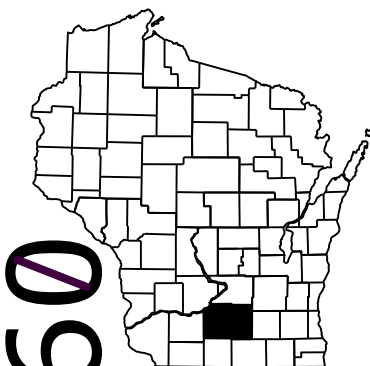


ORDER OF SHEETS		
Section No. 1	Title	
Section No. 2	Typical Sections and Details	
Section No. 3	Estimate of Quantities	
Section No. 3	Miscellaneous Quantities	
<del>Section No. 4</del>	<del>Right of Way Plat</del>	
<del>Section No. 5</del>	<del>Plan and Profile</del>	
Section No. 6	Standard Detail Drawings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

TOTAL SHEETS = 14



DESIGN DESIGNATION

A.A.D.T. (2013)	=	6,980
A.A.D.T.	=	
D.H.V.	=	
D.D.	=	
T.	=	
DESIGN SPEED	=	60 MPH
ESALS	=	

CONVENTIONAL SYMBOLS

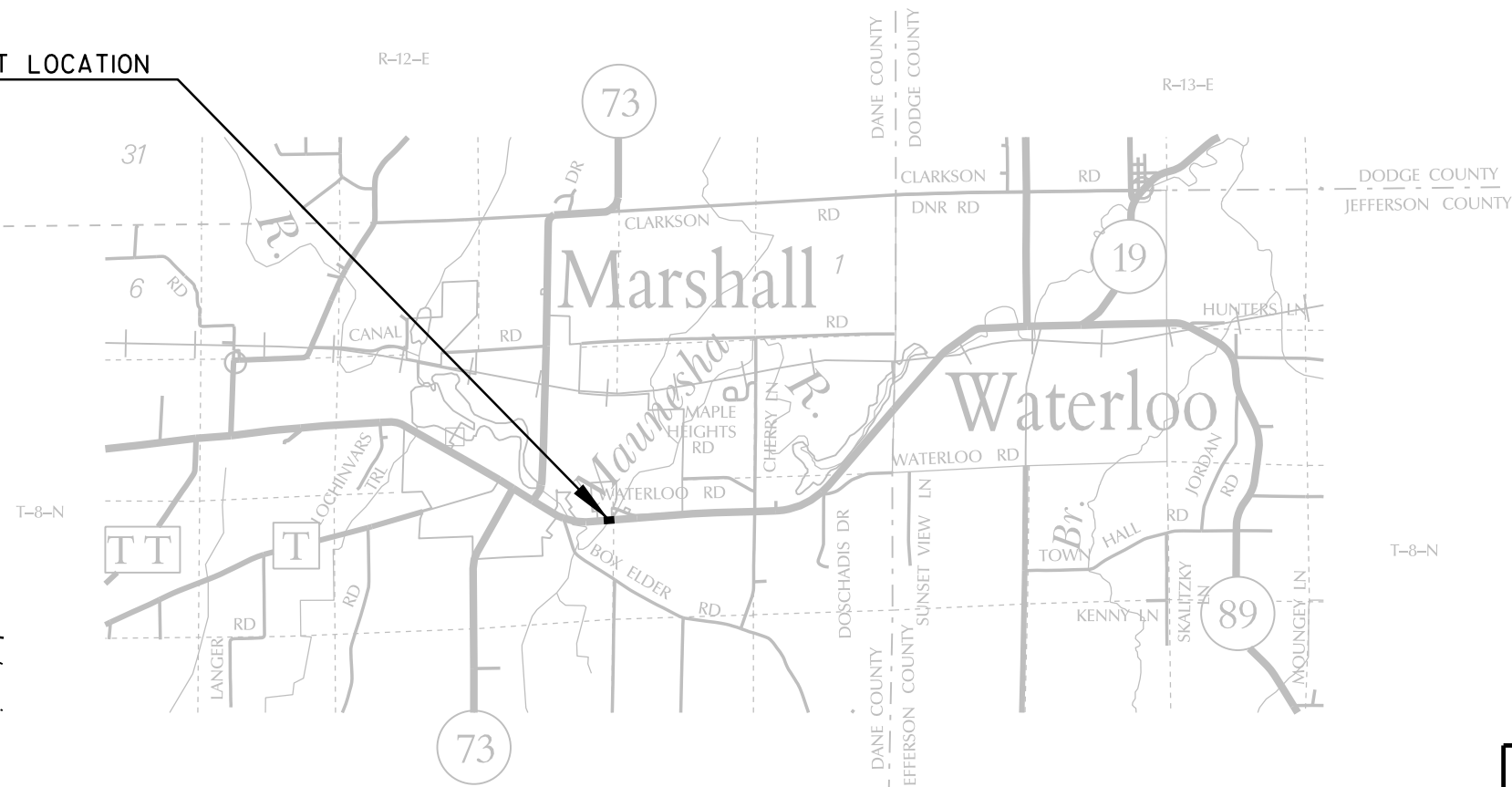
PLAN

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

PROFILE

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

PROJECT LOCATION  
B-13-190



LAYOUT  
SCALE 0 2/3 MI.

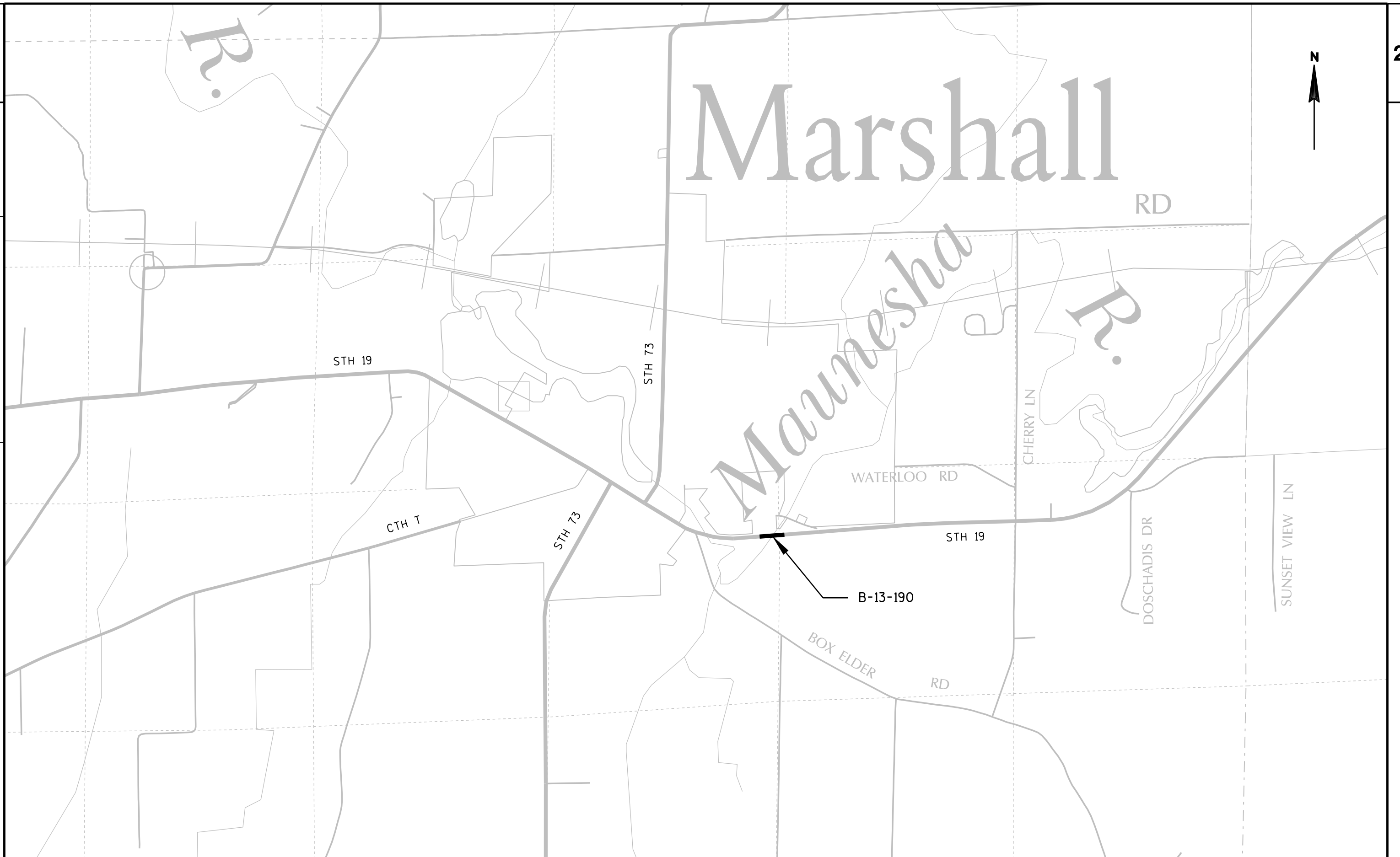
TOTAL NET LENGTH OF CENTERLINE = 0.03 MI.

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION  
PLAN OF PROPOSED IMPROVEMENT  
SUN PRAIRIE - WATERTOWN  
MAUNESHA RIVER STRUCTURE B-13-190  
STH 19  
DANE COUNTY

STATE PROJECT NUMBER  
3050-01-61

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
3050-01-61		

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
PREPARED BY	
Surveyor	
Designer	ROB KNORR
Project Manager	DAVID LAYTON
Regional Examiner	
Regional Supervisor	BRENDA SCHOENFELD
C.O. Examiner	
APPROVED FOR THE DEPARTMENT	
DATE: 4/16/13	
(Signature)	



PROJECT NO: 3050-01-61	HWY: STH 19	COUNTY: DANE	PROJECT OVERVIEW	SHEET	E
------------------------	-------------	--------------	------------------	-------	---

**GENERAL NOTES**

Width of traffic lane shall be no less than 18.5' from structure rail to edge of temporary concrete barrier.

There are utility facilities within the project area that are not shown on the plans. The contractor shall coordinate his construction activities with a call to Diggers Hotline and/or a direct call to the utilities that have facilities in the area. Not all utilities are members of Diggers Hotline. The Engineer shall adjust the locations of items under this contract to avoid conflict with the existing utility facilities.

**UTILITY CONTACTS**

**FRONTIER COMMUNICATIONS OF WI LLC**

ROBERT CHURCH - COMM. LINE  
100 COMMUNICATIONS DRIVE  
SUN PRAIRIE, WI 53590  
(608) 837-1881  
[robert.church@ftr.com](mailto:robert.church@ftr.com)

**WE ENERGIES - ELECTRICAL / GAS / PETROLEUM**

DAN SANDE  
A299  
333 WEST EVERETT STREET  
MILWAUKEE, WI 53203  
(414) 221-4578  
[Dan.Sande@we-energies.com](mailto:Dan.Sande@we-energies.com)

**CHARTER COMMUNICATIONS - COMM. LINE**

BRANDON STORM  
2701 DANIELS STREET  
MADISON, WI 53718  
(608) 274-3822  
[brandon.storm@chartercom.com](mailto:brandon.storm@chartercom.com)



**DNR LIAISON**

ERIC HEGGELUND  
SOUTH CENTRAL REGION HEADQUARTERS  
3911 FISH HATCHERY ROAD  
FITCHBURG, WI 53711-5397  
608-275-3301

**DESIGN CONTACT**

DAVID LAYTON, P.E.  
WISDOT SW REGION  
2012 WRIGHT STREET  
MADISON, WI 53704  
608-246-3821  
[David.Layton@dot.wi.gov](mailto:David.Layton@dot.wi.gov)

DATE 01MAY13		E S T I M A T E O F Q U A N T I T I E S			
LINE					3050-01-61
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	203.0200	REMOVING OLD STRUCTURE (STATION) 01. 0+00	LS	1.000	1.000
0020	213.0100	FINISHING ROADWAY (PROJECT) 01. 3050-01-61	EACH	1.000	1.000
0030	502.0100	CONCRETE MASONRY BRIDGES	CY	3.000	3.000
0040	502.3200	PROTECTIVE SURFACE TREATMENT	SY	14.000	14.000
0050	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	580.000	580.000
0060	513.4050	RAILING TUBULAR TYPE F (STRUCTURE) 01. B-13-190	LS	1.000	1.000
0070	618.0100	MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 01. 3050-01-61	EACH	1.000	1.000
0080	619.1000	MOBILIZATION	EACH	1.000	1.000
0090	643.0100	TRAFFIC CONTROL (PROJECT) 01. 3050-01-61	EACH	1.000	1.000
0100	643.0300	TRAFFIC CONTROL DRUMS	DAY	360.000	360.000
0110	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	18.000	18.000
0120	643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C	DAY	180.000	180.000
0130	643.0900	TRAFFIC CONTROL SIGNS	DAY	252.000	252.000
0140	643.1050	TRAFFIC CONTROL SIGNS PCMS	DAY	14.000	14.000
0150	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	208.000	208.000
0160	646.0600	REMOVING PAVEMENT MARKINGS	LF	188.000	188.000
0170	649.0400	TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH	LF	1,810.000	1,810.000
0180	649.1400	TEMPORARY PAVEMENT MARKING STOP LINE REMOVABLE TAPE 24-INCH	LF	24.000	24.000
0190	661.0100	TEMPORARY TRAFFIC SIGNALS FOR BRIDGES (STRUCTURE) 01. B-13-190	LS	1.000	1.000

MOBILIZATION	
	619.1000
LOCATION	3050-01-61
	EACH
PROJECT	1
TOTAL	1

REMOVING PAVEMENT MARKING		
	646.0600	
LOCATION	LF	REMARKS
STH 19	188	CENTERLINE YELLOW SKIPS
TOTAL	188	

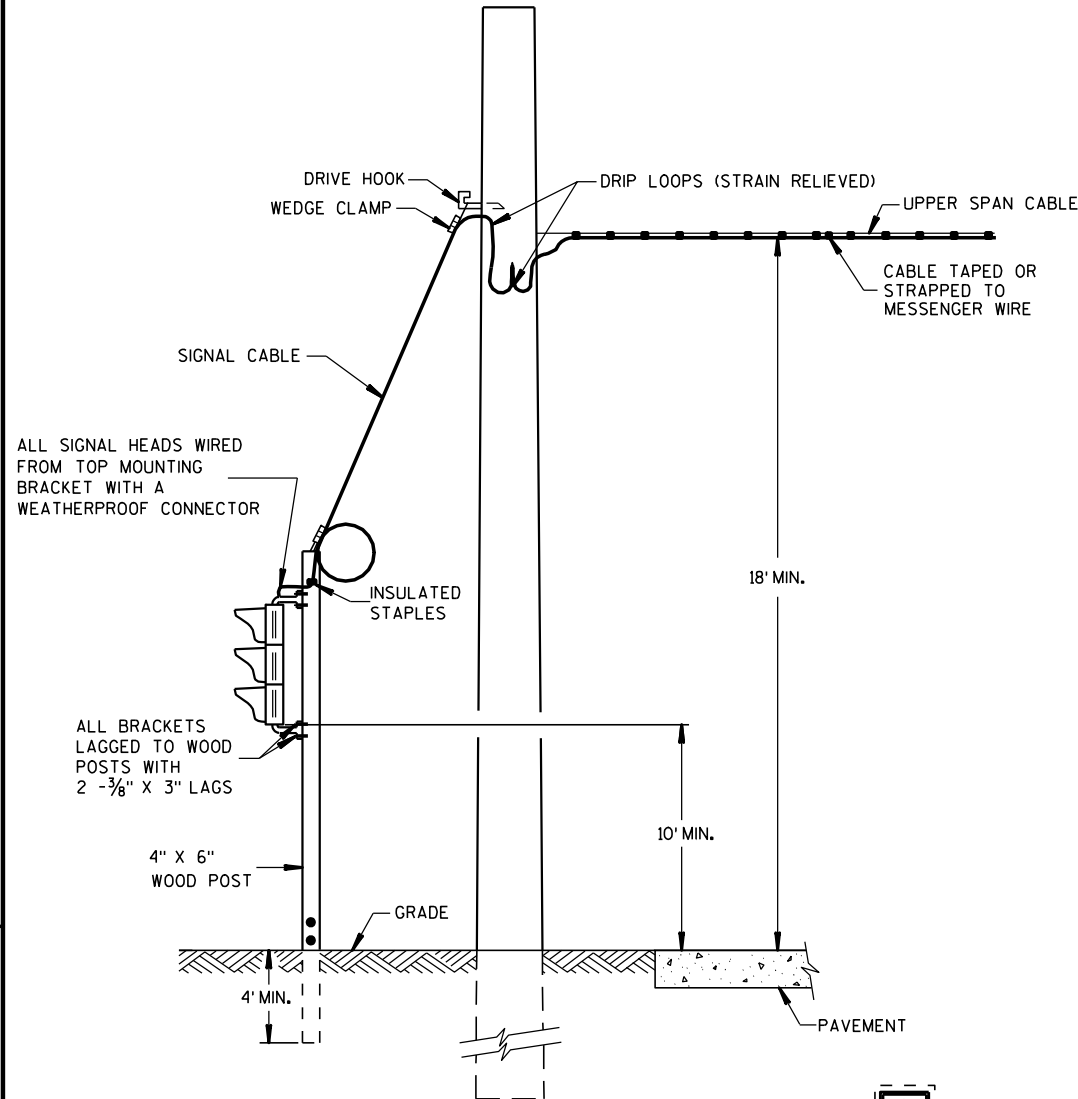
PAVEMENT MARKING			
	646.0106		
	PAVEMENT		
	MARKING EPOXY		
	4-INCH	4-INCH	
	(YELLOW)	(WHITE)	
LOCATION	LF	LF	REMARKS
STH 19	188	-	CENTERLINE YELLOW SKIPS
B-13-190	-	20	EDGE LINE @ REPAIR AREA
SUBTOTAL	188	20	
TOTAL	208		

TEMPORARY PAVEMENT MARKING				
	649.0400		649.1400	
	REMOVABLE TAPE		STOP LINE	
	4-INCH		REMOVABLE	
	YELLOW	WHITE	WHITE	
	(LF)	(LF)	(LF)	
LOCATION				REMARKS
STH 19	700	-	12	WEST OF STRUCTURE
B-13-190	-	410	-	ON STRUCTURE
STH 19	700	-	12	EAST OF STRUCTURE
SUBTOTAL	1,400	410	24	
TOTAL	1,810	24		

TRAFFIC CONTROL								
		643.0100			643.0715	643.0900		661.0100
		TRAFFIC			WARNING	TRAFFIC		TEMPORARY
		CONTROL		643.0420	LIGHTS	CONTROL	643.1050	TRAFFIC SIGNALS
		PROJECT	643.0300	BARRICADES	TYPE C	SIGNS	SIGNS	FOR BRIDGES
		EACH	DRUMS	TYPE III	TYPE C	SIGNS	PCMS	(B-13-190)
LOCATION	DAYS		DAYS	DAYS	DAYS	DAYS	DAYS	LS
PROJECT	18	1	360	18	180	252	14	1
TOTAL		1	360	18	180	252	14	1

Standard Detail Drawing List

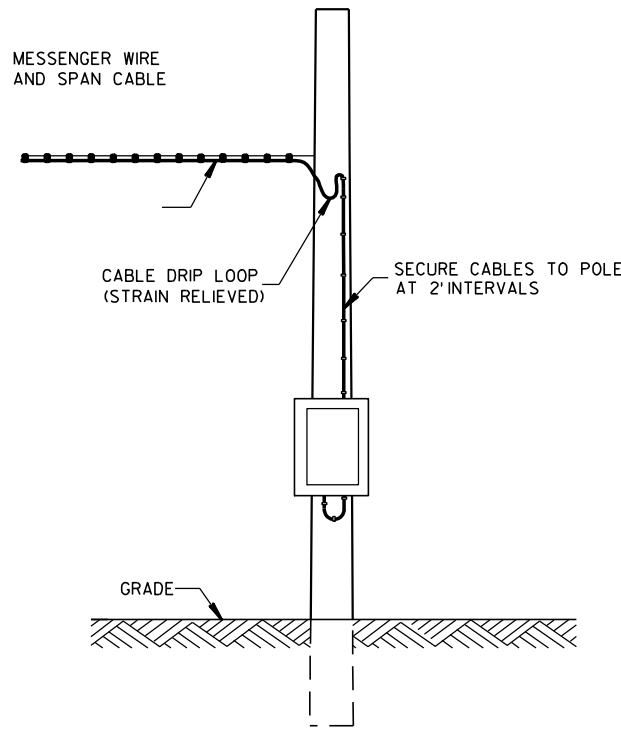
09G02-03A	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-03B	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-03C	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
15C08-15A	PAVEMENT MARKING (MAINLINE)
15D33-02	TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS



TYPICAL DROP TO TRAFFIC SIGNAL FACE

OFFSET DISTANCES FOR TEMPORARY NON-BREAKAWAY POLES	
SPEED LIMIT	OFFSET DISTANCE**
GREATER THAN 45 MPH	18 FT
45 MPH OR LESS	12 FT
45 MPH OR LESS W/ CURBS	2 FT
**NOTE: OFFSET MEASURED FROM OUTER EDGE OF OUTSIDE THRU LANE.	

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



POLE MOUNT CABINET INSTALLATION

GENERAL NOTES

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

POLE MOUNTED TRAFFIC SIGNAL CONTROL CABINET MAYBE MOUNTED ON THE SERVICE POLE IF THE ELECTRICAL UTILITY ALLOWS THE INSTALLATION.

WHEN UTILITY PLOES ARE USED TO SPAN THE TEMPORARY OVERHEAD CABLE, WRITTEN PERMISSION MUST BE OBTAINED FROM THE OWNER OF THE POLES AND GIVEN TO THE PROJECT MANAGER. ALL PERTINENT UTILITY AND CODE CLEARANCES SHALL BE MAINTAINED.

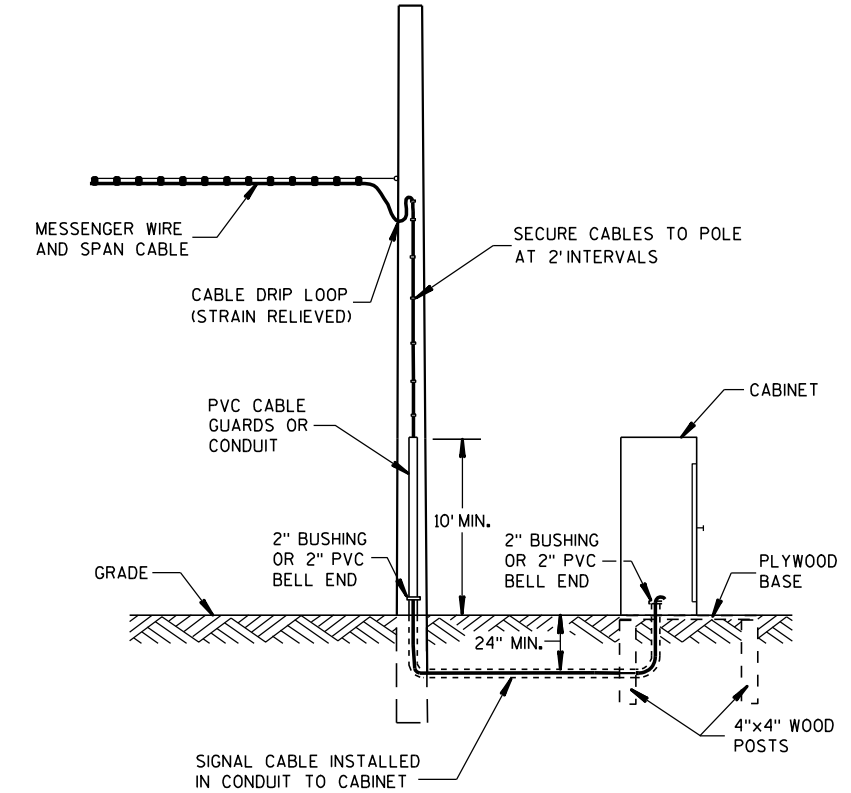
WOOD POLES (NONBREAKAWAY) SHALL BE NO CLOSER TO EDGE OF PAVEMENT THAN OFFSET DISTANCE CHART ALLOWS OR 4 FEET BEHIND PROTECTIVE BARRIER (BEAMGUARD, ETC.).

WOOD POSTS (BREAKAWAY) SHALL BE NO CLOSER THAN 2 FEET OUTSIDE OF SHOULDER.

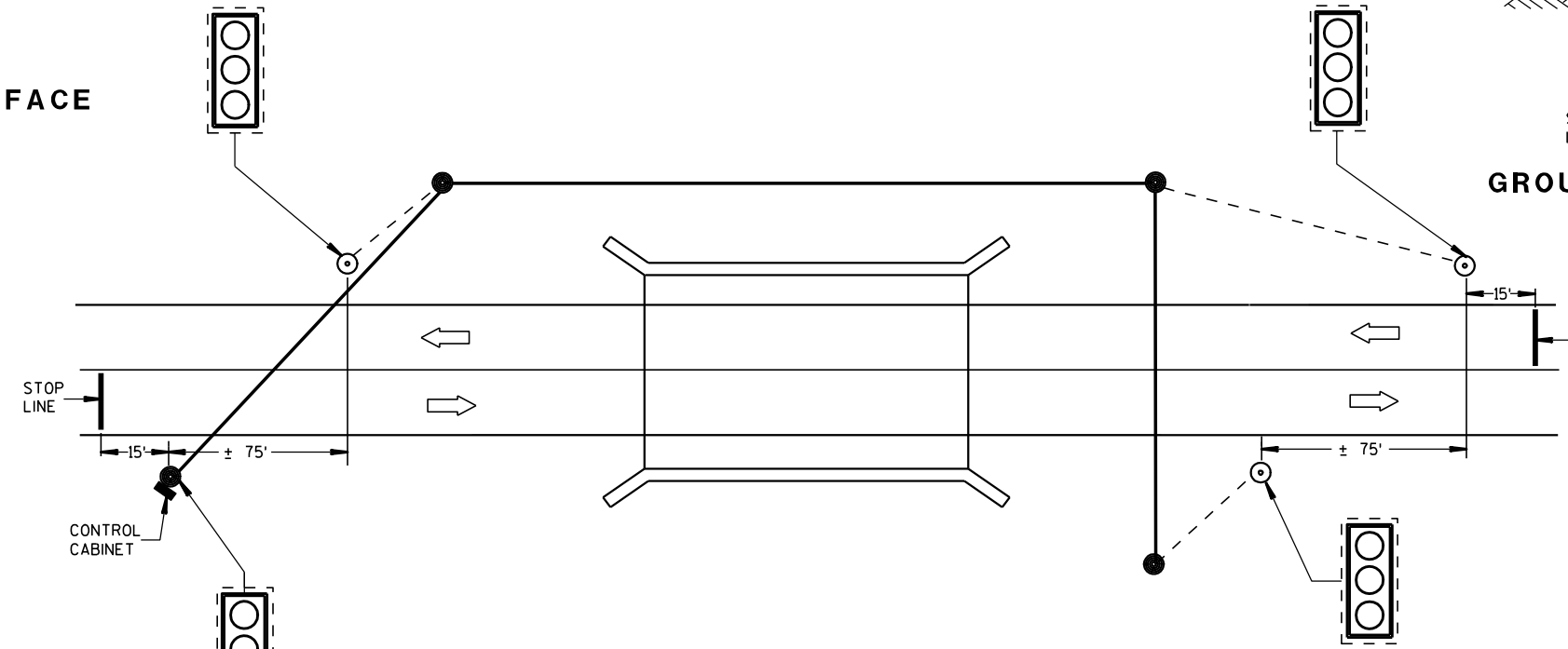
VERTICAL CLEARANCE ETC. PER NEC.

TRAFFIC SIGNAL FACES SHALL BE TYPICALLY PLACED 12 FEET FROM EDGE OF PAVEMENT.

EACH TRAFFIC SIGNAL FACE SHALL HAVE A BACKPLATE.



GROUND MOUNT CABINET INSTALLATION



PLAN VIEW  
TYPICAL BRIDGE TEMPORARY TRAFFIC SIGNAL LOCATION

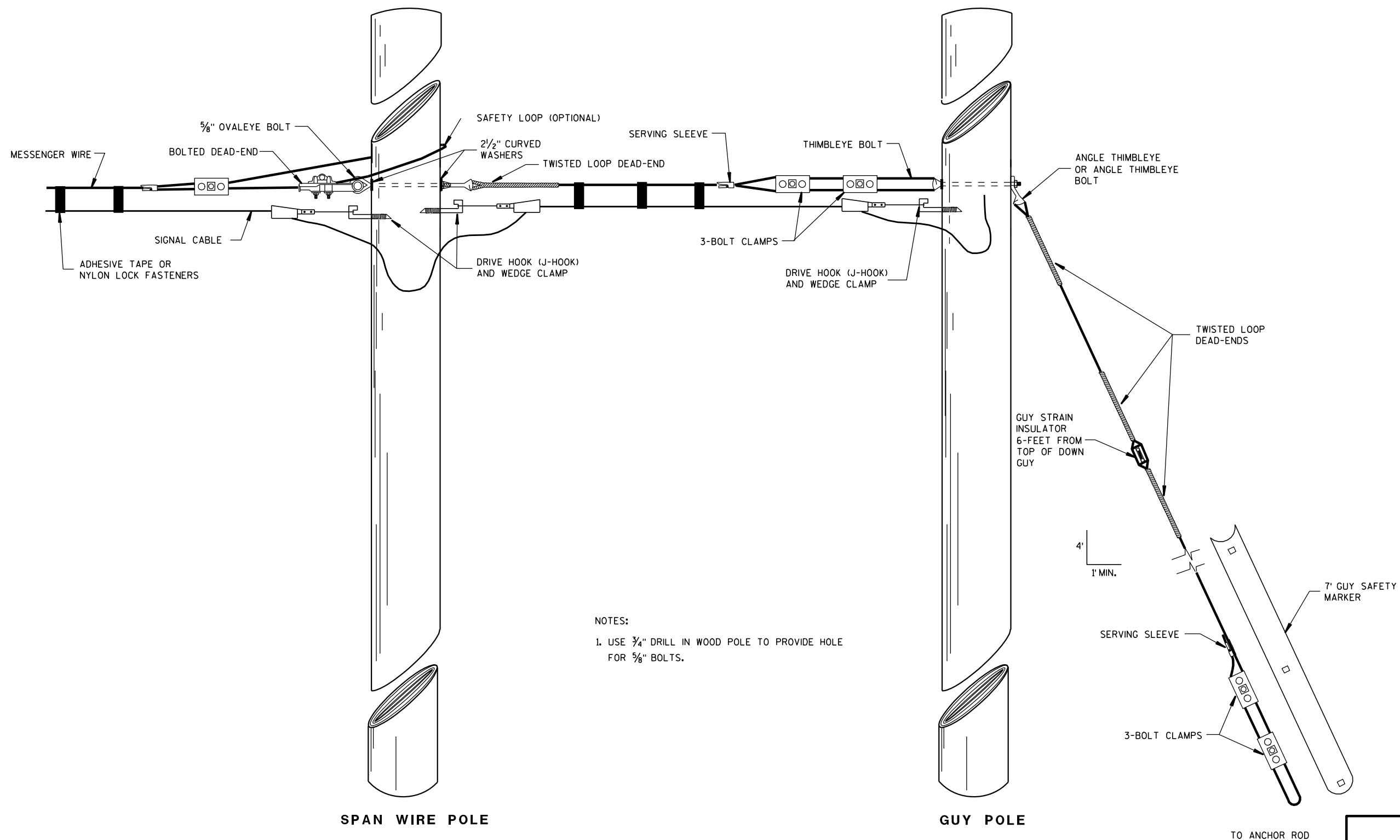
**LEGEND**

- WOOD POLE (NONBREAKAWAY)
- WOOD POST (BREAKAWAY)
- SIGNAL CABLE
- SIGNAL CABLE W/MESSENGER
- LED TRAFFIC SIGNAL FACE WITH BACKPLATE
- DIRECTION OF TRAFFIC

**BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
3/2/2011 DATE /S/ Thomas J. Goring STATE ELECTRICAL ENGINEER FOR HWYS  
FHWA



NOTES:  
1. USE 3/4" DRILL IN WOOD POLE TO PROVIDE HOLE FOR 5/8" BOLTS.

### TYPICAL DEAD-ENDINGS OR GUYING

#### BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

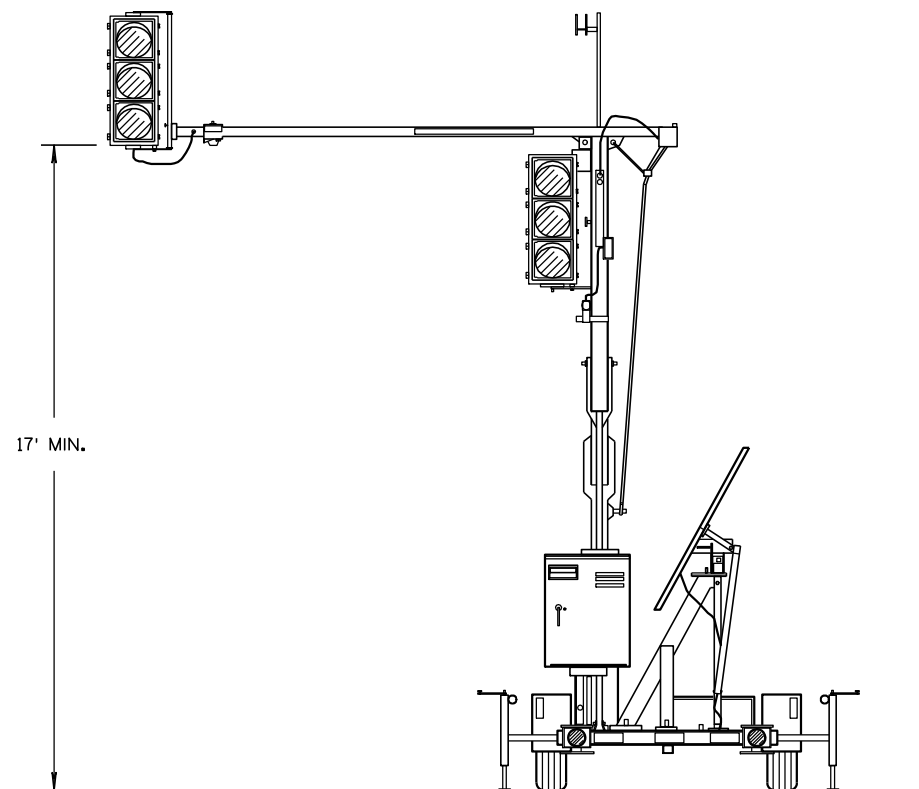
APPROVED

3/2/2011  
DATE

/S/ Thomas J. Goring  
STATE ELECTRICAL ENGINEER FOR HWYS

FHWA



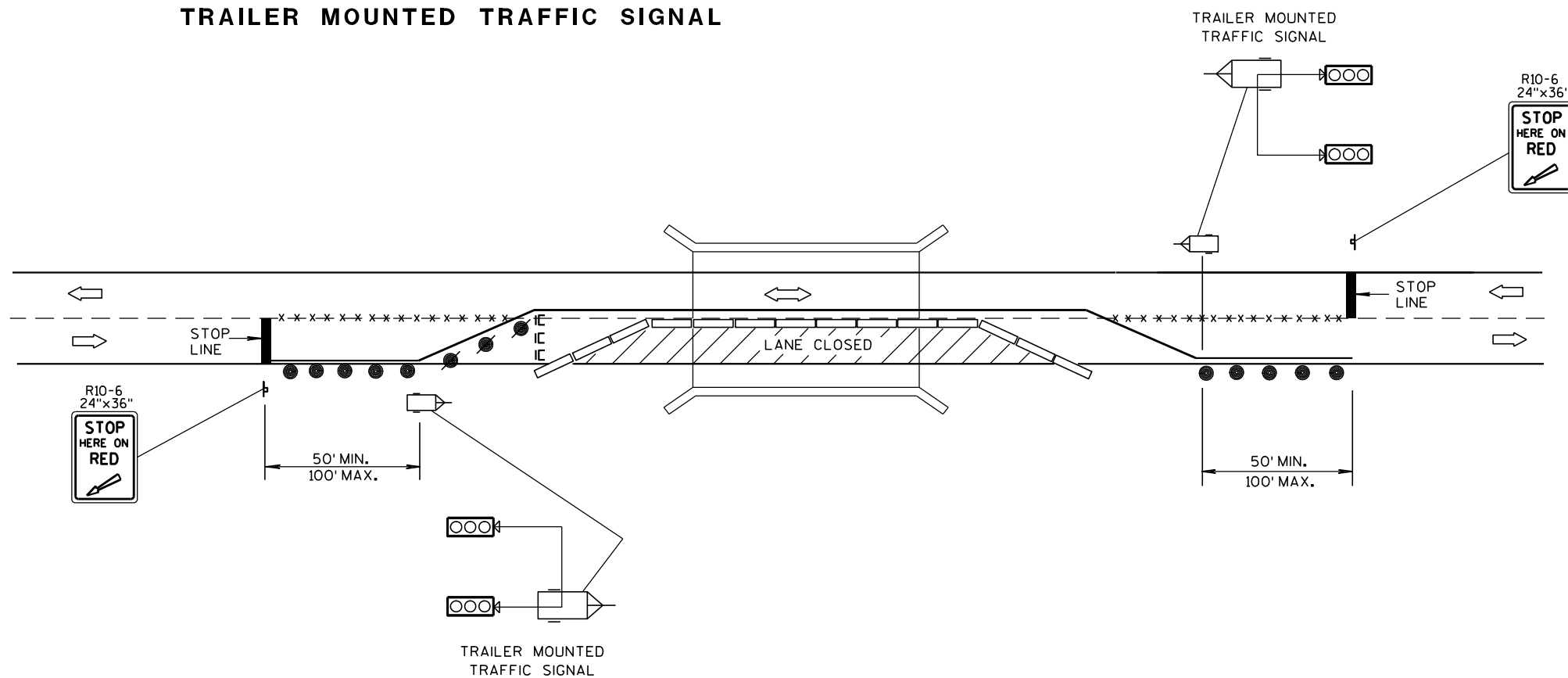


TRAILER MOUNTED TRAFFIC SIGNAL

## GENERAL NOTES

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

SIGNING, PAVEMENT MARKING AND LANE CONTROL REQUIREMENTS SHALL CONFORM TO STANDARD DETAIL DRAWING 15 D 33.



TYPICAL TRAILER MOUNTED TRAFFIC SIGNAL LOCATION

## LEGEND

- ⌵ POST MOUNTED SIGN
- \*-x-\* REMOVING PAVEMENT MARKING
- IC TYPE III BARRICADE WITH SIGN
- /● DRUM WITH/WITHOUT WARNING LIGHT, TYPE C (STEADY-BURN)
- ▬ TEMPORARY PRECAST CONCRETE BARRIER
- ⌵ TRAILER MOUNTED TRAFFIC SIGNAL
- ➡ DIRECTION OF TRAFFIC FLOW

BRIDGE TEMPORARY  
TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

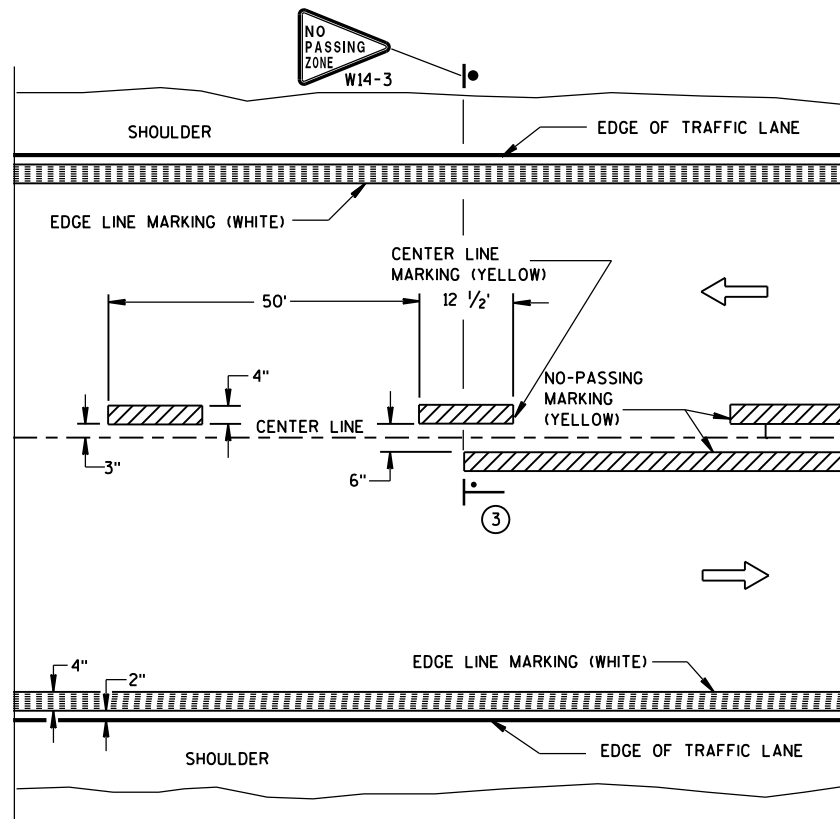
APPROVED

3/2/2011

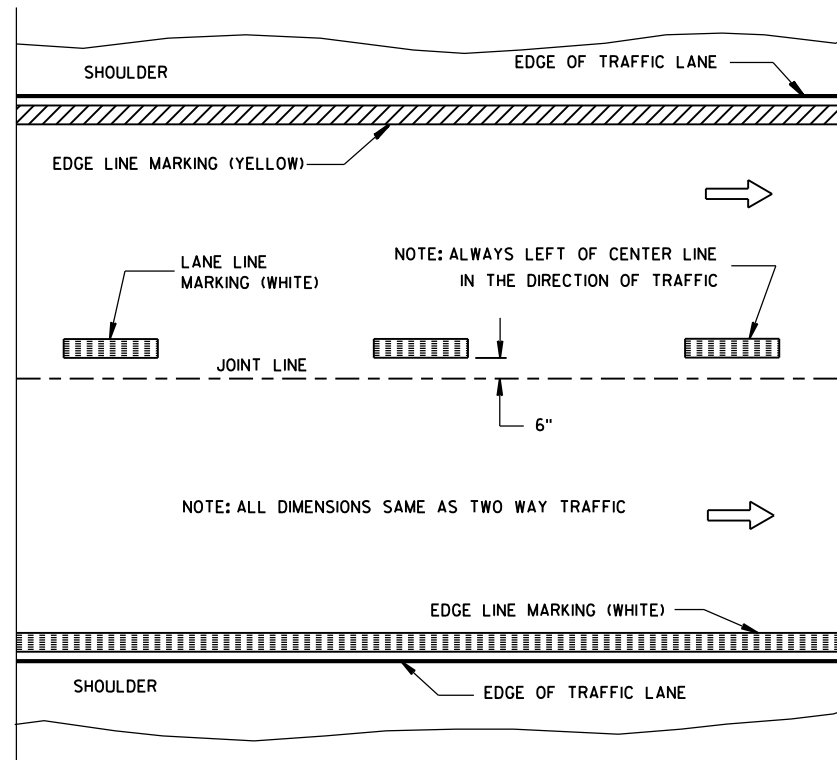
DATE

FHWA

/S/ Thomas J. Goring  
STATE ELECTRICAL ENGINEER FOR HWYS

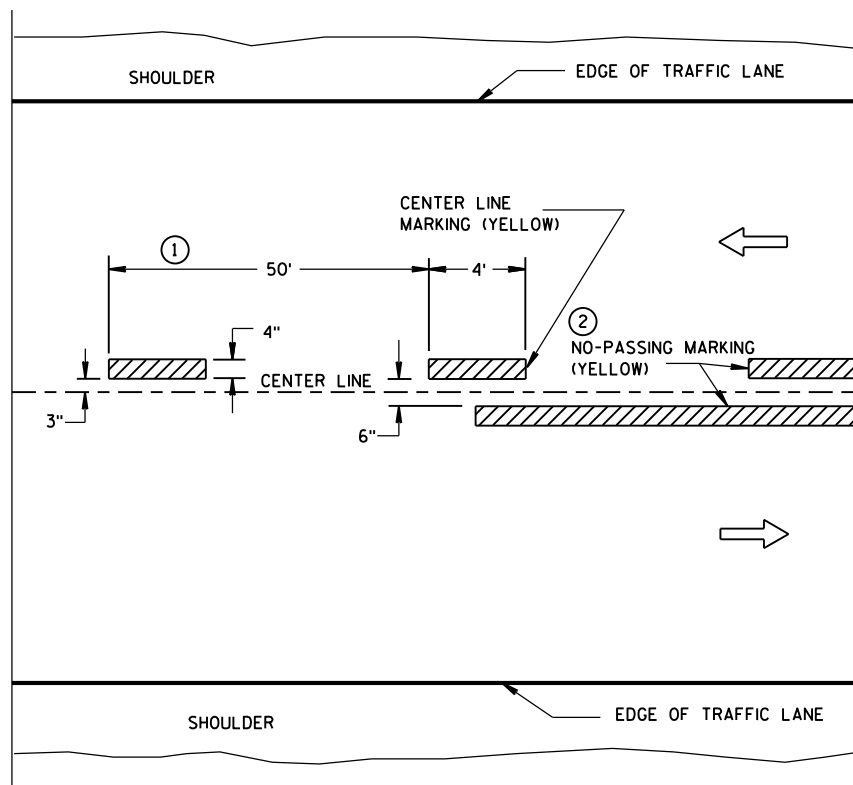


TWO WAY TRAFFIC

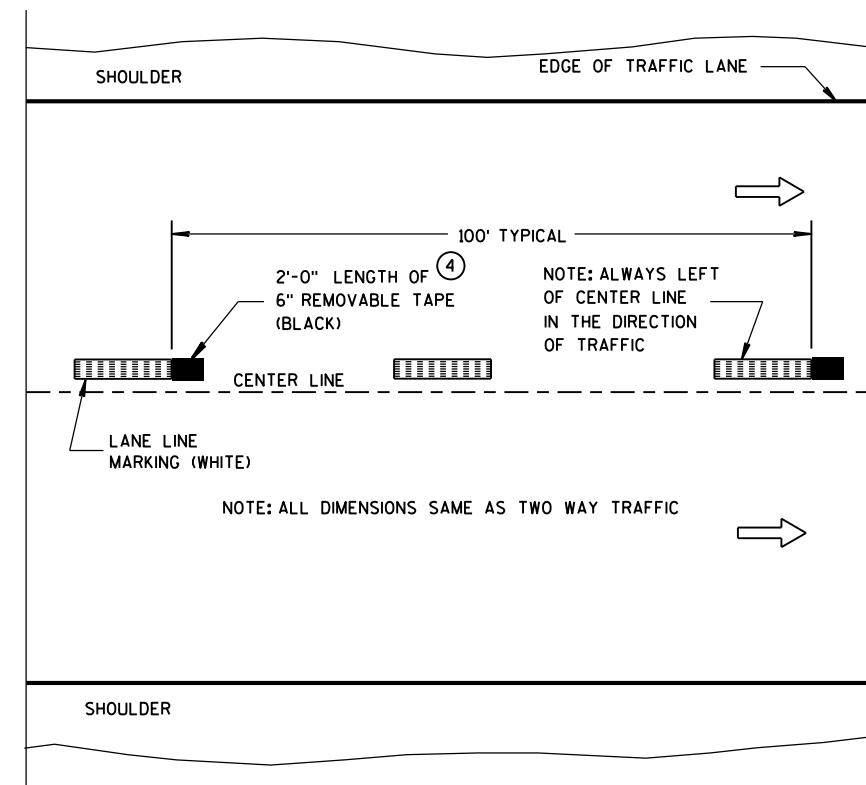


ONE WAY TRAFFIC

## PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

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

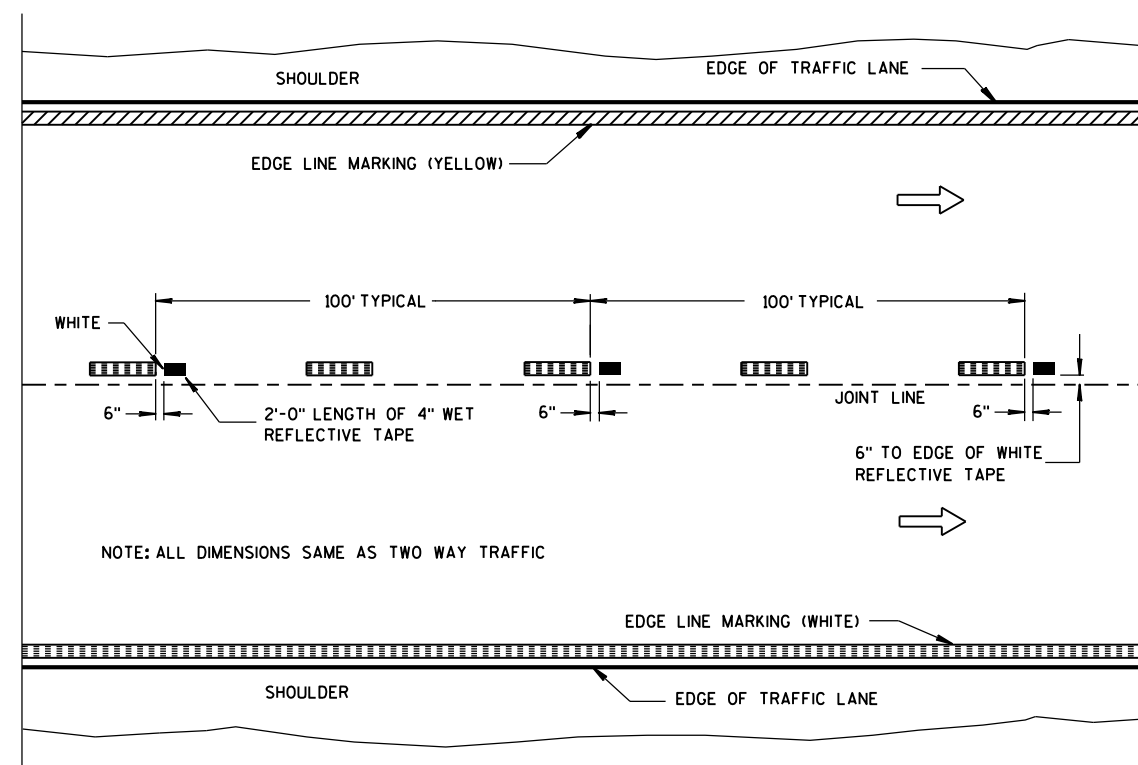
## GENERAL NOTES

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

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

## NOTE

ARROW SYMBOL ( → ) SHOWS DIRECTION OF TRAVEL



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

## LEGEND

- "T" MARKING
- POST MOUNTED SIGN

PAVEMENT MARKING  
(MAINLINE)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

## LEGEND

- POST MOUNTED SIGN
- REMOVING PAVEMENT MARKING
- TYPE III BARRICADE WITH SIGN
- DRUM WITH/WITHOUT WARNING LIGHT, TYPE C (STEADY-BURN)
- TEMPORARY PRECAST CONCRETE BARRIER
- FLAGS, 16"x16" MIN., ORANGE
- TEMPORARY SIGNAL WITH BACKPLATE AND 12-INCH LENSES ON BREAKAWAY POLE
- ASPHALTIC PAVEMENT WIDENING
- DIRECTION OF TRAFFIC FLOW
- 4" X 6" WOOD POST

## GENERAL NOTES :

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

NON-OPERATIONAL EQUIPMENT OR MATERIAL SHALL BE LOCATED BEHIND THE PRECAST CONCRETE BARRIER.

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

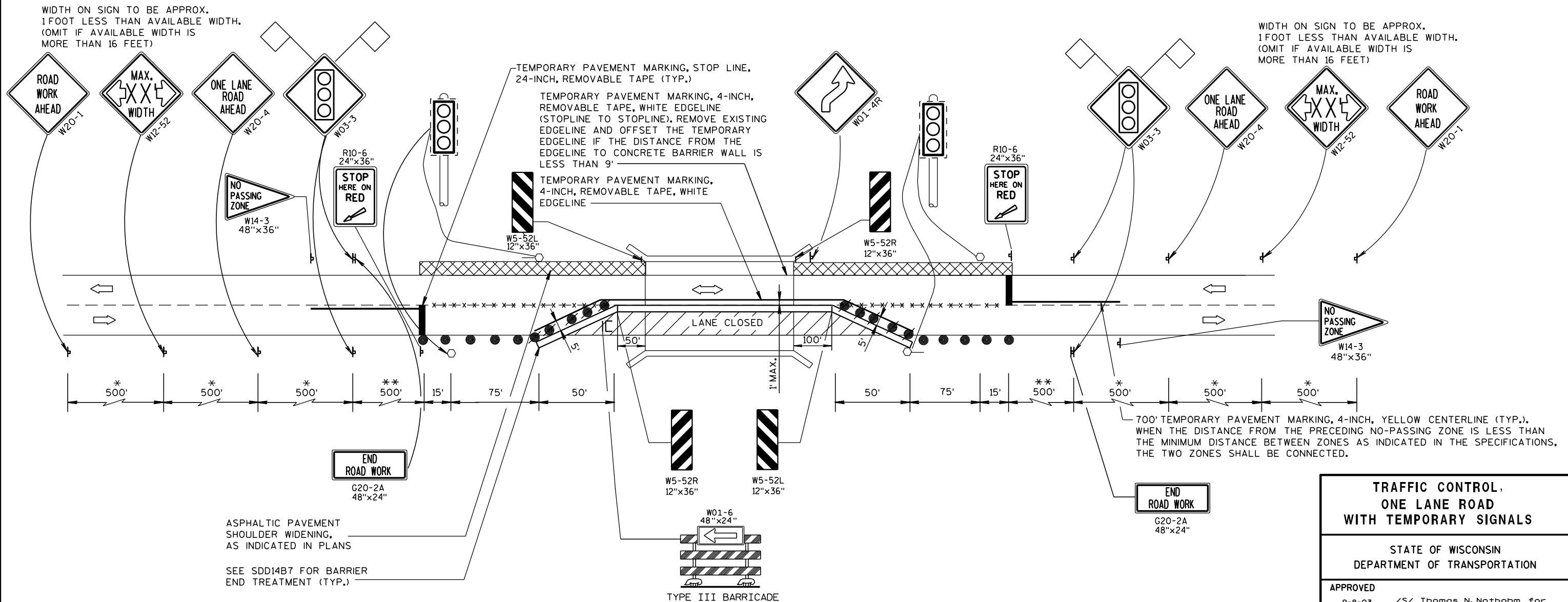
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

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.

PLACE TEMPORARY PAVEMENT MARKING EDGELINE AND CENTERLINE, AND REMOVE EXISTING PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR 7 OR MORE CONTINUOUS DAYS AND NIGHTS OR AS NOTED ON DETAIL.

\* 500' SPACING SHOWN IS FOR ROADWAYS WITH A PRE-CONSTRUCTION REGULATORY SPEED LIMIT OF 45 MPH OR MORE. FOR 35-40 MPH, USE 350' TYPICAL SPACING. FOR 25-30 MPH, USE 200' TYPICAL SPACING.

\*\* USE 300' SPACING IF PRE-CONSTRUCTION REGULATORY SPEED LIMIT IS 35 MPH OR LESS.



## GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

DIMENSIONS BASED ON ORIGINAL STRUCTURE PLANS.

## DESIGN DATA

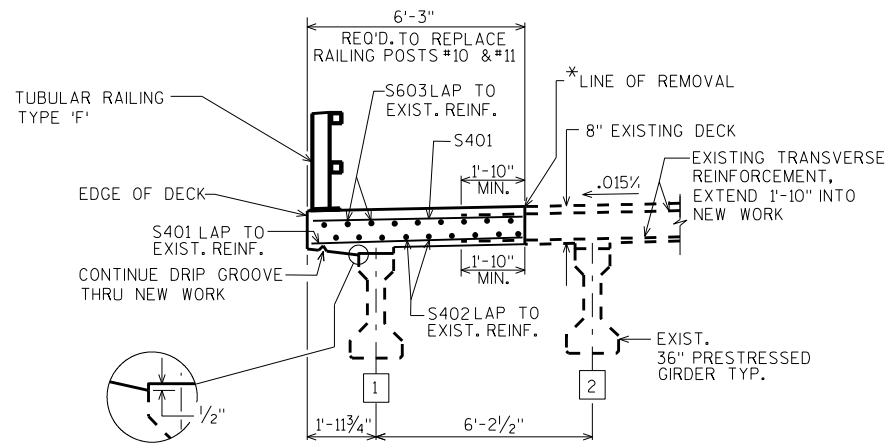
ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY SLAB —  $f'_c = 4,000$  P.S.I.BAR STEEL REINFORCEMENT, GRADE 60 —  $f_y = 60,000$  P.S.I.

## NOTES

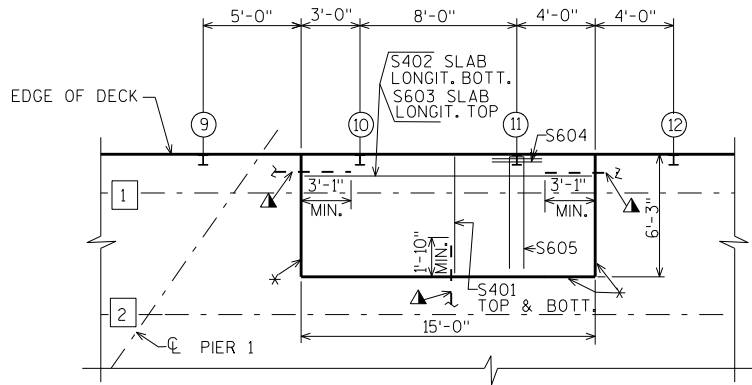
REMOVE EXISTING POSTS 10 AND 11, AND REPLACE WITH NEW POSTS. MATCH NEW CONCRETE TO EXISTING DECK.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE TOP, EDGE AND 1'-0" TO THE UNDERSIDE OF THE NEW DECK.



## PART SECTION THRU DECK

(LOOKING EAST)



## AREA OF DECK REPLACEMENT

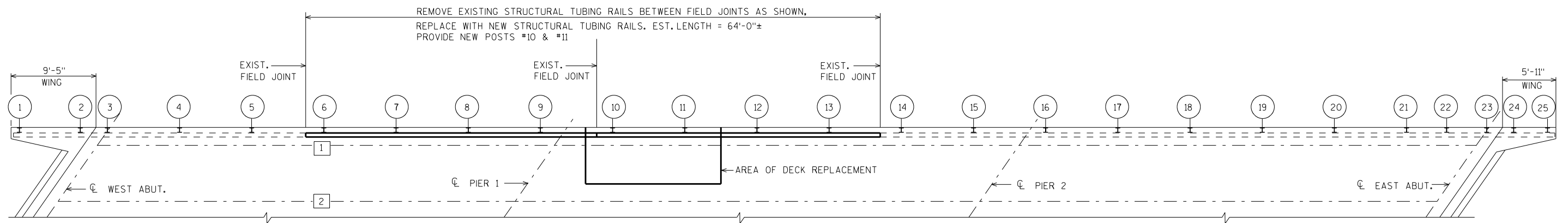
(FULL DEPTH)

▲ PRESERVE AND INCORPORATE EXISTING SLAB REINFORCEMENT INTO NEW WORK AS DETAILED

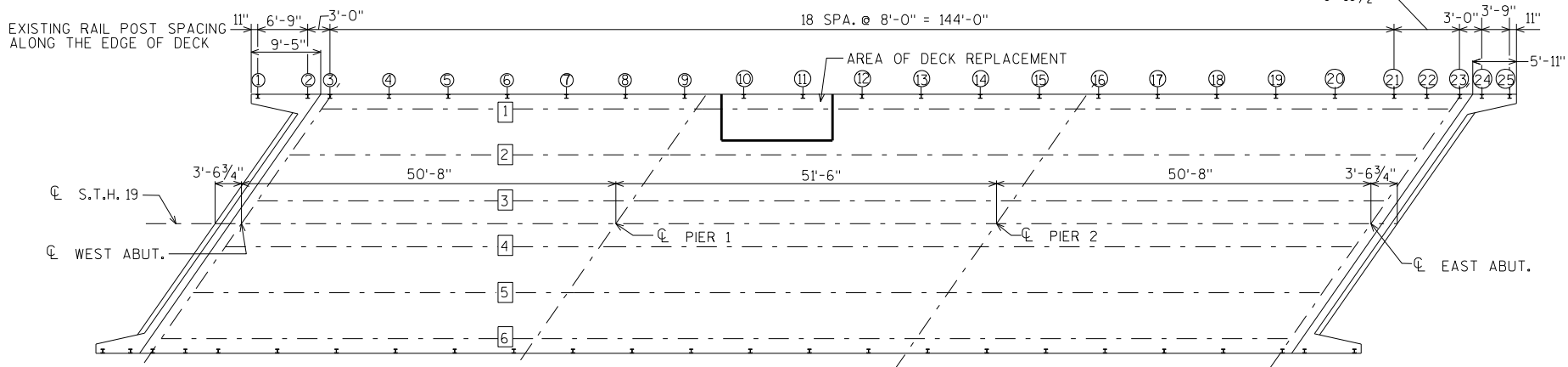
\*ALL LINES OF SLAB REMOVAL SHALL BE DEFINED BY A 1" DEEP SAW CUT. EDGE TROWEL NEW DECK &amp; APPLY LOW VISCOSITY CRACK SEALER.

(X) INDICATES RAIL POST NUMBER

(X) GIRDER NUMBER



## RAILING JOINT PLAN

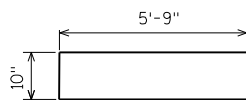


## PLAN

## BILL OF BARS

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

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S401	X	60	5'-11"			SLAB TRANS. TOP+BOT.
S402	X	9	14'-8"			SLAB LONGIT. BOT.
S603	X	9	14'-8"			SLAB LONGIT. TOP
S604	X	4	4'-0"			SLAB LONGIT. AT RAIL POSTS #10 + #11
S605	X	2	12'-0"	X		SLAB TRANS. AT RAIL POSTS #10 + #11



S605

## TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
203.0200	REMOVING OLD STRUCTURE	LS	1
502.0100	CONCRETE MASONRY BRIDGES	CY	3
502.3200	PROTECTIVE SURFACE TREATMENT	SY	14
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	580
513.4050	TUBULAR RAILING TYPE 'F' B-13-190	LS	1


## LIST OF DRAWINGS

- RAILING & DECK REPAIR
- TUBULAR RAILING TYPE 'F'

STRUCTURE DESIGN CONTACT:

STEVE REVELLO (608) 266-5095

LAURA SHADEWALD (608) 267-9592

NO.	DATE	REVISION	BY
 Plans Prepared By <b>WISDOT</b> <b>BUREAU OF STRUCTURES</b>			
ACCEPTED <i>William C. Diehn</i> <b>4/18/13</b>		CHIEF STRUCTURES DESIGN ENGINEER DATE	
<b>STRUCTURE B-13-190</b>			
S.T.H. 19 OVER MAUNESHA RIVER			
COUNTY	DANE	TOWN/CITY/VILLAGE	MEDINA
DESIGN SPEC. REHABILITATION N/A			
DESIGNED BY	SDR	DESIGN CK'D.	DRAWN BY CF PLANS CK'D. SDR
RAILING & DECK REPAIR			SHEET 1 OF 2

I.D.

DATE:

**LEGEND**

- ① W6X25 WITH 1/4" DIA. HOLES ON EACH SIDE OF POST FOR STUD NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- ② PLATE 1" X 9 1/2" X 10", WITH 1/16" X 1 1/2" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN.
- ③ A325 - 7/8" DIA. X 8" LONG HEX BOLTS (GALVANIZED) WITH A325 NUT & WASHER. 4 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING.
- ④ 1/4" X 8" X 8" FLAT BAR, WITH 15/16" DIA. HOLES FOR ANCHOR BOLTS NO. 3.
- ⑤ TS 4 X 4 X 0.25 STRUCTURAL TUBING, CONFORMING TO ASTM DESIGNATION A501 OR A500 GRADE B. ATTACH TO NO. 1 WITH TWO NO. 6 STUDS.
- ⑥ 5/8" DIA. X 1 1/2" LG. SHOP WELDED STUDS WITH HEX NUT AND 2" WASHERS. (2 REQ'D. AT EACH RAIL POST LOCATION) STUDS MAY BE FIELD WELDED TO MATCH LOCATION OF HOLES IN EXISTING POSTS.
- ⑨ SQUARE SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE "SLIDING FIT" WITH A MINIMUM OUT TO OUT DIMENSION OF 3 1/2".
- ⑩ TS 3 X 3 X 0.25 X 1'-10" AT FIELD JOINTS LONG. PROVIDE 1/2" DIA. SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 5. PROVIDE 3/8" DIA. X 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.

**GENERAL NOTES**

BID ITEM SHALL BE "RAILING TUBULAR TYPE F B-13-190", WHICH INCLUDES ALL ITEMS SHOWN.

POST BASE PLATES, NO. 2, SHALL BE FLAT WITH ALL SURFACES SMOOTH, STRAIGHT AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

ALL MATERIAL, EXCEPT ANCHORAGE DETAIL NO. 4 SHALL BE GALVANIZED AFTER FABRICATION.

FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

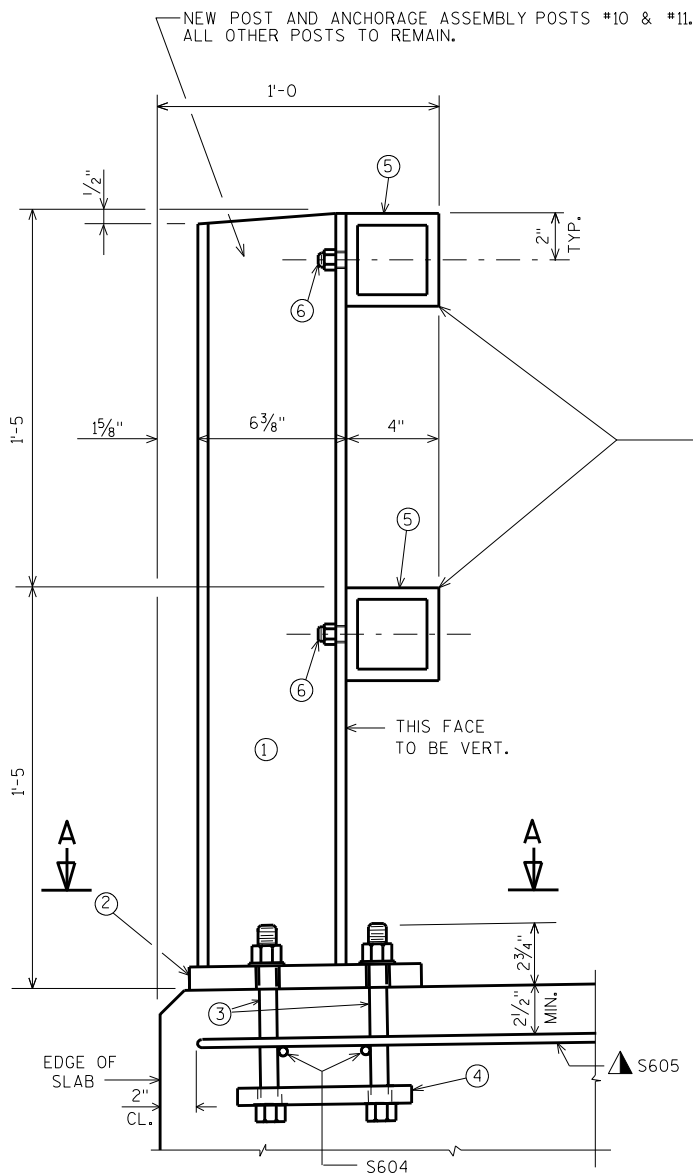
ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO ASTM DESIGNATION A709 GRADE 36 UNLESS NOTED OTHERWISE.

STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.

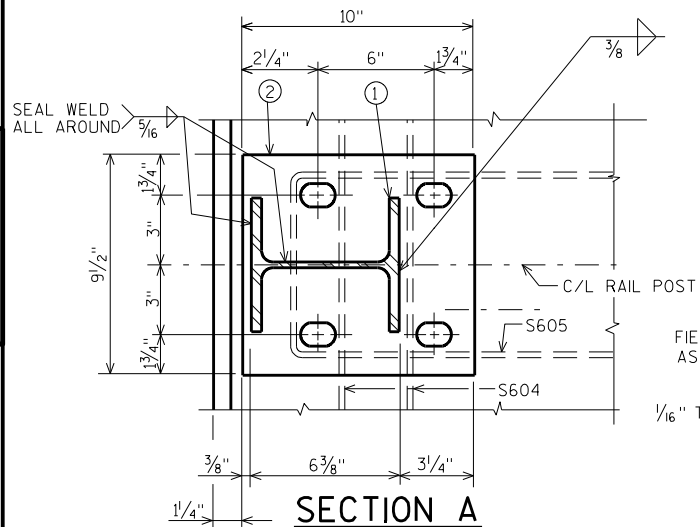
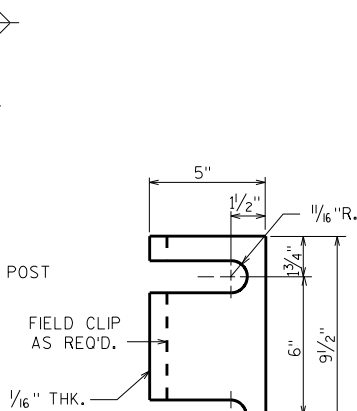
PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY SSPC SPECIFICATIONS.

PLACE FIRST BOTTOM LONGITUDINAL BAR CLEAR OF DRIP GROOVE.

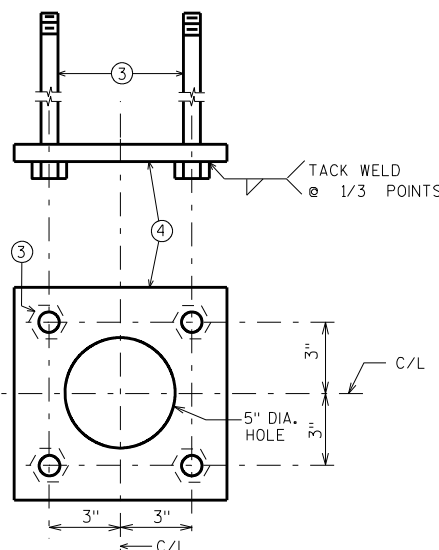
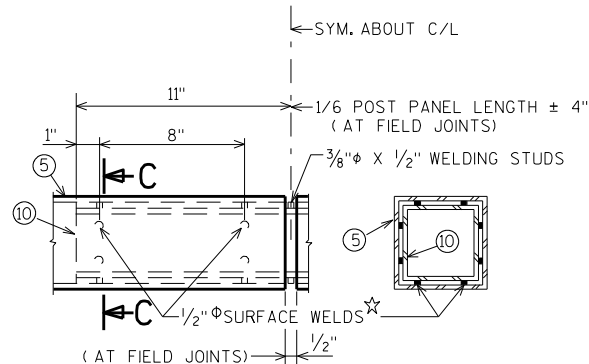
▲ TIE TO TOP MAT OF STEEL.

**SECTION THRU RAILING ON DECK**

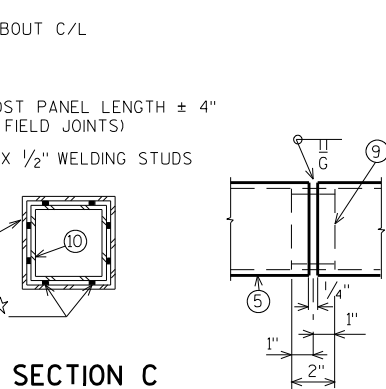
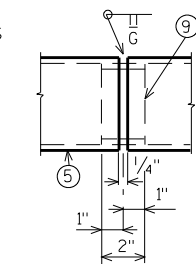
(SHOWN AT NEW POSTS #10 + #11)

**SECTION A****POST SHIM  
DETAIL**

4 PER POST

**ANCHORAGE DETAIL****FIELD ERECTION  
JOINT DETAIL**

★ MIN. 5/8" FLAT SURFACE DIA. PUNCHINGS OR STUDS MAY BE USED AS AN ALTERNATE.

**SECTION C****SHOP RAIL  
SPLICE DETAIL**

(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE B-13-190			
DRAWN BY		CF	PLANS CK'D. SDR
TUBULAR RAILING TYPE 'F'		SHEET	2

B13190RAIL.DGN  
SCALE =



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

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through innovation and exceptional service.

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