

GRE AUG 2015

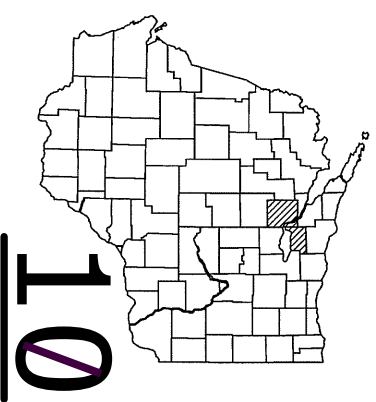
PROJECT ID: 4685-19-60  
WITH: N/A

COUNTY: OUTAGAMIE

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. 5 | Plan                         |
| Section No. 6 | Standard Detail Drawings     |
| Section No. 7 | Sign Plates                  |
| Section No. 8 | Structure Plans              |

TOTAL SHEETS = 224



DESIGN DESIGNATION

|               |   |        |
|---------------|---|--------|
| A.A.D.T. 2010 | = | 42,000 |
| A.A.D.T. 2036 | = | 61,200 |
| D.H.V.        | = | 5.360  |
| D.D.          | = | 63.37  |
| T.            | = | 6.1%   |
| DESIGN SPEED  | = | 70 MPH |
| ESALS         | = | N/A    |

CONVENTIONAL SYMBOLS

|                    |         |
|--------------------|---------|
| PLAN               |         |
| CORPORATE LIMITS   |         |
| REFERENCE LINE     |         |
| COMBUSTIBLE FLUIDS |         |
| UTILITIES          |         |
| ELECTRIC           | — E —   |
| FIBER OPTIC        | — FO —  |
| GAS                | — G —   |
| SANITARY SEWER     | — SAN — |
| STORM SEWER        | — SS —  |
| TELEPHONE          | — T —   |
| WATER              | — W —   |
| UTILITY PEDESTAL   |         |
| POWER POLE         |         |
| TELEPHONE POLE     |         |

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

STATE HIGHWAY REHABILITATION-MAINTENANCE PROJECT

TRI-COUNTY FREEWAY

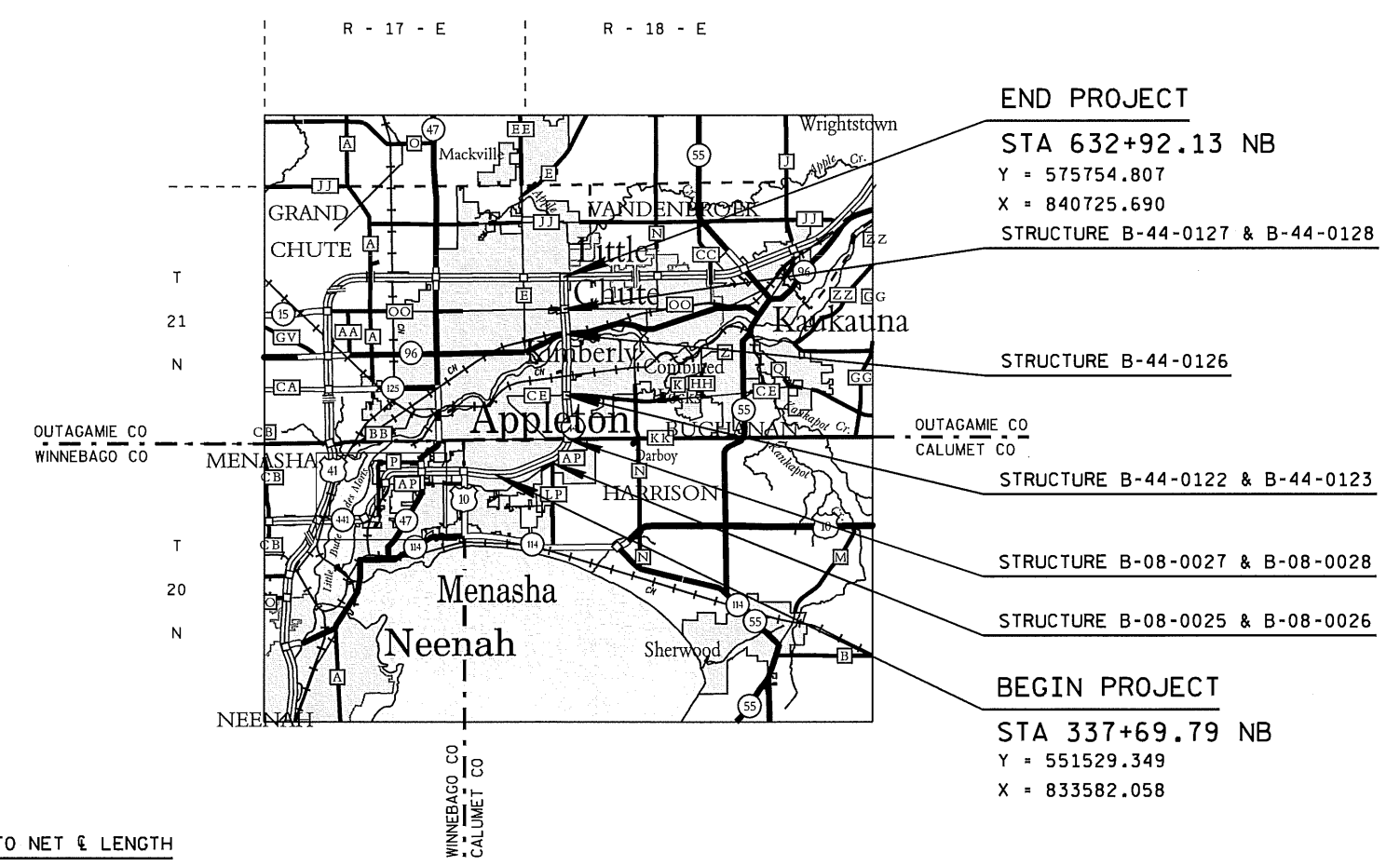
USH 10 - NORTH JUNCTION USH 41

STH 441

OUTAGAMIE COUNTY

STATE PROJECT NUMBER  
4685-19-60

| STATE PROJECT | FEDERAL PROJECT |          |
|---------------|-----------------|----------|
|               | PROJECT         | CONTRACT |
| 4685-19-60    | WISC 2015471    | 1        |
|               |                 |          |
|               |                 |          |



| EXCEPTION TO NET & LENGTH |                   |  |
|---------------------------|-------------------|--|
| B-44-0127 & B-44-0128     | STA 590+51-592+70 |  |
| B-44-0126                 | STA 548+48-564+83 |  |
| B-44-0122 & B-44-0123     | STA 485+53-487+40 |  |
| B-08-0027 & B-08-0028     | STA 424+67-426+31 |  |
| B-08-0025 & B-08-0026     | STA 393+75-395+14 |  |

LAYOUT  
SCALE 0 2 MI.  
TOTAL NET LENGTH OF CENTERLINE = 5.591 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN  
STATE PLANE COORDINATE SYSTEM (WSPCS), CENTRAL ZONE.

|                                                    |             |
|----------------------------------------------------|-------------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |             |
| PREPARED BY                                        | NE REGION   |
| Surveyor                                           | A. NELSON   |
| Designer                                           | T. BUCHHOLZ |
| Project Manager                                    | C. DEGRAVE  |
| Regional Examiner                                  |             |
| Regional Supervisor                                |             |
| C.O. Examiner                                      |             |
| APPROVED FOR THE DEPARTMENT                        |             |
| DATE: 05-01-2015                                   | (Signature) |

UTILITIES

CARL DONAHUE  
AT&T LEGACY - COMMUNICATION LINE  
866 ROCK CREEK RD PLANO, IL 60545 (715) 833-2054 CDONAHUE@ATT.COM

MIKE OLSEN  
ATC MANAGEMENT, INC. - ELECTRICITY  
801 O'KEEFE RD  
P.O. BOX 6113  
DE PERE, WI 54115-6113 (920) 338-6582 MOLSEN@ATCLLC.COM

JIM HAWBAKER  
APPLETON AREA SCHOOL DISTRICT - COMMUNICATION LINE  
SUITE 214  
10 COLLEGE AVE APPLETON, WI 54911 (920) 832-6161

PAULA VANDEHEY  
CITY OF APPLETON DEPARTMENT OF PUBLIC WORKS - SEWER  
100 N APPLETON ST APPLETON, WI 54911 (920) 832-6474

PAULA VANDEHEY  
CITY OF APPLETON DEPARTMENT OF PUBLIC WORKS - WATER  
100 N APPLETON ST APPLETON, WI 54911 (920) 832-6474

RICK VINCENT  
NET LEC LLC - COMMUNICATION LINE  
450 SECURITY BLVD  
P.O. BOX 19079  
GREEN BAY, WI 54307-9079 (920) 617-7316 RICK.VINCENT@NSIGHT.COM

STEVE JAKUBIEC  
TDS METROCOM - COMMUNICATION LINE  
SUITE 218A  
10 COLLEGE AVE APPLETON, WI 54911 (920) 882-4166  
STEVE.JAKUBIEC@TDS TELECOM.COM

STEVE JAKUBIEC  
TDS TELECOM - COMMUNICATION LINE  
SUITE 218A  
10 COLLEGE AVE APPLETON, WI 54911 (920) 882-4166  
STEVE.JAKUBIEC@TDS TELECOM.COM

KURT LITTLE  
TIME WARNER CABLE, A DELAWARE LIMITED PARTNERSHIP - COMMUNICATION LINE  
3520 E DESTINATION DR APPLETON, WI 54915 (920) 831-9227  
WIS,APP-JOINT-USE-PROJECT@TWCABLE.COM

STEVEN LAABS  
TOWN OF MENASHA UTILITY DISTRICT - WATER  
2340 AMERICAN DR NEENAH, WI 54956 (920) 739-5120  
STEVE@TOWN-MENASHA.COM

CHRIS LENTINE  
US SIGNAL COMPANY LLC - COMMUNICATION LINE  
201 IONIA, SW  
GRAND RAPIDS, MI 49503 (616) 988-7194 OSP@USSIGNAL.COM.COM

DAVE VANDER VELDEN  
VILLAGE OF KIMBERLY - SEWER  
515 W KIMBERLY AVE KIMBERLY, WI 54136-1335 (920) 788-7507  
DVANDERVELDEN@VOKIMBERLY.ORG

LATROY BRUMFIELD  
WE ENERGIES - ELECTRICITY  
ROOM A299  
333 WEST EVERETT ST MILWAUKEE, WI 53203 (414) 221-5617  
LATROY.BRUMFIELD@WE-ENERGIES.COM

LATROY BRUMFIELD  
WE ENERGIES - GAS/PETROLEUM  
ROOM A299  
333 WEST EVERETT ST MILWAUKEE, WI 53203 (414) 221-5617  
LATROY.BRUMFIELD@WE-ENERGIES.COM

GARY LAABS  
AT&T WISCONSIN - COMMUNICATION LINE  
4TH FLOOR  
221 WEST WASHINGTON ST  
APPLETON, WI 54911 (920) 735-3063 GL1784@ATT.COM

JOSEPH KASSAB  
AT&T WISCONSIN - COMMUNICATION LINE  
221 WEST WASHINGTON ST  
APPLETON, WI 54911 (920) 735-3206 JK572K@ATT.COM

DNR AREA LIAISON

MATT SCHAEVE  
DEPARTMENT OF NATURAL RESOURCES  
2984 SHAWANO AVE  
GREEN BAY, WI 54313  
PHONE: (920) 662-5472  
EMAIL: MATTHEW.SCHAEVE@WISCONSIN.GOV

DIGGERSHOTLINE

Dial 811 or (800)242-8511

www.DiggersHotline.com

EMERGENCY CONTACT NUMBERS FOR WE ENERGIES

ELECTRIC 24 HOUR EMERGENCY SERVICE: 1-800-662-4797  
GAS 24 HOUR EMERGENCY SERVICE: 1-800-261-5325

COUNTY SURVEYOR OR SURVEYS CONTACT PERSON

|                           |                         |
|---------------------------|-------------------------|
| OUTAGAMIE COUNTY SURVEYOR | CALUMET COUNTY SURVEYOR |
| JAMES HEBERT              | PETER HATAS             |
| ZONING ADMINISTRATION     | AERO-METRIC INC.        |
| 410 S. WALNUT ST.         | 420 TECHNOLOGY PKWY.    |
| APPLETON, WI 54911        | P.O. BOX 449            |
| PH 920-832-5255           | SHEBOYGAN, WI 53082     |
| FAX 920-832-4470          | PH 920-803-5854         |
| jim@hebertassoc.com       | FAX 920-457-6252        |
|                           | phatas@aerometric.com   |

WISDOT PROJECT MANAGER

TOM BUCHHOLZ  
NORTHEAST REGION  
1940 WEST MASON STREET  
GREEN BAY, WI 54303  
920-492-2227  
TOM.BUCHHOLZ@DOT.WI.GOV

GENERAL NOTES

DISTURBED AREAS WITHIN THE RIGHT OF WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, WILL BE TOPSOILED (SALVAGED OR TOPSOIL) FERTILIZED, SEEDED, AND MULCHED AS DIRECTED BY THE ENGINEER.

LOCATION OF UNDERGROUND UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN. THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND ALL UTILITIES IN THE VICINITY OF THE PROJECT TO LOCATE THEIR FACILITIES AT LEAST THREE WORKING DAYS PRIOR TO BEGINNING WORK.

NO TREES OR SHRUBS SHALL BE REMOVED UNLESS SUCH TREES OR SHRUBS HAVE BEEN DESIGNATED FOR REMOVAL BY THE ENGINEER.

PAVEMENT REMOVAL WILL BE TO THE NEAREST JOINT OR A SAWED EDGE WILL BE REQUIRED AS DIRECTED BY THE ENGINEER.

THE LOCATIONS OF CONCRETE REMOVAL AND REPLACEMENT AREAS ARE APPROXIMATE. THE EXACT LOCATIONS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

ALL CUTS FOR PAVEMENT REMOVAL SHALL BE FULL DEPTH CUTS MADE IN SOUND MATERIAL.

TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

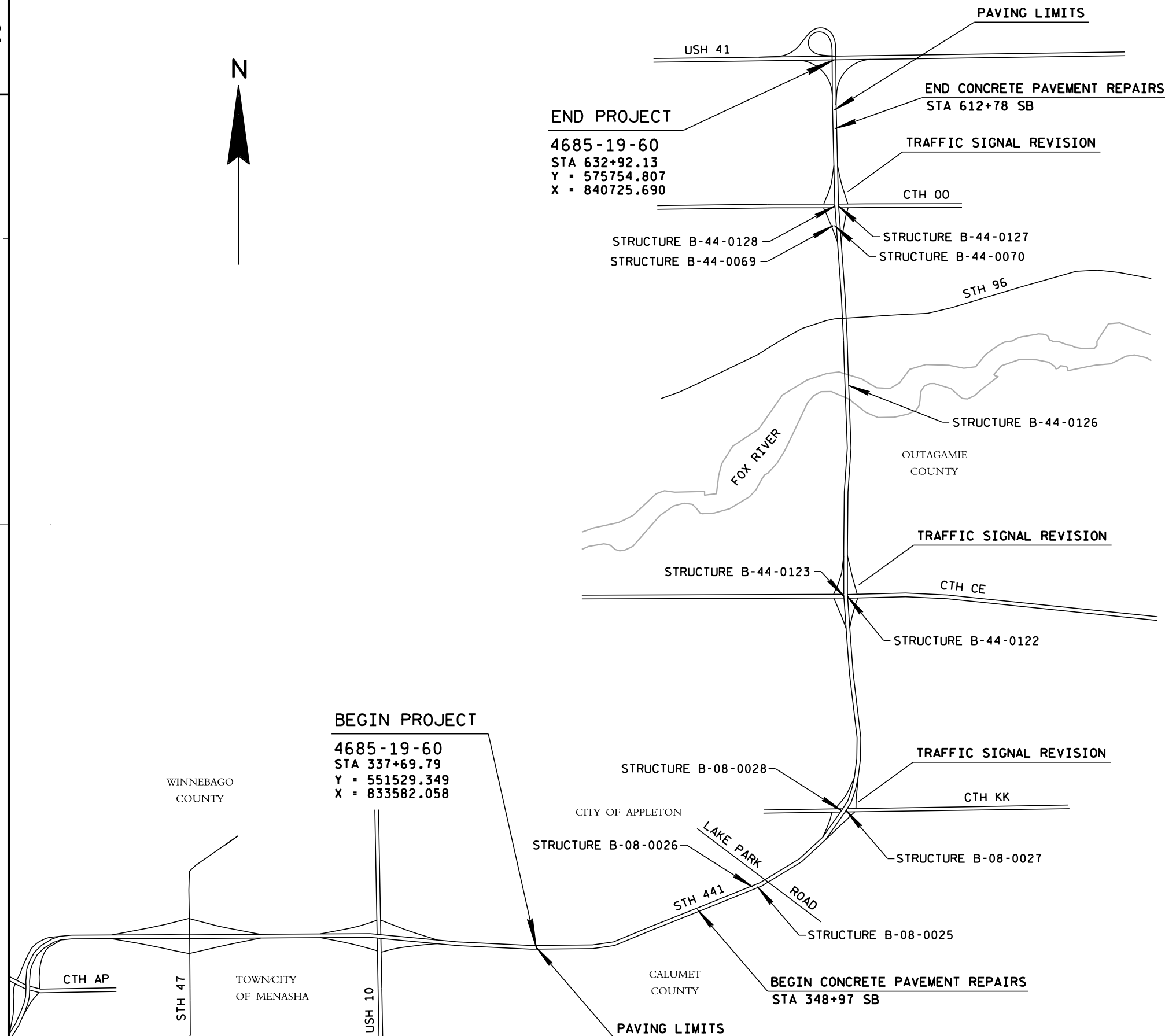
NEW PAVEMENT, BEAM GUARD, AND OTHER FACILITY LOCATIONS GIVEN IN THESE PLANS ARE APPROXIMATE AND SHALL BE CONFIRMED IN THE FIELD PRIOR TO PLACEMENT OR INSTALLATION.

THE LOCATIONS OF ALL EROSION CONTROL ITEMS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

REINFORCED CONCRETE APRON ENDWALLS SHALL BE TIED AS SHOWN ON THE STANDARD DETAIL DRAWINGS AND AS LOCATED IN THE MISCELLANEOUS QUANTITIES. JOINT TIES SHALL BE INCIDENTAL TO THE ITEM RESETTING PIPE ENDS.

ALL CONCRETE PAVEMENT REPLACEMENT WHICH ARE LONGITUDINALLY IN EXCESS OF 10 FEET AND ARE ADJACENT TO EXISTING CONCRETE PAVEMENT SHALL BE TIED TO THE EXISTING PAVEMENT USING PAVEMENT TIES. DETAILS FOR PAVEMENT TIE CONSTRUCTION SHALL CONFORM TO THE STANDARD SPECIFICATIONS AND STANDARD DETAIL DRAWINGS.

THE LOCATIONS OF ASPHALT PATCHING ON CTH 00 ARE APPROXIMATE. THE EXACT LOCATIONS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.



PROJECT NO: 4685-19-60

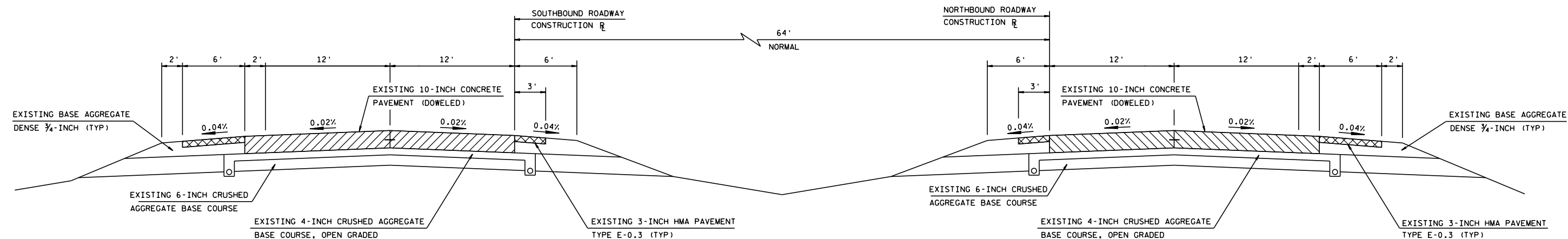
HWY: STH 441

COUNTY: OUTAGAMIE

PROJECT OVERVIEW

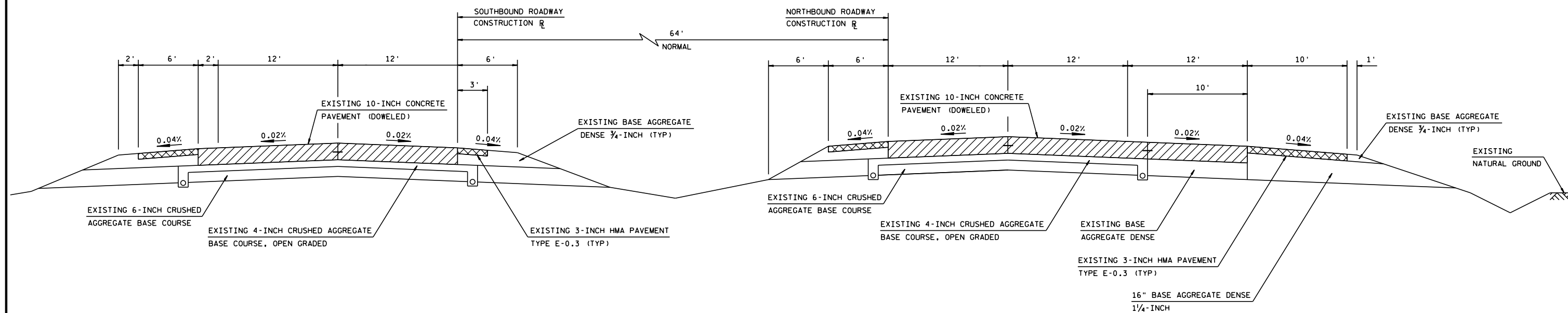
SHEET

E



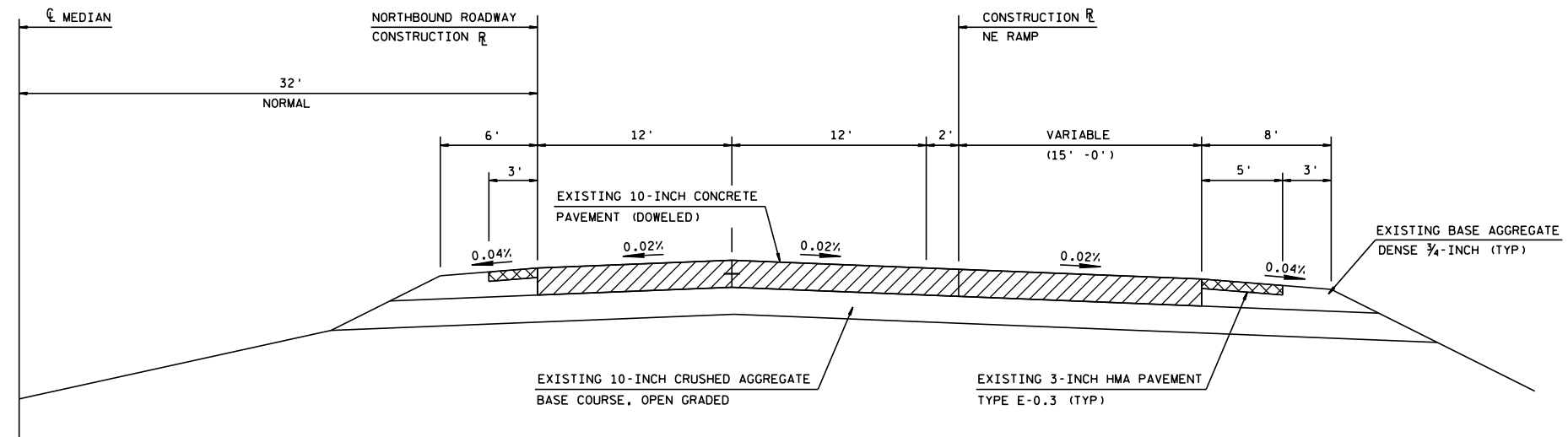
TYPICAL EXISTING CROSS SECTION FOR STH 441

337+69.79 TO 499+60 NB & SB

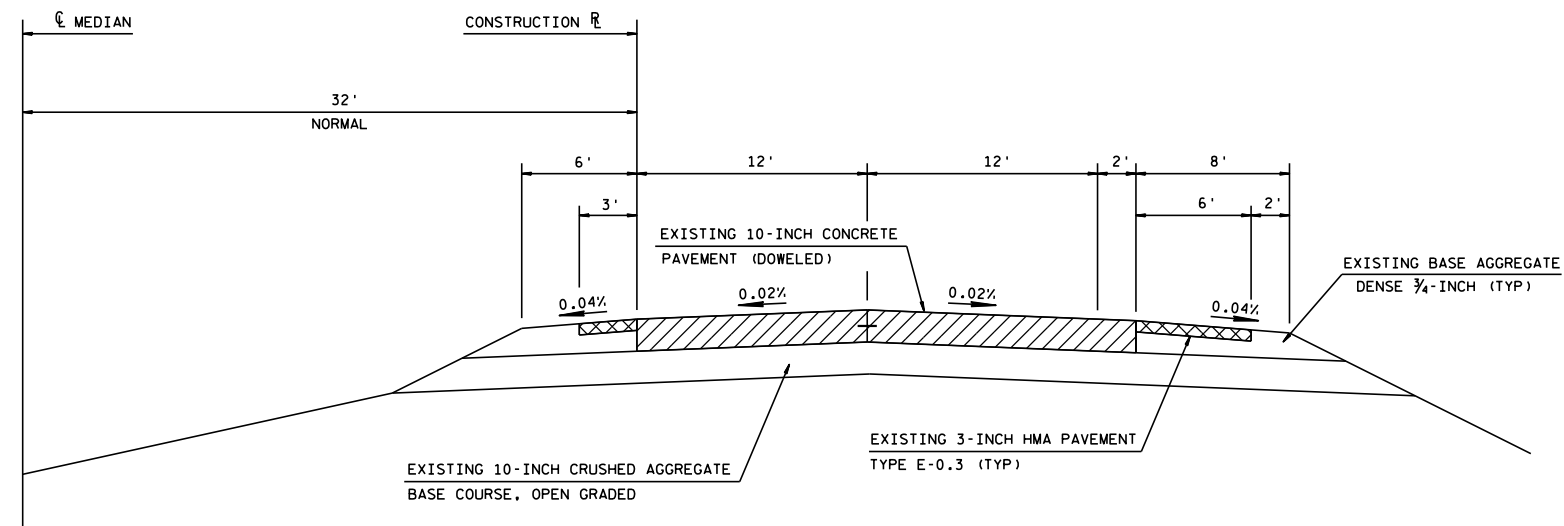


TYPICAL EXISTING CROSS SECTION FOR STH 441

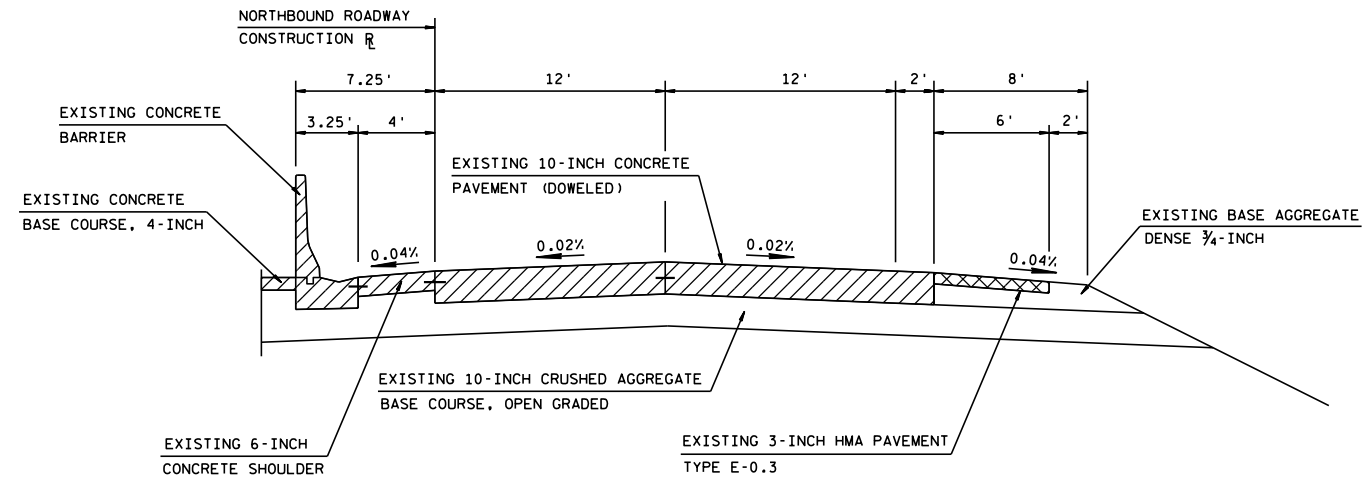
595+50 TO 632+92.13 NB & SB



1/2 TYPICAL EXISTING CROSS SECTION FOR STH 441  
499+60 TO 506+62 NB

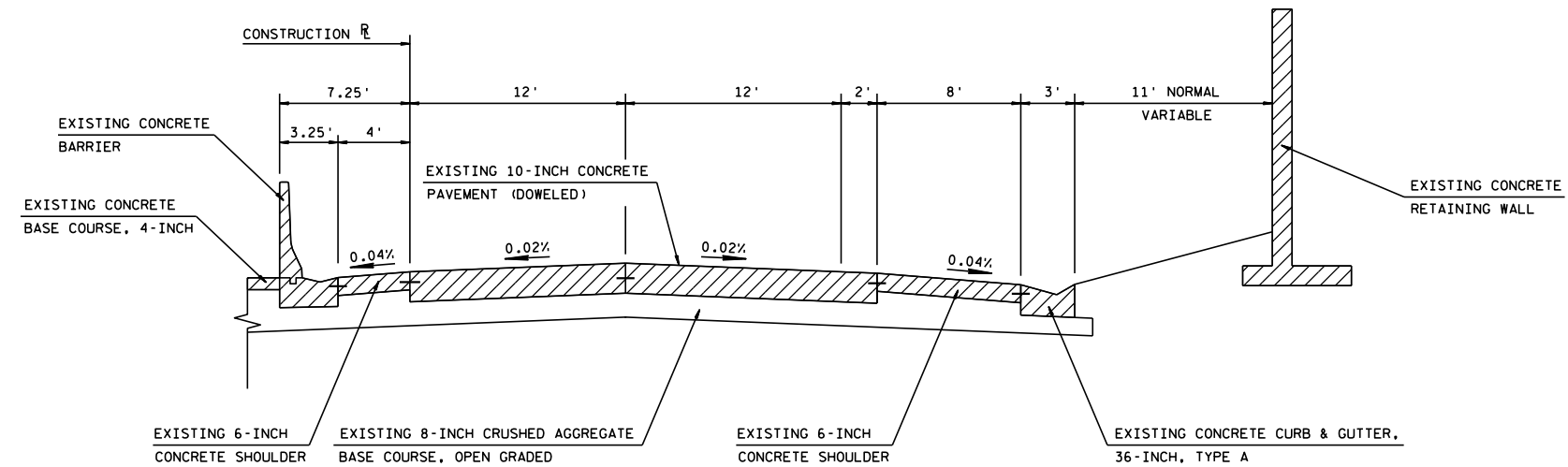


1/2 TYPICAL EXISTING CROSS SECTION FOR STH 441  
499+60 TO 506+62 SB



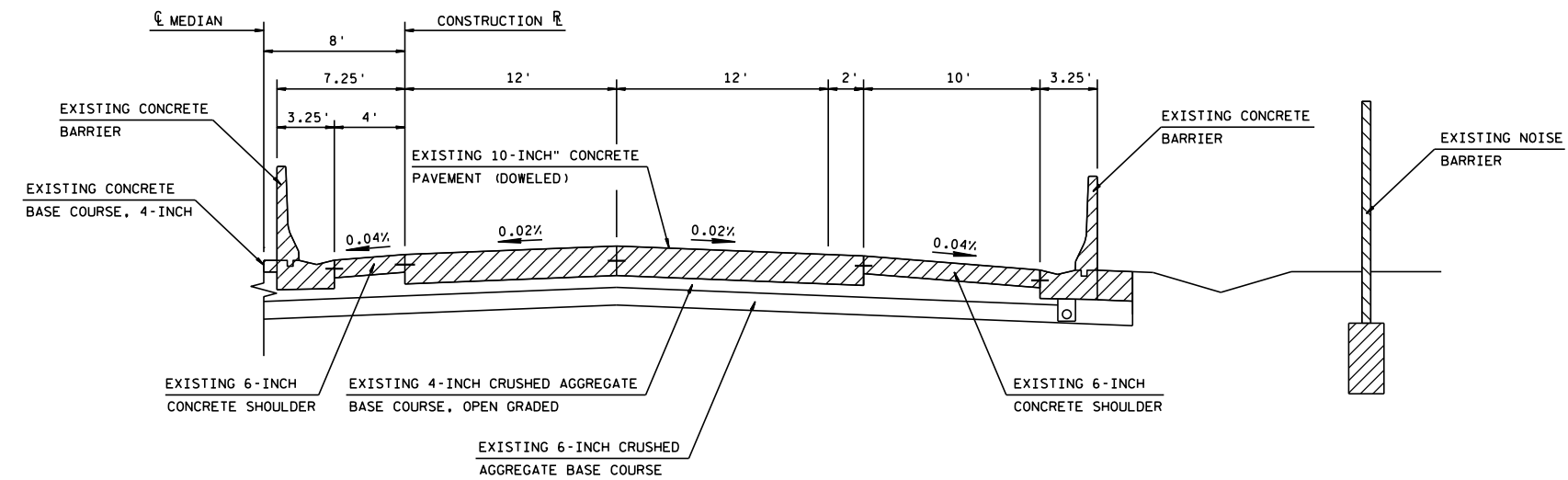
1/2 TYPICAL EXISTING CROSS SECTION FOR STH 441

506+62 TO 517+20 NB  
506+62 TO 519+24 SB



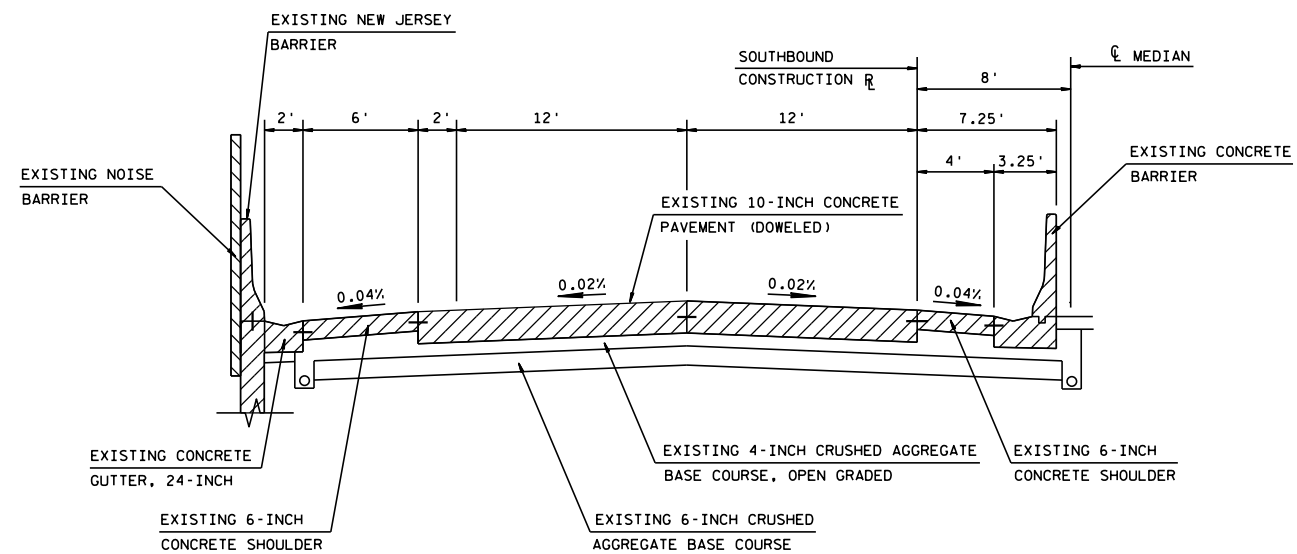
1/2 TYPICAL EXISTING CROSS SECTION FOR STH 441

517+20 TO 539+40 NB  
519+24 TO 539+40 SB



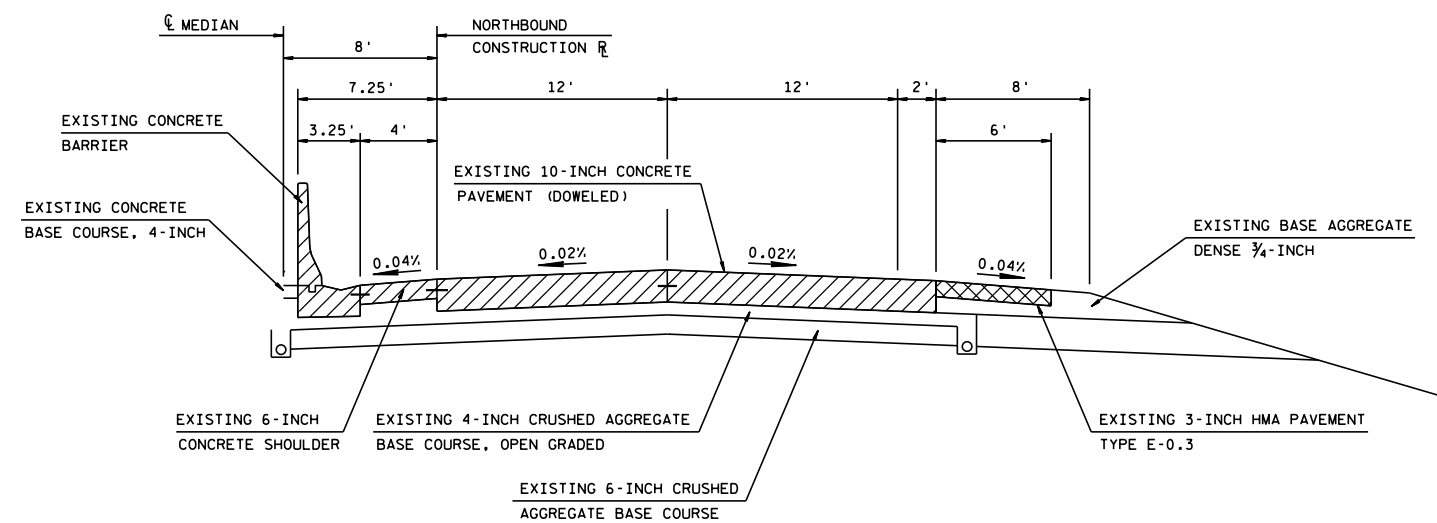
1/2 TYPICAL EXISTING CROSS SECTION FOR STH 441

539+40 TO 548+47.92 STH 441 NB  
539+40 TO 546+85 STH 441 SB



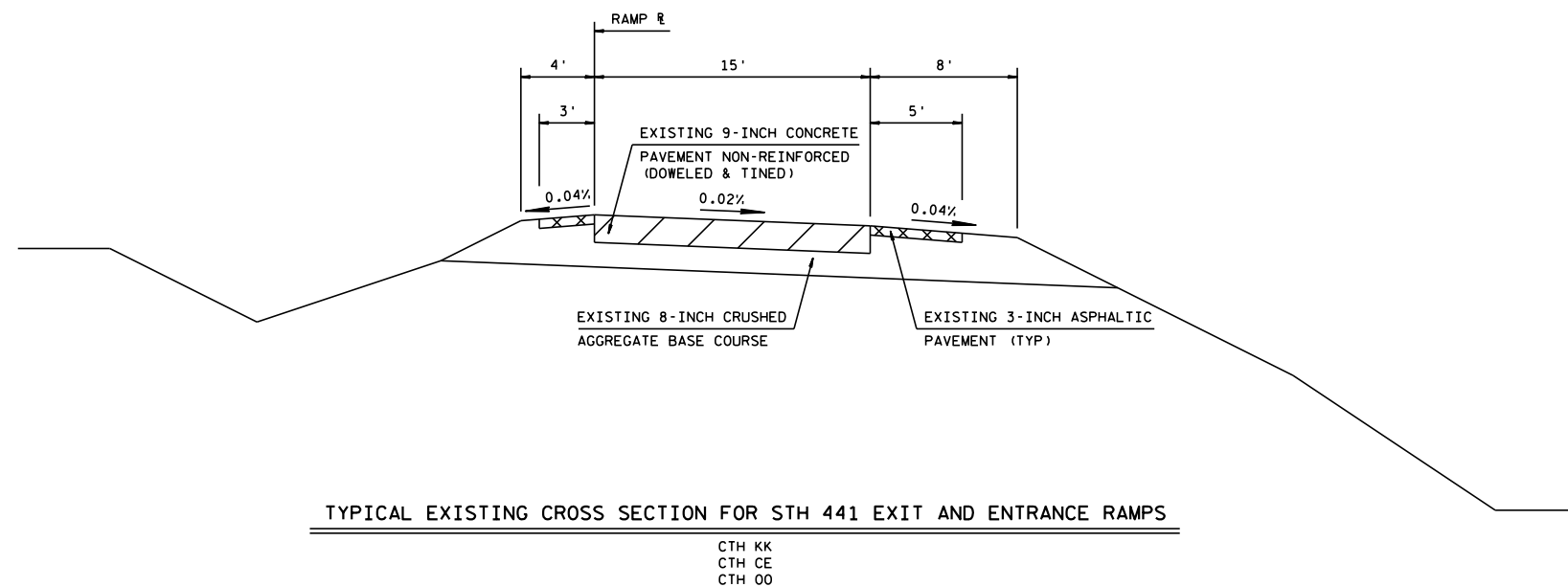
1/2 TYPICAL EXISTING CROSS SECTION FOR STH 441

546+85 TO 548+47.92 STH 441 SB



1/2 TYPICAL EXISTING CROSS SECTION FOR STH 441

564+76.08 TO 590+62.94

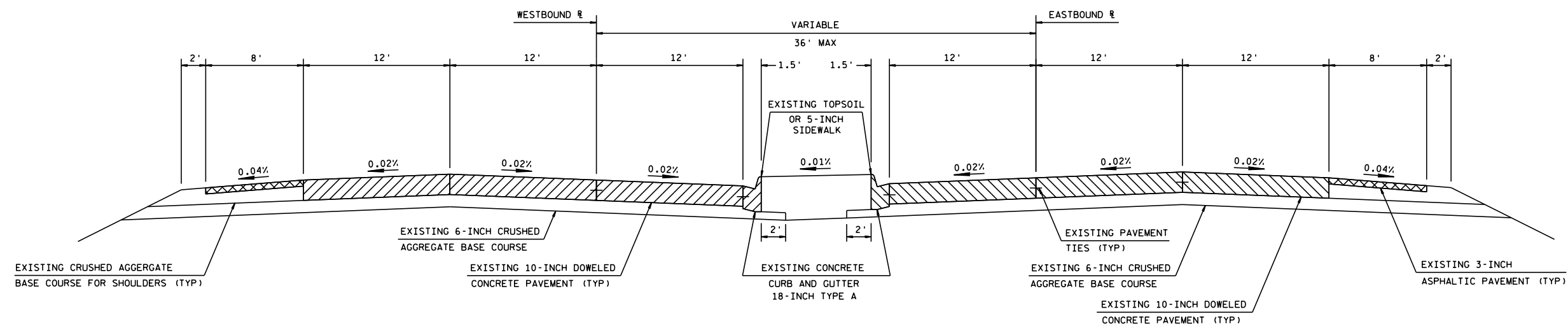


TYPICAL EXISTING CROSS SECTION FOR STH 441 EXIT AND ENTRANCE RAMP

CTH KK  
CTH CE  
CTH 00

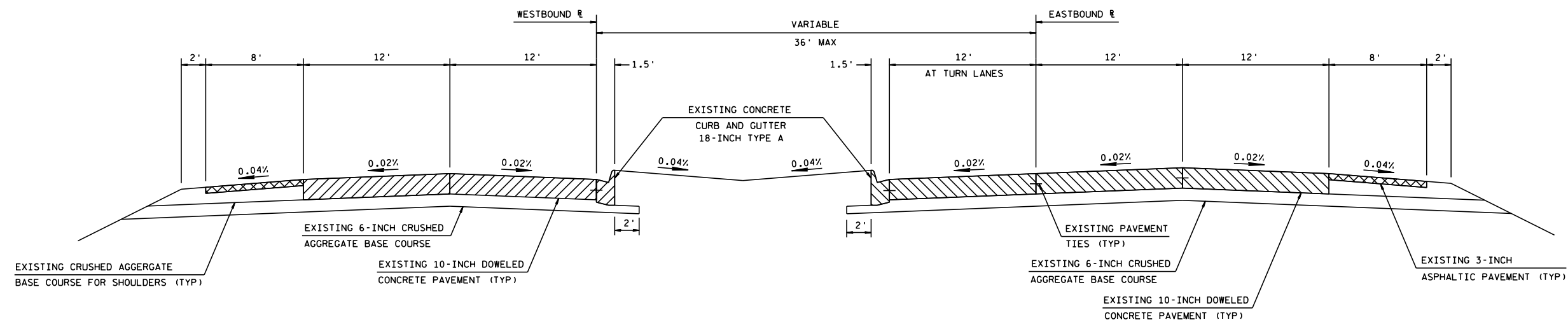
2

2



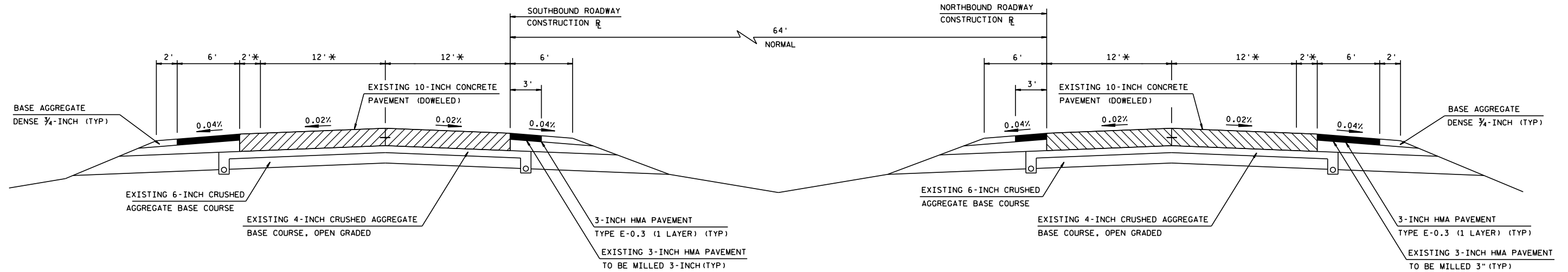
TYPICAL EXISTING CROSS SECTION FOR CTH 00

694+10 TO 697+00



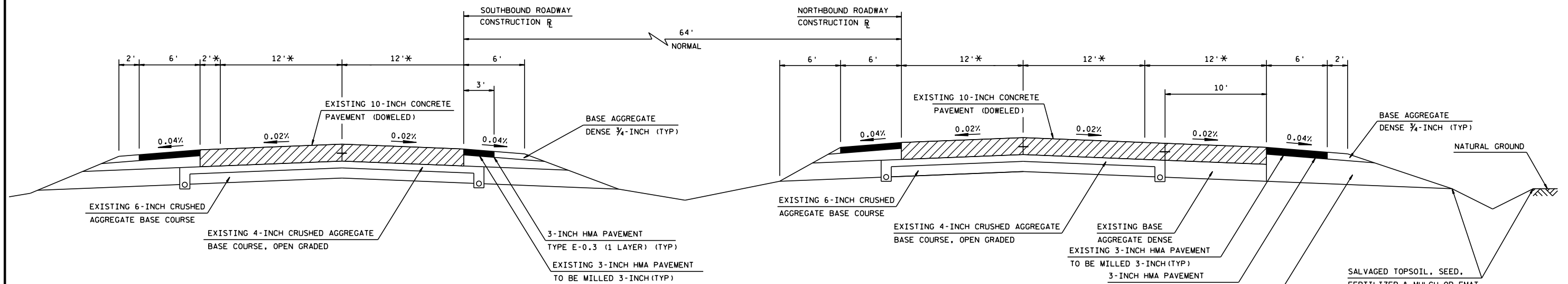
TYPICAL EXISTING CROSS SECTION FOR CTH 00

687+50 TO 694+10  
697+00 TO 710+00



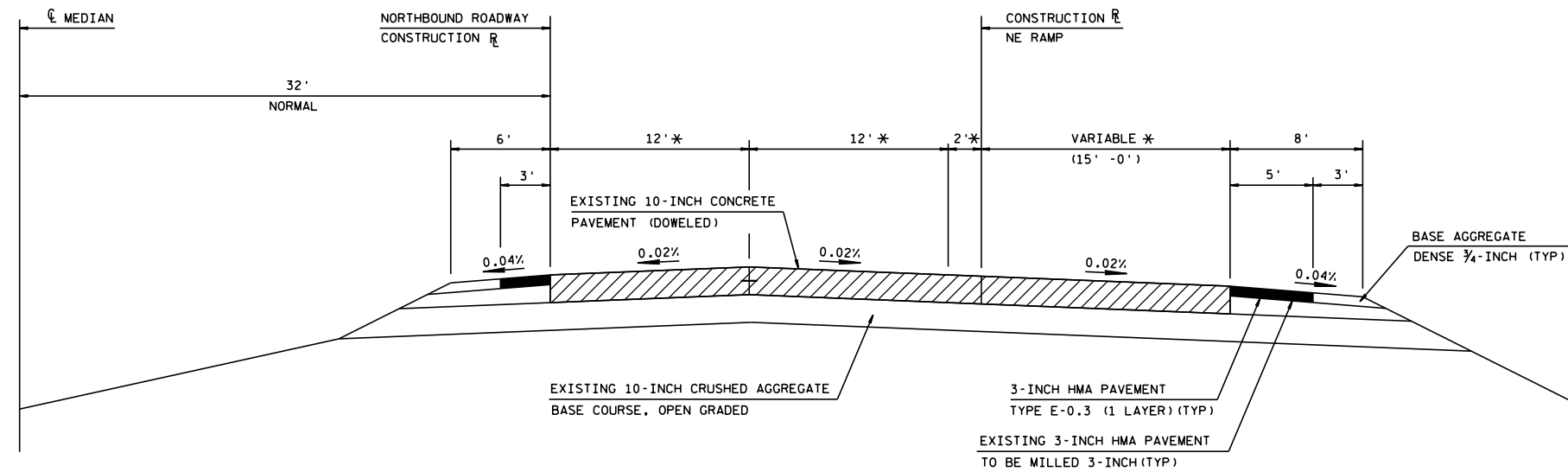
TYPICAL FINISHED CROSS SECTION FOR STH 441

337+69.79 TO 499+60 NB & SB  
USH 10 - CTH CE  
\* CONCRETE PAVEMENT REPAIR REQUIRED  
(SEE MISC. QUANTITIES FOR LOCATIONS)



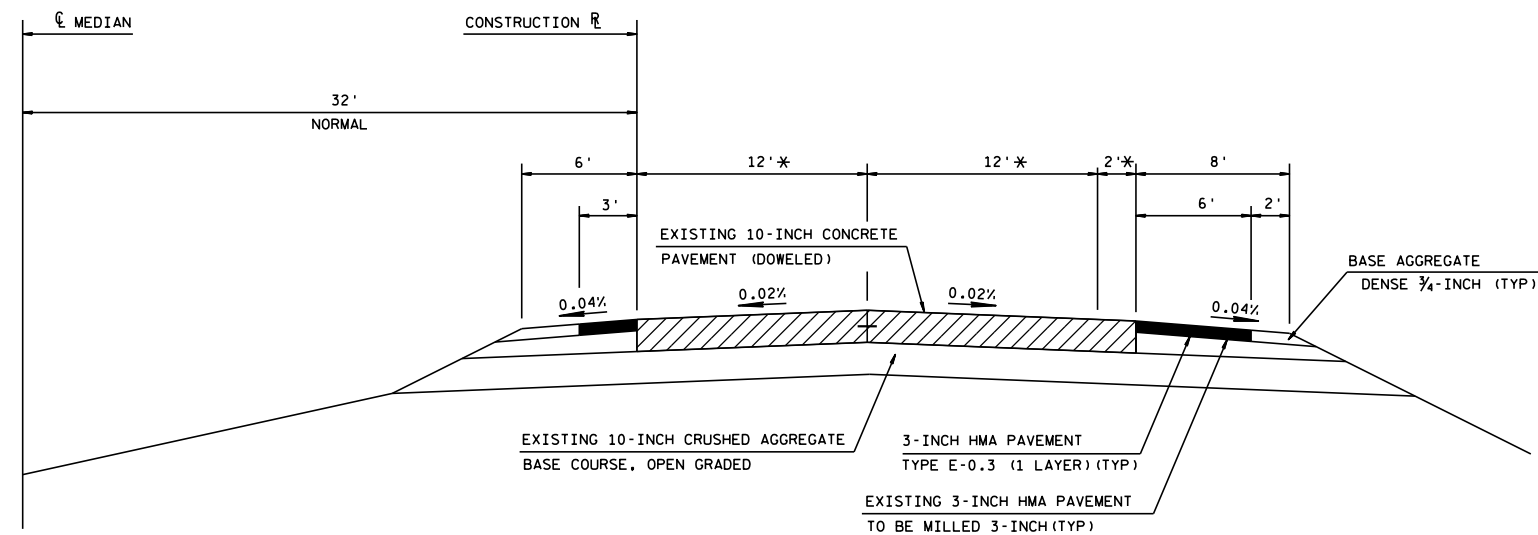
TYPICAL FINISHED CROSS SECTION FOR STH 441

595+50 TO 632+92.13 NB & SB  
CTH 00 - USH 41  
\* CONCRETE PAVEMENT REPAIR REQUIRED  
(SEE MISC. QUANTITIES FOR LOCATIONS)



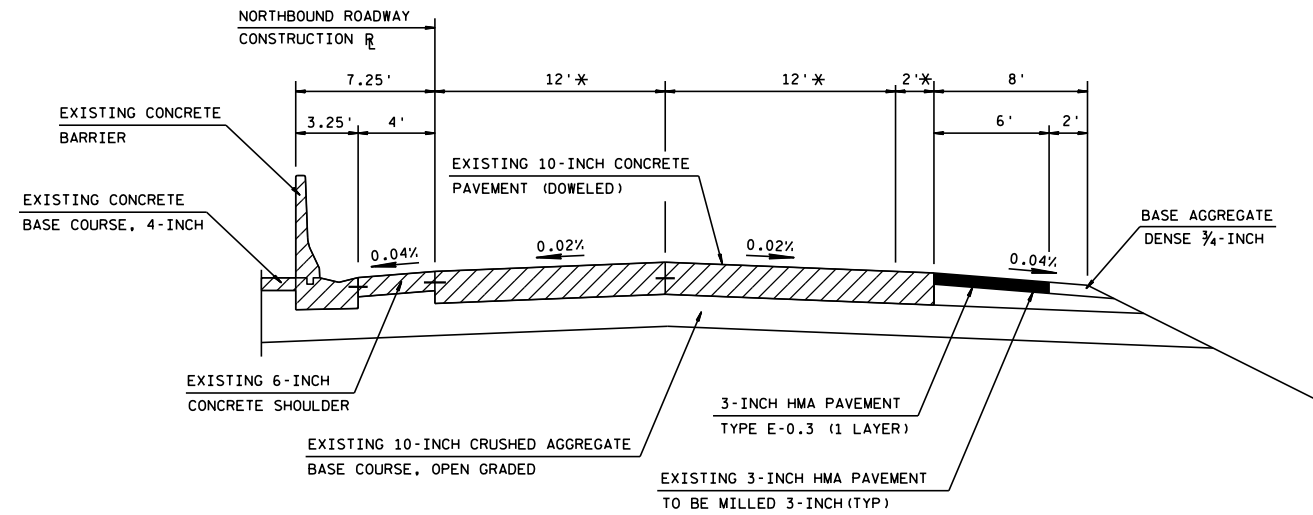
1/2 TYPICAL FINISHED CROSS SECTION FOR STH 441

499+60 TO 506+62 NB  
\* CONCRETE PAVEMENT REPAIR REQUIRED  
(SEE MISC. QUANTITIES FOR LOCATIONS)



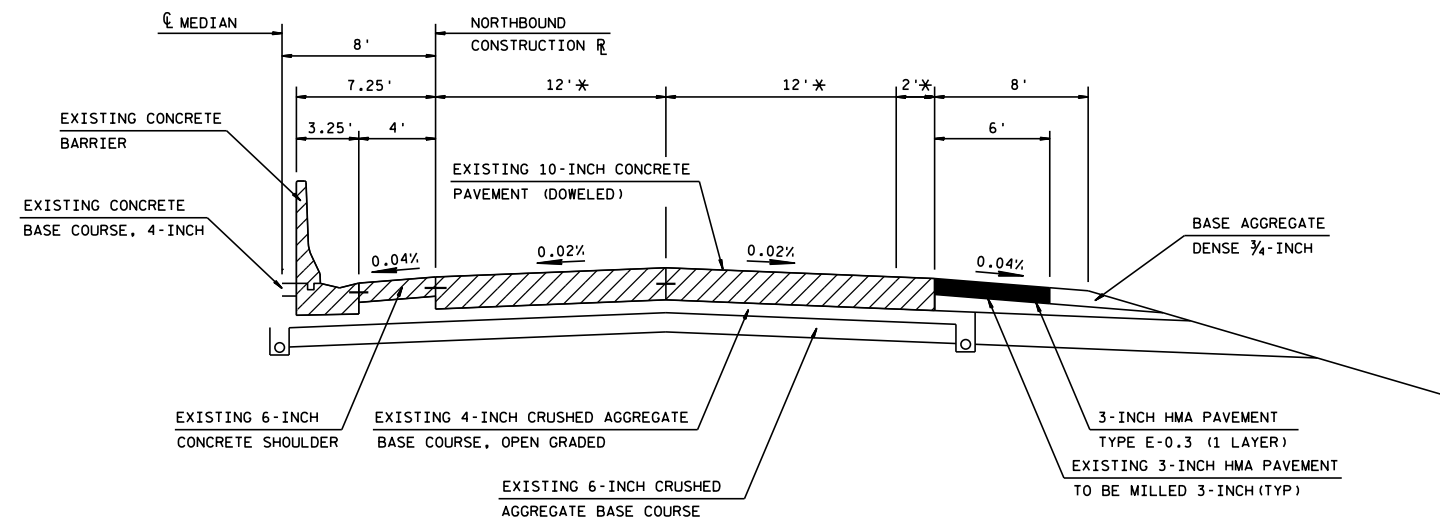
1/2 TYPICAL FINISHED CROSS SECTION FOR STH 441

499+60 TO 506+62 SB  
\* CONCRETE PAVEMENT REPAIR REQUIRED  
(SEE MISC. QUANTITIES FOR LOCATIONS)



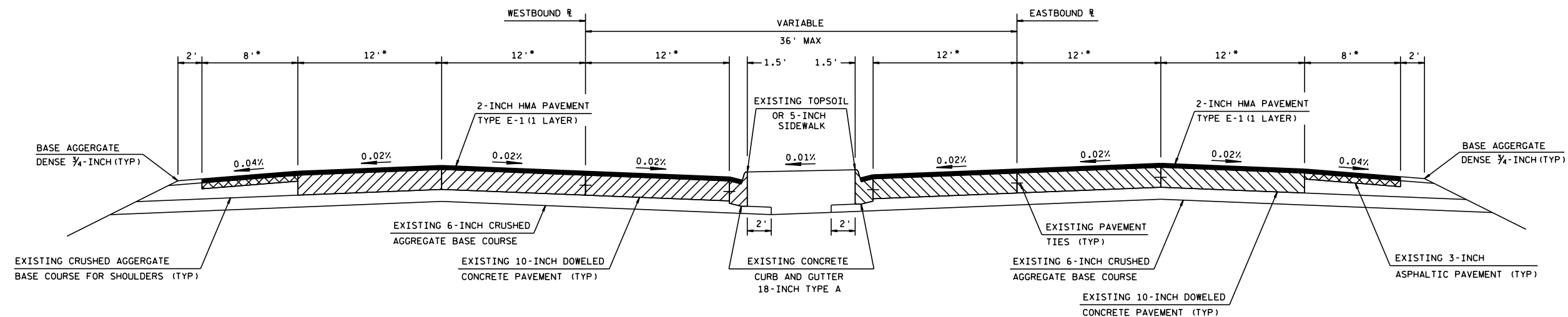
1/2 TYPICAL FINISHED CROSS SECTION FOR STH 441

506+62 TO 517+20 NB  
506+62 TO 519+24 SB  
\* CONCRETE PAVEMENT REPAIR REQUIRED  
(SEE MISC. QUANTITIES FOR LOCATIONS)



1/2 TYPICAL FINISHED CROSS SECTION FOR STH 441

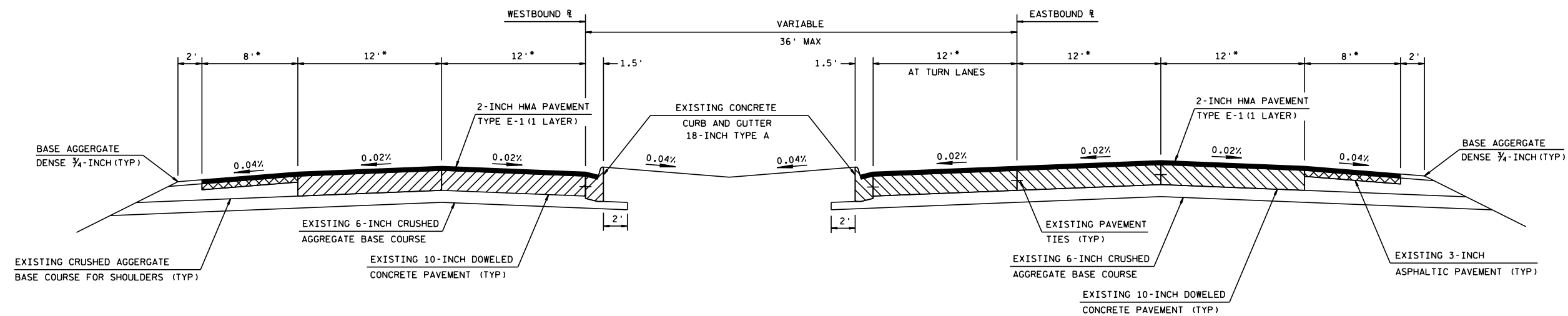
564+76.08 TO 590+62.94  
\* CONCRETE PAVEMENT REPAIR REQUIRED  
(SEE MISC. QUANTITIES FOR LOCATIONS)



**TYPICAL FINISHED CROSS SECTION FOR CTH 00**

694+10 TO 697+00

\*CONCRETE JOINT & CRACKCLEANING AND  
ASPHALTIC SURFACE PATCHING REQUIRED  
(SEE MISC. QUANTITIES FOR LOCATIONS)



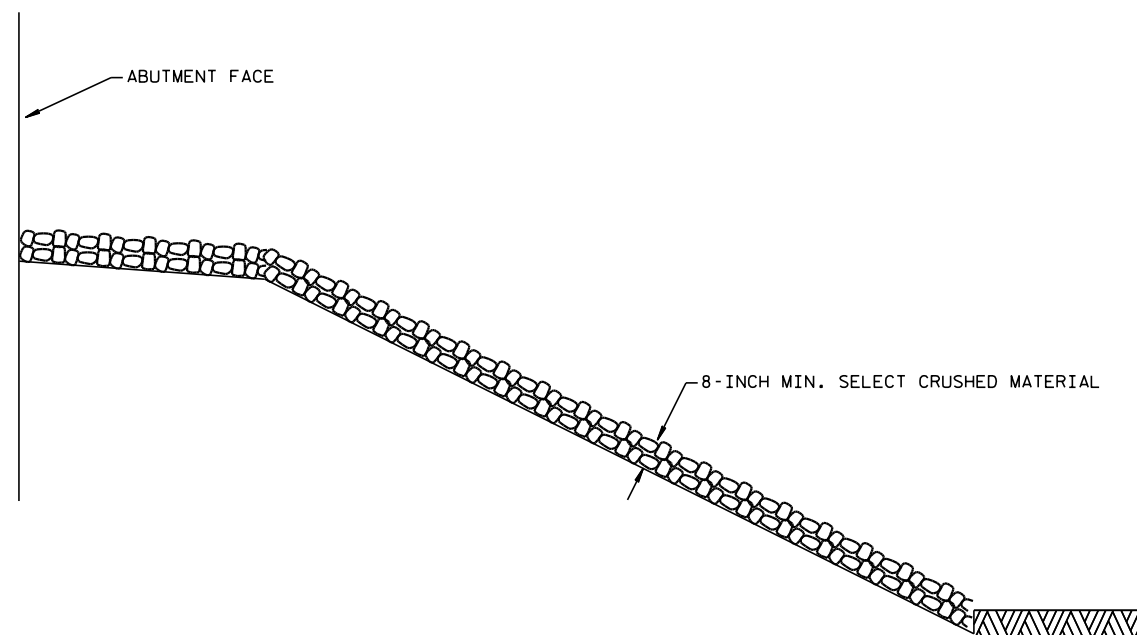
**TYPICAL FINISHED CROSS SECTION FOR CTH 00**

687+50 TO 694+10  
697+00 TO 710+00

\*CONCRETE JOINT & CRACKCLEANING AND  
ASPHALTIC SURFACE PATCHING REQUIRED  
(SEE MISC. QUANTITIES FOR LOCATIONS)

2

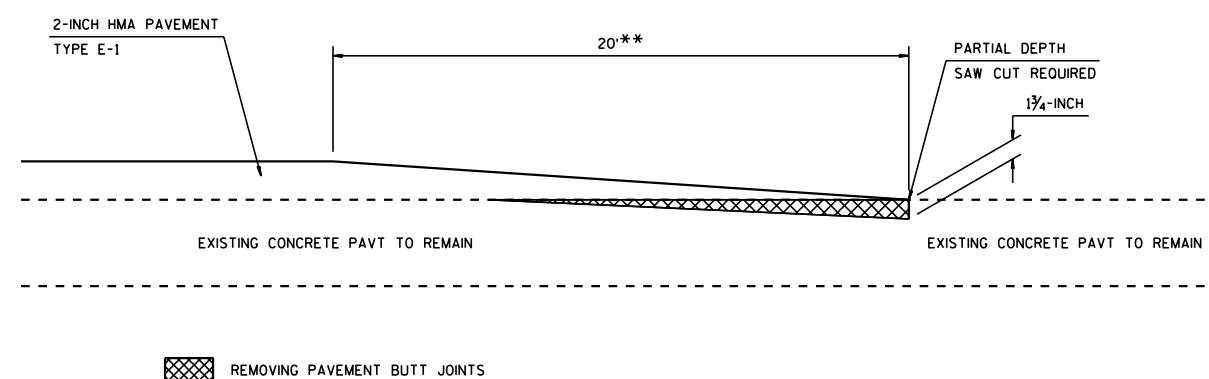
## 2



TYPICAL SLOPE PAVING AT ABUTMENT

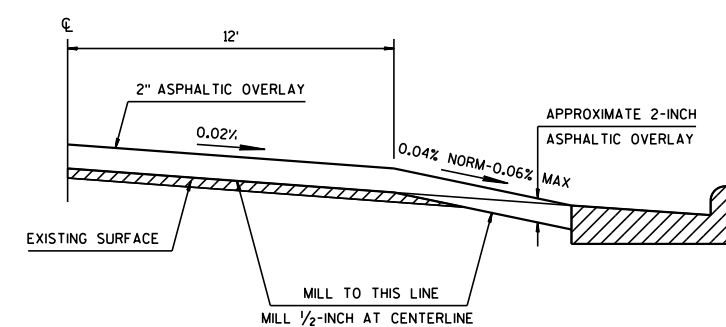
(PIER NOT SHOWN)

|           |               |
|-----------|---------------|
| B-44-0122 | NORTH & SOUTH |
| B-44-0123 | NORTH & SOUTH |
| B-44-0127 | NORTH         |
| B-44-0128 | NORTH         |

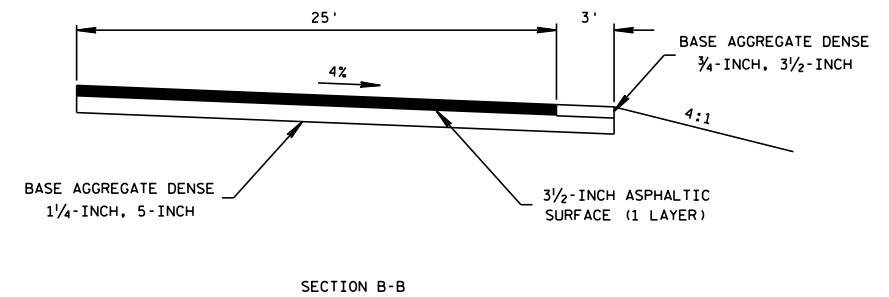
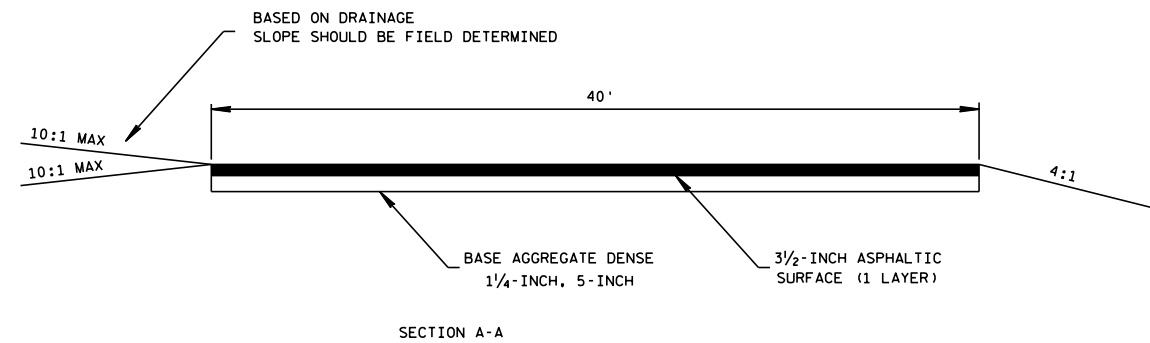
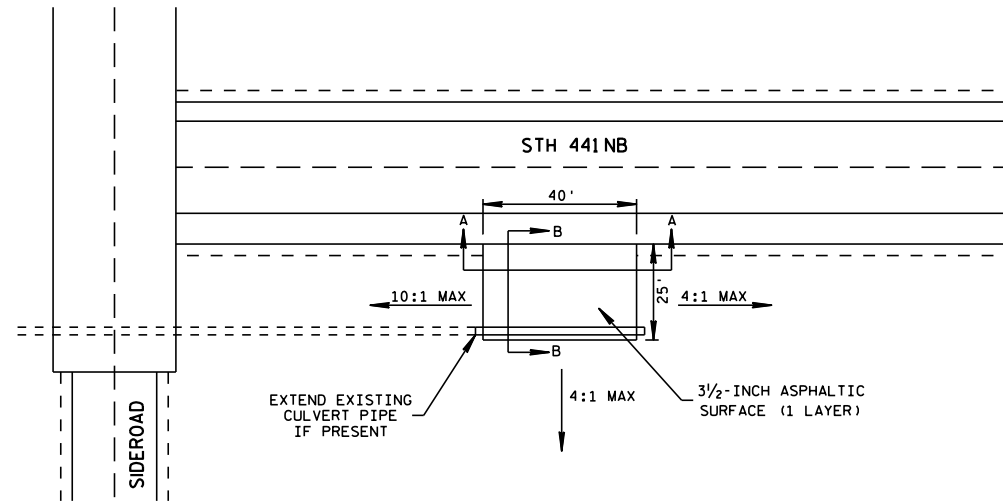


### REMOVING PAVEMENT BUTT JOINT DETAIL

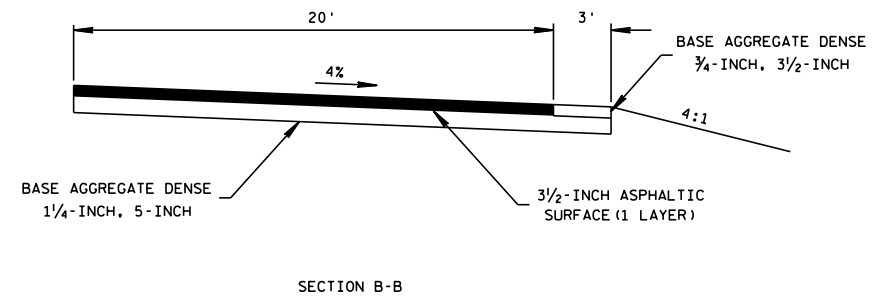
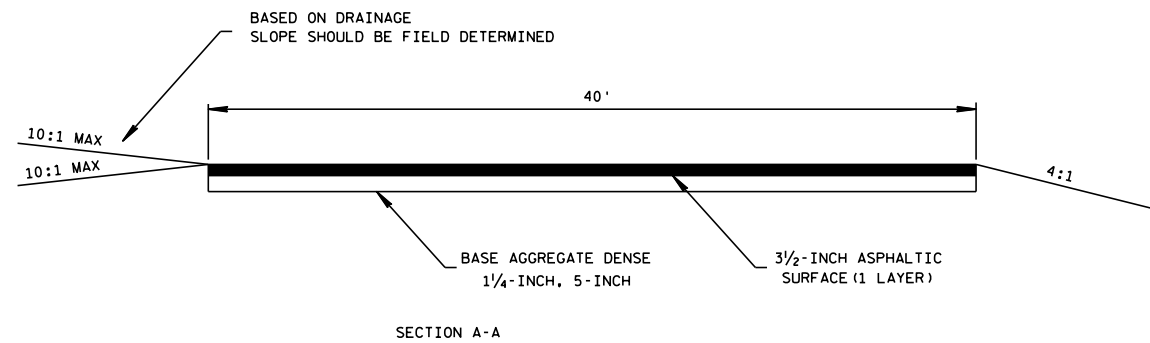
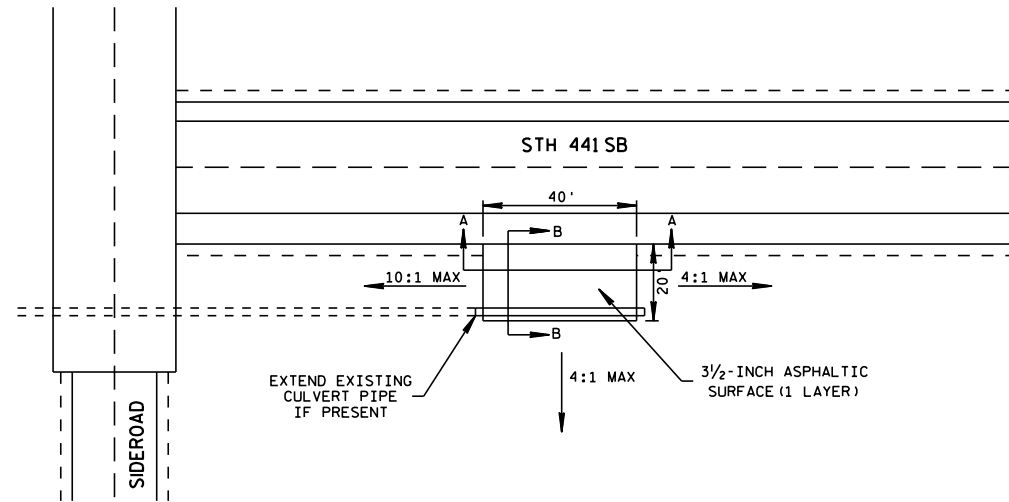
\*\*EB & WB DRIVING LANES ON  
CTH 00 DISTANCE SHOULD BE 75'



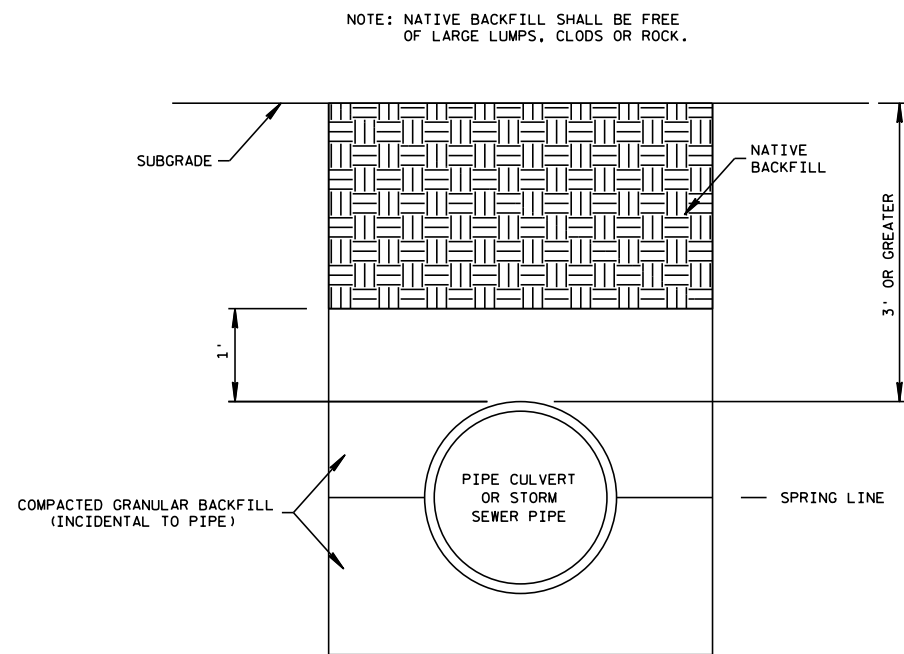
BUTT JOINT DETAIL FOR CURB & GUTTER



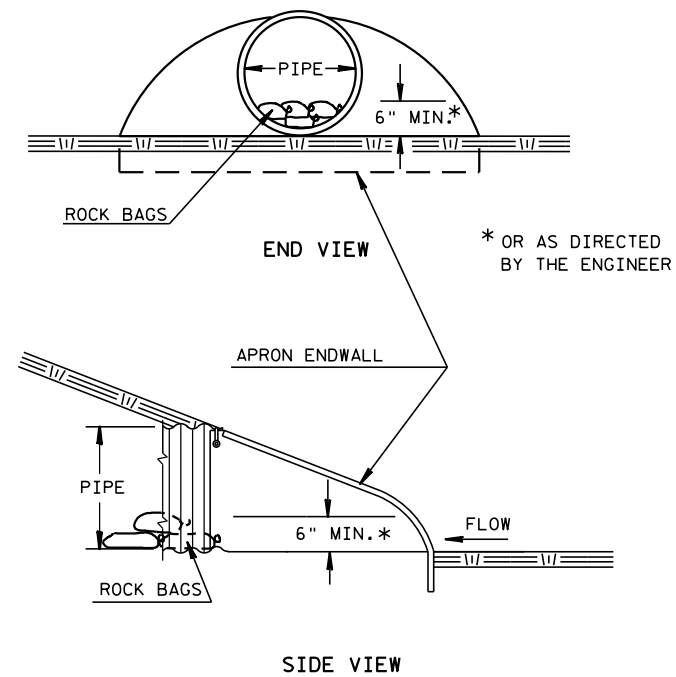
TRAFFIC ENFORCEMENT PAD - NORTHBOUND  
349+00 NB



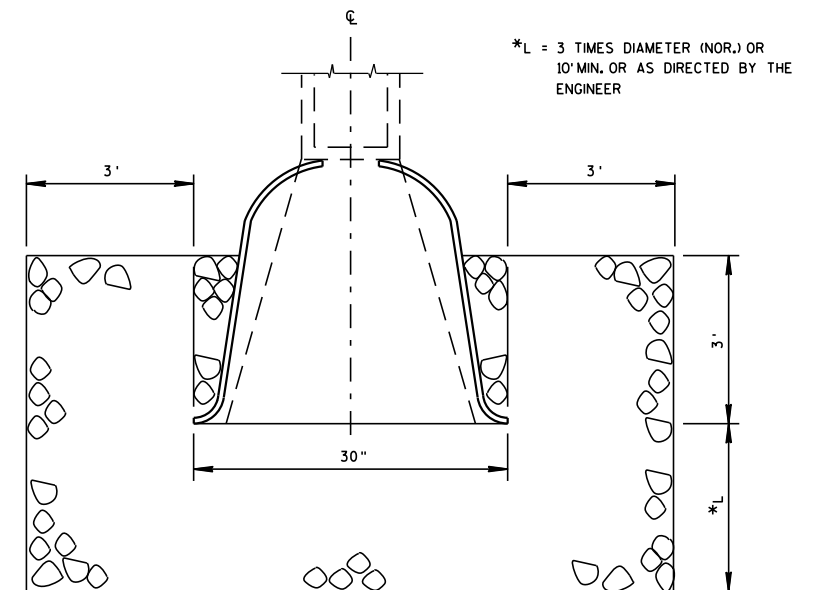
TRAFFIC ENFORCEMENT PAD - SOUTHBOUND RAILROAD CROSSING  
508+50 SB



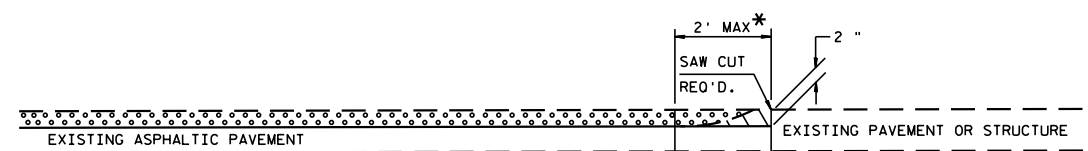
TRENCH BACKFILL DETAIL FOR NORMAL DEPTH PIPE CULVERTS AND STORM SEWER PIPE INSTALLATIONS



CULVERT PIPE DITCH CHECK



RIPRAP AT PIPE END



\* PAID FOR UNDER THE "REMOVING ASPHALTIC SURFACE BUTT JOINTS" ITEM

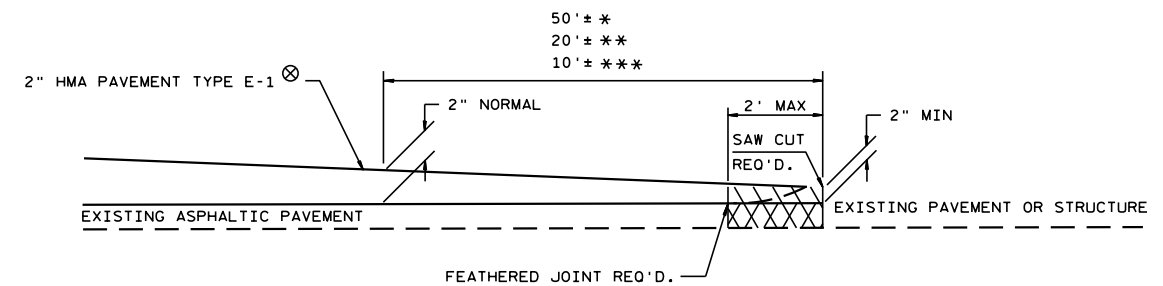
SEE TYPICAL CROSS SECTION FOR PAVEMENT TYPE AND THICKNESS OF INDIVIDUAL COURSES



REMOVING ASPHALTIC PAVEMENT, MILLING; RESURFACE W/ ASPHALTIC MATERIAL

REMOVING ASPHALTIC SURFACE BUTT JOINT

BUTT JOINT DETAIL FOR MILLED ASPHALTIC PAVEMENTS



⊗ SEE TYPICAL CROSS SECTION FOR PAVEMENT TYPE AND THICKNESS OF INDIVIDUAL COURSES

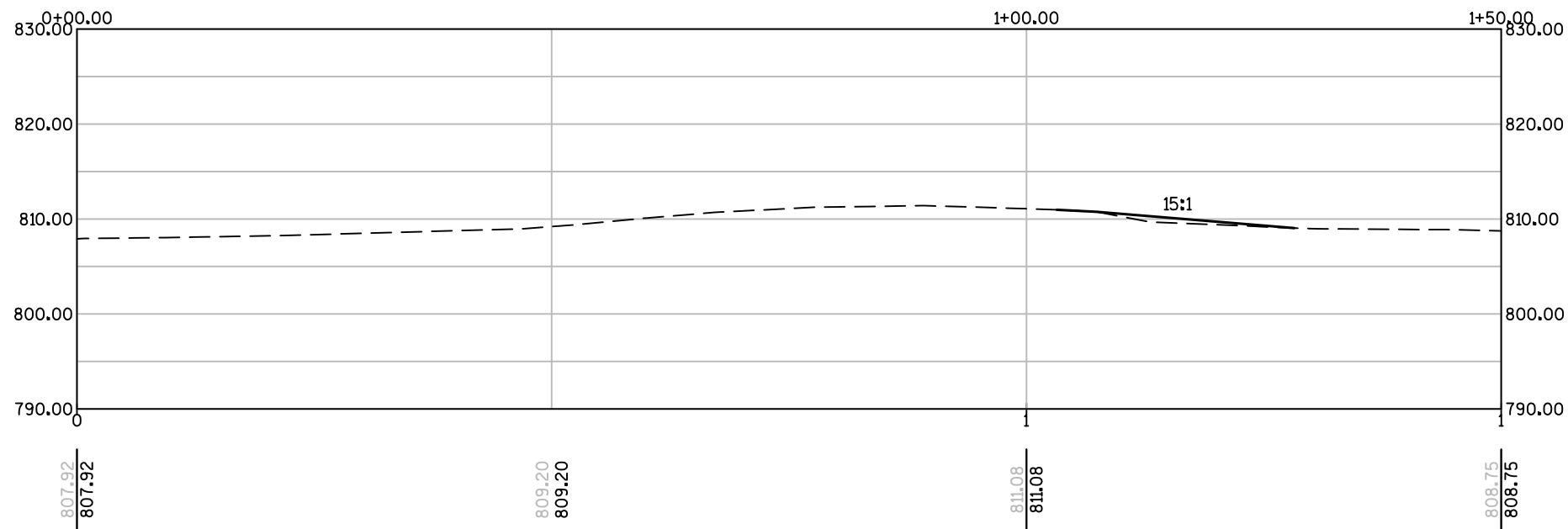


REMOVING PAVEMENT, BUTT JOINTS (FULL DEPTH REMOVAL OPTIONAL)

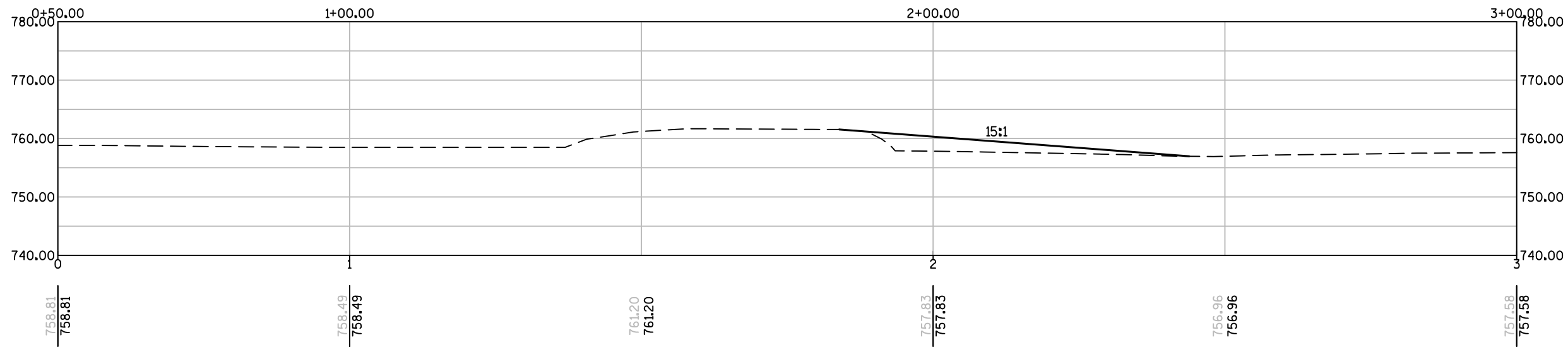
ASPHALTIC WEDGING (FULL DEPTH REMOVAL OPTION)

BUTT JOINT DETAIL FOR ASPHALTIC PAVEMENT

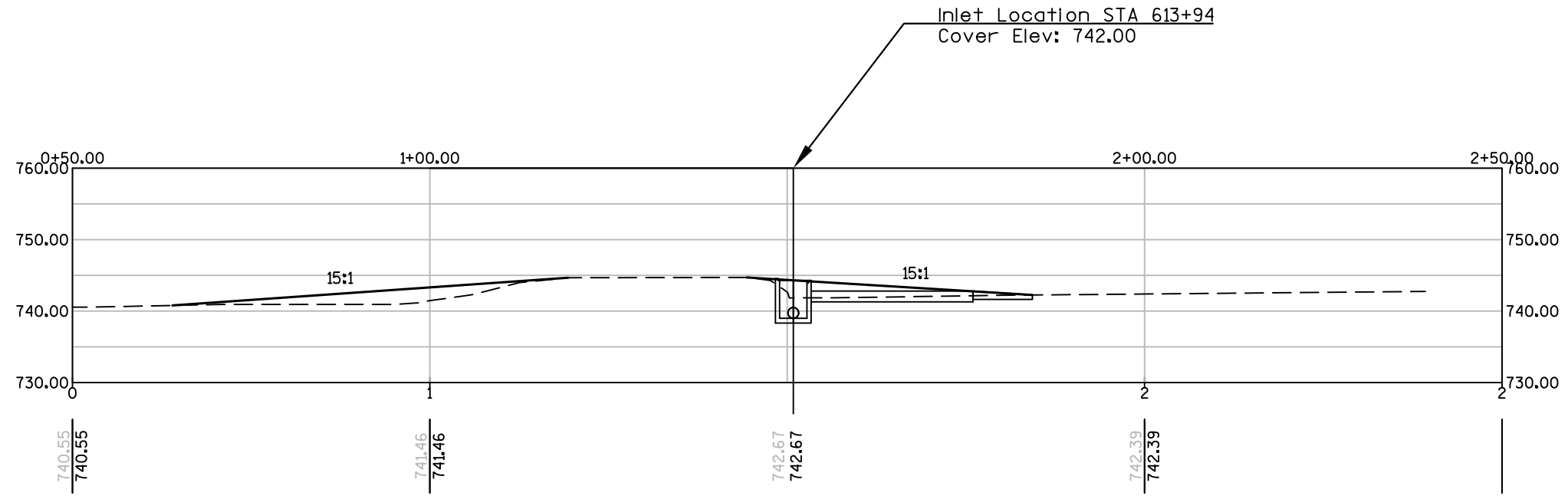
\* MAINLINE  
\*\* SIDEROADS  
\*\*\* PRIVATE ENTRANCES



375+00 MAINTENANCE CROSSOVER PROFILE



465+00 MAINTENANCE CROSSOVER PROFILE



613+75 MAINTENANCE CROSSOVER PROFILE

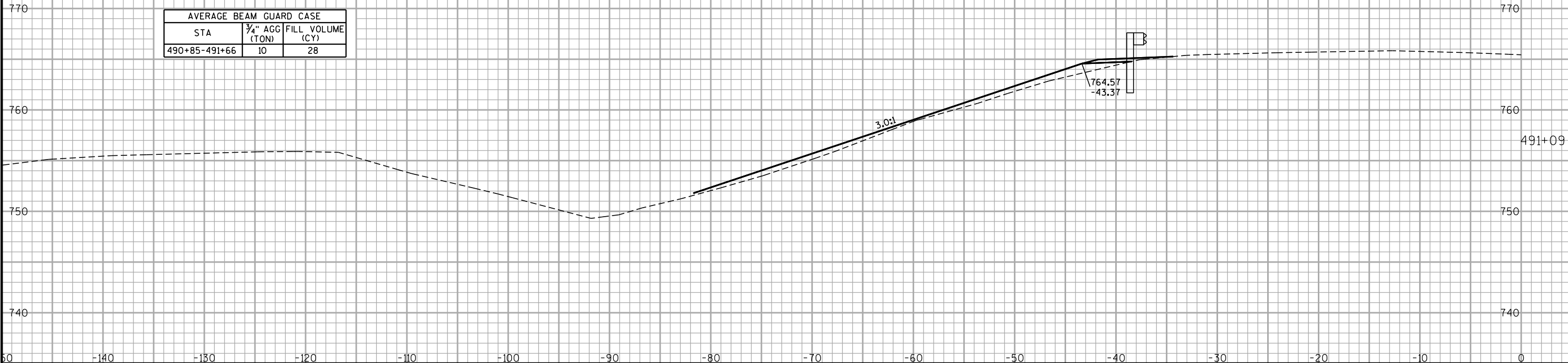
| EXTREME BEAM GUARD CASE |              |                  |
|-------------------------|--------------|------------------|
| STA                     | ¾" AGG (TON) | FILL VOLUME (CY) |
| 388+20-390+08           | 16           | 50               |

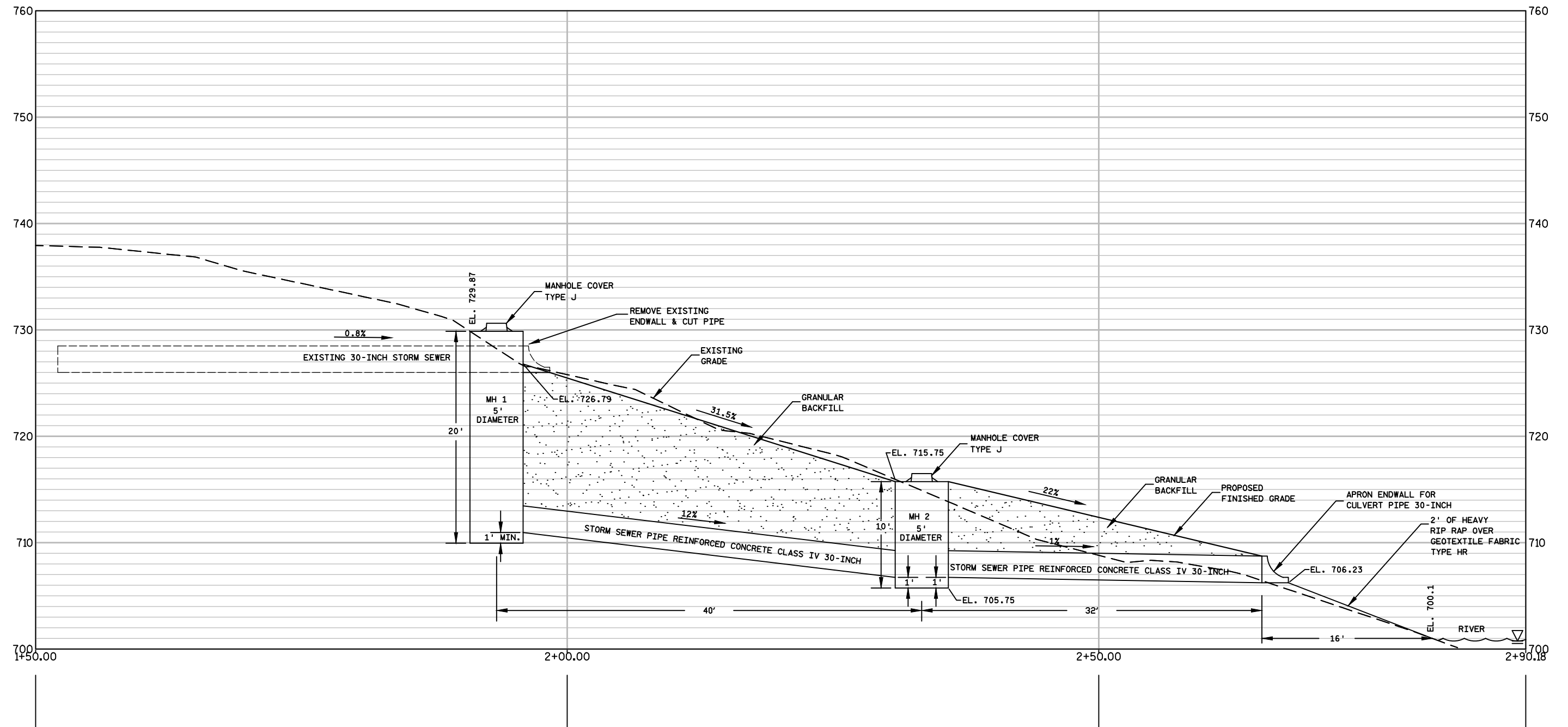
EXTREME BEAM GUARD CASE



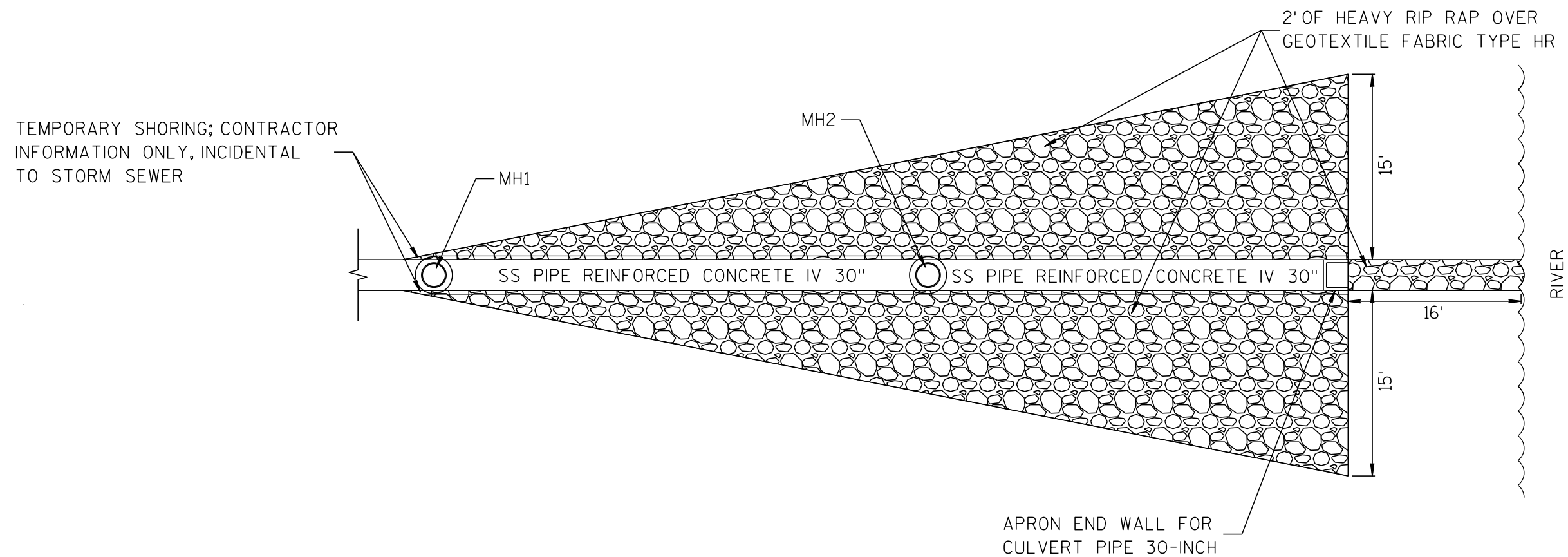
| AVERAGE BEAM GUARD CASE |              |                  |
|-------------------------|--------------|------------------|
| STA                     | ¾" AGG (TON) | FILL VOLUME (CY) |
| 490+85-491+66           | 10           | 28               |

AVERAGE BEAM GUARD CASE

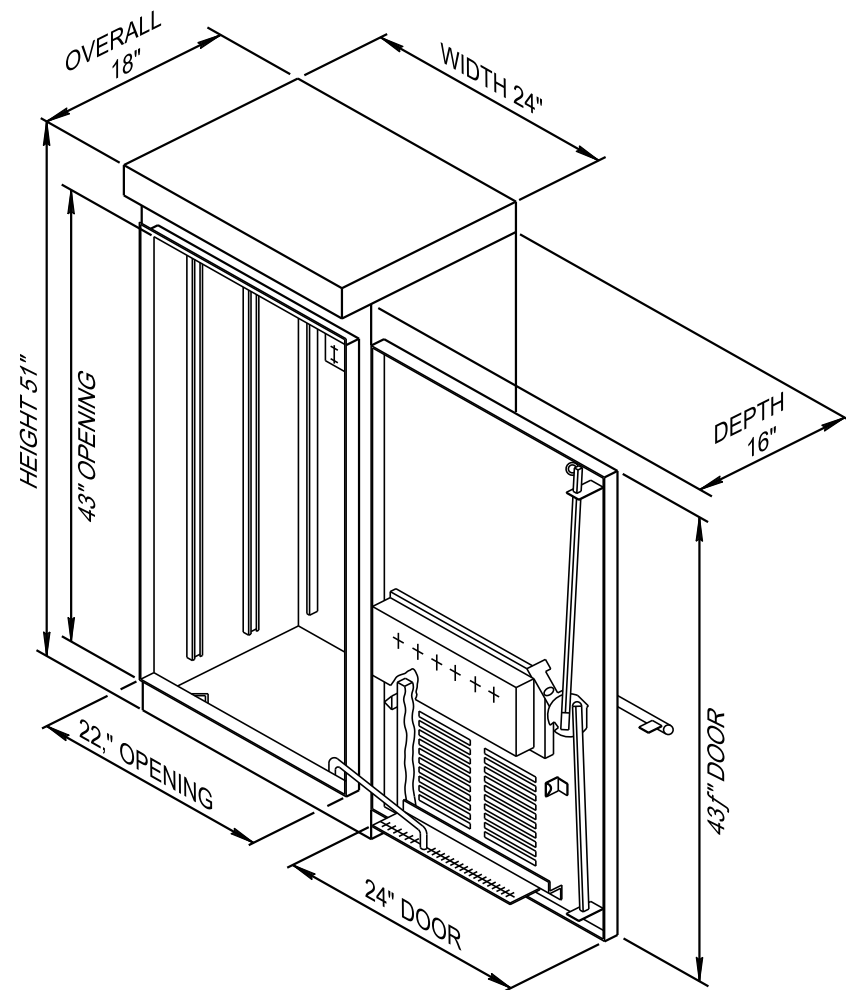




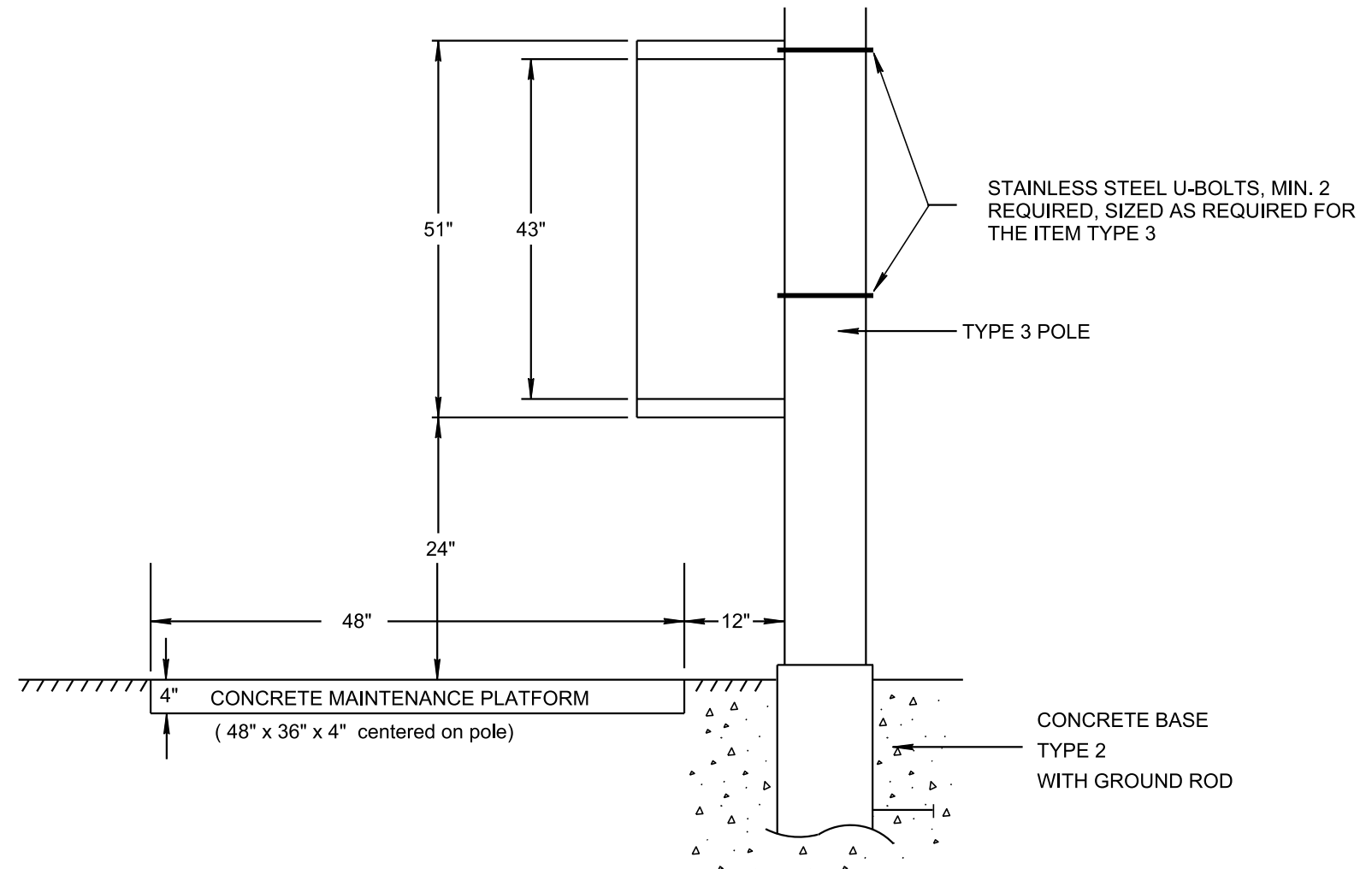
STH 441 PIPE OUTFALL AT FOX RIVER NORTH ABUTMENT



STH 441 PIPE OUTFALL AT FOX RIVER NORTH ABUTMENT

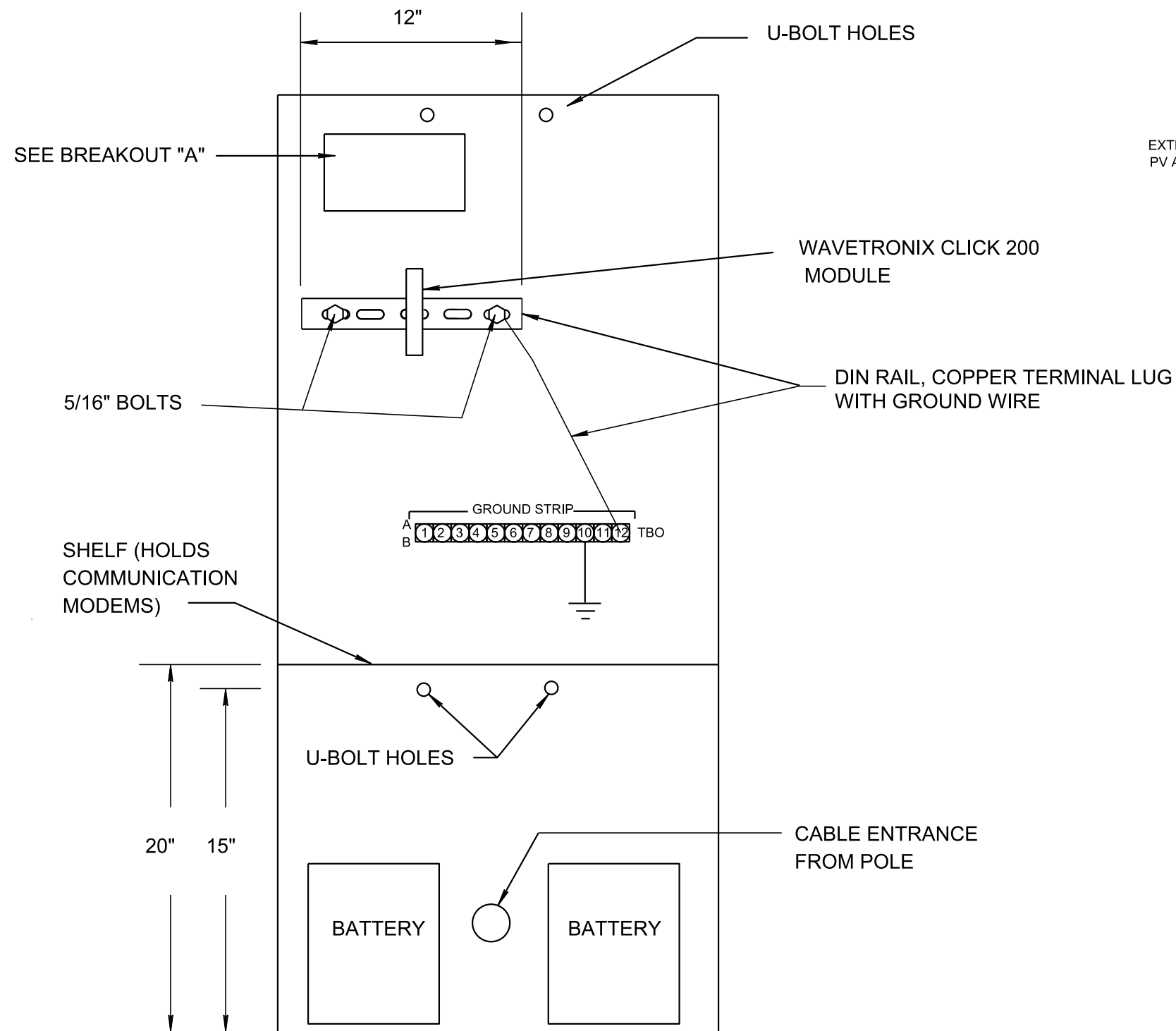


**CCTV POLE-MOUNTED CABINET  
USED IN SOLAR INSTALLATION**



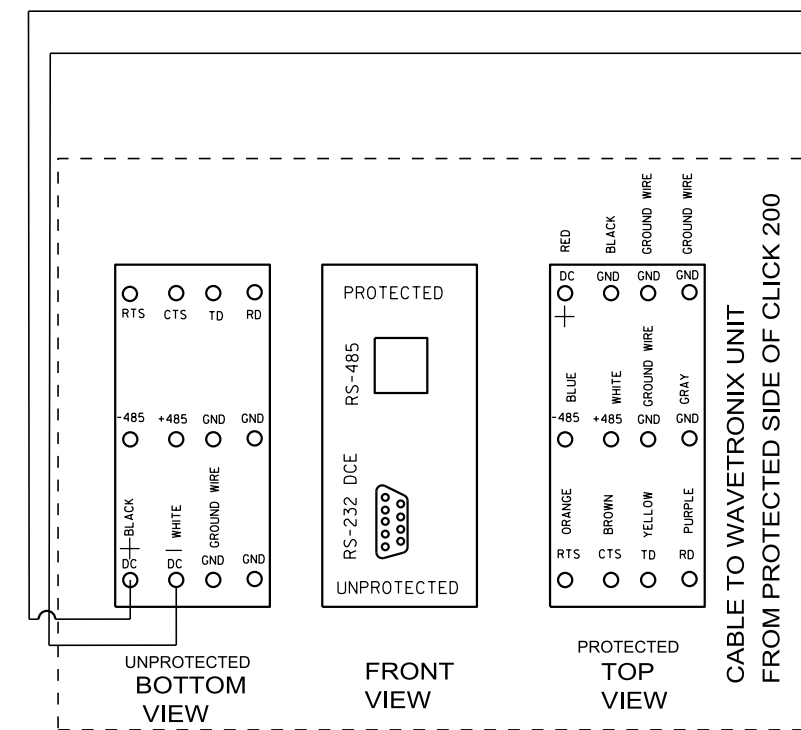
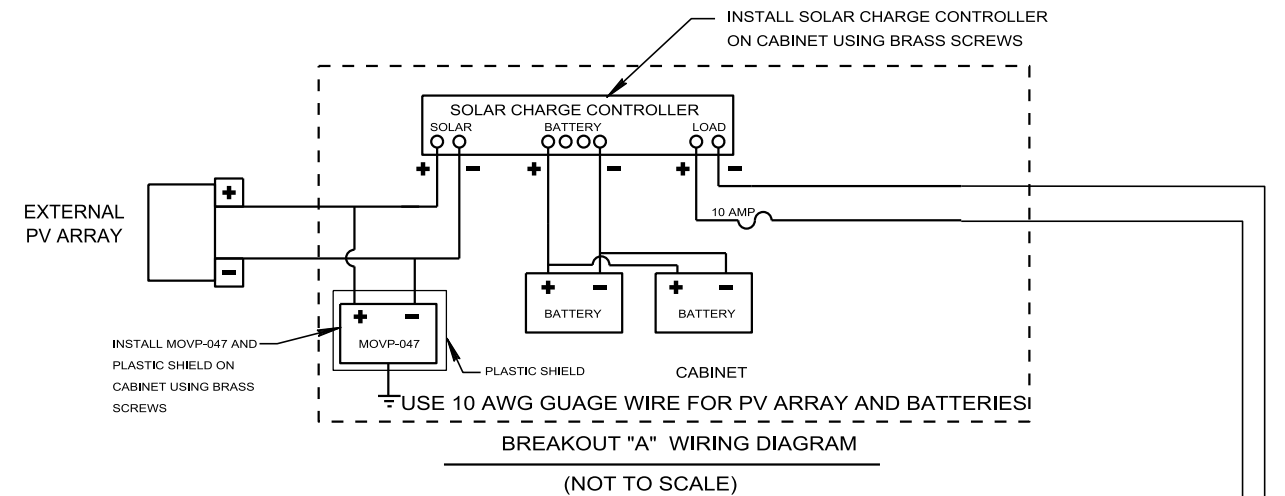
## CCTV POLE-MOUNTED CABINET ATR - WAVETRONIX

DESIGNED BY WISDOT CO  
SHEET 1 OF 2



FRONT VIEW/LAYOUT  
(NOT TO SCALE)

## CCTV POLE-MOUNTED CABINET USED IN SOLAR INSTALLATION



WAVETRONIX CLICK 200 MODULE  
WIRING DIAGRAM  
(NOT TO SCALE)

## CCTV POLE-MOUNTED CABINET LAYOUT

### CABINET WILL HAVE COMPONENTS INSTALLED

DESIGNED BY WISDOT DOT CO  
SHEET 2 OF 2

ADJUSTABLE STAINLESS STEEL 3/4" WIDE  
(MIN.) PIPE TO PIPE CLAMPS PLACED  
3" FROM BOTH ENDS OF THE  
MOUNTING BRACKET

SERVICE HEAD  
CABLE TO DRILLED HOLE  
WITH GROMMET

TYPE 3 POLE

SOLAR POWER CABLES, STRANDED WIRE  
WAVETRONIX CABLE

24"x51" CCTV POLE MOUNTED CABINET WITH  
2 SOLAR BATTERIES  
CHARGE REGULATOR  
WAVETRONIX POWER SUPPLY

CONCRETE MAINTENANCE PLATFORM

GRADE

CONCRETE BASE  
TYPE 2  
WITH GROUNDING ROD AND  
6 AWG BARE COPPER WIRE  
STRANDED

MOUNTING BRACKET

2 - SOLAR PANELS ON ONE BRACKET  
POINTED DUE SOUTH  
AT A 70 DEG. ANGLE

AS REQUIRED  
FROM TRAVEL LANE

TRANSFORMER BASE

INSTALL WAVETRONIX UNIT AS REQUIRED  
ABOVE TRAVEL LANE

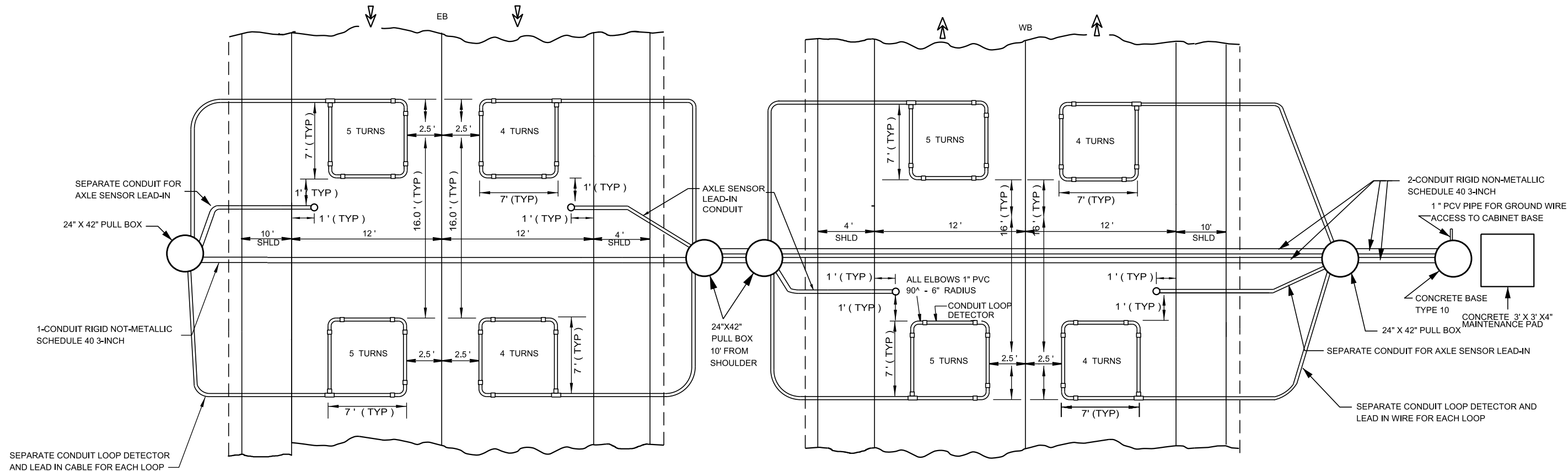
TRAVEL LANE

WAVETRONIX DETECTOR INSTALLATION

SOLAR POWER, ON TYPE 3 POLE

(NOT TO SCALE)

DESIGNED BY WISDOT CO



## ATR CLASSIFICATION DETECTOR INSTALLATION

ATR 441224 STA 463 +/- 100'

## GENERAL NOTES

DO NOT CHANGE THE LOOP DESIGN. OTHER DESIGNS DO NOT WORK WITH OUR EQUIPMENT.

ALL LOOPS TO HAVE THE NUMBER OF TURNS INDICATED ON DETAIL. LOOP WIRE SHALL BE NO. 12 AWG TYPE USE, WITH XLP INSULATION, STRANDED COPPER. LOOP LEAD WIRE FROM LOOP TO PULL BOX TO BE TWISTED AT LEAST 3 TURNS PER FOOT BEFORE INSTALLATION.

THE TWO SINGLE CONDUCTOR LOOP WIRES SHALL BE TWISTED TOGETHER AT A RATE OF 3-4 TWISTS PER FOOT FROM THE EXIT OF THE LOOP TO THE CONTROL CABINET BASE OR ITS CONNECTION WITH LOOP LEAD-IN CABLE AT THE PULL BOX. THESE TWISTED SINGLE CONDUCTOR PAIRS SHALL BE INSTALLED IN WELL DRAINED, PVC CONDUIT.

ALL LOOP INSTALLATIONS SHALL HAVE THE LOOP DETECTOR CONDUIT PITCHED TO DRAIN TO THE PULL BOX.

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 OR DUCT THAT IS TO FIT IN THE OPENING, PLUS NO MORE THAN 1/8".

LOOP WIRE TO LEAD-IN CABLE SPICES SHALL BE MADE ONLY IN THE PULL BOX WHICH IS NEAR THE EDGE OF THE ROAD. ALL SPICES SHALL BE MADE AS SOON AS POSSIBLE AFTER WIRES ARE INSTALLED. A SPICE OF A TWO CONDUCTOR CABLE CONSISTS OF TWO SOLDERED JOINTS ENCLOSED IN A SINGLE SPICE KIT. EACH SOLDERED CONNECTION SHALL BE INSULATED FROM ONE ANOTHER. ALL SPICES SHALL BE MADE WITH EPOXY TYPE SPICE KITS SUCH AS "3M 82A1" OR APPROVED EQUAL.

IF A SPICE TO THE LEAD-IN WIRE CANNOT BE MADE THE DAY THAT THE WIRE IS INSTALLED, THE WIRE ENDS SHALL BE SEALED WITH TAR OR SCOTCHKOTE TO KEEP WATER OUT OF THE INSULATING JACKET OF THE WIRE.

TWO CONDUCTOR, NO. 12 AWG, LOOP DETECTOR LEAD IN CABLE SHALL BE USED FROM THE SPICE CONNECTION AT THE PULL BOX TO THE CONTROL CABINET.

DETECTOR LEADS SHALL BE IDENTIFIED WITH THEIR ASSOCIATED LOOP BY USE OF WATERPROOF TAGS IN THE PULL BOX AND CABINET.

A COMPLETE "AS BUILT" WIRING DIAGRAM SHOWING LOOPS, CONNECTIONS AND LEAD-INS, SHALL BE PROVIDED TO THE ENGINEER AND JANE OLDENBURG - WI DOT - TRAVEL SURVEY SHOP, 3633 PIERSTORFF ST., MADISON, WI 53704, 608-245-2679, UPON COMPLETION OF THE LOOP WIRING INSTALLATION.

DRAIN SUMPS FOR CONDUIT, INCLUDING ALL LABOR, FITTINGS AND MATERIALS SHALL BE INCIDENTAL TO THE INSTALLED UNIT COST OF THE CONDUIT.

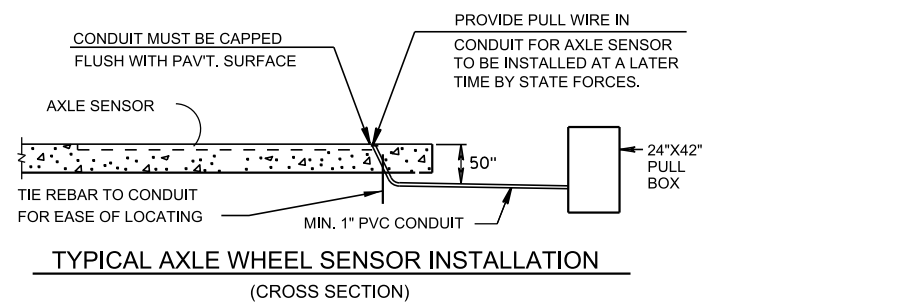
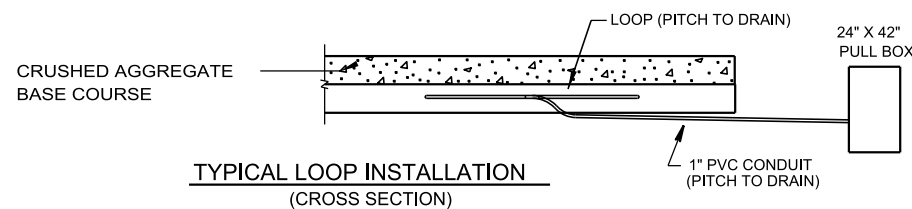
THE CONTRACTOR SHALL FURNISH THE FOLLOWING: LOOP AND AXLE SENSOR DETECTOR CONDUIT 1", LOOP DETECTOR WIRE, 3" P.V.C. CONDUIT, TYPE 10 CONCRETE CONTROL CABINET BASE TYPE 10 AND MAINTENANCE PLATFORM AND 24" PULL BOXES PER THIS DETAIL AND AS SHOWN ON CONSTRUCTION DETAIL SHEET, PULL BOX.

NO JOINTS OR PAVEMENT CORING ALLOWED 6 FEET EITHER SIDE OF LOOP AND PIEZO AREA.

A 2" 1/2" DIA. PIECE OF REBAR SHOULD BE USED TO SUPPORT THE AXLE SENSOR CONDUIT. THIS AIDS IN SUPPORT DURING CONCRETE POUR AND AIDS LOCATING LATER. PUT A TEMPORARY COVERING OVER THE AXLE SENSOR CONDUIT END THAT CAN BE REMOVED OR PUNCTURED LATER, BUT WILL KEEP THE CONCRETE OUT OF THE PVC CONDUIT, SUCH AS DUCT TAPE, OR PLUMBERS PUTTY.

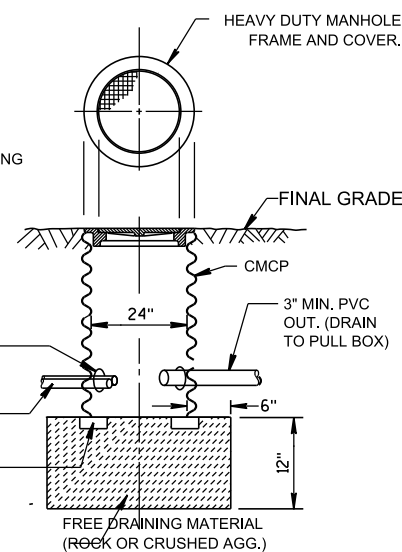
DESIGNED BY WISDOT CO

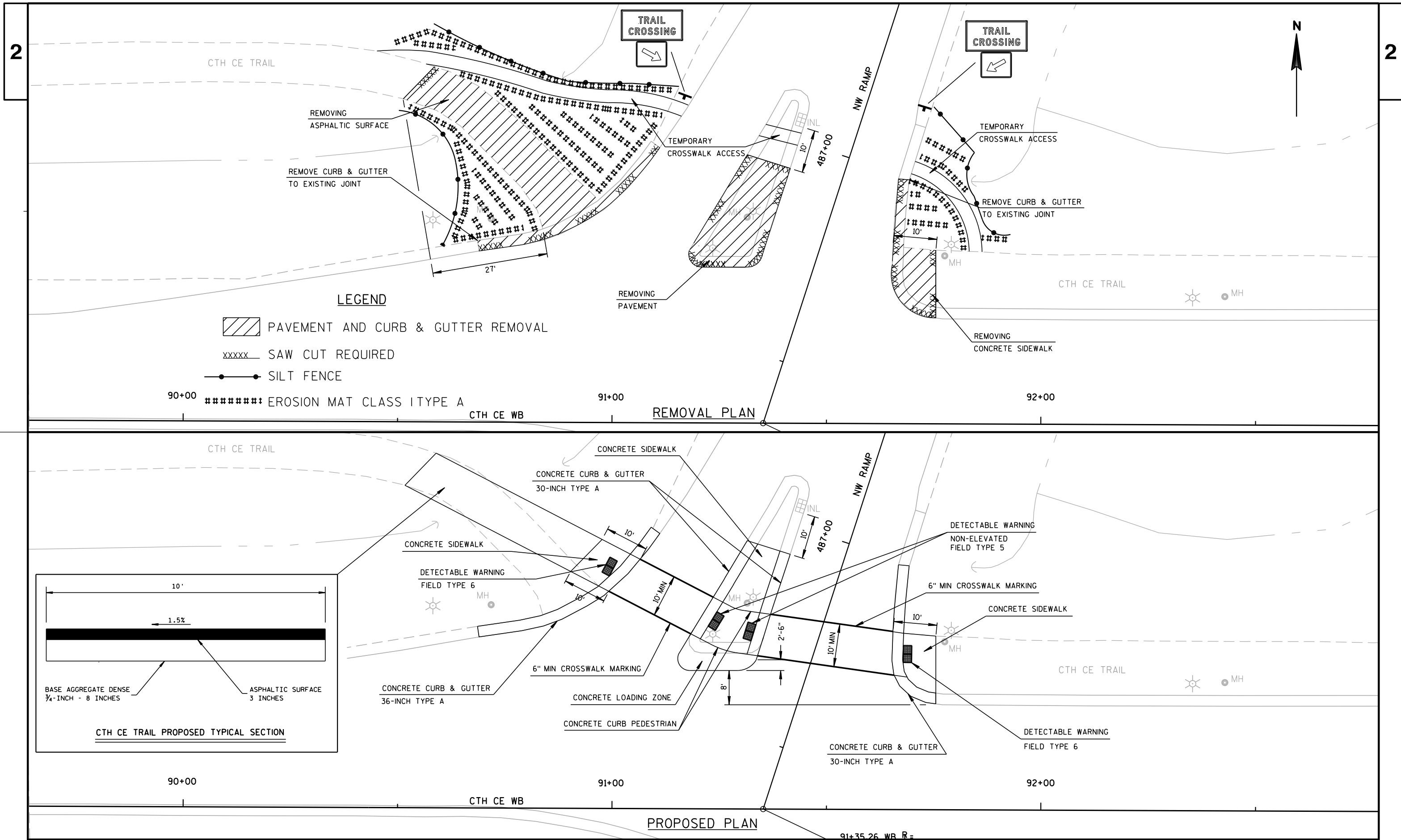
| ITEM DESCRIPTION                                                             | QUANTITY |
|------------------------------------------------------------------------------|----------|
| CONDUIT LOOP DETECTOR                                                        | 224 LF   |
| LOOP DETECTOR WIRE                                                           | 1488 LF  |
| LOOP DETECTOR LEAD IN CABLE                                                  | 824 LF   |
| CONDUIT RIGID NON-METALLIC SCH 40 1-INCH                                     | 312 LF   |
| CONDUIT RIGID NON-METALLIC SCH 80 3-INCH                                     | 314 LF   |
| PULL BOXES STEEL 24X42-INCH                                                  | 4 EA.    |
| CONCRETE CONTROL CABINET BASE TYPE 10 WITH MAINTENANCE PLATFORM 3' X 3' X 4" | 1 EA.    |

TYPICAL AXLE WHEEL SENSOR INSTALLATION  
(CROSS SECTION)TYPICAL LOOP INSTALLATION  
(CROSS SECTION)

FOR OTHER DETAILS OF PULL BOX SEE STANDARD DETAIL DRAWING ELSEWHERE IN THE PLAN

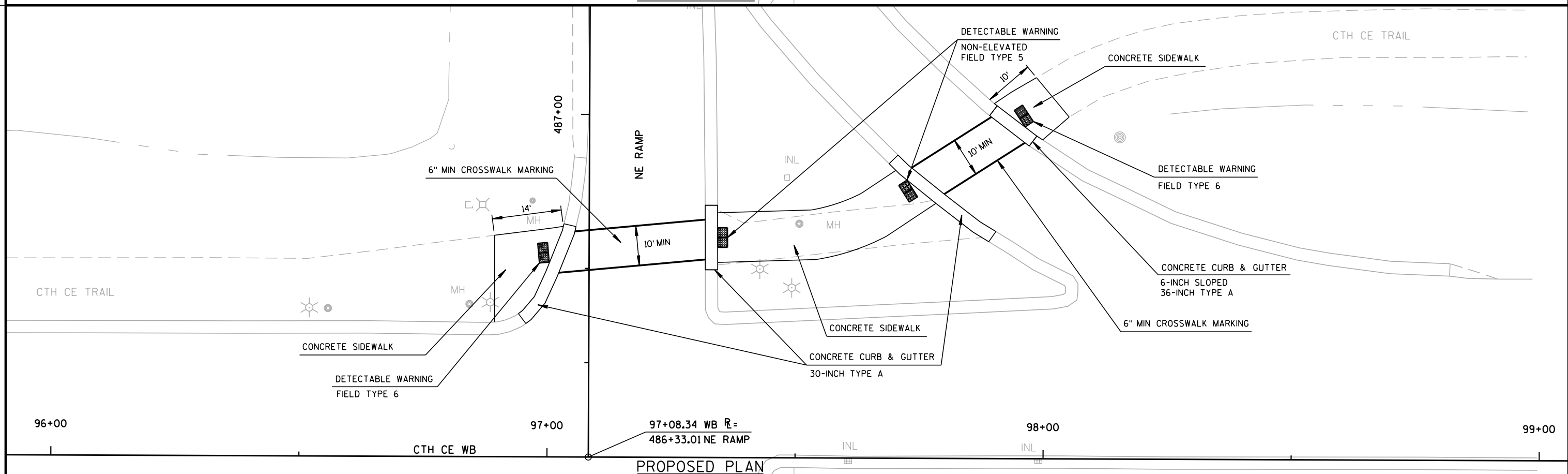
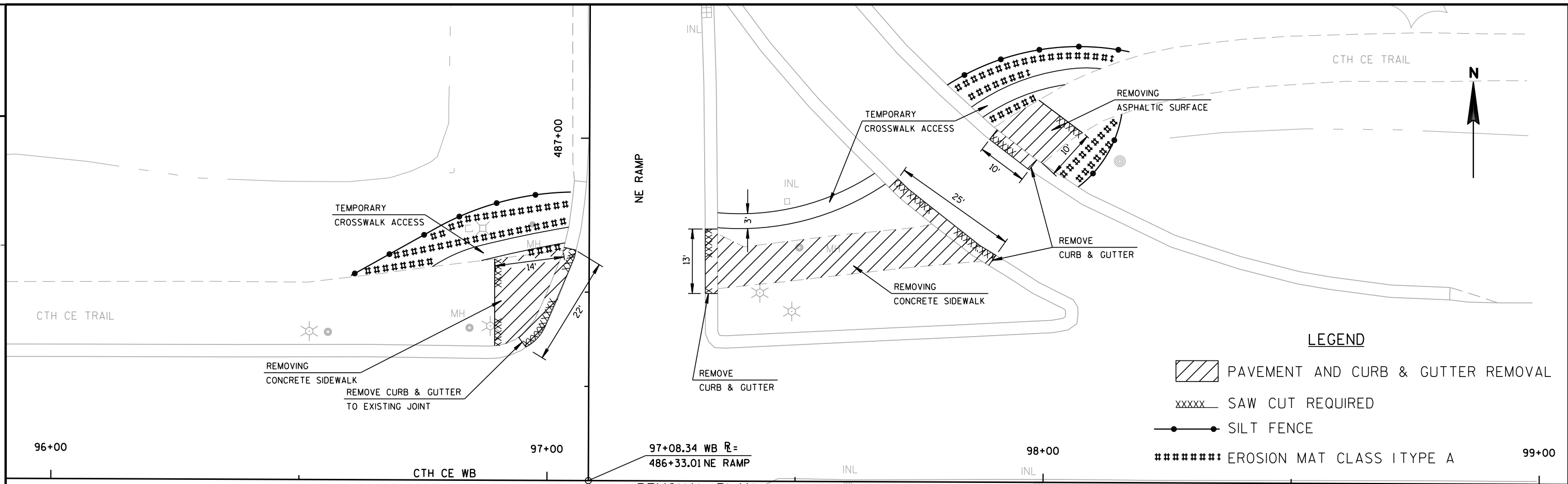
CUT OPENINGS AS REQUIRED IN FIELD. (SEE GENERAL NOTES)

1" MIN. PVC IN. (DRAIN TO PULL BOX)  
4 TO 8 BRICKS EQUALLY SPACED24" X 42" PULL BOX DETAIL  
(SEE S.D.D. FOR ADDITIONAL INFORMATION)



2

2



PROJECT NO: 4685-19-60

HWY: STH 441

COUNTY: OUTAGAMIE

CONSTRUCTION DETAIL

SHEET

E

FILE NAME : F:\D3-468519\021013\_cd.DGN

PLOT DATE : 11-FEB-2015 11:14

PLOT BY : dt+jym

PLOT NAME : 021013\_cd.i

PLOT SCALE : 20:1

28  
WISDOT/CADUS SHEET 42

▲ FOR CULVERT WINGS:

WITH WING WALL THICKNESS  $\geq 8"$  USE:  
 $\frac{5}{8}"$   $\phi$  CONCRETE MASONRY ANCHOR, TYPE S  
 5" EMBEDMENT DEPTH  
 SEE DETAIL "A"

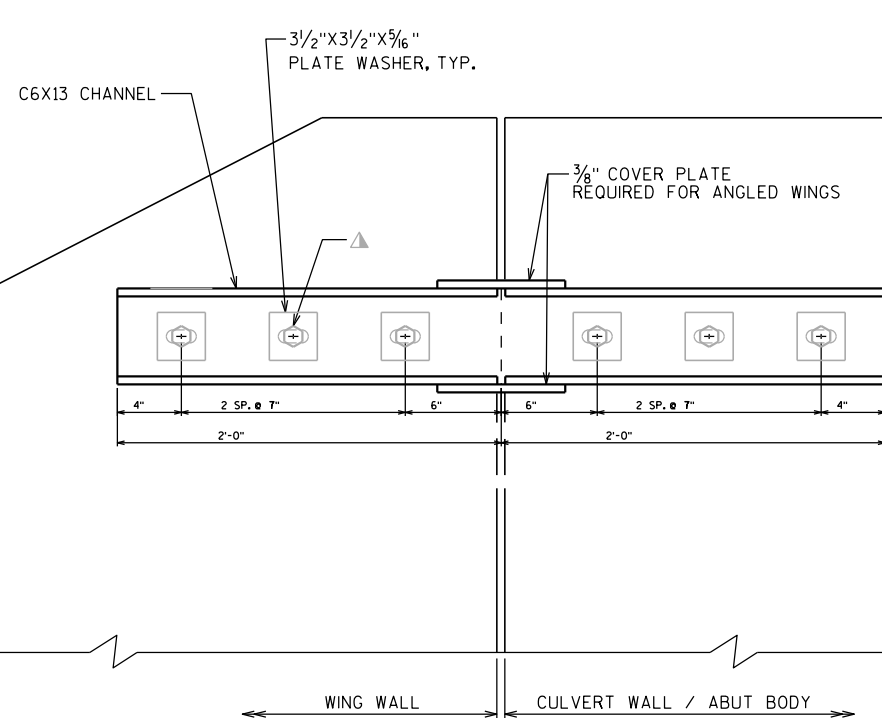
WITH WING WALL THICKNESS  $< 8"$  USE:  
 $\frac{5}{8}"$   $\phi$  THRU WALL THREADED ROD  
 SEE DETAIL "B"

USE  $\frac{1}{16}"$  X  $1\frac{3}{16}"$  LONG SLOTTED HOLES

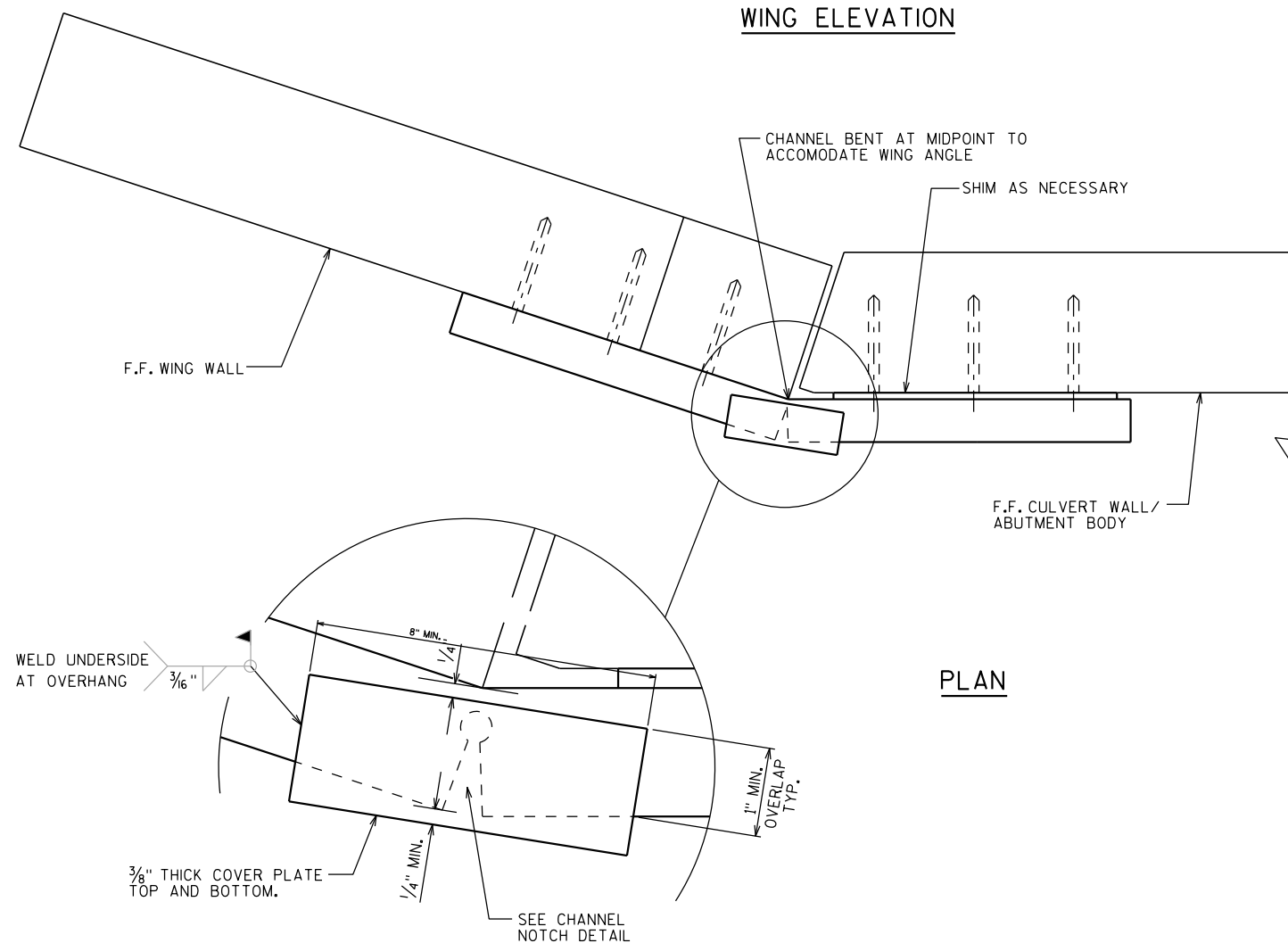
FOR BRIDGE WINGS:

1"  $\phi$  CONCRETE MASONRY ANCHOR, TYPE S  
 10" EMBEDMENT DEPTH  
 SEE DETAIL "A"

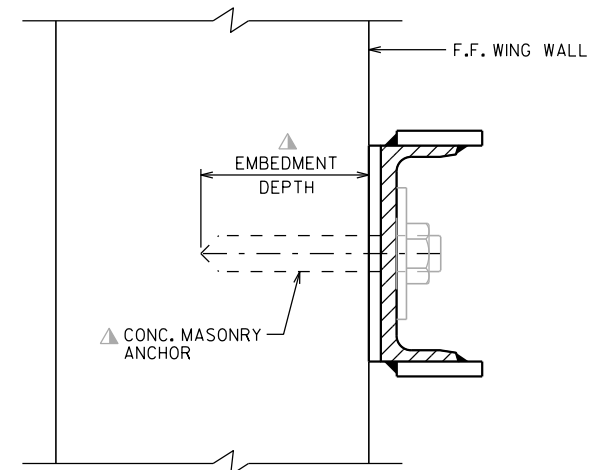
USE  $\frac{1}{16}"$  X  $2\frac{1}{2}"$  LONG SLOTTED HOLES



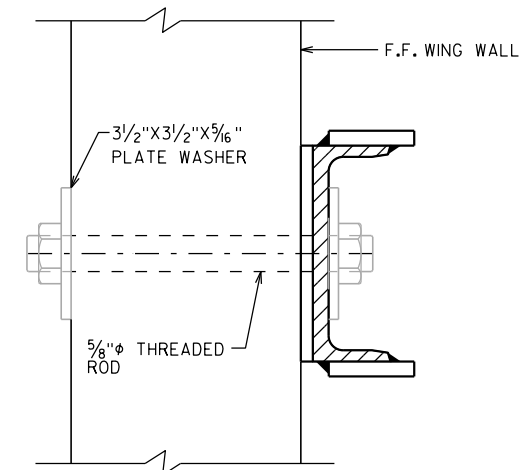
WING ELEVATION



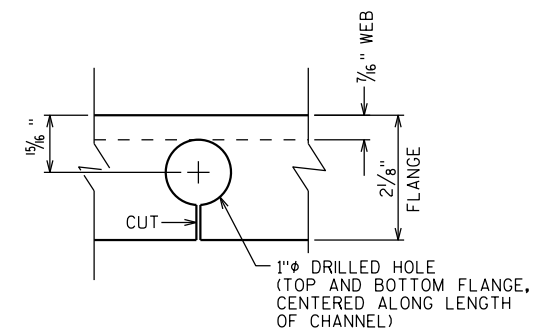
PLAN



DETAIL "A"  
SECTION THRU CHANNEL



DETAIL "B"  
SECTION THRU CHANNEL



CHANNEL NOTCH DETAIL  
FOR USE WITH ANGLED WINGS ONLY

GENERAL NOTES

WING STRAPPING DETAIL FOR THE PURPOSE OF MITIGATING INWARD WING TIPPING, AS AN ALTERNATIVE TO THE PREFERRED METHOD OF WING REPLACEMENT.

BID ITEM SHALL BE "STRAPPING B-XX-XXX" WHICH INCLUDES ALL ITEMS SHOWN.

WISDOT REGIONAL BRIDGE MAINTENANCE ENGINEER TO APPROVE USE OF DETAIL PRIOR TO INSTALLATION.

ALL PROVIDED STEEL MATERIAL SHALL CONFORM TO ASTM A36.

ALL STRUCTURAL STEEL SHOWN SHALL BE GALVANIZED. THREADED RODS, MASONRY ANCHORS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C.

CUTTING AND DRILLING OF CHANNEL SHALL BE DONE IN FABRICATION SHOP, PRIOR TO GALVANIZING.

IF WELDING COVER PLATE IN FIELD, PRIOR TO WELDING, REMOVE GALVANIZING FROM AREA TO BE WELDED. TOUCH UP WITH PAINT ALL AREAS LACKING GALVANIZING WHEN COMPLETE.

CHALK AROUND PERIMETER OF CHANNEL AND FILL PORTION OF HOLE AROUND ANCHOR BOLT AND SHIM WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

▲ FOR CULVERT WINGS:

WITH WING WALL THICKNESS  $\geq 8"$  USE:  
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 5" EMBEDMENT DEPTH  
 SEE DETAIL "A"

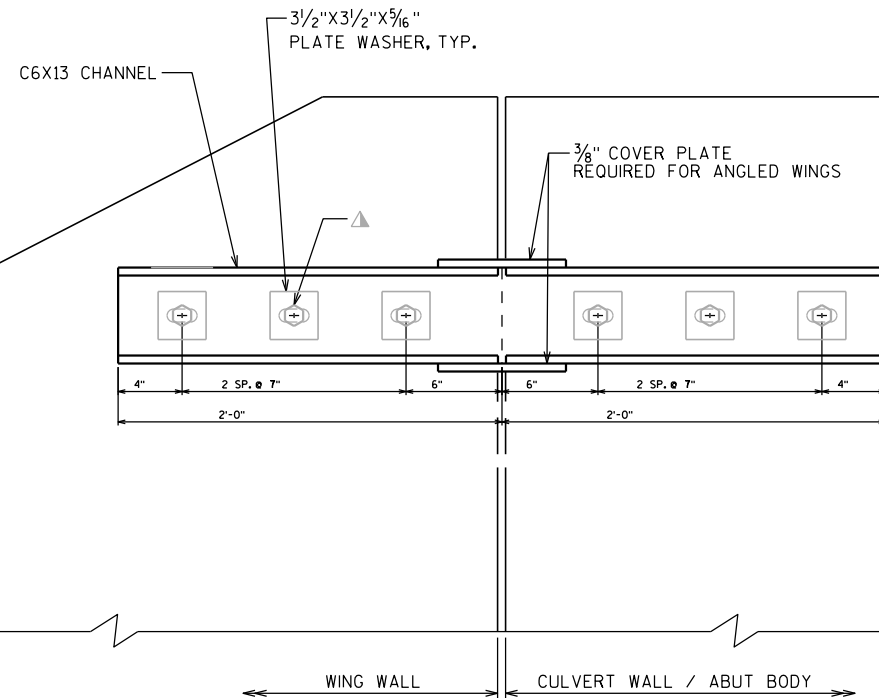
WITH WING WALL THICKNESS  $< 8"$  USE:  
 $\frac{5}{8}"$   $\phi$  THRU WALL THREADED ROD  
 SEE DETAIL "B"

USE  $\frac{1}{16}"$  X  $1\frac{1}{16}"$  LONG SLOTTED HOLES

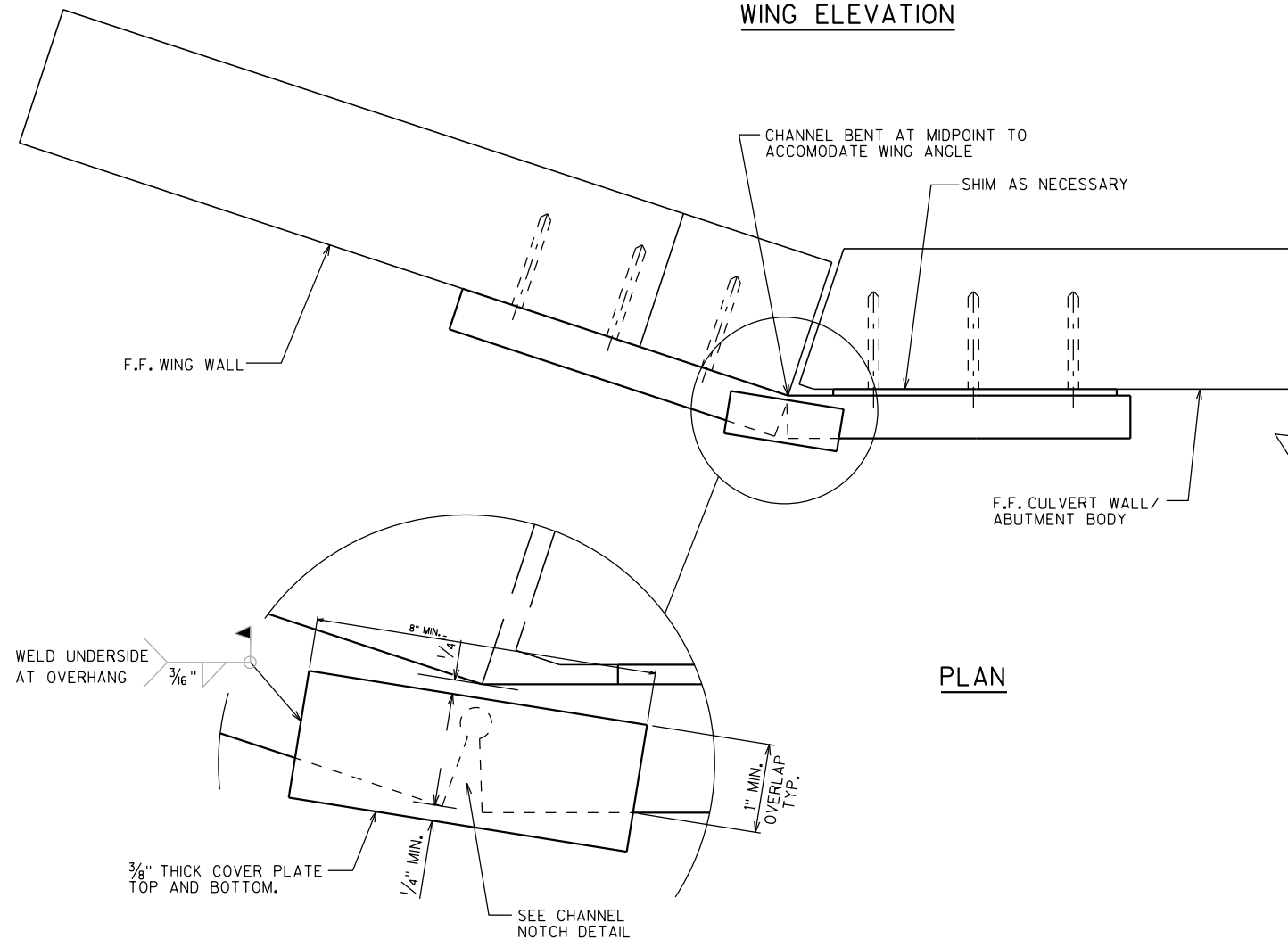
FOR BRIDGE WINGS:

1"  $\phi$  CONCRETE MASONRY ANCHOR, TYPE S  
 10" EMBEDMENT DEPTH  
 SEE DETAIL "A"

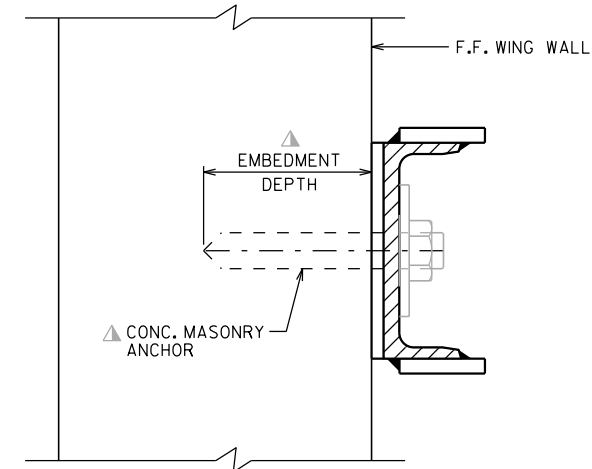
USE  $\frac{1}{16}"$  X  $2\frac{1}{2}"$  LONG SLOTTED HOLES



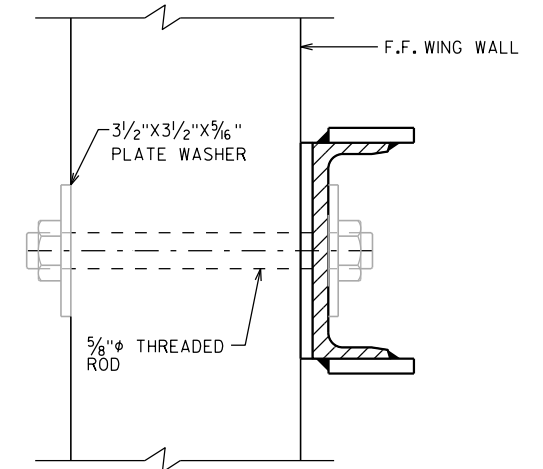
WING ELEVATION



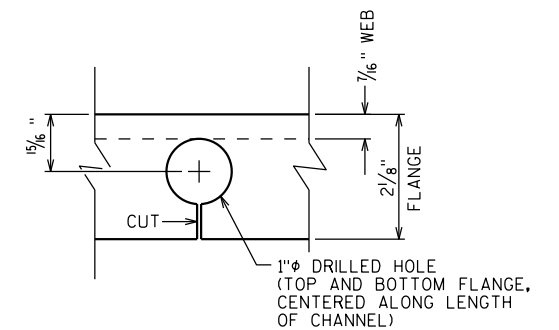
PLAN



DETAIL "A"  
SECTION THRU CHANNEL



DETAIL "B"  
SECTION THRU CHANNEL



CHANNEL NOTCH DETAIL  
FOR USE WITH ANGLED WINGS ONLY

GENERAL NOTES

WING STRAPPING DETAIL FOR THE PURPOSE OF MITIGATING INWARD WING TIPPING, AS AN ALTERNATIVE TO THE PREFERRED METHOD OF WING REPLACEMENT.

BID ITEM SHALL BE "STRAPPING B-XX-XXX" WHICH INCLUDES ALL ITEMS SHOWN.

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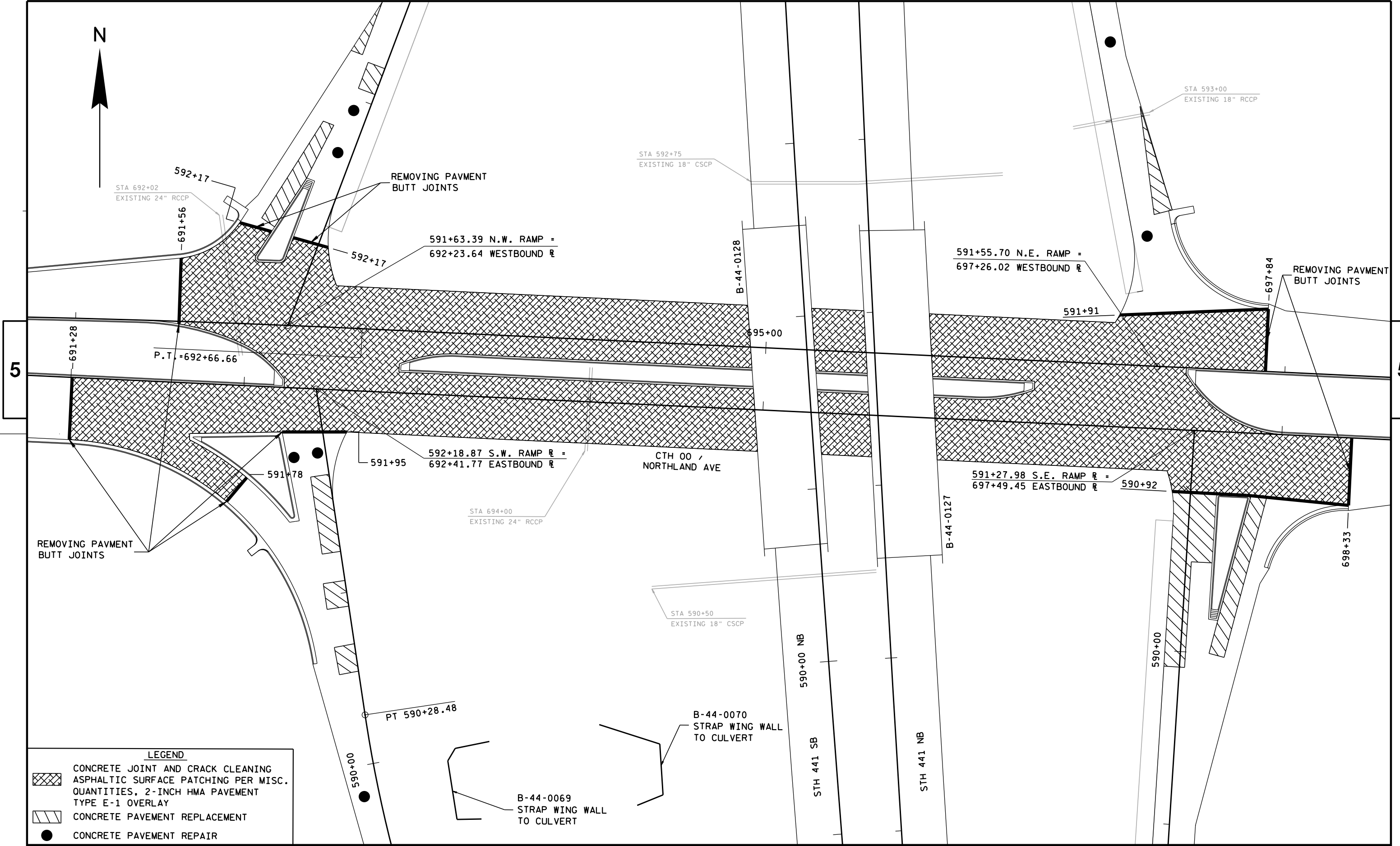
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CHALK AROUND PERIMETER OF CHANNEL AND FILL PORTION OF HOLE AROUND ANCHOR BOLT AND SHIM WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.



| LEGEND |                                                                                                                                  |
|--------|----------------------------------------------------------------------------------------------------------------------------------|
|        | CONCRETE JOINT AND CRACK CLEANING<br>ASPHALTIC SURFACE PATCHING PER MISC.<br>QUANTITIES, 2-INCH HMA PAVEMENT<br>TYPE E-1 OVERLAY |
|        | CONCRETE PAVEMENT REPLACEMENT                                                                                                    |
|        | CONCRETE PAVEMENT REPAIR                                                                                                         |

|                        |              |                   |                                    |       |   |
|------------------------|--------------|-------------------|------------------------------------|-------|---|
| PROJECT NO: 4685-19-60 | HWY: STH 441 | COUNTY: OUTAGAMIE | PLAN DETAIL - CTH 00/NORTHLAND AVE | SHEET | E |
|------------------------|--------------|-------------------|------------------------------------|-------|---|

| LEGEND                       | EXISTING                                                                          | PROPOSED                                                                          |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| FTMS CONVENTIONAL SYMBOLS    |                                                                                   |                                                                                   |
| JUNCTION BOX                 |  |                                                                                   |
| CCTV CAMERA AND POLE         |  |                                                                                   |
| POLE MOUNTED CABINET         |  |                                                                                   |
| METER BREAKER PEDESTAL       |  |                                                                                   |
| 24X36-INCH STEEL PULL BOX    |  |                                                                                   |
| FTMS (ITS) CONDUIT           |  |  |
| BREAKER DISCONNECT BOX       |  |                                                                                   |
| COMMUNICATIONS VAULT, TYPE 1 |  |  |

FTMS STANDARD ABBREVIATIONS

|      |                                |
|------|--------------------------------|
| CB   | CONTROLLER CABINET             |
| CCTV | CLOSED CIRCUIT TELEVISION SITE |
| CV   | COMMUNICATIONS VAULT           |
| PB   | PULL BOX                       |
| EX   | EXISTING                       |

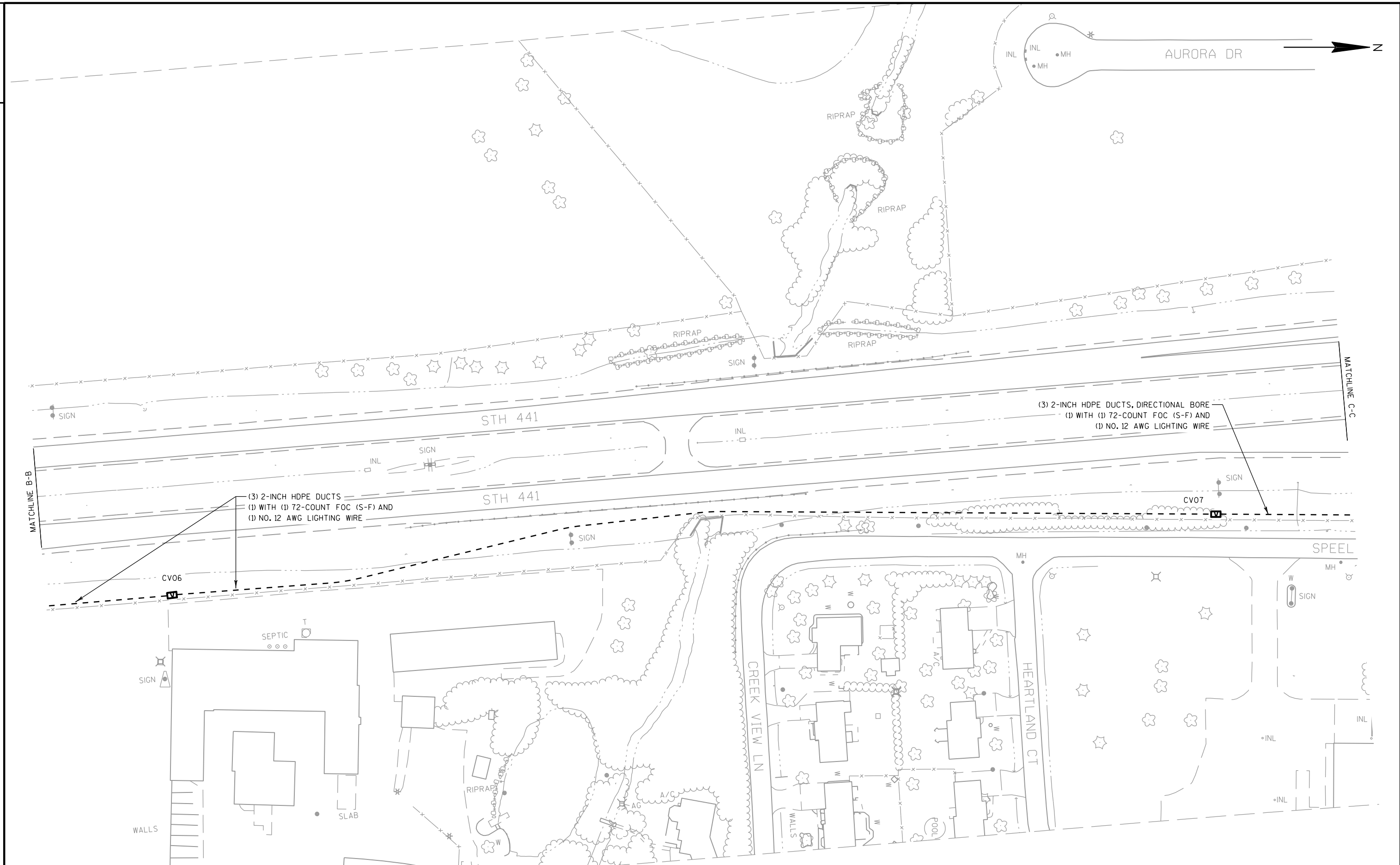
FTMS GENERAL NOTES

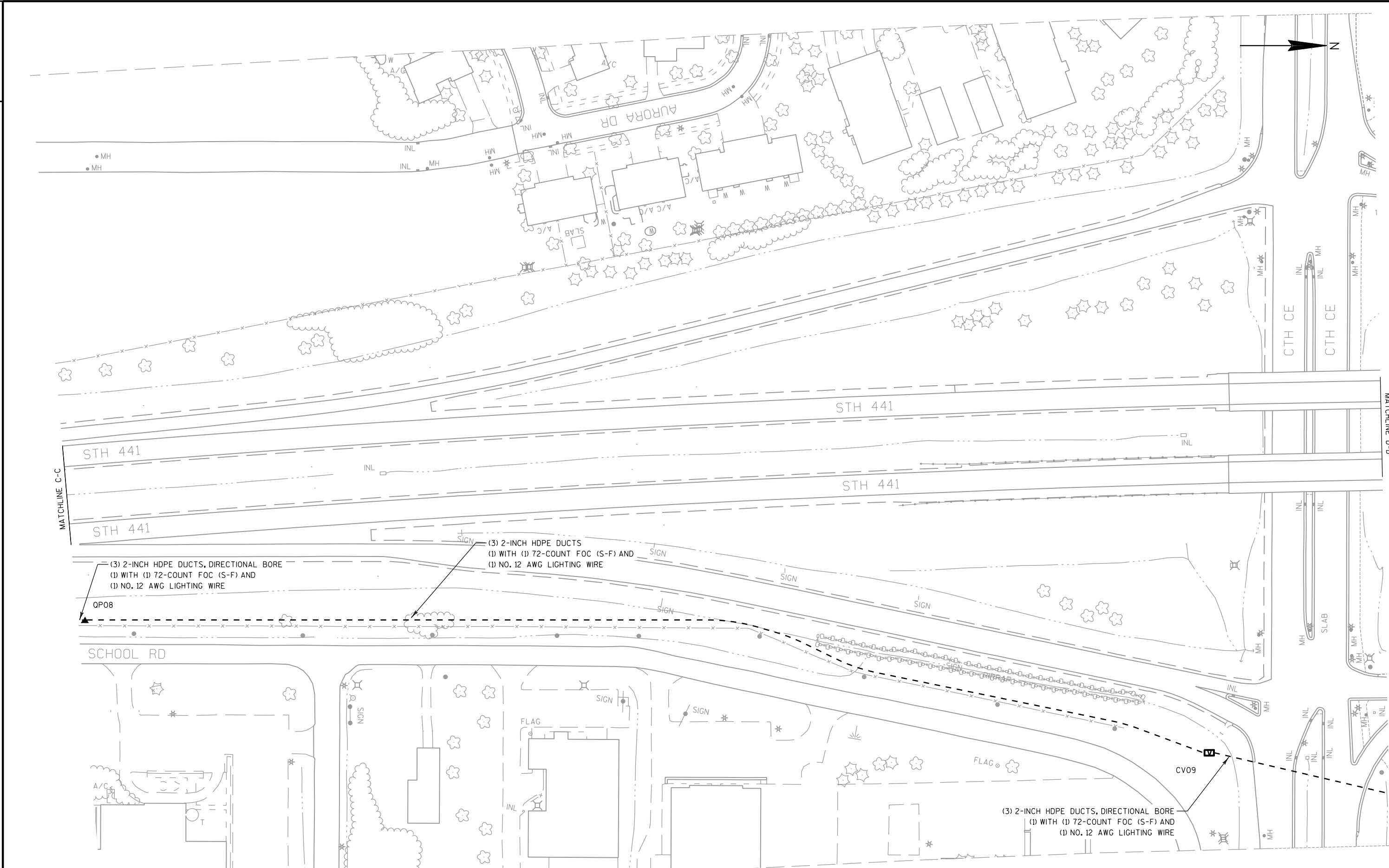
- THESE PLANS AND THE ASSOCIATED SPECIAL PROVISIONS REFLECT CONDITIONS KNOWN DURING THE DEVELOPMENT OF THE PLANS AND TECHNICAL SPECIAL PROVISIONS. ALL SCALES, DIMENSIONS AND LOCATIONS SHOWN IN THESE PLANS ARE APPROXIMATE. ACTUAL PHYSICAL FIELD CONDITIONS SHALL PROVIDE THE BASIS FOR THE APPLICATION OF WORK SHOWN IN THE PLANS. THE CONTRACTOR IS FULLY RESPONSIBLE FOR THE APPLICATION OF ALL WORK SHOWN IN THE PLANS TO THE ACTUAL PHYSICAL FIELD CONDITIONS TO PROVIDE A COMPLETE AND ACCEPTED PROJECT. IN THE EVENT THAT ACTUAL PHYSICAL FIELD CONDITIONS AFFECT OR PREVENT THE APPLICATION OR PROGRESSION OF ANY WORK SHOWN IN THE PLANS OR TECHNICAL SPECIAL PROVISIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY, AND PRIOR TO ANY FURTHER WORK ACTIVITY. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY LOCATION CHANGES OTHER THAN MINOR ADJUSTMENTS.
- BE AWARE THAT ALL EXISTING UNDERGROUND AND ABOVE GROUND STRUCTURES AND FACILITIES WITHIN THE SCOPE OF THIS PROJECT MAY NOT BE LOCATED IN THE PLANS. THE CONTRACTOR IS FULLY RESPONSIBLE FOR LOCATING AND AVOIDING ALL UNDERGROUND AND ABOVE GROUND STRUCTURES AND FACILITIES.
- BE AWARE THAT NO TEST BORINGS WERE MADE WHERE CONDUITS, PULLBOXES, POLES, CABINET FOUNDATIONS, OR OTHER EQUIPMENT IS TO BE INSTALLED. THE CONTRACTOR IS FULLY RESPONSIBLE FOR EXAMINING THE JOB SITE CONDITIONS BEFORE SUBMITTING BID PROPOSALS.
- NO TREES (AND/OR SHRUBS) SHALL BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.
- AREAS WITHIN THE RIGHT-OF-WAY DISTURBED SPECIFICALLY FOR FTMS CONSTRUCTION SHALL BE RESTORED TO THE ORIGINAL CONDITION WITH TOPSOIL, FERTILIZER, SEED, AND EROSION MAT, AND SHALL BE INCLUDED IN THE COST OF INSTALLING FTMS ITEMS. RESTORATION FOR AREAS DISTURBED FOR OTHER CONSTRUCTION OPERATIONS BUT ALSO CONTAINING FTMS CONSTRUCTION SHALL BE DONE ACCORDING TO REQUIREMENTS AND PAYMENT PROVISIONS FOR THE OTHER CONSTRUCTION OPERATIONS.
- THE LOCATION OF EXISTING AND PROPOSED UTILITY INSTALLATIONS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
- DUE TO RAMP, LANE, SHOULDER CLOSURE RESTRICTIONS, AND WORK UNDER OTHER CONTRACTS, SOME WORK MAY BE REQUIRED TO BE PERFORMED AT NIGHT.
- THE CONTRACTOR IS FULLY RESPONSIBLE FOR COORDINATING RAMP, LANE, SHOULDER, AND ROADWAY CLOSURES WITH OTHER CONTRACTS IN THE AREA.
- THE CONTRACTOR SHALL CONTACT THE WISDOT STATEWIDE TRAFFIC OPERATIONS CENTER AT (414) 227-2166 FIVE (5) WORKING DAYS PRIOR TO ENTERING ANY EXISTING WISDOT FTMS OR ITS CABINET.
- ALL LOOP DETECTORS ARE STATIONED TO CENTER OF LEADING EDGE AS APPROACHED BY NORMAL VEHICLE PATH.
- HAND DIG TRENCHES CROSSING EXISTING CONDUIT CONTAINING FIBER OPTIC CABLE.
- VISUALLY VERIFY DEPTHS OF EXISTING CONDUITS CONTAINING FIBER OPTIC CABLE PRIOR TO CROSSING BY DIRECTIONAL BORE OR SPECIAL METHOD.

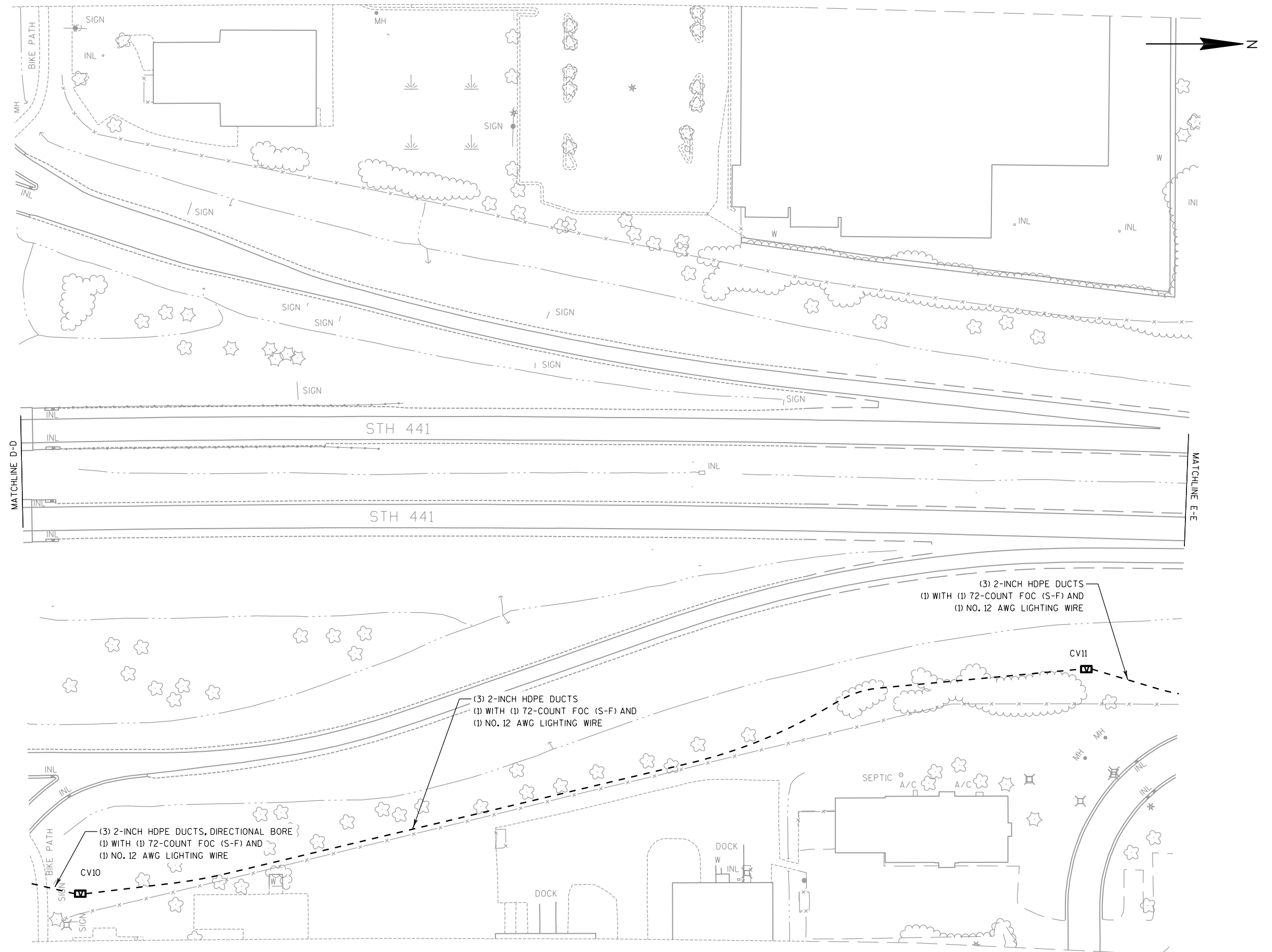
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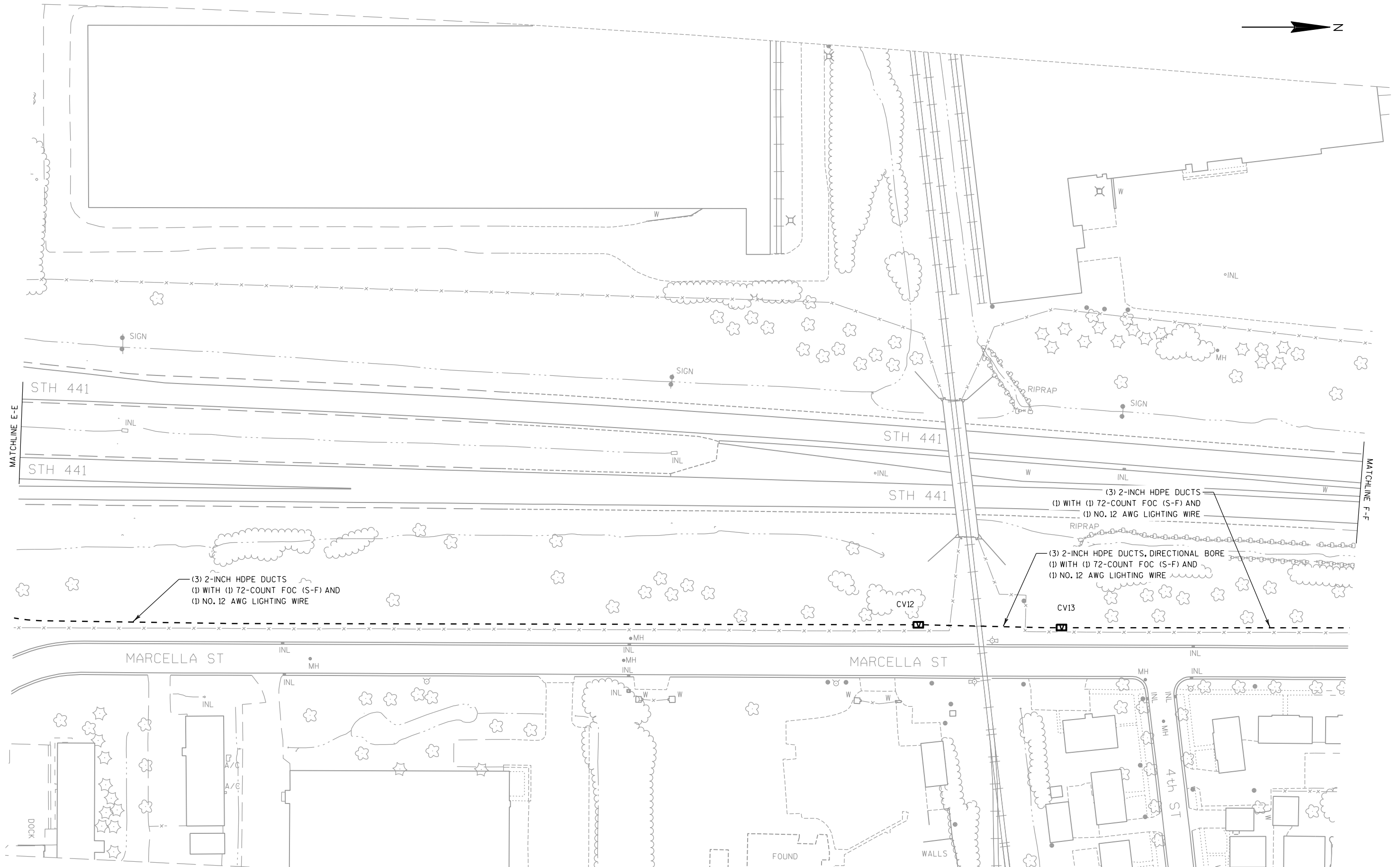






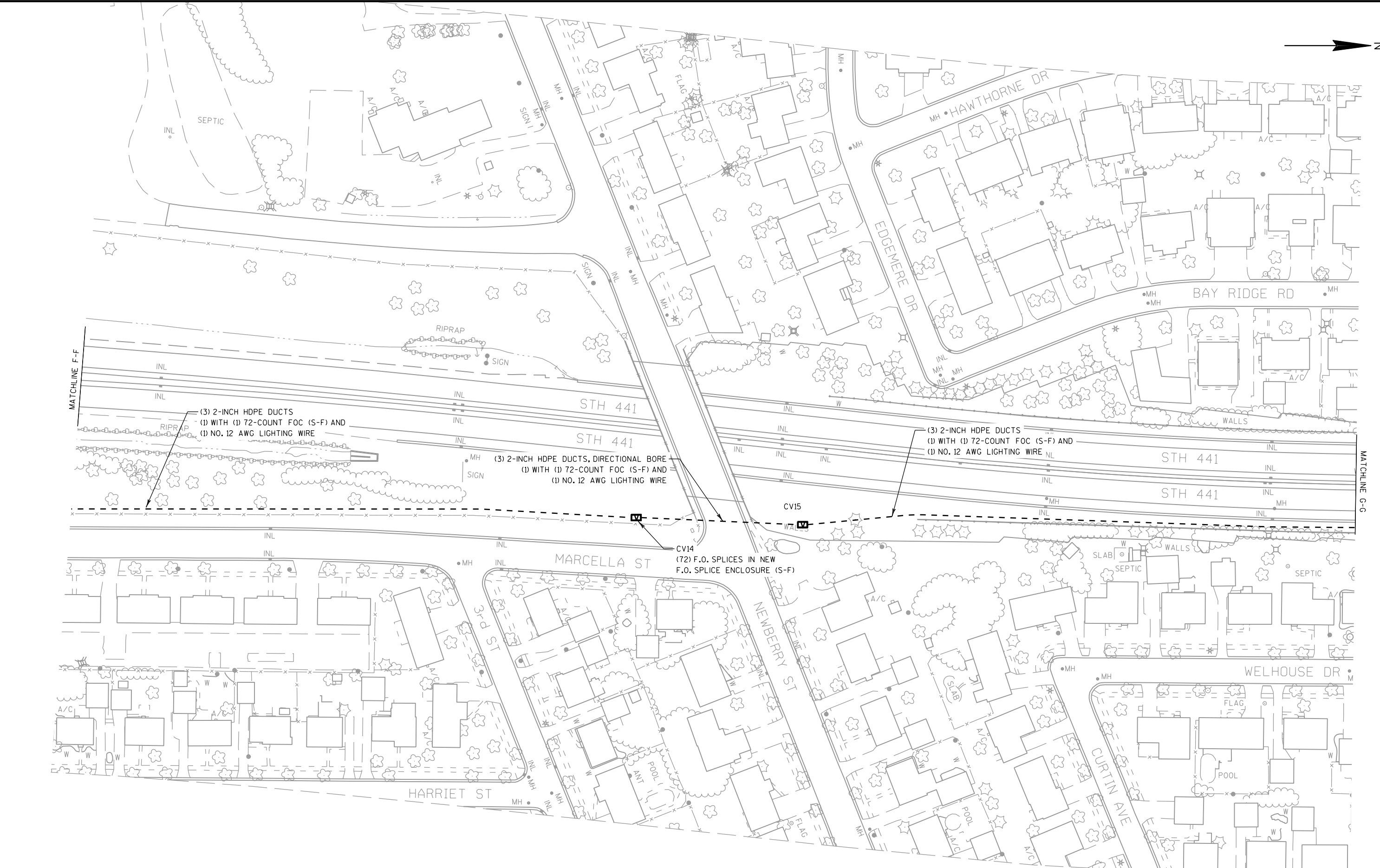


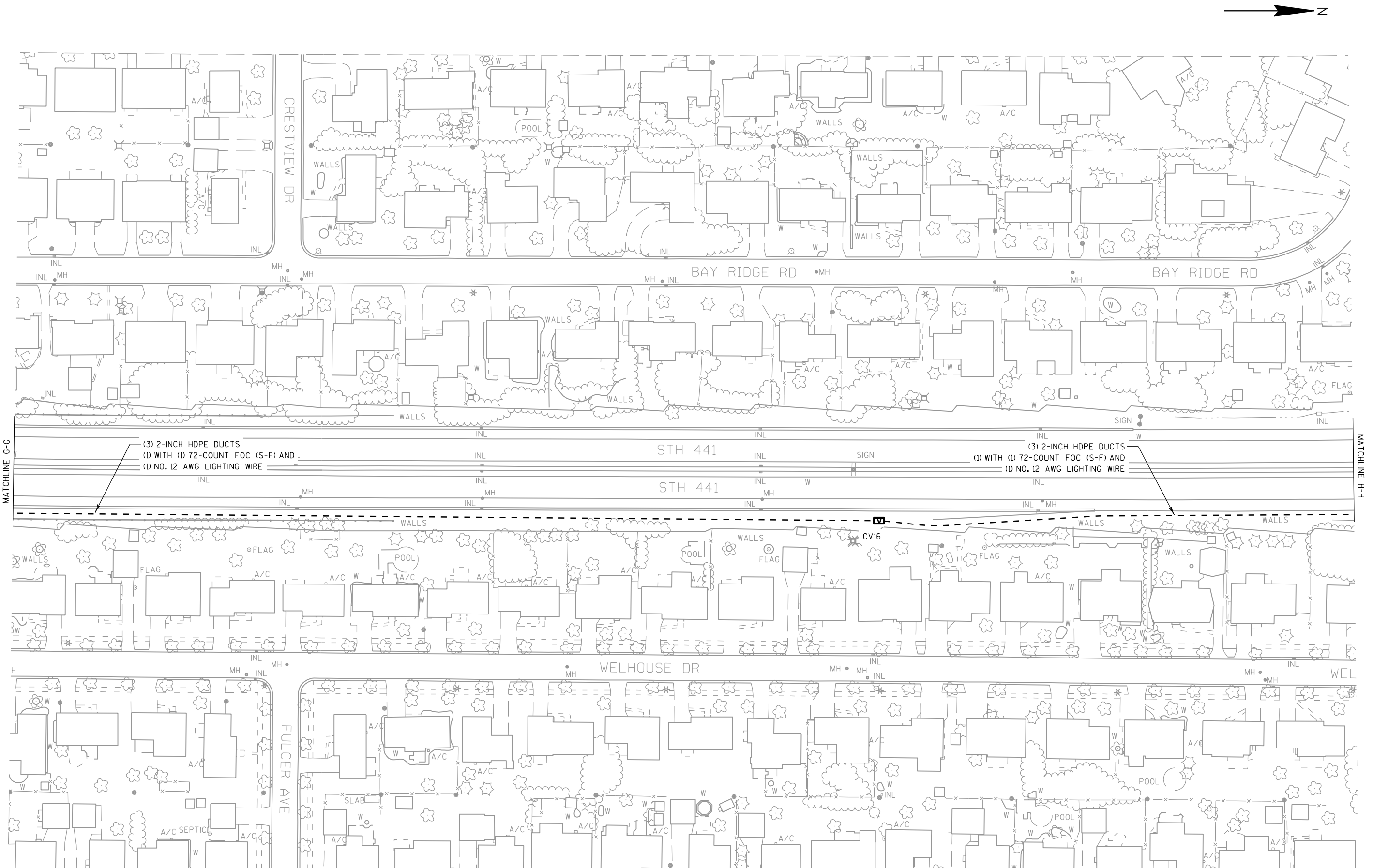




2

2





PROJECT NO: 4685-19-60

HWY: STH 441

COUNTY: OUTAGAMIE

FTMS PLAN SHEETS

SHEET

40

E

FILE NAME : \\m1ww400\ingrproj\63099\46851960\_Hwy441\cds\46851960\_fm40.dgn

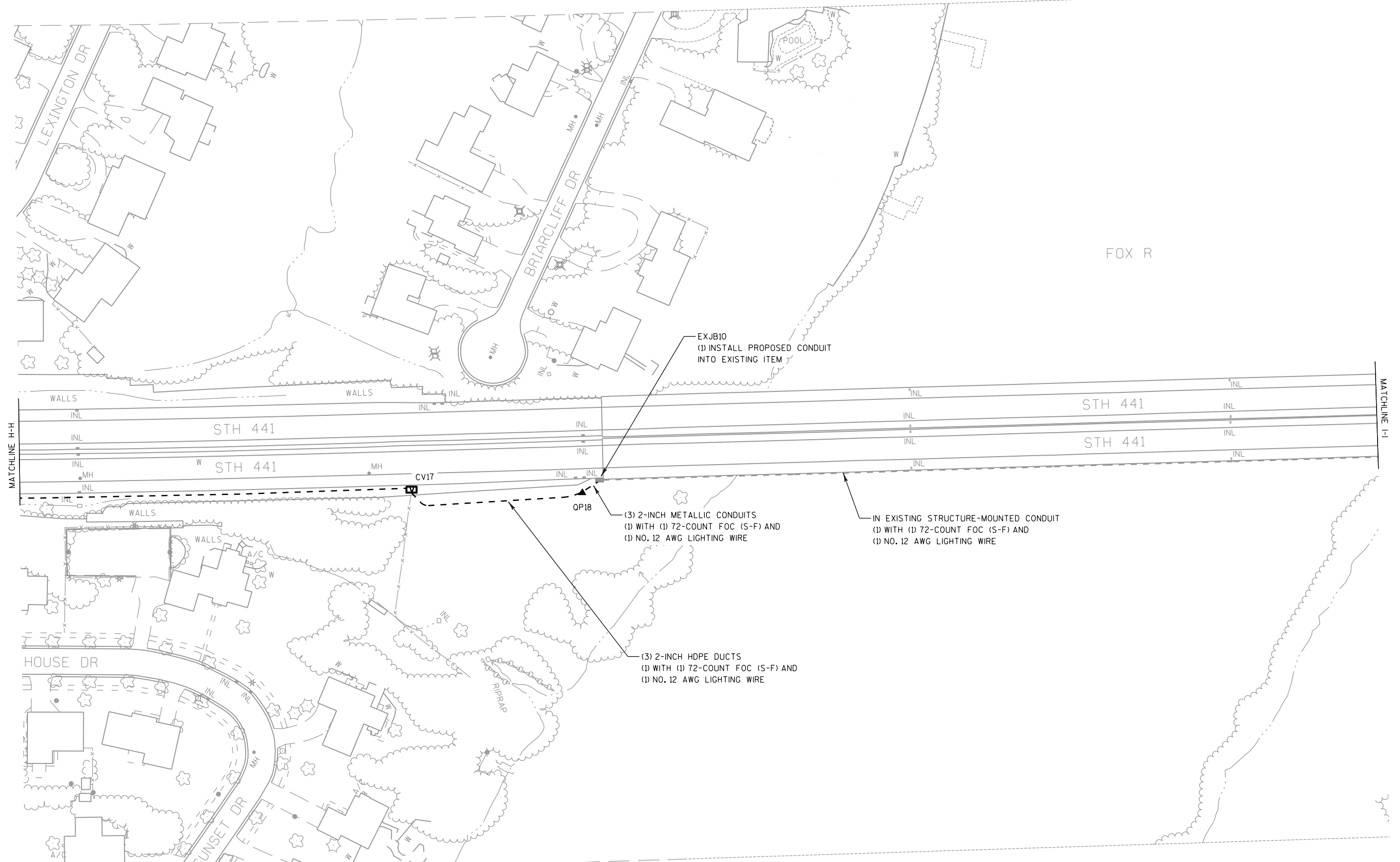
PLOT DATE : 4/20/2015

PLOT BY : pkutz

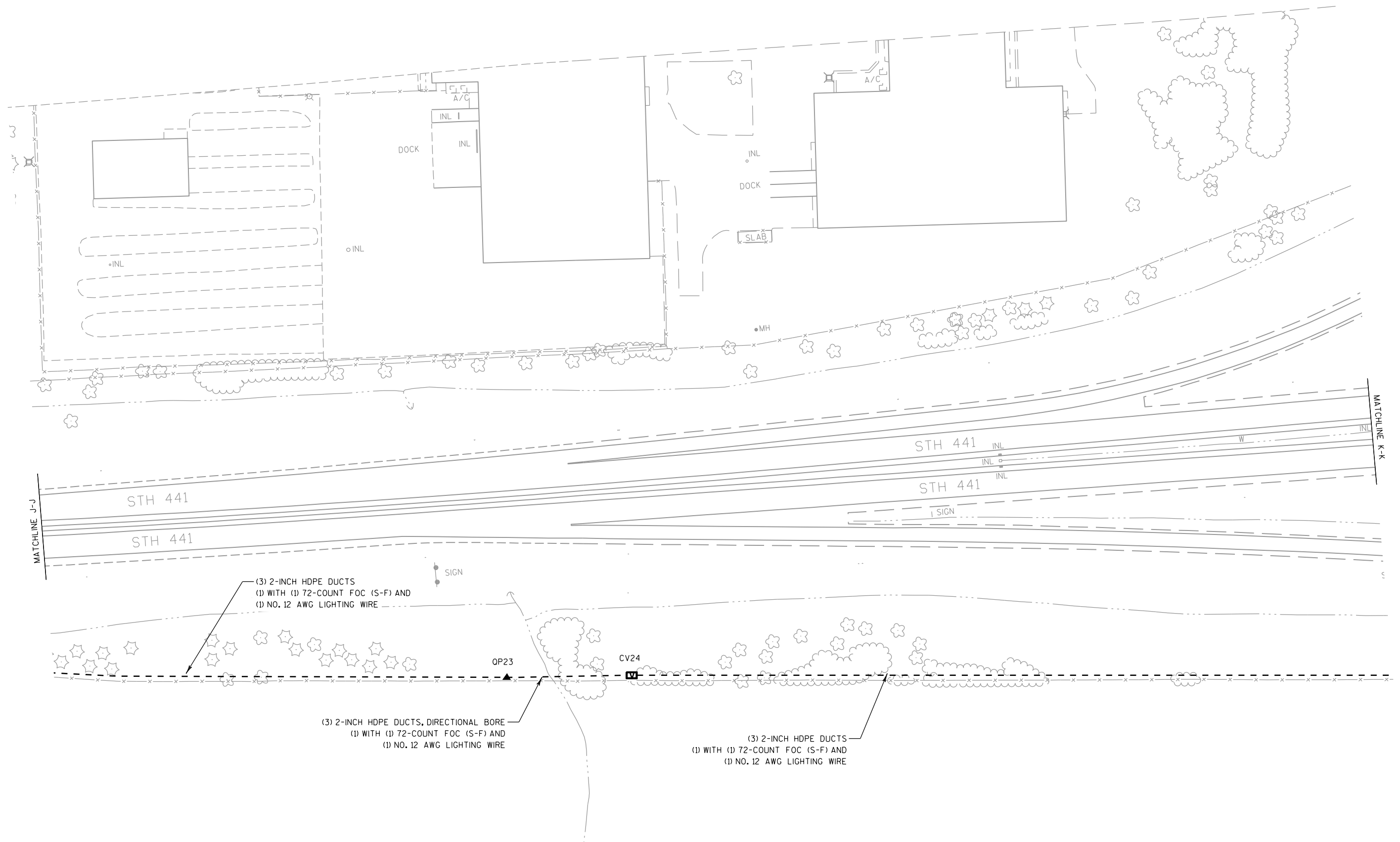
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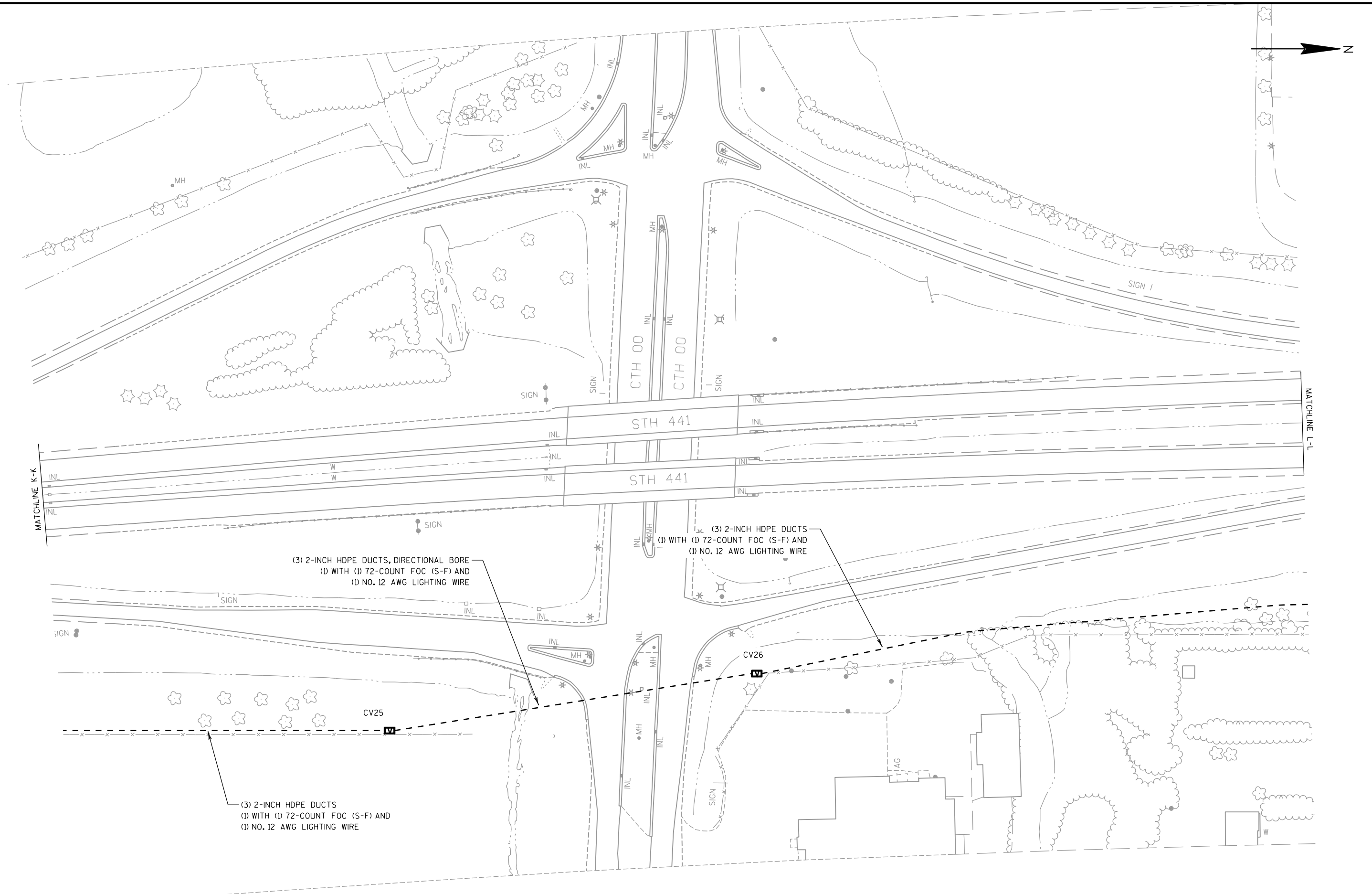
PLOT SCALE : 100:1

WISDOT/CADDs SHEET 42



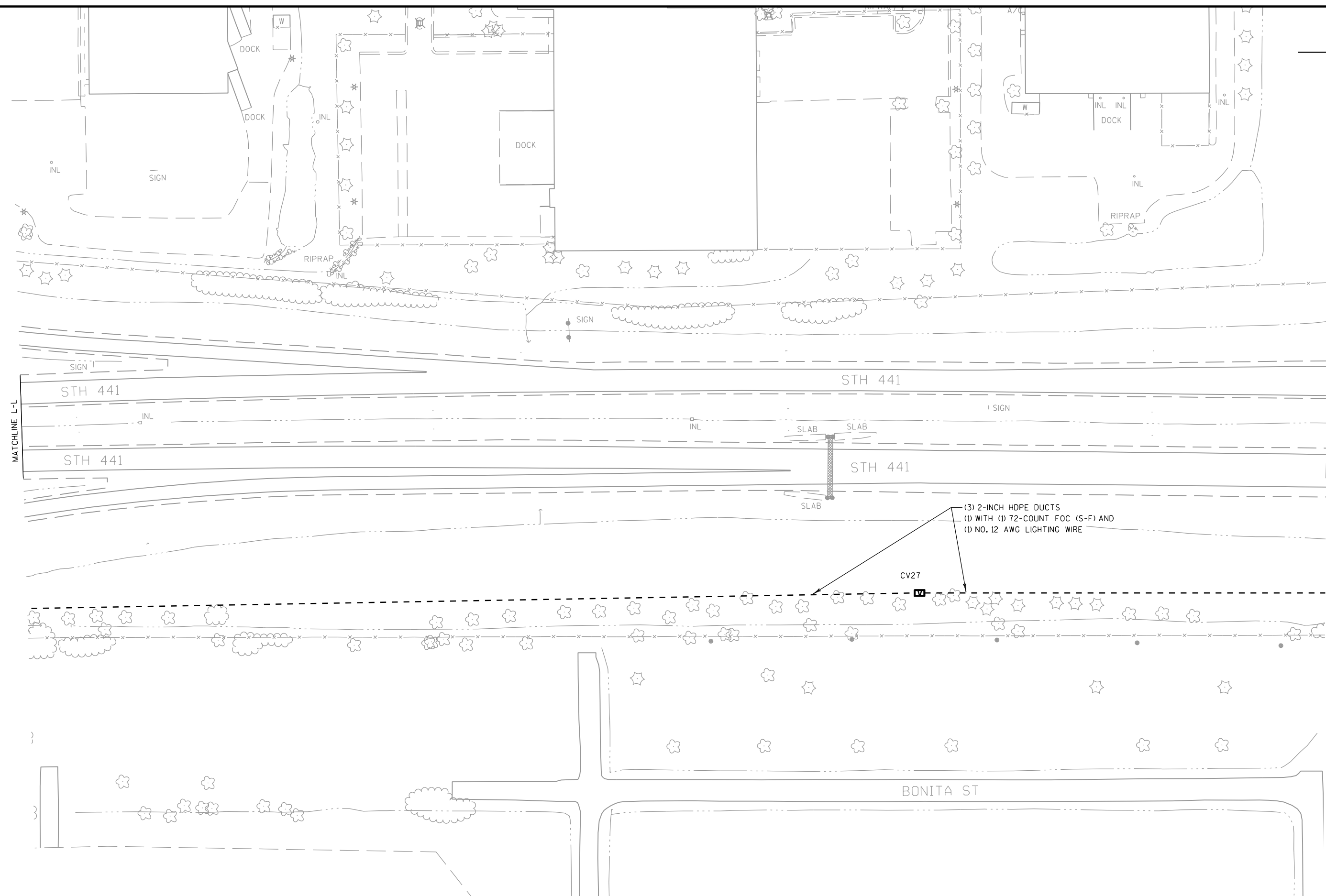






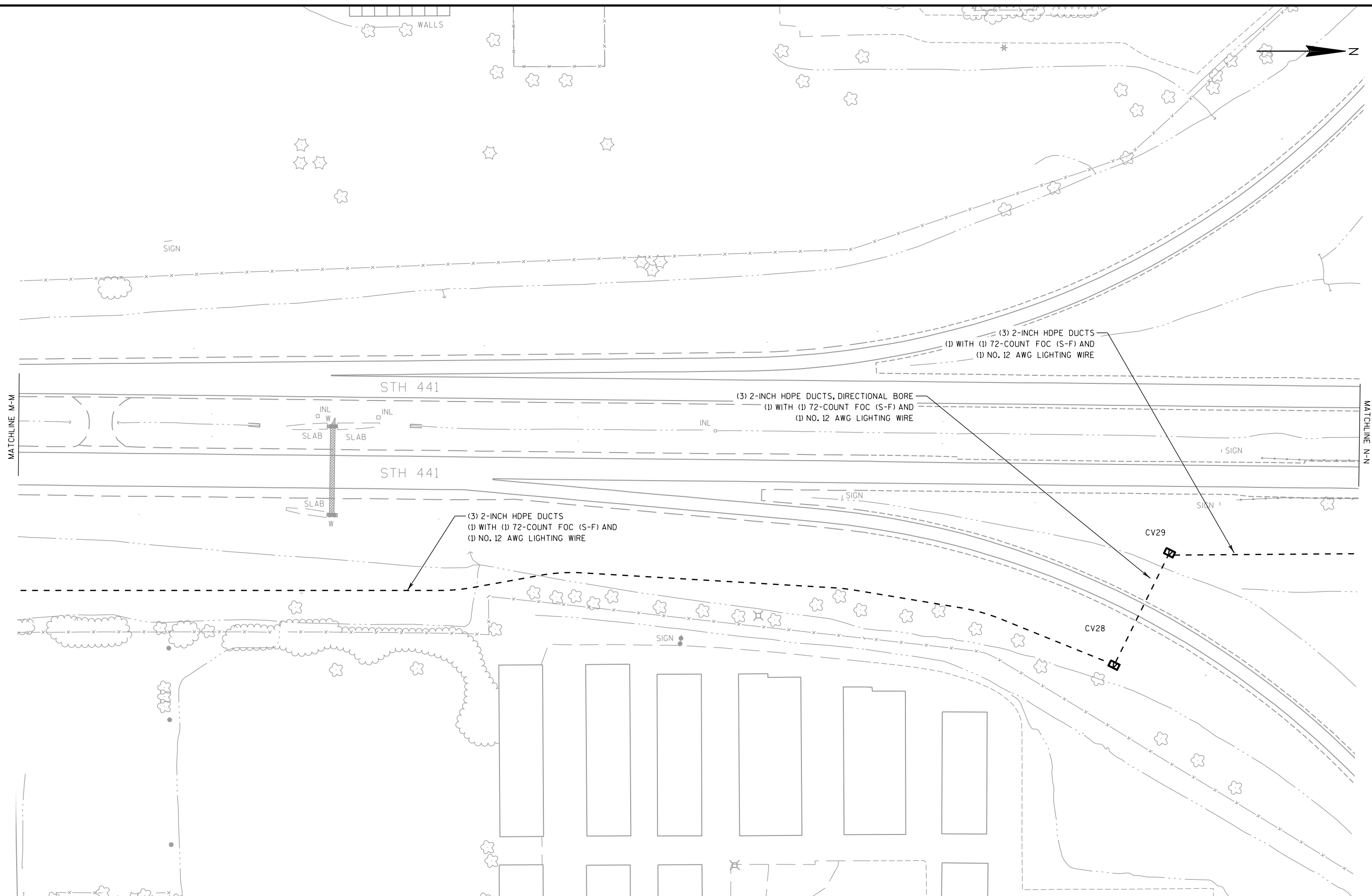
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2



2

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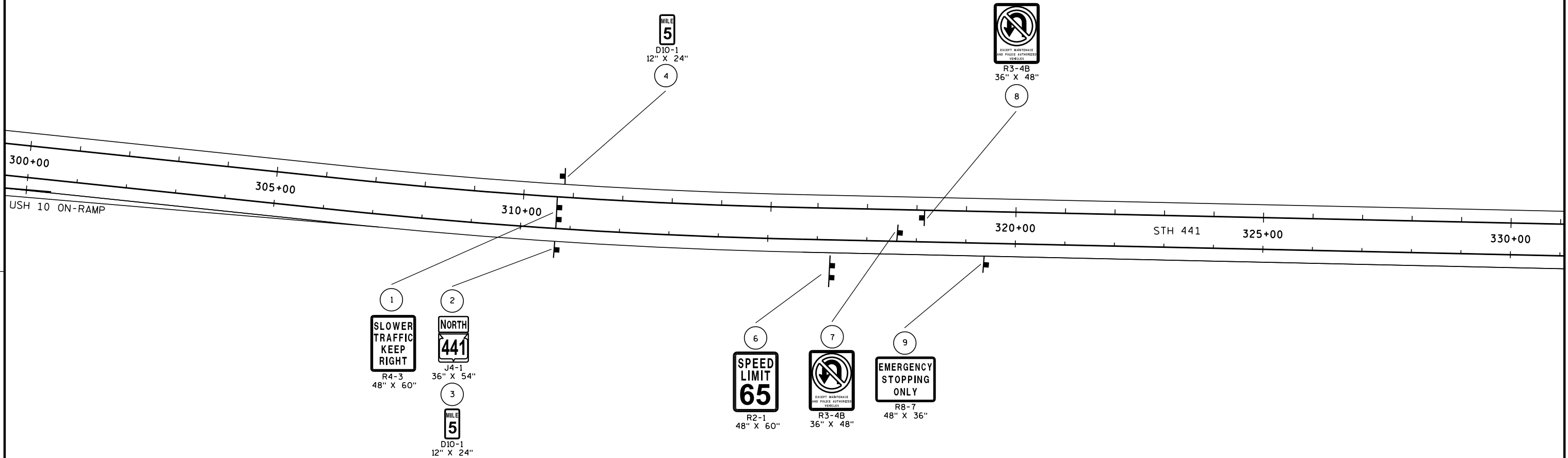


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WOOD POSTS SIZES, FOR TYPE II SIGNING, ARE ESTIMATED LENGTHS AND THE ACTUAL LENGTH WILL BE DETERMINED IN THE FIELD.

LEGEND

- |                 |                           |
|-----------------|---------------------------|
| —●— BUTTERFLY   | ○ SIGN-REMOVE AND REPLACE |
| —●— CANTILEVER  | □ SIGN-REMOVE EXISTING    |
| —●— SIGN BRIDGE | ⬡ SIGN-PLACE NEW          |
| ⌚ SIGN POSTS    |                           |
| ⌚ STEEL POSTS   |                           |

PLAN SHEET PRODUCED  
BY WISDOT-NE REGION

PROJECT NO: 4685-19-60

HWY: STH 441

COUNTY: OUTAGAMIE

PERMANENT SIGNING

SHEET

48

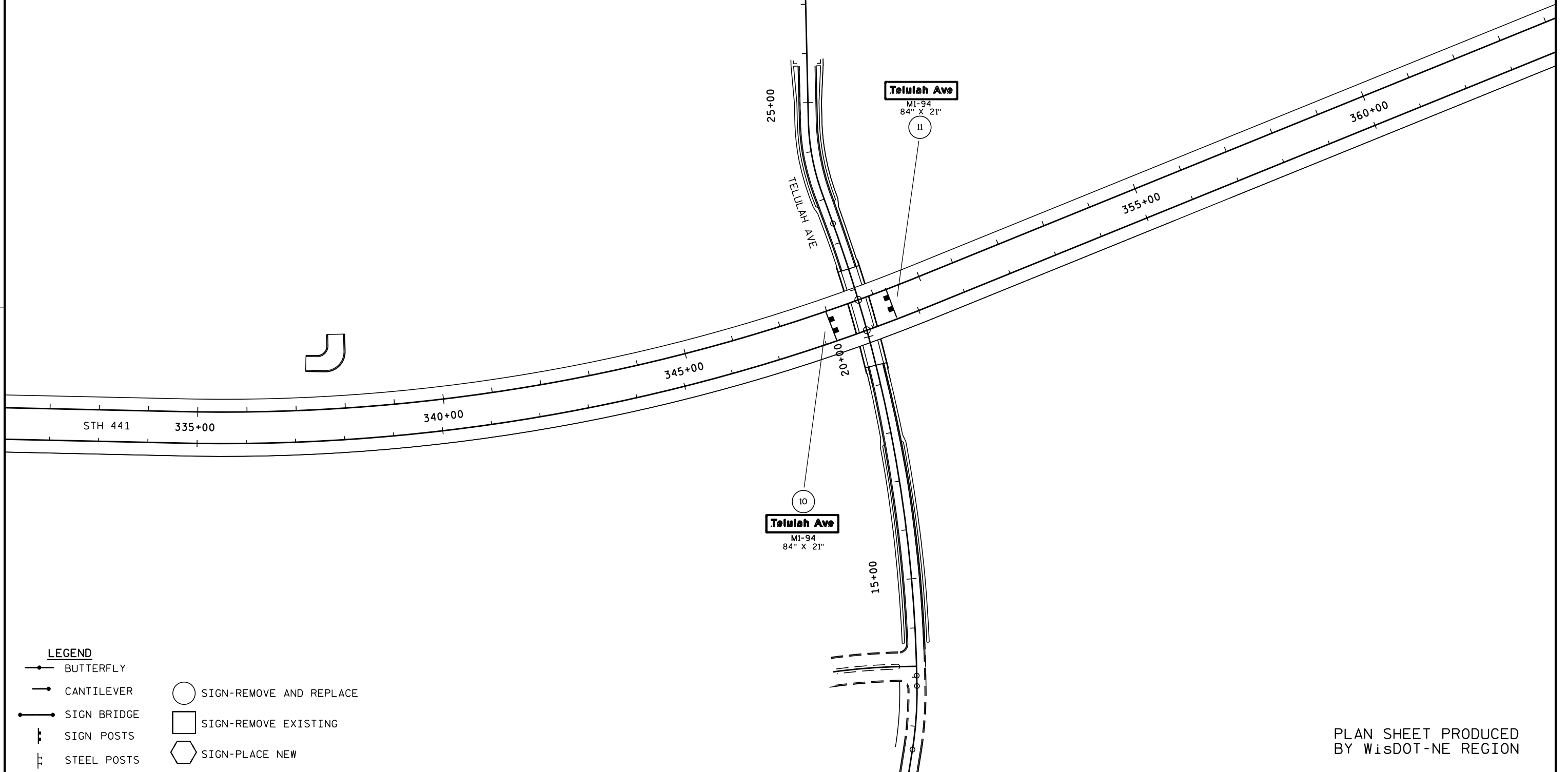
E

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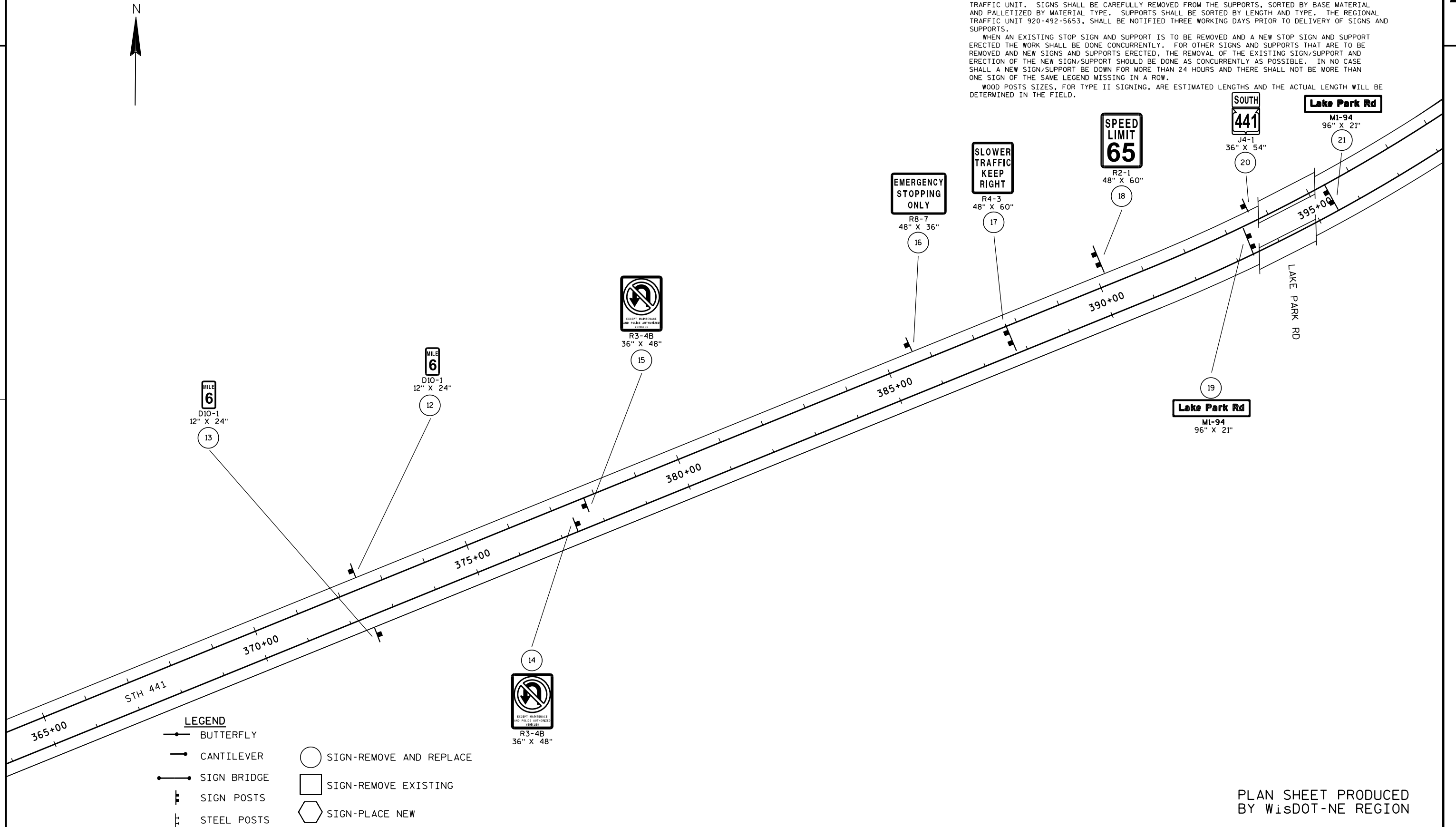


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PLAN SHEET PRODUCED  
BY WISDOT-NE REGION

PROJECT NO: 4685-19-60

HWY: STH 441

COUNTY: OUTAGAMIE

PERMANENT SIGNING

SHEET 50

E

W4-1  
48" X 48"

23

D10-1  
12" X 24"

24

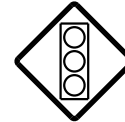
E5-1  
72" X 60"

22

25

D10-1  
12" X 24"

26

W3-3  
36" X 36"**LEGEND**

-  BUTTERFLY
-  CANTILEVER
-  SIGN BRIDGE
-  SIGN POSTS
-  STEEL POSTS

-  SIGN-REMOVE AND REPLACE
-  SIGN-REMOVE EXISTING
-  SIGN-PLACE NEW

**SIGNING NOTES**

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PLAN SHEET PRODUCED  
BY WisDOT-NE REGION

## SIGNING NOTES

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420+00

60+00

Calumet Co

12-2  
84" X 21"

28

430+00

CTH KK OFF-RAMP

435+00

430+00

435+00

450+00

STH 441

455+00

460+00

425+00

65+00

425+00

27

Outagamie Co

12-2  
96" X 21"

430+00

CTH KK ON-RAMP

29

W4-1  
48" X 48"

30

J4-1  
36" X 54"

31

R2-1  
48" X 60"

## LEGEND

- BUTTERFLY
- CANTILEVER
- SIGN BRIDGE
- SIGN POSTS
- STEEL POSTS

- SIGN-REMOVE AND REPLACE
- SIGN-REMOVE EXISTING
- SIGN-PLACE NEW

PLAN SHEET PRODUCED  
BY WISDOT-NE REGION

PROJECT NO: 4685-19-60

HWY: STH 441

COUNTY: OUTAGAMIE

PERMANENT SIGNING

SHEET

52

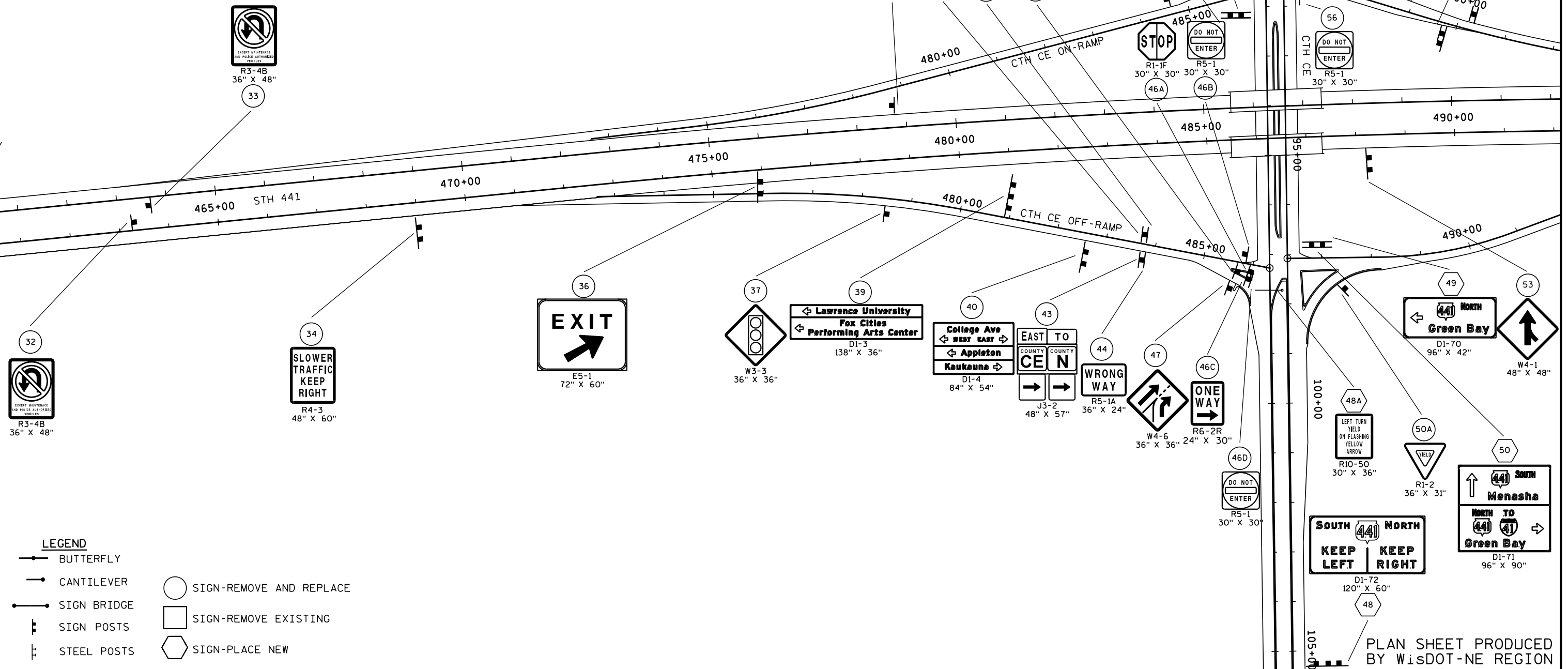
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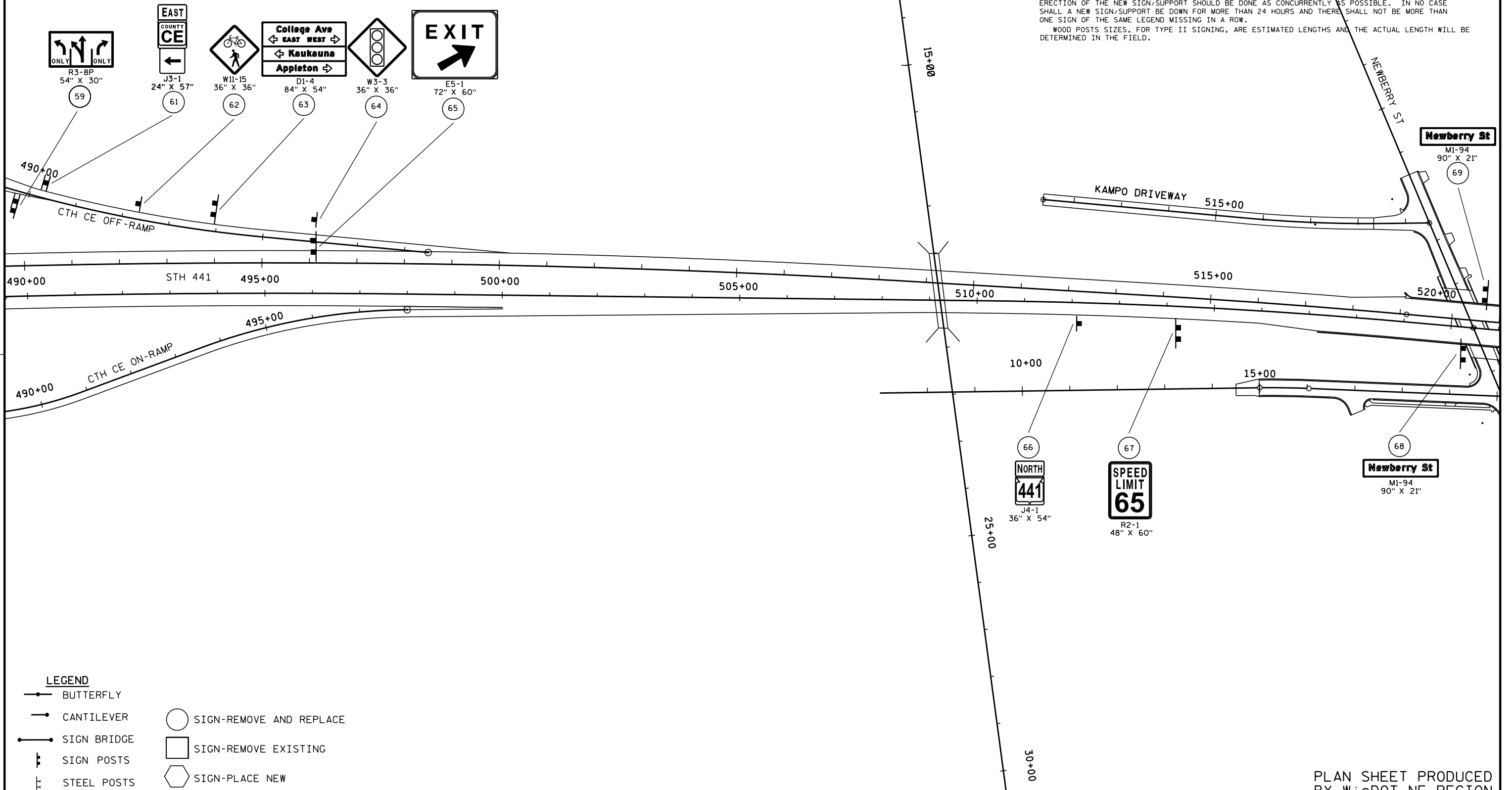
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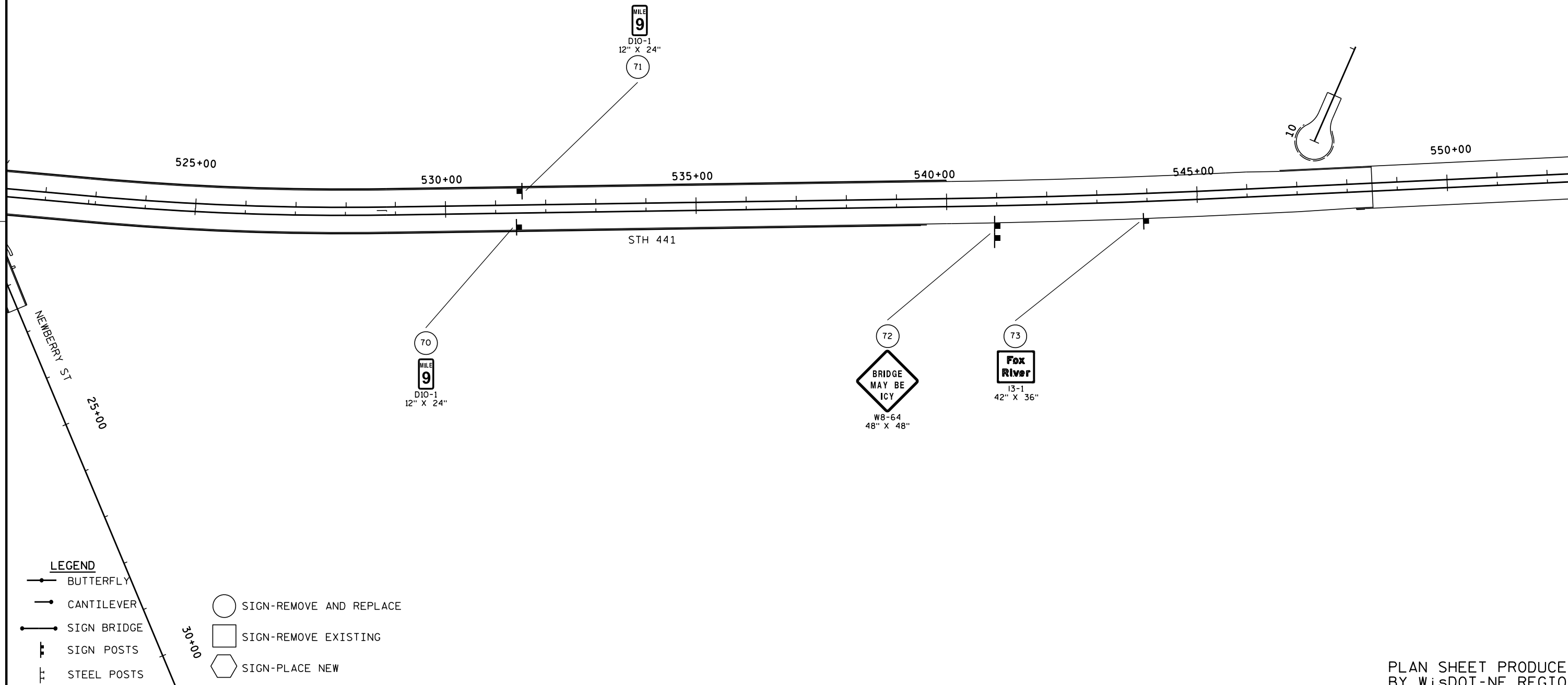


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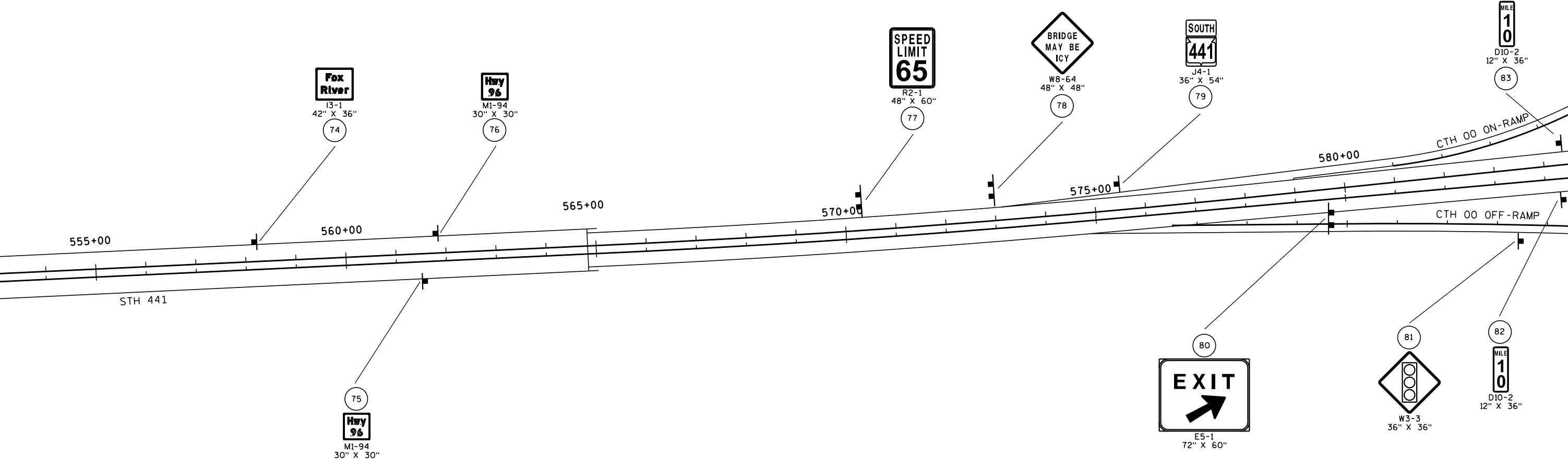


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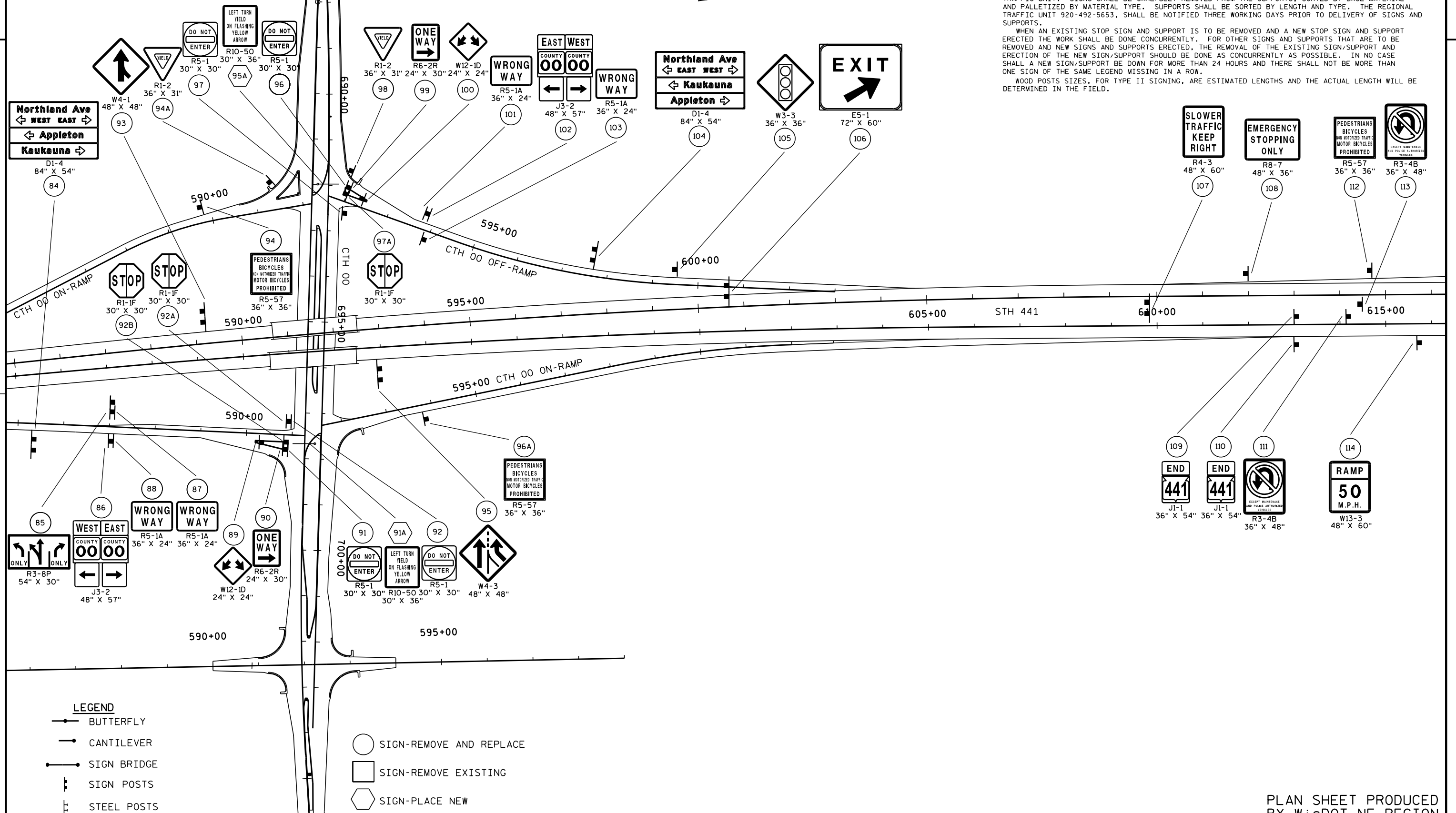
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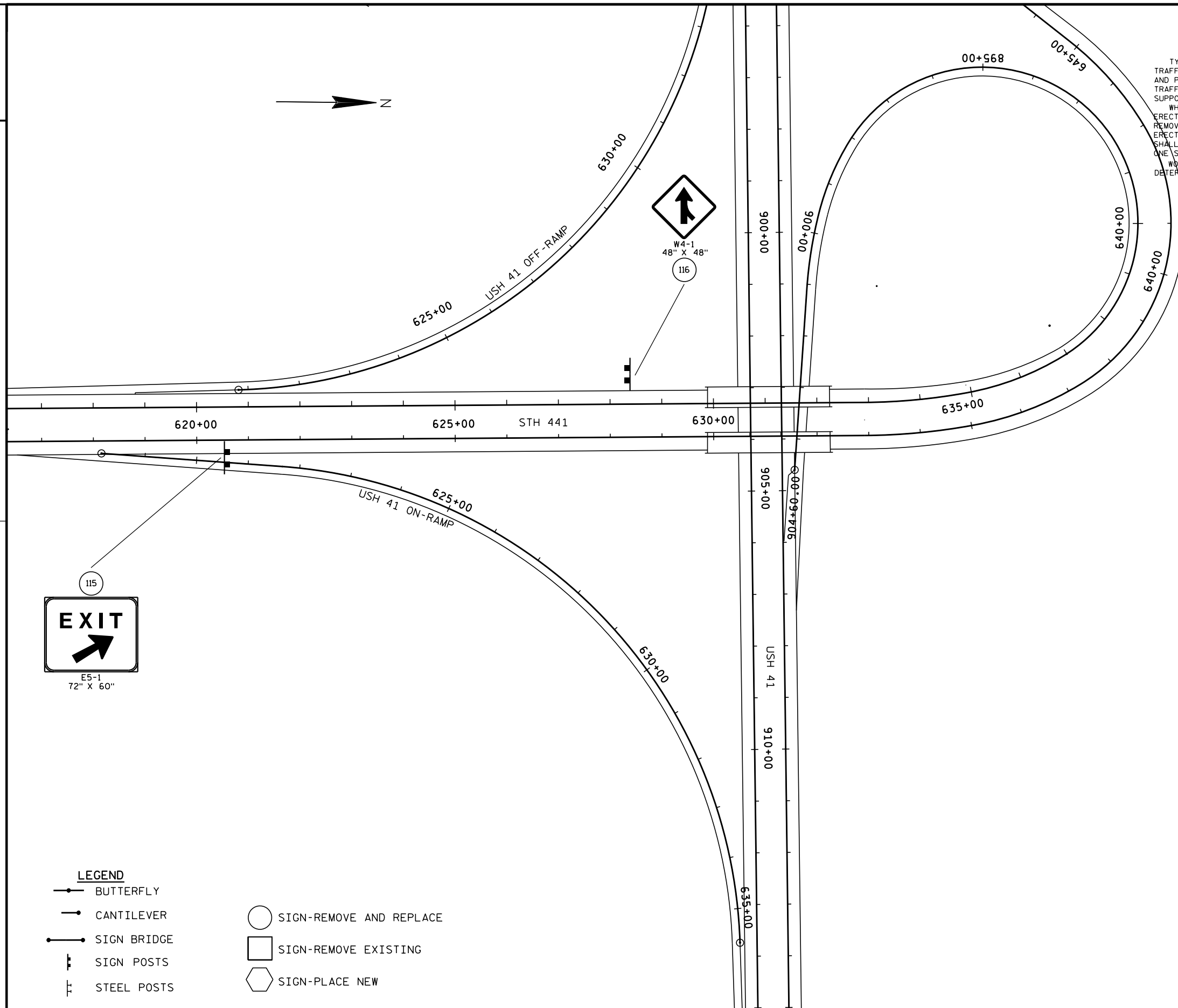


LEGEND

- BUTTERFLY
- CANTILEVER
- SIGN BRIDGE
- SIGN POSTS
- STEEL POSTS
- SIGN-REMOVE AND REPLACE
- SIGN-REMOVE EXISTING
- SIGN-PLACE NEW

PLAN SHEET PRODUCED  
BY WISDOT-NE REGION





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## LEGEND

- |                 |                           |
|-----------------|---------------------------|
| —●— BUTTERFLY   | ○ SIGN-REMOVE AND REPLACE |
| —●— CANTILEVER  | □ SIGN-REMOVE EXISTING    |
| —●— SIGN BRIDGE | ⬡ SIGN-PLACE NEW          |
| — — SIGN POSTS  |                           |
| — — STEEL POSTS |                           |

PLAN SHEET PRODUCED  
BY WISDOT-NE REGION

PROJECT NO: 4685-19-60

HWY: STH 441

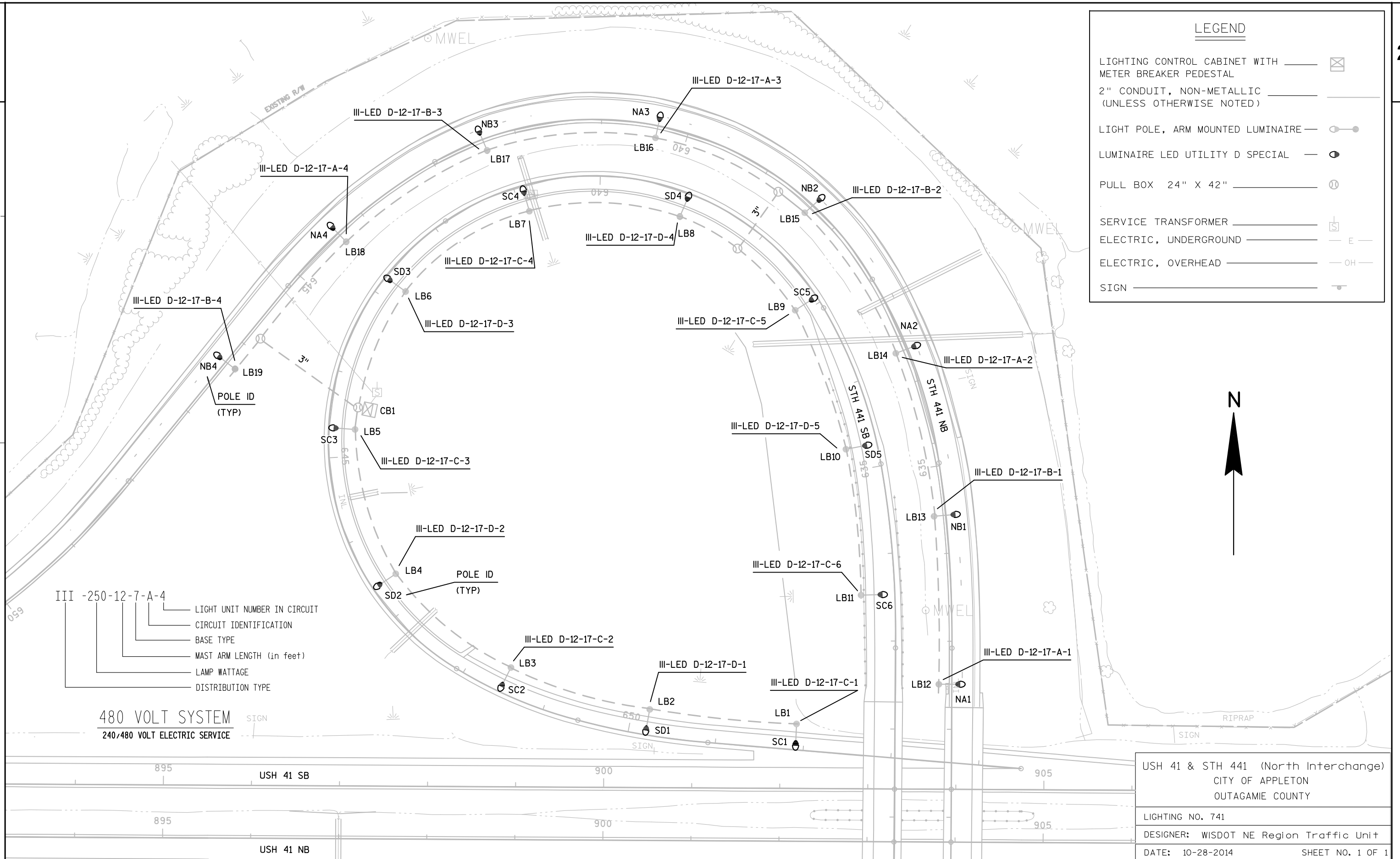
COUNTY: OUTAGAMIE

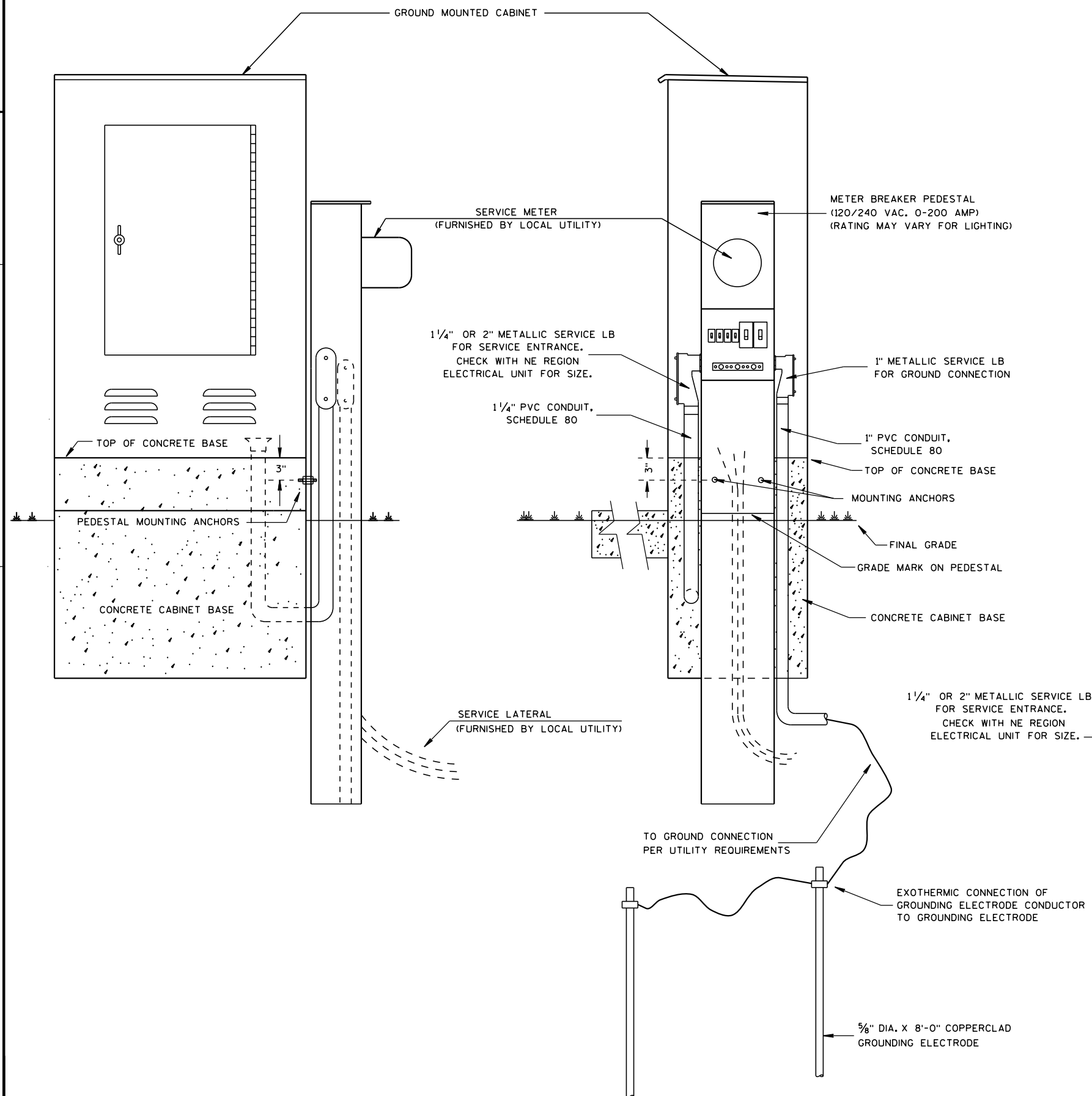
PERMANENT SIGNING

SHEET

58

E





## GENERAL NOTES

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

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

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

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

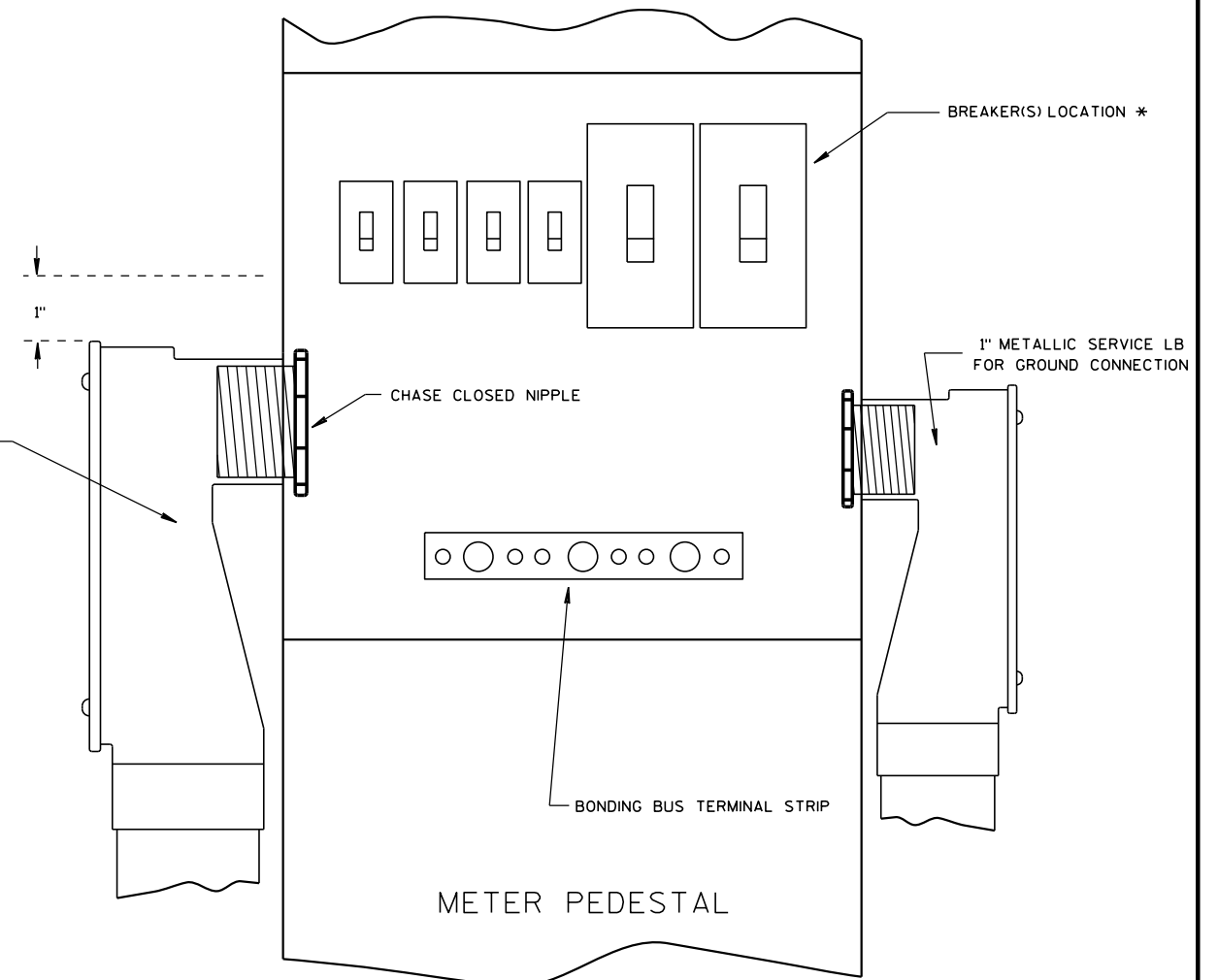
WHILE FLUSH MOUNTING IS THE MOST DESIRABLE MOUNTING CONFIGURATION UTILITY REQUIREMENTS MAY PRECLUDE THIS OPTION. CONTRACTOR MUST PROVIDE UTILITY APPROVED PEDESTAL AND INSTALL PER UTILITY AND MANUFACTURERS REQUIREMENTS.

SERVICE CONDUCTOR ENTRANCES SHALL BE RIGID METALLIC CONDUIT OR SCHEDULE 80 PVC, NIPPLES AND/OR CONDULETS AS REQUIRED. CONDUIT LB SHALL BE OF METALLIC SERVICE ENTRANCE TYPE.

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

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

\* SOME PEDESTAL LIGHTING PLANS SHOW MAIN LUGS ONLY.



## CONFIGURATION WITH HEAD NUMBERS

3-V

(R) 1, 2, 3  
(Y) 6, 7, 8  
(G) 9, 10, 11

4-VLP

(R) 4, 5  
(Y) 6, 7, 8  
(G) 9, 10, 11

## MONOTUBE STRUCTURE NUMBERS

SB2

S-44-0117

SB4

S-44-0118

SB5

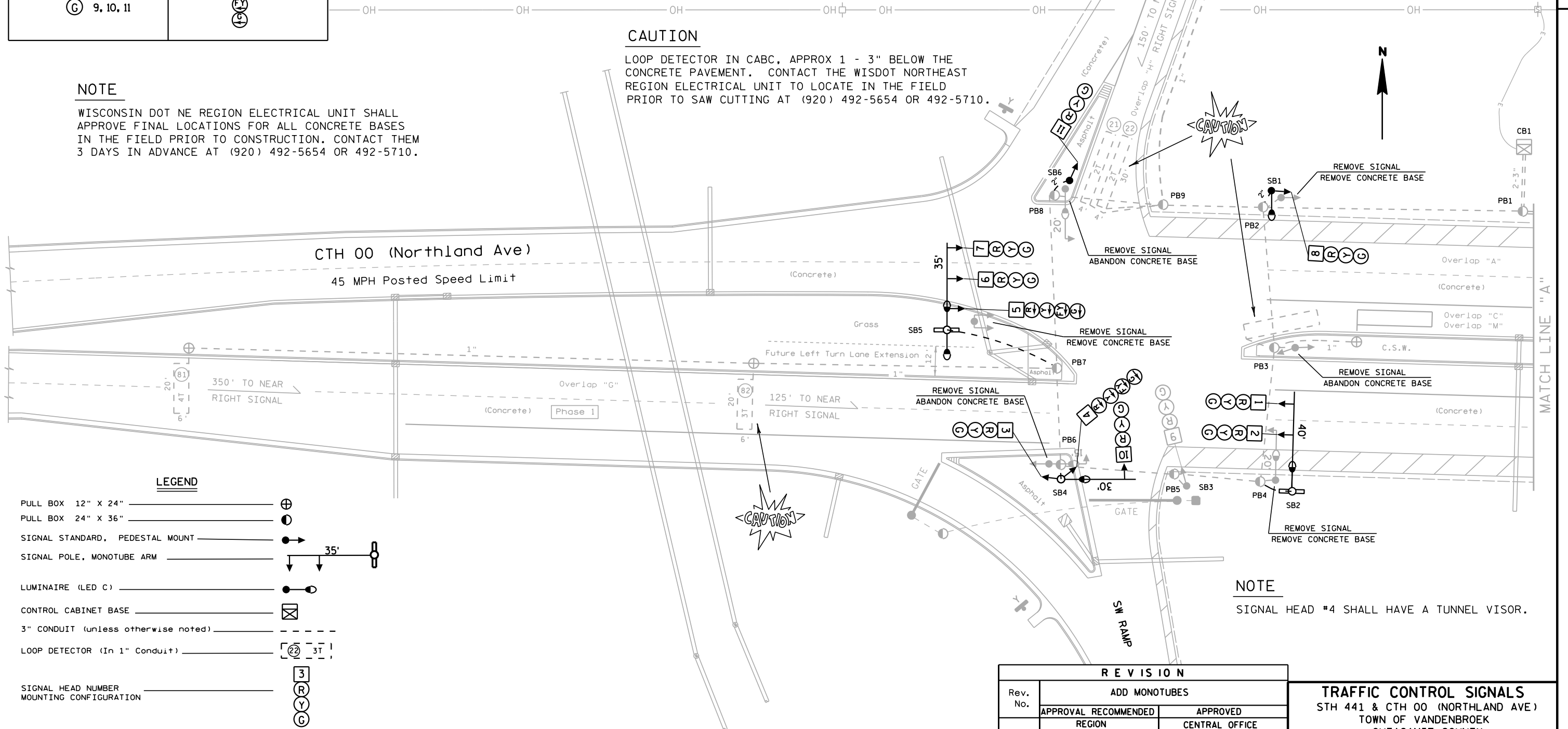
S-44-0119

## NOTE

WISCONSIN DOT NE REGION ELECTRICAL UNIT SHALL APPROVE FINAL LOCATIONS FOR ALL CONCRETE BASES IN THE FIELD PRIOR TO CONSTRUCTION. CONTACT THEM 3 DAYS IN ADVANCE AT (920) 492-5654 OR 492-5710.

## CAUTION

LOOP DETECTOR IN CABC, APPROX 1 - 3" BELOW THE CONCRETE PAVEMENT. CONTACT THE WISDOT NORTHEAST REGION ELECTRICAL UNIT TO LOCATE IN THE FIELD PRIOR TO SAW CUTTING AT (920) 492-5654 OR 492-5710.



## LEGEND

|                                           |                  |
|-------------------------------------------|------------------|
| PULL BOX 12" X 24"                        | ⊕                |
| PULL BOX 24" X 36"                        | ⊙                |
| SIGNAL STANDARD, PEDESTAL MOUNT           | →                |
| SIGNAL POLE, MONOTUBE ARM                 | 35'              |
| LUMINAIRE (LED C)                         | ●                |
| CONTROL CABINET BASE                      | ⊠                |
| 3" CONDUIT (unless otherwise noted)       | ---              |
| LOOP DETECTOR (In 1" Conduit)             | Ⓢ 3T             |
| SIGNAL HEAD NUMBER MOUNTING CONFIGURATION | 3<br>R<br>Y<br>G |
| OVERHEAD LINES                            | — OH —           |
| UNDERGROUND ELECTRIC                      | — E —            |
| UTILITY POLE                              | ⊕                |
| YIELD SIGN                                | Y                |
| RAMP GATE                                 | ● GATE           |

## GENERAL NOTE

THE LOCATION OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION.

## NOTE

SIGNAL HEAD #4 SHALL HAVE A TUNNEL VISOR.

## REVISION

| Rev. No.  | ADD MONOTUBES        |    |                |    |
|-----------|----------------------|----|----------------|----|
|           | APPROVAL RECOMMENDED |    | APPROVED       |    |
| 5         | REGION               | By | CENTRAL OFFICE | By |
|           | Date                 | By | Date           | By |
| 7-17-2012 |                      |    |                |    |
| 1-25-2010 |                      |    |                |    |
| 3-14-2008 |                      |    |                |    |
| 3-11-2005 |                      |    |                |    |

## TRAFFIC CONTROL SIGNALS

STH 441 & CTH 00 (NORTHLAND AVE)  
TOWN OF VANDENBROEK  
OUTAGAMIE COUNTY

SIGNAL NO. 510

WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVAL RECOMMENDED

Date 2-10-93

GERALD R KURTZ  
District Traffic Engineer

APPROVED

Date 3-16-93

R I MOE  
State Electrical Engineer

Controller Type: ECONOLITE

PAGE 1 OF 2

PROJECT NO: 4685-19-60

HWY: STH 441

COUNTY: OUTAGAMIE

CONSTRUCTION DETAIL - TRAFFIC SIGNAL REVISION

SHEET NO: 61

E

FILE NAME : F:\d3-traffic\5-510.dgn

PLOT DATE : 15-OCT-2014 13:53

PLOT BY : dotc5s

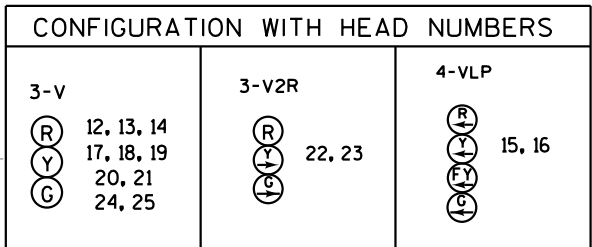
PLOT NAME : S-510, sb, rev5, const

ORG DATE : 1-25-05

PLOT SCALE : 40:1

WISDOT/CADDS SHEET 42

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NOTE  
SIGNAL HEAD #15 SHALL HAVE A TUNNEL VISOR.

| MONOTUBE STRUCTURE NUMBERS |           |
|----------------------------|-----------|
| SB7                        | S-44-0120 |
| SB9                        | S-44-0121 |
| SB11                       | S-44-0122 |

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Revision 5

**TRAFFIC CONTROL SIGNALS**  
**STH 441 & CTH 00 (NORTHLAND AVE)**  
**TOWN OF VANDENBROEK**  
**OUTAGAMIE COUNTY**

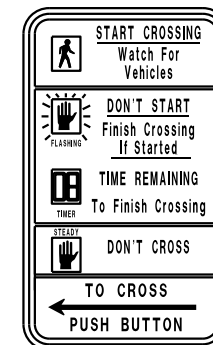
|                   |             |
|-------------------|-------------|
| SIGNAL NO. 510    |             |
| Controller Type : | ECONOLITE   |
|                   | PAGE 2 OF 2 |

## LEGEND

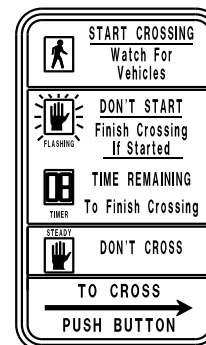
|                                                                           |                  |
|---------------------------------------------------------------------------|------------------|
| PULL BOX 12" X 24"                                                        | ⊕                |
| PULL BOX 24" X 36"                                                        | ●                |
| PULL BOX 24" X 42"                                                        | ⊗                |
| SIGNAL STANDARD, PEDESTAL MOUNT                                           | →                |
| SIGNAL POLE, MONOTUBE ARM                                                 | ↓                |
| LUMINAIRE (LED C)                                                         | ●                |
| CONTROL CABINET BASE                                                      | ⊠                |
| 3" CONDUIT (2" conduit from PB to T1/T2 base)<br>(unless otherwise noted) | ---              |
| LOOP DETECTOR (In 1" Conduit)                                             | (22) 3T          |
| MICROWAVE DETECTOR ZONE                                                   | (11) MICROWAVE   |
| SIGNAL HEAD NUMBER<br>MOUNTING CONFIGURATION                              | 3<br>R<br>Y<br>G |
| MICROWAVE DETECTOR UNIT                                                   | ⊕                |
| WALK/DON'T WALK INDICATOR 16"<br>WITH COUNTDOWN TIMER                     | ⊠                |
| PEDESTRIAN HEAD W/PUSH BUTTON                                             | ⊠<br>B           |

## MONOTUBE STRUCTURE NUMBERS

|     |           |
|-----|-----------|
| SB2 | S-44-0123 |
| SB4 | S-44-0124 |
| SB6 | S-44-0125 |



Install on SB8



Install on SB7

CE Trail (Asphalt)

CTH CE (College Ave)

45 MPH Posted Speed Limit

CE Trail (concrete)

190' TO NEAR  
RIGHT SIGNAL350' TO NEAR  
RIGHT SIGNAL

## NOTE

SIGNAL HEAD #1 SHALL HAVE A TUNNEL VISOR.

## NOTE

WISCONSIN DOT NE REGION ELECTRICAL UNIT SHALL APPROVE FINAL LOCATIONS FOR ALL CONCRETE BASES AND LOOP DETECTORS IN THE FIELD PRIOR TO CONSTRUCTION. CONTACT THEM 3 DAYS IN ADVANCE AT (920) 492-5654 OR 492-5710.

## GENERAL NOTE

THE LOCATION OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION.

## CONFIGURATION WITH HEAD NUMBERS

|                                              |                                           |                    |
|----------------------------------------------|-------------------------------------------|--------------------|
| 3-V<br>R 3, 4, 5<br>Y 6, 7, 8<br>G 9, 10, 11 | 4-VLP<br>R 1, 2<br>Y 3, 4, 5<br>G 6, 7, 8 | 1-P<br>⊠<br>12, 13 |
|----------------------------------------------|-------------------------------------------|--------------------|

PROJECT NO: 4685-19-60

HWY: STH 441

COUNTY: OUTAGAMIE

CONSTRUCTION DETAIL - TRAFFIC SIGNAL REVISION

SHEET

63

E

## LEGEND

|                                                                           |  |
|---------------------------------------------------------------------------|--|
| PULL BOX 12" X 24"                                                        |  |
| PULL BOX 24" X 36"                                                        |  |
| PULL BOX 24" X 42"                                                        |  |
| SIGNAL STANDARD, PEDESTAL MOUNT                                           |  |
| SIGNAL POLE, MONOTUBE ARM                                                 |  |
| LUMINAIRE (LED C)                                                         |  |
| CONTROL CABINET BASE                                                      |  |
| 3" CONDUIT (2" conduit from PB to T1/T2 base)<br>(unless otherwise noted) |  |
| LOOP DETECTOR (In 1" Conduit)                                             |  |
| MICROWAVE DETECTOR ZONE                                                   |  |
| SIGNAL HEAD NUMBER<br>MOUNTING CONFIGURATION                              |  |
| MICROWAVE DETECTOR UNIT                                                   |  |
| WALK/DON'T WALK INDICATOR 16"<br>WITH COUNTDOWN TIMER                     |  |
| PEDESTRIAN HEAD W/PUSH BUTTON                                             |  |

CTH CE (College Ave)  
45 MPH Posted Speed Limit

350' TO NEAR  
RIGHT SIGNAL

## NOTE

WISCONSIN DOT NE REGION ELECTRICAL UNIT SHALL APPROVE FINAL LOCATIONS FOR ALL CONCRETE BASES AND LOOP DETECTORS IN THE FIELD PRIOR TO CONSTRUCTION. CONTACT THEM 3 DAYS IN ADVANCE AT (920) 492-5654 OR 492-5710.

## GENERAL NOTE

THE LOCATION OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION.

PROJECT NO: 4685-19-60

HWY: STH 441

COUNTY: OUTAGAMIE

CONSTRUCTION DETAIL - TRAFFIC SIGNAL REVISION

SHEET

64

E

FILE NAME : F:\d3-traffic\5-511,rev2.dgn

PLOT DATE : 10-NOV-2014 13:49

PLOT BY : dotc5s

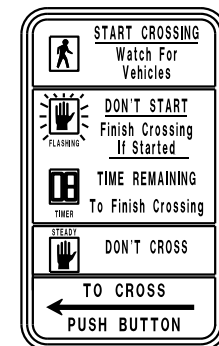
PLOT NAME : S-511,rev2,const

PLOT SCALE : 40:1

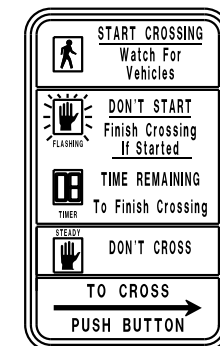
WISDOT/CADDS SHEET 42

## CONFIGURATION WITH HEAD NUMBERS

| 3-V         | 4-VLP    | 1-P        |
|-------------|----------|------------|
| <br>1, 2, 3 | <br>4, 5 | <br>12, 13 |



Install on SB3



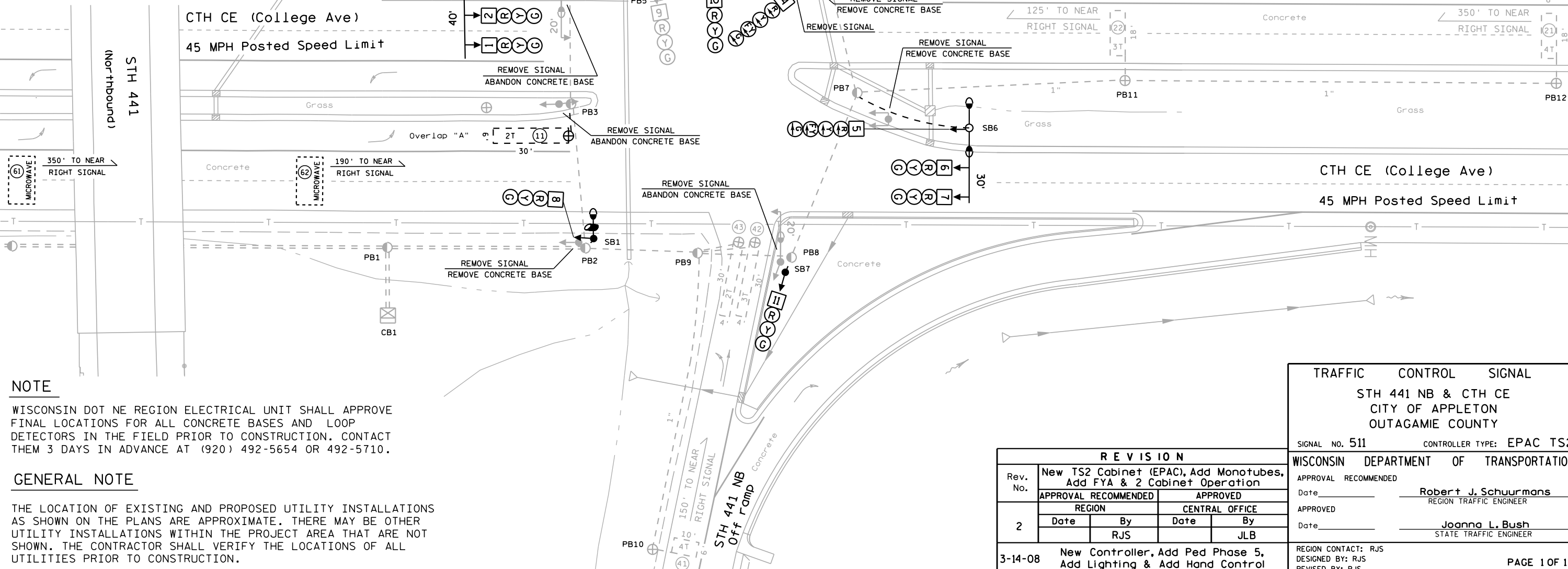
Install on SB4

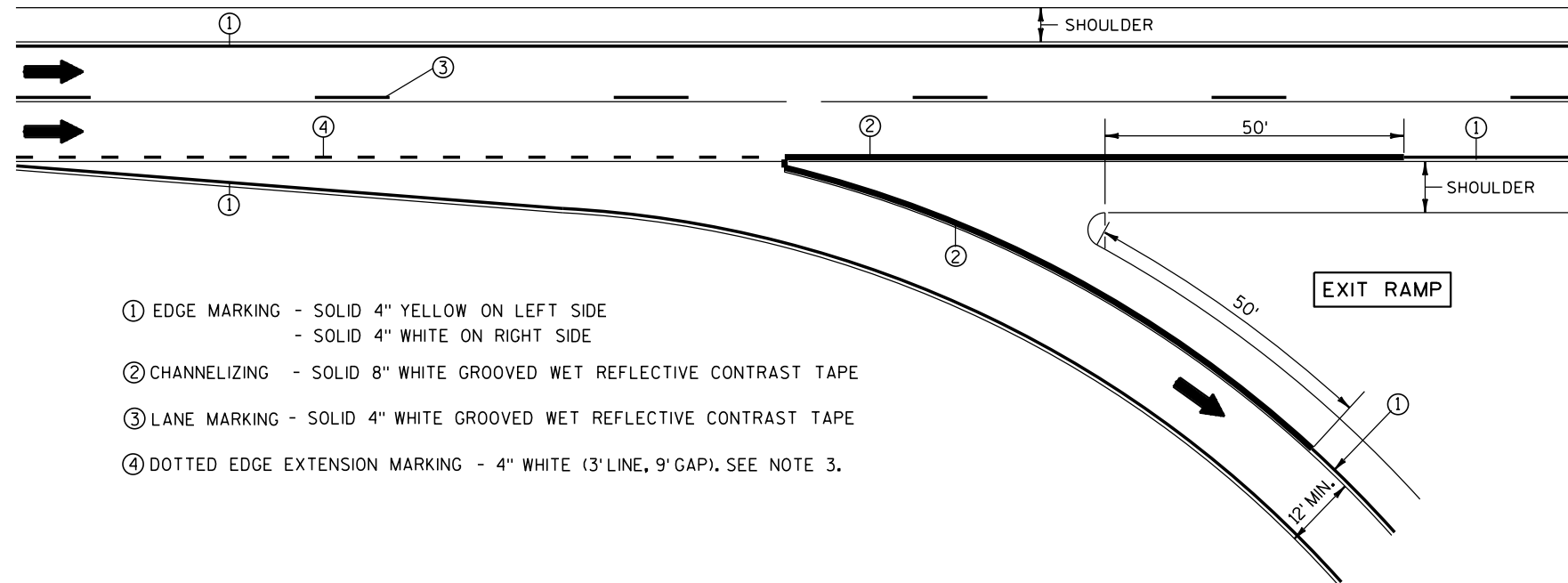
## NOTE

SIGNAL HEAD #4 SHALL HAVE A TUNNEL VISOR.

## MONOTUBE STRUCTURE NUMBERS

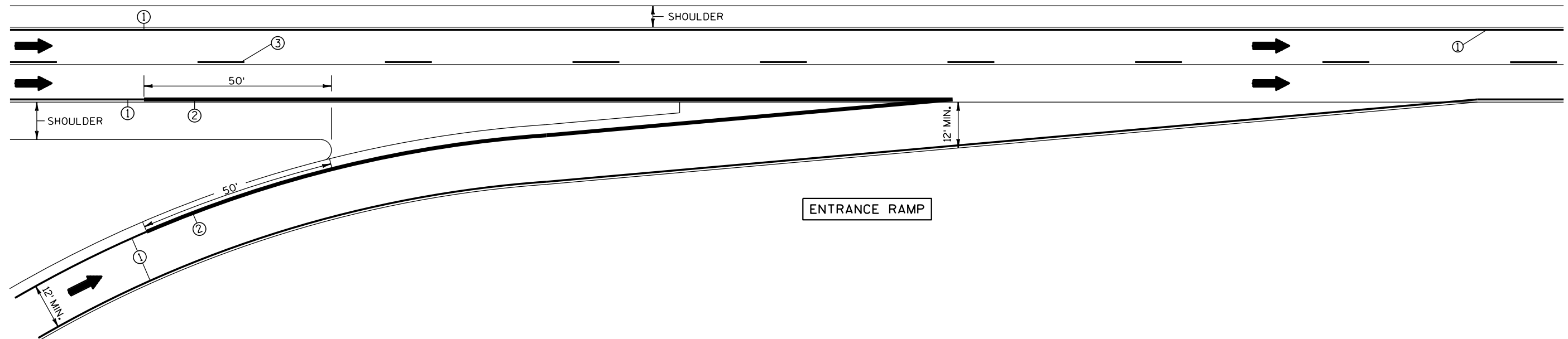
|     |           |
|-----|-----------|
| SB2 | S-44-0126 |
| SB5 | S-44-0127 |
| SB6 | S-44-0128 |



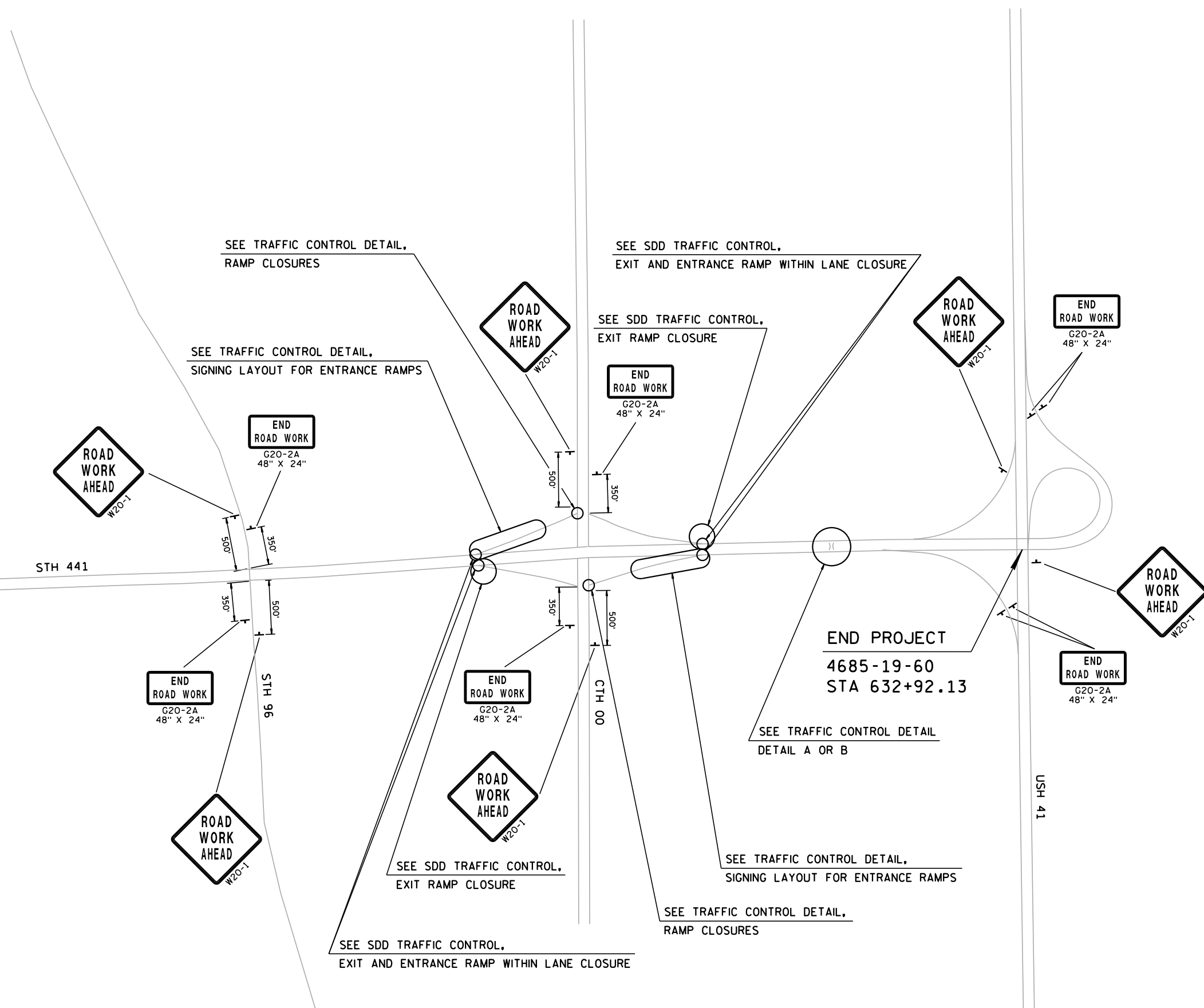


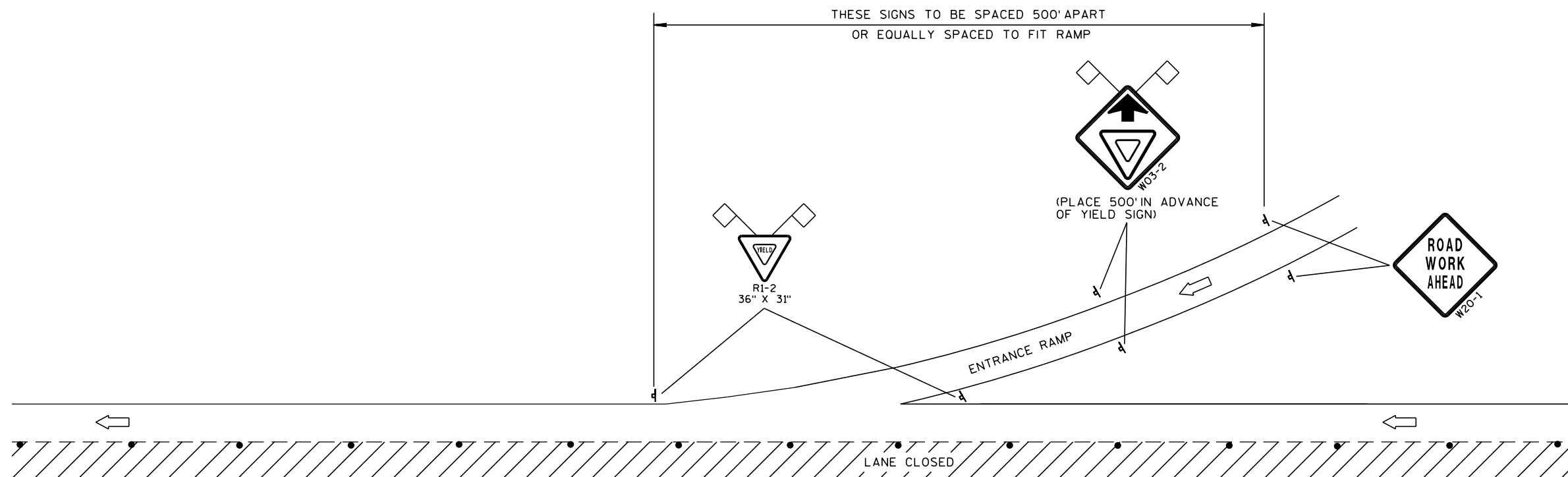
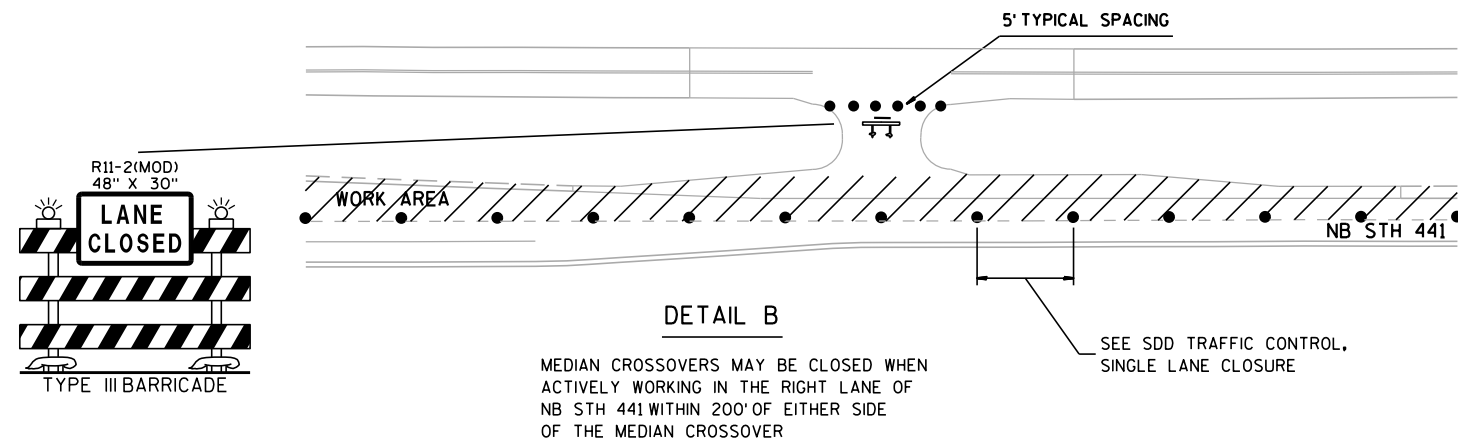
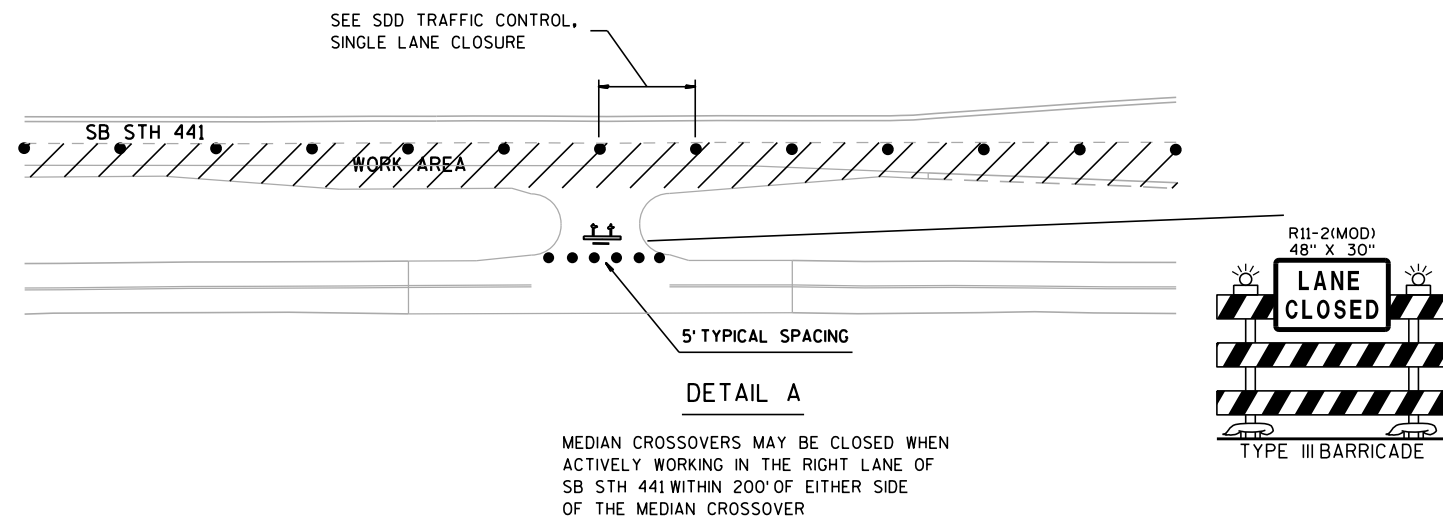
## NOTES:

1. ARROWS SHOWN ON THIS MARKING PLAN DESIGNATE TRAFFIC FLOW, AND SHALL NOT BE TAKEN AS PROPOSED PAVEMENT MARKINGS.
2. PLACE WHITE EDGE OF TAPE 6" LEFT FROM JOINT.
3. 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE-GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.

PAVEMENT MARKING (RAMPS AND GORES)







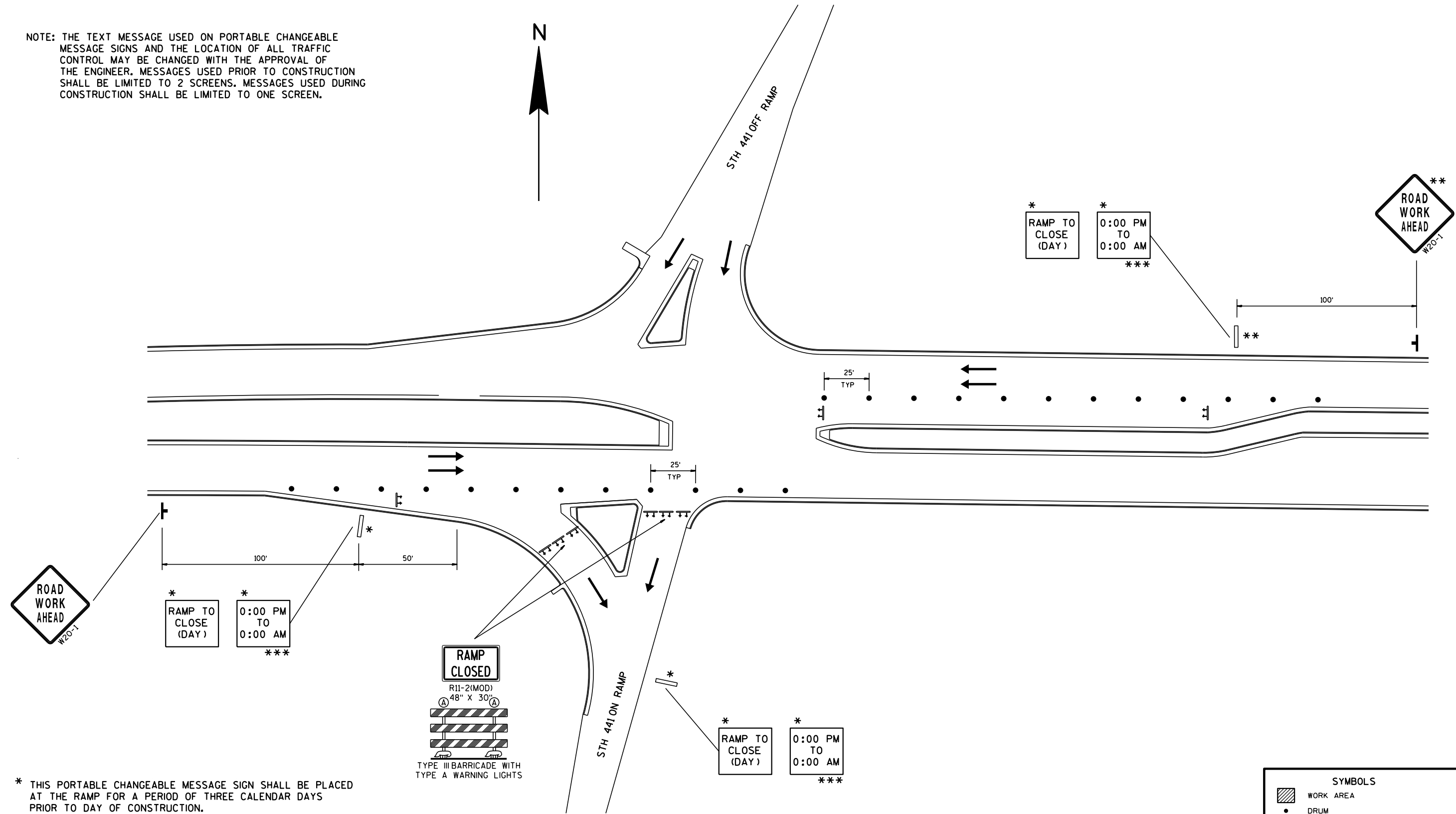
SIGNING LAYOUT FOR ENTRANCE RAMPS  
STH 441

#### LEGEND

- POST MOUNTED SIGN
- SIGN ON PORTABLE SUPPORT
- TRAFFIC CONTROL, DRUM
- TRAFFIC CONTROL, DRUM WITH WARNING LIGHT, TYPE C (STEADY-BURN)
- TYPE III BARRICADE (8' EQUIVALENT) WITH SIGN
- FLAGS, 16"x16" MIN., ORANGE
- DIRECTION OF TRAFFIC FLOW

NOTE: THE TEXT MESSAGE USED ON PORTABLE CHANGEABLE MESSAGE SIGNS AND THE LOCATION OF ALL TRAFFIC CONTROL MAY BE CHANGED WITH THE APPROVAL OF THE ENGINEER. MESSAGES USED PRIOR TO CONSTRUCTION SHALL BE LIMITED TO 2 SCREENS. MESSAGES USED DURING CONSTRUCTION SHALL BE LIMITED TO ONE SCREEN.

N

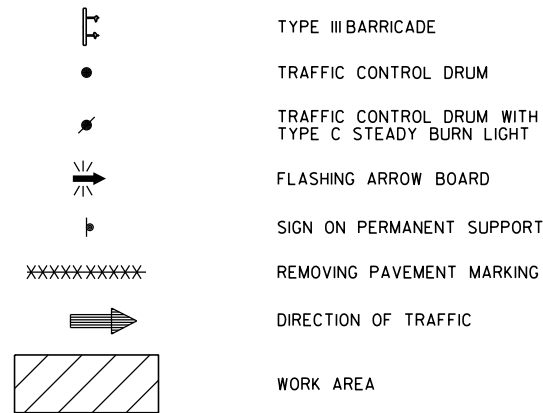


DETAIL FOR ON RAMP CLOSURE  
(NOT TO SCALE)

- \* THIS PORTABLE CHANGEABLE MESSAGE SIGN SHALL BE PLACED AT THE RAMP FOR A PERIOD OF THREE CALENDAR DAYS PRIOR TO DAY OF CONSTRUCTION.
- \*\* PLACE PORTABLE CHANGEABLE MESSAGE SIGN AND TRAFFIC CONTROL SIGN IN MEDIAN IF FIELD CONDITIONS ALLOW.
- \*\*\* SEE CONTRACT DOCUMENTS FOR SPECIFIC RAMP CLOSURE ALLOWABLE TIMES.

| SYMBOLS |                                               |
|---------|-----------------------------------------------|
|         | WORK AREA                                     |
|         | DRUM                                          |
|         | SIGN ON PORTABLE OR PERMANENT SUPPORT         |
|         | DIRECTION OF TRAFFIC FLOW                     |
|         | PORTABLE CHANGEABLE MESSAGE SIGN              |
|         | TYPE III BARRICADE WITH TYPE A WARNING LIGHTS |

LEGEND



TRAFFIC CONTROL 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, DISTANCE 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.

"W0" 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 AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

REDUCED SPEED AHEAD AND SPEED LIMIT 55 SIGNS MUST BE POST MOUNTED.

SPEED LIMIT SIGNS SHALL ALSO BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP AND AT 0.5 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.

THE LOCATION OF THE FIRST SIGN INDICATING THE 55 MPH REGULATORY SPEED LIMIT IS REFERENCED FROM BEGINNING OF LANE CLOSURE TAPER. THE 55 MPH REGULATORY SPEED LIMIT SIGN LOCATION MUST BE ADJUSTED WHEN CONSTRUCTION ACTIVITIES REQUIRE THE LANE CLOSURE START LOCATION TO CHANGE.

TRAFFIC CONTROL DEVICES NOT IN USE SHALL BE LAYED DOWN OR REMOVED, TURNING OF DEVICES TO OBSCURE THE MESSAGE WILL NOT BE ALLOWED.

REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 4 CONTINUOUS DAYS AND NIGHTS.

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

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

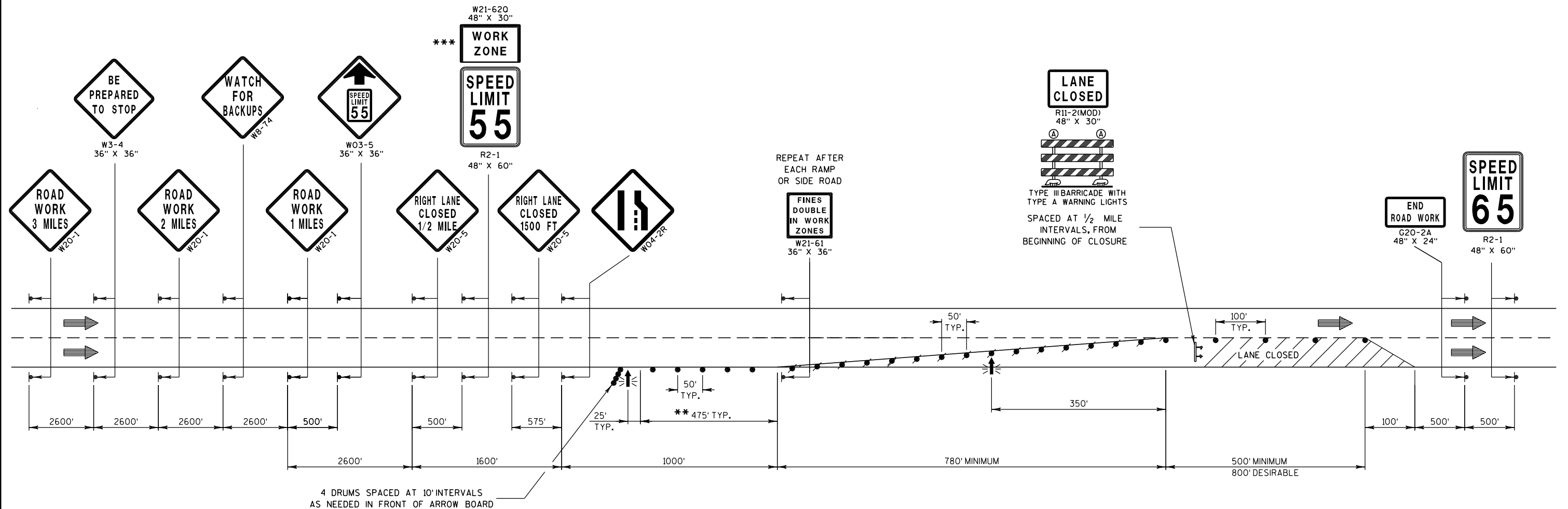
IF LANE CLOSURE IS MORE THAN 1 MILE, PLACE A TYPE III BARRICADE APPROXIMATELY EVERY 1/2 MILE ACROSS THE CLOSED LANE TO HELP ENFORCE THE DRUM LINE.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. 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 1/2 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 GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM OF 1500 FEET IN FRONT OF THE DRUMS.

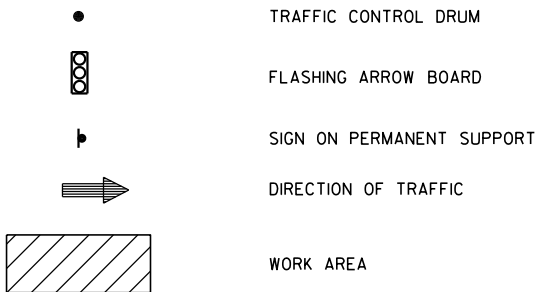
\*\*\* SEE REQUIREMENT FOR TEMPORARY REGULATORY SPEED REDUCTION IN THE SPECIAL PROVISIONS.

COVERING AND REMOVAL OF MATERIAL COVERING TEMPORARY REGULATORY SPEED LIMIT SIGNS AND EXISTING SPEED LIMIT SIGNS RELATED TO TEMPORARY AND/OR PERIODIC LANE CLOSURES SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.



LANE CLOSURE - REGULATORY SPEED REDUCTION WITHOUT BARRIER

LEGEND



TRAFFIC CONTROL 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, DISTANCE TO EXISTING SIGNS.

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

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 AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

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

REDUCED SPEED AHEAD AND SPEED LIMIT 55 SIGNS MUST BE POST MOUNTED.

SPEED LIMIT SIGNS SHALL ALSO BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP AND AT 0.5 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.

THE LOCATION OF THE FIRST SIGN INDICATING THE 55 MPH REGULATORY SPEED LIMIT IS REFERENCED FROM BEGINNING OF SHOULDER CLOSURE TAPER. THE 55 MPH REGULATORY SPEED LIMIT SIGN LOCATION MUST BE ADJUSTED WHEN CONSTRUCTION ACTIVITIES REQUIRE THE SHOULDER CLOSURE START LOCATION TO CHANGE.

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

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE SHOULDER CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE SHOULDER 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 1/2 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.

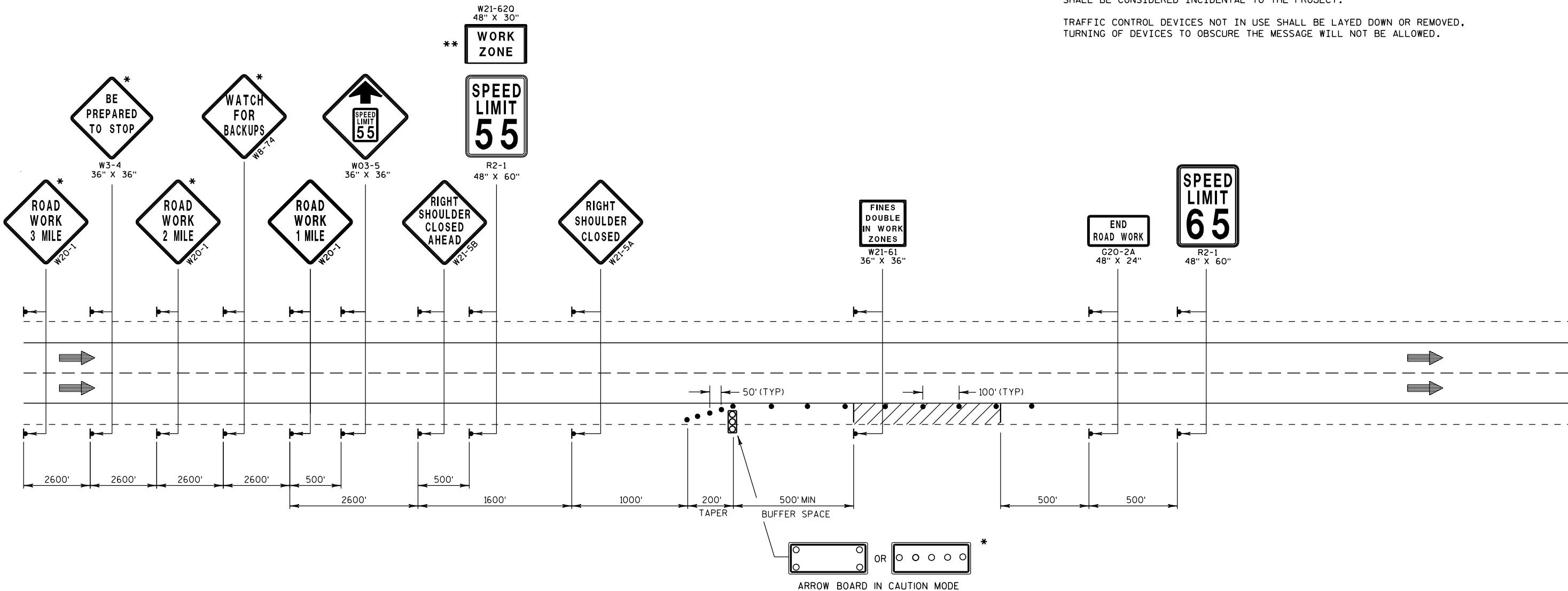
CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND SHOULDER CLOSURE DRUMS FOR A MINIMUM OF 1500 FEET IN FRONT OF THE DRUMS.

\* PROVIDE ITEM WHEN SPECIFIED IN MISCELLANEOUS QUANTITIES OR SPECIAL PROVISIONS.

\*\* SEE REQUIREMENT FOR TEMPORARY REGULATORY SPEED REDUCTION IN THE SPECIAL PROVISIONS.

COVERING AND REMOVAL OF MATERIAL COVERING TEMPORARY REGULATORY SPEED LIMIT SIGNS AND EXISTING SPEED LIMIT SIGNS RELATED TO TEMPORARY AND/OR PERIODIC SHOULDER CLOSURES SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.

TRAFFIC CONTROL DEVICES NOT IN USE SHALL BE LAYED DOWN OR REMOVED, TURNING OF DEVICES TO OBSCURE THE MESSAGE WILL NOT BE ALLOWED.



SHOULDER CLOSURE - REGULATORY SPEED REDUCTION WITHOUT BARRIER

3

| DATE 10JUN15 |          | E S T I M A T E O F Q U A N T I T I E S                     |      |            |            |
|--------------|----------|-------------------------------------------------------------|------|------------|------------|
| LINE         |          | 4685-19-60                                                  |      |            |            |
| NUMBER       | ITEM     | ITEM DESCRIPTION                                            | UNIT | TOTAL      | QUANTITY   |
| 0010         | 201.0105 | Clearing                                                    | STA  | 8.000      | 8.000      |
| 0020         | 201.0205 | Grubbing                                                    | STA  | 8.000      | 8.000      |
| 0030         | 204.0100 | Removing Pavement                                           | SY   | 48.000     | 48.000     |
| 0040         | 204.0105 | Removing Pavement Butt Joints                               | SY   | 995.000    | 995.000    |
| 0050         | 204.0110 | Removing Asphaltic Surface                                  | SY   | 260.000    | 260.000    |
| 0060         | 204.0115 | Removing Asphaltic Surface Butt Joints                      | SY   | 75.000     | 75.000     |
| 0070         | 204.0120 | Removing Asphaltic Surface Milling                          | SY   | 42,305.000 | 42,305.000 |
| 0080         | 204.0150 | Removing Curb & Gutter                                      | LF   | 945.000    | 945.000    |
| 0090         | 204.0155 | Removing Concrete Sidewalk                                  | SY   | 160.000    | 160.000    |
| 0100         | 204.0165 | Removing Guardrail                                          | LF   | 1,720.000  | 1,720.000  |
| 0110         | 204.0175 | Removing Concrete Slope Paving                              | SY   | 340.000    | 340.000    |
| 0120         | 204.0180 | Removing Delineators and Markers                            | EACH | 555.000    | 555.000    |
| 0130         | 204.0195 | Removing Concrete Bases                                     | EACH | 15.000     | 15.000     |
| 0140         | 204.0220 | Removing Inlets                                             | EACH | 1.000      | 1.000      |
| 0150         | 208.0100 | Borrow **P**                                                | CY   | 335.000    | 335.000    |
| 0160         | 211.0400 | Prepare Foundation for Asphaltic Shoulders                  | STA  | 871.000    | 871.000    |
| 0170         | 213.0100 | Finishing Roadway (project) 01. 4685-19-60                  | EACH | 1.000      | 1.000      |
| 0180         | 305.0110 | Base Aggregate Dense 3/4-Inch                               | TON  | 3,850.000  | 3,850.000  |
| 0190         | 305.0120 | Base Aggregate Dense 1 1/4-Inch                             | TON  | 180.000    | 180.000    |
| 0200         | 305.0500 | Shaping Shoulders                                           | STA  | 1,203.000  | 1,203.000  |
| 0210         | 416.0610 | Drilled Tie Bars                                            | EACH | 775.000    | 775.000    |
| 0220         | 416.0620 | Drilled Dowel Bars                                          | EACH | 3,030.000  | 3,030.000  |
| 0230         | 416.1110 | Concrete Shoulder Rumble Strips                             | LF   | 13,535.000 | 13,535.000 |
| 0240         | 416.1715 | Concrete Pavement Repair SHES                               | SY   | 1,380.000  | 1,380.000  |
| 0250         | 416.1725 | Concrete Pavement Replacement SHES                          | SY   | 2,490.000  | 2,490.000  |
| 0260         | 455.0105 | Asphaltic Material PG58-28                                  | TON  | 475.000    | 475.000    |
| 0270         | 455.0605 | Tack Coat                                                   | GAL  | 130.000    | 130.000    |
| 0280         | 460.1100 | HMA Pavement Type E-0.3                                     | TON  | 7,785.000  | 7,785.000  |
| 0290         | 460.1101 | HMA Pavement Type E-1                                       | TON  | 600.000    | 600.000    |
| 0300         | 460.2000 | Incentive Density HMA Pavement                              | DOL  | 5,960.000  | 5,960.000  |
| 0310         | 465.0105 | Asphaltic Surface                                           | TON  | 134.000    | 134.000    |
| 0320         | 465.0110 | Asphaltic Surface Patching                                  | TON  | 1,170.000  | 1,170.000  |
| 0330         | 465.0400 | Asphaltic Shoulder Rumble Strips                            | LF   | 46,900.000 | 46,900.000 |
| 0340         | 520.7000 | Cleaning Culvert Pipes                                      | EACH | 14.000     | 14.000     |
| 0350         | 521.0112 | Culvert Pipe Corrugated Steel 12-Inch                       | LF   | 35.000     | 35.000     |
| 0360         | 521.0118 | Culvert Pipe Corrugated Steel 18-Inch                       | LF   | 30.000     | 30.000     |
| 0370         | 522.1018 | Apron Endwalls for Culvert Pipe Reinforced Concrete 18-Inch | EACH | 1.000      | 1.000      |
| 0380         | 522.1024 | Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch | EACH | 4.000      | 4.000      |
| 0390         | 601.0405 | Concrete Curb & Gutter 18-Inch Type A                       | LF   | 205.000    | 205.000    |
| 0400         | 601.0409 | Concrete Curb & Gutter 30-Inch Type A                       | LF   | 485.000    | 485.000    |
| 0410         | 601.0452 | Concrete Curb & Gutter Integral 30-Inch Type D              | LF   | 40.000     | 40.000     |
| 0420         | 601.0555 | Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type A         | LF   | 215.000    | 215.000    |
| 0430         | 601.0600 | Concrete Curb Pedestrian                                    | LF   | 35.000     | 35.000     |
| 0440         | 602.0410 | Concrete Sidewalk 5-Inch                                    | SF   | 3,270.000  | 3,270.000  |
| 0450         | 602.0515 | Curb Ramp Detectable Warning Field Natural Patina           | SF   | 64.000     | 64.000     |
| 0460         | 602.1000 | Concrete Loading Zone                                       | SF   | 170.000    | 170.000    |
| 0470         | 604.0600 | Slope Paving Select Crushed Material                        | SY   | 540.000    | 540.000    |
| 0480         | 606.0300 | Riprap Heavy                                                | CY   | 105.000    | 105.000    |

3

3

| DATE 10JUN15 |          | E S T I M A T E O F Q U A N T I T I E S                       |      |            |            |
|--------------|----------|---------------------------------------------------------------|------|------------|------------|
| LINE         |          |                                                               |      | 4685-19-60 |            |
| NUMBER       | ITEM     | ITEM DESCRIPTION                                              | UNIT | TOTAL      | QUANTITY   |
| 0490         | 611.0430 | Reconstructing Inlets                                         | EACH | 4.000      | 4.000      |
| 0500         | 611.0530 | Manhole Covers Type J                                         | EACH | 1.000      | 1.000      |
| 0510         | 611.0642 | Inlet Covers Type MS                                          | EACH | 1.000      | 1.000      |
| 0520         | 611.2005 | Manholes 5-FT Diameter                                        | EACH | 1.000      | 1.000      |
| 0530         | 611.3901 | Inlets Median 1 Grate                                         | EACH | 1.000      | 1.000      |
| 0540         | 614.0010 | Barrier System Grading Shaping Finishing                      | EACH | 27.000     | 27.000     |
| 0550         | 614.0920 | Salvaged Rail                                                 | LF   | 346.000    | 346.000    |
| 0560         | 614.0925 | Salvaged Guardrail End Treatments                             | EACH | 19.000     | 19.000     |
| 0570         | 614.0950 | Replacing Guardrail Posts and Blocks                          | EACH | 55.000     | 55.000     |
| 0580         | 614.0951 | Replacing Guardrail Rail and Hardware                         | LF   | 346.000    | 346.000    |
| 0590         | 614.2300 | MGS Guardrail 3                                               | LF   | 188.000    | 188.000    |
| 0600         | 614.2340 | MGS Guardrail 3 L                                             | LF   | 338.000    | 338.000    |
| 0610         | 614.2610 | MGS Guardrail Terminal EAT                                    | EACH | 19.000     | 19.000     |
| 0620         | 614.2620 | MGS Guardrail Terminal Type 2                                 | EACH | 3.000      | 3.000      |
| 0630         | 618.0100 | Maintenance And Repair of Haul Roads (project) 01. 4685-19-60 | EACH | 1.000      | 1.000      |
| 0640         | 619.1000 | Mobilization                                                  | EACH | 1.000      | 1.000      |
| 0650         | 620.0300 | Concrete Median Sloped Nose                                   | SF   | 125.000    | 125.000    |
| 0660         | 624.0100 | Water                                                         | MGAL | 30.000     | 30.000     |
| 0670         | 625.0500 | Salvaged Topsoil                                              | SY   | 1,310.000  | 1,310.000  |
| 0680         | 627.0200 | Mulching                                                      | SY   | 1,310.000  | 1,310.000  |
| 0690         | 628.1504 | Silt Fence                                                    | LF   | 505.000    | 505.000    |
| 0700         | 628.1520 | Silt Fence Maintenance                                        | LF   | 505.000    | 505.000    |
| 0710         | 628.1905 | Mobilizations Erosion Control                                 | EACH | 5.000      | 5.000      |
| 0720         | 628.1910 | Mobilizations Emergency Erosion Control                       | EACH | 5.000      | 5.000      |
| 0730         | 628.2002 | Erosion Mat Class I Type A                                    | SY   | 11,000.000 | 11,000.000 |
| 0740         | 628.2023 | Erosion Mat Class II Type B                                   | SY   | 1,130.000  | 1,130.000  |
| 0750         | 628.2039 | Erosion Mat Class III Type D                                  | SY   | 180.000    | 180.000    |
| 0760         | 628.7504 | Temporary Ditch Checks                                        | LF   | 135.000    | 135.000    |
| 0770         | 628.7555 | Culvert Pipe Checks                                           | EACH | 12.000     | 12.000     |
| 0780         | 629.0210 | Fertilizer Type B                                             | CWT  | 2.000      | 2.000      |
| 0790         | 630.0130 | Seeding Mixture No. 30                                        | LB   | 35.000     | 35.000     |
| 0800         | 633.0100 | Delineator Posts Steel                                        | EACH | 445.000    | 445.000    |
| 0810         | 633.0500 | Delineator Reflectors                                         | EACH | 640.000    | 640.000    |
| 0820         | 633.1000 | Delineator Brackets                                           | EACH | 115.000    | 115.000    |
| 0830         | 633.5200 | Markers Culvert End                                           | EACH | 51.000     | 51.000     |
| 0840         | 634.0612 | Posts Wood 4x6-Inch X 12-FT                                   | EACH | 35.000     | 35.000     |
| 0850         | 634.0614 | Posts Wood 4x6-Inch X 14-FT                                   | EACH | 32.000     | 32.000     |
| 0860         | 634.0616 | Posts Wood 4x6-Inch X 16-FT                                   | EACH | 80.000     | 80.000     |
| 0870         | 634.0808 | Posts Tubular Steel 2x2-Inch X 8-FT                           | EACH | 3.000      | 3.000      |
| 0880         | 634.0812 | Posts Tubular Steel 2x2-Inch X 12-FT                          | EACH | 1.000      | 1.000      |
| 0890         | 635.0200 | Sign Supports Structural Steel HS                             | LB   | 1,168.000  | 1,168.000  |
| 0900         | 636.0100 | Sign Supports Concrete Masonry                                | CY   | 2.400      | 2.400      |
| 0910         | 636.0500 | Sign Supports Steel Reinforcement                             | LB   | 136.000    | 136.000    |
| 0920         | 637.2210 | Signs Type II Reflective H                                    | SF   | 1,514.020  | 1,514.020  |
| 0930         | 637.2215 | Signs Type II Reflective H Folding                            | SF   | 25.900     | 25.900     |
| 0940         | 637.2230 | Signs Type II Reflective F                                    | SF   | 202.000    | 202.000    |
| 0950         | 638.2602 | Removing Signs Type II                                        | EACH | 105.000    | 105.000    |
| 0960         | 638.3000 | Removing Small Sign Supports                                  | EACH | 138.000    | 138.000    |
| 0970         | 642.5201 | Field Office Type C                                           | EACH | 1.000      | 1.000      |
| 0980         | 643.0100 | Traffic Control (project) 01. 4685-19-60                      | EACH | 1.000      | 1.000      |
| 0990         | 643.0300 | Traffic Control Drums                                         | DAY  | 16,800.000 | 16,800.000 |
| 1000         | 643.0420 | Traffic Control Barricades Type III                           | DAY  | 2,150.000  | 2,150.000  |

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| DATE 10JUN15 |            | E S T I M A T E O F Q U A N T I T I E S                                |      |             |             |
|--------------|------------|------------------------------------------------------------------------|------|-------------|-------------|
| LINE         |            |                                                                        |      | 4685-19-60  |             |
| NUMBER       | ITEM       | ITEM DESCRIPTION                                                       | UNIT | TOTAL       | QUANTITY    |
| 1010         | 643.0705   | Traffic Control Warning Lights Type A                                  | DAY  | 4,265.000   | 4,265.000   |
| 1020         | 643.0715   | Traffic Control Warning Lights Type C                                  | DAY  | 715.000     | 715.000     |
| 1030         | 643.0800   | Traffic Control Arrow Boards                                           | DAY  | 95.000      | 95.000      |
| 1040         | 643.0900   | Traffic Control Signs                                                  | DAY  | 2,030.000   | 2,030.000   |
| 1050         | 643.0910   | Traffic Control Covering Signs Type I                                  | EACH | 15.000      | 15.000      |
| 1060         | 643.0920   | Traffic Control Covering Signs Type II                                 | EACH | 50.000      | 50.000      |
| 1070         | 643.1050   | Traffic Control Signs PCMS                                             | DAY  | 60.000      | 60.000      |
| 1080         | 645.0120   | Geotextile Fabric Type HR                                              | SY   | 150.000     | 150.000     |
| 1090         | 646.0106   | Pavement Marking Epoxy 4-Inch                                          | LF   | 119,550.000 | 119,550.000 |
| 1100         | 646.0126   | Pavement Marking Epoxy 8-Inch                                          | LF   | 735.000     | 735.000     |
| 1110         | 646.0841.S | Pavement Marking Grooved Wet Reflective Contrast Tape 4-Inch           | LF   | 13,810.000  | 13,810.000  |
| 1120         | 646.0843.S | Pavement Marking Grooved Wet Reflective Contrast Tape 8-Inch           | LF   | 5,550.000   | 5,550.000   |
| 1130         | 647.0166   | Pavement Marking Arrows Epoxy Type 2                                   | EACH | 4.000       | 4.000       |
| 1140         | 647.0176   | Pavement Marking Arrows Epoxy Type 3                                   | EACH | 4.000       | 4.000       |
| 1150         | 647.0356   | Pavement Marking Words Epoxy                                           | EACH | 2.000       | 2.000       |
| 1160         | 647.0566   | Pavement Marking Stop Line Epoxy 18-Inch                               | LF   | 80.000      | 80.000      |
| 1170         | 647.0606   | Pavement Marking Island Nose Epoxy                                     | EACH | 15.000      | 15.000      |
| 1180         | 647.0766   | Pavement Marking Crosswalk Epoxy 6-Inch                                | LF   | 370.000     | 370.000     |
| 1190         | 647.0803   | Pavement Marking Aerial Enforcement Bars Epoxy 24-Inch                 | LF   | 168.000     | 168.000     |
| 1200         | 650.4000   | Construction Staking Storm Sewer                                       | EACH | 3.000       | 3.000       |
| 1210         | 650.8000   | Construction Staking Resurfacing Reference                             | LF   | 80,980.000  | 80,980.000  |
| 1220         | 650.8500   | Construction Staking Electrical Installations (project) 01. 4685-19-60 | LS   | 1.000       | 1.000       |
| 1230         | 652.0125   | Conduit Rigid Metallic 2-Inch                                          | LF   | 150.000     | 150.000     |
| 1240         | 652.0210   | Conduit Rigid Nonmetallic Schedule 40 1-Inch                           | LF   | 312.000     | 312.000     |
| 1250         | 652.0225   | Conduit Rigid Nonmetallic Schedule 40 2-Inch                           | LF   | 300.000     | 300.000     |
| 1260         | 652.0235   | Conduit Rigid Nonmetallic Schedule 40 3-Inch                           | LF   | 610.000     | 610.000     |
| 1270         | 652.0335   | Conduit Rigid Nonmetallic Schedule 80 3-Inch                           | LF   | 314.000     | 314.000     |
| 1280         | 652.0615   | Conduit Special 3-Inch                                                 | LF   | 520.000     | 520.000     |
| 1290         | 652.0700.S | Install Conduit into Existing Item                                     | EACH | 4.000       | 4.000       |
| 1300         | 652.0800   | Conduit Loop Detector                                                  | LF   | 764.000     | 764.000     |
| 1310         | 653.0105   | Pull Boxes Steel 12x24-Inch                                            | EACH | 6.000       | 6.000       |
| 1320         | 653.0140   | Pull Boxes Steel 24x42-Inch                                            | EACH | 9.000       | 9.000       |
| 1330         | 653.0900   | Adjusting Pull Boxes                                                   | EACH | 6.000       | 6.000       |
| 1340         | 653.0905   | Removing Pull Boxes                                                    | EACH | 4.000       | 4.000       |
| 1350         | 654.0101   | Concrete Bases Type 1                                                  | EACH | 5.000       | 5.000       |
| 1360         | 654.0102   | Concrete Bases Type 2                                                  | EACH | 5.000       | 5.000       |
| 1370         | 654.0110   | Concrete Bases Type 10                                                 | EACH | 5.000       | 5.000       |
| 1380         | 654.0113   | Concrete Bases Type 13                                                 | EACH | 7.000       | 7.000       |
| 1390         | 654.0217   | Concrete Control Cabinet Bases Type 9 Special                          | EACH | 1.000       | 1.000       |
| 1400         | 654.0220   | Concrete Control Cabinet Bases Type 10                                 | EACH | 1.000       | 1.000       |
| 1410         | 655.0230   | Cable Traffic Signal 5-14 AWG                                          | LF   | 8,490.000   | 8,490.000   |
| 1420         | 655.0240   | Cable Traffic Signal 7-14 AWG                                          | LF   | 2,110.000   | 2,110.000   |
| 1430         | 655.0260   | Cable Traffic Signal 12-14 AWG                                         | LF   | 4,190.000   | 4,190.000   |
| 1440         | 655.0305   | Cable Type UF 2-12 AWG Grounded                                        | LF   | 4,100.000   | 4,100.000   |
| 1450         | 655.0515   | Electrical Wire Traffic Signals 10 AWG                                 | LF   | 13,960.000  | 13,960.000  |

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| DATE 10JUN15 |          | E S T I M A T E O F Q U A N T I T I E S                  |      |            |            |
|--------------|----------|----------------------------------------------------------|------|------------|------------|
| LINE         |          |                                                          |      | 4685-19-60 |            |
| NUMBER       | ITEM     | ITEM DESCRIPTION                                         | UNIT | TOTAL      | QUANTITY   |
| 1460         | 655.0610 | Electrical Wire Lighting 12 AWG                          | LF   | 23,365.000 | 23,365.000 |
| 1470         | 655.0700 | Loop Detector Lead In Cable                              | LF   | 5,394.000  | 5,394.000  |
| 1480         | 655.0800 | Loop Detector Wire                                       | LF   | 2,798.000  | 2,798.000  |
| 1490         | 656.0200 | Electrical Service Meter Breaker                         | LS   | 1.000      | 1.000      |
|              |          | Pedestal (location) 01. Cth CE SB & Sth 441              |      |            |            |
| 1500         | 657.0100 | Pedestal Bases                                           | EACH | 7.000      | 7.000      |
| 1510         | 657.0255 | Transformer Bases Breakaway 11 1/2-Inch Bolt Circle      | EACH | 5.000      | 5.000      |
| 1520         | 657.0310 | Poles Type 3                                             | EACH | 1.000      | 1.000      |
| 1530         | 657.0315 | Poles Type 4                                             | EACH | 4.000      | 4.000      |
| 1540         | 657.0420 | Traffic Signal Standards Aluminum 13-FT                  | EACH | 4.000      | 4.000      |
| 1550         | 657.0425 | Traffic Signal Standards Aluminum 15-FT                  | EACH | 3.000      | 3.000      |
| 1560         | 657.0709 | Luminaire Arms Truss Type 4-Inch Clamp 12-FT             | EACH | 4.000      | 4.000      |
| 1570         | 657.1350 | Install Poles Type 10                                    | EACH | 5.000      | 5.000      |
| 1580         | 657.1360 | Install Poles Type 13                                    | EACH | 7.000      | 7.000      |
| 1590         | 657.1525 | Install Monotube Arms 25-FT                              | EACH | 1.000      | 1.000      |
| 1600         | 657.1530 | Install Monotube Arms 30-FT                              | EACH | 4.000      | 4.000      |
| 1610         | 657.1535 | Install Monotube Arms 35-FT                              | EACH | 2.000      | 2.000      |
| 1620         | 657.1540 | Install Monotube Arms 40-FT                              | EACH | 5.000      | 5.000      |
| 1630         | 657.1812 | Install Luminaire Arms Steel 12-FT                       | EACH | 16.000     | 16.000     |
| 1640         | 658.0110 | Traffic Signal Face 3-12 Inch Vertical                   | EACH | 32.000     | 32.000     |
| 1650         | 658.0115 | Traffic Signal Face 4-12 Inch Vertical                   | EACH | 8.000      | 8.000      |
| 1660         | 658.0215 | Backplates Signal Face 3 Section 12-Inch                 | EACH | 32.000     | 32.000     |
| 1670         | 658.0220 | Backplates Signal Face 4 Section 12-Inch                 | EACH | 8.000      | 8.000      |
| 1680         | 658.0416 | Pedestrian Signal Face 16-Inch                           | EACH | 2.000      | 2.000      |
| 1690         | 658.0500 | Pedestrian Push Buttons                                  | EACH | 2.000      | 2.000      |
| 1700         | 658.0600 | Led Modules 12-Inch Red Ball                             | EACH | 32.000     | 32.000     |
| 1710         | 658.0605 | Led Modules 12-Inch Yellow Ball                          | EACH | 32.000     | 32.000     |
| 1720         | 658.0610 | Led Modules 12-Inch Green Ball                           | EACH | 32.000     | 32.000     |
| 1730         | 658.0615 | Led Modules 12-Inch Red Arrow                            | EACH | 8.000      | 8.000      |
| 1740         | 658.0620 | Led Modules 12-Inch Yellow Arrow                         | EACH | 16.000     | 16.000     |
| 1750         | 658.0625 | Led Modules 12-Inch Green Arrow                          | EACH | 8.000      | 8.000      |
| 1760         | 658.0635 | Led Modules Pedestrian Countdown Timer 16-Inch           | EACH | 2.000      | 2.000      |
| 1770         | 658.5069 | Signal Mounting Hardware (location) 01. CTH 00 & STH 441 | LS   | 1.000      | 1.000      |
| 1780         | 658.5069 | Signal Mounting Hardware (location) 02. CTH CE & STH 441 | LS   | 1.000      | 1.000      |
| 1790         | 658.5069 | Signal Mounting Hardware (location) 03. CTH CE & STH 441 | LS   | 1.000      | 1.000      |
| 1800         | 659.1125 | Luminaires Utility LED C                                 | EACH | 20.000     | 20.000     |
| 1810         | 659.1130 | Luminaires Utility LED D                                 | EACH | 19.000     | 19.000     |
| 1820         | 670.0200 | ITS Documentation                                        | LS   | 1.000      | 1.000      |
| 1830         | 671.0132 | Conduit HDPE 3-Duct 2-Inch                               | LF   | 15,460.000 | 15,460.000 |
| 1840         | 671.0232 | Conduit HDPE Directional Bore 3-Duct 2-Inch              | LF   | 3,265.000  | 3,265.000  |
| 1850         | 671.0300 | Fiber Optic Cable Marker                                 | EACH | 77.000     | 77.000     |
| 1860         | 673.0105 | Communication Vault Type 1                               | EACH | 23.000     | 23.000     |
| 1870         | 678.0006 | Install Fiber Optic Cable Outdoor Plant 6-CT             | LF   | 420.000    | 420.000    |
| 1880         | 678.0072 | Install Fiber Optic Cable Outdoor Plant 72-CT            | LF   | 22,475.000 | 22,475.000 |
| 1890         | 678.0300 | Fiber Optic Splice                                       | EACH | 148.000    | 148.000    |
| 1900         | 678.0400 | Fiber Optic Termination                                  | EACH | 6.000      | 6.000      |

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| DATE 10JUN15 |          | E S T I M A T E O F Q U A N T I T I E S                  |      |            |           |
|--------------|----------|----------------------------------------------------------|------|------------|-----------|
| LINE         |          |                                                          |      | 4685-19-60 |           |
| NUMBER       | ITEM     | ITEM DESCRIPTION                                         | UNIT | TOTAL      | QUANTITY  |
| 1910         | 678.0500 | Communication System Testing                             | LS   | 1.000      | 1.000     |
| 1920         | 690.0150 | Sawing Asphalt                                           | LF   | 116.000    | 116.000   |
| 1930         | 690.0250 | Sawing Concrete                                          | LF   | 9,200.000  | 9,200.000 |
| 1940         | ASP.1T0A | On-the-Job Training Apprentice at \$5.00/HR              | HRS  | 2,000.000  | 2,000.000 |
| 1950         | ASP.1T0G | On-the-Job Training Graduate at \$5.00/HR                | HRS  | 1,320.000  | 1,320.000 |
| 1960         | SPV.0045 | Special 01. Temporary Crosswalk Access                   | DAY  | 10.000     | 10.000    |
| 1970         | SPV.0060 | Special 01. Abandon Concrete Base                        | EACH | 12.000     | 12.000    |
| 1980         | SPV.0060 | Special 02. Installing Pole Mounted Wired Cabinet        | EACH | 1.000      | 1.000     |
| 1990         | SPV.0060 | Special 03. Installing 2 Solar Panels On One Bracket     | EACH | 1.000      | 1.000     |
| 2000         | SPV.0060 | Special 04. Installing Wavetronix Click 200 Module       | EACH | 1.000      | 1.000     |
| 2010         | SPV.0060 | Special 05. Installing Wavetronix Detector Module        | EACH | 1.000      | 1.000     |
| 2020         | SPV.0060 | Special 06. Installing Concrete Maintenance Platform     | EACH | 1.000      | 1.000     |
| 2030         | SPV.0060 | Special 07. Resetting Culvert Pipe Joints                | EACH | 2.000      | 2.000     |
| 2040         | SPV.0060 | Special 08. Strapping B-44-0069                          | EACH | 2.000      | 2.000     |
| 2050         | SPV.0060 | Special 09. Strapping B-44-0070                          | EACH | 2.000      | 2.000     |
| 2060         | SPV.0060 | Special 10. Grading, Shaping, And Finishing For Atr Site | EACH | 1.000      | 1.000     |
| 2070         | SPV.0060 | Special 11. Remove 250W HPS Luminaire                    | EACH | 19.000     | 19.000    |
| 2080         | SPV.0090 | Special 01. Concrete Joint And Crack Cleaning            | LF   | 845.000    | 845.000   |
| 2090         | SPV.0105 | Special 01. Sth 441 Outfall At Fox River North Abutment  | LS   | 1.000      | 1.000     |
| 2100         | SPV.0105 | Special 02. Remove Traffic Signal STH 441 NB & CTH CE    | LS   | 1.000      | 1.000     |
| 2110         | SPV.0105 | Special 03. Removing Trafic Signals STH 441 & CTH 00     | LS   | 1.000      | 1.000     |
| 2120         | SPV.0105 | Special 04. Removing Traffic Signal STH 441 SB & CTH CE  | LS   | 1.000      | 1.000     |

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| CLEARING & GRUBBING |            |                      |               |                      |     |                              |
|---------------------|------------|----------------------|---------------|----------------------|-----|------------------------------|
|                     |            | 201.0105<br>CLEARING |               | 201.0205<br>GRUBBING |     |                              |
| CATEGORY            | STATION TO | STATION              | LOCATION      | STA                  | STA | REMARKS                      |
| 0010                | 501+00 -   | 505+00               | STH 441 NB RT | 4                    | 4   | TREES & SHRUBS IN CLEAR ZONE |
| 0010                | 532+00 -   | 534+00               | STH 441 NB RT | 2                    | 2   | SHRUBS IN CLEAR ZONE         |
| 0010                | 527+50 -   | 528+50               | STH 441 SB LT | 1                    | 1   | TREES GROWING OVER WALL      |
| 0010                | 530+00 -   | 531+00               | STH 441 SB LT | 1                    | 1   | TREES GROWING OVER WALL      |
| PROJECT 0010 TOTALS |            |                      |               | 8                    | 8   |                              |

| REMOVING PAVEMENT   |            |                               |                |    |  |                               |
|---------------------|------------|-------------------------------|----------------|----|--|-------------------------------|
|                     |            | 204.0100<br>REMOVING PAVEMENT |                |    |  |                               |
| CATEGORY            | STATION TO | STATION                       | LOCATION       | SY |  | REMARKS                       |
| 0010                | 486+70 -   | 487+00                        | CTH CE NW RAMP | 48 |  | SPLITTER ISLAND FOR CROSSWALK |
| PROJECT 0010 TOTALS |            |                               |                | 48 |  |                               |

| REMOVING PAVEMENT BUTT JOINTS |            |                                              |                |     |  |                              |
|-------------------------------|------------|----------------------------------------------|----------------|-----|--|------------------------------|
|                               |            | 204.0105<br>REMOVING PAVEMENT<br>BUTT JOINTS |                |     |  |                              |
| CATEGORY                      | STATION TO | STATION                                      | LOCATION       | SY  |  | REMARKS                      |
| 0010                          | 590+88 -   | 591+08                                       | CTH 00 SE RAMP | 125 |  | EAST SIDE OF SPLITTER ISLAND |
| 0010                          | 590+88 -   | 591+08                                       | CTH 00 SE RAMP | 58  |  | WEST SIDE OF SPLITTER ISLAND |
| 0010                          | 591+59 -   | 591+79                                       | CTH 00 SW RAMP | 87  |  | WEST SIDE OF SPLITTER ISLAND |
| 0010                          | 591+70 -   | 591+90                                       | CTH 00 NE RAMP | 187 |  |                              |
| 0010                          | 591+75 -   | 591+95                                       | CTH 00 SW RAMP | 87  |  | EAST SIDE OF SPLITTER ISLAND |
| 0010                          | 592+00 -   | 592+20                                       | CTH 00 NW RAMP | 47  |  | EAST SIDE OF SPLITTER ISLAND |
| 0010                          | 592+00 -   | 592+20                                       | CTH 00 NW RAMP | 47  |  | WEST SIDE OF SPLITTER ISLAND |
| 0010                          | 691+27 -   | 691+47                                       | CTH 00 EB      | 96  |  |                              |
| 0010                          | 691+36 -   | 691+56                                       | CTH 00 WB      | 89  |  |                              |
| 0010                          | 697+63 -   | 697+83                                       | CTH 00 WB      | 80  |  |                              |
| 0010                          | 698+14 -   | 698+34                                       | CTH 00 EB      | 92  |  |                              |
| PROJECT 0010 TOTALS           |            |                                              |                | 995 |  |                              |

| REMOVING CONCRETE SIDEWALK |            |                                           |                   |     |  |                                                        |
|----------------------------|------------|-------------------------------------------|-------------------|-----|--|--------------------------------------------------------|
|                            |            | 204.0155<br>REMOVING CONCRETE<br>SIDEWALK |                   |     |  |                                                        |
| CATEGORY                   | STATION TO | STATION                                   | LOCATION          | SY  |  | REMARKS                                                |
| 0010                       | 92+39 -    | 92+45                                     | CTH CE MEDIAN     | 5   |  | SIDEWALK BY WEST MEDIAN NOSE                           |
| 0010                       | 486+60 -   | 486+84                                    | CTH CE NW RAMP RT | 16  |  | FOR DETECTABLE WARNING FIELD                           |
| 0010                       | 486+57 -   | 486+78                                    | CTH CE NE RAMP LT | 16  |  | FOR DETECTABLE WARNING FIELD                           |
| 0010                       | 486+57 -   | 486+78                                    | CTH CE NE RAMP RT | 16  |  | DETECTABLE WARNING FIELD, WEST SIDE OF SPLITTER ISLAND |
| 0010                       | 486+57 -   | 486+78                                    | CTH CE NE RAMP LT | 35  |  | DETECTABLE WARNING FIELD, EAST SIDE OF SPLITTER ISLAND |
| 0010                       | 694+83 -   | 695+32                                    | CTH 00 MEDIAN     | 46  |  | AROUND BRIDGE PIERS                                    |
| 0010                       | 692+89 -   | 693+13                                    | CTH 00 MEDIAN     | 16  |  | SIDEWALK BY WEST MEDIAN NOSE                           |
| 0010                       | 696+33 -   | 696+41                                    | CTH 00 MEDIAN     | 10  |  | SIDEWALK BY EAST MEDIAN NOSE                           |
| PROJECT 0010 TOTALS        |            |                                           |                   | 160 |  |                                                        |

| REMOVING CURB & GUTTER |            |                                       |                   |     |  |                                     |
|------------------------|------------|---------------------------------------|-------------------|-----|--|-------------------------------------|
|                        |            | 204.0150<br>REMOVING CURB<br>& GUTTER |                   |     |  |                                     |
| CATEGORY               | STATION TO | STATION                               | LOCATION          | LF  |  | REMARKS                             |
| 0010                   | 91+31 -    | 91+45                                 | CTH CE EB LT      | 14  |  | 30-INCH TYPE A                      |
| 0010                   | 91+50 -    | 91+75                                 | CTH CE WB RT      | 25  |  | 30-INCH TYPE A                      |
| 0010                   | 92+51 -    | 92+58                                 | CTH CE EB LT      | 7   |  | INTEGRAL CURB AND GUTTER            |
| 0010                   | 95+08 -    | 95+39                                 | CTH CE WB RT      | 31  |  | 30-INCH TYPE A                      |
| 0010                   | 95+10 -    | 95+18                                 | CTH CE EB LT      | 8   |  | INTEGRAL CURB AND GUTTER            |
| 0010                   | 96+13 -    | 96+19                                 | CTH CE EB LT      | 6   |  | INTEGRAL CURB AND GUTTER            |
| 0010                   | 97+53 -    | 97+61                                 | CTH CE EB LT      | 8   |  | INTEGRAL CURB AND GUTTER            |
| 0010                   | 97+67 -    | 97+75                                 | CTH CE WB RT      | 8   |  | 30-INCH TYPE A                      |
| 0010                   | 97+98 -    | 98+07                                 | CTH CE EB LT      | 9   |  | INTEGRAL CURB AND GUTTER            |
| 0010                   | 98+37 -    | 98+57                                 | CTH CE EB LT      | 20  |  | 30-INCH TYPE A                      |
| 0010                   | 486+08 -   | 486+36                                | CTH CE SW RAMP LT | 33  |  | 36-INCH TYPE A                      |
| 0010                   | 486+57 -   | 486+78                                | CTH CE NE RAMP LT | 33  |  | 30-INCH TYPE A                      |
| 0010                   | 486+57 -   | 486+78                                | CTH CE NE RAMP RT | 15  |  | WEST SIDE OF SPLITTER ISLAND        |
| 0010                   | 486+57 -   | 486+82                                | CTH CE NE RAMP LT | 25  |  | EAST SIDE OF SPLITTER ISLAND        |
| 0010                   | 486+98 -   | 487+08                                | CTH CE NE RAMP RT | 15  |  | 36-INCH TYPE A AT TRAIL             |
| 0010                   | 486+60 -   | 486+84                                | CTH CE NW RAMP RT | 33  |  | 30-INCH TYPE A                      |
| 0010                   | 487+00 -   | 487+28                                | CTH CE NE RAMP LT | 30  |  | EAST SIDE OF SPLITTER ISLAND        |
| 0010                   | 487+08 -   | 487+14                                | CTH CE NE RAMP RT | 6   |  | WEST SIDE OF SPLITTER ISLAND        |
| 0010                   | 487+15 -   | 487+35                                | CTH CE NE RAMP RT | 20  |  | 36-INCH TYPE A                      |
| 0010                   | 590+26 -   | 590+55                                | CTH 00 SE RAMP LT | 29  |  | EAST SIDE OF SPLITTER ISLAND        |
| 0010                   | 590+26 -   | 590+55                                | CTH 00 SE RAMP LT | 29  |  | WEST SIDE OF SPLITTER ISLAND        |
| 0010                   | 590+91 -   | 590+91                                | CTH 00 SE RAMP LT | 31  |  | FACE OF SPLITTER ISLAND             |
| 0010                   | 591+07 -   | 591+13                                | CTH 00 SW RAMP LT | 6   |  | 30-INCH TYPE A                      |
| 0010                   | 591+42 -   | 591+51                                | CTH 00 SW RAMP RT | 9   |  | WEST SIDE OF SPLITTER ISLAND        |
| 0010                   | 591+89 -   | 591+89                                | CTH 00 SW RAMP RT | 42  |  | FACE OF SPLITTER ISLAND             |
| 0010                   | 591+92 -   | 592+40                                | CTH 00 NE RAMP RT | 83  |  | 36-INCH TYPE A                      |
| 0010                   | 592+01 -   | 592+11                                | CTH 00 NW RAMP RT | 9   |  | SOUTHWEST CORNER OF SPLITTER ISLAND |
| 0010                   | 592+14 -   | 592+47                                | CTH 00 NW RAMP RT | 33  |  | WEST SIDE OF SPLITTER ISLAND        |
| 0010                   | 592+19 -   | 592+47                                | CTH 00 NW RAMP LT | 28  |  | EAST SIDE OF SPLITTER ISLAND        |
| 0010                   | 691+50 -   | 692+92                                | CTH 00 EB RT      | 42  |  | 18-INCH TYPE A                      |
| 0010                   | 691+67 -   | 691+88                                | CTH 00 EB LT      | 21  |  | 18-INCH TYPE A                      |
| 0010                   | 693+70 -   | 693+95                                | CTH 00 WB RT      | 25  |  | 18-INCH TYPE A                      |
| 0010                   | 693+90 -   | 694+01                                | CTH 00 EB LT      | 12  |  | 18-INCH TYPE A                      |
| 0010                   | 695+05 -   | 695+54                                | CTH 00 WB RT      | 50  |  | 18-INCH TYPE A                      |
| 0010                   | 697+44 -   | 697+53                                | CTH 00 WB RT      | 24  |  | 18-INCH TYPE A                      |
| 0010                   | 697+45 -   | 697+50                                | CTH 00 EB LT      | 20  |  | 18-INCH TYPE A                      |
| 0010                   | 697+68 -   | 698+19                                | CTH 00 EB RT      | 51  |  | 36-INCH TYPE A                      |
| PROJECT 0010 TOTALS    |            |                                       |                   | 890 |  |                                     |
| 0020                   | 486+60 -   | 486+80                                | CTH CE NW RAMP LT | 55  |  | 36-INCH TYPE A AT TRAIL             |
| PROJECT 0020 TOTALS    |            |                                       |                   | 55  |  |                                     |

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REMOVING CONCRETE SLOPE PAVING

| 204.0175<br>REMOVING<br>CONCRETE SLOPE<br>PAVING |         |    |         |              |     |                     |
|--------------------------------------------------|---------|----|---------|--------------|-----|---------------------|
| CATEGORY                                         | STATION | TO | STATION | LOCATION     | SY  | REMARKS             |
| 0010                                             | 694+88  | -  | 695+31  | CTH 00 WB LT | 170 | B-44-128 N ABUTMENT |
| 0010                                             | 695+55  | -  | 695+99  | CTH 00 WB LT | 170 | B-44-127 N ABUTMENT |
| PROJECT 0010 TOTALS                              |         |    |         |              | 340 |                     |

REMOVING INLETS

| 204.0220<br>REMOVING INLETS |         |    |         |                |      |                                     |
|-----------------------------|---------|----|---------|----------------|------|-------------------------------------|
| CATEGORY                    | STATION | TO | STATION | LOCATION       | EACH | REMARKS                             |
| 0010                        | 614+00  | -  | 614+05  | STH 441 MEDIAN | 1    | NORTH SIDE OF MAINTENANCE CROSSOVER |
| PROJECT 0010 TOTALS         |         |    |         |                | 1    |                                     |

BORROW \*\*p\*\*

| 208.0100<br>BORROW<br>**p** |         |    |         |                               |     |                           |
|-----------------------------|---------|----|---------|-------------------------------|-----|---------------------------|
| CATEGORY                    | STATION | TO | STATION | LOCATION                      | CY  | REMARKS                   |
| 0010                        | 375+00  | -  | 375+35  | STH 441 MAINTENANCE CROSSOVER | 5   | NORTH SIDE SLOPE          |
| 0010                        | 464+45  | -  | 465+50  | STH 441 MAINTENANCE CROSSOVER | 95  | NORTH SIDE SLOPE          |
| 0010                        | 613+25  | -  | 614+23  | STH 441 MAINTENANCE CROSSOVER | 235 | NORTH & SOUTH SIDE SLOPES |
| PROJECT 0010 TOTALS         |         |    |         |                               | 335 |                           |

CONCRETE SHOULDER RUMBLE STRIP

| 416.1110<br>CONCRETE<br>SHOULDER RUMBLE<br>STRIP |         |    |         |            |       |
|--------------------------------------------------|---------|----|---------|------------|-------|
| CATEGORY                                         | STATION | TO | STATION | LOCATION   | LF    |
| 0010                                             | 506+00  | -  | 548+48  | STH 441 NB | 4248  |
| 0010                                             | 565+00  | -  | 590+48  | STH 441 NB | 2548  |
| 0010                                             | 506+57  | -  | 548+48  | STH 441 SB | 4191  |
| 0010                                             | 565+00  | -  | 590+48  | STH 441 SB | 2548  |
| PROJECT 0010 TOTALS                              |         |    |         |            | 13535 |

BASE AGGREGATE

| 305.0120<br>305.0110<br>BASE AGGREGATE<br>DENSE 3/4-INCH<br>305.0500<br>BASE AGGREGATE<br>DENSE<br>1 1/4-INCH<br>305.0500<br>SHAPING<br>SHOULDERS |         |    |         |              |      |     |      |
|---------------------------------------------------------------------------------------------------------------------------------------------------|---------|----|---------|--------------|------|-----|------|
| CATEGORY                                                                                                                                          | STATION | TO | STATION | LOCATION     | TON  | TON | STA  |
| 0010                                                                                                                                              | 337+69  | -  | 499+60  | STH 441 NB   | 1125 | -   | 324  |
| 0010                                                                                                                                              | 337+69  | -  | 499+60  | STH 441 SB   | 1125 | -   | 324  |
| 0010                                                                                                                                              | 499+60  | -  | 506+62  | STH 441 NB   | 60   | -   | 14   |
| 0010                                                                                                                                              | 499+60  | -  | 506+62  | STH 441 SB   | 50   | -   | 14   |
| 0010                                                                                                                                              | 506+62  | -  | 517+20  | STH 441 NB   | 30   | -   | 11   |
| 0010                                                                                                                                              | 506+62  | -  | 519+24  | STH 441 SB   | 35   | -   | 13   |
| 0010                                                                                                                                              | 548+48  | -  | 590+63  | STH 441 NB   | 120  | -   | 43   |
| 0010                                                                                                                                              | 548+48  | -  | 590+63  | STH 441 SB   | 120  | -   | 43   |
| 0010                                                                                                                                              | 590+63  | -  | 648+08  | STH 441 NB   | 320  | -   | 115  |
| 0010                                                                                                                                              | 590+63  | -  | 641+82  | STH 441 SB   | 355  | -   | 103  |
| 0010                                                                                                                                              | 426+00  | -  | 438+90  | KK NW RAMP   | 40   | -   | 13   |
| 0010                                                                                                                                              | 407+00  | -  | 423+00  | KK SW RAMP   | 115  | -   | 32   |
| 0010                                                                                                                                              | 408+50  | -  | 426+00  | KK SE RAMP   | 50   | -   | 18   |
| 0010                                                                                                                                              | 425+45  | -  | 449+75  | KK NE RAMP   | 70   | -   | 25   |
| 0010                                                                                                                                              | 472+64  | -  | 486+00  | CE SW RAMP   | 20   | -   | 14   |
| 0010                                                                                                                                              | 486+00  | -  | 500+00  | CE NW RAMP   | 40   | -   | 28   |
| 0010                                                                                                                                              | 473+30  | -  | 485+50  | CE SE RAMP   | 20   | -   | 13   |
| 0010                                                                                                                                              | 487+00  | -  | 500+00  | CE NE RAMP   | 20   | -   | 13   |
| 0010                                                                                                                                              | 592+25  | -  | 603+00  | 00 NW RAMP   | 15   | -   | 11   |
| 0010                                                                                                                                              | 592+00  | -  | 604+00  | 00 NE RAMP   | 20   | -   | 12   |
| 0010                                                                                                                                              | 577+00  | -  | 590+75  | 00 SE RAMP   | 20   | -   | 14   |
| 0010                                                                                                                                              | 91+66   | -  | 97+10   | CTH CE EB    | 60   | -   | 6    |
| 0010                                                                                                                                              | 347+75  | -  | 348+00  | STH 441 SB   | -    | 32  | -    |
| 0010                                                                                                                                              | 348+60  | -  | 349+00  | STH 441 NB   | -    | 52  | -    |
| 0010                                                                                                                                              | 508+10  | -  | 508+50  | STH 441 SB   | -    | 44  | -    |
| 0010                                                                                                                                              | 509+60  | -  | 510+00  | STH 441 NB   | -    | 52  | -    |
| PROJECT 0010 TOTALS                                                                                                                               |         |    |         |              | 3830 | 180 | 1203 |
| 0020                                                                                                                                              | 91+45   | -  | 91+00   | CTH CE TRAIL | 20   | -   | -    |
| PROJECT 0020 TOTALS                                                                                                                               |         |    |         |              | 20   | 0   | 0    |

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HMA PAVEMENT ITEMS

|                        |        |   |        |                | 204.0110  | 204.0115  | 204.0120  | 211.0400      | 455.0105  | 455.0605  | 460.1100     | 460.1101     | 465.0105  | 465.0110  | 650.8000     | 690.0150 |                         |
|------------------------|--------|---|--------|----------------|-----------|-----------|-----------|---------------|-----------|-----------|--------------|--------------|-----------|-----------|--------------|----------|-------------------------|
|                        |        |   |        |                | REMOVING  | REMOVING  | REMOVING  | PREPARE       | ASPHLATIC | TACK COAT | HMA PAVEMENT | HMA PAVEMENT | ASPHALTIC | ASPHALTIC | CONSTRUCTION | SAWING   |                         |
|                        |        |   |        |                | ASPHALTIC | ASPHALTIC | ASPHALTIC | FOUNDATION    | MATERIAL  |           | TYPE E-0.3   | TYPE E-1     | SURFACE   | SURFACE   | STAKING      | ASPHALT  |                         |
|                        |        |   |        |                | SURFACE   | SURFACE   | SURFACE   | FOR ASPHALTIC | PG58-28   |           |              |              |           | PATCHING  | RESURFACING  |          |                         |
|                        |        |   |        |                | SY        | SY        | SY        | SHOULDERS     | AT 5.5%   | GAL       | TON          | TON          | TON       | TON       | REFERENCE    | LF       | REMARKS                 |
| 0010                   | 337+69 | - | 390+50 | STH 441 NB     | -         | 4.0       | 5281      | 106           | 52        | -         | 925          | -            | -         | -         | 10665        | 10       | RT & LT                 |
| 0010                   | 337+69 | - | 390+50 | STH 441 SB     | -         | 4.0       | 5281      | 106           | 52        | -         | 925          | -            | -         | -         | 10665        | 10       | RT & LT                 |
| 0010                   | 398+00 | - | 421+50 | STH 441 NB     | -         | 1.3       | 784       | 24            | 8         | -         | 137          | -            | -         | -         | 2550         | -        | LT                      |
| 0010                   | 398+00 | - | 421+00 | STH 441 SB     | -         | 3.0       | 1533      | 23            | 7         | -         | 135          | -            | -         | -         | 2500         | -        | RT                      |
| 0010                   | 413+42 | - | 421+50 | STH 441 NB     | -         | 1.3       | 540       | 8             | 5         | -         | 95           | -            | -         | -         | 850          | -        | RT                      |
| 0010                   | 411+97 | - | 421+00 | STH 441 SB     | -         | 1.0       | 301       | 9             | 6         | -         | 105          | -            | -         | -         | 912          | -        | LT                      |
| 0010                   | 429+30 | - | 436+75 | STH 441 NB     | -         | 1.3       | 500       | 7             | 5         | -         | 87           | -            | -         | -         | 475          | -        | RT                      |
| 0010                   | 429+30 | - | 435+96 | STH 441 SB     | -         | 1.0       | 225       | 7             | 4         | -         | 78           | -            | -         | -         | 670          | -        | LT                      |
| 0010                   | 429+30 | - | 482+50 | STH 441 NB     | -         | 1.3       | 1526      | 53            | 17        | -         | 310          | -            | -         | -         | 5350         | -        | LT                      |
| 0010                   | 429+30 | - | 482+50 | STH 441 SB     | -         | 3.0       | 3000      | 53            | 17        | -         | 310          | -            | -         | -         | 5350         | -        | RT                      |
| 0010                   | 450+09 | - | 463+64 | STH 441 SB     | -         | 1.0       | 452       | 14            | 9         | -         | 158          | -            | -         | -         | 1355         | -        | LT                      |
| 0010                   | 458+51 | - | 471+01 | STH 441 NB     | -         | 3.0       | 833       | 13            | 8         | -         | 146          | -            | -         | -         | 1250         | -        | RT                      |
| 0010                   | 475+80 | - | 482+50 | STH 441 NB     | -         | 1.3       | 447       | 7             | 4         | -         | 78           | -            | -         | -         | 670          | -        | RT                      |
| 0010                   | 476+63 | - | 482+50 | STH 441 SB     | -         | 1.0       | 196       | 6             | 4         | -         | 69           | -            | -         | -         | 560          | -        | LT                      |
| 0010                   | 490+30 | - | 496+45 | STH 441 NB     | -         | 1.3       | 410       | 6             | 4         | -         | 72           | -            | -         | -         | 615          | -        | RT                      |
| 0010                   | 490+30 | - | 495+83 | STH 441 SB     | -         | 1.0       | 184       | 6             | 4         | -         | 65           | -            | -         | -         | 555          | -        | LT                      |
| 0010                   | 490+30 | - | 506+00 | STH 441 NB     | -         | 1.3       | 523       | 16            | 5         | -         | 92           | -            | -         | -         | 1570         | -        | LT                      |
| 0010                   | 490+30 | - | 506+62 | STH 441 SB     | -         | 3.0       | 1088      | 16            | 5         | -         | 95           | -            | -         | -         | 1635         | -        | RT                      |
| 0010                   | 500+22 | - | 518+60 | STH 441 SB     | -         | 1.0       | 613       | 18            | 12        | -         | 214          | -            | -         | -         | 1838         | -        | LT                      |
| 0010                   | 509+00 | - | 516+85 | STH 441 NB     | -         | 3.0       | 523       | 8             | 5         | -         | 92           | -            | -         | -         | 785          | -        | RT                      |
| 0010                   | 567+80 | - | 570+00 | STH 441 SB     | -         | 1.3       | 73        | 2             | 1         | -         | 26           | -            | -         | -         | 220          | -        | LT                      |
| 0010                   | 567+80 | - | 574+87 | STH 441 NB     | -         | 3.0       | 471       | 7             | 5         | -         | 82           | -            | -         | -         | 710          | -        | RT                      |
| 0010                   | 579+40 | - | 587+65 | STH 441 NB     | -         | 1.3       | 550       | 8             | 5         | -         | 96           | -            | -         | -         | 825          | -        | RT                      |
| 0010                   | 582+55 | - | 587+60 | STH 441 SB     | -         | 1.0       | 168       | 5             | 3         | -         | 59           | -            | -         | -         | 505          | -        | LT                      |
| 0010                   | 595+50 | - | 599+60 | STH 441 NB     | -         | 1.3       | 273       | 4             | 3         | -         | 48           | -            | -         | -         | 410          | -        | RT                      |
| 0010                   | 595+50 | - | 600+35 | STH 441 SB     | -         | 1.3       | 323       | 5             | 2         | -         | 28           | -            | -         | -         | 485          | -        | RT                      |
| 0010                   | 595+50 | - | 604+00 | STH 441 NB     | -         | 1.3       | 283       | 9             | 5         | -         | 99           | -            | -         | -         | 850          | -        | LT                      |
| 0010                   | 595+50 | - | 626+95 | STH 441 SB     | -         | 3.0       | 2099      | 31            | 10        | -         | 183          | -            | -         | -         | 3145         | -        | RT                      |
| 0010                   | 604+67 | - | 609+81 | STH 441 SB     | -         | 1.5       | 172       | 5             | 3         | -         | 60           | -            | -         | -         | 515          | -        | LT                      |
| 0010                   | 621+04 | - | 626+95 | STH 441 NB     | -         | 1.5       | 396       | 6             | 4         | -         | 69           | -            | -         | -         | 595          | -        | RT                      |
| 0010                   | 622+25 | - | 626+95 | STH 441 SB     | -         | 1.0       | 157       | 5             | 3         | -         | 55           | -            | -         | -         | 470          | -        | LT                      |
| 0010                   | 623+00 | - | 626+95 | STH 441 NB     | -         | 1.5       | 132       | 4             | 3         | -         | 46           | -            | -         | -         | 395          | -        | LT                      |
| 0010                   | 347+75 | - | 348+00 | STH 441 SB     | -         | -         | -         | -             | -         | -         | -            | -            | 14        | -         | 25           | -        | TRAFFIC ENFORCEMENT PAD |
| 0010                   | 348+60 | - | 349+00 | STH 441 NB     | -         | -         | -         | -             | -         | -         | -            | -            | 22        | -         | 40           | -        | TRAFFIC ENFORCEMENT PAD |
| 0010                   | 508+10 | - | 508+50 | STH 441 SB     | -         | -         | -         | -             | -         | -         | -            | -            | 22        | -         | 40           | -        | TRAFFIC ENFORCEMENT PAD |
| 0010                   | 509+60 | - | 510+00 | STH 441 NB     | -         | -         | -         | -             | -         | -         | -            | -            | 18        | -         | 40           | -        | TRAFFIC ENFORCEMENT PAD |
| 0010                   | 398+00 | - | 423+00 | CTH KK SW RAMP | -         | 2.5       | 1389      | 25            | 13        | -         | 237          | -            | -         | -         | 1645         | 5        | LT                      |
| 0010                   | 407+00 | - | 423+44 | CTH KK SW RAMP | -         | 1.0       | 548       | 17            | 5         | -         | 96           | -            | -         | -         | 2440         | 3        | RT                      |
| 0010                   | 408+50 | - | 425+85 | CTH KK SE RAMP | -         | 1.0       | 578       | 18            | 6         | -         | 101          | -            | -         | -         | 1735         | 3        | LT                      |
| 0010                   | 425+45 | - | 449+75 | CTH KK NE RAMP | -         | 1.0       | 810       | 25            | 8         | -         | 142          | -            | -         | -         | 1290         | 3        | LT                      |
| 0010                   | 426+00 | - | 438+90 | CTH KK NW RAMP | -         | 1.0       | 430       | 13            | 4         | -         | 75           | -            | -         | -         | 2430         | 3        | RT                      |
| 0010                   | 407+00 | - | 411+97 | CTH KK SW RAMP | -         | -         | 467       | 5             | 11        | -         | 195          | -            | -         | -         | -            | -        | GORE AREA               |
| 0010                   | 410+60 | - | 413+42 | CTH KK SE RAMP | -         | -         | 396       | 4             | 9         | -         | 146          | -            | -         | -         | -            | -        | GORE AREA               |
| 0010                   | 435+96 | - | 437+25 | CTH KK NW RAMP | -         | -         | 172       | 3             | 2         | -         | 25           | -            | -         | -         | -            | -        | GORE AREA               |
| 0010                   | 436+75 | - | 449+75 | CTH KK NE RAMP | -         | -         | 645       | 14            | 10        | -         | 170          | -            | -         | -         | -            | -        | GORE AREA               |
| PROJECT 0010 SUBTOTALS |        |   |        |                | 0         | 63.6      | 34772     | 721           | 348       | 0         | 6226         | 0            | 76        | 0         | 69630        | 37       | 0                       |

PROJECT NO: 4685-19-60

HWY: STH 441

COUNTY: CALUMET & OUTAGAMIE

MISCELLANEOUS QUANTITIES

SHEET: 79

E

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| HMA PAVEMENT ITEMS (CONTINUED) |         |    |         |                |                                        |                                                       |                                                   |                                                            |                                                 |          |                   |                 |                             |                                         |                                                           |          |  |           |
|--------------------------------|---------|----|---------|----------------|----------------------------------------|-------------------------------------------------------|---------------------------------------------------|------------------------------------------------------------|-------------------------------------------------|----------|-------------------|-----------------|-----------------------------|-----------------------------------------|-----------------------------------------------------------|----------|--|-----------|
| CATEGORY                       | STATION | TO | STATION | LOCATION       | 204.0110                               | 204.0115                                              | 204.0120                                          | 211.0400                                                   | 455.0105                                        | 455.0605 | 460.1100          | 460.1101        | 465.0105                    | 465.0110                                | 650.8000                                                  | 690.0150 |  | REMARKS   |
|                                |         |    |         |                | REMOVING<br>ASPHALTIC<br>SURFACE<br>SY | REMOVING<br>ASPHALTIC<br>SURFACE BUTT<br>JOINTS<br>SY | REMOVING<br>ASPHALTIC<br>SURFACE<br>MILLING<br>SY | PREPARE<br>FOUNDATION<br>FOR ASPHALTIC<br>SHOULDERS<br>STA | ASPHLATIC<br>MATERIAL PG58-28<br>AT 5.5%<br>TON |          | TYPE E-0.3<br>TON | TYPE E-1<br>TON | ASPHALTIC<br>SURFACE<br>TON | ASPHALTIC<br>SURFACE<br>PATCHING<br>TON | CONSTRUCTION<br>STAKING<br>RESURFACING<br>REFERENCE<br>LF |          |  |           |
| 0010                           | 473+30  | -  | 485+50  | CTH CE SE RAMP | -                                      | 1.0                                                   | 407                                               | 13                                                         | 4                                               | -        | 71                | -               | -                           | -                                       | 1220                                                      | 3        |  | LT        |
| 0010                           | 472+63  | -  | 486+00  | CTH CE SW RAMP | -                                      | 1.0                                                   | 446                                               | 14                                                         | 4                                               | -        | 78                | -               | -                           | -                                       | 1340                                                      | 3        |  | RT        |
| 0010                           | 486+00  | -  | 500+22  | CTH CE NW RAMP | -                                      | 1.0                                                   | 790                                               | 15                                                         | 8                                               | -        | 138               | -               | -                           | -                                       | 1195                                                      | 5        |  | LT        |
| 0010                           | 486+00  | -  | 497+95  | CTH CE NW RAMP | -                                      | 1.0                                                   | 398                                               | 12                                                         | 4                                               | -        | 70                | -               | -                           | -                                       | 1425                                                      | 3        |  | RT        |
| 0010                           | 487+00  | -  | 500+00  | CTH CE NE RAMP | -                                      | 1.0                                                   | 433                                               | 13                                                         | 4                                               | -        | 76                | -               | -                           | -                                       | 1300                                                      | 3        |  | LT        |
| 0010                           | 472+64  | -  | 476+63  | CTH CE SW RAMP | -                                      | -                                                     | 531                                               | 5                                                          | 9                                               | -        | 161               | -               | -                           | -                                       | -                                                         | -        |  | GORE AREA |
| 0010                           | 473+30  | -  | 475+65  | CTH CE SE RAMP | -                                      | -                                                     | 306                                               | 3                                                          | 4                                               | -        | 56                | -               | -                           | -                                       | -                                                         | -        |  | GORE AREA |
| 0010                           | 495+83  | -  | 497+95  | CTH CE NW RAMP | -                                      | -                                                     | 259                                               | 3                                                          | 3                                               | -        | 50                | -               | -                           | -                                       | -                                                         | -        |  | GORE AREA |
| 0010                           | 496+45  | -  | 500+00  | CTH CE NE RAMP | -                                      | -                                                     | 244                                               | 4                                                          | 9                                               | -        | 146               | -               | -                           | -                                       | -                                                         | -        |  | GORE AREA |
| 0010                           | 577+00  | -  | 590+75  | CTH 00 SE RAMP | -                                      | 1.0                                                   | 458                                               | 14                                                         | 4                                               | -        | 80                | -               | -                           | -                                       | 1375                                                      | 3        |  | LT        |
| 0010                           | 592+00  | -  | 604+00  | CTH 00 NE RAMP | -                                      | 1.0                                                   | 400                                               | 12                                                         | 3                                               | -        | 63                | -               | -                           | -                                       | 1075                                                      | 3        |  | LT        |
| 0010                           | 592+25  | -  | 603+00  | CTH 00 NW RAMP | -                                      | 1.0                                                   | 358                                               | 11                                                         | 4                                               | -        | 70                | -               | -                           | -                                       | 1200                                                      | 3        |  | RT        |
| 0010                           | 577+00  | -  | 579+40  | CTH 00 SE RAMP | -                                      | -                                                     | 285                                               | 3                                                          | 3                                               | -        | 36                | -               | -                           | -                                       | -                                                         | -        |  | GORE AREA |
| 0010                           | 579+00  | -  | 582+55  | CTH 00 SW RAMP | -                                      | -                                                     | 355                                               | 4                                                          | 6                                               | -        | 97                | -               | -                           | -                                       | -                                                         | -        |  | GORE AREA |
| 0010                           | 599+60  | -  | 604+00  | CTH 00 NE RAMP | -                                      | -                                                     | 485                                               | 5                                                          | 9                                               | -        | 146               | -               | -                           | -                                       | -                                                         | -        |  | GORE AREA |
| 0010                           | 600+35  | -  | 602+45  | CTH 00 NW RAMP | -                                      | -                                                     | 260                                               | 3                                                          | 2                                               | -        | 25                | -               | -                           | -                                       | -                                                         | -        |  | GORE AREA |
| 0010                           | 618+60  | -  | 621+04  | USH 41 SE RAMP | -                                      | -                                                     | 298                                               | 4                                                          | 4                                               | -        | 65                | -               | -                           | -                                       | -                                                         | -        |  | GORE AREA |
| 0010                           | 618+80  | -  | 622+25  | USH 41 SW RAMP | -                                      | -                                                     | 335                                               | 5                                                          | 5                                               | -        | 90                | -               | -                           | -                                       | -                                                         | -        |  | GORE AREA |
| 0010                           | 691+67  | -  | 691+79  | CTH 00 EB      | -                                      | -                                                     | -                                                 | -                                                          | -                                               | -        | -                 | -               | -                           | 3                                       | -                                                         | -        |  |           |
| 0010                           | 691+41  | -  | 691+92  | CTH 00 EB      | -                                      | -                                                     | -                                                 | -                                                          | -                                               | -        | -                 | -               | -                           | 4                                       | -                                                         | -        |  |           |
| 0010                           | 692+88  | -  | 692+94  | CTH 00 EB      | -                                      | -                                                     | -                                                 | -                                                          | -                                               | -        | -                 | -               | -                           | 2                                       | -                                                         | -        |  |           |
| 0010                           | 693+05  | -  | 693+14  | CTH 00 EB      | -                                      | -                                                     | -                                                 | -                                                          | -                                               | -        | -                 | -               | -                           | 3                                       | -                                                         | -        |  |           |
| 0010                           | 693+18  | -  | 693+24  | CTH 00 EB      | -                                      | -                                                     | -                                                 | -                                                          | -                                               | -        | -                 | -               | -                           | 2                                       | -                                                         | -        |  |           |
| 0010                           | 693+31  | -  | 693+37  | CTH 00 EB      | -                                      | -                                                     | -                                                 | -                                                          | -                                               | -        | -                 | -               | -                           | 2                                       | -                                                         | -        |  |           |
| 0010                           | 693+69  | -  | 693+75  | CTH 00 EB      | -                                      | -                                                     | -                                                 | -                                                          | -                                               | -        | -                 | -               | -                           | 2                                       | -                                                         | -        |  |           |
| 0010                           | 693+92  | -  | 694+03  | CTH 00 EB      | -                                      | -                                                     | -                                                 | -                                                          | -                                               | -        | -                 | -               | -                           | 3                                       | -                                                         | -        |  |           |
| 0010                           | 694+42  | -  | 694+48  | CTH 00 EB      | -                                      | -                                                     | -                                                 | -                                                          | -                                               | -        | -                 | -               | -                           | 2                                       | -                                                         | -        |  |           |
| 0010                           | 694+42  | -  | 694+61  | CTH 00 EB      | -                                      | -                                                     | -                                                 | -                                                          | -                                               | -        | -                 | -               | -                           | 5                                       | -                                                         | -        |  |           |
| 0010                           | 694+76  | -  | 694+87  | CTH 00 EB      | -                                      | -                                                     | -                                                 | -                                                          | -                                               | -        | -                 | -               | -                           | 3                                       | -                                                         | -        |  |           |
| 0010                           | 695+46  | -  | 695+52  | CTH 00 EB      | -                                      | -                                                     | -                                                 | -                                                          | -                                               | -        | -                 | -               | -                           | 2                                       | -                                                         | -        |  |           |
| 0010                           | 695+93  | -  | 696+01  | CTH 00 EB      | -                                      | -                                                     | -                                                 | -                                                          | -                                               | -        | -                 | -               | -                           | 4                                       | -                                                         | -        |  |           |
| 0010                           | 696+08  | -  | 696+18  | CTH 00 EB      | -                                      | -                                                     | -                                                 | -                                                          | -                                               | -        | -                 | -               | -                           | 3                                       | -                                                         | -        |  |           |
| 0010                           | 696+27  | -  | 696+35  | CTH 00 EB      | -                                      | -                                                     | -                                                 | -                                                          | -                                               | -        | -                 | -               | -                           | 4                                       | -                                                         | -        |  |           |
| 0010                           | 696+47  | -  | 696+59  | CTH 00 EB      | -                                      | -                                                     | -                                                 | -                                                          | -                                               | -        | -                 | -               | -                           | 3                                       | -                                                         | -        |  |           |
| 0010                           | 696+61  | -  | 697+57  | CTH 00 EB      | -                                      | -                                                     | -                                                 | -                                                          | -                                               | -        | -                 | -               | -                           | 27                                      | -                                                         | -        |  |           |
| 0010                           | 697+53  | -  | 697+59  | CTH 00 EB      | -                                      | -                                                     | -                                                 | -                                                          | -                                               | -        | -                 | -               | -                           | 2                                       | -                                                         | -        |  |           |
| 0010                           | 691+53  | -  | 691+59  | CTH 00 WB      | -                                      | -                                                     | -                                                 | -                                                          | -                                               | -        | -                 | -               | -                           | 2                                       | -                                                         | -        |  |           |
| 0010                           | 691+55  | -  | 691+75  | CTH 00 WB      | -                                      | -                                                     | -                                                 | -                                                          | -                                               | -        | -                 | -               | -                           | 5                                       | -                                                         | -        |  |           |
| 0010                           | 691+72  | -  | 691+78  | CTH 00 WB      | -                                      | -                                                     | -                                                 | -                                                          | -                                               | -        | -                 | -               | -                           | 2                                       | -                                                         | -        |  |           |
| 0010                           | 691+56  | -  | 692+06  | CTH 00 WB      | -                                      | -                                                     | -                                                 | -                                                          | -                                               | -        | -                 | -               | -                           | 12                                      | -                                                         | -        |  |           |
| 0010                           | 691+89  | -  | 691+95  | CTH 00 WB      | -                                      | -                                                     | -                                                 | -                                                          | -                                               | -        | -                 | -               | -                           | 5                                       | -                                                         | -        |  |           |
| 0010                           | 691+86  | -  | 692+79  | CTH 00 WB      | -                                      | -                                                     | -                                                 | -                                                          | -                                               | -        | -                 | -               | -                           | 22                                      | -                                                         | -        |  |           |
| 0010                           | 692+41  | -  | 692+47  | CTH 00 WB      | -                                      | -                                                     | -                                                 | -                                                          | -                                               | -        | -                 | -               | -                           | 2                                       | -                                                         | -        |  |           |
| 0010                           | 692+96  | -  | 693+16  | CTH 00 WB      | -                                      | -                                                     | -                                                 | -                                                          | -                                               | -        | -                 | -               | -                           | 2                                       | -                                                         | -        |  |           |
| 0010                           | 693+93  | -  | 694+02  | CTH 00 WB      | -                                      | -                                                     | -                                                 | -                                                          | -                                               | -        | -                 | -               | -                           | 3                                       | -                                                         | -        |  |           |
| 0010                           | 694+41  | -  | 694+47  | CTH 00 WB      | -                                      | -                                                     | -                                                 | -                                                          | -                                               | -        | -                 | -               | -                           | 2                                       | -                                                         | -        |  |           |
| PROJECT 0010 SUBTOTALS         |         |    |         |                | 0                                      | 8                                                     | 7048                                              | 143                                                        | 89                                              | 0        | 1518              | 0               | 0                           | 133                                     | 79760                                                     | 26       |  |           |

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| HMA PAVEMENT ITEMS (CONTINUED) |                       |    |         |                       |                               |                                           |                                       |                                                |                                        |          |               |                             |                           |                       |                                |          |                 |                                               |
|--------------------------------|-----------------------|----|---------|-----------------------|-------------------------------|-------------------------------------------|---------------------------------------|------------------------------------------------|----------------------------------------|----------|---------------|-----------------------------|---------------------------|-----------------------|--------------------------------|----------|-----------------|-----------------------------------------------|
| CATEGORY                       | STATION               | TO | STATION | LOCATION              | 204.0110                      | 204.0115                                  | 204.0120                              | 211.0400                                       | 455.0105                               | 455.0605 | 460.1100      | 460.1101                    | 465.0105                  | 465.0110              | 650.8000                       | 690.0150 | REMARKS         |                                               |
|                                |                       |    |         |                       | REMOVING ASPHALTIC SURFACE SY | REMOVING ASPHALTIC SURFACE BUTT JOINTS SY | REMOVING ASPHALTIC SURFACE MILLING SY | PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS STA | ASPHLATIC MATERIAL PG58-28 AT 5.5% TON |          | TACK COAT GAL | HMA PAVEMENT TYPE E-0.3 TON | HMA PAVEMENT TYPE E-1 TON | ASPHALTIC SURFACE TON | ASPHALTIC SURFACE PATCHING TON |          |                 | CONSTRUCTION STAKING RESURFACING REFERENCE LF |
| 0010                           | 694+84                | -  | 695+13  | CTH 00 WB             | -                             | -                                         | -                                     | -                                              | -                                      | -        | -             | -                           | -                         | 7                     | -                              | -        |                 |                                               |
| 0010                           | 695+09                | -  | 695+16  | CTH 00 WB             | -                             | -                                         | -                                     | -                                              | -                                      | -        | -             | -                           | -                         | 2                     | -                              | -        |                 |                                               |
| 0010                           | 695+65                | -  | 695+73  | CTH 00 WB             | -                             | -                                         | -                                     | -                                              | -                                      | -        | -             | -                           | -                         | 5                     | -                              | -        |                 |                                               |
| 0010                           | 696+50                | -  | 696+56  | CTH 00 WB             | -                             | -                                         | -                                     | -                                              | -                                      | -        | -             | -                           | -                         | 2                     | -                              | -        |                 |                                               |
| 0010                           | 696+58                | -  | 697+48  | CTH 00 WB             | -                             | -                                         | -                                     | -                                              | -                                      | -        | -             | -                           | -                         | 21                    | -                              | -        |                 |                                               |
| 0010                           | 692+23                | -  | 697+50  | CTH 00 EB             | -                             | -                                         | -                                     | -                                              | 18                                     | 65       | -             | 300                         | -                         | -                     | 550                            | -        |                 |                                               |
| 0010                           | 692+23                | -  | 697+50  | CTH 00 WB             | -                             | -                                         | -                                     | -                                              | 18                                     | 65       | -             | 300                         | -                         | -                     | 550                            | -        |                 |                                               |
| 0010                           | 592+00                | -  | 592+50  | CTH 00 NW RAMP ISLAND | 30                            | -                                         | -                                     | -                                              | -                                      | -        | -             | -                           | 7                         | -                     | -                              | -        | RT              |                                               |
| 0010                           | 591+55                | -  | 591+80  | CTH 00 SW RAMP ISLAND | 85                            | -                                         | -                                     | -                                              | -                                      | -        | -             | -                           | 20                        | -                     | -                              | -        | RT              |                                               |
| 0010                           | 590+15                | -  | 590+90  | CTH 00 SE RAMP ISLAND | 56                            | -                                         | -                                     | -                                              | -                                      | -        | -             | -                           | 15                        | -                     | -                              | -        | RT              |                                               |
| 0010                           | 697+44                | -  | 697+62  | CTH 00                | 24                            | -                                         | -                                     | -                                              | -                                      | -        | -             | -                           | 6                         | -                     | -                              | 30       | MEDIAN SIDEWALK |                                               |
| 0010                           | 91+66                 | -  | 97+10   | CTH CE EB             | -                             | 3.0                                       | 485                                   | 7                                              | 2                                      | -        | 41            | -                           | -                         | -                     | -                              | -        | RT              |                                               |
| 0010                           | 486+00                | -  | 486+10  | CTH CE TRAIL          | 15                            | -                                         | -                                     | -                                              | -                                      | -        | -             | -                           | -                         | -                     | 120                            | 12       | NE RAMP         |                                               |
| 0010                           | UNDISTRIBUTED PROJECT |    |         |                       | -                             | -                                         | -                                     | -                                              | -                                      | -        | -             | -                           | -                         | 1000                  | -                              | -        |                 |                                               |
| PROJECT 0010 SUBTOTALS         |                       |    |         |                       | 210                           | 3                                         | 485                                   | 7                                              | 38                                     | 130      | 41            | 600                         | 48                        | 1037                  | 1220                           | 42       |                 |                                               |
| PROJECT 0010 TOTALS            |                       |    |         |                       | 210                           | 75                                        | 42305                                 | 871                                            | 475                                    | 130      | 7785          | 600                         | 124                       | 1170                  | 80980                          | 105      |                 |                                               |
| 0020                           | 486+75                | -  | 486+85  | CTH CE TRAIL          | 50                            | -                                         | -                                     | -                                              | -                                      | -        | -             | -                           | 10                        | -                     | -                              | 11       | NW RAMP         |                                               |
| PROJECT 0020 TOTALS            |                       |    |         |                       | 50                            | 0                                         | 0                                     | 0                                              | 0                                      | 0        | 0             | 0                           | 10                        | 0                     | 0                              | 11       |                 |                                               |

| CONCRETE PAVEMENT      |            |          |            |             |               |                   |                     |          |             |
|------------------------|------------|----------|------------|-------------|---------------|-------------------|---------------------|----------|-------------|
| CATEGORY               | STATION TO | STATION  | LOCATION   | 416.0610    | 416.0620      | 416.1715          | 416.1725            | 690.0250 | CONCRETE LF |
|                        |            |          |            | DRILLED TIE | DRILLED DOWEL | CONCRETE PAVEMENT | CONCRETE PAVEMENT   | SAWING   |             |
|                        |            |          |            | BARS EACH   | BARS EACH     | REPAIR SHES SY    | REPLACEMENT SHES SY |          |             |
| 0010                   | 361+65     | - 361+71 | STH 441 NB | 2           | 16            | 9                 | -                   | 40       |             |
| 0010                   | 367+13     | - 367+23 | STH 441 NB | 3           | 16            | 13                | -                   | 44       |             |
| 0010                   | 373+97     | - 374+03 | STH 441 NB | 2           | 16            | 8                 | -                   | 36       |             |
| 0010                   | 380+63     | - 380+73 | STH 441 NB | 3           | 16            | 16                | -                   | 48       |             |
| 0010                   | 388+65     | - 388+71 | STH 441 NB | 2           | 16            | 8                 | -                   | 36       |             |
| 0010                   | 433+45     | - 433+90 | STH 441 NB | 17          | 16            | -                 | 70                  | 118      |             |
| 0010                   | 435+60     | - 435+75 | STH 441 NB | 5           | 16            | 20                | -                   | 54       |             |
| 0010                   | 437+72     | - 437+78 | STH 441 NB | 2           | 16            | 9                 | -                   | 40       |             |
| 0010                   | 451+13     | - 451+19 | STH 441 NB | 2           | 16            | 9                 | -                   | 40       |             |
| 0010                   | 457+13     | - 457+19 | STH 441 NB | 2           | 16            | 9                 | -                   | 40       |             |
| 0010                   | 457+58     | - 457+73 | STH 441 NB | 5           | 16            | 23                | -                   | 58       |             |
| 0010                   | 465+95     | - 466+05 | STH 441 NB | 3           | 32            | 29                | -                   | 72       |             |
| 0010                   | 473+15     | - 473+45 | STH 441 NB | 11          | 16            | -                 | 40                  | 84       |             |
| 0010                   | 494+08     | - 494+23 | STH 441 NB | 5           | 16            | 23                | -                   | 58       |             |
| 0010                   | 509+21     | - 509+29 | STH 441 NB | 3           | 32            | 23                | -                   | 68       |             |
| 0010                   | 514+42     | - 514+48 | STH 441 NB | 2           | 16            | 9                 | -                   | 40       |             |
| 0010                   | 522+42     | - 522+48 | STH 441 NB | 2           | 16            | 8                 | -                   | 36       |             |
| 0010                   | 522+35     | - 522+55 | STH 441 NB | 7           | 16            | -                 | 31                  | 68       |             |
| 0010                   | 524+37     | - 524+52 | STH 441 NB | 5           | 16            | 23                | -                   | 58       |             |
| 0010                   | 530+37     | - 530+52 | STH 441 NB | 5           | 16            | 23                | -                   | 58       |             |
| 0010                   | 533+42     | - 533+48 | STH 441 NB | 2           | 16            | 9                 | -                   | 40       |             |
| 0010                   | 536+40     | - 536+50 | STH 441 NB | 3           | 16            | 16                | -                   | 48       |             |
| 0010                   | 537+37     | - 537+52 | STH 441 NB | 5           | 32            | 43                | -                   | 82       |             |
| 0010                   | 544+42     | - 544+48 | STH 441 NB | 2           | 16            | 9                 | -                   | 40       |             |
| 0010                   | 544+92     | - 544+98 | STH 441 NB | 2           | 16            | 9                 | -                   | 40       |             |
| 0010                   | 596+49     | - 596+64 | STH 441 NB | 5           | 16            | 23                | -                   | 58       |             |
| 0010                   | 596+84     | - 597+29 | STH 441 NB | 17          | 16            | -                 | 60                  | 114      |             |
| 0010                   | 348+97     | - 349+03 | STH 441 SB | 2           | 16            | 9                 | -                   | 40       |             |
| 0010                   | 351+78     | - 351+84 | STH 441 SB | 2           | 16            | 9                 | -                   | 40       |             |
| 0010                   | 354+97     | - 355+03 | STH 441 SB | -           | 32            | 17                | -                   | 64       |             |
| 0010                   | 356+93     | - 357+08 | STH 441 SB | 5           | 16            | 23                | -                   | 58       |             |
| 0010                   | 373+97     | - 374+03 | STH 441 SB | -           | 32            | 17                | -                   | 64       |             |
| 0010                   | 374+97     | - 375+03 | STH 441 SB | 2           | 16            | 9                 | -                   | 40       |             |
| 0010                   | 385+93     | - 386+08 | STH 441 SB | 5           | 16            | 20                | -                   | 54       |             |
| 0010                   | 467+49     | - 467+79 | STH 441 SB | 11          | 16            | -                 | 40                  | 84       |             |
| 0010                   | 510+69     | - 510+79 | STH 441 SB | 3           | 16            | 16                | -                   | 48       |             |
| 0010                   | 516+86     | - 516+92 | STH 441 SB | 2           | 16            | 9                 | -                   | 40       |             |
| 0010                   | 517+36     | - 517+42 | STH 441 SB | 2           | 16            | 9                 | -                   | 40       |             |
| 0010                   | 518+86     | - 518+92 | STH 441 SB | 2           | 16            | 9                 | -                   | 40       |             |
| 0010                   | 519+36     | - 519+42 | STH 441 SB | 2           | 16            | 9                 | -                   | 40       |             |
| 0010                   | 520+36     | - 520+42 | STH 441 SB | 2           | 16            | 9                 | -                   | 40       |             |
| 0010                   | 532+72     | - 532+78 | STH 441 SB | 2           | 16            | 9                 | -                   | 40       |             |
| 0010                   | 533+71     | - 533+79 | STH 441 SB | 3           | 16            | 12                | -                   | 44       |             |
| 0010                   | 543+72     | - 543+78 | STH 441 SB | 2           | 16            | 9                 | -                   | 40       |             |
| 0010                   | 543+72     | - 543+78 | STH 441 SB | 2           | 16            | 8                 | -                   | 36       |             |
| 0010                   | 547+70     | - 547+80 | STH 441 SB | 3           | 16            | 16                | -                   | 48       |             |
| 0010                   | 609+72     | - 609+78 | STH 441 SB | 2           | 16            | 9                 | -                   | 40       |             |
| 0010                   | 612+72     | - 612+78 | STH 441 SB | 2           | 16            | 9                 | -                   | 40       |             |
| PROJECT 0010 SUBTOTALS |            |          |            | 180         | 848           | 616               | 241                 | 2498     |             |

| CONCRETE PAVEMENT (CONTINUED) |            |          |                |             |               |                   |                     |          |             |
|-------------------------------|------------|----------|----------------|-------------|---------------|-------------------|---------------------|----------|-------------|
| CATEGORY                      | STATION TO | STATION  | LOCATION       | 416.0610    | 416.0620      | 416.1715          | 416.1725            | 690.0250 | CONCRETE LF |
|                               |            |          |                | DRILLED TIE | DRILLED DOWEL | CONCRETE PAVEMENT | CONCRETE PAVEMENT   | SAWING   |             |
|                               |            |          |                | BARS EACH   | BARS EACH     | REPAIR SHES SY    | REPLACEMENT SHES SY |          |             |
| 0010                          | 592+30     | - 592+36 | CTH 00 NE RAMP | 3           | 22            | 15                | -                   | 48       |             |
| 0010                          | 592+50     | - 593+00 | CTH 00 NE RAMP | 10          | 26            | -                 | 45                  | 62       |             |
| 0010                          | 593+15     | - 593+37 | CTH 00 NE RAMP | 8           | 1             | -                 | 6                   | 49       |             |
| 0010                          | 594+10     | - 594+16 | CTH 00 NE RAMP | -           | 22            | 10                | -                   | 42       |             |
| 0010                          | 596+54     | - 596+73 | CTH 00 NE RAMP | -           | 22            | -                 | 32                  | 68       |             |
| 0010                          | 597+81     | - 597+87 | CTH 00 NE RAMP | -           | 22            | 10                | -                   | 42       |             |
| 0010                          | 600+07     | - 600+13 | CTH 00 NE RAMP | -           | 22            | 10                | -                   | 42       |             |
| 0010                          | 585+10     | - 585+16 | CTH 00 SE RAMP | -           | 22            | 10                | -                   | 42       |             |
| 0010                          | 589+91     | - 590+92 | CTH 00 SE RAMP | 60          | 120           | -                 | 238                 | 230      |             |
| 0010                          | 590+00     | - 590+92 | CTH 00 SE RAMP | 40          | 56            | -                 | 105                 | 204      |             |
| 0010                          | 572+97     | - 573+03 | CTH 00 SW RAMP | 2           | 4             | 3                 | -                   | 20       |             |
| 0010                          | 573+97     | - 574+03 | CTH 00 SW RAMP | 2           | 10            | 5                 | -                   | 28       |             |
| 0010                          | 574+97     | - 575+03 | CTH 00 SW RAMP | 2           | 14            | 7                 | -                   | 32       |             |
| 0010                          | 589+72     | - 589+78 | CTH 00 SW RAMP | -           | 24            | 11                | -                   | 46       |             |
| 0010                          | 590+54     | - 590+70 | CTH 00 SW RAMP | 5           | 34            | -                 | 41                  | 78       |             |
| 0010                          | 590+91     | - 591+07 | CTH 00 SW RAMP | 5           | 22            | -                 | 27                  | 62       |             |
| 0010                          | 591+24     | - 591+69 | CTH 00 SW RAMP | 36          | 26            | -                 | 96                  | 132      |             |
| 0010                          | 591+82     | - 591+94 | CTH 00 SW RAMP | 16          | 24            | 43                | -                   | 88       |             |
| 0010                          | 592+14     | - 592+81 | CTH 00 NW RAMP | 26          | 26            | -                 | 134                 | 170      |             |
| 0010                          | 592+67     | - 592+75 | CTH 00 NW RAMP | -           | 28            | 17                | -                   | 54       |             |
| 0010                          | 592+94     | - 593+05 | CTH 00 NW RAMP | 2           | 46            | 37                | -                   | 82       |             |
| 0010                          | 593+06     | - 593+22 | CTH 00 NW RAMP | 5           | 22            | -                 | 27                  | 62       |             |
| 0010                          | 593+25     | - 593+69 | CTH 00 NW RAMP | 17          | 8             | -                 | 29                  | 101      |             |
| 0010                          | 593+68     | - 593+99 | CTH 00 NW RAMP | -           | 22            | -                 | 52                  | 92       |             |
| 0010                          | 596+37     | - 596+44 | CTH 00 NW RAMP | -           | 22            | 12                | -                   | 44       |             |
| 0010                          | 598+64     | - 598+70 | CTH 00 NW RAMP | -           | 22            | 10                | -                   | 42       |             |
| 0010                          | 465+97     | - 466+03 | CTH CE SW RAMP | 2           | 6             | 4                 | -                   | 24       |             |
| 0010                          | 476+94     | - 477+17 | CTH CE SW RAMP | -           | 22            | -                 | 38                  | 76       |             |
| 0010                          | 477+40     | - 477+74 | CTH CE SW RAMP | -           | 22            | -                 | 57                  | 98       |             |
| 0010                          | 478+39     | - 478+47 | CTH CE SW RAMP | -           | 22            | -                 | 13                  | 46       |             |
| 0010                          | 479+94     | - 480+16 | CTH CE SW RAMP | -           | 22            | -                 | 37                  | 74       |             |
| 0010                          | 480+74     | - 481+12 | CTH CE SW RAMP | -           | 22            | -                 | 63                  | 106      |             |
| 0010                          | 482+62     | - 483+34 | CTH CE SW RAMP | -           | 22            | -                 | 120                 | 174      |             |
| 0010                          | 483+71     | - 484+09 | CTH CE SW RAMP | -           | 22            | -                 | 63                  | 106      |             |
| 0010                          | 484+89     | - 484+95 | CTH CE SW RAMP | -           | 22            | 11                | -                   | 44       |             |
| 0010                          | 485+00     | - 485+11 | CTH CE SW RAMP | 3           | 2             | 4                 | -                   | 29       |             |
| 0010                          | 485+59     | - 485+65 | CTH CE SW RAMP | 2           | 22            | 10                | -                   | 42       |             |
| 0010                          | 485+85     | - 485+97 | CTH CE SW RAMP | 8           | 22            | 20                | -                   | 54       |             |
| 0010                          | 486+00     | - 486+19 | CTH CE SW RAMP | 14          | 26            | -                 | 40                  | 74       |             |
| 0010                          | 486+02     | - 486+08 | CTH CE SW RAMP | 2           | 22            | 10                | -                   | 42       |             |
| 0010                          | 486+08     | - 486+36 | CTH CE SW RAMP | 33          | 11            | -                 | 76                  | 105      |             |
| 0010                          | 486+16     | - 486+23 | CTH CE SW RAMP | 2           | 25            | 13                | -                   | 48       |             |
| 0010                          | 486+55     | - 486+78 | CTH CE NE RAMP | -           | -             | -                 | -                   | 58       |             |
| 0010                          | 486+60     | - 486+93 | CTH CE NW RAMP | -           | -             | -                 | -                   | 64       |             |
| 0010                          | 486+65     | - 486+78 | CTH CE NW RAMP | -           | -             | -                 | -                   | 18       |             |
| 0010                          | 486+73     | - 486+90 | CTH CE NW RAMP | 28          | 16            | -                 | 68                  | 102      |             |
| 0010                          | 487+66     | - 487+72 | CTH CE NW RAMP | -           | 48            | 24                | -                   | 84       |             |
| 0010                          | 487+89     | - 487+98 | CTH CE NW RAMP | -           | 48            | 36                | -                   | 90       |             |
| 0010                          | 489+20     | - 489+26 | CTH CE NW RAMP | 2           | 10            | 5                 | -                   | 28       |             |
| 0010                          | 489+49     | - 489+93 | CTH CE NW RAMP | 17          | 3             | -                 | 22                  | 97       |             |
| 0010                          | 492+01     | - 492+16 | CTH CE NW RAMP | -           | 22            | 25                | -                   | 60       |             |
| PROJECT 0010 SUBTOTALS        |            |          |                | 352         | 1148          | 362               | 1428                | 3705     |             |

| CONCRETE PAVEMENT (CONTINUED) |            |          |                |             |               |                   |                     |             |  |
|-------------------------------|------------|----------|----------------|-------------|---------------|-------------------|---------------------|-------------|--|
| CATEGORY                      | STATION TO | STATION  | LOCATION       | 416.0610    | 416.0620      | 416.1715          | 416.1725            | 690.0250    |  |
|                               |            |          |                | DRILLED TIE | DRILLED DOWEL | CONCRETE PAVEMENT | CONCRETE PAVEMENT   | SAWING      |  |
|                               |            |          |                | BARS EACH   | BARS EACH     | REPAIR SHES SY    | REPLACEMENT SHES SY | CONCRETE LF |  |
| 0010                          | 486+73     | - 486+97 | CTH CE NW RAMP | -           | -             | -                 | -                   | 76          |  |
| 0010                          | 486+74     | - 487+00 | CTH CE NE RAMP | -           | -             | -                 | -                   | 30          |  |
| 0010                          | 486+76     | - 487+05 | CTH CE NW RAMP | -           | -             | -                 | -                   | 54          |  |
| 0010                          | 486+94     | - 487+03 | CTH CE NE RAMP | -           | -             | -                 | -                   | 15          |  |
| 0010                          | 476+86     | - 476+92 | CTH CE SE RAMP | 2           | 22            | 10                | -                   | 42          |  |
| 0010                          | 477+04     | - 477+11 | CTH CE SE RAMP | 2           | 22            | 12                | -                   | 44          |  |
| 0010                          | 478+58     | - 479+03 | CTH CE SE RAMP | 17          | 22            | -                 | 75                  | 120         |  |
| 0010                          | 480+25     | - 480+81 | CTH CE SE RAMP | 21          | 22            | -                 | 93                  | 142         |  |
| 0010                          | 481+52     | - 481+58 | CTH CE SE RAMP | 2           | 16            | 8                 | -                   | 36          |  |
| 0010                          | 481+71     | - 481+77 | CTH CE SE RAMP | 2           | 22            | 10                | -                   | 42          |  |
| 0010                          | 482+62     | - 482+68 | CTH CE SE RAMP | 2           | 22            | 10                | -                   | 42          |  |
| 0010                          | 482+81     | - 482+87 | CTH CE SE RAMP | 2           | 22            | 10                | -                   | 42          |  |
| 0010                          | 484+06     | - 484+64 | CTH CE SE RAMP | 22          | 22            | -                 | 97                  | 146         |  |
| 0010                          | 486+67     | - 486+91 | CTH CE NE RAMP | 19          | 26            | -                 | 51                  | 88          |  |
| 0010                          | 487+00     | - 487+28 | CTH CE NE RAMP | 10          | 24            | -                 | 56                  | 62          |  |
| 0010                          | 487+08     | - 487+14 | CTH CE NE RAMP | 2           | 10            | 6                 | -                   | 29          |  |
| 0010                          | 487+33     | - 487+51 | CTH CE NE RAMP | 10          | 34            | -                 | 35                  | 75          |  |
| 0010                          | 487+80     | - 487+86 | CTH CE NE RAMP | 2           | 38            | 18                | -                   | 66          |  |
| 0010                          | 487+93     | - 487+99 | CTH CE NE RAMP | 2           | 22            | 10                | -                   | 42          |  |
| 0010                          | 488+91     | - 489+00 | CTH CE NE RAMP | 3           | 22            | 15                | -                   | 48          |  |
| 0010                          | 490+55     | - 490+62 | CTH CE NE RAMP | -           | 22            | 12                | -                   | 44          |  |
| 0010                          | 491+84     | - 492+20 | CTH CE NE RAMP | -           | 22            | -                 | 60                  | 102         |  |
| 0010                          | 96+63      | - 96+69  | CTH CE EB      | 2           | 16            | 8                 | -                   | 36          |  |
| 0010                          | 97+19      | - 97+25  | CTH CE EB      | 2           | 16            | 8                 | -                   | 36          |  |
| 0010                          | 97+53      | - 97+61  | CTH CE EB      | 3           | 16            | 11                | -                   | 40          |  |
| 0010                          | 97+98      | - 98+07  | CTH CE EB      | 3           | 16            | 12                | -                   | 42          |  |
| 0010                          | 98+13      | - 98+19  | CTH CE EB      | 2           | 16            | 8                 | -                   | 36          |  |
| 0010                          | 98+23      | - 98+29  | CTH CE EB      | 2           | 16            | 8                 | -                   | 36          |  |
| 0010                          | 91+59      | - 91+74  | CTH CE WB      | 5           | 16            | 20                | -                   | 55          |  |
| 0010                          | 92+55      | - 92+61  | CTH CE WB      | 2           | 16            | 8                 | -                   | 36          |  |
| 0010                          | 92+73      | - 92+79  | CTH CE WB      | 2           | 16            | 8                 | -                   | 36          |  |
| 0010                          | 95+31      | - 95+37  | CTH CE WB      | 2           | 16            | 8                 | -                   | 36          |  |
| 0010                          | 96+78      | - 96+96  | CTH CE WB      | 7           | 32            | -                 | 72                  | 108         |  |
| 0010                          | 420+50     | - 420+86 | CTH KK SW RAMP | 13          | 22            | -                 | 60                  | 102         |  |
| 0010                          | 421+74     | - 422+10 | CTH KK SW RAMP | 13          | 22            | -                 | 60                  | 102         |  |
| 0010                          | 426+55     | - 426+61 | CTH KK NE RAMP | 2           | 12            | 6                 | -                   | 30          |  |
| 0010                          | 426+64     | - 426+70 | CTH KK NE RAMP | 4           | 15            | 8                 | -                   | 32          |  |
| 0010                          | 427+40     | - 427+70 | CTH KK NE RAMP | 16          | 51            | -                 | 74                  | 116         |  |
| 0010                          | 428+09     | - 428+45 | CTH KK NE RAMP | 13          | 22            | -                 | 60                  | 102         |  |
| 0010                          | 431+78     | - 431+95 | CTH KK NE RAMP | -           | 22            | -                 | 28                  | 65          |  |
| 0010                          | 435+22     | - 435+28 | CTH KK NE RAMP | -           | 22            | 10                | -                   | 42          |  |
| 0010                          | 436+42     | - 436+48 | CTH KK NE RAMP | -           | 22            | 10                | -                   | 42          |  |
| 0010                          | 337+69     | - 632+93 | UNDISTRIBUTED  | 30          | 220           | 150               | -                   | 480         |  |
| PROJECT 0010 SUB TOTALS       |            |          |                | 243         | 1034          | 403               | 821                 | 2997        |  |
| PROJECT 0010 TOTALS           |            |          |                | 775         | 3030          | 1380              | 2490                | 9200        |  |

| ASPHALTIC SHOULDER RUMBLE STRIP |            |          |            |              |         |  |
|---------------------------------|------------|----------|------------|--------------|---------|--|
|                                 |            |          |            | 465.0400     |         |  |
|                                 |            |          |            | ASPHALTIC    |         |  |
|                                 |            |          |            | SHOULDER     |         |  |
|                                 |            |          |            | RUMBLE STRIP |         |  |
| CATEGORY                        | STATION TO | STATION  | LOCATION   | LF           | REMARKS |  |
| 0010                            | 337+69     | - 390+50 | STH 441 NB | 5281         | RT & LT |  |
| 0010                            | 337+69     | - 390+50 | STH 441 SB | 5281         | RT & LT |  |
| 0010                            | 398+00     | - 421+50 | STH 441 NB | 2350         | LT      |  |
| 0010                            | 398+00     | - 421+00 | STH 441 SB | 2300         | RT      |  |
| 0010                            | 413+42     | - 421+50 | STH 441 NB | 808          | LT      |  |
| 0010                            | 411+97     | - 421+00 | STH 441 SB | 903          | LT      |  |
| 0010                            | 429+30     | - 436+75 | STH 441 NB | 745          | RT      |  |
| 0010                            | 429+30     | - 435+96 | STH 441 SB | 666          | LT      |  |
| 0010                            | 429+30     | - 482+50 | STH 441 NB | 4580         | LT      |  |
| 0010                            | 429+30     | - 482+50 | STH 441 SB | 4497         | RT      |  |
| 0010                            | 450+09     | - 463+64 | STH 441 SB | 1255         | LT      |  |
| 0010                            | 458+51     | - 471+01 | STH 441 NB | 1150         | RT      |  |
| 0010                            | 475+80     | - 482+50 | STH 441 NB | 670          | RT      |  |
| 0010                            | 476+63     | - 482+50 | STH 441 SB | 587          | LT      |  |
| 0010                            | 490+30     | - 496+45 | STH 441 NB | 615          | RT      |  |
| 0010                            | 490+30     | - 495+83 | STH 441 SB | 555          | LT      |  |
| 0010                            | 490+30     | - 506+00 | STH 441 NB | 1570         | LT      |  |
| 0010                            | 490+30     | - 506+62 | STH 441 SB | 1632         | RT      |  |
| 0010                            | 500+22     | - 518+60 | STH 441 SB | 1738         | LT      |  |
| 0010                            | 509+00     | - 516+85 | STH 441 NB | 785          | RT      |  |
| 0010                            | 567+80     | - 570+00 | STH 441 SB | 220          | LT      |  |
| 0010                            | 567+80     | - 574+87 | STH 441 NB | 607          | RT      |  |
| 0010                            | 579+40     | - 587+65 | STH 441 NB | 825          | RT      |  |
| 0010                            | 582+55     | - 587+60 | STH 441 SB | 505          | LT      |  |
| 0010                            | 595+50     | - 599+60 | STH 441 NB | 410          | RT      |  |
| 0010                            | 595+50     | - 600+35 | STH 441 SB | 485          | RT      |  |
| 0010                            | 595+50     | - 604+00 | STH 441 NB | 850          | LT      |  |
| 0010                            | 595+50     | - 626+95 | STH 441 SB | 3150         | RT      |  |
| 0010                            | 604+67     | - 609+81 | STH 441 SB | 420          | LT      |  |
| 0010                            | 621+04     | - 626+95 | STH 441 NB | 595          | RT      |  |
| 0010                            | 622+25     | - 626+95 | STH 441 SB | 470          | LT      |  |
| 0010                            | 623+00     | - 626+95 | STH 441 NB | 395          | LT      |  |
| PROJECT 0010 TOTALS             |            |          |            | 46900        |         |  |

| CONCRETE CURB & GUTTER |         |    |         |                   |                                                   |                                                   |                                                            |                                                                    |                                   |                                     |
|------------------------|---------|----|---------|-------------------|---------------------------------------------------|---------------------------------------------------|------------------------------------------------------------|--------------------------------------------------------------------|-----------------------------------|-------------------------------------|
| CATEGORY               | STATION | TO | STATION | LOCATION          | 601.0405                                          | 601.0409                                          | 601.0452                                                   | 601.0555                                                           | 601.0600                          | REMARKS                             |
|                        |         |    |         |                   | CONCRETE CURB &<br>GUTTER 18-INCH<br>TYPE A<br>LF | CONCRETE CURB &<br>GUTTER 30-INCH<br>TYPE A<br>LF | CONCRETE CURB &<br>GUTTER INTEGRAL<br>30-INCH TYPE D<br>LF | CONCRETE CURB &<br>GUTTER 6-INCH<br>SLOPED 36-INCH<br>TYPE A<br>LF | CONCRETE CURB<br>PEDESTRIAN<br>LF |                                     |
| 0010                   | 91+31   | -  | 91+45   | CTH CE EB LT      | -                                                 | 14                                                | -                                                          | -                                                                  | -                                 |                                     |
| 0010                   | 91+50   | -  | 91+75   | CTH CE WB RT      | -                                                 | 25                                                | -                                                          | -                                                                  | -                                 |                                     |
| 0010                   | 92+51   | -  | 92+58   | CTH CE EB LT      | -                                                 | -                                                 | 8                                                          | -                                                                  | -                                 | INTEGRAL CURB AND GUTTER            |
| 0010                   | 95+08   | -  | 95+39   | CTH CE WB RT      | -                                                 | 31                                                | -                                                          | -                                                                  | -                                 |                                     |
| 0010                   | 95+10   | -  | 95+18   | CTH CE EB LT      | -                                                 | -                                                 | 8                                                          | -                                                                  | -                                 | INTEGRAL CURB AND GUTTER            |
| 0010                   | 96+13   | -  | 96+19   | CTH CE EB LT      | -                                                 | -                                                 | 6                                                          | -                                                                  | -                                 | INTEGRAL CURB AND GUTTER            |
| 0010                   | 97+53   | -  | 97+61   | CTH CE EB LT      | -                                                 | -                                                 | 8                                                          | -                                                                  | -                                 | INTEGRAL CURB AND GUTTER            |
| 0010                   | 97+67   | -  | 97+75   | CTH CE WB RT      | -                                                 | 8                                                 | -                                                          | -                                                                  | -                                 |                                     |
| 0010                   | 97+98   | -  | 98+07   | CTH CE EB LT      | -                                                 | -                                                 | 10                                                         | -                                                                  | -                                 | INTEGRAL CURB AND GUTTER            |
| 0010                   | 98+37   | -  | 98+57   | CTH CE EB LT      | -                                                 | 20                                                | -                                                          | -                                                                  | -                                 |                                     |
| 0010                   | 486+08  | -  | 486+36  | CTH CE SW RAMP LT | -                                                 | -                                                 | -                                                          | 35                                                                 | -                                 | 36-INCH TYPE A                      |
| 0010                   | 486+57  | -  | 486+78  | CTH CE NE RAMP LT | -                                                 | 22                                                | -                                                          | -                                                                  | -                                 |                                     |
| 0010                   | 486+57  | -  | 486+78  | CTH CE NE RAMP RT | -                                                 | 15                                                | -                                                          | -                                                                  | -                                 | WEST SIDE OF SPLITTER ISLAND        |
| 0010                   | 486+57  | -  | 486+82  | CTH CE NE RAMP LT | -                                                 | 25                                                | -                                                          | -                                                                  | -                                 | EAST SIDE OF SPLITTER ISLAND        |
| 0010                   | 486+98  | -  | 487+08  | CTH CE NE RAMP RT | -                                                 | -                                                 | -                                                          | 15                                                                 | -                                 | 36-INCH TYPE A AT TRAIL             |
| 0010                   | 486+60  | -  | 486+84  | CTH CE NW RAMP RT | -                                                 | 33                                                | -                                                          | -                                                                  | -                                 |                                     |
| 0010                   | 486+70  | -  | 486+80  | CTH CE NW RAMP LT | -                                                 | -                                                 | -                                                          | -                                                                  | 35                                | EAST SIDE OF SPLITTER ISLAND        |
| 0010                   | 487+00  | -  | 487+28  | CTH CE NE RAMP RT | -                                                 | 30                                                | -                                                          | -                                                                  | -                                 | EAST SIDE OF SPLITTER ISLAND        |
| 0010                   | 487+08  | -  | 487+14  | CTH CE NE RAMP RT | -                                                 | 6                                                 | -                                                          | -                                                                  | -                                 | WEST SIDE OF SPLITTER ISLAND        |
| 0010                   | 487+15  | -  | 487+35  | CTH CE NE RAMP RT | -                                                 | -                                                 | -                                                          | 20                                                                 | -                                 | 36-INCH TYPE A                      |
| 0010                   | 590+26  | -  | 590+55  | CTH 00 SE RAMP LT | -                                                 | 30                                                | -                                                          | -                                                                  | -                                 | EAST SIDE OF SPLITTER ISLAND        |
| 0010                   | 590+26  | -  | 590+55  | CTH 00 SE RAMP LT | -                                                 | 30                                                | -                                                          | -                                                                  | -                                 | WEST SIDE OF SPLITTER ISLAND        |
| 0010                   | 590+91  | -  | 590+91  | CTH 00 SE RAMP LT | -                                                 | 31                                                | -                                                          | -                                                                  | -                                 | FACE OF SPLITTER ISLAND             |
| 0010                   | 591+07  | -  | 591+13  | CTH 00 SW RAMP RT | -                                                 | -                                                 | -                                                          | 6                                                                  | -                                 | 36-INCH TYPE A                      |
| 0010                   | 591+42  | -  | 591+51  | CTH 00 SW RAMP RT | -                                                 | 10                                                | -                                                          | -                                                                  | -                                 | WEST SIDE OF SPLITTER ISLAND        |
| 0010                   | 591+89  | -  | 591+89  | CTH 00 SW RAMP RT | -                                                 | 42                                                | -                                                          | -                                                                  | -                                 | FACE OF SPLITTER ISLAND             |
| 0010                   | 591+92  | -  | 592+40  | CTH 00 NE RAMP RT | -                                                 | -                                                 | -                                                          | 84                                                                 | -                                 | 36-INCH TYPE A                      |
| 0010                   | 592+01  | -  | 592+11  | CTH 00 NW RAMP RT | -                                                 | 10                                                | -                                                          | -                                                                  | -                                 | SOUTHWEST CORNER OF SPLITTER ISLAND |
| 0010                   | 592+14  | -  | 592+47  | CTH 00 NW RAMP RT | -                                                 | 33                                                | -                                                          | -                                                                  | -                                 | WEST SIDE OF SPLITTER ISLAND        |
| 0010                   | 592+19  | -  | 592+47  | CTH 00 NW RAMP RT | -                                                 | 28                                                | -                                                          | -                                                                  | -                                 | EAST SIDE OF SPLITTER ISLAND        |
| 0010                   | 691+50  | -  | 691+92  | CTH 00 EB LT      | -                                                 | 42                                                | -                                                          | -                                                                  | -                                 | FACE OF SPLITTER ISLAND             |
| 0010                   | 691+67  | -  | 691+88  | CTH 00 EB LT      | 21                                                | -                                                 | -                                                          | -                                                                  | -                                 |                                     |
| 0010                   | 693+70  | -  | 693+95  | CTH 00 WB RT      | 25                                                | -                                                 | -                                                          | -                                                                  | -                                 |                                     |
| 0010                   | 693+90  | -  | 694+01  | CTH 00 EB LT      | 12                                                | -                                                 | -                                                          | -                                                                  | -                                 |                                     |
| 0010                   | 695+05  | -  | 695+54  | CTH 00 WB RT      | 50                                                | -                                                 | -                                                          | -                                                                  | -                                 |                                     |
| 0010                   | 697+44  | -  | 697+53  | CTH 00 WB RT      | 25                                                | -                                                 | -                                                          | -                                                                  | -                                 |                                     |
| 0010                   | 697+45  | -  | 697+50  | CTH 00 EB LT      | 20                                                | -                                                 | -                                                          | -                                                                  | -                                 |                                     |
| 0010                   | 697+68  | -  | 698+19  | CTH 00 EB RT      | 52                                                | -                                                 | -                                                          | -                                                                  | -                                 |                                     |
| PROJECT 0010 TOTALS    |         |    |         |                   | 205                                               | 485                                               | 40                                                         | 160                                                                | 35                                |                                     |
| 0020                   | 486+60  | -  | 486+84  | CTH CE NW RAMP LT | -                                                 | -                                                 | -                                                          | 55                                                                 | -                                 | 36-INCH TYPE A AT TRAIL             |
| PROJECT 0020 TOTALS    |         |    |         |                   | 0                                                 | 0                                                 | 0                                                          | 55                                                                 | 0                                 |                                     |

3

| STORM SEWER         |         |    |         |                                       |                                                                                  |                                                                                  |                        |
|---------------------|---------|----|---------|---------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|------------------------|
|                     |         |    |         | 520.7000<br>CLEANING CULVERT<br>PIPES | 522.1018<br>APRON ENDWALLS<br>FOR CULVERT PIPE<br>REINFORCED<br>CONCRETE 18-INCH | 522.1024<br>APRON ENDWALLS<br>FOR CULVERT PIPE<br>REINFORCED<br>CONCRETE 24-INCH |                        |
| CATEGORY            | STATION | TO | STATION | LOCATION                              | EACH                                                                             | EACH                                                                             | REMARKS                |
| 0010                | 92+49   | -  | 92+49   | CTH CE EB                             | 1                                                                                | -                                                                                |                        |
| 0010                | 374+00  | -  | 374+00  | STH 441 SB                            | -                                                                                | 1                                                                                | INLET ENDWALL          |
| 0010                | 448+00  | -  | 448+00  | STH 441 NB                            | 1                                                                                | -                                                                                |                        |
| 0010                | 455+00  | -  | 455+00  | STH 441 NB                            | 1                                                                                | -                                                                                |                        |
| 0010                | 460+00  | -  | 460+00  | STH 441 NB & SB                       | -                                                                                | -                                                                                | OUTLET ENDWALL         |
| 0010                | 487+09  | -  | 487+09  | CTH CE NW RAMP                        | 1                                                                                | -                                                                                |                        |
| 0010                | 487+50  | -  | 487+50  | STH 441 NB & SB                       | -                                                                                | -                                                                                | INLET ENDWALL          |
| 0010                | 485+75  | -  | 485+75  | CTH CE SW RAMP                        | -                                                                                | -                                                                                | INLET ENDWALL          |
| 0010                | 487+50  | -  | 487+50  | CTH CE NW RAMP                        | -                                                                                | -                                                                                | INLET ENDWALL          |
| 0010                | 494+00  | -  | 494+00  | STH 441 NB                            | 1                                                                                | -                                                                                | CLEAR PLANTS BY OUTLET |
| 0010                | 506+00  | -  | 506+00  | STH 441 NB                            | 1                                                                                | -                                                                                |                        |
| 0010                | 565+00  | -  | 565+00  | STH 441 NB & SB                       | 1                                                                                | -                                                                                |                        |
| 0010                | 569+00  | -  | 569+00  | STH 441 NB                            | 1                                                                                | -                                                                                |                        |
| 0010                | 573+00  | -  | 573+00  | STH 441 NB                            | 1                                                                                | -                                                                                |                        |
| 0010                | 577+00  | -  | 577+00  | STH 441 NB                            | 1                                                                                | -                                                                                |                        |
| 0010                | 581+00  | -  | 581+00  | STH 441 SB                            | 1                                                                                | -                                                                                |                        |
| 0010                | 590+50  | -  | 590+50  | STH 441 SB                            | 1                                                                                | -                                                                                |                        |
| 0010                | 592+75  | -  | 592+75  | STH 441 NB & SB                       | 1                                                                                | -                                                                                |                        |
| 0010                | 694+00  | -  | 694+00  | CTH 00 EB                             | 1                                                                                | -                                                                                |                        |
| PROJECT 0010 TOTALS |         |    |         |                                       | 14                                                                               | 1                                                                                | 4                      |

| CONCRETE SIDEWALK   |         |    |         |                                         |                                                                        |    |                              |
|---------------------|---------|----|---------|-----------------------------------------|------------------------------------------------------------------------|----|------------------------------|
|                     |         |    |         | 602.0410<br>CONCRETE<br>SIDEWALK 5-INCH | 602.0515<br>CURB RAMP<br>DETECTABLE<br>WARNING FIELD<br>NATURAL PATINA |    |                              |
| CATEGORY            | STATION | TO | STATION | LOCATION                                | SF                                                                     | SF | REMARKS                      |
| 0010                | 92+39   | -  | 92+45   | CTH CE MEDIAN                           | 19                                                                     | -  | SIDEWALK BY WEST MEDIAN NOSE |
| 0010                | 486+60  | -  | 486+84  | CTH CE NW RAMP RT                       | 140                                                                    | 8  |                              |
| 0010                | 486+62  | -  | 486+72  | CTH CE NW RAMP LT                       | 100                                                                    | 8  | EAST OF SPLITTER ISLAND      |
| 0010                | 486+65  | -  | 486+75  | CTH CE NW RAMP RT                       | 100                                                                    | 8  | WEST OF SPLITTER ISLAND      |
| 0010                | 486+57  | -  | 486+78  | CTH CE NE RAMP LT                       | 140                                                                    | 8  |                              |
| 0010                | 486+57  | -  | 486+78  | CTH CE NE RAMP RT                       | 140                                                                    | 8  | WEST OF SPLITTER ISLAND      |
| 0010                | 486+57  | -  | 486+78  | CTH CE NE RAMP LT                       | 300                                                                    | 8  | EAST OF SPLITTER ISLAND      |
| 0010                | 486+98  | -  | 487+08  | CTH CE NE RAMP RT                       | 100                                                                    | 8  | AT TRAIL                     |
| 0010                | 694+83  | -  | 695+32  | CTH 00 MEDIAN                           | 405                                                                    | -  | AROUND BRIDGE PIERS          |
| 0010                | 692+89  | -  | 693+13  | CTH 00 MEDIAN                           | 136                                                                    | -  | SIDEWALK BY WEST MEDIAN NOSE |
| 0010                | 696+33  | -  | 696+41  | CTH 00 MEDIAN                           | 75                                                                     | -  | SIDEWALK BY EAST MEDIAN NOSE |
| 0010                | 592+00  | -  | 592+50  | CTH 00 NW RAMP                          | 250                                                                    | -  | SPLITTER ISLAND              |
| 0010                | 591+55  | -  | 591+80  | CTH 00 SW RAMP                          | 765                                                                    | -  | SPLITTER ISLAND              |
| 0010                | 590+15  | -  | 590+90  | CTH 00 SE RAMP                          | 500                                                                    | -  | SPLITTER ISLAND              |
| PROJECT 0010 TOTALS |         |    |         |                                         | 3170                                                                   | 56 |                              |
| 0020                | 486+65  | -  | 486+75  | CTH CE NW RAMP LT                       | 100                                                                    | 8  | AT TRAIL                     |
| PROJECT 0020 TOTALS |         |    |         |                                         | 100                                                                    | 8  |                              |

| CULVERT PIPE CORRUGATED STEEL 12-INCH |         |    |         |                                                         |    |                         |
|---------------------------------------|---------|----|---------|---------------------------------------------------------|----|-------------------------|
|                                       |         |    |         | 521.0112<br>CULVERT PIPE<br>CORRUGATED STEEL<br>12-INCH |    |                         |
| CATEGORY                              | STATION | TO | STATION | LOCATION                                                | LF | REMARKS                 |
| 0010                                  | 465+08  | -  | 465+53  | MAINTENANCE CROSSOVER                                   | 35 | NORTH SIDE OF CROSSOVER |
| PROJECT 0010 TOTALS                   |         |    |         |                                                         | 35 |                         |

| CULVERT PIPE CORRUGATED STEEL 18-INCH |         |    |         |                                                         |    |                         |
|---------------------------------------|---------|----|---------|---------------------------------------------------------|----|-------------------------|
|                                       |         |    |         | 521.0118<br>CULVERT PIPE<br>CORRUGATED STEEL<br>18-INCH |    |                         |
| CATEGORY                              | STATION | TO | STATION | LOCATION                                                | LF | REMARKS                 |
| 0010                                  | 613+94  | -  | 614+17  | MAINTENANCE CROSSOVER                                   | 30 | NORTH SIDE OF CROSSOVER |
| PROJECT 0010 TOTALS                   |         |    |         |                                                         | 30 |                         |

| CONCRETE LOADING ZONE |         |    |         |                                      |     |                 |
|-----------------------|---------|----|---------|--------------------------------------|-----|-----------------|
|                       |         |    |         | 602.1000<br>CONCRETE LOADING<br>ZONE |     |                 |
| CATEGORY              | STATION | TO | STATION | LOCATION                             | SF  | REMARKS         |
| 0010                  | 486+57  | -  | 486+62  | CTH CE NW RAMP                       | 170 | SPLITTER ISLAND |
| PROJECT 0010 TOTALS   |         |    |         |                                      | 170 |                 |

| SLOPE PAVING SELECT CRUSHED MATERIAL |         |    |         |                                                     |     |                      |
|--------------------------------------|---------|----|---------|-----------------------------------------------------|-----|----------------------|
|                                      |         |    |         | 604.0600<br>SLOPE PAVING SELECT<br>CRUSHED MATERIAL |     |                      |
| CATEGORY                             | STATION | TO | STATION | LOCATION                                            | SY  | REMARKS              |
| 0010                                 | 93+67   | -  | 94+11   | CTH CE WB                                           | 50  | B-44-0123 N ABUTMENT |
| 0010                                 | 93+67   | -  | 94+11   | CTH CE EB                                           | 50  | B-44-0123 S ABUTMENT |
| 0010                                 | 94+59   | -  | 95+03   | CTH CE WB                                           | 50  | B-44-0122 N ABUTMENT |
| 0010                                 | 94+59   | -  | 95+03   | CTH CE EB                                           | 50  | B-44-0122 S ABUTMENT |
| 0010                                 | 694+88  | -  | 695+31  | CTH 00 WB                                           | 170 | B-44-128 N ABUTMENT  |
| 0010                                 | 695+55  | -  | 695+99  | CTH 00 WB                                           | 170 | B-44-127 N ABUTMENT  |
| PROJECT 0010 TOTALS                  |         |    |         |                                                     | 540 |                      |

3

| RIPRAP-GEOTEXTILE |         |    |         |                                   |                                                |         |                                             |  |
|-------------------|---------|----|---------|-----------------------------------|------------------------------------------------|---------|---------------------------------------------|--|
|                   |         |    |         | 606.0300<br>RIPRAP<br>HEAVY<br>CY | 645.0120<br>GEOTEXTILE<br>FABRIC TYPE HR<br>SY |         |                                             |  |
| CATEGORY          | STATION | TO | STATION | LOCATION                          |                                                | REMARKS |                                             |  |
| 0010              | 557+50  | -  | 560+00  | STH 441 OUTFALL                   | 15                                             | 20      | SEE CONSTRUCTION DETAIL                     |  |
| 0010              | 557+50  | -  | 560+00  | STH 441 OUTFALL                   | 45                                             | 65      | STH 441 OUTFALL AT FOX RIVER NORTH ABUTMENT |  |
| 0010              | 557+50  | -  | 560+00  | STH 441 OUTFALL                   | 45                                             | 65      | EAST SIDE                                   |  |
|                   |         |    |         | PROJECT 0010 TOTALS               | 105                                            | 150     |                                             |  |

| MANHOLES |         |    |         |                                              |                                             |                                               |                                              |                         |
|----------|---------|----|---------|----------------------------------------------|---------------------------------------------|-----------------------------------------------|----------------------------------------------|-------------------------|
|          |         |    |         | 611.0530<br>MANHOLE<br>COVERS TYPE J<br>EACH | 611.0642<br>INLET COVERS<br>TYPE MS<br>EACH | 611.2005<br>MANHOLES 5-FT<br>DIAMETER<br>EACH | 611.3901<br>INLETS MEDIAN<br>1 GRATE<br>EACH |                         |
| CATEGORY | STATION | TO | STATION | LOCATION                                     |                                             | REMARKS                                       |                                              |                         |
| 0010     | 613+94  | -  | 613+99  | MAINTENANCE CROSSOVER                        | 1                                           | 1                                             | 1                                            | NORTH SIDE OF CROSSOVER |
|          |         |    |         | PROJECT 0010 TOTALS                          | 1                                           | 1                                             | 1                                            |                         |

| RECONSTRUCTING INLETS |         |    |         |                                              |   |                                         |  |
|-----------------------|---------|----|---------|----------------------------------------------|---|-----------------------------------------|--|
|                       |         |    |         | 611.0430<br>RECONSTRUCTING<br>INLETS<br>EACH |   |                                         |  |
| CATEGORY              | STATION | TO | STATION | LOCATION                                     |   | REMARKS                                 |  |
| 0010                  | 691+92  | -  | 691+92  | CTH 00 MEDIAN WB                             | 1 | REMOVE AND REPLACE ALL ADJUSTMENT RINGS |  |
| 0010                  | 693+96  | -  | 693+96  | CTH 00 MEDIAN WB                             | 1 | REMOVE AND REPLACE ALL ADJUSTMENT RINGS |  |
| 0010                  | 693+96  | -  | 693+96  | CTH 00 MEDIAN EB                             | 1 | REMOVE AND REPLACE ALL ADJUSTMENT RINGS |  |
| 0010                  | 697+55  | -  | 697+55  | CTH 00 MEDIAN EB                             | 1 | REMOVE AND REPLACE ALL ADJUSTMENT RINGS |  |

|  |  |  |  |                |   |  |  |
|--|--|--|--|----------------|---|--|--|
|  |  |  |  | PROJECT TOTALS | 4 |  |  |
|--|--|--|--|----------------|---|--|--|

| BEAM GUARD |         |    |         |                                         |                                                                    |                                 |                                                             |                                                                |                                                               |                                   |                                           |                                                   |                                                      |   |
|------------|---------|----|---------|-----------------------------------------|--------------------------------------------------------------------|---------------------------------|-------------------------------------------------------------|----------------------------------------------------------------|---------------------------------------------------------------|-----------------------------------|-------------------------------------------|---------------------------------------------------|------------------------------------------------------|---|
|            |         |    |         | 204.0165<br>REMOVING<br>GUARDRAIL<br>LF | 614.0010<br>BARRIER SYSTEM<br>GRADING SHAPING<br>FINISHING<br>EACH | 614.0920<br>SALVAGED RAIL<br>LF | 614.0925<br>SALVAGED<br>GUARDRAIL END<br>TREATMENTS<br>EACH | 614.0950<br>REPLACING<br>GUARDRAIL POSTS<br>AND BLOCKS<br>EACH | 614.0951<br>REPLACING<br>GUARDRAIL RAIL<br>AND HARDWARE<br>LF | 614.2300<br>MGS GUARDRAIL 3<br>LF | 614.2340<br>MGS<br>GUARDRAIL<br>3 L<br>LF | 614.2610<br>MGS GUARDRAIL<br>TERMINAL EAT<br>EACH | 614.2620<br>MGS GUARDRAIL<br>TERMINAL TYPE 2<br>EACH |   |
| CATEGORY   | STATION | TO | STATION | LOCATION                                |                                                                    | REMARKS                         |                                                             |                                                                |                                                               |                                   |                                           |                                                   |                                                      |   |
| 0010       | 388+20  | -  | 393+54  | NB STH 441 RT                           | 54                                                                 | 1                               | -                                                           | 1                                                              | -                                                             | -                                 | -                                         | 1                                                 | -                                                    |   |
| 0010       | 388+20  | -  | 393+54  | NB STH 441 LT                           | 54                                                                 | 1                               | -                                                           | 1                                                              | -                                                             | -                                 | -                                         | 1                                                 | -                                                    |   |
| 0010       | 395+14  | -  | 398+62  | SB STH 441 RT                           | 54                                                                 | 1                               | -                                                           | 1                                                              | -                                                             | -                                 | -                                         | 1                                                 | -                                                    |   |
| 0010       | 395+14  | -  | 398+62  | SB STH 441 LT                           | 54                                                                 | 1                               | -                                                           | 1                                                              | -                                                             | -                                 | -                                         | 1                                                 | -                                                    |   |
| 0010       | 400+12  | -  | 403+60  | NB STH 441 RT                           | -                                                                  | 1                               | -                                                           | -                                                              | -                                                             | -                                 | -                                         | -                                                 | -                                                    |   |
| 0010       | 400+62  | -  | 403+60  | NB STH 441 LT                           | -                                                                  | 1                               | -                                                           | -                                                              | -                                                             | -                                 | -                                         | -                                                 | -                                                    |   |
| 0010       | 421+25  | -  | 424+73  | NB STH 441 RT                           | 54                                                                 | 1                               | -                                                           | 1                                                              | -                                                             | -                                 | -                                         | 1                                                 | -                                                    |   |
| 0010       | 421+25  | -  | 424+73  | NB STH 441 LT                           | 54                                                                 | 1                               | -                                                           | 1                                                              | -                                                             | -                                 | -                                         | 1                                                 | -                                                    |   |
| 0010       | 425+58  | -  | 429+06  | SB STH 441 LT                           | 54                                                                 | 1                               | -                                                           | 1                                                              | -                                                             | -                                 | -                                         | 1                                                 | -                                                    |   |
| 0010       | 425+69  | -  | 429+17  | SB STH 441 RT                           | 54                                                                 | 1                               | -                                                           | 1                                                              | -                                                             | -                                 | -                                         | 1                                                 | -                                                    |   |
| 0010       | 461+91  | -  | 466+30  | NB STH 441 RT                           | -                                                                  | 1                               | -                                                           | -                                                              | -                                                             | -                                 | -                                         | -                                                 | -                                                    |   |
| 0010       | 464+50  | -  | 468+15  | SB STH 441 LT                           | -                                                                  | 1                               | -                                                           | -                                                              | -                                                             | -                                 | -                                         | -                                                 | -                                                    |   |
| 0010       | 481+93  | -  | 485+41  | NB STH 441 RT                           | 54                                                                 | 1                               | -                                                           | 1                                                              | -                                                             | -                                 | -                                         | 1                                                 | -                                                    |   |
| 0010       | 481+93  | -  | 485+41  | NB STH 441 LT                           | 400                                                                | 1                               | 346                                                         | 1                                                              | 55                                                            | 346                               | -                                         | 1                                                 | -                                                    |   |
| 0010       | 487+47  | -  | 490+95  | SB STH 441 RT                           | 54                                                                 | 1                               | -                                                           | 1                                                              | -                                                             | -                                 | -                                         | 1                                                 | -                                                    |   |
| 0010       | 487+47  | -  | 490+95  | SB STH 441 LT                           | 54                                                                 | 1                               | -                                                           | 1                                                              | -                                                             | -                                 | -                                         | 1                                                 | -                                                    |   |
| 0010       | 564+85  | -  | 568+33  | SB STH 441 RT                           | 54                                                                 | 1                               | -                                                           | 1                                                              | -                                                             | -                                 | -                                         | 1                                                 | -                                                    |   |
| 0010       | 586+98  | -  | 590+46  | NB STH 441 RT                           | 54                                                                 | 1                               | -                                                           | 1                                                              | -                                                             | -                                 | -                                         | 1                                                 | -                                                    |   |
| 0010       | 592+69  | -  | 596+17  | SB STH 441 RT                           | 54                                                                 | 1                               | -                                                           | 1                                                              | -                                                             | -                                 | -                                         | 1                                                 | -                                                    |   |
| 0010       | 592+69  | -  | 596+17  | SB STH 441 LT                           | 54                                                                 | 1                               | -                                                           | 1                                                              | -                                                             | -                                 | -                                         | 1                                                 | -                                                    |   |
| 0010       | 626+36  | -  | 629+84  | NB STH 441 LT                           | -                                                                  | 1                               | -                                                           | -                                                              | -                                                             | -                                 | -                                         | -                                                 | -                                                    |   |
| 0010       | 626+38  | -  | 629+86  | NB STH 441 RT                           | -                                                                  | 1                               | -                                                           | -                                                              | -                                                             | -                                 | -                                         | -                                                 | -                                                    |   |
| 0010       | 632+45  | -  | 635+93  | SB STH 441 RT                           | -                                                                  | 1                               | -                                                           | -                                                              | -                                                             | -                                 | -                                         | -                                                 | -                                                    |   |
| 0010       | 632+45  | -  | 635+93  | SB STH 441 LT                           | -                                                                  | 1                               | -                                                           | -                                                              | -                                                             | -                                 | -                                         | -                                                 | -                                                    |   |
| 0010       | 589+52  | -  | 590+80  | CTH 00 SW RAMP LT                       | 170                                                                | 1                               | -                                                           | 1                                                              | -                                                             | -                                 | 50                                        | 113                                               | 1                                                    | 1 |
| 0010       | 589+52  | -  | 591+30  | CTH 00 SW RAMP RT                       | 170                                                                | 1                               | -                                                           | 1                                                              | -                                                             | -                                 | 75                                        | 113                                               | 1                                                    | 1 |
| 0010       | 588+98  | -  | 590+50  | CTH 00 SE RAMP RT                       | 170                                                                | 1                               | -                                                           | 1                                                              | -                                                             | -                                 | 63                                        | 113                                               | 1                                                    | 1 |
|            |         |    |         | PROJECT 0010 TOTALS                     | 1720                                                               | 27                              | 346                                                         | 19                                                             | 55                                                            | 346                               | 188                                       | 338                                               | 19                                                   | 3 |

|                        |              |                             |                          |           |   |
|------------------------|--------------|-----------------------------|--------------------------|-----------|---|
| PROJECT NO: 4685-19-60 | HWY: STH 441 | COUNTY: CALUMET & OUTAGAMIE | MISCELLANEOUS QUANTITIES | SHEET: 86 | E |
|------------------------|--------------|-----------------------------|--------------------------|-----------|---|



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| RESTORATION         |         |    |         |                 |                     |             |                         |                          |                       |                           |                                     | FIELD OFFICE TYPE C |    |         |          |                          |         |  |  |
|---------------------|---------|----|---------|-----------------|---------------------|-------------|-------------------------|--------------------------|-----------------------|---------------------------|-------------------------------------|---------------------|----|---------|----------|--------------------------|---------|--|--|
| CATEGORY            | STATION | TO | STATION | LOCATION        | 625.0500            | 627.0200    | 628.2023                | 628.2039                 | 629.0210              | 630.0130                  | REMARKS                             | STATION             | TO | STATION | LOCATION | 642.5201                 | REMARKS |  |  |
|                     |         |    |         |                 | SALVAGED TOPSOIL SY | MULCHING SY | EROSION MAT CLASS II SY | EROSION MAT CLASS III SY | FERTILIZER TYPE B CWT | SEEDING MIXTURE NO. 30 LB |                                     |                     |    |         |          | FIELD OFFICE TYPE C EACH |         |  |  |
| 0010                | 375+15  | -  | 375+33  | STH 441 MEDIAN  | 205                 | 205         | 205                     | -                        | 0.3                   | 5                         | NORTH SIDE OF MAINTENANCE CROSSOVER | 337+69              | -  | 632+92  | STH 441  | 1                        | PROJECT |  |  |
| 0010                | 465+05  | -  | 465+50  | STH 441 MEDIAN  | 275                 | 275         | 275                     | -                        | 0.4                   | 8                         | NORTH SIDE OF MAINTENANCE CROSSOVER |                     |    |         |          |                          |         |  |  |
| 0010                | 613+26  | -  | 613+67  | STH 441 MEDIAN  | 250                 | 250         | 250                     | -                        | 0.4                   | 8                         | SOUTH SIDE OF MAINTENANCE CROSSOVER |                     |    |         |          |                          |         |  |  |
| 0010                | 614+00  | -  | 615+48  | STH 441 MEDIAN  | 400                 | 400         | 400                     | -                        | 0.5                   | 10                        | NORTH SIDE OF MAINTENANCE CROSSOVER |                     |    |         |          |                          |         |  |  |
| 0010                | 557+50  | -  | 560+00  | STH 441 OUTFALL | 180                 | 180         | -                       | 180                      | 0.2                   | 4                         |                                     |                     |    |         |          |                          |         |  |  |
| PROJECT 0010 TOTALS |         |    |         |                 | 1310                | 1310        | 1130                    | 180                      | 2                     | 35                        |                                     |                     |    |         |          |                          |         |  |  |

3

| DELINEATORS            |            |          |          |                                                |                                      |                                             |                                              |                                           |                                            |                                   |
|------------------------|------------|----------|----------|------------------------------------------------|--------------------------------------|---------------------------------------------|----------------------------------------------|-------------------------------------------|--------------------------------------------|-----------------------------------|
| CATEGORY               | STATION TO | STATION  | LOCATION | 204.0180                                       | 633.0100                             | 633.0500                                    | 633.0500                                     | 633.1000                                  | 633.1000                                   | REMARKS                           |
|                        |            |          |          | REMOVING<br>DELINEATORS<br>AND MARKERS<br>EACH | DELINEATOR<br>POSTS<br>STEEL<br>EACH | DELINEATOR<br>REFLECTORS<br>(WHITE)<br>EACH | DELINEATOR<br>REFLECTORS<br>(YELLOW)<br>EACH | DELINEATOR<br>BRACKETS<br>(WHITE)<br>EACH | DELINEATOR<br>BRACKETS<br>(YELLOW)<br>EACH |                                   |
| 0010                   | 337+70     | - 632+92 | PROJECT  | 555                                            | 445                                  | 600                                         | 40                                           | 25                                        | 90                                         | INCLUDES RAMPS AT CTH 00, KK & CE |
| PROJECT 0010 SUBTOTALS |            |          |          | 555                                            | 445                                  | 600                                         | 40                                           | 25                                        | 90                                         |                                   |
| PROJECT 0010 TOTALS    |            |          |          | 555                                            | 445                                  | 640                                         |                                              | 115                                       |                                            |                                   |

| TRAFFIC CONTROL |    |         |                  |      |                                |                            |                                          |                                            |                                            |                                   |                            |                                            |                                             |                                 |      |      |      |      |      |      |      |
|-----------------|----|---------|------------------|------|--------------------------------|----------------------------|------------------------------------------|--------------------------------------------|--------------------------------------------|-----------------------------------|----------------------------|--------------------------------------------|---------------------------------------------|---------------------------------|------|------|------|------|------|------|------|
| STATION         | TO | STATION | LOCATION         | DAYS | 643.0100                       | 643.0300                   | 643.0420                                 | 643.0705                                   | 643.0715                                   | 643.0800                          | 643.0900                   | 643.0910                                   | 643.0920                                    | 643.1050                        | DAYS | DAYS | DAYS | DAYS | DAYS | DAYS | DAYS |
|                 |    |         |                  |      | TRAFFIC CONTROL (PROJECT) EACH | TRAFFIC CONTROL DRUMS EACH | TRAFFIC CONTROL BARRICADES TYPE III EACH | TRAFFIC CONTROL WARNING LIGHTS TYPE A EACH | TRAFFIC CONTROL WARNING LIGHTS TYPE C EACH | TRAFFIC CONTROL ARROW BOARDS EACH | TRAFFIC CONTROL SIGNS EACH | TRAFFIC CONTROL COVERING SIGNS TYPE I EACH | TRAFFIC CONTROL COVERING SIGNS TYPE II EACH | TRAFFIC CONTROL SIGNS PCMS EACH |      |      |      |      |      |      |      |
| 337+69          | -  | 632+92  | PROJECT          | 45   | 1                              | -                          | -                                        | -                                          | -                                          | -                                 | -                          | -                                          | -                                           | 1                               | 14   |      |      |      |      |      |      |
| 337+69          | -  | 632+92  | STH 441 MAINLINE | 44   | -                              | 350                        | 15405                                    | 45                                         | 1985                                       | 90                                | 3965                       | 11                                         | 500                                         | 1                               | 80   | 15   | 700  | -    | 35   | -    | -    |
| 398+00          | -  | 423+00  | CTH KK SW RAMP   | 2    | -                              | 35                         | 70                                       | 7                                          | 14                                         | 14                                | 28                         | -                                          | -                                           | -                               | -    | -    | -    | -    | 3    | 6    |      |
| 408+50          | -  | 425+85  | CTH KK SE RAMP   | 1    | -                              | 30                         | 30                                       | 4                                          | 4                                          | 8                                 | 8                          | -                                          | -                                           | -                               | -    | 10   | 10   | 2    | 2    | -    | -    |
| 425+45          | -  | 450+00  | CTH KK NE RAMP   | 2    | -                              | 35                         | 70                                       | 7                                          | 14                                         | 14                                | 28                         | -                                          | -                                           | -                               | -    | -    | -    | -    | 3    | 6    |      |
| 426+00          | -  | 438+90  | CTH KK NW RAMP   | 1    | -                              | 30                         | 30                                       | 4                                          | 4                                          | 8                                 | 8                          | -                                          | -                                           | -                               | -    | 10   | 10   | 2    | 2    | -    | -    |
| 428+00          | -  | 485+59  | CTH CE SW RAMP   | 3    | -                              | 36                         | 110                                      | 7                                          | 21                                         | 14                                | 42                         | -                                          | -                                           | -                               | -    | -    | -    | -    | 3    | 10   |      |
| 473+30          | -  | 485+50  | CTH CE SE RAMP   | 2    | -                              | 25                         | 50                                       | 4                                          | 8                                          | 8                                 | 16                         | -                                          | -                                           | -                               | -    | 9    | 18   | 2    | 2    | -    | -    |
| 486+67          | -  | 500+00  | CTH CE NE RAMP   | 4    | -                              | 35                         | 140                                      | 7                                          | 28                                         | 14                                | 56                         | -                                          | -                                           | -                               | -    | -    | -    | -    | 3    | 13   |      |
| 486+00          | -  | 500+22  | CTH CE NW RAMP   | 5    | -                              | 26                         | 130                                      | 4                                          | 20                                         | 8                                 | 40                         | -                                          | -                                           | -                               | -    | 11   | 90   | 5    | 5    | -    | -    |
| 573+00          | -  | 592+18  | CTH 00 SW RAMP   | 1    | -                              | 35                         | 35                                       | 7                                          | 7                                          | 14                                | 14                         | -                                          | -                                           | -                               | -    | -    | -    | -    | 5    | 5    |      |
| 577+00          | -  | 590+75  | CTH 00 SE RAMP   | 2    | -                              | 25                         | 50                                       | 4                                          | 8                                          | 8                                 | 16                         | -                                          | -                                           | -                               | -    | 9    | 18   | 2    | 2    | -    | -    |
| 592+00          | -  | 604+00  | CTH 00 NE RAMP   | 2    | -                              | 35                         | 70                                       | 7                                          | 14                                         | 14                                | 28                         | -                                          | -                                           | -                               | -    | -    | -    | -    | 3    | 6    |      |
| 591+63          | -  | 603+00  | CTH 00 NW RAMP   | 2    | -                              | 25                         | 50                                       | 4                                          | 8                                          | 8                                 | 16                         | -                                          | -                                           | -                               | -    | 9    | 18   | 2    | 2    | -    | -    |
| 91+00           | -  | 99+00   | CTH CE EB        | 1    | -                              | 40                         | 40                                       | 1                                          | 1                                          | -                                 | -                          | 15                                         | 15                                          | 1                               | 1    | 6    | 6    | -    | -    | -    | -    |
| 91+00           | -  | 99+00   | CTH CE WB        | 1    | -                              | 40                         | 40                                       | 1                                          | 1                                          | -                                 | -                          | 15                                         | 15                                          | 1                               | 1    | 6    | 6    | -    | -    | -    | -    |
| 691+00          | -  | 699+00  | CTH 00 EB        | 7    | -                              | 37                         | 260                                      | 1                                          | 7                                          | -                                 | -                          | 14                                         | 100                                         | 1                               | 7    | 5    | 40   | -    | -    | -    | -    |
| 691+00          | -  | 699+00  | CTH 00 WB        | 6    | -                              | 36                         | 220                                      | 1                                          | 6                                          | -                                 | -                          | 14                                         | 85                                          | 1                               | 6    | 5    | 34   | -    | -    | -    | -    |
| PROJECT TOTALS  |    |         |                  |      | 1                              | 16800                      |                                          | 2150                                       |                                            | 4265                              |                            | 715                                        |                                             | 95                              |      | 2030 |      | 15   | 50   | 60   |      |

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| PAVEMENT MARKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |         |    |         |                     |       |        |     |       |      |      |      |      |    |      |     |     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----|---------|---------------------|-------|--------|-----|-------|------|------|------|------|----|------|-----|-----|
| <div>646.0841.S<br/>PAVEMENT MARKING<br/>GROOVED WET REFLECTIVE<br/>CONTRAST TAPE 4-INCH (WHITE)</div> <div>646.0106<br/>PAVEMENT MARKING<br/>EPOXY 4-INCH (WHITE)</div> <div>646.0106<br/>PAVEMENT MARKING<br/>EPOXY 4-INCH (YELLOW)</div> <div>646.0126<br/>PAVEMENT MARKING<br/>EPOXY 8-INCH</div> <div>646.0843.S<br/>PAVEMENT MARKING<br/>GROOVED WET REFLECTIVE<br/>CONTRAST TAPE 8-INCH</div> <div>647.0166<br/>PAVEMENT MARKING<br/>ARROWS EPOXY TYPE 2</div> <div>647.0176<br/>PAVEMENT MARKING<br/>ARROWS EPOXY TYPE 3</div> <div>647.0356<br/>PAVEMENT MARKING<br/>WORDS EPOXY</div> <div>647.0566<br/>PAVEMENT MARKING<br/>LINE EPOXY 18-INCH</div> <div>646.0606<br/>PAVEMENT MARKING<br/>ISLAND NOSE EPOXY</div> <div>647.0766<br/>PAVEMENT MARKING<br/>CROSSWALK EPOXY 6-INCH</div> <div>647.0803<br/>PAVEMENT MARKING<br/>AERIAL ENFORCEMENT BARS EPOXY 24-INCH</div> |         |    |         |                     |       |        |     |       |      |      |      |      |    |      |     |     |
| CATEGORY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | STATION | TO | STATION | LOCATION            | LF    | LF     | LF  | LF    | LF   | EACH | EACH | EACH | LF | EACH | LF  | LF  |
| 0010                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 348+63  | -  | 632+92  | STH 441 NB MAINLINE | 21244 | 27690  | -   | 6915  | -    | -    | -    | -    | -  | -    | -   | 84  |
| 0010                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 348+40  | -  | 632+92  | STH 441 SB MAINLINE | 20930 | 27638  | -   | 6895  | -    | -    | -    | -    | -  | -    | -   | 84  |
| 0010                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 407+00  | -  | 451+00  | STH 441 NB          | -     | -      | -   | -     | 942  | -    | -    | -    | -  | -    | -   | -   |
| 0010                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 470+00  | -  | 501+00  | STH 441 NB          | -     | -      | -   | -     | 750  | -    | -    | -    | -  | -    | -   | -   |
| 0010                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 575+00  | -  | 603+00  | STH 441 NB          | -     | -      | -   | -     | 682  | -    | -    | -    | -  | -    | -   | -   |
| 0010                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 619+00  | -  | 621+00  | STH 441 NB          | -     | -      | -   | -     | 690  | -    | -    | -    | -  | -    | -   | -   |
| 0010                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 406+00  | -  | 447+00  | STH 441 SB          | -     | -      | -   | -     | 470  | -    | -    | -    | -  | -    | -   | -   |
| 0010                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 472+00  | -  | 500+00  | STH 441 SB          | -     | -      | -   | -     | 666  | -    | -    | -    | -  | -    | -   | -   |
| 0010                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 578+00  | -  | 604+00  | STH 441 SB          | -     | -      | -   | -     | 660  | -    | -    | -    | -  | -    | -   | -   |
| 0010                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 617+00  | -  | 619+00  | STH 441 SB          | -     | -      | -   | -     | 690  | -    | -    | -    | -  | -    | -   | -   |
| 0010                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 397+88  | -  | 423+44  | CTH KK SW RAMP      | 2436  | 1098   | -   | -     | -    | -    | -    | -    | -  | -    | 115 | -   |
| 0010                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 426+10  | -  | 440+10  | CTH KK NE RAMP      | 1260  | 1014   | -   | -     | -    | -    | -    | -    | -  | -    | -   | -   |
| 0010                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 472+64  | -  | 485+75  | CTH CE SW RAMP      | 1211  | 898    | -   | -     | -    | -    | -    | -    | -  | -    | -   | -   |
| 0010                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 472+64  | -  | 485+73  | CTH CE SE RAMP      | 1474  | 937    | -   | -     | -    | -    | -    | -    | -  | -    | -   | -   |
| 0010                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 486+95  | -  | 498+50  | CTH CE NW RAMP      | 1208  | 822    | 240 | -     | -    | 2    | 2    | 1    | 30 | 3    | 155 | -   |
| 0010                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 486+82  | -  | 498+00  | CTH CE NE RAMP      | 980   | 913    | -   | -     | -    | -    | -    | -    | -  | 3    | 100 | -   |
| 0010                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 581+00  | -  | 591+81  | CTH 00 SW RAMP      | 962   | 871    | -   | -     | -    | -    | -    | -    | -  | 3    | -   | -   |
| 0010                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 576+50  | -  | 590+81  | CTH 00 SE RAMP      | 1401  | 1091   | 415 | -     | -    | 2    | 2    | 1    | 25 | 3    | -   | -   |
| 0010                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 592+18  | -  | 603+00  | CTH 00 NW RAMP      | 1082  | 747    | 80  | -     | -    | -    | -    | -    | 25 | 3    | -   | -   |
| 0010                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 592+24  | -  | 602+00  | CTH 00 NE RAMP      | 957   | 686    | -   | -     | -    | -    | -    | -    | -  | -    | -   | -   |
| PROJECT 0010 SUBTOTALS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |         |    |         |                     | 55145 | 64405  | 735 | 13810 | 5550 | 4    | 4    | 2    | 80 | 15   | 370 | 168 |
| PROJECT 0010 TOTALS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         |    |         |                     |       | 119550 | 735 | 13810 | 5550 | 4    | 4    | 2    | 80 | 15   | 370 | 168 |

CONSTRUCTION STAKING STORM SEWER

| <div>650.4000<br/>CONSTRUCTION STAKING<br/>STORM SEWER</div> |         |    |         |                  |      |                         |
|--------------------------------------------------------------|---------|----|---------|------------------|------|-------------------------|
| CATEGORY                                                     | STATION | TO | STATION | LOCATION         | EACH | REMARKS                 |
| 0010                                                         | 613+94  | -  | 613+94  | MEDIAN CROSSOVER | 3    | NORTH SIDE OF CROSSOVER |
| PROJECT 0010 TOTALS                                          |         |    |         |                  | 3    |                         |

ADJUSTING PULL BOXES

| <div>653.0900<br/>ADJUSTING<br/>PULL BOXES</div> |         |    |         |                |      |
|--------------------------------------------------|---------|----|---------|----------------|------|
| CATEGORY                                         | STATION | TO | STATION | LOCATION       | EACH |
| 0010                                             | 693+00  | -  | 693+00  | CTH 00 MEDIAN  | 1    |
| 0010                                             | 696+46  | -  | 696+46  | CTH 00 MEDIAN  | 1    |
| 0010                                             | 697+53  | -  | 697+53  | CTH 00 MEDIAN  | 1    |
| 0010                                             | 590+84  | -  | 590+84  | CTH 00 SE RAMP | 1    |
| 0010                                             | 590+89  | -  | 590+89  | CTH 00 SE RAMP | 1    |
| 0010                                             | 92+42   | -  | 92+42   | CTH CE MEDIAN  | 1    |
| PROJECT 0010 TOTALS                              |         |    |         |                | 6    |

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| SIGNALS                |                                |                                                |                                                             |                                                             |                                                    |                                                |                                                      |                                                       |                                                                                     |                                                         |                                                                      |                                                            |                                                      |                                                      |                                                                 |
|------------------------|--------------------------------|------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------|------------------------------------------------|------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------|----------------------------------------------------------------------|------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|-----------------------------------------------------------------|
| CATEGORY               | LOCATION                       | 204.0195                                       | 652.0225                                                    | 652.0235                                                    | 652.0615                                           | *652.0800                                      | 653.0105                                             | *653.0140                                             | 653.0905                                                                            | 654.0101                                                | *654.0102                                                            | 654.0110                                                   | 654.0113                                             | 654.0217                                             | 655.0230                                                        |
|                        |                                | REMOVING<br>CONCRETE BASES<br>EACH             | CONDUIT RIGID<br>NONMETALLIC<br>SCHEDULE<br>40 2-INCH<br>LF | CONDUIT RIGID<br>NONMETALLIC<br>SCHEDULE 40<br>3-INCH<br>LF | CONDUIT SPECIAL<br>3-INCH<br>LF                    | CONDUIT<br>LOOP<br>DETECTOR<br>LF              | PULL BOXES<br>STEEL<br>12x24-INCH<br>EACH            | PULL BOXES<br>STEEL<br>24x42-INCH<br>EACH             | REMOVING PULL<br>BOX<br>EACH                                                        | CONCRETE<br>BASES TYPE 1<br>EACH                        | CONCRETE<br>BASES TYPE 2<br>EACH                                     | CONCRETE<br>BASES TYPE 10<br>EACH                          | CONCRETE<br>BASES TYPE 13<br>EACH                    | CONCRETE<br>CABINET BASES<br>TYPE 9 SPECIAL<br>EACH  | CABLE TRAFFIC<br>SIGNAL 5-14<br>AWG<br>LF                       |
| 0010                   | STH 441 & CTH 00 (S-510)       | 7                                              | 70                                                          | 200                                                         | 60                                                 | 180                                            | 3                                                    | -                                                     | -                                                                                   | 2                                                       | 2                                                                    | 2                                                          | 4                                                    | -                                                    | 4840                                                            |
| 0010                   | STH 441 NB & CTH CE (S-511)    | 3                                              | 20                                                          | 130                                                         | -                                                  | 90                                             | 1                                                    | -                                                     | -                                                                                   | 1                                                       | 1                                                                    | 2                                                          | 1                                                    | -                                                    | 1975                                                            |
| 0010                   | STH 441 SB & CTH CE (S44-2004) | 5                                              | 210                                                         | 280                                                         | 460                                                | 270                                            | 2                                                    | 5                                                     | 4                                                                                   | 2                                                       | 1                                                                    | 1                                                          | 2                                                    | 1                                                    | 1675                                                            |
| PROJECT 0010 TOTALS    |                                | 15                                             | 300                                                         | 610                                                         | 520                                                | 540                                            | 6                                                    | 5                                                     | 4                                                                                   | 5                                                       | 4                                                                    | 5                                                          | 7                                                    | 1                                                    | 8490                                                            |
| CATEGORY               | LOCATION                       | 655.0240                                       | 655.0260                                                    | 655.0305                                                    | 655.0515                                           | 655.0610                                       | *655.0700                                            | 656.0200                                              | 657.0100                                                                            | *657.0255                                               | 657.0315                                                             | 657.0420                                                   | 657.0425                                             | 657.0709                                             |                                                                 |
|                        |                                | CABLE TRAFFIC<br>SIGNAL 7-14<br>AWG<br>LF      | CABLE TRAFFIC<br>SIGNAL 12-14<br>AWG<br>LF                  | CABLE TYPE UF 2-<br>12 AWG GROUNDED<br>LF                   | ELECTRICAL WIRE<br>TRAFFIC SIGNALS<br>10 AWG<br>LF | ELECTRICAL<br>WIRE<br>LIGHTING 12<br>AWG<br>LF | LOOP<br>DETECTOR<br>LEAD IN<br>CABLE<br>LF           | LOOP<br>DETECTOR<br>WIRE<br>LF                        | ELECTRICAL<br>SERVICE METER<br>BREAKER<br>PEDESTAL(STH<br>441 SB & CTH<br>CE)<br>LS | PEDESTAL<br>BASES<br>EACH                               | TRANSFORMER<br>BASES BREAKAWAY<br>11 1/2-INCH BOLT<br>CIRCLE<br>EACH | POLES TYPE 4<br>EACH                                       | TRAFFIC SIGNAL<br>STANDARD<br>ALUMINUM 13-FT<br>EACH | TRAFFIC SIGNAL<br>STANDARD<br>ALUMINUM 15-FT<br>EACH | LUMINAIRE ARMS<br>TRUSS TYPE 4-<br>INCH CLAMP 12-<br>FT<br>EACH |
| 0010                   | STH 441 & CTH 00 (S-510)       | 1200                                           | 2320                                                        | 2240                                                        | 7640                                               | 1500                                           | 1080                                                 | 560                                                   | -                                                                                   | 3                                                       | 2                                                                    | 2                                                          | 2                                                    | 1                                                    | 2                                                               |
| 0010                   | STH 441 NB & CTH CE (S-511)    | 850                                            | 880                                                         | 1120                                                        | 3430                                               | 750                                            | 1930                                                 | 180                                                   | -                                                                                   | 2                                                       | 1                                                                    | 1                                                          | 1                                                    | 1                                                    | 1                                                               |
| 0010                   | STH 441 SB & CTH CE (S44-2004) | 60                                             | 990                                                         | 740                                                         | 2890                                               | 750                                            | 1560                                                 | 570                                                   | 1                                                                                   | 2                                                       | 1                                                                    | 1                                                          | 1                                                    | 1                                                    | 1                                                               |
| PROJECT 0010 TOTALS    |                                | 2110                                           | 4190                                                        | 4100                                                        | 13960                                              | 3000                                           | 4570                                                 | 1310                                                  | 1                                                                                   | 7                                                       | 4                                                                    | 4                                                          | 4                                                    | 3                                                    | 4                                                               |
| CATEGORY               | LOCATION                       | 657.1350                                       | 657.1360                                                    | 657.1525                                                    | 657.1530                                           | 657.1535                                       | 657.1540                                             | 657.1812                                              | 658.0110                                                                            | 658.0115                                                | 658.0215                                                             | 658.0220                                                   | 658.0416                                             | 658.0500                                             | 658.0600                                                        |
|                        |                                | INSTALL POLES<br>TYPE 10<br>EACH               | INSTALL POLES<br>TYPE 13<br>EACH                            | INSTALL MONOTUBE<br>ARMS 25-FT<br>EACH                      | INSTALL MONOTUBE<br>ARMS 30-FT<br>EACH             | INSTALL MONOTUBE<br>ARMS 35-FT<br>EACH         | INSTALL MONOTUBE<br>ARMS 40-FT<br>EACH               | INSTALL<br>LUMINAIRE<br>STEEL<br>12-FT<br>EACH        | TRAFFIC SIGNAL<br>FACE 3-12 INCH<br>VERTICAL<br>EACH                                | TRAFFIC<br>SIGNAL FACE<br>4-12 INCH<br>VERTICAL<br>EACH | BACKPLATES<br>SIGNAL FACE 3<br>SECTION 12-INCH<br>EACH               | BACKPLATES<br>SIGNAL FACE 4<br>SECTION 12-<br>INCH<br>EACH | BACKPLATES<br>SIGNAL FACE<br>16-INCH<br>EACH         | PEDESTRIAN<br>SIGNAL FACE<br>16-INCH<br>EACH         | PEDESTRIAN<br>PUSH BUTTON<br>EACH                               |
| 0010                   | STH 441 & CTH 00 (S-510)       | 2                                              | 4                                                           | -                                                           | 2                                                  | 2                                              | 2                                                    | 8                                                     | 16                                                                                  | 4                                                       | 16                                                                   | 4                                                          | -                                                    | -                                                    | 16                                                              |
| 0010                   | STH 441 NB & CTH CE (S-511)    | 2                                              | 1                                                           | 1                                                           | 1                                                  | -                                              | 1                                                    | 4                                                     | 8                                                                                   | 2                                                       | 8                                                                    | 2                                                          | 1                                                    | 1                                                    | 8                                                               |
| 0010                   | STH 441 SB & CTH CE (S44-2004) | 1                                              | 2                                                           | -                                                           | 1                                                  | -                                              | 2                                                    | 4                                                     | 8                                                                                   | 2                                                       | 8                                                                    | 2                                                          | 1                                                    | 1                                                    | 8                                                               |
| PROJECT 0010 TOTALS    |                                | 5                                              | 7                                                           | 1                                                           | 4                                                  | 2                                              | 5                                                    | 16                                                    | 32                                                                                  | 8                                                       | 32                                                                   | 8                                                          | 2                                                    | 2                                                    | 32                                                              |
| CATEGORY               | LOCATION                       | 658.0605                                       | 658.0610                                                    | 658.0615                                                    | 658.0620                                           | 658.0625                                       | 658.0635                                             | 658.5069.01.                                          | 659.1125                                                                            | 650.8500                                                | SPV.0060.01                                                          | SPV.0105.02                                                | SPV.0105.03                                          | SPV.0105.04                                          |                                                                 |
|                        |                                | LED MODULES 12-<br>INCH YELLOW<br>BALL<br>EACH | LED MODULES 12-<br>INCH GREEN BALL<br>EACH                  | LED MODULES 12-<br>INCH RED ARROW<br>EACH                   | LED MODULES 12-<br>INCH YELLOW<br>ARROW<br>EACH    | LED MODULES<br>12-INCH<br>GREEN ARROW<br>EACH  | PEDESTRIAN<br>COUNTDOWN<br>TIMER 16-<br>INCH<br>EACH | LED MODULES<br>COUNTDOWN<br>TIMER 16-<br>INCH<br>EACH | 02.03 SIGNAL<br>MOUNTING<br>HARDWARE<br>LS                                          | LED LUMINAIRE,<br>LED-C<br>EACH                         | CONSTRUCTION<br>STAKING<br>ELECTRICAL<br>INSTALLATIONS<br>LS         | ABANDON CONCRETE<br>BASE<br>EACH                           | REMOVE<br>TRAFFIC<br>SIGNAL<br>LS                    | REMOVE TRAFFIC<br>SIGNAL<br>LS                       | REMOVE TRAFFIC<br>SIGNAL<br>LS                                  |
| 0010                   | STH 441 & CTH 00 (S-510)       | 16                                             | 16                                                          | 4                                                           | 8                                                  | 4                                              | -                                                    | 1                                                     | 10                                                                                  | -                                                       | 5                                                                    | -                                                          | 1                                                    | -                                                    |                                                                 |
| 0010                   | STH 441 NB & CTH CE (S-511)    | 8                                              | 8                                                           | 2                                                           | 4                                                  | 2                                              | 1                                                    | 1                                                     | 5                                                                                   | -                                                       | 3                                                                    | 1                                                          | -                                                    | -                                                    |                                                                 |
| 0010                   | STH 441 SB & CTH CE (S44-2004) | 8                                              | 8                                                           | 2                                                           | 4                                                  | 2                                              | 1                                                    | 1                                                     | 5                                                                                   | -                                                       | 4                                                                    | -                                                          | -                                                    | 1                                                    |                                                                 |
| PROJECT 01. 4685-19-60 |                                | -                                              | -                                                           | -                                                           | -                                                  | -                                              | -                                                    | -                                                     | -                                                                                   | 1                                                       | -                                                                    | -                                                          | -                                                    | -                                                    |                                                                 |
| PROJECT 0010 TOTALS    |                                | 32                                             | 32                                                          | 8                                                           | 16                                                 | 8                                              | 2                                                    | 3                                                     | 20                                                                                  | 1                                                       | 12                                                                   | 1                                                          | 1                                                    | 1                                                    |                                                                 |

\*ADDITIONAL QUANTITIES SHOWN ELSEWHERE

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| ATR CLASSIFICATION DETECTOR 441224   |            |                      |                      |              |                  |                  |               |            |
|--------------------------------------|------------|----------------------|----------------------|--------------|------------------|------------------|---------------|------------|
| CATEGORY                             | LOCATION   | 652.0210             | 652.0335             | * 652.0800   | * 653.0140       | 654.0220         | 655.0700      | * 655.0800 |
|                                      |            | CONDUIT RIGID        | CONDUIT RIGID        | CONDUIT LOOP | PULL BOX 24"X42" | CONCRETE CONTROL | LOOP DETECTOR | LOOP       |
|                                      |            | NONMETALLIC SCHEDULE | NONMETALLIC SCHEDULE | DETECTOR     | DETECTOR         | CABINET BASE-    | LEAD-IN-CABLE | DETECTOR   |
|                                      |            | 40 - 1 INCH          | 80 - 3 INCH          | LF           | EACH             | TYPE 10          | LF            | WIRE       |
|                                      |            | LF                   | LF                   | LF           |                  | EACH             | LF            | LF         |
| 0010                                 | STA 463+30 | 312                  | 314                  | 224          | 4                | 1                | 824           | 1488       |
| PROJECT 0010 TOTALS                  |            | 312                  | 314                  | 224          | 4                | 1                | 824           | 1488       |
| *ADDITIONAL QUANTITY SHOWN ELSEWHERE |            |                      |                      |              |                  |                  |               |            |

| TEMPORARY CROSSWALK ACCESS |         |    |         |                |  |                            |
|----------------------------|---------|----|---------|----------------|--|----------------------------|
| SPV.0045.01                |         |    |         |                |  | TEMPORARY CROSSWALK ACCESS |
| CATEGORY                   | STATION | TO | STATION | LOCATION       |  | DAY                        |
| 0010                       | 486+60  | -  | 486+84  | CTH CE NW RAMP |  | 5                          |
| 0010                       | 486+57  | -  | 487+08  | CTH CE NE RAMP |  | 5                          |
| PROJECT 0010 TOTALS        |         |    |         |                |  | 10                         |

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| LED LIGHTING        |         |    |         |            |                |                 |
|---------------------|---------|----|---------|------------|----------------|-----------------|
| CATEGORY            | STATION | TO | STATION | LOCATION   | 659.1130       | SPV.0060.11     |
|                     |         |    |         |            | LED LUMINAIRE, | REMOVE 250W HPS |
|                     |         |    |         |            | LED-D          | LUMINAIRE       |
|                     |         |    |         |            | EACH           | EACH            |
| 0010                | 632+00  | -  | 647+00  | STH 441 NB | 8              | 8               |
| 0010                | 633+00  | -  | 652+00  | STH 441 SB | 11             | 11              |
| PROJECT 0010 TOTALS |         |    |         |            | 19             | 19              |

| RESETTING CULVERT PIPE JOINTS |         |    |         |                |             |               |
|-------------------------------|---------|----|---------|----------------|-------------|---------------|
| CATEGORY                      | STATION | TO | STATION | LOCATION       | SPV.0060.07 | REMARKS       |
|                               |         |    |         |                | RESETTING   |               |
|                               |         |    |         |                | PIPE ENDS   |               |
|                               |         |    |         |                | EACH        |               |
| 0010                          | 460+00  | -  | 460+00  | STH 441 SB     | 1           | INLET ENDWALL |
| 0010                          | 594+50  | -  | 594+50  | CTH 00 NW RAMP | 1           | INLET ENDWALL |
| PROJECT 0010 TOTALS           |         |    |         |                | 2           |               |

| STRAPPING B-44-0069 |         |    |         |                |                     |         |
|---------------------|---------|----|---------|----------------|---------------------|---------|
| CATEGORY            | STATION | TO | STATION | LOCATION       | SPV.0060.08         | REMARKS |
|                     |         |    |         |                | STRAPPING B-44-0069 |         |
|                     |         |    |         |                | EACH                |         |
| 0010                | 590+00  | -  | 590+00  | CTH 00 SW RAMP | 2                   | RT      |
| PROJECT 0010 TOTALS |         |    |         |                | 2                   |         |

| STRAPPING B-44-0070 |         |    |         |            |                     |         |
|---------------------|---------|----|---------|------------|---------------------|---------|
| CATEGORY            | STATION | TO | STATION | LOCATION   | SPV.0060.09         | REMARKS |
|                     |         |    |         |            | STRAPPING B-44-0070 |         |
|                     |         |    |         |            | EACH                |         |
| 0010                | 590+00  | -  | 590+00  | STH 441 SB | 2                   | LT      |
| PROJECT 0010 TOTALS |         |    |         |            | 2                   |         |

| CONCRETE JOINT AND CRACK CLEANING |         |    |         |           |                    |  |
|-----------------------------------|---------|----|---------|-----------|--------------------|--|
| CATEGORY                          | STATION | TO | STATION | LOCATION  | SPV.0090.01        |  |
|                                   |         |    |         |           | CONCRETE JOINT AND |  |
|                                   |         |    |         |           | CRACK CLEANING     |  |
|                                   |         |    |         |           | LF                 |  |
| 0010                              | 691+67  | -  | 691+79  | CTH 00 EB | 16                 |  |
| 0010                              | 691+92  | -  | 691+41  | CTH 00 EB | 12                 |  |
| 0010                              | 692+88  | -  | 692+94  | CTH 00 EB | 6                  |  |
| 0010                              | 693+05  | -  | 693+14  | CTH 00 EB | 10                 |  |
| 0010                              | 693+18  | -  | 693+24  | CTH 00 EB | 6                  |  |
| 0010                              | 693+31  | -  | 693+37  | CTH 00 EB | 12                 |  |
| 0010                              | 693+69  | -  | 693+75  | CTH 00 EB | 6                  |  |
| 0010                              | 693+92  | -  | 694+03  | CTH 00 EB | 11                 |  |
| 0010                              | 694+42  | -  | 694+48  | CTH 00 EB | 6                  |  |
| 0010                              | 694+42  | -  | 694+61  | CTH 00 EB | 25                 |  |
| 0010                              | 694+76  | -  | 694+87  | CTH 00 EB | 36                 |  |
| 0010                              | 695+46  | -  | 695+52  | CTH 00 EB | 41                 |  |
| 0010                              | 695+93  | -  | 696+01  | CTH 00 EB | 45                 |  |
| 0010                              | 696+08  | -  | 696+18  | CTH 00 EB | 16                 |  |
| 0010                              | 696+27  | -  | 696+35  | CTH 00 EB | 14                 |  |
| 0010                              | 696+47  | -  | 696+59  | CTH 00 EB | 20                 |  |
| 0010                              | 696+61  | -  | 697+57  | CTH 00 EB | 126                |  |
| 0010                              | 697+53  | -  | 697+59  | CTH 00 EB | 12                 |  |
| 0010                              | 691+53  | -  | 691+59  | CTH 00 WB | 6                  |  |
| 0010                              | 691+55  | -  | 691+75  | CTH 00 WB | 20                 |  |
| 0010                              | 691+72  | -  | 691+78  | CTH 00 WB | 6                  |  |
| 0010                              | 691+56  | -  | 692+06  | CTH 00 WB | 50                 |  |
| 0010                              | 691+89  | -  | 691+95  | CTH 00 WB | 6                  |  |
| 0010                              | 691+86  | -  | 692+79  | CTH 00 WB | 100                |  |
| 0010                              | 692+41  | -  | 692+47  | CTH 00 WB | 12                 |  |
| 0010                              | 692+96  | -  | 693+16  | CTH 00 WB | 6                  |  |
| 0010                              | 693+93  | -  | 694+02  | CTH 00 WB | 15                 |  |
| 0010                              | 694+41  | -  | 694+47  | CTH 00 WB | 12                 |  |
| 0010                              | 694+84  | -  | 695+13  | CTH 00 WB | 35                 |  |
| 0010                              | 695+09  | -  | 695+16  | CTH 00 WB | 26                 |  |
| 0010                              | 695+65  | -  | 695+73  | CTH 00 WB | 26                 |  |
| 0010                              | 696+50  | -  | 696+56  | CTH 00 WB | 15                 |  |
| 0010                              | 696+58  | -  | 697+48  | CTH 00 WB | 90                 |  |
| PROJECT 0010 TOTALS               |         |    |         |           | 845                |  |

3

| STH 441 PIPE OUTFALL AT FOX RIVER NORTH ABUTMENT                            |         |    |         |              |    |                         | ** STH 441 PIPE OUTFALL QUANTITIES ** |         |    |         |              |                              |                            |                            |                                                       |                                                                   |                                     |                                      |                          |  |
|-----------------------------------------------------------------------------|---------|----|---------|--------------|----|-------------------------|---------------------------------------|---------|----|---------|--------------|------------------------------|----------------------------|----------------------------|-------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------|--------------------------------------|--------------------------|--|
| SPV.0105.01<br>STH 441 PIPE<br>OUTFALL AT<br>FOX RIVER<br>NORTH<br>ABUTMENT |         |    |         |              |    |                         |                                       |         |    |         |              |                              |                            |                            |                                                       |                                                                   |                                     |                                      |                          |  |
| CATEGORY                                                                    | STATION | TO | STATION | LOCATION     | LS | REMARKS                 | CATEGORY                              | STATION | TO | STATION | LOCATION     | REMOVING<br>ENDWALLS<br>EACH | EXCAVATION<br>COMMON<br>CY | BACKFILL<br>GRANULAR<br>CY | APRON ENDWALLS<br>FOR CULVERT PIPE<br>30-INCH<br>EACH | STORM SEWER PIPE<br>REINFORCED CONCRETE<br>CLASS IV 30-INCH<br>LF | MANHOLE<br>COVERS<br>TYPE J<br>EACH | MANHOLES<br>5-FT<br>DIAMETER<br>EACH | REMARKS                  |  |
| 0010                                                                        | 557+50  | -  | 560+00  | Pipe Outfall | 1  | SEE CONSTRUCTION DETAIL | 0010                                  | 557+50  | -  | 560+00  | Pipe Outfall | 1                            | 600                        | 600                        | 1                                                     | 72                                                                | 2                                   | 2                                    | FOX RIVER NORTH ABUTMENT |  |
| PROJECT 0010 TOTALS                                                         |         |    |         |              | 1  |                         | PROJECT 0010 TOTALS                   |         |    |         |              | 1                            | 600                        | 600                        | 1                                                     | 72                                                                | 2                                   | 2                                    |                          |  |
| **NOTE** QUANTITIES FOR CONTRACTOR INFORMATION ONLY                         |         |    |         |              |    |                         |                                       |         |    |         |              |                              |                            |                            |                                                       |                                                                   |                                     |                                      |                          |  |

3

| BARRIER SYSTEM GRADING SHAPING FINISHING ESTIMATED QUANTITIES |         |    |         |                   |          |                       |                        |                                |            |
|---------------------------------------------------------------|---------|----|---------|-------------------|----------|-----------------------|------------------------|--------------------------------|------------|
|                                                               |         |    |         |                   | * BORROW | * SALVAGED<br>TOPSOIL | * FERTILIZER<br>TYPE B | * SEEDING<br>MIXTURE NO.<br>30 | * MULCHING |
| CATEGORY                                                      | STATION | TO | STATION | LOCATION          | CY       | SY                    | CWT                    | LB                             | SY         |
| 0010                                                          | 388+20  | -  | 393+54  | NB STH 441 RT     | 49       | 21                    | 0.1                    | 0.4                            | 21         |
| 0010                                                          | 388+20  | -  | 393+54  | NB STH 441 LT     | 10       | 21                    | 0.1                    | 0.4                            | 21         |
| 0010                                                          | 395+14  | -  | 398+62  | SB STH 441 RT     | 10       | 21                    | 0.1                    | 0.4                            | 21         |
| 0010                                                          | 395+14  | -  | 398+62  | SB STH 441 LT     | 27       | 21                    | 0.1                    | 0.4                            | 21         |
| 0010                                                          | 400+12  | -  | 403+60  | NB STH 441 RT     | 37       | 21                    | 0.1                    | 0.4                            | 21         |
| 0010                                                          | 400+62  | -  | 403+60  | NB STH 441 LT     | 10       | 21                    | 0.1                    | 0.4                            | 21         |
| 0010                                                          | 421+25  | -  | 424+73  | NB STH 441 RT     | 33       | 21                    | 0.1                    | 0.4                            | 21         |
| 0010                                                          | 421+25  | -  | 424+73  | NB STH 441 LT     | 10       | 21                    | 0.1                    | 0.4                            | 21         |
| 0010                                                          | 425+58  | -  | 429+06  | SB STH 441 LT     | 27       | 21                    | 0.1                    | 0.4                            | 21         |
| 0010                                                          | 425+69  | -  | 429+17  | SB STH 441 RT     | 10       | 21                    | 0.1                    | 0.4                            | 21         |
| 0010                                                          | 461+91  | -  | 466+30  | NB STH 441 RT     | 27       | 21                    | 0.1                    | 0.4                            | 21         |
| 0010                                                          | 464+50  | -  | 468+15  | SB STH 441 LT     | 27       | 21                    | 0.1                    | 0.4                            | 21         |
| 0010                                                          | 481+93  | -  | 485+41  | NB STH 441 RT     | 33       | 21                    | 0.1                    | 0.4                            | 21         |
| 0010                                                          | 481+93  | -  | 485+41  | NB STH 441 LT     | 10       | 21                    | 0.1                    | 0.4                            | 21         |
| 0010                                                          | 487+47  | -  | 490+95  | SB STH 441 RT     | 10       | 21                    | 0.1                    | 0.4                            | 21         |
| 0010                                                          | 487+47  | -  | 490+95  | SB STH 441 LT     | 27       | 21                    | 0.1                    | 0.4                            | 21         |
| 0010                                                          | 564+85  | -  | 568+33  | SB STH 441 RT     | 27       | 21                    | 0.1                    | 0.4                            | 21         |
| 0010                                                          | 586+98  | -  | 590+46  | NB STH 441 RT     | 27       | 21                    | 0.1                    | 0.4                            | 21         |
| 0010                                                          | 592+69  | -  | 596+17  | SB STH 441 RT     | 10       | 21                    | 0.1                    | 0.4                            | 21         |
| 0010                                                          | 592+69  | -  | 596+17  | SB STH 441 LT     | 33       | 21                    | 0.1                    | 0.4                            | 21         |
| 0010                                                          | 626+36  | -  | 629+84  | NB STH 441 LT     | 10       | 21                    | 0.1                    | 0.4                            | 21         |
| 0010                                                          | 626+38  | -  | 629+86  | NB STH 441 RT     | 27       | 21                    | 0.1                    | 0.4                            | 21         |
| 0010                                                          | 632+45  | -  | 635+93  | SB STH 441 RT     | 10       | 21                    | 0.1                    | 0.4                            | 21         |
| 0010                                                          | 632+45  | -  | 635+93  | SB STH 441 LT     | 27       | 21                    | 0.1                    | 0.4                            | 21         |
| 0010                                                          | 589+52  | -  | 590+80  | CTH 00 SW RAMP LT | 22       | 21                    | 0.1                    | 0.4                            | 21         |
| 0010                                                          | 589+52  | -  | 591+30  | CTH 00 SW RAMP RT | 22       | 21                    | 0.1                    | 0.4                            | 21         |
| 0010                                                          | 588+98  | -  | 590+50  | CTH 00 SE RAMP RT | 22       | 21                    | 0.1                    | 0.4                            | 21         |
| PROJECT 0010 TOTALS                                           |         |    |         |                   | 594      | 567                   | 3                      | 11                             | 567        |
| * ITEMS AND QUANTITIES SHOWN FOR CONTRACTOR USE ONLY          |         |    |         |                   |          |                       |                        |                                |            |

COMMUNICATION VAULTS

| ROADWAY | ITEM ID          | 652.0700.S      | 673.0105      | 678.0300 | 678.0400    |
|---------|------------------|-----------------|---------------|----------|-------------|
|         |                  | INSTALL CONDUIT | COMMUNICATION | FIBER    | FIBER       |
|         |                  | INTO EXISTING   | VAULT TYPE 1  | OPTIC    | OPTIC       |
|         |                  | ITEM            | ITEM          | SPLICE   | TERMINATION |
|         |                  | EACH            | EACH          | EACH     | EACH        |
| WS 441  | EXCBCCTV-08-0082 | --              | --            | --       | 6           |
|         | EXPB01           | 1               | --            | --       | --          |
|         | CV01             | --              | 1             | 4        | --          |
|         | CV02             | --              | 1             | --       | --          |
|         | CV05             | --              | 1             | --       | --          |
|         | CV06             | --              | 1             | --       | --          |
|         | CV07             | --              | 1             | --       | --          |
|         | CV09             | --              | 1             | --       | --          |
|         | CV10             | --              | 1             | --       | --          |
|         | CV11             | --              | 1             | --       | --          |
|         | CV12             | --              | 1             | --       | --          |
|         | CV13             | --              | 1             | --       | --          |
|         | CV14             | --              | 1             | 72       | --          |
|         | CV15             | --              | 1             | --       | --          |
|         | CV16             | --              | 1             | --       | --          |
|         | CV17             | --              | 1             | --       | --          |
|         | EXJB10           | 1               | --            | --       | --          |
|         | EXJB20           | 1               | --            | --       | --          |
|         | CV22             | --              | 1             | --       | --          |
|         | CV24             | --              | 1             | --       | --          |
|         | CV25             | --              | 1             | --       | --          |
|         | CV26             | --              | 1             | --       | --          |
|         | CV27             | --              | 1             | --       | --          |
|         | CV28             | --              | 1             | --       | --          |
|         | CV29             | --              | 1             | --       | --          |
|         | CV30             | --              | 1             | --       | --          |
|         | CV31             | --              | 1             | --       | --          |
|         | EXCV32           | 1               | --            | 72       | --          |
| TOTALS  |                  | 4               | 23            | 148      | 6           |

FTMS CONDUIT AND CABLE ITEMS

| ROADWAY | ITEM ID         | LINEAR<br>DISTANCE | 652.0125 | 655.0610   | 671.0132 | 671.0232     | 671.0300 | 678.0006      | 678.0072      |
|---------|-----------------|--------------------|----------|------------|----------|--------------|----------|---------------|---------------|
|         |                 |                    | CONDUIT  | ELECTRICAL | CONDUIT  | CONDUIT HDPE | FIBER    | INSTALL FIBER | INSTALL FIBER |
|         |                 |                    | RIGID    | WIRE       | HDPE     | DIRECTIONAL  | OPTIC    | OPTIC CABLE   | OPTIC CABLE   |
|         |                 |                    | METALLIC | LIGHTING   | 3-DUCT   | BORE 3-DUCT  | CABLE    | OUTDOOR       | OUTDOOR       |
|         |                 |                    | 2-INCH   | 12 AWG     | 2-INCH   | 2-INCH       | MARKER   | PLANT 6-CT    | PLANT 72-CT   |
|         |                 |                    | LF       | LF         | LF       | LF           | EACH     | LF            | LF            |
| WS 441  | EXPB01 - CV01   | 290                | --       | 290        | --       | 290          | 2        | 420           | --            |
|         | CV01 - CV02     | 190                | --       | 190        | --       | 190          | 2        | --            | 390           |
|         | CV02 - QP03     | 835                | --       | 835        | 835      | --           | 4        | --            | 835           |
|         | QP03 - QP04     | 65                 | --       | 65         | --       | 65           | 1        | --            | 65            |
|         | QP04 - CV05     | 260                | --       | 260        | 260      | --           | 2        | --            | 360           |
|         | CV05 - CV06     | 1305               | --       | 1305       | 1305     | --           | 4        | --            | 1405          |
|         | CV06 - CV07     | 1175               | --       | 1175       | 1175     | --           | 4        | --            | 1275          |
|         | CV07 - QP08     | 155                | --       | 155        | --       | 155          | 2        | --            | 155           |
|         | QP08 - CV09     | 1280               | --       | 1280       | 1280     | --           | 4        | --            | 1380          |
|         | CV09 - CV10     | 245                | --       | 245        | --       | 245          | 2        | --            | 345           |
|         | CV10 - CV11     | 1020               | --       | 1020       | 1020     | --           | 4        | --            | 1120          |
|         | CV11 - CV12     | 1075               | --       | 1075       | 1075     | --           | 4        | --            | 1175          |
|         | CV12 - CV13     | 155                | --       | 155        | --       | 155          | 2        | --            | 255           |
|         | CV13 - CV14     | 940                | --       | 940        | --       | 940          | 4        | --            | 1040          |
|         | CV14 - CV15     | 180                | --       | 180        | --       | 180          | 2        | --            | 280           |
|         | CV15 - CV16     | 1540               | --       | 1540       | 1540     | --           | 4        | --            | 1640          |
|         | CV16 - CV17     | 890                | --       | 890        | 890      | --           | 3        | --            | 990           |
|         | CV17 - QP18     | 185                | --       | 185        | 185      | --           | 1        | --            | 185           |
|         | QP18 - EXJB10   | 25                 | 75       | 25         | --       | --           | 1        | --            | 25            |
|         | EXJB10 - EXJB20 | 1590               | --       | 1590       | --       | --           | --       | --            | 1590          |
|         | EXJB20 - QP21   | 25                 | 75       | 25         | --       | --           | --       | --            | 25            |
|         | QP21 - CV22     | 150                | --       | 150        | 150      | --           | 1        | --            | 250           |
|         | CV22 - QP23     | 950                | --       | 950        | 950      | --           | 1        | --            | 950           |
|         | QP23 - CV24     | 130                | --       | 130        | --       | 130          | 1        | --            | 230           |
|         | CV24 - CV25     | 1155               | --       | 1155       | 1155     | --           | 4        | --            | 1255          |
|         | CV25 - CV26     | 390                | --       | 390        | --       | 390          | 2        | --            | 490           |
|         | CV26 - CV27     | 1570               | --       | 1570       | 1570     | --           | 4        | --            | 1670          |
|         | CV27 - CV28     | 1655               | --       | 1655       | 1655     | --           | 4        | --            | 1755          |
|         | CV28 - CV29     | 125                | --       | 125        | --       | 125          | 2        | --            | 225           |
|         | CV29 - CV30     | 415                | --       | 415        | 415      | --           | 2        | --            | 515           |
|         | CV30 - CV31     | 210                | --       | 210        | --       | 210          | 2        | --            | 310           |
|         | CV31 - EXCV32   | 190                | --       | 190        | --       | 190          | 2        | --            | 290           |
| TOTALS  |                 |                    | 150      | 20365      | 15460    | 3265         | 77       | 420           | 22475         |

FTMS LUMP SUM ITEMS

| ROADWAY | 670.0200      | 678.0500      |
|---------|---------------|---------------|
|         | ITS           | COMMUNICATION |
|         | DOCUMENTATION | SYSTEM        |
|         | LS            | TESTING       |
|         | LS            | LS            |
| WS 441  |               |               |
| PROJECT | 1             | 1             |
| TOTALS  |               |               |
|         | 1             | 1             |

GRADING, SHAPING & FINISHING FOR ATR SITE

|      |        |        |         |      |
|------|--------|--------|---------|------|
| **   | **     | **     | **      |      |
| FILL | SALV   | FERT.  | SEEDING |      |
|      | TOPSOI | TYPE B | MIXTURE |      |
|      |        |        | NO. 30  |      |
| CY   | SY     | CWT    | LB      | EACH |
| 3    | 15     | 0.01   | 0.25    | 1    |

\*\*ITEMS & QUANTITIES FOR BID INFORMATION ONLY.

STATE WILL PROVIDE THE FOLLOWING ITEMS PER STATION:

2 SOLAR PANELS AND ONE BRACKET  
CCTV MOUNTED WIRED CABINET  
WAVETRONIX HD-125 UNIT & 40' CABLE  
WAVETRONIX CLICK 200 SURGE ARRESTOR MODULE  
WIRE AND HARDWARE NEEDED FOR INSTALLATION

ATR WAVETRONIX DETECTOR

|                                                      |                                      |                                                                    |                            |                                                            |                                                               |                                                                |                                                               |                                                                  |                                                                   |
|------------------------------------------------------|--------------------------------------|--------------------------------------------------------------------|----------------------------|------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------------------|-------------------------------------------------------------------|
|                                                      | *654.0102<br>CONCRETE<br>BASE TYPE 2 | *657.0255<br>TRANSFORMER<br>BREAKAWAY 11½-INCH<br>BOLT CIRCLE BASE | 657.0310<br>POLE<br>TYPE 3 | SPV.0060.02<br>INSTALLING<br>POLE MOUNTED<br>WIRED CABINET | SPV.0060.03<br>INSTALLING<br>2 SOLAR PANELS<br>ON ONE BRACKET | SPV.0060.04<br>INSTALLING<br>WAVETRONIX<br>CLICK 200<br>MODULE | SPV.0060.05<br>INSTALLING<br>WAVETRONIX<br>DETECTOR<br>MODULE | SPV.0060.06<br>INSTALLING<br>CONCRETE<br>MAINTENANCE<br>PLATFORM | SPV.0060.10<br>GRADING,<br>SHAPING &<br>FINISHING FOR<br>ATR SITE |
| STATION ATR 44-1219<br>STH 144, BTWN USH 41 & CTH OO | EACH<br>1                            | EACH<br>1                                                          | EACH<br>1                  | EACH<br>1                                                  | EACH<br>1                                                     | EACH<br>1                                                      | EACH<br>1                                                     | EACH<br>1                                                        | EACH<br>1                                                         |
| TOTAL                                                | 1                                    | 1                                                                  | 1                          | 1                                                          | 1                                                             | 1                                                              | 1                                                             | 1                                                                | 1                                                                 |

\*ADDITIONAL MISCELLANEOUS QUANTITIES SHOWN ELSEWHERE.

DESIGNED BY WISDOT CO

ERECTION & REMOVAL OF PERMANENT SIGNING, TYPE II

| SIGN NO.       | LOCATION                               | SIGN CODE | W X H     | 637.2210<br>SIGNS<br>TYPE II<br>REFLECTIVE<br>TYPE H<br>S.F. | 637.2215<br>SIGNS<br>TYPE II<br>REFLECTIVE<br>TYPE H<br>S.F. | 637.2230<br>SIGNS<br>TYPE II<br>REFLECTIVE<br>TYPE F<br>S.F. | 634.0612<br>POSTS<br>WOOD<br>4x6x12<br>EACH | 634.0614<br>POSTS<br>WOOD<br>4x6x14<br>EACH | 634.0616<br>POSTS<br>WOOD<br>4x6x16<br>EACH | 634.0808<br>POSTS<br>TUBULAR<br>STEEL<br>2X2X8<br>EACH | 634.0812<br>POSTS<br>TUBULAR<br>STEEL<br>2X2X12<br>EACH | 638.2602<br>REMOVING<br>SIGNS<br>TYPE II<br>EACH | 638.3000<br>REMOVING<br>SMALL<br>SIGN<br>SUPPORTS<br>EACH | 635.0200<br>SIGN SUPPORTS<br>STRUCTURAL<br>STEEL<br>HIGH-STRENGTH<br>LB | 636.0100<br>SIGN SUPPORTS<br>CONCRETE<br>MASONRY<br>CY | 636.0500<br>SIGN SUPPORTS<br>STEEL<br>REINFORCEMENT<br>LB | TYPE/SIZE<br>OF<br>STEEL | REMARKS                                                                 |
|----------------|----------------------------------------|-----------|-----------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|---------------------------------------------|---------------------------------------------|---------------------------------------------|--------------------------------------------------------|---------------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------|-------------------------------------------------------------------------|--------------------------------------------------------|-----------------------------------------------------------|--------------------------|-------------------------------------------------------------------------|
| 1              | STH 441, N. OF USH 10 INTERCHANGE      | R4-3      | 48" X 60" | 20.00                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 2                                           | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      |                                                                         |
| 2              | "                                      | J4-1      | 36" X 54" | 13.50                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 1                                           | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      | NORTH STH 441                                                           |
| 3              | "                                      | D10-1     | 12" X 24" | 2.00                                                         | ---                                                          | ---                                                          | ---                                         | ---                                         | ---                                         | ---                                                    | ---                                                     | ---                                              | ---                                                       | ---                                                                     | ---                                                    | ---                                                       | ---                      | MILE 5, MOUNT BELOW SIGN #2, PART OF REMOVAL FOR SIGN #2                |
| 4              | "                                      | D10-1     | 12" X 24" | 2.00                                                         | ---                                                          | ---                                                          | 1                                           | ---                                         | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      | MILE 5                                                                  |
| 5              | VACANT                                 | ---       | ---       | ---                                                          | ---                                                          | ---                                                          | ---                                         | ---                                         | ---                                         | ---                                                    | ---                                                     | ---                                              | ---                                                       | ---                                                                     | ---                                                    | ---                                                       | ---                      |                                                                         |
| 6              | STH 441, N. OF USH 10 INTERCHANGE      | R2-1      | 48" X 60" | 20.00                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 2                                           | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      | 65 MPH                                                                  |
| 7              | "                                      | R3-4B     | 36" X 48" | 12.00                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 1                                           | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      |                                                                         |
| 8              | "                                      | R3-4B     | 36" X 48" | 12.00                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 1                                           | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      |                                                                         |
| 9              | "                                      | R8-7      | 48" X 36" | 12.00                                                        | ---                                                          | ---                                                          | ---                                         | 1                                           | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      |                                                                         |
| 10             | STH 441, AT TELULAH AVE OVERPASS       | M1-94     | 84" X 21" | 12.25                                                        | ---                                                          | ---                                                          | 2                                           | ---                                         | ---                                         | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      | TELULAH AVE, SEE SIGN DETAIL SHEET                                      |
| 11             | "                                      | M1-94     | 84" X 21" | 12.25                                                        | ---                                                          | ---                                                          | 2                                           | ---                                         | ---                                         | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      | TELULAH AVE, SEE SIGN DETAIL SHEET                                      |
| 12             | STH 441, N. OF TELULAH AVE             | D10-1     | 12" X 24" | 2.00                                                         | ---                                                          | ---                                                          | 1                                           | ---                                         | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      | MILE 6                                                                  |
| 13             | "                                      | D10-1     | 12" X 24" | 2.00                                                         | ---                                                          | ---                                                          | 1                                           | ---                                         | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      | MILE 6                                                                  |
| 14             | "                                      | R3-4B     | 36" X 48" | 12.00                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 1                                           | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      |                                                                         |
| 15             | "                                      | R3-4B     | 36" X 48" | 12.00                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 1                                           | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      |                                                                         |
| 16             | "                                      | R8-7      | 48" X 36" | 12.00                                                        | ---                                                          | ---                                                          | ---                                         | 1                                           | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      |                                                                         |
| 17             | "                                      | R4-3      | 48" X 60" | 20.00                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 2                                           | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      |                                                                         |
| 18             | "                                      | R2-1      | 48" X 60" | 20.00                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 2                                           | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      | 65 MPH                                                                  |
| 19             | STH 441, AT LAKE PARK RD OVERPASS      | M1-94     | 96" X 21" | 14.00                                                        | ---                                                          | ---                                                          | 2                                           | ---                                         | ---                                         | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      | LAKE PARK RD, SEE SIGN DETAIL SHEET                                     |
| 20             | "                                      | J4-1      | 36" X 54" | 13.50                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 1                                           | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      | SOUTH STH 441                                                           |
| 21             | "                                      | M1-94     | 96" X 21" | 14.00                                                        | ---                                                          | ---                                                          | 2                                           | ---                                         | ---                                         | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      | LAKE PARK RD, SEE SIGN DETAIL SHEET                                     |
| 22             | STH 441, CALUMET ST/CTH KK INTERCHANGE | E5-1      | 72" X 60" | 30.00                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 2                                           | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      |                                                                         |
| 23             | "                                      | W4-1      | 48" X 48" | ---                                                          | ---                                                          | 16.00                                                        | ---                                         | ---                                         | 2                                           | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      |                                                                         |
| 24             | "                                      | D10-1     | 12" X 24" | 2.00                                                         | ---                                                          | ---                                                          | ---                                         | ---                                         | ---                                         | ---                                                    | ---                                                     | ---                                              | ---                                                       | ---                                                                     | ---                                                    | ---                                                       | ---                      | MILE 7, MOUNT TO LEFT POST BELOW SIGN #23, PART OF REMOVAL FOR SIGN #23 |
| 25             | "                                      | D10-1     | 12" X 24" | 2.00                                                         | ---                                                          | ---                                                          | 1                                           | ---                                         | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      | MILE 7                                                                  |
| 26             | "                                      | W3-3      | 36" X 36" | ---                                                          | ---                                                          | 9.00                                                         | ---                                         | 1                                           | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      |                                                                         |
| 27             | "                                      | I2-2      | 96" X 21" | 14.00                                                        | ---                                                          | ---                                                          | 2                                           | ---                                         | ---                                         | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      | OUTAGAMIE CO, SEE SIGN DETAIL SHEET                                     |
| 28             | "                                      | I2-2      | 96" X 21" | 14.00                                                        | ---                                                          | ---                                                          | 2                                           | ---                                         | ---                                         | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      | CALUMET CO, SEE SIGN DETAIL SHEET                                       |
| 29             | "                                      | W4-1      | 48" X 48" | ---                                                          | ---                                                          | 16.00                                                        | ---                                         | ---                                         | 2                                           | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      |                                                                         |
| 30             | STH 441, N. OF CALUMET ST/CTH KK       | J4-1      | 36" X 54" | 13.50                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 1                                           | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      | NORTH STH 441                                                           |
| 31             | "                                      | R2-1      | 48" X 60" | 20.00                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 2                                           | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      | 65 MPH                                                                  |
| 32             | "                                      | R3-4B     | 36" X 48" | 12.00                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 1                                           | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      |                                                                         |
| 33             | "                                      | R3-4B     | 36" X 48" | 12.00                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 1                                           | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      |                                                                         |
| 34             | "                                      | R4-3      | 48" X 60" | 20.00                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 2                                           | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      |                                                                         |
| 35             | VACANT                                 | ---       | ---       | ---                                                          | ---                                                          | ---                                                          | ---                                         | ---                                         | ---                                         | ---                                                    | ---                                                     | ---                                              | ---                                                       | ---                                                                     | ---                                                    | ---                                                       | ---                      |                                                                         |
| 36             | STH 441, AT COLLEGE AVE/CTH CE         | E5-1      | 72" X 60" | 30.00                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 2                                           | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      |                                                                         |
| 37             | "                                      | W3-3      | 36" X 36" | 9.00                                                         | ---                                                          | ---                                                          | ---                                         | 1                                           | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      |                                                                         |
| PAGE SUBTOTALS |                                        |           |           | 418.00                                                       | 0.00                                                         | 41.00                                                        | 16                                          | 4                                           | 29                                          | 0                                                      | 0                                                       | 33                                               | 49                                                        | 0                                                                       | 0                                                      | 0                                                         |                          |                                                                         |

PLAN SHEET PRODUCED  
BY WisDOT - NE REGION

ERECTION & REMOVAL OF PERMANENT SIGNING, TYPE II

| SIGN NO.       | LOCATION                                   | SIGN CODE | W X H      | 637.2210<br>SIGNS<br>TYPE II<br>REFLECTIVE<br>TYPE H<br>S.F. | 637.2215<br>SIGNS<br>TYPE II<br>REFLECTIVE<br>TYPE H<br>S.F. | 637.2230<br>SIGNS<br>TYPE II<br>REFLECTIVE<br>TYPE F<br>S.F. | 634.0612<br>POSTS<br>WOOD<br>4x6x12<br>EACH | 634.0614<br>POSTS<br>WOOD<br>4x6x14<br>EACH | 634.0616<br>POSTS<br>WOOD<br>4x6x16<br>EACH | 634.0808<br>POSTS<br>TUBULAR<br>STEEL<br>2X2X8<br>EACH | 634.0812<br>POSTS<br>TUBULAR<br>STEEL<br>2X2X12<br>EACH | 638.2602<br>REMOVING<br>SIGNS<br>TYPE II<br>EACH | 638.3000<br>REMOVING<br>SMALL<br>SIGN<br>SUPPORTS<br>EACH | 635.0200<br>SIGN SUPPORTS<br>STRUCTURAL<br>STEEL<br>HIGH-STRENGTH<br>LB | 636.0100<br>SIGN SUPPORTS<br>CONCRETE<br>MASONRY<br>CY | 636.0500<br>SIGN SUPPORTS<br>STEEL<br>REINFORCEMENT<br>LB | TYPE/SIZE<br>OF<br>STEEL | REMARKS                                                                   |
|----------------|--------------------------------------------|-----------|------------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|---------------------------------------------|---------------------------------------------|---------------------------------------------|--------------------------------------------------------|---------------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------|-------------------------------------------------------------------------|--------------------------------------------------------|-----------------------------------------------------------|--------------------------|---------------------------------------------------------------------------|
| 38             | STH 441, AT COLLEGE AVE/CTH CE INTERCHANGE | D10-1     | 12" X 24"  | 2.00                                                         | ---                                                          | ---                                                          | 1                                           | ---                                         | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      | MILE 8                                                                    |
| 39             | "                                          | D1-3      | 138" X 36" | 34.50                                                        | ---                                                          | ---                                                          | ---                                         | 3                                           | ---                                         | ---                                                    | ---                                                     | 1                                                | 3                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      | LAWRENCE UNIVERSITY, FOX CITIES PAC, SEE SIGN DETAIL SHEET                |
| 40             | "                                          | D1-4      | 84" X 54"  | 31.50                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 2                                           | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      | COLLEGE AVE, APPLETON, KAUKAUNA, SEE SIGN DETAIL SHEET                    |
| 41             | "                                          | R5-57     | 36" X 36"  | 9.00                                                         | ---                                                          | ---                                                          | ---                                         | 1                                           | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      |                                                                           |
| 42             | "                                          | J3-1      | 24" X 57"  | 9.50                                                         | ---                                                          | ---                                                          | ---                                         | ---                                         | 1                                           | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      | WEST CTH CE, SEE PLAN SHEET                                               |
| 43             | "                                          | J3-2      | 48" X 57"  | 19.00                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 1                                           | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      | EAST CTH CE, TO CTH N, SEE PLAN SHEET                                     |
| 44             | "                                          | R5-1A     | 36" X 24"  | 6.00                                                         | ---                                                          | ---                                                          | ---                                         | ---                                         | ---                                         | ---                                                    | ---                                                     | ---                                              | ---                                                       | ---                                                                     | ---                                                    | ---                                                       | ---                      | MOUNT ON BACKSIDE OF SIGN #42, PART OF REMOVAL FOR SIGN #43               |
| 45             | "                                          | R5-1A     | 36" X 24"  | 6.00                                                         | ---                                                          | ---                                                          | ---                                         | ---                                         | ---                                         | ---                                                    | ---                                                     | 1                                                | ---                                                       | ---                                                                     | ---                                                    | ---                                                       | ---                      | MOUNT ON BACKSIDE OF SIGN #41, PART OF REMOVAL FOR SIGN #42               |
| 46             | "                                          | W12-1D    | 24" X 24"  | ---                                                          | ---                                                          | 4.00                                                         | 1                                           | ---                                         | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      |                                                                           |
| 46A            | "                                          | R1-1F     | 30" X 30"  | ---                                                          | 5.18                                                         | ---                                                          | ---                                         | ---                                         | ---                                         | ---                                                    | ---                                                     | 1                                                | ---                                                       | ---                                                                     | ---                                                    | ---                                                       | ---                      | MOUNT TO SIGNAL                                                           |
| 46B            | "                                          | R5-1      | 30" X 30"  | 6.25                                                         | ---                                                          | ---                                                          | ---                                         | 1                                           | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      |                                                                           |
| 46C            | "                                          | R6-2R     | 24" X 30"  | 5.00                                                         | ---                                                          | ---                                                          | ---                                         | ---                                         | ---                                         | ---                                                    | 1                                                       | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      |                                                                           |
| 46D            | "                                          | R5-1      | 30" X 30"  | 6.25                                                         | ---                                                          | ---                                                          | ---                                         | ---                                         | ---                                         | ---                                                    | ---                                                     | ---                                              | ---                                                       | ---                                                                     | ---                                                    | ---                                                       | ---                      | MOUNT ON BACK OF SIGN #46C, PART OF REMOVAL FOR SIGN #46C                 |
| 47             | "                                          | W4-6      | 36" X 36"  | ---                                                          | ---                                                          | 9.00                                                         | ---                                         | 1                                           | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      |                                                                           |
| 48             | COLLEGE AVE/CTH CE                         | D1-72     | 120" X 60" | 50.00                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 3                                           | ---                                                    | ---                                                     | ---                                              | ---                                                       | ---                                                                     | ---                                                    | ---                                                       | ---                      | STH 441, SEE SIGN DETAIL SHEET                                            |
| 48A            | "                                          | R10-50    | 30" X 36"  | 7.50                                                         | ---                                                          | ---                                                          | ---                                         | ---                                         | ---                                         | ---                                                    | ---                                                     | ---                                              | ---                                                       | ---                                                                     | ---                                                    | ---                                                       | ---                      | MOUNT TO MONOTUBE OVERHEAD ARM NEXT TO LEFT TURN SIGNAL HEAD              |
| 49             | "                                          | D1-70     | 96" X 42"  | 28.00                                                        | ---                                                          | ---                                                          | 1                                           | ---                                         | ---                                         | ---                                                    | ---                                                     | ---                                              | ---                                                       | 584                                                                     | 1.2                                                    | 68                                                        | 2-TYPE A                 | BAND SIGN TO TYPE I STEEL POSTS, SEE SIGN DETAIL SHEET, SEE PLATE A5-8    |
| 50             | "                                          | D1-71     | 96" X 90"  | 60.00                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 1                                           | ---                                                    | ---                                                     | ---                                              | ---                                                       | ---                                                                     | ---                                                    | ---                                                       | ---                      | BAND SIGN TO TYPE I STEEL POSTS, SEE SIGN DETAIL SHEET, SEE PLATE A5-8    |
| 50A            | "                                          | R1-2      | 36" X 31"  | 3.88                                                         | ---                                                          | ---                                                          | ---                                         | 1                                           | ---                                         | ---                                                    | ---                                                     | ---                                              | ---                                                       | ---                                                                     | ---                                                    | ---                                                       | ---                      |                                                                           |
| 51             | "                                          | D1-71     | 96" X 90"  | 60.00                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 1                                           | ---                                                    | ---                                                     | ---                                              | ---                                                       | 584                                                                     | 1.2                                                    | 68                                                        | 2-TYPE A                 | BAND SIGN TO TYPE I STEEL POSTS, SEE SIGN DETAIL SHEET, SEE PLATE A5-8    |
| 51A            | "                                          | R10-50    | 30" X 36"  | 7.50                                                         | ---                                                          | ---                                                          | ---                                         | ---                                         | ---                                         | ---                                                    | ---                                                     | ---                                              | ---                                                       | ---                                                                     | ---                                                    | ---                                                       | ---                      | MOUNT TO MONOTUBE OVERHEAD ARM NEXT TO LEFT TURN SIGNAL HEAD              |
| 52             | "                                          | D1-70     | 84" X 42"  | 24.50                                                        | ---                                                          | ---                                                          | 1                                           | ---                                         | ---                                         | ---                                                    | ---                                                     | ---                                              | ---                                                       | ---                                                                     | ---                                                    | ---                                                       | ---                      | BAND SIGN TO TYPE I STEEL POSTS, SEE SIGN DETAIL SHEET, SEE PLATE A5-8    |
| 53             | "                                          | D1-72     | 120" X 60" | 50.00                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 3                                           | ---                                                    | ---                                                     | ---                                              | ---                                                       | ---                                                                     | ---                                                    | ---                                                       | ---                      | STH 441, SEE SIGN DETAIL SHEET                                            |
| 54             | STH 441, AT COLLEGE AVE/CTH CE INTERCHANGE | R1-2      | 36" X 31"  | 3.88                                                         | ---                                                          | ---                                                          | ---                                         | 1                                           | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      |                                                                           |
| 54A            | "                                          | R1-1F     | 30" X 30"  | ---                                                          | 5.18                                                         | ---                                                          | ---                                         | ---                                         | ---                                         | ---                                                    | ---                                                     | ---                                              | ---                                                       | ---                                                                     | ---                                                    | ---                                                       | ---                      |                                                                           |
| 55             | "                                          | W12-1D    | 24" X 24"  | ---                                                          | ---                                                          | 4.00                                                         | 1                                           | ---                                         | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      |                                                                           |
| 56             | "                                          | R5-1      | 30" X 30"  | 6.25                                                         | ---                                                          | ---                                                          | ---                                         | 1                                           | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      |                                                                           |
| 57             | "                                          | D1-3      | 138" X 36" | 34.50                                                        | ---                                                          | ---                                                          | ---                                         | 3                                           | ---                                         | ---                                                    | ---                                                     | 1                                                | 3                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      | LAWRENCE UNIVERSITY, FOX CITIES PAC, SEE SIGN DETAIL SHEET                |
| 58             | "                                          | R5-1A     | 36" X 24"  | 6.00                                                         | ---                                                          | ---                                                          | ---                                         | ---                                         | ---                                         | ---                                                    | ---                                                     | 1                                                | ---                                                       | ---                                                                     | ---                                                    | ---                                                       | ---                      | MOUNT ON BACKSIDE OF SIGN #59                                             |
| 59             | "                                          | R3-8P     | 54" X 30"  | 11.25                                                        | ---                                                          | ---                                                          | 2                                           | ---                                         | ---                                         | ---                                                    | ---                                                     | ---                                              | 2                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      | PART OF REMOVAL FOR SIGN #58                                              |
| 60             | "                                          | R5-1A     | 36" X 24"  | 6.00                                                         | ---                                                          | ---                                                          | ---                                         | ---                                         | ---                                         | ---                                                    | ---                                                     | 1                                                | ---                                                       | ---                                                                     | ---                                                    | ---                                                       | ---                      | MOUNT ON BACKSIDE OF SIGN #61                                             |
| 61             | "                                          | J3-1      | 24" X 57"  | 9.50                                                         | ---                                                          | ---                                                          | ---                                         | ---                                         | 1                                           | ---                                                    | ---                                                     | ---                                              | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      | EAST CTH CE, SEE PLAN SHEET, PART OF REMOVAL FOR SIGN #60                 |
| 62             | "                                          | W11-15    | 36" X 36"  | ---                                                          | ---                                                          | 9.00                                                         | ---                                         | 1                                           | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      |                                                                           |
| 63             | "                                          | D1-4      | 84" X 54"  | 31.50                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 2                                           | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      | COLLEGE AVE, KAUKAUNA, APPLETON, SEE SIGN DETAIL SHEET                    |
| 64             | "                                          | W3-3      | 36" X 36"  | ---                                                          | ---                                                          | 9.00                                                         | ---                                         | 1                                           | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      |                                                                           |
| 65             | "                                          | E5-1      | 72" X 60"  | 30.00                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 2                                           | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      |                                                                           |
| 66             | STH 441, N. OF COLLEGE AVE/CTH CE          | J4-1      | 36" X 54"  | 13.50                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 1                                           | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      | NORTH STH 441                                                             |
| 67             | "                                          | R2-1      | 48" X 60"  | 20.00                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 2                                           | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      | 65 MPH                                                                    |
| 68             | STH 441, AT NEWBERRY ST OVERPASS           | M1-94     | 90" X 21"  | 13.13                                                        | ---                                                          | ---                                                          | 2                                           | ---                                         | ---                                         | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      | NEWBERRY ST, SEE SIGN DETAIL SHEET                                        |
| 69             | "                                          | M1-94     | 90" X 21"  | 13.13                                                        | ---                                                          | ---                                                          | 2                                           | ---                                         | ---                                         | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      | NEWBERRY ST, SEE SIGN DETAIL SHEET                                        |
| 70             | STH 441, N. OF NEWBERRY ST OVERPASS        | D10-1     | 12" X 24"  | 2.00                                                         | ---                                                          | ---                                                          | 1                                           | ---                                         | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      | MILE 9                                                                    |
| 71             | "                                          | D10-1     | 12" X 24"  | 2.00                                                         | ---                                                          | ---                                                          | 1                                           | ---                                         | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      | MILE 9                                                                    |
| 72             | "                                          | W8-64     | 48" X 48"  | ---                                                          | ---                                                          | 16.00                                                        | ---                                         | ---                                         | 2                                           | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      |                                                                           |
| 73             | "                                          | I3-1      | 42" X 36"  | 10.50                                                        | ---                                                          | ---                                                          | 1                                           | ---                                         | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      | FOX RIVER, SEE SIGN DETAIL                                                |
| 74             | "                                          | I3-1      | 42" X 36"  | 10.50                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | ---                                         | 1                                                      | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                    | ---                                                       | ---                      | FOX RIVER, SEE SIGN DETAIL, MOUNT TO TOP OF PARAPET WALL, SEE PLATE A4-10 |
| PAGE SUBTOTALS |                                            |           |            | 650.01                                                       | 10.36                                                        | 51.00                                                        | 14                                          | 14                                          | 22                                          | 1                                                      | 1                                                       | 31                                               | 40                                                        | 1168                                                                    | 2.4                                                    | 136                                                       |                          |                                                                           |

PLAN SHEET PRODUCED  
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ERECTION & REMOVAL OF PERMANENT SIGNING, TYPE II

| SIGN NO.       | LOCATION                                     | SIGN CODE | W X H     | 637.2210<br>SIGNS<br>TYPE II<br>REFLECTIVE<br>TYPE H<br>S.F. | 637.2215<br>SIGNS<br>TYPE II<br>REFLECTIVE<br>TYPE H<br>S.F. | 637.2230<br>SIGNS<br>TYPE II<br>REFLECTIVE<br>TYPE F<br>S.F. | 634.0612<br>POSTS<br>WOOD<br>4x6x12<br>EACH | 634.0614<br>POSTS<br>WOOD<br>4x6x14<br>EACH | 634.0616<br>POSTS<br>WOOD<br>4x6x16<br>EACH | 634.0808<br>POSTS<br>TUBULAR<br>STEEL<br>2X2X8<br>EACH | 634.0812<br>POSTS<br>TUBULAR<br>STEEL<br>2X2X12<br>EACH | 638.2602<br>REMOVING<br>SIGNS<br>TYPE II<br>EACH | 638.3000<br>REMOVING<br>SMALL<br>SIGN<br>SUPPORTS<br>EACH | 635.0200<br>SIGN SUPPORTS<br>STRUCTURAL<br>STEEL<br>HIGH-STRENGTH<br>LB | 636.0100<br>SIGN<br>SUPPORTS<br>CONCRETE<br>MASONRY<br>CY | 636.0500<br>SIGN<br>SUPPORTS<br>STEEL<br>REINFORCEMENT<br>LB | TYPE/SIZE<br>OF<br>STEEL | REMARKS                                                                |
|----------------|----------------------------------------------|-----------|-----------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|---------------------------------------------|---------------------------------------------|---------------------------------------------|--------------------------------------------------------|---------------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------|-------------------------------------------------------------------------|-----------------------------------------------------------|--------------------------------------------------------------|--------------------------|------------------------------------------------------------------------|
| 75             | STH 441, N. OF NEWBERRY ST OVERPASS          | M1-94     | 30" X 30" | 6.25                                                         | ---                                                          | ---                                                          | ---                                         | ---                                         | ---                                         | 1                                                      | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      | HWY 96, SEE SIGN DETAIL, MOUNT TO TOP OF PARAPET WALL, SEE PLATE A4-10 |
| 76             | "                                            | M1-94     | 30" X 30" | 6.25                                                         | ---                                                          | ---                                                          | ---                                         | ---                                         | ---                                         | 1                                                      | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      | HWY 96, SEE SIGN DETAIL, MOUNT TO TOP OF PARAPET WALL, SEE PLATE A4-10 |
| 77             | "                                            | R2-1      | 48" X 60" | 20.00                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 2                                           | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      | 65 MPH                                                                 |
| 78             | "                                            | W8-64     | 48" X 48" | ---                                                          | ---                                                          | 16.00                                                        | ---                                         | ---                                         | 2                                           | ---                                                    | ---                                                     | ---                                              | ---                                                       | ---                                                                     | ---                                                       | ---                                                          | ---                      |                                                                        |
| 79             | "                                            | J4-1      | 36" X 54" | 13.50                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 1                                           | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      | SOUTH STH 441                                                          |
| 80             | STH 441, AT NORTHLAND AVE/CTH 00 INTERCHANGE | E5-1      | 72" X 60" | 30.00                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 2                                           | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      |                                                                        |
| 81             | "                                            | W3-3      | 36" X 36" | ---                                                          | ---                                                          | 9.00                                                         | ---                                         | 1                                           | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      |                                                                        |
| 82             | "                                            | D10-2     | 12" X 36" | 3.00                                                         | ---                                                          | ---                                                          | 1                                           | ---                                         | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      | MILE 10                                                                |
| 83             | "                                            | D10-2     | 12" X 36" | 3.00                                                         | ---                                                          | ---                                                          | 1                                           | ---                                         | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      | MILE 10                                                                |
| 84             | "                                            | D1-4      | 84" X 54" | 31.50                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 2                                           | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      | NORTHLAND AVE, APPLETON, KAUKAUNA, SEE SIGN DETAIL SHEET               |
| 85             | "                                            | R3-8P     | 54" X 30" | 11.25                                                        | ---                                                          | ---                                                          | ---                                         | 2                                           | ---                                         | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      |                                                                        |
| 86             | "                                            | J3-2      | 48" X 57" | 19.00                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 1                                           | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      | WEST CTH 00, EAST CTH 00, SEE PLAN SHEET                               |
| 87             | "                                            | R5-1A     | 36" X 24" | 6.00                                                         | ---                                                          | ---                                                          | ---                                         | ---                                         | ---                                         | ---                                                    | ---                                                     | ---                                              | ---                                                       | ---                                                                     | ---                                                       | ---                                                          | ---                      | MOUNT ON BACKSIDE OF SIGN #85, PART OF REMOVAL FOR SIGN #85            |
| 88             | "                                            | R5-1A     | 36" X 24" | 6.00                                                         | ---                                                          | ---                                                          | ---                                         | ---                                         | ---                                         | ---                                                    | ---                                                     | ---                                              | ---                                                       | ---                                                                     | ---                                                       | ---                                                          | ---                      | MOUNT ON BACKSIDE OF SIGN #86, PART OF REMOVAL FOR SIGN #86            |
| 89             | "                                            | W12-1D    | 24" X 24" | ---                                                          | ---                                                          | 4.00                                                         | 1                                           | ---                                         | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      |                                                                        |
| 90             | "                                            | R6-2R     | 24" X 30" | 5.00                                                         | ---                                                          | ---                                                          | ---                                         | 1                                           | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      |                                                                        |
| 91             | "                                            | R5-1      | 30" X 30" | 6.25                                                         | ---                                                          | ---                                                          | ---                                         | ---                                         | ---                                         | ---                                                    | ---                                                     | ---                                              | ---                                                       | ---                                                                     | ---                                                       | ---                                                          | ---                      | MOUNT ON BACKSIDE OF SIGN #90, PART OF REMOVAL FOR SIGN #90            |
| 91A            | "                                            | R10-50    | 30" X 36" | 7.50                                                         | ---                                                          | ---                                                          | ---                                         | ---                                         | ---                                         | ---                                                    | ---                                                     | ---                                              | ---                                                       | ---                                                                     | ---                                                       | ---                                                          | ---                      | MOUNT TO MONOTUBE OVERHEAD ARM NEXT TO LEFT TURN SIGNAL HEAD           |
| 92             | "                                            | R5-1      | 30" X 30" | 6.25                                                         | ---                                                          | ---                                                          | ---                                         | 1                                           | ---                                         | ---                                                    | ---                                                     | 1                                                | ---                                                       | ---                                                                     | ---                                                       | ---                                                          | ---                      |                                                                        |
| 92A            | "                                            | R1-1F     | 30" X 30" | ---                                                          | 5.18                                                         | ---                                                          | ---                                         | ---                                         | ---                                         | ---                                                    | ---                                                     | ---                                              | ---                                                       | ---                                                                     | ---                                                       | ---                                                          | ---                      | MOUNT ON BACKSIDE OF SIGN #92, PART OF REMOVAL FOR SIGN #92            |
| 92B            | "                                            | R1-1F     | 30" X 30" | ---                                                          | 5.18                                                         | ---                                                          | ---                                         | ---                                         | ---                                         | ---                                                    | ---                                                     | 1                                                | ---                                                       | ---                                                                     | ---                                                       | ---                                                          | ---                      | MOUNT TO SIGNAL                                                        |
| 93             | "                                            | W4-1      | 48" X 48" | ---                                                          | ---                                                          | 16.00                                                        | ---                                         | ---                                         | 2                                           | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      |                                                                        |
| 94             | "                                            | R5-57     | 36" X 36" | 9.00                                                         | ---                                                          | ---                                                          | ---                                         | 1                                           | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      |                                                                        |
| 94A            | "                                            | R1-2      | 36" X 31" | 3.88                                                         | ---                                                          | ---                                                          | ---                                         | 1                                           | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      |                                                                        |
| 95             | "                                            | W4-3      | 48" X 48" | ---                                                          | ---                                                          | 16.00                                                        | ---                                         | ---                                         | 2                                           | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      |                                                                        |
| 95A            | "                                            | R10-50    | 30" X 36" | 7.50                                                         | ---                                                          | ---                                                          | ---                                         | ---                                         | ---                                         | ---                                                    | ---                                                     | ---                                              | ---                                                       | ---                                                                     | ---                                                       | ---                                                          | ---                      | MOUNT TO MONOTUBE OVERHEAD ARM NEXT TO LEFT TURN SIGNAL HEAD           |
| 96             | "                                            | R5-1      | 30" X 30" | 6.25                                                         | ---                                                          | ---                                                          | ---                                         | ---                                         | ---                                         | ---                                                    | ---                                                     | ---                                              | 1                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      | MOUNT ON BACKSIDE OF SIGN #99, PART OF REMOVAL FOR SIGN #99            |
| 96A            | "                                            | R5-57     | 36" X 36" | 9.00                                                         | ---                                                          | ---                                                          | ---                                         | 1                                           | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      |                                                                        |
| 97             | "                                            | R5-1      | 30" X 30" | 6.25                                                         | ---                                                          | ---                                                          | ---                                         | 1                                           | ---                                         | ---                                                    | ---                                                     | 1                                                | ---                                                       | ---                                                                     | ---                                                       | ---                                                          | ---                      |                                                                        |
| 97A            | "                                            | R1-1F     | 30" X 30" | ---                                                          | 5.18                                                         | ---                                                          | ---                                         | ---                                         | ---                                         | ---                                                    | ---                                                     | 1                                                | ---                                                       | ---                                                                     | ---                                                       | ---                                                          | ---                      | MOUNT TO SIGNAL                                                        |
| 98             | "                                            | R1-2      | 36" X 31" | 3.88                                                         | ---                                                          | ---                                                          | ---                                         | 1                                           | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      |                                                                        |
| 99             | "                                            | R6-2R     | 24" X 30" | 5.00                                                         | ---                                                          | ---                                                          | ---                                         | 1                                           | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      |                                                                        |
| 100            | "                                            | W12-1D    | 24" X 24" | ---                                                          | ---                                                          | 4.00                                                         | 1                                           | ---                                         | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      |                                                                        |
| 101            | "                                            | R5-1A     | 36" X 24" | 6.00                                                         | ---                                                          | ---                                                          | ---                                         | ---                                         | ---                                         | ---                                                    | ---                                                     | 1                                                | ---                                                       | ---                                                                     | ---                                                       | ---                                                          | ---                      | MOUNT ON BACKSIDE OF SIGN #102                                         |
| 102            | "                                            | J3-2      | 48" X 57" | 19.00                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 1                                           | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      | EAST CTH 00, WEST CTH 00, SEE PLAN SHEET                               |
| 103            | "                                            | R5-1A     | 36" X 24" | 6.00                                                         | ---                                                          | ---                                                          | 1                                           | ---                                         | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      |                                                                        |
| 104            | "                                            | D1-4      | 84" X 54" | 31.50                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 2                                           | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      | NORTHLAND AVE, KAUKAUNA, APPLETON, SEE SIGN DETAIL SHEET               |
| 105            | "                                            | W3-3      | 36" X 36" | ---                                                          | ---                                                          | 9.00                                                         | ---                                         | 1                                           | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      |                                                                        |
| 106            | "                                            | E5-1      | 72" X 60" | 30.00                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 2                                           | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      |                                                                        |
| 107            | STH 441, N. OF NORTHLAND AVE INTERCHANGE     | R4-3      | 48" X 60" | 20.00                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 2                                           | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      |                                                                        |
| 108            | "                                            | R8-7      | 48" X 36" | 12.00                                                        | ---                                                          | ---                                                          | ---                                         | 1                                           | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      |                                                                        |
| 109            | "                                            | J1-1      | 36" X 54" | 13.50                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 1                                           | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      | END STH 441                                                            |
| 110            | "                                            | J1-1      | 36" X 54" | 13.50                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 1                                           | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      | END STH 441                                                            |
| 111            | "                                            | R3-4B     | 36" X 48" | 12.00                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 1                                           | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      |                                                                        |
| 112            | "                                            | R5-57     | 36" X 36" | 9.00                                                         | ---                                                          | ---                                                          | ---                                         | 1                                           | ---                                         | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      |                                                                        |
| PAGE SUBTOTALS |                                              |           |           | 404.01                                                       | 15.54                                                        | 74.00                                                        | 5                                           | 14                                          | 24                                          | 2                                                      | 0                                                       | 37                                               | 42                                                        | 0                                                                       | 0                                                         | 0                                                            |                          |                                                                        |

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ERECTION & REMOVAL OF PERMANENT SIGNING, TYPE II

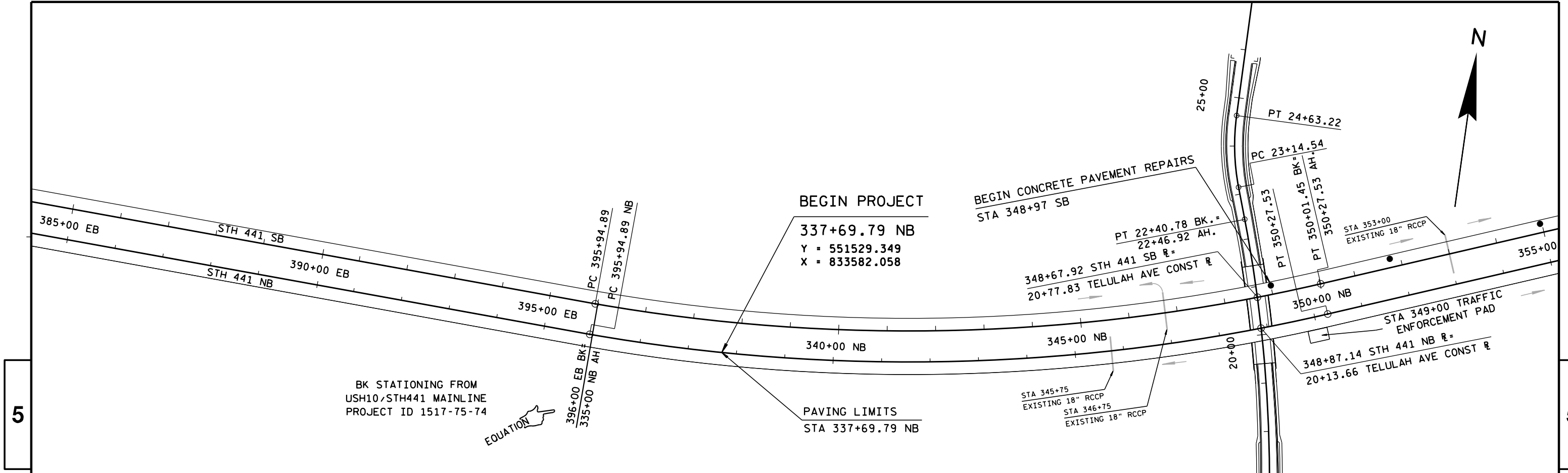
| SIGN NO. | LOCATION                                 | SIGN CODE | W X H     | 637.2210<br>SIGNS<br>TYPE II<br>REFLECTIVE<br>TYPE H<br>S.F. | 637.2215<br>SIGNS<br>TYPE II<br>REFLECTIVE<br>TYPE H<br>S.F. | 637.2230<br>SIGNS<br>TYPE II<br>REFLECTIVE<br>TYPE F<br>S.F. | 634.0612<br>POSTS<br>WOOD<br>4x6x12<br>EACH | 634.0614<br>POSTS<br>WOOD<br>4x6x14<br>EACH | 634.0616<br>POSTS<br>WOOD<br>4x6x16<br>EACH | 634.0808<br>POSTS<br>TUBULAR<br>STEEL<br>2X2X8<br>EACH | 634.0812<br>POSTS<br>TUBULAR<br>STEEL<br>2X2X12<br>EACH | 638.2602<br>REMOVING<br>SIGNS<br>TYPE II<br>EACH | 638.3000<br>REMOVING<br>SMALL<br>SIGN<br>SUPPORTS<br>EACH | 635.0200<br>SIGN SUPPORTS<br>STRUCTURAL<br>STEEL<br>HIGH-STRENGTH<br>LB | 636.0100<br>SIGN<br>SUPPORTS<br>CONCRETE<br>MASONRY<br>CY | 636.0500<br>SIGN<br>SUPPORTS<br>STEEL<br>REINFORCEMENT<br>LB | TYPE/SIZE<br>OF<br>STEEL | REMARKS                                           |
|----------|------------------------------------------|-----------|-----------|--------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|---------------------------------------------|---------------------------------------------|---------------------------------------------|--------------------------------------------------------|---------------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------|-------------------------------------------------------------------------|-----------------------------------------------------------|--------------------------------------------------------------|--------------------------|---------------------------------------------------|
| 113      | STH 441, N. OF NORTHLAND AVE INTERCHANGE | R3-4B     | 36" X 48" | 12.00                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 1                                           | ---                                                    | ---                                                     | 1                                                | 1                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      |                                                   |
| 114      | STH 441, AT USH 41 INTERCHANGE           | W13-3     | 48" X 60" | ---                                                          | ---                                                          | 20.00                                                        | ---                                         | ---                                         | ---                                         | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      | 50 MPH, MOUNT TO S-44-28 SIGN BRIDGE RIGHT COLUMN |
| 115      | "                                        | E5-1      | 72" X 60" | 30.00                                                        | ---                                                          | ---                                                          | ---                                         | ---                                         | 2                                           | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      |                                                   |
| 116      | "                                        | W4-1      | 48" X 48" | ---                                                          | ---                                                          | 16.00                                                        | ---                                         | ---                                         | 2                                           | ---                                                    | ---                                                     | 1                                                | 2                                                         | ---                                                                     | ---                                                       | ---                                                          | ---                      |                                                   |

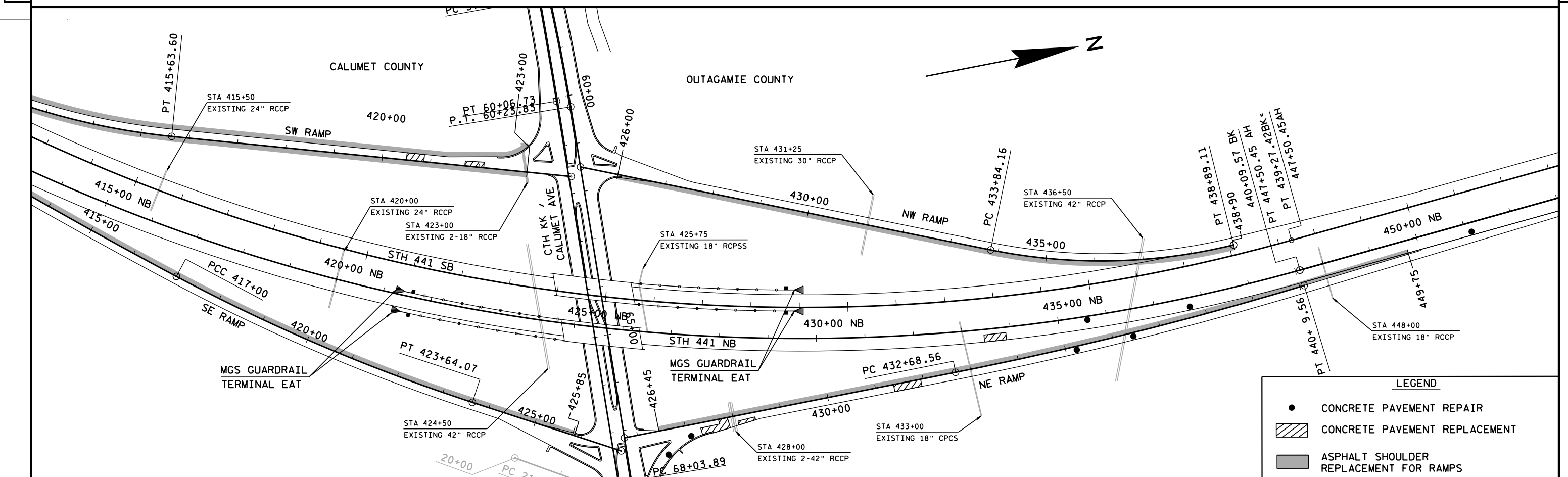
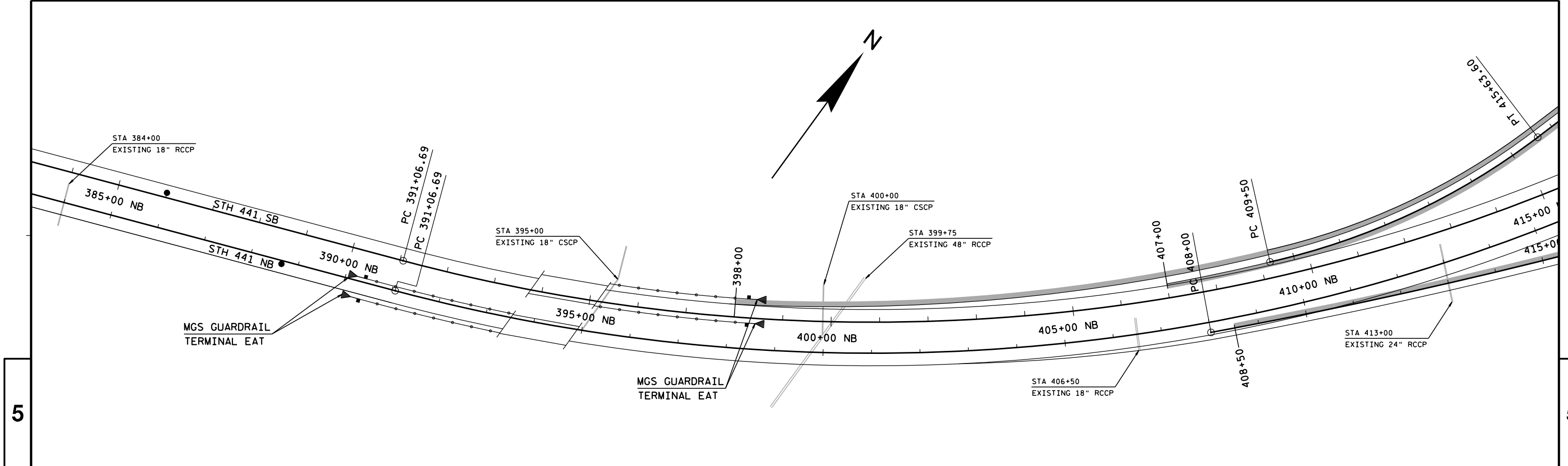
PAGE SUBTOTALS

PROJECT TOTALS

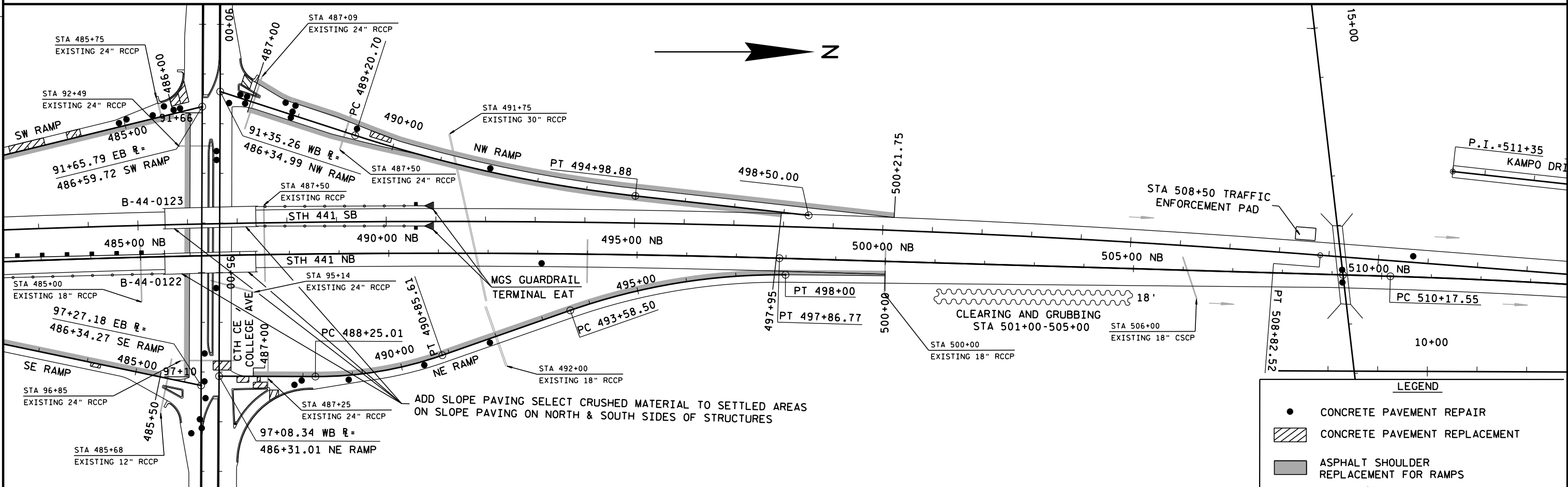
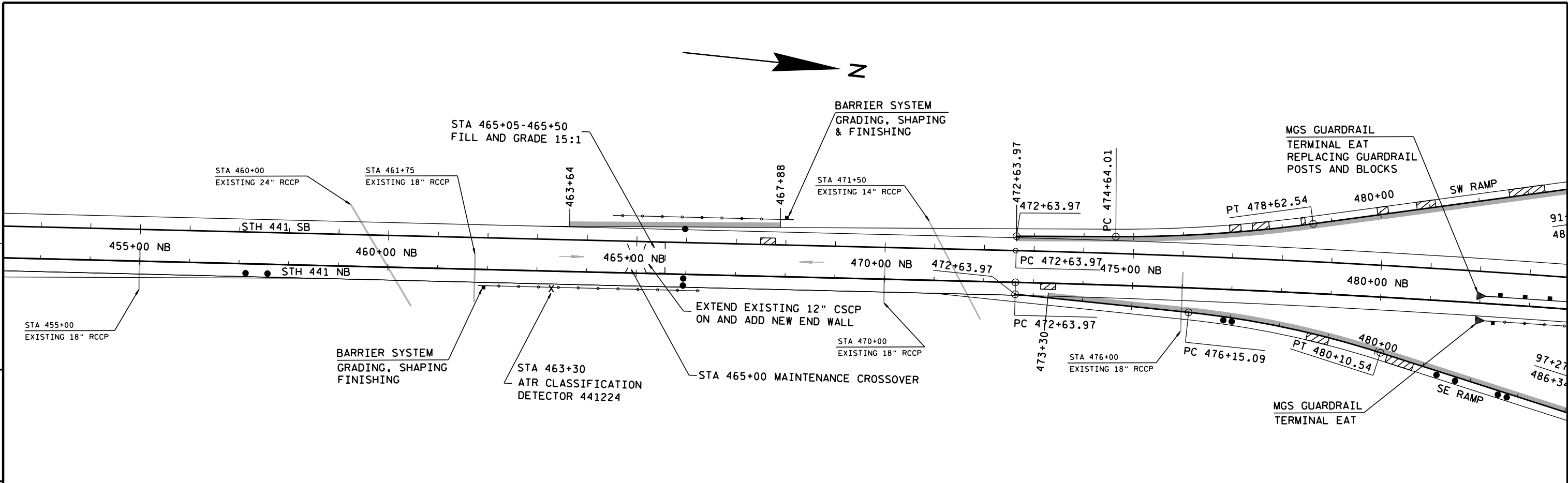
1514.02 25.90 202.00 35 32 80 3 1 105 138 1168 2.4 136

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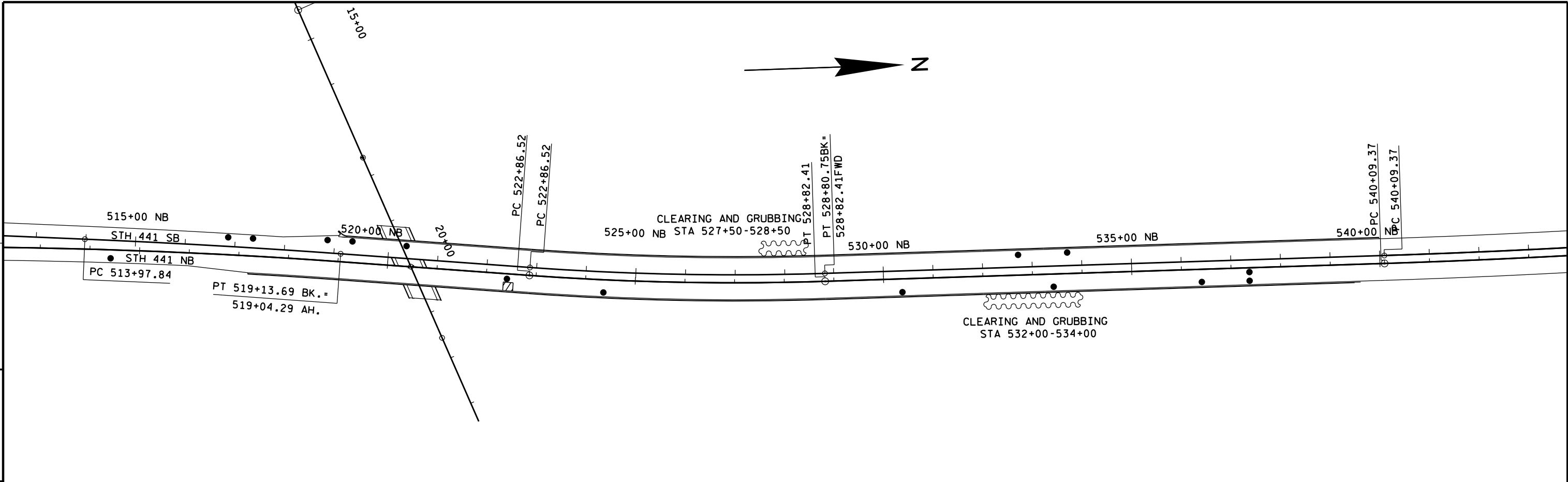
| LEGEND |                                        |
|--------|----------------------------------------|
| ●      | CONCRETE PAVEMENT REPAIR               |
| ▨      | CONCRETE PAVEMENT REPLACEMENT          |
| ■      | ASPHALT SHOULDER REPLACEMENT FOR RAMPS |



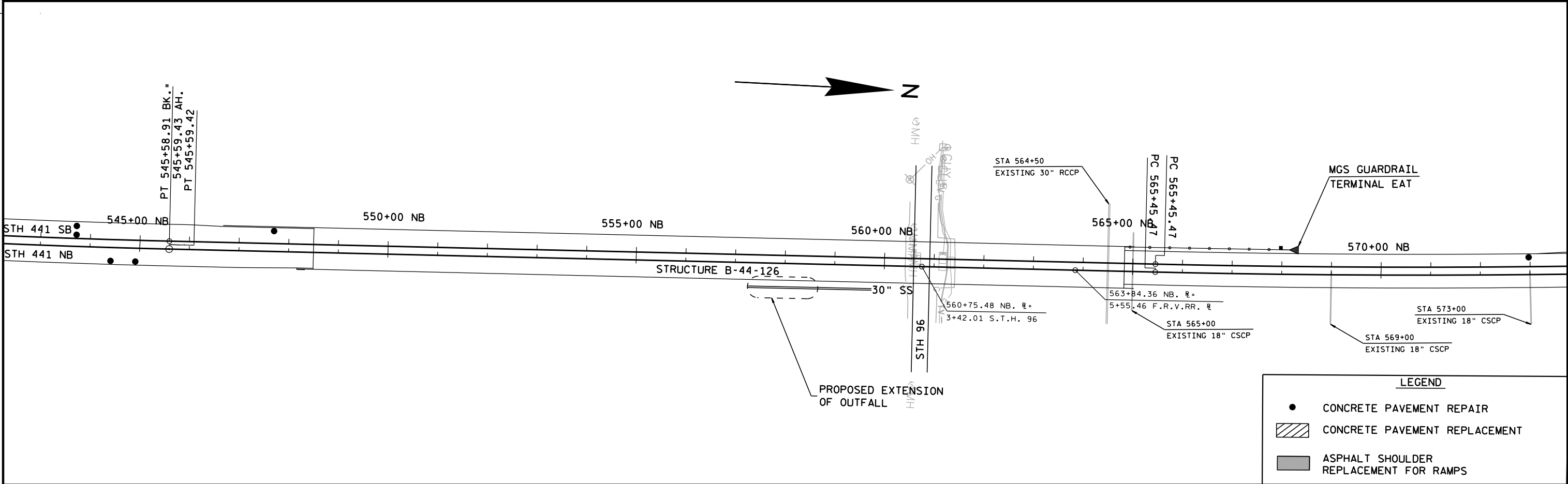
**LEGEND**

- CONCRETE PAVEMENT REPAIR
- ▨ CONCRETE PAVEMENT REPLACEMENT
- ASPHALT SHOULDER REPLACEMENT FOR RAMPS

5



5



LEGEND

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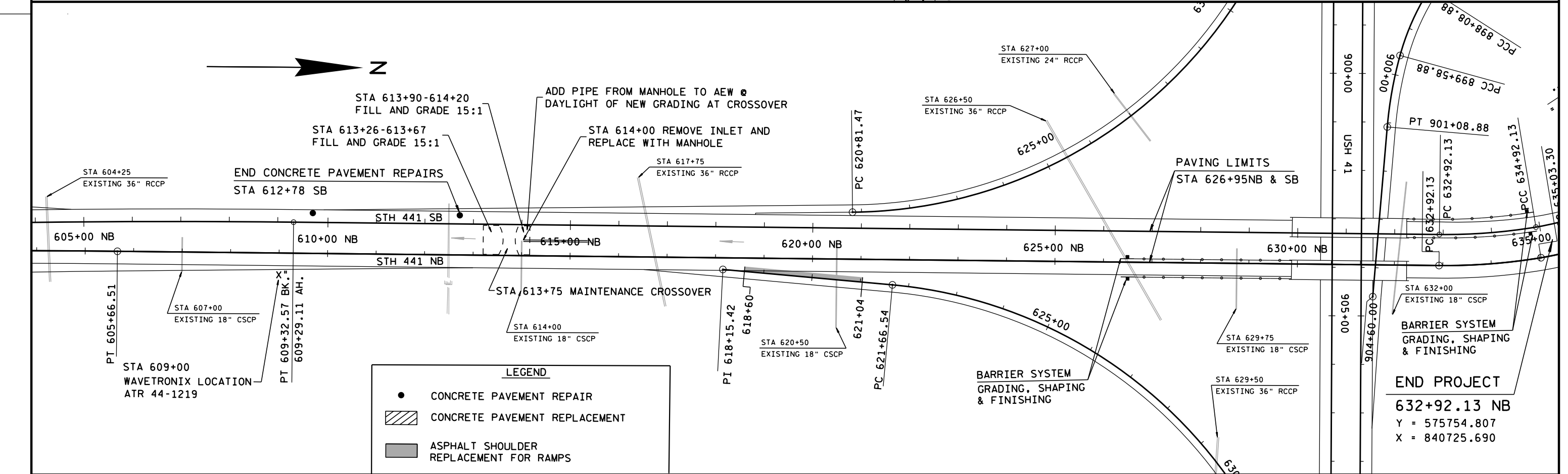
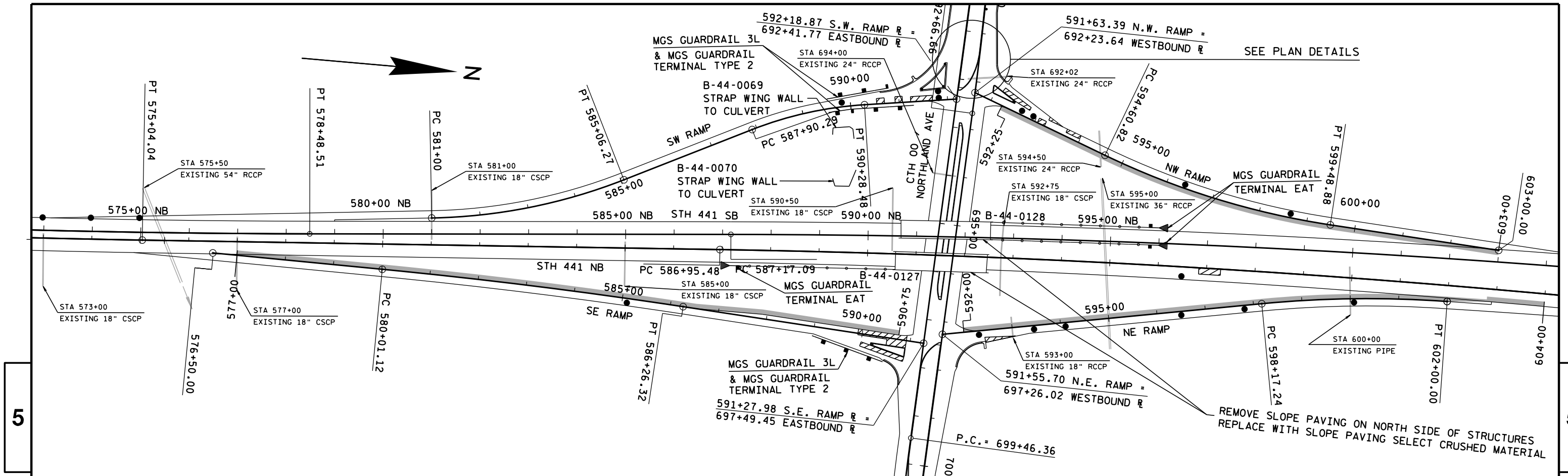
CONCRETE PAVEMENT REPAIR

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CONCRETE PAVEMENT REPLACEMENT

■

ASPHALT SHOULDER REPLACEMENT FOR RAMPS

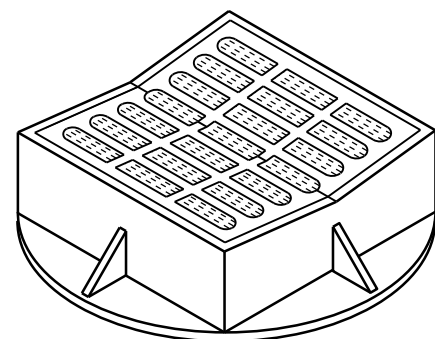
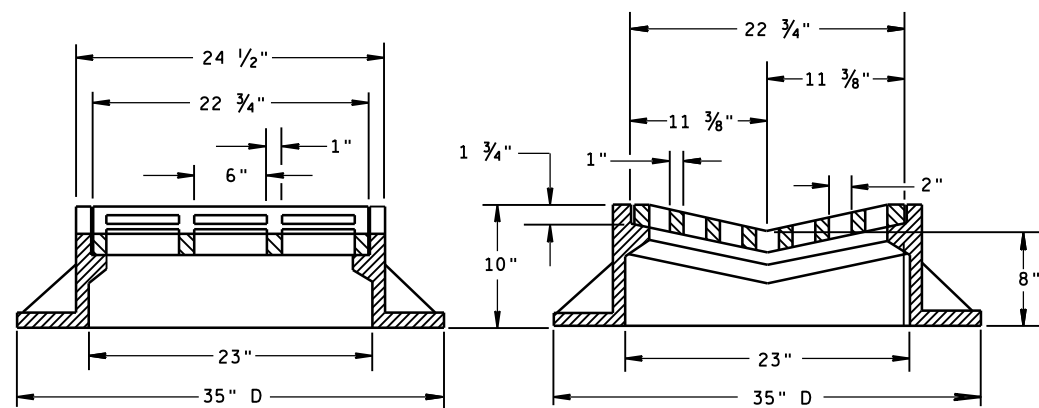


Standard Detail Drawing List

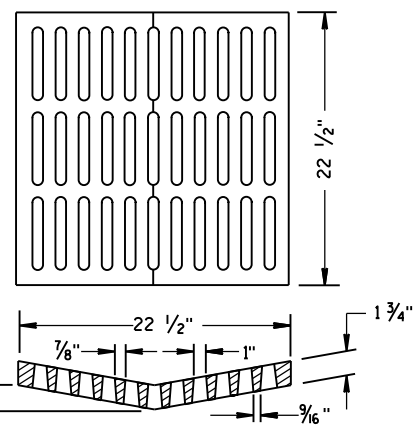
|           |                                                                                     |
|-----------|-------------------------------------------------------------------------------------|
| 08A05-19B | INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM                                         |
| 08A05-19D | INLET COVER TYPE BW, MANHOLE COVERS, TYPE K, J, J-S, L & M                          |
| 08B09-01  | MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER                             |
| 08C08-01  | INLETS MEDIAN 1 AND 2 GRATE                                                         |
| 08D01-17  | CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES                                    |
| 08D05-15A | CURB RAMPS TYPES 1 AND 1-A                                                          |
| 08D05-15B | CURB RAMPS TYPES 2 AND 3                                                            |
| 08D05-15C | CURB RAMPS TYPES 4A AND 4A1                                                         |
| 08D05-15D | CURB RAMPS TYPE 4B AND 4B1                                                          |
| 08D05-15E | CURB RAMPS TYPES 5, 6, 7A, 7B & 8                                                   |
| 08E08-03  | TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS                     |
| 08E09-06  | SILT FENCE                                                                          |
| 08F01-11  | APRON ENDWALLS FOR CULVERT PIPE                                                     |
| 08F04-07  | JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL                             |
| 09B02-08  | CONDUIT                                                                             |
| 09B04-11  | PULL BOX                                                                            |
| 09C02-07  | CONCRETE BASES, TYPES 1, 2, 5, & 6                                                  |
| 09C03-04  | TRANSFORMER/PEDESTAL BASES                                                          |
| 09C05-09  | CONCRETE CONTROL CABINET BASES                                                      |
| 09C06-07  | CONCRETE CONTROL CABINET BASE, TYPE 9, SPECIAL                                      |
| 09C12-06A | CONCRETE BASE TYPE 13                                                               |
| 09C12-06B | CONCRETE BASE TYPE 13                                                               |
| 09C13-02  | CONCRETE BASE TYPE 10 & TYPE 13 EXTENSION                                           |
| 09D01-05  | CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)                               |
| 09E01-14B | POLE MOUNTINGS FOR TRAFFIC SIGNALS AND LIGHTING UNITS, TYPE 3 (HEAVY DUTY)          |
| 09E01-14C | POLE MOUNTINGS FOR TRAFFIC SIGNALS AND LIGHTING UNITS, TYPE 4                       |
| 09E01-14G | HARDWARE DETAILS FOR POLE MOUNTINGS                                                 |
| 09E06-05  | TRAFFIC SIGNAL STANDARD POLY BRACKET MOUNTINGS (TYPICAL) 13 FT. OR 15 FT.           |
| 09E08-06B | TYPE 10 POLE 15'-30' MONOTUBE ARM                                                   |
| 09E08-06D | TYPE 13 POLE 35'-55' MONOTBE ARM                                                    |
| 09E08-06E | GENERAL NOTES AND HARDWARE DETAILS FOR TYPE 9, 10, 12 & 13 POLES WITH MONOTUBE ARMS |
| 09F09-04  | LOOP DETECTOR PLACED IN CRUSHED AGGREGATE BASE (NEW CONCRETE PAVEMENT)              |
| 09H09-01  | COMMUNICATION VAULT                                                                 |
| 11A01-05  | MAINTENANCE CROSSOVER FOR FREEWAYS                                                  |
| 11B02-02  | CONCRETE MEDIAN NOSE                                                                |
| 13A05-05A | SHOULDER RUMBLE STRIP, MILLING                                                      |
| 13A05-05B | SHOULDER RUMBLE STRIP, MILLING                                                      |
| 13C09-11A | CONCRETE PAVEMENT REPAIR AND REPLACEMENT                                            |
| 13C09-11B | CONCRETE PAVEMENT REPAIR AND REPLACEMENT                                            |
| 13C09-11C | CONCRETE PAVEMENT REPAIR AND REPLACEMENT                                            |
| 14B24-07A | STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL                                    |
| 14B42-03A | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL                                            |
| 14B42-03B | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL                                            |
| 14B42-03C | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL                                            |
| 14B43-03A | MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)                                          |
| 14B43-03B | MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)                                          |
| 14B43-03C | MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)                                          |
| 14B44-02A | MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)                            |
| 14B44-02B | MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)                            |
| 14B44-02C | MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)                            |
| 14B47-02A | MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL                                      |
| 14B47-02B | MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL                                      |
| 14B47-02C | MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL                                      |
| 15A02-08  | DELINEATOR POST, DELINEATOR, AND DELINEATOR BRACKET WITH REFLECTIVE SHEETING        |
| 15A03-02A | FLEXIBLE MARKER POST FOR CULVERT END                                                |
| 15A03-02B | FLEXIBLE MARKER POST FOR CULVERT END                                                |
| 15A06-02  | DELINEATOR LAYOUT                                                                   |
| 15C07-12B | PAVEMENT MARKING WORDS                                                              |
| 15C07-12C | PAVEMENT MARKING ARROWS                                                             |
| 15C08-16A | PAVEMENT MARKING (MAINLINE)                                                         |
| 15C08-16B | PAVEMENT MARKING (INTERSECTIONS)                                                    |
| 15C08-16E | PAVEMENT MARKING (LEFT TURN LANE)                                                   |
| 15C08-16F | PAVEMENT MARKING (ISLANDS)                                                          |
| 15C14-01  | AERIAL ENFORCEMENT BARS PAVEMENT MARKING DETAILS                                    |
| 15C33-01  | STOP LINE AND CROSSWALK PAVEMENT MARKING                                            |
| 15D15-01  | TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE                         |
| 15D16-02  | TRAFFIC CONTROL, EXIT RAMP CLOSURE                                                  |
| 15D20-03  | TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY                        |

Standard Detail Drawing List

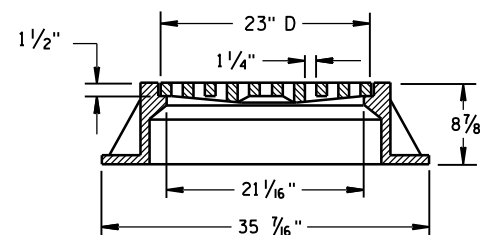
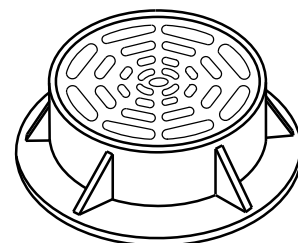
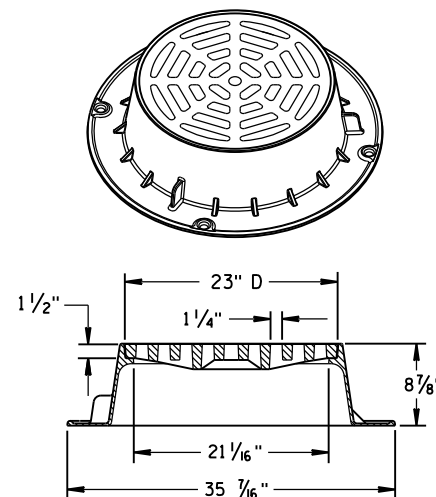
|          |                                                                                  |
|----------|----------------------------------------------------------------------------------|
| 15D21-03 | TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE                         |
| 15D27-02 | TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH |



TYPE "B"

ALTERNATIVE GRATE FOR  
TYPE "B" COVER

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS POSSIBLE.  
 NOTED AS TYPE B-A ON THE DRAINAGE TABLE



TYPE "C"

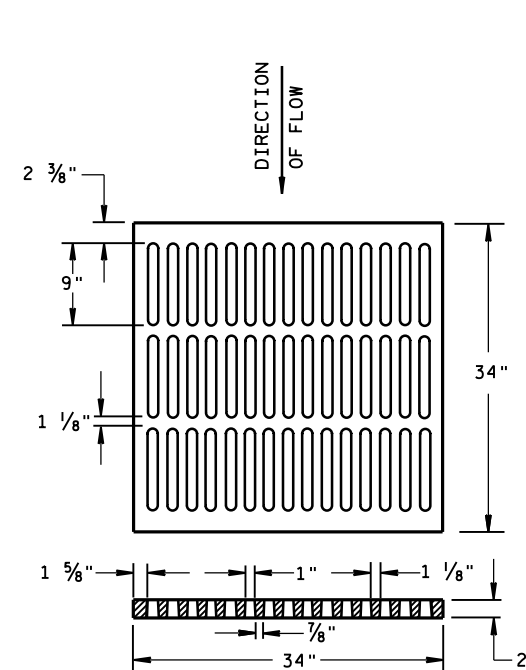
NOTE: EITHER CASTING IS ACCEPTABLE

## GENERAL NOTES

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

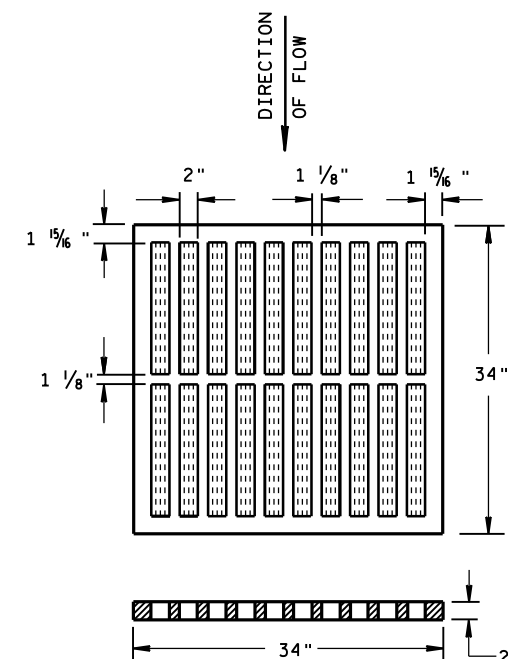
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.



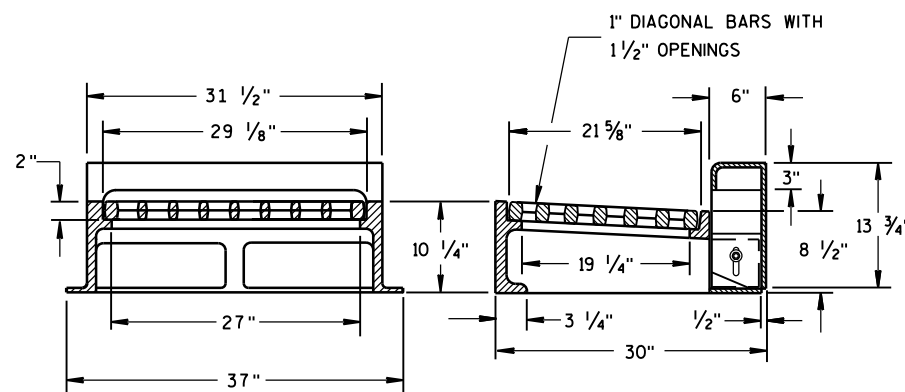
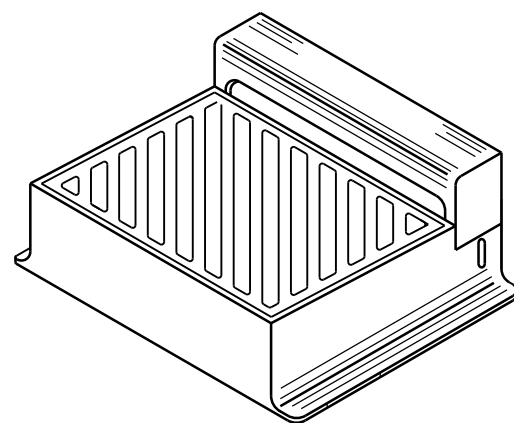
ALTERNATIVE TYPE "MS"

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS PERMITTED  
 NOTED AS TYPE MS-A ON THE DRAINAGE TABLE



TYPE "MS"

USE ON FREEWAYS AND EXPRESSWAYS  
 NOTED AS TYPE MS ON DRAINAGE TABLE



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

TYPE "WM"

DIAGONAL SLOTS, SHALL BE ORIENTED  
 TO THE DIRECTION OF FLOW AS ILLUSTRATED.  
 GRATES ARE MANUFACTURED TO BE REVERSIBLE.

DIRECTION  
OF FLOW

INLET COVERS  
 TYPE B, B-A, C,  
 MS, MS-A, & WM

STATE OF WISCONSIN  
 DEPARTMENT OF TRANSPORTATION

APPROVED

DATE 11/27/2013

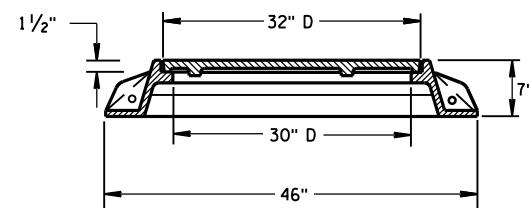
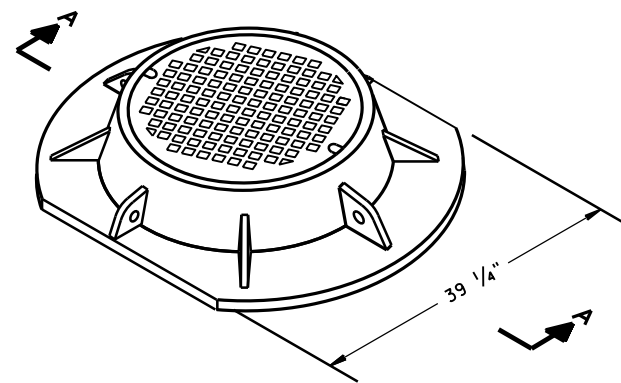
FHWA

/S/ Jerry H. Zogg

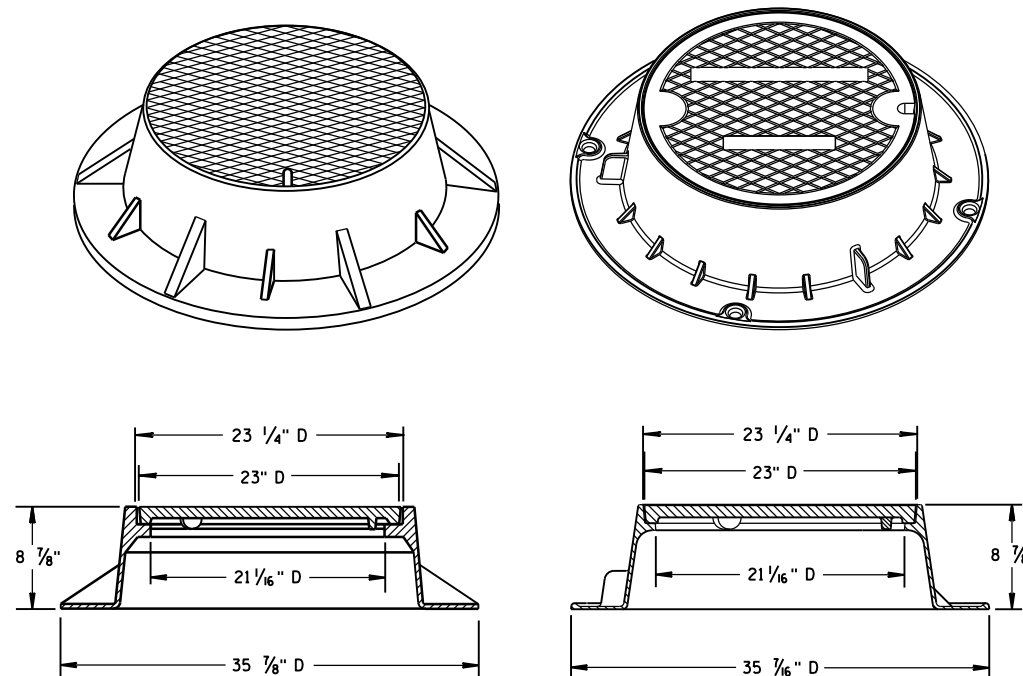
ROADWAY STANDARDS ENGINEER

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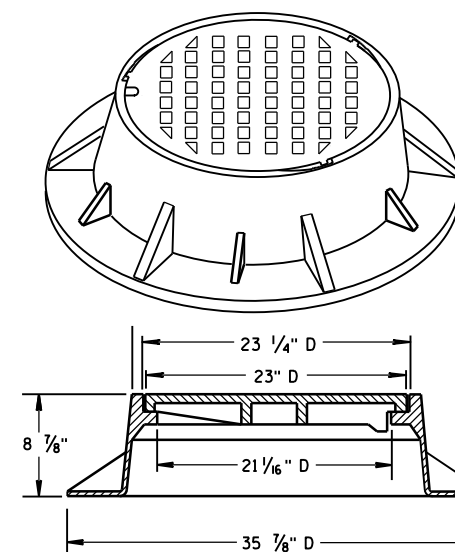
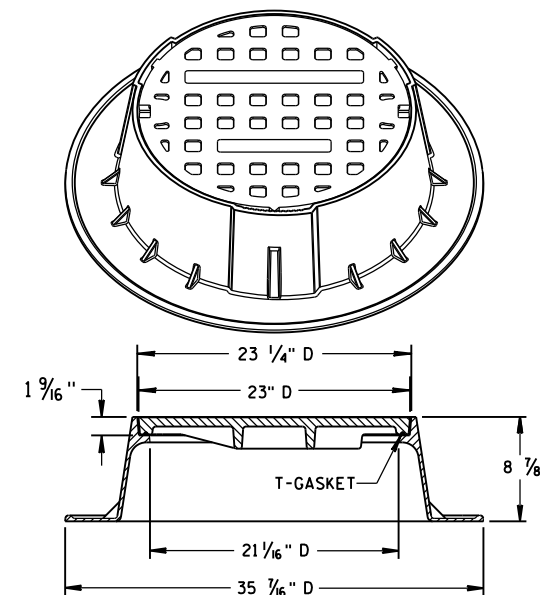


SECTION A-A  
TYPE "K"



TYPE "J"

NOTE: EITHER CASTING IS ACCEPTABLE

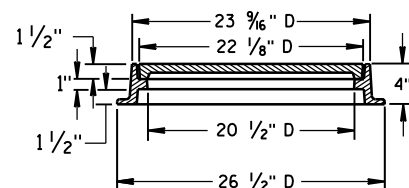
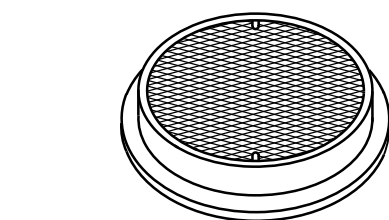


TYPE "J" SPECIAL

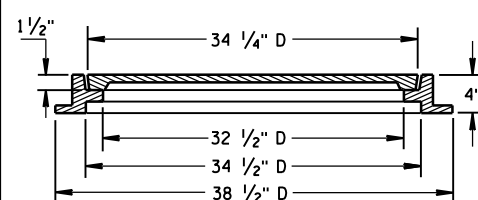
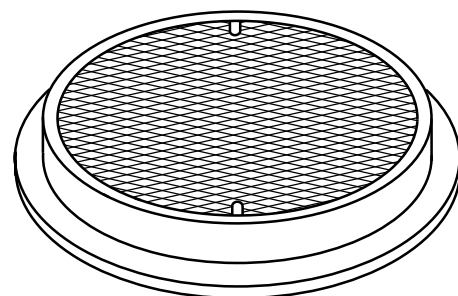
TYPE "B" NON-ROCKING SELF-SEAL LID

(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)

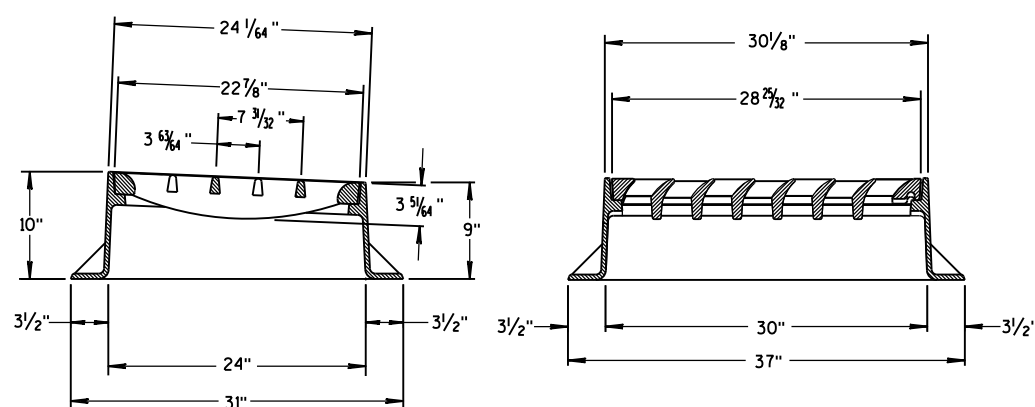
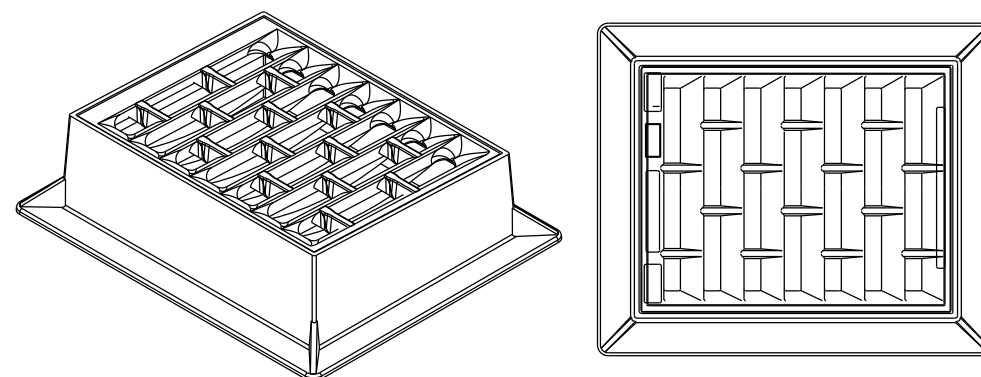
NOTE: EITHER CASTING IS ACCEPTABLE



TYPE "L"



TYPE "M"



INLET COVER TYPE "BW"

## GENERAL NOTES

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

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

ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

11/27/2013

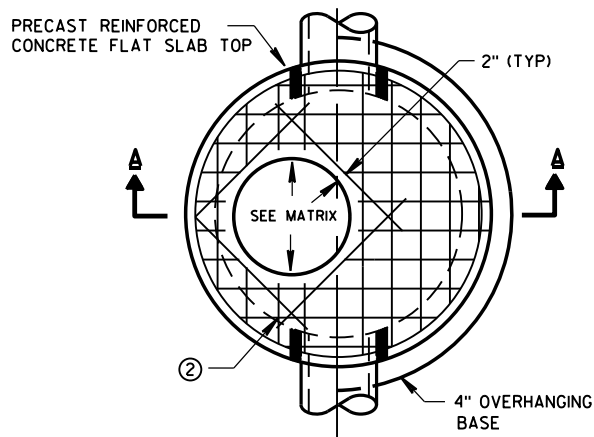
DATE

FHWA

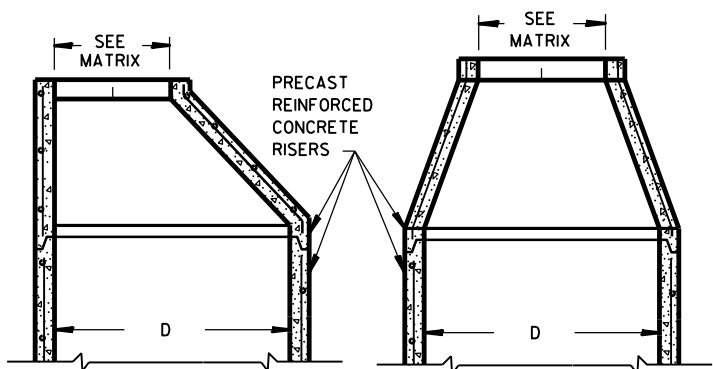
/S/ Jerry H. Zogg

ROADWAY STANDARDS C 107

ENGINEER

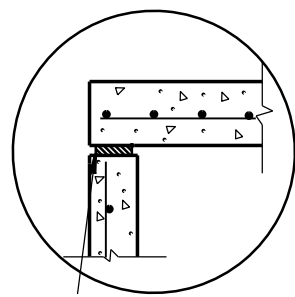


PLAN VIEW CIRCULAR OPENING

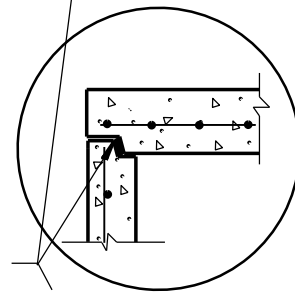


OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

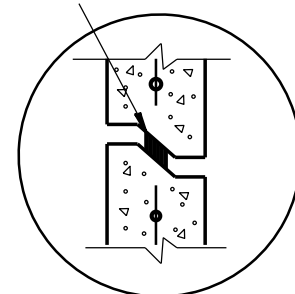
OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP



TOP WITH PLAIN END JOINT



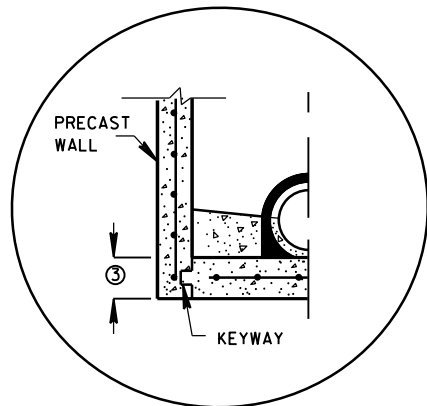
TOP WITH TONGUE AND GROOVE JOINT



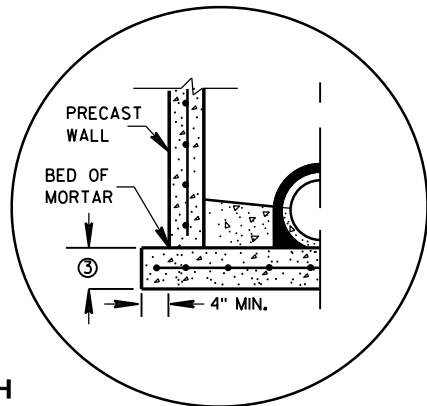
RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"

JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C990 (TYP)

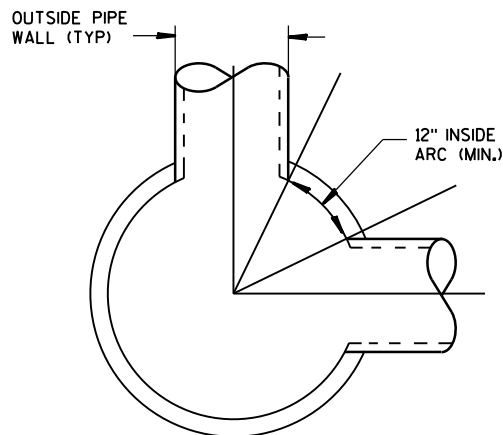


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION

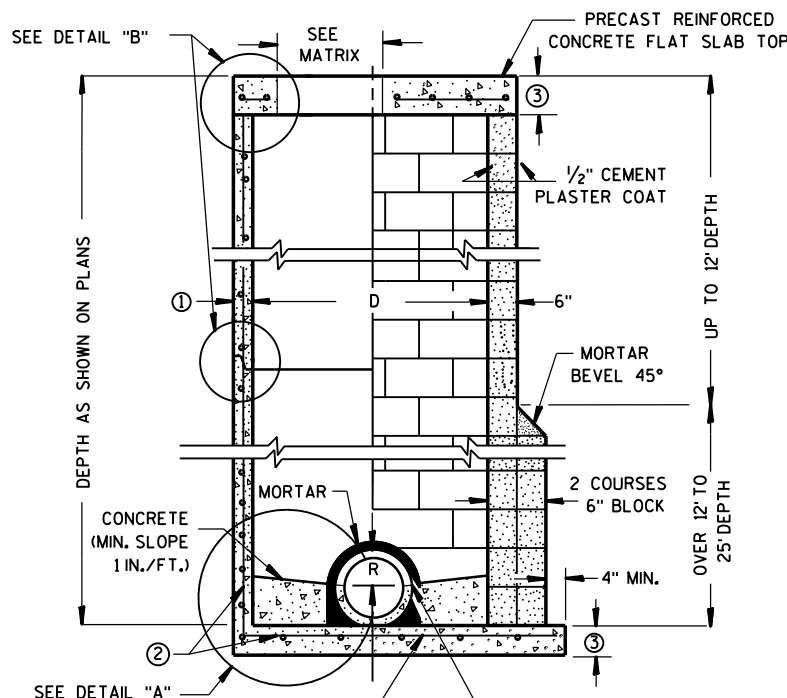


SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



DETAIL "C"



CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES

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

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

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS. UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST MANHOLE UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

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

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

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

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

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

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

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

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

ALL BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED. CONCRETE BLOCK WILL NOT BE PERMITTED FOR STRUCTURES GREATER THAN 4 FEET IN DIAMETER.

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

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

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

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

- ① MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT, 5 INCHES FOR 4-FT, 6 INCHES FOR 5-FT, 7 INCHES FOR 6-FT, 8 INCHES FOR 7-FT AND 9 INCHES FOR 8-FT DIAMETER PRECAST MANHOLES.
- ② FOR PRECAST MANHOLES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.
- ③ PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER OF 48" AND LESS SHALL HAVE A MINIMUM THICKNESS OF 6". PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER LARGER THAN 48" SHALL HAVE A MINIMUM THICKNESS OF 8".

MANHOLE COVER OPENING MATRIX

| MANHOLE COVER TYPE | C | ALL J'S | K | L | M |
|--------------------|---|---------|---|---|---|
| OPENING SIZE (FT)  |   |         |   |   |   |
| 2 DIA.             | X | X       |   | X |   |
| 3 DIA.             |   |         | X |   | X |

PIPE MATRIX

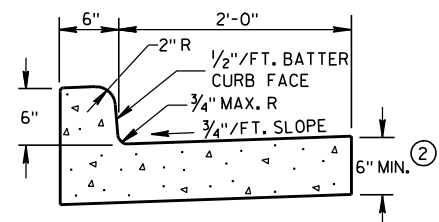
| MANHOLE SIZE | MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES |                     |
|--------------|--------------------------------------------|---------------------|
|              | 180° SEPARATION (IN)                       | 90° SEPARATION (IN) |
| 3-FT         | 15                             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

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

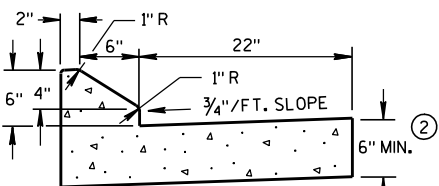
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
6/5/2012 /S/ Jerry H. Zogg  
DATE ROADWAY STANDARDS DEVELOPMENT  
FHWA ENGINEER 108

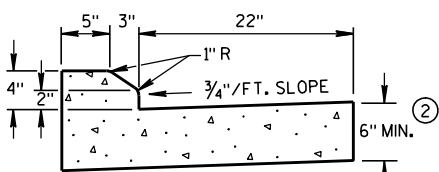




TYPES A &amp; D ①

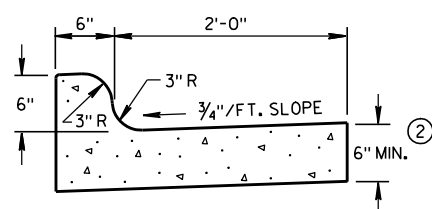


6" SLOPED CURB TYPES G &amp; J ①

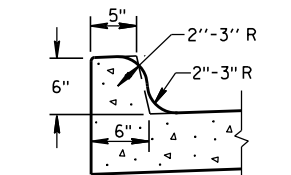
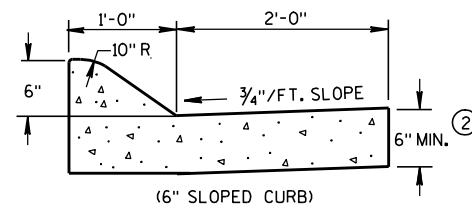


4" SLOPED CURB TYPES G &amp; J ①

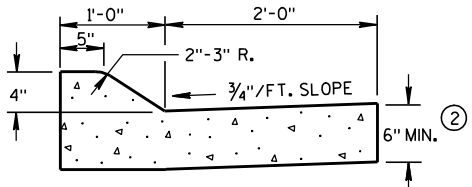
CONCRETE CURB &amp; GUTTER 30"



TYPES K &amp; L ①

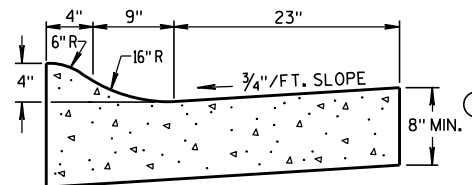
OPTIONAL CURB SHAPE  
FOR TYPES K & L ①

(6" SLOPED CURB)

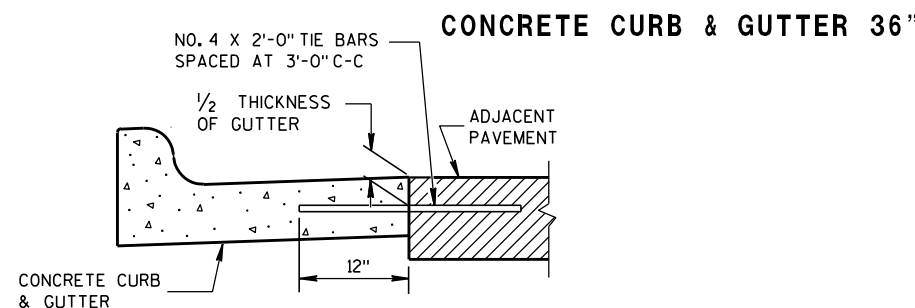


(4" SLOPED CURB)

TYPES A &amp; D ①

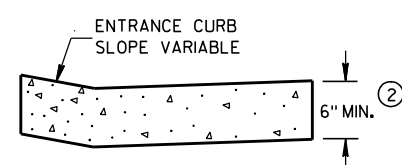


4" SLOPED CURB TYPES R &amp; T ① ④



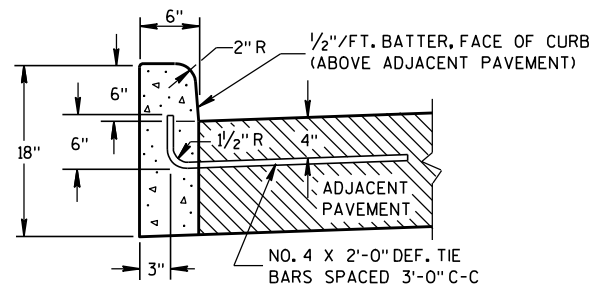
CONCRETE CURB &amp; GUTTER 36"

TYPICAL TIE BAR LOCATION ①



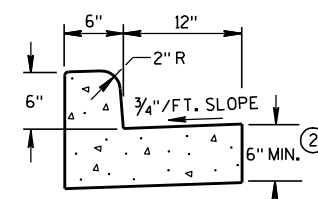
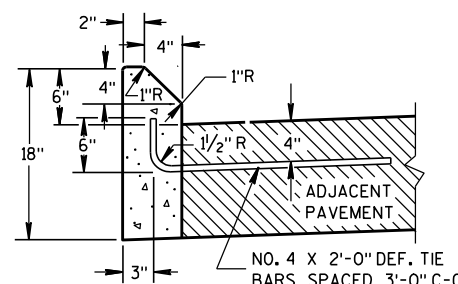
DRIVEWAY ENTRANCE CURB

(WHEN DIRECTED BY THE ENGINEER)



TYPES A &amp; D ①

CONCRETE CURB

TYPES A & D  
CONCRETE CURB & GUTTER 18"

TYPES G &amp; J ①

## GENERAL NOTES

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

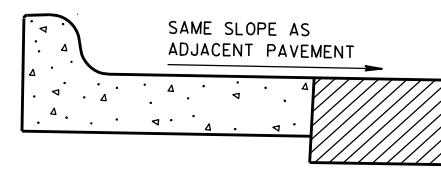
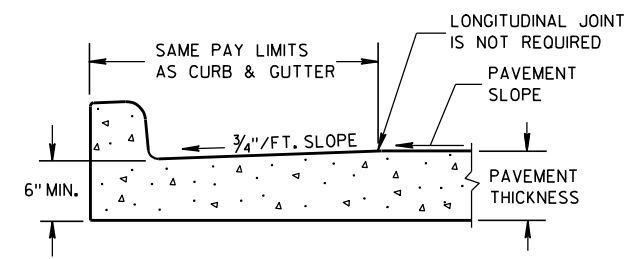
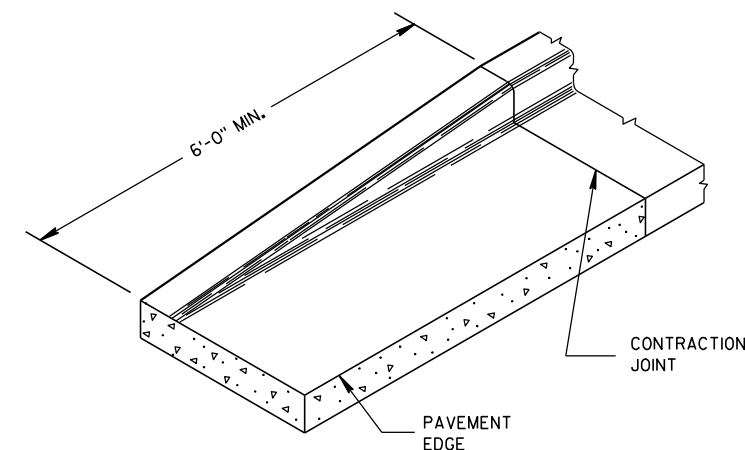
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

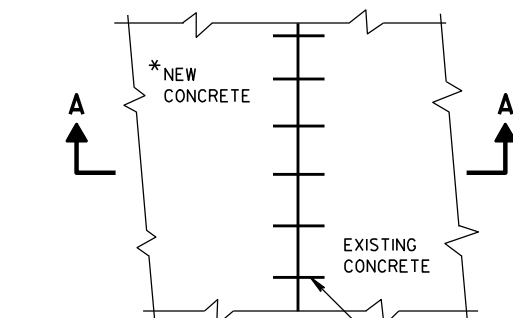
WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

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

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

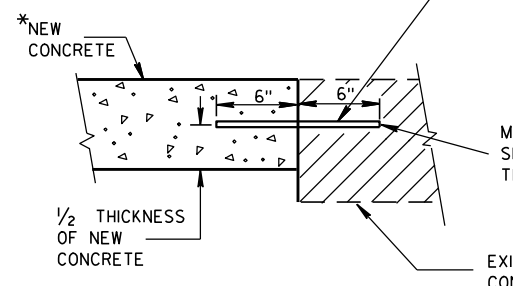
REVERSE SLOPE GUTTER ⑤  
(TYPICAL FOR ALL CURB & GUTTER TYPES)PARTIAL SECTION OF PAVEMENT  
WITH INTEGRAL CURB & GUTTER

END SECTION CURB &amp; GUTTER



PLAN VIEW

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

SECTION A-A  
TIE BARS DRILLED  
INTO EXISTING PAVEMENT

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

MAXIMUM DRILL HOLE  
SIZE IS 1/8" GREATER  
THAN TIE BAR DIAMETER

EXISTING  
CONCRETE

CONCRETE CURB, CONCRETE  
CURB & GUTTER AND TIES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

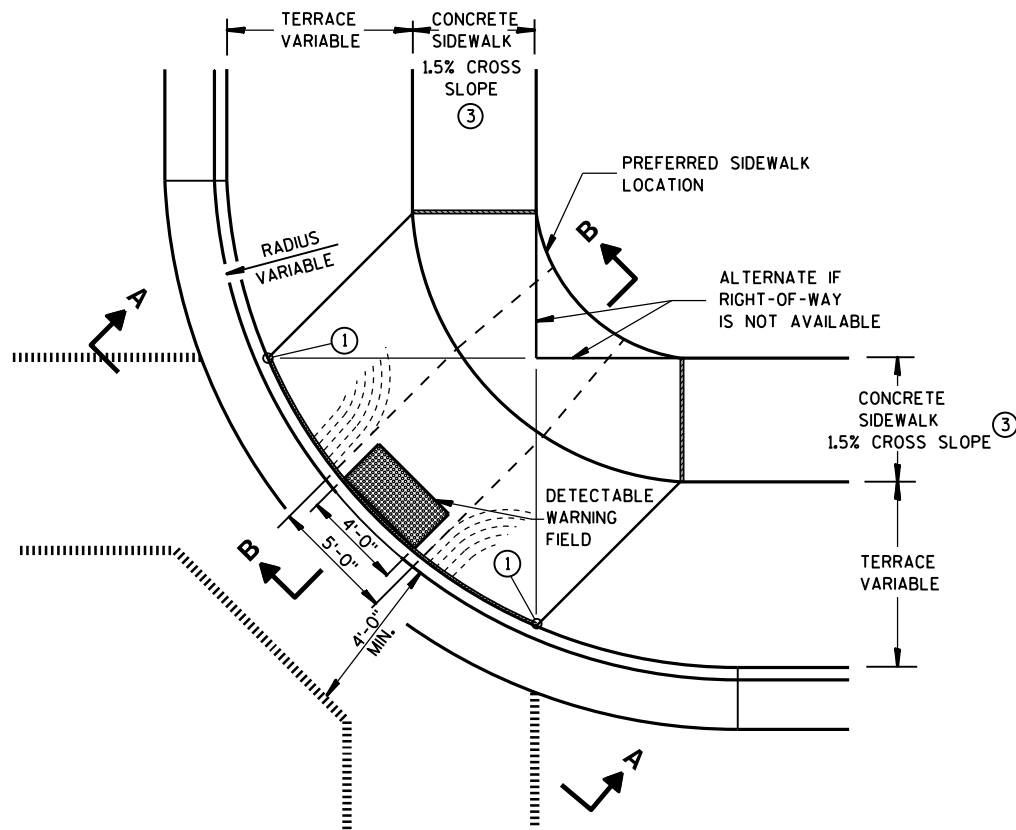
APPROVED

9/4/08

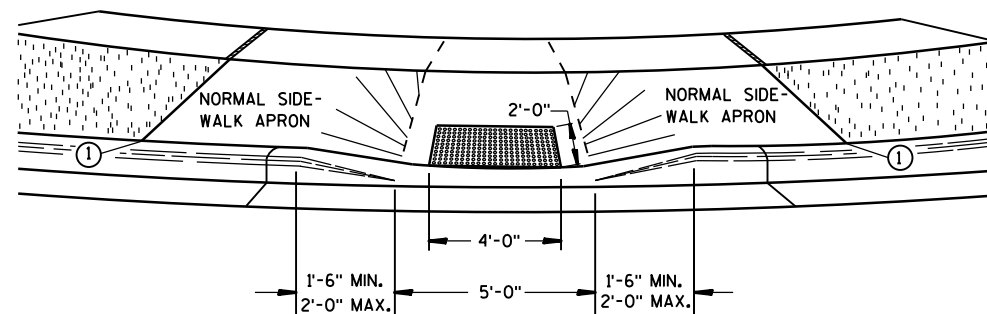
DATE

FHWA

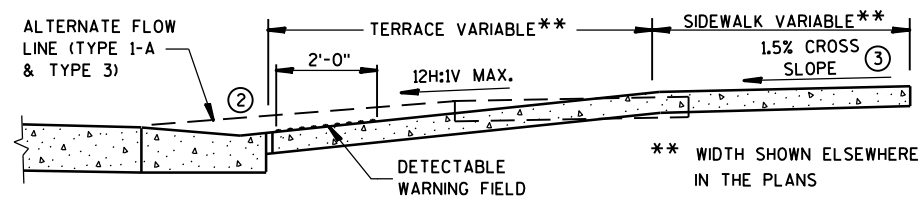
/S/ Jerry H. 7-  
ROADWAY STANDARDS 110 ENT  
ENGINEER



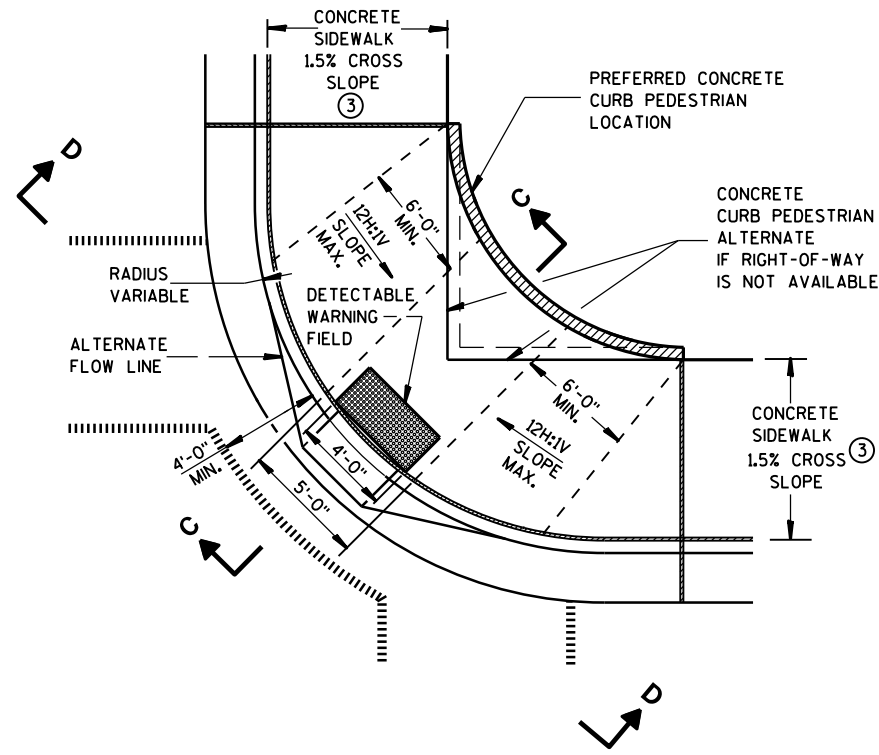
**PLAN VIEW  
TYPE 1 RAMP**  
(CENTER OF CORNER RADIUS)



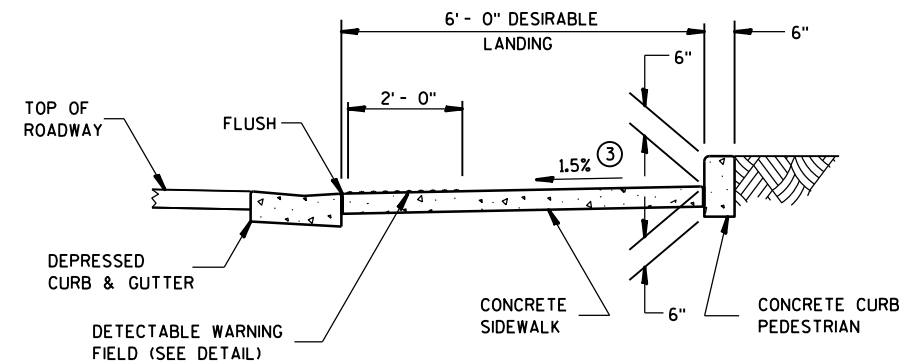
**VIEW A-A**



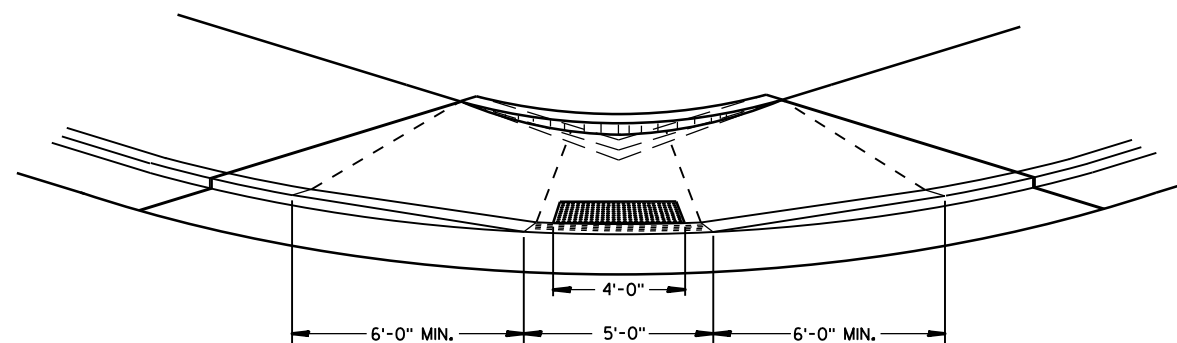
**SECTION B-B**



**PLAN VIEW  
TYPE 1-A RAMP**  
(NO TERRACE)



**SECTION C-C**



**VIEW D-D**

## GENERAL NOTES

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

RAMPS SHALL BE BUILT AT 12H:1V OR FLATTER. WHEN NECESSARY, THE SIDEWALK ELEVATION MAY BE LOWERED TO MEET THE HIGH POINT ON THE RAMP.

TYPE 1 RAMPS SHALL HAVE A NORMAL SIDEWALK APRON AND CURB ON BOTH SIDES OF RAMP.

DETECTABLE WARNING FIELD SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS "CURB RAMP DETECTABLE WARNING FIELD". THE CONCRETE PEDESTRIAN CURB, IF NEEDED, SHALL BE MEASURED AND PAID BY THE LINEAL FOOT AS "CONCRETE CURB PEDESTRIAN". CONCRETE SIDEWALK IN THE CURB RAMP AREA SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS CONCRETE SIDEWALK, INCLUDING THE AREA UNDER THE DETECTABLE WARNING FIELD.

SELECT CURB RAMP DETECTABLE WARNING FIELD MATERIALS AND DEVICES FROM THE DEPARTMENT'S APPROVED MATERIALS LIST. THE COLOR OF THE DETECTABLE WARNING FIELD IS SPECIFIED ELSEWHERE AND IS INCIDENTAL TO THE BID ITEM OF "CURB RAMP DETECTABLE WARNING FIELD".

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

SURFACE TEXTURE OF THE RAMP SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP.

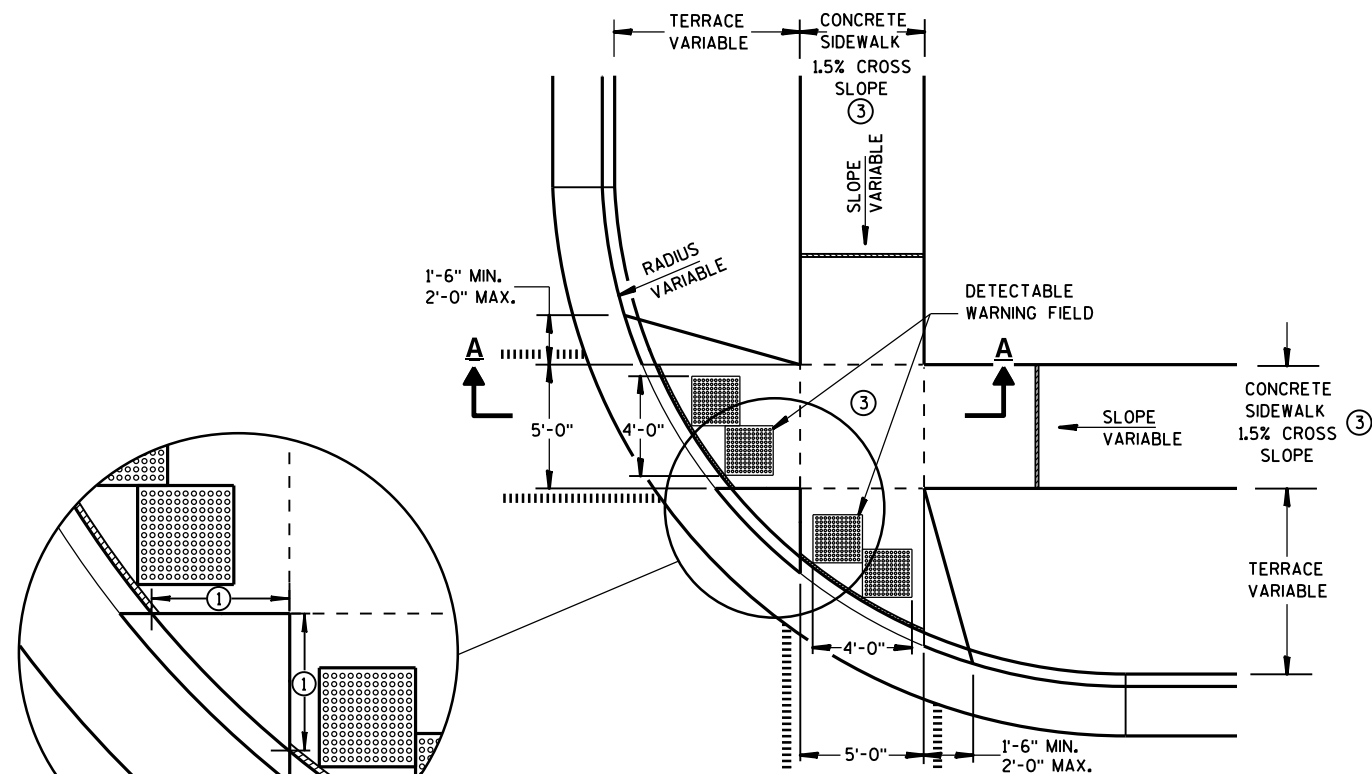
- ① THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB.
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE.
- ③  $\pm 0.5\%$  CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

## LEGEND

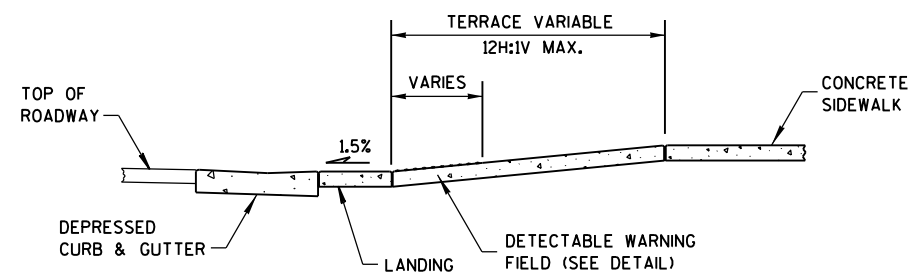
- 1/2" EXPANSION JOINT-SIDEWALK
- - - CONTRACTION JOINT FIELD LOCATED
- ||||| PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT

**CURB RAMPS  
TYPES 1 AND 1-A**

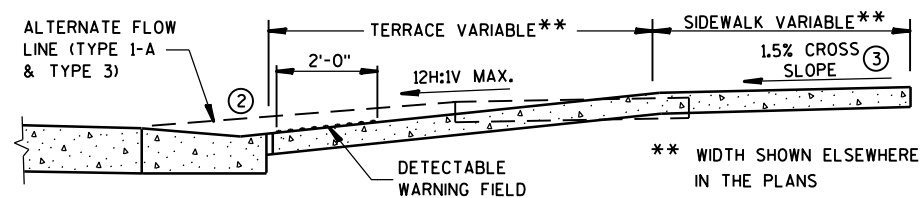
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



**PLAN VIEW  
TYPE 2 RAMP**  
(ON LINE WITH SIDEWALK)



**SECTION A-A**



**SECTION B-B**

## GENERAL NOTES

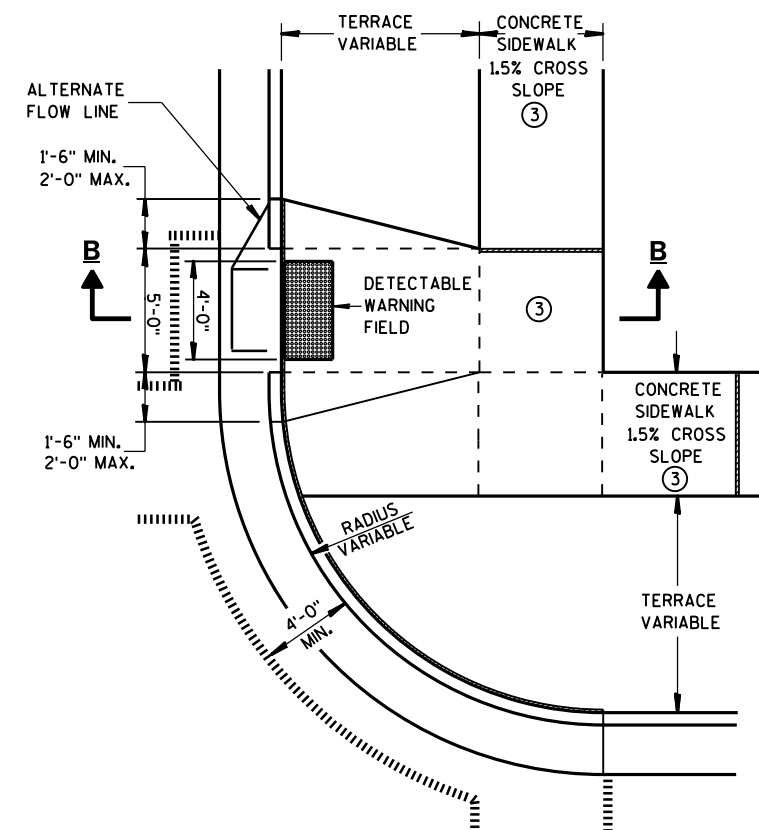
USE THE TYPE 3 RAMP ONLY WHEN A TYPE 1 OR TYPE 2 CANNOT BE ACHIEVED BECAUSE OF FIELD CONDITIONS.

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

- ① WHEN THIS DISTANCE IS LESS THAN 6'-0" IT MAY BE DIFFICULT TO ACHIEVE A 12H:1V SLOPE, OR FLATTER, ON THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 12H:1V SLOPE, OR FLATTER, ON RAMP. 2" MINIMUM CURB HEIGHT.
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE.
- ③  $\pm 0.5\%$  CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

## LEGEND

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



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

**CURB RAMPS  
TYPES 2 AND 3**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 112

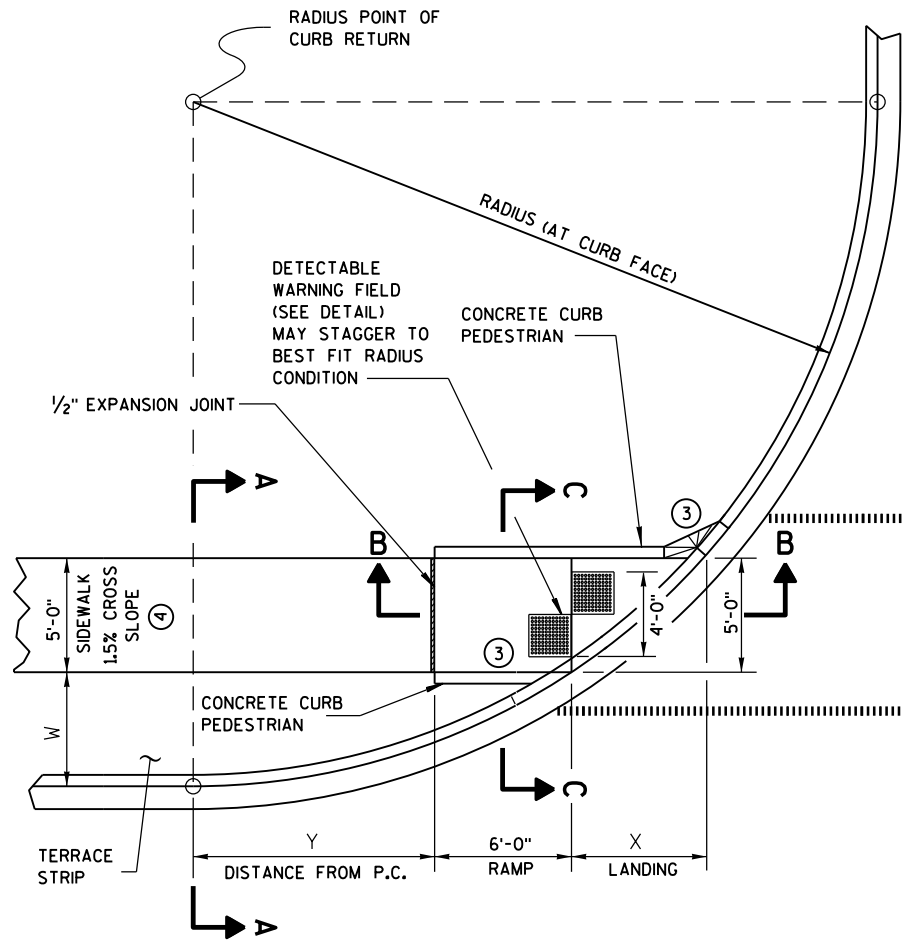


**CURB RAMP TYPE 4A**

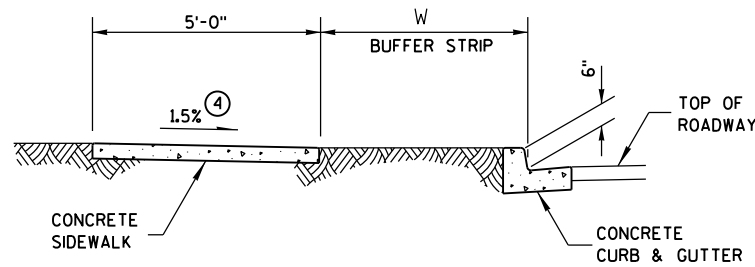


## INTERMEDIATE RADII CAN BE INTERPOLATED

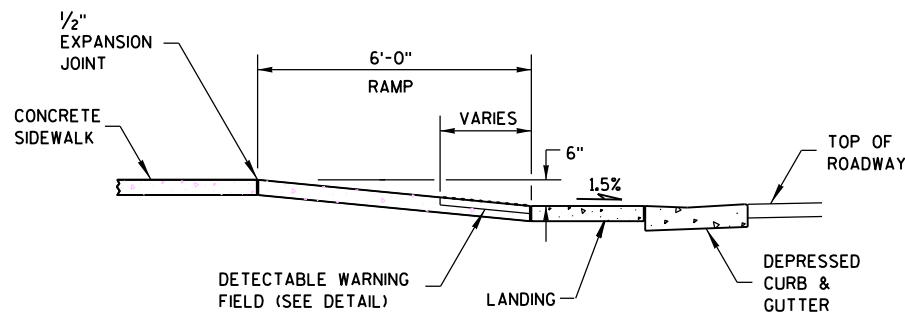




CURB RAMP TYPE 4B  
PLAN VIEW



SECTION A-A FOR TYPE 4B

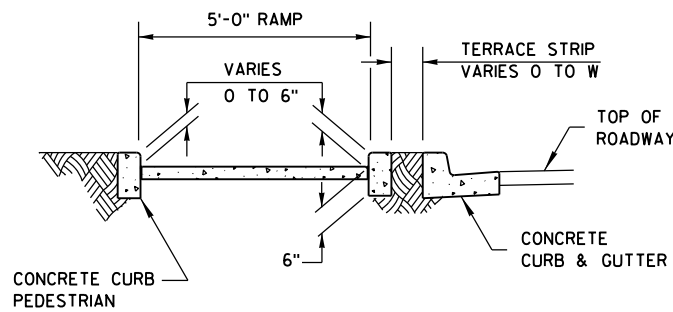


SECTION B-B FOR TYPE 4B

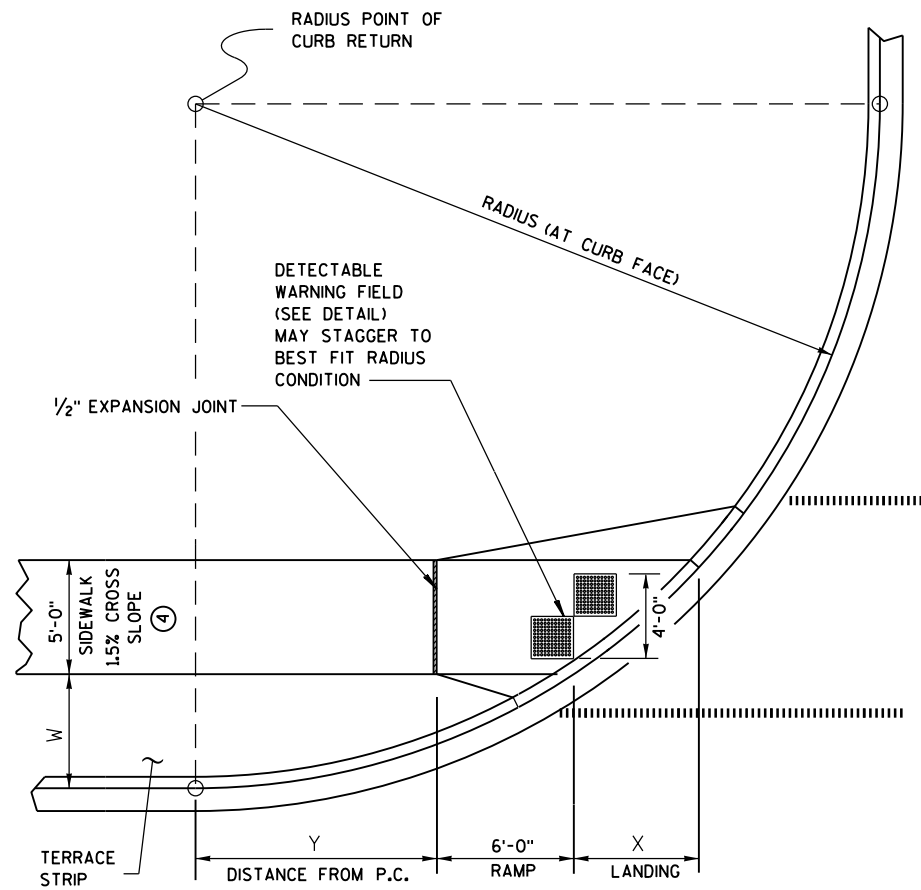
- LEGEND**
- 1/2" EXPANSION JOINT-SIDEWALK
  - - - CONTRACTION JOINT FIELD LOCATED
  - ===== PAVEMENT MARKING CROSSWALK (WHITE)

| RADIUS<br>(AT CURB FACE) | W = 3' - 0" |            | W = 4' - 0" |            | W = 5' - 0" |             | W = 6' - 0" |            | W = 7' - 0" |            |
|--------------------------|-------------|------------|-------------|------------|-------------|-------------|-------------|------------|-------------|------------|
|                          | X           | Y          | X           | Y          | X           | Y           | X           | Y          | X           | Y          |
| 20 FEET                  | 5'-5 1/2"   | 4'-6 1/2"  | 4'-8 1/2"   | 6'-0"      | 4'-1"       | 7'-2 3/4"   | 3'-7"       | 8'-3 1/2"  | 3'-1 1/2"   | 9'-2 1/2"  |
| 30 FEET                  | 7'-3 3/4"   | 7'-1"      | 6'-5 1/2"   | 8'-11 1/2" | 5'-9 1/4"   | 10'-7"      | 5'-2 1/2"   | 12'-0"     | 4'-8 3/4"   | 13'-3 1/4" |
| 40 FEET                  | 8'-9 1/2"   | 9'-2 1/2"  | 7'-10"      | 11'-5 1/4" | 7'-1"       | 13'-4 1/2"  | 6'-5 3/4"   | 15'-3/4"   | 5'-11 1/2"  | 16'-7 1/4" |
| 50 FEET                  | 10'-3/4"    | 11'-3/4"   | 9'-1/4"     | 13'-7 1/4" | 8'-2 1/2"   | 15'-9 1/2"  | 7'-6 1/2"   | 17'-9"     | 6'-11 3/4"  | 19'-6 1/4" |
| 60 FEET                  | 11'-2 1/2"  | 12'-8 3/4" | 10'-3/4"    | 15'-6 1/2" | 9'-2 1/4"   | 17'-11 3/4" | 8'-5 3/4"   | 20'-1 3/4" | 7'-10 1/2"  | 22'-1 1/2" |

INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION C-C FOR TYPE 4B



CURB RAMP TYPE 4B1  
PLAN VIEW

**GENERAL NOTES**

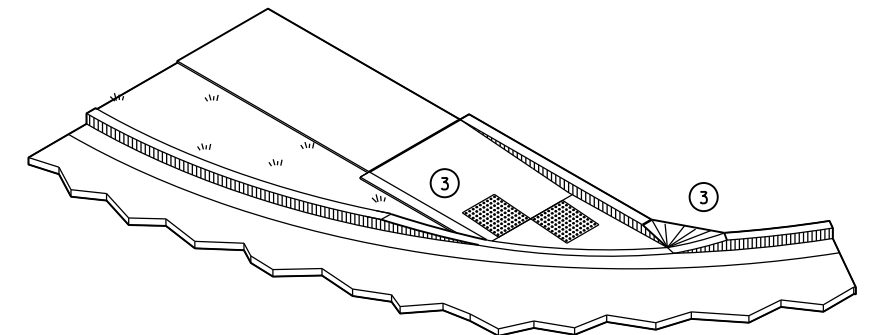
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1.

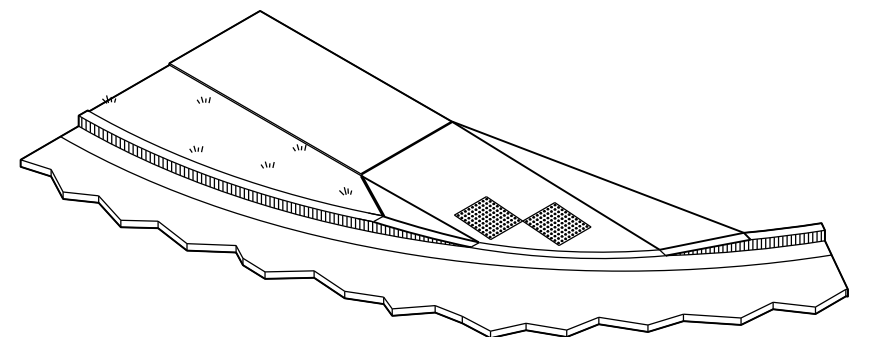
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

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

④ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



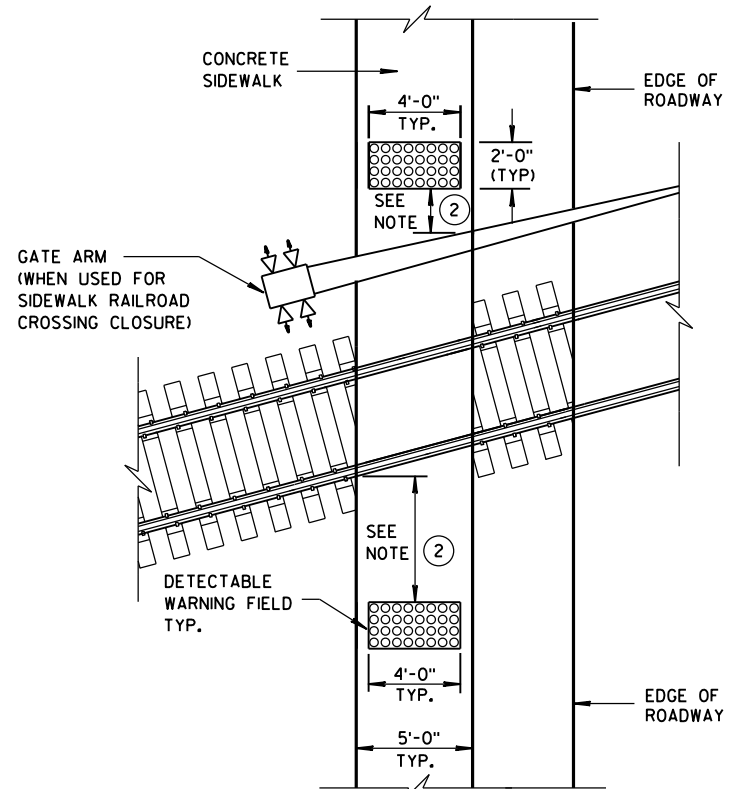
ISOMETRIC VIEW FOR TYPE 4B



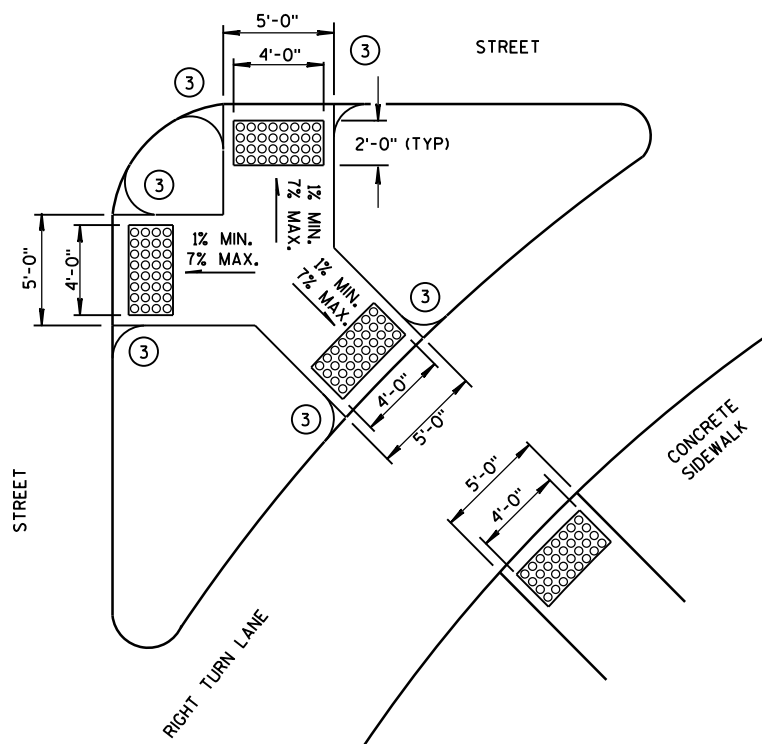
ISOMETRIC VIEW FOR TYPE 4B1

CURB RAMPS  
TYPE 4B AND 4B1

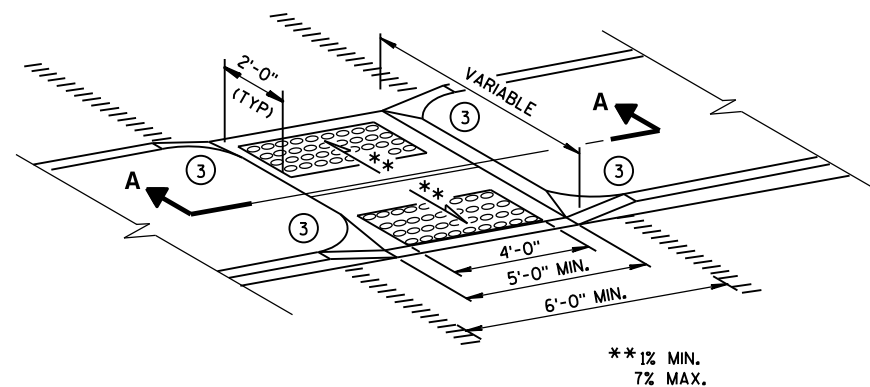
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 114



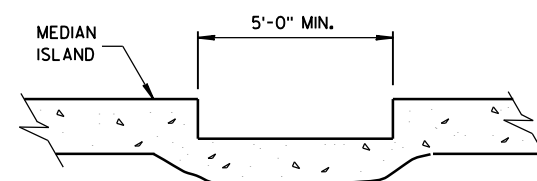
**TYPE 8**  
**DETECTABLE WARNINGS**  
**AT RAILROAD CROSSING**



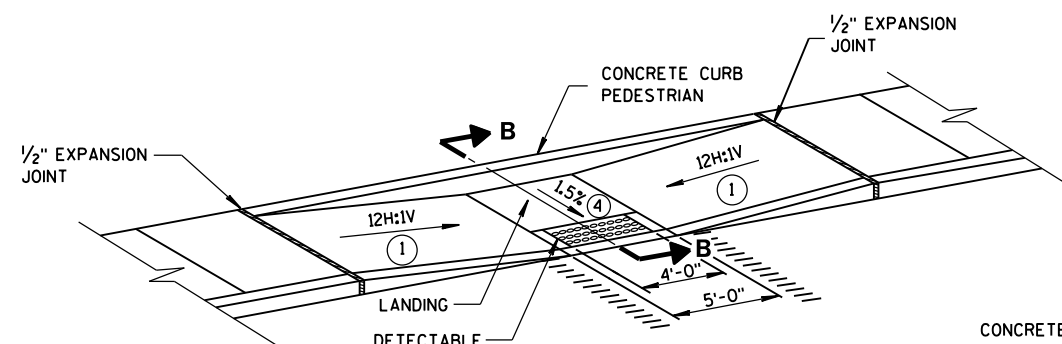
**TYPE 6**  
**DETECTABLE WARNING AT ISLANDS**



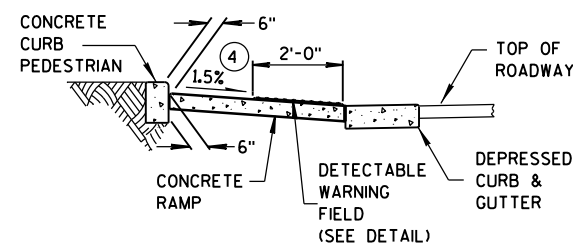
**MEDIAN ISLAND**  
**NON-ELEVATED CROSSING**  
**TYPE 5**



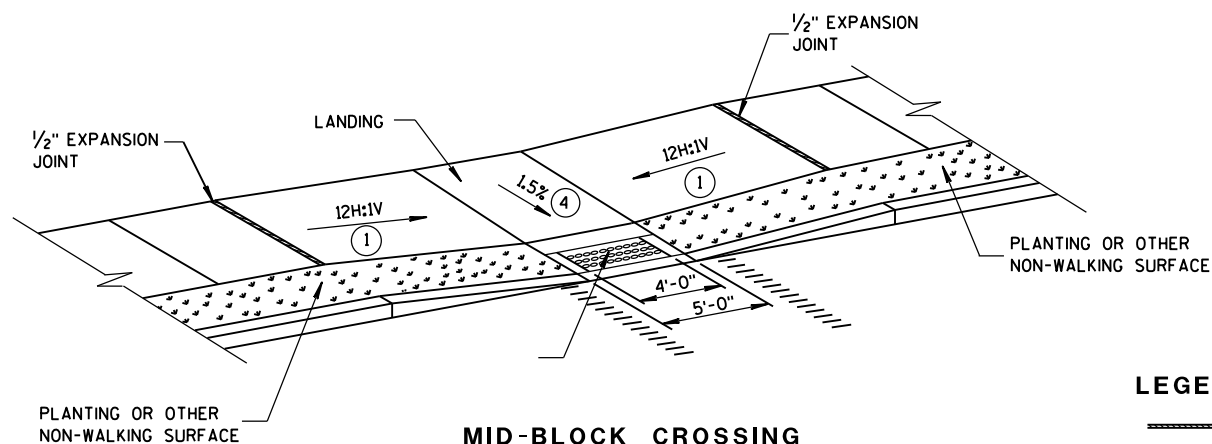
**SECTION A-A**



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



**SECTION B-B**



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

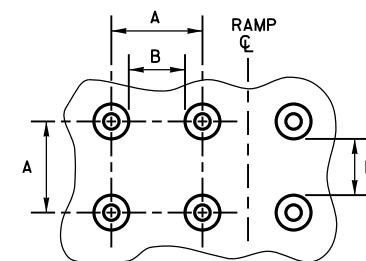
NOTE: THESE PARALLEL AND PARALLEL/PERPENDICULAR CURB RAMPS MAY BE USED AT INTERSECTIONS AND MID BLOCK LOCATIONS.

## GENERAL NOTES

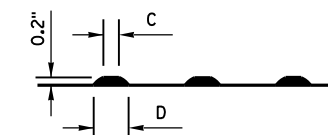
SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

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

- ① SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.
- ② THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET  $\pm$  0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET FROM THE NEAREST RAIL.
- ③ INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS.) DO NOT MARK TRANSITION NOSE.
- ④  $\pm$ 0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.



**PLAN VIEW**

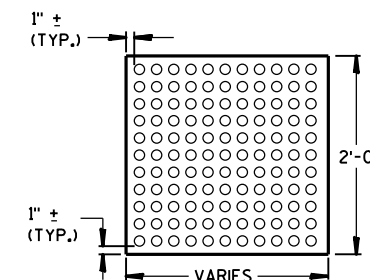


**ELEVATION VIEW**

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

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

## TRUNCATED DOMES DETECTABLE WARNING PATTERN DETAIL



**PLAN VIEW**

## DETECTABLE WARNING FIELD (TYPICAL)

## LEGEND

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

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

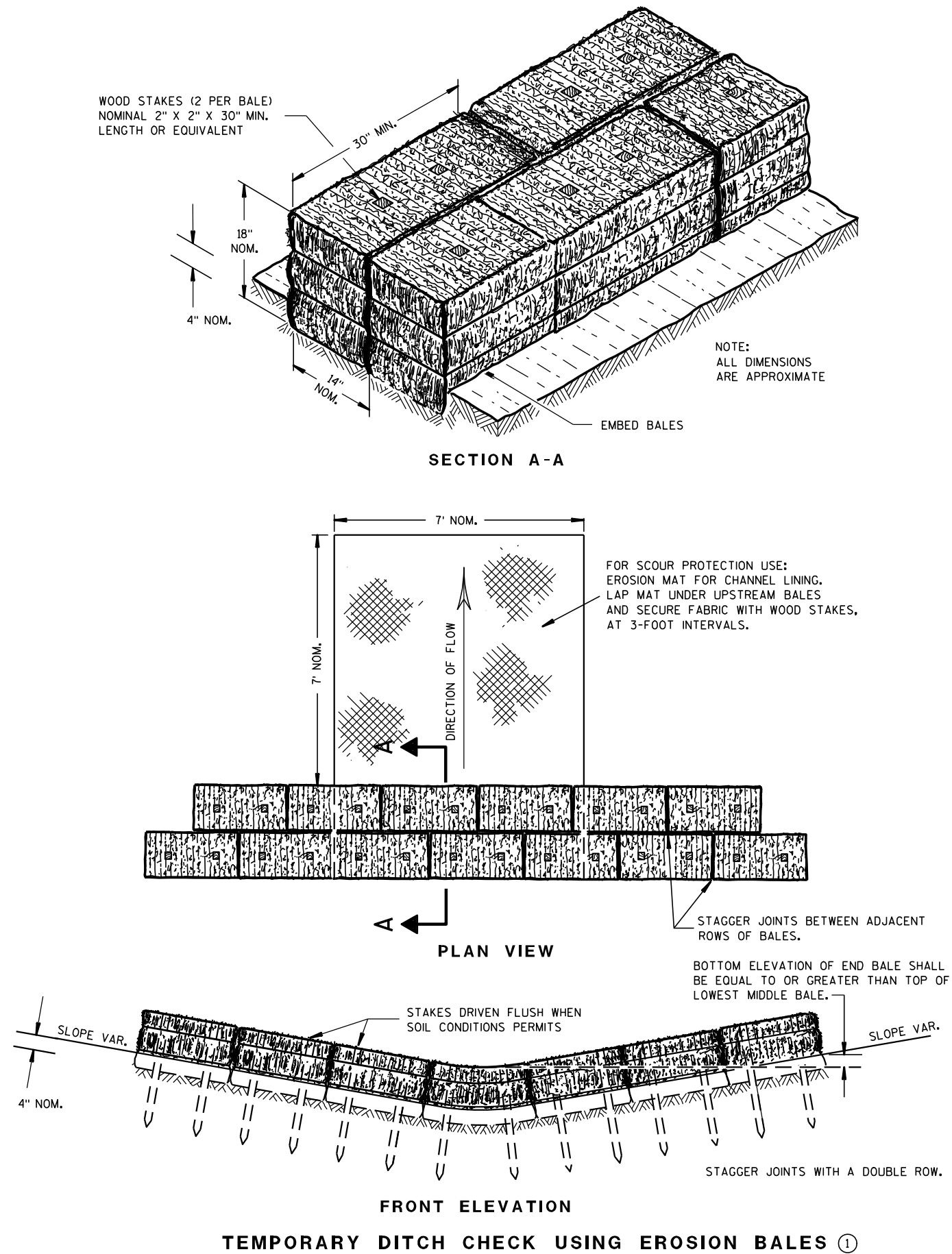
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

2-6-2013  
DATE

FHWA

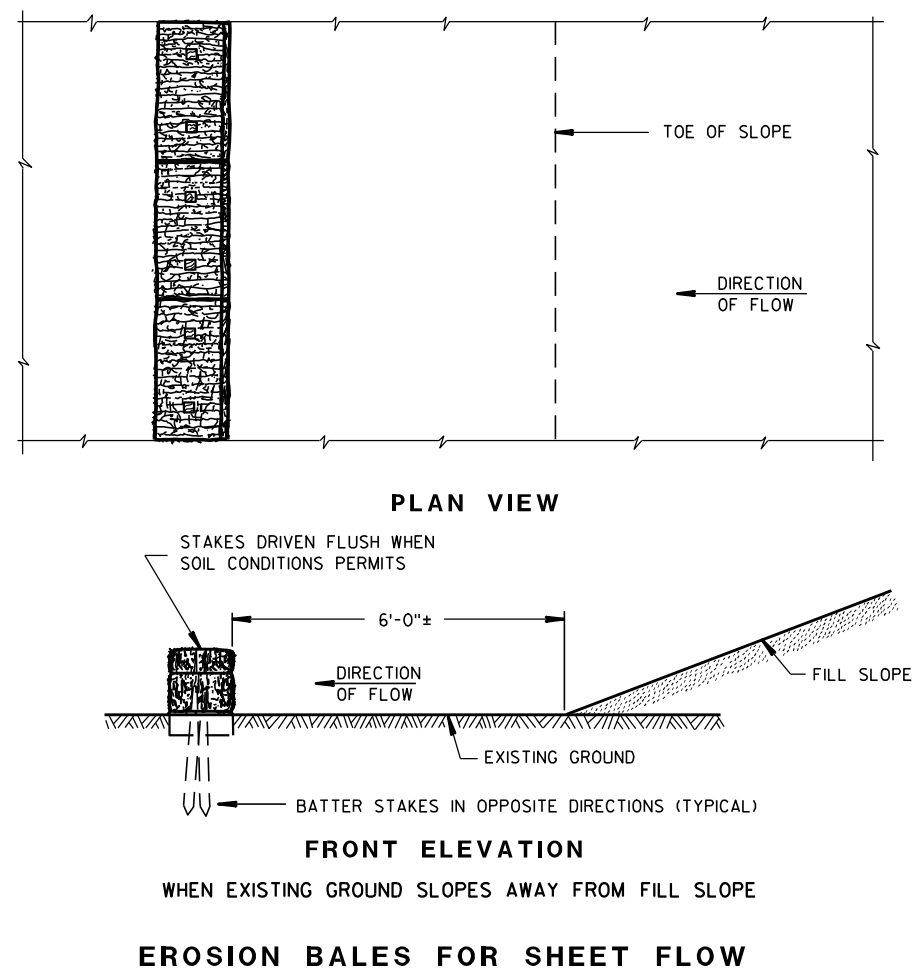
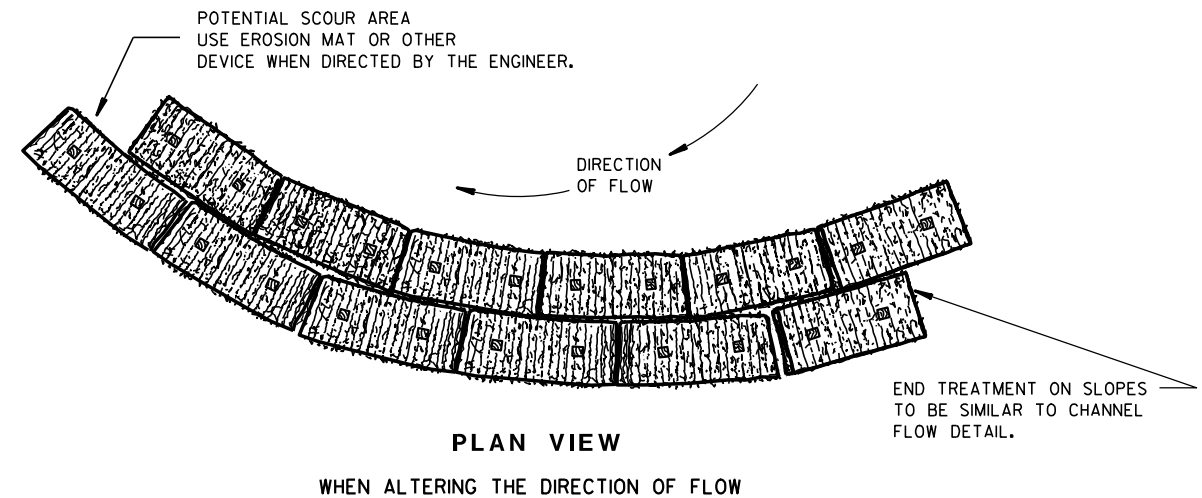
/S/ Jerry H. Zogg  
ROADWAY STANDARDS ENGINEER 115 INT



## GENERAL NOTES

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

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

TYPICAL INSTALLATIONS OF  
EROSION BALES / TEMPORARY  
DITCH CHECKS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02  
DATE

/S/ Beth Conn  
CHIEF ROADWAY DEVELOPER 116 ENGINEER

FHWA



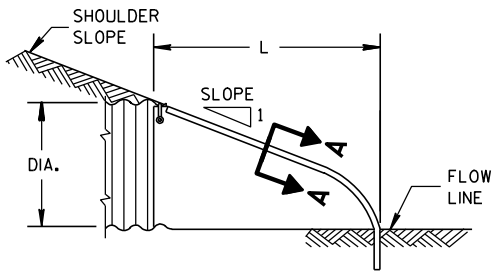
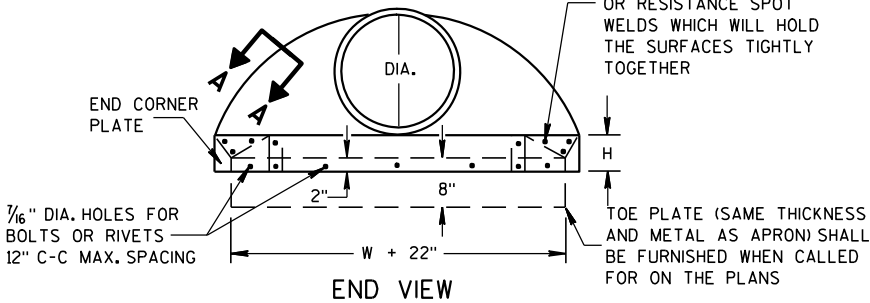
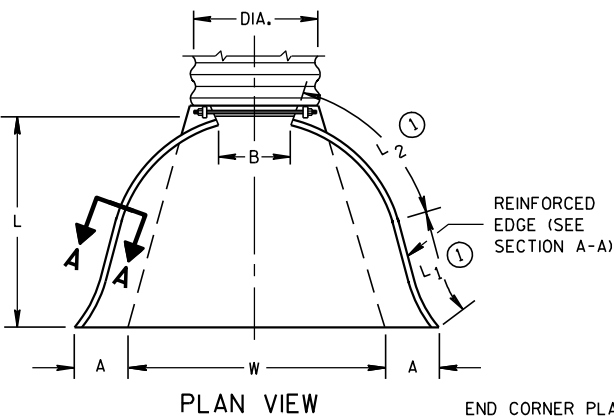
- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS 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.



|                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <h1 style="margin: 0;">SILT FENCE</h1>                                                                                                                                                                                                                                                                                                                                          |
| <h2 style="margin: 0;">STATE OF WISCONSIN</h2> <h3 style="margin: 0;">DEPARTMENT OF TRANSPORTATION</h3>                                                                                                                                                                                                                                                                         |
| <p><b>APPROVED</b></p> <div style="display: flex; justify-content: space-between; align-items: flex-end;"> <div style="text-align: center;"> <u>4-29-05</u><br/>             DATE           </div> <div style="text-align: center;"> <u>/S/ Beth Connolly</u><br/>             CHIEF ROADWAY DEVELOPMENT ENGINEER           </div> </div> <p style="margin-top: 10px;">FHWA</p> |

| METAL APRON ENDWALLS |                         |       |                     |             |            |                |         |         |            |                  |  |       |
|----------------------|-------------------------|-------|---------------------|-------------|------------|----------------|---------|---------|------------|------------------|--|-------|
| PIPE DIA.<br>(IN.)   | MIN. THICK.<br>(Inches) |       | DIMENSIONS (Inches) |             |            |                |         |         |            | APPROX.<br>SLOPE |  | BODY  |
|                      | STEEL                   | ALUM. | A<br>(±1")          | B<br>(MAX.) | H<br>(±1") | L<br>(±1 1/2") | L1<br>① | L2<br>① | W<br>(±2") |                  |  |       |
| 12                   | .064                    | .060  | 6                   | 6           | 6          | 21             | 12      | 17 1/2  | 24         | 2 1/2 to 1       |  | 1 Pc. |
| 15                   | .064                    | .060  | 7                   | 8           | 6          | 26             | 14      | 21 3/4  | 30         | 2 1/2 to 1       |  | 1 Pc. |
| 18                   | .064                    | .060  | 8                   | 10          | 6          | 31             | 15      | 28 1/4  | 36         | 2 1/2 to 1       |  | 1 Pc. |
| 21                   | .064                    | .060  | 9                   | 12          | 6          | 36             | 18      | 29 5/8  | 42         | 2 1/2 to 1       |  | 1 Pc. |
| 24                   | .064                    | .075  | 10                  | 13          | 6          | 41             | 18      | 37 1/4  | 48         | 2 1/2 to 1       |  | 1 Pc. |
| 30                   | .079                    | .075  | 12                  | 16          | 8          | 51             | 18      | 52 1/4  | 60         | 2 1/2 to 1       |  | 1 Pc. |
| 36                   | .079                    | .105  | 14                  | 19          | 9          | 60             | 24      | 59 3/4  | 72         | 2 1/2 to 1       |  | 2 Pc. |
| 42                   | .109                    | .105  | 16                  | 22          | 11         | 69             | 24      | 75 5/8  | 84         | 2 1/2 to 1       |  | 2 Pc. |
| 48                   | .109                    | .105  | 18                  | 27          | 12         | 78             | 24      | 81      | 90         | 2 1/4 to 1       |  | 3 Pc. |
| 54                   | .109                    | .105  | 18                  | 30          | 12         | 84             | 30      | 85 1/2  | 102        | 2 1/4 to 1       |  | 3 Pc. |
| 60                   | .109x                   | .105x | 18                  | 33          | 12         | 87             | —       | —       | 114        | 2 to 1           |  | 3 Pc. |
| 66                   | .109x                   | .105x | 18                  | 36          | 12         | 87             | —       | —       | 120        | 2 to 1           |  | 3 Pc. |
| 72                   | .109x                   | .105x | 18                  | 39          | 12         | 87             | —       | —       | 126        | 2 to 1           |  | 3 Pc. |
| 78                   | .109x                   | .105x | 18                  | 42          | 12         | 87             | —       | —       | 132        | 1 1/2 to 1       |  | 3 Pc. |
| 84                   | .109x                   | .105x | 18                  | 45          | 12         | 87             | —       | —       | 138        | 1 1/2 to 1       |  | 3 Pc. |
| 90                   | .109x                   | .105x | 18                  | 37          | 12         | 87             | —       | —       | 144        | 1 1/2 to 1       |  | 3 Pc. |
| 96                   | .109x                   | .105x | 18                  | 35          | 12         | 87             | —       | —       | 150        | 1 1/2 to 1       |  | 3 Pc. |

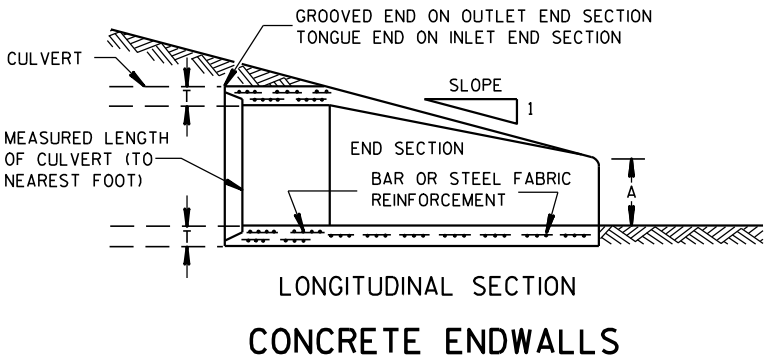
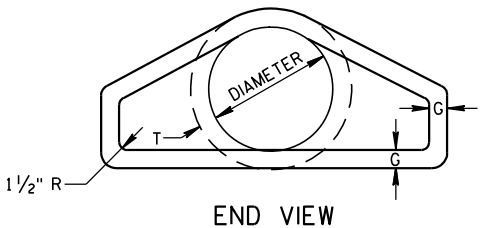
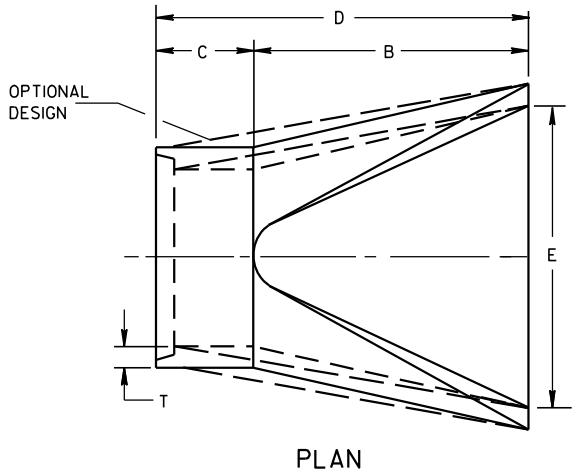
\* EXCEPT CENTER PANEL  
SEE GENERAL NOTES



METAL ENDWALLS

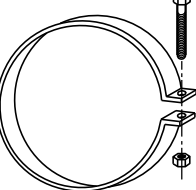
| REINFORCED CONCRETE APRON ENDWALLS |                     |        |        |           |            |     |       |                  |  |  |  |  |
|------------------------------------|---------------------|--------|--------|-----------|------------|-----|-------|------------------|--|--|--|--|
| PIPE DIA.<br>(IN.)                 | DIMENSIONS (Inches) |        |        |           |            |     |       | APPROX.<br>SLOPE |  |  |  |  |
|                                    | T                   | A      | B      | C         | D          | E   | G     |                  |  |  |  |  |
| 12                                 | 2                   | 4      | 24     | 48 7/8    | 72 1/8     | 24  | 2     | 3 to 1           |  |  |  |  |
| 15                                 | 2 1/4               | 6      | 27     | 46        | 73         | 30  | 2 1/4 | 3 to 1           |  |  |  |  |
| 18                                 | 2 1/2               | 9      | 27     | 46        | 73         | 36  | 2 1/2 | 3 to 1           |  |  |  |  |
| 21                                 | 2 3/4               | 9      | 36     | 37 1/2    | 73 1/2     | 42  | 2 3/4 | 3 to 1           |  |  |  |  |
| 24                                 | 3                   | 9 1/2  | 43 1/2 | 30        | 73 1/2     | 48  | 3     | 3 to 1           |  |  |  |  |
| 27                                 | 3 1/4               | 10 1/2 | 49 1/2 | 24        | 73 1/2     | 54  | 3 1/4 | 3 to 1           |  |  |  |  |
| 30                                 | 3 1/2               | 12     | 54     | 19 3/4    | 73 1/2     | 60  | 3 1/2 | 3 to 1           |  |  |  |  |
| 36                                 | 4                   | 15     | 63     | 34 3/4    | 97 3/4     | 72  | 4     | 3 to 1           |  |  |  |  |
| 42                                 | 4 1/2               | 21     | 63     | 35        | 98         | 78  | 4 1/2 | 3 to 1           |  |  |  |  |
| 48                                 | 5                   | 24     | 72     | 26        | 98         | 84  | 5     | 3 to 1           |  |  |  |  |
| 54                                 | 5 1/2               | 27     | 65     | 33 1/4-35 | 98 1/4-100 | 90  | 5 1/2 | 2 1/2 to 1       |  |  |  |  |
| 60                                 | 6                   | 30-35  | 60     | 39        | 99         | 96  | 5     | 2 to 1           |  |  |  |  |
| 66                                 | 6 1/2               | 24-30  | 72-78  | 21-27     | 99         | 102 | 5 1/2 | 2 to 1           |  |  |  |  |
| 72                                 | 7                   | 24-36  | 78     | 21        | 99         | 108 | 6     | 2 to 1           |  |  |  |  |
| 78                                 | 7 1/2               | 24-36  | 78     | 21        | 99         | 114 | 6 1/2 | 2 to 1           |  |  |  |  |
| 84                                 | 8                   | 36     | 90 1/2 | 21        | 111 1/2    | 120 | 6 1/2 | 1 1/2 to 1       |  |  |  |  |
| 90                                 | 8 1/2               | 41     | 87 1/2 | 24        | 111 1/2    | 132 | 6 1/2 | 1 1/2 to 1       |  |  |  |  |

\* MINIMUM  
\*\* MAXIMUM

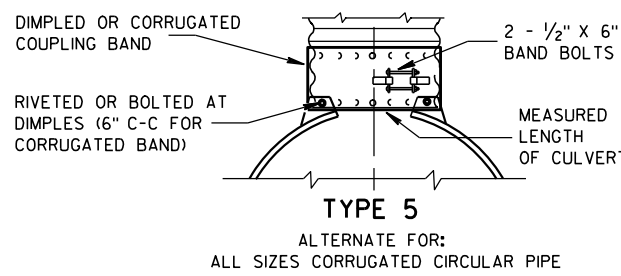
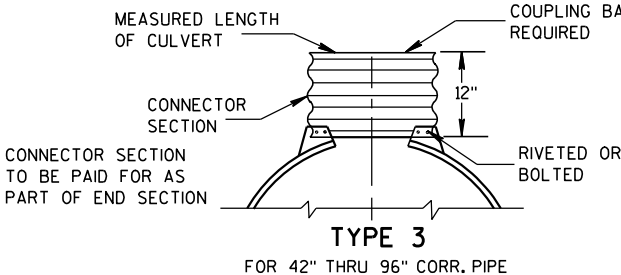
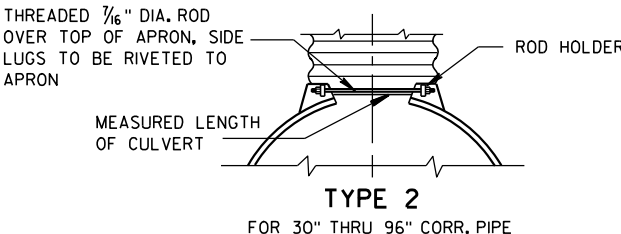
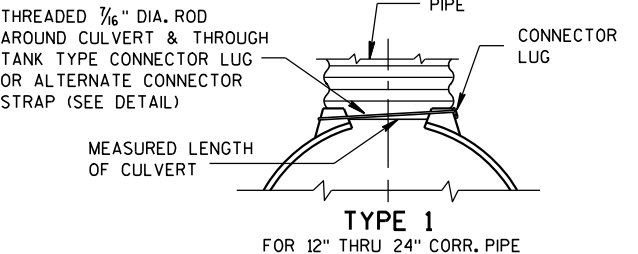


CONCRETE ENDWALLS

1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



ALTERNATE FOR TYPE 1 CONNECTION  
END SECTION CONNECTOR STRAP



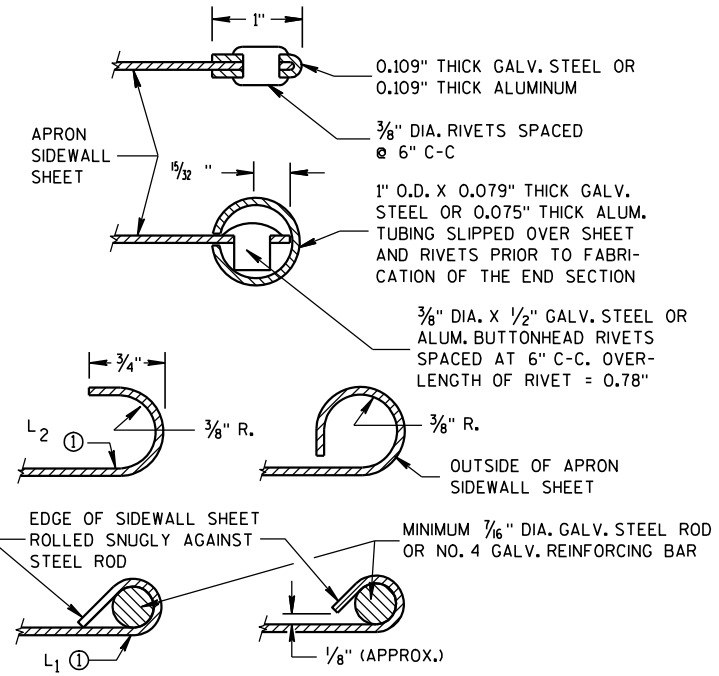
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

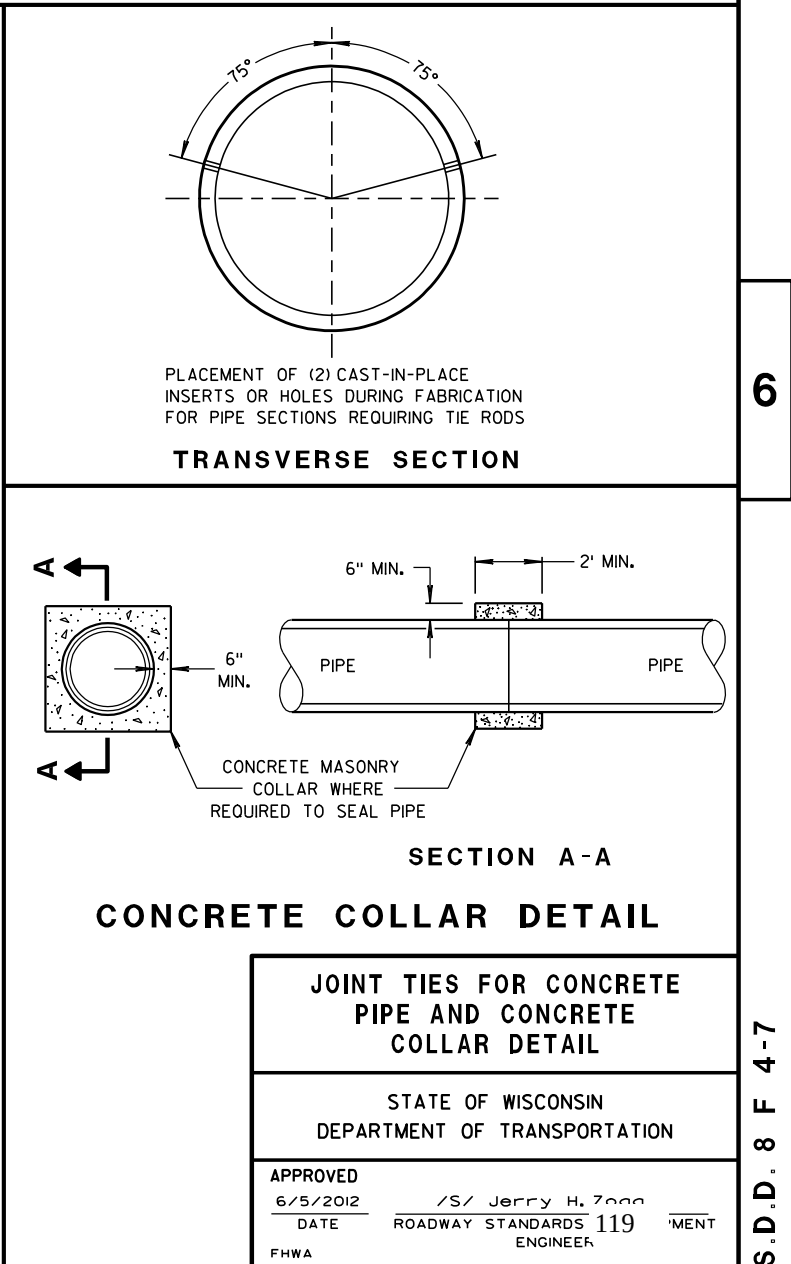
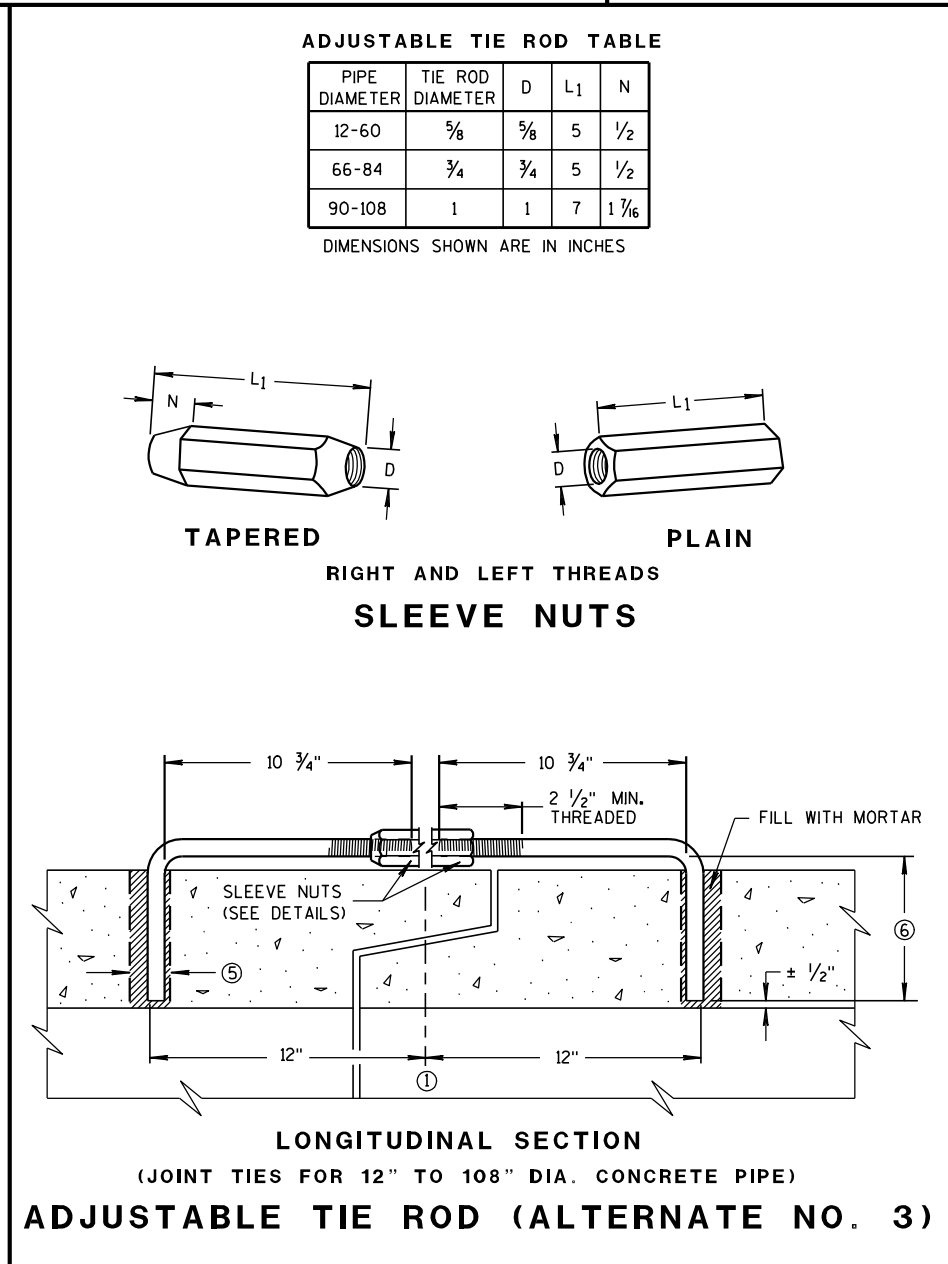
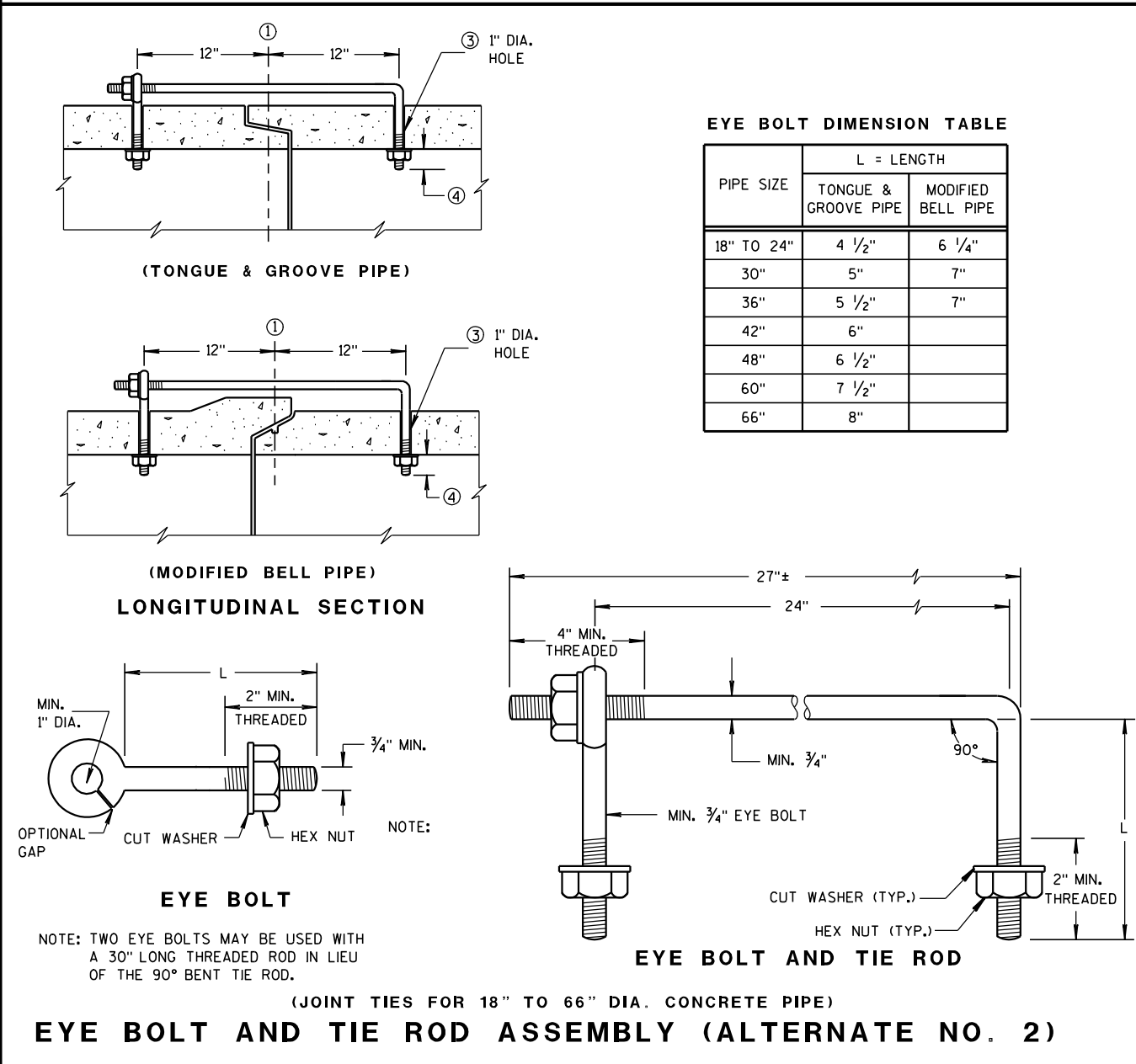
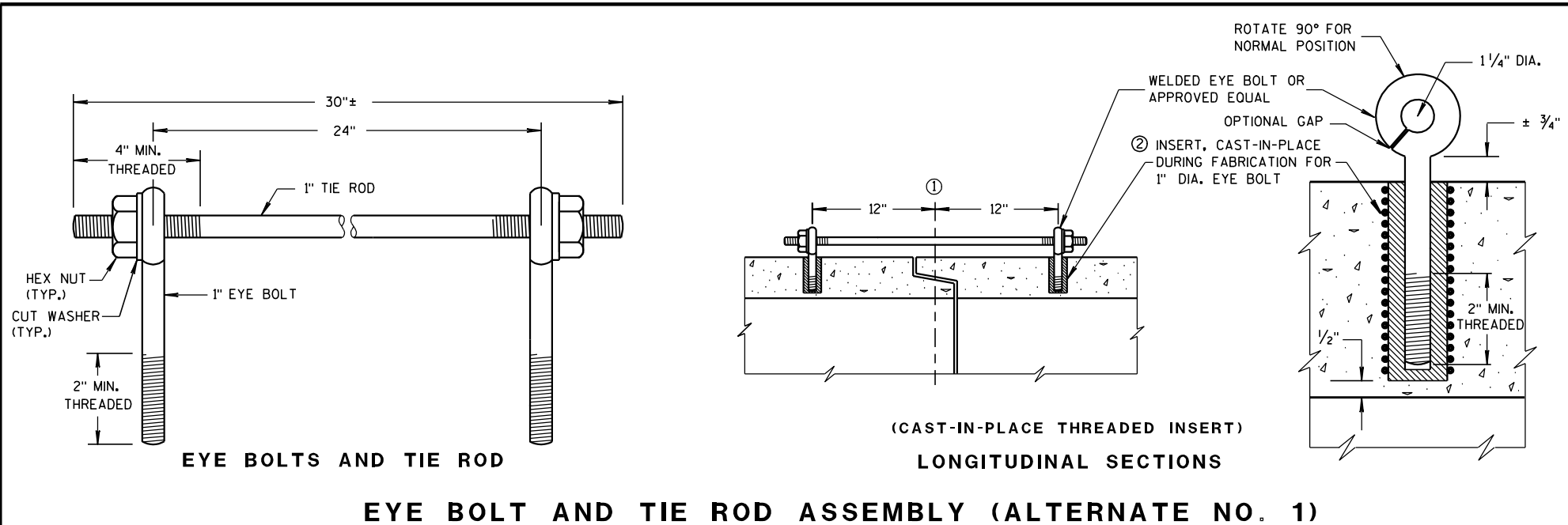
ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

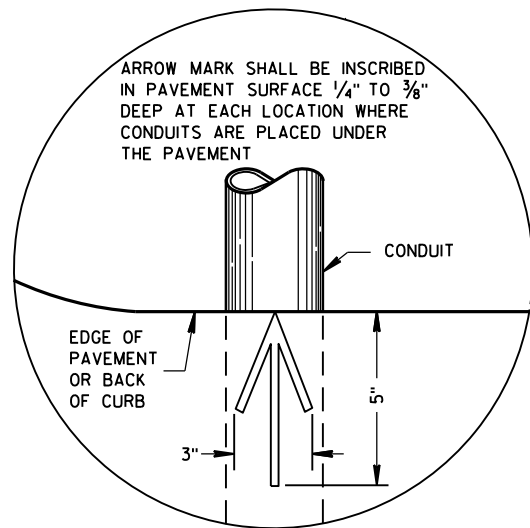
LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

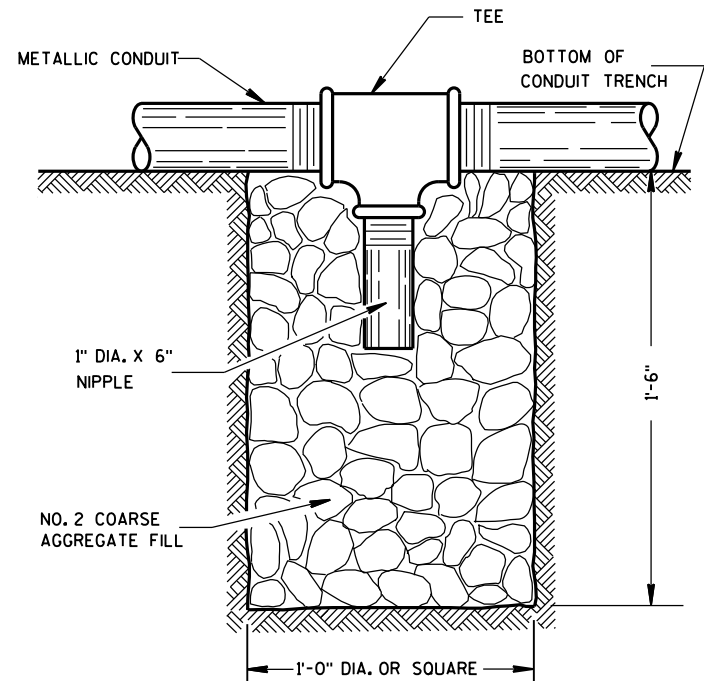
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

|                                                    |                                                |     |      |
|----------------------------------------------------|------------------------------------------------|-----|------|
| APRON ENDWALLS FOR CULVERT PIPE                    |                                                |     |      |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                                                |     |      |
| APPROVED<br>11/30/94<br>DATE                       | /S/ Rory L. Rhinehart<br>CHIEF ROADWAY DEVELOP | 118 | NEER |
| FHWA                                               |                                                |     |      |



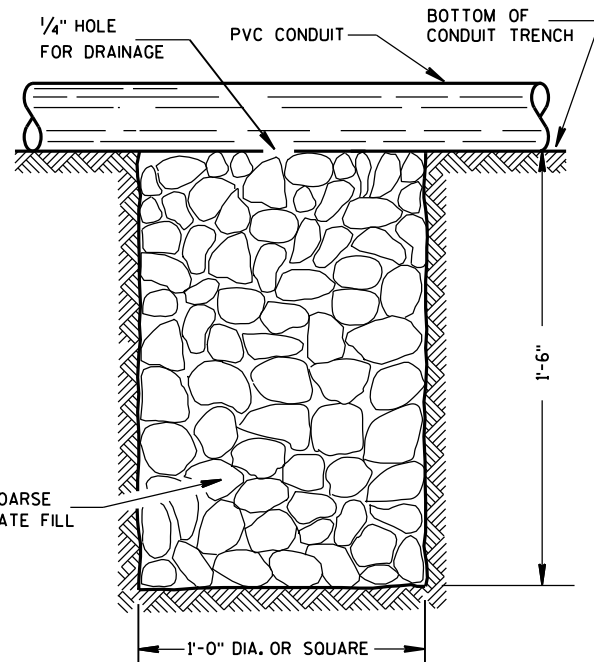


PLAN VIEW  
ARROW MARK



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

DRAIN SUMP FOR METALLIC CONDUIT



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

DRAIN SUMP FOR PVC CONDUIT

## GENERAL NOTES

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

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

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

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

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

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

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

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

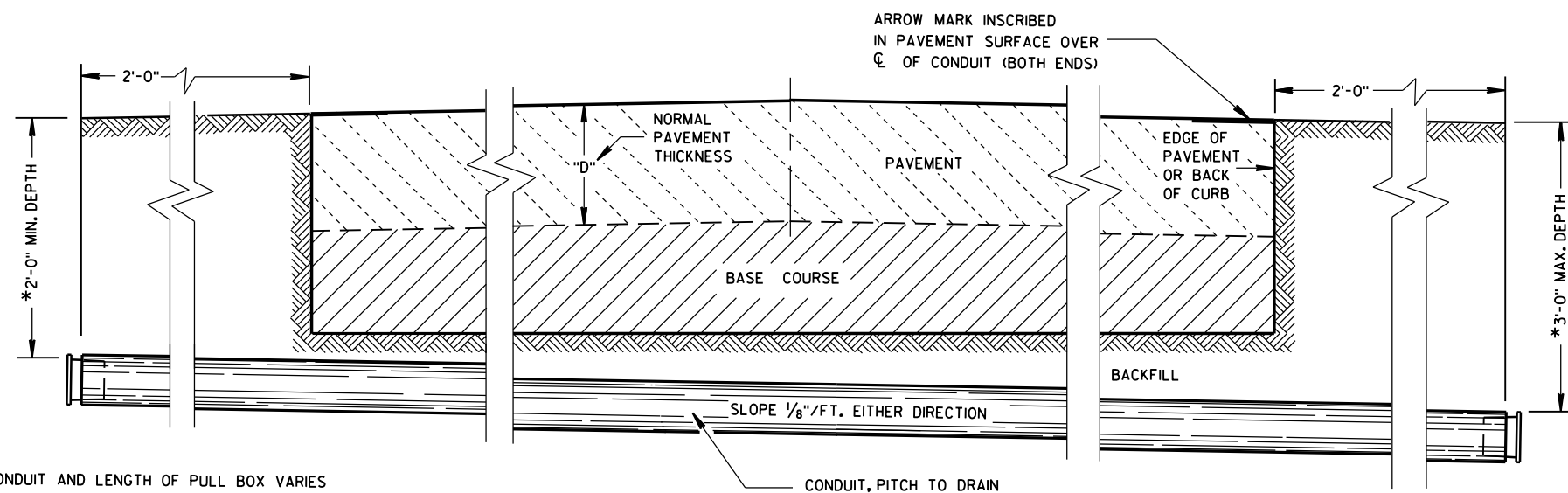
PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

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

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

POLY ROPE OR A PULL WIRE SHALL BE INSTALLED AS STATED IN THE STANDARD SPECIFICATION, ITEM 652.3.1.1.

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



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

SIDE ELEVATION  
DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

## CONDUIT

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2014

DATE

FHWA

/S/ Ahmet Demirbilek  
STATE ELECTRICAL 120

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

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

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

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

GENERAL NOTES

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

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

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

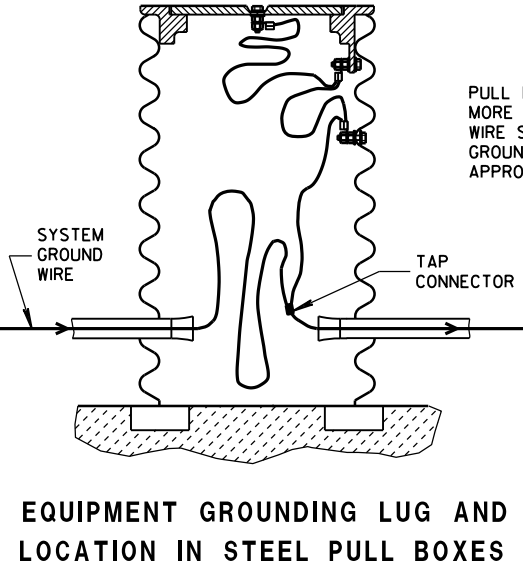
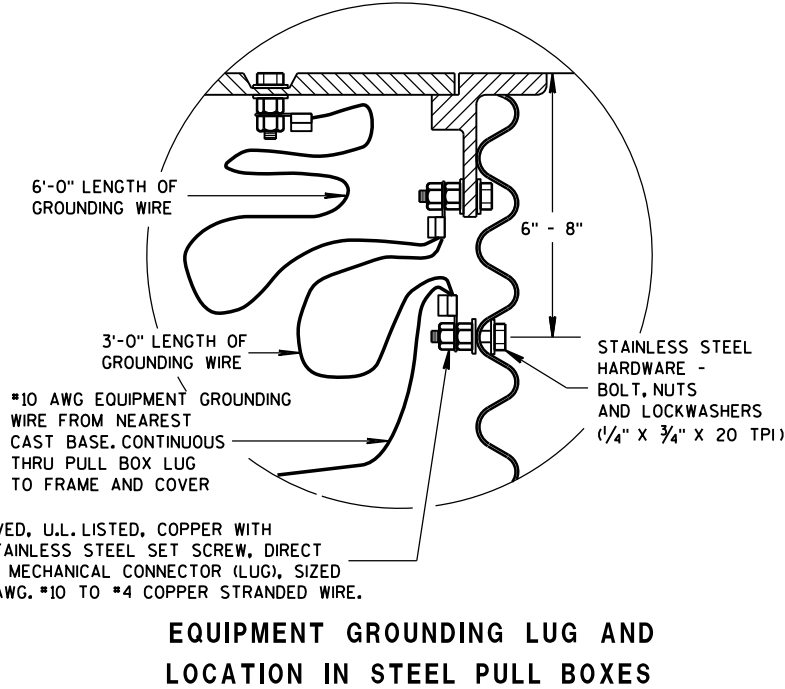
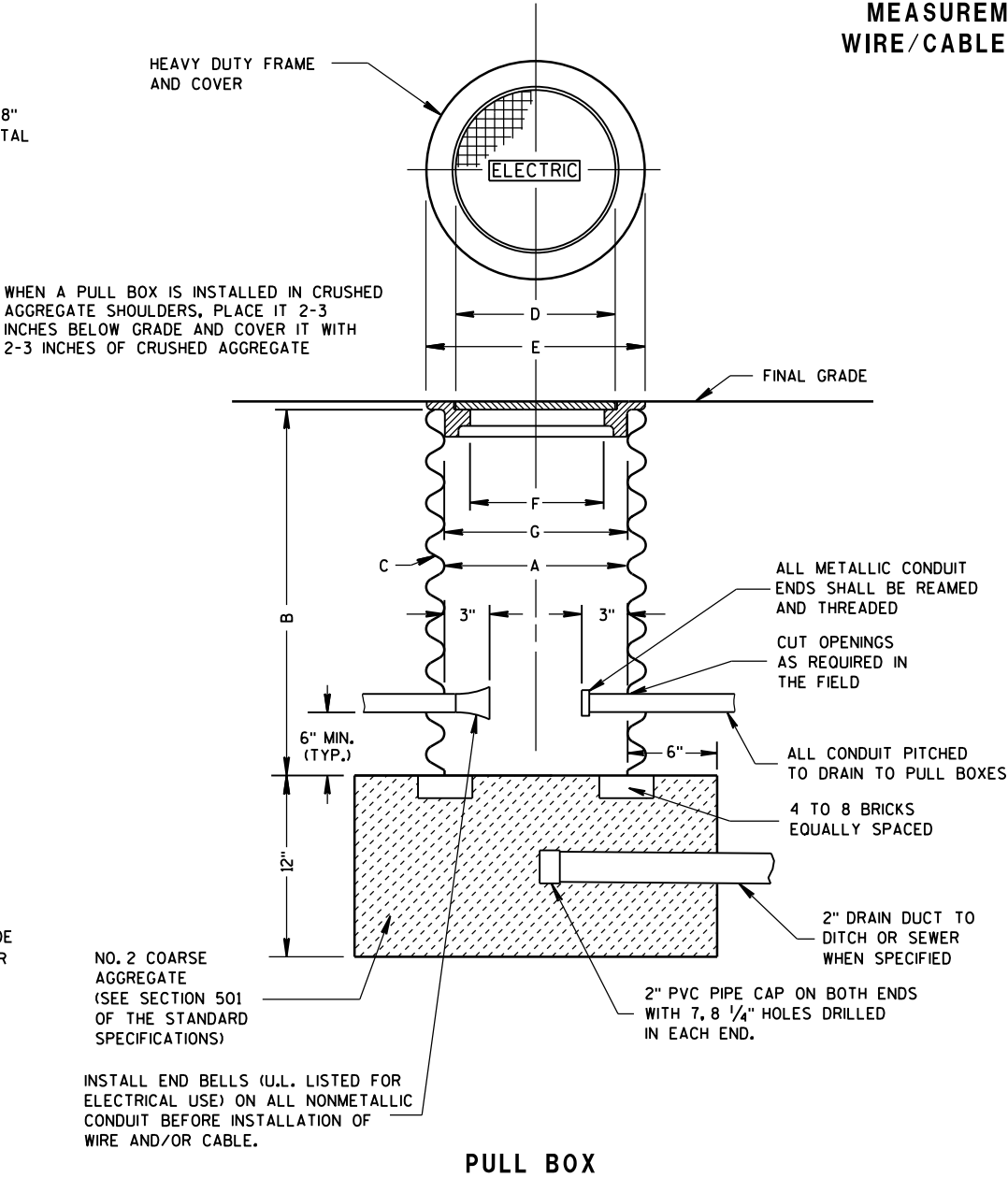
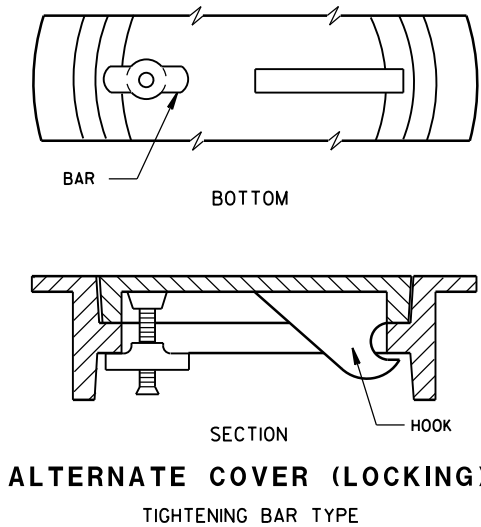
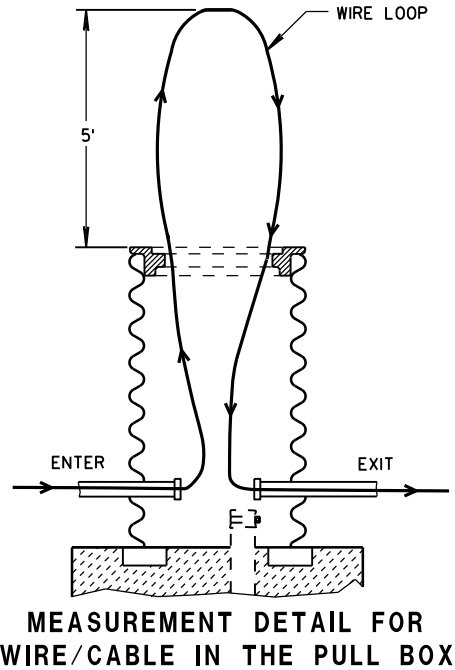
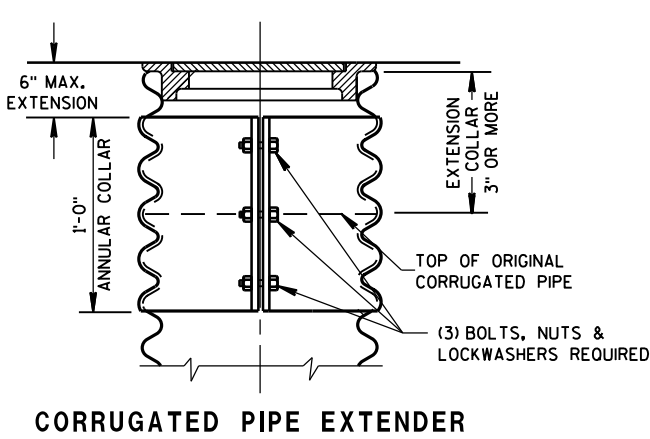
ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/4".

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

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

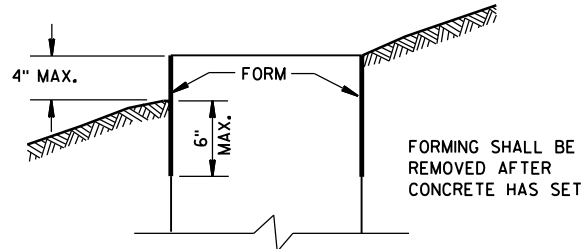
ALL METALLIC CONDUIT IN WHICH WIRE AND/OR CABLE IS TO BE INSTALLED, SHALL BE BUSHED BEFORE INSTALLATION OF THE WIRE AND/OR CABLE.

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.



|                                                    |                                             |
|----------------------------------------------------|---------------------------------------------|
| PULL BOX                                           |                                             |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                                             |
| APPROVED<br>Sept. 2014<br>DATE                     | /S/ Ahmet Demirelek<br>STATE ELECTRICAL 121 |
| FHWA                                               |                                             |

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



## FORMING DETAIL

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

## GENERAL NOTES

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

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

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

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

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

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

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

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

## GENERAL NOTES (CONTINUED)

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

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

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

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

A NO. 4 AWG, STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD) FOR TYPE 1, TYPE 2, TYPE 5, AND TYPE 6 BASES.

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

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

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

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

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

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

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

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

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

3 (4) 1" DIA. X 5'-0" ANCHOR RODS.

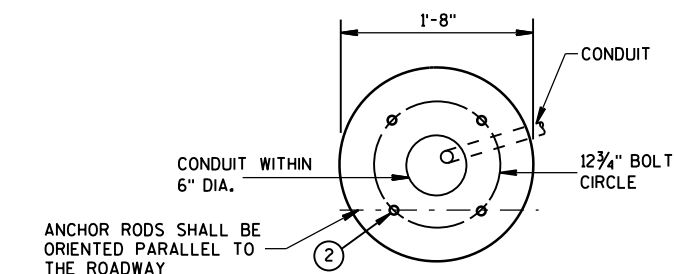
4 (6) NO. 6 X 6'-8" BAR STEEL REINFORCEMENT.

5 (7) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

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

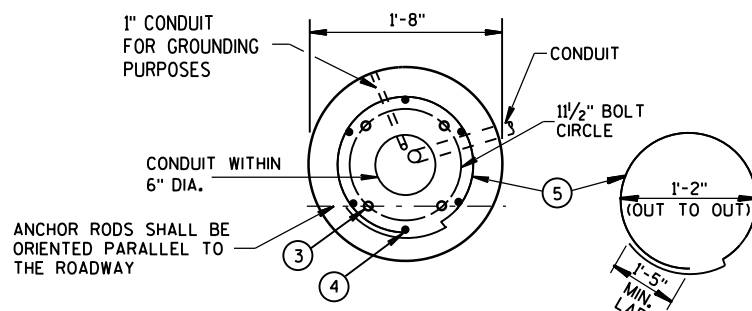
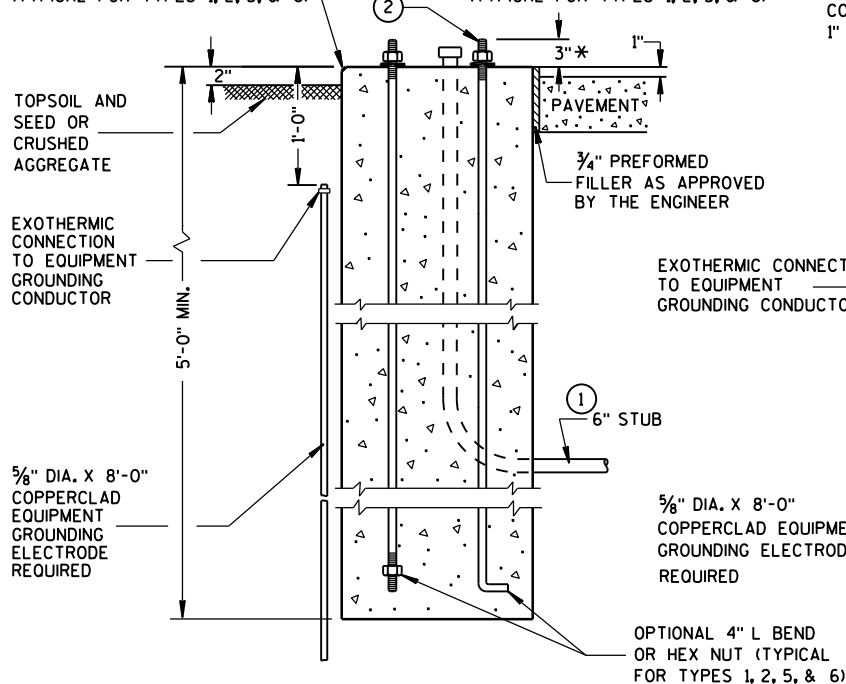
7 (6) NO. 4 X 4'-8" BAR STEEL REINFORCEMENT.

8 (5) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

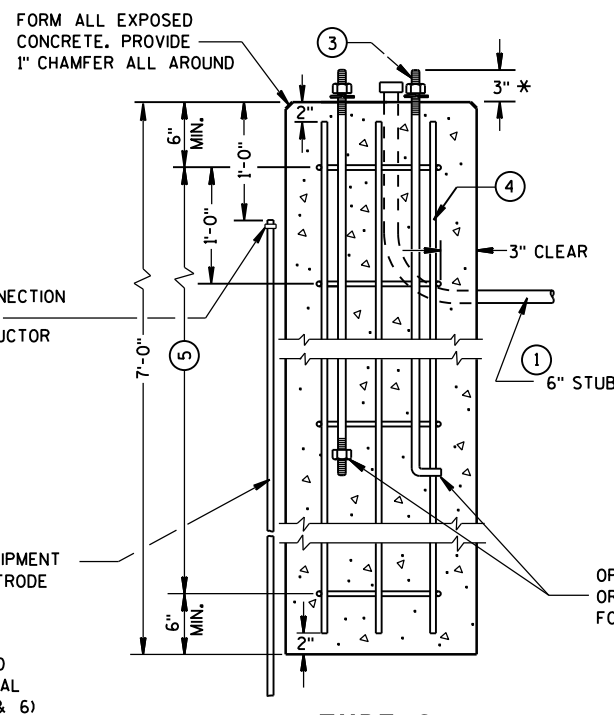


FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND

## HALF SECTION IN UNPAVED AREA (TYPICAL FOR TYPES 1, 2, 5, & 6)

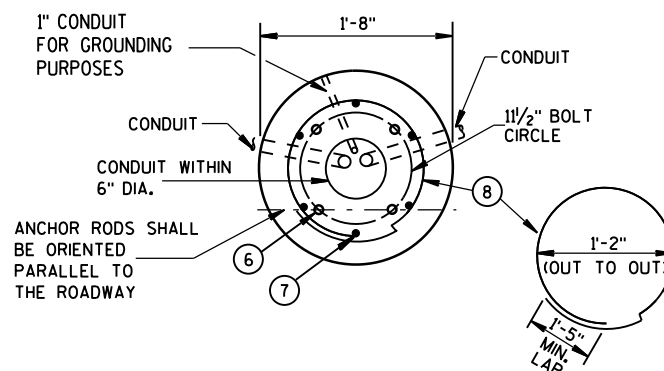


FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND

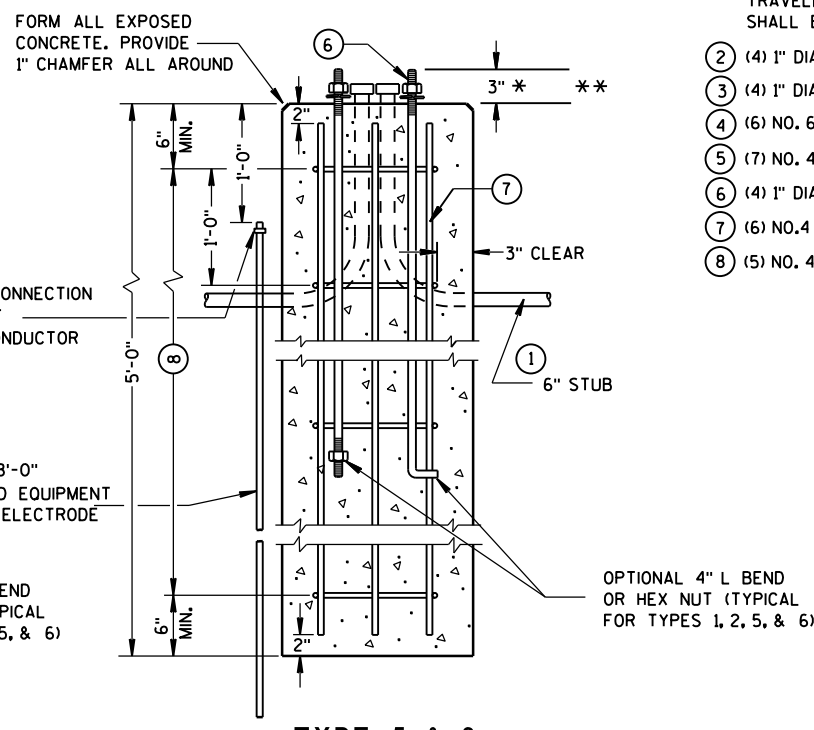


## TYPE 2

## CONCRETE BASES



FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND



## TYPE 5 & 6

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

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

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2014

DATE

FHWA

/S/ Ahmet Demirbilek  
STATE ELECTRICAL 122

GENERAL NOTES

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

FOUR (4) BOLTS SHALL BE FURNISHED WITH EACH TRANSFORMER BASE. BOLTS SHALL BE 1" DIAMETER, 4" IN LENGTH, WITH WASHERS, LOCK WASHERS AND NUTS. BOLTS, NUTS AND WASHERS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 641.2.2 OF THE STANDARD SPECIFICATIONS.

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

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

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

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

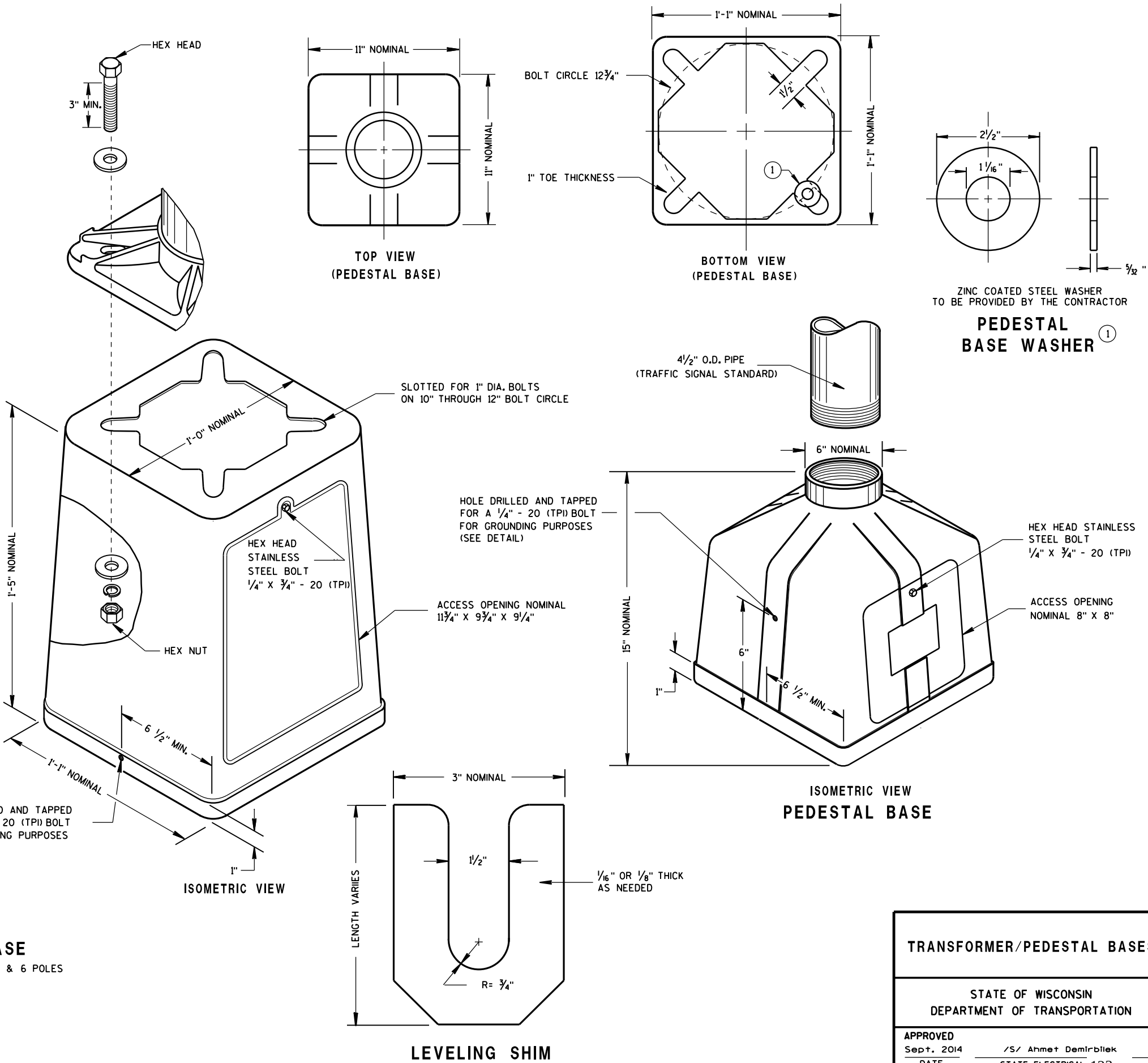
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

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

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

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

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



TYPICAL MECHANICAL  
CONNECTOR LUG  
TO BE FURNISHED WITH EACH BASE

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

ISOMETRIC VIEW  
PEDESTAL BASE

LEVELING SHIM

TRANSFORMER/PEDESTAL BASES

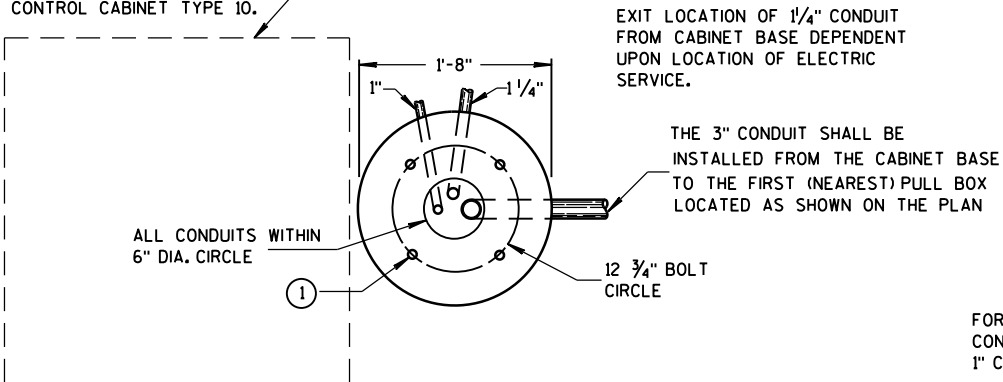
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
Sept. 2014 /S/ Ahmet Demirbilek  
DATE STATE ELECTRICAL 123  
FHWA

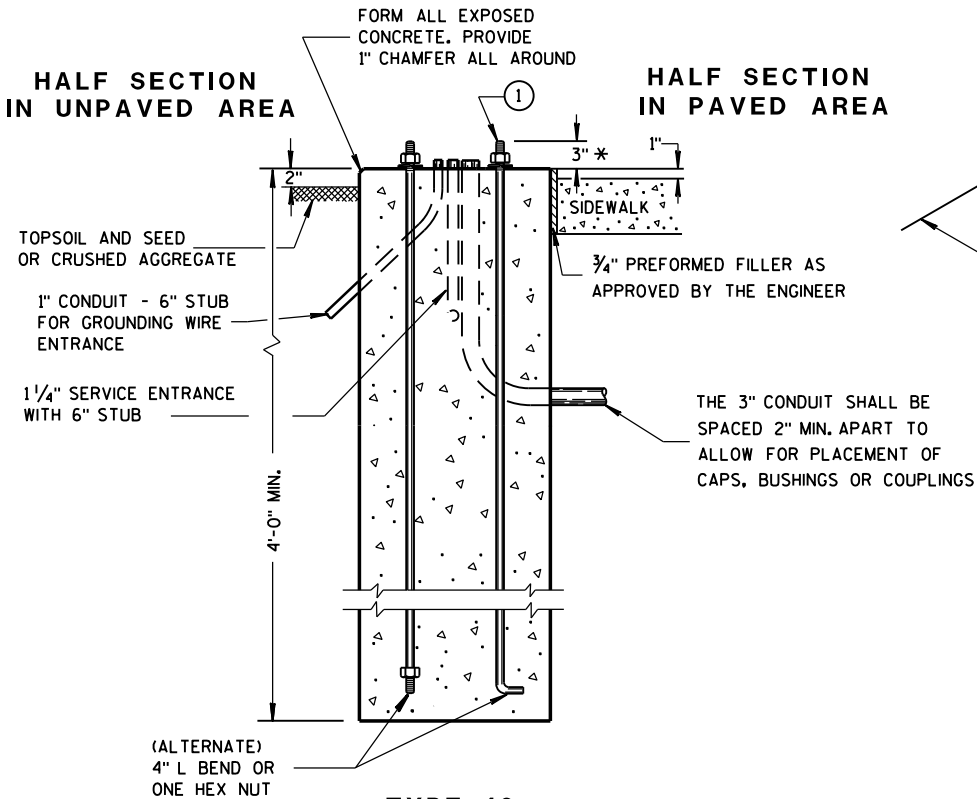
| CONTROL CABINET<br>BASE TYPE | DIMENSIONS |     |     |     | C.Y. CONCRETE<br>(APPROX.) |
|------------------------------|------------|-----|-----|-----|----------------------------|
|                              | H          | I   | J   | K   |                            |
| TYPE 6 - 30" CABINET         | 34"        | 60" | 10" | 17" | .64                        |
| TYPE 7 - 38" CABINET         | 42"        | 60" | 10" | 21" | .93                        |
| TYPE 8 - 38" CABINET         | 42"        | 72" | 12" | 21" | 1.29                       |
| TYPE 9 - VARIABLE            | 54"        | 72" | 14" | 27" | 1.56                       |
| TYPE 10 - POST MOUNT         | AS SHOWN   |     |     |     | .65 *                      |

\* INCLUDES MAINTENANCE PLATFORM.

TYPICAL 3'-0" X 3'-0" X 4" THICK  
MAINTENANCE PLATFORM.  
LOCATION TO BE DETERMINED  
IN THE FIELD. COST TO BE  
INCLUDED UNDER CONCRETE  
CONTROL CABINET TYPE 10.



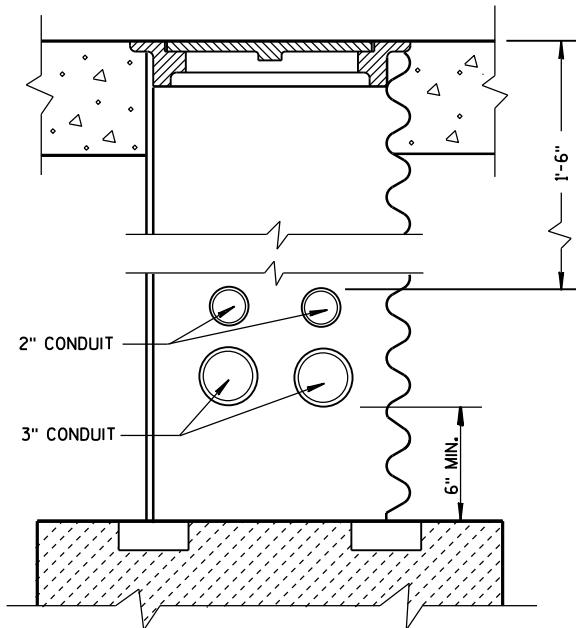
### HALF SECTION IN UNPAVED AREA



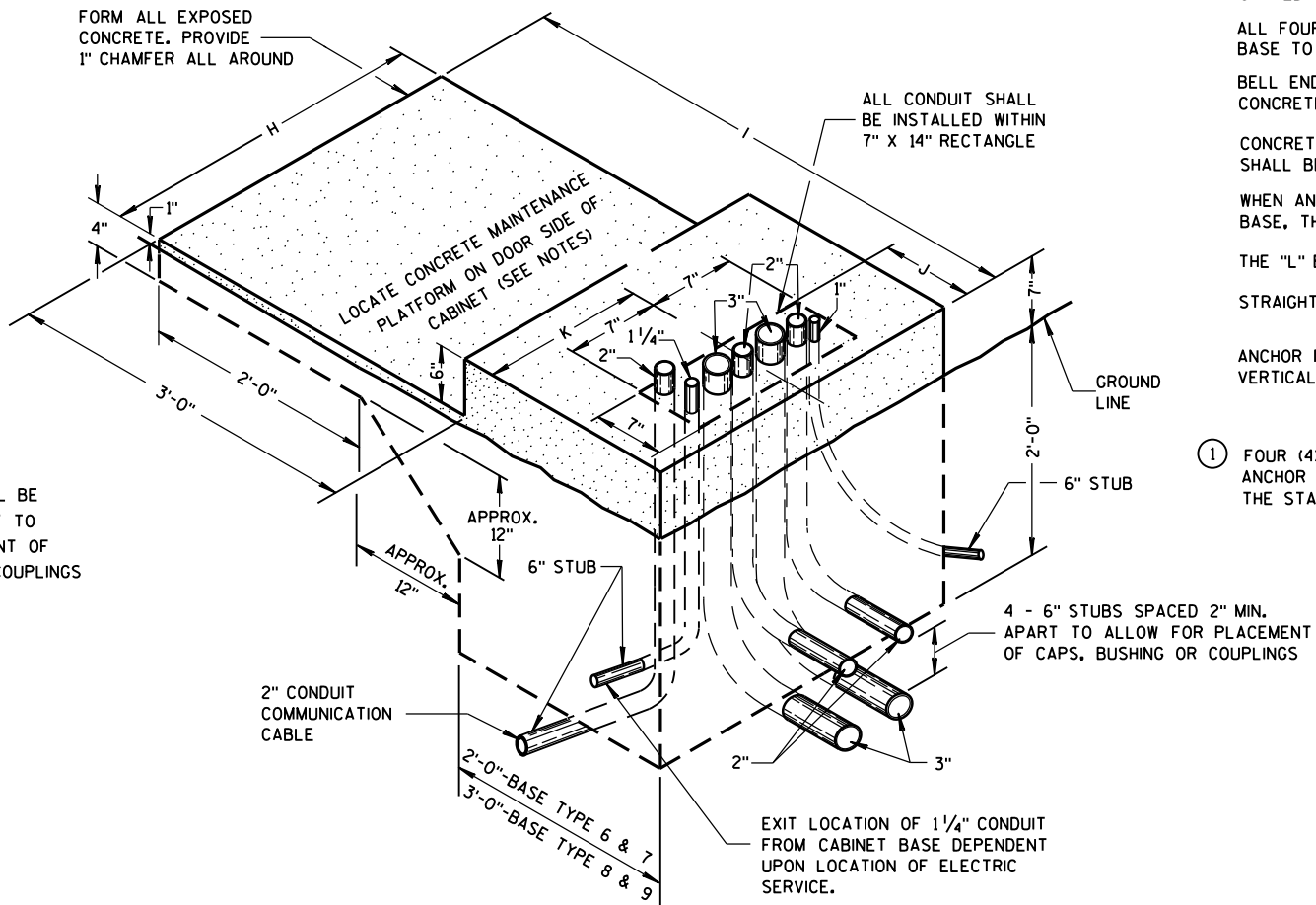
TYPE 10

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

## CONCRETE CONTROL CABINET BASES



### CONDUIT LOCATIONS IN 24" X 36" PULL BOX (LEADING TO CONTROLLER CABINET BASE TYPE 6, 7, 8 AND 9)



TYPE 6, 7, 8 AND 9  
(ISOMETRIC VIEW)

## GENERAL NOTES

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

INSTALL FOUR 1/2 INCH MINIMUM DIAMETER X 4 INCH MINIMUM LENGTH APPROVED CONCRETE  
MASONRY ANCHORS WITH A PULLOUT STRENGTH OF 9,000 LBS. TO ANCHOR THE CABINET TO  
TYPE 6, 7, 8, AND 9 BASES. THE ANCHOR STUDS SHALL BE LOCATED AS DIRECTED BY  
THE ENGINEER TO PROPERLY ANCHOR THE CONTROL CABINET TO THE BASE.

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

CONDUIT HEIGHT ABOVE THE CONCRETE BASE SHALL BE 1 INCH.

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

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

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

CONTROL CABINET BASE TOP SURFACES SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

WHEN A TYPE 10 CONTROL CABINET BASE IS USED TO POST MOUNT A CONTROL CABINET, A  
36" SQUARE 4" THICK CONCRETE MAINTENANCE PLATFORM SHALL BE REQUIRED ON THE DOOR  
SIDE OF THE CABINET. THE TOP 1 INCH SHALL BE ABOVE FINISHED GRADE AND BE BROOM  
FINISHED AND LEVEL.

MAINTENANCE PLATFORMS ARE NOT REQUIRED WHEN THE SURROUNDING AREA IS PAVED.

MINIMUM BENDING RADIUS OF CONDUIT = 6 X THE DIAMETER.

ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

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

ALL FOUR (TWO INCH AND THREE INCH) CONDUIT SHALL BE INSTALLED FROM THE CABINET  
BASE TO THE FIRST (NEAREST) PULL BOX LOCATED AS SHOWN ON THE PLANS.

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

CONCRETE FORM DEPTH BELOW FINISHED GRADE SHALL BE 6" MAXIMUM. CONCRETE FORMS  
SHALL BE REMOVED AFTER CONCRETE HAS SET.

WHEN ANCHOR RODS USING THE ALTERNATE L BEND ARE FURNISHED FOR THE TYPE 10  
BASE, THE 4" L BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH.

THE "L" BEND SHALL NOT BE THREADED.

STRAIGHT ANCHOR RODS SHALL BE THREADED 12" IN LENGTH ON EACH END OF THE ROD.

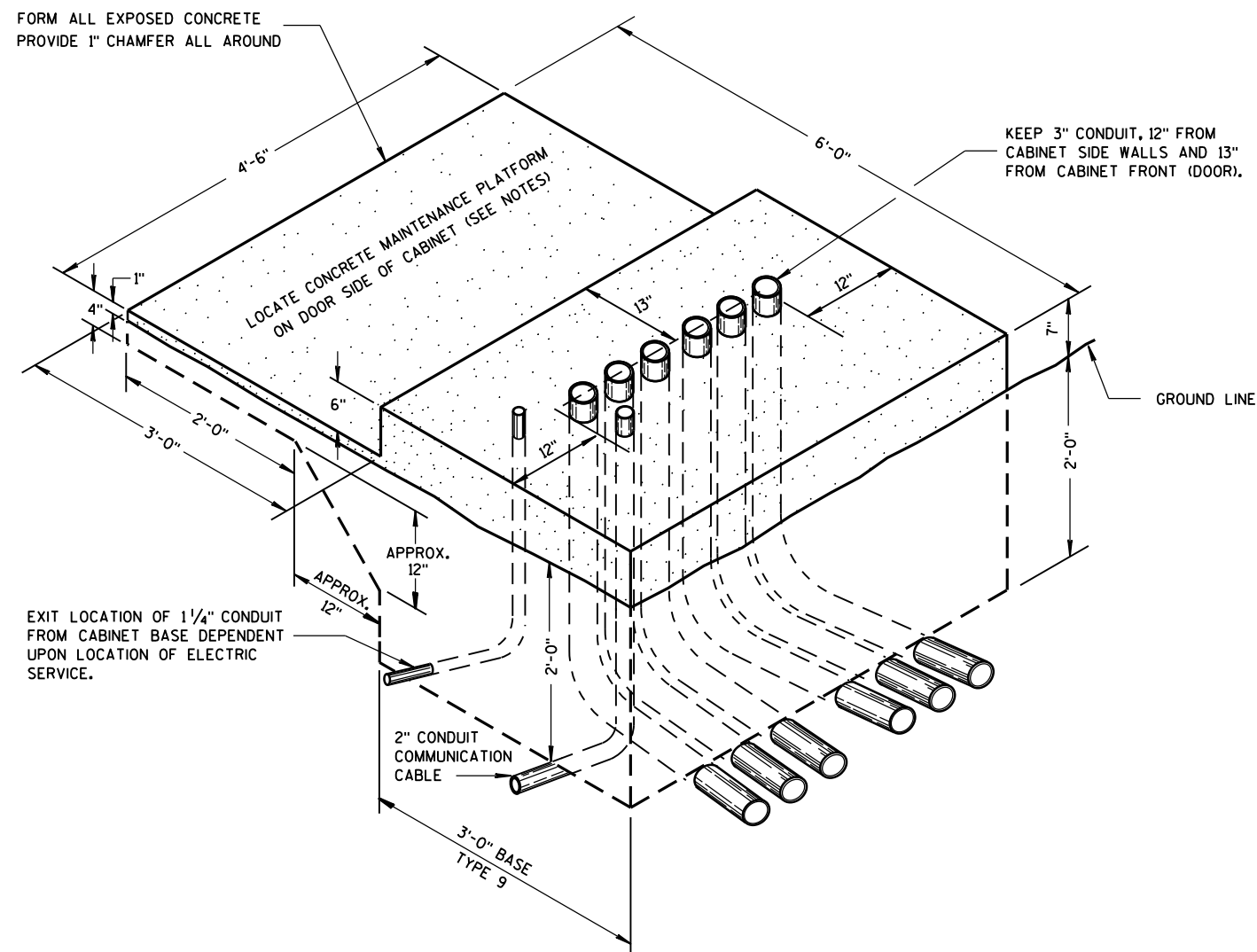
ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM  
VERTICAL.

- ① FOUR (4) ANCHOR RODS, 1" DIA. X 3'-6".  
ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2.1 OF  
THE STANDARD SPECIFICATIONS.

### CONCRETE CONTROL CABINET BASES

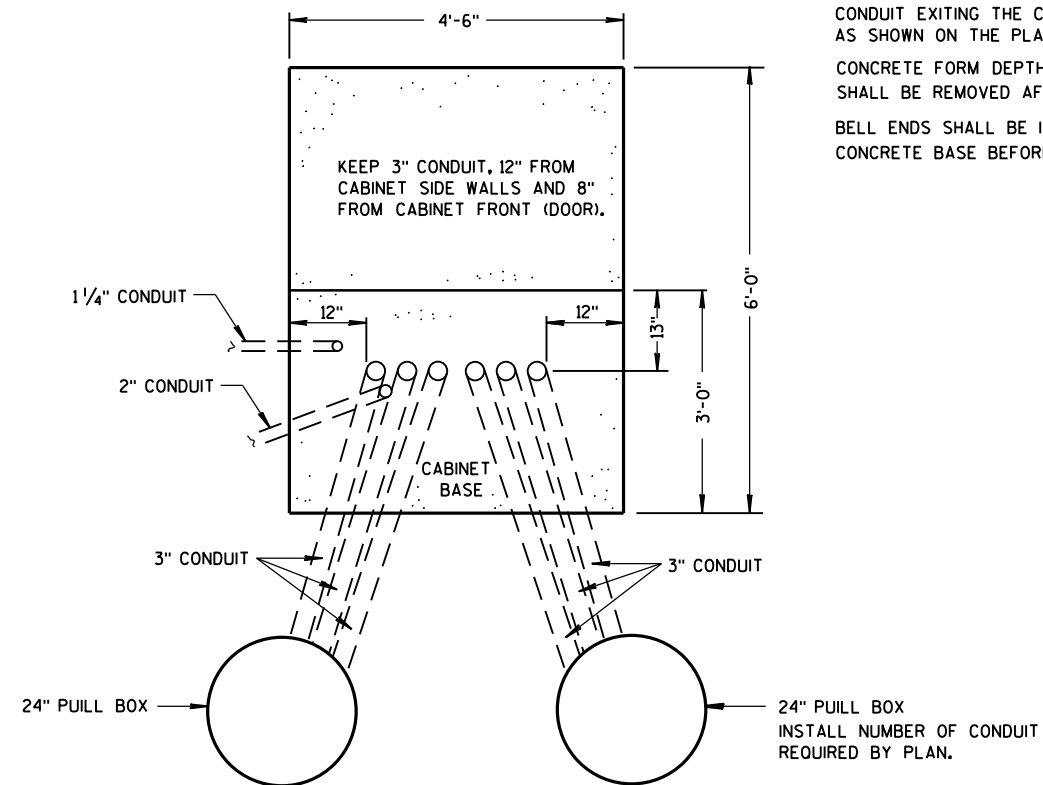
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
Sept. 2014 /S/ Ahmet Demirelek  
DATE STATE ELECTRICAL 124  
FHWA



ISOMETRIC VIEW  
TYPE 9, SPECIAL

(C.Y. CONCRETE = APPROX. 1.56)



PLAN VIEW

CONCRETE CONTROL CABINET BASE, TYPE 9, SPECIAL

## GENERAL NOTES

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

INSTALL FOUR 1/2 INCH MINIMUM DIAMETER X 4 INCH MINIMUM LENGTH STAINLESS STEEL APPROVED CONCRETE MASONRY ANCHORS WITH A PULLOUT STRENGTH OF 9,000 LBS. TO ANCHOR THE CABINET TO TYPE 6, 7, 8, AND 9 BASES. THE ANCHOR STUDS SHALL BE LOCATED AS DIRECTED BY THE ENGINEER TO PROPERLY ANCHOR THE CONTROL CABINET TO THE BASE.

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

CONDUIT HEIGHT ABOVE THE CONCRETE BASE SHALL BE 1 INCH.

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

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

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

CONTROL CABINET BASE TOP SURFACE SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

MAINTENANCE PLATFORM SHALL BE FLOAT OR BROOM FINISHED AND BE LEVEL.

MAINTENANCE PLATFORMS ARE NOT REQUIRED WHEN THE SURROUNDING AREA IS PAVED.

MINIMUM BENDING RADIUS OF CONDUIT = 6 X THE DIAMETER.

ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

CAP ALL BELOW GRADE METALLIC CONDUIT ENDS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED.

PLUG ALL BELOW GRADE NONMETALLIC CONDUIT ENDS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED.

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

CONDUIT EXITING THE CONCRETE BASE (SIX THREE INCH) SHALL TERMINATE IN PULL BOXES AS SHOWN ON THE PLANS.

CONCRETE FORM DEPTH BELOW FINISHED GRADE SHALL BE 6" MAXIMUM. CONCRETE FORMS SHALL BE REMOVED AFTER CONCRETE HAS SET.

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

CONCRETE CONTROL CABINET  
BASE, TYPE 9, SPECIAL

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

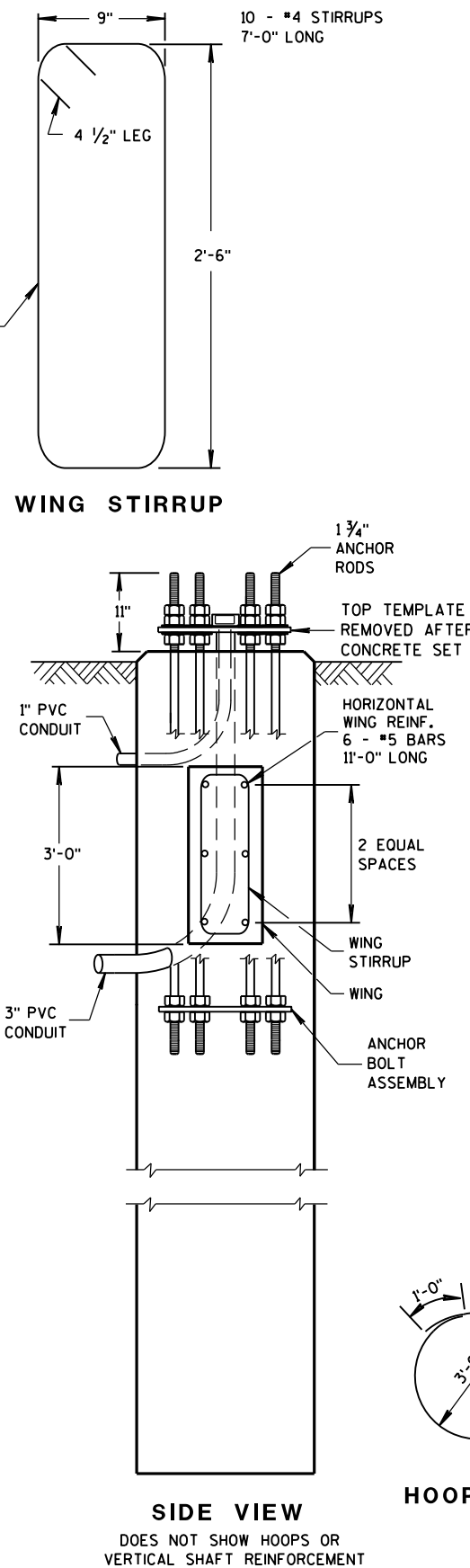
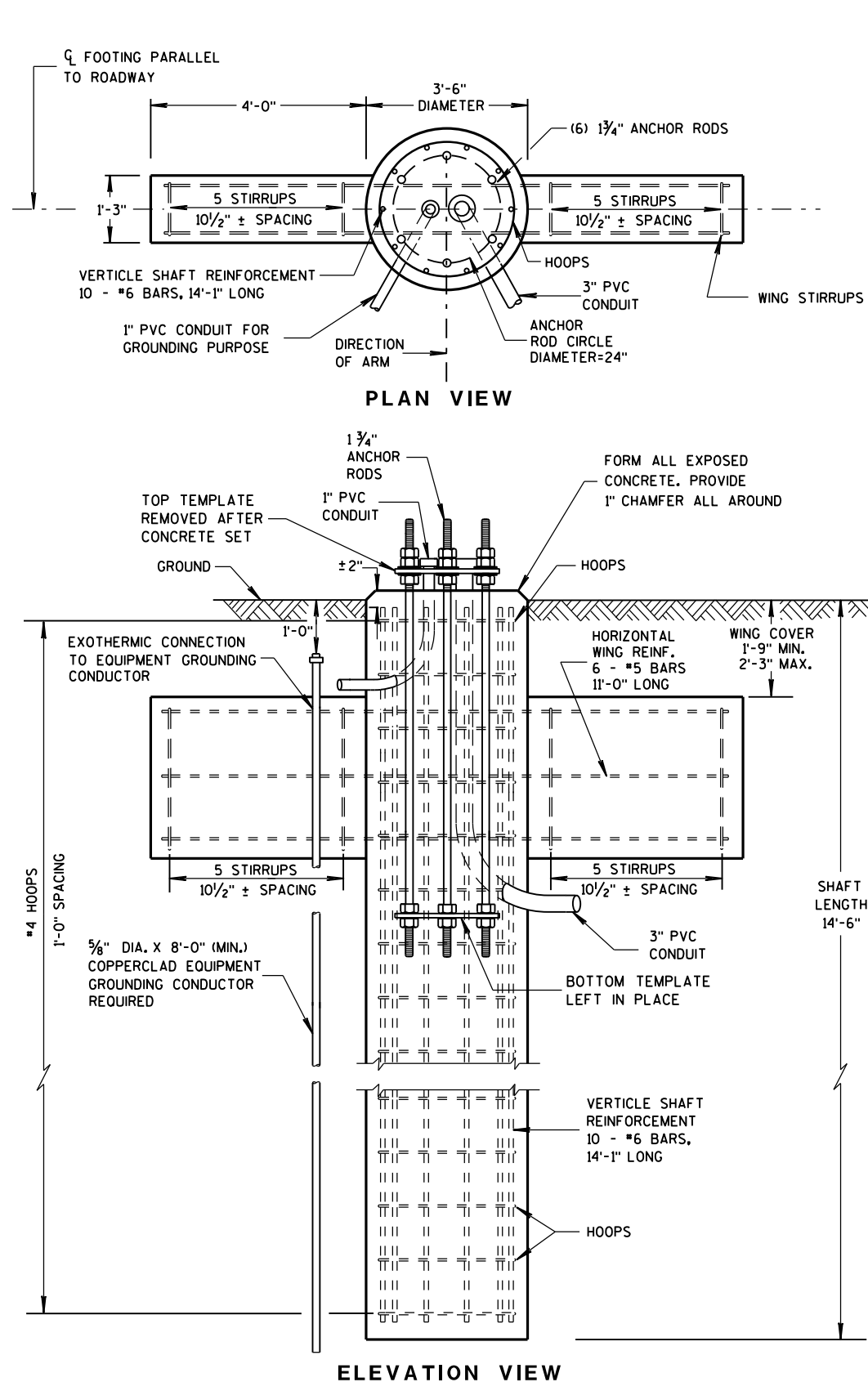
APPROVED

Sept. 2014

DATE

FHWA

/S/ Ahmet Demirbilek  
STATE ELECTRICAL 125



## GENERAL NOTES

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

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

BENDING DIMENSIONS FOR REINFORCING BARS ARE OUT TO OUT.

USE 3" CLEAR FOR ALL REINFORCEMENT UNLESS NOTED OTHERWISE.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

|                                                 |                  |
|-------------------------------------------------|------------------|
| CONCRETE MASONRY                                | fc=3,500 p.s.i.  |
| HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60 | fy=60,000 p.s.i. |
| ANCHOR RODS, AASHTO M314 GRADE 55               | fy=55,000 p.s.i. |
| TEMPLATES, ASTM A709 GRADE 36                   | fy=36,000 p.s.i. |

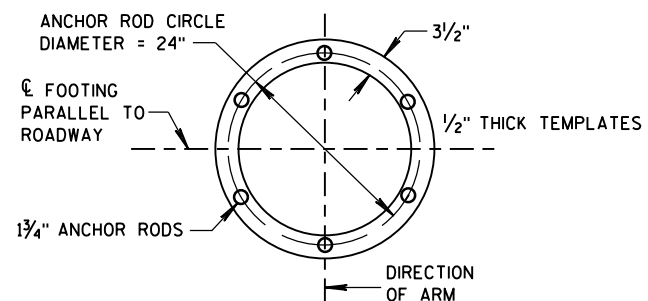
(FOR TYPE 12 & 13 POLES)

CONCRETE = 6.3 C.Y.  
H.S. REINFORCEMENT = 433 LBS.

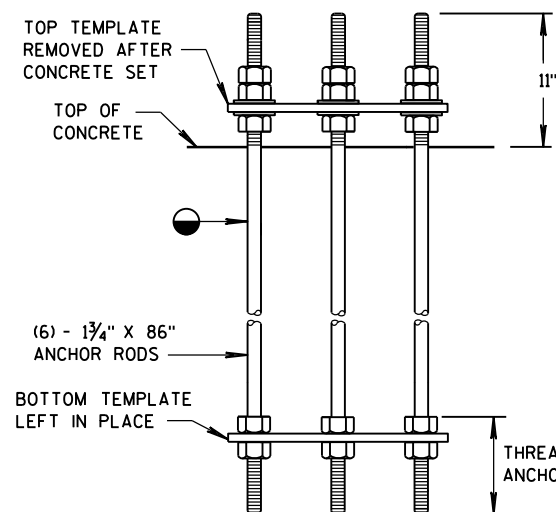
TO BE USED WHEN GROUND ELEVATION AT BASE EQUALS OR IS GREATER THAN HIGH POINT OF ROADWAY ELEVATION.  
SEE S.D.D. 9C13-2 WHEN GROUND ELEVATION AT BASE IS LOWER THAN HIGH POINT OF ROADWAY ELEVATION.

CONCRETE BASE TYPE 13

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



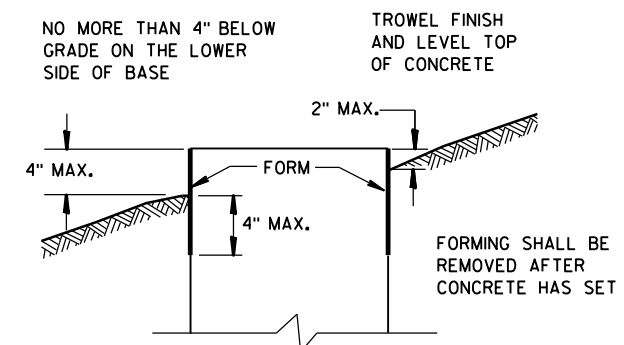
TOP AND BOTTOM TEMPLATES



ANCHOR BOLT ASSEMBLY DETAIL

● THREAD TOP 11" OF ANCHOR ROD FOR 3 NUTS AND 2 WASHERS AND BOTTOM 5 1/2" FOR 2 NUTS PER ANCHOR ROD. HOT-DIP GALVANIZE THE ENTIRE LENGTH OF THE ANCHOR RODS (AASHTO M111) AND HOT-DIP NUTS AND WASHERS (AASHTO M232). USE ZINC COATED NUTS MANUFACTURED WITH SUFFICIENT ALLOWANCE TO ALLOW NUTS TO RUN FREELY ON THE THREADS.

## CONCRETE BASE TYPE 13 ANCHOR ASSEMBLY



FORMING DETAIL

CONCRETE BASE TYPE 13

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

Feb. 2015

DATE

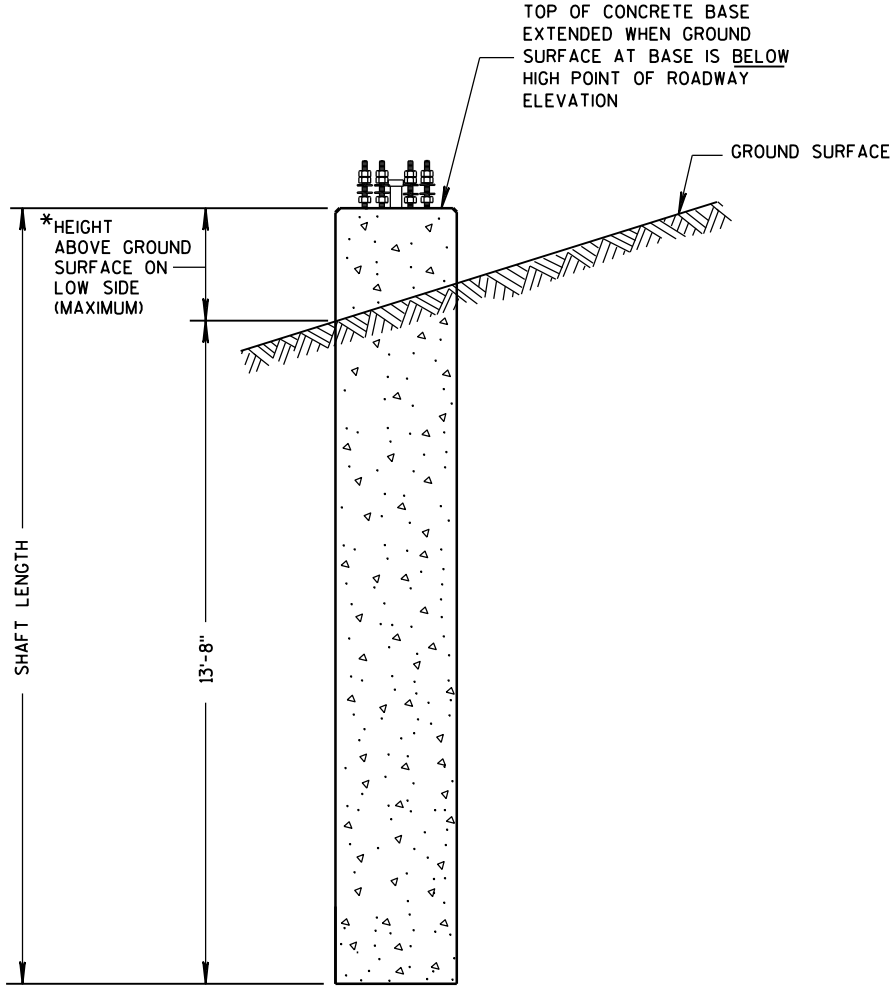
FHWA

/S/ Ahmet Demirelek

STATE ELECTRICAL 127

REINFORCEMENT AND CONCRETE QUANTITIES  
ADJUSTED FOR EXTENDED TYPE 10 CONCRETE BASE

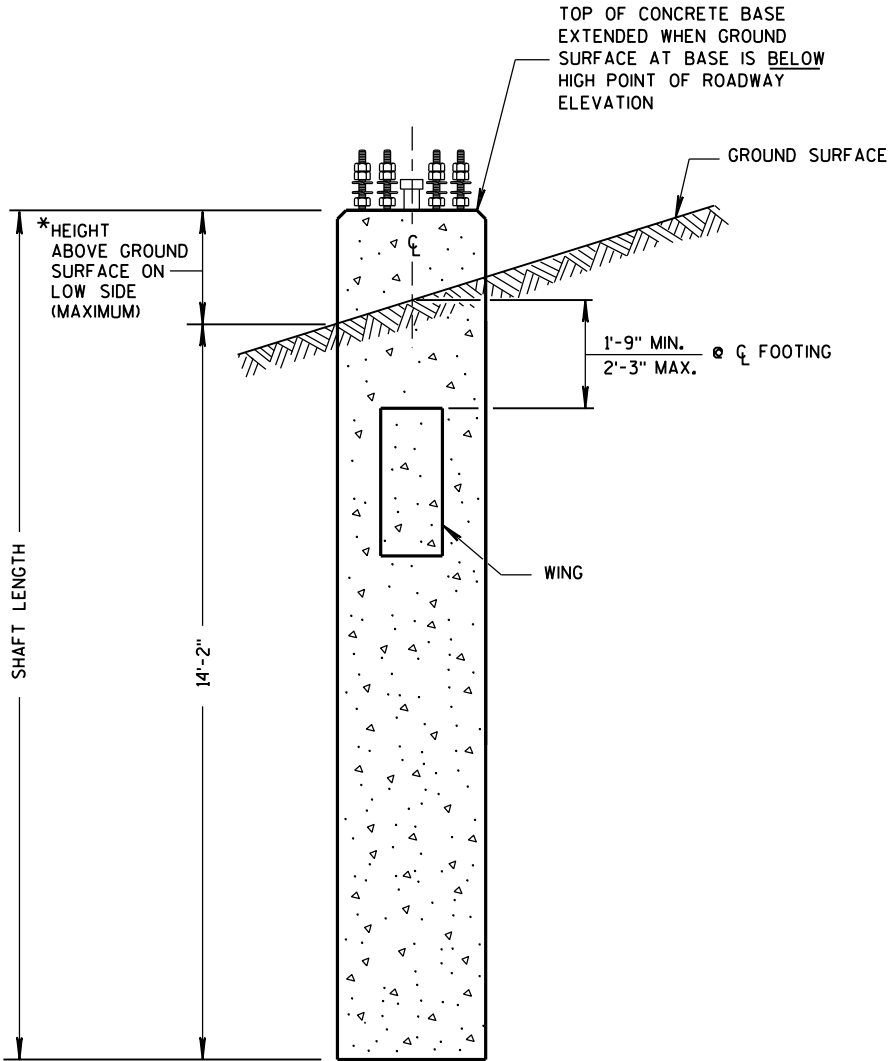
| HEIGHT INCREASE<br>REQUIRED | * HEIGHT<br>ABOVE GROUND<br>SURFACE ON<br>LOW SIDE<br>(MAXIMUM) | SHAFT<br>LENGTH | LENGTH OF #6<br>VERTICAL REINF. | NO. OF #4<br>HOOPS | C.Y. OF<br>CONCRETE | LBS. OF HOOP<br>BAR STEEL | LBS. OF VERTICAL<br>BAR STEEL |
|-----------------------------|-----------------------------------------------------------------|-----------------|---------------------------------|--------------------|---------------------|---------------------------|-------------------------------|
| >0" TO 6"                   | 10"                                                             | 14'-6"          | 14'-1"                          | 16                 | 2.6                 | 78                        | 127                           |
| >6" TO 1'-0"                | 1'-4"                                                           | 15'-0"          | 14'-7"                          | 16                 | 2.7                 | 78                        | 131                           |
| >1'-0" TO 1'-6"             | 1'-10"                                                          | 15'-6"          | 15'-1"                          | 17                 | 2.8                 | 83                        | 136                           |
| >1'-6" TO 2'-0"             | 2'-4"                                                           | 16'-0"          | 15'-7"                          | 17                 | 2.9                 | 83                        | 141                           |



CONCRETE BASE TYPE 10 (EXTENDED)

REINFORCEMENT AND CONCRETE QUANTITIES  
ADJUSTED FOR EXTENDED TYPE 13 CONCRETE BASE

| HEIGHT INCREASE<br>REQUIRED | * HEIGHT<br>ABOVE GROUND<br>SURFACE ON<br>LOW SIDE<br>(MAXIMUM) | SHAFT<br>LENGTH | LENGTH OF #6<br>VERTICAL REINF. | NO. OF #4<br>HOOPS | C.Y. OF<br>CONCRETE | LBS. OF H.S.<br>BAR STEEL |
|-----------------------------|-----------------------------------------------------------------|-----------------|---------------------------------|--------------------|---------------------|---------------------------|
| >0" TO 6"                   | 10"                                                             | 15'-0"          | 14'-7"                          | 16                 | 6.5                 | 447                       |
| >6" TO 1'-0"                | 1'-4"                                                           | 15'-6"          | 15'-1"                          | 16                 | 6.6                 | 454                       |
| >1'-0" TO 1'-6"             | 1'-10"                                                          | 16'-0"          | 15'-7"                          | 17                 | 6.8                 | 469                       |
| >1'-6" TO 2'-0"             | 2'-4"                                                           | 16'-6"          | 16'-1"                          | 17                 | 7.0                 | 476                       |

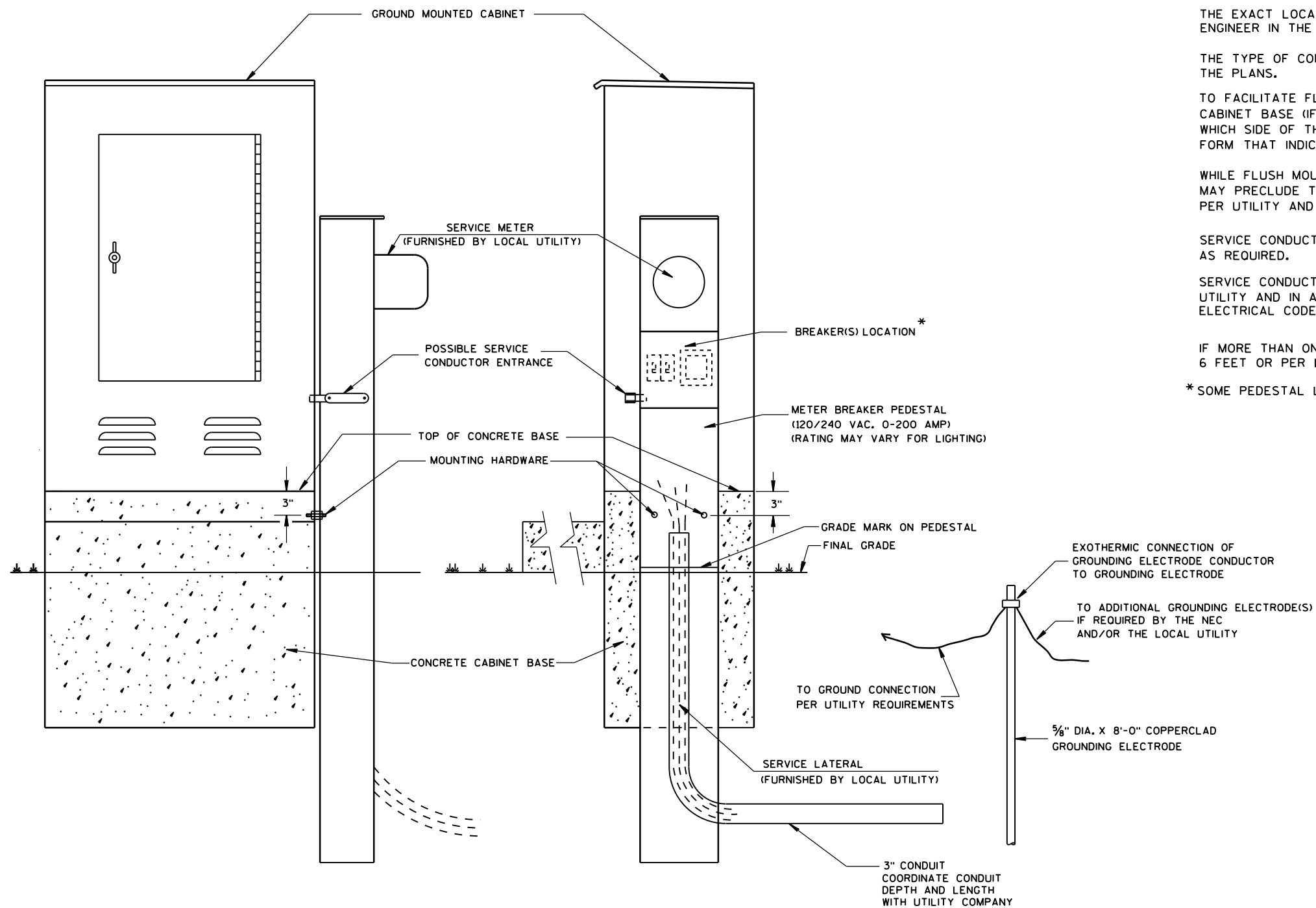


CONCRETE BASE TYPE 13 (EXTENDED)

CONCRETE BASE  
TYPE 10 & TYPE 13 EXTENSION

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
11-26-2013 /S/ Ahmet Demirbilek  
DATE STATE ELECTRICAL 128  
FHWA



TYPICAL CABINET SERVICE INSTALLATION

## GENERAL NOTES

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

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

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

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

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

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

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

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

\* SOME PEDESTAL LIGHTING PLANS SHOW MAIN LUGS ONLY.

CABINET SERVICE INSTALLATION  
(METER BREAKER PEDESTAL)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2014

DATE

FHWA

/S/ Ahmet Demirbilek

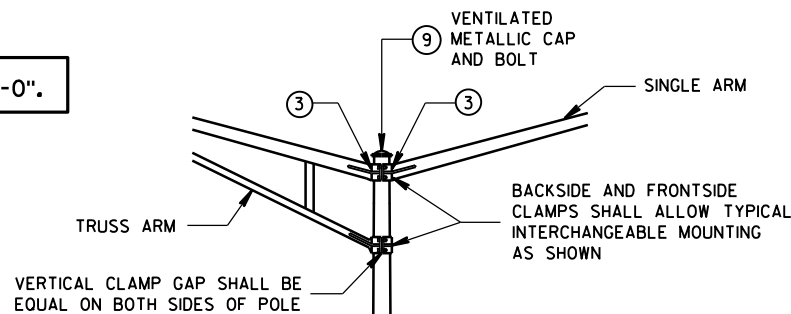
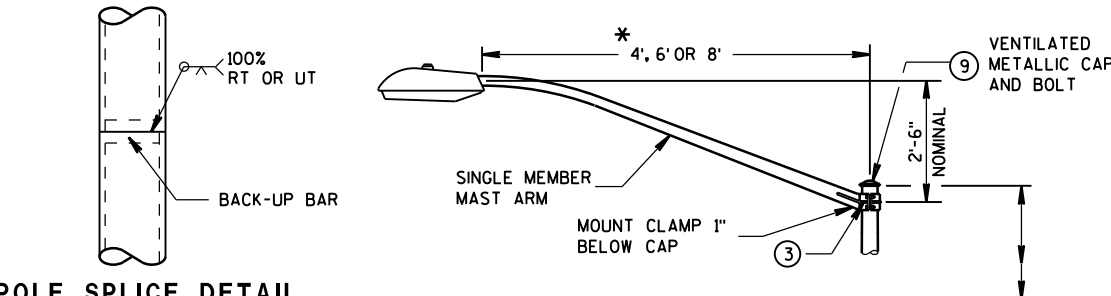
STATE ELECTRICAL 129

**FOR MANUFACTURERS USE ONLY**

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

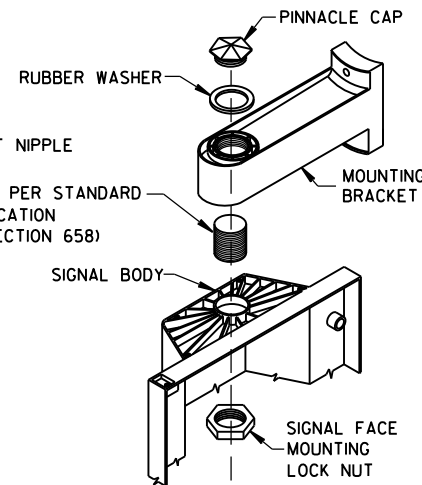
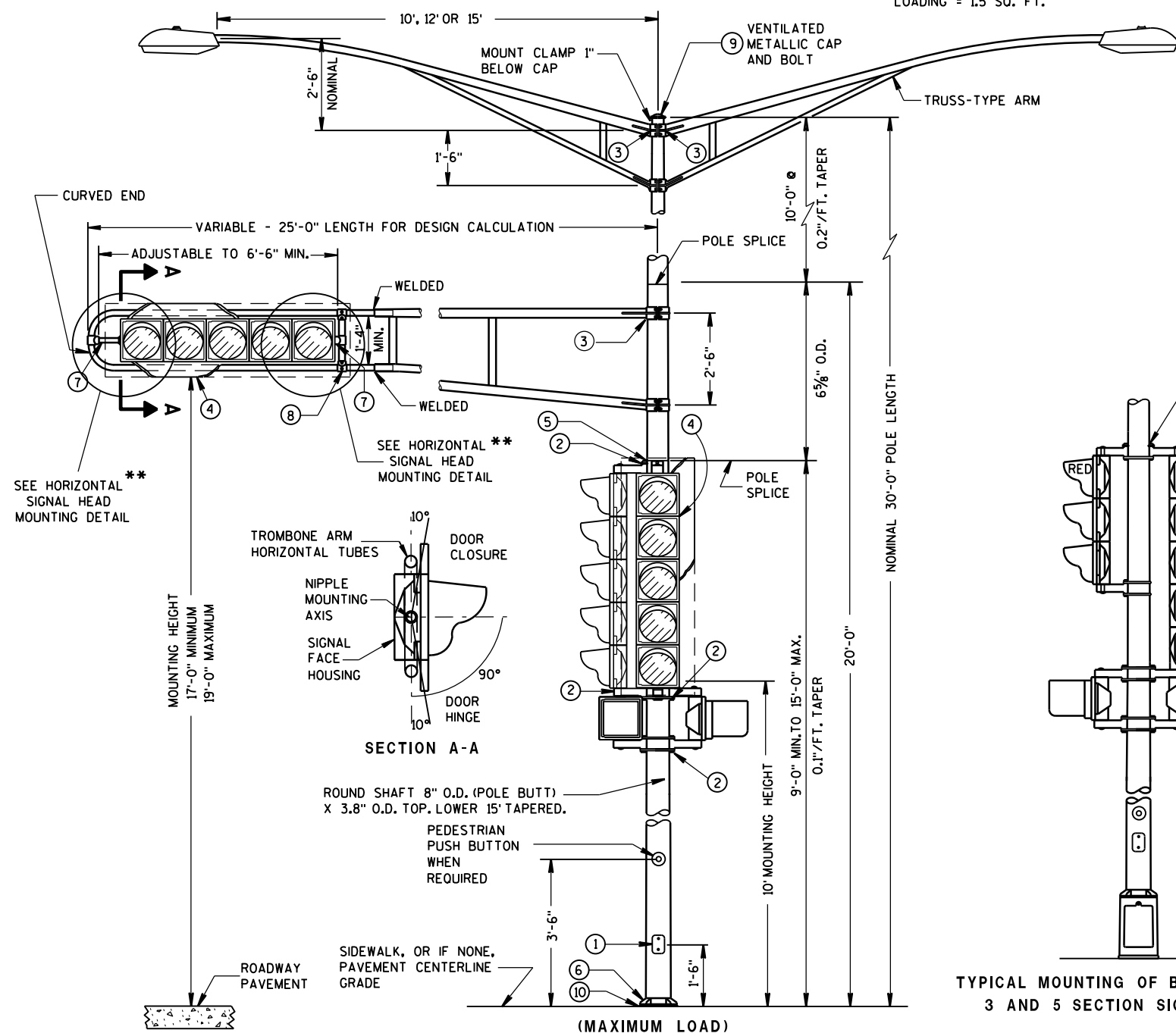
\* RISE FOR 4' ARM SHALL BE 2'-0".

**POLE SPLICE DETAIL**

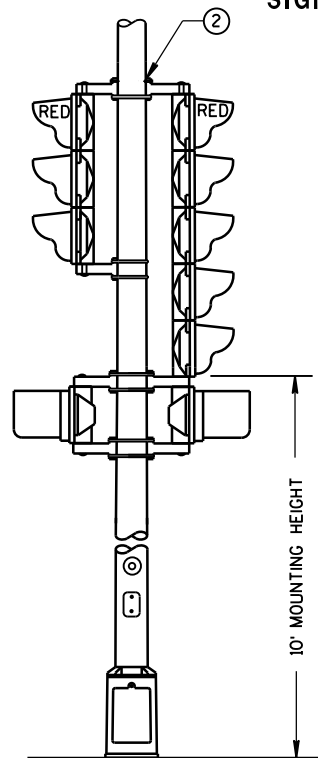


**INTERCHANGEABLE MOUNTING DETAIL**

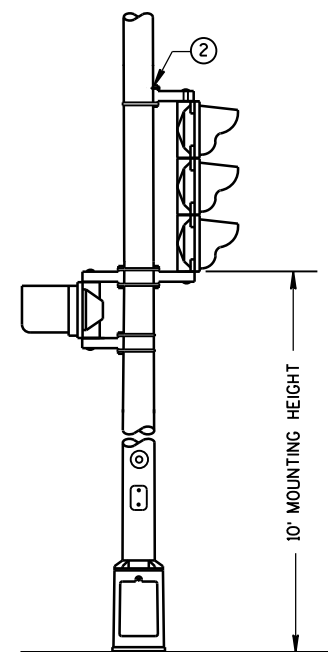
LUMINAIRE  
WT. - 50 LBS.  
EFFECTIVE PROJECTED  
AREA FOR WIND  
LOADING = 1.5 SQ. FT.



**SIGNAL FACE MOUNTING DETAIL  
(BANDED)**



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



TYPICAL MOUNTING OF 3 SECTION  
SIGNAL FACE

**GENERAL NOTES**

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

ALL TYPE 3 POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.

POLES SHALL BE GALVANIZED STEEL.

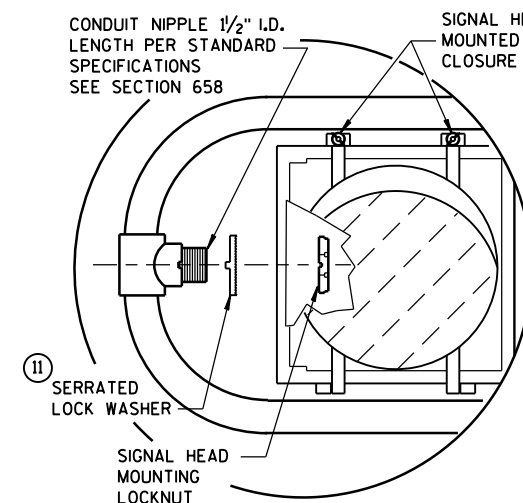
SECTION 657, POLES, OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

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

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

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

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

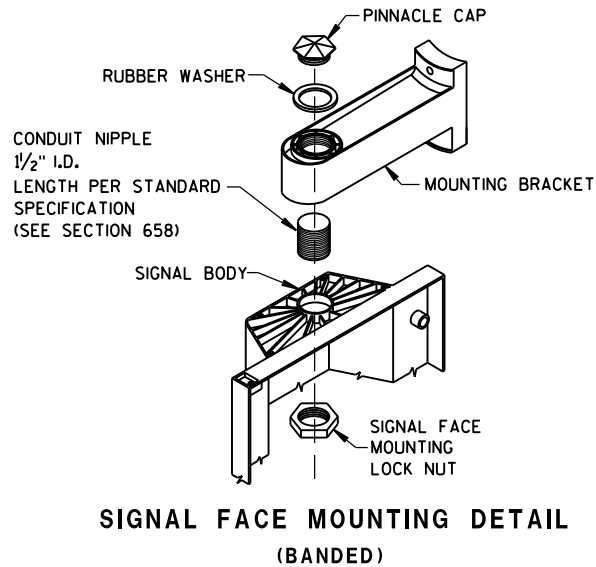
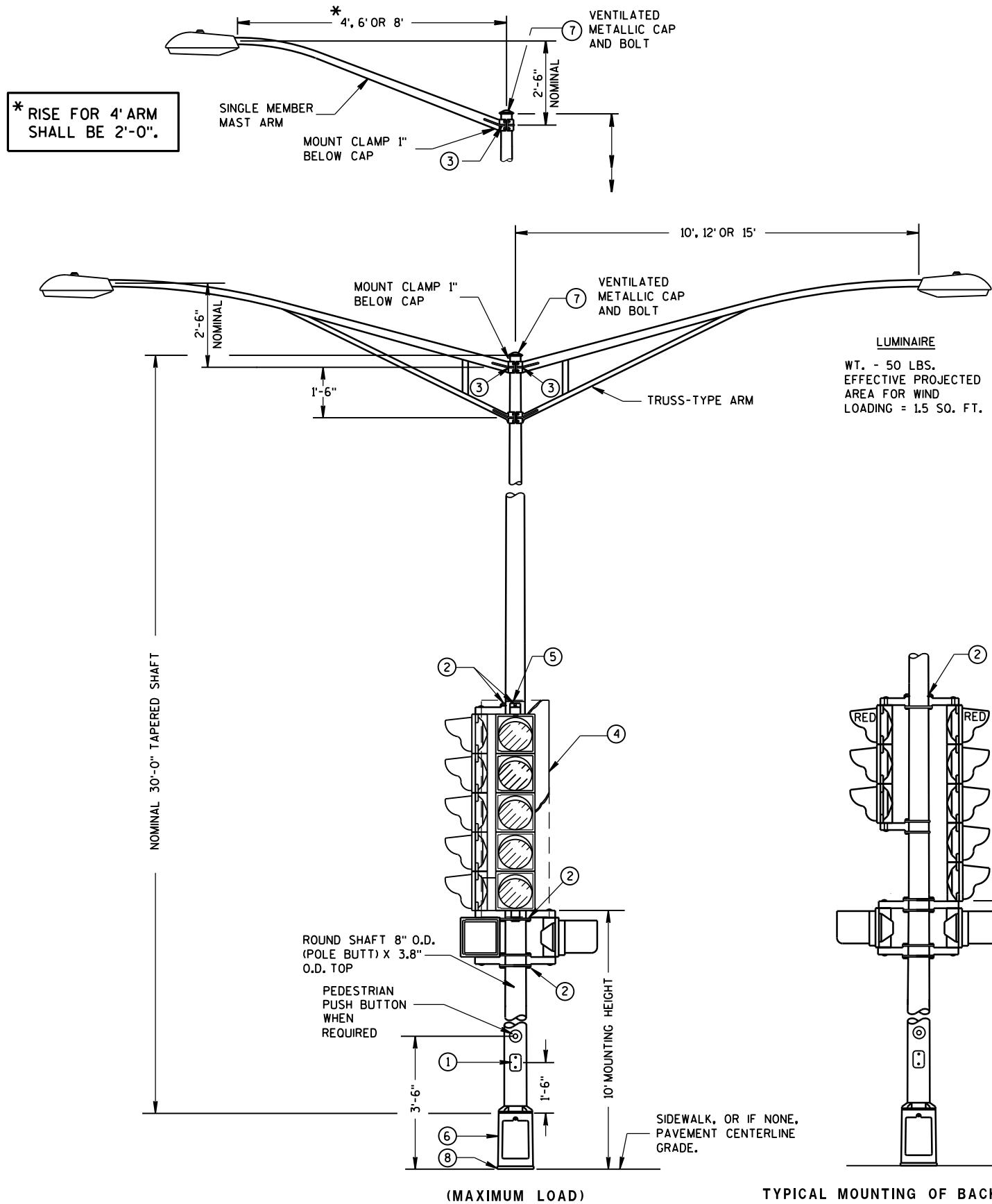


**HORIZONTAL SIGNAL HEAD MOUNTING DETAIL \*\***

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

**POLE MOUNTINGS FOR  
TRAFFIC SIGNALS AND  
LIGHTING UNITS, TYPE 3  
(HEAVY DUTY)**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 130



### GENERAL NOTES

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

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

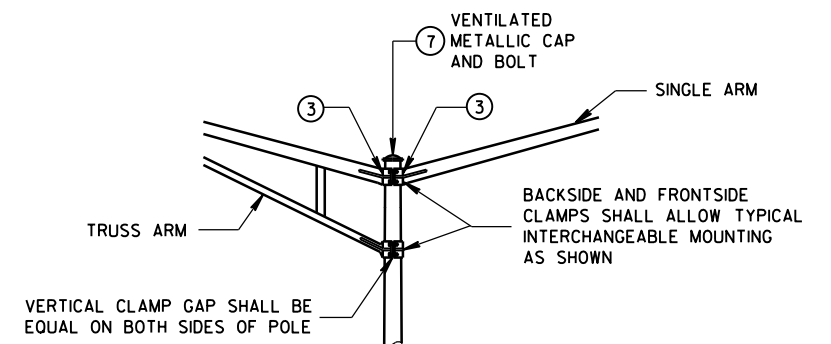
POLES SHALL BE GALVANIZED STEEL WITH A MINIMUM WALL THICKNESS OF U.S. STANDARD 11 GAGE (.1196").

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

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

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

- ① 4" X 6" REINFORCED HANDHOLE & COVER ASSEMBLY WITH 2 (TWO) 1/4" X 3/4" - 20 TPI HEX HEAD STAINLESS STEEL BOLTS.
- ② SIGNAL FACE MOUNTING BRACKETS, MOUNT WITH CAP SCREWS AND BANDING. (SEE STANDARD SPECIFICATIONS - SEC. 658).
- ③ GROMMETS, 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 3/8" HOLE IN POLE SHAFT FOR WIRING.
- ④ SECURELY MOUNT DULL BLACK POLYCARBONATE BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURER'S RECOMMENDATIONS.
- ⑤ POLE MOUNTED SIGNAL FACES SHALL REQUIRE 1 OR MORE MOUNTING SPACERS UNDER THE TOP MOUNTING BRACKET(S) AS REQUIRED, TO PLUMB THE SIGNAL FACE.
- ⑥ CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.
- ⑦ 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.
- ⑧ SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND THE TRANSFORMER BASE.

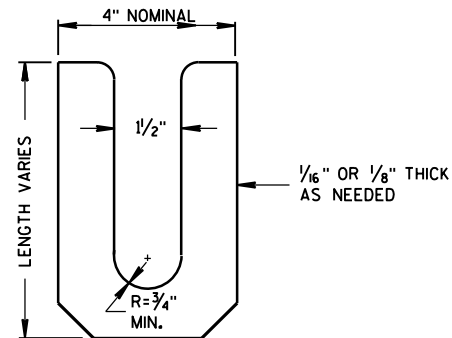


### INTERCHANGEABLE MOUNTING DETAIL

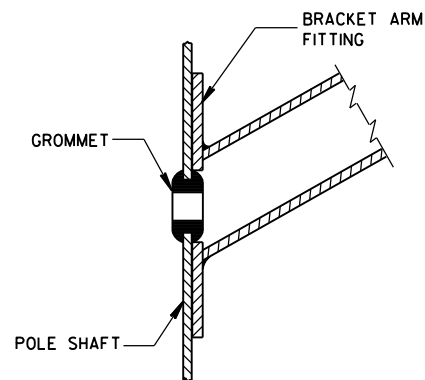
TYPE 4 POLE MOUNTING CONFIGURATION

POLE MOUNTINGS FOR  
TRAFFIC SIGNALS AND  
LIGHTING UNITS, TYPE 4

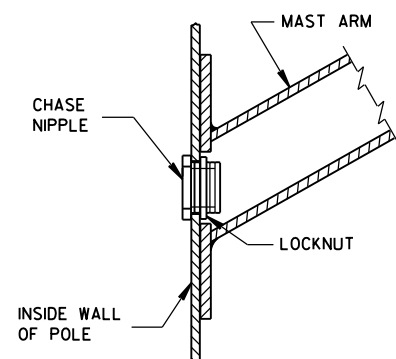
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 131



**LEVELING SHIM**  
SHALL BE ALUMINUM



**TYPICAL APPLICATION OF GROMMET IN POLE SHAFT**



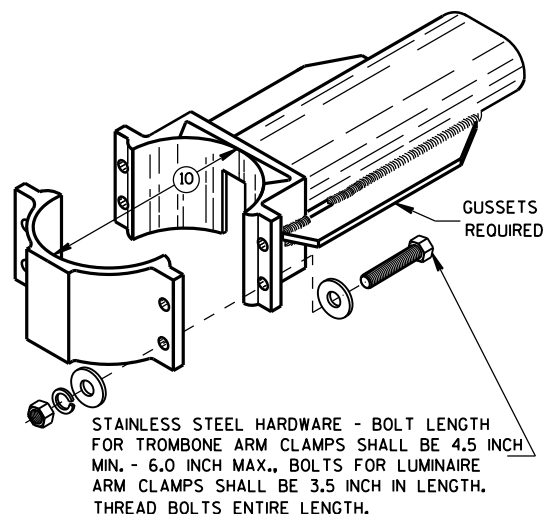
**TYPICAL APPLICATION OF CHASE NIPPLE IN POLE SHAFT**

# GENERAL NOTES

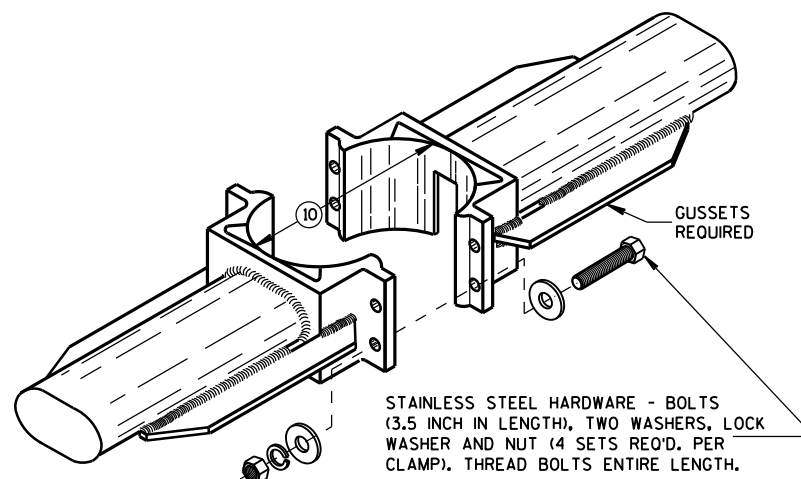
CLAMP BOLT-NUT TIGHTENING TORQUE SHALL BE INDICATED BY INDENT STAMPING (1/2 INCH NUMERALS AND LETTERS) OR WEATHERPROOF PRINTING ON THE INSIDE OF THE CLAMP THAT IS WELDED TO THE ARM MEMBER.

- ⑩ 4.5" I.D. FOR LUMINAIRE MAST ARM CLAMP.  
6.625" I.D. FOR TROMBONE MAST ARM CLAMP.
- ⑪ INDIVIDUAL BASE PLATE ANCHOR ROD COVERS. (4 REQUIRED)
- ⑫ BASE PLATE SLOTTED TO ACCEPT 11" THROUGH 12" BOLT  
CIRCLE USING 1" DIAMETER ANCHOR RODS.
- ⑬ LEVELING SHIMS, DESIGNED FOR THE PURPOSE, SHALL BE USED WHEN PLUMBING  
POLES. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT  
ACCEPTABLE. LEVELING SHIMS SHALL BE USED ONLY BETWEEN THE TOP OF THE  
CONCRETE BASE AND A METALLIC BASE PLATE.

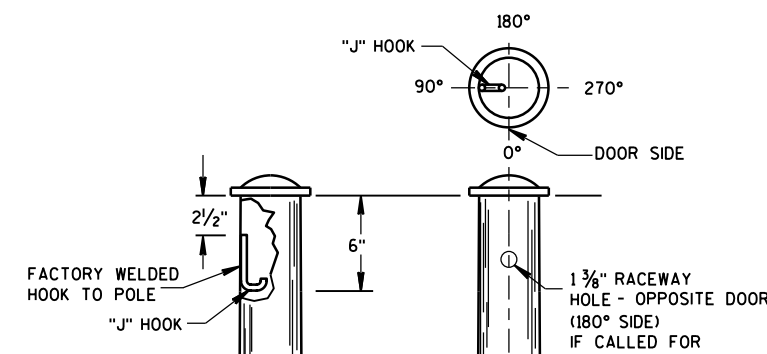
SHIMS SHALL BE LONG ENOUGH AND WIDE ENOUGH TO COMPLETELY COVER THE  
AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.



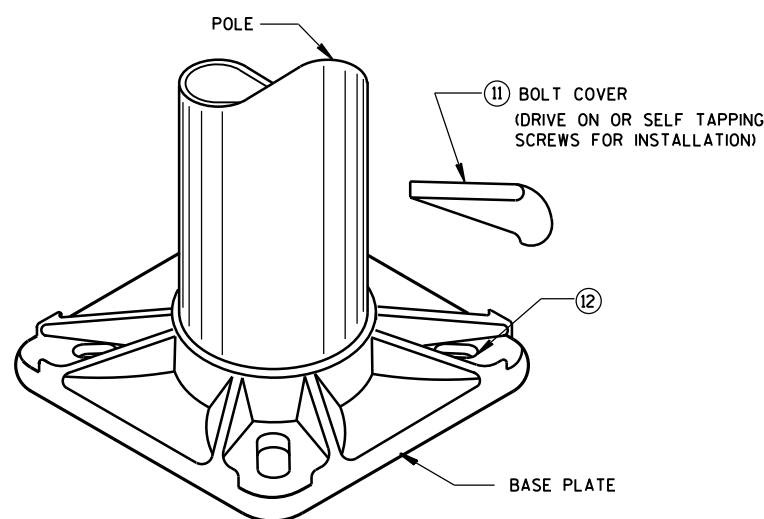
**TYPICAL TROMBONE MAST ARM AND SINGLE LUMINAIRE MAST ARM MOUNTING CLAMP**



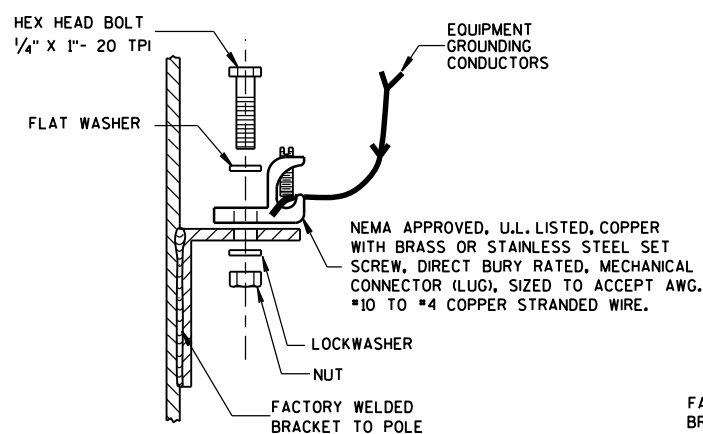
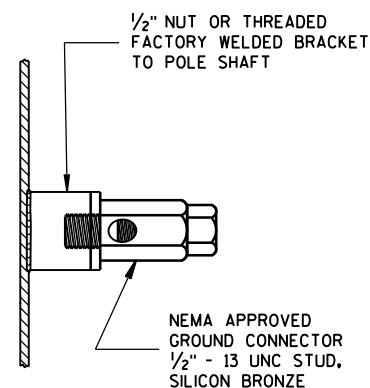
**TYPICAL LUMINAIRE MAST ARM (DOUBLE) MOUNTING BRACKETS**



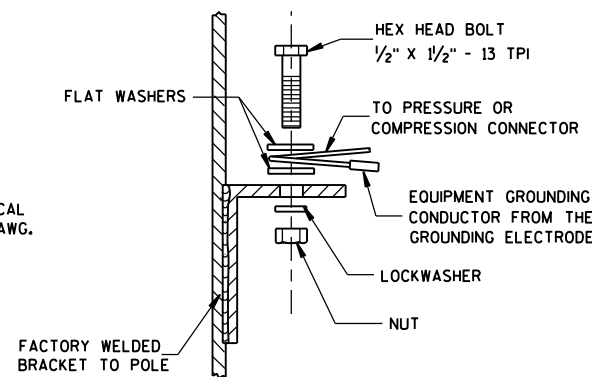
**TYPICAL "J" HOOK LOCATION**



**BASE PLATE**



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



## HARDWARE DETAILS FOR POLE MOUNTINGS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
Feb. 2015  
DATE /S/ Ahmet Demirbilek  
STATE ELECTRICAL 132  
FHWA

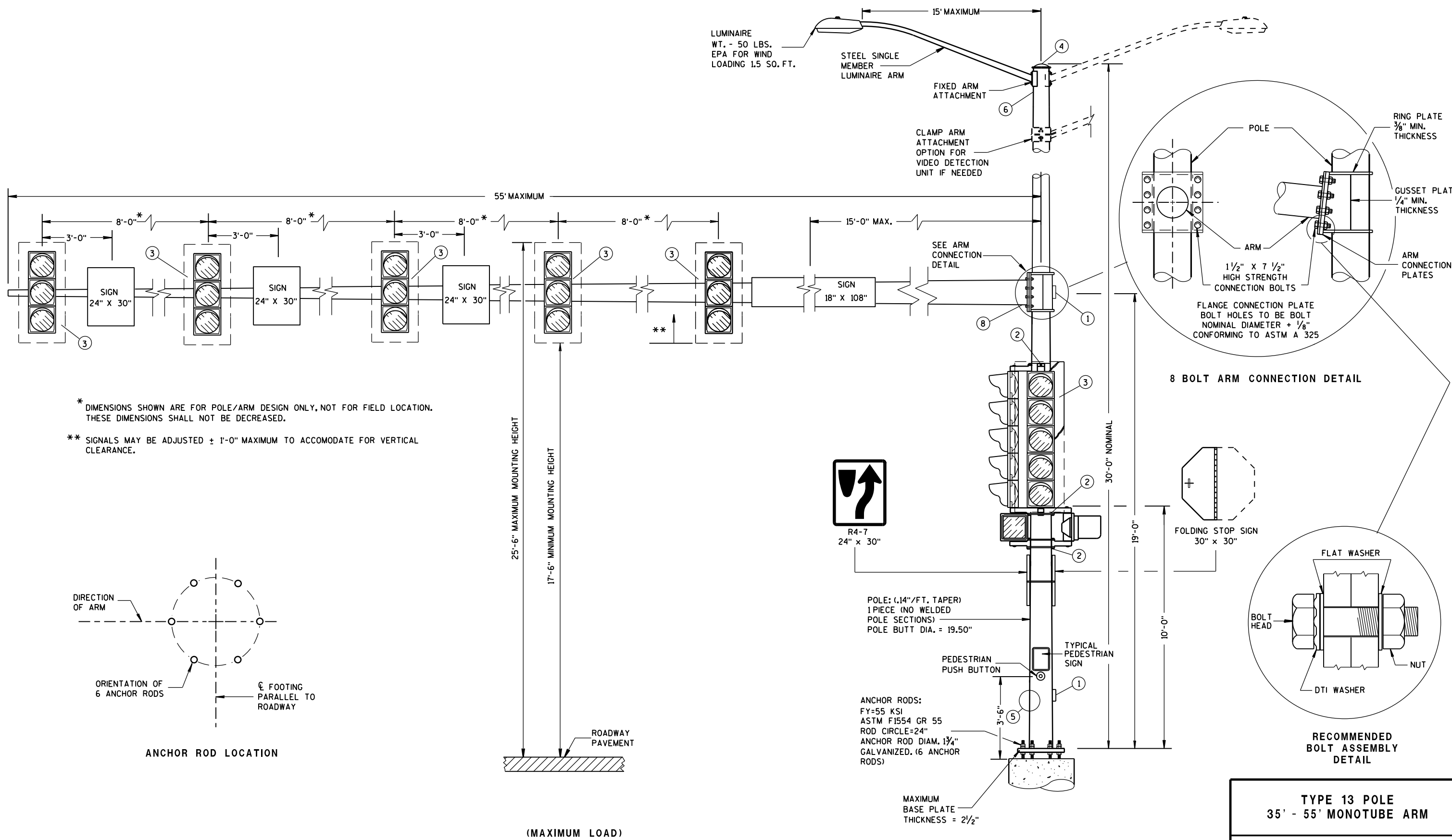


FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS.  
FASTEN CAPS WITH ONE (1) 1/4" X 3/4" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.



S.D.D. 6-E-5





TYPE 13 POLE  
35' - 55' MONOTUBE ARM

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

Sep. 2014  
DATE

FHWA

/S/ Ahmet Demirbilek  
STATE ELECTRICAL 135

GENERAL NOTES

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

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

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

MONOTUBE POLE AND ARM SHALL BE GALVANIZED STEEL.

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

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

STANDARD STRAIGHT ARM DESIGN (3 ¼ ± RISE).

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

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

MANUFACTURER'S SUBMITTED POLE DESIGNS AND DRAWINGS SHALL BE SIGNED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER AND CERTIFIED AS BEING IN COMPLIANCE WITH THE AASHTO 2013 6TH EDITION AND ALL PERTINENT WISDOT SPECIFICATIONS AND DRAWINGS FOR TRAFFIC AND LIGHTING STRUCTURES AND AS FOLLOWS:

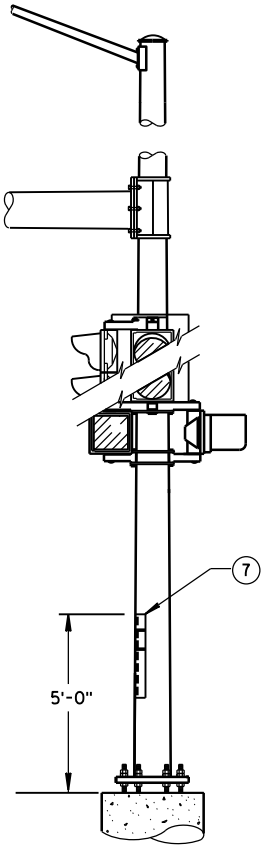
- CATEGORY III FATIGUE LOADS OF GALLOPING, TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 9 AND TYPE 10 STRUCTURES.
- CATEGORY II FATIGUE LOADS OF GALLOPING, TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 12 AND TYPE 13 STRUCTURES.
- 90 MPH (3-SECOND GUST) WIND SPEED AND A 50 YEAR DESIGN LIFE.

SECURE THE OPENING BELOW THE BASE PLATE WITH STAINLESS STEEL OR GALVANIZED STEEL MESH AND SECURE THE MESH WITH ¾" S.S. BANDING AROUND THE LEVELING NUTS.

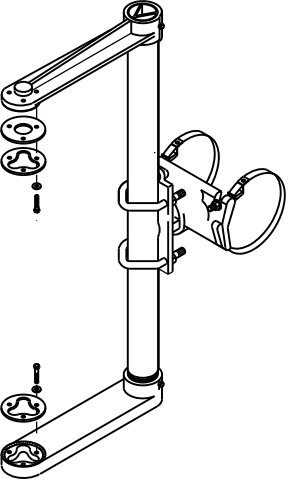
INDENT PRINT (NOMINAL ½" HIGH) THE POLE LENGTH AND FIRST TWO LETTERS OF THE MANUFACTURERS NAME ON TWO SIDES OF THE BASE PLATE 180 DEGREES APART, BEFORE GALVANIZING. THE ARM SHALL BE IDENTIFIED WITH THE SAME INFORMATION BY INDENT PRINT.

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

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

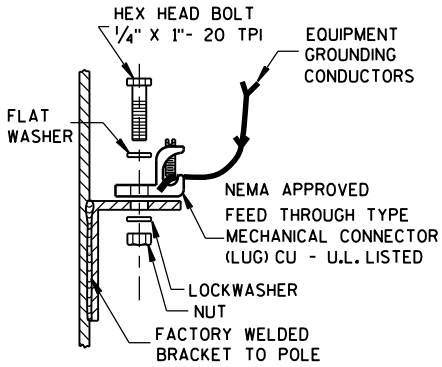


STRUCTURAL IDENTIFICATION  
PLAQUE PLACEMENT



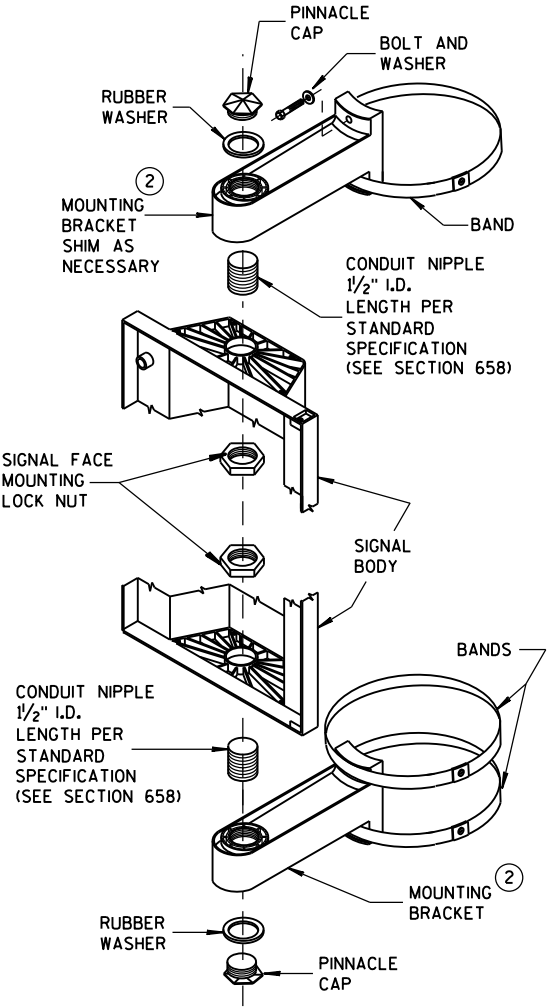
SIGNAL FACE MOUNTING BRACKET  
DETAIL FOR MONOTUBE ARM

(MOUNT PER MANUFACTURER'S RECOMMENDATION)

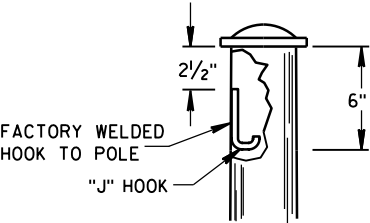


TYPICAL GROUNDING CONNECTIONS

NUT, BOLT AND WASHERS SHALL  
BE STAINLESS STEEL



SIGNAL FACE  
VERTICAL MOUNTING DETAIL



"J" HOOK WIRE SUPPORT

- ① DESIGN FOR MAXIMUM ALLOWABLE HANDHOLE WITH COVER ASSEMBLY WITH TWO ¼" x ¾" - 20 TPI STAINLESS STEEL HEX HEAD BOLTS.
- ② SIGNAL MOUNTING BRACKETS FOR POLE MOUNTING, MOUNT WITH CAP SCREW AND BANDING, (SEE SPECIFICATIONS SEC. 658).
- ③ SECURELY MOUNT BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURERS RECOMMENDATIONS.
- ④ THE TOP OF THE POLE SHAFT AND THE END OF THE MONOTUBE ARM SHALL BE EQUIPPED WITH A REMOVABLE, VENTILATED CAP HELD SECURELY IN PLACE WITH SET SCREWS.
- ⑤ FACTORY-WELDED BRACKET FOR GROUNDING LUG, OPPOSITE HANDHOLE, (LUG AND HARDWARE PAID UNDER SEPARATE ITEM). PROVIDE HOLE IN BRACKET FOR ¼" x ¾" - 20 TPI STAINLESS STEEL HEX HEAD BOLT.
- ⑥ FACTORY-WELDED "J" HOOK FOR STRAIN RELIEF FOR POLE LUMINAIRE WIRE.
- ⑦ INSTALL DEPARTMENT PROVIDED STRUCTURAL IDENTIFICATION PLAQUES.

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

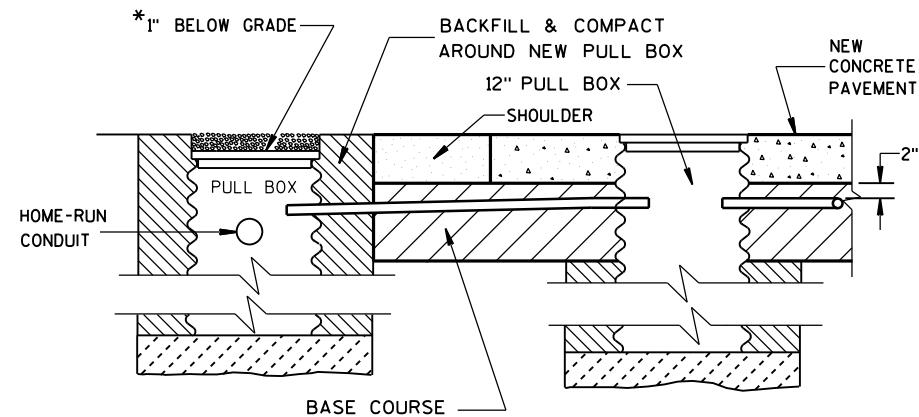
MOUNTING HEIGHT SHALL BE 5'-0" ABOVE THE CURB OR SHOULDER . ADJUST IF IT IS KNOWN THAT REQUIRED TRAFFIC SIGNS WILL BE OBSTRUCTED.

- ⑧ FACTORY DRILLED ½" DRAIN HOLE 2" FROM FLANGE CONNECTION PLATE.

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
Sept. 2014 /S/ Ahmet Demirbilek  
DATE STATE ELECTRICAL 136  
FHWA



SECTION A-A  
NO CURB & GUTTER

### LOOP DETECTOR INSTALLATION DETAILS

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

### GENERAL NOTES

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

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

PITCH LEAD OUT CONDUIT TO DRAIN TO ROADSIDE PULL BOX.

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

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

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

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

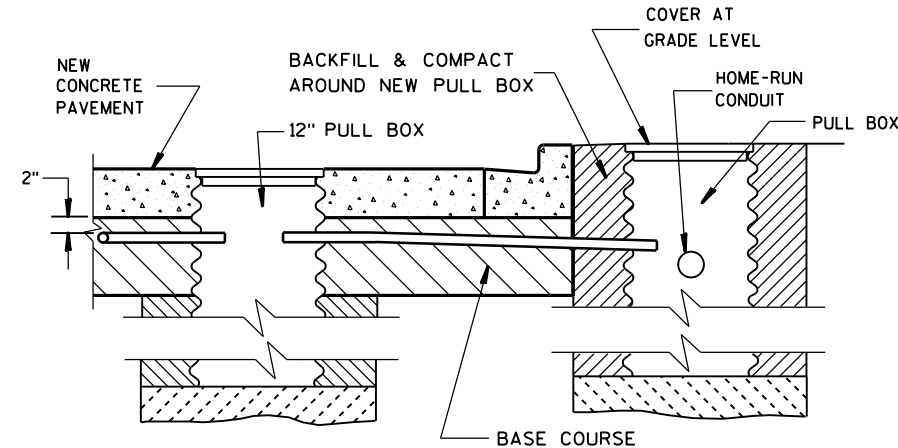
THE #12 AWG LOOP WIRE FROM THE LOOP TO THE ROADSIDE PULL BOX, SHALL BE HAND TWISTED AT LEAST 3 TWISTS PER FOOT BEFORE INSTALLATION.

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

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

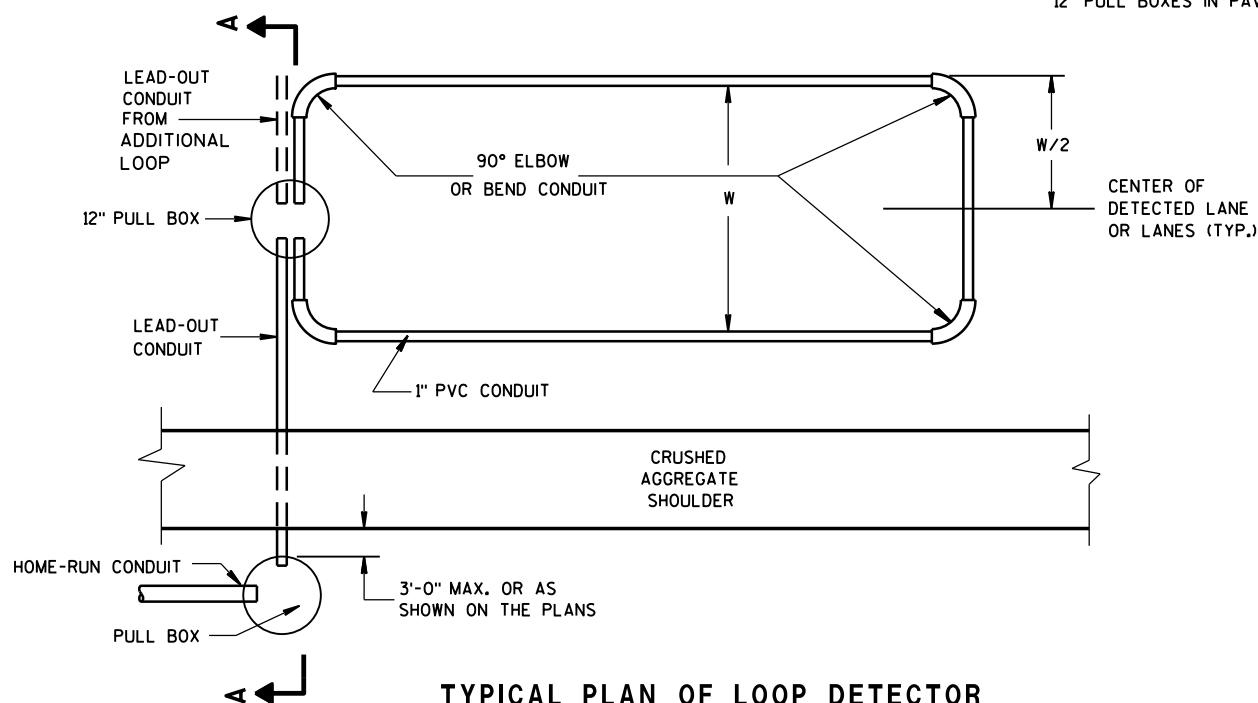
PROTECTION OF THE CONDUIT, CONDULET AND PULL BOX SHALL BE REQUIRED AFTER INSTALLATION AND BEFORE THE NEW CONCRETE PAVEMENT IS PLACED.

12" PULL BOXES IN PAVEMENT SHALL BE CORRUGATED STEEL ONLY.

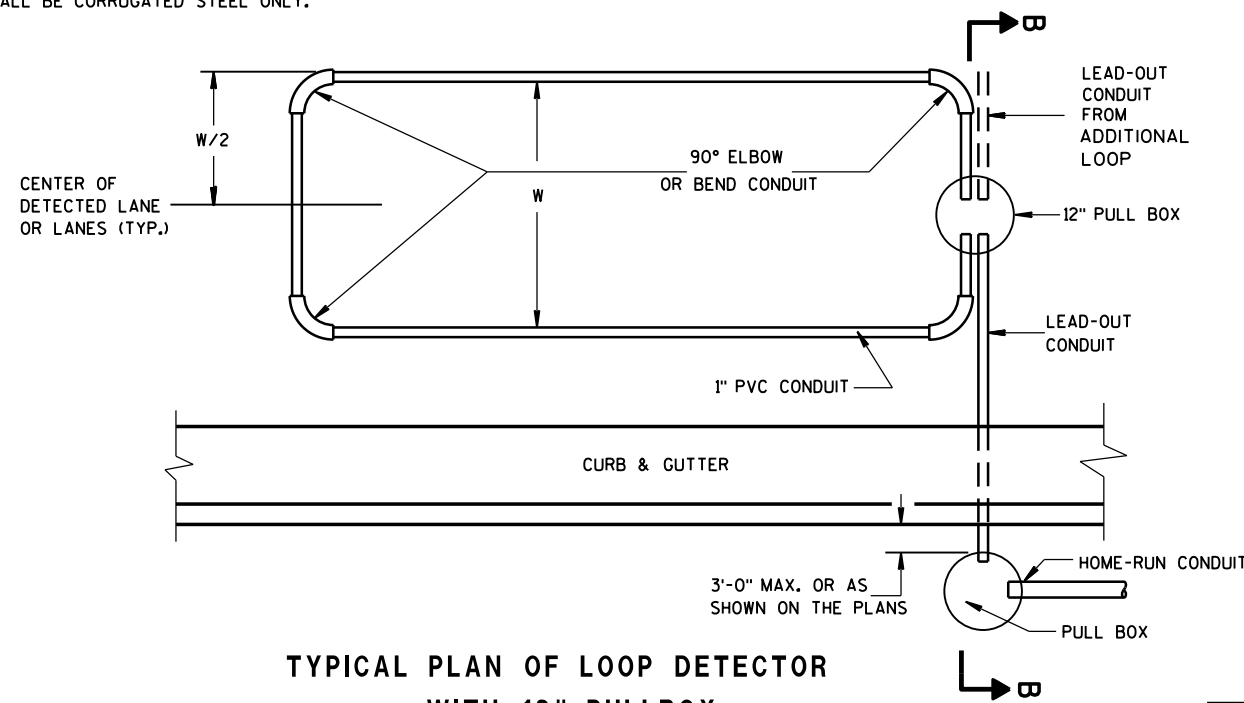


SECTION B-B  
CURB & GUTTER

### LOOP DETECTOR INSTALLATION DETAILS



TYPICAL PLAN OF LOOP DETECTOR  
WITH 12" PULLBOX

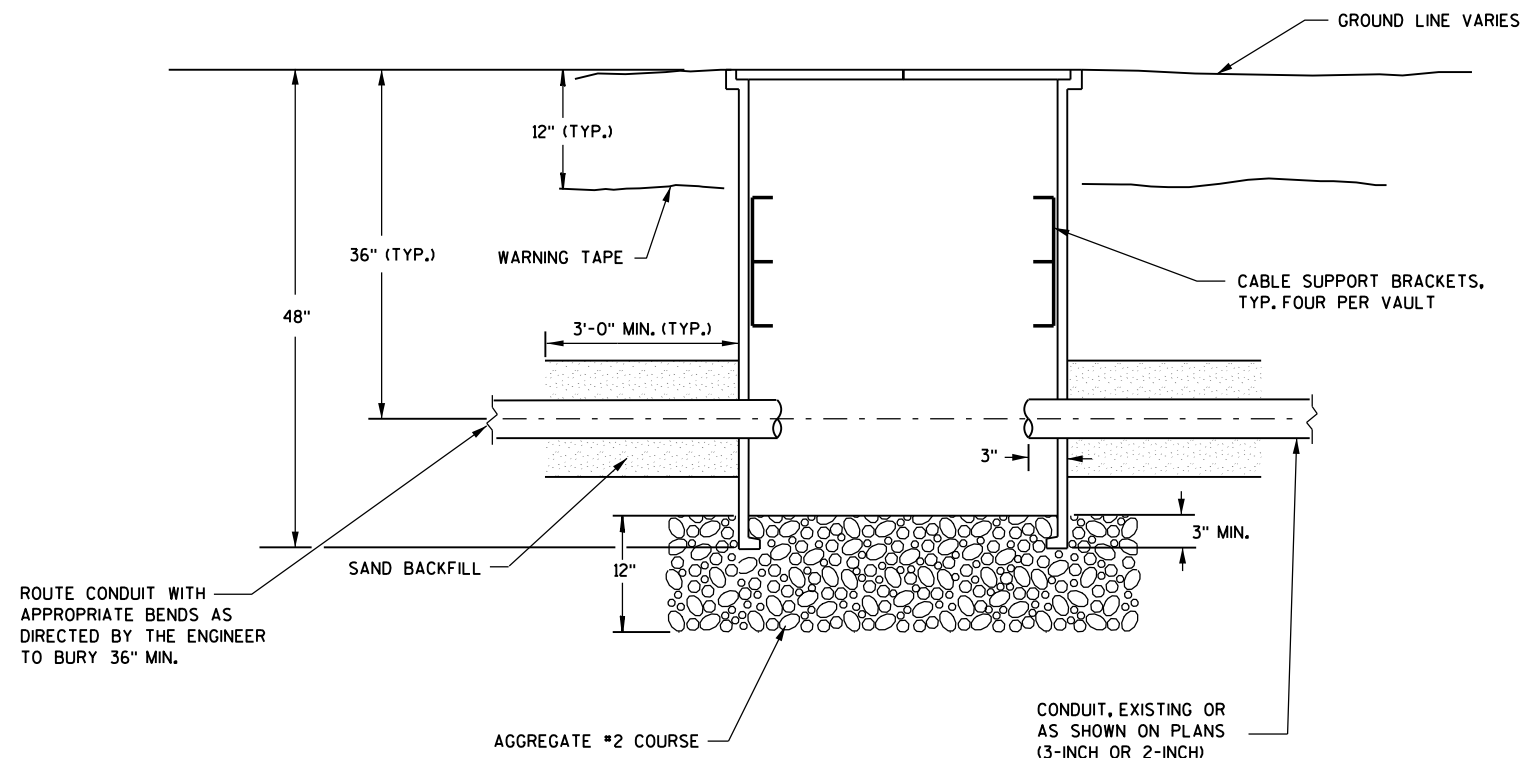


TYPICAL PLAN OF LOOP DETECTOR  
WITH 12" PULLBOX

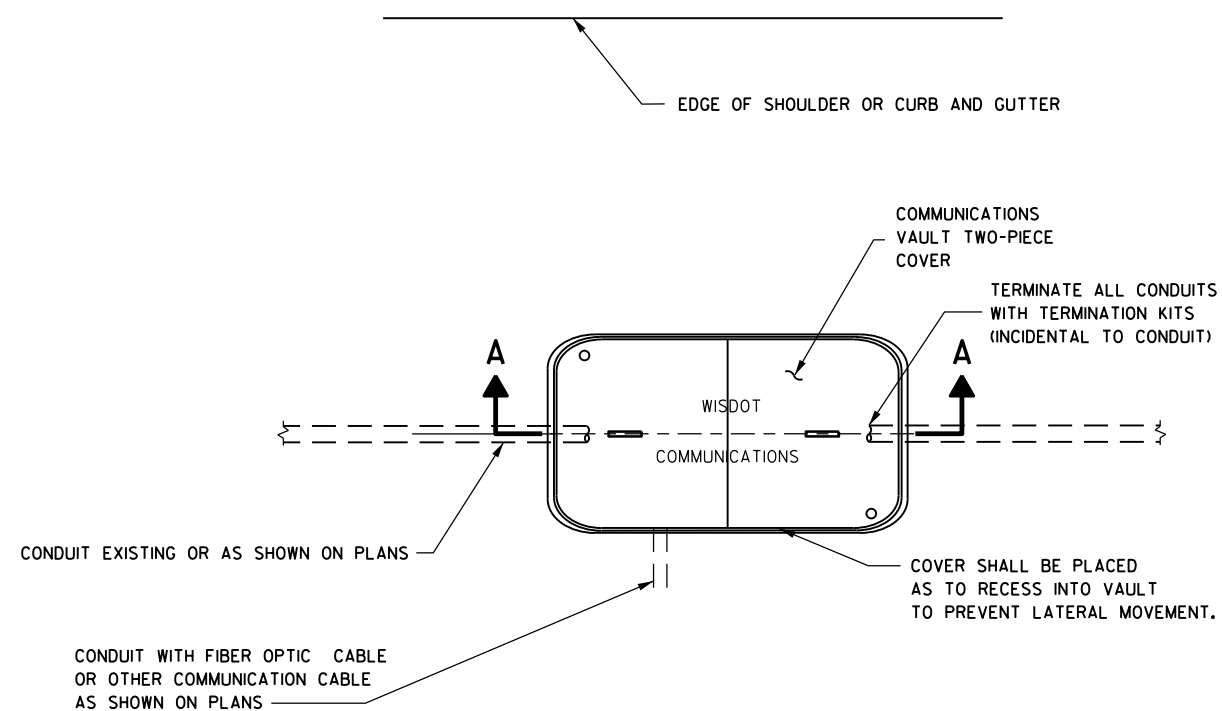
LOOP DETECTOR PLACED  
IN CRUSHED AGGREGATE BASE  
(NEW CONCRETE PAVEMENT)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
DATE Sept. 2014 /S/ Ahmet Demirbilek  
STATE ELECTRICAL 137  
FHWA



SECTION A-A



PLAN VIEW

## COMMUNICATIONS VAULT

## GENERAL NOTES

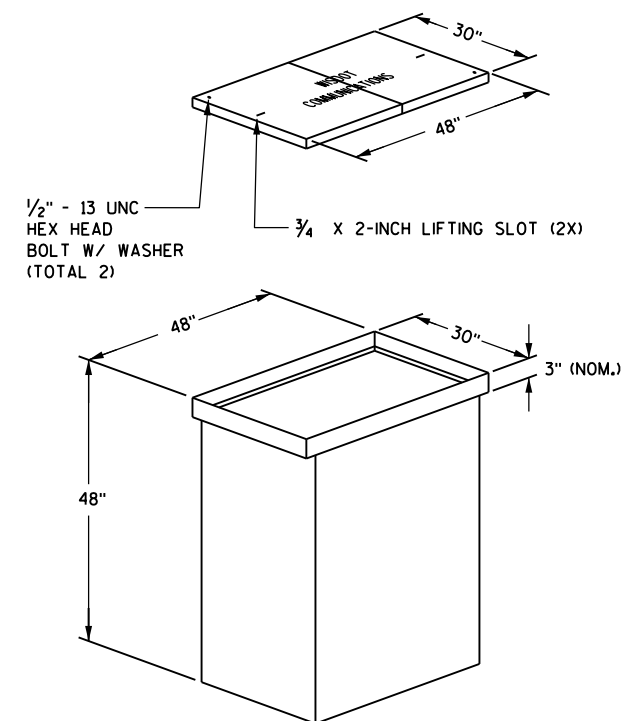
BOX SHALL HAVE AN OPEN BASE.

COVER SHALL BE DETECTABLE, AND 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.

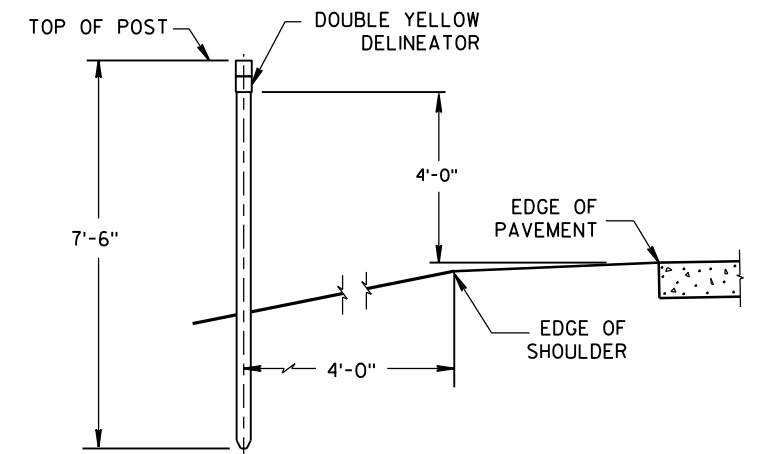
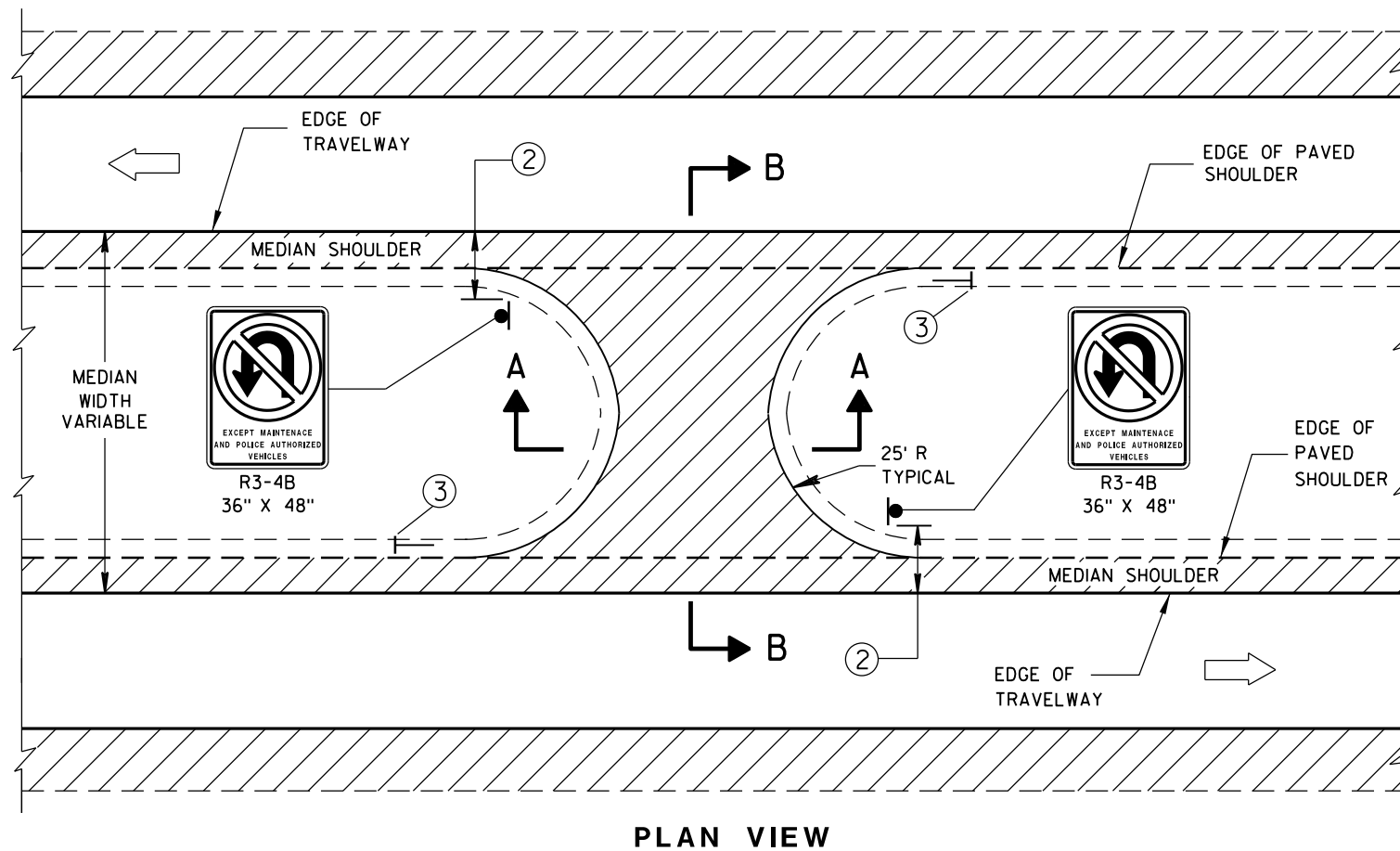
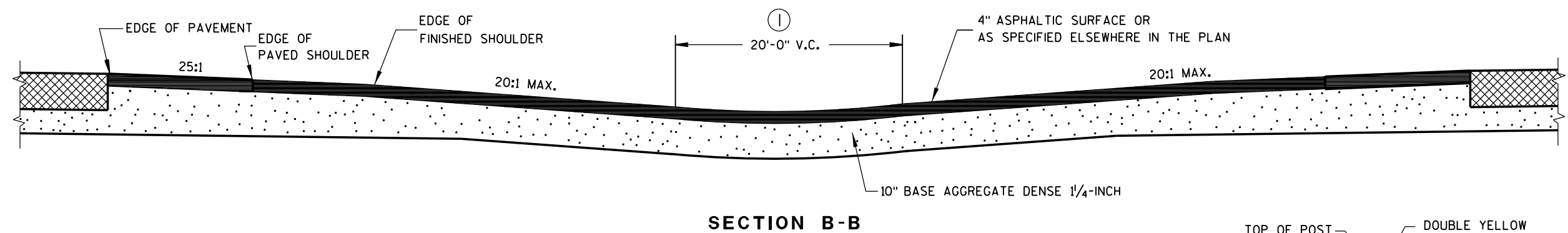
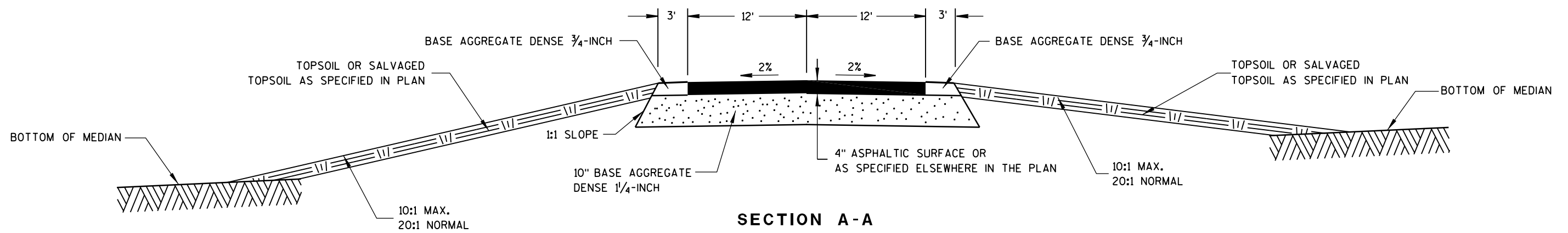


ISOMETRIC VIEW

## COMMUNICATION VAULT

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
Sept. 2014 /S/ Ahmet Demirbilek  
DATE STATE ELECTRICAL 138  
FHWA



## GENERAL NOTES

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

- ① ADJUST VERTICAL CURVE LOCATION LATERALLY TO MAINTAIN 20:1 MAX.
- ② SIGNING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.
- ③ INSTALL DOUBLE YELLOW DELINEATOR. SEE STANDARD DETAIL DRAWING 15A2.

MAINTENANCE CROSSOVER  
FOR FREEWAYS

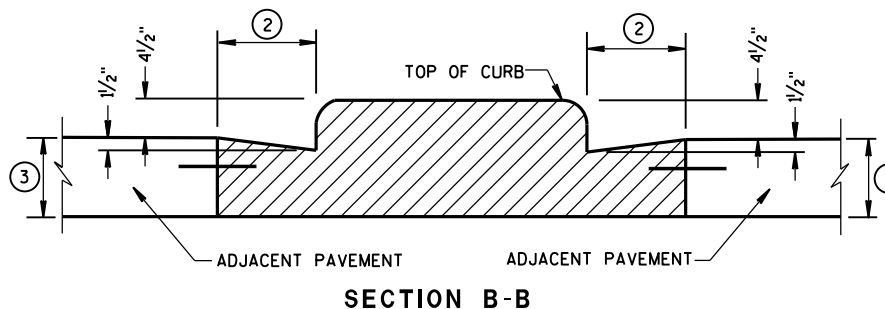
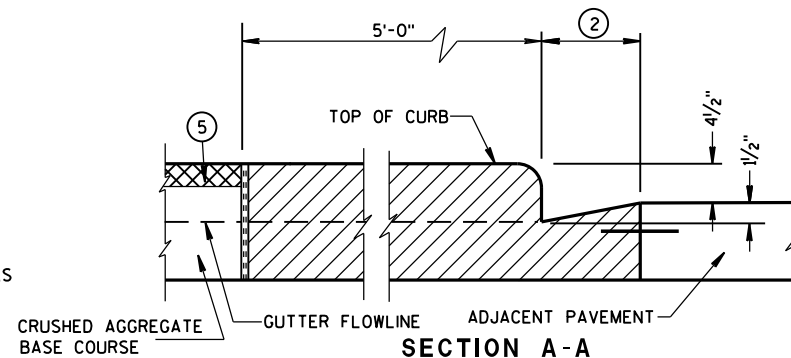
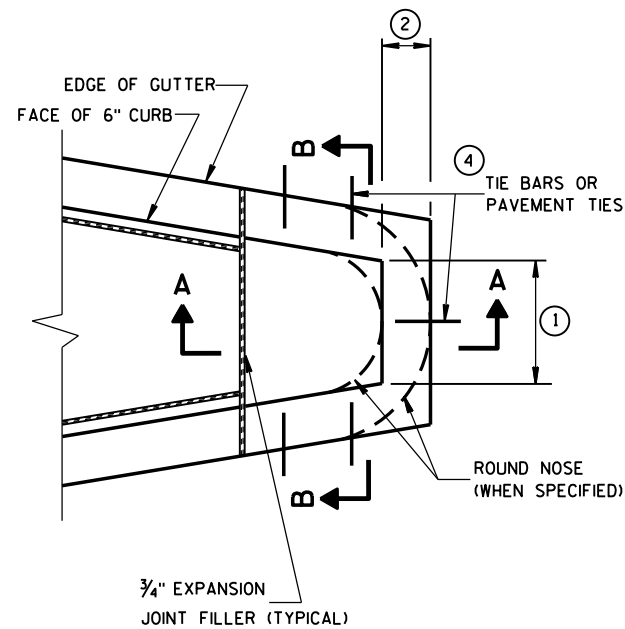
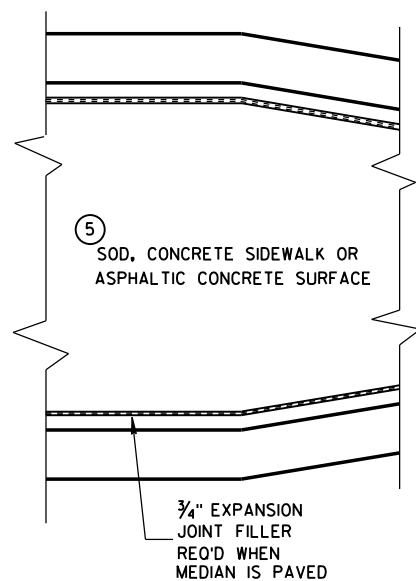
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

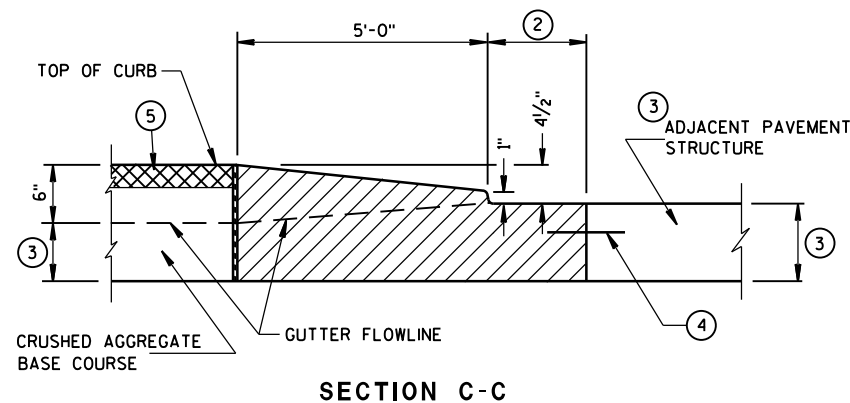
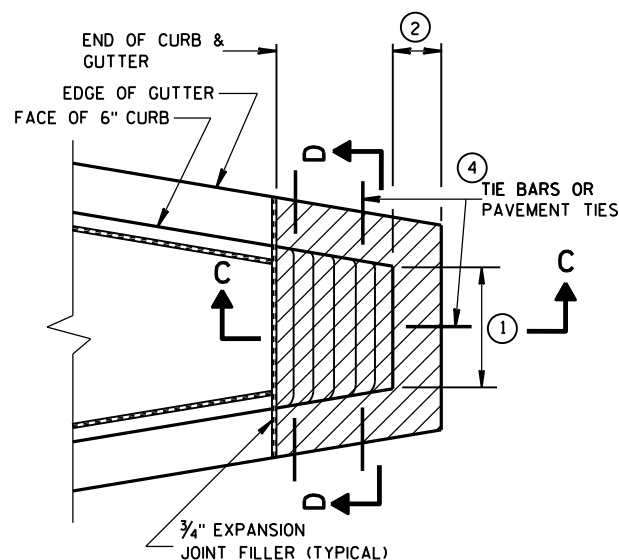
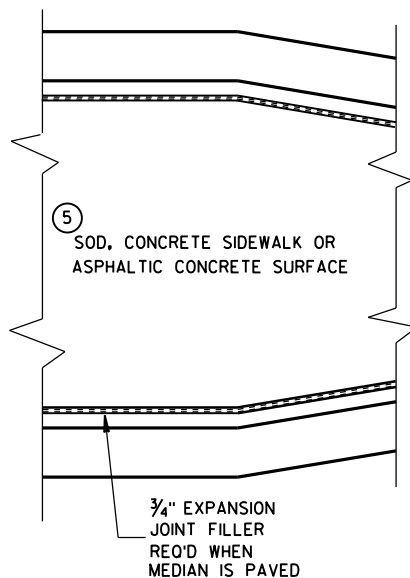
8/2013  
DATE

FHWA

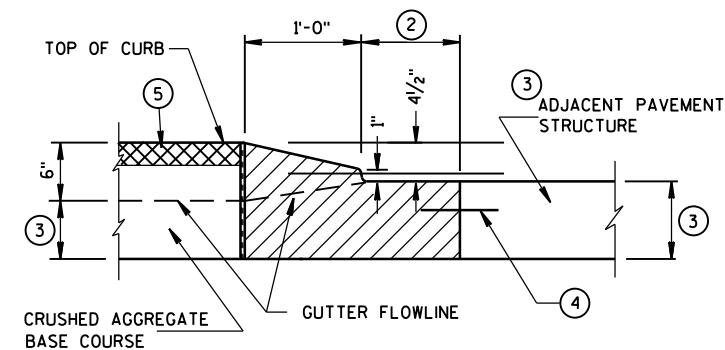
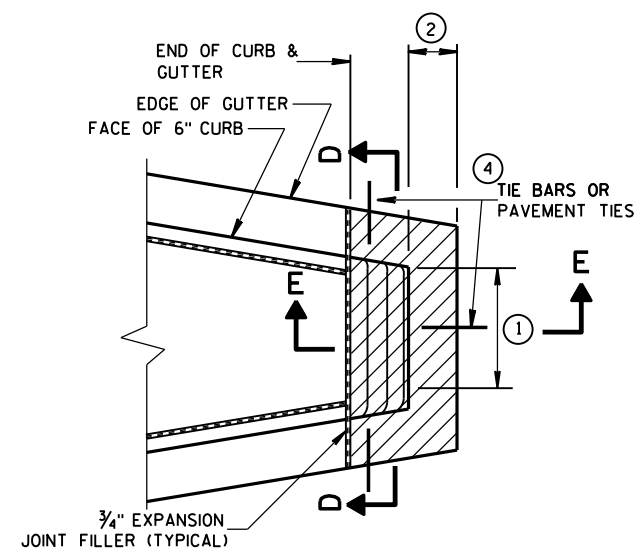
/S/ Jerry H. Zogg  
ROADWAY STANDARDS ENGINEER  
139 NT



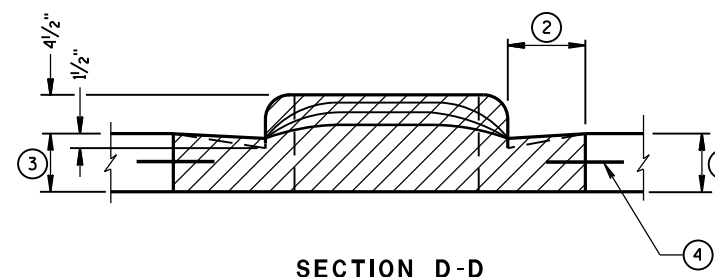
CONCRETE MEDIAN BLUNT NOSE DETAIL



CONCRETE MEDIAN SLOPED NOSE TYPE 1



CONCRETE MEDIAN SLOPED NOSE TYPE 2



## GENERAL NOTES

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

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

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

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

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

CONCRETE MEDIAN NOSE

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

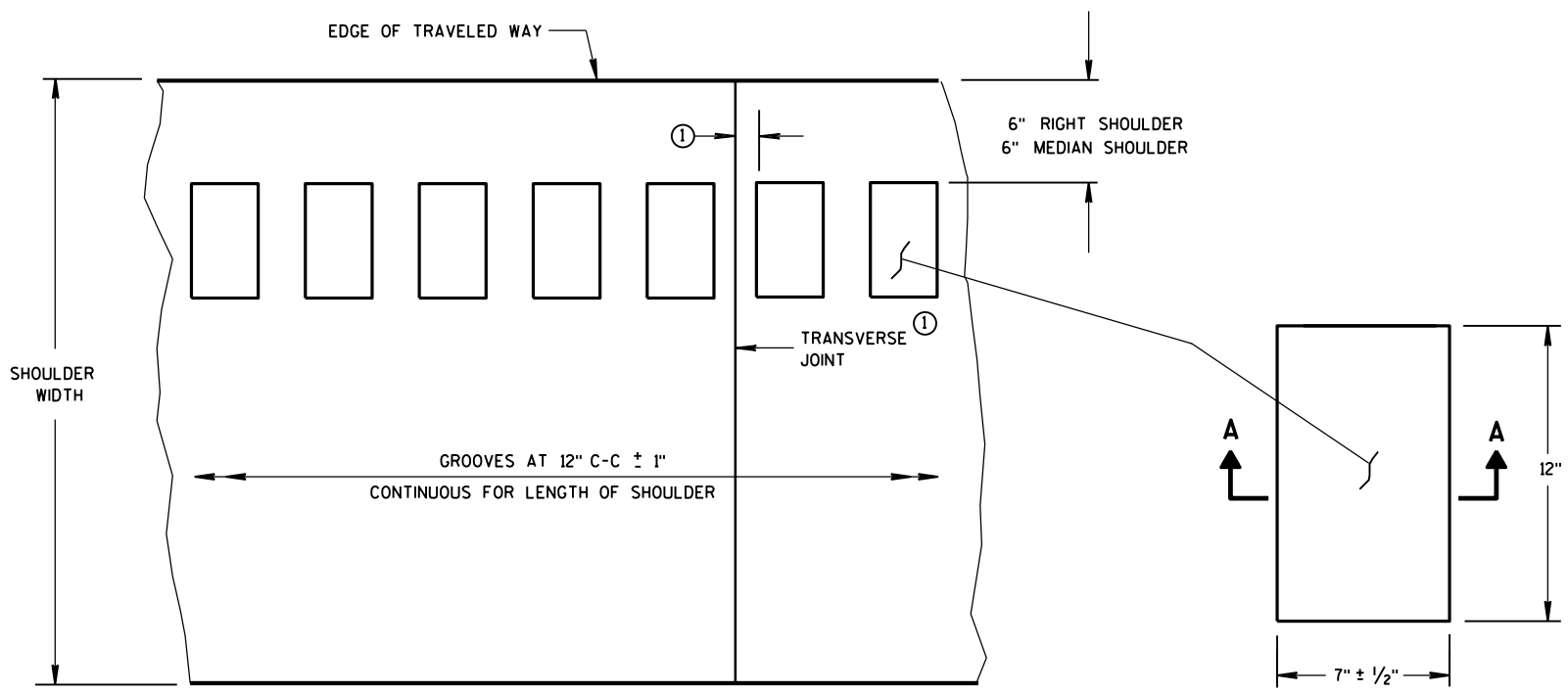
6/8/2006

DATE

FHWA

/S/ Jerry H. Zoag  
ROADWAY STANDARDS & 140  
ENGINEER

4T



PLAN VIEW  
SHOULDER WITH GROOVES

PLAN VIEW  
(SINGLE GROOVE)

PLACEMENT DETAIL FOR MILLED RUMBLE STRIP

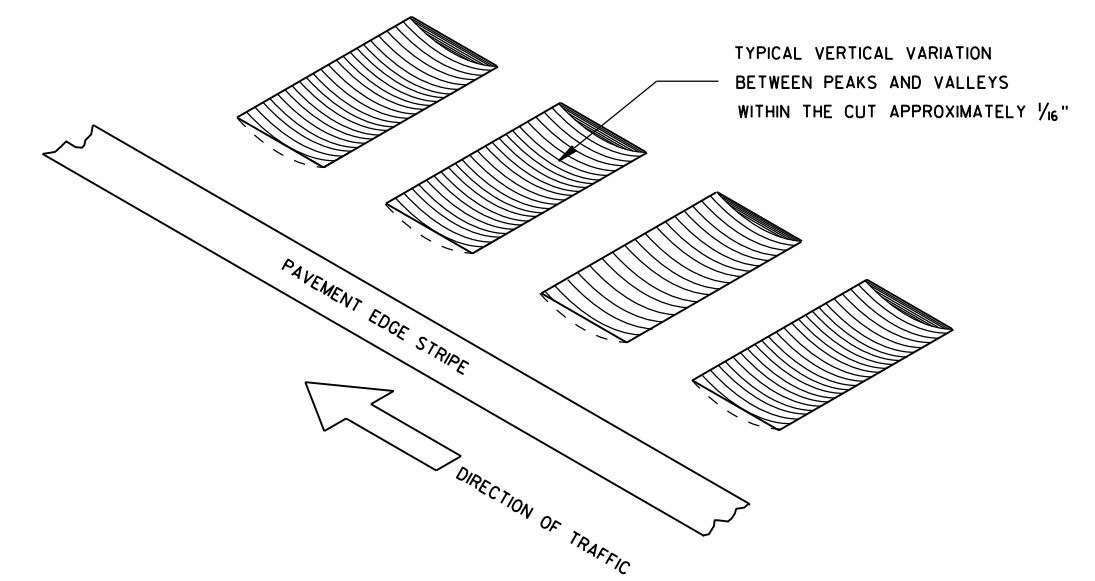
### GENERAL NOTES

DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

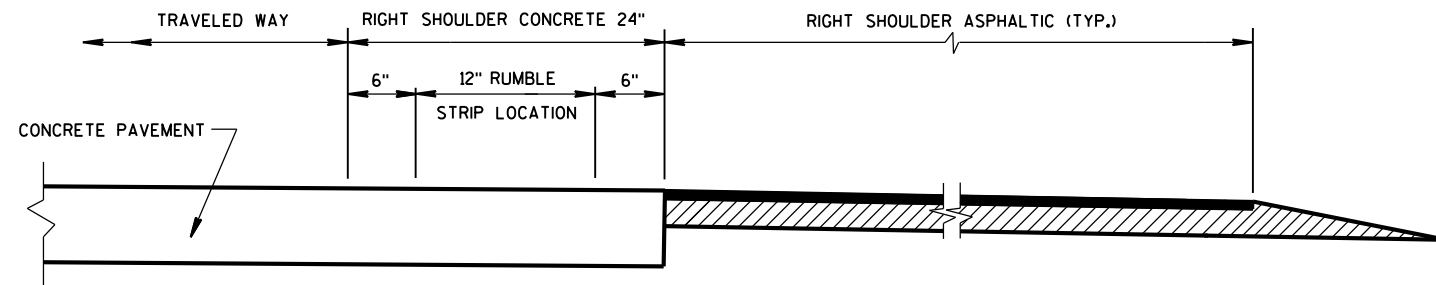
#### RUMBLE STRIPS ON EXPRESSWAYS

DO NOT INSTALL RUMBLE STRIPS ACROSS SIDE ROAD INTERSECTIONS, COMMERCIAL DRIVEWAYS, PRIVATE DRIVEWAYS OR ADJACENT TO RIGHT TURN LANES, LEFT TURN LANES, TURN LANE TAPERS, BRIDGE DECKS, BRIDGE APPROACHES, OR 100 FEET IN ADVANCE OF RAILROAD CROSSING. THE ATTACHED STANDARD DETAIL DRAWING SHOWS THE LOCATION OF THE RUMBLE STRIPS AT INTERCHANGE AREAS.

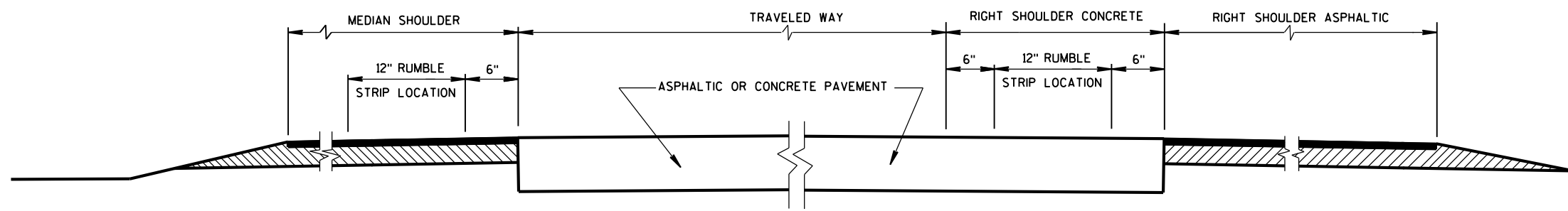
① CONCRETE PAVEMENT - RUMBLE STRIPS SHALL BE A MINIMUM OF 6" AWAY FROM TRANSVERSE JOINTS.



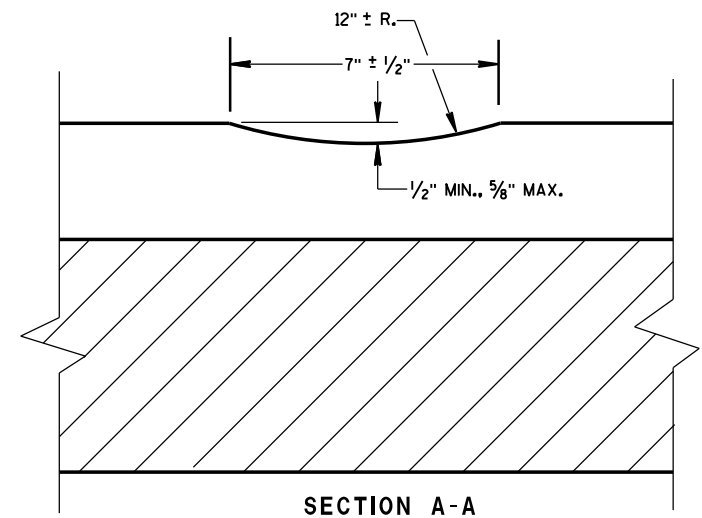
ISOMETRIC



SECTION VIEW  
(CONCRETE PAVEMENT EXTENDS INTO RIGHT SHOULDER)



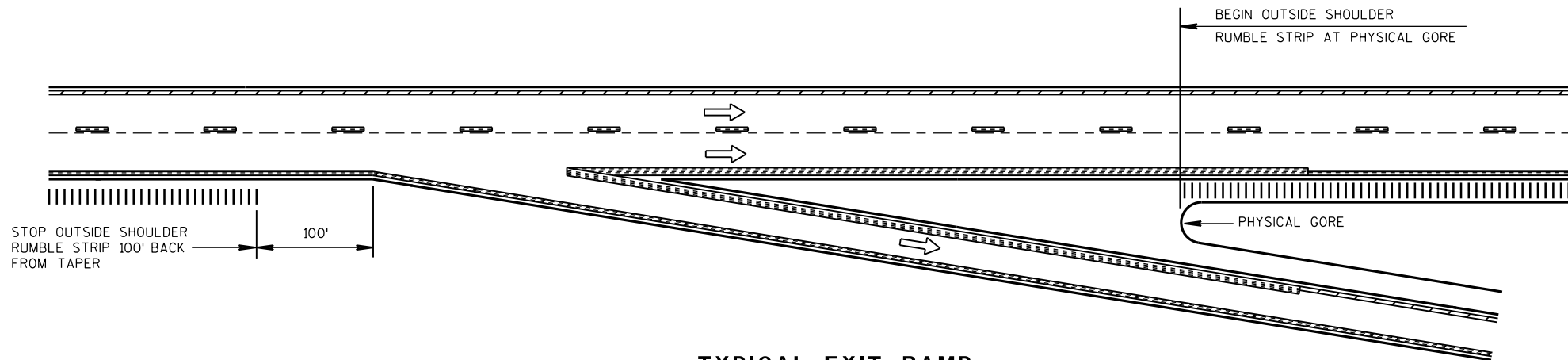
SECTION VIEW  
TYPICAL LOCATIONS OF SHOULDER RUMBLE STRIPS  
IN RURAL DIVIDED HIGHWAYS  
(ONE ROADWAY IS SHOWN)



SECTION A-A

SHOULDER RUMBLE STRIP,  
MILLING

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 141



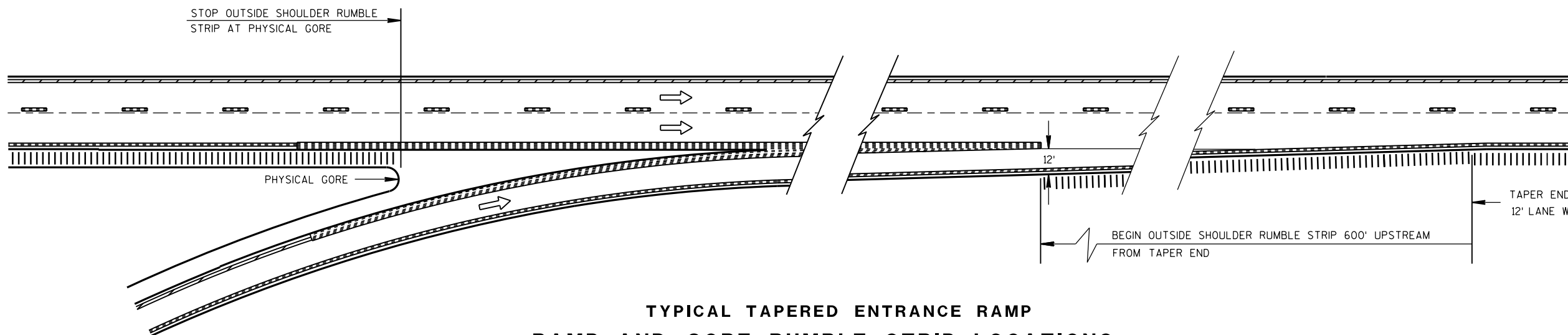
**TYPICAL EXIT RAMP**

**NOTES:**

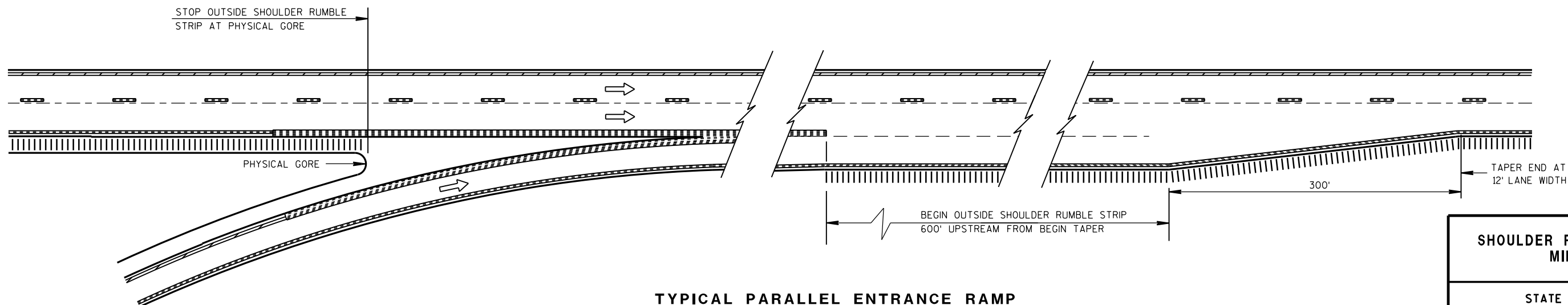
NO RUMBLE STRIP ON EXIT, DIRECTIONAL, OR ENTRANCE RAMPS, EXCEPT NEAR THE ENTRANCE TAPER END AND ALONG THE PARALLEL RAMP AREA AS SHOWN.

PAVEMENT MARKING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.

NOTE:  
ARROW SYMBOL (→)  
SHOWS DIRECTION OF TRAVEL



**TYPICAL TAPERED ENTRANCE RAMP  
RAMP AND GORE RUMBLE STRIP LOCATIONS**

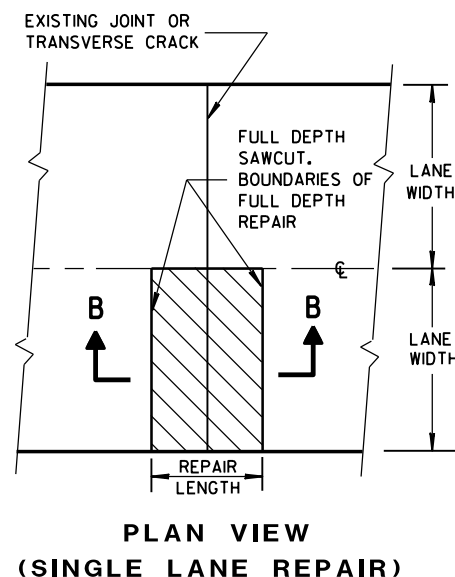
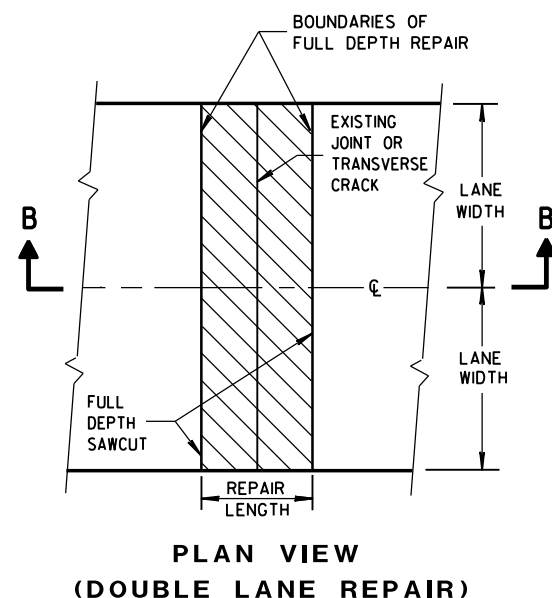
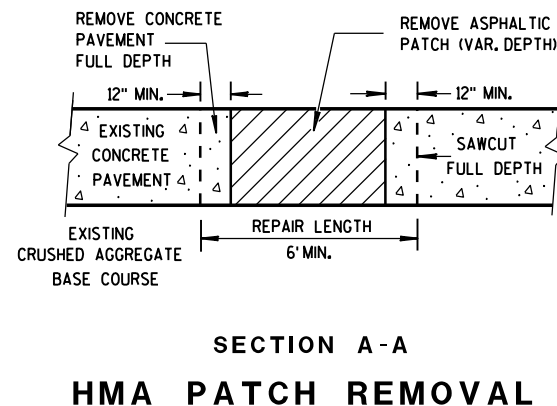
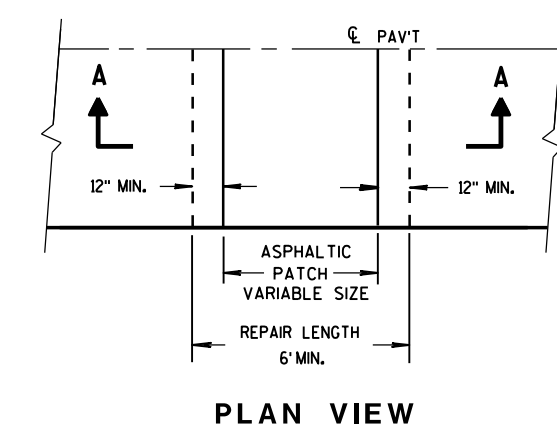


**TYPICAL PARALLEL ENTRANCE RAMP  
RAMP AND GORE RUMBLE STRIP LOCATIONS**

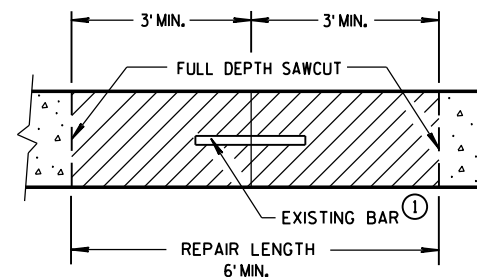
**SHOULDER RUMBLE STRIP,  
MILLING**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
DATE 12/17/2012  
/S/ Jerry H. Zoega  
ROADWAY STANDARDS ENGINEER 142 ENT  
FHWA



**FULL DEPTH CONCRETE PAVEMENT REMOVAL**  
(SEE NOTE)



**SECTION B-B**  
**CONCRETE REMOVAL**

**GENERAL NOTES**

SAW CUT, DRILL, AND LIFT OUT EXISTING CONCRETE PAVEMENT WITHIN THE BOUNDARIES OF CONCRETE REPAIR AREAS. THE CONTRACTOR MAY MAKE ADDITIONAL SAW CUTS INSIDE THE REPAIR LIMITS TO REDUCE WEIGHT AND SIZE OF CONCRETE PIECES. ADDITIONAL SAW CUTS ARE NOT PAID FOR BY THE DEPARTMENT.

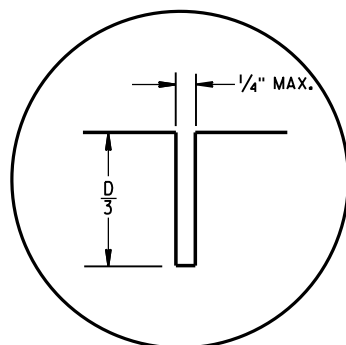
PROVIDE A 6-FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREAS TO ADJACENT TRANSVERSE JOINT OR CRACK IN THE SAME LANE.

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

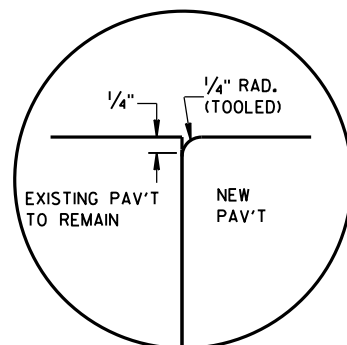
① DOWEL BARS MIGHT NOT EXIST.

TIE BAR TABLE

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

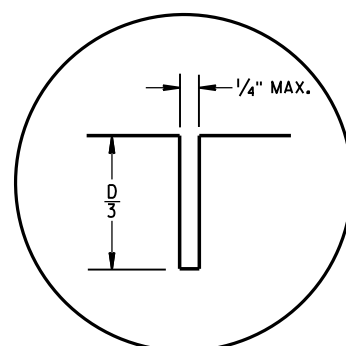


C1

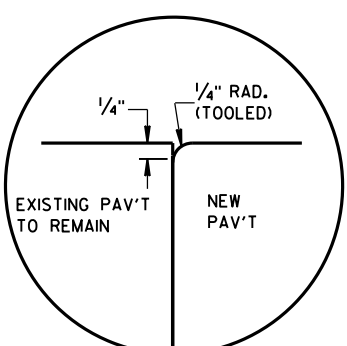


C2

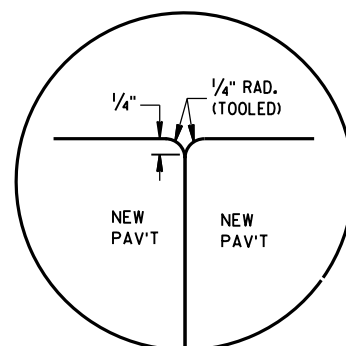
## TRANSVERSE JOINTS



L1

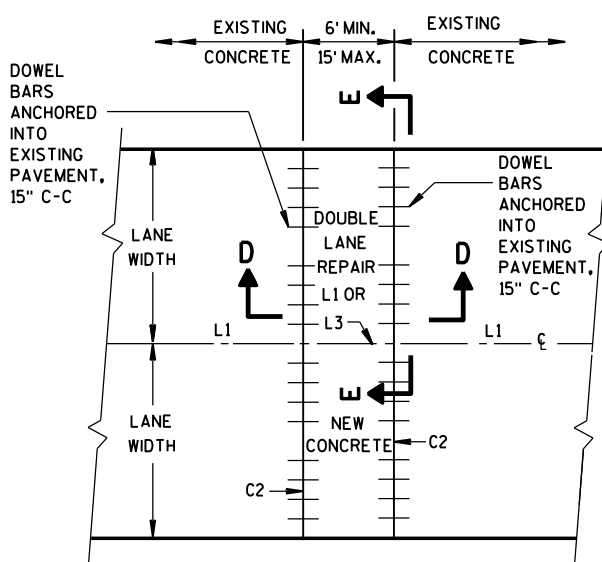


L2



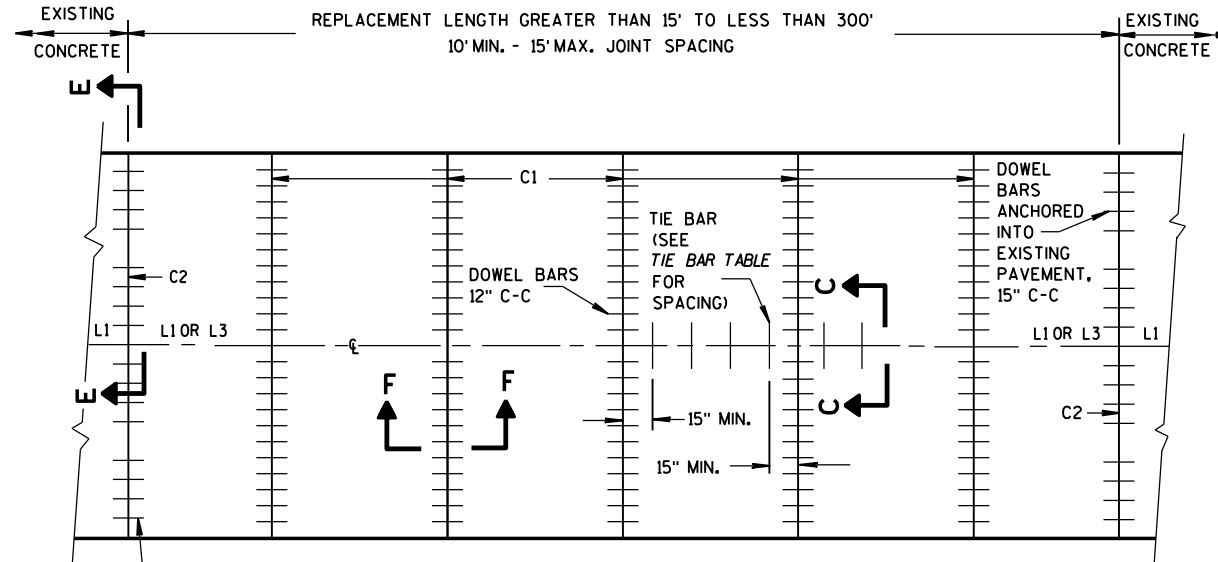
L3

## LONGITUDINAL JOINTS



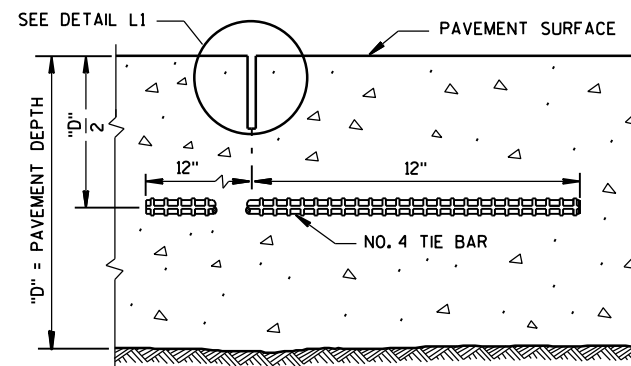
PLAN VIEW

## MULTI-LANE CONCRETE PAVEMENT REPAIR



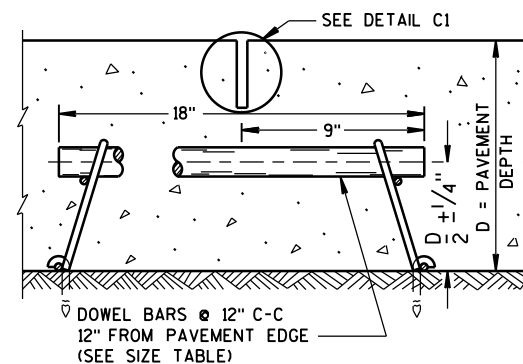
PLAN VIEW

## MULTI-LANE CONCRETE PAVEMENT REPLACEMENT



SECTION C-C

## SAWED LONGITUDINAL JOINT

SECTION F-F  
CONTRACTION JOINT

## GENERAL NOTES

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

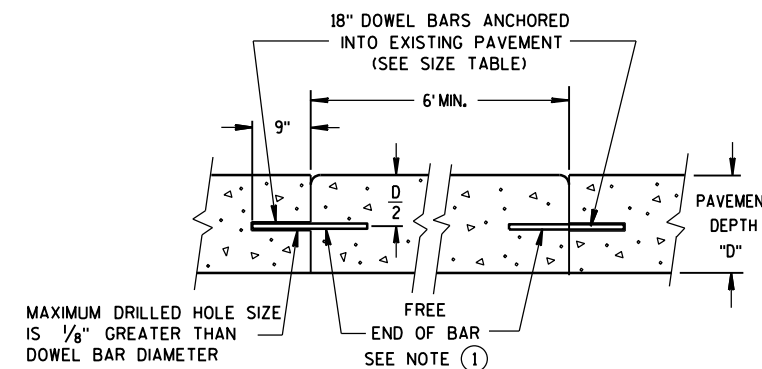
CONCRETE PAVEMENT REPAIRS OF EXISTING NONDOWELED CONCRETE PAVEMENTS DO NOT NEED TO BE DOWELED.

DO NOT SEAL OR FILL JOINTS.

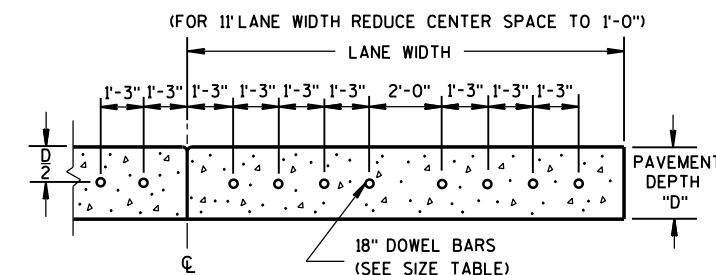
ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

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

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



SECTION D-D



SECTION E-E

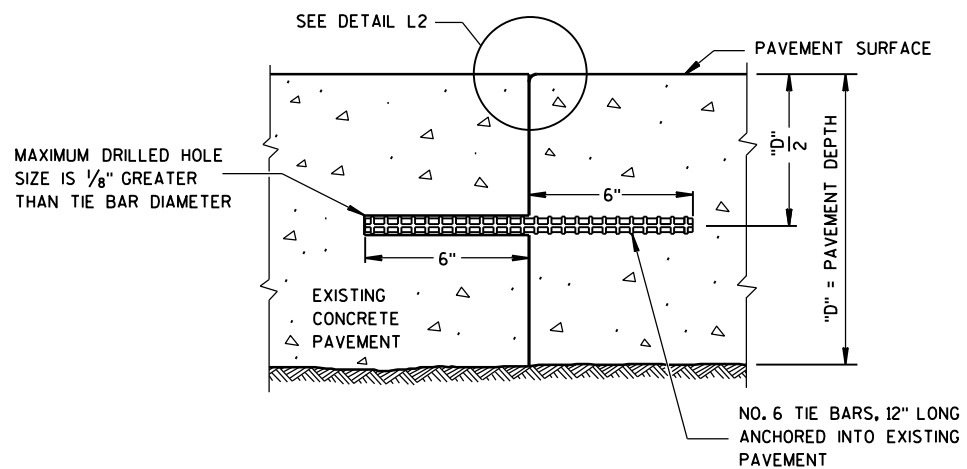
## DRILLED DOWEL BAR CONSTRUCTION JOINT

PAVEMENT DEPTH, DOWEL BAR SIZE  
AND JOINT SPACING TABLE

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

CONCRETE PAVEMENT  
REPAIR AND REPLACEMENT

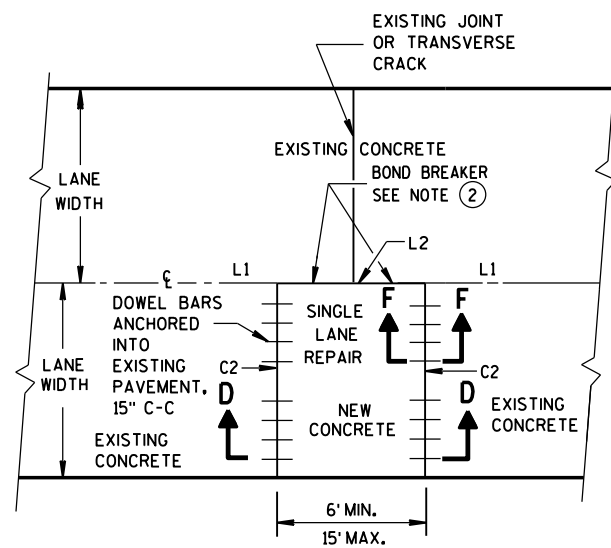
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 144



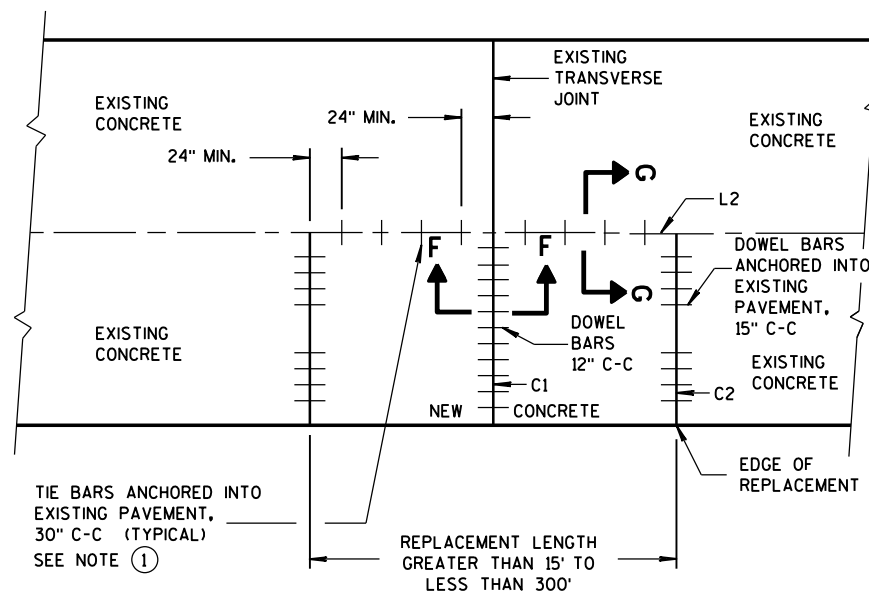
SECTION G-G  
TIE BARS ANCHORED  
INTO EXISTING PAVEMENT

## GENERAL NOTES

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



PLAN VIEW  
SINGLE LANE  
CONCRETE PAVEMENT REPAIR



PLAN VIEW  
SINGLE LANE  
CONCRETE PAVEMENT REPLACEMENT

## CONCRETE PAVEMENT REPAIR AND REPLACEMENT

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
12-2013 /S/ Deb Bischoff  
DATE PAVEMENT POLICY & DE 145 IER  
FHWA

BILL OF MATERIALS

| NOTE NO. | QTY. | DESCRIPTION                                                                                                                                                       |
|----------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ①        | 4    | WOOD BREAKAWAY TERMINAL POST: 5 1/2" X 7 1/2" X 3'-9"                                                                                                             |
| ②        | **   | STEEL TUBE: OPTION 1 - QUANTITY OF 4 TS 8" X 6" X 0.188", 4'-6" LONG OR OPTION 2 - QUANTITY OF 2 TS 8" X 6" X 0.188", 6'-0" AND 2 TS 8" X 6" X 0.188", 4'-6" LONG |
| ③        | 2    | SOIL PLATE: 2'-0" X 1'-6" X 1/4" **                                                                                                                               |
| ④        | 4    | WOOD BREAKAWAY CRT POST: 6" X 8" X 6'-0"                                                                                                                          |
| ⑤        | 6    | WOOD OFFSET BLOCKS: 6' X 8" X 1'-2"                                                                                                                               |
| ⑥        | 1    | PIPE SLEEVE: 2" X 5 1/2" STANDARD PIPE                                                                                                                            |
| ⑦        | 1    | BEARING PLATE                                                                                                                                                     |
| ⑧        | 1    | BCT CABLE ASSEMBLY                                                                                                                                                |
| ⑨        | 1    | CABLE ANCHOR BOX                                                                                                                                                  |
| ⑩        | 1    | STRUT & YOKE                                                                                                                                                      |
| ⑪        | 1    | STEEL PLATE BEAM, END PANEL 12 GA, 13'-6 1/2" LONG FOR SKT-350, ET-2000 AND ET-2000 PLUS                                                                          |
| ⑫        | 3    | STEEL PLATE BEAM: 12 GA, 13'-6 1/2"                                                                                                                               |
| ⑬        | 1    | ET-2000/ET-2000 PLUS GUARDRAIL EXTRUDER OR SKT-350 IMPACT HEAD: AS FURNISHED BY MANUFACTURER                                                                      |
| ⑭        | 1    | REFLECTIVE SHEETING TYPE H: 18" X 18"                                                                                                                             |
| ⑮        | 1    | E.A.T. MARKER POST                                                                                                                                                |

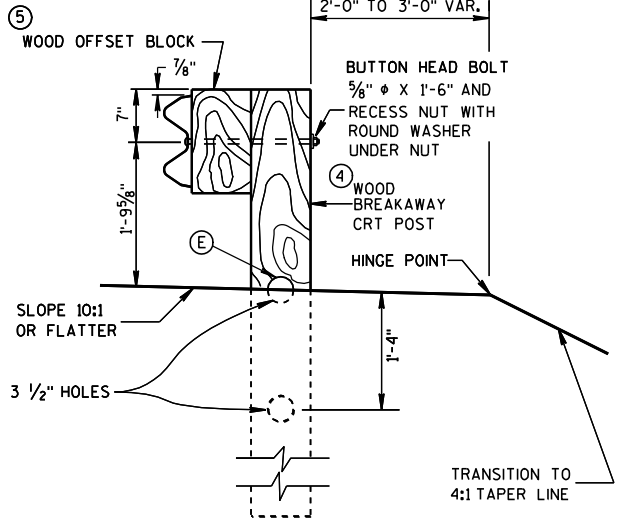
GENERAL NOTES

FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS. IF NONE ARE AVAILABLE, INSTALL 5/8"  $\phi$  X 1'-6" BUTTON HEAD BOLTS AT ALL POSTS EXCEPT FOR POST 1.

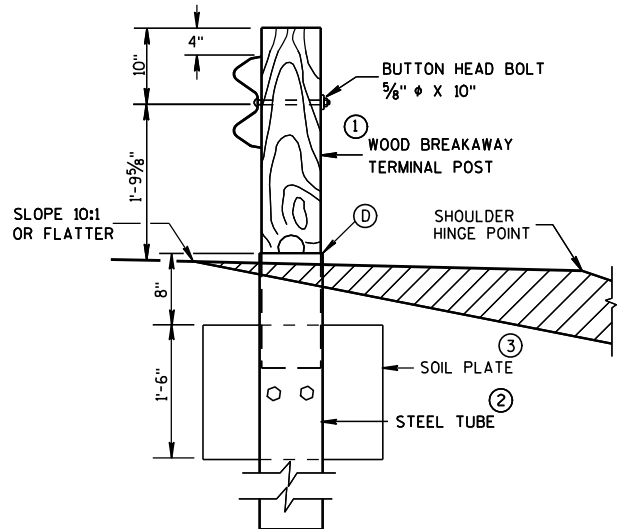
- (A) THE SLOPE IN THE AREA BOUNDED BY THE EXTENDED VEHICLE RUNOUT PATH (EVRP), THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.
- (C) THE 13 SLOT FIRST RAIL PANEL MAY BE USED IN LIEU OF THE 3 SLOT RAIL PANEL ON SKT-350 ONLY.
- (D) THE TOP OF THE STEEL TUBE ON POSTS 1 THROUGH 4 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.
- (E) THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST 5 THROUGH 8 SHALL BE 3/4" ABOVE THE FINISHED GROUND LINE.
- (F) SHEETING IS ATTACHED TO 0.040 ALUMINUM SHEET AND ATTACHED TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER OF E.A.T. STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.
- DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

\* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

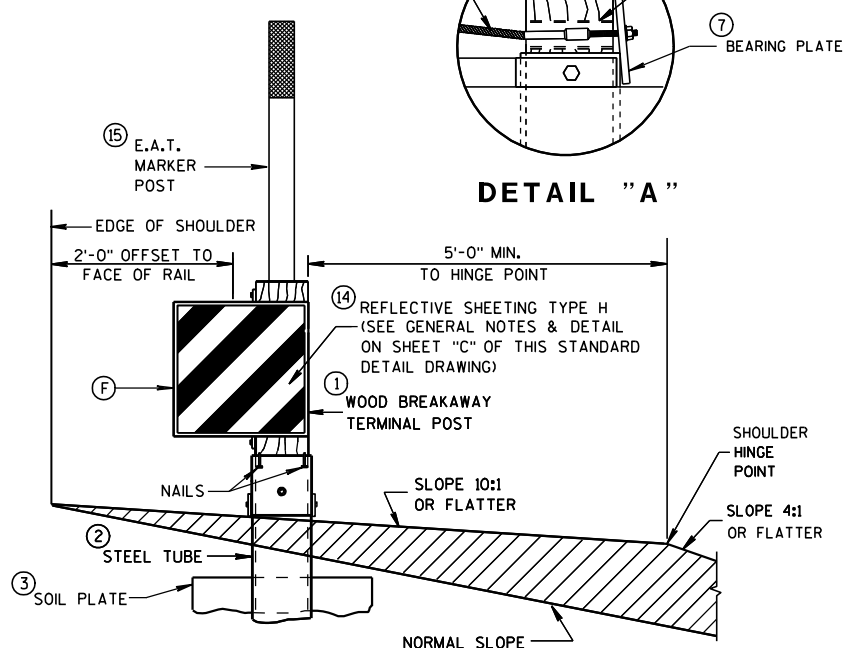
\*\* SDD SHOWS 4 - 54 INCH STEEL TUBES WITH SOIL PLATES INSTALLED ON POST 1 AND POST 2. POST 3 AND 4 DO NOT NEED SOIL PLATES. AN ALTERNATIVE INSTALLATION WOULD CONSIST OF 2 - 72 INCH STEEL TUBES ON POST 1 AND POST 2 AND 54 INCH TUBES ON POSTS 3 AND 4. THE ALTERNATIVE INSTALLATION DOES NOT REQUIRE SOIL PLATES.



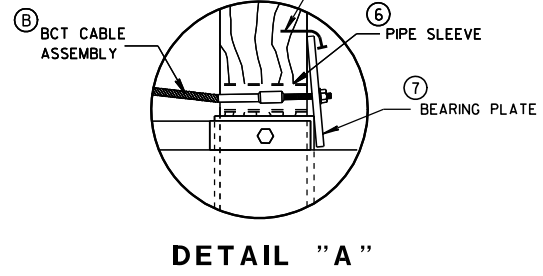
SECTION C-C  
TYPICAL AT POST NOS. 6, 8



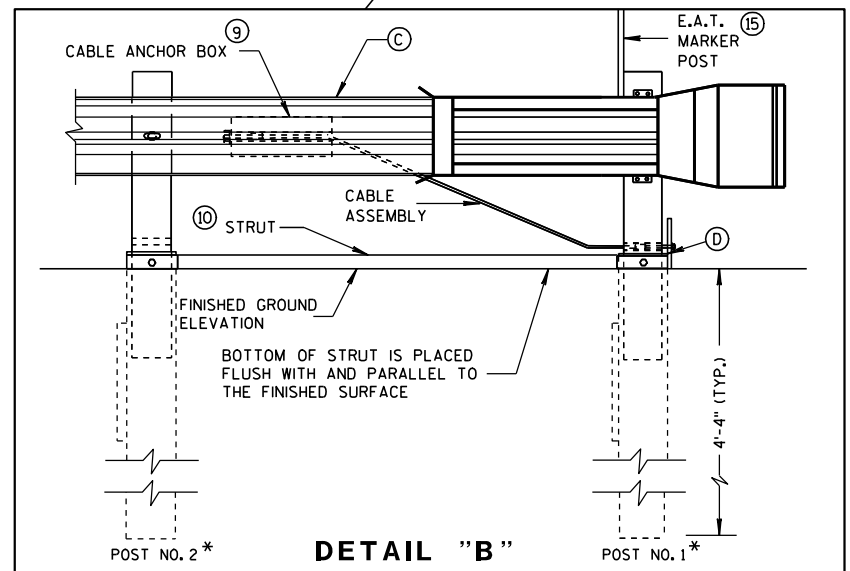
SECTION B-B  
TYPICAL AT POST NO. 2\*



SECTION A-A  
TYPICAL AT POST NO. 1\*



DETAIL "A"



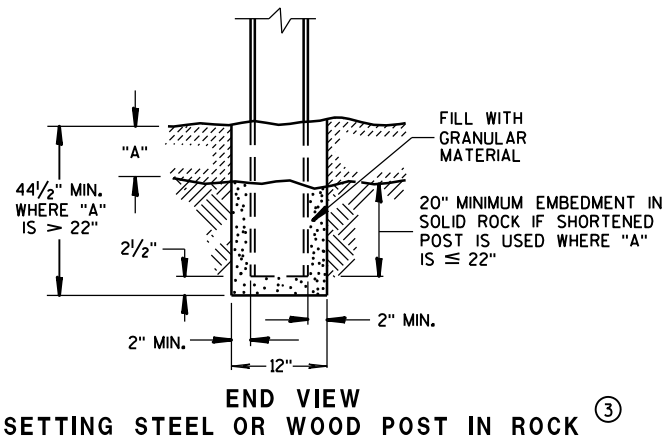
DETAIL "B"

STEEL PLATE BEAM GUARD  
ENERGY ABSORBING TERMINAL

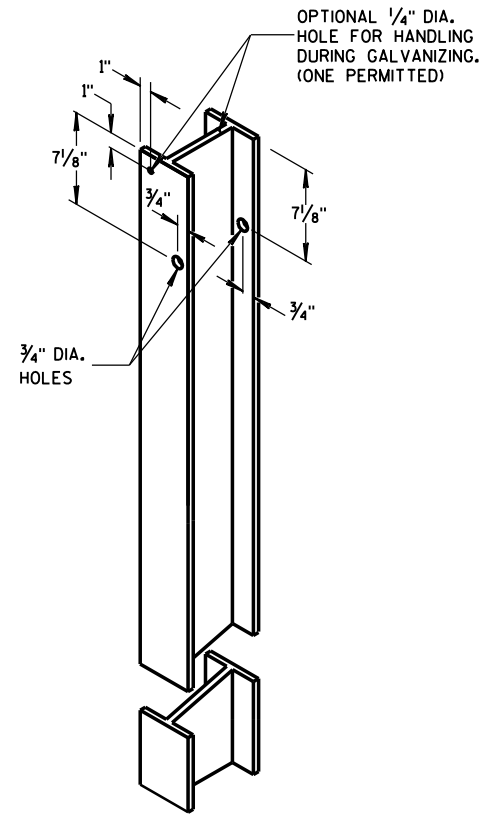
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

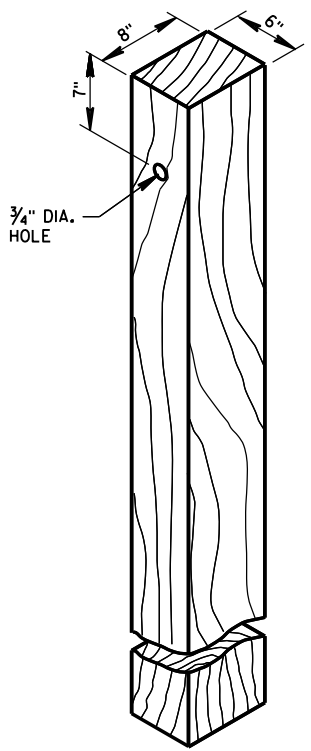
- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- ③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2 INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AND INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- ④ WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- ⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 3/4" TO 32".
- ⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



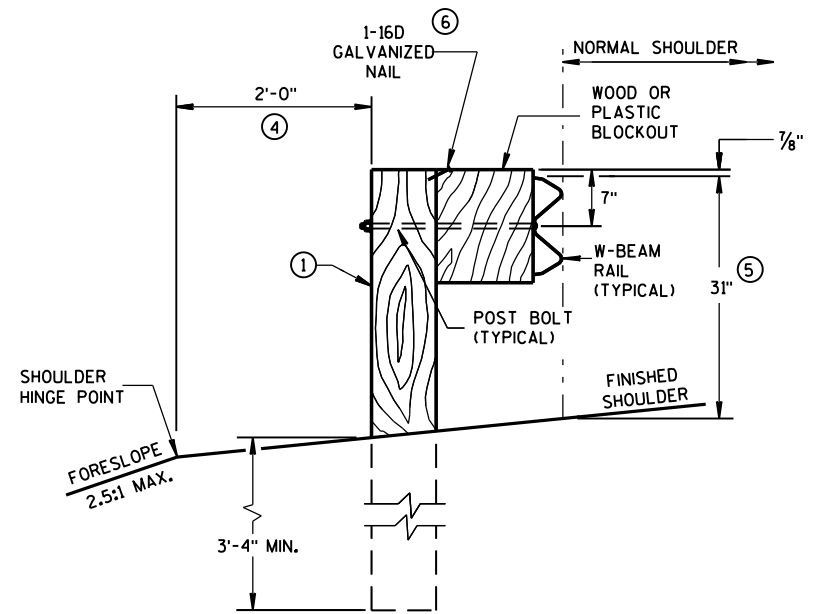
END VIEW  
SETTING STEEL OR WOOD POST IN ROCK ③



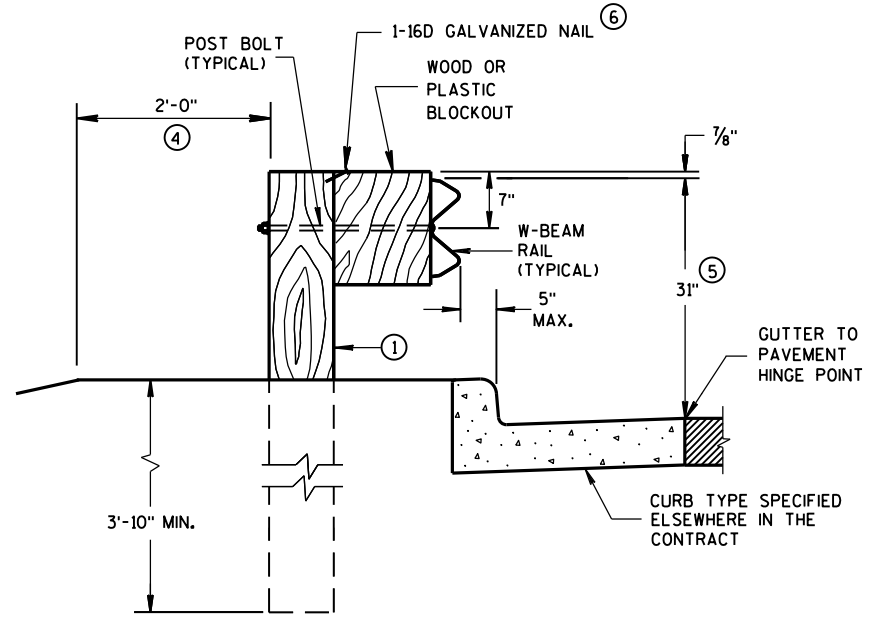
STEEL POST &  
HOLE PUNCHING DETAIL  
(w6X9) ①



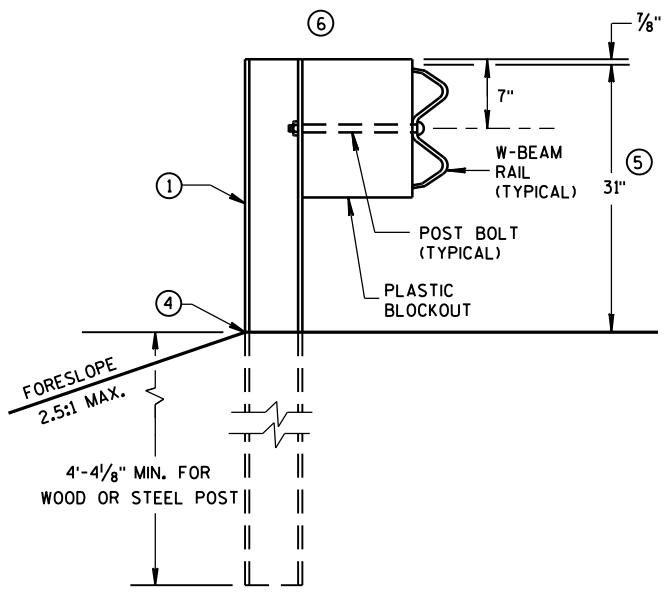
WOOD POST  
(6" X 8") NOMINAL ①



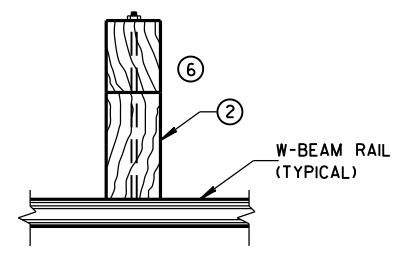
END VIEW  
LOCATED ALONG A ROADWAY SHOULDER  
STANDARD INSTALLATION



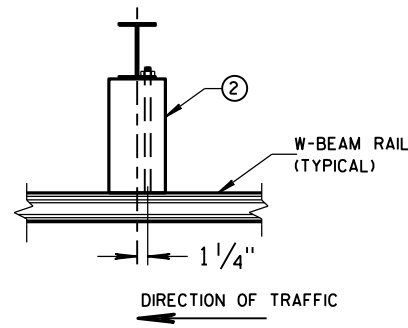
END VIEW  
LOCATED ALONG A CURBED ROADWAY



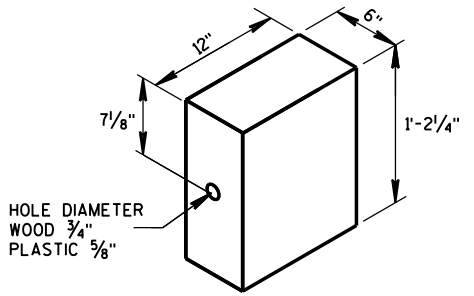
END VIEW  
MGS LONGER POST AT HALFPST SPACING W BEAM (K)



PLAN VIEW  
WOOD POST,  
BLOCKOUT & BEAM



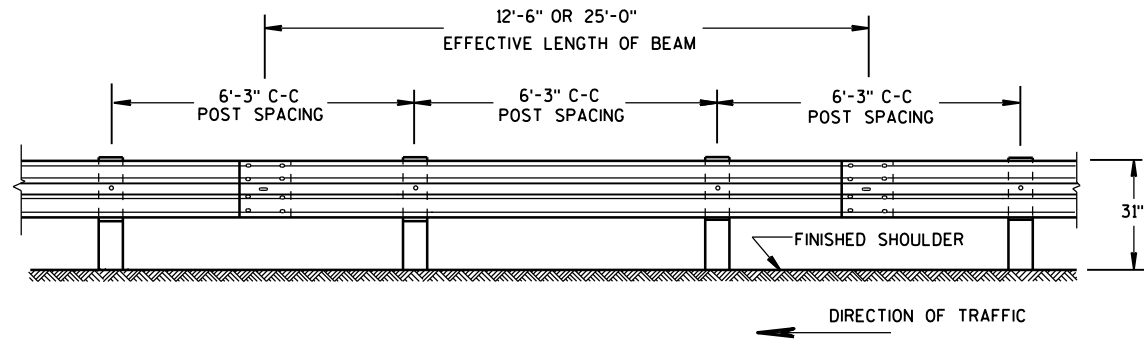
PLAN VIEW  
STEEL POST,  
PLASTIC BLOCKOUT & BEAM



WOOD OR  
PLASTIC BLOCKOUT ②

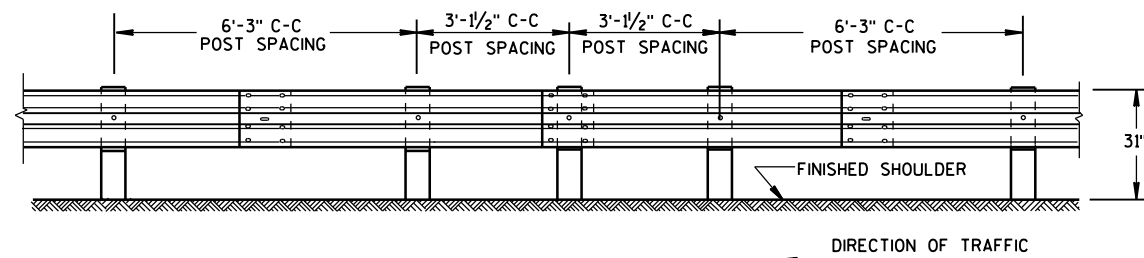
MIDWEST GUARDRAIL SYSTEM  
(MGS) GUARDRAIL

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 147



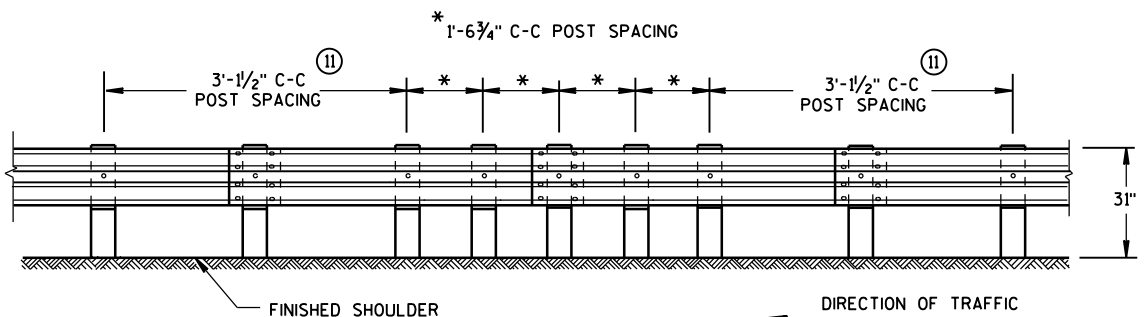
FRONT VIEW

## POST SPACING STANDARD INSTALLATION



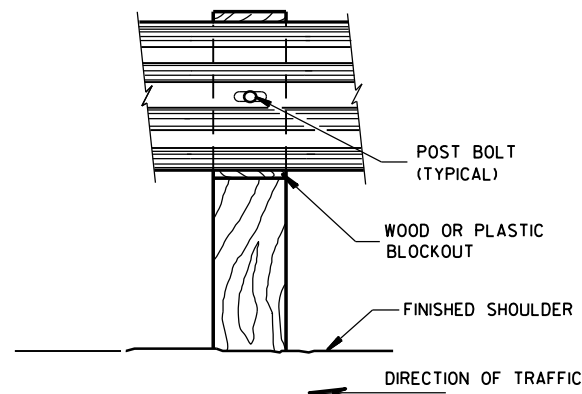
FRONT VIEW

## HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)

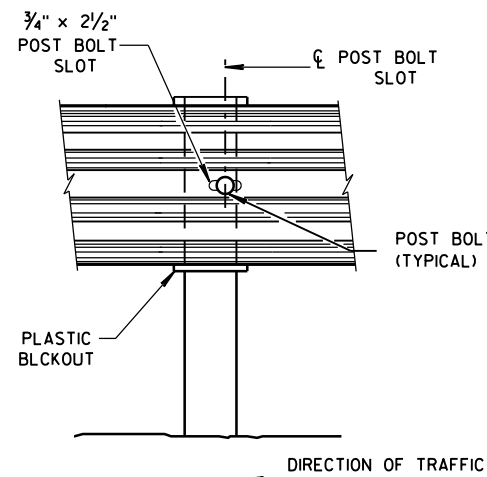


FRONT VIEW

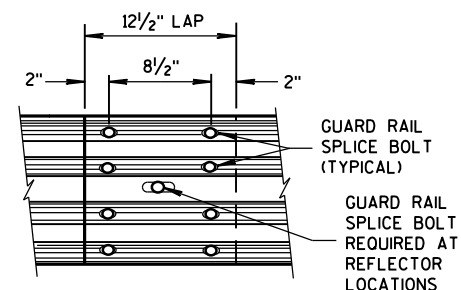
## QUARTER POST SPACING (QS)



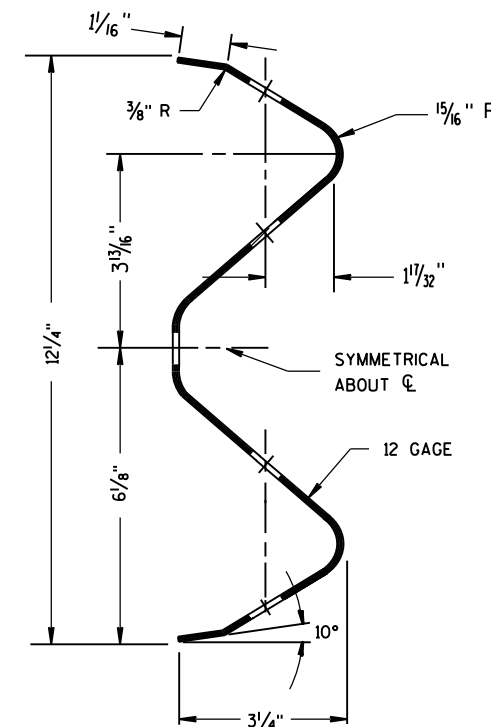
FRONT VIEW AT WOOD POST



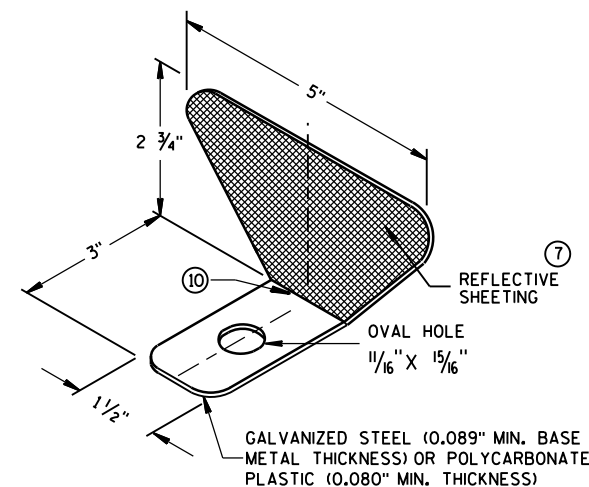
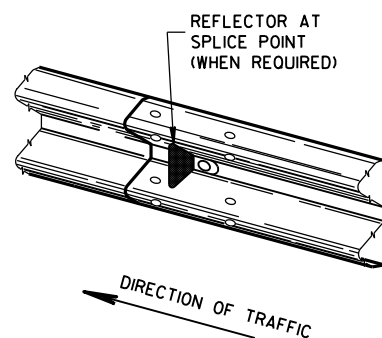
FRONT VIEW AT STEEL POST



FRONT VIEW  
MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL



## ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

## GENERAL NOTES

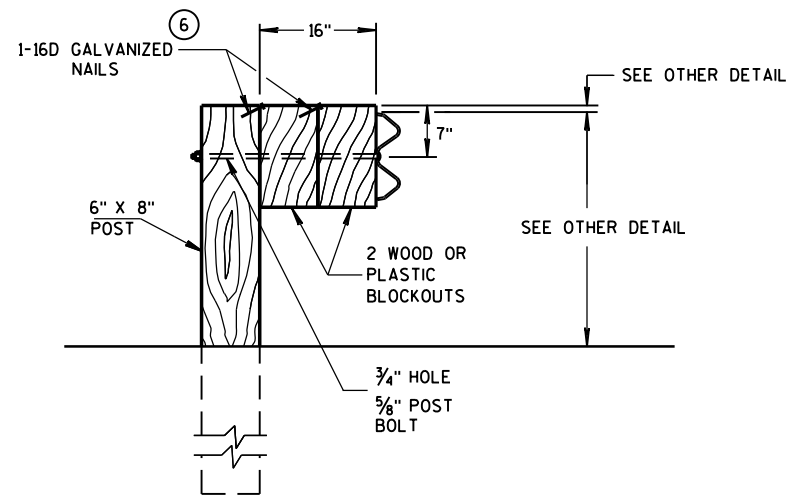
- ⑦ PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.
  - ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
  - ⑨ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
  - ⑩ PROVIDE AN ANGLE OF BEND OF  $90^\circ \pm 1^\circ$  FOR TWO-SIDED REFLECTORS.
  - ⑪ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A  $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES  $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND  $\frac{5}{8}$ " DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.
- GUARD RAIL SPLICE BOLTS ARE A  $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES  $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

## REFLECTOR SPACING

|                 | BEAM GUARD LENGTH | REFLECTOR SPACING | NO. SURFACES REFLECTORIZED | MIN. NO. REFLECTORS |
|-----------------|-------------------|-------------------|----------------------------|---------------------|
| ONE WAY TRAFFIC | < 200'            | 50' C-C           | 1                          | 3                   |
|                 | > 200'            | 100' C-C          | 1                          |                     |
| TWO WAY TRAFFIC | < 200'            | 25' C-C           | 1 ⑨                        | 6                   |
|                 | > 200'            | 50' C-C           | 1                          |                     |
| TWO WAY TRAFFIC | < 200'            | 50' C-C           | 2 ⑩                        | 3                   |
|                 | > 200'            | 100' C-C          | 2                          |                     |

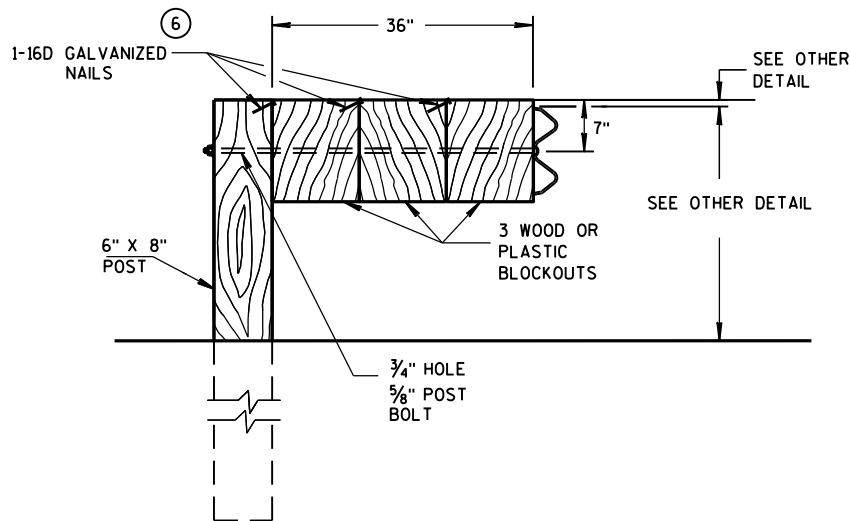
## MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



### DETAIL FOR 16" BLOCKOUT DEPTH

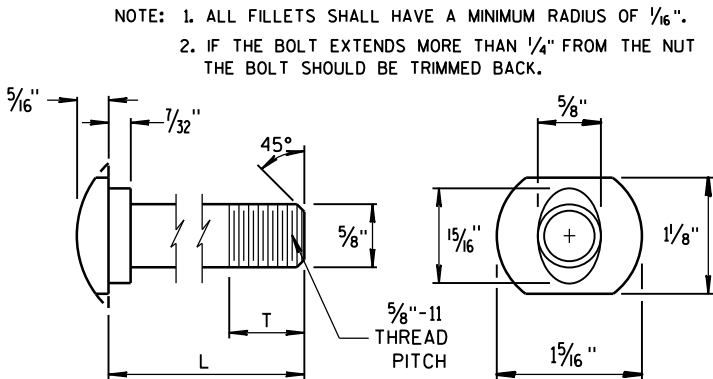
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



### DETAIL FOR 36" BLOCKOUT DEPTH

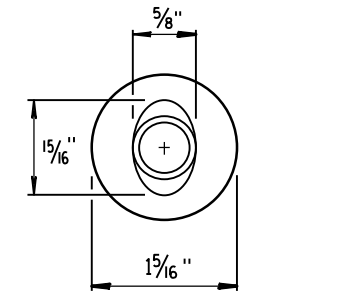
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

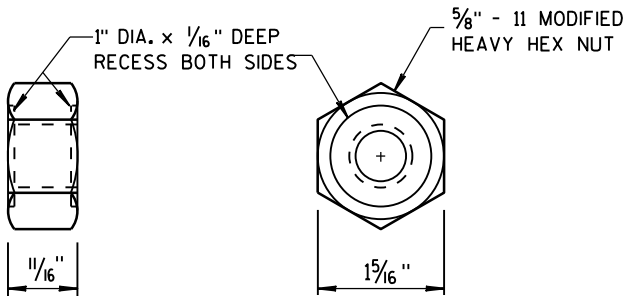


POST BOLT TABLE

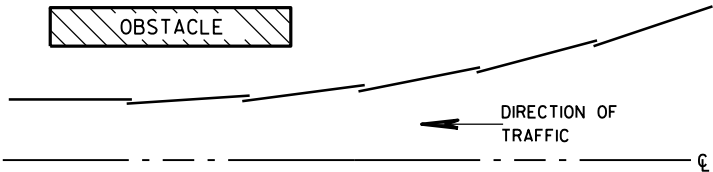
| L      | T (MIN.) |
|--------|----------|
| 1 1/4" | 1 1/8"   |
| 2"     | 1 3/4"   |
| 10"    | 4"       |
| 14"    | 4 1/16"  |
| 18"    | 4"       |
| 21"    | 4 1/16"  |
| 25"    | 4"       |



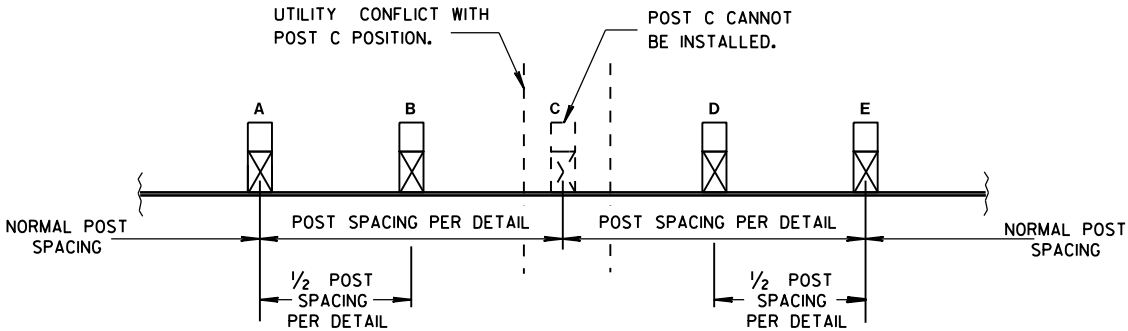
ALTERNATE BOLT HEAD



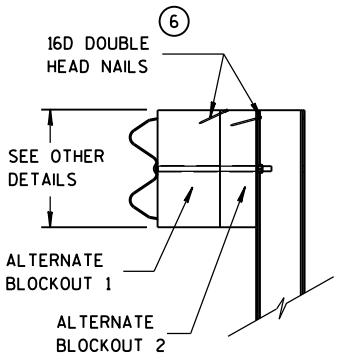
### POST BOLT AND RECESS NUT



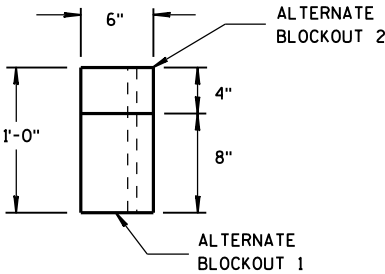
### PLAN VIEW BEAM LAPPING DETAIL



### POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

### ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM  
(MGS) GUARDRAIL

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
June 2014 /S/ Jerry H. Zogg  
DATE ROADWAY STANDARDS (149) ENT  
FHWA ENGINEER

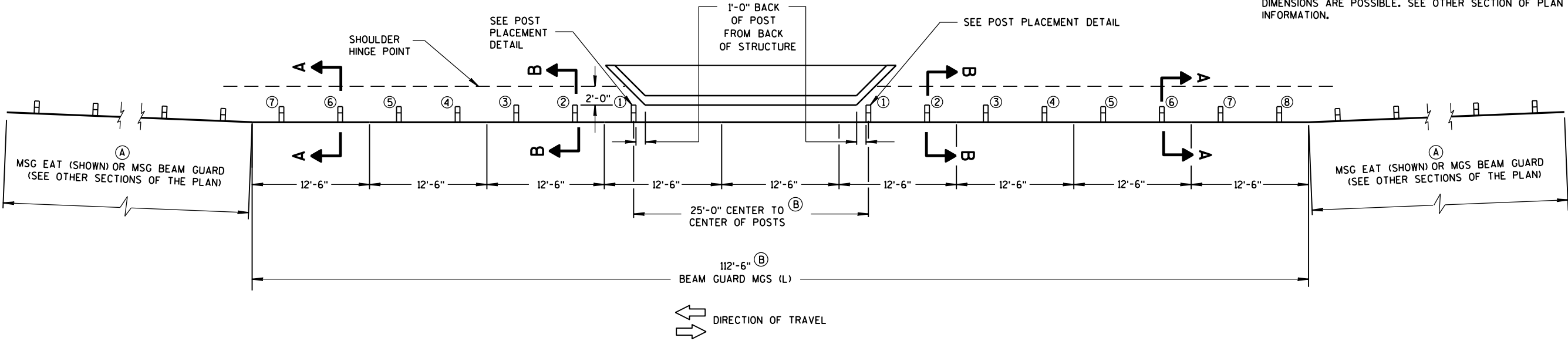
GENERAL NOTES

POSTS 1 THROUGH 3 ARE CRT POSTS.  
ALL OTHER POSTS SHALL BE WOOD OR STEEL.

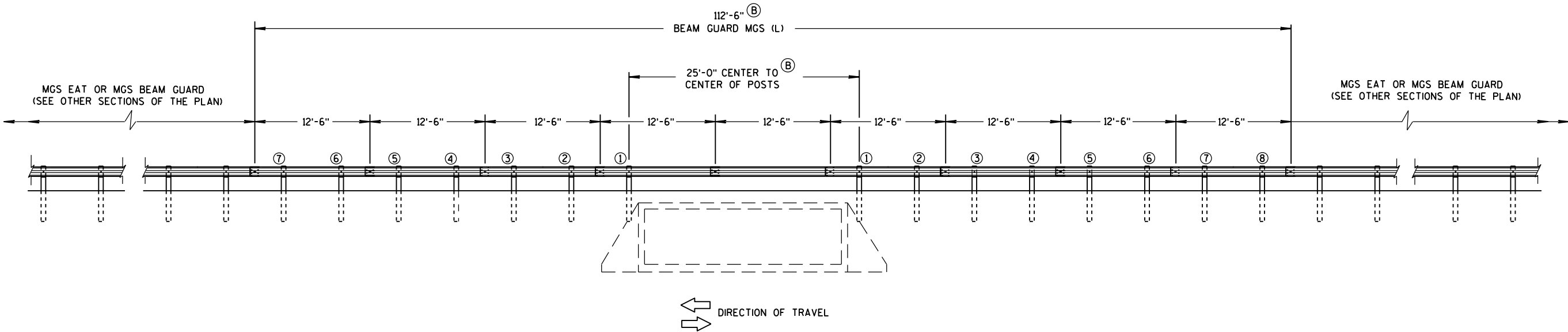
SEE SDD 14 B 42 FOR MORE DETAILS.

(A) FLARE FOR MGS EAT SHOWN. IF INSTALLING MGS NO FLARE NEEDED.

(B) VALUES SHOWN ON DRAWING REPRESENT THE MAXIMUM LENGTH. SHORTER DIMENSIONS ARE POSSIBLE. SEE OTHER SECTION OF PLAN FOR MORE INFORMATION.



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L) TWO-WAY TRAFFIC

MIDWEST GUARDRAIL SYSTEM  
LONG SPAN MGS (L)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

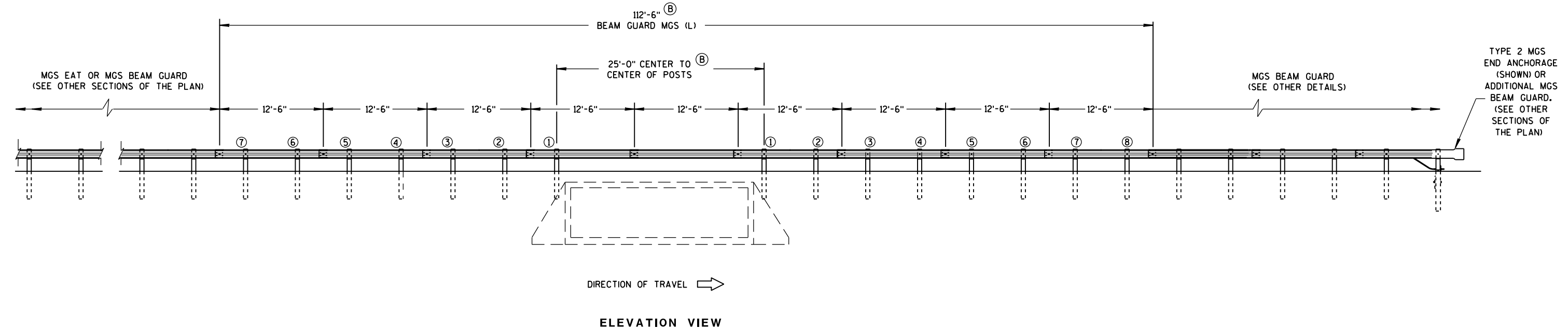
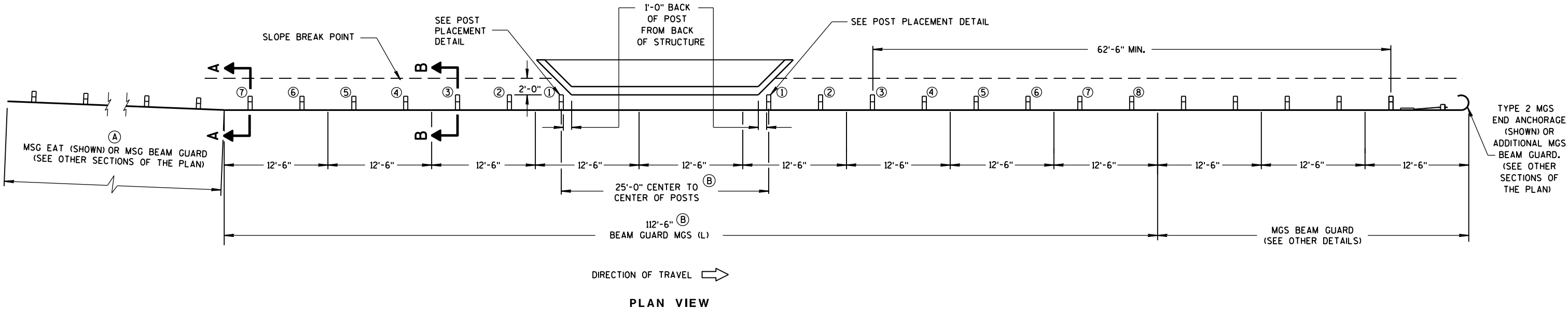
150

GENERAL NOTES

POSTS 1 THROUGH 3 ARE CRT POSTS.  
ALL OTHER POSTS SHALL BE WOOD OR STEEL.

SEE SDD 14 B 42 FOR MORE DETAILS.

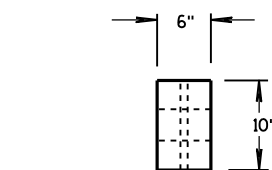
- (A) FLARE FOR MGS EAT SHOWN. IF INSTALLING MGS NO FLARE NEEDED.
- (B) VALUES SHOWN ON DRAWING REPRESENT THE MAXIMUM LENGTH. SHORTER DIMENSIONS ARE POSSIBLE. SEE OTHER SECTION OF PLAN FOR MORE INFORMATION.



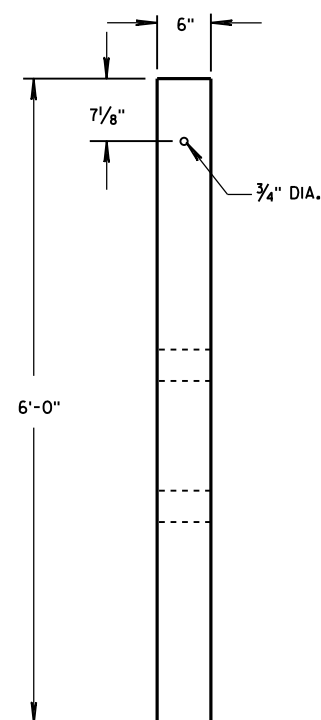
MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L) ONE-WAY TRAFFIC

MIDWEST GUARDRAIL SYSTEM  
LONG SPAN MGS (L)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

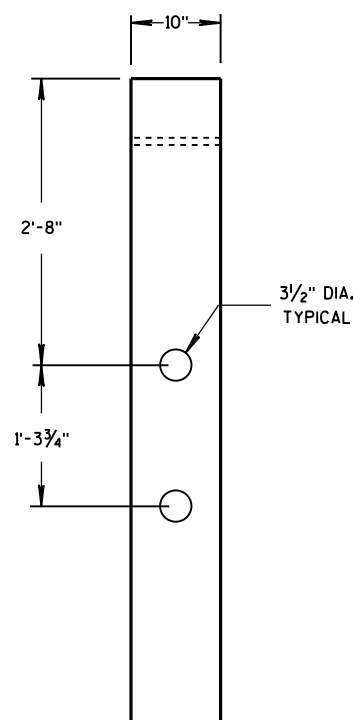


PLAN VIEW

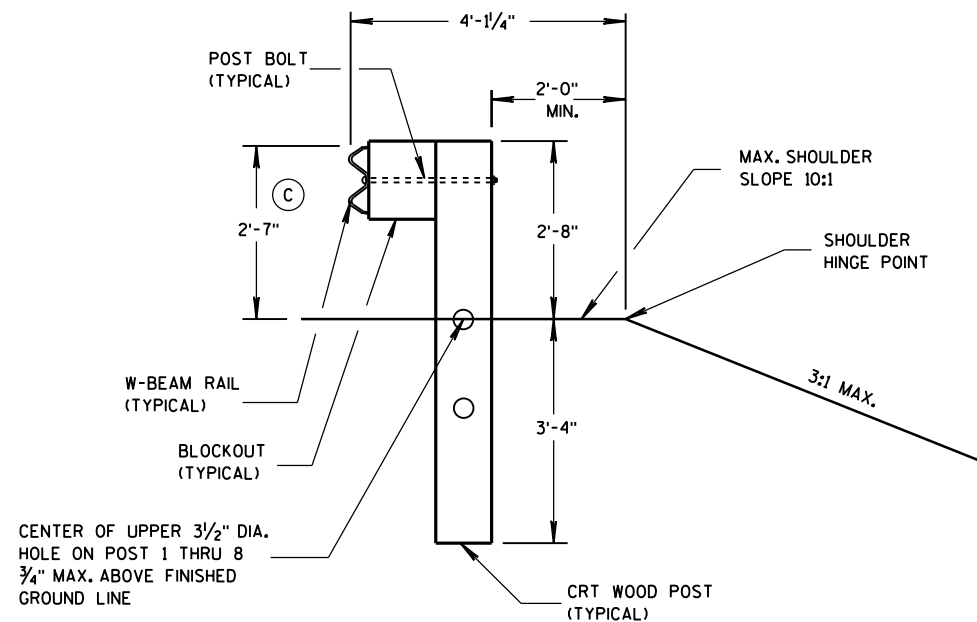


FRONT VIEW

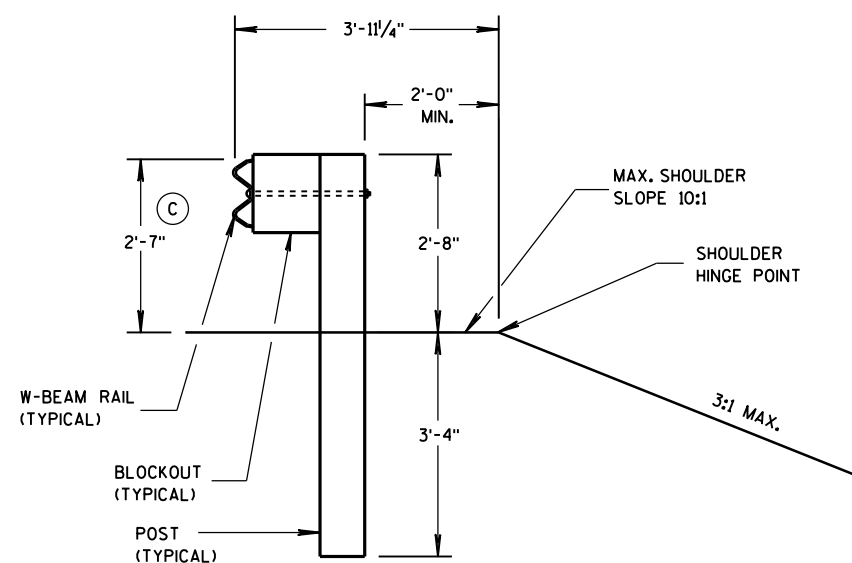
CRT WOOD POST



SIDE VIEW

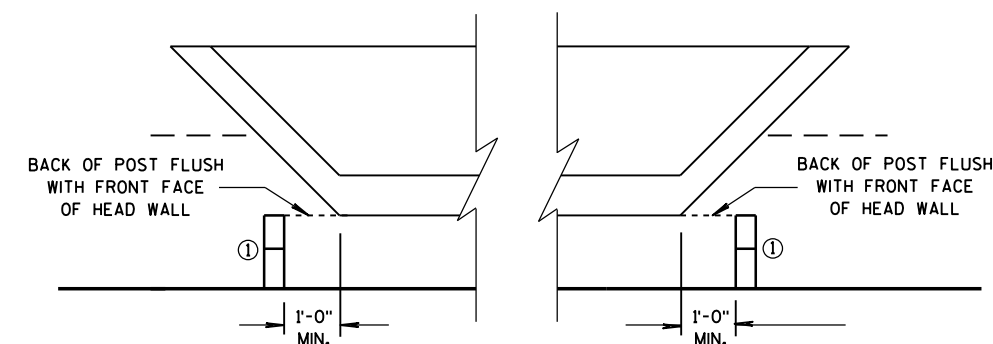
SECTION B-B  
POSTS NO. 1-3

SEE OTHER DETAILS

SECTION A-A  
POSTS NO. 4-8

SEE OTHER DETAILS

## GENERAL NOTES

(C) TOLERANCE FOR TOP OF W-BEAM RAIL IS  $\pm 1"$ .

POST PLACEMENT DETAIL

MIDWEST GUARDRAIL SYSTEM  
LONG SPAN MGS (L)STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

5/10/2013  
DATE

FHWA

/S/ Jerry H. Zogg  
ROADWAY STANDARDS (152) ENT  
ENGINEER

GENERAL NOTES

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.
- (C) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.
- (D) THE TOP OF THE STEEL TUBE ON POST 1 AND POST 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.
- (E) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER.
- (G) 1/2" DIAMETER X 3" LONG LAG BOLT AND WASHER.
- (H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.
- (I) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

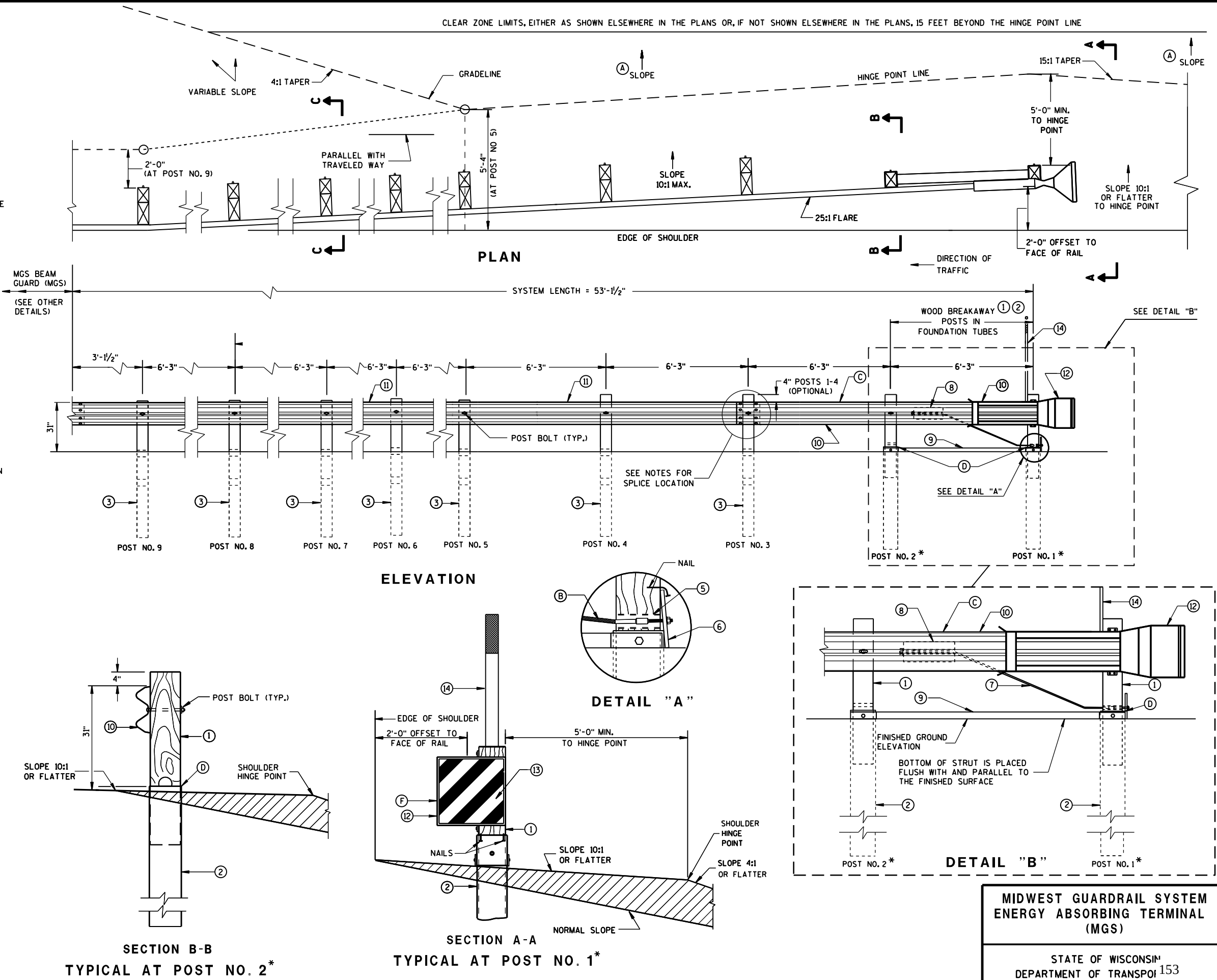
SEE SDD 14B42 FOR MORE INFORMATION.

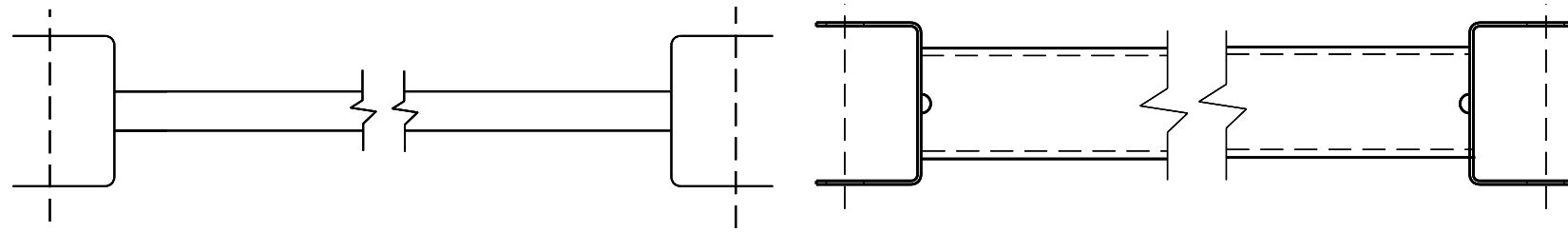
\* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

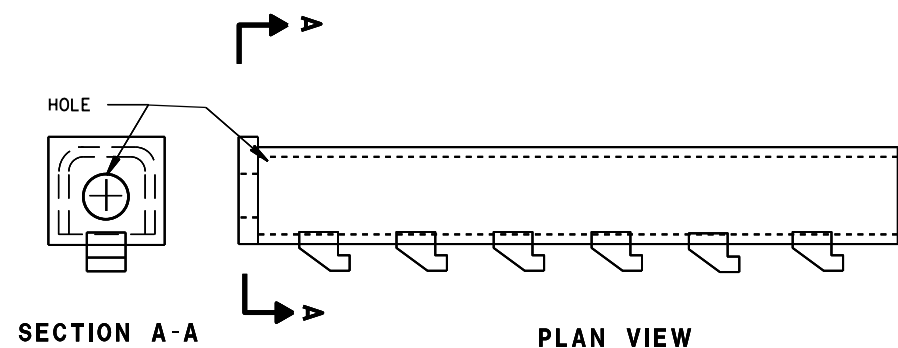
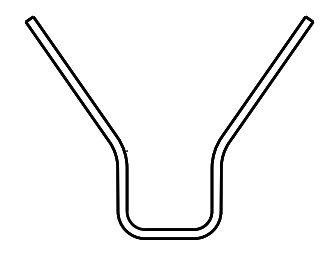
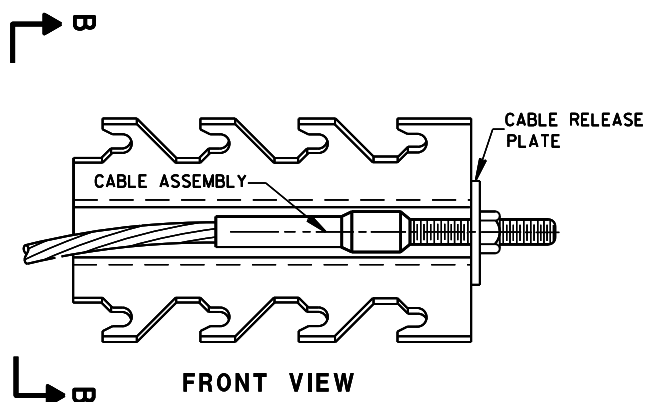
W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

THE CENTER OF THE UPPER 3/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.





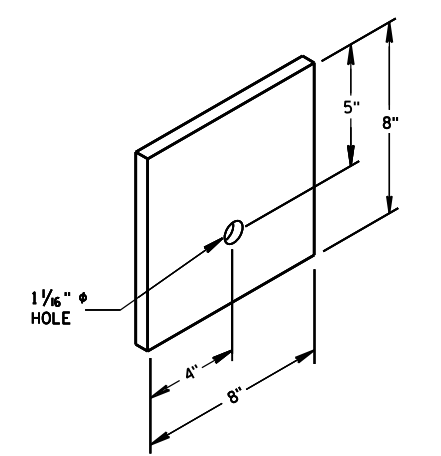
9 H  
**GENERIC GROUND STRUT**



8 H  
**GENERIC ANCHOR CABLE BOX**

**BILL OF MATERIALS**

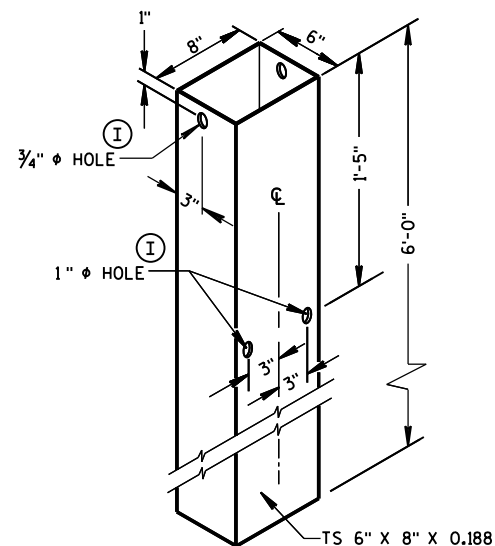
| PART NO.                                                                                     | DESCRIPTION                                                                                          |
|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION. |                                                                                                      |
| ①                                                                                            | WOOD BREAKAWAY POST                                                                                  |
| ②                                                                                            | 6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2                                        |
| ③                                                                                            | WOOD CRT                                                                                             |
| ④                                                                                            | WOOD BLOCKOUT                                                                                        |
| ⑤                                                                                            | PIPE SLEEVE                                                                                          |
| ⑥                                                                                            | BEARING PLATE                                                                                        |
| ⑦                                                                                            | BCT CABLE ASSEMBLY                                                                                   |
| ⑧                                                                                            | ANCHOR CABLE BOX                                                                                     |
| ⑨                                                                                            | GROUND STRUT                                                                                         |
| ⑩                                                                                            | PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.                                                       |
| ⑪                                                                                            | STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.                           |
| ⑫                                                                                            | END SECTION EAT                                                                                      |
| ⑬                                                                                            | 0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS |
| ⑭                                                                                            | EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)                                                |



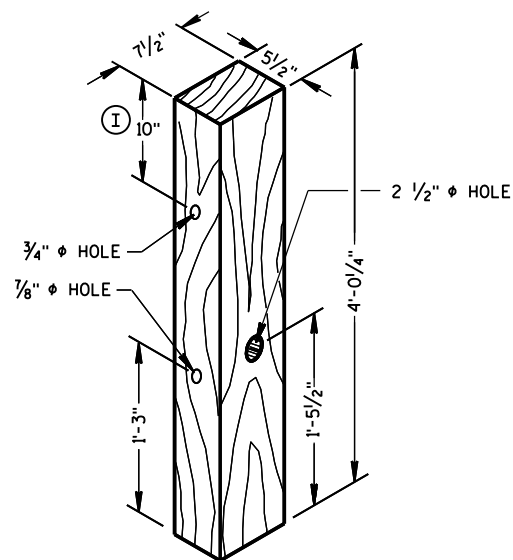
⑥  
**BEARING PLATE**

6

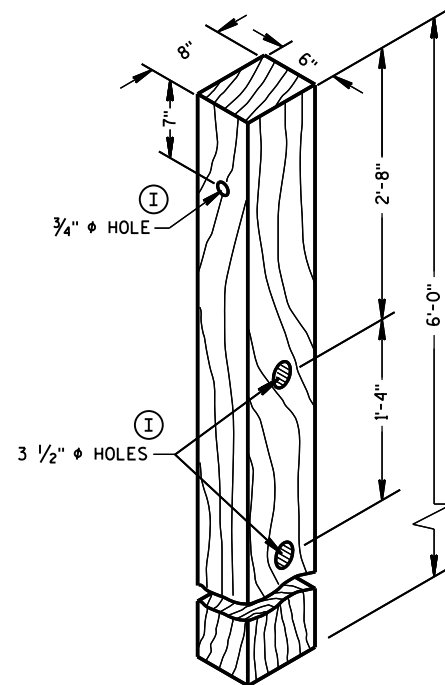
6



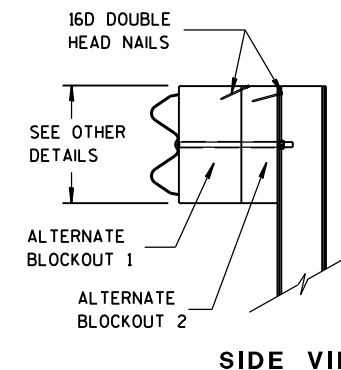
FOUNDATION TUBE ②



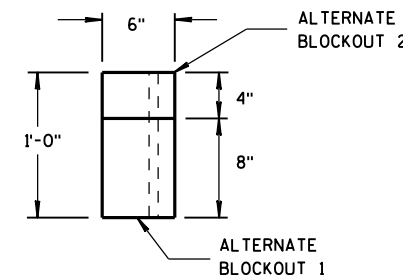
POSTS NUMBER 1 AND 2  
WOOD BREAKAWAY POST ①



POSTS NUMBER 3-9  
WOOD CRT POST ③

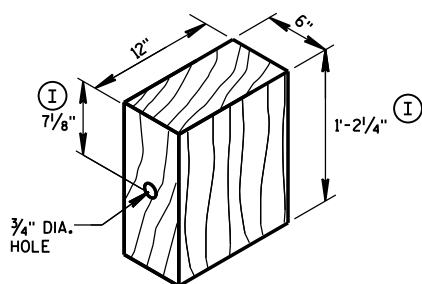


SIDE VIEW



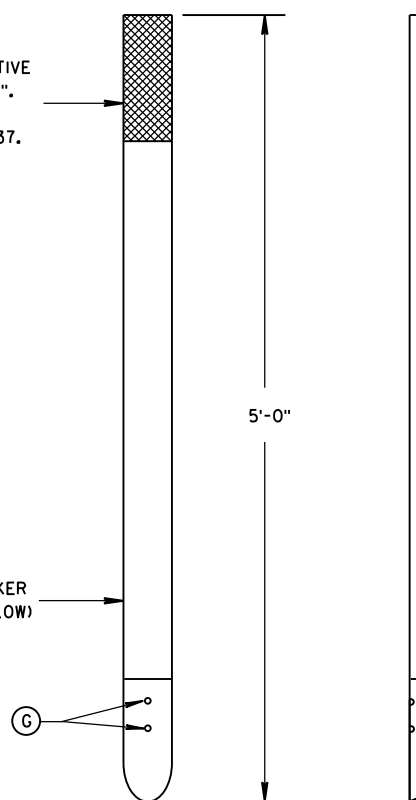
TOP VIEW

ALTERNATE WOOD  
BLOCKOUT DETAIL



WOOD BLOCKOUT ④  
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2

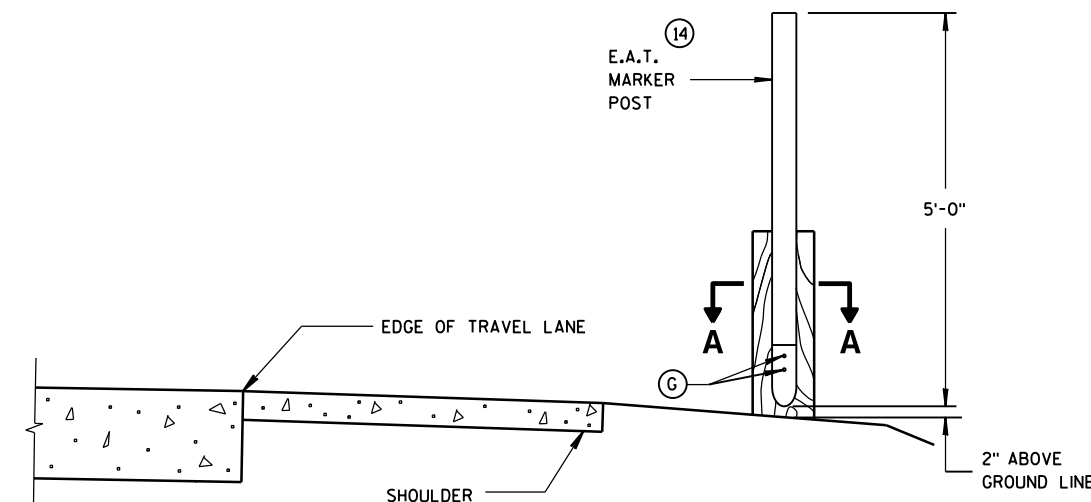
TYPE H  
YELLOW REFLECTIVE  
SHEETING 3" X 9".  
SEE STANDARD  
SPECIFICATION 637.



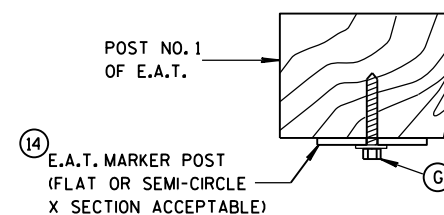
FRONT VIEW

SIDE VIEW

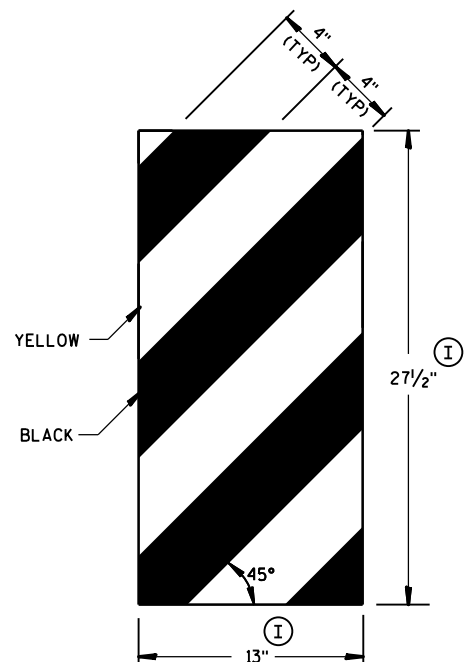
E.A.T. MARKER POST ⑭



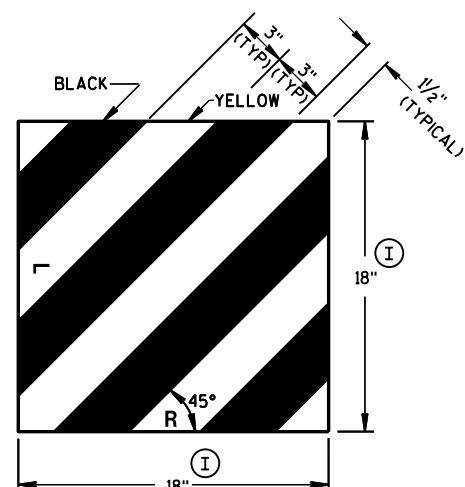
TYPICAL INSTALLATION OF E.A.T.  
MARKER POST BACKSIDE OF POST NO. 1  
(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A



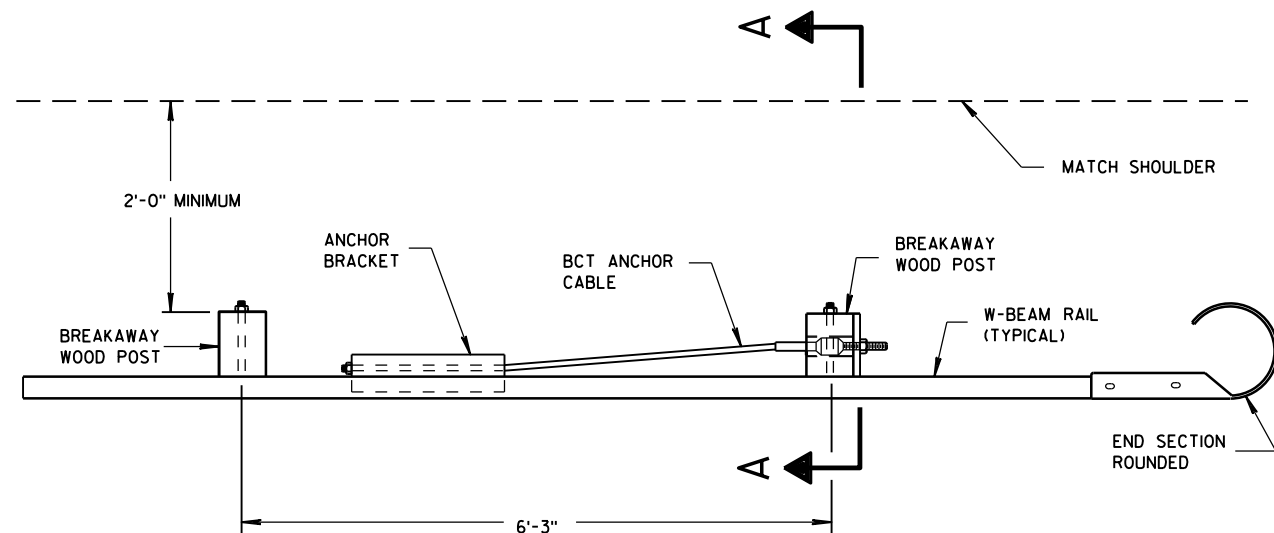
GENERIC REFLECTIVE SHEETING ⑬ ①



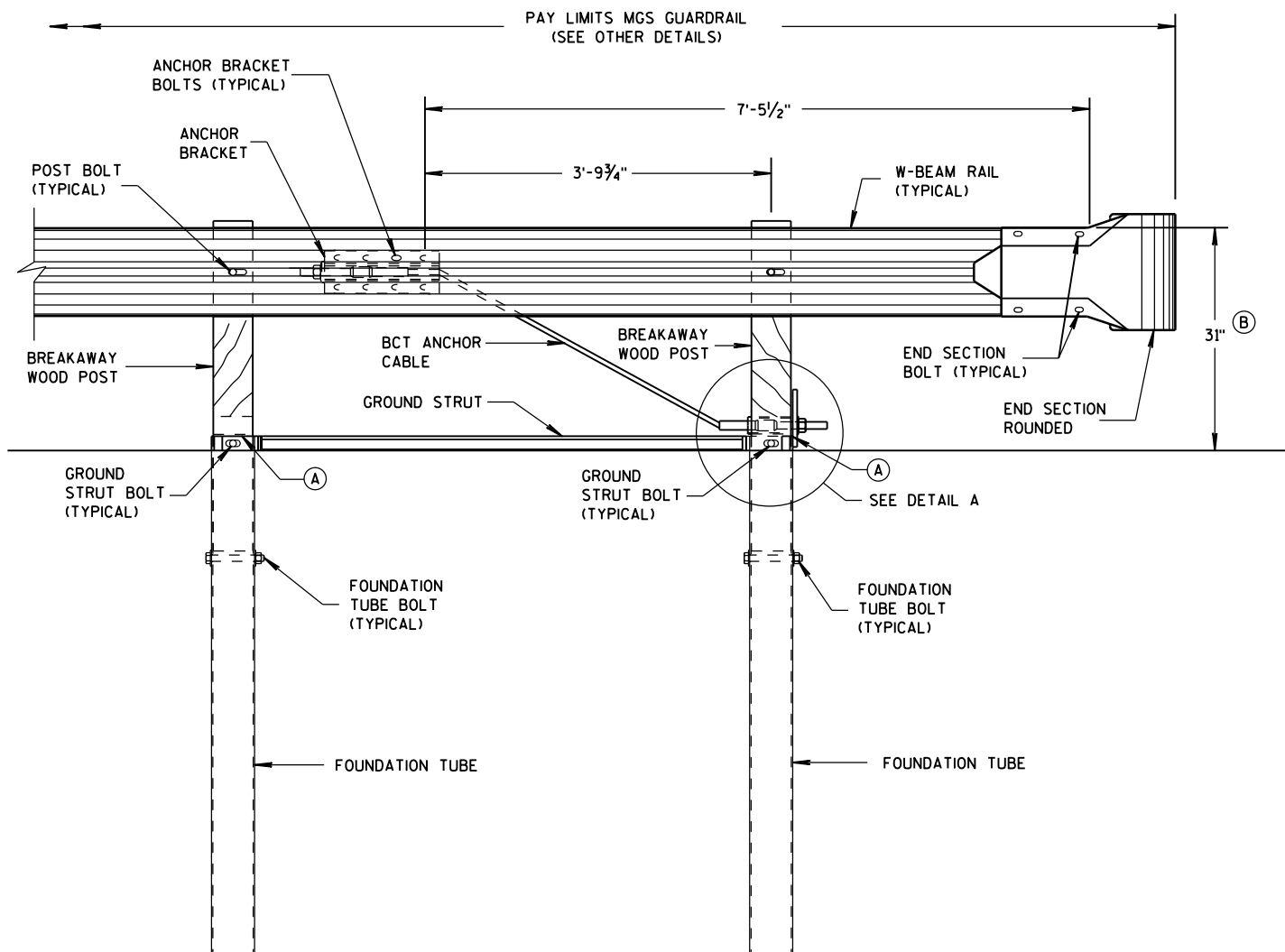
MIDWEST GUARDRAIL SYSTEM  
ENERGY ABSORBING TERMINAL  
(MGS)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
June 2014 /S/ Jerry H. Zogg  
DATE ROADWAY STANDARDS 155 ENT  
FHWA ENGINEER

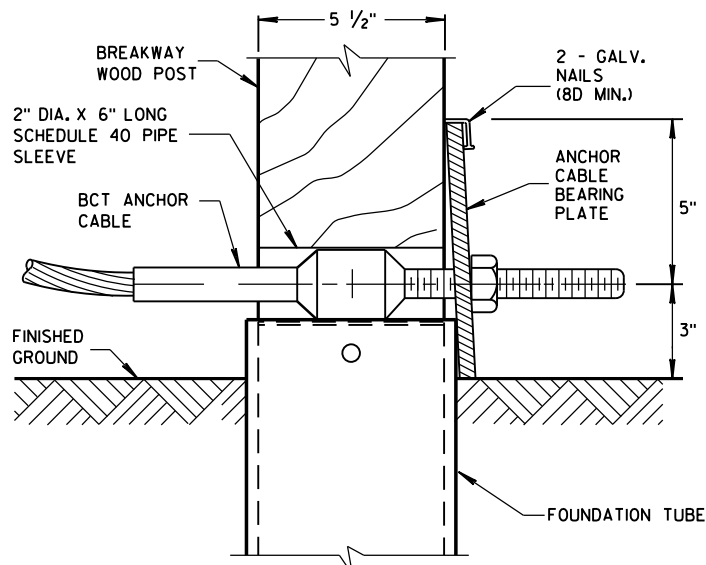


PLAN VIEW



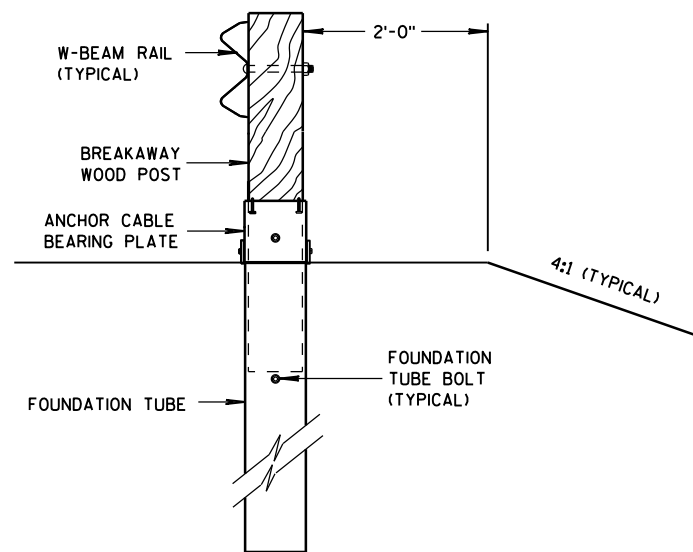
FRONT VIEW

END RAIL DETAIL



DETAIL A

POST NO. 1  
GROUND STRUT NOT SHOWN FOR CLARITY.



SECTION A-A

## GENERAL NOTES

SEE SDD 14 B 42 FOR MORE INFORMATION.

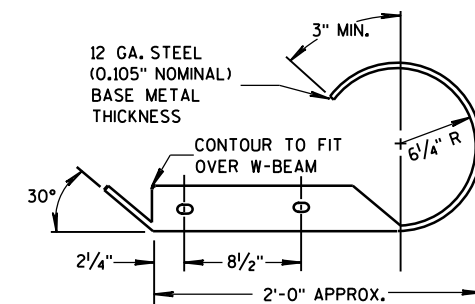
END SECTION BOLTS AND NUTS HAVE THE SAME MATERIAL REQUIREMENTS AS SPLICE BOLTS.

FOUNDATION TUBE BOLTS ARE 7/8" DIAMETER ASTM A307 HEX HEAD BOLT. FOUNDATION TUBE BOLTS REQUIRE ASTM A563 A NUT AND TWO ASTM F844 7/8" DIAMETER FLAT WASHERS. INSTALL ONE WASHER UNDER BOLT HEAD AND ONE WASHER UNDER NUT.

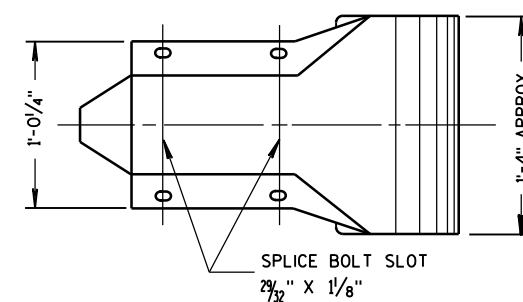
ANCHOR BRACKET AND GROUND STRUT BOLTS ARE A 5/8" DIAMETER ASTM A307 HEX HEAD BOLT. ANCHOR BRACKET BOLTS REQUIRE ASTM A563 A NUT AND TWO ASTM F844 5/8" DIAMETER FLAT WASHERS. INSTALL ONE WASHER UNDER BOLT HEAD AND ONE WASHER UNDER NUT.

W-BEAM END SECTION ROUNDED HAS THE SAME MATERIAL PROPERTIES AS STANDARD STEEL RAIL.

- (A) TOP OF FOUNDATION TUBE SHALL BE NO MORE THAN 3" ABOVE FINISHED GROUND.
- (B) FOR NEW CONSTRUCTION TOP OF RAIL IS 31"  $\pm$  1". FOR EXISTING INSTALLATIONS TOP OF RAIL IS BETWEEN 27 3/4" TO 32"  $\pm$  1".



PLAN VIEW

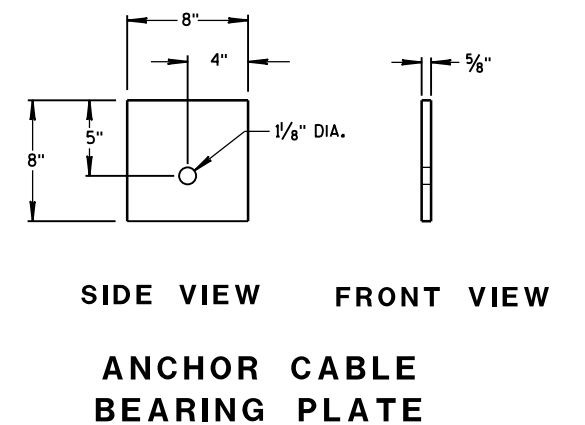
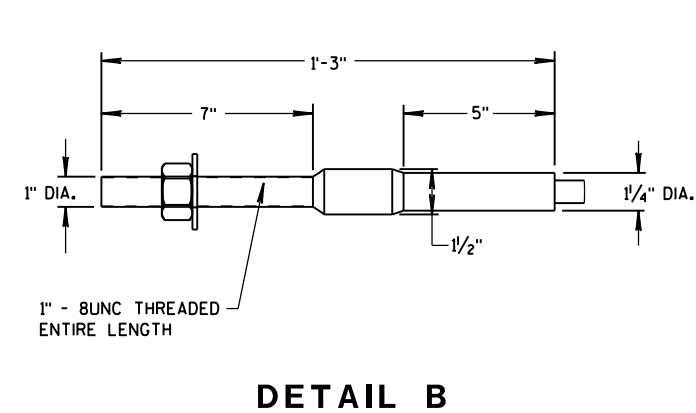
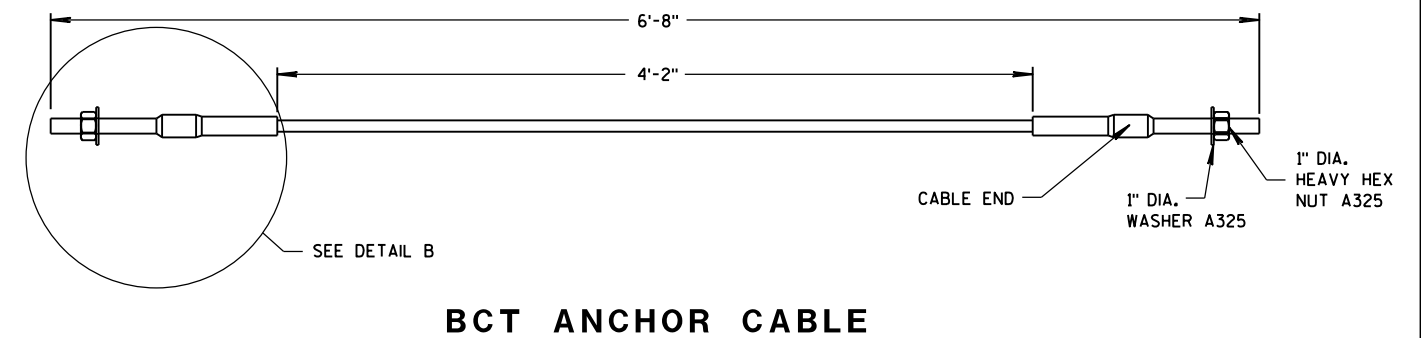
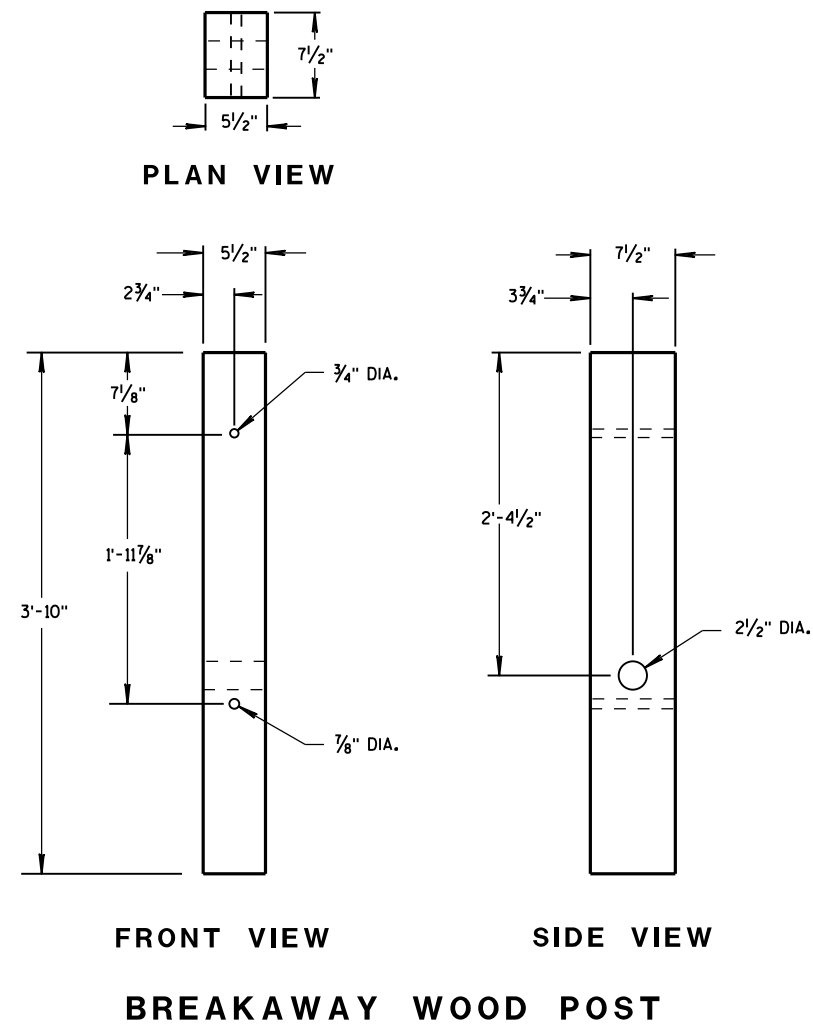
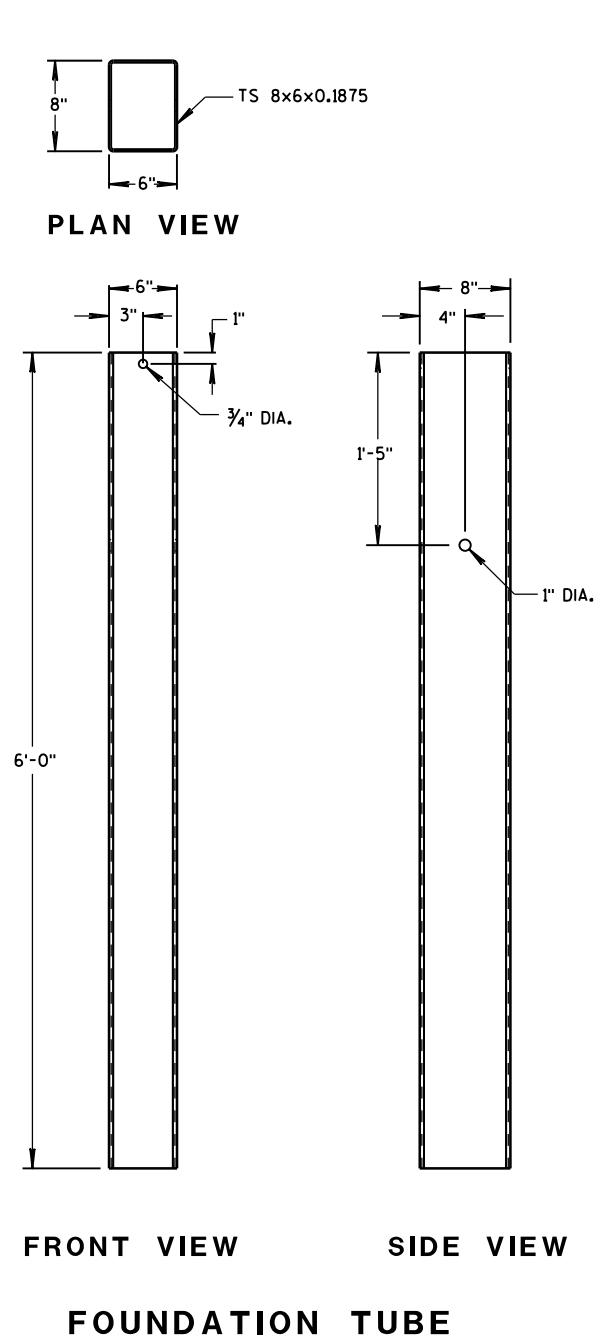


FRONT VIEW

W BEAM END  
SECTION ROUNDED

MIDWEST GUARDRAIL  
SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 156

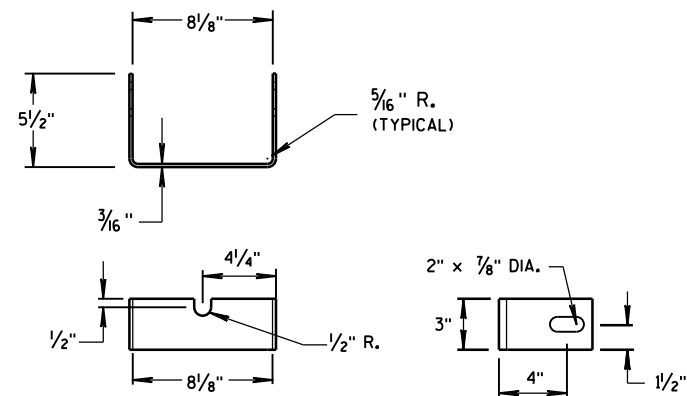


## GENERAL NOTES

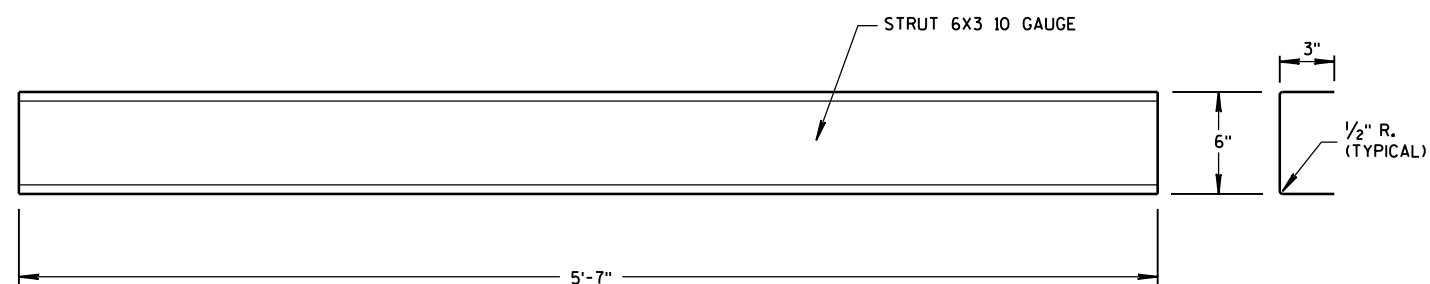
BCT ANCHOR CABLE IS A 3/4" DIAMETER 6X19 IWRC IPS GALVANIZED WIRE ROPE. THE SWAGED FITTINGS AND STUD ARE REQUIRED. END FITTING SHALL BE MACHINED FROM HOT-ROLLED CARBON STEEL CONFORMING TO ASTM A576 GRADE 1035 AND GALVANIZED ACCORDING TO ASTM A123. TREADED STUD SHALL CONFORM TO ASTM A325 OR SAE GRADE 5. MINIMUM BREAKING STRENGTH OF WIRE ROPE IS 43,000 LB. WIRE ROPE IS TO BE TAUT.

MIDWEST GUARDRAIL  
SYSTEM (MGS) TYPE 2 TERMINAL

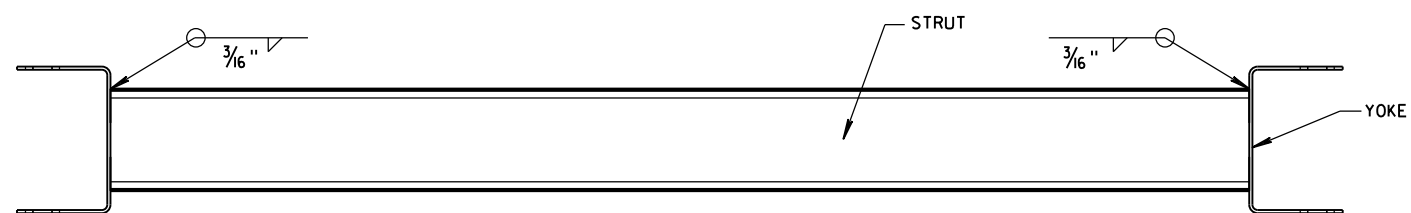
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 157



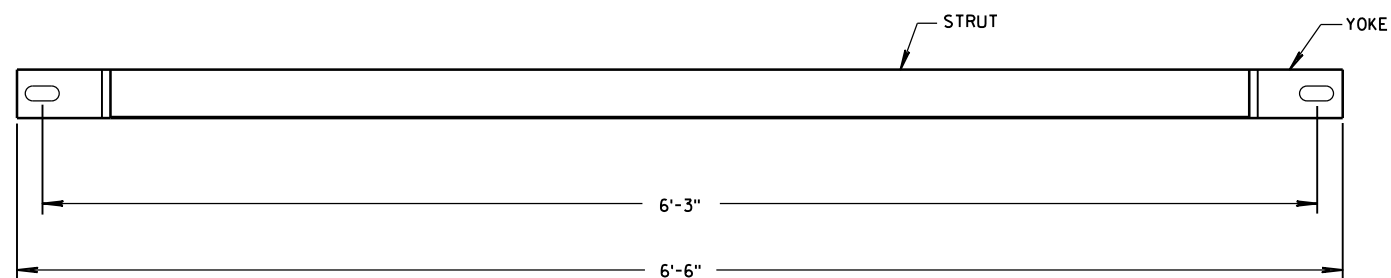
YOKE DETAIL



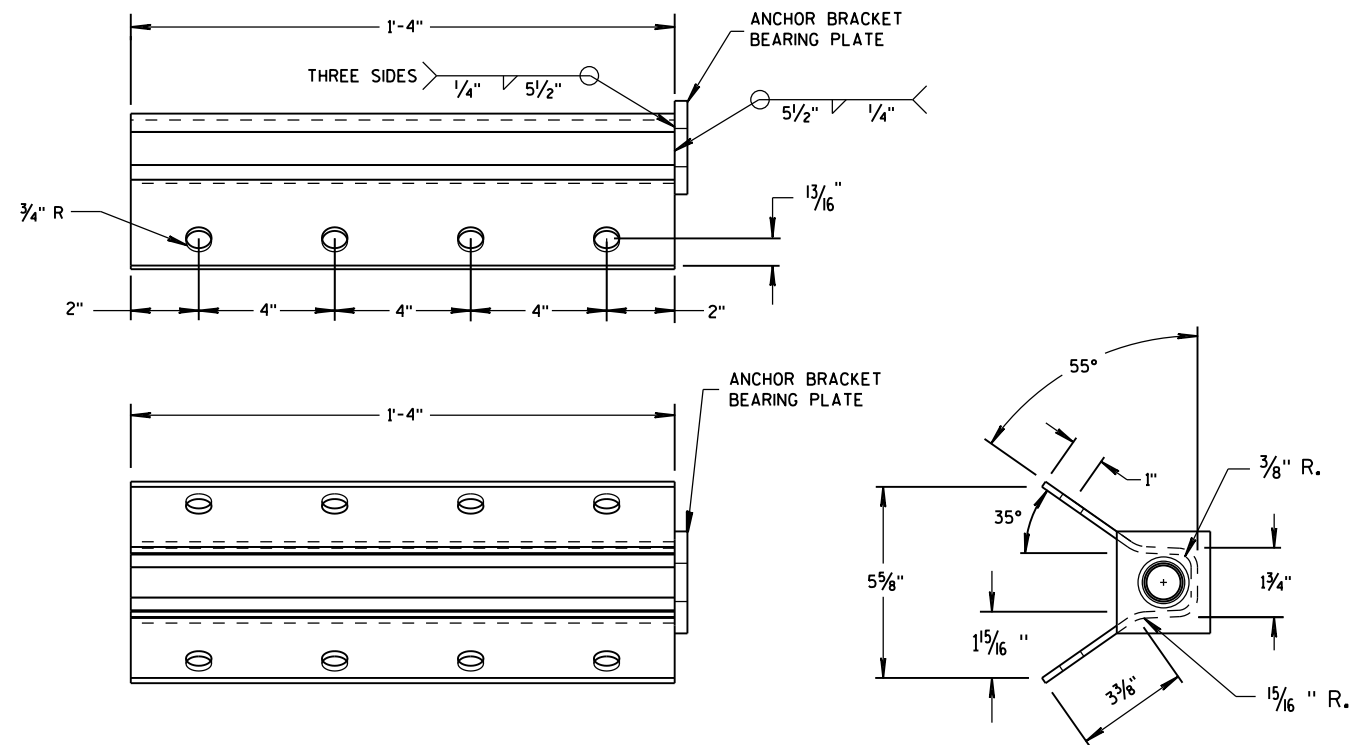
STRUT DETAIL



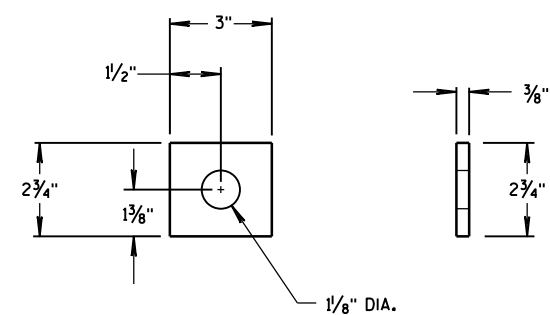
PLAN VIEW



FRONT VIEW  
GROUND STRUT DETAIL



ANCHOR BRACKET

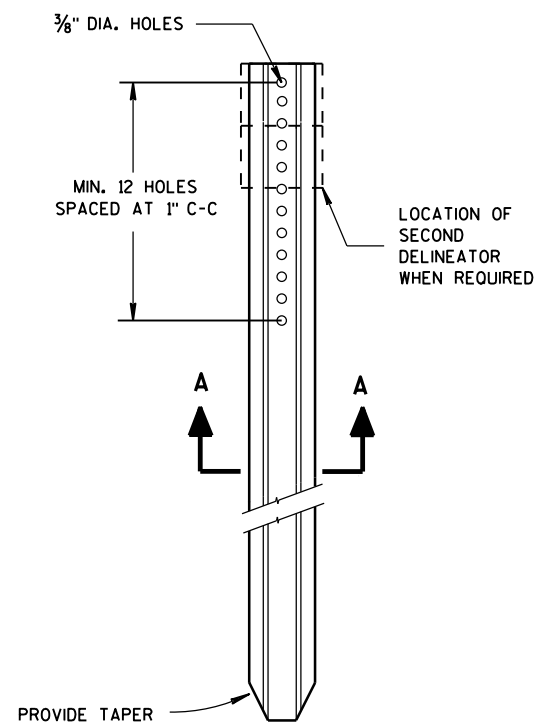


ANCHOR BRACKET  
BEARING PLATE

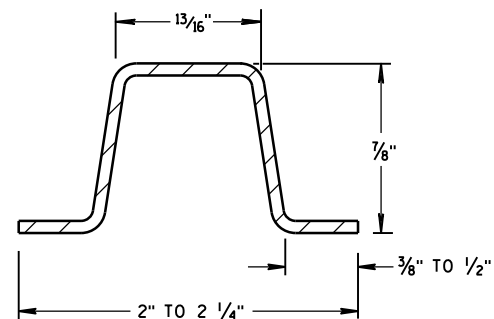
MIDWEST GUARDRAIL  
SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
June 2014 /S/ Jerry H. Zogg  
DATE ROADWAY STANDARDS ENGINEER 158 ENT  
FHWA

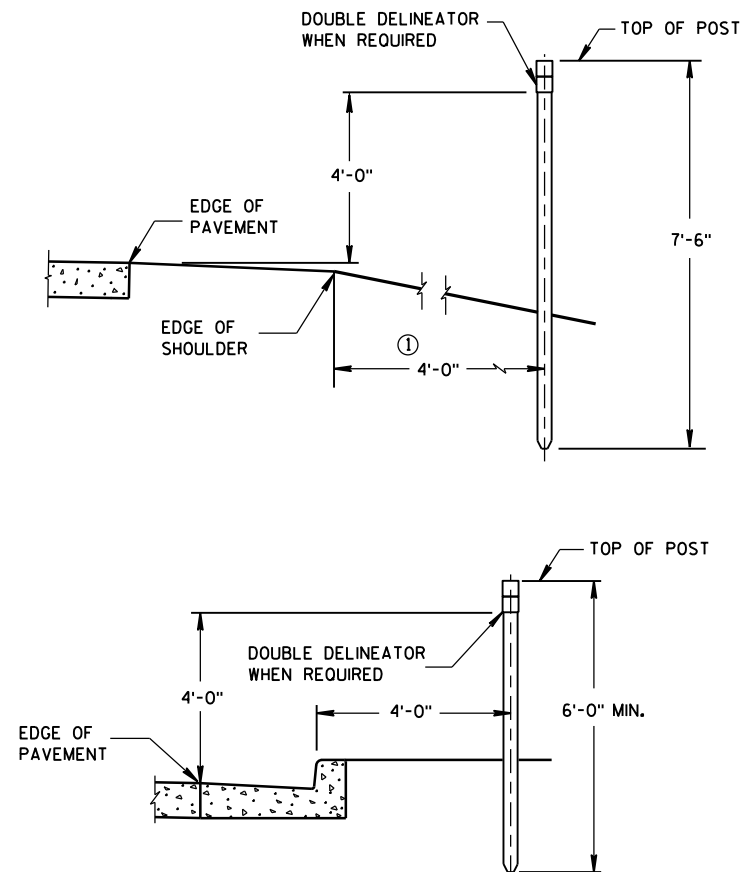


DELINEATOR POST

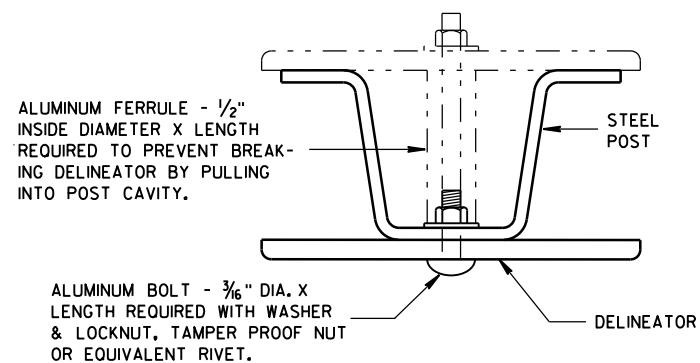


SECTION A-A

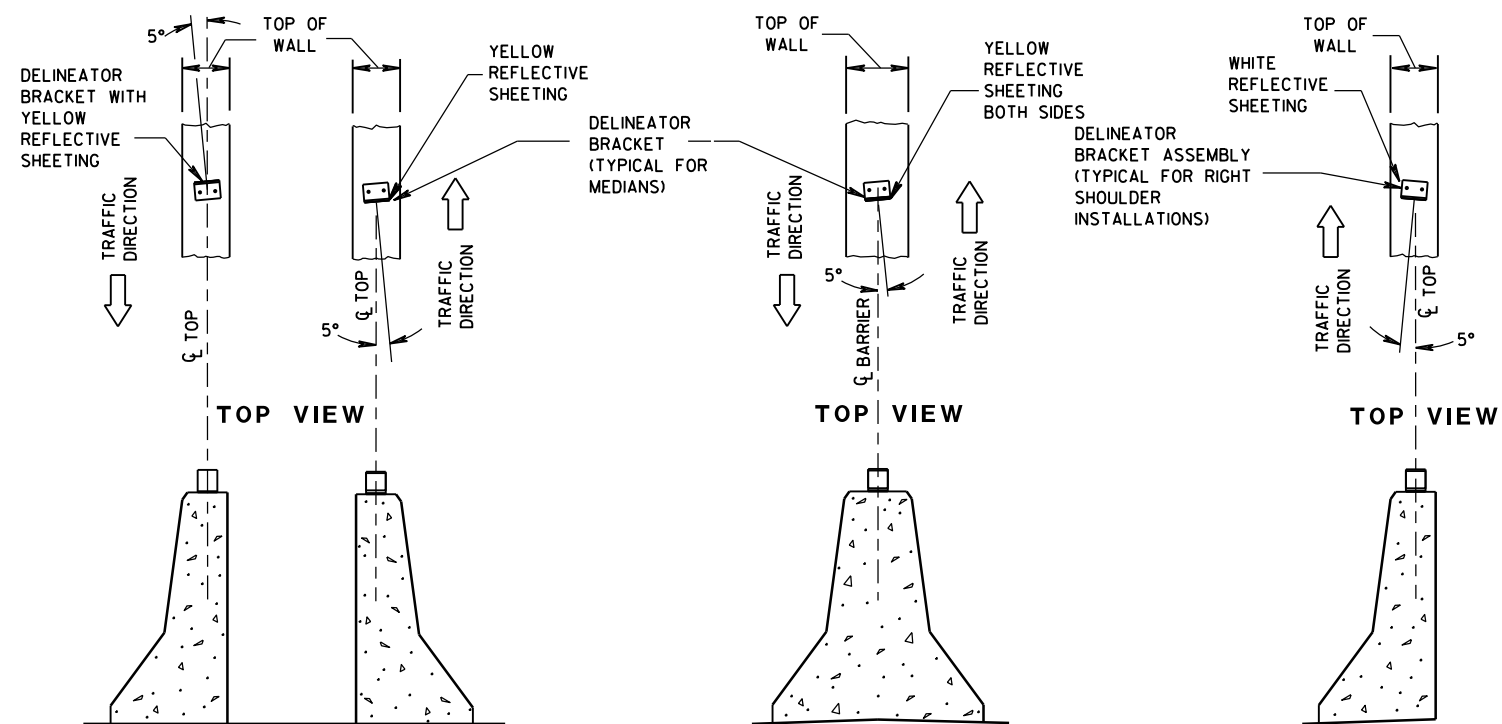
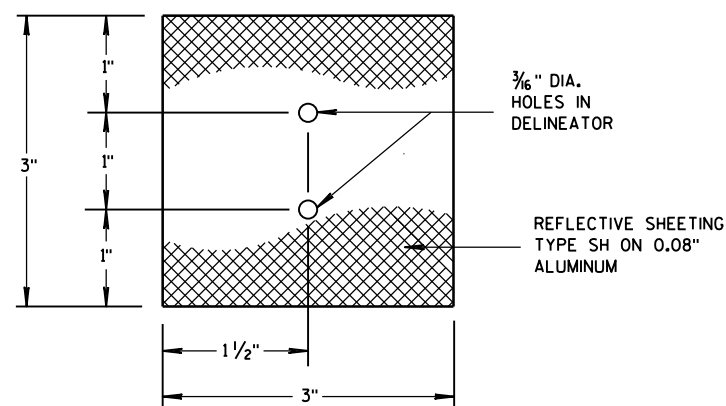
WEIGHT 1.12 LBS PER FT. ± 0.1 LB.



TYPICAL INSTALLATIONS OF DELINEATOR POSTS



MOUNTING DETAIL FOR DELINEATOR



DOUBLE BARRIERS IN MEDIAN

MEDIAN BARRIER

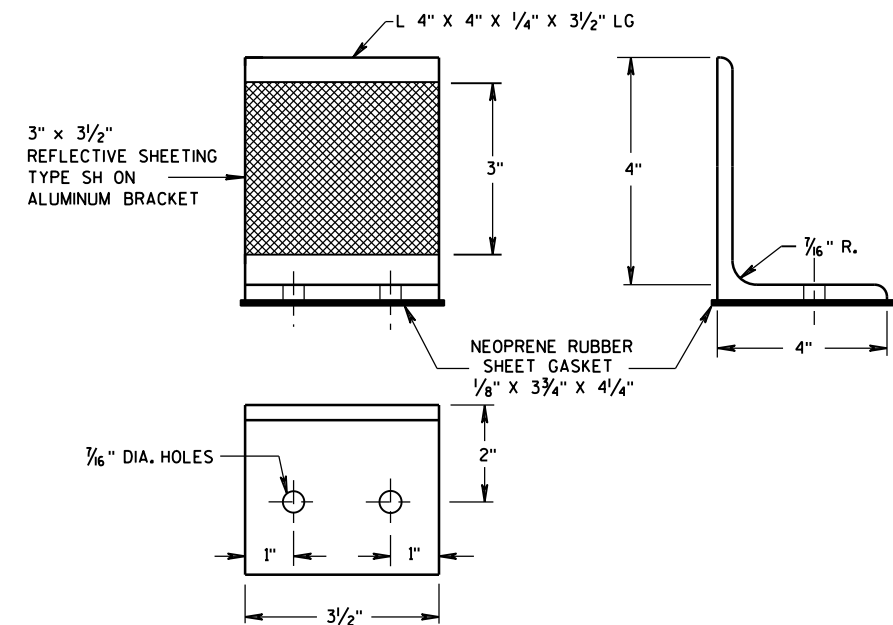
BARRIER LOCATED TO RT. OF TRAFFIC FLOW

LOCATION AND AIMING DETAILS FOR DELINEATOR BRACKETS MOUNTED ON CONCRETE BARRIERS

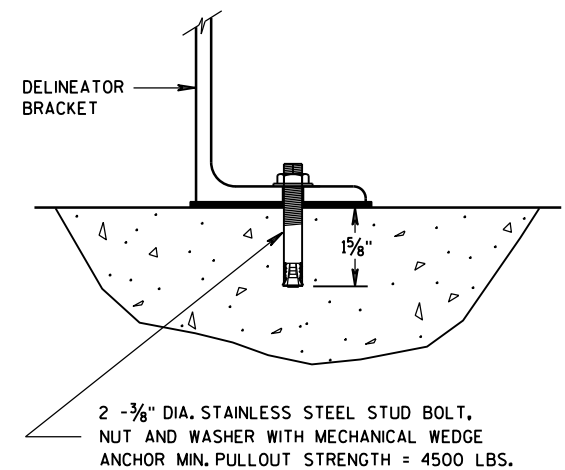
## GENERAL NOTES

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

- ① DELINEATORS SHALL BE PLACED AT A CONSTANT DISTANCE FROM THE EDGE OF THE SHOULDER FOR THE LENGTH OF THE INSTALLATION.



DELINEATOR BRACKET



DELINEATOR BRACKET MOUNTING DETAIL

DELINEATOR POST, DELINEATOR, AND DELINEATOR BRACKET WITH REFLECTIVE SHEETING

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

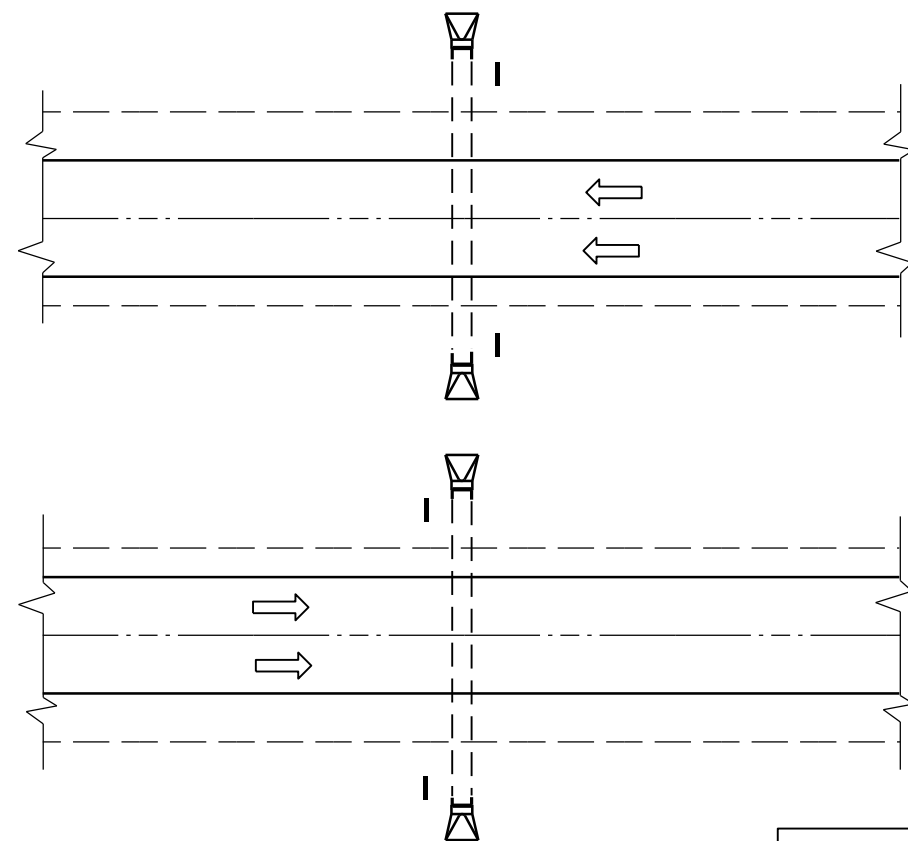
APPROVED

7/2013

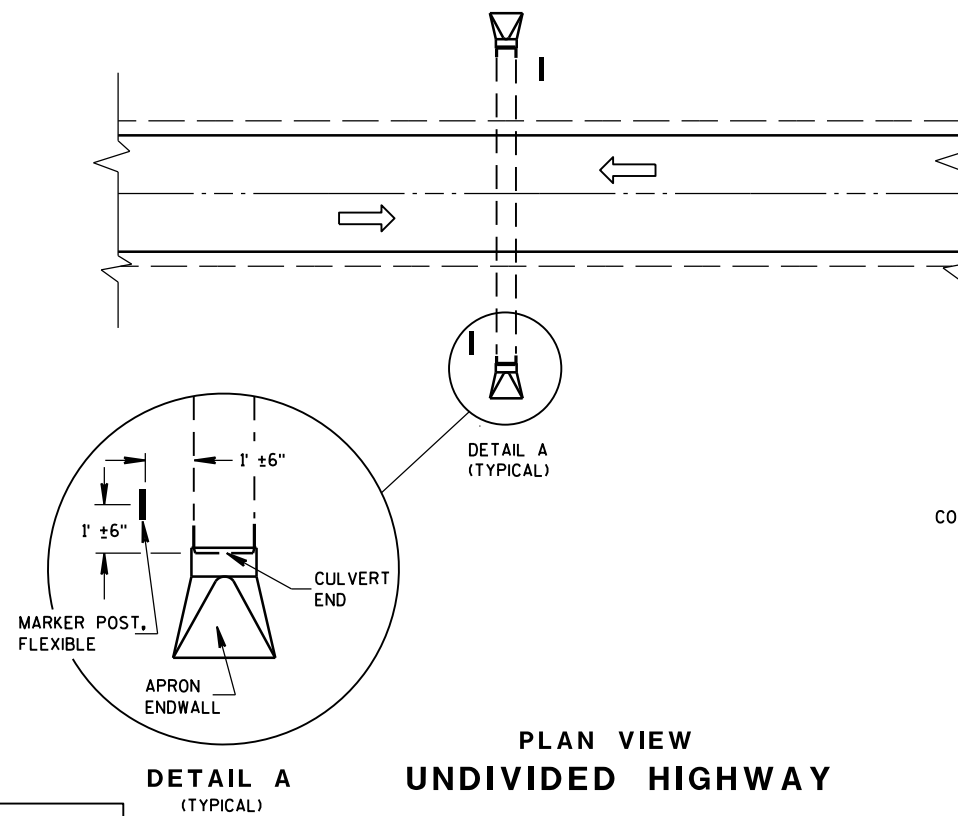
DATE

FHWA

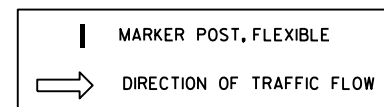
/S/ Travis Feltes  
STATE TRAFFIC E 159



PLAN VIEW  
DIVIDED HIGHWAY



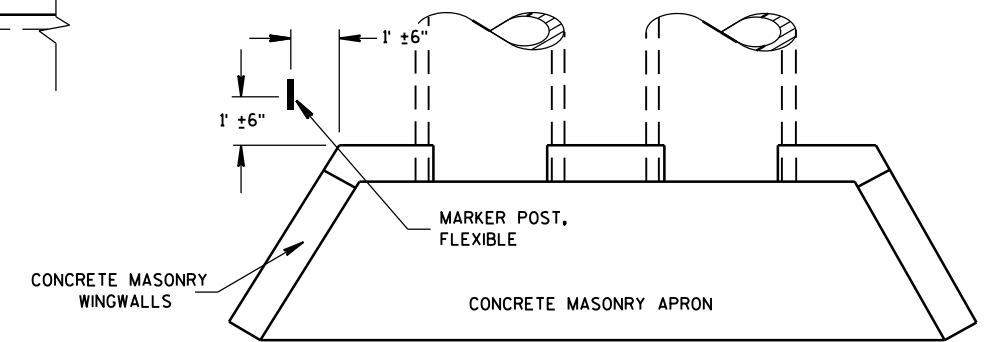
PLAN VIEW  
UNDIVIDED HIGHWAY



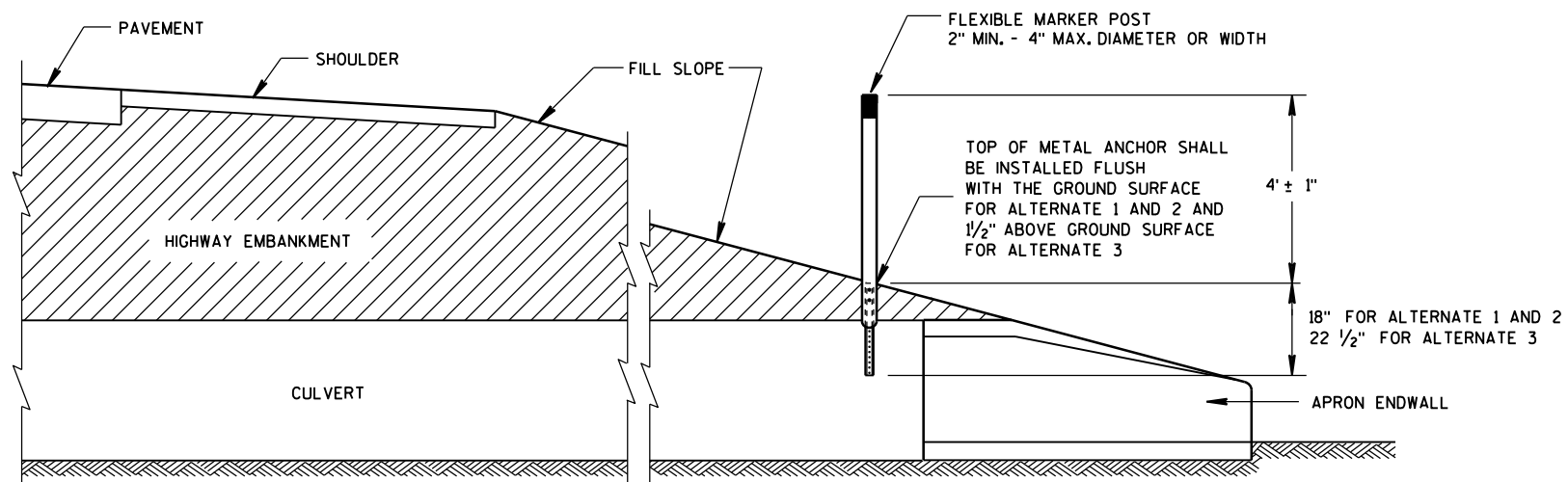
### FLEXIBLE MARKER POST LOCATION

### GENERAL NOTES

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



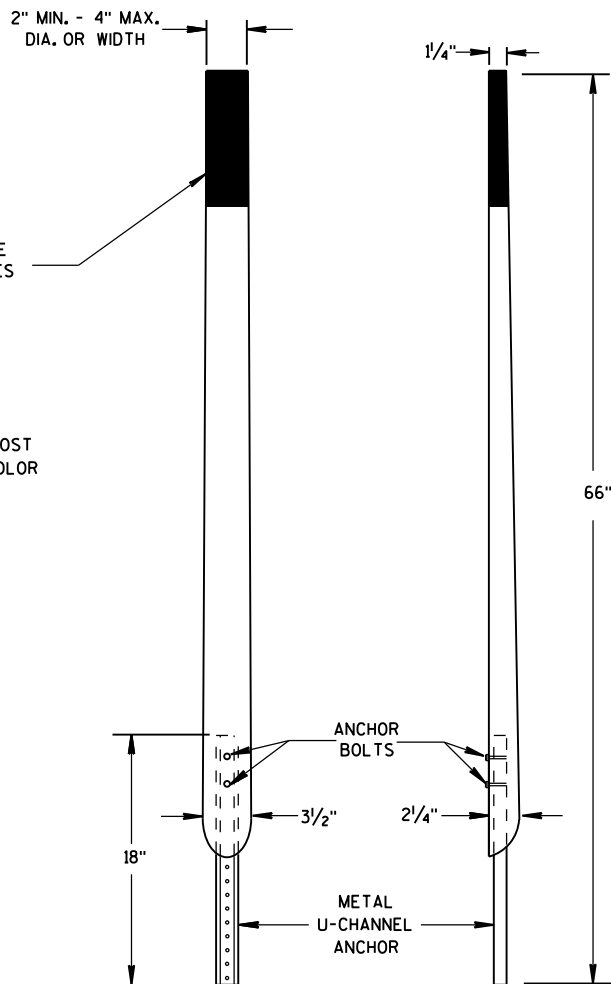
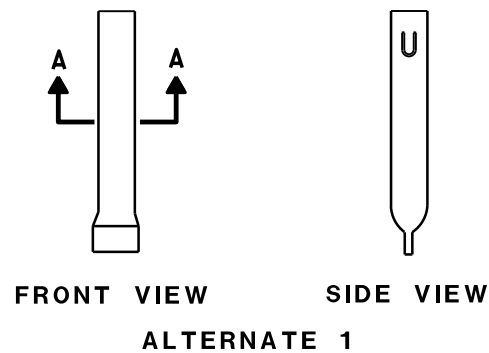
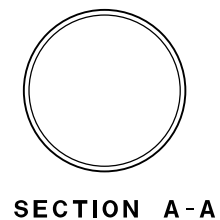
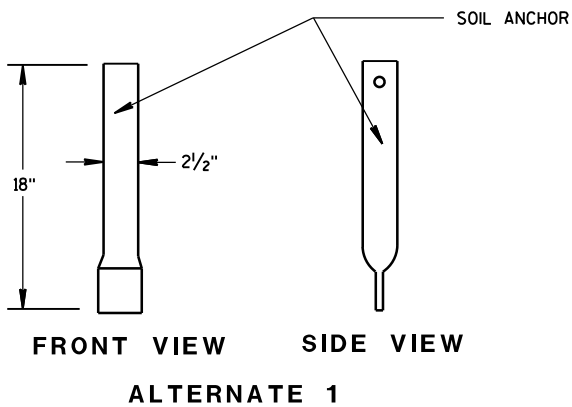
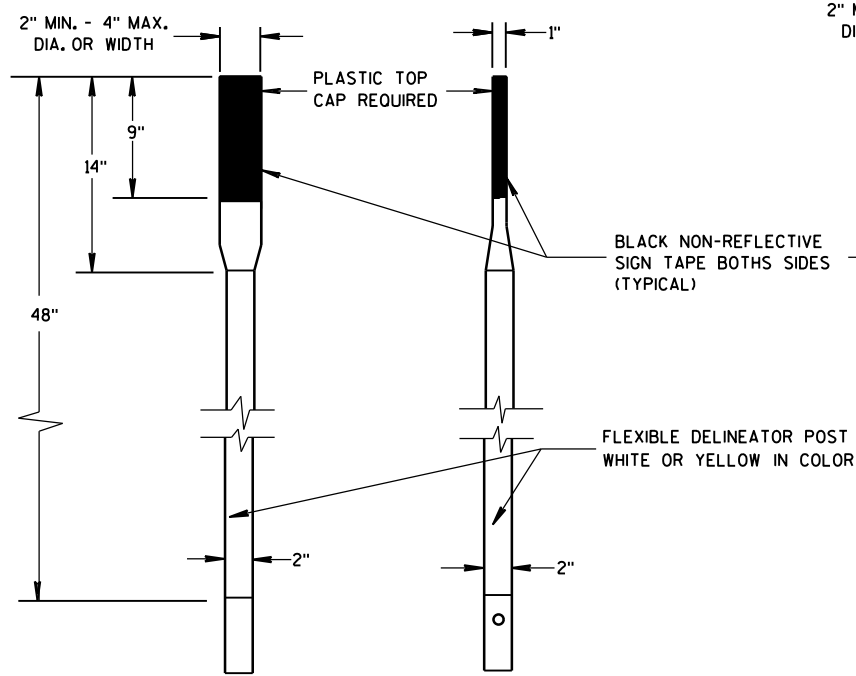
PLAN VIEW  
CONCRETE MASONRY ENDWALLS FOR  
CULVERT PIPE AND PIPE ARCH



CROSS SECTION  
FLEXIBLE MARKER POST

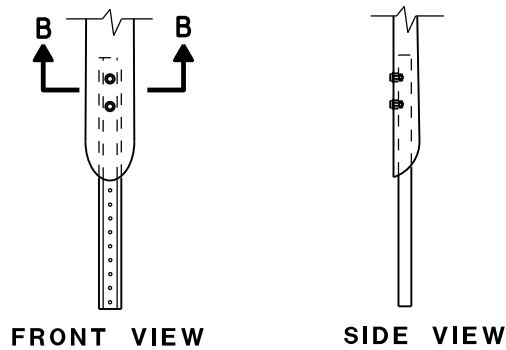
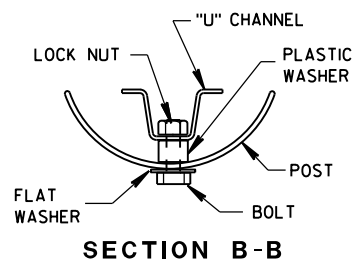
FLEXIBLE MARKER POST  
FOR CULVERT END

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 160

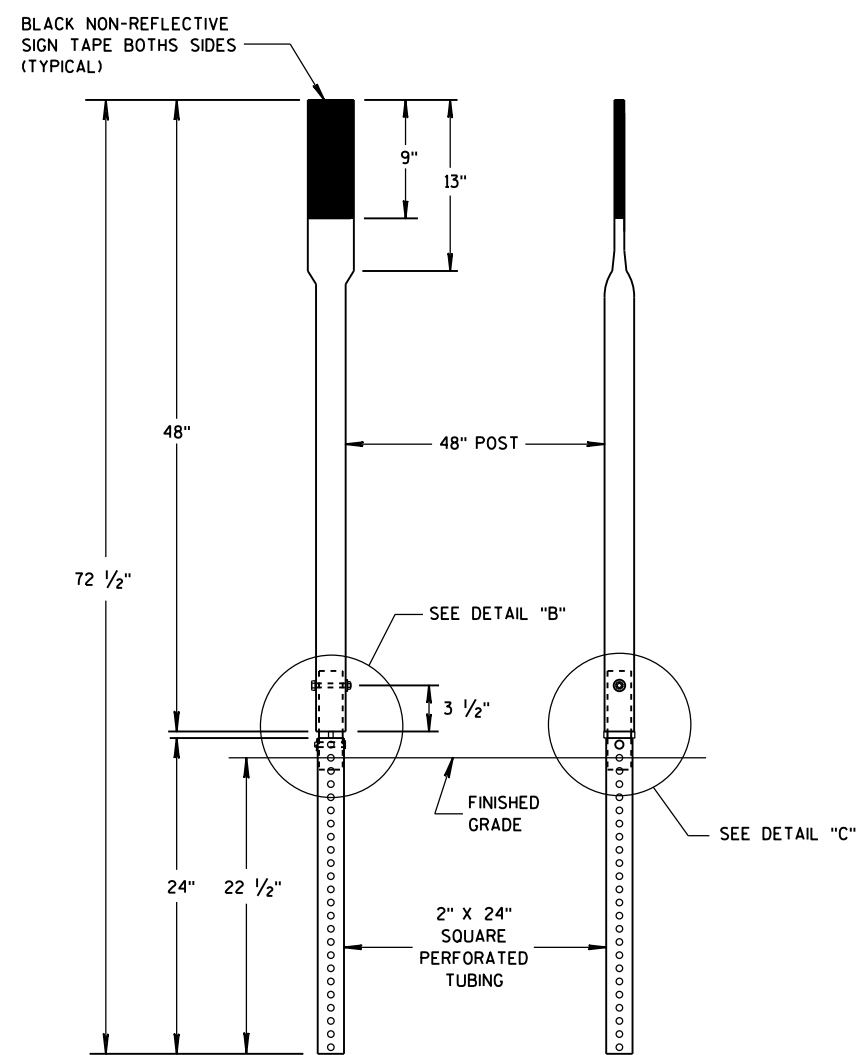


FRONT VIEW SIDE VIEW  
ALTERNATE 2

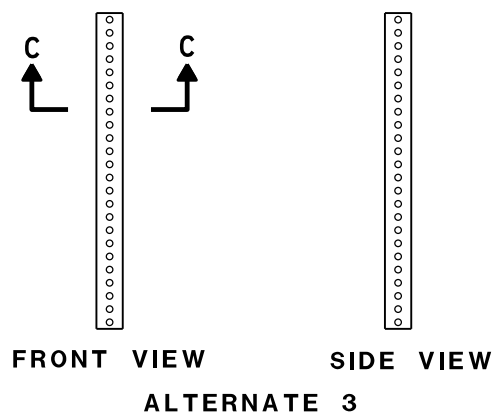
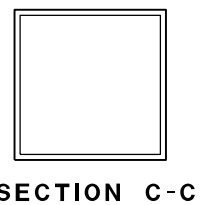
FLEXIBLE MARKER POSTS



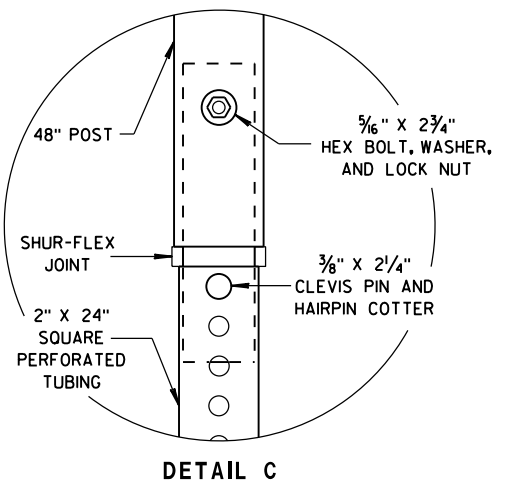
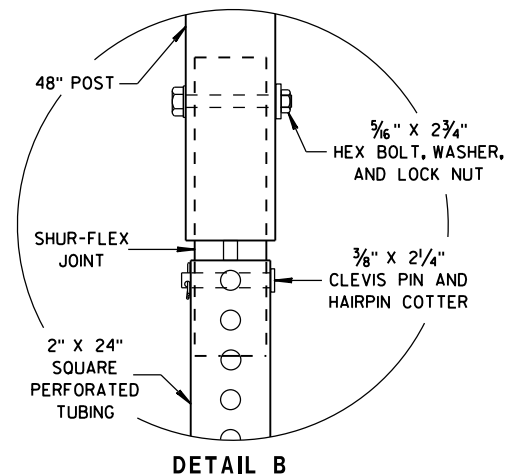
FRONT VIEW SIDE VIEW  
ALTERNATE 2  
FLEXIBLE MARKER POST ANCHORS



FRONT VIEW SIDE VIEW  
ALTERNATE 3



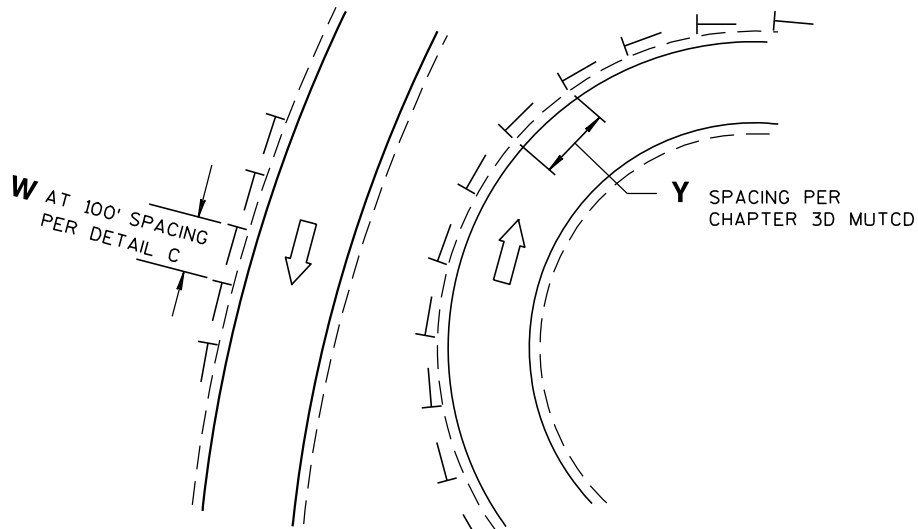
FRONT VIEW SIDE VIEW  
ALTERNATE 3



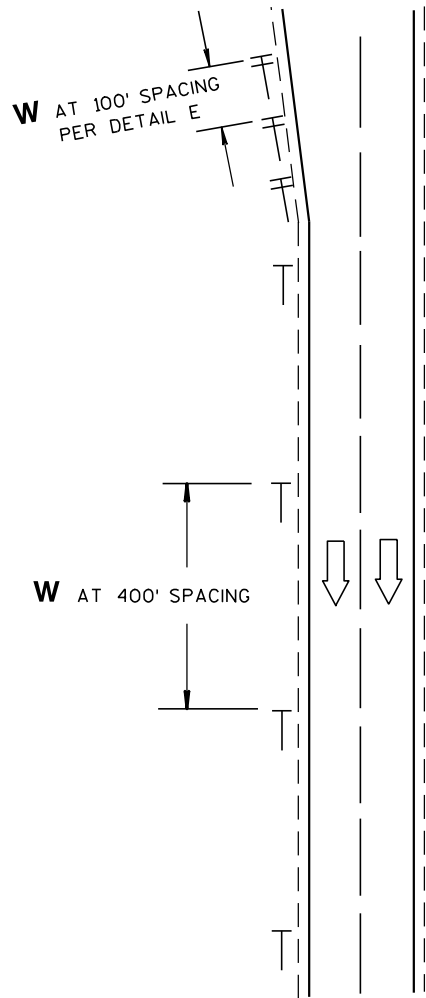
FLEXIBLE MARKER POST  
FOR CULVERT END

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

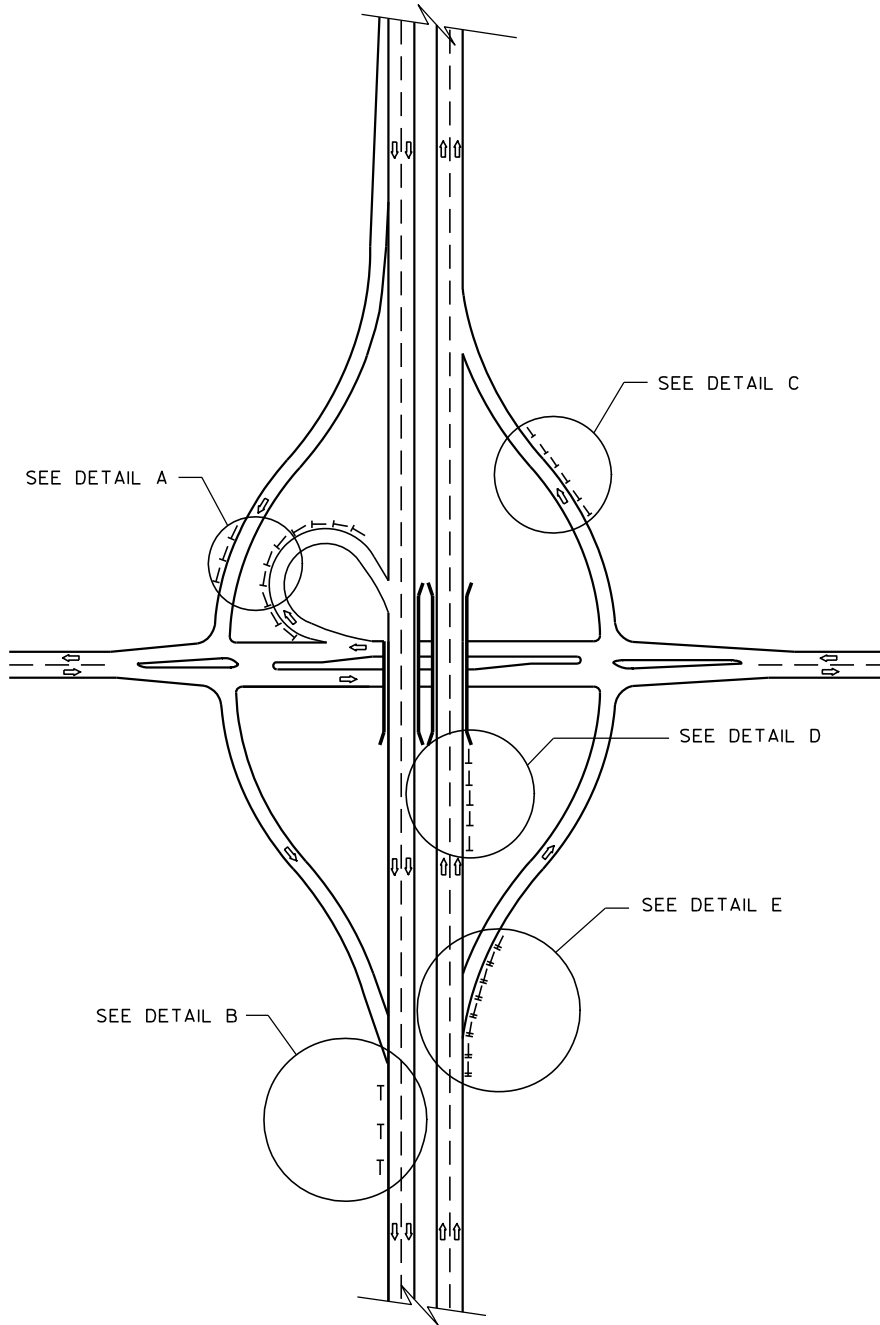
APPROVED  
10/1/2012 /S/ Travis Feltes  
DATE STATE TRAFFIC ENGINEER 161 IGN  
FHWA



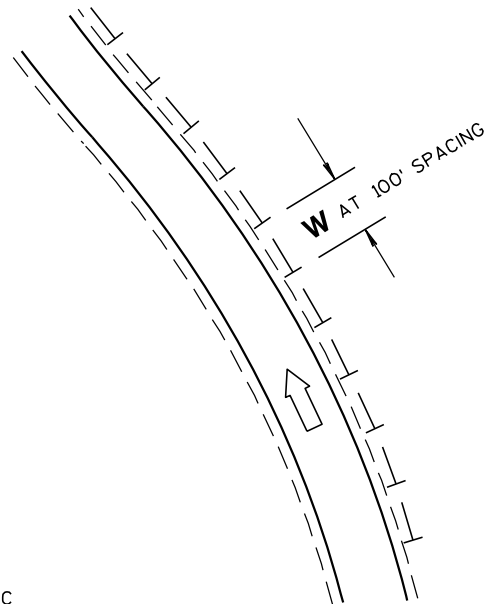
DETAIL A  
DELINEATOR LAYOUT AT CURVED RAMP



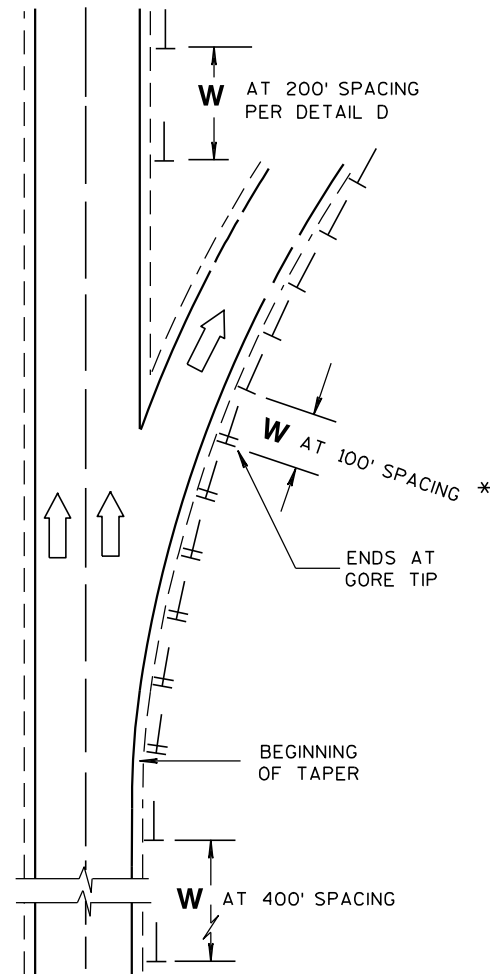
DETAIL B  
DELINEATOR LAYOUT  
ALONG MAINLINE



DELINEATOR LAYOUT



DETAIL C  
DELINEATOR LAYOUT ALONG RAMP



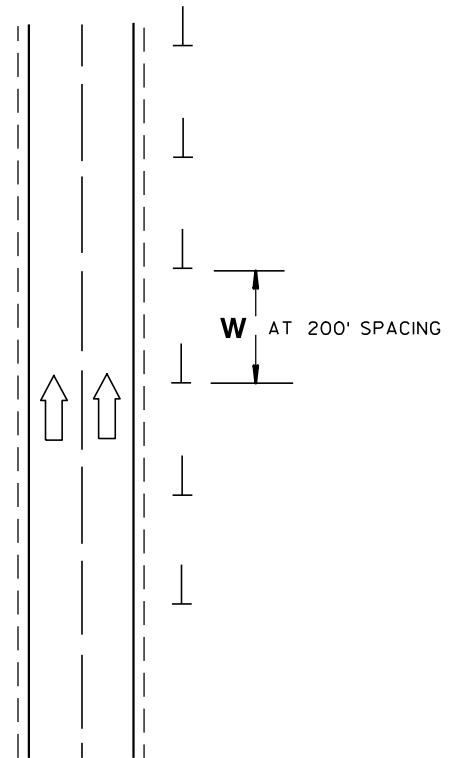
DETAIL E  
DELINEATOR LAYOUT FOR ACCELERATION  
- DECELERATION LANES AND TAPERS AT RAMPS

GENERAL NOTES

\* USE DOUBLE DELINEATOR ALONG ACCELERATION-DECELERATION LANES AND TAPERS.  
USE SINGLE DELINEATOR WHEN RAMP PAVEMENT IS FULL WIDTH.

LEGEND

- DIRECTION OF TRAFFIC FLOW
- SINGLE DELINEATOR
- DOUBLE DELINEATOR
- W** WHITE
- Y** YELLOW



DETAIL D  
DELINEATOR LAYOUT  
BETWEEN INTERCHANGE RAMPS

DELINEATOR LAYOUT

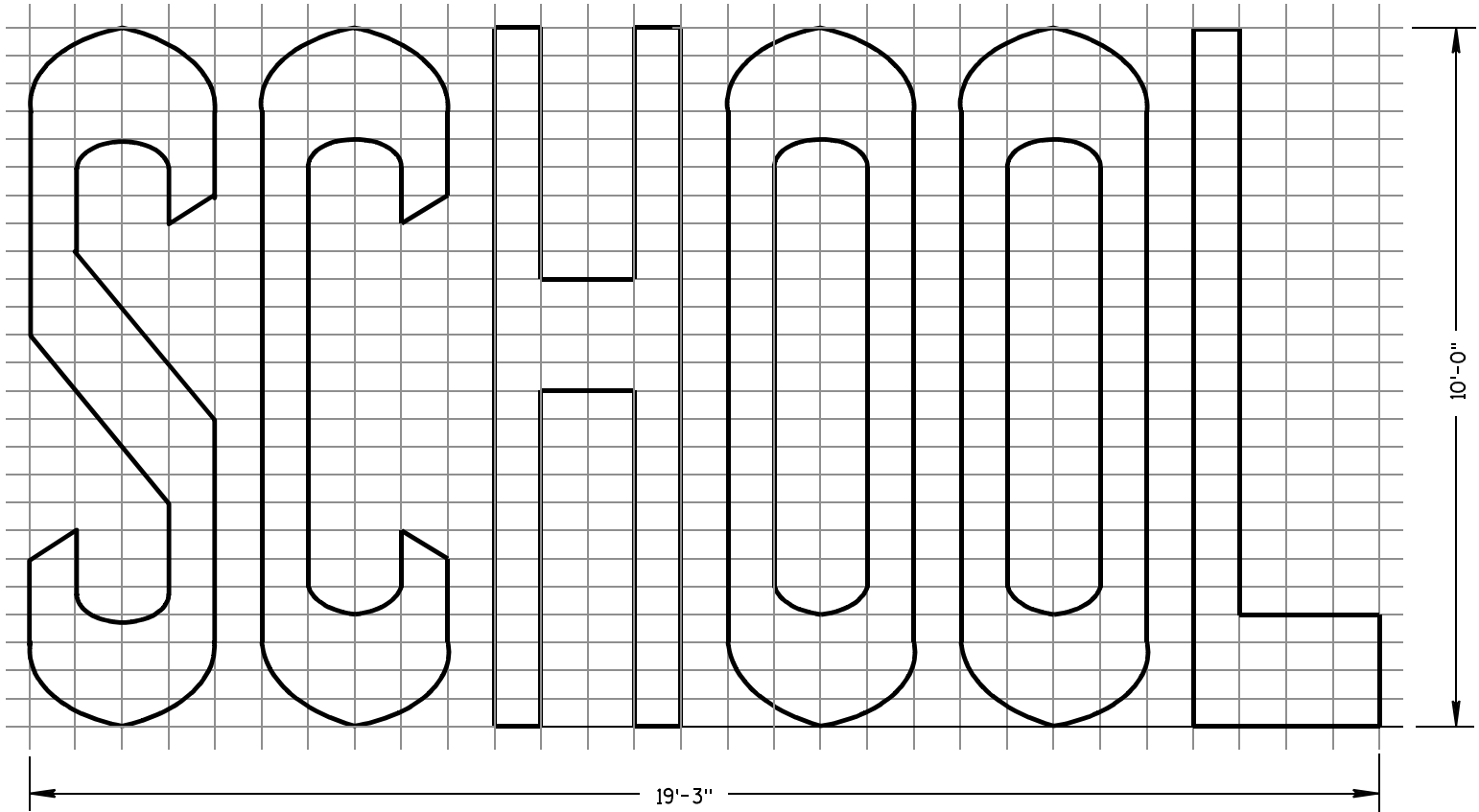
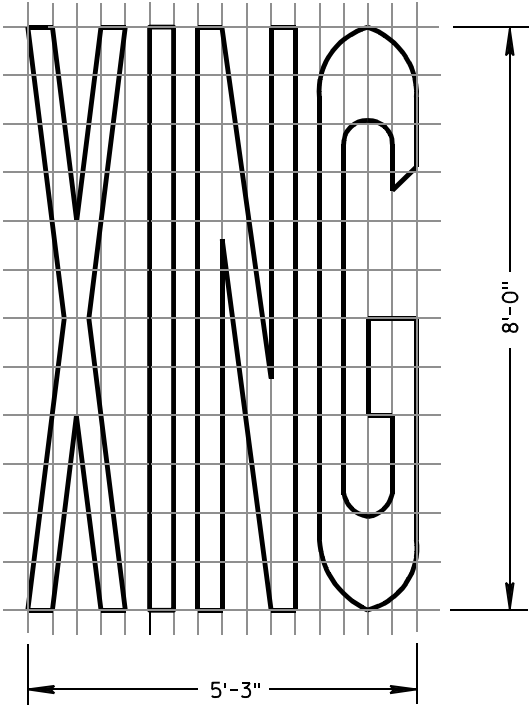
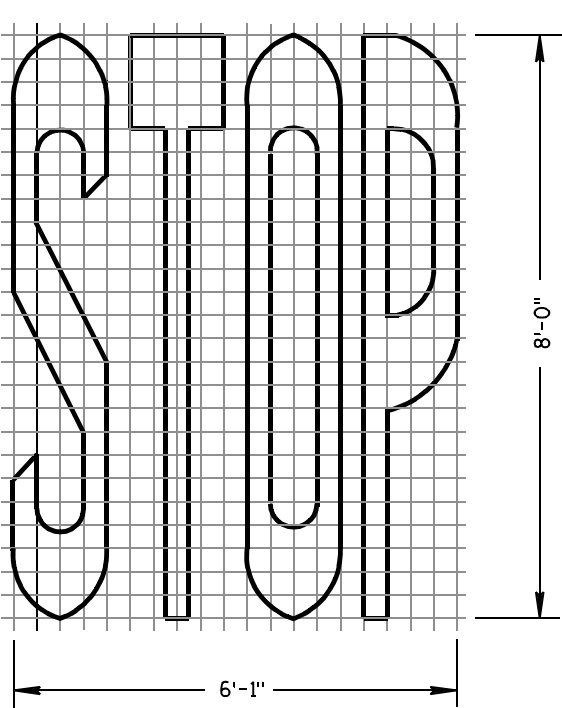
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
2/5/09 /S/ Thomas N. Nothmann  
DATE STATE TRAFFIC ENGINEER 162 SIGN  
FHWA

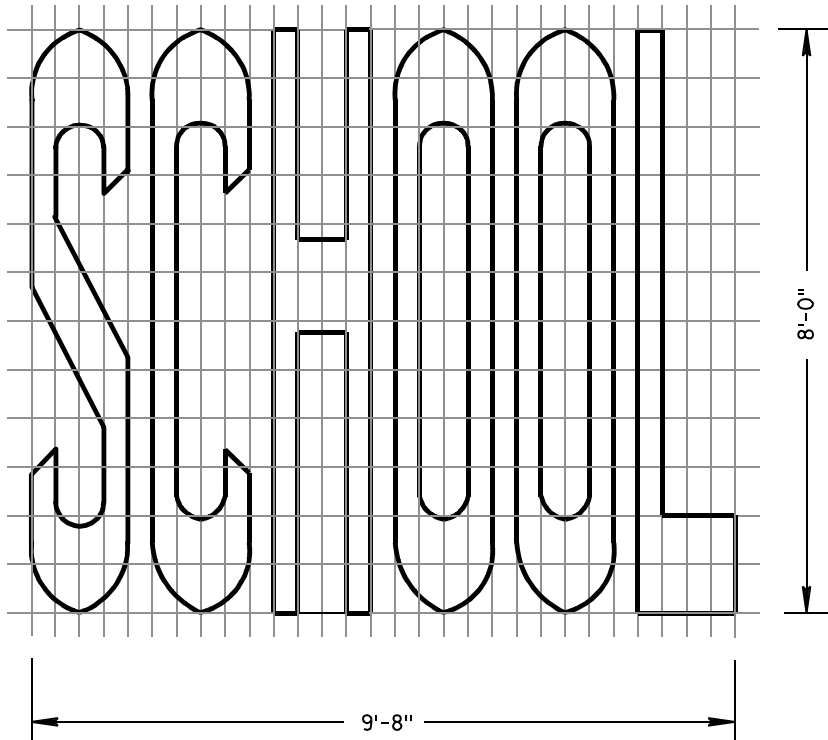
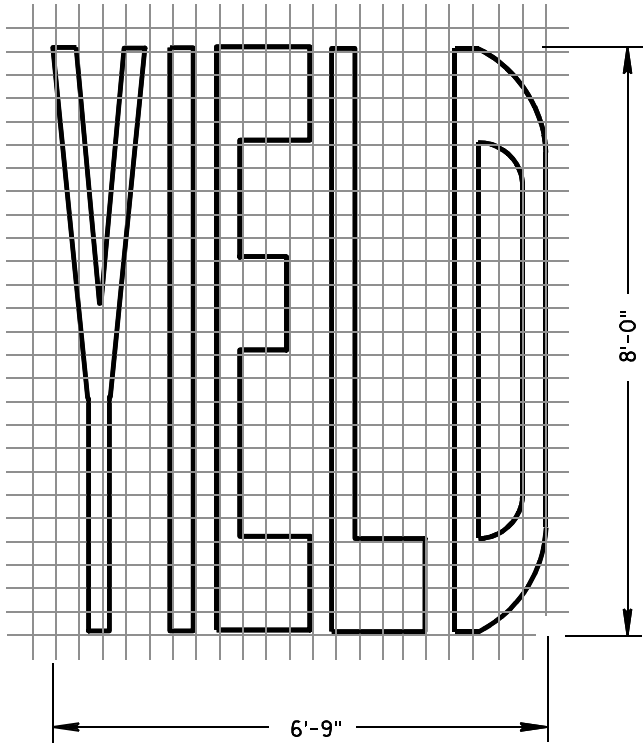
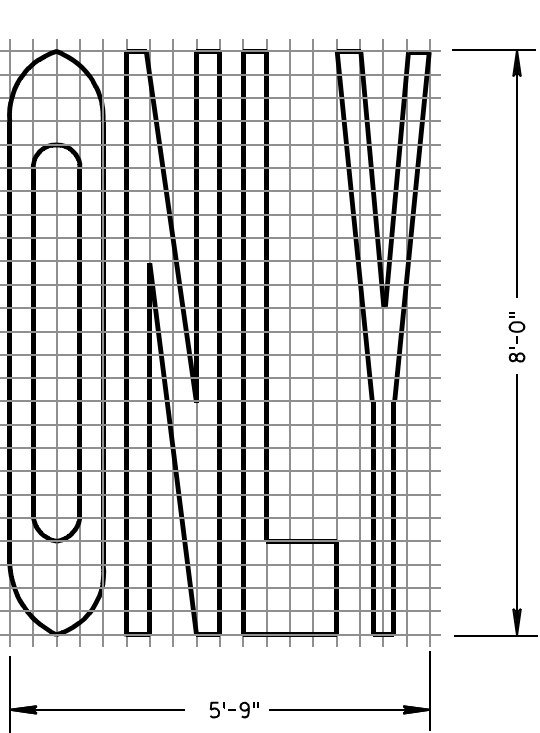
GENERAL NOTES

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

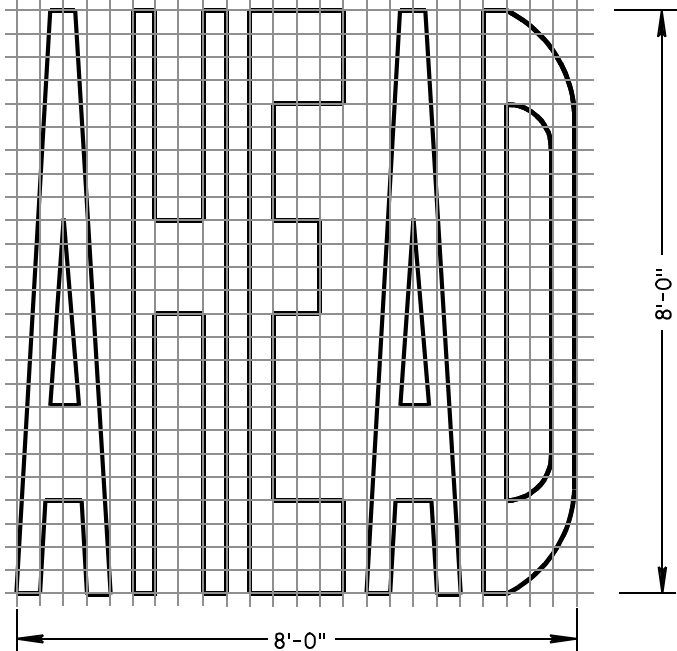
ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES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



TWO-LANE



SINGLE-LANE



PAVEMENT MARKING WORDS

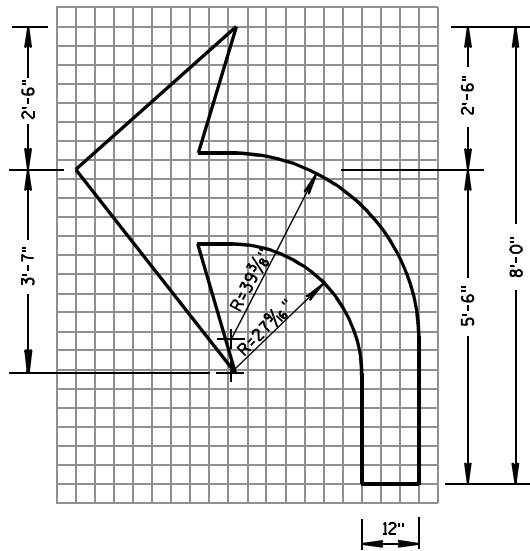
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

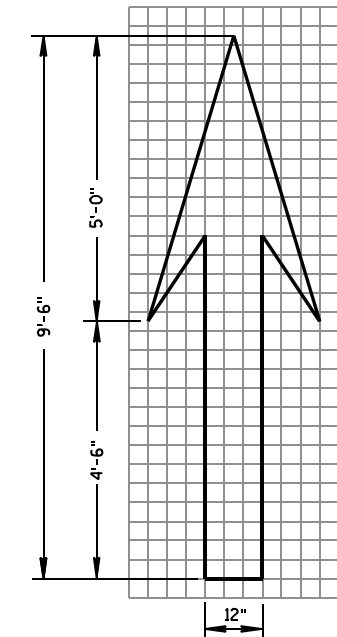
7-1-11  
DATE

/S/ Thomas N. Nothmann  
STATE TRAFFIC ENGINEER 163 IGN

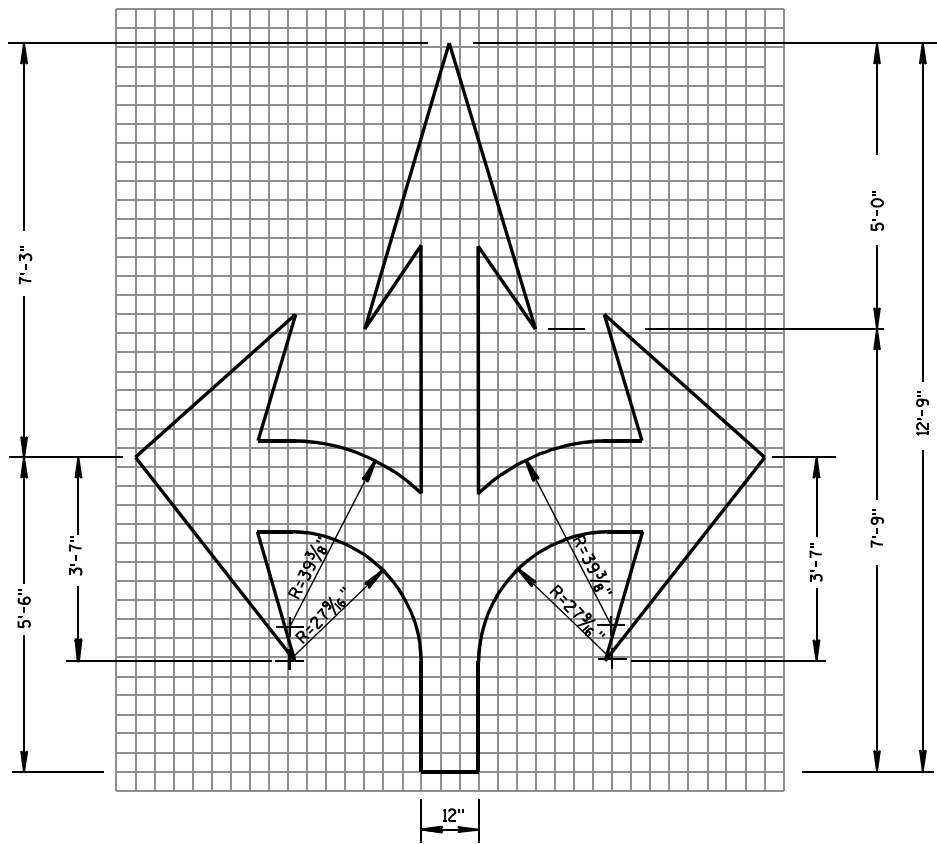
FHWA



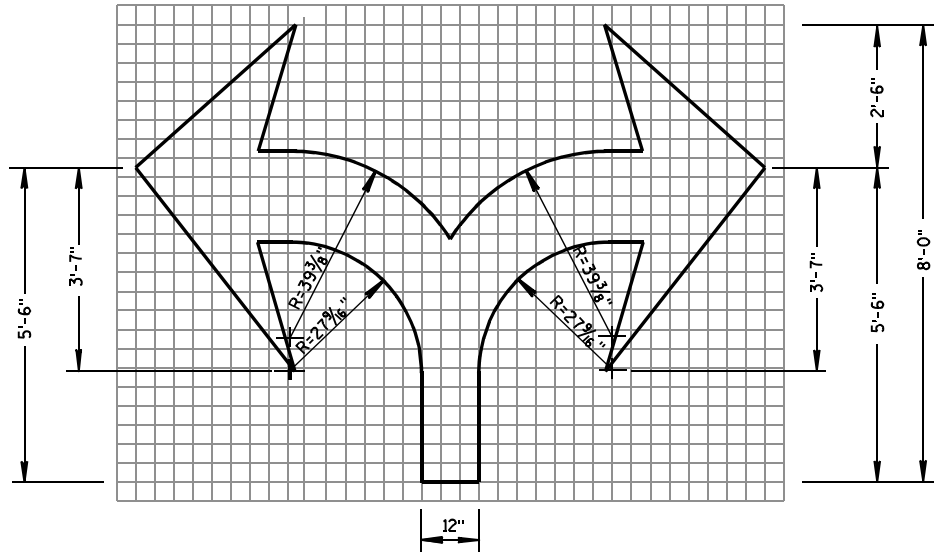
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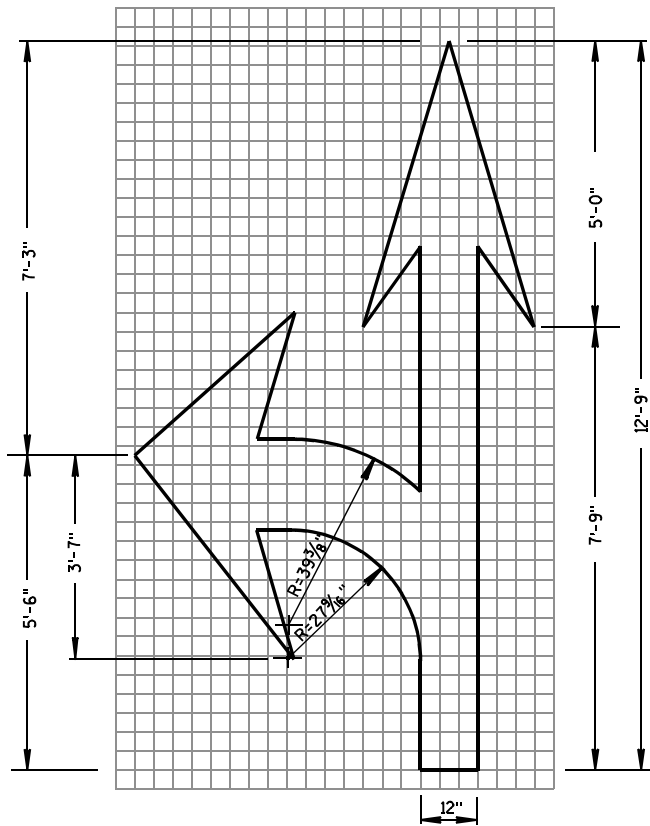
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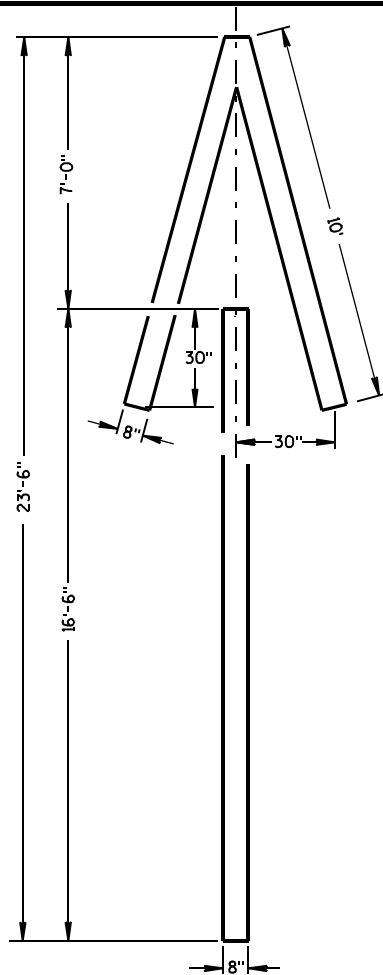
TYPE 6



TYPE 7



TYPE 3

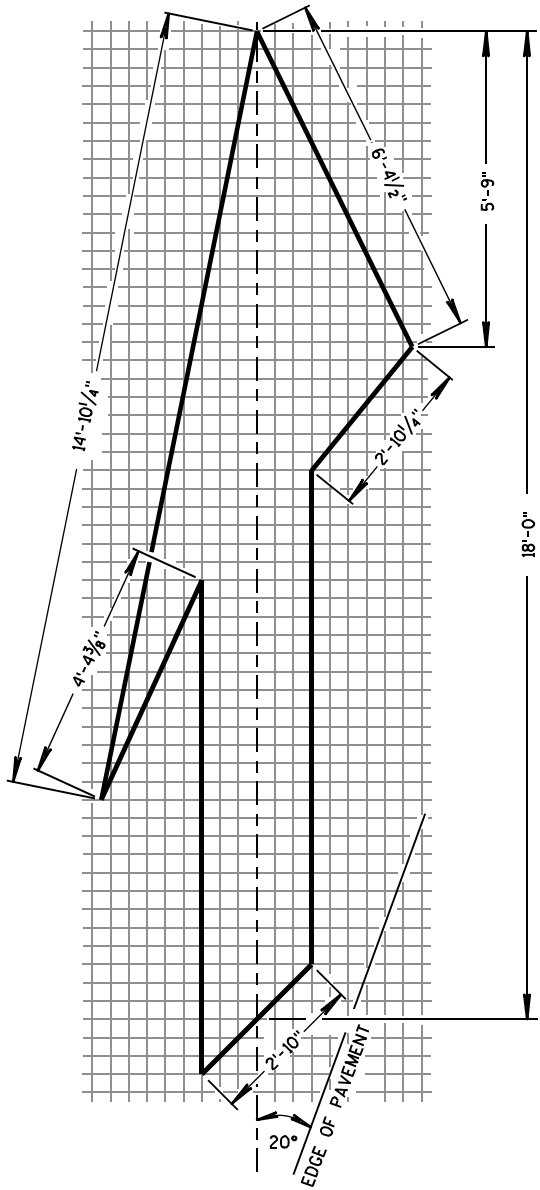


TYPE 4

GENERAL NOTES

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

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

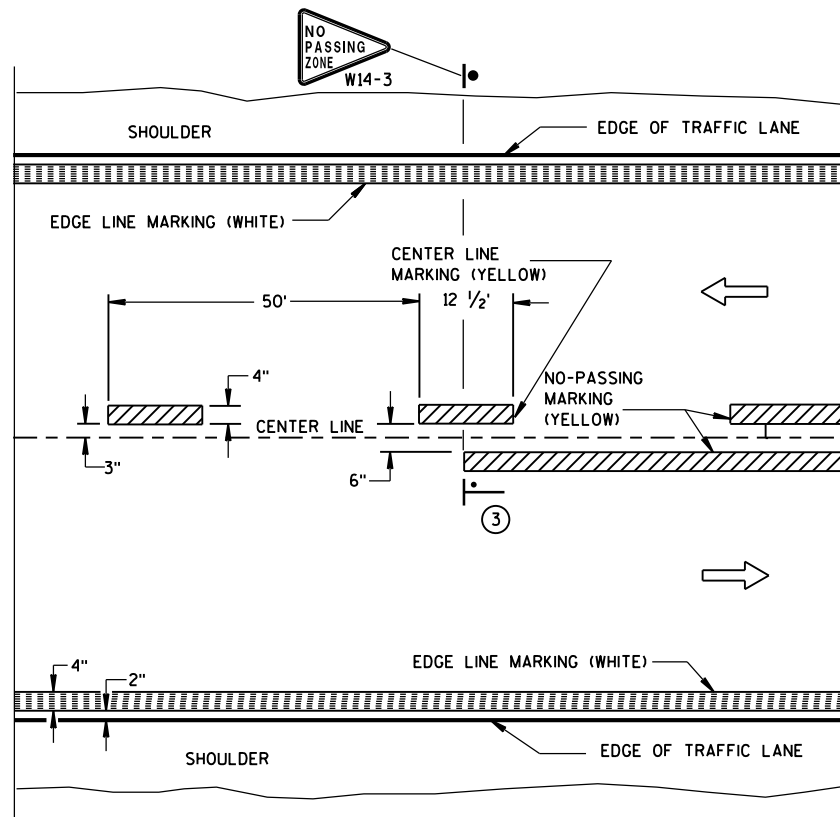


TYPE 5 LANE DROP ARROW

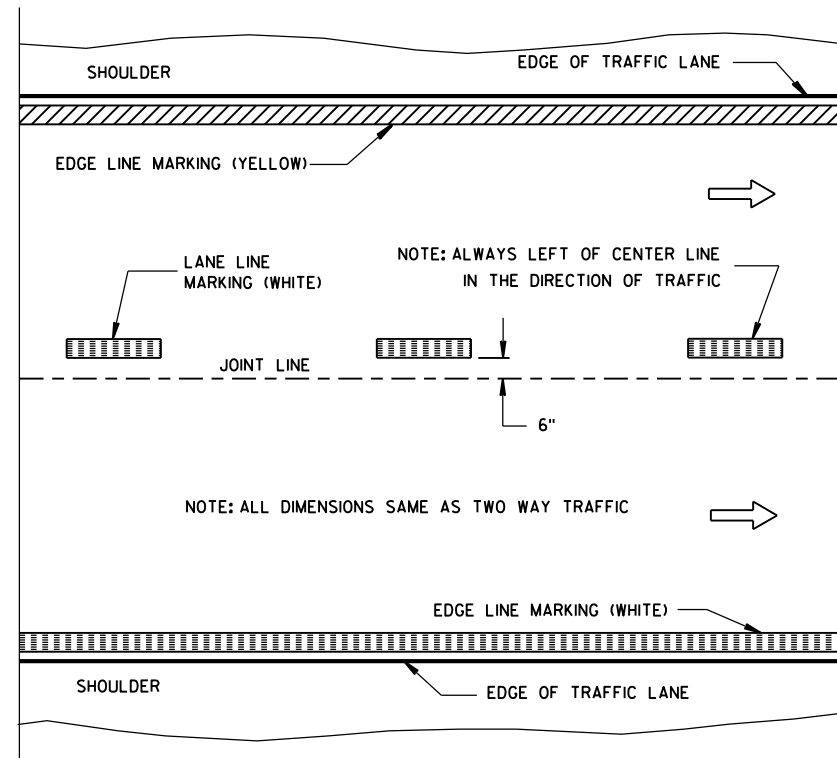
PAVEMENT MARKING ARROWS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
7/1/11 DATE /S/ Thomas N. Nathahn  
STATE TRAFFIC ENGINEER 164 SIGN  
FHWA

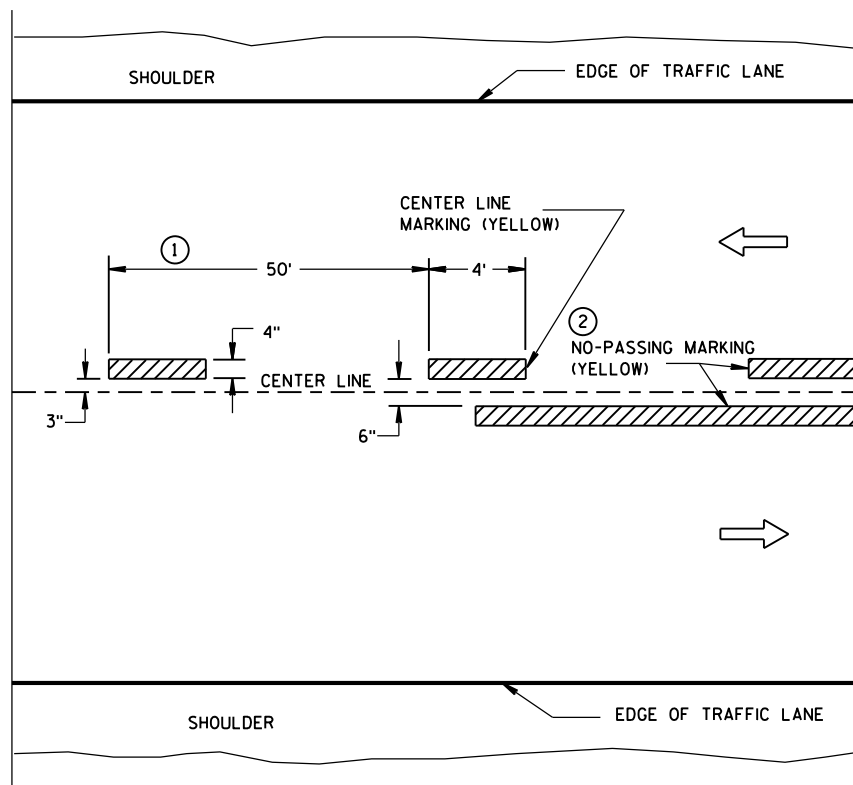


TWO WAY TRAFFIC

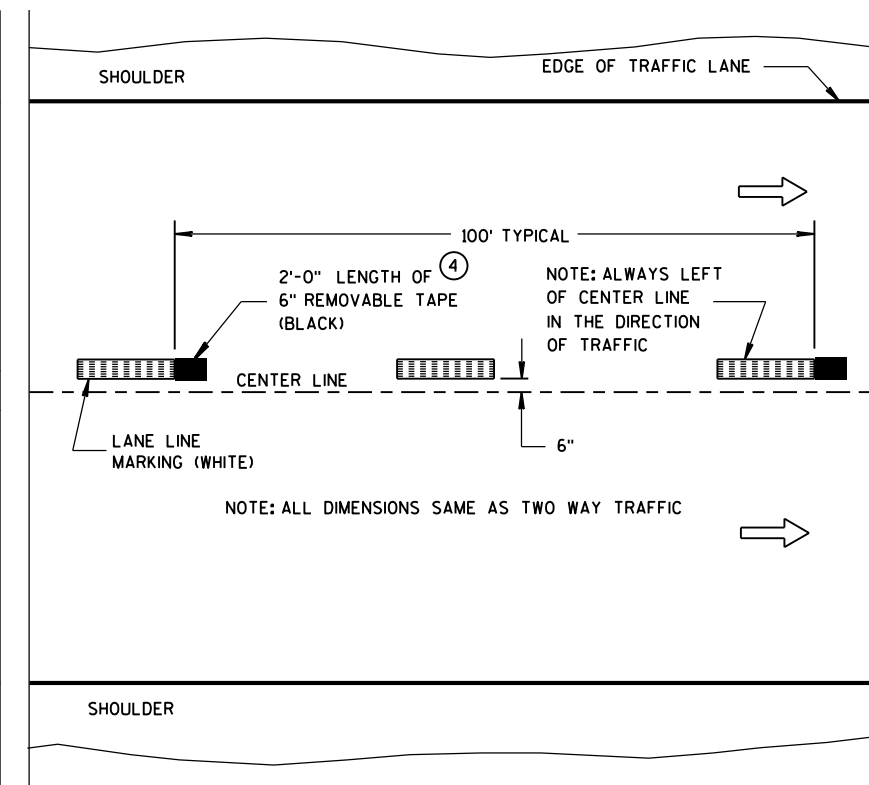


ONE WAY TRAFFIC

## PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

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

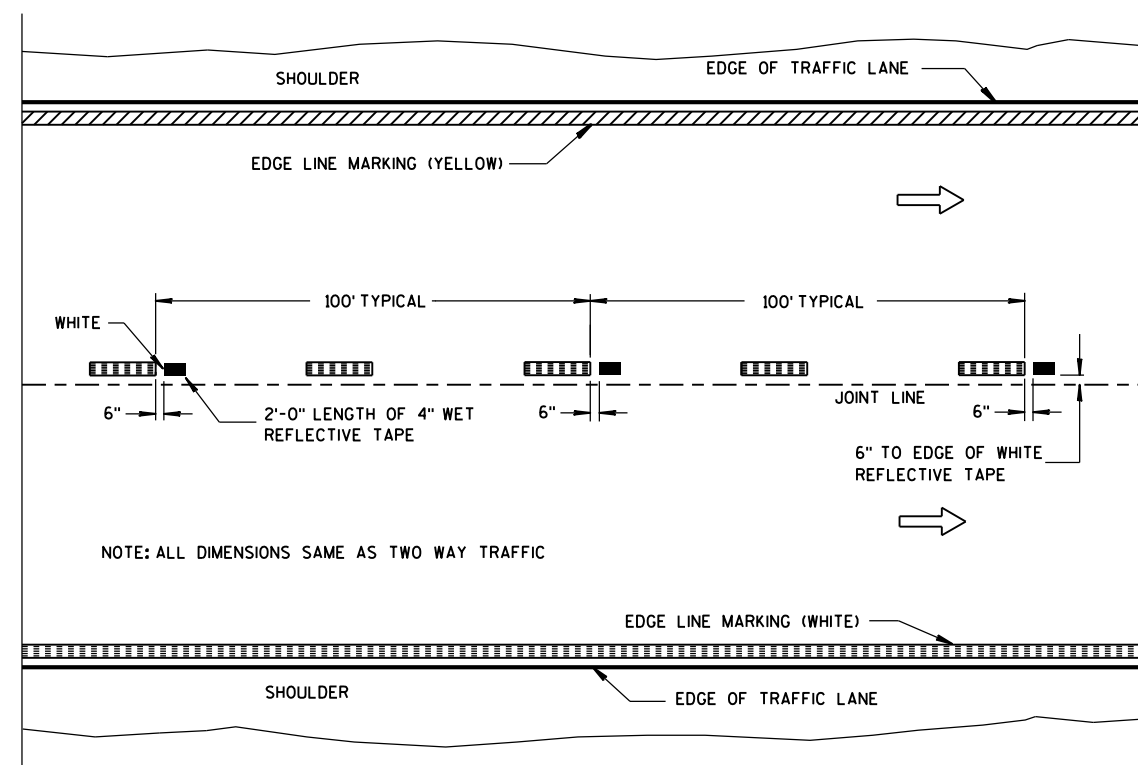
## GENERAL NOTES

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

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

## NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL



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

## LEGEND

- "T" MARKING
- POST MOUNTED SIGN

PAVEMENT MARKING  
(MAINLINE)

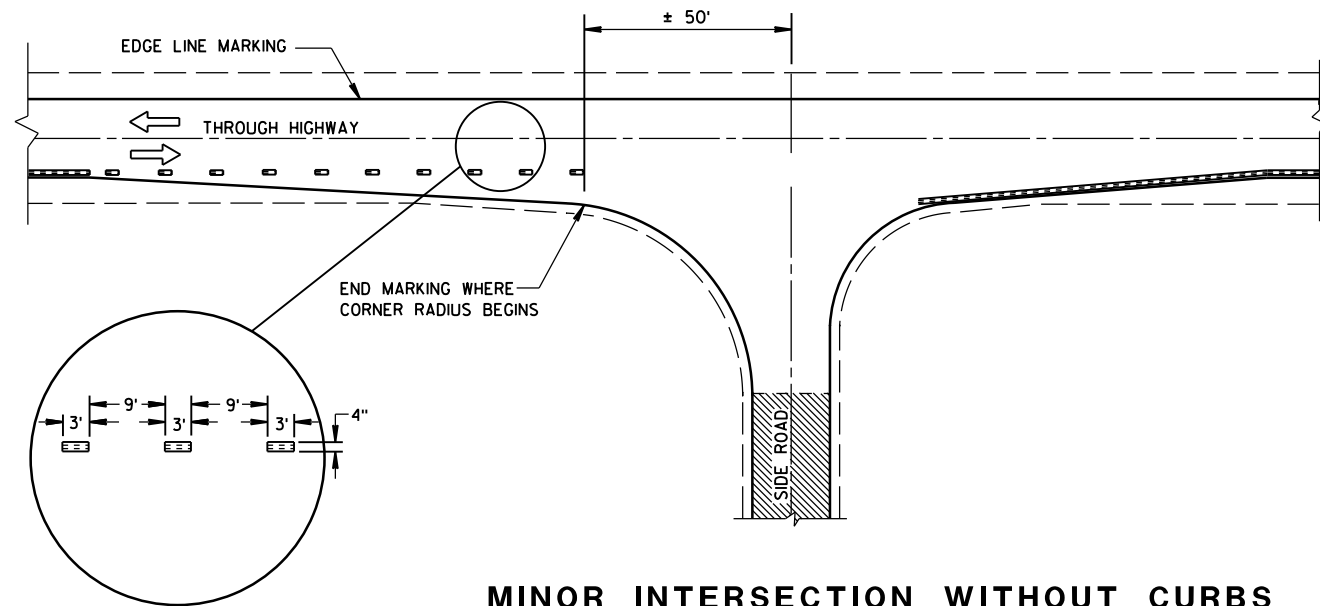
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

5-13-2013  
DATE

FHWA

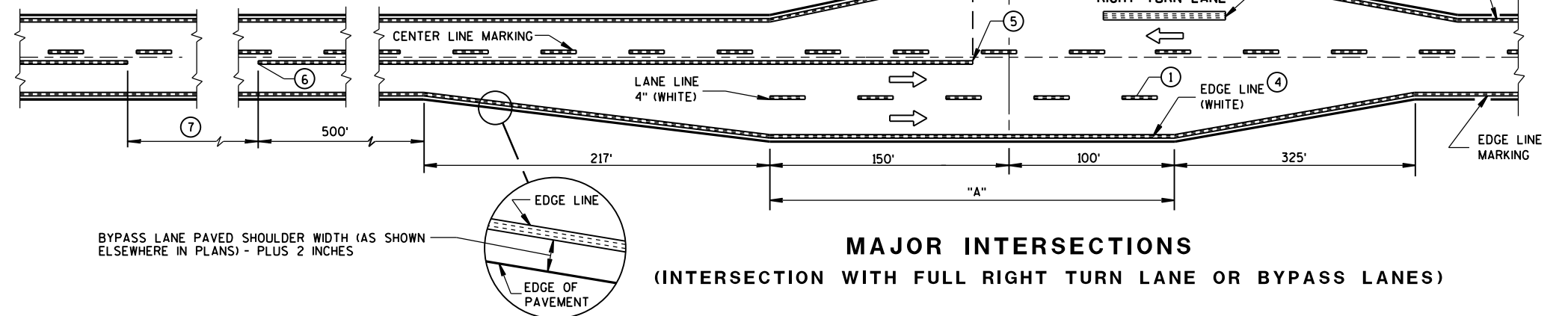
/S/ Travis Feltes  
STATE TRAFFIC E 165



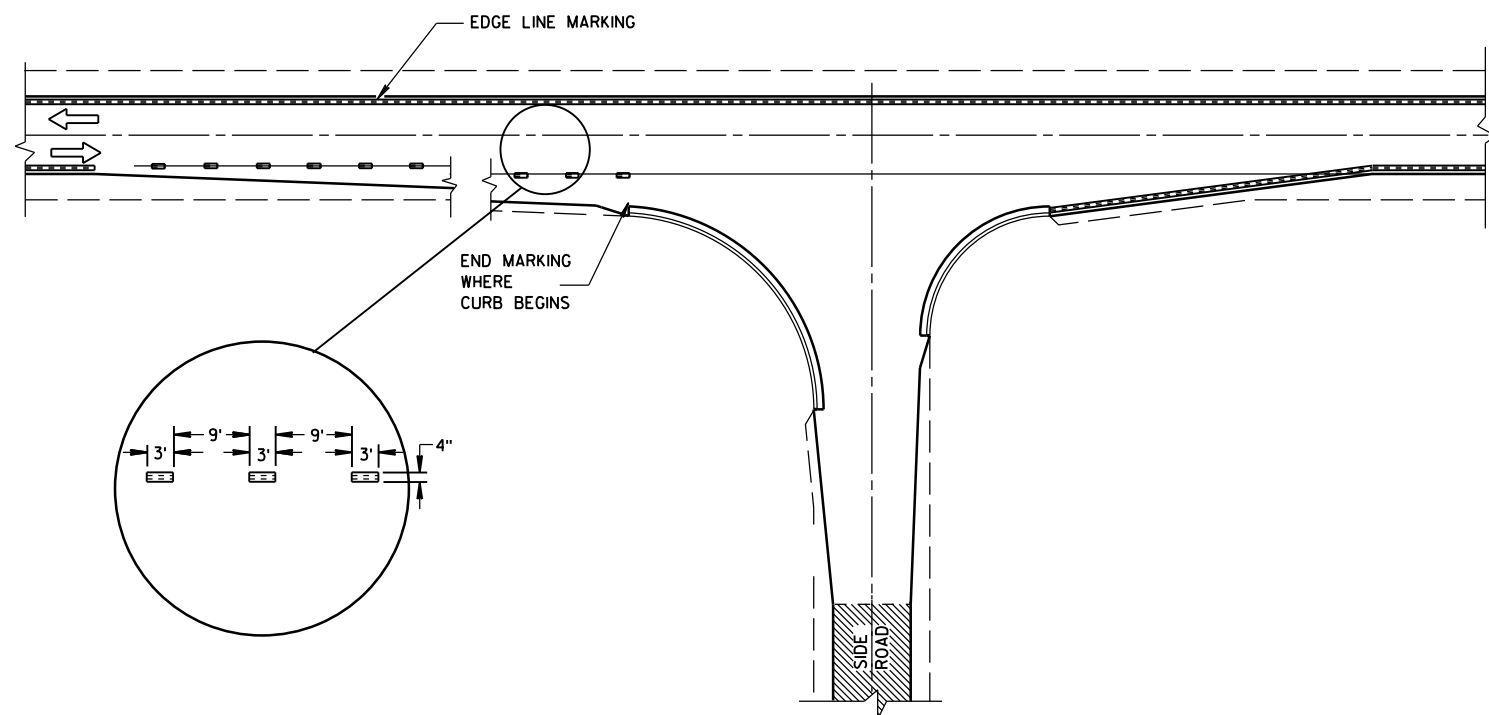
**MINOR INTERSECTION WITHOUT CURBS**

⑦

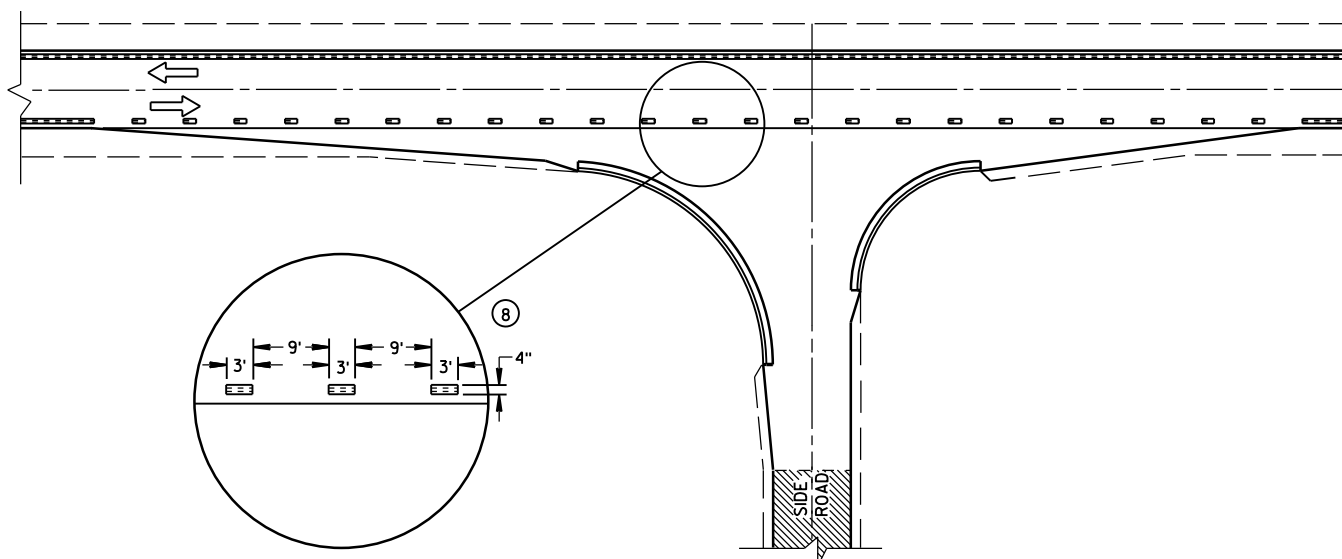
| POSTED SPEED (MPH) | MINIMUM DISTANCE BETWEEN ZONES (FEET) |
|--------------------|---------------------------------------|
| 25 - 30            | 528                                   |
| 35 - 40            | 528                                   |
| 45 - 50            | 686                                   |
| 55                 | 792                                   |



**MAJOR INTERSECTIONS**  
(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANES)



**MINOR INTERSECTION WITH CURBS**  
(TYPICAL MARKING)



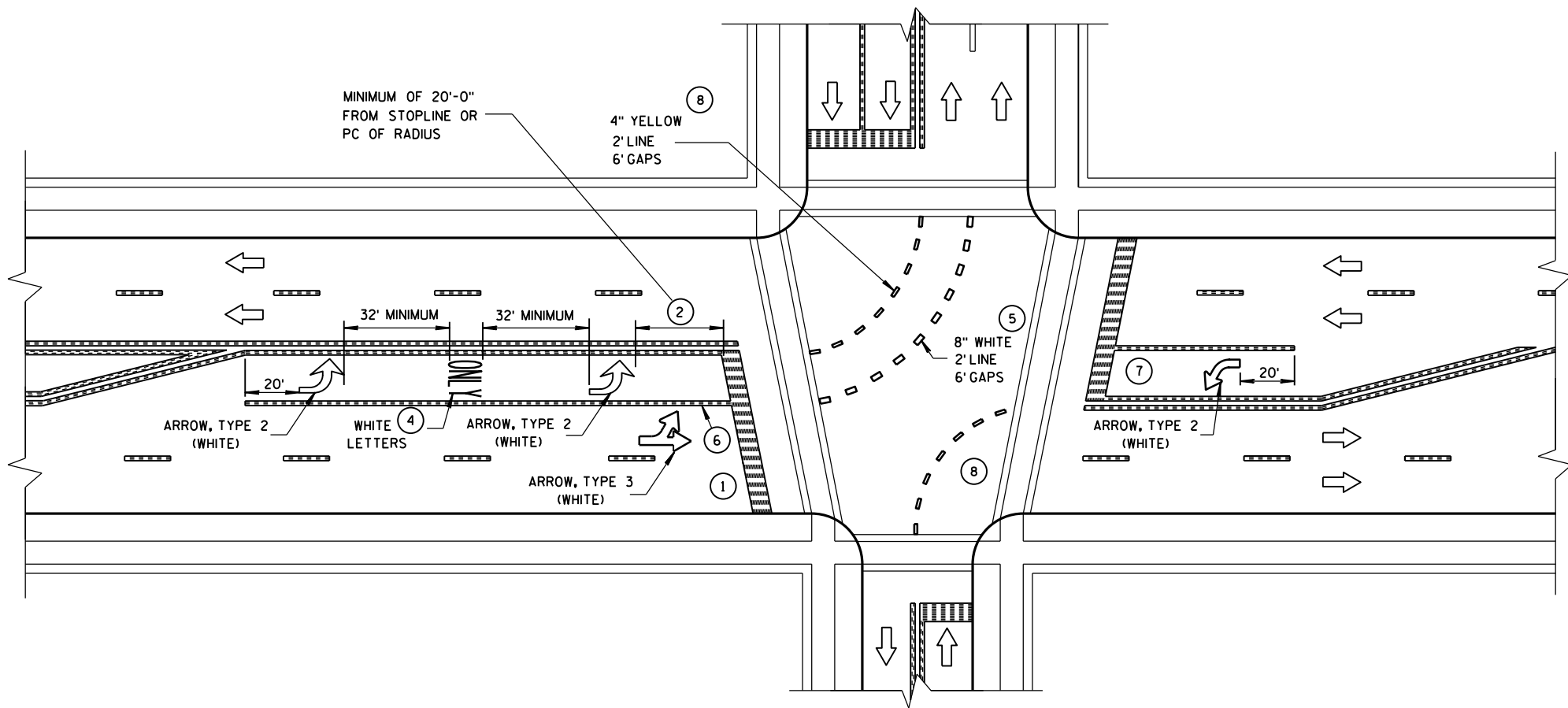
**MINOR INTERSECTION WITH CURBS**  
③ (FOR SPECIAL CONDITIONS AS SPECIFIED)

## GENERAL NOTES

- EDGE LINES SHALL BE OMITTED THROUGH INTERSECTIONS. EDGE LINES SHALL BE CONTINUED THROUGH DRIVEWAYS.
- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
  - ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
  - ③ ALTERNATIVE MARKING SHALL BE PROVIDED WHEN SPECIFIED IN THE CONTRACT. TYPICAL SITUATIONS WHERE THIS MARKING MAY BE REQUIRED ARE WHERE THE INTERSECTION IS ON A SHARP HORIZONTAL CURVE OR CREST VERTICAL CURVE IN AN UNLIGHTED AREA SUCH THAT THE EDGE LINE MAY BE MISLEADING TO THE MOTORIST OR DISAPPEAR FROM SIGHT.
  - ④ THE EDGE LINE IN THE TAPER AREAS OF THE BYPASS LANE AND THE BYPASS LANE SHALL BE LOCATED 1-FOOT FROM EDGE OF PAVEMENT TO THE OUTSIDE EDGE OF EDGE LINE.
  - ⑤ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.
  - ⑥ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.
  - ⑦ IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.
  - ⑧ 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.
- ARROW SYMBOL ( → ) SHOWS DIRECTION OF TRAVEL

PAVEMENT MARKING  
(INTERSECTIONS)

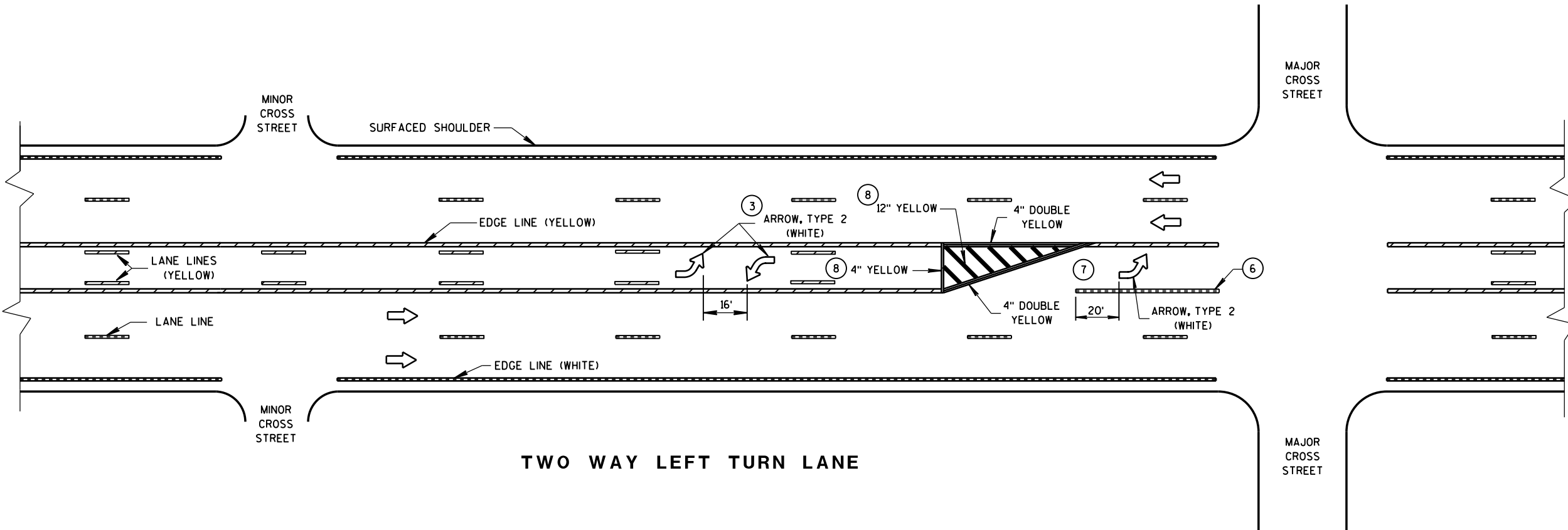
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 166



GENERAL NOTES

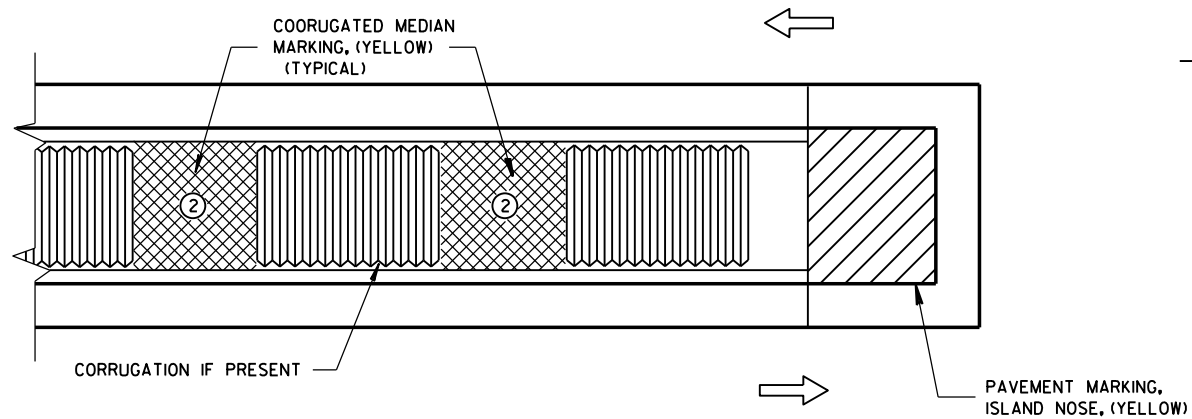
- 1 STOP BAR IS REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.
- 2 DISTANCE MAY BE ADJUSTED TO ACCOMODATE SHORT LEFT TURN LANES. AS APPROVED BY THE ENGINEER.
- 3 A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
- 4 ADD EXTRA SETS OF ONE ARROW AND ONE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

NOTE:  
ARROW SYMBOL (➡)  
SHOWS DIRECTION OF TRAVEL

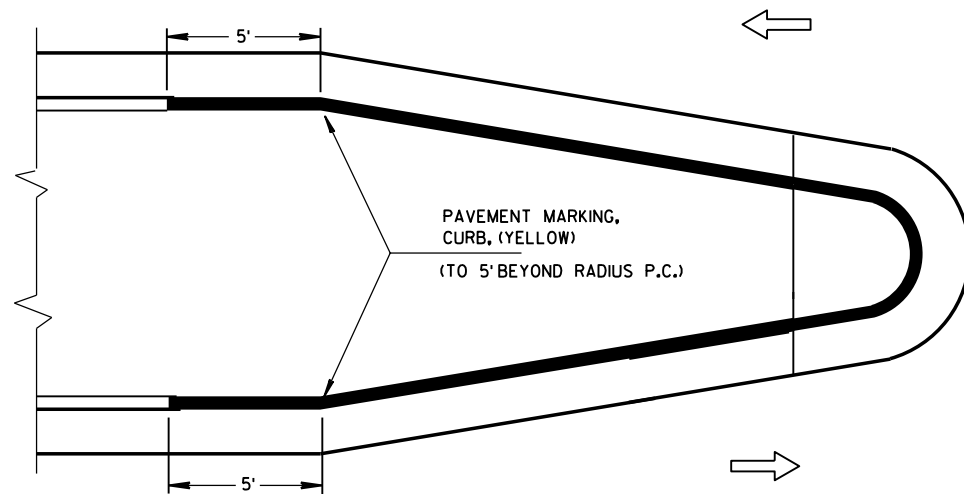


PAVEMENT MARKING  
(LEFT TURN LANE)

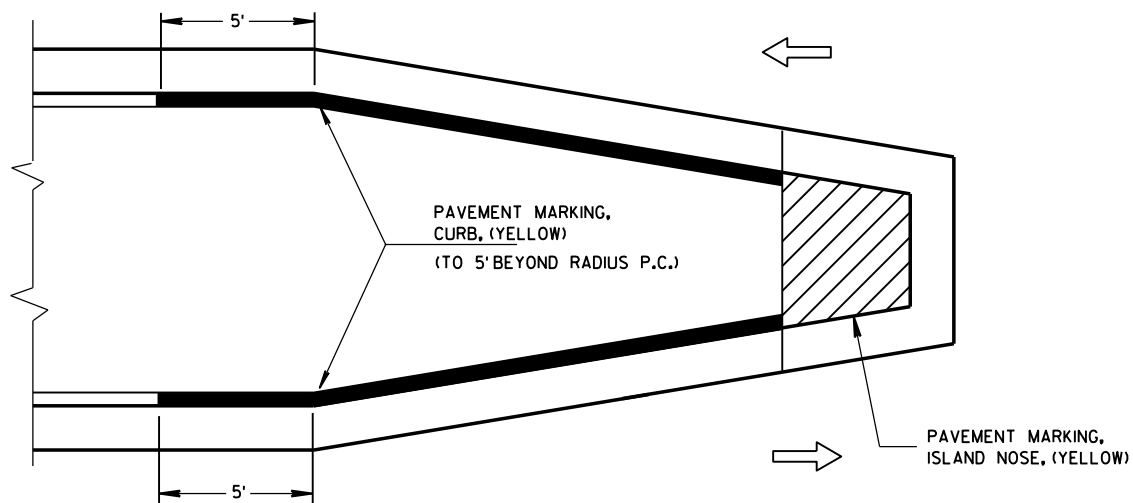
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



MEDIAN ISLAND WITH SQUARE BLUNT NOSE

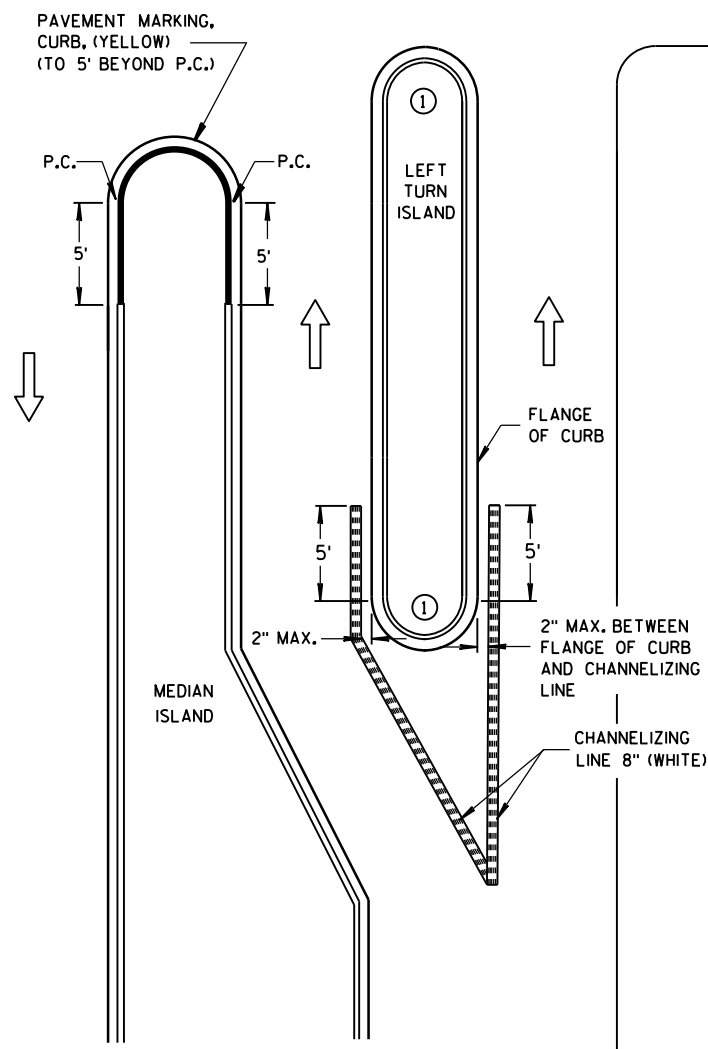


MEDIAN ISLAND WITH ROUND BLUNT NOSE



MEDIAN ISLAND WITH SLOPED NOSE

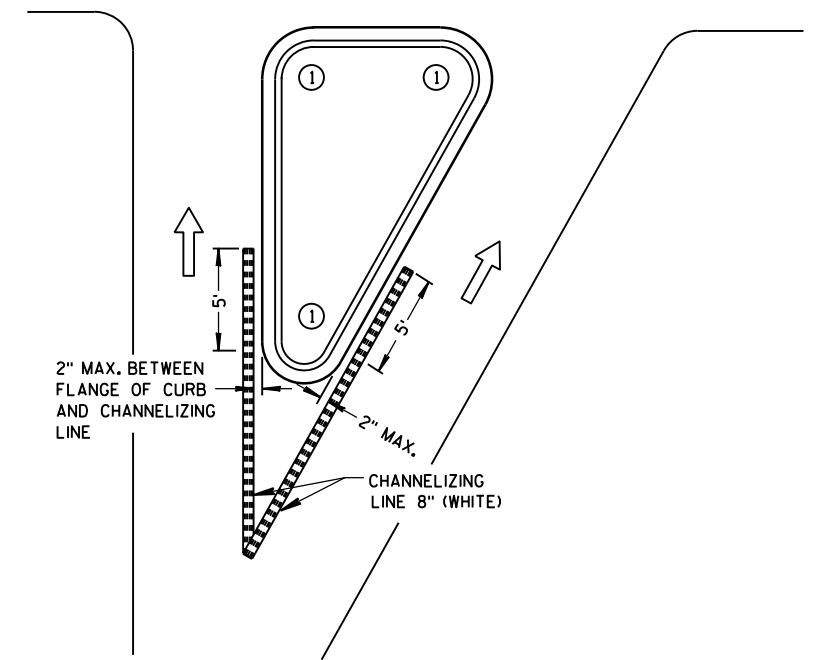
TYPICAL PLACEMENT OF PAVEMENT MARKING ON MEDIAN ISLANDS



LEFT TURN & MEDIAN ISLAND

GENERAL NOTES

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



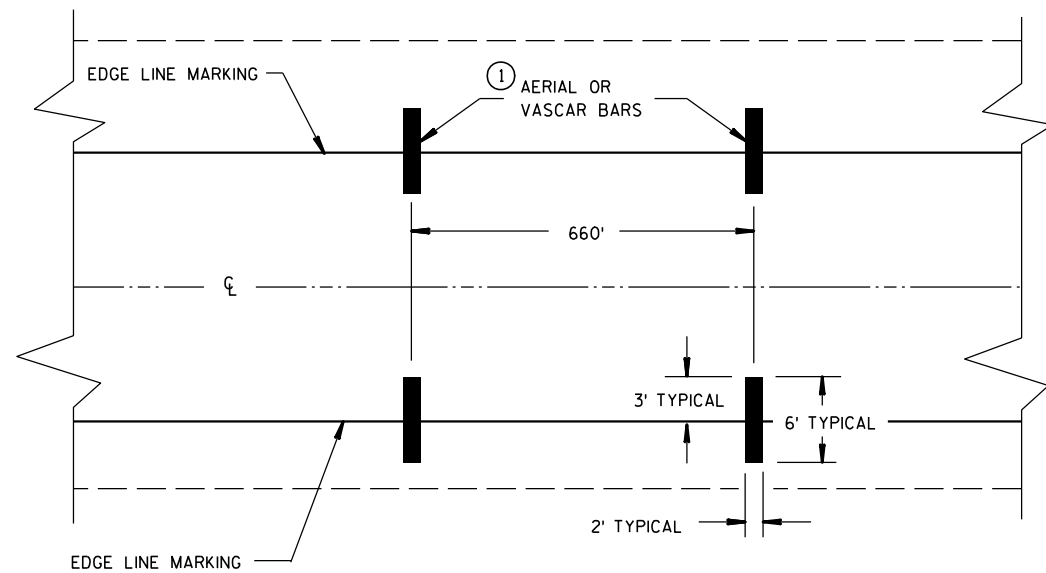
RIGHT TURN ISLAND

LEGEND

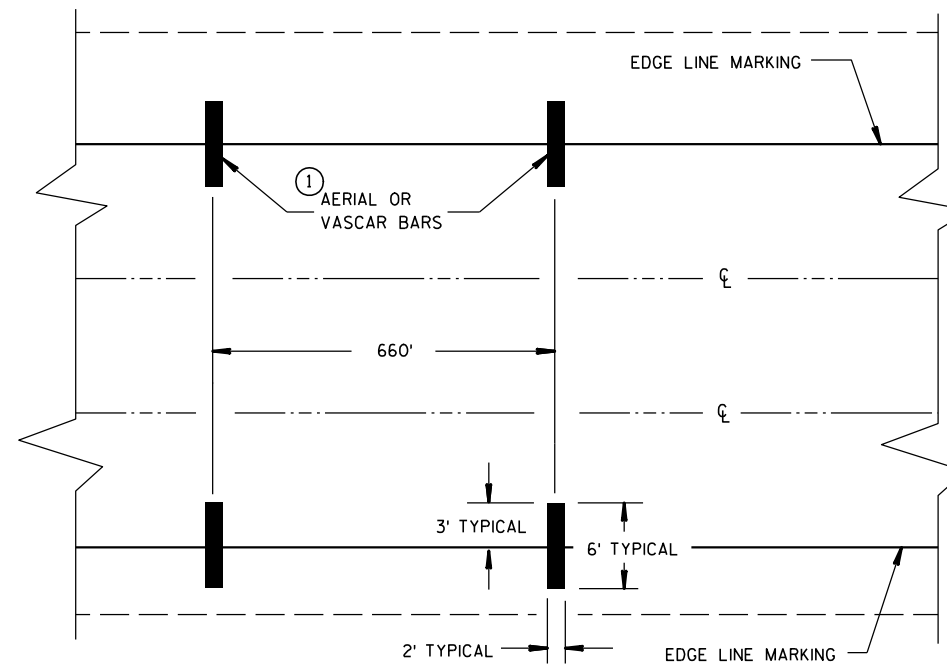
- ISLAND NOSE MARKING
- CURB MARKING
- CORRUGATED MEDIAN MARKING
- DIRECTION OF TRAVEL

PAVEMENT MARKING (ISLANDS)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 168



TYPICAL FOR TWO WAY OR ONE WAY TRAFFIC



TYPICAL FOR MULTILANE TRAFFIC

## SPEED ENFORCEMENT ZONE WITH AERIAL OR VASCAR BARS

### GENERAL NOTES

- ① NUMBER OF VASCAR OR AERIAL BARS SHALL BE A MINIMUM OF 2 OR A MAXIMUM OF 5 AT 660' SPACING.

A CAR CAN BE PROVIDED BY THE WISCONSIN STATE PATROL FOR TRAFFIC CONTROL.

AERIAL ENFORCEMENT BARS  
PAVEMENT MARKING DETAILS

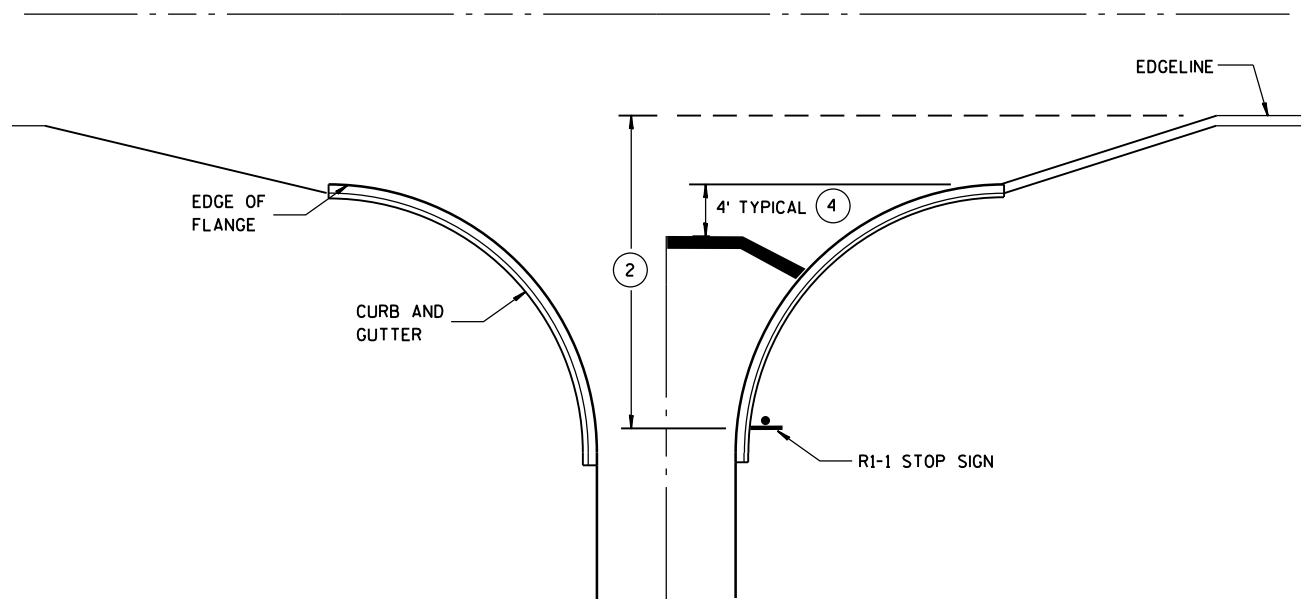
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

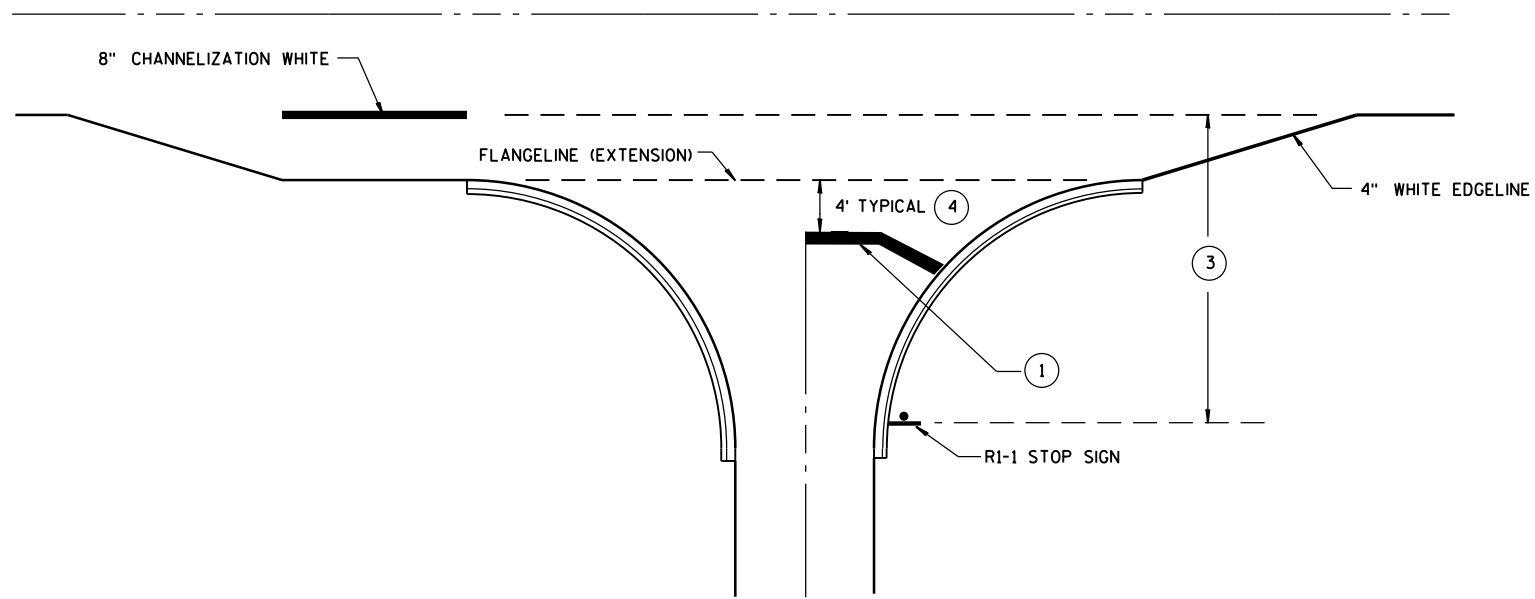
4/23/01  
DATE

/S/ Chester L. Seng  
CHIEF SIGNS AND MARKINGS ENGINEER

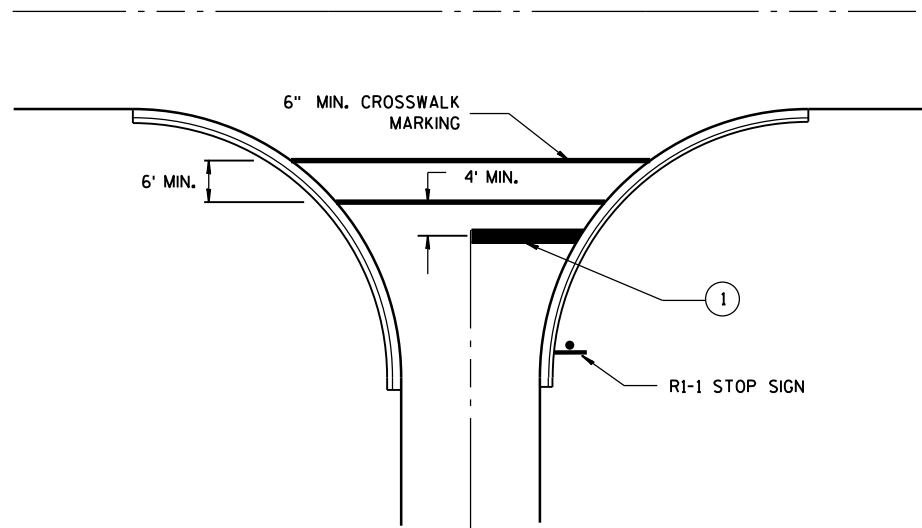
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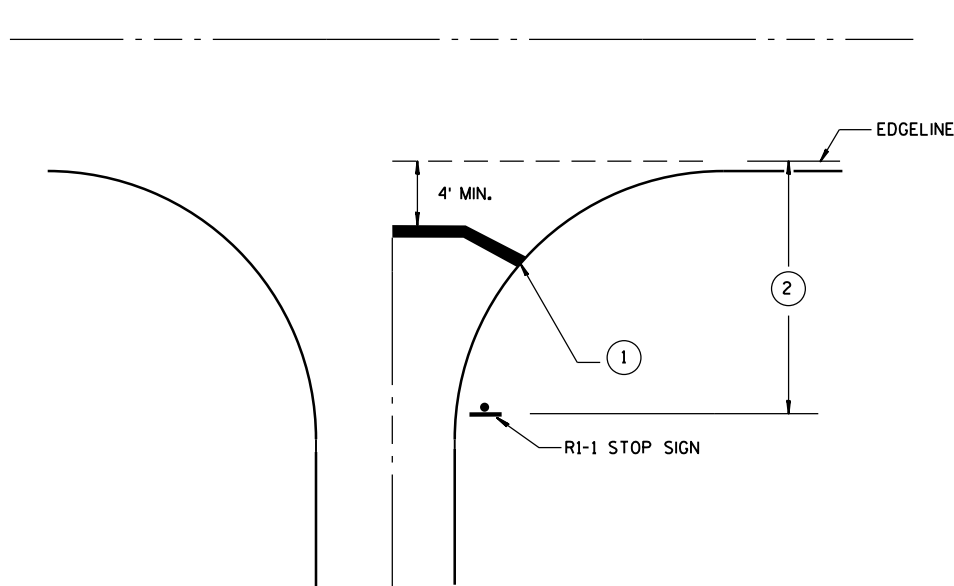
TYPICAL STOP LINE PAVEMENT MARKING  
WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING  
FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING  
FOR SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING  
WITHOUT CURB AND GUTTER

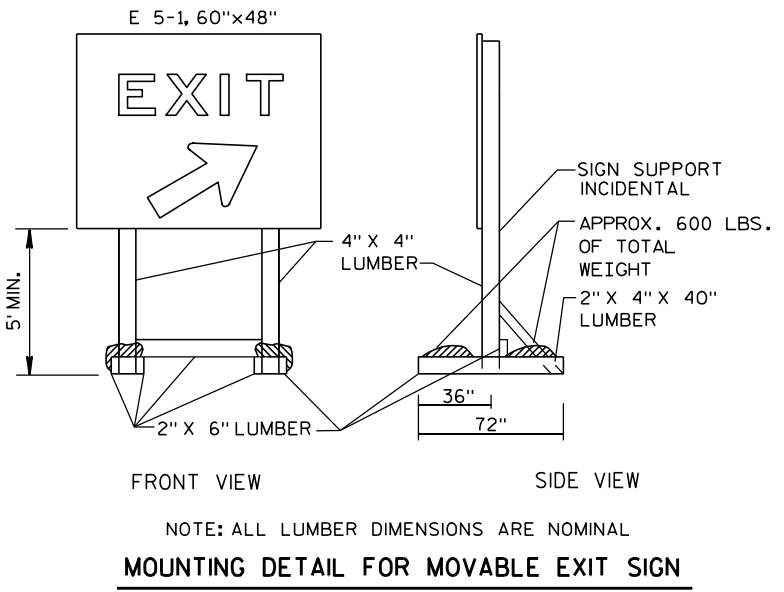
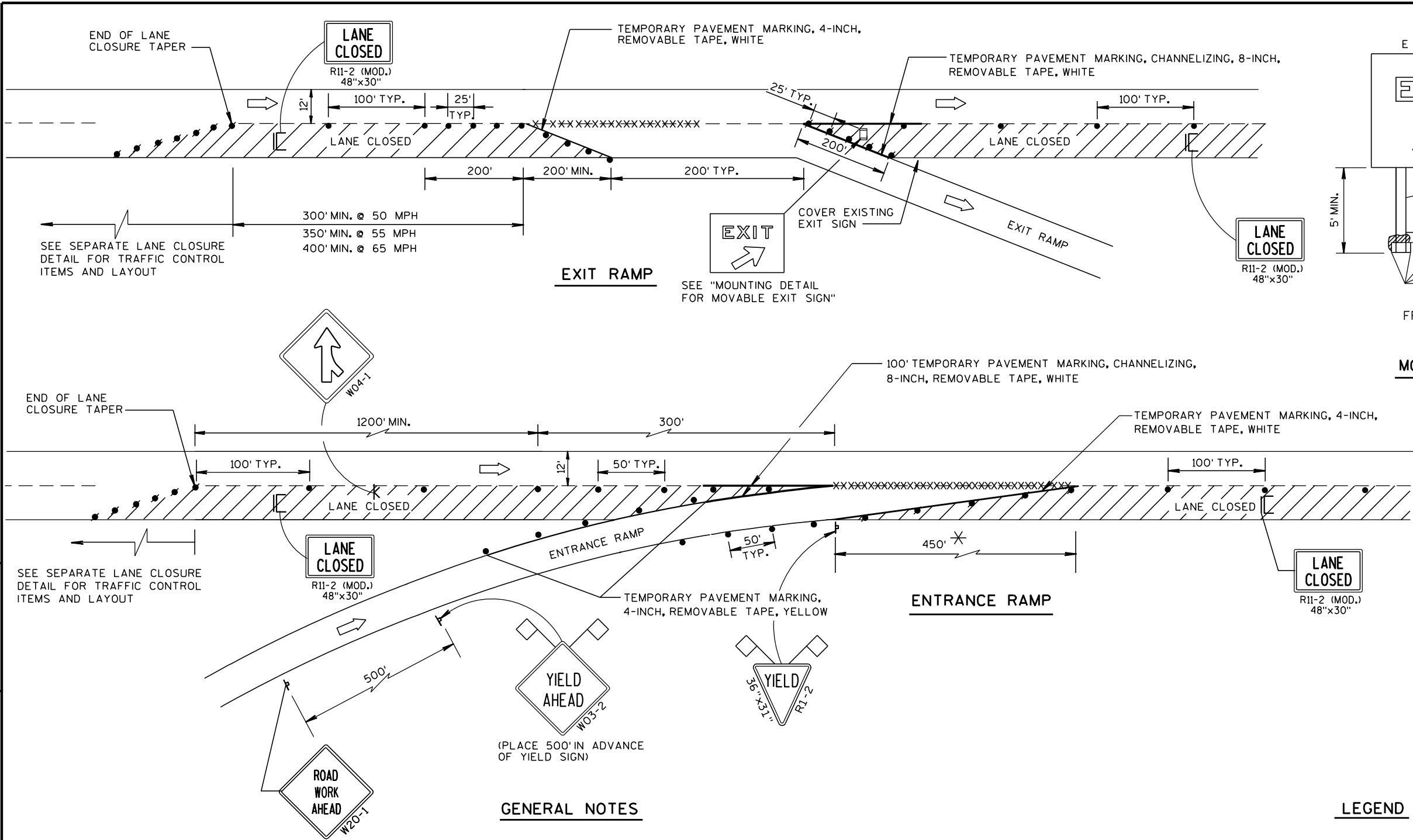
GENERAL NOTES

- ① 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE PROJECT ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- ② IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGE LINE THAN NO STOP LINE IS REQUIRED.
- ③ IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION THAN NO STOP LINE IS REQUIRED.
- ④ MOVE CLOSER TO EDGE OF TRAVEL LANE AS NEEDED FOR VISIBILITY AND SIGHT LINES.

STOP LINE AND CROSSWALK  
PAVEMENT MARKING

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
DATE 4/30/2013 /S/ Travis Feltes  
STATE TRAFFIC ENGINEER 170  
FHWA



**GENERAL NOTES**

THE INSTALLATIONS SHOWN ON THIS SHEET ARE TYPICAL EXAMPLES AND ARE NOT INTENDED TO REPRESENT ANY PARTICULAR RAMP. AT SPECIFIC FIELD LOCATIONS, SIMILAR INSTALLATIONS SHALL BE USED AND ADJUSTED TO THE GEOMETRICS OF THE RAMP AS COORDINATED WITH 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.

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.

SEE SEPARATE LANE CLOSURE DETAIL FOR TYPICAL SPACING OF TYPE III BARRICADES AND R11-2 (MOD.) "LANE CLOSED" SIGNS.

YIELD SIGN AND WARNING SIGNS ON ENTRANCE RAMP ARE ALSO APPROPRIATE FOR CLOSURE OF THE MAINLINE LEFT LANE. OMIT THE YIELD SIGN IF MORE THAN ONE LANE REMAINS OPEN ON THE MAINLINE AND THE RAMP TAPER IS AT LEAST AS LONG AS THE NORMAL ENTRANCE RAMP TAPER AT THE SITE.

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

IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE ENTRANCE RAMP AND MAINLINE TRAFFIC.

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

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF LANE CLOSURE IS TO BE IN PLACE FOR 7 OR MORE CONTINUOUS DAYS AND NIGHTS.

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

\* LENGTH OF OPENING MAY BE REDUCED TO 150 FEET DURING STAGING OF WORK IN IMMEDIATE AREA OF RAMP TAPER.

**LEGEND**

- POST MOUNTED SIGN
- SIGN ON PORTABLE SUPPORT
- TRAFFIC CONTROL, DRUM
- TRAFFIC CONTROL, DRUM WITH WARNING LIGHT, TYPE C (STEADY-BURN)
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- TYPE III BARRICADE (8' EQUIVALENT) WITH SIGN
- FLAGS, 16"x16" MIN., ORANGE
- DIRECTION OF TRAFFIC FLOW

| TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE |           |                    |                         |
|-------------------------------------------------------------|-----------|--------------------|-------------------------|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION             |           |                    |                         |
| APPROVED                                                    | 5/24/2000 | /S/ Chester J. ... | CHIEF SIGNS AND MAR 171 |
| DATE                                                        |           |                    | INER                    |
| FHWA                                                        |           |                    |                         |

## LEGEND

-  TYPE III BARRICADE
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TRAFFIC CONTROL DRUM
-  SIGN ON PERMANENT SUPPORT
-  TYPE "A" WARNING LIGHT (FLASHING)
-  DIRECTION OF TRAFFIC

## GENERAL NOTES

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

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

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

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

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.

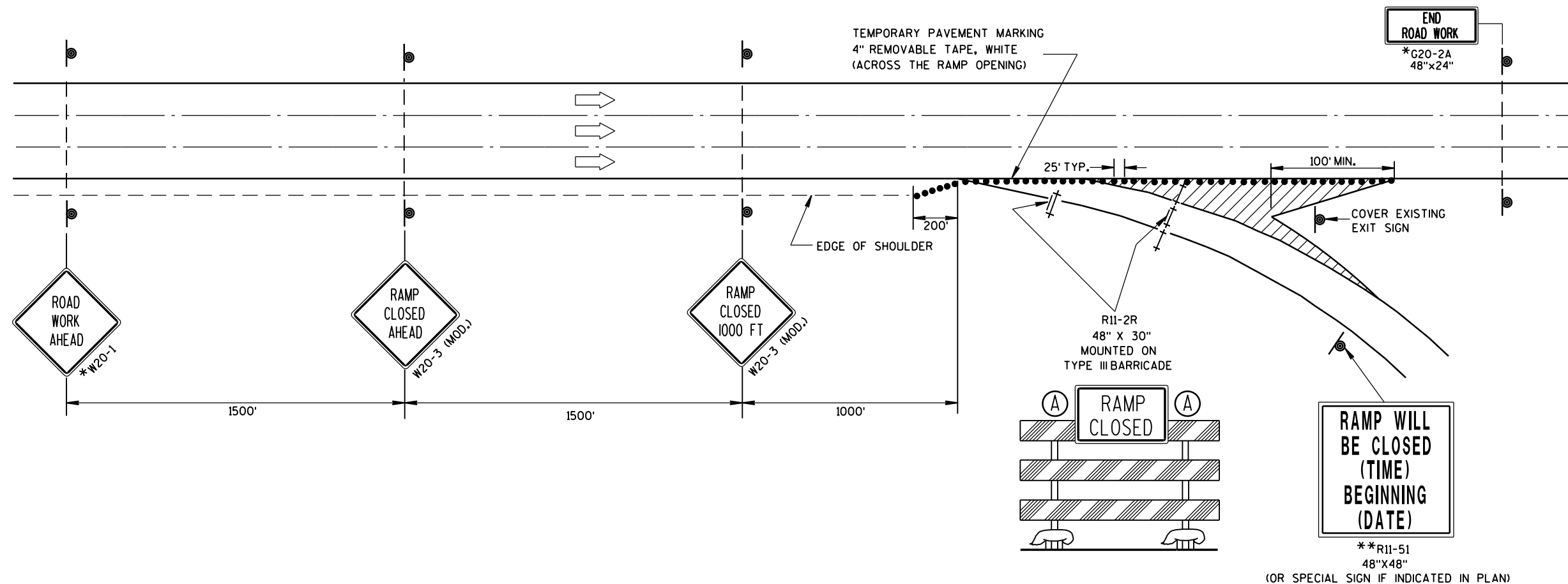
PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF RAMP CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

WORK AREAS WITH A DROPOFF ALONG THE EDGE OF AN OPEN TRAVEL LANE SHALL BE LEVELED WITH TEMPORARY FILL WHEN THE CONTRACTOR IS NOT WORKING ADJACENT TO THE TRAVEL LANE. DRUMS SHALL BE PLACED ENTIRELY OUTSIDE THE TRAVEL LANE, ALLOWING THE FULL UNOBSTRUCTED LANE WIDTH, WHEN THE WORK IS NOT IN PROGRESS.

WHERE MEDIAN BARRIER IS IN PLACE, SIGNS SHOWN ON LEFT SIDE OF ROADWAY MAY BE OMITTED FOR RIGHT SIDE RAMP CLOSURES OF LESS THAN 12-HOUR DURATION.

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

\*\* PLACE "RAMP WILL BE CLOSED" SIGN 10 CALENDAR DAYS PRIOR TO CLOSURE OR AS DIRECTED BY THE ENGINEER. SEE WISCONSIN STANDARD SIGN PLATES FOR SIGN LAYOUT.



TRAFFIC CONTROL,  
EXIT RAMP CLOSURE

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

8/2013

DATE

FHWA

/S/ Travis Feltes

STATE TRAFFIC ENGINE 172

ESIGN

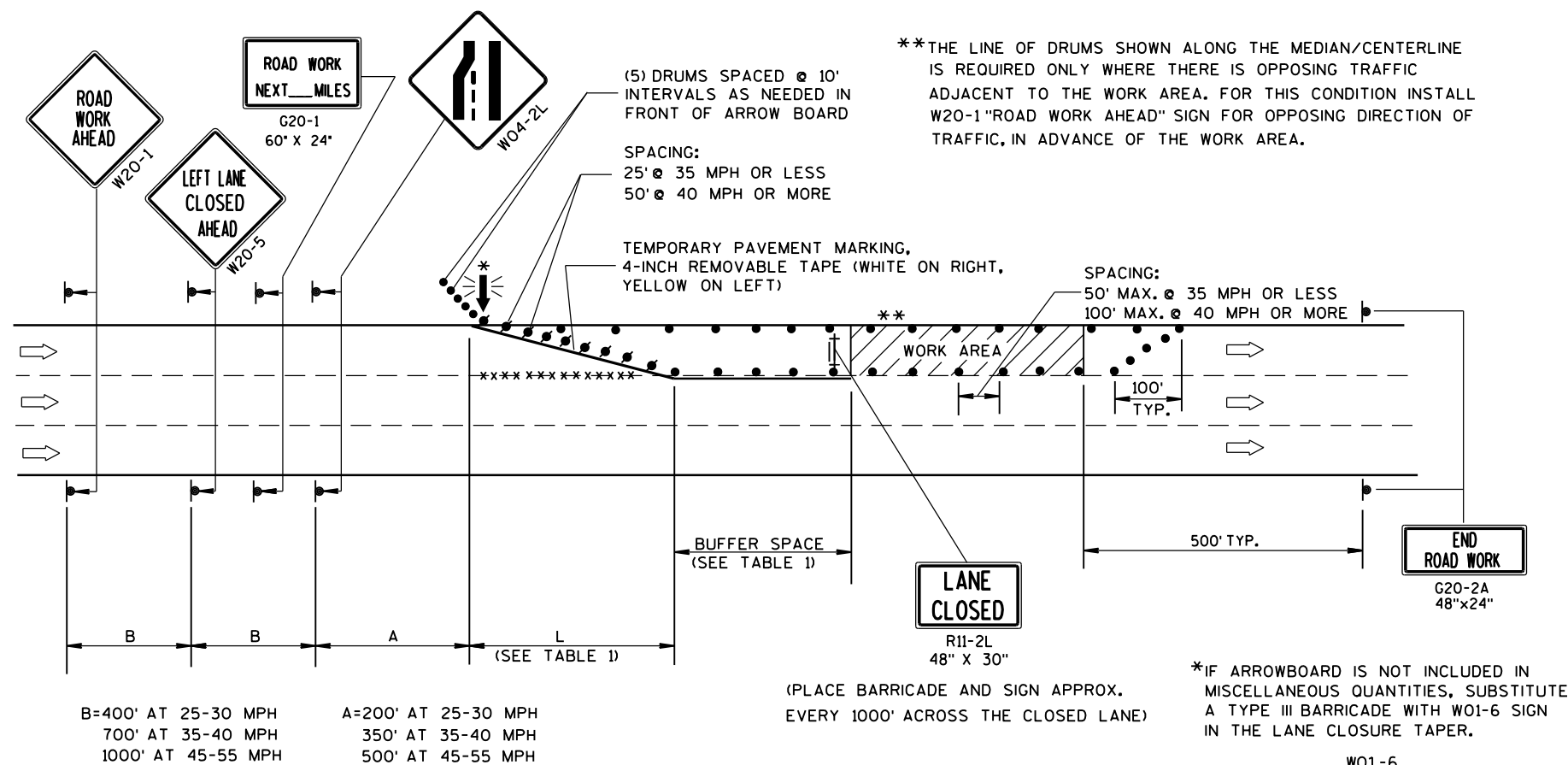


TABLE 1  
 TAPER AND BUFFER SPACE  
 FOR 12' LANE WIDTH

| S  | L    | BUFFER SPACE |
|----|------|--------------|
| 25 | 125' | 55'          |
| 30 | 180' | 85'          |
| 35 | 245' | 120'         |
| 40 | 320' | 170'         |
| 45 | 540' | 220'         |
| 50 | 600' | 280'         |
| 55 | 660' | 335'         |

FOR LANE WIDTH OTHER THAN 12':

L = WS AT 45 MPH OR GREATER

$L = \frac{WS^2}{60}$  AT 40 MPH OR LESS

L = TAPER LENGTH IN FEET

S = NON-CONSTRUCTION SPEED LIMIT (MPH)

W = WIDTH OF LANE CLOSURE

## LEGEND

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

## GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

W20-1, 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.

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

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

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

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

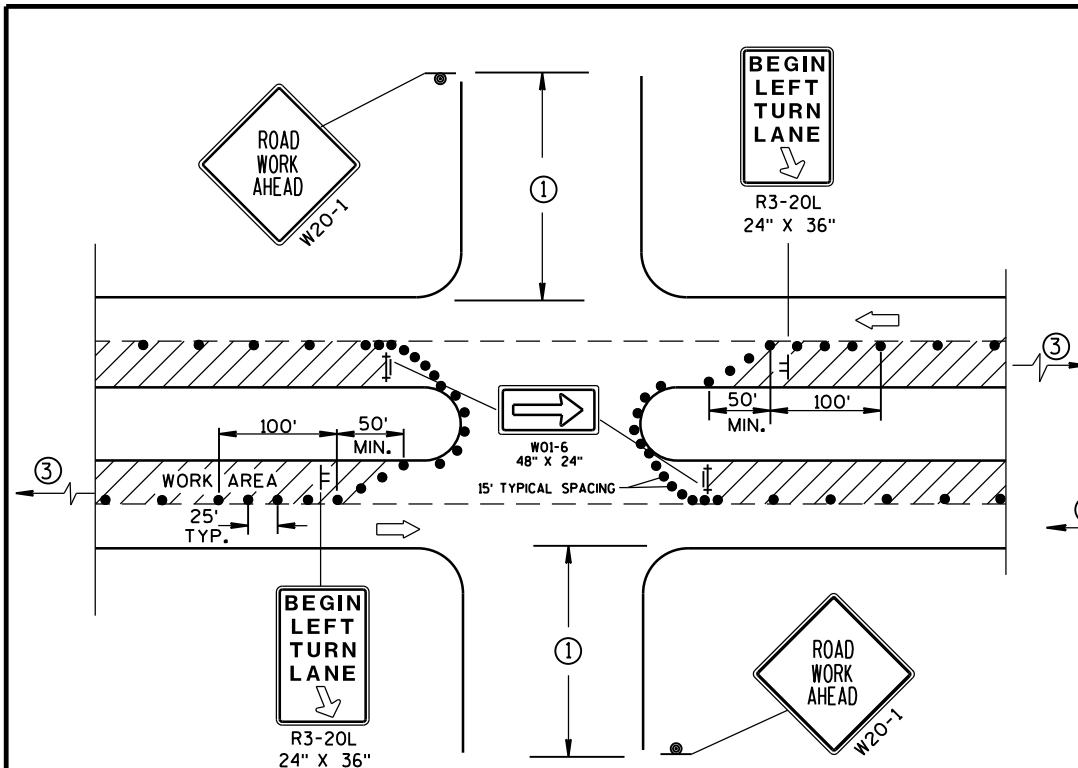
BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

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

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

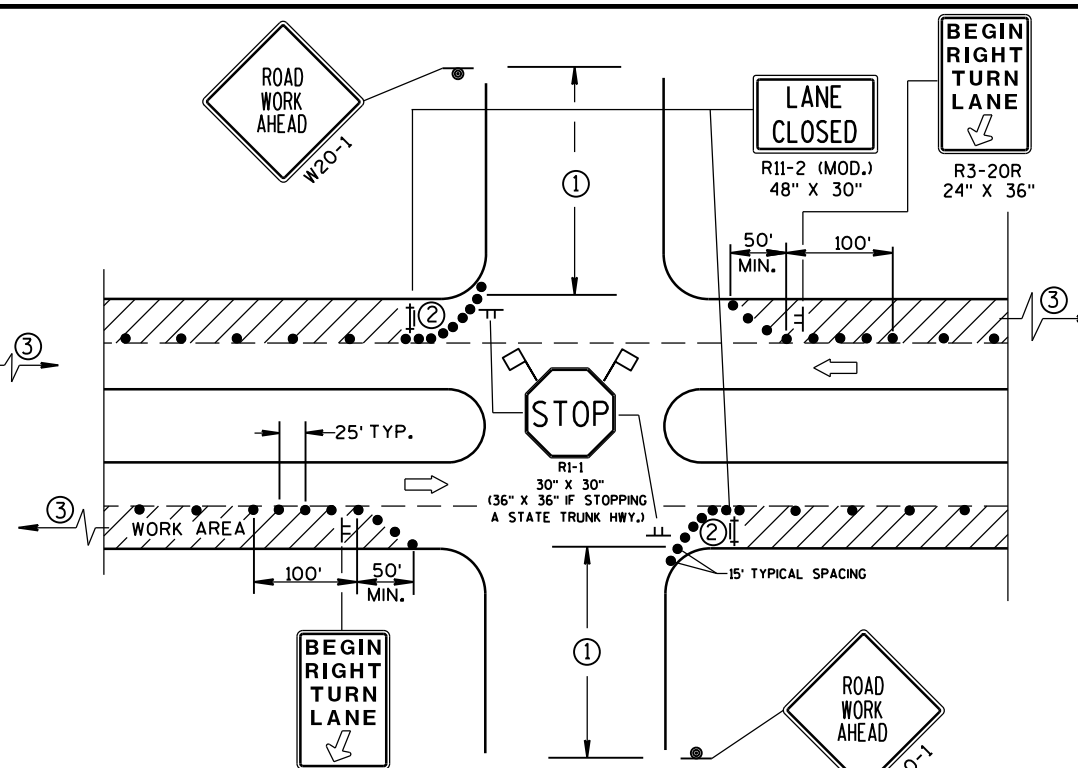
STATE OF WISCONSIN  
 DEPARTMENT OF TRANSPORTATION

APPROVED  
 Feb. 2015 /S/ Travis Feltes  
 DATE STATE TRAFFIC ENGINE 173 SIGN  
 FHWA



DETAIL A  
FOR LEFT LANE CLOSURE AT  
INTERSECTION OR MEDIAN OPENING

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



DETAIL B  
FOR RIGHT LANE CLOSURE  
AT INTERSECTION

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

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

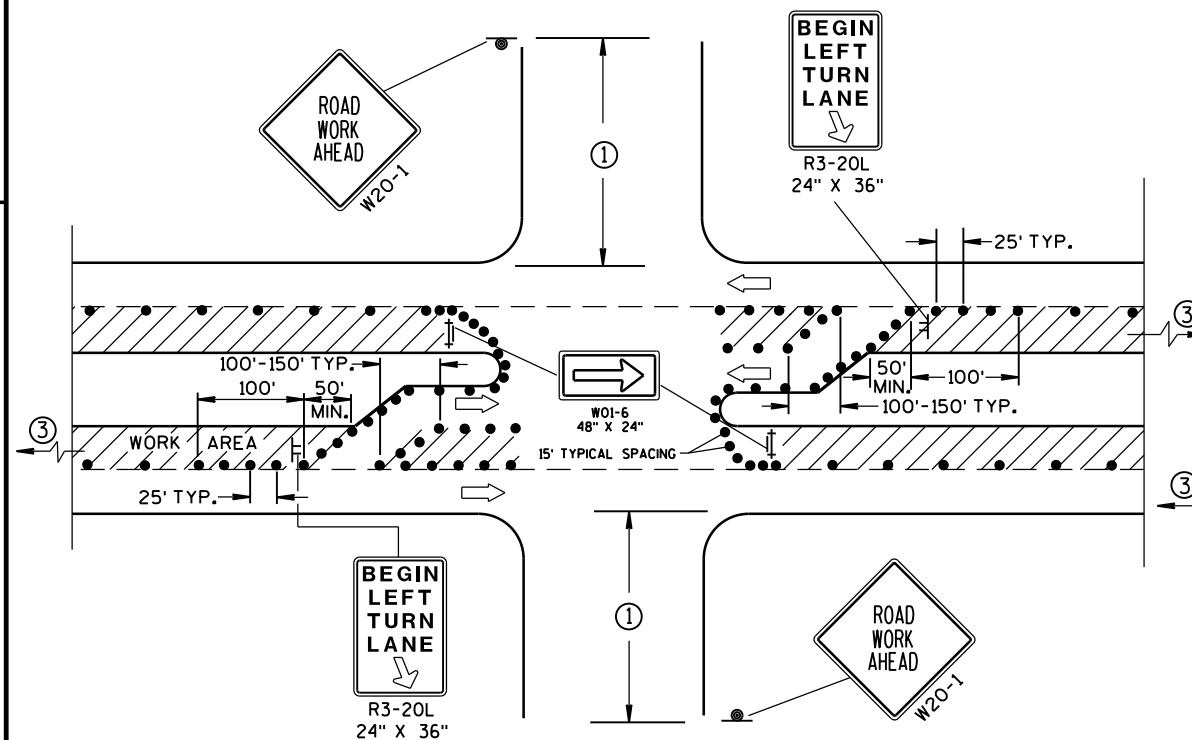
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

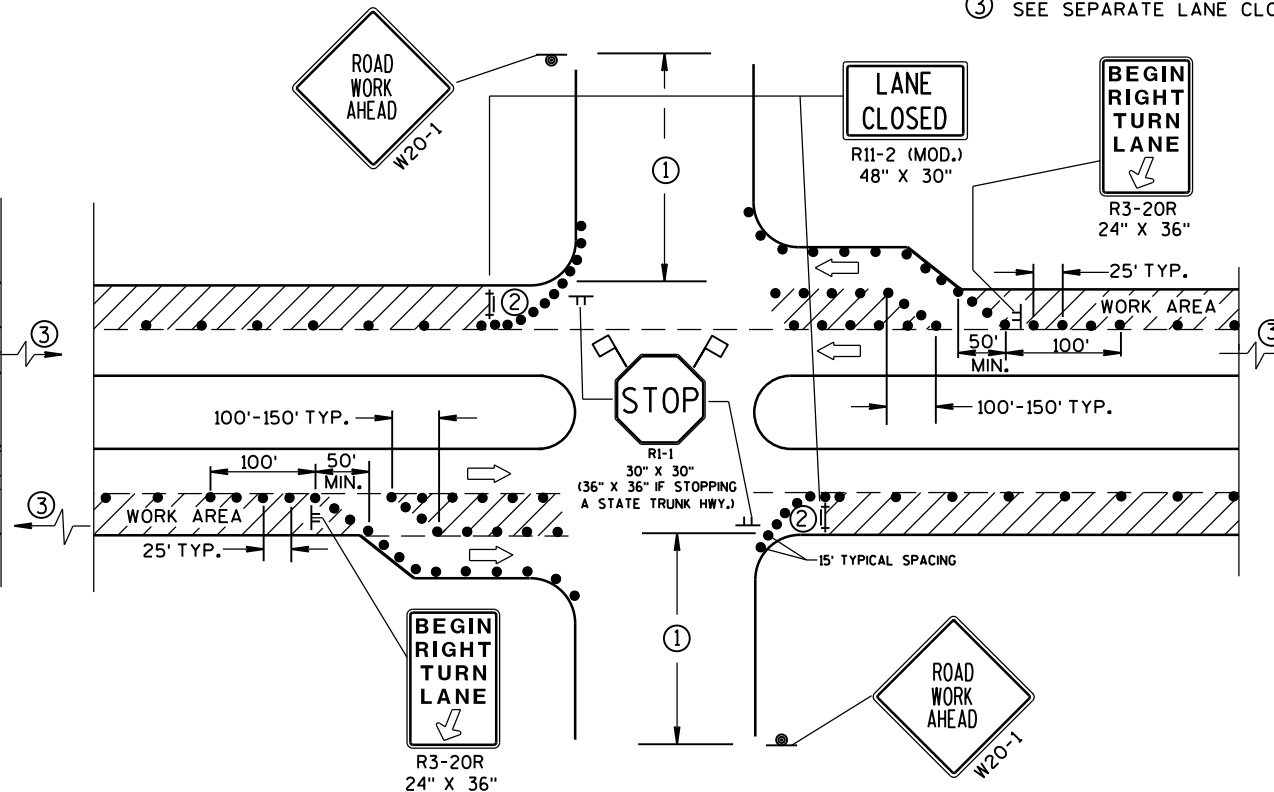
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

- 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.



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



DETAIL D  
FOR RIGHT LANE CLOSURE AT INTERSECTION  
(WITH RIGHT TURN BAY OPEN)

### LEGEND

- TRAFFIC CONTROL DRUM
- ⊙ SIGN ON PERMANENT SUPPORT
- ⊢ SIGN ON TEMPORARY SUPPORT (5' MIN. MOUNTING HEIGHT)
- ⊢ TYPE III BARRICADE WITH ATTACHED SIGN AND TYPE "A" WARNING LIGHT (FLASHING)
- ➡ DIRECTION OF TRAFFIC
- 🚩 FLAGS, 16" X 16" MIN., (ORANGE)
- ▨ WORK AREA

### TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
Nov. 2014 /S/ Travis Feltes  
DATE STATE TRAFFIC ENGINE 174 SIGN  
FHWA

LEGEND

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

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.

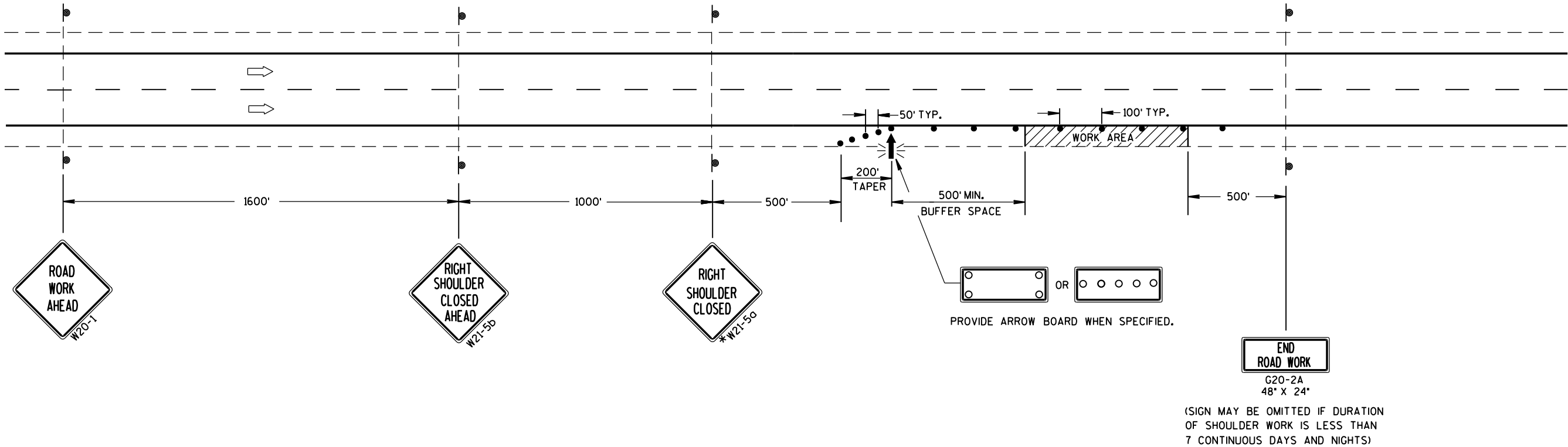
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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.

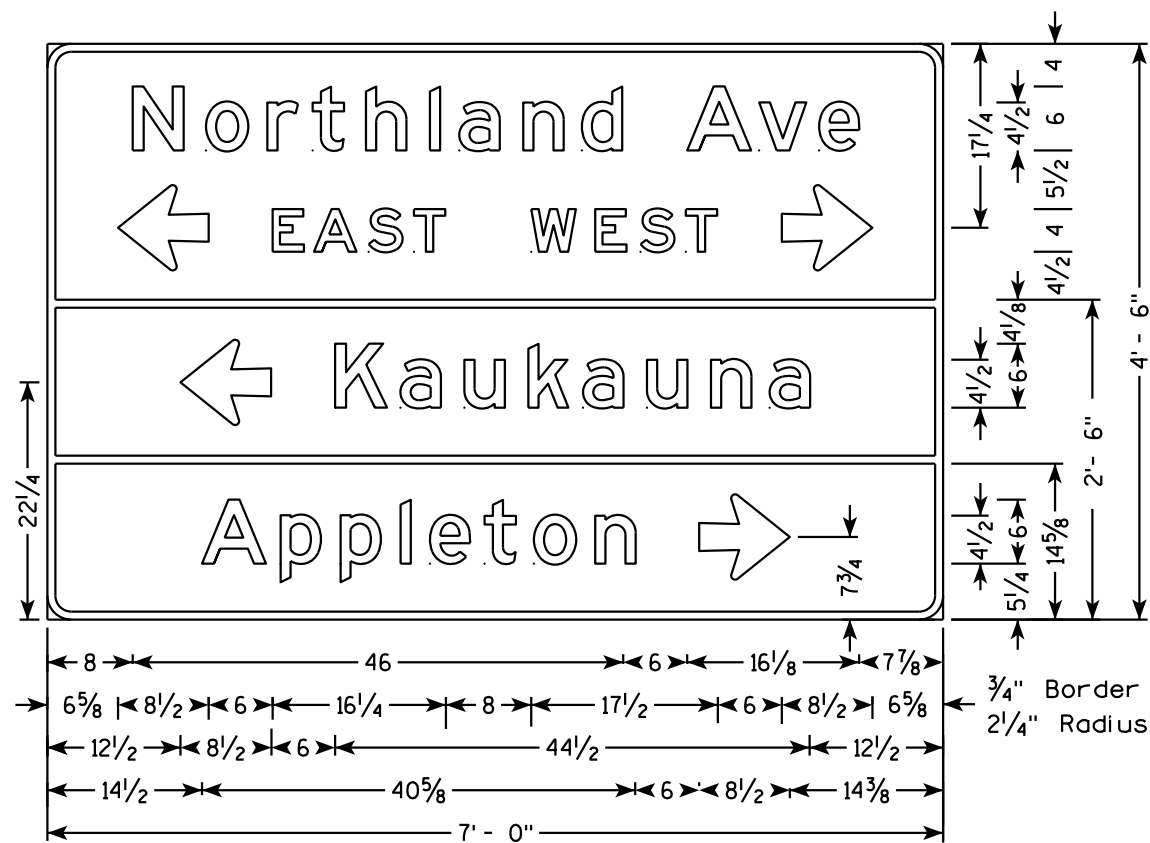
\*FOR SHORT DURATION SHOULDER WORK OF LESS THAN ONE HOUR, THE W21-5a SIGN MAY BE OMITTED.



TRAFFIC CONTROL  
SHOULDER CLOSURE ON DIVIDED  
ROADWAY, SPEEDS GREATER  
THAN 40 MPH

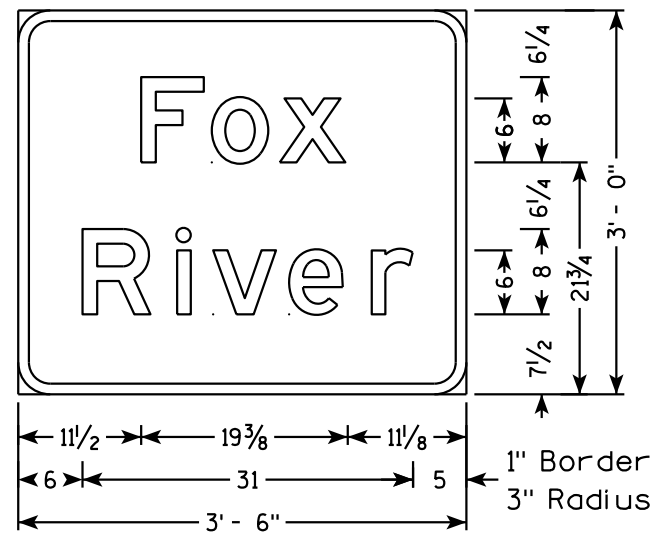
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
8/2013 /S/ Travis Feltz  
DATE STATE TRAFFIC ENGINE 175 SIGN  
FHWA



D1-4

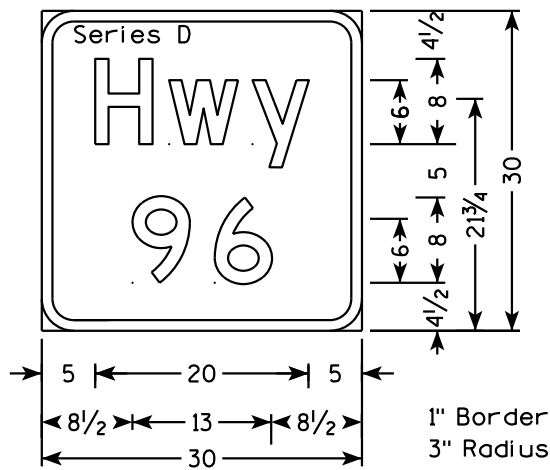
104



I3-1

73

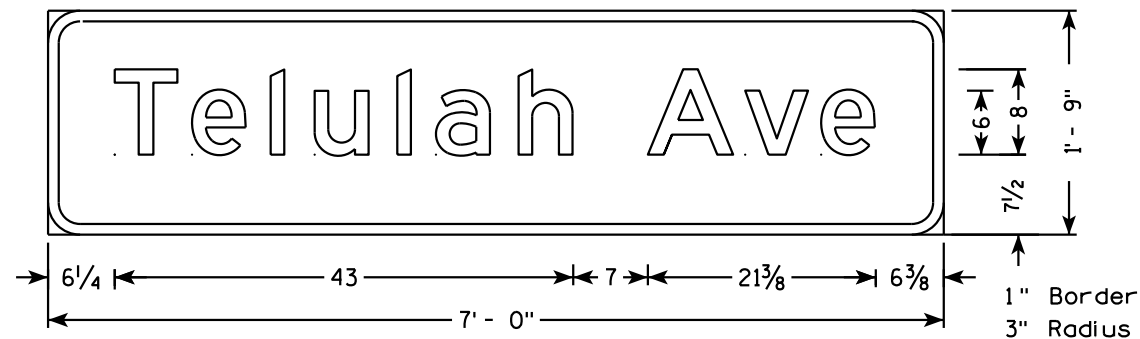
74



M1-94

75

76



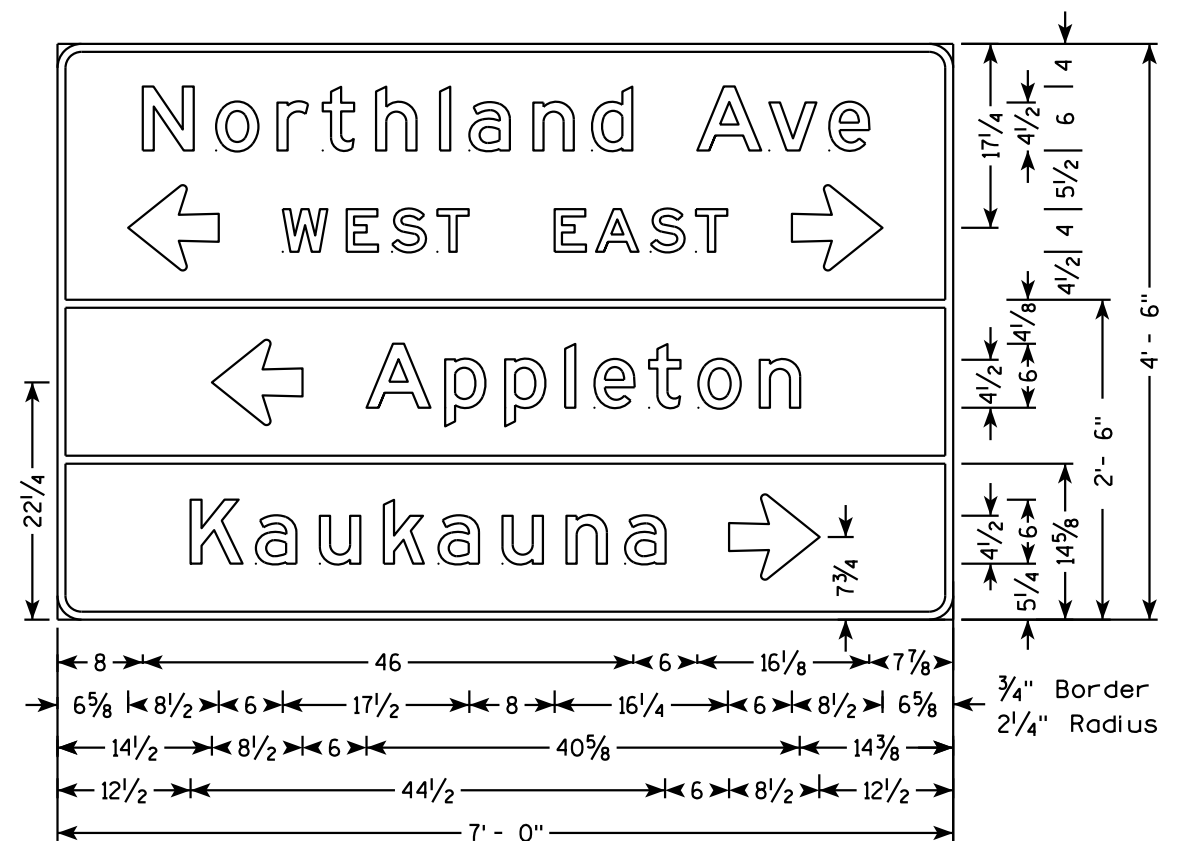
M1-94

10

11

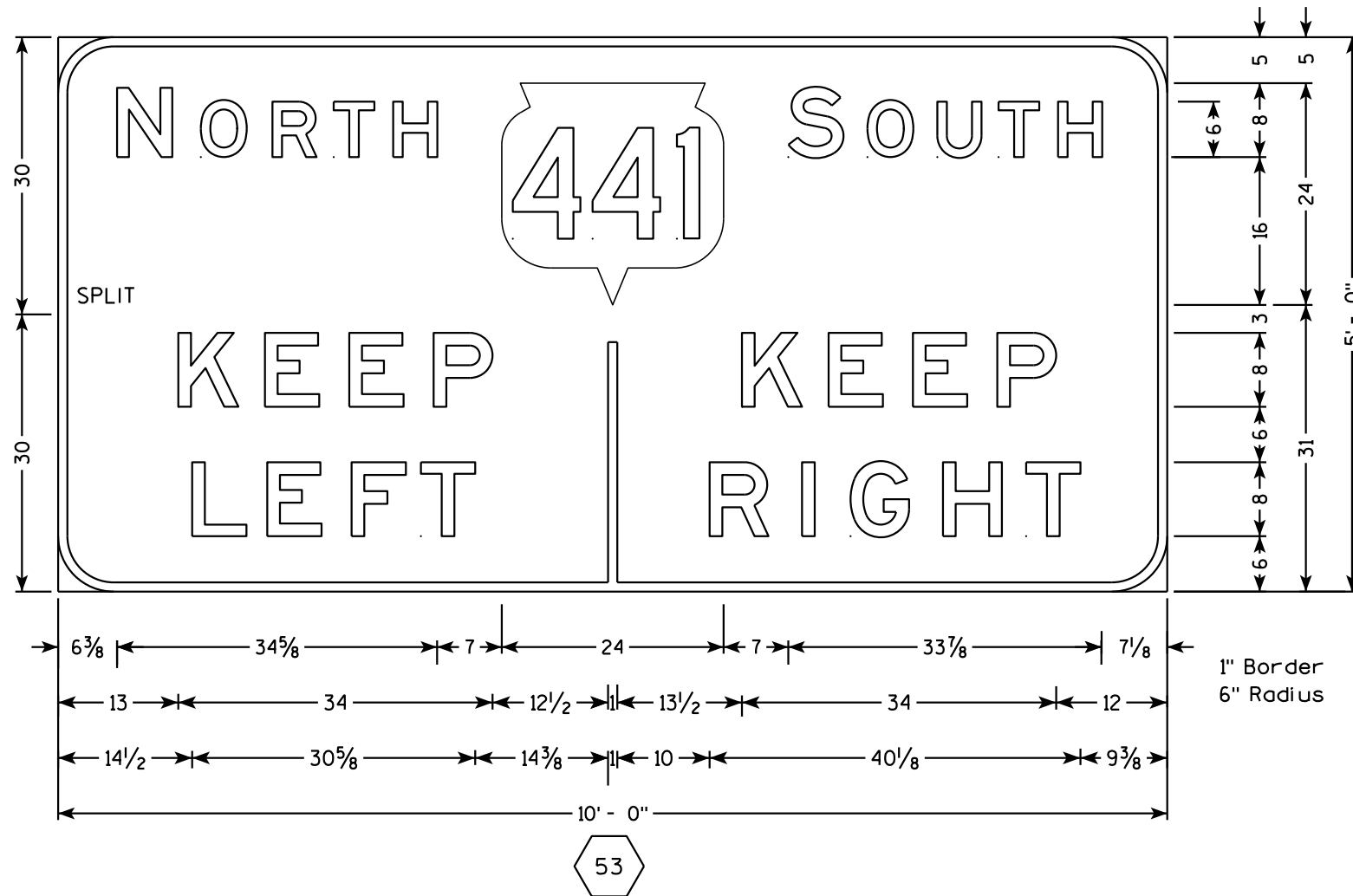
### NOTES

1. All Signs Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - GREEN  
Message - WHITE
3. Message Series - E except as Shown

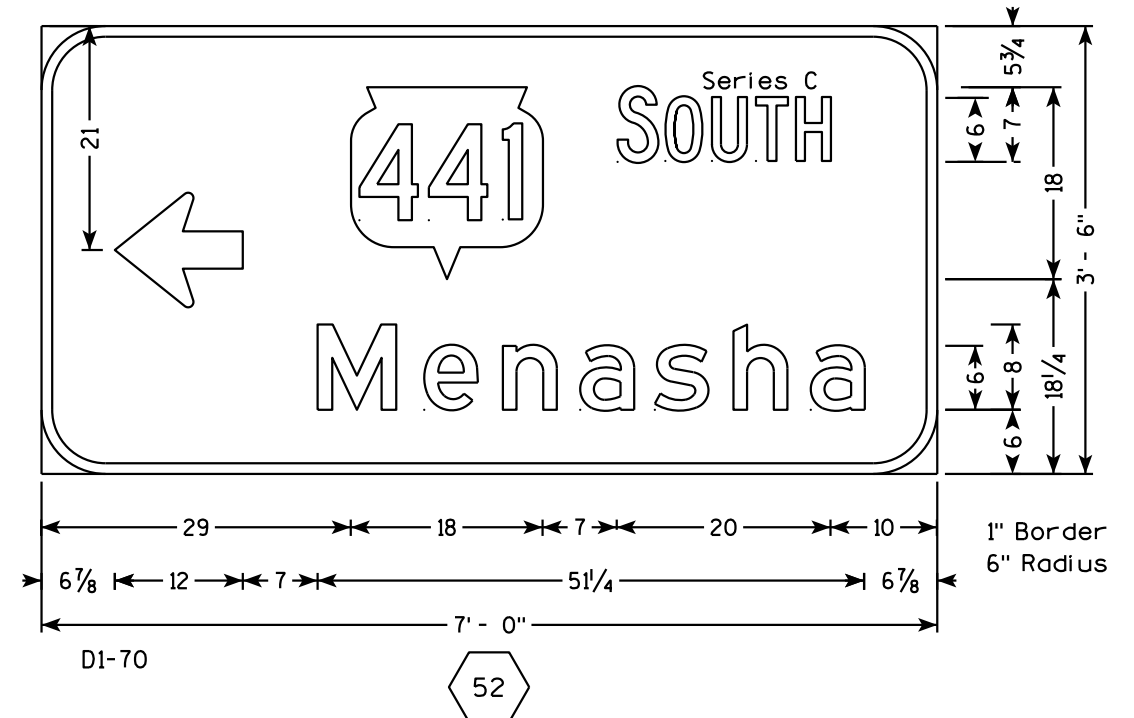
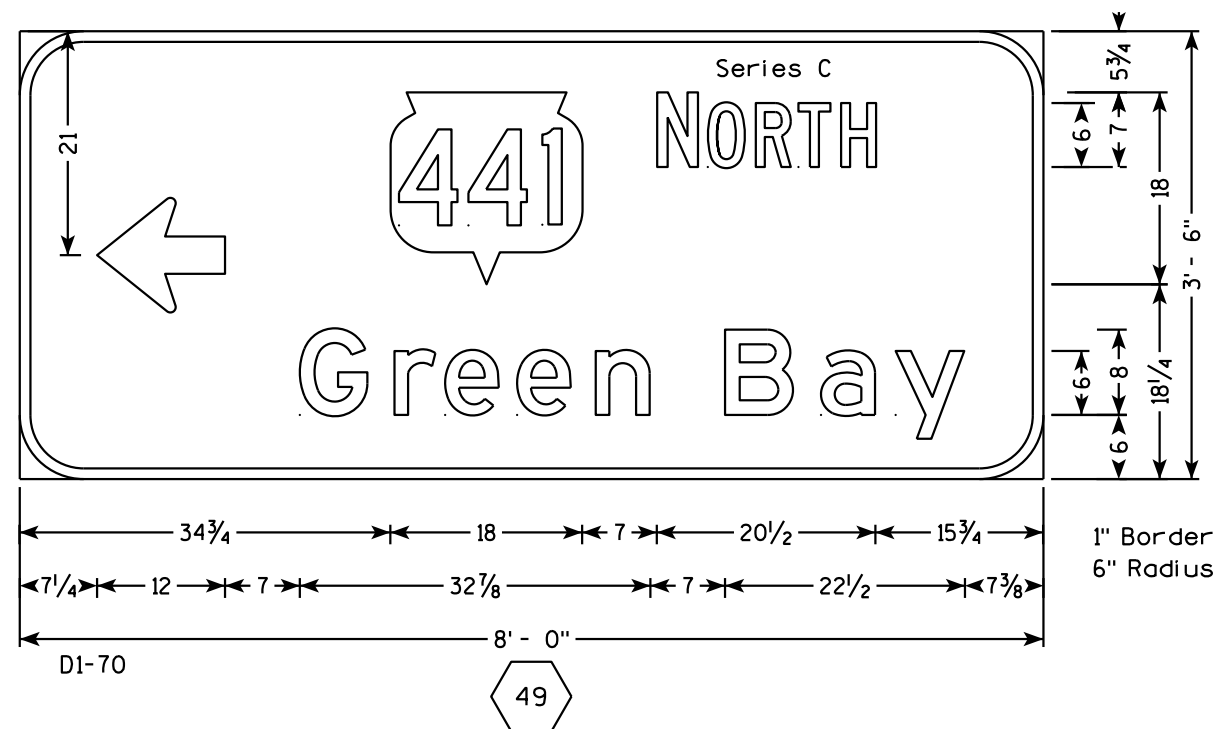


D1-4

84

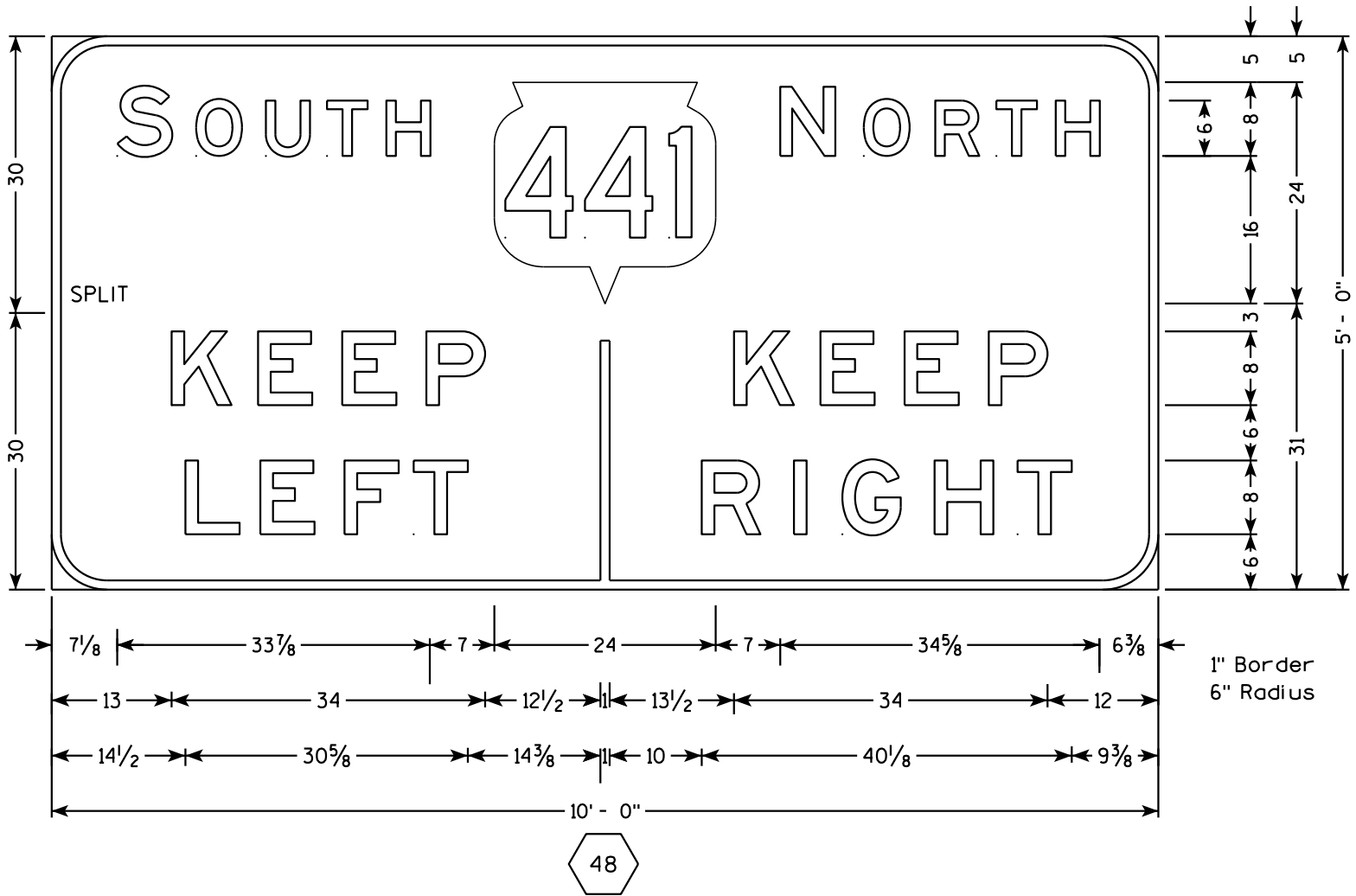


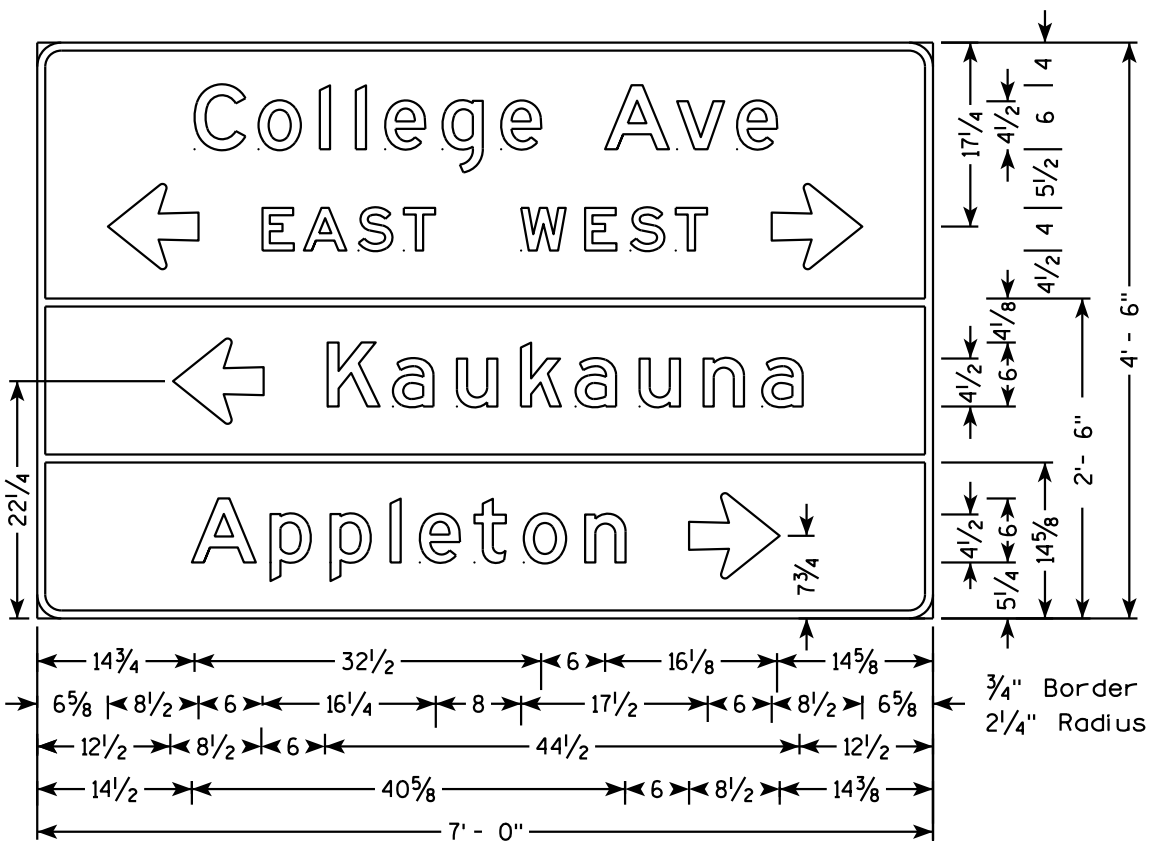
- NOTES**
1. All Signs Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
  2. Color:  
Background - GREEN  
Message - WHITE
  3. Message Series - E



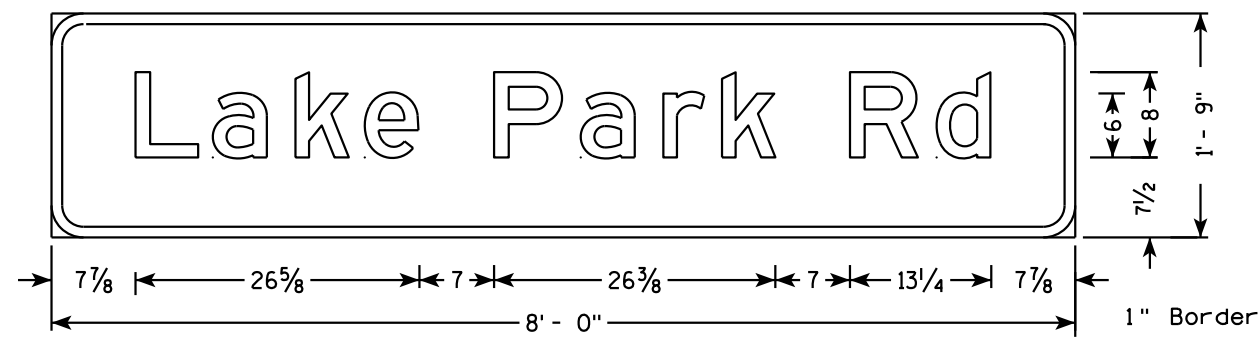
NOTES

- 1. All Signs Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:  
Background - GREEN  
Message - WHITE
- 3. Message Series - E





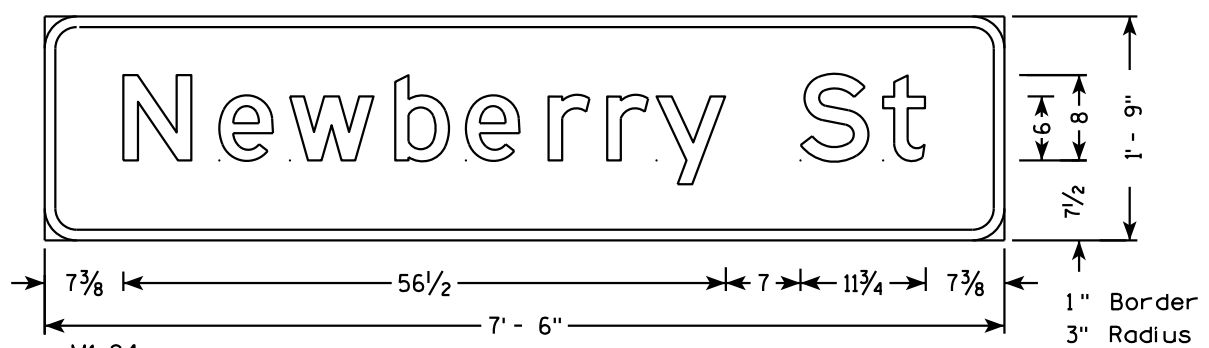
D1-4  
63



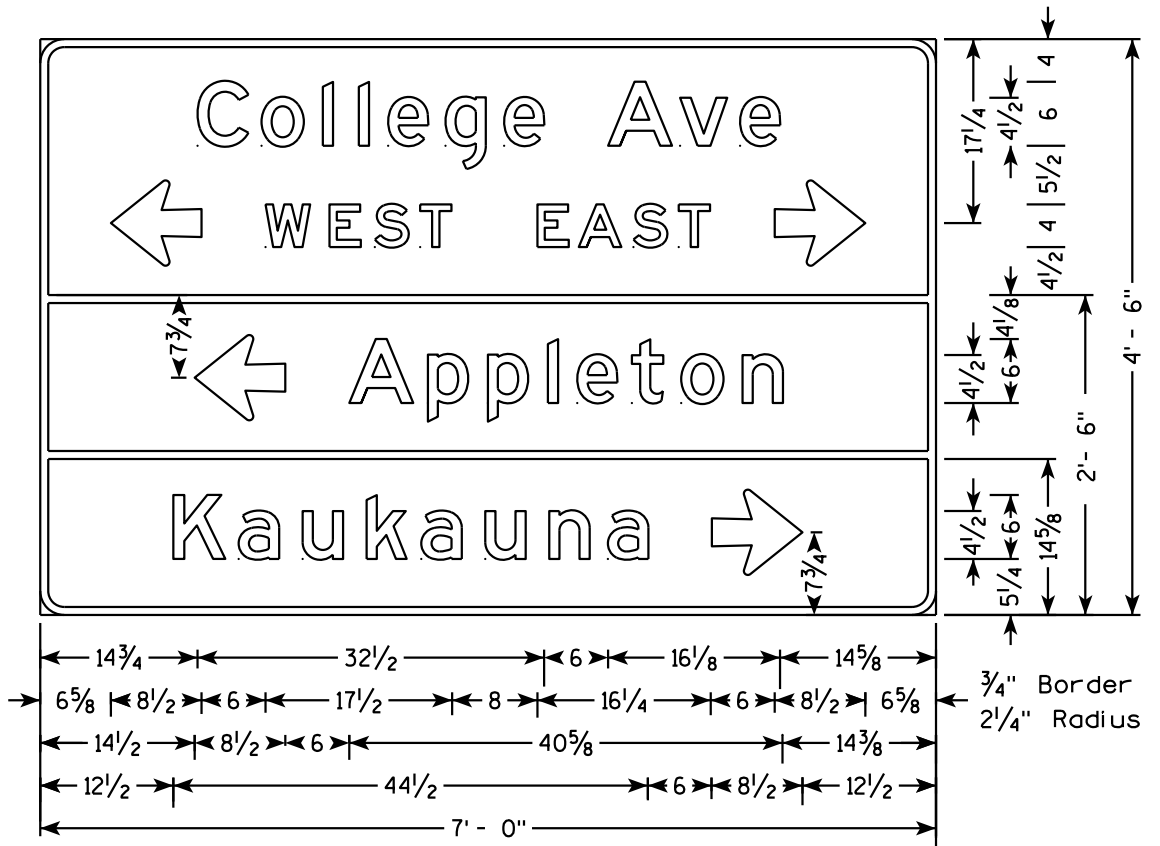
M1-94  
19 21

NOTES

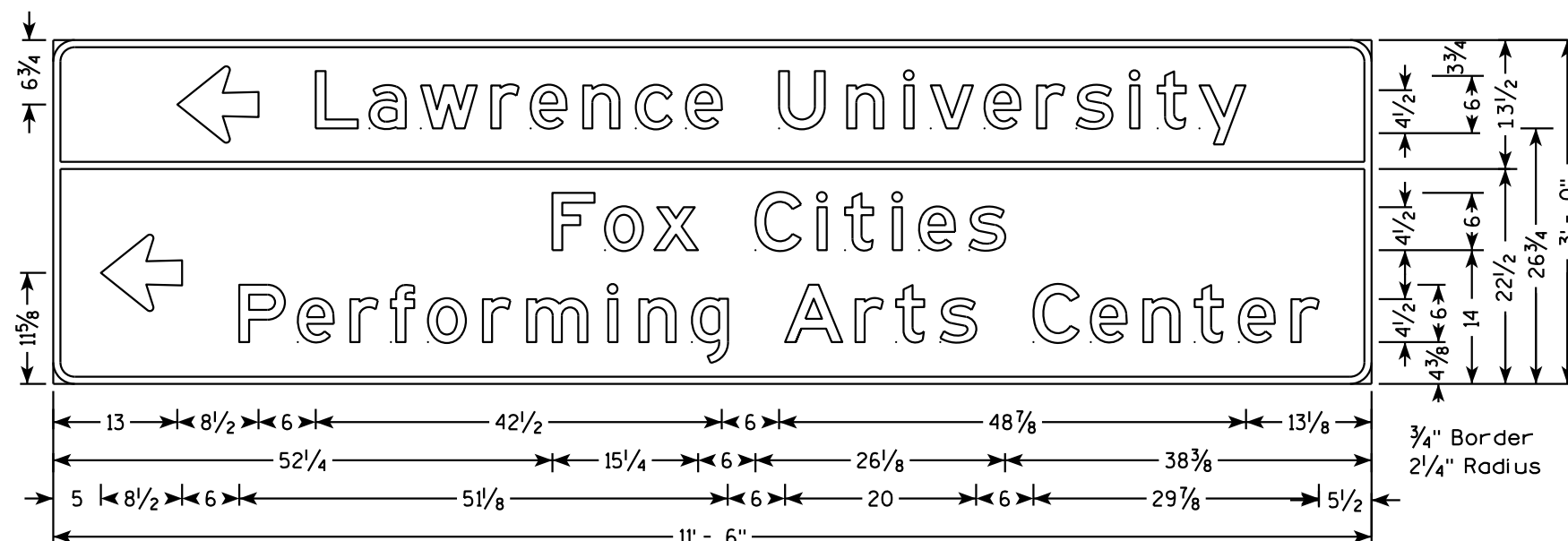
1. All Signs Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - GREEN  
Message - WHITE
3. Message Series - E



M1-94  
68 69

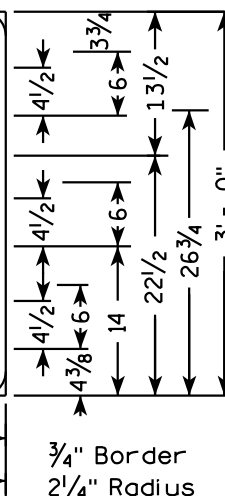


D1-4  
40



D1-3

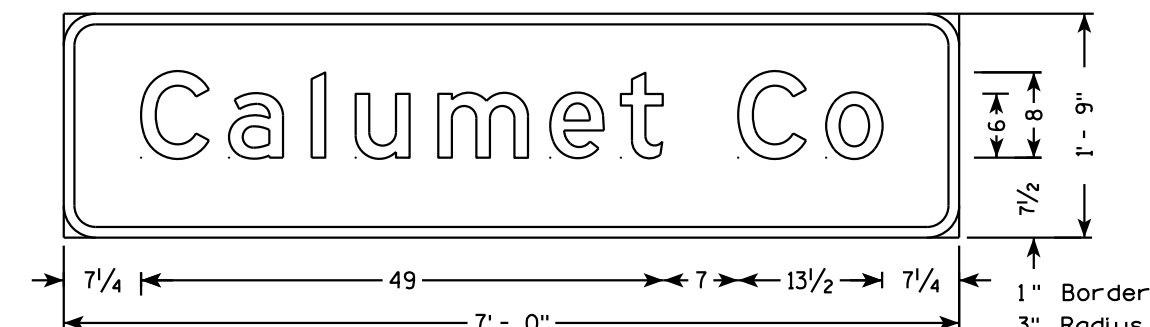
39



3/4" Border  
2 1/4" Radius

# NOTES

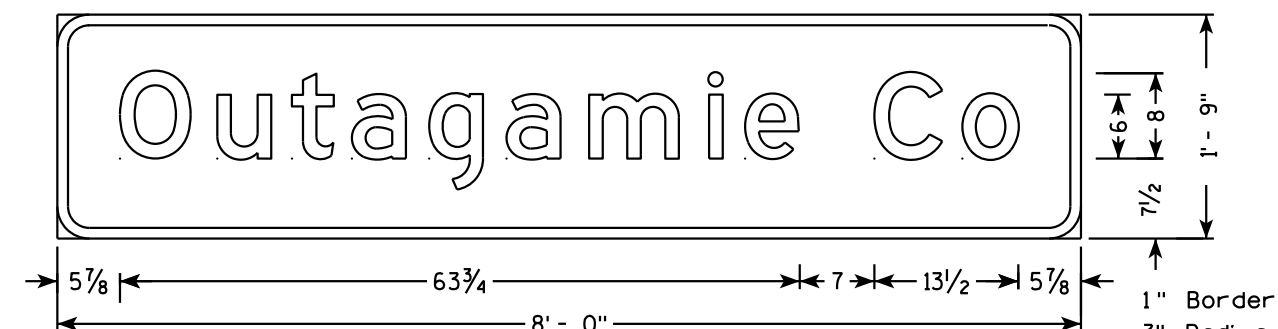
1. All Signs Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - GREEN  
Message - WHITE
3. Message Series - E



I2-2

28

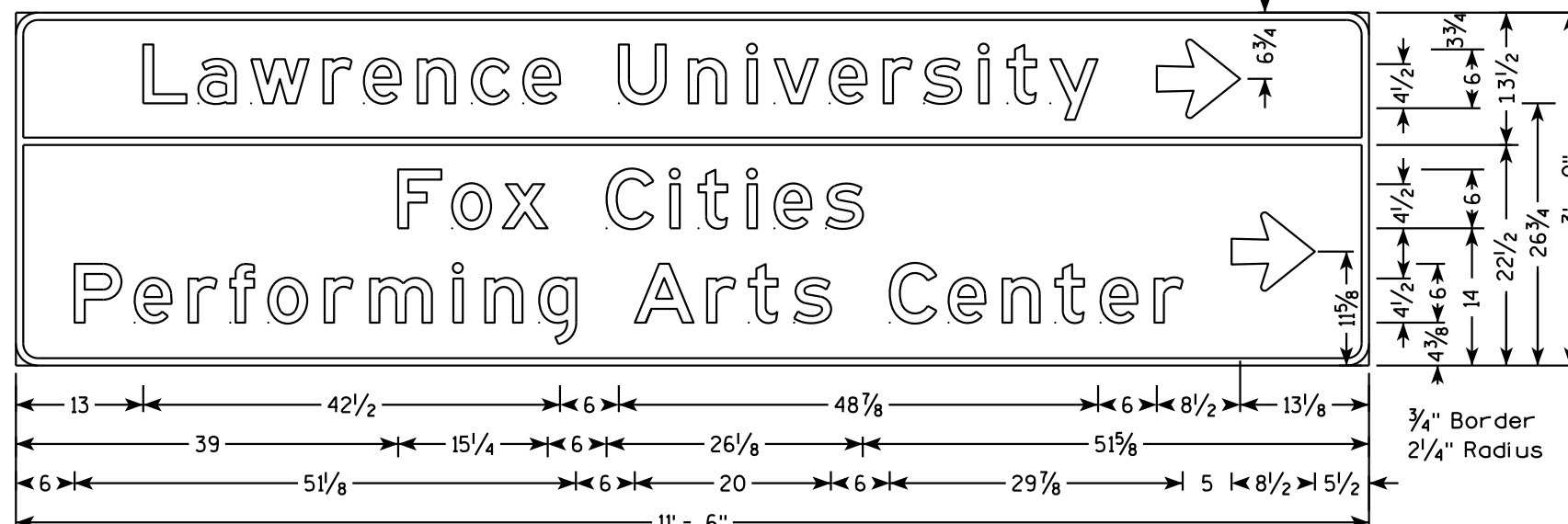
1" Border  
3" Radius



I2-2

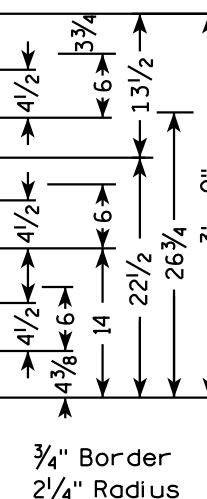
27

1" Border  
3" Radius



D1-3

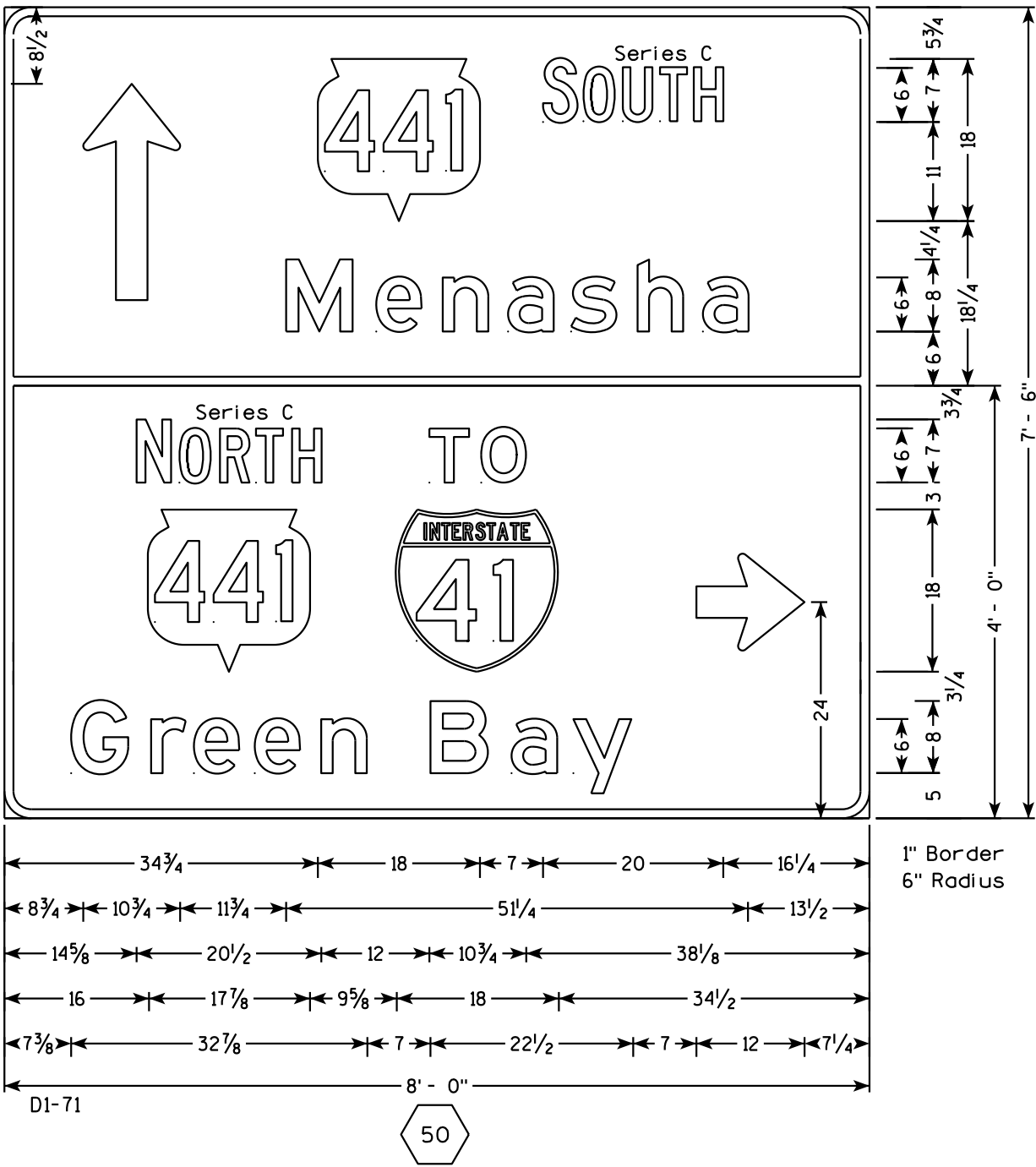
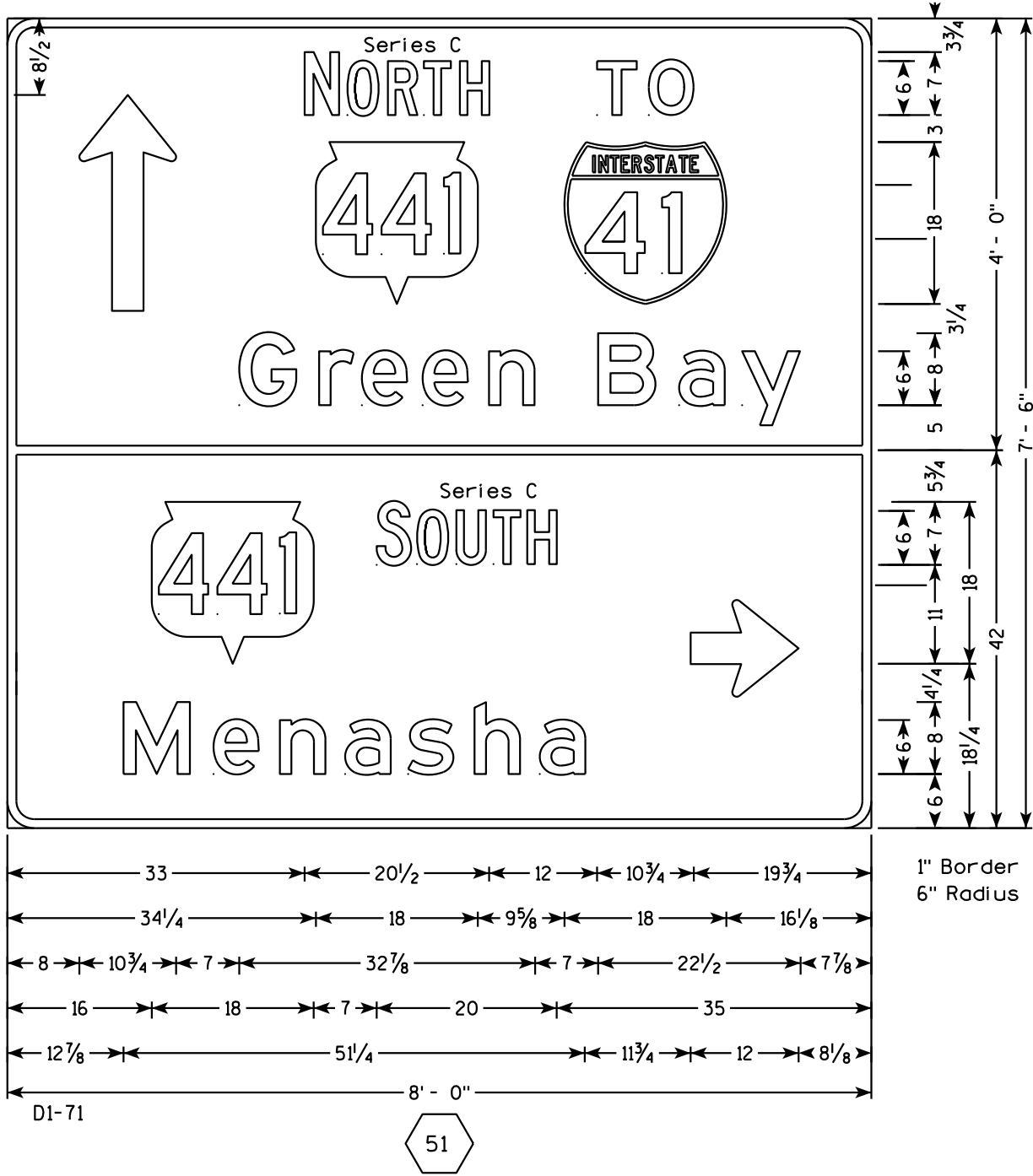
57



3/4" Border  
2 1/4" Radius

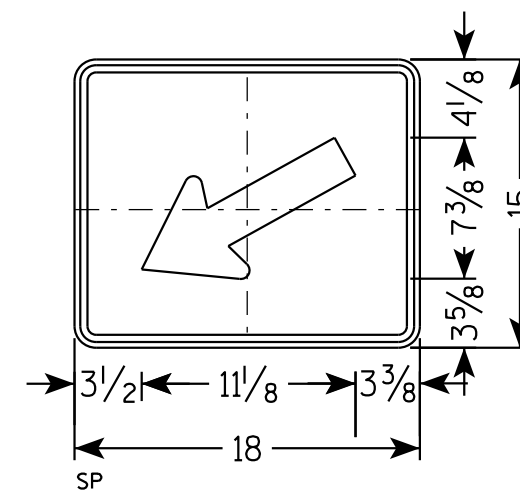
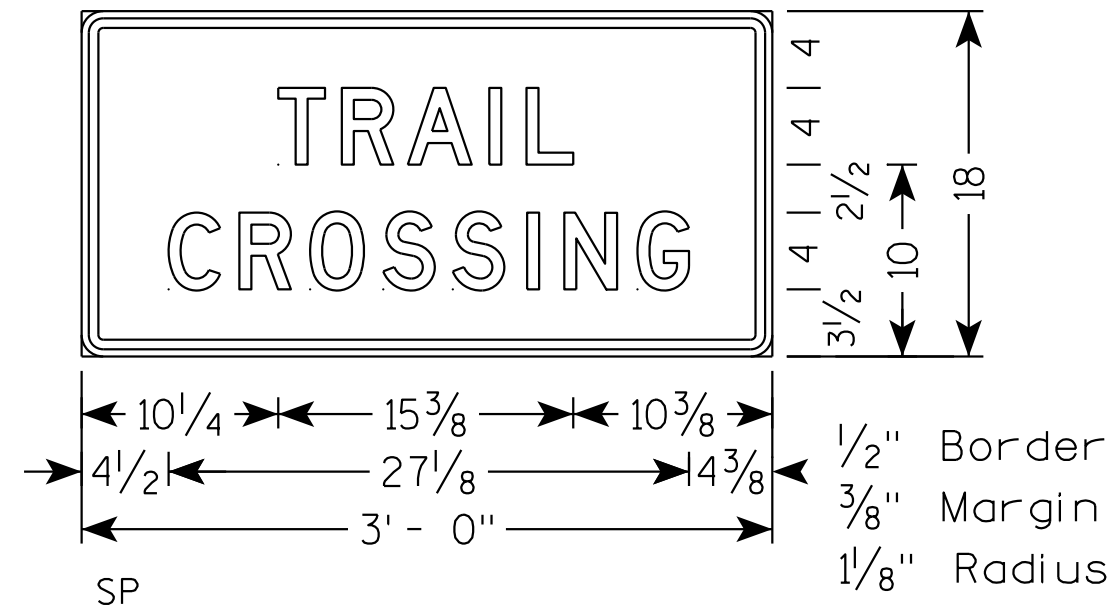
NOTES

- 1. All Signs Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:  
Background - GREEN  
Message - WHITE
- 3. Message Series - E

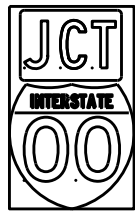


# NOTES

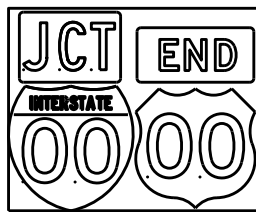
1. All Signs are Type II - Type F Reflective
2. Color:  
Background - ORANGE  
Message - BLACK
3. Message Series - D



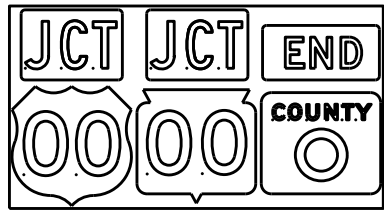
TYPICAL ASSEMBLIES



J1-1



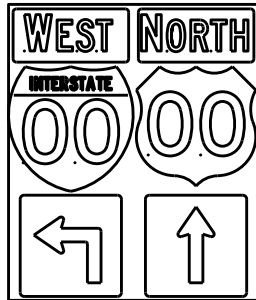
J1-2



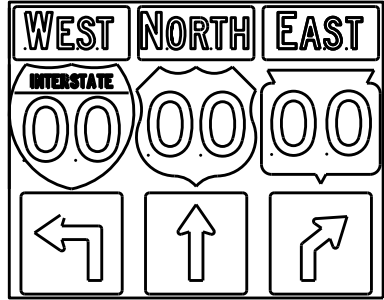
J1-3



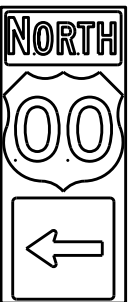
J2-1



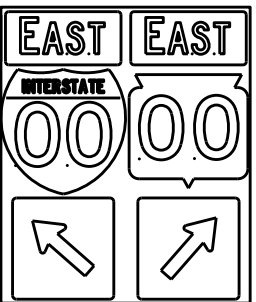
J2-2



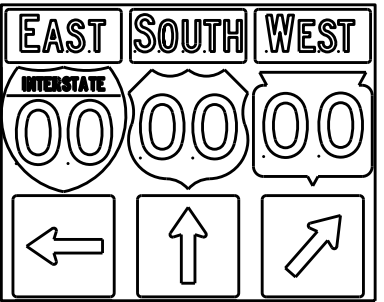
J2-3



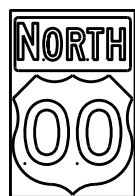
J3-1



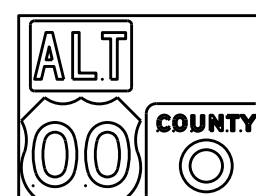
J3-2



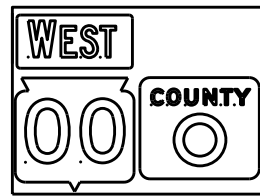
J3-3



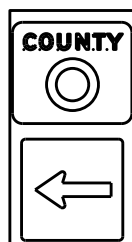
J4-1



J4-2



J4-2



J13-1



J12-1



J32-1



J33-1



J23-1

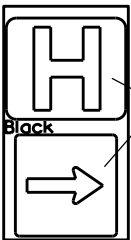


J22-1



JV

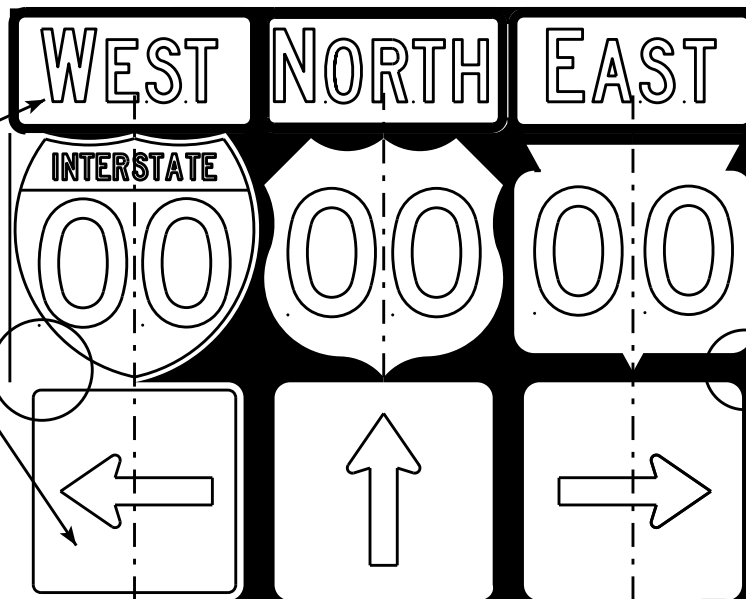
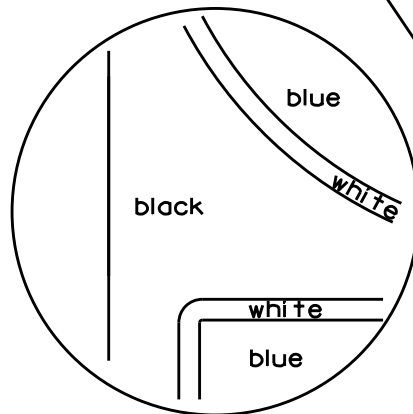
( Typical Vertical J-Assembly  
See Note 10 and 11)



JH-1

Blue Background

[blue background  
with interstate]



[black background]

ROUTE MARKERS & COMPONENTS  
IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

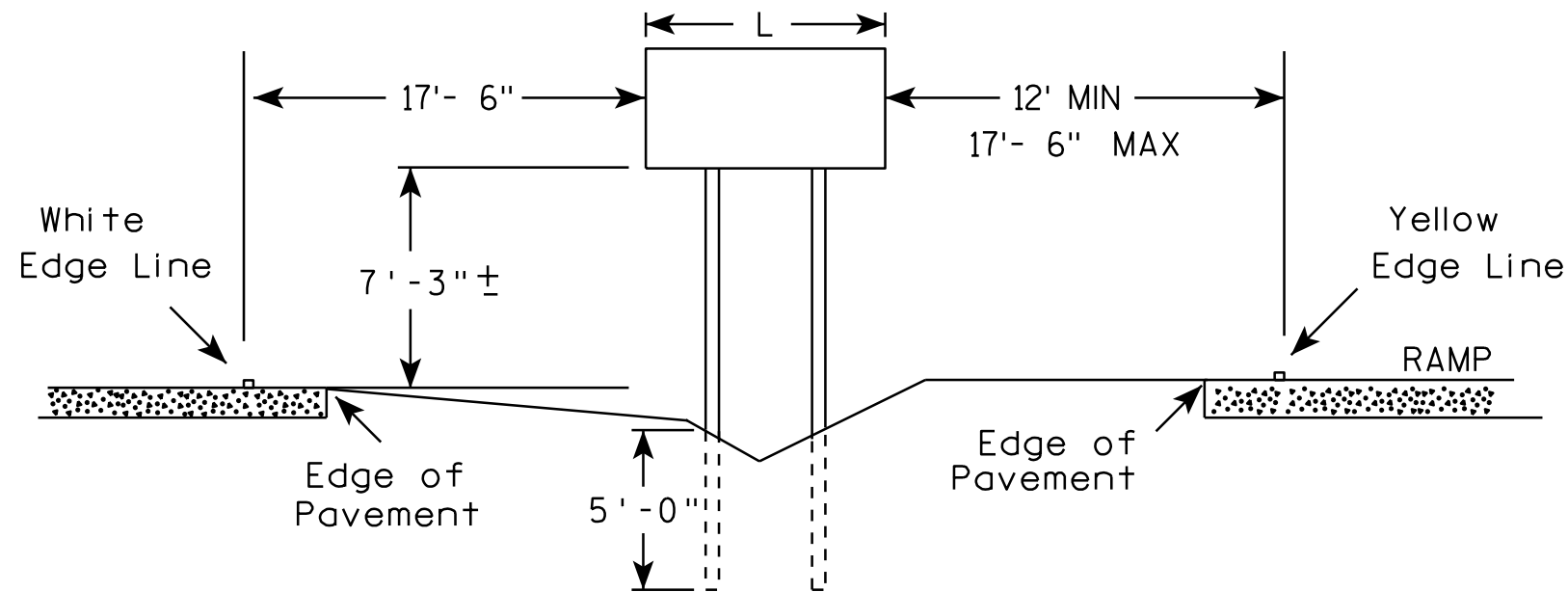
APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

DATE 2/06/14 PL 183 A2-1S.8

SHEET NO: E

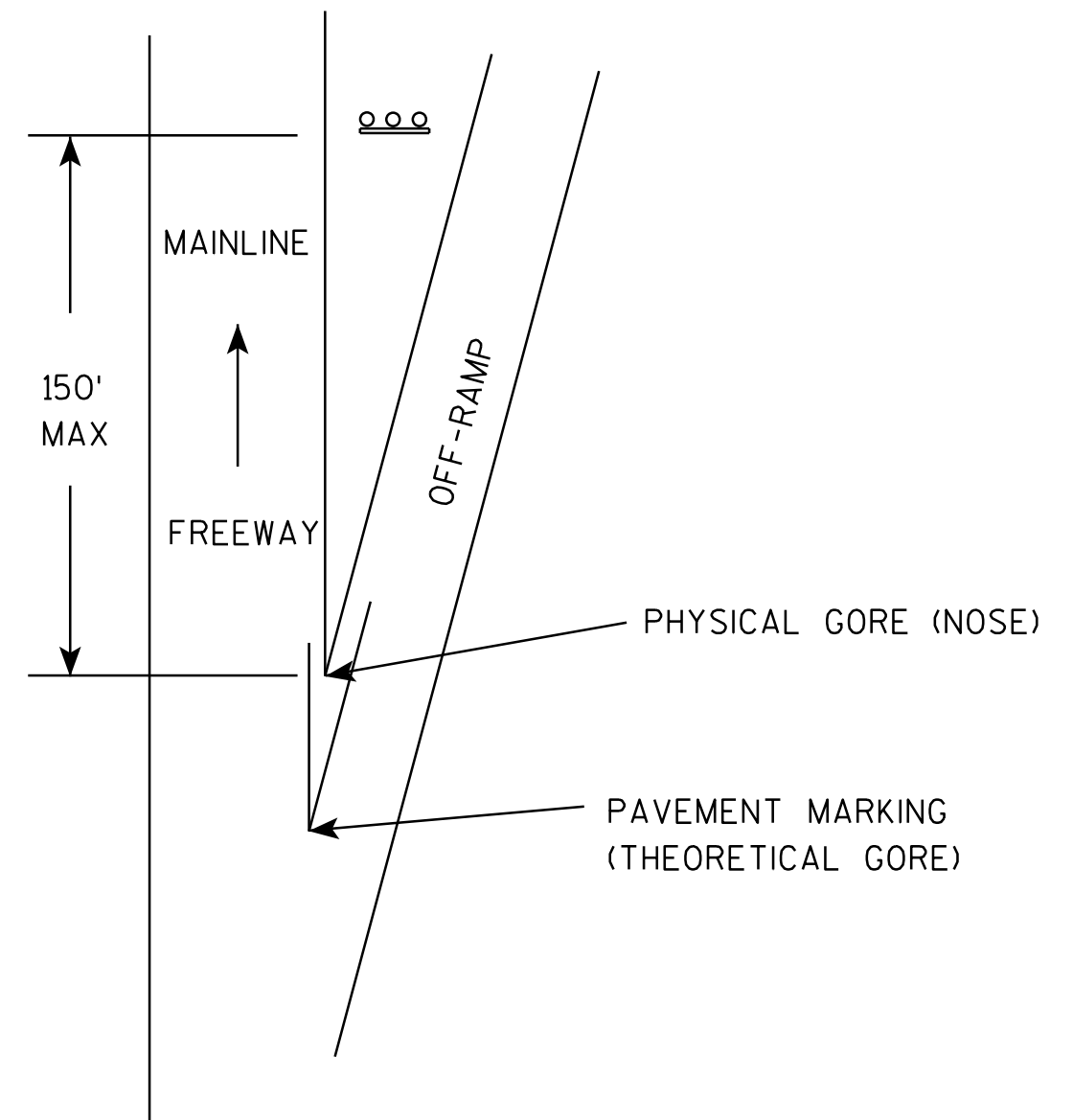
NOTES

1. Signs are Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - Black Non-reflective  
Message - see Note 5
3. Message Series - See Note 5
4. Corners shall be square or rounded if base material is plywood. If base material is metal the corners shall be rounded.
5. The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
6. Certain marker heads require the component pieces to be the same color. As an example, all the components used with an M1-1 Interstate marker shall be blue.
7. Single panel j-assemblies shall only be used with route marker shields that are same size. If the route marker shields are different size use multiple piece component.
8. Route assemblies that have 24 inch route shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have one horizontal splice between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 inches or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
9. Route assemblies that have 36 inch shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have two horizontal splices. One horizontal splice shall be between the cardinal direction and route shields and the other horizontal splice shall be between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
10. All Vertical J Assemblies are given a Sign Code of JV
11. For JV Assemblies that have a mixture of Interstate and non Interstate shields, arrows and cardinals shall be white on blue.



#### GENERAL NOTES

1. The 150 foot distance from the physical gore (where pavement ends) will normally provide the offsets as shown.
2. If roadway geometrics permit, the sign may be closer than the 150 foot distance as long as the offsets are maintained.
3. At no time shall the location be greater than 150 feet. If the normal offsets cannot be maintained, they can be reduced to 6 feet from the edge of the paved shoulder (both freeway and ramp).
4. The offset from edge of sign to the yellow edge line on the ramp is shown as a minimum of 12 feet and a maximum of 17 feet, 6 inches. Preference is adhering to the maximum rather than the minimum dimension.
5. When L is equal to or exceeds 10 feet, use 3 posts as per A4-4.
6. The ( $\pm$ ) tolerance for the mounting height is 3 inches.



TYPICAL INSTALLATION  
OF TYPE II SIGNS ON  
WOOD POSTS IN GORE

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

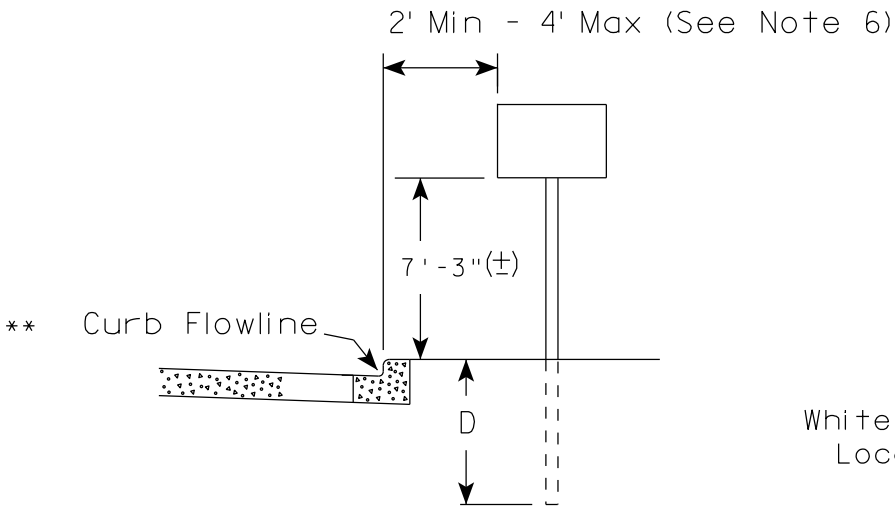
DATE 2/06/14 PLA 184 A4-2.3

PROJECT NO:

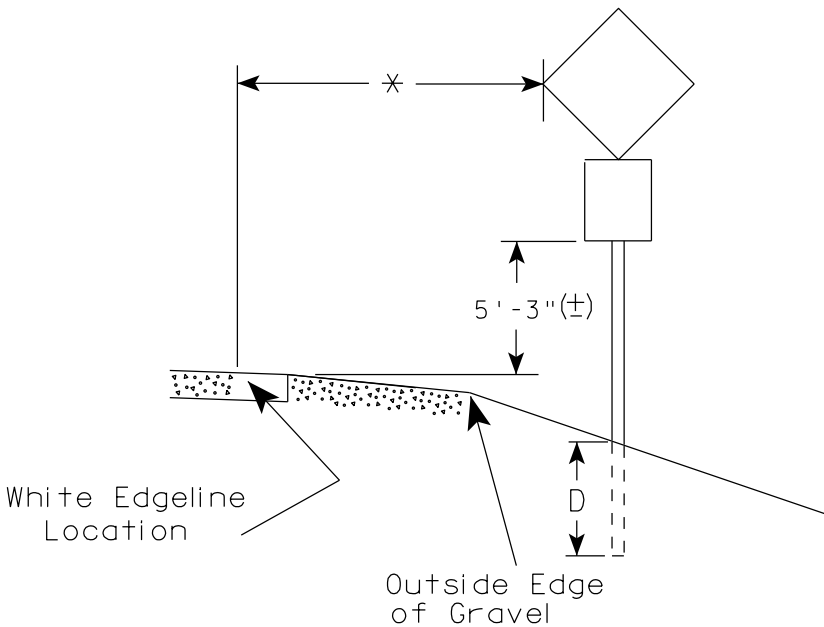
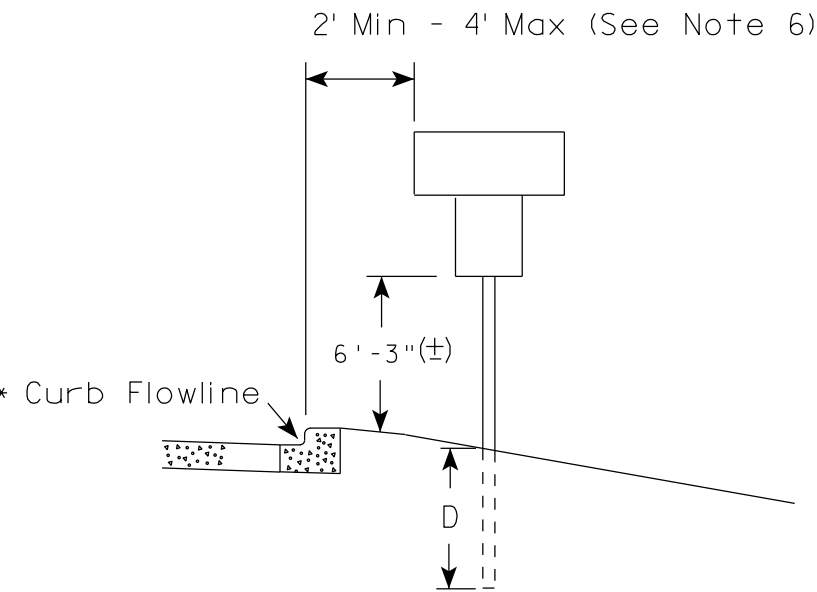
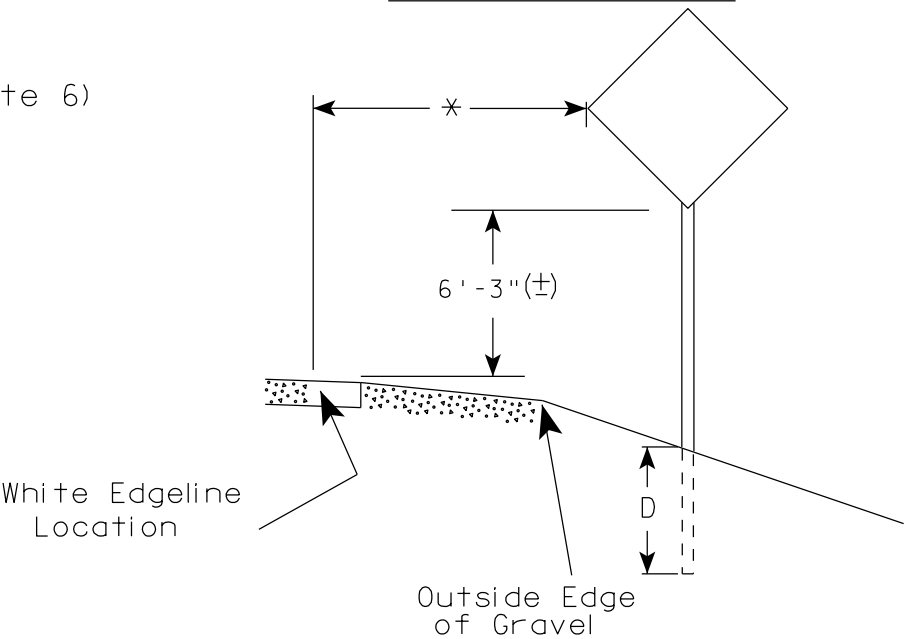
SHEET NO:

E

URBAN AREA



RURAL AREA (See Note 2)



GENERAL NOTES

1. Signs wider than 4 feet, 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), 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" (±).

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.

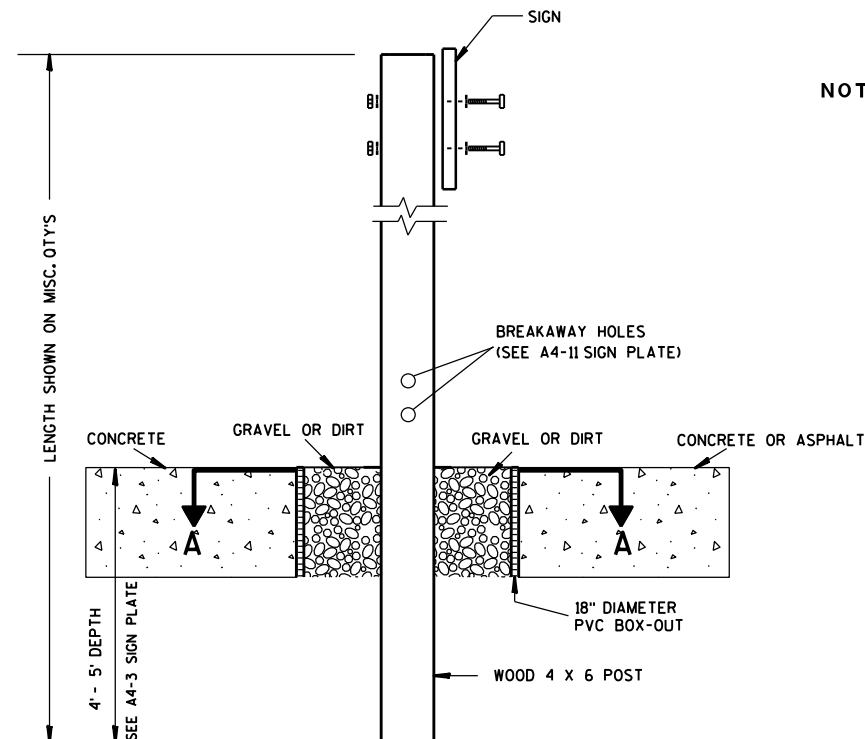
TYPICAL INSTALLATION  
OF PERMANENT TYPE II  
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED  
*Matthew R. Rauch*  
for State Traffic Engineer

DATE 11/12/14 PLATE NO. A4-3.19

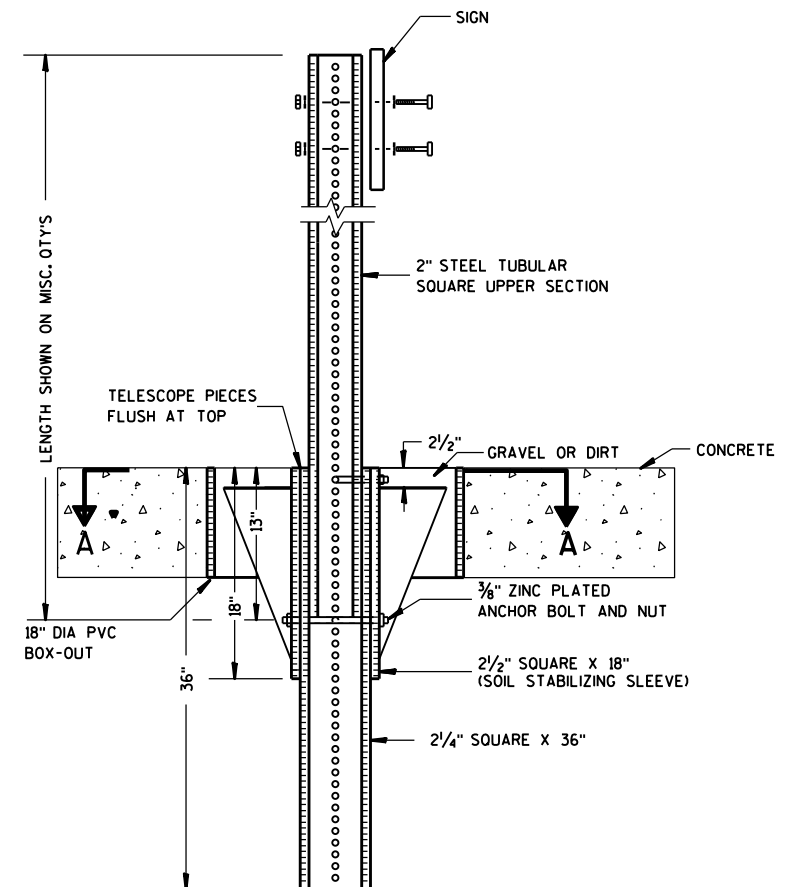
185



### ELEVATION VIEW

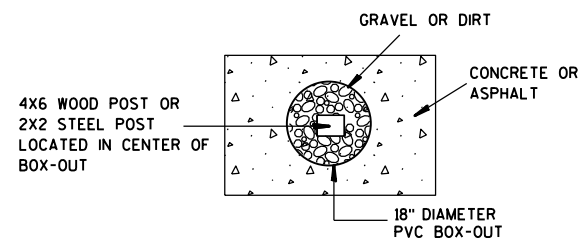
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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 PLAT 186 A4-3B.1

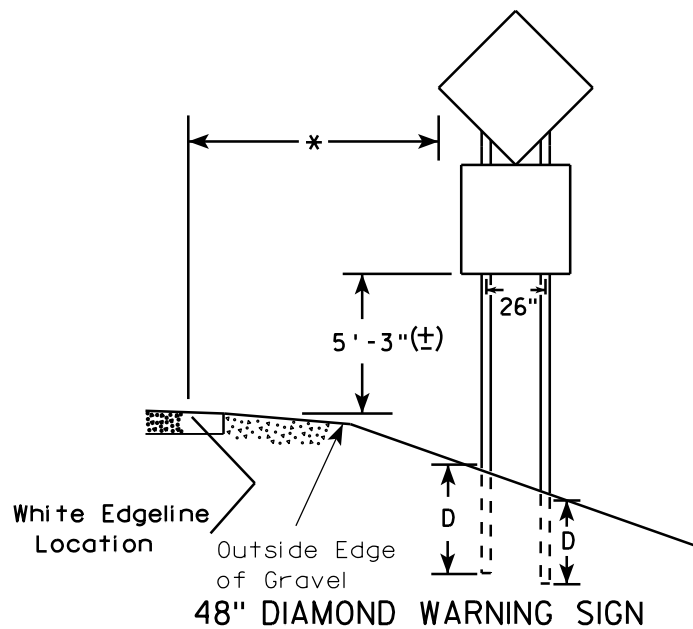
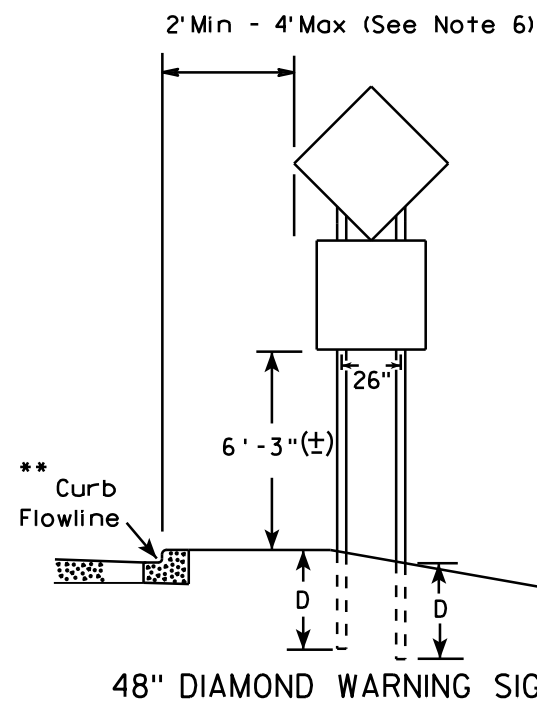
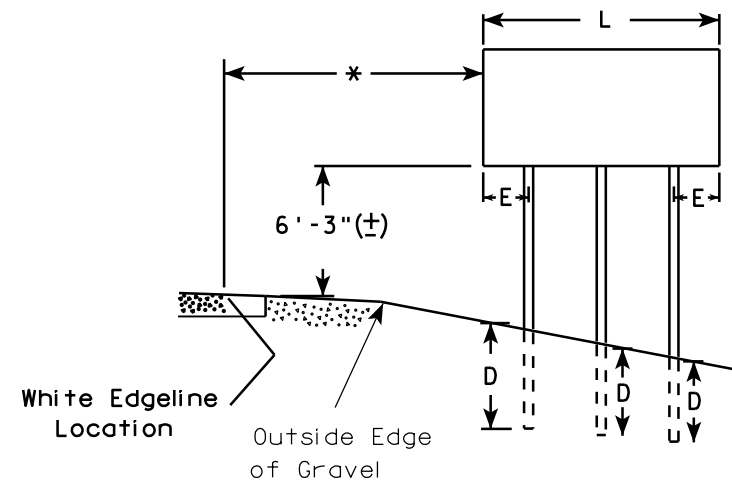
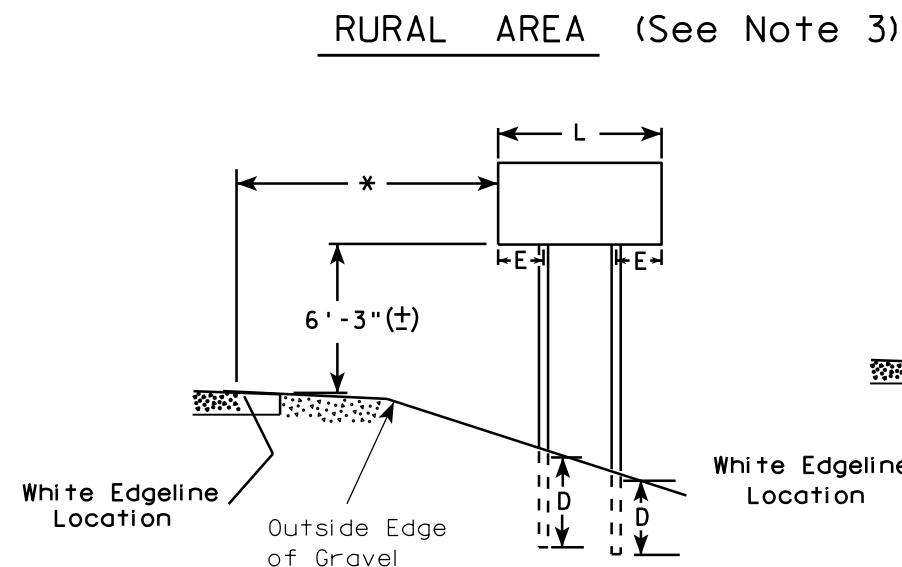
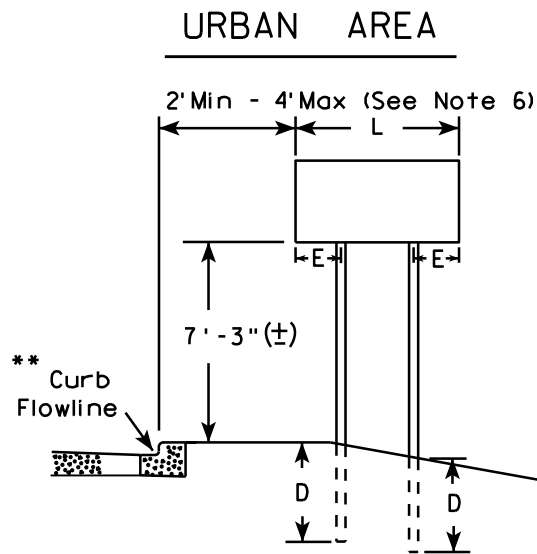
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



- GENERAL NOTES**
- For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
  - See tables below for required number of posts.
  - For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
  - The (±) tolerance for mounting height is 3 inches.
  - Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
  - Offset distance shall be consistent with existing signs or consistent throughout length of project.
  - Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
  - The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

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

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

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

\*\*\*

| SIGN SHAPE OTHER THAN DIAMOND<br>(TWO POSTS REQUIRED) |     |
|-------------------------------------------------------|-----|
| L                                                     | E   |
| Greater than 48"<br>Less than 60"                     | 12" |
| 60" to 120"                                           | L/5 |

| SIGN SHAPE OTHER THAN DIAMOND<br>(THREE POSTS REQUIRED) |     |
|---------------------------------------------------------|-----|
| L                                                       | E   |
| Greater than 120"<br>less than 168"                     | 12" |

| SIGN SHAPE OTHER THAN DIAMOND<br>(FOUR POSTS REQUIRED) |     |
|--------------------------------------------------------|-----|
| L                                                      | E   |
| 168" and greater                                       | 12" |

POST EMBEDMENT DEPTH

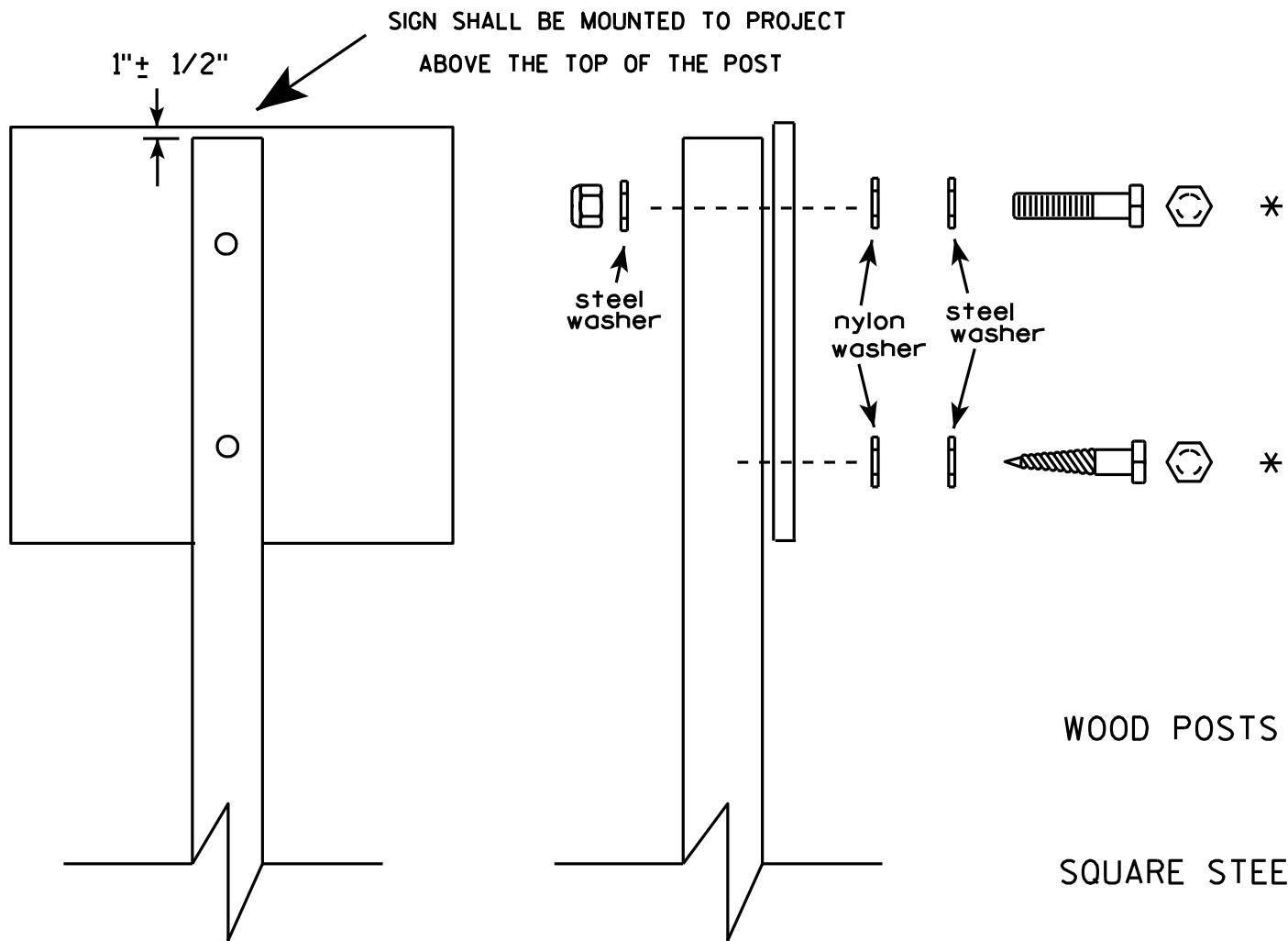
| Area of Sign<br>Installation<br>( Sq. Ft. ) | D<br>( Min ) |
|---------------------------------------------|--------------|
| 20 or Less                                  | 4'           |
| Greater than 20                             | 5'           |

TYPICAL INSTALLATION  
OF TYPE II SIGNS  
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 11/12/14 PLATE NO. 13

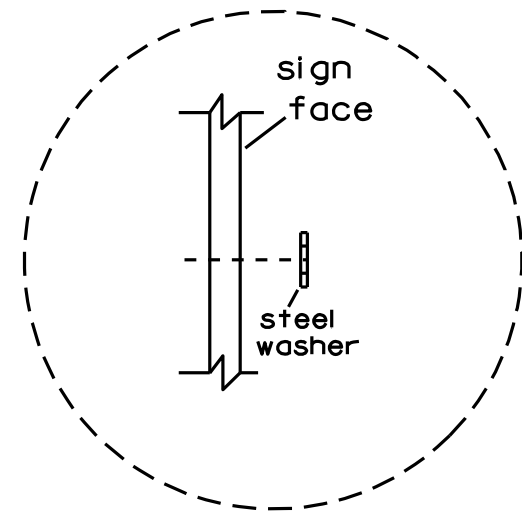


Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

- 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 POSTS (4" x 4" or 4" x 6")  
LAG SCREWS - 3/8" X 3"  
MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts
- SQUARE STEEL POSTS (2" x 2")  
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts  
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 for all Type H signs.

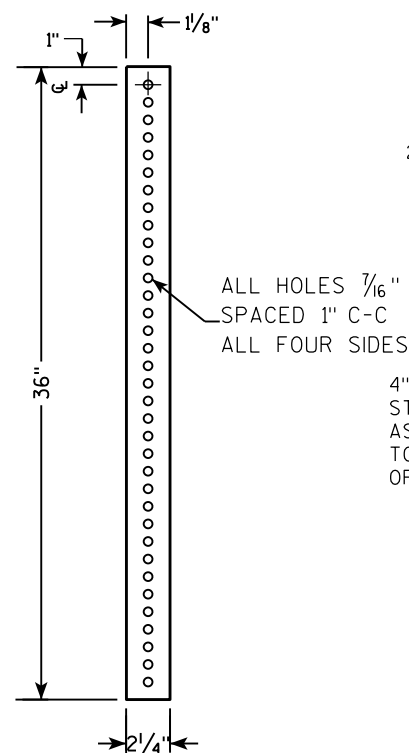


Washer Placement when Sign Has Other Than Type H or Type F Face

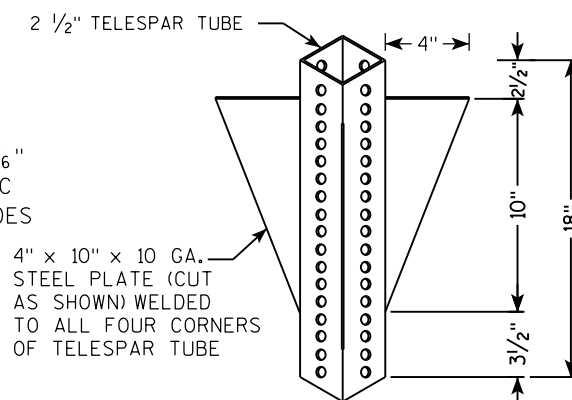
\* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

|                                  |                                                       |
|----------------------------------|-------------------------------------------------------|
| ATTACHMENT OF SIGNS<br>TO POSTS  |                                                       |
| WISCONSIN DEPT OF TRANSPORTATION |                                                       |
| APPROVED                         | <i>Matthew R. Rauch</i><br>For State Traffic Engineer |
| DATE 3/23/10                     | PLATE NO. A4-8.7                                      |

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



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



TECHNICAL DRAWING OF A SIGN POST ASSEMBLY.

**Side View Labels:**

- SIGN
- SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL
- 2" STEEL TUBULAR SQUARE UPPER SECTION
- ALL HOLES  $\frac{7}{16}$ " SPACED 1" C-C ALL FOUR SIDES
- $\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT
- 2 1/2" GRAVEL OR DIRT
- $\frac{3}{8}$ " ZINC PLATED ANCHOR BOLT AND NUT
- 2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)
- 2 1/4" SQUARE X 36"

**Cross Section Labels:**

- TELESCOPE PIECES FLUSH AT TOP
- 13"
- 18"
- 36"
- 18" DIA SCHEDULE 40 PVC BOX-OUT

TECHNICAL DRAWING OF A SIGNPOST ASSEMBLY.

**Side View Dimensions:**

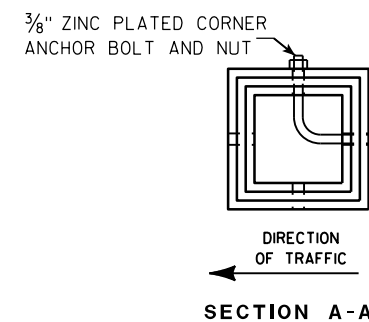
- Overall height: LENGTH SHOWN ON MISC. Q'TYS
- Top section height: 36"
- Section below top: 18"
- Section below that: 12"

**End View Dimensions:**

- Top section width: 2"
- Section below top: 2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)
- Bottom section width: 2 1/4" SQUARE X 36"

**Labels and Specifications:**

- SIGN
- SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL
- 2" STEEL TUBULAR SQUARE UPPER SECTION
- ALL HOLES 7/16" SPACED 1" C-C
- ALL FOUR SIDES
- 3/8" ZINC PLATED CORNER ANCHOR BOLT AND NUT
- TELESCOPE PIECES FLUSH AT TOP
- 3/8" ZINC PLATED ANCHOR BOLT AND NUT



| 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 Matthaeus R. Rauch

for State Traffic Engineer

DATE 2/05/15 PLATI 189 14-9.9

PROJECT NO:

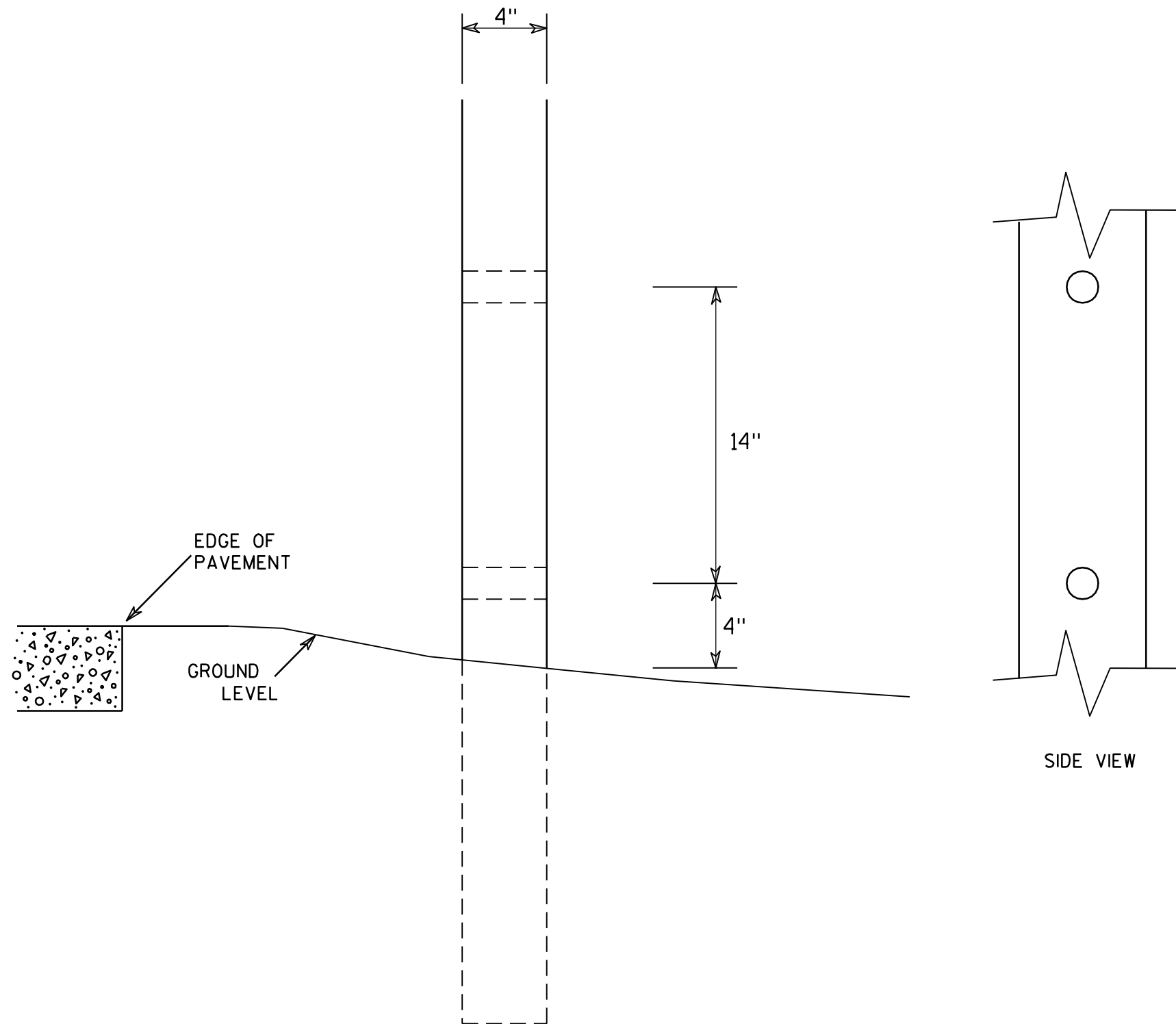
HWY:

COUNTY:

SHEET NO:

**T**

7



GENERAL NOTES

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

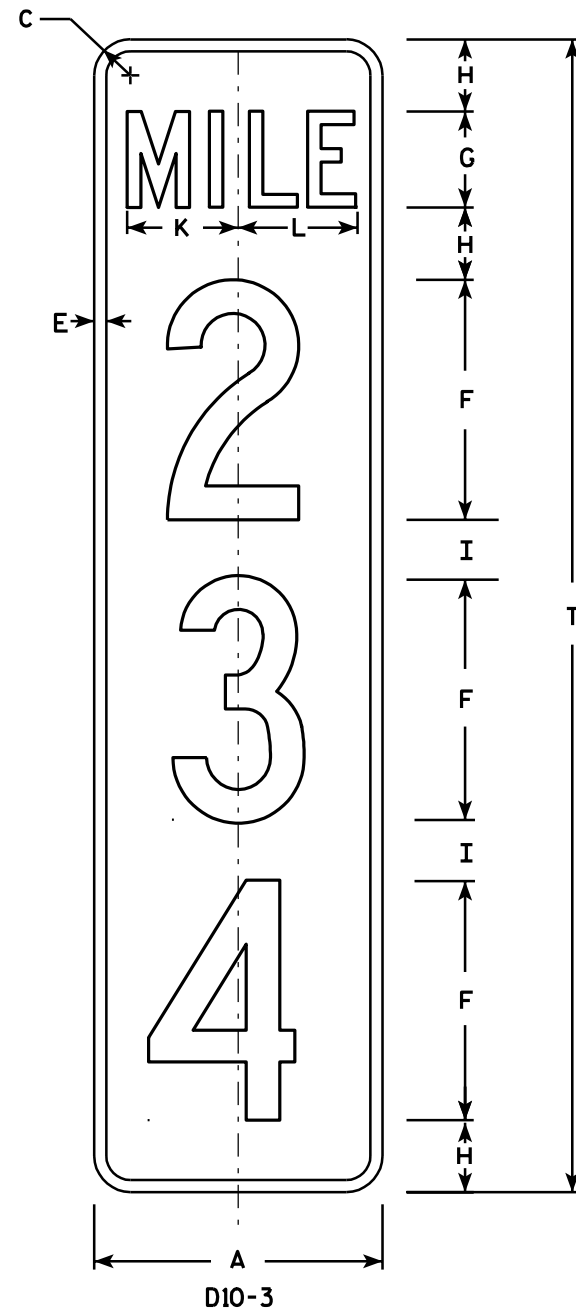
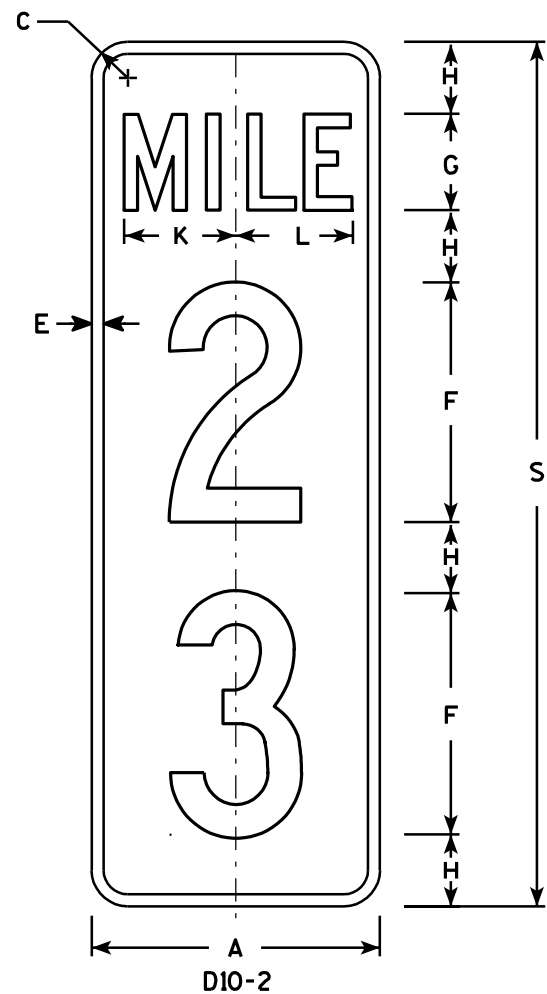
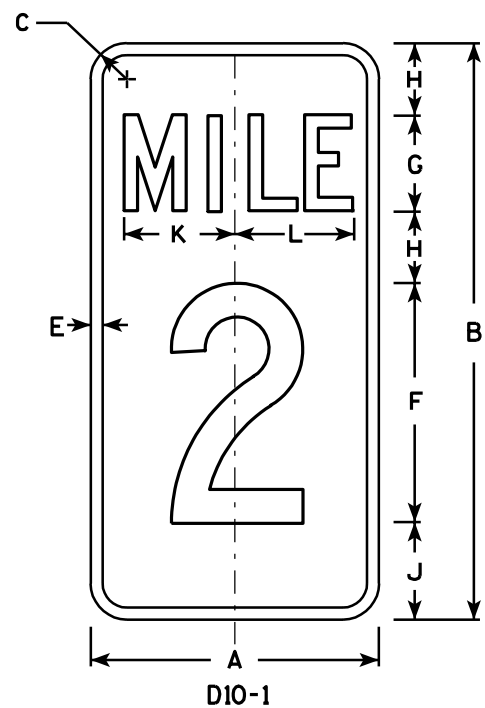
7

4 X 6 WOOD POST  
MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Chester J. Spang*  
for State Traffic Engineer

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



# NOTES

- Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:  
Background - Green  
Message - White - Type H Reflective
- Message Series - C
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- Optically adjust numerals about the centerline of the sign to achieve proper balance.

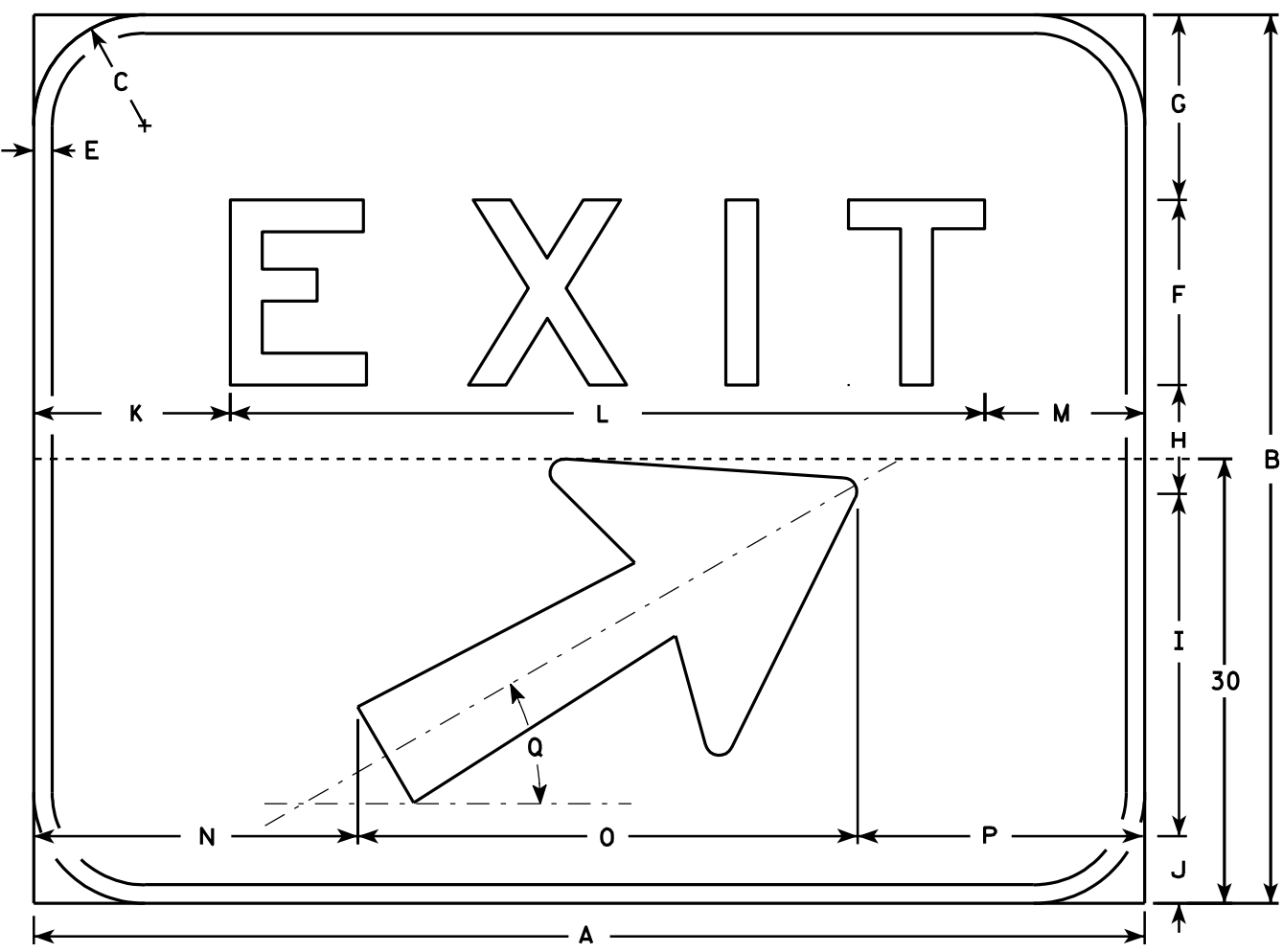
Metric equivalent  
for this sign is:

| PHY. SIZE |                  |
|-----------|------------------|
| 12 X 24   | 300 mm X 600 mm  |
| 12 X 36   | 300 mm X 900 mm  |
| 12 X 48   | 300 mm X 1200 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 |
|------|----|----|-------|---|-----|----|---|---|-------|---|-------|-------|---|---|---|---|---|---|----|----|---|---|---|---|---|---|
| 1    |    |    |       |   |     |    |   |   |       |   |       |       |   |   |   |   |   |   |    |    |   |   |   |   |   |   |
| 2    |    |    |       |   |     |    |   |   |       |   |       |       |   |   |   |   |   |   |    |    |   |   |   |   |   |   |
| 3    |    |    |       |   |     |    |   |   |       |   |       |       |   |   |   |   |   |   |    |    |   |   |   |   |   |   |
| 4    | 12 | 24 | 1 1/2 |   | 1/2 | 10 | 4 | 3 | 2 1/2 | 4 | 4 5/8 | 4 7/8 |   |   |   |   |   |   | 36 | 48 |   |   |   |   |   |   |
| 5    | 12 | 24 | 1 1/2 |   | 1/2 | 10 | 4 | 3 | 2 1/2 | 4 | 4 5/8 | 4 7/8 |   |   |   |   |   |   | 36 | 48 |   |   |   |   |   |   |

| D10-1           | D10-2           | D10-3           |
|-----------------|-----------------|-----------------|
| Area<br>sq. ft. | Area<br>sq. ft. | Area<br>sq. ft. |
| 2.0             | 3.0             | 4.0             |
| Area<br>m2      | Area<br>m2      | Area<br>m2      |
| .19             | .28             | .38             |

|                                                                                                                                   |                   |
|-----------------------------------------------------------------------------------------------------------------------------------|-------------------|
| STANDARD SIGN<br>D10-1 , D10-2 & D10-3                                                                                            |                   |
| WISCONSIN DEPT OF TRANSPORTATION                                                                                                  |                   |
| APPROVED <br>for Director, Office of Traffic |                   |
| DATE 1/16/02                                                                                                                      | PLATE NO. D10-3.2 |



E5-1

NOTES

- 1. Sign is Type II - Type H reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:  
Background - Green  
Message - White (Type H reflective)
- 3. Message Series - E
- 4. Corners may be square or rounded but borders shall be rounded as shown.
- 5. Base material for this sign shall be plywood and shall be split into two seperate pieces for the 72 x 60 size as shown on the detail by the dashed line (-----).
- 6. Arrow is Type "A" from sign plate A1-1.
- 7. As per the Standard Spec's, this sign shall not have a vertical joint.

Metric equivalent  
for this sign is:

| SIZE |                   |
|------|-------------------|
| 1    |                   |
| 2    |                   |
| 3    |                   |
| 4    | 1500 mm X 1200 mm |
| 5    | 1800 mm X 1500 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<br>sq. ft. | Area<br>m <sup>2</sup> |
|------|----|----|---|---|---|----|----|-------|--------|-------|--------|--------|--------|--------|----|--------|-----|---|---|---|---|---|---|---|---|---|-----------------|------------------------|
| 1    |    |    |   |   |   |    |    |       |        |       |        |        |        |        |    |        |     |   |   |   |   |   |   |   |   |   |                 |                        |
| 2    |    |    |   |   |   |    |    |       |        |       |        |        |        |        |    |        |     |   |   |   |   |   |   |   |   |   |                 |                        |
| 3    |    |    |   |   |   |    |    |       |        |       |        |        |        |        |    |        |     |   |   |   |   |   |   |   |   |   |                 |                        |
| 4    | 60 | 48 | 6 |   | 1 | 10 | 10 | 5 7/8 | 18 1/2 | 3 5/8 | 10 5/8 | 40 3/4 | 8 5/8  | 17 1/2 | 27 | 15 1/2 | 30° |   |   |   |   |   |   |   |   |   | 20.0            | 1.80                   |
| 5    | 72 | 60 | 6 |   | 1 | 12 | 12 | 10    | 18 1/2 | 7 1/2 | 13 1/4 | 48 1/2 | 10 1/4 | 23 1/2 | 27 | 21 1/2 | 30° |   |   |   |   |   |   |   |   |   | 30.0            | 2.70                   |

STANDARD SIGN  
E5 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED  
*Christa J. Spang*  
for State Traffic Engineer

DATE 6/22/00 PLATE NO. E5-1.8

PROJECT NO:

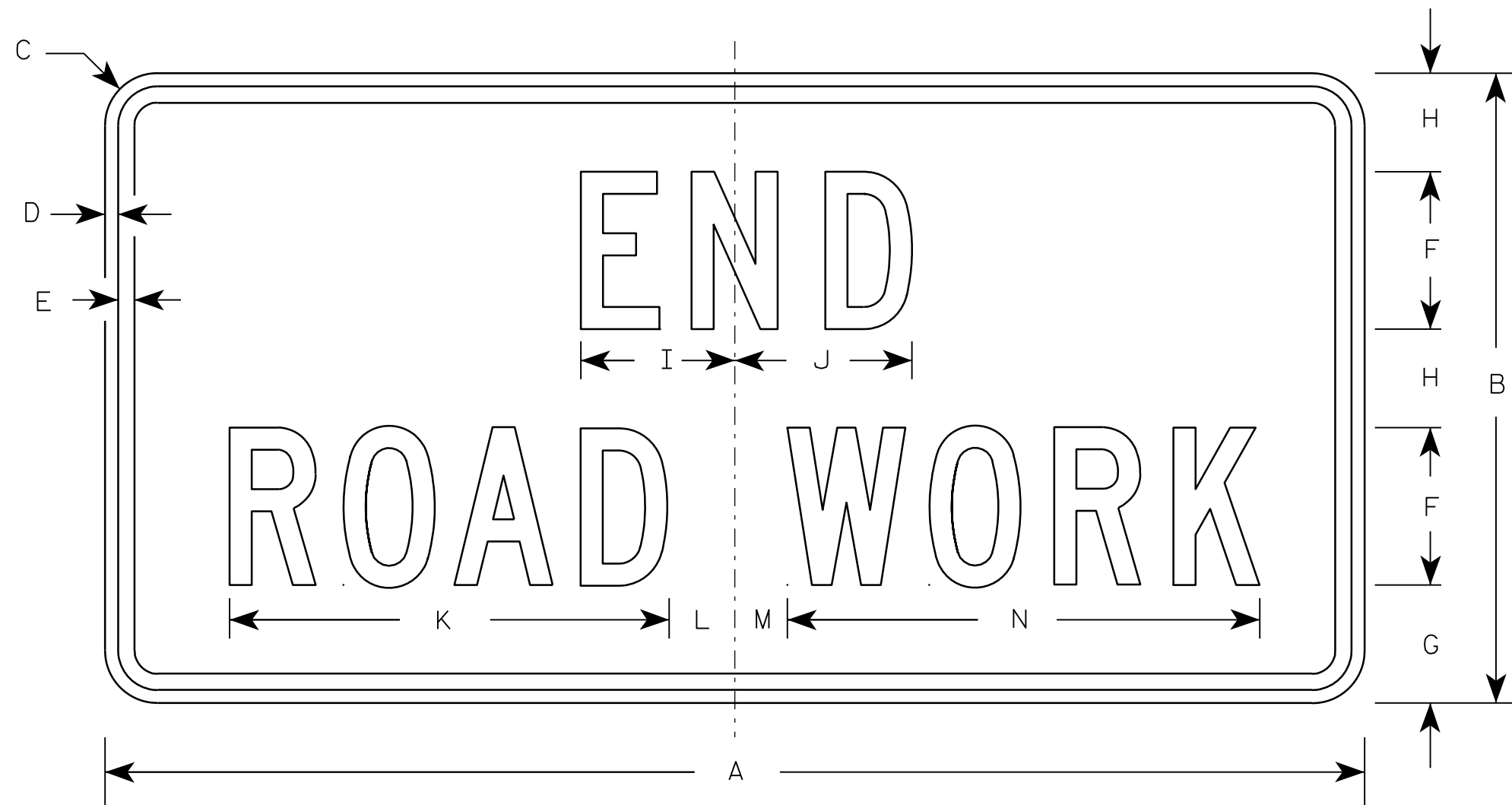
HWY:

COUNTY:

SHEET NO: 192

E

7



G20-2A

Metric equivalent  
for this sign is:

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

| SIZE | A  | B  | C     | D   | E   | F | G     | H     | I     | J     | K      | L     | M     | N      | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. | Area<br>m <sup>2</sup> |
|------|----|----|-------|-----|-----|---|-------|-------|-------|-------|--------|-------|-------|--------|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|------------------------|
| 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                   |

NOTES

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

7

PROJECT NO:

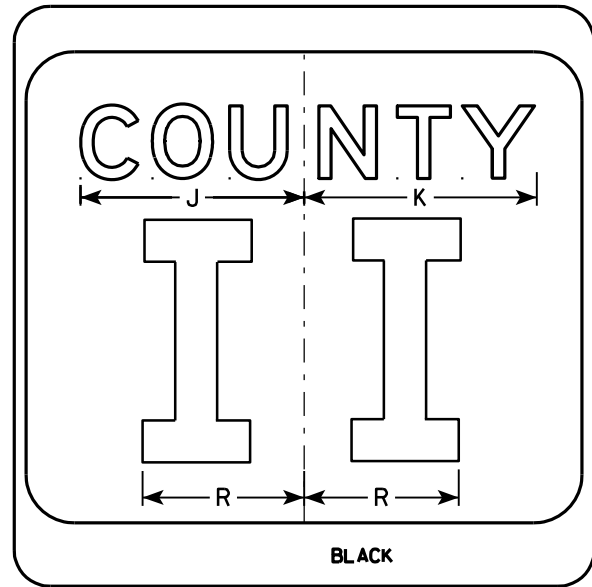
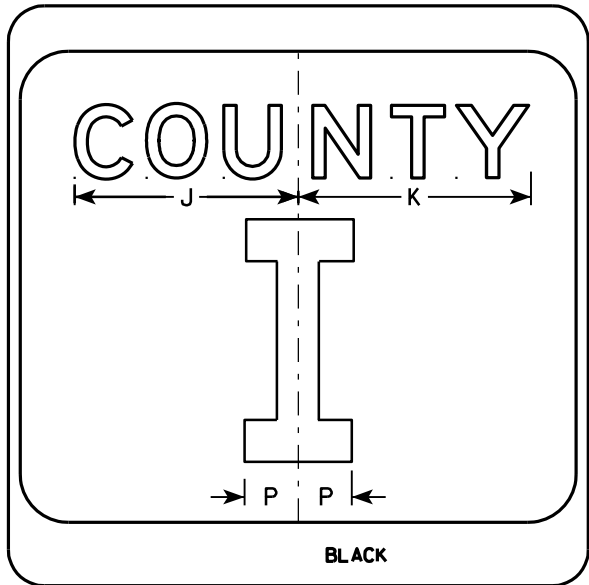
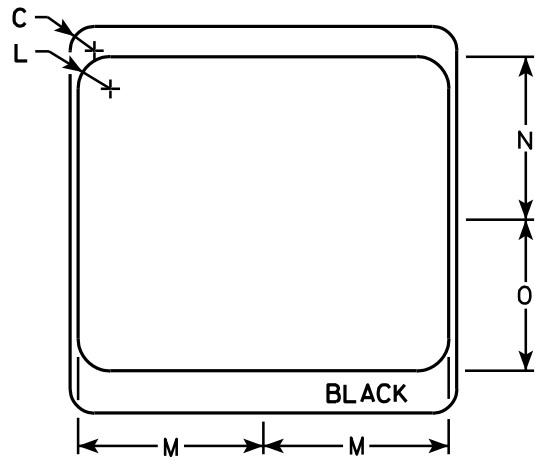
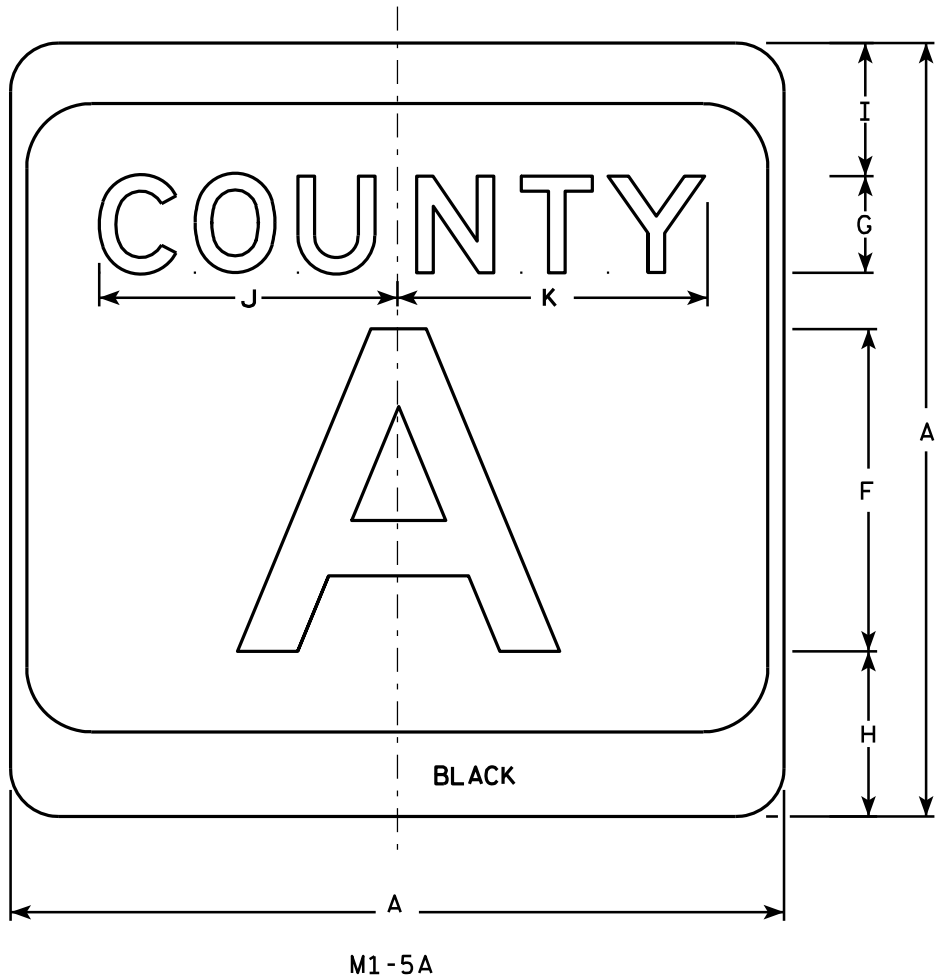
HWY:

COUNTY:

SHEET NO: 193

E

7



NOTES

1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - White & Black - See Note 7  
Message - Black
3. Message Series - see Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Message Series E for 1 letter.  
Message Series D for 2 letters unless message is too big then Series C.  
Message Series C for 3 letters unless message is too big then Series B.
6. Substitute appropriate letters & optically center to achieve proper balance.
7. Permanent Signs  
Background - Type H Reflective  
Detour or temporary Signs  
Background - Reflective

| 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<br>sq. ft. |
|------|----|---|-------|---|---|----|---|-------|-------|--------|--------|---|--------|--------|-------|-------|---|-------|---|---|---|---|---|---|---|-----|-----------------|
| 1    |    |   |       |   |   |    |   |       |       |        |        |   |        |        |       |       |   |       |   |   |   |   |   |   |   |     |                 |
| 2    | 24 |   | 1 1/2 |   |   | 10 | 3 | 5 1/8 | 4 1/8 | 9 1/4  | 9 5/8  | 2 | 11 1/2 | 10 1/8 | 9 3/8 | 2 1/4 |   | 6 5/8 |   |   |   |   |   |   |   | 4.0 |                 |
| 3    | 36 |   | 2 1/4 |   |   | 16 | 4 | 7 5/8 | 5 5/8 | 12 1/4 | 12 7/8 | 3 | 17 1/8 | 15 1/4 | 14    | 3 3/8 |   | 10    |   |   |   |   |   |   |   | 9.0 |                 |
| 4    | 36 |   | 2 1/4 |   |   | 16 | 4 | 7 5/8 | 5 5/8 | 12 1/4 | 12 7/8 | 3 | 17 1/8 | 15 1/4 | 14    | 3 3/8 |   | 10    |   |   |   |   |   |   |   | 9.0 |                 |
| 5    | 36 |   | 2 1/4 |   |   | 16 | 4 | 7 5/8 | 5 5/8 | 12 1/4 | 12 7/8 | 3 | 17 1/8 | 15 1/4 | 14    | 3 3/8 |   | 10    |   |   |   |   |   |   |   | 9.0 |                 |

CTH MARKER

M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

PROJECT NO:

HWY:

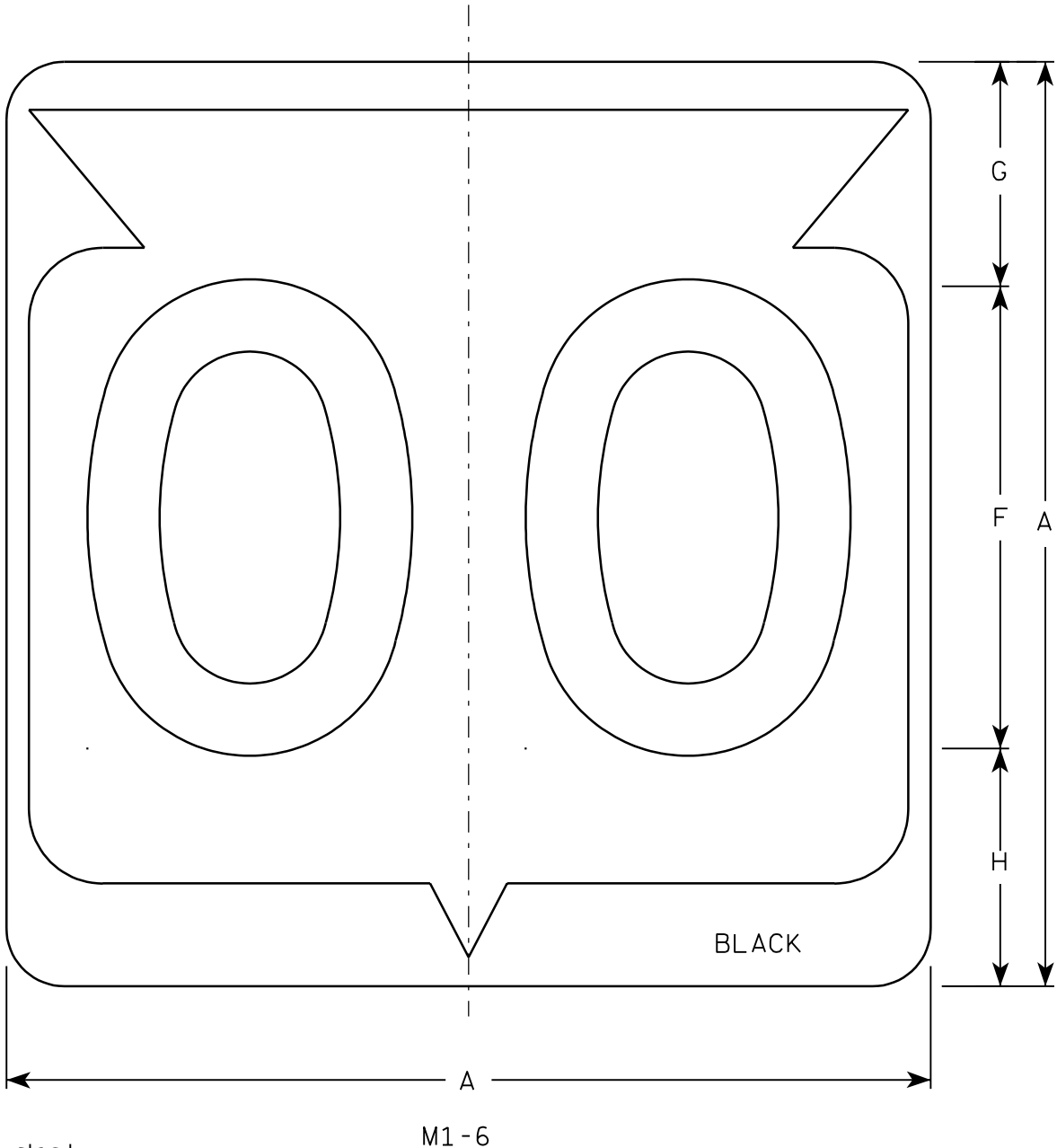
COUNTY:

SHEET NO: 194

E

7

7



Metric equivalent  
for this sign is:

| SIZE |                 |
|------|-----------------|
| 1    |                 |
| 2    | 600 mm X 600 mm |
| 3    | 900 mm X 900 mm |
| 4    | 900 mm X 900 mm |
| 5    | 900 mm X 900 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<br>sq. ft. | Area<br>m <sup>2</sup> |
|------|----|---|-------|---|---|----|-------|-------|--------|-------|--------|--------|-------|-------|--------|--------|---|---|---|---|---|---|---|---|---|---|-----------------|------------------------|
| 1    |    |   |       |   |   |    |       |       |        |       |        |        |       |       |        |        |   |   |   |   |   |   |   |   |   |   |                 |                        |
| 2    | 24 |   | 1 1/2 |   |   | 12 | 5 1/2 | 6 1/2 | 10 1/4 | 2 1/2 | 8 7/8  | 11 1/2 | 1     | 1 7/8 | 11 1/4 | 21 7/8 |   |   |   |   |   |   |   |   |   |   | 4.0             | .36                    |
| 3    | 36 |   | 2 1/4 |   |   | 18 | 8 3/4 | 9 1/4 | 15 3/8 | 5 3/8 | 12 5/8 | 17 1/8 | 1 1/2 | 2 7/8 | 16 7/8 | 33     |   |   |   |   |   |   |   |   |   |   | 9.0             | .81                    |
| 4    | 36 |   | 2 1/4 |   |   | 18 | 8 3/4 | 9 1/4 | 15 3/8 | 5 3/8 | 12 5/8 | 17 1/8 | 1 1/2 | 2 7/8 | 16 7/8 | 33     |   |   |   |   |   |   |   |   |   |   | 9.0             | .81                    |
| 5    | 36 |   | 2 1/4 |   |   | 18 | 8 3/4 | 9 1/4 | 15 3/8 | 5 3/8 | 12 5/8 | 17 1/8 | 1 1/2 | 2 7/8 | 16 7/8 | 33     |   |   |   |   |   |   |   |   |   |   | 9.0             | .81                    |

PROJECT NO:

HWY:

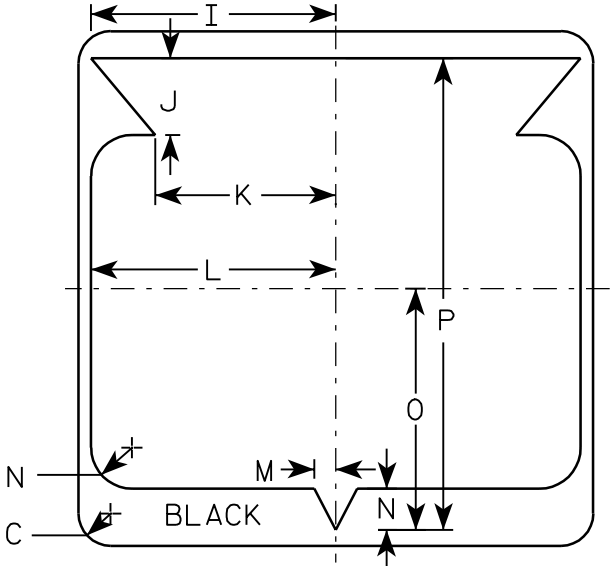
COUNTY:

SHEET NO: 195

E

NOTES

1. Sign is Type II - See Note 6 - reference  
WIS DOT Standard Specification for HIGHWAY  
and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - White & Black - See Note 6  
Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base  
material is plywood but borders shall be rounded  
as shown. When base material is metal, the  
corners and borders shall be rounded.
5. Substitute appropriate Series numerals and  
adjust spacing as per plate A10-1.
6. Permanent Signs  
Background - Type H Reflective  
Detour or temporary Signs  
Background - Reflective



STATE ROUTE MARKER  
M1-6 FOR ASSEMBLIES

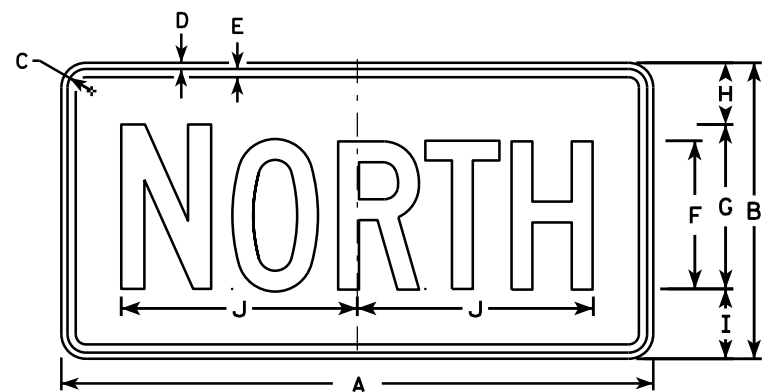
WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang  
for State Traffic Engineer

DATE 3/20/02

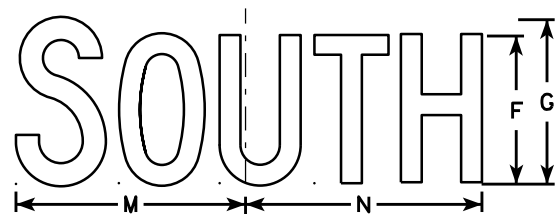
PLATE NO. M1-6.9



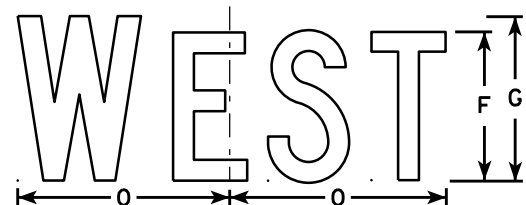
M3-1  
MK3-1  
MM3-1  
MN3-1



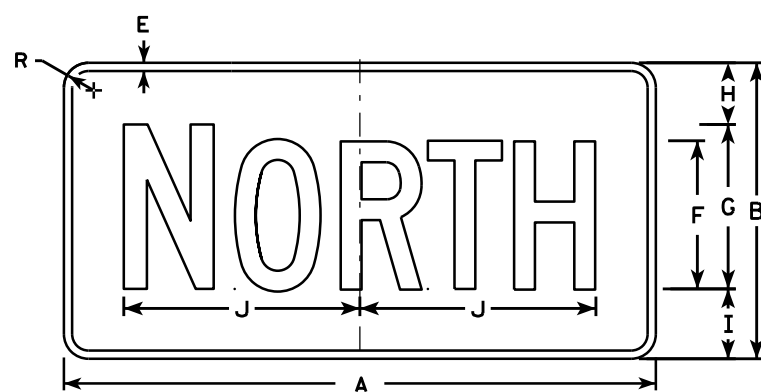
M3-2  
MK3-2  
MM3-2  
MN3-2



M3-3  
MK3-3  
MM3-3  
MN3-3



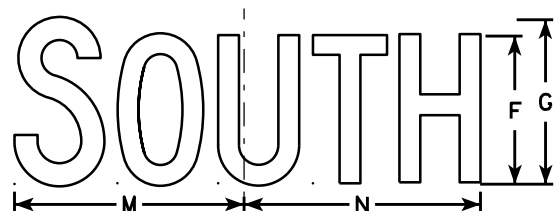
M3-4  
MK3-4  
MM3-4  
MN3-4



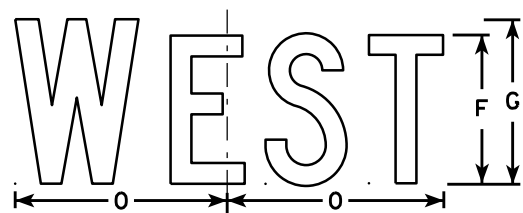
MB3-1



MB3-2



MB3-3



MB3-4

### NOTES

1. All Signs Type II - Type H
2. Color:  
Background - See note 5  
Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M3-1 thru M3-4 Background - White  
Message - Black  
MB3-1 thru MB3-4 Background - Blue  
Message - White  
MK3-1 thru MK3-4 Background - Green  
Message - White  
MM3-1 thru MM3-4 Background - White  
Message - Green  
MN3-1 thru MN3-4 Background - Brown  
Message - White
6. Note the first letter of each direction is larger than the remainder of the message.

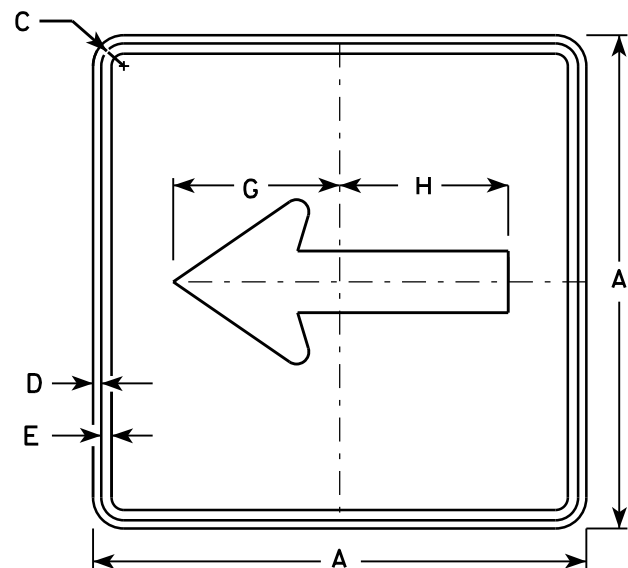
| SIZE | A  | B  | C     | D   | E   | F | G  | H     | I     | J      | K     | L      | M      | N      | O     | P | Q | R     | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|----|-------|-----|-----|---|----|-------|-------|--------|-------|--------|--------|--------|-------|---|---|-------|---|---|---|---|---|---|---|---|-----------------|
| 1    |    |    |       |     |     |   |    |       |       |        |       |        |        |        |       |   |   |       |   |   |   |   |   |   |   |   |                 |
| 2    | 24 | 12 | 1 1/8 | 3/8 | 3/8 | 6 | 7  | 2 1/4 | 2 3/4 | 10 1/4 | 7 7/8 | 8 3/8  | 10 1/4 | 9 3/4  | 8 3/4 |   |   | 1 1/2 |   |   |   |   |   |   |   |   | 2.00            |
| 3    | 36 | 18 | 1 1/8 | 3/8 | 1/2 | 9 | 10 | 3 3/4 | 4 1/4 | 14 3/8 | 12    | 12 1/8 | 14     | 14 1/8 | 13    |   |   | 1 1/2 |   |   |   |   |   |   |   |   | 4.5             |
| 4    | 36 | 18 | 1 1/8 | 3/8 | 1/2 | 9 | 10 | 3 3/4 | 4 1/4 | 14 3/8 | 12    | 12 1/8 | 14     | 14 1/8 | 13    |   |   | 1 1/2 |   |   |   |   |   |   |   |   | 4.5             |
| 5    | 36 | 18 | 1 1/8 | 3/8 | 1/2 | 9 | 10 | 3 3/4 | 4 1/4 | 14 3/8 | 12    | 12 1/8 | 14     | 14 1/8 | 13    |   |   | 1 1/2 |   |   |   |   |   |   |   |   | 4.5             |

STANDARD SIGNS  
M3-1 thru M3-4  
SERIES

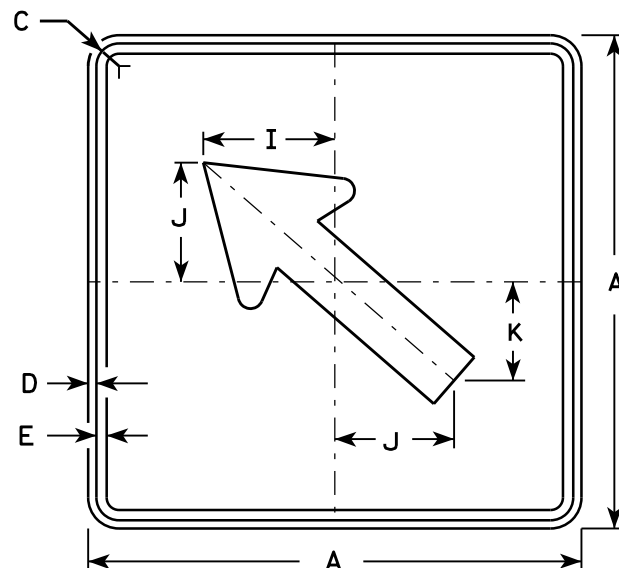
WISCONSIN DEPT OF TRANSPORTATION

APPROVED  
*Matthew R. Rauch*  
for State Traffic Engineer

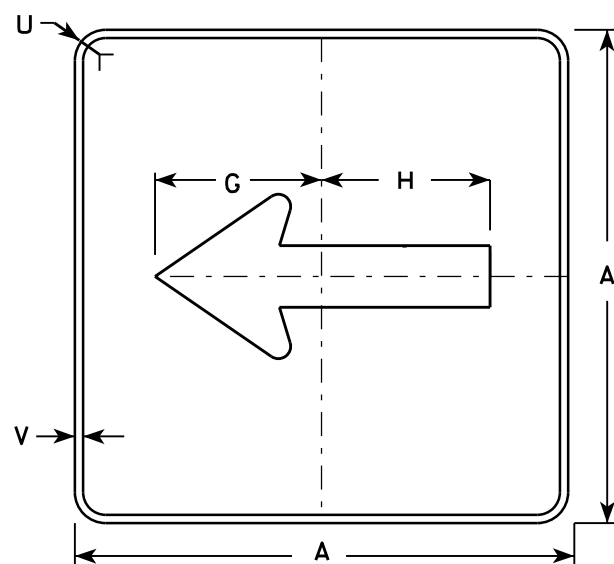
DATE 6/30/14 PLAT 196 M3-1.13



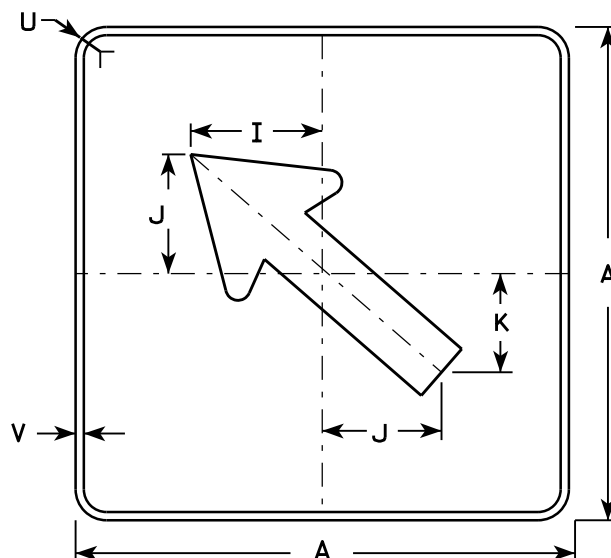
M6 - 1  
MK6 - 1  
MM6 - 1  
MN6 - 1  
M06 - 1  
MP6 - 1  
MR6 - 1



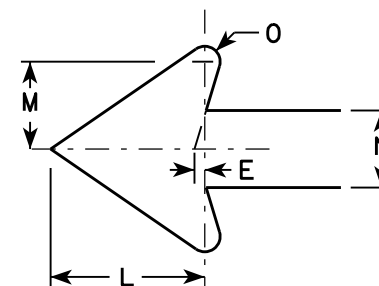
M6 - 2  
MK6 - 2  
MM6 - 2  
MN6 - 2  
M06 - 2  
MP6 - 2  
MR6 - 2



MB6 - 1



MB6 - 2



### NOTES

- Signs are Type II - Type H except as Shown
- Color:  
Background - See note 4  
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M6-1 and M6-2 Background - White  
Message - Black  
MB6-1 and MB6-2 Background - Blue  
Message - White  
MG6-1 and MG6-2 Background - Green  
Message - White  
MK6-1 and MK6-2 Background - Green  
Message - White  
MM6-1 and MM6-2 Background - White  
Message - Green  
MN6-1 and MN6-2 Background - Brown  
Message - White  
M06-1 and M06-2 Background - Orange - Type F Reflective  
Message - Black  
MP6-1 and MP6-2 Background - White  
Message - Blue  
MR6-1 and MR6-2 Background - Brown  
Message - Yellow

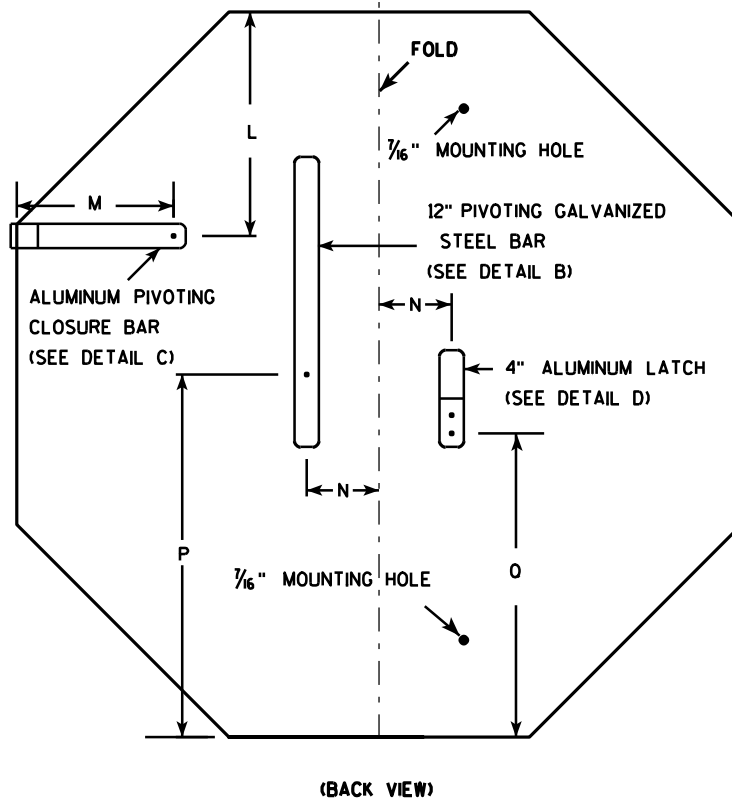
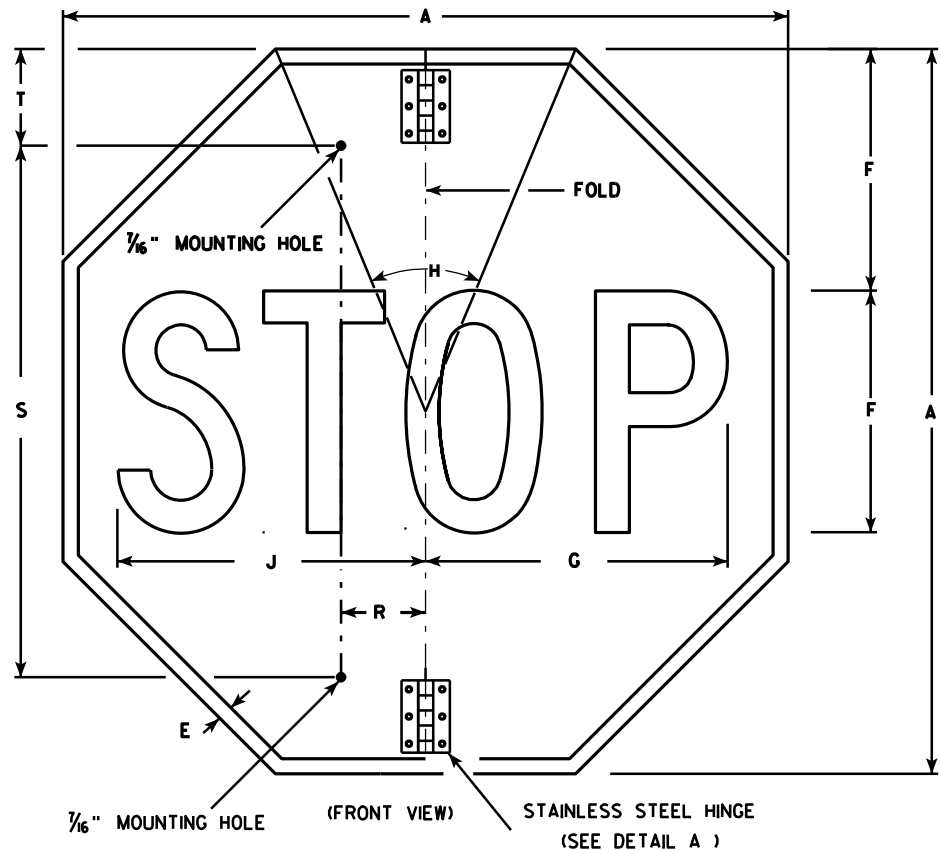
| SIZE | A  | B | C     | D   | E   | F | G      | H      | I     | J     | K     | L     | M     | N     | O   | P | Q | R | S | T | U     | V   | W | X | Y | Z | Area<br>sq. ft. |
|------|----|---|-------|-----|-----|---|--------|--------|-------|-------|-------|-------|-------|-------|-----|---|---|---|---|---|-------|-----|---|---|---|---|-----------------|
| 1    |    |   |       |     |     |   |        |        |       |       |       |       |       |       |     |   |   |   |   |   |       |     |   |   |   |   |                 |
| 2    | 21 |   | 1 1/8 | 3/8 | 3/8 |   | 7 1/2  | 7 1/8  | 5 5/8 | 5     | 4 1/4 | 5 1/4 | 3     | 2 5/8 | 1/2 |   |   |   |   |   | 1 1/2 | 1/2 |   |   |   |   | 3.06            |
| 3    | 30 |   | 1 3/8 | 1/2 | 5/8 |   | 10 3/4 | 10 1/4 | 8     | 7 1/4 | 6     | 7 1/2 | 4 1/4 | 3 3/4 | 3/4 |   |   |   |   |   | 1 7/8 | 1/2 |   |   |   |   | 6.25            |
| 4    | 30 |   | 1 3/8 | 1/2 | 5/8 |   | 10 3/4 | 10 1/4 | 8     | 7 1/4 | 6     | 7 1/2 | 4 1/4 | 3 3/4 | 3/4 |   |   |   |   |   | 1 7/8 | 1/2 |   |   |   |   | 6.25            |
| 5    | 30 |   | 1 3/8 | 1/2 | 5/8 |   | 10 3/4 | 10 1/4 | 8     | 7 1/4 | 6     | 7 1/2 | 4 1/4 | 3 3/4 | 3/4 |   |   |   |   |   | 1 7/8 | 1/2 |   |   |   |   | 6.25            |

STANDARD SIGN  
M6 - 1 & M6 - 2  
SERIES

WISCONSIN DEPT OF TRANSPORTATION

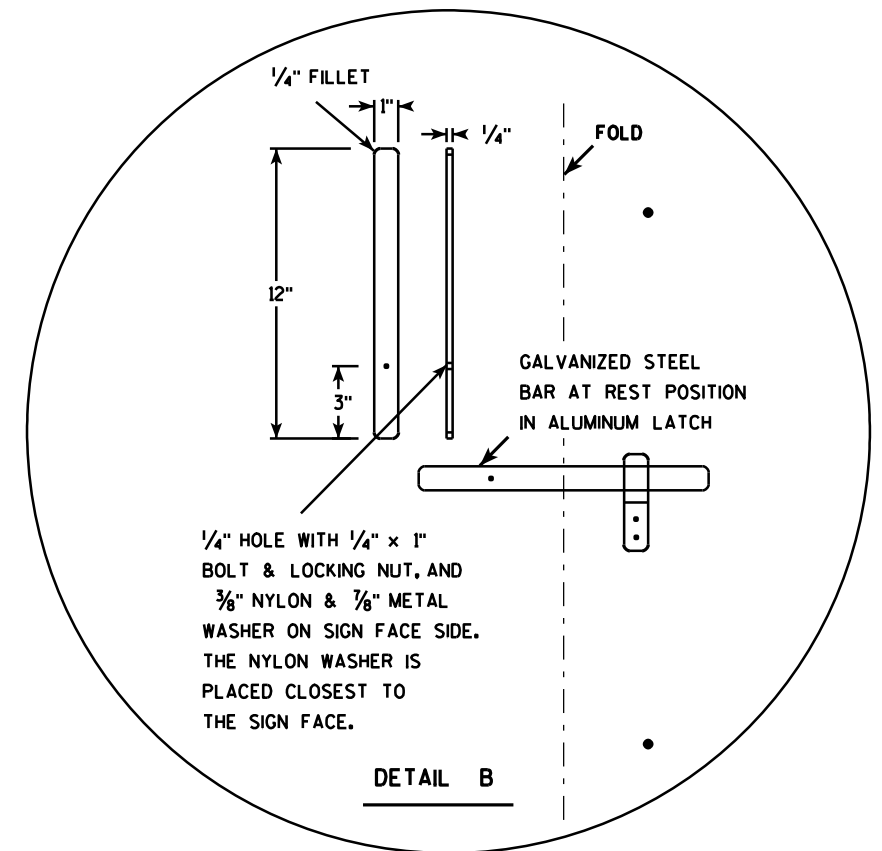
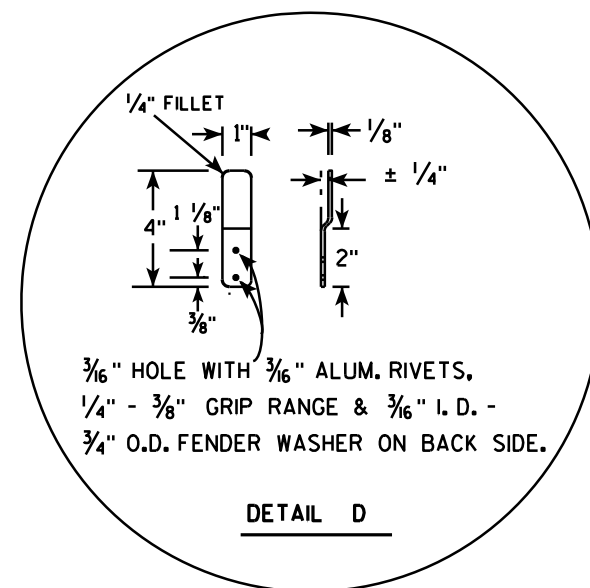
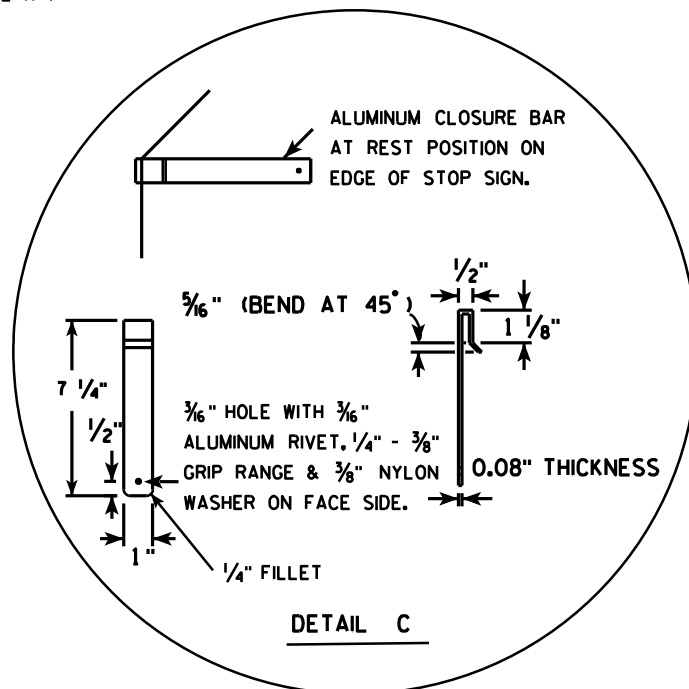
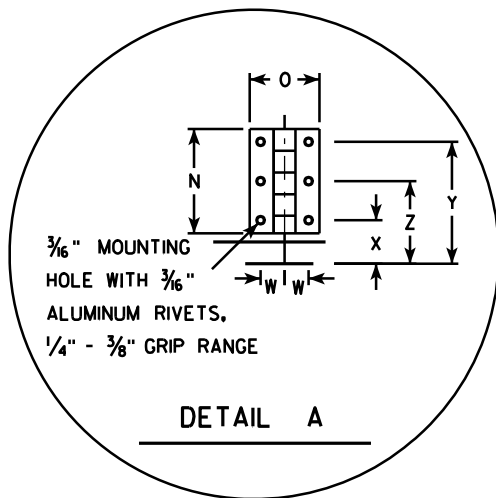
APPROVED  
*Matthew R. Rauch*  
for State Traffic Engineer

DATE 7/03/14 PLAT 197 M6-1.14



# NOTES

- Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:  
Background - Red  
Message - White
- Message Series - C
- 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<br>sq. ft. |
|------|----|---|---|---|---------------|----|------------------|----|---|------------------|---|-----------------|-----------------|---|---|----|------------------|-----------------|----|---|---|---|----------------|-----------------|-----------------|-----------------|-----------------|
| 1    |    |   |   |   |               |    |                  |    |   |                  |   |                 |                 |   |   |    |                  |                 |    |   |   |   |                |                 |                 |                 |                 |
| 2S   | 30 |   |   |   | $\frac{5}{8}$ | 10 | 12 $\frac{1}{2}$ | 45 |   | 12 $\frac{3}{4}$ |   | 9 $\frac{1}{4}$ | 6 $\frac{1}{2}$ | 3 | 2 | 15 | 12 $\frac{3}{8}$ | 2 $\frac{1}{2}$ | 22 | 5 |   |   | $\frac{1}{16}$ | 1 $\frac{1}{4}$ | 3 $\frac{1}{2}$ | 2 $\frac{3}{8}$ | 5.18            |
| 2M   | 36 |   |   |   | $\frac{3}{4}$ | 12 | 15               | 45 |   | 15 $\frac{3}{8}$ |   | 11              | 6 $\frac{1}{2}$ | 3 | 2 | 18 | 15 $\frac{3}{8}$ | 2 $\frac{1}{2}$ | 26 | 5 |   |   | $\frac{1}{16}$ | 1 $\frac{1}{4}$ | 3 $\frac{1}{2}$ | 2 $\frac{3}{8}$ | 7.46            |
| 3    | 36 |   |   |   | $\frac{3}{4}$ | 12 | 15               | 45 |   | 15 $\frac{3}{8}$ |   | 11              | 6 $\frac{1}{2}$ | 3 | 2 | 18 | 15 $\frac{3}{8}$ | 2 $\frac{1}{2}$ | 26 | 5 |   |   | $\frac{1}{16}$ | 1 $\frac{1}{4}$ | 3 $\frac{1}{2}$ | 2 $\frac{3}{8}$ | 7.46            |
| 4    |    |   |   |   |               |    |                  |    |   |                  |   |                 |                 |   |   |    |                  |                 |    |   |   |   |                |                 |                 |                 |                 |
| 5    |    |   |   |   |               |    |                  |    |   |                  |   |                 |                 |   |   |    |                  |                 |    |   |   |   |                |                 |                 |                 |                 |

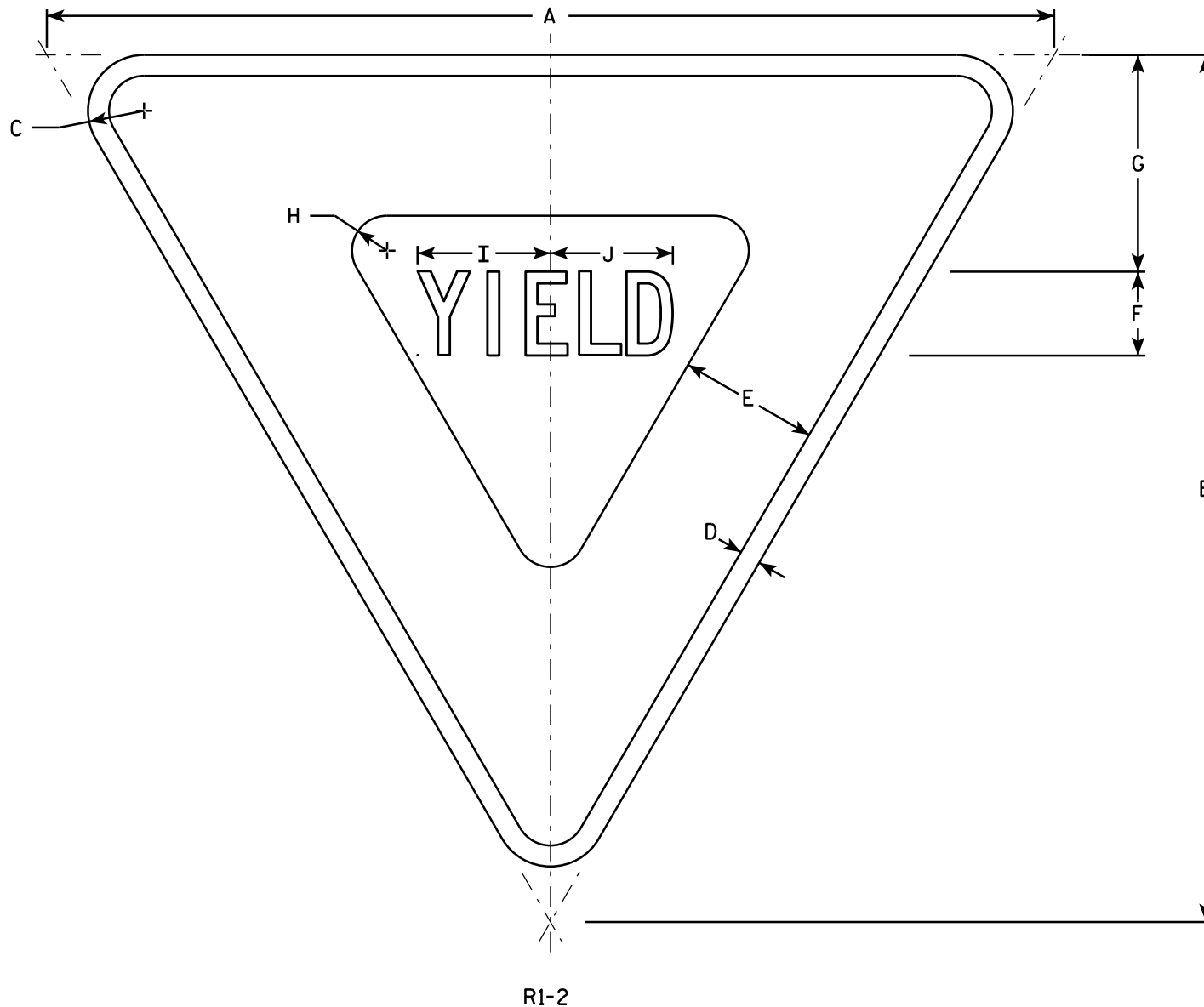
|             |      |         |               |   |
|-------------|------|---------|---------------|---|
| PROJECT NO: | HWY: | COUNTY: | SHEET NO: 198 | E |
|-------------|------|---------|---------------|---|

## STANDARD SIGN R1-1F

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - White  
Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. The border strip and word message are reflectorized red.

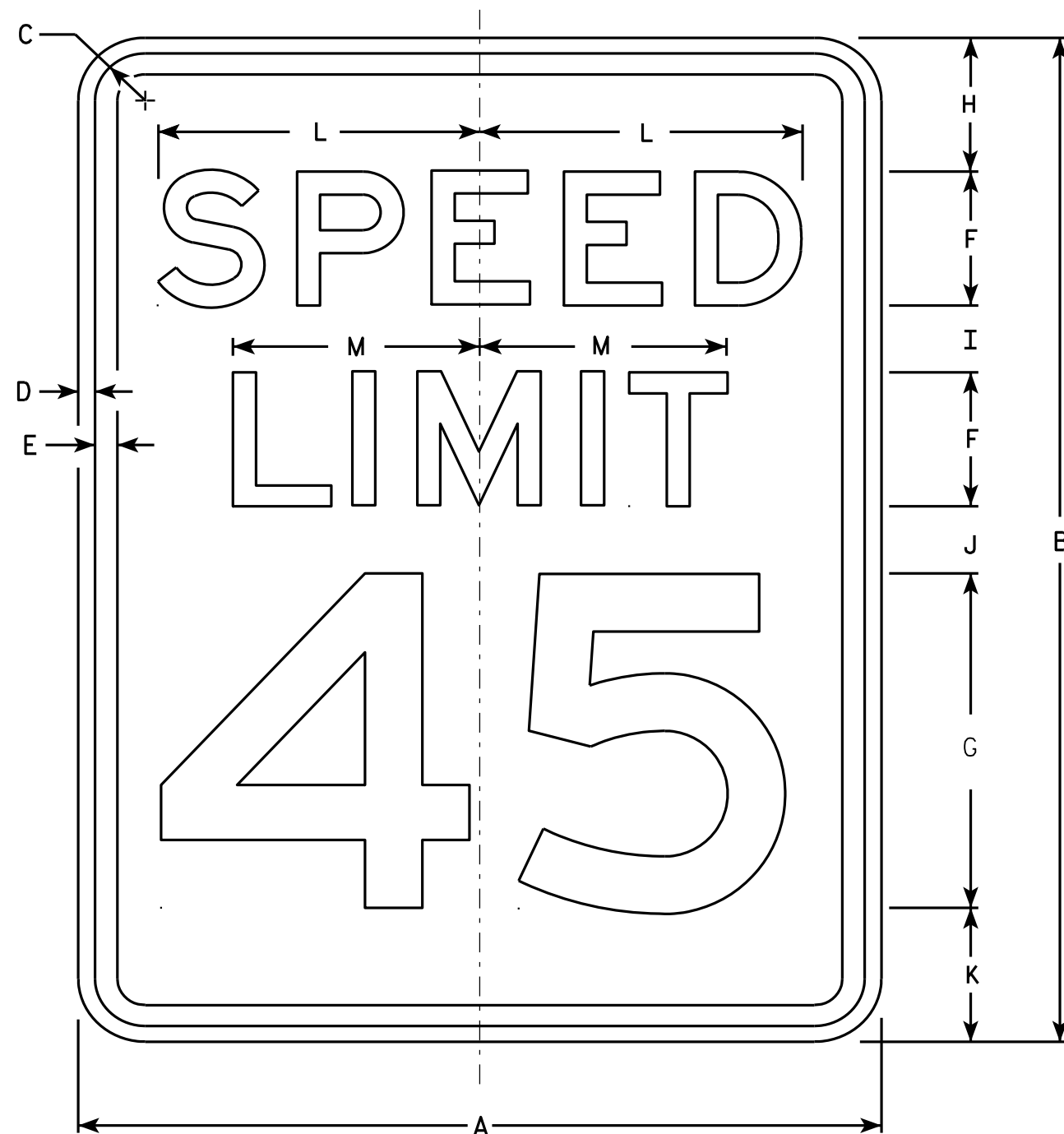
| SIZE | A  | B      | C     | D     | E     | F     | G     | H     | I     | J     | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|--------|-------|-------|-------|-------|-------|-------|-------|-------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    | 30 | 26     | 1 1/2 | 5/8   | 4     | 2 1/2 | 6 3/8 | 7/8   | 4     | 3 5/8 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 2.71            |
| 2S   | 36 | 31     | 2     | 3/4   | 5     | 3     | 7 3/4 | 1 1/4 | 4 3/4 | 4 3/8 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 3.88            |
| 2M   | 48 | 42     | 3     | 1     | 6     | 4     | 9 3/4 | 2     | 6 1/4 | 5 7/8 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 7.00            |
| 3    | 48 | 42     | 3     | 1     | 6     | 4     | 9 3/4 | 2     | 6 1/4 | 5 7/8 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 7.00            |
| 4    | 48 | 42     | 3     | 1     | 6     | 4     | 9 3/4 | 2     | 6 1/4 | 5 7/8 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 7.00            |
| 5    | 60 | 52     | 3     | 1 1/2 | 8     | 5     | 13    | 2 1/2 | 7 7/8 | 7 1/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 10.83           |
| 6    |    |        |       |       |       |       |       |       |       |       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 7    | 18 | 15 1/2 | 1     | 3/8   | 2 1/2 | 1 1/2 | 3 7/8 | 5/8   | 2 3/8 | 2 1/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 0.97            |

STANDARD SIGN  
R1-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 10/13/14 PLATE 199 P1-2.12



R2-1

### NOTES

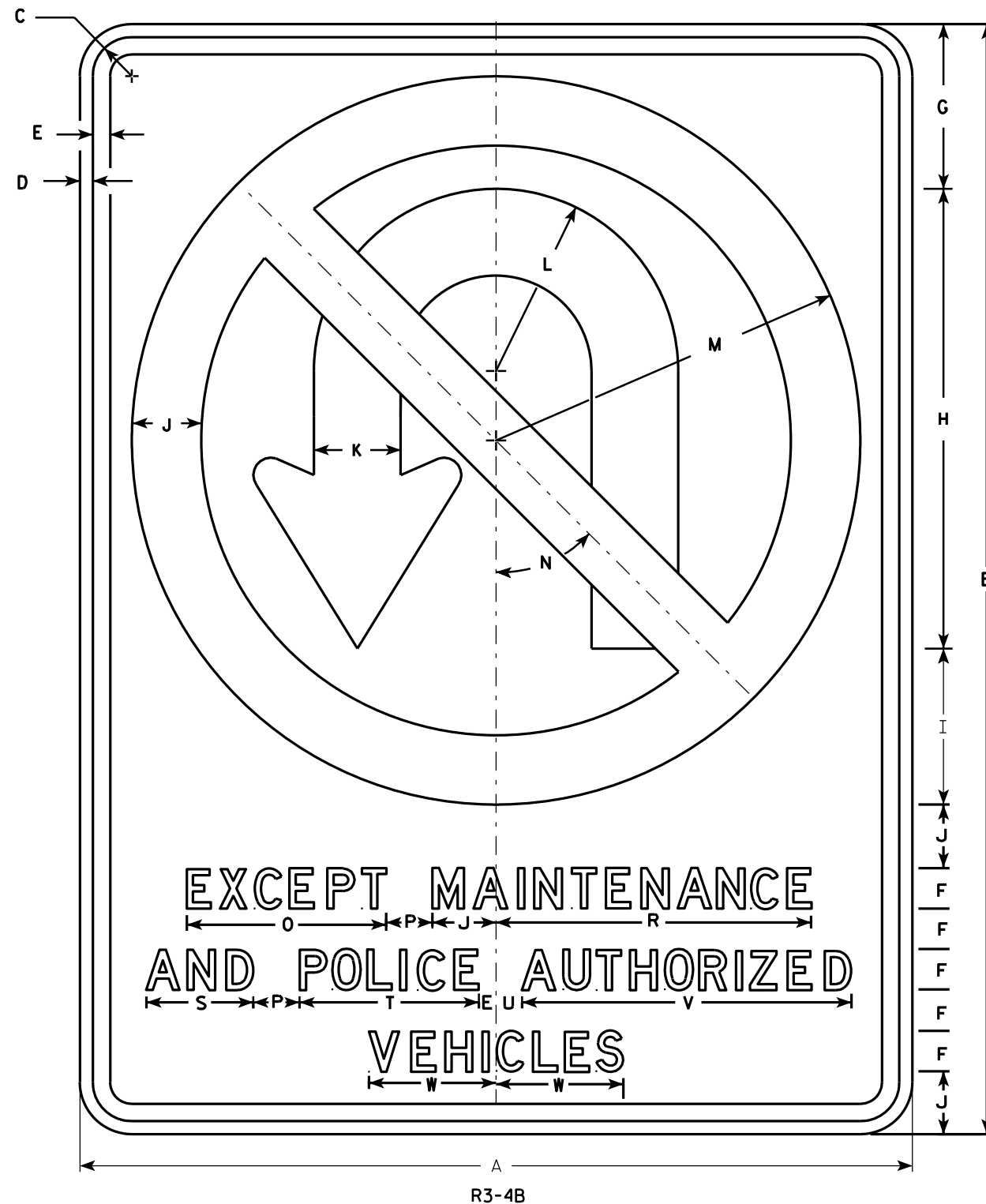
1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - White  
Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded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

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

### STANDARD SIGN R2-1

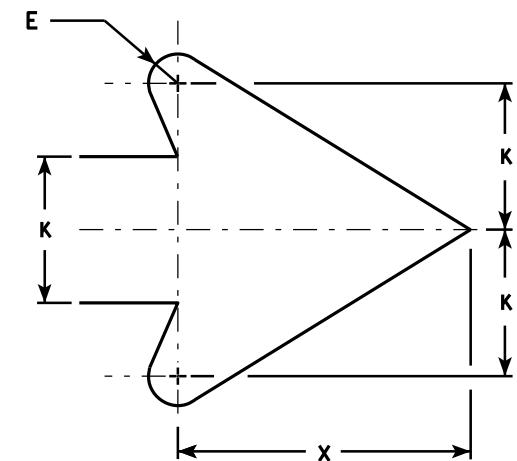
WISCONSIN DEPT OF TRANSPORTATION  
APPROVED *Matthew R. Rauch*  
For State Traffic Engineer  
DATE 5/26/10 PLATE NO. R2-1.13

PROJECT NO: HWY: COUNTY: SHEET NO: 200 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.



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<br>sq. ft. |
|------|----|----|-------|-----|---|-----|-------|--------|-----|-----|-----|-------|------|-----|-------|---|---|--------|-------|-----|-------|--------|-------|-------|---|---|-----------------|
| 1    |    |    |       |     |   |     |       |        |     |     |     |       |      |     |       |   |   |        |       |     |       |        |       |       |   |   |                 |
| 2S   |    |    |       |     |   |     |       |        |     |     |     |       |      |     |       |   |   |        |       |     |       |        |       |       |   |   |                 |
| 2M   |    |    |       |     |   |     |       |        |     |     |     |       |      |     |       |   |   |        |       |     |       |        |       |       |   |   |                 |
| 3    |    |    |       |     |   |     |       |        |     |     |     |       |      |     |       |   |   |        |       |     |       |        |       |       |   |   |                 |
| 4    | 36 | 48 | 1 5⁄8 | 5⁄8 | ¾ | 1 ¾ | 7 1⁄8 | 19 7⁄8 | 6 ¾ | 2 ¾ | 3 ¾ | 7 7⁄8 | 15 ¾ | 45° | 8 5⁄8 | 2 |   | 13 5⁄8 | 4 5⁄8 | 7 ¾ | 1 1⁄8 | 14 1⁄4 | 5 1⁄2 | 7 5⁄8 |   |   | 12.0            |
| 5    | 36 | 48 | 1 5⁄8 | 5⁄8 | ¾ | 1 ¾ | 7 1⁄8 | 19 7⁄8 | 6 ¾ | 2 ¾ | 3 ¾ | 7 7⁄8 | 15 ¾ | 45° | 8 5⁄8 | 2 |   | 13 5⁄8 | 4 5⁄8 | 7 ¾ | 1 1⁄8 | 14 1⁄4 | 5 1⁄2 | 7 5⁄8 |   |   | 12.0            |

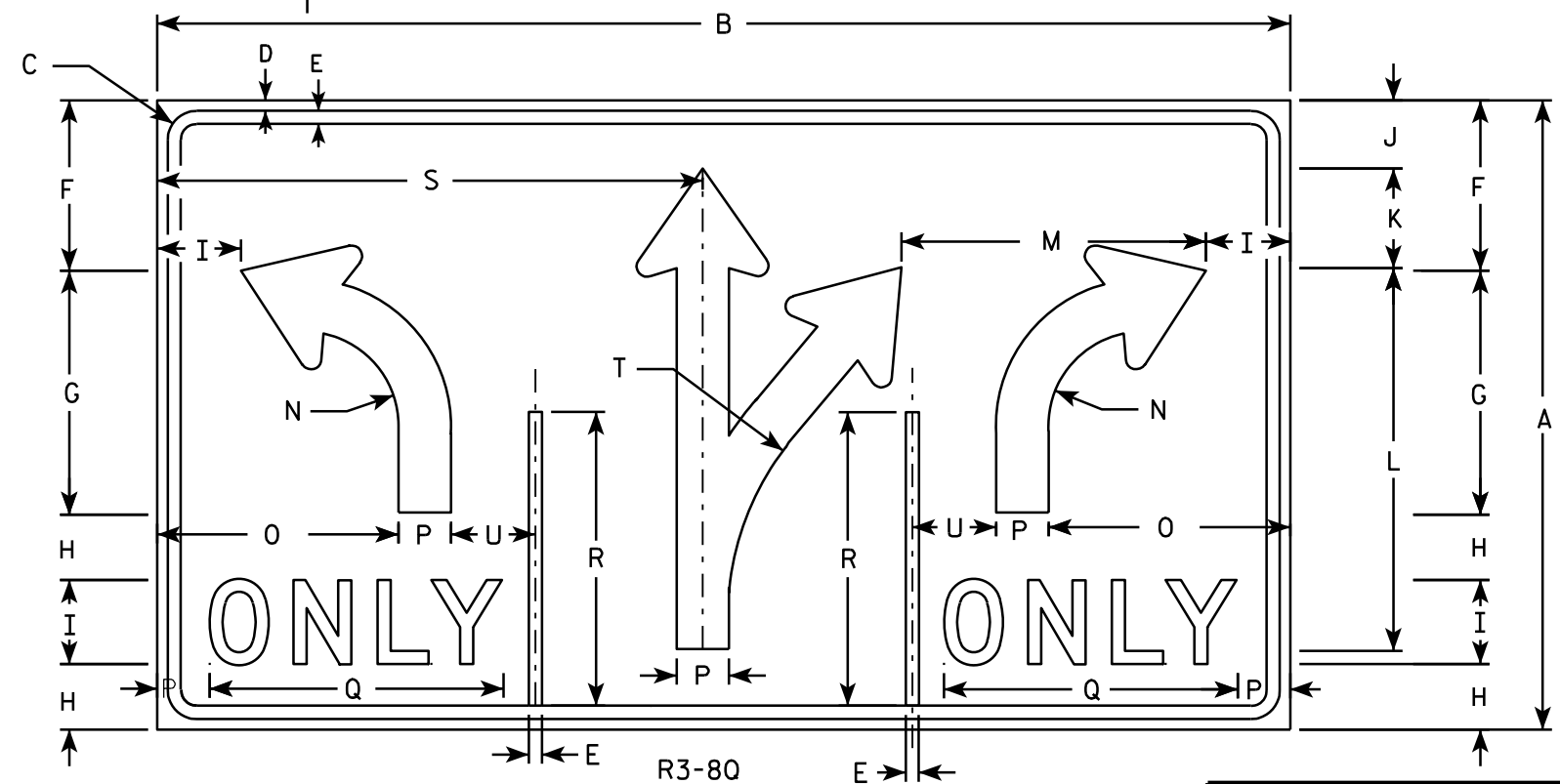
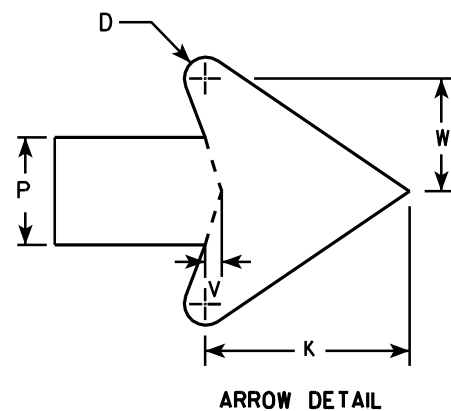
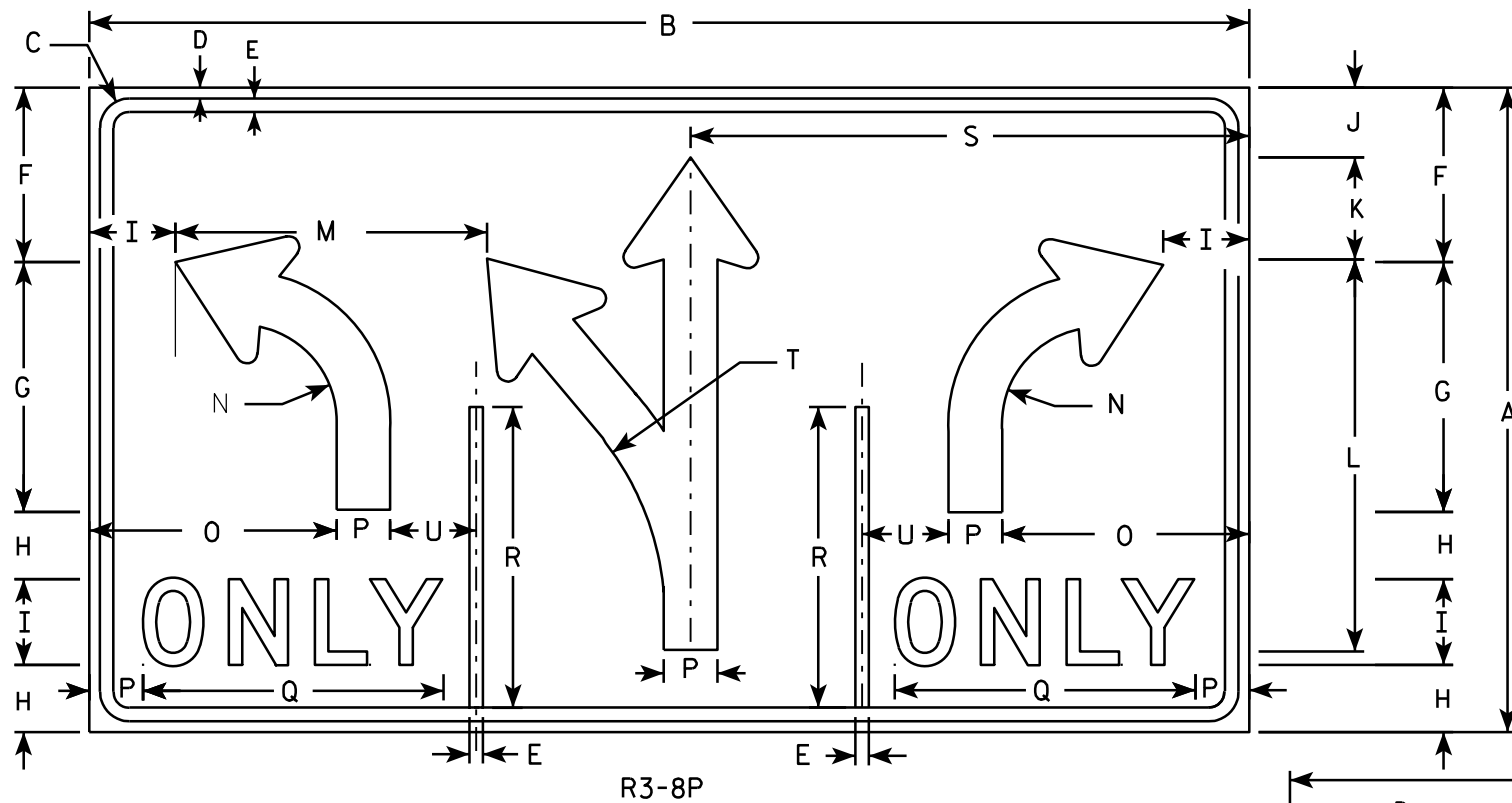
### STANDARD SIGN R3-4B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 3/17/2011 PLATE NO. R3-4B.2

PROJECT NO: HWY: COUNTY: SHEET NO: 201 E



# NOTES

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

| 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<br>sq. ft. |
|------|----|----|-------|-----|-----|--------|--------|-------|---|-------|-------|--------|--------|-------|--------|-------|--------|--------|--------|--------|---|-----|-------|---|---|---|-----------------|
| 1    |    |    |       |     |     |        |        |       |   |       |       |        |        |       |        |       |        |        |        |        |   |     |       |   |   |   |                 |
| 2S   | 30 | 54 | 1 3⁄8 | 1⁄2 | 5⁄8 | 8 1⁄8  | 11 5⁄8 | 3 1⁄8 | 4 | 3 1⁄4 | 4 3⁄4 | 18 1⁄4 | 14 1⁄2 | 4 1⁄2 | 11 1⁄2 | 2 1⁄2 | 14     | 14     | 26     | 13 1⁄4 | 4 | 3⁄8 | 2 5⁄8 |   |   |   | 11.25           |
| 2M   | 30 | 54 | 1 3⁄8 | 1⁄2 | 5⁄8 | 8 1⁄8  | 11 5⁄8 | 3 1⁄8 | 4 | 3 1⁄4 | 4 3⁄4 | 18 1⁄4 | 14 1⁄2 | 4 1⁄2 | 11 1⁄2 | 2 1⁄2 | 14     | 14     | 26     | 13 1⁄4 | 4 | 3⁄8 | 2 5⁄8 |   |   |   | 11.25           |
| 3    |    |    |       |     |     |        |        |       |   |       |       |        |        |       |        |       |        |        |        |        |   |     |       |   |   |   |                 |
| 4    | 48 | 84 | 2 1⁄4 | 3⁄4 | 1   | 13 1⁄4 | 18 1⁄2 | 5 1⁄8 | 6 | 5 1⁄4 | 7 1⁄8 | 29 1⁄8 | 22 5⁄8 | 7 1⁄4 | 17 1⁄4 | 3 3⁄4 | 20 5⁄8 | 22 3⁄8 | 40 3⁄4 | 21 7⁄8 | 7 | 5⁄8 | 4     |   |   |   | 28.0            |
| 5    | 48 | 84 | 2 1⁄4 | 3⁄4 | 1   | 13 1⁄4 | 18 1⁄2 | 5 1⁄8 | 6 | 5 1⁄4 | 7 1⁄8 | 29 1⁄8 | 22 5⁄8 | 7 1⁄4 | 17 1⁄4 | 3 3⁄4 | 20 5⁄8 | 22 3⁄8 | 40 3⁄4 | 21 7⁄8 | 7 | 5⁄8 | 4     |   |   |   | 28.0            |

## STANDARD SIGN R3-8P & R3-80

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 3/24/2011 PLATE NO. R3-8P.2

PROJECT NO:

SHEET NO: 202

E



R4-3

# NOTES

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

| 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<br>sq. ft. |
|------|----|----|-------|-----|-----|---|-------|-------|--------|----|--------|--------|--------|--------|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    |    |    |       |     |     |   |       |       |        |    |        |        |        |        |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 2S   | 24 | 30 | 1 1/8 | 3/8 | 1/2 | 4 | 3 5/8 | 2 1/4 | 9 3/4  | 10 | 6 1/4  | 6 3/4  | 7 1/8  | 7 5/8  |   |   |   |   |   |   |   |   |   |   |   |   | 5.0             |
| 2M   | 24 | 30 | 1 1/8 | 3/8 | 1/2 | 4 | 3 5/8 | 2 1/4 | 9 3/4  | 10 | 6 1/4  | 6 3/4  | 7 1/8  | 7 5/8  |   |   |   |   |   |   |   |   |   |   |   |   | 5.0             |
| 3    | 36 | 48 | 1 5/8 | 5/8 | 3/4 | 6 | 6     | 4     | 14 5/8 | 15 | 9 3/8  | 10     | 10 3/4 | 11 3/8 |   |   |   |   |   |   |   |   |   |   |   |   | 12.0            |
| 4    | 36 | 48 | 1 5/8 | 5/8 | 3/4 | 6 | 6     | 4     | 14 5/8 | 15 | 9 3/8  | 10     | 10 3/4 | 11 3/8 |   |   |   |   |   |   |   |   |   |   |   |   | 12.0            |
| 5    | 48 | 60 | 2 1/4 | 3/4 | 1   | 8 | 7 1/4 | 4 1/2 | 19 1/2 | 20 | 12 1/2 | 13 1/2 | 14 1/4 | 15 1/4 |   |   |   |   |   |   |   |   |   |   |   |   | 20.0            |

## STANDARD SIGN R4-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 3/25/2011 PLATE NO. R4-3.8

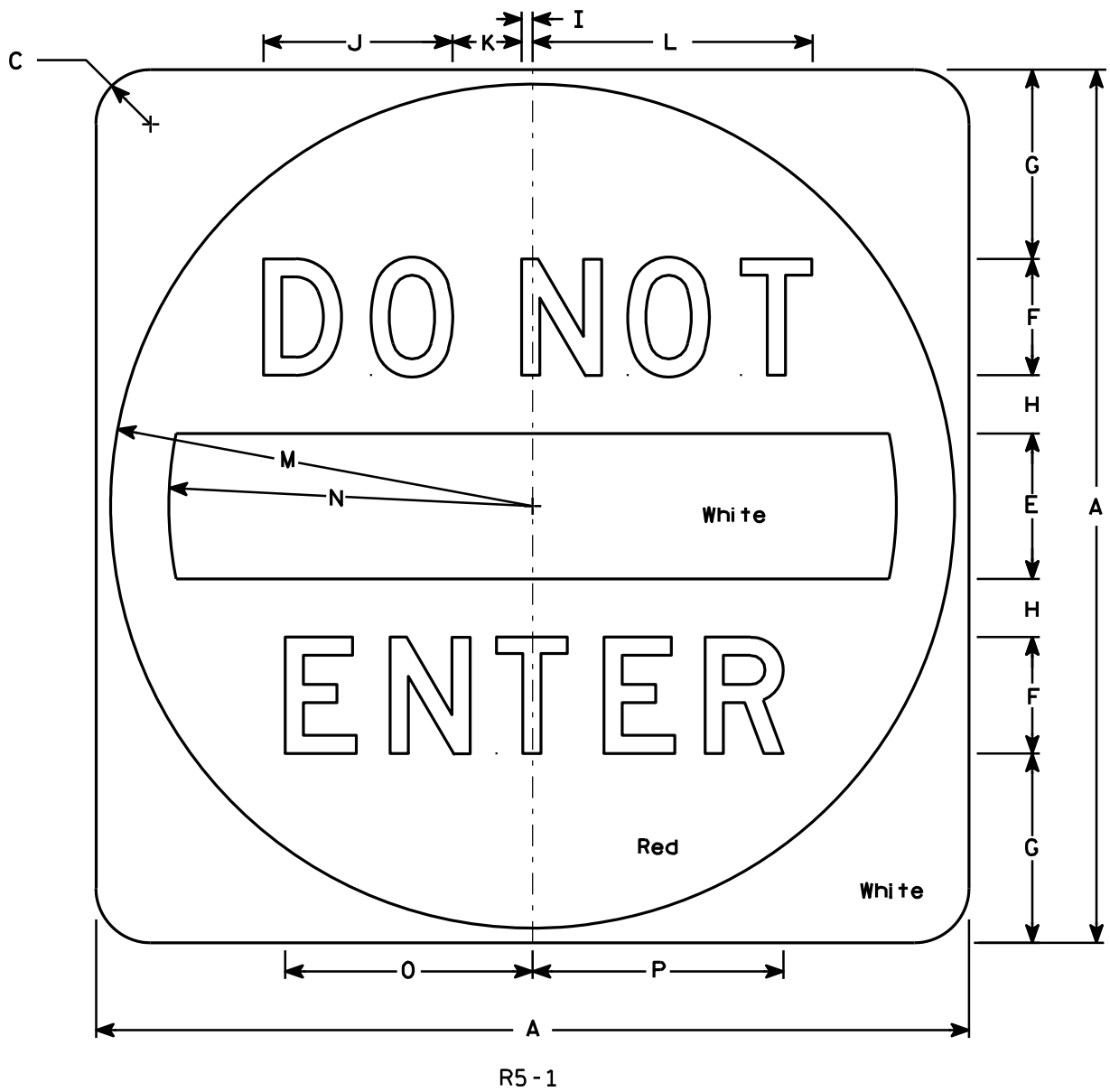
PROJECT NO:

SHEET NO: 203

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 - See detail
  - Message - White - Type H Reflective
- 3. Message Series - D
- 4. Corners may be square or rounded when base material is plywood but when base material is metal, the corners 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<br>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  |   |   |   |   |   |   |   |   |   |   | 6.26            |
| 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            |

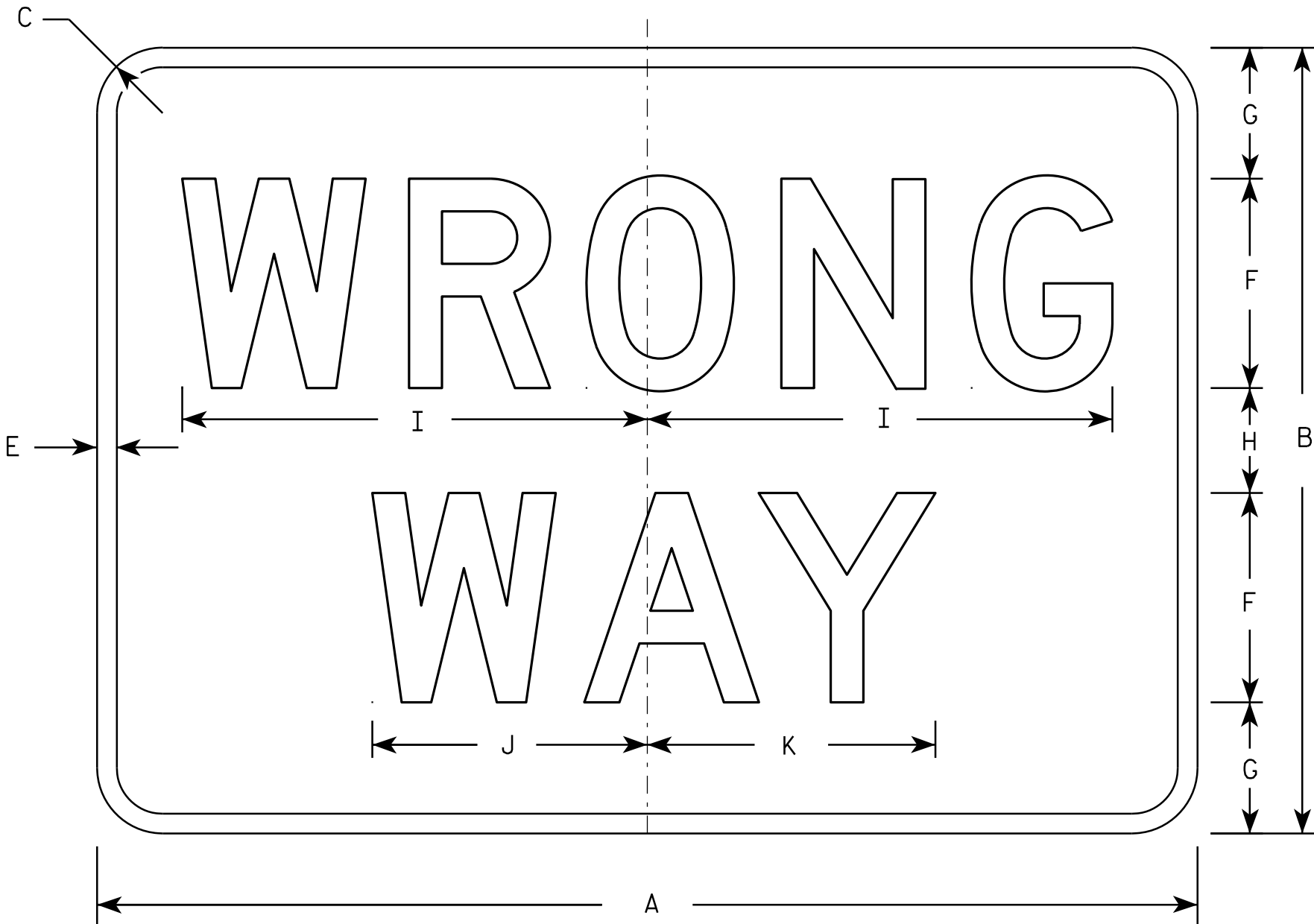
STANDARD SIGN

R5 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 12/17/10 PLATE NO. R5-1.15



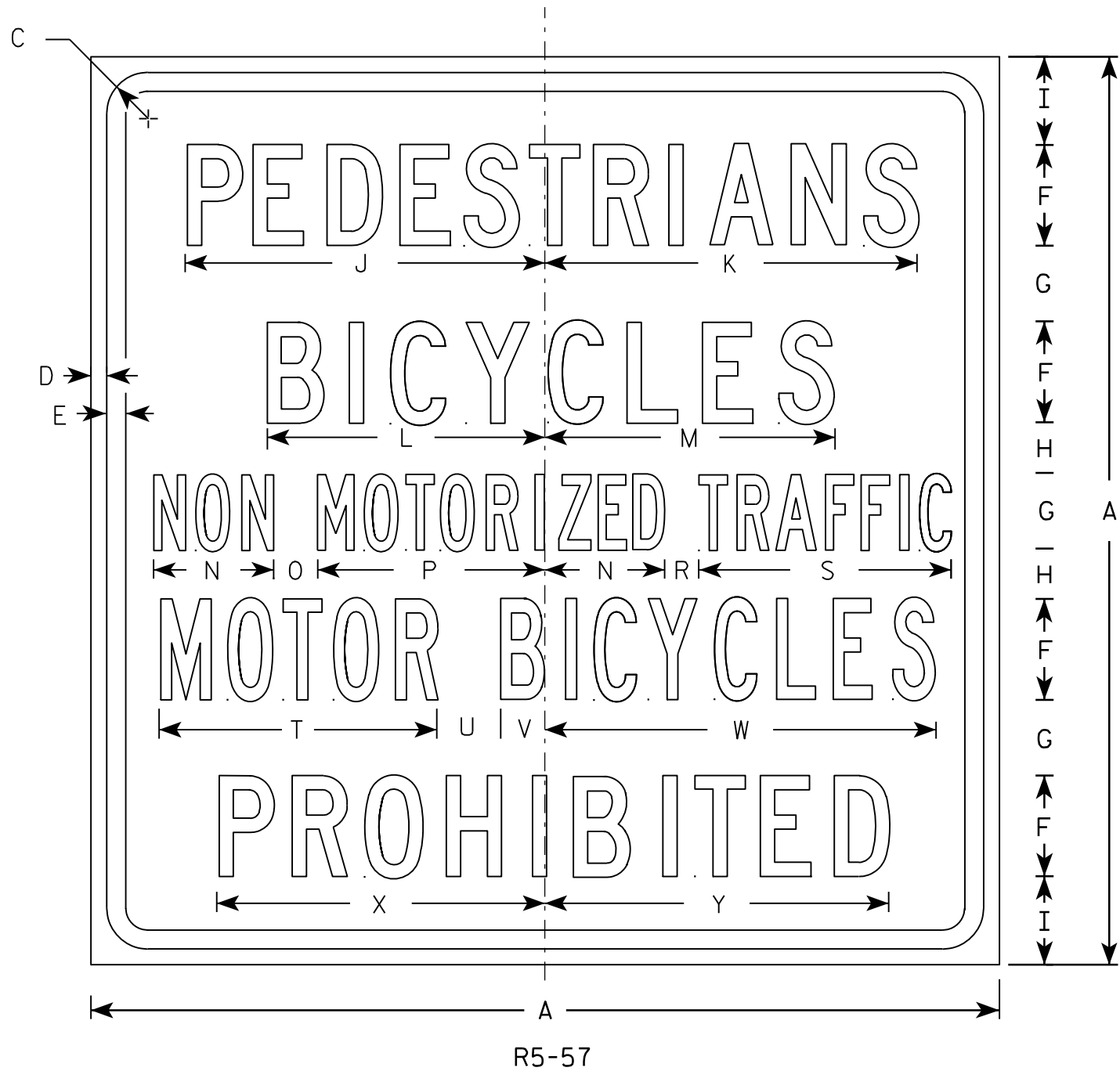
R5-1A

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 - 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.

| 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<br>sq. ft. |
|------|----|----|-------|---|-----|---|-------|---|--------|--------|-------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    | 30 | 18 | 1 1/2 |   | 1/2 | 5 | 3     | 2 | 11     | 6 1/2  | 6 7/8 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 3.75            |
| 2S   | 36 | 24 | 2     |   | 5/8 | 6 | 4 1/2 | 3 | 13 1/4 | 7 7/8  | 8 1/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 6.00            |
| 2M   | 42 | 30 | 2 1/2 |   | 3/4 | 8 | 5     | 4 | 17 3/4 | 10 1/2 | 11    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 8.75            |
| 3    | 42 | 30 | 2 1/2 |   | 3/4 | 8 | 5     | 4 | 17 3/4 | 10 1/2 | 11    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 8.75            |
| 4    | 42 | 30 | 2 1/2 |   | 3/4 | 8 | 5     | 4 | 17 3/4 | 10 1/2 | 11    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 8.75            |
| 5    | 42 | 30 | 2 1/2 |   | 3/4 | 8 | 5     | 4 | 17 3/4 | 10 1/2 | 11    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 8.75            |

|                                  |                                                       |
|----------------------------------|-------------------------------------------------------|
| STANDARD SIGN<br>R5-1A           |                                                       |
| WISCONSIN DEPT OF TRANSPORTATION |                                                       |
| APPROVED                         | <i>Matthew R. Rauch</i><br>for State Traffic Engineer |
| DATE 12/17/10                    | PLATE NO. R5-1A.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 - Black
3. Message Series - Lines 1, 2, and 5 are Series C.  
Lines 3 and 4 are Series B.
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

7

7

| SIZE | A  | B | C     | D   | E   | F | G | H | I     | J      | K      | L  | M      | N     | O     | P | Q | R     | S  | T  | U     | V     | W      | X  | Y      | Z | Area<br>sq. ft. |
|------|----|---|-------|-----|-----|---|---|---|-------|--------|--------|----|--------|-------|-------|---|---|-------|----|----|-------|-------|--------|----|--------|---|-----------------|
| 1    |    |   |       |     |     |   |   |   |       |        |        |    |        |       |       |   |   |       |    |    |       |       |        |    |        |   |                 |
| 2S   |    |   |       |     |     |   |   |   |       |        |        |    |        |       |       |   |   |       |    |    |       |       |        |    |        |   |                 |
| 2M   |    |   |       |     |     |   |   |   |       |        |        |    |        |       |       |   |   |       |    |    |       |       |        |    |        |   |                 |
| 3    |    |   |       |     |     |   |   |   |       |        |        |    |        |       |       |   |   |       |    |    |       |       |        |    |        |   |                 |
| 4    | 36 |   | 1 5⁄8 | 5⁄8 | 3⁄4 | 4 | 3 | 2 | 3 1⁄2 | 14 1⁄4 | 14 7⁄8 | 11 | 11 1⁄2 | 4 3⁄4 | 1 3⁄4 | 9 |   | 1 3⁄8 | 10 | 11 | 2 1⁄2 | 1 3⁄4 | 15 1⁄2 | 13 | 13 5⁄8 |   | 9.0             |
| 5    | 36 |   | 1 5⁄8 | 5⁄8 | 3⁄4 | 4 | 3 | 2 | 3 1⁄2 | 14 1⁄4 | 14 7⁄8 | 11 | 11 1⁄2 | 4 3⁄4 | 1 3⁄4 | 9 |   | 1 3⁄8 | 10 | 11 | 2 1⁄2 | 1 3⁄4 | 15 1⁄2 | 13 | 13 5⁄8 |   | 9.0             |

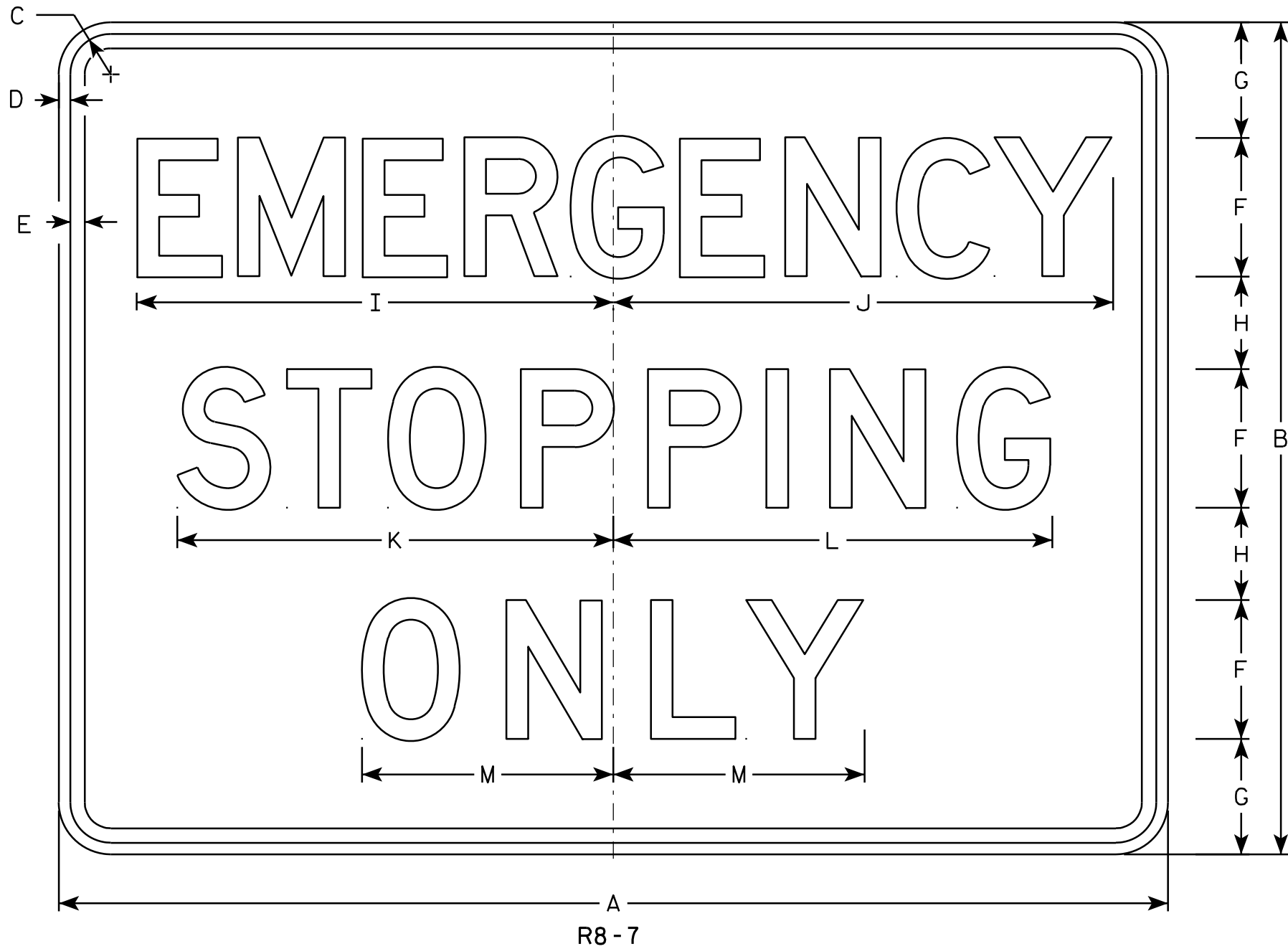
STANDARD SIGN  
R5-57

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 3/29/2011 PLATE NO. R5-57.10

PROJECT NO: HWY: COUNTY: SHEET NO: 206 E



NOTES

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

| 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<br>sq. ft. |
|------|----|----|-----|---|---|---|---|---|------|------|------|----|------|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    |    |    |     |   |   |   |   |   |      |      |      |    |      |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 2S   |    |    |     |   |   |   |   |   |      |      |      |    |      |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 2M   |    |    |     |   |   |   |   |   |      |      |      |    |      |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 3    |    |    |     |   |   |   |   |   |      |      |      |    |      |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 4    | 48 | 36 | 1 ¾ | ½ | ⅝ | 6 | 5 | 4 | 20 ⅝ | 21 ⅝ | 18 ⅞ | 19 | 10 ⅞ |   |   |   |   |   |   |   |   |   |   |   |   |   | 12.0            |
| 5    | 48 | 36 | 1 ¾ | ½ | ⅝ | 6 | 5 | 4 | 20 ⅝ | 21 ⅝ | 18 ⅞ | 19 | 10 ⅞ |   |   |   |   |   |   |   |   |   |   |   |   |   | 12.0            |

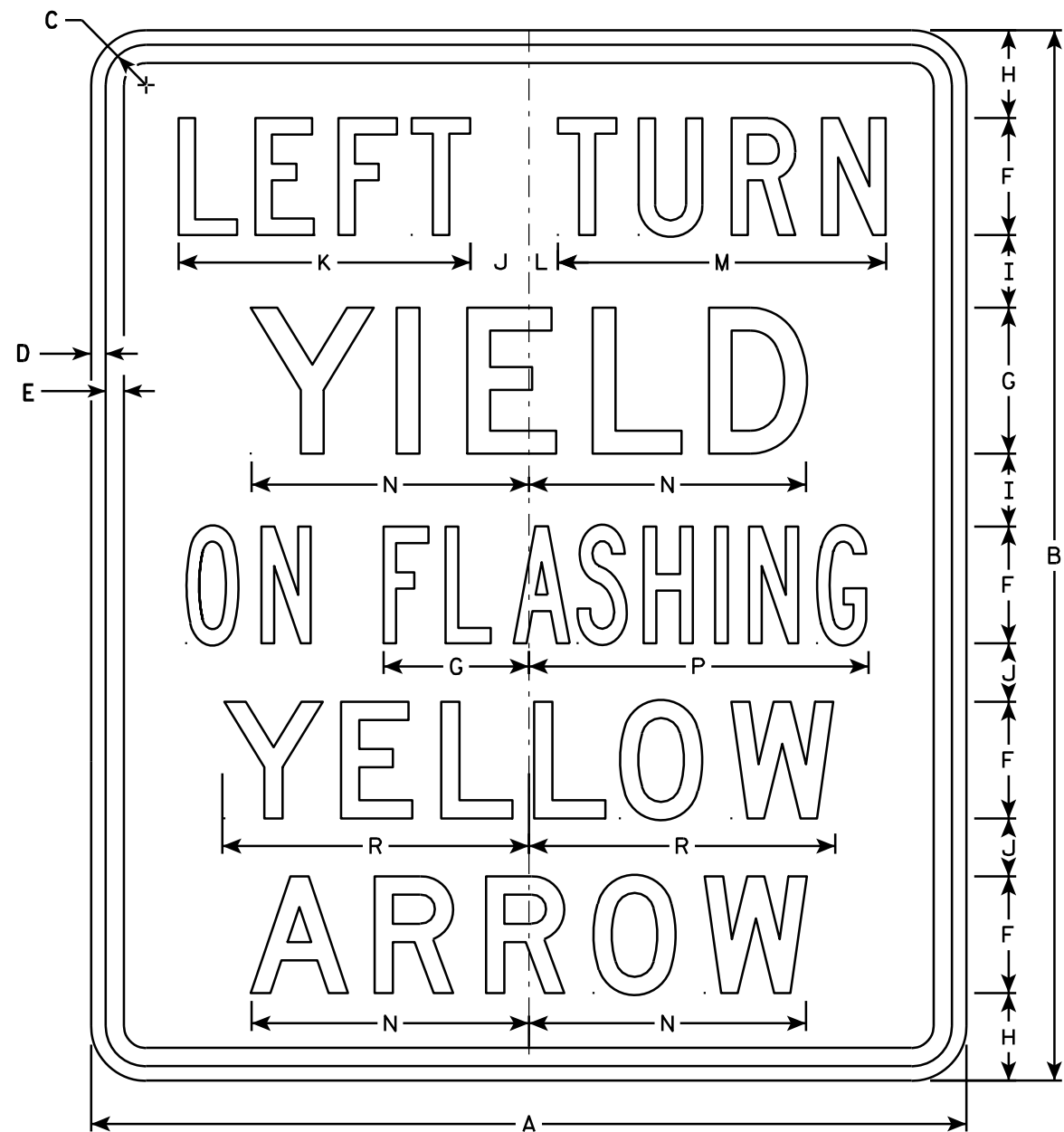
STANDARD SIGN  
R8-7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 3/31/2011 PLATE NO. R8-7.6

PROJECT NO: HWY: COUNTY: SHEET NO: 207 E

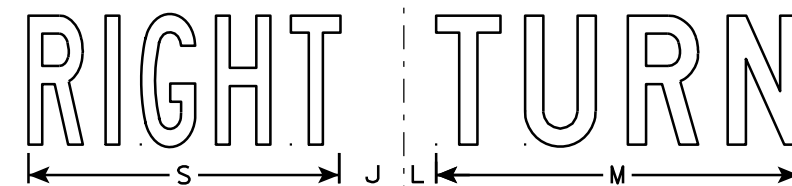


R10-50L

### NOTES

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

"RIGHT" Is Series B



R10-50R

| 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<br>sq. ft. |
|------|----|----|-------|-----|-----|---|---|---|-------|---|----|---|--------|-------|-------|--------|---|--------|-------|---|---|---|---|---|---|---|-----------------|
| 1    |    |    |       |     |     |   |   |   |       |   |    |   |        |       |       |        |   |        |       |   |   |   |   |   |   |   |                 |
| 2S   | 30 | 36 | 1 3⁄8 | 1⁄2 | 5⁄8 | 4 | 5 | 3 | 2 1⁄2 | 2 | 10 | 1 | 11 1⁄4 | 9 1⁄2 | 4 1⁄4 | 11 5⁄8 |   | 10 1⁄2 | 9 5⁄8 |   |   |   |   |   |   |   | 7.5             |
| 2M   | 30 | 36 | 1 3⁄8 | 1⁄2 | 5⁄8 | 4 | 5 | 3 | 2 1⁄2 | 2 | 10 | 1 | 11 1⁄4 | 9 1⁄2 | 4 1⁄4 | 11 5⁄8 |   | 10 1⁄2 | 9 5⁄8 |   |   |   |   |   |   |   | 7.5             |
| 3    |    |    |       |     |     |   |   |   |       |   |    |   |        |       |       |        |   |        |       |   |   |   |   |   |   |   |                 |
| 4    |    |    |       |     |     |   |   |   |       |   |    |   |        |       |       |        |   |        |       |   |   |   |   |   |   |   |                 |
| 5    |    |    |       |     |     |   |   |   |       |   |    |   |        |       |       |        |   |        |       |   |   |   |   |   |   |   |                 |

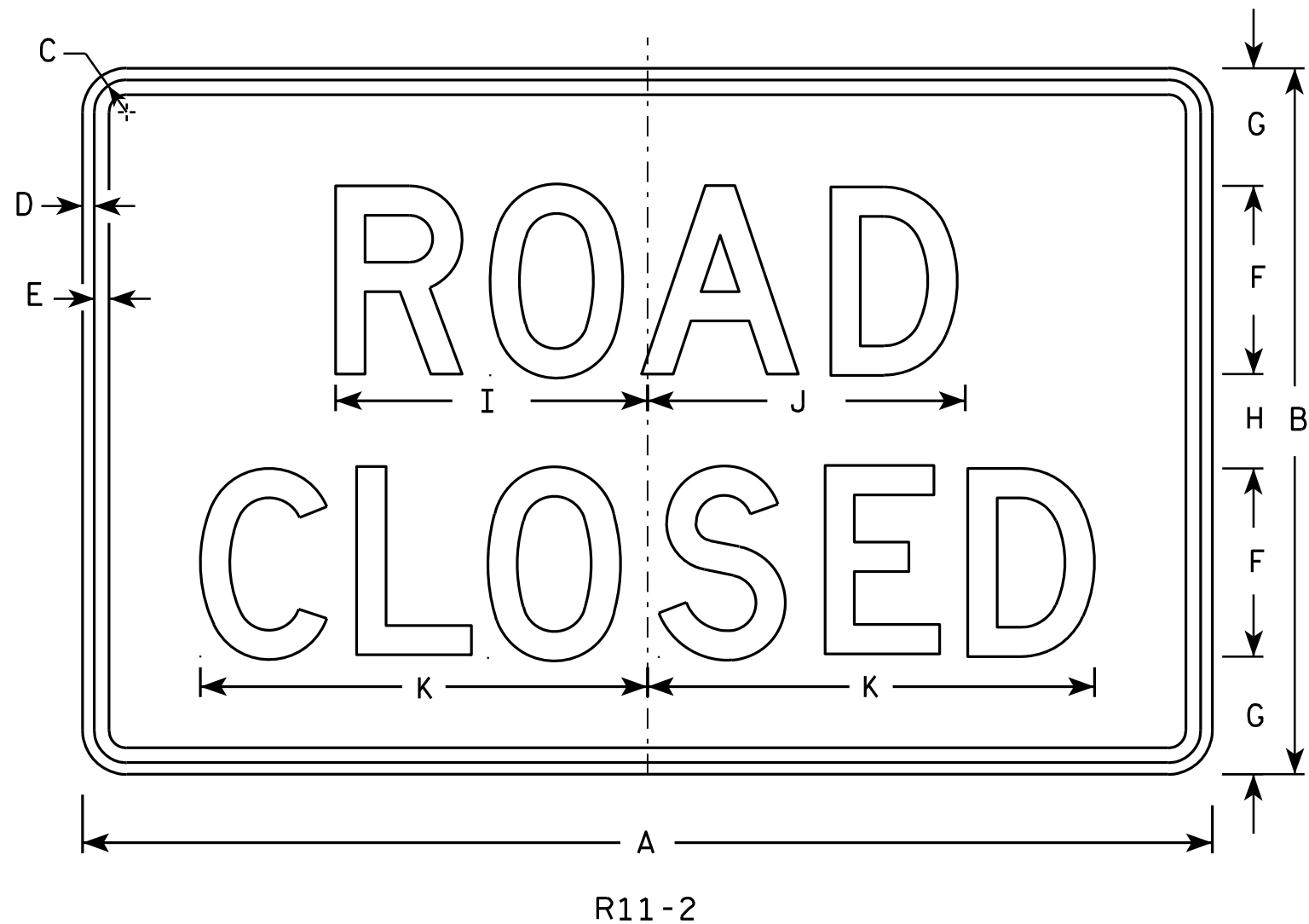
### STANDARD SIGN R10-50

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

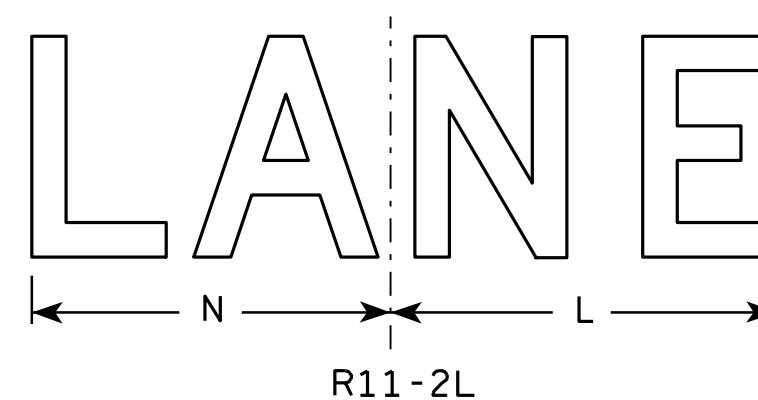
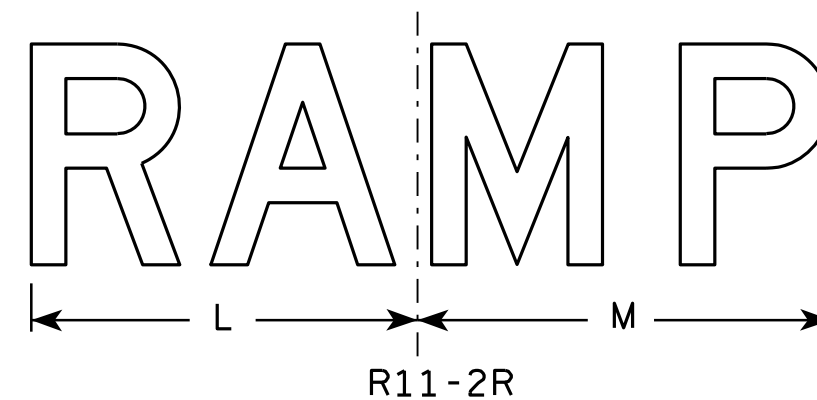
DATE 4/11/13 PLATE NO. R10-50.2

PROJECT NO: HWY: COUNTY: SHEET NO: 208 E



### NOTES

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

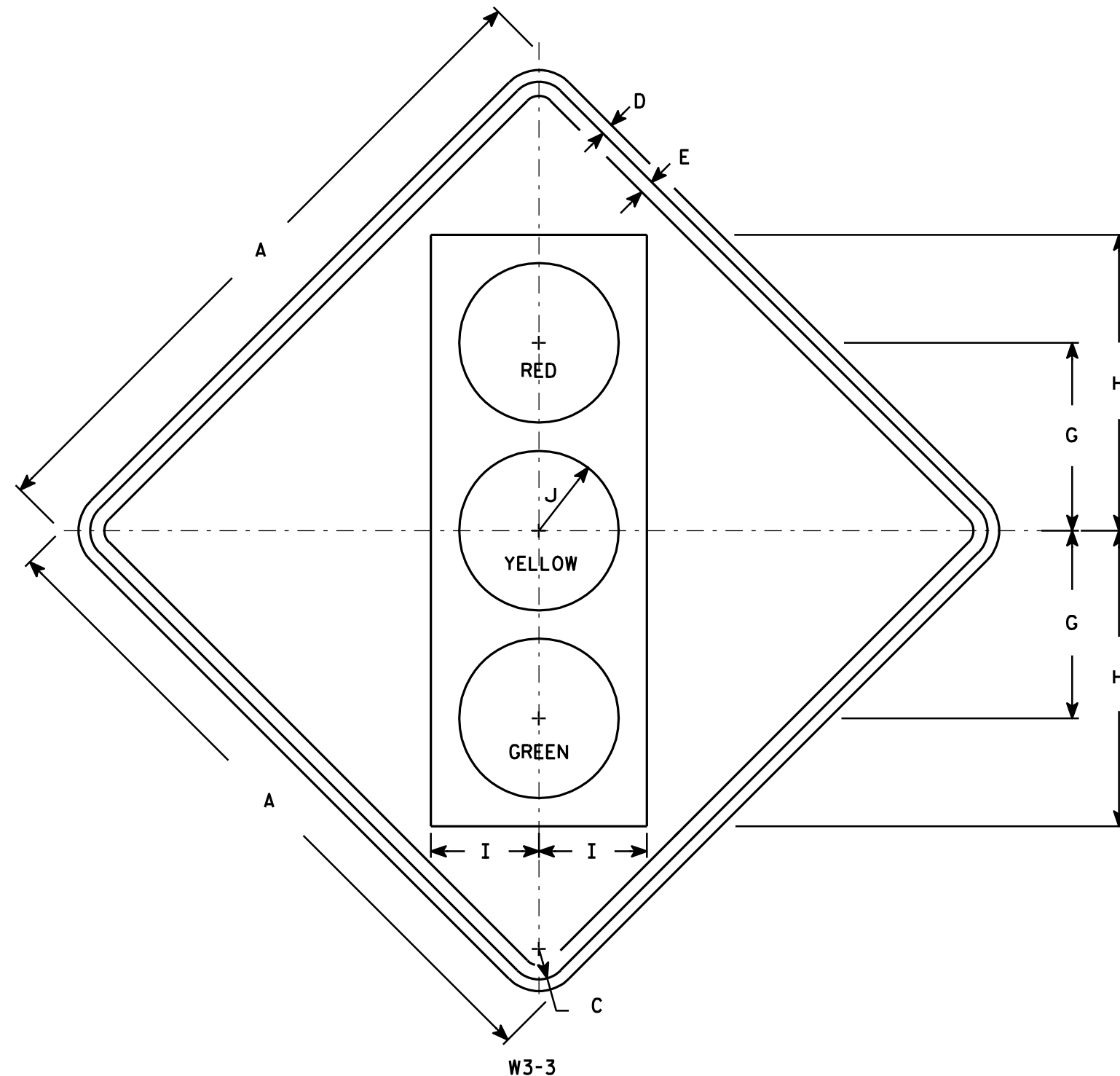


| SIZE | A  | B  | C     | D   | E   | F | G | H | I      | J      | K  | L  | M  | N  | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|----|-------|-----|-----|---|---|---|--------|--------|----|----|----|----|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|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

### STANDARD SIGN R11-2

WISCONSIN DEPT OF TRANSPORTATION  
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer  
DATE 4/1/11 PLATE NO. R11-2.10

PROJECT NO: HWY: COUNTY: SHEET NO: 209 E



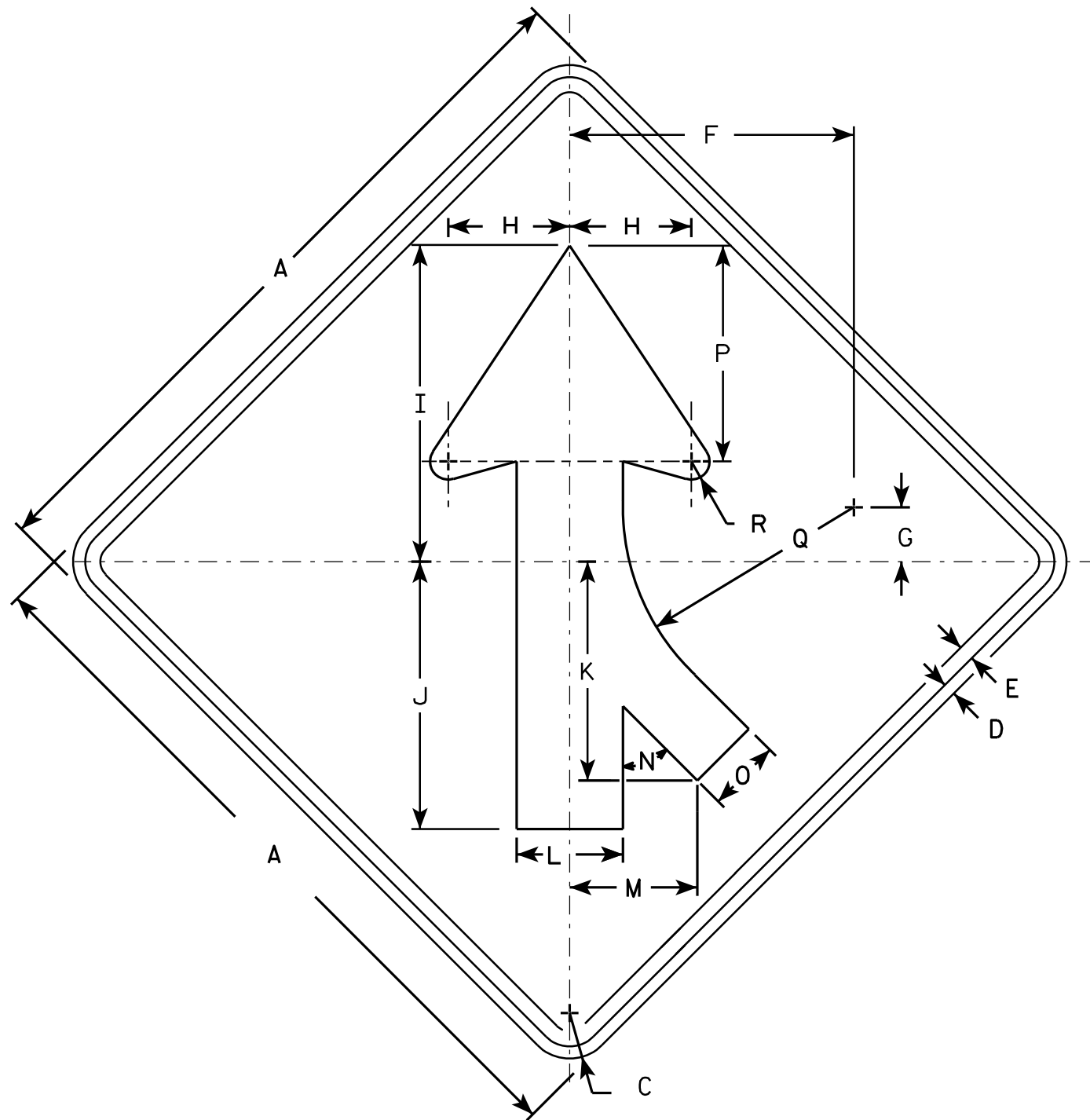
# NOTES

- Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:  
Background - Yellow  
Message - See Note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- Symbol and border are non-reflective black.  
Top circle - Type H Reflectorized Red  
Center circle - Same as background  
Bottom circle - Type H Reflectorized Green

| 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<br>sq. ft. |
|------|----|---|-------|-----|-----|---|--------|--------|-------|-------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    | 30 |   | 1 3/8 | 1/2 | 5/8 |   | 8 3/4  | 13 3/4 | 5     | 3 3/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 6.25            |
| 2S   | 36 |   | 1 5/8 | 5/8 | 3/4 |   | 10     | 15 3/4 | 5 3/4 | 4 1/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 9.0             |
| 2M   | 36 |   | 1 5/8 | 5/8 | 3/4 |   | 10     | 15 3/4 | 5 3/4 | 4 1/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 9.0             |
| 3    | 36 |   | 1 5/8 | 5/8 | 3/4 |   | 10     | 15 3/4 | 5 3/4 | 4 1/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 9.0             |
| 4    | 48 |   | 2 1/4 | 3/4 | 1   |   | 12 1/2 | 20     | 7 1/2 | 5     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 16.0            |
| 5    | 48 |   | 2 1/4 | 3/4 | 1   |   | 12 1/2 | 20     | 7 1/2 | 5     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 16.0            |

|             |      |         |               |   |
|-------------|------|---------|---------------|---|
| PROJECT NO: | HWY: | COUNTY: | SHEET NO: 210 | E |
|-------------|------|---------|---------------|---|

|                                  |                                                       |
|----------------------------------|-------------------------------------------------------|
| STANDARD SIGN<br>W3-3            |                                                       |
| WISCONSIN DEPT OF TRANSPORTATION |                                                       |
| APPROVED                         | <i>Matthew R. Rauch</i><br>for State Traffic Engineer |
| DATE 6/7/10                      | PLATE NO. W3-3.11                                     |



W4-1 R

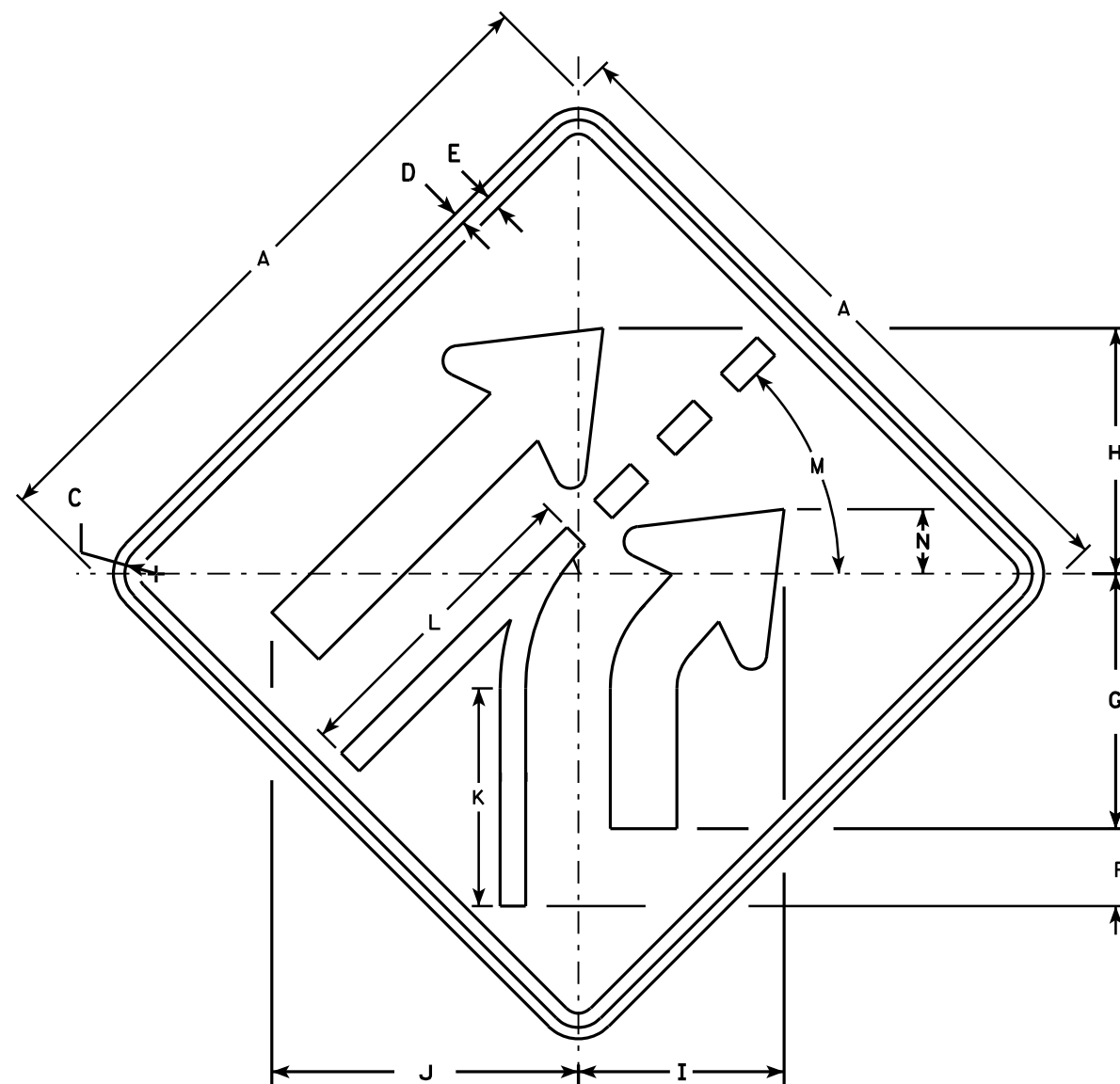
### NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - Yellow  
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W4-1L is the same as W4-1R except the arrow is reversed along the vertical centerline.

| 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<br>sq. ft. |
|------|----|---|-------|-----|-----|--------|-------|---|--------|--------|--------|-------|-------|-----|-------|--------|--------|-------|---|---|---|---|---|---|---|---|-----------------|
| 1    | 30 |   | 1 3/8 | 1/2 | 5/8 | 11 5/8 | 2 1/2 | 5 | 13     | 11     | 9      | 4 3/8 | 5 1/4 | 45° | 3     | 8 7/8  | 9 1/2  | 3/4   |   |   |   |   |   |   |   |   | 6.25            |
| 2S   | 36 |   | 1 5/8 | 5/8 | 3/4 | 14     | 2 3/4 | 6 | 15 3/4 | 13 1/4 | 10 1/4 | 5 1/4 | 6 3/8 | 45° | 3 5/8 | 10 5/8 | 11 3/8 | 7/8   |   |   |   |   |   |   |   |   | 9.0             |
| 2M   | 36 |   | 1 5/8 | 5/8 | 3/4 | 14     | 2 3/4 | 6 | 15 3/4 | 13 1/4 | 10 1/4 | 5 1/4 | 6 3/8 | 45° | 3 5/8 | 10 5/8 | 11 3/8 | 7/8   |   |   |   |   |   |   |   |   | 9.0             |
| 3    | 36 |   | 1 5/8 | 5/8 | 3/4 | 14     | 2 3/4 | 6 | 15 3/4 | 13 1/4 | 10 1/4 | 5 1/4 | 6 3/8 | 45° | 3 5/8 | 10 5/8 | 11 3/8 | 7/8   |   |   |   |   |   |   |   |   | 9.0             |
| 4    | 48 |   | 2 1/4 | 3/4 | 1   | 18 3/4 | 3 5/8 | 8 | 20 1/2 | 17 1/2 | 14 3/8 | 7     | 8 3/8 | 45° | 4 3/4 | 14 1/4 | 15 1/4 | 1 1/4 |   |   |   |   |   |   |   |   | 16.0            |
| 5    | 48 |   | 2 1/4 | 3/4 | 1   | 18 3/4 | 3 5/8 | 8 | 20 1/2 | 17 1/2 | 14 3/8 | 7     | 8 3/8 | 45° | 4 3/4 | 14 1/4 | 15 1/4 | 1 1/4 |   |   |   |   |   |   |   |   | 16.0            |

### STANDARD SIGN W4-1

WISCONSIN DEPT OF TRANSPORTATION  
 APPROVED *Matthew R. Rauch*  
 for State Traffic Engineer  
 DATE 03/12/13 PLATE NO. W4-1.14



W4-6

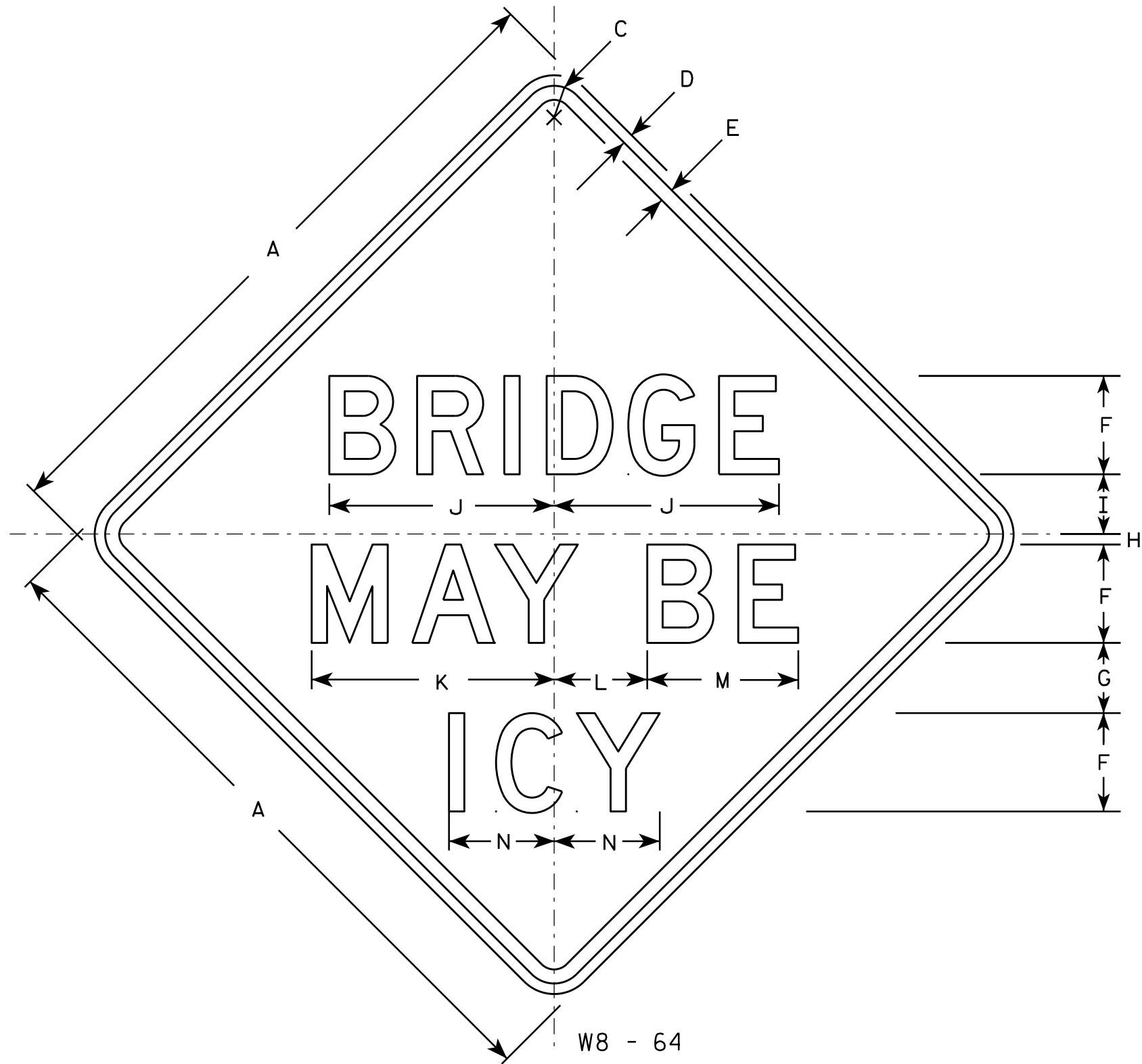
# NOTES

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

\* Scale and Rotate W4-3 and make modifications.

| 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<br>sq. ft. |
|------|----|---|-------|-----|-----|-------|--------|--------|--------|--------|--------|--------|-----|-------|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    | 30 |   | 1 3/8 | 1/2 | 5/8 | 3 3/8 | 11 1/4 | 10 3/4 | 9      | 13 1/2 | 9 1/2  | 14     | 45° | 2 7/8 |   |   |   |   |   |   |   |   |   |   |   |   | 6.25            |
| 2S   | 36 |   | 1 5/8 | 5/8 | 3/4 | 4     | 13 1/2 | 13     | 10 7/8 | 16 1/4 | 11 1/2 | 16 7/8 | 45° | 3 3/8 |   |   |   |   |   |   |   |   |   |   |   |   | 9.0             |
| 2M   | 36 |   | 1 5/8 | 5/8 | 3/4 | 4     | 13 1/2 | 13     | 10 7/8 | 16 1/4 | 11 1/2 | 16 7/8 | 45° | 3 3/8 |   |   |   |   |   |   |   |   |   |   |   |   | 9.0             |
| 3    |    |   |       |     |     |       |        |        |        |        |        |        |     |       |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 4    | 48 |   | 2 1/4 | 3/4 | 1   | 5 3/8 | 18     | 17 1/4 | 14 1/2 | 21 5/8 | 15 1/4 | 22 1/2 | 45° | 4 1/2 |   |   |   |   |   |   |   |   |   |   |   |   | 16.0            |
| 5    | 48 |   | 2 1/4 | 3/4 | 1   | 5 3/8 | 18     | 17 1/4 | 14 1/2 | 21 5/8 | 15 1/4 | 22 1/2 | 45° | 4 1/2 |   |   |   |   |   |   |   |   |   |   |   |   | 16.0            |

|                                  |                                                       |
|----------------------------------|-------------------------------------------------------|
| <b>STANDARD SIGN</b>             |                                                       |
| <b>W4-6</b>                      |                                                       |
| WISCONSIN DEPT OF TRANSPORTATION |                                                       |
| APPROVED                         | <i>Matthew R. Rauch</i><br>for State Traffic Engineer |
| DATE 3/12/13                     | PLATE NO. W4-6.3                                      |



### NOTES

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

| 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<br>sq. ft. |
|------|----|---|-------|-----|-----|---|-------|-----|-------|----|--------|-------|--------|-------|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    |    |   |       |     |     |   |       |     |       |    |        |       |        |       |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 2S   | 36 |   | 1 5/8 | 5/8 | 3/4 | 5 | 3 3/4 | 5/8 | 3 1/8 | 12 | 13     | 5     | 8      | 5 5/8 |   |   |   |   |   |   |   |   |   |   |   |   | 9.0             |
| 2M   | 36 |   | 1 5/8 | 5/8 | 3/4 | 5 | 3 3/4 | 5/8 | 3 1/8 | 12 | 13     | 5     | 8      | 5 5/8 |   |   |   |   |   |   |   |   |   |   |   |   | 9.0             |
| 3    |    |   |       |     |     |   |       |     |       |    |        |       |        |       |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 4    | 48 |   | 2 1/4 | 3/4 | 1   | 7 | 5     | 3/4 | 4 1/4 | 16 | 17 1/4 | 6 5/8 | 10 3/4 | 7 1/2 |   |   |   |   |   |   |   |   |   |   |   |   | 16.0            |
| 5    | 48 |   | 2 1/4 | 3/4 | 1   | 7 | 5     | 3/4 | 4 1/4 | 16 | 17 1/4 | 6 5/8 | 10 3/4 | 7 1/2 |   |   |   |   |   |   |   |   |   |   |   |   | 16.0            |

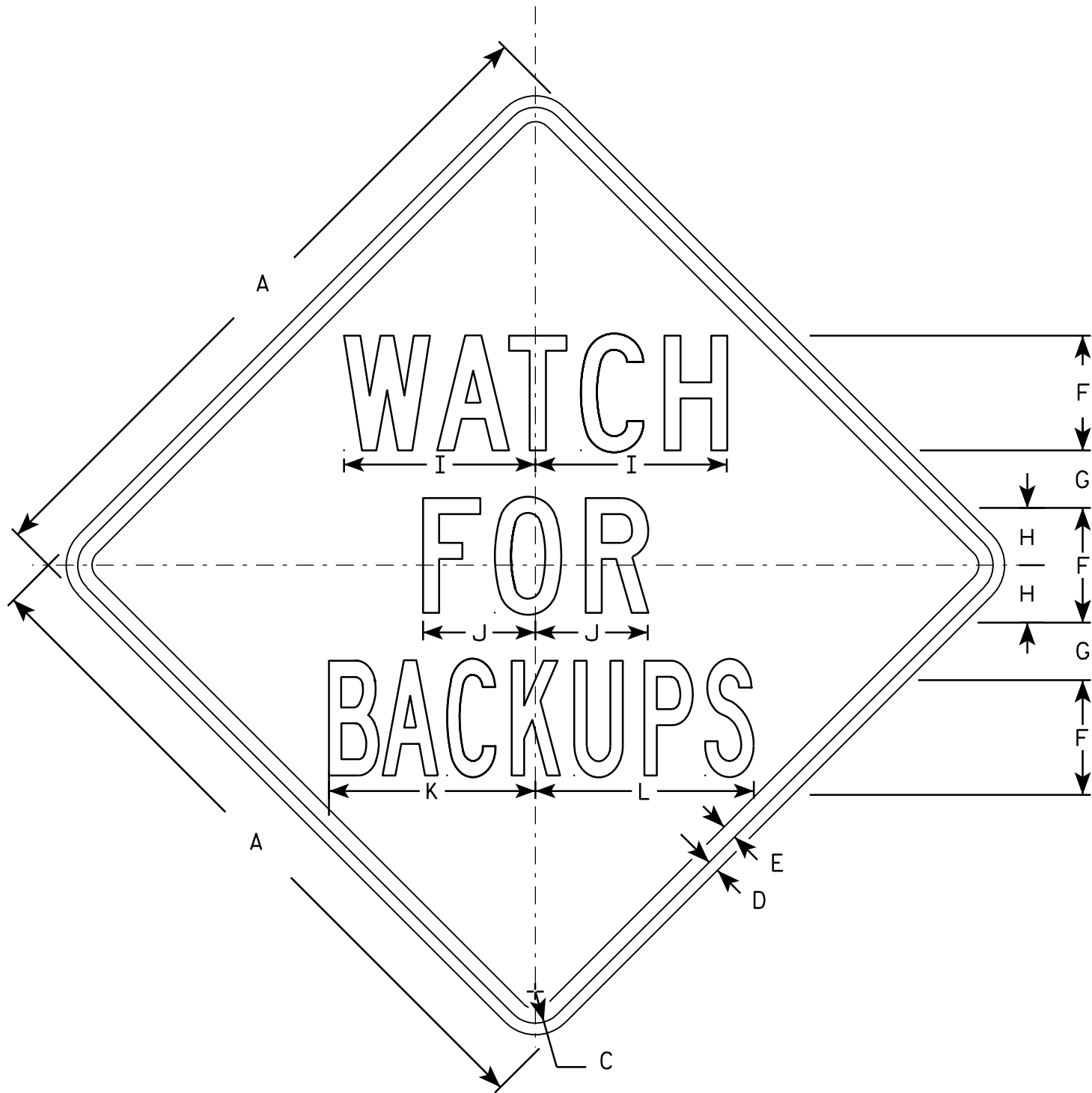
### STANDARD SIGN W8-64

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 03/14/13 PLATE 213 W8-64.6

PROJECT NO: HWY: COUNTY: SHEET NO: E



W8-74

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 except Line 3 is Series B
- 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 | O | R | S | T | U | V | W | X | Y | Z    | Area<br>sq. ft. |
|------|----|---|-------|-----|-----|---|-------|---|--------|-------|--------|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|------|-----------------|
| 1    |    |   |       |     |     |   |       |   |        |       |        |        |   |   |   |   |   |   |   |   |   |   |   |   |   |      |                 |
| 2S   | 36 |   | 1 5⁄8 | 5⁄8 | 3⁄4 | 6 | 2 1⁄2 | 3 | 10     | 5 7⁄8 | 10 3⁄4 | 11 3⁄8 |   |   |   |   |   |   |   |   |   |   |   |   |   | 9.0  |                 |
| 2M   | 36 |   | 1 5⁄8 | 5⁄8 | 3⁄4 | 6 | 2 1⁄2 | 3 | 10     | 5 7⁄8 | 10 3⁄4 | 11 3⁄8 |   |   |   |   |   |   |   |   |   |   |   |   |   | 9.0  |                 |
| 3    | 48 |   | 2 1⁄4 | 3⁄4 | 1   | 8 | 4     | 4 | 13 5⁄8 | 7 7⁄8 | 14 3⁄8 | 15 1⁄4 |   |   |   |   |   |   |   |   |   |   |   |   |   | 16.0 |                 |
| 4    | 48 |   | 2 1⁄4 | 3⁄4 | 1   | 8 | 4     | 4 | 13 5⁄8 | 7 7⁄8 | 14 3⁄8 | 15 1⁄4 |   |   |   |   |   |   |   |   |   |   |   |   |   | 16.0 |                 |
| 5    | 48 |   | 2 1⁄4 | 3⁄4 | 1   | 8 | 4     | 4 | 13 5⁄8 | 7 7⁄8 | 14 3⁄8 | 15 1⁄4 |   |   |   |   |   |   |   |   |   |   |   |   |   | 16.0 |                 |

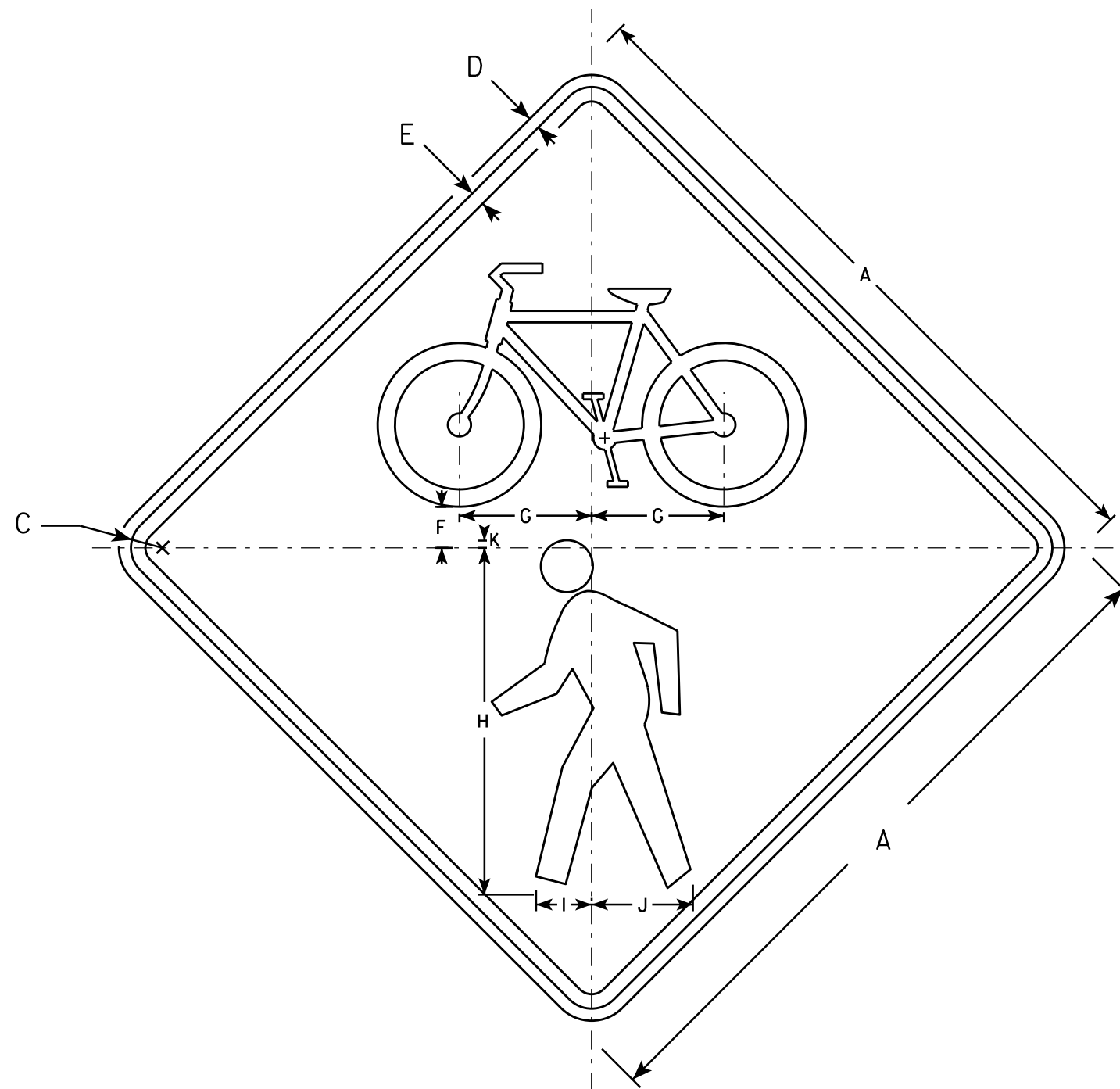
STANDARD SIGN

W8-74

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 3/23/11 PLATE NO. W8-74.2



W11-15

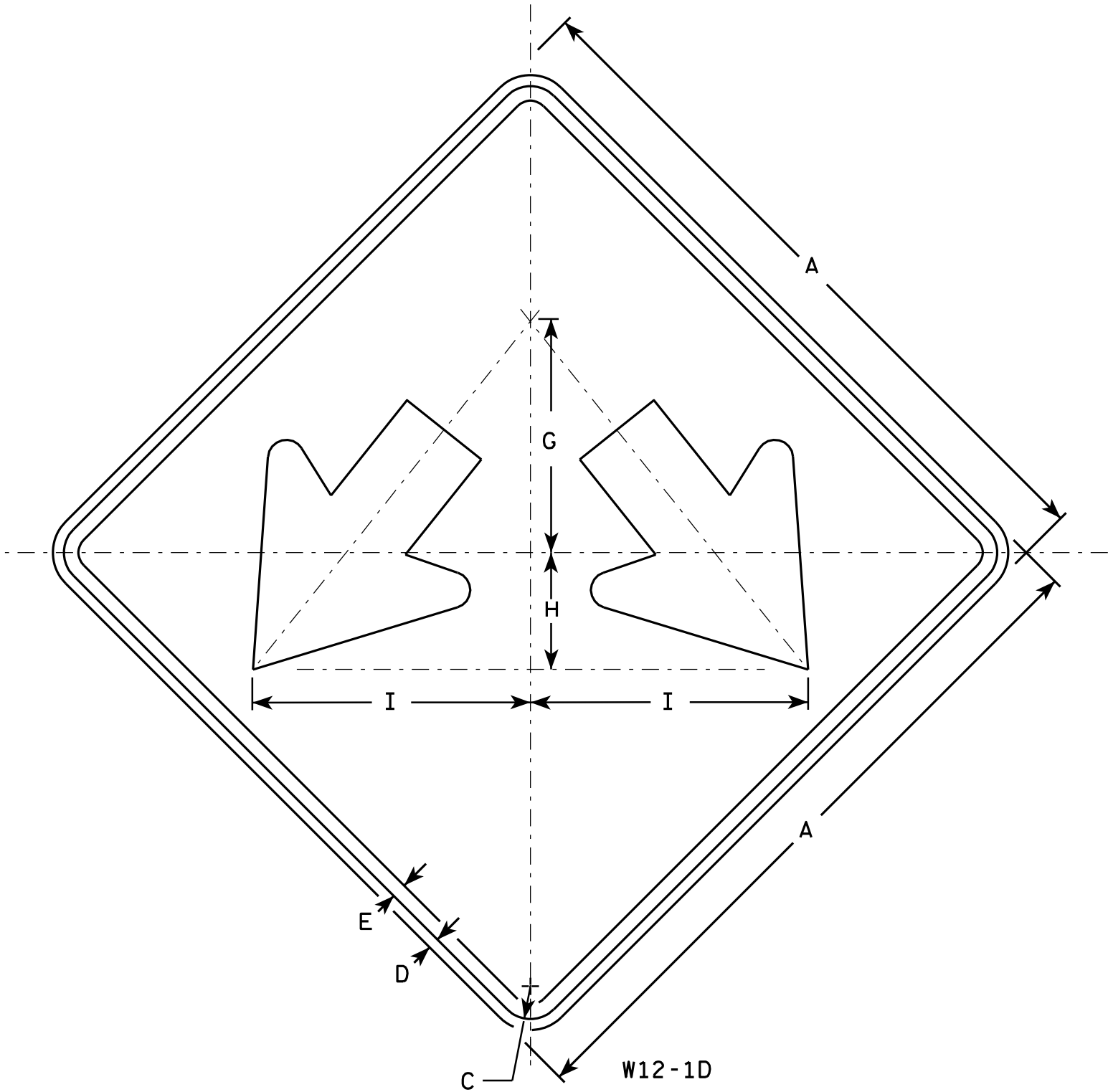
NOTES

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

| 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<br>sq. ft. |
|------|----|---|-------|-----|-----|-------|-------|----|-------|-------|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    | 24 |   | 1 1/8 | 3/8 | 1/2 | 1 3/8 | 4 5/8 | 12 | 1 7/8 | 3 1/2 | 1/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 4.0             |
| 2S   | 30 |   | 1 3/8 | 1/2 | 5/8 | 1 3/4 | 5 3/4 | 15 | 2 3/8 | 4 3/8 | 3/8 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 6.25            |
| 2M   | 36 |   | 1 5/8 | 5/8 | 3/4 | 2 1/8 | 6 7/8 | 18 | 2 7/8 | 5 1/4 | 3/8 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 9.0             |
| 3    | 36 |   | 1 5/8 | 5/8 | 3/4 | 2 1/8 | 6 7/8 | 18 | 2 7/8 | 5 1/4 | 3/8 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 16.0            |
| 4    | 48 |   | 2 1/4 | 3/4 | 1   | 2 7/8 | 9 1/8 | 24 | 3 7/8 | 7     | 1/2 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 16.0            |
| 5    |    |   |       |     |     |       |       |    |       |       |     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |

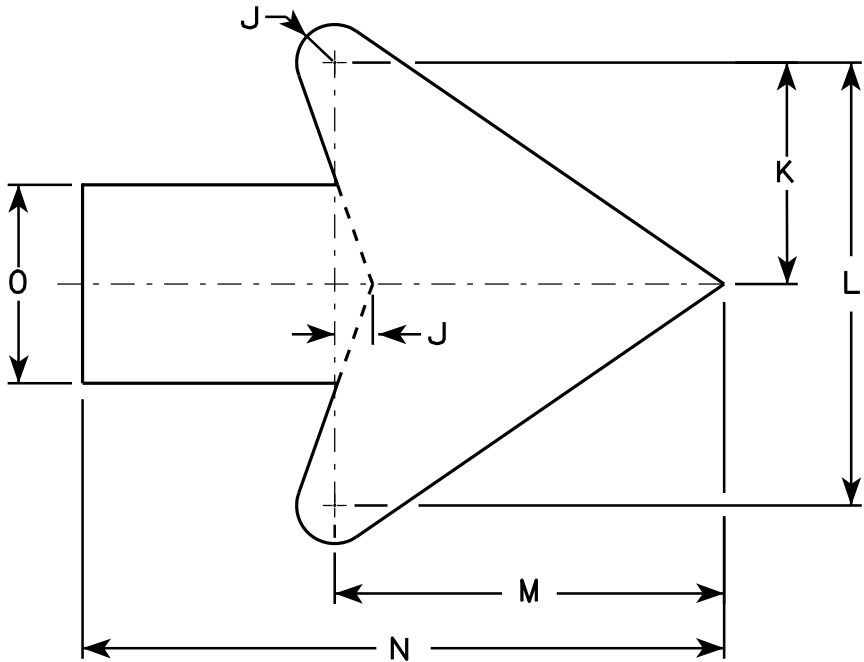
|                                  |                                                       |
|----------------------------------|-------------------------------------------------------|
| STANDARD SIGN                    |                                                       |
| W11-15                           |                                                       |
| WISCONSIN DEPT OF TRANSPORTATION |                                                       |
| APPROVED                         | <i>Matthew R. Rauch</i><br>for State Traffic Engineer |
| DATE 2/13/14                     | PLATE NO. W11-15.4<br>215                             |

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



NOTES

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



Arrow Detail

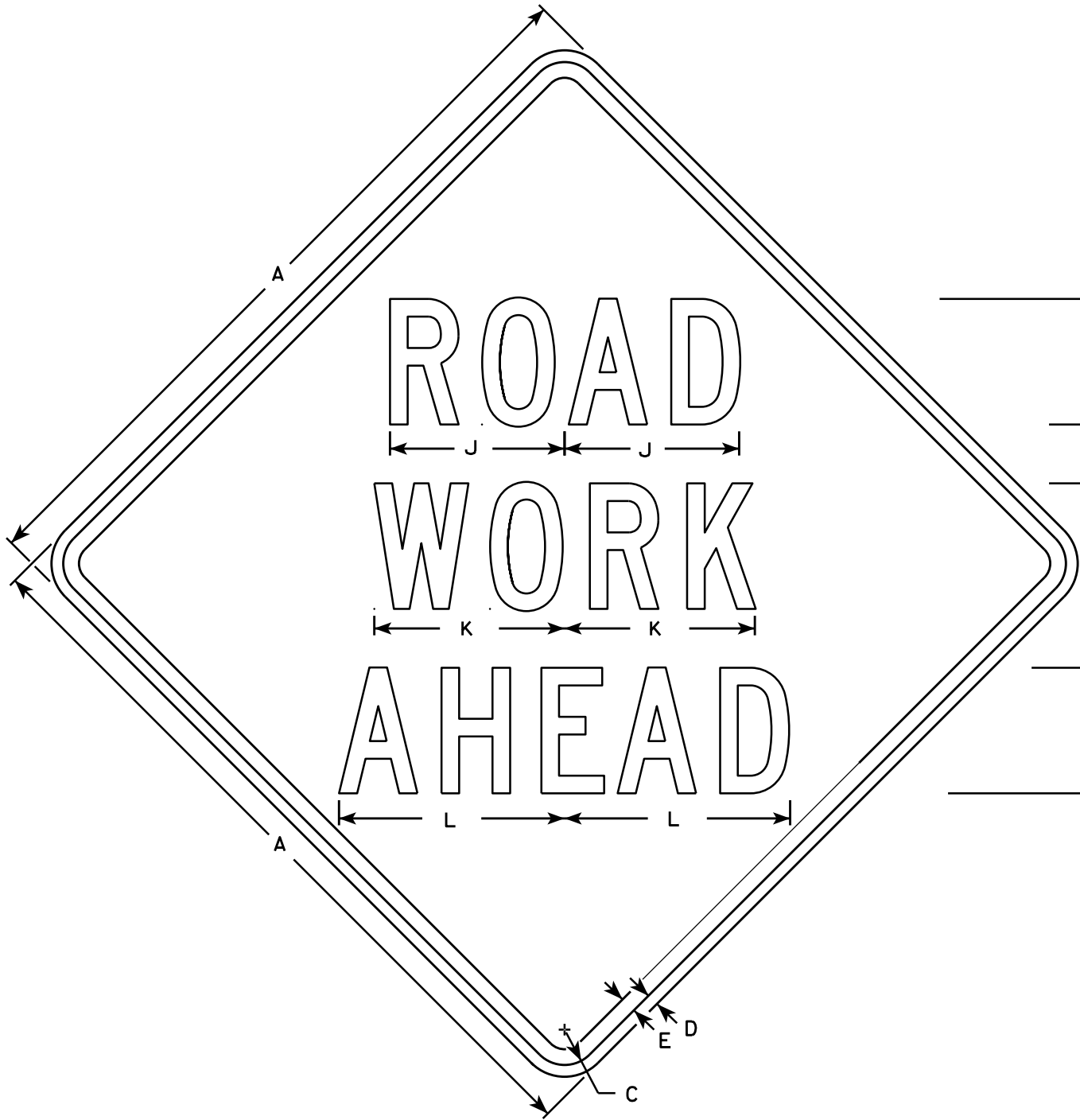
| SIZE | A  | B | C     | D   | E   | F | G  | H | I      | J     | K     | L      | M      | N      | O     | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|---|-------|-----|-----|---|----|---|--------|-------|-------|--------|--------|--------|-------|---|---|---|---|---|---|---|---|---|---|---|--------------|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

STANDARD SIGN  
W12-1D

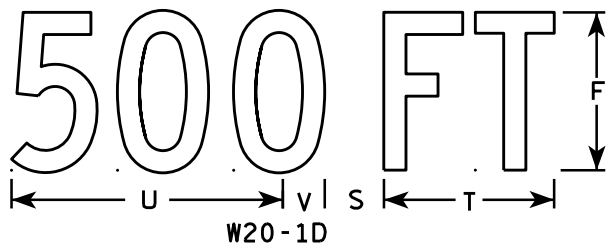
WISCONSIN DEPT OF TRANSPORTATION

APPROVED  
*Matthew R. Rauch*  
for State Traffic Engineer

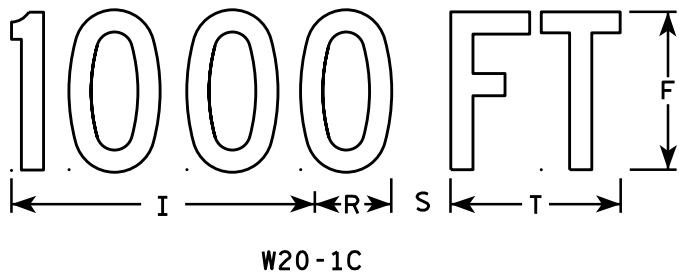
DATE 3/13/13 PLATE NO. W12-1D.15



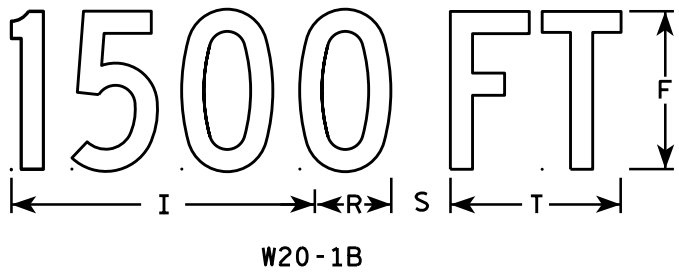
W20-1A



W20-1D



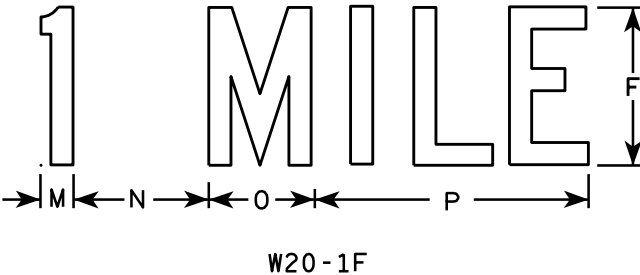
W20-1C



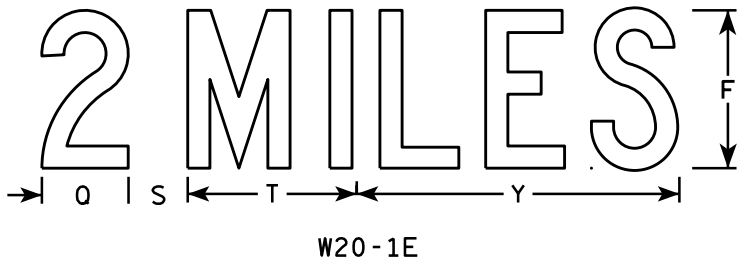
W20-1B



W20-1G



W20-1F



W20-1E

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<br>sq. ft. |
|------|----|---|-------|-----|-----|---|-------|-------|--------|--------|--------|--------|-------|-------|-------|--------|-------|-------|-------|-------|--------|-------|--------|-------|--------|---|-----------------|
| 1    | 36 |   | 1 3/8 | 1/2 | 5/8 | 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      |       | 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, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

State Traffic Engineer

DATE 5/07/15

PLATE NO. W20-1.10

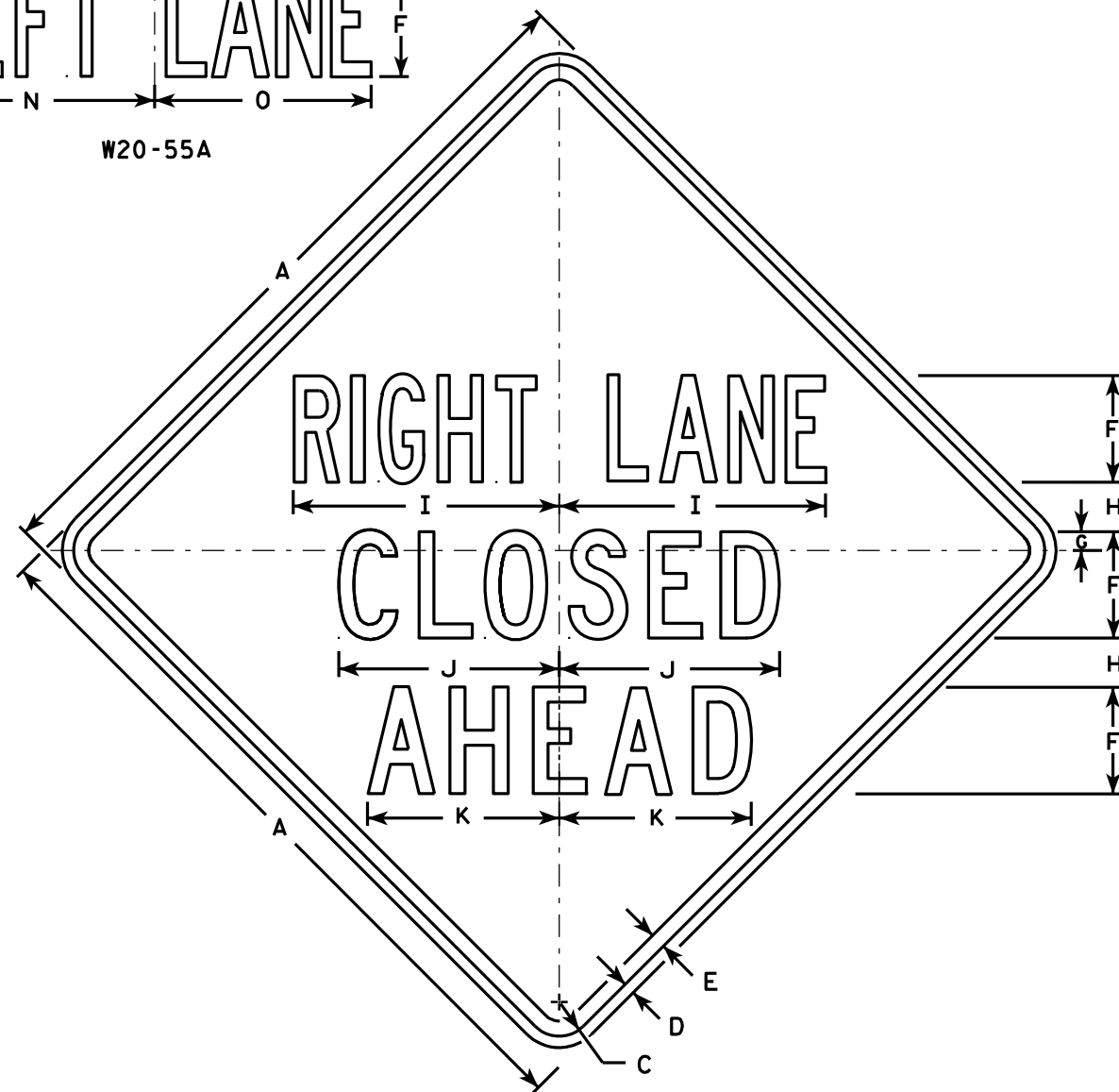
217

CENTER LANE

W20-56A

LEFT LANE

W20-55A



W20-5A

500 FT

W20-5D

1000 FT

W20-5C

1500 FT

W20-5B

1/2 MILE

W20-5G

1 MILE

W20-5F

### NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - Orange  
Message - Black
3. Message Series - See Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. "----- LANE" is Series B.  
All other copy is Series C.

| 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<br>sq. ft. |
|------|----|---|-------|-----|-----|---|-------|-------|--------|--------|--------|--------|--------|----|--------|-------|-------|-------|-------|----|-------|-------|--------|-------|-------|--------|-----------------|
| 1    | 36 | 6 | 1 5/8 | 5/8 | 3/4 | 5 | 7/8   | 2 1/2 | 13 1/8 | 10 3/4 | 9 1/2  | 14 1/4 | 13 5/8 | 12 | 12     | 1 3/8 | 1 1/8 | 4 1/2 | 3 1/2 | 9  | 1 7/8 | 5 5/8 | 10 1/8 | 2 1/2 | 1 3/4 | 8      | 9.0             |
| 2S   | 48 | 8 | 2 1/4 | 3/4 | 1   | 7 | 1 1/4 | 3 1/4 | 17 1/2 | 14 3/8 | 12 5/8 | 19     | 18 3/8 | 16 | 14 1/4 | 1 7/8 | 1 1/2 | 6     | 4 5/8 | 12 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 2 3/8 | 10 5/8 | 16.0            |
| 2M   | 48 | 8 | 2 1/4 | 3/4 | 1   | 7 | 1 1/4 | 3 1/4 | 17 1/2 | 14 3/8 | 12 5/8 | 19     | 18 3/8 | 16 | 14 1/4 | 1 7/8 | 1 1/2 | 6     | 4 5/8 | 12 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 2 3/8 | 10 5/8 | 16.0            |
| 3    | 48 | 8 | 2 1/4 | 3/4 | 1   | 7 | 1 1/4 | 3 1/4 | 17 1/2 | 14 3/8 | 12 5/8 | 19     | 18 3/8 | 16 | 14 1/4 | 1 7/8 | 1 1/2 | 6     | 4 5/8 | 12 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 2 3/8 | 10 5/8 | 16.0            |
| 4    | 48 | 8 | 2 1/4 | 3/4 | 1   | 7 | 1 1/4 | 3 1/4 | 17 1/2 | 14 3/8 | 12 5/8 | 19     | 18 3/8 | 16 | 14 1/4 | 1 7/8 | 1 1/2 | 6     | 4 5/8 | 12 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 2 3/8 | 10 5/8 | 16.0            |
| 5    | 48 | 8 | 2 1/4 | 3/4 | 1   | 7 | 1 1/4 | 3 1/4 | 17 1/2 | 14 3/8 | 12 5/8 | 19     | 18 3/8 | 16 | 14 1/4 | 1 7/8 | 1 1/2 | 6     | 4 5/8 | 12 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 2 3/8 | 10 5/8 | 16.0            |

PROJECT NO:

HWY:

COUNTY:

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

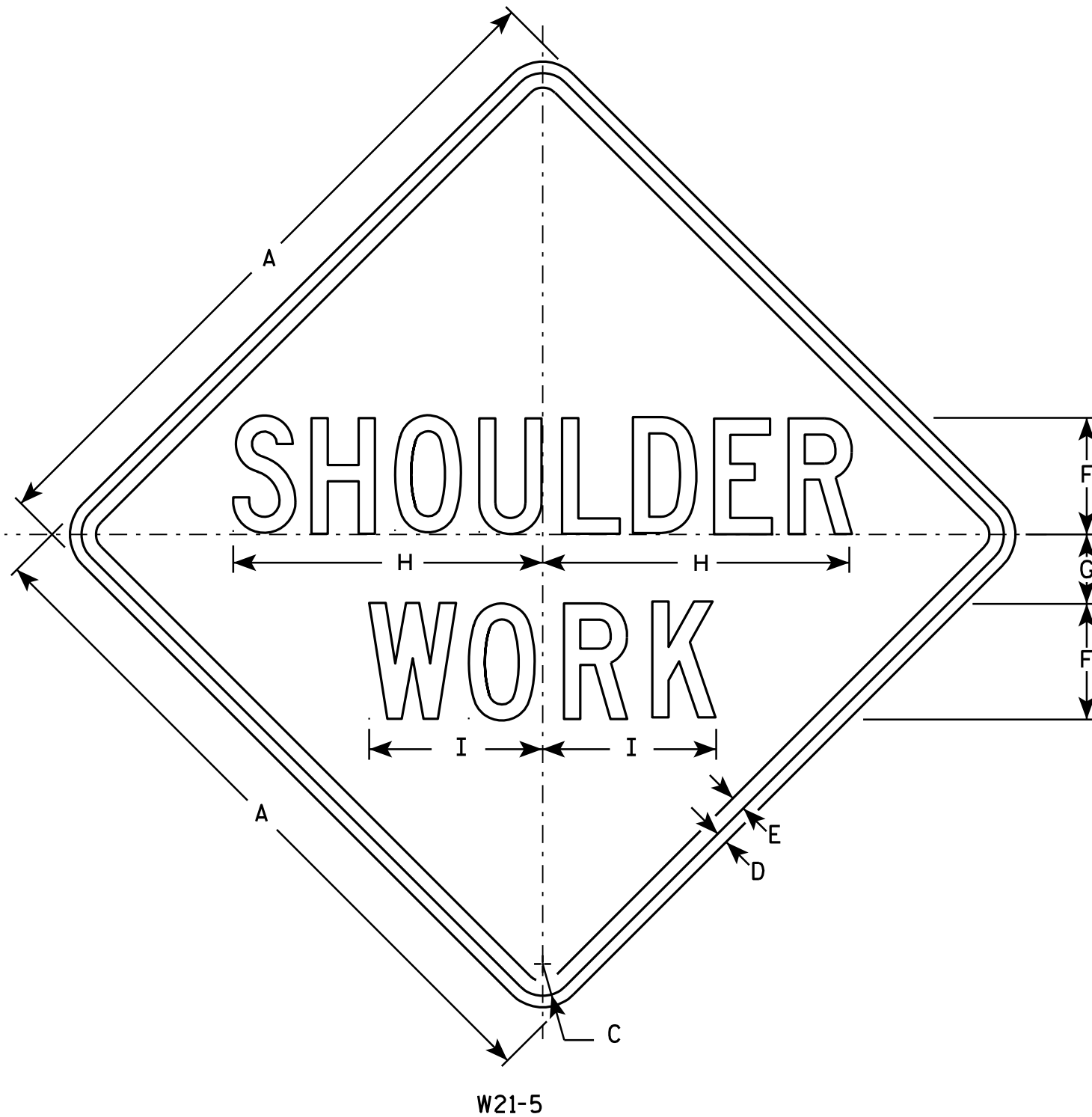
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

SHEET NO: 218

E



### NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - Orange  
Message - Black
3. 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.

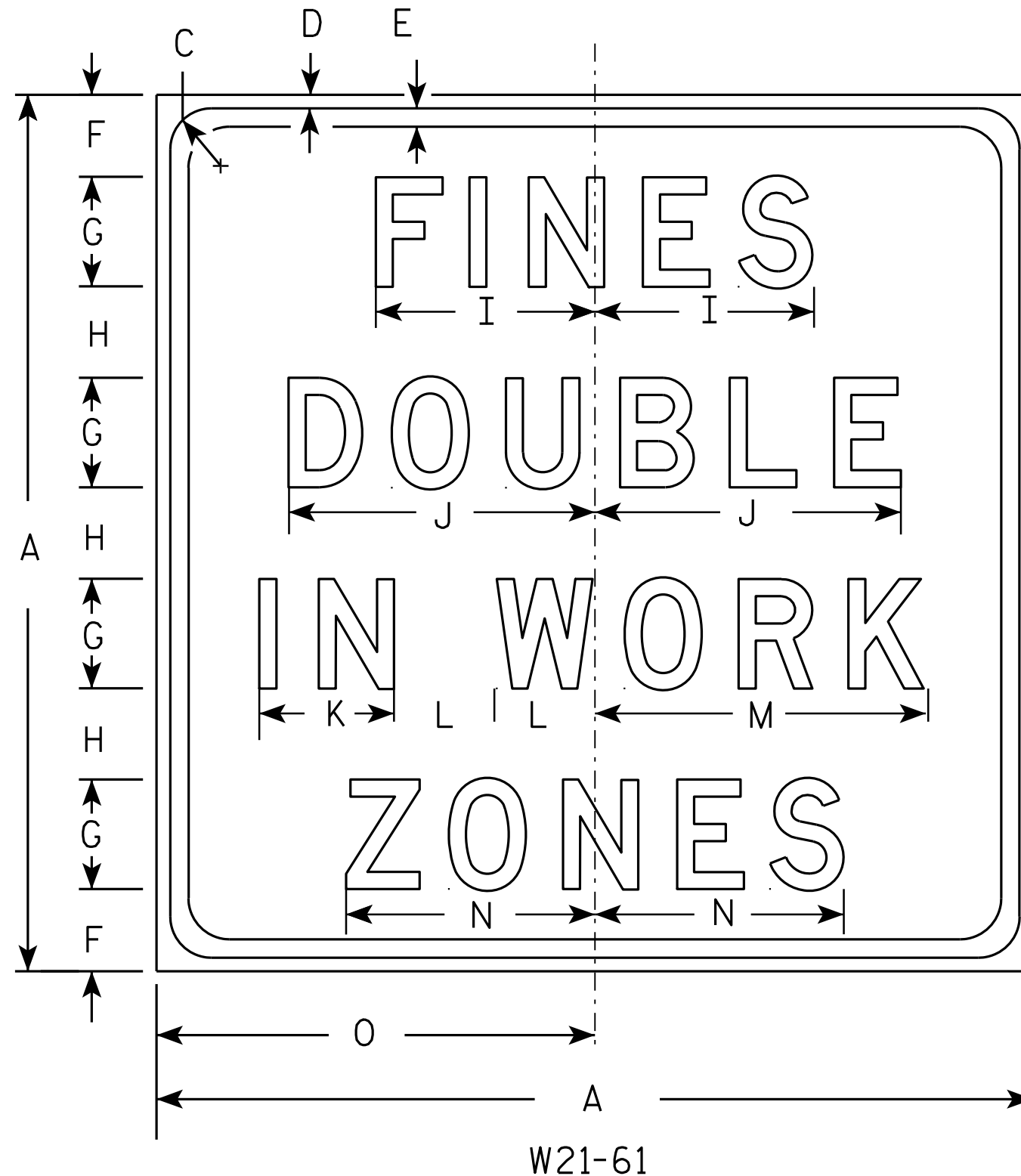
| SIZE | A  | B | C     | D   | E   | F | G     | H      | I      | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|---|-------|-----|-----|---|-------|--------|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|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

### STANDARD SIGN W21-5

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer  
DATE 3/21/11 PLATE NO. W21-5.5

PROJECT NO: HWY: COUNTY: SHEET NO: 219 E



W21-61

## NOTES

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

| 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<br>sq. ft. |
|------|----|---|-------|-----|-----|-------|-------|-------|----|--------|-------|-------|--------|--------|----|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    | 24 |   | 1 1/8 | 3/8 | 1/2 | 2 1/4 | 3     | 2 1/2 | 6  | 8 3/8  | 3 3/4 | 2 3/4 | 9 1/8  | 6 7/8  | 12 |   |   |   |   |   |   |   |   |   |   |   | 4.0             |
| 2S   | 36 |   | 1 5/8 | 5/8 | 3/4 | 3 3/8 | 4 1/2 | 3 3/4 | 9  | 12 5/8 | 5 1/2 | 4 1/8 | 13 3/4 | 10 1/4 | 18 |   |   |   |   |   |   |   |   |   |   |   | 9.0             |
| 2M   | 36 |   | 1 5/8 | 5/8 | 3/4 | 3 3/8 | 4 1/2 | 3 3/4 | 9  | 12 5/8 | 5 1/2 | 4 1/8 | 13 3/4 | 10 1/4 | 18 |   |   |   |   |   |   |   |   |   |   |   | 9.0             |
| 3    | 48 |   | 2 1/4 | 3/4 | 1   | 4 1/2 | 6     | 5     | 12 | 16 3/4 | 7 3/8 | 5 1/2 | 18 1/4 | 13 5/8 | 24 |   |   |   |   |   |   |   |   |   |   |   | 16.0            |
| 4    |    |   |       |     |     |       |       |       |    |        |       |       |        |        |    |   |   |   |   |   |   |   |   |   |   |   |                 |
| 5    |    |   |       |     |     |       |       |       |    |        |       |       |        |        |    |   |   |   |   |   |   |   |   |   |   |   |                 |

STANDARD SIGN  
W21-61

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
For State Traffic Engineer  
DATE 3/21/11 PLATE NO. W21-61.4

PROJECT NO:

HWY:

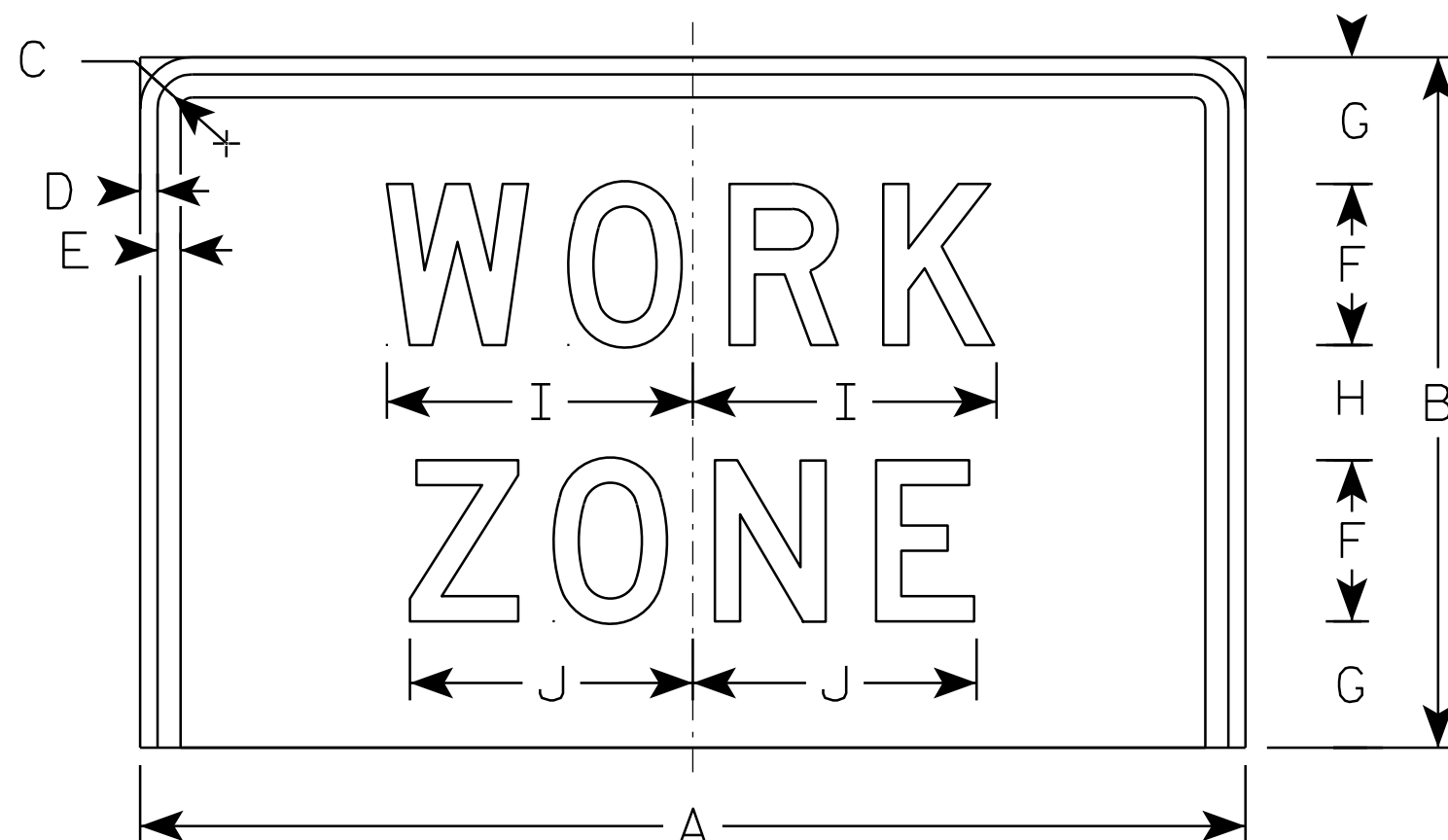
COUNTY:

SHEET NO: 220

E

NOTES

1. Sign is Type II - Type F - reference  
WIS DOT Standard Specification for HIGHWAY  
and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - Orange  
Message - Black
3. Message Series - D



W21-620

| 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<br>sq. ft. |
|------|----|----|-------|-----|---|---|-------|---|--------|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    |    |    |       |     |   |   |       |   |        |        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 2S   | 48 | 30 | 2 1/4 | 3/4 | 1 | 7 | 5 1/2 | 5 | 13 1/4 | 12 1/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 10.0            |
| 2M   | 48 | 30 | 2 1/4 | 3/4 | 1 | 7 | 5 1/2 | 5 | 13 1/4 | 12 1/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 10.0            |
| 3    |    |    |       |     |   |   |       |   |        |        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 4    |    |    |       |     |   |   |       |   |        |        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 5    |    |    |       |     |   |   |       |   |        |        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |

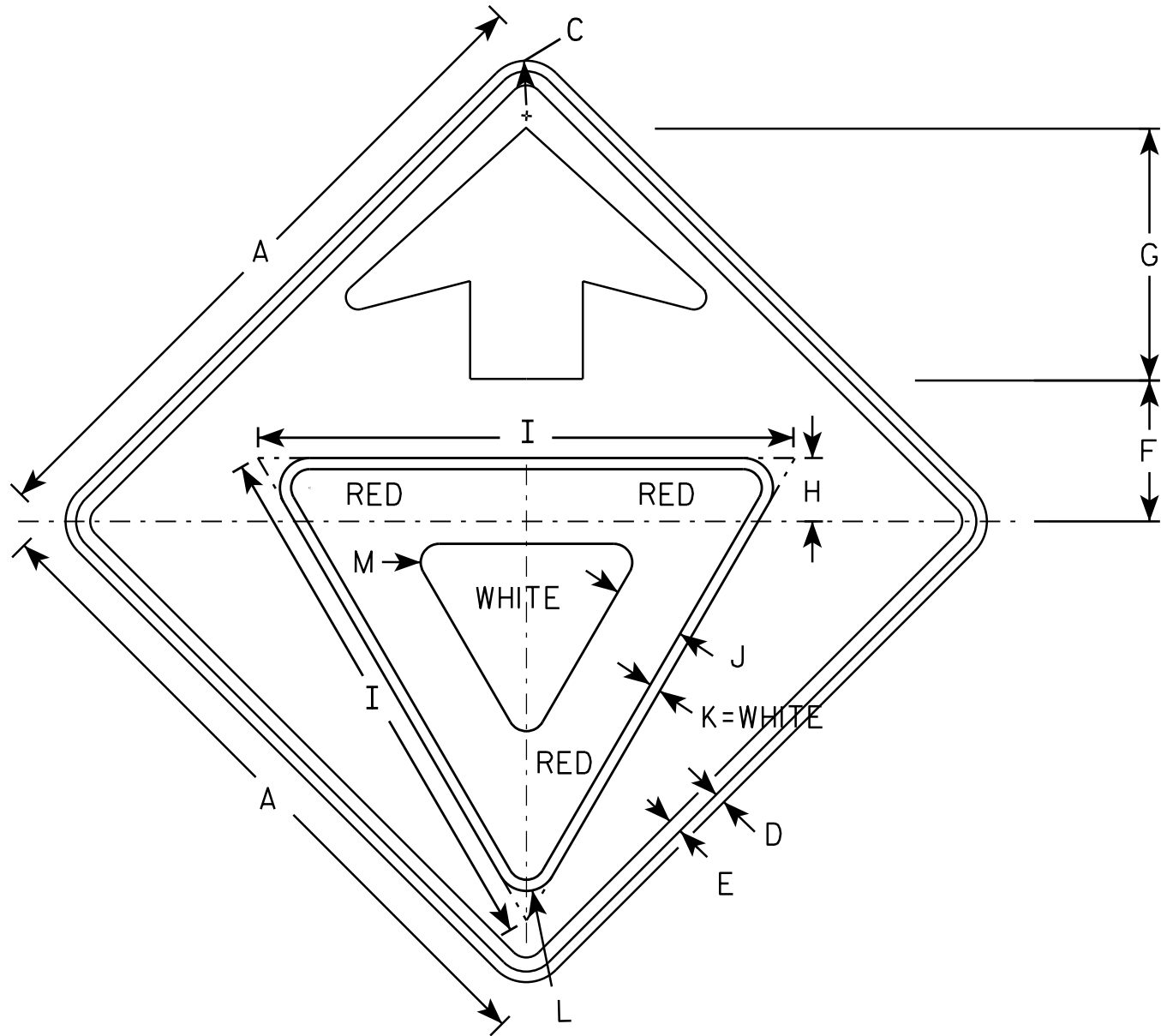
STANDARD SIGN  
W21-620

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

DATE 3/21/11 PLATE NO. W21-620.2

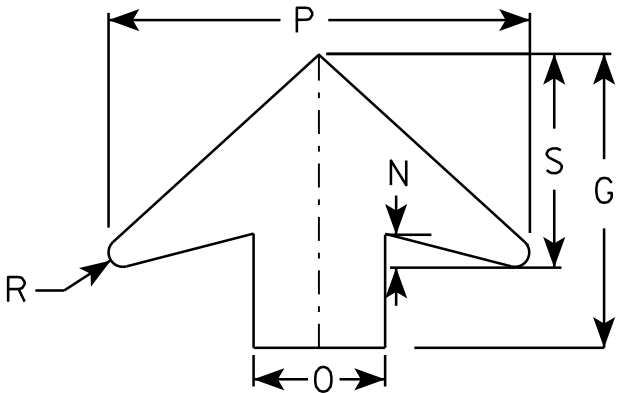
PROJECT NO: HWY: COUNTY: SHEET NO: 221 E



W03-2

NOTES

- 1. All Signs Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
  - Background - ORANGE
  - Arrow & Border - BLACK
  - Yield Symbol - WHITE BORDER ON RED BACKGROUND



ARROW DETAIL

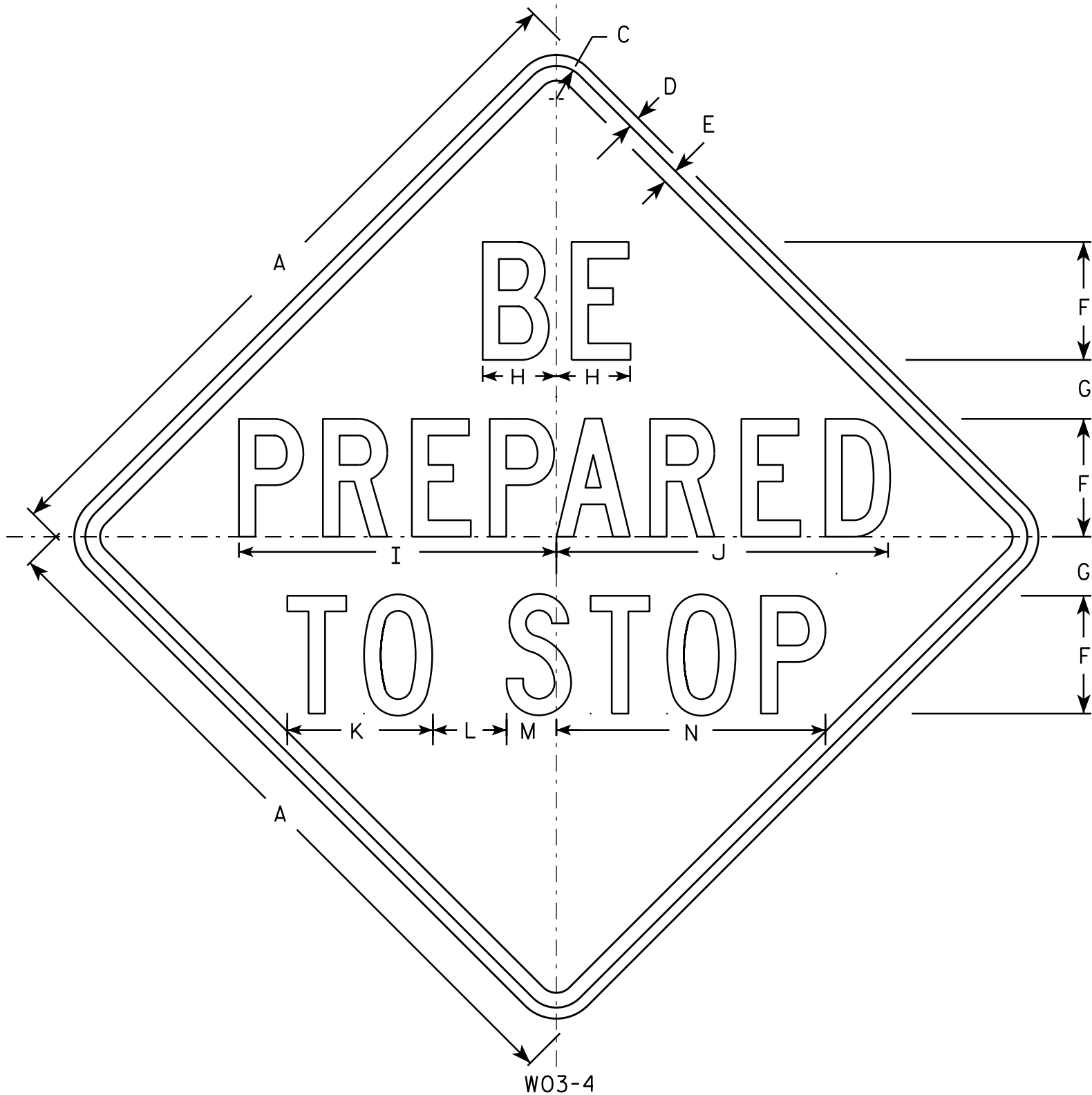
| SIZE | A  | B | C     | D   | E   | F     | G      | H     | I  | J     | K   | L     | M     | N     | O | P      | Q | R   | S     | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|---|-------|-----|-----|-------|--------|-------|----|-------|-----|-------|-------|-------|---|--------|---|-----|-------|---|---|---|---|---|---|---|-----------------|
| 1    | 36 |   | 1 5/8 | 5/8 | 3/4 | 7 1/2 | 13 1/2 | 3 3/8 | 28 | 3 3/4 | 5/8 | 1 1/2 | 1     | 1 5/8 | 6 | 19 1/4 |   | 5/8 | 9 3/4 |   |   |   |   |   |   |   | 9.0             |
| 2S   | 48 |   | 2 1/4 | 3/4 | 1   | 10    | 17 7/8 | 4 1/2 | 38 | 5     | 3/4 | 2 1/8 | 1 3/8 | 2     | 8 | 25 5/8 |   | 7/8 | 13    |   |   |   |   |   |   |   | 16.0            |
| 2M   | 48 |   | 2 1/4 | 3/4 | 1   | 10    | 17 7/8 | 4 1/2 | 38 | 5     | 3/4 | 2 1/8 | 1 3/8 | 2     | 8 | 25 5/8 |   | 7/8 | 13    |   |   |   |   |   |   |   | 16.0            |
| 3    | 48 |   | 2 1/4 | 3/4 | 1   | 10    | 17 7/8 | 4 1/2 | 38 | 5     | 3/4 | 2 1/8 | 1 3/8 | 2     | 8 | 25 5/8 |   | 7/8 | 13    |   |   |   |   |   |   |   | 16.0            |
| 4    | 48 |   | 2 1/4 | 3/4 | 1   | 10    | 17 7/8 | 4 1/2 | 38 | 5     | 3/4 | 2 1/8 | 1 3/8 | 2     | 8 | 25 5/8 |   | 7/8 | 13    |   |   |   |   |   |   |   | 16.0            |
| 5    | 48 |   | 2 1/4 | 3/4 | 1   | 10    | 17 7/8 | 4 1/2 | 38 | 5     | 3/4 | 2 1/8 | 1 3/8 | 2     | 8 | 25 5/8 |   | 7/8 | 13    |   |   |   |   |   |   |   | 16.0            |

STANDARD SIGN  
W03-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 11/20/13 PLATE 222 W03-2.1



### 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.

| 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<br>sq. ft. |
|------|----|---|-------|-----|-----|---|-------|-------|--------|--------|-------|---|-------|--------|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    | 36 |   | 1 3⁄8 | 1⁄2 | 5⁄8 | 6 | 2 1⁄2 | 3 3⁄4 | 15 7⁄8 | 16 7⁄8 | 7 3⁄8 | 4 | 2 3⁄8 | 13 3⁄4 |   |   |   |   |   |   |   |   |   |   |   |   | 9.0             |
| 2S   | 48 |   | 2 1⁄4 | 3⁄4 | 1   | 8 | 4     | 5     | 21 1⁄2 | 22 1⁄2 | 9 7⁄8 | 5 | 3 3⁄8 | 18 1⁄4 |   |   |   |   |   |   |   |   |   |   |   |   | 16.0            |
| 2M   | 48 |   | 2 1⁄4 | 3⁄4 | 1   | 8 | 4     | 5     | 21 1⁄2 | 22 1⁄2 | 9 7⁄8 | 5 | 3 3⁄8 | 18 1⁄4 |   |   |   |   |   |   |   |   |   |   |   |   | 16.0            |
| 3    | 48 |   | 2 1⁄4 | 3⁄4 | 1   | 8 | 4     | 5     | 21 1⁄2 | 22 1⁄2 | 9 7⁄8 | 5 | 3 3⁄8 | 18 1⁄4 |   |   |   |   |   |   |   |   |   |   |   |   | 16.0            |
| 4    | 48 |   | 2 1⁄4 | 3⁄4 | 1   | 8 | 4     | 5     | 21 1⁄2 | 22 1⁄2 | 9 7⁄8 | 5 | 3 3⁄8 | 18 1⁄4 |   |   |   |   |   |   |   |   |   |   |   |   | 16.0            |
| 5    | 48 |   | 2 1⁄4 | 3⁄4 | 1   | 8 | 4     | 5     | 21 1⁄2 | 22 1⁄2 | 9 7⁄8 | 5 | 3 3⁄8 | 18 1⁄4 |   |   |   |   |   |   |   |   |   |   |   |   | 16.0            |

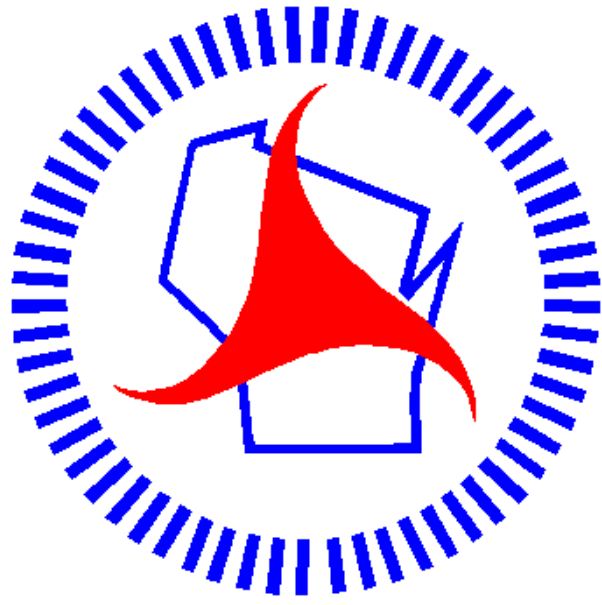
### STANDARD SIGN W03-4

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 12/02/13 PLATE NO. 223 W03-4.1

PROJECT NO: HWY: COUNTY: SHEET NO: E



## *Wisconsin Department of Transportation*

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