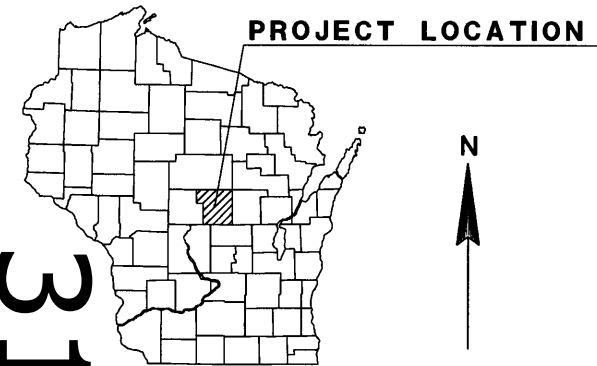


NCL MAR 13  
PROJECT ID: 6767-04-72  
WITH: N/A

COUNTY: PORTAGE

ORDER OF SHEETS		
Section No. 1	Title	
Section No. 2	Typical Sections and Details (Includes Erosion Control Plan)	
Section No. 3	Estimate of Quantities	
Section No. 3	Miscellaneous Quantities	
Section No. 5	Plan and Profile	
Section No. 6	Standard Detail Drawings	
Section No. 7	Sign Plates	
Section No. 9	Computer Earthwork Data	
Section No. 9	Cross Sections	

TOTAL SHEETS = 96



DESIGN DESIGNATION		
	CTH B	HOOVER AVE
A.A.D.T. (2013)	= 17,300	6,600
A.A.D.T. (2033)	= 20,700	7,300
D.H.V.	= 2,298	1,000
D.O.	= 58/42	58/42
T.	= 5.4%	3.8%
DESIGN SPEED	= 50 M.P.H.	40 M.P.H.
ESALS	= 1,854,200	423,400

#### CONVENTIONAL SYMBOLS

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

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

# STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

## PLAN OF PROPOSED IMPROVEMENT

# CTH B & HOOVER AVE INTERSECTION

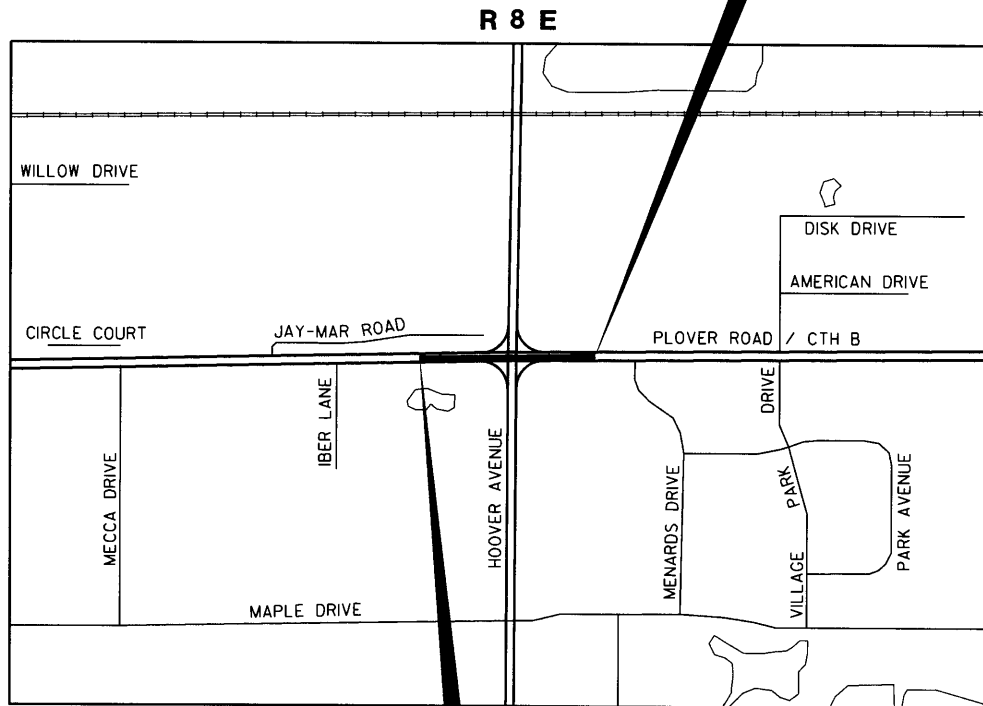
VILLAGE OF PLOVER

CTH B

PORTAGE COUNTY

STATE PROJECT NUMBER  
**6767-04-72**

END PROJECT  
STA 110+55.01  
Y = 177,605.04  
X = 177,829.72



BEGIN PROJECT  
STA 104+50.98  
Y = 177,596.00  
X = 177,225.77

LAYOUT  
SCALE 0 500 FT.

TOTAL NET LENGTH OF CENTERLINE = 0.114 MI.

"COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY  
COORDINATE SYSTEM (WCCS), PORTAGE COUNTY."

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
6767-04-72	WISC 2013087	1

ACCEPTED FOR

PORTAGE COUNTY

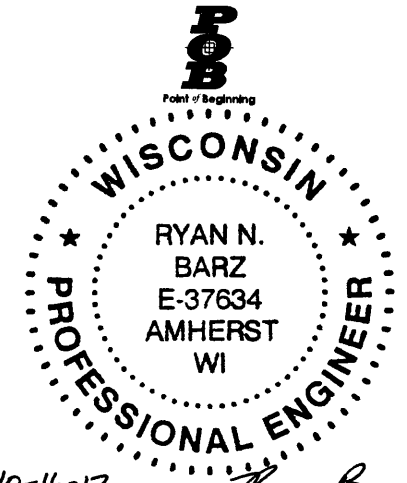
10-12-12 (Date)  
BRIAN KELLEY, HIGHWAY COMMISSIONER  
(Signature & Title of Official)

ACCEPTED FOR

VILLAGE of PLOVER

10-15-12 (Date)  
DAN SCHLUTTER, VILLAGE PRESIDENT  
(Signature & Title of Official)

ORIGINAL PLANS PREPARED BY



10-16-12 (Date)  
(Signature)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PREPARED BY  
Surveyor POINT OF BEGINNING, INC.  
Designer POINT OF BEGINNING, INC.  
Management Consultant CEDAR CORPORATION  
C.O. Examiner JE

APPROVED FOR THE DEPARTMENT  
DATE: 10-23-12 (Management Consultant Signature)

E

GENERAL NOTES

ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

COORDINATES ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 WITH 2007 ADJUSTMENT (NAD83(07)).

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

EXCAVATION BELOW SUBGRADE (EBS) IS NOT USED TO BALANCE YARDAGE AND IS NOT SHOWN ON THE CROSS SECTIONS BUT IS MEASURED AND PAID FOR AS EXCAVATION COMMON.

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

THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY UTILITY WHICH IS NOT A MEMBER OF THE DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.

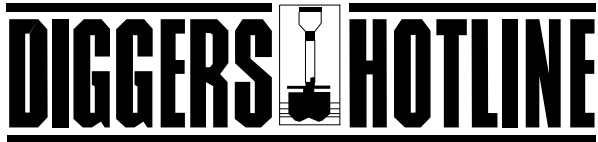
INLET AND DISCHARGE ELEVATIONS FOR DRAINAGE STRUCTURES SHOWN ON THE PLAN MAY BE ADJUSTED BY THE ENGINEER TO MEET FIELD CONDITIONS.

WHEN THE QUANTITY OF BASE AGGREGATE IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE LAYERS SHOWN ON THE PLAN IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

UTILITIES

<u>CHARTER COMMUNICATIONS</u> (COMMUNICATIONS) RUDI RUDIGER 5024 HEFFRON STREET STEVENS POINT, WI 54481 (715)302-1550 RUDI.RUDIGER@CHARTERCOM.COM	<u>VILLAGE OF PLOVER</u> (SANITARY, WATER, IRRIGATION, SIGNALS) BILL KONKOL OR ROY HOPFENSPERGER 2400 POST ROAD PLOVER, WI 54467 (715)345-5257 BKONKOL@PLOVERWI.GOV RHOPFENSPERGER@PLOVERWI.GOV
<u>AT&amp;T WISCONSIN</u> (COMMUNICATIONS) CHUCK BARTELT 70 E. DIVISION STREET, 1ST FL FOND DU LAC, WI 54935 (920)929-1013 CB1461@ATT.COM	<u>WISCONSIN PUBLIC SERVICE</u> (ELECTRICITY, GAS) STEVE HARVEY 2001 PLOVER ROAD PLOVER, WI 54467 (715)345-7527 DEMEZERA@WISCONSINPUBLICSERVICE.COM

\*\* DENOTES UTILITIES THAT ARE NOT DIGGERS HOTLINE MEMBERS



Call 811 3 Work Days Before You Dig  
or Toll Free (800) 242-8511  
Hearing Impaired TDD (800) 542-2289  
www.DiggersHotline.com

ABBREVIATIONS

AH	AHEAD	PC	POINT OF CURVATURE
ASPH	ASPHALT	PE	PRIVATE ENTRANCE
BK	BACK	PI	POINT OF INTERSECTION
CABC	CRUSHED AGGREGATE BASE COURSE	PL	PROPERTY LINE
CE	COMMERCIAL ENTRANCE	PLE	PERMANENT LIMITED EASEMENT
CP	CULVERT PIPE	PT	POINT OF TANGENCY
C/L	CENTER LINE	RAD	RADIUS
CMP	CORRUGATED METAL PIPE	RCCP	REINFORCED CONCRETE CULVERT PIPE
CTH	COUNTY TRUNK HIGHWAY	RCPSS	REINFORCED CONCRETE PIPE STORM SEWER
CWT	CENTURY WEIGHT	RD	ROAD
CY	CUBIC YARD	RT	RIGHT
D	DEGREE	R/L	REFERENCE LINE
E	EAST	R/W	RIGHT OF WAY
EB	EASTBOUND	S	SOUTH
ELEV	ELEVATION	SB	SOUTHBOUND
FE	FIELD ENTRANCE	SF	SQUARE FEET
FT	FEET	SS	STORM SEWER
G	GARAGE	SDD	STANDARD DETAIL DRAWING
GAL	GALLON	STA	STATION
H	HOUSE	STR	STRUCTURE
HMA	HOT MIX ASPHALT	STH	STATE TRUNK HIGHWAY
HOR	HORIZONTAL	SY	SQUARE YARD
ID	INCH DIAMETER	T	TANGENT
L	LENGTH	TI	TEMPORARY INTEREST
LB	POUND	TYP	TYPICAL
LF	LINEAR FOOT	VAR	VARIABLE
LT	LEFT	VER	VERTICLE
LS	LUMP SUM	VPC	POINT OF VERTICAL CURVATURE
MAX	MAXIMUM	VPI	POINT OF VERTICAL INTERSECTION
MIN	MINIMUM	VPT	POINT OF VERTICAL TANGENCY
MISC	MISCELLANEOUS	W	WEST
MPH	MILES PER HOUR	WB	WESTBOUND
N	NORTH	X	EAST/WEST GRID COORDINATE
NB	NORTHBOUND	Y	NORTH/SOUTH GRID COORDINATE
NC	NORMAL CROWN		
N/A	NOT APPLICABLE		
NOR	NORMAL		

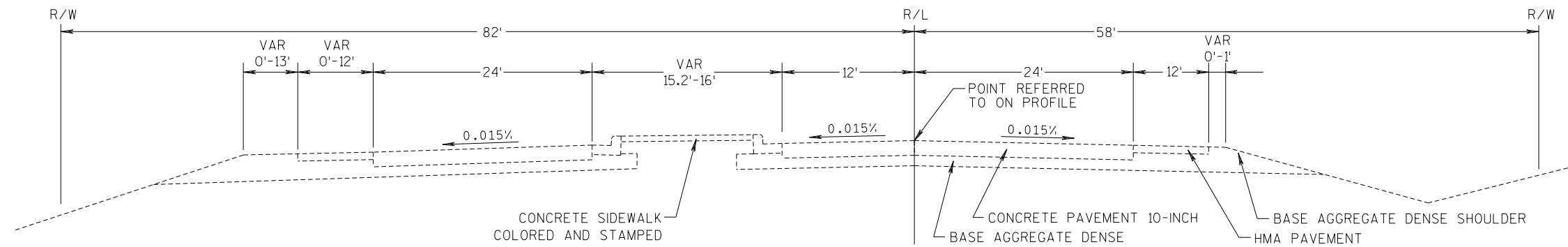
OTHER CONTACTS

<u>DNR LIAISON</u> MARC HERSHFIELD 473 GRIFFITH AVENUE WISCONSIN RAPIDS, WI 54494 (715)421-7867 MARC.HERSHFIELD@WISCONSIN.GOV	<u>PORTAGE COUNTY HIGHWAY DEPARTMENT</u> BRIAN KELLEY 800 PLOVER ROAD PLOVER, WI 54467 (715)345-5230 KELLEYB@CO.PORTAGE.WI.US
--	--

<u>DESIGNER</u> POINT OF BEGINNING, INC. RYAN BARZ 5709 WINDY DRIVE, SUITE D STEVENS POINT, WI 54482 (715)344-9999 RYANB@POBINC.COM	<u>VILLAGE OF PLOVER</u> BILL KONKOL 2801 CHESTNUT DRIVE PLOVER, WI 54467 (715)345-5257 BKONKOL@PLOVERWI.GOV
---	---

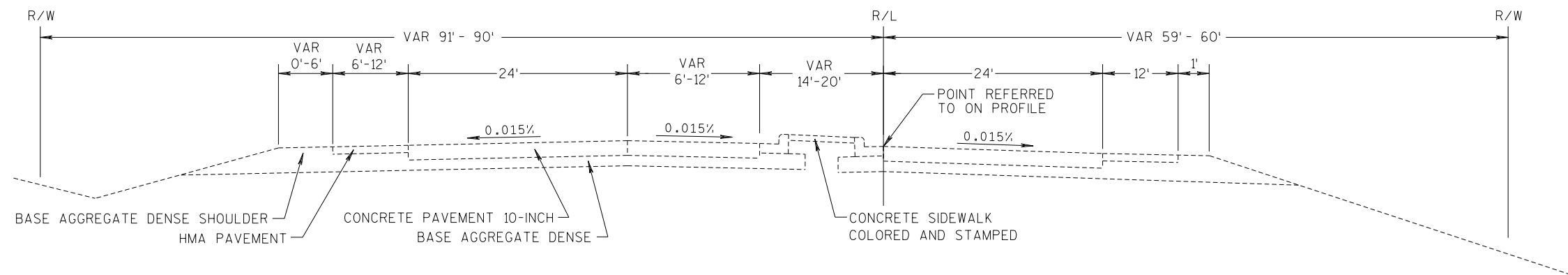
ORDER OF TYPICAL SECTION AND DETAIL SHEETS

- GENERAL NOTES
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- INTERSECTION
- EROSION CONTROL
- STORM SEWER
- PERMANENT SIGNING
- TRAFFIC SIGNALS
- PAVEMENT MARKING
- TRAFFIC CONTROL



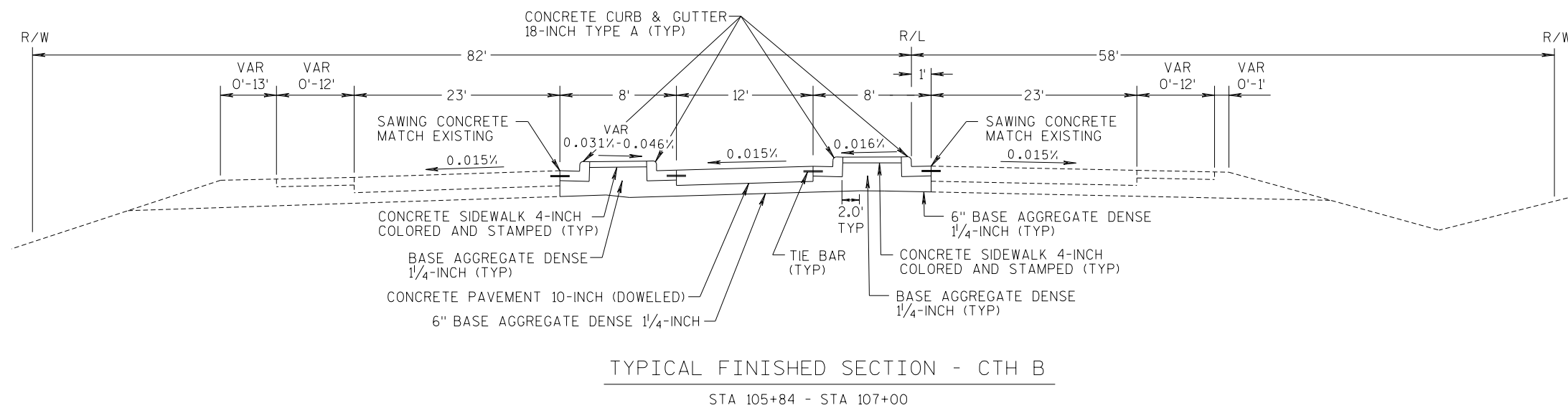
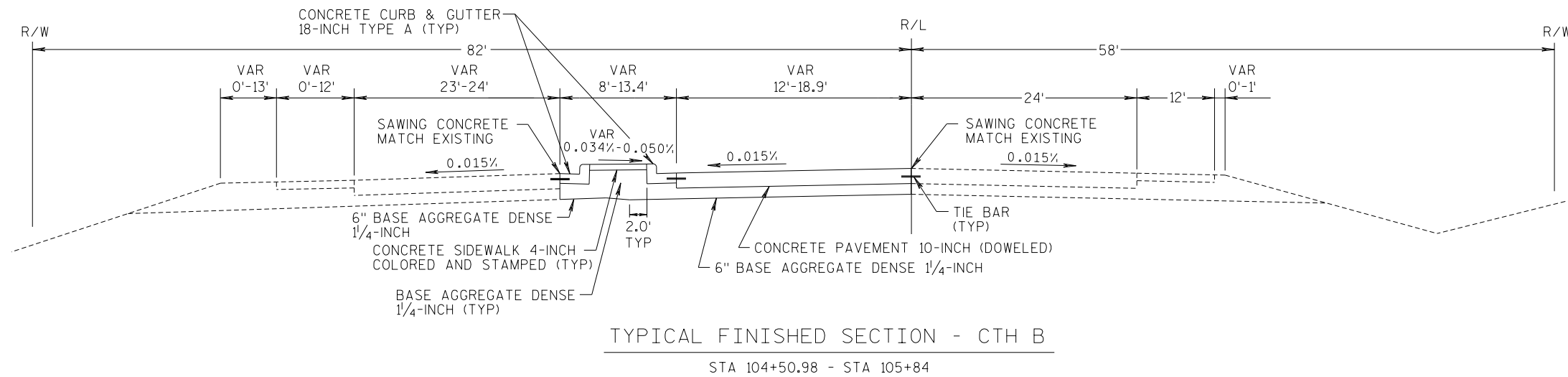
## TYPICAL EXISTING SECTION - CTH B

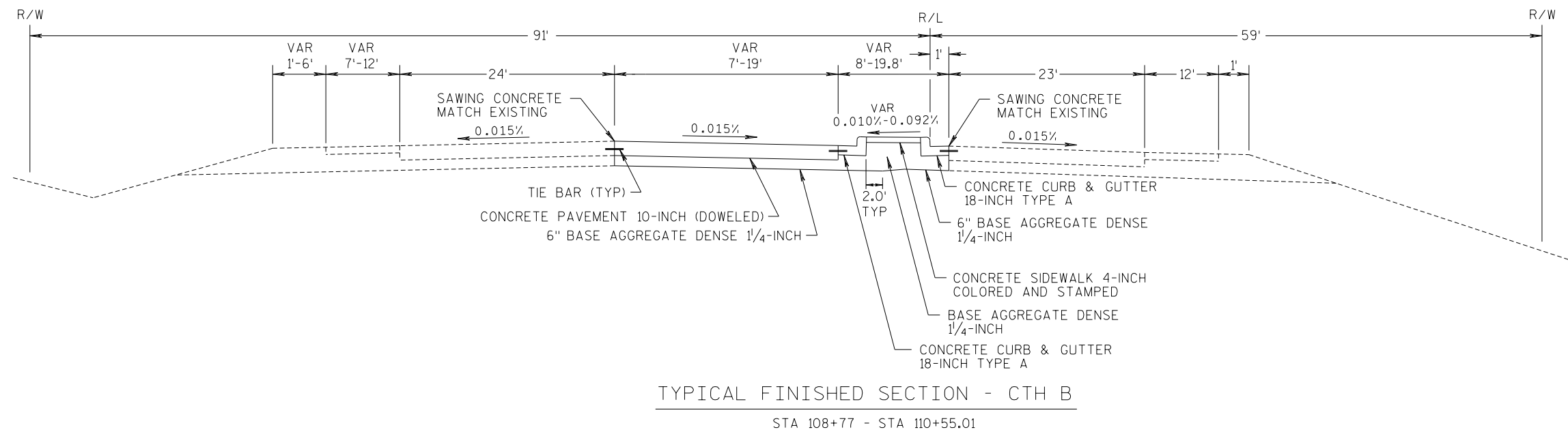
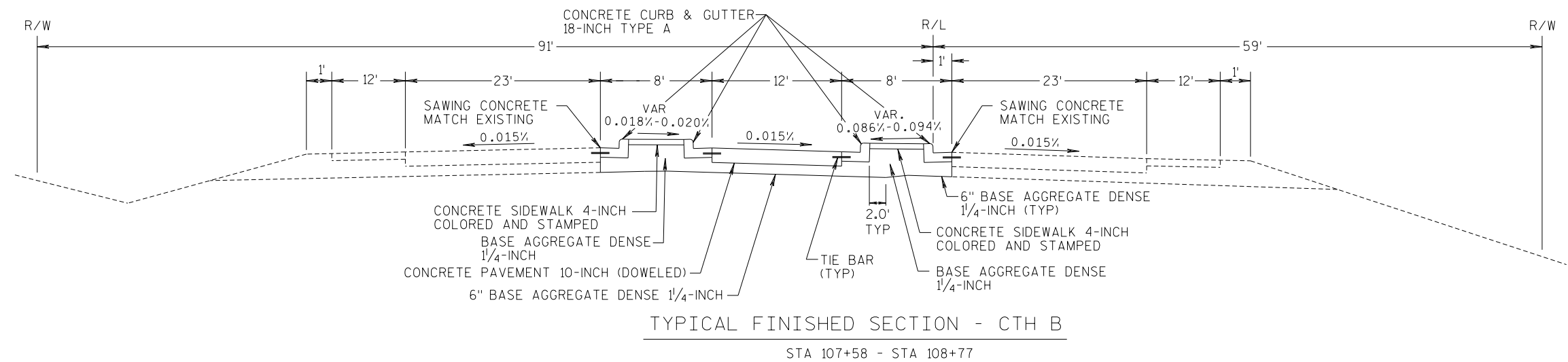
STA 104+50.98 - STA 107+00

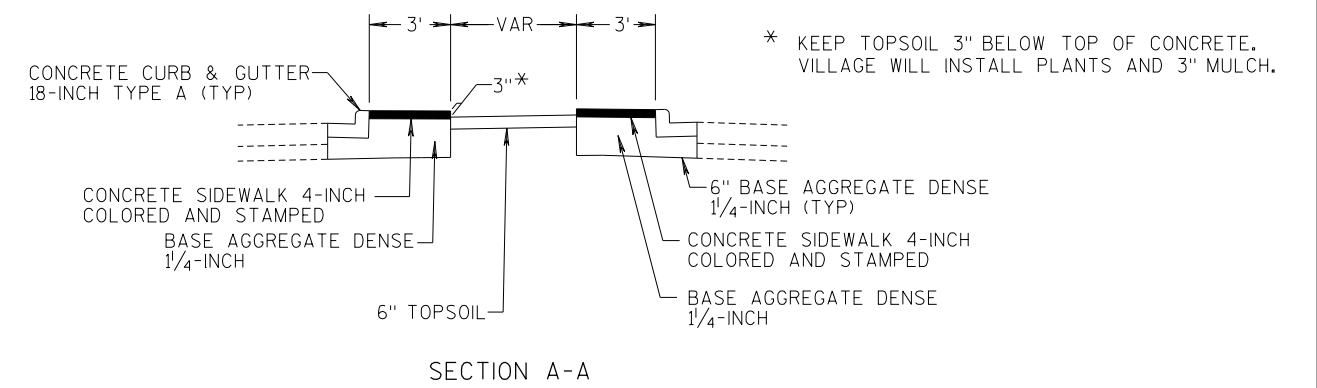
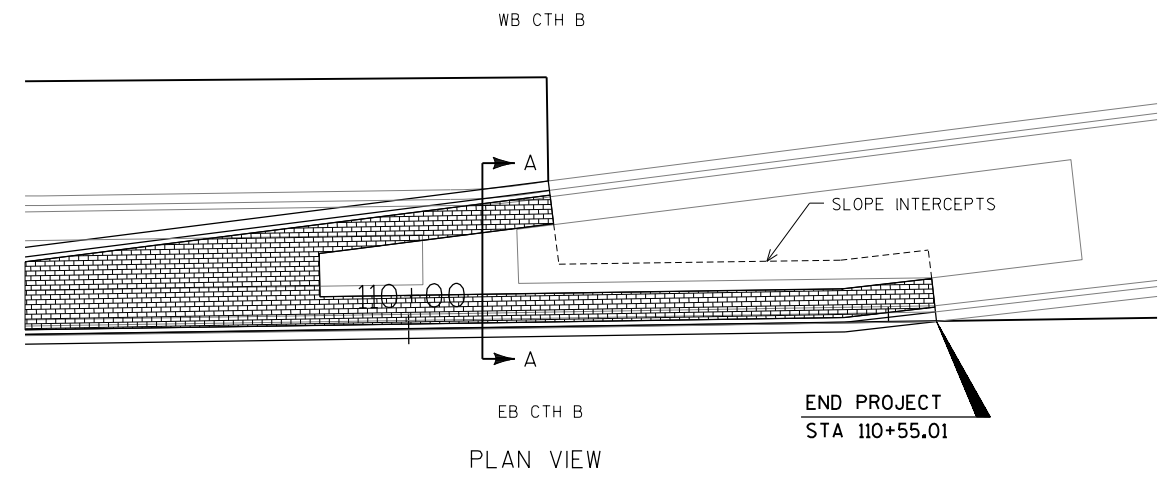


## TYPICAL EXISTING SECTION - CTH B

STA 107+58 - STA 110+55.01

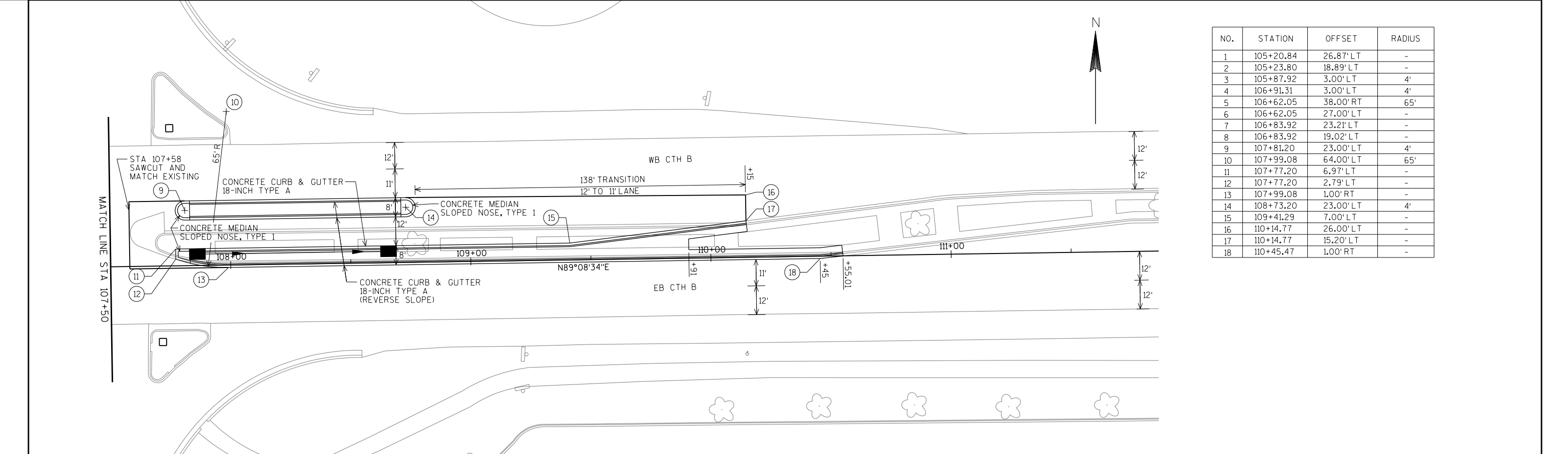
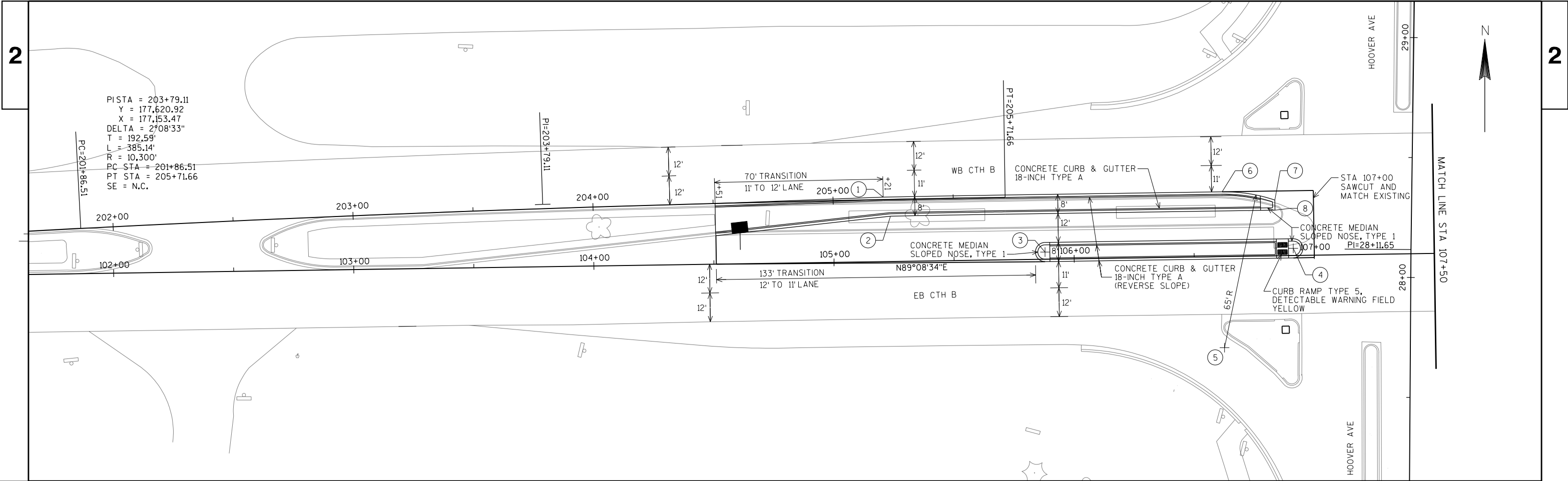




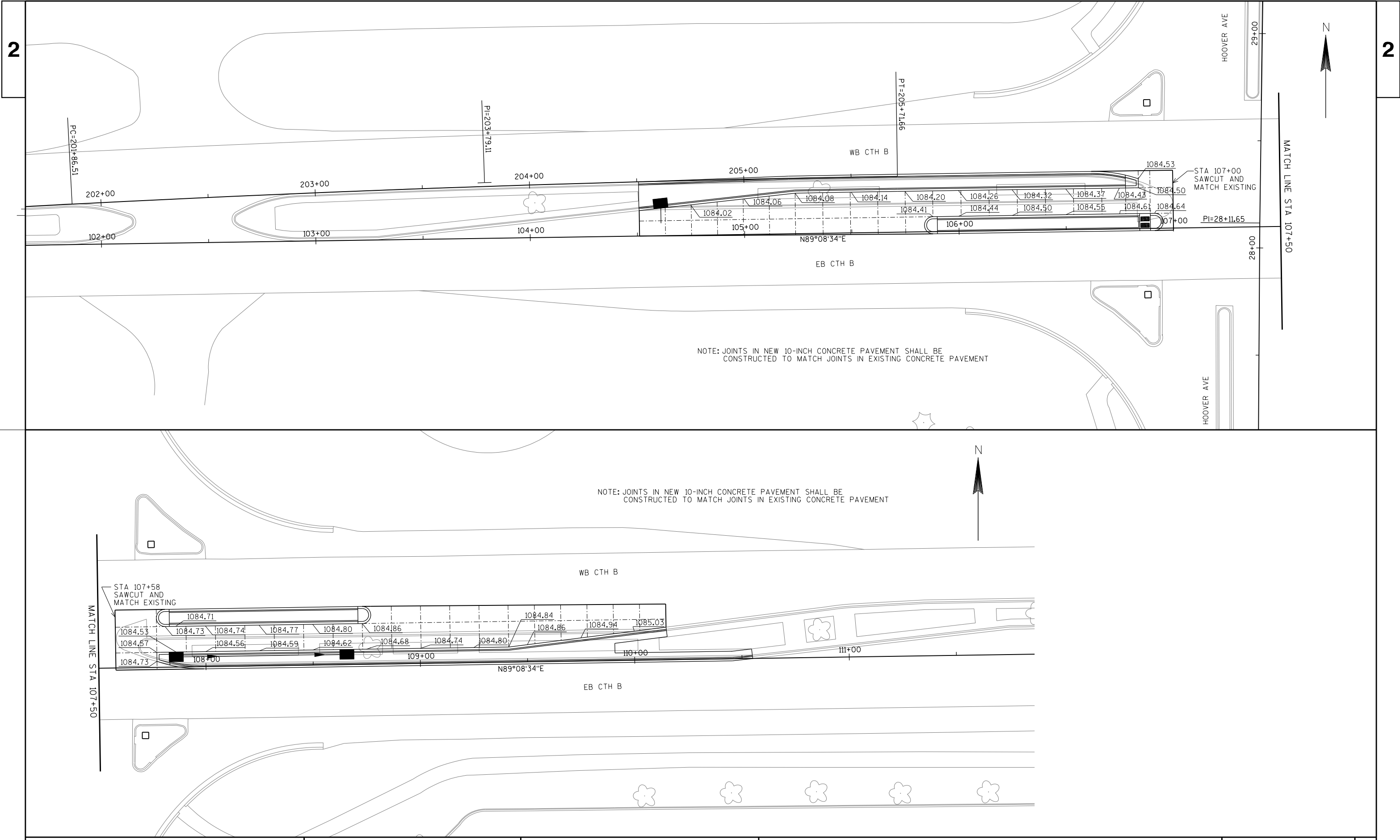


TOPSOIL DETAIL

STA 109+91 - STA 110+55.01



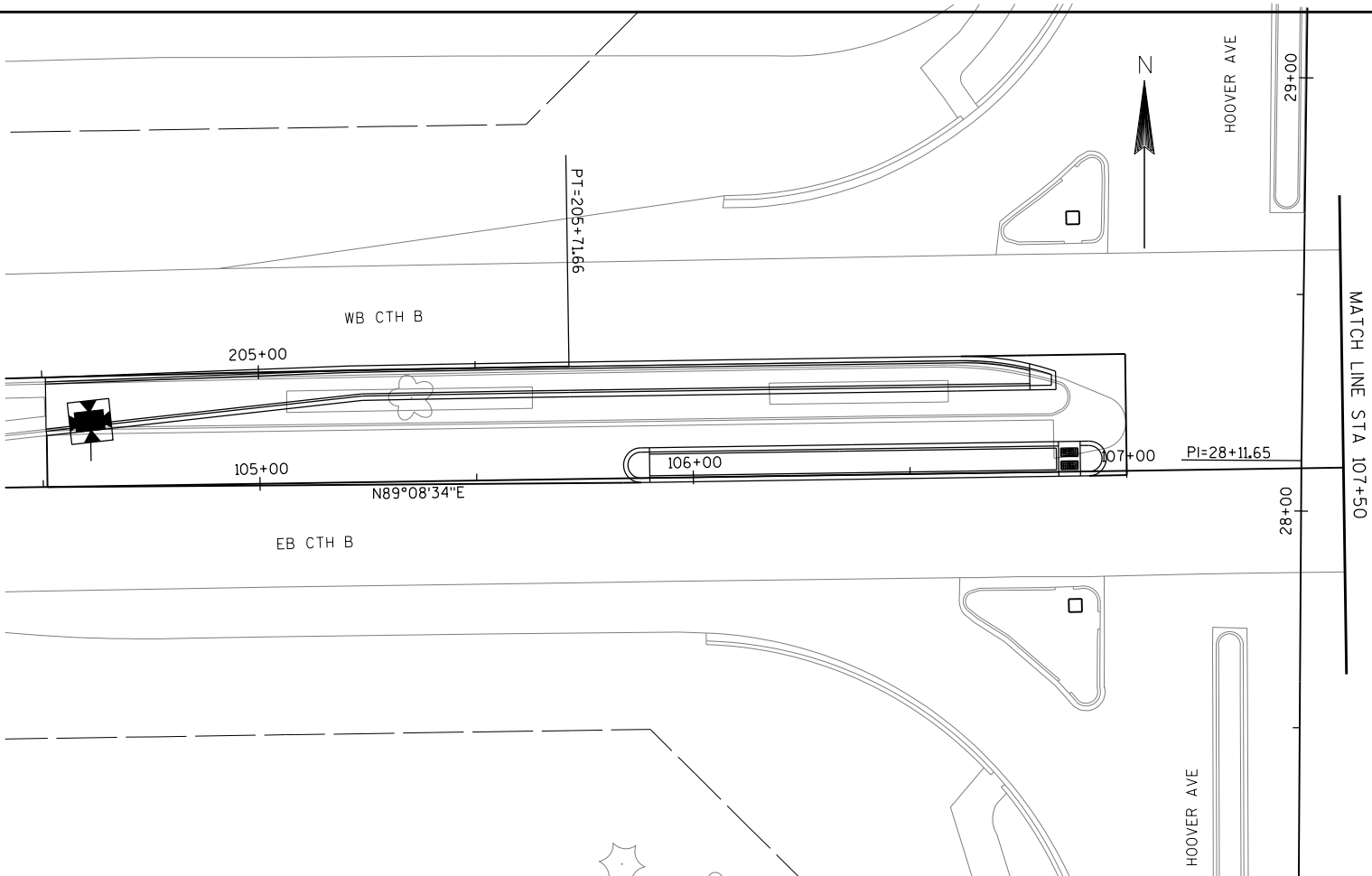
NO.	STATION	OFFSET	RADIUS
1	105+20.84	26.87' LT	-
2	105+23.80	18.89' LT	-
3	105+87.92	3.00' LT	4'
4	106+91.31	3.00' LT	4'
5	106+62.05	38.00' RT	65'
6	106+62.05	27.00' LT	-
7	106+83.92	23.21' LT	-
8	106+83.92	19.02' LT	-
9	107+81.20	23.00' LT	4'
10	107+99.08	64.00' LT	65'
11	107+77.20	6.97' LT	-
12	107+77.20	2.79' LT	-
13	107+99.08	1.00' RT	-
14	108+73.20	23.00' LT	4'
15	109+41.29	7.00' LT	-
16	110+14.77	26.00' LT	-
17	110+14.77	15.20' LT	-
18	110+45.47	1.00' RT	-



RUNOFF COEFFICIENT TABLE

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

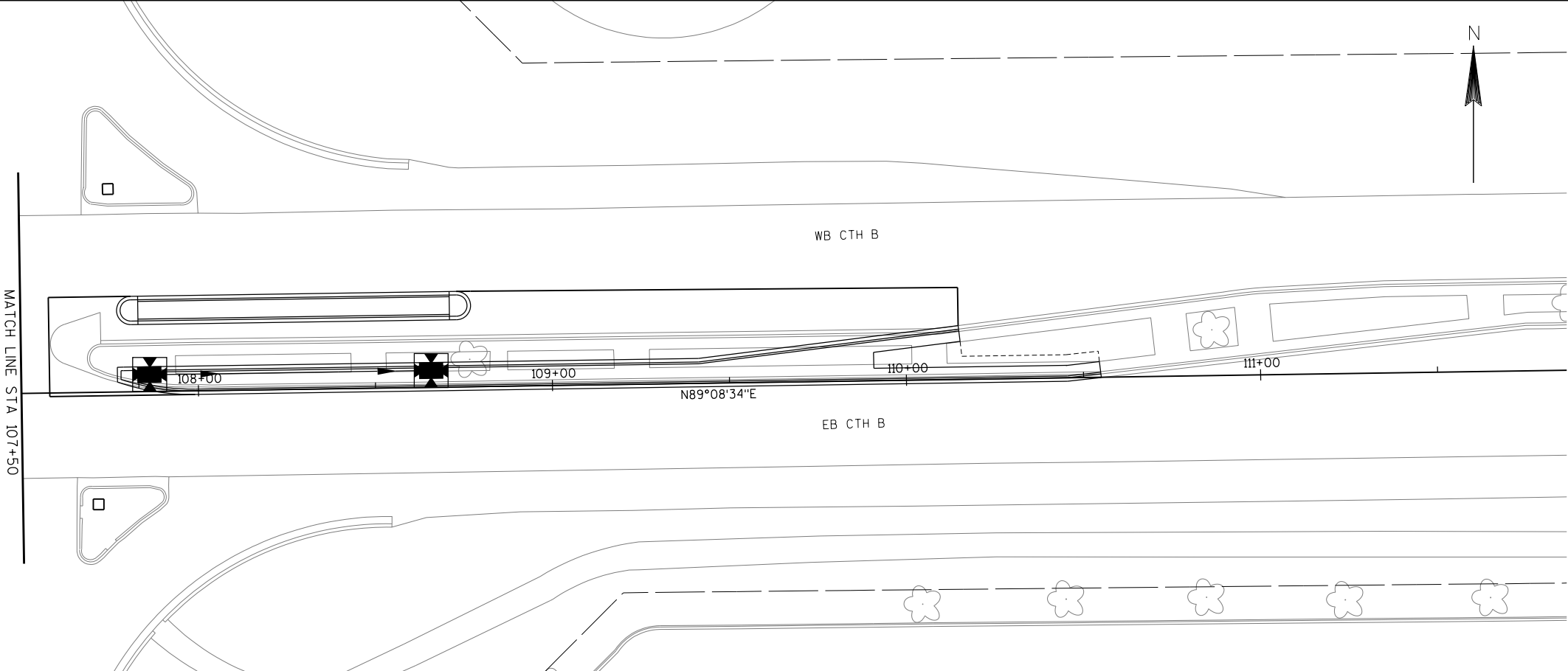
TOTAL PROJECT AREA = 2.02 ACRES  
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.32 ACRES

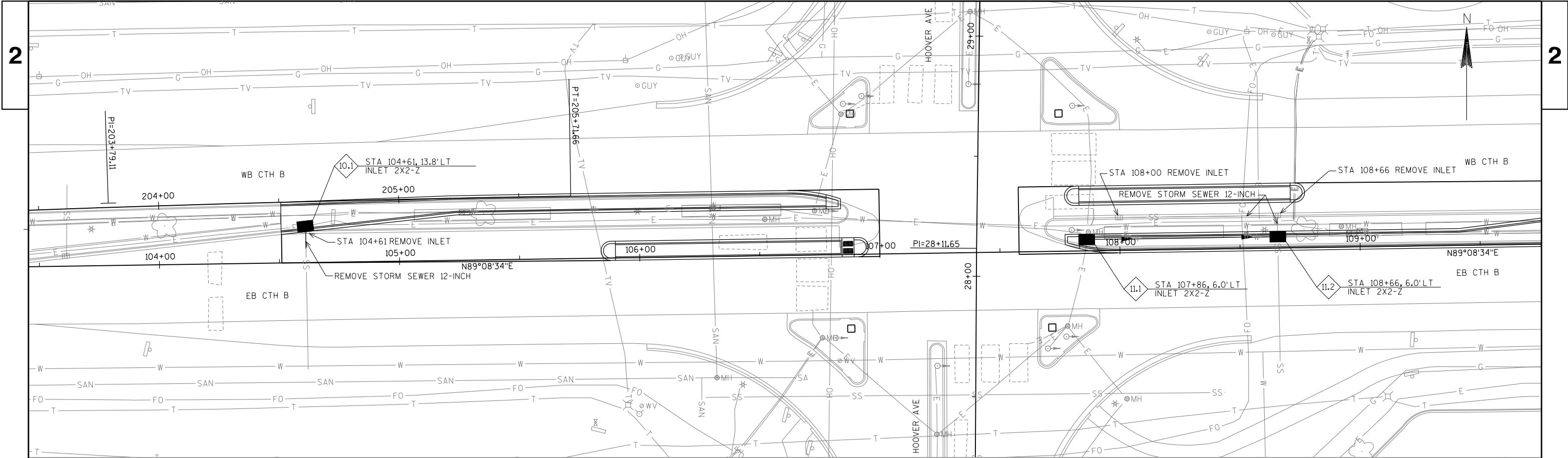


EROSION CONTROL LEGEND

INLET PROTECTION TYPE A & C

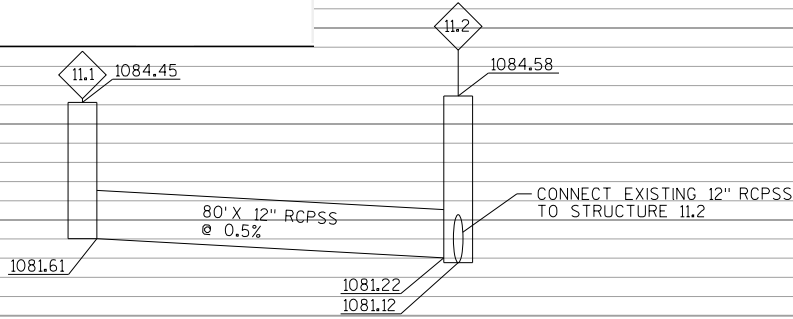
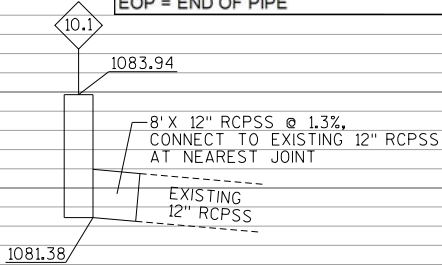
SLOPE INTERCEPT

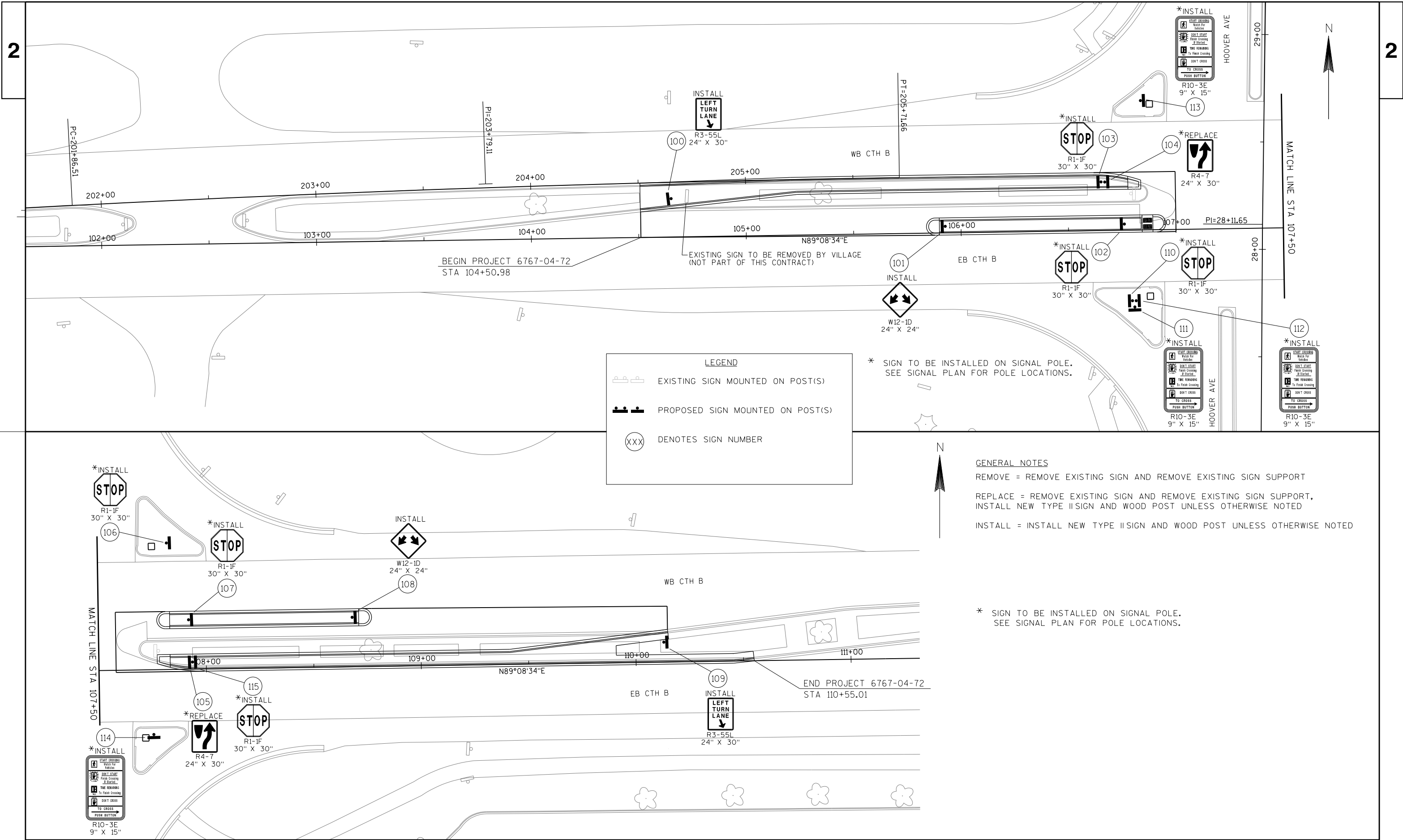




DISCHARGE PIPE																
STRUCTURE NUMBER	STATION	LOCATION	INLET TYPE	* RIM/GRATE ELEVATION	** TOP OF STRUCTURE ELEVATION	INLET ELEVATION	OUTLET ELEVATION	*** DEPTH (FT)	TO	SIZE (IN)	PAY LENGTH C-C (FT)	INSTALL LENGTH (FT)	SLOPE (FT./FT.)	INLET ELEVATION (EOP)	OUTLET ELEVATION (EOP)	
10.1	104+61	13.8 LT	2X2-Z	1083.94	1082.94	---	1081.38	1.73	EX PIPE	12	8	7	0.013	1081.38	1081.30	
11.1	107+86	6.0 LT	2X2-Z	1084.45	1083.45	---	1081.61	2.01	11.2	12	80	78	0.005	1081.61	1081.22	
11.2	108+66	6.0 LT	2X2-Z	1084.58	1083.58	1081.22	1081.12	2.63	---	---	---	---	---	---	---	

\*RIM/GRATE ELEVATION = NORMAL FLOWLINE ELEVATION  
\*\*TOP OF STRUCTURE ELEVATION = RIM/GRATE ELEV. - 6" CASTING - 6" ADJUSTMENT RINGS  
\*\*\* DEPTH = TSE - OUTLET ELEV. + PIPE THICKNESS  
TSE = TOP OF STRUCTURE ELEVATION  
EOP = END OF PIPE





## CONSTRUCTION NOTES:

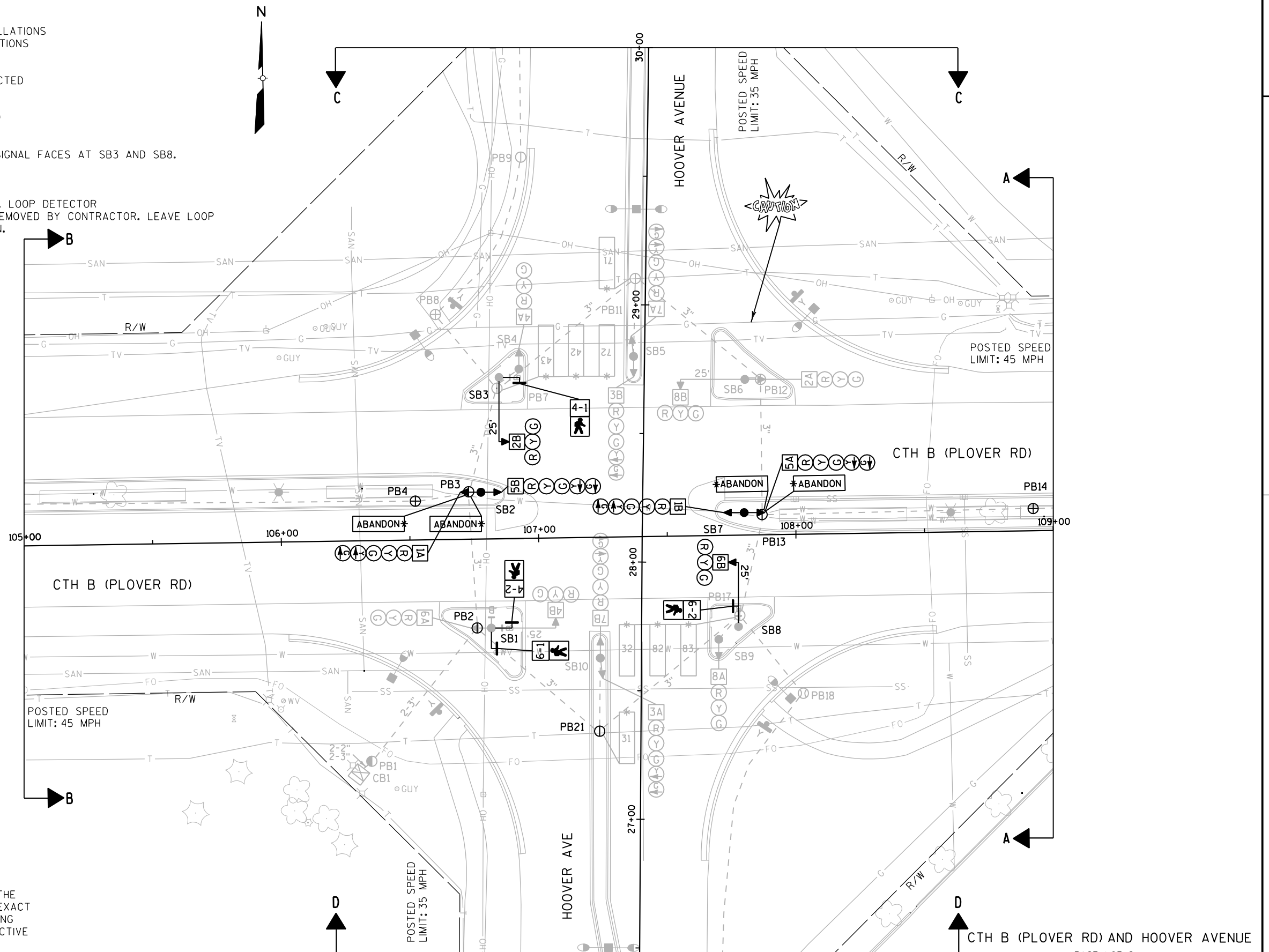
1. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
2. MAINTAIN EXISTING SIGNAL HEADS IN OPERATION UNTIL DIRECTED BY ENGINEER.
3. REMOVE EXISTING SIGNAL FACES, POLE, PEDESTAL BASE, AND TYPE I CONCRETE BASE AT SB2 AND SB7.
4. REMOVE EXISTING TROMBONE ARM, PEDESTRIAN HEAD, AND SIGNAL FACES AT SB3 AND SB8.
5. REMOVE EXISTING PEDESTRIAN HEADS AT SB1.
6. ABANDONED LOOP DETECTOR CONDUIT TO REMAIN IN PLACE. LOOP DETECTOR WIRE AND LEAD-IN CABLE FOR ABANDONED LOOPS TO BE REMOVED BY CONTRACTOR. LEAVE LOOP DETECTOR WIRE AND LEAD-IN CABLE FOR LOOPS TO REMAIN.
7. REMOVE ALL TRAFFIC SIGNAL CABLE AND #10 AWG GROUNDING CONDUCTORS. LEAVE #10 AWG PULL BOX BONDING FOR PULL BOXES TO REMAIN. A PULL WIRE IN EACH EXISTING CONDUIT RUN IS TO REMAIN.
8. MEDIAN LIGHTING ON CTH B TO BE RELOCATED BY OTHERS.

## LEGEND

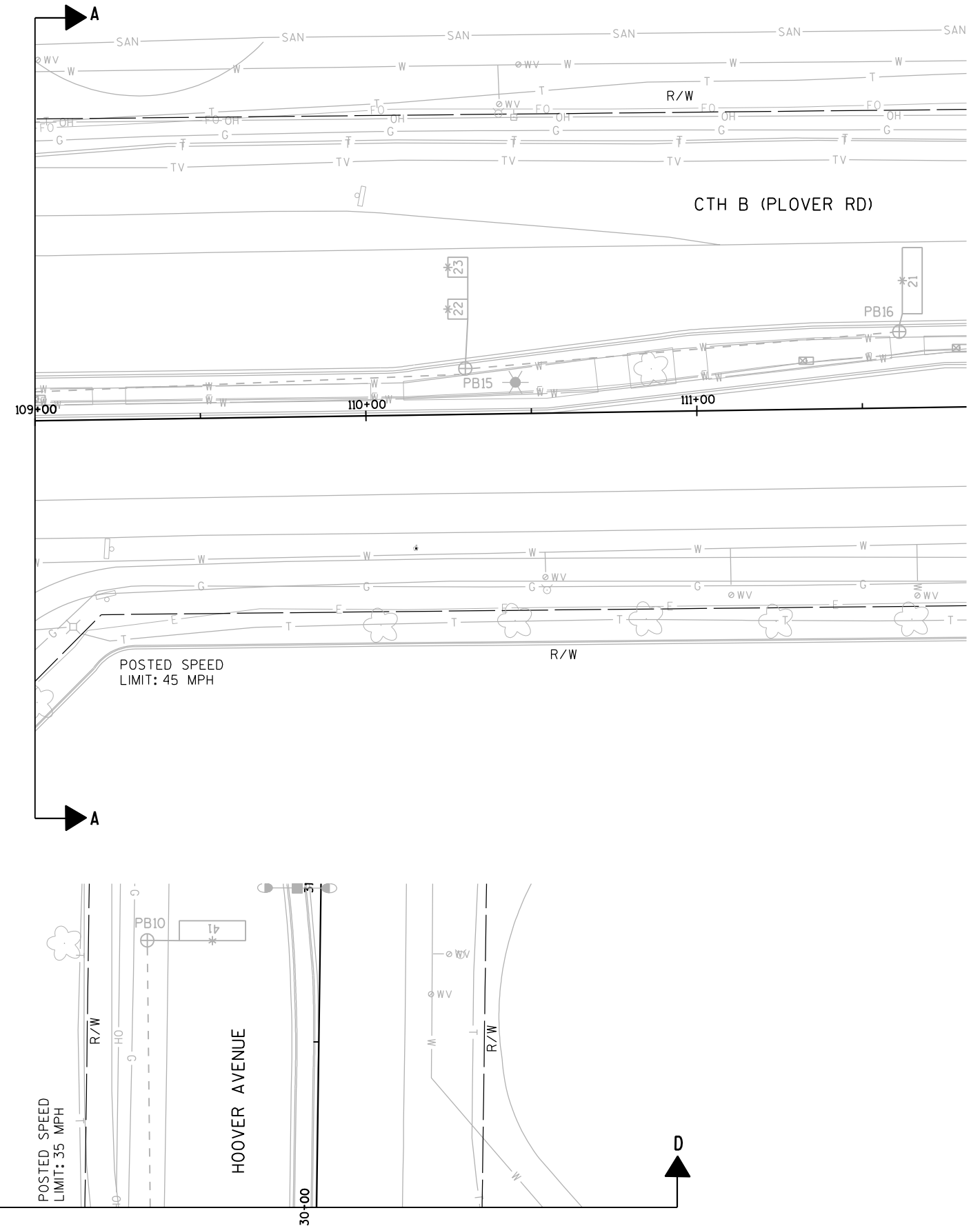
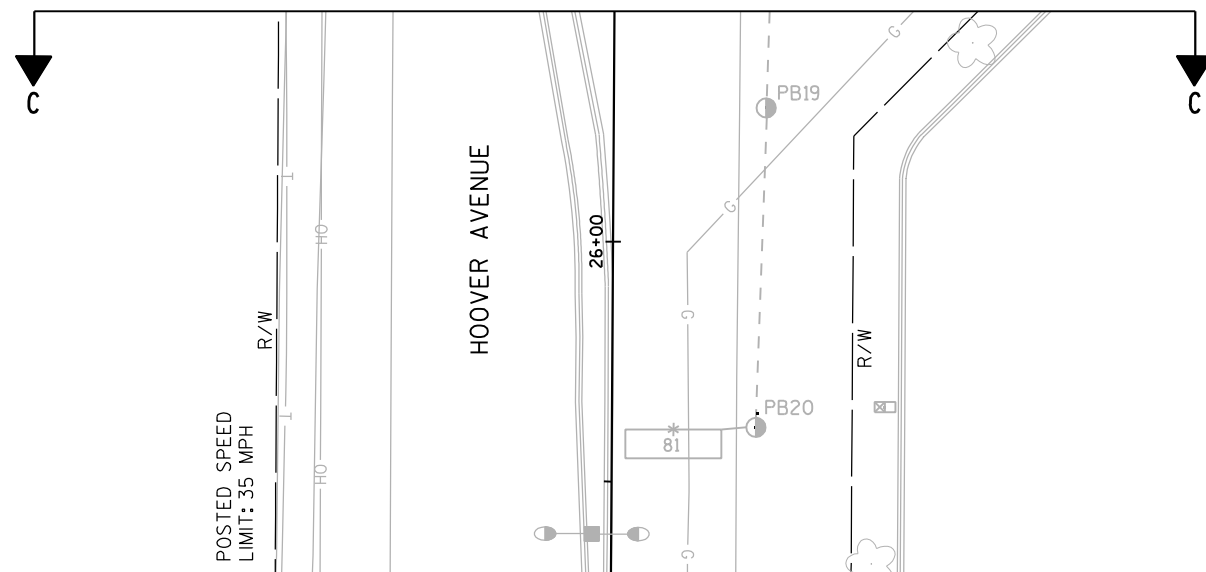
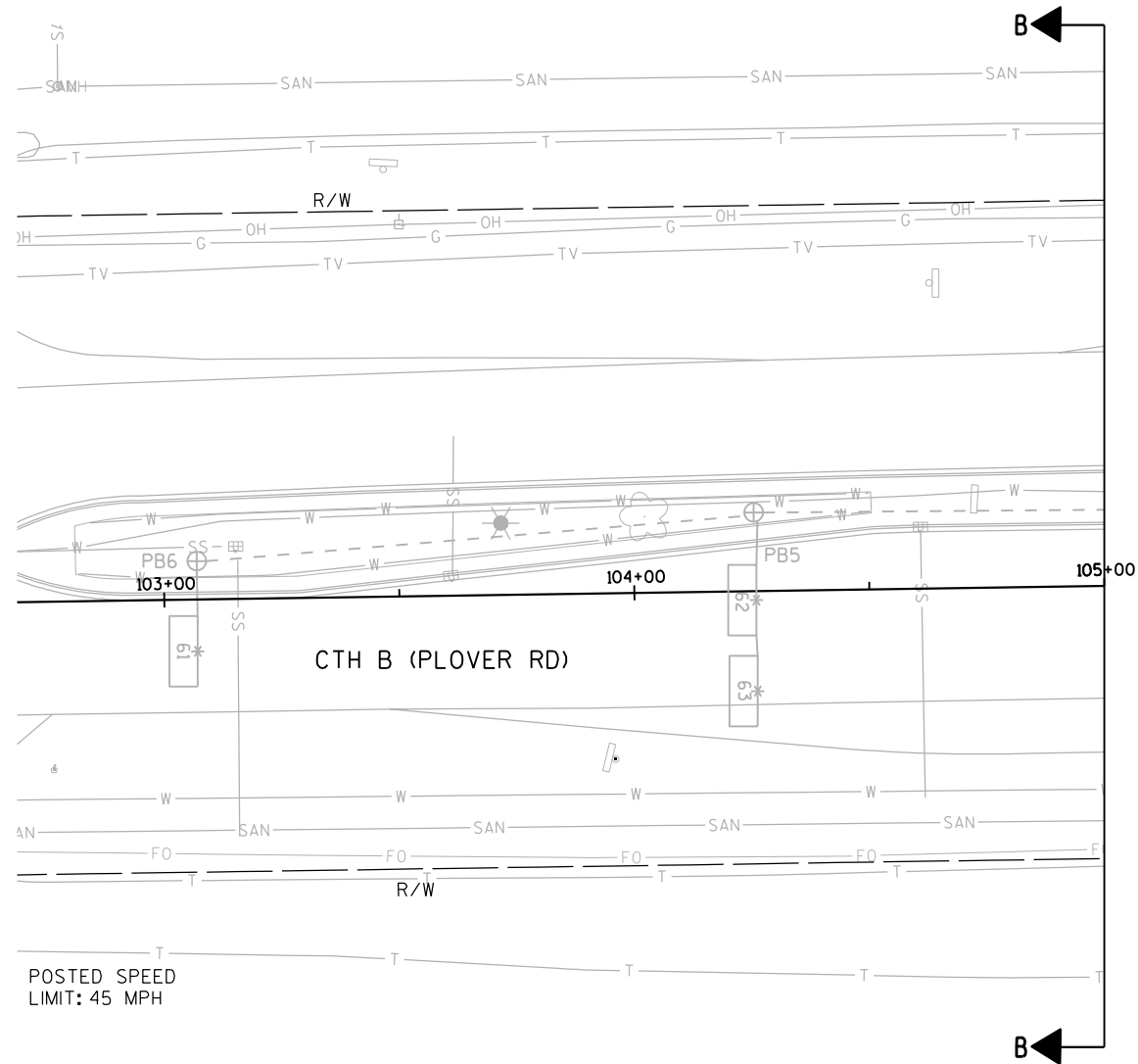
	CONTROL CABINET
	NONMETALLIC CONDUIT, 2" UNLESS OTHERWISE NOTED
	LOOP DETECTOR CONDUIT 1" NONMETALLIC
	SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
	SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
	LUMINAIRE ARM UNDER PERMIT TO LOCAL MUNICIPALITY
	LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
	LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
	PULL BOX, 18" X 24"
	PULL BOX, 12" X 24"
	PULL BOX, 24" X 36"
	SIGNAL HEAD NUMBER
	RED CIRCULAR INDICATOR
	YELLOW CIRCULAR INDICATOR
	GREEN CIRCULAR INDICATOR
	YELLOW ARROW
	GREEN ARROW
	DON'T WALK INDICATOR
	WALK INDICATOR

NOTE: GRAYSHADE REPRESENTS EXISTING  
BOLD REPRESENTS ITEMS TO BE REMOVED

NOTE:  
EXISTING UTILITIES SHOWN, IN PLAN AND PROFILE ARE  
INDICATED IN ACCORDANCE WITH AVAILABLE RECORDS. THE  
CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING EXACT  
LOCATIONS AND ELEVATIONS OF ALL UTILITIES, INCLUDING  
SEWER AND WATER FROM THE OWNERS OF THE RESPECTIVE  
UTILITIES. ALL UTILITY OWNERS SHALL BE NOTIFIED  
BY THE CONTRACTOR 3 WORKING DAYS PRIOR TO EXCAVATION.



CTH B (PLOVER RD) AND HOOVER AVENUE  
PAGE 1 OF 2



CTH B (PLOVER RD) AND HOOVER AVENUE  
PAGE 2 OF 2

### LEGEND

- | SUMMARY OF SELECTED ITEMS<br>FOR INFORMATION ONLY |  |
|---|--|
| QUANTITY  | DESCRIPTION                            |
| 4 (EACH)  | WOOD POLES, CLASS 4                    |
| 800 (FEET)  | SPAN WIRE                              |
| 12 (EACH)   | TRAFFIC SIGNAL FACES<br>3-V (VERTICAL) |
| 4 (EACH)  | LUMINAIRES, 250 W                      |

- SIDE OF THE POST OR POLE.  
 GUYING OF POLES IS REQUIRED AND LOCATIONS SHALL BE APPROVED BY THE ENGINEER.  
 MOUNT NEAR RIGHT SIGNAL HEADS BETWEEN THE TETHER AND SPAN WIRES.  
 TEMPORARY SIGNAL HEADS SHALL BE SPAN WIRE MOUNTED WITH THE TETHERCLAMP ASSEMBLY OPTION. SEE S.D.D. SPAN WIRE TEMPORARY TRAFFIC SIGNAL.  
 LEFT TURNS ARE PROHIBITED DURING CONSTRUCTION. INSTALL R3-2, 36-INCH, NO LEFT TURN SIGNS BETWEEN 2B AND 2C, 4B AND 4C, 6B AND 6C, AND 8B AND 8C.

NOTE:  
 EXISTING UTILITIES SHOWN, IN PLAN AND PROFILE ARE INDICATED IN ACCORDANCE WITH AVAILABLE RECORDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING EXACT LOCATIONS AND ELEVATIONS OF

CTH B (PLOVER RD) AND HOOVER AVENUE

PAGE 1 OF 2

SEQUENCE OF OPERATION

		NOT USED								NOT USED							
		←				↓				→				↑			
		01				02				03				04			
		CLEAR TO				CLEAR TO				CLEAR TO				CLEAR TO			
		R/W	**			R/W	**			R/W	**			R/W	**		
RING 1	01																
	02	2A,2B,2C								G	Y	R					
	03																
	04	4A,4B,4C								R	R	R					
	05																
	06	6A,6B,6C								R	R	R					
	07																
	08	8A,8B,8C								R	R	R					
	02P																
RING 2	04P																
	06P																
	08P																
		05				06				07				08			
		CLEAR TO				CLEAR TO				CLEAR TO				CLEAR TO			
		R/W	**			R/W	**			R/W	**			R/W	**		
RING 2	01																
	02	2A,2B,2C								R	R	R					
	03																
	04	4A,4B,4C								R	R	R					
	05																
	06	6A,6B,6C								G	Y	R					
	07																
	08	8A,8B,8C								R	R	R					
	02P																
RING 2	04P																
	06P																
	08P																

BARRIER

\*\* CLEARANCE TO A PHASE IN CONFLICT WITH THIS PHASE ON (SEE CHART 1)

CONTROLLER LOGIC

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

OVERLAPS

O.L. "A" =  
O.L. "B" =  
O.L. "C" =  
O.L. "D" =

CHART 1

PHASE ON	NONCONFLICTING PHASE ALLOWED TO TIME CONCURRENTLY	PHASES IN CONFLICT WITH PHASE ON
1		
2	6	4,8
3		
4	8	2,6
5		
6	2	4,8
7		
8	4	2,6

TYPE OF INTERCONNECT	
NONE	X
TBC	
CLOSED LOOP	
HARDWIRE	
TONE (FREQ)	
FIBER OPTIC	
RADIO	
MASTER SIGNAL NO:	

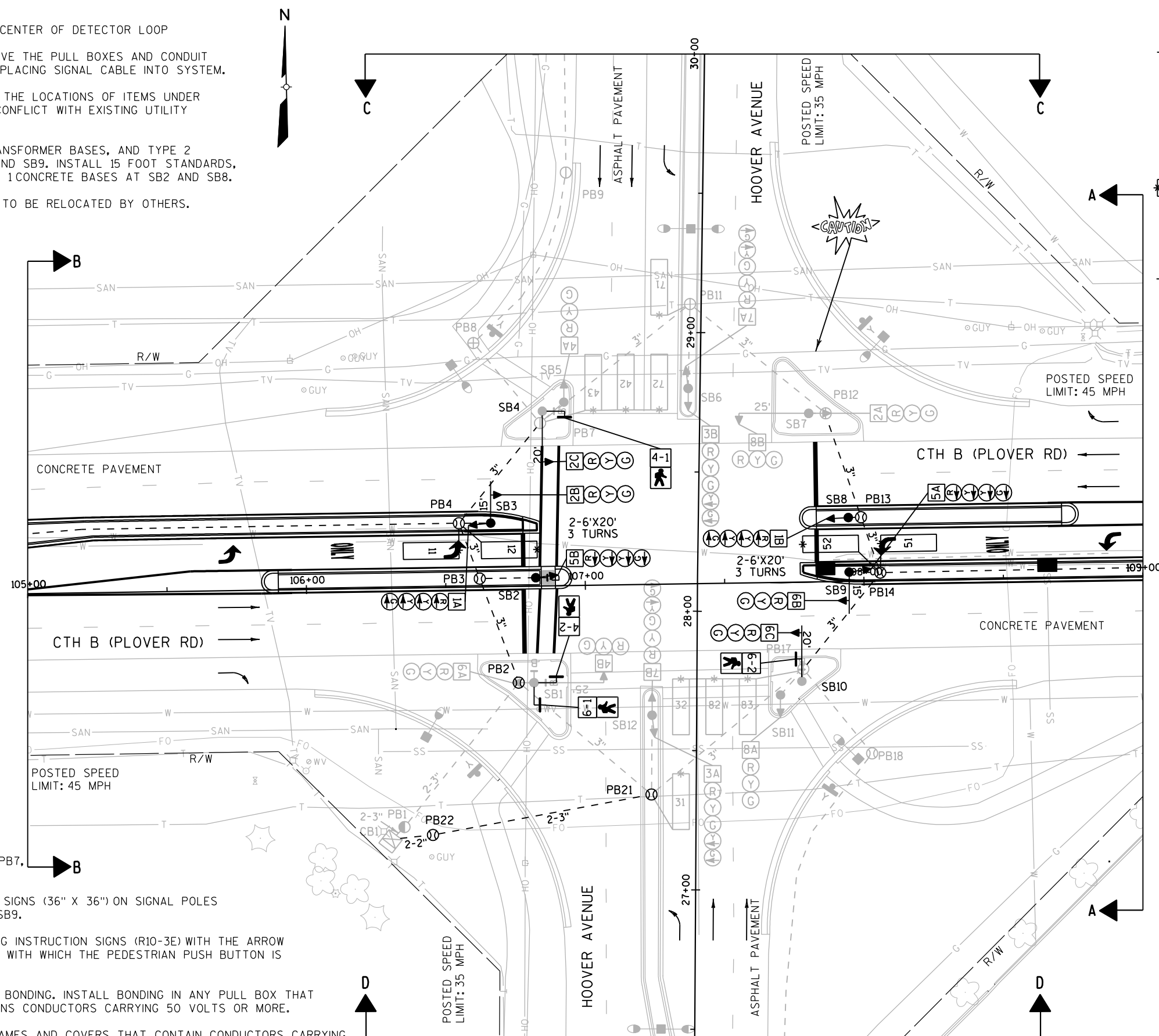
TYPE OF PRE-EMPT	
NONE	X
RAILROAD	
EMERGENCY VEHICLE	
3M	
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTOR	

TYPE OF LIGHTING	
BY OTHERS	
IN TRAFFIC SIGNAL CABINET	X
IN SEPARATE LIGHTING CABINET	

## CONSTRUCTION NOTES:

1. \* LOCATION IS TO FRONT CENTER OF DETECTOR LOOP
2. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED PRIOR TO PLACING SIGNAL CABLE INTO SYSTEM.
3. THE ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.
4. INSTALL TYPE 2 POLES, TRANSFORMER BASES, AND TYPE 2 CONCRETE BASES AT SB3 AND SB9. INSTALL 15 FOOT STANDARDS, PEDESTAL BASES, AND TYPE 1 CONCRETE BASES AT SB2 AND SB8.
5. MEDIAN LIGHTING ON CTH B TO BE RELOCATED BY OTHERS.

6. CONNECT PROPOSED CONDUIT TO EXISTING PULL BOX PB5, PB7, PB12, PB15, PB17.
7. INSTALL R1-1F FOLDING STOP SIGNS (36" X 36") ON SIGNAL POLES SB1, SB2, SB3, SB7, SB8 AND SB9.
8. INSTALL PEDESTRIAN CROSSING INSTRUCTION SIGNS (R10-3E) WITH THE ARROW POINTING TO THE CROSSWALK WITH WHICH THE PEDESTRIAN PUSH BUTTON IS ASSOCIATED.
9. MAINTAIN EXISTING PULL BOX BONDING. INSTALL BONDING IN ANY PULL BOX THAT IS NOT BONDED THAT CONTAINS CONDUCTORS CARRYING 50 VOLTS OR MORE.
10. BOND EXISTING PULL BOX FRAMES AND COVERS THAT CONTAIN CONDUCTORS CARRYING 50 VOLTS OR MORE.



## LEGEND

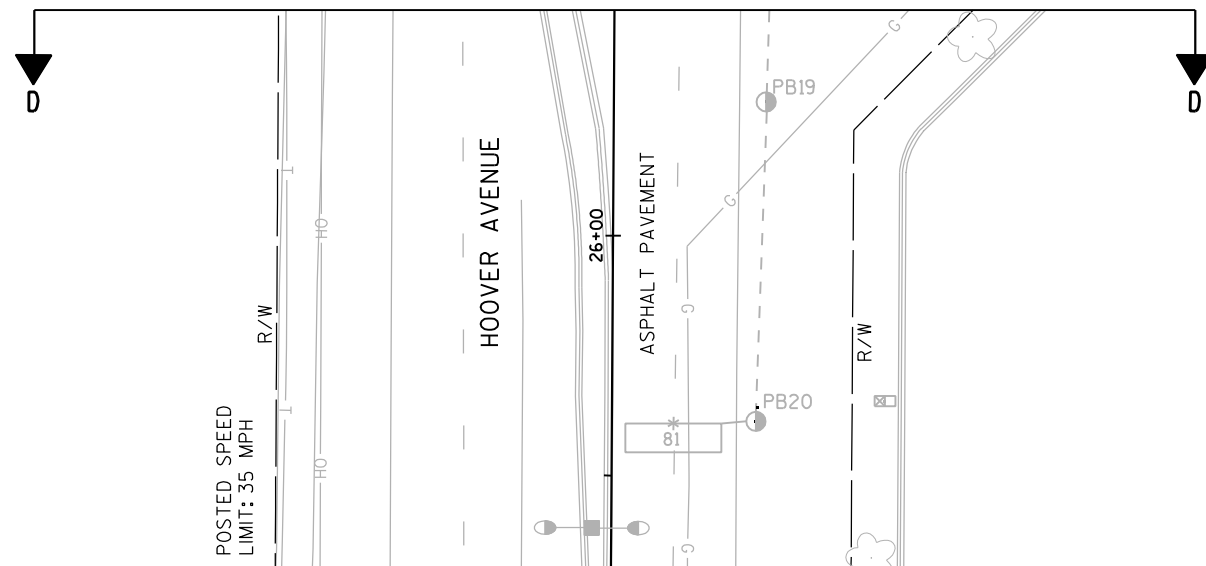
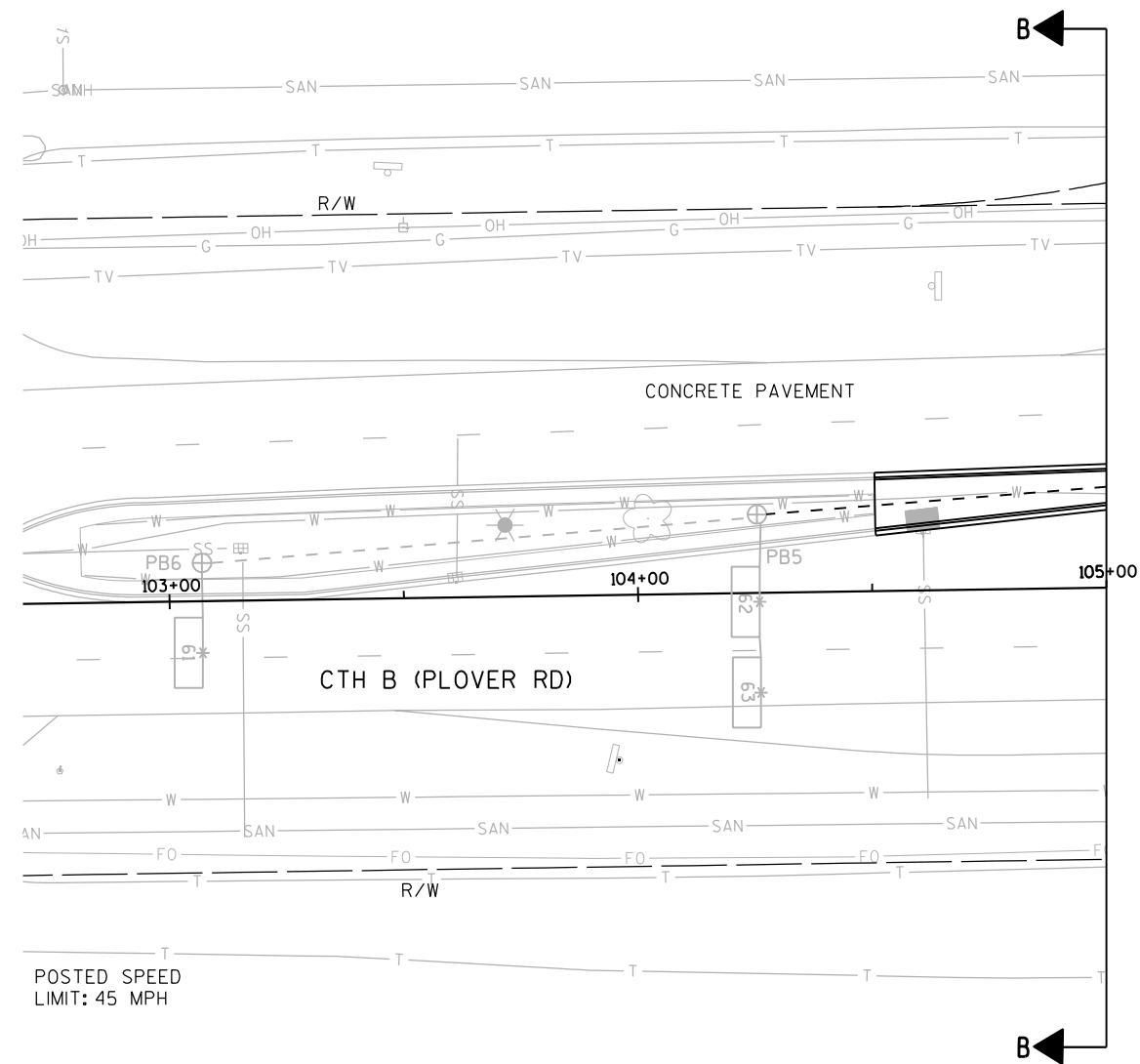
- CONTROL CABINET
- NONMETALLIC CONDUIT, 2" UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- LUMINAIRE ARM UNDER PERMIT TO LOCAL MUNICIPALITY
- LUMINAIRE UNDER PERMIT TO LOCAL MUNICIPALITY
- LOOP DETECTOR CONDUIT 1" NONMETALLIC
- PULL BOX, 18" X 24"
- PULL BOX, 12" X 24"
- PULL BOX, 24" X 42"
- PULL BOX, 24" X 36"
- SIGNAL HEAD NUMBER
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR
- RED ARROW
- YELLOW ARROW
- GREEN ARROW
- WALK / DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
- YIELD SIGN
- LANE DESIGNATION FOR INFO ONLY
- NOTE: ALL LENSES ARE 12-INCH GRAYSHADE REPRESENTS EXISTING

CONFIGURATION WITH HEAD NUMBERS				
3-H R Y G 4B, 8B	3-V R Y G 2A, 2B, 2C 4A 6A, 6B, 6C 8A	4-VF R Y G 1A, 1B 5A, 5B	5-V R Y G 3A, 3B 7A, 7B	2-P WALK / DON'T WALK 4-1, 4-2 6-1, 6-2

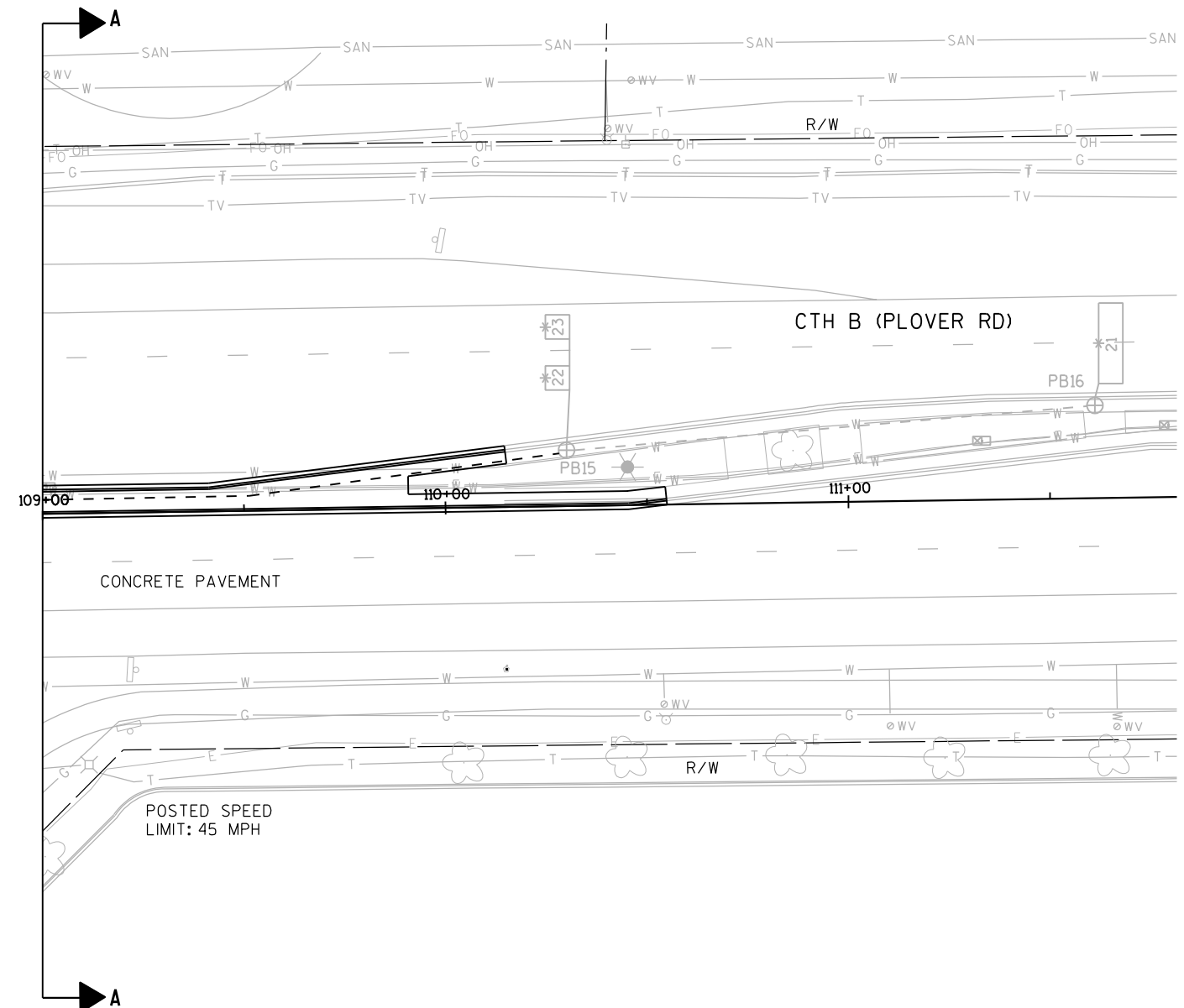
NOTE:  
EXISTING UTILITIES SHOWN, IN PLAN AND PROFILE ARE INDICATED IN ACCORDANCE WITH AVAILABLE RECORDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING EXACT LOCATIONS AND ELEVATIONS OF ALL UTILITIES, INCLUDING SEWER AND WATER FROM THE OWNERS OF THE RESPECTIVE UTILITIES. ALL UTILITY OWNERS SHALL BE NOTIFIED BY THE CONTRACTOR 3 WORKING DAYS PRIOR TO EXCAVATION.

CTH B (PLOVER RD) AND HOOVER AVENUE

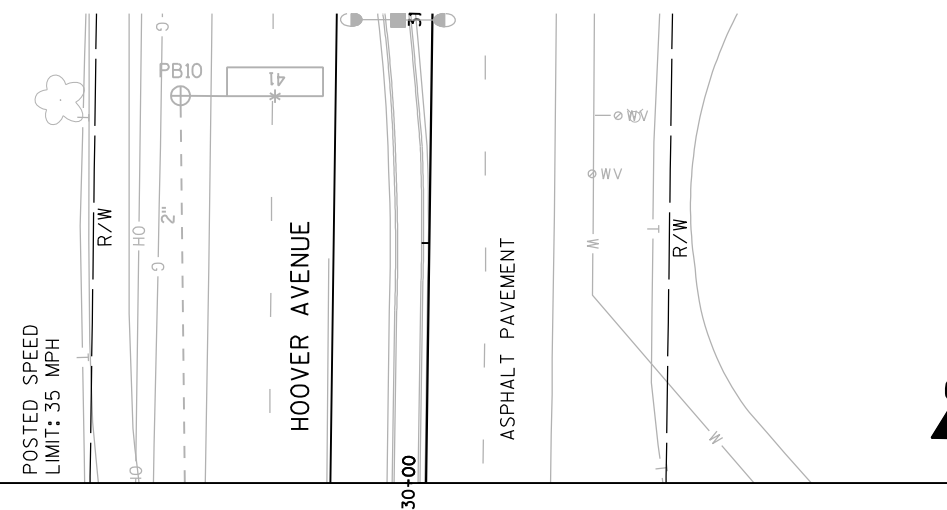
PAGE 1 OF 3



N



C



CTH B (PLOVER RD) AND HOOVER AVENUE  
PAGE 2 OF 3



PROJECT ID: 6767-04-72  
INTERSECTION: CTH B (PLOVER RD) & HOOVER AVE

SIGNAL WIRE COLOR CODING	BLK-BLACK	RED-RED	GRN-GREEN
	WHT-WHITE	BLU-BLUE	ORG-ORANGE

DATE: Oct-12

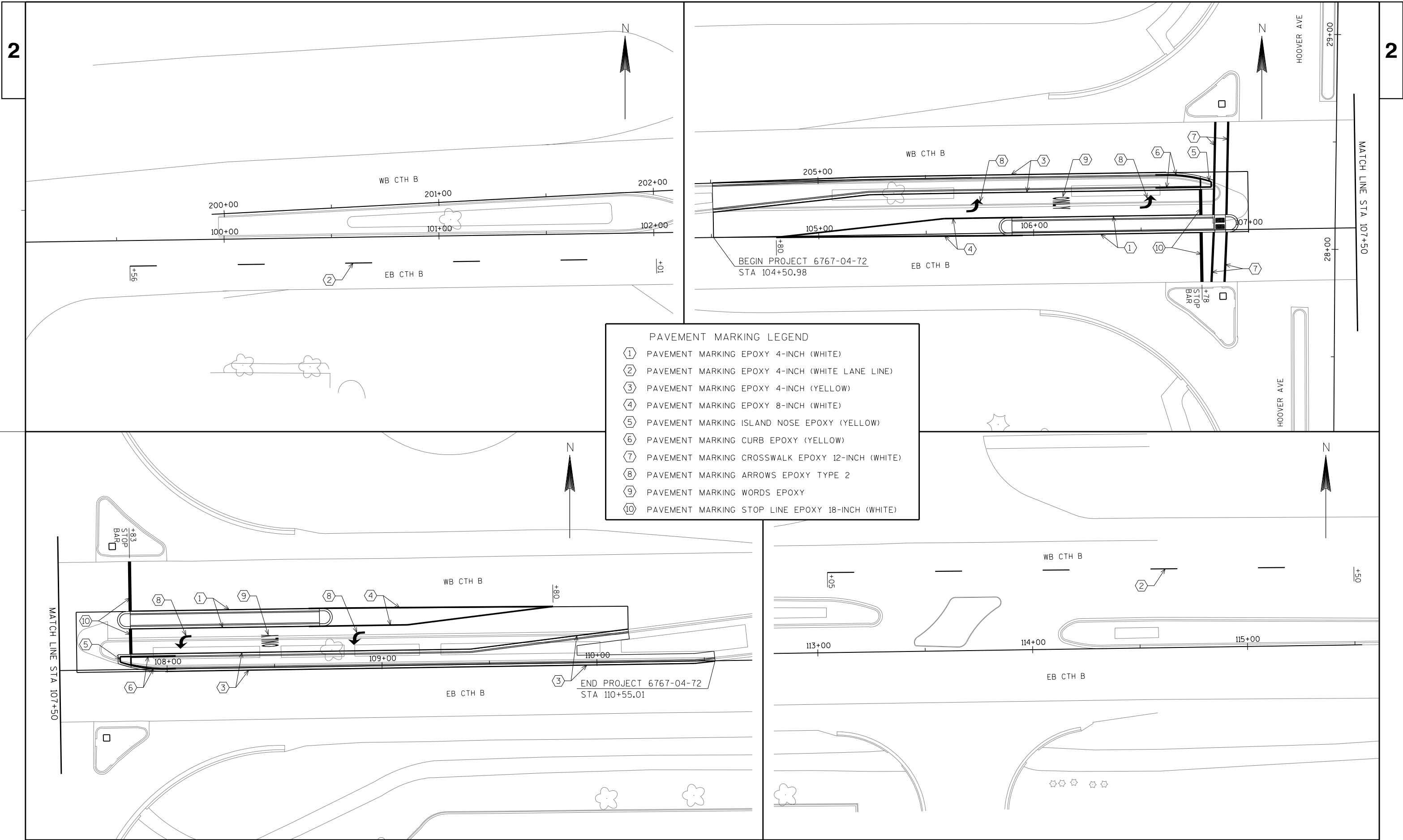
CB1 TO	AWG 14 # OF COND.	HEAD NO.	PHASE	SIGNAL INDICATION WIRE COLOR									PED BUTTON	OTHER
				RED	YELLOW	GREEN	<RED>	<YELLOW>	<FLASH YEL>	<GREEN>	D/WALK	WALK		
SB1	15	4B	4	RED	ORG	GRN								
		6A	6	RED/BLK	ORG/BLK	GRN/BLK								
		4-2	4								WHT/BLK	BLU/BLK		
		6-1	6								BLK/WHT	BLU/WHT		
		PB	4										BLU	
		PB	6										BLK	
SB2	12	5B	5				RED	ORG	BLK	GRN				
		PB	4										BLU	
SB3	12	2B	2	RED	ORG	GRN								
		1A	1				RED/BLK	ORG/BLK	BLK	GRN/BLK				
SB4	12	2C	2	RED	ORG	GRN								
		4-1	4								WHT/BLK	BLU/BLK		
		PB	4										BLU	
SB5	12	4A	4	RED	ORG	GRN								
SB6	15	3B	3	RED	ORG	GRN								
		7A	7	RED/BLK	ORG/BLK	GRN/BLK		BLK		BLU				
								WHT/BLK		BLU/BLK				
SB7	12	8B	8	RED	ORG	GRN								
		2A	2	RED/BLK	ORG/BLK	GRN/BLK								
SB8	12	1B	1				RED	ORG	BLK	GRN				
SB9	12	6B	6	RED	ORG	GRN								
		5A	5				RED/BLK	ORG/BLK	BLK	GRN/BLK				
SB10	12	6C	6	RED	ORG	GRN								
		6-2	6								WHT/BLK	BLU/BLK		
		PB	6										BLU	
SB11	12	8A	8	RED	ORG	GRN								
SB12	15	3A	3	RED	ORG	GRN								
		7B	7	RED/BLK	ORG/BLK	GRN/BLK		BLK		BLU				
								WHT/BLK		BLU/BLK				

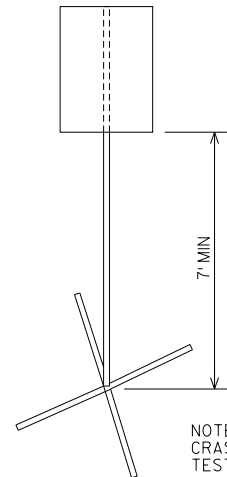
EQUIPMENT GROUNDING CONDUCTORS 10 AWG GRN XLP	
FROM	TO
CB1	SB1
SB1	SB2
SB2	SB3
SB3	SB4
SB4	SB5
SB5	SB6
SB6	SB7
SB7	SB8
SB8	SB9
SB9	SB10
SB10	SB11
SB11	SB12
SB12	CB1

PULL BOX BONDING JUMPER 10 AWG GRN XLP	
FROM	TO
PB2	SB1
PB3	SB2
PB4	SB3
PB13	SB8
PB14	SB9
PB21	SB12
PB22	CB1
RECONNECT EXISTING BONDING WIRES. INSTALL BONDING FOR ANY PULL BOXES WITHOUT BONDING WHERE REQUIRED.	

- NOTES:
1. USE WHITE CONDUCTOR IN THE SIGNAL CABLE AS THE GROUNDED CONDUCTOR FOR ALL TRAFFIC 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 FROM THE PEDESTRIAN PUSH BUTTONS TO THE COLOR INDICATED IN THE CHART. CONNECT THE OTHER TERMINAL TO THE GROUNDED CONDUCTOR.

CTH B (PLOVER RD) AND HOOVER AVENUE  
PAGE 1 OF 1

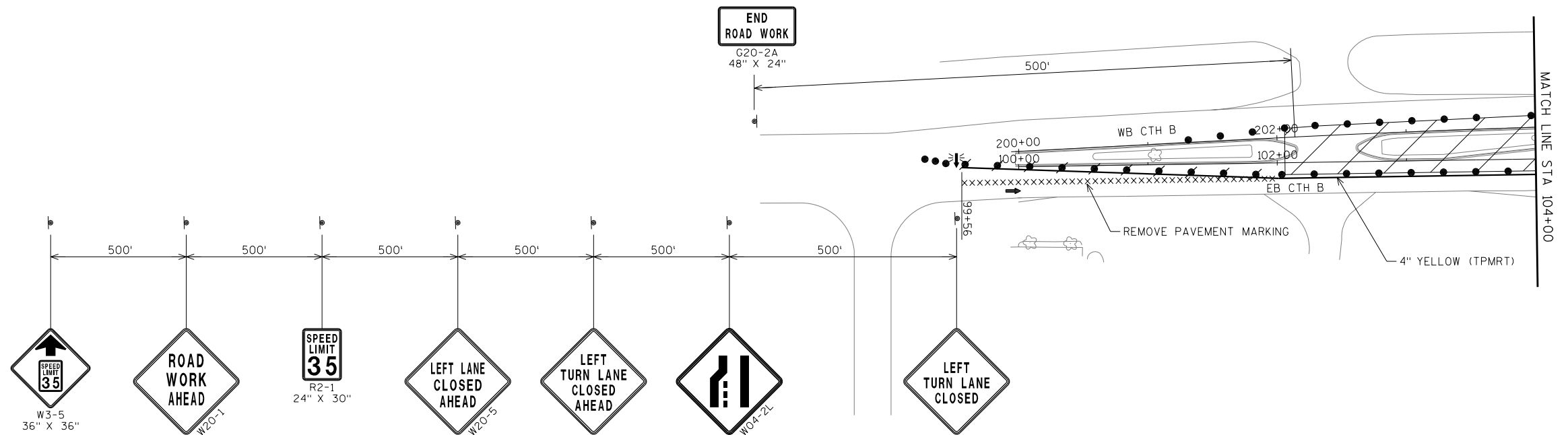




NOTE: THE SELECTED SUPPORT SYSTEM SHALL MEET THE CRASHWORTHINESS CRITERIA OF NCHRP REPORT 350, TEST LEVEL 3.

TEMPORARY SUPPORT DETAIL

LEGEND	
	TYPE III BARRICADE (UNLESS OTHERWISE NOTED)
	TYPE III BARRICADE WITH ATTACHED SIGN
	TRAFFIC CONTROL DRUM
	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
	SIGN ON PERMANENT SUPPORT
	SIGN ON TEMPORARY SUPPORT
	WORK AREA (CLOSED TO TRAFFIC)
	FLASHING ARROW BOARD
	TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE
	DIRECTION OF TRAFFIC



HOOVER AVE  
NO LEFT TURNS

SP  
54" X 18"

PLACE SIGN ON CTH B APPROXIMATELY  
1,000' WEST OF THE INTERSECTION WITH BUS. 51  
OR AS DIRECTED BY ENGINEER.



W3-5  
36" X 36"



W20-1



R2-1  
24" X 30"



W20-5



W20-5

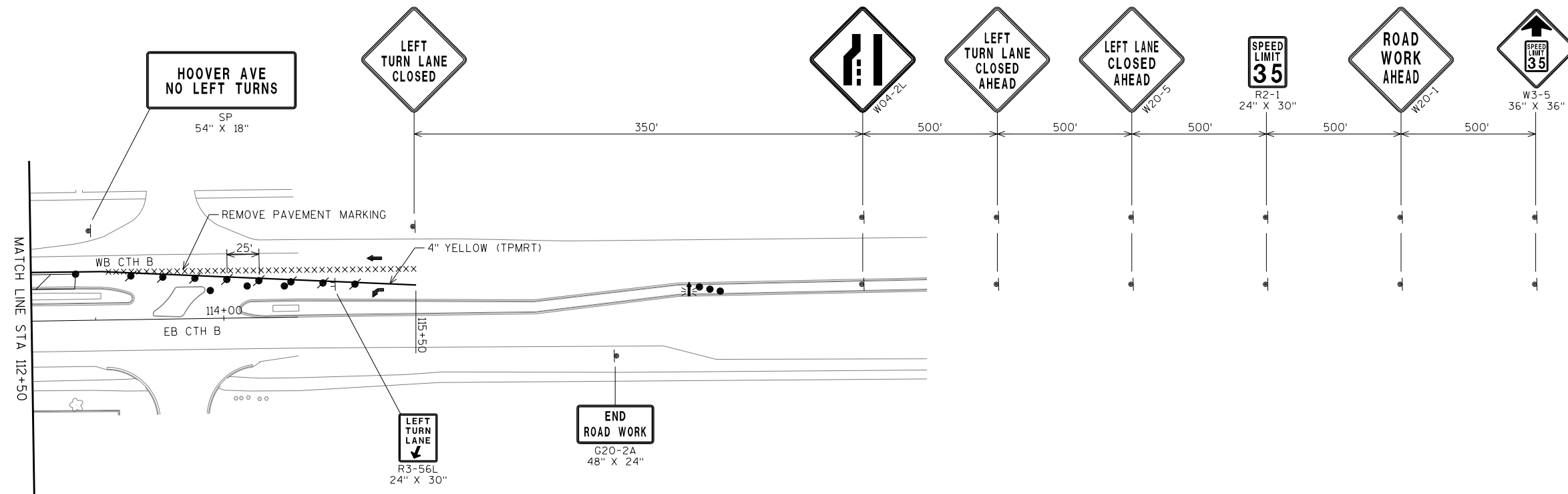


W04-2L



W20-5





## LEGEND

- TYPE III BARRICADE (UNLESS OTHERWISE NOTED)
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- WORK AREA (CLOSED TO TRAFFIC)
- FLASHING ARROW BOARD
- (TPMRT) TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE
- DIRECTION OF TRAFFIC

DATE 07JAN13		E S T I M A T E O F Q U A N T I T I E S			
LINE		6767-04-72			
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	201.0120	CLEARING	ID	16.000	16.000
0020	201.0220	GRUBBING	ID	16.000	16.000
0030	204.0100	REMOVING PAVEMENT	SY	990.000	990.000
0040	204.0155	REMOVING CONCRETE SIDEWALK	SY	434.000	434.000
0050	204.0195	REMOVING CONCRETE BASES	EACH	2.000	2.000
0060	204.0220	REMOVING INLETS	EACH	3.000	3.000
0070	204.0245	REMOVING STORM SEWER (SIZE) 01. 12-INCH	LF	82.000	82.000
0080	205.0100	EXCAVATION COMMON	CY	787.000	787.000
0090	213.0100	FINISHING ROADWAY (PROJECT) 01. 6767-04-72	EACH	1.000	1.000
0100	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	780.000	780.000
0110	415.0100	CONCRETE PAVEMENT 10-INCH	SY	900.000	900.000
0120	416.0610	DRILLED TIE BARS	EACH	421.000	421.000
0130	416.0620	DRILLED DOWEL BARS	EACH	63.000	63.000
0140	601.0405	CONCRETE CURB & GUTTER 18-INCH TYPE A	LF	1,327.000	1,327.000
0150	602.0405	CONCRETE SIDEWALK 4-INCH	SF	72.000	72.000
0160	602.0505	CURB RAMP DETECTABLE WARNING FIELD YELLOW	SF	16.000	16.000
0170	608.0412	STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 12-INCH	LF	88.000	88.000
0180	611.0666	INLET COVERS TYPE Z	EACH	3.000	3.000
0190	611.3220	INLETS 2X2-FT	EACH	3.000	3.000
0200	619.1000	MOBILIZATION	EACH	1.000	1.000
0210	620.0300	CONCRETE MEDIAN SLOPED NOSE	SF	226.000	226.000
0220	625.0100	TOPSOIL	SY	29.000	29.000
0230	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	3.000	3.000
0240	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	2.000	2.000
0250	628.7005	INLET PROTECTION TYPE A	EACH	3.000	3.000
0260	628.7015	INLET PROTECTION TYPE C	EACH	3.000	3.000
0270	634.0612	POSTS WOOD 4X6-INCH X 12-FT	EACH	2.000	2.000
0280	634.0614	POSTS WOOD 4X6-INCH X 14-FT	EACH	2.000	2.000
0290	637.0202	SIGNS REFLECTIVE TYPE II	SF	31.760	31.760
0300	637.0402	SIGNS REFLECTIVE FOLDING TYPE II	SF	44.760	44.760
0310	638.2602	REMOVING SIGNS TYPE II	EACH	2.000	2.000
0320	642.5001	FIELD OFFICE TYPE B	EACH	1.000	1.000
0330	643.0200	TRAFFIC CONTROL SURVEILLANCE AND MAINTENANCE (PROJECT) 01. 6767-04-72	DAY	69.000	69.000
0340	643.0300	TRAFFIC CONTROL DRUMS	DAY	9,660.000	9,660.000
0350	643.0410	TRAFFIC CONTROL BARRICADES TYPE II	DAY	276.000	276.000
0360	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	207.000	207.000
0370	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	690.000	690.000
0380	643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C	DAY	1,242.000	1,242.000
0390	643.0800	TRAFFIC CONTROL ARROW BOARDS	DAY	138.000	138.000
0400	643.0900	TRAFFIC CONTROL SIGNS	DAY	3,366.000	3,366.000
0410	643.0920	TRAFFIC CONTROL COVERING SIGNS TYPE II	EACH	5.000	5.000
0420	643.1000	TRAFFIC CONTROL SIGNS FIXED MESSAGE	SF	13.500	13.500
0430	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	1,390.000	1,390.000
0440	646.0126	PAVEMENT MARKING EPOXY 8-INCH	LF	460.000	460.000
0450	646.0600	REMOVING PAVEMENT MARKINGS	LF	126.000	126.000
0460	647.0166	PAVEMENT MARKING ARROWS EPOXY TYPE 2	EACH	4.000	4.000
0470	647.0356	PAVEMENT MARKING WORDS EPOXY	EACH	2.000	2.000
0480	647.0456	PAVEMENT MARKING CURB EPOXY	LF	84.000	84.000
0490	647.0566	PAVEMENT MARKING STOP LINE EPOXY 18-INCH	LF	70.000	70.000
0500	647.0606	PAVEMENT MARKING ISLAND NOSE EPOXY	EACH	2.000	2.000

DATE 07JAN13		E S T I M A T E O F Q U A N T I T I E S			
LINE					6767-04-72
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0510	647.0776	PAVEMENT MARKING CROSSWALK EPOXY 12-INCH	LF	133.000	133.000
0520	649.0400	TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH	LF	990.000	990.000
0530	650.4000	CONSTRUCTION STAKING STORM SEWER	EACH	3.000	3.000
0540	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	546.000	546.000
0550	650.7000	CONSTRUCTION STAKING CONCRETE PAVEMENT	LF	546.000	546.000
0560	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 6767-04-72	LS	1.000	1.000
0570	652.0225	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH **P**	LF	455.000	455.000
0580	652.0605	CONDUIT SPECIAL 2-INCH **P**	LF	80.000	80.000
0590	652.0615	CONDUIT SPECIAL 3-INCH **P**	LF	370.000	370.000
0600	652.0700.S	INSTALL CONDUIT INTO EXISTING ITEM	EACH	5.000	5.000
0610	652.0800	CONDUIT LOOP DETECTOR **P**	LF	280.000	280.000
0620	653.0140	PULL BOXES STEEL 24X42-INCH	EACH	7.000	7.000
0630	653.0905	REMOVING PULL BOXES	EACH	6.000	6.000
0640	654.0101	CONCRETE BASES TYPE 1	EACH	2.000	2.000
0650	654.0102	CONCRETE BASES TYPE 2	EACH	2.000	2.000
0660	655.0230	CABLE TRAFFIC SIGNAL 5-14 AWG **P**	LF	220.000	220.000
0670	655.0240	CABLE TRAFFIC SIGNAL 7-14 AWG **P**	LF	88.000	88.000
0680	655.0260	CABLE TRAFFIC SIGNAL 12-14 AWG **P**	LF	2,410.000	2,410.000
0690	655.0270	CABLE TRAFFIC SIGNAL 15-14 AWG **P**	LF	670.000	670.000
0700	655.0515	ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG **P**	LF	1,550.000	1,550.000
0710	655.0700	LOOP DETECTOR LEAD IN CABLE **P**	LF	5,650.000	5,650.000
0720	655.0800	LOOP DETECTOR WIRE **P**	LF	880.000	880.000
0730	657.0100	PEDESTAL BASES	EACH	2.000	2.000
0740	657.0255	TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE	EACH	2.000	2.000
0750	657.0305	POLES TYPE 2	EACH	2.000	2.000
0760	657.0425	TRAFFIC SIGNAL STANDARDS ALUMINUM 15-FT	EACH	2.000	2.000
0770	657.0585	TROMBONE ARMS 15-FT	EACH	2.000	2.000
0780	657.0590	TROMBONE ARMS 20-FT	EACH	2.000	2.000
0790	658.0110	TRAFFIC SIGNAL FACE 3-12 INCH VERTICAL	EACH	4.000	4.000
0800	658.0115	TRAFFIC SIGNAL FACE 4-12 INCH VERTICAL	EACH	4.000	4.000
0810	658.0215	BACKPLATES SIGNAL FACE 3 SECTION 12-INCH	EACH	4.000	4.000
0820	658.0220	BACKPLATES SIGNAL FACE 4 SECTION 12-INCH	EACH	4.000	4.000
0830	658.0416	PEDESTRIAN SIGNAL FACE 16-INCH	EACH	4.000	4.000
0840	658.0500	PEDESTRIAN PUSH BUTTONS	EACH	1.000	1.000
0850	658.0600	LED MODULES 12-INCH RED BALL	EACH	4.000	4.000
0860	658.0605	LED MODULES 12-INCH YELLOW BALL	EACH	4.000	4.000
0870	658.0610	LED MODULES 12-INCH GREEN BALL	EACH	4.000	4.000
0880	658.0615	LED MODULES 12-INCH RED ARROW	EACH	4.000	4.000
0890	658.0620	LED MODULES 12-INCH YELLOW ARROW	EACH	8.000	8.000
0900	658.0625	LED MODULES 12-INCH GREEN ARROW	EACH	4.000	4.000
0910	658.0635	LED MODULES PEDESTRIAN COUNTDOWN TIMER 16-INCH	EACH	4.000	4.000
0920	658.5069	SIGNAL MOUNTING HARDWARE (LOCATION) 01. CTH B & HOOVER AVE	LS	1.000	1.000
0930	661.0200	TEMPORARY TRAFFIC SIGNALS FOR INTERSECTIONS (LOCATION) 01. CTH B & HOOVER AVE	LS	1.000	1.000
0940	690.0250	SAWING CONCRETE	LF	1,200.000	1,200.000
0950	715.0415	INCENTIVE STRENGTH CONCRETE PAVEMENT	DOL	500.000	500.000

DATE 07JAN13		E S T I M A T E O F Q U A N T I T I E S			
LINE					6767-04-72
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0960	ASP. 1T0A	ON-THE-JOB TRAINING APPRENTICE AT \$5.00/HR	HRS	1,200.000	1,200.000
0970	ASP. 1T0G	ON-THE-JOB TRAINING GRADUATE AT \$5.00/HR	HRS	600.000	600.000
0980	SPV. 0060	SPECIAL 01. BONDING PULL BOX FRAMES AND COVERS	EACH	5.000	5.000
0990	SPV. 0105	SPECIAL 01. REMOVE AND TRANSPORT TRAFFIC SIGNALS CTH B & HOOVER AVE	LS	1.000	1.000
1000	SPV. 0105	SPECIAL 02. MODIFY TRAFFIC SIGNAL CABINET CTH B & HOOVER AVE	LS	1.000	1.000
1010	SPV. 0105	SPECIAL 03. INSTALL CONDUIT INTO EXISTING CABINET BASE	LS	1.000	1.000
1020	SPV. 0165	SPECIAL 01. CONCRETE SIDEWALK 4-INCH COLORED AND STAMPED	SF	3,670.000	3,670.000

3

CLEARING AND GRUBBING			
STATION	LOCATION	201.0120 CLEARING ID	201.0220 GRUBBING ID
105+35	MEDIAN	10	10
108+77	MEDIAN	6	6
TOTAL:		16	16

3

204.0220 REMOVING INLETS		
STATION	LOCATION	EACH
104+61	LT	1
108+00	LT	1
108+66	LT	1
TOTAL:		3

204.0155 REMOVING CONCRETE SIDEWALK			
STATION	TO	STATION	SY
104+50.98	-	106+87	224
107+69	-	110+55.01	206
TEMPORARY SIGNAL POLES			4
TOTAL:			434

204.0100 REMOVING PAVEMENT				
STATION	TO	STATION	SY	REMARKS
104+50.98	-	107+00	485	CONCRETE PAVEMENT AND CURB AND GUTTER
107+58	-	110+55.01	505	CONCRETE PAVEMENT AND CURB AND GUTTER
TOTAL:			990	

204.0245 REMOVING STORM SEWER 01. 12-INCH			
STATION	TO	STATION	LF
104+61			8
108+00	-	108+66	66
108+66			8
TOTAL:			82

EARTHWORK SUMMARY					
205.0100 COMMON EXCAVATION			UNEXPANDED	MASS	
STATION	TO	STATION	CUT CY	FILL CY	ORDINATE +/- (1) CY
104+50.98	-	107+00	373	0	373
107+58	-	110+55.01	414	0	414
TOTAL:			787	0	787

(1) POSITIVE QUANTITY INDICATES AN EXCESS OF MATERIAL.  
NEGATIVE QUANTITY INDICATES A SHORTAGE OF MATERIAL.

3

BASE AGGREGATE			
STATION	TO	STATION	305.0120 DENSE 1 1/4-INCH TON
104+50.98	-	107+00	384
107+58	-	110+55.01	359
UNDISTRIBUTED			37
TOTAL:			780

CONCRETE CURB AND GUTTER

				601.0405 CURB AND GUTTER 18-INCH TYPE A	620.0300 CONCRETE MEDIAN SLOPED NOSE
STATION	TO	STATION	LOCATION	LF	SF
104+50.98		106+78	MEDIAN	227	-
104+50.98		106+78	MEDIAN	227	-
105+90		106+78	EB ISLAND	94	-
105+90		106+78	EB ISLAND	94	-
106+84			EB ISLAND	5	-
105+90			EB ISLAND	-	41
106+89			EB ISLAND	-	41
106+78			MEDIAN	-	31
107+83			MEDIAN	-	31
107+83			WB ISLAND	-	41
107+83	108+71		WB ISLAND	88	-
107+83	108+71		WB ISLAND	88	-
108+71			MEDIAN	-	41
107+83	110+15		MEDIAN	232	-
107+83	110+55.01		MEDIAN	272	-
TOTAL:				1,327	226

3

CONCRETE PAVEMENT

STATION	TO	STATION	LOCATION	415.0100 CONCRETE PAVEMENT 10-INCH SY	416.0610 DRILLED TIE BARS EACH*	416.0620 DRILLED DOWEL BARS EACH**
104+50.98	-	107+00	LT	436	199	32
107+58	-	110+15	LT	464	222	31
TOTAL:				900	421	63

\*WHERE MATCHING EXISTING CONCRETE LONGITUDINALLY, DRILL TIE BARS 30" ON CENTER  
\*\*WHERE MATCHING EXISTING CONCRETE TRANSVERSELY, DRILL DOWEL BARS 15" ON CENTER

STORM SEWER ITEMS

608.0412 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 12-INCH					
STATION	LOCATION	LF	611.3220 INLETS 2X2-FT EACH	611.0666 INLET COVERS TYPE Z EACH	REMARKS
104+61	INLET 10.1 - EXISTING	8	1	1	CONNECT TO EXISTING PIPE AT NEAREST JOINT
107+86	INLET 11.1 - INLET 11.2	80	1	1	
108+66	INLET 11.2 - EXISTING	---	1	1	CONNECT EXISTING PIPE TO INLET 11.2
TOTAL:		88	3	3	

CONCRETE SIDEWALK

625.0100 TOPSOIL			
STATION	TO	STATION	REMARKS
109+91		110+55.01	29 KEEP TOPSOIL 3" BELOW TOP OF CONCRETE
TOTAL:			29

602.0405 CONCRETE SIDEWALK 4-INCH			
STATION	LOCATION	SF	602.0505 CURB RAMP DETECTABLE WARNING FIELD YELLOW SF
106+87	MEDIAN PEDESTRIAN REFUGE	40	16
	REPAIR FOR TEMPORARY SIGNAL POLES	32	-
TOTAL:		72	16

3

MOBILIZATIONS EROSION CONTROL				
STATION	TO	STATION	628.1905	628.1910
			MOBILIZATIONS EROSION CONTROL EACH	MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
104+50.98		110+55.01	3	2
TOTAL:			3	2

INLET PROTECTION			
STATION	LOCATION	628.7005	628.7015
		TYPE A EACH	TYPE C EACH
104+61	LT	1	1
107+86	LT	1	1
108+66	LT	1	1
TOTAL:		3	3

3

SIGN LISTING									
SIGN NUMBER	SIGN CODE	MESSAGE	SIZE	WOOD POSTS 4 X 6		637.0202 REFLECTIVE TYPE II SF	637.0402 REFLECTIVE FOLDING TYPE II SF	638.2602 REMOVING SIGNS TYPE II EACH	REMARKS
				634.0612 12-FT EACH	634.0614 14-FT EACH				
100	R3-55L	LEFT TURN LANE (WITH ARROW)	24 X 30	---	1	5.00	---	---	MOUNTED AT 2'3"
101	W12-1D	DOUBLE DIAGONAL ARROW	24 X 24	1	---	4.00	---	---	
102	R1-1F	STOP (FOLDING SIGN)	36 X 36	---	---	---	7.46	---	
103	R1-1F	STOP (FOLDING SIGN)	36 X 36	---	---	---	7.46	---	
104	R4-7	KEEP RIGHT SYMBOL	24 X 30	---	---	5.00	---	1	MOUNTED ON TRAFFIC SIGNAL POLE
105	R4-7	KEEP RIGHT SYMBOL	24 X 30	---	---	5.00	---	1	MOUNTED ON TRAFFIC SIGNAL POLE
106	R1-1F	STOP (FOLDING SIGN)	36 X 36	---	---	---	7.46	---	MOUNTED ON TRAFFIC SIGNAL POLE
107	R1-1F	STOP (FOLDING SIGN)	36 X 36	---	---	---	7.46	---	MOUNTED ON TRAFFIC SIGNAL POLE
108	W12-1D	DOUBLE DIAGONAL ARROW	24 X 24	1	---	4.00	---	---	MOUNTED AT 2'3"
109	R3-55L	LEFT TURN LANE (WITH ARROW)	24 X 30	---	1	5.00	---	---	
110	R1-1F	STOP (FOLDING SIGN)	36 X 36	---	---	---	7.46	---	MOUNTED ON TRAFFIC SIGNAL POLE
111	R10-3E	PEDESTRIAN CROSSING INSTRUCTIONS	9 X 15	---	---	0.94	---	---	MOUNTED ON TRAFFIC SIGNAL POLE
112	R10-3E	PEDESTRIAN CROSSING INSTRUCTIONS	9 X 15	---	---	0.94	---	---	MOUNTED ON TRAFFIC SIGNAL POLE
113	R10-3E	PEDESTRIAN CROSSING INSTRUCTIONS	9 X 15	---	---	0.94	---	---	MOUNTED ON TRAFFIC SIGNAL POLE
114	R10-3E	PEDESTRIAN CROSSING INSTRUCTIONS	9 X 15	---	---	0.94	---	---	MOUNTED ON TRAFFIC SIGNAL POLE
115	R1-1F	STOP (FOLDING SIGN)	36 X 36	---	---	---	7.46	---	MOUNTED ON TRAFFIC SIGNAL POLE
TOTAL:				2	2	31.76	44.76	2	

TRAFFIC CONTROL							
LOCATION	643.0200	643.0300	643.0410	643.0420	643.0705	643.0715	643.0800
	SURVEILLANCE AND MAINTENANCE (PROJECT) 6767-04-72 DAYS				WARNING LIGHTS TYPE A DAYS	WARNING LIGHTS TYPE C DAYS	
PROJECT	66	9,240	264	198	660	1,188	132
UNDISTRIBUTED	3	420	12	9	30	54	6
TOTAL:	69	9,660	276	207	690	1,242	138

PROJECT NO: 6767-04-72

HWY: CTH B

COUNTY: PORTAGE

MISCELLANEOUS QUANTITIES

SHEET

E

TRAFFIC CONTROL COVERING SIGNS

LOCATION	NUMBER OF SIGNS	NUMBER OF CYCLES	643.0920 TYPE II EACH
WESTBOUND	3	1	3
EASTBOUND	2	1	2
TOTAL:			5

TRAFFIC CONTROL SIGNS

MESSAGE	SIGN NUMBER	NUMBER OF SIGNS	DAYS	643.0900 SIGNS DAYS	643.1000 FIXED MESSAGE SF	REMARKS
HOOVER AVE NO LEFT TURNS		---	---	---	6.75	ON CTH B, 1,000' WEST OF BUS. 51
SPEED REDUCTION AHEAD 35 MPH SYMBOL	W3-5	3	66	198	---	
ROAD WORK AHEAD	W20-1	7	66	462	---	
SPEED LIMIT 35 MPH	R2-1	3	66	198	---	
LEFT LANE CLOSED AHEAD	W20-5	3	66	198	---	
LEFT TURN LANE CLOSED AHEAD		5	66	330	---	
LEFT LANE ENDS	WO-2L	3	66	198	---	
LEFT TURN LANE CLOSED		4	66	264	---	
END ROAD WORK	G20-2A	2	66	132	---	
LANE CLOSED	R11-2L	2	66	132	---	
SIDEWALK CLOSED	R9-9	2	66	132	---	
RIGHT TURN LANE (WITH RIGHT ARROW)	R3-56R	2	66	132	---	
RIGHT LANE MUST TURN RIGHT	R3-7R	2	66	132	---	
ONLY ARROWS STRAIGHT OR RIGHT	R3-8D	2	66	132	---	
NO LEFT TURN SYMBOL	R3-2	8	66	528	---	
LEFT TURN LANE (WITH LEFT ARROW)	R3-56L	1	66	66	---	
SIDEWALK CLOSED AHEAD	R9-11	2	66	132	---	
HOOVER AVE NO LEFT TURNS		---	---	---	6.75	STA 113+00 LT
TOTAL:				3,366	13.50	

REMOVING PAVEMENT MARKINGS AND  
TEMPORARY PAVEMENT MARKINGS

				646.0600 REMOVING PAVEMENT MARKINGS	649.0400 TEMPORARY PAVEMENT MARKING REMOVEABLE TAPE 4-INCH YELLOW
STATION	TO	STATION	LOCATION	LF	LF
99+56	-	102+01	CL	63	---
99+56	-	104+51	TAPER/CL	---	495
113+05	-	115+50	CL	63	---
110+55	-	115+50	TAPER/CL	---	495
TOTAL:				126	990

3

3

PAVEMENT MARKING EPOXY										
STATION	TO	STATION	LOCATION	646.0106 EPOXY 4-INCH		646.0126 EPOXY 8-INCH	647.0456 CURB EPOXY	647.0566 STOP LINE EPOXY 18-INCH	647.0606 ISLAND NOSE EPOXY EACH	647.0776 CROSSWALK EPOXY 12-INCH
				YELLOW LF	WHITE LF	WHITE LF	LF	WHITE LF		WHITE LF
99+56		102+01	EB CL	---	63	---	---	---	---	---
104+51		106+78	EB TURN LANE, LT EDGELINE	230	---	---	---	---	---	---
104+51		106+62	WB LT EDGELINE	211	---	---	---	---	---	---
104+80		105+95	EB CHANNELIZING	---	---	230	---	---	---	---
105+95		106+78	EB LT EDGELINE	---	83	---	---	---	---	---
105+95		106+78	EB TURN LANE, RT EDGELINE	---	83	---	---	---	---	---
106+57		106+78	MEDIAN CURB	---	---	---	42	---	---	---
106+78			MEDIAN NOSE	---	---	---	---	---	1	---
106+78			EB TURN LANE	---	---	---	---	12	---	---
106+78			EB	---	---	---	---	23	---	---
106+87			CROSSWALK	---	---	---	---	---	---	133
107+83			MEDIAN NOSE	---	---	---	---	---	1	---
107+83			WB TURN LANE	---	---	---	---	12	---	---
107+83			WB	---	---	---	---	23	---	---
107+83		108+04	MEDIAN CURB	---	---	---	42	---	---	---
107+83		108+66	WB TURN LANE, RT EDGELINE	---	83	---	---	---	---	---
107+83		108+66	WB LT EDGELINE	---	83	---	---	---	---	---
108+66		109+80	WB CHANNELIZING	---	---	230	---	---	---	---
107+83		110+15	WB TURN LANE, LT EDGELINE	235	---	---	---	---	---	---
107+99		110+55	EB LT EDGELINE	256	---	---	---	---	---	---
113+05		115+50	WB CL	---	63	---	---	---	---	---
TOTAL:				932	458	460	84	70	2	133

PAVEMENT MARKING WORDS AND ARROWS			
STATION	LOCATION	647.0166 ARROWS EPOXY TYPE 2 EACH	647.0356 WORDS EPOXY EACH
105+73	EB LEFT TURN LANE	1	---
106+13	EB LEFT TURN LANE	---	1
106+53	EB LEFT TURN LANE	1	---
108+08	WB LEFT TURN LANE	1	---
108+48	WB LEFT TURN LANE	---	1
108+88	WB LEFT TURN LANE	1	---
TOTAL:		4	2

CONSTRUCTION STAKING						
STATION	TO	STATION	650.4000* STORM SEWER EACH	650.4500 SUBGRADE LF	650.7000 CONCRETE PAVEMENT LF	650.9910 SUPPLEMENTAL CONTROL LS
104+50.98	-	107+00	1	249	249	1
107+58	-	110+55.01	2	297	297	---
TOTAL:			3	546	546	1

\* SEE STORM SEWER LISTING

3

690.0250 SAWING CONCRETE					
STATION	TO	STATION	LOCATION	LF	REMARKS
104+50.98			BEGIN PROJECT	21	CONCRETE PAVEMENT, CURB & GUTTER, AND SIDEWALK
104+50.98		107+00	EB MATCH	249	
104+50.98		107+00	WB MATCH	249	
107+00			MATCH	28	
107+58			MATCH	28	CONCRETE PAVEMENT, CURB & GUTTER, AND SIDEWALK
107+58		110+15	WB MATCH	257	
107+58		110+55.01	EB MATCH	297	
110+15			MATCH	15	
110+55.01			MATCH	6	
TEMPORARY SIGNAL POLE LOCATIONS				50	
TOTAL:				1,200	

3

SPV.0165 01. CONCRETE SIDEWALK 4-INCH COLORED AND STAMPED				
STATION	TO	STATION	LOCATION	SF
104+50.98	-	106+78	MEDIAN	1,330
105+90	-	106+84	EB ISLAND	470
107+83	-	108+71	WB ISLAND	440
107+83	-	110+55.01	MEDIAN	1,430
TOTAL:				3,670

3

3

REMOVING CONCRETE BASES

204.0195 REMOVING CONCRETE BASES EACH		
SIGNAL BASE NO.	LOCATION	
SB2	106+78, 18' LT	1
SB7	107+80, 9' LT	1
TOTAL		2

CONDUIT

			652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH L.F.	652.0605 CONDUIT SPECIAL 2-INCH L.F.	652.0615 CONDUIT SPECIAL 3-INCH L.F.
LOC.	TO	LOC.			
PB2		PB3			40
PB3		SB2	20		
PB3		PB4			21
PB4		SB3	12		
PB4		PB5	186	45	
PB4		PB7			46
PB12		PB13			38
PB13		SB8	5		
PB13		PB14			21
PB14		SB9	11		
PB14		PB15	191	35	
PB14		PB17			44
PB21		PB22			160
CB1		PB22	30		
TOTAL			455	80	370

PULL BOXES

653.0140 PULL BOXES STEEL 24"x42" EACH		
PULL BOX NO.	** LOCATION	
PB2	106+76, 35' RT	1
PB3	106+62, 3' LT	1
PB4	106+54, 23' LT	1
PB13	107+99, 23' LT	1
PB14	108+06, 3' LT	1
PB21	107+23, 75' RT	1
PB22	106+44, 89' RT	1
TOTAL		7

TRAFFIC SIGNAL CABLE AND ELECTRICAL WIRE

		655.0230 CABLE TRAFFIC SIGNAL 5-14 AWG L.F.	655.0240 CABLE TRAFFIC SIGNAL 7-14 AWG L.F.	655.0260 CABLE TRAFFIC SIGNAL 12-14 AWG L.F.	655.0270 CABLE TRAFFIC SIGNAL 15-14 AWG L.F.	655.0515 ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG L.F.
LOC.	TO LOC.					
CB1	SB1				121	121
CB1	SB2			190		
CB1	SB3			218		
CB1	SB4			273		
CB1	SB5			280		
CB1	SB6				383	
CB1	SB7			380		
CB1	SB8			324		
CB1	SB9			294		
CB1	SB10			229		
CB1	SB11			222		
CB1	SB12				166	166
SB1	SB2					100
SB2	SB3					87
SB3	SB4					101
SB4	SB5					41
SB5	SB6					149
SB6	SB7					139
SB7	SB8					90
SB8	SB9					77
SB9	SB10					100
SB10	SB11					42
SB11	SB12					152
SB1	PB2					22
PB3	SB2					30
PB4	SB3					28
PB14	SB9					27
PB21	SB12					44
PB23	CB1					34
SB1	HEAD 4-2	15				
SB1	HEAD 6-1	15				
SB2	HEAD 5B		22			
SB3	HEAD 2B	35				
SB3	HEAD 1A		22			
SB4	HEAD 2C	45				
SB4	HEAD 4-1	15				
SB8	HEAD 1B		22			
SB9	HEAD 6B	35				
SB9	HEAD 5A		22			
SB10	HEAD 6C	45				
SB10	HEAD 6-2	15				
TOTAL		220	88	2410	670	1550
NOTE: GROUNDING CONDUCTOR (10 AWG) TOTAL INCLUDES RING AND COVER BONDING QUANTITIES						

LEGEND

\*\* FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD

INSTALL CONDUIT INTO EXISTING ITEM

652.0700.S INSTALL CONDUIT INTO EXISTING ITEM EACH		
PULL BOX NO.	LOCATION	
PB5	104+26, 17' LT	1
PB7	106+85, 59' LT	1
PB12	107+87, 60' LT	1
PB15	110+30, 14' LT	1
PB17	107+78, 31' RT	1
TOTAL		5

REMOVING PULL BOXES

653.0905 REMOVING PULL BOXES EACH		
PULL BOX NO.	LOCATION	
PB2	106+76, 35' RT	1
PB3	106+73, 18' LT	1
PB4	106+52, 15' LT	1
PB13	107+87, 8' LT	1
PB14	108+92, 9' LT	1
PB21	107+23, 75' RT	1
TOTAL		6

CONCRETE BASES

		654.0101 CONCRETE BASES TYPE 1 EACH	654.0102 CONCRETE BASES TYPE 2 EACH
SIGNAL BASE NO.	** LOCATION		
SB2	106+82, 3' LT	1	
SB3	106+66, 23' LT		1
SB8	107+95, 23' LT	1	
SB9	107+95, 3' LT		1
TOTAL		2	2

TRAFFIC SIGNAL QUANTITIES

CTH B & HOOVER AVENUE  
PAGE 1 OF 3

3

TRAFFIC DETECTOR LOOPS

LOOP NO.	HOME RUN PB	** LOCATION	SIZE (FT) X (FT)	NO. OF TURNS	PAVEMENT TYPE	SDD INSTALLATION REFERENCE	652.0800 CONDUIT LOOP DETECTOR	655.0700 LOOP DETECTOR LEAD IN CABLE	655.0800 LOOP DETECTOR WIRE
							L.F.	L.F.	L.F.
11	PB4	106+55, 13' LT	6 X 20	3	CONCRETE	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 1)	68	140	210
12	PB4	106+83, 13' LT	6 X 20	3	CONCRETE	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 1)	72	140	228
21	PB17	EXISTING						573	
22	PB16	EXISTING						441	
23	PB16	EXISTING						441	
31	PB22	EXISTING						101	
32	PB18	EXISTING						172	
41	PB11	EXISTING						418	
42	PB8	EXISTING						186	
43	PB8	EXISTING						186	
51	PB14	107+78, 14' LT	6 X 20	3	CONCRETE	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 1)	66	215	210
52	PB14	108+06, 13' LT	6 X 20	3	CONCRETE	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 1)	74	215	232
61	PB7	EXISTING						489	
62	PB6	EXISTING						370	
63	PB6	EXISTING						370	
71	PB12	EXISTING						255	
72	PB8	EXISTING						187	
81	PB21	EXISTING						407	
82	PB18	EXISTING						172	
83	PB18	EXISTING						172	
TOTAL							280	5650	880

3

TRAFFIC SIGNAL EQUIPMENT

SIG. BASE NO.	657.0100 PEDESTAL BASES EACH	657.0255 TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE EACH	657.0305 POLES TYPE 2 EACH	657.0425 TRAFFIC SIGNAL STANDARDS ALUMINUM 15-FT EACH	657.0585 TROMBONE ARMS 15-FT EACH	657.0590 TROMBONE ARMS 20-FT EACH	658.0500 PEDESTRIAN PUSH BUTTONS EACH
SB2	1			1			1
SB3		1	1		1		
SB4						1	
SB8	1			1			
SB9		1	1		1		
SB10						1	
TOTAL	2	2	2	2	2	2	1

LEGEND  
\*\* FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD

TRAFFIC SIGNAL QUANTITIES  
  
CTH B & HOOVER AVENUE  
PAGE 2 OF 3

3

3

TRAFFIC SIGNAL FACES

SIG. HEAD NO.	SIG. BASE NO.	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 SIGNAL FACE 3-12" VERTICAL EACH	TRAFFIC SIGNAL FACE 4-12" VERTICAL EACH	BACKPLATES SIGNAL FACE 3 SECTION 12-INCH EACH	BACKPLATES SIGNAL FACE 4 SECTION 12-INCH EACH	PEDESTRIAN SIGNAL FACE 16-INCH EACH	LED MODULES 12-INCH RED BALL EACH	LED MODULES 12-INCH YELLOW BALL EACH	LED MODULES 12-INCH GREEN BALL EACH	LED MODULES 12-INCH RED ARROW EACH	LED MODULES 12-INCH YELLOW ARROW EACH	LED MODULES 12-INCH GREEN ARROW EACH	LED MODULES PEDESTRIAN COUNTDOWN TIMER 16-INCH EACH
1A	SB3		1		1					1	2	1	
1B	SB8		1		1					1	2	1	
2B	SB3	1		1			1	1	1				
2C	SB4	1		1			1	1	1				
5A	SB9		1		1					1	2	1	
5B	SB2		1		1					1	2	1	
6B	SB9	1		1			1	1	1				
6C	SB10	1		1			1	1	1				
4-1	SB4					1							1
4-2	SB1					1							1
6-1	SB1					1							1
6-2	SB10					1							1
TOTAL		4	4	4	4	4	4	4	4	4	8	4	4

TRAFFIC SIGNAL INSTALLATION

LOCATION	658.5069.01	661.0200.01	SPV.0105.01	SPV.0105.02	SPV.0105.03
	SIGNAL MOUNTING HARDWARE	TEMPORARY TRAFFIC SIGNALS FOR INTERSECTIONS	REMOVE AND TRANSPORT TRAFFIC SIGNALS	MODIFY TRAFFIC SIGNAL CABINET	INSTALL CONDUIT INTO EXISTING CABINET BASE
	L.S.	L.S.	L.S.	L.S.	L.S.
CTH B AND HOOVER AVE	1	1	1	1	1
TOTAL	1	1	1	1	1

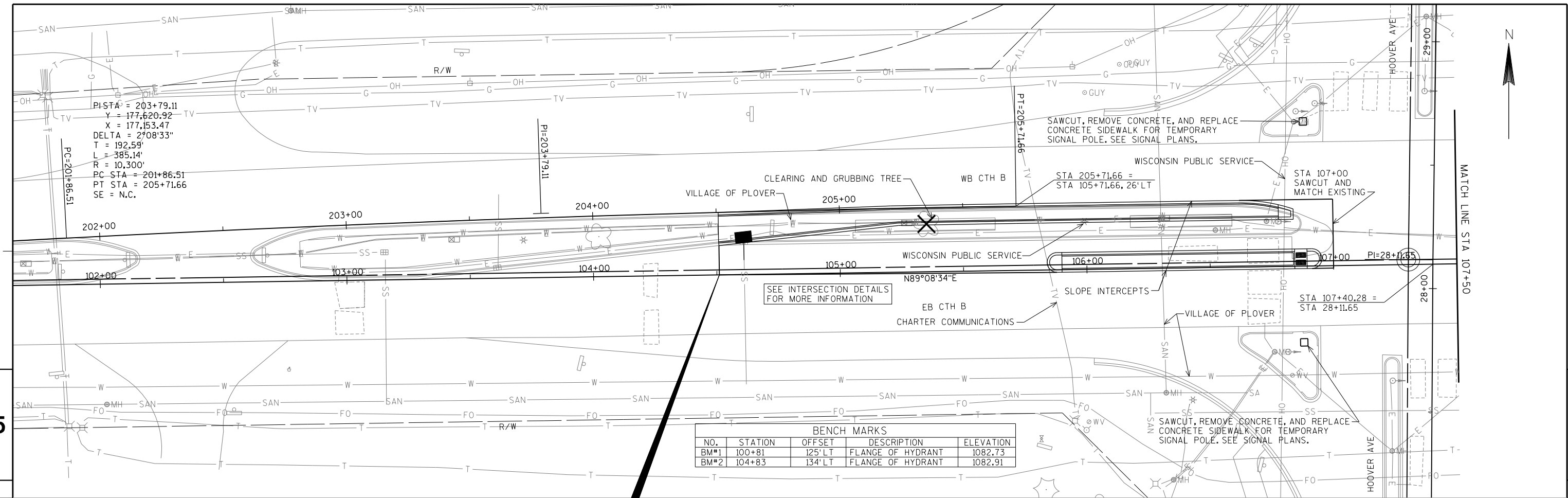
BONDING PULL BOX FRAMES AND COVERS

PULL BOX NO.	SPV.0060.01 BONDING PULL BOX FRAMES AND COVERS EACH
PB1	1
PB7	1
PB11	1
PB12	1
PB17	1
TOTAL	5

TRAFFIC SIGNAL QUANTITIES

CTH B & HOOVER AVENUE

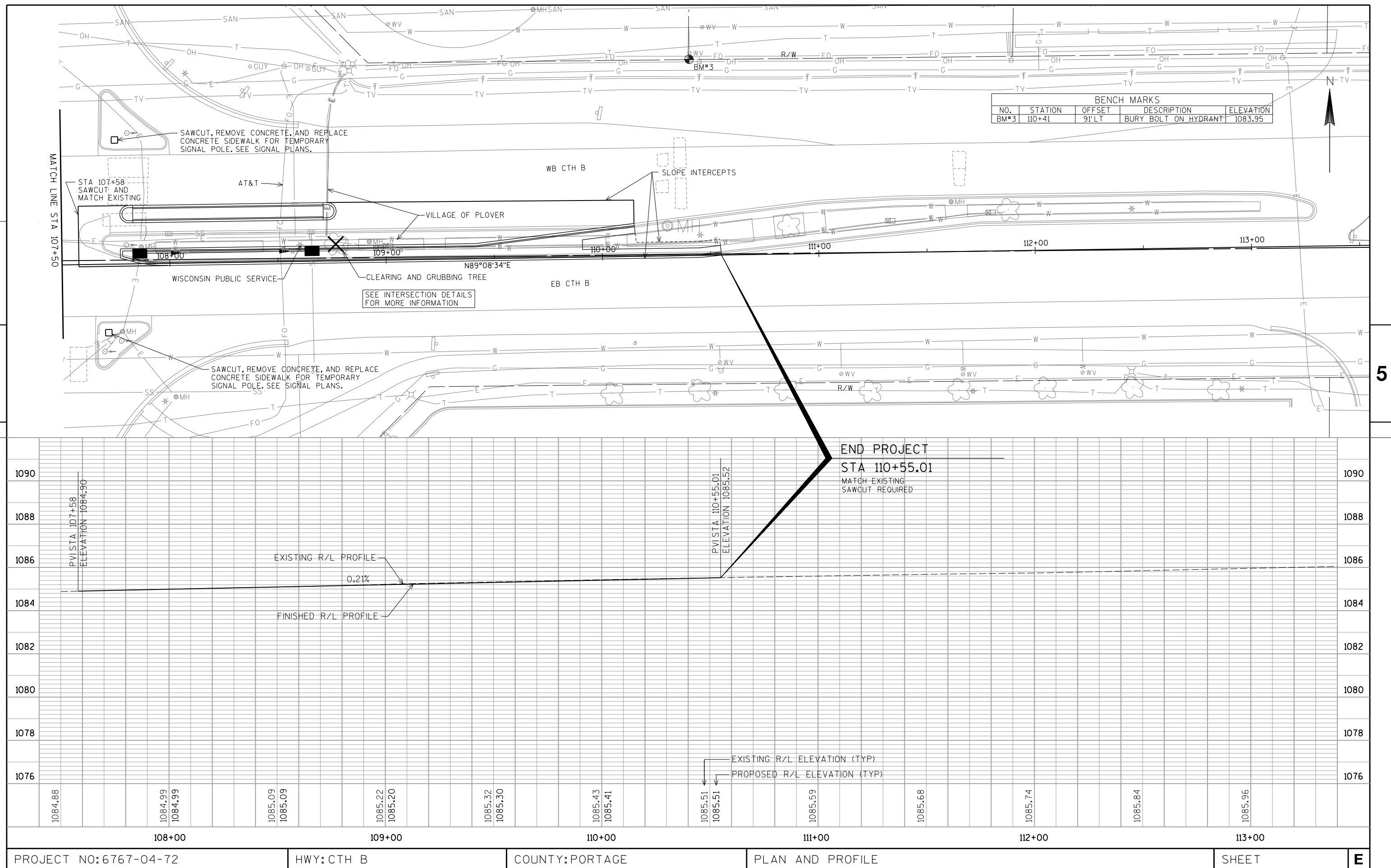
PAGE 3 OF 3



BENCH MARKS				
NO.	STATION	OFFSET	DESCRIPTION	ELEVATION
BM#1	100+81	125' LT	FLANGE OF HYDRANT	1082.73
BM#2	104+83	134' LT	FLANGE OF HYDRANT	1082.91

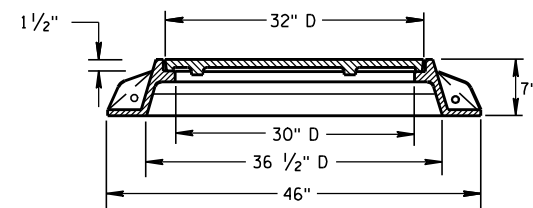


102+00		103+00		104+00		105+00		106+00		107+00	
PROJECT NO: 6767-04-72		HWY: CTH B		COUNTY: PORTAGE		PLAN AND PROFILE		SHEET		E	



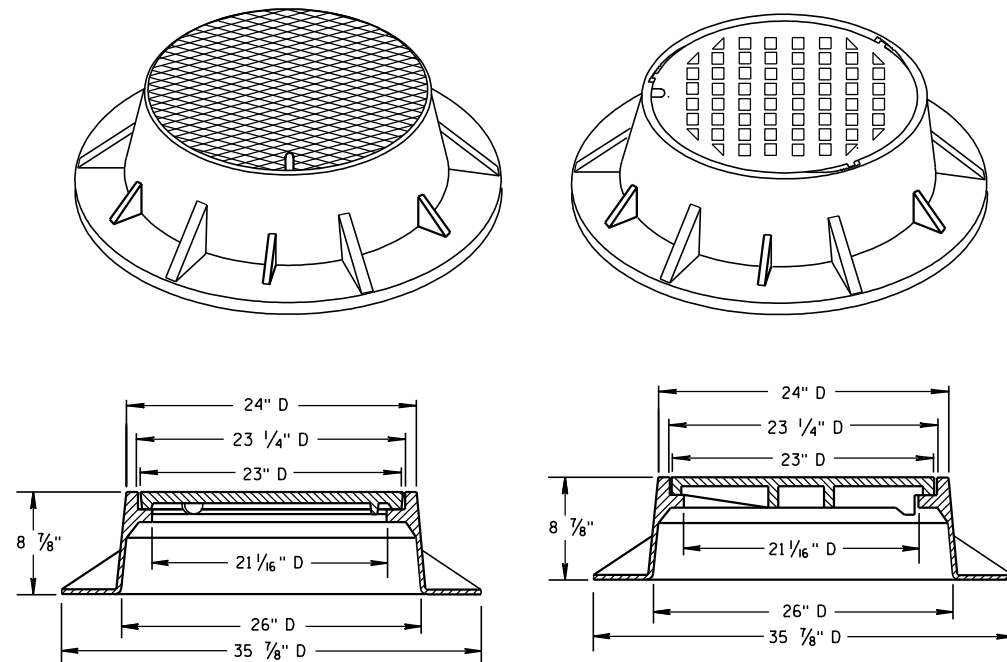
Standard Detail Drawing List

08A05-18D	INLET COVER, TYPE BW, Z	MANHOLE COVERS, TYPE K, J, J-S, L & M
08C07-01	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT	
08D01-17	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES	
08D05-14E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8	
08E10-02	INLET PROTECTION TYPE A, B, C AND D	
08F04-07	JOINT TIES FOR CONCRETE PIPE	AND CONCRETE COLLAR DETAIL
09B02-07	CONDUIT	
09B04-09	PULL BOX	
09C02-06	CONCRETE BASES, TYPES 1, 2 & 5	
09C03-03	TRANSFORMER/PEDESTAL BASES	
09E01-11A	POLE MOUNTINGS FOR TRAFFIC SIGNALS TYPE 2	
09E01-11G	HARDWARE DETAILS FOR POLE MOUNTINGS	
09E06-04	TRAFFIC SIGNAL STANDARD POLY BRACKET MOUNTINGS (TYPICAL) 13 FT. OR 15 FT.	
09E07-05	TRAFFIC SIGNAL STANDARD PEDESTRIAN AND FLASHER TYPICAL	MOUNTING DETAILS
09F15-03A	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 1)	
09G01-03A	SPAN WIRE TEMPORARY TRAFFIC SIGNAL	
09G01-03B	SPAN WIRE TEMPORARY TRAFFIC SIGNAL	
09G01-03C	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 MEDIAN NOSE	
13C01-15	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES	
13C13-07	URBAN DOWELED CONCRETE PAVEMENT	
13C18-01A	CONCRETE PAVEMENT JOINTING	
13C18-01B	CONCRETE PAVEMENT STEEL REINFORCEMENT	
13C18-01C	CONCRETE PAVEMENT JOINT TIES	
13C18-01D	CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES	
15C05-01	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M. P. H. OR LESS	
15C07-12B	PAVEMENT MARKING WORDS	
15C07-12C	PAVEMENT MARKING ARROWS	
15C08-15A	PAVEMENT MARKING (MAINLINE)	
15C08-15E	PAVEMENT MARKING (LEFT TURN LANE)	
15C08-15F	PAVEMENT MARKING (ISLANDS, STOP LINE & CROSS WALK)	
15D30-01	TRAFFIC CONTROL, SIDEWALK CLOSURE	



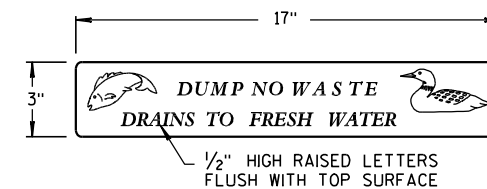
**SECTION A-A**  
**TYPE "K"**  
(APPROXIMATE WEIGHT 439 LBS.)

FRAME.....	216 LBS.
LID.....	223 LBS.

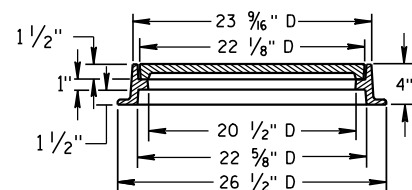
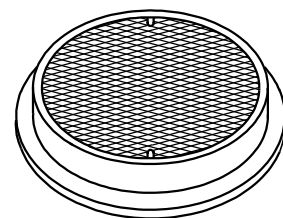
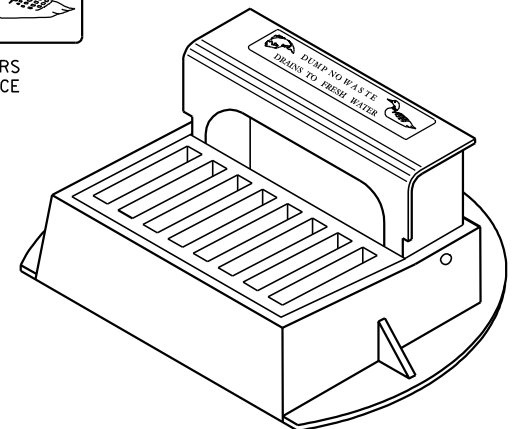


**TYPE "J"**  
(APPROXIMATE WEIGHT 267 LBS.)  
FRAME.....152 LBS.  
LID.....115 LBS.

**TYPE "J" SPECIAL**  
 TYPE "B" NON-ROCKING SELF-SEAL LID  
 (APPROXIMATE WEIGHT 267 LBS.)  
 FRAME..... 158 LBS.  
 LID..... 109 LBS.  
 (NOTED AS TYPE J-S ON THE DRAINAGE TABLE)

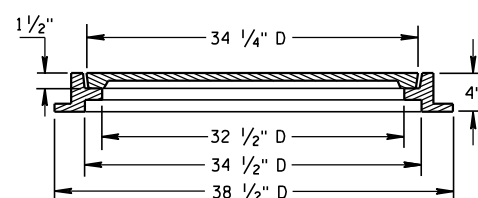
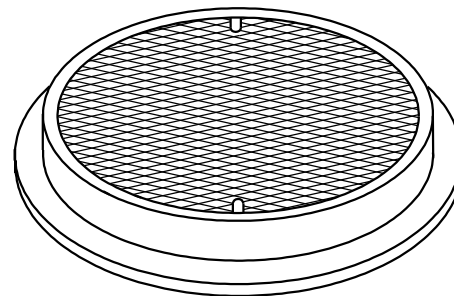


## LOGO DETAIL



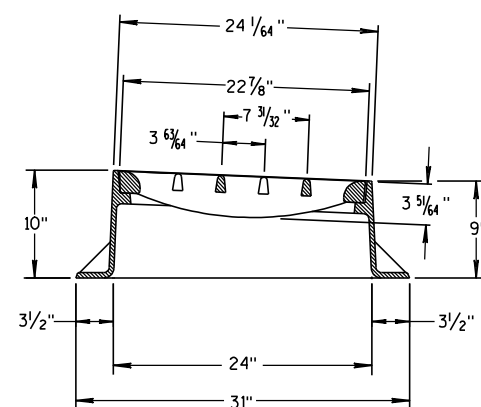
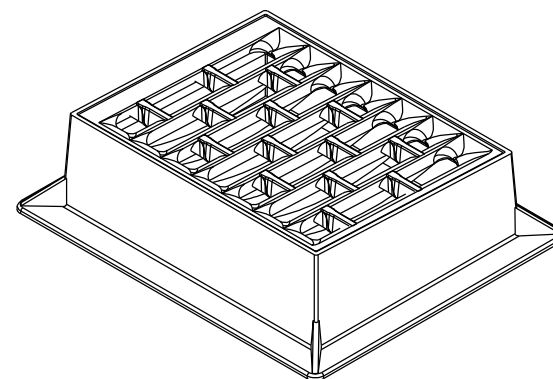
**TYPE "L"**  
(APPROXIMATE WEIGHT 158 LBS.)

FRAME.....	81 LBS.
LID.....	77 LBS.

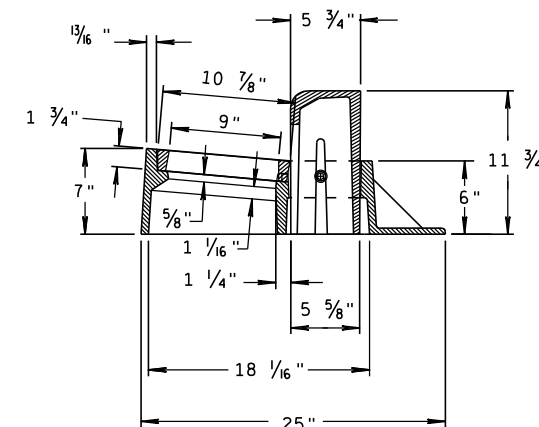
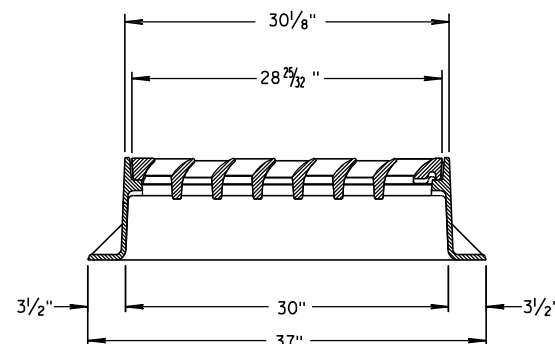
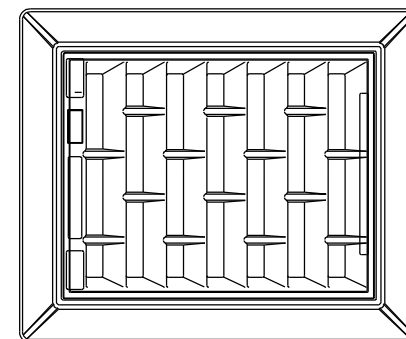


**TYPE "M"**  
(APPROXIMATE WEIGHT 377 LBS.)

FRAME.....	125 LBS.
LID.....	252 LBS.

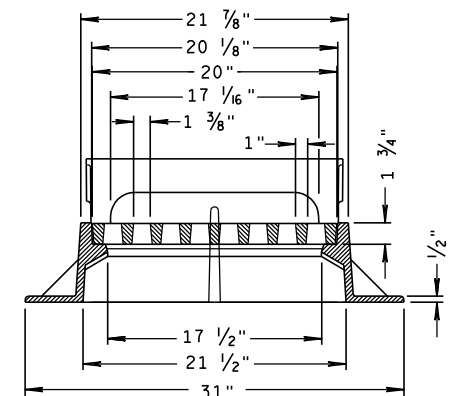


INLET COVER TYPE "BW"



**INLET COVER TYPE "Z"**  
(APPROXIMATE WEIGHT 344 LBS.)

FRAME.....	206 LBS.
GRATE.....	46 LBS.
CURB BOX.....	92 LBS.

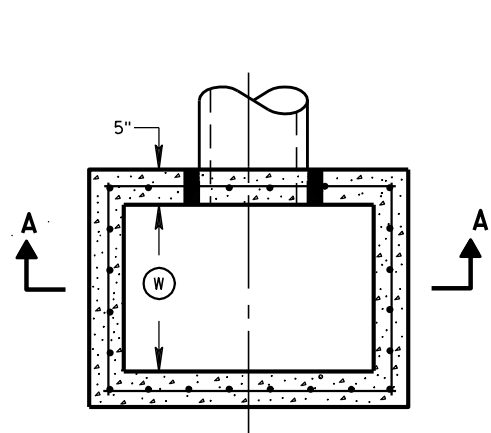


INLET COVERS, TYPE BW, Z  
MANHOLE COVERS, TYPE  
K, J, J-S, L & M

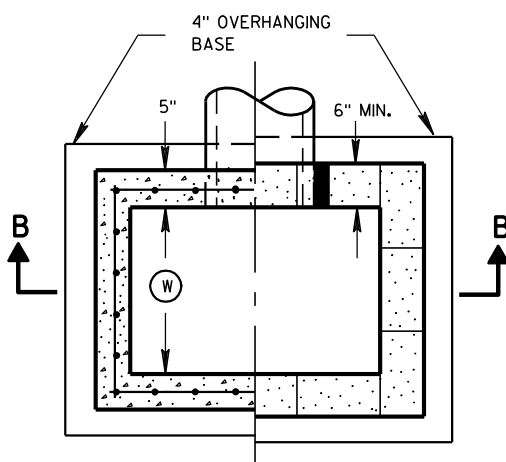
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
6/5/2012  
DATE  
FHWA

/S/ Jerry H. Zogg  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER

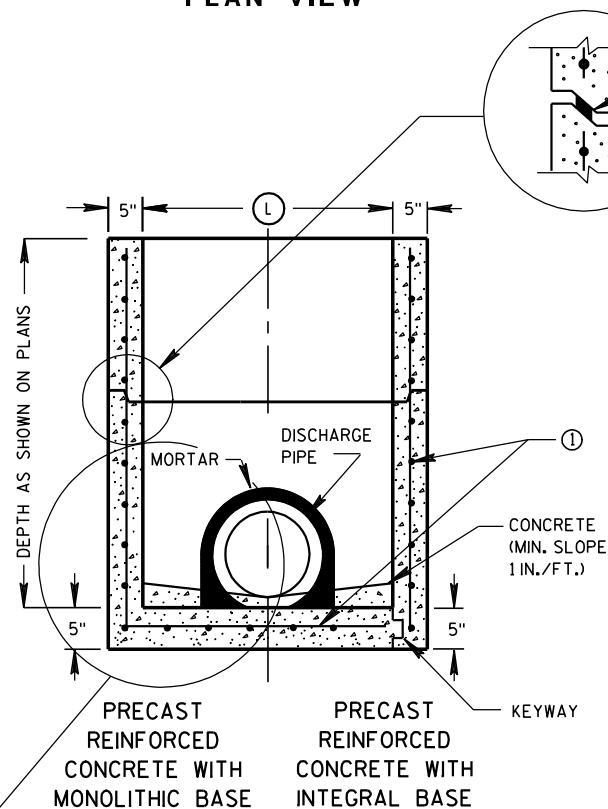


PLAN VIEW

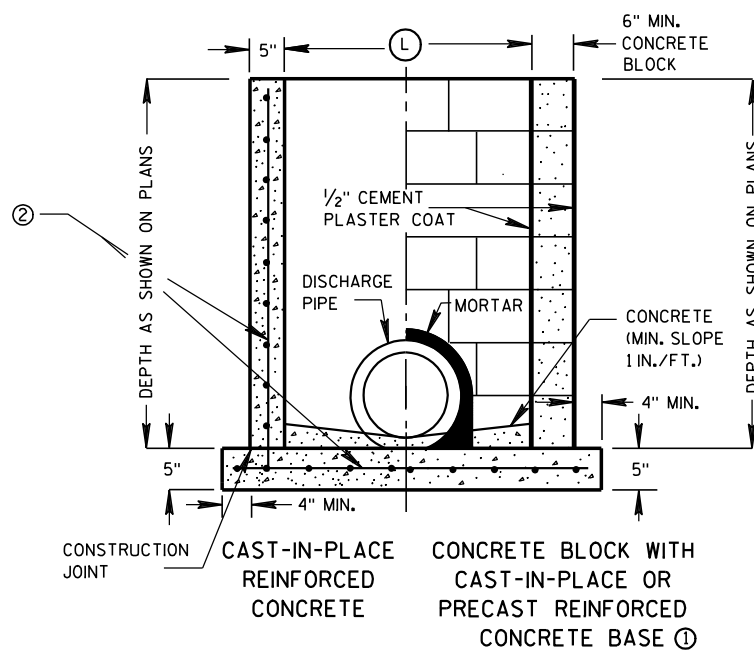


PLAN VIEW

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



SECTION A-A



SECTION B-B

SEPERATE PRECAST REINFORCED CONCRETE BASE OPTION

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

## 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 SEPERATE 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.

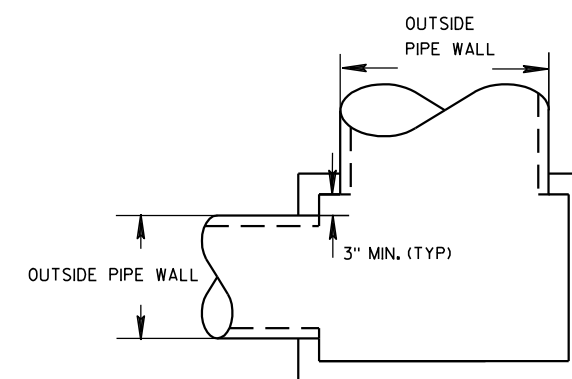
- FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.
- CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

## INLET COVER MATRIX

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

## PIPE MATRIX

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

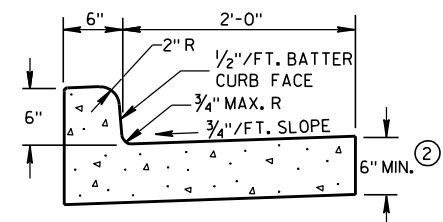


DETAIL "A"

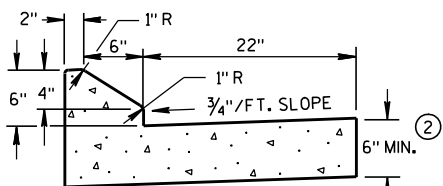
INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

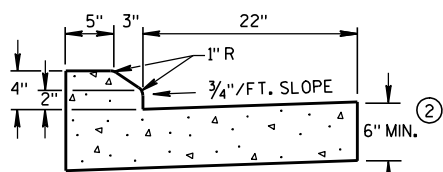
APPROVED  
DATE 6/5/2012  
FHW  
/S/ Jerry H. Zogg  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER



TYPES A &amp; D ①



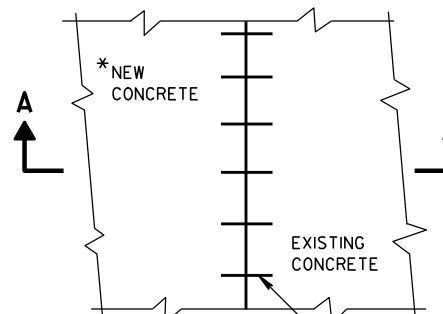
6" SLOPED CURB TYPES G &amp; J ①



4" SLOPED CURB TYPES G &amp; J ①

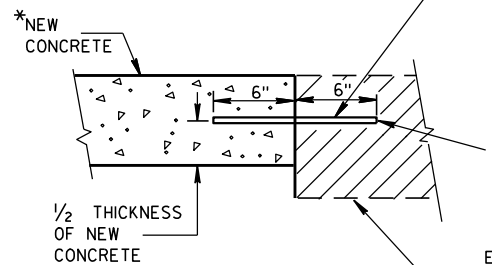
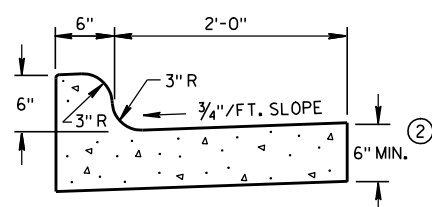
CONCRETE CURB &amp; GUTTER 30"

\* NEW CURB & GUTTER,  
SURFACE DRAINS,  
CONCRETE PAVEMENT  
OR OTHER NEW CONCRETE.

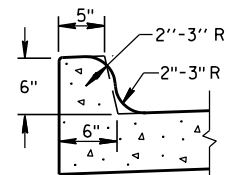
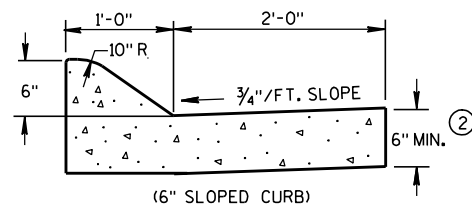


PLAN VIEW

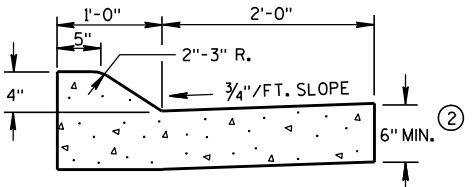
NO. 6 TIE BARS SPACED 2'-6" C-C,  
INSTALLED PERPENDICULAR  
TO THE LONGITUDINAL JOINT.

SECTION A-A  
TIE BARS DRILLED  
INTO EXISTING PAVEMENT

TYPES K &amp; L ①

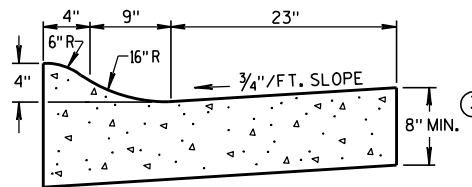
OPTIONAL CURB SHAPE  
FOR TYPES K & L ①

(6" SLOPED CURB)

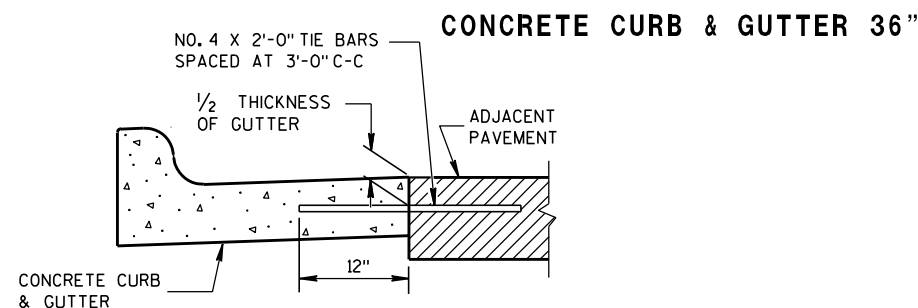


(4" SLOPED CURB)

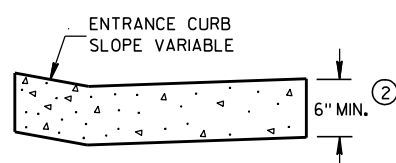
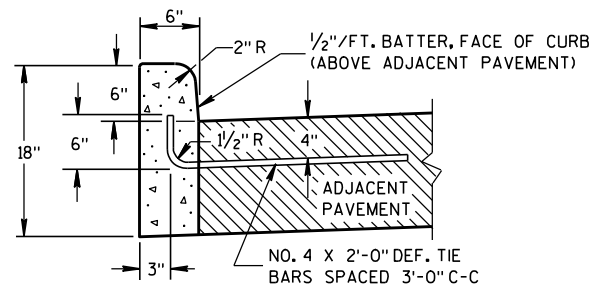
TYPES A &amp; D ①



4" SLOPED CURB TYPES R &amp; T ① ④

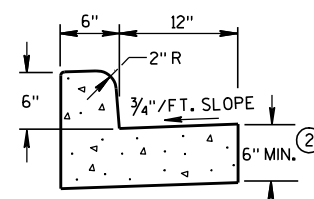
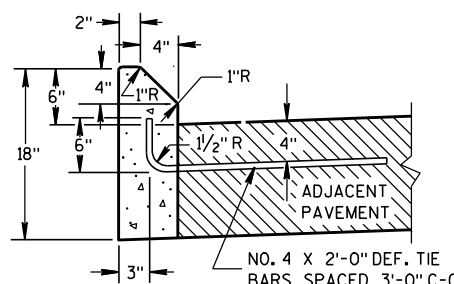


TYPICAL TIE BAR LOCATION ①

DRIVEWAY ENTRANCE CURB  
(WHEN DIRECTED BY THE ENGINEER)

TYPES A &amp; D ①

CONCRETE CURB

TYPES A & D  
CONCRETE CURB & GUTTER 18"

TYPES G &amp; J ①

## GENERAL NOTES

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

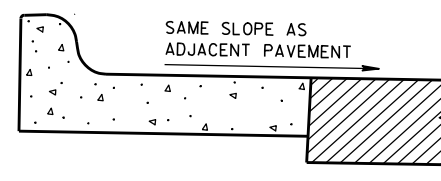
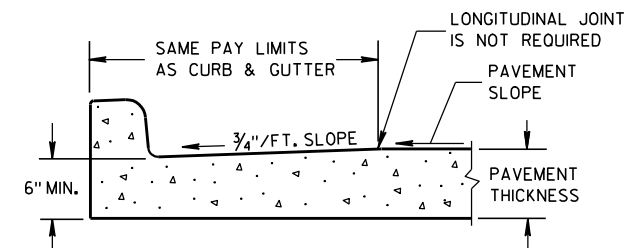
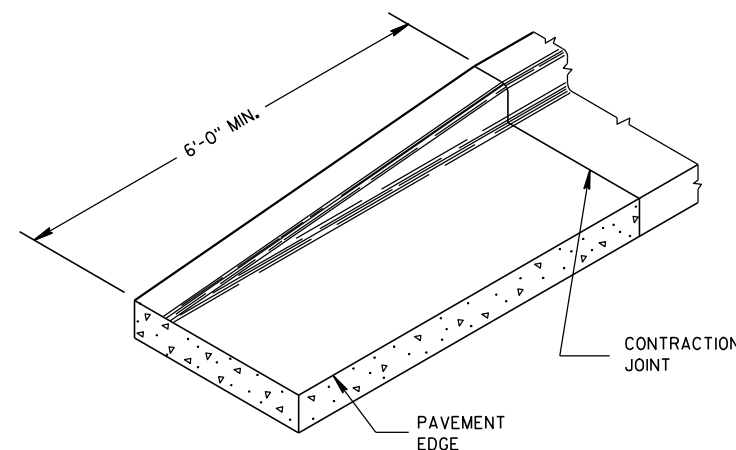
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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 AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K AND R.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ④ THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- ⑤ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.

REVERSE SLOPE GUTTER ⑤  
(TYPICAL FOR ALL CURB & GUTTER TYPES)PARTIAL SECTION OF PAVEMENT  
WITH INTEGRAL CURB & GUTTER

END SECTION CURB &amp; GUTTER

CONCRETE CURB, CONCRETE  
CURB & GUTTER AND TIES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

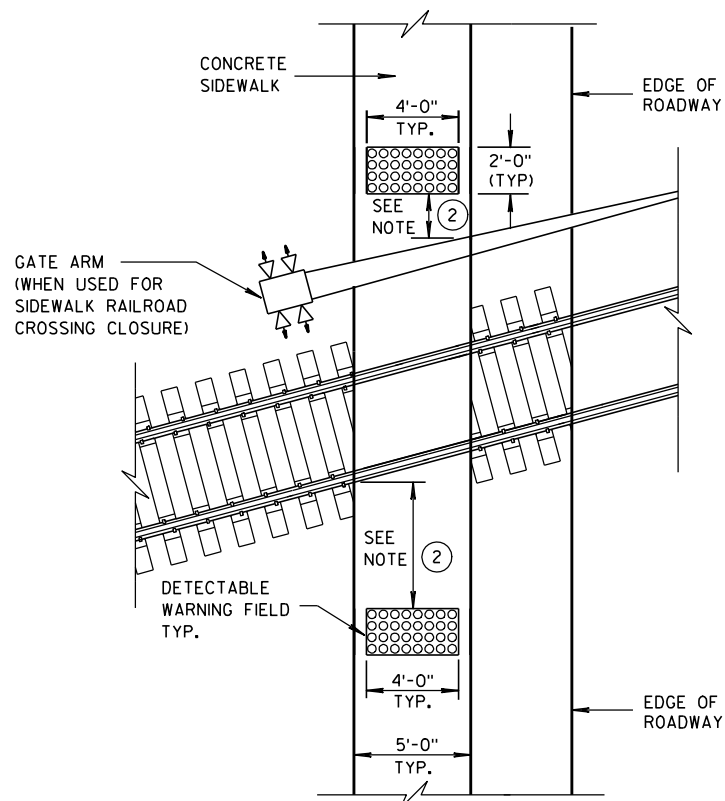
APPROVED

9/4/08

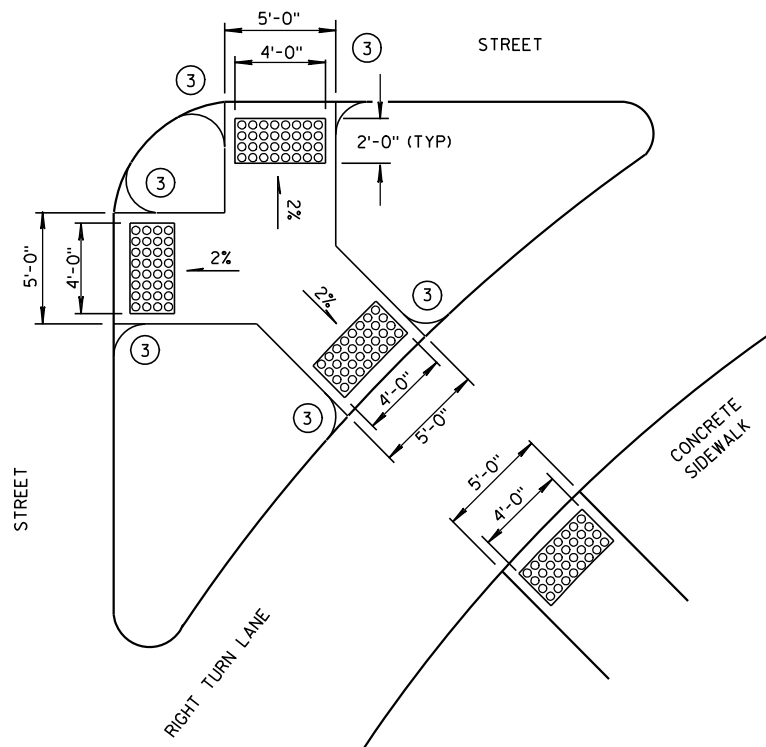
DATE

FHWA

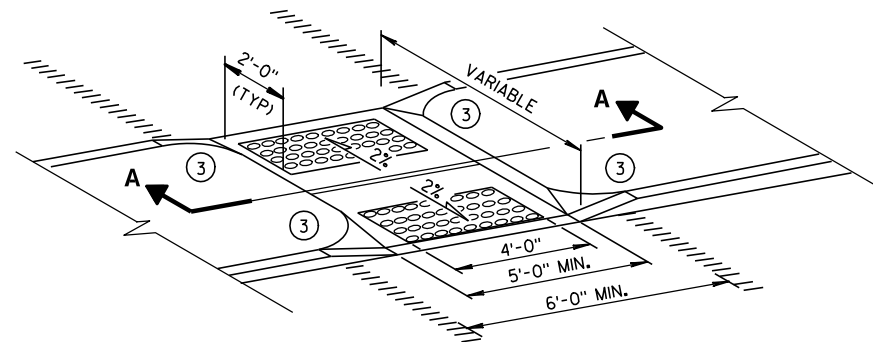
/S/ Jerry H. Zogg  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER



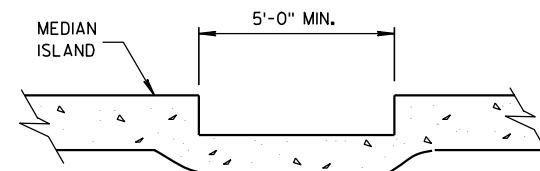
**TYPE 8**  
**DETECTABLE WARNINGS**  
**AT RAILROAD CROSSING**



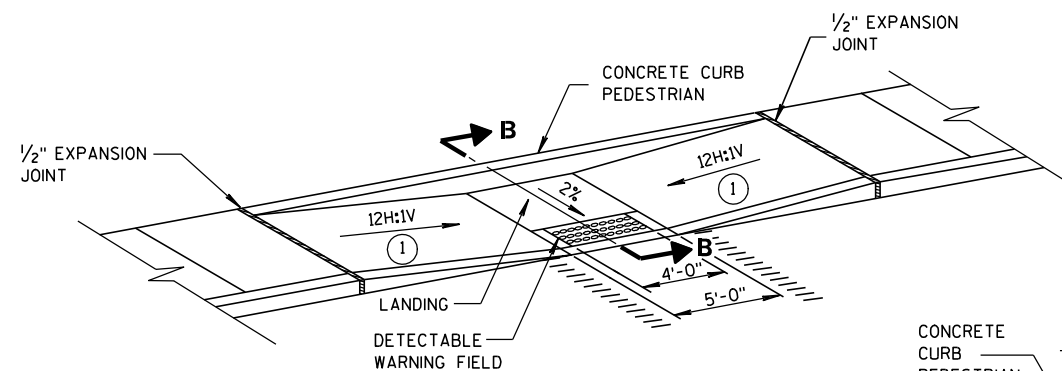
**TYPE 6**  
**DETECTABLE WARNING AT ISLANDS**



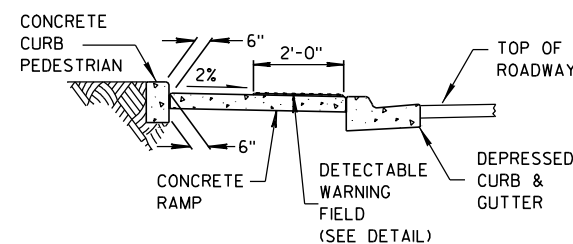
**MEDIAN ISLAND**  
**NON-ELEVATED CROSSING**  
**TYPE 5**



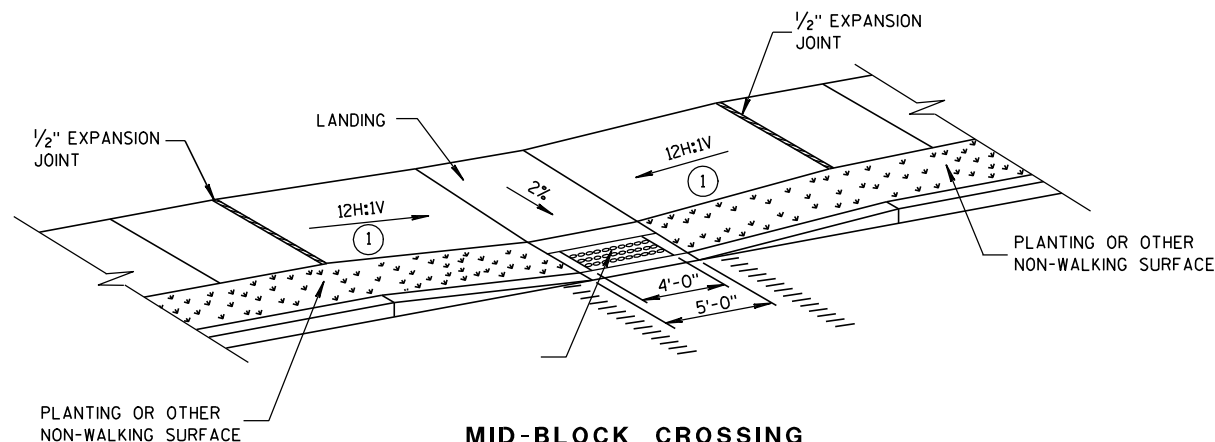
**SECTION A-A**



**MID-BLOCK CROSSING**  
**TYPE 7A**



**SECTION B-B**



**MID-BLOCK CROSSING**  
**TYPE 7B**

NOTE: THESE PARALLEL AND PARALLEL/PERPENDICULAR CURB RAMPS  
MAY BE USED AT INTERSECTIONS AND MID BLOCK LOCATIONS.

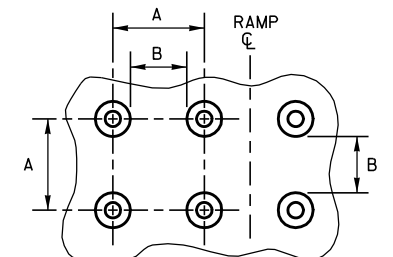
## GENERAL NOTES

SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

- 1 SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.
- 2 THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET  $\pm$  0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET FROM THE NEAREST RAIL.
- 3 INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS.) DO NOT MARK TRANSITION NOSE.

## LEGEND

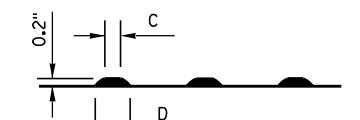
- 1/2" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)



**PLAN VIEW**

	MIN.	MAX.
A	1.6"	2.4"
B	0.65"	1.5"
C	*	*
D	0.9"	1.4"

\* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.

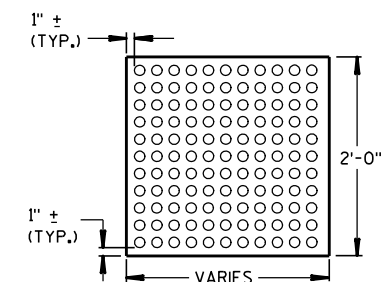


**ELEVATION VIEW**

## TRUNCATED DOMES

### DETECTABLE WARNING

### PATTERN DETAIL



**PLAN VIEW**

## DETECTABLE WARNING

### FIELD (TYPICAL)

**CURB RAMPS**  
**TYPES 5, 6, 7A, 7B & 8**

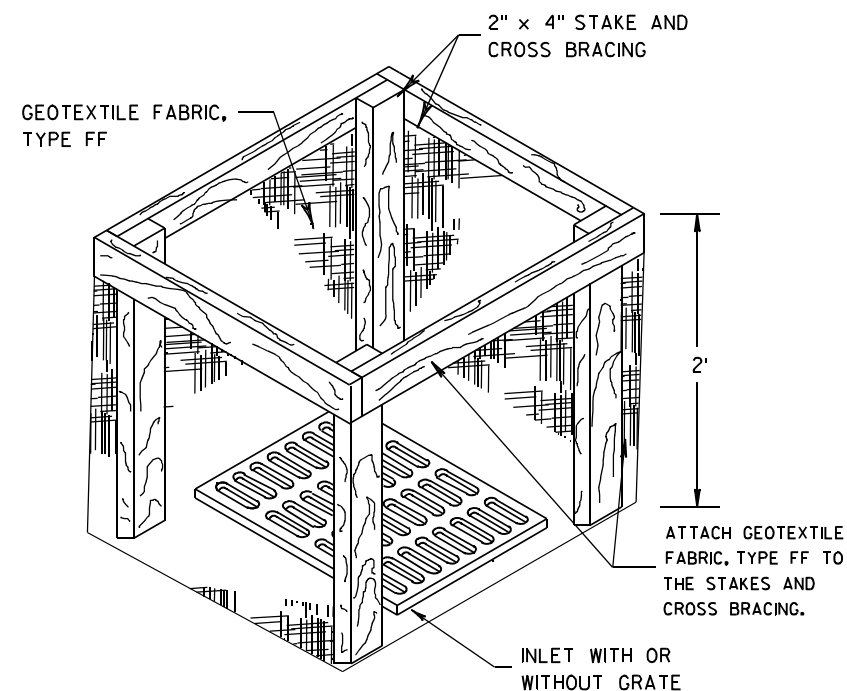
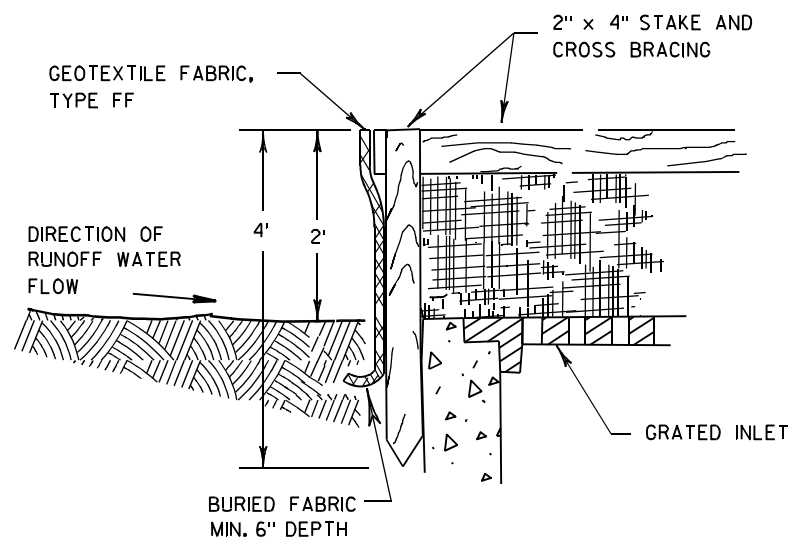
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

2-9-10  
DATE

FHWA

/S/ Jerry H. Zogg  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER



**INLET PROTECTION, TYPE A**

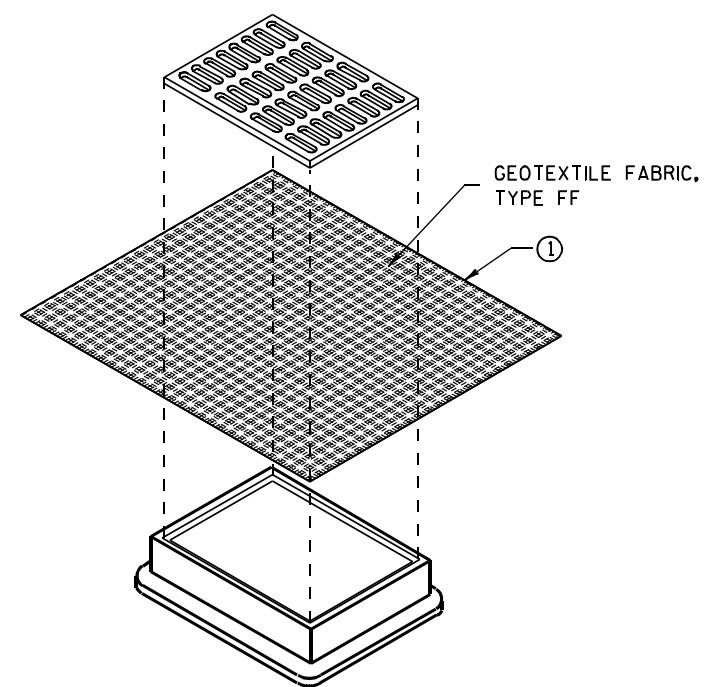
**GENERAL NOTES**

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

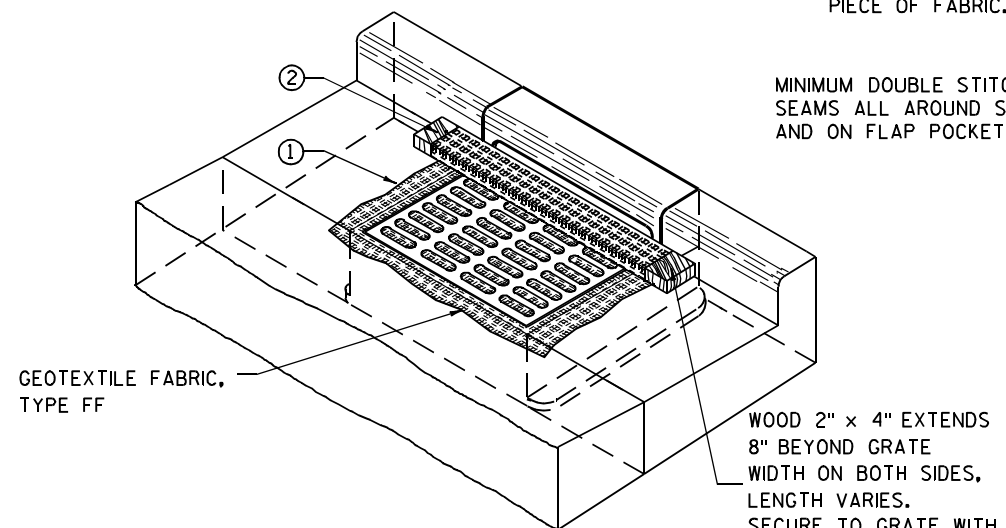
MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

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

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



**INLET PROTECTION, TYPE B  
(WITHOUT CURB BOX)**  
(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



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

**INSTALLATION NOTES**

**TYPE B & C**

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

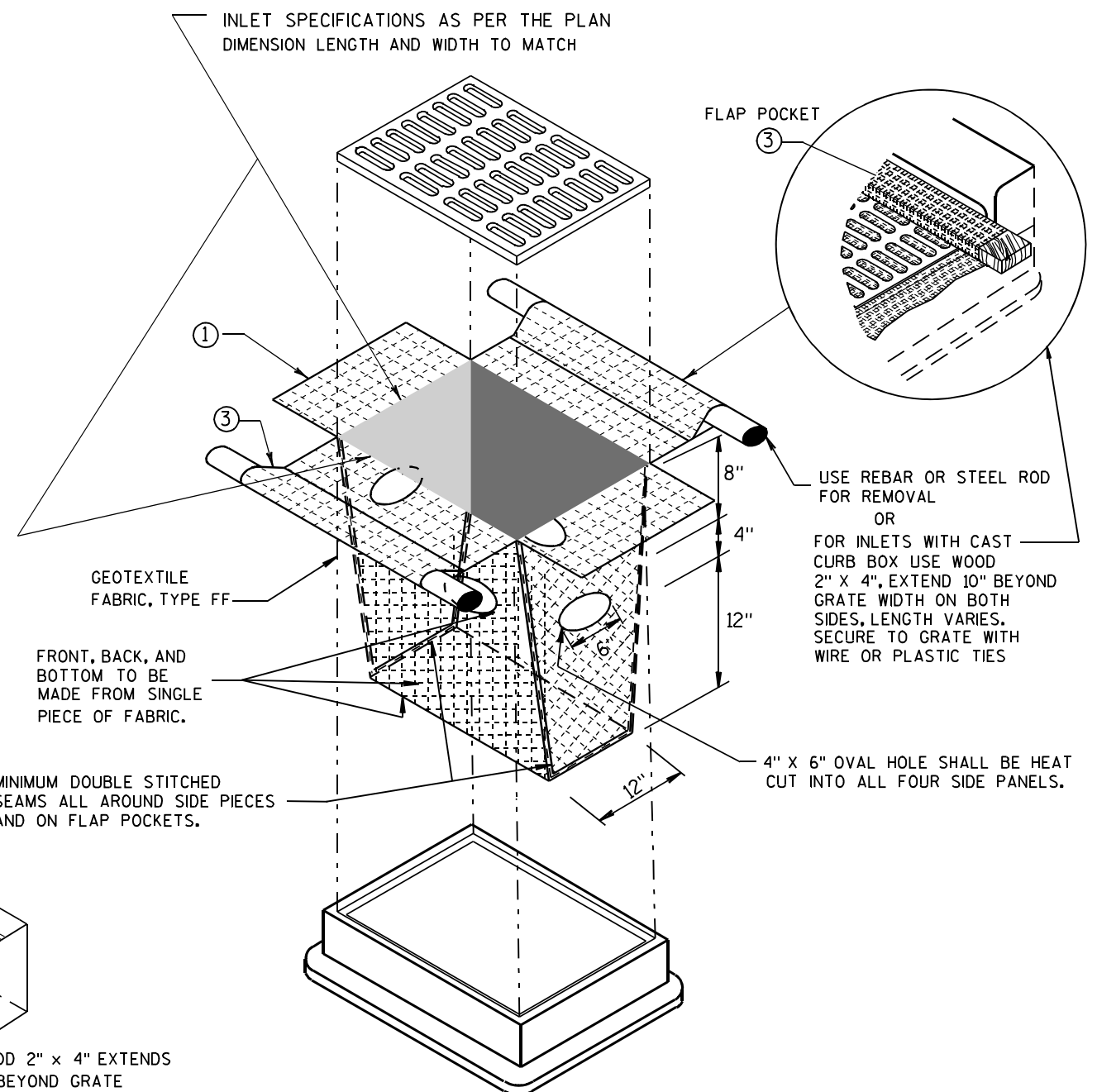
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

**TYPE D**

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

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

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



**INLET PROTECTION, TYPE D**

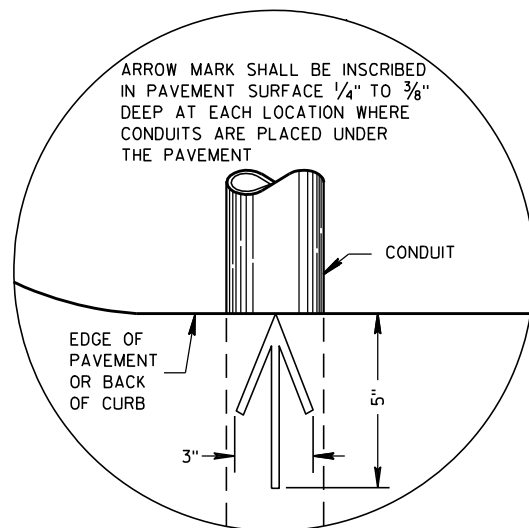
(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX AS PER NOTE ② )

**INLET PROTECTION  
TYPE A, B, C, AND D**

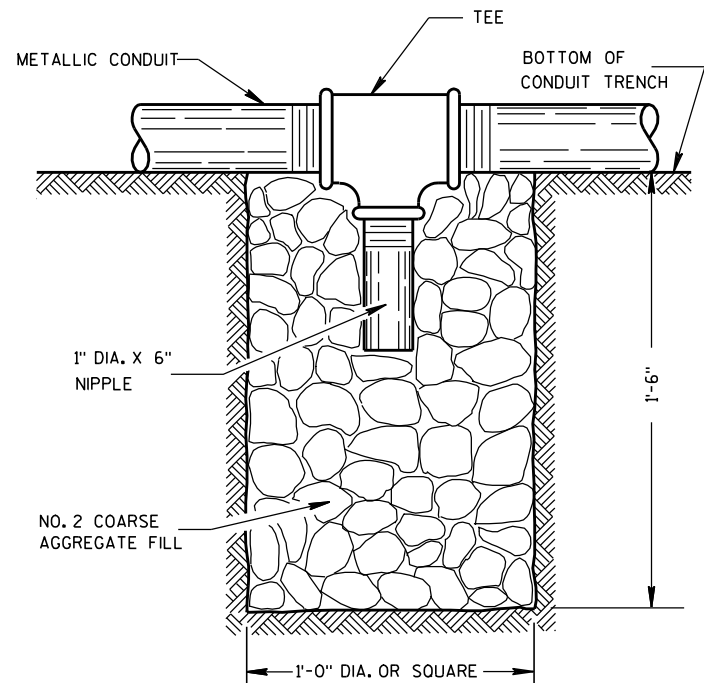
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
10/16/02 /S/ Beth Cannestra  
DATE  
CHIEF ROADWAY DEVELOPMENT ENGINEER  
FHWA



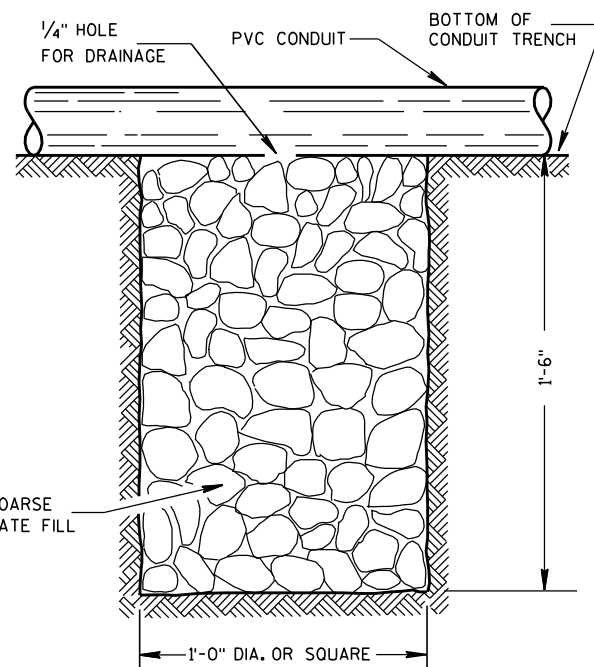


PLAN VIEW  
ARROW MARK



NOTE: INSTALL AT LOCATIONS WHERE METALLIC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

DRAIN SUMP FOR METALLIC CONDUIT



NOTE: INSTALL AT LOCATIONS WHERE PVC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

DRAIN SUMP FOR PVC CONDUIT

## GENERAL NOTES

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

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

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

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

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

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

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

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

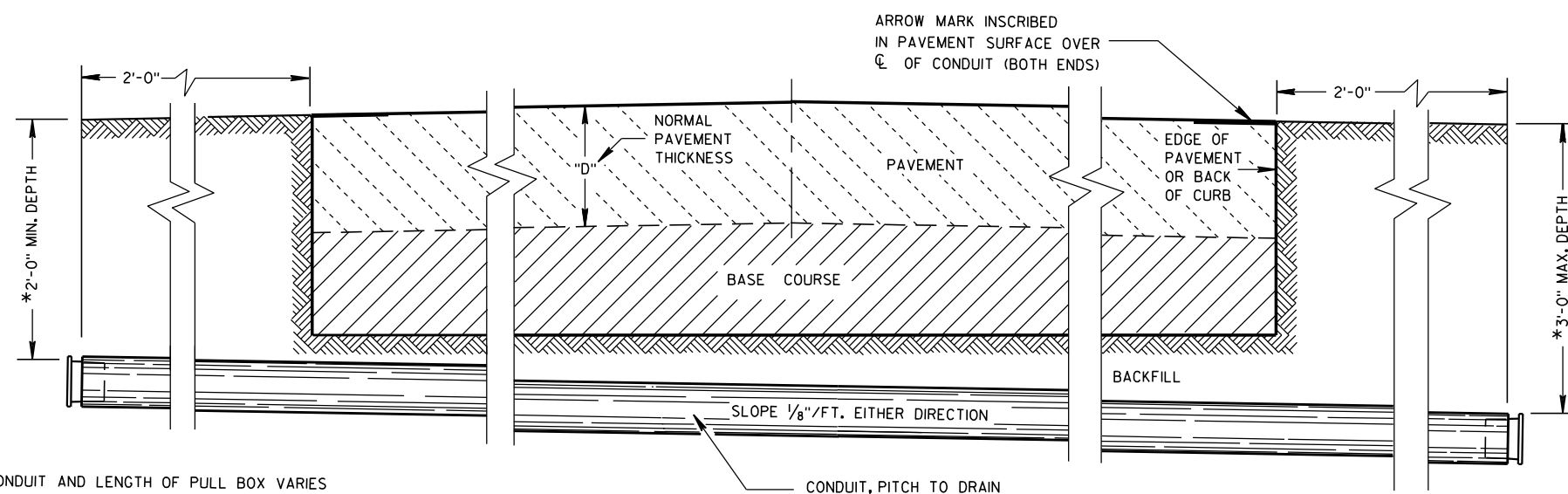
PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

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

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

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.



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

SIDE ELEVATION  
DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

## CONDUIT

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

10/23/03  
DATE

FHWA

/S/ Balu Ananthanarayanan  
STATE ELECTRICAL ENGINEER FOR HWYS

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

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

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

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

GENERAL NOTES

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

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

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

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

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

GROUNDING LUGS (MECHANICAL CONNECTORS) SHALL BE U.L. LISTED AND APPROVED FOR USE WITH COPPER WIRE. THE MECHANICAL CONNECTION (INSIDE AND OUTSIDE) TO THE PULL BOX, SHALL BE TOTALLY AND PERMANENTLY SEALED WITH A SILICONE OR RUBBERIZED CAULKING COMPOUND AS APPROVED BY THE ENGINEER.

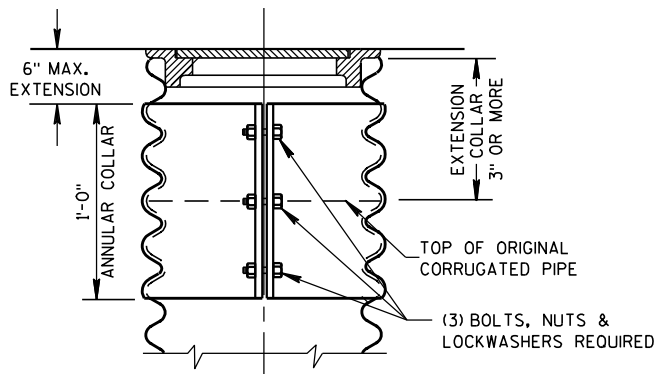
GROUNDING LUGS ARE NOT REQUIRED IN PULL BOXES WHEN VOLTAGES OF LESS THAN 50 VOLTS AC ARE THE ONLY VOLTAGES ENCOUNTERED IN THE BOXES.

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

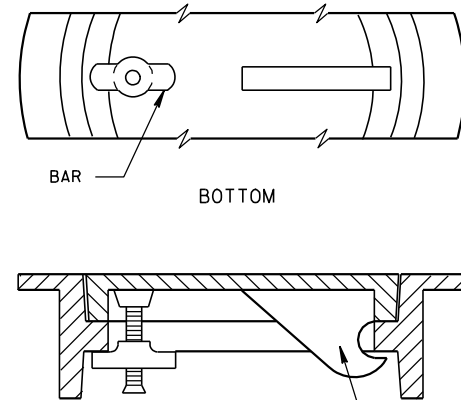
S.D.D. 9B2, "CONDUIT", APPLIES TO THIS DRAWING.

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

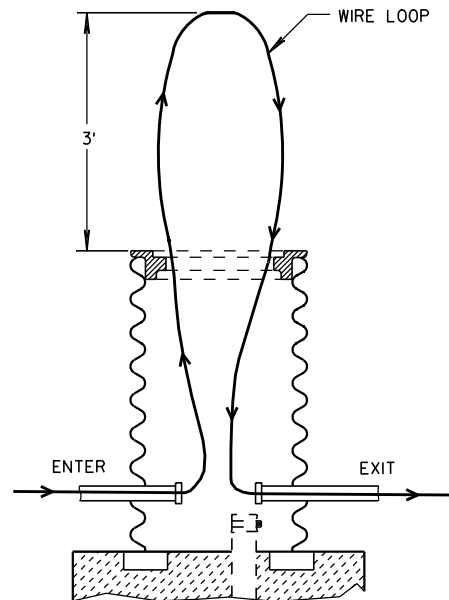
IF PULL BOX EQUIPMENT GROUNDING IS REQUIRED USING AN EQUIPMENT GROUNDING ELECTRODE IN EACH PULL BOX, THE EQUIPMENT GROUNDING ELECTRODE SHALL BE 5/8" X 8'-0", COPPERCLAD AND BE EXOTHERMICALLY WELDED TO A #4 AWG, COPPER, STRANDED WIRE (BARE OR GREEN INSULATED). THE #4 AWG WIRE SHALL BE 4 FEET IN LENGTH, NEATLY COILED, TAPED AND AVAILABLE FOR USE WHEN REQUIRED.



CORRUGATED PIPE EXTENDER

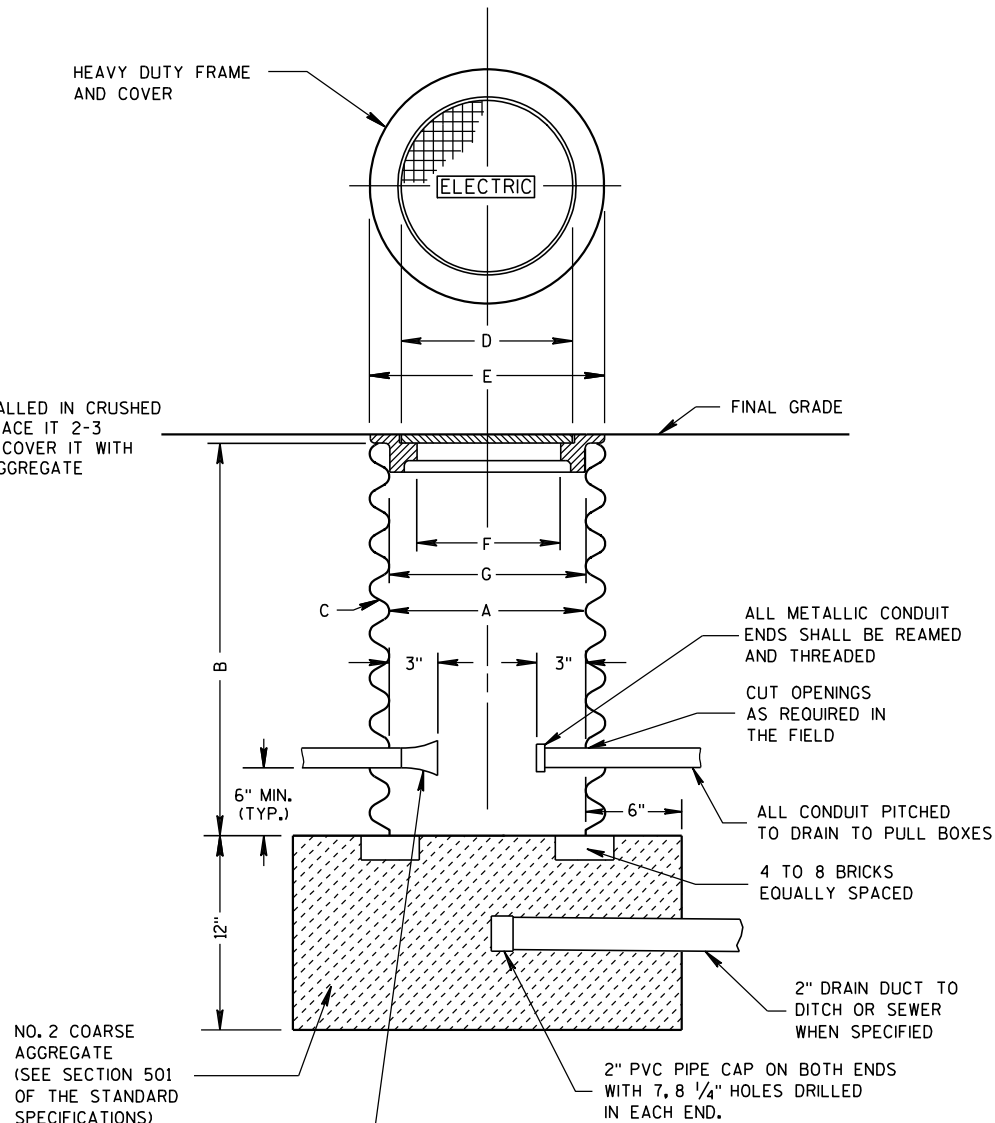


ALTERNATE COVER (LOCKING)

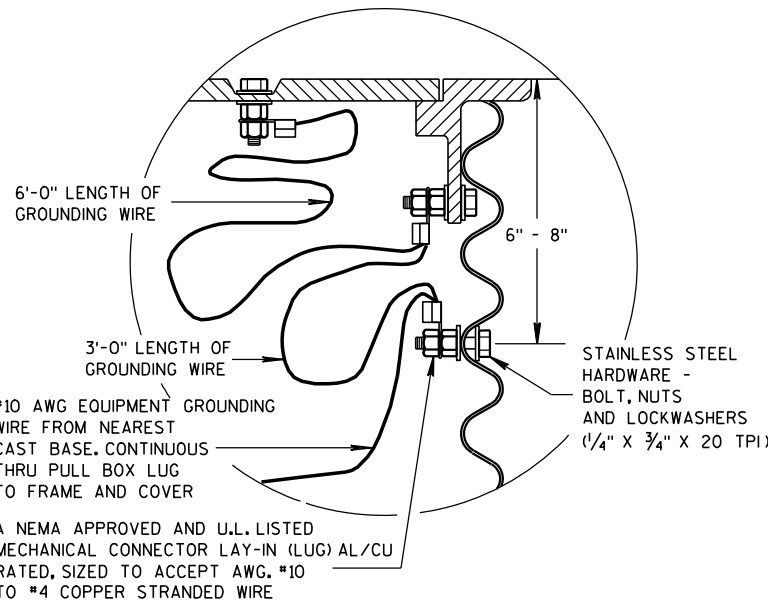


MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX

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



PULL BOX



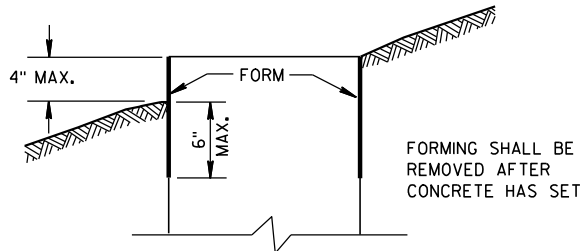
EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES

PULL BOX

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
9/27/06 /S/ Balu Ananthanarayanan  
DATE STATE ELECTRICAL ENGINEER FOR HWYS  
FHWA

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



### FORMING DETAIL

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

### GENERAL NOTES

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

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

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

CONDUIT SIZES AND LOCATIONS SHALL BE 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.

### GENERAL NOTES (CONTINUED)

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) FOR TYPE 2 AND TYPE 5 BASES.

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER THE BASE OF THE TYPE 2 AND TYPE 5 BASES THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

ANCHOR RODS SHALL BE THREADED 12" IN LENGTH ON EACH END OF THE ROD, ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2.1 AND 641.2.2 OF THE STANDARD SPECIFICATIONS, ASTM A-449, OR ASTM A-687 (GRADE 105).

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

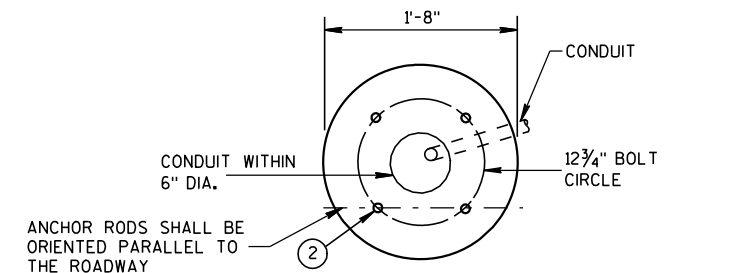
WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4" "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND END SHALL NOT BE THREADED.

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

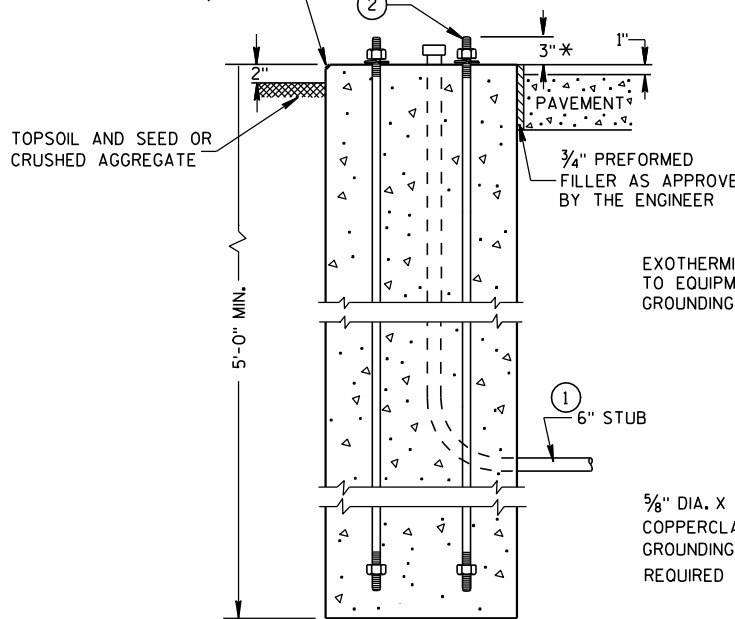
WELDING OF THE ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TIE WIRES SHALL BE USED.

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

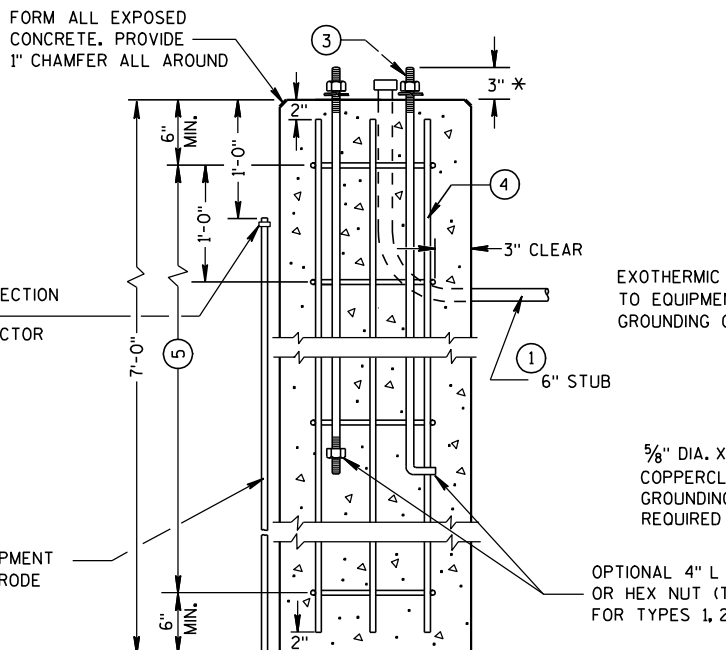
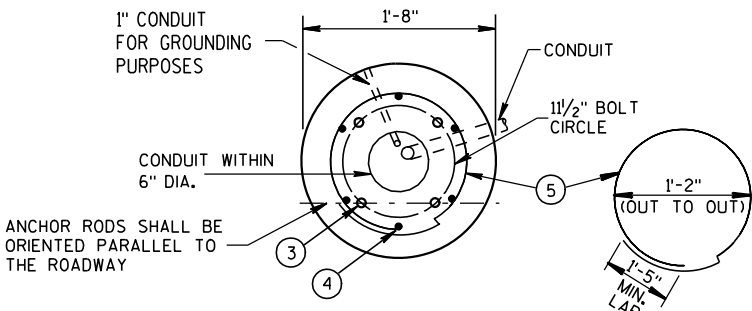
- 1 THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN 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.



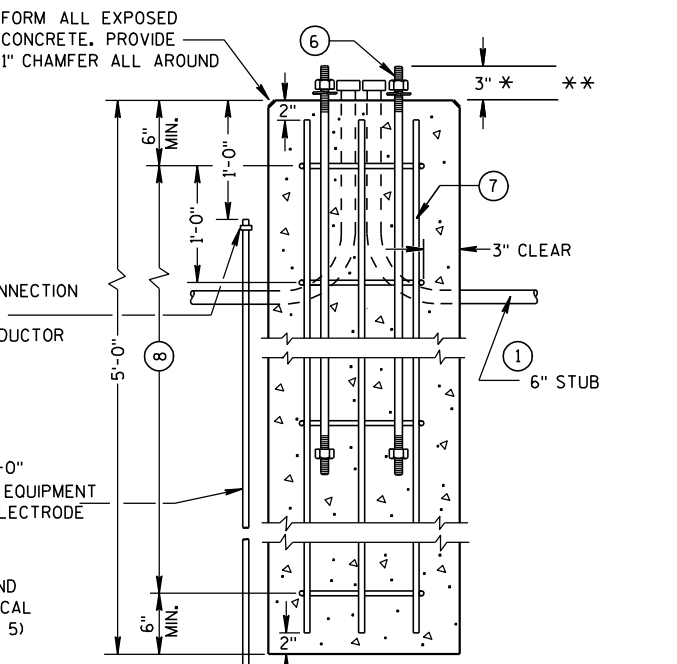
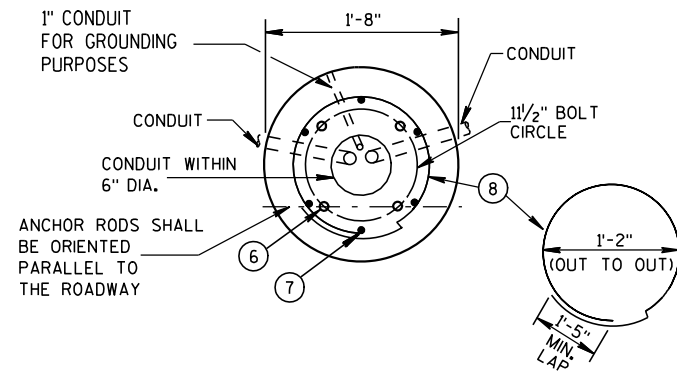
### HALF SECTION IN UNPAVED AREA (TYPICAL FOR TYPES 1, 2 & 5)



TYPE 1



TYPE 2



TYPE 5

### CONCRETE BASES

\* ANY ANCHOR ROD PROJECTION SHORTER THAN 2 3/4" OR LONGER THAN 3 1/4" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.

\*\* FOR NONBREAKAWAY INSTALLATIONS, 4 1/2" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

3/3/10

DATE

FHWA

/S/ Joanna L. Bush  
STATE ELECTRICAL ENGINEER FOR HWYS

GENERAL NOTES

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

FOUR (4) BOLTS SHALL BE FURNISHED WITH EACH TRANSFORMER BASE. BOLTS SHALL BE 1" DIAMETER, 4" IN LENGTH, WITH WASHERS, LOCK WASHERS AND NUTS. BOLTS, NUTS AND WASHERS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 641.2.2 OF THE STANDARD SPECIFICATIONS, ASTM A-325, (92,000 YIELD) HEAVY HEX NUT AND BE GALVANIZED IN ACCORDANCE WITH ASTM A-153, CLASS C.

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

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

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

A NEMA APPROVED AND U.L. LISTED MECHANICAL CONNECTOR (LUG) AL/CU RATED AND SIZED TO ACCEPT #10 AWG STRANDED WIRE, SHALL BE FURNISHED AND INSTALLED IN THE PEDESTAL AND TRANSFORMER BASES.

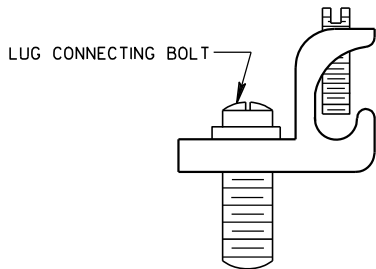
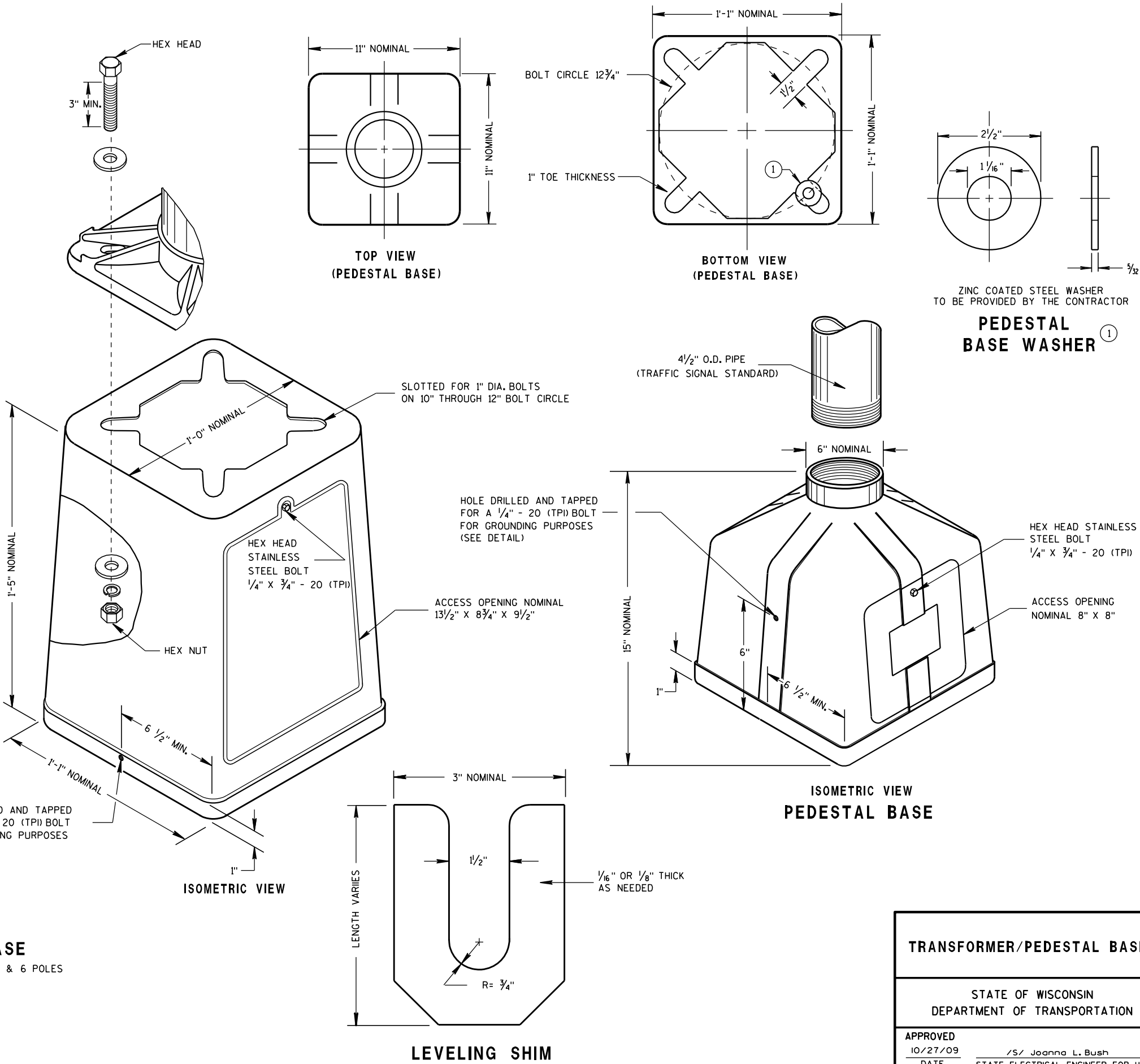
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

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

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

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

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



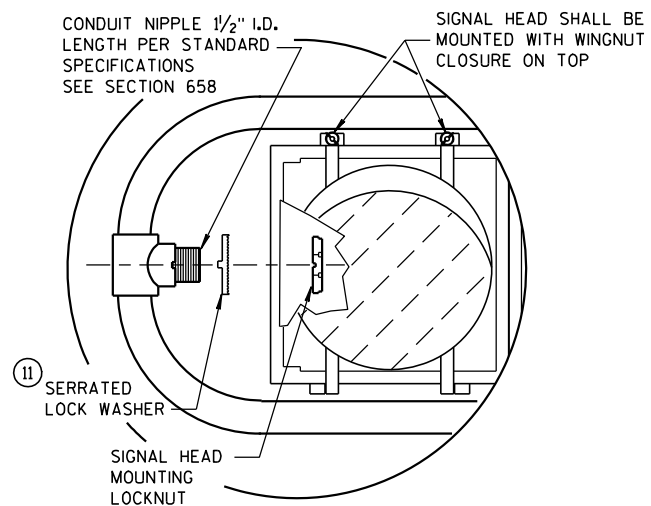
TYPICAL MECHANICAL  
CONNECTOR LUG  
TO BE FURNISHED WITH EACH BASE

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

TRANSFORMER/PEDESTAL BASES

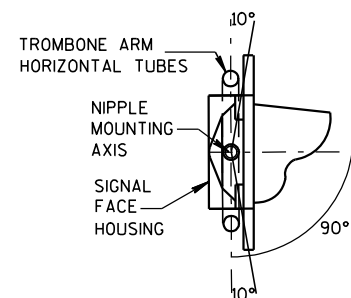
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
10/27/09  
DATE /S/ Joanna L. Bush  
STATE ELECTRICAL ENGINEER FOR HWYS  
FHWA



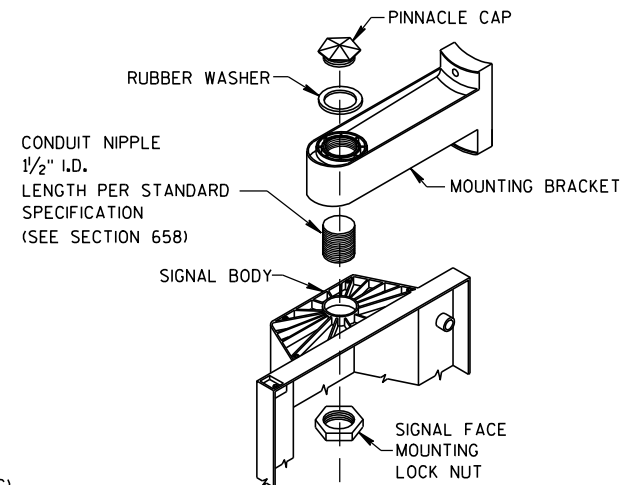
### HORIZONTAL SIGNAL HEAD MOUNTING DETAIL \*

\* SIGNAL HEAD ATTACHMENT ALSO APPLYS TO MOUNTING AT CROSS BAR

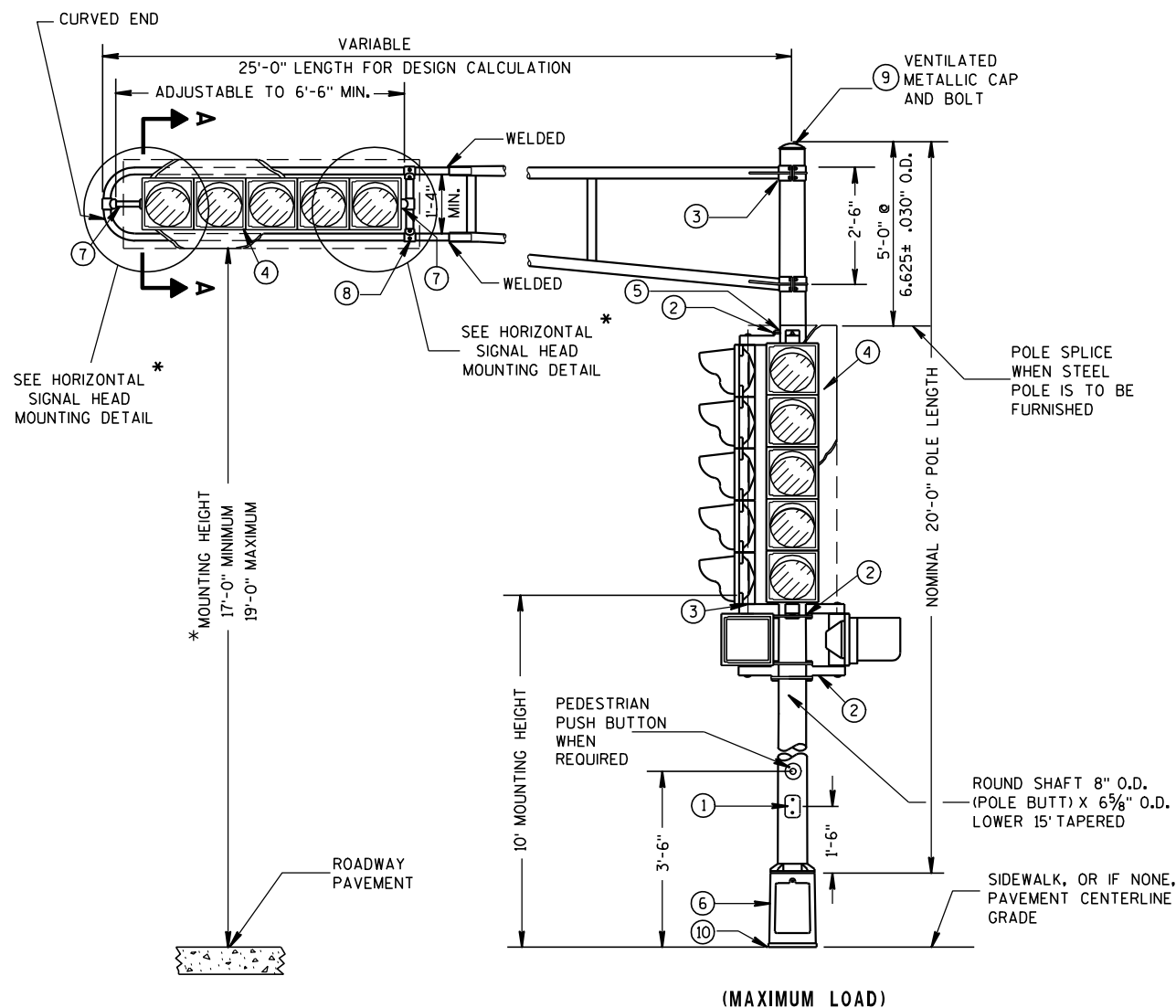


### SECTION A-A

(10 DEGREES TILT REQUIREMENT OF FACE(S) IN THE TROMBONE MOUNTING)



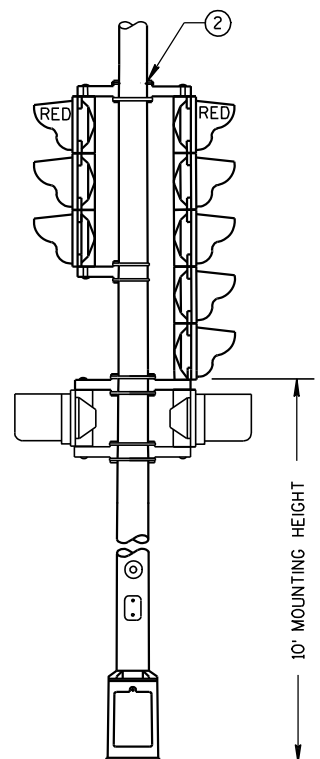
### SIGNAL FACE MOUNTING DETAIL (BANDED)



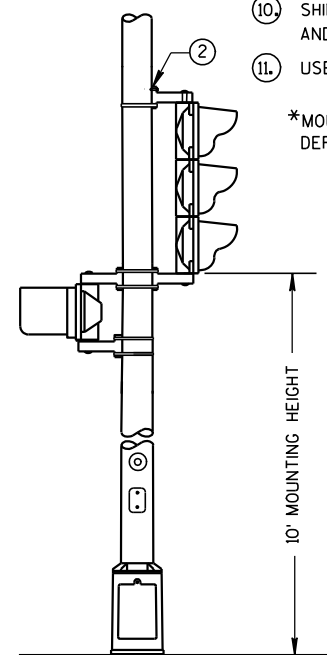
(MAXIMUM LOAD)

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

### TYPE 2 POLE MOUNTING CONFIGURATION



TYPICAL MOUNTING OF 3 SECTION  
SIGNAL FACE



### GENERAL NOTES

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

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

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

A PULL WIRE/ROPE IN ACCORDANCE WITH STANDARD SPECIFICATION 652 SHALL BE INSTALLED IN EACH TROMBONE ARM RACEWAY DURING THE MANUFACTURING PROCESS.

TYPE 2 ALUMINUM POLES SHALL BE CONSTRUCTED OF 6063-T6 ALUMINUM ALLOY. SLEEVEING INSIDE THE POLE IS NOT ACCEPTABLE.

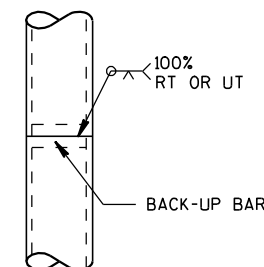
WHEN TRANSFORMER BASES ARE USED, WIRE CONNECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

- (1) 4" X 6" REINFORCED HANDHOLE & COVER ASSEMBLY WITH 2 (TWO) 1/4" X 3/4" - 20 TPI HEX HEAD STAINLESS STEEL BOLTS.
- (2) SIGNAL FACE MOUNTING BRACKETS. MOUNT WITH CAP SCREWS AND BANDING. (SEE STANDARD SPECIFICATIONS - SEC. 658)
- (3) GROMMETS, 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 3/8" HOLE IN POLE SHAFT FOR WIRING.
- (4) SECURELY MOUNT DULL BLACK POLYCARBONATE BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURER'S RECOMMENDATIONS.
- (5) POLE MOUNTED SIGNAL FACES SHALL REQUIRE 1 OR MORE MOUNTING SPACERS UNDER THE TOP MOUNTING BRACKET(S) AS REQUIRED, TO PLUMB THE SIGNAL FACES.
- (6) CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.
- (7) MOUNTING BRACKET NIPPLES FOR THE SIGNAL FACE(S) SHALL BE 2 INCHES IN LENGTH AND 1/2 INCHES IN DIAMETER. (SEE STANDARD SPECIFICATION - SECTION 658).
- (8) VERTICAL STRUT (ADJUSTABLE). ONE (1) SET SCREW (1/4" X 3/4" LONG-20 TPI, STAINLESS STEEL, HEX HEAD) INTO EACH ARM MEMBER IF STRUT IS THE SLIDING TYPE.
- (9) FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) 1/4" X 3/4" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.
- (10) SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND THE TRANSFORMER BASE.
- (11) USE SERRATED LOCK WASHERS WITH NOTCHES BETWEEN END TEE AND SIGNAL HEAD.

\*MOUNTING HEIGHT LIMITATION DIMENSIONS OF THE TROMBONE MAST ARM WILL BE DEPENDENT UPON THE USE/NON-USE OF A TRANSFORMER BASE.

### FOR MANUFACTURERS USE ONLY

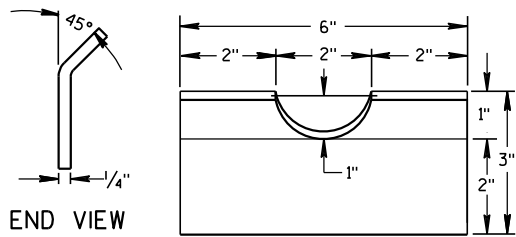
WELD TO BE 100% R.T. OR U.T. TESTED AS PER THE REQUIREMENTS OF AWS D 1.5-88. RECORDS OF COMPLIANCE OF SUCH TESTING SHALL BE FURNISHED TO THE OFFICE OF DESIGN/BRIDGE FOR VERIFICATION AND APPROVAL.



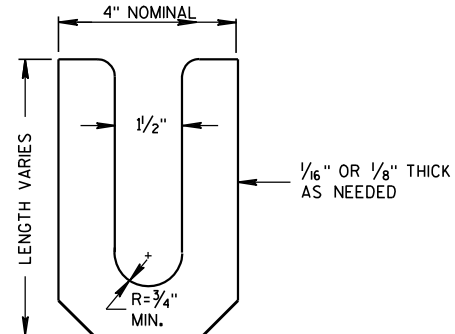
### POLE SPLICE DETAIL

### POLE MOUNTINGS FOR TRAFFIC SIGNALS TYPE 2

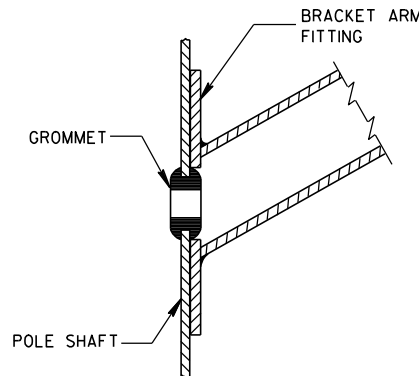
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



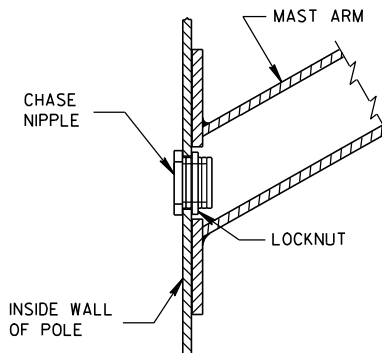
FRONT VIEW  
RECTANGULAR CLAMP SHIM  
(4 TO A SET)



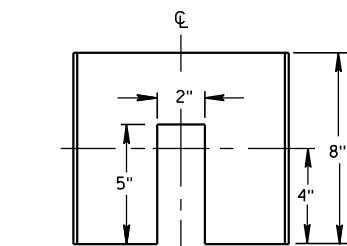
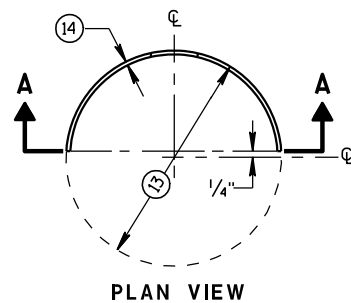
LEVELING SHIM  
SHALL BE ALUMINUM



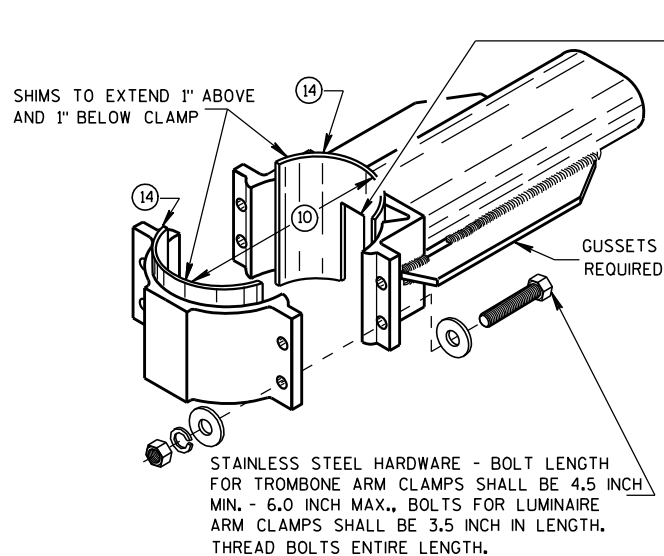
TYPICAL APPLICATION OF  
GROMMET IN POLE SHAFT



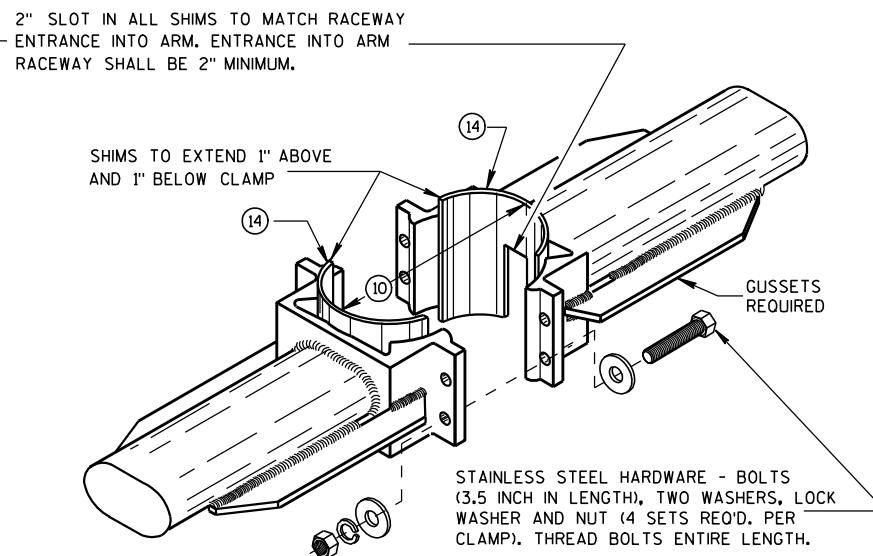
TYPICAL APPLICATION OF  
CHASE NIPPLE IN POLE SHAFT



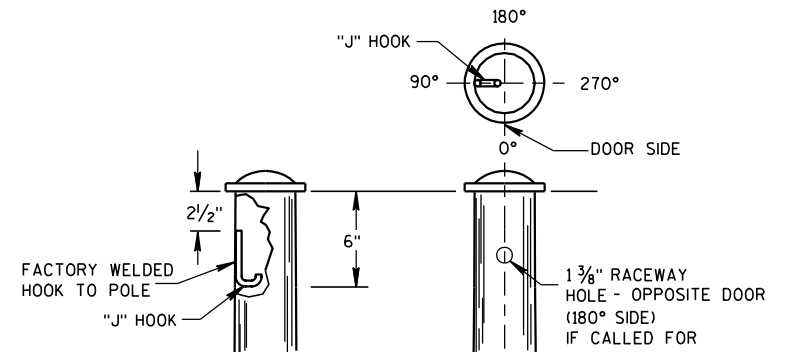
SECTION A-A  
CIRCULAR CLAMP SHIM  
(2 TO A SET)



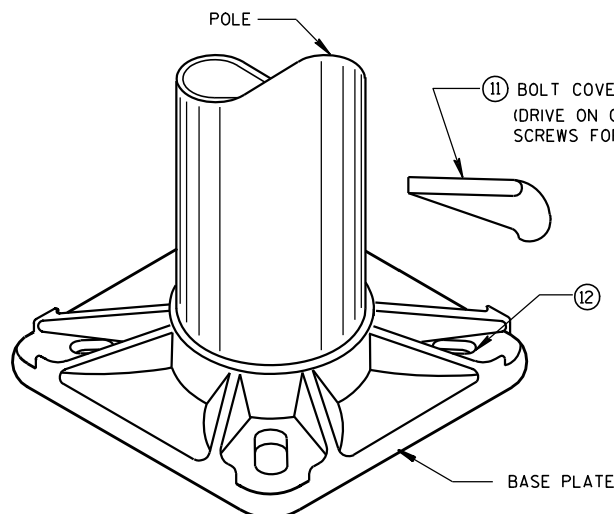
TYPICAL TROMBONE MAST ARM AND SINGLE  
LUMINAIRE MAST ARM MOUNTING CLAMP



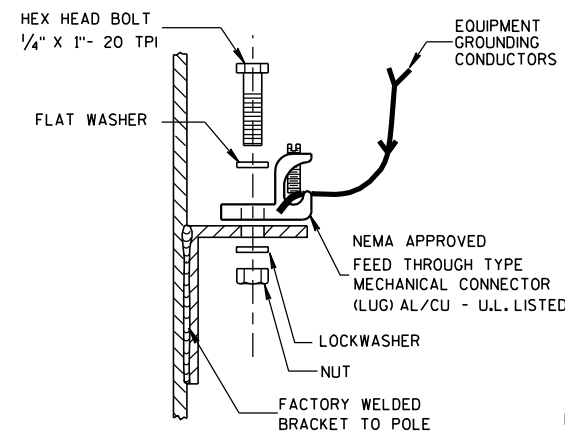
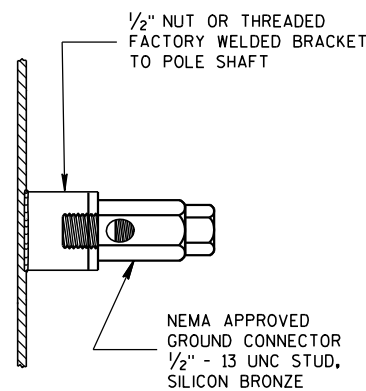
TYPICAL LUMINAIRE MAST ARM  
(DOUBLE) MOUNTING BRACKETS



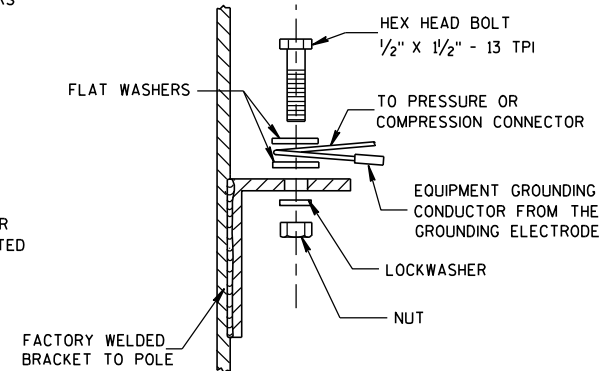
TYPICAL "J" HOOK LOCATION



BASE PLATE



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



## GENERAL NOTES

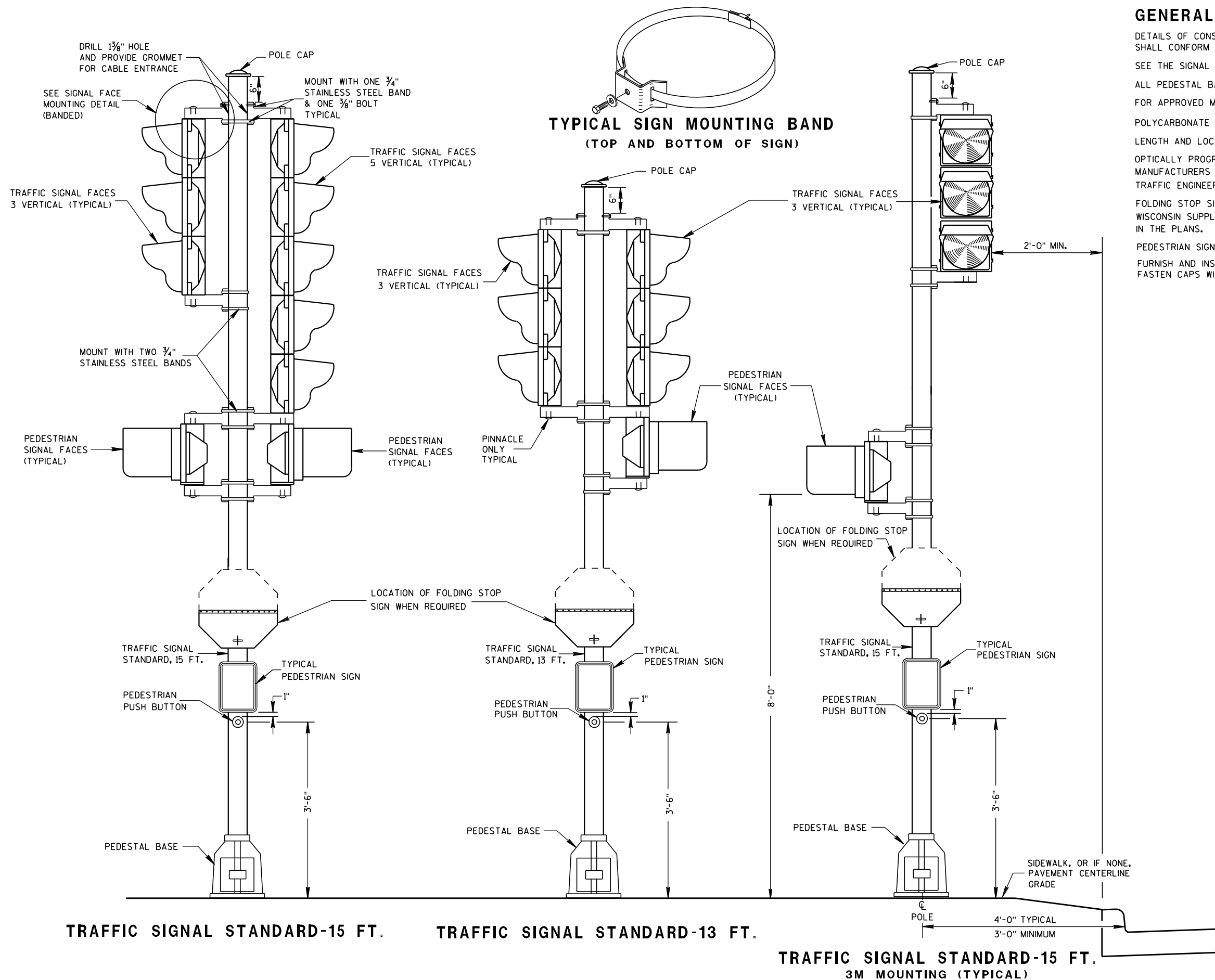
CLAMP BOLT-NUT TIGHTENING TORQUE SHALL BE INDICATED BY INDENT STAMPING (1/2 INCH NUMERALS AND LETTERS) OR WEATHERPROOF PRINTING ON THE INSIDE OF THE CLAMP THAT IS WELDED TO THE ARM MEMBER.

10. 4.5" I.D. FOR LUMINAIRE MAST ARM CLAMP.  
6.625" I.D. FOR TROMBONE MAST ARM CLAMP.
11. INDIVIDUAL BASE PLATE ANCHOR ROD COVERS. (4 REQUIRED)
12. BASE PLATE SLOTTED TO ACCEPT 11" THROUGH 12" BOLT CIRCLE USING 1" DIAMETER ANCHOR RODS.
13. OUTSIDE SHIM DIAMETER - (4.5" O.D. FOR LUMINAIRE MAST ARM)  
(6.625" O.D. FOR TROMBONE MAST ARM)
14. VARIABLE SHIM THICKNESS - (0.10", 0.25", 0.35", 0.53" OR 0.70")  
SHIM THICKNESS FOR TROMBONE MAST ARMS MAY BE TYPICALLY 0.25", 0.35", 0.53" OR 0.70".  
SHIM THICKNESS FOR LUMINAIRE MAST ARMS MAY BE TYPICALLY 0.10", 0.25" OR 0.35".  
SHIM MATERIAL SHALL BE ALUMINUM ALLOY.  
SHIM THICKNESS SHALL BE IMPRESSED INTO EACH SHIM. NUMERALS SHALL BE 1/4" HIGH AND LEGIBLE.  
THE CONTRACTOR SHALL SUBMIT TWO COPIES OF ALL SHIM SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL.
15. LEVELING SHIMS, DESIGNED FOR THE PURPOSE, SHALL BE USED WHEN PLUMBING POLES. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE. LEVELING SHIMS SHALL BE USED ONLY BETWEEN THE TOP OF THE CONCRETE BASE AND A METALLIC BASE PLATE.  
SHIMS SHALL BE LONG ENOUGH AND WIDE ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.

## HARDWARE DETAILS FOR POLE MOUNTINGS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
3/2/11  
DATE /S/ Thomas J. Goring  
STATE ELECTRICAL ENGINEER FOR HWYS  
FHWA



## GENERAL NOTES

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

SEE THE SIGNAL PLAN FOR REQUIRED SIGNAL FACE SIZES.

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

FOR APPROVED MOUNTING HARDWARE, SEE THE CONTRACT SPECIAL PROVISIONS.

POLYCARBONATE MOUNTING BRACKETS SHALL BE USED.

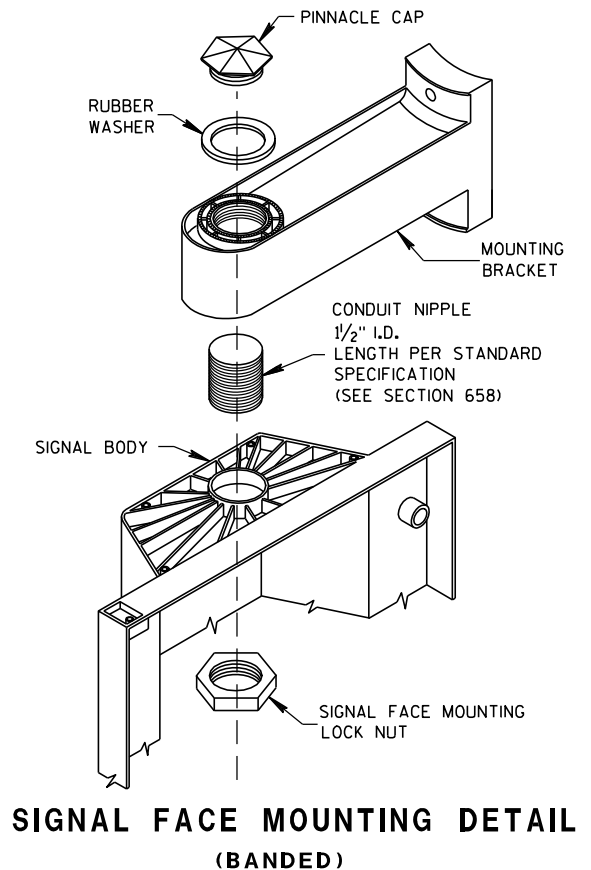
LENGTH AND LOCATION OF TRAFFIC SIGNAL STANDARDS SHALL BE AS SHOWN ON THE PLANS.

OPTICALLY PROGRAMMED SIGNAL FACES SHALL BE MASKED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS, AND UNDER THE DIRECTIONS OF THE DISTRICT TRAFFIC ENGINEER.

FOLDING STOP SIGNS SHALL BE IN ACCORDANCE WITH THE MUTCD AND/OR THE LATEST WISCONSIN SUPPLEMENT. THE SIGNS SHALL BE SIZED AND LOCATED AS CALLED FOR IN THE PLANS.

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.

FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1)  $\frac{1}{4}$ " x  $\frac{3}{4}$ " - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.



**TRAFFIC SIGNAL STANDARD  
POLY BRACKET MOUNTINGS  
(TYPICAL) 13 FT. OR 15 FT.**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

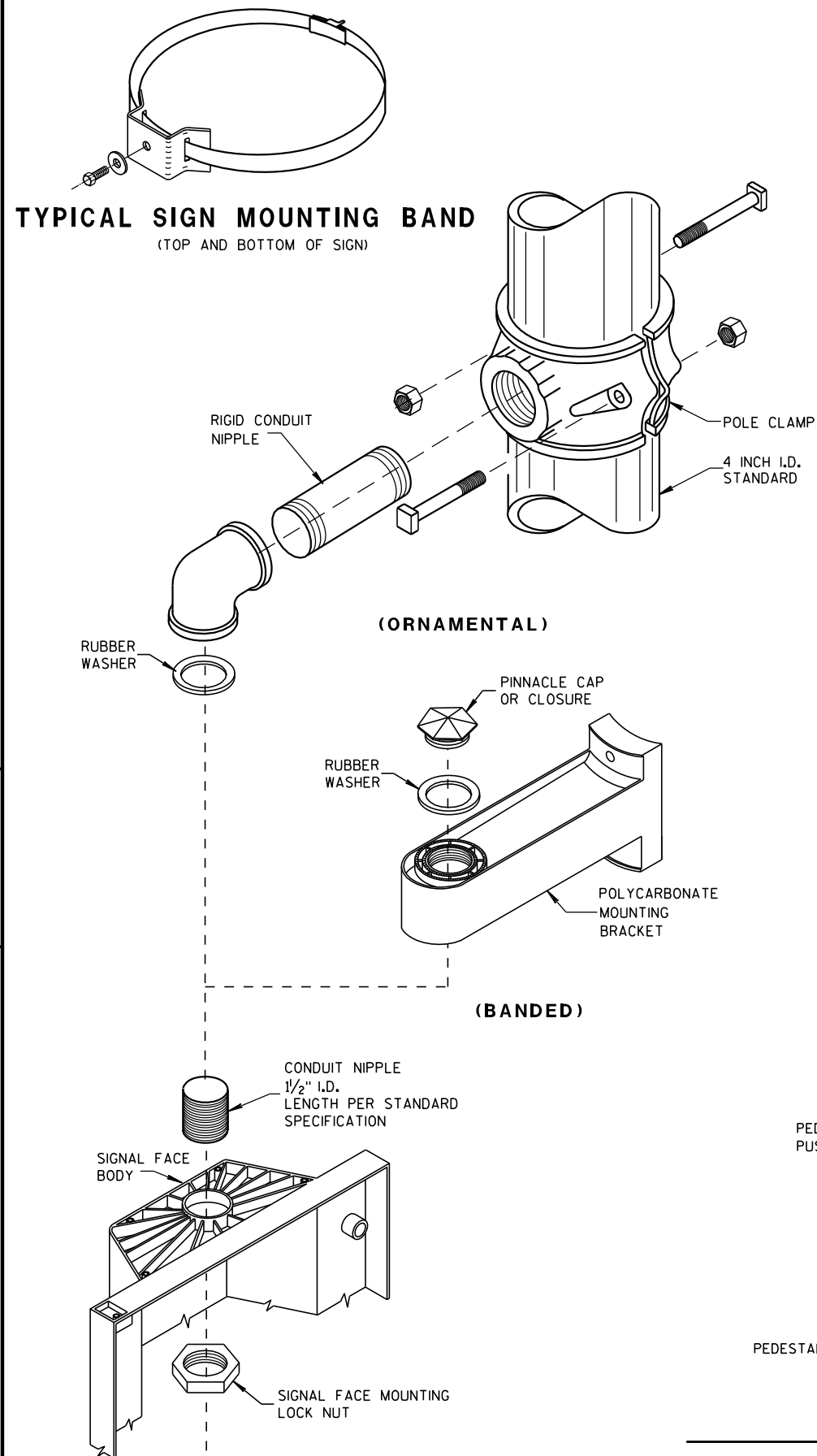
5/11/10

DATE

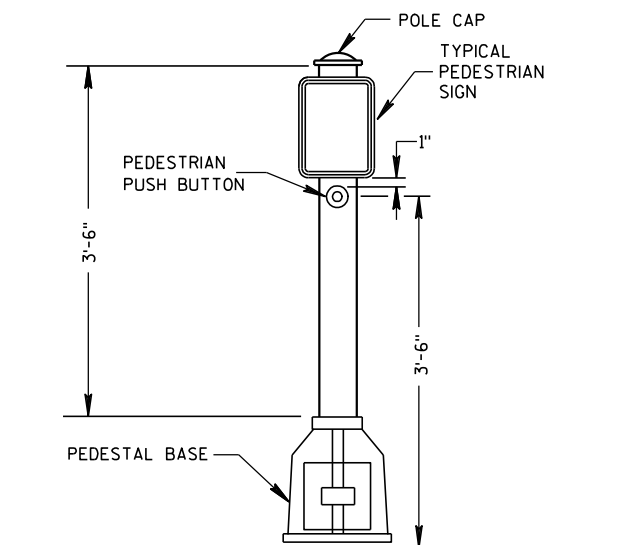
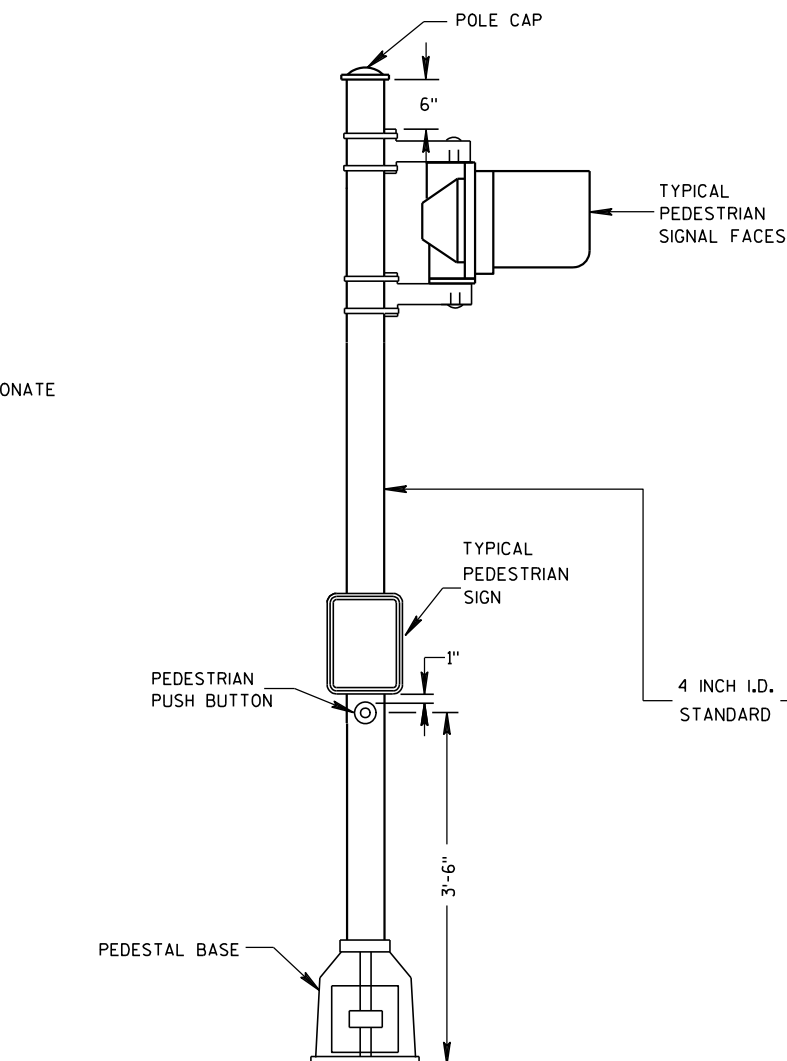
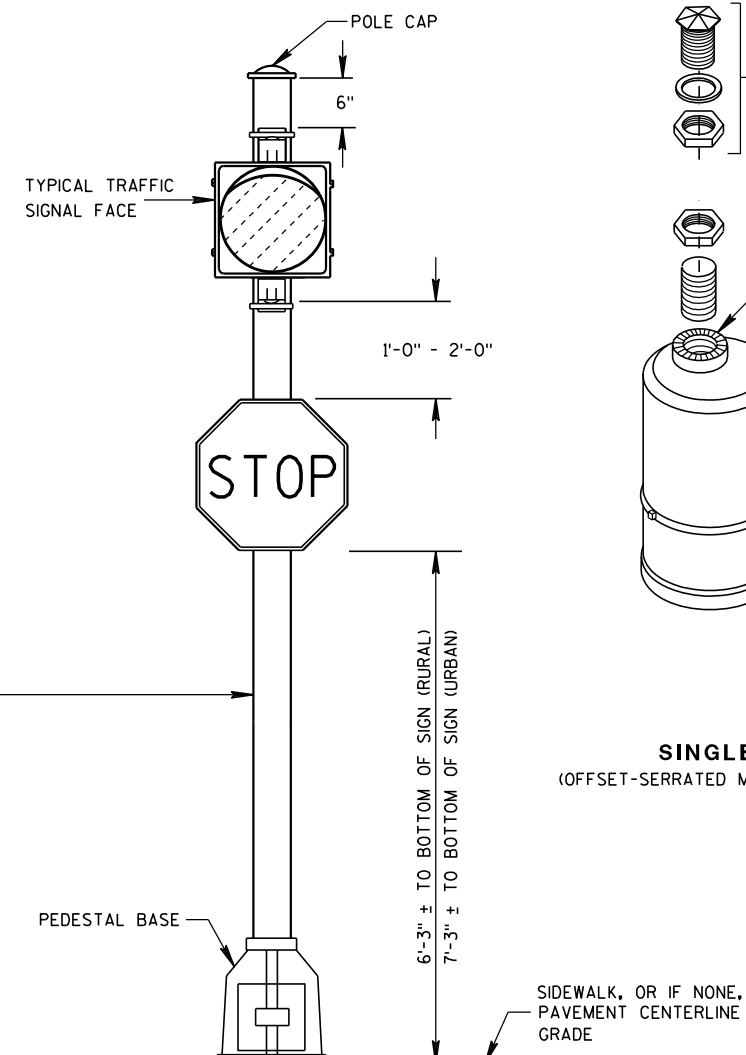
/S/ John Corbin

STATE ELECTRICAL ENGINEER FOR HWYS

FHWA



SIGNAL FACE MOUNTING DETAILS

PEDESTRIAN PUSH BUTTON  
TYPICAL MOUNTINGPEDESTRIAN FACE STANDARD-10 FT.  
(WALK-DON'T WALK)STANDARD FLASHER.  
10 FOOT, 13 FOOT OR 15 FOOT AS REQUIRED

## GENERAL NOTES

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

SEE THE SIGNAL PLAN FOR REQUIRED SIGNAL FACE SIZES.

LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

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

FOR APPROVED MOUNTING HARDWARE, SEE THE CONTRACT SPECIFICATIONS.

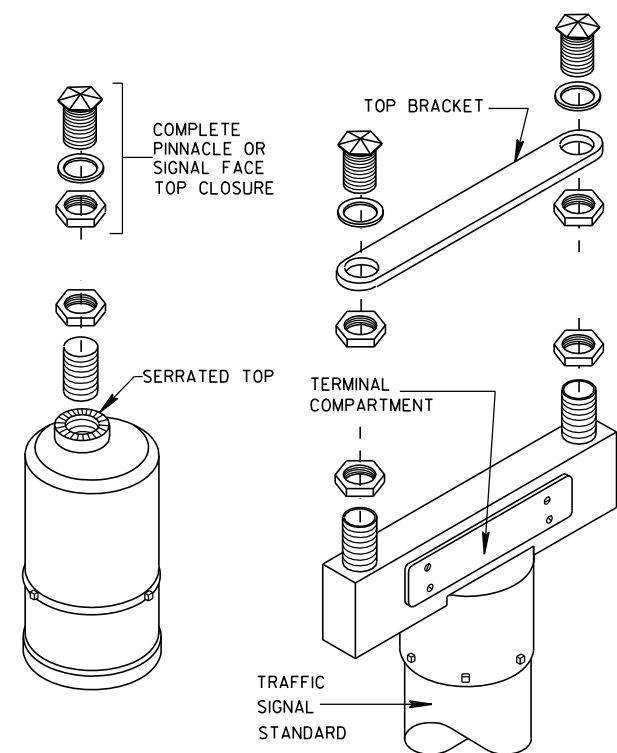
POLYCARBONATE SIGNAL FACE MOUNTING BRACKETS SHALL BE USED UNLESS ORNAMENTAL POLE CLAMPS ARE SPECIFIED.

LENGTH OF TRAFFIC STANDARDS SHALL BE AS SHOWN ON THE PLANS.

MOUNTINGS AND BRACKETS SHALL BE AS SHOWN ON THE PLANS OR DESCRIBED IN THE SPECIAL PROVISIONS (BY THE DISTRICT TRAFFIC ENGINEER).

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.

FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) 1/4" X 3/4" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.

SINGLE  
(OFFSET-SERRATED MOUNTING)DOUBLE  
(SERRATED MOUNTING)

SLIPFITTERS

TRAFFIC SIGNAL STANDARD  
PEDESTRIAN AND FLASHER  
TYPICAL MOUNTING DETAILS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

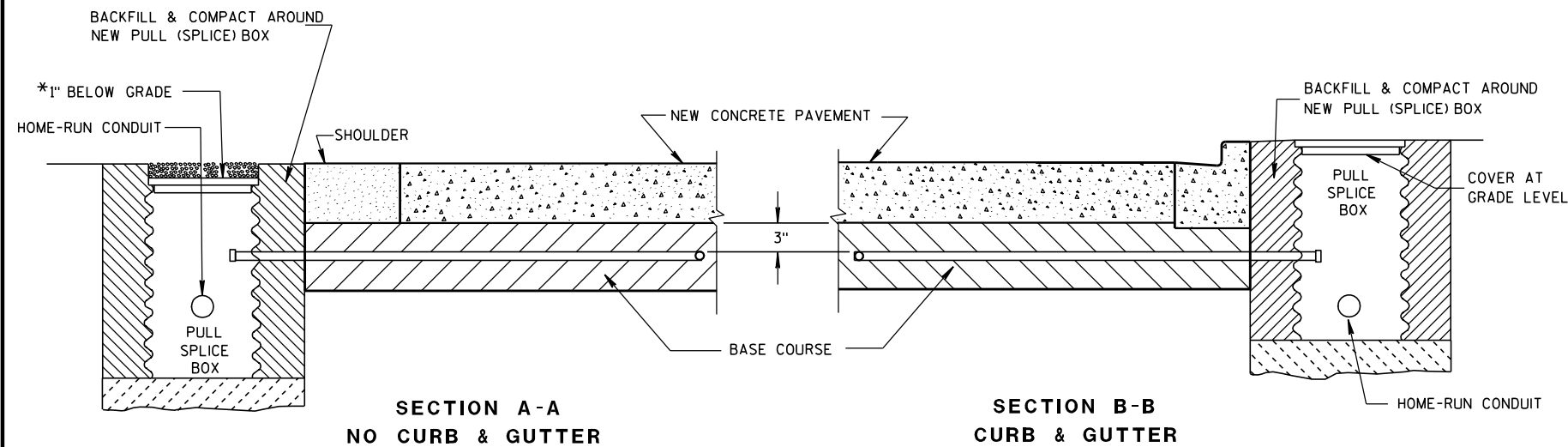
APPROVED

5/11/10

DATE

FHWA

/S/ John Corbin  
STATE ELECTRICAL ENGINEER FOR HWYS



\*RECESS PULL (SPlice) BOX SO THAT THE COVER IS 3\"

### LOOP DETECTOR INSTALLATION DETAIL

### GENERAL NOTES

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

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

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

SPlices SHALL BE INSTALLED BY USING CAST IN PLACE SPlice KITS SUCH AS 3M TYPE 82A1 OR APPROVED EQUAL. NON-INSULATED BUTT SPlices TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPlices SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPlice KIT.

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

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

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

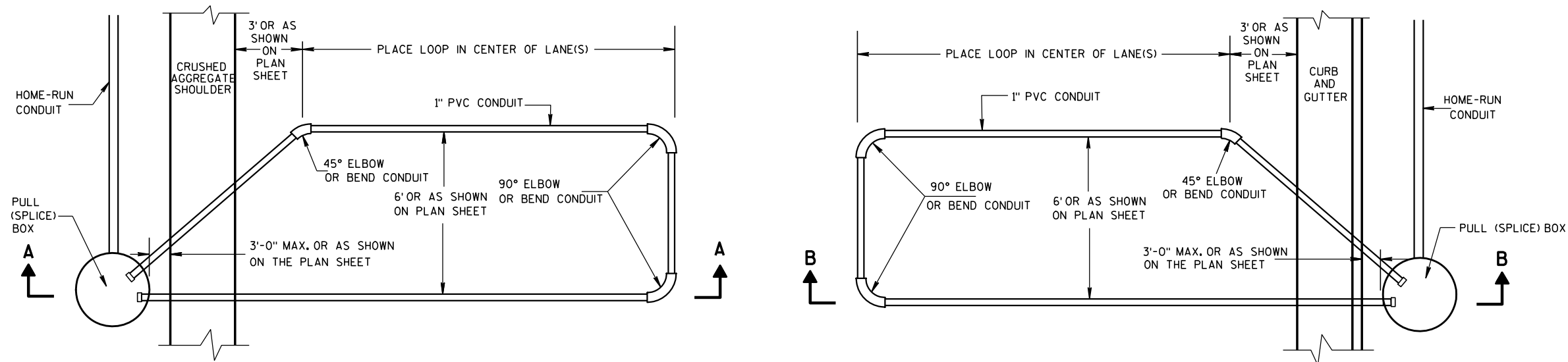
THE #12 AWG. LOOP WIRE IN THE PULL (SPlice) BOX SHALL BE HAND TWISTED AT LEAST 3 TWISTS PER FOOT BEFORE BEING SPliced TO THE LOOP LEAD-IN CABLE.

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

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

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

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



TYPICAL PLAN OF LOOP DETECTOR  
WITH 18\"

LOOP DETECTOR INSTALLED IN  
BASE COURSE WITH PULL (SPlice)  
BOX OFF ROADWAY  
(OPTION 1)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

6/7/06

DATE

/S/ Balu Ananthanarayanan

STATE ELECTRICAL ENGINEER FOR HWYS

FHWA

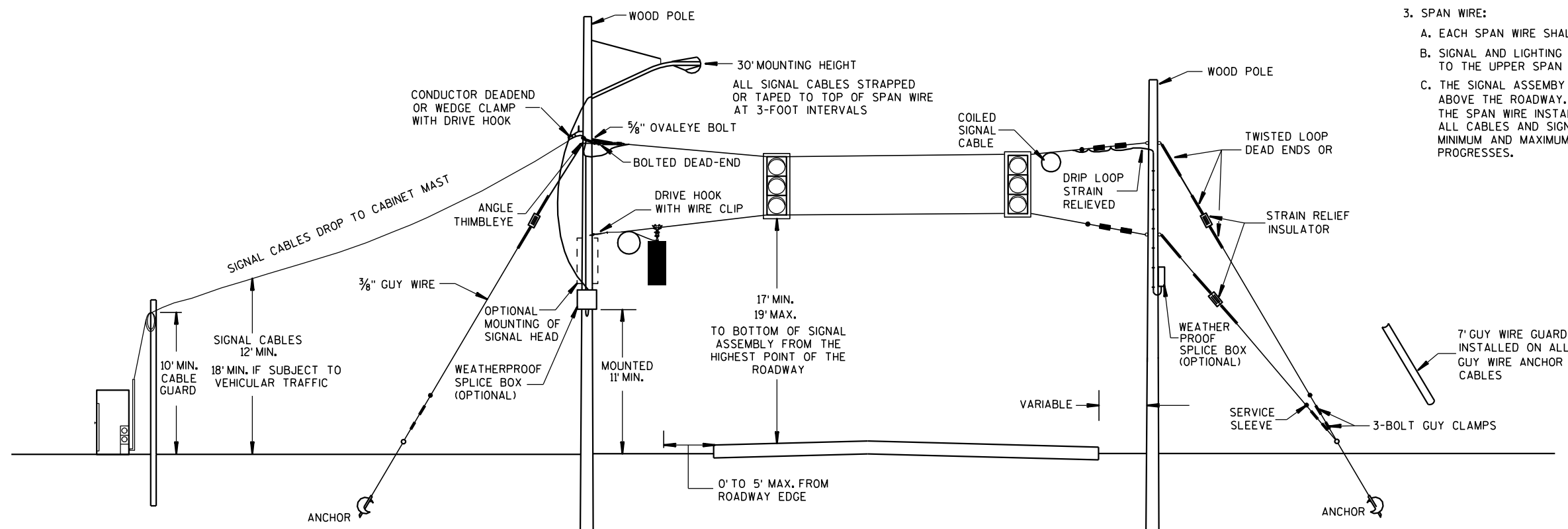
## GENERAL NOTES

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:  
 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.

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

MINIMUM POLE LENGTHS	POLE BURIEL DEPTHS
25'	5'
30'	6'
35'	7'
40'	8'
45'	9'

### SPAN WIRE TEMPORARY TRAFFIC SIGNAL

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

7-14-08  
DATE

/S/ Balu Ananthanarayanan  
STATE ELECTRICAL ENGINEER FOR HWYS

FHWA



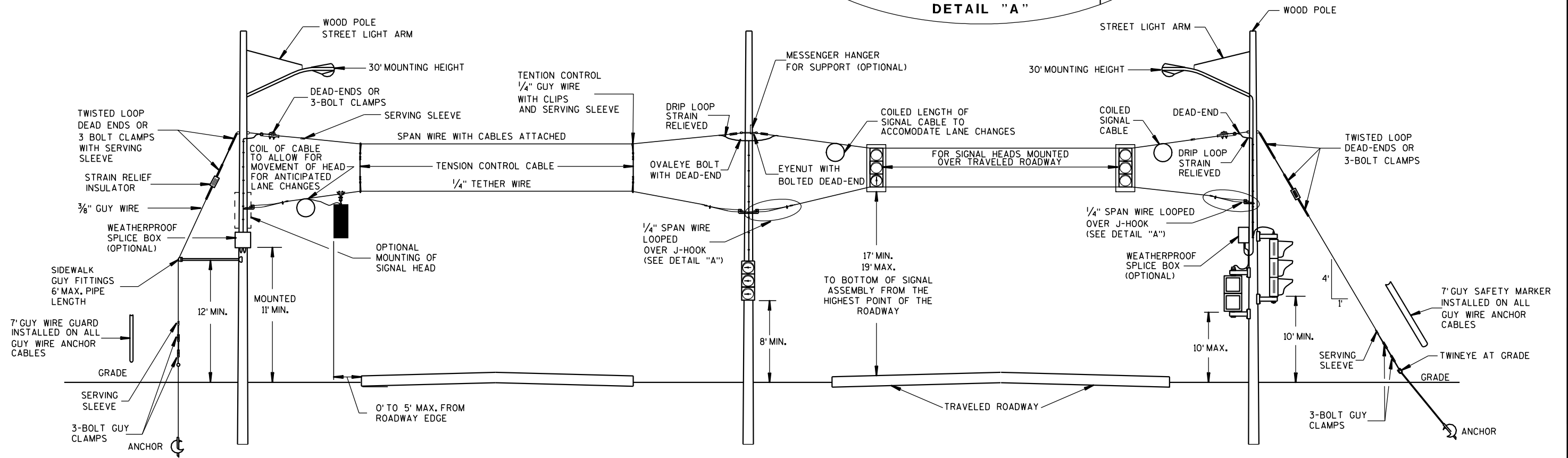
# SPAN WIRE TEMPORARY SIGNALS 4 LANE ROADWAYS

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 ASSEMBLY 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.

MINIMUM POLE LENGTHS	CLASS	MIN. BURIAL DEPTHS
25'	<u>V</u>	5'
30'	<u>V</u>	6'
35'	<u>IV</u>	7'
40'	<u>IV</u>	8'
45'	<u>IV</u>	9'

<p>SPAN WIRE TEMPORARY TRAFFIC SIGNAL</p>	
<p>STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION</p>	
<p>APPROVED <u>7-14-08</u> DATE</p>	<p><u>/S/ Balu Ananthanarayanan</u> STATE ELECTRICAL ENGINEER FOR HWYS</p>
<p>FHWA</p>	



**SPAN WIRE  
TEMPORARY SIGNALS  
4 LANE ROADWAYS**

**GENERAL NOTES**

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:
  - 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 ASSEMBLY 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.

MINIMUM POLE LENGTHS	CLASS	MIN. BURIAL DEPTHS
25'	V	5'
30'	V	6'
35'	IV	7'
40'	IV	8'
45'	IV	9'

**SPAN WIRE  
TEMPORARY TRAFFIC SIGNAL**

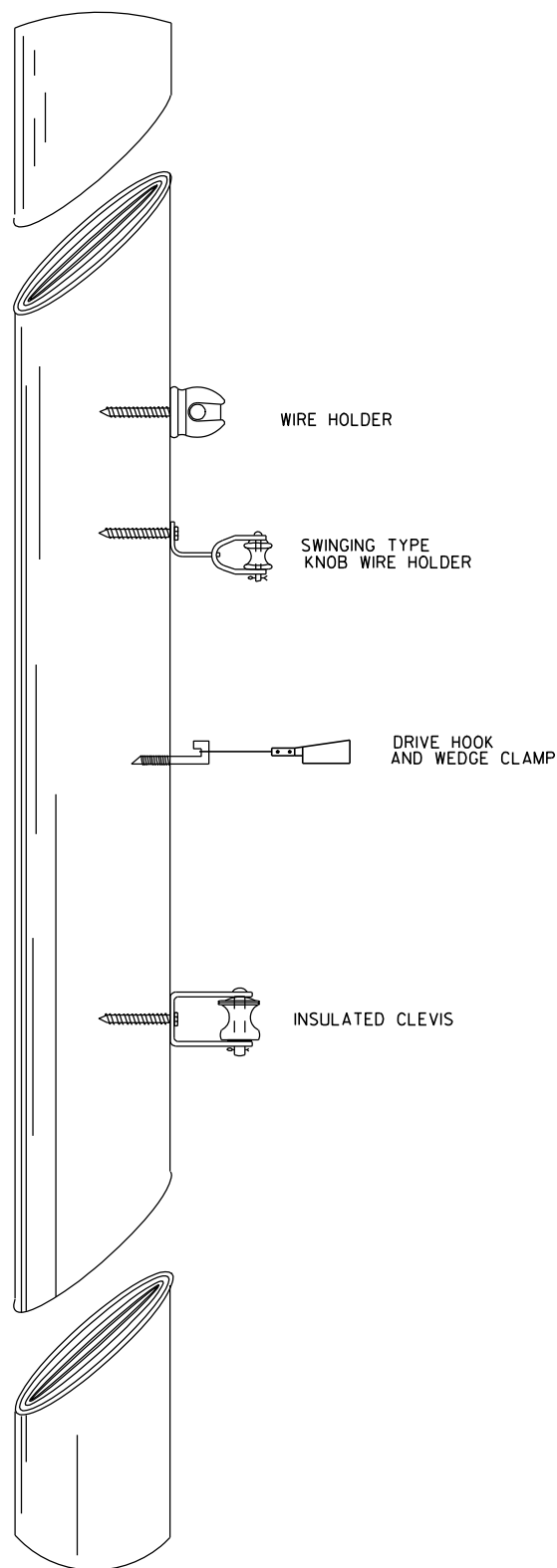
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

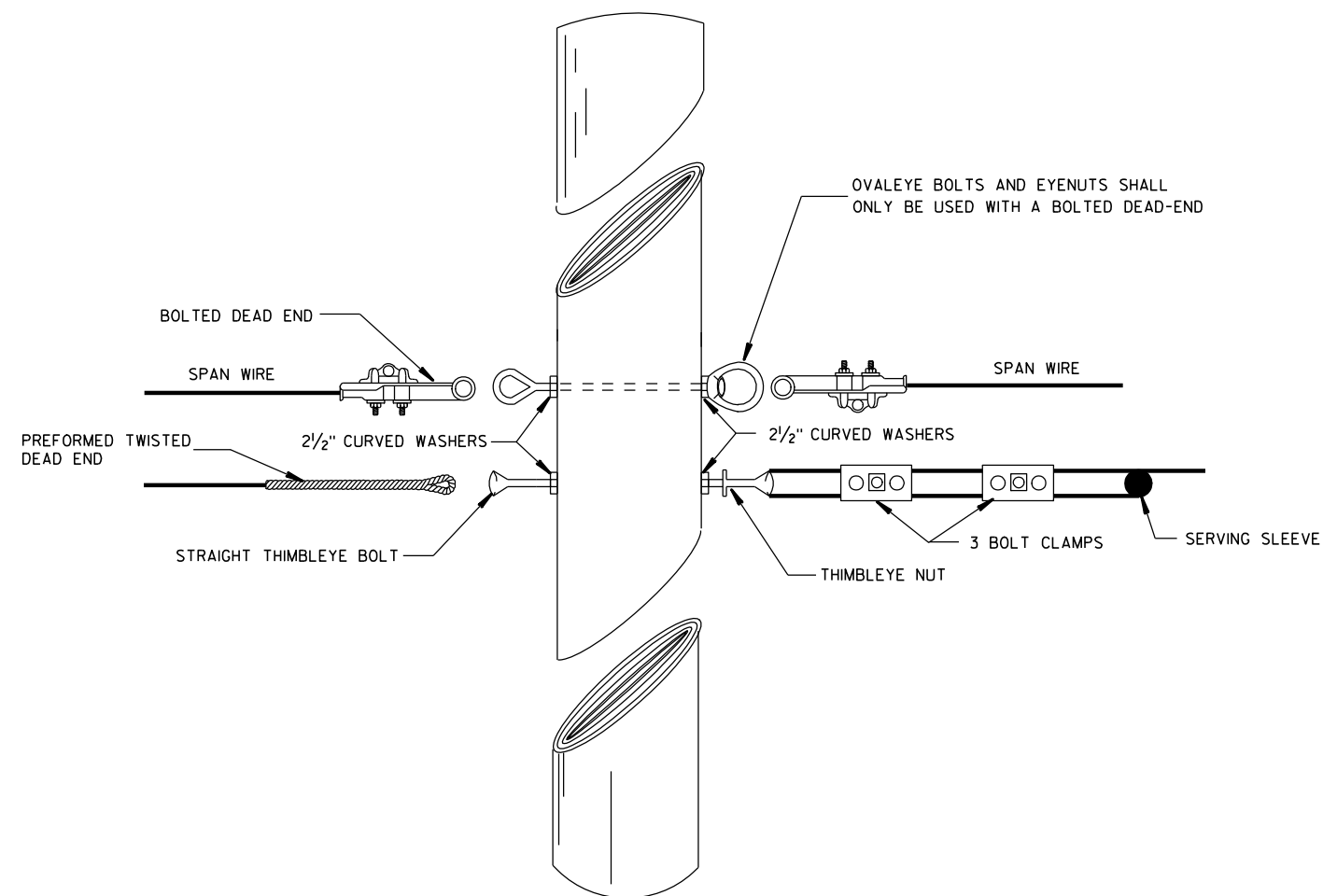
7-14-08  
DATE

/S/ Balu Ananthanarayanan  
STATE ELECTRICAL ENGINEER FOR HWYS

FHWA



TYPICAL CABLE HANGERS



TYPICAL DEAD-ENDING

SPAN WIRE  
TEMPORARY TRAFFIC SIGNAL

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

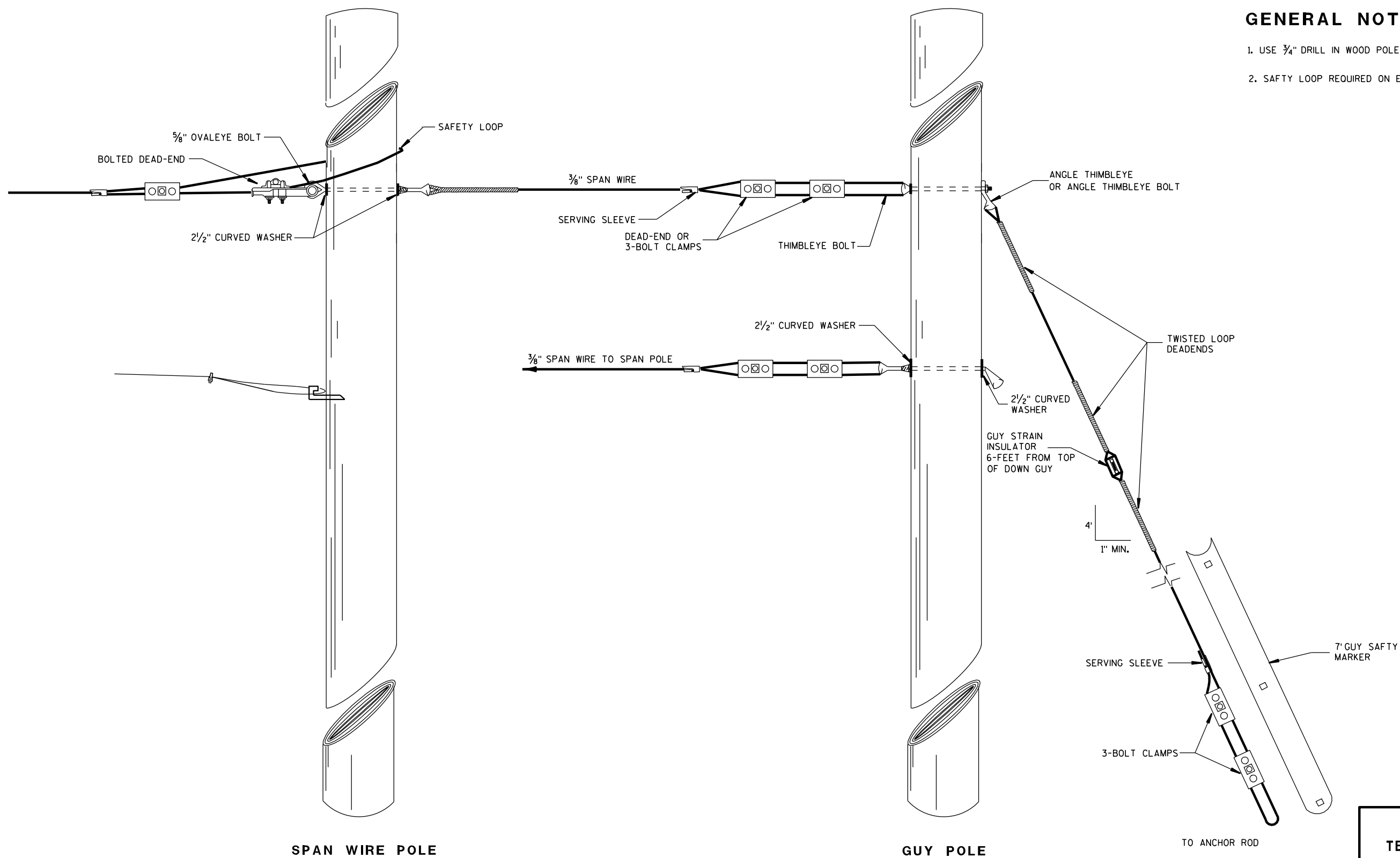
7-14-08

DATE

FHWA

/S/ Balu Ananthanarayanan

STATE ELECTRICAL ENGINEER FOR HWYS



## GENERAL NOTES

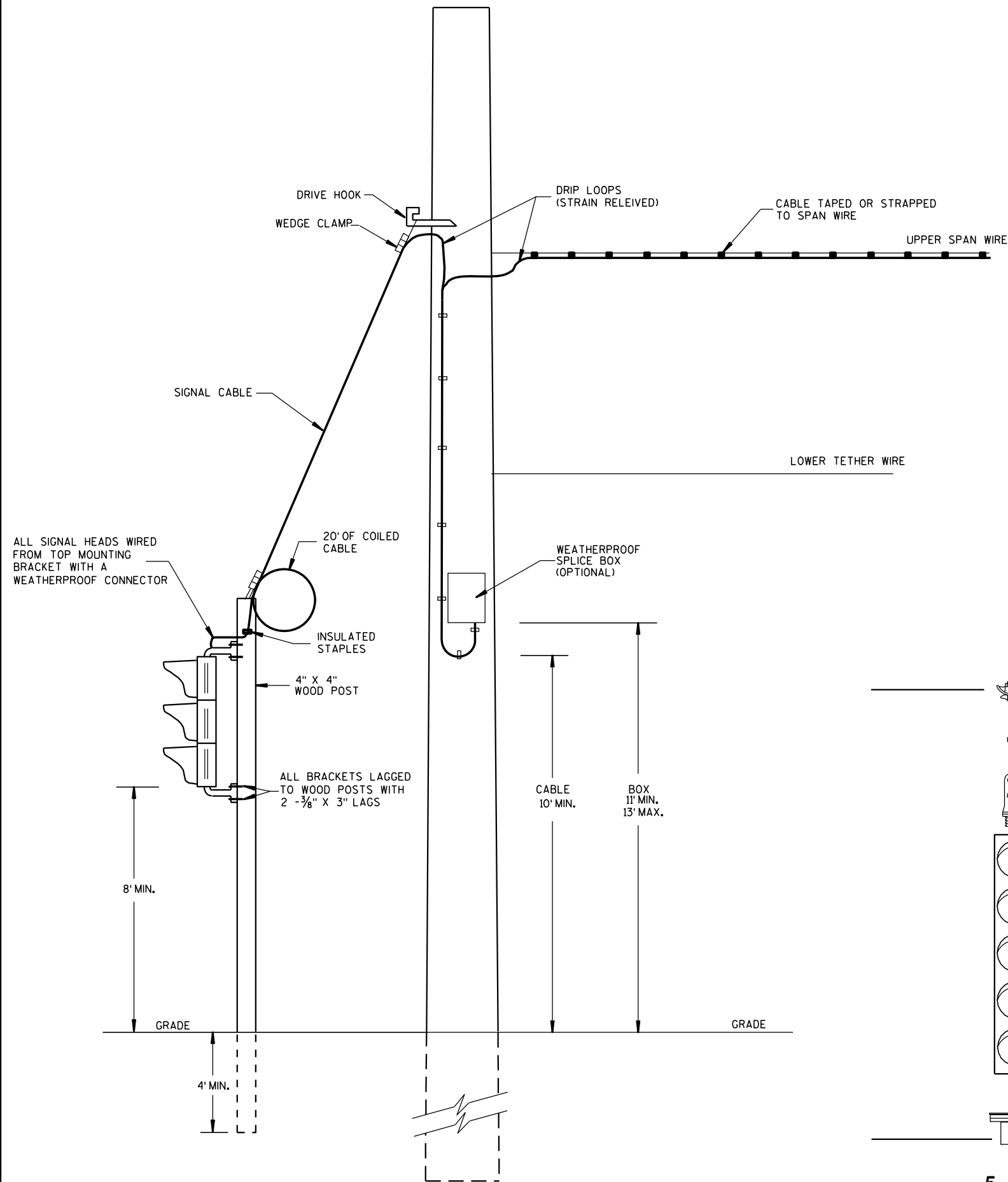
1. USE  $\frac{3}{4}$ " DRILL IN WOOD POLE TO PROVIDE HOLE FOR  $\frac{5}{8}$ " BOLTS.
2. SAFETY LOOP REQUIRED ON EACH END OF ALL SPAN WIRES.

## TYPICAL DEAD-ENDINGS OR GUYING

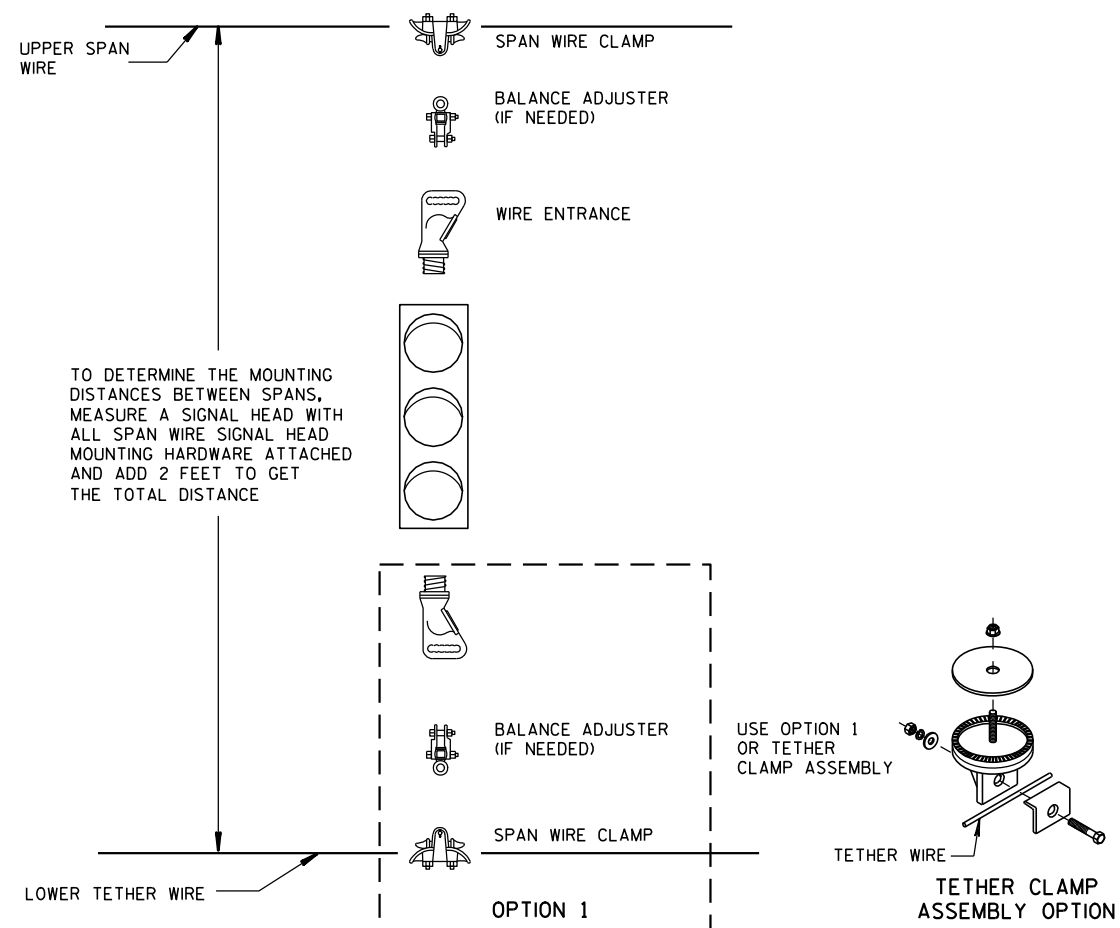
### SPAN WIRE TEMPORARY TRAFFIC SIGNAL

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

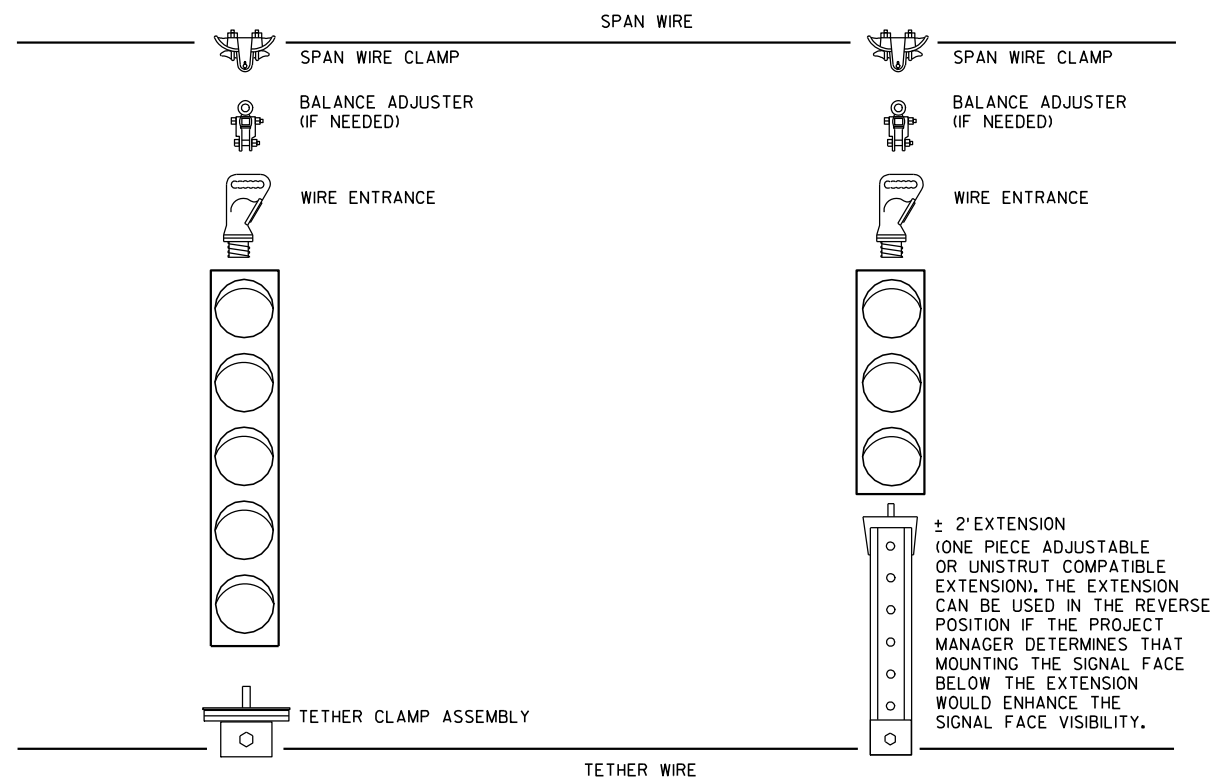
APPROVED  
7-14-08  
DATE /S/ Balu Ananthanarayanan  
STATE ELECTRICAL ENGINEER FOR HWYS  
FHWA



TYPICAL DROP TO TEMPORARY MOVEABLE SIGNAL



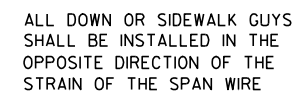
TYPICAL SPAN WIRE MOUNTING HARDWARE

5 SECTION VERTICAL WITH 3 SECTION  
VERTICAL ON ONE SPAN WIRESPAN WIRE  
TEMPORARY TRAFFIC SIGNALSTATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

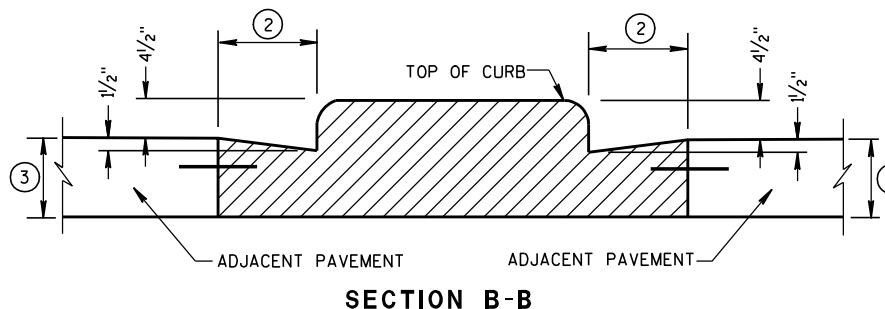
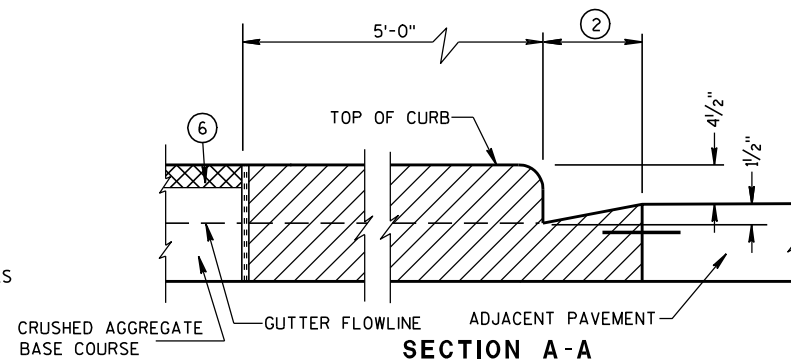
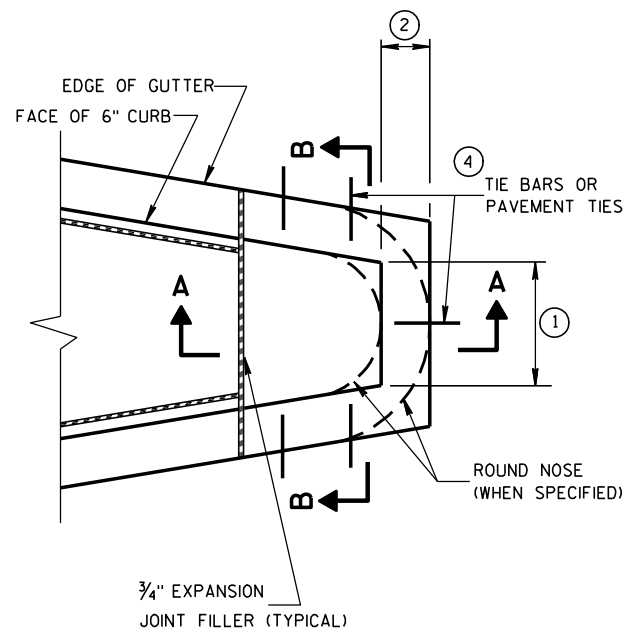
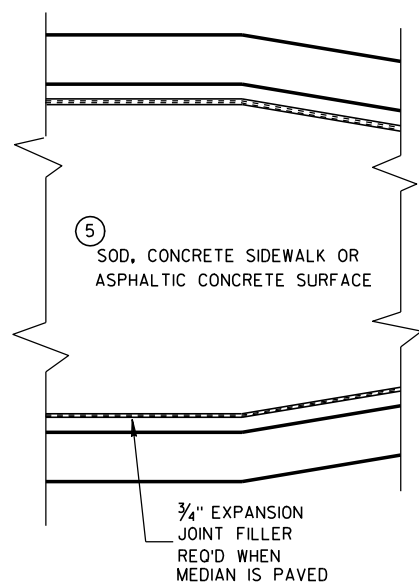
APPROVED

7-14-08  
DATE/S/ Balu Ananthanarayanan  
STATE ELECTRICAL ENGINEER FOR HWYS

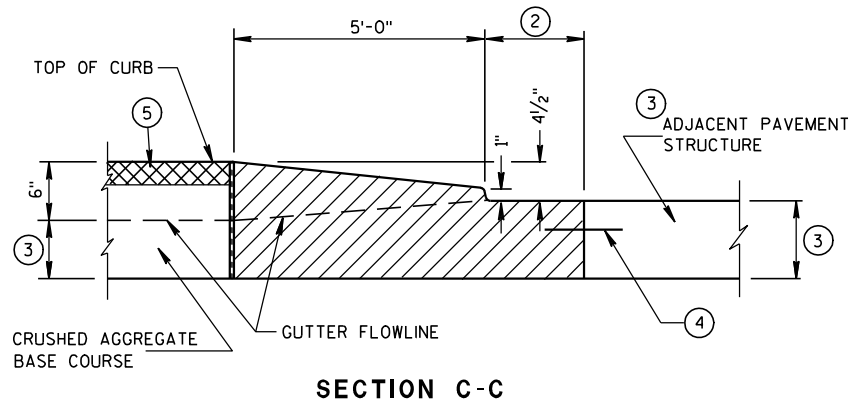
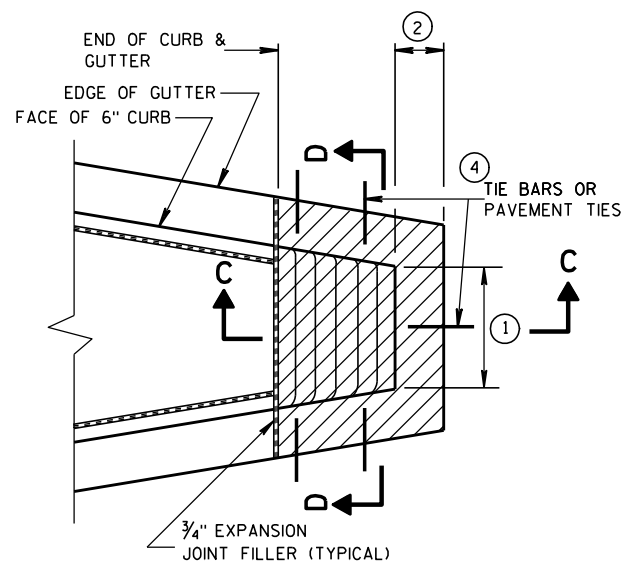
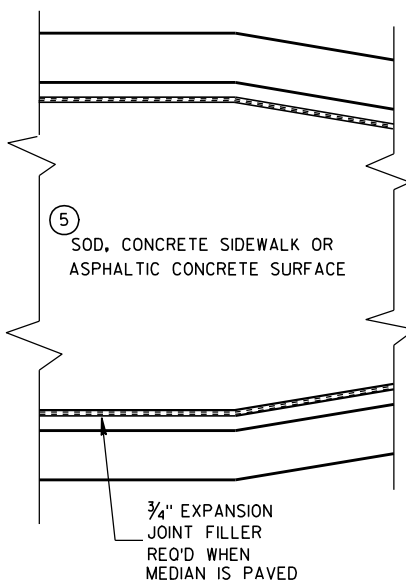
FHWA



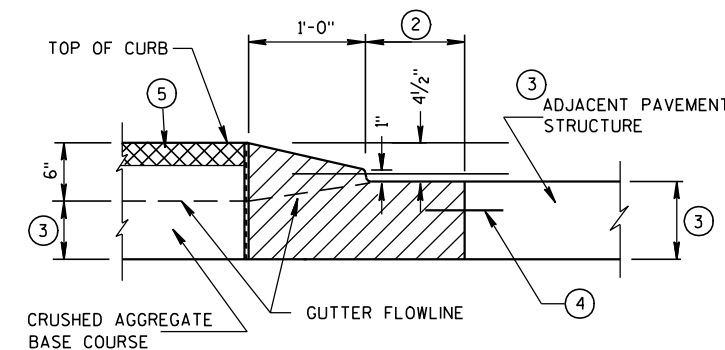
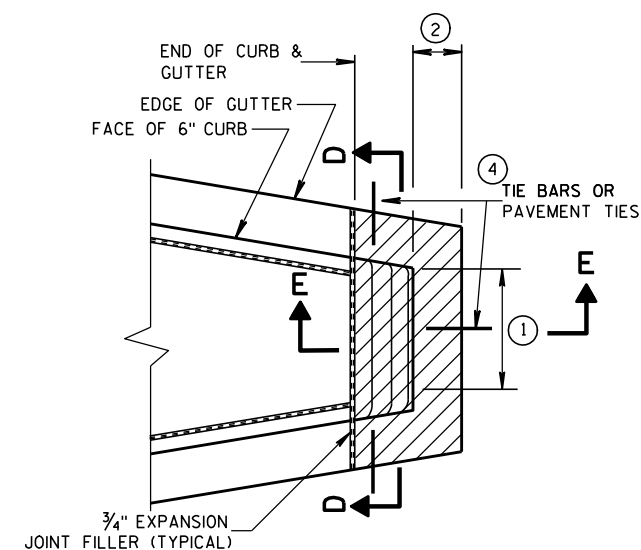
**S.D.D. 9 G 1-3g**



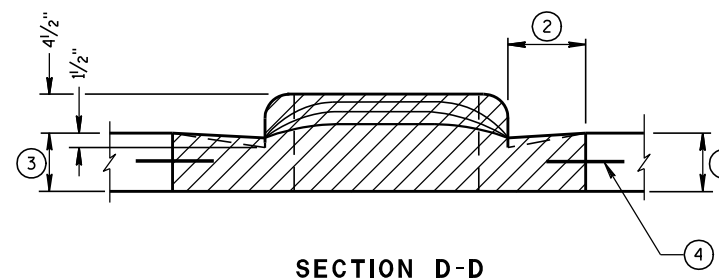
**CONCRETE MEDIAN BLUNT NOSE DETAIL**



**CONCRETE MEDIAN SLOPED NOSE TYPE 1**



**CONCRETE MEDIAN SLOPED NOSE TYPE 2**



## GENERAL NOTES

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

- ① SEE PLAN FOR MEDIAN NOSE WIDTH AND RADIUS (FOR ROUND NOSE ALTERNATE).
- ② WIDTH OF GUTTER TO MATCH EXISTING ADJACENT GUTTER OR AS SPECIFIED ELSEWHERE IN THE PLAN.
- ③ DEPTH EQUAL TO ADJACENT PAVEMENT. ADJACENT PAVEMENT STRUCTURE DETAILS ARE SHOWN ON THE PLAN. TYPICAL OPTIONS ARE:
  - (1) NEW OR EXISTING CONCRETE PAVEMENT.
  - (2) ASPHALTIC CONCRETE PAVEMENT OVER NEW OR EXISTING CONCRETE BASE COURSE.
  - (3) ASPHALTIC CONCRETE PAVEMENT OVER CRUSHED AGGREGATE BASE COURSE.

- ④ TIE BARS OR PAVEMENT TIES REQUIRED IN NEW CONCRETE PAVEMENT OR CONCRETE BASE COURSE. TIE BARS SHALL BE NO. 4 X 2'-0" SPACED AT 2'-0" C-C.

PAVEMENT TIES REQUIRED IN EXISTING CONCRETE BASE COURSE. PAVEMENT TIES SHALL BE NO. 6 X 1'-0" SPACED AT 3'-0" C-C INSTALLED ON A HORIZONTAL SKEW OF 6:1. THE DIRECTION OF SKEW SHALL ALTERNATE AFTER EVERY ONE OR TWO BARS.

- ⑤ SURFACE TYPE AND DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

**CONCRETE MEDIAN NOSE**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

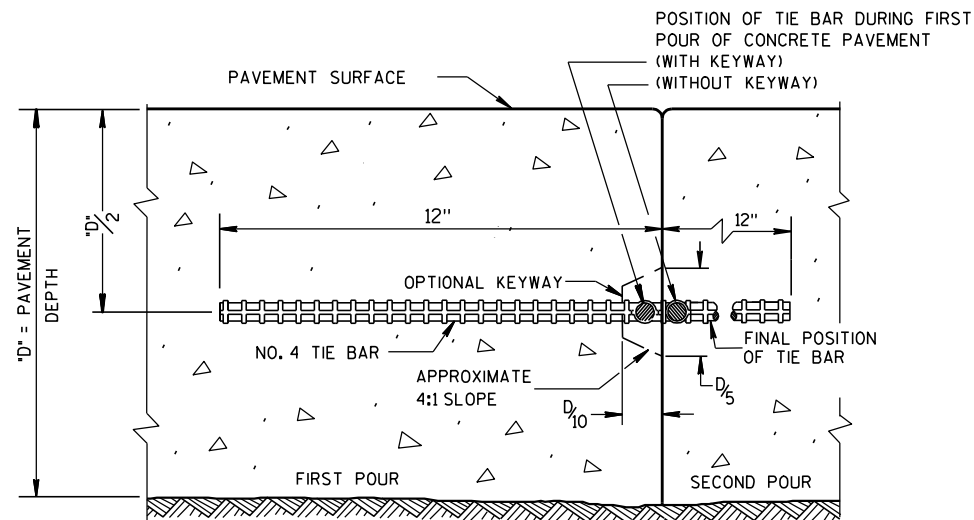
APPROVED

6/8/2006

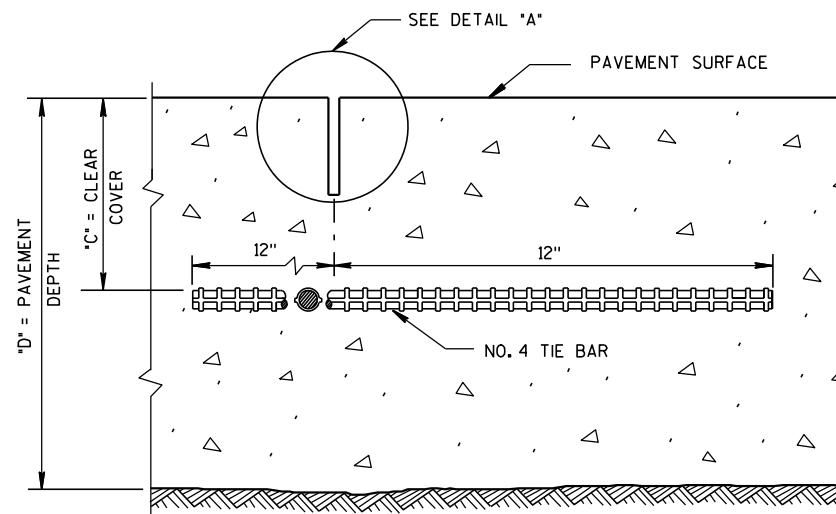
DATE

FHWA

/S/ Jerry H. Zogg  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER



**CONSTRUCTION JOINT**



**SAWED JOINT**

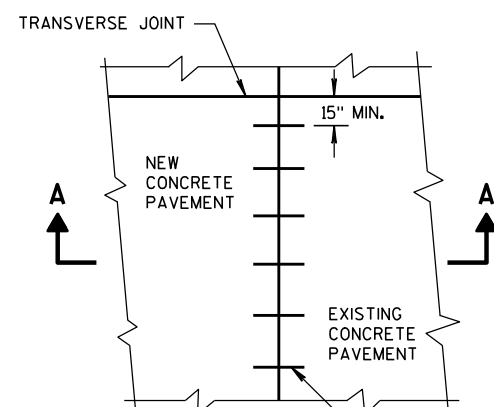
**GENERAL NOTES**

DO NOT SEAL OR FILL LONGITUDINAL JOINTS.

CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

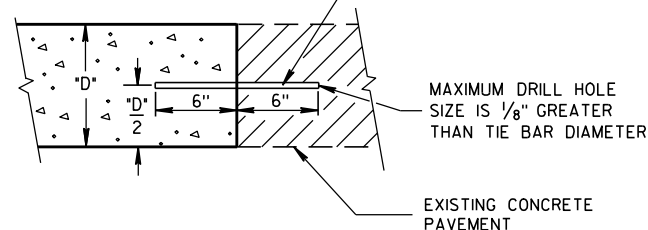
CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

- ① ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

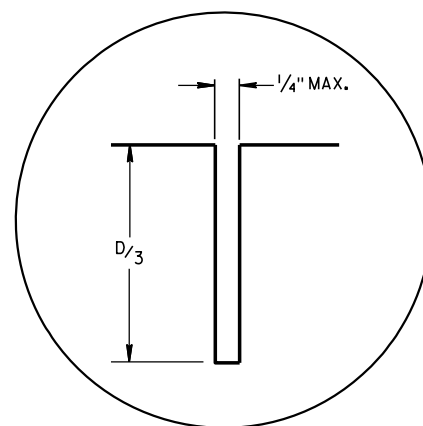


**PLAN VIEW**

NO. 6 TIE BARS SPACED 2'-6" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT. ①

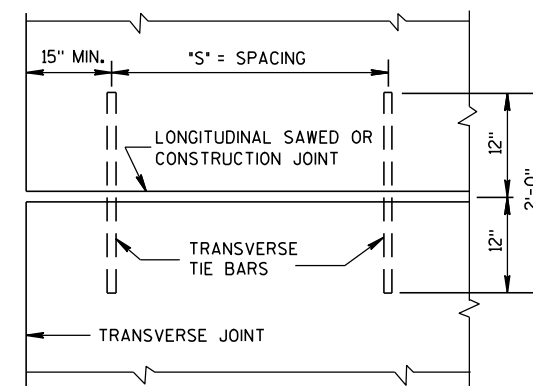


**SECTION A-A  
LONGITUDINAL CONSTRUCTION JOINT  
TIE BARS ANCHORED  
INTO EXISTING PAVEMENT**



**DETAIL "A"**

PAVEMENT DEPTH 'D'	CLEAR COVER 'C'	MAXIMUM TIE BAR SPACING "S"	
		PAVEMENT WIDTH 24' OR 26'	≥ 30'
6, 6 1/2"	3" ± 1/2"	48"	42"
7, 7 1/2"	3 1/4" ± 1"	45"	36"
8, 8 1/2"	3 3/4" ± 1"	39"	30"
9, 9 1/2"	4 1/4" ± 1"	33"	27"
10, 10 1/2"	4 3/4" ± 1"	30"	24"
11, 11 1/2"	5 1/4" ± 1"	27"	21"
12"	5 3/4" ± 1"	24"	21"



**PLAN VIEW  
SHOWING LOCATION OF TIE BARS**

**CONCRETE PAVEMENT  
LONGITUDINAL JOINTS AND TIES**

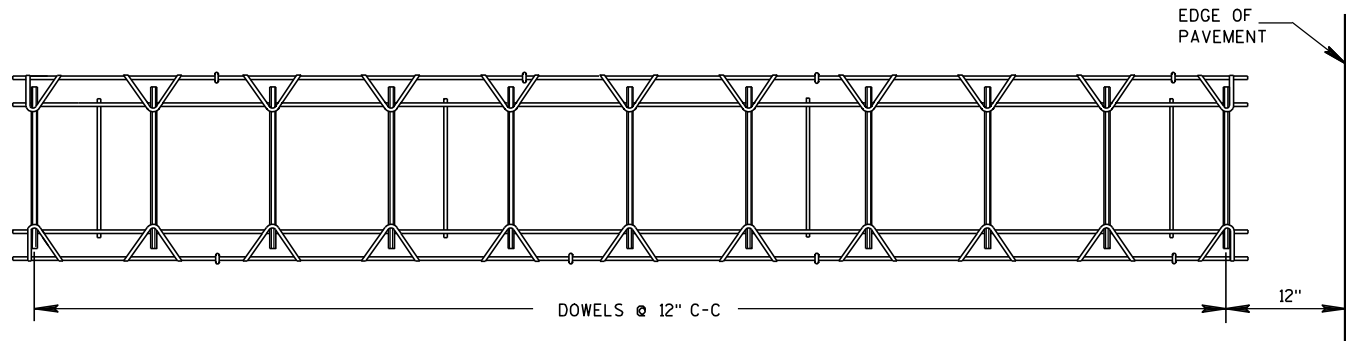
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

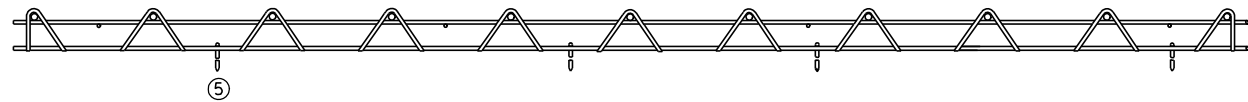
10-5-2010  
DATE

FHWA

/S/ Deb Bischoff  
PAVEMENT POLICY & DESIGN ENGINEER



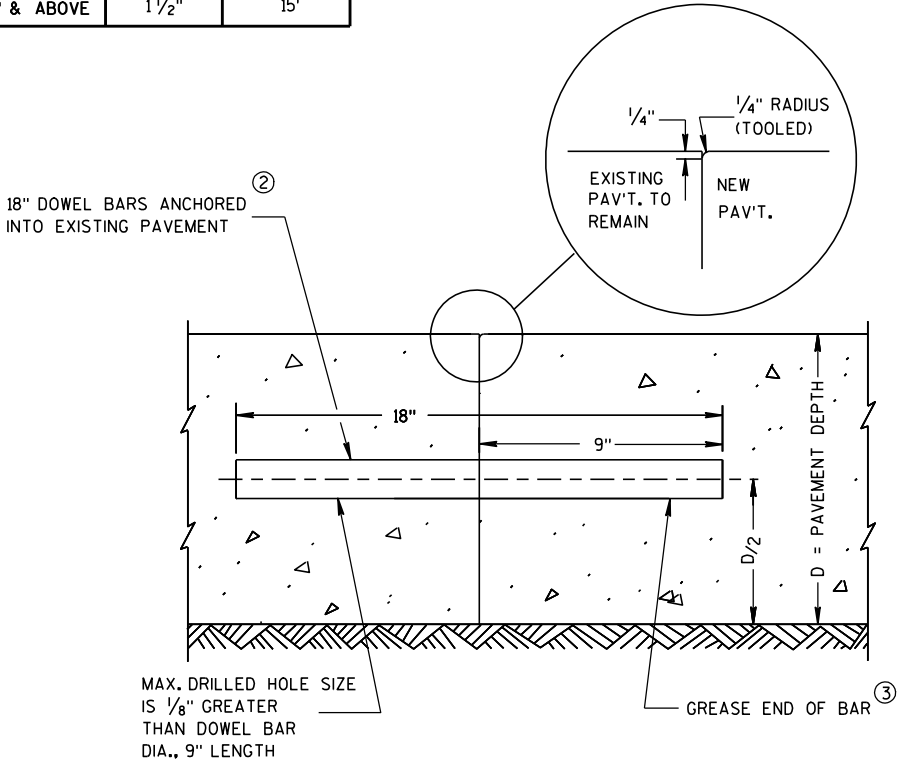
PLAN VIEW



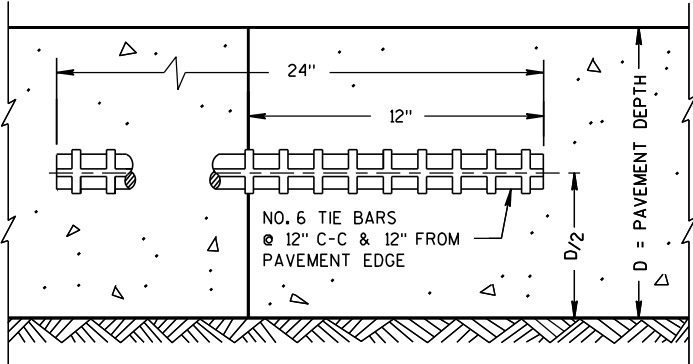
SIDE VIEW  
CONTRACTION JOINT DOWEL ASSEMBLY

PAVEMENT DEPTH, DOWEL BAR SIZE  
AND JOINT SPACING TABLE

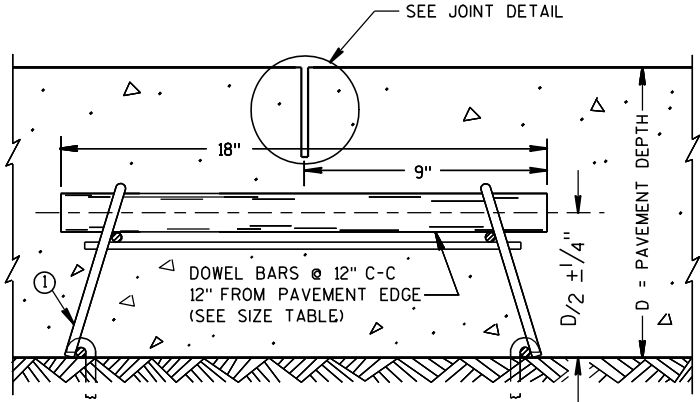
PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 1/2", 6", 6 1/2"	NONE	12'
7", 7 1/2"	1"	14'
8", 8 1/2"	1 1/4"	15'
9", 9 1/2"	1 1/4"	15'
10" & ABOVE	1 1/2"	15'



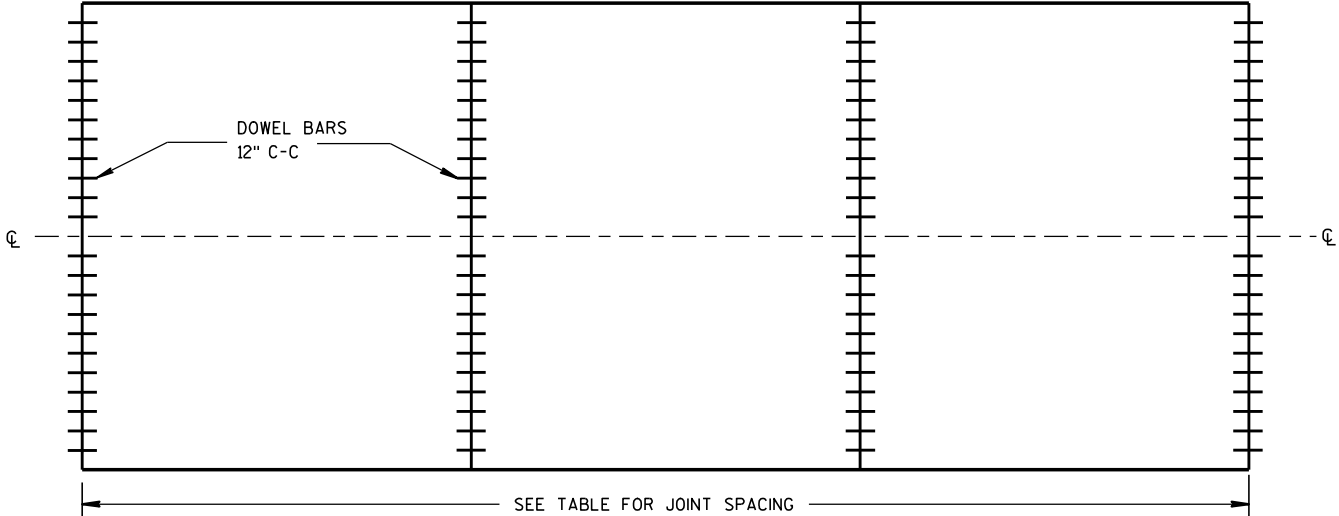
TRANSVERSE CONTRACTION JOINTS ABUTTING  
EXISTING PAVEMENT  
DOWEL BAR DETAIL



TRANSVERSE CONSTRUCTION JOINT



DOWELED CONTRACTION JOINT



CONTRACTION JOINT LOCATIONS

GENERAL NOTES

CONTRACTION JOINTS

CONSTRUCT CONTRACTION JOINTS NORMAL TO THE CENTERLINE. SHOW THE LOCATION OF CONTRACTION JOINTS THROUGH INTERSECTIONS ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT SEAL OR FILL CONTRACTION JOINTS.

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

FOR PAVEMENT SLABS OF VARYING WIDTHS, CENTER THE DOWEL ASSEMBLY ACROSS THE LANES. LOCATE THE INNER AND OUTER MOST DOWEL BARS SO THAT THE CENTER OF THE BARS ARE A MINIMUM OF 6 INCHES AND A MAXIMUM OF 12 INCHES FROM THE LONGITUDINAL JOINT AND THE EDGE OF PAVEMENT.

CONSTRUCTION JOINTS

LOCATE CONSTRUCTION JOINTS A MINIMUM OF 4 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.

THE CONTRACTOR MAY INSERT TIE BARS THROUGH THE HEADER BOARD AFTER THE CONCRETE HAS BEEN PLACED.

1 THE ENGINEER MAY APPROVE THE USE OF ALTERNATIVE DESIGNS OF THE DOWEL ASSEMBLY. THE CONTRACTOR MAY USE MECHANICAL DOWEL BAR INSERTERS INSTEAD OF DOWEL ASSEMBLIES.

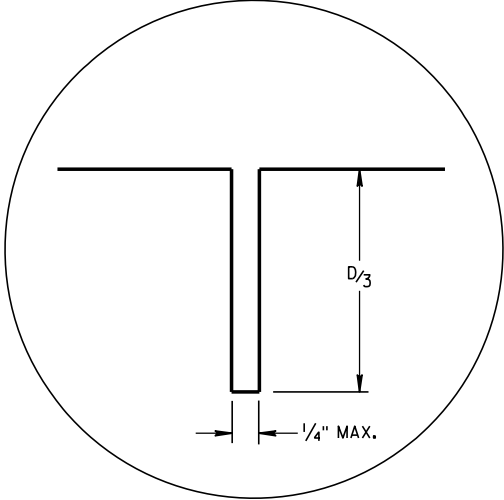
2 ANCHOR DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY.

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

4 SPACE DOWEL BARS INSTALLED BY DRILLING 1'-3" ON CENTER. CENTER THE GROUPING OF DOWEL BARS INSIDE THE SLAB BASED ON ALL THE FOLLOWING SITUATIONS:

BETWEEN THE EDGES OF PAVEMENTS WITHOUT LONGITUDINAL JOINTS OR BETWEEN THE EDGE OF PAVEMENT AND NEAREST LONGITUDINAL JOINT OR BETWEEN TWO ADJACENT LONGITUDINAL JOINTS.

5 SECURE BASKETS WITH ANCHORS TO HOLD DOWEL BARS IN THE CORRECT POSITION AND ALIGNMENT. TYPE, LOCATION, NUMBER AND LENGTH OF ANCHORS ARE DEPENDENT UPON FIELD CONDITIONS.



JOINT DETAIL

URBAN DOWELED  
CONCRETE PAVEMENT

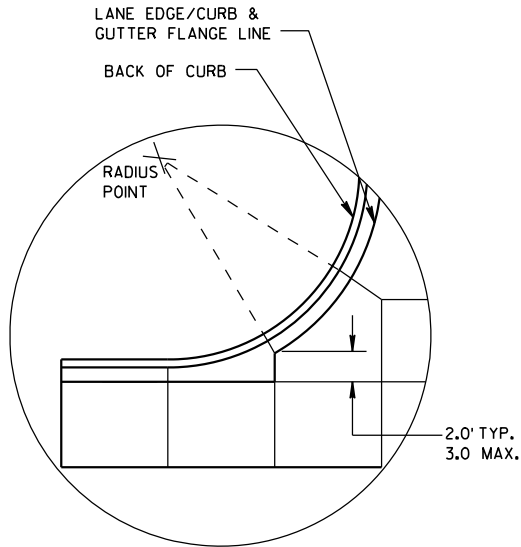
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

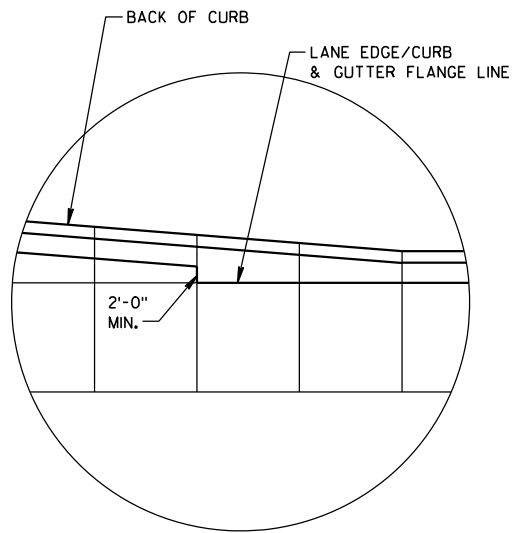
12/11/2009  
DATE

FHWA

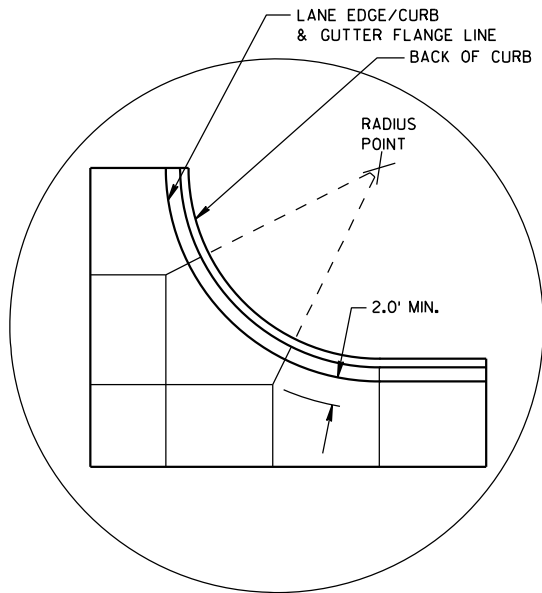
/S/ Deb Bischoff  
PAVEMENT POLICY & DESIGN ENGINEER



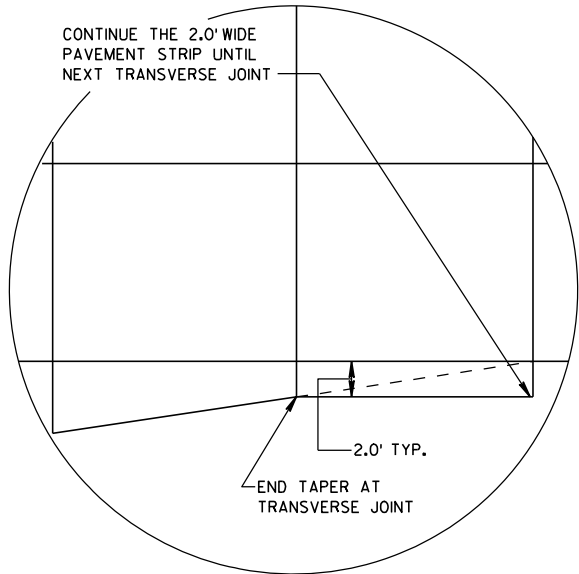
DETAIL "A"



DETAIL "B"



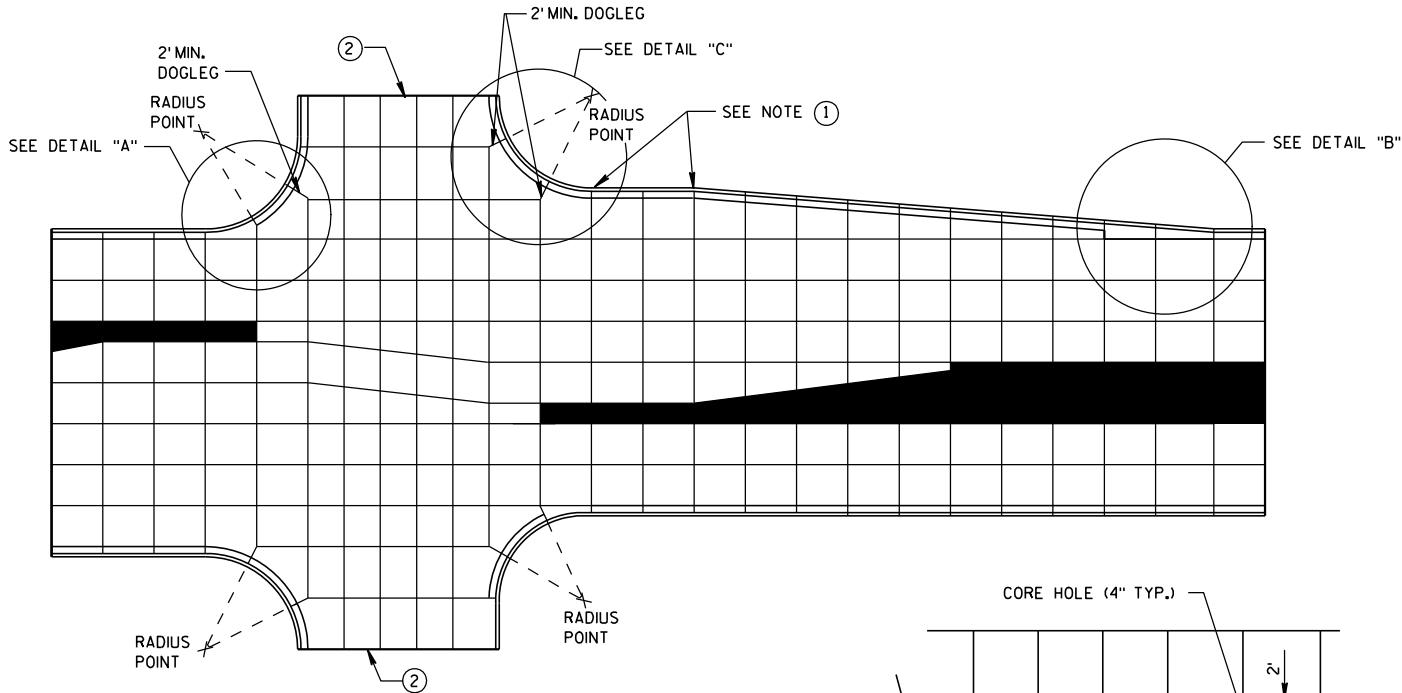
DETAIL "C"



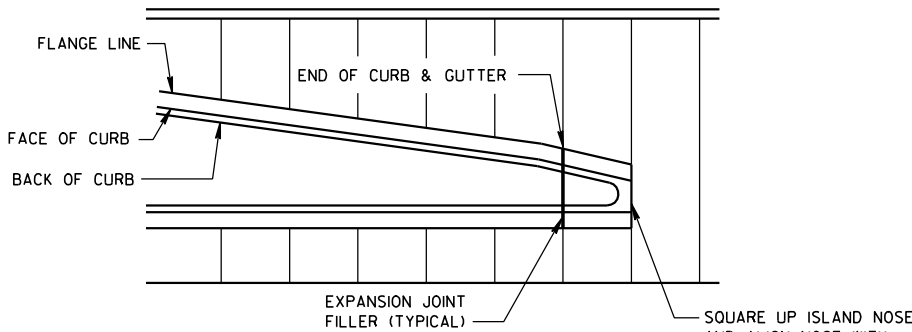
DETAIL "D"

GENERAL NOTES

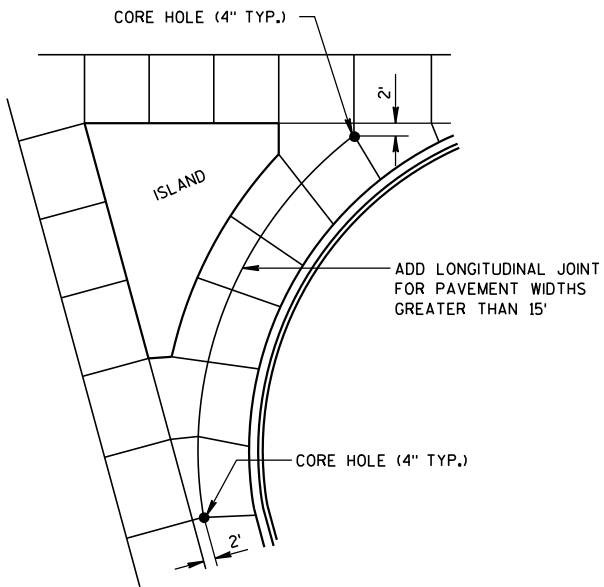
- THE PRIMARY ROADWAY CONTROLS THE TRANSVERSE JOINT PATTERN.
- ALIGN NEW JOINTS WITH EXISTING JOINTS OR CRACKS.
- CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE ROADWAY.
- ADJUST TRANSVERSE JOINTS TO ALIGN WITH UTILITY FIXTURES (E.G. MANHOLES AND INLETS) IN THE PAVEMENT STRUCTURE WHEN POSSIBLE. WATER VALVES DO NOT REQUIRE JOINT ADJUSTMENT.
- AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.
- SEE TABLE FOR TRANSVERSE JOINT SPACING. JOINT SPACING SPECIFIED IS MAXIMUM AND ACTUAL SPACING CAN BE ADJUSTED TO ACCOMMODATE INTERSECTIONS.
- AVOID ANGLES LESS THAN 60° BY DOGLEGGING JOINTS THROUGH CURVE RADIUS POINTS. USE 90° ANGLES WHEN POSSIBLE.
- CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.
1. PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
  2. CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
  3. THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM THESE JOINTING DETAILS.



STANDARD INTERSECTION



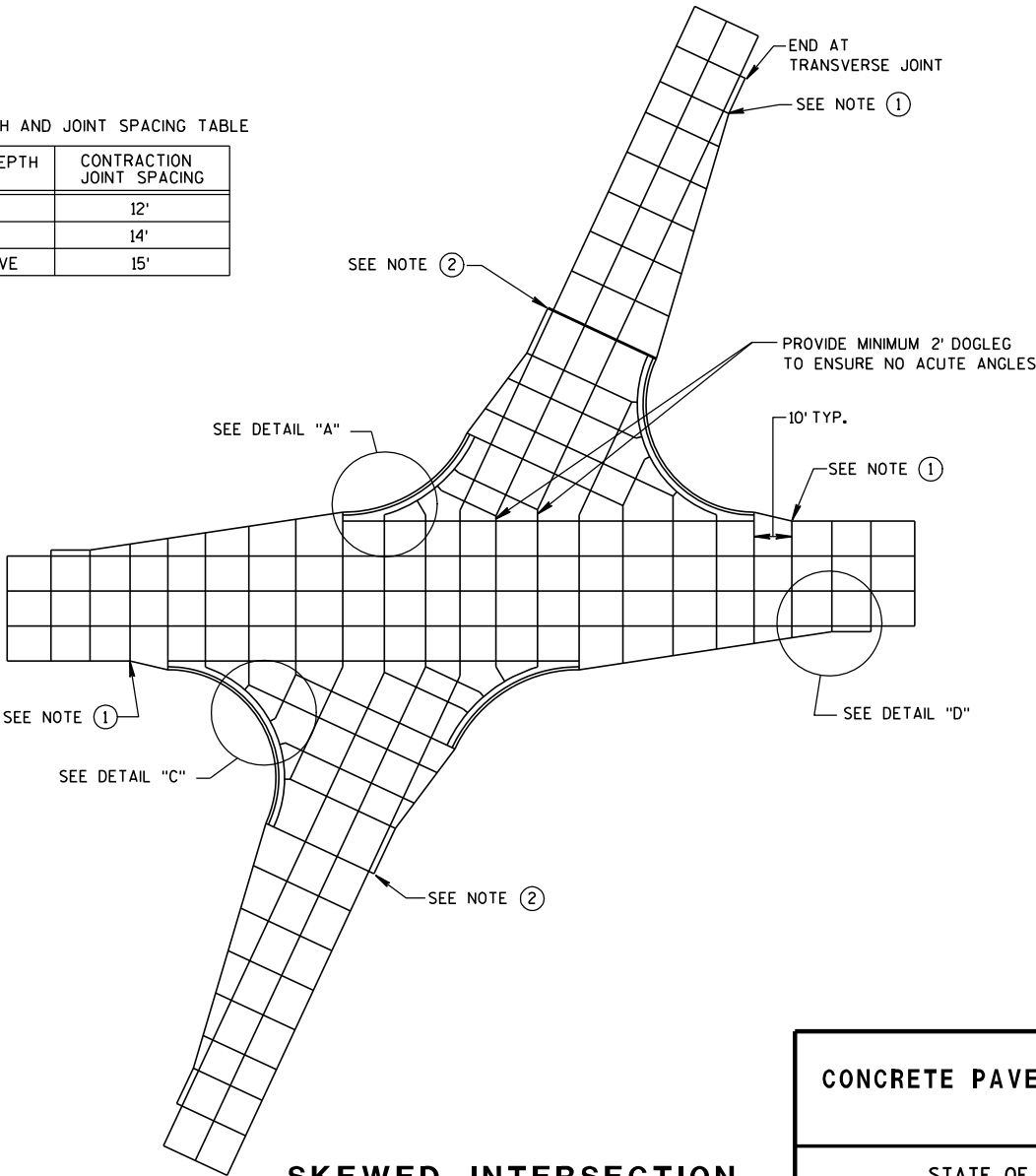
APPROACH TO MEDIAN



LARGE RIGHT TURN

PAVEMENT DEPTH AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6 1/2"	12'
7", 7 1/2"	14'
8" & ABOVE	15'



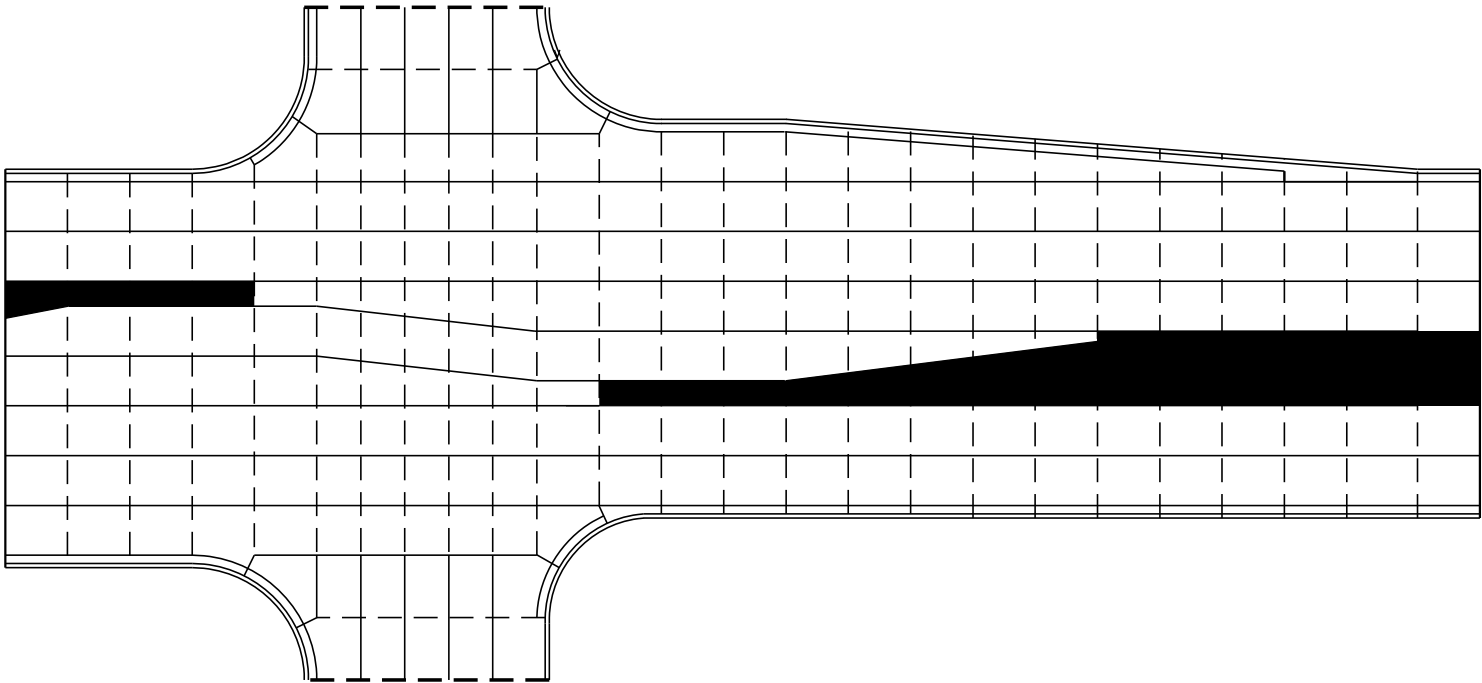
SKEWED INTERSECTION

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

LEGEND

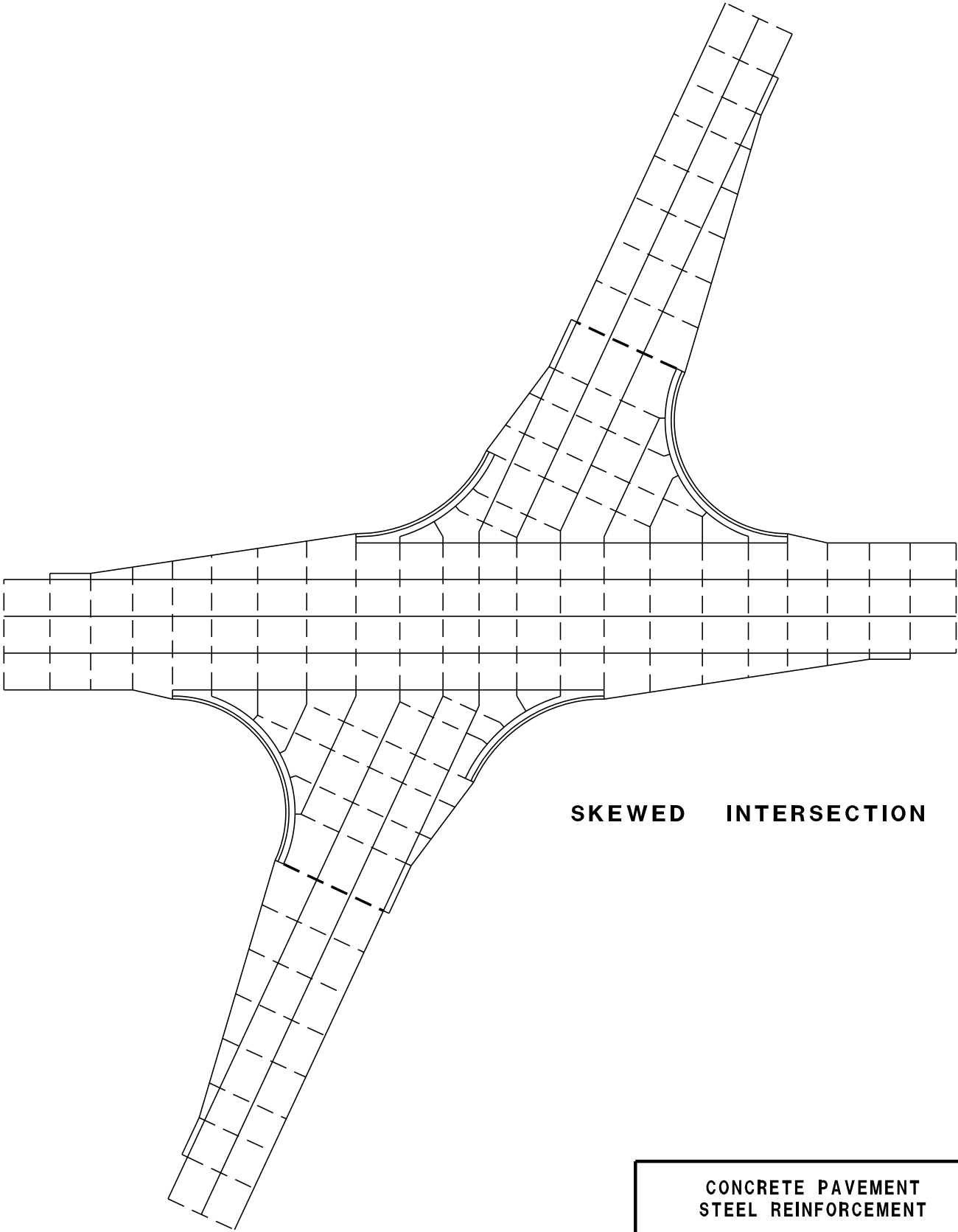
- POTENTIAL DOWELED EXPANSION JOINT
- - - DOWELED JOINT
- TIED JOINT



STANDARD INTERSECTION

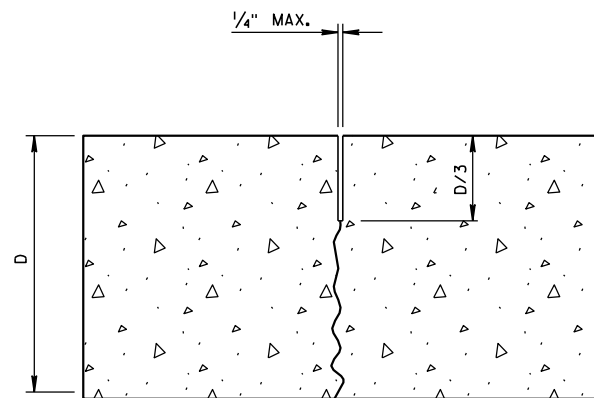
GENERAL NOTES

USE AN EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 415.

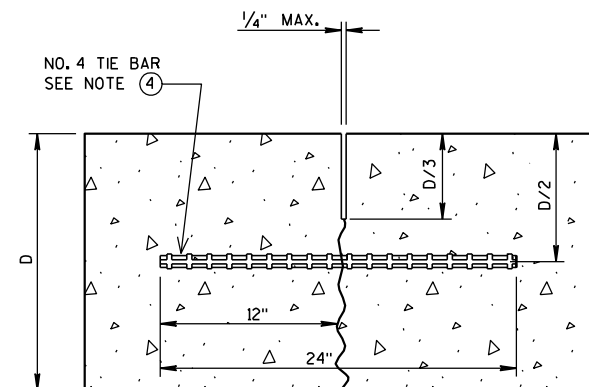


SKewed INTERSECTION

CONCRETE PAVEMENT STEEL REINFORCEMENT
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

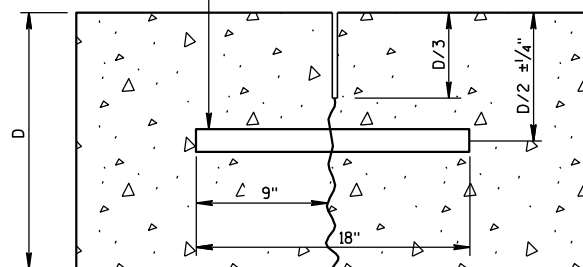


UNDOWELED-TRANSVERSE



TIED LONGITUDINAL

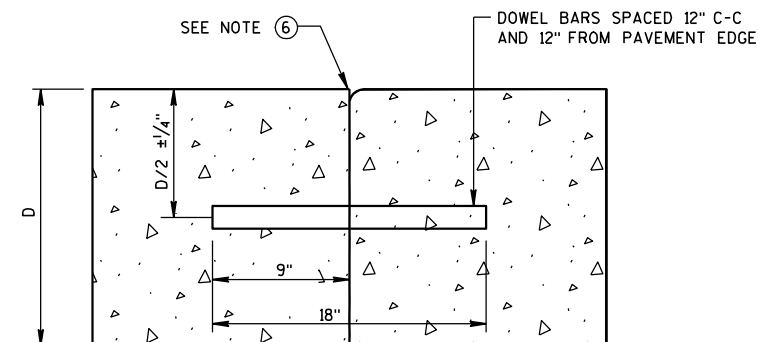
DOWEL BARS AT 12" C-C  
12" FROM PAVEMENT EDGE



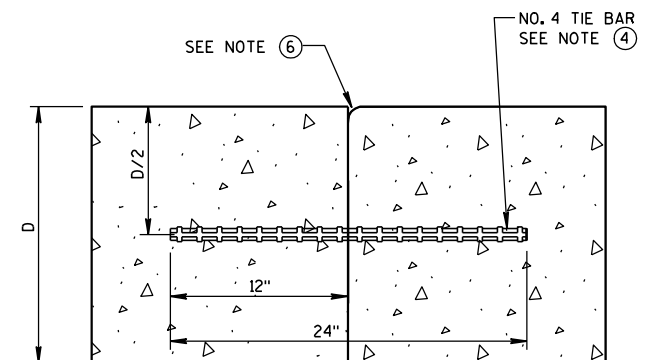
DOWELED-TRANSVERSE

## CONTRACTION JOINTS

SEE NOTE ②

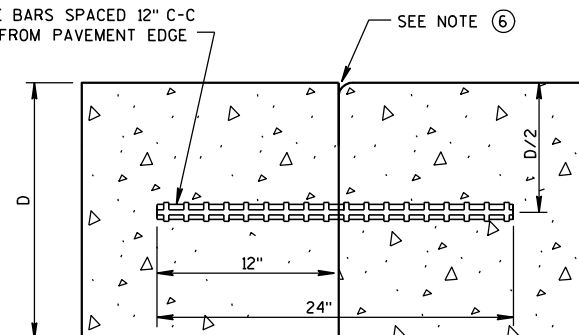


DOWELED TRANSVERSE



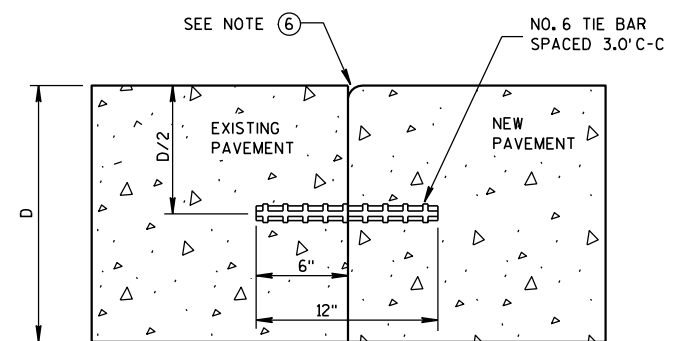
TIED LONGITUDINAL

NO. 6 TIE BARS SPACED 12" C-C  
AND 12" FROM PAVEMENT EDGE



TIED TRANSVERSE

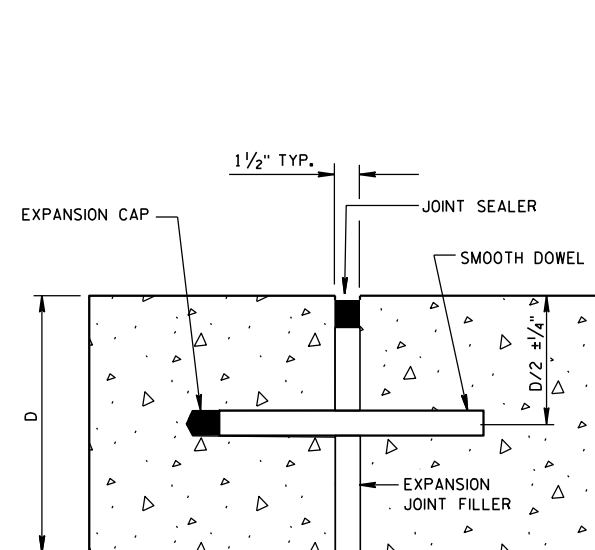
SEE NOTE ③



TIED LONGITUDINAL TO EXISTING

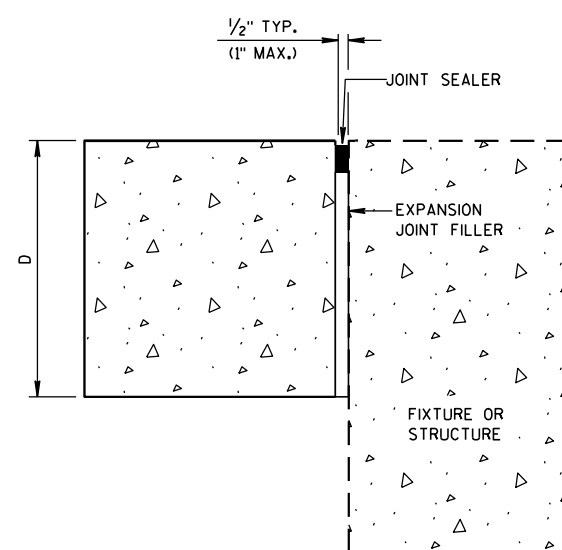
## CONSTRUCTION JOINTS

SEE NOTE ⑤



DOWELED-TRANSVERSE

SEE NOTE ①



UNTIED-LONGITUDINAL

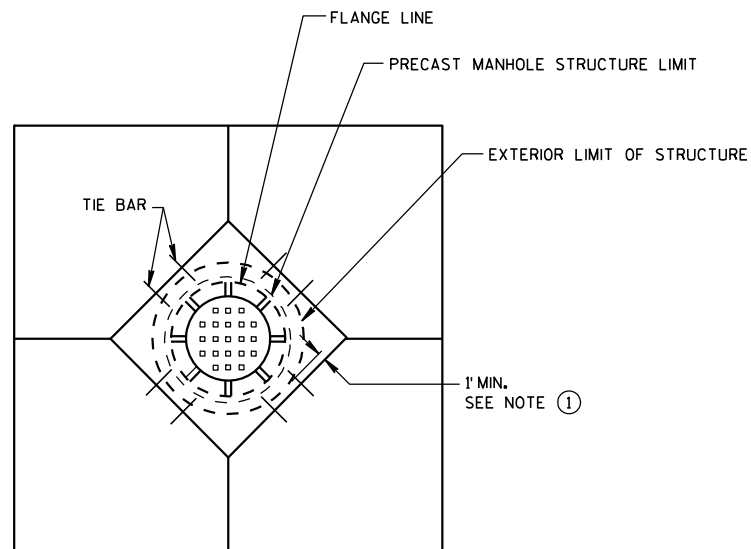
## EXPANSION JOINTS

## GENERAL NOTES

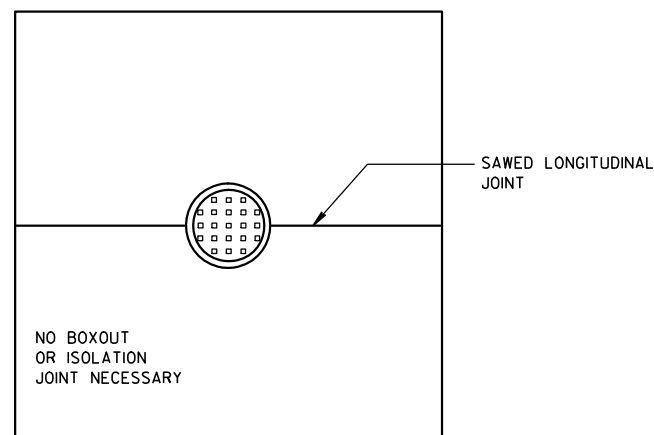
1. USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
2. SPACE CONTRACTION JOINTS IN ACCORDANCE WITH 13C4, 13C11 OR 13C13.
3. LOCATE CONSTRUCTION JOINTS A MINIMUM OF 4 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO THE CONTRACTION JOINTS.
4. SPACE TIE BARS AT LONGITUDINAL CONSTRUCTION OR CONTRACTION JOINTS IN ACCORDANCE WITH SDD 13C1.
5. CONSTRUCTION JOINTS CAN BE FORMED OR SAWED.
6. IF JOINT IS FORMED, PROVIDE A 1/4-INCH RADIUS.

CONCRETE PAVEMENT  
JOINT TYPES

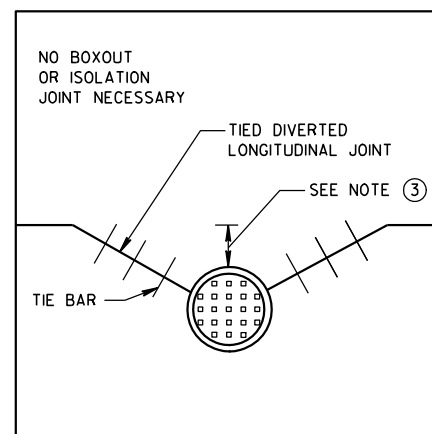
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



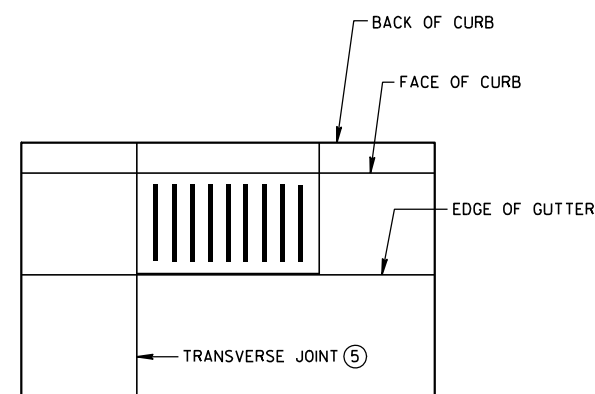
**DIAGONAL MANHOLE BOXOUT  
FOR CONSTRUCTION JOINTS**



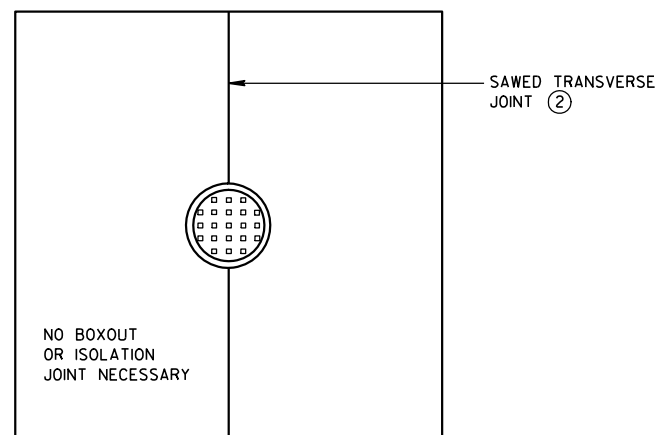
**MANHOLE WITH  
LONGITUDINAL JOINT**



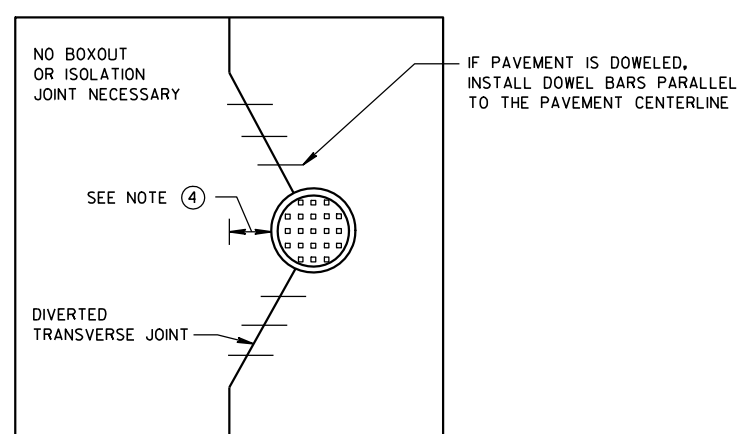
**MANHOLE WITH DIVERTED  
LONGITUDINAL CONTRACTION JOINT**



**INLET WITH  
TRANSVERSE JOINT**



**MANHOLE WITH  
TRANSVERSE JOINT**



**MANHOLE WITH DIVERTED  
TRANSVERSE CONTRACTION JOINT**

**GENERAL NOTES**

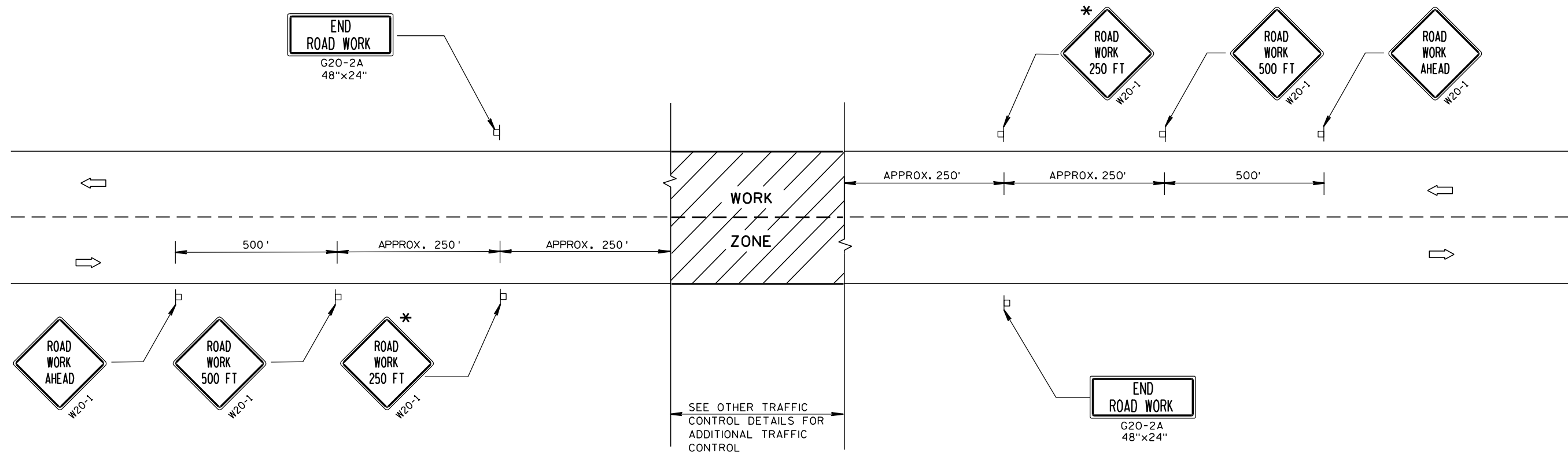
1. USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1 FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.
2. ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.
3. IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE OF MANHOLE IS GREATER THAN 2 FEET, DO NOT DIVERT JOINT AND SAW LONGITUDINAL JOINT AS NORMAL. IF DISTANCE IS 2 FEET OR LESS, DIVERT LONGITUDINAL JOINT AT A 2:1 TAPER RATE TO THE CENTER OF THE MANHOLE.
4. IF DISTANCE FROM THE EDGE OF MANHOLE TO THE NEAREST TRANSVERSE JOINT IS GREATER THAN 4 FEET, REDIRECT JOINT TO INTERSECT MANHOLE. IF DISTANCE IS 4 FEET OR LESS, PLACE REBAR REINFORCEMENT AROUND 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  
10-5-2010  
DATE  
FHWA

/S/ Deb Bischoff  
PAVEMENT POLICY & DESIGN ENGINEER



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

GENERAL NOTES

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

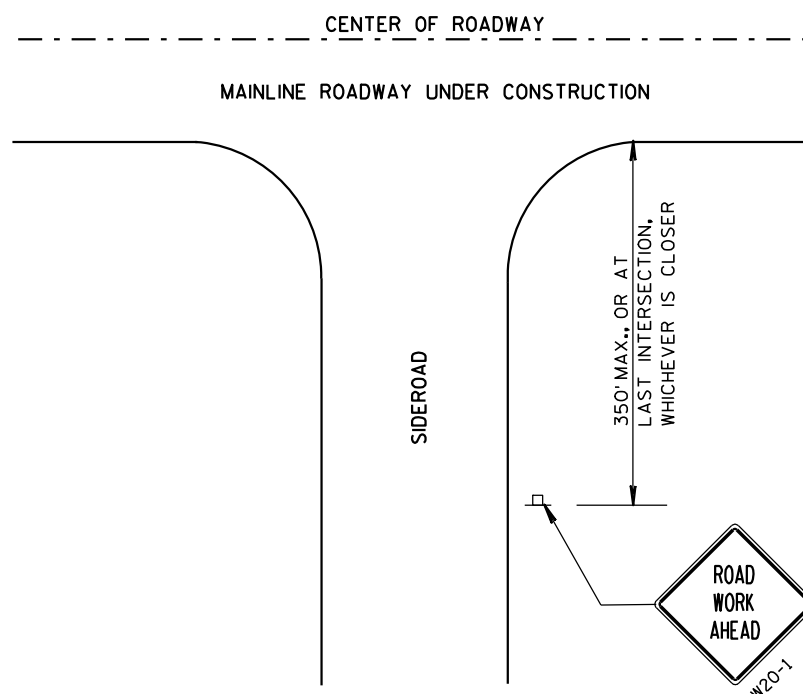
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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

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.



LEGEND

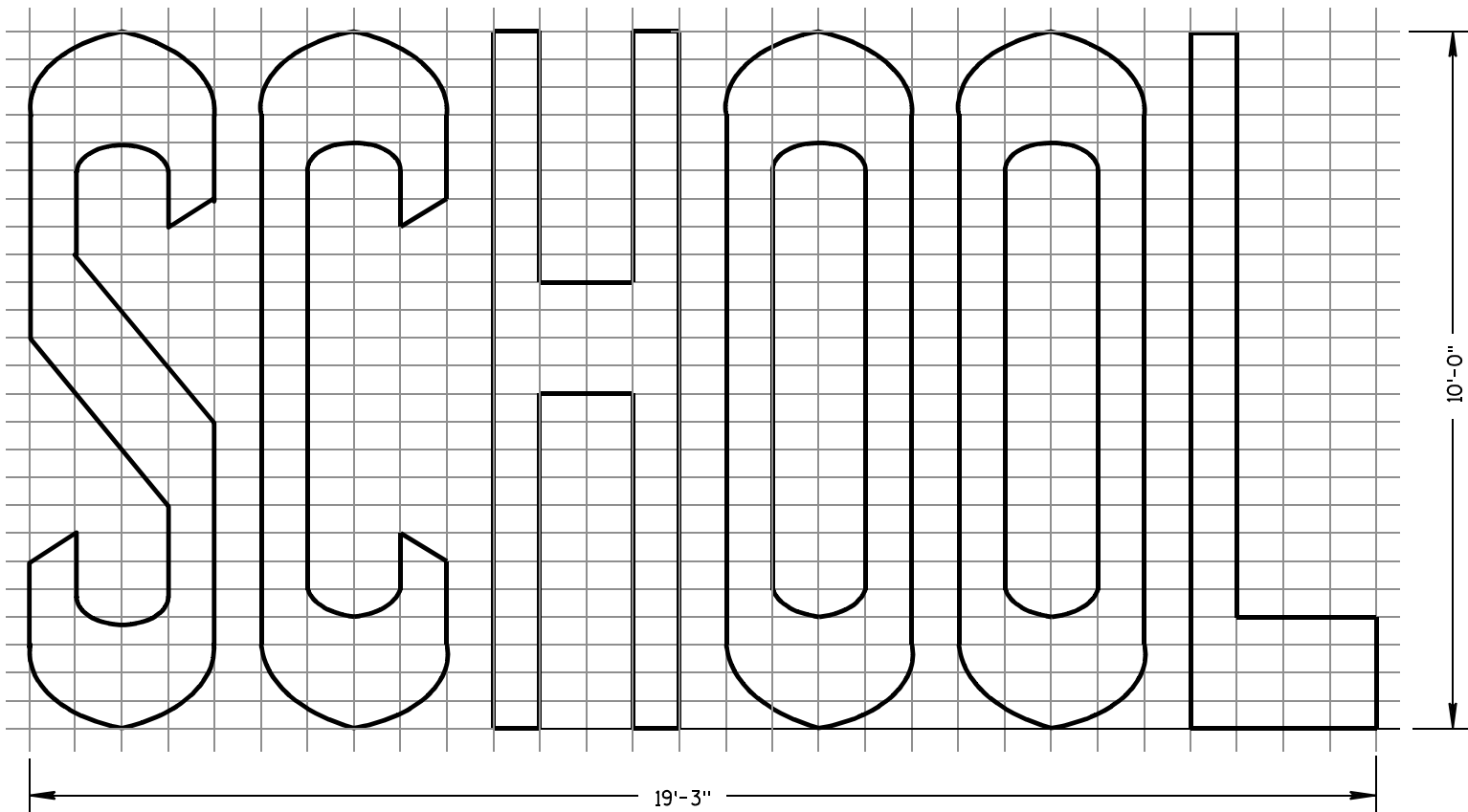
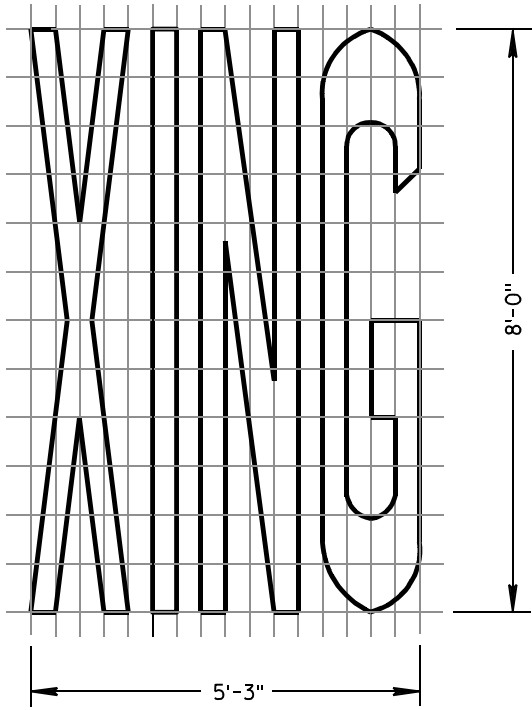
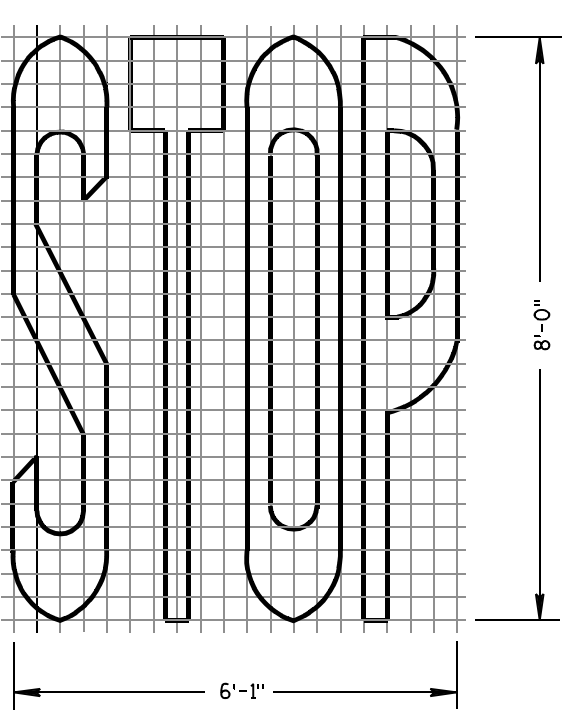
- POST MOUNTED SIGN
- ➡ DIRECTION OF TRAFFIC FLOW

TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 5/23/00 DATE	/S/ Chester J. Spang CHIEF SIGNS AND MARKING ENGINEER
FHWA	

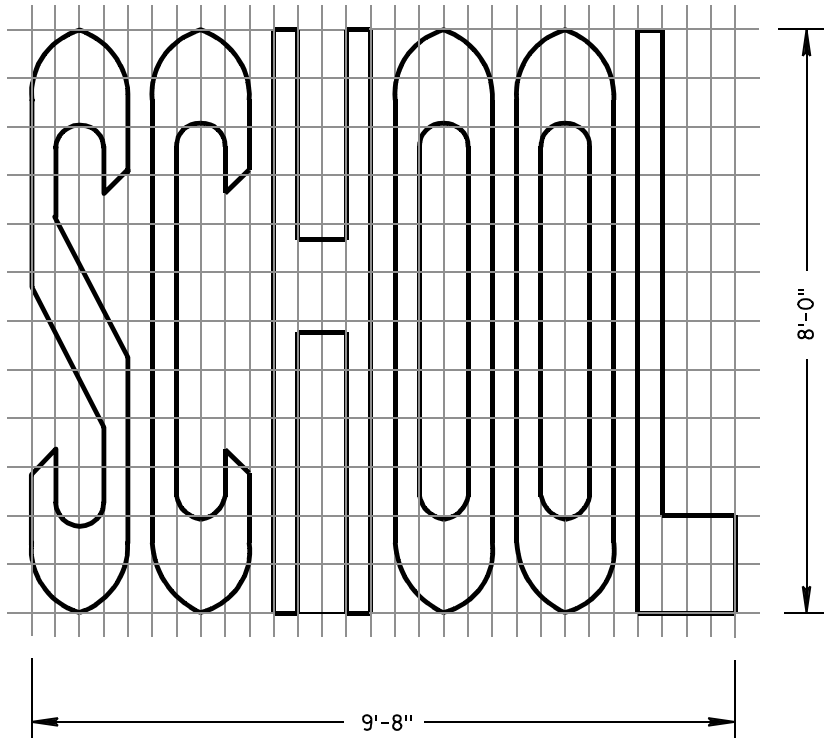
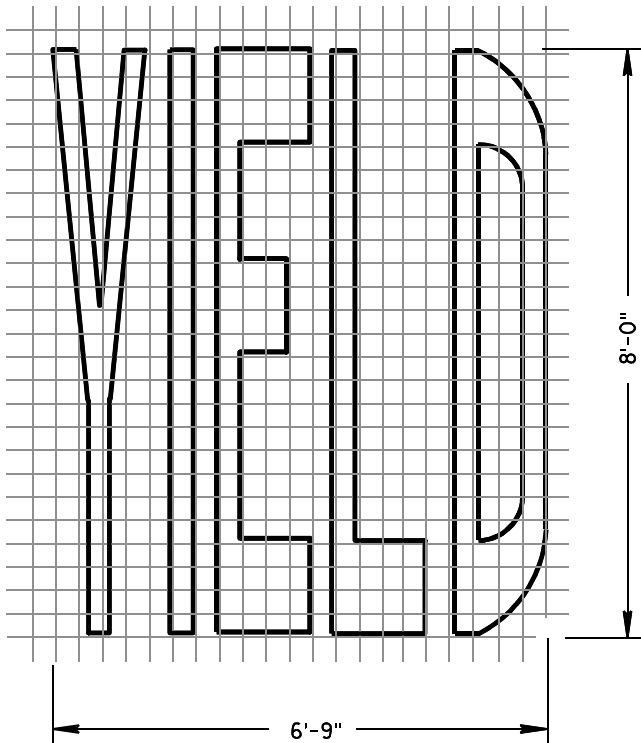
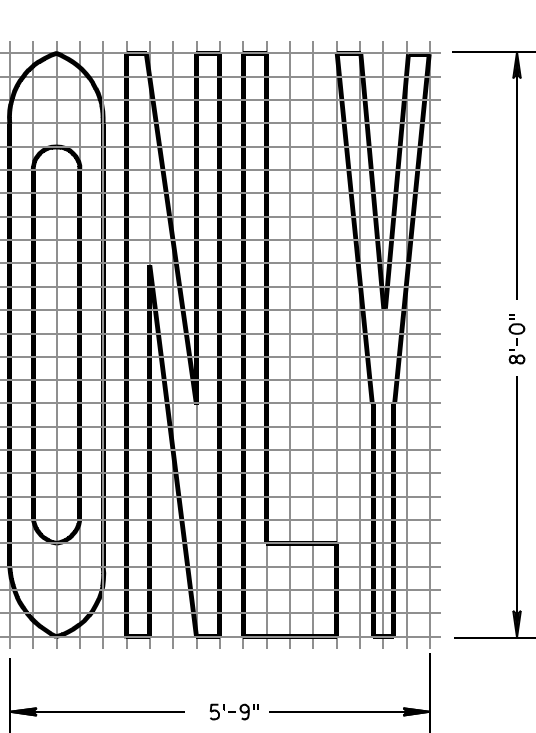
GENERAL NOTES

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.

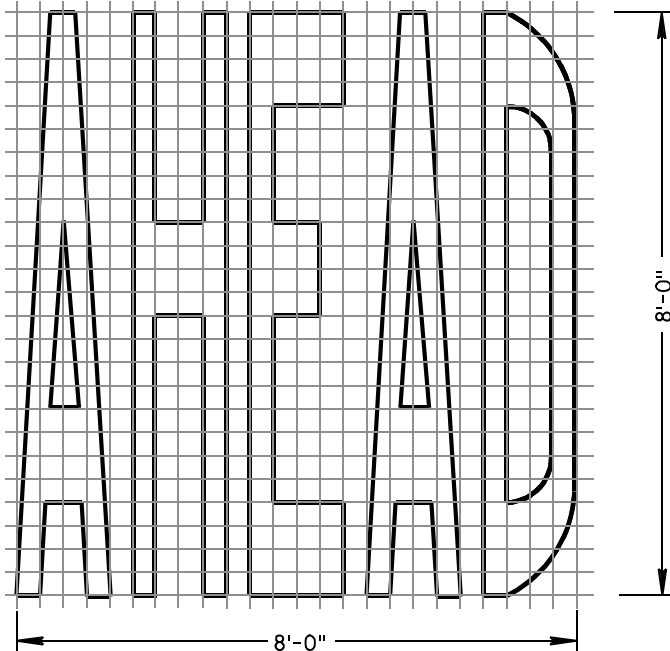
ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES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



TWO-LANE



SINGLE-LANE



PAVEMENT MARKING WORDS

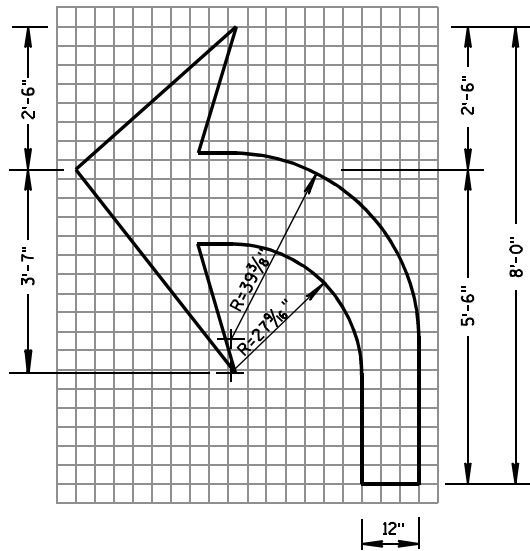
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

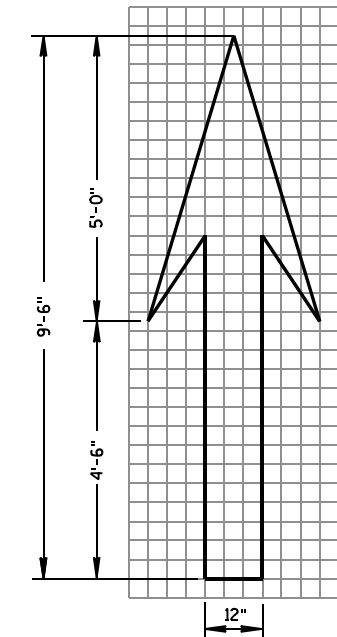
7-1-11  
DATE

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

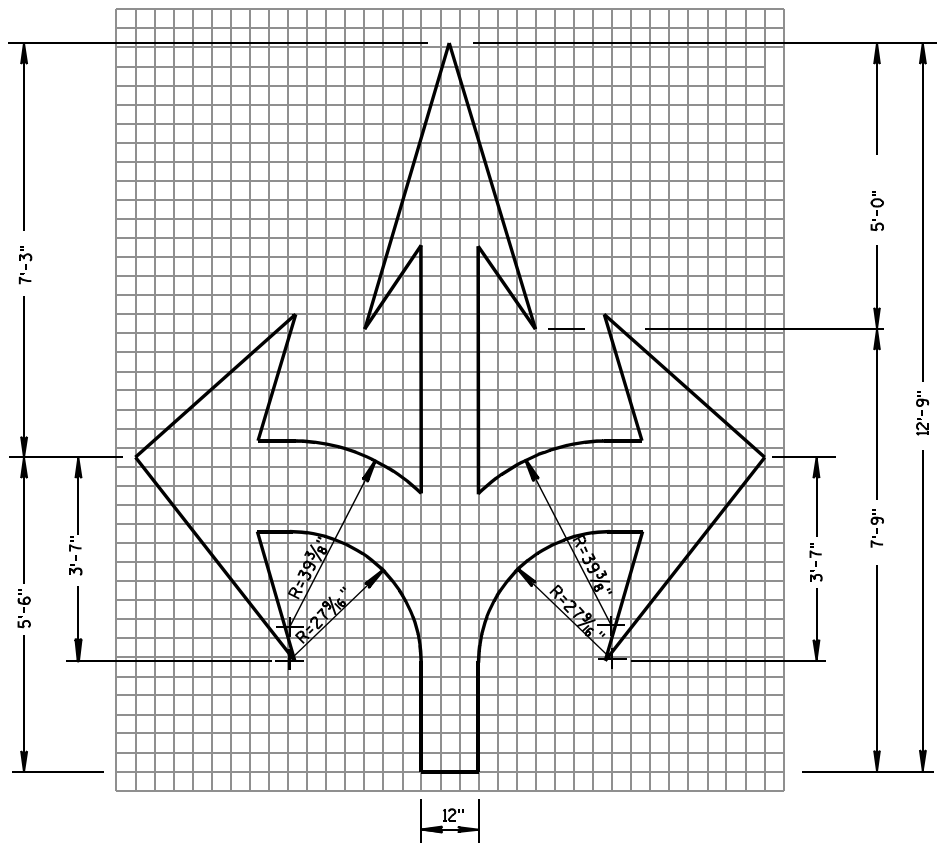
FHWA



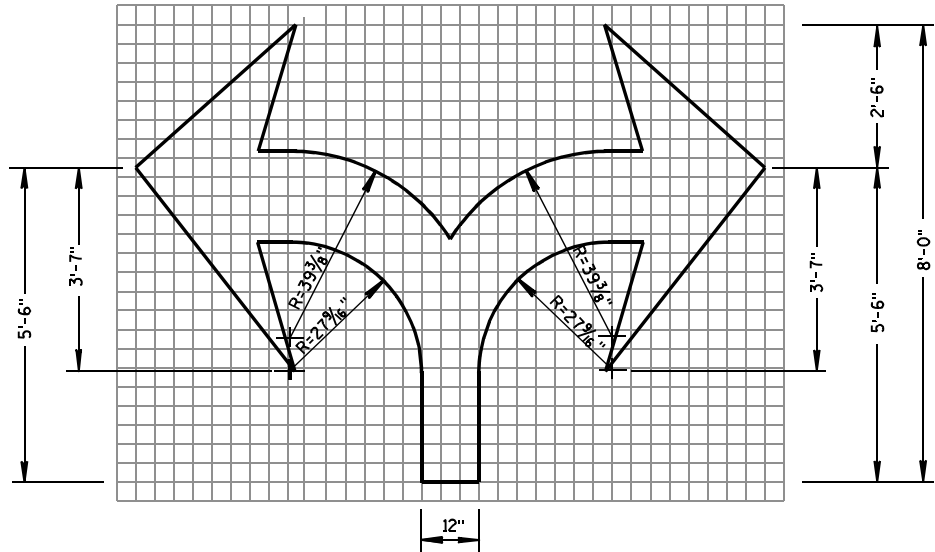
TYPE 2



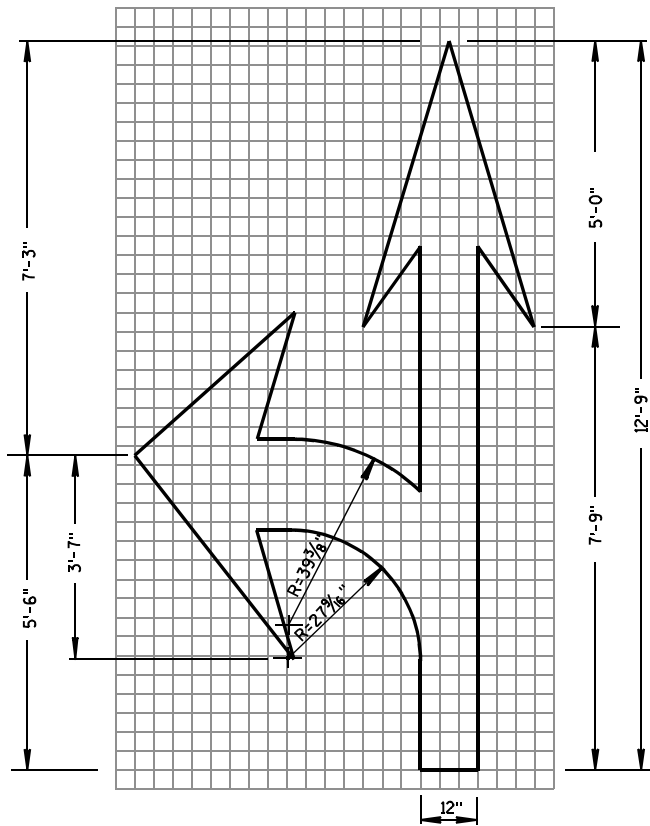
TYPE 1



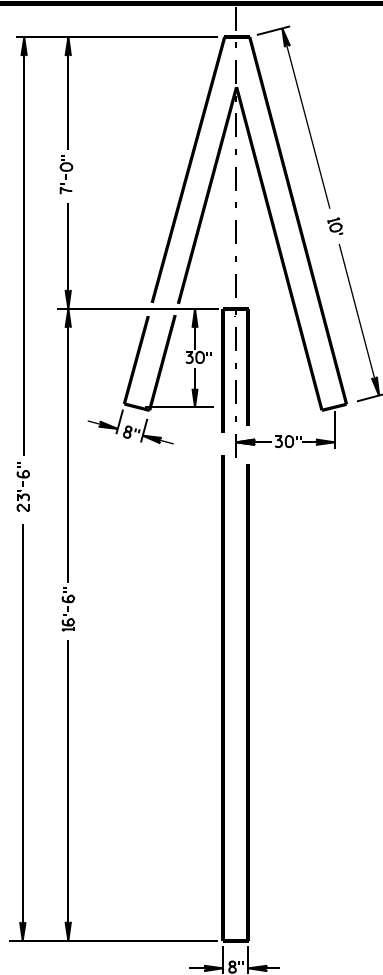
TYPE 6



TYPE 7



TYPE 3

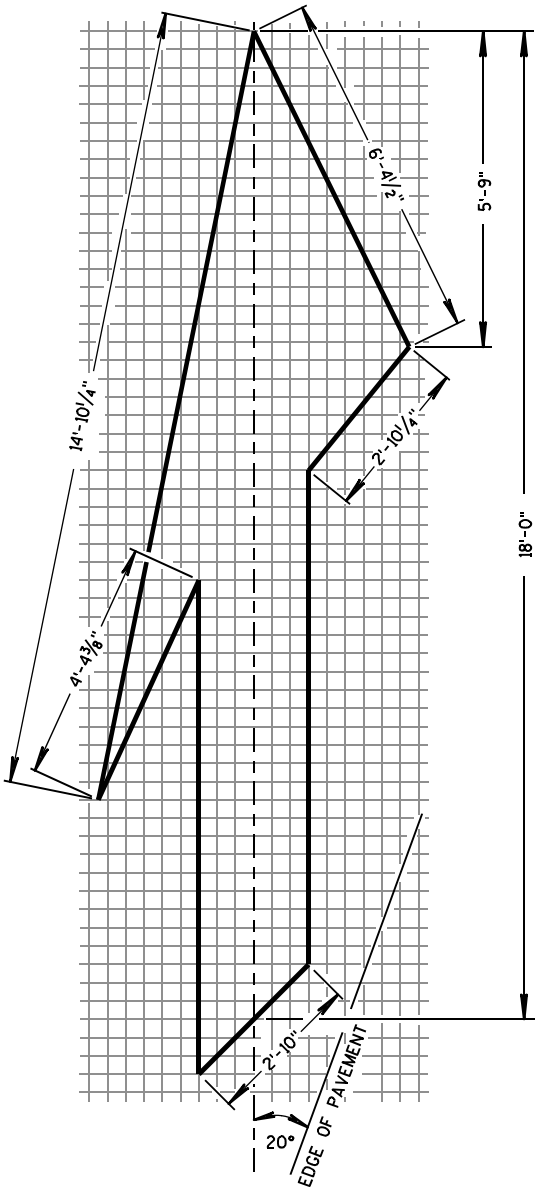


TYPE 4

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.

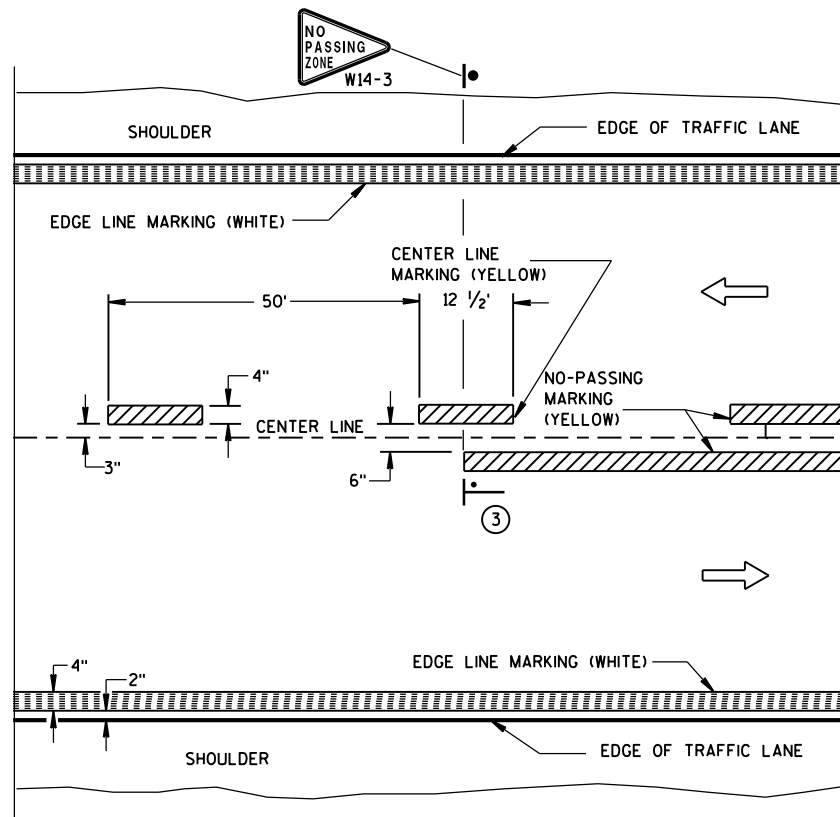


TYPE 5 LANE DROP ARROW

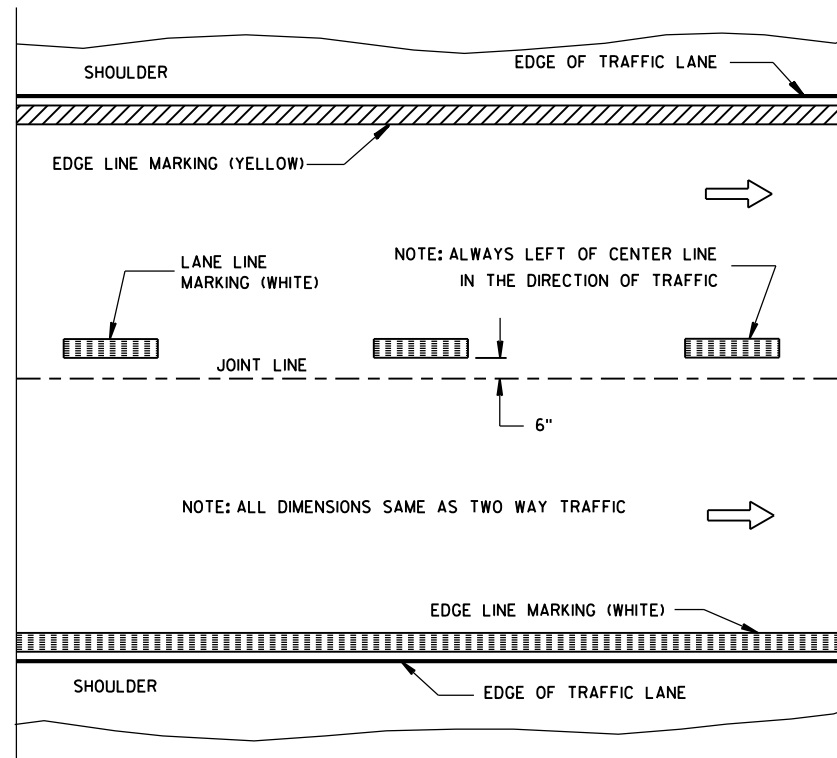
PAVEMENT MARKING ARROWS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
7/1/11 DATE /S/ Thomas N. Notbohm  
STATE TRAFFIC ENGINEER OF DESIGN  
FHWA

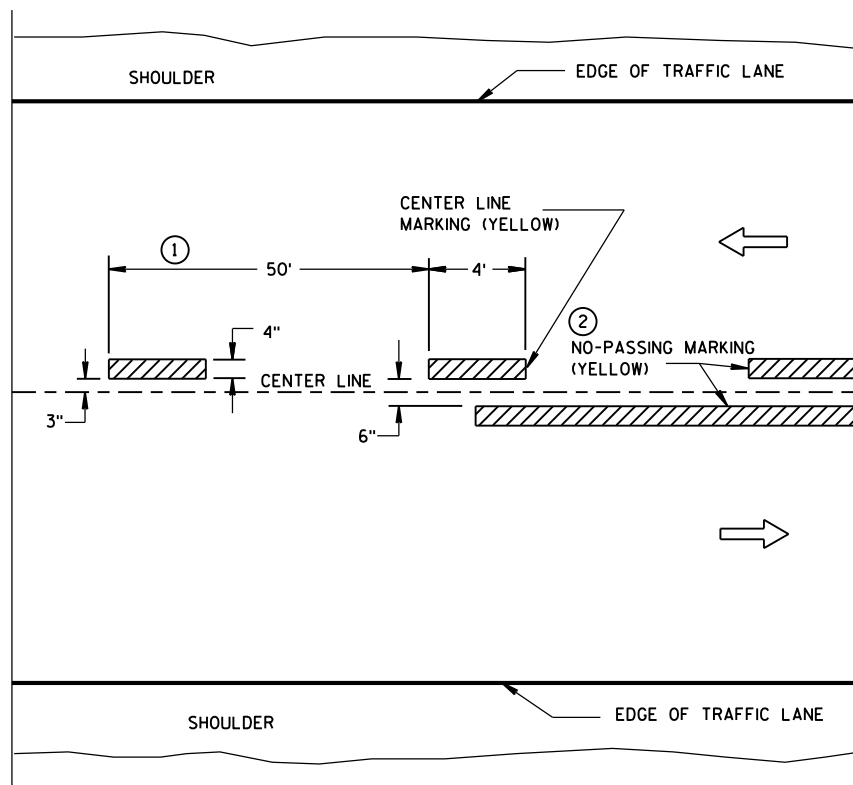


TWO WAY TRAFFIC

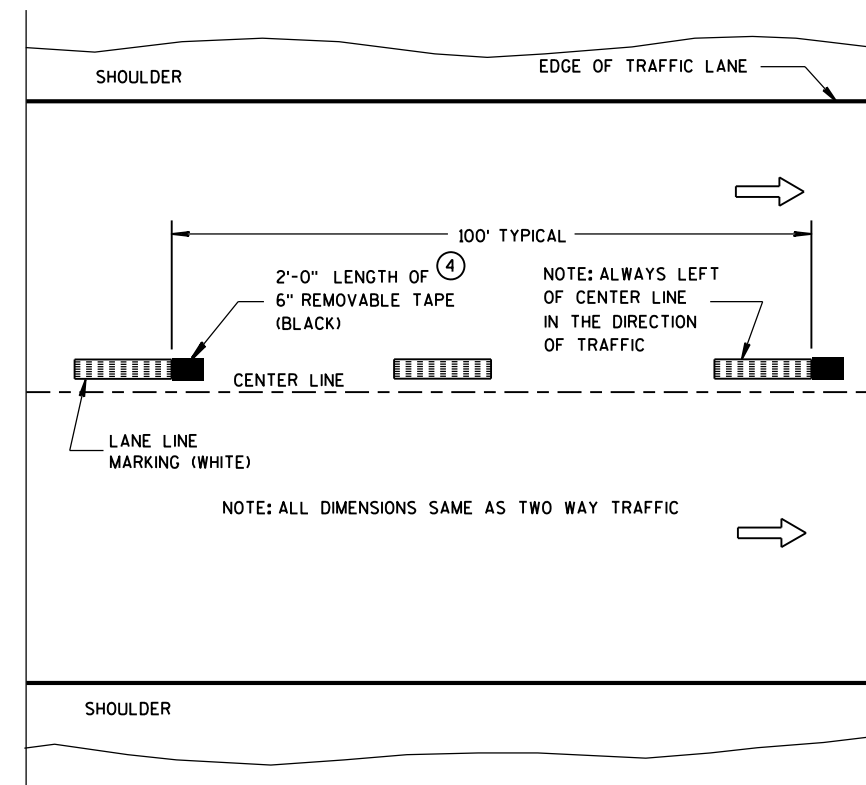


ONE WAY TRAFFIC

## PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

**TEMPORARY (INTERMEDIATE) PAVEMENT MARKING**  
(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

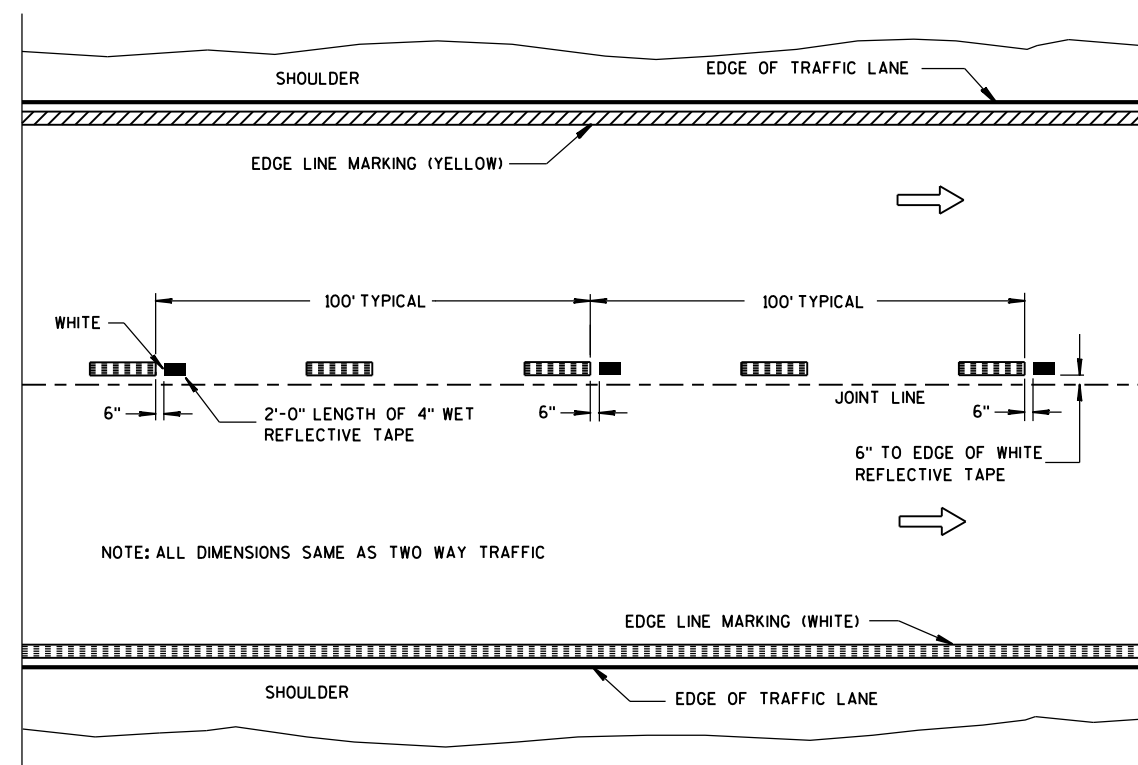
## GENERAL NOTES

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

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

## NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL



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

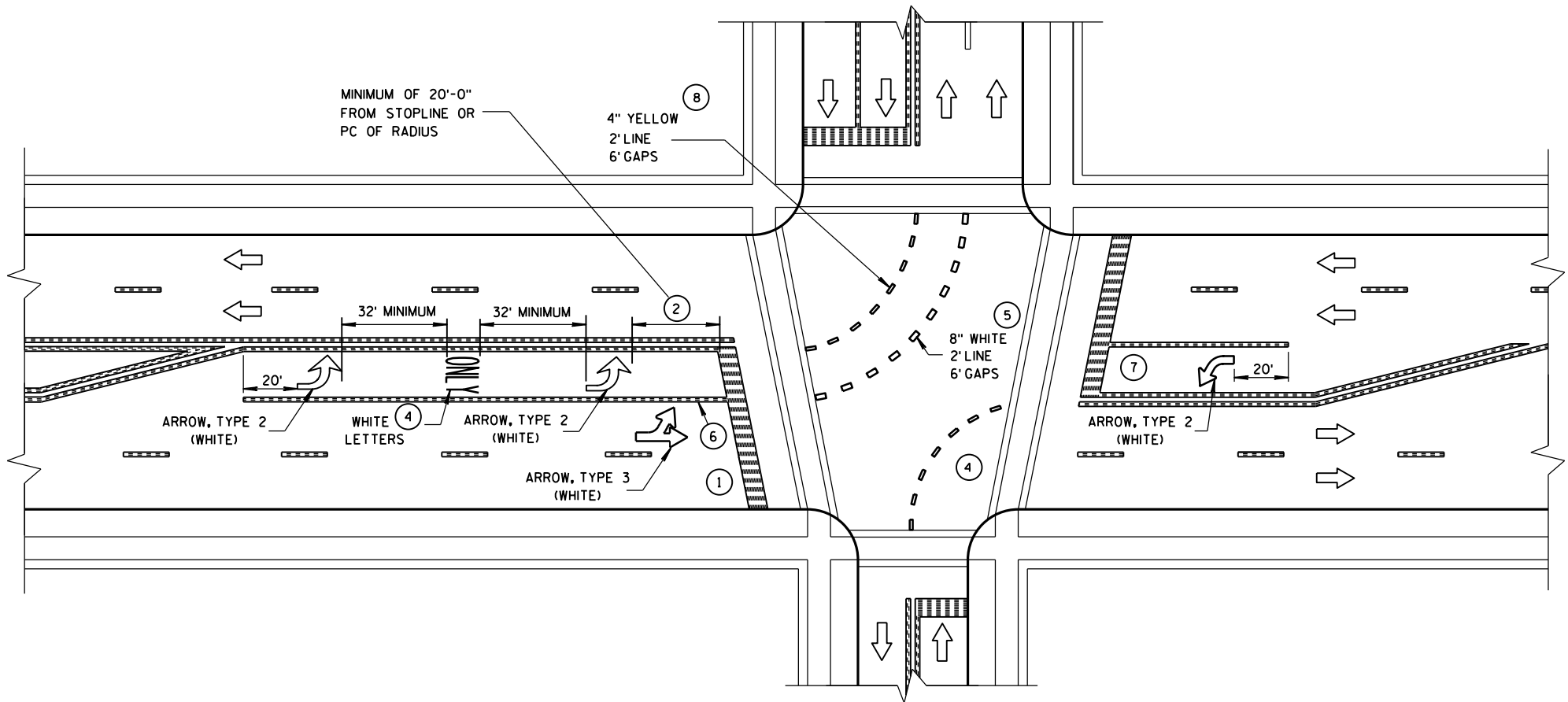
## LEGEND

- "T" MARKING
- POST MOUNTED SIGN

PAVEMENT MARKING  
(MAINLINE)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

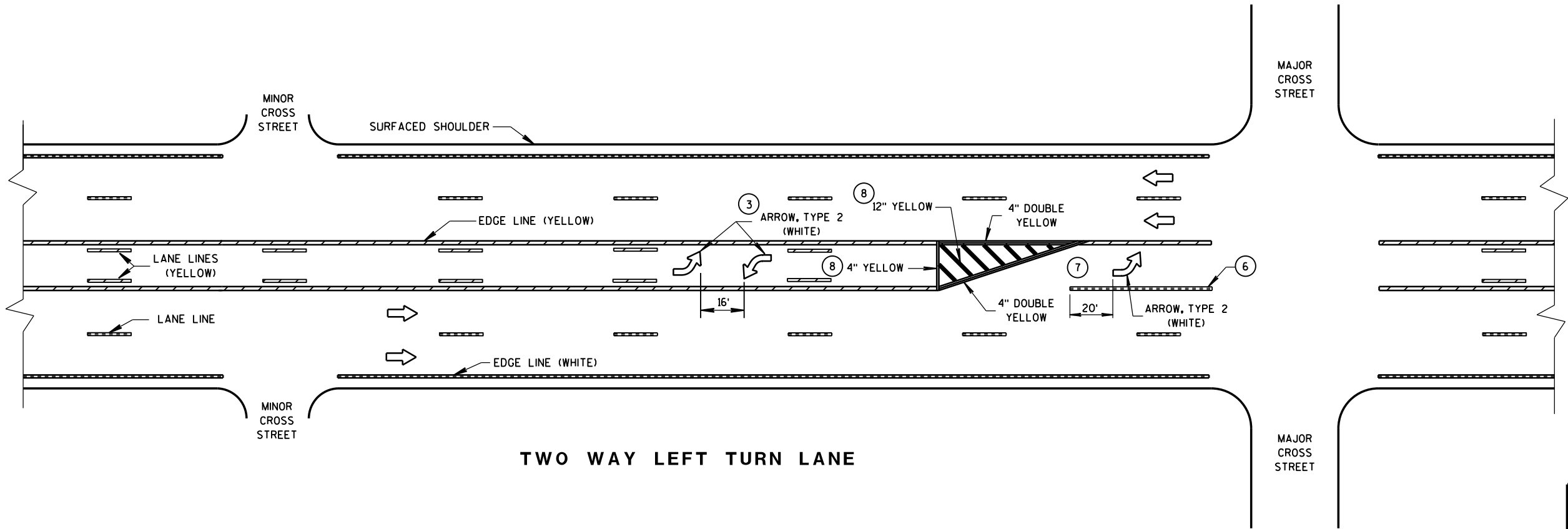
APPROVED  
10-1-2012 /S/ Travis Feltes  
DATE STATE TRAFFIC ENGINEER OF DESIGN  
FHWA



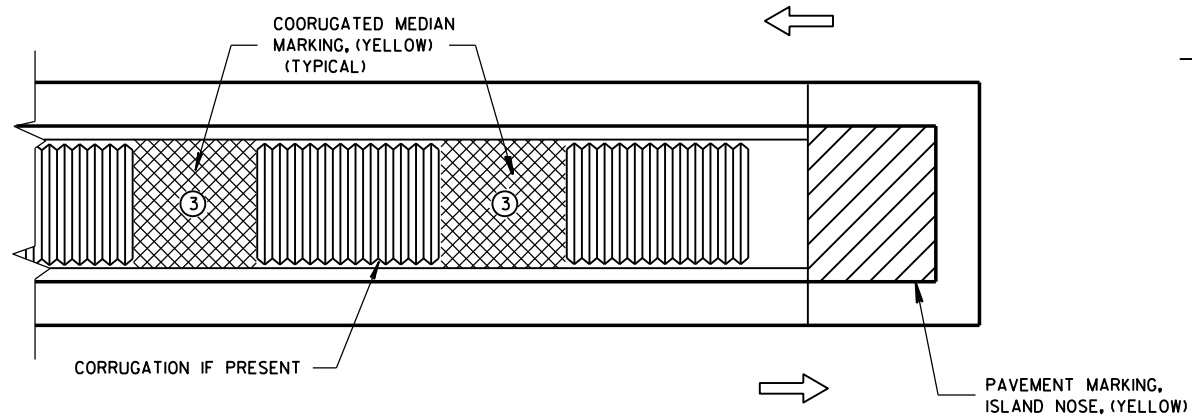
GENERAL NOTES

- ① STOP BAR IS REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.
- ② DISTANCE MAY BE ADJUSTED TO ACCOMODATE SHORT LEFT TURN LANES, AS APPROVED BY THE ENGINEER.
- ③ A SET OF ARROWS IS REQUIRED EVERY 400' OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
- ④ ADD EXTRA ARROW AND ONLY PER 160' OR WHEN ON A CURVE.
- ⑤ 8" WHITE WITH 2' LINE 6' GAPS FOR DUAL TURN LANE.
- ⑥ 8" WHITE
- ⑦ ADD SECOND ARROW WHEN TURN BAY IS GREATER THAN OR EQUAL TO 108'.
- ⑧ REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.

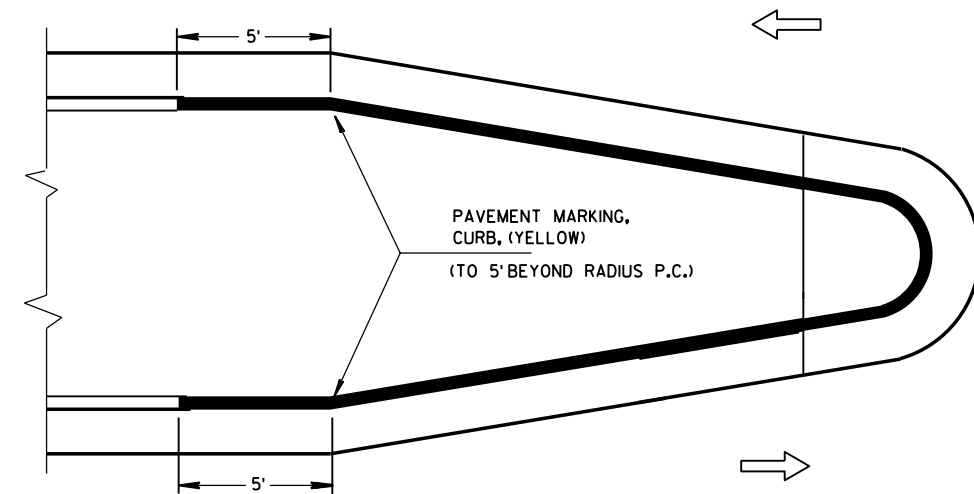
NOTE:  
ARROW SYMBOL ( ➡ )  
SHOWS DIRECTION OF TRAVEL



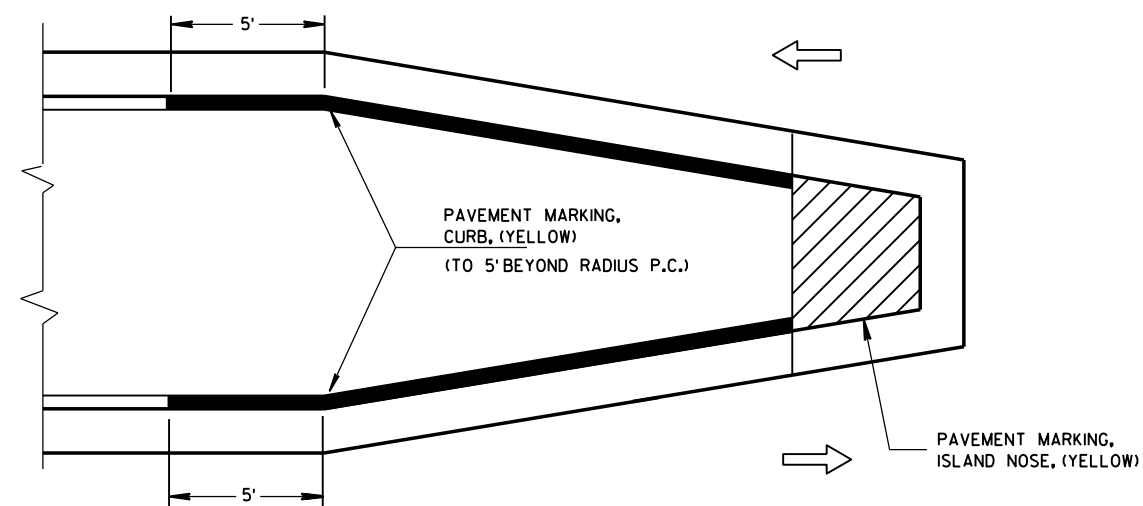
PAVEMENT MARKING (LEFT TURN LANE)
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION



**MEDIAN ISLAND WITH SQUARE BLUNT NOSE**

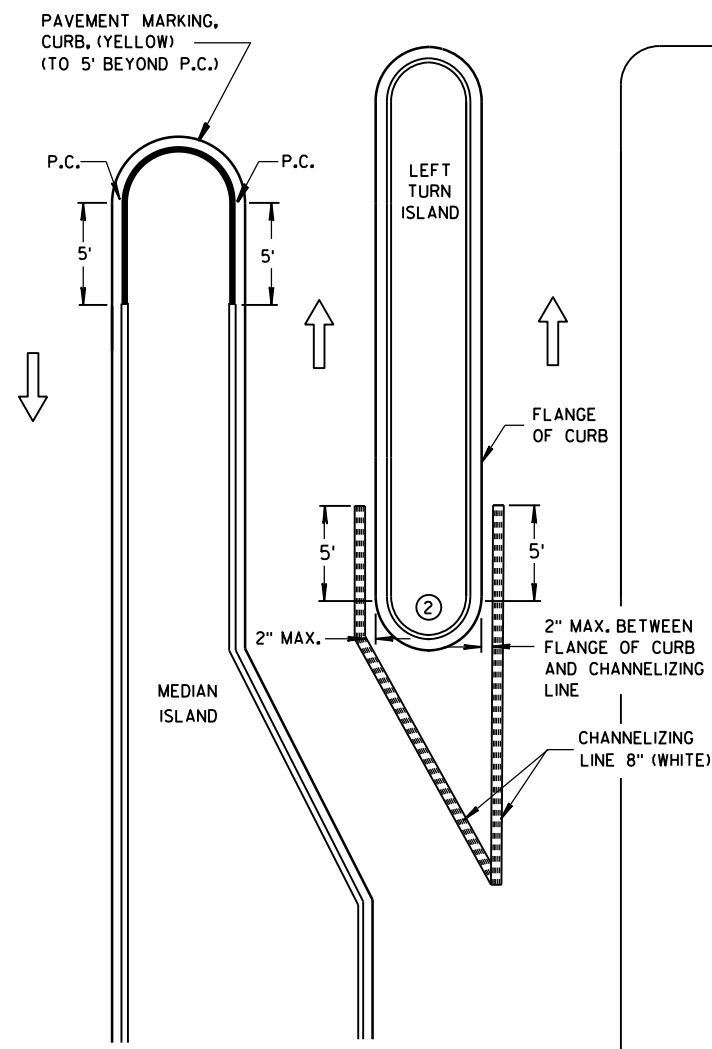


**MEDIAN ISLAND WITH ROUND BLUNT NOSE**



**MEDIAN ISLAND WITH SLOPED NOSE**

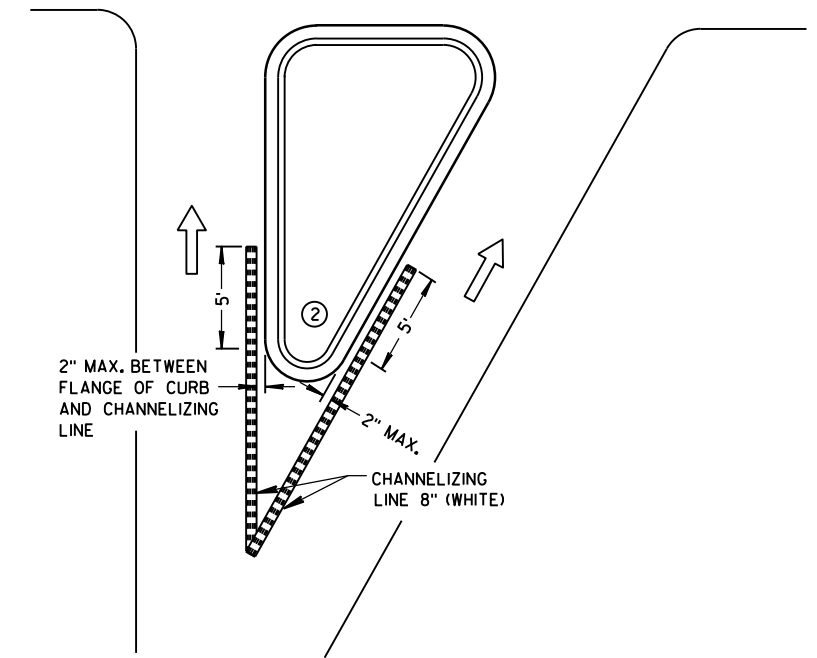
**TYPICAL PLACEMENT OF PAVEMENT MARKING ON MEDIAN ISLANDS**



**LEFT TURN & MEDIAN ISLAND**

**GENERAL NOTES**

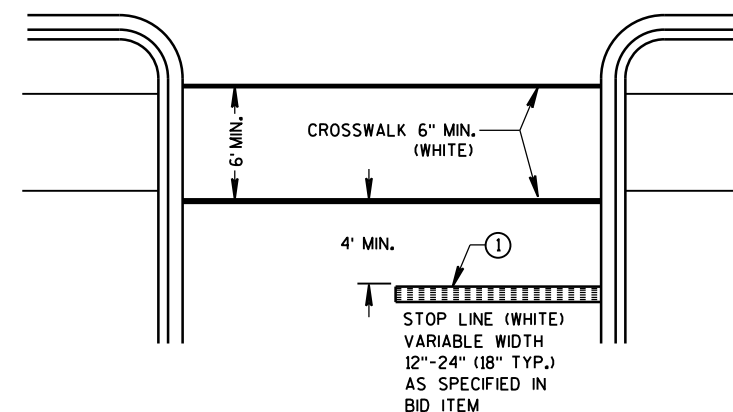
- ① STOP LINE IS REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.
- ② DO NOT MARK CURB NOSES THAT SEPARATE LANES OF TRAFFIC TRAVELING IN THE SAME DIRECTION.
- ③ WHEN CONCRETE CORRUGATED MEDIAN IS CONSTRUCTED TO SEPARATE TRAFFIC OPERATING IN THE OPPOSING DIRECTION YELLOW PAVEMENT MARKING SHALL BE APPLIED TO THE FLAT PORTION OF THE CONCRETE CORRUGATED MEDIAN. THE ITEM OF PAVEMENT MARKING, CONCRETE CORRUGATED MEDIAN, WILL BE MEASURED IN PLACE AND AND ACCEPTED IN ACCORDANCE WITH THE CONTRACT AND PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT.



**RIGHT TURN ISLAND**

**LEGEND**

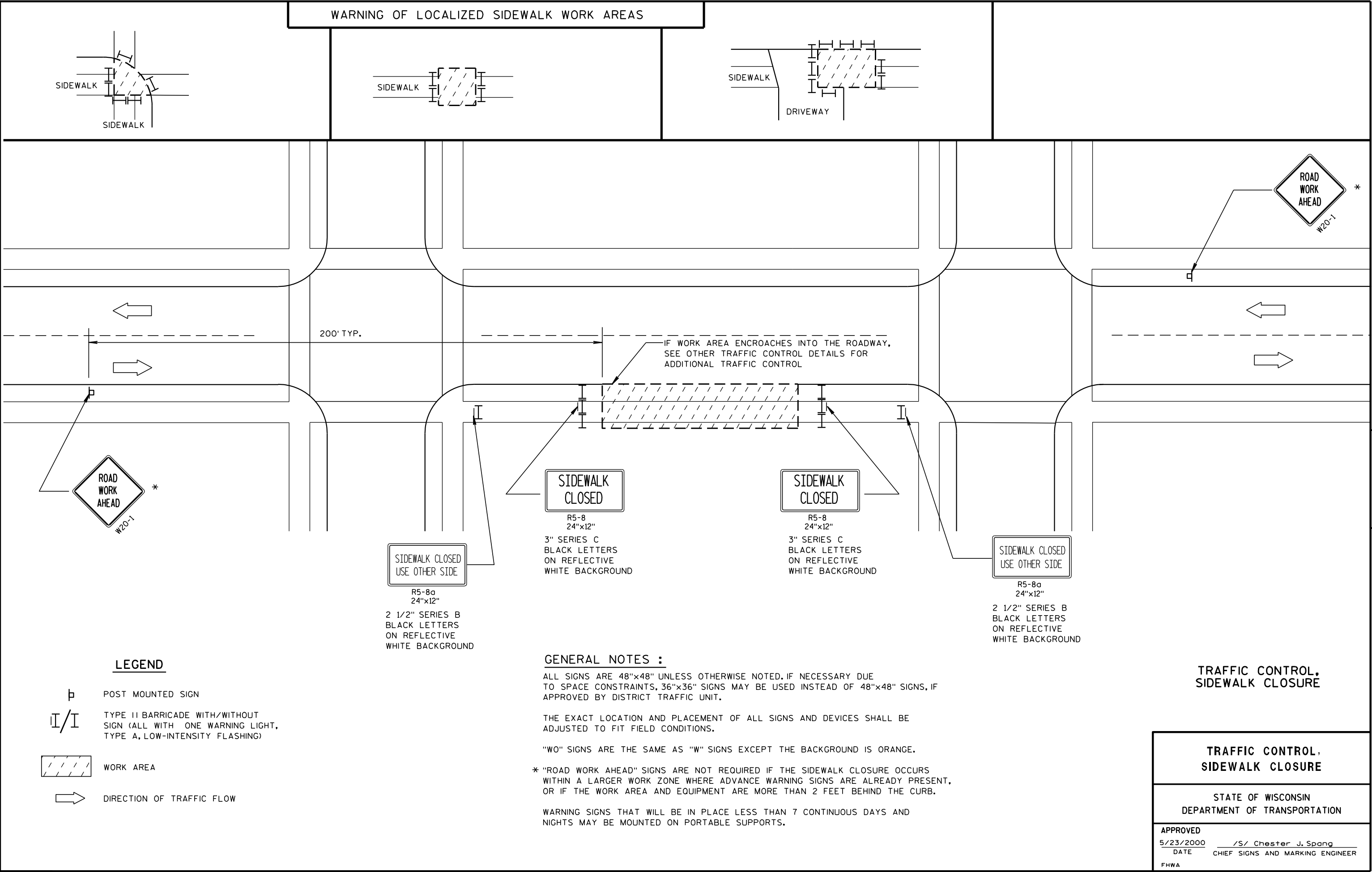
- ISLAND NOSE MARKING
- CURB MARKING
- CORRUGATED MEDIAN MARKING
- DIRECTION OF TRAVEL



**STOP LINE AND CROSSWALK**

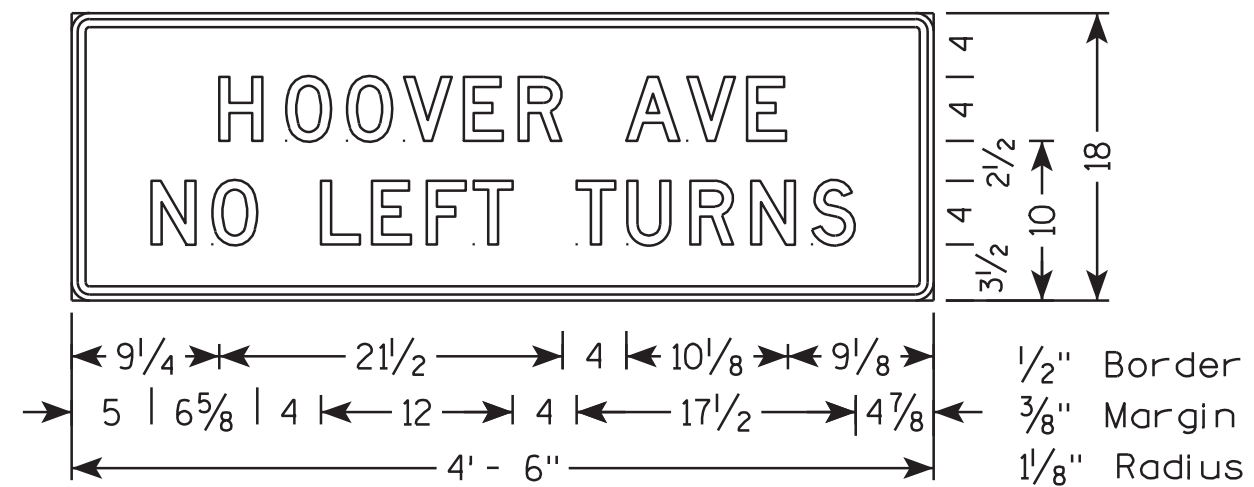
**PAVEMENT MARKING (ISLANDS, STOP LINE & CROSS WALK)**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

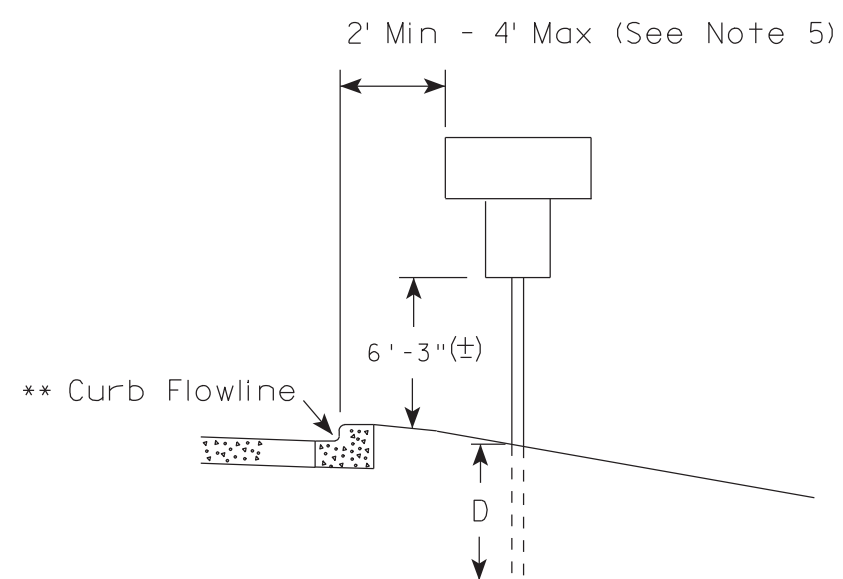
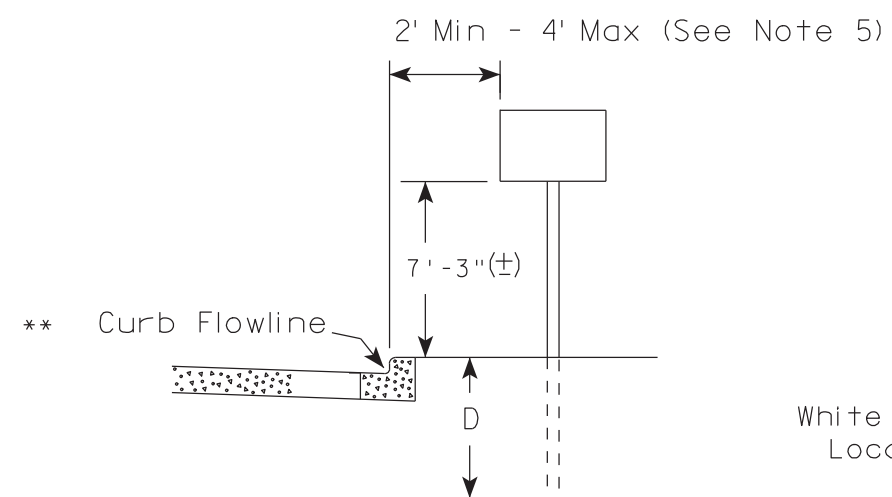


NOTES

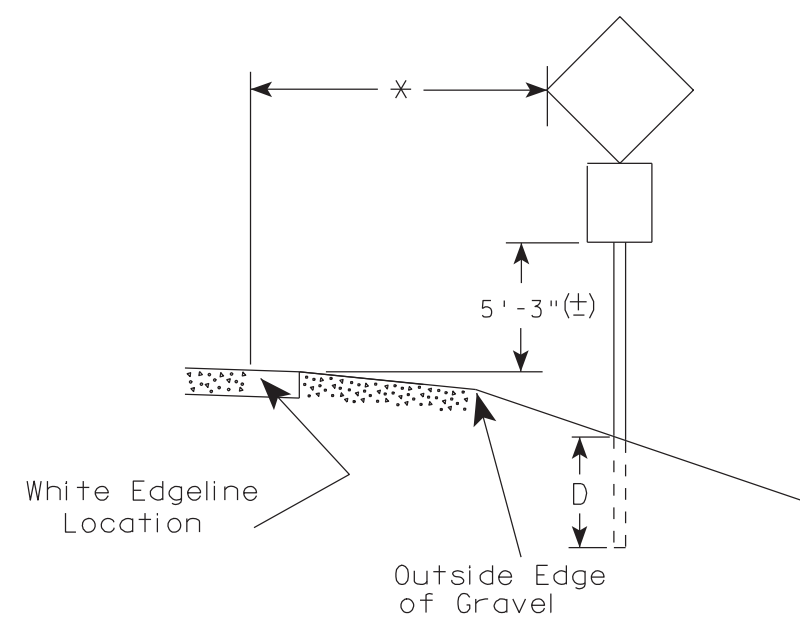
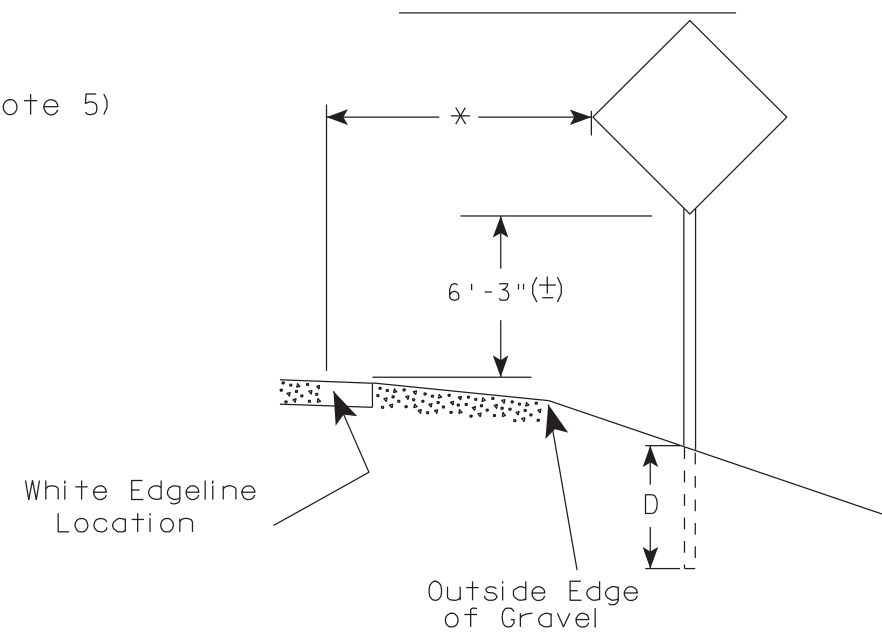
1. Sign Is Type II - Type F Reflective - reference  
WIS DOT Standard Specification for HIGHWAY  
and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - ORANGE  
Message - BLACK
3. Message Series - D



# URBAN AREA



# RURAL AREA (See Note 2)



- ## GENERAL NOTES
1. Signs wider than 4 feet or larger than 20 sq. ft. shall be mounted on multiple posts. Refer to plate A4-4.
  2. If signs are mounted on barrier wall, see A4-10 sign plate.
  3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
  4. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
  5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
  6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
  7. The (±) tolerance for mounting height is 3 inches.
  8. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
  9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series) & End of Road Markers (W5-56 & W5-56A) shall be mounted at a height of 4'-3" (±).

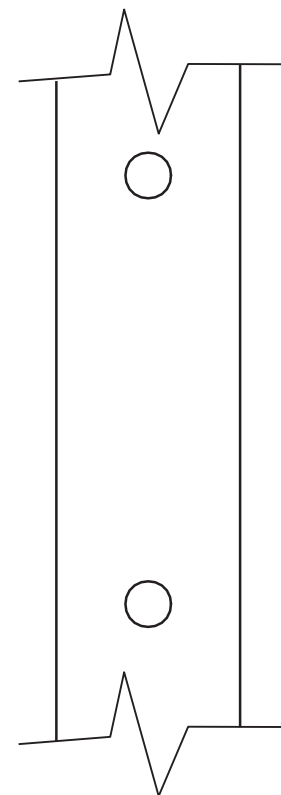
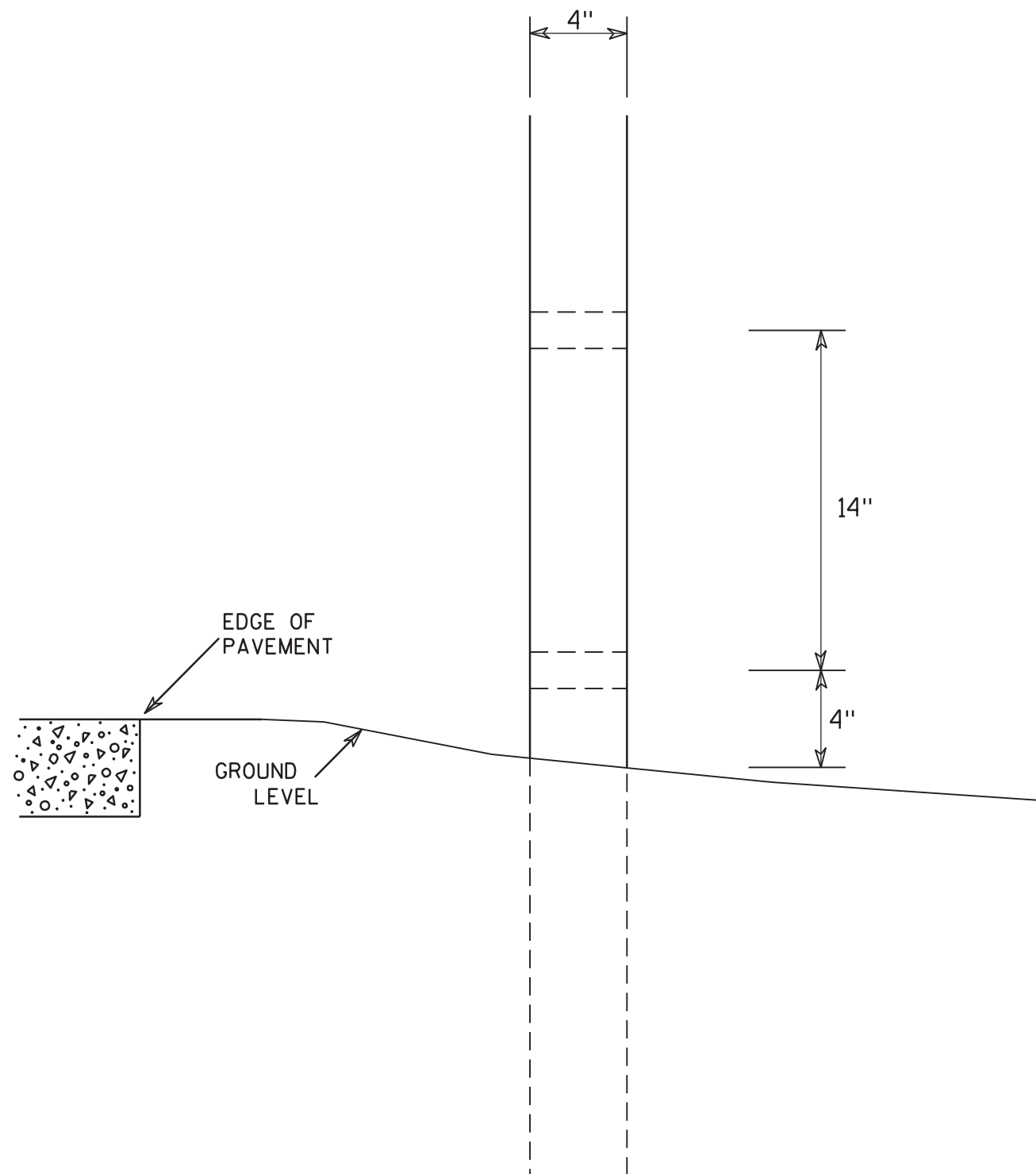
## POST EMBEDMENT DEPTH

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

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

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

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 9/21/2011	PLATE NO. A4-3.16



SIDE VIEW

### GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1 1/2" diameter holes drilled perpendicular to the roadway centerline.

### 4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Chester J. Spang*  
for State Traffic Engineer

DATE 3/27/97 PLATE NO. A4-11.2

PROJECT NO:

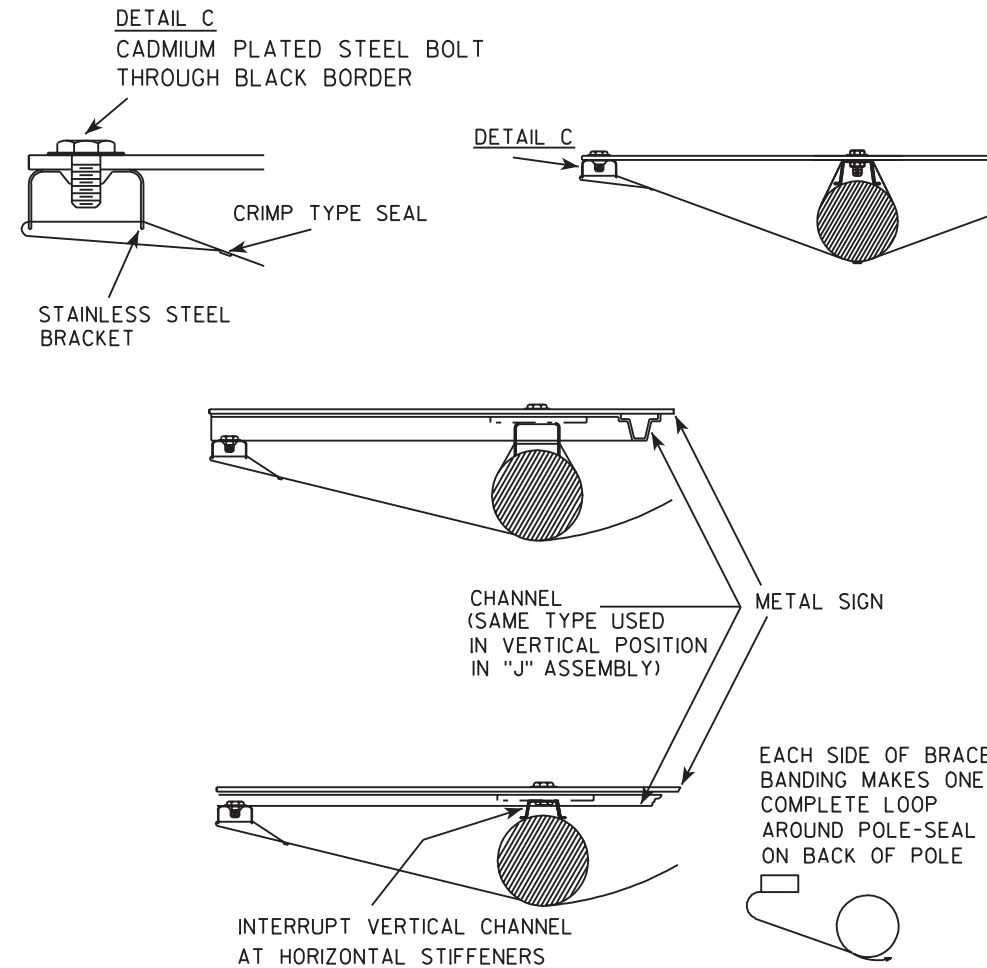
HWY:

COUNTY:

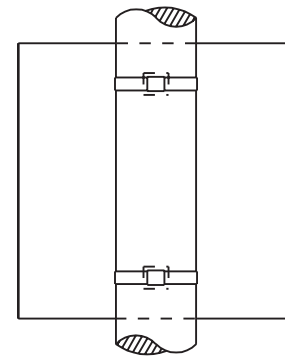
SHEET NO:

E

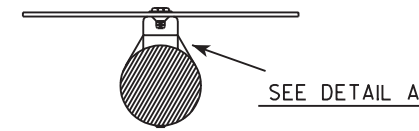
# BRACE BANDING



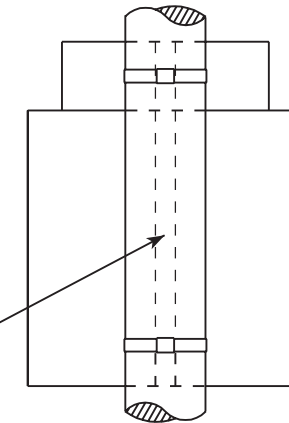
# SINGLE SIGN



# BRACKET BANDING

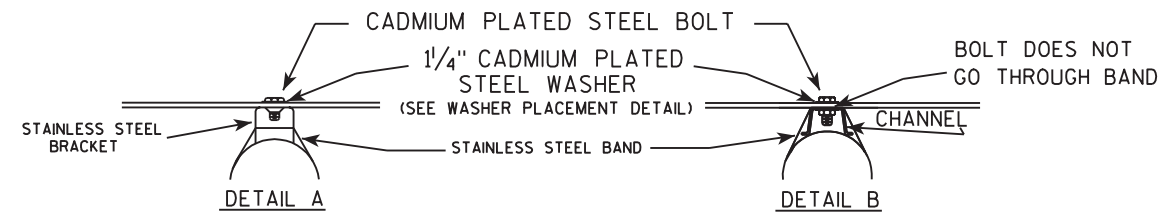


# "J" ASSEMBLY



CHANNEL  
SEE TYPICAL PANEL  
INSTALLATION SHEET

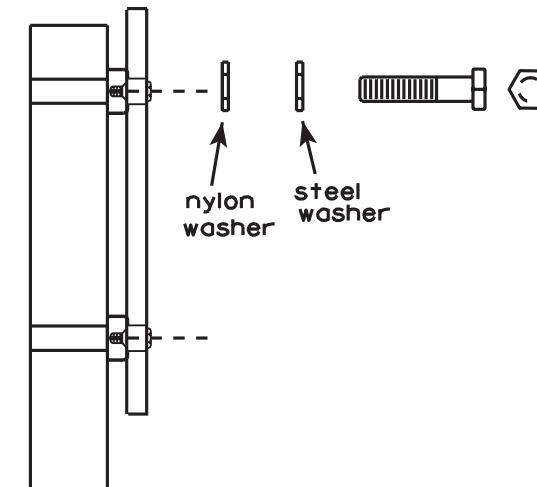
SEE DETAIL B



# GENERAL NOTES

1. Signs 4' or greater in width shall have one brace band installed at the center of the sign.
2. Signs 3' or greater in height shall have three bracket bands installed. Signs less than 3' in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be 3/4" in width and 0.025" thickness.

# WASHER PLACEMENT



# WASHERS (ALL POSTS) -

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

# STANDARD SIGN SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 11/08/05 PLATE NO. A5-9.2

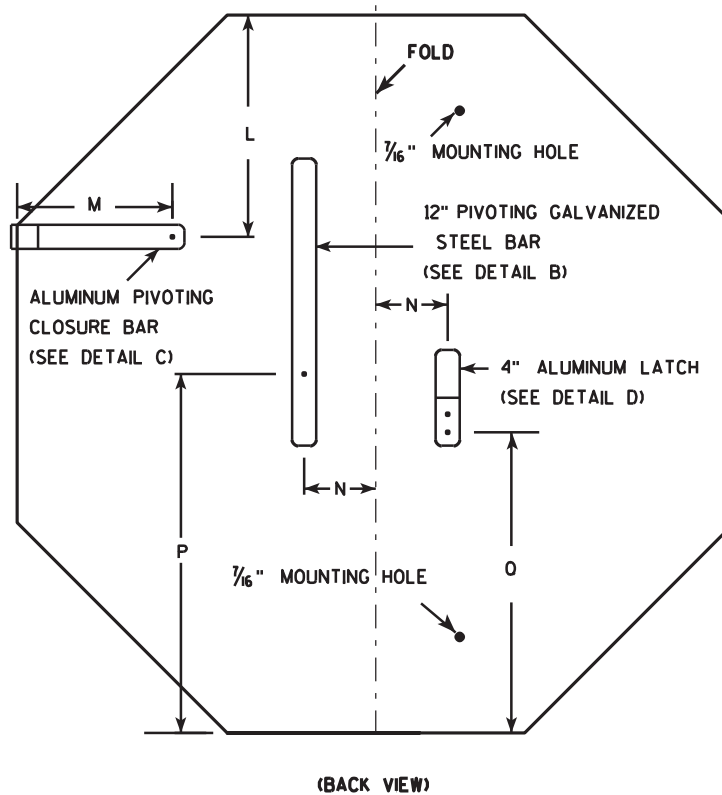
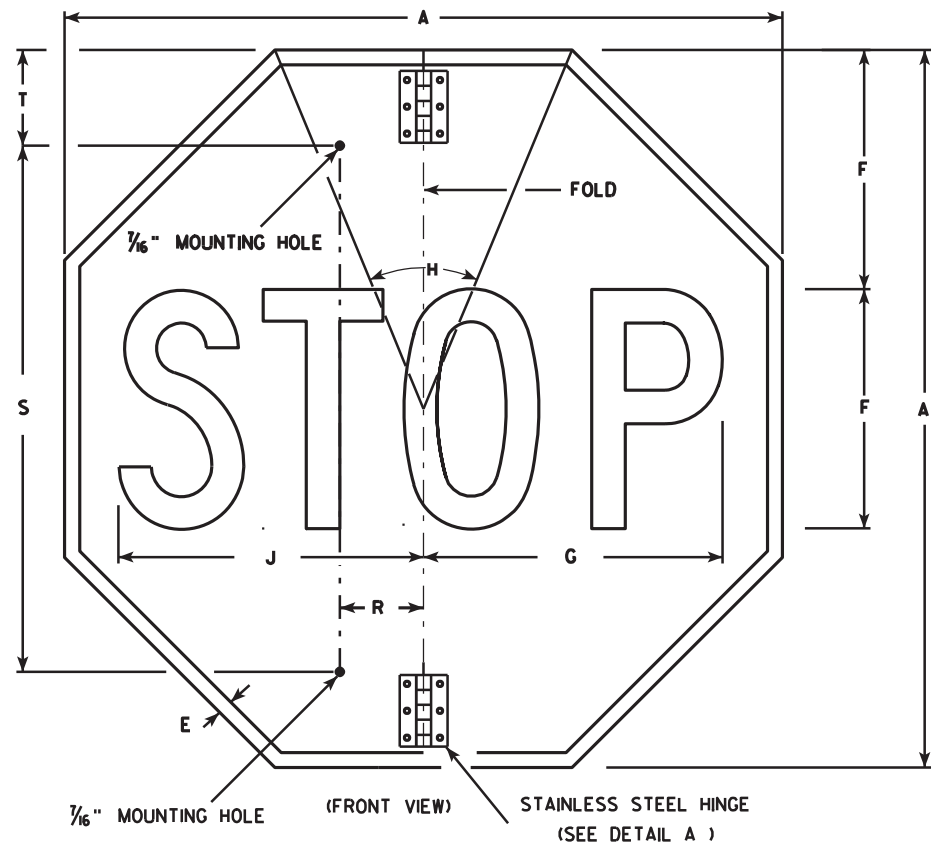
PROJECT NO:

HWY:

COUNTY:

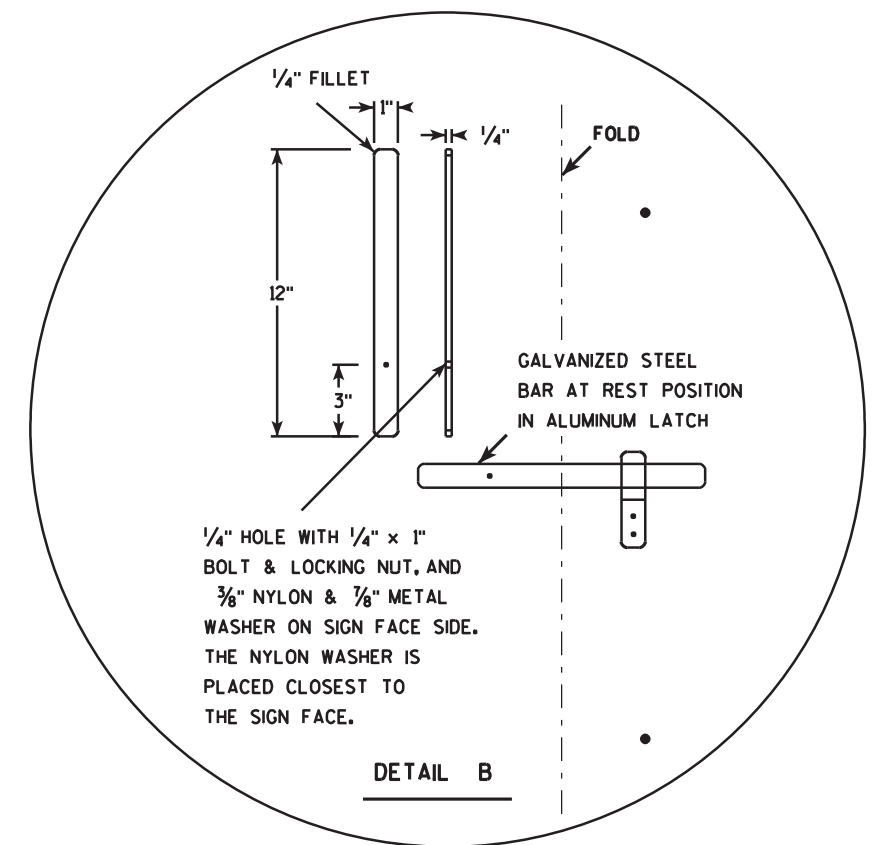
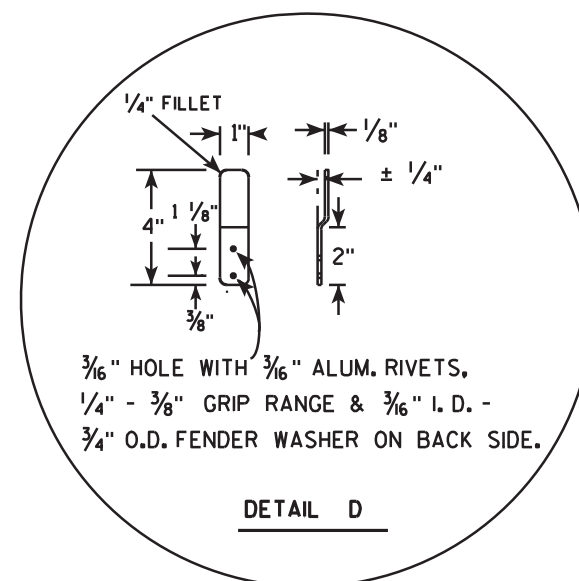
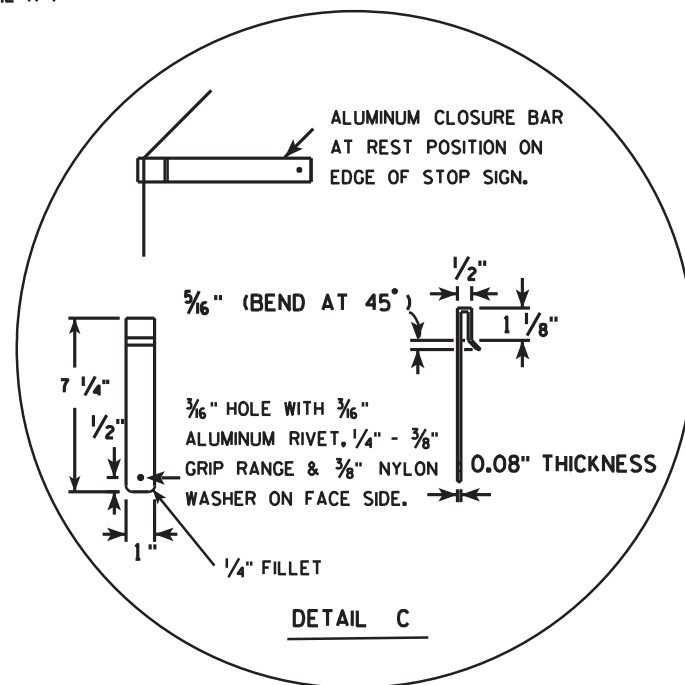
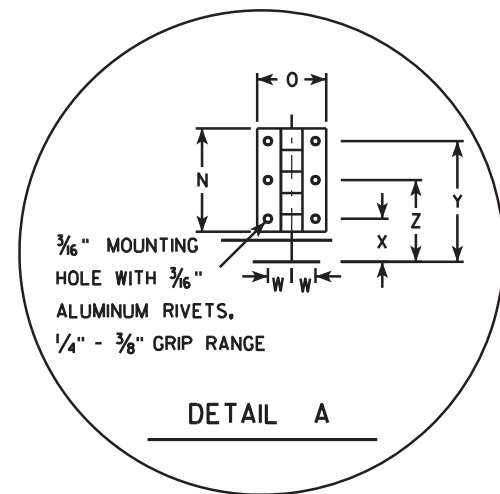
SHEET NO:

E



# NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - Red  
Message - White
3. Message Series - C
4. All hardware used on the folding STOP sign installation shall conform to 637.2.4 of the WIS DOT Standard Specification.



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30				5/8	10	12 1/2	45		12 3/4		9 1/4	6 1/2	3	2	15	12 3/8	2 1/2	22	5			1 1/8	1 1/4	3 1/2	2 3/8	5.18
2M	36				3/4	12	15	45		15 3/8		11	6 1/2	3	2	18	15 3/8	2 1/2	26	5			1 1/8	1 1/4	3 1/2	2 3/8	7.46
3	36				3/4	12	15	45		15 3/8		11	6 1/2	3	2	18	15 3/8	2 1/2	26	5			1 1/8	1 1/4	3 1/2	2 3/8	7.46
4																											
5																											

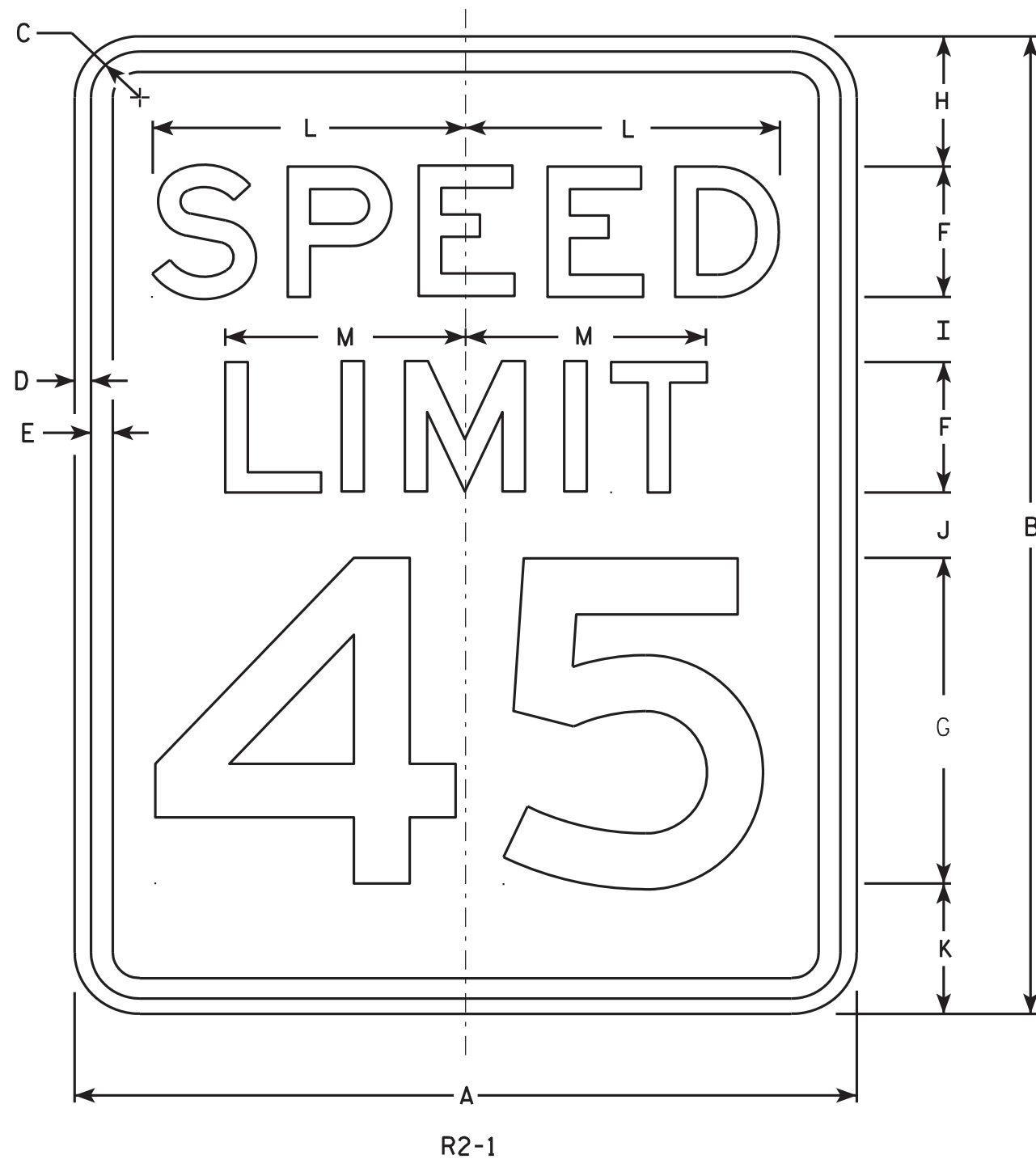
PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
-------------	------	---------	-----------	---

STANDARD SIGN  
R1-1F

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-1F.3



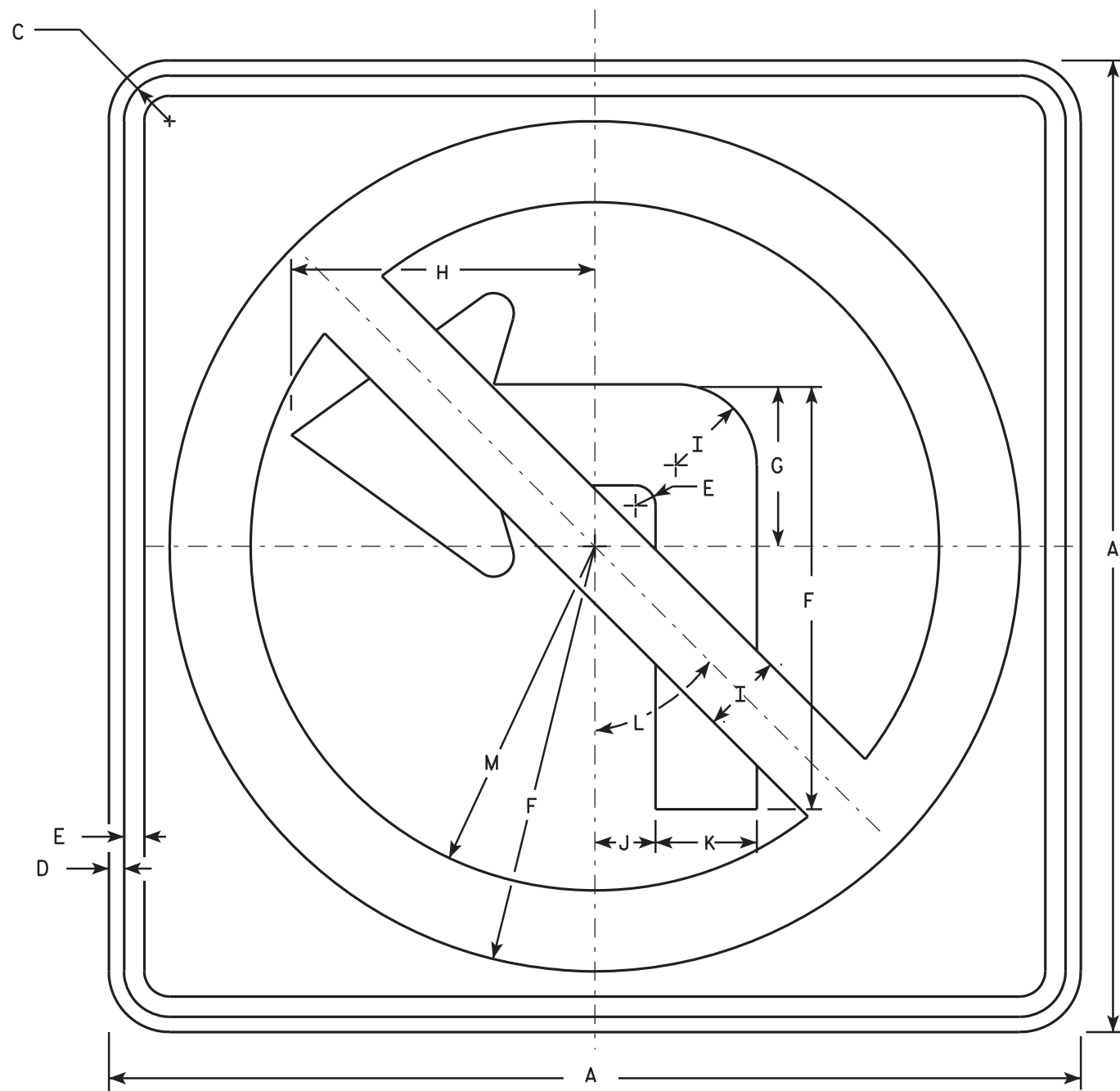
NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/8	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 3/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	2 1/4	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

STANDARD SIGN R2-1	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 5/26/10	PLATE NO. R2-L13

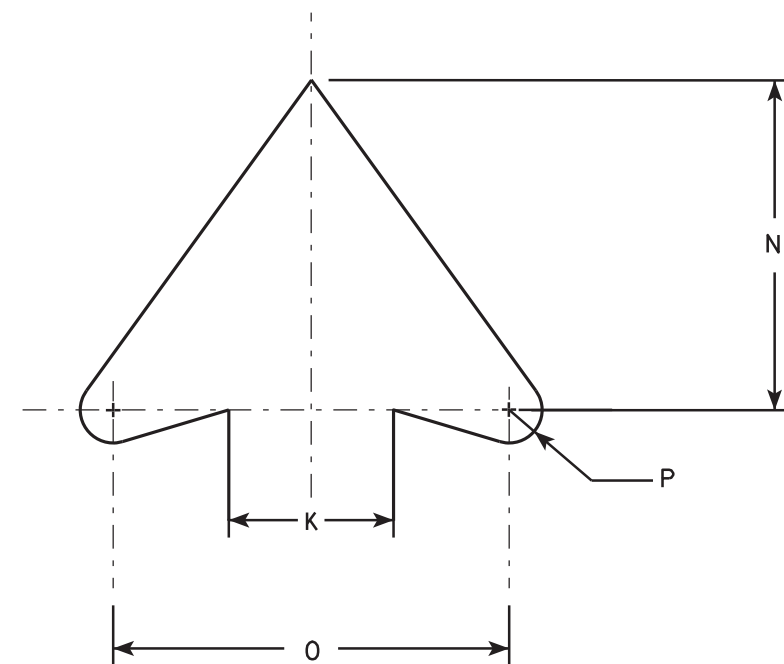
PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
-------------	------	---------	-----------	---



R3-2

# NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - White  
Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2											4.0
2S	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2											4.0
2M	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
3	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
4	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1											16.0

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
-------------	------	---------	-----------	---

STANDARD SIGN

R3-2

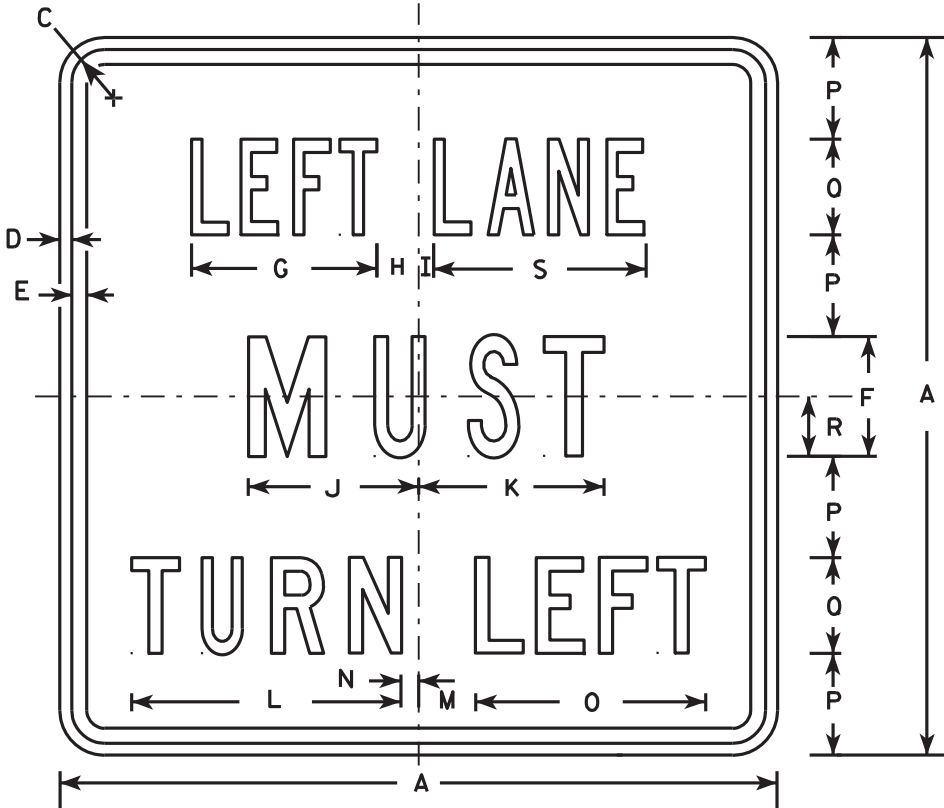
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

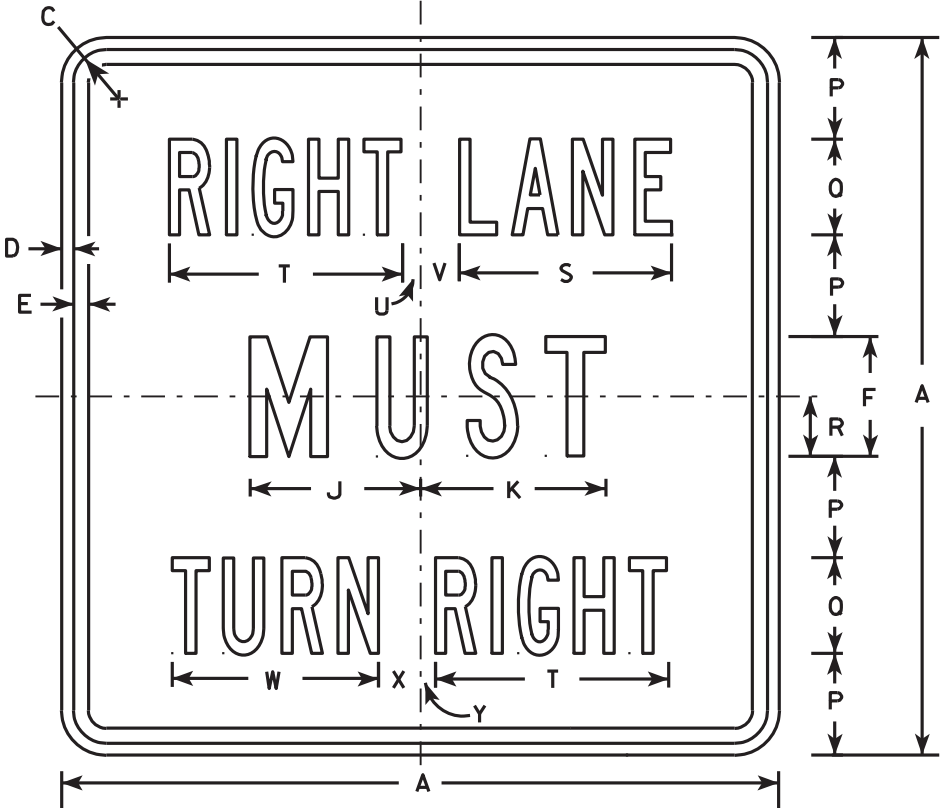
DATE 12/08/10 PLATE NO. R3-2.10

NOTES

- 1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:  
Background - White  
Message - Black
- 3. Message Series - Line 1 is Series B.  
Line 2 is Series C.  
Line 3 on plate R3-7R is Series B and Series C on plate R3-7L.
- 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.



R3-7L



R3-7R

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3⁄8	1⁄2	5⁄8	5	7 3⁄4	1 3⁄4	5⁄8	7 1⁄8	7 3⁄4	11 1⁄4	2 3⁄8	3⁄4	9 5⁄8	4 1⁄4	4	2 1⁄2	8 7⁄8	9 3⁄4	3⁄4	1 5⁄8	8 5⁄8	1 5⁄8	5⁄8		6.25
2S	30		1 3⁄8	1⁄2	5⁄8	5	7 3⁄4	1 3⁄4	5⁄8	7 1⁄8	7 3⁄4	11 1⁄4	2 3⁄8	3⁄4	9 5⁄8	4 1⁄4	4	2 1⁄2	8 7⁄8	9 3⁄4	3⁄4	1 5⁄8	8 5⁄8	1 5⁄8	5⁄8		6.25
2M	30		1 3⁄8	1⁄2	5⁄8	5	7 3⁄4	1 3⁄4	5⁄8	7 1⁄8	7 3⁄4	11 1⁄4	2 3⁄8	3⁄4	9 5⁄8	4 1⁄4	4	2 1⁄2	8 7⁄8	9 3⁄4	3⁄4	1 5⁄8	8 5⁄8	1 5⁄8	5⁄8		6.25
3	36		1 5⁄8	5⁄8	3⁄4	6	9 5⁄8	2	1 1⁄8	8 3⁄4	9	13 1⁄2	3 7⁄8	1 1⁄2	12 1⁄2	5	5	3	10 5⁄8	12	7⁄8	2 1⁄4	10 5⁄8	2 1⁄8	1		9.00
4	48		2 1⁄4	3⁄4	1	8	13 1⁄2	2 3⁄8	1 1⁄2	11 1⁄2	11 7⁄8	17 3⁄4	3 5⁄8	2 1⁄2	16 3⁄8	6 1⁄2	7	4	14 3⁄8	16 7⁄8	5⁄8	3 1⁄4	15 1⁄8	2 3⁄4	1 1⁄8		16.00
5																											

STANDARD SIGN  
R3-7L & R3-7R

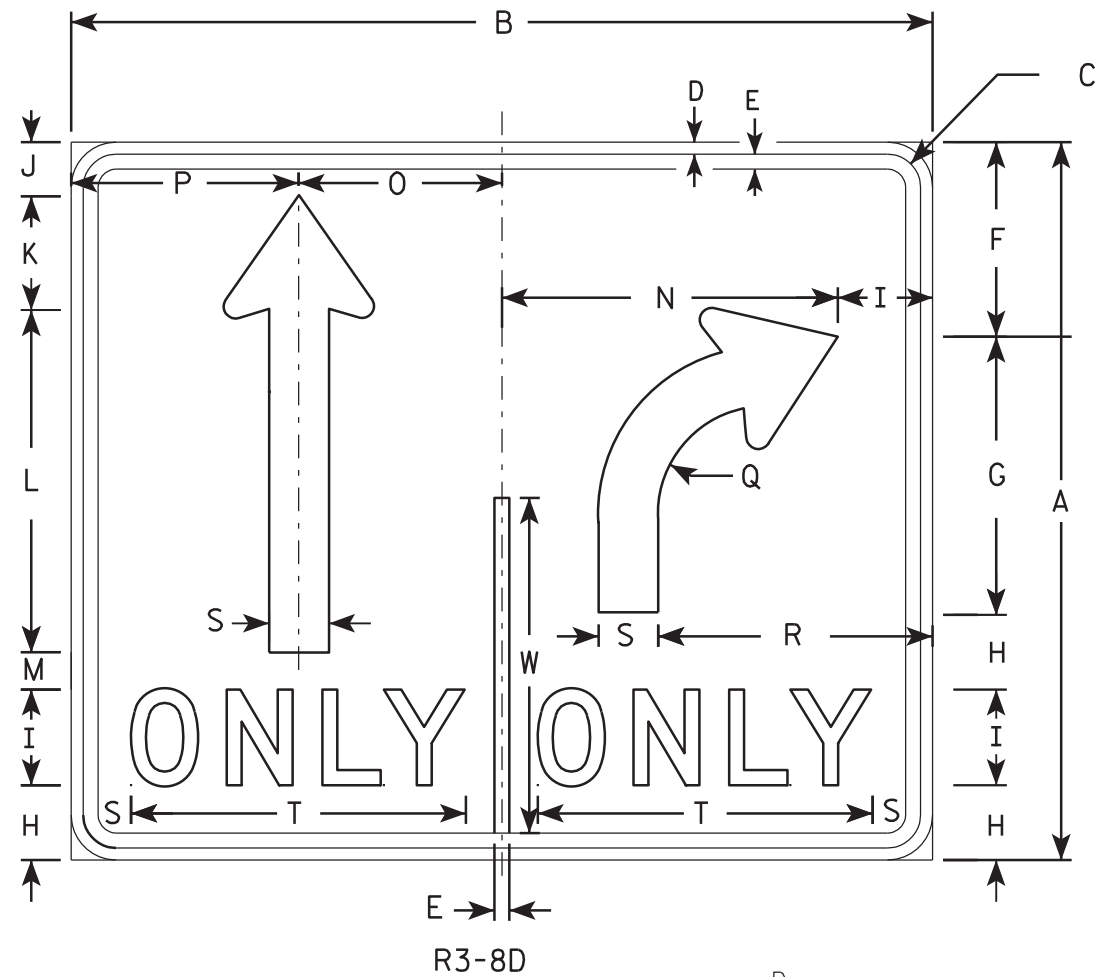
WISCONSIN DEPT OF TRANSPORTATION

APPROVED  
*Matthew R. Rauch*  
for State Traffic Engineer

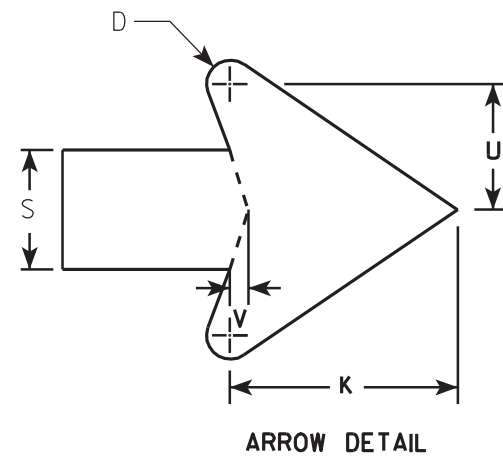
DATE 3/18/2011 PLATE NO. R3-7.3

# NOTES

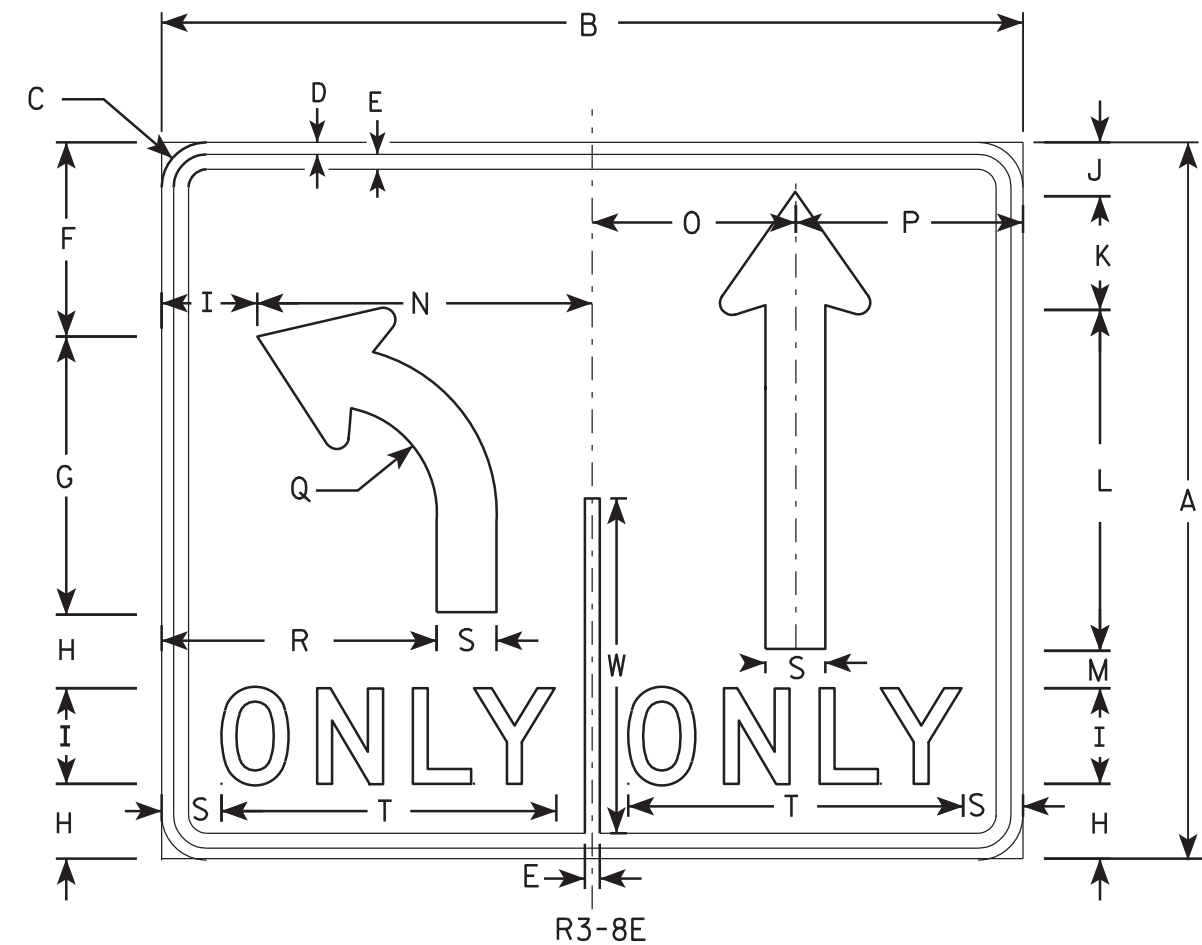
1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - WHITE  
Message - BLACK
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded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



R3-8D



ARROW DETAIL



R3-8E

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30	36	1 3⁄8	1⁄2	5⁄8	8 1⁄8	11 5⁄8	3 1⁄8	4	2 1⁄4	4 3⁄4	14 1⁄4	1 5⁄8	14	8 1⁄2	9 1⁄2	4 1⁄2	11 1⁄2	2 1⁄2	14	2 5⁄8	3⁄8	14				7.5
2M	30	36	1 3⁄8	1⁄2	5⁄8	8 1⁄8	11 5⁄8	3 1⁄8	4	2 1⁄4	4 3⁄4	14 1⁄4	1 5⁄8	14	8 1⁄2	9 1⁄2	4 1⁄2	11 1⁄2	2 1⁄2	14	2 5⁄8	3⁄8	14				7.5
3																											
4	48	54	2 1⁄4	3⁄4	1	13 1⁄4	18 1⁄2	5 1⁄8	6	3 1⁄2	7 1⁄8	21 1⁄2	4 3⁄4	21	12 3⁄4	14 1⁄4	7 1⁄4	17 1⁄8	3 3⁄4	20 5⁄8	4	5⁄8	22 3⁄8				18.0
5	48	54	2 1⁄4	3⁄4	1	13 1⁄4	18 1⁄2	5 1⁄8	6	3 1⁄2	7 1⁄8	21 1⁄2	4 3⁄4	21	12 3⁄4	14 1⁄4	7 1⁄4	17 1⁄8	3 3⁄4	20 5⁄8	4	5⁄8	22 3⁄8				18.0

## STANDARD SIGN R3-8D & R3-8E

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

*Matthew R. Rauch*  
For State Traffic Engineer

DATE 3/18/2011

PLATE NO. R3-8D.2

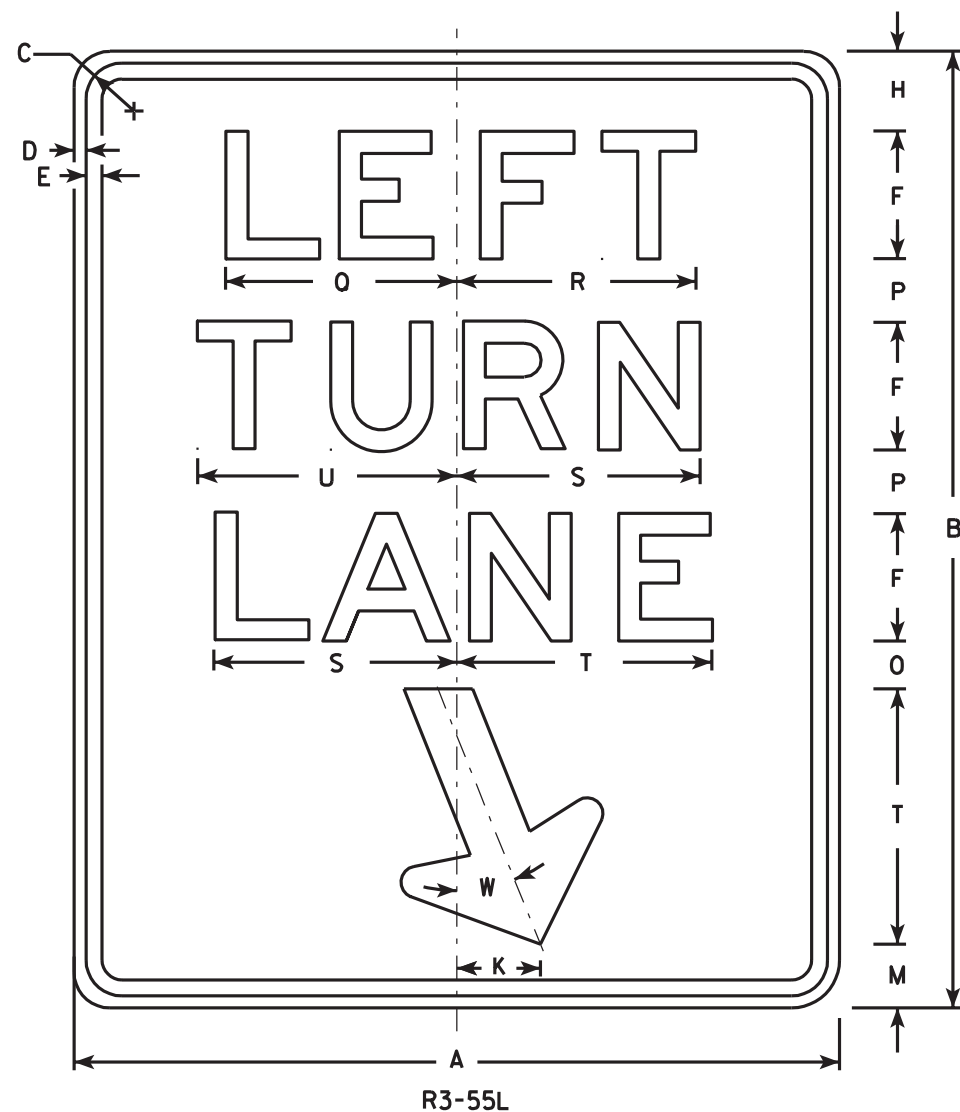
PROJECT NO:

HWY:

COUNTY:

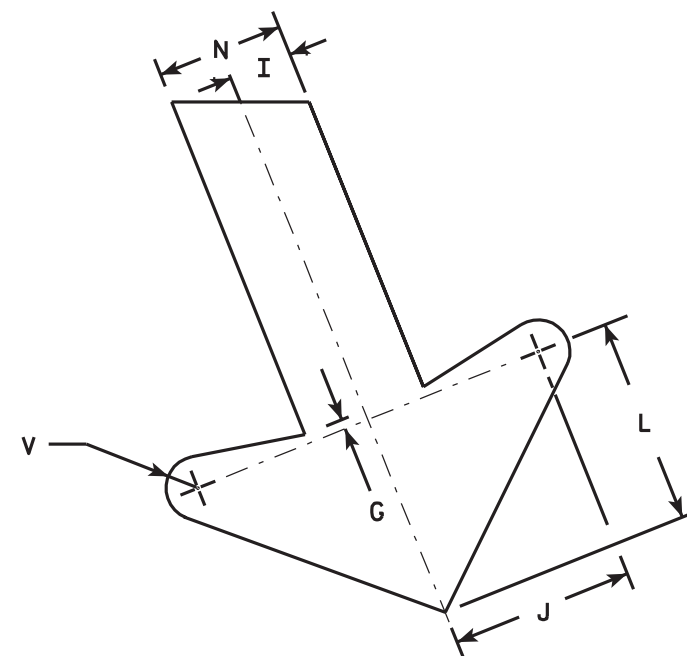
SHEET NO:

E



### NOTES

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

Metric equivalent for this sign is:

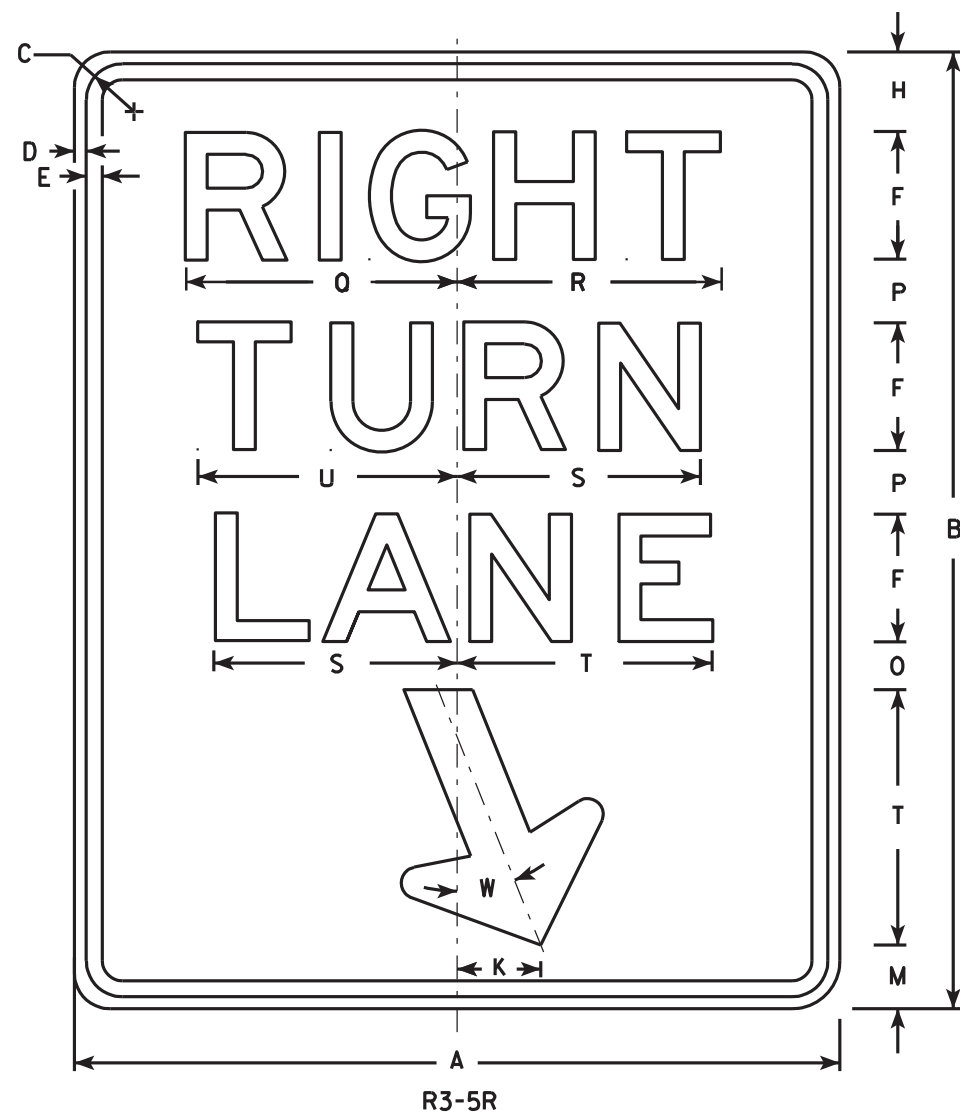
SIZE	
1	
2	600 mm X 750 mm
3	900 mm X 1200 mm
4	
5	

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m <sup>2</sup>
1																												
2	24	30	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	2	1 1/2	2	7 1/4	7 1/2	7 5/8	8	8 1/8	1/2	22°				5.0	0.45
3	36	48	1 3/4	1/2	5/8	6	3/8	4 1/4	1 1/2	4 1/4	4	4 7/8	3 1/4	3	3	3 3/4	10 7/8	11 1/4	11 1/2	12	12 1/4	3/4	22°				12.0	1.08
4																												
5																												

**STANDARD SIGN**  
**R3-55L**

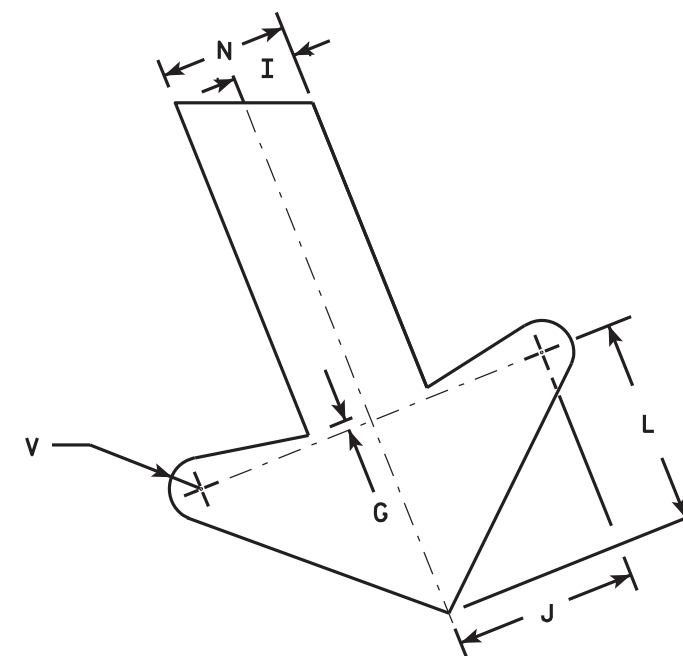
---

WISCONSIN DEPT OF TRANSPORTATION  
 APPROVED *Matthew R. Rauch*  
For State Traffic Engineer  
 DATE 7/05/05 PLATE NO. R3-55L.6



# NOTES

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



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	30	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	2	1 1/2	2	8 1/2	8 1/4	7 5/8	8	8 1/8	1/2	22°				5.0
2M	24	30	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	2	1 1/2	2	8 1/2	8 1/4	7 5/8	8	8 1/8	1/2	22°				5.0
3	36	48	1 3/4	1/2	5/8	6	3/8	4 1/4	1 1/2	4 1/4	4	4 7/8	3 1/4	3	3	3 3/4	12 3/4	12 1/2	11 1/2	12	12 1/4	3/4	22°				12.0
4																											
5																											

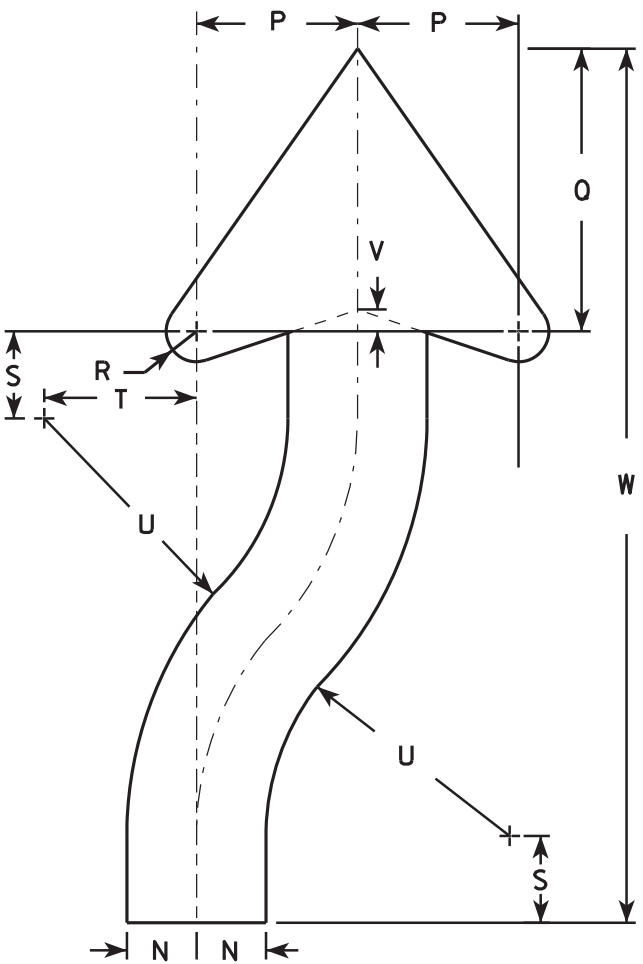
PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
-------------	------	---------	-----------	---

STANDARD SIGN  
R3-56R

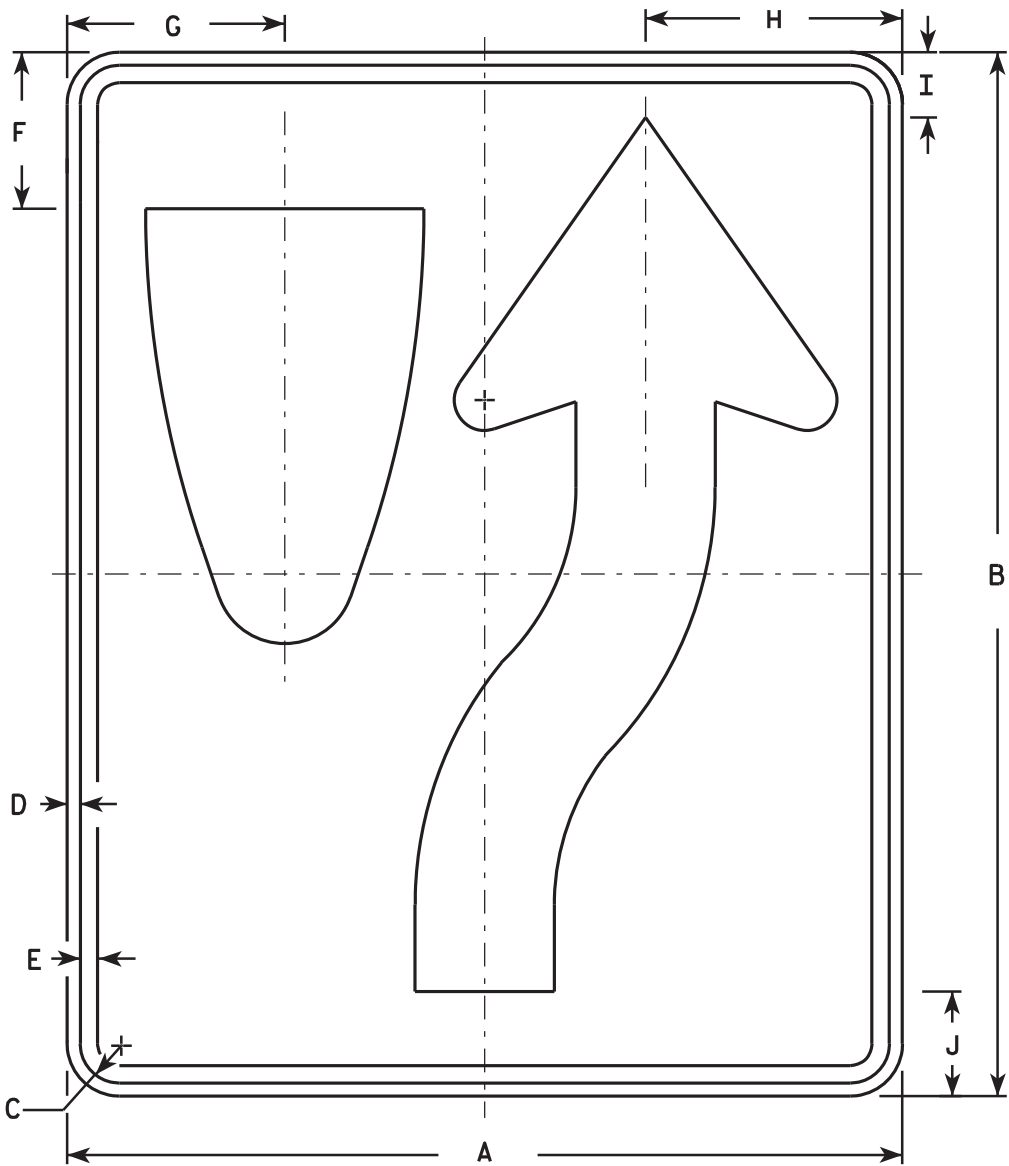
WISCONSIN DEPT OF TRANSPORTATION  
APPROVED *Matthew R. Rauch*  
DATE 6/22/10 *For State Traffic Engineer* PLATE NO. R3-56R.1

NOTES

- 1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition. material is plywood but borders shall be rounded
- 2. Color:  
Background - White  
Message - Black
- 3. Corners may be square or rounded when base as shown. When base material is metal, the corners and borders shall be rounded.
- 4. R4-8 is the same as R4-7 except Legend is reversed.



ARROW DETAIL



R4-7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	3 3/8	4 3/4	5 1/2	1 3/8	2 1/4	6	3	9 3/8	1 1/2	22 1/2	3 1/2	6 1/8	5/8	1 7/8	3 1/4	6 3/4	1/2	20 3/8				3.0
2S	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
2M	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
3	36	48	1 3/4	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
4	36	48	1 3/4	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
5	48	60	2 1/4	3/4	1	9	12 1/2	14 3/4	3 3/4	6	16	8	25	4	60	9 1/4	16 1/4	1 5/8	5	8 3/4	18	1 1/4	50 1/4				20.0

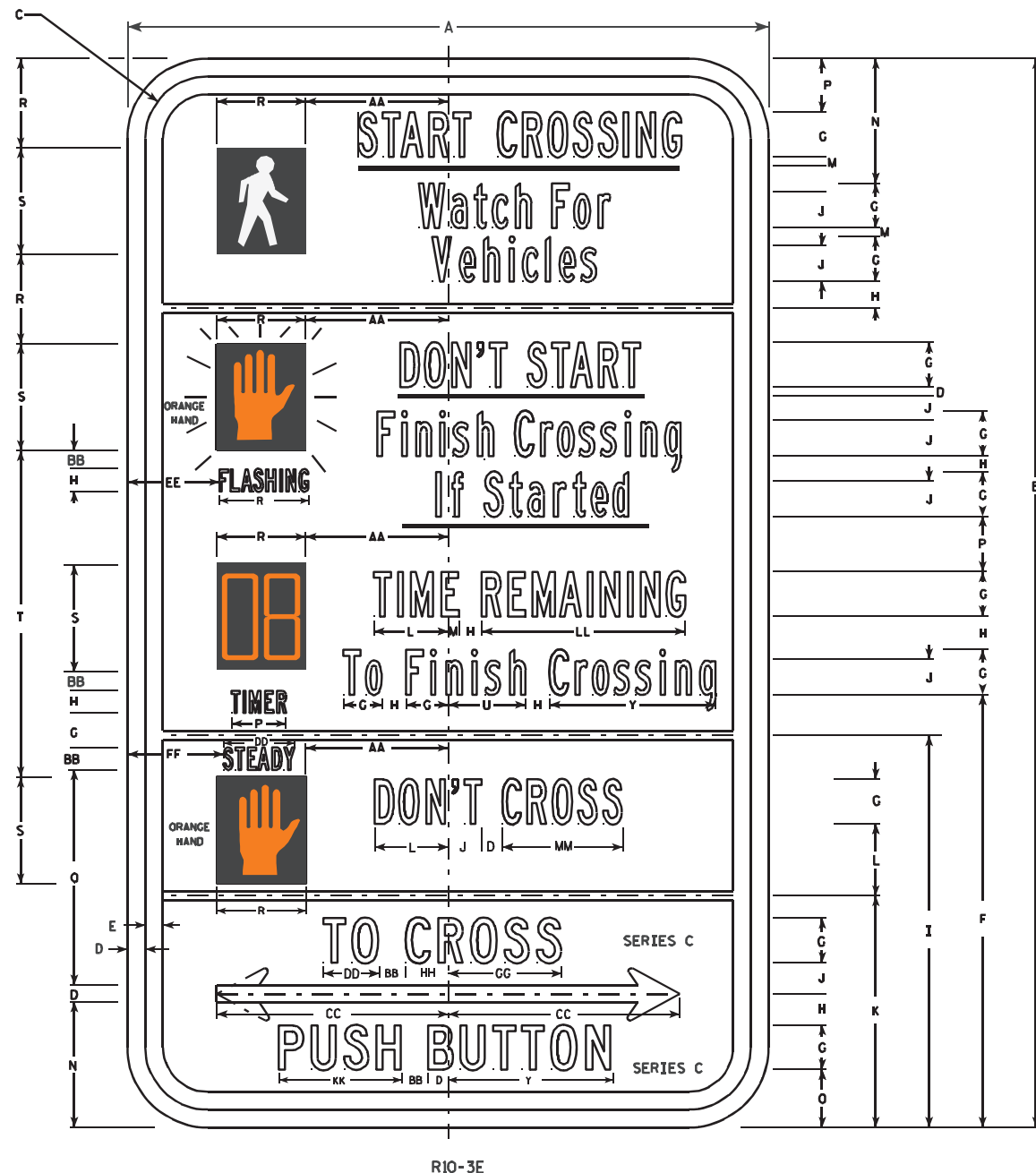
STANDARD SIGN  
R4-7 & R4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED  
*Matthew R. Rauch*  
for State Traffic Engineer

DATE 3/25/2011 PLATE NO. R4-7.8

PROJECT NO: HWY: COUNTY: SHEET NO: E



NOTES

1. All Signs Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - WHITE  
Message - BLACK except Hand Symbol which is Orange with black background.
3. Message Series - B or as noted on the sign.
4. R10-3ER (right arrow)  
R10-3EL (left arrow)  
R10-3ED (double arrow)



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	6	10	1/2	1/8	1/8	4	3/8	1/4	4 1/8	1/4	2 1/8	3/4	1/8	1 1/8	1/2	1/2	2 1/4	7/8	1	3	3/4	1 3/4	1 5/8	1 3/8	1 1/2	5/8	0.42
2S	9	15	7/8	1/4	1/4	6 1/8	5/8	3/8	5 1/2	1/2	3 1/4	1	1/8	1 3/4	7/8	3/4	3	1 1/4	1 1/2	4 5/8	1 1/8	2 5/8	2 1/8	2	2 3/8	1 3/8	0.94
2M	9	15	7/8	1/4	1/4	6 1/8	5/8	3/8	5 1/2	1/2	3 1/4	1	1/8	1 3/4	7/8	3/4	3	1 1/4	1 1/2	4 5/8	1 1/8	2 5/8	2 1/8	2	2 3/8	1 3/8	0.94
3																											
4																											

SIZE	AA	BB	CC	DD	EE	FF	GG	HH	II	JJ	KK	LL	MM	NN	OO	PP	QQ	RR	SS	TT	UU	VV	WW	XX	YY	ZZ	Area sq. ft.
1	1 3/8	1/4	2 1/4	1/2	7/8	7/8	1 1/8	3/8	1	1/2	1 1/8	1 7/8	1 1/8														
2S	2	3/8	3 1/4	1	1 1/4	1 3/8	1 5/8	5/8	1 5/8	3/4	1 3/4	2 7/8	1 5/8														
2M	2	3/8	3 1/4	1	1 1/4	1 3/8	1 5/8	5/8	1 5/8	3/4	1 3/4	2 7/8	1 5/8														
3																											
4																											

STANDARD SIGN  
R10-3EL,R,D

WISCONSIN DEPT OF TRANSPORTATION

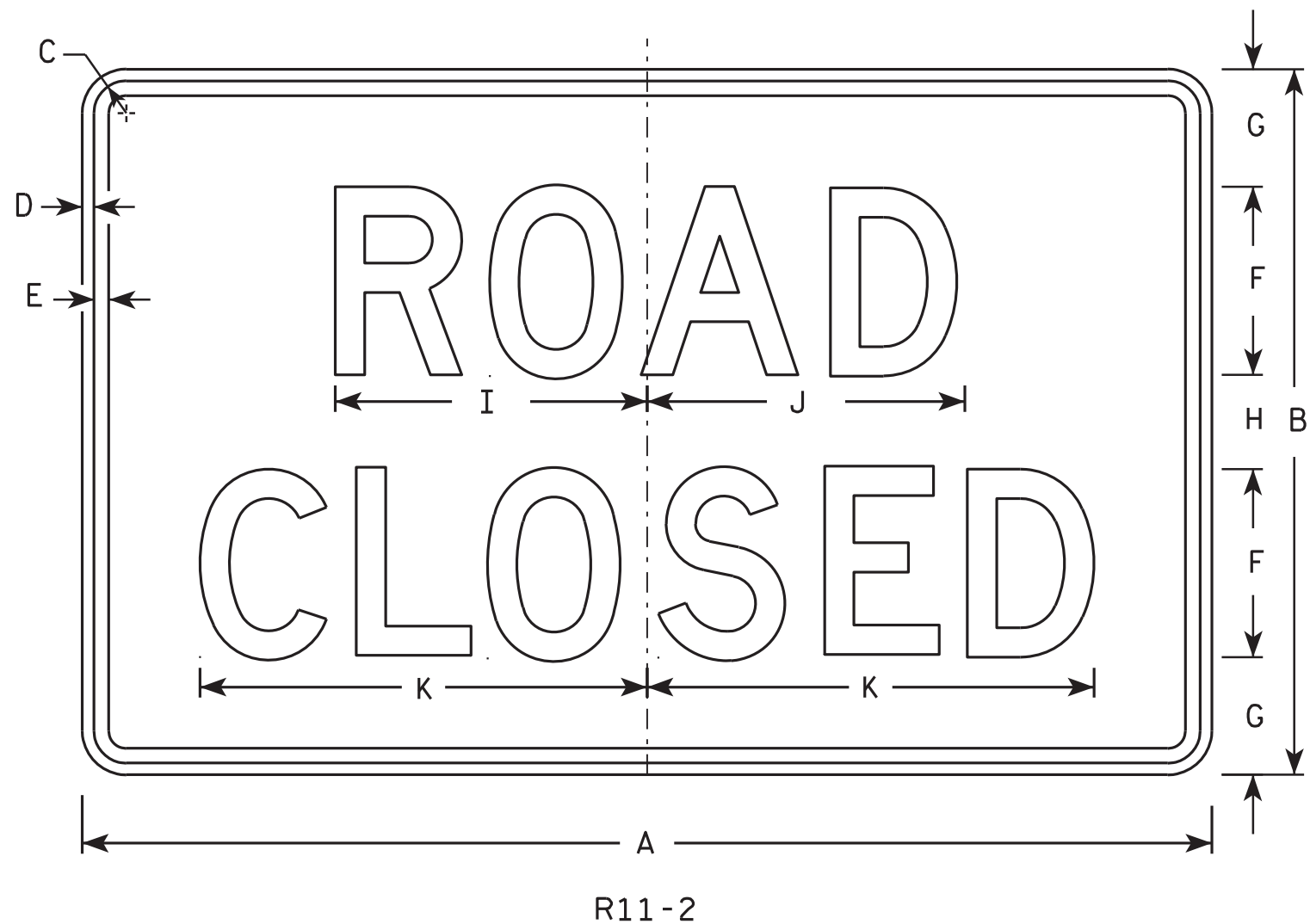
APPROVED  
*Matthew R. Rauch*  
for  
State Traffic Engineer

DATE 4/12/2011 PLATE NO. R10-3E.2

PROJECT NO:

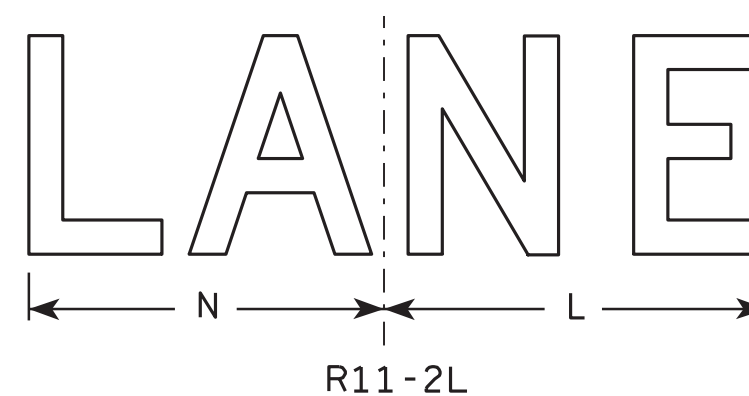
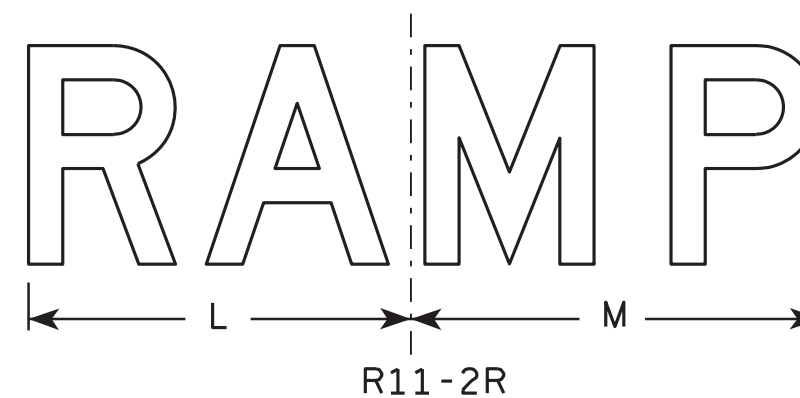
SHEET NO:

E



# NOTES

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



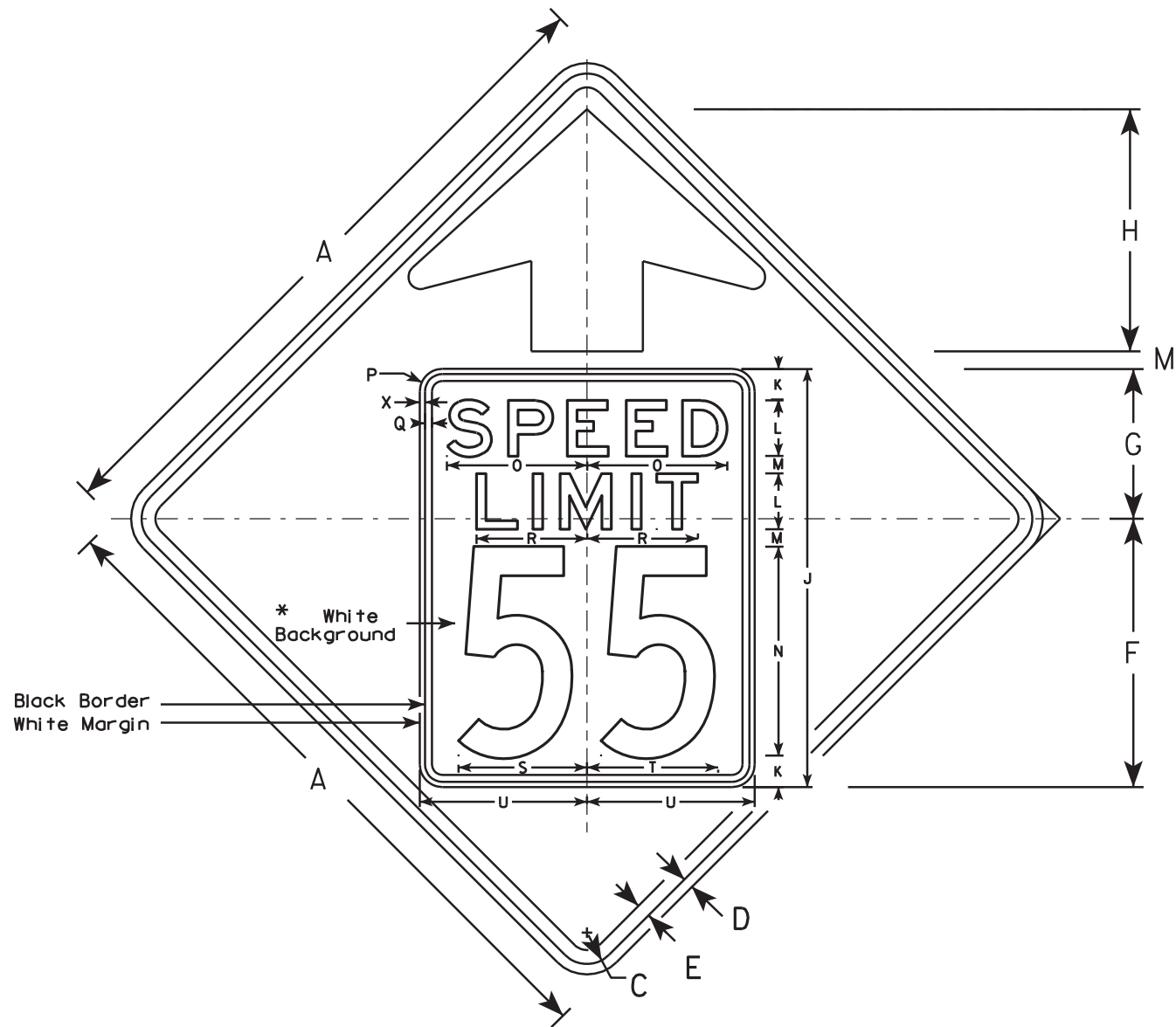
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
2M	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13													10.0
3	48	30	1 3⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13				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

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
-------------	------	---------	-----------	---

STANDARD SIGN  
R11-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
For State Traffic Engineer  
DATE 4/1/11 PLATE NO. R11-2.10

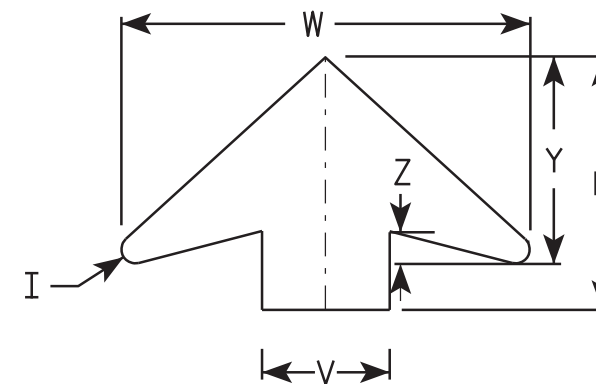


W3-5

### NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color: \*  
Background - YELLOW\*  
Message - BLACK
3. Message Series - C for numbers Series E for wording
4. Substitute appropriate numerals and optically adjust spacing to achieve proper balance

\*Speed Limit Sign shall have a White Background



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	36		1 5/8	5/8	3/4	14 1/2	9 1/2	11 1/2	5/8	24	2	3	1	12	7 1/8	1 1/2	3/8	5 3/4	7 1/4	7 1/8	9	6	19 1/4	3/8	9 3/4	1 5/8	9.0
2M	36		1 5/8	5/8	3/4	14 1/2	9 1/2	11 1/2	5/8	24	2	3	1	12	7 1/8	1 1/2	3/8	5 3/4	7 1/4	7 1/8	9	6	19 1/4	3/8	9 3/4	1 5/8	9.0
3	36		1 5/8	5/8	3/4	14 1/2	9 1/2	11 1/2	5/8	24	2	3	1	12	7 1/8	1 1/2	3/8	5 3/4	7 1/4	7 1/8	9	6	19 1/4	3/8	9 3/4	1 5/8	9.0
4	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0
5	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0

PROJECT NO:

STANDARD SIGN  
W3-5

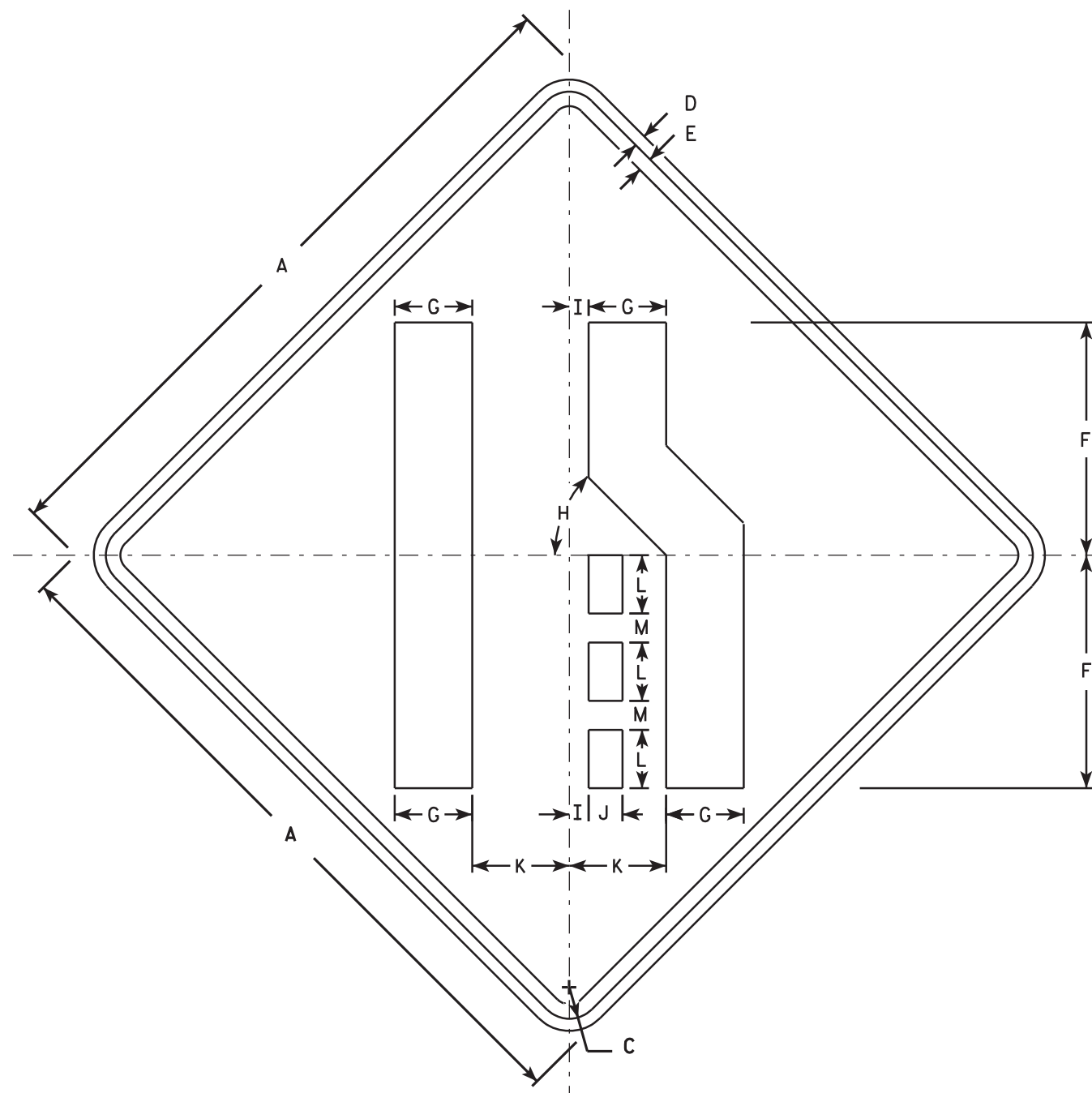
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W3-5.5

SHEET NO:

E



W4-2R

NOTES

1. Sign Is Type II - Type H 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. W4-2L is the same as W4-2R except the symbol is reversed along the vertical centerline.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 <sup>3</sup> / <sub>8</sub>	1/2	<sup>5</sup> / <sub>8</sub>	10	3 <sup>3</sup> / <sub>8</sub>	45°	<sup>7</sup> / <sub>8</sub>	1 1/2	4 1/4	2 1/2	1 1/4														6.25
2S	36		1 <sup>5</sup> / <sub>8</sub>	<sup>5</sup> / <sub>8</sub>	<sup>3</sup> / <sub>4</sub>	12	4	45°	1	1 <sup>3</sup> / <sub>4</sub>	5	3	1 1/2														9.0
2M	36		1 <sup>5</sup> / <sub>8</sub>	<sup>5</sup> / <sub>8</sub>	<sup>3</sup> / <sub>4</sub>	12	4	45°	1	1 <sup>3</sup> / <sub>4</sub>	5	3	1 1/2														9.0
3	36		1 <sup>5</sup> / <sub>8</sub>	<sup>5</sup> / <sub>8</sub>	<sup>3</sup> / <sub>4</sub>	12	4	45°	1	1 <sup>3</sup> / <sub>4</sub>	5	3	1 1/2														9.0
4	48		2 1/4	<sup>3</sup> / <sub>4</sub>	1	16	5 <sup>3</sup> / <sub>8</sub>	45°	1 1/4	2 <sup>3</sup> / <sub>8</sub>	6 <sup>3</sup> / <sub>4</sub>	4	2														16.0
5	48		2 1/4	<sup>3</sup> / <sub>4</sub>	1	16	5 <sup>3</sup> / <sub>8</sub>	45°	1 1/4	2 <sup>3</sup> / <sub>8</sub>	6 <sup>3</sup> / <sub>4</sub>	4	2														16.0

STANDARD SIGN  
W4-2

WISCONSIN DEPT OF TRANSPORTATION

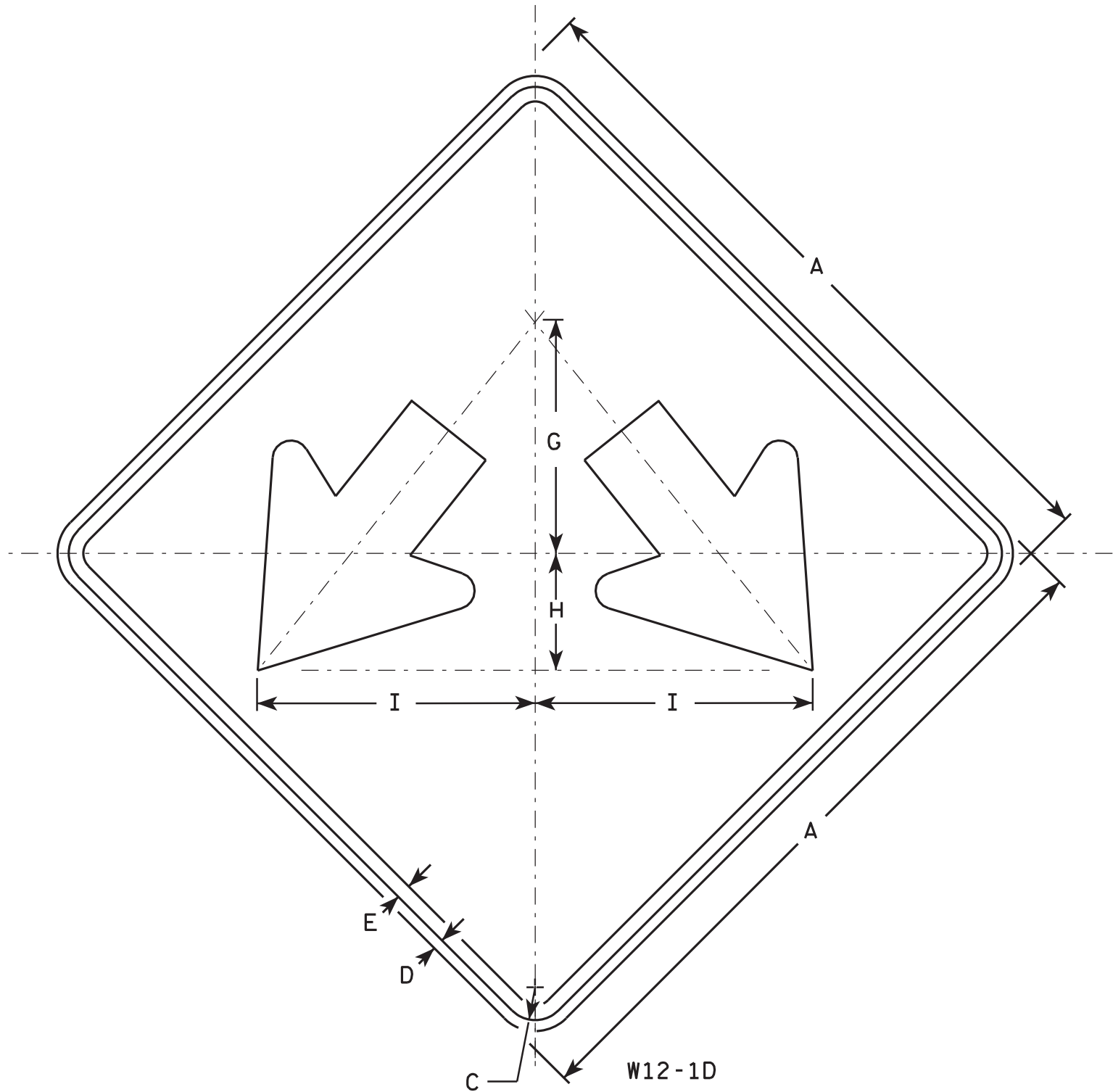
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 2/29/2012 PLATE NO. W4-2.13

PROJECT NO:

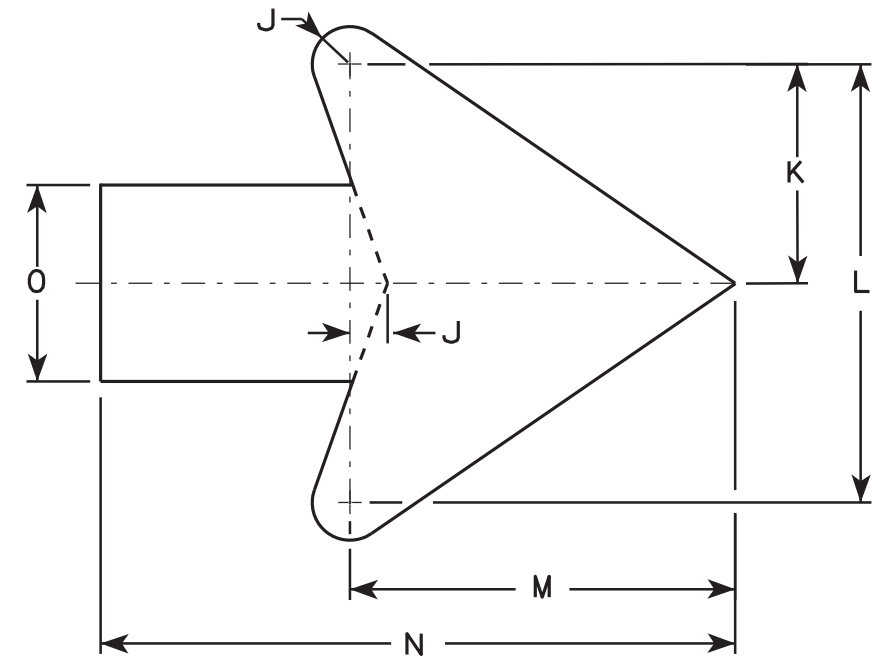
SHEET NO:

E



### NOTES

1. Sign is Type II - Type H 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.



Arrow Detail

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24		1 1/8	1/2	3/8		8	4	9 1/2	3/8	3 3/8	7 1/4	6 3/8	10 3/8	3 1/4												4.0
2M	24		1 1/8	1/2	3/8		8	4	9 1/2	3/8	3 3/8	7 1/4	6 3/8	10 3/8	3 1/4												4.0
3	30		1 3/8	1/2	5/8		10	5	11 7/8	3/4	4 1/2	9	7 7/8	13	4												6.25
4	36		1 3/8	1/2	5/8		12	6	14 1/4	1	5 1/2	10 7/8	9 5/8	15 3/4	4 3/4												9.0
5	48		2 1/4	3/4	1		16	8	19	1 1/4	7 1/4	14 1/2	12 3/4	21	6 1/4												16.0

### STANDARD SIGN W12-1D

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 3/15/11 PLATE NO. W12-1D.14

PROJECT NO:

HWY:

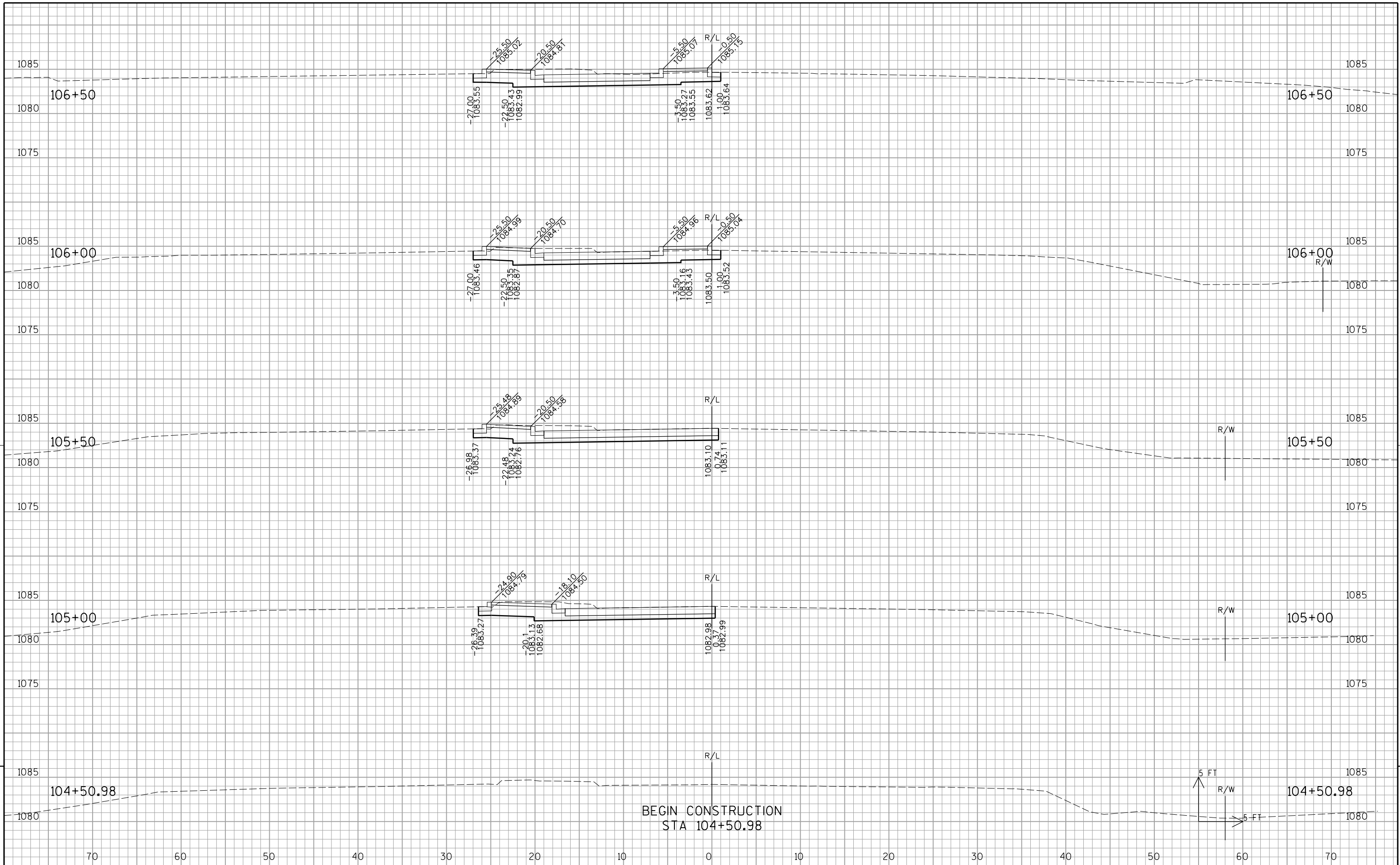
COUNTY:

SHEET NO:

E

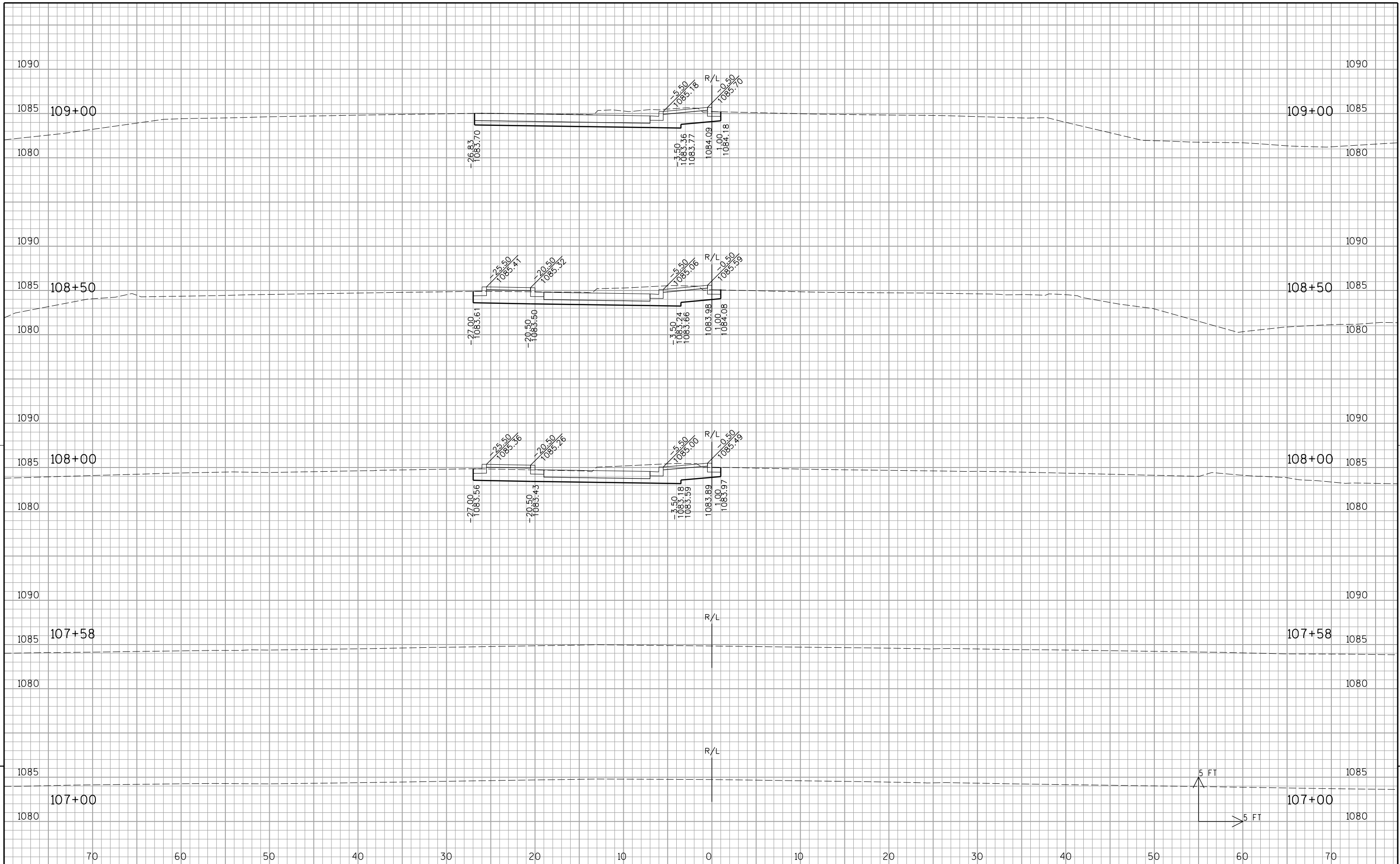
EARTHWORK SUMMARY

Station	End Area (SF)		Incremental (CY)		Expanded Fill 1.30	Cumulative (CY)		Mass Ordinate
	Cut	Fill	Cut	Fill		Cut	Exp. Fill	
104+51	42.0	0.0						
105+00	40.5	0.0	75	0	0	75	0	75
105+50	41.7	0.0	76	0	0	151	0	151
106+00	40.0	0.0	76	0	0	227	0	227
106+50	40.9	0.0	75	0	0	302	0	302
107+00	36.0	0.0	71	0	0	373	0	373
107+58	36.0	0.0						
108+00	43.7	0.0	62	0	0	62	0	62
108+50	45.1	0.0	82	0	0	144	0	144
109+00	43.9	0.0	82	0	0	226	0	226
109+50	43.4	0.0	81	0	0	307	0	307
110+00	32.6	0.0	70	0	0	377	0	377
110+50	6.1	0.0	36	0	0	413	0	413
110+55	6.0	0.0	1	0	0	414	0	414
		TOTALS:	787	0	0			

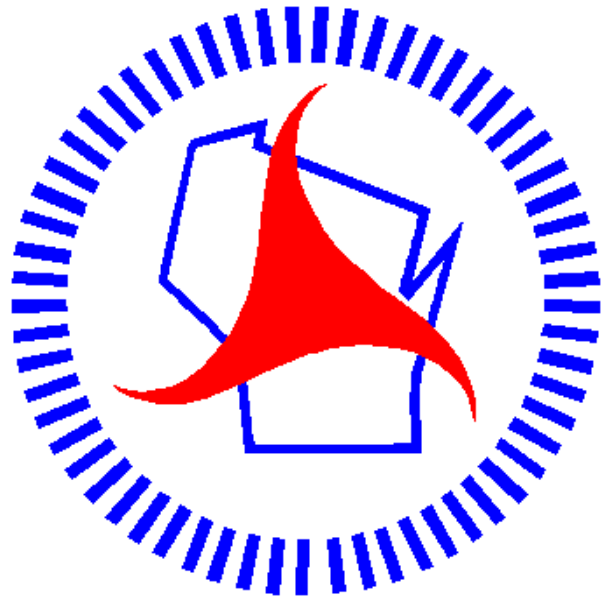


9

9







## *Wisconsin Department of Transportation*

Dedicated people creating transportation solutions  
through innovation and exceptional service.

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