

SUP March 09, 2021

PROJECT ID: 8398-00-70

COUNTY: POLK

ORDER OF SHEETS

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

TOTAL SHEETS = 48



DESIGN DESIGNATION

| | | | |
|--------------|------|---|---------|
| A.A.D.T. | 2015 | = | 10 |
| A.A.D.T. | 2035 | = | 11 |
| D.H.V. | | = | N/A |
| D.D. | | = | 50/50 |
| T. | | = | 10% MAX |
| DESIGN SPEED | | = | 25 MPH |
| ESALS | | = | 37,000 |

CONVENTIONAL SYMBOLS

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

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

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

T APPLE RIVER, 165TH AVENUE

FOX CREEK BRIDGE B-48-0053

LOCAL STR
POLK COUNTY

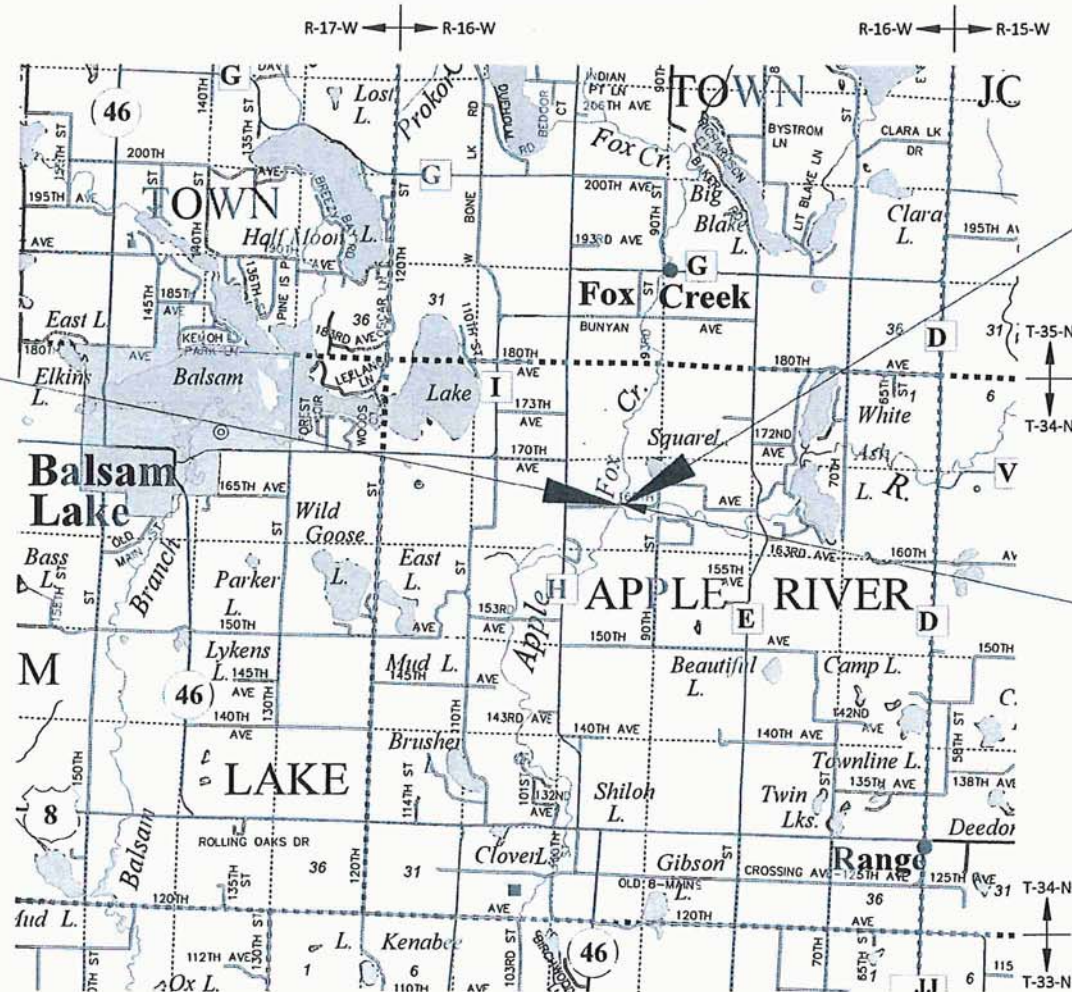
STATE PROJECT NUMBER

8398-00-70

BEGIN PROJECT
STA 9+50
Y = 286,652.67
X = 536,575.51

END PROJECT
STA 11+00
Y = 286,626.46
X = 536,722.04

STRUCTURE B-48-0053
STA 9+80.25 - STA 10+27.75



LAYOUT
SCALE 0 2 MI

TOTAL NET LENGTH OF CENTERLINE = 0.028 MILES

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), POLK COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES. ELEVATIONS ARE REFERENCED TO NAVD 88 (12A). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

STATE PROJECT

8398-00-70

FEDERAL PROJECT

PROJECT

WISC 2021240

CONTRACT

1

ACCEPTED FOR

POLK COUNTY

Date 10/28/2020
(Signature and Title of Official)

ORIGINAL PLANS PREPARED BY

WISCONSIN
JACOB A. FRIBERG
E-43328
RICE LAKE
WI
PROFESSIONAL ENGINEER
DATE: 10/27/2020
(Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY
Surveyor COOPER ENGINEERING
Designer COOPER ENGINEERING
Project Manager MATTHEW VAN NATTA, PE
Regional Supervisor ANDREW STENSLAND, PE
Regional Examiner TOU YANG, PE

APPROVED FOR THE DEPARTMENT
DATE: 10/28/2020
(Signature)

LIST OF STANDARD ABBREVIATIONS

| | | | |
|-----------|------------------------|---------|----------------------------|
| ABUT | ABUTMENT | LT. | LEFT |
| AC | ACRES | LS | LUMP SUM |
| AGG | AGGREGATE | MH | MANHOLE |
| AH | AHEAD | N | NORTH |
| ADT | AVERAGE DAILY TRAFFIC | NC | NORMAL CROWN |
| | | PAVT | PAVEMENT |
| AVG. | AVERAGE | PC | POINT OF CURVATURE |
| ASPH | ASPHALTIC | PE | PRIVATE ENTRANCE |
| BK. | BACK | PI | POINT OF INTERSECTION |
| BM | BENCHMARK | PL | PROPERTY LINE |
| Δ | CENTRAL ANGLE OR DELTA | PP | POWER POLE |
| ℄ , C/L | CENTERLINE | PT | POINT OF TANGENCY |
| C & G | CURB AND GUTTER | R | RANGE , RADIUS |
| CABC | CRUSHED AGGREGATE | RCCP | REINFORCED CONCRETE |
| | BASE COURSE | | CULVERT PIPE |
| CONC. | CONCRETE | RD | ROAD |
| | | REBAR | REINFORCEMENT BAR |
| COR | CORNER | REQD | REQUIRED |
| CORR | CORRUGATED | RDWY | ROADWAY |
| CSCP | CORRUGATED STEEL | RHF | RIGHT HAND FORWARD |
| | CULVERT PIPE | RL, R/L | REFERENCE LINE |
| CSPA | CORRUGATED STEEL | RR | RAILROAD |
| | PIPE ARCH | RT. | RIGHT |
| CTH | COUNTY TRUNK HIGHWAY | R/W | RIGHT-OF-WAY |
| CP. | CULVERT PIPE | S | SOUTH |
| CY | CUBIC YARD | SAN S | SANITARY SEWER |
| CWT. | HUNDREDWEIGHT | SDD | STANDARD DETAIL DRAWING |
| DIA | DIAMETER | SE | SUPER ELEVATION |
| D | DEGREE OF CURVE | SF. | SQUARE FEET |
| DHV | DESIGN HOURLY VOLUME | SHLDR | SHOULDER |
| DWY | DRIVEWAY | SPECS | SPECIFICATIONS |
| EBS | EXC. BELOW SUB GRADE | SQ. | SQUARE |
| ELEV., EL | ELEVATION | SS. | STORM SEWER |
| ELEC. | ELECTRIC | SY. | SQUARE YARD |
| EXC | EXCAVATION | STH | STATE TRUNK HIGHWAY |
| EXIST | EXISTING | ST. | STREET |
| E | EAST | STA. | STATION |
| FE | FIELD ENTRANCE | SW | SIDEWALK |
| FF. | FACE TO FACE | T | TANGENT |
| FL, F/L | FLOW LINE | TC | TOP OF CURB |
| FS | FULL SUPERELEVATION | ℄ , T/L | TRANSIT LINE |
| G | GARAGE | TEL | TELEPHONE |
| GN | GRID NORTH | TEMP | TEMPORARY |
| H | HOUSE | TLE | TEMPORARY LIMITED EASEMENT |
| | | TYP | TYPICAL |
| HYD | HYDRANT | USH | UNITED STATES HIGHWAY |
| I | INTERSECTION ANGLE | UG | UNDERGROUND |
| INTERS | INTERSECTION | V | DESIGN SPEED |
| INV. | INVERT | VAR. | VARIABLE |
| IP | IRON PIN OR PIPE | VERT | VERTICAL |
| LC | LONG CHORD OF CURVE | YD | YARD |
| | | | |
| LF | LINEAR FOOT | | |
| LHF | LEFT HAND FORWARD | | |
| L | LENGTH OF CURVE | | |

UTILITY CONTACTS

ELECTRIC

POLK-BURNETT ELECTRIC COOP
NATHAN VOLGREN
1001 STATE ROAD 35
CENTURIA, WI 54824
PHONE: (800) 421-0283 x336
EMAIL: nvolgren@polkburnett.com

COMMUNICATIONS

NORTHWEST COMMUNICATIONS
GREG CARDINAL
116 HARRIMAN AVENUE N
AMERY, WI 54001
PHONE: (715) 268-7101
EMAIL: gregcardinal@amerytel.net

ALL UTILITIES LISTED ARE MEMBERS OF DIGGERS HOTLINE



OTHER CONTACTS

DESIGN CONSULTANT

COOPER ENGINEERING
JACOB FRIBERG
2600 COLLEGE DRIVE
RICE LAKE, WI 54868
PHONE: (715) 234-7008
EMAIL: jfriberg@cooperengineering.net

POLK COUNTY

HIGHWAY COMMISSIONER
EMIL "MOE" NORBY
900 PHEASANT LANE, PO BOX 248
BALSAM LAKE, WI 54810
PHONE: (715) 485-8723
EMAIL: emil.norby@co.polk.wi.us

WDNR REGIONAL CONTACT

WDNR/WISDOT LIAISON
AMY CRONK
810 W. MAPLE STREET
SPOONER, WI 54801
PHONE: (715) 635-4229
EMAIL: amy.cronk@wisconsin.gov

GENERAL NOTES:

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

ACCESS TO ALL RESIDENCES & SIDE ROADS SHALL BE MAINTAINED DURING CONSTRUCTION.

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

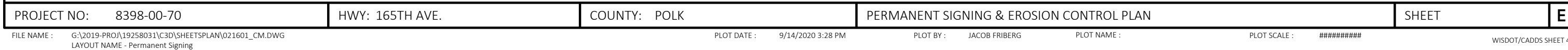
THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY UTILITY WHICH IS NOT A MEMBER OF THE DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.

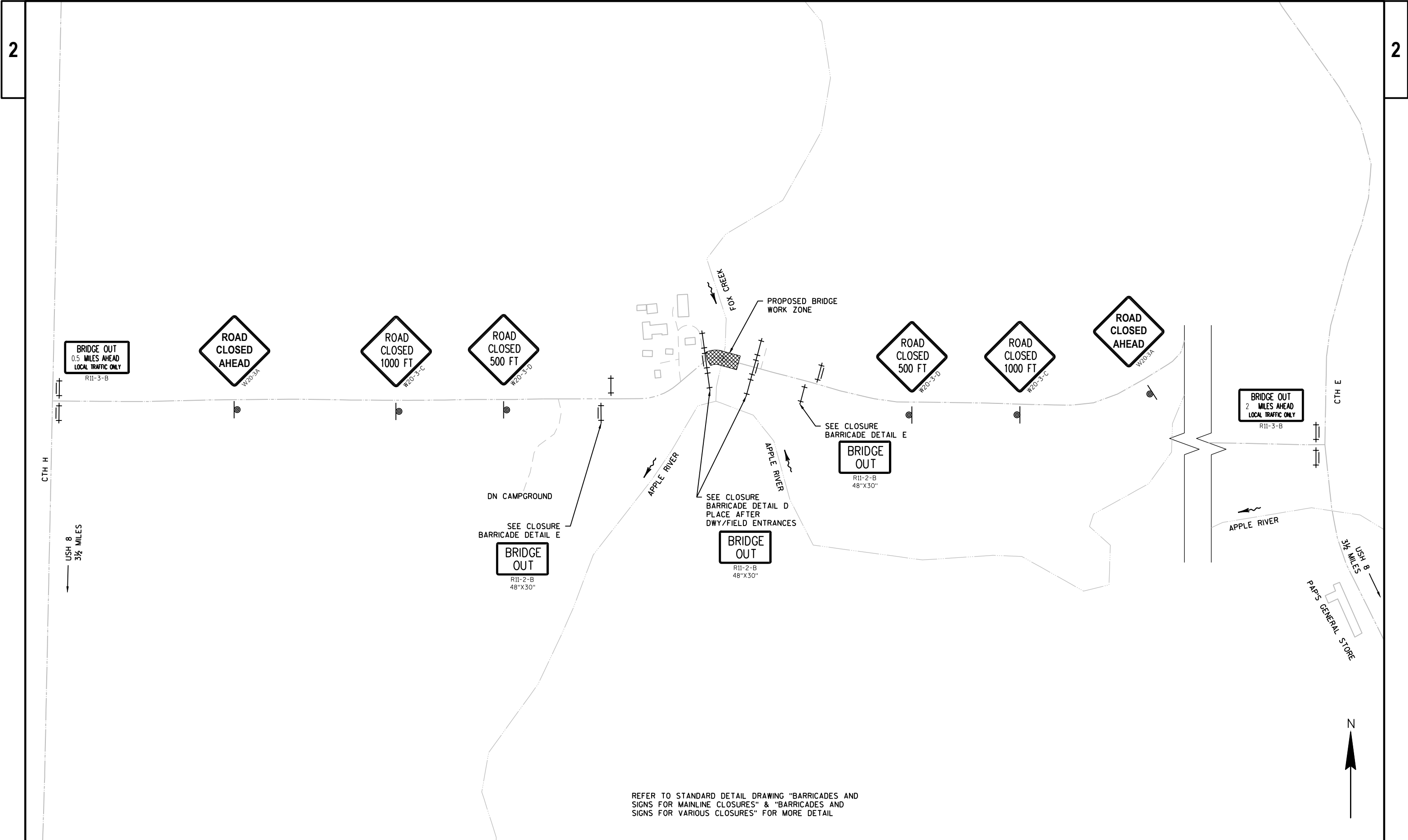
165TH AVENUE WILL BE CLOSED DURING CONSTRUCTION AND NO DETOUR ROUTE WILL BE MARKED.

RUNOFF COEFFICIENT TABLE

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

TOTAL PROJECT AREA = 0.23 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.17 ACRES





Estimate Of Quantities

| 8398-00-70 | | | | | |
|------------|------------|------------------------------------------------------------------------------|------|------------|------------|
| Line | Item | Item Description | Unit | Total | Qty |
| 0002 | 203.0600.S | Removing Old Structure Over Waterway With Minimal Debris (station) 01. 10+00 | LS | 1.000 | 1.000 |
| 0004 | 205.0100 | Excavation Common | CY | 90.000 | 90.000 |
| 0006 | 206.1000 | Excavation for Structures Bridges (structure) 01. B-48-53 | LS | 1.000 | 1.000 |
| 0008 | 208.0100 | Borrow | CY | 75.000 | 75.000 |
| 0010 | 210.1500 | Backfill Structure Type A | TON | 330.000 | 330.000 |
| 0012 | 213.0100 | Finishing Roadway (project) 01. 8398-00-70 | EACH | 1.000 | 1.000 |
| 0014 | 305.0110 | Base Aggregate Dense 3/4-Inch | TON | 15.000 | 15.000 |
| 0016 | 305.0120 | Base Aggregate Dense 1 1/4-Inch | TON | 150.000 | 150.000 |
| 0018 | 455.0605 | Tack Coat | GAL | 20.000 | 20.000 |
| 0020 | 465.0105 | Asphaltic Surface | TON | 50.000 | 50.000 |
| 0022 | 502.0100 | Concrete Masonry Bridges | CY | 158.000 | 158.000 |
| 0024 | 502.3200 | Protective Surface Treatment | SY | 209.000 | 209.000 |
| 0026 | 505.0400 | Bar Steel Reinforcement HS Structures | LB | 4,370.000 | 4,370.000 |
| 0028 | 505.0600 | Bar Steel Reinforcement HS Coated Structures | LB | 22,260.000 | 22,260.000 |
| 0030 | 513.4061 | Railing Tubular Type M | LF | 100.000 | 100.000 |
| 0032 | 516.0500 | Rubberized Membrane Waterproofing | SY | 10.000 | 10.000 |
| 0034 | 550.2104 | Piling CIP Concrete 10 3/4 X 0.25-Inch | LF | 1,360.000 | 1,360.000 |
| 0036 | 606.0300 | Riprap Heavy | CY | 105.000 | 105.000 |
| 0038 | 612.0406 | Pipe Underdrain Wrapped 6-Inch | LF | 150.000 | 150.000 |
| 0040 | 618.0100 | Maintenance And Repair of Haul Roads (project) 01. 8398-00-70 | EACH | 1.000 | 1.000 |
| 0042 | 619.1000 | Mobilization | EACH | 1.000 | 1.000 |
| 0044 | 625.0500 | Salvaged Topsoil | SY | 330.000 | 330.000 |
| 0046 | 628.1504 | Silt Fence | LF | 325.000 | 325.000 |
| 0048 | 628.1520 | Silt Fence Maintenance | LF | 325.000 | 325.000 |
| 0050 | 628.1905 | Mobilizations Erosion Control | EACH | 3.000 | 3.000 |
| 0052 | 628.1910 | Mobilizations Emergency Erosion Control | EACH | 2.000 | 2.000 |
| 0054 | 628.2008 | Erosion Mat Urban Class I Type B | SY | 330.000 | 330.000 |
| 0056 | 628.6005 | Turbidity Barriers | SY | 115.000 | 115.000 |
| 0058 | 629.0210 | Fertilizer Type B | CWT | 0.200 | 0.200 |
| 0060 | 630.0120 | Seeding Mixture No. 20 | LB | 10.000 | 10.000 |
| 0062 | 630.0500 | Seed Water | MGAL | 10.000 | 10.000 |
| 0064 | 634.0612 | Posts Wood 4x6-Inch X 12-FT | EACH | 11.000 | 11.000 |
| 0066 | 637.2230 | Signs Type II Reflective F | SF | 55.750 | 55.750 |
| 0068 | 638.2102 | Moving Signs Type II | EACH | 2.000 | 2.000 |
| 0070 | 638.2602 | Removing Signs Type II | EACH | 11.000 | 11.000 |
| 0072 | 638.3000 | Removing Small Sign Supports | EACH | 9.000 | 9.000 |
| 0074 | 642.5001 | Field Office Type B | EACH | 1.000 | 1.000 |

Estimate Of Quantities

| 8398-00-70 | | | | | |
|------------|----------|--------------------------------------------------------------------|------|-----------|-----------|
| Line | Item | Item Description | Unit | Total | Qty |
| 0076 | 643.0420 | Traffic Control Barricades Type III | DAY | 910.000 | 910.000 |
| 0078 | 643.0705 | Traffic Control Warning Lights Type A | DAY | 1,560.000 | 1,560.000 |
| 0080 | 643.0900 | Traffic Control Signs | DAY | 910.000 | 910.000 |
| 0082 | 643.5000 | Traffic Control | EACH | 1.000 | 1.000 |
| 0084 | 645.0111 | Geotextile Type DF Schedule A | SY | 60.000 | 60.000 |
| 0086 | 645.0120 | Geotextile Type HR | SY | 160.000 | 160.000 |
| 0088 | 650.4500 | Construction Staking Subgrade | LF | 102.000 | 102.000 |
| 0090 | 650.5000 | Construction Staking Base | LF | 102.000 | 102.000 |
| 0092 | 650.6500 | Construction Staking Structure Layout (structure) 01. B-48-53 | LS | 1.000 | 1.000 |
| 0094 | 650.9910 | Construction Staking Supplemental Control (project) 01. 8398-00-70 | LS | 1.000 | 1.000 |
| 0096 | 650.9920 | Construction Staking Slope Stakes | LF | 102.000 | 102.000 |
| 0098 | 690.0150 | Sawing Asphalt | LF | 45.000 | 45.000 |
| 0100 | 715.0502 | Incentive Strength Concrete Structures | DOL | 1,580.000 | 1,580.000 |
| 0102 | ASP.1T0A | On-the-Job Training Apprentice at \$5.00/HR | HRS | 300.000 | 300.000 |
| 0104 | ASP.1T0G | On-the-Job Training Graduate at \$5.00/HR | HRS | 300.000 | 300.000 |
| 0106 | SPV.0090 | Special 01. FLASHING STAINLESS STEEL | LF | 42.500 | 42.500 |

| CATEGORY | STATION | TO | STATION | SIDE | SALVAGED/ UNUSEABLE | | EXPANDED | | MASS | |
|------------|---------|----|---------|-------|------------------------|----------|-----------|------------|-----------|----------|
| | | | | | EXCAVATION | PAVEMENT | AVAILABLE | UNEXPANDED | FILL | ORDINATE |
| | | | | | COMMON | MATERIAL | MATERIAL | FILL | (FACTOR = | +/- |
| | | | | | 205.0100 | | | | 1.25) | BORROW |
| | | | | | CY | CY | CY | CY | CY | CY |
| 0010 | 9+50 | - | 9+80 | LT/RT | 25 | 10 | 15 | 35 | 45 | -30 |
| 0010 | 10+28 | - | 11+00 | LT/RT | 65 | 20 | 45 | 70 | 90 | -45 |
| TOTAL 0010 | | | | | 90 | 30 | 60 | 105 | 135 | -75 |

| CATEGORY | STATION | TO | STATION | SIDE | AVERAGE ASPHALT THICKNESS (IN) | LAYERS | BASE | | BASE | | GAL | TON | LF |
|------------|---------|----|---------|-------|-----------------------------------------|--------|-----------|------------|-----------|-------------------|-----|-----|----------------|
| | | | | | | | AGGREGATE | AGGREGATE | AGGREGATE | AGGREGATE | | | |
| | | | | | | | DENSE | DENSE | DENSE | DENSE | | | |
| | | | | | | | 3/4-INCH | 1 1/4-INCH | TACK COAT | ASPHALTIC SURFACE | | | SAWING ASPHALT |
| | | | | | | | 305.0110 | 305.0120 | 455.0605 | 465.0105 | | | 690.0150 |
| 0010 | 9+50 | - | 9+80 | LT/RT | 3.5 | 2 | 5 | 45 | 6 | 15 | | | 23.5 |
| 0010 | 10+28 | - | 11+00 | LT/RT | 3.5 | 2 | 10 | 105 | 14 | 35 | | | 21.5 |
| TOTAL 0010 | | | | | | | 15 | 150 | 20 | 50 | | | 45 |

| CATEGORY | LOCATION | EROSION MAT | | | | |
|------------|------------|-------------|---------------|------------|------------|------------|
| | | SALVAGED | URBAN CLASS I | FERTILIZER | SEEDING | |
| | | TOPSOIL | TYPE B | TYPE B | MIX NO. 20 | SEED WATER |
| | | 625.0500 | 628.2008 | 629.0210 | 630.0120 | 630.0500 |
| | | SY | SY | CWT | LB | MGAL |
| 0010 | B-48-53 NW | 45 | 45 | 0.03 | 2 | 2 |
| 0010 | B-48-53 SW | 15 | 15 | 0.01 | 1 | 1 |
| 0010 | B-48-53 NE | 125 | 125 | 0.07 | 3 | 3 |
| 0010 | B-48-53 SE | 145 | 145 | 0.09 | 4 | 4 |
| TOTAL 0010 | | 330 | 330 | 0.2 | 10 | 10 |

| CATEGORY | LOCATION | SILT FENCE | |
|------------|---------------|------------|-------------|
| | | SILT FENCE | MAINTENANCE |
| | | 628.1504 | 628.1520 |
| | | LF | LF |
| 0010 | B-48-53 NW | 55 | 55 |
| 0010 | B-48-53 SW | 30 | 30 |
| 0010 | B-48-53 NE | 75 | 75 |
| 0010 | B-48-53 SE | 100 | 100 |
| 0010 | UNDISTRIBUTED | 65 | 65 |
| TOTAL 0010 | | 325 | 325 |

| CATEGORY | LOCATION | TURBIDITY BARRIER | |
|------------|--------------|-------------------|--------------------|
| | | TURBIDITY BARRIER | |
| | | 628.6005 | REMARKS |
| | | SY | |
| 0010 | B-48-53 WEST | 60 | 90' LONG X 6' HIGH |
| 0010 | B-48-53 EAST | 55 | 80' LONG X 6' HIGH |
| TOTAL 0010 | | 115 | |

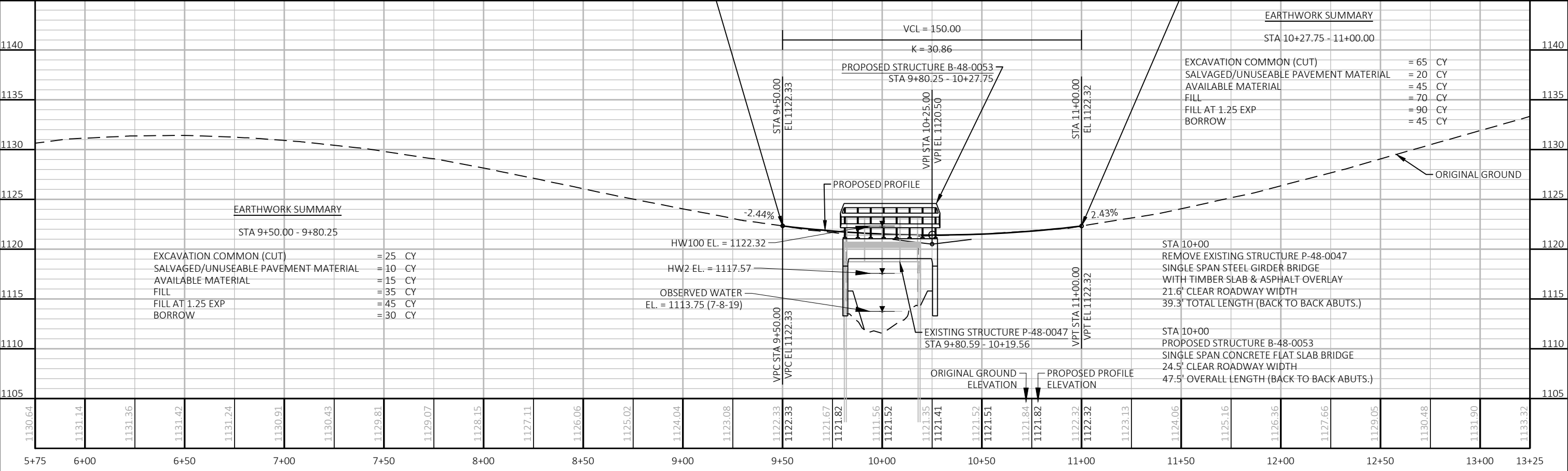
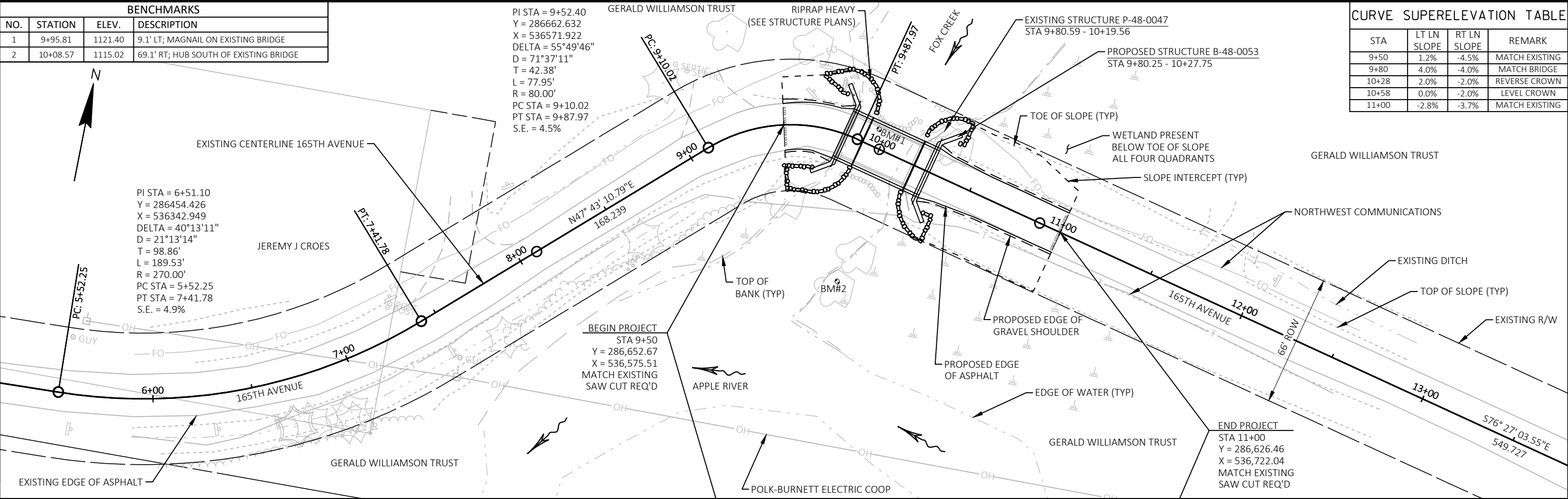
| CATEGORY | SIGN | | | SIGN CODE | DESCRIPTION | SIGN DIMENSIONS | | | POSTS | SIGNS | | MOVING SIGNS TYPE II | REMOVING SIGNS TYPE II | REMOVING SMALL SIGN SUPPORTS | REMARKS |
|------------|---------|-------|----|--------------|-----------------------|--------------------|----------|----------|----------|------------|---|----------------------------|------------------------------|------------------------------------|------------------------------------------------|
| | | | | | | | | | WOOD | TYPE II | | | | | |
| | | | | | | | | | 4x6-INCH | REFLECTIVE | | | | | |
| | x 12 FT | F | EA | | | SF | EA | EA | EA | | | | | | |
| NO. | STATION | SIDE | W | X | H | 634.0612 | 637.2230 | 638.2102 | 638.2602 | 638.3000 | | | | | |
| 0010 | 1 | 0+80 | RT | | | | | | | | | | | | REMOVE 20 MPH ADVISORY SIGN ONLY |
| 0010 | 2 | 0+80 | RT | W13-1 | ADVISORY SPEED XX MPH | 18 | X | 18 | - | 2.25 | - | - | - | - | 15 MPH; MOUNT ON EXISTING POST FOR SIGN NO. 1 |
| 0010 | 3 | 6+31 | RT | | | | | | - | - | - | | 1 | 1 | REMOVE NARROW BRIDGE SIGN & SUPPORT |
| 0010 | 4 | 9+08 | LT | W1-8 | CHEVRON | 18 | X | 24 | 1 | 3.00 | - | - | - | - | |
| 0010 | 5 | 9+08 | LT | W1-8 | CHEVRON | 18 | X | 24 | - | 3.00 | - | - | - | - | MOUNT ON SAME POST AS SIGN NO. 4 |
| 0010 | 6 | 9+10 | RT | W1-1R | RIGHT TURN SIGN | 36 | X | 36 | 1 | 9.00 | - | - | - | - | |
| 0010 | 7 | 9+10 | RT | W13-1 | ADVISORY SPEED XX MPH | 18 | X | 18 | - | 2.25 | - | - | - | - | 15 MPH; MOUNT ON SAME POST AS SIGN NO. 6 |
| 0010 | 8 | 9+37 | LT | W1-8 | CHEVRON | 18 | X | 24 | 1 | 3.00 | - | - | - | - | |
| 0010 | 9 | 9+45 | LT | W1-6 | LARGE ARROW | 48 | X | 24 | 1 | 8.00 | - | - | - | - | LEFT ARROW |
| 0010 | 10 | 9+63 | LT | | | | | | - | - | - | | 1 | 1 | REMOVE ARROW SIGN & SUPPORT |
| 0010 | 11 | 9+66 | LT | W1-6 | LARGE ARROW | 48 | X | 24 | 1 | 8.00 | - | - | - | - | RIGHT ARROW |
| 0010 | 12 | 9+75 | RT | | | | | | - | - | - | | 1 | 1 | REMOVE WEIGHT RESTRICTION SIGN & SUPPORT |
| 0010 | 13 | 9+75 | RT | | | | | | 1 | - | 1 | - | - | - | MOVE FOX CREEK SIGN FROM NO. 12 SUPPORT |
| 0010 | 14 | 9+78 | RT | | | | | | - | - | - | | 1 | 1 | REMOVE OBJECT MARKER SIGN & SUPPORT |
| 0010 | 15 | 9+78 | RT | W5-52R | RIGHT OBJECT MARKER | 12 | X | 36 | 1 | 3.00 | - | - | - | - | |
| 0010 | 16 | 9+81 | LT | | | | | | - | - | - | | 1 | 1 | REMOVE OBJECT MARKER SIGN & SUPPORT |
| 0010 | 17 | 9+81 | LT | W5-52L | LEFT OBJECT MARKER | 12 | X | 36 | 1 | 3.00 | - | - | - | - | |
| 0010 | 18 | 9+81 | LT | W1-6 | CHEVRON | 18 | X | 24 | - | 3.00 | - | - | - | - | MOUNT ON SAME POST AS SIGN NO. 17 |
| 0010 | 19 | 10+20 | RT | | | | | | - | - | - | | 1 | 1 | REMOVE OBJECT MARKER SIGN & SUPPORT |
| 0010 | 20 | 10+20 | LT | | | | | | - | - | - | | 1 | 1 | REMOVE OBJECT MARKER SIGN & SUPPORT |
| 0010 | 21 | 10+23 | LT | | | | | | - | - | - | | 1 | 1 | REMOVE WEIGHT RESTRICTION SIGN & SUPPORT |
| 0010 | 22 | 10+28 | RT | W5-52L | LEFT OBJECT MARKER | 12 | X | 36 | 1 | 3.00 | - | - | - | - | |
| 0010 | 23 | 10+28 | LT | W5-52R | RIGHT OBJECT MARKER | 12 | X | 36 | 1 | 3.00 | - | - | - | - | |
| 0010 | 24 | 10+31 | LT | | | | | | 1 | - | 1 | - | - | - | MOVE FOX CREEK SIGN FROM NO. 21 SUPPORT |
| 0010 | 25 | 12+08 | LT | | | | | | - | - | - | | 1 | 1 | REMOVE NARROW BRIDGE SIGN & SUPPORT |
| 0010 | 26 | 14+48 | LT | | | | | | - | - | - | | 1 | - | REMOVE 20 MPH ADVISORY SIGN ONLY |
| 0010 | 27 | 14+48 | LT | W13-1 | ADVISORY SPEED XX MPH | 18 | X | 18 | - | 2.25 | - | - | - | - | 15 MPH; MOUNT ON EXISTING POST FOR SIGN NO. 26 |
| TOTAL 0010 | | | | | | | | | 11 | 55.75 | 2 | 11 | 9 | | |

| CATEGORY | DAYS | TRAFFIC CONTROL BARRICADES | | TRAFFIC CONTROL WARNING LIGHTS | | TRAFFIC CONTROL SIGNS | | REMARKS |
|------------|------|-------------------------------|------|-----------------------------------|------|-----------------------------|------|-----------------------------------------|
| | | TYPE III | | TYPE A | | | | |
| | | 643.0420 | | 643.0705 | | 643.0900 | | |
| | | # | DAYS | # | DAYS | # | DAYS | |
| 0010 | 65 | 3 | 195 | 4 | 260 | 1 | 65 | ROAD CLOSED DETAIL D WEST SIDE |
| 0010 | 65 | 3 | 195 | 4 | 260 | 1 | 65 | ROAD CLOSED DETAIL D EAST SIDE |
| 0010 | 65 | 4 | 260 | 8 | 520 | 6 | 390 | ADVANCED ROAD CLOSED DETAIL C WEST SIDE |
| 0010 | 65 | 4 | 260 | 8 | 520 | 6 | 390 | ADVANCED ROAD CLOSED DETAIL C EAST SIDE |
| TOTAL 0010 | | 910 | | 1,560 | | 910 | | |

| CATEGORY | STATION | TO | STATION | CONSTRUCTION | CONSTRUCTION | CONSTRUCTION |
|------------|---------|----|---------|--------------|--------------|--------------|
| | | | | STAKING | STAKING | STAKING |
| | | | | SUBGRADE | BASE | SLOPE STAKES |
| | | | | 650.4500 | 650.5000 | 650.9920 |
| | | | | LF | LF | LF |
| 0010 | 9+50 | - | 9+80 | 30 | 30 | 30 |
| 0010 | 10+28 | - | 11+00 | 72 | 72 | 72 |
| TOTAL 0010 | | | | 102 | 102 | 102 |

| BENCHMARKS | | | |
|------------|----------|---------|----------------------------------------|
| NO. | STATION | ELEV. | DESCRIPTION |
| 1 | 9+95.81 | 1121.40 | 9.1' LT; MAGNAIL ON EXISTING BRIDGE |
| 2 | 10+08.57 | 1115.02 | 69.1' RT; HUB SOUTH OF EXISTING BRIDGE |

| CURVE SUPERELEVATION TABLE | | | |
|----------------------------|-------------|-------------|----------------|
| STA | LT LN SLOPE | RT LN SLOPE | REMARK |
| 9+50 | 1.2% | -4.5% | MATCH EXISTING |
| 9+80 | 4.0% | -4.0% | MATCH BRIDGE |
| 10+28 | 2.0% | -2.0% | REVERSE CROWN |
| 10+58 | 0.0% | -2.0% | LEVEL CROWN |
| 11+00 | -2.8% | -3.7% | MATCH EXISTING |



| | | | | | | | |
|-------------|------------|-----------------|--------------|-------------------|--------------|-------|---|
| PROJECT NO: | 8398-00-70 | HWY: 165TH AVE. | COUNTY: POLK | PLAN AND PROFILE: | 165TH AVENUE | SHEET | E |
|-------------|------------|-----------------|--------------|-------------------|--------------|-------|---|

Standard Detail Drawing List

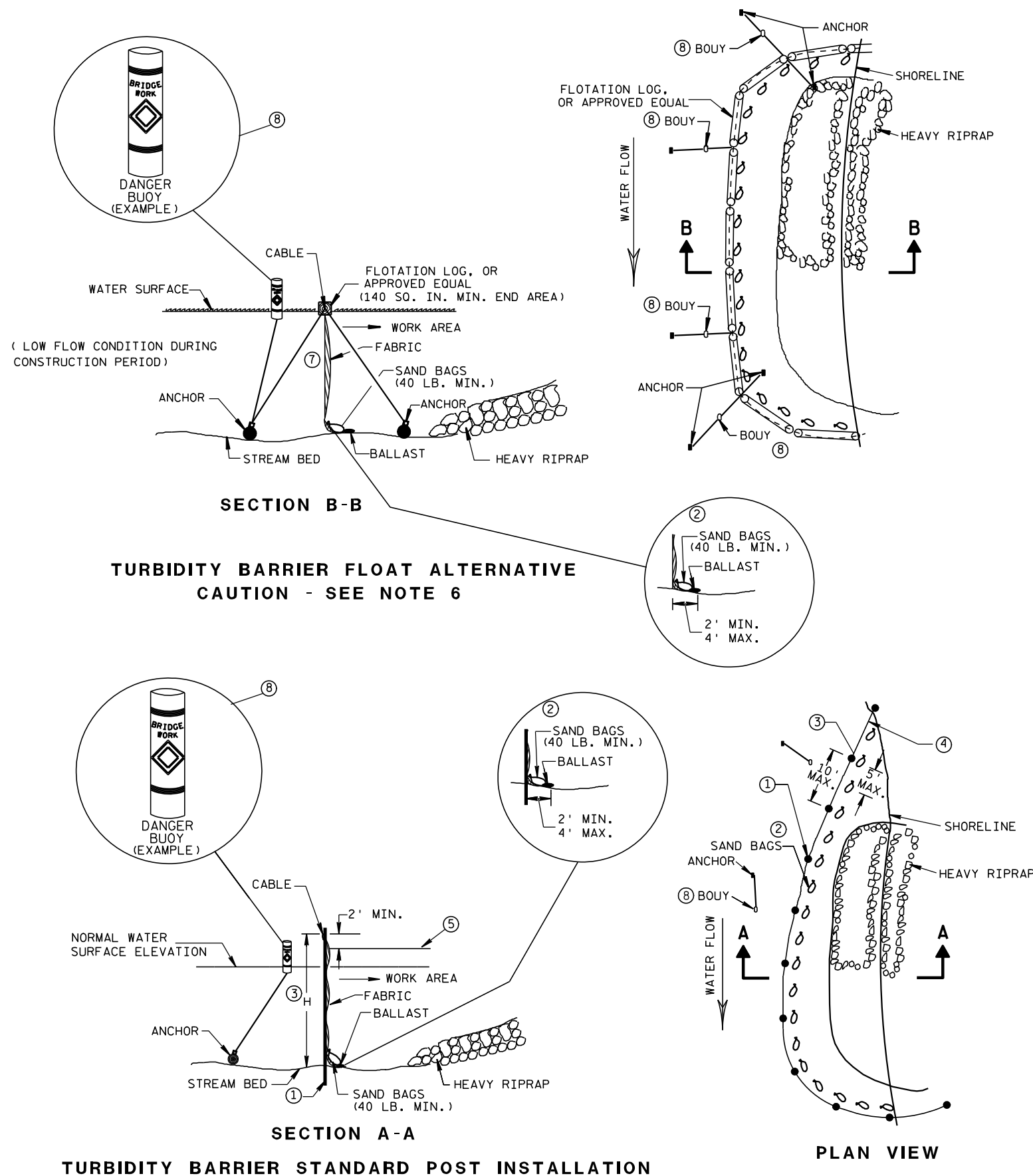
| | |
|-----------|-------------------------------------------------------------------|
| 08E09-06 | SILT FENCE |
| 08E11-02 | TURBIDITY BARRIER |
| 12A03-10 | NAME PLATE (STRUCTURES) |
| 15C02-08A | BARRICADES AND SIGNS FOR MAINLINE CLOSURES |
| 15C02-08B | BARRICADES AND SIGNS FOR VARIOUS CLOSURES |
| 15C06-09 | SIGNING & MARKING FOR TWO LANE BRIDGES |
| 15C11-07B | CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS |
| 15D38-02A | TEMPORARY TRAFFIC CONTROL SIGN MOUNTING |
| 15D38-02B | ATTACHMENT OF SIGNS TO POSTS |



- 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.



| | |
|------------------------------------------------------------|------------------------------------------------------------------|
| <p>SILT FENCE</p> | |
| <p>STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION</p> | |
| <p>APPROVED 4-29-05 DATE</p> | <p>/s/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER</p> |

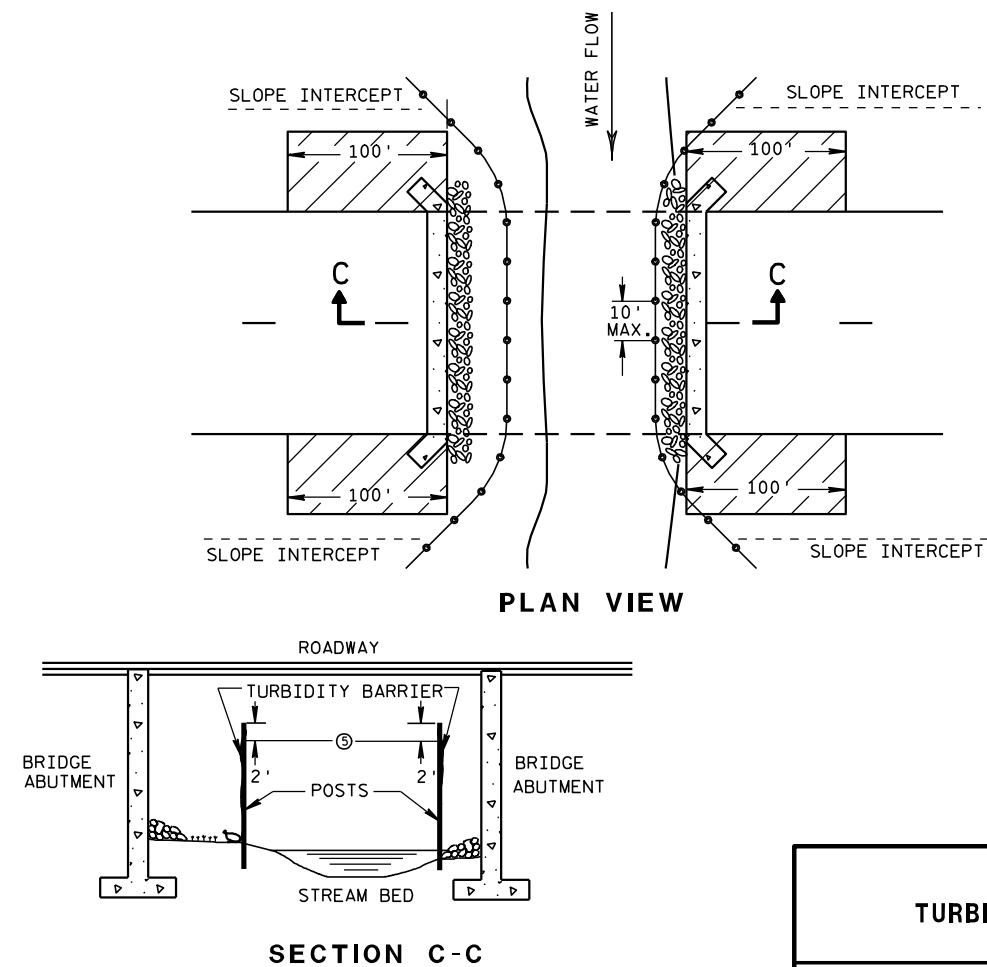


GENERAL NOTES

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.

TURBIDITY BARRIER MAY BE REMOVED AT THE ENGINEERS DISCRETION, WHEN PERMANENT EROSION CONTROL MEASURES HAVE BEEN ESTABLISHED.

- ① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.
- ② SANDBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.
- ③ WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.
- ④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.
- ⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MINIMUM BARRIER HEIGHT SHALL BE 2' GREATER THAN EITHER THE 02 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WHICHEVER IS GREATER.
- ⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.
- ⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.
- ⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

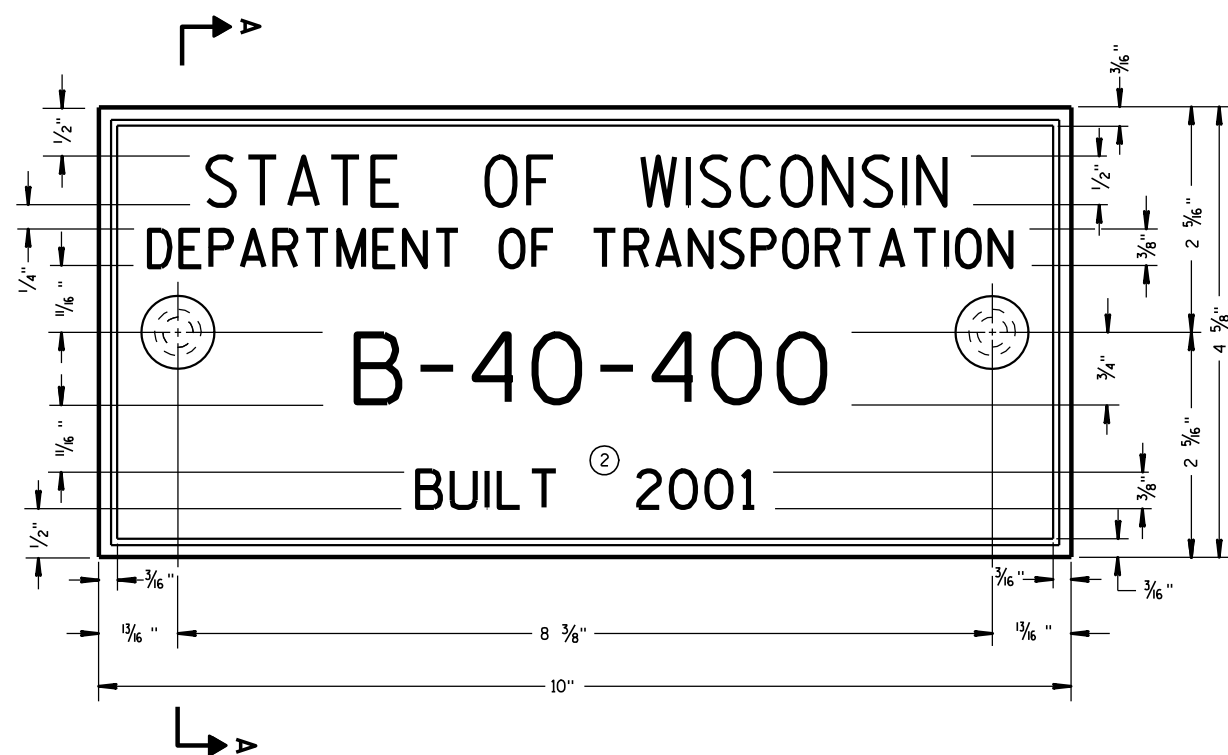
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02
DATE

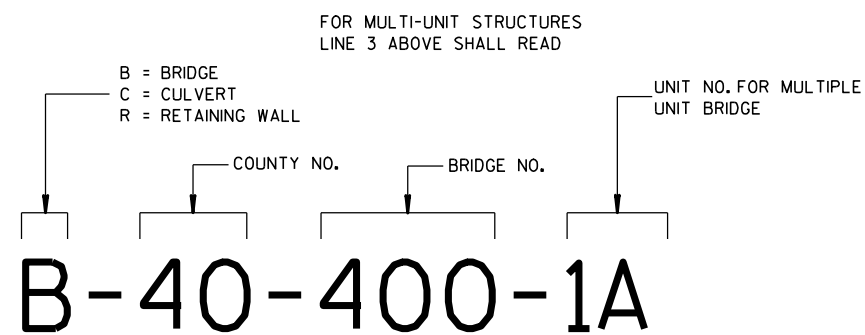
FHWA

/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)



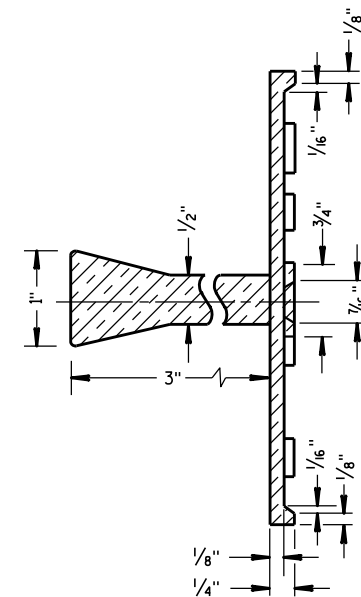
NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

GENERAL NOTES

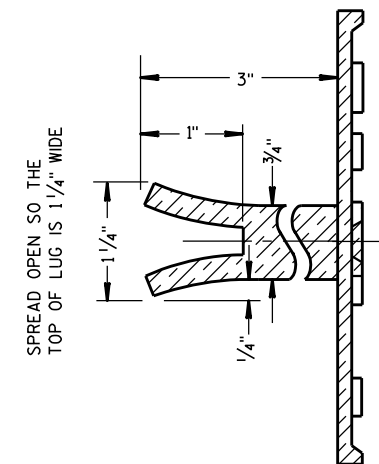
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

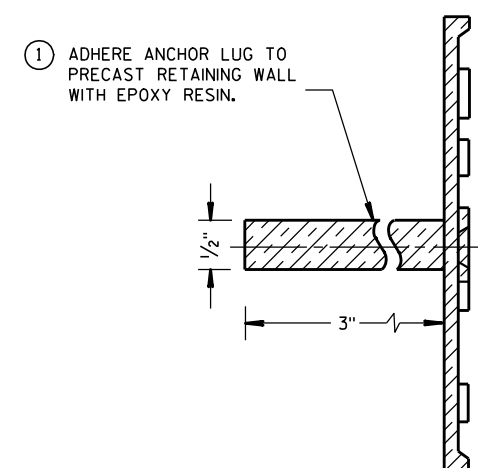
- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE
(STRUCTURES)

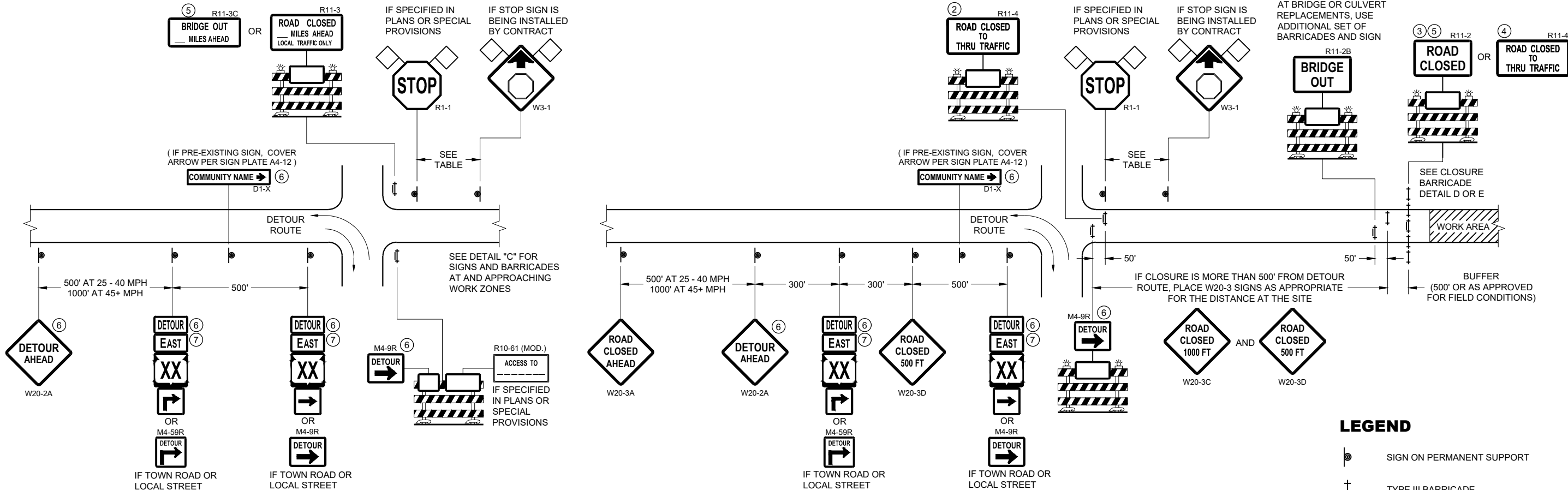
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10
DATE

FHWA

/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER

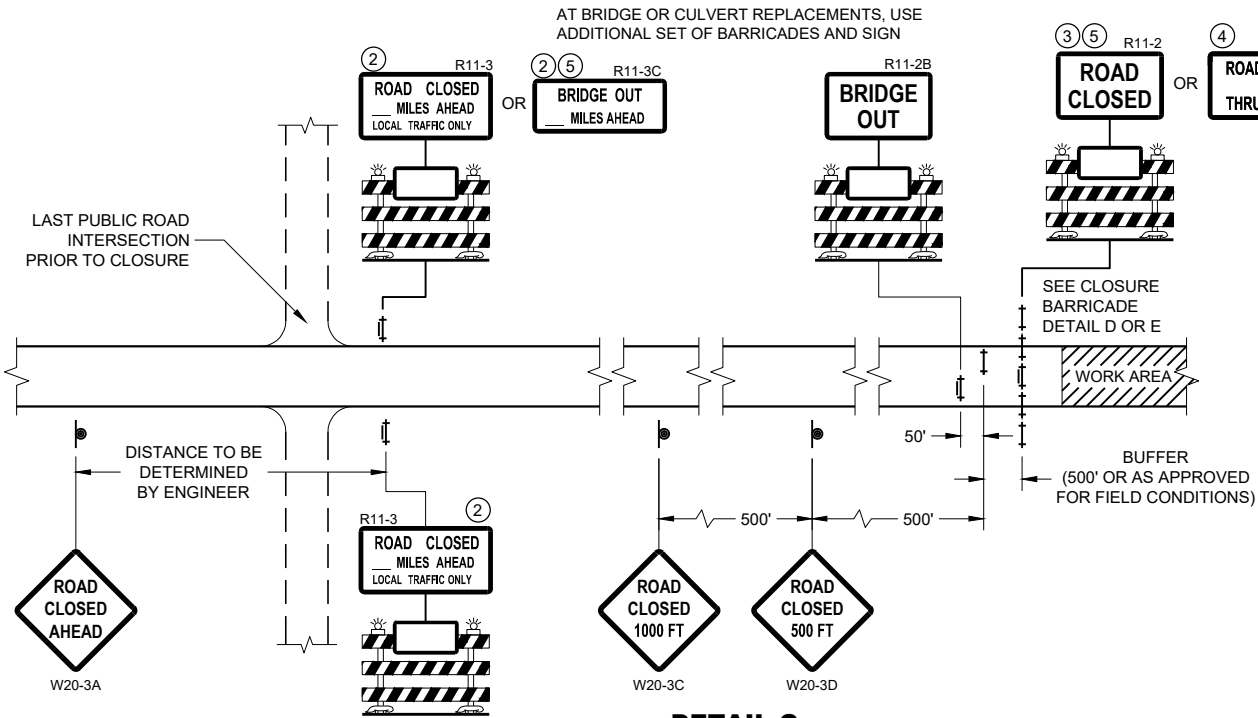


DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN OR EQUAL TO 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

| SPEED LIMIT (MPH) | "STOP AHEAD" ADVANCE WARNING DISTANCE (FT) |
|-------------------|--------------------------------------------|
| 25 | 200 |
| 30 | 200 |
| 35 | 350 |
| 40 | 350 |
| 45 | 500 |
| 50 | 550 |
| 55 | 750 |

SEE SDD 15C2-SHEET "b"
FOR GENERAL NOTES
AND FOOTNOTES ① THROUGH ⑦

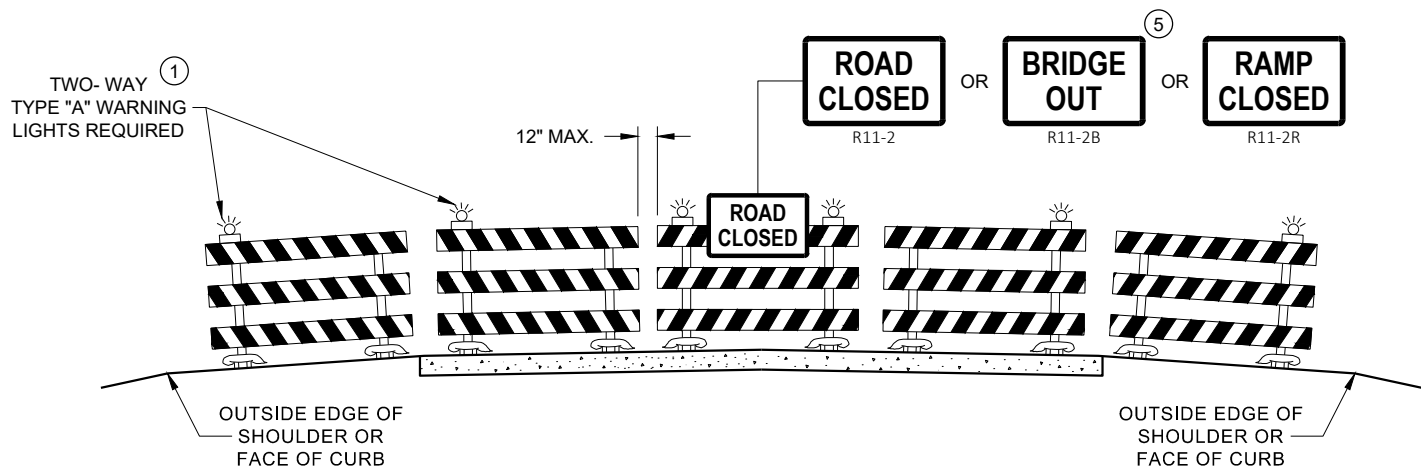
LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- FLAGS, 16" X 16" MIN. (ORANGE)
- DETOUR M4 - 8
- EAST M3 - X
- XX M1 - 4 OR XX M1 - 6 OR COUNTY X M1 - 5A
- M05 - 1 OR M06 - 1

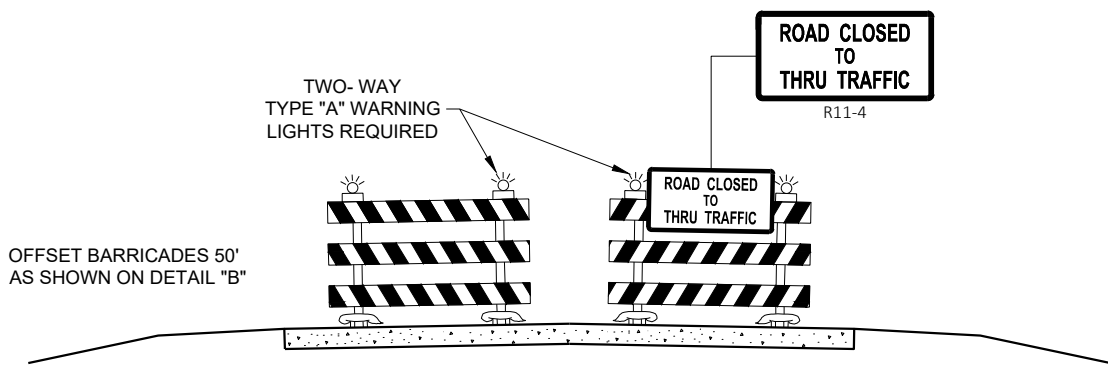
**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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.

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.

BARRICADES 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.

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

ALL TYPE III BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL "D" FOR FULL ROAD CLOSURES.

TYPE "A" LOW - INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE R11 - 2, R11 - 3, M4 - 9, R11 - 4, AND R10 - 61 SIGNS PLACED ON THE BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE RAIL OR BOTTOM RAILS.

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:

- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60 " X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- MO5 - 1 AND MO6 - 1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- D1 - X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1 - 1 SHALL BE 36" X 36"

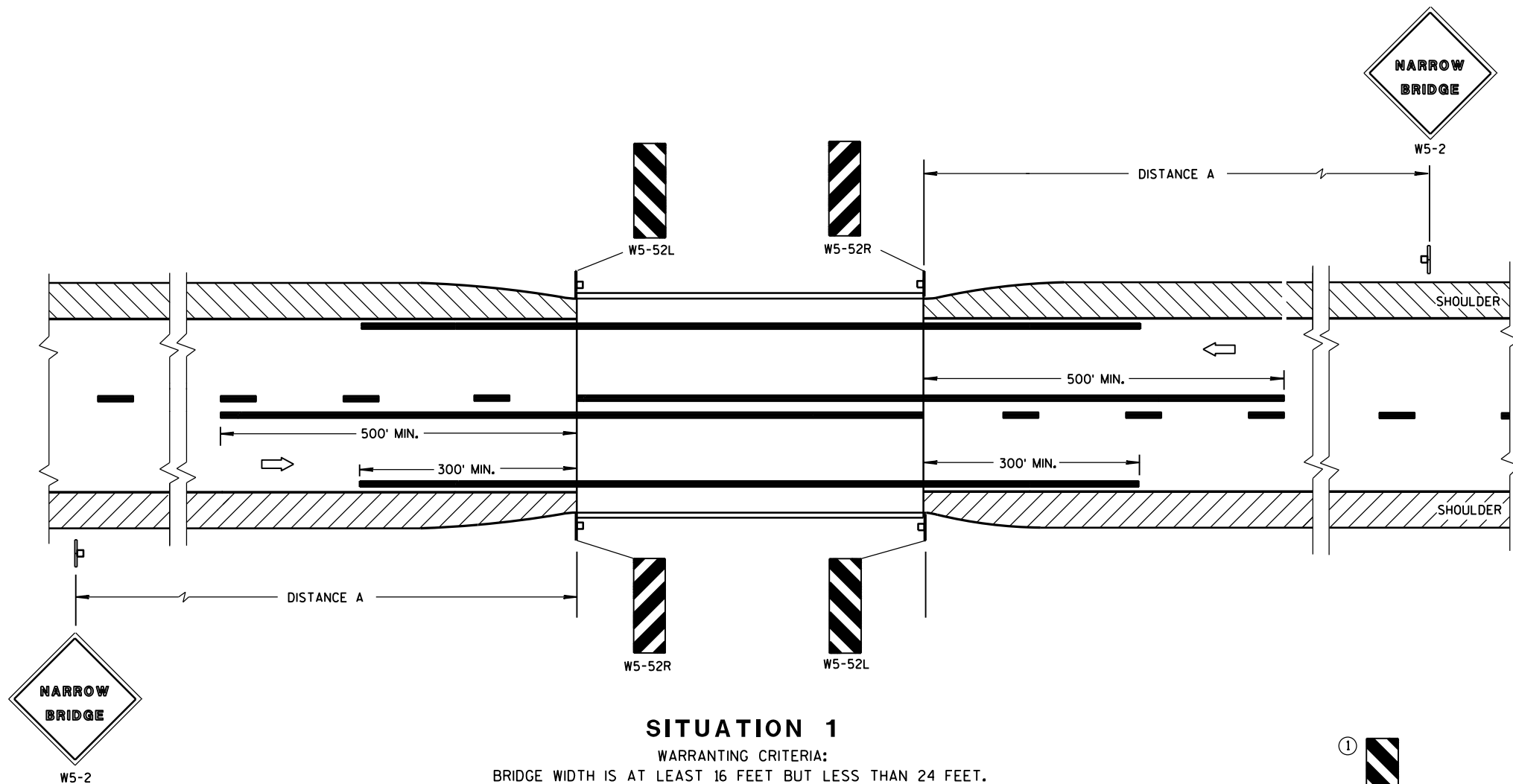
- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- 2 THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT AN INTERSECTION.
- 3 FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "D".
- 4 FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "E".
- 5 FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11 - 2 AND R11 - 3 SIGNS.
- 6 INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.
- 7 "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS
FOR
VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



SITUATION 1

WARRANTING CRITERIA:
BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET.

DISTANCE TABLE

| POSTED OR 85th PERCENTILE SPEED | DISTANCE "A" |
|---------------------------------|--------------|
| 25 | 150' |
| 30 | 200' |
| 35 | 250' |
| 40 | 300' |
| 45 | 400' |
| 50 | 550' |
| 55 | 750' |

GENERAL NOTES

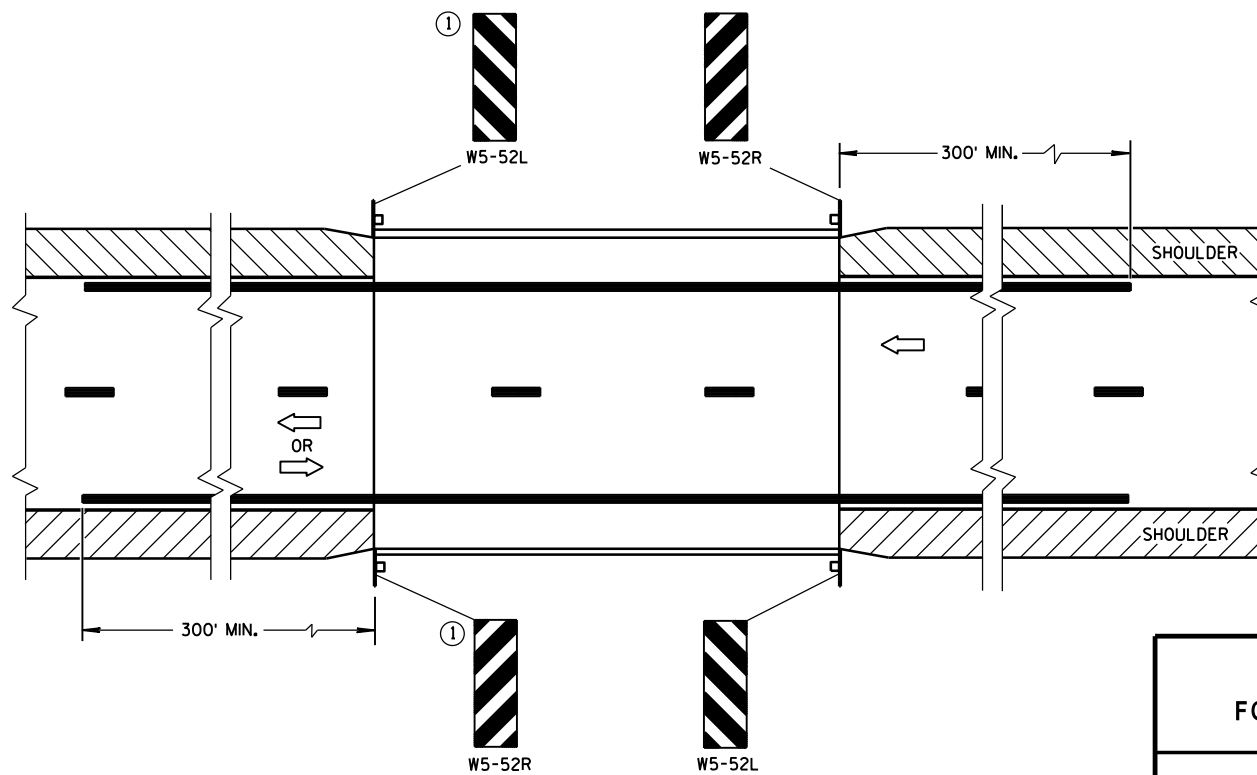
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

LOCATE W5-52 SIGN POST(S) BEHIND GUARDRAIL WHEN PRESENT.

PLACE THE EDGE OF THE W5-52 SIGN IN LINE WITH FACE OF CURB OR PARAPET.

① OMIT ON ONE-WAY TRAVELLED WAYS.

➡ DIRECTION OF TRAFFIC



SITUATION 2

WARRANTING CRITERIA:
1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE SHOULDER WIDTH IS LESS THAN 6 FEET.

SIGNING & MARKING FOR TWO LANE BRIDGES

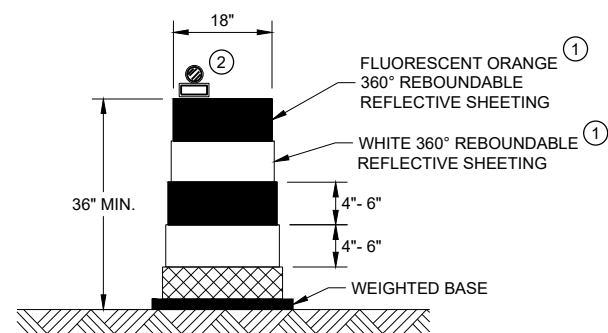
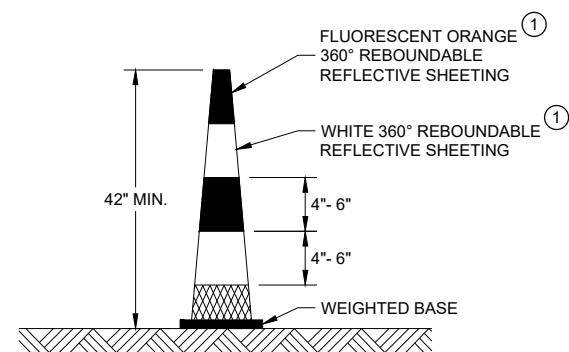
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

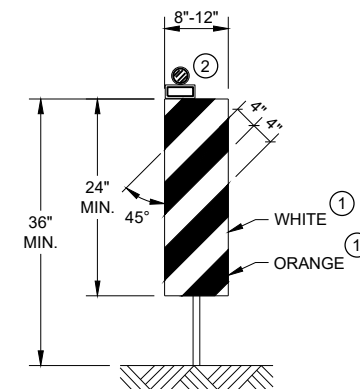
June 2017
DATE

/S/ Matthew R. Rauch
STATE SIGNING AND MARKING ENGINEER

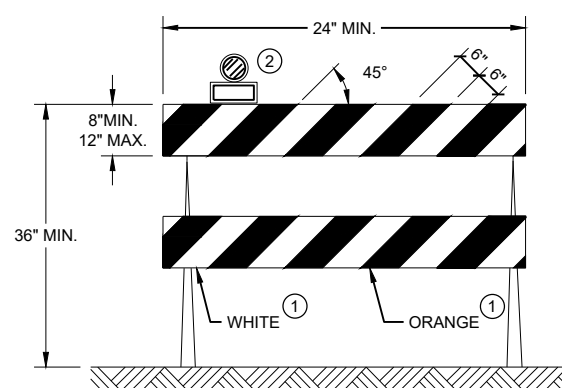
FHWA

**DRUM****42" CONE**

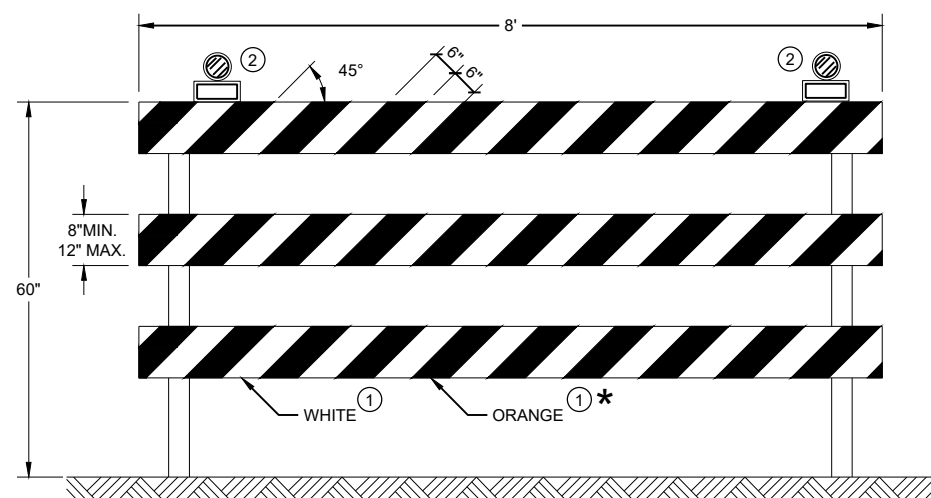
DO NOT USE IN TAPERS
 $\frac{1}{2}$ SPACING OF DRUMS

**VERTICAL PANEL**

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

**TYPE II BARRICADE**

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

**TYPE III BARRICADE**

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

GENERAL NOTES

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

**CHANNELIZING DEVICES
 DRUMS, CONES, BARRICADES
 AND VERTICAL PANELS**

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

APPROVED
 June 2017 /S/ Andrew Heidtke
 DATE WORK ZONE ENGINEER

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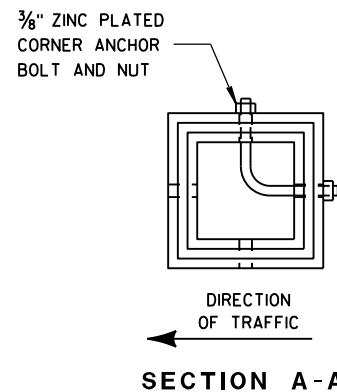


DETAIL OF TUBULAR STEEL SIGN POST

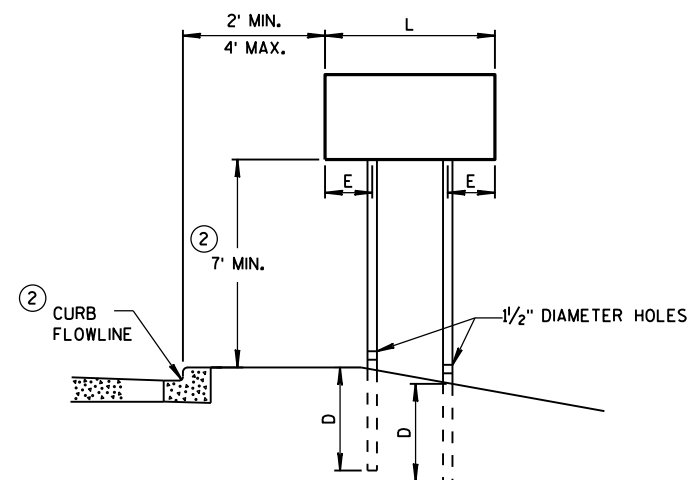
TUBULAR STEEL POSTS

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

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).
SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.



SECTION A-A

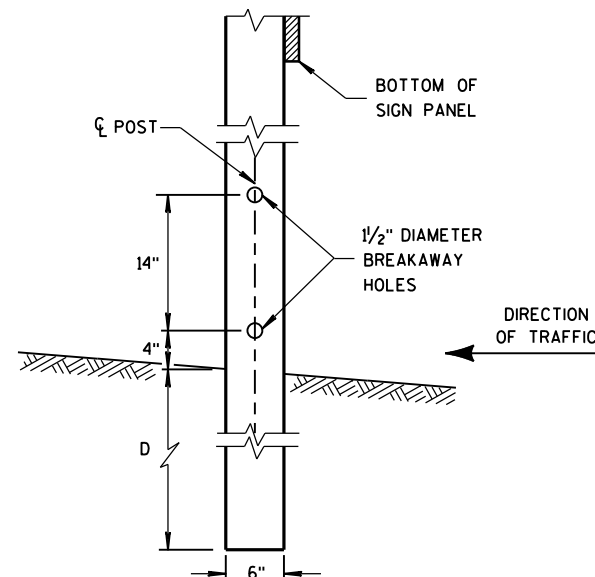


URBAN AREA

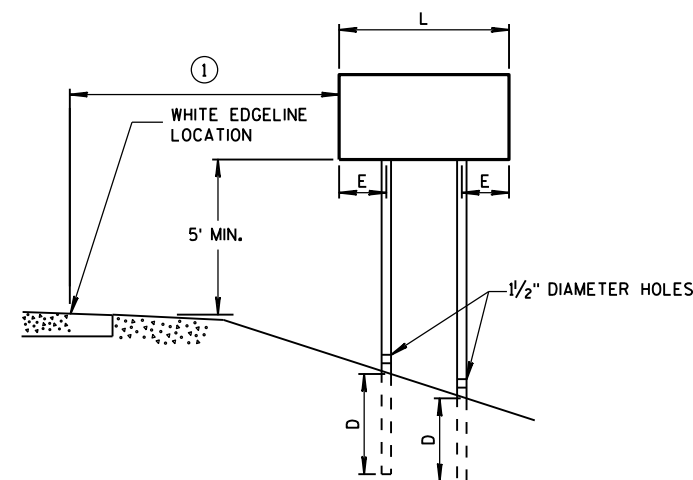
POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST EMBEDMENT DEPTH

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



4" x 6" WOOD POST MODIFICATION



RURAL AREA

4" X 6" WOOD POST

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

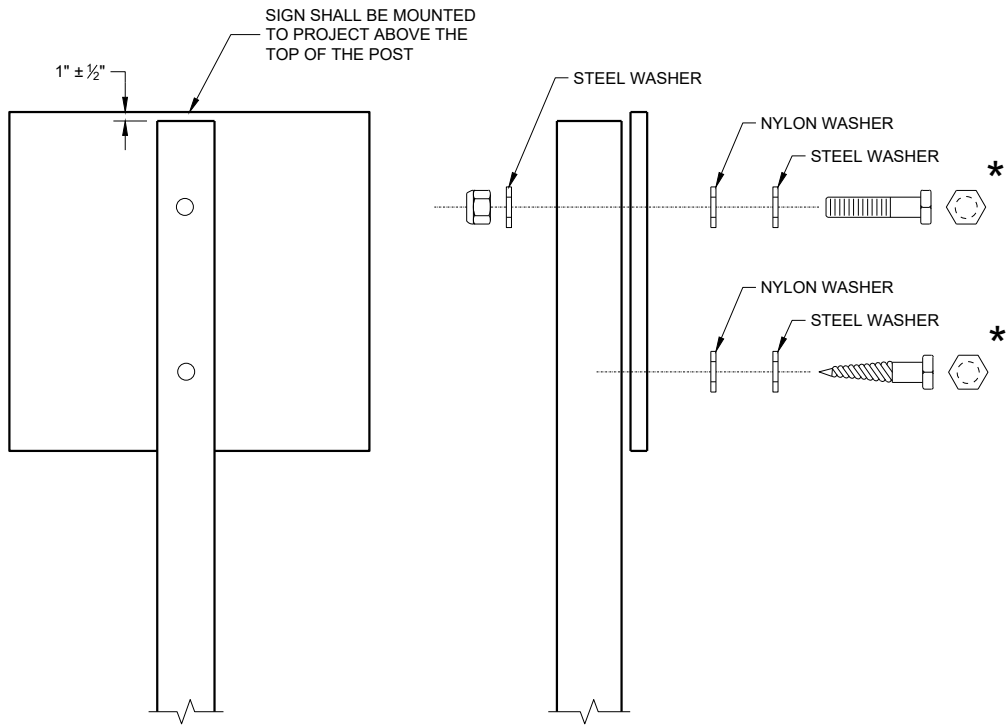
SEE NOTE ③

GENERAL NOTES

- ① 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.
- ② THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.
- ③ FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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

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

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

WOOD POST (4" x 6")
LAG SCREWS - ¾" x 3"
MACHINE BOLTS - ⅝" x 6 ½" OR 7" LENGTH W/NUTS

SQUARE STEEL POST (2" x 2")
MACHINE BOLTS - ¾" x 3 ¼" LENGTH W/NUTS
RIVETS - ⅝" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM
BODY/MANDREL O.D. FLANGE 0.720 - 0.765 INCH,
GRIP RANGE 0.042 - 0.375 INCH

WASHERS (ALL POSTS) -
1 ¼" O.D. x ⅜" I.D. x ⅛" STEEL
1 ¼" O.D. x ⅜" I.D. x 0.080 NYLON

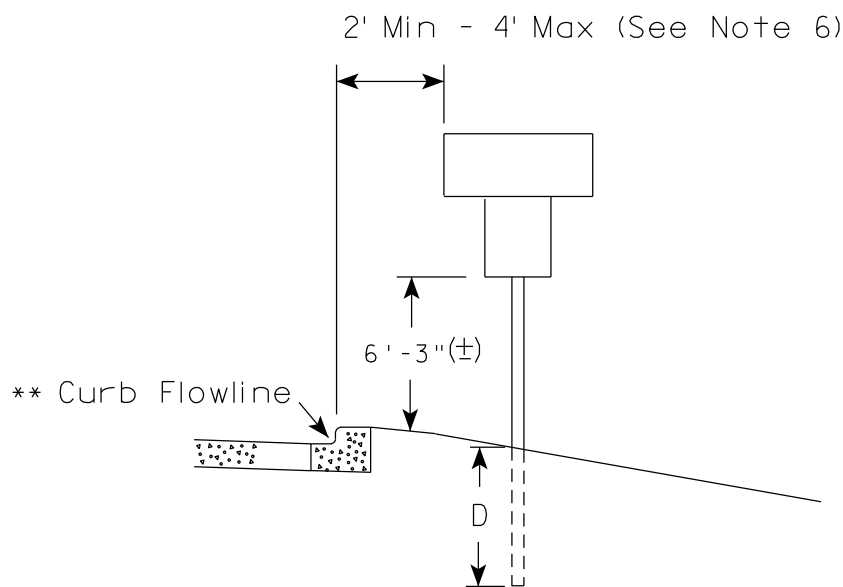
* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION
PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM
SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH
THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER
THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

ATTACHMENT OF SIGNS
TO POSTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

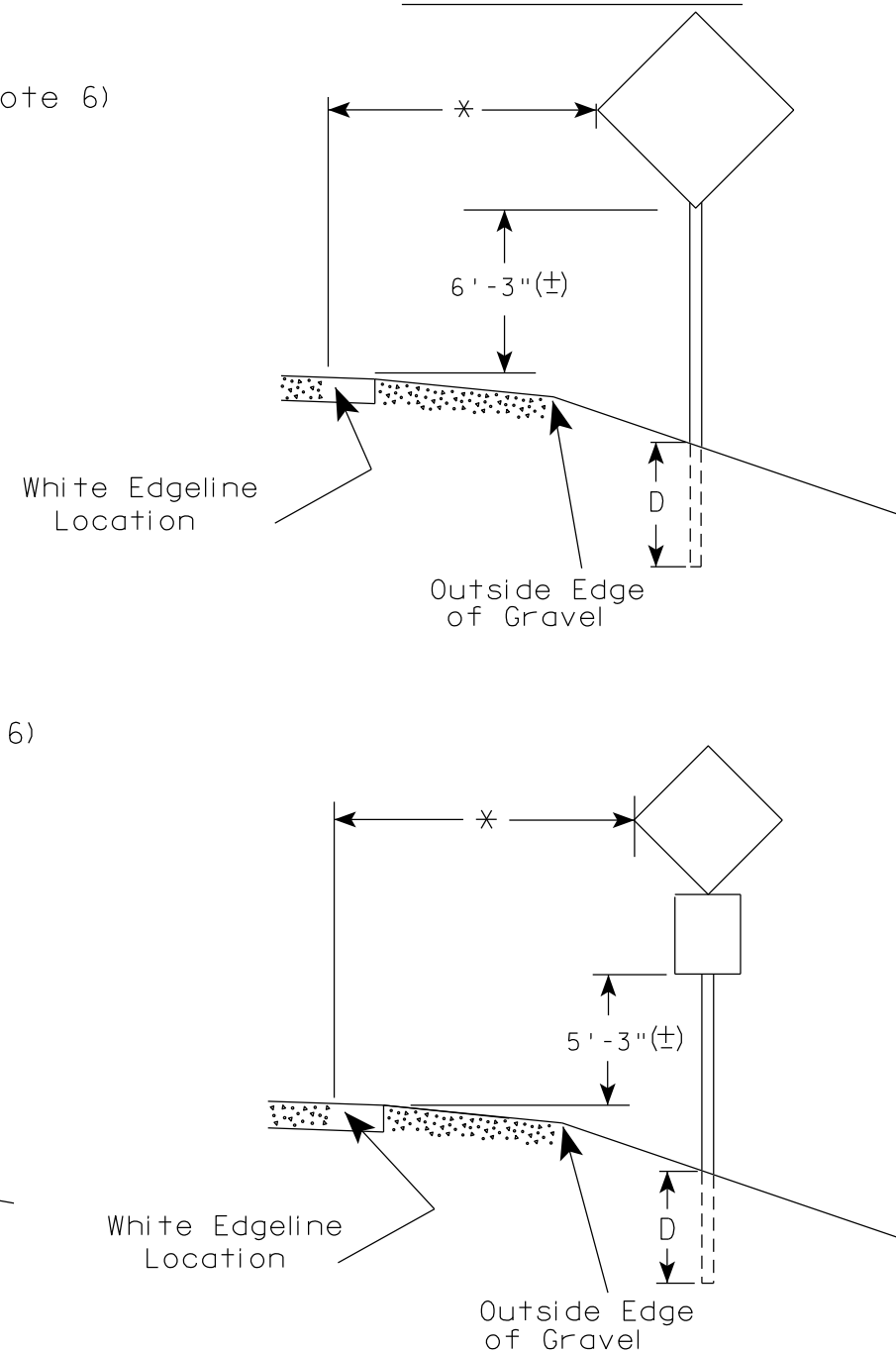
APPROVED
June 2017 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA

7



* * 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.

7



- * 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.

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on or behind barrier wall, see A4-10 sign plate.

The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (\pm). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (\pm).

3. For expressways and freeways, mounting height is 7'- 3" (\pm) or 6'-3" (\pm) depending upon existence of a sub-sign.
4. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (\pm).
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. The (\pm) tolerance for mounting height is 3 inches.
7. Folding signs shall be mounted at a height of 5'-3" (\pm) or as directed by the Engineer.

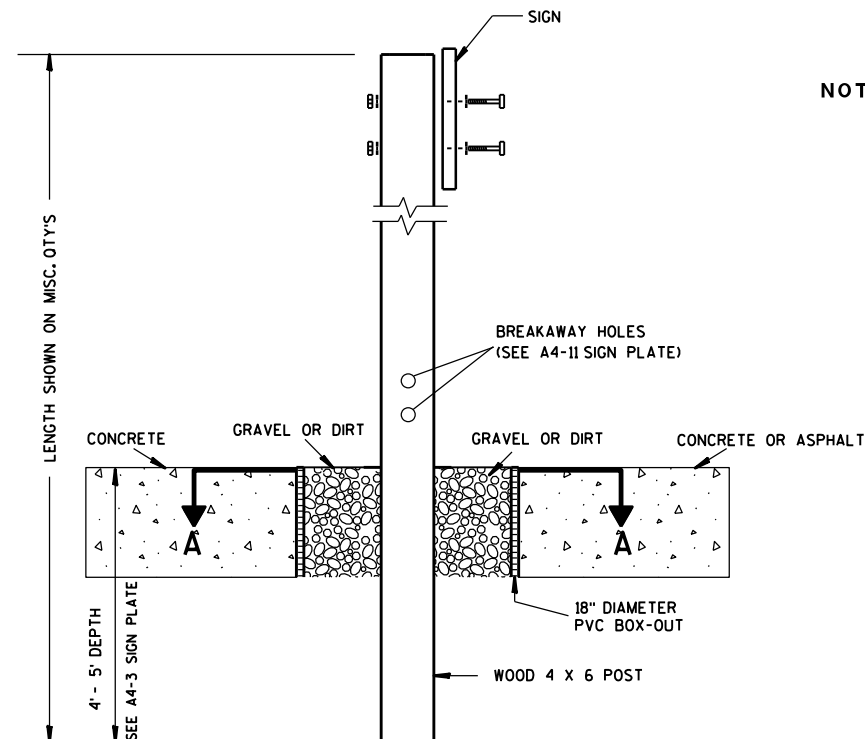
| POST EMBEDMENT DEPTH | |
|-----------------------------------------|--------------|
| Area of Sign Installation (Sq.Ft.) | D (Min) |
| 20 or Less | 4" |
| Greater than 20 | 5' |

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

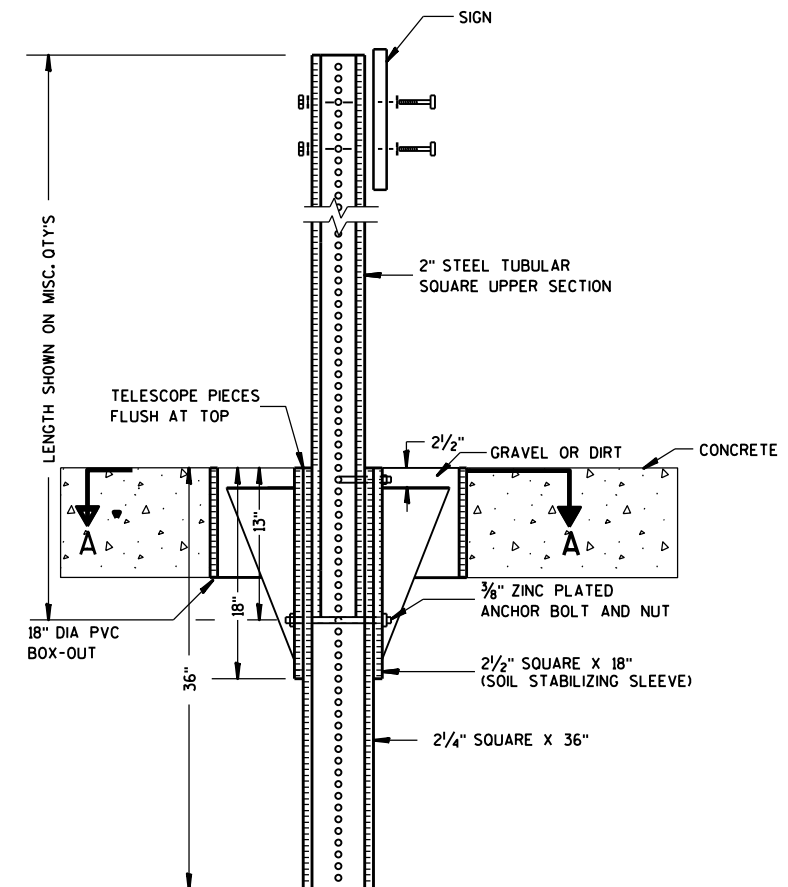
DATE 5/13/2020 PLATE NO. A4-3.22



ELEVATION VIEW

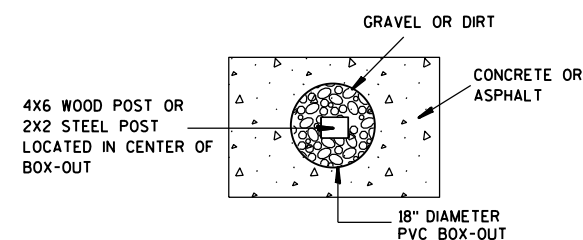
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

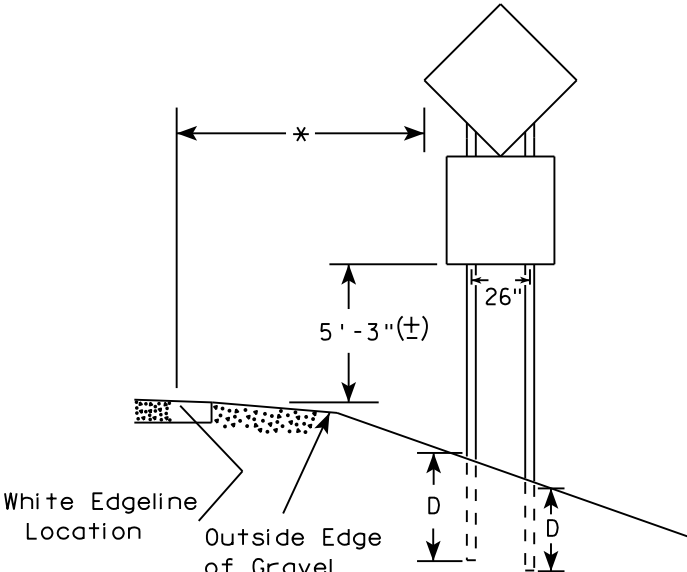
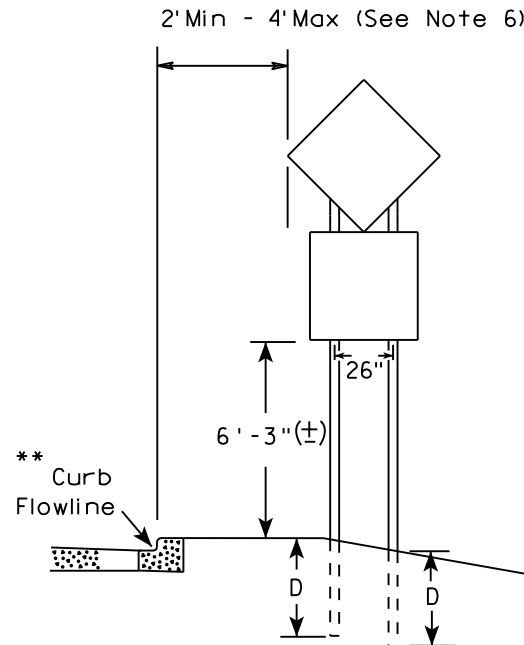
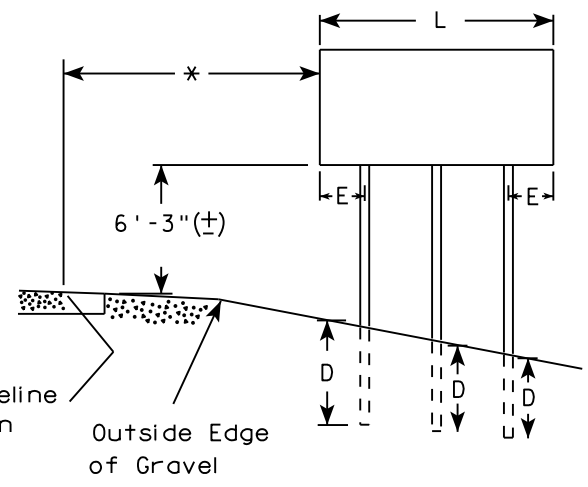
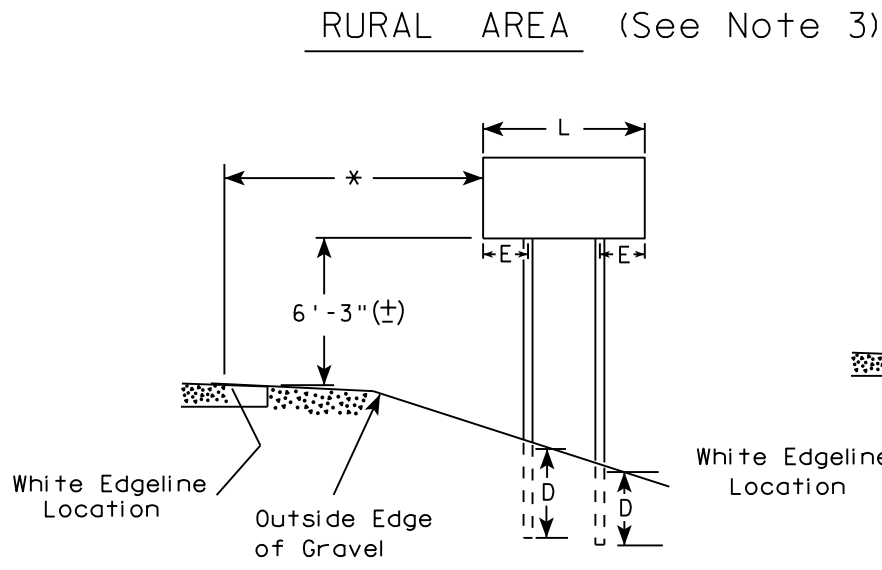
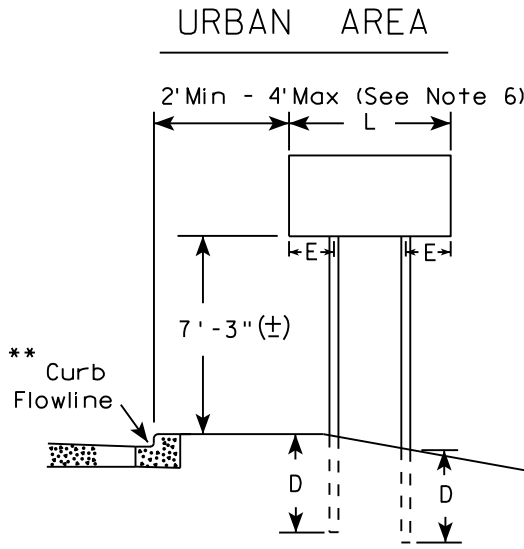
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



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

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

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

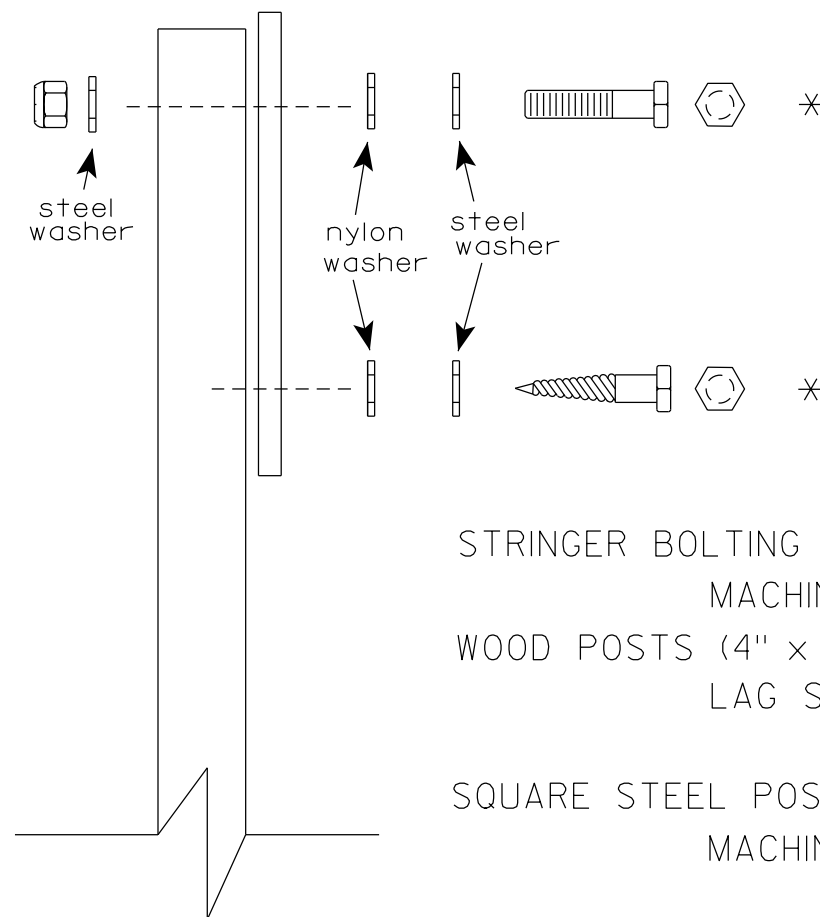
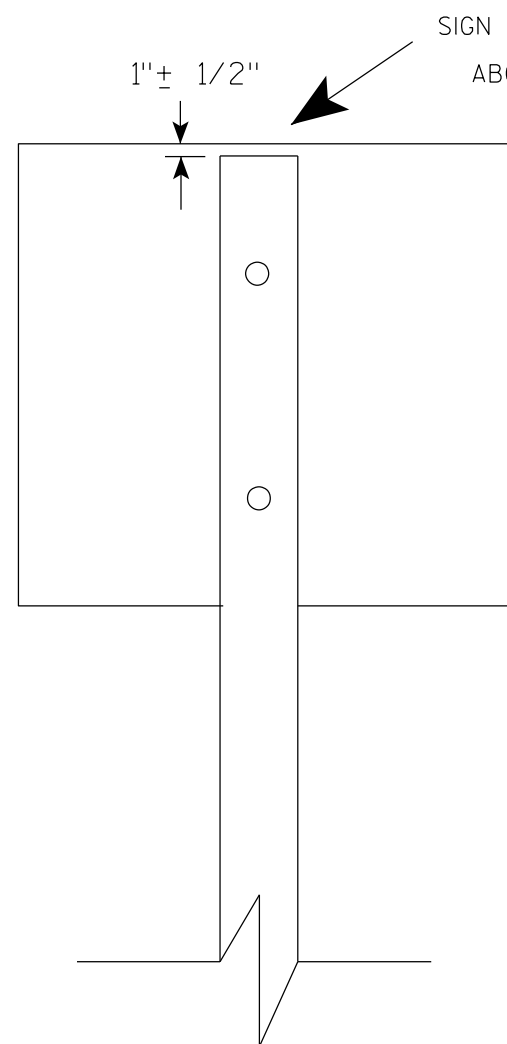
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-4.15

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

- * 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.
- ** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.
- *** See A4-3 sign plate for signs 4' or less in width and less than 20 S.F. in area.



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

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

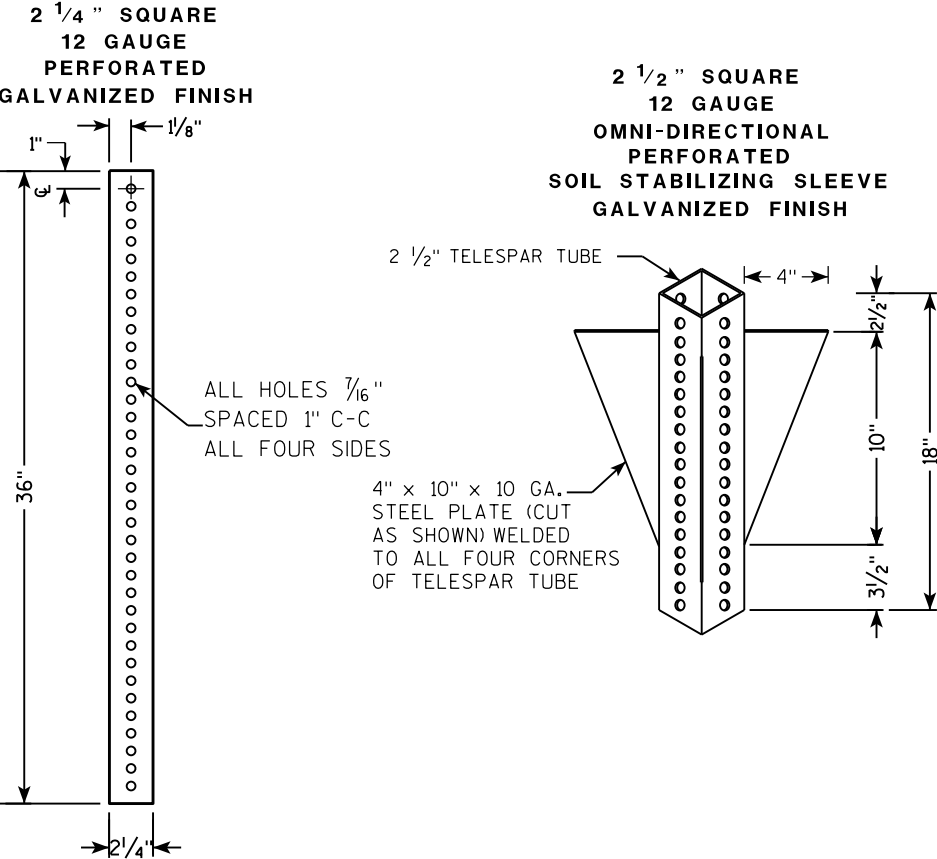
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

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

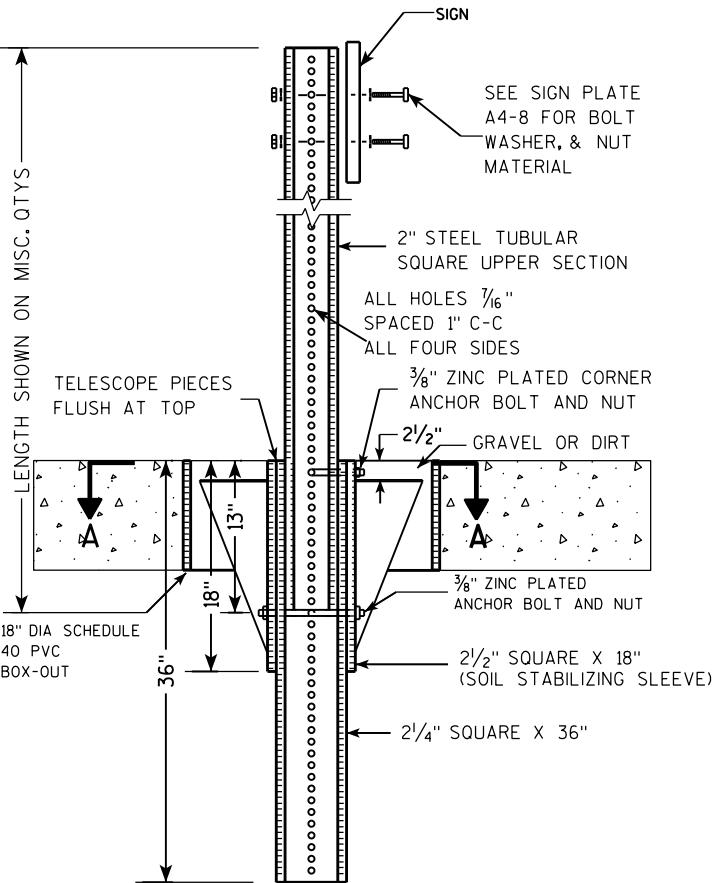
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

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

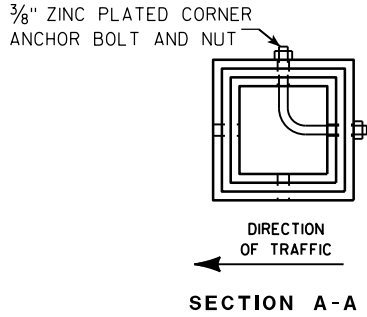
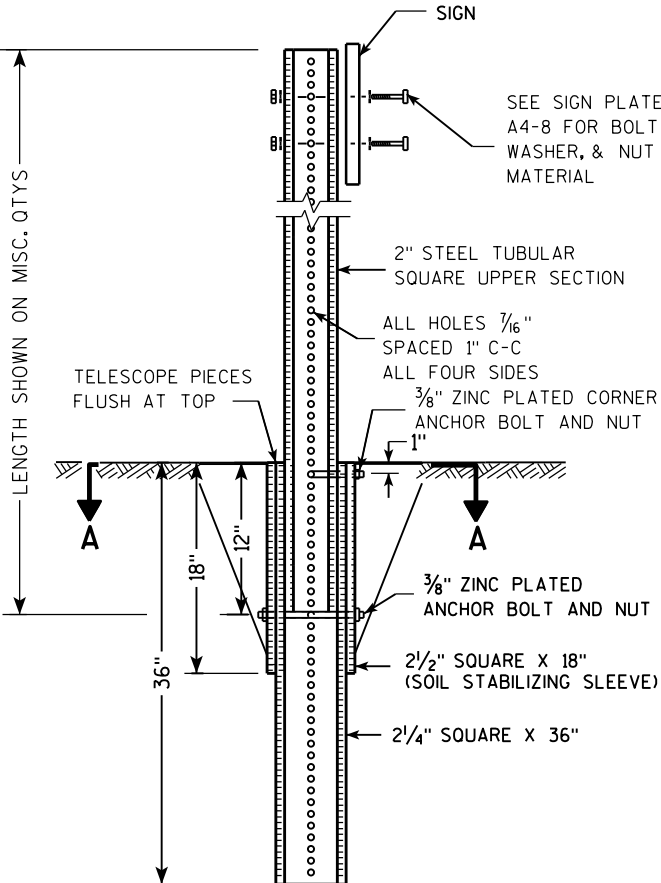
TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM



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



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



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

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

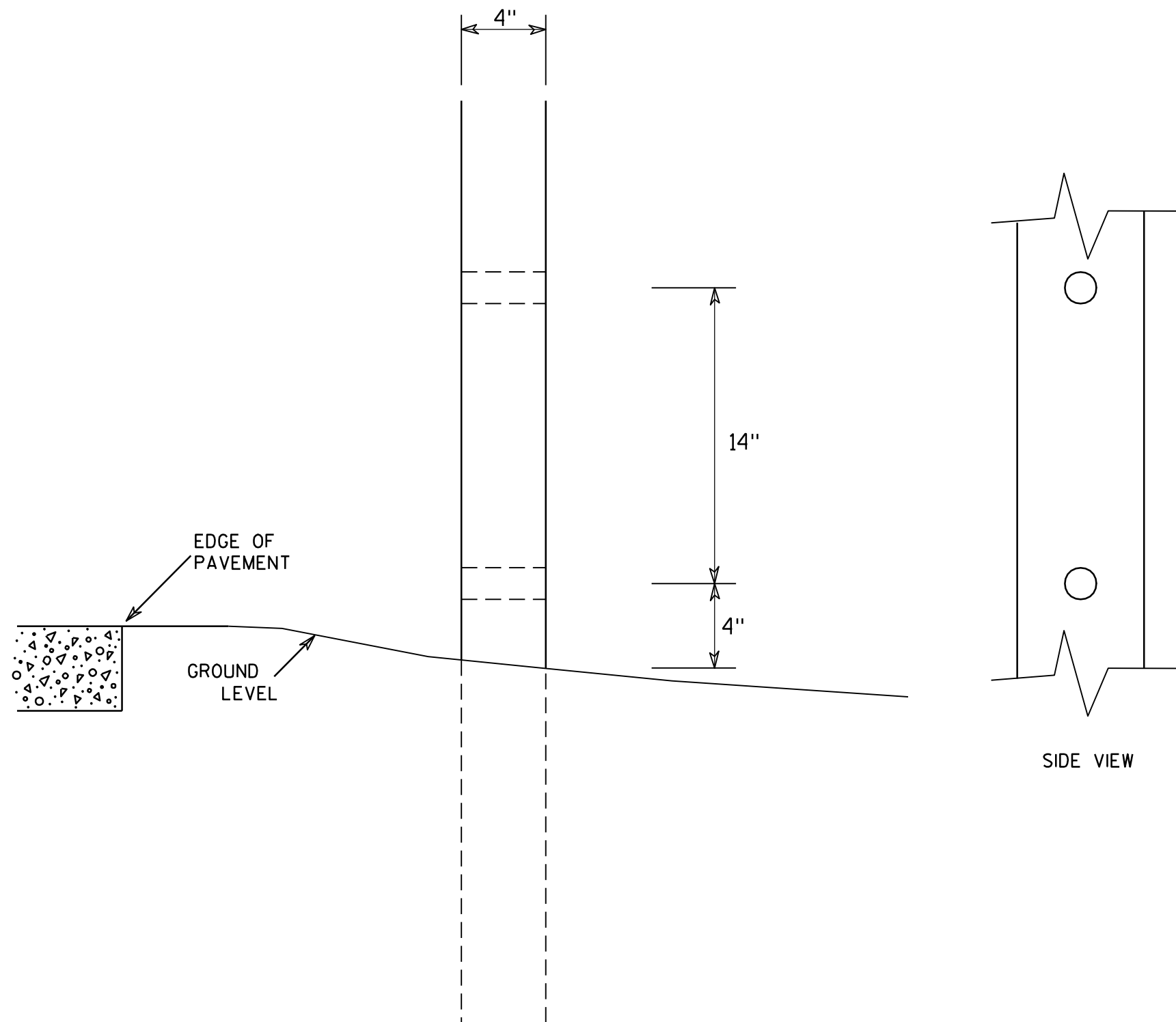
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

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

PROJECT NO:

HWY:

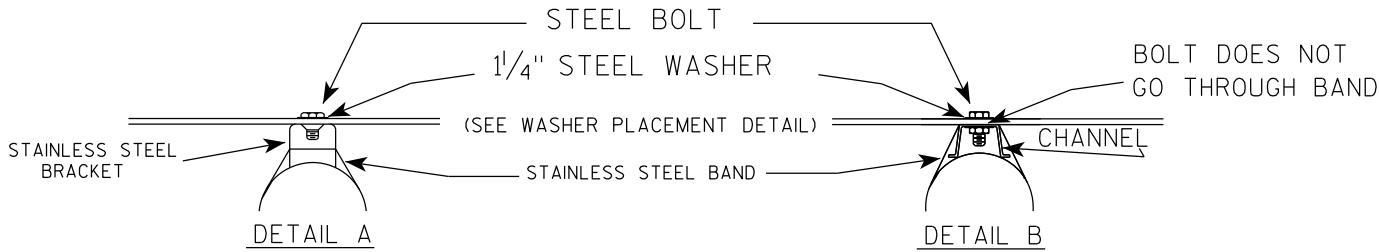
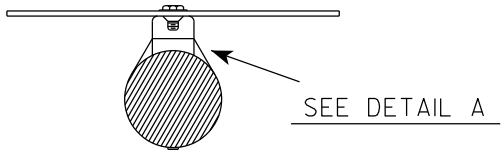
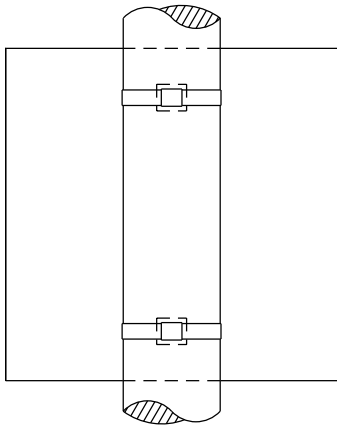
COUNTY:

SHEET NO:

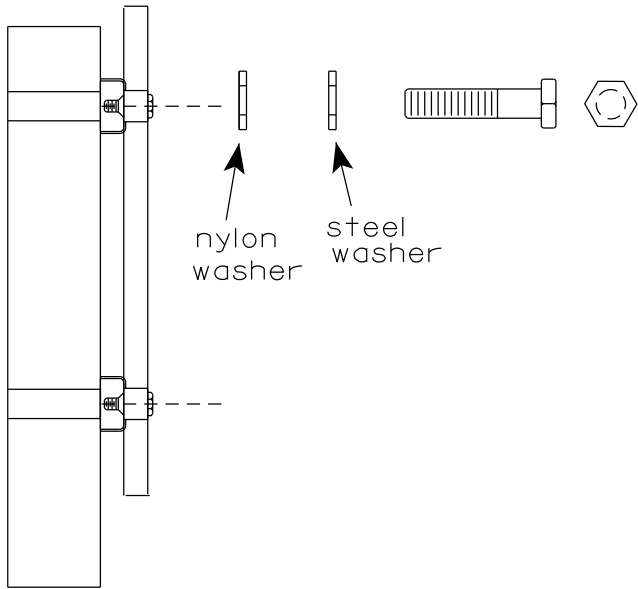
E

BANDING

SINGLE SIGN



WASHER PLACEMENT

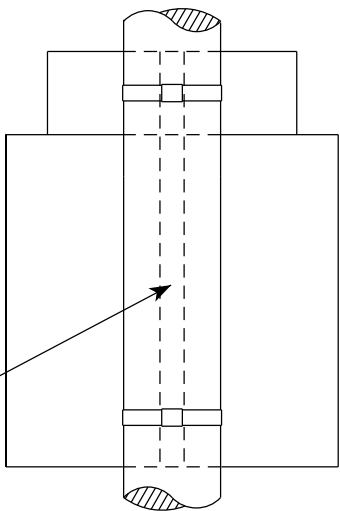


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

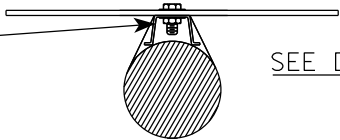
GENERAL NOTES

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

"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET

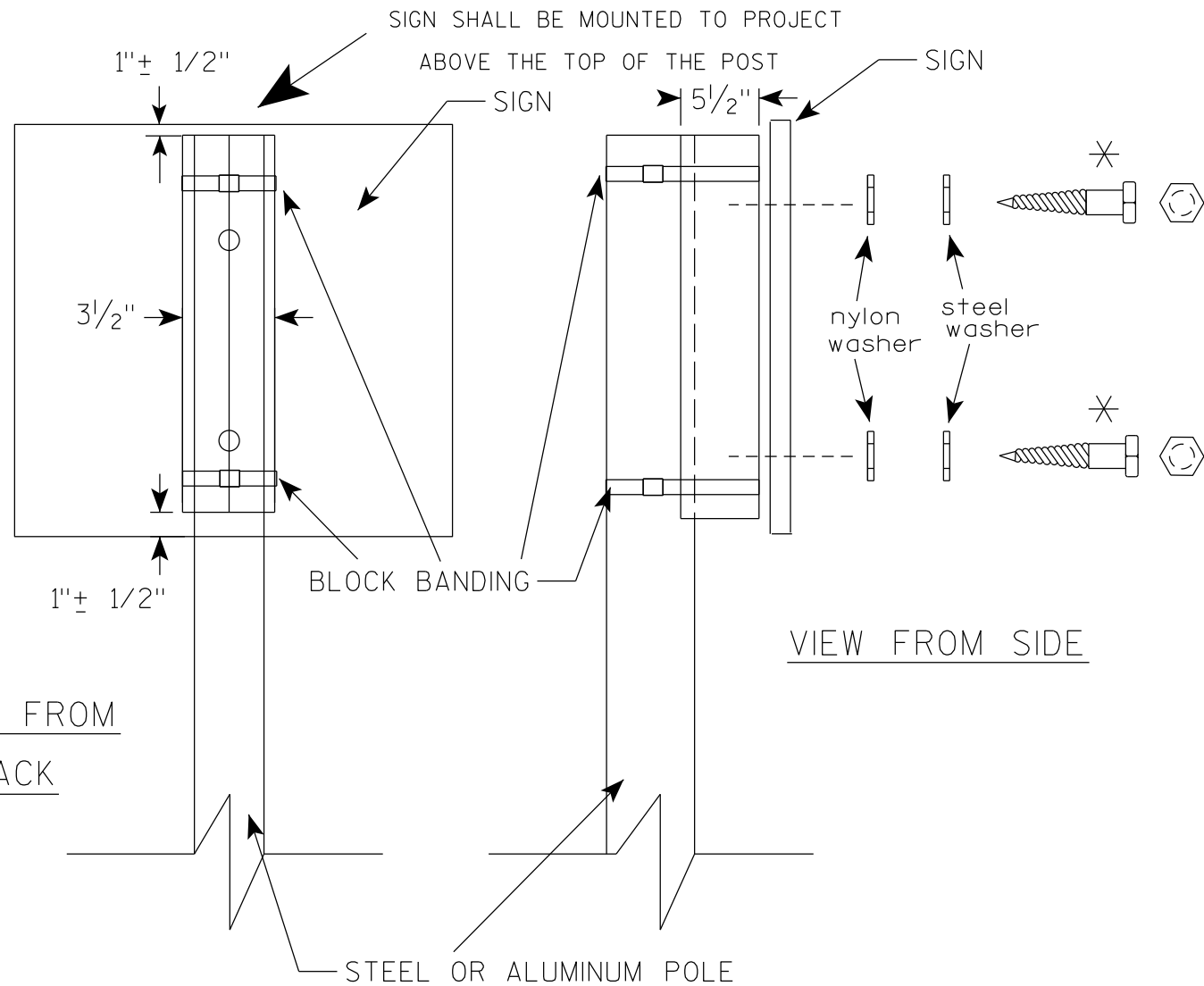


STANDARD SIGN
SIGN BANDING DETAILS

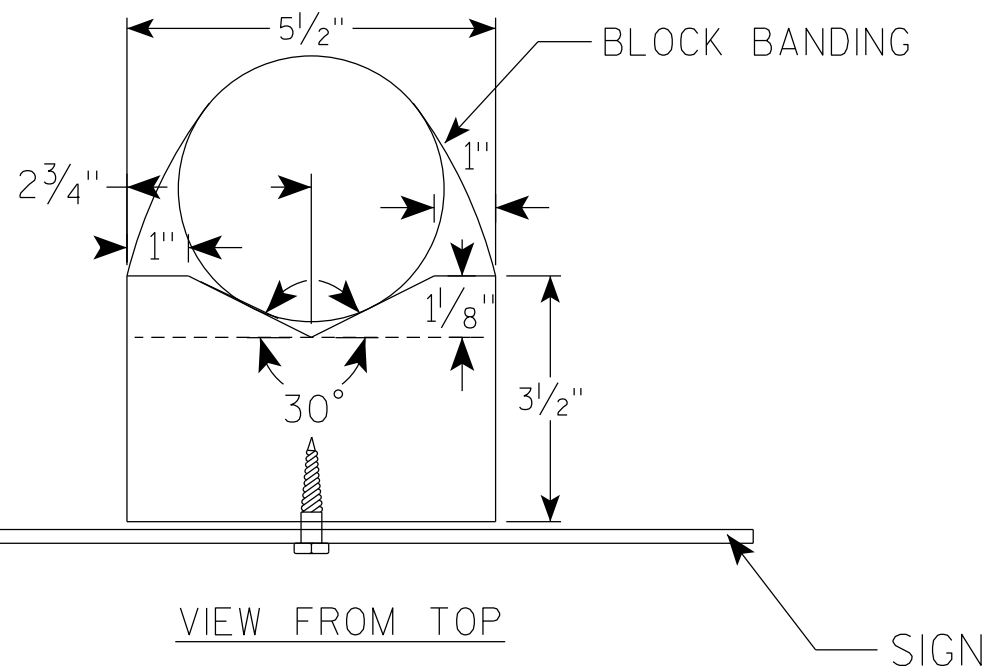
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/10/19 PLATE NO. A5-9.4

VIEW FROM
BACK



VIEW FROM SIDE



GENERAL NOTES

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

✱ LAG BOLTS SHALL BE $\frac{3}{8}$ " X $2\frac{1}{2}$ "

BLOCK BANDING DETAIL
(V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

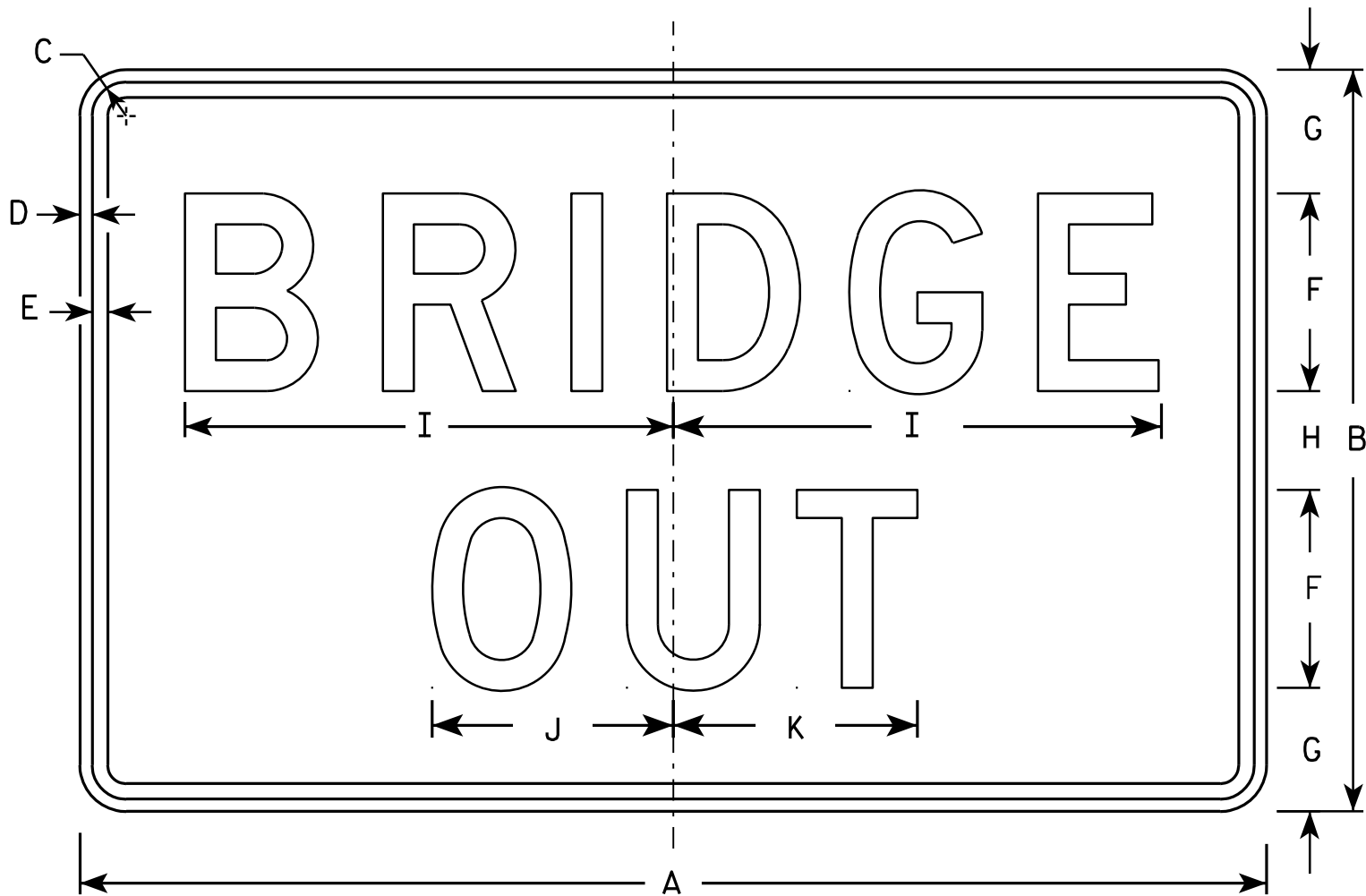
PROJECT NO:

SHEET NO:

E

NOTES

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



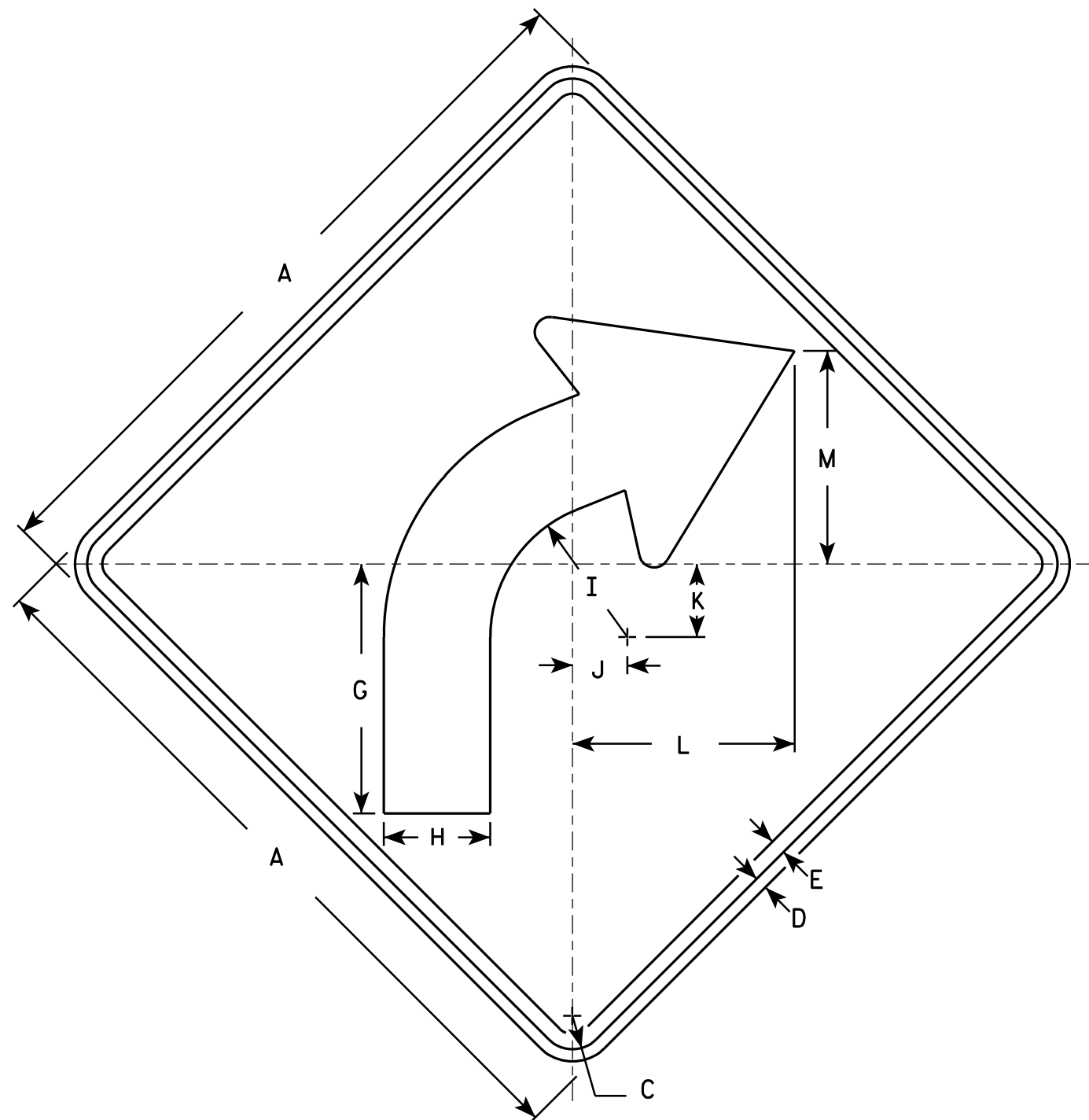
R11-2B

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|----|-------|-----|-----|---|---|---|--------|-------|-------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 48 | 30 | 1 3⁄8 | 1⁄2 | 5⁄8 | 8 | 5 | 4 | 19 3⁄4 | 9 3⁄4 | 9 7⁄8 | | | | | | | | | | | | | | | | 10.0 |
| 2M | 48 | 30 | 1 3⁄8 | 1⁄2 | 5⁄8 | 8 | 5 | 4 | 19 3⁄4 | 9 3⁄4 | 9 7⁄8 | | | | | | | | | | | | | | | | 10.0 |
| 3 | 48 | 30 | 1 3⁄8 | 1⁄2 | 5⁄8 | 8 | 5 | 4 | 19 3⁄4 | 9 3⁄4 | 9 7⁄8 | | | | | | | | | | | | | | | | 10.0 |
| 4 | 48 | 30 | 1 3⁄8 | 1⁄2 | 5⁄8 | 8 | 5 | 4 | 19 3⁄4 | 9 3⁄4 | 9 7⁄8 | | | | | | | | | | | | | | | | 10.0 |
| 5 | 48 | 30 | 1 3⁄8 | 1⁄2 | 5⁄8 | 8 | 5 | 4 | 19 3⁄4 | 9 3⁄4 | 9 7⁄8 | | | | | | | | | | | | | | | | 10.0 |

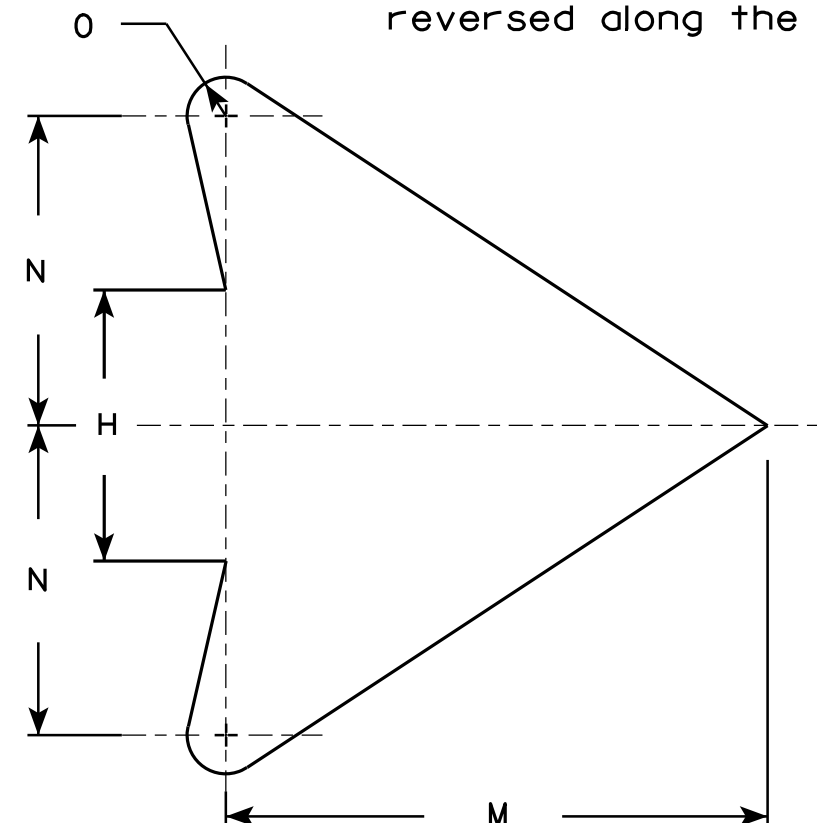
| | |
|----------------------------------|-------------------------------------------------------|
| STANDARD SIGN | |
| R11-2B | |
| WISCONSIN DEPT OF TRANSPORTATION | |
| APPROVED | <i>Matthew R. Rauch</i> For State Traffic Engineer |
| DATE 4/1/11 | PLATE NO. R11-2B.2 |

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W1-2L is the same as W1-2R except the arrow is reversed along the vertical centerline.



W1-2R



ARROW DETAIL

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

STANDARD SIGN W1-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/15/12 PLATE NO. W1-2.10

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

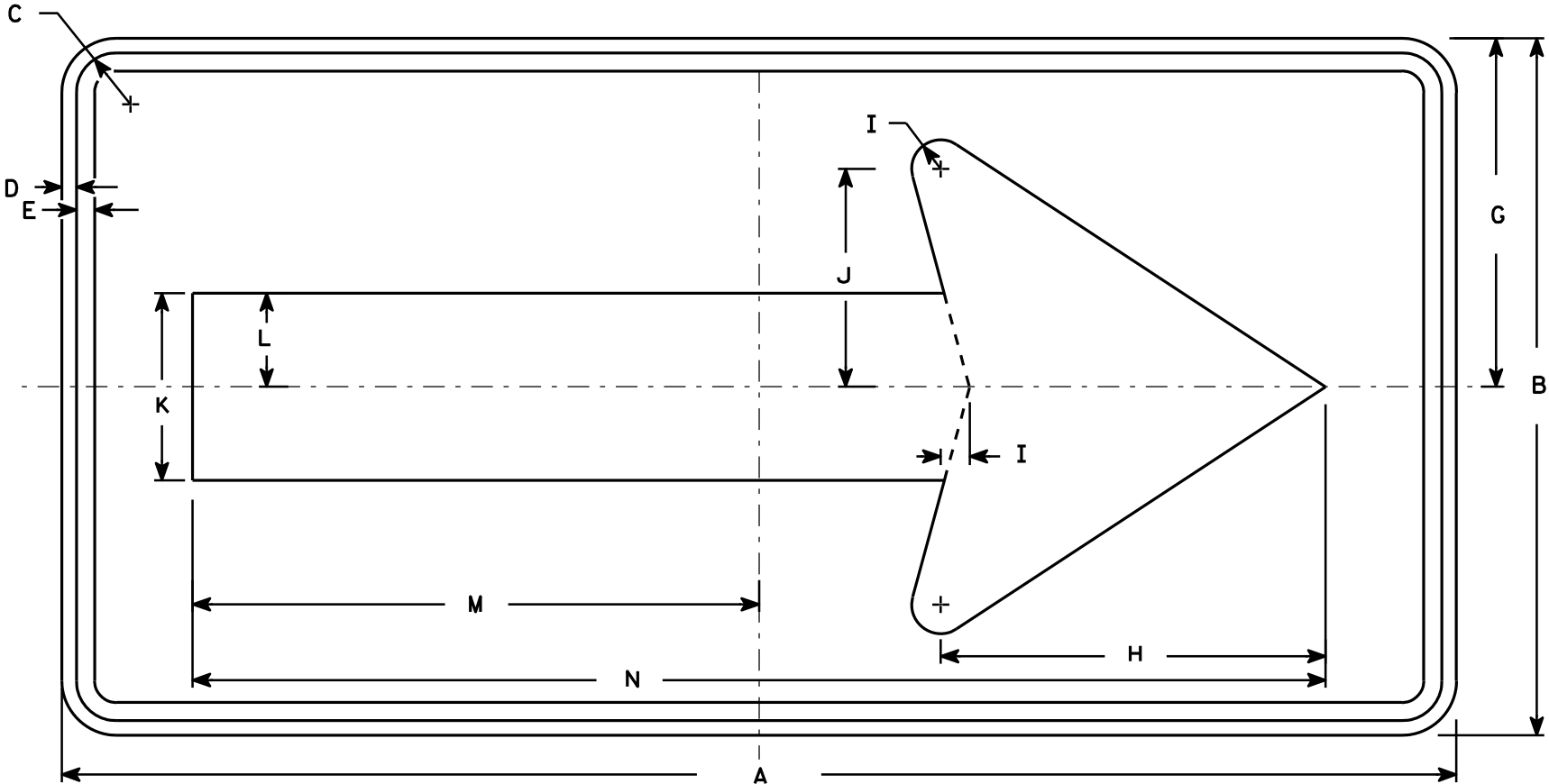
E

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.



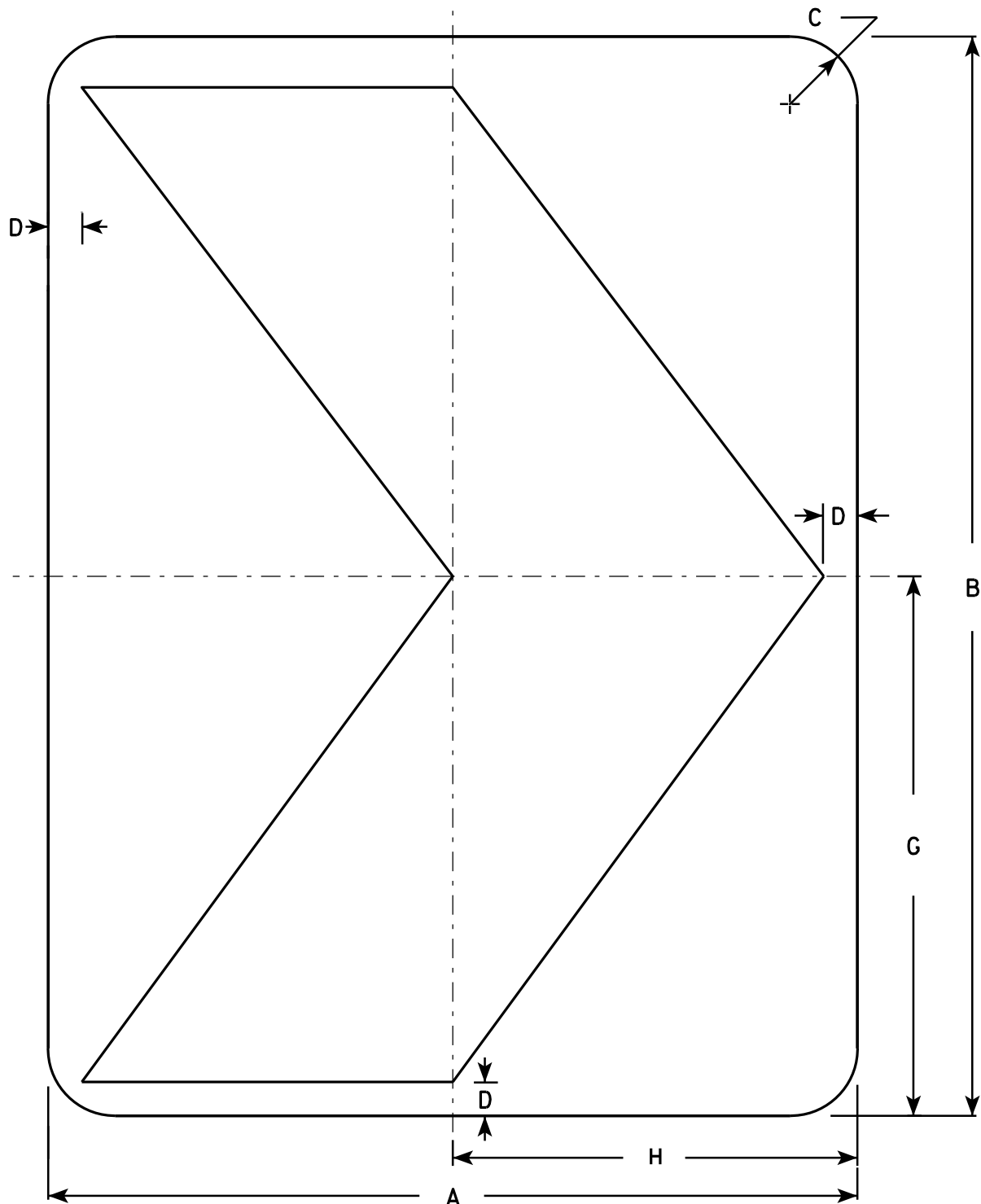
W1-6

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|----|-------|-----|-----|---|----|--------|-------|-------|-------|-------|--------|--------|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1 | 36 | 18 | 1 1/8 | 3/8 | 3/8 | | 9 | 10 | 3/4 | 5 5/8 | 4 3/4 | 2 3/8 | 14 5/8 | 29 1/4 | | | | | | | | | | | | | 4.5 |
| 2S | 48 | 24 | 1 3/8 | 1/2 | 5/8 | | 12 | 13 1/4 | 1 | 7 1/2 | 6 1/2 | 3 1/4 | 19 1/2 | 39 | | | | | | | | | | | | | 8.0 |
| 2M | 48 | 24 | 1 3/8 | 1/2 | 5/8 | | 12 | 13 1/4 | 1 | 7 1/2 | 6 1/2 | 3 1/4 | 19 1/2 | 39 | | | | | | | | | | | | | 8.0 |
| 3 | 60 | 30 | 1 3/8 | 1/2 | 5/8 | | 15 | 16 1/4 | 1 1/4 | 9 1/4 | 8 | 4 | 24 3/8 | 48 3/4 | | | | | | | | | | | | | 12.5 |
| 4 | 60 | 30 | 1 3/8 | 1/2 | 5/8 | | 15 | 16 1/4 | 1 1/4 | 9 1/4 | 8 | 4 | 24 3/8 | 48 3/4 | | | | | | | | | | | | | 12.5 |
| 5 | 96 | 48 | 2 1/4 | 3/4 | 1 | | 24 | 26 1/2 | 2 | 15 | 13 | 6 1/2 | 39 | 78 | | | | | | | | | | | | | 32.0 |

STANDARD SIGN
W1-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/7/10 PLATE NO. W1-6.8



W1-8

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.

| 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 | 12 | 18 | 1 1/2 | 1/2 | | | 9 | 6 | | | | | | | | | | | | | | | | | | | 1.5 |
| 2S | 18 | 24 | 1 1/2 | 3/4 | | | 12 | 9 | | | | | | | | | | | | | | | | | | | 3.0 |
| 2M | 18 | 24 | 1 1/2 | 3/4 | | | 12 | 9 | | | | | | | | | | | | | | | | | | | 3.0 |
| 3 | 24 | 30 | 1 1/2 | 1 | | | 15 | 12 | | | | | | | | | | | | | | | | | | | 5.0 |
| 4 | 30 | 36 | 1 7/8 | 1 1/4 | | | 18 | 15 | | | | | | | | | | | | | | | | | | | 7.5 |
| 5 | 36 | 48 | 2 1/4 | 1 1/2 | | | 24 | 18 | | | | | | | | | | | | | | | | | | | 12.0 |

STANDARD SIGN

W1-8

WISCONSIN DEPT OF TRANSPORTATION

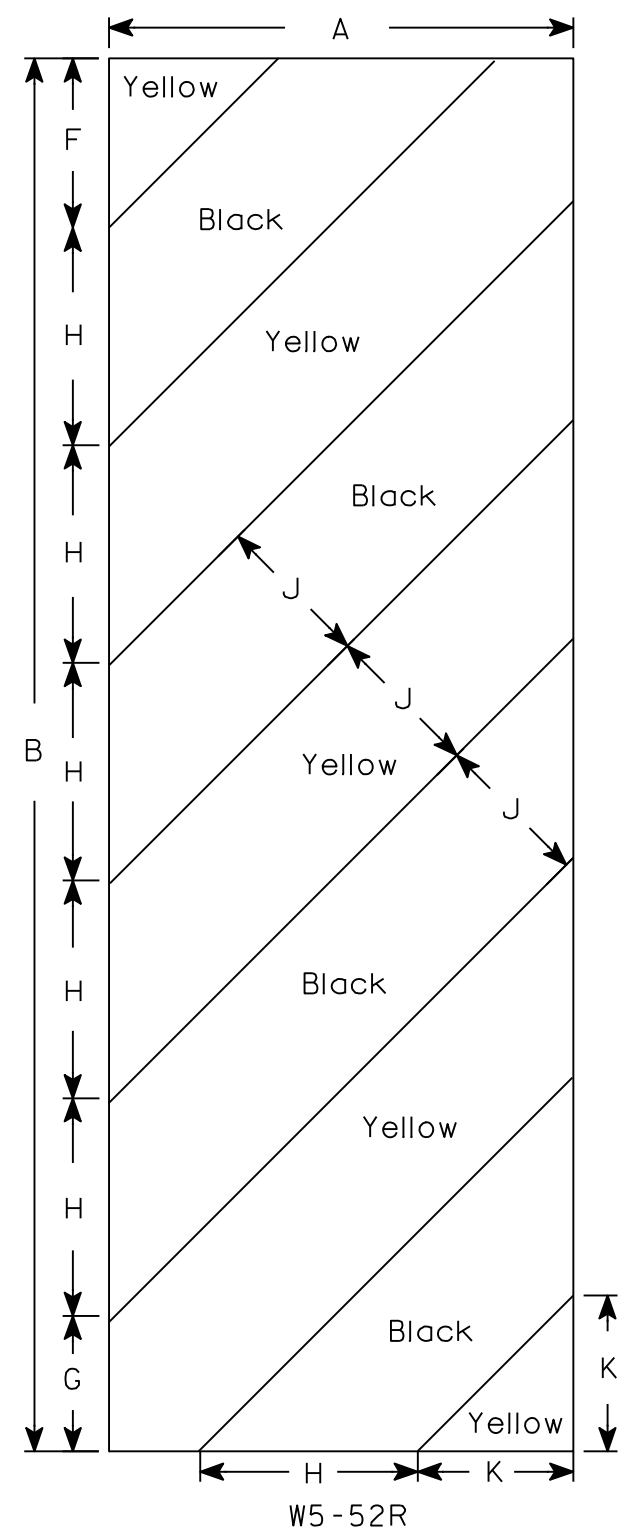
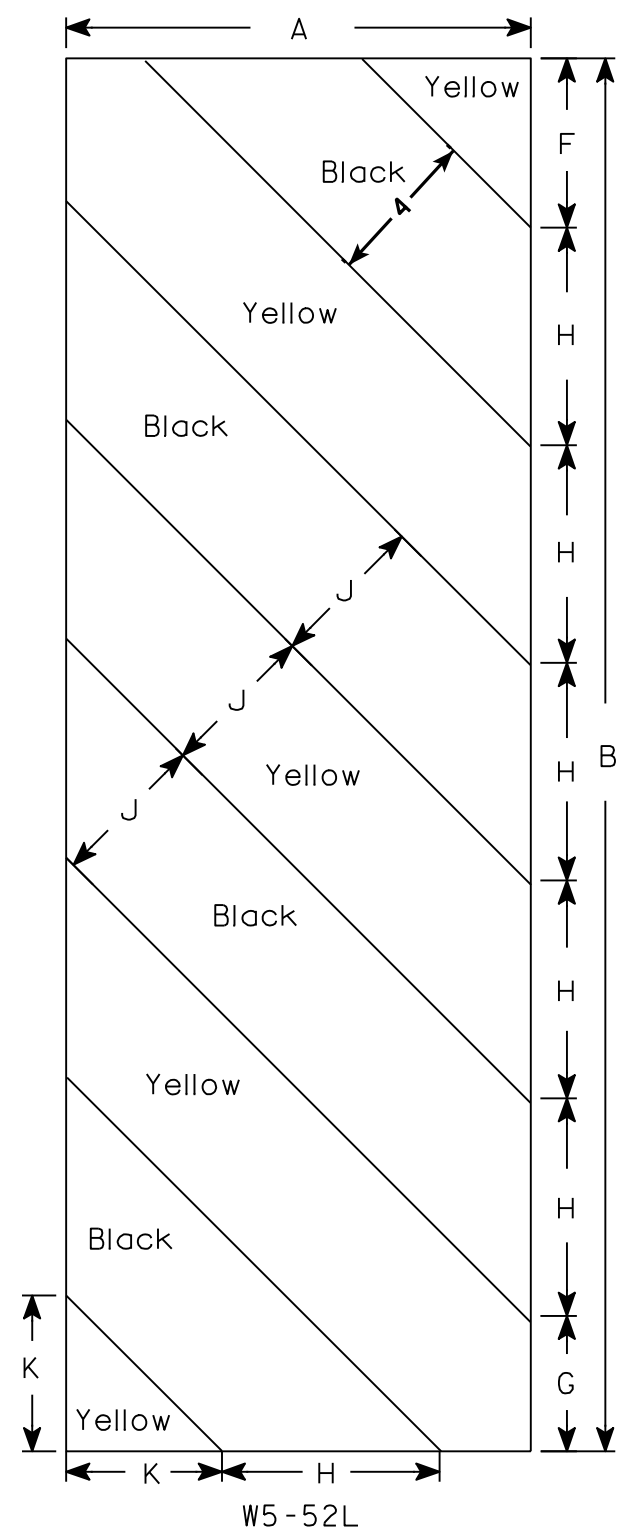
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W1-8.6

PROJECT NO:

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.
- 4. Alternate colors of stripes as shown.

| 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 | 12 | 36 | | | | 4 3⁄8 | 3 1⁄2 | 5 5⁄8 | 45° | 4 | 4 | | | | | | | | | | | | | | | | 3.0 |
| 2M | 12 | 36 | | | | 4 3⁄8 | 3 1⁄2 | 5 5⁄8 | 45° | 4 | 4 | | | | | | | | | | | | | | | | 3.0 |
| 3 | 18 | 54 | | | | 6 | 5 1⁄2 | 8 1⁄2 | 45° | 6 | 6 9⁄16 | | | | | | | | | | | | | | | | 6.75 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W5-52.9

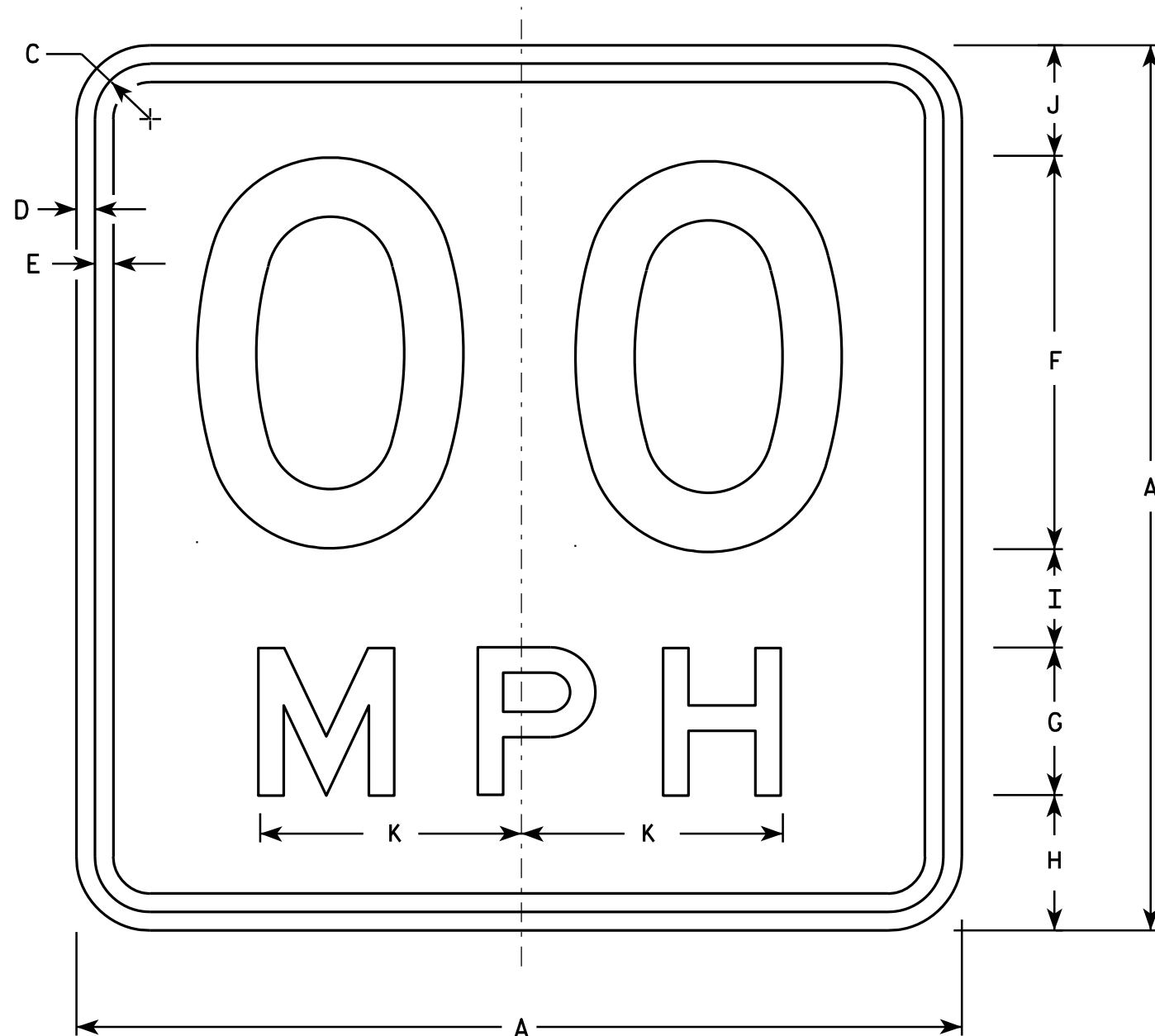
PROJECT NO:

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. Message Series - See Note 6
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically space about centerline to achieve proper balance.
6. Line 1 is Series D
Line 2 is Series E

W13-1

- * For 30" x 30" Warning Signs, use 18" x 18" W13-1 signs.
For 36" x 36" Warning Signs, use 24" x 24" W13-1 signs.

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|---|-------|-----|-----|----|---|-------|-------|-------|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1 | 18 | | 1 1/8 | 3/8 | 3/8 | 8 | 3 | 2 3/4 | 2 | 2 1/4 | 5 3/8 | | | | | | | | | | | | | | | | 2.25 |
| * 2S | 18 | | 1 1/8 | 3/8 | 3/8 | 8 | 3 | 2 3/4 | 2 | 2 1/4 | 5 3/8 | | | | | | | | | | | | | | | | 2.25 |
| * 2M | 18 | | 1 1/8 | 3/8 | 3/8 | 8 | 3 | 2 3/4 | 2 | 2 1/4 | 5 3/8 | | | | | | | | | | | | | | | | 2.25 |
| 3 | 24 | | 1 1/8 | 3/8 | 1/2 | 10 | 4 | 4 | 2 3/4 | 3 1/4 | 6 5/8 | | | | | | | | | | | | | | | | 4.00 |
| 4 | 36 | | 1 5/8 | 5/8 | 3/4 | 16 | 6 | 5 1/2 | 4 | 4 1/2 | 10 5/8 | | | | | | | | | | | | | | | | 9.00 |
| 5 | 36 | | 1 5/8 | 5/8 | 3/4 | 16 | 6 | 5 1/2 | 4 | 4 1/2 | 10 5/8 | | | | | | | | | | | | | | | | 9.00 |

STANDARD SIGN

W13-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 5/31/12 PLATE NO. W13-1.16

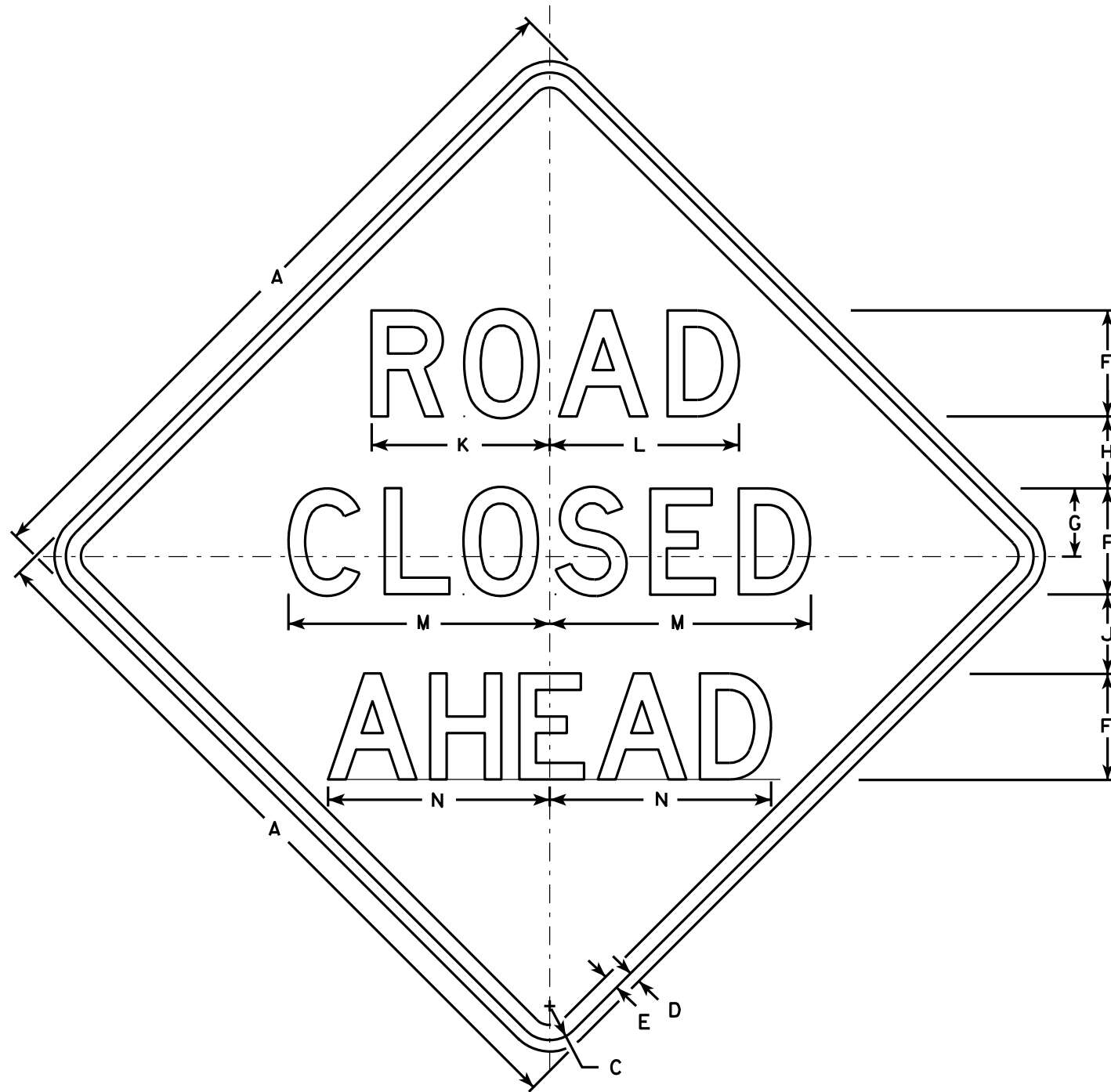
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



W20-3A

500 FT

W20-3D

1000 FT

W20-3C

1500 FT

W20-3B

1/2 MILE

W20-3G

1 MILE

W20-3F

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. Lines 1 and 2 are Series D.
Line 3 is Series D for AHEAD and Series C for all other distances.

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

STANDARD SIGN
W20-3A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-3.7

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

DESIGN DATA

LIVE LOADS:
 DESIGN LOADING = HL-93
 INVENTORY RATING FACTOR = 1.24
 OPERATING RATING FACTOR = 1.61
 MAX. STD. PERMIT VEHICLE LOAD = 220 KIPS

STRUCTURE IS DESIGNED FOR FUTURE WEARING SURFACE
 OF 20 POUNDS PER SQUARE FOOT

MATERIAL PROPERTIES:

CONCRETE MASONRY SLAB ----- F'C = 4,000 PSI
 BAR STEEL REINFORCEMENT (GRADE 60) ----- F_y = 60,000 PSI
 CONCRETE MASONRY OTHER ----- F'C = 3,500 PSI

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON PILING CIP CONCRETE 10 3/4 X 0.25-INCH
 DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 120 TONS* (MIN) PER PILE AS
 DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 75'-0"
 LONG WEST ABUTMENT AND 95'-0" LONG EAST ABUTMENT.

* THE FACTOR AXIAL RESISTANCE OF THE PILES IN COMPRESSION USED FOR
 DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE
 FACTOR OF 0.5 USING THE MODIFIED GATES TO DETERMINE DRIVEN PILE
 CAPACITY.

TRAFFIC DATA

A.D.T. (2015) = 10
 A.D.T. (2035) = 11
 R.D.S. = 25 MPH

HYDRAULIC DATA

100 YEAR FREQUENCY
 Q100 = 2310 CFS
 VEL. = 8.8 FPS
 HW100 ELEV. = 1122.32
 WATERWAY AREA = 246 SF
 DRAINAGE AREA = 60.8 SQ.MI.
 SCOUR CODE = 5

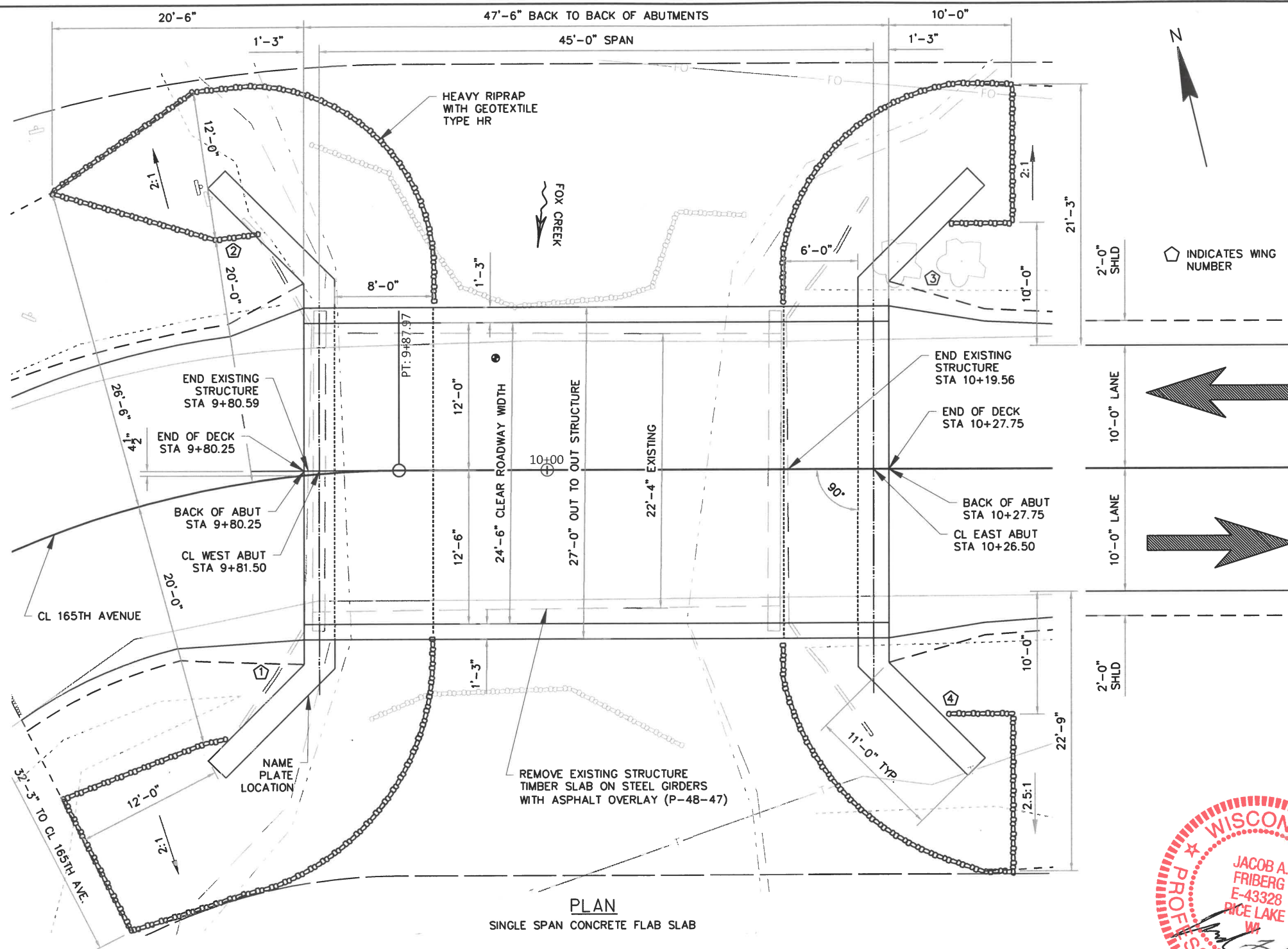
2 YEAR FREQUENCY
 Q2 = 510 CFS
 VEL. = 2.9 FPS
 HW2 ELEV. = 1117.57

ROAD OVERTOPPING FREQUENCY
 FREQUENCY = 55 YEARS
 Q55 = 2000 CFS
 HW55 ELEV. = 1121.70

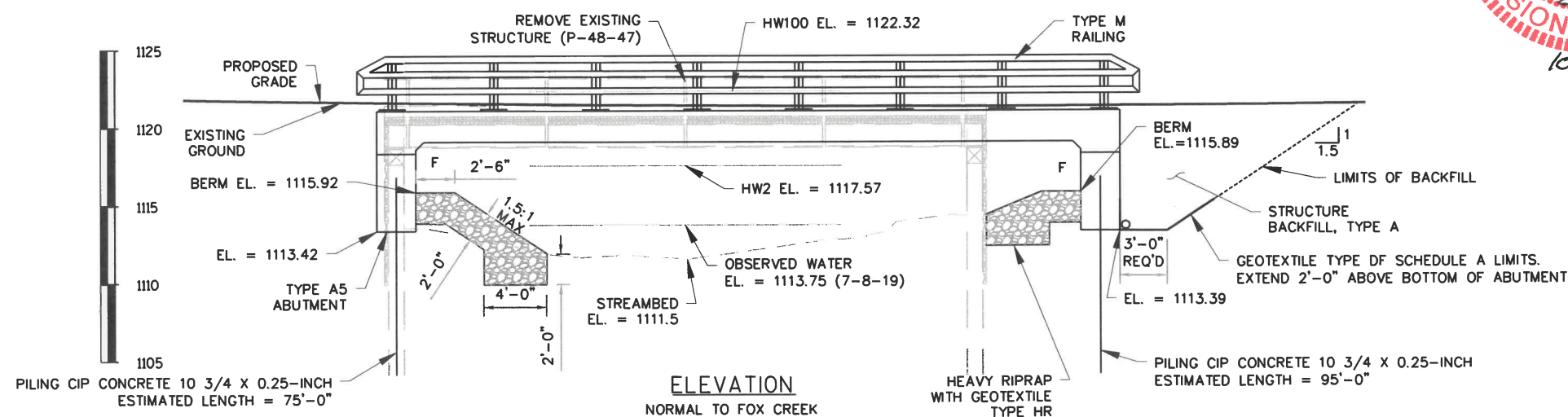
CONTACTS

BRIDGE OFFICE:
 CONTACT: AARON BONK
 PHONE: (608) 261-0261

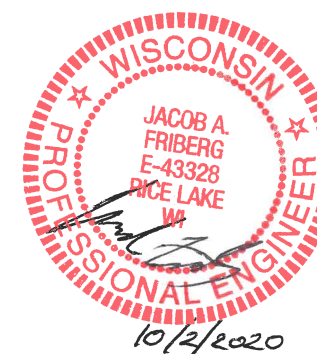
CONSULTANT:
 CONTACT: COOPER ENGINEERING
 PHONE: (715) 234-7008



PLAN
 SINGLE SPAN CONCRETE FLAB SLAB



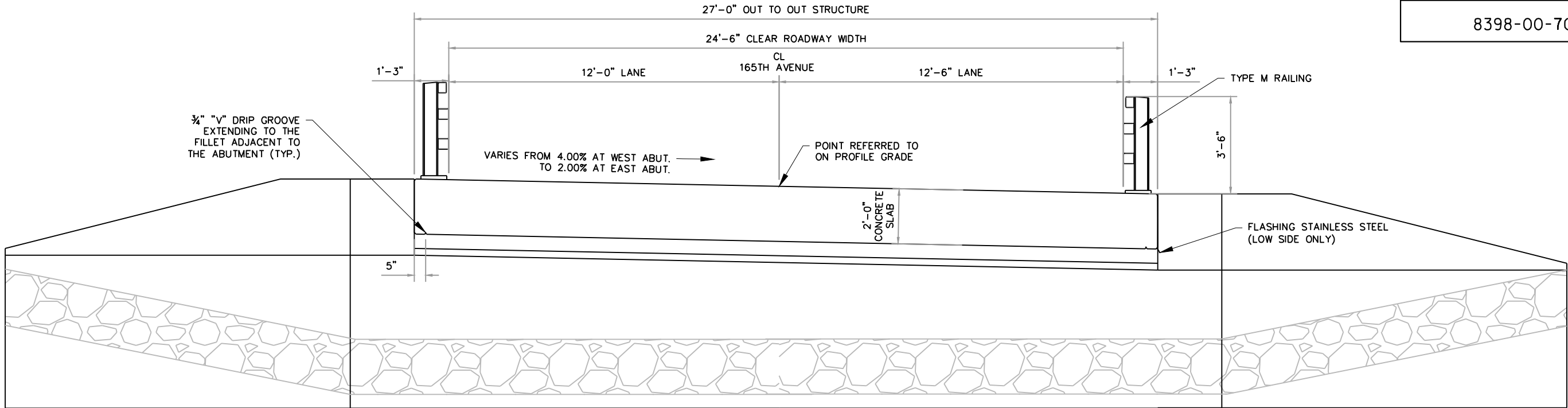
ELEVATION
 NORMAL TO FOX CREEK



LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. WEST ABUTMENT
5. WEST ABUTMENT WING DETAILS
6. EAST ABUTMENT
7. EAST ABUTMENT WING DETAILS
8. SUPERSTRUCTURE
9. TUBULAR STEEL RAILING TYPE "M"

| NO. | DATE | REVISION | BY |
|----------------------------------------------------|------|-------------------|-------------|
| | | | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | | | |
| ACCEPTED | | 11/06/20 | |
| CHIEF STRUCTURES DESIGN ENGINEER | | DATE | |
| STRUCTURE B-48-53 | | | |
| 165TH AVENUE OVER FOX CREEK | | | |
| COUNTY | POLK | TOWN/CITY/VILLAGE | APPLE RIVER |
| DESIGN SPEC. | | | |
| AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS | | | |
| DESIGNED BY | JF | DESIGN CK'D. | SP |
| DRAWN BY | JF | PLANS CK'D. | SP |
| GENERAL PLAN | | SHEET 1 OF 9 | |



PROPOSED CROSS SECTION THRU BRIDGE

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE, UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.

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

THE SLOPE OF FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE TYPE 'HR' TO THE EXTENT SHOWN ON SHEET 1 AND THE ABUTMENT DETAILS.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-48-0053" SHALL BE THE EXISTING GROUNDLINE.

BACKFILL PAY LIMITS. BACKFILL BEYOND PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

AT THE BACKFACE OF THE ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURAL BACKFILL.

EXCAVATION BELOW THE ABUTMENT AND ABUTMENT BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT.

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE TOP SURFACE OF THE SLAB, THE EXTERIOR EDGE OF THE SLAB, AND THE FIRST 1'-0" OF THE UNDERSIDE OF THE SLAB.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE TOP AND EXTERIOR EXPOSED FACE OF THE WINGS, AND THE END 1'-0" OF THE FRONT FACE OF ABUTMENT.

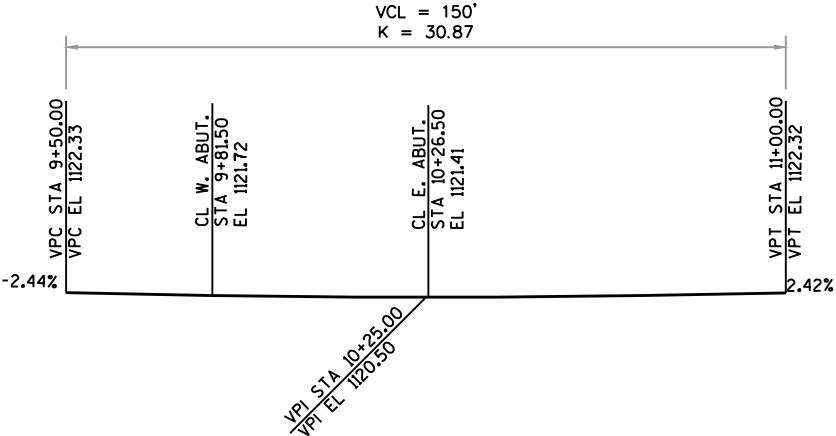
THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW NEW BRIDGE AND CURRENT CONSTRUCTION YEAR.

ALL STATIONS AND ELEVATIONS ARE IN FEET.

ELEVATIONS SHOWN ON THE PLANS ARE REFERENCES TO THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88).

THE COORDINATE SYSTEM FOR THIS PROJECT IS WISCONSIN COUNTY COORDINATE SYSTEM (WCCS) - POLK COUNTY.

| BENCHMARKS | | | |
|------------|----------|---------|----------------------------------------|
| NO. | STATION | ELEV. | DESCRIPTION |
| 1 | 9+95.81 | 1121.40 | 9.1' LT; MAGNAIL ON EXISTING BRIDGE |
| 2 | 10+08.57 | 1115.02 | 69.1' RT; HUB SOUTH OF EXISTING BRIDGE |



PROFILE GRADE LINE

TOTAL ESTIMATED QUANTITIES

| BID ITEM NO. | BID ITEMS | UNIT | W ABUT. | E. ABUT. | SUPER. | TOTAL |
|--------------|----------------------------------------------------------------------|------|---------|----------|--------|--------|
| 203.0600.S | REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (STA 10+00) | LS | - | - | - | 1 |
| 206.1000 | EXCAVATION FOR STRUCTURES BRIDGES (B-48-53) | LS | - | - | - | 1 |
| 210.1500 | BACKFILL STRUCTURE TYPE A | TON | 170 | 160 | - | 330 |
| 502.0100 | CONCRETE MASONRY BRIDGES | CY | 30 | 29 | 99 | 158 |
| 502.3200 | PROTECTIVE SURFACE TREATMENT | SY | 18 | 18 | 173 | 209 |
| 505.0400 | BAR STEEL REINFORCEMENT HS STRUCTURES | LB | 2,220 | 2,150 | - | 4,370 |
| 505.0600 | BAR STEEL REINFORCEMENT HS COATED STRUCTURES | LB | 1,525 | 1,515 | 19,220 | 22,260 |
| 513.4061 | RAILING TUBULAR TYPE M | LF | - | - | 100 | 100 |
| 516.0500 | RUBBERIZED MEMBRANE WATERPROOFING | SY | 5 | 5 | - | 10 |
| 550.2104 | PILING CIP CONCRETE 10.75 X 0.25-INCH | LF | 600 | 760 | - | 1,360 |
| 606.0300 | RIPRAP HEAVY | CY | 65 | 40 | - | 105 |
| 612.0406 | PIPE UNDERDRAIN WRAPPED 6-INCH | LF | 75 | 75 | - | 150 |
| 645.0111 | GEOTEXTILE TYPE DF SCHEDULE A | SY | 30 | 30 | - | 60 |
| 645.0120 | GEOTEXTILE TYPE HR | SY | 95 | 65 | - | 160 |
| SPV.0090.01 | FLASHING STAINLESS STEEL | LF | - | - | 42.5 | 42.5 |
| NON-BID ITEM | 4" X 3/4" PERFORMED JOINT FILLER | LF | 27 | 27 | - | 54 |

| | | | |
|----------------------------------------------------|------|----------------|-------------------|
| | | | |
| NO. | DATE | REVISION | BY |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | | | |
| STRUCTURE B-48-53 | | | |
| | | DRAWN BY JF | PLANS CK'D. SP |
| CROSS SECTION & QUANTITIES | | | SHEET 2 OF 9 |

| BORING # | DATE COMPLETED | NORTHING (Y) | EASTING (X) |
|----------------------------------------------------------|------------------|--------------|-------------|
| 1 | OCTOBER 15, 2019 | 286648.4717 | 536601.8443 |
| 2 | OCTOBER 16, 2019 | 286649.2341 | 536653.6164 |
| BORINGS COMPLETED BY: AMERICAN ENGINEERING TESTING, INC. | | | |
| REPORT COMPLETED BY: AMERICAN ENGINEERING TESTING, INC. | | | |
| ALL COORDINATES REFERENCED TO WCCS NAD 83(2011) POLK CO. | | | |

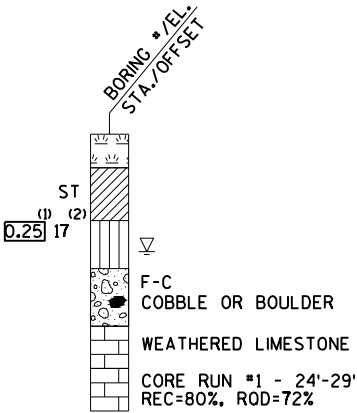
STATE PROJECT NUMBER

8398-00-70

MATERIAL SYMBOLS

| | | |
|---------------------|-----------|-------------------|
| ASPHALT | TOPSOIL | PEAT |
| CONCRETE | FILL | GRAVEL |
| SAND | CLAY | SILT |
| BOULDERS OR COBBLES | LIMESTONE | BEDROCK (UNKNOWN) |
| SHALE | SANDSTONE | IGNEOUS/META |

LEGEND OF BORING



- (1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)
- (2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

- ▽ AT TIME OF DRILLING
- ▽ END OF DRILLING
- ▽ AFTER DRILLING

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, WE DO NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

| NO. | DATE | REVISION | BY |
|-----|------|----------|----|
|-----|------|----------|----|

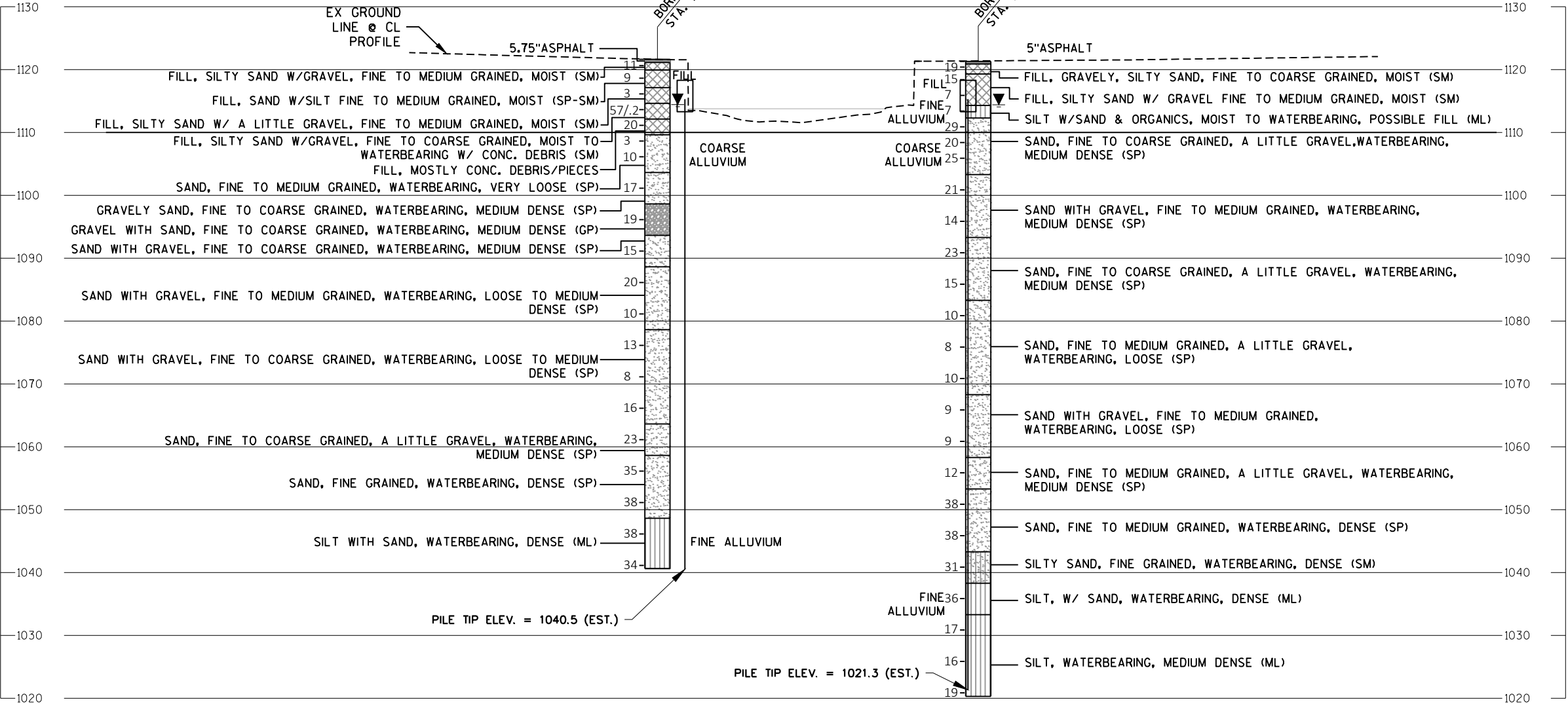
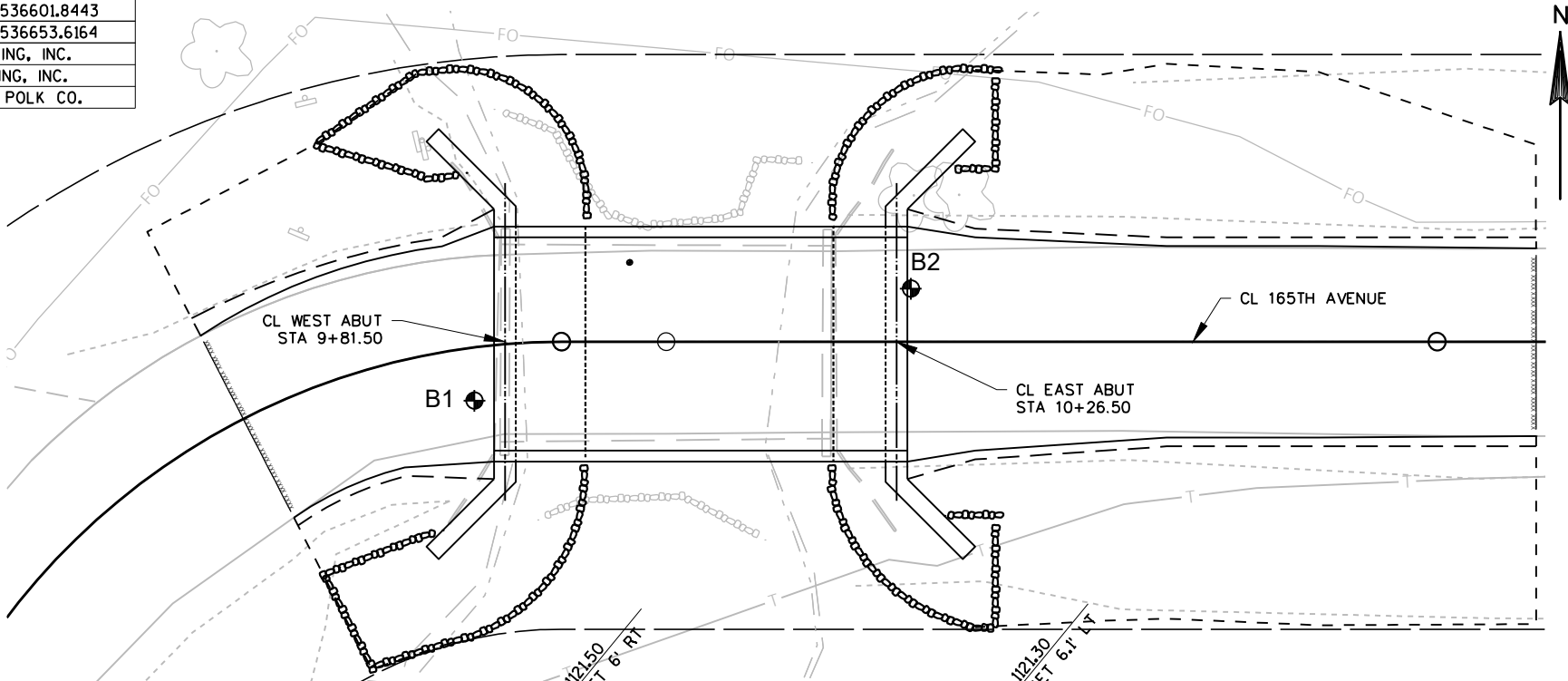
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

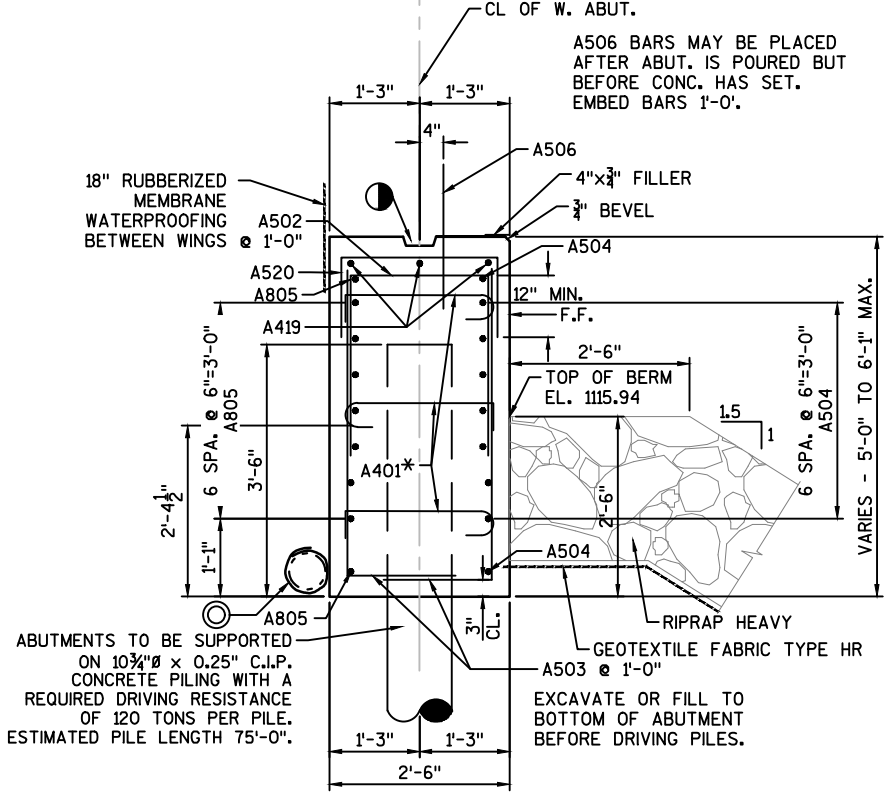
STRUCTURE B-48-53

DRAWN BY JMM PLANS CK'D. JF

SUBSURFACE
EXPLORATION

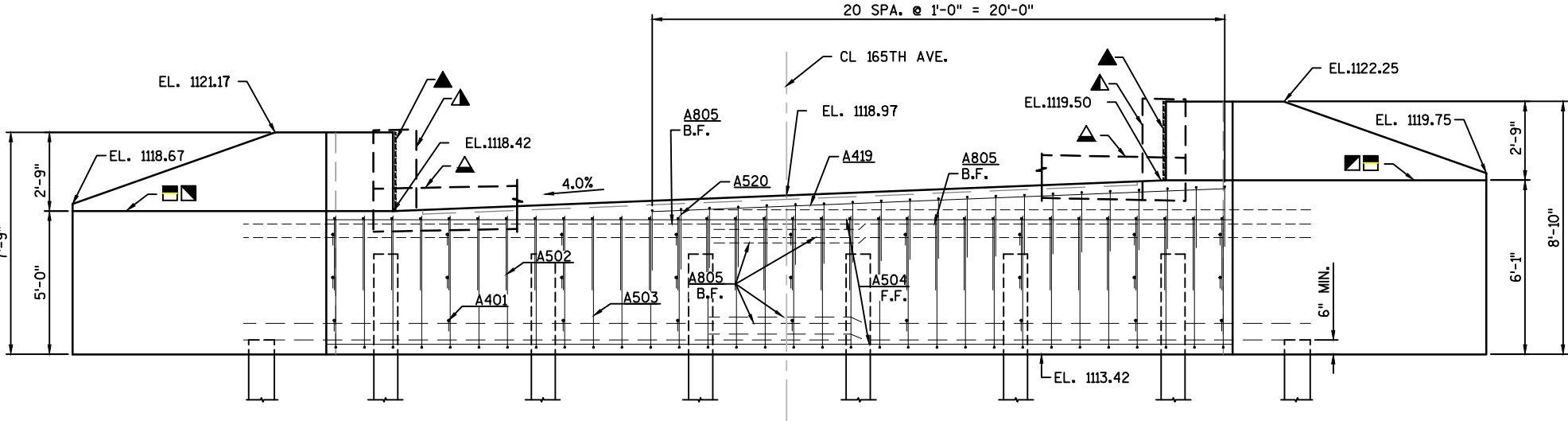
SHEET 3 OF 9



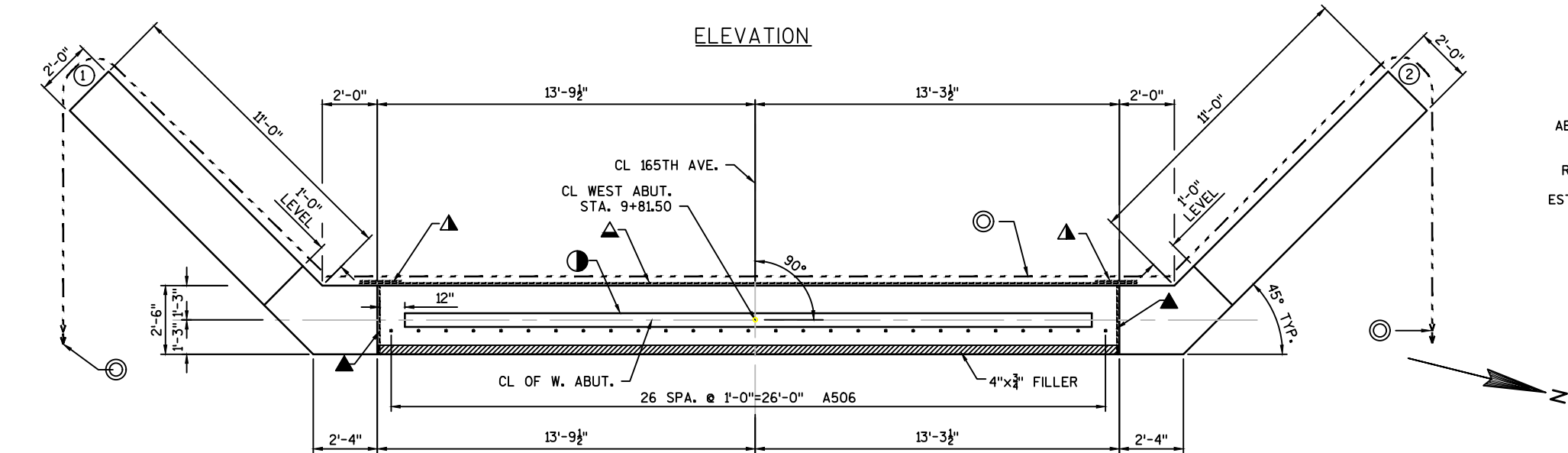


TYP. SECTION THRU ABUTMENT BODY
LEGEND

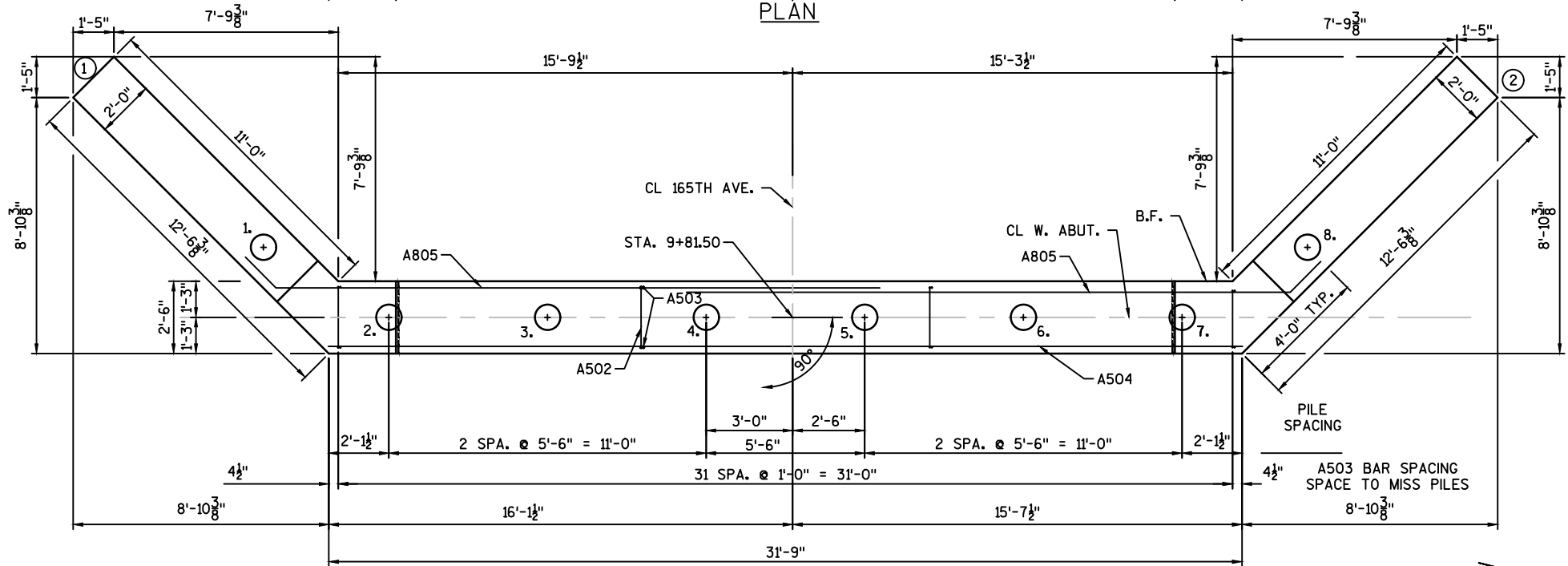
- ① INDICATES WING NUMBER
 - ⊙ PIPE UNDERDRAIN WRAPPED 6-INCH. EXTEND THRU GEOTEXTILE FABRIC AT FACE OF RIPRAP HEAVY. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. PLACE ABOVE NORMAL WATER. PROVIDE RODENT PROTECTION AT ENDS OF PIPE.
 - ▲ 1/2" FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. AND VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.
 - ▲ VERT. 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING (RMW), EXTEND FROM 9" BELOW BRIDGE SEAT TO TOP OF WINGS.
 - ▲ HORIZ. 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING (RMW), EXTEND BETWEEN WINGS.
 - OPTIONAL KEYED CONST. JOINT ON WING FORMED BY BEVELED 2x6. IF JOINT IS USED, POUR CONCRETE ABOVE JOINT AFTER DECK IS IN PLACE AND PLACE 18" RMW ON BACK FACE OF WING. COST OF RMW INCLUDED IN BID ITEM "CONCRETE MASONRY BRIDGES".
 - 3/4" "V" GROOVE ON FRONT FACE OF WING WALL, REQUIRED ONLY WHERE CONSTRUCTION JOINT IS USED.
 - KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2x6.
- F.F. = FRONT FACE B.F. = BACK FACE CL. = CLEAR



ELEVATION



PLAN



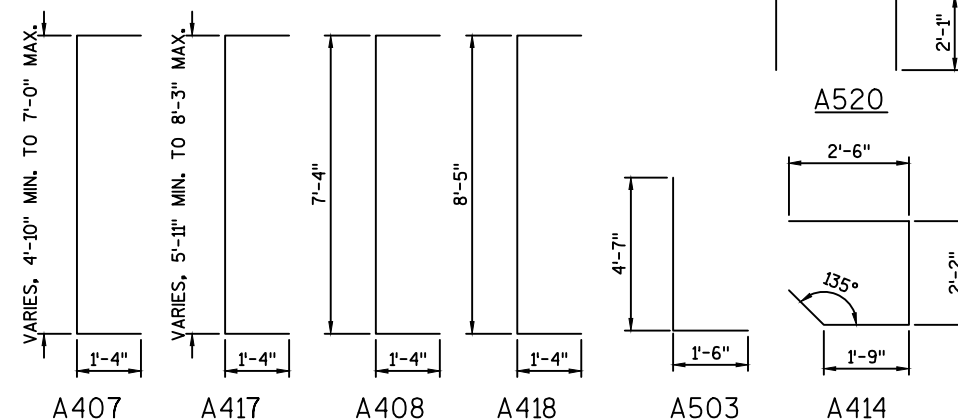
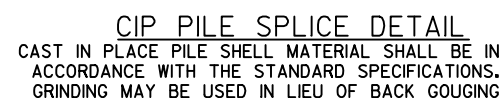
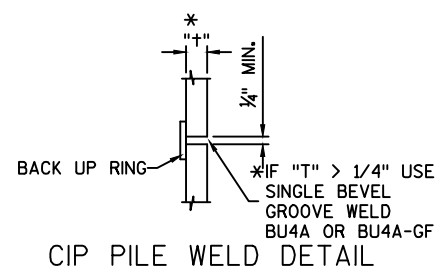
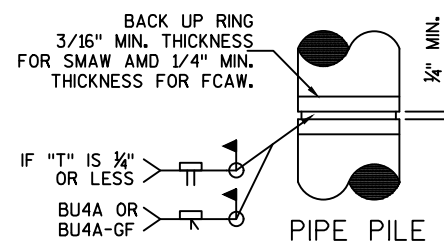
PILE LAYOUT

| | | | |
|----------------------------------------------------|------|-----------------|--------------------|
| | | | |
| NO. | DATE | REVISION | BY |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | | | |
| STRUCTURE B-48-53 | | | |
| | | DRAWN BY JMM | PLANS CK'D. JAF |
| WEST ABUTMENT | | SHEET 4 OF 9 | |
| | | | |



BAR SERIES TABLE

BUNDLE AND TAG EACH SERIES SEPARATELY



DIMENSIONS ARE APPROX.. THE GRATE IS SIZED TO FIT INTO PIPE COUPLING.

RODENT SHIELD NOTES:

ORIENT SHIELD SO SLOTS ARE VERTICAL.

ORIENT SHIELD SO SLOTS ARE VERTICAL.

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO.10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS. THE RODENT SHIELD SHALL BE INCLUDED IN THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

LEGEND

- ① INDICATES WING NUMBER
- KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2X6.
- ◎ PIPE UNDERDRAIN WRAPPED 6-INCH. EXTEND THRU GEOTEXTILE FABRIC AT FACE OF RIPRAP HEAVY. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. PROVIDE RODENT PROTECTION AT ENDS OF PIPE.
- ▲ 1/2" FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. AND VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.
- ▲ VERT. 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING (RMW), EXTEND FROM 9" BELOW BRIDGE SEAT TO TOP OF WINGS.
- ▲ HORIZ. 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING (RMW), EXTEND BETWEEN WINGS.
- OPTIONAL KEYED CONG. JOINT ON WING FORMED BY BEVELED 2x6. IF JOINT IS USED, POUR CONCRETE ABOVE JOINT AFTER DECK IS IN PLACE AND PLACE 18" RMW ON BACK FACE OF WING. COST OF RMW INCLUDED IN BID ITEM "CONCRETE MASONRY BRIDGES".
- 3/4" "V" GROOVE ON FRONT FACE OF WING WALL, REQUIRED ONLY WHERE CONSTRUCTION JOINT IS USED.
- F.F. = FRONT FACE B.F. = BACK FACE CL. = CLEAR

BILL OF BARS

| BAR MARK | COAT | NO. REQ'D | LENGTH | BENT | BAR SERIES | LOCATION |
|-------------|------|--------------|---------|------|---------------|------------------------------|
| A401 | | 27 | 3'-0" | X | | ABUT. BODY TIE BARS |
| A502 | | 32 | 6'-11" | X | | ABUT. BODY HORIZ. TOP |
| A503 | | 64 | 6'-1" | X | | ABUT. BODY VERT. |
| A504 | | 9 | 31'-0" | | | ABUT. BODY HORIZ. F.F. |
| A805 | | 18 | 22'-2" | X | | ABUT. BODY HORIZ. B.F. |
| A506 | X | 27 | 2'-0" | | | ABUT. BODY - TOP DOWEL VERT. |
| A407 | X | 20 | 8'-5" | X | X | WING 1 VERT. E.F. |
| A408 | X | 4 | 9'-10" | X | | WING 1 VERT. E.F. |
| A509 | X | 18 | 13'-8" | X | | WINGS 1 & 2 HORIZ. F.F. |
| A810 | X | 18 | 15'-2" | X | | WINGS 1 & 2 HORIZ. B.F. |
| A411 | X | 4 | 9'-0" | | | WINGS 1 & 2 HORIZ. E.F. |
| A412 | X | 4 | 6'-0" | | | WINGS 1 & 2 HORIZ. E.F. |
| A413 | X | 4 | 12'-8" | X | | WINGS 1 & 2 DIAGONAL E.F. |
| A414 | X | 8 | 8'-5" | X | | WINGS 1 & 2 HORIZ. |
| A415 | X | 14 | 3'-8" | | | WINGS 1 & 2 VERT. |
| A416 | X | 4 | 12'-1" | | | WINGS 1 & 2 HORIZ. E.F. |
| A417 | X | 20 | 9'-7" | X | X | WING 2 VERT. E.F. |
| A418 | X | 4 | 10'-11" | X | | WING 2 VERT. E.F. |
| A419 | | 3 | 20'-0" | X | | ABUT. BODY HORIZ. |
| A520 | | 21 | 6'-1" | X | | ABUT. BODY VERT. |

NOTES:

- NOTES:
1. BAR TABLE APPLIES TO WEST ABUTMENT ONLY.
 2. THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE. BAR DIMENSIONS ARE OUT TO OUT OF BAR.
- I** LENGTH SHOWN IS AN AVERAGE LENGTH TO BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

| | | | |
|----------------------------------------------------|------|--------------------|----|
| | | | |
| NO. | DATE | REVISION | BY |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | | | |
| STRUCTURE B-48-53 | | | |
| DRAWN BY JMM | | PLANS CK'D. JAF | |
| WEST ABUTMENT WING DETAILS | | SHEET 5 OF 9 | |

The elevation view shows a bridge structure with the following details:

- Dimensions:**
 - Overall height: 8'-3 1/2"
 - Deck thickness: 5'-6 1/2"
 - Clearance above deck: 2'-9"
 - Span length: 12 SPA. @ 1'-0" = 12'-0"
 - Minimum clearance below deck: 6" MIN.
- Elevations:**
 - EL. 1121.68 (Top left)
 - EL. 1119.18 (Deck top left)
 - EL. 1118.93 (Deck top center)
 - EL. 1118.66 (Deck top center)
 - EL. 1118.39 (Deck top right)
 - EL. 1121.14 (Top right)
 - EL. 1118.64 (Deck top right)
 - EL. 1113.39 (Bottom center)
- Structural Components:**
 - B401, B502, B503, B504 (Vertical reinforcement bars)
 - B419, B520 (Horizontal reinforcement bars)
 - B805 B.F. (Bottom Flange reinforcement)
- Other Features:**
 - CL 165TH AVE. (Centerline)
 - 2.0% (Slope percentage)
 - 6" MIN. (Minimum clearance)

ELEVATION

[illegible]

PLAN

CL 165TH AVE.

CL E. ABUT.

B.F.

PILE SPACING

B503 BAR SPACING
4 1/2" SPACE TO MISS PILES

PILE LAYOUT

* (3) B401 TIE BARS AT 4'-0" HORIZ. SPA.
ALTERNATE THE POSITION OF THE 90° AND
180° HOOKS AT EACH VERTICAL LAYER OF TIES.

CL. OF E. ABUT.

B506 BARS MAY BE PLACED AFTER ABUT. IS POURED BEFORE CONC. HAS SET. EMBED BARS 1'-0".

18" RUBBERIZED MEMBRANE WATERPROOFING BETWEEN WINGS

B502 @ 1'-0"

B520

B805

B419

B401*

B504

12" MIN.

F.F.

2'-6"

TOP OF BERM EL. 1115.88

1.5

1

6 SPA. @ 6"-3'-0"

B504

2'-6"

3"-6"

1'-1"

2'-4 1/2"

6 SPA. @ 6"-3'-0"

B805

B805

3"

CL

ABUTMENTS TO BE SUPPORTED ON 10 3/4"Ø x 0.25" C.I.P. CONCRETE PILING WITH A REQUIRED DRIVING RESISTANCE OF 120 TONS PER PILE. ESTIMATED PILE LENGTH 95'-0".

B503 @ 1'-0"

EXCAVATE OR FILL TO BOTTOM OF ABUTMENT BEFORE DRIVING PILES.

RIPRAP HEAVY

GEOTEXTILE FABRIC TYPE HR

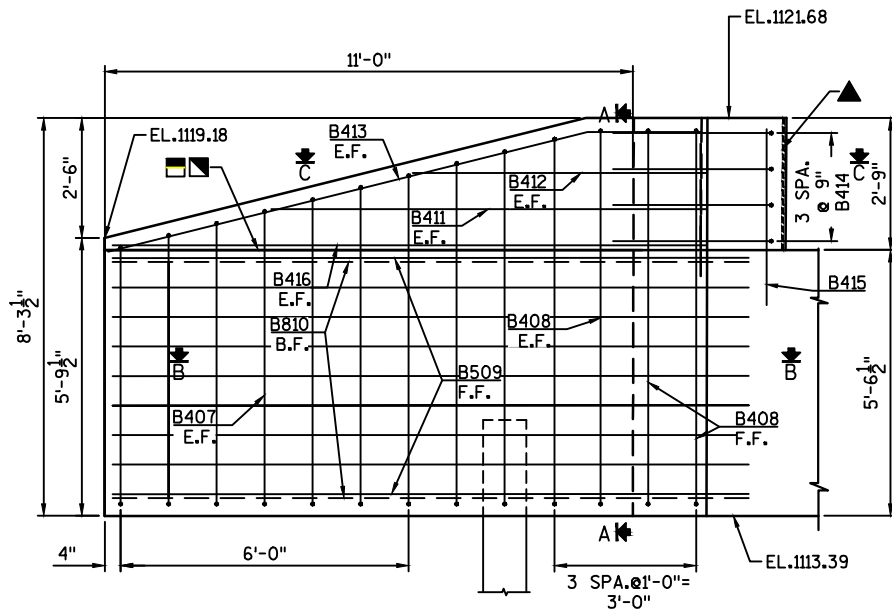
VAPES - 5'-0" TO 5'-6" MAY

TYP. SECTION THRU ABUTMENT BODY

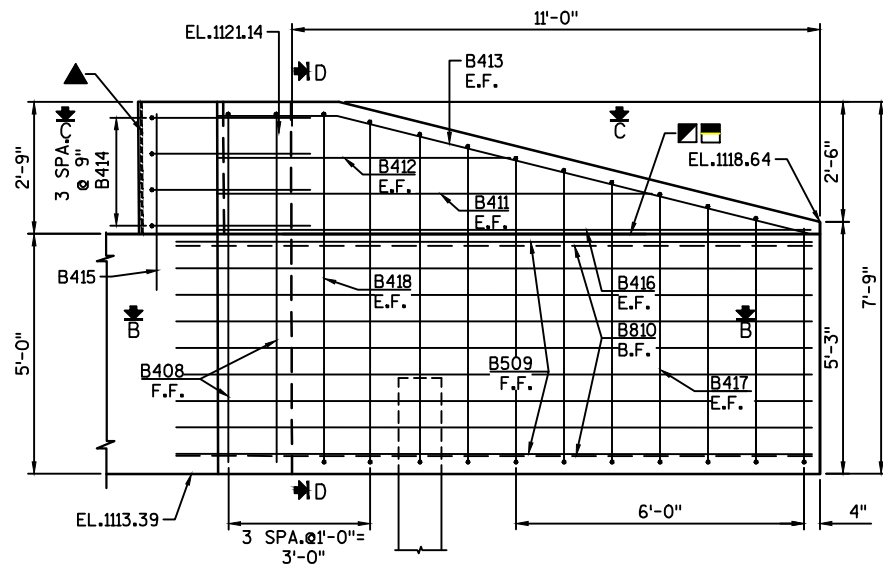
LEGEND

- ① INDICATES WING NUMBER
- ◎ PIPE UNDERDRAIN WRAPPED 6-INCH. EXTEND THRU GEOTEXTILE FABRIC AT FACE OF RIPRAP HEAVY. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. PLACE ABOVE NORMAL WATER. PROVIDE RODENT PROTECTION AT ENDS OF PIPE.
- ▲ 1/2" FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. AND VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.
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- ▣ OPTIONAL KEYED CONST. JOINT ON WING FORMED BY BEVELED 2x6. IF JOINT IS USED, POUR CONCRETE ABOVE JOINT AFTER DECK IS IN PLACE AND PLACE 18" RMW ON BACK FACE OF WING. COST OF RMW INCLUDED IN BID ITEM "CONCRETE MASONRY BRIDGES".
- ▣ 3/4" "V" GROOVE ON FRONT FACE OF WING WALL, REQUIRED ONLY WHERE CONSTRUCTION JOINT IS USED.
- KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2x6.
- F.F. = FRONT FACE B.F. = BACK FACE CL. = CLEAR

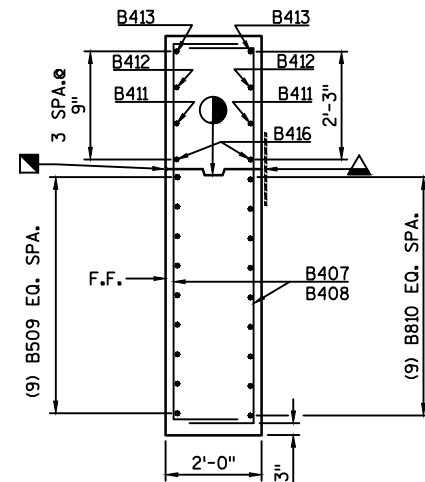
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| NO. | DATE | REVISION | BY |
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| STRUCTURE B-48-53 | | | |
| DRAWN BY JMM | | PLANS CK'D. JAF | |
| EAST ABUTMENT | | SHEET 6 OF 9 | |



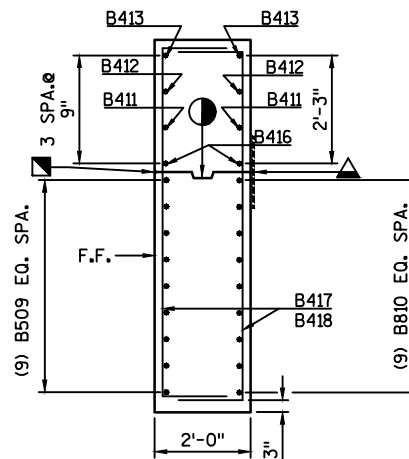
ELEVATION WING 3



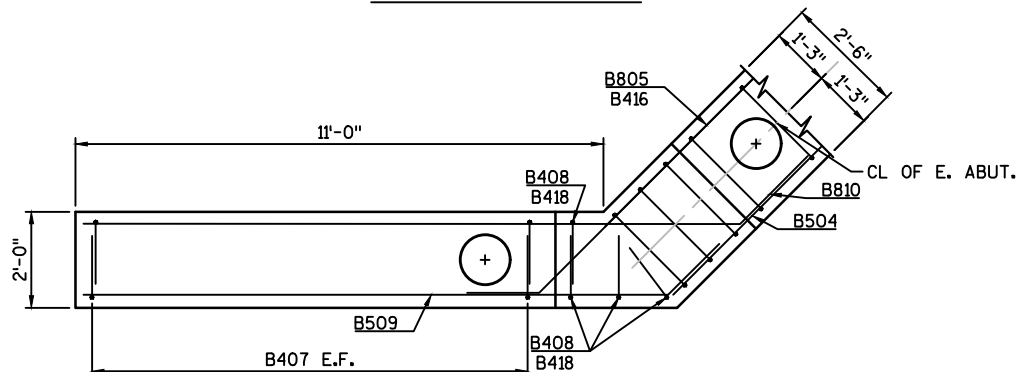
ELEVATION WING 4



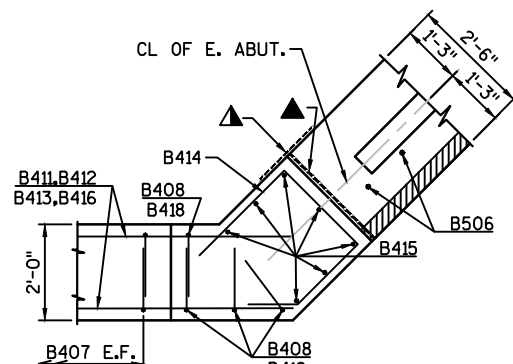
SECTION A



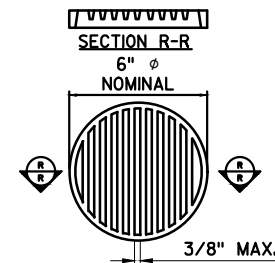
SECTION D



SECTION B



SECTION C



RODENT SHIELD

DIMENSIONS ARE APPROX.. THE GRATE IS SIZED TO FIT INTO PIPE COUPLING.

RODENT SHIELD NOTES:

ORIENT SHIELD SO SLOTS ARE VERTICAL.

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO.10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS. THE RODENT SHIELD SHALL BE INCLUDED IN THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

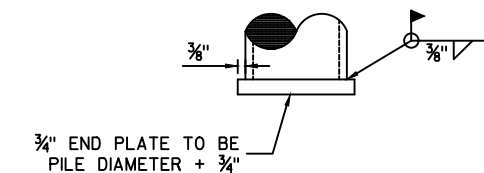
BILL OF BARS

| BAR MARK | COAT | NO. REQ'D | LENGTH | BENT | BAR SERIES | LOCATION |
|----------|------|-----------|--------|------|------------|------------------------------|
| B401 | | 27 | 3'-0" | X | | ABUT. BODY TIE BARS |
| B502 | | 32 | 6'-11" | X | | ABUT. BODY HORIZ. TOP |
| B503 | | 64 | 6'-1" | X | | ABUT. BODY VERT. |
| B504 | | 9 | 31'-0" | | | ABUT. BODY HORIZ. F.F. |
| B805 | | 18 | 22'-2" | X | | ABUT. BODY HORIZ. B.F. |
| B506 | X | 27 | 2'-0" | | | ABUT. BODY - TOP DOWEL VERT. |
| B407 | X | 20 | 9'-0" | X | X | WING 3 VERT. E.F. |
| B408 | X | 4 | 10'-4" | X | | WING 3 VERT. E.F. |
| B509 | X | 18 | 13'-8" | X | | WINGS 3 & 4 HORIZ. F.F. |
| B810 | X | 18 | 15'-2" | X | | WINGS 3 & 4 HORIZ. B.F. |
| B411 | X | 4 | 9'-0" | | | WINGS 3 & 4 HORIZ. E.F. |
| B412 | X | 4 | 6'-0" | | | WINGS 3 & 4 HORIZ. E.F. |
| B413 | X | 4 | 12'-8" | X | | WINGS 3 & 4 DIAGONAL E.F. |
| B414 | X | 8 | 8'-5" | X | | WINGS 3 & 4 HORIZ. |
| B415 | X | 14 | 3'-8" | | | WINGS 3 & 4 VERT. |
| B416 | X | 4 | 12'-1" | | | WINGS 3 & 4 HORIZ. E.F. |
| B417 | X | 20 | 8'-5" | X | X | WING 4 VERT. E.F. |
| B418 | X | 4 | 9'-10" | X | | WING 4 VERT. E.F. |
| B419 | | 3 | 12'-0" | X | | ABUT. BODY HORIZ. |
| B520 | | 13 | 6'-1" | X | | ABUT. BODY VERT. |

NOTES:

1. BAR TABLE APPLIES TO EAST ABUTMENT ONLY.
2. THE FIRST OR FIRST TWO DIGITS OF A BAR MARK SIGNIFIES THE BAR SIZE. BAR DIMENSIONS ARE OUT TO OUT OF BAR.

LENGTH SHOWN IS AN AVERAGE LENGTH TO BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.



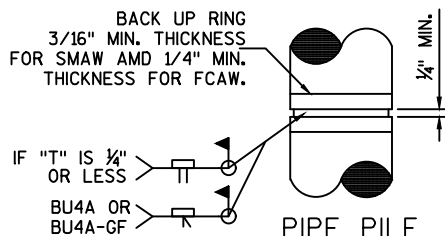
END PLATE DETAIL FOR CIP PILING

BAR SERIES TABLE

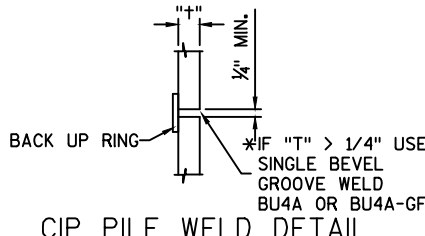
| MARK | NO. REQ'D | LENGTH |
|------|----------------|------------------|
| B407 | 2 SERIES OF 10 | 7'-10" TO 10'-1" |
| B417 | 2 SERIES OF 10 | 7'-4" TO 9'-6" |

BUNDLE AND TAG EACH SERIES SEPARATELY

| MARK | A | B |
|------|--------|-----|
| B805 | 1'-6" | 45° |
| B509 | 12'-2" | 45° |
| B810 | 13'-8" | 45° |
| B413 | 10'-2" | 11° |

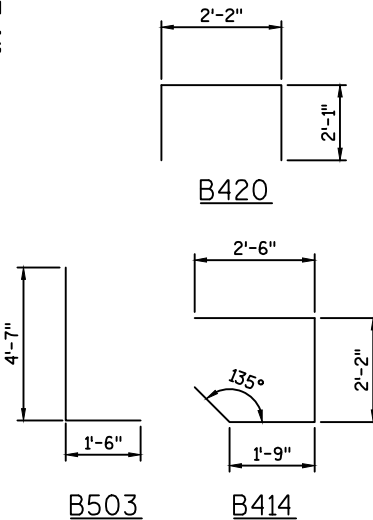
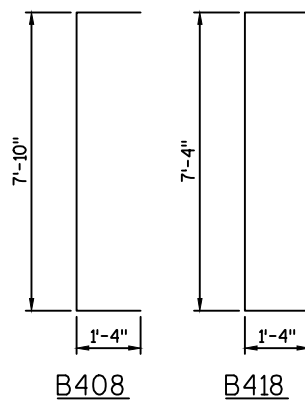
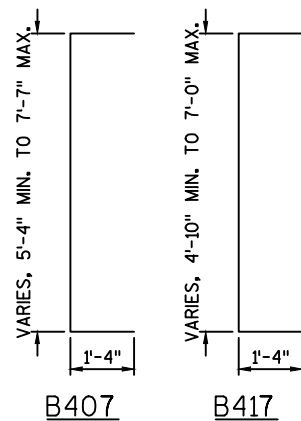


PIPE PILE



CIP PILE WELD DETAIL

CIP PILE SPLICE DETAIL
CAST IN PLACE PILE SHELL MATERIAL SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. GRINDING MAY BE USED IN LIEU OF BACK GOUGING

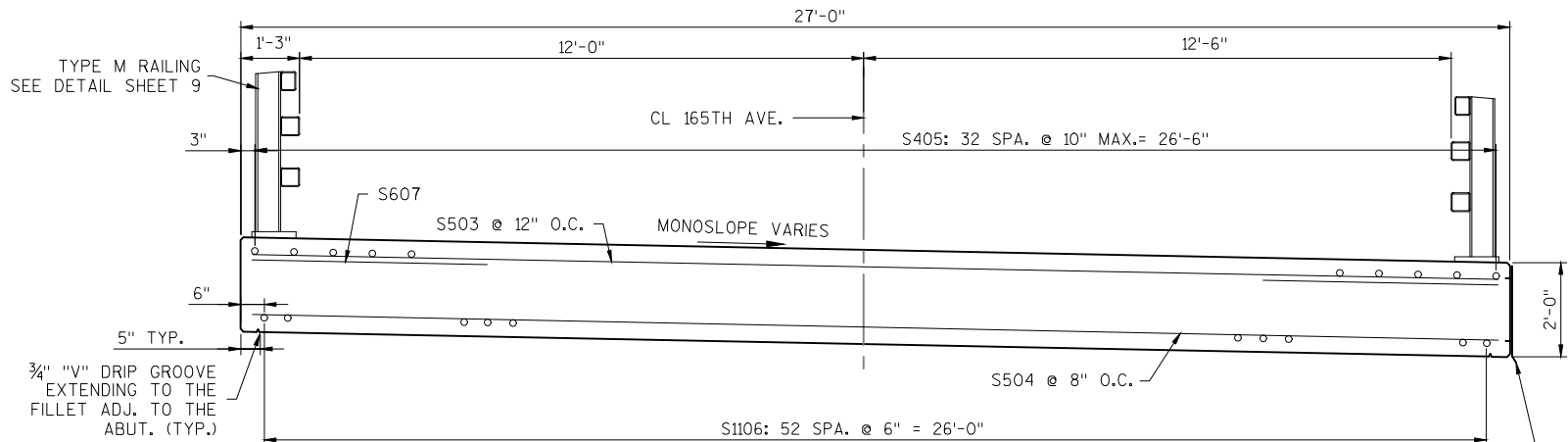


LEGEND

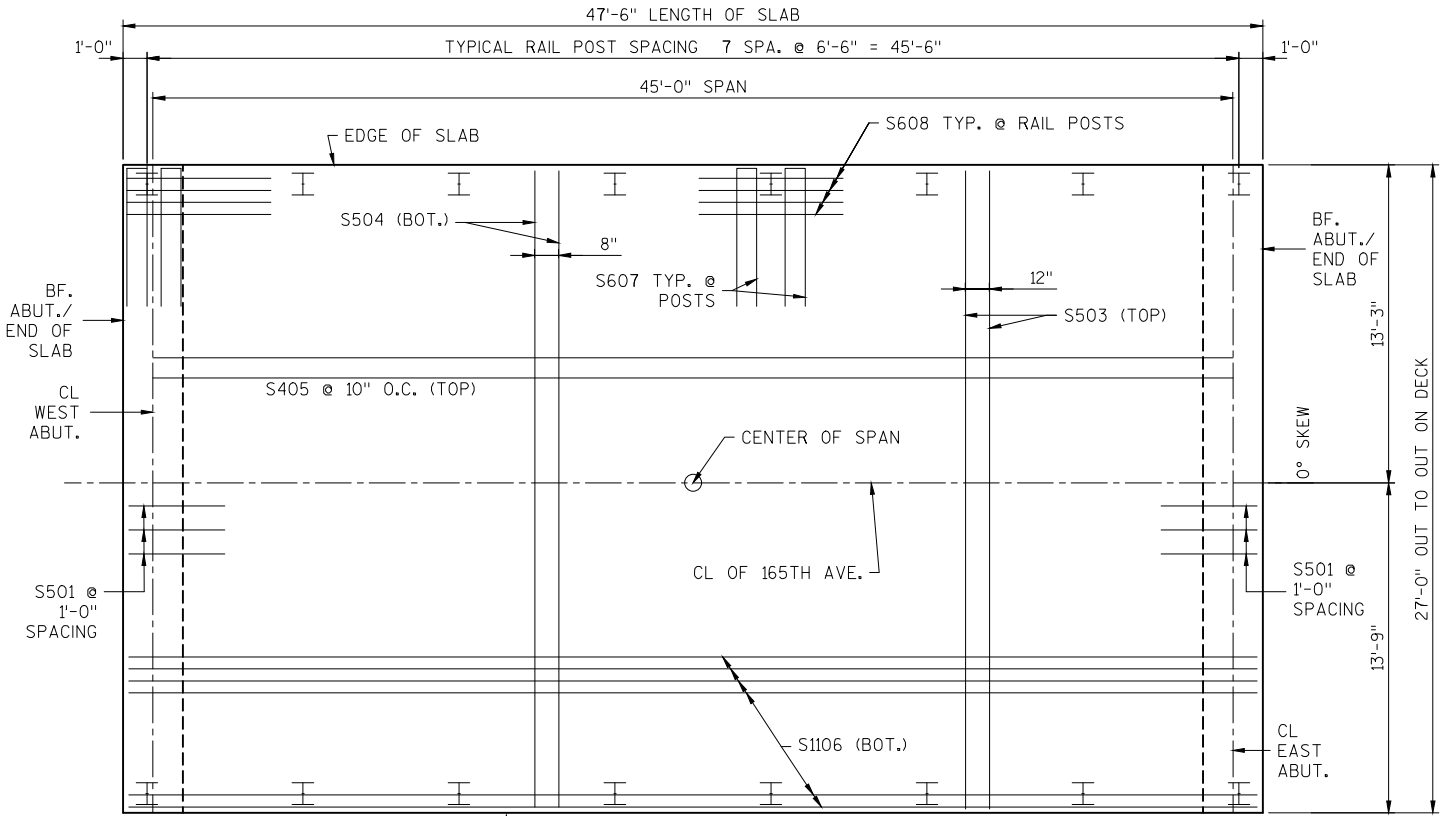
- ① INDICATES WING NUMBER
- KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2X6.
- ◎ PIPE UNDERDRAIN WRAPPED 6-INCH. EXTEND THRU GEOTEXTILE FABRIC AT FACE OF RIPRAP HEAVY. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. PROVIDE RODENT PROTECTION AT ENDS OF PIPE.
- ▲ 1/2" FILLER EXTEND AS SHOWN. SEAL ALL EXPOSED HORIZ. AND VERT. SURFACES OF FILLER WITH NON-STAINING GRAY, NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.
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- ▲ HORIZ. 18" WIDE RUBBERIZED MEMBRANE WATERPROOFING (RMW), EXTEND BETWEEN WINGS.
- OPTIONAL KEYED CONST. JOINT ON WING FORMED BY BEVELED 2X6. IF JOINT IS USED, POUR CONCRETE ABOVE JOINT AFTER DECK IS IN PLACE AND PLACE 18" RMW ON BACK FACE OF WING. COST OF RMW INCLUDED IN BID ITEM "CONCRETE MASONRY BRIDGES".
- 3/4" "V" GROOVE ON FRONT FACE OF WING WALL, REQUIRED ONLY WHERE CONSTRUCTION JOINT IS USED.

F.F. = FRONT FACE B.F. = BACK FACE CL. = CLEAR

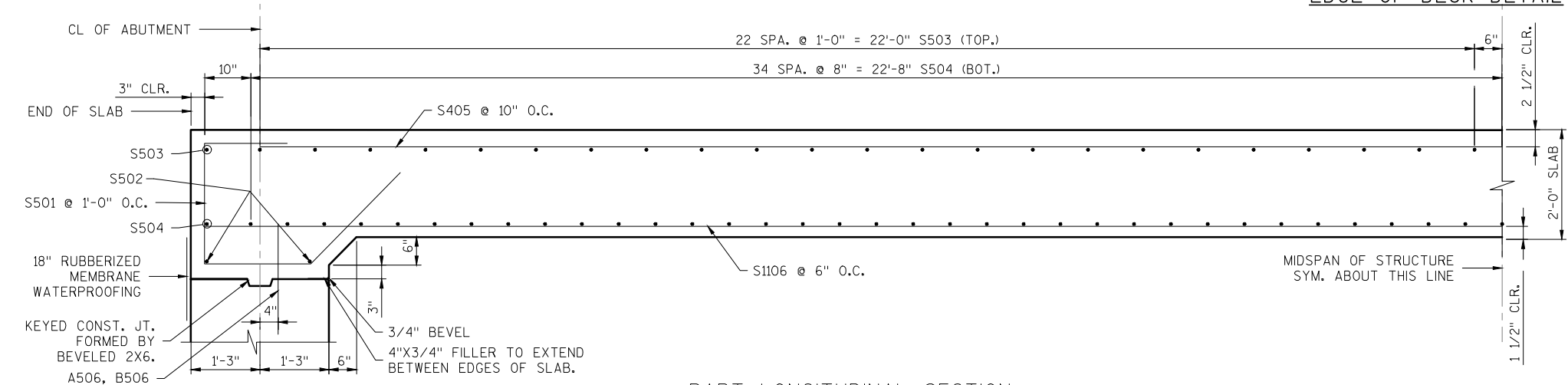
| NO. | DATE | REVISION | BY |
|----------------------------------------------------|------|-----------------|--------------|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | | | |
| STRUCTURE B-48-53 | | | |
| DRAWN BY JMM | | PLANS CK'D. JAF | |
| EAST ABUTMENT WING DETAILS | | | SHEET 7 OF 9 |



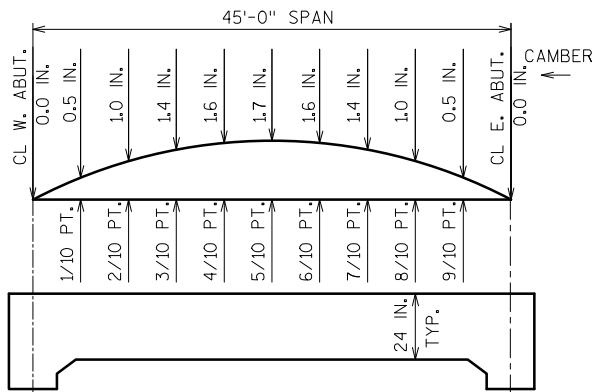
CROSS SECTION THRU BRIDGE
LOOKING EAST



PLAN



PART LONGITUDINAL SECTION



CAMBER AND SLAB THICKNESS DIAGRAM

CAMBER SHOWN IS BASED ON 3 TIMES DEAD LOAD DEFLECTIONS. CAMBER SPANS AS SHOWN TO PROVIDE FOR DEAD LOAD DEFLECTION AND FUTURE CREEP. CAMBER DOES NOT INCLUDE ALLOWANCE FOR FORM SETTLEMENT. PARAPETS, SIDEWALKS AND MEDIANS PLACED ON TOP OF THE SLAB SHALL BE POURED AFTER FALSEWORK HAS BEEN RELEASED.

TOP OF DECK ELEVATIONS

| | CL BRG. W. ABUT. | 1/10 | 2/10 | 3/10 | 4/10 | 5/10 | 6/10 | 7/10 | 8/10 | 9/10 | CL BRG. E. ABUT. |
|-----------------|---------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------------------|
| N. EDGE OF DECK | 1122.25 | 1122.17 | 1122.08 | 1122.01 | 1121.94 | 1121.88 | 1121.83 | 1121.78 | 1121.74 | 1121.70 | 1121.68 |
| CL | 1121.72 | 1121.66 | 1121.61 | 1121.56 | 1121.52 | 1121.48 | 1121.46 | 1121.44 | 1121.42 | 1121.41 | 1121.41 |
| S. EDGE OF DECK | 1121.17 | 1121.14 | 1121.11 | 1121.09 | 1121.08 | 1121.07 | 1121.07 | 1121.08 | 1121.09 | 1121.11 | 1121.14 |
| MONOSLOPE | -4.0% | -3.8% | -3.6% | -3.4% | -3.2% | -3.0% | -2.8% | -2.6% | -2.4% | -2.2% | -2.0% |

TO DETERMINE FALSEWORK ELEVATION AT EDGE OF SLAB, CROWN OR REFERENCE LINE FOLLOW THIS PROCEDURE:

TOP OF SLAB ELEVATION AT FINAL GRADE
LESS SLAB THICKNESS
PLUS CAMBER
PLUS FORM SETTLEMENT/DEFLECTION DUE TO PLACEMENT OF SLAB CONC. (TO BE COMPUTED BY THE CONTRACTOR)
EQUALS TOP OF SLAB FALSEWORK ELEVATION.

RAILING NOT SHOWN FOR CLARITY

CAULK ENTIRE
LENGTH WITH
SILICON CAULK

3/16" X 1 3/4" (MIN.) CONCRETE
SCREWS SPACED AT 1'-0"
EACH ROW. STAGGER ROWS.

3/4" "V" DRIP GROOVE
EXTENDING TO THE
FILLET ADJ. TO THE
ABUT. (TYP.)

FLASHING
STAINLESS STEEL
(LOW SIDE ONLY)

EDGE OF DECK DETAIL

NOTES

- THE BID ITEM "FLASHING STAINLESS STEEL" SHALL INCLUDE PROVIDING AND INSTALLING THE STAINLESS STEEL FLASHING, SILICONE CAULK, AND 3/16" CONCRETE SCREWS.
- FLASHING TO BE INSTALLED AFTER PROTECTIVE SURFACE TREATMENT APPLICATION.
- CONCRETE SCREWS SHALL BE 410 STAINLESS STEEL.
- EXTEND FLASHING TO F.F. ABUTMENT.
- TOP OF FLASHING TO BEGIN APPROX. 1-INCH BELOW TOP OF DECK/SLAB SURFACE.
- THE FLASHING IS TO BE CONSTANT HEIGHT BASED ON THE THINNEST SLAB DEPTH OVER THE BRIDGE LENGTH.

BILL OF BARS

| BAR MARK | COAT | NO. REQ'D | LENGTH | BENT | LOCATION |
|-------------|------|--------------|--------|------|-------------------------------|
| S501 | X | 56 | 7'-7" | X | DIAPHRAGM @ ABUTS. - LONGIT. |
| S502 | X | 4 | 26'-6" | | DIAPHRAGM @ ABUTS. - TRANS. |
| S503 | X | 48 | 26'-6" | | SLAB, TOP, TRANSVERSE |
| S504 | X | 71 | 26'-6" | | SLAB, BOTTOM, TRANSVERSE |
| S405 | X | 33 | 45'-0" | | SLAB, TOP, LONGIT. |
| S1106 | X | 53 | 47'-0" | | SLAB, BOTTOM, LONGIT. |
| S607 | X | 32 | 12'-0" | X | SLAB, TRANS., 2 PER RAIL POST |
| S608 | X | 64 | 6'-0" | | SLAB, LONG., 4 PER RAIL POST |

- NOTES:
- THE FIRST OR FIRST TWO DIGITS THE OF A BAR MARK SIGNIFIES BAR SIZE.
 - DIMENSIONS IN BENDING DETAILS ARE OUT TO OUT OF BAR.
 - EPOXY COAT ALL SUPERSTRUCTURE BAR STEEL REINFORCEMENT.

| NO. | DATE | REVISION | BY |
|----------------------------------------------------|------|--------------------|----|
| | | | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | | | |
| STRUCTURE B-48-53 | | | |
| DRAWN BY JMM | | PLANS CK'D. JAF | |
| SUPERSTRUCTURE | | SHEET 8 OF 9 | |

LEGEND

- ①

W6 x 25 WITH 1/8" X 1 1/2" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- ②

PLATE 1/4" x 11 3/4" x 1'-8" WITH 1 5/16" X 1 5/8" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.
- ③

ASTM A449 - 1/8" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED), 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-9" LONG IN ABUTMENT WINGS. AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-3" LONG. USE 10 3/4" LONG AT ALL OTHER LOCATIONS. (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTIBILITY.)
- ④

5/8" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1 3/16" DIA. HOLES FOR ANCHOR BOLTS NO. 3
- ⑤

TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- 5A

TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- ⑥

7/8" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/16" X 1 5/8" X 1 5/8" WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)
- ⑦

NOT USED SINCE NO THRIE BEAM RAIL ATTACHMENT AT THIS STRUCTURE
- ⑧

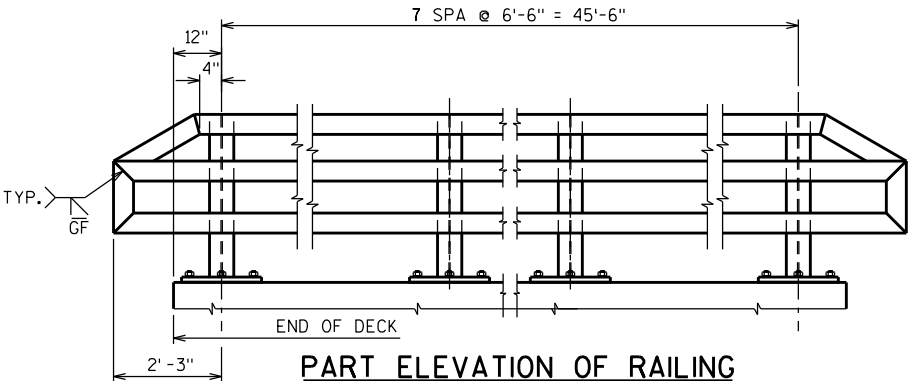
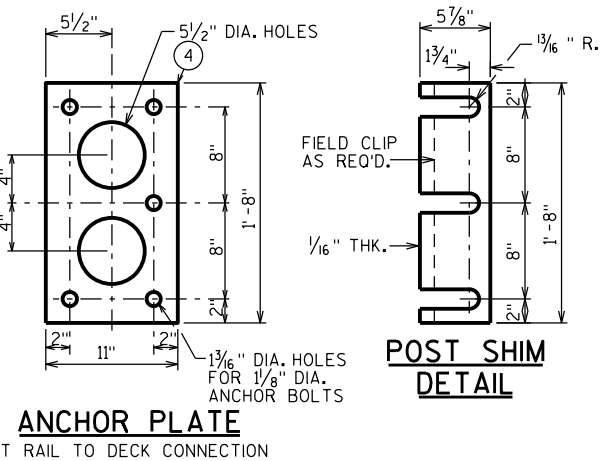
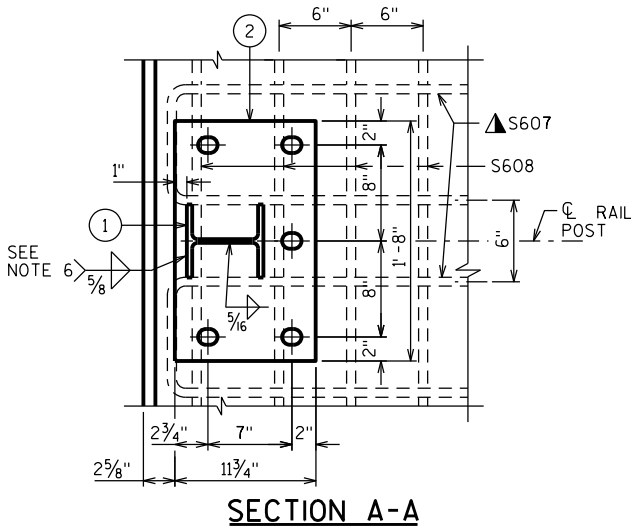
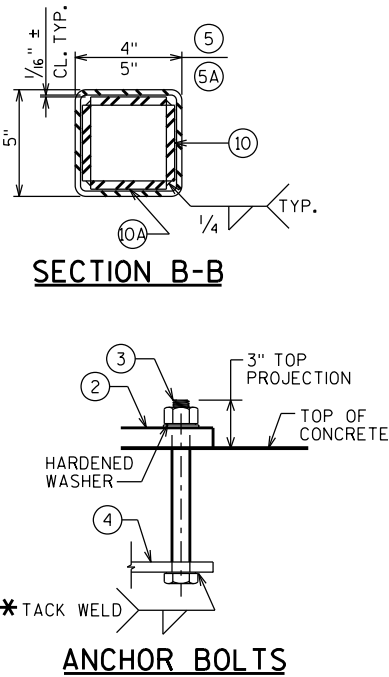
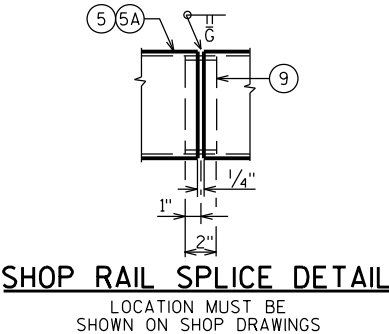
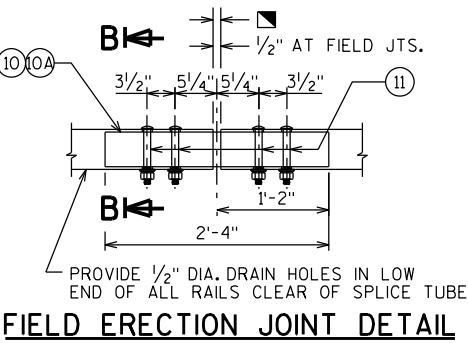
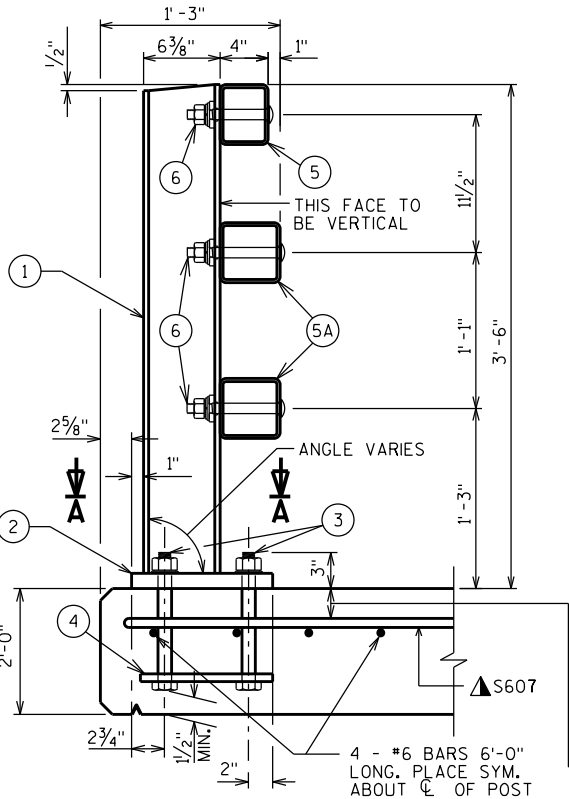
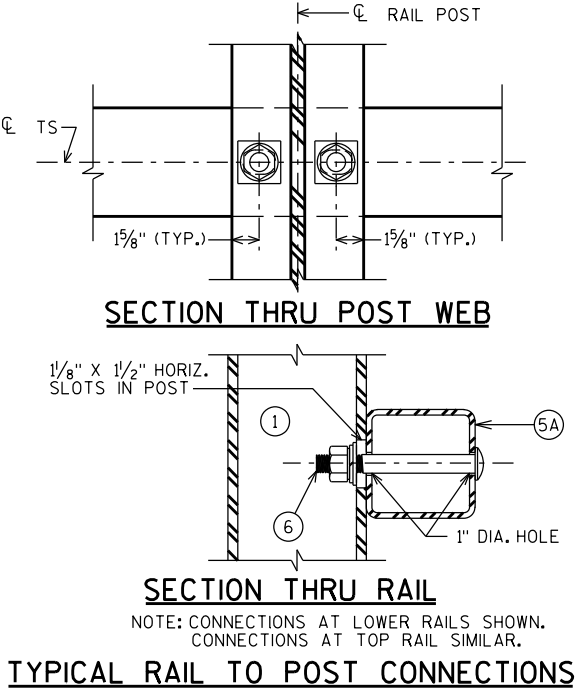
INOT USED SINCE NO THRIE BEAM RAIL ATTACHMENT AT THIS STRUCTURE
- ⑨

SPLICE SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE "SLIDING FIT".
- ⑩

3/8" x 3 5/8" x 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.
- 10A

3/8" x 2 5/8" x 2'-4" PLATE USED IN NO. 5, 3/8" x 3 5/8" x 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.
- ⑪

7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 1 5/8" X 1 1/4" LONGIT. SLOTTED HOLES AT FIELD JOINTS AND 1 5/16" X 2 1/4" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A.



GENERAL NOTES

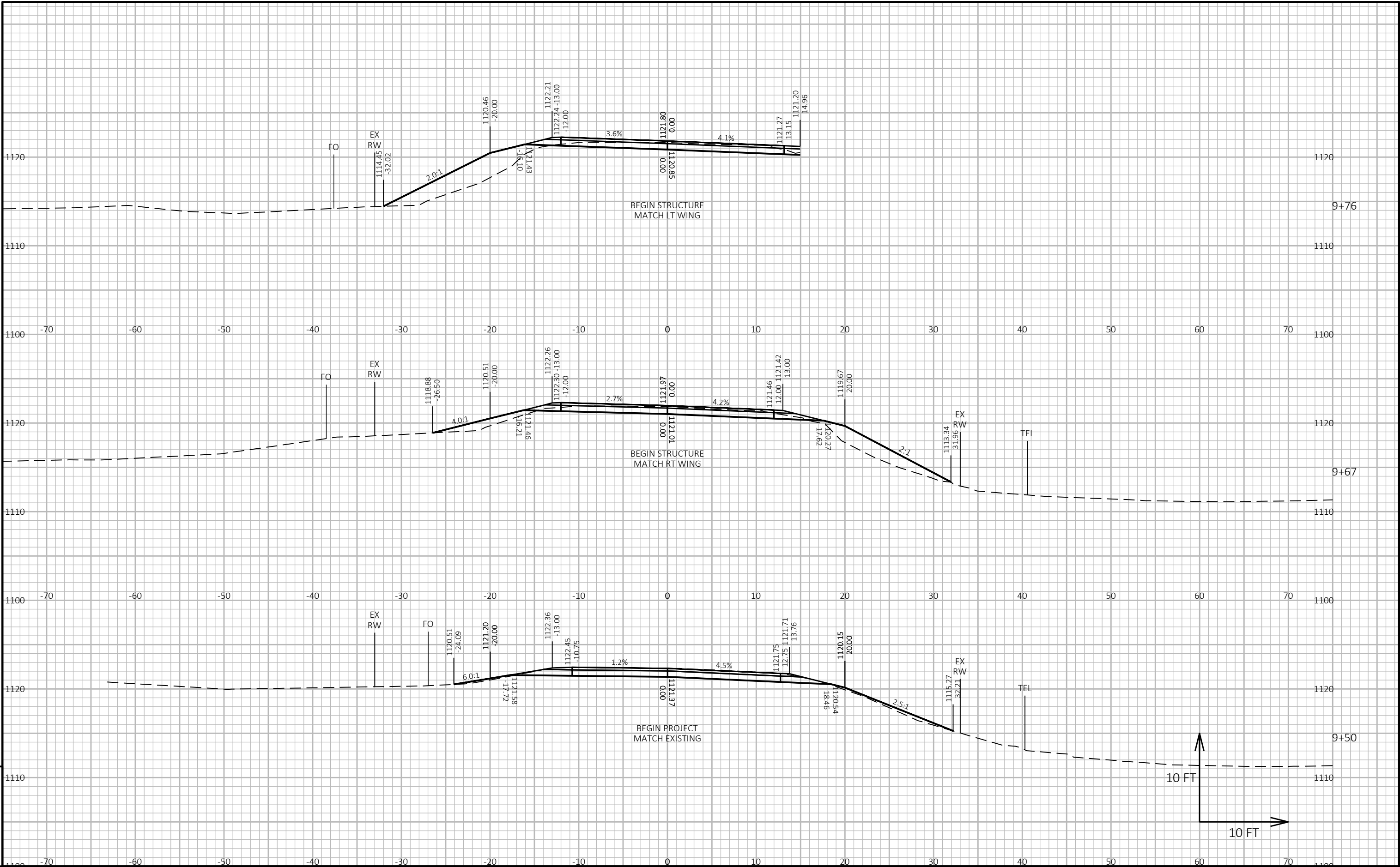
1. BID ITEM SHALL BE "RAILING TUBULAR TYPE M" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
3. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE. RAILS SHALL BE SPLICED IN A PANEL OVER EXPANSION JOINTS.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
7. FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
8. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
9. ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY SSPC SPECIFICATIONS.

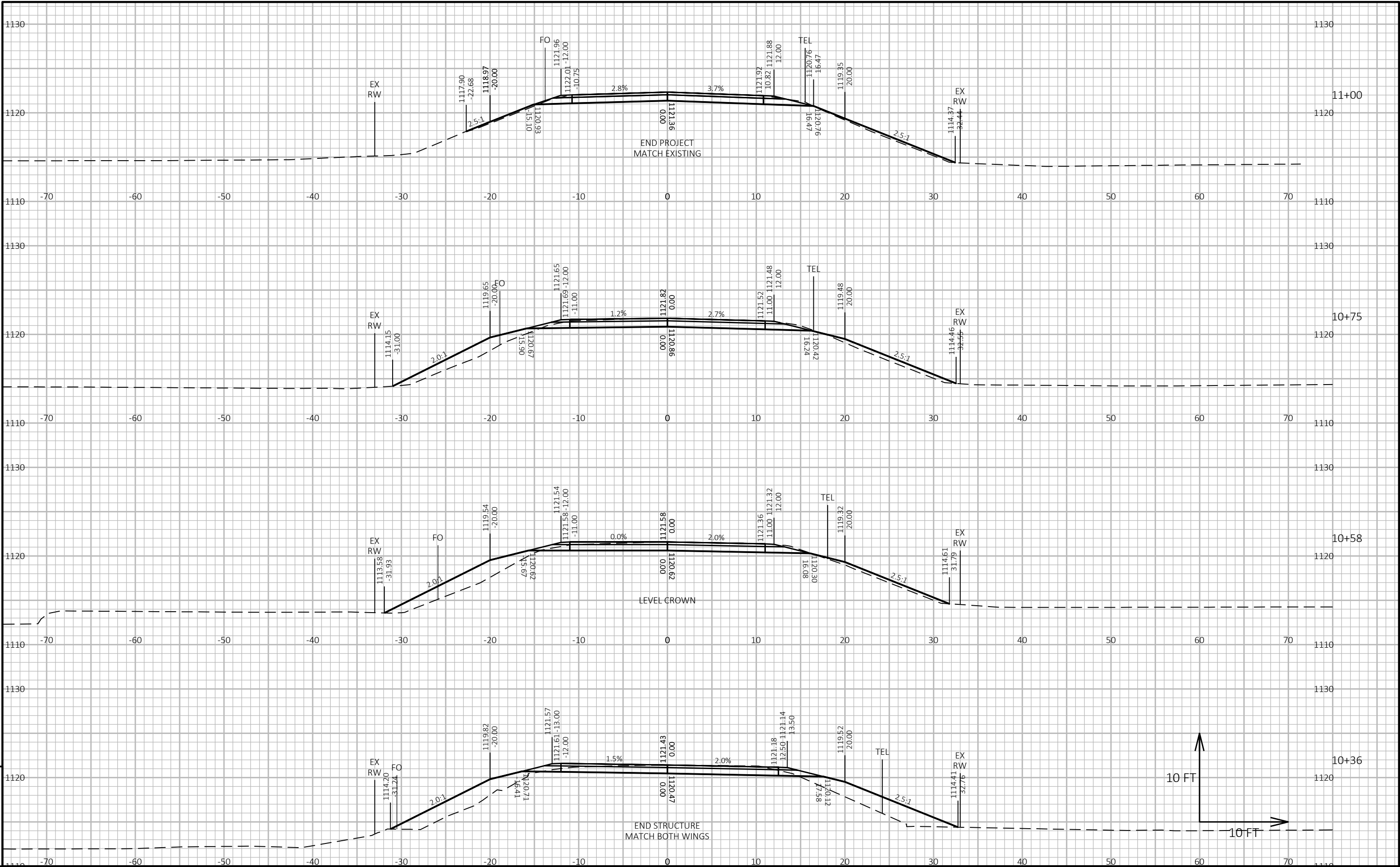
- ▲

TIE TO TOP MAT OF STEEL.
- *

FOR ANCHOR BOLTS IN WINGS, TACK WELD MAY BE USED IN FIELD AFTER ANCHOR PLATE IS IN POSITION IF REQ'D. FOR CONSTRUCTIBILITY.

| | | | |
|----------------------------------------------------|------|-----------------|----|
| | | | |
| NO. | DATE | REVISION | BY |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | | | |
| STRUCTURE B-48-53 | | | |
| DRAWN BY JAF | | PLANS CK'D. SKP | |
| TUBULAR STEEL RAILING TYPE 'M' | | SHEET 9 OF 9 | |





Notes



Wisconsin Department of Transportation

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