

WKE

Dec 14, 2021

PROJECT ID: 1320-16-71

COUNTY: RACINE

ORDER OF SHEETS

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

TOTAL SHEETS = 74



25

# STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

## STH 11 IH 94 - Ohio Street STH 11 RACINE COUNTY

STATE PROJECT NUMBER
1320-16-71

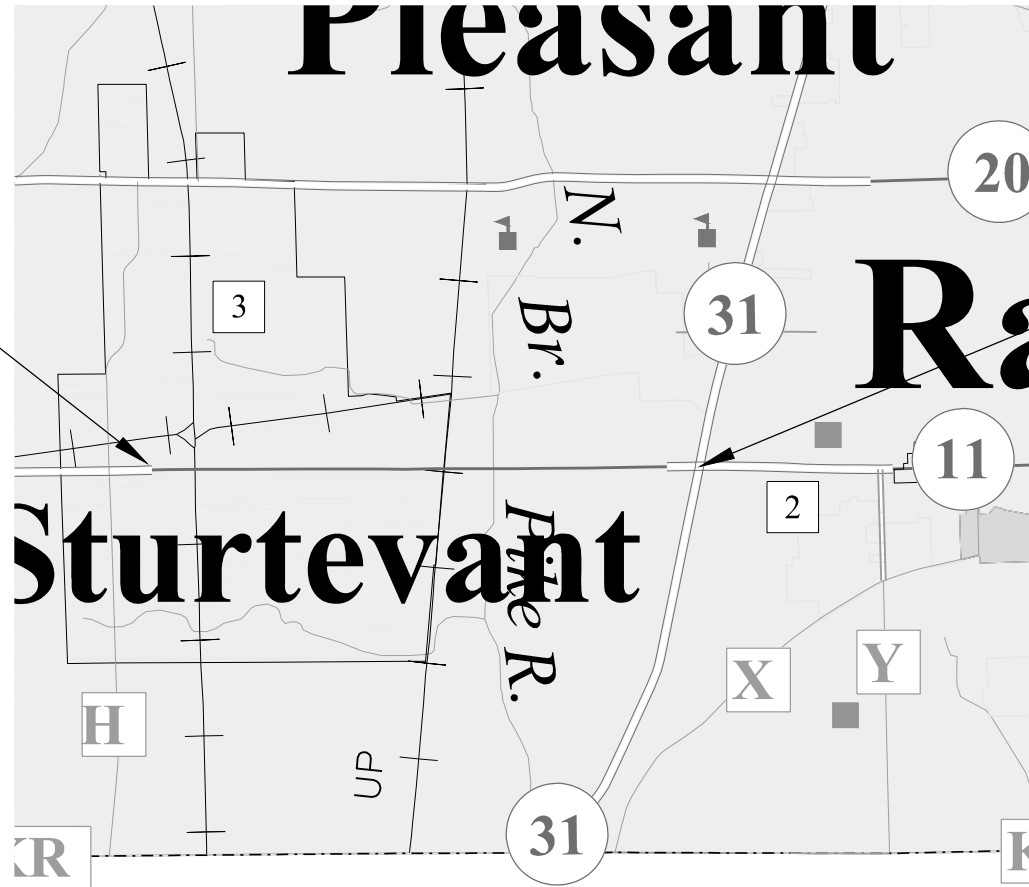
STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1320-16-71	WISC 2022084	1

DESIGN DESIGNATION

A.A.D.T.	2017	=	15,100 - 25,400
A.A.D.T.		=	
D.H.V.		=	
D.D.		=	
T.		=	
DESIGN SPEED		=	
ESALS		=	

START PROJECT  
STA 195+00

END PROJECT  
STA 361+00



SECTIONS 20-30, T-3-N, R-22-E

LAYOUT  
SCALE 0 1 MI

TOTAL NET LENGTH OF CENTERLINE = 0.0

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	
SILT FENCE	

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	
UTILITY PEDESTAL	
POWER POLE	
TELEPHONE POLE	

ORIGINAL PLANS PREPARED BY  
TRAFFIC ANALYSIS & DESIGN INC.

DATE: JULY 30, 2021

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PREPARED BY: \_\_\_\_\_ WISDOT  
Designer: \_\_\_\_\_ TRAFFIC ANALYSIS & DESIGN INC.  
Project Manager: \_\_\_\_\_ ALLISON BLACKWOOD  
Regional Examiner: \_\_\_\_\_  
Regional Supervisor: \_\_\_\_\_ MANOJOY NAG

APPROVED FOR THE DEPARTMENT  
DATE: JULY 30, 2021

**E**

### GENERAL NOTES

1. NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.
2. ALL UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO CONSTRUCTION. NOTIFY THE ENGINEER OF ANY CONFLICTS PRIOR TO CONSTRUCTION.
3. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
4. THERE ARE DELINEATED WETLANDS IN THE PROJECT AREA. THE LOCATIONS ARE SHOWN IN THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOT DISTURBING THESE LOCATIONS.
5. DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE FERTILIZED, SEEDED, AND MULCHED.
6. INSTALL HEAVY DUTY SILT FENCE WHERE WORK WILL BE WITHIN 30' OF WETLANDS BOUNDARY.
7. USE EROSION CONTROL MAT WITHOUT FERTILIZER FOR RESTORATION WHEN WORK IS COMPLETE WITHIN 30' OF WETLANDS BOUNDARY.
8. INLET PROTECTION REQUIRED ON SIDE OF STREET WHERE WORK IS BEING PERFORMED.
9. CONTRACTOR SHALL PROTECT SECTION CORNER AND WITNESS TIES AT CTH H AND 90TH STREET.

### UTILITIES

AT&T LOCAL NETWORK - COMMUNICATION LINE  
DALE DEFEVER  
39869 LINN ST  
CANTON, MI 48147  
(586) 242-2671  
DD2579@ATT.COM  
CC: J.NAVARRO@NORTHWINDTECH.COM

PAETEC COMMUNICATIONS, LLC - COMMUNICATION LINE  
LORI S. KETTER  
314 N DANZ AVE  
GREEN BAY, WI 54302-3526  
414-274-9215  
LORI.KETTER@WINDSTREAM.COM

MOUNT PLEASANT STORM WATER DIST. 1 - SEWER  
LINDSEY WEBER  
8811 CAMPUS DR  
MOUNT PLEASANT, WI 53406  
(262) 664-7833  
LWEBER@MTPLEASANTWI.GOV

VILLAGE OF MOUNT PLEASANT - SEWER  
LINDSEY WEBER  
8811 CAMPUS DR  
MOUNT PLEASANT, WI 53406  
(262) 664-7833  
LWEBER@MTPLEASANTWI.GOV

WE ENERGIES - ELECTRICITY  
JAMES NELSON  
7815 NORTHWESTERN AVE  
RACINE, WI 53406  
WORK: 262-884-6740  
MOBILE: 414-315-1189

### DNR

BENTON STELZEL  
SOUTHEAST REGION TRANSPORTATION LIAISON  
DNR SOUTHEAST REGION HEADQUARTERS  
2300 N. DR. MARTIN LUTHER KING JR. DRIVE  
MILWAUKEE, WI 53212  
BENTON.STELZEL@WISCONSIN.GOV

ATC MANAGEMENT, INC. - ELECTRICITY-TRANSMISSION  
CHRIS DAILEY  
P.O. BOX 47  
WAUKESHA, WI 53187  
262-506-6884  
CDAILEY@ATCLLC.COM

AT&T WISCONSIN - COMMUNICATION LINE  
MIKE VANBOVEN  
411 7TH STREET  
RACINE, WI 53403  
(262) 676-3958  
MV3658@ATT.COM

RACINE WATER WORKS COMMISSION - WATER  
CHAD REGALIA  
100 HUBBARD ST  
RACINE, WI 53402  
262-497-4611  
CHAD.REGALIA@CITYOFRACINE.ORG

SPECTRUM - COMMUNICATION LINE  
BEAU ABUYA  
1320 N DR MARTIN LUTHER KING JR DR  
MILWAUKEE, WI 53212  
(414) 908-1343  
WIS.ENGINEERING@CHARTER.COM

WE ENERGIES - GAS/PETROLEUM  
CHRIS DEGRAVE  
7815 NORTHWESTERN AVE  
RACINE, WI 53406  
WORK: 262-886-7018  
MOBILE: 262-939-9814

VERIZON BUSINESS - COMMUNICATION LINE  
RJ CICALTELLO JR.  
15725 WEST RYERSON ROAD  
NEW BERLIN, WI 53151  
262-232-1323  
RANDY.CICALTELLO@VERIZON.COM

LEVEL 3 COMMUNICATIONS LLC - COMMUNICATION LINE  
BRAHIM GADDOUR  
3235 INTERTECH DR, SUITE 600  
BROOKFIELD, WI 53045  
WORK: 414-908-1027  
MOBILE: 414-704-1026  
BRAHIM.GADDOUR@LUMEN.COM

ROGERS TELECOM - COMMUNICATION LINE  
KEITH JACKSON  
4804 N. 40TH STREET  
SHEBOYGAN, WI 53083  
WORK: 920-395-7121  
MOBILE: 920-889-9905  
KJACKSON@GABES.COM

TDS METROCOM LLC - COMMUNICATION LINE  
MATTHEW SCHULTE  
525 JUNCTION ROAD  
MADISON, WI 53717  
(262) 754-3063  
MATT.SCHULTE@TDSTELECOM.COM

WISCONSIN DEPARTMENT OF TRANSPORTATION - TRAFFIC SIGNALS  
DERRIN WOLFORD  
141 NW BARSTOW STREET  
WAUKESHA, WI 53188  
(262) 521-4409  
DERRIN.WOLFORD@DOT.WI.GOV

MIDWEST FIBER NETWORKS LLC - COMMUNICATION LINE  
CORY SCHMUKI  
6070 N FLINT RD  
GLENDALE, WI 53209  
WORK: 414-459-3561  
MOBILE: 414-349-2764  
CSCHMUKI@MIDWESTFIBERNETWORKS.COM

VILLAGE OF STURTEVANT - SEWER  
JACK FEINER  
2801 89TH STREET  
STURTEVANT, WI 53177  
WORK: 262-886-7202  
MOBILE: 262-997-0738  
FEINERJ@STURTEVANT.WI.GOV

SPRINT COMMUNICATIONS CO LP - COMMUNICATION LINE  
DAN HILLIARD  
849 EARL ST  
SAINT PAUL, MN 55106  
(612) 217-3526  
DAN.J.HILLIARD@T-MOBILE.COM

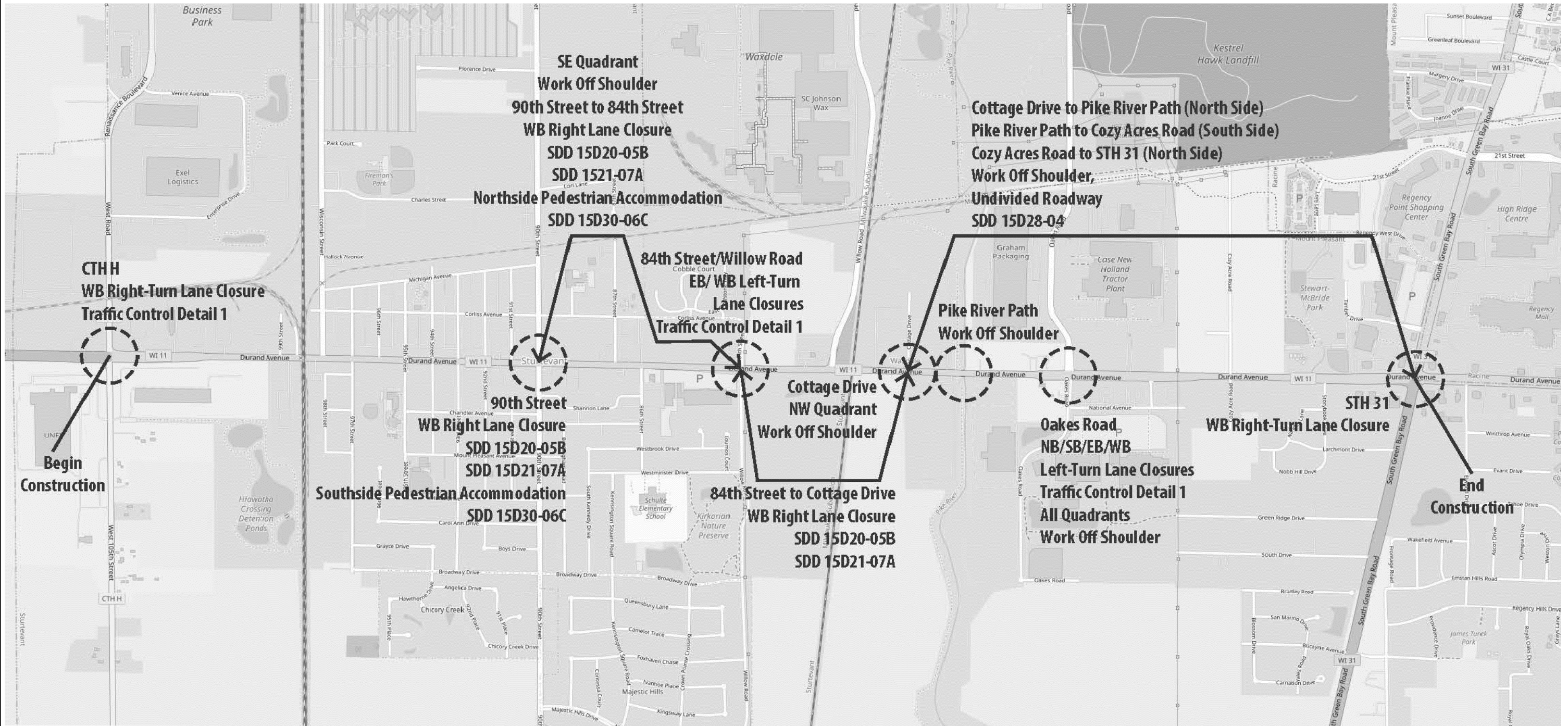
WISCONSIN DEPARTMENT OF TRANSPORTATION - STREET LIGHTING  
ERIC PEREA  
141 NW BARSTOW STREET  
WAUKESHA, WI 53188  
(262) 574-5422  
ERIC.PEREA@DOT.WI.GOV

WISCONSIN DEPARTMENT OF TRANSPORTATION - ELECTRICAL FIELD UNIT  
935 S. 60TH STREET  
WEST ALLIS, WI 53214  
414-266-1170



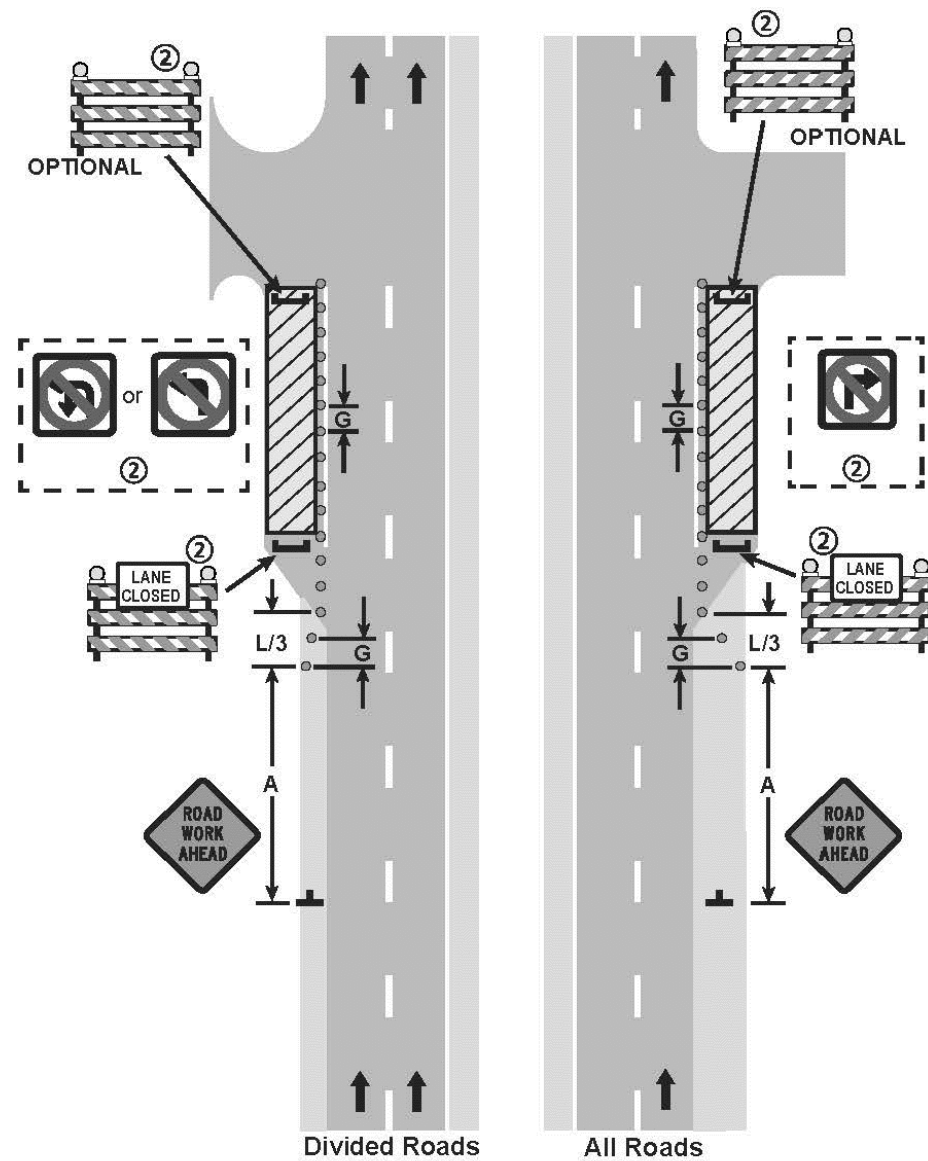
NOTES

- 1. WORK OFF SHOULDER REQUIRES WORK VEHICLE WITH AN ACTIVATED 360 DEGREE FLASHING BEACON.
- 2. TEMPORARY CLOSURE OF LEFT AND RIGHT TURN LANES MAY OCCUR BETWEEN THE HOURS OF 9 AM AND 3 PM, EXCEPT FOR AT THE INTERSECTION OF STH 11 AND STH 31, WHERE CLOSURES MAY OCCUR DURING DAYLIGHT HOURS UNTIL NOON.
- 3. TEMPORARY CLOSURES OF THE WB RIGHT THROUGH LANE MAY OCCUR DURING DAYLIGHT HOURS WEST OF COTTAGE DRIVE. TEMPORARY CLOSURES OF THE EB RIGHT THROUGH LANE MAY OCCUR DURING DAYLIGHT HOURS EXCEPT 2 PM TO 6 PM.
- 4. TEMPORARY CLOSURE OF THE RIGHT TURN LANES IN THE NE AND NW QUADS OF STH 31 MAY OCCUR DURING DAYLIGHT HOURS UNTIL NOON.



THIS DETAIL APPLIES TO THE FOLLOWING LOCATIONS:

Location	Speed Limit	Work Area	Signal Component	Closure Type	A	G	L
CTH H/105th	45	WB - NE Pork Chop	Antenna	WB Rt	500 ft	50 ft	540 ft
84th/Willow - West Leg	40	Median Island	Cameras (V1, V4)	WB Lt	350 ft	25 ft	320 ft
84th/Willow - East Leg	40	Median Island	Cameras (V2, V3)	EB Lt	350 ft	25 ft	320 ft
Oakes - West Leg	40	Median Island	Cameras & Signal Heads (V1 et al)	EB Lt	350 ft	25 ft	320 ft
Oakes - East Leg	40	Median Island	Cameras & Signal Heads (V2 et al)	WB Lt	350 ft	25 ft	320 ft
Oakes - South Leg	25	Median Island	Signal Heads (8, 15, 24)	NB Lt	200 ft	25 ft	125 ft
Oakes - North Leg	25	Median Island	Signal Heads (7, 16, 20)	SB Left	200 ft	25 ft	125 ft
STH 31 - East Leg	40	NE Quadrant	Buried Conduit	WB Rt	350 ft	25 ft	320 ft
STH 31 - North Leg	35	NW Quadrant	Buried Conduit	SB Rt	350 ft	25 ft	245 ft
STH 31 - West Leg	40	Behind Curb	Buried Conduit	WB Rt	350 ft	25 ft	320 ft



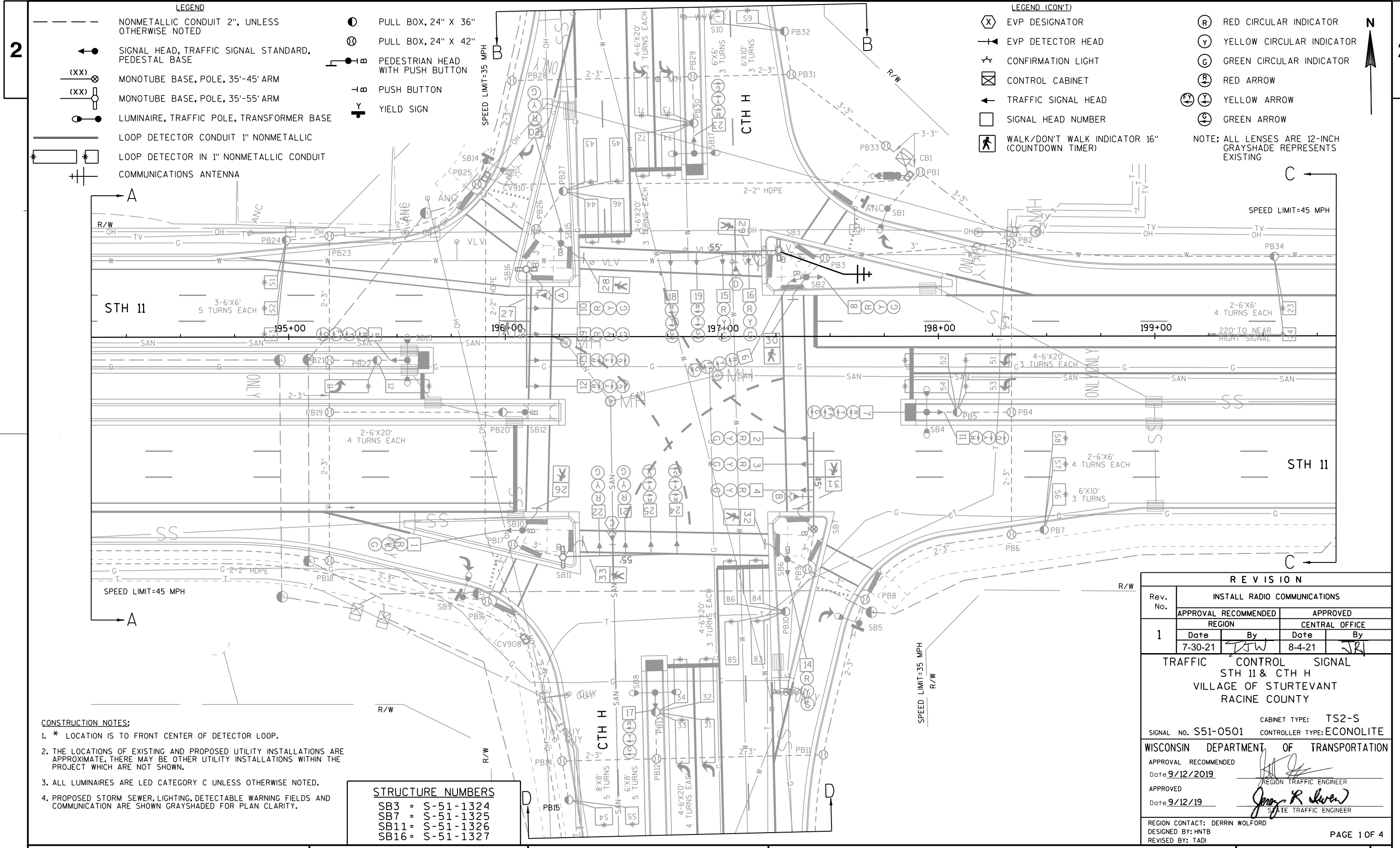
**TURN LANE CLOSURES**

3 DAYS OR LESS



**NOTES**

- SEE TRAFFIC CONTROL OVERVIEW SHEET FOR USAGE OF SDDS AT ALL OTHER PROJECT LOCATIONS.
- TURN PROHIBITION SIGNS ARE REQUIRED IF TURNS ARE PROHIBITED.
- END ROAD WORK SIGN SHOULD BE PLACED 500 FEET PAST WORK AREA.
- OPTIONAL TYPE III BARRICADES ARE NOT REQUIRED.



**LEGEND**

- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) MONOTUBE BASE, POLE, 35'-45' ARM
- (XX) MONOTUBE BASE, POLE, 35'-55' ARM
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LOOP DETECTOR CONDUIT 1" NONMETALLIC
- \* --- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- COMMUNICATIONS ANTENNA

- PULL BOX, 24" X 36"
- PULL BOX, 24" X 42"
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- Y YIELD SIGN

**LEGEND (CON'T)**

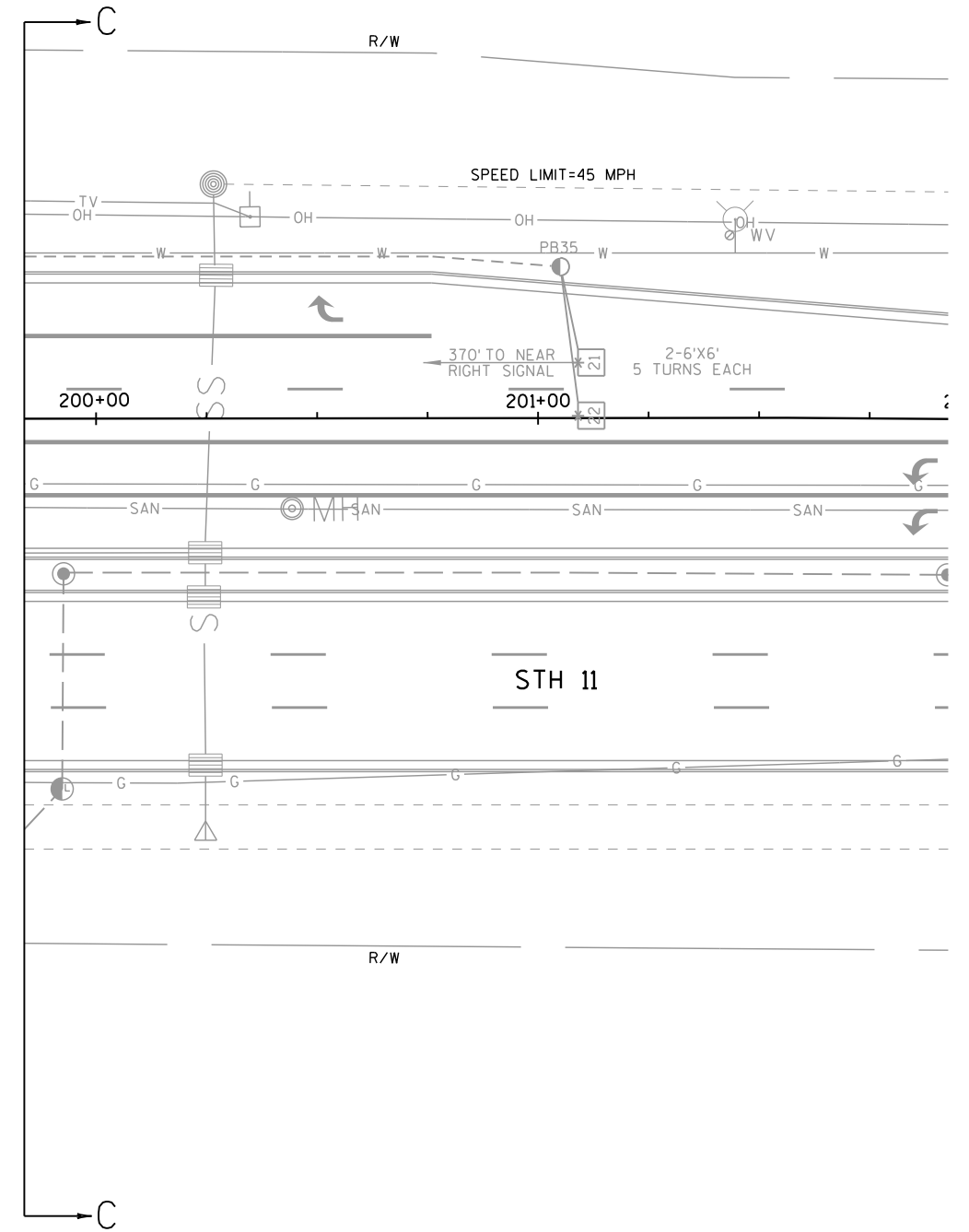
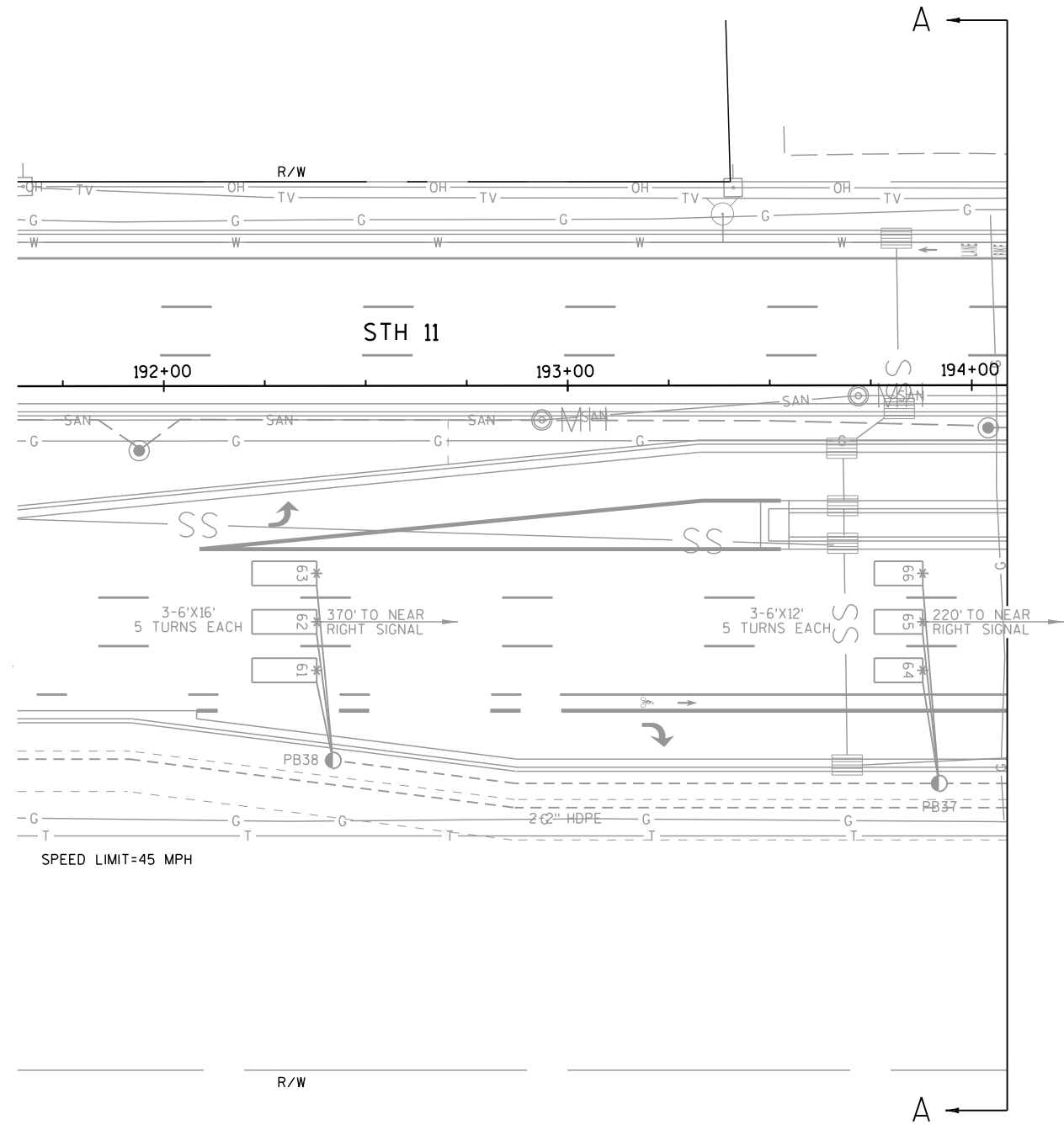
- (X) EVP DESIGNATOR
  - EVP DETECTOR HEAD
  - ☆ CONFIRMATION LIGHT
  - ☒ CONTROL CABINET
  - ← TRAFFIC SIGNAL HEAD
  - SIGNAL HEAD NUMBER
  - WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
  - (R) RED CIRCULAR INDICATOR
  - (Y) YELLOW CIRCULAR INDICATOR
  - (G) GREEN CIRCULAR INDICATOR
  - (R) RED ARROW
  - (Y) YELLOW ARROW
  - (G) GREEN ARROW
- NOTE: ALL LENSES ARE 12-INCH GRAYSHADE REPRESENTS EXISTING

- CONSTRUCTION NOTES:**
- \* LOCATION IS TO FRONT CENTER OF DETECTOR LOOP.
  - THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
  - ALL LUMINAIRES ARE LED CATEGORY C UNLESS OTHERWISE NOTED.
  - PROPOSED STORM SEWER, LIGHTING, DETECTABLE WARNING FIELDS AND COMMUNICATION ARE SHOWN GRAYSHADED FOR PLAN CLARITY.

**STRUCTURE NUMBERS**

SB3	=	S-51-1324
SB7	=	S-51-1325
SB11	=	S-51-1326
SB16	=	S-51-1327

REVISION					
Rev. No.	INSTALL RADIO COMMUNICATIONS				
1	APPROVAL RECOMMENDED	REGION		APPROVED	CENTRAL OFFICE
	Date	By	Date	By	
	7-30-21	JW	8-4-21	JR	
TRAFFIC CONTROL SIGNAL STH 11 & CTH H VILLAGE OF STURTEVANT RACINE COUNTY					
CABINET TYPE: TS2-S SIGNAL NO. S51-0501 CONTROLLER TYPE: ECONOLITE					
WISCONSIN DEPARTMENT OF TRANSPORTATION					
APPROVAL RECOMMENDED		Date 9/12/2019			
APPROVED		Date 9/12/19			
		REGION TRAFFIC ENGINEER			
		STATE TRAFFIC ENGINEER			
REGION CONTACT: DERRIN WOLFORD					
DESIGNED BY: HNTB					
REVISED BY: TADI					



TRAFFIC CONTROL SIGNAL  
 STH 11 & CTH H  
 VILLAGE OF STURTEVANT  
 RACINE COUNTY

SIGNAL NO. S51-0501  
 REGION CONTACT: DERRIN WOLFORD  
 DESIGNED BY: HNTB  
 REVISED BY: TADI

PAGE 2 OF 4



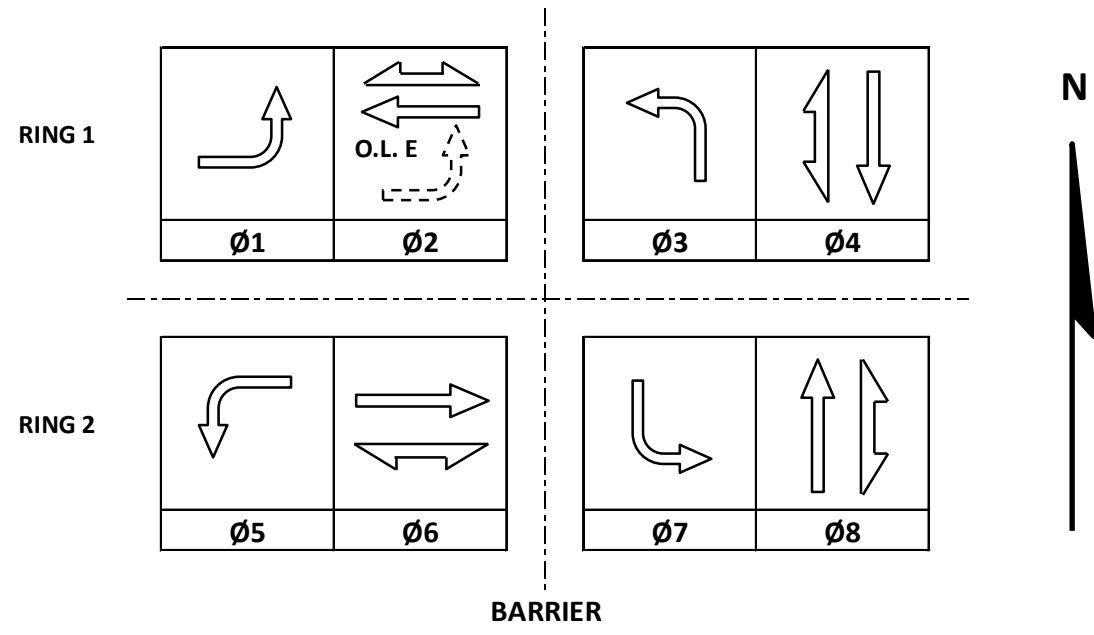
TRAFFIC CONTROL SIGNAL  
 STH 11 & CTH H  
 VILLAGE OF STURTEVANT  
 RACINE COUNTY

SIGNAL NO. S51-0501

REGION CONTACT: DERRIN WOLFORD  
 DESIGNED BY: HNTB  
 REVISED BY: TADI

PAGE 3 OF 4

	HEAD NUMBERS	FLASH
Ø1	5,6,7	R
Ø2	8,9,10	R
Ø3	17,18,19	R
Ø4	20,21,22	R
Ø5	11,12,13	R
Ø6	1,2,3,4	R
Ø7	23,24,25	R
Ø8	14,15,16	R
Ø2P	28,29	
Ø4P	26,27	
Ø6P	32,33	
Ø8P	30,31	
OLE	5,6,7	-
OLF		
OLG		
OLH		



**GENERAL NOTES:**  
 1. PHASES 3 AND 7 ARE IN CONFLICT AND NOT ALLOWED TO TIME CONCURRENTLY.

**CONTROLLER LOGIC**

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

**EMERGENCY VEHICLE PREEMPTION SEQUENCE**

EMERGENCY VEHICLE PREEMPTOR	A	B	C	D
MOVEMENT				
PHASE	2+5	6+1	4+7	8+3

AFTER PREEMPTION SEQUENCE 2+5 OR 6+1, CONTROLLER SHALL RETURN TO PHASES 2+6.  
 AFTER PREEMPTION SEQUENCE 4+7 OR 8+3, CONTROLLER SHALL RETURN TO PHASES 4+8.

**DETECTOR LOGIC**

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR*(S)	11	21	23	31	33	41	43	45
CALLED PHASE	1	2	2	3	3	4	4	4
CALL OPTION	X	X	X	X	X		X	X
DELAY TIME								
EXTENSION OPTION	X	X	X	X	X	X	X	X
EXTEND TIME						X		
USE ADDED INITIAL		X	X					
CROSS SWITCH PHASE	2							

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR*(S)	12	22	24	32	34	42	44	46
CALLED PHASE	1	2	2	3	3	4	4	4
CALL OPTION	X	X	X	X	X		X	X
DELAY TIME								
EXTENSION OPTION	X	X	X	X	X	X	X	X
EXTEND TIME						X		
USE ADDED INITIAL		X	X					
CROSS SWITCH PHASE	2							

DETECTOR INPUT	19	17	23	21	27	25	31	29
PLAN LOOP DETECTOR*(S)	51	53	61	63	65	71	73	81
CALLED PHASE	5	5	6	6	6	7	7	8
CALL OPTION	X	X	X	X	X	X	X	
DELAY TIME								
EXTENSION OPTION	X	X	X	X	X	X	X	X
EXTEND TIME								X
USE ADDED INITIAL			X	X	X			
CROSS SWITCH PHASE								

DETECTOR INPUT	20	18	24	22	28	26	32	30
PLAN LOOP DETECTOR*(S)	52	54	62	64	66	72	74	82
CALLED PHASE	5	5	6	6	6	7	7	8
CALL OPTION	X	X	X	X	X	X	X	
DELAY TIME								
EXTENSION OPTION	X	X	X	X	X	X	X	X
EXTEND TIME								X
USE ADDED INITIAL			X	X	X			
CROSS SWITCH PHASE								

DETECTOR INPUT	35	33	39	37	43	41	47	45
PLAN LOOP DETECTOR*(S)	83	85	S1	S3	S5	S7	S9	
CALLED PHASE	8	8						
CALL OPTION	X	X						
DELAY TIME								
EXTENSION OPTION	X	X						
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

DETECTOR INPUT	36	34	40	38	44	42	48	46
PLAN LOOP DETECTOR*(S)	84	86	S2	S4	S6	S8	S10	
CALLED PHASE	8	8						
CALL OPTION	X	X						
DELAY TIME								
EXTENSION OPTION	X	X						
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

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

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

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

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

STH 11 & CTH H	
VILLAGE OF STURTEVANT	
RACINE COUNTY	
SIGNAL NO: S51-0501	CABINET TYPE: TS2-S
CONTROLLER TYPE: ECONOLITE	
DATE: 6/2021	PAGE NUMBER: 4 OF 4

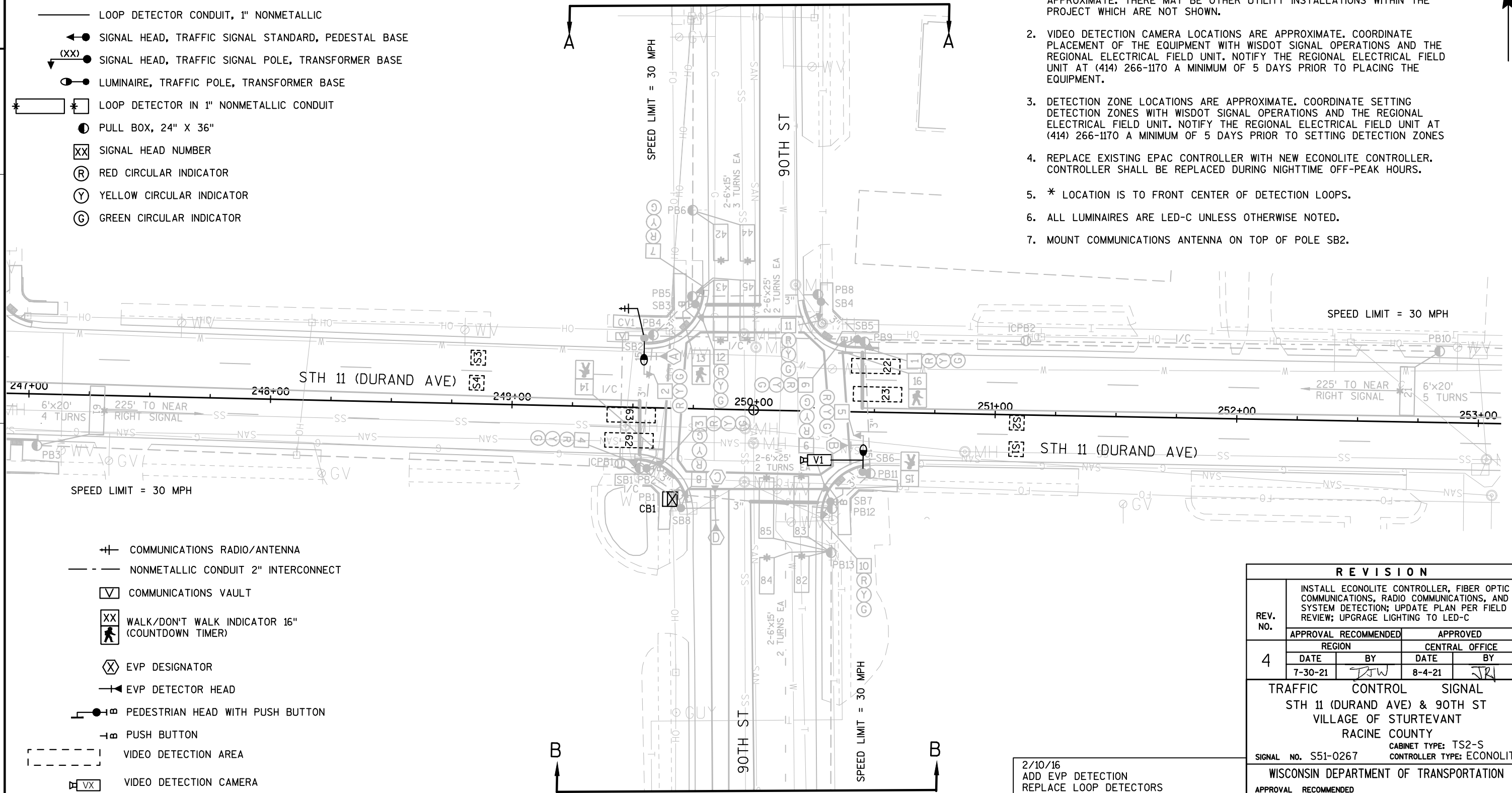


LEGEND

- 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, TRAFFIC POLE, TRANSFORMER BASE
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- PULL BOX, 24" X 36"
- SIGNAL HEAD NUMBER
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR

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. VIDEO DETECTION CAMERA LOCATIONS ARE APPROXIMATE. COORDINATE PLACEMENT OF THE EQUIPMENT WITH WISDOT SIGNAL OPERATIONS AND THE REGIONAL ELECTRICAL FIELD UNIT. NOTIFY THE REGIONAL ELECTRICAL FIELD UNIT AT (414) 266-1170 A MINIMUM OF 5 DAYS PRIOR TO PLACING THE EQUIPMENT.
3. DETECTION ZONE LOCATIONS ARE APPROXIMATE. COORDINATE SETTING DETECTION ZONES WITH WISDOT SIGNAL OPERATIONS AND THE REGIONAL ELECTRICAL FIELD UNIT. NOTIFY THE REGIONAL ELECTRICAL FIELD UNIT AT (414) 266-1170 A MINIMUM OF 5 DAYS PRIOR TO SETTING DETECTION ZONES
4. REPLACE EXISTING EPAC CONTROLLER WITH NEW ECONOLITE CONTROLLER. CONTROLLER SHALL BE REPLACED DURING NIGHTTIME OFF-PEAK HOURS.
5. \* LOCATION IS TO FRONT CENTER OF DETECTION LOOPS.
6. ALL LUMINAIRES ARE LED-C UNLESS OTHERWISE NOTED.
7. MOUNT COMMUNICATIONS ANTENNA ON TOP OF POLE SB2.



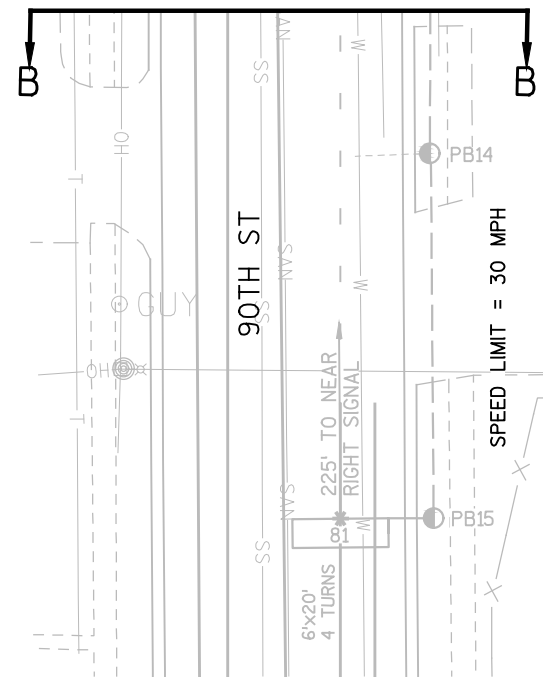
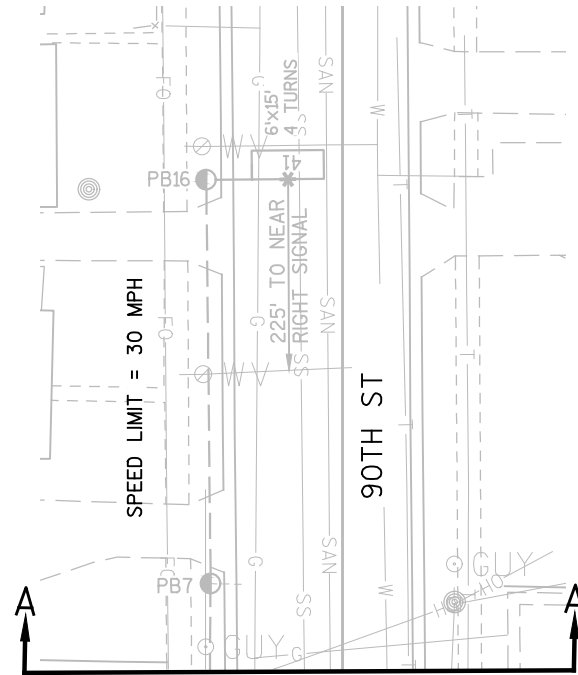
- COMMUNICATIONS RADIO/ANTENNA
- NONMETALLIC CONDUIT 2" INTERCONNECT
- COMMUNICATIONS VAULT
- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- VIDEO DETECTION AREA
- VIDEO DETECTION CAMERA

NOTE: ALL LENSES ARE 12-INCH  
GRAYSHADE REPRESENTS EXISTING

- 2/10/16  
ADD EVP DETECTION  
REPLACE LOOP DETECTORS
- 3/31/10  
CHANGE PEDESTRIAN HEADS 13,14,15,16 TO  
COUNT DOWN TIMERS.  
CHANGE CABINET & CONTROLLER
- 2/20/02  
RENUMBER LOOPS HEADS & PULL BOXES.  
CHANGE EMERGENCY FLASH TO RED-RED

REVISION			
REV. NO.	INSTALL ECONOLITE CONTROLLER, FIBER OPTIC COMMUNICATIONS, RADIO COMMUNICATIONS, AND SYSTEM DETECTION; UPDATE PLAN PER FIELD REVIEW; UPGRADE LIGHTING TO LED-C		
4	APPROVAL RECOMMENDED	APPROVED	
	REGION	CENTRAL OFFICE	
	DATE	BY	DATE BY
	7-30-21	JRW	8-4-21 JRI
TRAFFIC CONTROL SIGNAL STH 11 (DURAND AVE) & 90TH ST VILLAGE OF STURTEVANT RACINE COUNTY CABINET TYPE: TS2-S SIGNAL NO. S51-0267 CONTROLLER TYPE: ECONOLITE			
WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVAL RECOMMENDED			
DATE	12-21-83	JOHN A. WHITE REGION TRAFFIC ENGINEER	
APPROVED			
DATE	8-19-80	H.O. PRICE STATE TRAFFIC ENGINEER	
REGION CONTACT: D. WOLFORD		PAGE 1 OF 3	
DESIGNED BY:		REVISED BY: TADI	

7-30-21 HWY



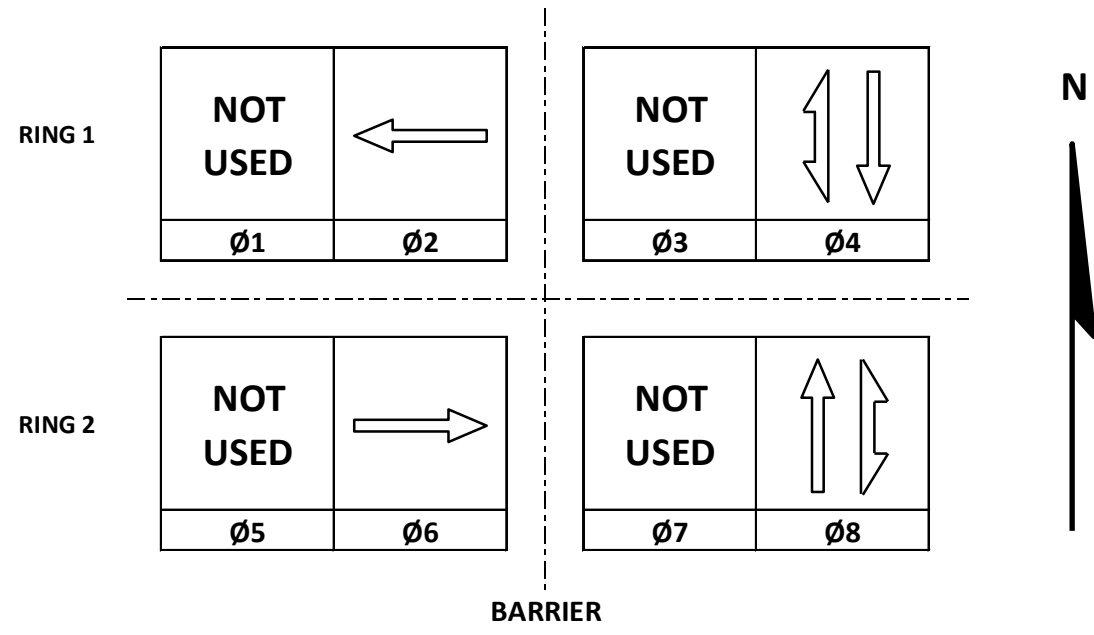
TRAFFIC CONTROL SIGNAL  
 STH 11 (DURAND AVE) & 90TH ST  
 VILLAGE OF STURTEVANT  
 RACINE COUNTY

SIGNAL NO. S51-0267

REGION CONTACT: D. WOLFORD  
 DESIGNED BY:  
 REVISED BY: TADI

PAGE 2 OF 3

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



**CONTROLLER LOGIC**

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

**EMERGENCY VEHICLE PREEMPTION SEQUENCE**

EMERGENCY VEHICLE PREEMPTOR	A	B	C	D
MOVEMENT	←→	←→	↑↓	↑↓
PHASE	2+6	6+2	4+8	8+4

AFTER PREEMPTION SEQUENCE 2+6 OR 6+2, CONTROLLER SHALL RETURN TO PHASES 2+6.  
 AFTER PREEMPTION SEQUENCE 4+8 OR 8+4, CONTROLLER SHALL RETURN TO PHASES 4+8.

**DETECTOR LOGIC**

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR*(S)	21	42	44	61	82	84		
CALLED PHASE	2	4	4	6	8	8		
CALL OPTION	X	X	X	X	X	X		
DELAY TIME		X			X			
EXTENTION OPTION	X	X	X	X	X	X		
EXTEND TIME								
USE ADDED INITIAL	X			X				
CROSS SWITCH PHASE								

DETECTOR INPUT	17	19	21	23	25	27	29	31
PLAN LOOP DETECTOR*(S)	22	62	S1	S3				
CALLLED PHASE								
CALL OPTION								
DELAY TIME								
EXTENTION OPTION								
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR*(S)	41	43	45	81	83	85		
CALLED PHASE	4	4	4	8	8	8		
CALL OPTION		X	X		X	X		
DELAY TIME		X	X		X	X		
EXTENTION OPTION	X	X	X	X	X	X		
EXTEND TIME	X			X				
USE ADDED INITIAL								
CROSS SWITCH PHASE								

DETECTOR INPUT	18	20	22	24	26	28	30	32
PLAN LOOP DETECTOR*(S)	23	63	S2	S4				
CALLLED PHASE								
CALL OPTION								
DELAY TIME								
EXTENTION OPTION								
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

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

TYPE OF COORDINATION	
NONE	
TBC	
TRAFFIC RESPONSIVE	X
ADAPTIVE	X
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM NO:	SS- 51-0201

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

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

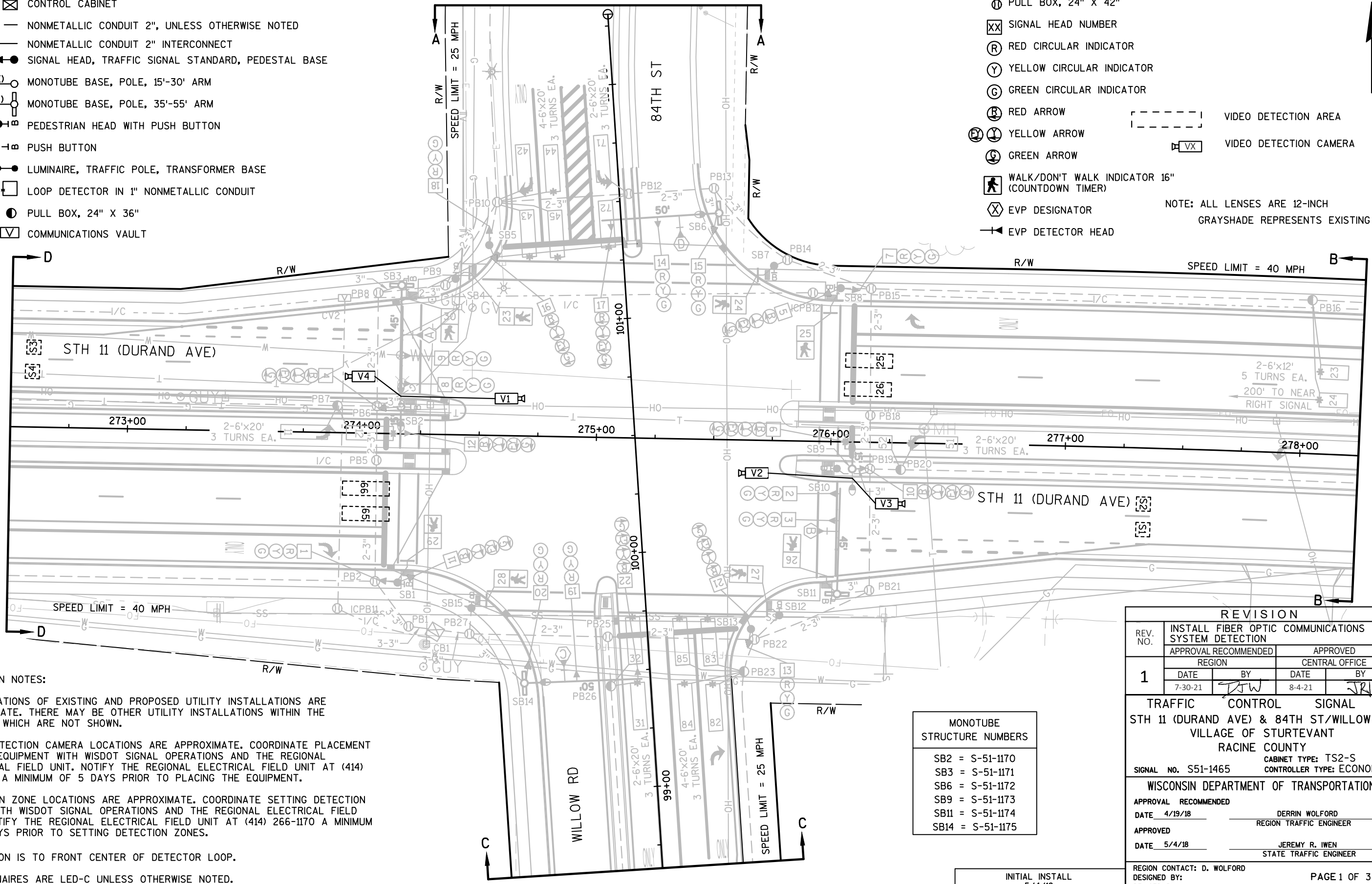
STH 11 (DURAND AVE) & 90TH ST	
VILLAGE OF STURTEVANT	
RACINE COUNTY	
SIGNAL NO: S51-0267	CABINET TYPE: TS2-S
CONTROLLER TYPE: ECONOLITE	
DATE: 6/2021	PAGE NUMBER: 3 OF 3

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- NONMETALLIC CONDUIT 2" INTERCONNECT
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) MONOTUBE BASE, POLE, 15'-30' ARM
- (XX) MONOTUBE BASE, POLE, 35'-55' ARM
- PEDESTRIAN HEAD WITH PUSH BUTTON
- PUSH BUTTON
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- PULL BOX, 24" X 36"
- COMMUNICATIONS VAULT

- PULL BOX, 24" X 42"
- 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)
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- VIDEO DETECTION AREA
- VIDEO DETECTION CAMERA

NOTE: ALL LENSES ARE 12-INCH GRAYSHADE REPRESENTS EXISTING



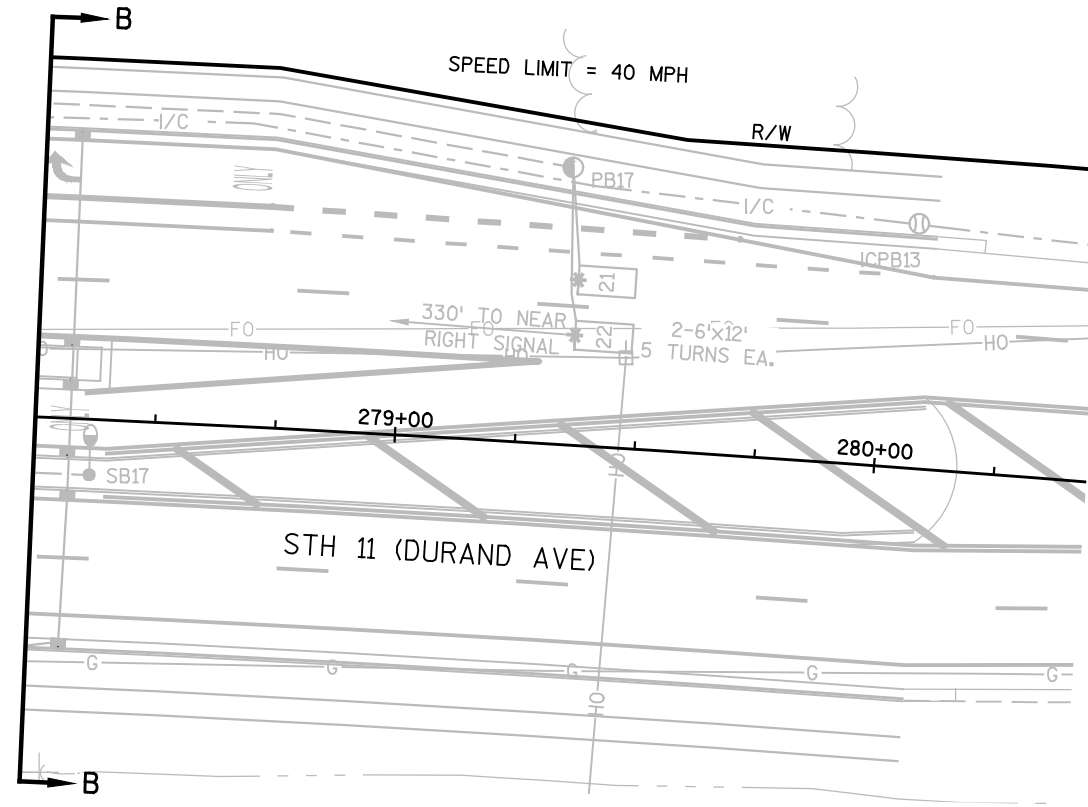
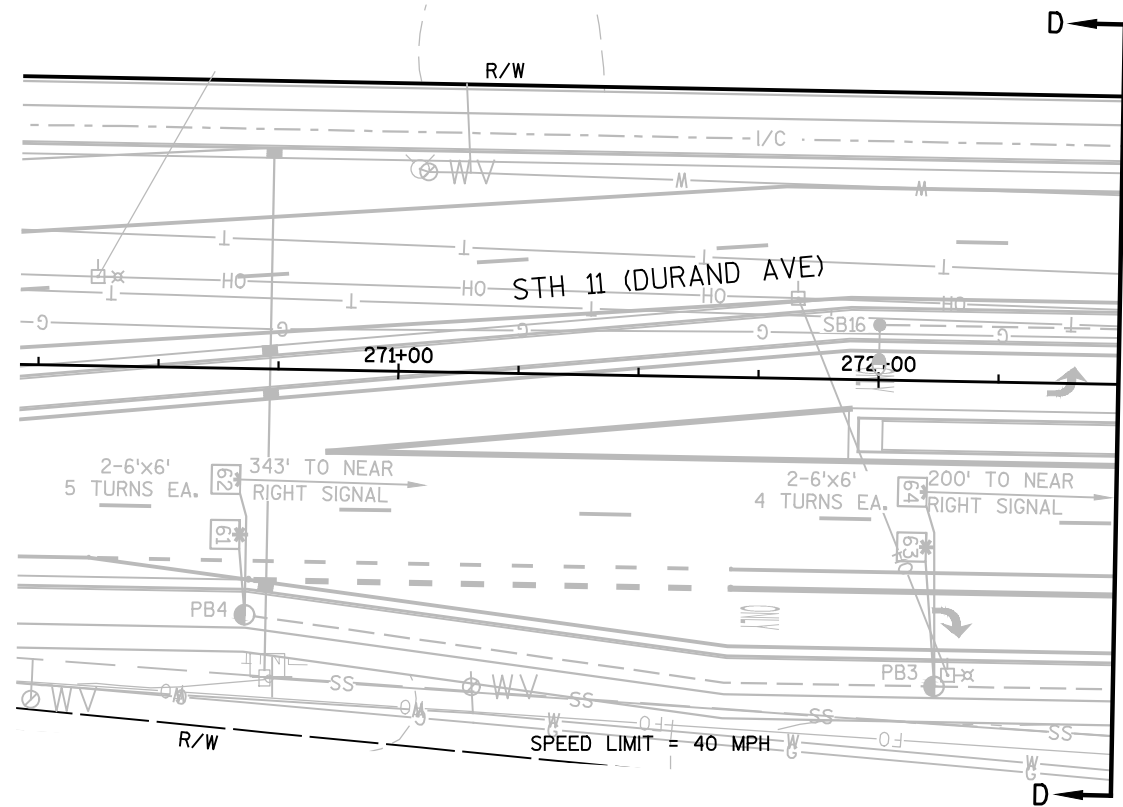
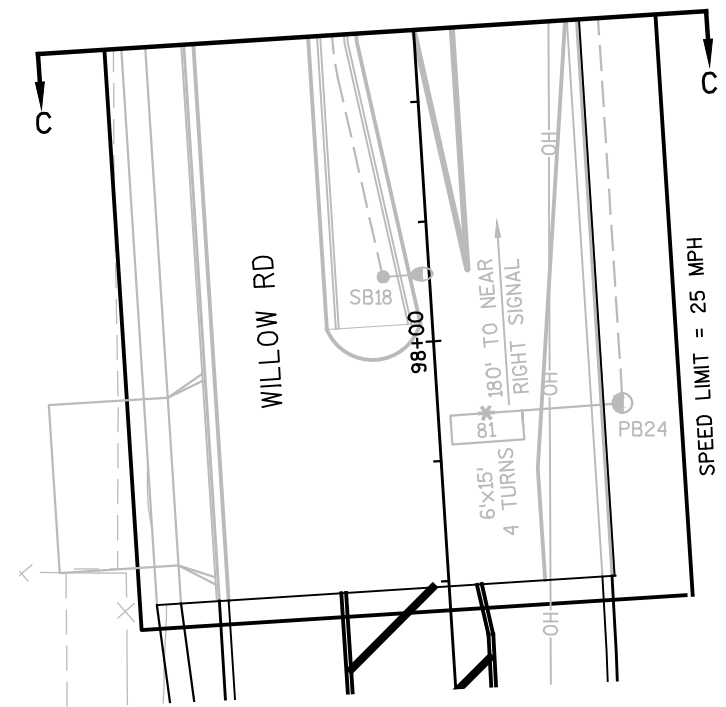
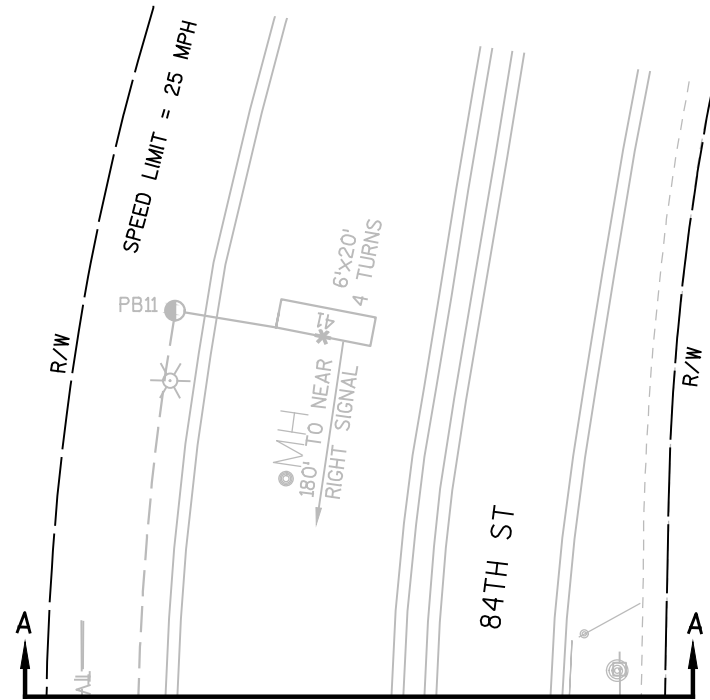
CONSTRUCTION NOTES:

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. VIDEO DETECTION CAMERA LOCATIONS ARE APPROXIMATE. COORDINATE PLACEMENT OF THE EQUIPMENT WITH WISDOT SIGNAL OPERATIONS AND THE REGIONAL ELECTRICAL FIELD UNIT. NOTIFY THE REGIONAL ELECTRICAL FIELD UNIT AT (414) 266-1170 A MINIMUM OF 5 DAYS PRIOR TO PLACING THE EQUIPMENT.
3. DETECTION ZONE LOCATIONS ARE APPROXIMATE. COORDINATE SETTING DETECTION ZONES WITH WISDOT SIGNAL OPERATIONS AND THE REGIONAL ELECTRICAL FIELD UNIT. NOTIFY THE REGIONAL ELECTRICAL FIELD UNIT AT (414) 266-1170 A MINIMUM OF 5 DAYS PRIOR TO SETTING DETECTION ZONES.
5. \* LOCATION IS TO FRONT CENTER OF DETECTOR LOOP.
6. ALL LUMINAIRES ARE LED-C UNLESS OTHERWISE NOTED.

MONOTUBE STRUCTURE NUMBERS	
SB2	= S-51-1170
SB3	= S-51-1171
SB6	= S-51-1172
SB9	= S-51-1173
SB11	= S-51-1174
SB14	= S-51-1175

REVISION			
REV. NO.	INSTALL FIBER OPTIC COMMUNICATIONS AND SYSTEM DETECTION		
1	APPROVAL RECOMMENDED	APPROVED	
	REGION	CENTRAL OFFICE	
	DATE	BY	DATE BY
	7-30-21	JTW	8-4-21 JRI
TRAFFIC CONTROL SIGNAL			
STH 11 (DURAND AVE) & 84TH ST/WILLOW RD			
VILLAGE OF STURTEVANT			
RACINE COUNTY			
SIGNAL NO. S51-1465		CABINET TYPE: TS2-S	
		CONTROLLER TYPE: ECONOLITE	
WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVAL RECOMMENDED			
DATE	4/19/18	DERRIN WOLFORD REGION TRAFFIC ENGINEER	
APPROVED			
DATE	5/4/18	JEREMY R. IWEN STATE TRAFFIC ENGINEER	
REGION CONTACT: D. WOLFORD		PAGE 1 OF 3	
DESIGNED BY:		REVISED BY: TADI	

7-30-21 MKC



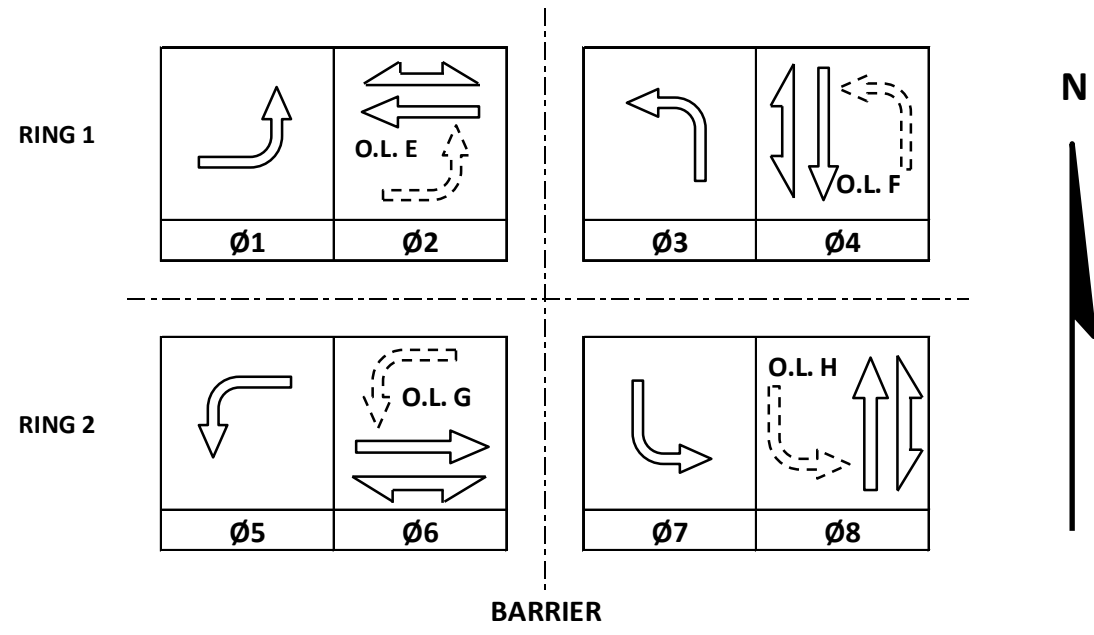
TRAFFIC CONTROL SIGNAL  
 STH 11 (DURAND AVE) & 84TH ST/WILLOW RD  
 VILLAGE OF STURTEVANT  
 RACINE COUNTY

SIGNAL NO. S51-1465

REGION CONTACT: D. WOLFORD  
 DESIGNED BY:  
 REVISED BY: TADI

PAGE 2 OF 3

	HEAD NUMBERS	FLASH
Ø1	4,5,6	R
Ø2	7,8,9	R
Ø3	16,17	R
Ø4	18,19,20	R
Ø5	10,11,12	R
Ø6	1,2,3	R
Ø7	21,22	R
Ø8	13,14,15	R
Ø2P	23,24	
Ø4P	29,30	
Ø6P	27,28	
Ø8P	25,26	
OLE	4,5,6	-
OLF	16,17	-
OLG	10,11,12	-
OLH	21,22	-



**GENERAL NOTES:**

- LEFT TURN PHASES ONLY TIME DURING EVP OPERATIONS. AT ALL OTHER TIMES, LEFT TURNS ARE PERMITTED ONLY.

**CONTROLLER LOGIC**

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

**EMERGENCY VEHICLE PREEMPTION SEQUENCE**

EMERGENCY VEHICLE PREEMPTOR	A	B	C	D
MOVEMENT				
PHASE	2+5	6+1	4+7	8+3

AFTER PREEMPTION SEQUENCE 2+5 OR 6+1, CONTROLLER SHALL RETURN TO PHASES 2+6.  
 AFTER PREEMPTION SEQUENCE 4+7 OR 8+3, CONTROLLER SHALL RETURN TO PHASES 4+8.

**DETECTOR LOGIC**

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR*(S)	11	21	23	31	41	43	45	51
CALLED PHASE	1	2	2	3	4	4	4	5
CALL OPTION	X	X	X	X		X	X	X
DELAY TIME						X		
EXTENTION OPTION	X	X	X	X	X	X	X	X
EXTEND TIME					X			
USE ADDED INITIAL		X	X					
CROSS SWITCH PHASE	2			4				6

DETECTOR INPUT	19	17	23	21	27	25	31	29
PLAN LOOP DETECTOR*(S)	61	63	71	81	83	85		
CALLED PHASE	6	6	7	8	8	8		
CALL OPTION	X	X	X		X	X		
DELAY TIME					X			
EXTENTION OPTION	X	X	X	X	X	X		
EXTEND TIME				X				
USE ADDED INITIAL	X	X						
CROSS SWITCH PHASE			8					

DETECTOR INPUT	35	33	39	37	43	41	47	45
PLAN LOOP DETECTOR*(S)	25	65	S1	S3				
CALLLED PHASE								
CALL OPTION								
DELAY TIME								
EXTENTION OPTION								
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR*(S)	12	22	24	32	42	44		52
CALLED PHASE	1	2	2	3	4	4		5
CALL OPTION	X	X	X	X	X	X		X
DELAY TIME					X			
EXTENTION OPTION	X	X	X	X	X	X		X
EXTEND TIME								
USE ADDED INITIAL		X	X					
CROSS SWITCH PHASE	2			4				6

DETECTOR INPUT	20	18	24	22	28	26	32	30
PLAN LOOP DETECTOR*(S)	62	64	72	82	84			
CALLLED PHASE	6	6	7	8	8			
CALL OPTION	X	X	X	X	X			
DELAY TIME				X				
EXTENTION OPTION	X	X	X	X	X			
EXTEND TIME								
USE ADDED INITIAL	X	X						
CROSS SWITCH PHASE			8					

DETECTOR INPUT	36	34	40	38	44	42	48	46
PLAN LOOP DETECTOR*(S)	26	66	S2	S4				
CALLLED PHASE								
CALL OPTION								
DELAY TIME								
EXTENTION OPTION								
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

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

TYPE OF COORDINATION	
NONE	
TBC	
TRAFFIC RESPONSIVE	X
ADAPTIVE	X
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM NO:	SS- 51-0201

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

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

DETECTOR INPUT	35	33	39	37	43	41	47	45
PLAN LOOP DETECTOR*(S)	25	65	S1	S3				
CALLLED PHASE								
CALL OPTION								
DELAY TIME								
EXTENTION OPTION								
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

DETECTOR INPUT	36	34	40	38	44	42	48	46
PLAN LOOP DETECTOR*(S)	26	66	S2	S4				
CALLLED PHASE								
CALL OPTION								
DELAY TIME								
EXTENTION OPTION								
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

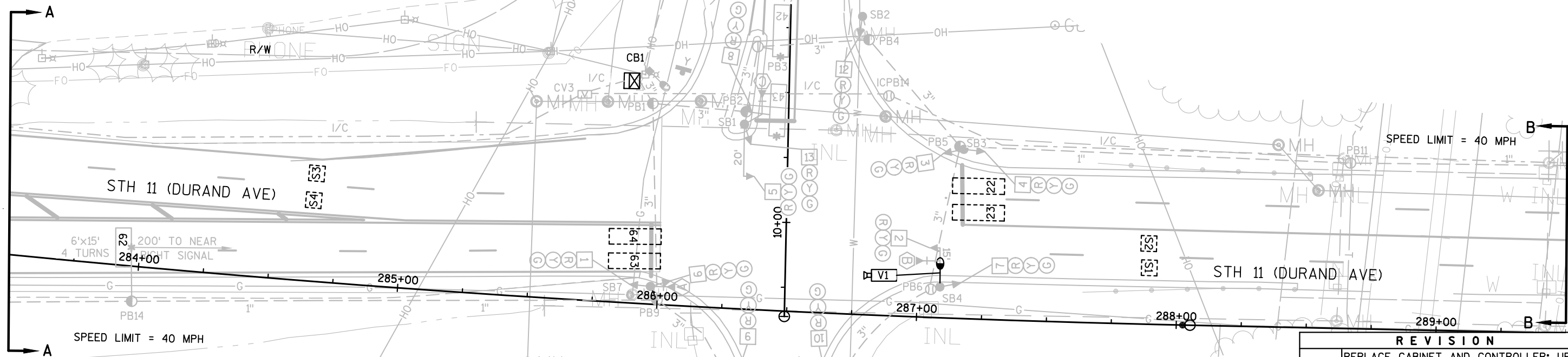
STH 11 (DURAND AVE) & 84TH ST/WILLOW RD  
 VILLAGE OF STURTEVANT  
 RACINE COUNTY  
 SIGNAL NO: S51-1465 CABINET TYPE: TS2-S  
 CONTROLLER TYPE: ECONOLITE  
 DATE: 5/2021 PAGE NUMBER: 3 OF 3

LEGEND

- ☒ CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- LOOP DETECTOR CONDUIT, 1" NONMETALLIC
- - - NONMETALLIC CONDUIT 2" INTERCONNECT
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) ● SIGNAL HEAD, TRAFFIC SIGNAL POLE, TRANSFORMER BASE
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- \* [ ] LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- - - VIDEO DETECTION AREA
- [ VX ] VIDEO DETECTION CAMERA
- Y YIELD SIGN

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. VIDEO DETECTION CAMERA LOCATIONS ARE APPROXIMATE. COORDINATE PLACEMENT OF THE EQUIPMENT WITH WISDOT SIGNAL OPERATIONS AND THE REGIONAL ELECTRICAL FIELD UNIT. NOTIFY THE REGIONAL ELECTRICAL FIELD UNIT AT (414) 266-1170 A MINIMUM OF 5 DAYS PRIOR TO PLACING THE EQUIPMENT.
3. DETECTION ZONE LOCATIONS ARE APPROXIMATE. COORDINATE SETTING DETECTION ZONES WITH WISDOT SIGNAL OPERATIONS AND THE REGIONAL ELECTRICAL FIELD UNIT. NOTIFY THE REGIONAL ELECTRICAL FIELD UNIT AT (414) 266-1170 A MINIMUM OF 5 DAYS PRIOR TO SETTING DETECTION ZONES
4. CABINET AND CONTROLLER SHALL BE REPLACED DURING NIGHTTIME OFF-PEAK HOURS.
5. \* LOCATION IS TO FRONT CENTER OF DETECTOR LOOP.
6. ALL LUMINAIRES ARE LED-C UNLESS OTHERWISE NOTED.



- ⊙ PULL BOX, 24" X 42"
- PULL BOX, 24" X 36"
- ⊙ PULL BOX, 18" X 24"
- ☑ COMMUNICATIONS VAULT
- [ XX ] SIGNAL HEAD NUMBER
- (R) RED CIRCULAR INDICATOR
- (Y) YELLOW CIRCULAR INDICATOR
- (G) GREEN CIRCULAR INDICATOR
- (X) EVP DESIGNATOR
- EVP DETECTOR HEAD

NOTE: ALL LENSES ARE 12-INCH GRAYSHADE REPRESENTS EXISTING

SB7 CHANGED TO A 30' POLE ON TYPE 5 BASE; EVP HEAD A MOVED TO SB7; CONDUIT RING COMPLETED FROM SB3 TO SB4 4/18/19

ADD LOOP DETECTORS 21 & 22; INSTALL CELL MODEM; CHANGE CONTROLLER 3/26/18

CHANGE CABINET & CONTROLLER TO EPAC; ADD LIGHTING TO SB1 & SB4

INSTALL NEW CONTROLLER 5/12/95

STOP LINE DETECTION SOUTHBOUND 12/13/88

INITIAL INSTALL 8/11/77

REVISION			
REV. NO.	REPLACE CABINET AND CONTROLLER; UPDATE SEQUENCE OF OPERATION AND LOOP NUMBERING; INSTALL SYSTEM DETECTION AND FIBER OPTIC INTERCONNECT; UPGRADE LIGHTING TO LED-C		
6	APPROVAL RECOMMENDED	APPROVED	
	REGION	CENTRAL OFFICE	
	DATE	BY	DATE BY
	7-30-21	JAW	8-4-21 JRI

TRAFFIC CONTROL SIGNAL  
 STH 11 (DURAND AVE) &  
 WILLOW RD/BUCYRUS ERIE ENT  
 VILLAGE OF STURTEVANT  
 RACINE COUNTY

CABINET TYPE: TS2-E  
 CONTROLLER TYPE: ECONOLITE

SIGNAL NO. S51-0216

WISCONSIN DEPARTMENT OF TRANSPORTATION

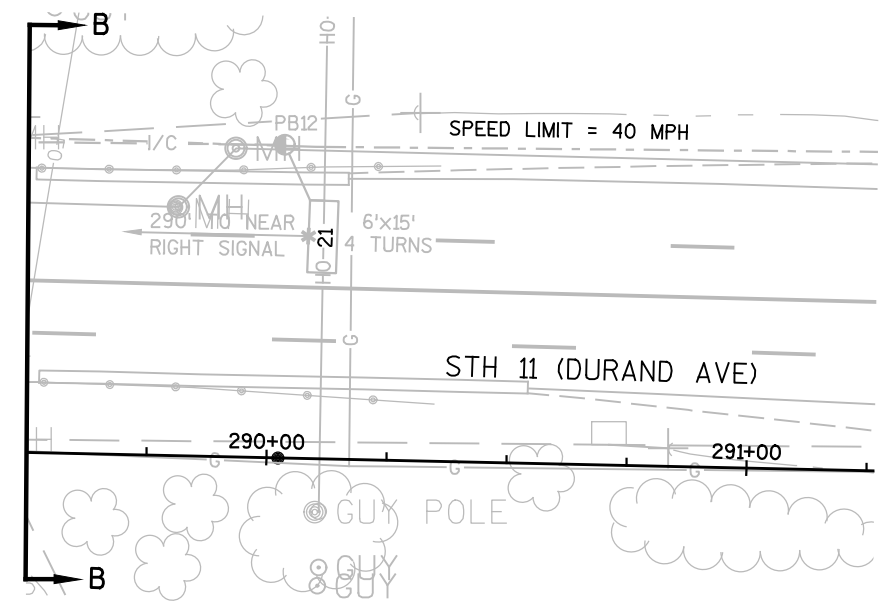
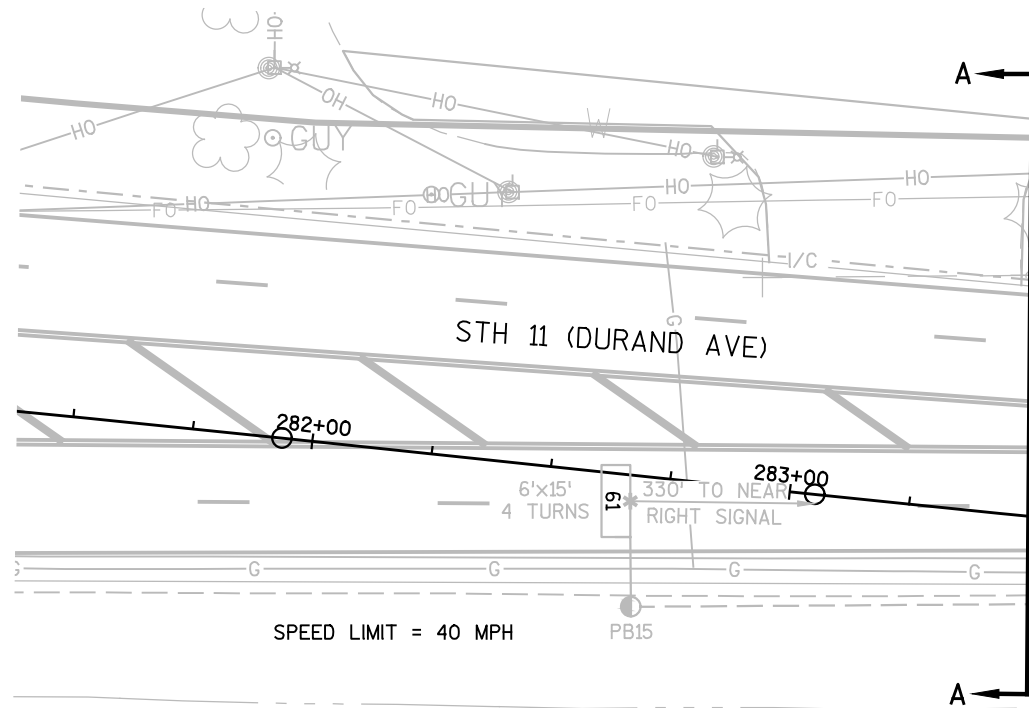
APPROVAL RECOMMENDED  
 DATE 1/12/77 DONALD H. JORGENSON  
 REGION TRAFFIC ENGINEER

APPROVED  
 DATE 2/17/77 WAYNE N. VOLT  
 STATE TRAFFIC ENGINEER

REGION CONTACT: D. WOLFORD  
 DESIGNED BY: TADI  
 REVISED BY: TADI

PAGE 1 OF 3

7-30-21 JAW



TRAFFIC CONTROL SIGNAL  
 STH 11 (DURAND AVE) &  
 WILLOW RD/BUCYRUS ERIE ENT  
 VILLAGE OF STURTEVANT  
 RACINE COUNTY

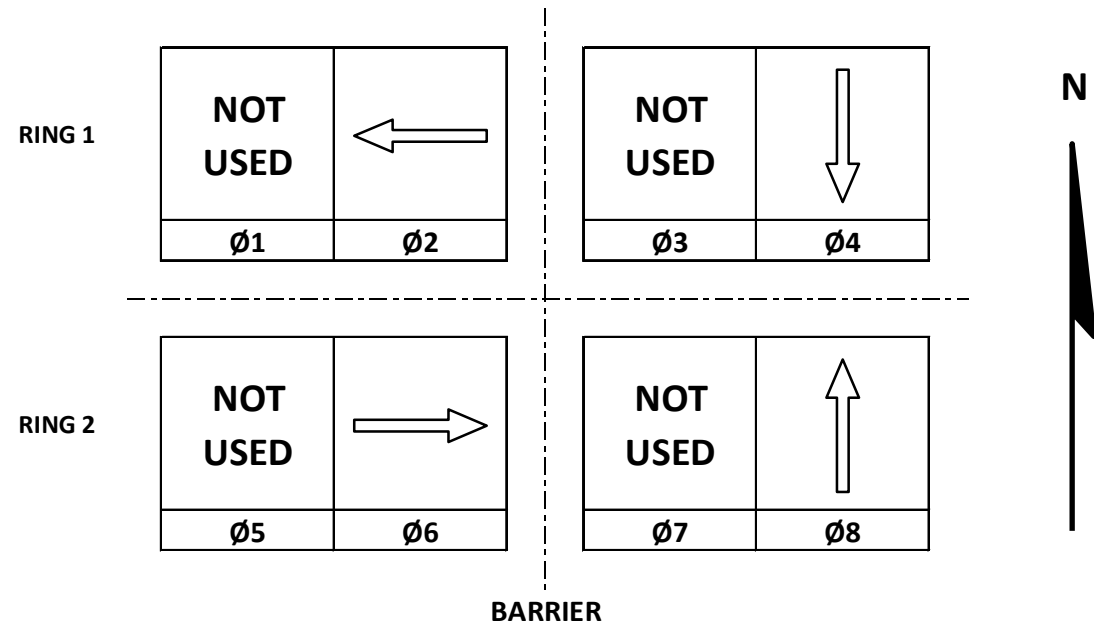
SIGNAL NO. S51-0216

REGION CONTACT: D. WOLFORD  
 DESIGNED BY:  
 REVISED BY: TADI

PAGE 2 OF 3



	HEAD NUMBERS	FLASH
Ø1		
Ø2	4,5,6,7	R
Ø3		
Ø4	8,9,10	R
Ø5		
Ø6	1,2,3	R
Ø7		
Ø8	11,12,13	R
Ø2P		
Ø4P		
Ø6P		
Ø8P		
OLE		
OLF		
OLG		
OLH		



**CONTROLLER LOGIC**

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

**EMERGENCY VEHICLE PREEMPTION SEQUENCE**

EMERGENCY VEHICLE PREEMPTOR	A	B	C
MOVEMENT	← →	← →	↑ ↓
PHASE	2+6	6+2	4+8

AFTER PREEMPTION SEQUENCE 2+6 OR 6+2, CONTROLLER SHALL RETURN TO PHASES 2+6.  
 AFTER PREEMPTION SEQUENCE 4+8, CONTROLLER SHALL RETURN TO PHASES 4+8.

**DETECTOR LOGIC**

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR*(S)	21	42	61	81				
CALLED PHASE	2	4	6	8				
CALL OPTION	X	X	X	X				
DELAY TIME				X				
EXTENTION OPTION	X	X	X	X				
EXTEND TIME								
USE ADDED INITIAL	X		X					
CROSS SWITCH PHASE								

DETECTOR INPUT	19	17	23	21	27	25	31	29
PLAN LOOP DETECTOR*(S)	63	22	S3	S1				
CALLLED PHASE								
CALL OPTION								
DELAY TIME								
EXTENTION OPTION								
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR*(S)	41	43	62	82				
CALLED PHASE	4	4	6	8				
CALL OPTION		X	X	X				
DELAY TIME		X		X				
EXTENTION OPTION	X	X	X	X				
EXTEND TIME	X							
USE ADDED INITIAL			X					
CROSS SWITCH PHASE								

DETECTOR INPUT	20	18	24	22	28	26	32	30
PLAN LOOP DETECTOR*(S)	64	23	S4	S2				
CALLLED PHASE								
CALL OPTION								
DELAY TIME								
EXTENTION OPTION								
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

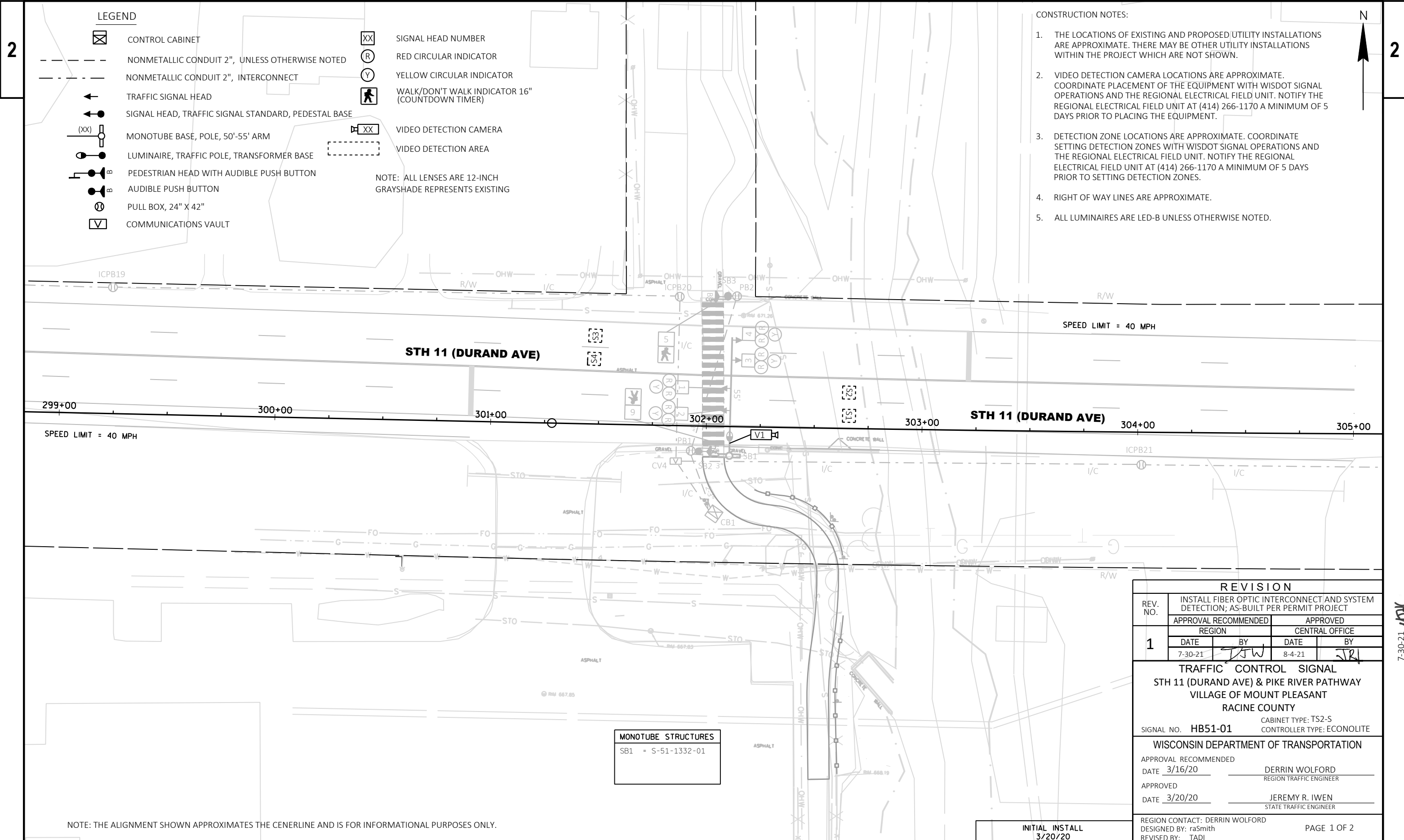
TYPE OF INTERCONNECT/COMMUNICATION	
NONE	
CLOSED LOOP	
TWISTED PAIR	
FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	X
RADIO	
CELL MODEM	

TYPE OF COORDINATION	
NONE	
TBC	
TRAFFIC RESPONSIVE	X
ADAPTIVE	X
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM NO:	SS- 51-0201

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

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

STH 11 (DURAND AVE) & WILLOW RD/BUCYRUS ERIE ENT	
VILLAGE O F STURTEVANT	
RACINE COUNTY	
SIGNAL NO: S51-0216	CABINET TYPE: TS2-S
CONTROLLER TYPE: ECONOLITE	
DATE: 5/2021	PAGE NUMBER: 3 OF 3



**LEGEND**

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- NONMETALLIC CONDUIT 2", INTERCONNECT
- TRAFFIC SIGNAL HEAD
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- MONOTUBE BASE, POLE, 50'-55' ARM
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- PEDESTRIAN HEAD WITH AUDIBLE PUSH BUTTON
- AUDIBLE PUSH BUTTON
- PULL BOX, 24" X 42"
- COMMUNICATIONS VAULT
- SIGNAL HEAD NUMBER
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- WALK/DON'T WALK INDICATOR 16" (COUNTDOWN TIMER)
- VIDEO DETECTION CAMERA
- VIDEO DETECTION AREA

NOTE: ALL LENSES ARE 12-INCH GRAYSHADE REPRESENTS EXISTING

- 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. VIDEO DETECTION CAMERA LOCATIONS ARE APPROXIMATE. COORDINATE PLACEMENT OF THE EQUIPMENT WITH WISDOT SIGNAL OPERATIONS AND THE REGIONAL ELECTRICAL FIELD UNIT. NOTIFY THE REGIONAL ELECTRICAL FIELD UNIT AT (414) 266-1170 A MINIMUM OF 5 DAYS PRIOR TO PLACING THE EQUIPMENT.
  3. DETECTION ZONE LOCATIONS ARE APPROXIMATE. COORDINATE SETTING DETECTION ZONES WITH WISDOT SIGNAL OPERATIONS AND THE REGIONAL ELECTRICAL FIELD UNIT. NOTIFY THE REGIONAL ELECTRICAL FIELD UNIT AT (414) 266-1170 A MINIMUM OF 5 DAYS PRIOR TO SETTING DETECTION ZONES.
  4. RIGHT OF WAY LINES ARE APPROXIMATE.
  5. ALL LUMINAIRES ARE LED-B UNLESS OTHERWISE NOTED.

REVISION			
REV. NO.	INSTALL FIBER OPTIC INTERCONNECT AND SYSTEM DETECTION; AS-BUILT PER PERMIT PROJECT		
	APPROVAL RECOMMENDED	APPROVED	
	REGION	CENTRAL OFFICE	
1	DATE	BY	DATE
	7-30-21	JTW	8-4-21
		JRW	

**TRAFFIC CONTROL SIGNAL**  
**STH 11 (DURAND AVE) & PIKE RIVER PATHWAY**  
**VILLAGE OF MOUNT PLEASANT**  
**RACINE COUNTY**

SIGNAL NO. **HB51-01** CABINET TYPE: TS2-S  
 CONTROLLER TYPE: ECONOLITE

**WISCONSIN DEPARTMENT OF TRANSPORTATION**

APPROVAL RECOMMENDED  
 DATE 3/16/20 DERRIN WOLFORD  
 REGION TRAFFIC ENGINEER

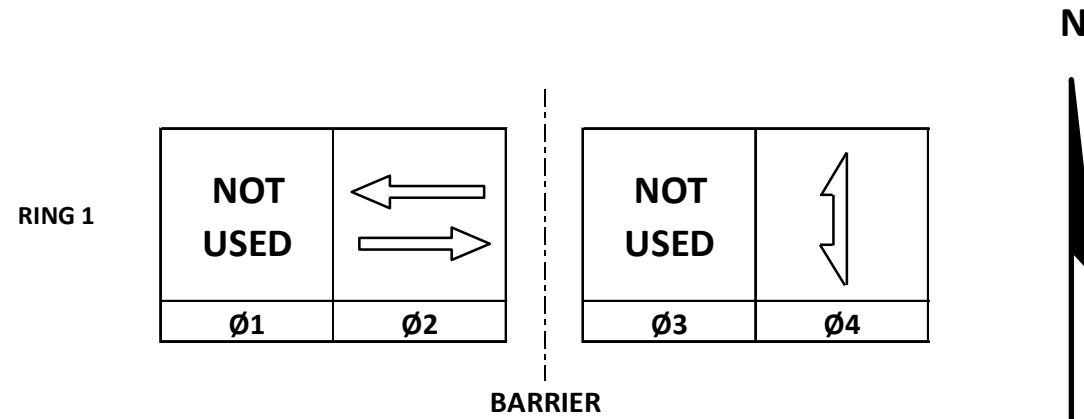
APPROVED  
 DATE 3/20/20 JEREMY R. IWEN  
 STATE TRAFFIC ENGINEER

**MONOTUBE STRUCTURES**  
 SB1 = S-51-1332-01

NOTE: THE ALIGNMENT SHOWN APPROXIMATES THE CENTERLINE AND IS FOR INFORMATIONAL PURPOSES ONLY.

INITIAL INSTALL  
 3/20/20

	HEAD NUMBERS	FLASH
Ø1		
Ø2	1,2,3,4	R
Ø3		
Ø4		
Ø5		
Ø6		
Ø7		
Ø8		
Ø2P		
Ø4P	5,6	
Ø6P		
Ø8P		
OLE		
OLF		
OLG		
OLH		



CONTROLLER LOGIC

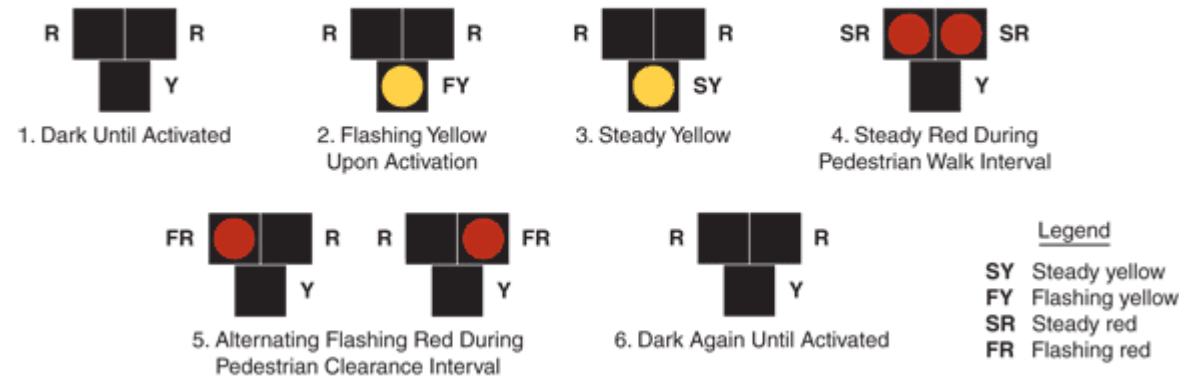
PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1				
2			PED	X
3				
4				X
5				
6				X
7				
8				

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

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

TYPE OF COORDINATION	
NONE	
TBC	
TRAFFIC RESPONSIVE	X
ADAPTIVE	X
*LOCATION OF MASTER	
CONTROLLER NO:	S-
SIGNAL SYSTEM NO:	SS- 51-0201

Figure 4F-3. Sequence for a Pedestrian Hybrid Beacon



DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR*(S)	S1	S3						
CALLED PHASE								
CALL OPTION								
DELAY TIME								
EXTENTION OPTION								
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

DETECTOR INPUT	19	17	23	21	27	25	31	29
PLAN LOOP DETECTOR*(S)								
CALLED PHASE								
CALL OPTION								
DELAY TIME								
EXTENTION OPTION								
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

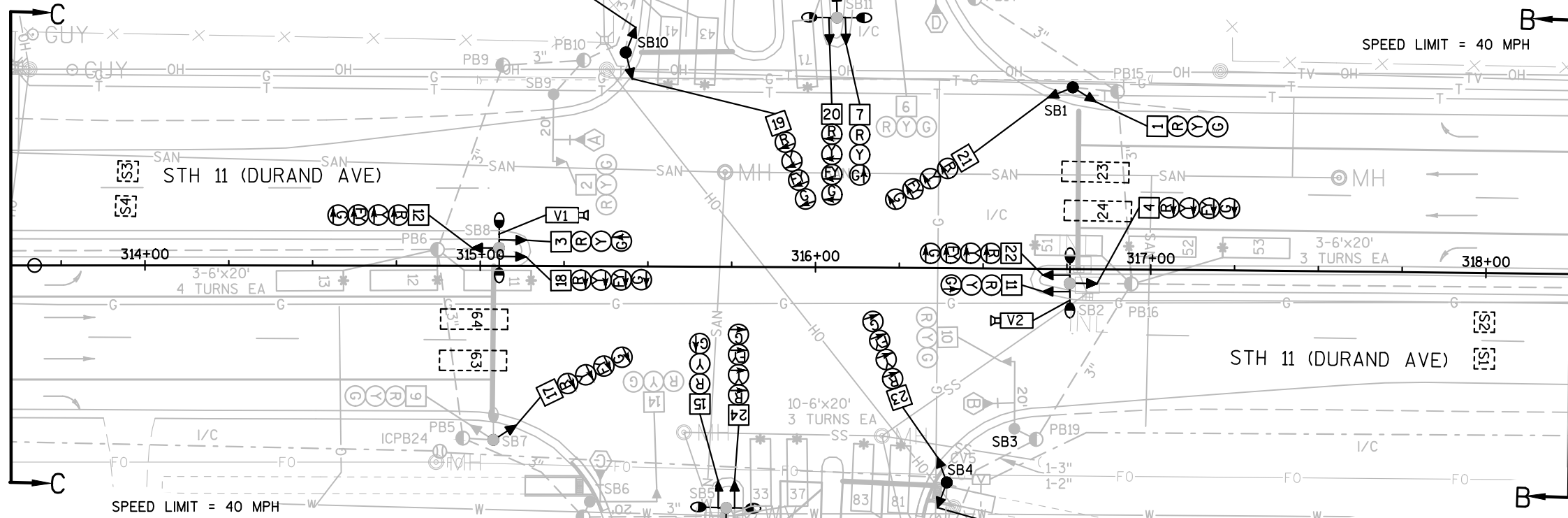
DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR*(S)	S2	S4						
CALLED PHASE								
CALL OPTION								
DELAY TIME								
EXTENTION OPTION								
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

DETECTOR INPUT	20	18	24	22	28	26	32	30
PLAN LOOP DETECTOR*(S)								
CALLED PHASE								
CALL OPTION								
DELAY TIME								
EXTENTION OPTION								
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

STH 11 (DURAND AVE) & PIKE RIVER PATHWAY	
VILLAGE OF MOUNT PLEASANT	
RACINE COUNTY	
SIGNAL NO: HB51-01	CABINET TYPE: TS2-S
CONTROLLER TYPE: ECONOLITE	
DATE: 5/2021	PAGE NUMBER: 2 OF 2

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- LOOP DETECTOR CONDUIT 1" NONMETALLIC CONDUIT
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE



- NONMETALLIC CONDUIT 2" INTERCONNECT
- COMMUNICATIONS VAULT
- VIDEO DETECTION AREA
- VIDEO DETECTION CAMERA
- PULL BOX, 24" X 36"
- PULL BOX, 24" X 42"
- SIGNAL HEAD NUMBER
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR
- RED ARROW
- YELLOW ARROW
- GREEN ARROW
- EVP DESIGNATOR
- EVP DETECTOR HEAD

NOTE: ALL LENSES ARE 12-INCH GRAYSHADE REPRESENTS EXISTING

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. REMOVE AND REPLACE SIGNAL HEADS 3, 4, 7, 8, 11, 12, 15, AND 16 USING EXISTING CONDUCTORS.
3. INSTALL HEADS ON EXISTING POLES USING EXISTING CONDUCTORS.
4. REPLACE SIGNAL STANDARDS SB1, SB4, AND SB10 WITH 15' STANDARDS. INSTALL NEW SIGNAL HEADS 1, 5, 13, 17, 19, 21, AND 23.
5. VIDEO DETECTION CAMERA LOCATIONS ARE APPROXIMATE. COORDINATE PLACEMENT OF THE EQUIPMENT WITH WISDOT SIGNAL OPERATIONS AND THE REGIONAL ELECTRICAL FIELD UNIT. NOTIFY THE REGIONAL ELECTRICAL FIELD UNIT AT (414) 266-1170 A MINIMUM OF 5 DAYS PRIOR TO PLACING THE EQUIPMENT.
6. DETECTION ZONE LOCATIONS ARE APPROXIMATE. COORDINATE SETTING DETECTION ZONES WITH WISDOT SIGNAL OPERATIONS AND THE REGIONAL ELECTRICAL FIELD UNIT. NOTIFY THE REGIONAL ELECTRICAL FIELD UNIT AT (414) 266-1170 A MINIMUM OF 5 DAYS PRIOR TO SETTING DETECTION ZONES
7. REPLACE SIGNAL CONTROL CABINET.
8. WORK SHALL BE PERFORMED AT NIGHT DURING OFF-PEAK HOURS.
9. \* LOCATION IS TO FRONT CENTER OF DETECTOR LOOP.
10. ALL LUMINAIRES ARE LED-C UNLESS OTHERWISE NOTED.

REVISION

REV. NO.	INSTALL FIBER OPTIC COMMUNICATIONS, FYA AND SYSTEM DETECTION, REPLACE CABINET AND CONTROLLER; UPGRADE LIGHTING TO LED-C			
	APPROVAL RECOMMENDED		APPROVED	
3	REGION	DATE	CENTRAL OFFICE	DATE
	DATE	BY	DATE	BY
	7-30-21	JTW	8-4-21	JRI

TRAFFIC CONTROL SIGNAL  
 STH 11 (DURAND AVE) & OAKES RD  
 VILLAGE OF MOUNT PLEASANT  
 RACINE COUNTY  
 CABINET TYPE: TS2-E  
 SIGNAL NO. S51-0733 CONTROLLER TYPE: ECONOLITE

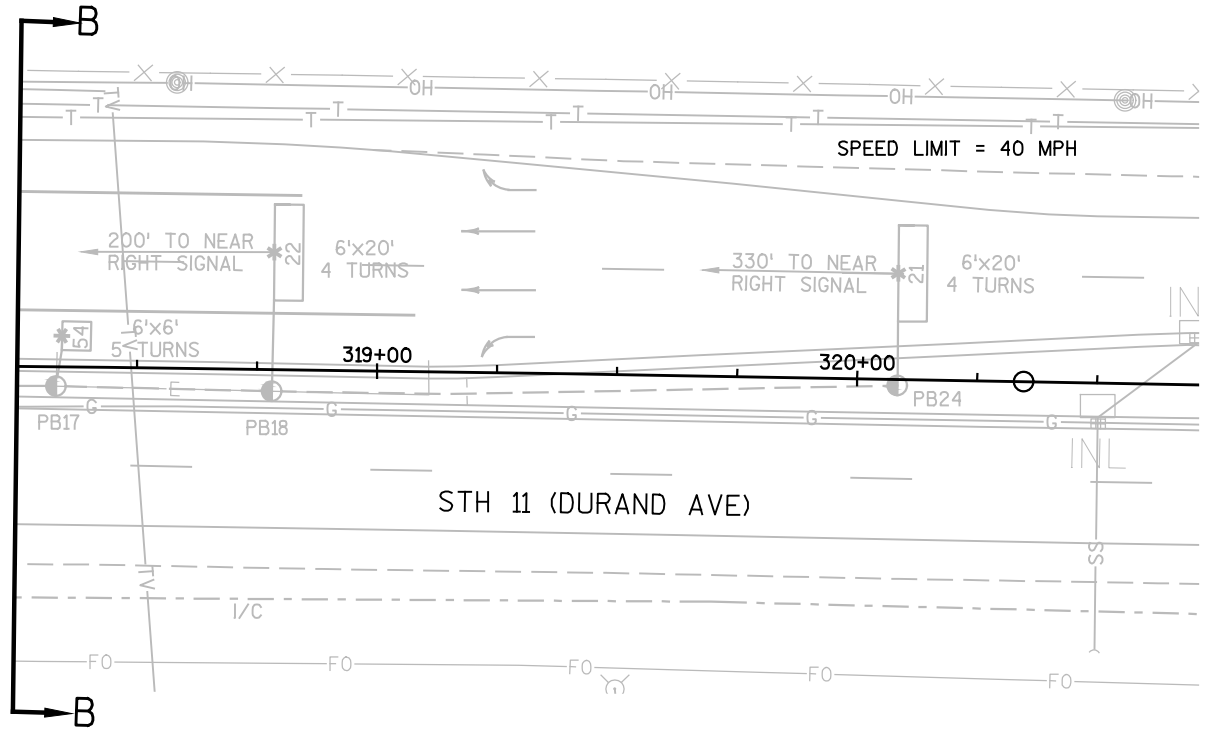
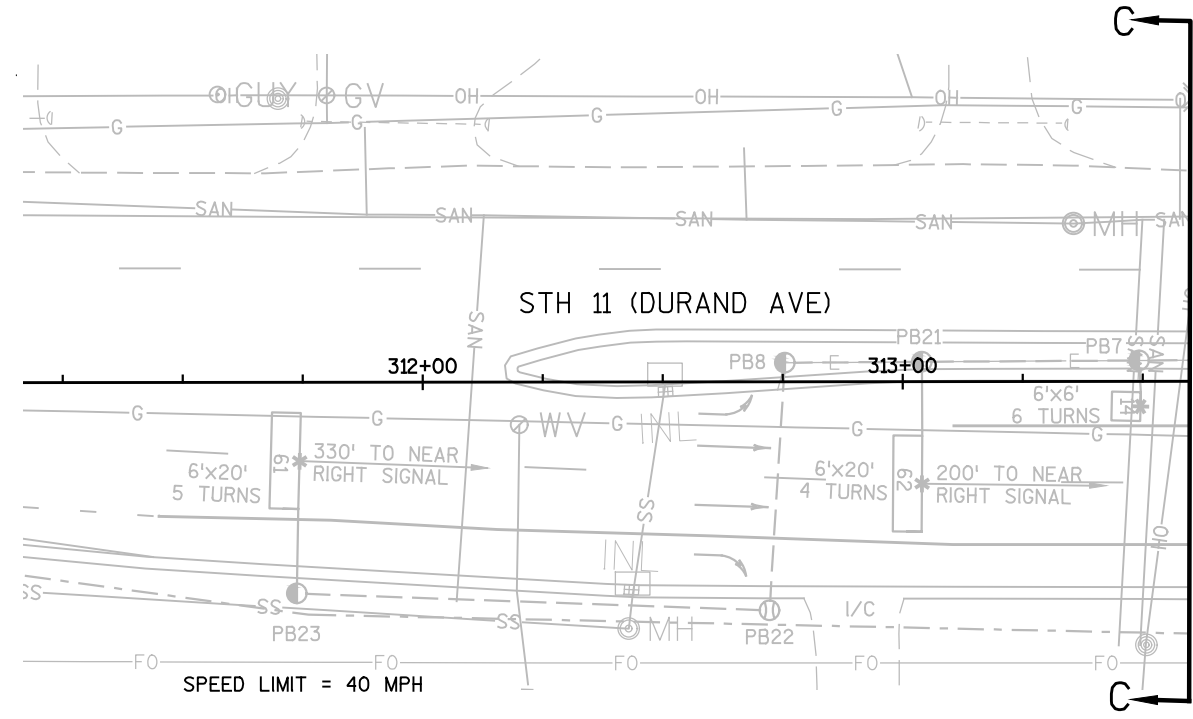
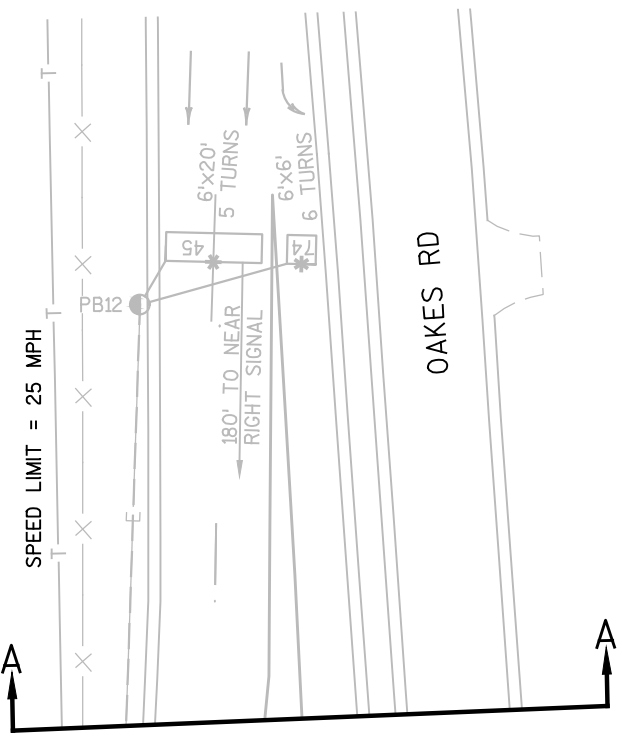
WISCONSIN DEPARTMENT OF TRANSPORTATION  
 APPROVAL RECOMMENDED  
 DATE 9/16/98 MITZI M. DOBERSEK  
 REGION TRAFFIC ENGINEER  
 APPROVED  
 DATE 10/09/98 WILLIAM C. GILDING  
 STATE TRAFFIC ENGINEER

ADD EMERGENCY VEHICLE PREEMPTION;  
 RELOCATE AND REPLACE LOOPS IN KIND  
 2/10/16

1-8-2014 CHANGE FLASHER OPERATION  
 TO R-R

REGION CONTACT: D. WOLFORD  
 DESIGNED BY: TADI  
 REVISED BY: TADI  
 PAGE 1 OF 3

7-30-21 MKC



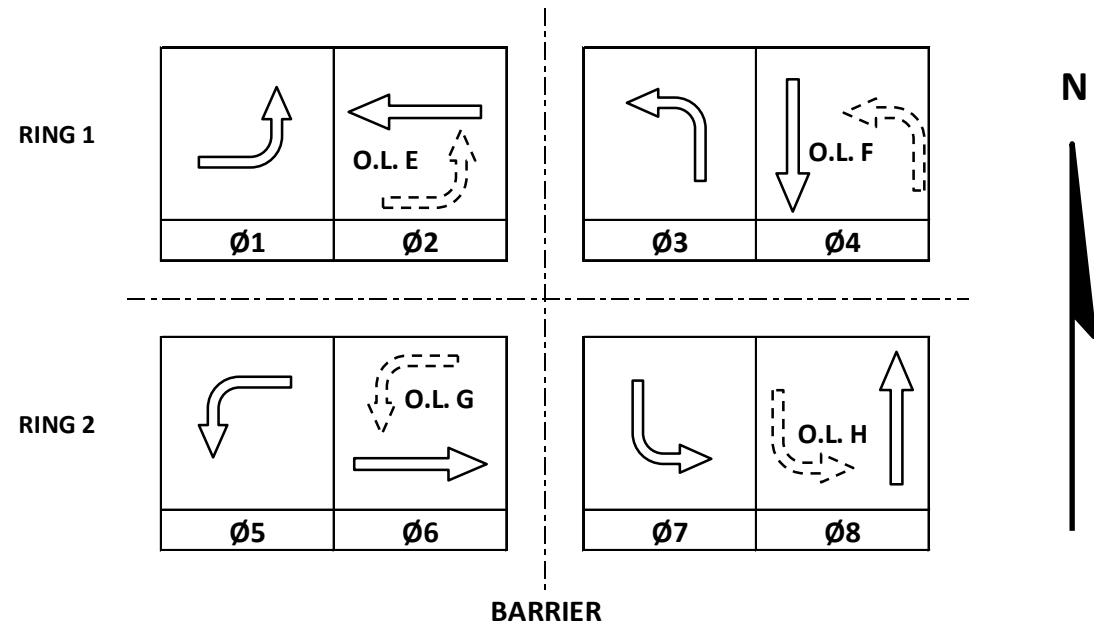
TRAFFIC CONTROL SIGNAL  
 STH 11 (DURAND AVE) & OAKES RD  
 VILLAGE OF MOUNT PLEASANT  
 RACINE COUNTY

SIGNAL NO. S51-0733

REGION CONTACT: D. WOLFORD  
 DESIGNED BY:  
 REVISED BY: TADI

PAGE 2 OF 3

	HEAD NUMBERS	FLASH
Ø1	12,21,22	R
Ø2	1,2,3	R
Ø3	8,19,20	R
Ø4	13,14,15	R
Ø5	4,17,18	R
Ø6	9,10,11	R
Ø7	16,23,24	R
Ø8	5,6,7	R
Ø2P		
Ø4P		
Ø6P		
Ø8P		
OLE	12,21,22	-
OLF	8,19,20	-
OLG	4,17,18	-
OLH	16,23,24	-



**CONTROLLER LOGIC**

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

**EMERGENCY VEHICLE PREEMPTION SEQUENCE**

EMERGENCY VEHICLE PREEMPTOR	A	B	C	D
MOVEMENT				
PHASE	2+5	6+1	4+7	8+3

AFTER PREEMPTION SEQUENCE 2+5 OR 6+1, CONTROLLER SHALL RETURN TO PHASES 2+6.  
 AFTER PREEMPTION SEQUENCE 4+7 OR 8+3, CONTROLLER SHALL RETURN TO PHASES 4+8.

**DETECTOR LOGIC**

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR*(S)	11	13	21	31	33	35,36	41	43
CALLED PHASE	1	1	2	3	3	FUTURE	4	4
CALL OPTION	X	X	X	X	X		X	X
DELAY TIME							X	
EXTENTION OPTION	X	X	X	X	X		X	X
EXTEND TIME								
USE ADDED INITIAL			X					
CROSS SWITCH PHASE	2	2		4	4			

DETECTOR INPUT	19	17	23	21	27	25	31	29
PLAN LOOP DETECTOR*(S)	45	52	54	62	72	74	82	84
CALLED PHASE	4	5	5	6	7	7	8	8
CALL OPTION		X		X	X		X	X
DELAY TIME							X	
EXTENTION OPTION	X	X	X	X	X	X	X	X
EXTEND TIME	X		X			X		
USE ADDED INITIAL				X				
CROSS SWITCH PHASE		6			8			

DETECTOR INPUT	35	33	39	37	43	41	47	45
PLAN LOOP DETECTOR*(S)	63	23	S3	S1				
CALL OPTION								
DELAY TIME								
EXTENTION OPTION								
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR*(S)	12	14	22	32	34	37	42	44
CALLED PHASE	1	1	2	3	3	FUTURE	4	4
CALL OPTION	X		X	X			X	X
DELAY TIME							X	
EXTENTION OPTION	X	X	X	X	X		X	X
EXTEND TIME		X			X			
USE ADDED INITIAL			X					
CROSS SWITCH PHASE	2			4				

DETECTOR INPUT	20	18	24	22	28	26	32	30
PLAN LOOP DETECTOR*(S)	51	53	61	71	73	81	83	85
CALLED PHASE	5	5	6	7	7	8	8	8
CALL OPTION	X	X	X	X	X	X	X	
DELAY TIME						X		
EXTENTION OPTION	X	X	X	X	X	X	X	X
EXTEND TIME								X
USE ADDED INITIAL			X					
CROSS SWITCH PHASE	6	6		8	8			

DETECTOR INPUT	36	34	40	38	44	42	48	46
PLAN LOOP DETECTOR*(S)	64	24	S4	S2				
CALL OPTION								
DELAY TIME								
EXTENTION OPTION								
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

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

TYPE OF COORDINATION	
NONE	
TBC	
TRAFFIC RESPONSIVE	X
ADAPTIVE	X
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM NO:	SS- 51-0201

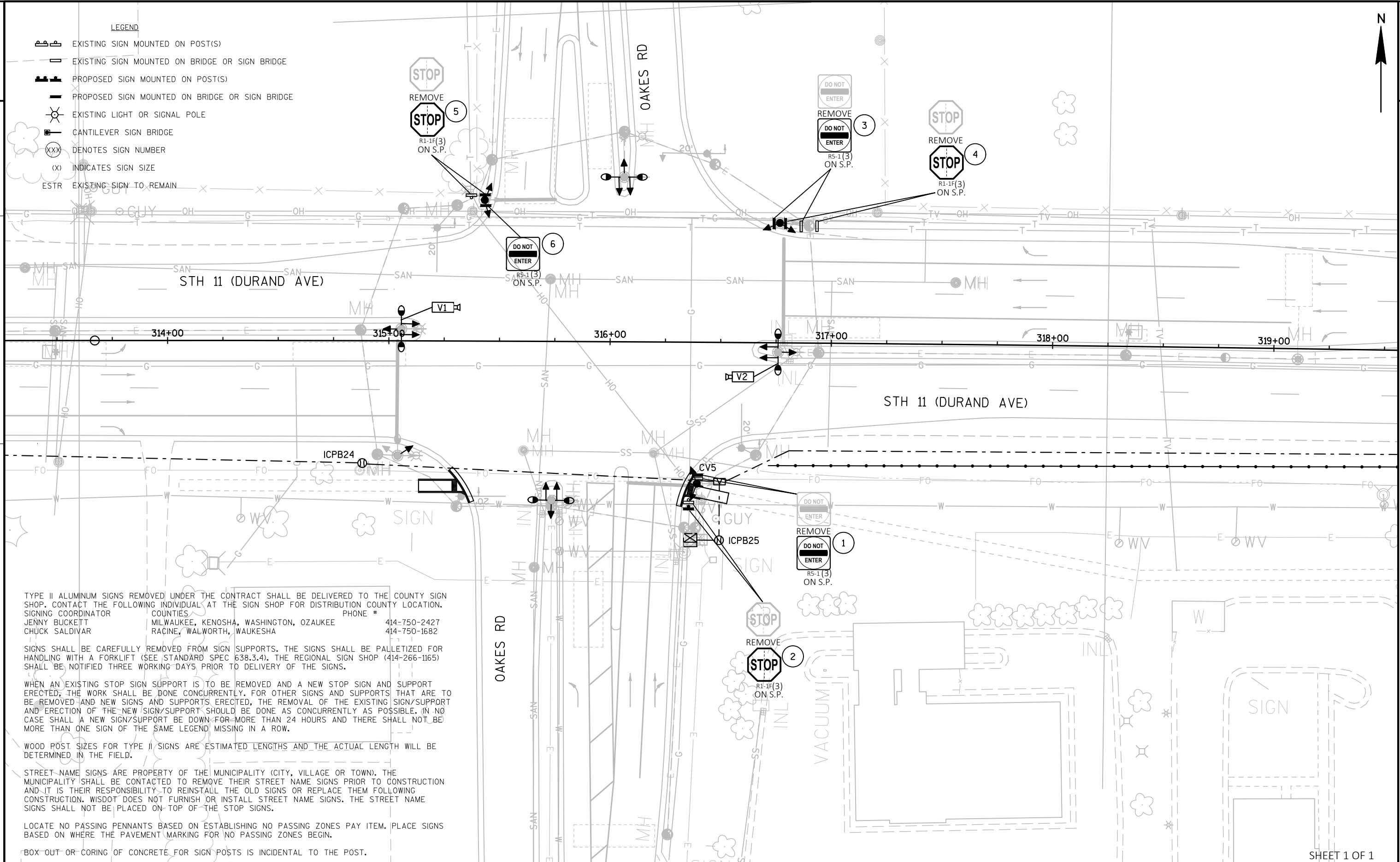
TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC CABINET	X
IN SEPARATE DOT LIGHTING CABINET	

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

STH 11 (DURAND AVE) & OAKES RD	
VILLAGE OF MOUNT PLEASANT	
RACINE COUNTY	
SIGNAL NO: S51-0733	CABINET TYPE: TS2-S
CONTROLLER TYPE: ECONOLITE	
DATE: 5/2021	PAGE NUMBER: 3 OF 3

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- EXISTING LIGHT OR SIGNAL POLE
- CANTILEVER SIGN BRIDGE
- DENOTES SIGN NUMBER
- INDICATES SIGN SIZE
- EXISTING SIGN TO REMAIN



TYPE II ALUMINUM SIGNS REMOVED UNDER THE CONTRACT SHALL BE DELIVERED TO THE COUNTY SIGN SHOP. CONTACT THE FOLLOWING INDIVIDUAL AT THE SIGN SHOP FOR DISTRIBUTION COUNTY LOCATION.  
 SIGNING COORDINATOR COUNTRIES PHONE #  
 JENNY BUCKETT MILWAUKEE, KENOSHA, WASHINGTON, OZAUKEE 414-750-2427  
 CHUCK SALDIVAR RACINE, WALWORTH, WAUKESHA 414-750-1682

SIGNS SHALL BE CAREFULLY REMOVED FROM SIGN SUPPORTS. THE SIGNS SHALL BE PALLETIZED FOR HANDLING WITH A FORKLIFT (SEE STANDARD SPEC 638.3.4). THE REGIONAL SIGN SHOP (414-266-1165) SHALL BE NOTIFIED THREE WORKING DAYS PRIOR TO DELIVERY OF THE SIGNS.

WHEN AN EXISTING STOP SIGN SUPPORT IS TO BE REMOVED AND A NEW STOP SIGN AND SUPPORT ERRECTED, THE WORK SHALL BE DONE CONCURRENTLY. FOR OTHER SIGNS AND SUPPORTS THAT ARE TO BE REMOVED AND NEW SIGNS AND SUPPORTS ERRECTED, THE REMOVAL OF THE EXISTING SIGN/SUPPORT AND ERRECTION OF THE NEW SIGN/SUPPORT SHOULD BE DONE AS CONCURRENTLY AS POSSIBLE. IN NO CASE SHALL A NEW SIGN/SUPPORT BE DOWN FOR MORE THAN 24 HOURS AND THERE SHALL NOT BE MORE THAN ONE SIGN OF THE SAME LEGEND MISSING IN A ROW.

WOOD POST SIZES FOR TYPE II SIGNS ARE ESTIMATED LENGTHS AND THE ACTUAL LENGTH WILL BE DETERMINED IN THE FIELD.

STREET-NAME SIGNS ARE PROPERTY OF THE MUNICIPALITY (CITY, VILLAGE OR TOWN). THE MUNICIPALITY SHALL BE CONTACTED TO REMOVE THEIR STREET NAME SIGNS PRIOR TO CONSTRUCTION AND IT IS THEIR RESPONSIBILITY TO REINSTALL THE OLD SIGNS OR REPLACE THEM FOLLOWING CONSTRUCTION. WISDOT DOES NOT FURNISH OR INSTALL STREET NAME SIGNS. THE STREET NAME SIGNS SHALL NOT BE PLACED ON TOP OF THE STOP SIGNS.

LOCATE NO PASSING PENNANTS BASED ON ESTABLISHING NO PASSING ZONES PAY ITEM. PLACE SIGNS BASED ON WHERE THE PAVEMENT MARKING FOR NO PASSING ZONES BEGIN.

BOX-OUT OR CORING OF CONCRETE FOR SIGN POSTS IS INCIDENTAL TO THE POST.

LEGEND

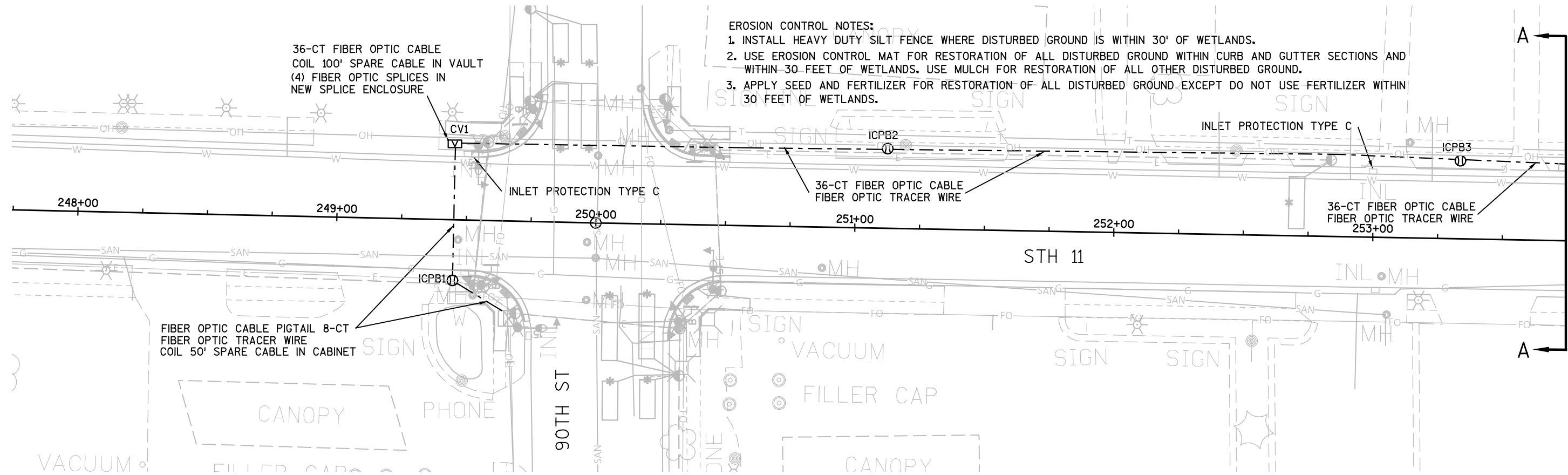
- NONMETALLIC INTERCONNECT CONDUIT 2"
- ☒ COMMUNICATIONS VAULT
- ⊙ PULL BOX, 24" X 42"
- ☒ CONTROL CABINET
- HEAVY DUTY SILT FENCE

CONSTRUCTION NOTES

1. ALL UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO CONSTRUCTION. NOTIFY THE ENGINEER OF ANY CONFLICTS PRIOR TO CONSTRUCTION.
2. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.

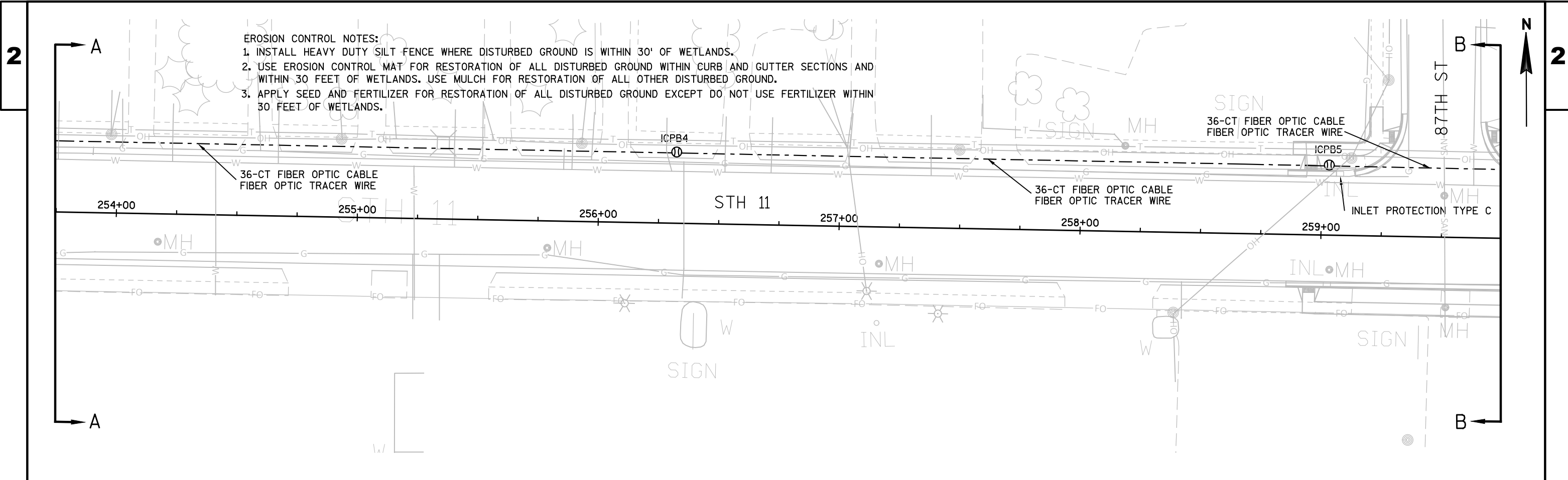
EROSION CONTROL NOTES:

1. INSTALL HEAVY DUTY SILT FENCE WHERE DISTURBED GROUND IS WITHIN 30' OF WETLANDS.
2. USE EROSION CONTROL MAT FOR RESTORATION OF ALL DISTURBED GROUND WITHIN CURB AND GUTTER SECTIONS AND WITHIN 30 FEET OF WETLANDS. USE MULCH FOR RESTORATION OF ALL OTHER DISTURBED GROUND.
3. APPLY SEED AND FERTILIZER FOR RESTORATION OF ALL DISTURBED GROUND EXCEPT DO NOT USE FERTILIZER WITHIN 30 FEET OF WETLANDS.



TRAFFIC	SIGNAL	INTERCONNECT
STH 11 RACINE COUNTY		
REGION CONTACT: D. WOLFORD DESIGNED BY: TADI REVISED BY:		PAGE 1 OF 10



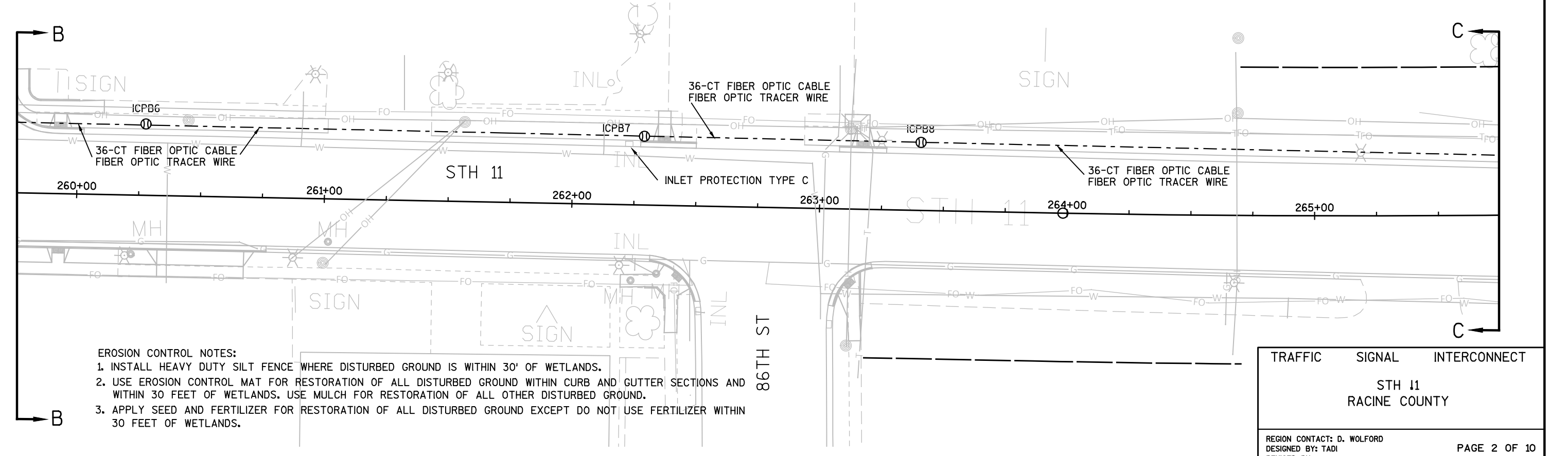


**EROSION CONTROL NOTES:**  
 1. INSTALL HEAVY DUTY SILT FENCE WHERE DISTURBED GROUND IS WITHIN 30' OF WETLANDS.  
 2. USE EROSION CONTROL MAT FOR RESTORATION OF ALL DISTURBED GROUND WITHIN CURB AND GUTTER SECTIONS AND WITHIN 30 FEET OF WETLANDS. USE MULCH FOR RESTORATION OF ALL OTHER DISTURBED GROUND.  
 3. APPLY SEED AND FERTILIZER FOR RESTORATION OF ALL DISTURBED GROUND EXCEPT DO NOT USE FERTILIZER WITHIN 30 FEET OF WETLANDS.

36-CT FIBER OPTIC CABLE  
 FIBER OPTIC TRACER WIRE

36-CT FIBER OPTIC CABLE  
 FIBER OPTIC TRACER WIRE

INLET PROTECTION TYPE C



**EROSION CONTROL NOTES:**  
 1. INSTALL HEAVY DUTY SILT FENCE WHERE DISTURBED GROUND IS WITHIN 30' OF WETLANDS.  
 2. USE EROSION CONTROL MAT FOR RESTORATION OF ALL DISTURBED GROUND WITHIN CURB AND GUTTER SECTIONS AND WITHIN 30 FEET OF WETLANDS. USE MULCH FOR RESTORATION OF ALL OTHER DISTURBED GROUND.  
 3. APPLY SEED AND FERTILIZER FOR RESTORATION OF ALL DISTURBED GROUND EXCEPT DO NOT USE FERTILIZER WITHIN 30 FEET OF WETLANDS.

36-CT FIBER OPTIC CABLE  
 FIBER OPTIC TRACER WIRE

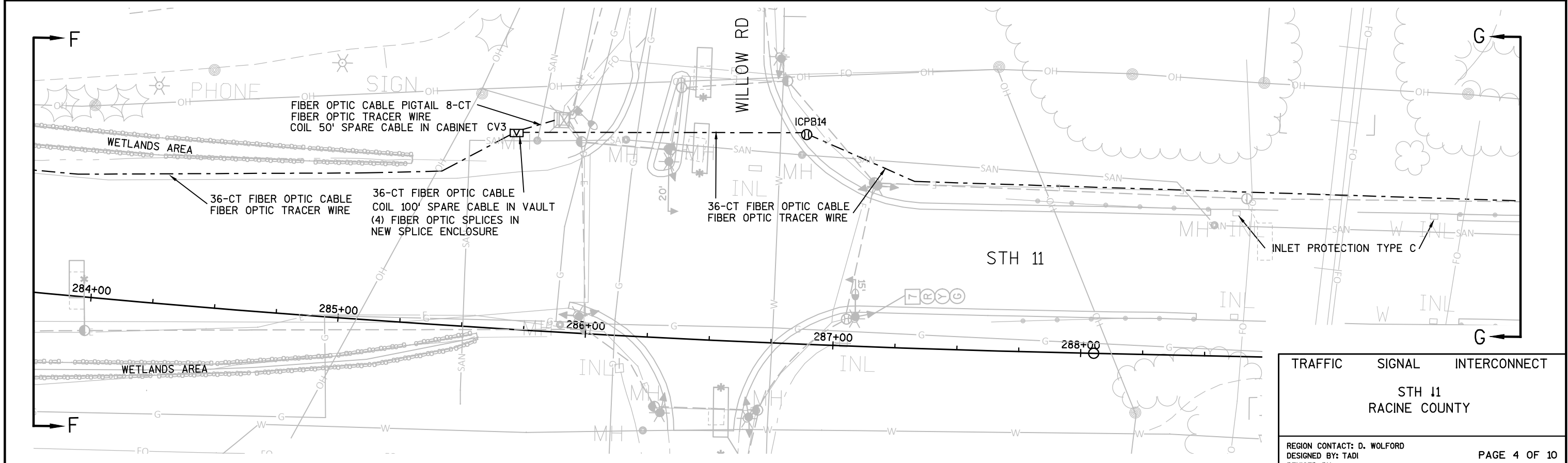
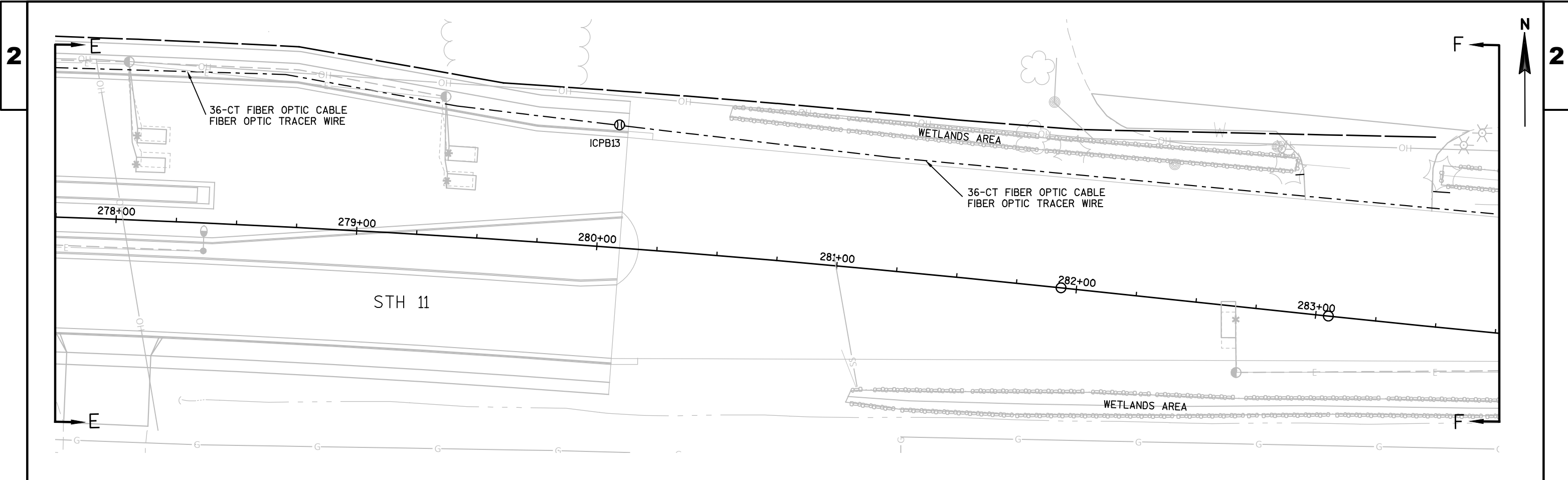
36-CT FIBER OPTIC CABLE  
 FIBER OPTIC TRACER WIRE

INLET PROTECTION TYPE C

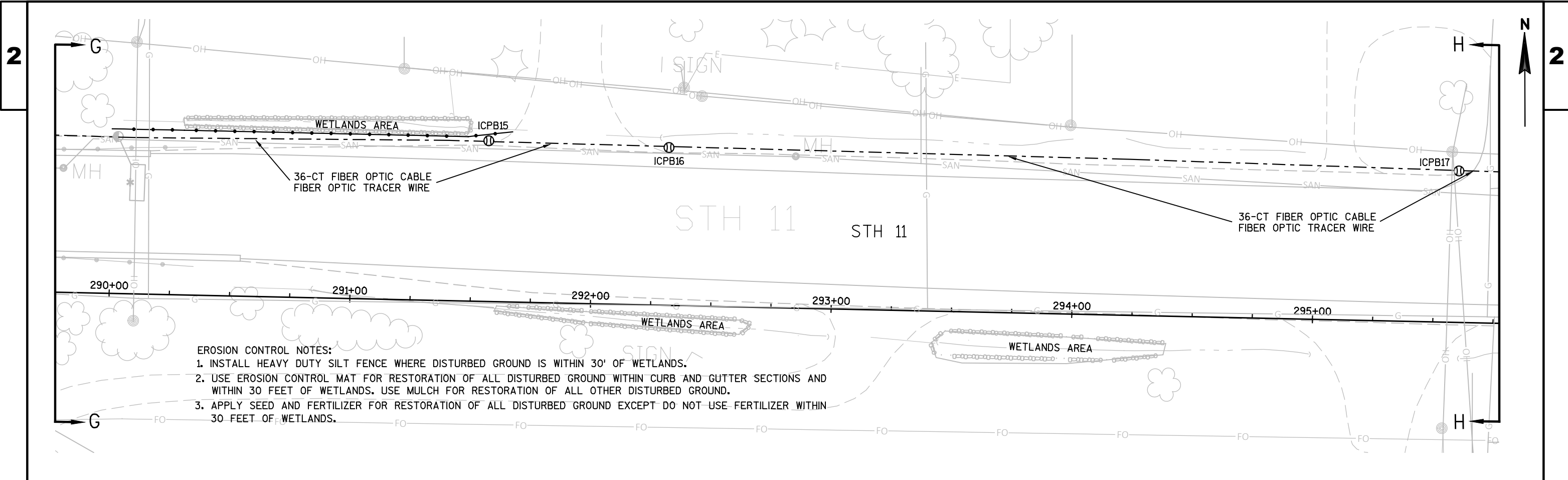
TRAFFIC SIGNAL INTERCONNECT  
 STH 11  
 RACINE COUNTY

REGION CONTACT: D. WOLFORD  
 DESIGNED BY: TADI  
 REVISED BY:  
 PAGE 2 OF 10

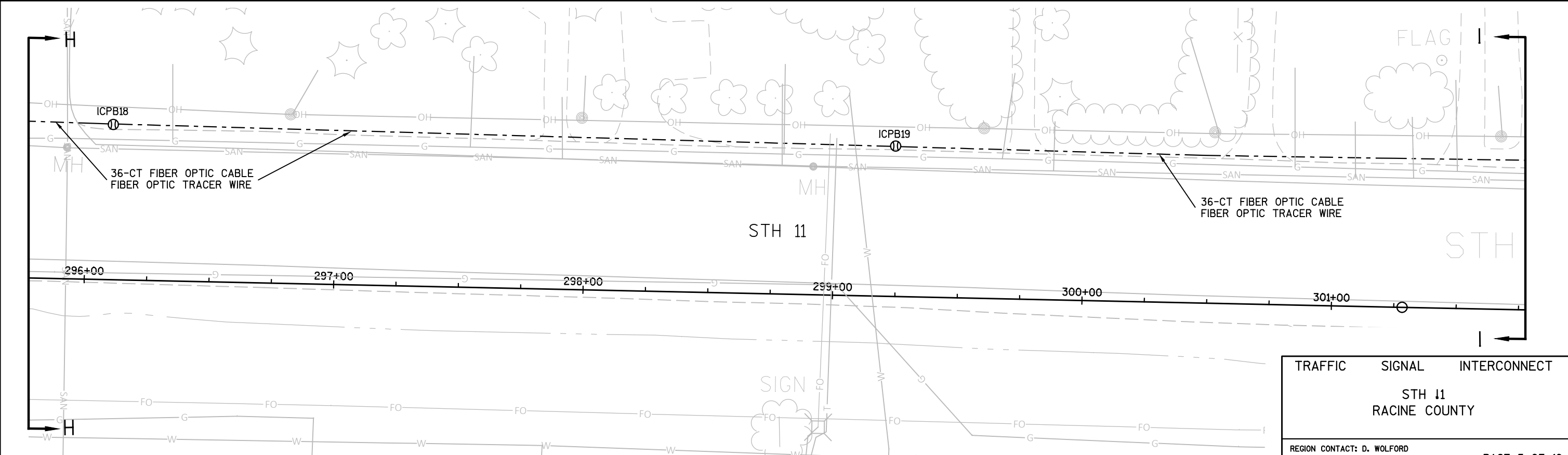




TRAFFIC	SIGNAL	INTERCONNECT
STH 11 RACINE COUNTY		
REGION CONTACT: D. WOLFORD		PAGE 4 OF 10
DESIGNED BY: TADI REVISED BY:		

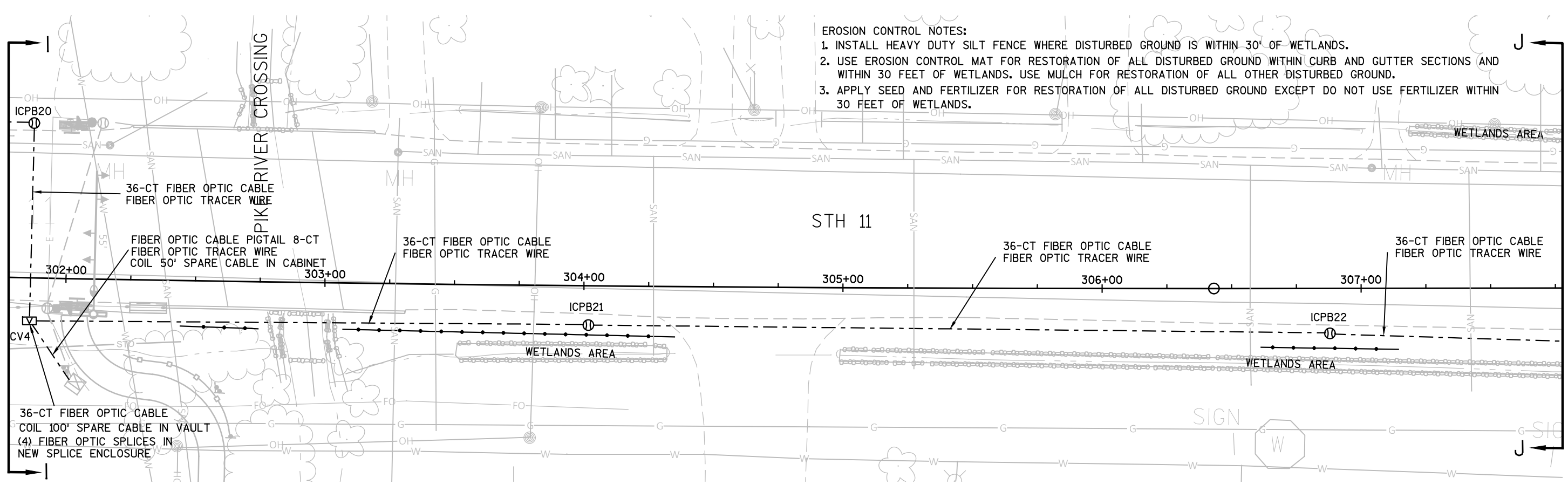


- EROSION CONTROL NOTES:**
1. INSTALL HEAVY DUTY SILT FENCE WHERE DISTURBED GROUND IS WITHIN 30' OF WETLANDS.
  2. USE EROSION CONTROL MAT FOR RESTORATION OF ALL DISTURBED GROUND WITHIN CURB AND GUTTER SECTIONS AND WITHIN 30 FEET OF WETLANDS. USE MULCH FOR RESTORATION OF ALL OTHER DISTURBED GROUND.
  3. APPLY SEED AND FERTILIZER FOR RESTORATION OF ALL DISTURBED GROUND EXCEPT DO NOT USE FERTILIZER WITHIN 30 FEET OF WETLANDS.

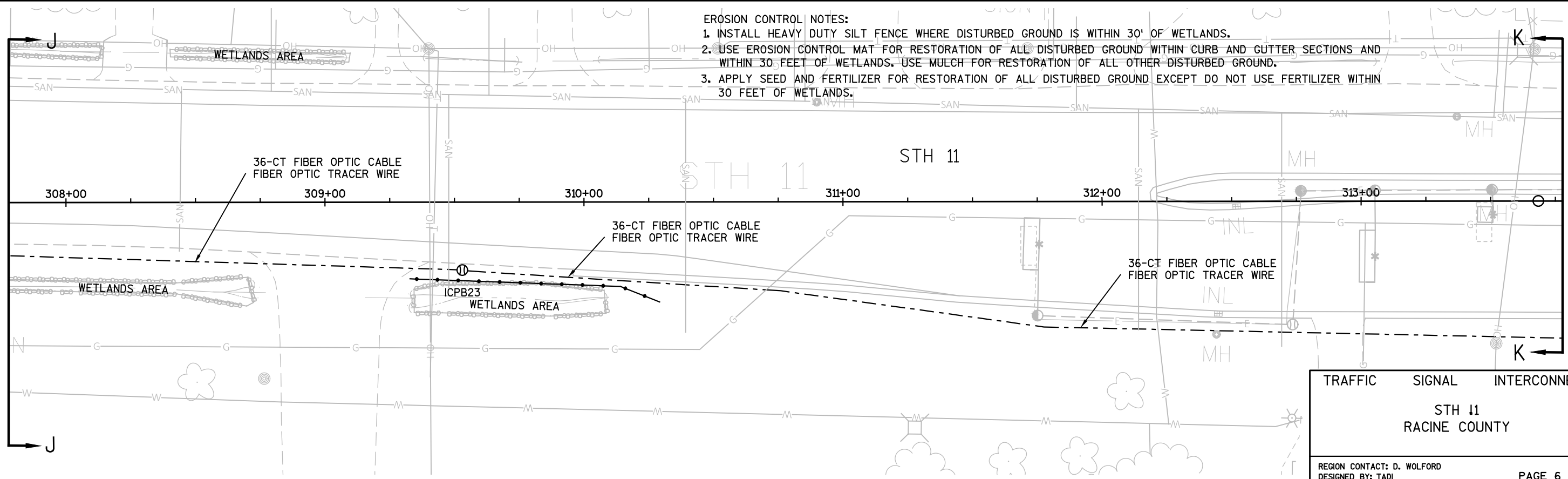


TRAFFIC	SIGNAL	INTERCONNECT
STH 11 RACINE COUNTY		
REGION CONTACT: D. WOLFORD		PAGE 5 OF 10
DESIGNED BY: TADI		
REVISED BY:		

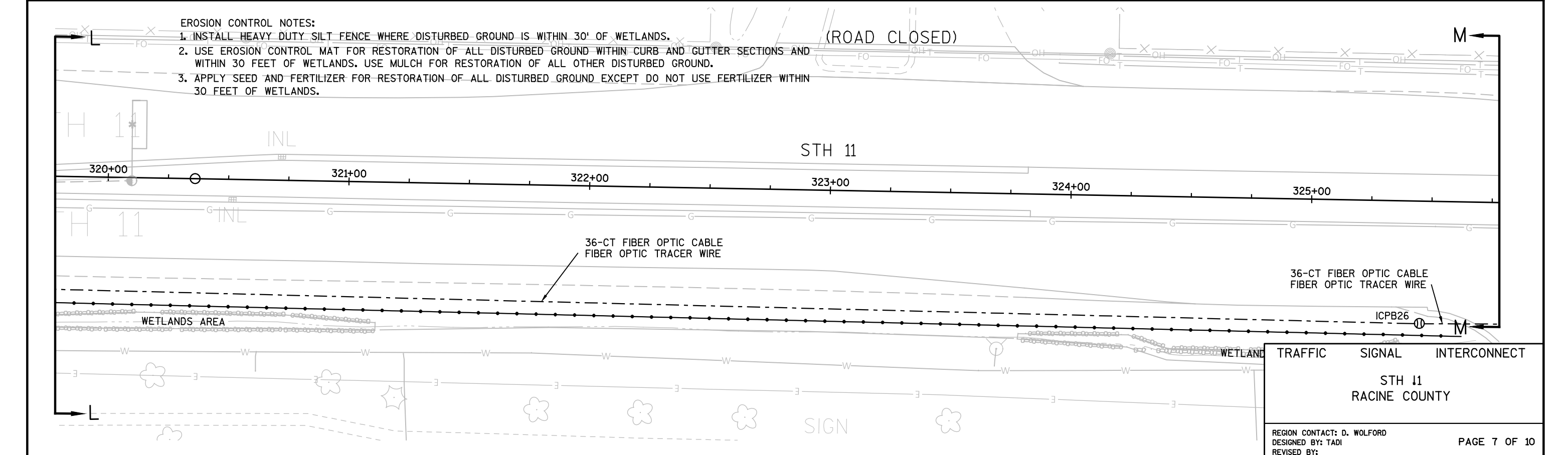
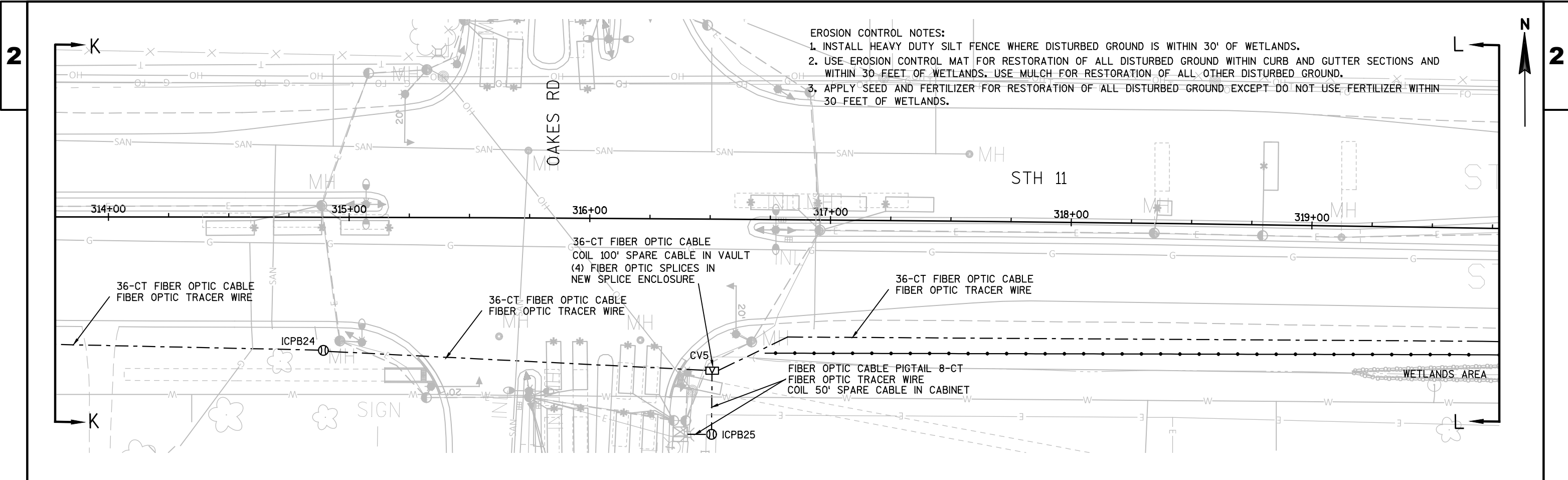
- EROSION CONTROL NOTES:
1. INSTALL HEAVY DUTY SILT FENCE WHERE DISTURBED GROUND IS WITHIN 30' OF WETLANDS.
  2. USE EROSION CONTROL MAT FOR RESTORATION OF ALL DISTURBED GROUND WITHIN CURB AND GUTTER SECTIONS AND WITHIN 30 FEET OF WETLANDS. USE MULCH FOR RESTORATION OF ALL OTHER DISTURBED GROUND.
  3. APPLY SEED AND FERTILIZER FOR RESTORATION OF ALL DISTURBED GROUND EXCEPT DO NOT USE FERTILIZER WITHIN 30 FEET OF WETLANDS.

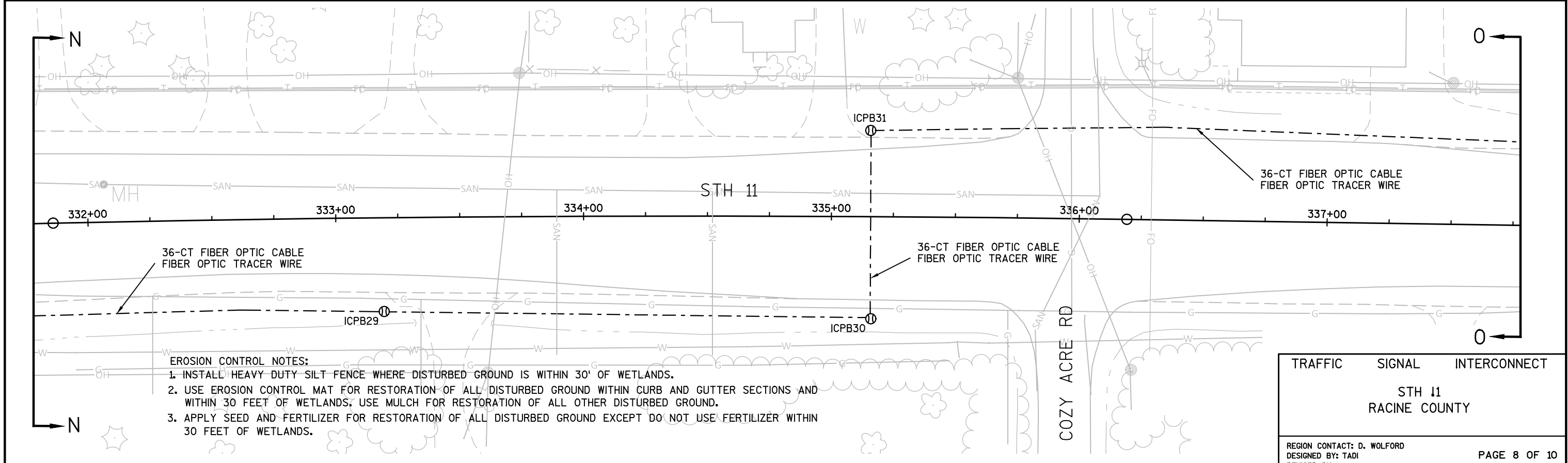
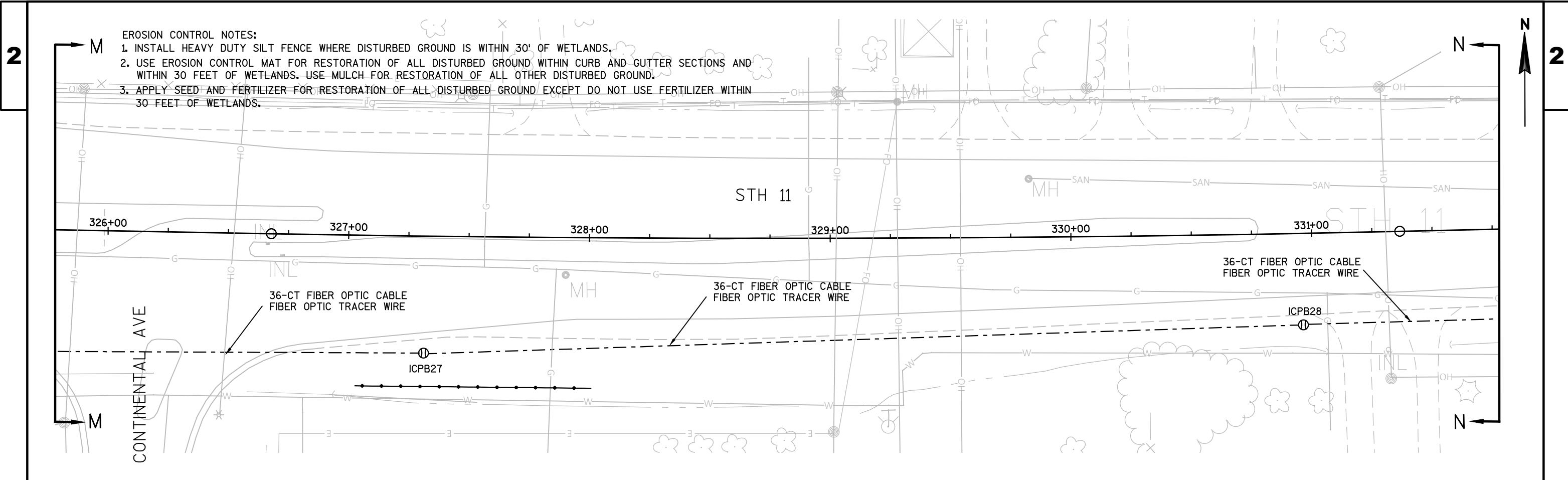


- EROSION CONTROL NOTES:
1. INSTALL HEAVY DUTY SILT FENCE WHERE DISTURBED GROUND IS WITHIN 30' OF WETLANDS.
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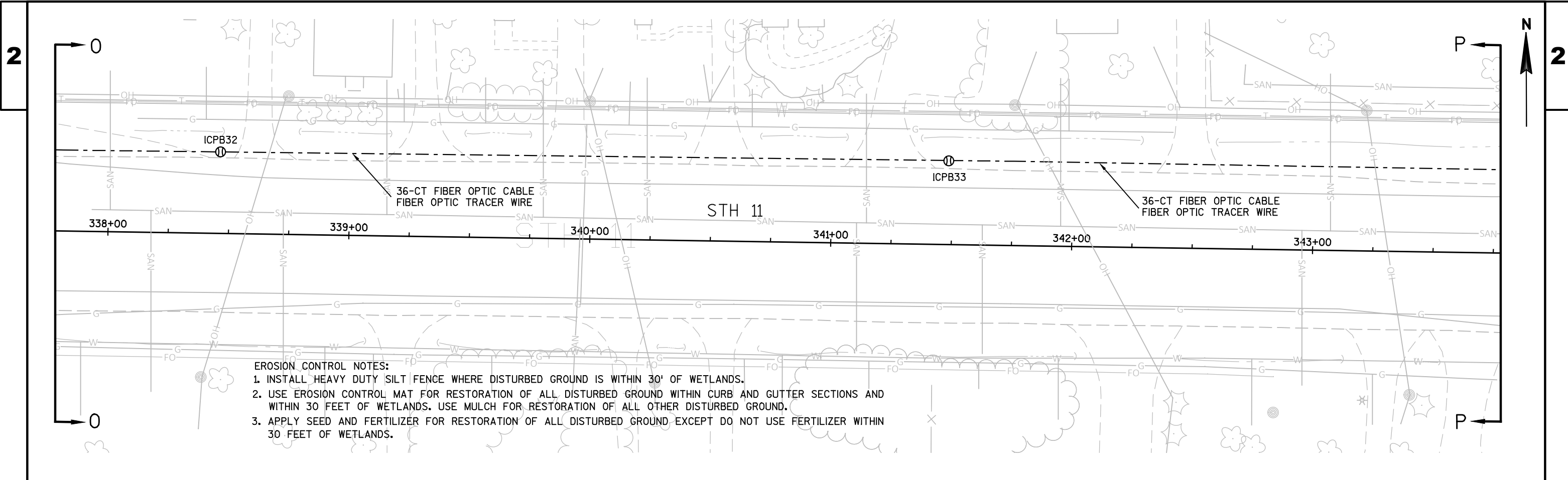


TRAFFIC	SIGNAL	INTERCONNECT
STH 11 RACINE COUNTY		
REGION CONTACT: D. WOLFORD		PAGE 6 OF 10
DESIGNED BY: TADI		
REVISED BY:		



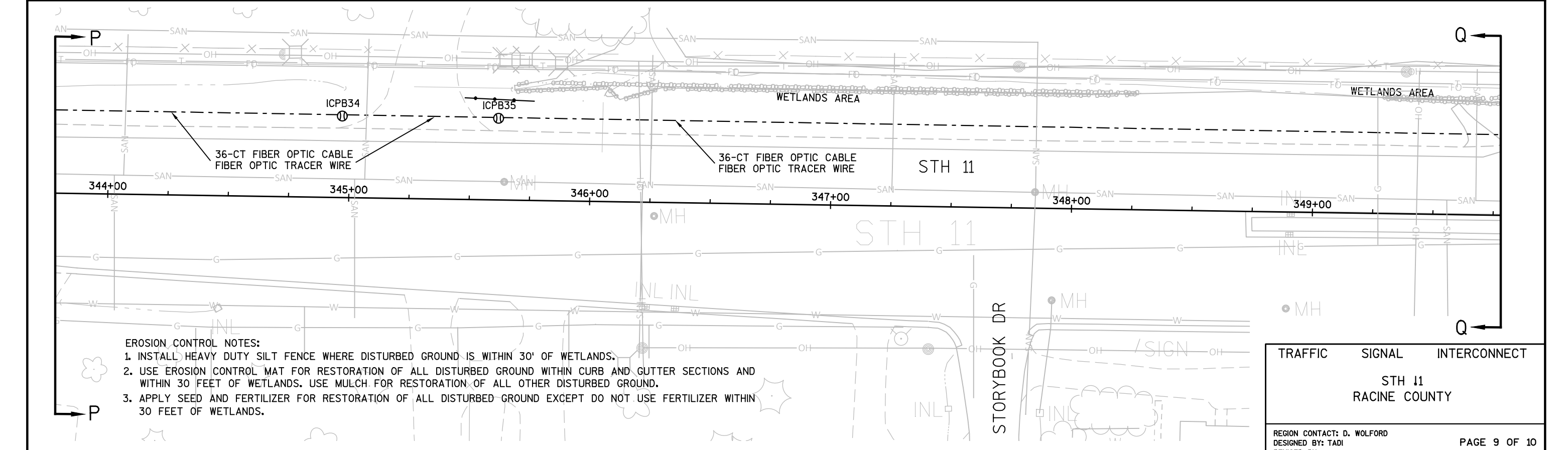


TRAFFIC	SIGNAL	INTERCONNECT
STH 11 RACINE COUNTY		
REGION CONTACT: D. WOLFORD		PAGE 8 OF 10
DESIGNED BY: TADI REVISED BY:		



**EROSION CONTROL NOTES:**

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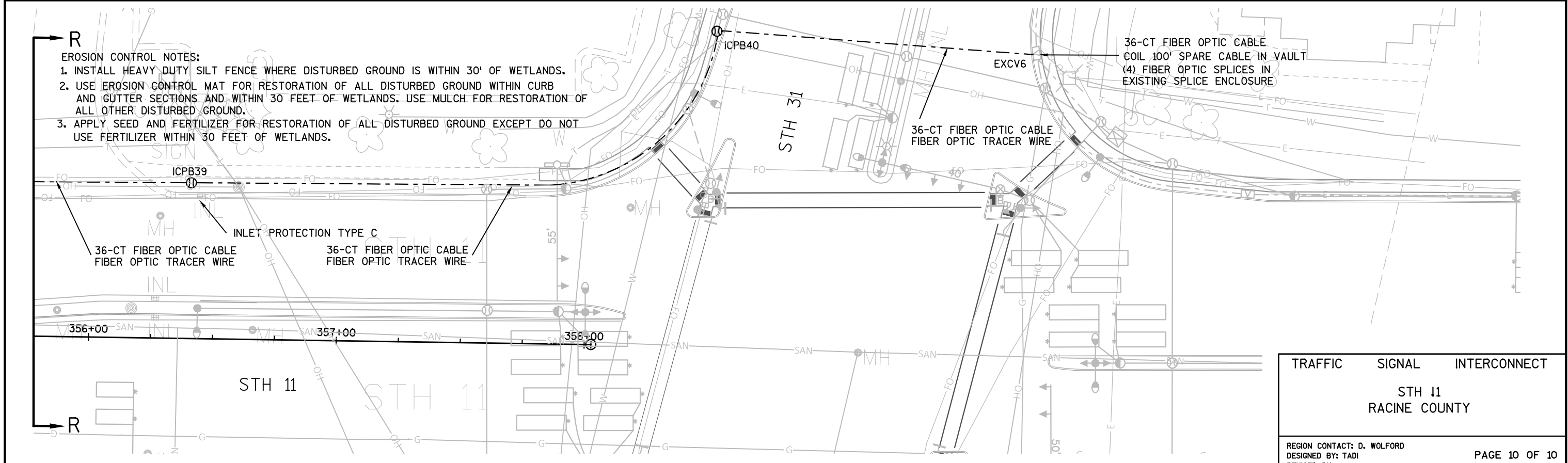
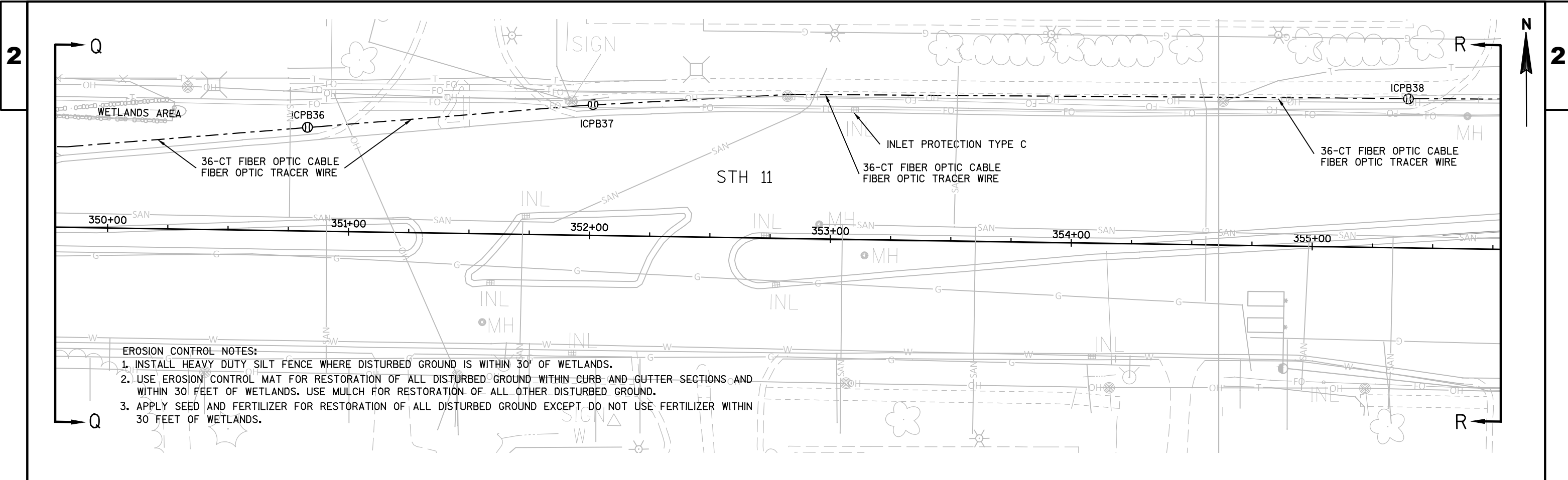
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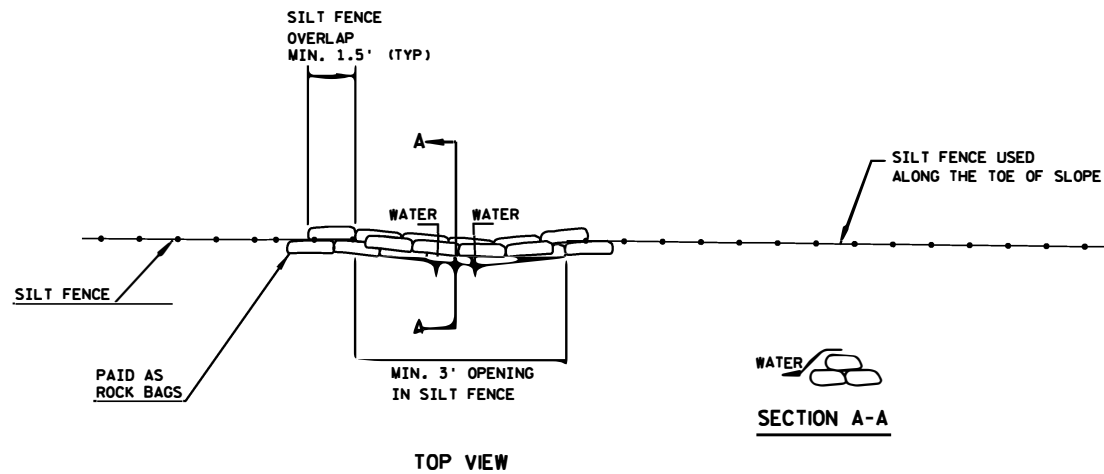
TRAFFIC	SIGNAL	INTERCONNECT
STH 11 RACINE COUNTY		

REGION CONTACT: D. WOLFORD  
 DESIGNED BY: TADI  
 REVISED BY:  
 PAGE 9 OF 10

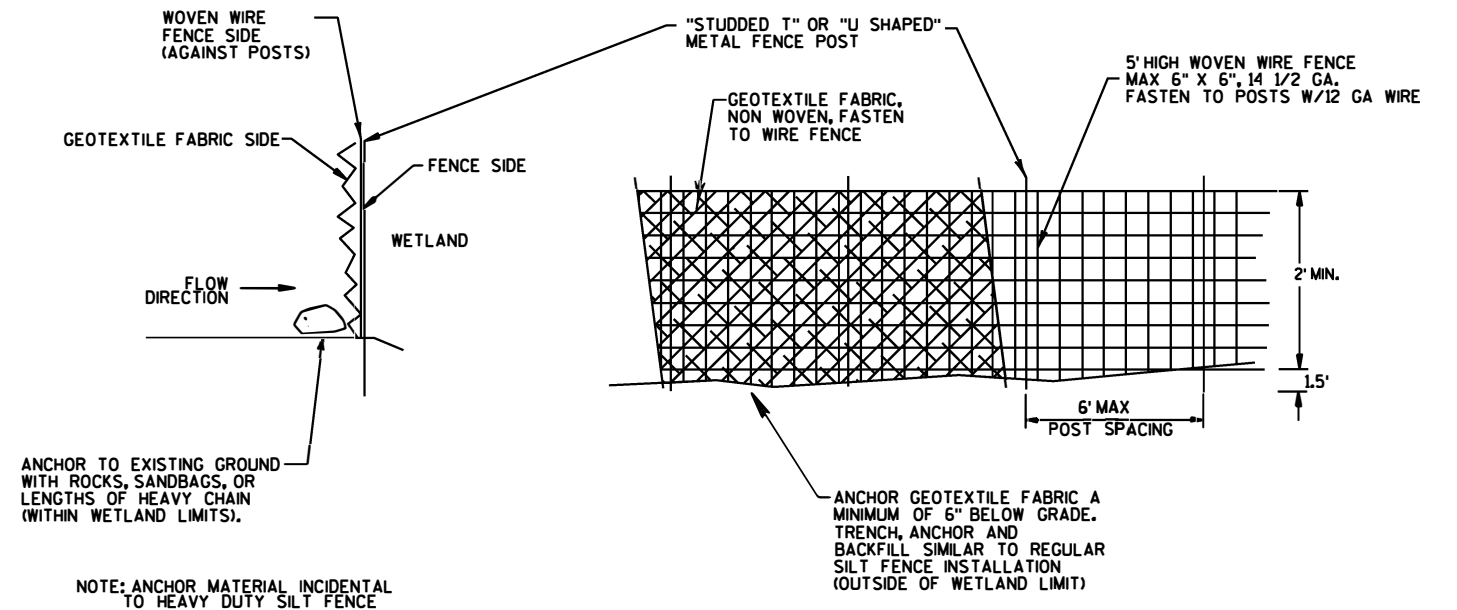




TRAFFIC	SIGNAL	INTERCONNECT
STH 11 RACINE COUNTY		
REGION CONTACT: D. WOLFORD		PAGE 10 OF 10
DESIGNED BY: TADI		
REVISED BY:		



ROCK BAGS USED FOR SILT FENCE RELIEF DETAIL



HEAVY DUTY SILT FENCE

Estimate Of Quantities By Plan Sets

1320-16-71

Line	Item	Item Description	Unit	Total	Qty
0002	204.9060.S	Removing (item description) 01. Traffic Signals STH 11 at 90th St	EACH	1.000	1.000
0004	204.9060.S	Removing (item description) 02. Traffic Signals STH 11 at Willow Rd	EACH	1.000	1.000
0006	204.9060.S	Removing (item description) 03. Traffic Signals STH 11 at Oakes Rd	EACH	1.000	1.000
0014	619.1000	Mobilization	EACH	0.800	0.800
0016	627.0200	Mulching	SY	1,110.000	1,110.000
0018	628.1520	Silt Fence Maintenance	LF	1,890.000	1,890.000
0020	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0022	628.1910	Mobilizations Emergency Erosion Control	EACH	1.000	1.000
0024	628.2002	Erosion Mat Class I Type A	SY	4,040.000	4,040.000
0026	628.7015	Inlet Protection Type C	EACH	8.000	8.000
0028	629.0205	Fertilizer Type A	CWT	2.100	2.100
0030	630.0130	Seeding Mixture No. 30	LB	87.600	87.600
0032	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	3.000	3.000
0034	637.2210	Signs Type II Reflective H	SF	47.000	47.000
0036	637.2215	Signs Type II Reflective H Folding	SF	22.380	22.380
0038	637.2230	Signs Type II Reflective F	SF	20.000	20.000
0040	638.2102	Moving Signs Type II	EACH	3.000	3.000
0042	638.2602	Removing Signs Type II	EACH	3.000	3.000
0044	638.3000	Removing Small Sign Supports	EACH	3.000	3.000
0048	643.0300	Traffic Control Drums	DAY	2,872.000	2,872.000
0050	643.0410	Traffic Control Barricades Type II	DAY	55.000	55.000
0052	643.0420	Traffic Control Barricades Type III	DAY	162.000	162.000
0056	643.0900	Traffic Control Signs	DAY	478.000	478.000
0058	643.1050	Traffic Control Signs PCMS	DAY	10.000	10.000
0060	643.5000	Traffic Control	EACH	0.850	0.850
0062	649.0150	Temporary Marking Line Removable Tape 4-Inch	LF	4,220.000	4,220.000
0064	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	2,215.000	2,215.000
0066	652.0605	Conduit Special 2-Inch	LF	8,855.000	8,855.000
0068	653.0140	Pull Boxes Steel 24x42-Inch	EACH	40.000	40.000
0070	655.0230	Cable Traffic Signal 5-14 AWG	LF	140.000	140.000
0072	655.0240	Cable Traffic Signal 7-14 AWG	LF	240.000	240.000
0074	655.0510	Electrical Wire Traffic Signals 12 AWG	LF	12,180.000	12,180.000
0076	657.0425	Traffic Signal Standards Aluminum 15-FT	EACH	3.000	3.000
0078	658.0173	Traffic Signal Face 3S 12-Inch	EACH	7.000	7.000
0080	658.0174	Traffic Signal Face 4S 12-Inch	EACH	12.000	12.000
0082	658.5069	Signal Mounting Hardware (location) 01. STH 11 at Oakes Rd	LS	1.000	1.000
0084	659.1125	Luminaires Utility LED C	EACH	11.000	11.000
0086	670.0100	Field System Integrator	LS	1.000	1.000
0088	670.0200	ITS Documentation	LS	1.000	1.000
0090	673.0105	Communication Vault Type 1	EACH	5.000	5.000
0092	678.0036	Install Fiber Optic Cable Outdoor Plant 36-CT	LF	12,180.000	12,180.000
0094	678.0200	Fiber Optic Splice Enclosure	EACH	5.000	5.000
0096	678.0300	Fiber Optic Splice	EACH	24.000	24.000
0098	678.0500	Communication System Testing	LS	1.000	1.000
0100	678.0600	Install Ethernet Switches	EACH	5.000	5.000
0102	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,400.000	1,400.000
0104	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	1,500.000	1,500.000
0106	SPV.0060	Special 01. Trans & Install State Furn Traffic Signal Cabinet STH 11 at 90th St	EACH	1.000	1.000
0108	SPV.0060	Special 02. Trans & Install State Furn Traffic Signal Cabinet STH 11 at Willow Rd	EACH	1.000	1.000

Estimate Of Quantities By Plan Sets

1320-16-71

Line	Item	Item Description	Unit	Total	Qty
0110	SPV.0060	Special 03. Trans & Install State Furn Traffic Signal Cabinet STH 11 at Oakes Rd	EACH	1.000	1.000
0112	SPV.0060	Special 04. Trans & Install State Furnished Video Vehicle Detection Sys STH 11 at 90th	EACH	1.000	1.000
0114	SPV.0060	Special 05. Trans & Install State Furnished Video Vehicle Detection Sys STH 11 at 84th	EACH	1.000	1.000
0116	SPV.0060	Special 06. Trans & Install State Furnished Video Veh Detection Sys STH 11 at Willow R	EACH	1.000	1.000
0118	SPV.0060	Special 07. Trans & Install State Furnished Video Veh Detection Sys STH 11 at Oakes Rd	EACH	1.000	1.000
0120	SPV.0060	Special 08. Trans & Install State Furnished Video Veh Det Sys STH 11 at Pike River Pat	EACH	1.000	1.000
0130	SPV.0060	Special 13. Trans & Install State Furn FO Pigtail 8-ct 85-FT & Optical Transceiver	EACH	1.000	1.000
0132	SPV.0060	Special 14. Trans & Install State Furnished FO Pigtail 8-ct 95-FT & Opt Transceiver	EACH	1.000	1.000
0134	SPV.0060	Special 15. Trans & Install State Furnished FO Pigtail 8-ct 100-FT & Opt Transceiver	EACH	1.000	1.000
0136	SPV.0060	Special 16. Trans & Install State Furnished FO Pigtail 8-ct 140-FT & Opt Transceiver	EACH	1.000	1.000
0138	SPV.0060	Special 17. Trans & Install State Furnished FO Pigtail 8-ct 240-FT & Opt Transceiver	EACH	1.000	1.000
0140	SPV.0060	Special 18. Trans & Install State Furnished Radio Interconnect Units STH 11 at CTH H	EACH	1.000	1.000
0142	SPV.0060	Special 19. Trans & Install State Furnished Radio Interconnect Units STH 11 at 90th St	EACH	1.000	1.000
0144	SPV.0060	Special 20. Exposing Existing Infrastructure Unpaved Area	EACH	6.000	6.000
0146	SPV.0060	Special 21. Exposing Existing Infrastructure Paved Area	EACH	12.000	12.000
0148	SPV.0090	Special 01. Fiber Optic Warning Tape	LF	12,180.000	12,180.000
0150	SPV.0090	Special 02. Heavy Duty Silt Fence	LF	1,890.000	1,890.000

STH 11 FROM CTH H TO STH 31  
ALL ITEMS ARE CATEGORY 0010

STATE FURNISHED MATERIALS SUMMARY - FOR INFORMATION ONLY

EACH	DESCRIPTION
4	VIDEO VEHICLE DETECTION SYSTEM
1	PATCH PANEL WITH FIBER OPTIC PIGTAIL 8-CT 95-FT
1	PATCH PANEL WITH FIBER OPTIC PIGTAIL 8-CT 100-FT
1	PATCH PANEL WITH FIBER OPTIC PIGTAIL 8-CT 105-FT
1	PATCH PANEL WITH FIBER OPTIC PIGTAIL 8-CT 145-FT
1	PATCH PANEL WITH FIBER OPTIC PIGTAIL 8-CT 245-FT
5	ETHERNET SWITCH
10	SMALL FORM FACTOR PLUGGABLE OPTICAL TRANSCEIVER
5	SPLICE ENCLOSURE
12180	FIBER OPTIC CABLE OUTDOOR PLANT 36-CT
2	5.8 GHZ RADIO INTERCONNECT UNITS

REMOVING TRAFFIC SIGNALS

LOCATION	204.0060.S.01	204.0060.S.02	204.0060.S.03
	REMOVING	REMOVING	REMOVING
	TRAFFIC SIGNALS	TRAFFIC SIGNALS	TRAFFIC SIGNALS
	L.S.	L.S.	L.S.
STH 11 AT 90TH ST	1	-	-
STH 11 AT WILLOW RD	-	1	-
STH 11 AT OAKES RD	-	-	1
<b>TOTAL</b>	<b>1</b>	<b>1</b>	<b>1</b>

MOBILIZATION

LOCATION	619.1000.01
	MOBILIZATION
	EACH
PROJECT 1320-16-71	0.8
<b>TOTAL</b>	<b>0.8</b>

EROSION CONTROL AND RESTORATION

STA - STA	LOCATION	SIDE	627.0200	SPV.0090.02	628.1520	628.2002	629.0205	630.0130
			MULCHING	HEAVY DUTY	SILT FENCE	EROSION MAT	FERTILIZER	SEEDING
			SY	SILT FENCE	MAINTENANCE	CLASS 1	TYPE A	MIXTURE
				LF	LF	TYPE A	TYPE A	NO. 30
						SY	CWT	LB
249+40 - 263+40	LT		--	--	--	89	0.06	1.6
263+40 - 280+10	LT		--	--	--	928	0.58	16.7
280+10 - 295+60	LT		489	90	90	347	0.31	15.05
295+60 - 301+85	LT		25	--	--	--	0.02	0.45
301+85 - 309+55	RT		11	120	120	200	0.01	3.8
309+55 - 316+85	RT		--	95	95	406	0.22	7.3
316+85 - 331+00	RT		228	940	940	550	0.14	9.9
331+00 - 333+20	RT		--	--	--	--	--	--
333+20 - 335+15	RT		108	--	--	--	0.07	1.95
335+15 - 345+60	LT		28	--	--	--	0.02	0.5
345+60 - 349+80	LT		--	--	--	233	--	4.2
349+80 - 358+45	LT		--	65	65	481	0.27	8.65
<b>UNDISTRIBUTED</b>			<b>221</b>	<b>580</b>	<b>580</b>	<b>806</b>	<b>0.40</b>	<b>17.50</b>
<b>TOTAL</b>			<b>1110</b>	<b>1890</b>	<b>1890</b>	<b>4040</b>	<b>2.10</b>	<b>87.60</b>

EROSION CONTROL AND RESTORATION - CONTINUED

LOCATION	628.1905	628.1910	628.7015
	MOBILIZATIONS	MOBILIZATIONS	INLET
	EROSION CONTROL	EMERGENCY	PROTECTION
	EACH	EACH	EACH
PROJECT 1320-16-71	4	1	8
<b>TOTAL</b>	<b>4</b>	<b>1</b>	<b>8</b>

STH 11 FROM CTH H TO STH 31  
ALL ITEMS ARE CATEGORY 0010

VIDEO VEHICLE DETECTION SYSTEM

LOCATION	SPV.0060.04	SPV.0060.05	SPV.0060.06	SPV.0060.07	SPV.0060.08
	TRANSPORTING AND INSTALLING STATE FURNISHED VIDEO VEHICLE DETECTION SYSTEM L.S.	TRANSPORTING AND INSTALLING STATE FURNISHED VIDEO VEHICLE DETECTION SYSTEM L.S.	TRANSPORTING AND INSTALLING STATE FURNISHED VIDEO VEHICLE DETECTION SYSTEM L.S.	TRANSPORTING AND INSTALLING STATE FURNISHED VIDEO VEHICLE DETECTION SYSTEM L.S.	TRANSPORTING AND INSTALLING STATE FURNISHED VIDEO VEHICLE DETECTION SYSTEM L.S.
STH 11 AT 90TH ST	1	-	-	-	-
STH 11 AT 84TH ST	-	1	-	-	-
STH 11 AT WILLOW RD	-	-	1	-	-
STH 11 AT OAKES RD	-	-	-	1	-
STH 11 AT PIKE RIVER PATHWAY	-	-	-	-	1
<b>TOTAL</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>

COMMUNICATION VAULTS

VAULT NO.	LOCATION *		VAULT TYPE 1 EACH
	STA	OFFSET	
CV1	249+45	29 LT	1
CV2	273+92	57 LT	1
CV3	285+66	80 LT	1
CV4	301+88	12 RT	1
CV5	316+51	63 RT	1
<b>TOTAL</b>			<b>5</b>

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

CONDUIT

FROM	TO	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH L.F.	652.0605 CONDUIT SPECIAL 2-INCH L.F.
EXCB1	ICPB1 (90TH ST)	-	20
ICPB1	CV1	-	50
CV1	ICPB2	-	165
ICPB2	ICPB3	-	220
ICPB3	ICPB4	-	295
ICPB4	ICPB5	-	270
ICPB5	ICPB6	-	120
ICPB6	ICPB7	-	200
ICPB7	ICPB8	-	110
ICPB8	ICPB9	320	-
ICPB9	ICPB10	210	-
ICPB10	CV2	435	-
CV2	ICPB11	-	130
ICPB11	EXCB1 (84TH ST)	-	40
CV2	ICPB12	-	195
ICPB12	ICPB13	-	420
ICPB13	CV3	-	565
CV3	EXCB1 (WILLOW)	15	-
CV3	ICPB14	-	115
ICPB14	ICPB15	470	-
ICPB15	ICPB16	-	75
ICPB16	ICPB17	-	325
ICPB17	ICPB18	-	50
ICPB18	ICPB19	-	310
ICPB19	ICPB20	-	260

CONDUIT -CONTINUED

FROM	TO	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH L.F.	652.0605 CONDUIT SPECIAL 2-INCH L.F.
ICPB20	CV4	-	75
CV4	EXCB1 (PIKE)	25	-
CV4	ICPB21	-	235
ICPB21	ICPB22	-	285
ICPB22	ICPB23	-	265
ICPB23	ICPB24	-	360
ICPB24	CV5	-	160
CV5	ICPB25	25	-
ICPB25	EXCB1 (OAKES)	10	-
CV5	ICPB26	-	900
ICPB26	ICPB27	-	180
ICPB27	ICPB28	365	-
ICPB28	ICPB29	-	220
ICPB29	ICPB30	-	195
ICPB30	ICPB31	-	75
ICPB31	ICPB32	-	325
ICPB32	ICPB33	-	300
ICPB33	ICPB34	-	340
ICPB34	ICPB35	-	60
ICPB35	ICPB36	-	355
ICPB36	ICPB37	-	115
ICPB37	ICPB38	340	-
ICPB38	ICPB39	-	95
ICPB39	ICPB40	-	250
ICPB40	EXCV6	-	130
<b>TOTAL</b>		<b>2215</b>	<b>8855</b>

TRAFFIC SIGNAL CABLE AND WIRE - OAKES RD

FROM	TO SIGNAL HEAD NUMBER	655.0230 CABLE TRAFFIC SIGNAL 5-14 AWG L.F.	655.0240 CABLE TRAFFIC SIGNAL 7-14 AWG L.F.
		SB1	1
SB1	21	-	20
SB2	11	20	-
SB2	4	-	20
SB2	22	-	20
SB4	5	20	-
SB4	23	-	20
SB5	15	20	-
SB5	8	-	20
SB5	24	-	20
SB7	17	-	20
SB8	3	20	-
SB8	12	-	20
SB8	18	-	20
SB10	13	20	-
SB10	19	-	20
SB11	7	20	-
SB11	16	-	20
SB11	20	-	20
<b>TOTAL</b>		<b>140</b>	<b>240</b>

STH 11 FROM CTH H TO STH 31  
ALL ITEMS ARE CATEGORY 0010

3

3

PULL BOXES			
PULL BOX NO.	LOCATION *		653.0140
	STA	OFFSET	PULL BOXES
			STEEL 24x42-INCH EACH
ICPB1	249+45	24RT	1
ICPB2	251+13	31 LT	1
ICPB3	253+34	30 LT	1
ICPB4	256+32	29 LT	1
ICPB5	259+03	29 LT	1
ICPB6	260+27	28 LT	1
ICPB7	262+29	27 LT	1
ICPB8	263+40	27 LT	1
ICPB9	267+65	15 LT	1
ICPB10	269+70	50 LT	1
ICPB11	273+92	76 RT	1
ICPB12	275+90	63 LT	1
ICPB13	280+06	50 LT	1
ICPB14	286+85	85 LT	1
ICPB15	291+56	67 LT	1
ICPB16	292+32	66 LT	1
ICPB17	295+60	63 LT	1
ICPB18	296+10	63 LT	1
ICPB19	299+25	60 LT	1
ICPB20	301+88	60 LT	1
ICPB21	304+01	16 RT	1
ICPB22	306+88	17 RT	1
ICPB23	309+28	27 RT	1
ICPB24	314+90	75 RT	1
ICPB25	316+51	90 RT	1
ICPB26	325+45	52 RT	1
ICPB27	327+32	48 RT	1
ICPB28	330+96	37 RT	1
ICPB29	333+20	38 RT	1
ICPB30	335+16	42 RT	1
ICPB31	335+16	35 LT	1
ICPB32	338+46	34 LT	1
ICPB33	341+48	35 LT	1
ICPB34	344+97	35 LT	1
ICPB35	345+62	34 LT	1
ICPB36	350+82	43 LT	1
ICPB37	352+00	54 LT	1
ICPB38	355+40	63 LT	1
ICPB39	356+40	63 LT	1
ICPB40	358+50	127 LT	1
TOTAL	TOTAL		40

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

POLES		
SIGNAL BASE NO.	TRAFFIC SIGNAL	
	STANDARDS ALUMINUM	LUMINAIRES UTILITY
	15-FT EACH	LED C EACH
	657.0425	659.1125
SB2	90TH ST	1
SB6	90TH ST	1
SB4	WILLOW	1
SB1	OAKES	1
SB2	OAKES	2
SB4	OAKES	1
SB5	OAKES	2
SB8	OAKES	2
SB10	OAKES	1
SB11	OAKES	2
TOTAL		11

TRAFFIC SIGNAL MOUNTING HARDWARE	
LOCATION	L.S.
STH 11 AT OAKES RD	1
TOTAL	1

FACES - OAKES RD			
SIGNAL BASE NO.	SIGNAL HEAD NO.	658.0173	658.0174
		TRAFFIC SIGNAL FACE	TRAFFIC SIGNAL FACE
		3S-12 INCH EACH	4S-12 INCH EACH
SB1	1	1	-
SB1	21	-	1
SB2	11	1	-
SB2	4	-	1
SB2	22	-	1
SB4	5	1	-
SB4	23	-	1
SB5	15	1	-
SB5	8	-	1
SB5	24	-	1
SB7	17	-	1
SB8	3	1	-
SB8	12	-	1
SB8	18	-	1
SB10	13	1	-
SB10	19	-	1
SB11	7	1	-
SB11	16	-	1
SB11	20	-	1
TOTAL		7	12

TRAFFIC SIGNAL CABINET			
LOCATION	SPV.0060.01	SPV.0060.02	SPV.0060.03
	TRANSPORTING AND INSTALLING STATE FURNISHED TRAFFIC SIGNAL CABINET	TRANSPORTING AND INSTALLING STATE FURNISHED TRAFFIC SIGNAL CABINET	TRANSPORTING AND INSTALLING STATE FURNISHED TRAFFIC SIGNAL CABINET
	L.S.	L.S.	L.S.
STH 11 AT 90TH ST	1	-	-
STH 11 AT WILLOW RD	-	1	-
STH 11 AT OAKES RD	-	-	1
TOTAL	1	1	1

STH 11 FROM CTH H TO STH 31  
ALL ITEMS ARE CATEGORY 0010

3

3

TRANSPORT AND INSTALL STATE FURNISHED FIBER OPTIC COMMUNICATIONS EQUIPMENT

		SPV.0060.13	SPV.0060.14	SPV.0060.15	SPV.0060.16	SPV.0060.17
		TRANSPORTING AND INSTALLING STATE FURNISHED FO CABLE PIGTAIL 8-CT 85-FT AND OPTICAL TRANSCEIVER	TRANSPORTING AND INSTALLING STATE FURNISHED FO CABLE PIGTAIL 8-CT 95-FT AND OPTICAL TRANSCEIVER	TRANSPORTING AND INSTALLING STATE FURNISHED FO CABLE PIGTAIL 8-CT 100-FT AND OPTICAL TRANSCEIVER	TRANSPORTING AND INSTALLING STATE FURNISHED FO CABLE PIGTAIL 8-CT 140-FT AND OPTICAL TRANSCEIVER	TRANSPORTING AND INSTALLING STATE FURNISHED FO CABLE PIGTAIL 8-CT 240-FT AND OPTICAL TRANSCEIVER
LOCATION	LOCATION	L.S.	L.S.	L.S.	L.S.	L.S.
STH 11 AT 90TH ST	CV1 - EXCB1	--	--	--	1	--
STH 11 AT 84TH ST	CV2 - EXCB1	--	--	--	--	1
STH 11 AT WILLOW RD	CV3 - EXCB1	1	--	--	--	--
STH 11 AT PIKE RIVER PATHWAY	CV4 - EXCB1	--	1	--	--	--
STH 11 AT OAKES RD	CV5-EXCB1	--	--	1	--	--
<b>TOTAL</b>		<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>

INTERCONNECT TESTING AND INTEGRATION

		670.0100	670.0200	678.0500
		FIELD SYSTEM INTEGRATOR	ITS DOCUMENTATION	COMMUNICATIONS SYSTEM TESTING
LOCATION	LOCATION	L.S.	L.S.	L.S.
PROJECT 1320-16-71		1	1	1
<b>TOTAL</b>		<b>1</b>	<b>1</b>	<b>1</b>

FIBER OPTIC SPLICE

		678.0200	678.0300
		FIBER OPTIC SPLICE ENCLOSURE	FIBER OPTIC SPLICE
LOCATION	LOCATION	EACH	EACH
STH 11 AT 90TH ST	CV1	1	4
STH 11 AT 84TH ST	CV2	1	4
STH 11 AT WILLOW RD	CV3	1	4
STH 11 AT PIKE RIVER PATHWAY	CV4	1	4
STH 11 AT OAKES RD	CV5	1	4
STH 11 AT STH 31	EXCV6	--	4
<b>TOTAL</b>		<b>5</b>	<b>24</b>

FIBER OPTIC COMMUNICATIONS EQUIPMENT

		678.0600	INCIDENTAL TO 678.0600
		INSTALL ETHERNET SWITCHES	CAT-5E CABLE 5-FT CONTRACTOR FURNISHED
LOCATION	LOCATION	EACH	EACH
STH 11 AT 90TH ST	EXCB1	1	1
STH 11 AT 84TH ST	EXCB1	1	1
STH 11 AT WILLOW RD	EXCB1	1	1
STH 11 AT PIKE RIVER PATHWAY	EXCB1	1	1
STH 11 AT OAKES RD	EXCB1	1	1
<b>TOTAL</b>		<b>5</b>	<b>5</b>

FIBER OPTIC TRACER

		655.0510	SPV.0090.01
		ELECTRICAL WIRE TRAFFIC SIGNALS 12 AWG	FIBER OPTIC WARNING TAPE
LOCATION	LOCATION	L.F.	L.F.
EXCB1 AT STH 11 AT 90TH ST - EXCV6 AT STH 11 AT STH 31		12180	12180
<b>TOTAL</b>		<b>12180</b>	<b>12180</b>

FIBER OPTIC CABLE

LOCATION	678.0036
	INSTALL FIBER OPTIC CABLE OUTDOOR PLANT 36-CT L.F.
EXCB1 AT STH 11 AT 90TH ST - EXCV6 AT STH 11 AT STH 31	12180
<b>TOTAL</b>	<b>12180</b>

RADIO COMMUNICATIONS EQUIPMENT

		SPV.0060.18	SPV.0060.19
		TRANSPORTING AND INSTALLING STATE FURNISHED RADIO INTERCONNECT UNITS	TRANSPORTING AND INSTALLING STATE FURNISHED RADIO INTERCONNECT UNITS
LOCATION	LOCATION	LS	LS
STH 11 AT CTH H		1	--
STH 11 AT 90TH ST		--	1
<b>TOTAL</b>		<b>1</b>	<b>1</b>



3

3

LOCATION	TRAFFIC CONTROL						
	643.5000	643.0300	643.0410	643.0420	643.0900	643.1050	649.0150
	TRAFFIC CONTROL EACH	TRAFFIC CONTROL DRUMS DAY	TRAFFIC CONTROL BARRICADES TYPE II DAY	TRAFFIC CONTROL BARRICADES TYPE III DAY	TRAFFIC CONTROL SIGNS DAY	TRAFFIC CONTROL SIGNS PCMS DAY	TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH DAY
PROJECT 1320-16-71	0.85	--	--	--	--	10	--
CTH H	--	13	--	2	3	--	--
90TH ST SOUTH SIDE PED ACCOMODATIONS	--	--	2	4	4	--	--
90TH ST - STA 268+30	--	582	36	36	156	--	1920
STA 268+30 - WILLOW RD	--	708	12	84	102	--	1920
84TH ST/WILLOW RD	--	45	--	4	6	--	--
WILLOW RD - PIKE RIVER PATH	--	205	--	--	35	--	--
PIKE RIVER PATH - STA 319+00	--	215	--	--	35	--	--
OAKES RD	--	37	--	4	6	--	--
STA 319+00 - COZY ACRES RD	--	210	--	--	35	--	--
COZY ACRES RD - STH 31	--	406	--	--	35	--	--
STH 31	--	202	--	12	18	--	--
UNDISTRIBUTED	--	249	5	16	43	--	380
TOTAL	0.85	2872	55	162	478	10	4220

LOCATION	EXPOSING INFRASTRUCTURE	
	SPV.0060.20	SPV.0060.21
	EXPOSING INFRASTRUCTURE UNPAVED	EXPOSING INFRASTRUCTURE PAVED
UNDISTRIBUTED	6	12
TOTAL	6	12

3

3

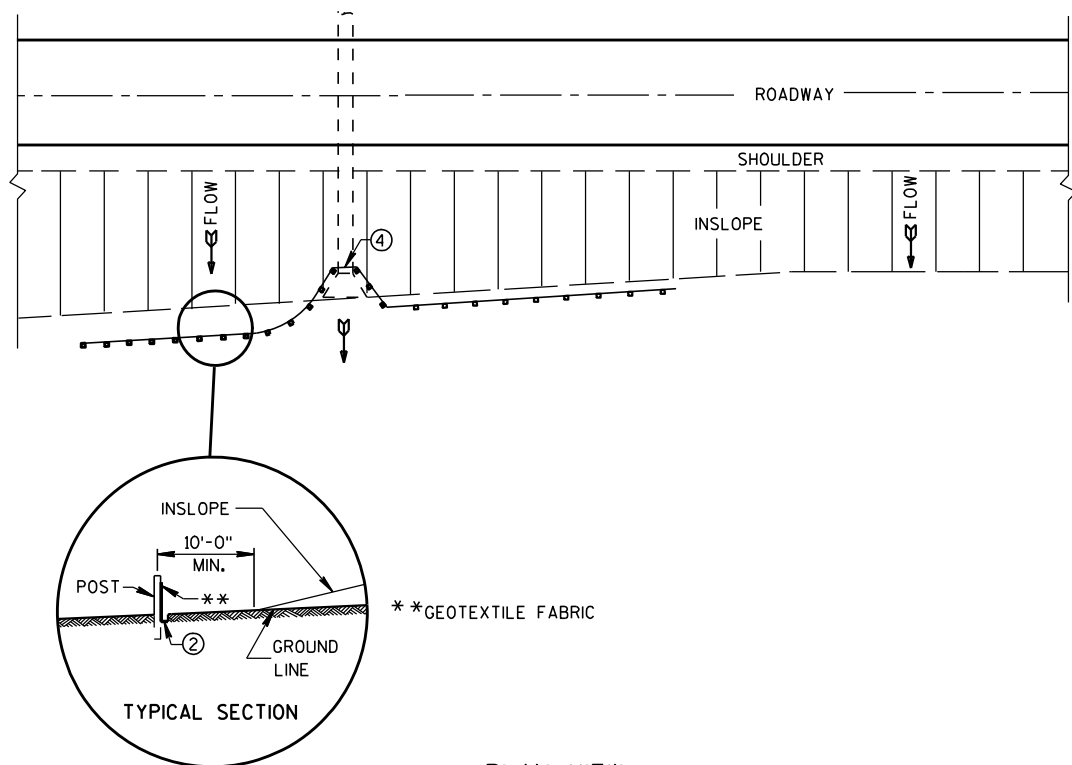
TYPE II PERMANENT SIGNING

1320-16-71

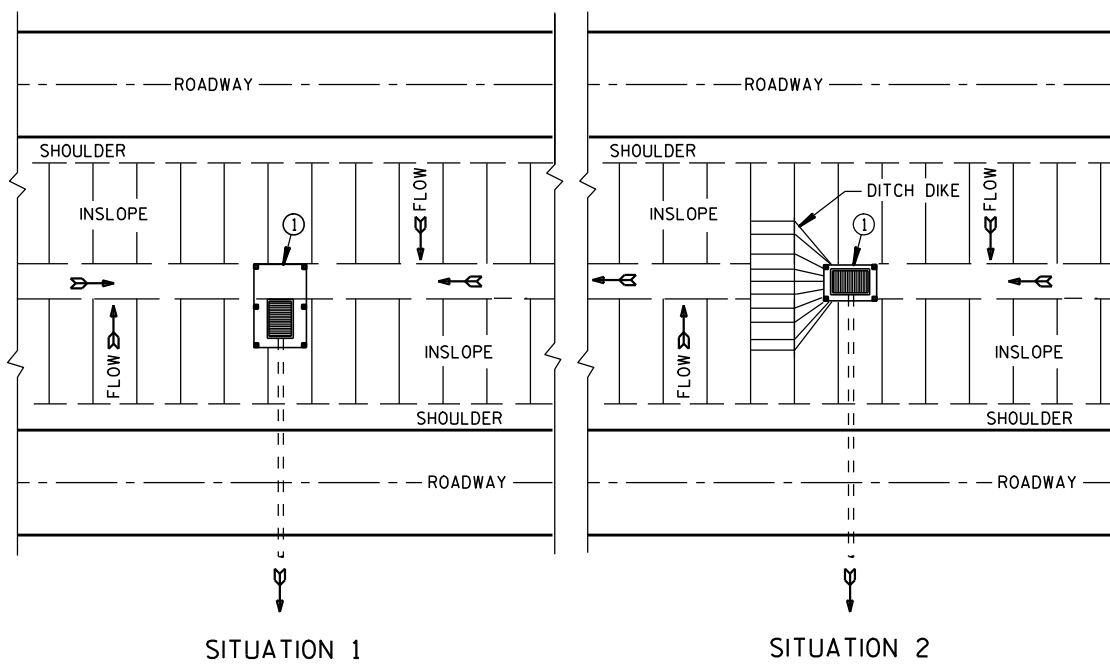
SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE			637.2210	637.2230	637.2215	638.2102	638.2602	638.3000	634.0618	MOUNT ON SAME POST AS SIGN #	REMARKS / NEW SIGN LOCATION
			W [IN.]	x x	H [IN.]	SIGNS TYPE II REFLECTIVE H [SF]	SIGNS TYPE II RELFECTIVE F [SF]	SIGNS TYPE II REFLECTIVE H FOLDING (SF)	MOVING SIGNS TYPE II [EA]	REMOVING SIGNS TYPE II (EA)	REM SMALL SIGN SUP [EA]	POSTS WOOD 4" X 6" X 18' [EA]		
1	R5-1(3)		36	x	36	9.000								MOUNT ON SIGNAL POLE
2	R1-1F(3)		36	X	36			7.460						MOUNT ON SIGNAL POLE
3	R5-1(3)		36	X	36	9.000								MOUNT ON SIGNAL POLE
4	R1-1F(3)		36	X	36			7.460						MOUNT ON SIGNAL POLE
5	R1-1F(3)		36	X	36			7.460						MOUNT ON SIGNAL POLE
6	R5-1(3)		36	X	36	9.000								MOUNT ON SIGNAL POLE
		UNDISTRIBUTED				20.000	20.000		3	3	3	3		
		TOTALS				47.000	20.000	22.380	3	3	3	3		

## Standard Detail Drawing List

08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
09B02-10	CONDUIT
09B04-11	PULL BOX
09D02-03	SIGNAL CONTROL CABINET
09E06-05	TRAFFIC SIGNAL STANDARD POLY BRACKET MOUNTINGS (TYPICAL) 13 FT. OR 15 FT.
09H09-02	COMMUNICATION VAULT TYPE 1
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D20-05B	TRAFFIC CONTROL, SINGLE RIGHT LANE CLOSURE, UNDIVIDED NON-FREEWAY/EXPRESSWAY
15D21-07A	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
15D28-04	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D30-06C	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



PLAN VIEW  
TYPICAL APPLICATION OF SILT FENCE

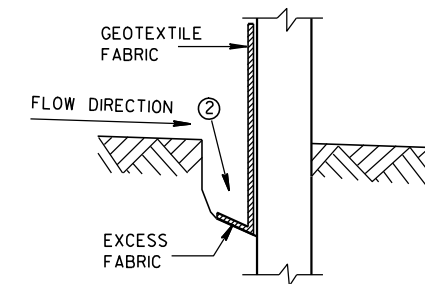


SITUATION 1 SITUATION 2  
PLAN VIEW  
SILT FENCE AT MEDIAN SURFACE DRAINS

**GENERAL NOTES**

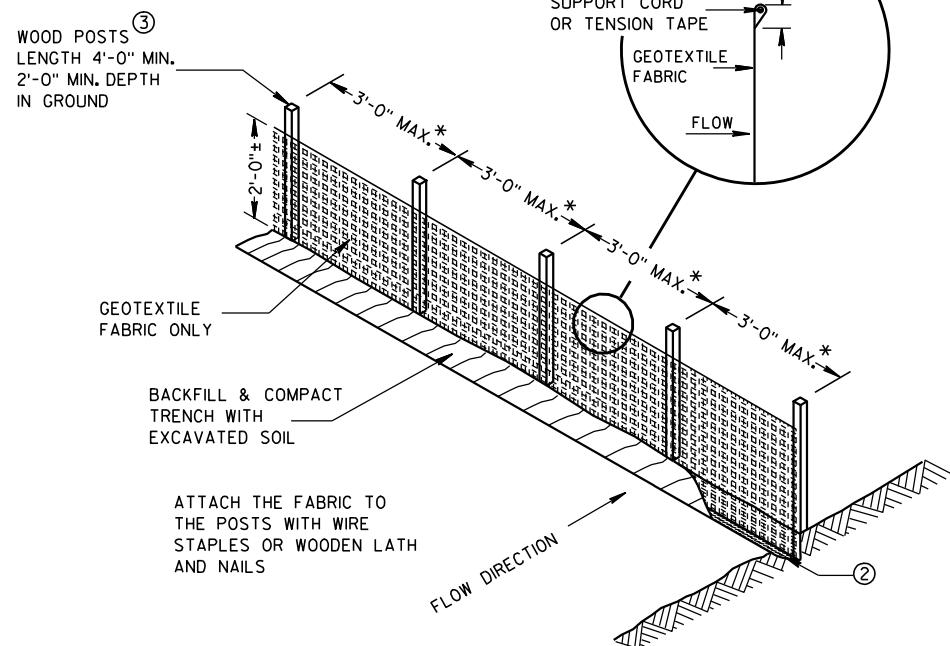
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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



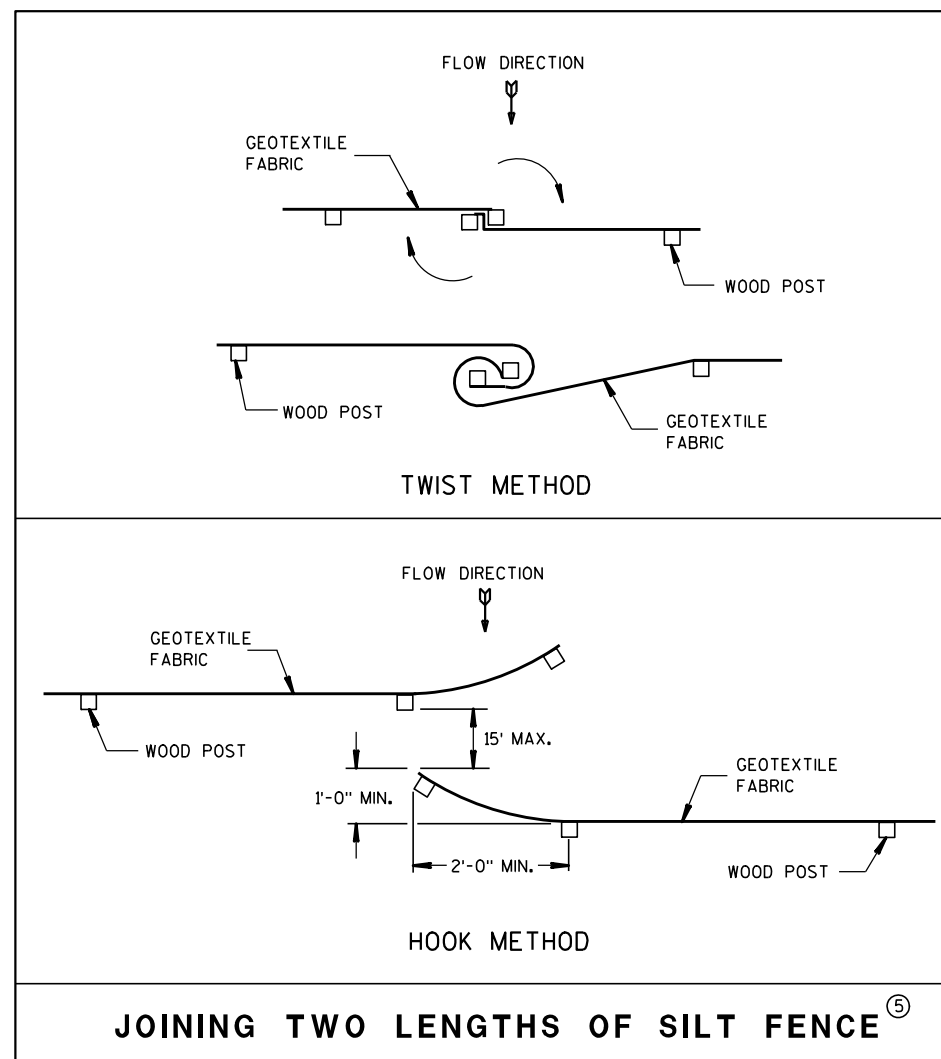
TRENCH DETAIL

NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS

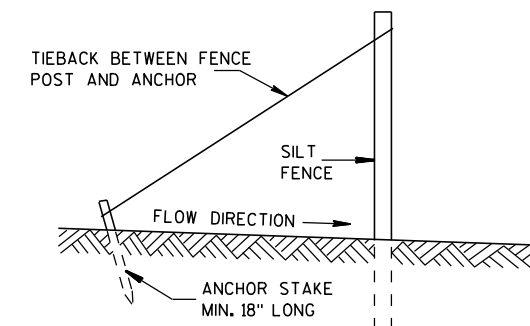


SILT FENCE

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



JOINING TWO LENGTHS OF SILT FENCE ⑤

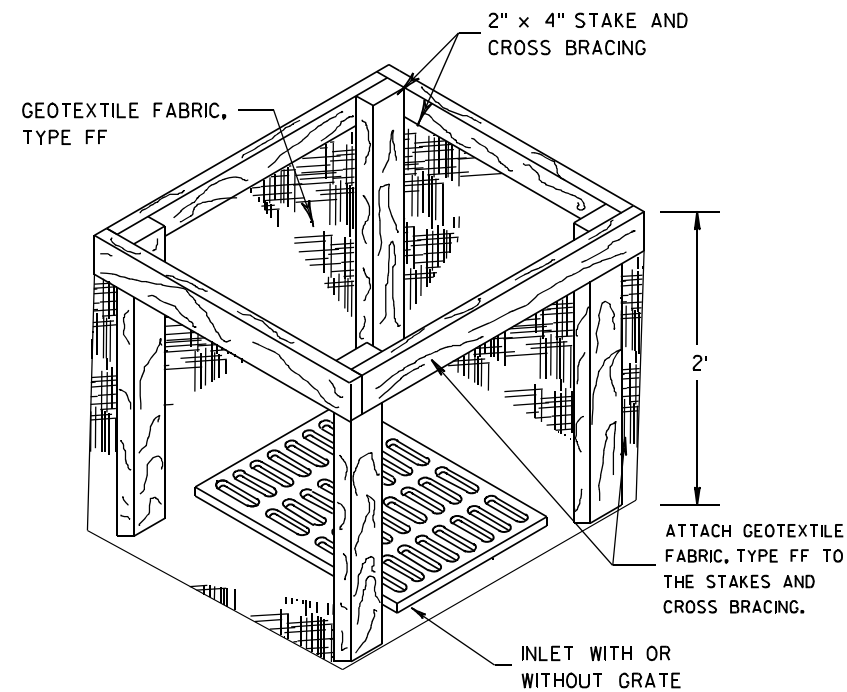
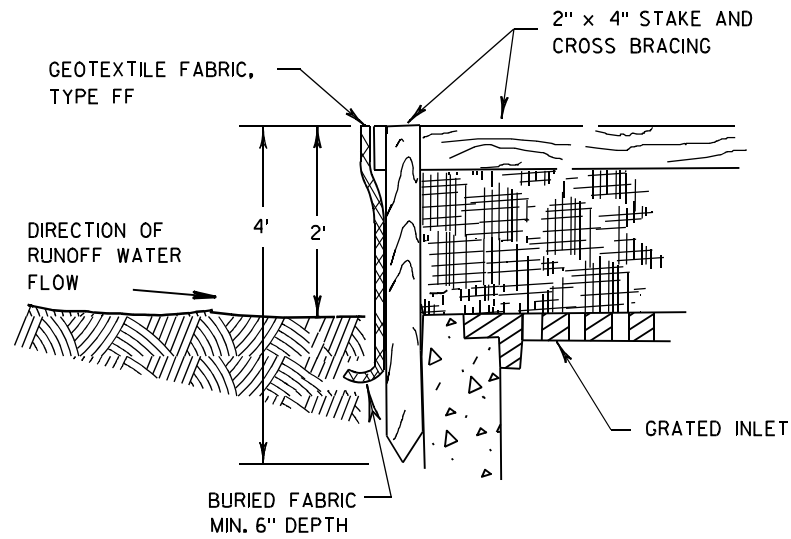


SILT FENCE TIE BACK  
(WHEN REQUIRED BY THE ENGINEER)

**SILT FENCE**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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



**INLET PROTECTION, TYPE A**

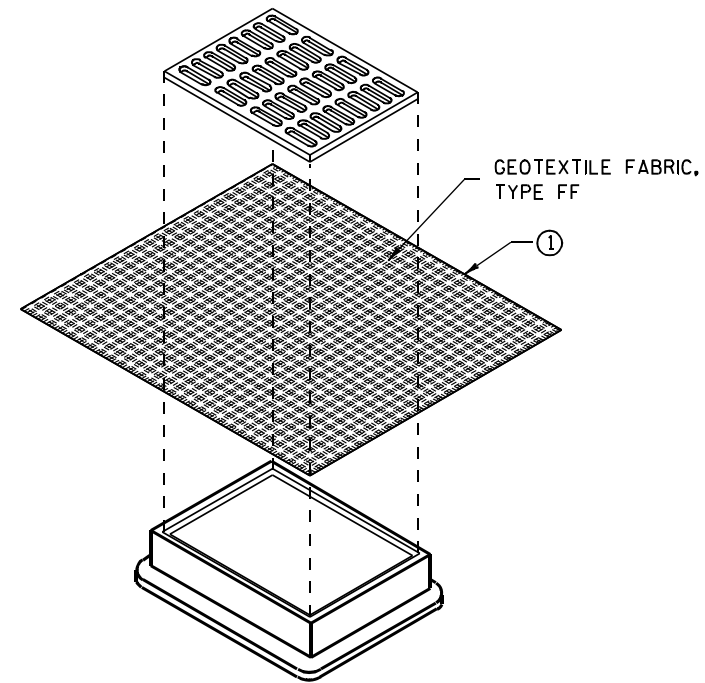
**GENERAL NOTES**

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

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

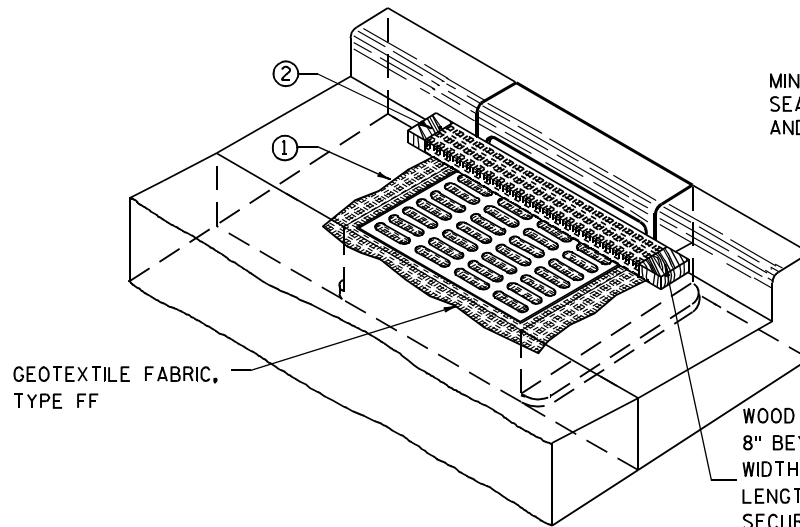
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

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



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

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



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

**INSTALLATION NOTES**

**TYPE B & C**

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

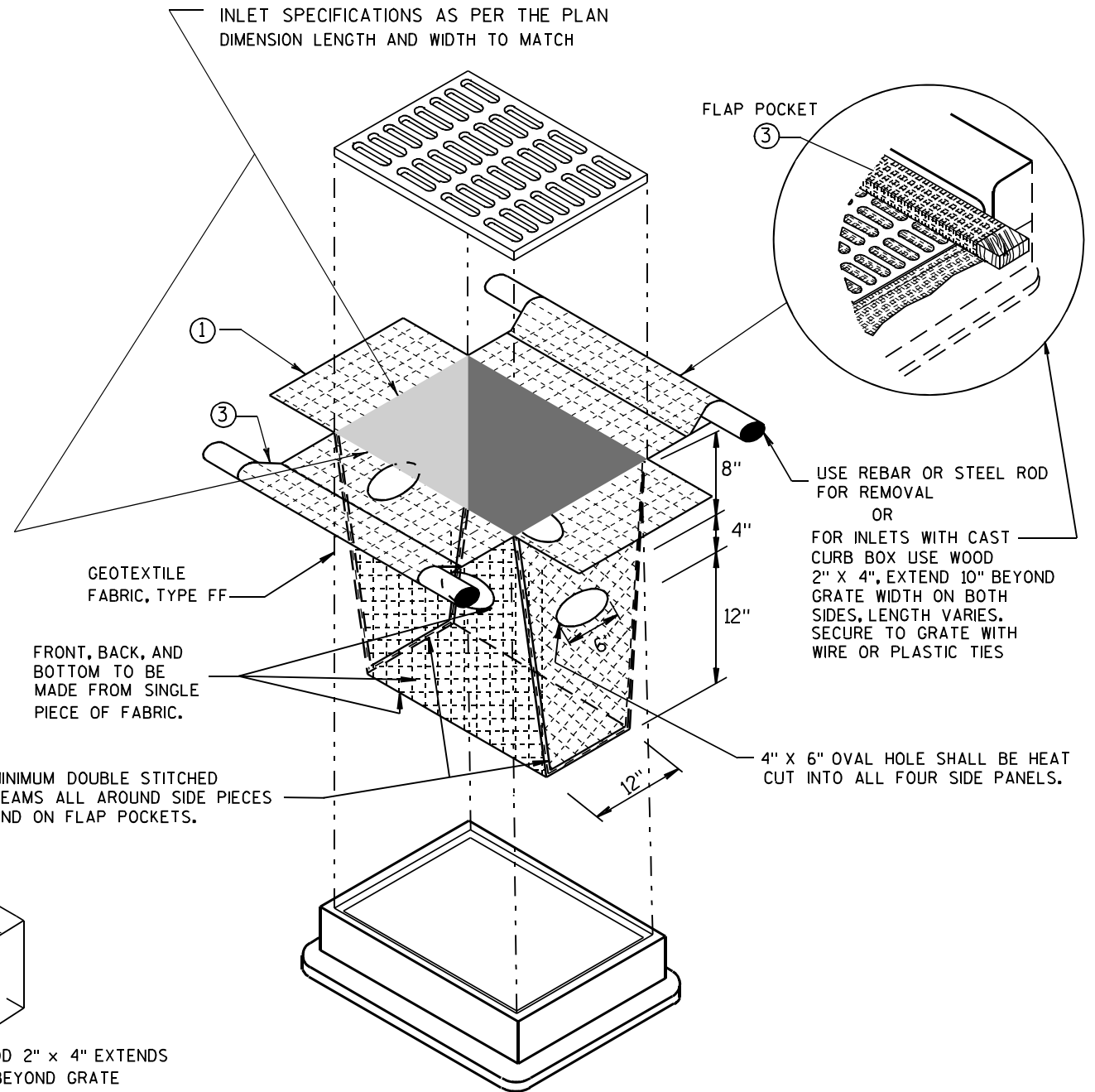
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

**TYPE D**

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

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

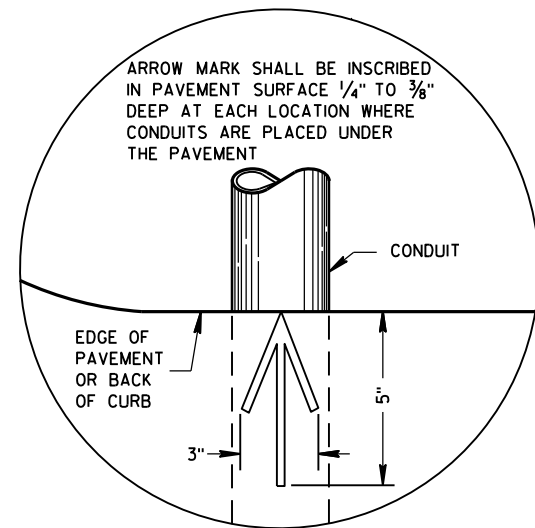
THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE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



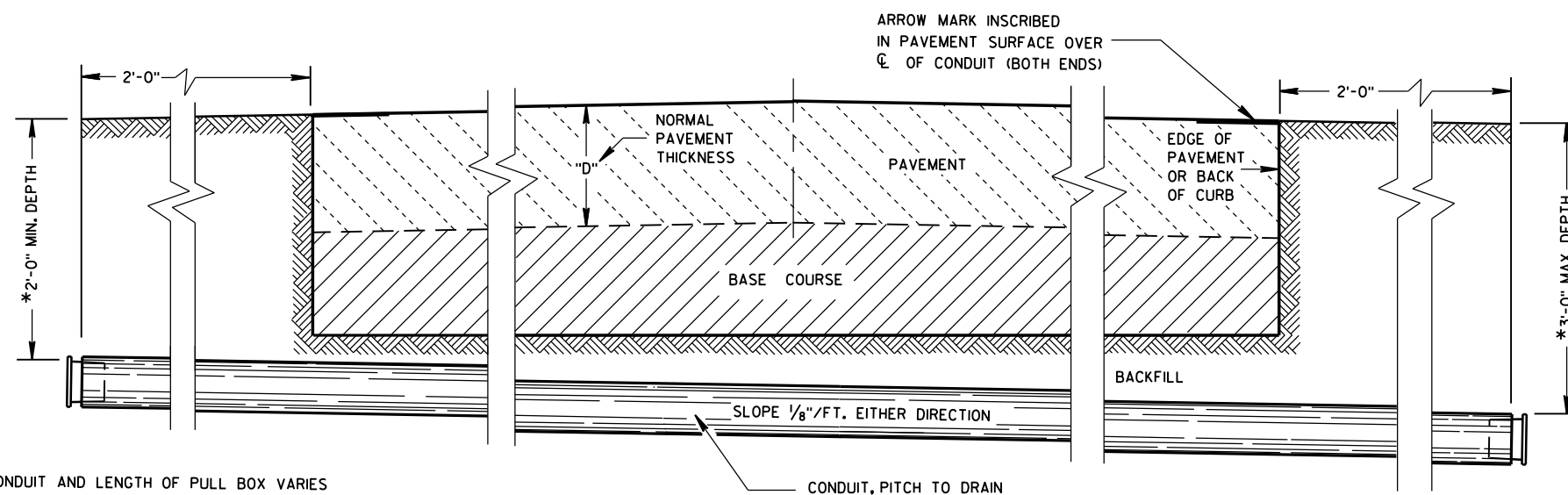
**INLET PROTECTION, TYPE D**

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

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



**PLAN VIEW  
ARROW MARK**



**SIDE ELEVATION  
DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS**

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

**GENERAL NOTES**

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

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

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

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

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

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

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

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

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

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

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

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

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

6

6

S.D.D. 9 B 2-10

S.D.D. 9 B 2-10

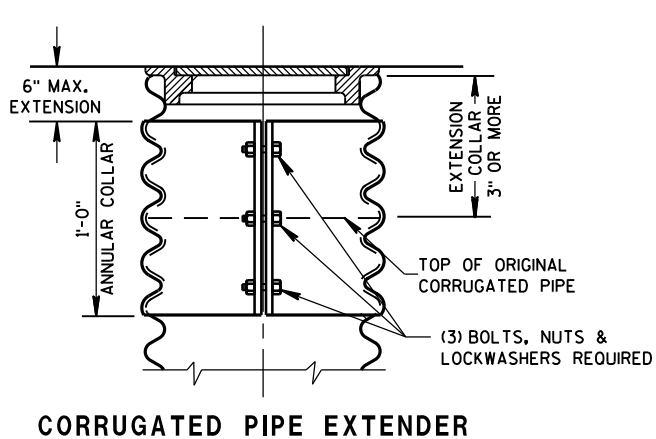
<b>CONDUIT</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March, 2017 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL ENGINEER
FHWA	

**TABLE OF NOMINAL DIMENSIONS AND WEIGHTS**

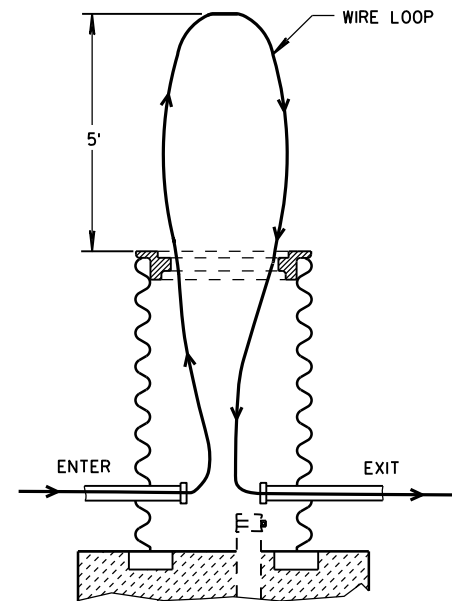
DIMENSION IN INCHES		CORRUGATED STEEL PIPE								
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24
PIPE LENGTH **	B	24	30	36	24	30	36	36	42	48
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
COVER	D	10 1/4	10 1/4	10 1/4	16 1/4	16 1/4	16 1/4	22 1/4	22 1/4	22 1/4
FRAME	E	14 1/2	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.

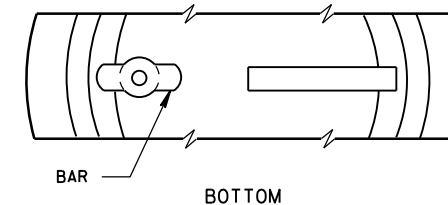
\*\* NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.



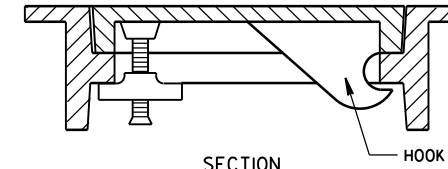
**CORRUGATED PIPE EXTENDER**



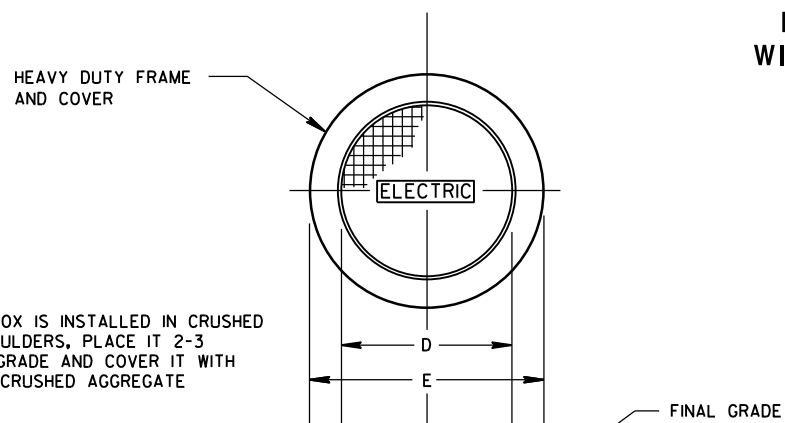
**MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX**



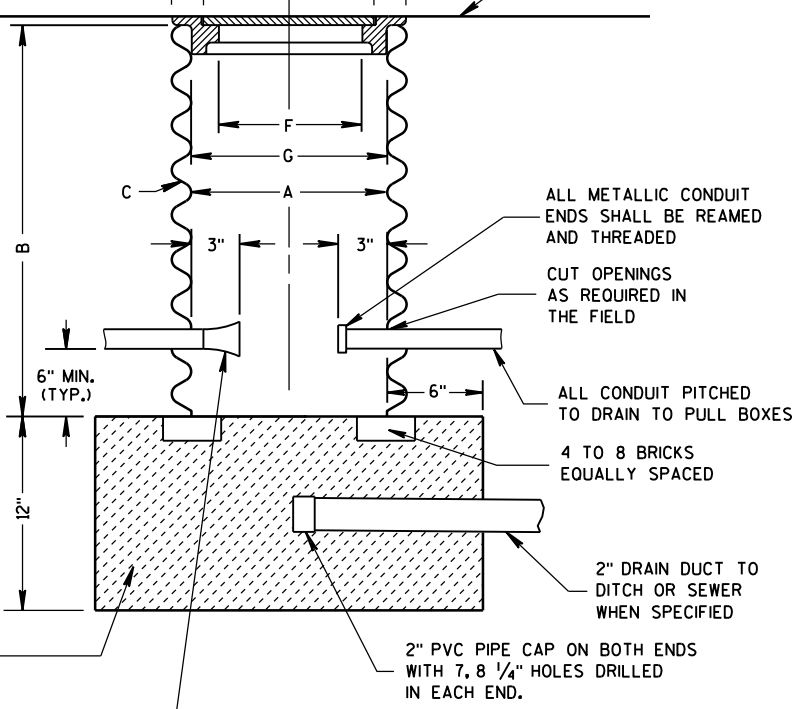
**ALTERNATE COVER (LOCKING)**



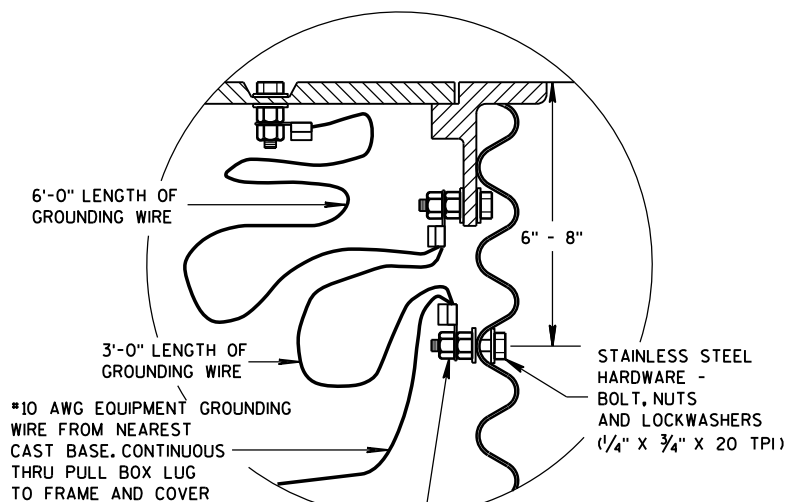
**TIGHTENING BAR TYPE**



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

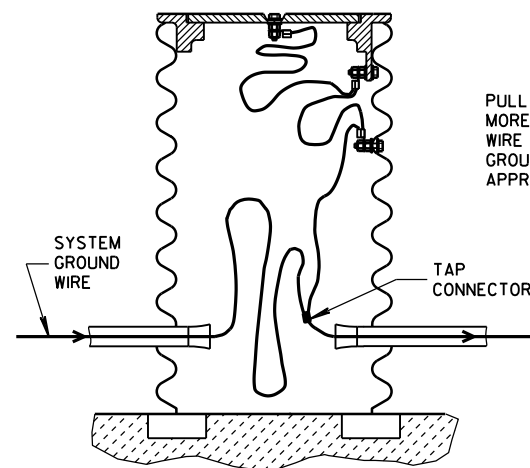


**PULL BOX**



NEMA APPROVED, U.L. LISTED, COPPER WITH BRASS OR STAINLESS STEEL SET SCREW, DIRECT BURY RATED, MECHANICAL CONNECTOR (LUG), SIZED TO ACCEPT AWG. #10 TO #4 COPPER STRANDED WIRE.

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



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

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

**GENERAL NOTES**

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

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

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

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

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

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

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

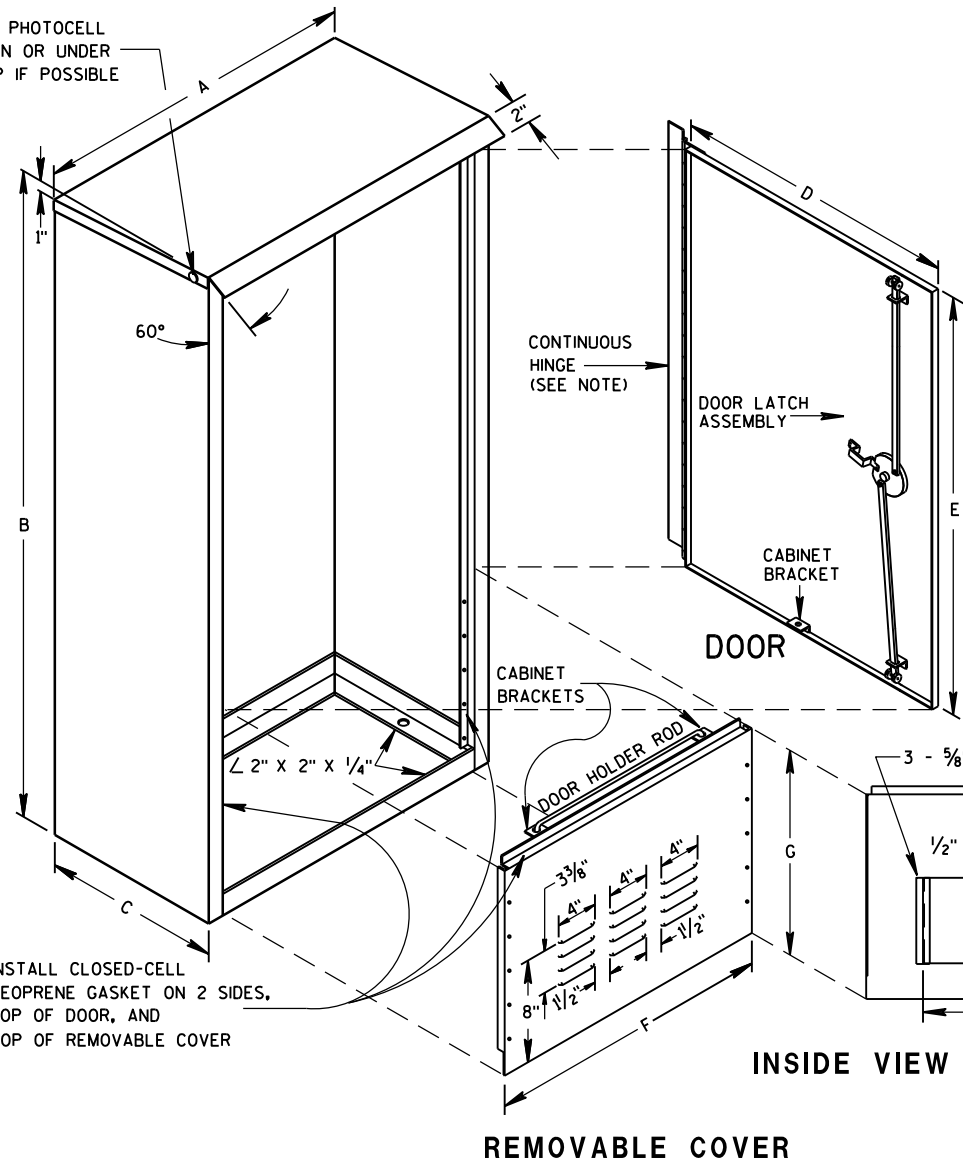
WHEN PULL BOXES ARE INSTALLED FOR FUTURE USE, DO NOT INSTALL THE EQUIPMENT GROUNDING LUG. THE EQUIPMENT GROUNDING LUG, THE EQUIPMENT GROUNDING ELECTRODE AND THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE REQUIRED AND INSTALLED UNDER A FUTURE WIRING CONTRACT.

NO. 2 COARSE AGGREGATE (SEE SECTION 501 OF THE STANDARD SPECIFICATIONS)

INSTALL END BELLS (U.L. LISTED FOR ELECTRICAL USE) ON ALL NONMETALLIC CONDUIT BEFORE INSTALLATION OF WIRE AND/OR CABLE.

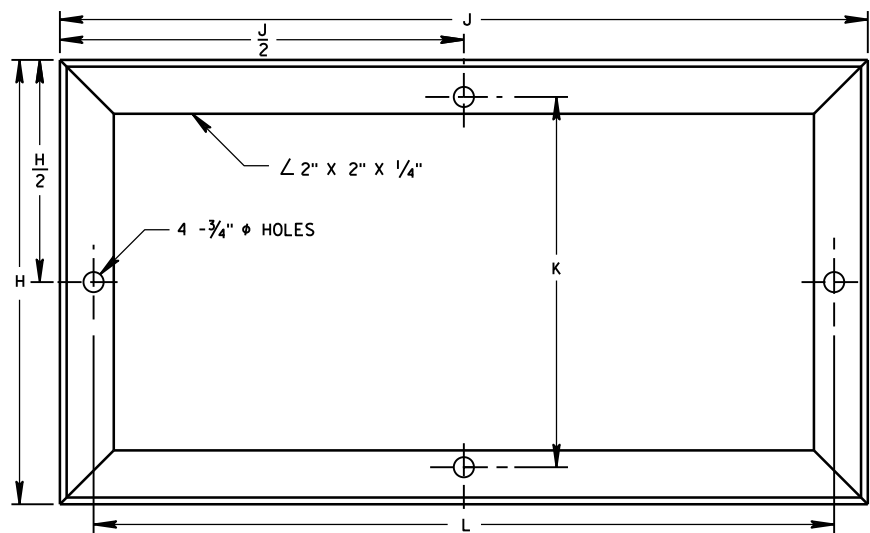
<b>PULL BOX</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE	/S/ Ahmet Demirelek STATE ELECTRICAL ENGINEER
FHWA	

TYPICAL PHOTOCELL LOCATION OR UNDER DRIP LIP IF POSSIBLE

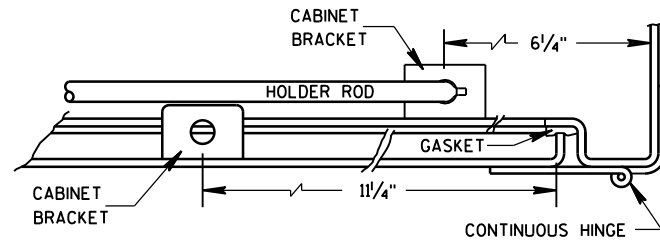


INSTALL CLOSED-CELL NEOPRENE GASKET ON 2 SIDES, TOP OF DOOR, AND TOP OF REMOVABLE COVER

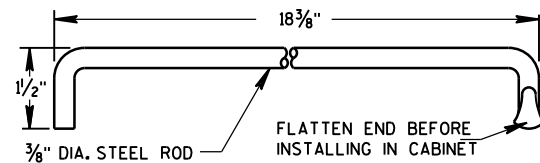
REMOVABLE COVER



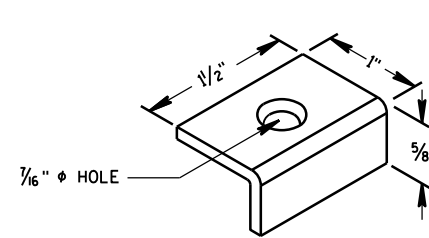
MOUNTING BASE



HINGE & DOOR HOLDER



HOLDER ROD

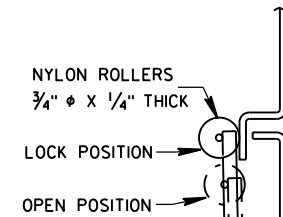


CABINET BRACKET

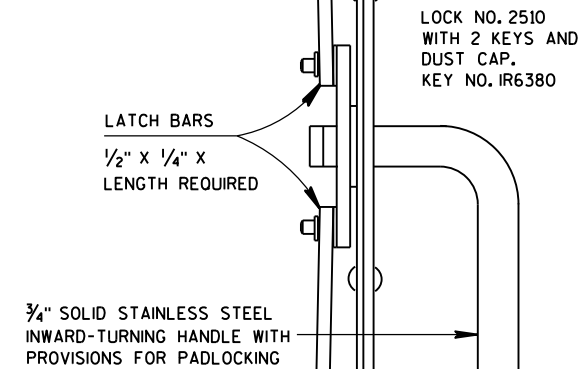
INSIDE VIEW SHOWING FILTER

TABLE OF DIMENSIONS (INCHES)

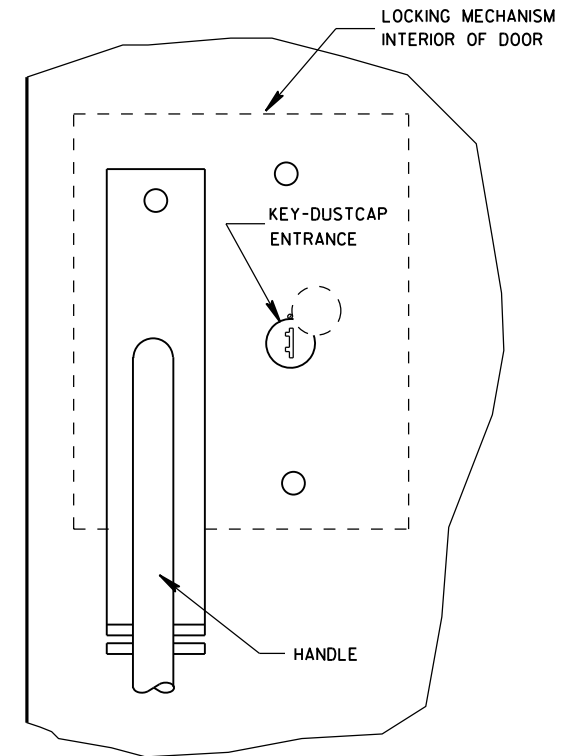
MARK	CABINET TYPE		
	3060	3860	3866
A	30	38	38
B	60	60	66
C	16 1/2	16 1/2	24
D	26 1/2	34 3/4	33 3/4
E	38 3/4	38 3/4	38 3/4
F	26 1/2	34 3/4	33 3/4
G	19	19	25
H	16 1/2	16 1/2	24
H/2	8 1/4	8 1/4	12
J	30	38	38
J/2	15	19	19
K	13 3/4	13 3/4	21 1/4
L	27 1/2	35 1/2	35 1/2



LATCH BAR GUIDE

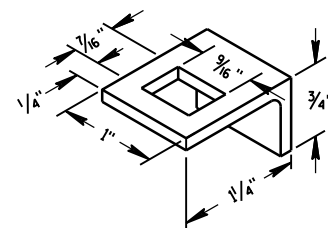


SIDE VIEW



FRONT VIEW

LATCH ASSEMBLY



LATCH BAR GUIDE

GENERAL NOTES

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

PRIME WITH PHOSPHATE TREATMENT AND PRIMER.

FINISH EXTERIOR SURFACES WITH RUSTOLEUM #906 SILVER GRAY OR APPROVED EQUAL.

FINISH INTERIOR WITH RUSTOLEUM #2766 HIGH GLOSS WHITE ENAMEL OR APPROVED EQUAL.

ALL SHEET METAL PARTS SHALL BE .125 INCH THICK ALUMINUM.

ALL SEAMS SHALL BE CONTINUOUSLY WELDED.

ALUMINUM SHALL BE TYPE 5052-H32.

CONTINUOUS HINGE SHALL BE HEAVY GAUGE ALUMINUM WITH 1/4" DIAMETER STAINLESS STEEL HINGE PIN. HINGE IS SECURED WITH 1/4" X 20 TPI STAINLESS STEEL CARRIAGE BOLTS AND STAINLESS STEEL NYLOCK NUTS.

A SINGLE PHOTOCELL SHALL BE LOCATED ON THE NORTH-NORTHEAST SIDE OF THE CABINET UNLESS OTHERWISE CALLED FOR IN THE SPECIAL PROVISIONS. THE PHOTOCELL SHALL BE PLACED AS SHOWN AND SHALL BE LISTED ON THE DEPARTMENTS APPROVED PRODUCTS LIST.

DOOR LATCH ASSEMBLY TO BE PROVIDED WITH THREE-POINT LOCKING MECHANISM.

LOCK NO. 2510 WITH 2 KEYS AND DUST CAP. KEY NO. IR6380

SIGNAL CONTROL CABINET

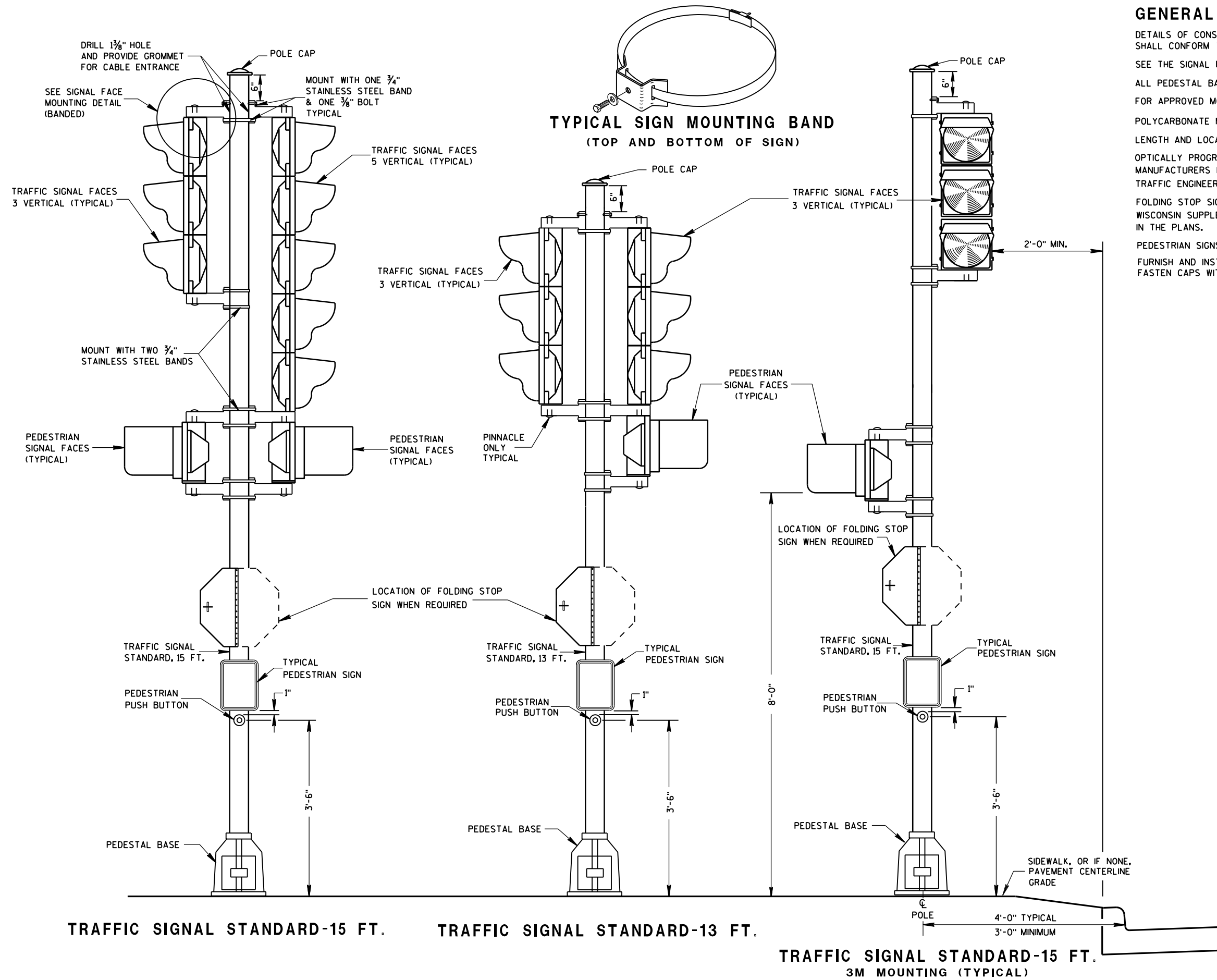
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVED DATE: Sept. 2014 /S/ Ahmet Demireblek STATE ELECTRICAL ENGINEER FHWA



6

6



### 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.

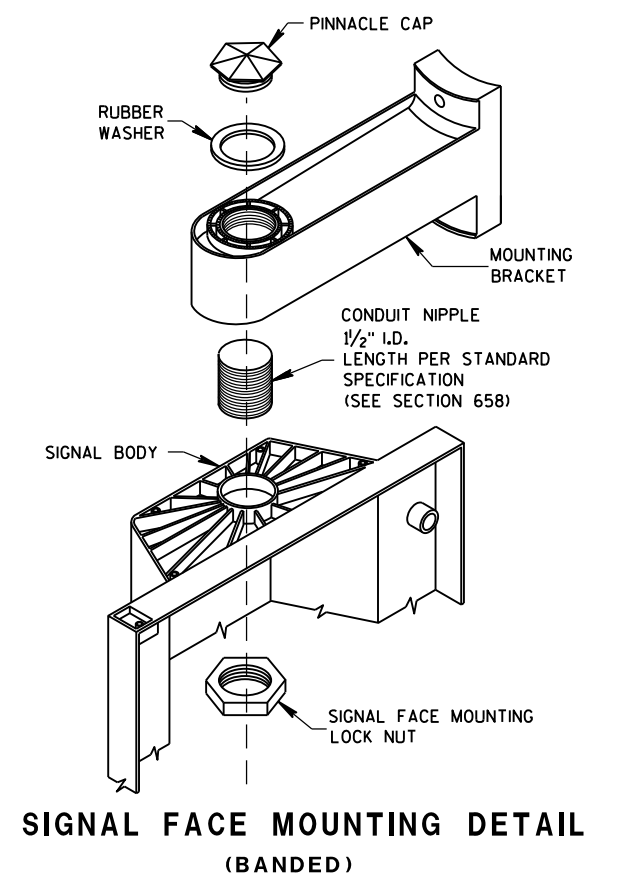
LENGTH AND LOCATION OF TRAFFIC SIGNAL STANDARDS SHALL BE AS SHOWN ON THE PLANS.

OPTICALLY PROGRAMMED SIGNAL FACES SHALL BE MASKED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS, AND UNDER THE DIRECTIONS OF THE REGION 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) 1/4" X 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  
2/28/2013  
DATE

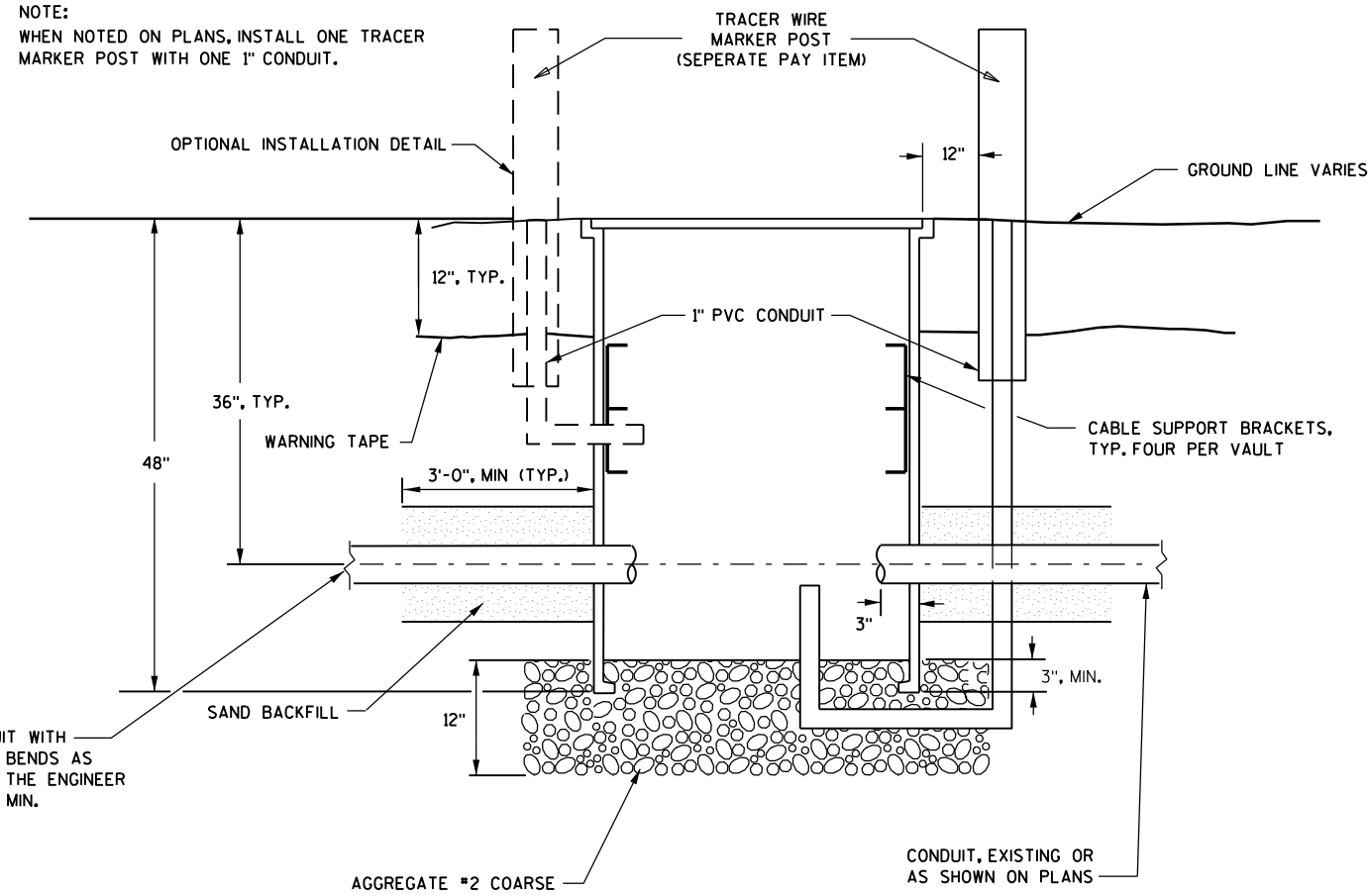
/S/ Ahmet Demirbilek  
STATE ELECTRICAL ENGINEER

FHWA

S.D.D. 9 E 6-5

S.D.D. 9 E 6-5

NOTE:  
WHEN NOTED ON PLANS, INSTALL ONE TRACER  
MARKER POST WITH ONE 1" CONDUIT.



ROUTE CONDUIT WITH  
APPROPRIATE BENDS AS  
DIRECTED BY THE ENGINEER  
TO BURY 36" MIN.

### GENERAL NOTES

PROVIDE VAULT WITH OPEN BASE.

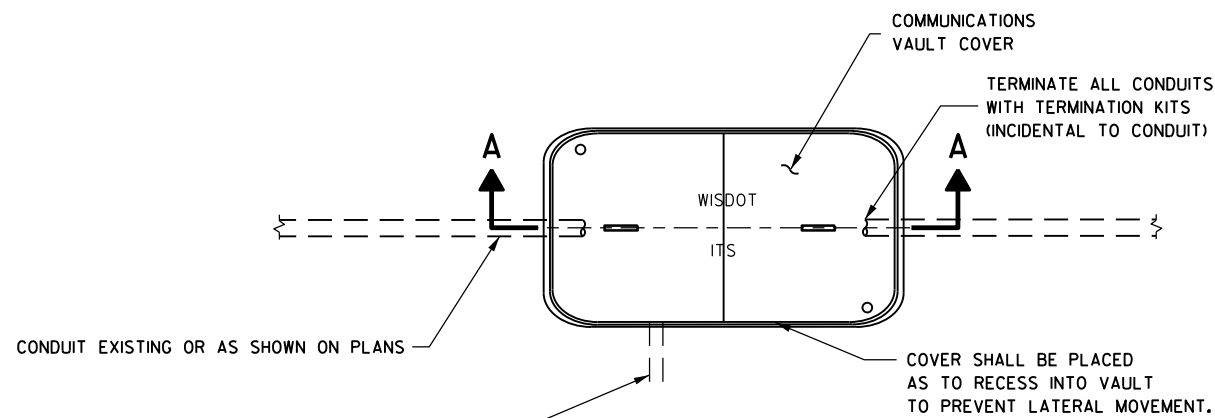
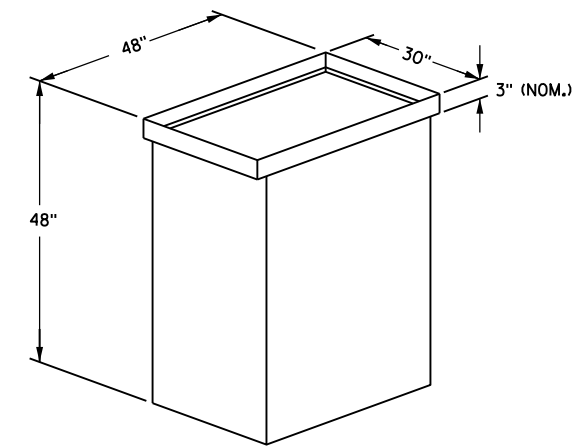
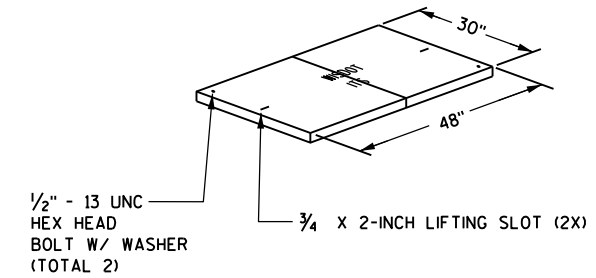
COVER SHALL HAVE A MINIMUM DESIGN LOAD OF 15,000 LBS AND SHALL LOCK.

ALL OPENINGS IN STRUCTURE MUST BE MACHINED AT TIME OF FABRICATION, OR PUNCH  
DRIVEN AT TIME OF PLACEMENT.

VAULTS SHALL BE OF ONE-PIECE CONSTRUCTION. TWO-PIECE/STACKABLE VAULTS  
WILL NOT BE PERMITTED.

FIELD PLACEMENT OF COMMUNICATIONS VAULTS SHALL BE AS DIRECTED BY  
THE ENGINEER.

FIBER TRACER MARKER POSTS SHALL BE CONSTRUCTED WITH HIGH-IMPACT PLASTIC  
MATERIAL WHICH IS FADE RESISTANT AND UV STABLE. ALL HARDWARE SHALL BE  
STAINLESS STEEL AND CONTAIN A MINIMUM OF FIVE STANDARD TERMINALS.



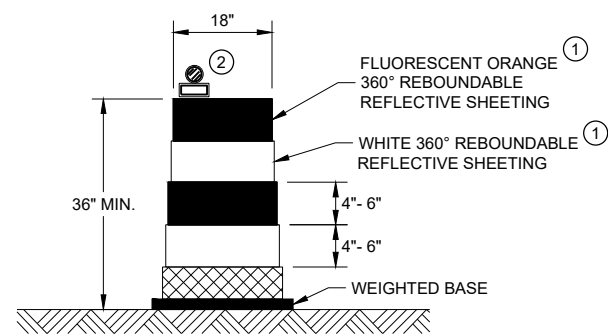
### COMMUNICATIONS VAULT TYPE 1

COMMUNICATION VAULT  
TYPE 1

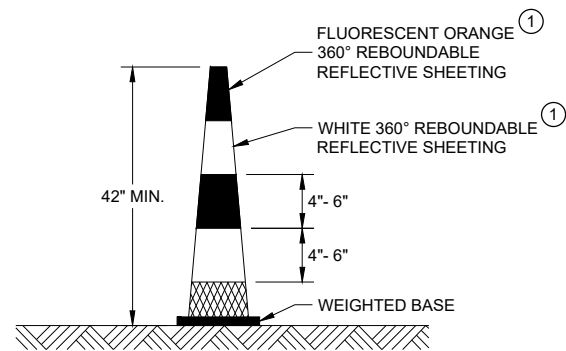
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May, 2017  
DATE  
FHWA

/S/ Ahmet Demirbilek  
STATE ELECTRICAL ENGINEER

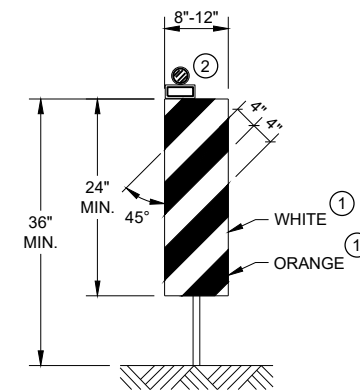


**DRUM**



**42" CONE**

DO NOT USE IN TAPERS  
 1/2 SPACING OF DRUMS

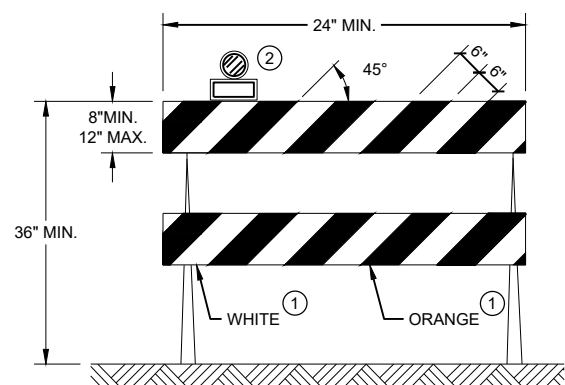


**VERTICAL PANEL**

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

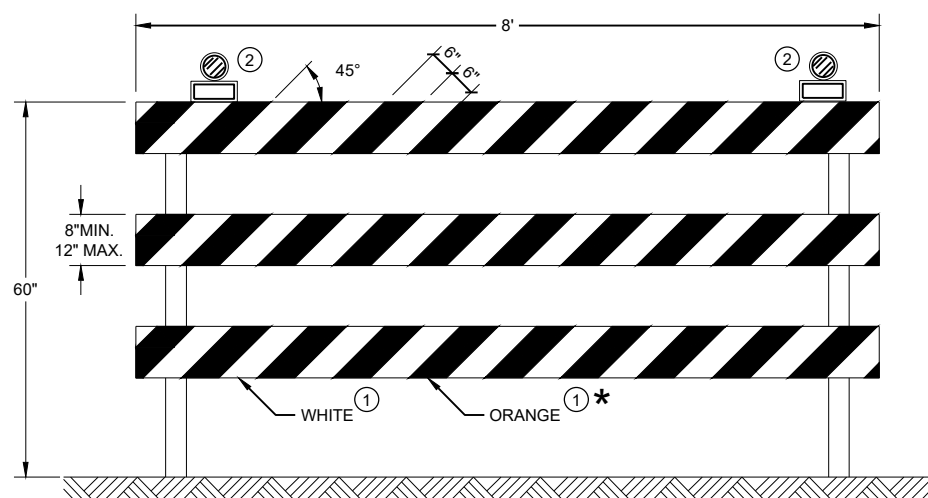
**GENERAL NOTES**

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



**TYPE II BARRICADE**

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












**TYPE III BARRICADE**

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

\* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

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

**LEGEND**

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

**GENERAL NOTES**

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

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

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

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

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

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

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

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

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

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

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

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

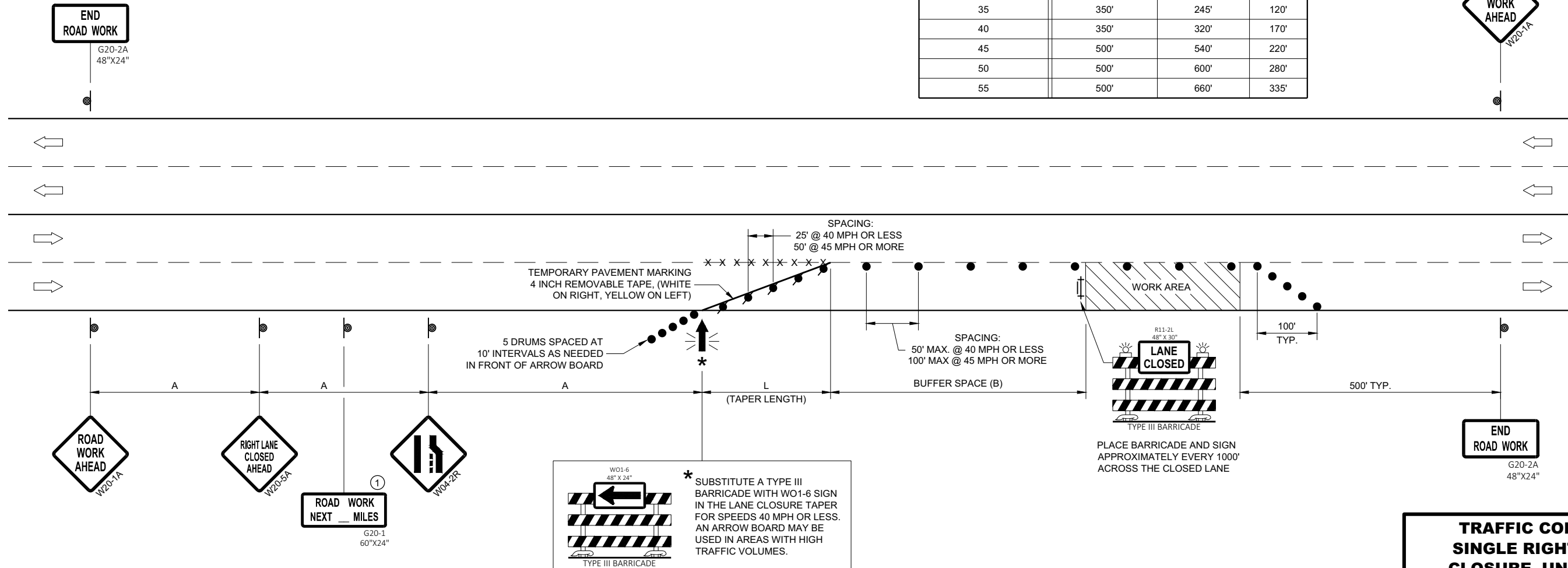
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

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

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

6

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SDD 15D20 - 05b

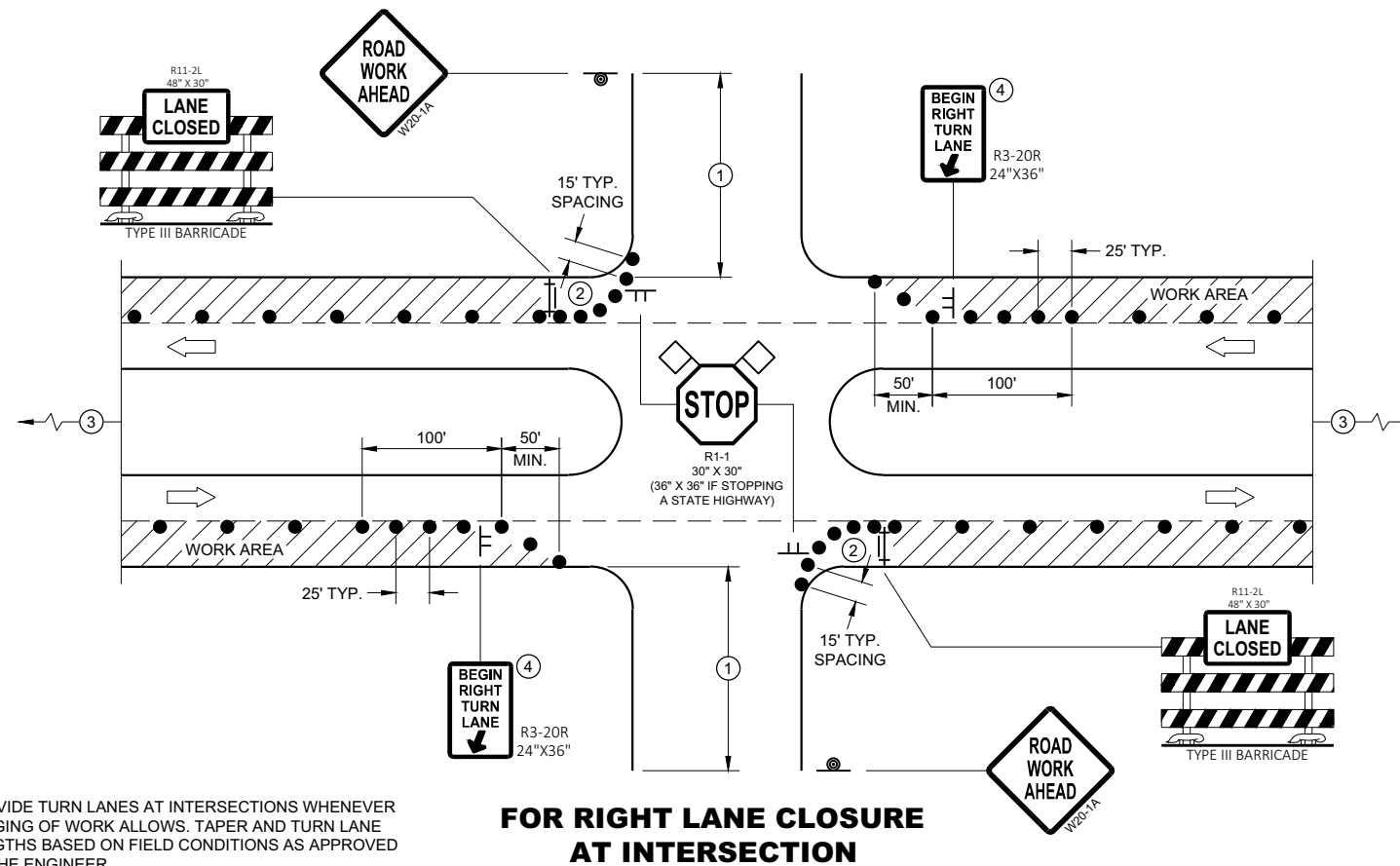
SDD 15D20 - 05b

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2020 /S/ Andrew Heidtke  
DATE STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER

FHWA



### GENERAL NOTES

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

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

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

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

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

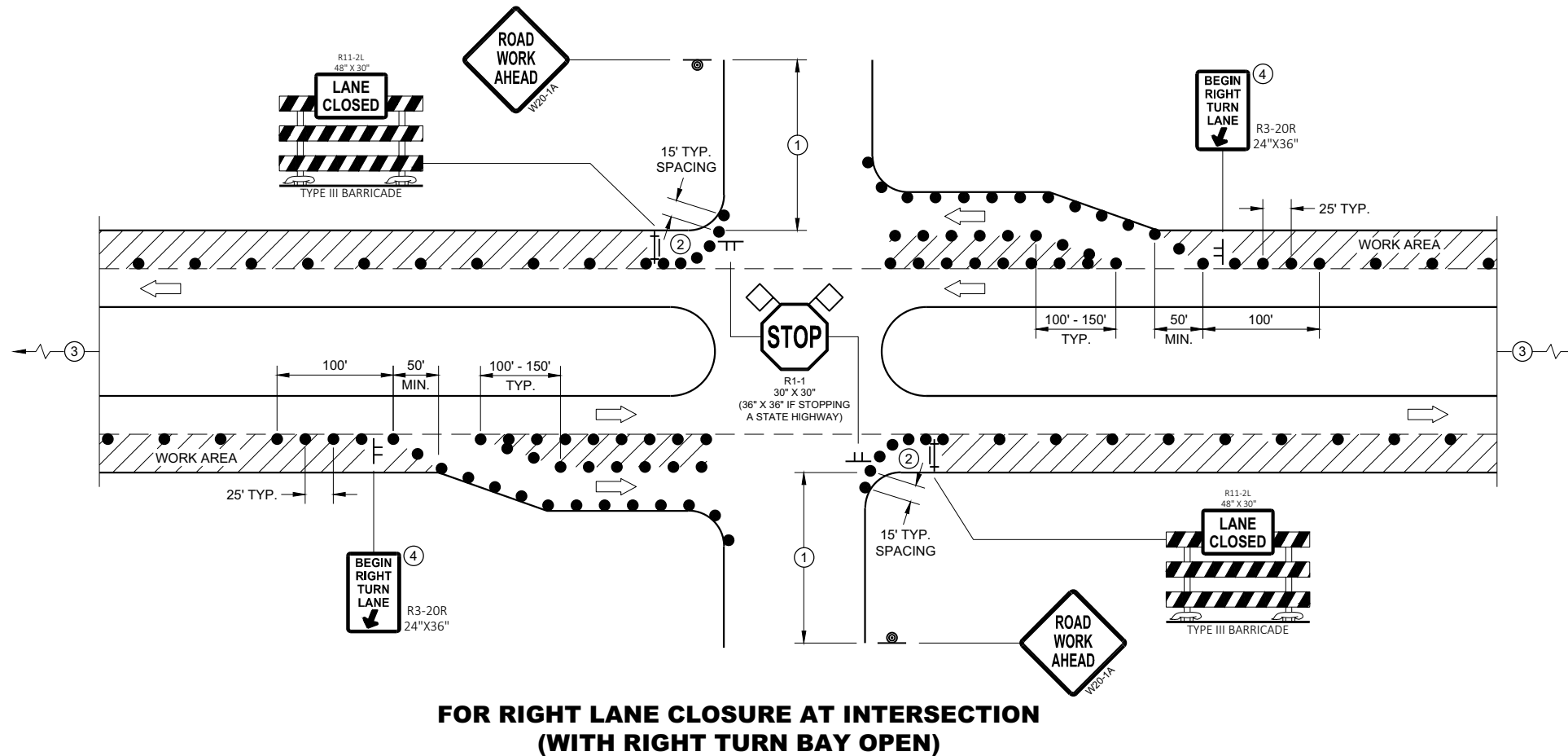
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

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

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

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

- ① 500' TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.  
350' IF 35 - 40 MPH.  
200' IF 25 - 30 MPH.
- ② ALSO USE BARRICADE AND 15 FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS
- ③ SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.
- ④ MINIMUM MOUNTING HEIGHT OF 5 FEET FROM EDGE OF PAVEMENT (AT EDGE LINE LOCATION) TO BOTTOM OF SIGN.







### LEGEND

- ⊥ SIGN ON TEMPORARY SUPPORT
- ⊙ SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- ⊥ TYPE III BARRICADE WITH ATTACHED SIGN
- ➔ DIRECTION OF TRAFFIC
- ◇ FLAGS, 16" X 16" MIN., ORANGE
- ▨ WORK AREA

### TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE RIGHT LANE CLOSURE

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

**LEGEND**

-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM
-  DIRECTION OF TRAFFIC
-  WORK ZONE

**GENERAL NOTES**

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

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

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

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

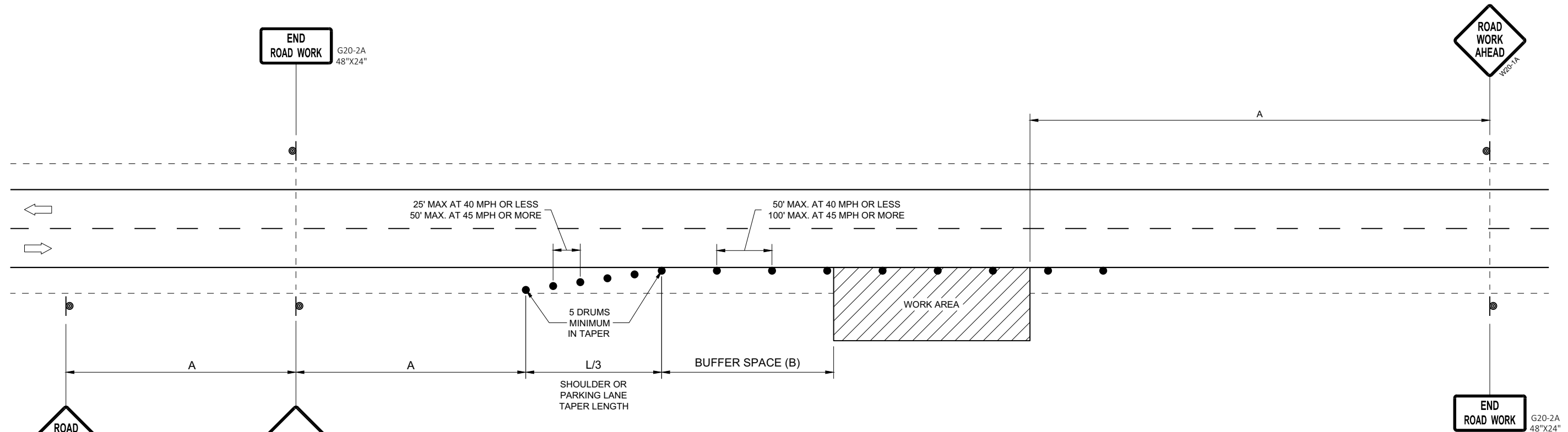
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

W20-1A AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.

6

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OR  
IF TRAFFIC CONTROL DEVICES  
ENCROACH ONTO TRAVELED WAY, USE

POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	SHOULDER TAPER L / 3 W, LATERAL OFFSET (FT)						BUFFER SPACE (B) FEET
		3	4	5	6	7	8	
25	200'	10	14	17	21	24	28	55
30	200'	15	20	25	30	35	40	85
35	350'	20	27	34	40	47	54	120
40	350'	26	35	44	53	62	70	170
45	500'	45	59	74	89	104	119	220
50	500'	50	66	83	99	116	132	280
55	500'	54	73	91	109	127	145	335'

**TRAFFIC CONTROL, WORK ON  
SHOULDER OR PARKING LANE,  
UNDIVIDED ROADWAY**

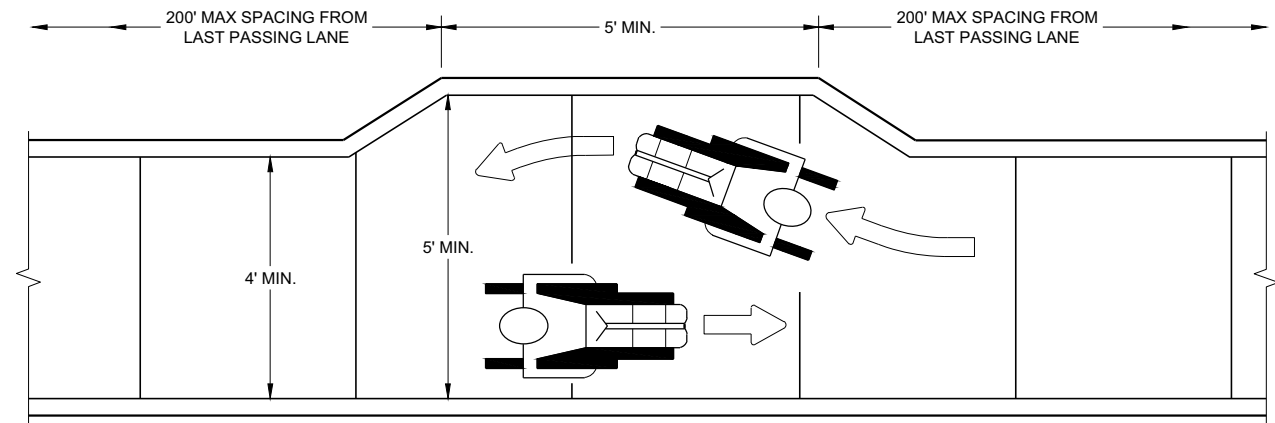
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2020 /S/ Andrew Heidtke  
DATE STATEWIDE WORK ZONE TRAFFIC  
SAFETY ENGINEER

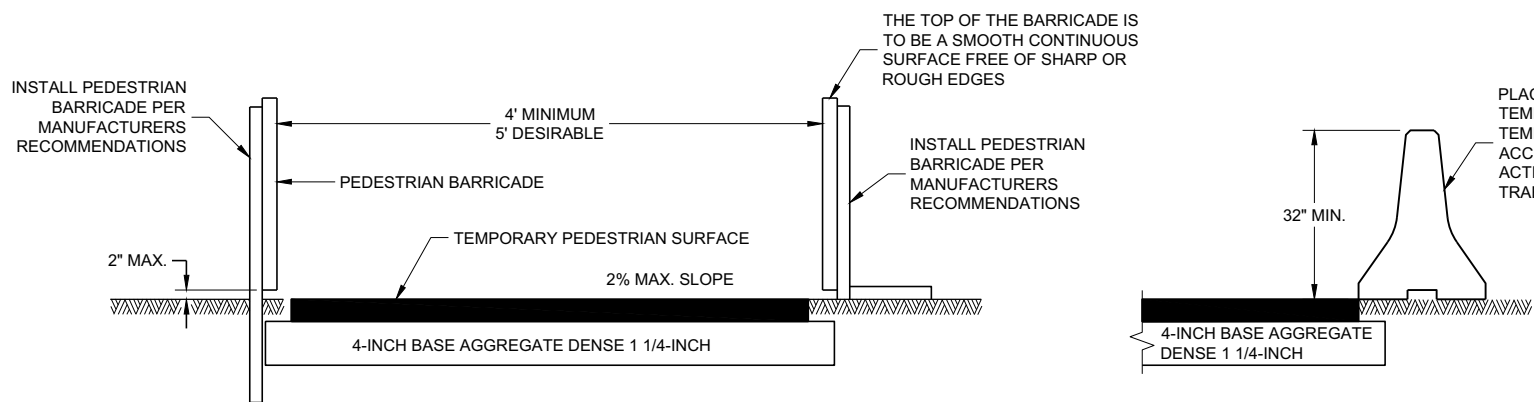
FHWA

SDD 15D28 - 04

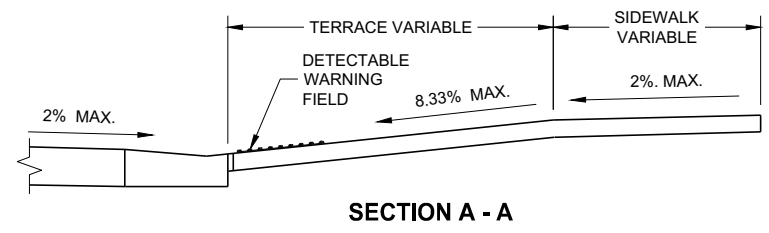
SDD 15D28 - 04



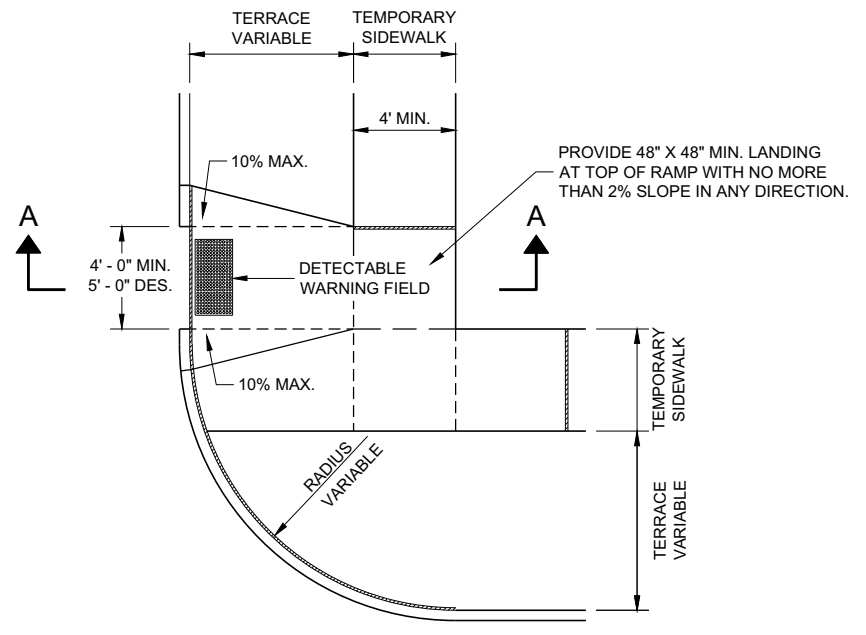
**NARROW SIDEWALK PASSING DETAIL**



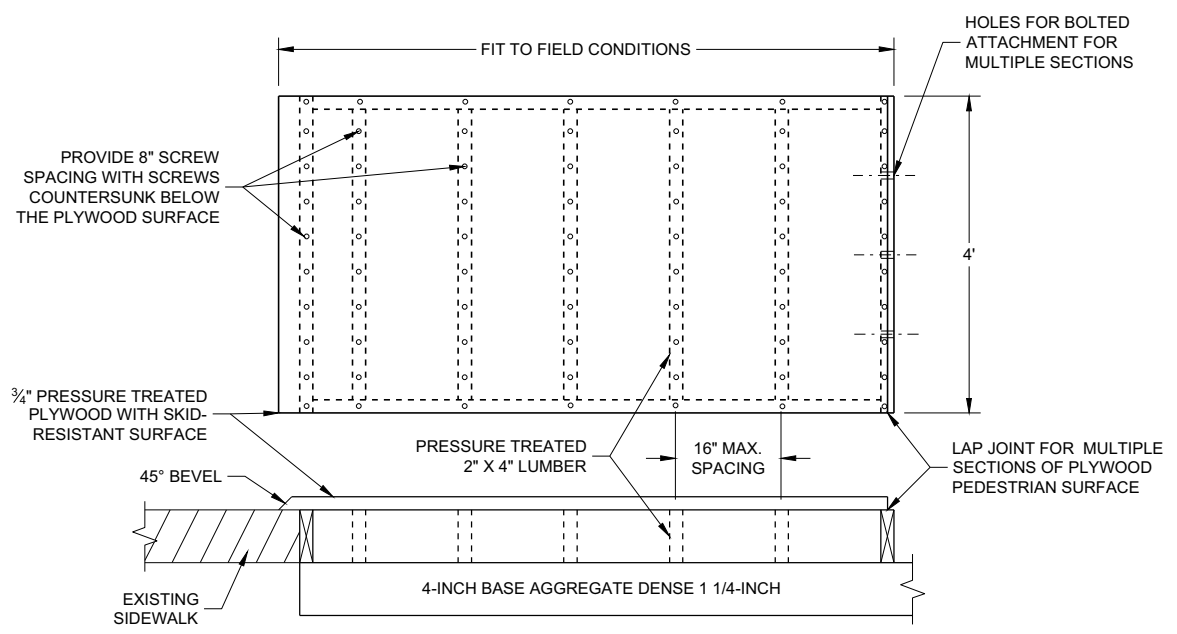
**TEMPORARY PEDESTRIAN ACCESS**



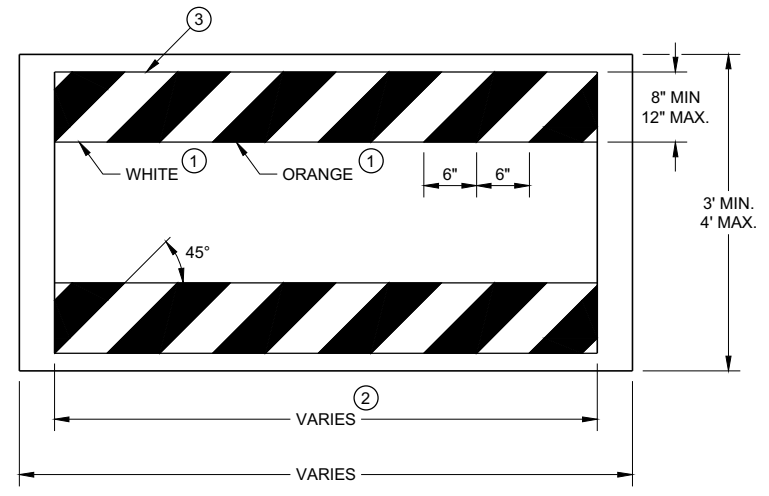
**SECTION A - A**



**PLAN VIEW  
TEMPORARY TYPE 3 RAMP  
(OUTSIDE OF CROSSWALK AREA)**



**TEMPORARY PEDESTRIAN SURFACE PLYWOOD**

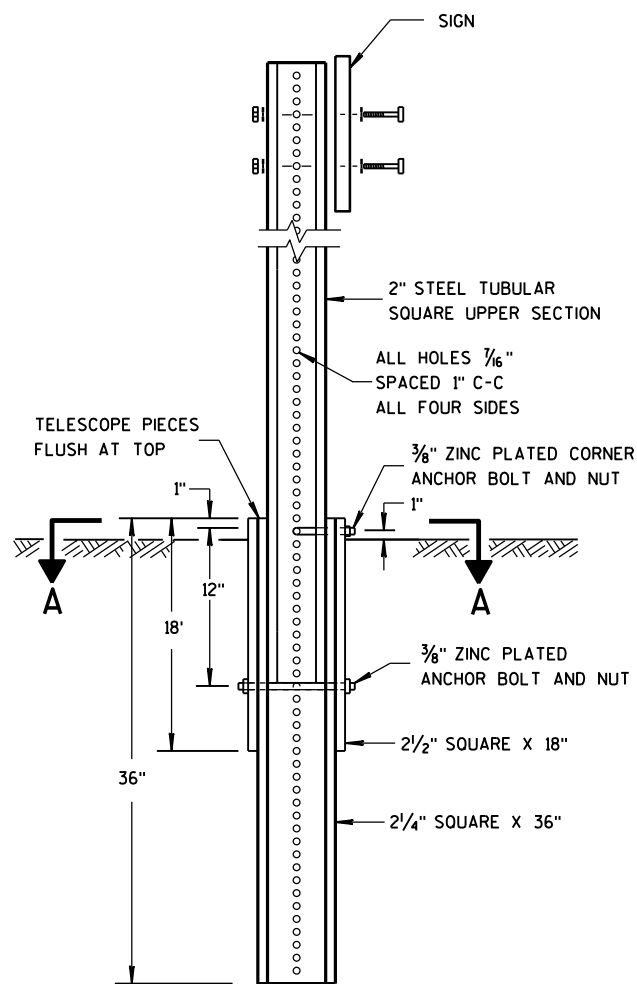


**TEMPORARY PEDESTRIAN BARRICADE \***

**GENERAL NOTES**

- BARRICADE DEVICE SELECTED FROM APPROVED PRODUCT LIST
- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
- ② SHEETING REQUIRED ON MORE THAN 50% OF BARRICADE WIDTH.
- ③ PLACE SHEETING ON BOTH SIDES OF THE BARRICADE.
- \* USE THIS DETAIL FOR SHEETING PLACEMENT REFERENCE.

<b>TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2019 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	



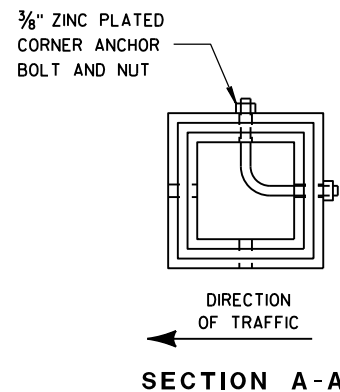
**DETAIL OF TUBULAR STEEL SIGN POST**

**TUBULAR STEEL POSTS**

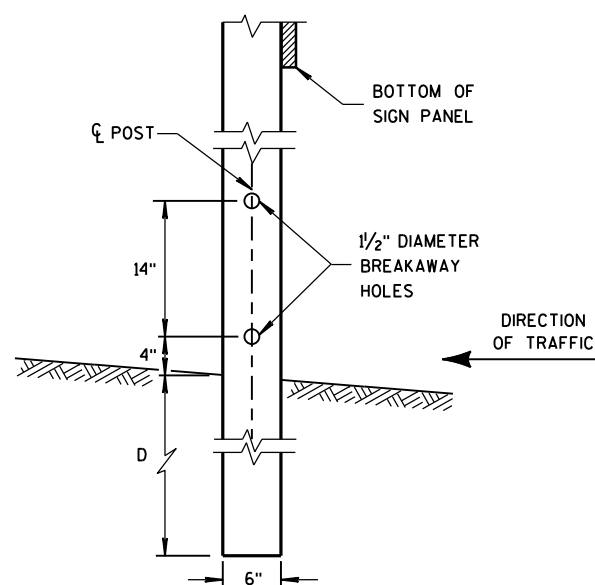
AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

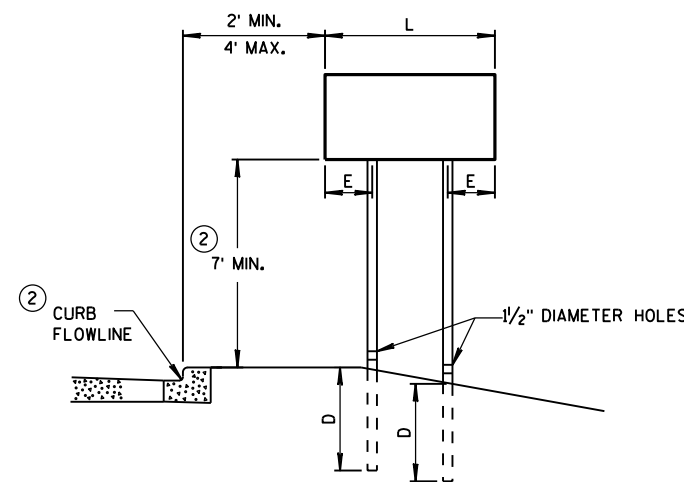
SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.



**SECTION A-A**



**4" X 6" WOOD POST MODIFICATION**

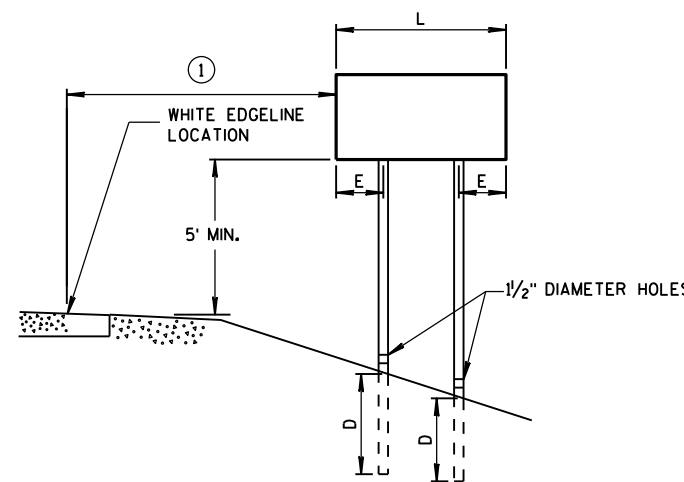


**URBAN AREA**

**POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS**

**WOOD POST EMBEDMENT DEPTH**

AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'



**RURAL AREA**

**4" X 6" WOOD POST**

POST SPACING REQUIREMENTS		NUMBER OF WOOD POSTS REQUIRED
L	E	
48" OR LESS AND LESS THAN 20 SQ. FT.	-	1
LESS THAN 60"	12"	2
60" TO 120"	L/5	2
GREATER THAN 120" LESS THAN 168"	12"	3
168" AND GREATER	12"	4

SEE NOTE (3)

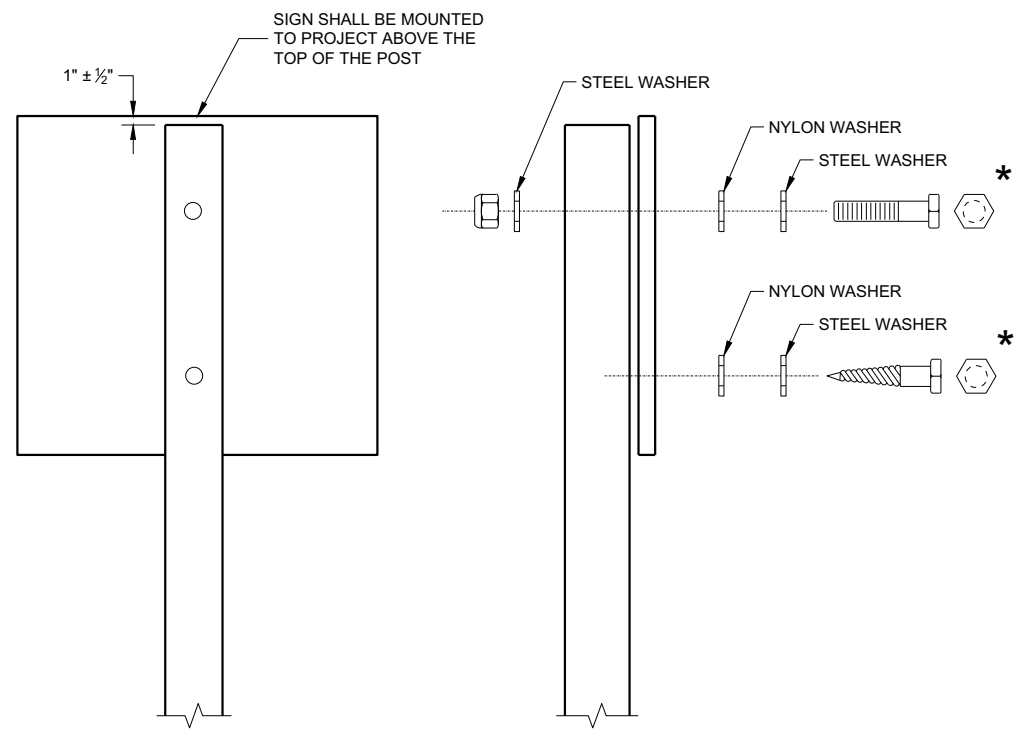
**GENERAL NOTES**

- ① 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.
- ② 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. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.
- ③ FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.

**TEMPORARY TRAFFIC CONTROL SIGN MOUNTING**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION





NUTS, BOLTS AND LAGS USED FOR MOUNTING SIGNS SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

- A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3
- B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

THREADS ON BOLTS AND NUTS SHALL BE MANUFACTURED WITH SUFFICIENT ALLOWANCE FOR THE CADMIUM PLATE OR GALVANIZED COATING TO PERMIT THE NUTS TO RUN FREELY ON THE BOLTS.

WOOD POST (4" x 6")  
 LAG SCREWS - 3/8" x 3"  
 MACHINE BOLTS - 5/16" x 6 1/2" OR 7" LENGTH W/NUTS

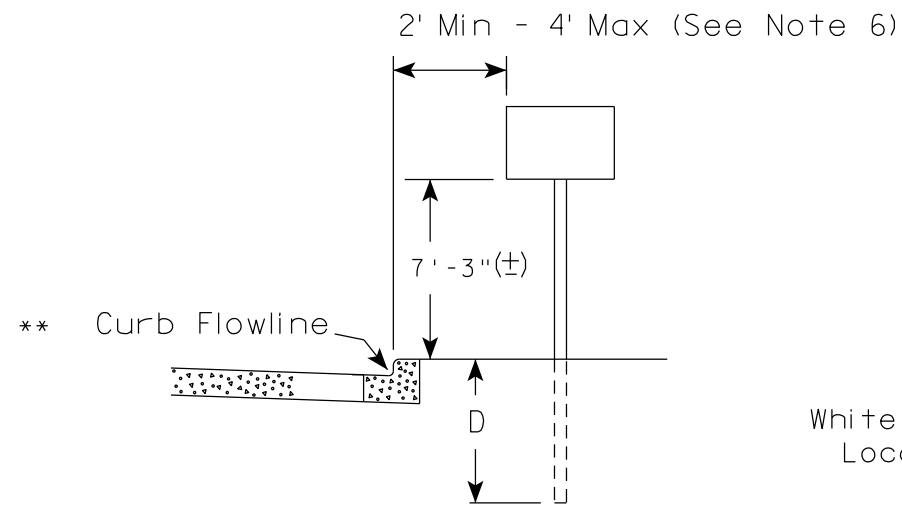
SQUARE STEEL POST (2" x 2")  
 MACHINE BOLTS - 3/8" x 3 1/4" LENGTH W/NUTS  
 RIVETS - 3/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM  
 BODY/MANDREL O.D. FLANGE 0.720 - 0.765 INCH,  
 GRIP RANGE 0.042 - 0.375 INCH

WASHERS (ALL POSTS) -  
 1 1/4" O.D. x 3/8" I.D. x 1/16" STEEL  
 1 1/4" O.D. x 3/8" I.D. x 0.080 NYLON

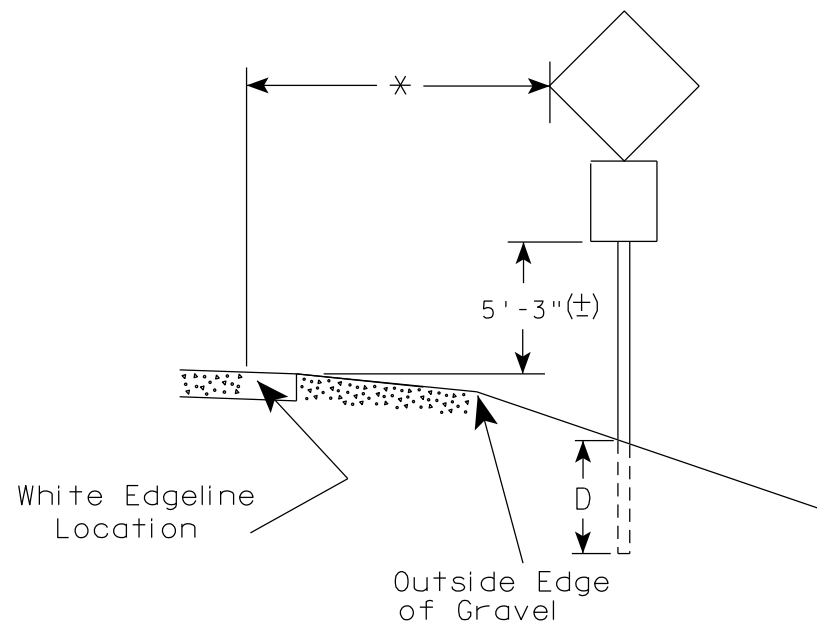
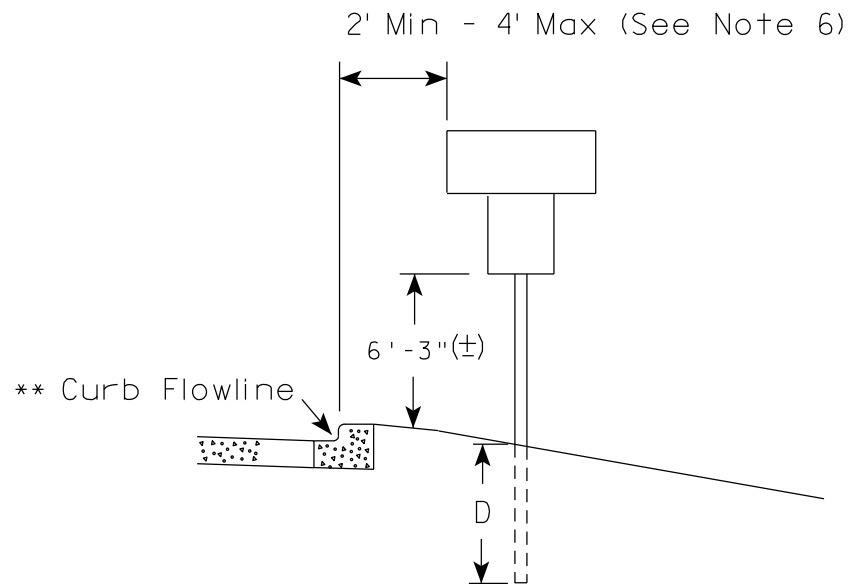
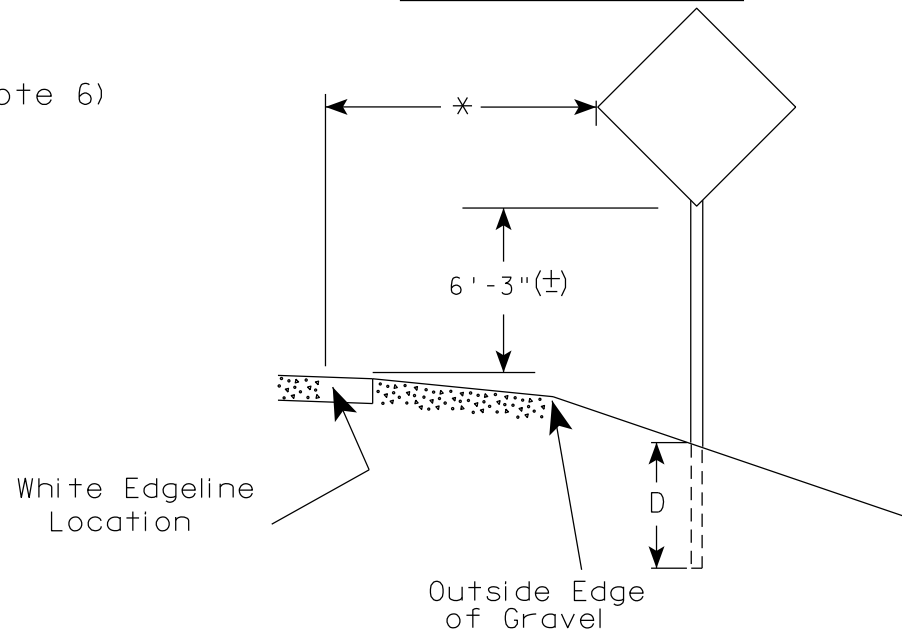
\* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

<b>ATTACHMENT OF SIGNS TO POSTS</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
<small>FHWA</small>	

URBAN AREA



RURAL AREA (See Note 2)



GENERAL NOTES

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

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.

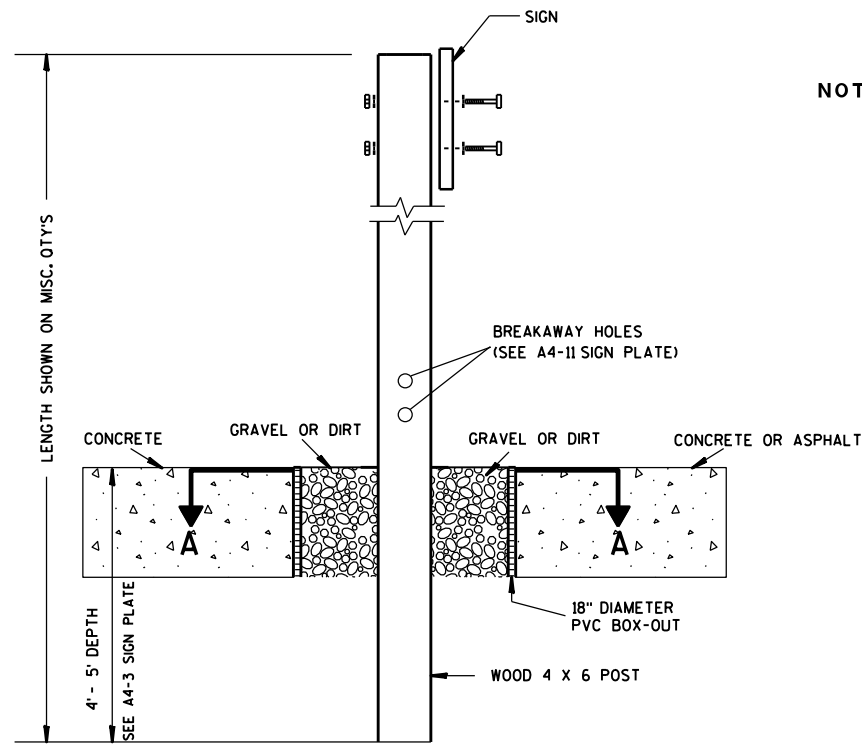
\* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

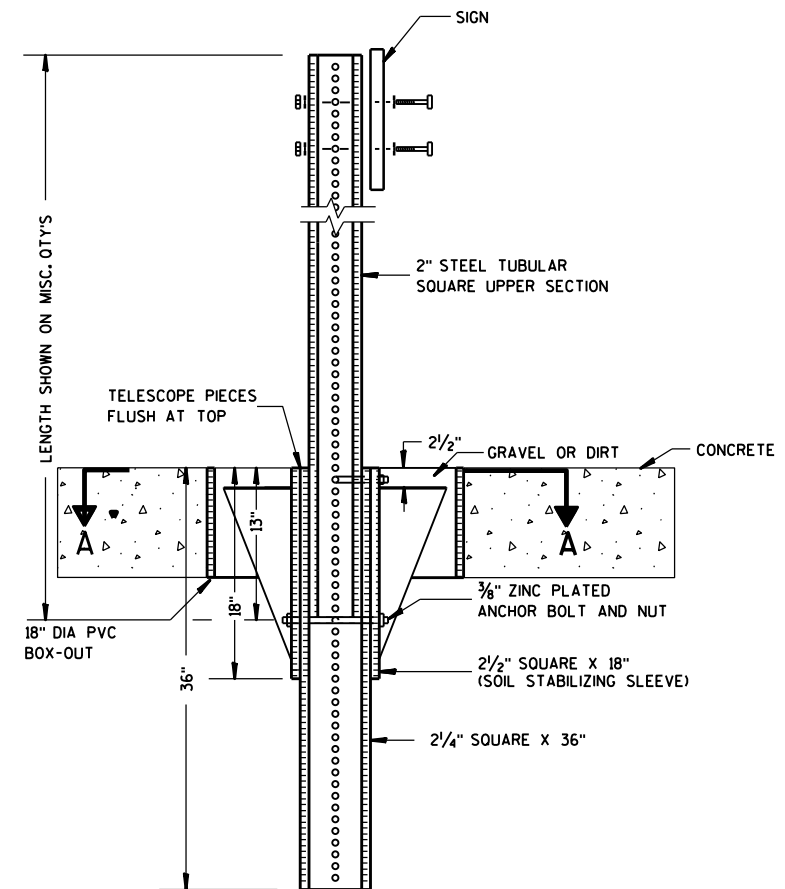
DATE 5/13/2020 PLATE NO. A4-3.22



**ELEVATION VIEW**

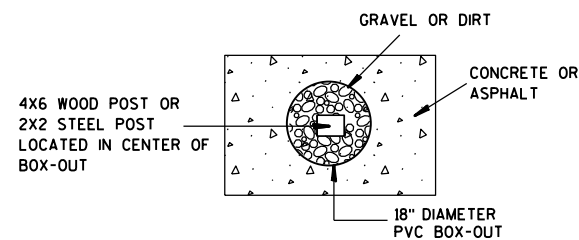
**DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT**

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



**ELEVATION VIEW**

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



**PLAN VIEW**

**FOR NEW CONCRETE/ ASPHALT INSTALLATIONS**

**SIGN POST  
BOX-OUTS  
A4-3B**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

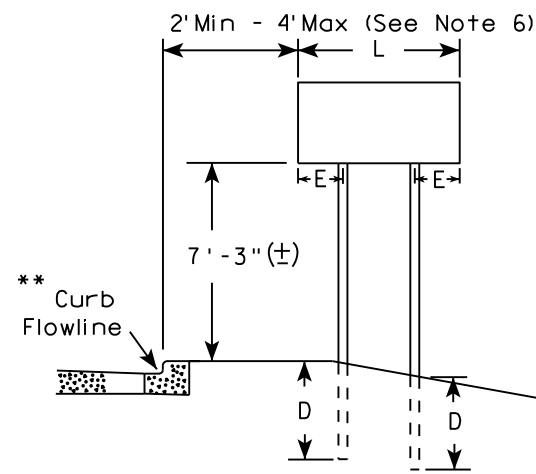
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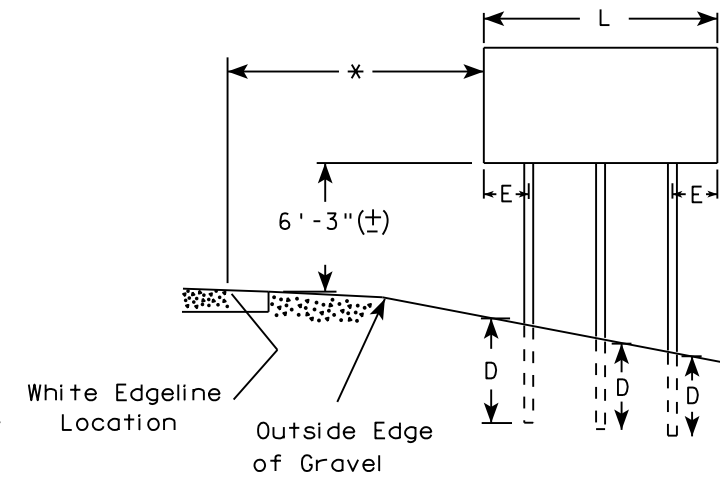
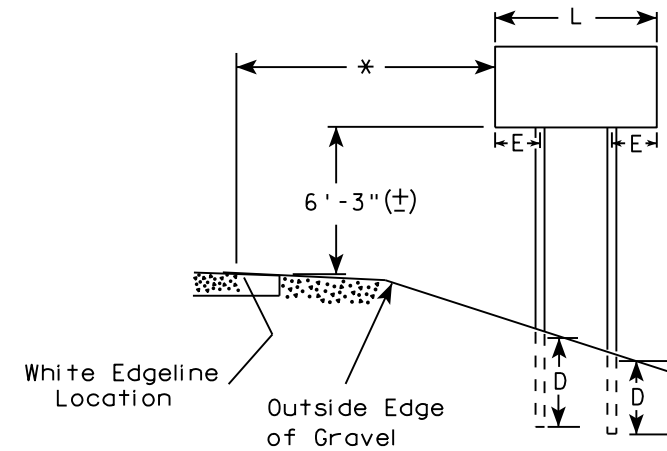
GENERAL NOTES

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

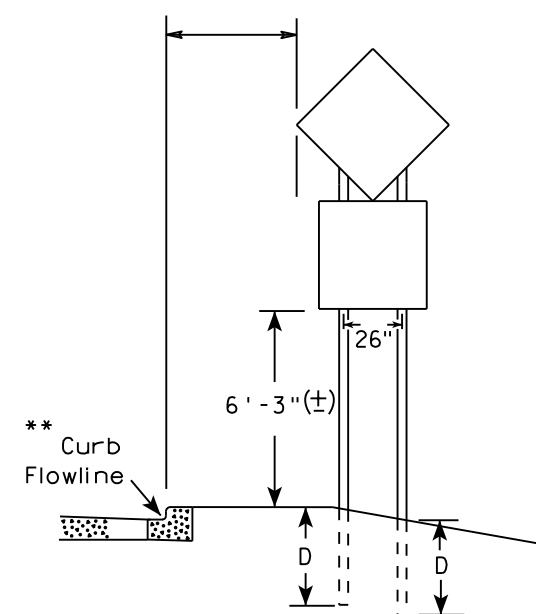
URBAN AREA



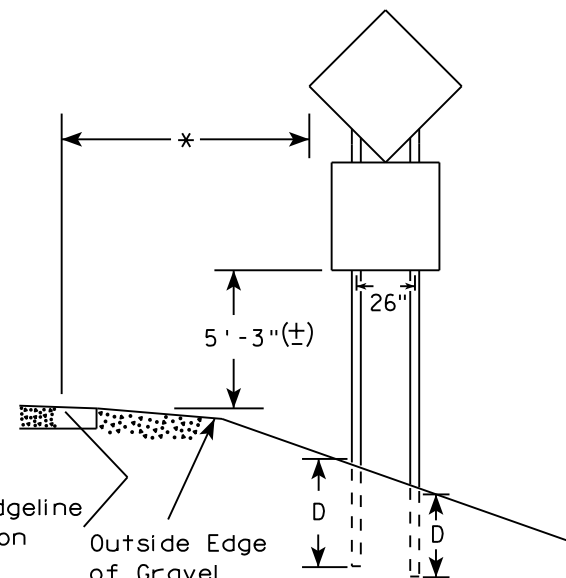
RURAL AREA (See Note 3)



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



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

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

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

\*\*\*

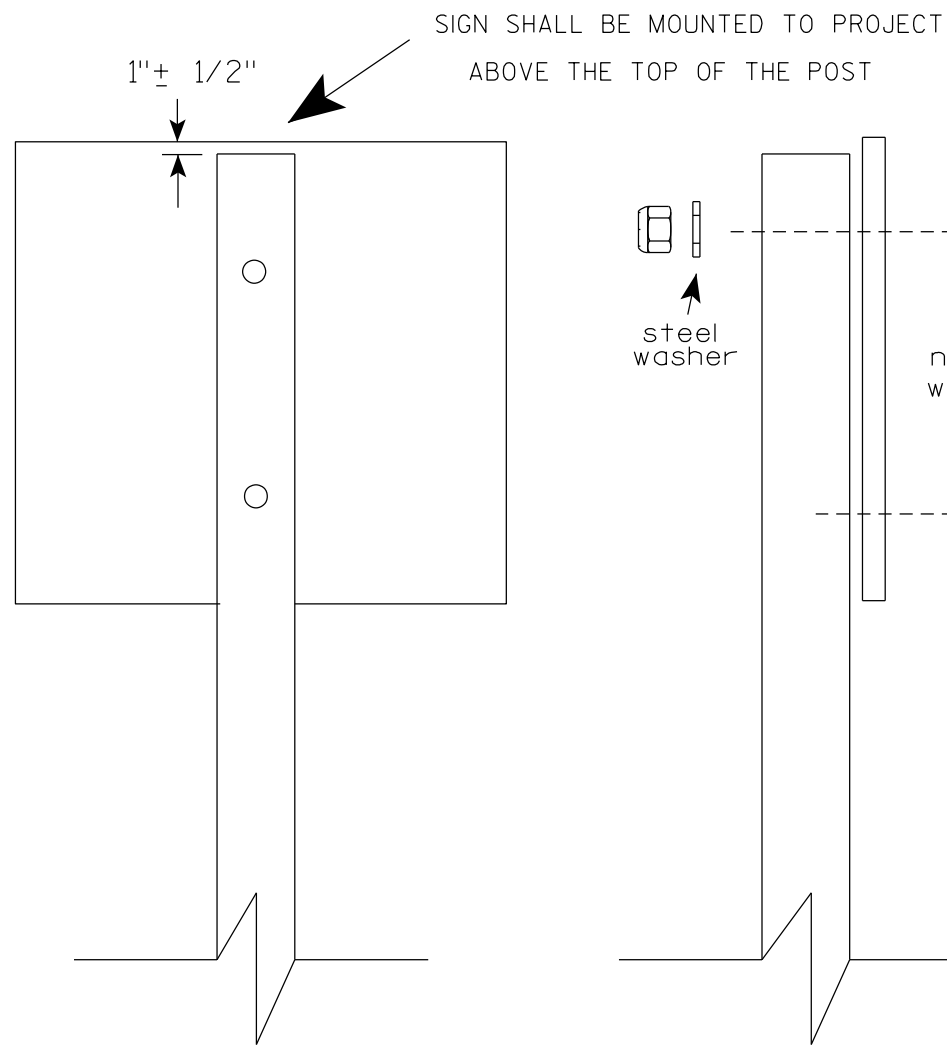
SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION  
 APPROVED *Matthew R. Rauch*  
 For State Traffic Engineer  
 DATE 8/21/17 PLATE NO. A4-4.15



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

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

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

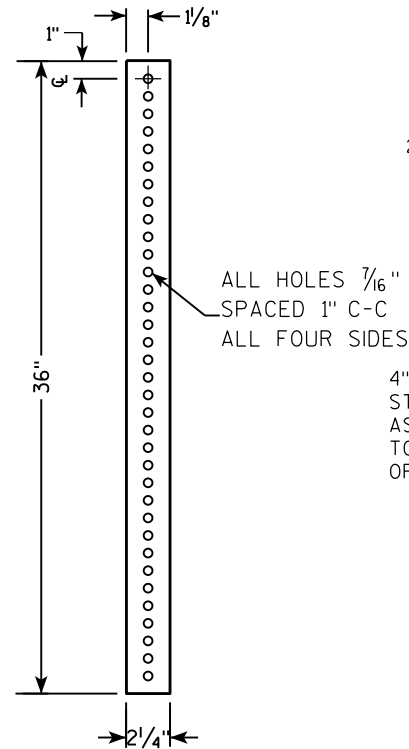
- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS -  $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS -  $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)  
 $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
-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

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

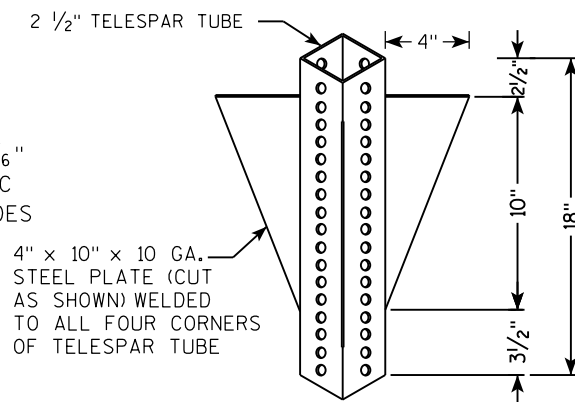
ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R Rauch</i> For State Traffic Engineer
DATE 4/1/2020	PLATE NO. A4-8.9

**TELESCOPIC TUBING ANCHORS  
TWO PIECE SYSTEM**

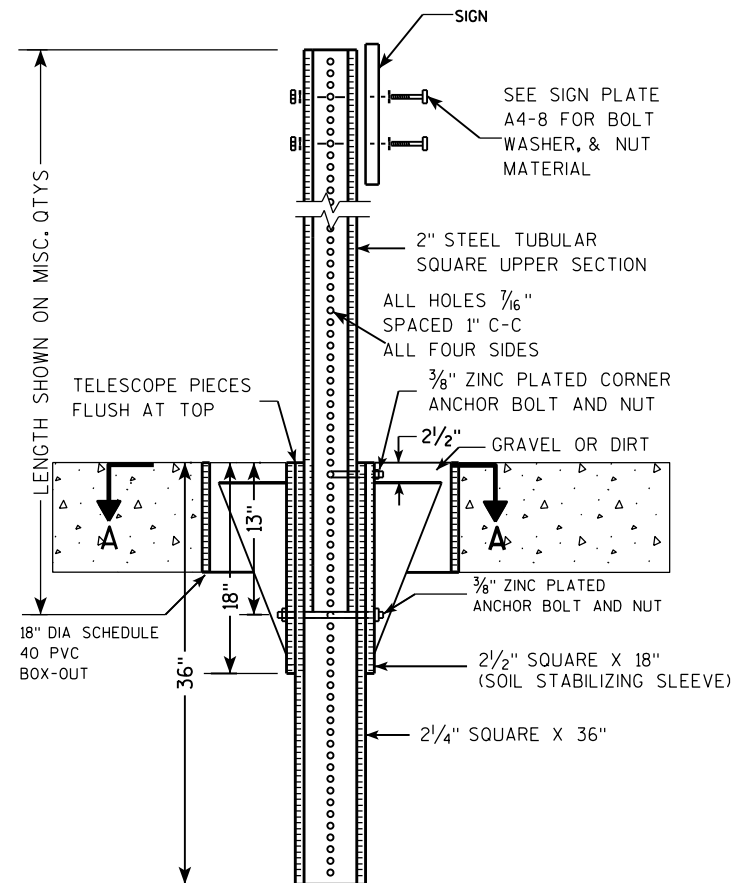
2 1/4" SQUARE  
12 GAUGE  
PERFORATED  
GALVANIZED FINISH



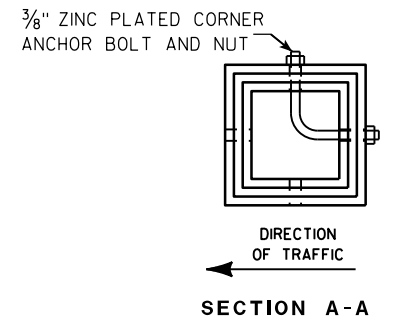
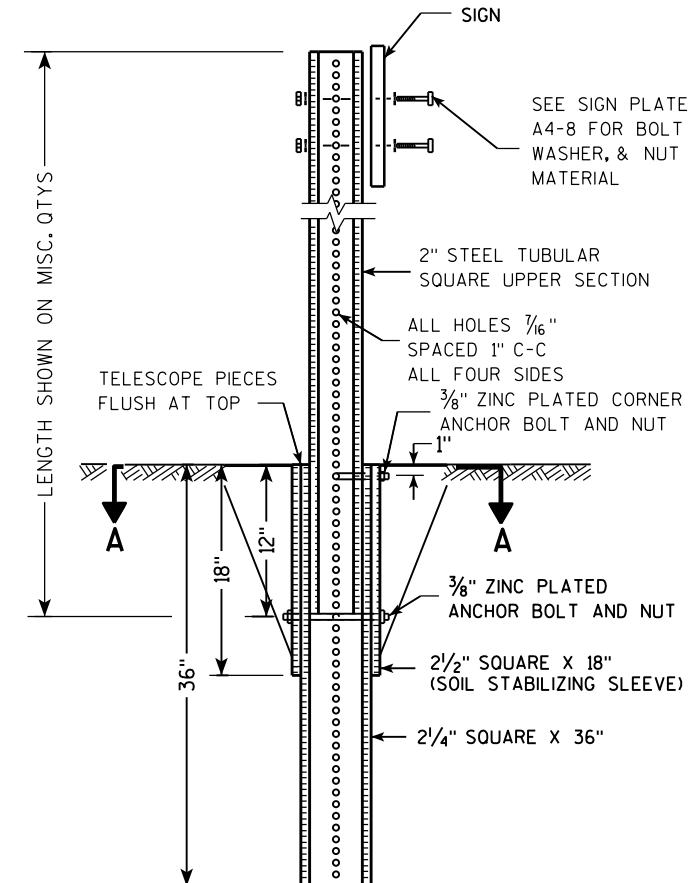
2 1/2" SQUARE  
12 GAUGE  
OMNI-DIRECTIONAL  
PERFORATED  
SOIL STABILIZING SLEEVE  
GALVANIZED FINISH



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



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



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

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

**TUBULAR STEEL  
SIGN POST  
A4-9**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

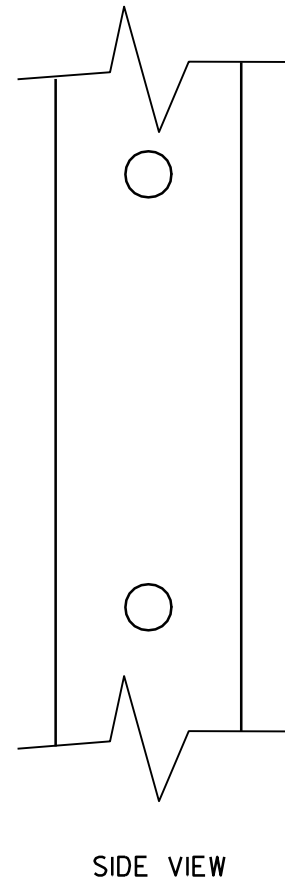
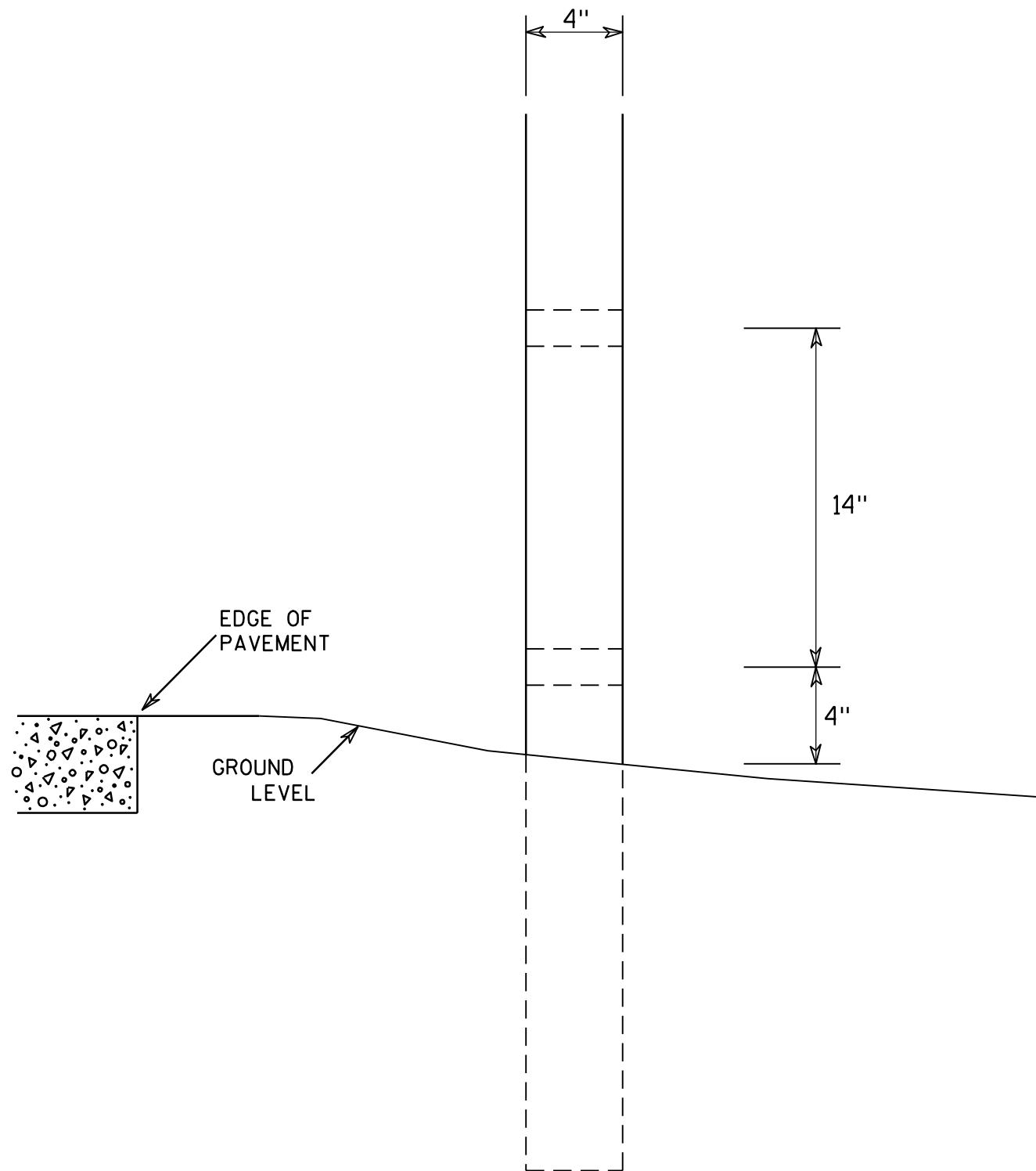
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



GENERAL NOTES

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

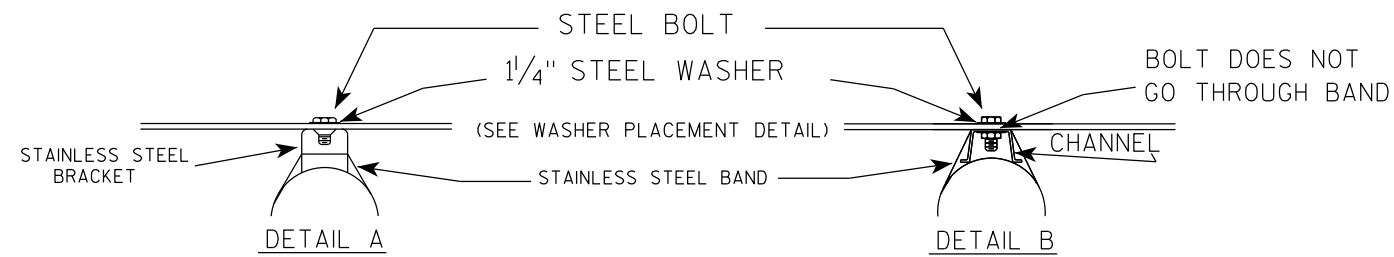
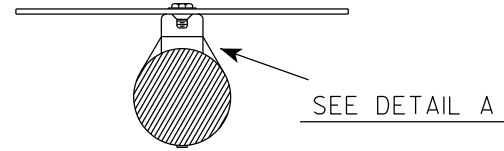
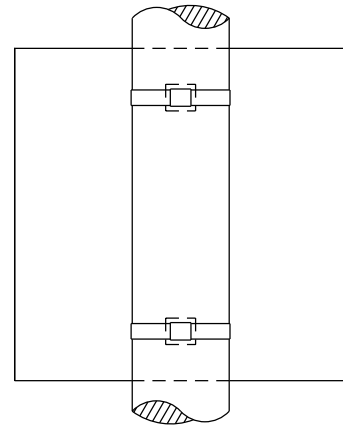
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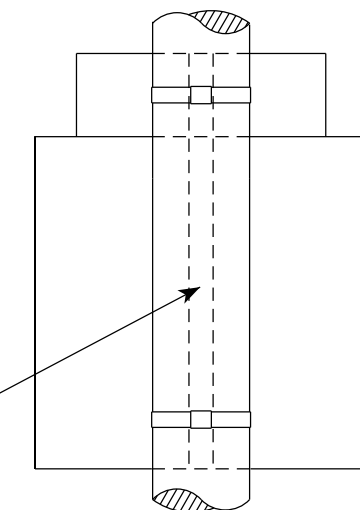
<b>4 X 6 WOOD POST MODIFICATIONS</b>	
<i>WISCONSIN DEPT OF TRANSPORTATION</i>	
APPROVED	<i>Chester J Spang</i> for State Traffic Engineer
DATE <u>3/27/97</u>	PLATE NO. <u>A4-11.2</u>

# BANDING

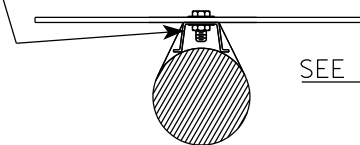
SINGLE SIGN



"J" ASSEMBLY

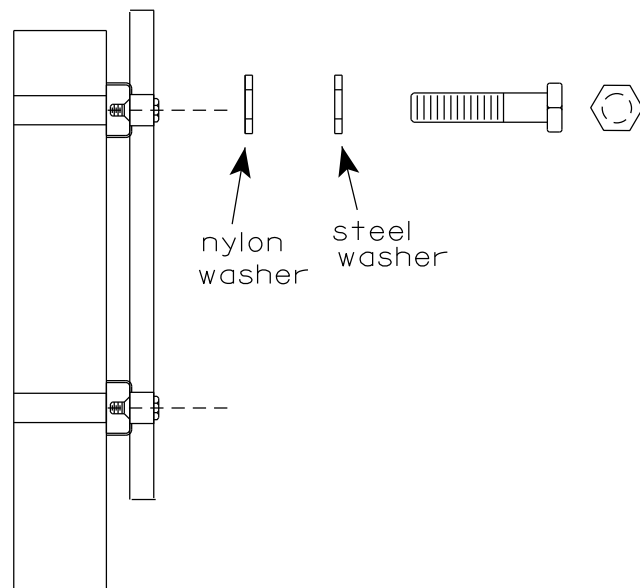


CHANNEL  
SEE TYPICAL PANEL  
INSTALLATION SHEET



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

WASHER PLACEMENT



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

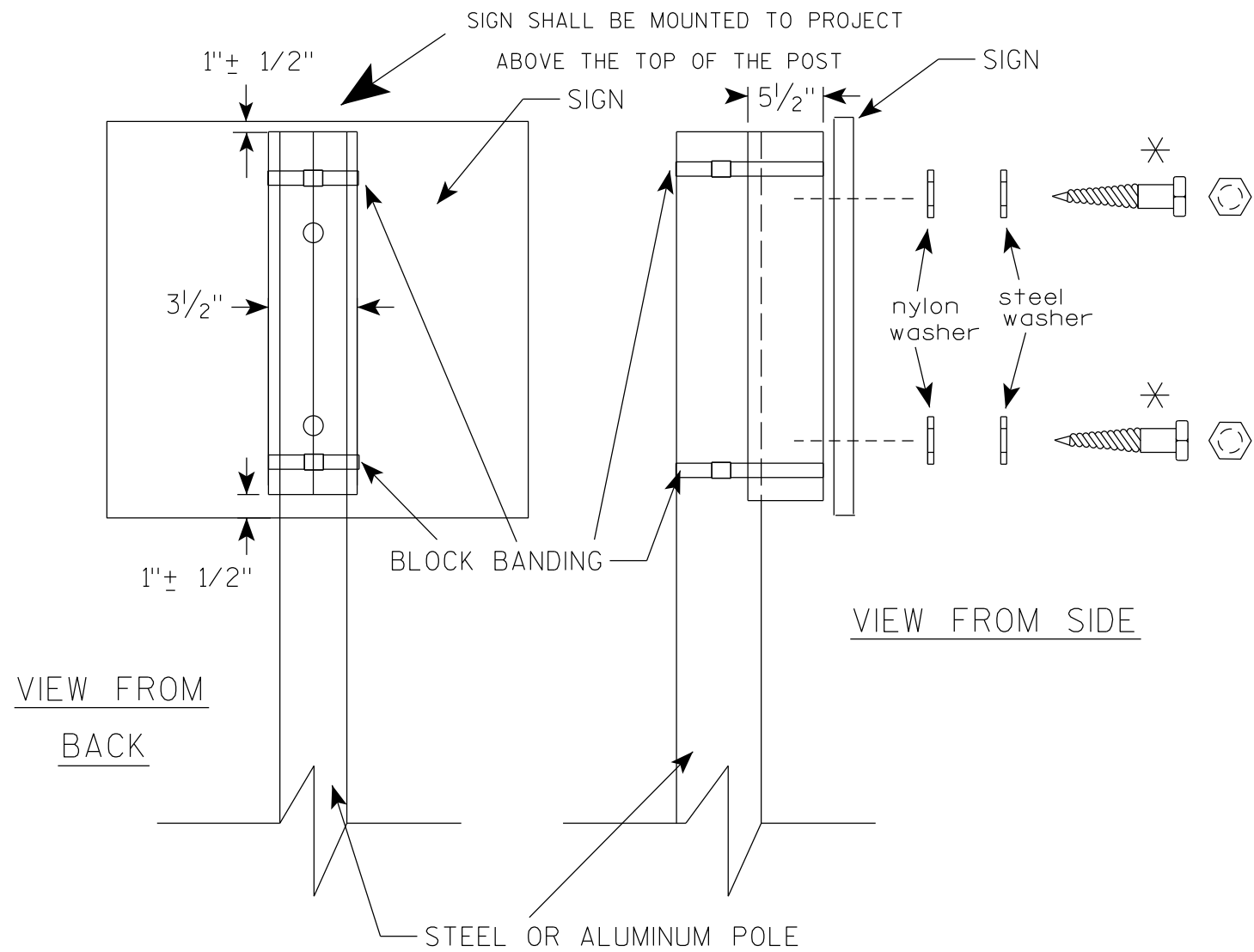
STANDARD SIGN  
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

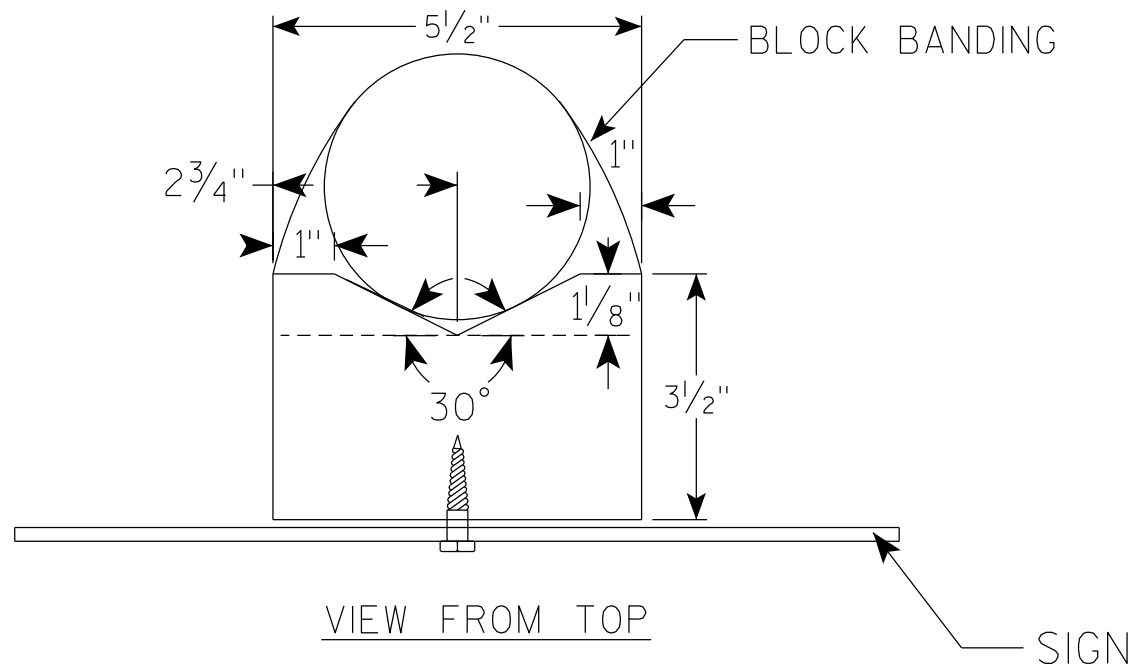




GENERAL NOTES

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

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



BLOCK BANDING DETAIL  
( V-BLOCK OPTION )

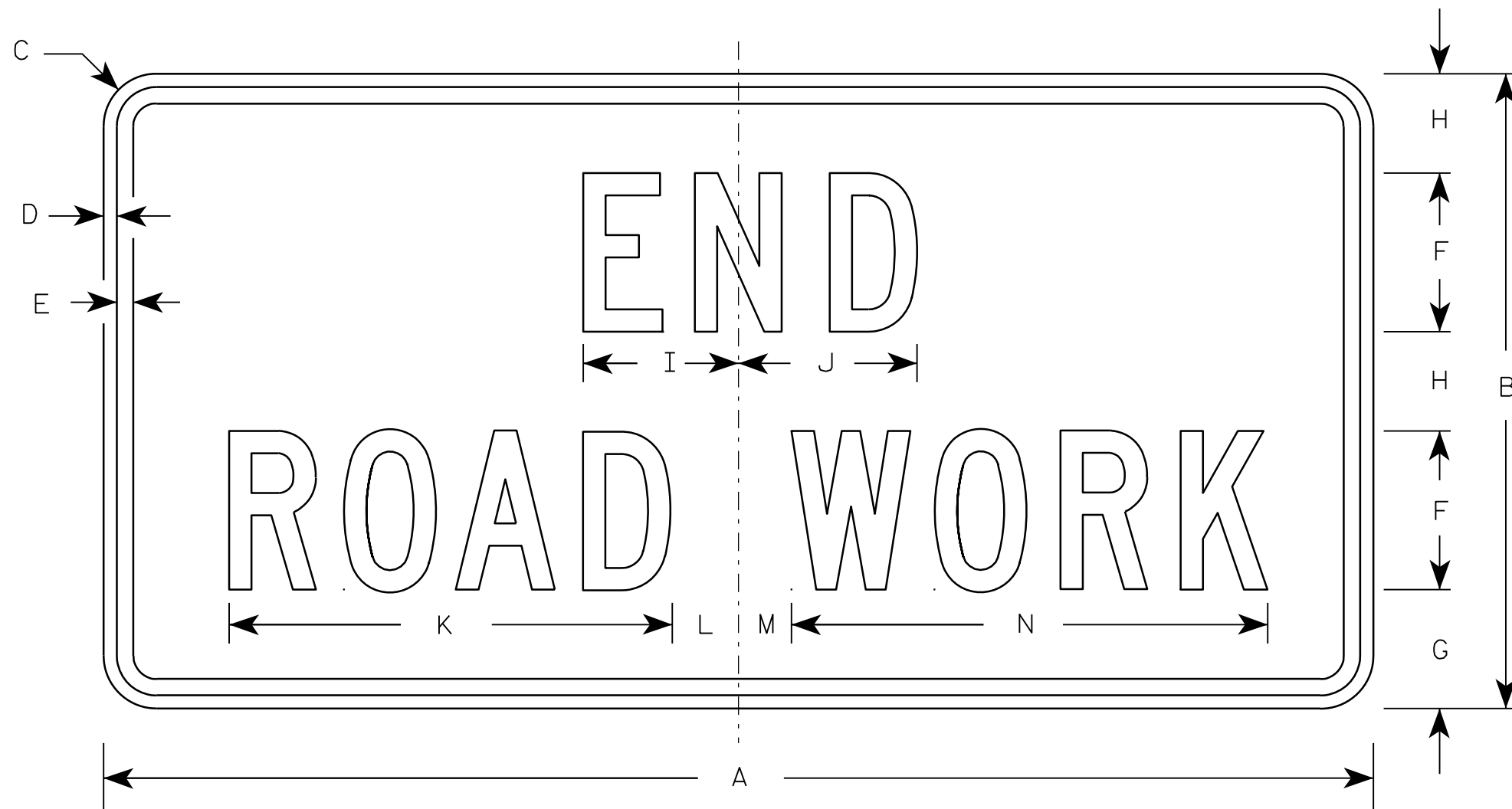
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*  
For State Traffic Engineer

DATE 6/10/19 PLATE NO. A5-10.2

NOTES

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



G20-2A

7

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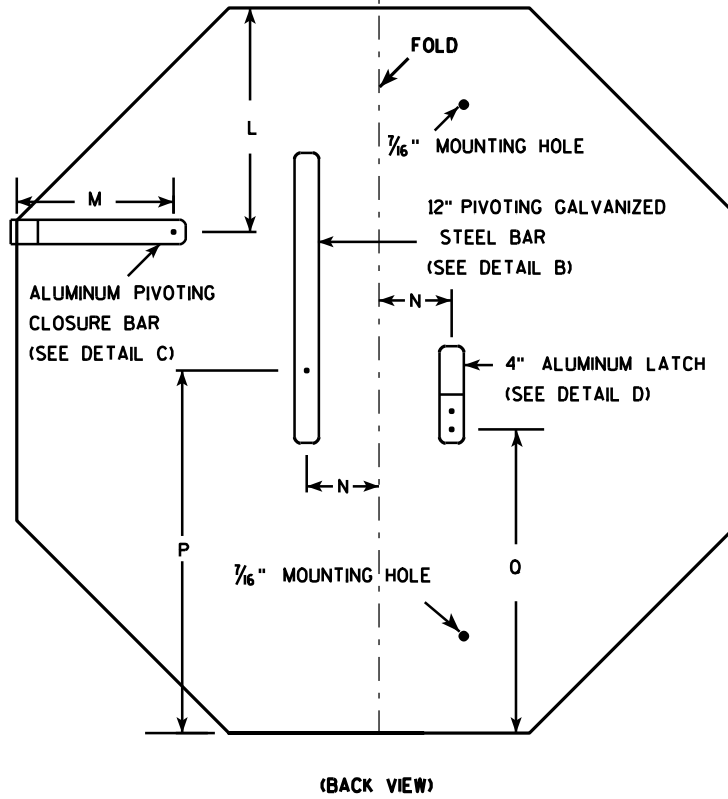
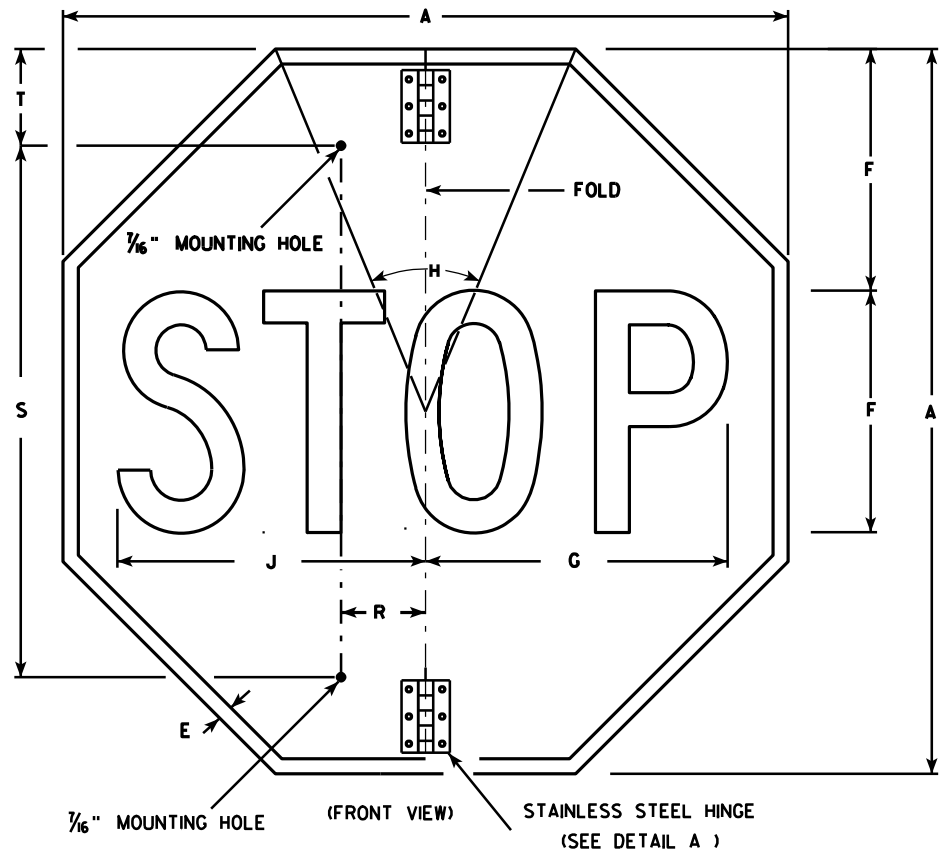
Metric equivalent for this sign is:

SIZE	
1	900 mm X 450 mm
2	1200 mm X 600 mm
3	1200 mm X 600 mm
4	1200 mm X 600 mm
5	1200 mm X 600 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area sq.
1	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
4	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
5	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72

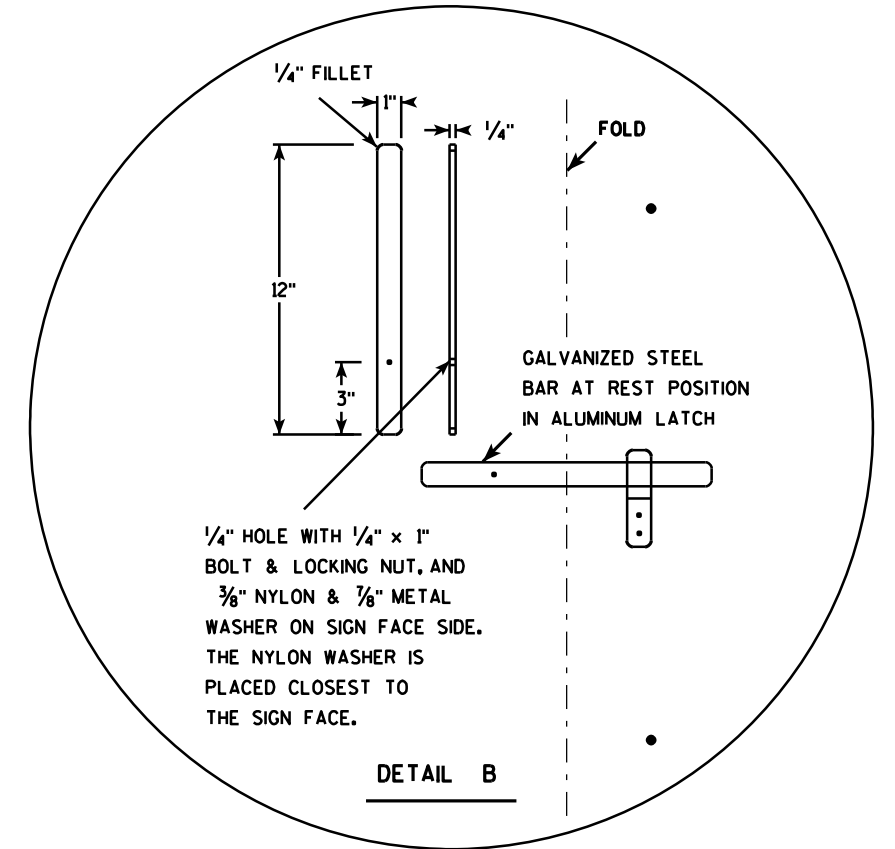
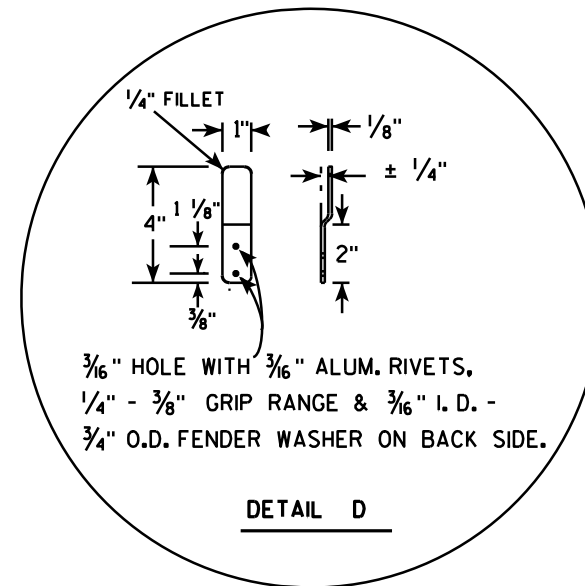
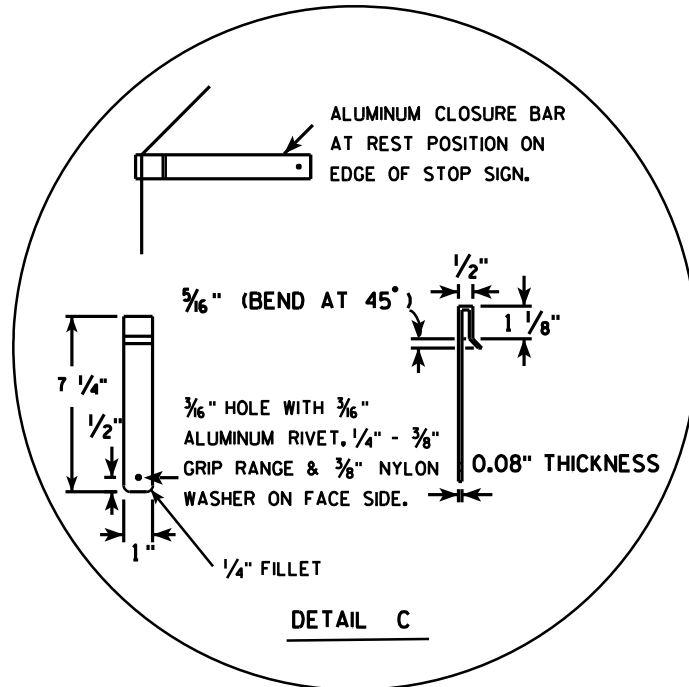
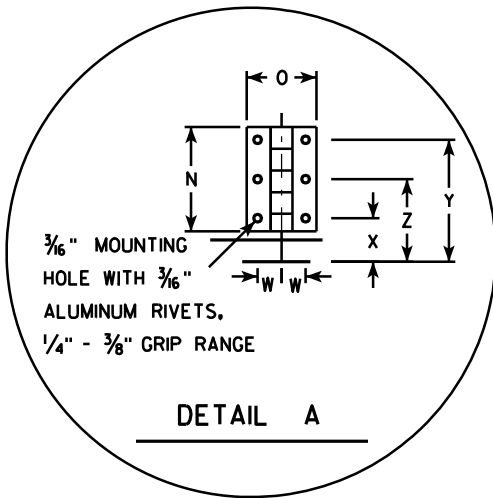
STANDARD SIGN G20-2A	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 9/30/09	PLATE NO. G20-2A.8

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	<b>E</b>
-------------	------	---------	-----------	----------



**NOTES**

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



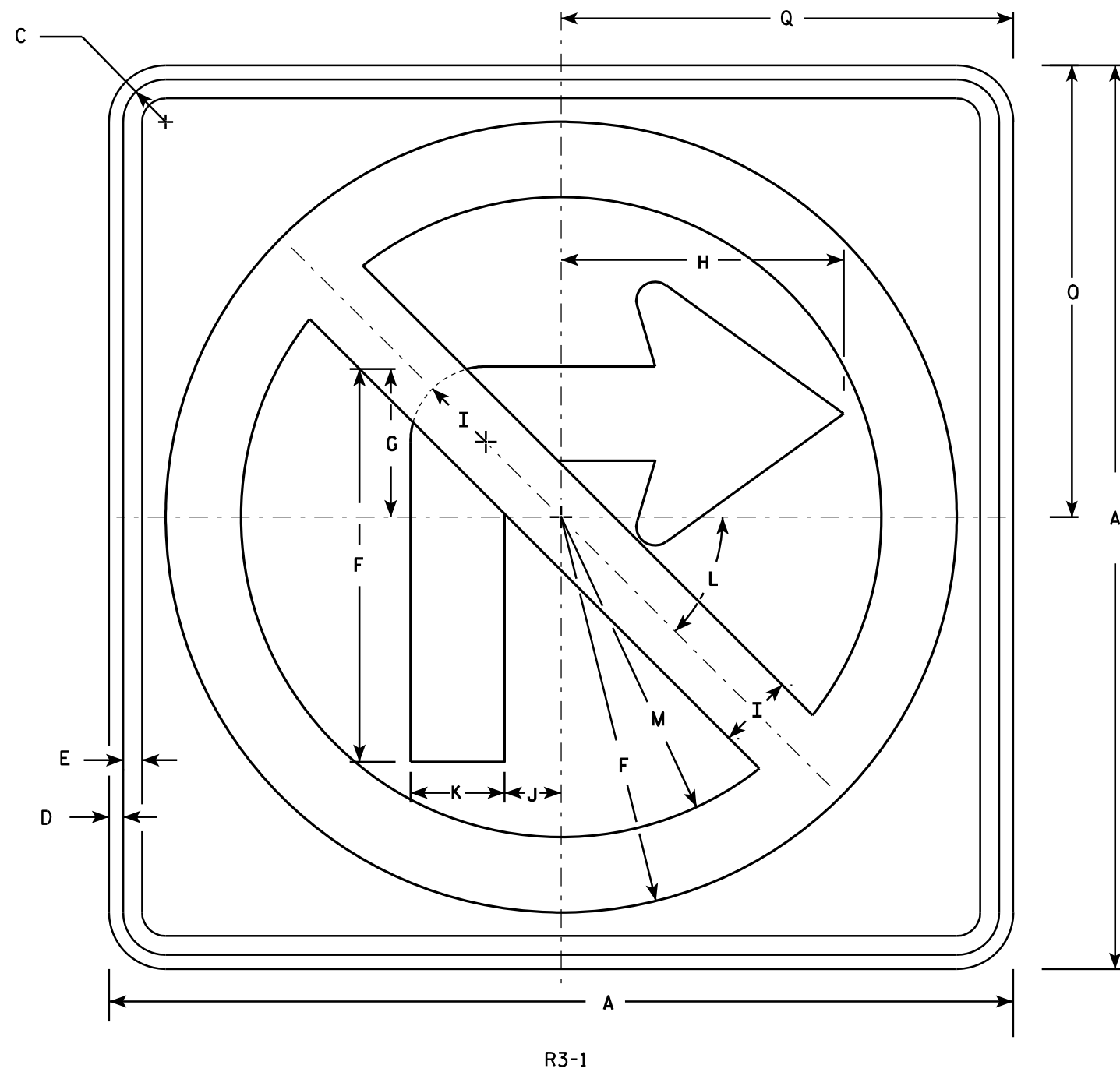
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30				5/8	10	12 1/2	45		12 3/4		9 1/4	6 1/2	3	2	15	12 3/8	2 1/2	22	5			1 1/8	1 1/4	3 1/2	2 3/8	5.18
2M	36				3/4	12	15	45		15 3/8		11	6 1/2	3	2	18	15 3/8	2 1/2	26	5			1 1/8	1 1/4	3 1/2	2 3/8	7.46
3	36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

**STANDARD SIGN**  
R1-1F

WISCONSIN DEPT OF TRANSPORTATION

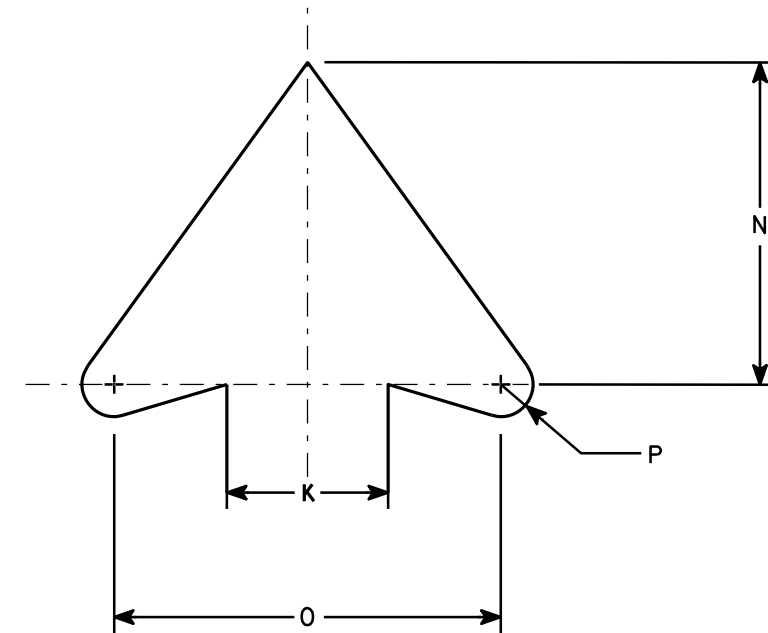
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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



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	12										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	12										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	18										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	18										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	18										9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1	24										16.0

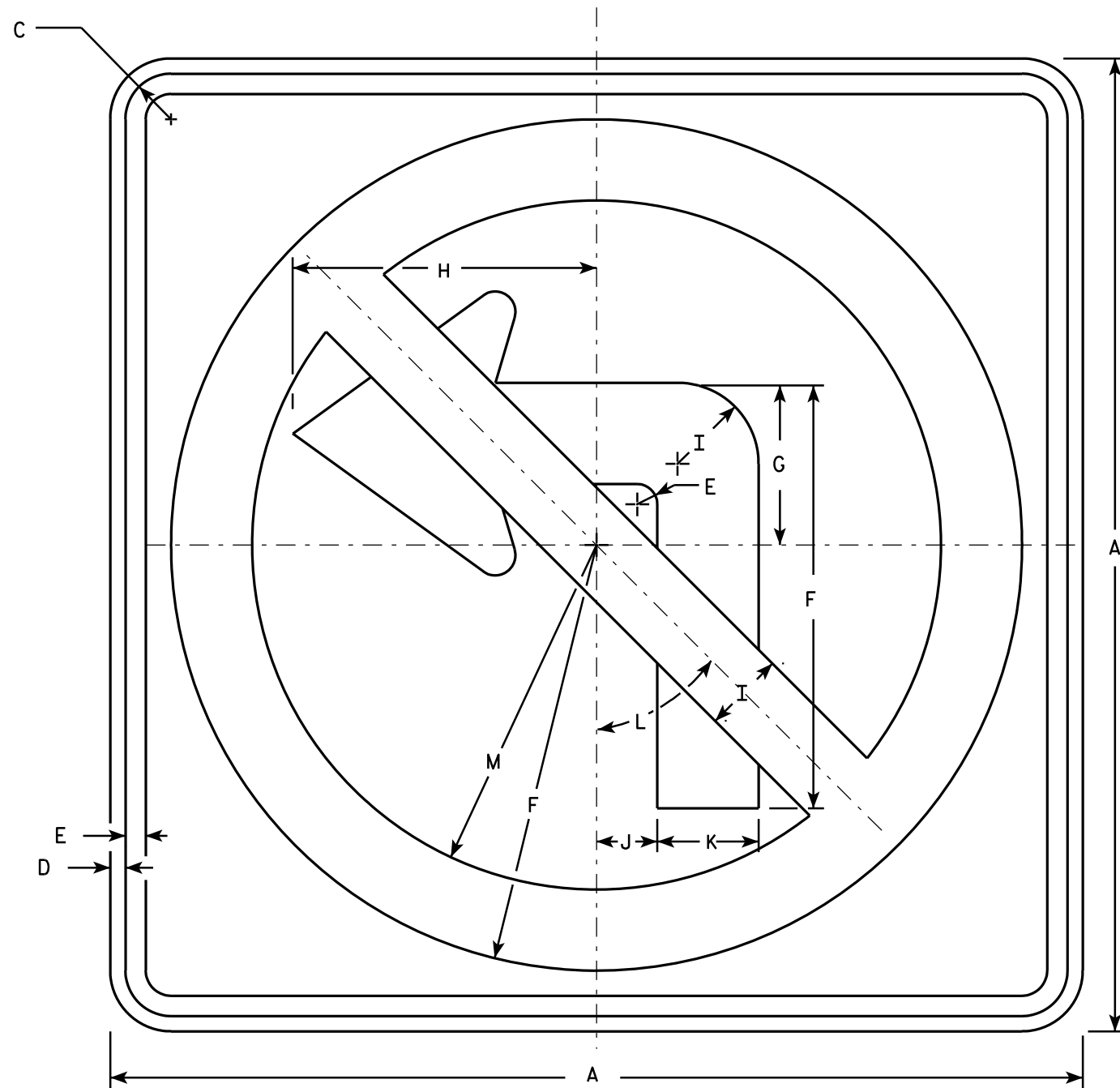
**STANDARD SIGN**  
**R3-1**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-1.5

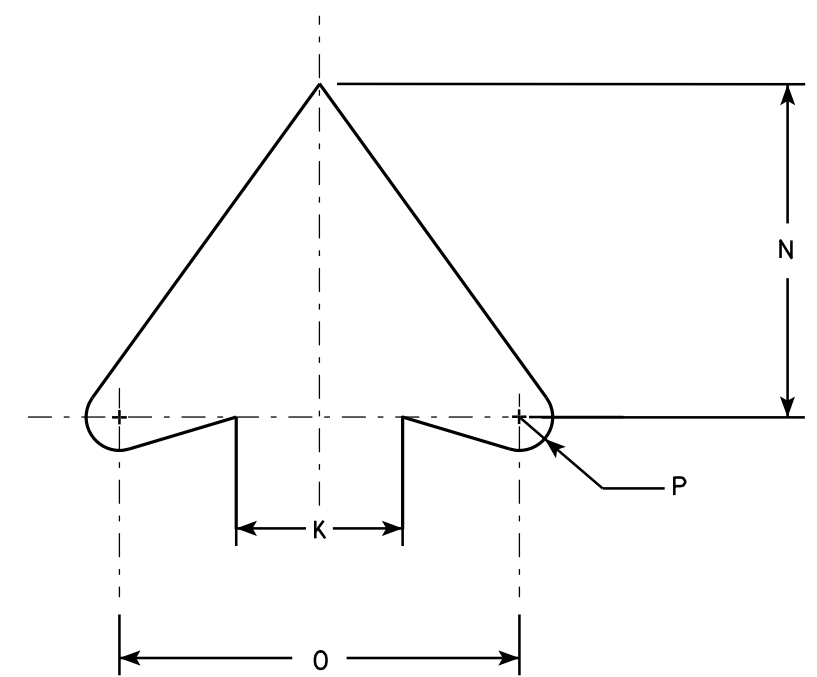
PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: \_\_\_\_\_ **E**



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

**STANDARD SIGN**  
**R3-2**

WISCONSIN DEPT OF TRANSPORTATION

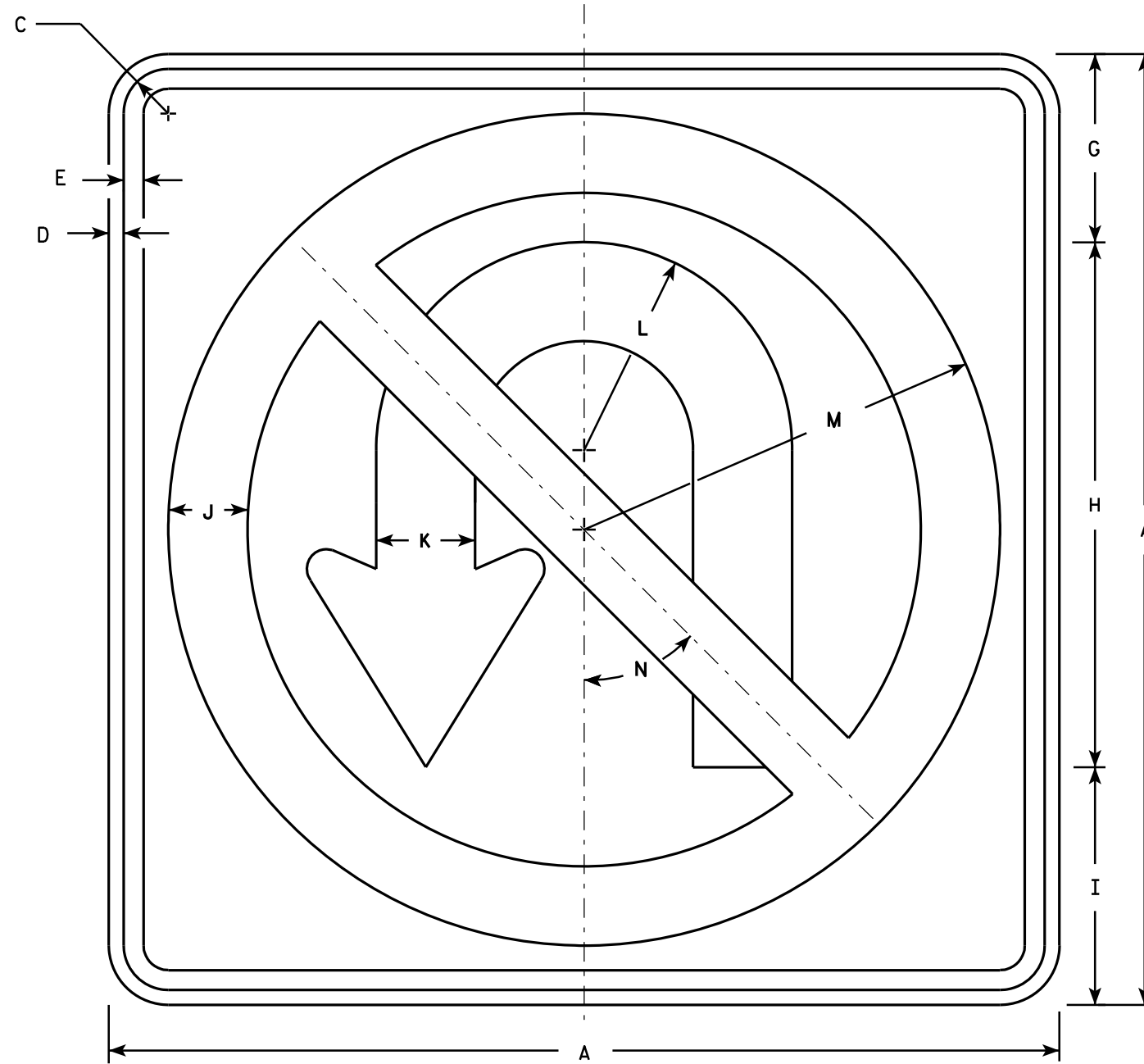
APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

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

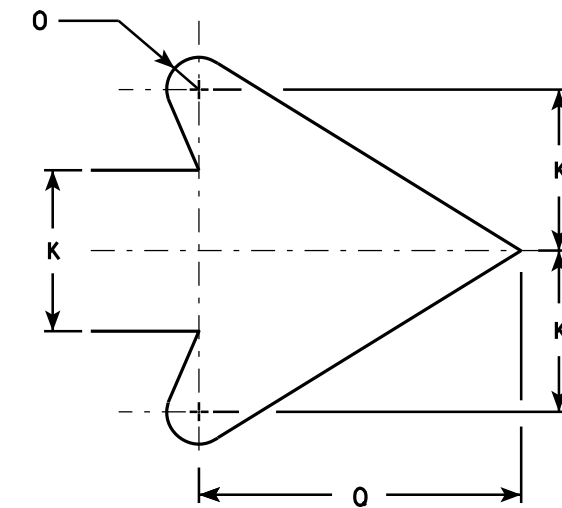
PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: \_\_\_\_\_ E

NOTES

1. 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.



R3-4



ARROW DETAIL

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area Sq. Ft.
1																											
2S	24		1 1/8	3/8	1/2		4 3/4	13 1/4	6	2	2 1/2	5 1/4	10 1/2	45°	1/2		5										4.0
2M	36		1 5/8	5/8	3/4		7 1/8	19 7/8	9	3	3 3/4	7 7/8	15 3/4	45°	3/4		7 5/8										9.0
3	36		1 5/8	5/8	3/4		7 1/8	19 7/8	9	3	3 3/4	7 7/8	15 3/4	45°	3/4		7 5/8										9.0
4	36		1 5/8	5/8	3/4		7 1/8	19 7/8	9	3	3 3/4	7 7/8	15 3/4	45°	3/4		7 5/8										9.0
5	36		1 5/8	5/8	3/4		7 1/8	19 7/8	9	3	3 3/4	7 7/8	15 3/4	45°	3/4		7 5/8										9.0

**STANDARD SIGN**  
**R3-4**

WISCONSIN DEPT OF TRANSPORTATION

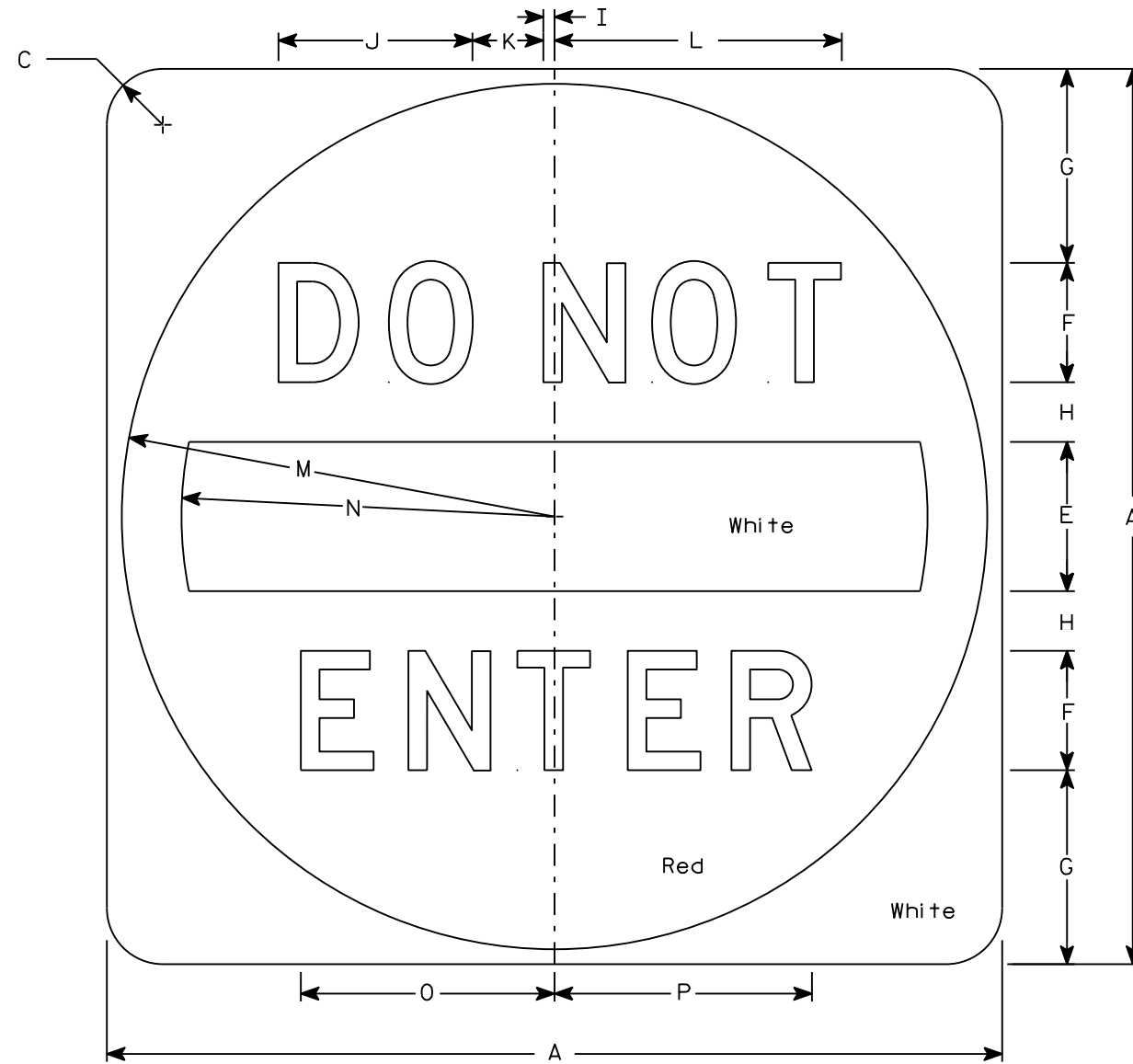
APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

DATE: 12/08/10 PLATE NO. R3-4.11

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

NOTES

1. Sign is Type II - Type H Reflective
2. Color:  
Background - See detail  
Message - White
3. Message Series - D



R5-1

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30		1 7/8		5	4	6 1/2	2	3/8	6 1/2	2 3/8	9 5/8	14 1/2	12 1/2	8 1/2	8 5/8											6.25
2M	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4											9.0
3	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4											9.0
4	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4											9.0
5	48		3		8	6	11	3	5/8	9 3/4	3 5/8	14 1/2	23 1/2	20	12 3/4	12 7/8											16.0

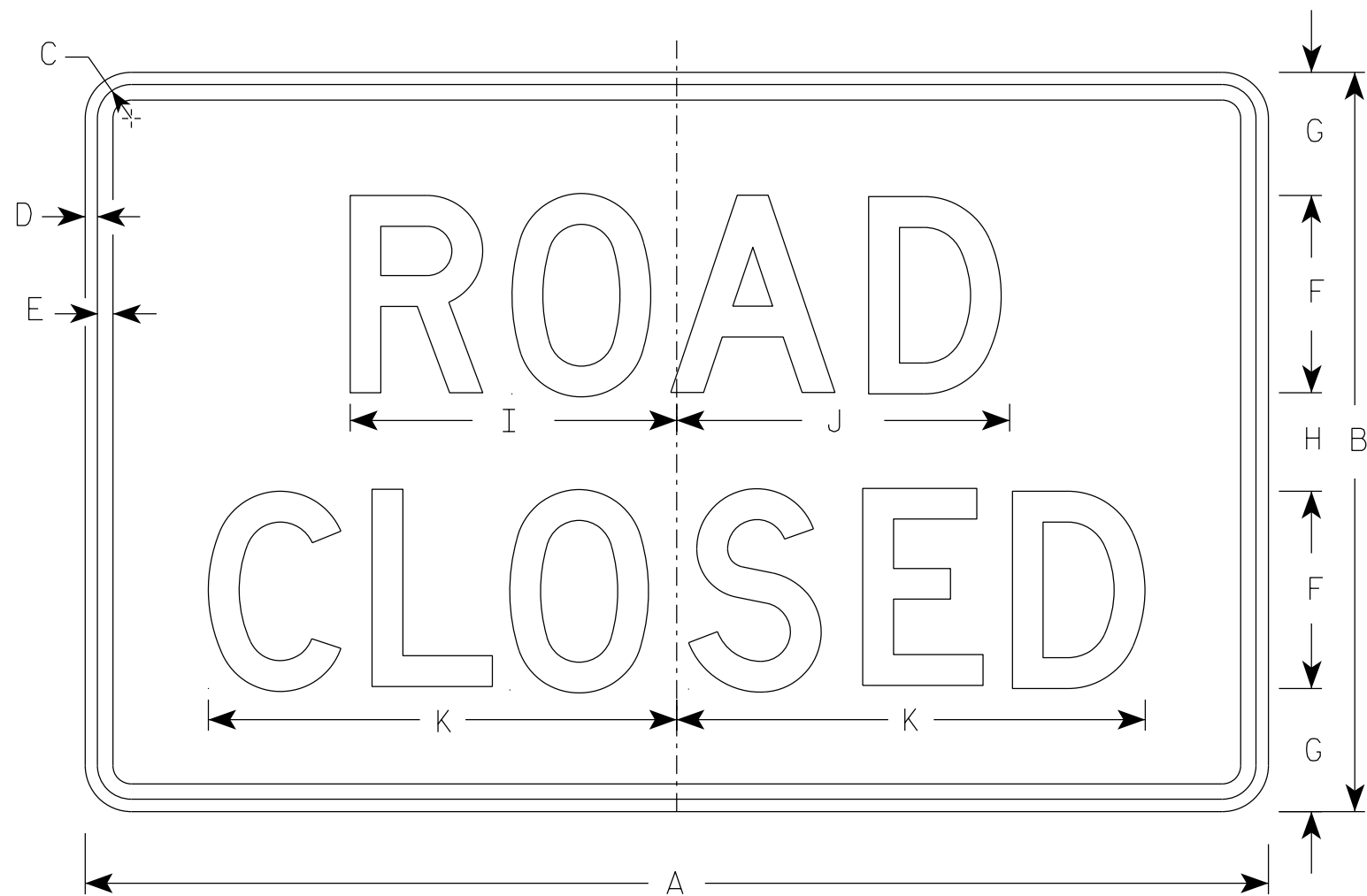
STANDARD SIGN  
R5-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 3/15/18 PLATE NO. R5-1.16

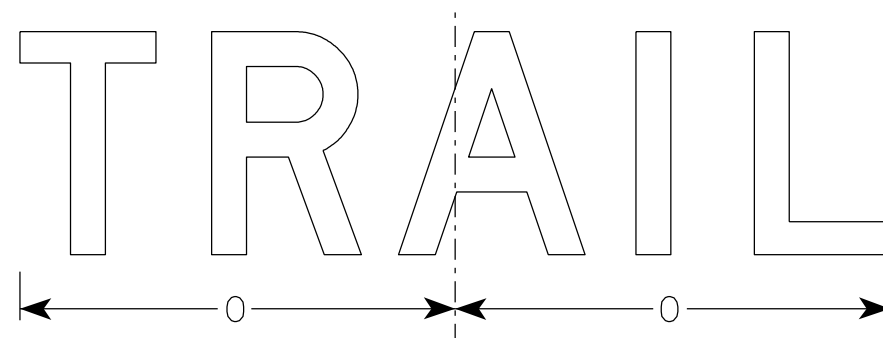
PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: \_\_\_\_\_ **E**



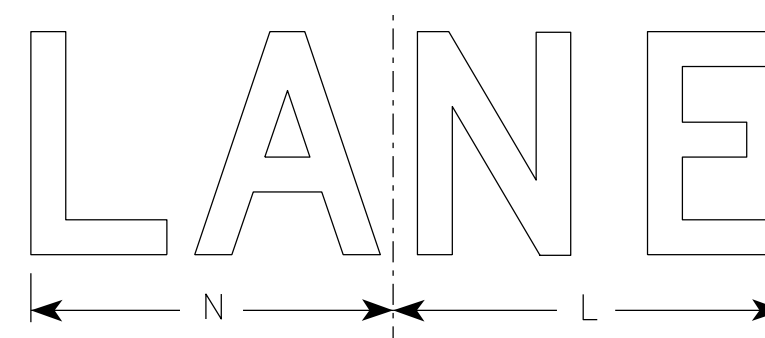
R11-2



R11-2R



R11-2T



R11-2L

NOTES

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

7

7

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

STANDARD SIGN  
R11-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*  
For State Traffic Engineer

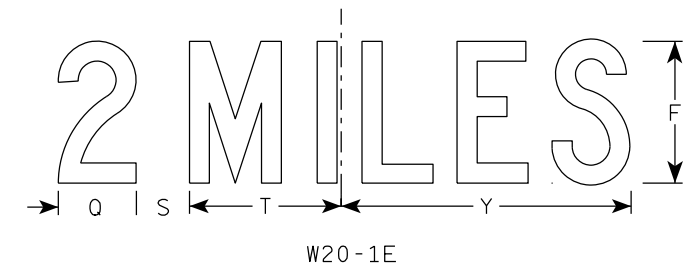
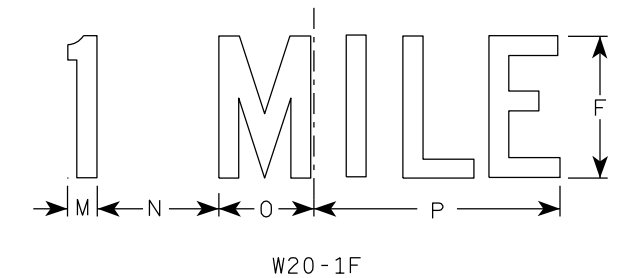
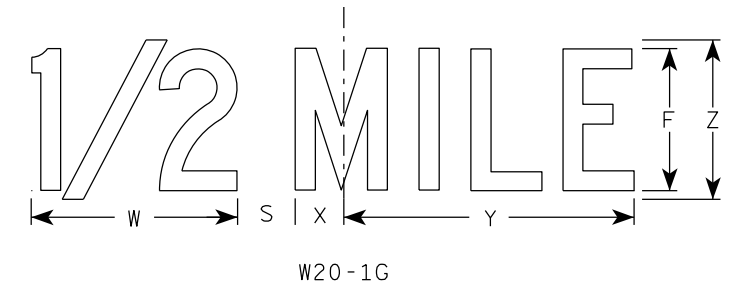
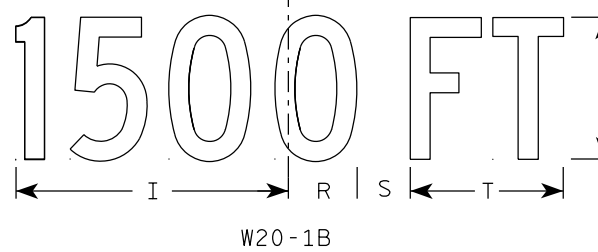
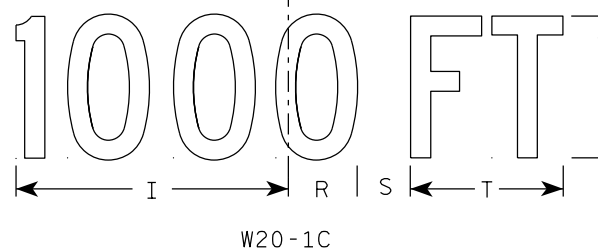
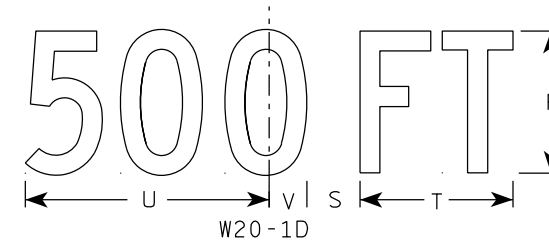
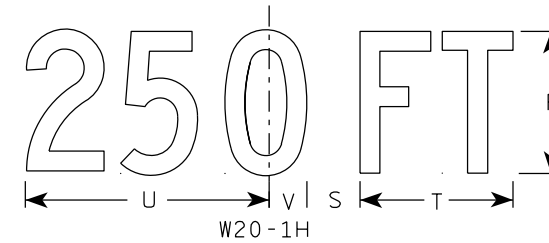
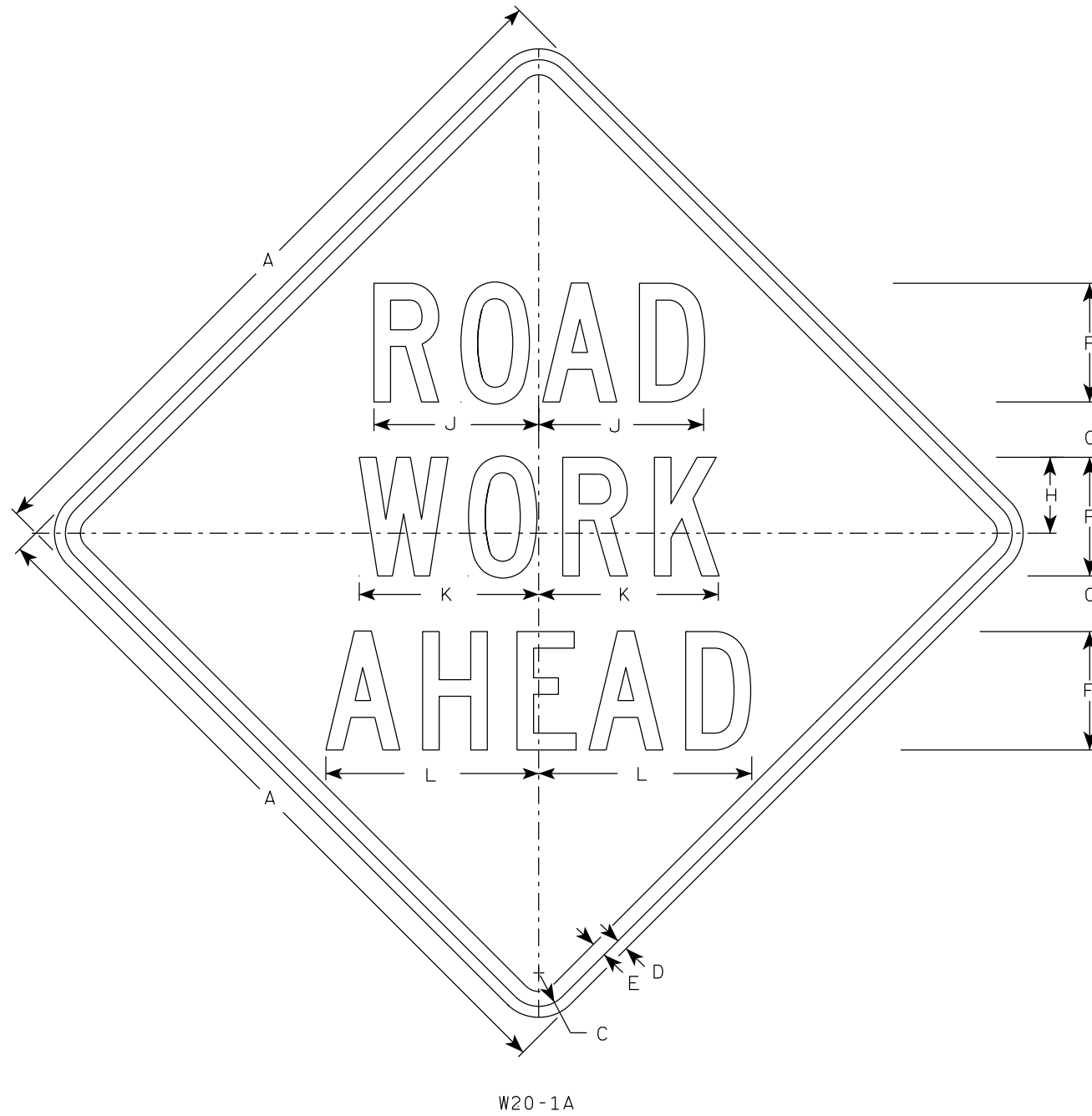
DATE 3/29/2021 PLATE NO. R11-2.11

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



**NOTES**

1. Sign is Type II - Type F Reflective
2. Color:
  - Background - Orange
  - Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



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

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

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

DATE 3/25/2020 PLATE NO. W20-1.11



## ***Wisconsin Department of Transportation***

Dedicated people creating transportation solutions through innovation and exceptional service.

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

WKE

Dec 14, 2021

PROJECT ID: 2250-14-71

COUNTY: RACINE

# STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

## PLAN OF PROPOSED IMPROVEMENT

### STH 20 IH 94 - WIS 31 STH 20 RACINE COUNTY

STATE PROJECT NUMBER  
**2250-14-71**

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
2250-14-71	<b>WISC 2022085</b>	<b>1</b>

ORDER OF SHEETS

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

TOTAL SHEETS = **46**

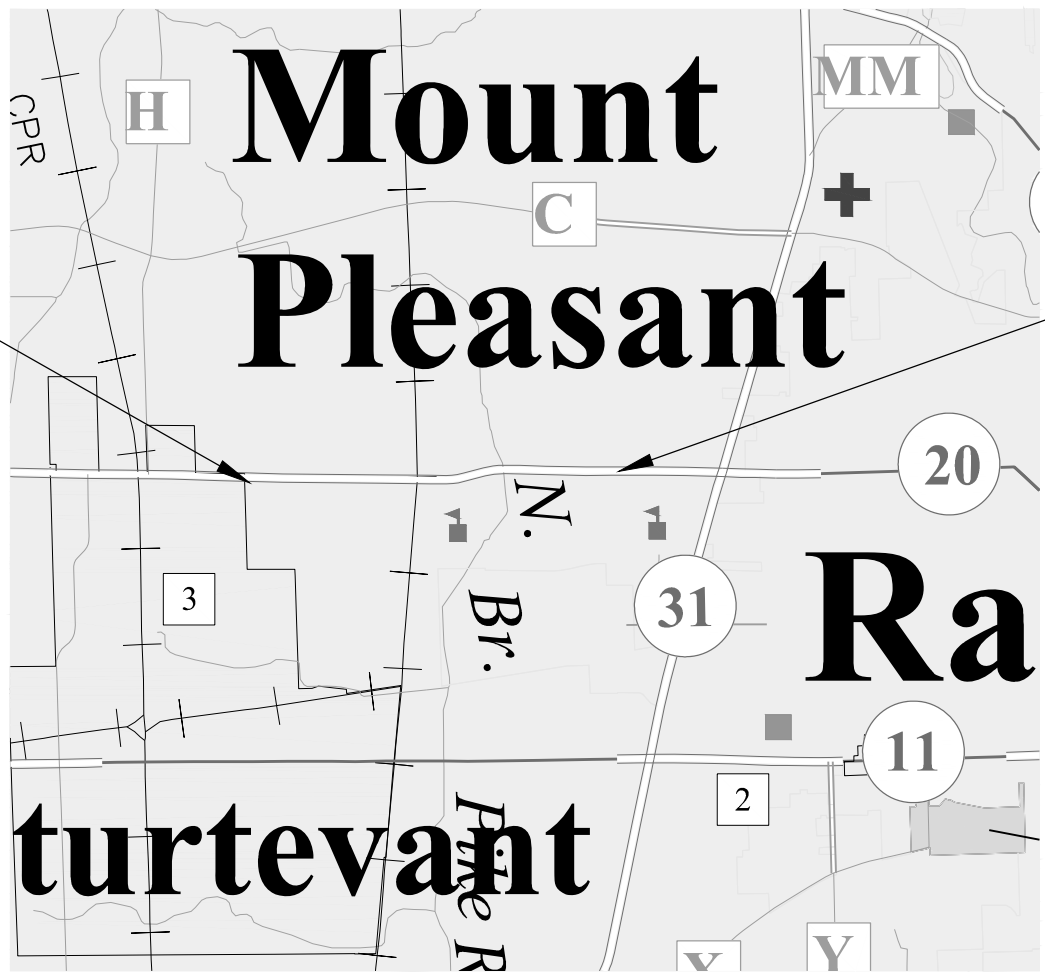


DESIGN DESIGNATION

A.A.D.T.	2017	=	25,800 - 33,500
A.A.D.T.		=	
D.H.V.		=	
D.D.		=	
T.		=	
DESIGN SPEED		=	
ESALS		=	

START PROJECT  
STA 150+00

END PROJECT  
STA 261+00



SECTIONS 13-18, T-3-N, R-22-E

#### CONVENTIONAL SYMBOLS

PLAN	PROFILE
CORPORATE LIMITS	GRADE LINE
PROPERTY LINE	ORIGINAL GROUND
LOT LINE	MARSH OR ROCK PROFILE (To be noted as such)
LIMITED HIGHWAY EASEMENT	SPECIAL DITCH
EXISTING RIGHT OF WAY	GRADE ELEVATION
PROPOSED OR NEW R/W LINE	CULVERT (Profile View)
SLOPE INTERCEPT	UTILITIES
REFERENCE LINE	ELECTRIC
EXISTING CULVERT	FIBER OPTIC
PROPOSED CULVERT (Box or Pipe)	GAS
COMBUSTIBLE FLUIDS	SANITARY SEWER
MARSH AREA	STORM SEWER
WOODED OR SHRUB AREA	TELEPHONE
	WATER
	UTILITY PEDESTAL
	POWER POLE
	TELEPHONE POLE

ORIGINAL PLANS PREPARED BY  
TRAFFIC ANALYSIS & DESIGN INC.

DATE: **JULY 30, 2021**  
(Professional Engineer Signature)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PREPARED BY	Surveyor	WISDOT
Designer	TRAFFIC ANALYSIS & DESIGN INC.	
Project Manager	ALLISON BLACKWOOD	
Regional Examiner		
Regional Supervisor	MANOJOY NAG	

APPROVED FOR THE DEPARTMENT  
DATE: **JULY 30, 2021**  
*Allison Blackwood*  
(Signature)

### GENERAL NOTES

1. NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.
2. ALL UTILITIES SHALL BE LOCATED IN THE FIELD PRIOR TO CONSTRUCTION. NOTIFY THE ENGINEER OF ANY CONFLICTS PRIOR TO CONSTRUCTION.
3. CONTRACTOR SHALL PROTECT SECTION CORNERS AND WITNESS TIES AT 90TH STREET.

### UTILITIES

AT&T LOCAL NETWORK - COMMUNICATION LINE  
DALE DEFEVER  
39869 LINN ST  
CANTON, MI 48147  
(586) 242-2671  
DD2579@ATT.COM  
CC: J.NAVARRO@NORTHWINDTECH.COM

PAETEC COMMUNICATIONS, LLC - COMMUNICATION LINE  
LORI S. KETTER  
314 N. DANZ AVENUE  
GREEN BAY, WI 53402-3526  
414-274-9215  
LORI.KETTER@WINDSTREAM.COM

MOUNT PLEASANT STORM WATER DIST. 1 - SEWER  
LINDSEY WEBER  
8811 CAMPUS DR  
MOUNT PLEASANT, WI 53406  
(262) 664-7833  
LWEBER@MTPLEASANTWI.GOV

VILLAGE OF MOUNT PLEASANT - SEWER  
LINDSEY WEBER  
8811 CAMPUS DR  
MOUNT PLEASANT, WI 53406  
(262) 664-7833  
LWEBER@MTPLEASANTWI.GOV

WE ENERGIES - ELECTRICITY  
JAMES NELSON  
7815 NORTHWESTERN AVE  
RACINE, WI 53406  
WORK: 262-884-6740  
MOBILE: 414-315-1189

### DNR

BENTON STELZEL  
SOUTHEAST REGION TRANSPORTATION LIAISON  
DNR SOUTHEAST REGION HEADQUARTERS  
2300 N. DR. MARTIN LUTHER KING JR. DRIVE  
MILWAUKEE, WI 53212  
BENTON.STELZEL@WISCONSIN.GOV

ATC MANAGEMENT, INC. - ELECTRICITY-TRANSMISSION  
CHRIS DAILEY  
P.O. BOX 47  
WAUKESHA, WI 53187  
(262) 506-6884  
CDAILEY@ATCLLC.COM

AT&T WISCONSIN - COMMUNICATION LINE  
MIKE VANBOVEN  
411 7TH STREET  
RACINE, WI 53403  
(262) 676-3958  
MV3658@ATT.COM

RACINE WATER WORKS COMMISSION - WATER  
CHAD REGALIA  
100 HUBBARD ST  
RACINE, WI 53402  
262-497-4611  
CHAD.REGALIA@CITYOFRACINE.ORG

SPECTRUM - COMMUNICATION LINE  
BEAU ABUYA  
1320 N DR MARTIN LUTHER KING JR DR  
MILWAUKEE, WI 53212  
(414) 908-1343  
WIS.ENGINEERING@CHARTER.COM

WE ENERGIES - GAS/PETROLEUM  
CHRIS DEGRAVE  
7815 NORTHWESTERN AVE  
RACINE, WI 53406  
WORK: 262-886-7018  
MOBILE: 262-939-9814

CITY OF RACINE - SEWER  
ARA MOLITOR  
730 WASHINGTON AVE, RM 304  
RACINE, WI 53403  
WORK NUMBER: 262-636-9487  
MOBILE NUMBER: 262-770-7242  
EMAIL: ARA.MOLITOR@CITYOFRACINE.ORG

LEVEL 3 COMMUNICATIONS LLC - COMMUNICATION LINE  
BRAHIM GADDOUR  
3235 INTERTECH DR, SUITE 600  
BROOKFIELD, WI 53045  
WORK: 414-908-1027  
MOBILE: 414-704-1026  
BRAHIM.GADDOUR@LUMEN.ORG

ROGERS TELECOM - COMMUNICATION LINE  
VICKIE MORAN  
4804 N 40TH ST  
SHEBOYGAN, WI 53083  
920-459-2600  
VMORAN@GABES.COM

TDS METROCOM LLC - COMMUNICATION LINE  
MATTHEW SCHULTE  
525 JUNCTION ROAD  
MADISON, WI 53717  
(262) 754-3063  
MATT.SCHULTE@TDSTELECOM.COM

WISCONSIN DEPARTMENT OF TRANSPORTATION - TRAFFIC SIGNALS  
DERRIN WOLFORD  
141 NW BARSTOW STREET  
WAUKESHA, WI 53188  
(262) 521-4409  
DERRIN.WOLFORD@DOT.WI.GOV

MIDWEST FIBER NETWORKS LLC - COMMUNICATION LINE  
CORY SCHMUKI  
6070 N FLINT RD  
GLENDALE, WI 53029  
WORK: 414-459-3561  
MOBILE: 414-349-2764  
CSCHMUKI@MIDWESTFIBERNETWORKS.COM

CITY OF RACINE - STREET LIGHTING  
ARA MOLITOR  
730 WASHINGTON AVE, RM 304  
RACINE, WI 53403  
WORK NUMBER: 262-636-9487  
MOBILE NUMBER: 262-770-7242  
EMAIL: ARA.MOLITOR@CITYOFRACINE.ORG

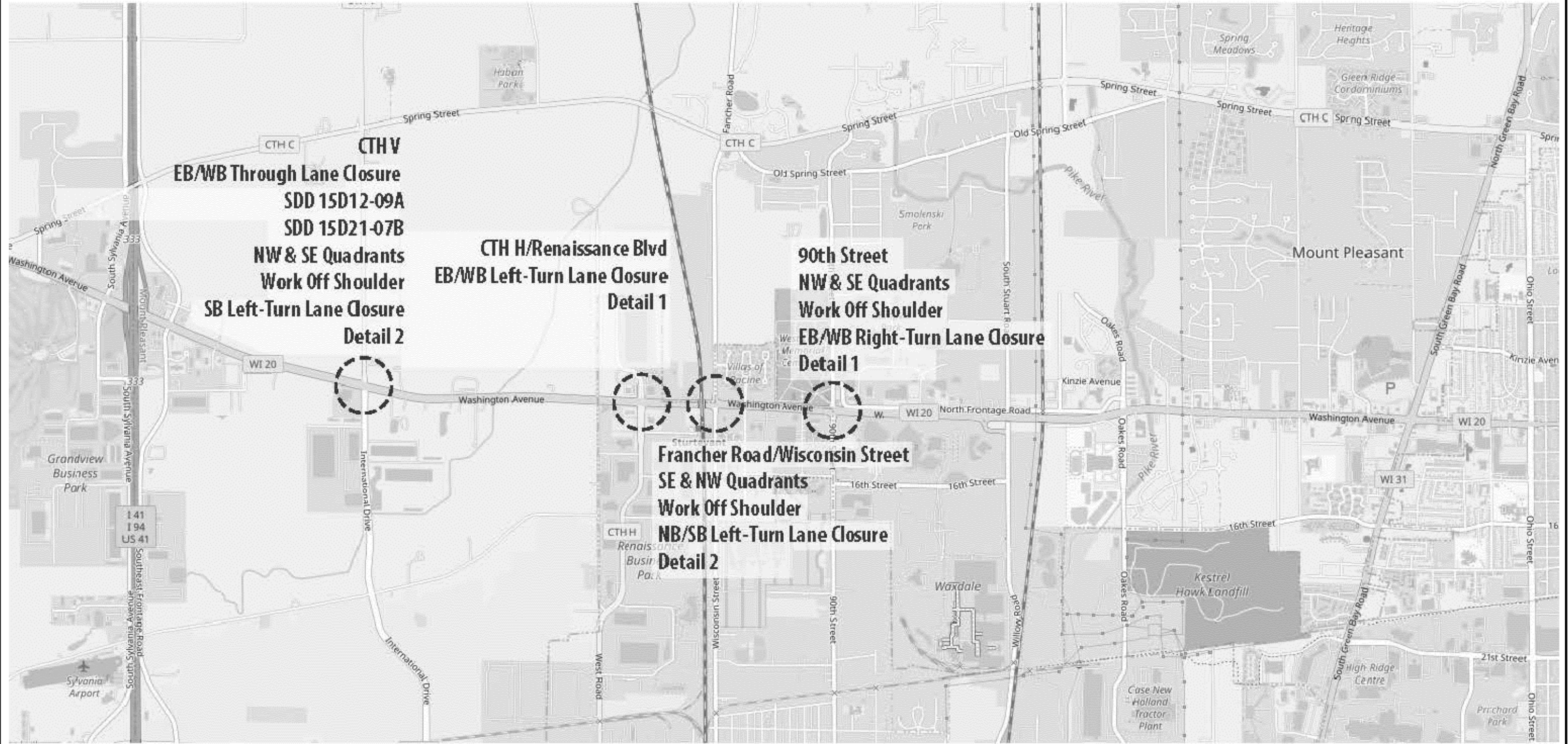
SPRINT COMMUNICATIONS CO LP - COMMUNICATION LINE  
DAN HILLIARD  
849 EARL ST  
SAINT PAUL, MN 55106  
(612) 217-3526  
DAN.J.HILLIARD@T-MOBILE.COM

WISCONSIN DEPARTMENT OF TRANSPORTATION - STREET LIGHTING  
ERIC PEREA  
141 NW BARSTOW STREET  
WAUKESHA, WI 53188  
(262) 574-5422  
ERIC.PEREA@DOT.WI.GOV

WISCONSIN DEPARTMENT OF TRANSPORTATION - ELECTRICAL FIELD UNIT  
935 S. 60TH STREET  
WEST ALLIS, WI 53214  
414-266-1170

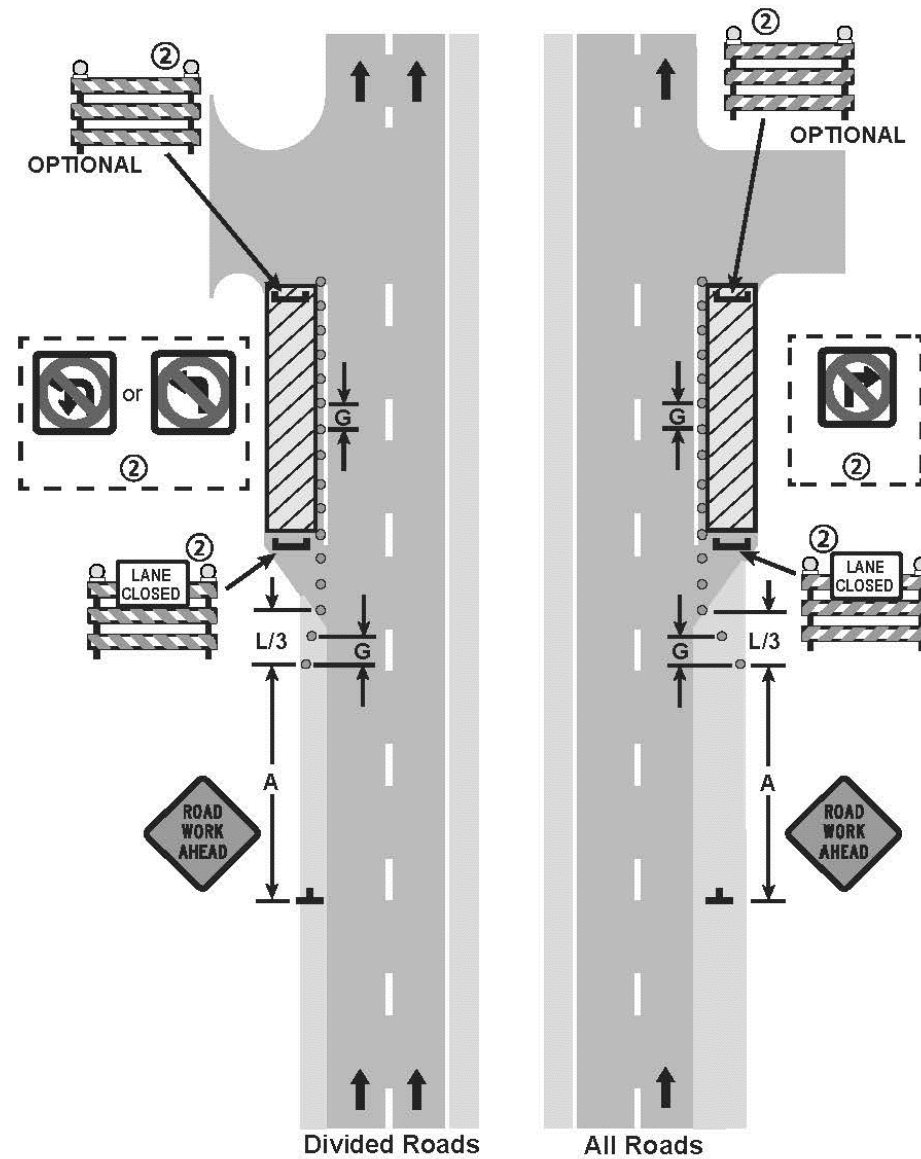


- NOTES
1. WORK OFF SHOULDER REQUIRES WORK VEHICLE WITH AN ACTIVATED 360 DEGREE FLASHING BEACON.
  2. DO NOT INSTALL ANY SIGNS OR TRAFFIC CONTROL DEVICES WITHIN 100 FEET OF RAILROAD OVERPASSES.
  3. TEMPORARY CLOSURE OF A SINGLE THROUGH LANE AND RIGHT AND LEFT TURN LANES MAY OCCUR BETWEEN THE HOURS OF 9AM AND 3PM.









THIS DETAIL APPLIES TO THE FOLLOWING LOCATIONS:

Location	Speed Limit	Work Area	Signal Component	Closure Type	A	G	L	Notes
County H (Renaissance Blvd) East Leg	40	Median Island	Camera (V2 & V3)	WB Lt Turn Lane	350 ft	25 ft	320 ft	
County H (Renaissance Blvd) West Leg	40	Median Island	Camera (V1 & V4)	EB Lt Turn Lane	350 ft	25 ft	320 ft	
90th - East Leg	50	WB Rt Turn Island	Camera (V4)	WB Rt Turn Lane	500 ft	50 ft	600 ft	
90th - West Leg	50	EB Rt Turn Island	Camera (V3)	EB Rt Turn Lane	500 ft	50 ft	600 ft	



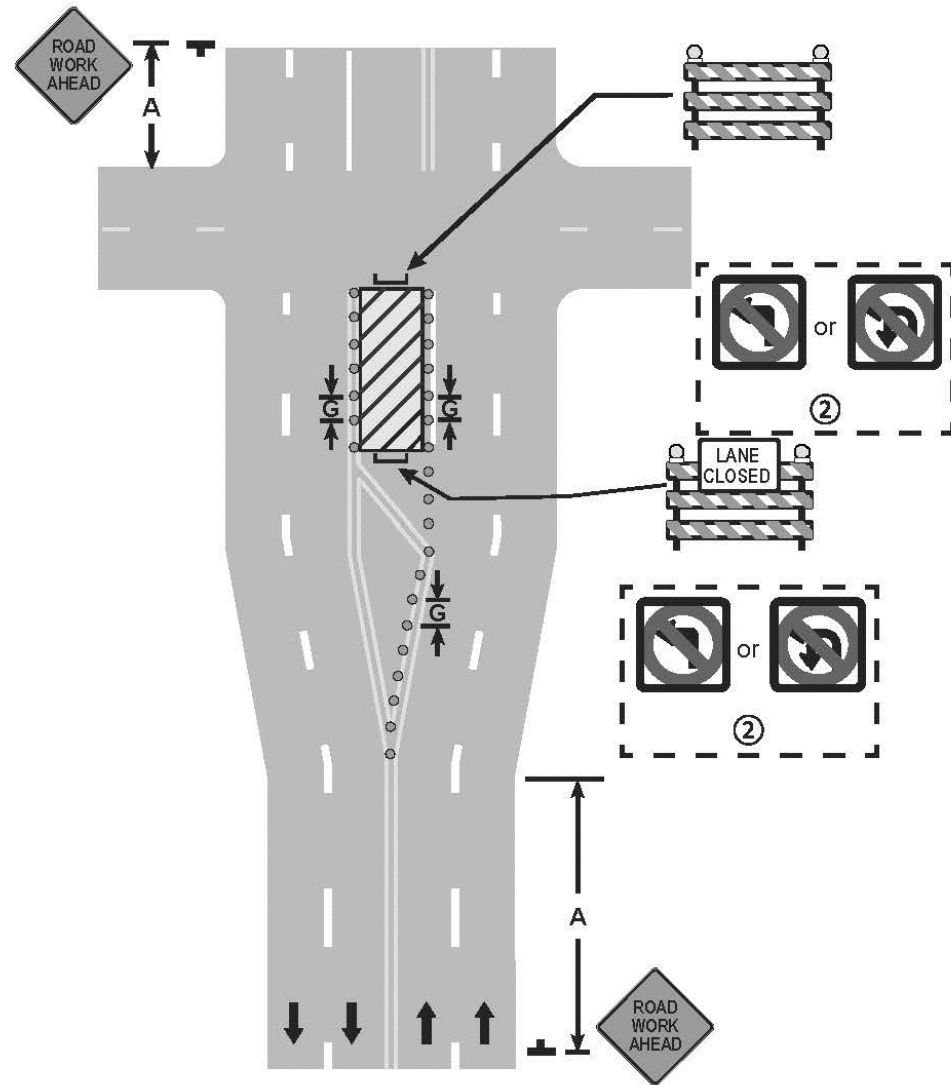
**TURN LANE CLOSURES**  
3 DAYS OR LESS

-  W20-1A, 48"X48"
-  R11-2L, 48"X30"
-  R3-2, 36"X36"
-  R3-1, 36"X36"
-  R3-4, 36"X36"
-  G20-2A, 48"X24"

- NOTES
- SEE TRAFFIC CONTROL OVERVIEW SHEET FOR USAGE OF SDDS AT ALL OTHER PROJECT LOCATIONS.
  - TURN PROHIBITION SIGNS ARE REQUIRED IF TURNS ARE PROHIBITED.
  - END ROAD WORK SIGN SHOULD BE PLACED 500 FEET PAST WORK AREA.
  - OPTIONAL TYPE III BARRICADES ARE NOT REQUIRED.

THIS DETAIL APPLIES TO THE FOLLOWING LOCATIONS:

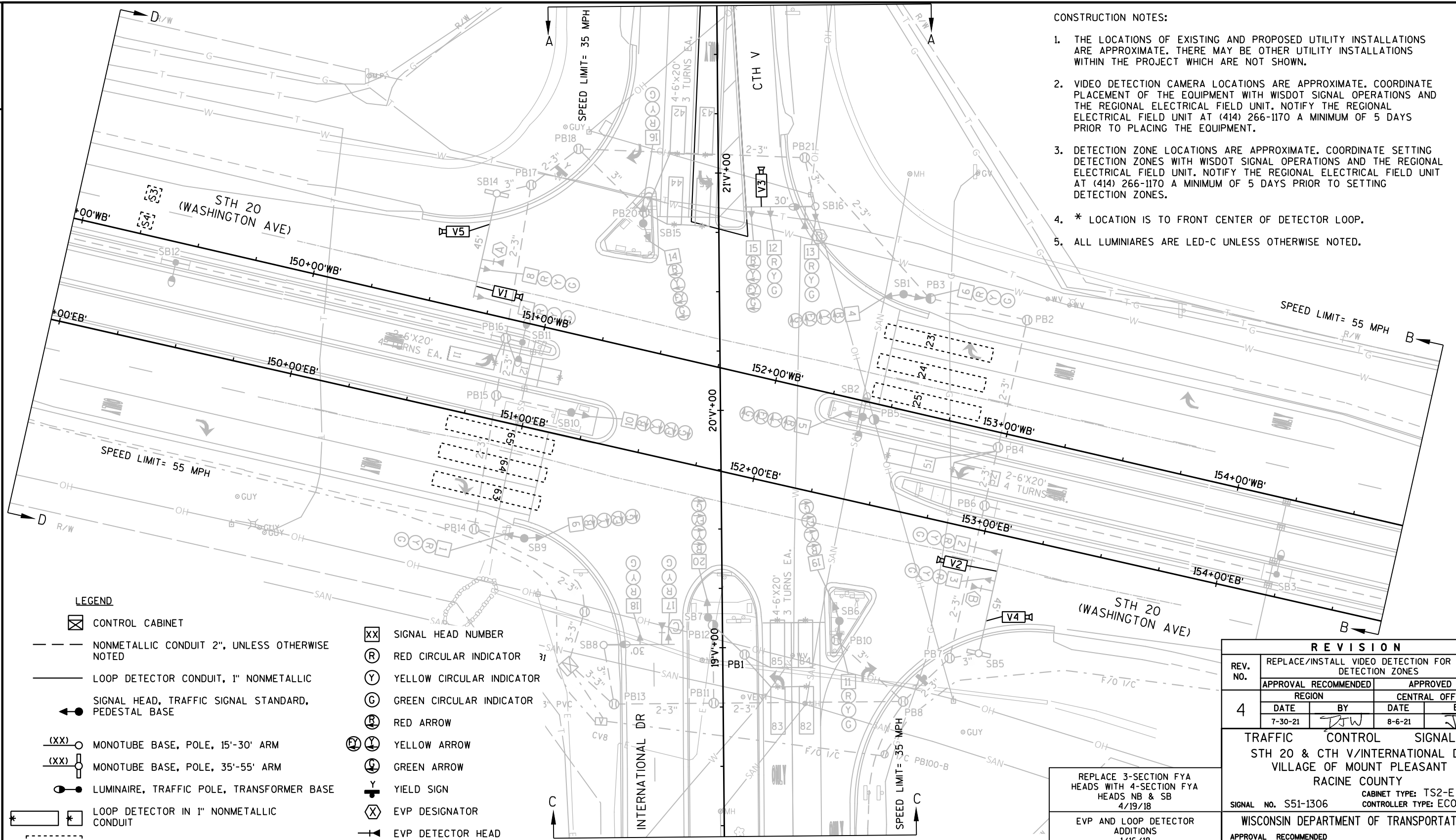
Location	Speed Limit	Work Area	Signal Component	Closure Type	A	G	L	Notes
County V - North Leg	35	NB Through Lane	Camera (V3)	SB Lt Turn Lane	350 ft	25 ft	245 ft	modify by placing east row of drums into NB through lane underneath V3
CTH H (Fancher) /Wisconsin -North Leg	45	NB Through Lane	Camera (V4)	SB Lt Turn Lane	500 ft	50 ft	420 ft	modify by placing east row of drums into NB through lane underneath V4
CTH H (Fancher) /Wisconsin - South Leg	35	SB Through Lane	Camera (V3)	NB Lt Turn Lane	350 ft	25 ft	245 ft	modify by placing west row of drums into NB through lane underneath V3



- W20-1A, 48"X48"
- R11-2L, 48"X30"
- R3-2, 36"X36"
- R3-1, 36"X36"  
24"X24"
- R3-4, 36"X36"  
24"X24"
- G20-2A, 48"X24"

**LEFT TURN LANE CLOSURE**  
**TWO-LANE, TWO WAY or MULTI-LANE UNDIVIDED ROAD**  
 3 DAYS OR LESS

- NOTES
- SEE TRAFFIC CONTROL OVERVIEW SHEET FOR USAGE OF SDDS AT ALL OTHER PROJECT LOCATIONS.
  - END ROAD WORK SIGN SHOULD BE PLACED 500 FEET PAST WORK AREA.



- 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. VIDEO DETECTION CAMERA LOCATIONS ARE APPROXIMATE. COORDINATE PLACEMENT OF THE EQUIPMENT WITH WISDOT SIGNAL OPERATIONS AND THE REGIONAL ELECTRICAL FIELD UNIT. NOTIFY THE REGIONAL ELECTRICAL FIELD UNIT AT (414) 266-1170 A MINIMUM OF 5 DAYS PRIOR TO PLACING THE EQUIPMENT.
  3. DETECTION ZONE LOCATIONS ARE APPROXIMATE. COORDINATE SETTING DETECTION ZONES WITH WISDOT SIGNAL OPERATIONS AND THE REGIONAL ELECTRICAL FIELD UNIT. NOTIFY THE REGIONAL ELECTRICAL FIELD UNIT AT (414) 266-1170 A MINIMUM OF 5 DAYS PRIOR TO SETTING DETECTION ZONES.
  4. \* LOCATION IS TO FRONT CENTER OF DETECTOR LOOP.
  5. ALL LUMINIARES ARE LED-C UNLESS OTHERWISE NOTED.



LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- LOOP DETECTOR CONDUIT, 1" NONMETALLIC
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- MONOTUBE BASE, POLE, 15'-30' ARM
- MONOTUBE BASE, POLE, 35'-55' ARM
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- VIDEO DETECTION AREA
- VIDEO DETECTION CAMERA
- PULL BOX, 24" X 36"
- PULL BOX, 24" X 42"
- SIGNAL HEAD NUMBER
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR
- RED ARROW
- YELLOW ARROW
- GREEN ARROW
- YIELD SIGN
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- NONMETALLIC INTERCONNECT CONDUIT 2", UNLESS OTHERWISE NOTED

NOTE: ALL LENSES ARE 12-INCH GRAYSHADE REPRESENTS EXISTING

**MONOTUBE STRUCTURES**  
 SB5 = S-51-1151  
 SB8 = S-51-1152  
 SB14 = S-51-1153  
 SB16 = S-51-1154

REPLACE 3-SECTION FYA HEADS WITH 4-SECTION FYA HEADS NB & SB 4/19/18  
 EVP AND LOOP DETECTOR ADDITIONS 1/16/18  
 INSTALL FIBER OPTIC INTERCONNECT, PLAN UPDATE PER 2250-14-70 9/27/17  
 INITIAL INSTALL 5/10/13

REVISION			
REV. NO.	REPLACE/INSTALL VIDEO DETECTION FOR SYSTEM DETECTION ZONES		
4	APPROVAL RECOMMENDED	APPROVED	
	REGION	CENTRAL OFFICE	
	DATE	BY	DATE BY
	7-30-21	JAW	8-6-21 JRI
TRAFFIC CONTROL SIGNAL STH 20 & CTH V/INTERNATIONAL DR VILLAGE OF MOUNT PLEASANT RACINE COUNTY CABINET TYPE: TS2-E SIGNAL NO. S51-1306 CONTROLLER TYPE: ECONOLITE			
WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVAL RECOMMENDED	DAVID A. BRANTNER REGION TRAFFIC ENGINEER		
DATE 5/10/13			
APPROVED	JOANNA L. BUSH STATE TRAFFIC ENGINEER		
DATE 5/21/13			
REGION CONTACT: D. WOLFORD		PAGE 1 OF 4	
DESIGNED BY:		REVISED BY: TRAFFIC ANALYSIS & DESIGN INC.	

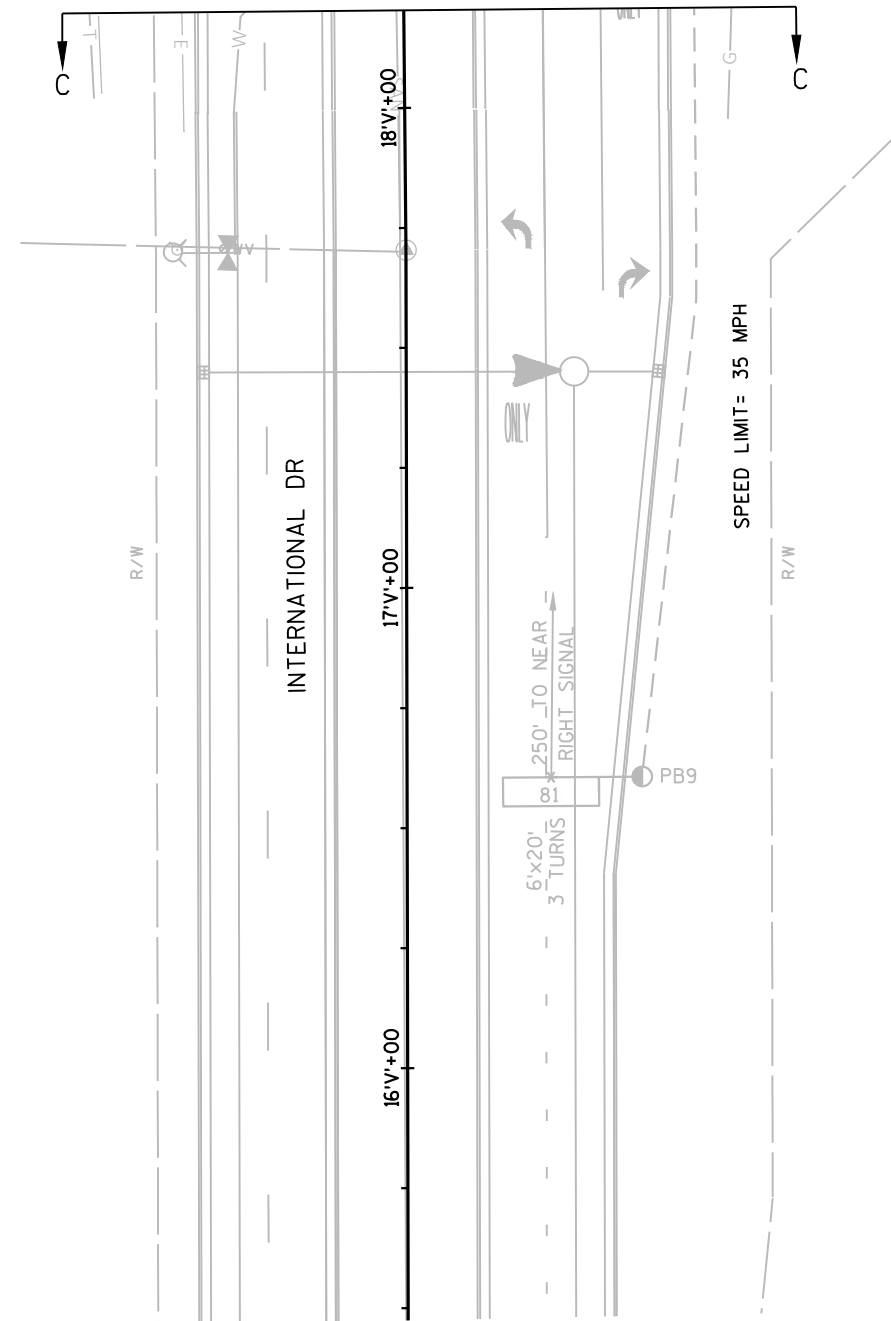
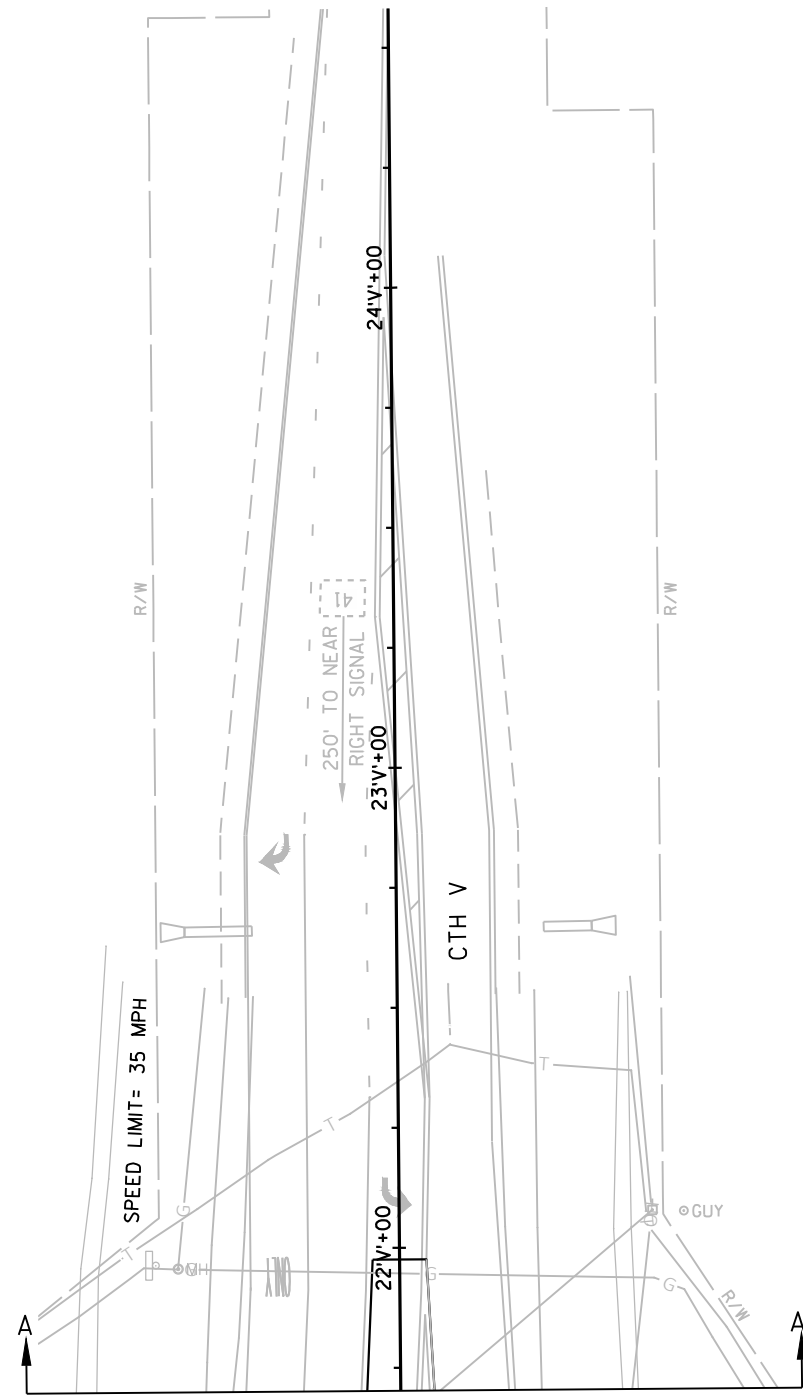




TRAFFIC CONTROL SIGNAL  
 STH 20 & CTH V/INTERNATIONAL DR  
 VILLAGE OF MOUNT PLEASANT  
 RACINE COUNTY

SIGNAL NO. S51-1306

REGION CONTACT: D. WOLFORD  
 DESIGNED BY: PAGE 2 OF 4  
 REVISED BY: TRAFFIC ANALYSIS & DESIGN INC.

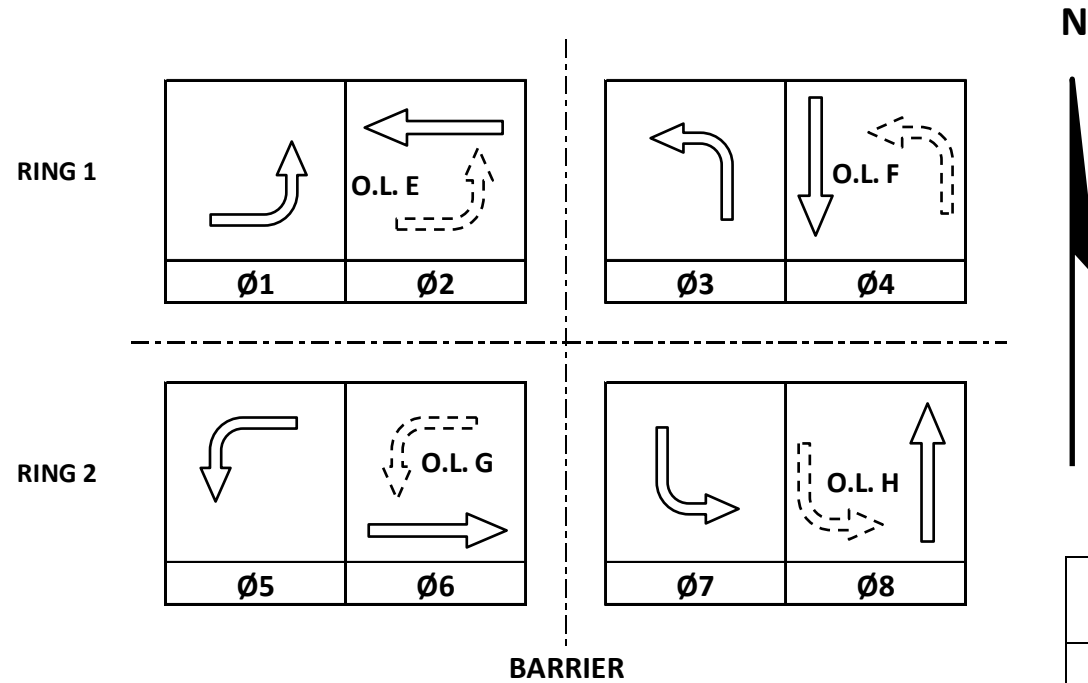


TRAFFIC CONTROL SIGNAL  
 STH 20 & CTH V/INTERNATIONAL DR  
 VILLAGE OF MOUNT PLEASANT  
 RACINE COUNTY

SIGNAL NO. S51-1306

REGION CONTACT: D. WOLFORD  
 DESIGNED BY: PAGE 3 OF 4  
 REVISED BY: TRAFFIC ANALYSIS & DESIGN INC.

	HEAD NUMBERS	FLASH
Ø1	4,5	R
Ø2	6,7,8	R
Ø3	14,15	R
Ø4	16,17,18	R
Ø5	9,10	R
Ø6	1,2,3	R
Ø7	19,20	R
Ø8	11,12,13	R
Ø2P		
Ø4P		
Ø6P		
Ø8P		
OLE	4,5	-
OLF	14,15	-
OLG	9,10	-
OLH	19,20	-



**CONTROLLER LOGIC**

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

**EMERGENCY VEHICLE PREEMPTION SEQUENCE**

EMERGENCY VEHICLE PREEMPTOR	A	B	C	D
MOVEMENT				
PHASE	2+5	6+1	4+7	8+3

AFTER PREEMPTION SEQUENCE 2+5 OR 6+1, CONTROLLER SHALL RETURN TO PHASES 2+6.

AFTER PREEMPTION SEQUENCE 4+7 OR 8+3, CONTROLLER SHALL RETURN TO PHASES 4+8.

**DETECTOR LOGIC**

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR*(S)	11	42	44	51	81	82	84	
CALLED PHASE	1	4	4	5	8	8	8	
CALL OPTION	X	X	X	X		X	X	
DELAY TIME								
EXTENTION OPTION	X	X	X	X	X	X	X	
EXTEND TIME					X			
USE ADDED INITIAL								
CROSS SWITCH PHASE	2			6				

DETECTOR INPUT	19	17	23	21	27	25	31	29
PLAN LOOP DETECTOR*(S)	21	23	25	61	63	65	S2	S4
CALLED PHASE	2			6				
CALL OPTION	X			X				
DELAY TIME								
EXTENTION OPTION	X			X				
EXTEND TIME								
USE ADDED INITIAL	X			X				
CROSS SWITCH PHASE								

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR*(S)	12	43	45	52	83	85		
CALLED PHASE	1	4	4	5	8	8		
CALL OPTION	X	X	X	X	X	X		
DELAY TIME								
EXTENTION OPTION	X	X	X	X	X	X		
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE	2			6				

DETECTOR INPUT	20	18	24	22	28	26	32	30
PLAN LOOP DETECTOR*(S)	22	24	41	62	64	S1	S3	
CALLED PHASE	2		4	6				
CALL OPTION	X			X				
DELAY TIME								
EXTENTION OPTION	X		X	X				
EXTEND TIME			X					
USE ADDED INITIAL	X			X				
CROSS SWITCH PHASE								

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

TYPE OF COORDINATION	
NONE	
TBC	
TRAFFIC RESPONSIVE	X
ADAPTIVE	X
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM NO:	SS- 51-0036

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

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

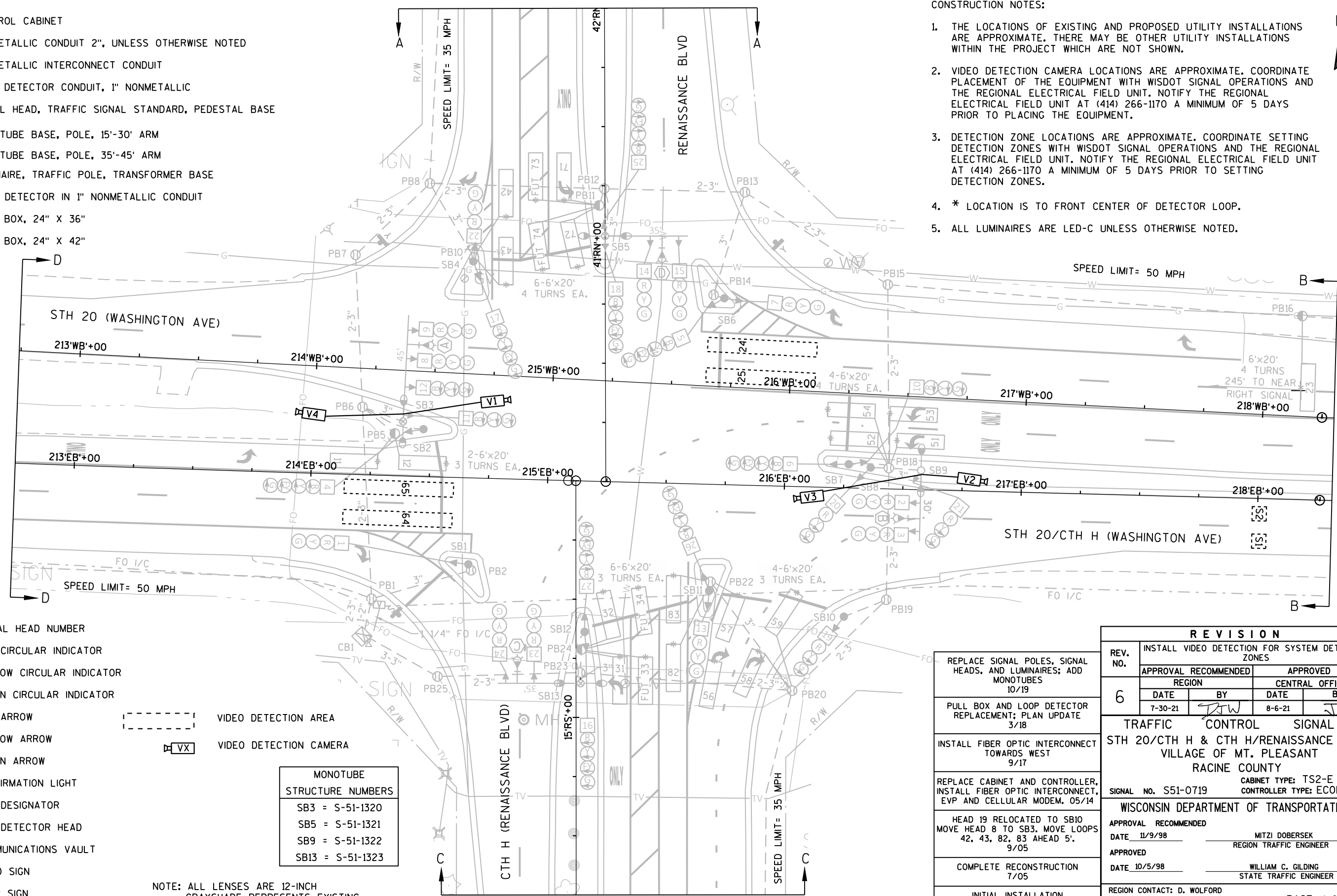
STH 20 & CTH V/INTERNATIONAL DR	
VILLAGE OF MOUNT PLEASANT	
RACINE COUNTY	
SIGNAL NO: S51-1306	CABINET TYPE: TS2-E
CONTROLLER TYPE: ECONOLITE	
DATE: 5/2021	PAGE NUMBER: 4 OF 4

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- NONMETALLIC INTERCONNECT CONDUIT
- LOOP DETECTOR CONDUIT, 1" NONMETALLIC
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- MONOTUBE BASE, POLE, 15'-30' ARM
- MONOTUBE BASE, POLE, 35'-45' ARM
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- PULL BOX, 24" X 36"
- PULL BOX, 24" X 42"

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. VIDEO DETECTION CAMERA LOCATIONS ARE APPROXIMATE. COORDINATE PLACEMENT OF THE EQUIPMENT WITH WISDOT SIGNAL OPERATIONS AND THE REGIONAL ELECTRICAL FIELD UNIT. NOTIFY THE REGIONAL ELECTRICAL FIELD UNIT AT (414) 266-1170 A MINIMUM OF 5 DAYS PRIOR TO PLACING THE EQUIPMENT.
3. DETECTION ZONE LOCATIONS ARE APPROXIMATE. COORDINATE SETTING DETECTION ZONES WITH WISDOT SIGNAL OPERATIONS AND THE REGIONAL ELECTRICAL FIELD UNIT. NOTIFY THE REGIONAL ELECTRICAL FIELD UNIT AT (414) 266-1170 A MINIMUM OF 5 DAYS PRIOR TO SETTING DETECTION ZONES.
4. \* LOCATION IS TO FRONT CENTER OF DETECTOR LOOP.
5. ALL LUMINAIRES ARE LED-C UNLESS OTHERWISE NOTED.



- SIGNAL HEAD NUMBER
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR
- RED ARROW
- YELLOW ARROW
- GREEN ARROW
- CONFIRMATION LIGHT
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- COMMUNICATIONS VAULT
- YIELD SIGN
- STOP SIGN

VIDEO DETECTION AREA

VIDEO DETECTION CAMERA

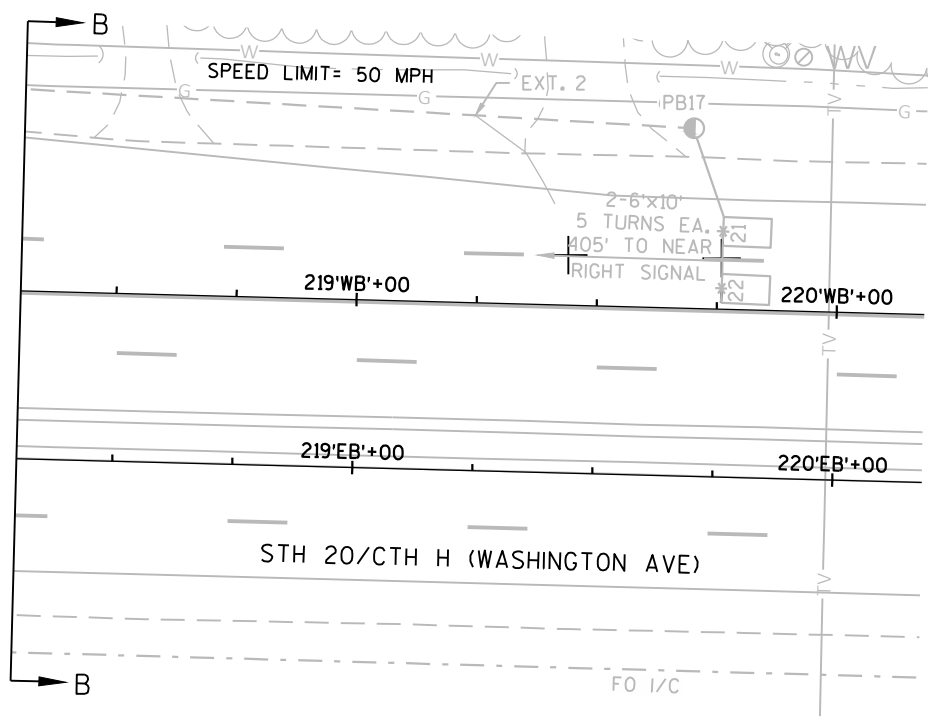
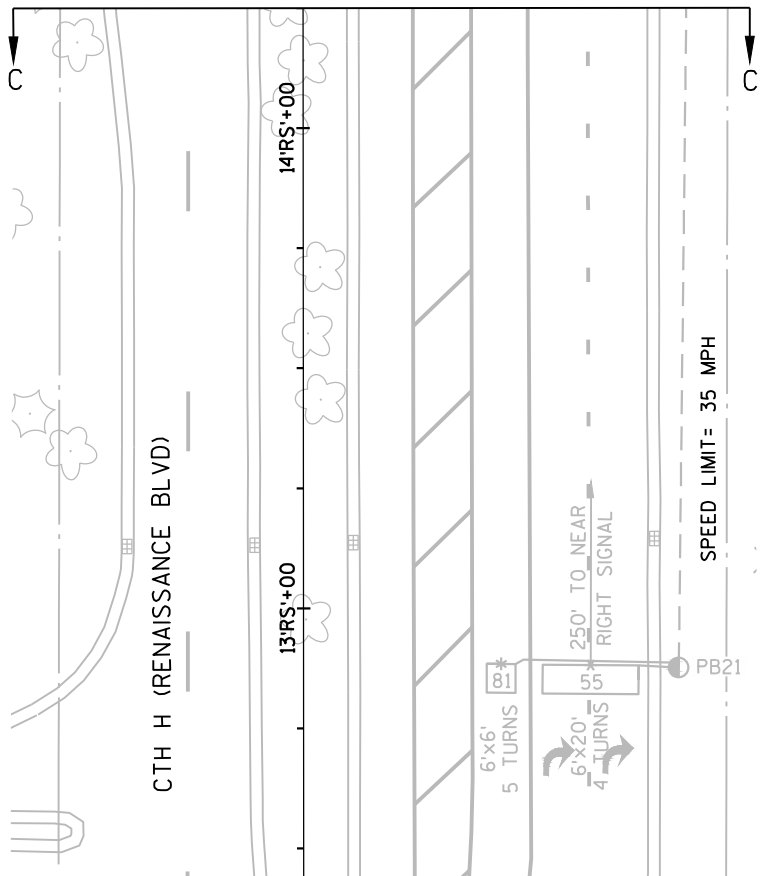
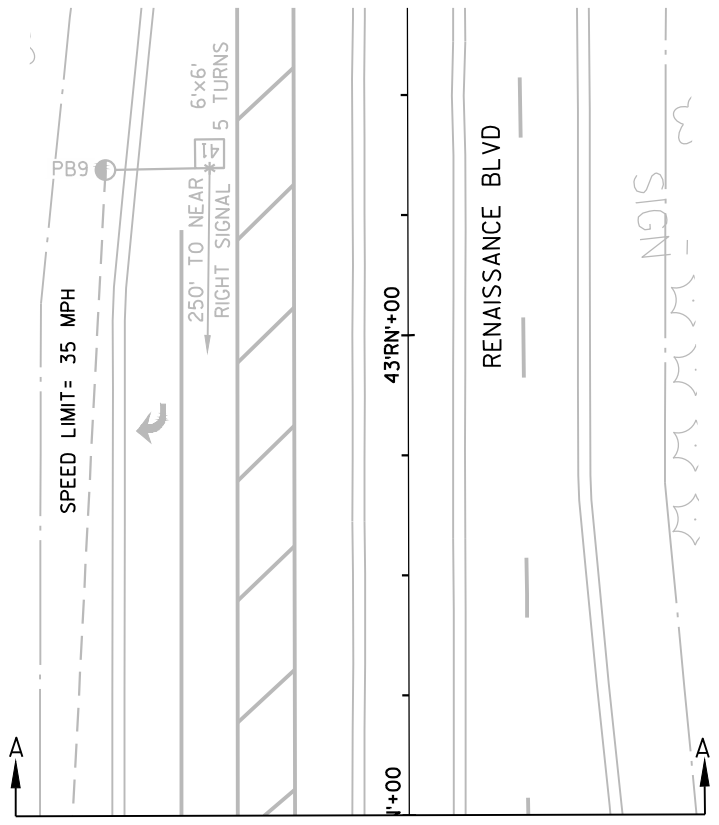
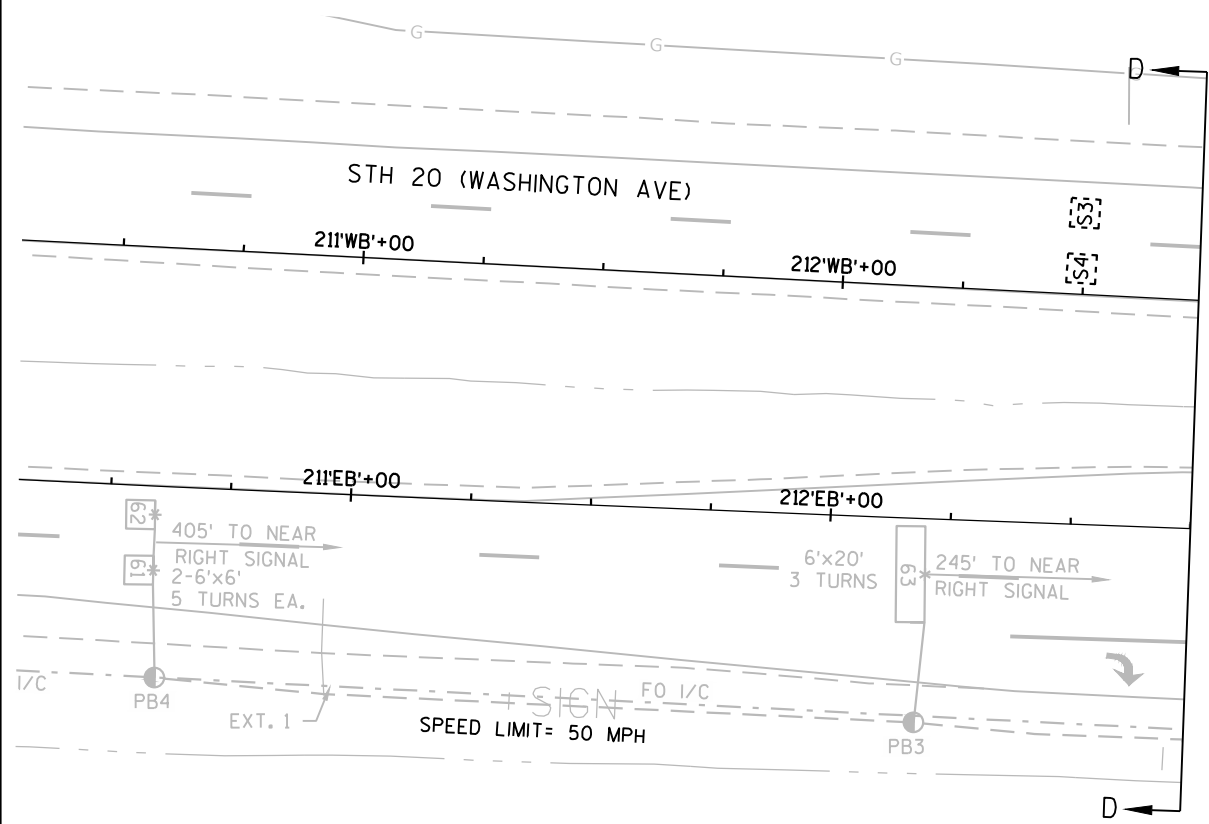
MONOTUBE STRUCTURE NUMBERS	
SB3	= S-51-1320
SB5	= S-51-1321
SB9	= S-51-1322
SB13	= S-51-1323

NOTE: ALL LENSES ARE 12-INCH  
GRAYSHADE REPRESENTS EXISTING

REPLACE SIGNAL POLES, SIGNAL HEADS, AND LUMINAIRES; ADD MONOTUBES 10/19
PULL BOX AND LOOP DETECTOR REPLACEMENT; PLAN UPDATE 3/18
INSTALL FIBER OPTIC INTERCONNECT TOWARDS WEST 9/17
REPLACE CABINET AND CONTROLLER, INSTALL FIBER OPTIC INTERCONNECT, EVP AND CELLULAR MODEM. 05/14
HEAD 19 RELOCATED TO SB10 MOVE HEAD 8 TO SB3. MOVE LOOPS 42, 43, 82, 83 AHEAD 5'. 9/05
COMPLETE RECONSTRUCTION 7/05
INITIAL INSTALLATION DATE NOT AVAILABLE

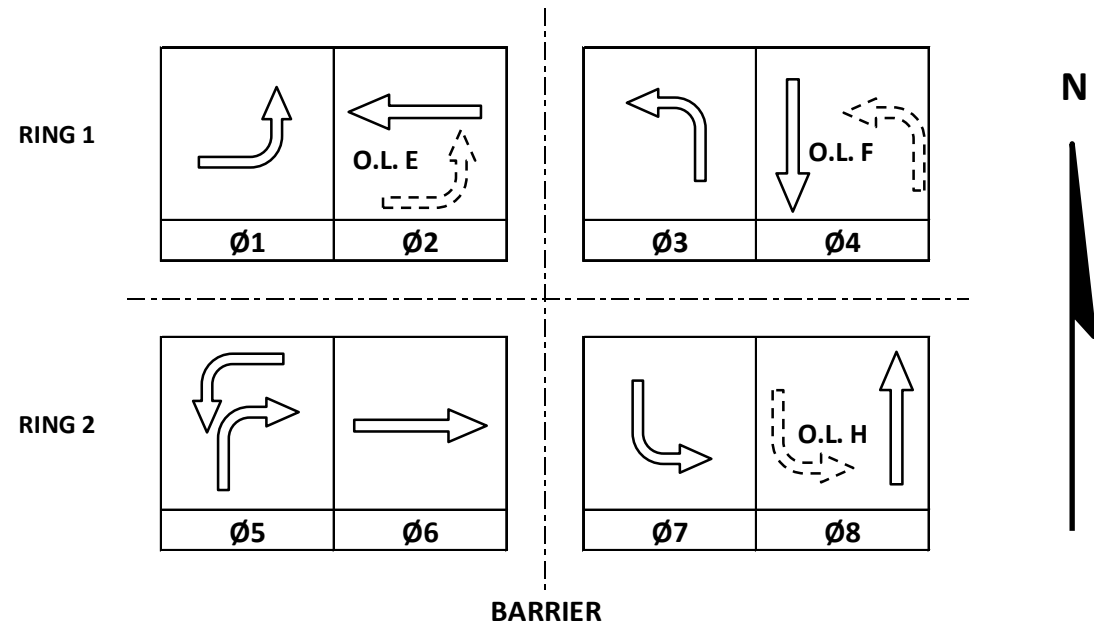
REVISION			
REV. NO.	INSTALL VIDEO DETECTION FOR SYSTEM DETECTION ZONES		
6	APPROVAL RECOMMENDED	APPROVED	
	REGION	CENTRAL OFFICE	
DATE	BY	DATE	BY
7-30-21	JRW	8-6-21	JRW
TRAFFIC CONTROL SIGNAL STH 20/CTH H & CTH H/RENAISSANCE BLVD VILLAGE OF MT. PLEASANT RACINE COUNTY			
SIGNAL NO. S51-0719		CABINET TYPE: TS2-E CONTROLLER TYPE: ECONOLITE	
WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVAL RECOMMENDED		MITZI DOBERSEK REGION TRAFFIC ENGINEER	
DATE	11/9/98		
APPROVED		WILLIAM C. GILDING STATE TRAFFIC ENGINEER	
DATE	10/5/98		
REGION CONTACT: D. WOLFORD		PAGE 1 OF 3	
DESIGNED BY:		REVISED BY: TRAFFIC ANALYSIS & DESIGN INC.	

7-30-21 MKC



TRAFFIC CONTROL SIGNAL  
 STH 20/CTH H & CTH H/RENAISSANCE BLVD  
 VILLAGE OF MT. PLEASANT  
 RACINE COUNTY  
 SIGNAL NO. S51-0719  
 REGION CONTACT: D. WOLFORD  
 DESIGNED BY: PAGE 2 OF 3  
 REVISED BY: TRAFFIC ANALYSIS & DESIGN INC.

	HEAD NUMBERS	FLASH
Ø1	4,5,6	R
Ø2	7,8,9	R
Ø3	16,17,18	R
Ø4	22,23,24	R
Ø5	10,11,12,19,20,21	R, R
Ø6	1,2,3	R
Ø7	25,26,27	R
Ø8	13,14,15	R
Ø2P		
Ø4P		
Ø6P		
Ø8P		
OLE	4,5,6	-
OLF	16,17,18	-
OLG		
OLH	25,26,27	-



**CONTROLLER LOGIC**

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

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

TYPE OF COORDINATION	
NONE	
TBC	
TRAFFIC RESPONSIVE	X
ADAPTIVE	X
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM NO:	SS- 51-0094

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

**EMERGENCY VEHICLE PREEMPTION SEQUENCE**

EMERGENCY VEHICLE PREEMPTOR	A	B	C	D
MOVEMENT				
PHASE	2+5	6+1	4+7	8+3

AFTER PREEMPTION SEQUENCE 2+5 OR 6+1, CONTROLLER SHALL RETURN TO PHASES 2+6.  
 AFTER PREEMPTION SEQUENCE 4+7 OR 8+3, CONTROLLER SHALL RETURN TO PHASES 4+8.

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

**DETECTOR LOGIC**

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR*(S)	11	21/22	31	33	41	43	51	53
CALLED PHASE	1	2	3	FUTURE	4	4	5	5
CALL OPTION	X	X	X			X	X	X
DELAY TIME								
EXTENTION OPTION	X	X	X		X	X	X	X
EXTEND TIME					X			
USE ADDED INITIAL		X						
CROSS SWITCH PHASE	2		4					

DETECTOR INPUT	19	17	23	21	27	25	31	29
PLAN LOOP DETECTOR*(S)	55	57	59	61/62	71	73	81	83
CALLED PHASE	5	5	5	6	7	FUTURE	8	8
CALL OPTION		X	X	X	X			X
DELAY TIME								
EXTENTION OPTION	X	X	X	X	X		X	X
EXTEND TIME	X						X	
USE ADDED INITIAL				X				
CROSS SWITCH PHASE					8			

DETECTOR INPUT	35	33	39	37	43	41	47	45
PLAN LOOP DETECTOR*(S)	24	64	S1	S3				
CALL OPTION								
DELAY TIME								
EXTENTION OPTION								
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR*(S)	12	23	32	34	42		52	54
CALLED PHASE	1	2	3	FUTURE	4		5	5
CALL OPTION	X	X	X		X		X	X
DELAY TIME								
EXTENTION OPTION	X	X	X		X		X	X
EXTEND TIME								
USE ADDED INITIAL		X						
CROSS SWITCH PHASE	2		4					

DETECTOR INPUT	20	18	24	22	28	26	32	30
PLAN LOOP DETECTOR*(S)	56	58		63	72	74	82	
CALLED PHASE	5	5		6	7	FUTURE	8	
CALL OPTION	X	X		X	X		X	
DELAY TIME								
EXTENTION OPTION	X	X		X	X		X	
EXTEND TIME								
USE ADDED INITIAL				X				
CROSS SWITCH PHASE					8			

DETECTOR INPUT	36	34	40	38	44	42	48	46
PLAN LOOP DETECTOR*(S)	25	65	S2	S4				
CALL OPTION								
DELAY TIME								
EXTENTION OPTION								
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE								

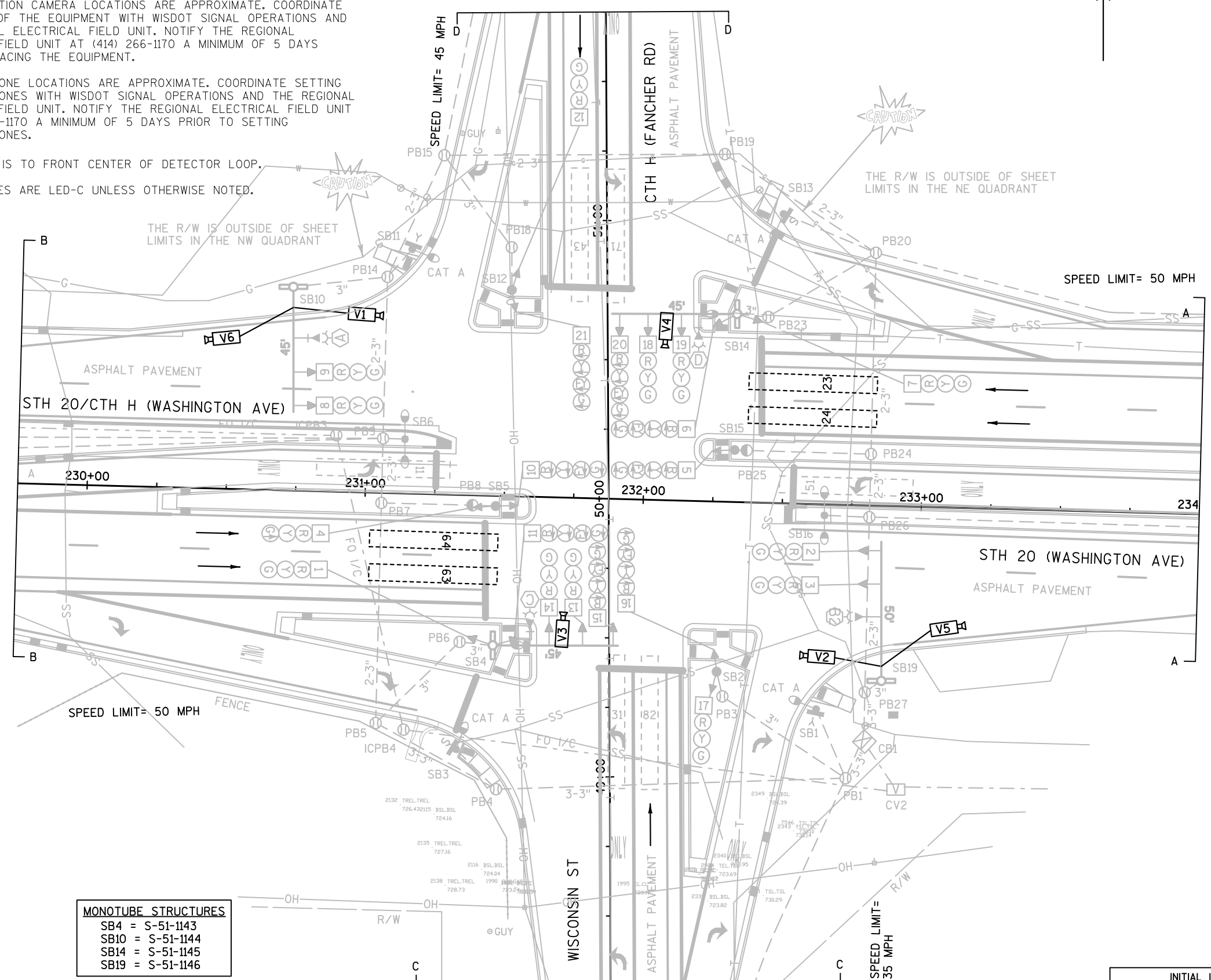
STH 20/CTH H & CTH H/RENAISSANCE BLVD	
VILLAGE OF MOUNT PLEASANT	
RACINE COUNTY	
SIGNAL NO: S51-0719	CABINET TYPE: TS2-E
CONTROLLER TYPE: ECONOLITE	
DATE: 5/2021	PAGE NUMBER: 3 OF 3

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. VIDEO DETECTION CAMERA LOCATIONS ARE APPROXIMATE. COORDINATE PLACEMENT OF THE EQUIPMENT WITH WISDOT SIGNAL OPERATIONS AND THE REGIONAL ELECTRICAL FIELD UNIT. NOTIFY THE REGIONAL ELECTRICAL FIELD UNIT AT (414) 266-1170 A MINIMUM OF 5 DAYS PRIOR TO PLACING THE EQUIPMENT.
3. DETECTION ZONE LOCATIONS ARE APPROXIMATE. COORDINATE SETTING DETECTION ZONES WITH WISDOT SIGNAL OPERATIONS AND THE REGIONAL ELECTRICAL FIELD UNIT. NOTIFY THE REGIONAL ELECTRICAL FIELD UNIT AT (414) 266-1170 A MINIMUM OF 5 DAYS PRIOR TO SETTING DETECTION ZONES.
4. \* LOCATION IS TO FRONT CENTER OF DETECTOR LOOP.
6. ALL LUMINAIRES ARE LED-C UNLESS OTHERWISE NOTED.

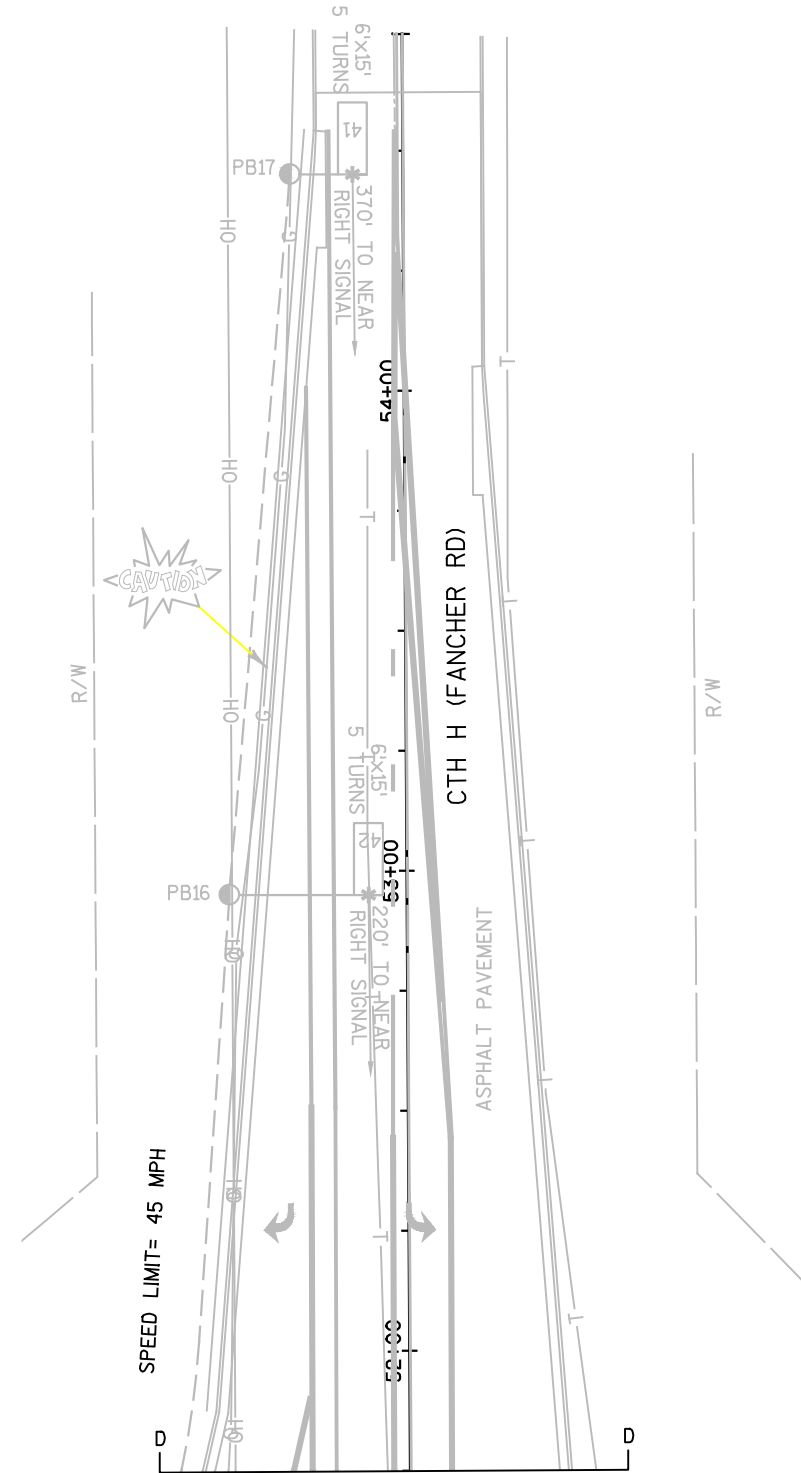
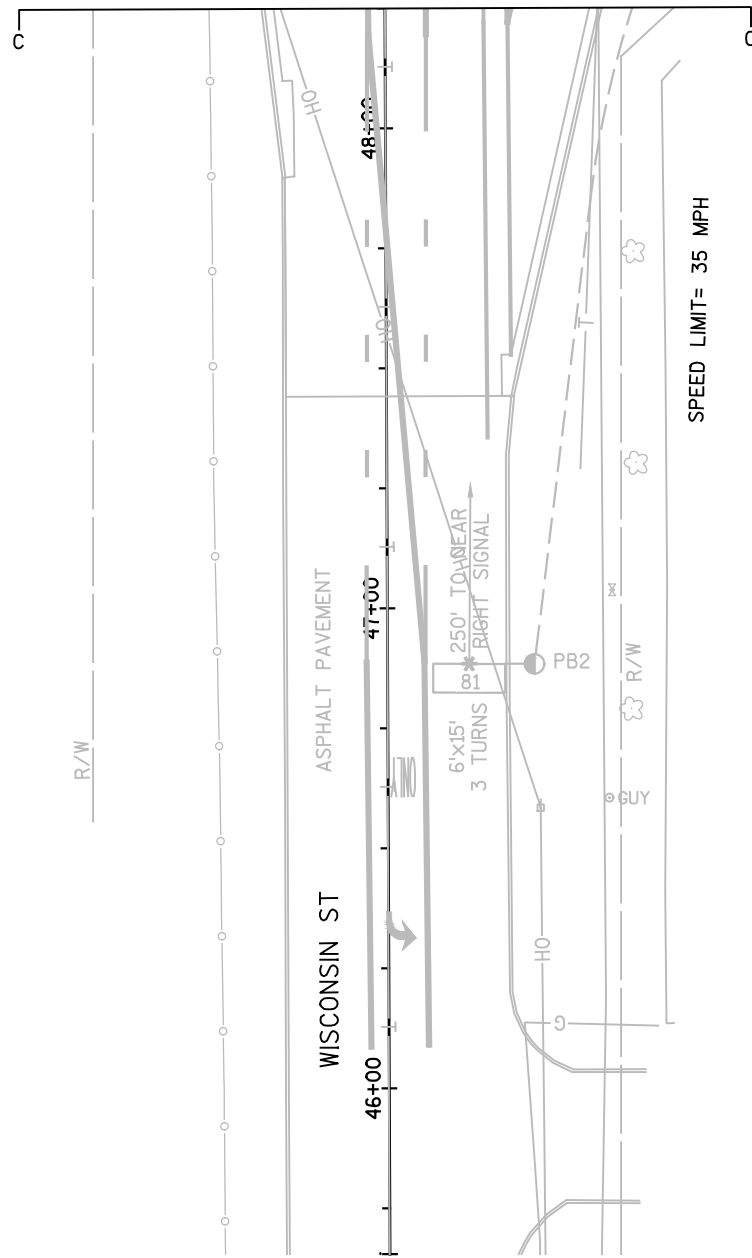
LEGEND

- CONTROL CABINET
  - NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
  - LOOP DETECTOR CONDUIT 1" NONMETALLIC
  - NONMETALLIC INTERCONNECT CONDUIT 2" UNLESS OTHERWISE NOTED
  - SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
  - MONOTUBE BASE, POLE, 35'-55' ARM
  - LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
  - LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
  - VIDEO DETECTION AREA
  - PULL BOX, 24" X 36"
  - PULL BOX, 24" X 42"
  - SIGNAL HEAD NUMBER
  - RED CIRCULAR INDICATOR
  - YELLOW CIRCULAR INDICATOR
  - GREEN CIRCULAR INDICATOR
  - RED ARROW
  - YELLOW ARROW
  - GREEN ARROW
  - YIELD SIGN
  - STOP SIGN
  - VIDEO DETECTION CAMERA
  - CONFIRMATION LIGHT
  - EVP DESIGNATOR
  - EVP DETECTOR HEAD
  - CONDUIT STUBOUT
  - LANE DESIGNATION FOR INFO ONLY
- NOTE: ALL LENSES ARE 12-INCH  
GRAYSHADE REPRESENTS EXISTING



**MONOTUBE STRUCTURES**  
 SB4 = S-51-1143  
 SB10 = S-51-1144  
 SB14 = S-51-1145  
 SB19 = S-51-1146

REVISION				
REV. NO.	REPLACE/INSTALL VIDEO DETECTION FOR SYSTEM DETECTION ZONES			
	APPROVAL RECOMMENDED		APPROVED	
	REGION	DATE	CENTRAL OFFICE	DATE
1		7-30-21		8-6-21
	BY		BY	
	TJW		JRI	
TRAFFIC CONTROL SIGNAL STH 20/CTH H & CTH H (FANCHER RD)/ WISCONSIN ST VILLAGE OF STURTEVANT/ VILLAGE OF MOUNT PLEASANT RACINE COUNTY				
SIGNAL NO. S51-0259		CABINET TYPE: TS2-E CONTROLLER TYPE: ECONOLITE		
WISCONSIN DEPARTMENT OF TRANSPORTATION				
APPROVAL RECOMMENDED		DATE 5/5/14		
APPROVED		DATE 5/6/14		
MITZI M. DOBERSEK REGION TRAFFIC ENGINEER		JOANNA L. BUSH STATE TRAFFIC ENGINEER		
REGION CONTACT: D. WOLFORD DESIGNED BY: AECOM REVISED BY: TRAFFIC ANALYSIS & DESIGN INC				



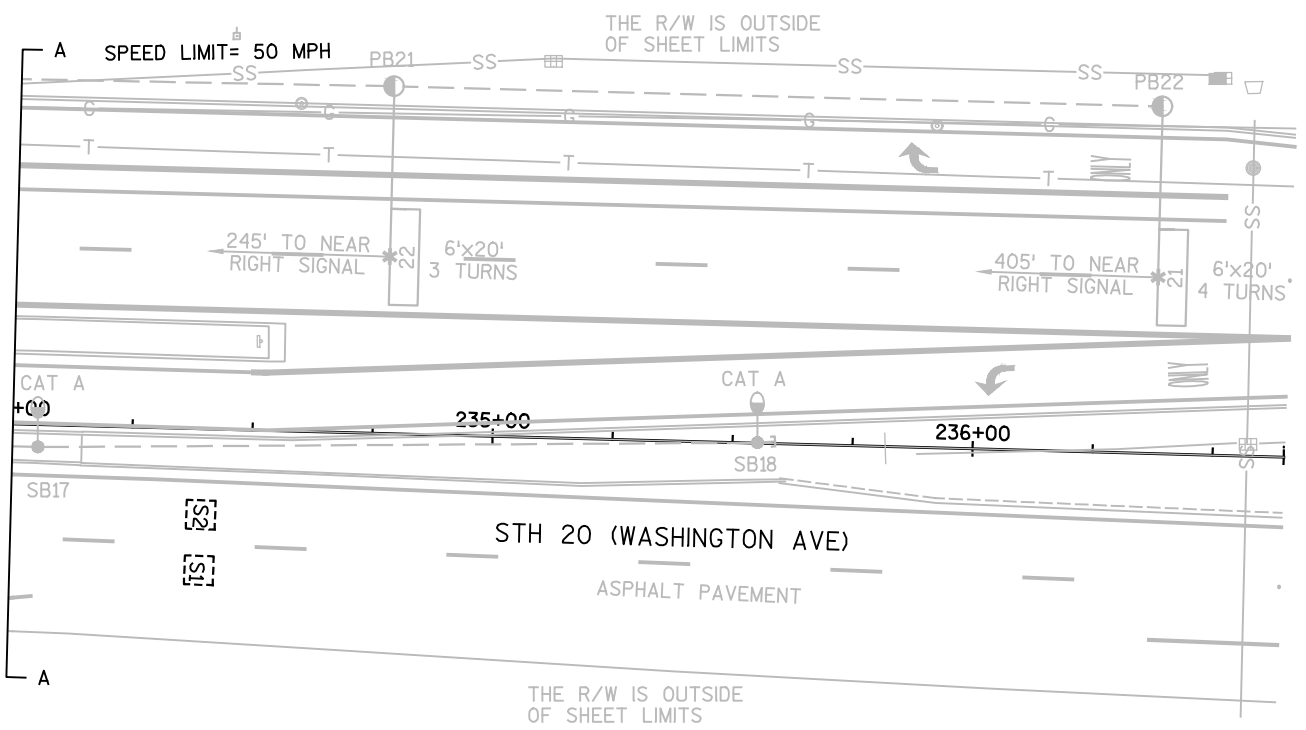
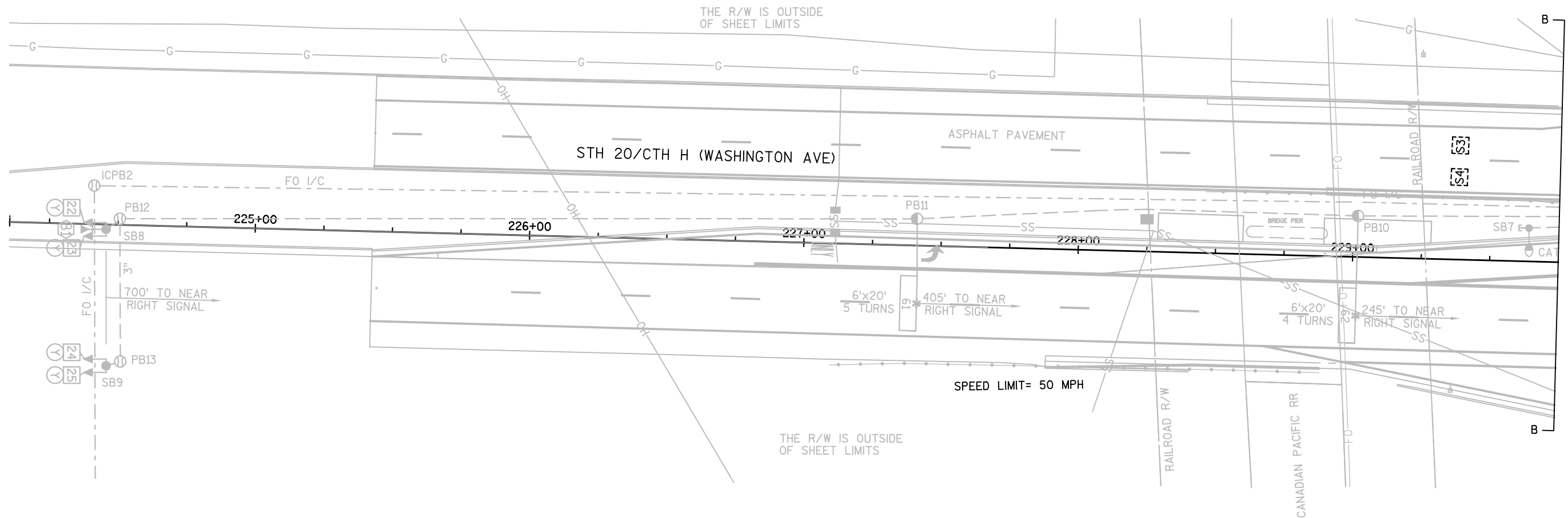
TRAFFIC CONTROL SIGNAL  
 STH 20/CTH H & CTH H (FANCHER RD)/  
 WISCONSIN ST  
 VILLAGE OF STURTEVANT/  
 VILLAGE OF MOUNT PLEASANT  
 RACINE COUNTY

SIGNAL NO. S51-0259

REGION CONTACT: D. WOLFORD  
 DESIGNED BY: AECOM  
 REVISED BY: TRAFFIC ANALYSIS & DESIGN INC

PAGE 2 OF 4





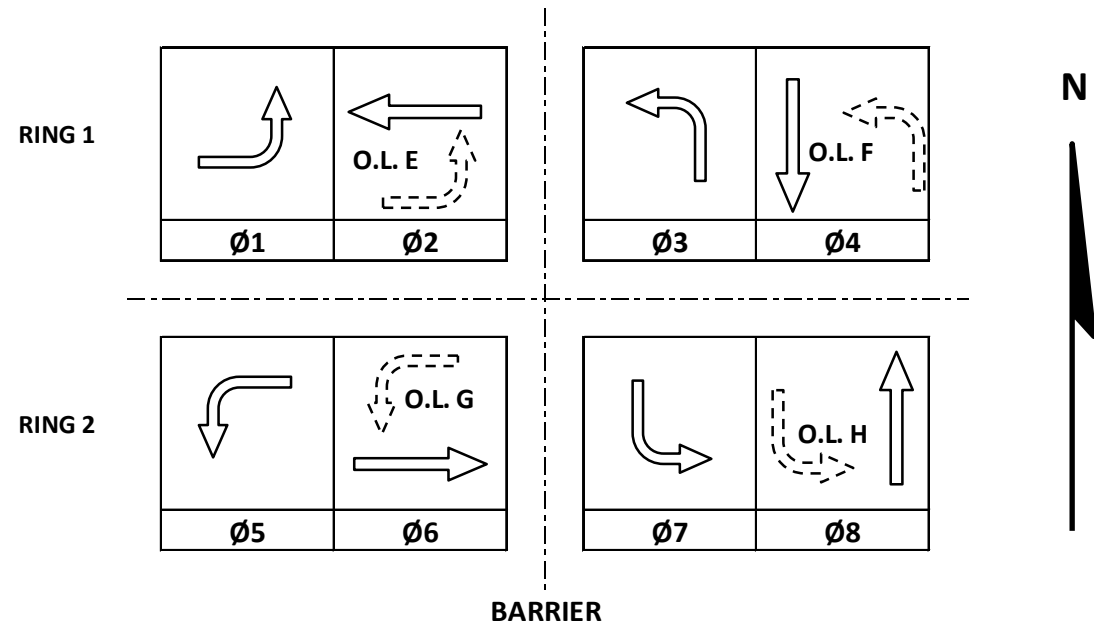
TRAFFIC CONTROL SIGNAL  
 STH 20/CTH H & CTH H (FANCHER RD)/  
 WISCONSIN ST  
 VILLAGE OF STURTEVANT/  
 VILLAGE OF MOUNT PLEASANT  
 RACINE COUNTY

SIGNAL NO. S51-0259

REGION CONTACT: D. WOLFORD  
 DESIGNED BY: AECOM  
 REVISED BY: TRAFFIC ANALYSIS & DESIGN INC

PAGE 3 OF 4

	HEAD NUMBERS	FLASH
Ø1	5,6	R
Ø2	7,8,9	R
Ø3	20,21	R
Ø4	12,13,14	R
Ø5	10,11	R
Ø6	1,2,3,4	R
Ø7	15,16	R
Ø8	17,18,19	R
Ø2P		
Ø4P		
Ø6P		
Ø8P		
OLE	5,6	-
OLF	20,21	-
OLG	10,11	-
OLH	15,16	-
BCN	22,23,24,25	FY



**CONTROLLER LOGIC**

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

**EMERGENCY VEHICLE PREEMPTION SEQUENCE**

EMERGENCY VEHICLE PREEMPTOR	A	B	C	D
MOVEMENT				
PHASE	2+5	6+1	4+7	8+3

AFTER PREEMPTION SEQUENCE 2+5 OR 6+1, CONTROLLER SHALL RETURN TO PHASES 2+6  
 AFTER PREEMPTION SEQUENCE 4+7 OR 8+3, CONTROLLER SHALL RETURN TO PHASES 4+8

**DETECTOR LOGIC**

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR*(S)	21	41	61	81				
CALLED PHASE	2	4	6	8				
CALL OPTION	X		X					
DELAY TIME								
EXTENTION OPTION	X	X	X	X				
EXTEND TIME		X		X				
USE ADDED INITIAL	X		X					
CROSS SWITCH PHASE								

DETECTOR INPUT	19	17	23	21	27	25	31	29
PLAN LOOP DETECTOR*(S)	11	24	43	63	71	51	S3	
CALLED PHASE	1		4		7			
CALL OPTION	X		X		X			
DELAY TIME								
EXTENTION OPTION	X		X		X			
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE	2				8			

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR*(S)	22	42	62					
CALLED PHASE	2	4	6					
CALL OPTION	X		X					
DELAY TIME								
EXTENTION OPTION	X	X	X					
EXTEND TIME		X						
USE ADDED INITIAL	X		X					
CROSS SWITCH PHASE								

DETECTOR INPUT	20	18	24	22	28	26	32	30
PLAN LOOP DETECTOR*(S)	23	31	51	64	82	S2	S4	
CALLED PHASE		3	5		8			
CALL OPTION		X	X		X			
DELAY TIME								
EXTENTION OPTION		X	X		X			
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE		4	6					

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

TYPE OF COORDINATION	
NONE	
TBC	
TRAFFIC RESPONSIVE	X
ADAPTIVE	X
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM NO:	SS- 51-0094

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

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

**GENERAL NOTES:**

1. BCN = "BE PREPARED TO STOP WHEN FLASHING" BEACON
2. PREPARE TO STOP WHEN FLASHING BEACON SHALL DEACTIVATE AT START OF PHASE 6 GREEN INTERVAL AND REACTIVATE 8 SECONDS PRIOR TO START OF PHASE 6 YELLOW INTERVAL.
3. PREPARE TO STOP WHEN FLASHING BEACON SHALL FLASH ALTERNATELY ON EACH POLE.

STH 20/CTH H & CTH H (FANCHER RD)/WISCONSIN ST	
VILLAGE OF STURTEVANT/VILLAGE OF MOUNT PLEASANT	
RACINE COUNTY	
SIGNAL NO: S51-0259	CABINET TYPE: TS2-E
CONTROLLER TYPE: ECONOLITE	
DATE: 5/2021	PAGE NUMBER: 4 OF 4

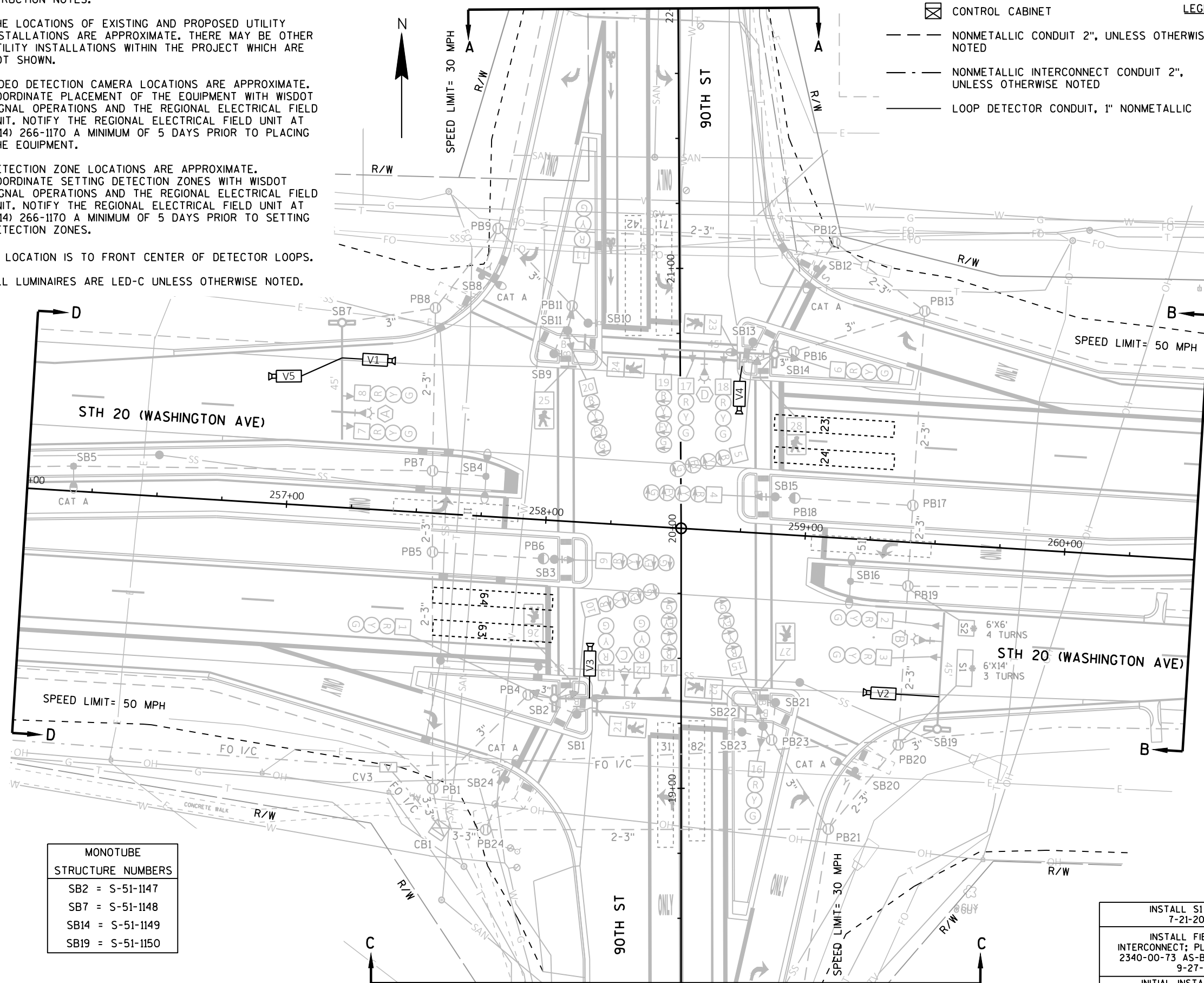
CONSTRUCTION NOTES:

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3. DETECTION ZONE LOCATIONS ARE APPROXIMATE. COORDINATE SETTING DETECTION ZONES WITH WISDOT SIGNAL OPERATIONS AND THE REGIONAL ELECTRICAL FIELD UNIT. NOTIFY THE REGIONAL ELECTRICAL FIELD UNIT AT (414) 266-1170 A MINIMUM OF 5 DAYS PRIOR TO SETTING DETECTION ZONES.
4. \* LOCATION IS TO FRONT CENTER OF DETECTOR LOOPS.
5. ALL LUMINAIRES ARE LED-C UNLESS OTHERWISE NOTED.

- LEGEND**
- ☒ CONTROL CABINET
  - NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
  - NONMETALLIC INTERCONNECT CONDUIT 2", UNLESS OTHERWISE NOTED
  - LOOP DETECTOR CONDUIT, 1" NONMETALLIC

- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- (XX) MONOTUBE BASE, POLE, 35'-55' ARM
- ⊖ PEDESTRIAN HEAD WITH PUSH BUTTON
- ⊖ PUSH BUTTON
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- ☒ LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- VIDEO DETECTION AREA
- ☒ VIDEO DETECTION CAMERA
- PULL BOX, 24" X 36"
- PULL BOX, 24" X 42"
- ☒ 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)
- Ⓢ EVP DESIGNATOR
- Ⓢ EVP DETECTOR HEAD
- Ⓢ CONFIRMATION LIGHT
- Ⓢ CONDUIT STUBOUT
- ☒ COMMUNICATIONS VAULT
- Ⓢ YIELD SIGN
- Ⓢ STOP SIGN

NOTE: ALL LENSES ARE 12-INCH GRAYSHADE REPRESENTS EXISTING

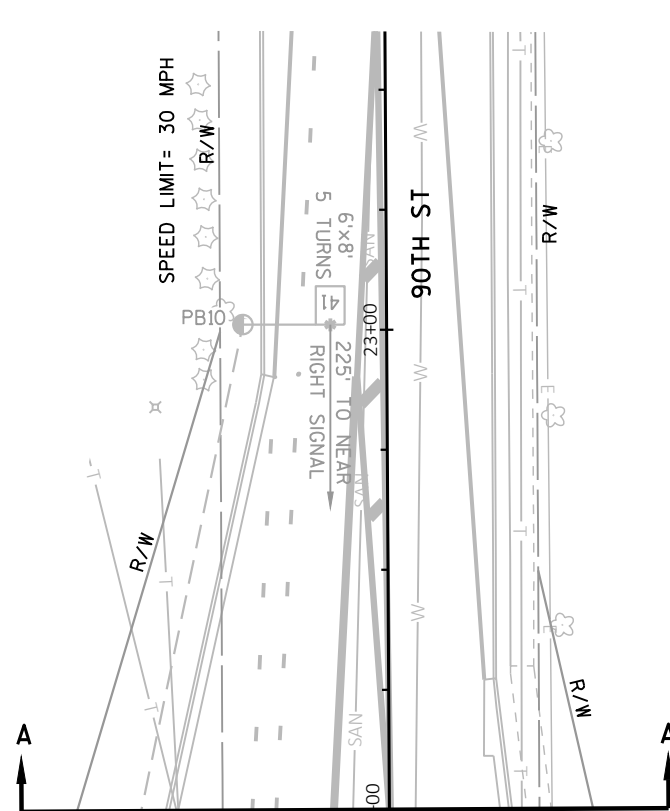
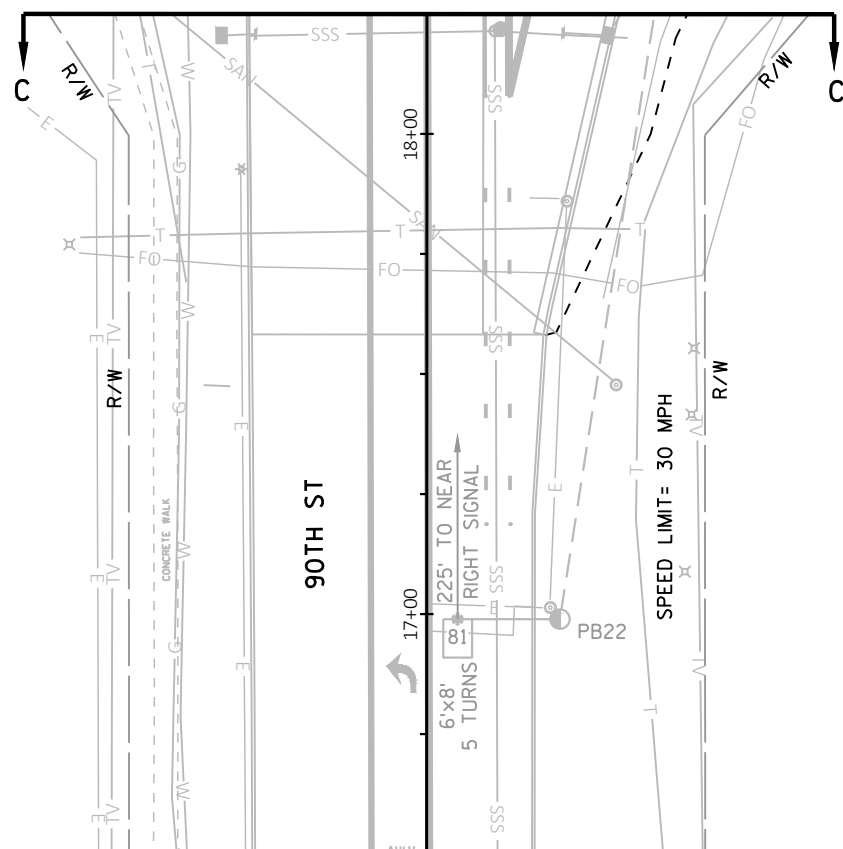
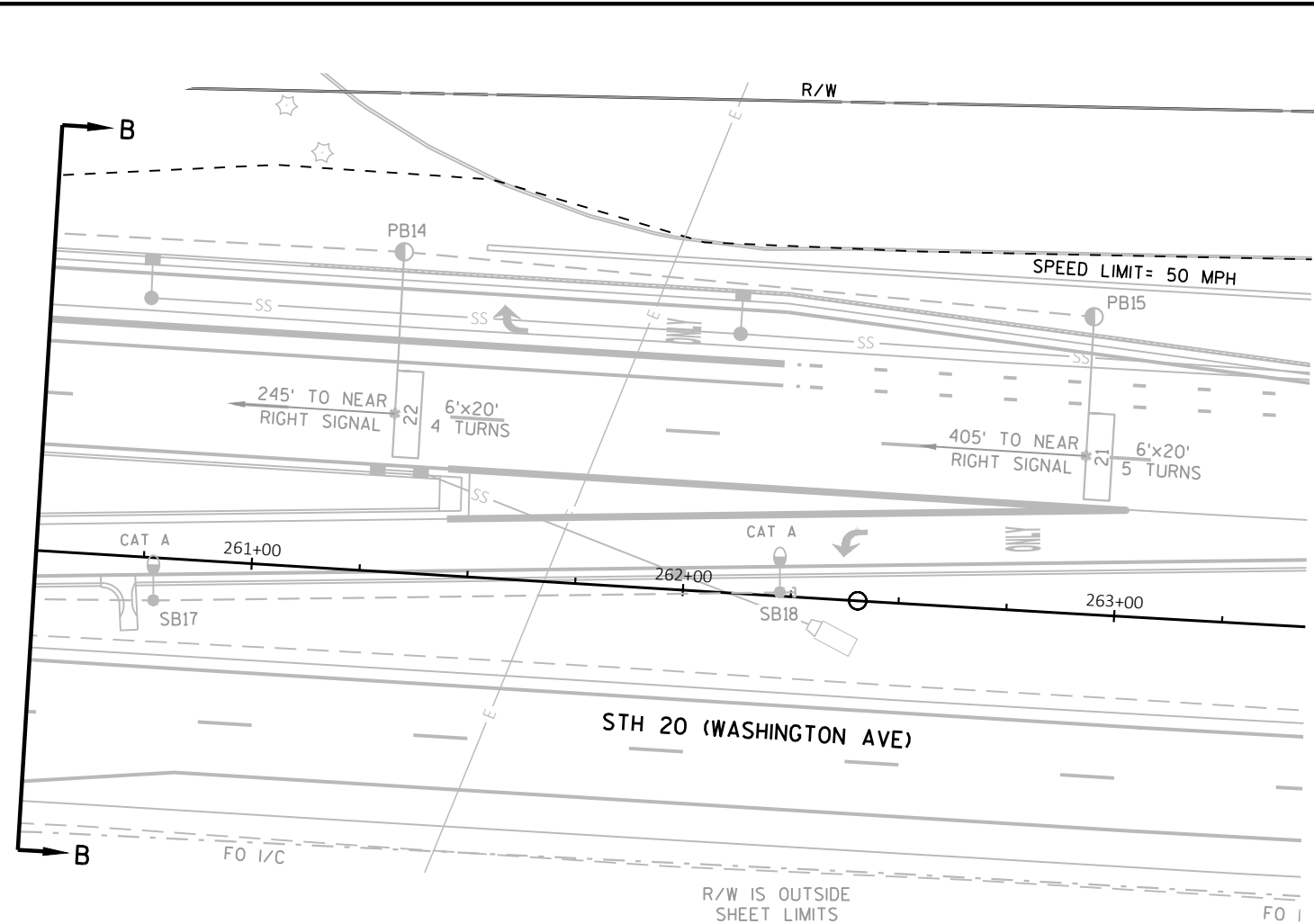
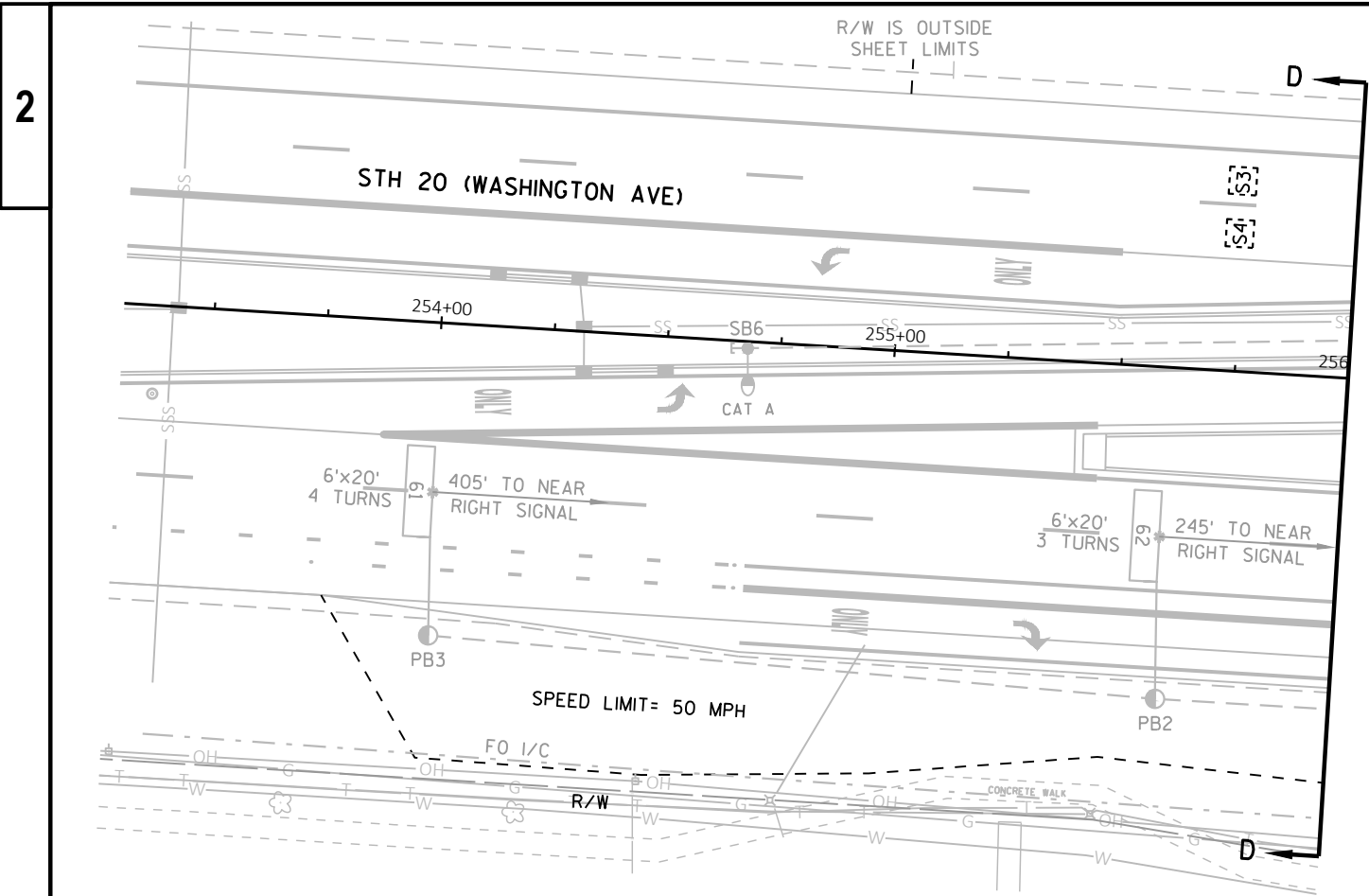


MONOTUBE STRUCTURE NUMBERS	
SB2	= S-51-1147
SB7	= S-51-1148
SB14	= S-51-1149
SB19	= S-51-1150

INSTALL S1 & S2 7-21-2021
INSTALL FIBER OPTIC INTERCONNECT; PLAN UPDATE PER 2340-00-73 AS-BUILT & REDLINE 9-27-2017
INITIAL INSTALLATION 5-2014

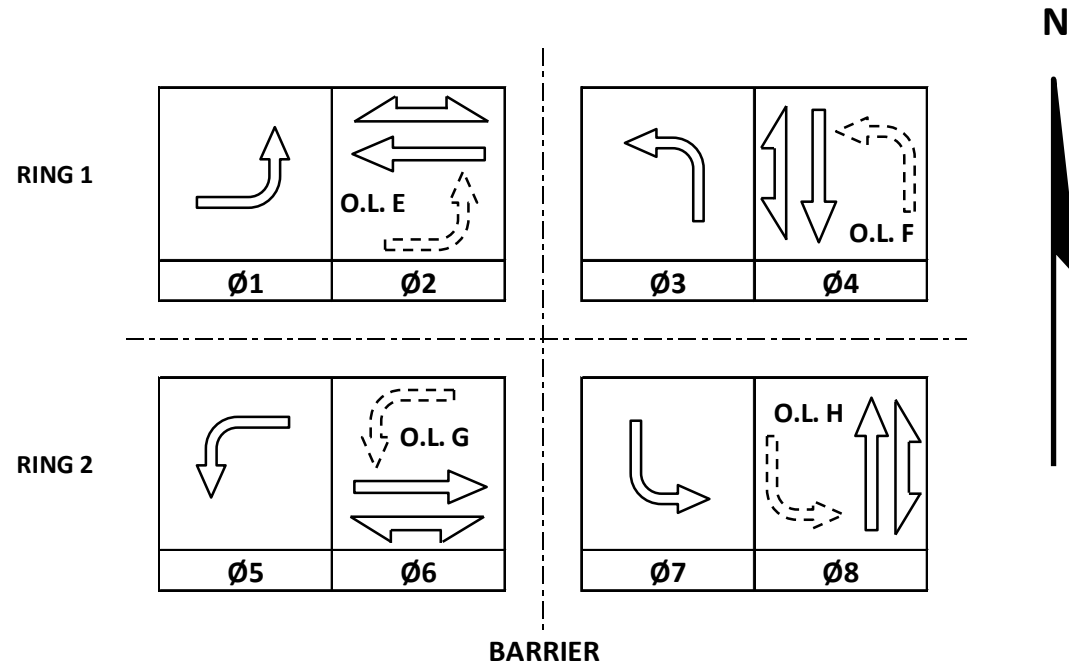
REVISION				
REV. NO.	REPLACE/INSTALL VIDEO DETECTION FOR SYSTEM DETECTION ZONES. UPDATE BIKE BUTTON CABINET INPUT LOCATIONS AND DETECTOR ASSIGNMENTS.			
3	APPROVAL RECOMMENDED	APPROVED		
	REGION	CENTRAL OFFICE		
	DATE	BY	DATE	BY
	7-30-21	JRW	8-6-21	JR
TRAFFIC CONTROL SIGNAL STH 20 & 90TH ST VILLAGE OF MOUNT PLEASANT RACINE COUNTY				
SIGNAL NO. S51-0536		CABINET TYPE: TS2-E CONTROLLER TYPE: ECONOLITE		
WISCONSIN DEPARTMENT OF TRANSPORTATION				
APPROVAL RECOMMENDED		MITZI M. DOBERSEK, P.E. REGION TRAFFIC ENGINEER		
DATE 5/5/14		APPROVED		
DATE 5/6/14		JOANNA L. BUSH STATE TRAFFIC ENGINEER		
REGION CONTACT: DERRIN WOLFORD		PAGE 1 OF 3		
DESIGNED BY:		REVISOR:		
TRAFFIC ANALYSIS & DESIGN INC.				

7-30-21 MJK



TRAFFIC CONTROL SIGNAL  
 STH 20 & 90TH ST  
 VILLAGE OF MOUNT PLEASANT  
 RACINE COUNTY  
 SIGNAL NO. S51-0536  
 REGION CONTACT: DERRIN WOLFORD  
 DESIGNED BY: JOHN BRUGGEMAN  
 REVISED BY: JOHN BRUGGEMAN

	HEAD NUMBERS	FLASH
Ø1	4,5	R
Ø2	6,7,8	R
Ø3	19,20	R
Ø4	11,12,13	R
Ø5	9,10	R
Ø6	1,2,3	R
Ø7	14,15	R
Ø8	16,17,18	R
Ø2P	23,24	
Ø4P	25,26	
Ø6P	21,22	
Ø8P	27,28	
OLE	4,5	-
OLF	19,20	-
OLG	9,10	-
OLH	14,15	-



**CONTROLLER LOGIC**

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

**EMERGENCY VEHICLE PREEMPTION SEQUENCE**

EMERGENCY VEHICLE PREEMPTOR	A	B	C	D
MOVEMENT				
PHASE	2+5	1+6	4+7	3+8

AFTER PREEMPTION SEQUENCE 2+5 OR 1+6, CONTROLLER SHALL RETURN TO PHASES 2+6.  
 AFTER PREEMPTION SEQUENCE 4+7 OR 3+8, CONTROLLER SHALL RETURN TO PHASES 4+8.

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

TYPE OF COORDINATION	
NONE	
TBC	
TRAFFIC RESPONSIVE	X
ADAPTIVE	X
*LOCATION OF MASTER CONTROLLER NO:	
SIGNAL SYSTEM NO:	SS-51-0094

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

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

**DETECTOR LOGIC**

DETECTOR INPUT	3	1	7	5	11	9	15	13
PLAN LOOP DETECTOR*(S)	21	41	61	81	S1			
CALLED PHASE	2	4	6	8				
CALL OPTION	X		X					
DELAY TIME								
EXTENTION OPTION	X	X	X	X				
EXTEND TIME		X		X				
USE ADDED INITIAL	X		X					
CROSS SWITCH PHASE								

DETECTOR INPUT	19	17	23	21	27	25	31	29
PLAN LOOP DETECTOR*(S)	11	24	42	63	71	S3		
CALLED PHASE	1		4		7			
CALL OPTION	X		X		X			
DELAY TIME								
EXTENTION OPTION	X		X		X			
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE	2				8			

DETECTOR INPUT	4	2	8	6	12	10	16	14
PLAN LOOP DETECTOR*(S)	22		62		S2			
CALLED PHASE	2		6					
CALL OPTION	X		X					
DELAY TIME								
EXTENTION OPTION	X		X					
EXTEND TIME								
USE ADDED INITIAL	X		X					
CROSS SWITCH PHASE								

DETECTOR INPUT	20	18	24	22	22	28	26	30
PLAN LOOP DETECTOR*(S)	23	31	51	64	82	S4		
CALLED PHASE		3	5		8			
CALL OPTION		X	X		X			
DELAY TIME								
EXTENTION OPTION		X	X		X			
EXTEND TIME								
USE ADDED INITIAL								
CROSS SWITCH PHASE		4	6					

- GENERAL NOTES:**
1. BUTTONS ON SB10 AND SB23 USED TO CALL PHASE 4 AND PHASE 8 GREEN FOR BICYCLISTS VIA PROGRAMMED BIKE MIN GREEN.

STH 20 & 90TH ST	
VILLAGE OF MT. PLEASANT	
RACINE COUNTY	
SIGNAL NO: S51-0536	CABINET TYPE: TS2
CONTROLLER TYPE: ECONOLITE	
DATE: 5/2021	PAGE NO. 3 OF 3

Estimate Of Quantities By Plan Sets

2250-14-71

Line	Item	Item Description	Unit	Total	Qty
0008	204.9060.S	Removing (item description) 04. Traffic Signals STH 20 at CTH V	EACH	1.000	1.000
0010	204.9060.S	Removing (item description) 05. Traffic Signals STH 20 at Fancher	EACH	1.000	1.000
0012	204.9060.S	Removing (item description) 06. Traffic Signals STH 20 at 90th St	EACH	1.000	1.000
0014	619.1000	Mobilization	EACH	0.200	0.200
0046	642.5001	Field Office Type B	EACH	1.000	1.000
0048	643.0300	Traffic Control Drums	DAY	374.000	374.000
0052	643.0420	Traffic Control Barricades Type III	DAY	19.000	19.000
0054	643.0800	Traffic Control Arrow Boards	DAY	5.000	5.000
0056	643.0900	Traffic Control Signs	DAY	64.000	64.000
0058	643.1050	Traffic Control Signs PCMS	DAY	10.000	10.000
0060	643.5000	Traffic Control	EACH	0.150	0.150
0062	649.0150	Temporary Marking Line Removable Tape 4-Inch	LF	1,450.000	1,450.000
0122	SPV.0060	Special 09. Trans & Install State Furnished Video Veh Detection Sys STH 20 at CTH V	EACH	1.000	1.000
0124	SPV.0060	Special 10. Trans & Install State Furnished Video Veh Detect Sys STH 20 at Renaissance	EACH	1.000	1.000
0126	SPV.0060	Special 11. Trans & Install State Furnished Video Veh Detection Sys STH 20 at Fancher	EACH	1.000	1.000
0128	SPV.0060	Special 12. Trans & Install State Furnished Video Veh Detection Sys STH 20 at 90th ST	EACH	1.000	1.000

STH 20 FROM CTH V TO 90<sup>TH</sup> ST  
ALL ITEMS ARE CATEGORY 0010

STATE FURNISHED MATERIALS SUMMARY - FOR INFORMATION ONLY

MOBILIZATION

619.1000.02

MOBILIZATION

EACH	DESCRIPTION
4	VIDEO VEHICLE DETECTION SYSTEM

LOCATION	EACH
PROJECT 2250-14-71	0.2
<b>TOTAL</b>	<b>0.2</b>

REMOVING TRAFFIC SIGNALS

LOCATION	204.0060.S.04	204.0060.S.05	204.0060.S.06
	REMOVING TRAFFIC SIGNALS EACH	REMOVING TRAFFIC SIGNALS EACH	REMOVING TRAFFIC SIGNALS EACH
STH 20 AT CTH V	1	--	--
STH 20 AT FANCHER	--	1	--
STH 20 AT 90TH ST	--	--	1
<b>TOTAL</b>	<b>1</b>	<b>1</b>	<b>1</b>

FIELD OFFICE

LOCATION	642.5001.01 FIELD OFFICE TYPE B EACH
PROJECT 2250-14-71	1
<b>TOTAL</b>	<b>1</b>

TRAFFIC CONTROL

LOCATION	643.5000	643.0300	643.0420	643.0800	643.0900	643.1050	649.9000
	TRAFFIC CONTROL EACH	TRAFFIC CONTROL DRUMS DAY	TRAFFIC CONTROL BARRICADES TYPE III DAY	TRAFFIC CONTROL ARROW BOARDS DAY	TRAFFIC CONTROL SIGNS DAY	TRAFFIC CONTROL SIGNS PCMS DAY	TRAFFIC CONTROL MARKING REMOVAL LINE 4-INCH DAY
PROJECT 2250-14-71	0.15	--	--	--	--	10	--
STH 20 AT CTH V	--	243	5	4	26	--	1,320
STH 20 AT RENAISSANCE	--	47	4	0	10	--	0
STH 20 AT FANCHER	--	27	4	0	12	--	0
STH 20 AT 90TH	--	23	4	0	10	--	0
UNDISTRIBUTED (10%)	--	34	2	1	6	--	130
<b>TOTAL</b>	<b>0.15</b>	<b>374</b>	<b>19</b>	<b>5</b>	<b>64</b>	<b>10</b>	<b>1450</b>

VIDEO VEHICLE DETECTION SYSTEM

LOCATION	SPV.0060.09	SPV.0060.10	SPV.0060.11	SPV.0060.12
	TRANSPORTING AND INSTALLING STATE FURNISHED VIDEO VEHICLE DETECTION SYSTEM EACH	TRANSPORTING AND INSTALLING STATE FURNISHED VIDEO VEHICLE DETECTION SYSTEM EACH	TRANSPORTING AND INSTALLING STATE FURNISHED VIDEO VEHICLE DETECTION SYSTEM EACH	TRANSPORTING AND INSTALLING STATE FURNISHED VIDEO VEHICLE DETECTION SYSTEM EACH
STH 20 AT CTH V	1	--	--	--
STH 20 AT RENAISSANCE	--	1	--	--
STH 20 AT FANCHER	--	--	1	--
STH 20 AT 90TH	--	--	--	1
<b>TOTAL</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>

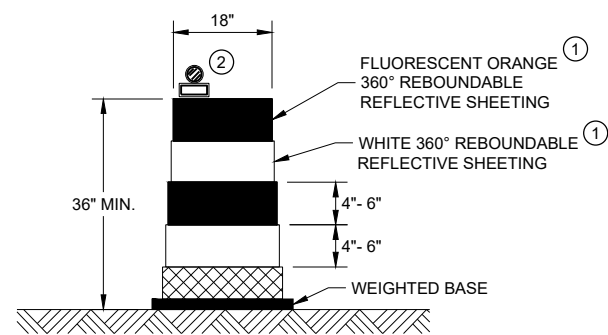
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3

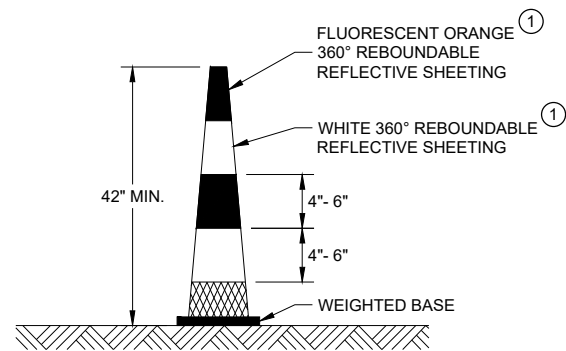
## Standard Detail Drawing List

15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D12-09A	TRAFFIC CONTROL, LANE CLOSURE
15D21-07A	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
15D21-07B	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
15D27-03	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
15D28-04	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS



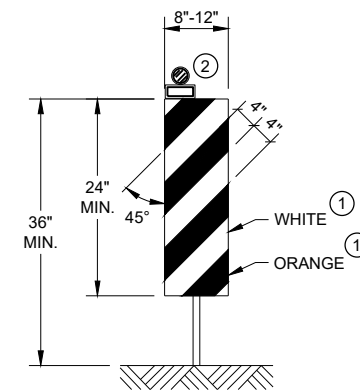


**DRUM**



**42" CONE**

DO NOT USE IN TAPERS  
 1/2 SPACING OF DRUMS

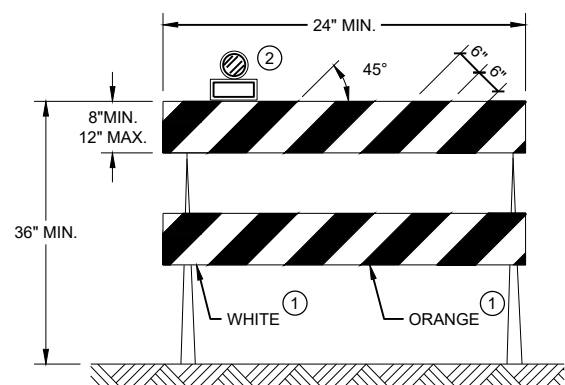


**VERTICAL PANEL**

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

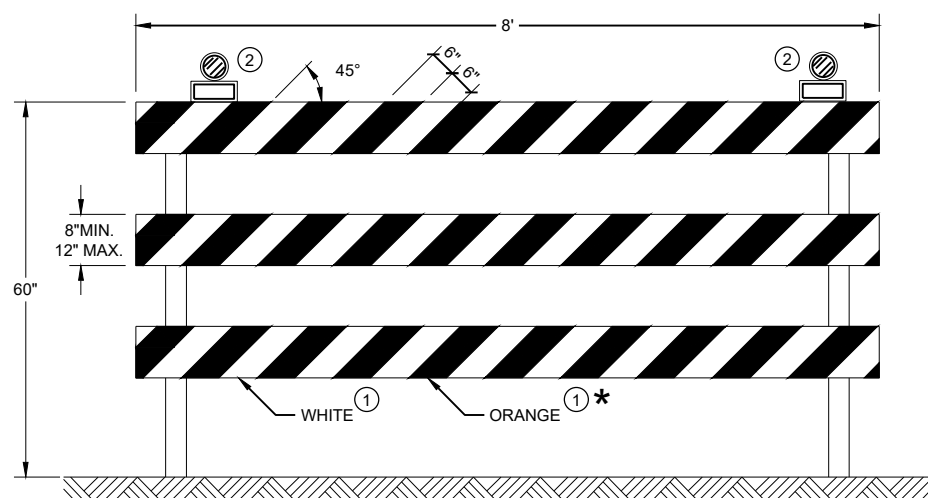
**GENERAL NOTES**

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



**TYPE II BARRICADE**

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



**TYPE III BARRICADE**

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

\* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

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

## GENERAL NOTES

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

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

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

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

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

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.











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

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS

NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE ONE HALF THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

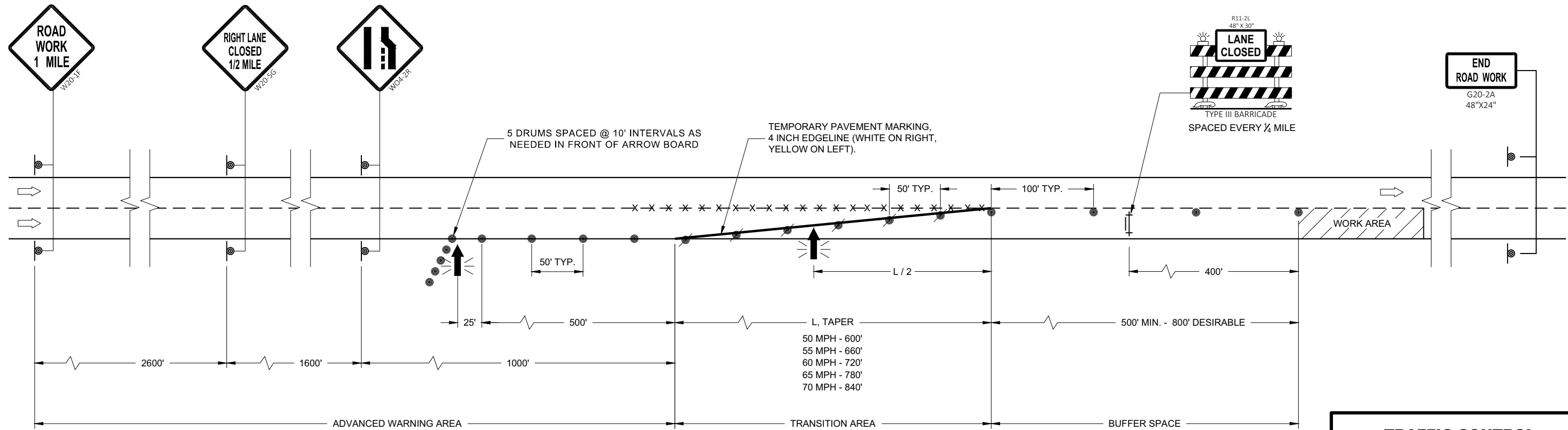
CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

## LEGEND

-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TYPE "A" WARNING LIGHT (FLASHING)
-  -X-X-X- REMOVING PAVEMENT MARKINGS
-   DIRECTION OF TRAFFIC
-  WORK AREA
-  FLASHING ARROW BOARD

6

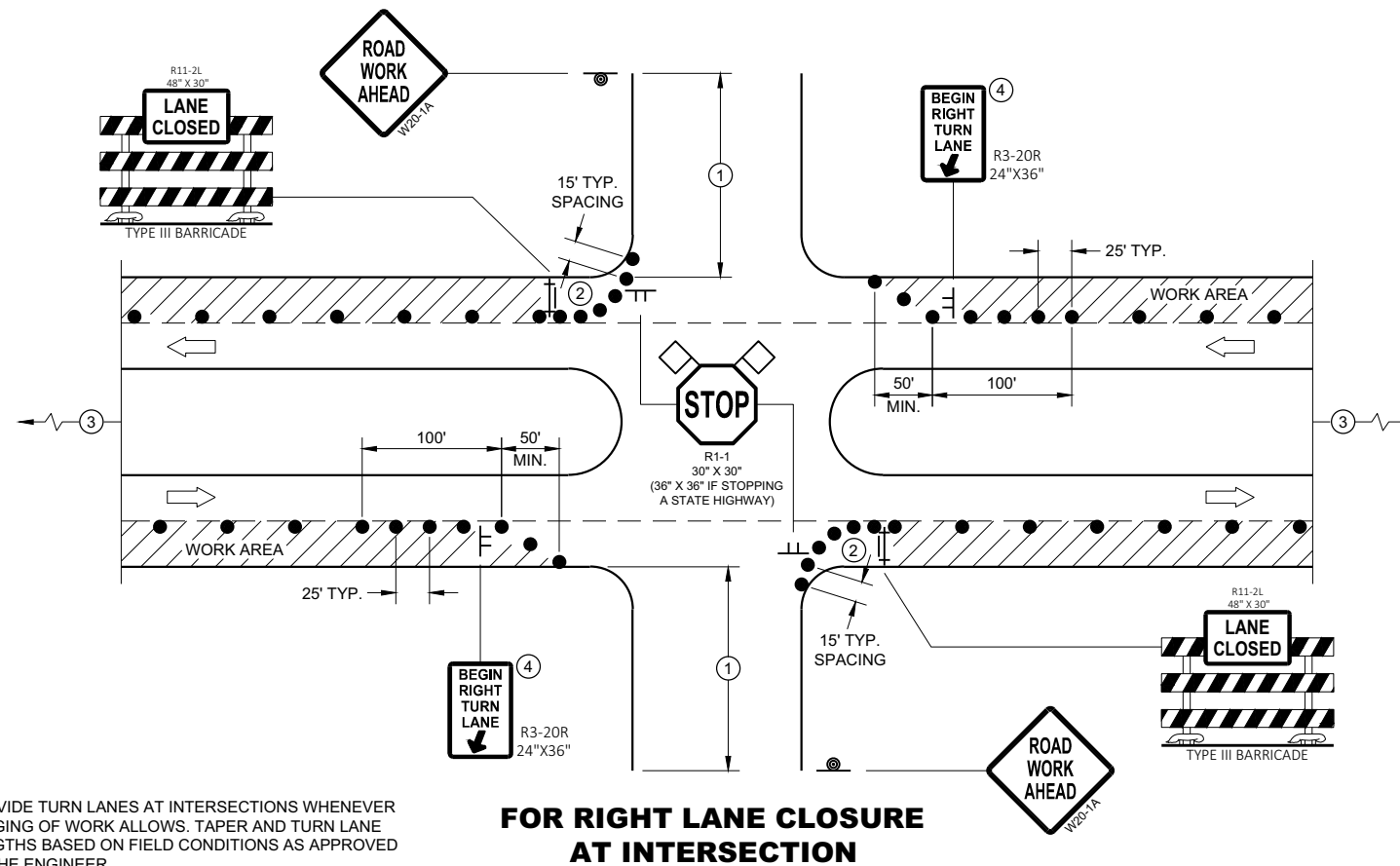
SDD 15D12 - 09a



6

SDD 15D12 - 09a

<b>TRAFFIC CONTROL LANE CLOSURE</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED August 2020 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	



PROVIDE TURN LANES AT INTERSECTIONS WHENEVER STAGING OF WORK ALLOWS. TAPER AND TURN LANE LENGTHS BASED ON FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

### GENERAL NOTES

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

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

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

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

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

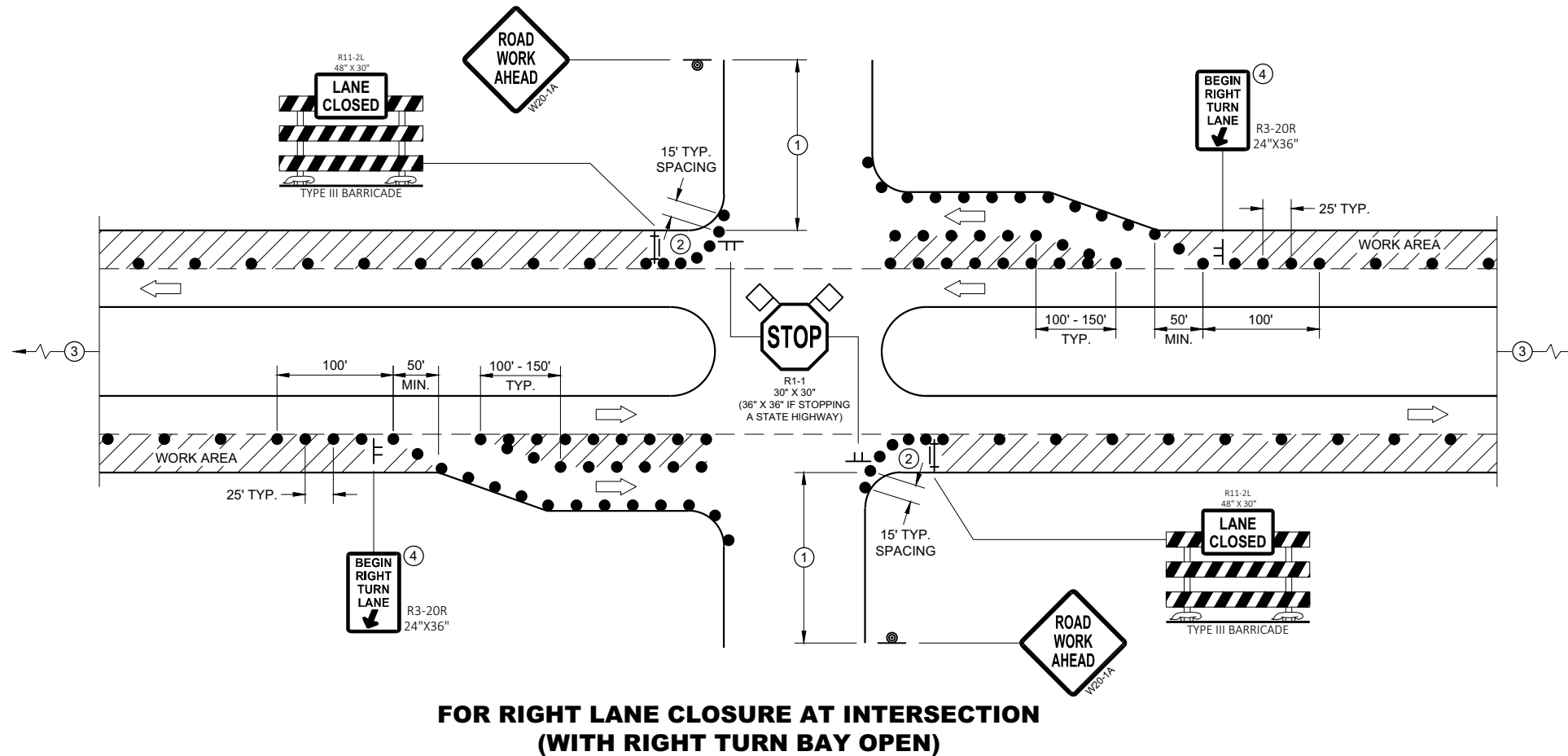
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

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

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

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

- ① 500' TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.  
350' IF 35 - 40 MPH.  
200' IF 25 - 30 MPH.
- ② ALSO USE BARRICADE AND 15 FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS
- ③ SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.
- ④ MINIMUM MOUNTING HEIGHT OF 5 FEET FROM EDGE OF PAVEMENT (AT EDGE LINE LOCATION) TO BOTTOM OF SIGN.

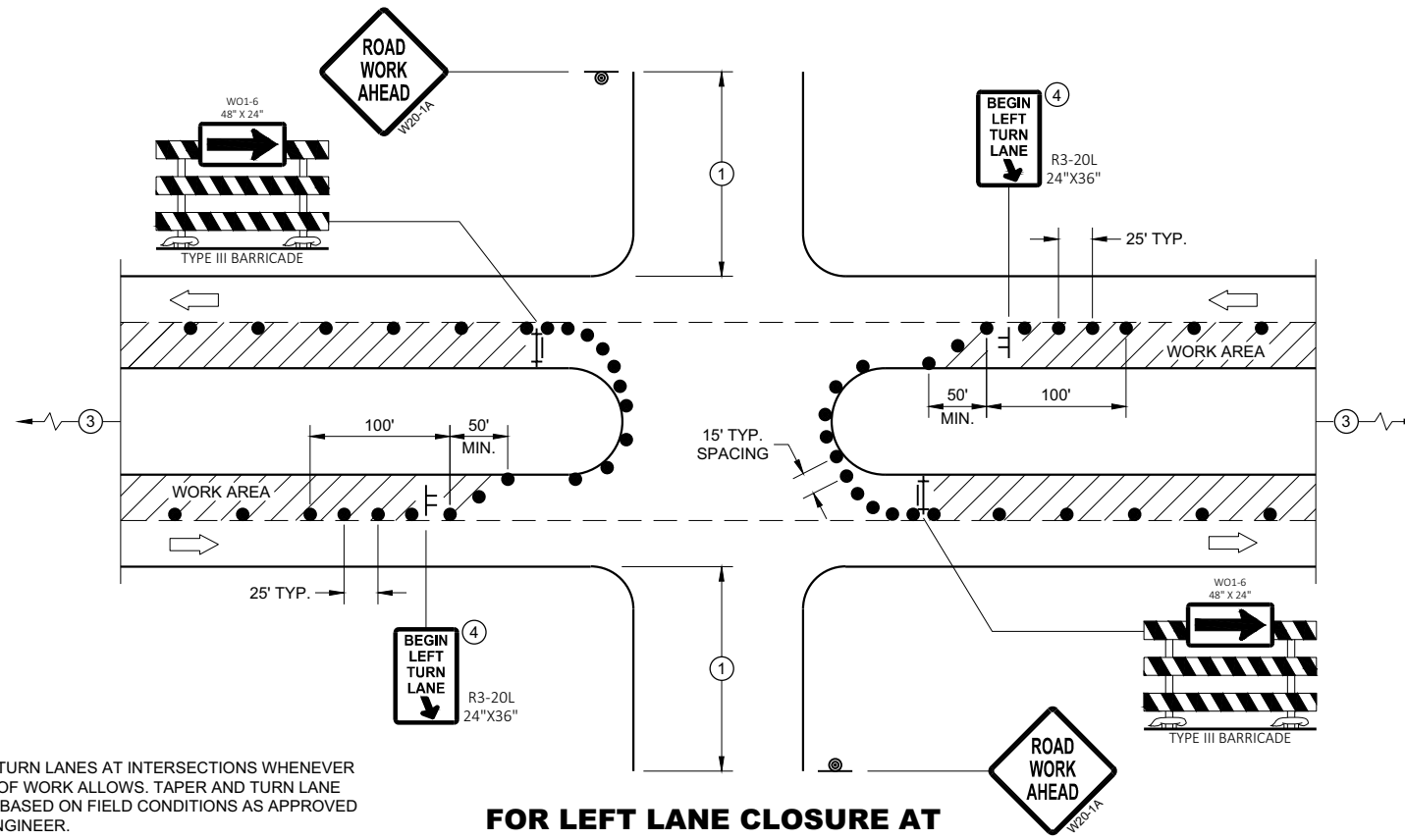


### LEGEND

- SIGN ON TEMPORARY SUPPORT
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE III BARRICADE WITH ATTACHED SIGN
- DIRECTION OF TRAFFIC
- FLAGS, 16" X 16" MIN., ORANGE
- WORK AREA

### TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE RIGHT LANE CLOSURE

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



PROVIDE TURN LANES AT INTERSECTIONS WHENEVER STAGING OF WORK ALLOWS. TAPER AND TURN LANE LENGTHS BASED ON FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

**FOR LEFT LANE CLOSURE AT INTERSECTION OR MEDIAN OPENING**

**GENERAL NOTES**

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

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

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

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

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

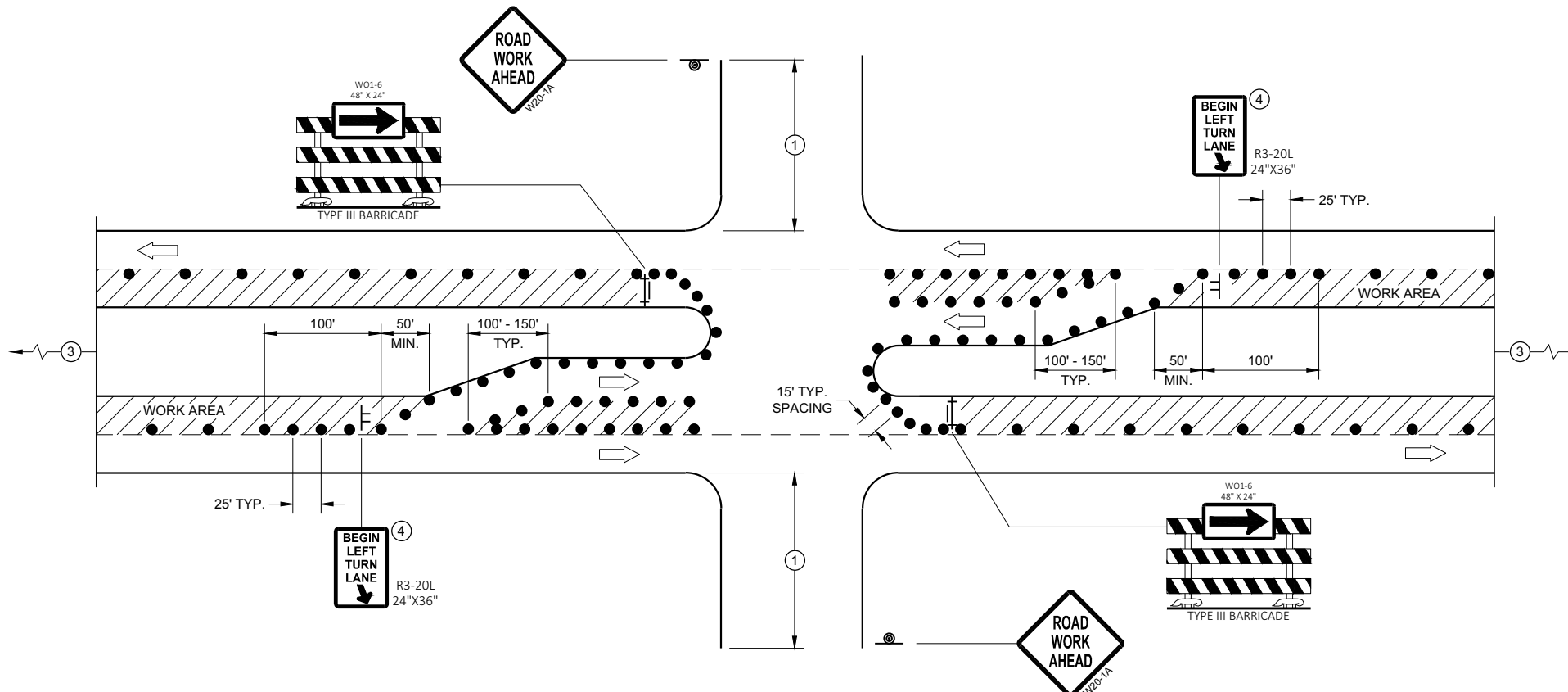
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

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

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

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

- ① 500' TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.  
350' IF 35 - 40 MPH.  
200' IF 25 - 30 MPH.
- ② ALSO USE BARRICADE AND 15 FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS
- ③ SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.
- ④ MINIMUM MOUNTING HEIGHT OF 5 FEET FROM EDGE OF PAVEMENT (AT EDGE LINE LOCATION) TO BOTTOM OF SIGN.



**FOR LEFT LANE CLOSURE AT INTERSECTION OR MEDIAN OPENING (WITH LEFT TURN BAY OPEN)**

**LEGEND**

- SIGN ON TEMPORARY SUPPORT
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE III BARRICADE WITH ATTACHED SIGN
- DIRECTION OF TRAFFIC
- FLAGS, 16" X 16" MIN., ORANGE
- WORK AREA

**TRAFFIC CONTROL,  
INTERSECTION WITHIN SINGLE  
LEFT LANE CLOSURE**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
August 2020 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER

FHWA

### GENERAL NOTES

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

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

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

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

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

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

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

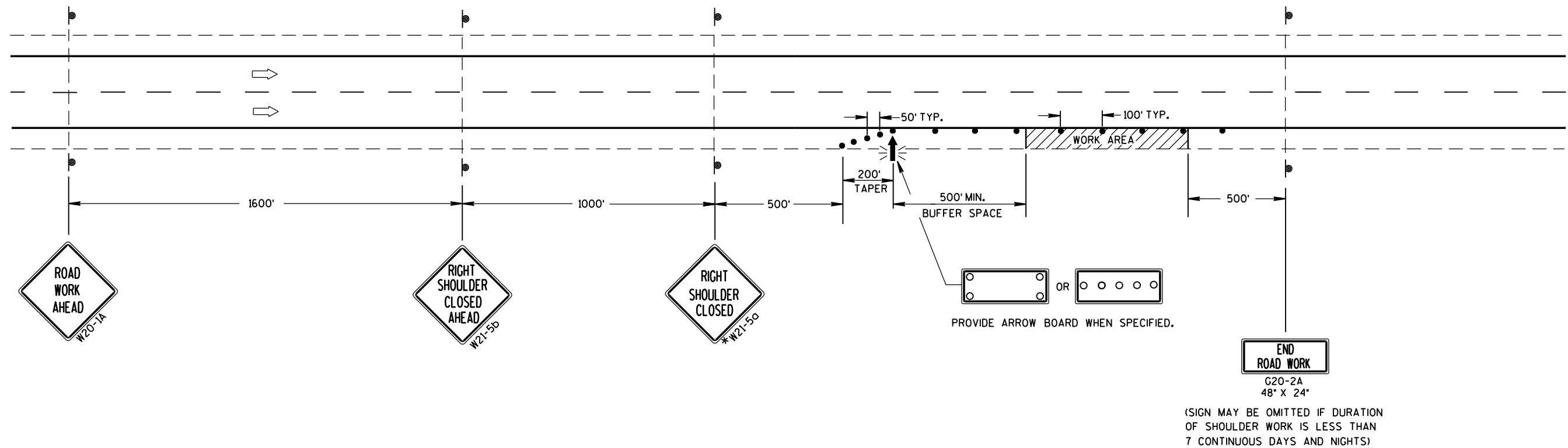
CHANNELIZING DEVICES PLACED ADJACENT TO THE WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

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

### LEGEND

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







PROVIDE ARROW BOARD WHEN SPECIFIED.

(SIGN MAY BE OMITTED IF DURATION OF SHOULDER WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS)

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

**LEGEND**

-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM
-  DIRECTION OF TRAFFIC
-  WORK ZONE

**GENERAL NOTES**

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

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

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

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

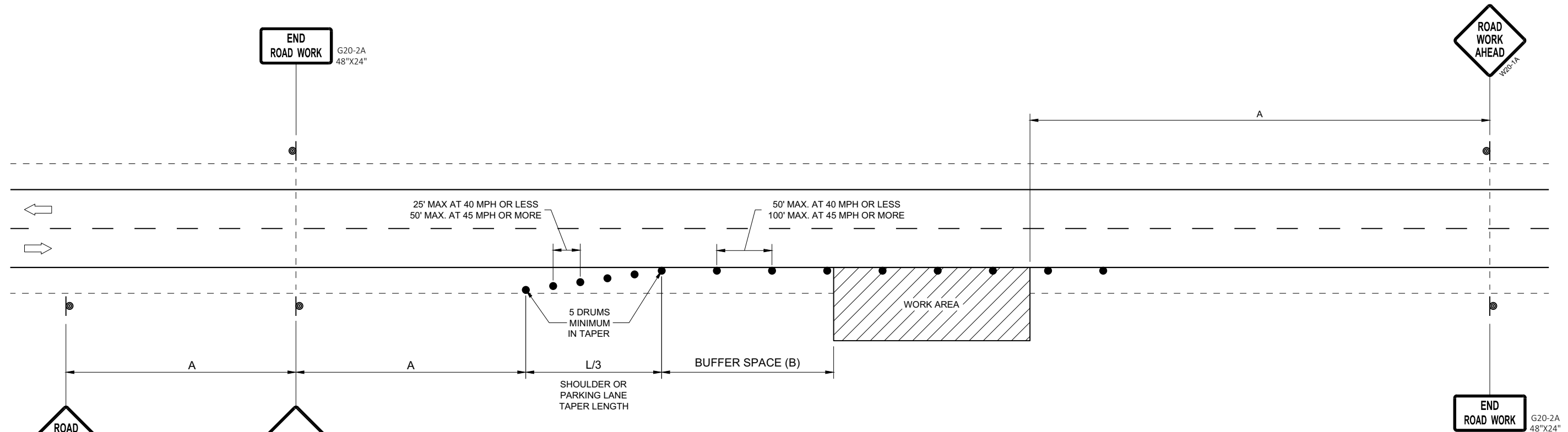
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

W20-1A AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.

6

6



OR  
IF TRAFFIC CONTROL DEVICES  
ENCROACH ONTO TRAVELED WAY, USE

POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	SHOULDER TAPER L / 3 W, LATERAL OFFSET (FT)						BUFFER SPACE (B) FEET
		3	4	5	6	7	8	
25	200'	10	14	17	21	24	28	55
30	200'	15	20	25	30	35	40	85
35	350'	20	27	34	40	47	54	120
40	350'	26	35	44	53	62	70	170
45	500'	45	59	74	89	104	119	220
50	500'	50	66	83	99	116	132	280
55	500'	54	73	91	109	127	145	335'

**TRAFFIC CONTROL, WORK ON  
SHOULDER OR PARKING LANE,  
UNDIVIDED ROADWAY**

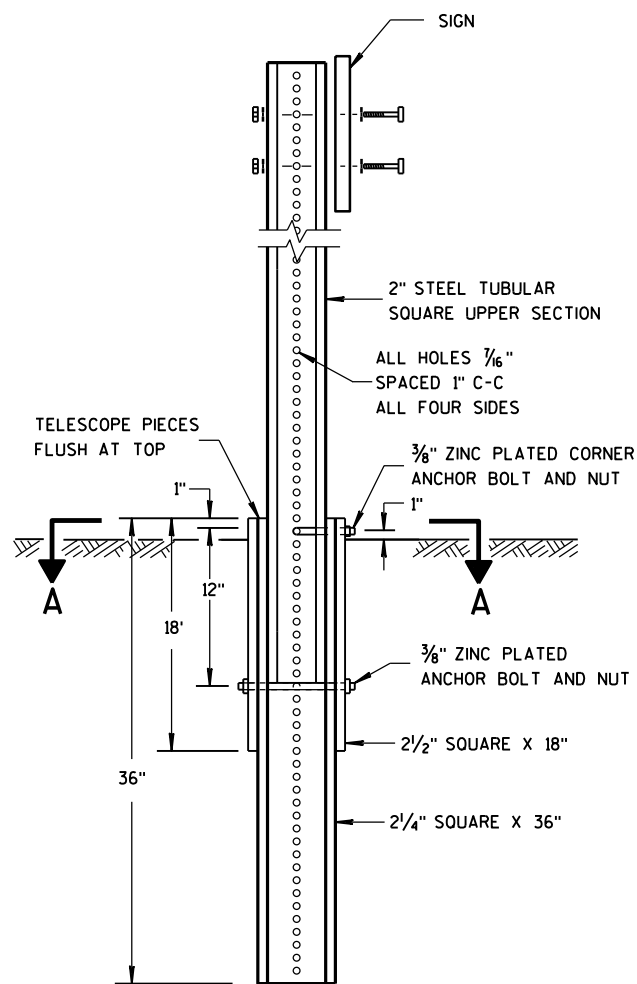
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2020 /S/ Andrew Heidtke  
DATE STATEWIDE WORK ZONE TRAFFIC  
SAFETY ENGINEER

FHWA

SDD 15D28 - 04

SDD 15D28 - 04



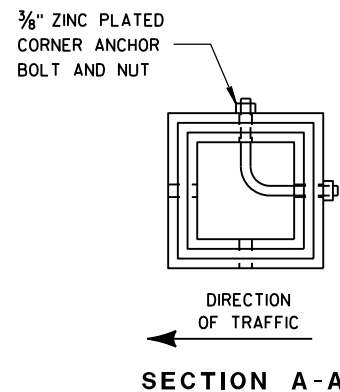
**DETAIL OF TUBULAR STEEL SIGN POST**

**TUBULAR STEEL POSTS**

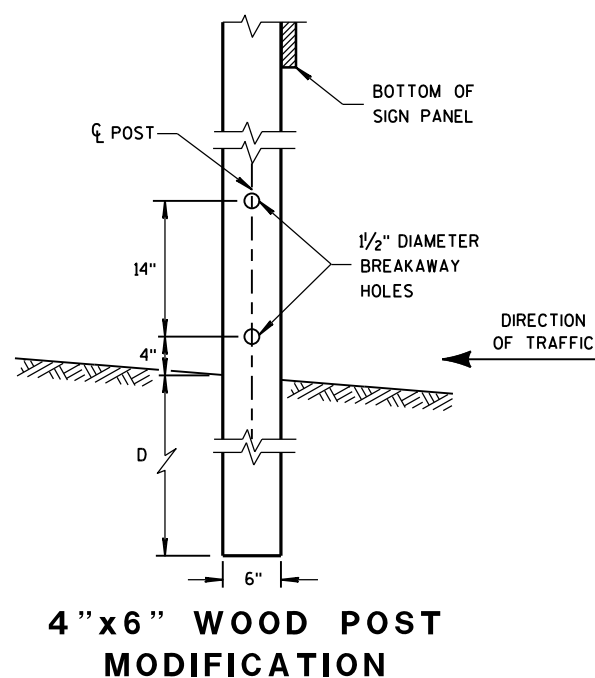
AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

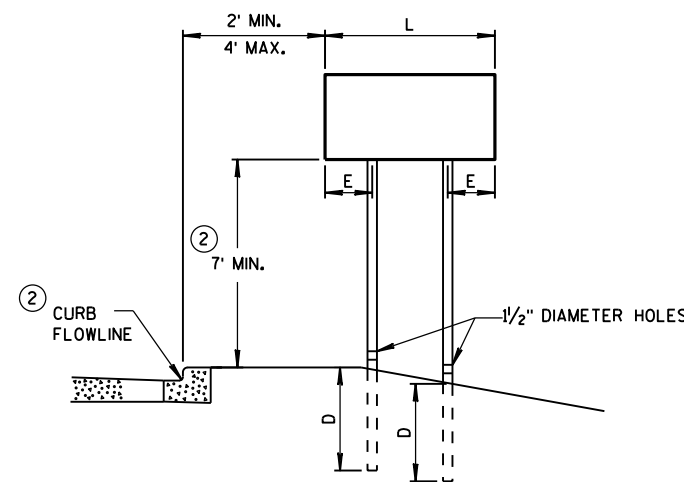
SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.



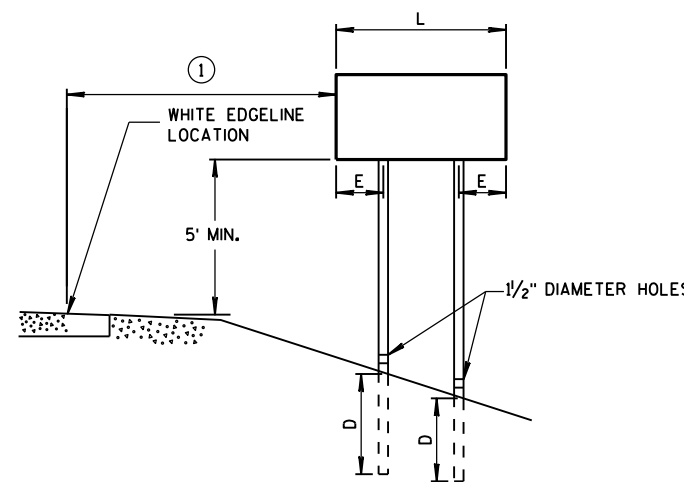
**SECTION A-A**



**4" X 6" WOOD POST MODIFICATION**



**URBAN AREA**



**RURAL AREA**

**POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS**

**WOOD POST EMBEDMENT DEPTH**

AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'

**4" X 6" WOOD POST**

POST SPACING REQUIREMENTS		NUMBER OF WOOD POSTS REQUIRED
L	E	
48" OR LESS AND LESS THAN 20 SQ. FT.	-	1
LESS THAN 60"	12"	2
60" TO 120"	L/5	2
GREATER THAN 120" LESS THAN 168"	12"	3
168" AND GREATER	12"	4

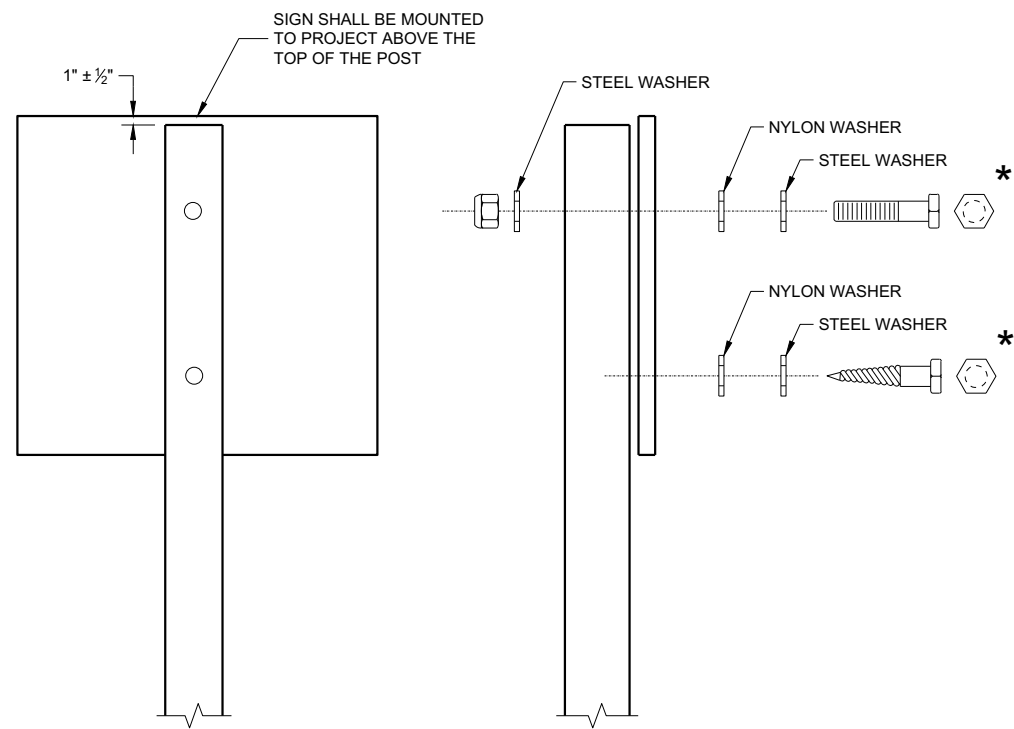
SEE NOTE ③

**GENERAL NOTES**

- ① 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.
- ② 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. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.
- ③ FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.

**TEMPORARY TRAFFIC CONTROL SIGN MOUNTING**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



NUTS, BOLTS AND LAGS USED FOR MOUNTING SIGNS SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

- A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3
- B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

THREADS ON BOLTS AND NUTS SHALL BE MANUFACTURED WITH SUFFICIENT ALLOWANCE FOR THE CADMIUM PLATE OR GALVANIZED COATING TO PERMIT THE NUTS TO RUN FREELY ON THE BOLTS.

WOOD POST (4" x 6")  
 LAG SCREWS - 3/8" x 3"  
 MACHINE BOLTS - 5/16" x 6 1/2" OR 7" LENGTH W/NUTS

SQUARE STEEL POST (2" x 2")  
 MACHINE BOLTS - 3/8" x 3 1/4" LENGTH W/NUTS  
 RIVETS - 3/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM  
 BODY/MANDREL O.D. FLANGE 0.720 - 0.765 INCH,  
 GRIP RANGE 0.042 - 0.375 INCH

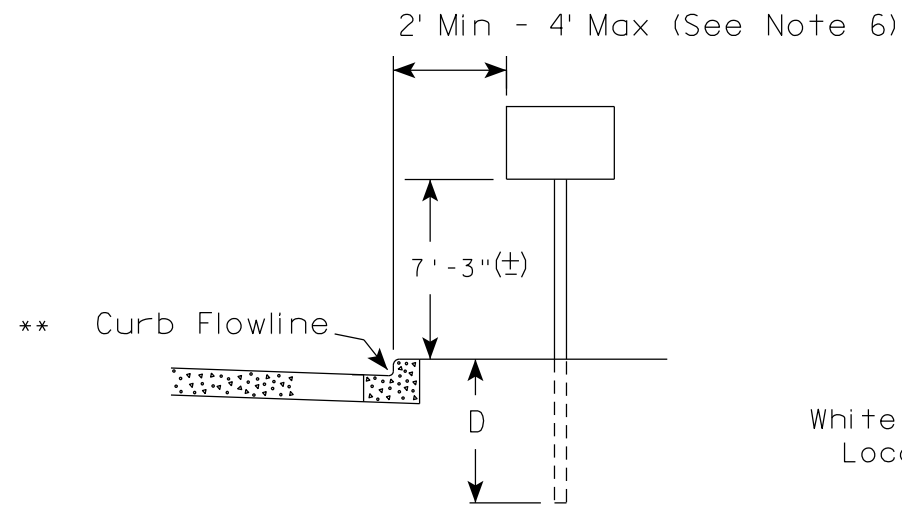
WASHERS (ALL POSTS) -  
 1 1/4" O.D. x 3/8" I.D. x 1/16" STEEL  
 1 1/4" O.D. x 3/8" I.D. x 0.080 NYLON

\* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

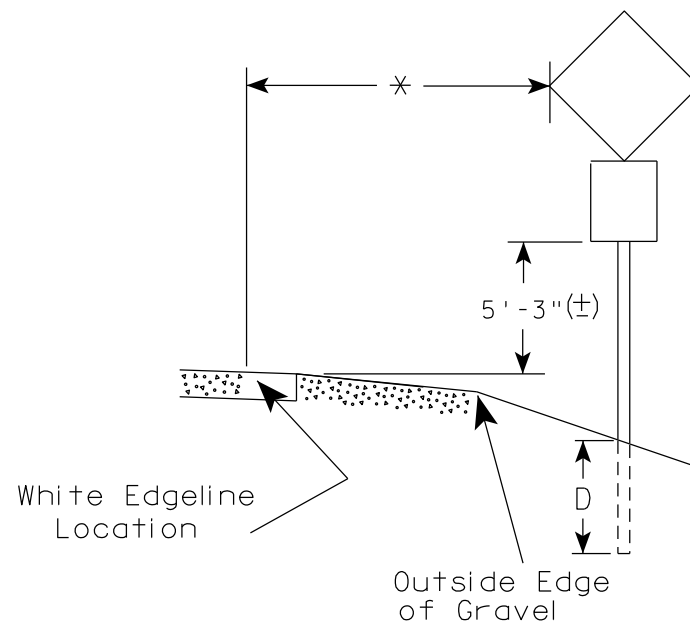
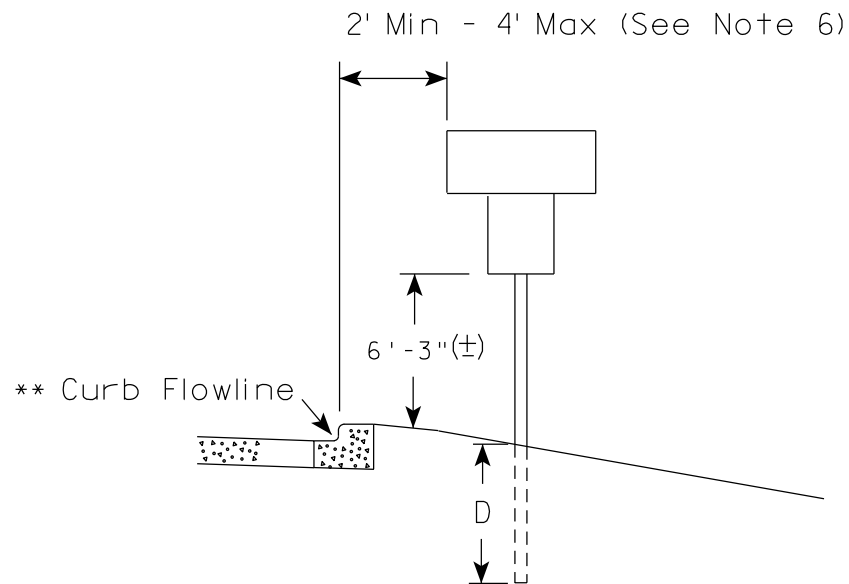
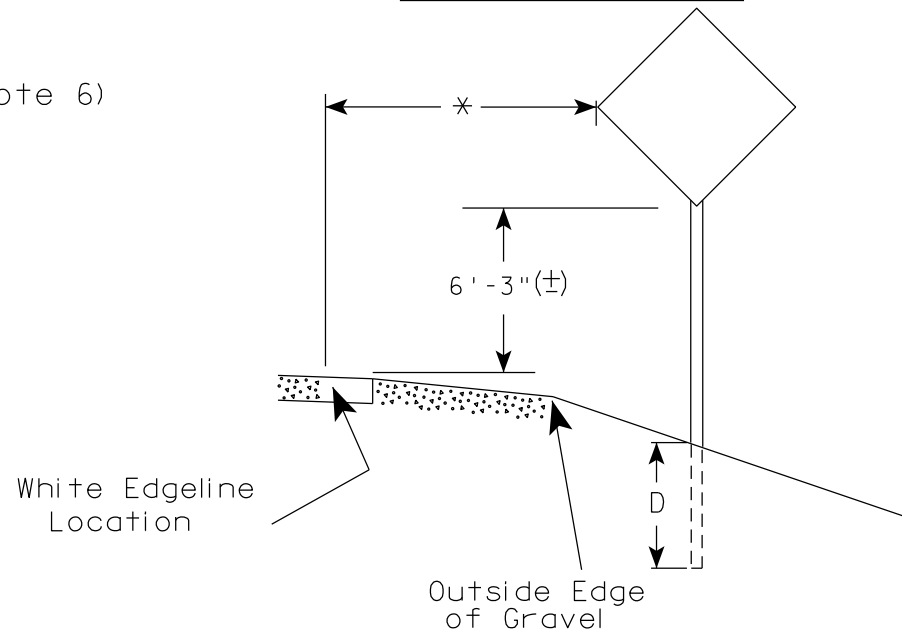
<b>ATTACHMENT OF SIGNS TO POSTS</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	



URBAN AREA



RURAL AREA (See Note 2)



GENERAL NOTES

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

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.

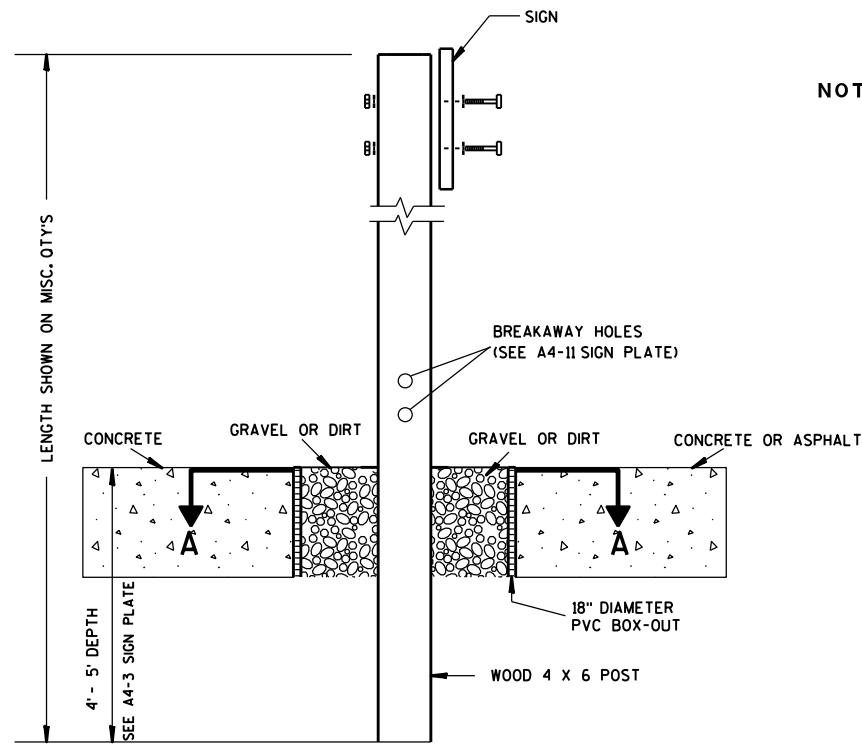
\* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

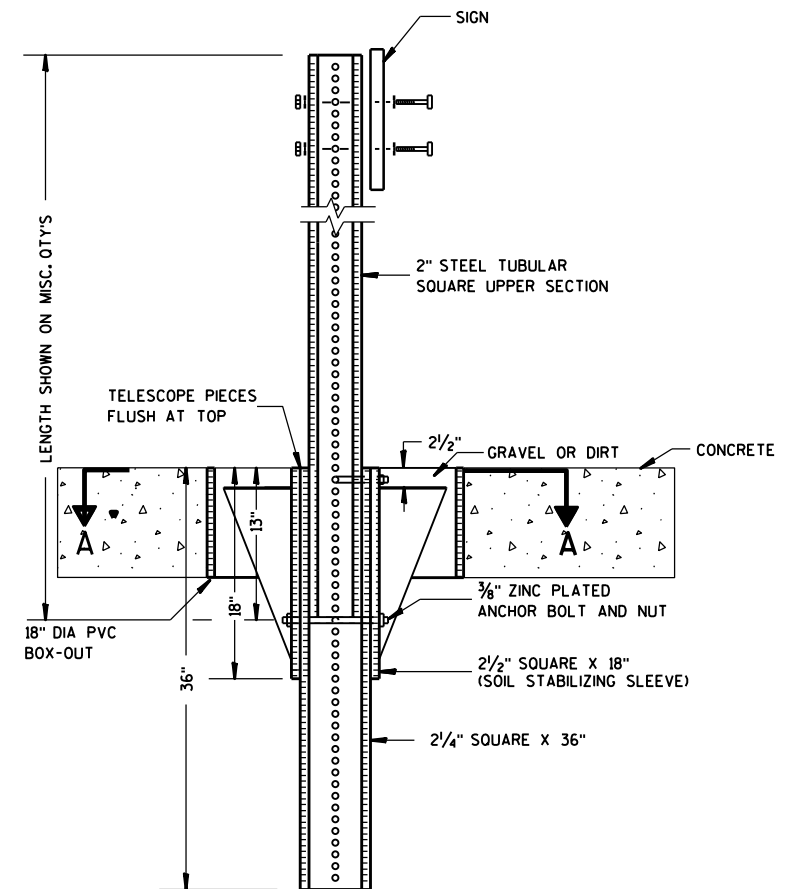
DATE 5/13/2020 PLATE NO. A4-3.22



**ELEVATION VIEW**

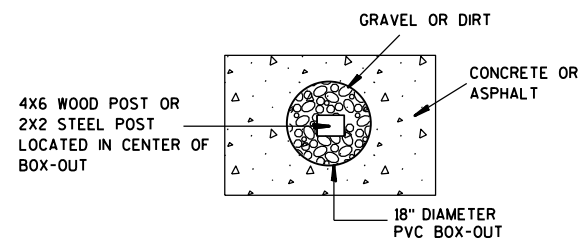
**DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT**

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



**ELEVATION VIEW**

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



**PLAN VIEW**

**FOR NEW CONCRETE/ASPHALT INSTALLATIONS**

**SIGN POST  
BOX-OUTS  
A4-3B**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

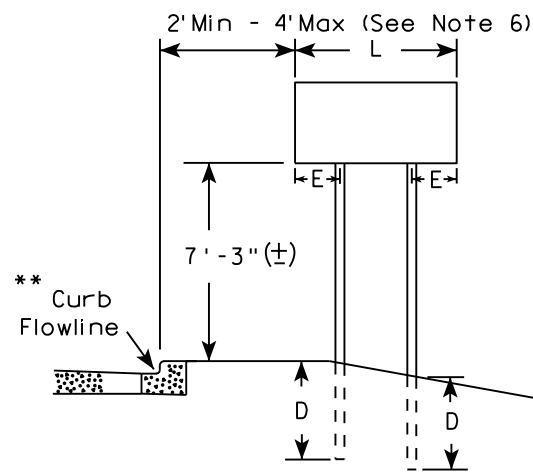
7

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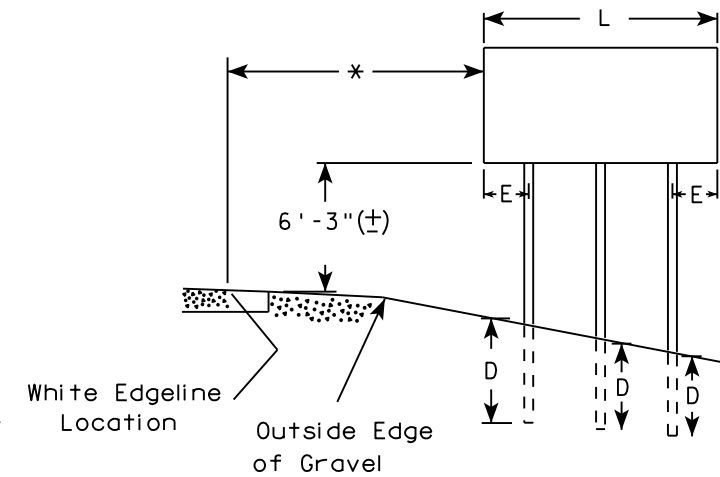
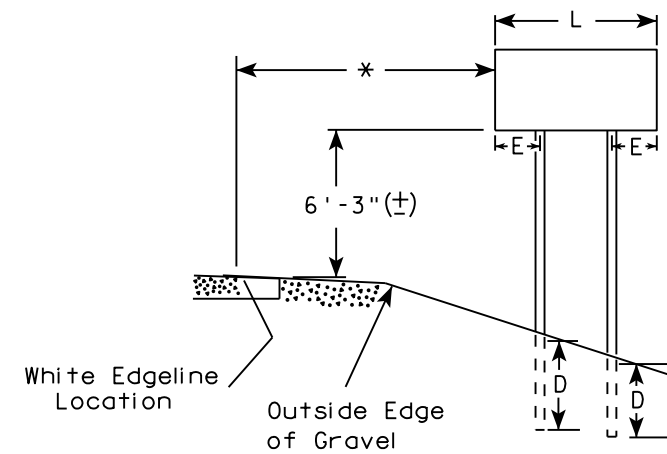
GENERAL NOTES

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

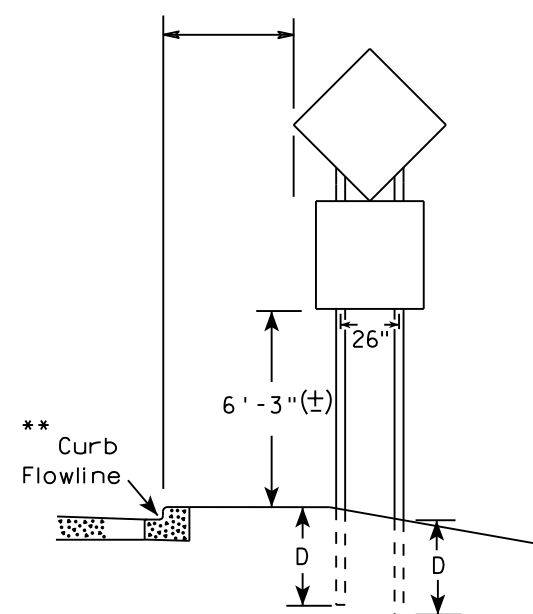
URBAN AREA



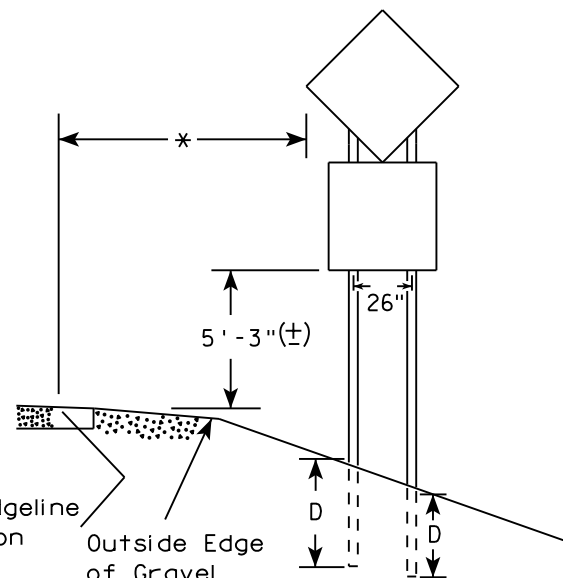
RURAL AREA (See Note 3)



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



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

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

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

\*\*\*

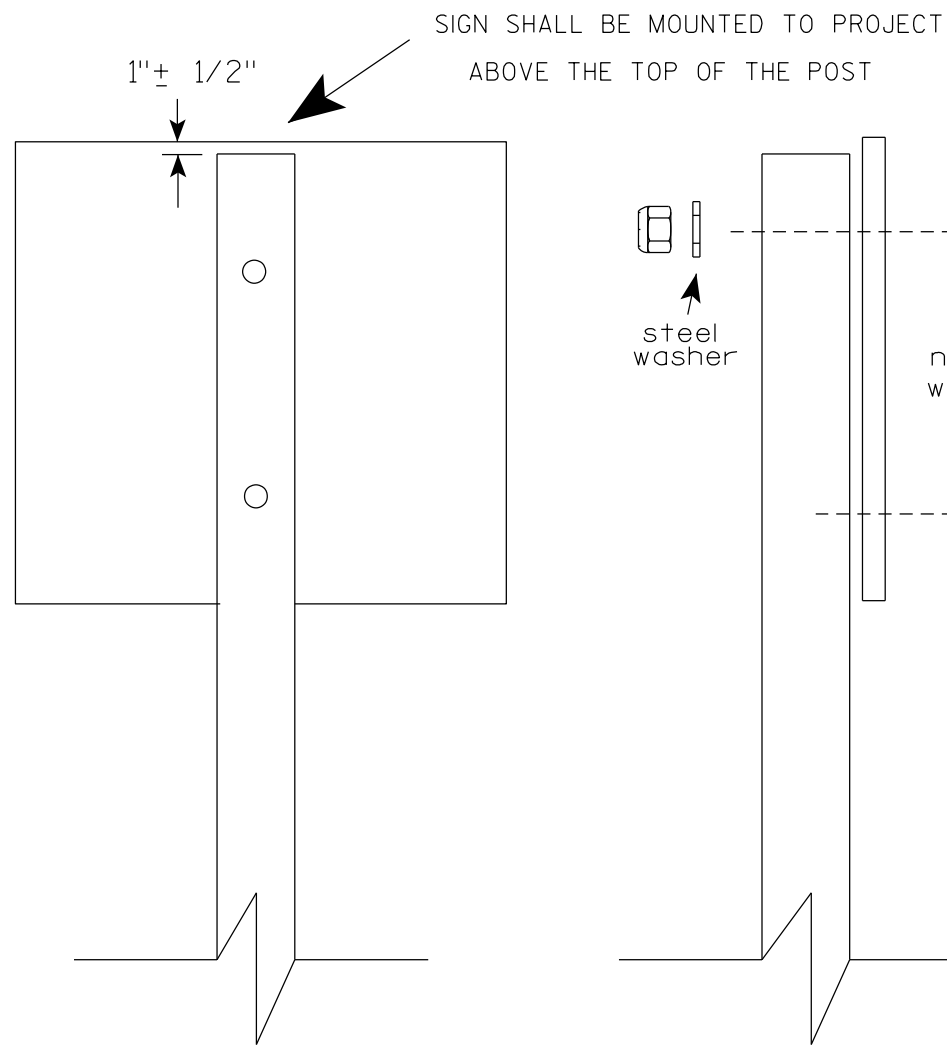
SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION  
 APPROVED *Matthew R. Rauch*  
 For State Traffic Engineer  
 DATE 8/21/17 PLATE NO. A4-4.15



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

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

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

STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)

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

WOOD POSTS (4" x 6")

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

SQUARE STEEL POSTS (2" x 2")

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

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

WASHERS (ALL POSTS) -

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

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

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

ATTACHMENT OF SIGNS  
TO POSTS

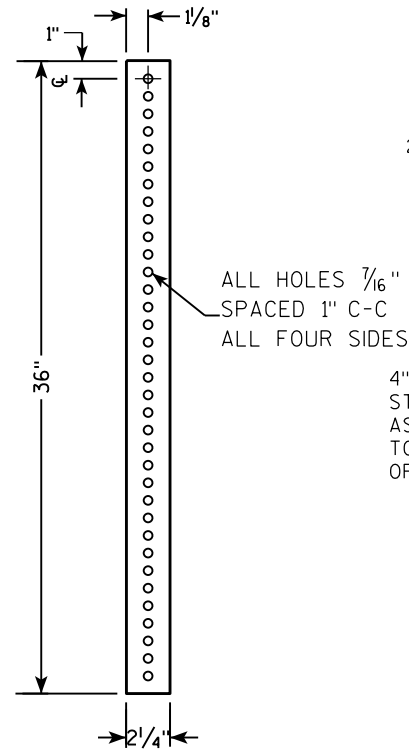
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*  
For State Traffic Engineer

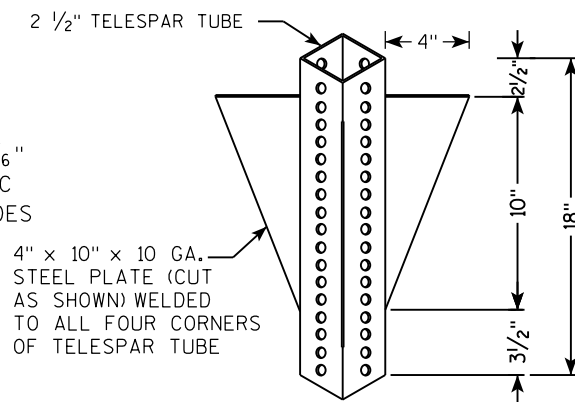
DATE 4/1/2020 PLATE NO. A4-8.9

**TELESCOPIC TUBING ANCHORS  
TWO PIECE SYSTEM**

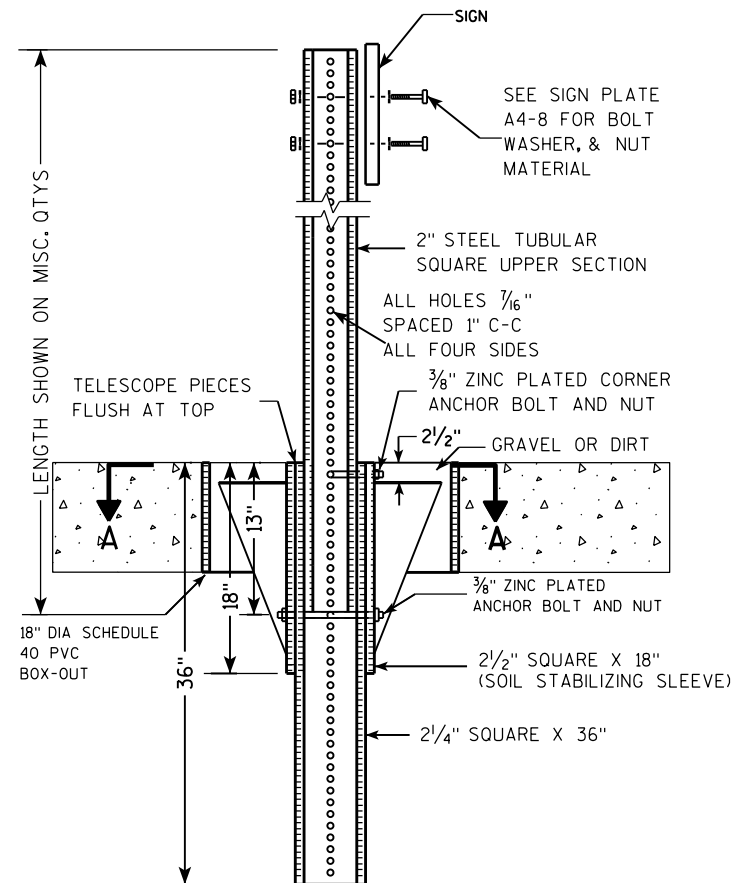
2 1/4" SQUARE  
12 GAUGE  
PERFORATED  
GALVANIZED FINISH



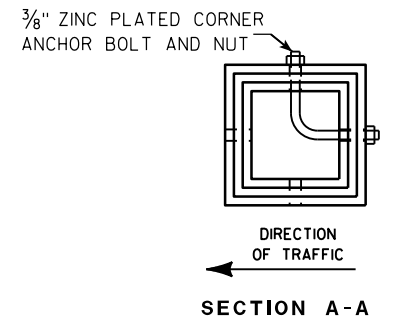
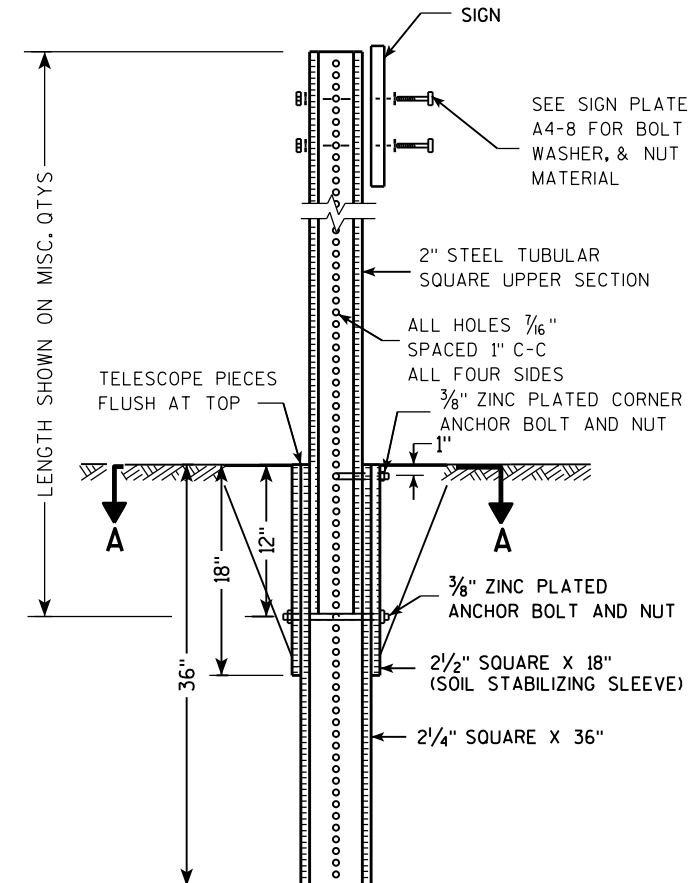
2 1/2" SQUARE  
12 GAUGE  
OMNI-DIRECTIONAL  
PERFORATED  
SOIL STABILIZING SLEEVE  
GALVANIZED FINISH



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



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



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

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

**TUBULAR STEEL  
SIGN POST  
A4-9**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

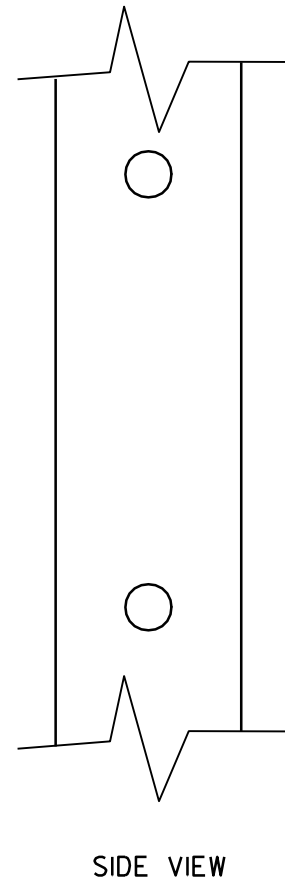
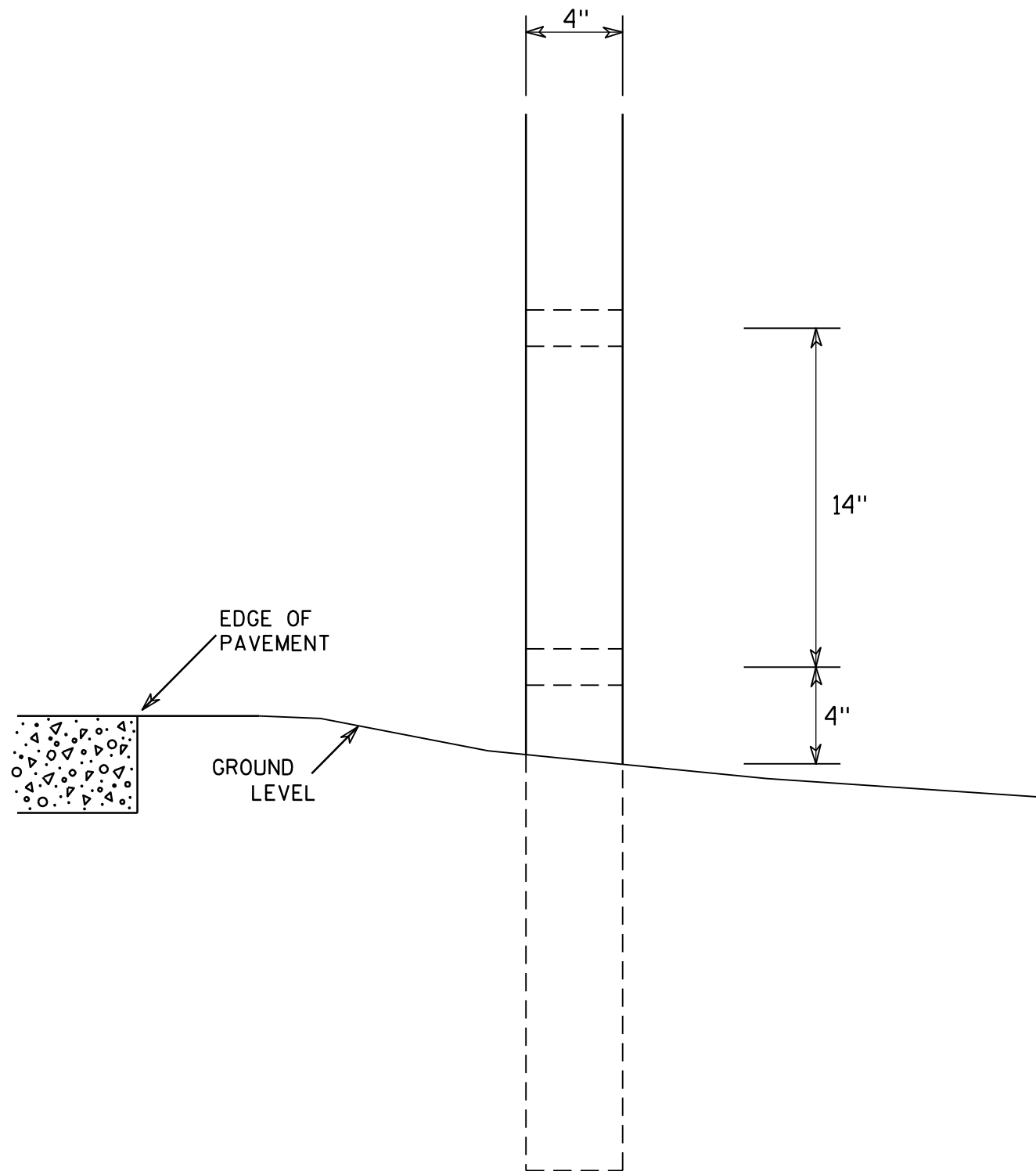
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



GENERAL NOTES

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

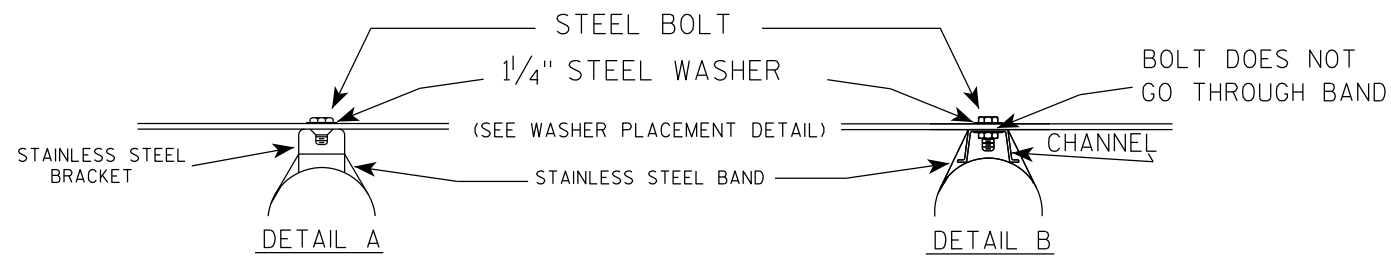
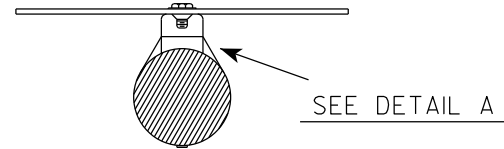
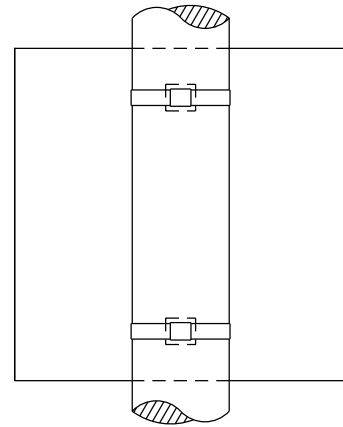
7

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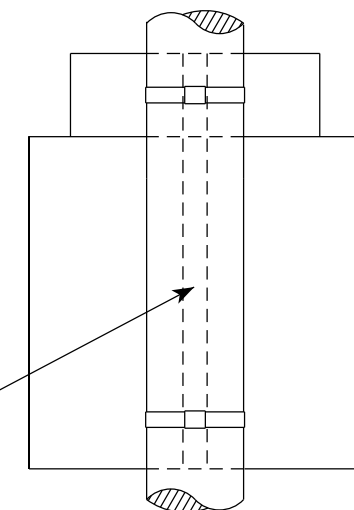
<b>4 X 6 WOOD POST MODIFICATIONS</b>	
<i>WISCONSIN DEPT OF TRANSPORTATION</i>	
APPROVED	<i>Chester J Spang</i> for State Traffic Engineer
DATE <u>3/27/97</u>	PLATE NO. <u>A4-11.2</u>

# BANDING

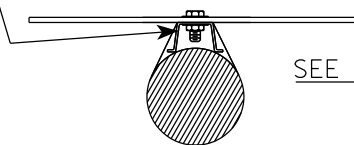
SINGLE SIGN



"J" ASSEMBLY

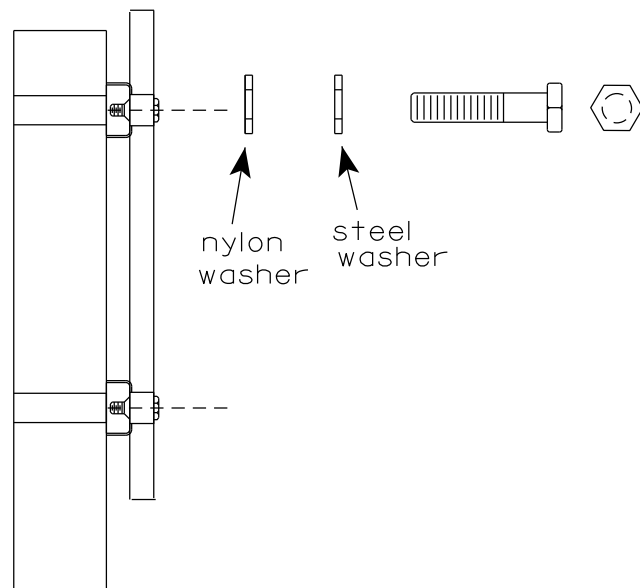


CHANNEL  
SEE TYPICAL PANEL  
INSTALLATION SHEET



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

WASHER PLACEMENT



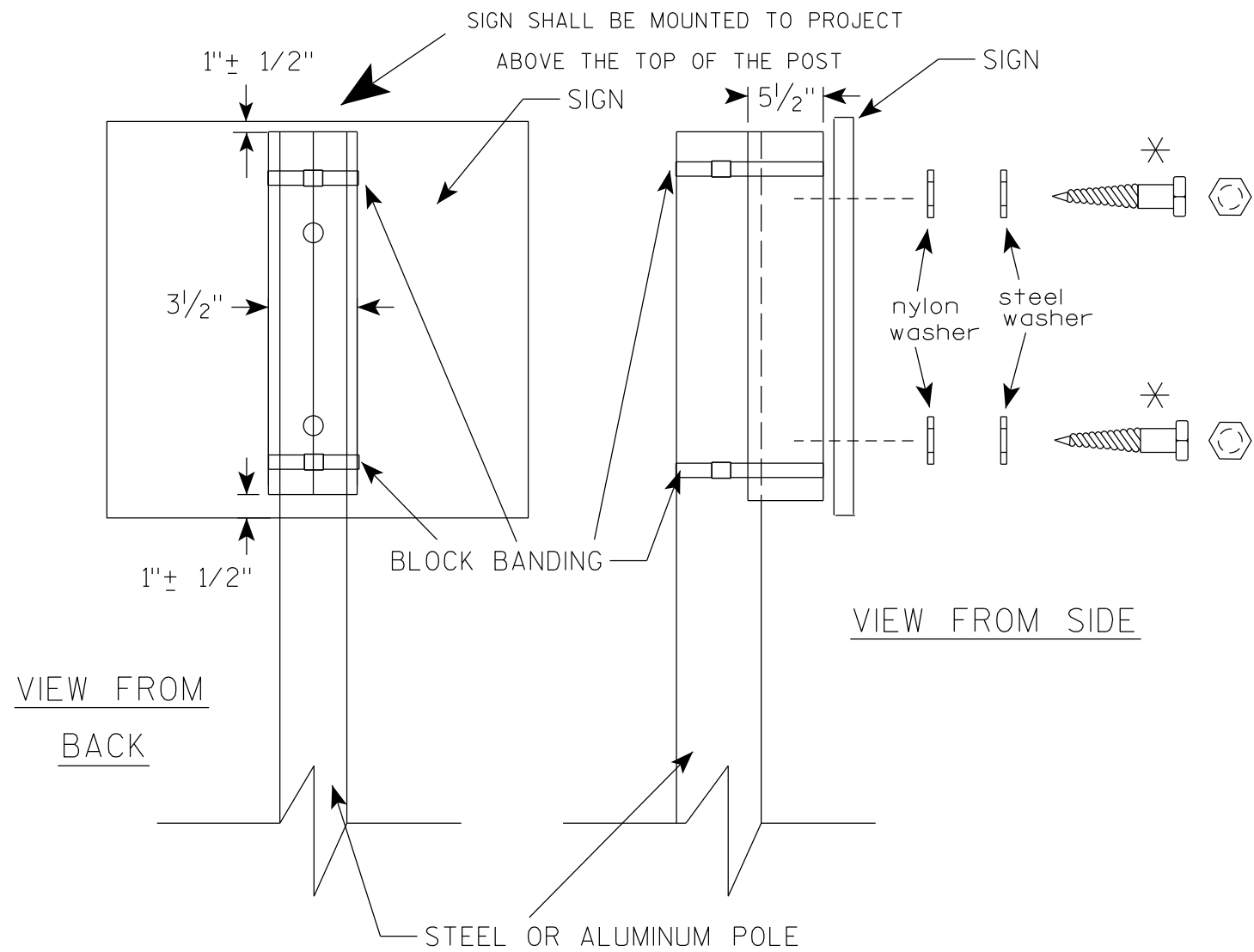
WASHERS (ALL POSTS) -  
 1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL  
 1-1/4" O.D. X 3/8" I.D. X .080 NYLON  
 FOR ALL TYPE H SIGNS

STANDARD SIGN  
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

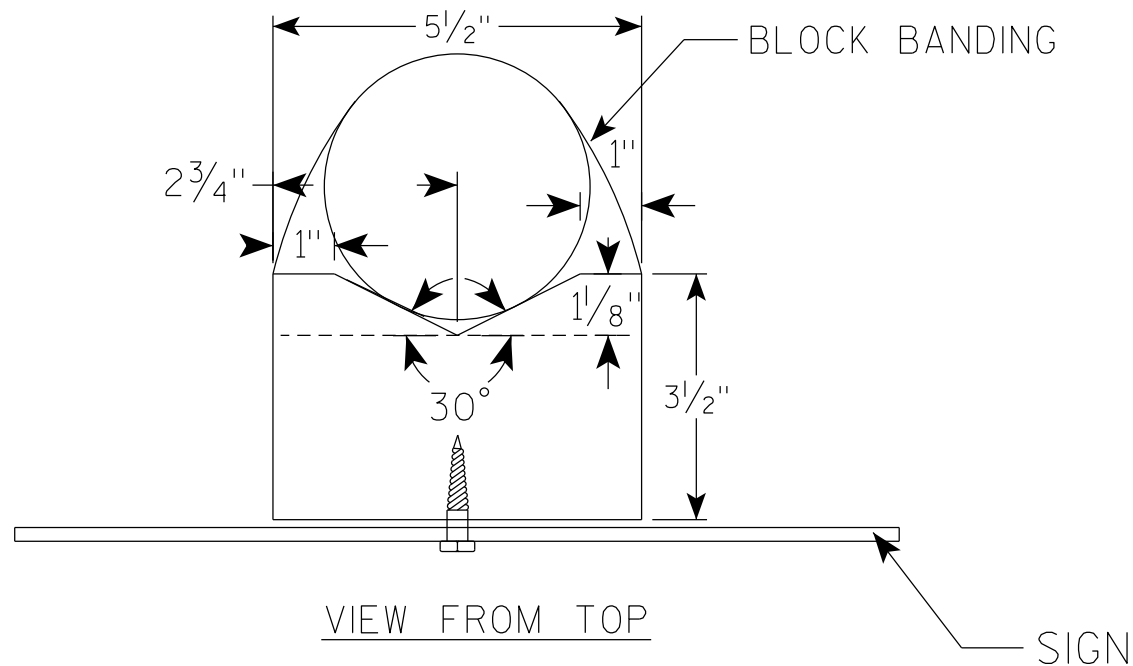
DATE 6/10/19 PLATE NO. A5-9.4



GENERAL NOTES

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

✱ LAG BOLTS SHALL BE 3/8" X 2 1/2"

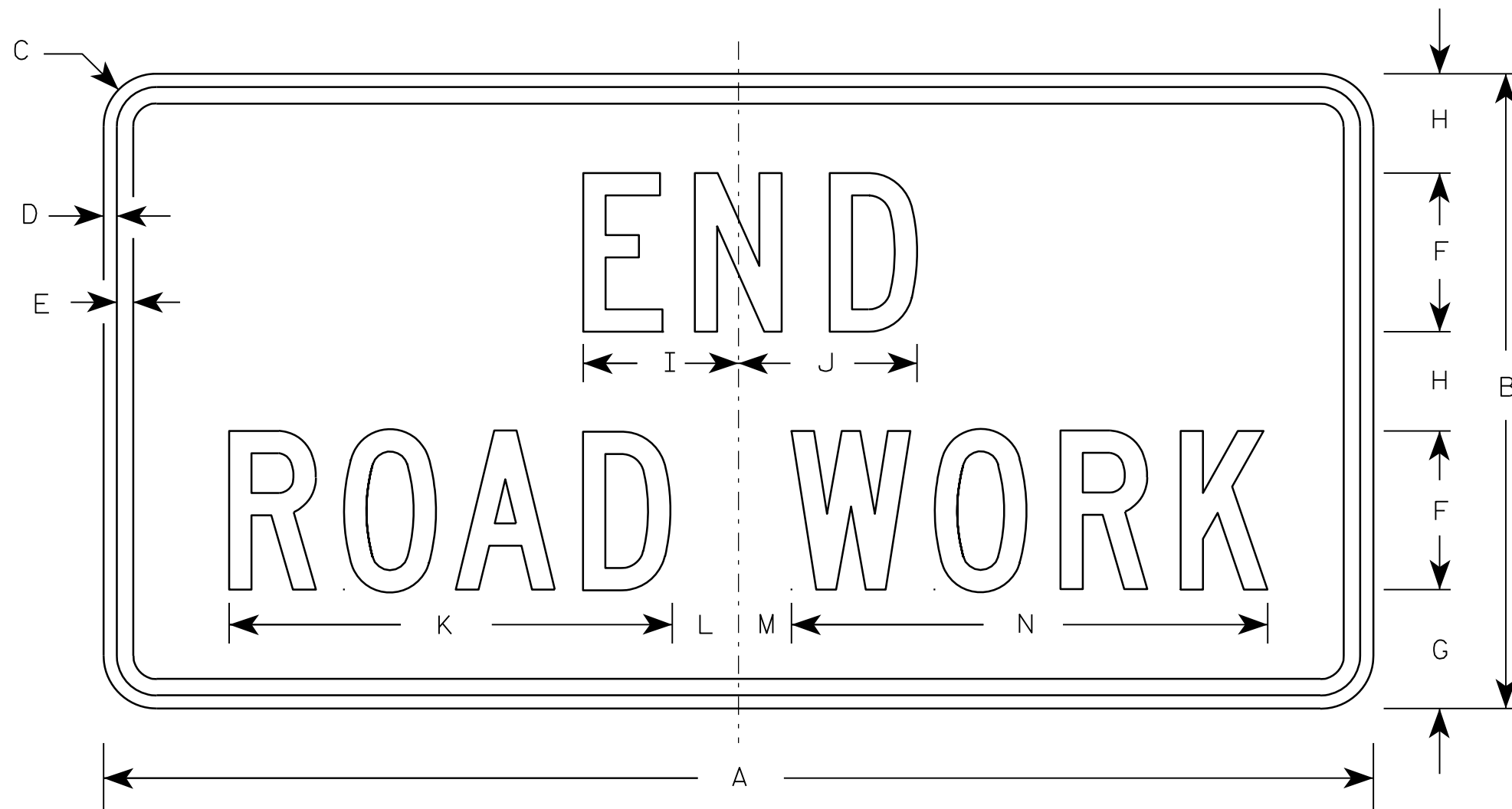


BLOCK BANDING DETAIL ( V-BLOCK OPTION )	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R Rauch</i> For State Traffic Engineer
DATE 6/10/19	PLATE NO. A5-10.2



NOTES

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



G20-2A

7

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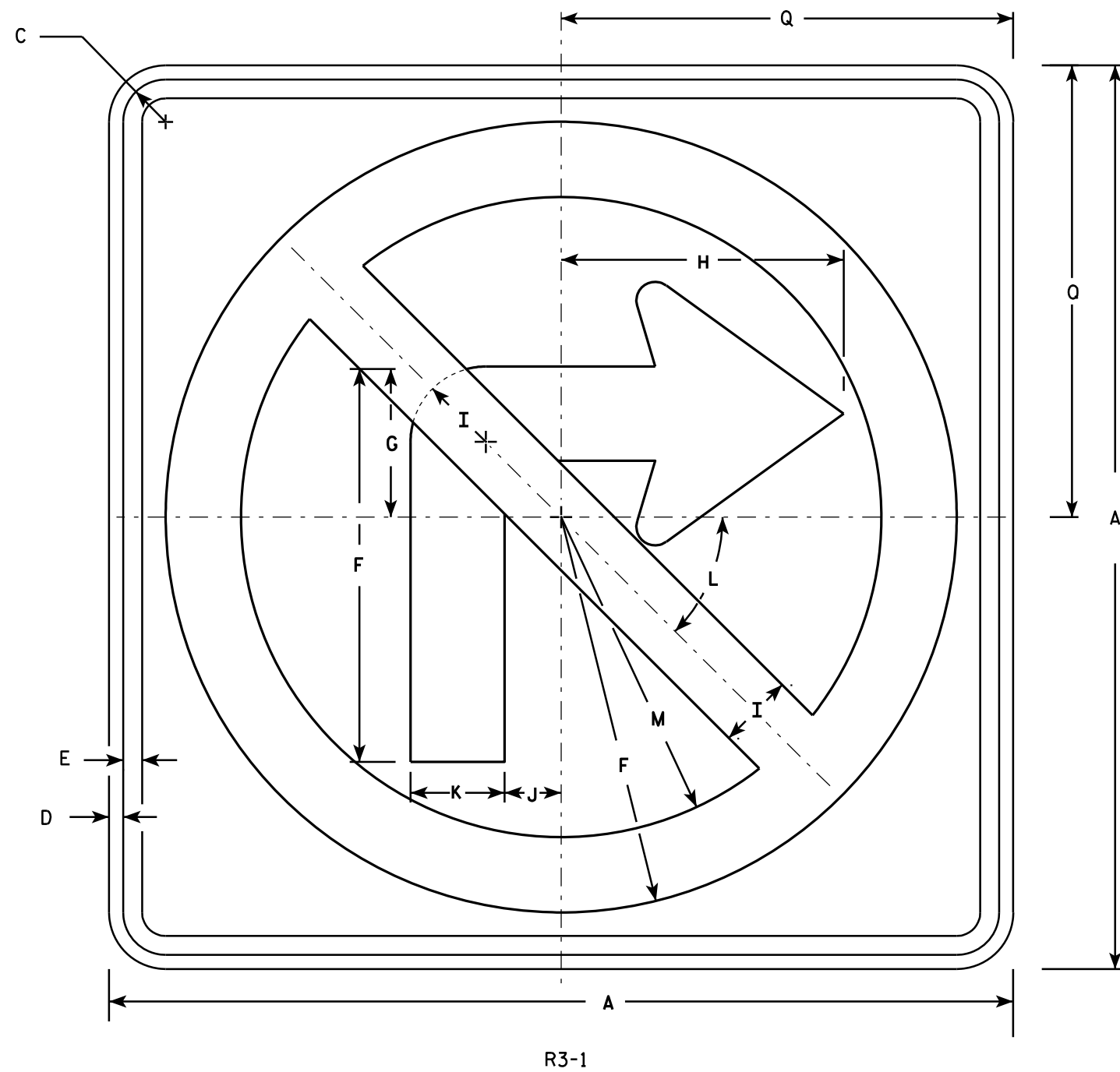
Metric equivalent for this sign is:

SIZE	
1	900 mm X 450 mm
2	1200 mm X 600 mm
3	1200 mm X 600 mm
4	1200 mm X 600 mm
5	1200 mm X 600 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area sq. m.
1	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
4	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
5	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72

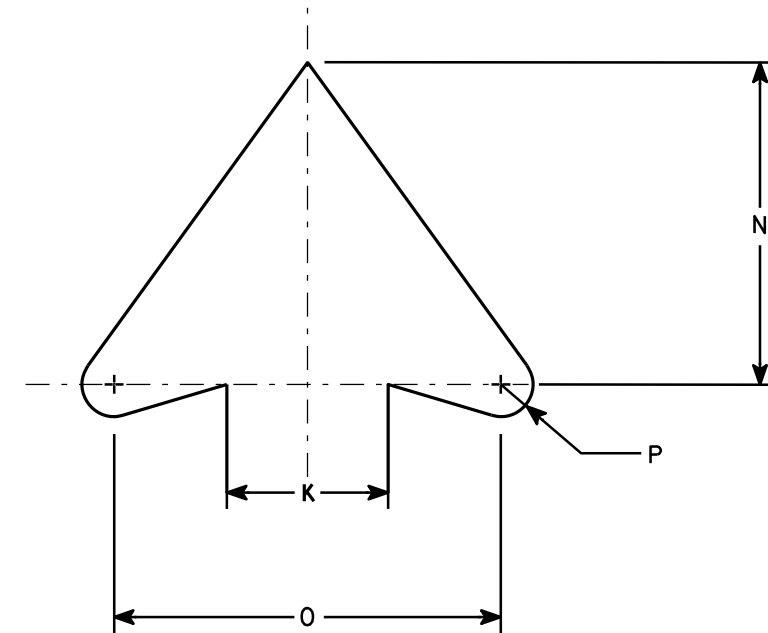
STANDARD SIGN G20-2A	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 9/30/09	PLATE NO. G20-2A.8

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	<b>E</b>
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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	12										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	12										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	18										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	18										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	18										9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1	24										16.0

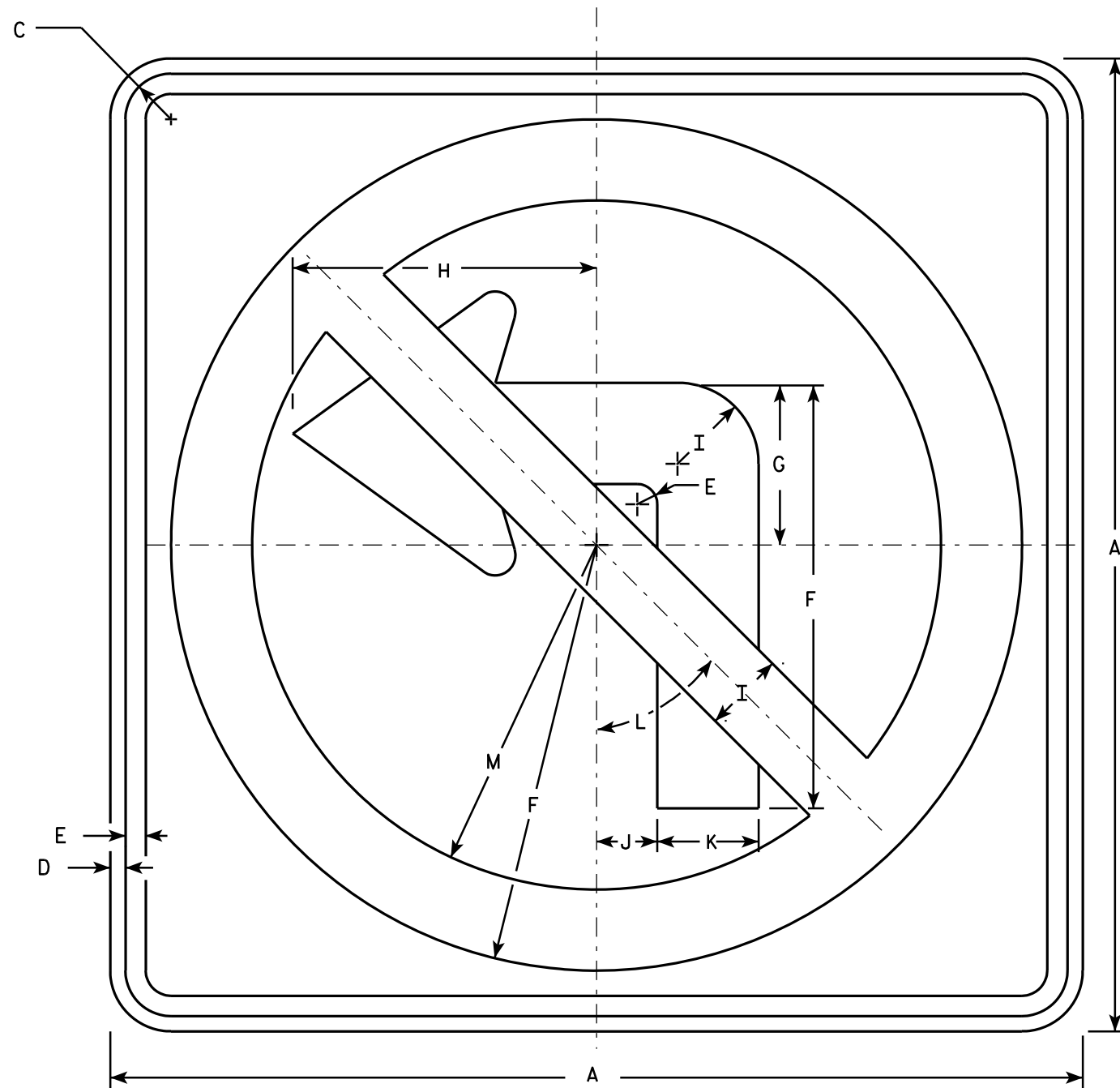
**STANDARD SIGN**  
**R3-1**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-1.5

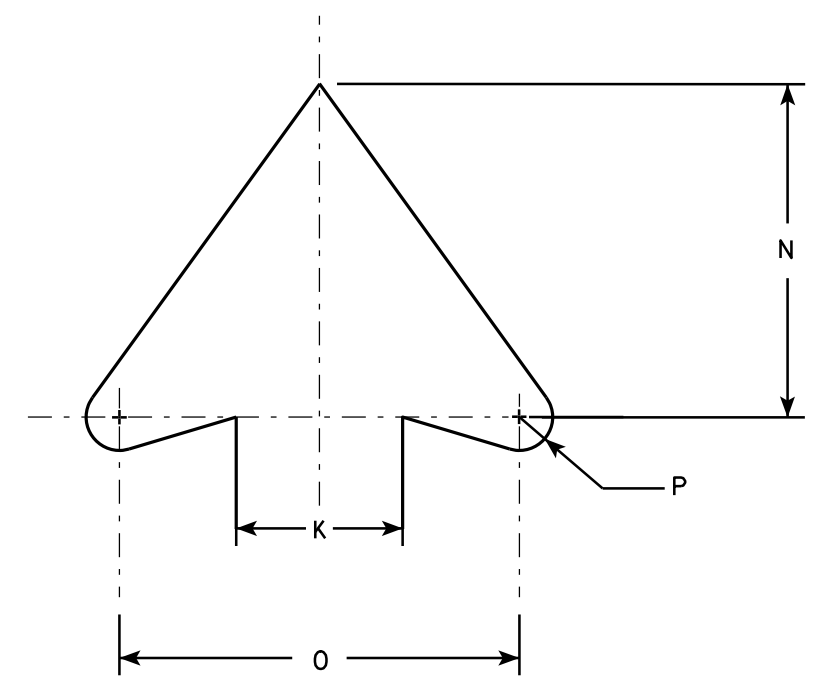
PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: \_\_\_\_\_ E



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

**STANDARD SIGN**  
**R3-2**

WISCONSIN DEPT OF TRANSPORTATION

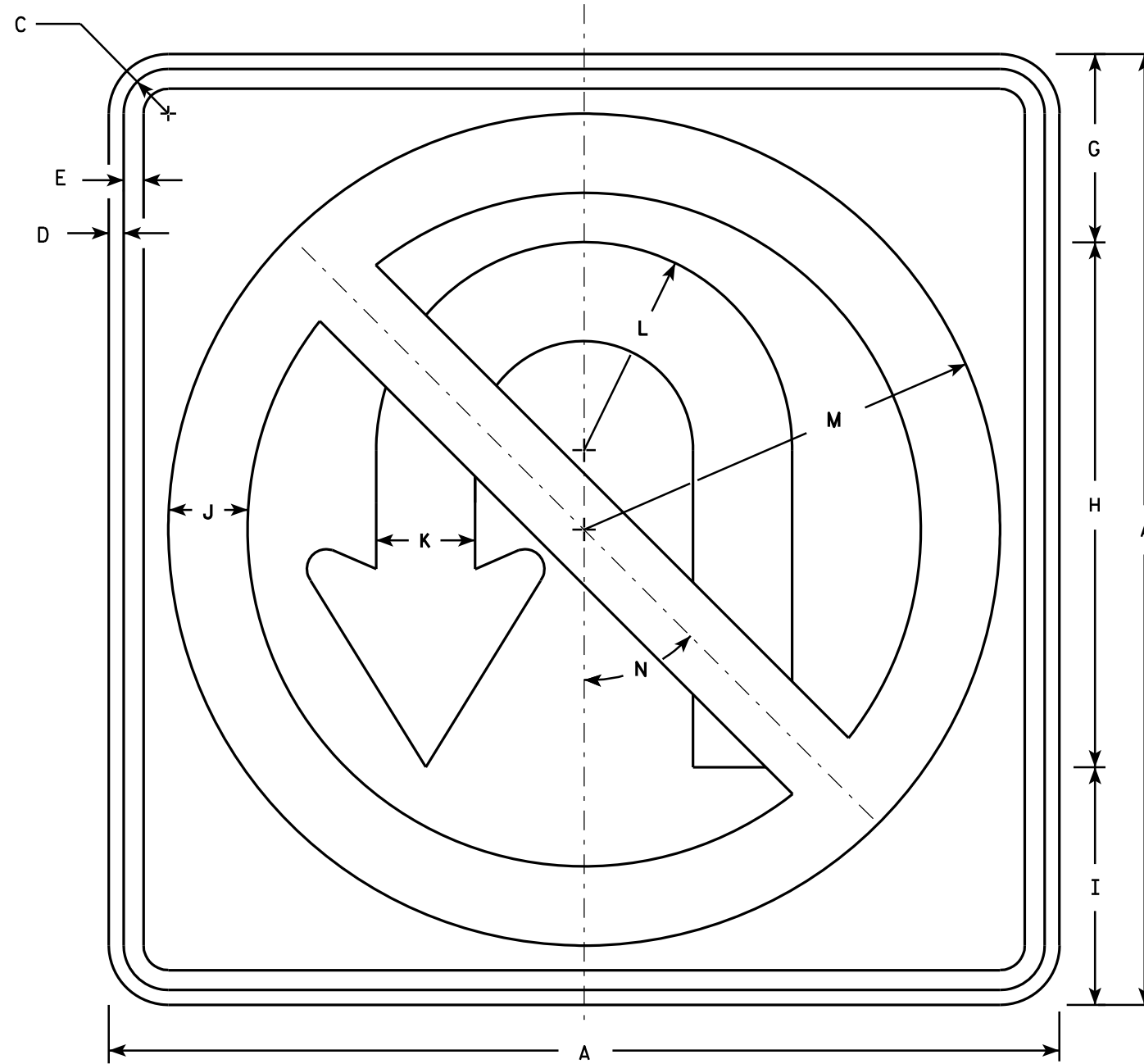
APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

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

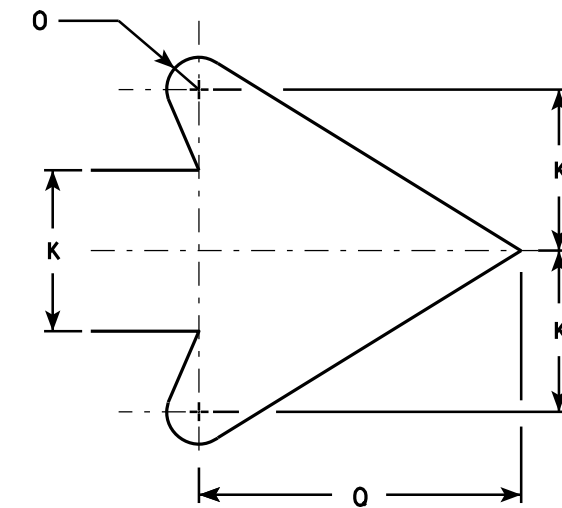
PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: **E**

NOTES

1. 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.



R3-4



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	3/8	1/2		4 3/4	13 1/4	6	2	2 1/2	5 1/4	10 1/2	45°	1/2		5										4.0
2M	36		1 5/8	5/8	3/4		7 1/8	19 7/8	9	3	3 3/4	7 7/8	15 3/4	45°	3/4		7 5/8										9.0
3	36		1 5/8	5/8	3/4		7 1/8	19 7/8	9	3	3 3/4	7 7/8	15 3/4	45°	3/4		7 5/8										9.0
4	36		1 5/8	5/8	3/4		7 1/8	19 7/8	9	3	3 3/4	7 7/8	15 3/4	45°	3/4		7 5/8										9.0
5	36		1 5/8	5/8	3/4		7 1/8	19 7/8	9	3	3 3/4	7 7/8	15 3/4	45°	3/4		7 5/8										9.0

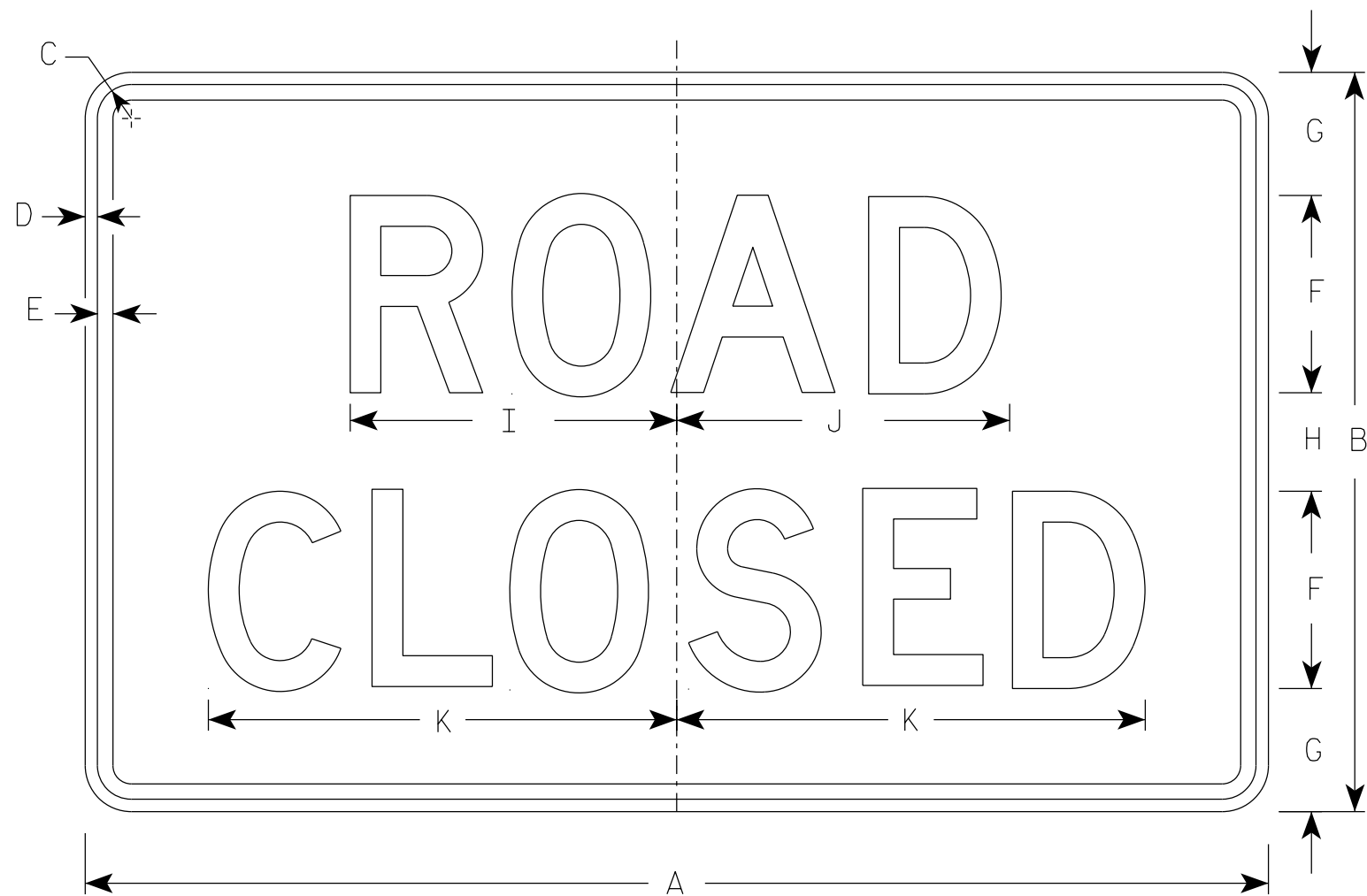
**STANDARD SIGN**  
**R3-4**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE: 12/08/10 PLATE NO. R3-4.11

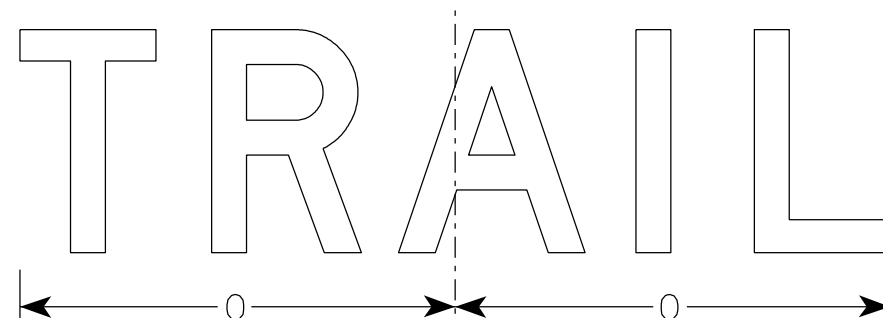
PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: **E**



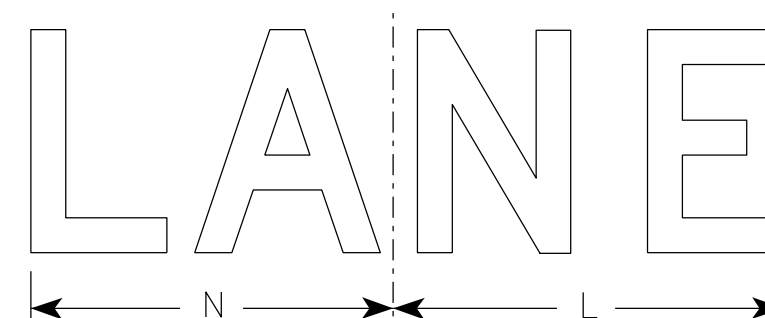
R11-2



R11-2R



R11-2T



R11-2L

NOTES

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

7

7

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

STANDARD SIGN  
R11-2

WISCONSIN DEPT OF TRANSPORTATION

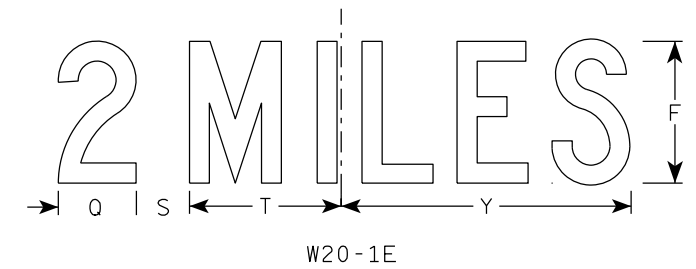
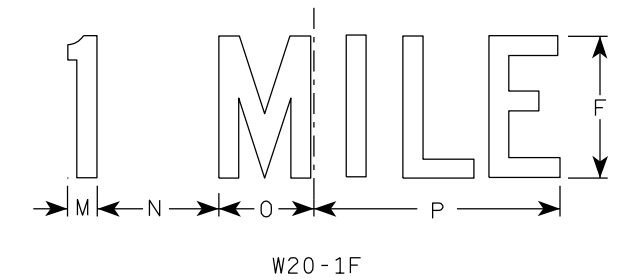
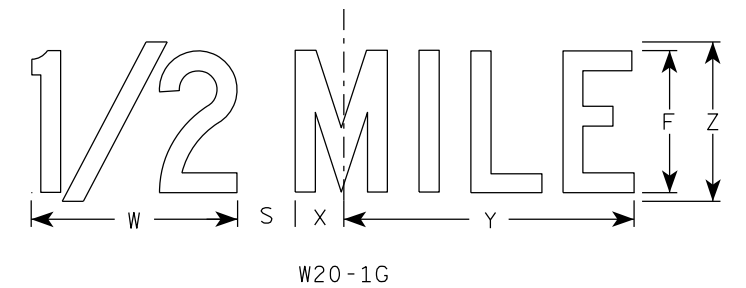
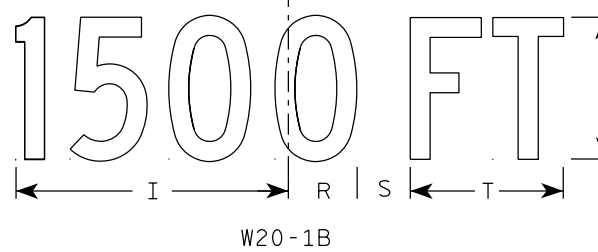
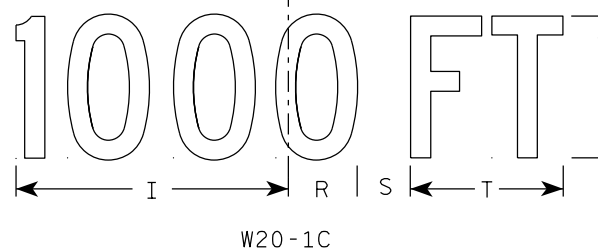
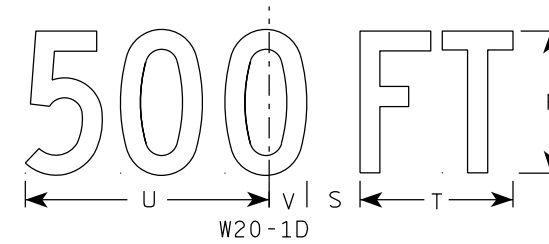
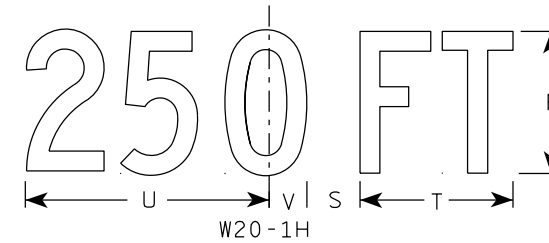
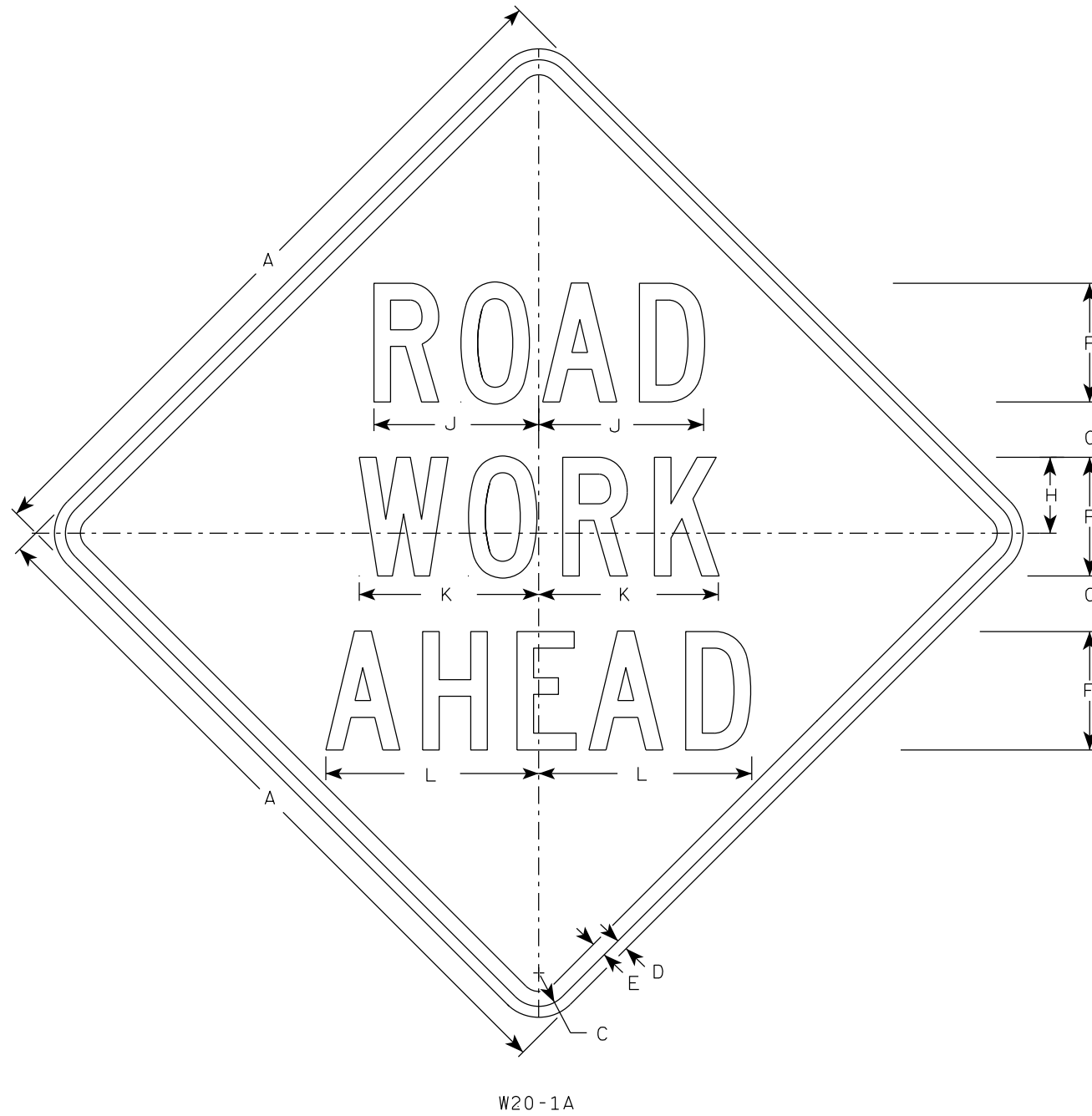
APPROVED *Matthew R Rauch*  
For State Traffic Engineer

DATE 3/29/2021 PLATE NO. R11-2.11

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

**NOTES**

1. Sign is Type II - Type F Reflective
2. Color:  
Background - Orange  
Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



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

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

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

DATE 3/25/2020 PLATE NO. W20-1.11

# Notes



## ***Wisconsin Department of Transportation***

Dedicated people creating transportation solutions through innovation and exceptional service.

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