CONCRETE FLAT SLAB TOP



②-

CONTRACTOR TO PROVIDE DRAWING(S)

STAMPED BY A PROFESSIONAL ENGINEER

SEE DETAIL "A"

(I)·

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

2" (TYP)

" OVERHANGING

- PRECAST REINFORCED

CONCRETE FLAT SLAB TOP

1/2" CEMENT

- MORTAR

BEVEL 45°

2 COURSES 으는

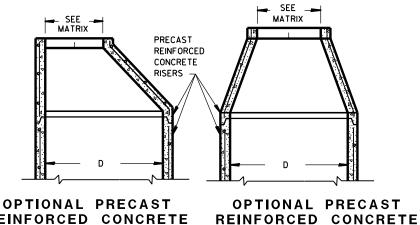
12'. EPT

6" BLOCK

4" MIN

SPLIT PIPE OR FORM CONCRETE TO FIT

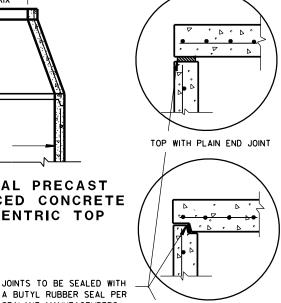
PLASTER COAT



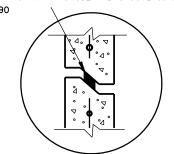
REINFORCED CONCRETE **ECCENTRIC TOP** CONCENTRIC TOP

PRECAST

WALL

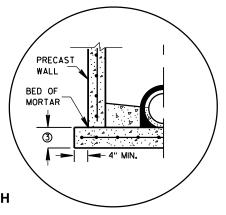


A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS TOP WITH TONGUE AND GROOVE JOINT RECOMMENDATIONS CONFORMING TO ASTM C990



RISER WITH TONGUE AND GROOVE JOINT

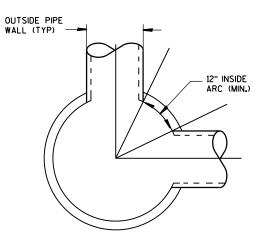
DETAIL "B"



PRECAST REINFORCED

CONCRETE WITH INTEGRAL BASE OPTION

SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION DETAIL "A"



DETAIL "C"

MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER

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 MANHOLE UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY

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 GRANULAR BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

PRECAST REINFORCED CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES. THE CONE TOPS SHALL BE INSTALLED ON A BED OF MORTAR.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES, AND CONCENTRIC CONE TOPS SHALL BE USED ONLY ON STRUCTURES 5 FEET OR LESS IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

STEPS MEETING AASHTO M199 AND THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH: 16 INCH C-C MAXIMUM SPACING: PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM LENGTH OF 10 INCHES; MINIMUM WALL EMBEDMENT OF 3 INCHES. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 1 INCH.

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF 1/2" AND MEET THE REQUIREMENTS OF ASTM A615.

CERTIFICATION SHALL BE PROVIDED THAT INSTALLED STEPS WHEN TESTED IN ACCORDANCE WITH SECTION 10 OF AASHTO T280 CAN WITHSTAND A VERTICAL LOAD OF 800 LBS. AND A HORIZONTAL LOAD OF 400 LBS.

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

CONCRETE BLOCK WILL NOT BE PERMITED FOR STRUCTURES GREATER THAN 4 FEET IN DIAMETER.

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

ALL PRECAST MANHOLE UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.

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".

- MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT. 5 INCHES FOR 4-FT. 6 INCHES FOR 5-FT. 7 INCHES FOR 6-FT, 8 INCHES FOR 7-FT AND 9 INCHES FOR 8-FT DIAMETER PRECAST MANHOLES.
- (2) FOR PRECAST MANHOLES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.
- (3) PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER OF 48" AND LESS SHALL HAVE A MINIMUM THICKNESS OF 6". PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER LARGER THAN 48" SHALL HAVE A MINIMUM THICKNESS

MANHOLE COVER OPENING MATRIX

MANHOLE COVER TYPE	С	ALL J'S	К	L	M
OPENING SIZE (FT)					
2 DIA.	х	х		х	
3 DIA.			×		Х

PIPE MATRIX

MANHOLE	MAXIMUM INSIDE PIF FOR TWO F	
SIZE	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18
5-FT	36	24
6-FT	42	36
7-FT	48	36
8-FT	60	42

MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER

> STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVED	
6/5/2012	/S/ Jerry H.Zogg
DATE	ROADWAY STANDARDS DEVELOPMENT
FHWA	ENGINEER

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1/2" CEMENT

CONCRETE

(MIN. SLOPE 1 IN. /FT.)

CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER

FOR STEEL REINFORCING DESIGN

CONCRETE BLOCK

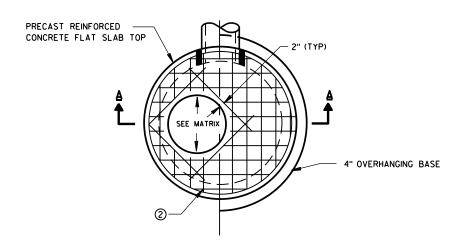
OR PRECAST REINFORCED

CONCRETE BASE 2

WITH CAST-IN-PLACE

FOR CAST-IN-PLACE STRUCTURES

PLASTER COAT

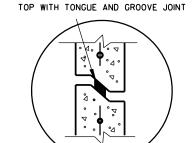


PLAN VIEW CIRCULAR OPENING

JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C990 (TYP) PRECAST DISCHARGE WALL TOP WITH PLAIN END JOINT



DISCHARGE PRECAST RED OF MORTAR



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

RISER WITH TONGUE AND GROOVE JOINT

DETAIL "A"

DETAIL "B"

INLETS 3-FT AND 4-FT DIAMETER

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

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 GRANULAR 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.

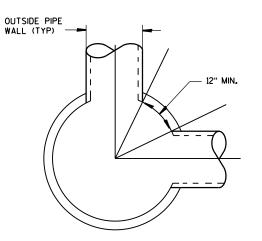
4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

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	С	F	ALL H'S	S	T	٧	WM	Z
INLET SIZE	OPENING SIZE (FT)											
3-FT	2 DIA.				×							х
	2X2	х	х					х		х		
4-FT	2 DIA.				х							х
	2X2	х	x					х		х		
	2X2.5			Х				х	х	х	Х	
	2X3						х					
	2.5X3					Х						



DETAIL "C"

PIPE MATRIX

INLET		MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES							
SIZE	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

6/5/2012 /S/ Jerry H. Zogg DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER FHW4

SEE DETAIL "A"

8 (1)

PRECAST REINFORCED

MONOLITHIC BASE

CONCRETE WITH

DISCHARGE PIPE

SECTION A-A

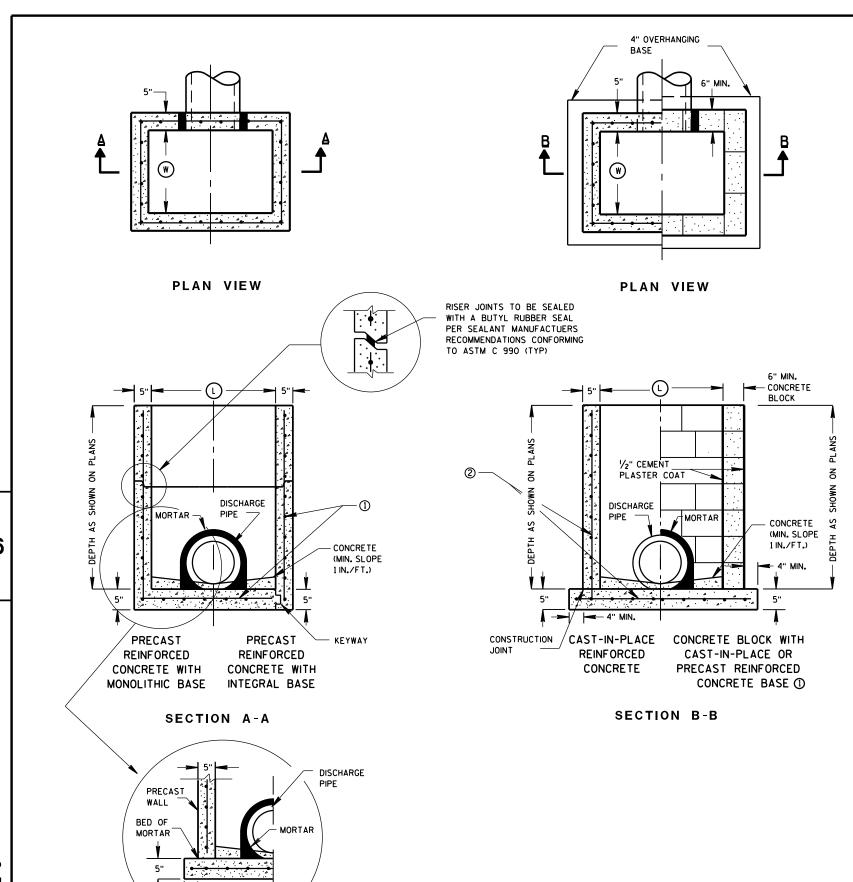
CIRCULAR INLETS W/ FLAT TOP

MORTAR

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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 GRANULAR 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.

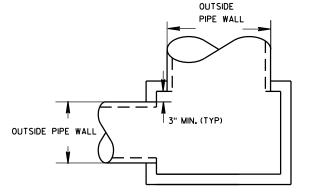
- 1) FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.
- (2) CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

	INLET SIZE		INLET COVER TYPE	ALL A'S	ALL B'S	BW	F	ALL H'S	s	т	v	WM
		WIDTH (W) (FT)	LENGTH (L) (FT)									
	2X2-FT	2	2	X	х				Х		Х	
ſ	2X2.5-FT	2	2.5			Х			Х	Х	Х	Х
[2X3-FT	2	3					Х				
	2.5X3-FT	2.5	3				Х					

PIPE MATRIX

	MAXIMUM INSIDE PIPE DIAMETER					
INLET SIZE	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

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVED 6/5/2012 DATE

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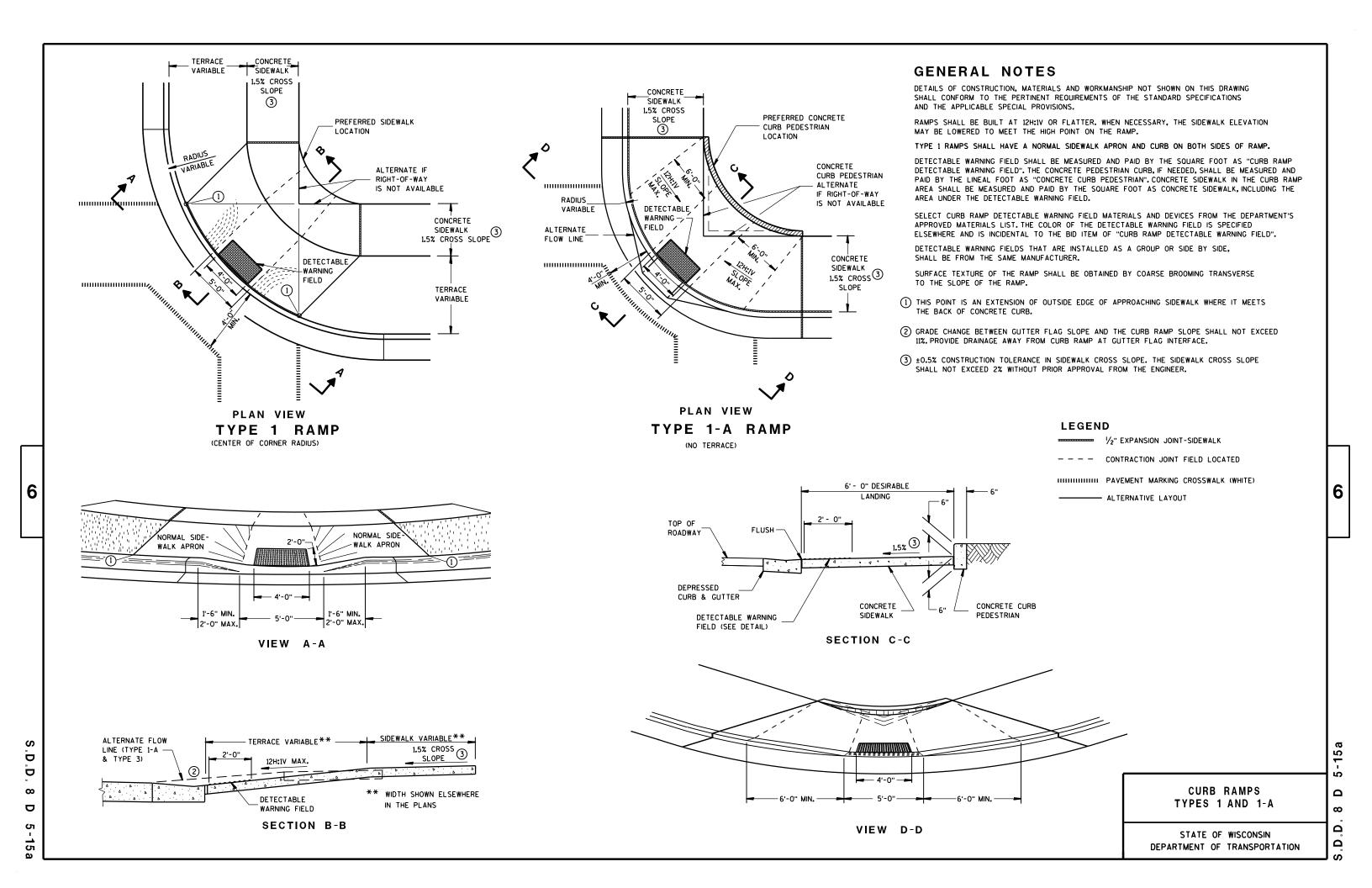
/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT

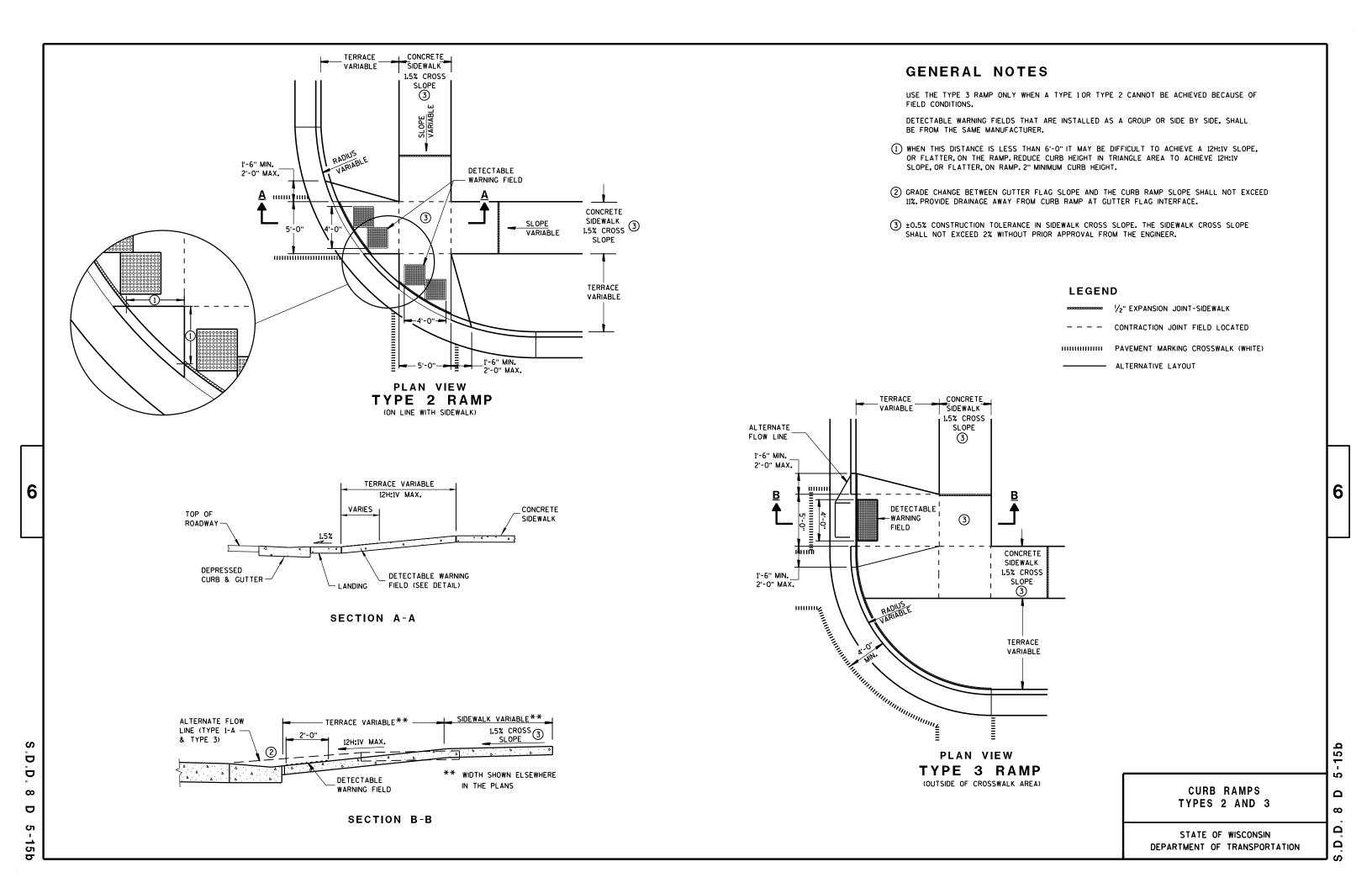
ENGINEER

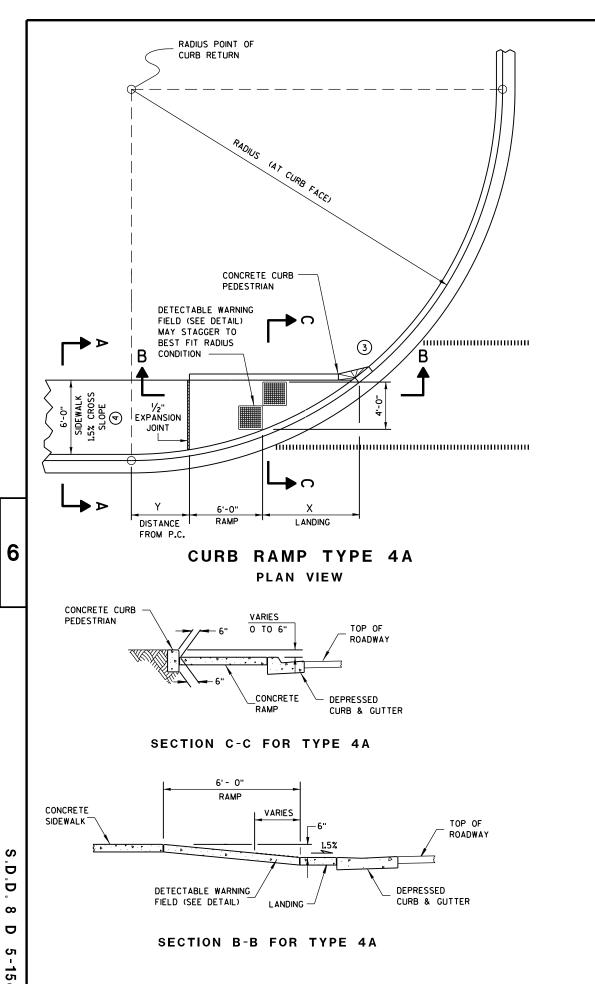
INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

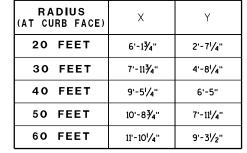
SEPARATE PRECAST REINFORCED

CONCRETE BASE OPTION









GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE.

4 ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS

SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

ISOMETRIC VIEW FOR TYPE 4A

ISOMETRIC VIEW FOR TYPE 4A1

₩ 1/2" EXPANSION JOINT-SIDEWALK

HIHIHIHIH PAVEMENT MARKING CROSSWALK (WHITE)

CONTRACTION JOINT FIELD LOCATED

CURB RAMPS

TYPES 4A AND 4A1

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

LEGEND

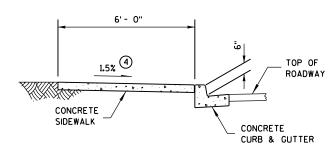
OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.

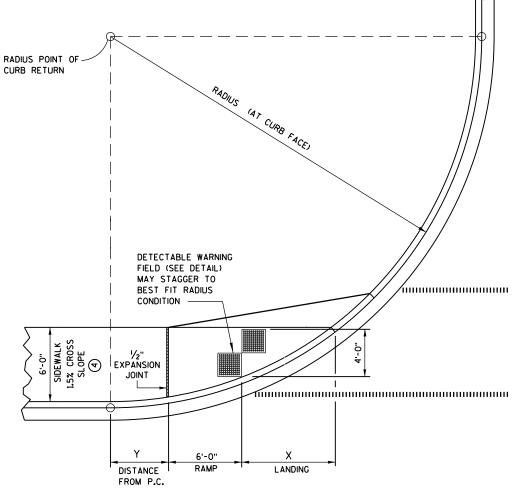
(3) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS.) DO NOT MARK TRANSITION NOSE.

SHALL BE FROM THE SAME MANUFACTURER.

INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION A-A FOR TYPE 4A

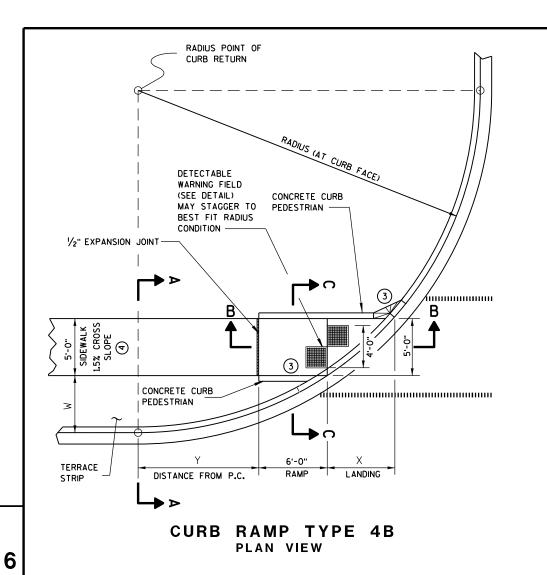


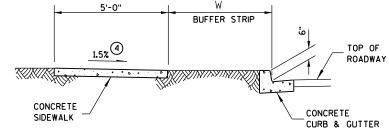
CURB RAMP TYPE 4A1
PLAN VIEW

15c

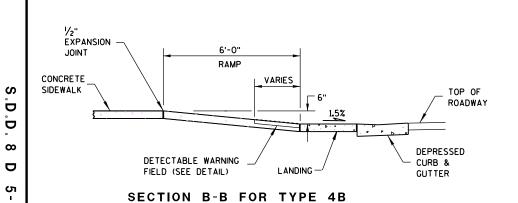
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SECTION A-A FOR TYPE 4B



LEGEND

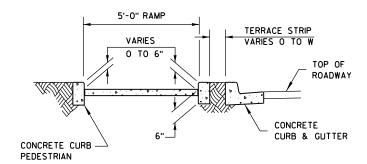
/2" EXPANSION JOINT-SIDEWALK

---- CONTRACTION JOINT FIELD LOCATED

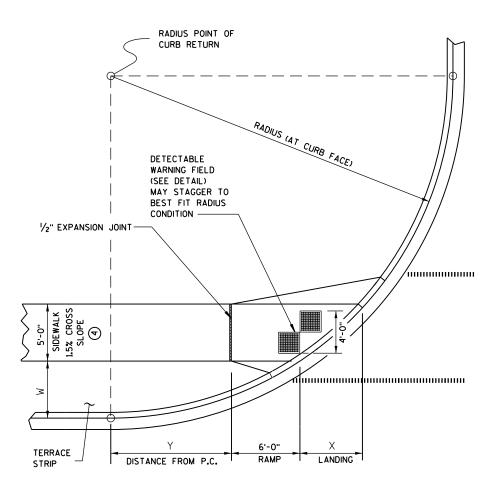
HIHIHIHIH PAVEMENT MARKING CROSSWALK (WHITE)

RADIUS	W = 3' - Ø"		W = 4' - ∅"		W = 5'-0"		W = 6' - Ø"		W = 7' - 0"	
(AT CURB FACE)	X	Y	X	Υ	X	Y	X	Y	X	Y
20 FEET	5'-51/2"	4'-61/2"	4'-81/2"	6'-0"	4'-1"	7'-2¾"	3'-7"	8'-31/2"	3'-11/2"	9'-21/2"
30 FEET	7'-3¾"	7'-1"	6'-51/2"	8'-11'/2"	5'-91/4"	10'-7"	5'-21/2"	12'-0"	4'-8¾"	13'-3'/4"
40 FEET	8'-91/2"	9'-21/2"	7'-10"	11'-5'/4"	7'-1"	13'-41/2"	6'-5¾"	15'-¾"	5'-111/2"	16'-7'/4"
50 FEET	10'-¾"	11'-3⁄4''	9'-1/4"	13'-7'/4"	8'-21/2"	15'-91/2"	7'-61/2"	17'-9"	6'-11¾"	19'-6'/4"
60 FEET	11'-21/2"	12'-8¾"	10'-¾"	15'-61/2"	9'-21/4"	17'-11¾"	8'-5¾"	20'-1¾"	7'-101/2"	22'-11/2"

INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION C-C FOR TYPE 4B



CURB RAMP TYPE 4B1
PLAN VIEW

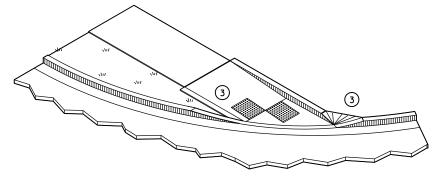
GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

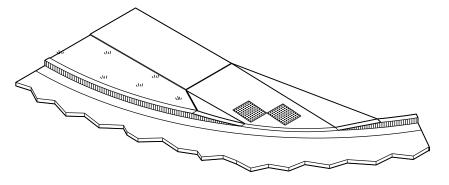
RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

- (3) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS.) DO NOT MARK TRANSITION NOSE.
- (4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



ISOMETRIC VIEW FOR TYPE 4B



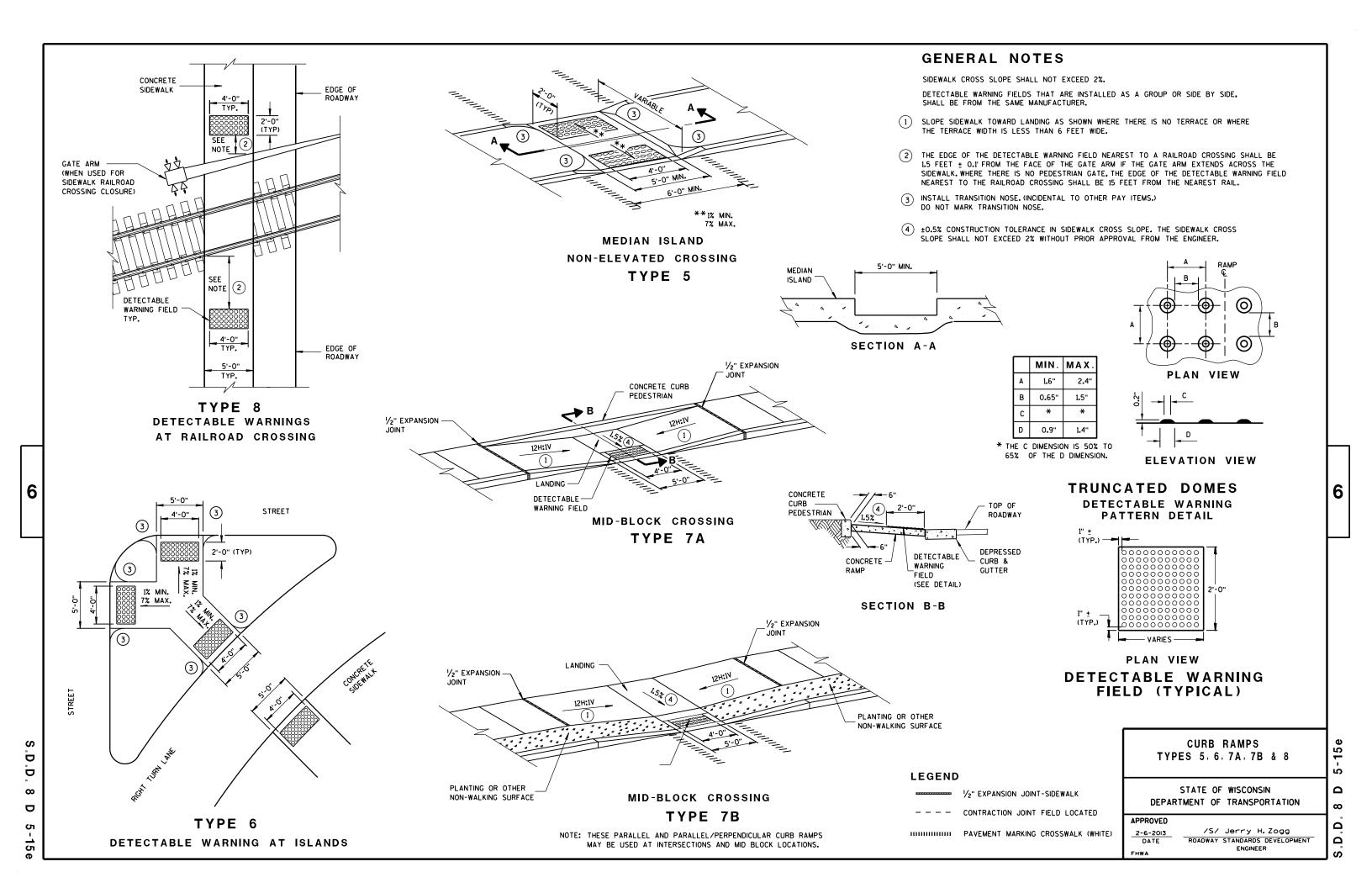
ISOMETRIC VIEW FOR TYPE 4B1

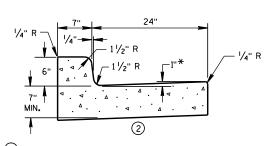
CURB RAMPS Type 4B and 4B1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

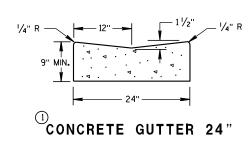
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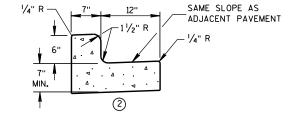


CONCRETE CURB & GUTTER 31"

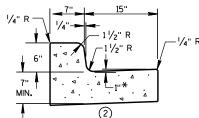


* TO BE MEASURED TO A

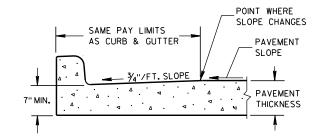
MAXIMUM OF 3" WHERE DRAINAGE PROBLEMS EXIST.



CONCRETE CURB & GUTTER 19"



ONCRETE CURB & GUTTER 22"



PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER

GENERAL NOTES

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

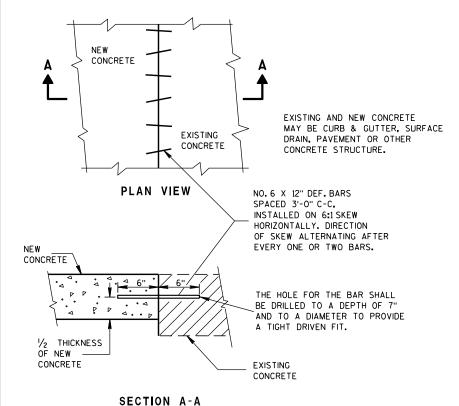
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

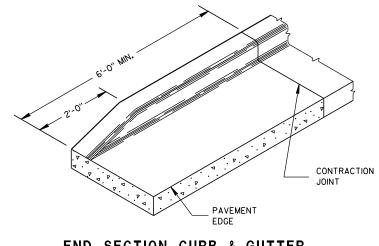
WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE COURSE AND UNCLASSIFIED EXCAVATION LIMITS ARE 2'-O" BEHIND THE BACK OF CURB.

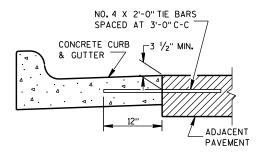
- WHEN PLACED ADJACENT TO NEW CONCRETE, TIE BARS ARE REQUIRED FOR CURB AND GUTTER 31", 22", 19" AND CONCRETE GUTTER 24".
- THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE COURSE PROVIDED A 7" MIMIMUM GUTTER THICKNESS IS
- (3) WHEN HIGH SIDE CURB SECTION IS REQUIRED, THE LOCATION(S) WILL BE NOTED ON THE PLAN.



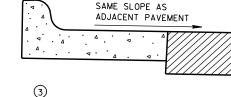
PAVEMENT TIES



END SECTION CURB & GUTTER



TYPICAL TIE BAR LOCATION



HIGH SIDE SECTION

(TYPICAL FOR ALL CURB & GUTTER)



(For Optional Use in Milwaukee Co. Only)

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVED

/S/ Jerry Zogg 11/2/2010 ROADWAY STANDARDS DEVELOPMENT ENGINEER

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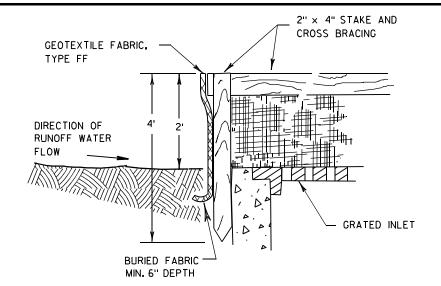
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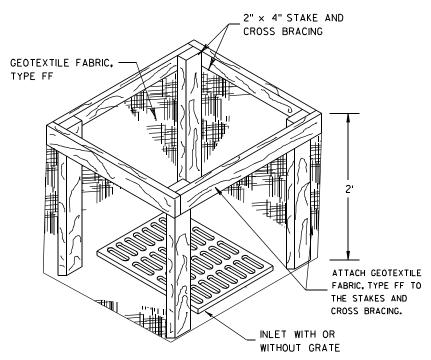
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INLET PROTECTION, TYPE A

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

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 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 A, B, C, AND D

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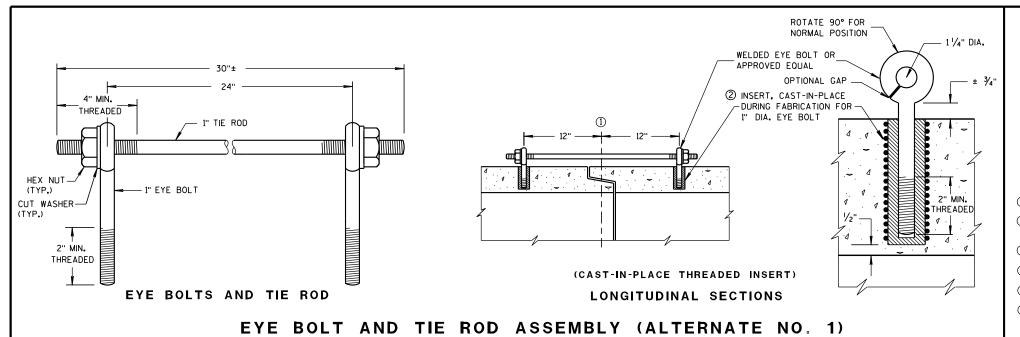
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STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

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/S/ Beth Cannestra 10/16/02 CHIEF ROADWAY DEVELOPMENT ENGINEER



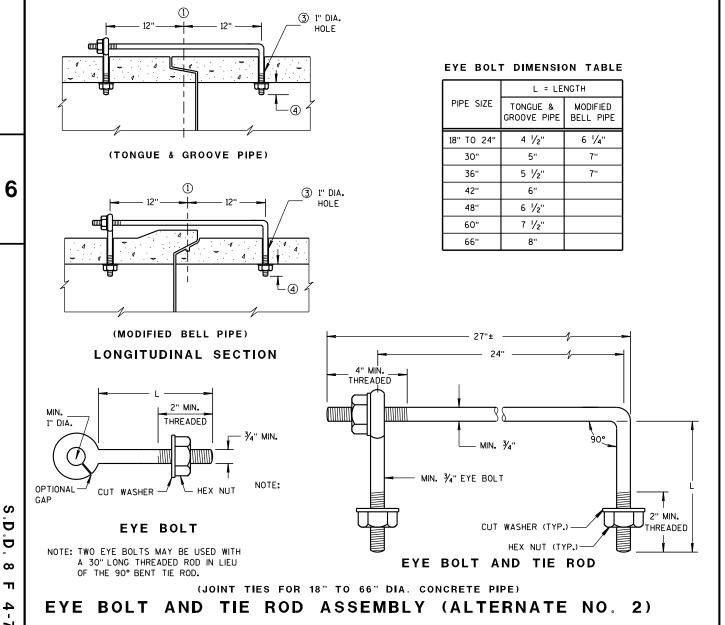
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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.

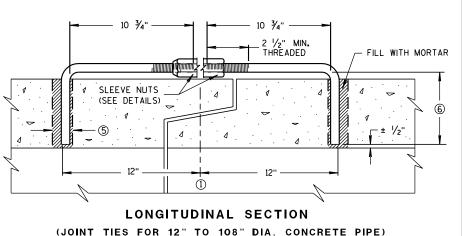
JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

- (1) & OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.
- THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE
- ${\mathfrak S}$ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12 INCHES FROM ${\mathfrak L}$ OF TONGUE AND GROOVE.
- 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 $rac{1}{2}$ INCH OF THE INNER SURFACE OF THE PIPE.

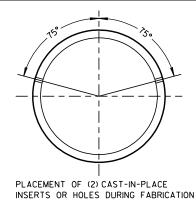


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ADJUSTABLE TIE ROD TABLE 5/8 5 12-60 3/4 5 1/2 3/4 90-108 DIMENSIONS SHOWN ARE IN INCHES **TAPERED** PLAIN RIGHT AND LEFT THREADS **SLEEVE NUTS** 2 1/2" MIN. THREADED

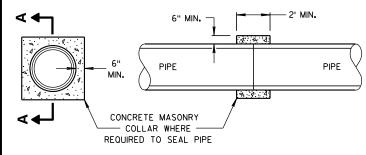


ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

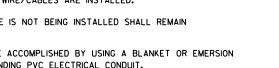
JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

6/5/2012 /S/ Jerry H. Zogg DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER

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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 EMERSION 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 REIN-STALLED 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

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.).

POLY ROPE OR A PULL 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.

BOTTOM OF ¼" HOLE PVC CONDUIT-CONDUIT TRENCH BOTTOM OF METALLIC CONDUIT-FOR DRAINAGE CONDUIT TRENCH 1" DIA. X 6" NIPPLE NO. 2 COARSE NO. 2 COARSE AGGREGATE FILL AGGREGATE FILL I'-0" DIA. OR SQUARE ──➤ 1'-0" DIA. OR SQUARE →

NOTE: INSTALL AT LOCATIONS WHERE METALLIC CONDUITS

CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

DRAIN SUMP FOR METALLIC CONDUIT DRAIN SUMP FOR PVC CONDUIT

NOTE: INSTALL AT LOCATIONS WHERE PVC CONDUITS

CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

ARROW MARK INSCRIBED IN PAVEMENT SURFACE OVER € OF CONDUIT (BOTH ENDS) — 2'-0"*—* — 2'-0" NORMAL PAVEMENT EDGE OF PAVEMENT THICKNESS PAVEMENT OR BACK OF CURB BASE COURSE **BACKFILL** SLOPE 1/8"/FT. EITHER DIRECTION *DEPTH OF CONDUIT AND LENGTH OF PULL BOX VARIES CONDUIT, PITCH TO DRAIN WITH HEIGHT OF CURB USED. ALSO SEE PULL BOX S.D.D. 9B4

SIDE ELEVATION DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

CONDUIT UNDER PAVED HIGHWAYS

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ARROW MARK SHALL BE INSCRIBED IN PAVEMENT SURFACE 1/4" TO 3/8"

DEEP AT EACH LOCATION WHERE CONDUITS ARE PLACED UNDER

PLAN VIEW

ARROW MARK

CONDUIT

THE PAVEMENT

EDGE OF

PAVEMENT OR BACK

OF CURB

DIMENSION IN INCHES		CORRUGATED STEEL PIPE								
PIPE DIAMETER (INSIDE)	Α	12	12	12	18	18	18	24	24	24
PIPE LENGTH **	В	24	30	36	24	30	36	36	42	48
WALL THICKNESS	С	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	Ε	14 1/2	14 1/2	14 1/2	20 ½	20 ½	20 ½	26 ½	26 ½	26 ½
FRAME	F	8 1/2	8 1/2	8 1/2	14 1/2	14 ½	14 1/2	20 ½	20 ½	20 ½
FRAME	G	11 1/2	11 1/2	11 1/2	17 1/2	17 1/2	17 1/2	23 ½	23 ½	23 ½
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.

6" MAX. **EXTENSION** TOP OF ORIGINAL CORRUGATED PIPE (3) BOLTS, NUTS & LOCKWASHERS REQUIRED

ELECTRIC

FINAL GRADE

ALL METALLIC CONDUIT

AND THREADED

CUT OPENINGS

THE FIELD

2" PVC PIPE CAP ON BOTH ENDS

WITH 7, 8 1/4" HOLES DRILLED

IN EACH END.

PULL BOX

AS REQUIRED IN

ENDS SHALL BE REAMED

ALL CONDUIT PITCHED

4 TO 8 BRICKS

EQUALLY SPACED

TO DRAIN TO PULL BOXES

2" DRAIN DUCT TO

DITCH OR SEWER

WHEN SPECIFIED

CORRUGATED PIPE EXTENDER

HEAVY DUTY FRAME -

6" MIN.

(TYP.)

AND COVER

WHEN A PULL BOX IS INSTALLED IN CRUSHED

AGGREGATE SHOULDERS, PLACE IT 2-3

2-3 INCHES OF CRUSHED AGGREGATE

NO. 2 COARSE

(SEE SECTION 501

OF THE STANDARD

WIRE AND/OR CABLE.

INSTALL END BELLS (U.L. LISTED FOR

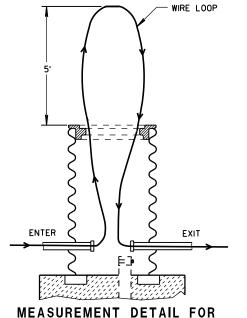
CONDUIT BEFORE INSTALLATION OF

ELECTRICAL USE) ON ALL NONMETALLIC

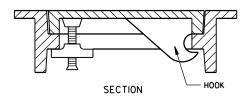
SPECIFICATIONS)

AGGREGATE

INCHES BELOW GRADE AND COVER IT WITH

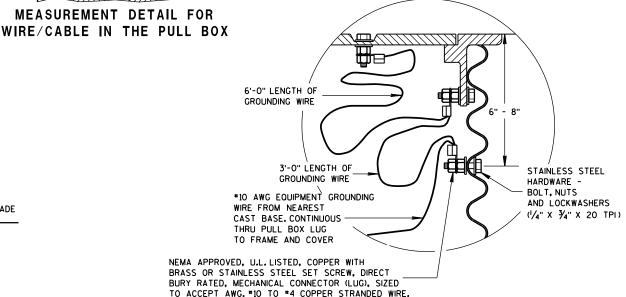


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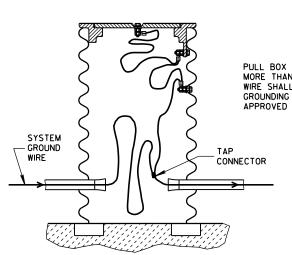


ALTERNATE COVER (LOCKING)

TIGHTENING BAR TYPE



EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES



EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES

PULL BOX TO NEAREST BASE DISTANCE MORE THAN 20 FEET. PULL BOX GROUND WIRE SHALL CONNECT AT SYSTEM GROUNDING WIRE. USE DEPARTMENT APPROVED TAP CONNECTOR.

PULL BOX

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

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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

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

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.

TRAFFIC LOADS.

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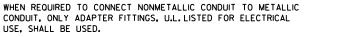
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IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE DIRT OR FILL. THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUND THE BASE.
BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1FOOT OR LESS. A NO. 4 AWG, STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL

BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE

(GROUND ROD) FOR TYPE 1. TYPE 2. TYPE 5. AND TYPE 6 BASES.

GENERAL NOTES (CONTINUED)

ENDS OF CONDUIT INSTALLED BELOW GRADE FOR FUTURE USE SHALL BE

OF CONCRETE BASES BEFORE INSTALLATION OF CABLE OR WIRE.

CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC.

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER THE BASE OF THE TYPE 2 AND TYPE 5 BASES THROUGH A LINCH 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" "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND END 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 BY 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.

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 AS 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.

MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6 X 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 NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

FORMING DETAIL

1'-8"

a)

- FORM

FORMING SHALL BE

CONCRETE HAS SET

REMOVED AFTER

FORM DEPTH SHALL BE

GRADE ON THE LOWER

SIDE OF BASE

4" MAX.

CONDUIT WITHIN

6" DIA.

ANCHOR RODS SHALL BE

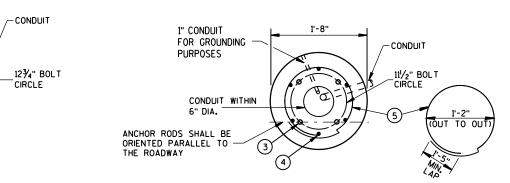
ORIENTED PARALLEL TO

1" CHAMFER ALL AROUND

FORM ALL EXPOSED

CONCRETE, PROVIDE

NO MORE THAN 6" BELOW



QUANTITY

REQUIREMENTS

ARDS OF CONCRETE

APPROX. CUBIC

LBS. OF HOOP

LBS. OF VERTICAL

BAR STEEL

BAR STEEL

CONCRETE BASE TYPE

0.57

23

60

0.40

NONE

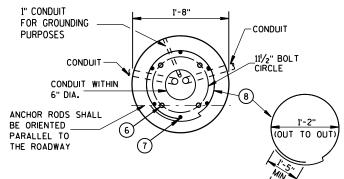
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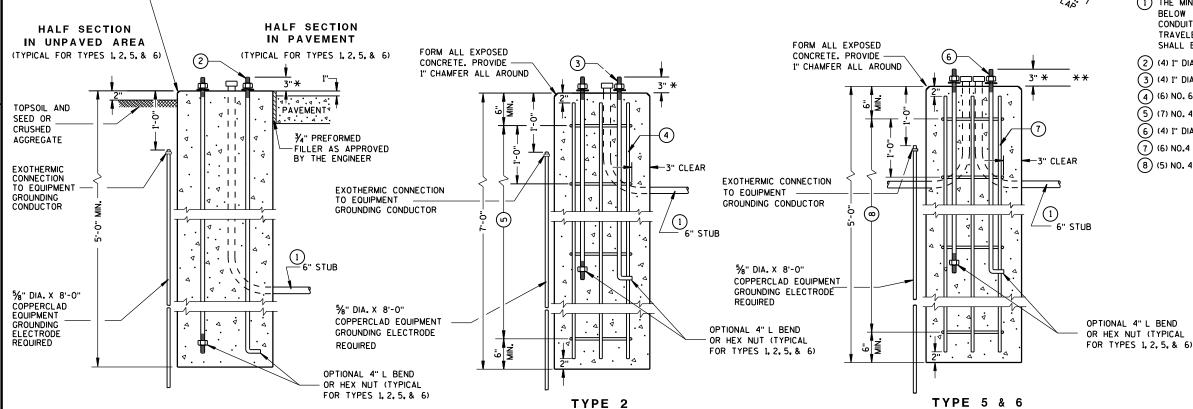
5 & 6

0.40

16

18





CONCRETE BASES

* ANY ANCHOR ROD PROJECTION SHORTER THAN 2¾" OR LONGER THAN 31/4" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.

** FOR NONBREAKAWAY INSTALLATIONS, 41/2" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

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

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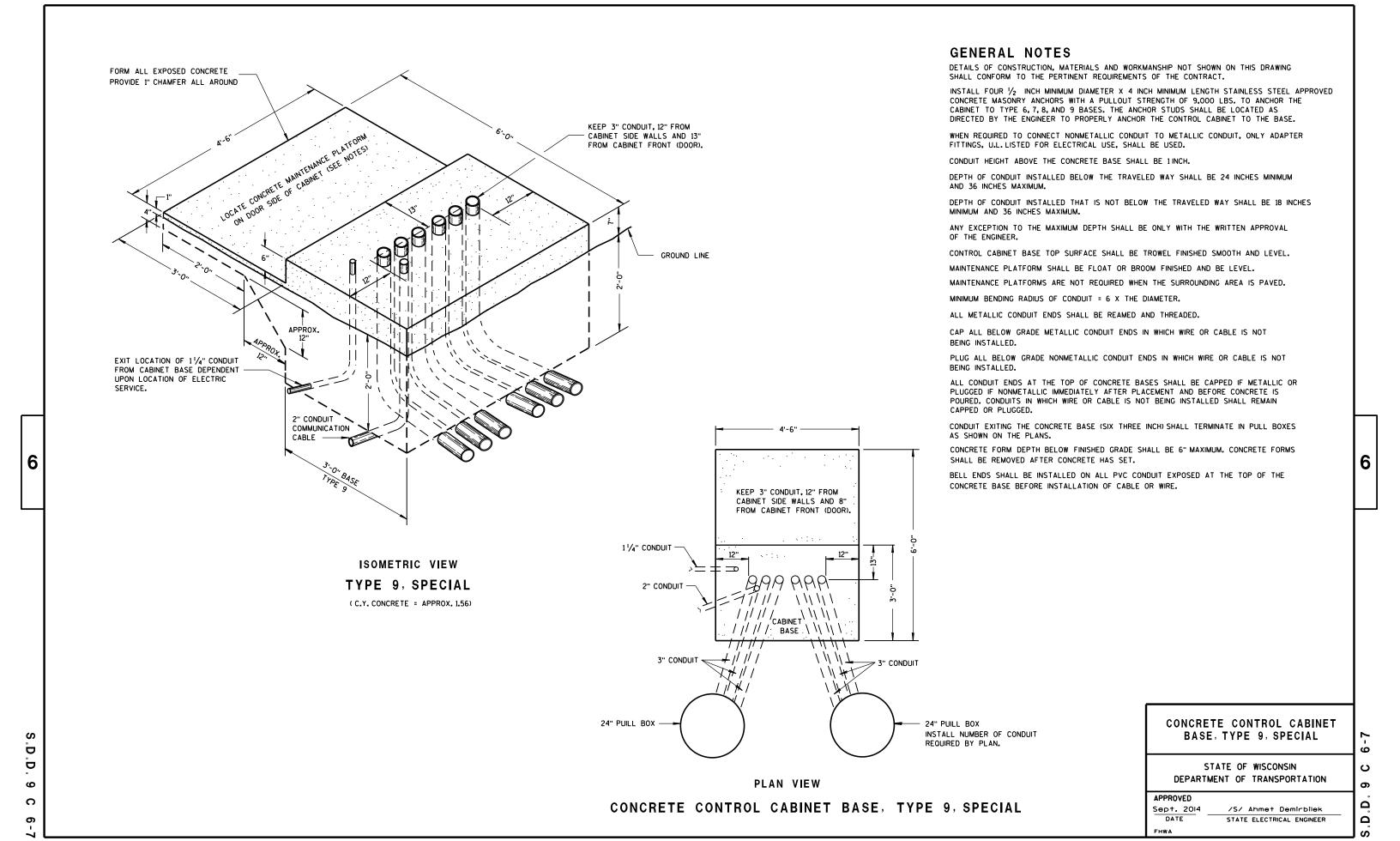
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BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

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

CONDUIT SIZES AND LOCATIONS SHALL BE AS 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.

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

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 4 INCHES. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED. NONMETALLIC CONDUIT SHALL HAVE BELL END INSTALLED. ALL CONDUIT SHALL BE SLOPED 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. CONDUIT 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.

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

WHEN REQUIRED TO CONNECT NONMETALLIC 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).

THE EQUIPMENT GROUNDING CONDUCTOR SHALL 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.

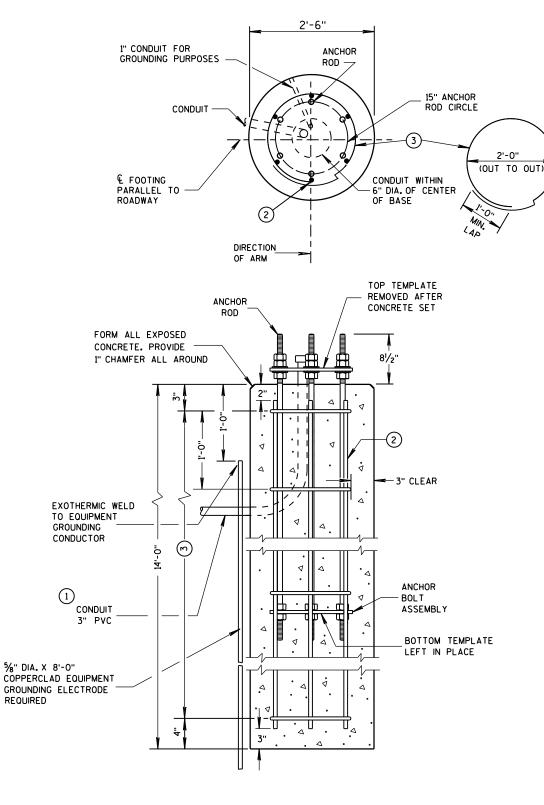
WELDING OF THE ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TEMPLATES SHALL BE USED.

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.

- 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 BY THE ENGINEER.
- (2) (6) NO. 6 X 13'-7" BAR STEEL REINFORCEMENT.
- (3) (15) NO. 4 X 7'-4" BAR STEEL REINFORCEMENT @ 1'-0" 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, AASHTO M314 GRADE 55	fy=55,000	p.s.i.
TEMPLATES, ASTM, A709 GRADE 36	fy=36,000	p.s.i.



CONCRETE BASE TYPE 10 (FOR TYPE 9 & 10 POLES)

TO BE USED WHEN GROUND ELEVATION AT BASE EQUALS OR IS GREATER THAN HIGH POINT OF ROADWAY ELEVATION. SEE S.D.D. 9C13-2 WHEN GROUND ELEVATION AT BASE IS LOWER THAN HIGH POINT OF ROADWAY ELEVATION.

€ FOOTING PARALLEL TO-1/2" THICK TEMPLATES ROADWAY 11/2" ANCHOR RODS DIRECTION TOP AND BOTTOM TEMPLATES TOP TEMPLATE REMOVED AFTER CONCRETE SET TOP OF CONCRETE THREAD TOP 81/2" OF ANCHOR ROD FOR 3 NUTS AND 2 WASHERS AND BOTTOM 51/2" FOR 2 NUTS PER ANCHOR ROD. HOT-DIP GALVANIZE THE ENTIRE LENGTH OF THE ANCHOR RODS (AASHTO M111) AND HOT-DIP NUTS AND WASHERS (AASHTO M232). USE ZINC COATED NUTS MANUFACTURED WITH (6) - 1¹/₂" X 50" SUFFICIENT ALLOWANCE TO ALLOW NUTS ANCHOR RODS TO RUN FREELY ON THE THREADS. BOTTOM TEMPLATE LEFT IN PLACE THREAD BOTTOM OF ANCHOR ROD 51/2" ANCHOR BOLT ASSEMBLY DETAIL

CONCRETE BASE TYPE 10

ANCHOR ASSEMBLY

NO MORE THAN 4" BELOW

GRADE ON THE LOWER

SIDE OF BASE

4" MAX.

ANCHOR ROD CIRCLE

DIAMETER = 15"

APPROX. CUBIC YARDS OF CONCRETE 2.5

VARDS OF CONCRETE

LBS. OF HOOP
BAR STEEL

LBS. OF VERTICAL
BAR STEEL

122

CONCRETE BASE TYPE 10

TROWEL FINISH

OF CONCRETE

2" MAX.-

- FORM

4" MAX.

FORMING DETAIL

AND LEVEL TOP

FORMING SHALL BE REMOVED AFTER

CONCRETE HAS SET

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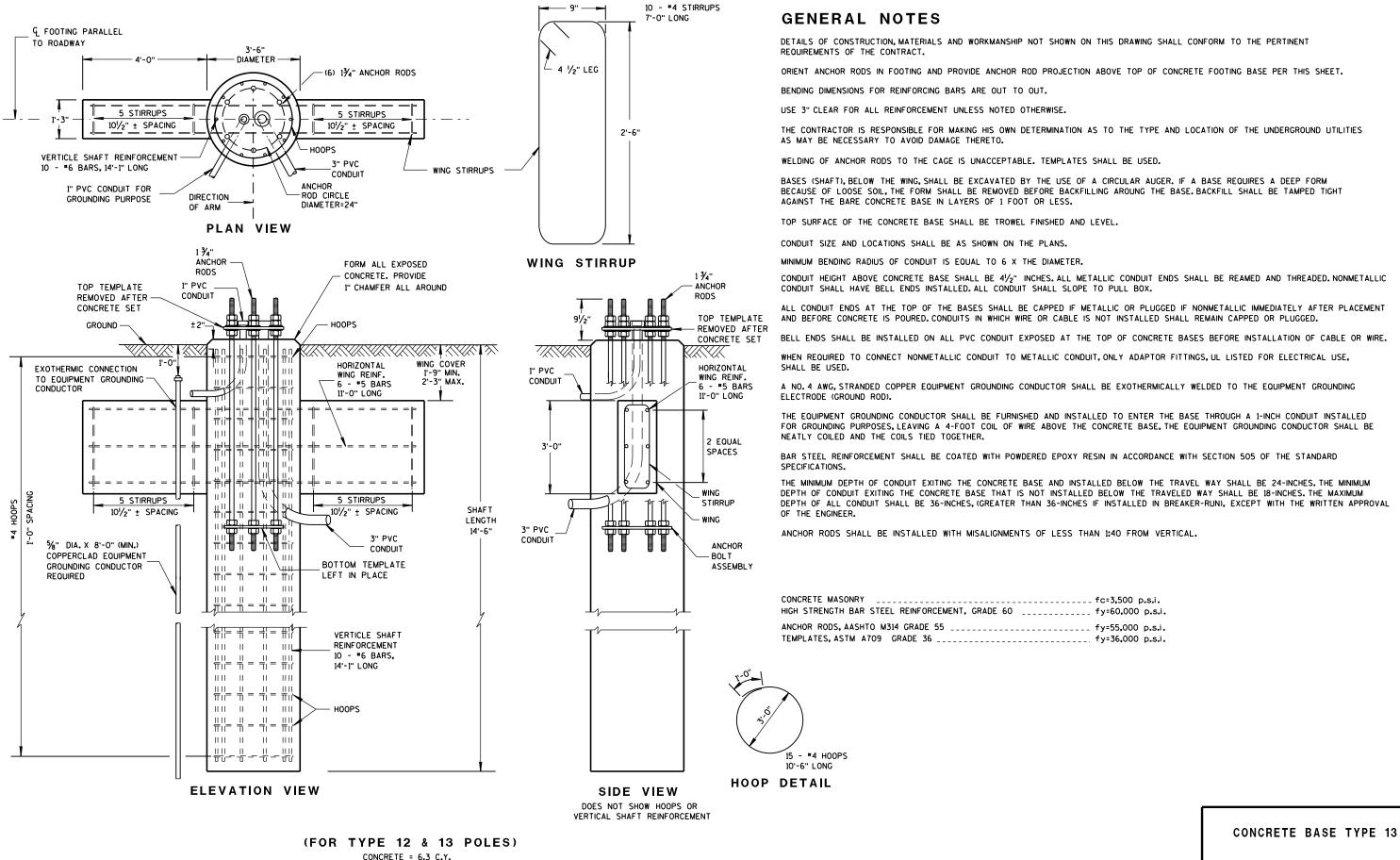
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H.S. REINFORCEMENT = 433 LBS.

SEE S.D.D. 9C13-2 WHEN GROUND ELEVATION AT BASE IS LOWER THAN HIGH POINT OF ROADWAY ELEVATION.

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

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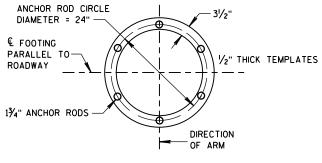
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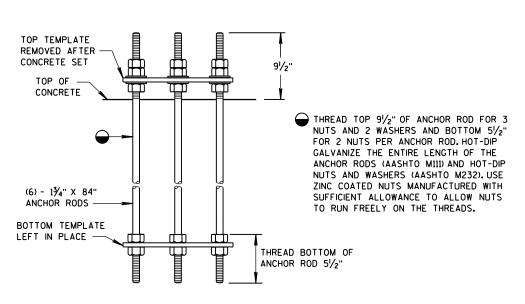
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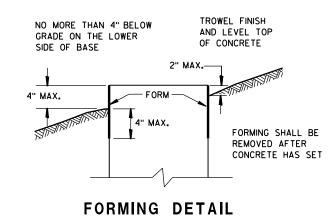


TOP AND BOTTOM TEMPLATES



ANCHOR BOLT ASSEMBLY DETAIL

CONCRETE BASE TYPE 13 ANCHOR ASSEMBLY



CONCRETE BASE TYPE 13

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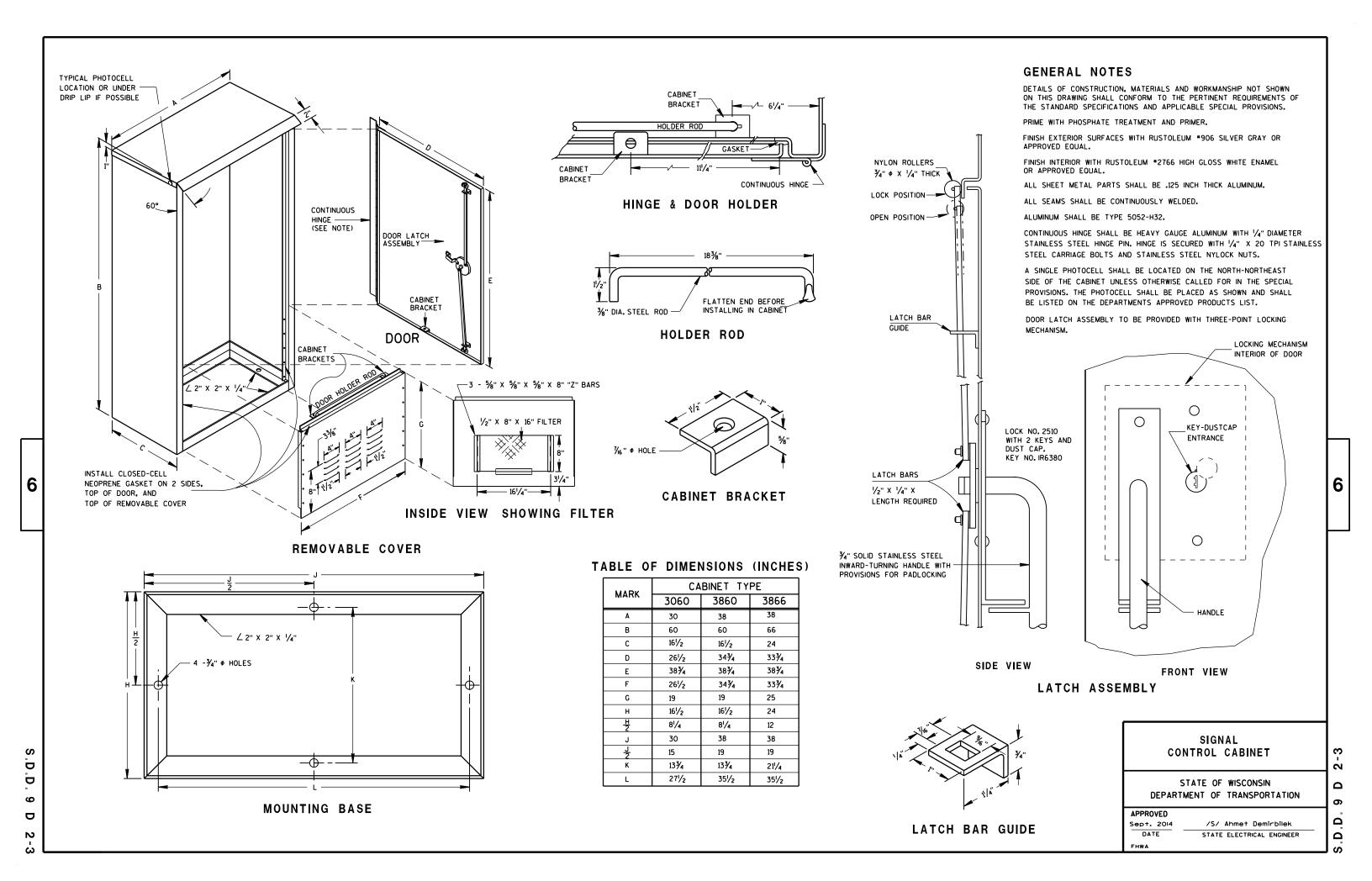
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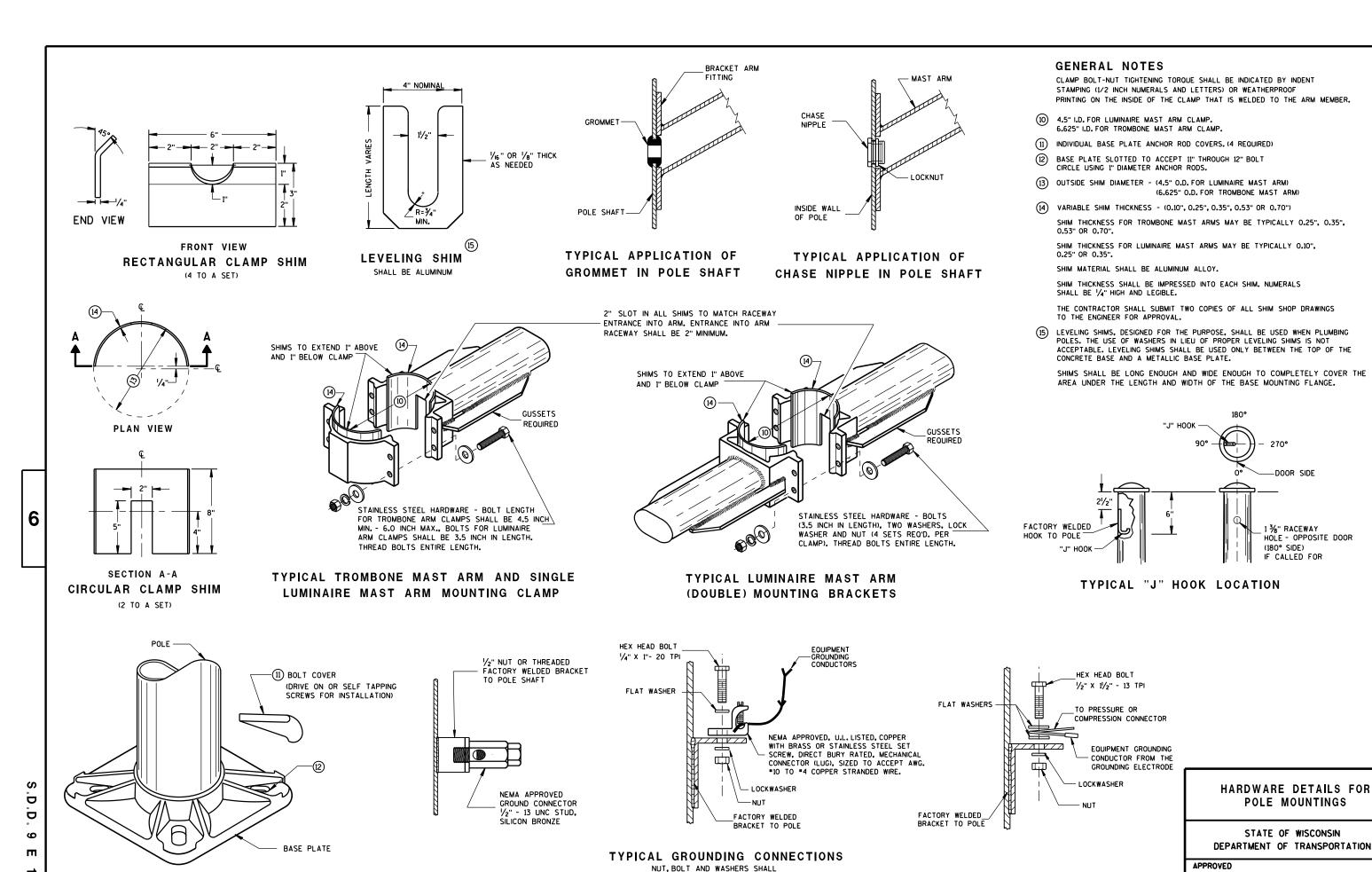
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BE STAINLESS STEEL

BASE PLATE

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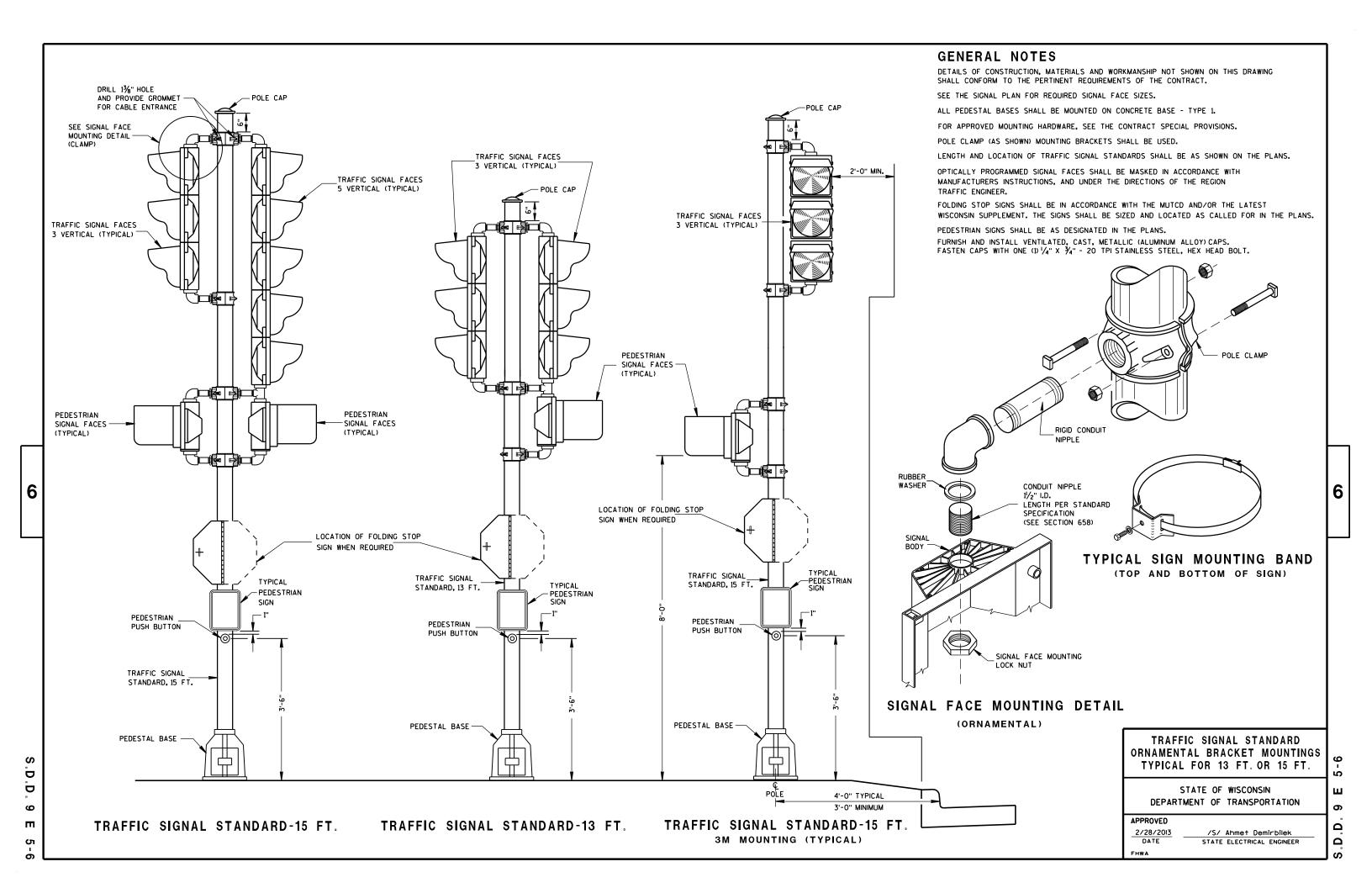
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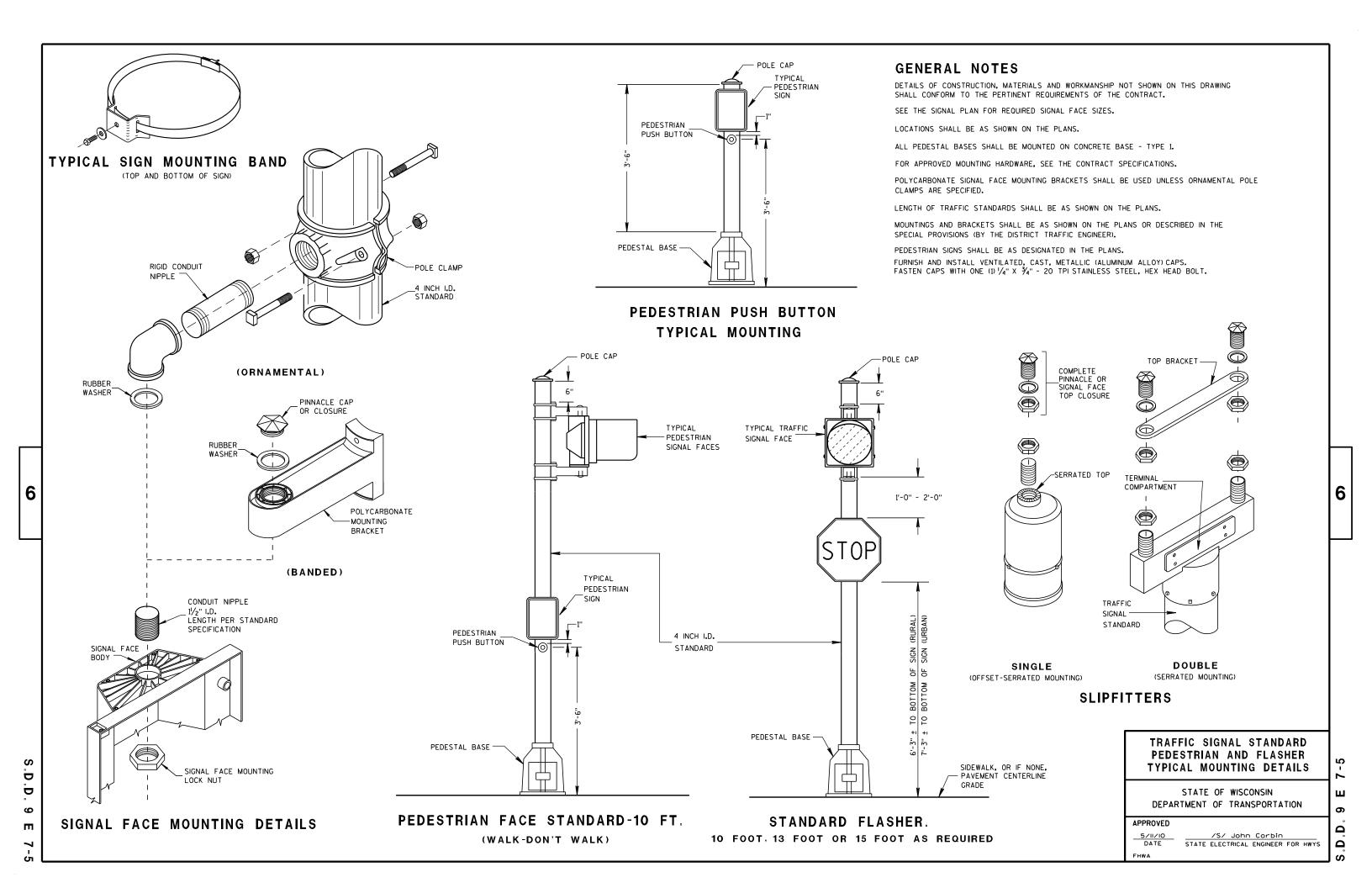
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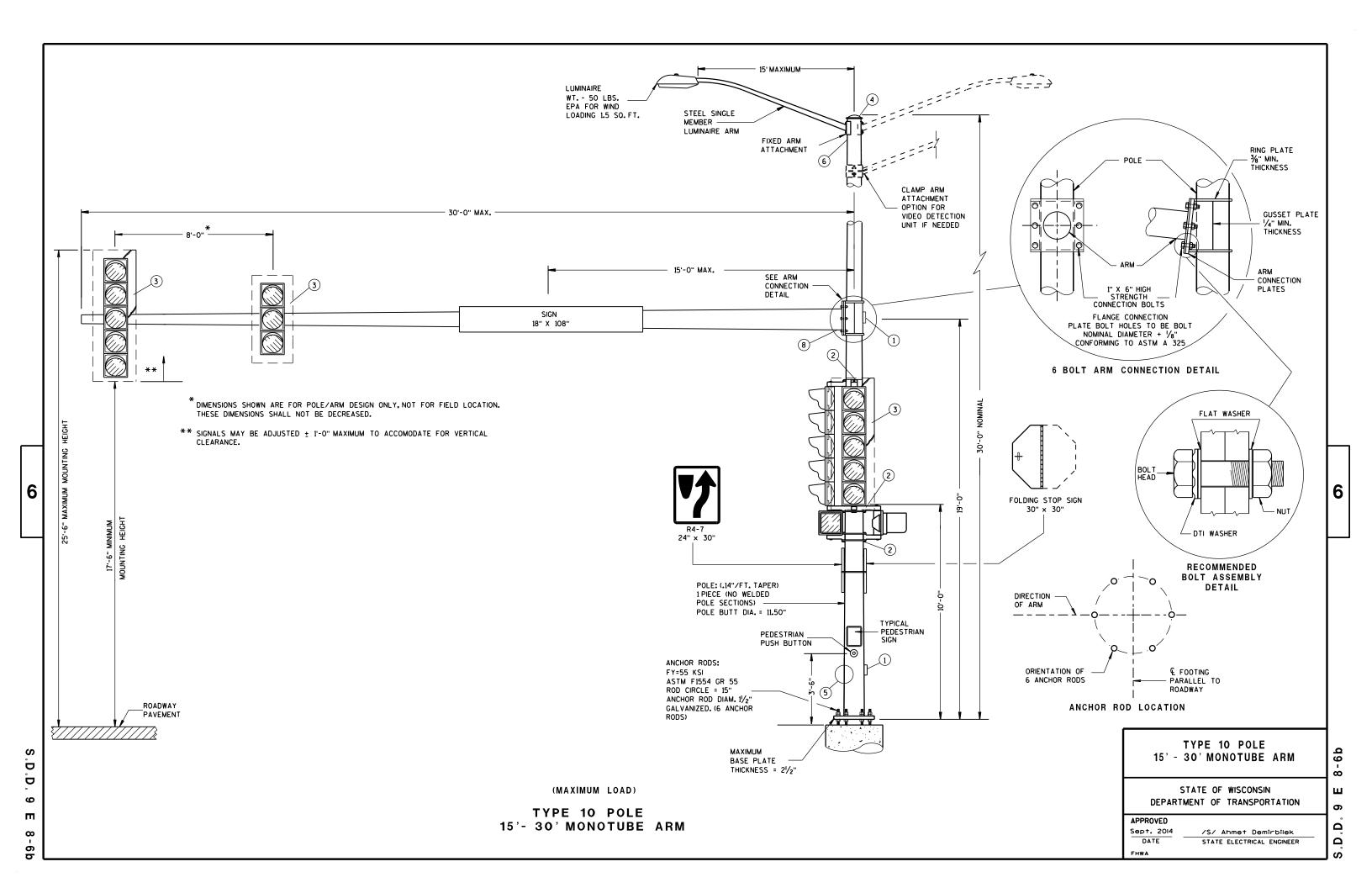
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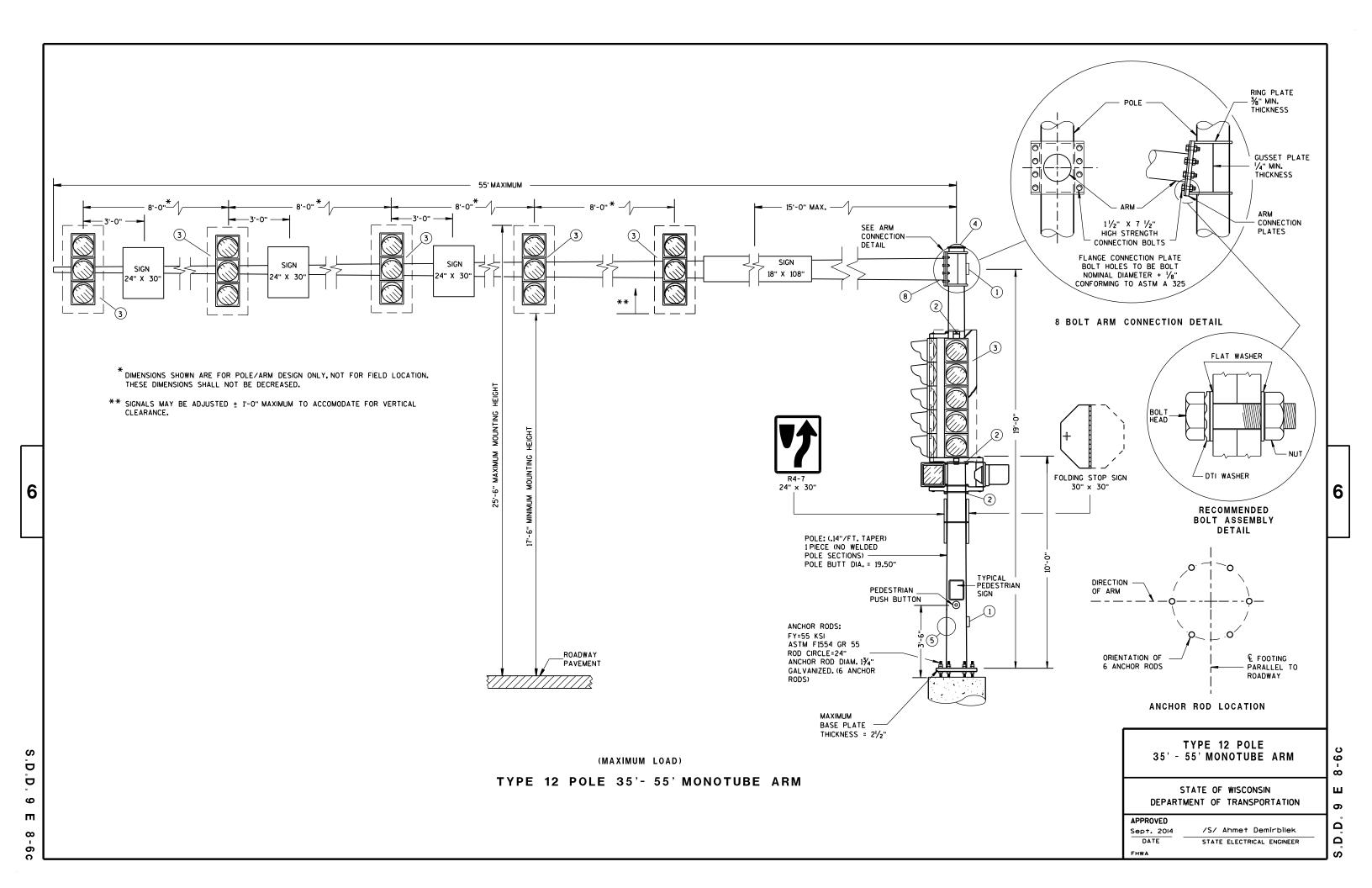
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POLE TYPES 9 AND 10 ARE FOR ARM LENGTHS 15-FOOT TO 30-FOOT.

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

MONOTUBE POLE AND ARM SHALL BE GALVANIZED STEEL.

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

ONE (1) PIECE POLE CONSTRUCTION (NO WELDED POLE SECTIONS).

STANDARD STRAIGHT ARM DESIGN (3 % ± RISE).

SECTION 657, POLES OF THE STANDARD SPECIFICATIONS 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 2013 6TH EDITION AND ALL PERTINENT WISDOT SPECIFICATIONS AND DRAWINGS FOR TRAFFIC AND LIGHTING STRUCTURES AND AS FOLLOWS:

- CATEGORY I 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 I FATIGUE LOADS OF GALLOPING, TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 12 AND TYPE 13 STRUCTURES.
- 90 MPH (3-SECOND GUST) WIND SPEED AND A 50 YEAR DESIGN LIFE.

SECURE THE OPENING BELOW THE BASE PLATE WITH STAINLESS STEEL OR GALVANIZED STEEL MESH AND SECURE THE MESH WITH $\frac{3}{4}$ " S.S. BANDING AROUND THE LEVELING NUTS.

INDENT PRINT (NOMINAL $\frac{1}{2}$ " 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 HEADS AT SAME ELEVATION.

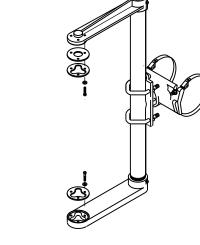
SIGN MOUNTING BRACKETS SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 637 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.

- DESIGN FOR MAXIMUM ALLOWABLE HANDHOLE 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 SPECIFICATIONS SEC. 658).
- 3 SECURELY MOUNT BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURERS RECOMMENDATIONS.
- 4 THE TOP OF THE POLE SHAFT AND THE END OF 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 HANDHOLE, (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 DEPARTMENT PROVIDED STRUCTURAL IDENTIFICATION PLAQUES.

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

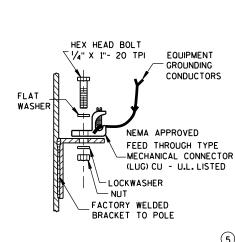
MOUNTING HEIGHT SHALL BE 5'-0" ABOVE THE CURB OR SHOULDER .ADJUST IF IT IS KNOWN THAT REQUIRED TRAFFIC SIGNS WILL BE OBSTRUCTED.

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



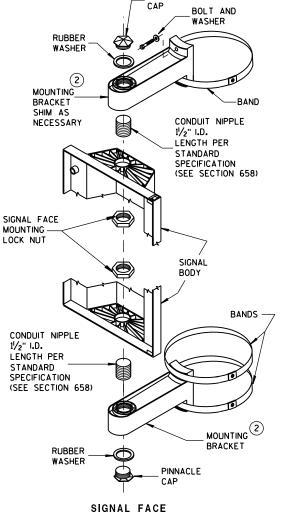
SIGNAL FACE MOUNTING BRACKET DETAIL FOR MONOTUBE ARM

(MOUNT PER MANUFACTURER'S RECOMMENDATION)



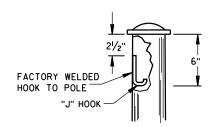
TYPICAL GROUNDING CONNECTIONS

NUT, BOLT AND WASHERS SHALL
BE STAINLESS STEEL



PINNACI F

VERTICAL MOUNTING DETAIL



"J" HOOK WIRE SUPPORT

GENERAL NOTES AND HARDWARE DETAILS FOR TYPE 9, 10, 12 & 13 POLES WITH MONOTUBE ARMS

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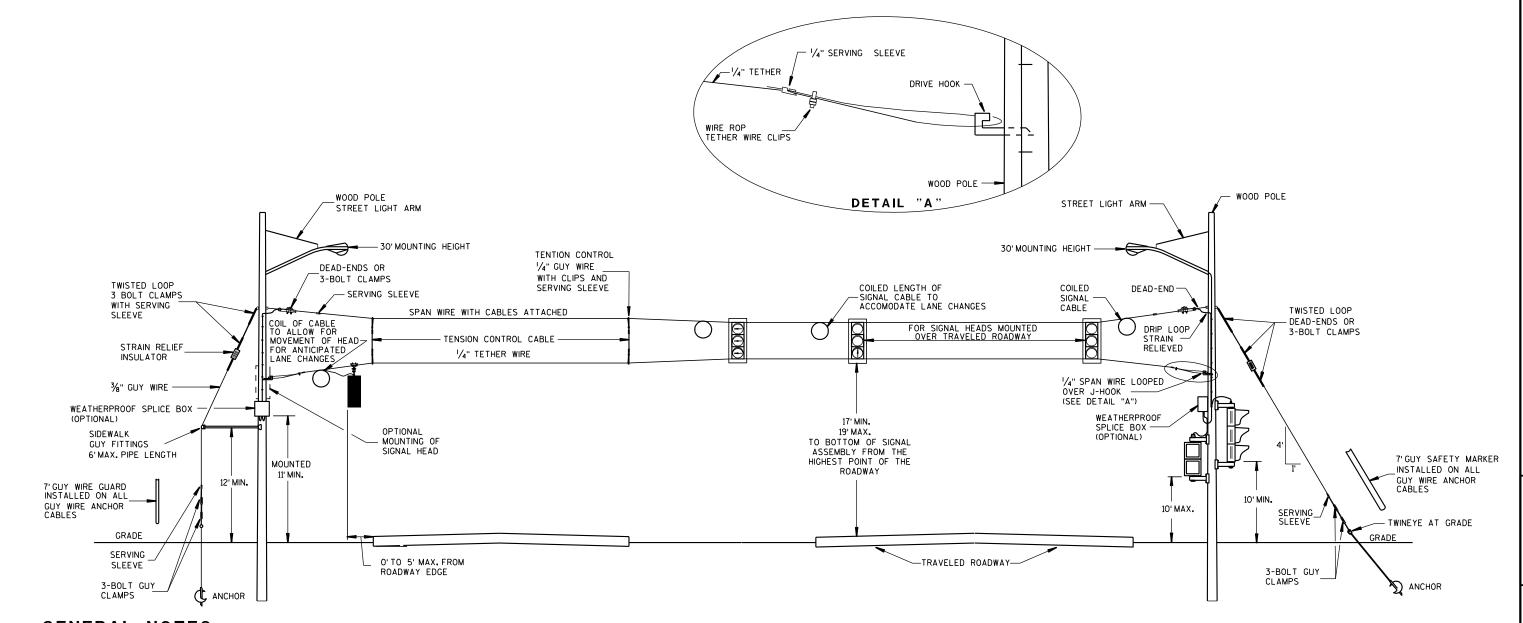
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

5'-0"

APPROVED
Sept. 2014
DATE
STATE ELECTRICAL ENGINEER
FHWA



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

1. WOOD POLES SHALL BE CLASS 4. LENGTH DETERMINED BY SIGNAL PLAN.

2. SIGNAL FACES:

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- A. ALL SECTIONS SHALL BE 12" AND POLYCARBONATE.
- B. EACH SHALL CONTAIN A 5" WIDE DULL BLACK POLYCARBONATE BACKPLATE.
- C. EACH SHALL BE WIRED FROM THE TOP SIGNAL MOUNTING BRACKET.
- D. NEAR RIGHT SIGNAL FACE SUSPENDED ON THE TETHER (NO BACKPLATE) SHALL NOT BE OVER THE TRAVELED WAY. IF THE POLE IS WITHIN 5 FEET OF THE TRAVELED WAY MOUNT THE SIGNAL FACE ON THE WOOD POLE WITH BACKPLATE.
- E. FAR INDICATION SHALL BE MAINTAINED OVER CENTER OF TRAFFIC LANE.
- 3. SPAN WIRE:
- A. EACH SPAN WIRE SHALL BE INDIVIDUALLY DOWN GUYED.
- B. SIGNAL AND LIGHTING CABLES SHALL ONLY BE ATTACHED TO THE UPPER SPAN WIRE.
- C. THE SIGNAL ASSEMBY SHALL HAVE A 17' MIN. HEIGHT ABOVE THE ROADWAY. THIS SHALL BE MEASURED AFTER THE SPAN WIRE INSTALLATION IS COMPLETED WITH ALL CABLES AND SIGNAL FACES IN PLACE, MAINTAIN MINIMUM AND MAXIMUM HEIGHTS AS ROADWAY WORK PROGRESSES.

SPAN WIRE TEMPORARY SIGNALS

4 LANE ROADWAYS

MINIMUM POLE LENGTHS	CLASS	MIN. BURIAL DEPTHS
25'	¥	5'
30'	\mathbf{x}	6'
35'	TV.	7'
40'	IV.	8'
45'	IV.	9'

SPAN WIRE TEMPORARY TRAFFIC SIGNAL

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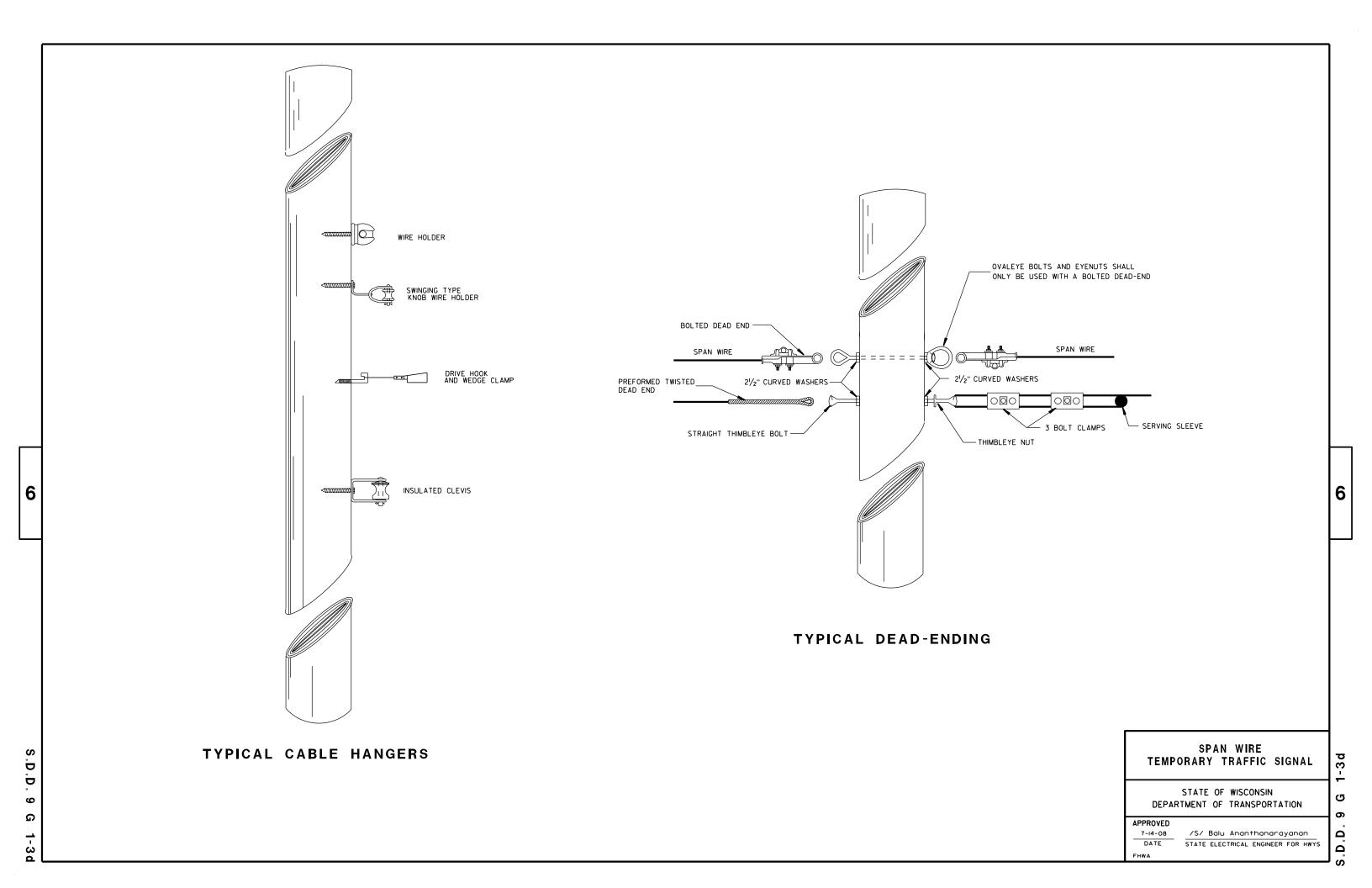
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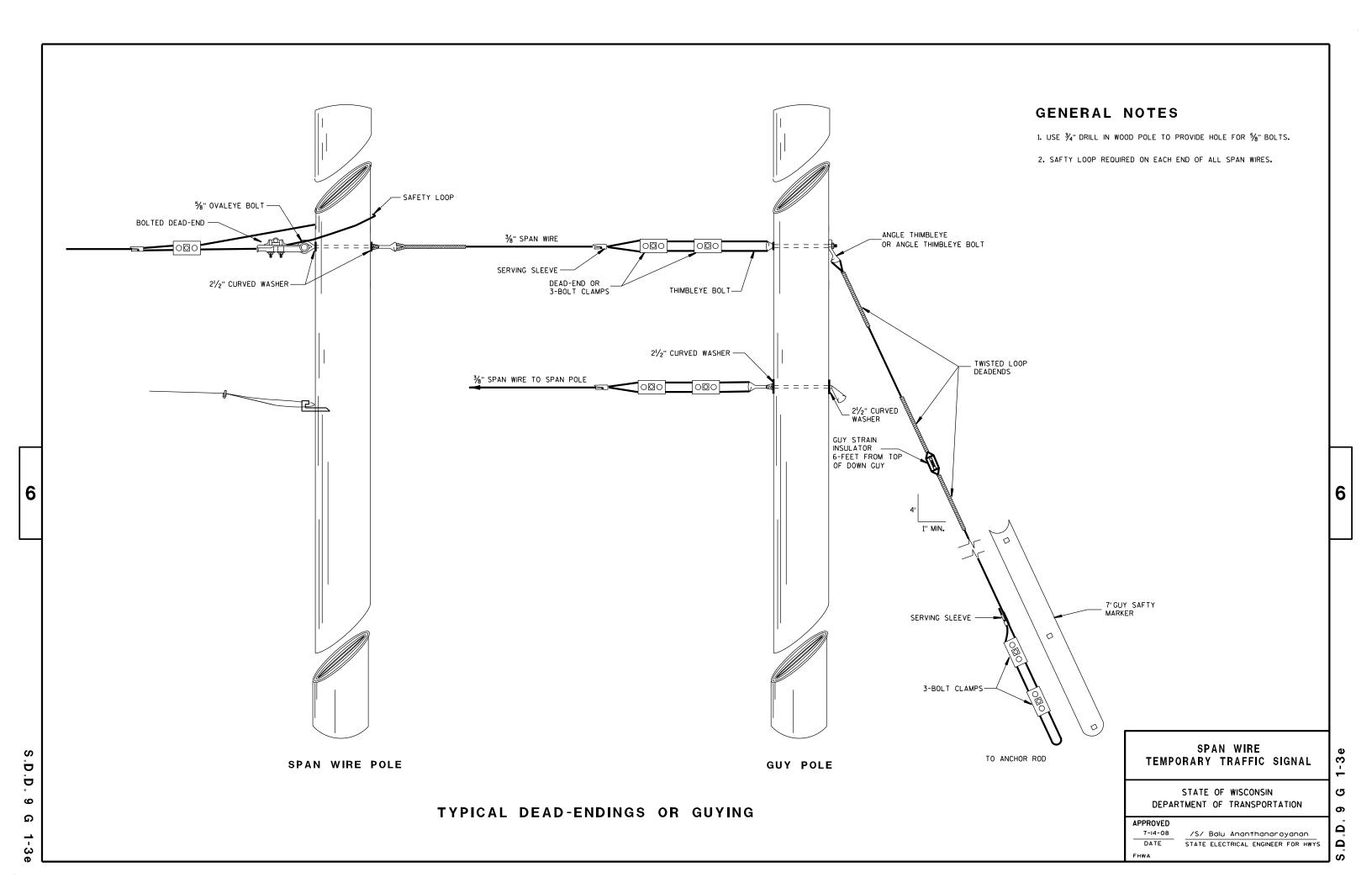
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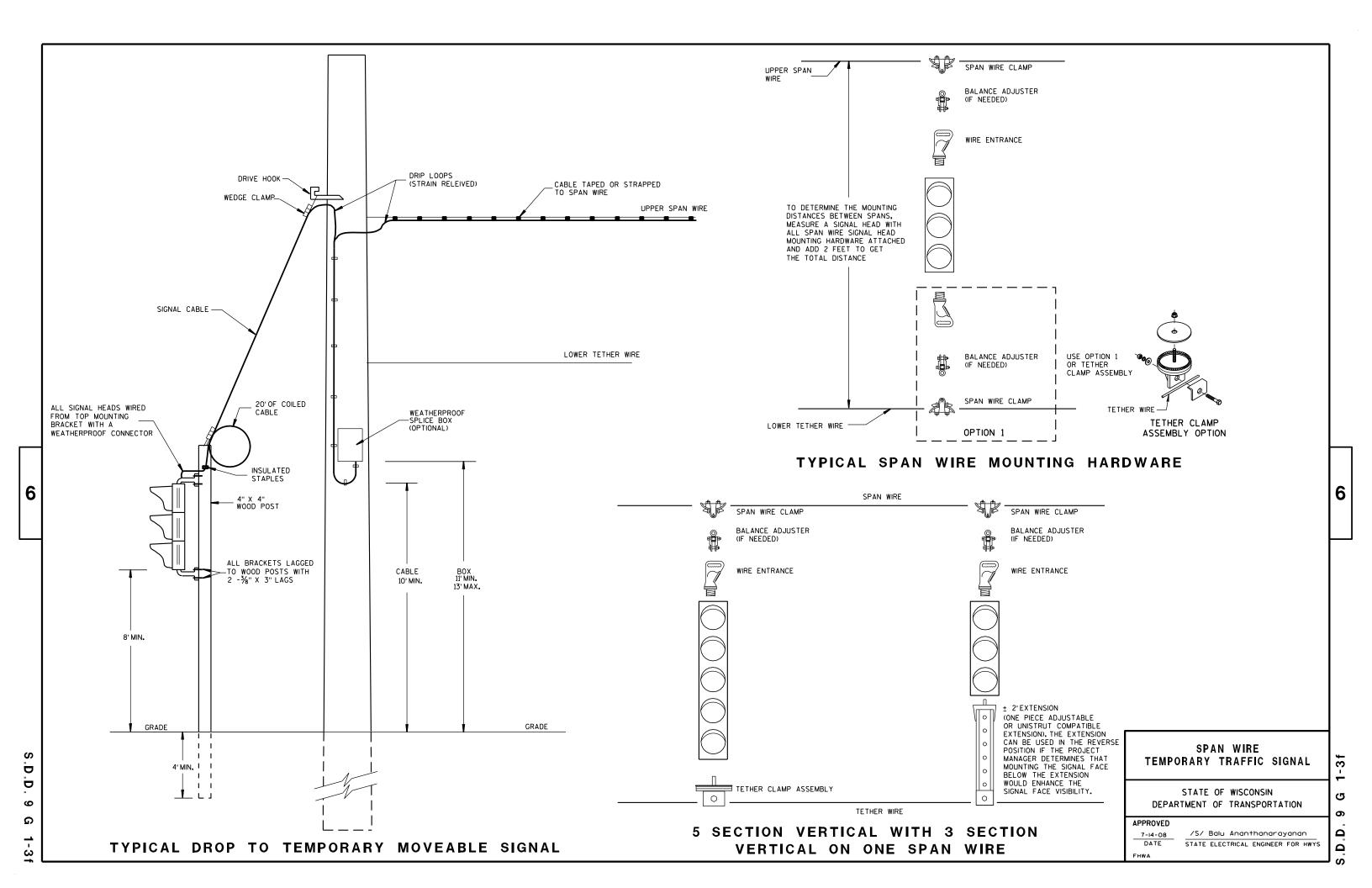
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

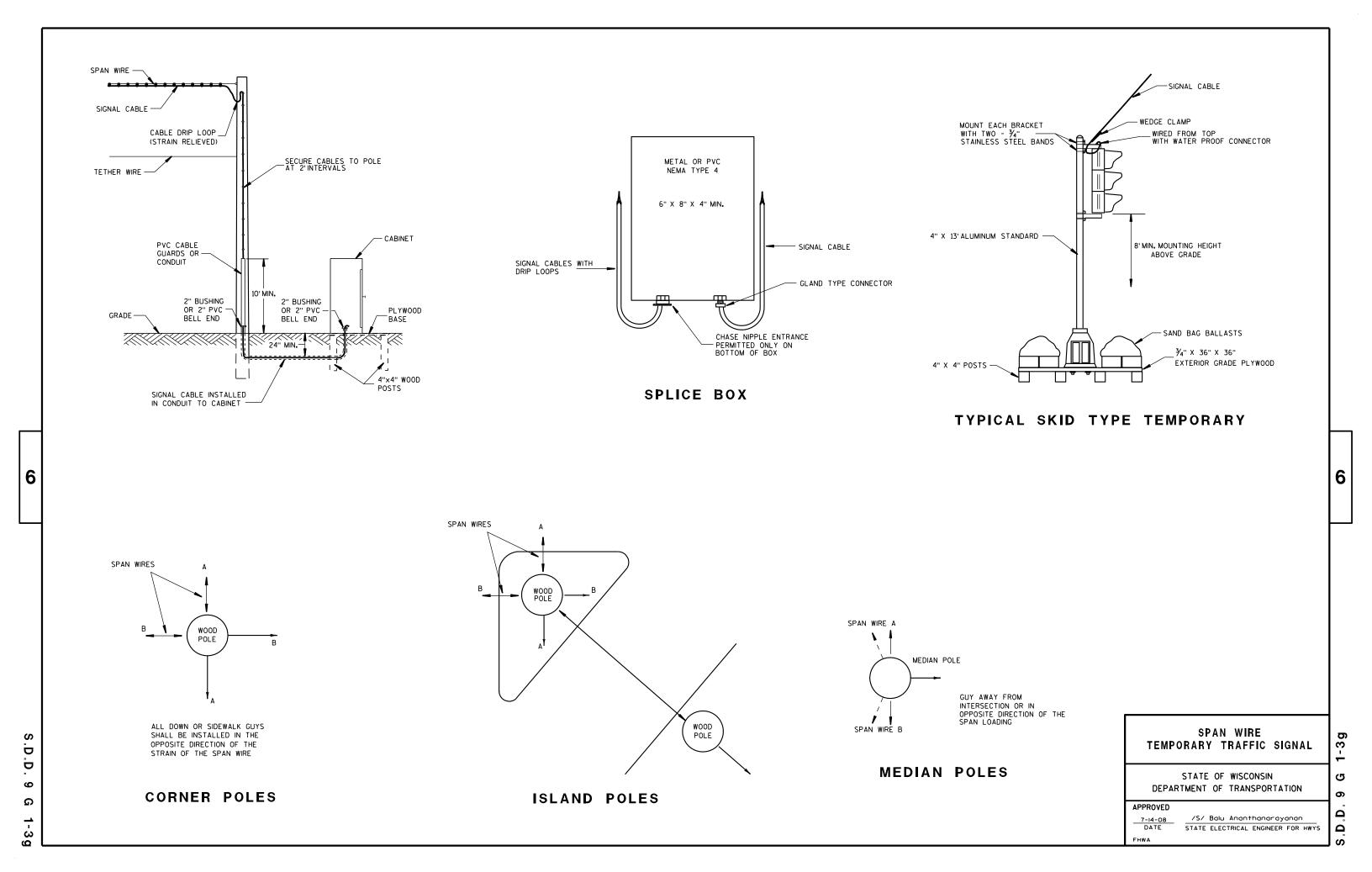
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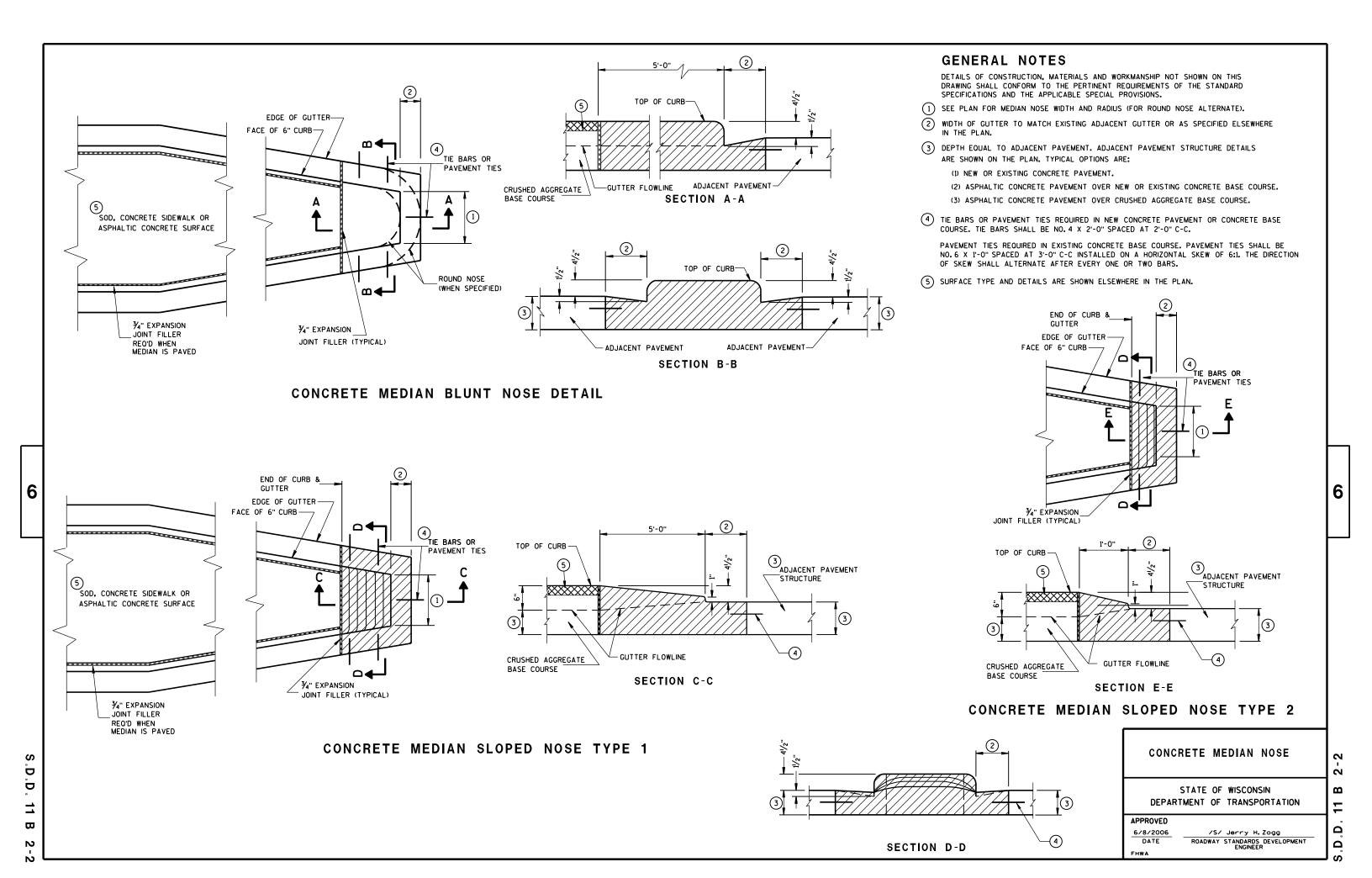
7-14-08
DATE
STATE ELECTRICAL ENGINEER FOR HWYS

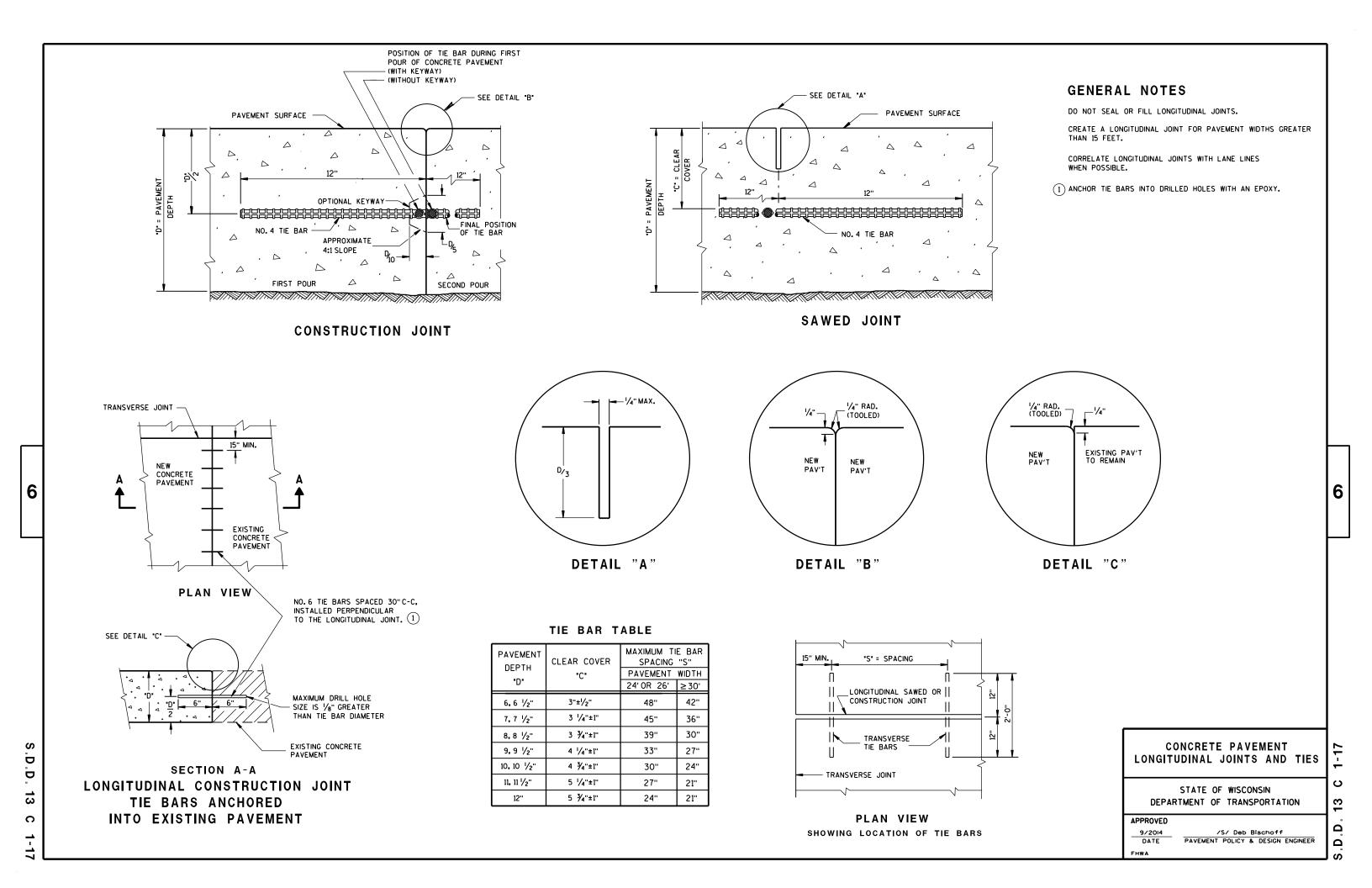








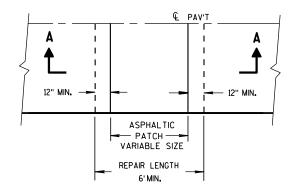




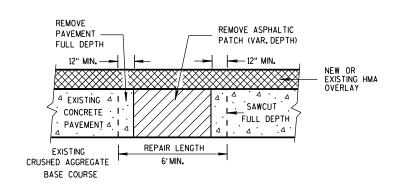
PROVIDE 6-FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREAS TO ADJACENT TRANSVERSE JOINT OR CRACK.

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

1) DOWEL BARS MIGHT NOT EXIST.

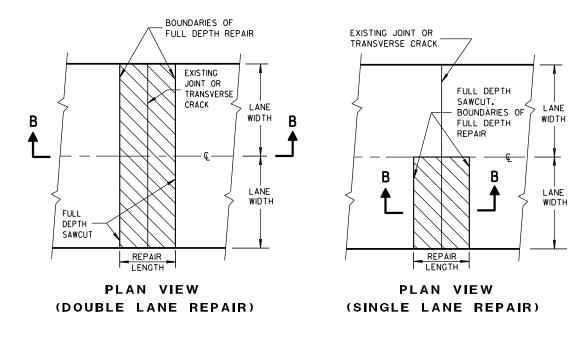


PLAN VIEW



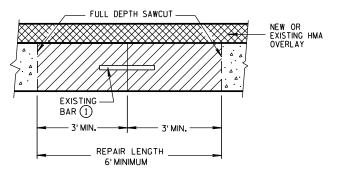
SECTION A-A

HMA PATCH REMOVAL



FULL DEPTH CONCRETE PAVEMENT REMOVAL

(SEE NOTE)



SECTION B-B

CONCRETE REMOVAL

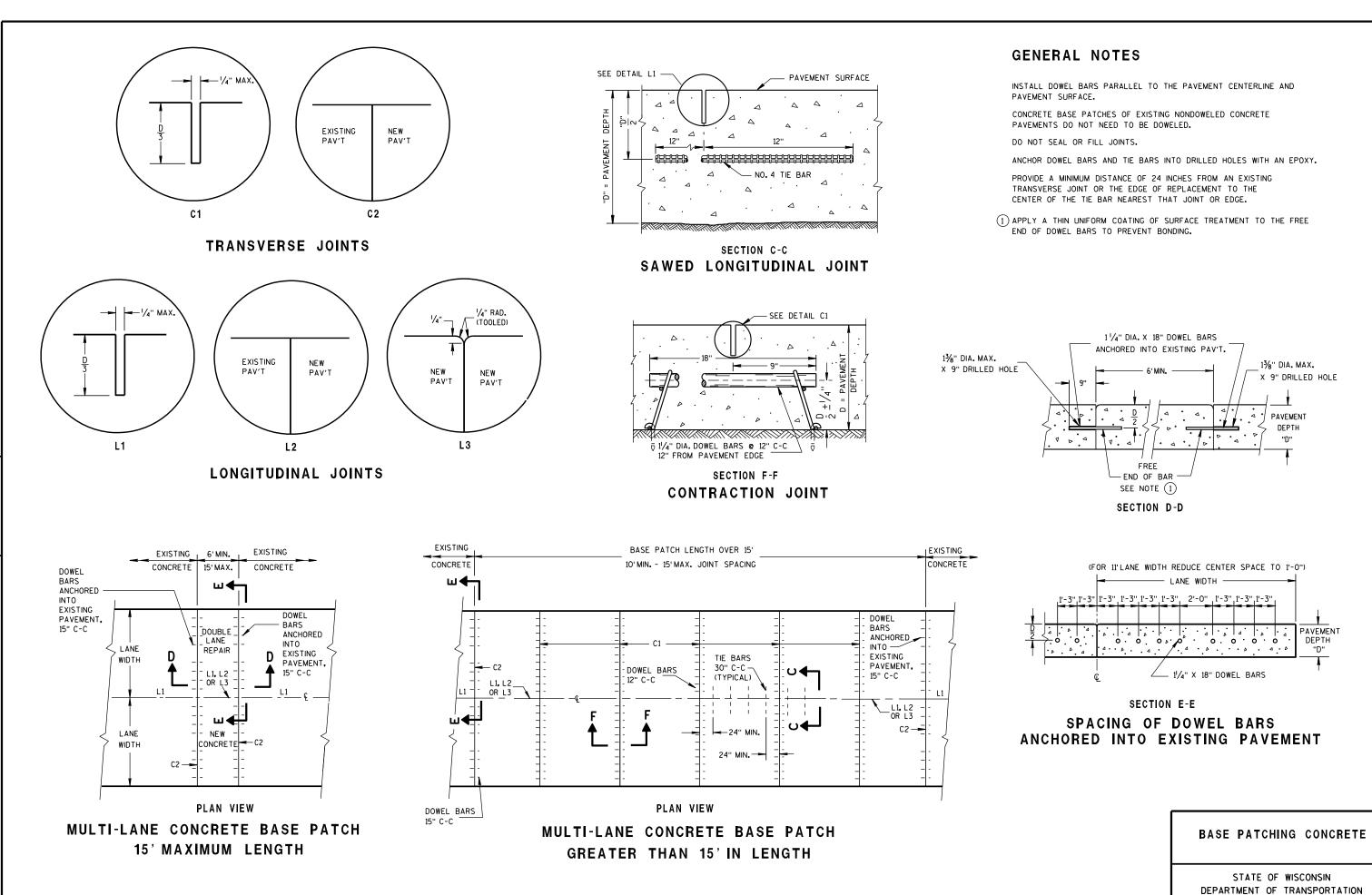
BASE PATCHING CONCRETE

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

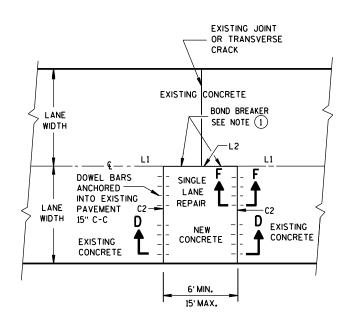


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TIE BARS ANCHORED INTO EXISTING PAVEMENT



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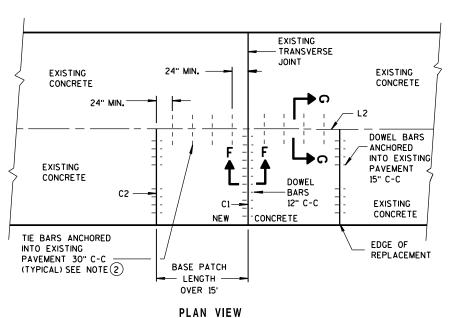
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PLAN VIEW SINGLE LANE CONCRETE BASE PATCH 15' MAXIMUM LENGTH



SINGLE LANE CONCRETE BASE PATCH GREATER THAN 15' IN LENGTH

GENERAL NOTES

1 USE AN ENGINEER-APPROVED BOND BREAKER (E.G. RELEASE AGENT, CURING COMPOUND) FOR SINGLE LANE BASE PATCHES UP TO 15 FEET IN LENGTH.

2) WITH THE APPROVAL OF THE ENGINEER, FOR SINGLE LANE PAVEMENT REPLACEMENTS LESS THAN 30 FEET IN LENGTH, DRILLED TIE BARS MAY BE INSTALLED ON 6:1 SKEW HORIZONTALLY, DIRECTION OF SKEW ALTERNATING WITH EACH SUCCESSIVE BAR. DRIVE SKEWED TIE BARS TO A DEPTH OF 6 INCHES AND TO SUCH A DIAMETER AS TO PROVIDE A TIGHT DRIVEN FIT.

BASE PATCHING CONCRETE

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVED

/S/ Deb Bischoff 12-11-2009 DATE PAVEMENT POLICY & DESIGN ENGINEER

FHWA

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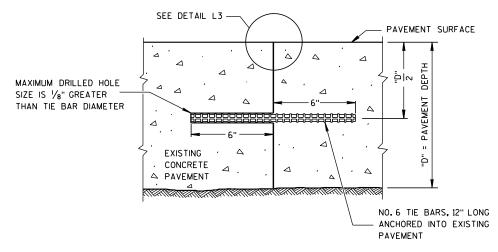
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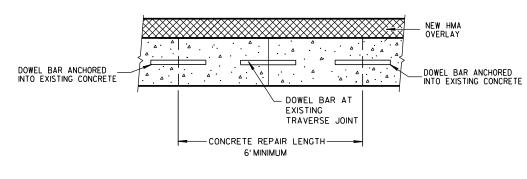
PLAN VIEW

SINGLE LANE CONCRETE BASE REPAIR



SECTION G-G

TIE BARS ANCHORED INTO EXISTING PAVEMENT



SECTION H-H

CONCRETE BASE

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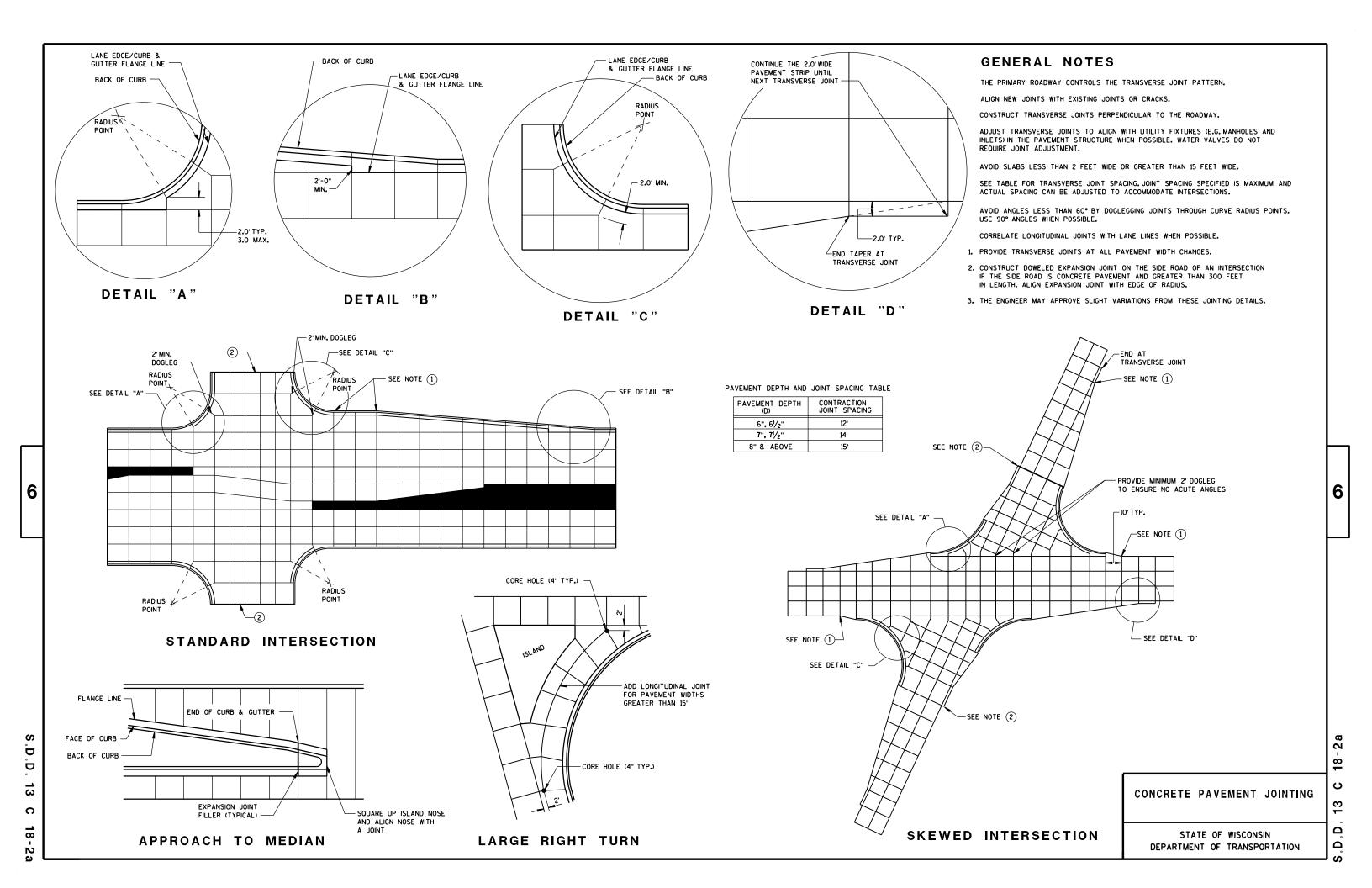
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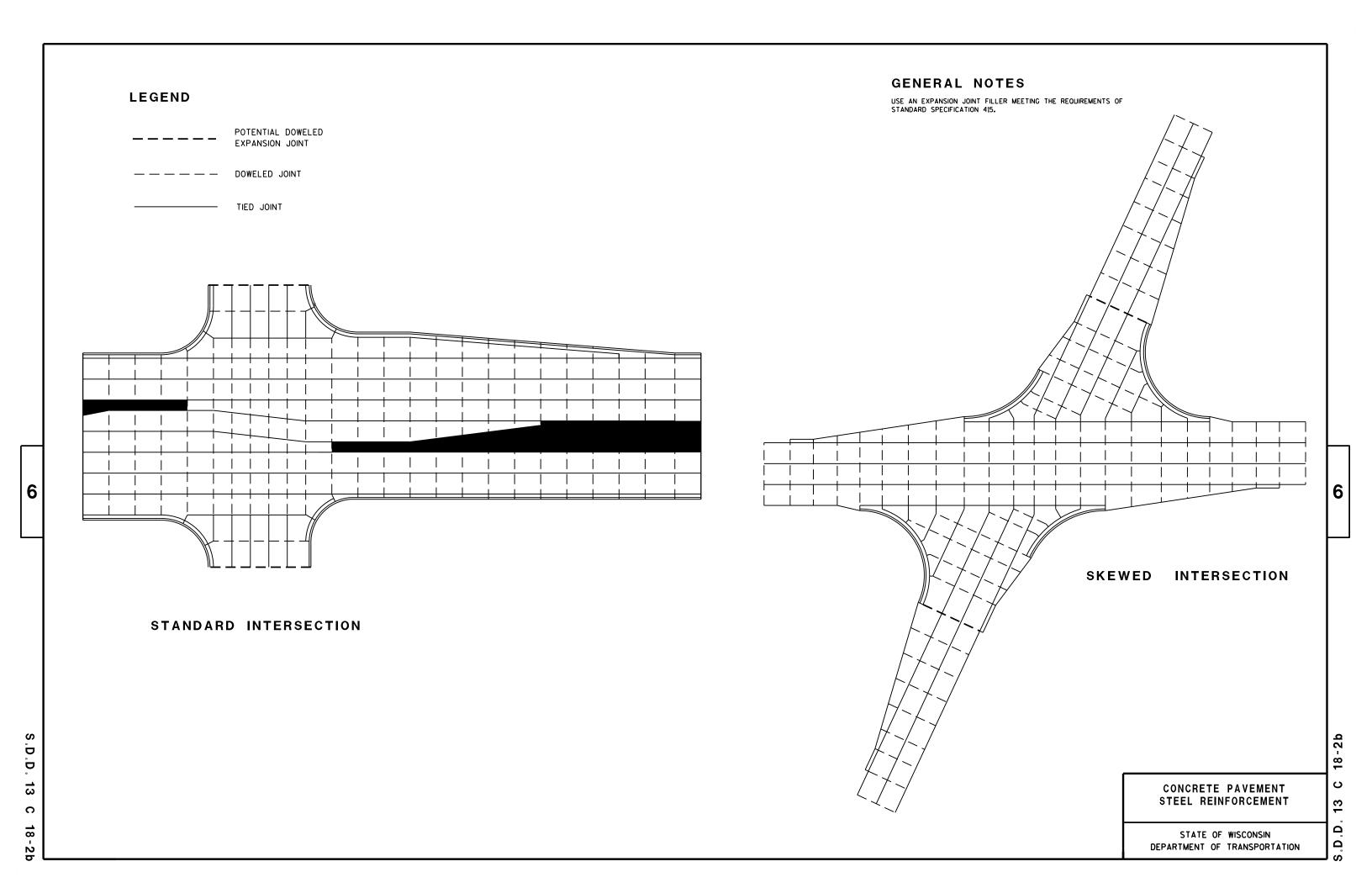
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

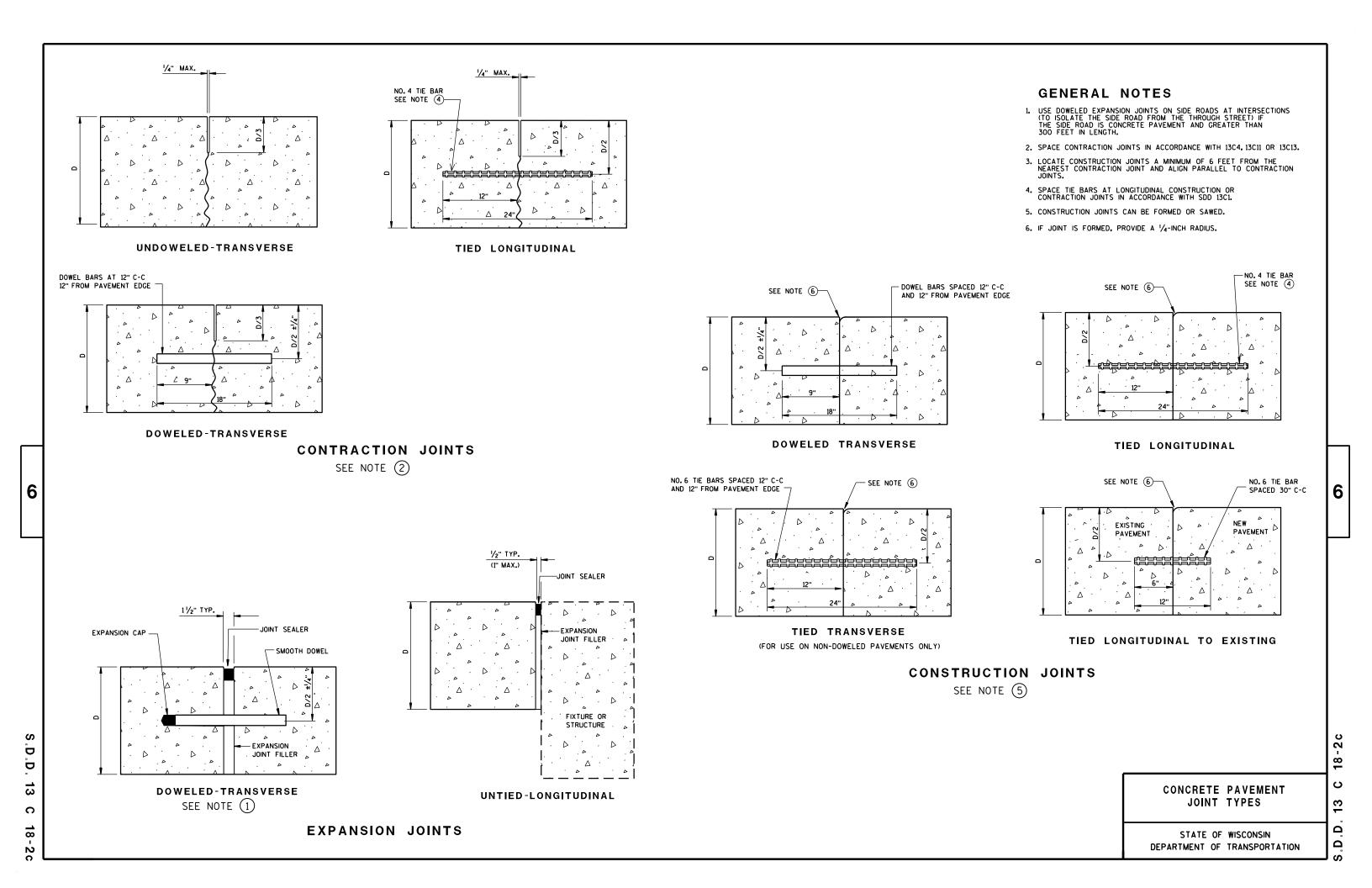
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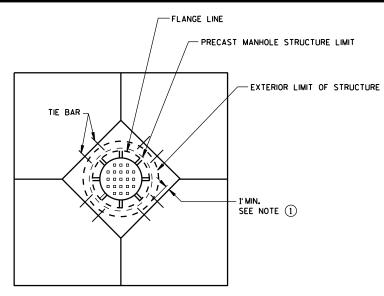
/S/ Deb Bischoff
PAVEMENT POLICY & DESIGN ENGINEER

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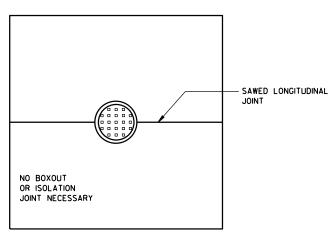




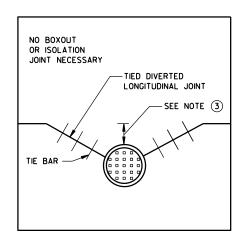




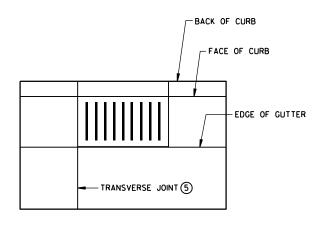
DIAGONAL MANHOLE BOXOUT FOR CONSTRUCTION JOINTS



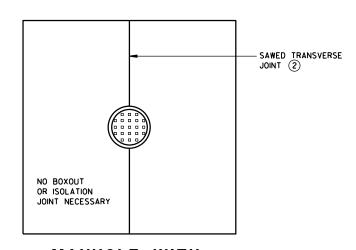
MANHOLE WITH LONGITUDINAL JOINT



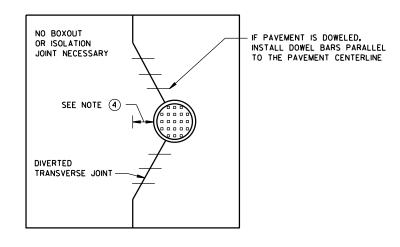
MANHOLE WITH DIVERTED LONGITUDINAL CONTRACTION JOINT



INLET WITH TRANSVERSE JOINT



MANHOLE WITH TRANSVERSE JOINT



MANHOLE WITH DIVERTED TRANSVERSE CONTRACTION JOINT

- ① USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1-FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.
- 2 ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.
- (3) IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE OF MANHOLE IS 2 FEET OR LESS, DIVERT THE LONGITUDIAL JOINT AT A 2:1 TAPER RATE TO THE CENTER OF THE MANHOLE. IF THE DISTANCE IS GREATER THAN 2 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.
- (4) IF DISTANCE FROM THE EDGE OF THE MANHOLE TO THE NEAREST TRANSVERSE JOINT IS 4 FEET OR LESS, REDIRECT JOINT TO INTERSECT THE CENTER OF THE MANHOLE. IF DISTANCE IS GREATER THAN 4 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.
- (5) ALIGN TRANSVERSE JOINT WITH ONE EDGE OF INLET WHEN PRACTICAL.

CONCRETE PAVEMENT
JOINTING AT UTILITY FIXTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

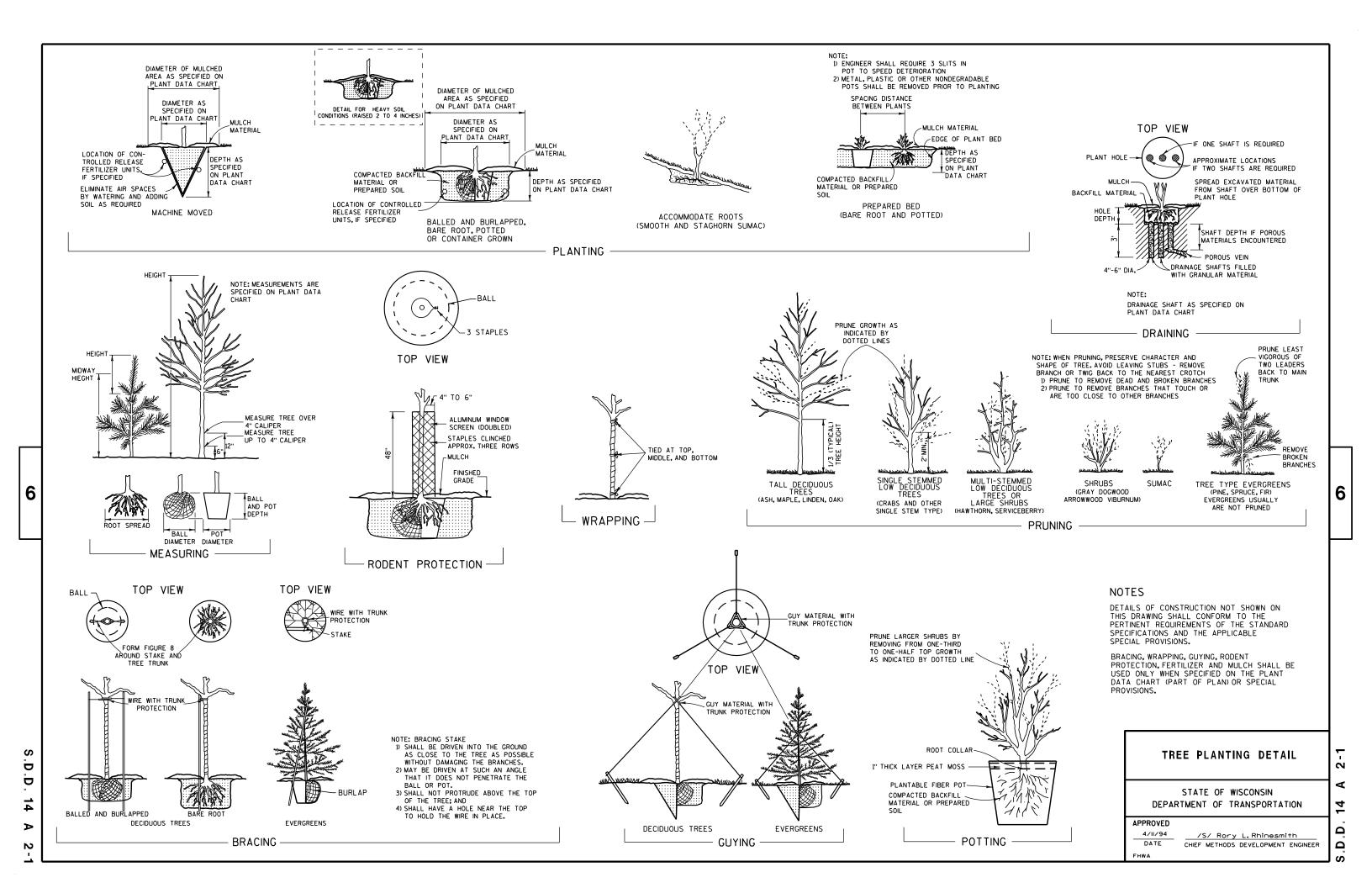
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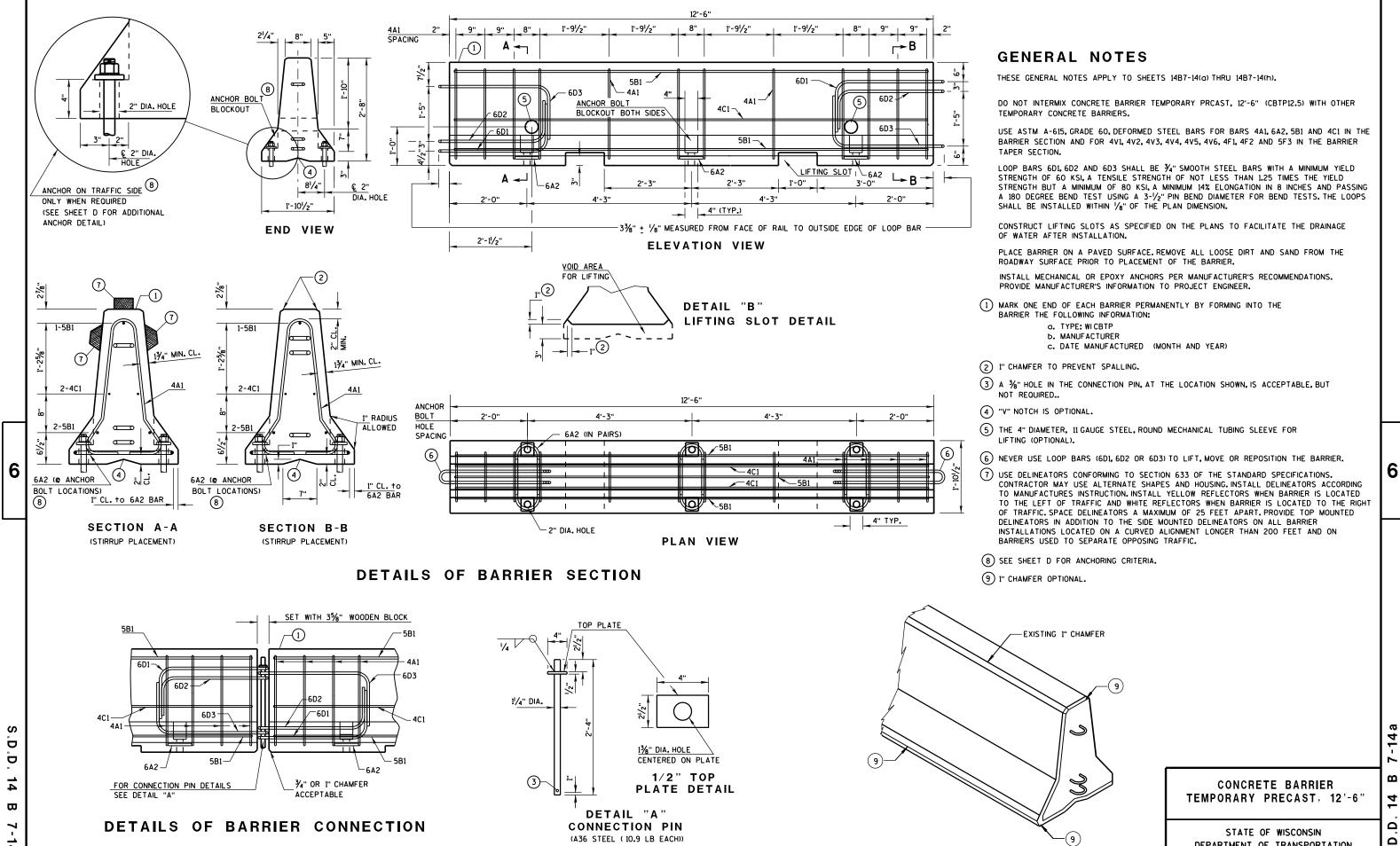
/S/ Deb Bischoff
PAVEMENT POLICY & DESIGN ENGINEER

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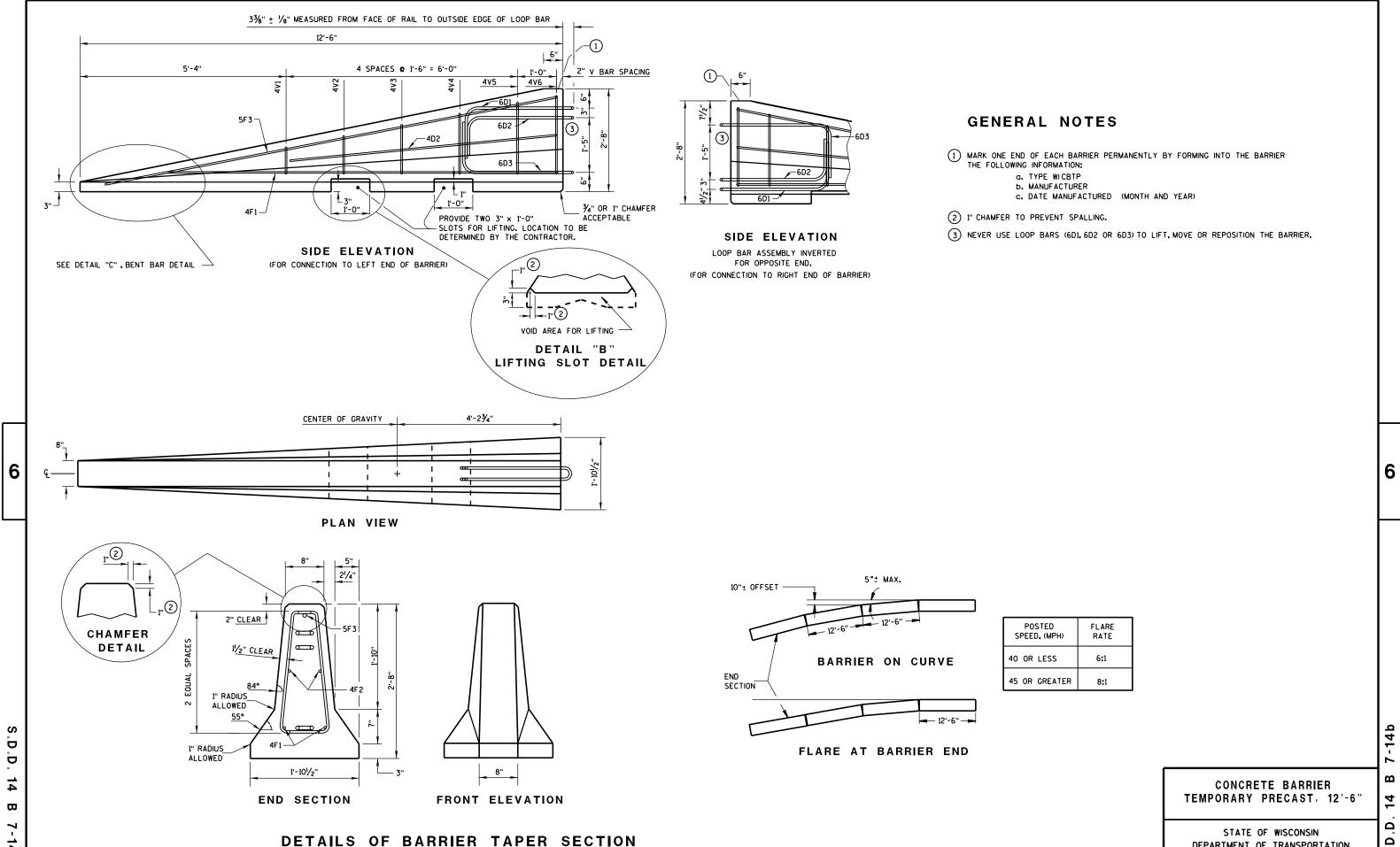
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DEPARTMENT OF TRANSPORTATION



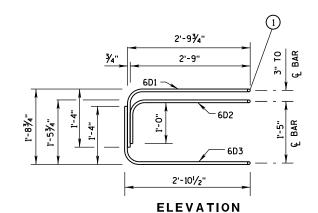
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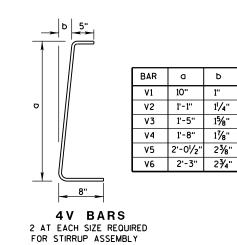
DEPARTMENT OF TRANSPORTATION

BARRIER TAPER SECTION BILL OF MATERIALS

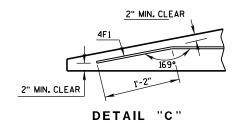
(PER 12'-6" BARRIER TAPER SECTION)

WENTE O BANNEN TAILN SECTION						
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.			
4V1	4	2	1'-11"			
4V2	4	2	2'-2"			
4V3	4	2	2'-6"			
4V4	4	2	2'-9"			
4V5	4	2	3'-2"			
4V6	4	2	3'-4"			
4F1	4	2	12'-0"			
4F2	4	2	7'-6"			
5F3	5	1	11'-9"			
LOOP ASSEMBLY						
6D1	6	1	8'-5"			
6D2	6	1	7'-7"			
6D3	6	1	8'-6"			
		•				





LOOP BAR ASSEMBLY



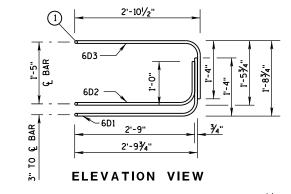


TAPER BARRIER SECTION



(PER 12'-6" BARRIER SECTION)

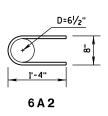
	BAR	BAR SIZE	NO. OF BARS	LENGTH FT.			
	4A1	4	12	6'-0"			
	6A2	6	6	2'-11"			
	5B1	5	3	12'-2"			
	4C1	4	2	12'-2"			
	LOOP ASSEMBLY						
	6D1	6	2	8'-5"			
	6D2	6	2	7'-7"			
	6D3	6	2	8'-6"			

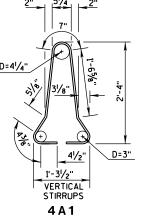




PLAN VIEW
LOOP BAR ASSEMBLY

(MARKED END SHOWN, INVERT FOR OTHER END)





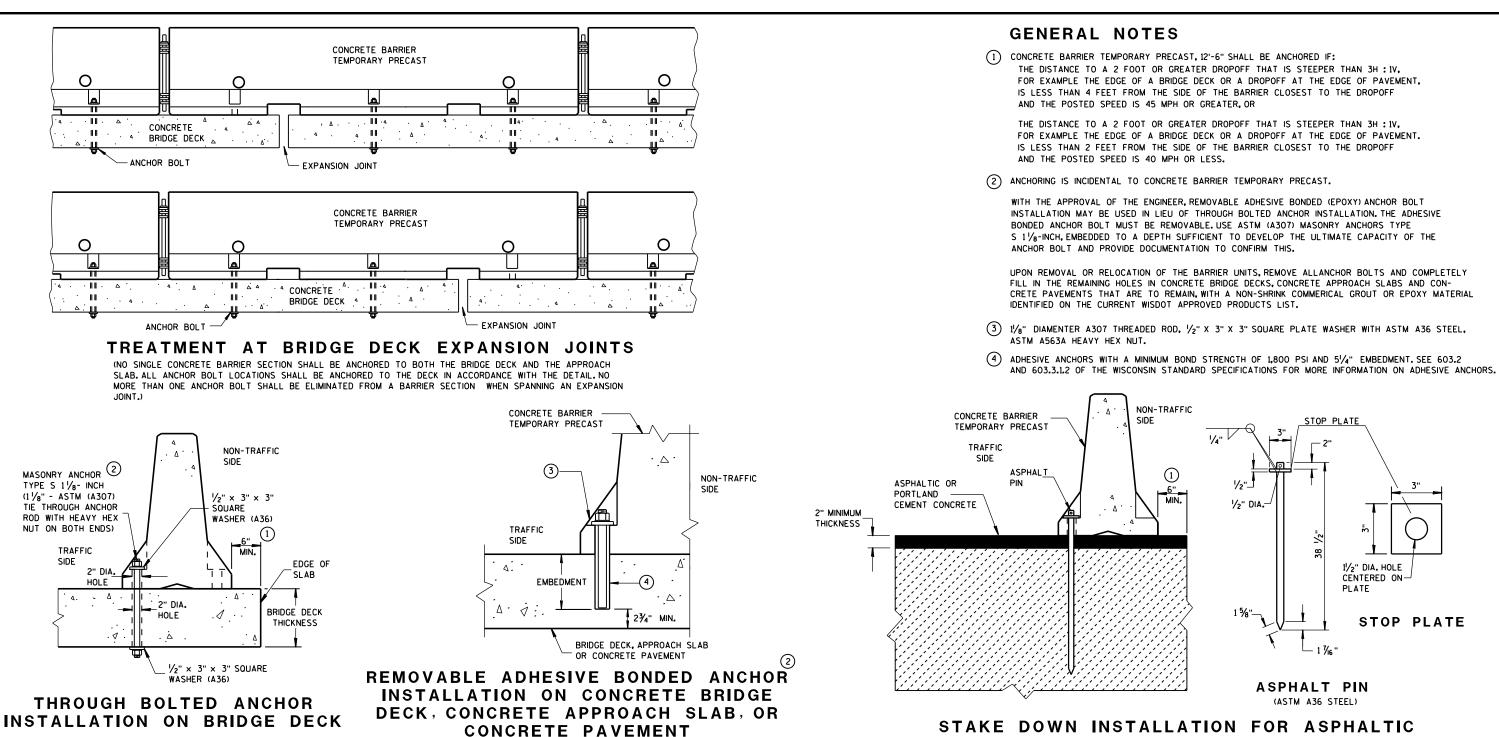
BARRIER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

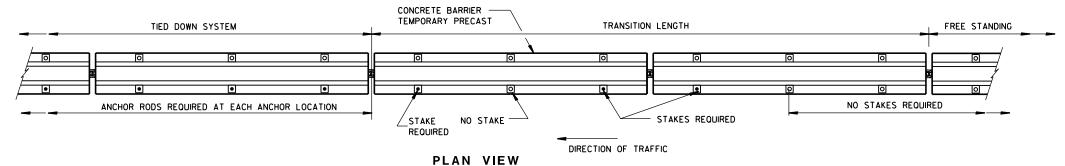
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STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)



(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM (PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY, IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN,)

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(DO NOTUSE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)

STATE OF WISCONSIN

CONCRETE BARRIER

TEMPORARY PRECAST, 12'-6"

11/2" DIA. HOLE

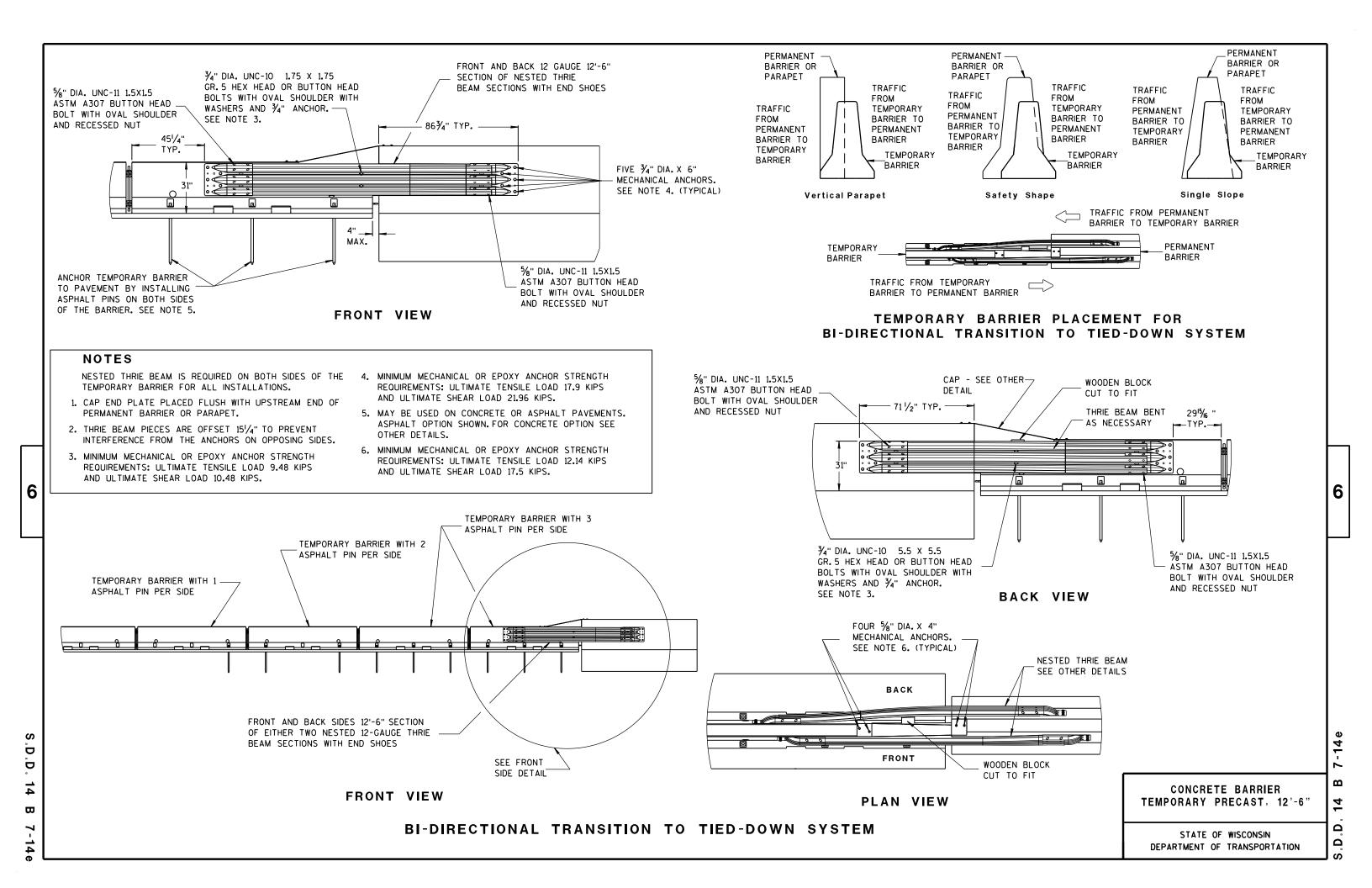
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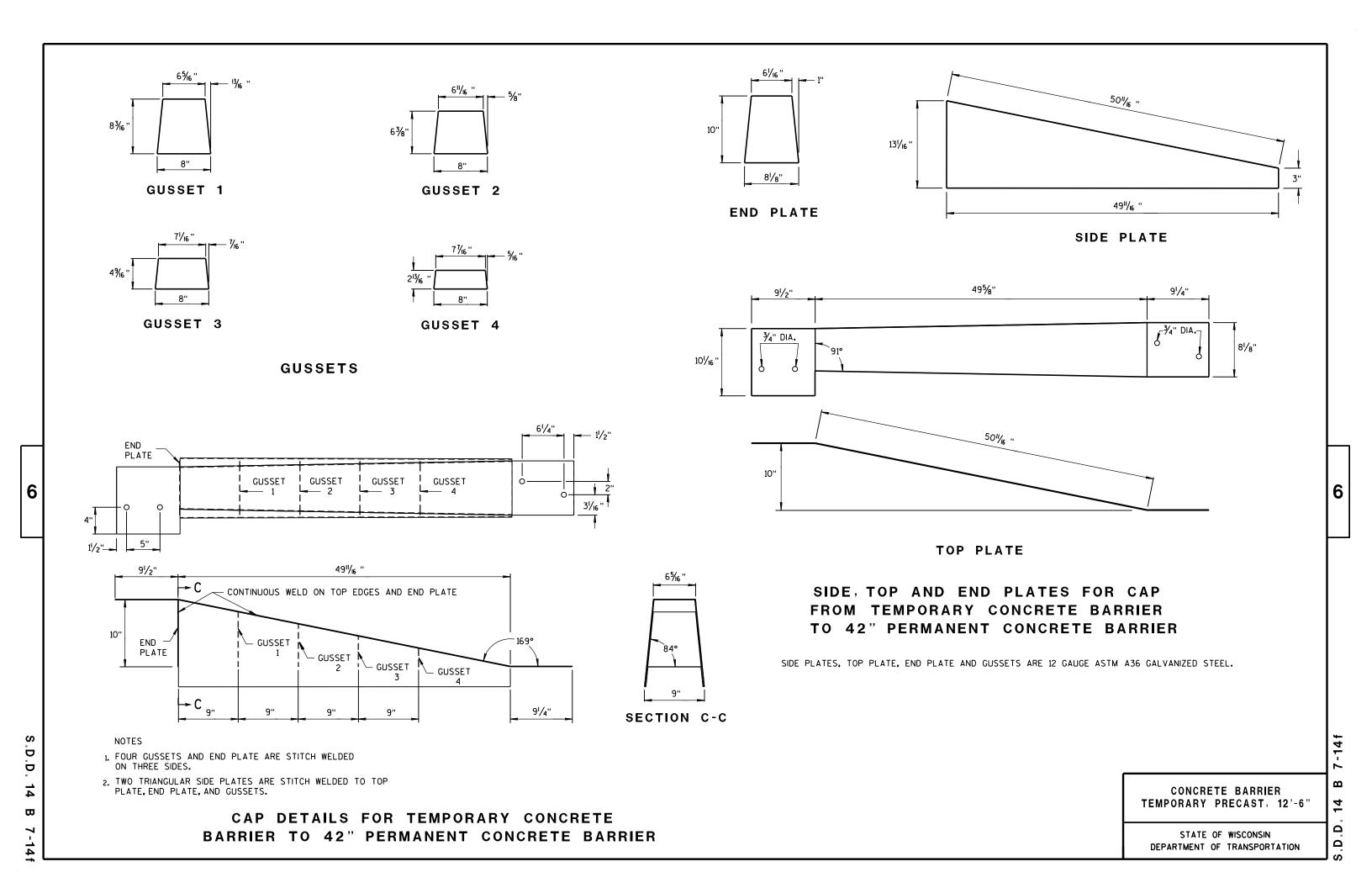
STOP PLATE

PLATE

DEPARTMENT OF TRANSPORTATION

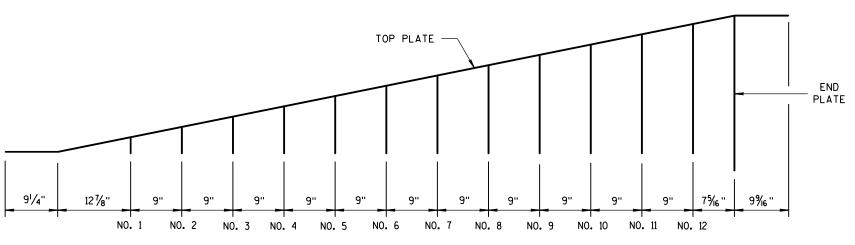
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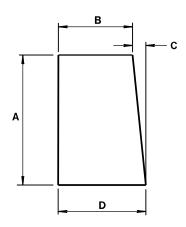
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GUSSET LOCATION

CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER



GUSSETS 1 - 12

ALL GUSSETS 1/8" STEEL PLATE

GU	SSET	DIMEN	ISIONS	6
GUSSET No.	A	В	С	D
1	21/8"	73/4"	1/4"	8
2	4"/16 "	7% "	1/2"	8
3	61/2"	73/8"	11/16 "	81/16 "
4	85/16"	73/16"	7∕8"	8½ ₆ "
5	101/8"	7"	1 ½ ₆ "	81/16 "
6	11 ¹⁵ / ₁₆ ''	6 ¹³ / ₁₆ "	1 1/4"	81/16"
7	13¾"	65%"	1 ½6"	81/16"
8	15% "	6¾6"	1 % "	81/16"
9	173/8"	61/4"	1 ¹³ / ₁₆ ''	8½6"
10	193/6"	6½ ₆ "	1 15/16 "	81/16 "
11	21"	57/8"	23/6"	8½ ₆ "
12	22 ¹³ / ₁₆ "	5 ¹¹ / ₁₆ "	25/6"	81/16"

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 STEEL AND GALVANIZED.

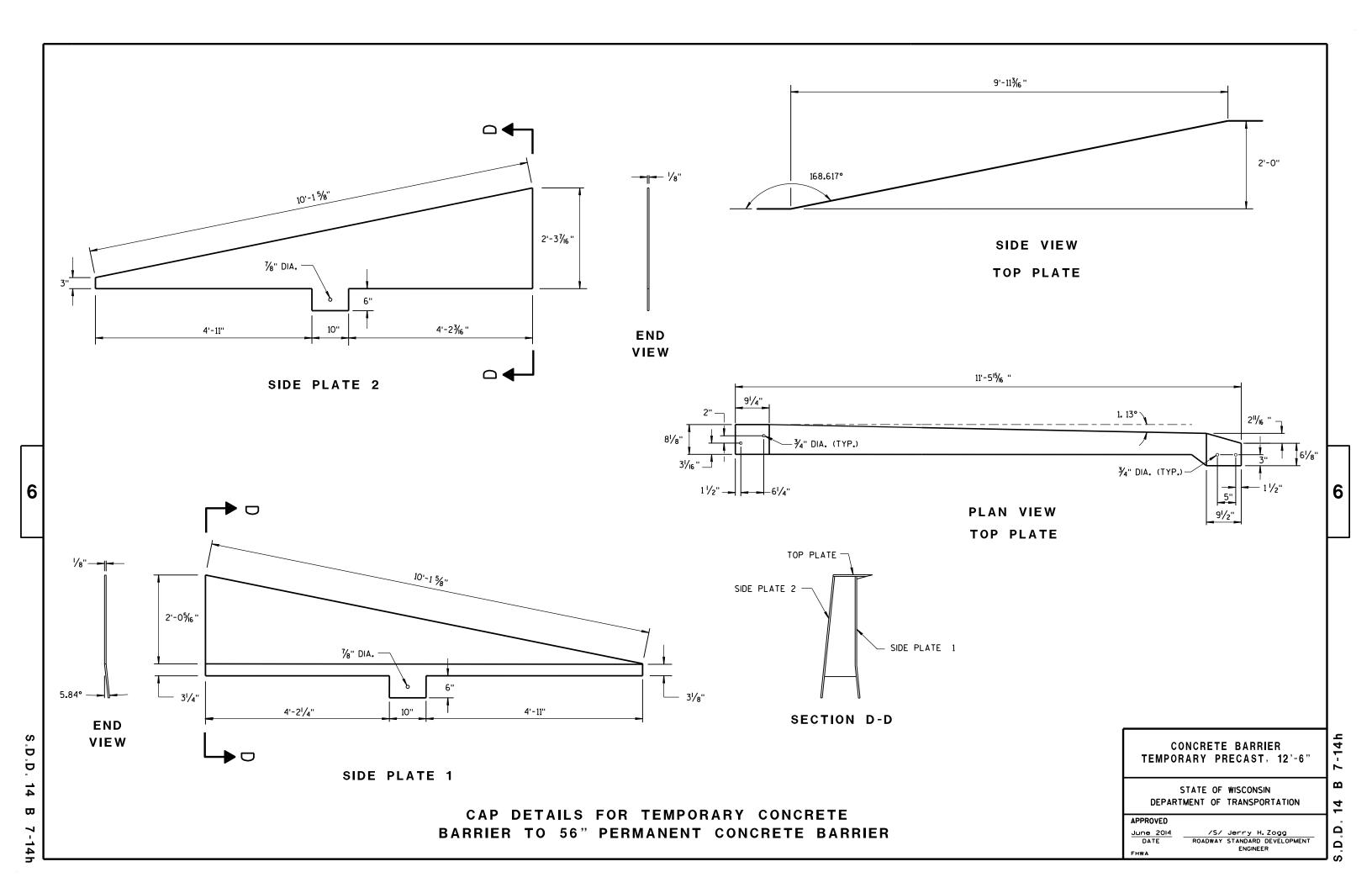
GUSSETS AND END PLATE ARE STITCH WELDED ON 3 SIDES. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE AND GUSSETS.

> CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

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SECTION A-A SECTION B-B

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PLAN VIEW

BILL OF MATERIALS

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



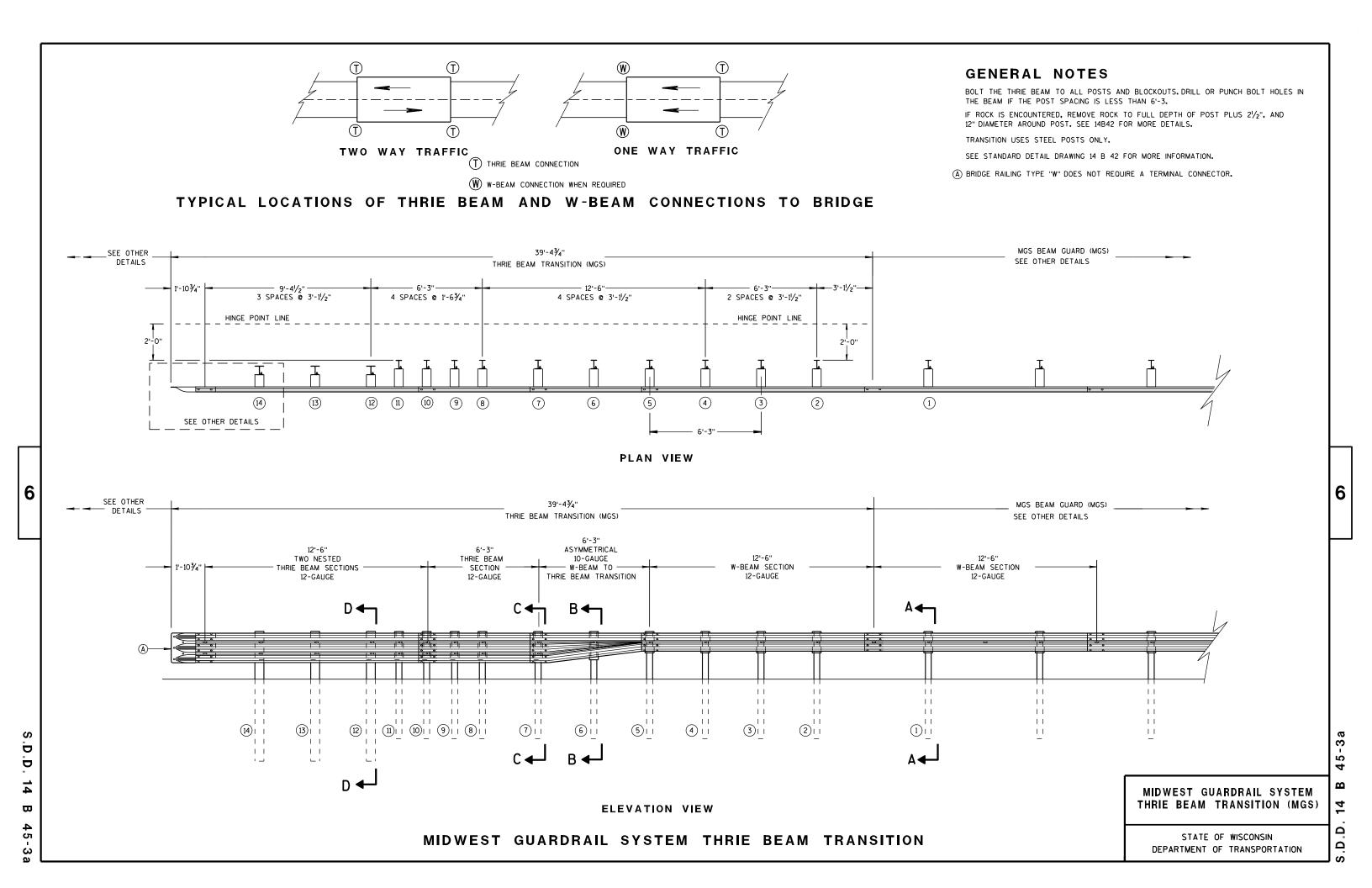
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

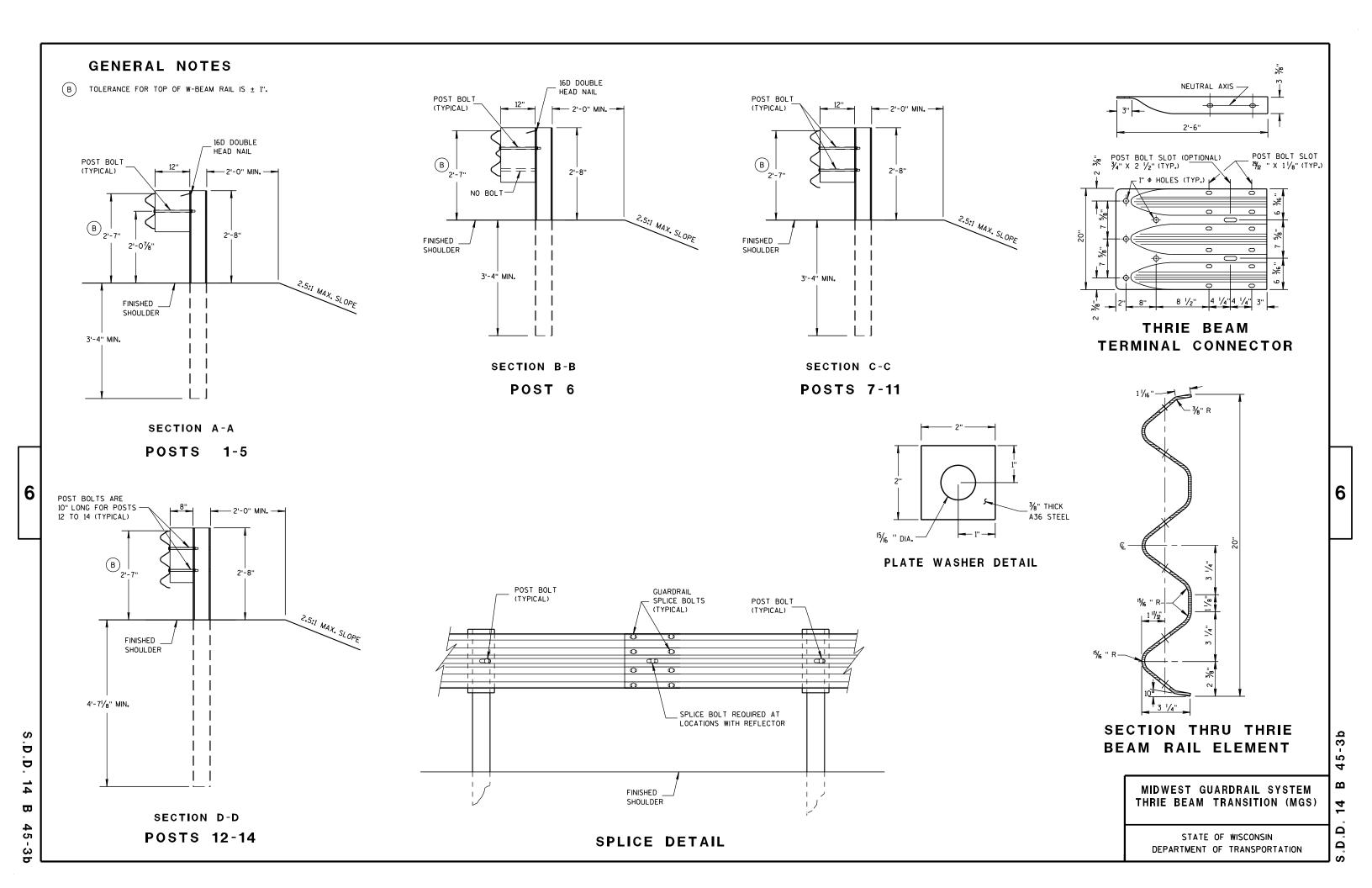
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

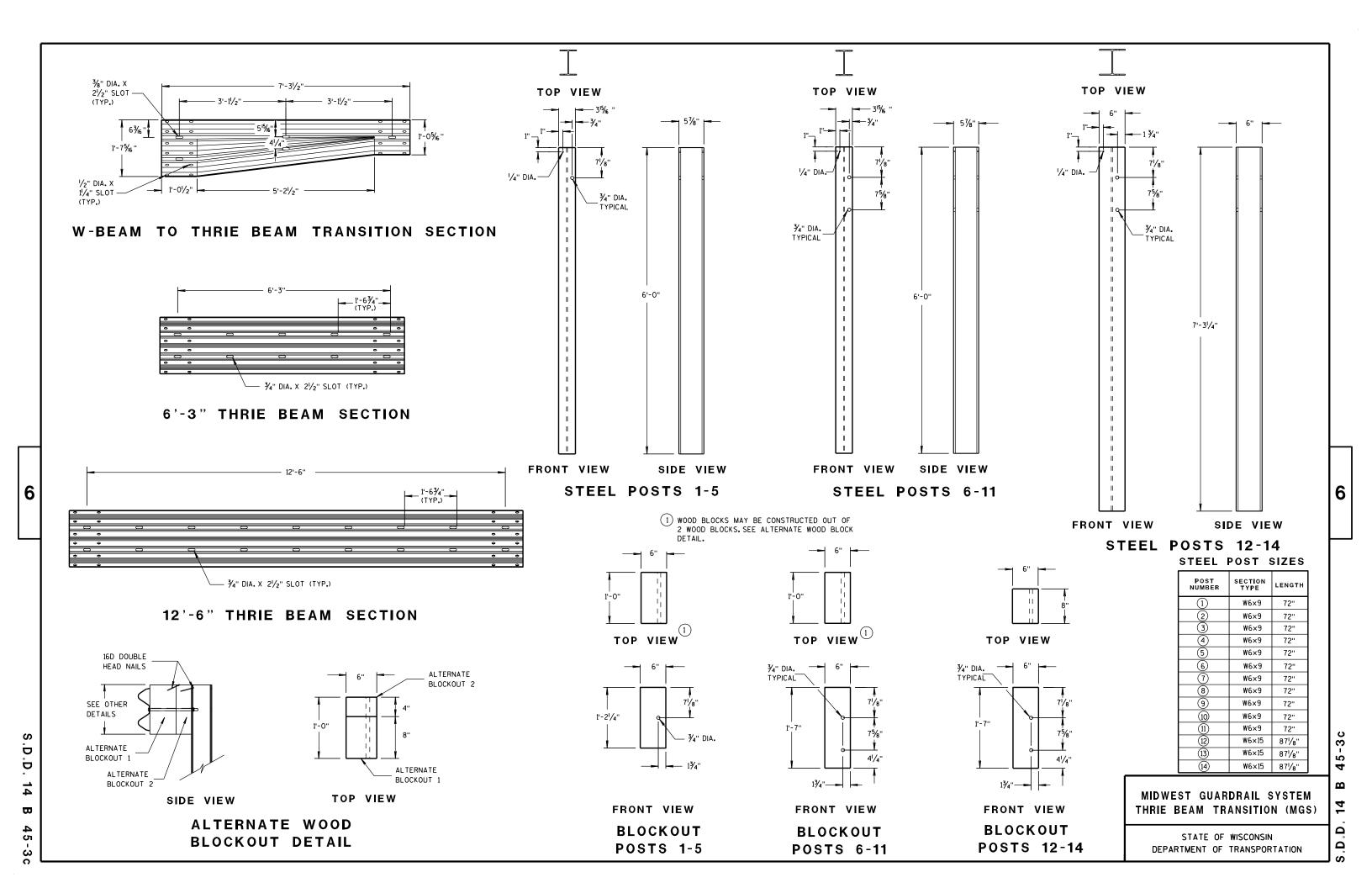
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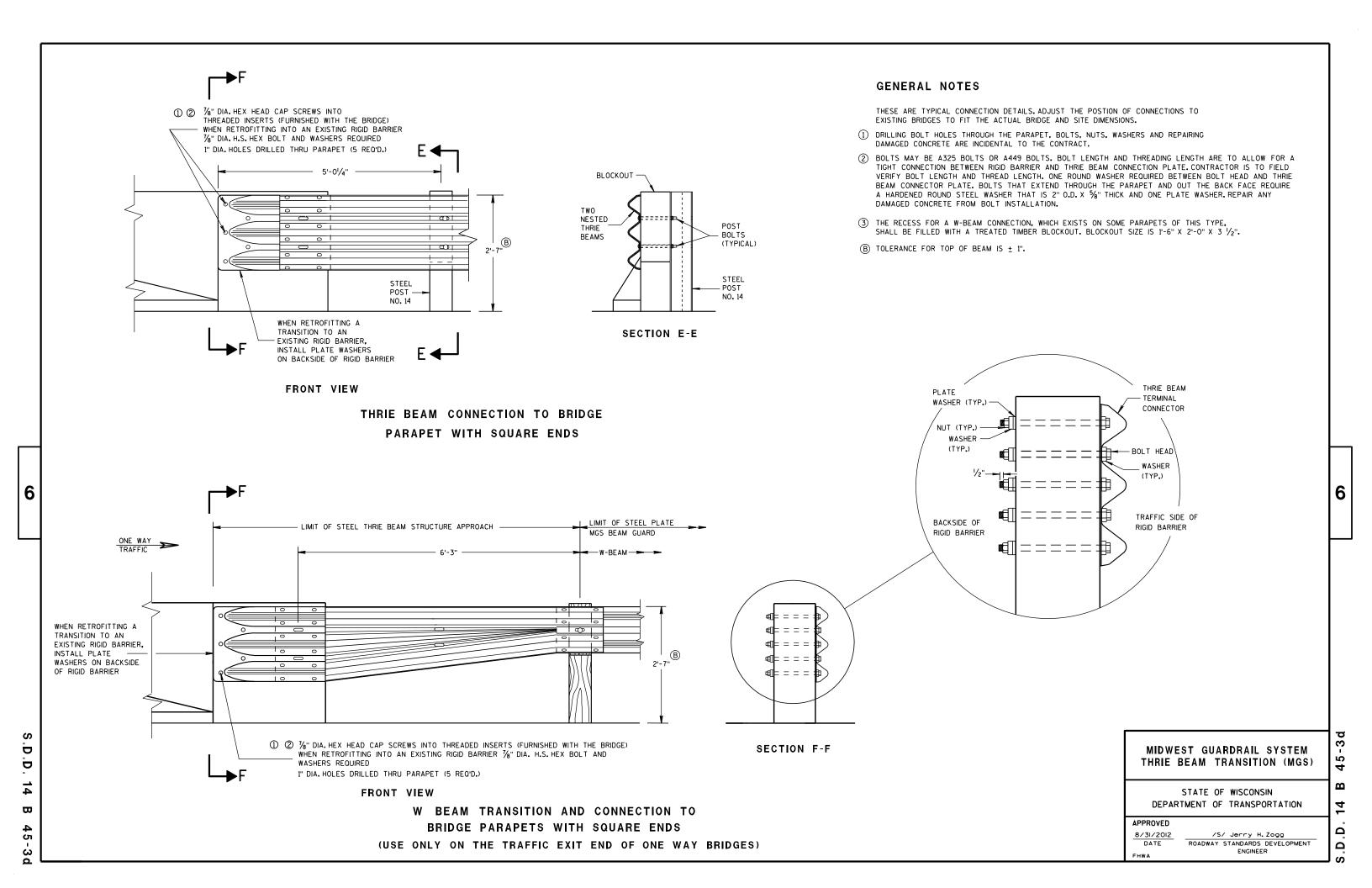
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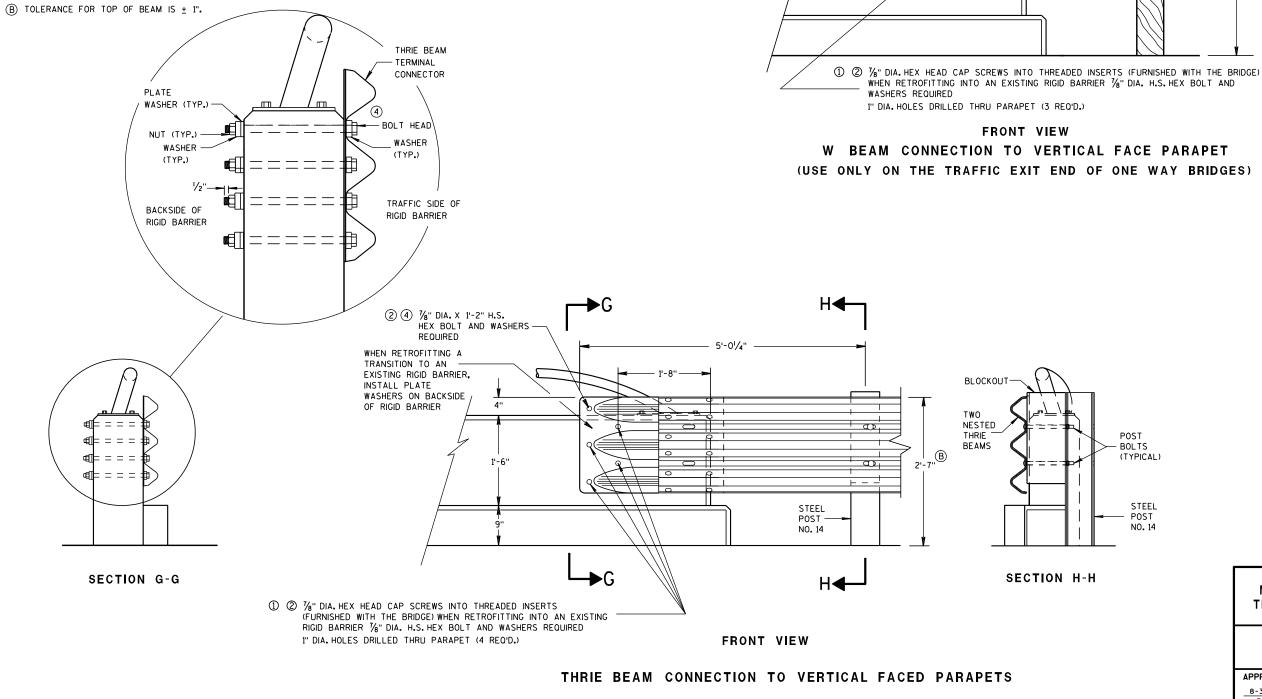




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THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

- (1) DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- (2) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE, BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5%" THICK AND ONE PLATE WASHER REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- (3) THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2". BLOCK IS INCIDENTAL TO THE CONTRACT.
- 4 BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.



② 1/8" DIA. X 1'-2" H.S.

REQUIRED

WHEN RETROFITTING

A TRANSITION TO

AN EXISTING RIGID

BARRIFR INSTALL -

PLATE WASHERS

ON BACKSIDE OF

RIGID BARRIER

HEX BOLT AND WASHERS

W BEAM TERMINAL -CONNECTOR

4

LIMIT OF STEEL PLATE

5'-0 1/4" -

4'-2 1/4"

- 3'-1¹/2'

MGS BEAM GUARD

ONE WAY

(B)

6

2

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MIDWEST GUARDRAIL SYSTEM

THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

/S/ Jerry H. Zogg

ROADWAY STANDARDS DEVELOPMENT

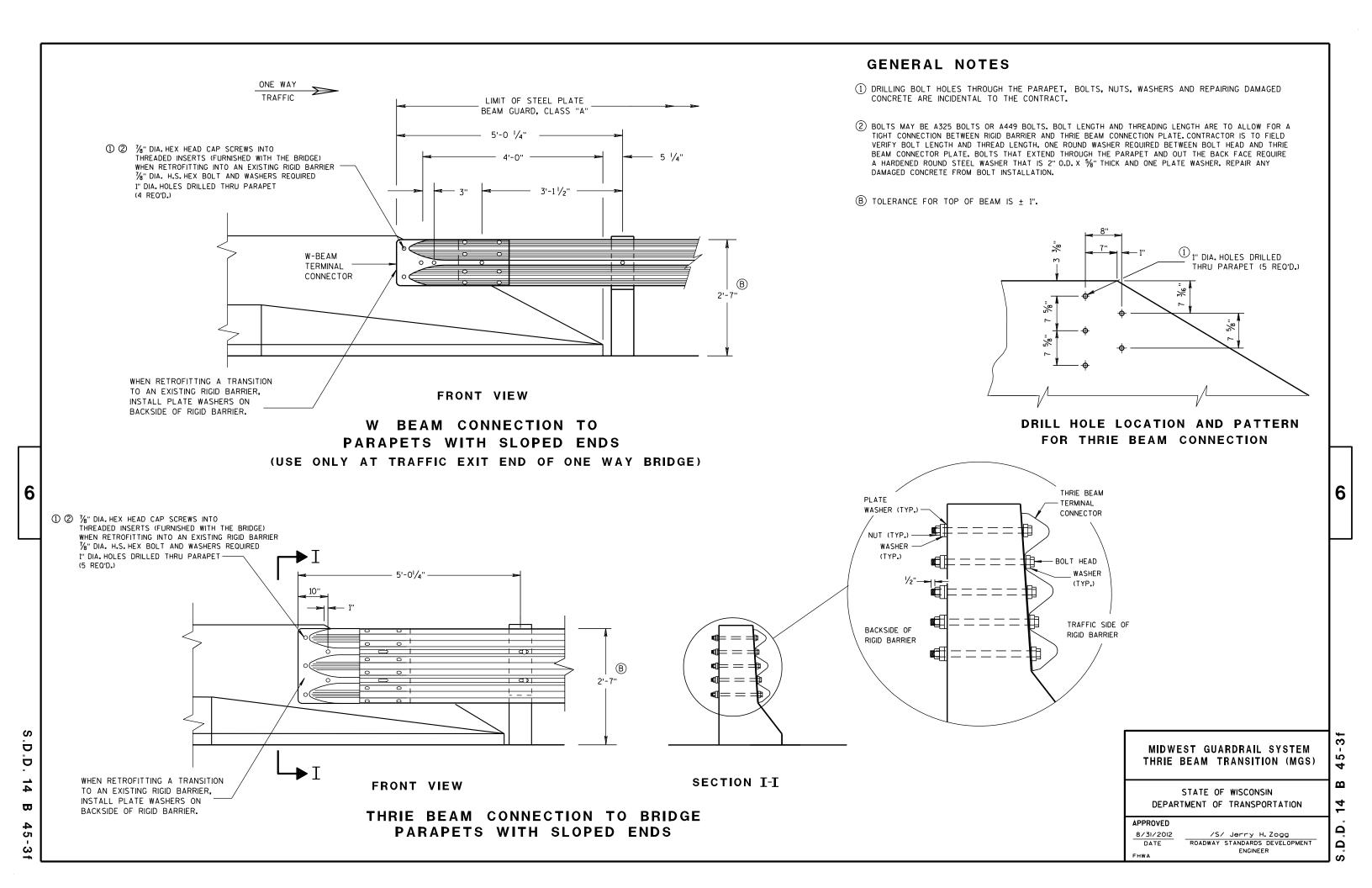
ENGINEER

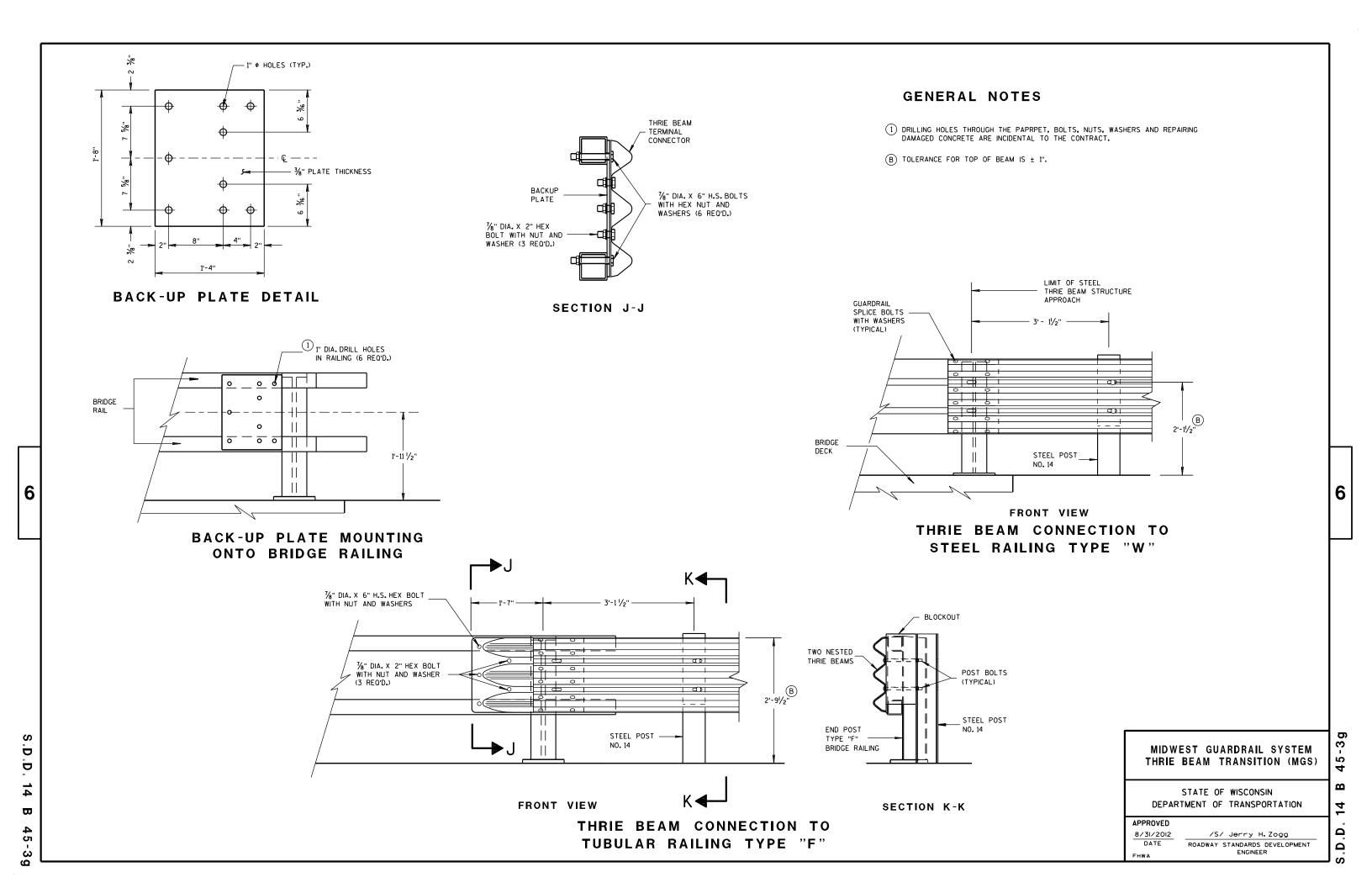
APPROVED

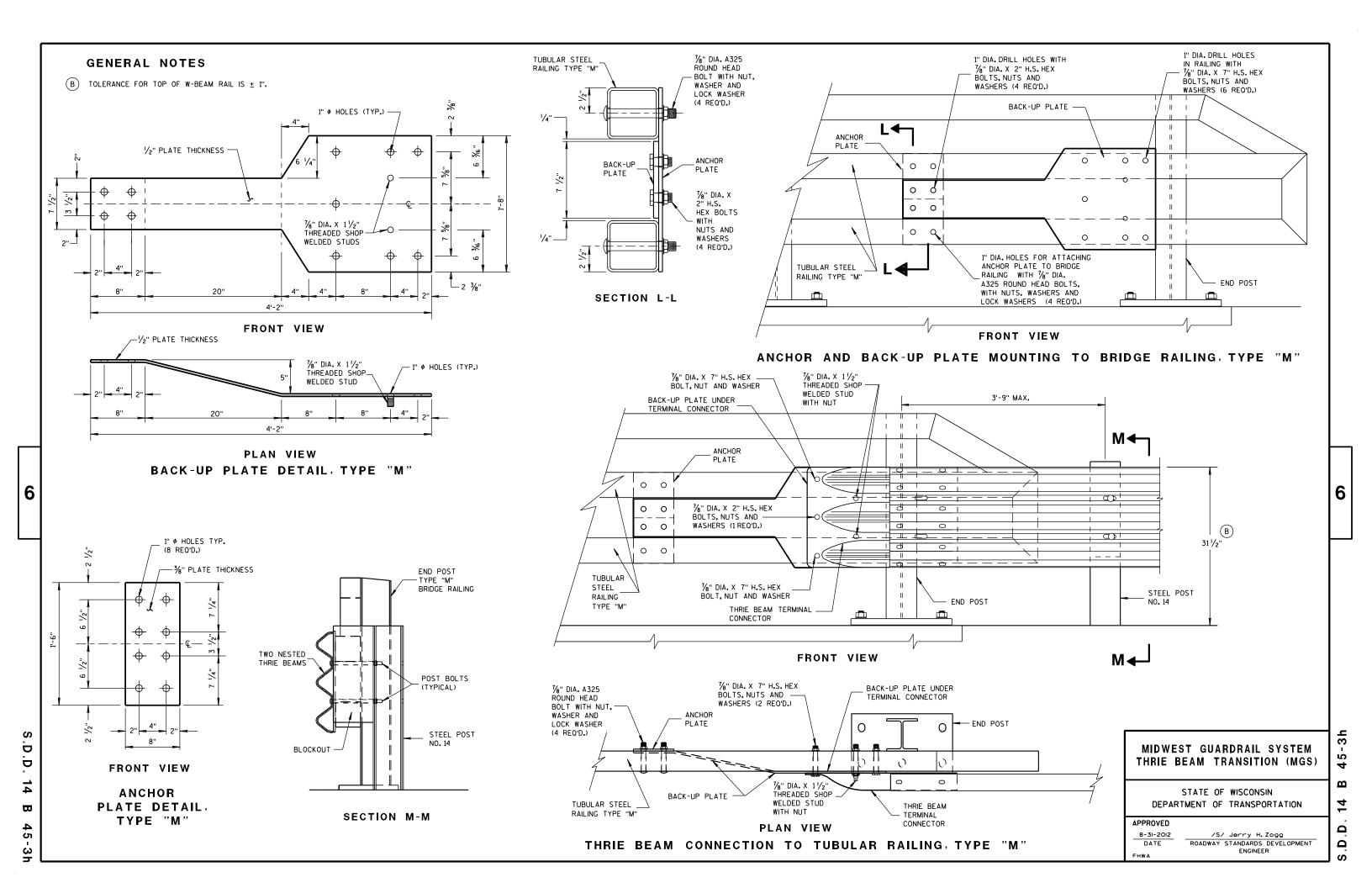
8-31-2012

2'-7"

TRAFFIC







	CONNE		R ASSEMBLY)	ION
PLATE	QUANTITY	SHAPE	SIZE (A × B × C × D)	THICKNESS
P1	1	в₫	20" × 20"	3/6 "
P2	1	B∱c	20" × 20" × 28%6"	¾6 "
Р3	1	B C D	39" × 35/8" × 20" × 191/6"	3∕16 ''
S1	4	B	18 1/6 " × 3 1/8" × 18 3/4"	1/4"
S2	1	B C D	10 ¹ / ₄ " × 2 ¹ / ₁₆ " × 10 ³ / ₈ " × ¹ / ₂ "	1/4"
S3	1	B C D	$3" \times 1^{1}/_{16}" \times 3^{1}/_{8}" \times 1^{1}/_{2}"$	1/4"
S4	1	вД	6½" × 2½6"	1/4"
S5	1	В	6½" × ½"	1/4"
S6	1	В	7¾" × 1¾"	1/4"
S7	1	ABC	2%6" × 6" × 3%" × 5%"	1/4"
S8	1	A∯C	1 ⁵ / ₃₂ " × 7 ¹ / ₂ " × 2 ¹ / ₂ " × 7 ³ / ₈ "	1/4"
S9	1	C 	$6\frac{1}{16}$ " × $6\frac{3}{16}$ " × $1\frac{3}{32}$ "	1/4"
S10	1	A D C	1%" × 9%" × 3%" × 911/16"	1/4"
S11	1	C A	8½" × 8¾" × 1⅓6 "	1/4"

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SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

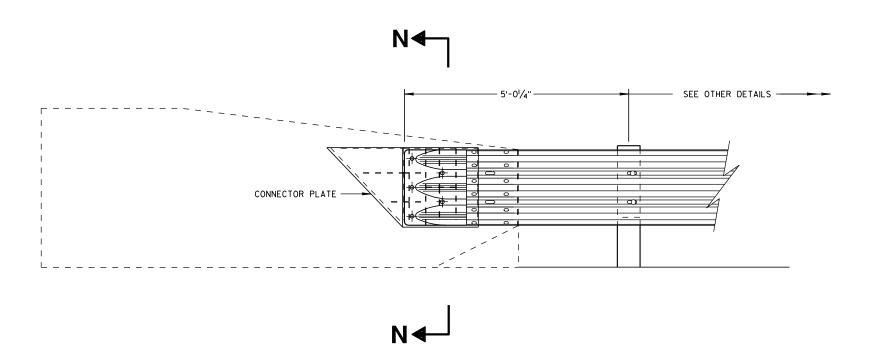
APPROVED

8/31/2012 /S/ Jerry H. Zogg

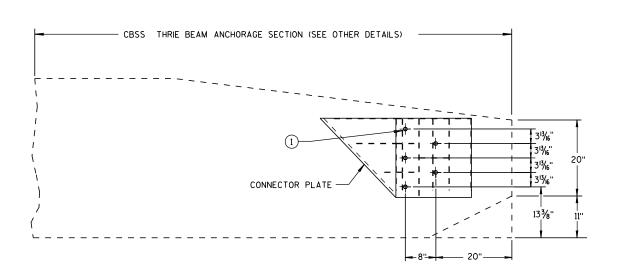
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER

S.D.D. 1

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THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER

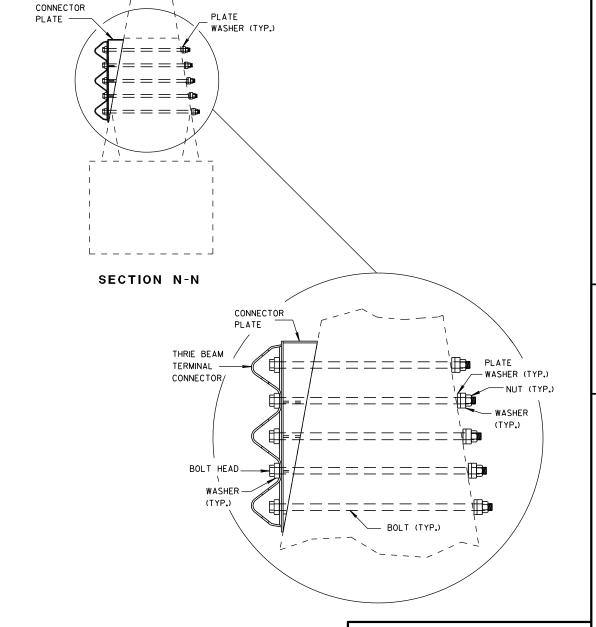


SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)

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STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVED 8/31/2012

/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER

GENERAL NOTES

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

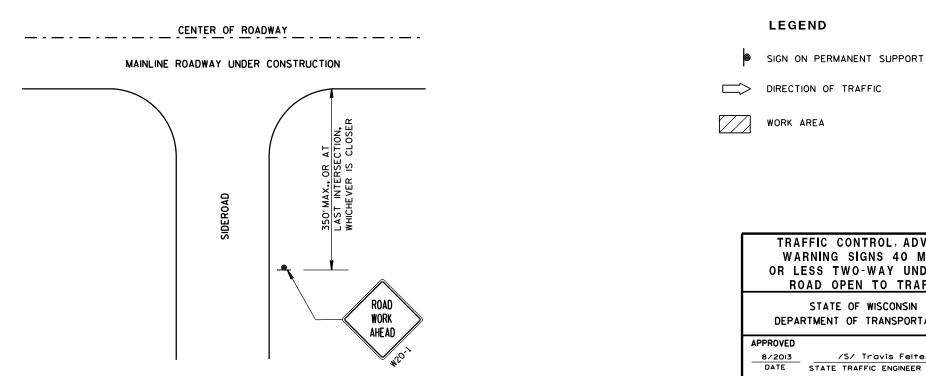
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"×48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"x36" SIGNS MAY BE USED INSTEAD OF 48"x48"

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

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS RE-ESTABLISHED.

* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FT" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.



TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

/S/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN

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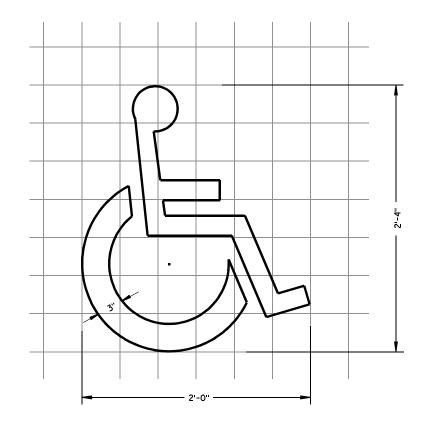
D Ö 15 C

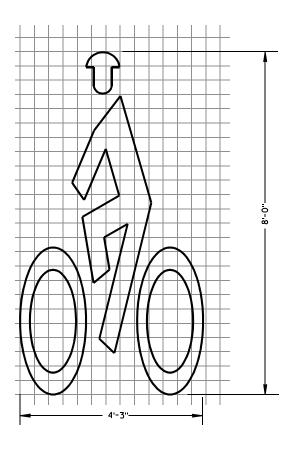
GENERAL NOTES

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.

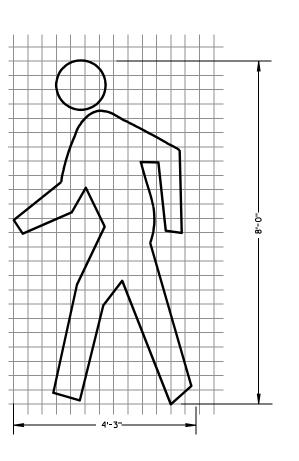
ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES OF THAT BOOK ARE ACCEPTABLE.

A DETAILED DRAWING OF THE HANDICAPPED PARKING SYMBOL IS ILLUSTRATED IN THE "STANDARD HIGHWAY SIGNS MANUAL" BY THE FEDERAL HIGHWAY ADMINISTRATION.

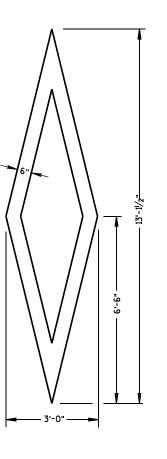




BIKE CROSSING SYMBOL



PEDESTRIAN SYMBOL



PREFERENTIAL LANE SYMBOL

PAVEMENT MARKING SYMBOLS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

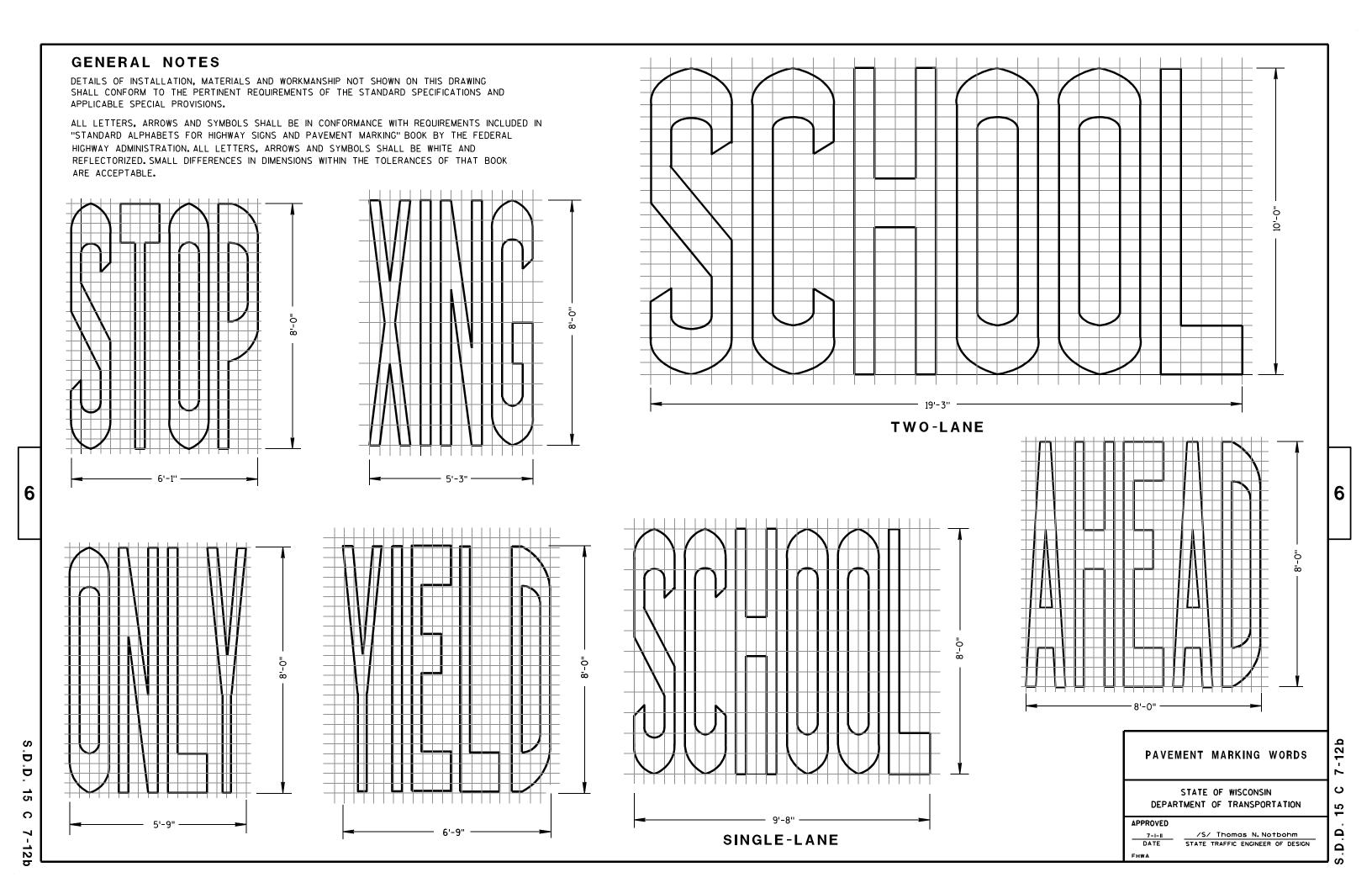
APPROVED

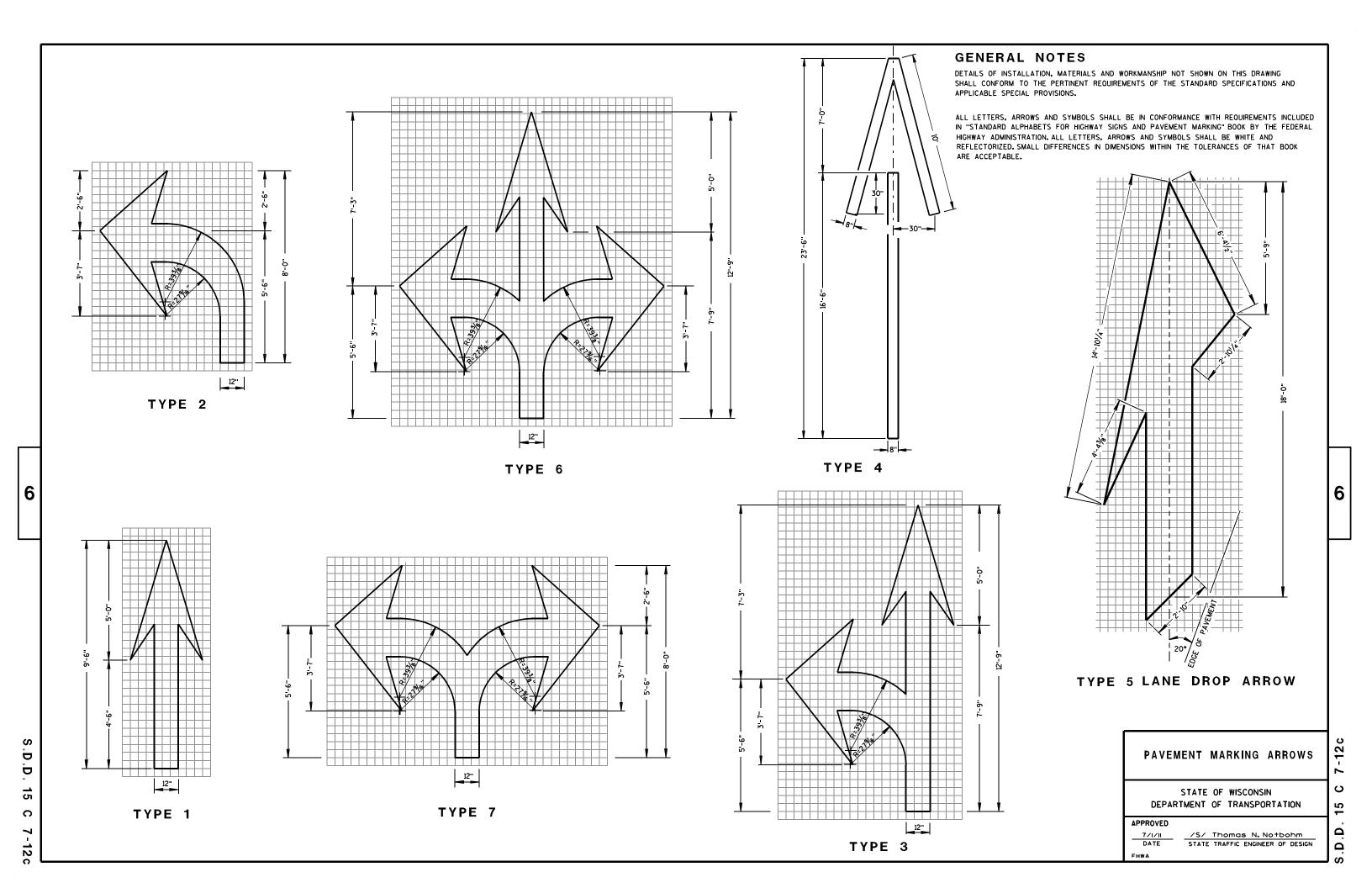
7/I/II /S/ DATE STATE

/S/ Thomas N Notbohm STATE TRAFFIC ENGINEER OF DESIGN 6

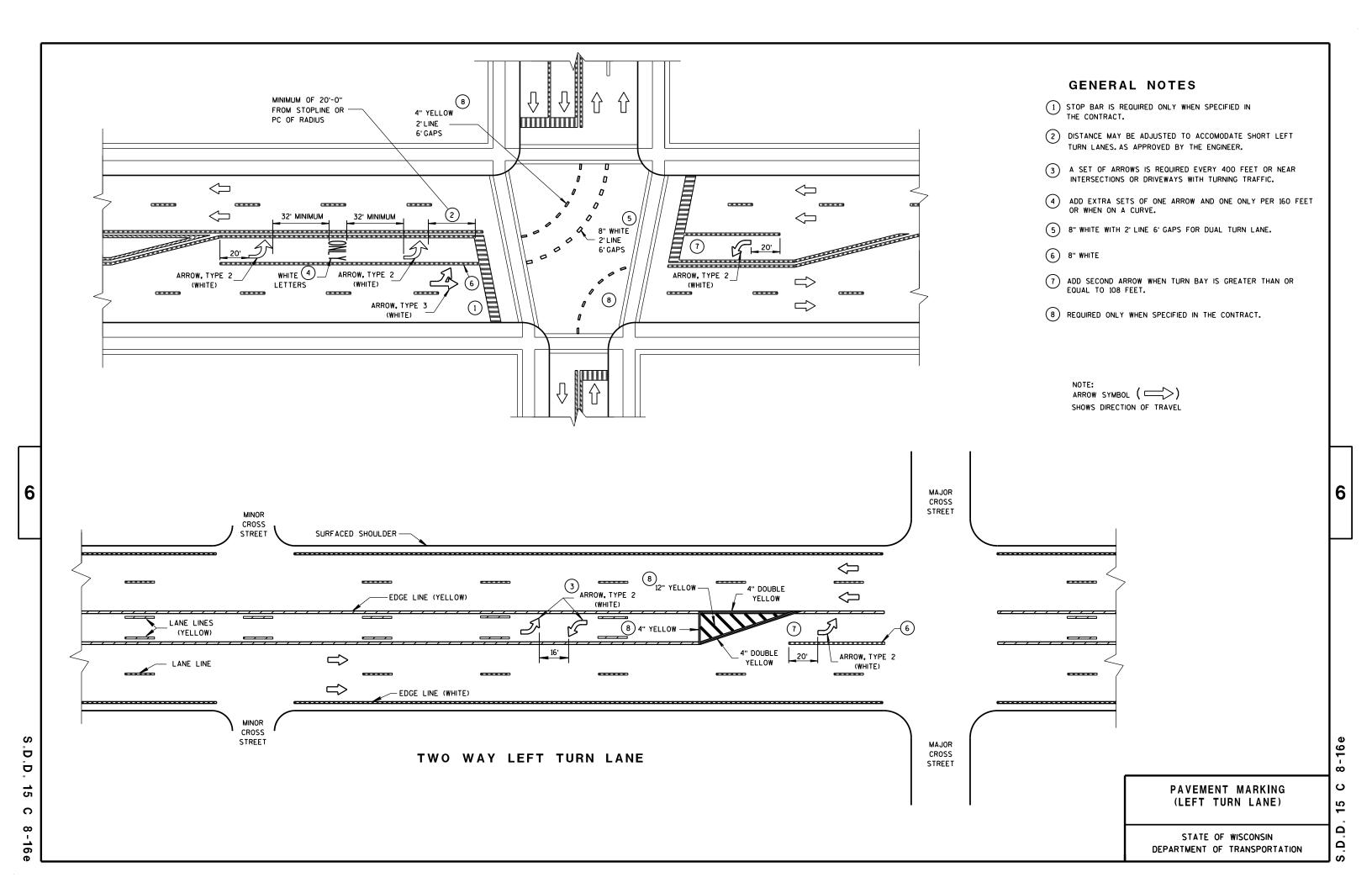
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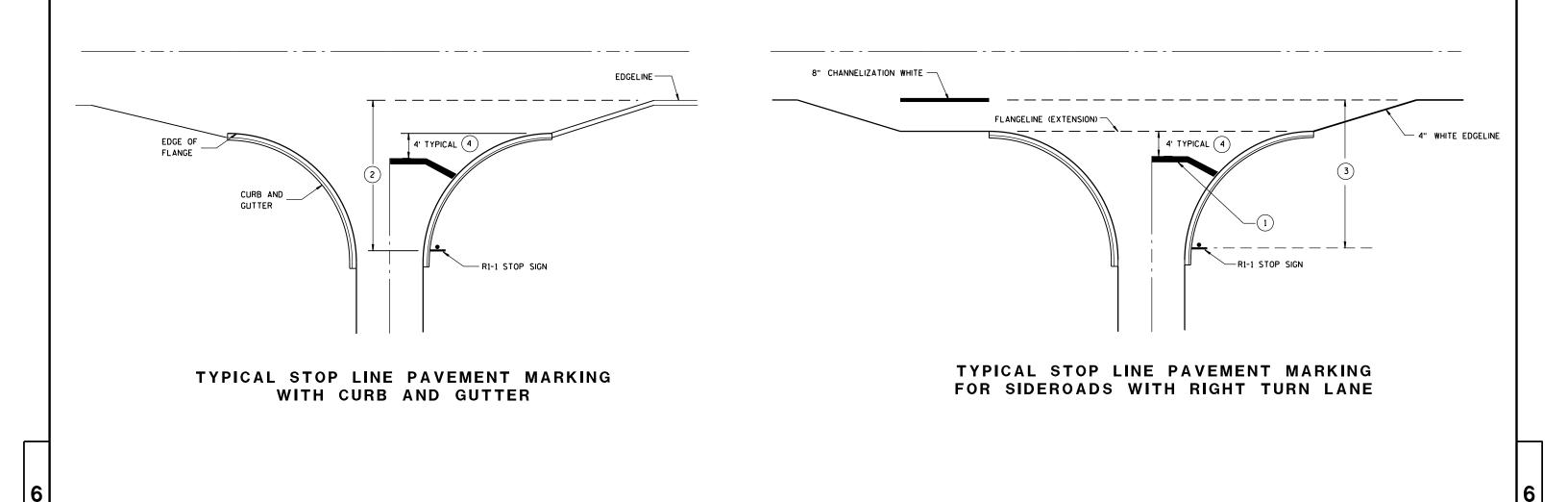
.D.D. 15 C 7-12a

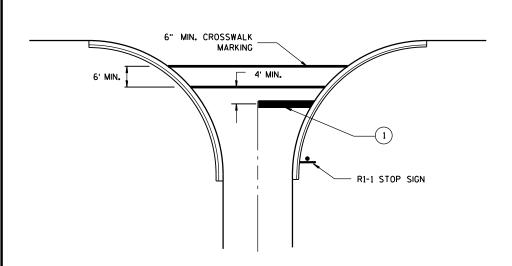




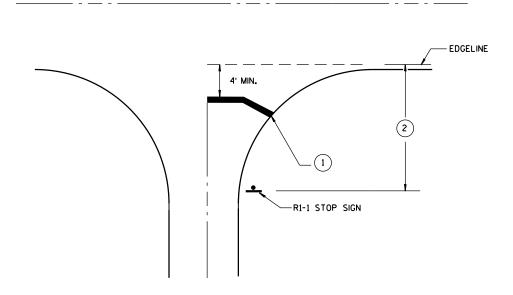








TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

GENERAL NOTES

- 1 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE PROJECT ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- 2 IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE THAN NO STOP LINE IS REQUIRED.
- (3) IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION THAN NO STOP LINE IS REQUIRED.
- MOVE CLOSER TO EDGE OF TRAVEL LANE AS NEEDED FOR VISIBILITY AND SIGHT LINES.

STOP LINE AND CROSSWALK PAVEMENT MARKING

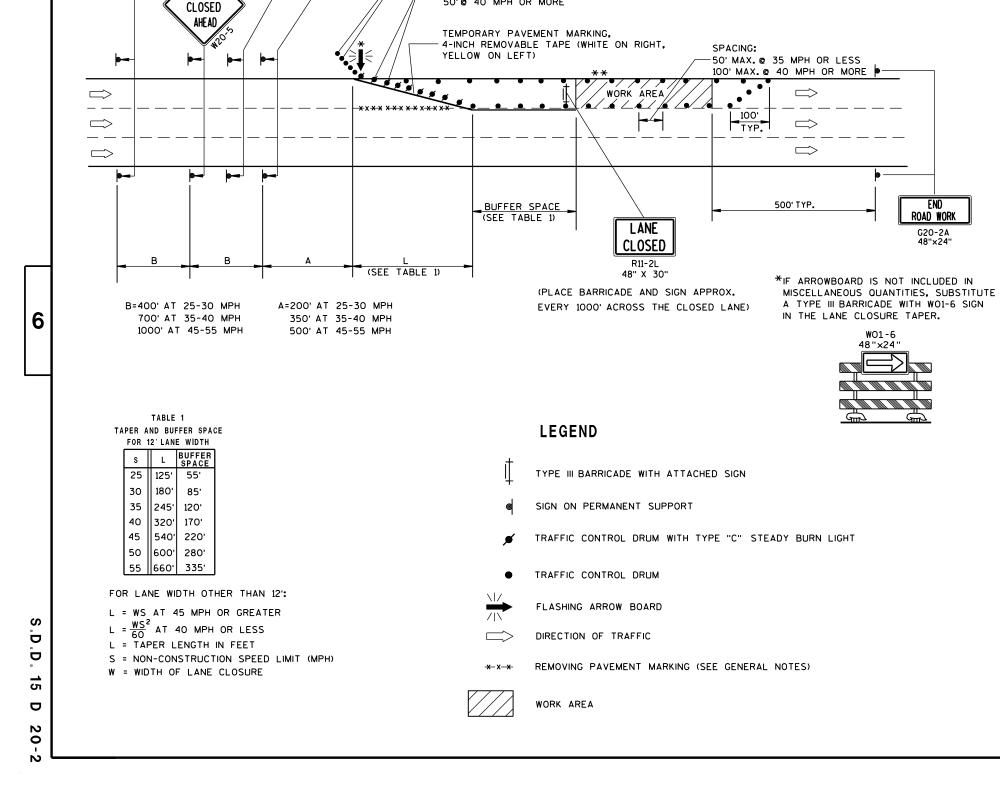
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVED	
4/30/2013	/S/ Travis Feltes
DATE	STATE TRAFFIC ENGINEER
FHWA	

.D.D. 15 C 33-1

S.D.D.





(5) DRUMS SPACED @ 10'

INTERVALS AS NEEDED IN

FRONT OF ARROW BOARD

25' @ 35 MPH OR LESS 50' @ 40 MPH OR MORE

SPACING:

ROAD WORK

NEXT___MILES

G20-1

60" X 24"

AHEAD

GENERAL NOTES

**THE LINE OF DRUMS SHOWN ALONG THE MEDIAN/CENTERLINE

ADJACENT TO THE WORK AREA. FOR THIS CONDITION INSTALL

W20-1 "ROAD WORK AHEAD" SIGN FOR OPPOSING DIRECTION OF

IS REQUIRED ONLY WHERE THERE IS OPPOSING TRAFFIC

TRAFFIC. IN ADVANCE OF THE WORK AREA.

THIS LANE CLOSURE DETAIL IS TYPICAL FOR CLOSING THE LEFT LANE, FOR A RIGHT LANE CLOSURE, REVERSE THE TRAFFIC CONTROL.

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

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 SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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

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

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 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.

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

ON UNDIVIDED ROADWAYS, OMIT THE SIGNS SHOWN ON LEFT SIDE OF ROAD.

W2O-1, G2O-1 AND G2O-2A SIGNS ARE NOT REQUIRED IF THE LANE CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.

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

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROWBOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROWBOARDS AND LANE CLOSURE DRUMS.

PLACE THE ARROWBOARD AS CLOSE AS POSSIBLE TO THE BEGINNING OF THE LANE CLOSURE TAPER, PREFERABLY ON THE SHOULDER OR TERRACE.

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

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

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

TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY

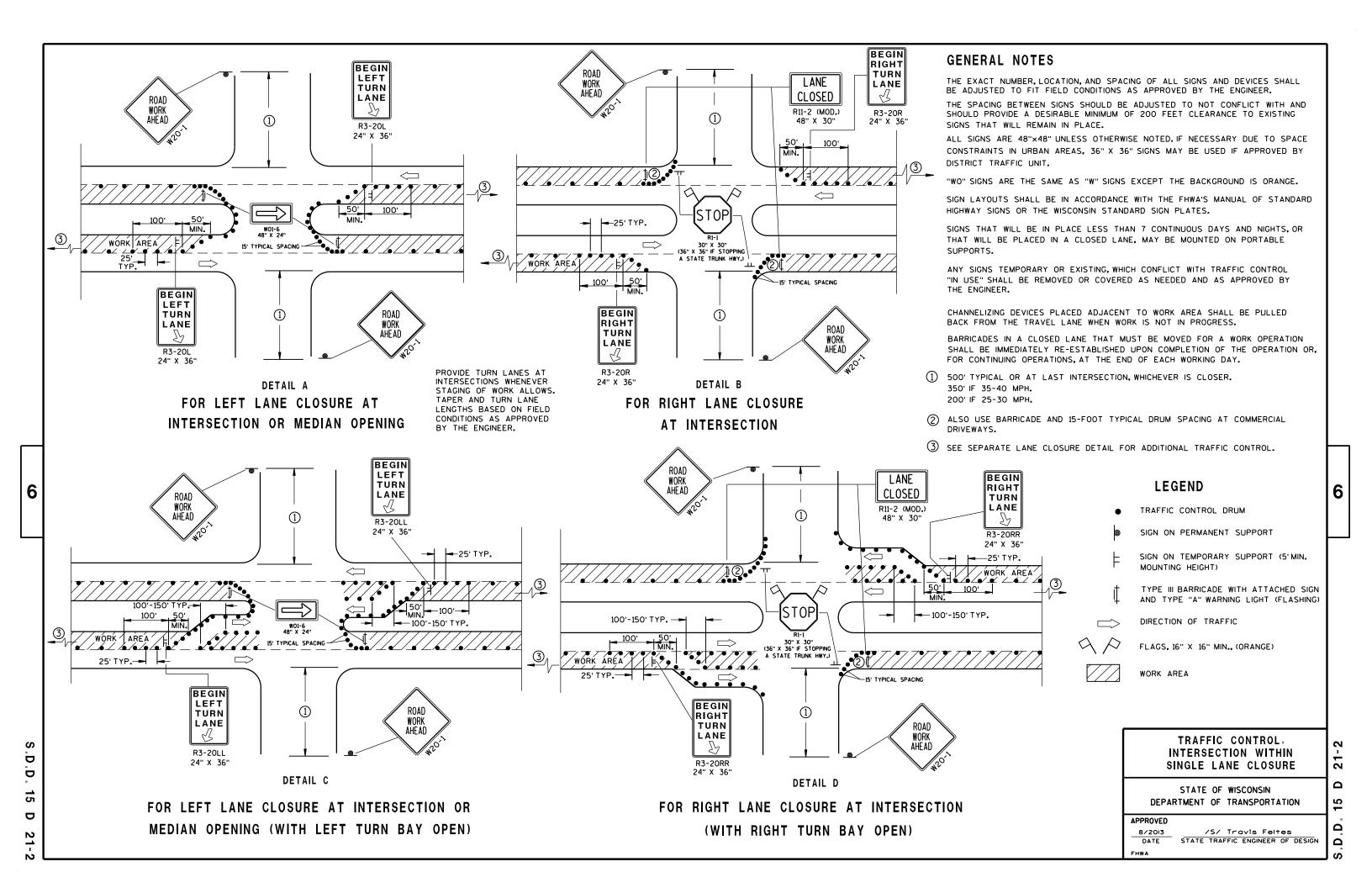
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/2013 /S/ Travis Feites

DATE TRAFFIC ENGINEER OF DESIGN

S.D.D. 15 D 2



1. Signs are Type II - Type H Reflective - reference WIS DOT Standard

areater 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.



PROJECT NO:

J32-1

J22-1

J23-1

J33-1

PLOT BY: mscsja

PLATE NO. __A2-15.8

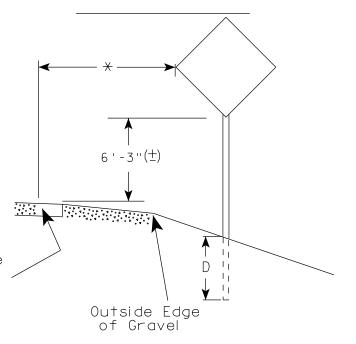
DATE 2/06/14

SHEET NO:

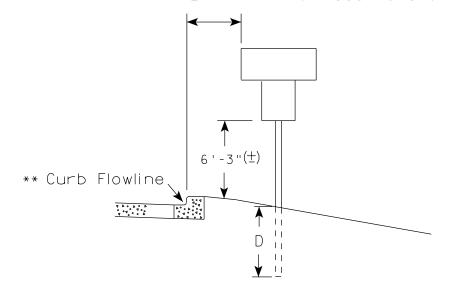
URBAN ARFA

2' Min - 4' Max (See Note 6) 7'-3"(士) ** Curb Flowline. White Edgeline Location

RURAL AREA (See Note 2)



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



5'-3"(生) A POLICE AND A POL D^{-1} Outside Edae of Gravel

White Edgeline Location

** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated.

HWY:

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.

PLOT DATE: 12-NOV-2014 14:03

GENERAL NOTES

- 1. Signs wider than 4 feet, 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
- 2. If signs are mounted on barrier wall, see A4-10 sign plate.
- 3. For expressways and freeways, mounting height is $7'-3''(\pm)$ or 6'-3" (±) depending upon existence of a sub-sign.
- 4. Minimum mounting height for J assemblies (A2-1S) is $7'-3''(\pm)$ or $6'-3''(\pm)$ per urban or rural detail respectively.
- 5. Minimum mounting height for signs mounted on traffic signal poles is 5' - 3'' (\pm).
- 6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
- 7. The (+) tolerance for mounting height is 3 inches.
- 8. Folding signs shall be mounted at a height of 5'-3'' (\pm) or as directd by the Engineer.
- 9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (\pm) . 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'' (\pm).

POST EMBEDMENT DEPTH

D
(Min)
4'
5'

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

SHEET NO:

APPROVED

for State Traffic Engineer

DATE 11/12/14

PROJECT NO: FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43.DGN COUNTY:

PLOT BY: mscsja

PLOT NAME :

WISDOT/CADDS SHEET 42

PLOT SCALE: 99.237937:1.000000



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



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

HWY:



PLAN VIEW

COUNTY:

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

WISCONSIN DEPT OF TRANSPORTATION

For State Traffic Engineer

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

SHEET NO:

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN

PROJECT NO:

PLOT DATE: 27-JAN-2014 09:48

PLOT NAME :

PLOT BY: mscsja

PLOT SCALE: 13.659812:1.000000

APPROVED

WISDOT/CADDS SHEET 42

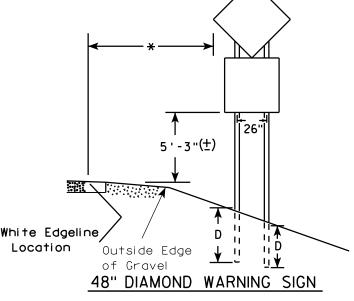
GENERAL NOTES

- 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. Minimum mounting height for J assemblies (A2-1S) is 7'-3'' (±) or 6'-3'' (±) per urban or rural detail respectively.
- 6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
- 7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
- 8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8). Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4"-3" (±).
- * 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.
- ** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.
- *** See A4-3 sign plate for signs 4' or less in width or less than 20 S.F. in area.

URBAN AREA RURAL AREA (See Note 3) 2'Min - 4'Max (See Note 6) ₩E# FF# 6'-3"(±) 6'-3"(±) 7'-3"(±) ** Curb ********\ Flowline D **7000** White Edgeline

2'Min - 4'Max (See Note 6) 6'-3"(±) Curb Flowline. 48" DIAMOND WARNING SIGN

D 11



COUNTY:

Outside Edge

of Gravel

	SIGN SHAPE OTHER THAN (TWO POSTS REQUIRED	
	L	E
* * *	Greater than 48" Less than 60"	12"
	60" to 120"	L/5

SIGN SHAPE OTHER THAN (THREE POSTS REQUIR	
L	E
Greater than 120" less than 168"	12"

HWY:

White Edgeline,

Location

SIGN SHAPE OTHER THAN (FOUR POSTS REQUIRE	
L	E
168" and greater	12"

Location

Outside Edae

of Gravel

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

Matther

PLATE NO. A4-4.13

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A44.DGN

PROJECT NO:

PLOT DATE: 12-NOV-2014 14:01

PLOT NAME :

PLOT BY: mscsja

PLOT SCALE: 107.021305:1.000000

WISDOT/CADDS SHEET 42

SHEET NO:

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

For State Traffic Engineer

DATE 11/12/14



PROJECT NO: HWY: COUNTY: SHEET NO: FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A49.DGN PLOT DATE: 05-FEB-2015 17:09 PLOT BY: mscsja PLOT NAME : PLOT SCALE: 13.659812:1.000000

DATE 2/05/15

PLATE NO. <u>A4-9.9</u>

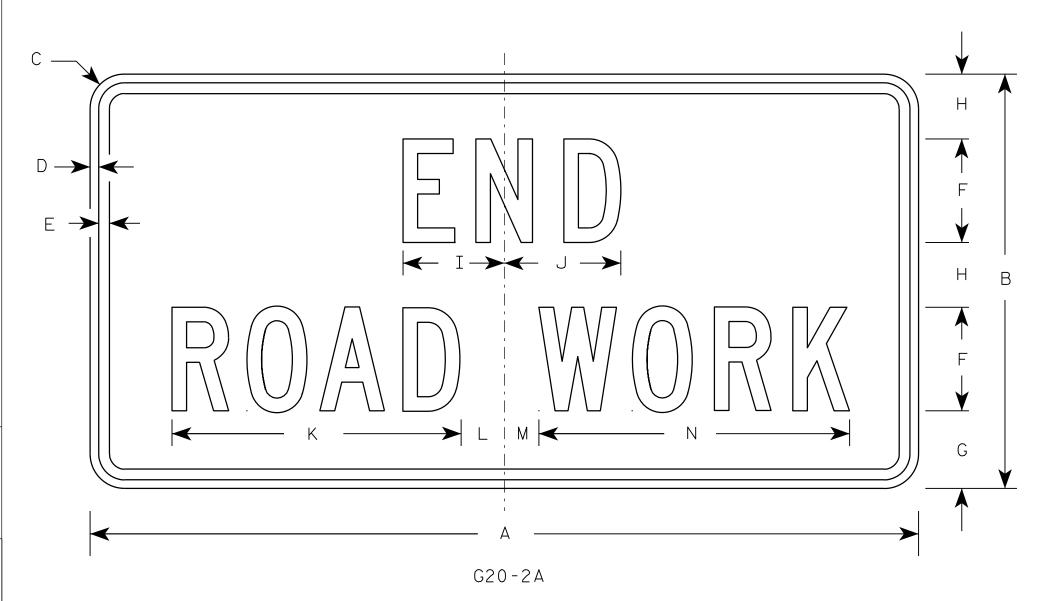
For State Traffic Engineer

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.



Metric equivalent for this sign is:

SIZE	Α	В	С	D	E	F	G	Н	I	J	К	L	М	N	0	Р	Q	R	S	Т	U	٧	W	Х	Y	Z	Area sq. ft.	Area m2
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 %	6 3/4	16 ¾	2 1/2	1 3/4	18 ½													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 %	6 3/4	16 ¾	2 1/2	1 3/4	18 ½													8.0	0.72
4	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 %	6 3/4	16 ¾	2 1/2	1 3/4	18 ½													8.0	0.72
5	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 1/8	6 3/4	16 ¾	2 1/2	1 3/4	18 ½													8.0	0.72

COUNTY:

STANDARD SIGN G20-2A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED AND UN A O N

Matther R Lauch

For State Traffic Engineer

DATE 9/30/09 PLATE NO. G20-2A.8

SHEET NO:

FILE NAME : C:\Users\PROJECTS\tr_stdplate\G202A.DGN

HWY:

PROJECT NO:

PLOT DATE: 30-SEP-2009 09:31

PLOT BY: ditjph

PLOT NAME :

PLOT SCALE: 5.561773:1.000000

WISDOT/CADDS SHEET 42

- Sign is Type II see Note 7 reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:

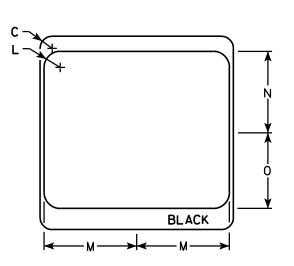
Background - White & Black - See Note 7 Message - Black

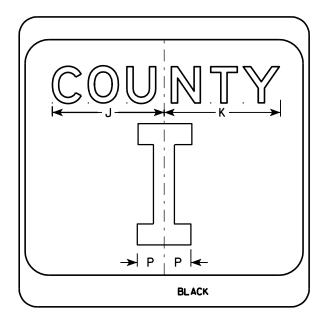
- 3. Message Series see Note 5
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 5. Message Series E for 1 letter.

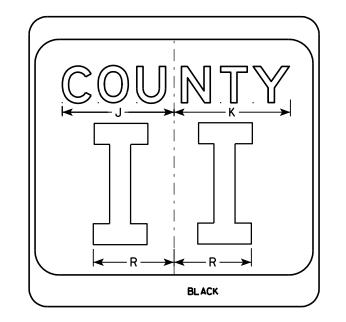
 Message Series D for 2 letters unless
 message is too big then Series C.

 Message Series C for 3 letters unless
 message is too big then Series B.
- 6. Substitute appropriate letters & optically center to achieve proper balance.
- 7. Permanent Signs

Background - Type H Reflective Detour or temporary Signs Background - Reflective







PLOT NAME :

SIZE	Α	В	С	D	E	F	G	Н	I	J	К	L	М	N	0	Р	0	R	S	Т	U	V	W	Х	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 %									4.0
3	36		2 1/4			16	4	7 %	5 %	12 1/4	12 1/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 %	5 %	12 1/4	12 1/8	3	17 1/8	15 1/4	14	3 %		10									9.0
5	36		2 1/4			16	4	7 5/8	5 %	12 1/4	12 1/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
DDO	IECT	NO.					111	/V.					COUN	TV.													
FRU	JECT	NO.					HV	V I .						I I .					I								

CTH MARKER
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

PROVED

Matthew Rauch

Forstate Traffic Engineer

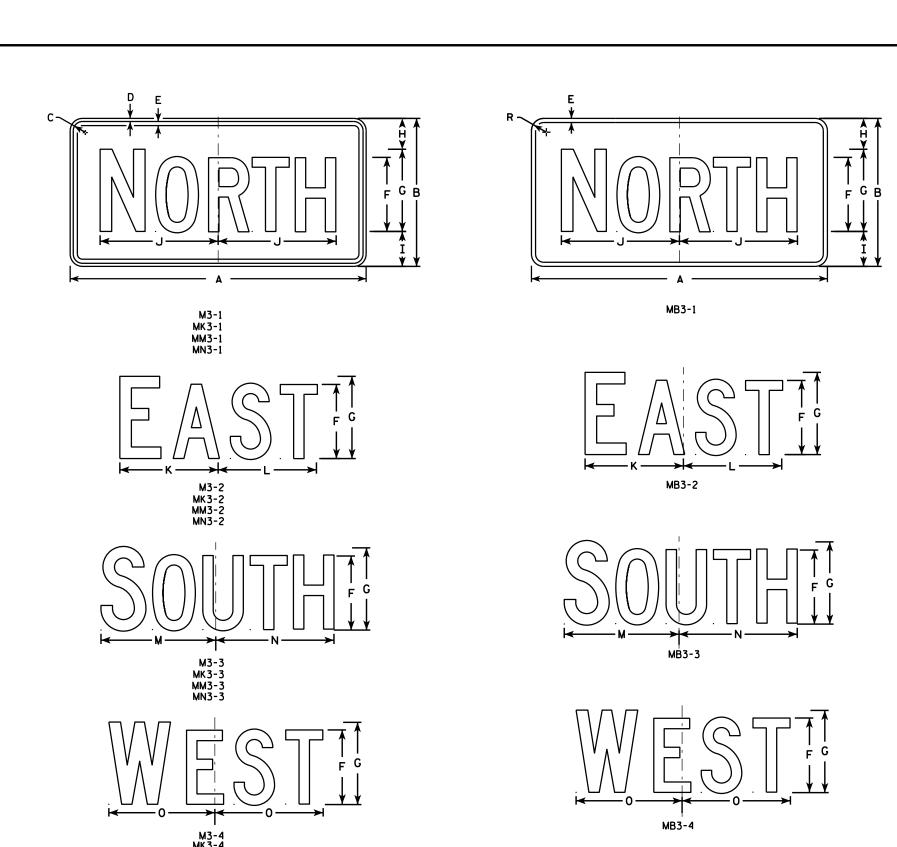
NATE 9/27/11 PLATE NO. M1-5A.8

DATE 9/27/11

SHEET NO:

BLACK

M1-5A



- 1. All Signs Type II Type H
- 2. Color:

Background - See note 5 Message - See note 5

- 3. Message Series C
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 5. M3-1 thru M3-4 Background White

Message - Black

MB3-1 thru MB3-4 Background - Blue

Message - White

MK3-1 thru MK3-4 Background - Green

Message - White

MM3-1 thru MM3-4 Background - White

Message - Green

MN3-1 thru MN3-4 Background - Brown

Message - White

6. Note the first letter of each direction is larger than the remainder of the message.

					MN3-4																					
SIZE	Α	В	С	D	E	F	G	Н	I	J K	L	М	N	0	Р	0	R	S	T	U	v	W	Х	Y	Z	Areq sq. ft.
SIZE 1																										
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4 7 1/8	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

COUNTY:

STANDARD SIGNS M3-1 thur M3-4 SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matther & Rauch

For State Traffic Engineer

DATE 6/30/14 PLATE NO. M3-1.13

SHEET NO:

07.001/5...14.675054.4.000000

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\M31.DGN

HWY:

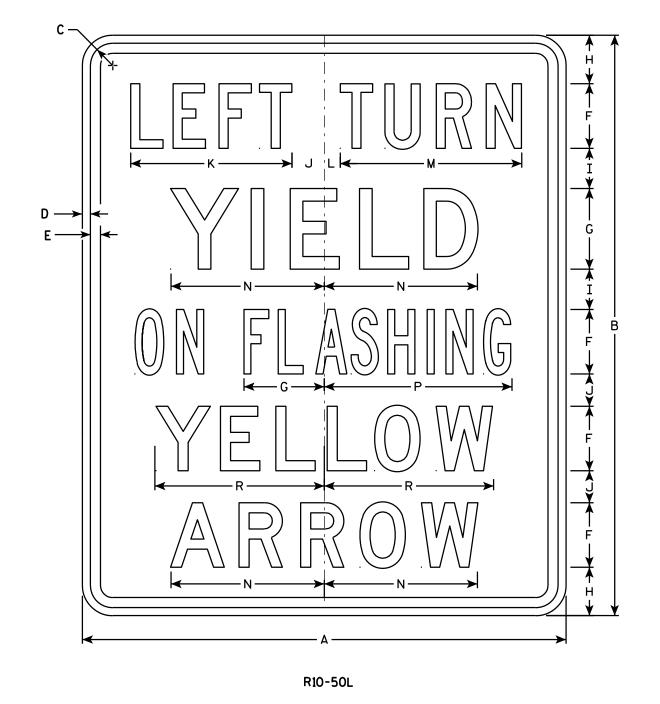
PROJECT NO:

PLOT DATE: 30-JUN-2014 12:53

PLOT NAME :

PLOT BY: mscsja

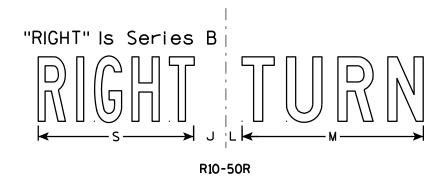
PLOT SCALE: 11.675051:1.000000



- 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 see note 5
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 5. Line 1 is Series C. Lines 2, 4 and 5 are Series D. Line 3 is Series B.



SIZE	Α	В	С	D	E	F	G	Н	I	J	K	L	М	N	0	Р	0	R	S	T	د	٧	W	X	Y	Z	Areo sq. ft.
1																											
2S	30	36	1 3/8	1/2	5/8	4	5	3	2 1/2	2	10	1	11 1/4	9 1/2	4 1/4	11 %		10 1/2	9 %								7.5
2M	30	36	1 3/8	1/2	5/8	4	5	3	2 1/2	2	10	1	11 1/4	9 1/2	4 1/4	11 %		10 1/2	9 %								7.5
3																											
4																											
5																											

COUNTY:

STANDARD SIGN R10-50

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

For State Traffic Engineer

DATE 4/11/13

PLATE NO. R10-50.2

SHEET NO:

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\R1050.DGN

PROJECT NO:

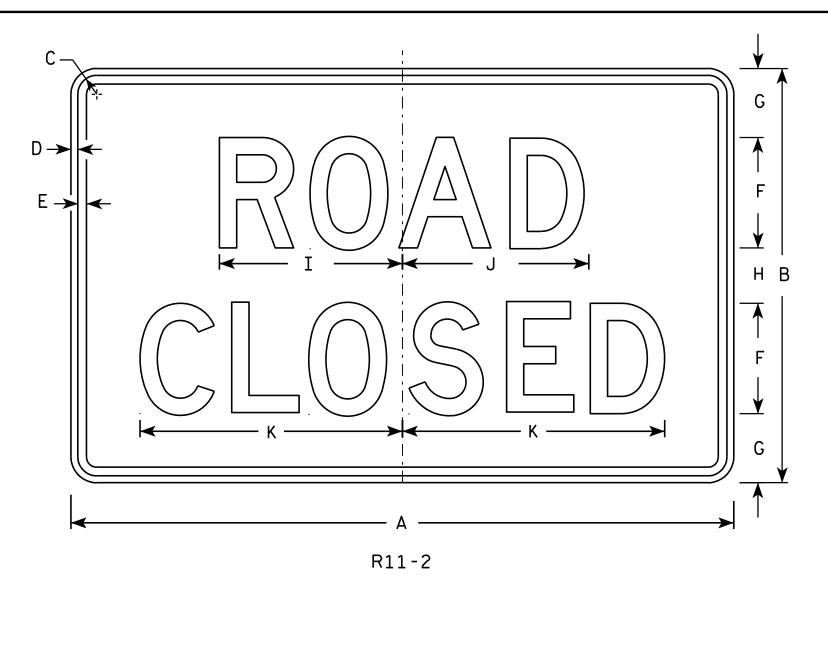
HWY:

PLOT DATE: 11-APR-2013 11:17

PLOT BY: mscsja

PLOT SCALE: 5.954276:1.000000

WISDOT/CADDS SHEET 42

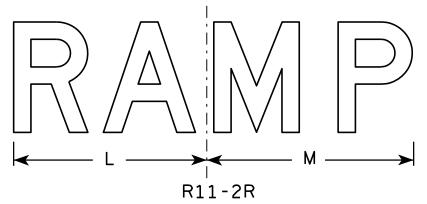


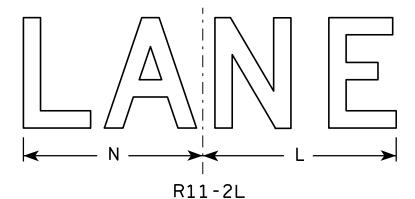
<u>NOTES</u>

- 1. Sign is Type II Type H Reflective reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:

Background - White Message - Black

- 3. Message Series D
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 5. Modify the message as required.





SIZE	A	В	С	D	E	F	G	Н	I	J	K	L	M	N	0	Ρ	0	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
2M	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
3	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
4	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
5	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
PRO	DJECT	NO:						HWY:					С	OUNTY	':												

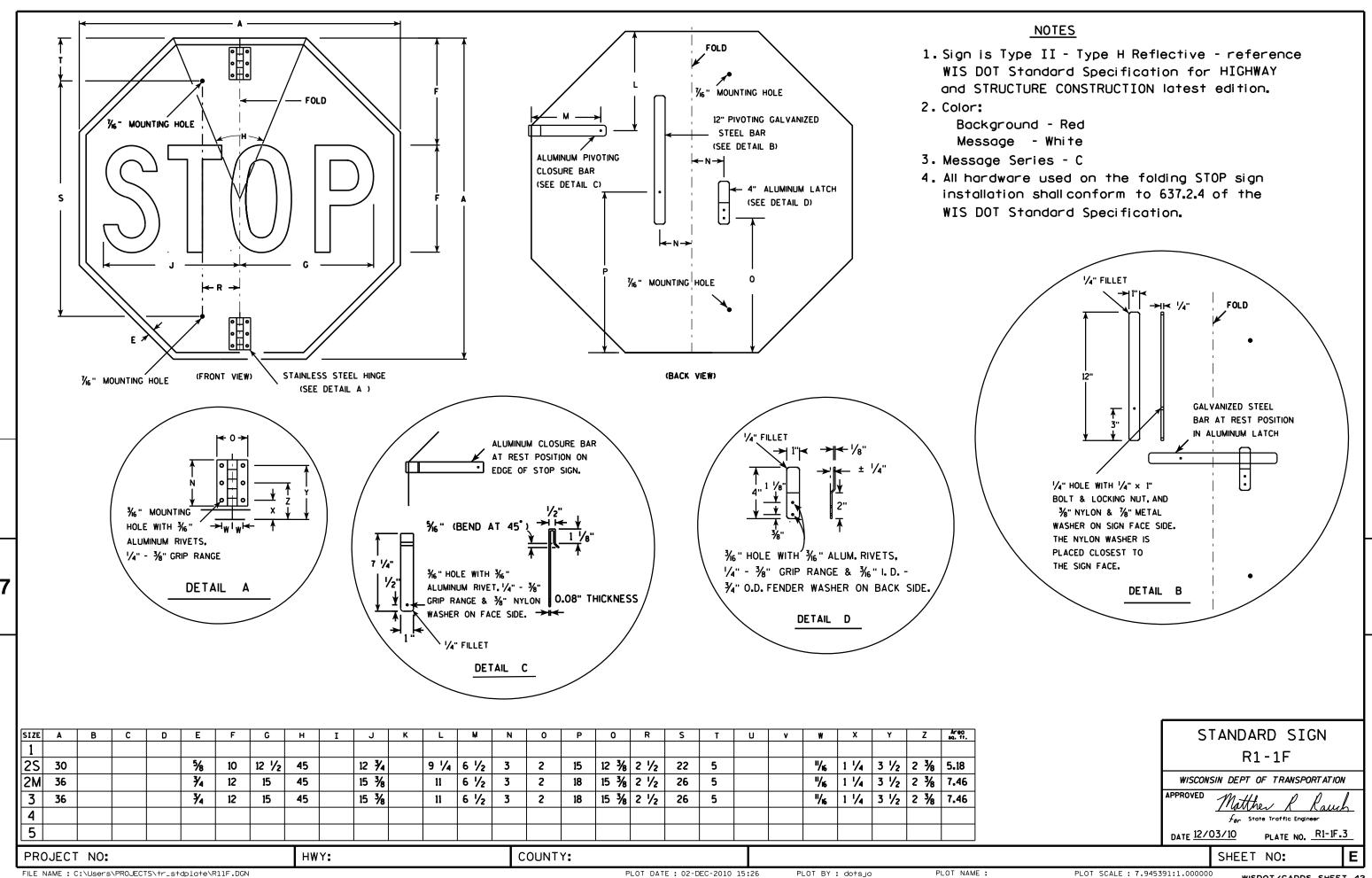
STANDARD SIGN R11-2

WISCONSIN DEPT OF TRANSPORTATION

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

SHEET NO:

PLOT BY: mscj9h



- 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 See note 5
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 5. Lines 1, 2 & 3 are series E Lines 4,5, & 6 are series D.
- 6. Substitute appropriate numeral and optically adjust spacing to achieve proper balance.
- 7. Substitute name of county or town on County Trunk and Town Highways respectively. Community name on City or Village Streets including Connecting Highways is optional.

* Varies (see note 6)

SIZE	Α	В	С	D	E	F	G	Н	I	J	K	L	М	N	0	Р	0	R	S	Т	U	V	W	X	Y	Z	Area sq. ft.
1	24	30	1 1/8	3∕8	1/2	3	6	4	3	1 1/4	2 1/4	1 3/8	3/4	1/2	1 1/8	9	9 1/2	6	6 1/2	7 1/8	6 1/8	3 1/4	3 %	7 3/4			5.0
2S	24	30	1 1/8	3∕8	1/2	3	6	4	3	1 1/4	2 1/4	1 3/8	3/4	1/2	1 %	9	9 1/2	6	6 1/2	7 1/8	6 %	3 1/4	3 %	7 3/4			5.0
2M	24	30	1 1/8	3∕8	1/2	3	6	4	3	1 1/4	2 1/4	1 3/8	3/4	1/2	1 %	9	9 1/2	6	6 1/2	7 1/8	6 %	3 1/4	3 %	7 3/4			5.0
3	36	48	1 3/8	1/2	5/8	6	10	8	4 1/2	2 1/2	2 1/4	1 1/2	3/4	1/2	3	13 1/2	14 1/4	9	9 3/4	10 %	10 1/4	3 1/4	3 %	7 3/4			12.0
4	48	60	2 1/4	₹4	1	6	12	8	6	2 1/2	4 1/2	2 3/4	1 1/2	1	3 3/4	18	19	12	13	14 1/4	13 3/4	6 1/2	7 1/4	15 1/2			20.0
5																											

STANDARD SIGN R12-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Fer State Traffic Engineer DATE 4/1/11

SHEET NO:

PLOT NAME :

PLOT DATE: 01-APR-2011 13:33

PLOT BY: mscj9h

PLOT SCALE: 5.363138:1.000000

WISDOT/CADDS SHEET 42

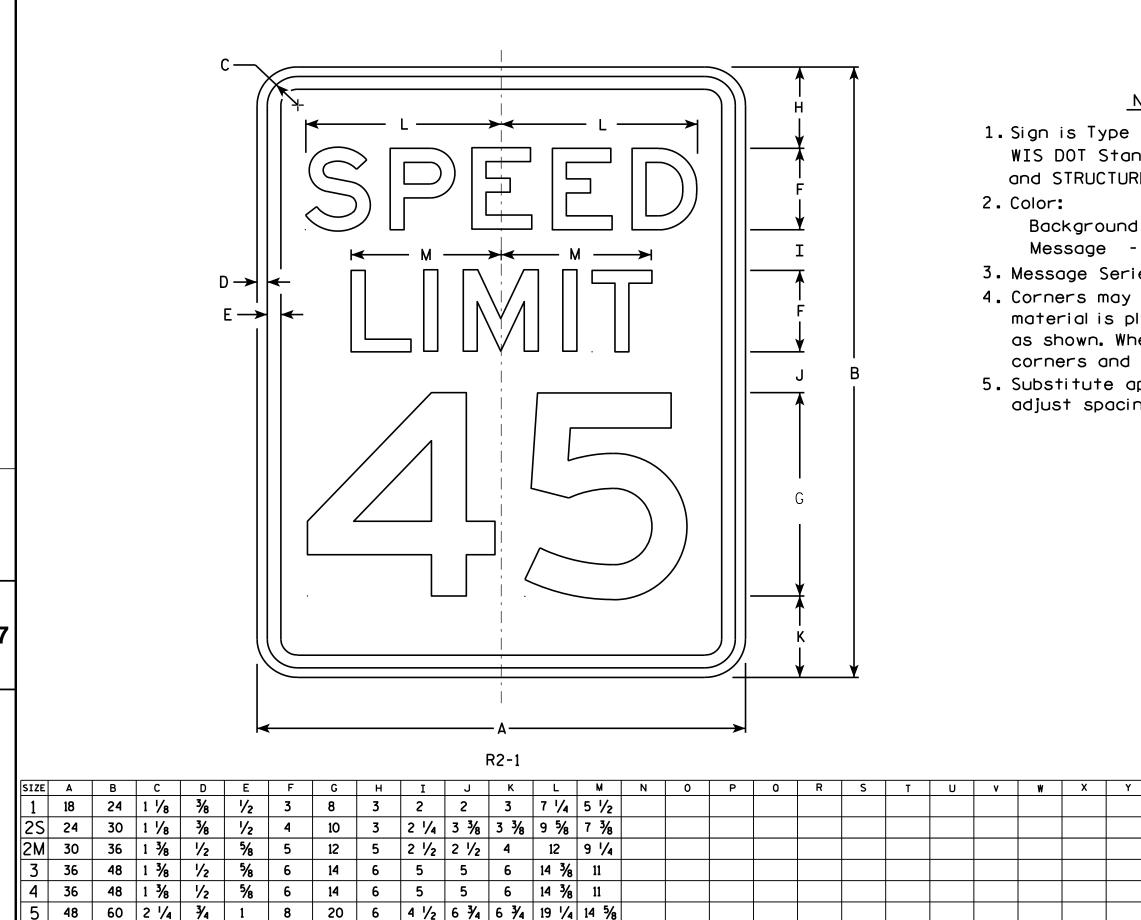
PLATE NO. R12-1.8

PROJECT NO:

FILE NAME : C:\Users\PROJECTS\tr_stdplate\R121.DGN

HWY:

COUNTY:



COUNTY:

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.

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.
- 5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

3.0

5.0

7.5

12.0

12.0

20.0

STANDARD SIGN R2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matther R Raus

For State Traffic Engineer DATE <u>5/26/1</u>0 PLATE NO. R2-1.13

SHEET NO:

FILE NAME : C:\Users\PROJECTS\tr_stdplate\R21.DGN

PROJECT NO:

HWY:

PLOT DATE: 28-MAY-2010 08:32

PLOT BY : ditjph

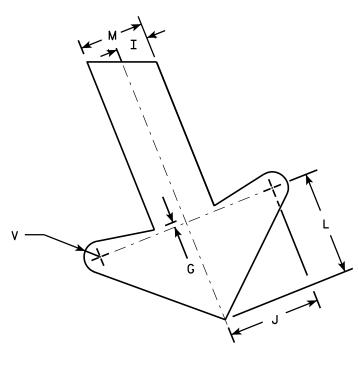
PLOT NAME :

PLOT SCALE: 4.717577:1.000000

- 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.



ARROW DETAIL

SIZE	Α	В	С	D	Ε	F	G	Н	Ι	J	K	L	М	N	0	Р	0	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
25	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 %	2 %	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 1/8	2 %	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 %	3	2 1/4	10 %	11 1/4		12 1/4	11 1/2	12	22°	3/4	13 1/4				13.5
4																											
5																											

COUNTY:

R3-20L

HWY:

М

М

0

STANDARD SIGN R3-20L

WISCONSIN DEPT OF TRANSPORTATION

APPROVED For State Traffic Engineer PLATE NO. R3-20L.7

DATE 10/18/10

SHEET NO:

FILE NAME : C:\Users\PROJECTS\tr_stdplate\R320L.DGN

PROJECT NO:

PLOT DATE: 15-OCT-2010 14:45

PLOT NAME :

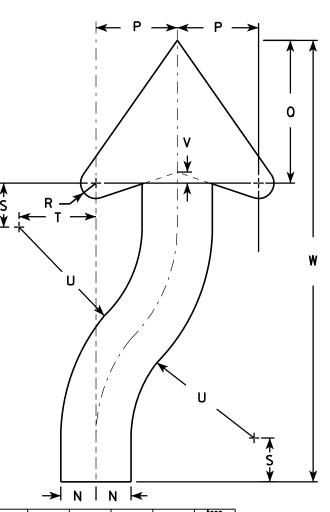
PLOT BY: dotsja

PLOT SCALE: 5.959043:1.000000

- 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.



ARROW DETAIL

																							→	N I	N 		
SIZE	Α .	В	С	D	E	F	G	Н	I	J	K	L	М	N	0	Р	0	R	S	Т	U	٧	W	X	Y	Z	Areg sq. ft.
1	18	24	1 1/8	3∕8	1/2	3 %	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 1/8	3 1/4	6 3/4	1/2	20 ¾				3.0
25	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 %	3	8	4	12 1/2	2 3	30	4 %	8 1/8	7 ⁄8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
21	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 %	3	8	4	12 1/2	2 3	30	4 %	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 1/8	4 1/2	12	6	18 3/4	3 4	15	6 %	12 1/4	1 1/4	3 3/4	6 %	13 1/2	1	40 ¾				12.0
4	36	48	1 3/4	1/2	5/8	6 3/4	9 3/8	11 1/8	2 1/8	4 1/2	12	6	18 ¾	3 4	45	6 %	12 1/4	1 1/4	3 3/4	6 %	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 ¾	18	1 1/4	50 1/4				20.0

COUNTY:

R4-7

STANDARD SIGN R4-7 & R4-8

WISCONSIN DEPT OF TRANSPORTATION

SHEET NO:

For State Traffic Engineer DATE 3/25/2011

PLATE NO. R4-7.8

FILE NAME : C:\Users\PROJECTS\tr_stdplate\R47.DGN

PROJECT NO:

D→

HWY:

PLOT DATE: 25-MAR-2011 14:10

PLOT NAME :

PLOT BY: mscsja

PLOT SCALE: 5.462457:1.000000



- 1. Sign is Type II Type H Reflective reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:

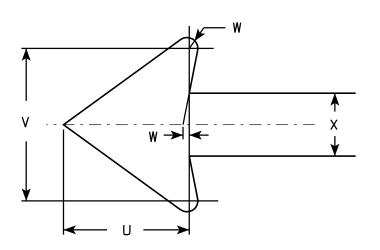
Background - White Message - Red

- 3. Message Series See Note 5
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 5. Lines 1, 3 and 4 are series C, line 2 is series B.
- 6. R7-1D (double arrow)

R7-1L (left arrow)

R7-1R (right arrow)

PLOT NAME :



R7-1

SIZE	Α	В	С	D	Ε	F	G	Н	I	J	K	L	M	N	0	Р	0	R	S	Т	U	٧	W	X	Y	Z	Areg sq. ft.
1	12	18	1 1/8	3/8	3/8	3	1 %	2	%	5/8	1 1/2	2 1/2	2	2	4 %	4 %	2 1/4	2 1/8	2 1/2	3 %	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 %	7 1/8	7	2 3/4	2 5/8	3 1/8	5 %	2 1/4	2 %	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 ½	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 ½	1/4	1 1/2			5.0
4																											
5																			·				·				

COUNTY:

STANDARD SIGN R7-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

OVED

Matthew R Rauch

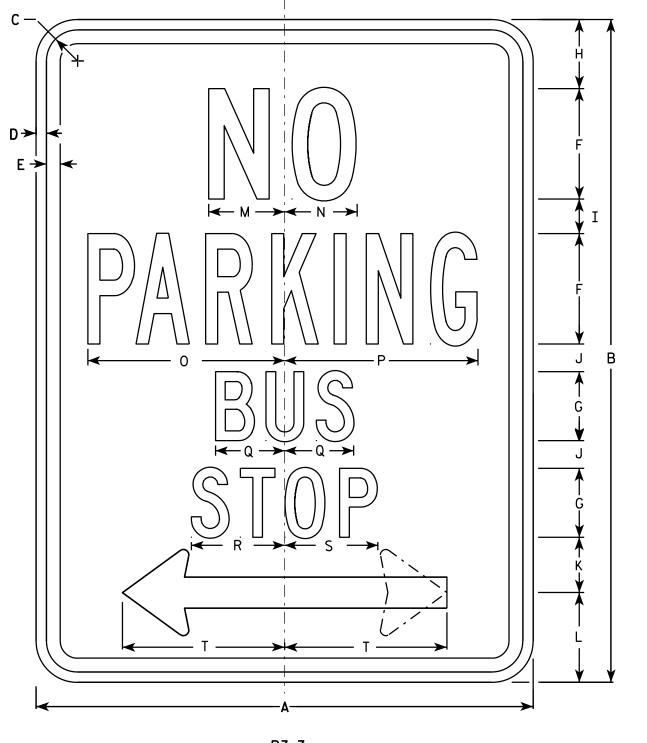
For State Traffic Engineer

DATE 3/31/2011

SHEET NO:

HWY:

PROJECT NO:



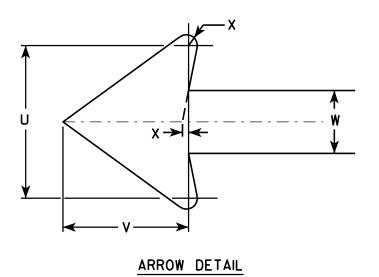
- 1. Sign is Type II Type H Reflective reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:

Background - White Message - Red

- 3. Message Series See Note 6
- 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.R7-7D (double arrow) R7-7R (right arrow) R7-7L (left arrow)

PLOT NAME :

6.Lines 1, 3 and 4 are Series C. Line 2 is Series B.



R7-7

SIZE	Δ	В		П	F	F	G	н	т	J	K	1	М	N	0	Р	<u> </u>	R	5	т	Пп	v	w	x	ΤΥ	7	Area
1	12	18	1 1/8	3/8	3/8	3	2	1 1/8	<u>%</u>	5/8	1 1/2	2 1/2	2	2	4 1/8	4 1/8	2	2 3/4	2 5/8	3 1/8	1 3/4	1 1/2	3/4	1/8			1.50
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 1/2	3 3/8	3 3/8	5 1/8	2 %	2 1/4	1 1/8	1/4			3.00
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	4 1/8	4	7 3/4	3 1/2	3	1 1/2	1/4			5.00
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	4 1/8	4	7 3/4	3 1/2	3	1 1/2	1/4			5.00
4																											
5																											

COUNTY:

STANDARD SIGN R7-7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

For State Traffic Engineer
DATE 3/31/2011 PLATE NO. R7

D11 PLATE NO. R7-7.8
SHEET NO:

PROJECT NO:

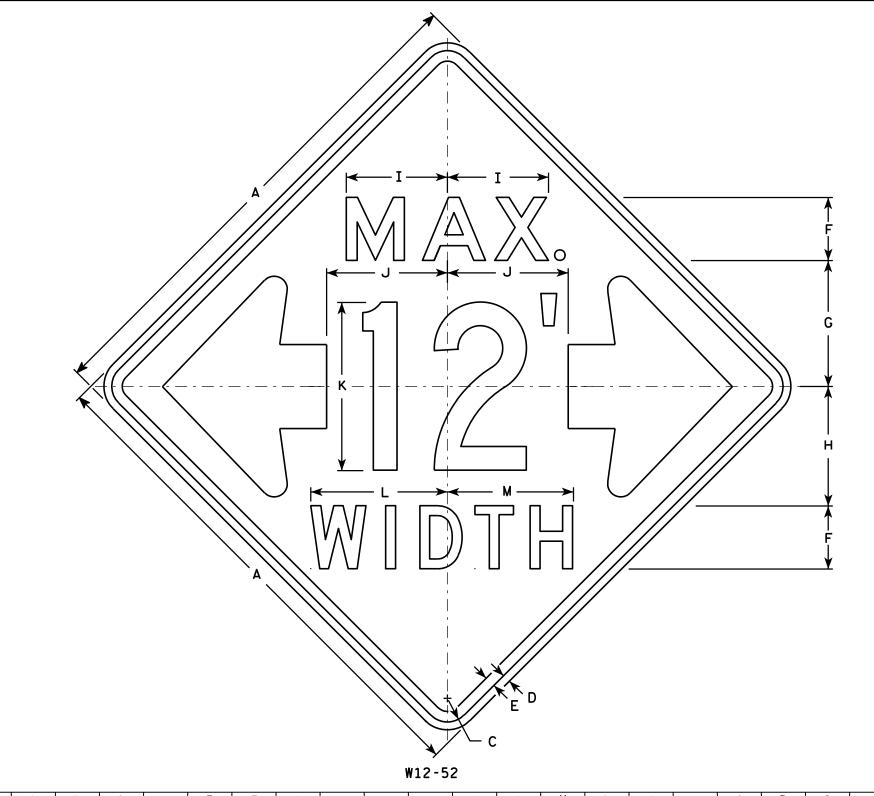
FILE NAME : C:\Users\PROJECTS\tr_stdplate\R77.DGN

HWY:

PLOT DATE: 31-MAR-2011 10:59

PLOT BY: mscsja

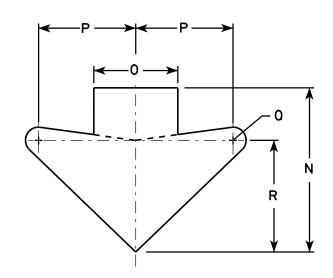
PLOT SCALE : 3.476110:1.000000



- 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. The top line is series E, the numerals are series C, and the bottom line is series D.
- 6. Substitute appropriate numerals and adjust spacing as required.



ARROW DETAIL

SIZE	Α	В	С	D	E	F	G	Н	I	J	K	L	М	N	0	Р	0	R	S	T	U	٧	W	X	Y	Z	Area sq. ft.
1																											
25	48		2 1/4	3/4	1	6	12	11 3/8	9 %	11 1/2	16	13	12	15 %	8	9 1/4	1 1/4	10 5/8									16.0
2M	48		2 1/4	3/4	1	6	12	11 3/8	9 %	11 1/2	16	13	12	15 %	8	9 1/4	1 1/4	10 %									16.0
3																											
4																											
5																											

COUNTY:

STANDARD SIGN W12-52

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

For State Traffic Engineer

DATE 3/16/11 PLATE NO. W12-52.7

SHEET NO:

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W1252.DGN

PROJECT NO:

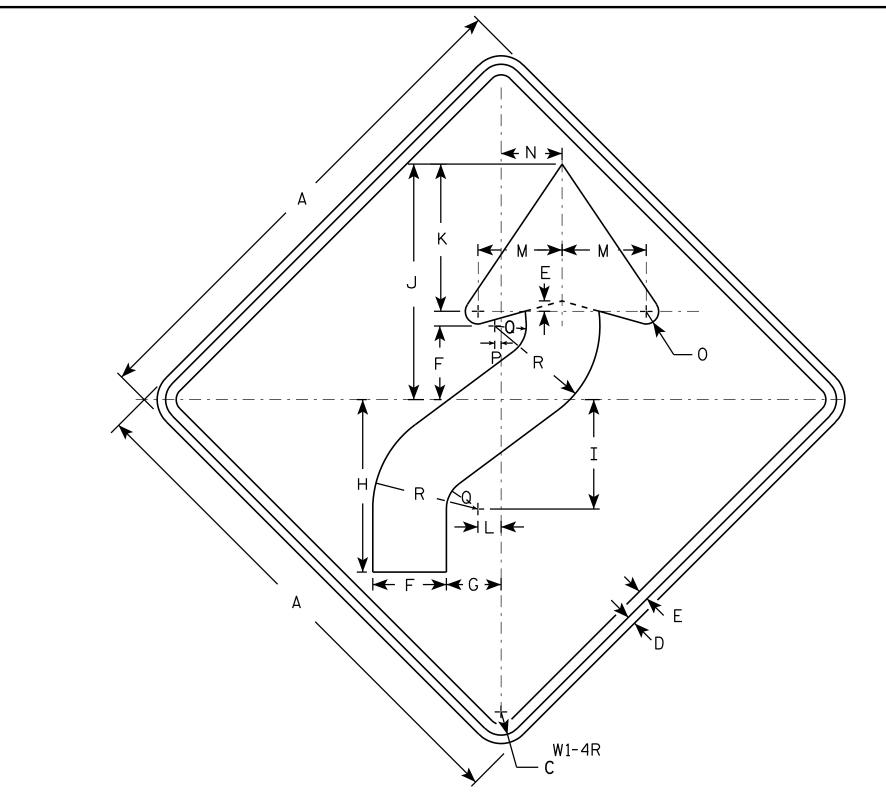
HWY:

PLOT DATE: 16-MAR-2011 14:45

PLOT BY: mscj9h

PLOT NAME :

PLOT SCALE: 9.137199:1.000000



- 1. Sign is Type II Type F Reflective reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:

Background - Yellow Message - Black

- 3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 4. W1-4L is the same as W1-4R except the arrow is reversed along the vertical centerline.

3 1/2 2 5/8 8 1/4 5 1/4 11 1/4 5/8 1/4 1 1/2 5 24 1 1/8 4.0 25 3 5/8 3/4 3/8 1 1/8 6 1/4 30 4 3/8 3 1/4 10 1/4 6 1/2 14 8 3/4 1 3/8 6.25 36 12 3/8 7 1/8 16 1/8 10 1/2 1 5/8 4 1/2 1 1/2 2 1/4 7 1/2 9.0 3 12 3/8 7 1/8 16 1/8 10 1/2 1 5/8 36 5 1/4 4 1/2 | 1 1/2 2 1/4 7 1/2 9.0 4 36 1 % 5 1/4 | 12 3/8 | 7 3/8 | 16 3/8 | 10 1/2 | 1 5/8 4 1/2 1 2 1/4 7 1/2 1/2 9.0 5 48 5 1/4 16 1/2 10 1/2 22 1/2 14 2 1/4 6 1 1/4 16.0

COUNTY:

STANDARD SIGN W1-4

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matther R Raul for State Traffic Engineer

DATE 5/17/12

PLATE NO. W1-4.11

SHEET NO:

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W14.DGN

PROJECT NO:

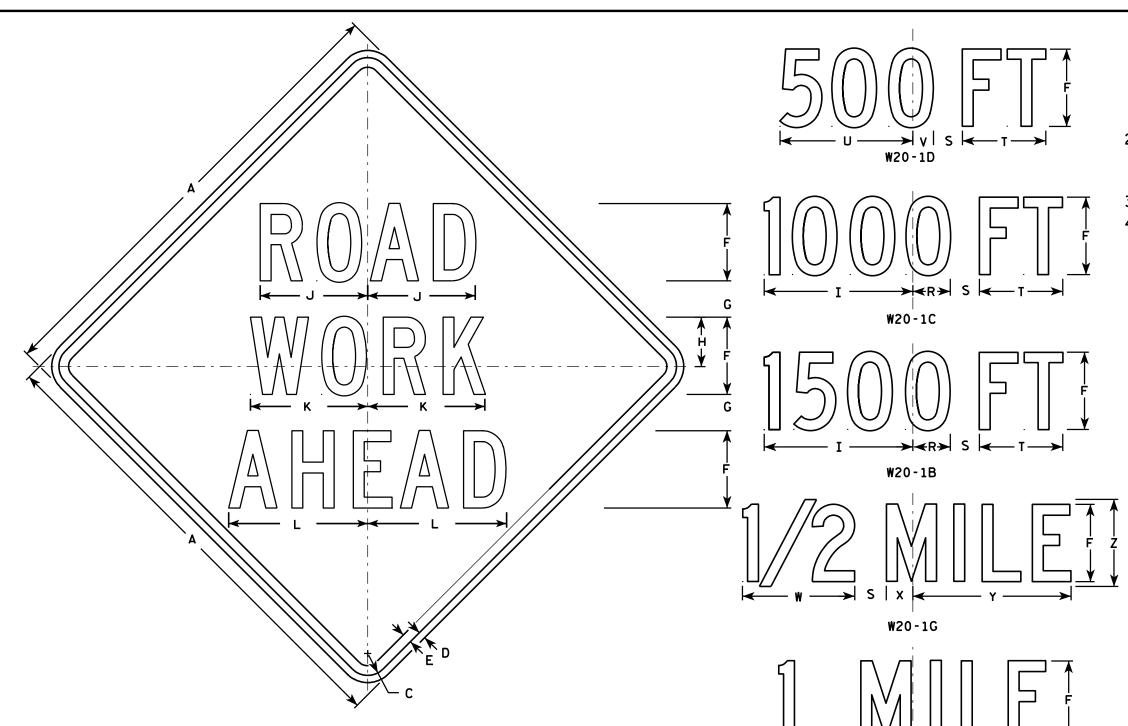
HWY:

PLOT DATE: 17-MAY-2012 13:20

PLOT NAME :

PLOT BY: mscsja

PLOT SCALE : 5.706180:1.000000



7 5/8 8 7/8 1 1/8 4 1/2 3 1/2

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 |

3 3/4 | 5 1/8 | 15 3/8 | 11 1/8 | 12 1/8 | 14 3/8 | 1 5/8 | 6 3/8 | 5 3/8

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

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 |

| 3 3/4 | 5 1/8 | 15 3/8 | 11 1/8 | 12 1/8 | 14 3/8 | 1 5/8 | 6 7/8 |

W20-1A

2 \\ 8 | 3 \\ 4 | 10 \\ 8 |

NOTES

- 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

Area sq. ft.

16.0

16.0

16.0

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.

STANDARD SIGN W20-1A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matther R Rauch

For State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-1.9

SHEET NO:

1 3/4 10 3/4

16 3/8 9

1 3/8

2 1/4

2 1/4

1/2

3/4

3/4

SIZE A

3

4

5

36

48

48

48

48

48

PROJECT NO:

W20-1F

1 3/8

13 3/4 2 1/8 11 1/8 2 3/4 16 3/8

13 3/4 2 1/8 11 1/8 2 3/4 16 3/8

13 3/4 2 1/8 11 1/8 2 3/4 16 3/8

8 \% | 13 \% | 2 \% | 11 \% | 2 \% | 16 \% | 9

| 13 3/4 | 2 1/8 | 11 1/8 | 2 3/4 |

5 %

8 %

2 1/2 1 1/8

3 1/8

3 %

3 %

3 %

- 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. Allother copy is Series C.

500 FT

W20-5C

1500 FT



PLOT BY: mscj9h



									W20-	5A																	W 4	20-3F
SI	ZE	Α	В	С	D	E	F	G	Н	I	J	K	L	M	N	0	Р	0	R	S	T	U	V	W	Х	Y	Z	Area sq. ft.
	1	36	6	1 5/8	5/8	₹4	5	1 /8	2 1/2	13 1/8	10 ¾	9 1/2	14 1/4	13 %	12	12	1 3/8	1 1/8	4 1/2	3 1/2	9	1 1/8	5 %	10 1/8	2 1/2	1 3/4	8	9.0
2	?S	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 1/8	1 1/2	6	4 %	12	2 %	7 1/2	13 1/2	3 3/8	2 3/8	10 %	16.0
2	M	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 1/8	1 1/2	6	4 %	12	2 %	7 1/2	13 1/2	3 3/8	2 3/8	10 %	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 1/8	1 1/2	6	4 %	12	2 %	7 1/2	13 1/2	3 3/8	2 3/8	10 %	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 %	19	18 3/8	16	14 1/4	1 %	1 1/2	6	4 5/8	12	2 %	7 1/2	13 ½	3 %	2 3/8	10 %	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 %	19	18 3/8	16	14 1/4	1 1/8	1 1/2	6	4 %	12	2 %	7 1/2	13 1/2	3 3/8	2 3/8	10 %	16.0

COUNTY:

STANDARD SIGN W20-5A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew & Rauch

For State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-5.11

SHEET NO:

PROJECT NO:

HWY:

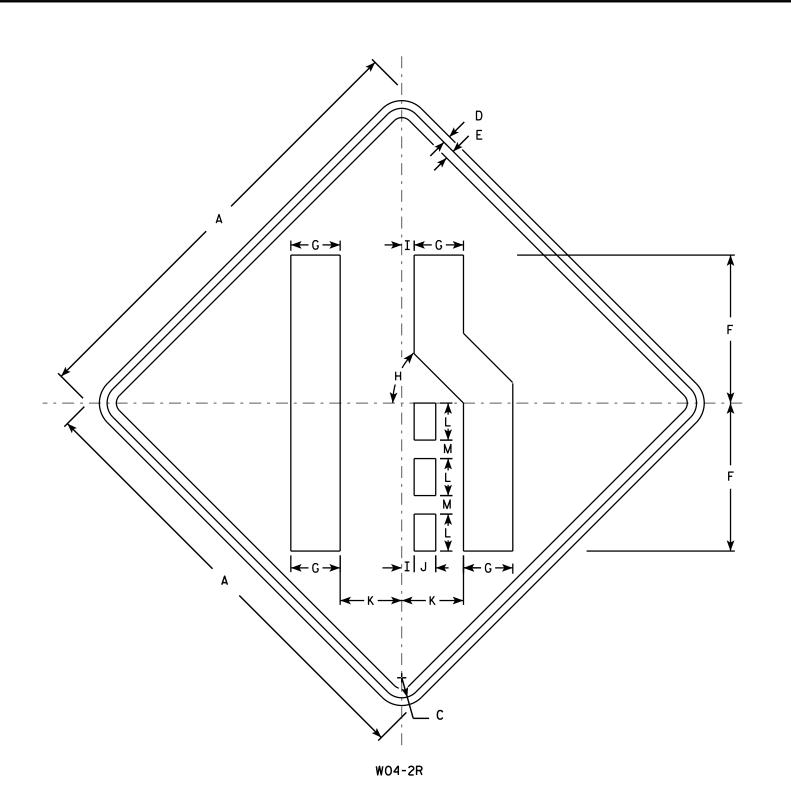
W20-56A

W20-55A

- 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 symbolis reversed along the vertical centerline.



SIZE	Α	В	С	D	Ε	F	G	Н	I	J	K	L	М	N	0	Р	0	R	S	T	U	٧	W	X	Y	Z	Area sq. ft.
1 2S 2M 3 4	36		1 1/8	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 ¾	4	2														16.0
2M	48		2 1/4	3∕4	1	16	5 3/8	45°	1 1/4	2 3/8	6 ¾	4	2														16.0
3	48		2 1/4	3∕4	1	16	5 3/8	45°	1 1/4	2 3/8	6 ¾	4	2														16.0
4	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 ¾	4	2														16.0
5	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 ¾	4	2														16.0

STANDARD SIGN WO4-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

//WMW/ / / Ad ForState Traffic Engineer

DATE 11/20/13 PLATE NO. W04-2.1

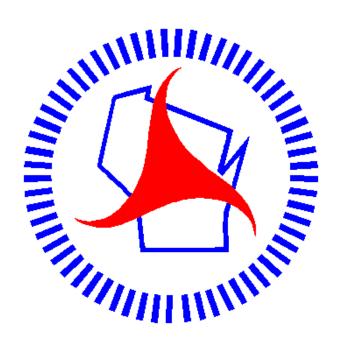
SHEET NO:

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W042.DGN

PROJECT NO:

PLOT DATE: 20-NOV-2013 11:43

PLOT BY: mscsja



Wisconsin Department of Transportation

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