

RHI  
PROJECT ID:  
WITH: N/A

9898-01-70

COUNTY:  
VILAS

MARCH 2019

ORDER OF SHEETS

|                          |                                                             |
|--------------------------|-------------------------------------------------------------|
| Section No. 1            | Title                                                       |
| Section No. 2            | Typical Sections and Details(Includes Erosion Control Plan) |
| Section No. 3            | Estimate of Quantities                                      |
| Section No. 3            | Miscellaneous Quantities                                    |
| <del>Section No. 4</del> | <del>Right of Way Plan</del>                                |
| 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 = 58

PROJECT LOCATION



BEGIN PROJECT  
STA. 8+00  
Y=170089.894  
X=498058.963

DESIGN DESIGNATION

|              |      |   |        |
|--------------|------|---|--------|
| A.A.D.T.     | 2019 | = | 233    |
| A.A.D.T.     | 2039 | = | 257    |
| D.H.V.       | 2039 | = | ---    |
| D.D.         |      | = | 60/40  |
| T.           |      | = | 3.5%   |
| DESIGN SPEED |      | = | 55 MPH |
| ESALS        |      | = | 15,000 |

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<br>(Box or Pipe) |  |
| COMBUSTIBLE FLUIDS                |  |
| MARSH AREA                        |  |
| WOODED OR SHRUB AREA              |  |

|                                                |  |
|------------------------------------------------|--|
| PROFILE                                        |  |
| GRADE LINE                                     |  |
| ORIGINAL GROUND                                |  |
| MARSH OR ROCK PROFILE<br>(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                                 |  |

|       |  |
|-------|--|
| ROCK  |  |
| LABEL |  |
| 95.36 |  |
| 36    |  |
| E     |  |
| FO    |  |
| G     |  |
| SAN   |  |
| SS    |  |
| T     |  |
| W     |  |
| Ø     |  |

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

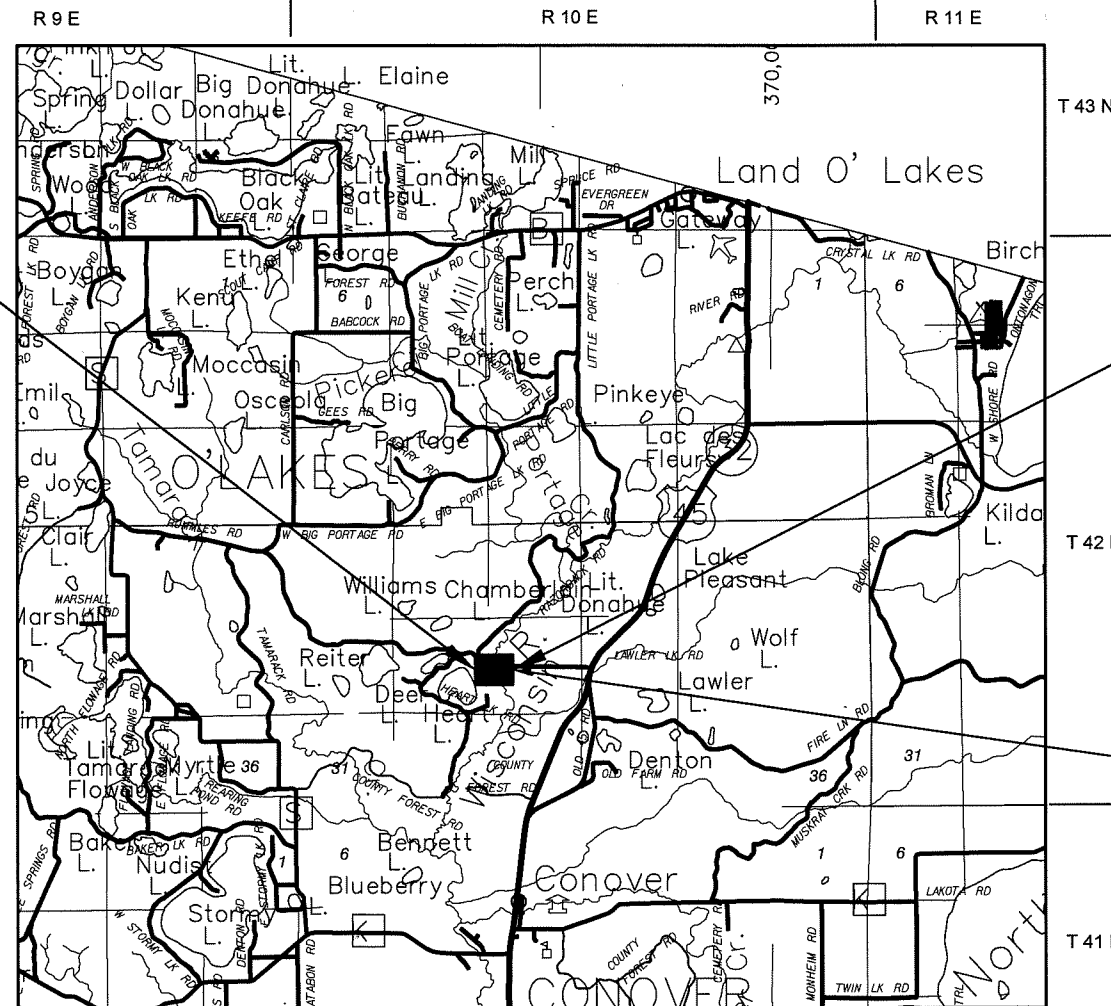
PLAN OF PROPOSED IMPROVEMENT

T CONOVER, RUMMELS ROAD

WISCONSIN RIVER BRIDGE B-63-0028

LOCAL STREET  
VILAS COUNTY

STATE PROJECT NUMBER  
9898-01-70



LAYOUT  
SCALE 0 2 MILE

TOTAL NET LENGTH OF CENTERLINE = 0.095 MI.

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, VILAS COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

STATE PROJECT

9898-01-70

FEDERAL PROJECT

PROJECT

WISC 2019181

CONTRACT

1

ACCEPTED FOR  
TOWN OF CONOVER

10-18-18 *George Champay*  
DATE TOWN CHAIRMAN

ORIGINAL PLANS PREPARED BY

AYRES  
ASSOCIATES



STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor AYRES ASSOCIATES

Designer AYRES ASSOCIATES

Management Consultant CEDAR CORPORATION

APPROVED FOR THE DEPARTMENT

DATE: 10-30-2018 *Andrew Dana*  
(Management Consultant Signature)

GENERAL NOTES

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLAN ARE APPROXIMATE. THERE MAY BE OTHER 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 LOCAL MUNICIPAL UTILITY WHICH IS NOT A MEMBER OF THE DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.

FILL, AS SHOWN ON THE PLAN SHEETS, PERTAINS TO EMBANKMENT CONSTRUCTED FROM EXCAVATION COMMON. THE FACTOR USED FOR EXPANDING THE FILLS TO COMPUTE THE VOLUME OF MATERIAL REQUIRED IS 1.3.

EXCAVATION BELOW SUBGRADE (EBS) WILL BE MEASURED AND PAID FOR AS EXCAVATION COMMON. THE LOCATION FOR EBS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

A SAW JOINT IS REQUIRED WHERE NEW ASPHALTIC SURFACE PAVEMENT MEETS EXISTING ASPHALTIC SURFACE PAVEMENT.

SAW CUT LOCATIONS SHOWN ON THE PLAN ARE SUBJECT TO ADJUSTMENT BY THE ENGINEER IN THE FIELD. THE LINE OF SUCH SAW CUTS WILL BE NEATLY DELINEATED THROUGH THE ASPHALT WITHOUT ANY DAMAGE TO THE REMAINING PORTION OF THE EXISTING PAVEMENT.

TEMPORARY STORAGE OF ANY EXCAVATED MATERIAL WILL NOT BE PERMITTED IN WETLANDS, FLOODWAY OR FLOODPLAIN OF ANY WETLANDS.

EROSION CONTROL MEASURES WILL BE PLACED AS SHOWN ON THE EROSION CONTROL PLAN. THE EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.

REMOVAL OF ITEMS ARE INCIDENTAL TO THE RESPECTIVE EROSION CONTROL BID ITEM COSTS.

NO TREES OR SHRUBS SHALL BE REMOVED WITHOUT APPROVAL BY THE ENGINEER.

RESHAPE AND SEEDING OF ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY OPERATIONS OUTSIDE OF THE ENGINEER DETERMINED CONSTRUCTION LIMITS ARE INCIDENTAL TO THE CONTRACT.

THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING MOTORISTS AND PEDESTRIANS THAT MAY ENTER THE WORK ZONE FROM POSSIBLE HAZARD.

BEARINGS SHOWN ON THIS PLAN ARE TRUE BEARINGS.

PROPERTY LINES SHOWN ARE APPROXIMATE.

ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF NAVD88 (2012).

UTILITIES

\* WE ENERGIES  
800 INDUSTRIAL PARK DRIVE  
IRON MOUNTAIN, MI 49801  
ATTENTION: MR. GEORGE JOHNSEN  
E-MAIL: George.Johnsen@we-energies.com

TELEPHONE 414-221-5617

\* FRONTIER COMMUNICATIONS  
541 NORTH 4TH STREET  
WAUSAU, WISCONSIN 54403  
ATTENTION: MR. CHRIS POLLACK  
E-MAIL: christopher.pollack@ftr.com

TELEPHONE 715-847-1504

\*-MEMBER OF DIGGERS HOTLINE



Dial 811 or (800)242-8511  
www.DiggersHotline.com

RUNOFF COEFFICIENT TABLE

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

TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.73 ACRES  
SOIL GROUP C

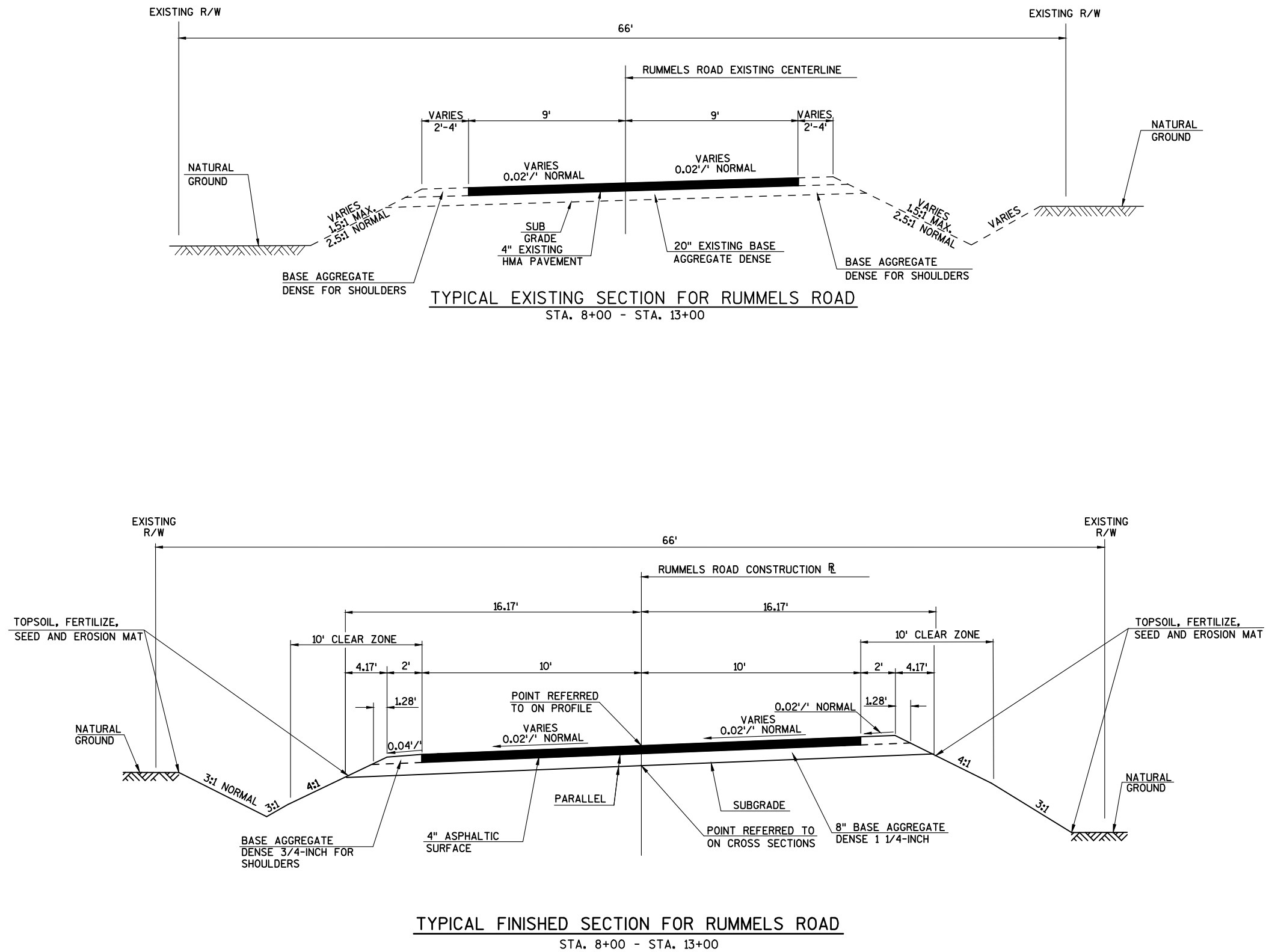
STANDARD ABBREVIATIONS

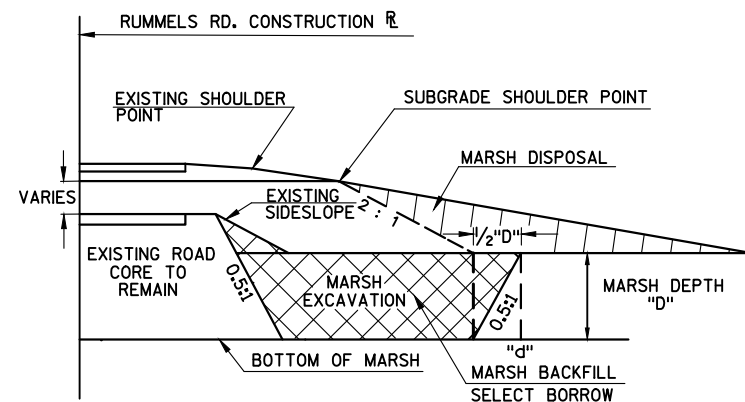
|       |                              |           |                                      |
|-------|------------------------------|-----------|--------------------------------------|
| ADT   | AVERAGE DAILY TRAFFIC        | NC        | NORMAL CROWN                         |
| AC    | ASPHALT CEMENT               | PT        | POINT OF TANGENCY                    |
| AGG   | AGGREGATE                    | PC        | POINT OF CURVATURE                   |
| ASPH  | ASPHALT                      | PI        | POINT OF INTERSECTION                |
| BM    | BENCH MARK                   | PE        | PRIVATE ENTRANCE                     |
| C/L   | CENTERLINE                   | R         | RADIUS                               |
| CONC  | CONCRETE                     | REM       | REMOVE                               |
| CMP   | CORRUGATED METAL PIPE        | R/L OR RL | REFERENCE LINE                       |
| CR.   | CREEK                        | RCCP      | REINFORCED CONCRETE CULVERT PIPE     |
| D     | DEGREE OF CURVE              | RCPSS     | REINFORCED CONCRETE PIPE STORM SEWER |
| DHV   | DESIGN HOUR VOLUME           | R.O.      | RUNOUT                               |
| ESALS | EQUIVALENT SINGLE AXIS LOADS | R/W       | RIGHT-OF-WAY                         |
| EXIST | EXISTING                     | STA       | STATION                              |
| FE    | FIELD ENTRANCE               | SE        | SUPER ELEVATION                      |
| HYD   | HYDRANT                      | SS        | STORM SEWER                          |
| IP    | IRON PIPE OR PIN             | T         | TANGENT                              |
| L     | LENGTH OF CURVE              | TEL       | TELEPHONE                            |
| LC    | LONG CHORD OF CURVE          | TLE       | TEMPORARY LIMITED EASEMENT           |
| LR    | LENGTH OF RUNOFF             | T         | TRUCKS                               |
| MH    | MANHOLE                      | VC        | VERTICAL CURVE                       |
|       |                              | W         | WELL                                 |

DEPARTMENT OF NATURAL RESOURCES

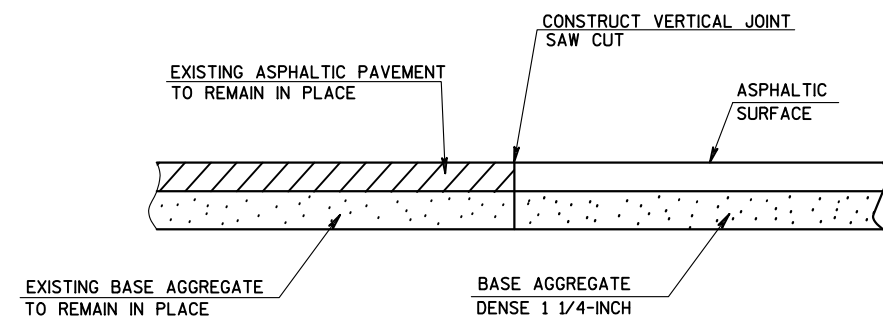
WDNR-NORTHERN REGION  
107 SUTLIFF  
RHINELANDER, WISCONSIN 54501  
ATTENTION: JON SIMONSEN  
E-MAIL: JONATHAN.SIMONSEN@WISCONSIN.GOV

TELEPHONE 715-367-1936



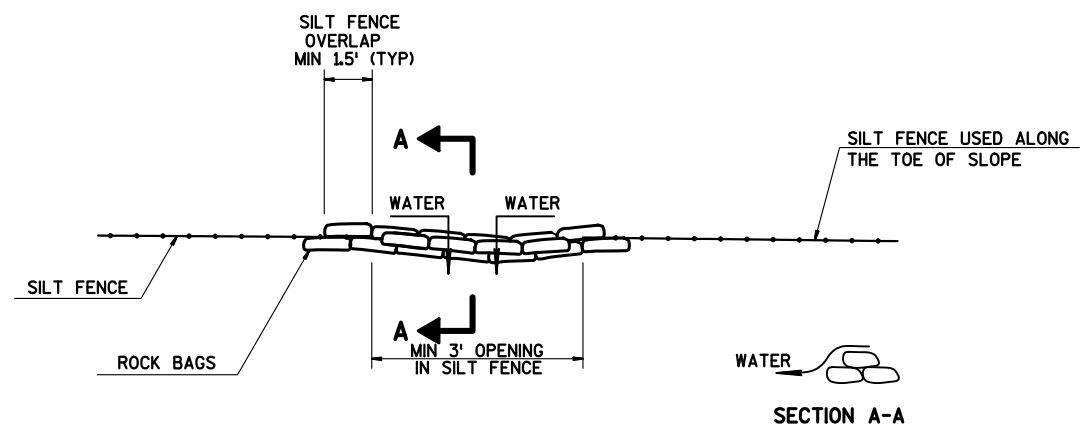


**TYPICAL SECTION-MARSH EXCAVATION**



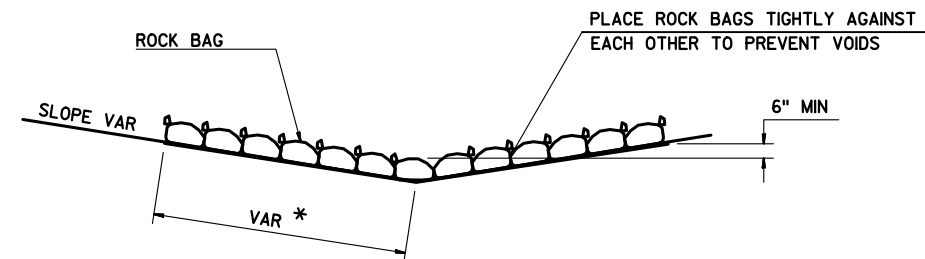
**SAW CUT DETAIL**

STA. 8+00  
STA. 13+00

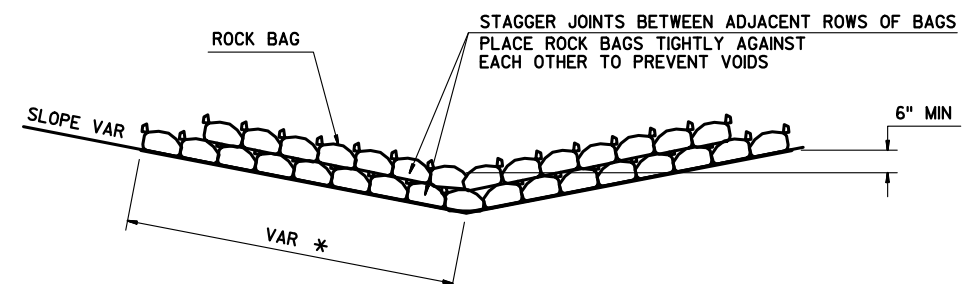


**TOP VIEW**

**ROCK BAGS USED FOR SILT FENCE RELIEF DETAIL**



**SIDE VIEW (SINGLE LAYER)**

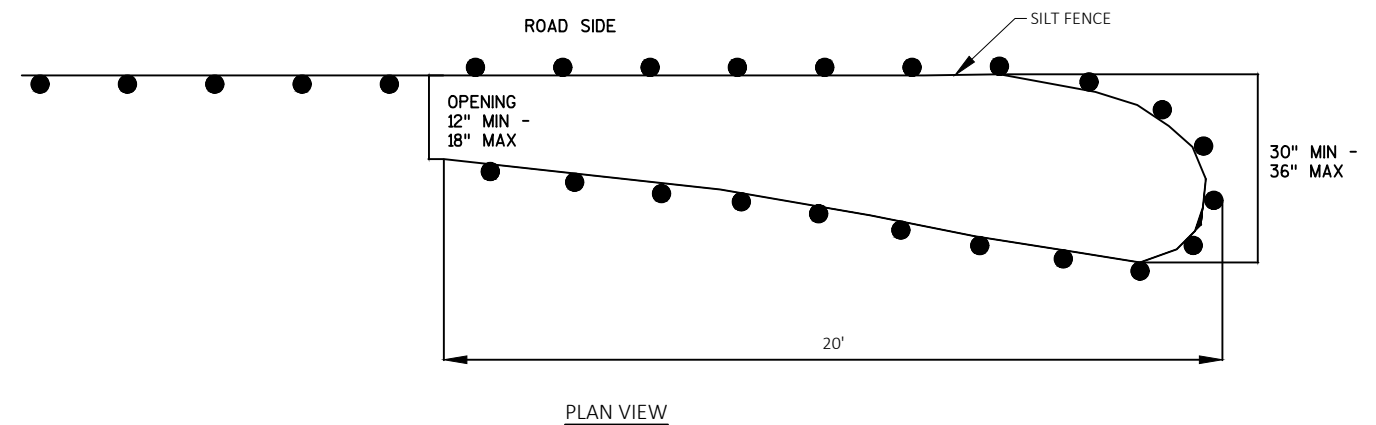


\* LENGTH AND NUMBER OF BAGS MAY VARY  
\* DEPENDING ON DESIRED DEPTH OF WATER POOL

**SIDE VIEW (MULTIPLE LAYER)**

**ROCK BAGS DITCH CHECK**

PAID AS ROCK BAGS  
(SEE MISCELLANEOUS QUANTITIES FOR LOCATIONS)

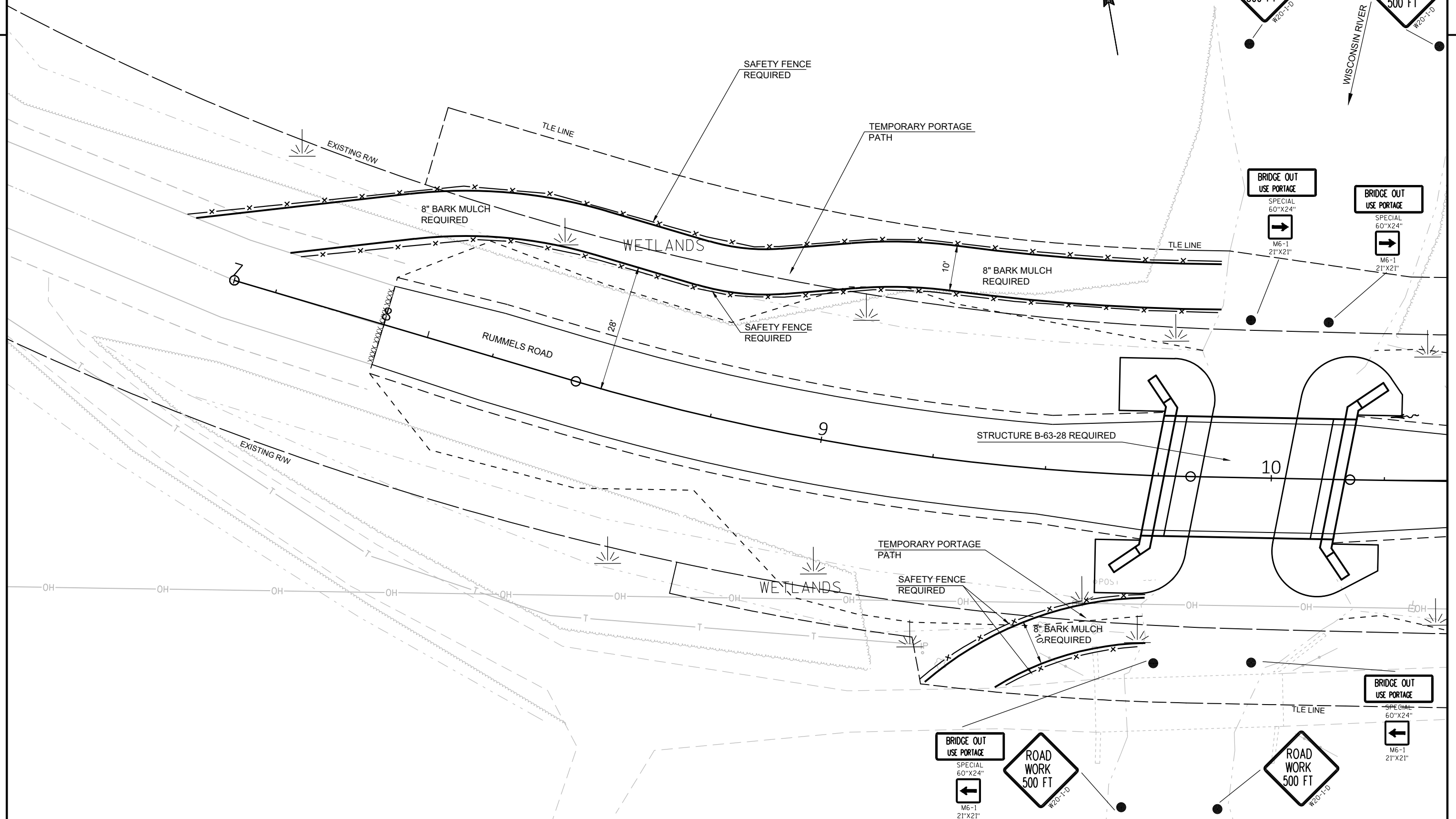


**GENERAL NOTES:**

SILT FENCE POSTS FOR THE TURN-AROUND SHOULD BE ON THE OUTSIDE OF THE TURN-AROUND. AND TRENCHED IN ACCORDING TO SILT FENCE REQUIREMENTS.

**TEMPORARY SMALL ANIMAL TURN-AROUND**

NOTE:  
SIGNS WILL BE AFFIXED TO BUOYS. FOLLOW  
GUIDELINES IN SPECIAL PROVISIONS FOR  
EXACT SIGN LOCATIONS.



PROJECT NO: 9898-01-70

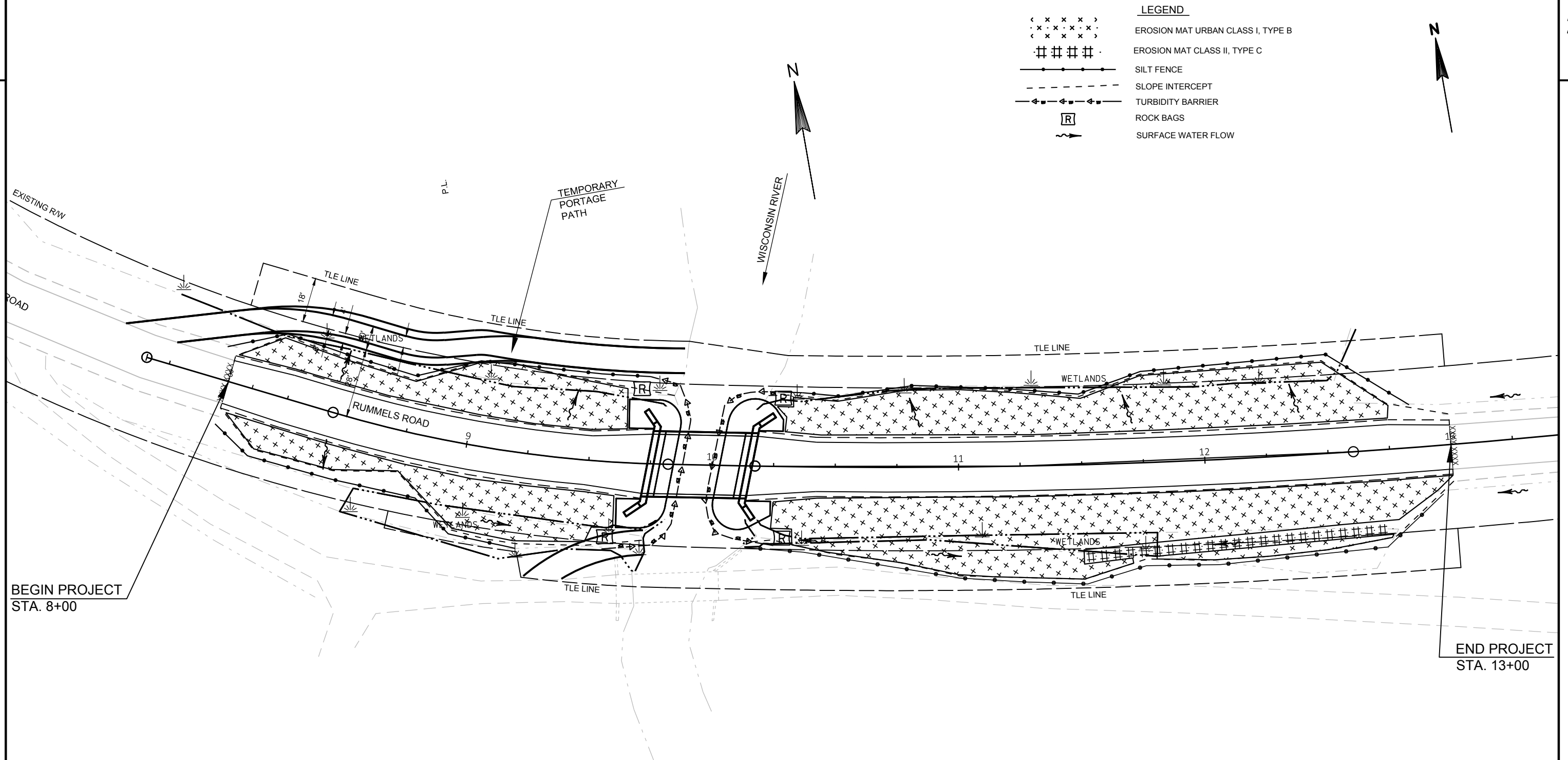
HWY: RUMMELS ROAD

COUNTY: VILAS

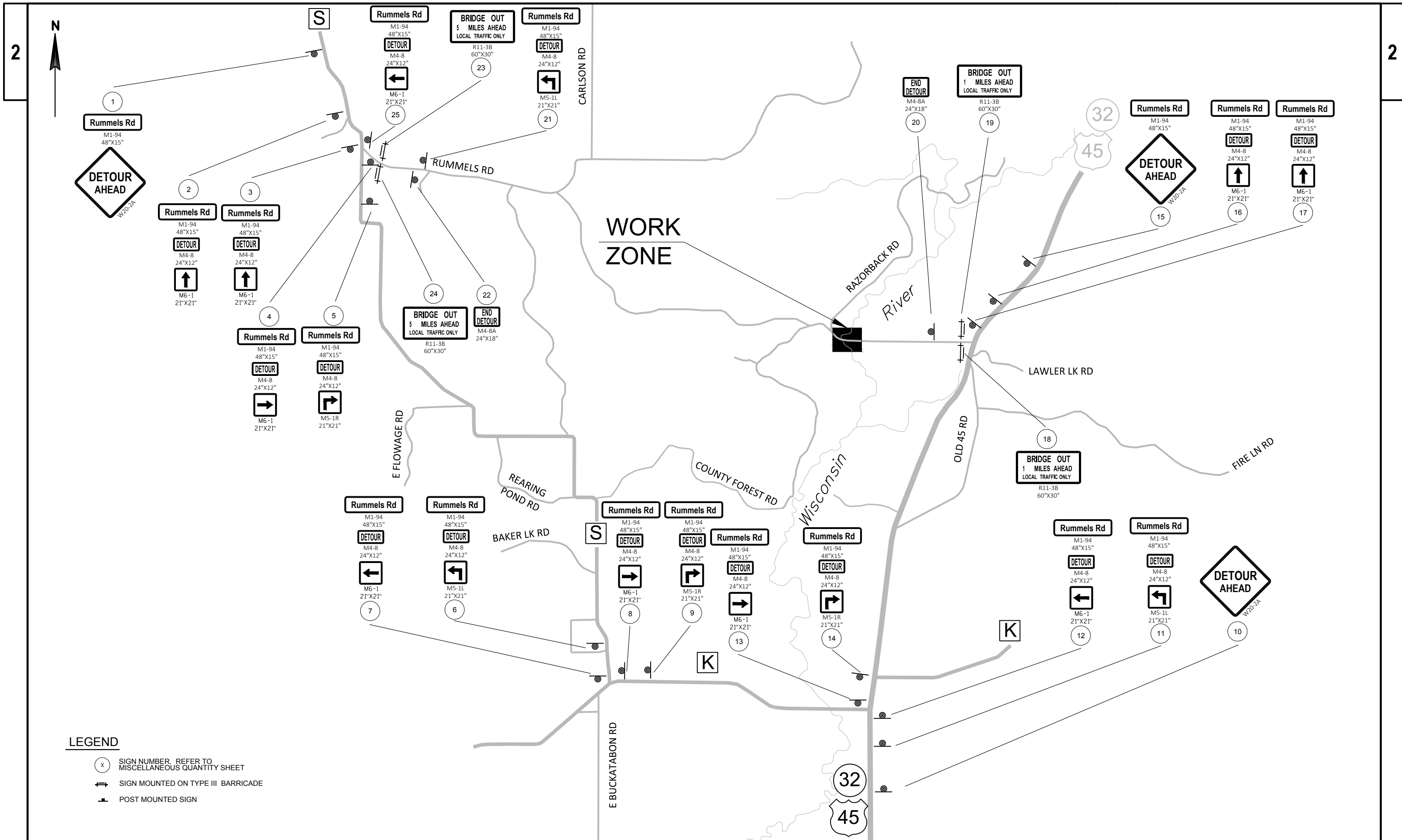
PLAN DETAIL-PORTAGE PLAN

SHEET

E







**LEGEND**

- (X) SIGN NUMBER. REFER TO MISCELLANEOUS QUANTITY SHEET
- ≡ SIGN MOUNTED ON TYPE III BARRICADE
- ⊥ POST MOUNTED SIGN

|                        |                   |               |                     |       |   |
|------------------------|-------------------|---------------|---------------------|-------|---|
| PROJECT NO: 9898-01-70 | HWY: RUMMELS ROAD | COUNTY: VILAS | DETOUR-RUMMELS ROAD | SHEET | E |
|------------------------|-------------------|---------------|---------------------|-------|---|

Estimate Of Quantities

| 9898-01-70 |            |                                                                              |      |            |            |
|------------|------------|------------------------------------------------------------------------------|------|------------|------------|
| Line       | Item       | Item Description                                                             | Unit | Total      | Qty        |
| 0002       | 201.0105   | Clearing                                                                     | STA  | 6.000      | 6.000      |
| 0004       | 201.0205   | Grubbing                                                                     | STA  | 6.000      | 6.000      |
| 0006       | 203.0600.S | Removing Old Structure Over Waterway With Minimal Debris (station) 01. 10+00 | LS   | 1.000      | 1.000      |
| 0008       | 204.9060.S | Removing (item description) 01. Post                                         | EACH | 2.000      | 2.000      |
| 0010       | 205.0100   | Excavation Common                                                            | CY   | 220.000    | 220.000    |
| 0012       | 205.0400   | Excavation Marsh                                                             | CY   | 833.000    | 833.000    |
| 0014       | 206.1000   | Excavation for Structures Bridges (structure) 01. B-63-28                    | LS   | 1.000      | 1.000      |
| 0016       | 208.0100   | Borrow                                                                       | CY   | 740.000    | 740.000    |
| 0018       | 208.1100   | Select Borrow                                                                | CY   | 1,250.000  | 1,250.000  |
| 0020       | 210.1500   | Backfill Structure Type A                                                    | TON  | 360.000    | 360.000    |
| 0022       | 213.0100   | Finishing Roadway (project) 01. 9898-01-70                                   | EACH | 1.000      | 1.000      |
| 0024       | 305.0110   | Base Aggregate Dense 3/4-Inch                                                | TON  | 75.000     | 75.000     |
| 0026       | 305.0120   | Base Aggregate Dense 1 1/4-Inch                                              | TON  | 735.000    | 735.000    |
| 0028       | 455.0605   | Tack Coat                                                                    | GAL  | 62.000     | 62.000     |
| 0030       | 465.0105   | Asphaltic Surface                                                            | TON  | 235.000    | 235.000    |
| 0032       | 502.0100   | Concrete Masonry Bridges                                                     | CY   | 134.000    | 134.000    |
| 0034       | 502.3200   | Protective Surface Treatment                                                 | SY   | 150.000    | 150.000    |
| 0036       | 505.0400   | Bar Steel Reinforcement HS Structures                                        | LB   | 4,480.000  | 4,480.000  |
| 0038       | 505.0600   | Bar Steel Reinforcement HS Coated Structures                                 | LB   | 17,710.000 | 17,710.000 |
| 0040       | 513.4061   | Railing Tubular Type M                                                       | LF   | 89.000     | 89.000     |
| 0042       | 516.0500   | Rubberized Membrane Waterproofing                                            | SY   | 12.000     | 12.000     |
| 0044       | 550.0500   | Pile Points                                                                  | EACH | 14.000     | 14.000     |
| 0046       | 550.2104   | Piling CIP Concrete 10 3/4 X 0.25-Inch                                       | LF   | 980.000    | 980.000    |
| 0048       | 606.0300   | Riprap Heavy                                                                 | CY   | 135.000    | 135.000    |
| 0050       | 612.0406   | Pipe Underdrain Wrapped 6-Inch                                               | LF   | 150.000    | 150.000    |
| 0052       | 618.0100   | Maintenance And Repair of Haul Roads (project) 01. 9898-01-70                | EACH | 1.000      | 1.000      |
| 0054       | 619.1000   | Mobilization                                                                 | EACH | 1.000      | 1.000      |
| 0056       | 624.0100   | Water                                                                        | MGAL | 5.000      | 5.000      |
| 0058       | 625.0100   | Topsoil                                                                      | SY   | 1,670.000  | 1,670.000  |
| 0060       | 627.0200   | Mulching                                                                     | SY   | 550.000    | 550.000    |
| 0062       | 628.1504   | Silt Fence                                                                   | LF   | 685.000    | 685.000    |
| 0064       | 628.1520   | Silt Fence Maintenance                                                       | LF   | 1,370.000  | 1,370.000  |
| 0066       | 628.1905   | Mobilizations Erosion Control                                                | EACH | 5.000      | 5.000      |
| 0068       | 628.1910   | Mobilizations Emergency Erosion Control                                      | EACH | 2.000      | 2.000      |
| 0070       | 628.2008   | Erosion Mat Urban Class I Type B                                             | SY   | 1,920.000  | 1,920.000  |
| 0072       | 628.2027   | Erosion Mat Class II Type C                                                  | SY   | 120.000    | 120.000    |
| 0074       | 628.6005   | Turbidity Barriers                                                           | SY   | 190.000    | 190.000    |



Estimate Of Quantities

9898-01-70

| Line | Item     | Item Description                                                   | Unit | Total     | Qty       |
|------|----------|--------------------------------------------------------------------|------|-----------|-----------|
| 0076 | 628.7570 | Rock Bags                                                          | EACH | 80.000    | 80.000    |
| 0078 | 629.0210 | Fertilizer Type B                                                  | CWT  | 1.600     | 1.600     |
| 0080 | 630.0120 | Seeding Mixture No. 20                                             | LB   | 50.000    | 50.000    |
| 0082 | 630.0200 | Seeding Temporary                                                  | LB   | 35.000    | 35.000    |
| 0084 | 630.0300 | Seeding Borrow Pit                                                 | LB   | 8.000     | 8.000     |
| 0086 | 634.0612 | Posts Wood 4x6-Inch X 12-FT                                        | EACH | 4.000     | 4.000     |
| 0088 | 634.0616 | Posts Wood 4x6-Inch X 16-FT                                        | EACH | 2.000     | 2.000     |
| 0090 | 637.2230 | Signs Type II Reflective F                                         | SF   | 18.000    | 18.000    |
| 0092 | 638.2602 | Removing Signs Type II                                             | EACH | 10.000    | 10.000    |
| 0094 | 638.3000 | Removing Small Sign Supports                                       | EACH | 8.000     | 8.000     |
| 0096 | 642.5001 | Field Office Type B                                                | EACH | 1.000     | 1.000     |
| 0098 | 643.0420 | Traffic Control Barricades Type III                                | DAY  | 1,350.000 | 1,350.000 |
| 0100 | 643.0705 | Traffic Control Warning Lights Type A                              | DAY  | 2,100.000 | 2,100.000 |
| 0102 | 643.0900 | Traffic Control Signs                                              | DAY  | 3,840.000 | 3,840.000 |
| 0104 | 643.1050 | Traffic Control Signs PCMS                                         | DAY  | 14.000    | 14.000    |
| 0106 | 643.5000 | Traffic Control                                                    | EACH | 1.000     | 1.000     |
| 0108 | 645.0111 | Geotextile Type DF Schedule A                                      | SY   | 100.000   | 100.000   |
| 0110 | 645.0120 | Geotextile Type HR                                                 | SY   | 275.000   | 275.000   |
| 0112 | 650.4500 | Construction Staking Subgrade                                      | LF   | 457.000   | 457.000   |
| 0114 | 650.5000 | Construction Staking Base                                          | LF   | 457.000   | 457.000   |
| 0116 | 650.6500 | Construction Staking Structure Layout (structure) 01. B-63-28      | LS   | 1.000     | 1.000     |
| 0118 | 650.9910 | Construction Staking Supplemental Control (project) 01. 9898-01-70 | LS   | 1.000     | 1.000     |
| 0120 | 650.9920 | Construction Staking Slope Stakes                                  | LF   | 457.000   | 457.000   |
| 0122 | 690.0150 | Sawing Asphalt                                                     | LF   | 36.000    | 36.000    |
| 0124 | 715.0502 | Incentive Strength Concrete Structures                             | DOL  | 804.000   | 804.000   |
| 0126 | ASP.1T0A | On-the-Job Training Apprentice at \$5.00/HR                        | HRS  | 150.000   | 150.000   |
| 0128 | ASP.1T0G | On-the-Job Training Graduate at \$5.00/HR                          | HRS  | 300.000   | 300.000   |
| 0130 | SPV.0045 | Special 01. Waterway Buoys                                         | DAY  | 240.000   | 240.000   |
| 0132 | SPV.0090 | Special 01. Temporary Portage Path                                 | LF   | 250.000   | 250.000   |

CLEARING AND GRUBBING

| STATION | TO | STATION | LOCATION     | 201.0105<br>CLEARING<br>STATION | 201.0205<br>GRUBBING<br>STATION |
|---------|----|---------|--------------|---------------------------------|---------------------------------|
| 7+00    | -  | 13+00   | RUMMELS ROAD | 6                               | 6                               |
| TOTALS  |    |         |              | 6                               | 6                               |

REMOVING POST

| STATION | LOCATION         | 204.9060.S<br>EACH |
|---------|------------------|--------------------|
| 9+75    | RUMMELS ROAD, RT | 2                  |
| TOTAL   |                  | 2                  |

EARTHWORK SUMMARY

| Division         | From/To Station | Location     | Common Excavation<br>(item #205.0100) | Unusable<br>Pavement Material<br>(4) | Available<br>Material (5) | Excavation<br>Marsh (6) | Expanded<br>Marsh Backfill<br>(10) | Unexpanded<br>Fill | Expanded Fill<br>(13) | Mass Ordinate<br>+/- (14) | Borrow<br><br>(item #208.0100) | Select Borrow<br>(item #208.1100) | Comment: |
|------------------|-----------------|--------------|---------------------------------------|--------------------------------------|---------------------------|-------------------------|------------------------------------|--------------------|-----------------------|---------------------------|--------------------------------|-----------------------------------|----------|
|                  |                 |              | Cut                                   |                                      |                           | (item #205.0400)        | Factor<br>1.50                     |                    | Factor<br>1.30        |                           |                                |                                   |          |
| 1                | 8+00 - 13+00    | RUMMELS ROAD | 220                                   | 102                                  | 118                       | 833                     | 1,250                              | 660                | 858                   | -740                      | 740                            | 1,250                             |          |
| Division 1 Total |                 |              | 220                                   | 102                                  | 118                       | 833                     | 1,250                              | 660                | 858                   | -740                      | 740                            | 1,250                             |          |

- 2) Unsuable Pavement Material is included in Cut
- 4) Unusable Pavement Material = Existing Asphaltic Pavement & Concrete Pavement. Backfill any areas below subgrade with borrow .
- 5) Available Material = Cut - Unusuable Pavement Material
- 6) Marsh Excavation - to be backfilled with Select Borrow Material as shown in cross sections, then Borrow for the remaining Marsh Excavation.
- 10) Expanded Marsh Backfill - This is to be filled w ith Select Borrow material. Marsh Backfill Factor = 1.5. Item Number 208.1100.
- 13) Expanded Fill. Factor = 1.3 Expanded Fill = Unexpanded Fill \* Fill Factor
- 14) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

BASE AGGREGATE DENSE AND WATER

| STATION | TO | STATION | LOCATION     | 305.0110<br>3/4-INCH<br>TON | 305.0120<br>1 1/4-INCH<br>TON | 624.0100<br>WATER<br>MGAL |
|---------|----|---------|--------------|-----------------------------|-------------------------------|---------------------------|
| 8+00    | -  | 9+73    | RUMMELS ROAD | 30                          | 280                           | 2                         |
| 10+16   | -  | 13+00   | RUMMELS ROAD | 45                          | 455                           | 3                         |
| TOTALS  |    |         |              | 75                          | 735                           | 5                         |

HMA PAVEMENT

| STATION | TO | STATION | LOCATION     | 455.0605<br>TACK<br>COAT<br>GAL | 465.0105<br>ASPHALTIC<br>SURFACE<br>TON |
|---------|----|---------|--------------|---------------------------------|-----------------------------------------|
| 8+00    | -  | 9+73    | RUMMELS ROAD | 24                              | 90                                      |
| 10+16   | -  | 13+00   | RUMMELS ROAD | 38                              | 145                                     |
| TOTALS  |    |         |              | 62                              | 235                                     |

TOPSOIL, MULCHING, FERTILIZER AND SEED

| STATION TO STATION |   |       |                       | 625.0100<br>TOPSOIL | 627.0200<br>MULCHING | 629.0210<br>FERTILIZER<br>TYPE B<br>CWT | 630.0120<br>SEEDING<br>MIXTURE NO. 20<br>LB | 630.0200<br>SEEDING<br>TEMPORARY<br>LB | 630.0300<br>SEEDING<br>BORROW PIT<br>LB |
|--------------------|---|-------|-----------------------|---------------------|----------------------|-----------------------------------------|---------------------------------------------|----------------------------------------|-----------------------------------------|
|                    |   |       |                       | SY                  | SY                   |                                         |                                             |                                        |                                         |
| 8+00               | - | 9+73  | RUMMELS ROAD, LT & RT | 495                 | -                    | 0.3                                     | 14                                          | 7                                      | -                                       |
| 10+16              | - | 13+00 | RUMMELS ROAD, LT & RT | 1,175               | -                    | 0.8                                     | 32                                          | 15                                     | -                                       |
|                    |   |       | BORROW PIT            | -                   | 550                  | 0.4                                     | -                                           | 8                                      | 8                                       |
|                    |   |       | UNDISTRIBUTED         | -                   | -                    | 0.1                                     | 4                                           | 5                                      | -                                       |
| TOTALS             |   |       |                       | 1,670               | 550                  | 1.6                                     | 50                                          | 35                                     | 8                                       |

NOTE: TEMPORARY SEEDING RATE IS 1.5 LBS/1000 SF

SILT FENCE

| STATION TO STATION |   |       |                       | 628.1504<br>SILT FENCE<br>LF | 628.1520<br>MAINTENANCE<br>LF |
|--------------------|---|-------|-----------------------|------------------------------|-------------------------------|
|                    |   |       |                       |                              |                               |
| 8+00               | - | 9+73  | RUMMELS ROAD, LT & RT | 315                          | 630                           |
| 10+16              | - | 13+00 | RUMMELS ROAD, LT      | 255                          | 510                           |
|                    |   |       | UNDISTRIBUTED         | 115                          | 230                           |
| TOTALS             |   |       |                       | 685                          | 1,370                         |

MOBILIZATIONS EROSION CONTROL

| LOCATION | 628.1905<br>EROSION<br>CONTROL | 628.1910<br>EMERGENCY<br>EROSION<br>CONTROL |
|----------|--------------------------------|---------------------------------------------|
|          | EACH                           | EACH                                        |
| PROJECT  | 5                              | 2                                           |
| TOTALS   | 5                              | 2                                           |

EROSION MAT

| STATION TO STATION |   |       |                       | 628.2008<br>URBAN CLASS I<br>TYPE B<br>SY | 628.2027<br>CLASS II<br>TYPE C<br>SY |
|--------------------|---|-------|-----------------------|-------------------------------------------|--------------------------------------|
|                    |   |       |                       |                                           |                                      |
| 8+00               | - | 9+73  | RUMMELS ROAD, LT & RT | 495                                       | -                                    |
| 10+16              | - | 13+00 | RUMMELS ROAD, LT & RT | 1100                                      | -                                    |
| 11+50              | - | 12+75 | RUMMELS ROAD, RT      | -                                         | 100                                  |
|                    |   |       | UNDISTRIBUTED         | 325                                       | 20                                   |
| TOTALS             |   |       |                       | 1,920                                     | 120                                  |

TURBIDITY BARRIERS

| STATION       | LOCATION     | 628.6005<br>SY |
|---------------|--------------|----------------|
| WEST ABUTMENT | RUMMELS ROAD | 90             |
| EAST ABUTMENT | RUMMELS ROAD | 100            |
| TOTAL         |              | 190            |

ROCK BAGS

| STATION | LOCATION         | 628.7570<br>EACH |
|---------|------------------|------------------|
| 9+60    | RUMMELS ROAD, RT | 15               |
| 9+75    | RUMMELS ROAD, LT | 15               |
| 10+30   | RUMMELS ROAD, LT | 15               |
| 10+35   | RUMMELS ROAD, RT | 15               |
|         | UNDISTRIBUTED    | 20               |
| TOTAL   |                  | 80               |

SIGNS REFLECTIVE TYPE II AND WOOD POSTS

| STATION | LOCATION         | 634.0612<br>WOOD POSTS<br>4"x6"x12' | 634.0616<br>WOOD POSTS<br>4"x6"x16' | 637.2203<br>SIGNS TYPE II REFLECTIVE F |              |              | REMARKS                    |
|---------|------------------|-------------------------------------|-------------------------------------|----------------------------------------|--------------|--------------|----------------------------|
|         |                  | EACH                                | EACH                                | W5-52L<br>SF                           | W5-52R<br>SF | R7-52D<br>SF |                            |
| 9+72    | RUMMELS ROAD, RT | 1                                   | -                                   | -                                      | 3            | -            | BRIDGE HASH MARKS, RT      |
| 9+76    | RUMMELS ROAD, LT | 1                                   | -                                   | 3                                      | -            | -            | BRIDGE HASH MARKS, LT      |
| 10+14   | RUMMELS ROAD, RT | 1                                   | -                                   | 3                                      | -            | -            | BRIDGE HASH MARKS, RT      |
| 10+18   | RUMMELS ROAD, LT | 1                                   | -                                   | -                                      | 3            | -            | BRIDGE HASH MARKS, LT      |
| 10+50   | RUMMELS ROAD, RT | -                                   | 1                                   | -                                      | -            | 3            | "NO PARKING BETWEEN SIGNS" |
| 10+50   | RUMMELS ROAD, LT | -                                   | 1                                   | -                                      | -            | 3            | "NO PARKING BETWEEN SIGNS" |
| TOTALS  |                  | 4                                   | 2                                   |                                        | 18           |              |                            |

REMOVING SIGNS AND SUPPORTS

| STATION | LOCATION              | 638.2602<br>REMOVING<br>SIGNS<br>TYPE II<br>EA | 638.3000<br>REMOVING<br>SMALL SIGN<br>SUPPORTS<br>EA | REMARKS                                |
|---------|-----------------------|------------------------------------------------|------------------------------------------------------|----------------------------------------|
| 9+85    | RUMMELS ROAD, RT      | 2                                              | 1                                                    | "NARROW BRIDGE" "WEIGHT LIMIT 15 TONS" |
| 9+85    | RUMMELS ROAD, LT & RT | 2                                              | 2                                                    | BRIDGE HASH MARKS                      |
| 10+15   | RUMMELS ROAD, LT & RT | 2                                              | 2                                                    | BRIDGE HASH MARKS                      |
| 10+20   | RUMMELS ROAD, LT & RT | 2                                              | 2                                                    | "NO PARKING BETWEEN SIGNS"             |
| 10+20   | RUMMELS ROAD, LT      | 2                                              | 1                                                    | "NARROW BRIDGE" "WEIGHT LIMIT 15 TONS" |
| TOTALS  |                       | 10                                             | 8                                                    |                                        |

TRAFFIC CONTROL SUMMARY

| LOCATION               | APPROXIMATE<br>SERVICE<br>DAYS | 643.0420<br>BARRICADES<br>TYPE III |       | 643.0705<br>WARNING LIGHTS<br>TYPE A |       | 643.0900<br>SIGNS |       | 643.1050<br>SIGNS<br>PCMS |      | SPV.0045.01<br>WATERWAY<br>BUOYS |      | REMARKS                                                       |
|------------------------|--------------------------------|------------------------------------|-------|--------------------------------------|-------|-------------------|-------|---------------------------|------|----------------------------------|------|---------------------------------------------------------------|
|                        |                                | NO. IN<br>SERVICE                  | DAYS  | NO. IN<br>SERVICE                    | DAYS  | NO. IN<br>SERVICE | DAYS  | NO. IN<br>SERVICE         | DAYS | NO. IN<br>SERVICE                | DAYS |                                                               |
| DETOUR                 |                                |                                    |       |                                      |       |                   |       |                           |      |                                  |      |                                                               |
| USH 45 / RUMMELS ROAD  | 75                             | -                                  | -     | -                                    | -     | 7                 | 525   | -                         | -    | -                                | -    | SEE DETOUR SIGNING FOR MAINLINE CLOSURES                      |
| USH 45 / CTH K         | 75                             | -                                  | -     | -                                    | -     | 10                | 750   | -                         | -    | -                                | -    | SEE DETOUR SIGNING FOR MAINLINE CLOSURES                      |
| CTH K / CTH S          | 75                             | -                                  | -     | -                                    | -     | 8                 | 600   | -                         | -    | -                                | -    | SEE DETOUR SIGNING FOR MAINLINE CLOSURES                      |
| CTH S / RUMMELS ROAD   | 75                             | -                                  | -     | -                                    | -     | 15                | 1,125 | -                         | -    | -                                | -    | SEE DETOUR SIGNING FOR MAINLINE CLOSURES                      |
| SUBTOTALS              |                                |                                    | 0     |                                      | 0     |                   | 3,000 |                           | 0    |                                  | 0    |                                                               |
| BRIDGE CLOSURE         |                                |                                    |       |                                      |       |                   |       |                           |      |                                  |      |                                                               |
| WEST OF PROJECT LIMITS | 7                              | -                                  | -     | -                                    | -     | -                 | -     | 1                         | 7    | -                                | -    |                                                               |
| EAST OF PROJECT LIMITS | 7                              | -                                  | -     | -                                    | -     | -                 | -     | 1                         | 7    | -                                | -    |                                                               |
| RUMMELS ROAD / CTH S   | 75                             | 2                                  | 150   | 4                                    | 300   | 2                 | 150   | -                         | -    | -                                | -    | SEE BARRICADES AND SIGNS FOR MAINLINE CLOSURES - DETAIL A     |
| B.O.P.                 | 75                             | 7                                  | 525   | 10                                   | 750   | 2                 | 150   | -                         | -    | -                                | -    | SEE BARRICADES AND SIGNS FOR MAINLINE CLOSURES - DETAIL A & D |
| E.O.P.                 | 75                             | 7                                  | 525   | 10                                   | 750   | 2                 | 150   | -                         | -    | -                                | -    | SEE BARRICADES AND SIGNS FOR MAINLINE CLOSURES - DETAIL A & D |
| RUMMELS ROAD / USH 45  | 75                             | 2                                  | 150   | 4                                    | 300   | 2                 | 150   | -                         | -    | -                                | -    | SEE BARRICADES AND SIGNS FOR MAINLINE CLOSURES - DETAIL A     |
| WISCONSIN RIVER        | 30                             | -                                  | -     | -                                    | -     | 8                 | 240   | -                         | -    | 8                                | 240  | SEE PORTAGE PLAN DETAIL                                       |
| SUBTOTALS              |                                |                                    | 1,350 |                                      | 2,100 |                   | 840   |                           | 14   |                                  | 240  |                                                               |
| TOTALS                 |                                |                                    | 1,350 |                                      | 2,100 |                   | 3,840 |                           | 14   |                                  | 240  |                                                               |

CONSTRUCTION STAKING

| STATION            | TO | STATION | LOCATION     | 650.4500       | 650.5000   | 650.6500                  | 650.9910                      | 650.9920              | GROUP<br>CODE |
|--------------------|----|---------|--------------|----------------|------------|---------------------------|-------------------------------|-----------------------|---------------|
|                    |    |         |              | SUBGRADE<br>LF | BASE<br>LF | STRUCTURE<br>LAYOUT<br>LS | SUPPLEMENTAL<br>CONTROL<br>LS | SLOPE<br>STAKES<br>LF |               |
| 8+00               | -  | 9+73    | RUMMELS ROAD | 173            | 173        | -                         | 1                             | 173                   | 0010          |
| 10+16              | -  | 13+00   | RUMMELS ROAD | 284            | 284        | -                         | -                             | 284                   | 0010          |
| SUBTOTALS          |    |         |              | 457            | 457        | 0                         | 1                             | 457                   | 0010          |
| 10+00 RUMMELS ROAD |    |         |              | -              | -          | 1                         | -                             | -                     | 0020          |
| SUBTOTALS          |    |         |              | 0              | 0          | 1                         | 0                             | 0                     | 0020          |
| TOTALS             |    |         |              | 457            | 457        | 1                         | 1                             | 457                   |               |

SAWING ASPHALT

| STATION | LOCATION     | 690.0150<br>LF |
|---------|--------------|----------------|
| 8+00    | RUMMELS ROAD | 18             |
| 13+00   | RUMMELS ROAD | 18             |
| TOTAL   |              | 36             |

TEMPORARY PORTAGE PATH

| STATION | TO | STATION | LOCATION         | SPV.0180.01<br>LF |
|---------|----|---------|------------------|-------------------|
| 7+80    | -  | 9+80    | RUMMELS ROAD, LT | 200               |
| 9+25    | -  | 9+75    | RUMMELS ROAD, RT | 50                |
| TOTAL   |    |         |                  | 250               |

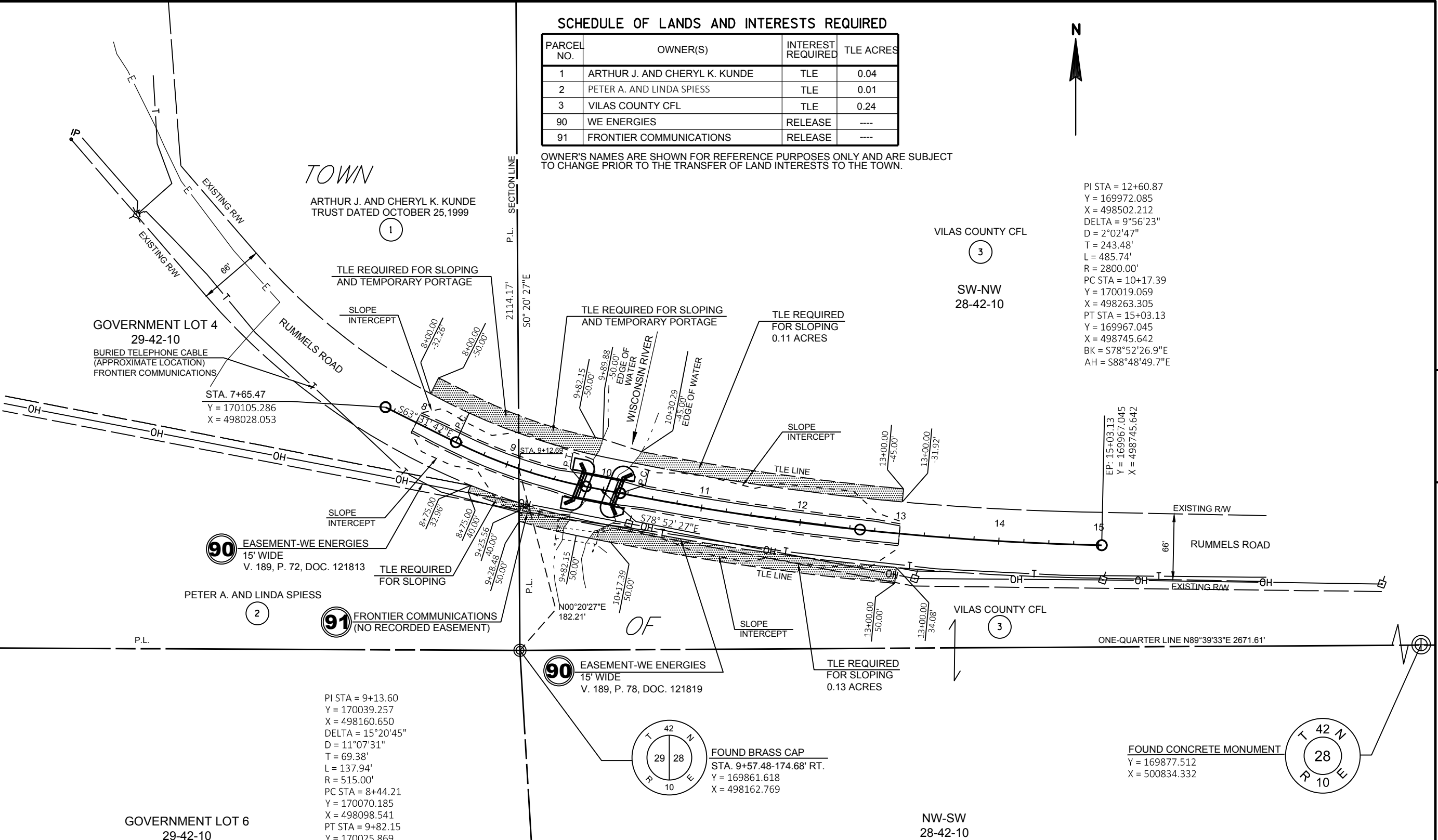
SCHEDULE OF LANDS AND INTERESTS REQUIRED

| PARCEL NO. | OWNER(S)                      | INTEREST REQUIRED | TLE ACRES |
|------------|-------------------------------|-------------------|-----------|
| 1          | ARTHUR J. AND CHERYL K. KUNDE | TLE               | 0.04      |
| 2          | PETER A. AND LINDA SPIESS     | TLE               | 0.01      |
| 3          | VILAS COUNTY CFL              | TLE               | 0.24      |
| 90         | WE ENERGIES                   | RELEASE           | ----      |
| 91         | FRONTIER COMMUNICATIONS       | RELEASE           | ----      |

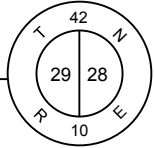
OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE TOWN.



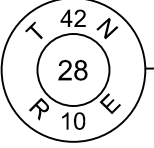
PI STA = 12+60.87  
Y = 169972.085  
X = 498502.212  
DELTA = 9°56'23"  
D = 2°02'47"  
T = 243.48'  
L = 485.74'  
R = 2800.00'  
PC STA = 10+17.39  
Y = 170019.069  
X = 498263.305  
PT STA = 15+03.13  
Y = 169967.045  
X = 498745.642  
BK = S78°52'26.9"E  
AH = S88°48'49.7"E



PI STA = 9+13.60  
Y = 170039.257  
X = 498160.650  
DELTA = 15°20'45"  
D = 11°07'31"  
T = 69.38'  
L = 137.94'  
R = 515.00'  
PC STA = 8+44.21  
Y = 170070.185  
X = 498098.541  
PT STA = 9+82.15  
Y = 170025.869  
X = 498228.729  
BK = S63°31'41.6"E  
AH = S78°52'26.9"E



FOUND BRASS CAP  
STA. 9+57.48-174.68' RT.  
Y = 169861.618  
X = 498162.769



FOUND CONCRETE MONUMENT  
Y = 169877.512  
X = 500834.332

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, VILAS COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

PROJECT NO: 9898-01-70

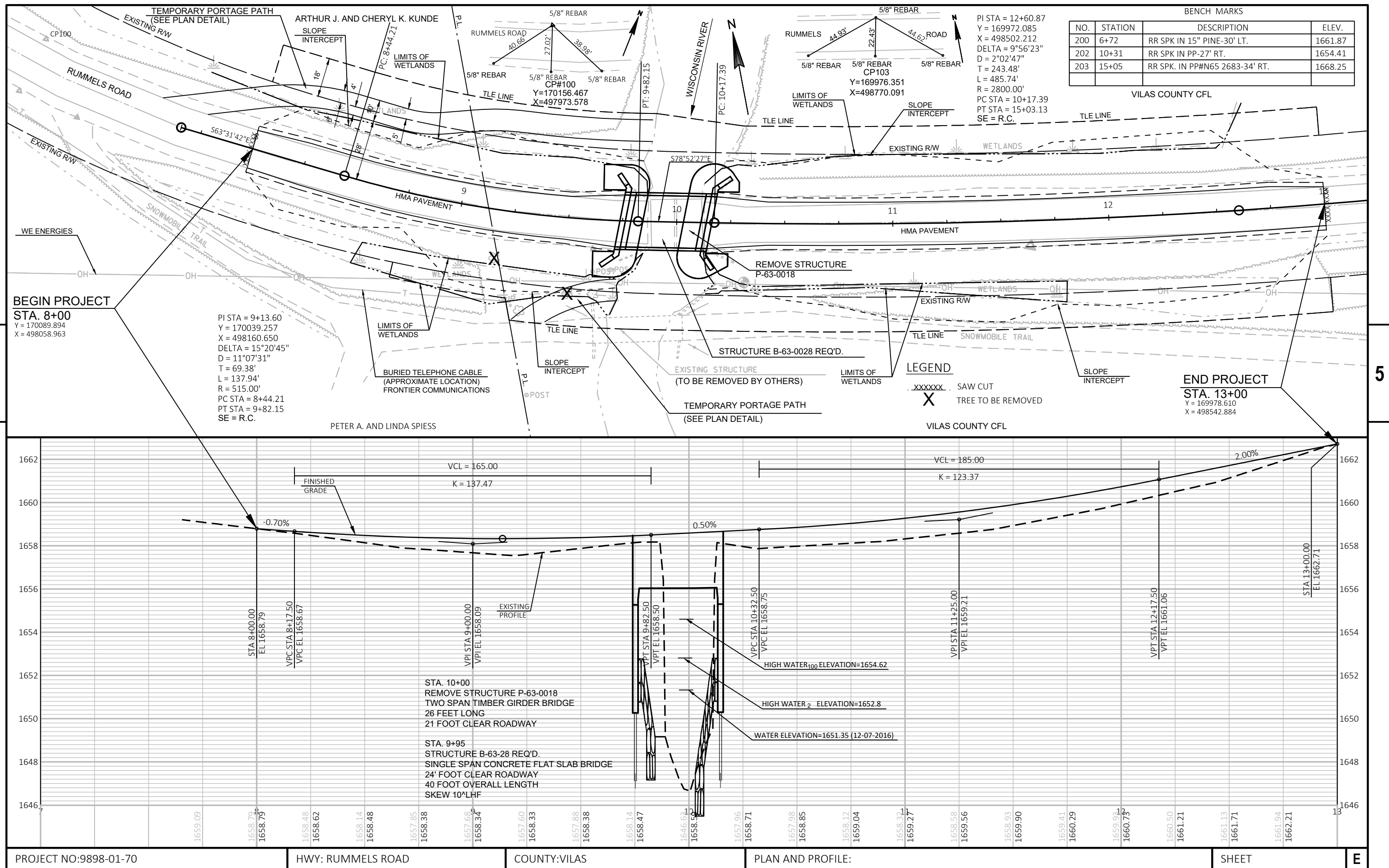
HWY: RUMMELS ROAD

COUNTY: VILAS

PLAN SHEET

SHEET

E





Standard Detail Drawing List

|           |                                                                                                    |
|-----------|----------------------------------------------------------------------------------------------------|
| 08D04-05  | CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES                                                         |
| 08E09-06  | SILT FENCE                                                                                         |
| 08E11-02  | TURBIDITY BARRIER                                                                                  |
| 12A03-10  | NAME PLATE (STRUCTURES)                                                                            |
| 15C02-06B | BARRICADES AND SIGNS FOR MAINLINE CLOSURES                                                         |
| 15C02-06C | DETOUR SIGNING FOR MAINLINE CLOSURES                                                               |
| 15C04-05  | TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC |
| 15C06-09  | SIGNING & MARKING FOR TWO LANE BRIDGES                                                             |
| 15D38-02A | TEMPORARY TRAFFIC CONTROL SIGN MOUNTING                                                            |
| 15D38-02B | ATTACHMENT OF SIGNS TO POSTS                                                                       |

## 6



PLAN VIEW  
FLUME AT CURB END



## 6

S.D.D. 8 D 4-5

- ① JOINTS SHALL BE  $\frac{1}{8}$  TO  $\frac{1}{4}$  INCH WIDE BY  $1\frac{1}{2}$  INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
- ② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
- ③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

EXPANSION JOINT

CONCRETE CURB AND GUTTER

2" MIN. CURB HEIGHT

4" R

TAPER CURB TO FLOW LINE

INCREASE  $\phi$  FROM RIGHT ANGLE TO BEST FIT FIELD CONDITIONS

8'-0"

4'-0"

EDGE OF PAVEMENT

3'-0" MIN.

SURFACE DRAIN IS SYMMETRICAL WHEN CURB AND GUTTER IS CONTINUED

SHOULDER OR BERM HINGE POINT

JOINTS

W3 WIRE MESH (SEE SECTION D-D)

RIPRAP

6'-0"

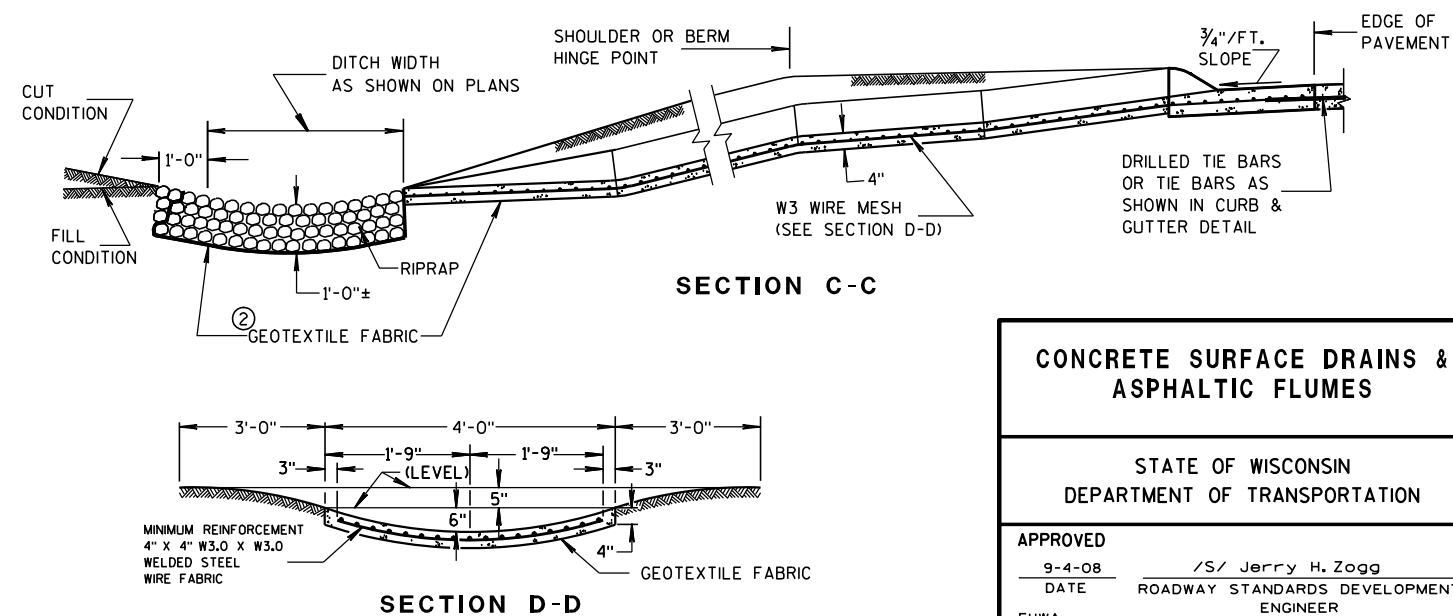
OR AS REQUIRED

1'-0" ON CUT SLOPE

DITCH

PLAN VIEW

### PLAN VIEW



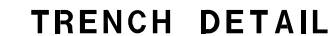
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
9-4-08 /S/ Jerry H. Zogg  
DATE ROADWAY STANDARDS DEVELOPMENT  
ENGINEER

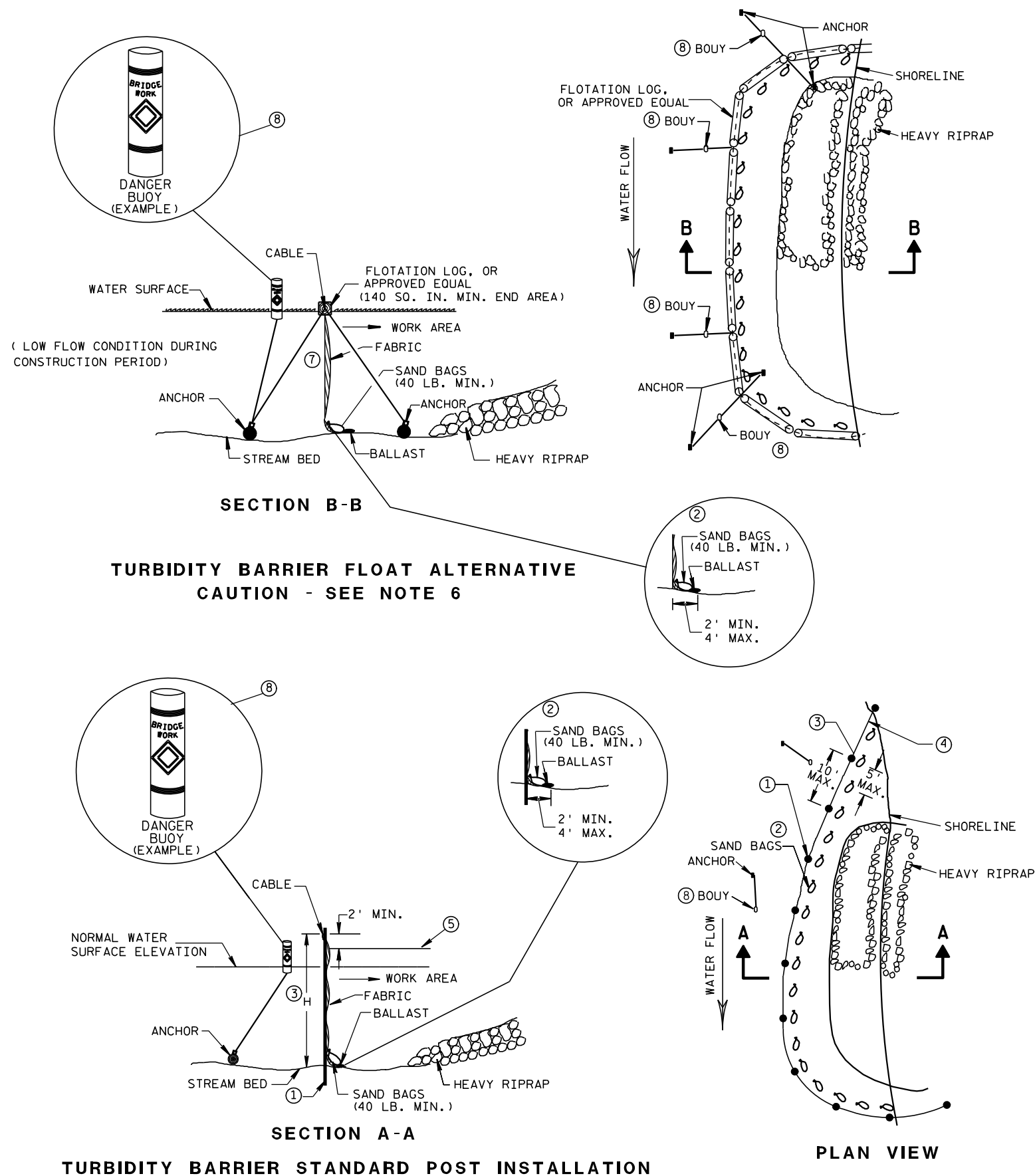




- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1½" X 1½" 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.



|                                                            |                                                                 |
|------------------------------------------------------------|-----------------------------------------------------------------|
| <b>SILT FENCE</b>                                          |                                                                 |
| <b>STATE OF WISCONSIN<br/>DEPARTMENT OF TRANSPORTATION</b> |                                                                 |
| <b>APPROVED</b><br>4-29-05<br>DATE                         | /S/ <u>Beth Cannestra</u><br>CHIEF ROADWAY DEVELOPMENT ENGINEER |

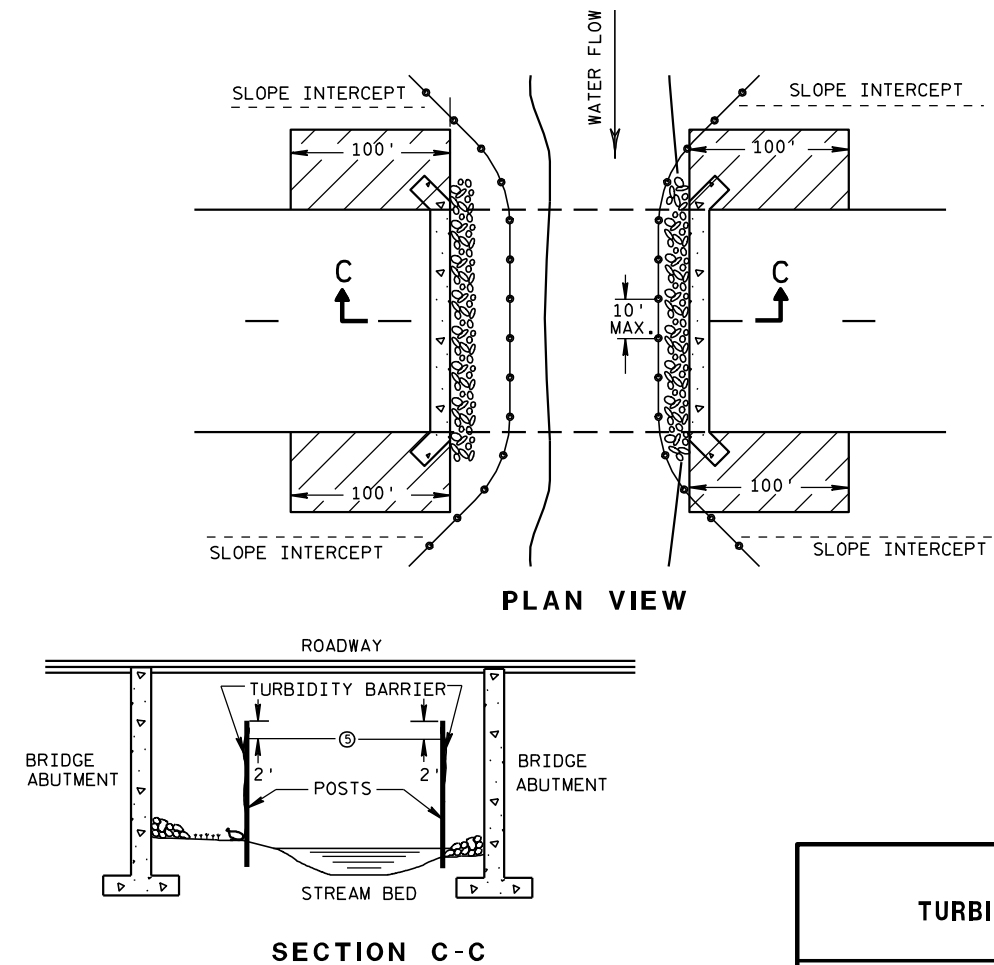


## GENERAL NOTES

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

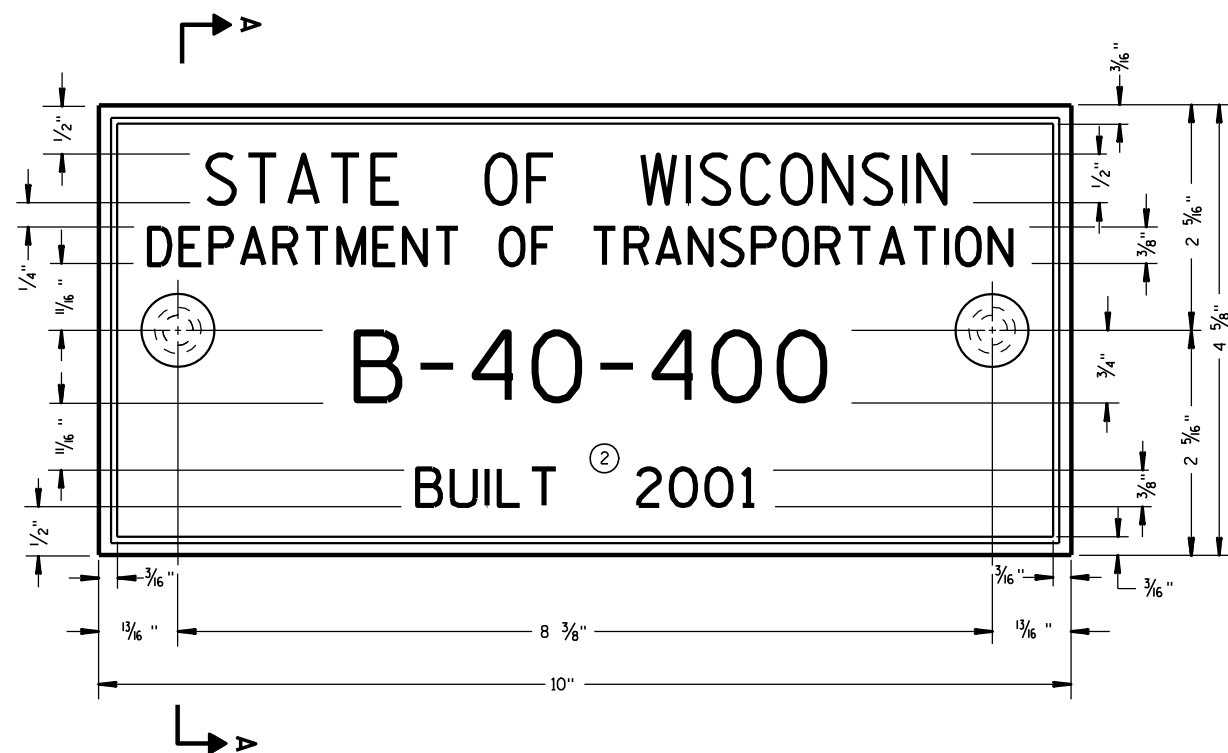
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

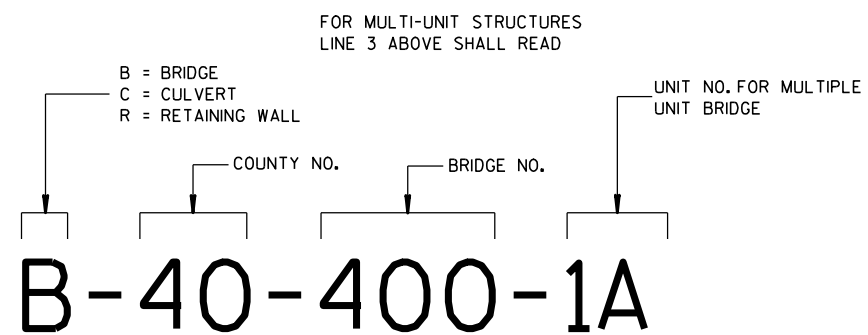
6/04/02  
DATE

FHWA

/S/ Beth Canestra  
CHIEF ROADWAY DEVELOPMENT ENGINEER



**TYPICAL NAME PLATE**  
(BRIDGES, CULVERTS, AND RETAINING WALLS)



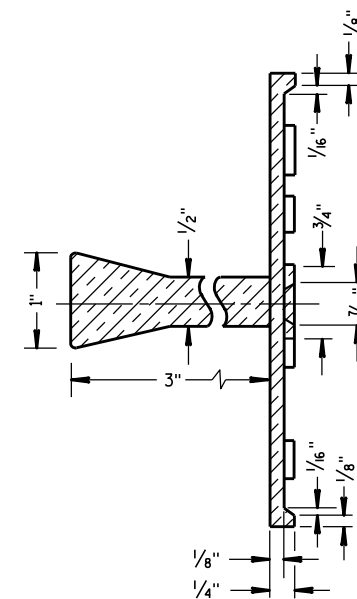
**NUMBERING DESIGNATION  
MULTI-UNIT STRUCTURES**

## GENERAL NOTES

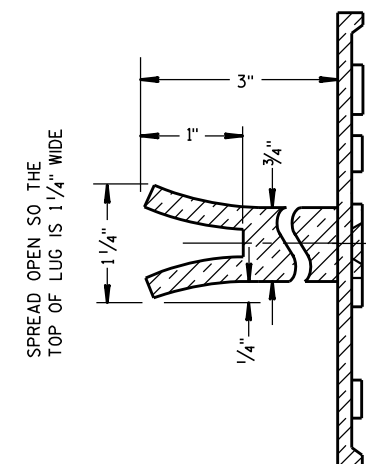
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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.

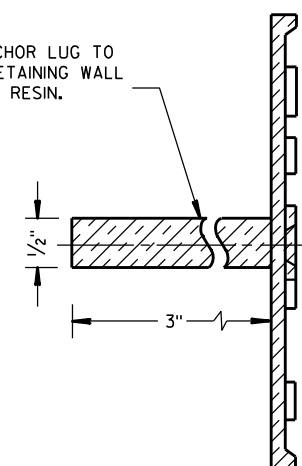


**SECTION A-A**



**ALTERNATE LUG**

- ① ADHERE ANCHOR LUG TO PRECAST RETAINING WALL WITH EPOXY RESIN.



**ALTERNATE LUG**  
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE  
(STRUCTURES)**

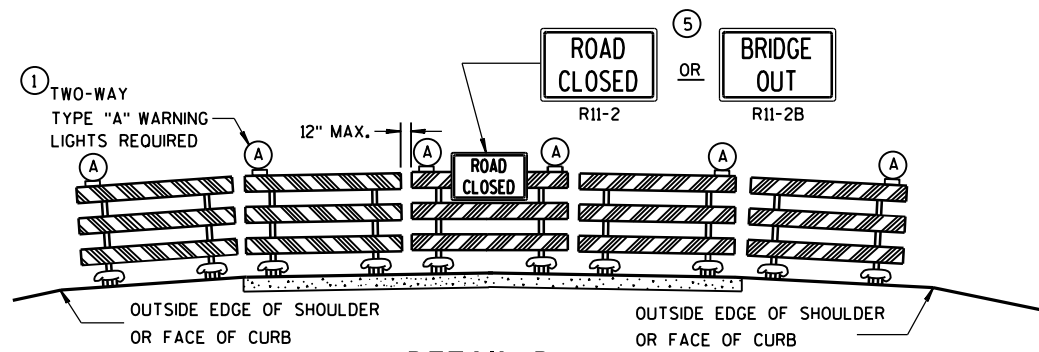
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

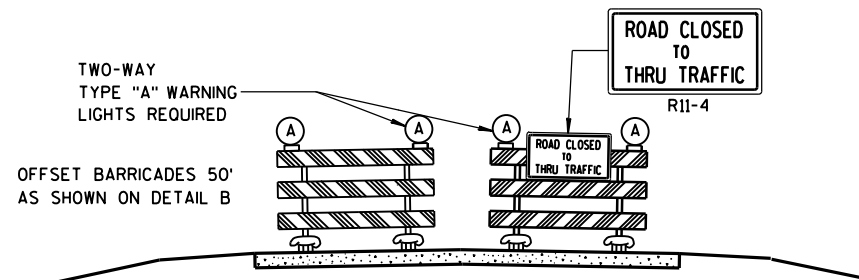
3/26/10  
DATE

FHWA

/S/ Scot Becker  
CHIEF STRUCTURAL DEVELOPMENT ENGINEER



DETAIL 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 BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE 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, 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". (30" X 15" 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.)

M05-1 AND M06-1 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.

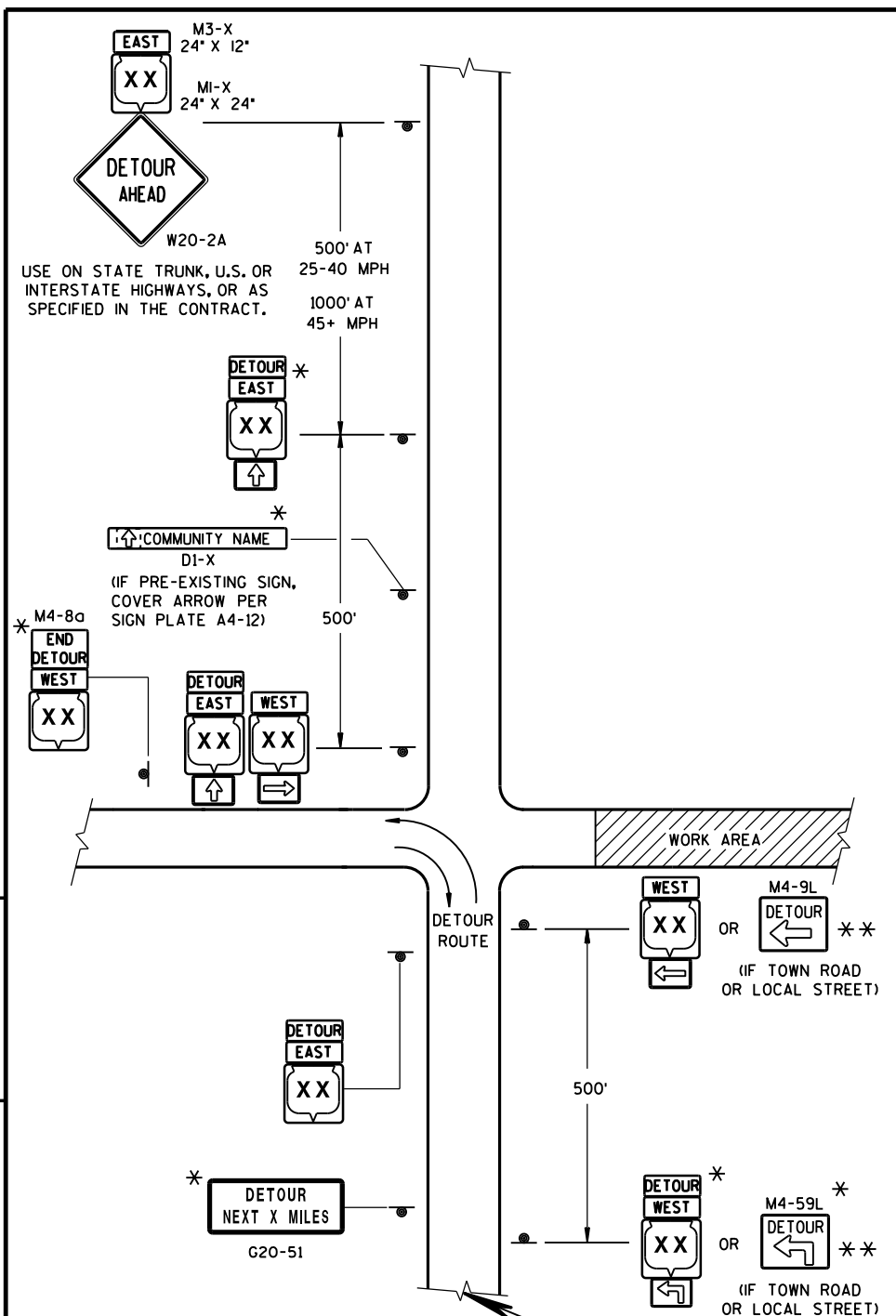
R1-1 SHALL BE 36" X 36".

- 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 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 LANE 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 MAINLINE CLOSURES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

Sept. 2015 /S/ Peter Amokobe Atepe  
DATE STATEWIDE WORK ZONE TRAFFIC  
FHWA SAFETY ENGINEER



THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL DETOUR SIGN LAYOUT AND SPACING. SEE PROJECT DETOUR SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.

MATCH POINT

DETAIL F  
DETOUR SIGNING

GENERAL NOTES

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

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. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS, MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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.

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

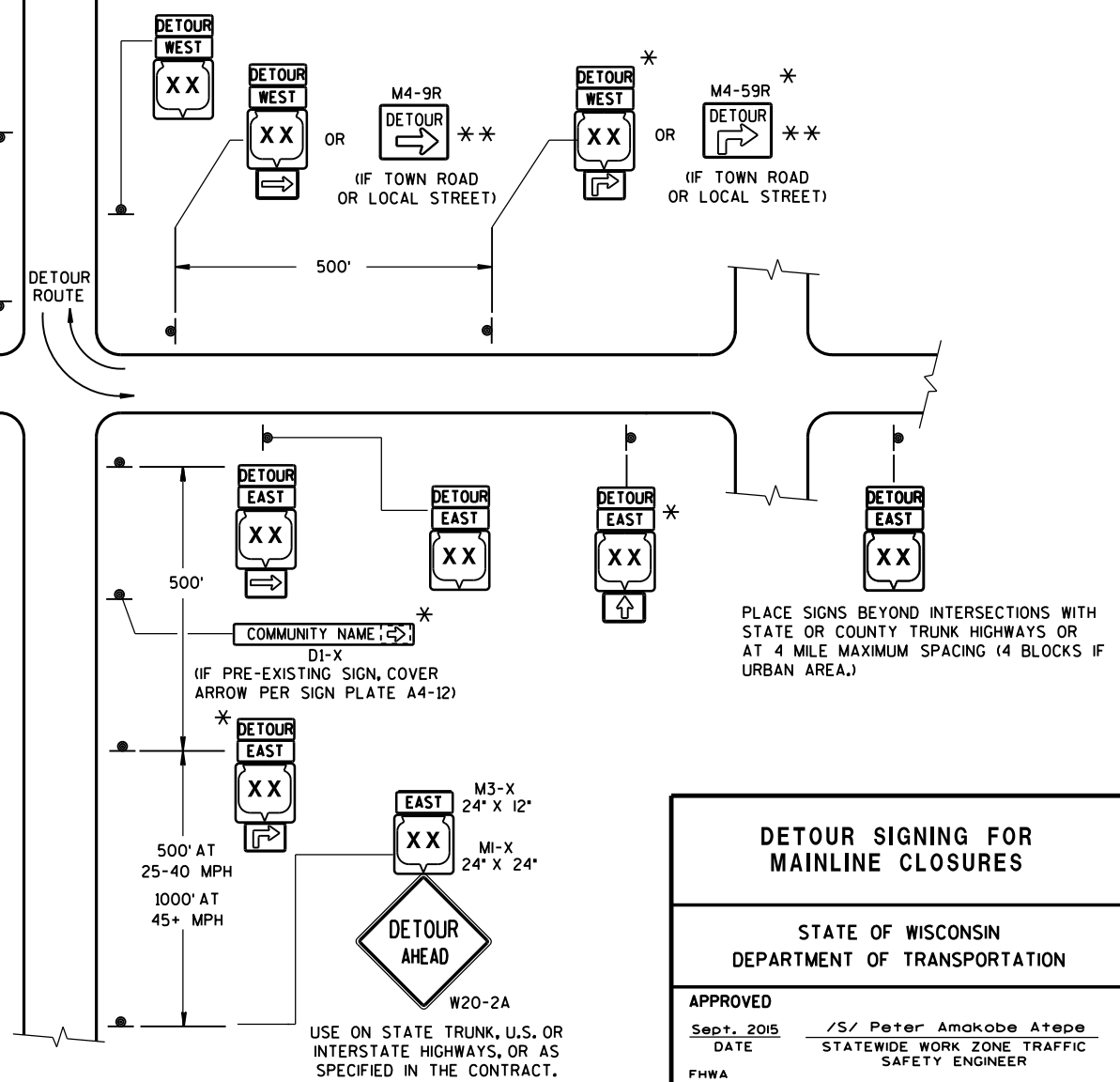
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

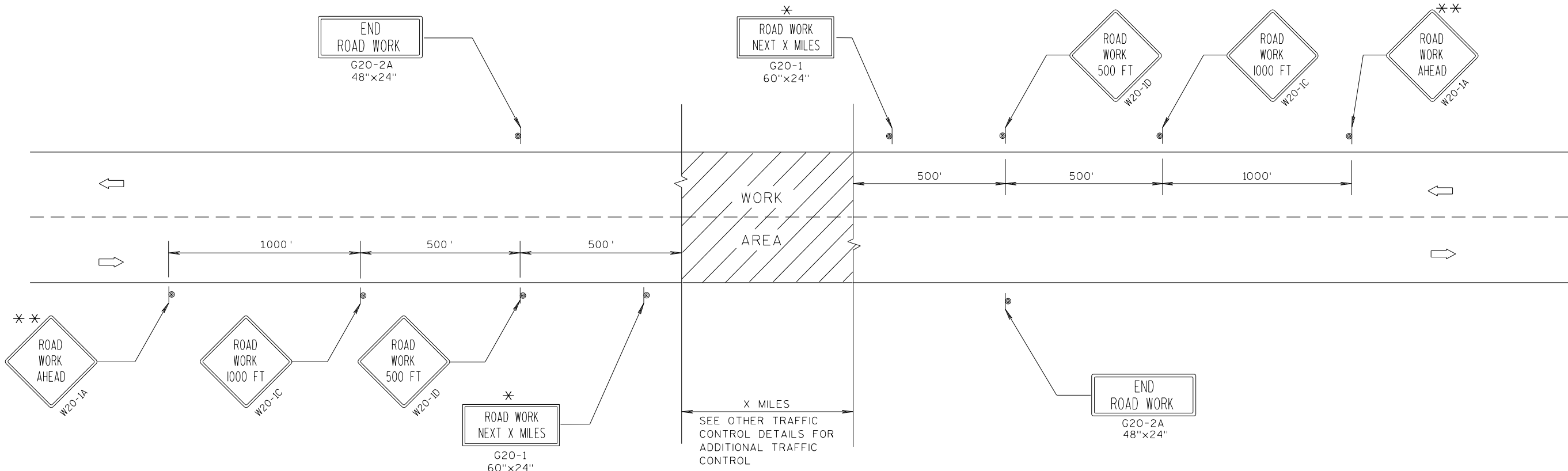
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-9 SHALL BE 30" X 24".
- M4-8a SHALL BE 24" X 18".
- G20-51 SHALL BE 60" X 24".
- W20-2 SHALL BE 48" X 48".
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

\* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

\*\* FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.



| DETOUR SIGNING FOR MAINLINE CLOSURES               |                                                                           |
|----------------------------------------------------|---------------------------------------------------------------------------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                                                                           |
| APPROVED<br>DATE<br>FWHA                           | /S/ Peter Amakobe Atepe<br>STATEWIDE WORK ZONE TRAFFIC<br>SAFETY ENGINEER |



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

GENERAL NOTES

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

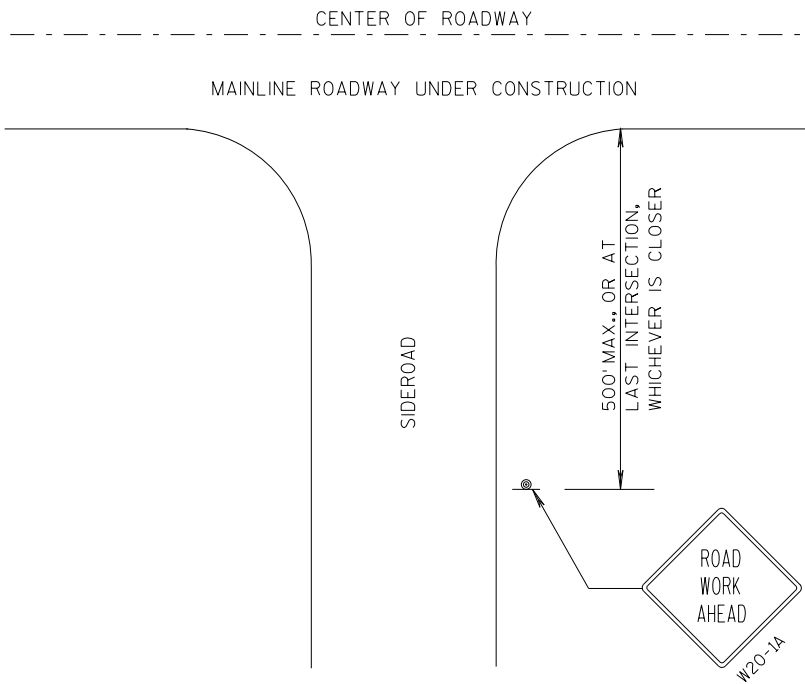
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS RE-ESTABLISHED.

- \* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.
- \* \* PLACE ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.



LEGEND

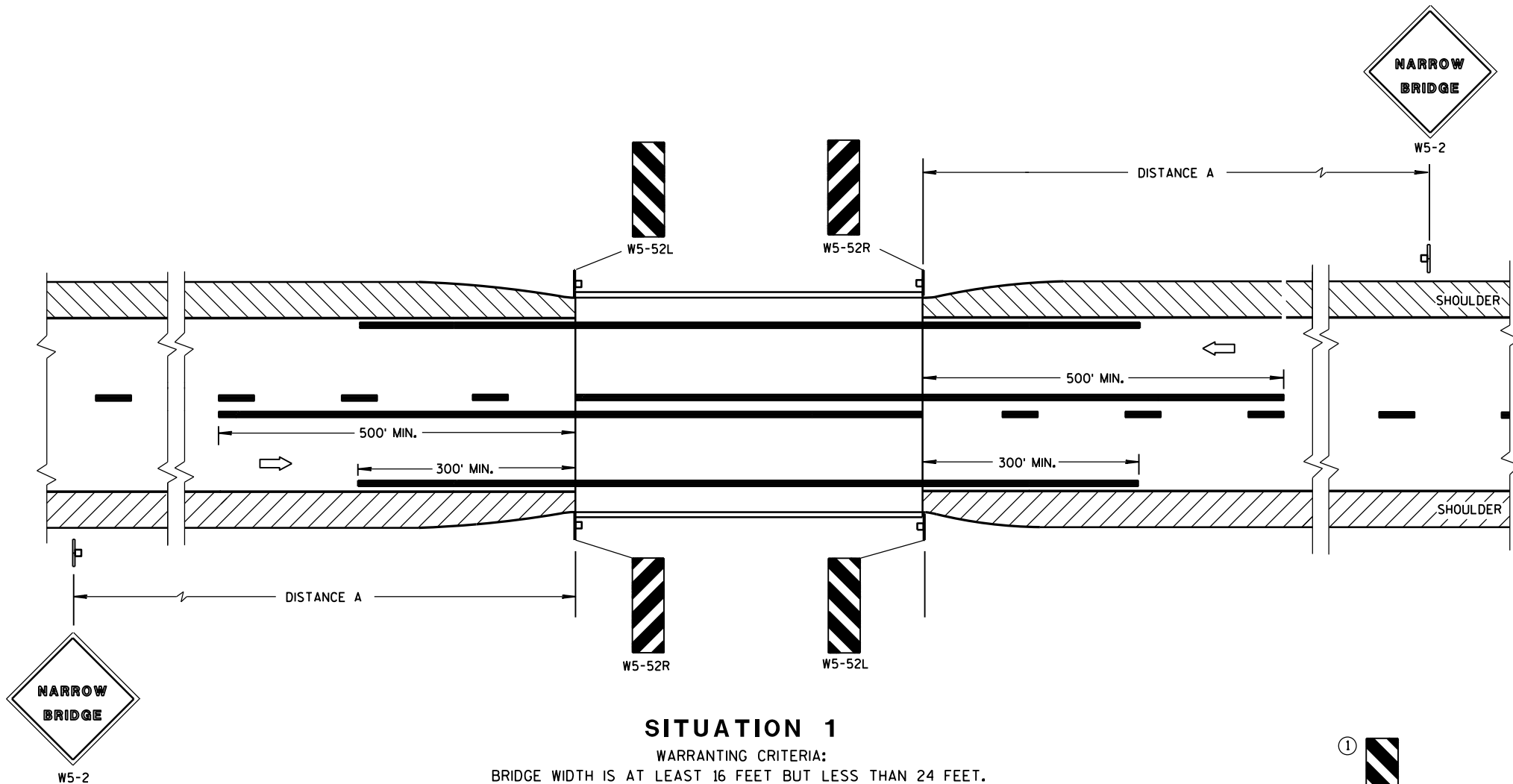
- ⦿ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA

TRAFFIC CONTROL, ADVANCE  
WARNING SIGNS 45 M.P.H.  
OR GREATER TWO-WAY  
UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
7/2018 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER  
FHWA

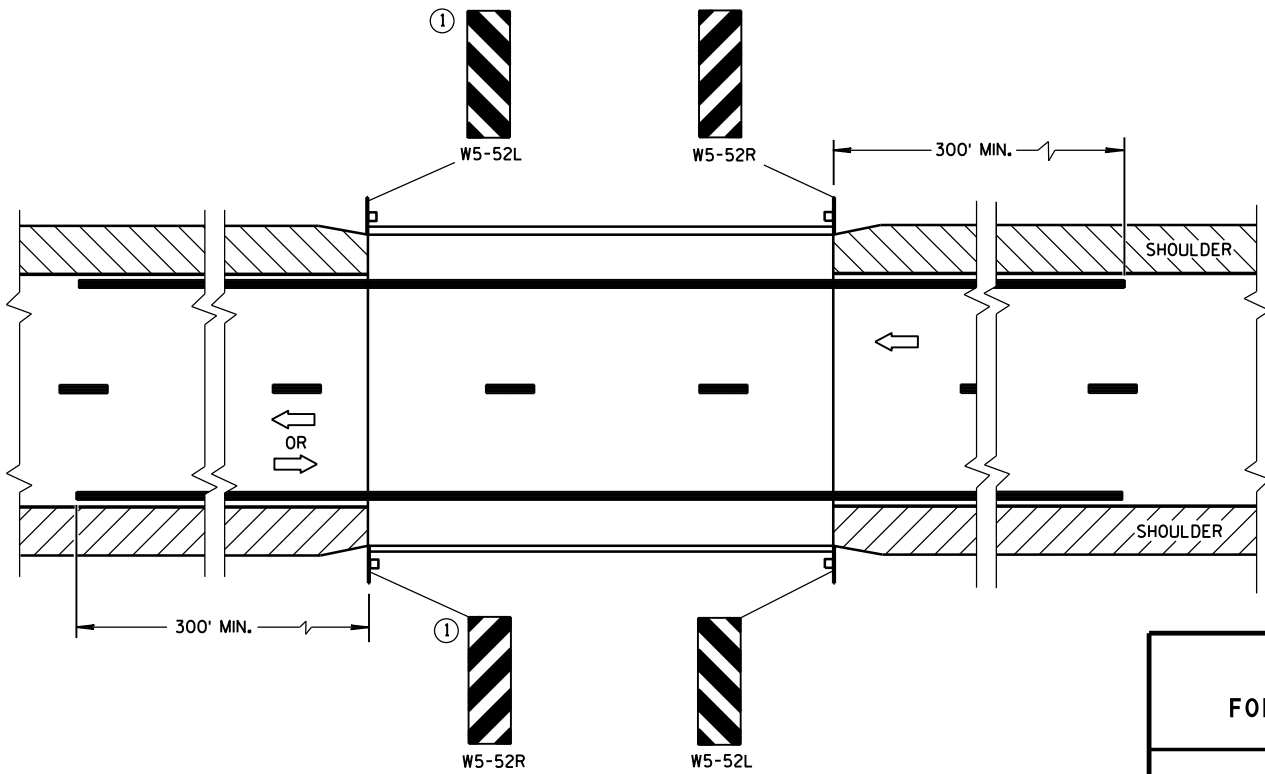




**SITUATION 1**  
WARRANTING CRITERIA:  
BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET.

**DISTANCE TABLE**

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



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

**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.

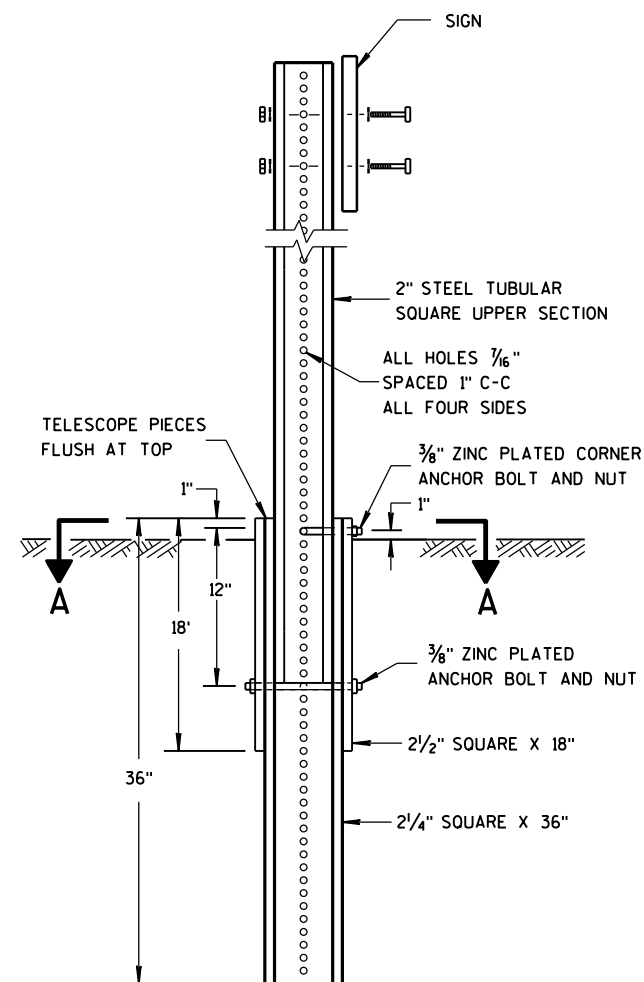
① OMIT ON ONE-WAY TRAVELLED WAYS.

➡ DIRECTION OF TRAFFIC

**SIGNING & MARKING  
FOR TWO LANE BRIDGES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
June 2017 /S/ Matthew R. Rauch  
DATE STATE SIGNING AND MARKING ENGINEER  
FHWA



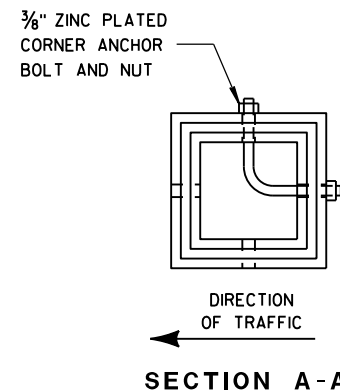
DETAIL OF TUBULAR  
STEEL SIGN POST

TUBULAR STEEL POSTS

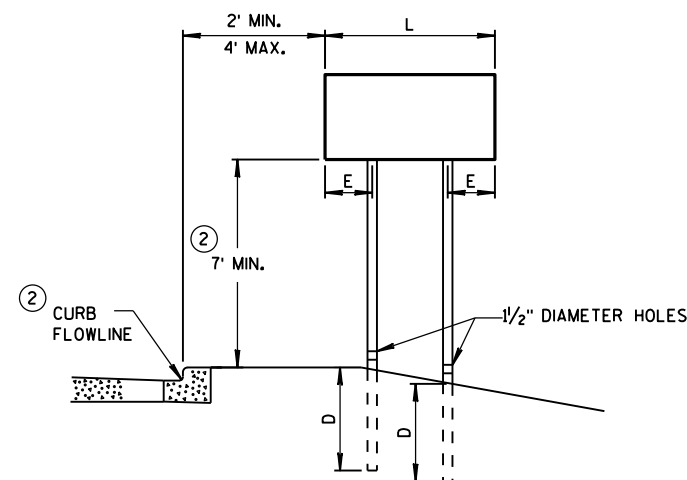
| AREA OF SIGN<br>INSTALLATION<br>(SQ. FT.)      | NUMBER OF<br>REQUIRED TUBULAR<br>STEEL POSTS |
|------------------------------------------------|----------------------------------------------|
| 9 OR LESS                                      | 1                                            |
| GREATER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



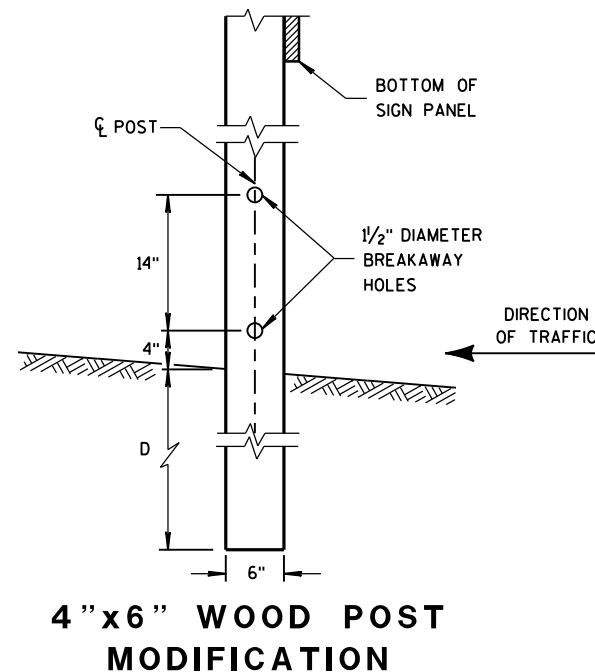
SECTION A-A



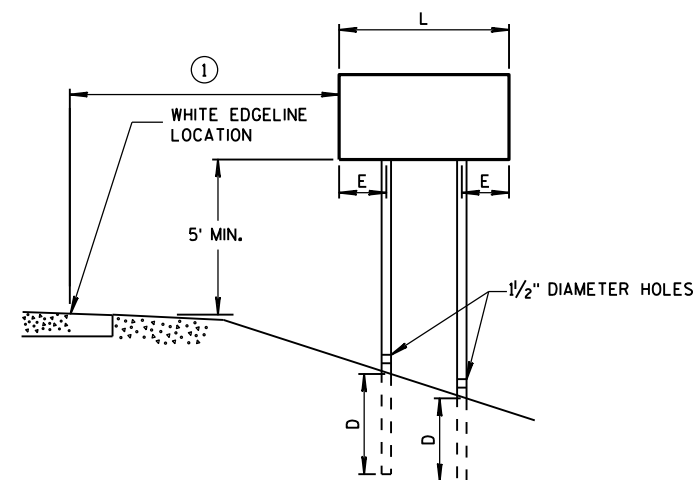
URBAN AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

| WOOD POST<br>EMBEDMENT DEPTH              |            |
|-------------------------------------------|------------|
| AREA OF SIGN<br>INSTALLATION<br>(SQ. FT.) | D<br>(MIN) |
| 20 OR LESS                                | 4'         |
| GREATER THAN 20                           | 5'         |



4 "x6 " WOOD POST  
MODIFICATION



RURAL AREA

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

SEE NOTE ③

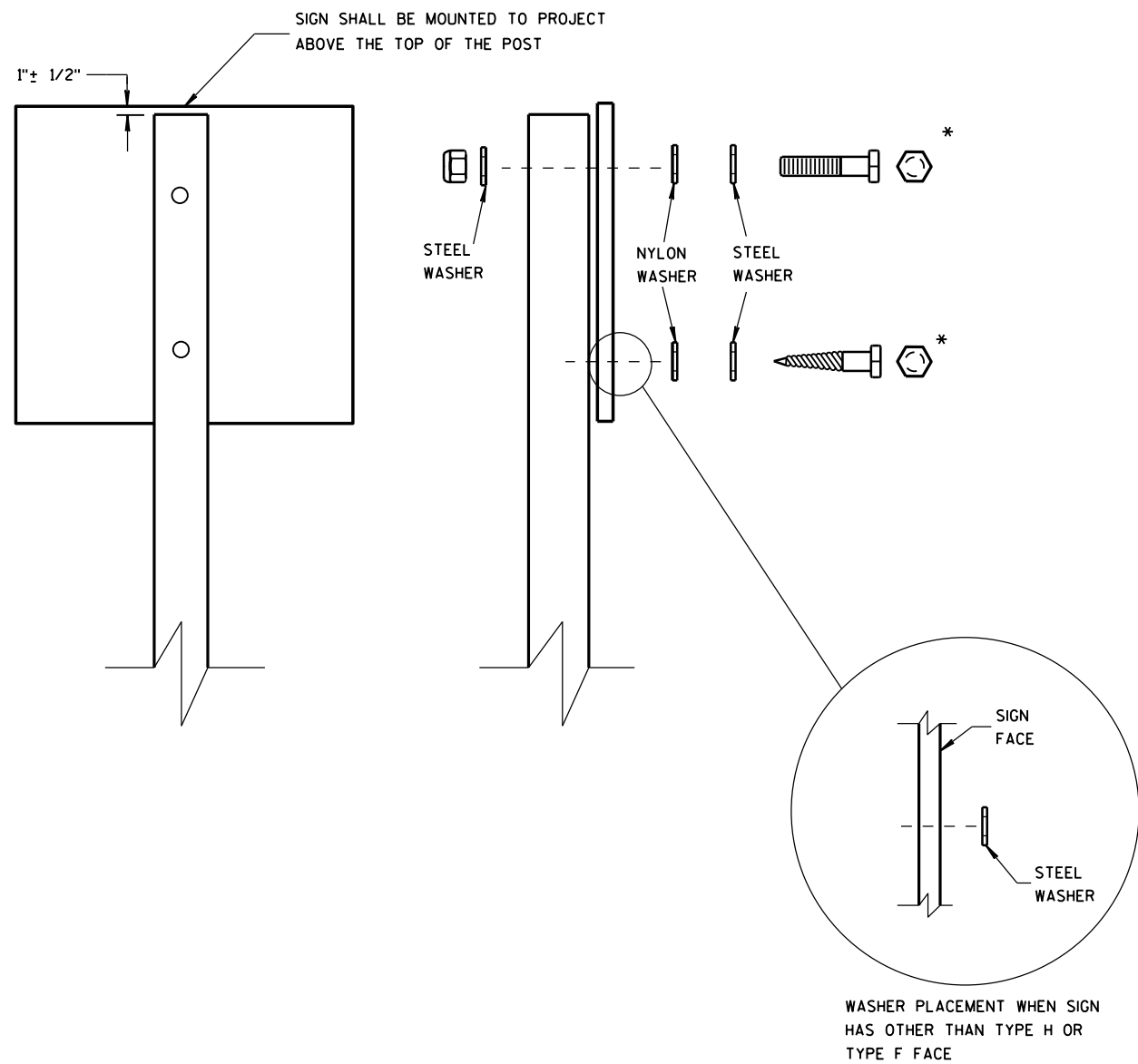
GENERAL NOTES

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

- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" x 3-1/4" LENGTH W/ NUTS
  - RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

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

\* 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<br>TO POSTS                    |                                          |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                                          |
| APPROVED<br>June 2017<br>DATE                      | /S/ Andrew Heldtke<br>WORK ZONE ENGINEER |
| FHWA                                               |                                          |

NOTES

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



M1-94

\* Minimum dimension is normally height of upper case letter.

| SIZE | A      | B  | C     | D | E   | F     | G | H     | I     | J     | K     | L      | M     | N | O     | P | Q | R  | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|--------|----|-------|---|-----|-------|---|-------|-------|-------|-------|--------|-------|---|-------|---|---|----|---|---|---|---|---|---|---|---|-----------------|
| 1    |        |    |       |   |     |       |   |       |       |       |       |        |       |   |       |   |   |    |   |   |   |   |   |   |   |   |                 |
| 2    | Varies | 15 | 2 1/4 |   | 3/4 | 4 1/2 | 6 | 5     | 4 1/8 | 8 5/8 | 5 1/4 | 14 5/8 | 7 3/4 | 6 | 8 1/2 |   |   | 30 |   |   |   |   |   |   |   |   | Varies          |
| 3    |        |    |       |   |     |       |   |       |       |       |       |        |       |   |       |   |   |    |   |   |   |   |   |   |   |   |                 |
| 4    | Varies | 21 | 3     |   | 1   | 6     | 8 | 7 1/8 | 4 3/4 | 9 1/2 | 5 3/4 | 17 1/2 | 9 1/4 | 7 | 12    |   |   | 36 |   |   |   |   |   |   |   |   | Varies          |
| 5    | Varies | 21 | 3     |   | 1   | 6     | 8 | 7 1/8 | 4 3/4 | 9 1/2 | 5 3/4 | 17 1/2 | 9 1/4 | 7 | 12    |   |   | 36 |   |   |   |   |   |   |   |   | Varies          |

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

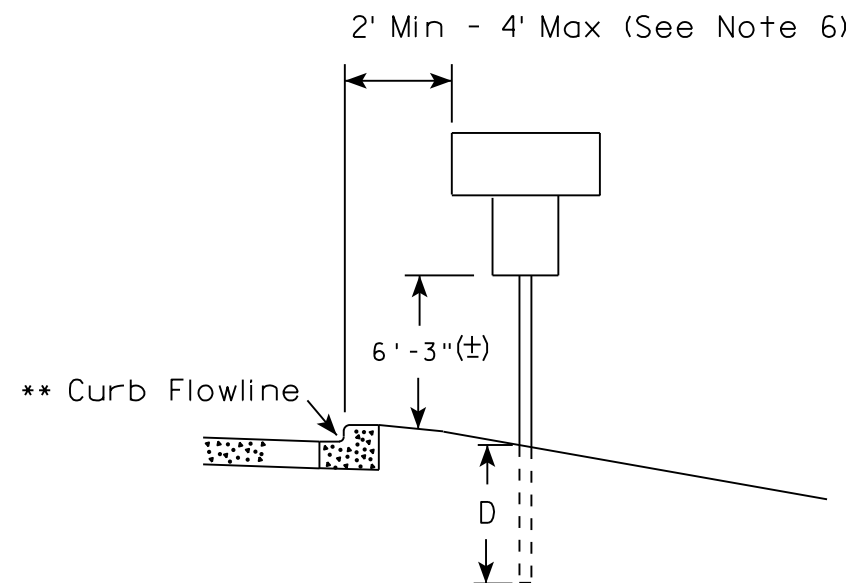
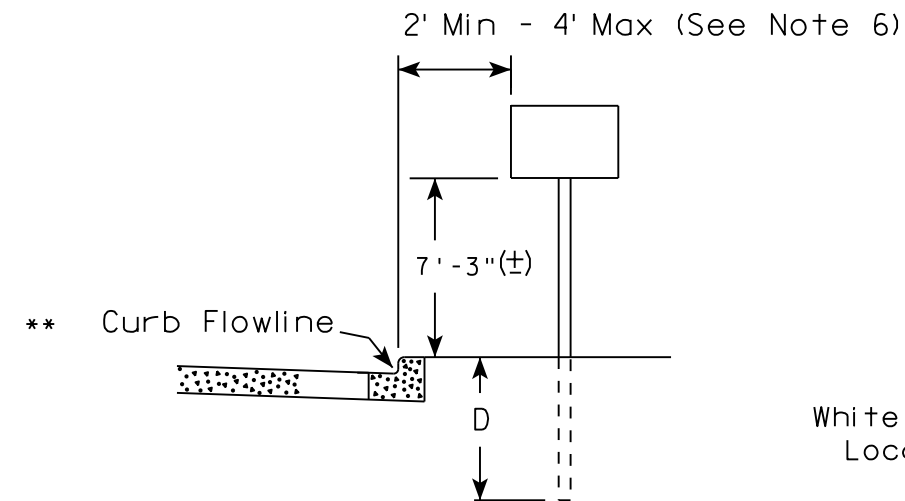
STANDARD SIGN  
M1-94

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

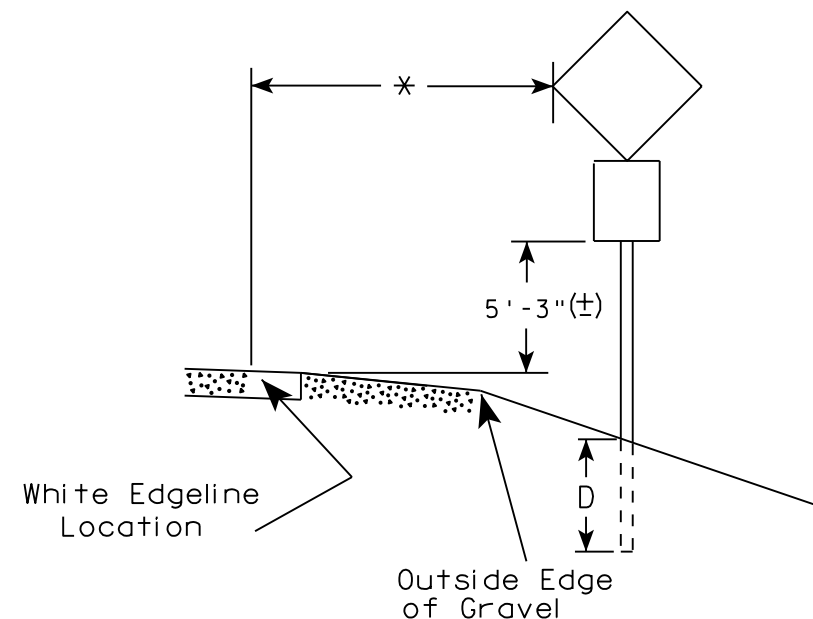
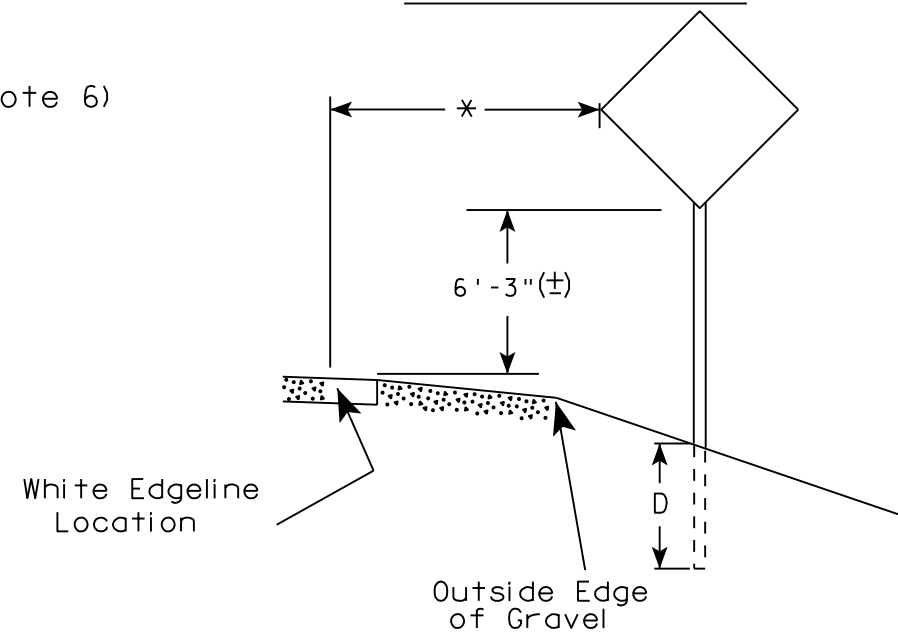
DATE 12/16/10 PLATE NO. M1-94.6

## URBAN AREA



✱✱ 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.

## RURAL AREA (See Note 2)



✱ 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.

POST EMBEDMENT DEPTH

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

## GENERAL NOTES

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

TYPICAL INSTALLATION  
OF PERMANENT TYPE II  
SIGNS ON SINGLE POSTS

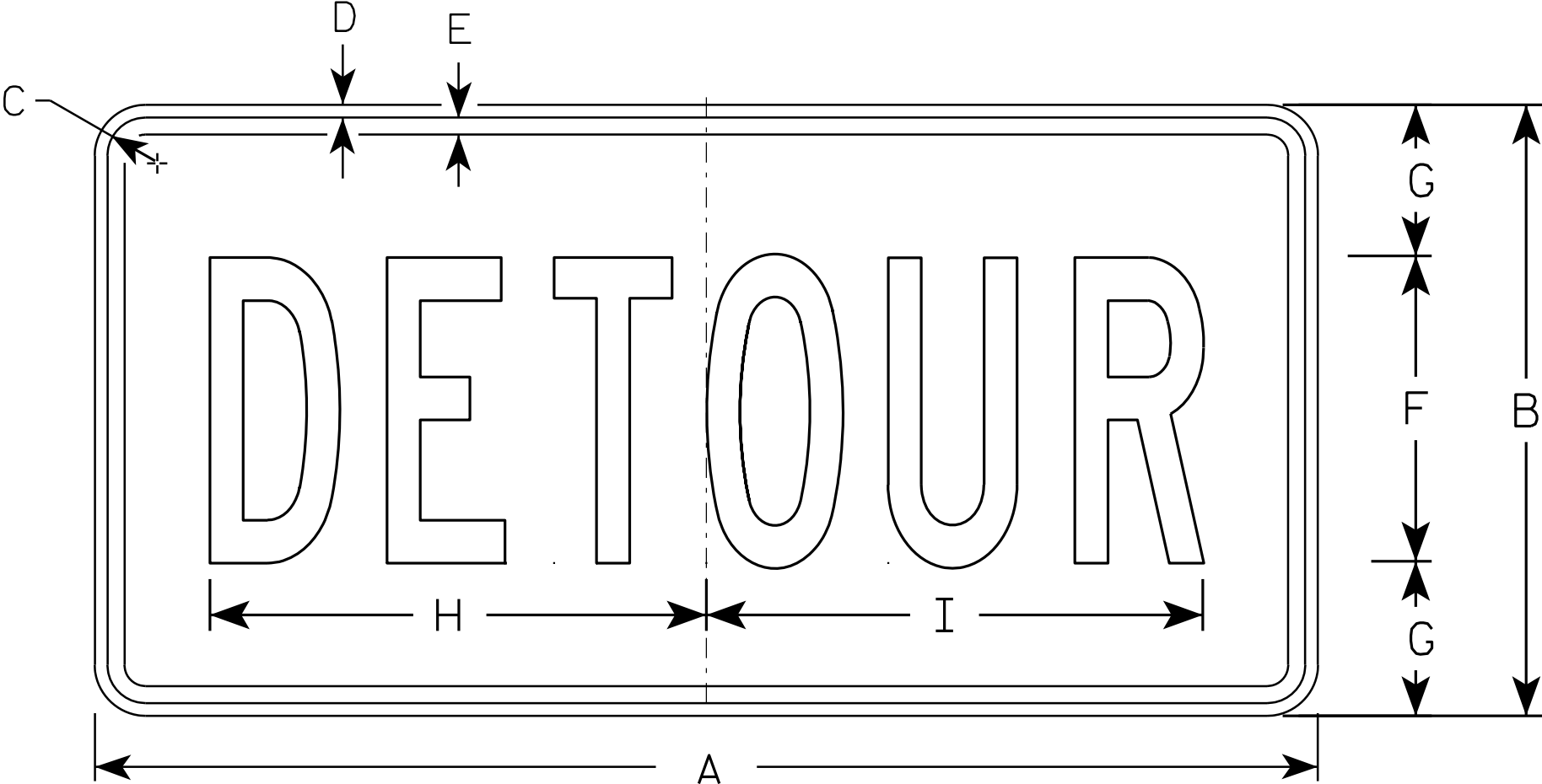
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-3.21

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 - B
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



M4 - 8

| 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 | Areg<br>sq. ft. |
|------|----|----|-------|-----|-----|---|-------|--------|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    |    |    |       |     |     |   |       |        |        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 2    | 24 | 12 | 1 1/8 | 3/8 | 3/8 | 6 | 3     | 10     | 10 1/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 2.0             |
| 3    | 36 | 18 | 1 1/8 | 3/8 | 1/2 | 9 | 4 1/2 | 14 5/8 | 14 1/2 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 4.5             |
| 4    |    |    |       |     |     |   |       |        |        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 5    |    |    |       |     |     |   |       |        |        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |

STANDARD SIGN

M4 - 8

WISCONSIN DEPT OF TRANSPORTATION

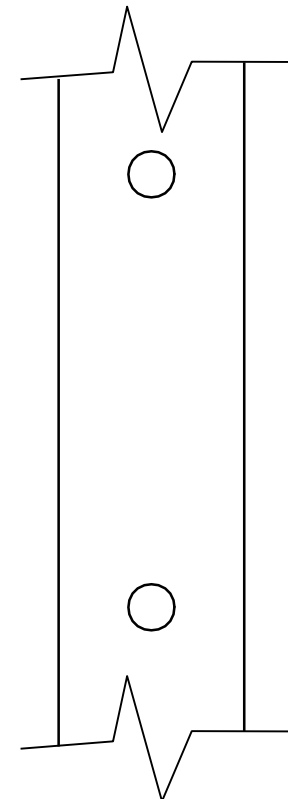
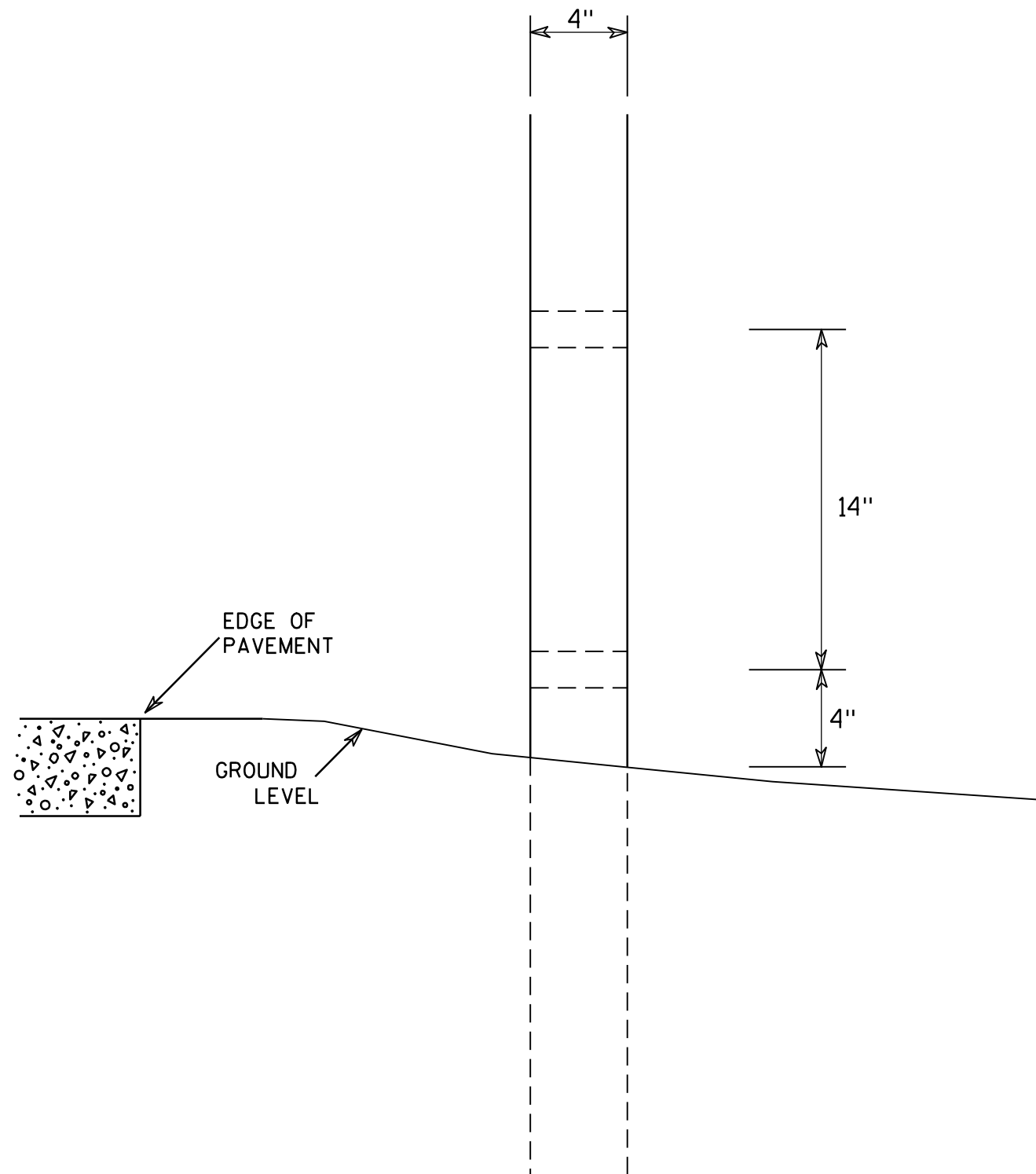
APPROVED

Matthew R. Rauch

for State Traffic Engineer

DATE 11/10/10

PLATE NO. M4-8.2



SIDE VIEW

# GENERAL NOTES

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

## 4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

*Chester J. Spang*  
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

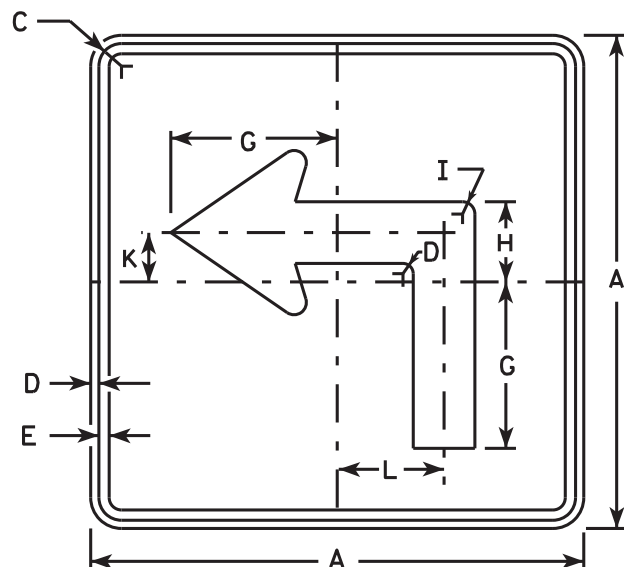
PROJECT NO:

HWY:

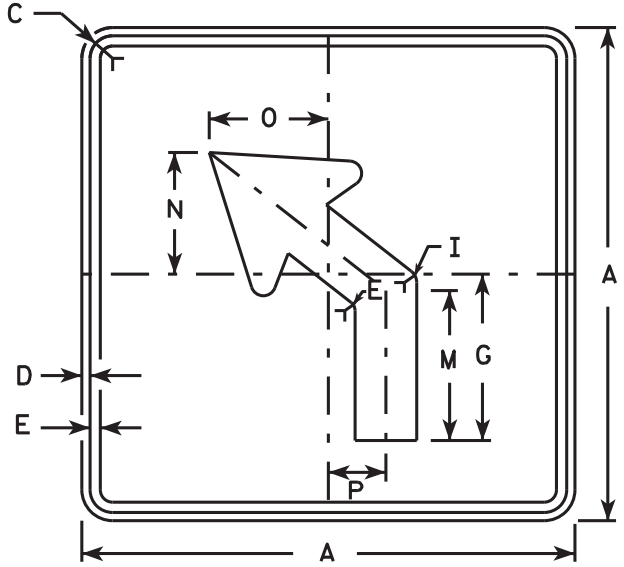
COUNTY:

SHEET NO:

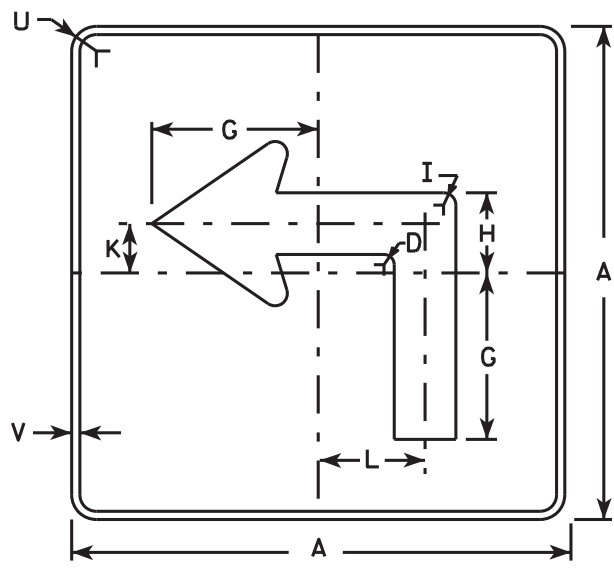
E



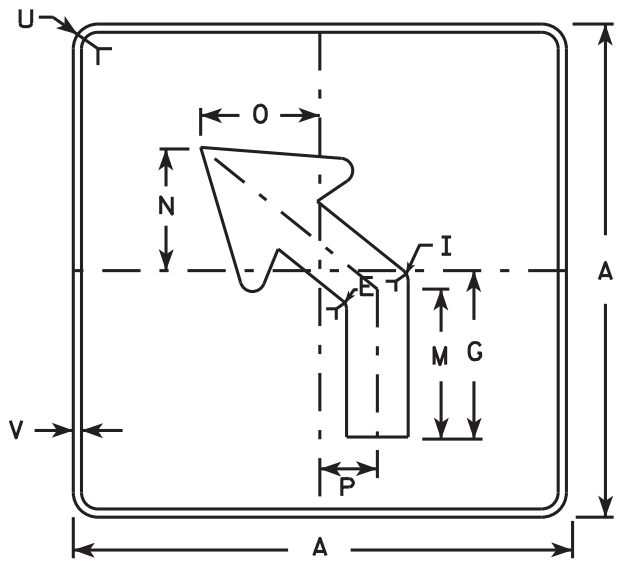
M5-1L  
MM5-1L  
M05-1L  
MP5-1L



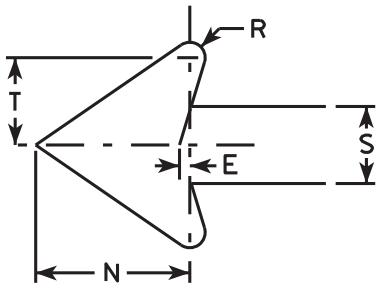
M5-2L  
MM5-2L  
M05-2L  
MP5-2L



MB5-1L  
MK5-1L  
MN5-1L  
MR5-1L



MB5-2L  
MK5-2L  
MN5-2L  
MR5-2L



NOTES

- Signs are Type II - Type H reflective except as shown
- Color:  
Background - See note 4  
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- |                 |                                         |
|-----------------|-----------------------------------------|
| M5-1 and M5-2   | Background - White                      |
|                 | Message - Black                         |
| MB5-1 and MB5-2 | Background - Blue                       |
|                 | Message - White                         |
| MK5-1 and MK5-2 | Background - Green                      |
|                 | Message - White                         |
| MM5-1 and MM5-2 | Background - White                      |
|                 | Message - Green                         |
| MN5-1 and MN5-2 | Background - Brown                      |
|                 | Message - White                         |
| M05-1 and M05-2 | Background - Orange - Type F Reflective |
|                 | Message - Black                         |
| MP5-1 and MP5-2 | Background - White - Type H Reflective  |
|                 | Message - Blue                          |
| MR5-1 and MR5-2 | Background - Brown                      |
|                 | Message - Yellow                        |
- M5-1R same as M5-1L except arrow points right.
- M5-2R same as M5-2L except arrow tilts right.

| SIZE | A  | B | C     | D   | E   | F | G      | H     | I   | J | K     | L     | M     | N     | O     | P     | O | R   | S     | T     | U     | V   | W | X | Y | Z | Area<br>sq. ft. |
|------|----|---|-------|-----|-----|---|--------|-------|-----|---|-------|-------|-------|-------|-------|-------|---|-----|-------|-------|-------|-----|---|---|---|---|-----------------|
| 1    |    |   |       |     |     |   |        |       |     |   |       |       |       |       |       |       |   |     |       |       |       |     |   |   |   |   |                 |
| 2    | 21 |   | 1 1/8 | 3/8 | 3/8 |   | 7      | 3 3/8 | 5/8 |   | 2 1/8 | 4 1/2 | 6 3/8 | 5 1/4 | 5     | 2 1/2 |   | 1/2 | 2 5/8 | 3     | 1 1/2 | 1/2 |   |   |   |   | 3.06            |
| 3    | 30 |   | 1 3/8 | 1/2 | 5/8 |   | 10 1/8 | 4 7/8 | 7/8 |   | 3     | 6 1/2 | 9 1/8 | 7 1/2 | 7 1/4 | 3 1/2 |   | 3/4 | 3 3/4 | 4 1/4 | 1 7/8 | 1/2 |   |   |   |   | 6.25            |
| 4    | 30 |   | 1 3/8 | 1/2 | 5/8 |   | 10 1/8 | 4 7/8 | 7/8 |   | 3     | 6 1/2 | 9 1/8 | 7 1/2 | 7 1/4 | 3 1/2 |   | 3/4 | 3 3/4 | 4 1/4 | 1 7/8 | 1/2 |   |   |   |   | 6.25            |
| 5    | 30 |   | 1 3/8 | 1/2 | 5/8 |   | 10 1/8 | 4 7/8 | 7/8 |   | 3     | 6 1/2 | 9 1/8 | 7 1/2 | 7 1/4 | 3 1/2 |   | 3/4 | 3 3/4 | 4 1/4 | 1 7/8 | 1/2 |   |   |   |   | 6.25            |

STANDARD SIGN

M5-1 & M5-2

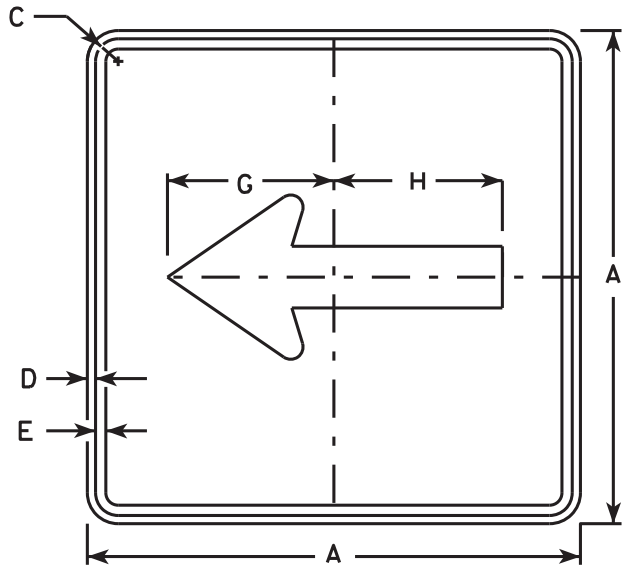
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*

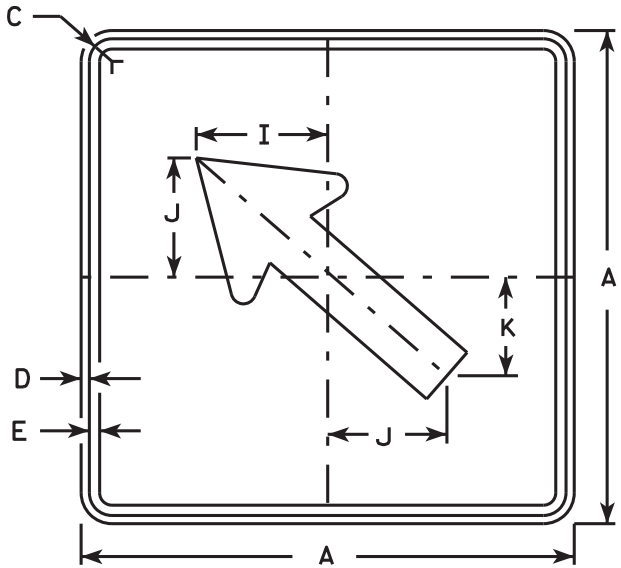
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M5-1.13

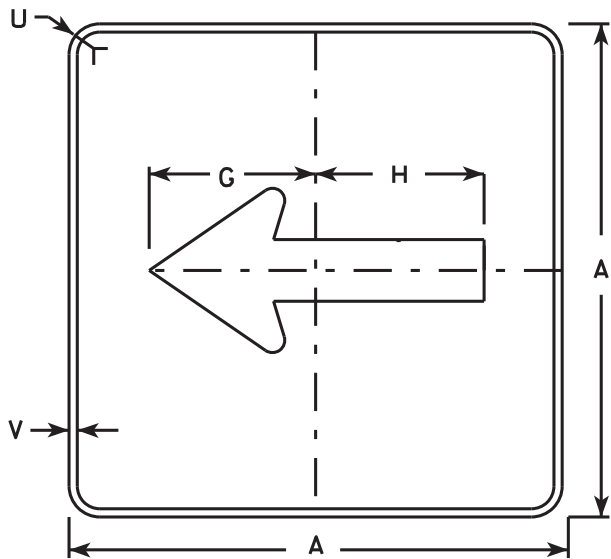




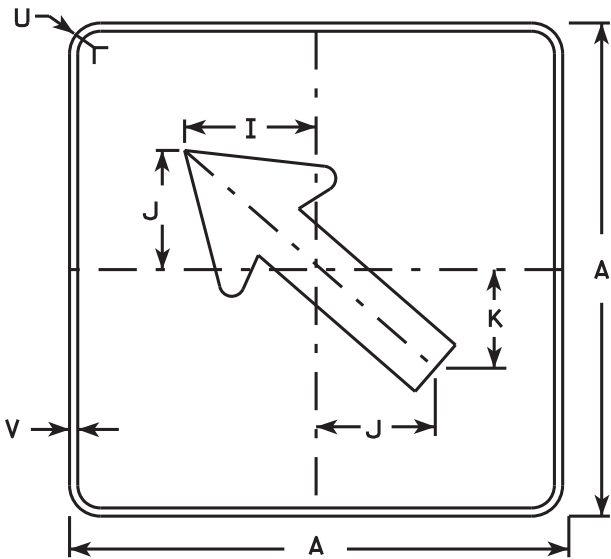
M6 - 1  
MM6 - 1  
MO6 - 1  
MP6 - 1



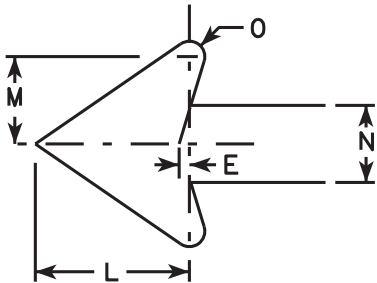
M6 - 2  
MM6 - 2  
MO6 - 2  
MP6 - 2



MB6 - 1  
MK6 - 1  
MN6 - 1  
MR6 - 1



MB6 - 2  
MK6 - 2  
MN6 - 2  
MR6 - 2



NOTES

- 1. Signs are Type II - Type H except as Shown
- 2. Color:
  - Background - See note 4
  - Message - See note 4
- 3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 4. M6-1 and M6-2 Background - White  
Message - Black  
MB6-1 and MB6-2 Background - Blue  
Message - White  
MK6-1 and MK6-2 Background - Green  
Message - White  
MM6-1 and MM6-2 Background - White  
Message - Green  
MN6-1 and MN6-2 Background - Brown  
Message - White  
MO6-1 and MO6-2 Background - Orange - Type F Reflective  
Message - Black  
MP6-1 and MP6-2 Background - White  
Message - Blue  
MR6-1 and MR6-2 Background - Brown  
Message - Yellow

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

PROJECT NO:

HWY:

COUNTY:

SHEET NO: E

STANDARD SIGN  
M6 - 1 & M6 - 2  
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED  
*Matthew R. Rauch*  
for State Traffic Engineer

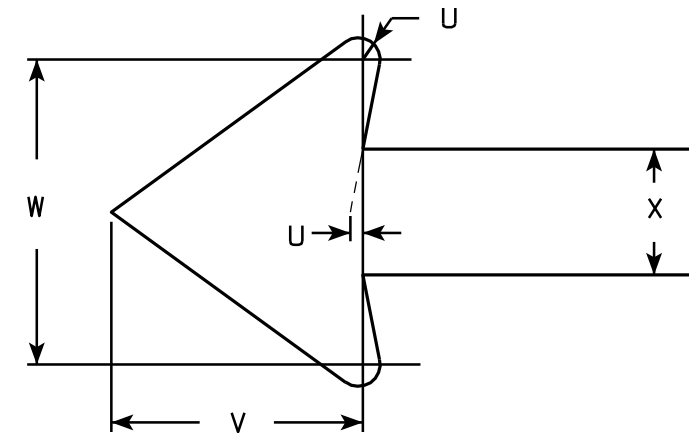
DATE 10/15/15 PLATE NO. M6-1.15



R7-52

### 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 - Red
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, 3 and 4 are series C, line 2 is series B.
6. R7-52D (double arrow)  
R7-52L (left arrow)  
R7-52R (right arrow)



ARROW DETAIL

| SIZE | A  | B  | C     | D   | E   | F | G     | H     | I     | J     | K     | L     | M     | N     | O     | P     | Q     | R     | S     | T     | U   | V     | W     | X     | Y | Z | Area<br>sq. ft. |
|------|----|----|-------|-----|-----|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|-------|-------|-------|---|---|-----------------|
| 1    | 12 | 18 | 1 1/8 | 3/8 | 3/8 | 3 | 1 7/8 | 1 1/2 | 7/8   | 7/8   | 2     | 2 1/2 | 2     | 2     | 4 7/8 | 4 7/8 | 5 1/8 | 5     | 3 1/8 | 3 7/8 | 1/8 | 1 1/2 | 1 3/4 | 3/4   |   |   | 1.5             |
| 2S   | 18 | 24 | 1 1/8 | 3/8 | 1/2 | 4 | 2 1/2 | 2 1/2 | 1 1/4 | 1     | 2     | 3 1/4 | 2 3/4 | 2 5/8 | 7 1/8 | 7     | 6 3/8 | 6 1/4 | 3 7/8 | 5 7/8 | 1/4 | 2 1/4 | 2 5/8 | 1 1/8 |   |   | 3.0             |
| 2M   | 24 | 30 | 1 1/8 | 3/8 | 1/2 | 5 | 3     | 3     | 2     | 1 1/4 | 2 1/2 | 4     | 3 1/4 | 3 3/8 | 9 1/4 | 9 1/4 | 7 5/8 | 7 5/8 | 4 3/4 | 7 3/4 | 1/4 | 3     | 3 1/2 | 1 1/2 |   |   | 5.0             |
| 3    | 24 | 30 | 1 1/8 | 3/8 | 1/2 | 5 | 3     | 3     | 2     | 1 1/4 | 2 1/2 | 4     | 3 1/4 | 3 3/8 | 9 1/4 | 9 1/4 | 7 5/8 | 7 5/8 | 4 3/4 | 7 3/4 | 1/4 | 3     | 3 1/2 | 1 1/2 |   |   | 5.0             |
| 4    |    |    |       |     |     |   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |     |       |       |       |   |   |                 |
| 5    |    |    |       |     |     |   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |     |       |       |       |   |   |                 |

### STANDARD SIGN R7-52

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 3/31/2011 PLATE NO. R7-52.6

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

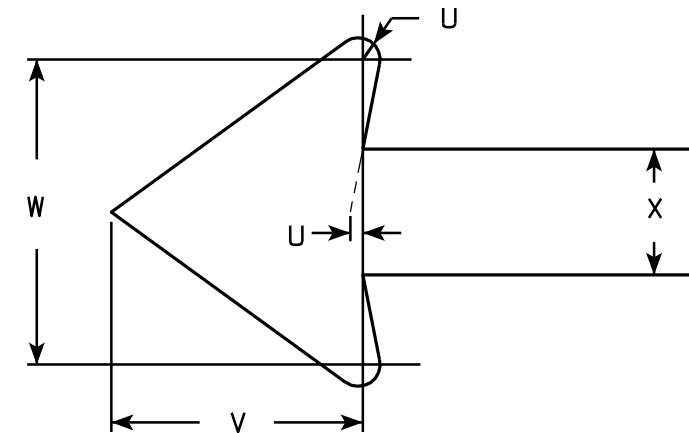




R7-52

### 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 - Red
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, 3 and 4 are series C, line 2 is series B.
6. R7-52D (double arrow)  
R7-52L (left arrow)  
R7-52R (right arrow)



ARROW DETAIL

| SIZE | A  | B  | C     | D   | E   | F | G     | H     | I     | J     | K     | L     | M     | N     | O     | P     | Q     | R     | S     | T     | U   | V     | W     | X     | Y | Z | Area<br>sq. ft. |
|------|----|----|-------|-----|-----|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|-------|-------|-------|---|---|-----------------|
| 1    | 12 | 18 | 1 1/8 | 3/8 | 3/8 | 3 | 1 7/8 | 1 1/2 | 7/8   | 7/8   | 2     | 2 1/2 | 2     | 2     | 4 7/8 | 4 7/8 | 5 1/8 | 5     | 3 1/8 | 3 7/8 | 1/8 | 1 1/2 | 1 3/4 | 3/4   |   |   | 1.5             |
| 2S   | 18 | 24 | 1 1/8 | 3/8 | 1/2 | 4 | 2 1/2 | 2 1/2 | 1 1/4 | 1     | 2     | 3 1/4 | 2 3/4 | 2 5/8 | 7 1/8 | 7     | 6 3/8 | 6 1/4 | 3 7/8 | 5 7/8 | 1/4 | 2 1/4 | 2 5/8 | 1 1/8 |   |   | 3.0             |
| 2M   | 24 | 30 | 1 1/8 | 3/8 | 1/2 | 5 | 3     | 3     | 2     | 1 1/4 | 2 1/2 | 4     | 3 1/4 | 3 3/8 | 9 1/4 | 9 1/4 | 7 5/8 | 7 5/8 | 4 3/4 | 7 3/4 | 1/4 | 3     | 3 1/2 | 1 1/2 |   |   | 5.0             |
| 3    | 24 | 30 | 1 1/8 | 3/8 | 1/2 | 5 | 3     | 3     | 2     | 1 1/4 | 2 1/2 | 4     | 3 1/4 | 3 3/8 | 9 1/4 | 9 1/4 | 7 5/8 | 7 5/8 | 4 3/4 | 7 3/4 | 1/4 | 3     | 3 1/2 | 1 1/2 |   |   | 5.0             |
| 4    |    |    |       |     |     |   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |     |       |       |       |   |   |                 |
| 5    |    |    |       |     |     |   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |     |       |       |       |   |   |                 |

### STANDARD SIGN R7-52

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 3/31/2011 PLATE NO. R7-52.6

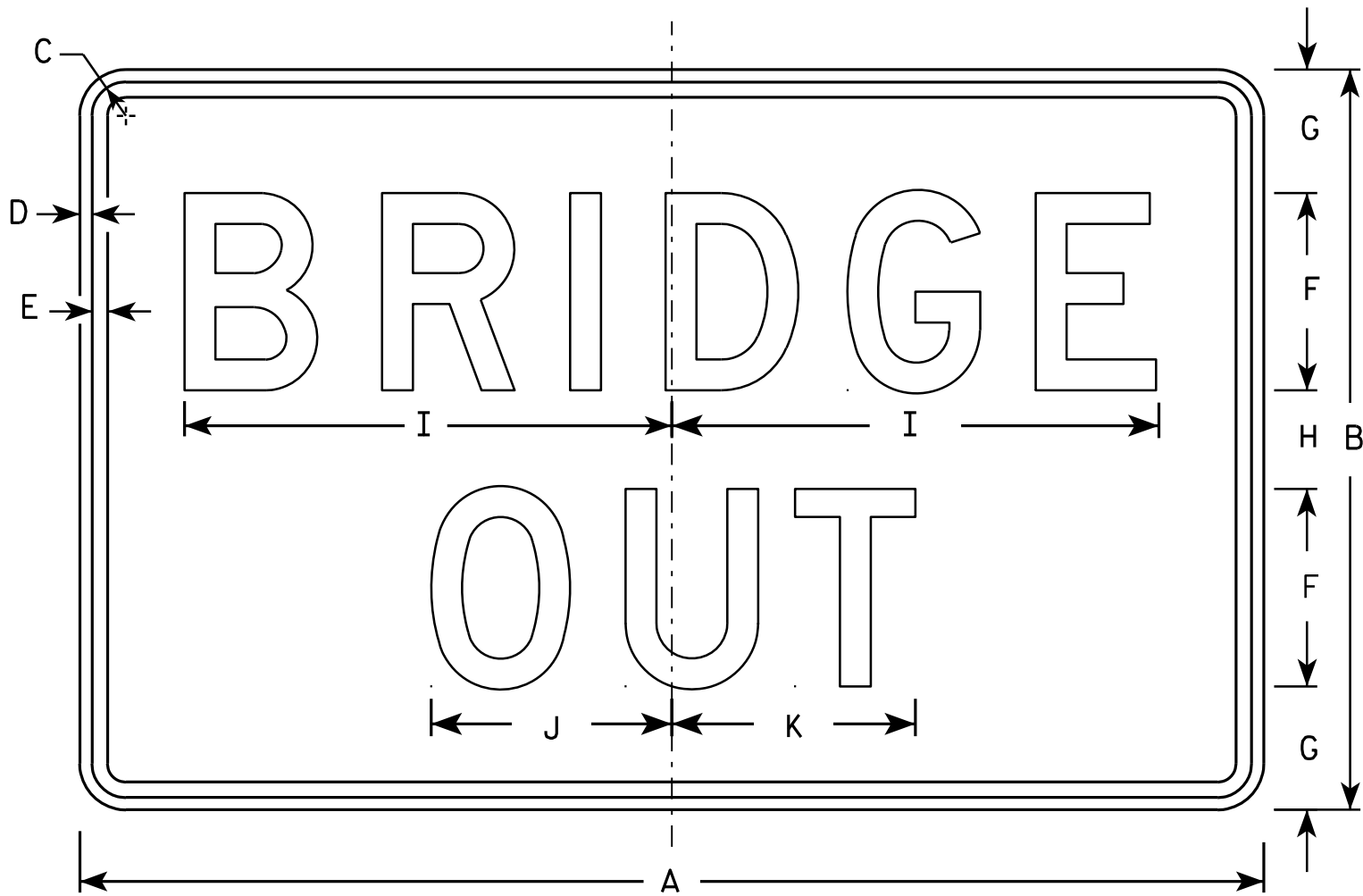
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



R11-2B

NOTES

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

| SIZE | A  | B  | C     | D   | E   | F | G | H | I      | J     | K     | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|----|-------|-----|-----|---|---|---|--------|-------|-------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    |    |    |       |     |     |   |   |   |        |       |       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 2S   | 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

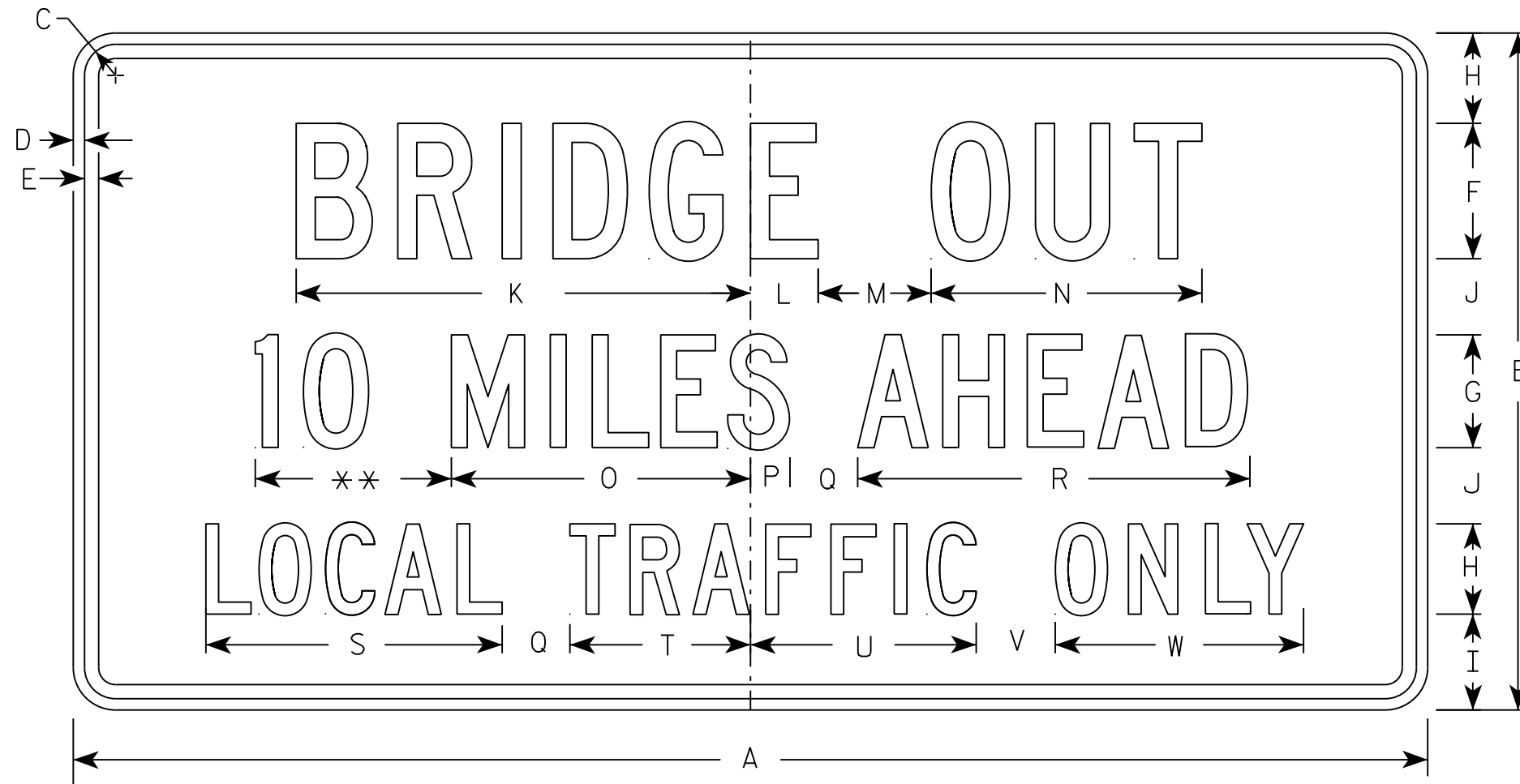
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-2B.2

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
  - Background - White
  - Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals to nearest quarter mile and optically adjust spacing to achieve proper balance.



\*\* See Note 5

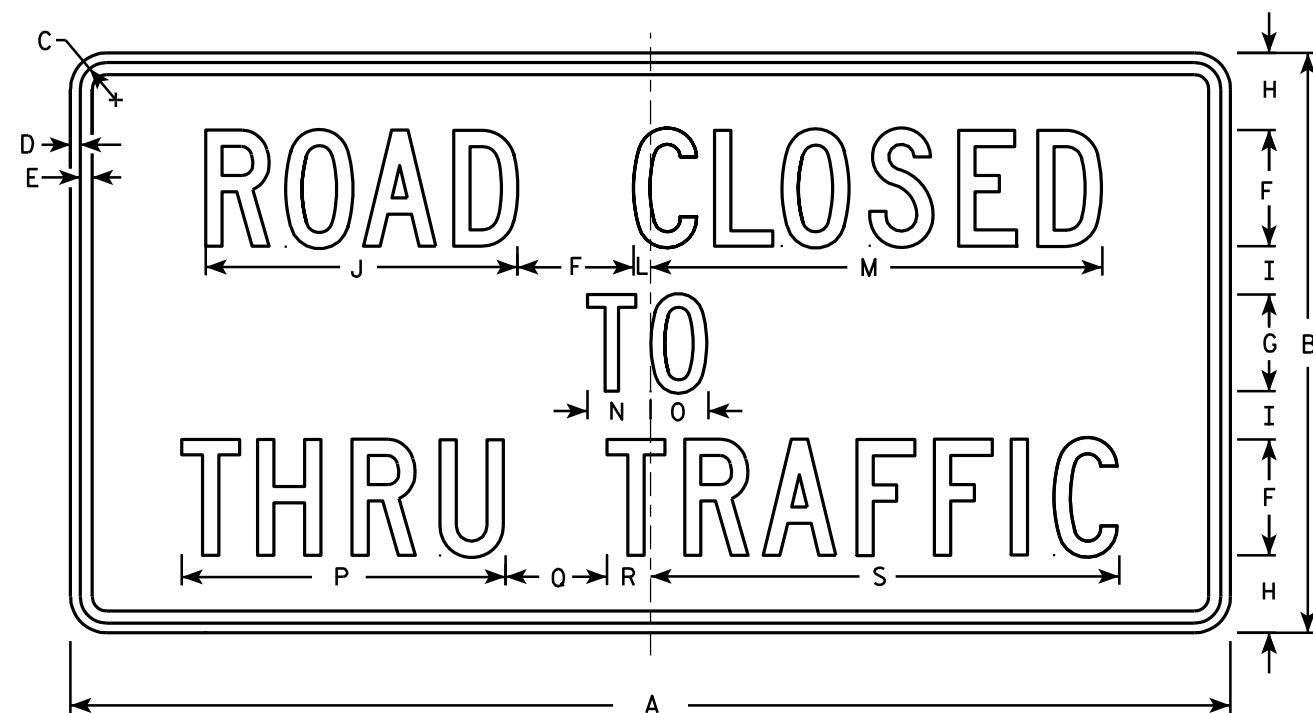
R11-3B

Diagram illustrating a 1/4 mile race track layout. The track is divided into two main sections: "1/4 MILE" and "AHEAD". The "1/4 MILE" section is further divided into segments labeled with asterisks, Q, and X. The "AHEAD" section is divided into segments labeled Q and R. Arrows indicate the direction of travel from left to right.

[illegible]

|                                  |                                                      |
|----------------------------------|------------------------------------------------------|
| STANDARD SIGN                    |                                                      |
| R11-3B                           |                                                      |
| WISCONSIN DEPT OF TRANSPORTATION |                                                      |
| APPROVED                         | <u>Matthew R Rauch</u><br>for State Traffic Engineer |
| DATE 3/21/17                     | PLATE NO. R11-3B.3                                   |

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



R11-4

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 - C
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

| SIZE | A  | B  | C     | D | E   | F | G | H | I   | J    | K | L   | M      | N   | O | P    | Q   | R   | S    | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|----|-------|---|-----|---|---|---|-----|------|---|-----|--------|-----|---|------|-----|-----|------|---|---|---|---|---|---|---|-----------------|
| 1    |    |    |       |   |     |   |   |   |     |      |   |     |        |     |   |      |     |     |      |   |   |   |   |   |   |   |                 |
| 2S   | 60 | 30 | 1 3⁄8 | ½ | 5⁄8 | 6 | 5 | 4 | 2 ½ | 16 ⅛ |   | 7⁄8 | 23 3⁄8 | 3 ¼ | 3 | 16 ¾ | 5 ¼ | 2 ¼ | 24 ¼ |   |   |   |   |   |   |   | 12.5            |
| 2M   | 60 | 30 | 1 3⁄8 | ½ | 5⁄8 | 6 | 5 | 4 | 2 ½ | 16 ⅛ |   | 7⁄8 | 23 3⁄8 | 3 ¼ | 3 | 16 ¾ | 5 ¼ | 2 ¼ | 24 ¼ |   |   |   |   |   |   |   | 12.5            |
| 3    |    |    |       |   |     |   |   |   |     |      |   |     |        |     |   |      |     |     |      |   |   |   |   |   |   |   |                 |
| 4    |    |    |       |   |     |   |   |   |     |      |   |     |        |     |   |      |     |     |      |   |   |   |   |   |   |   |                 |
| 5    |    |    |       |   |     |   |   |   |     |      |   |     |        |     |   |      |     |     |      |   |   |   |   |   |   |   |                 |

STANDARD SIGN  
R11 - 4

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-4.3

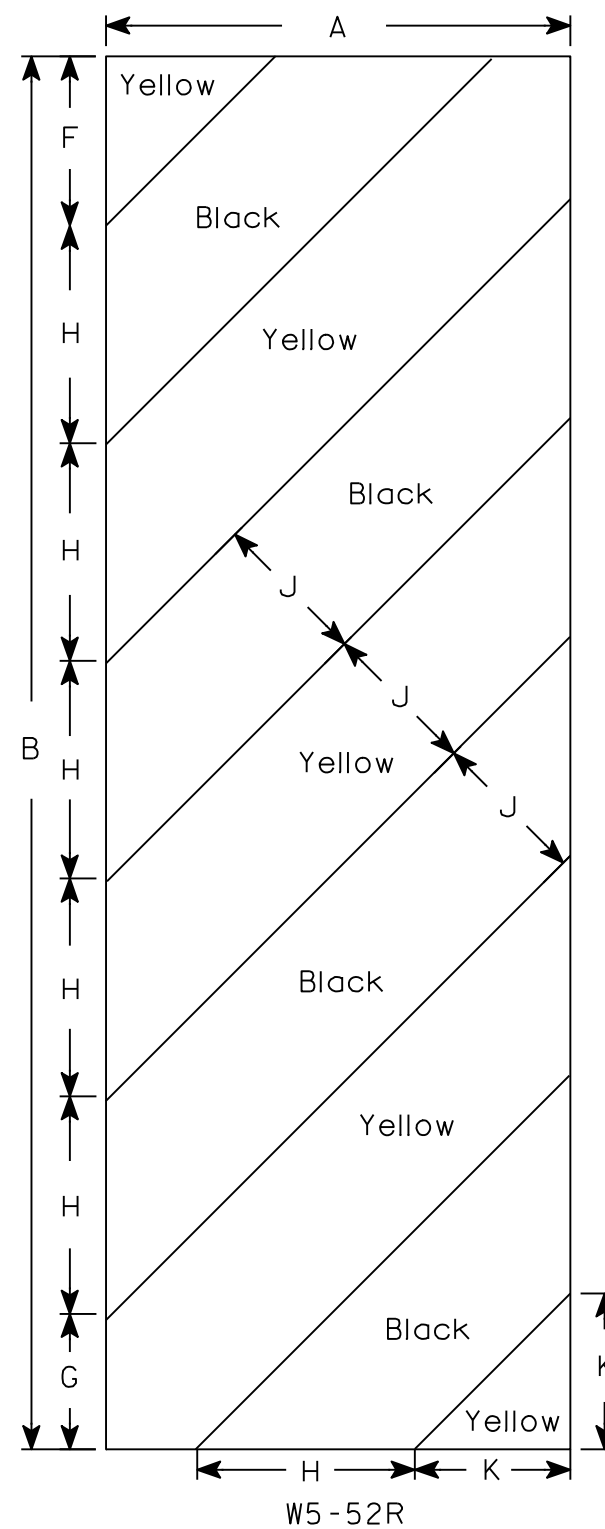
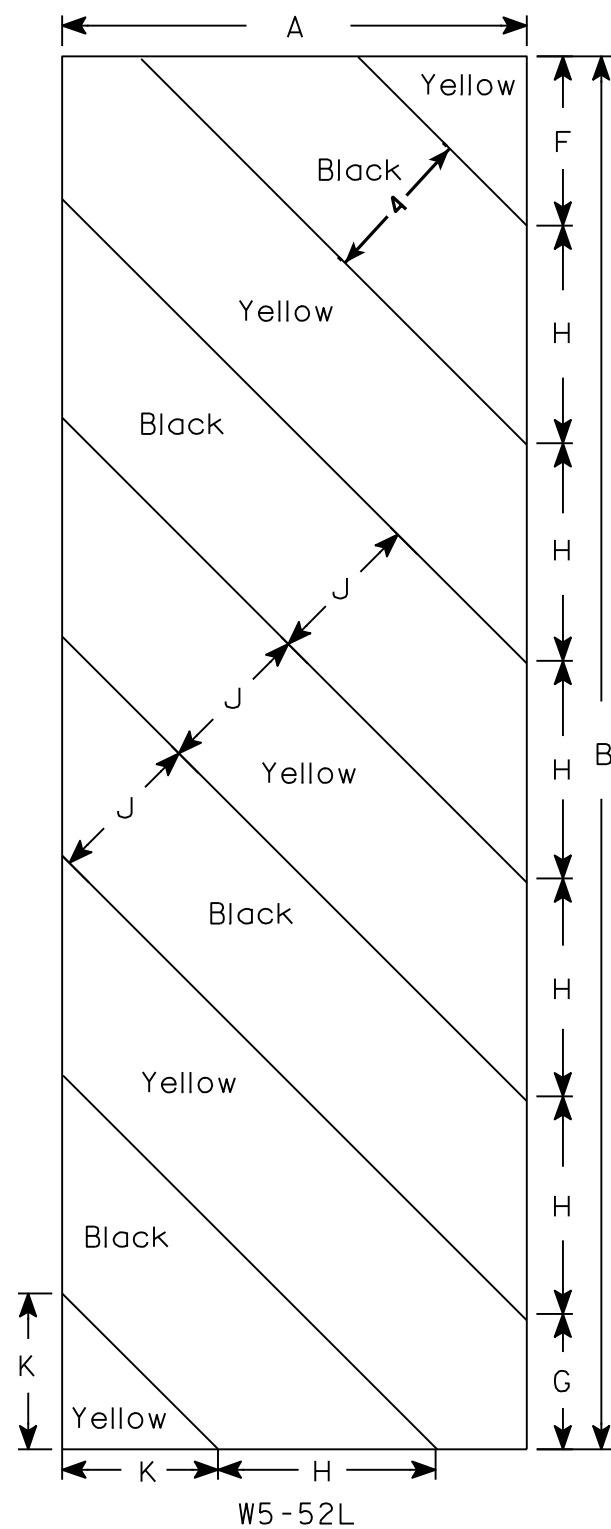
PROJECT NO:

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.
4. Alternate colors of stripes as shown.

[illegible]

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

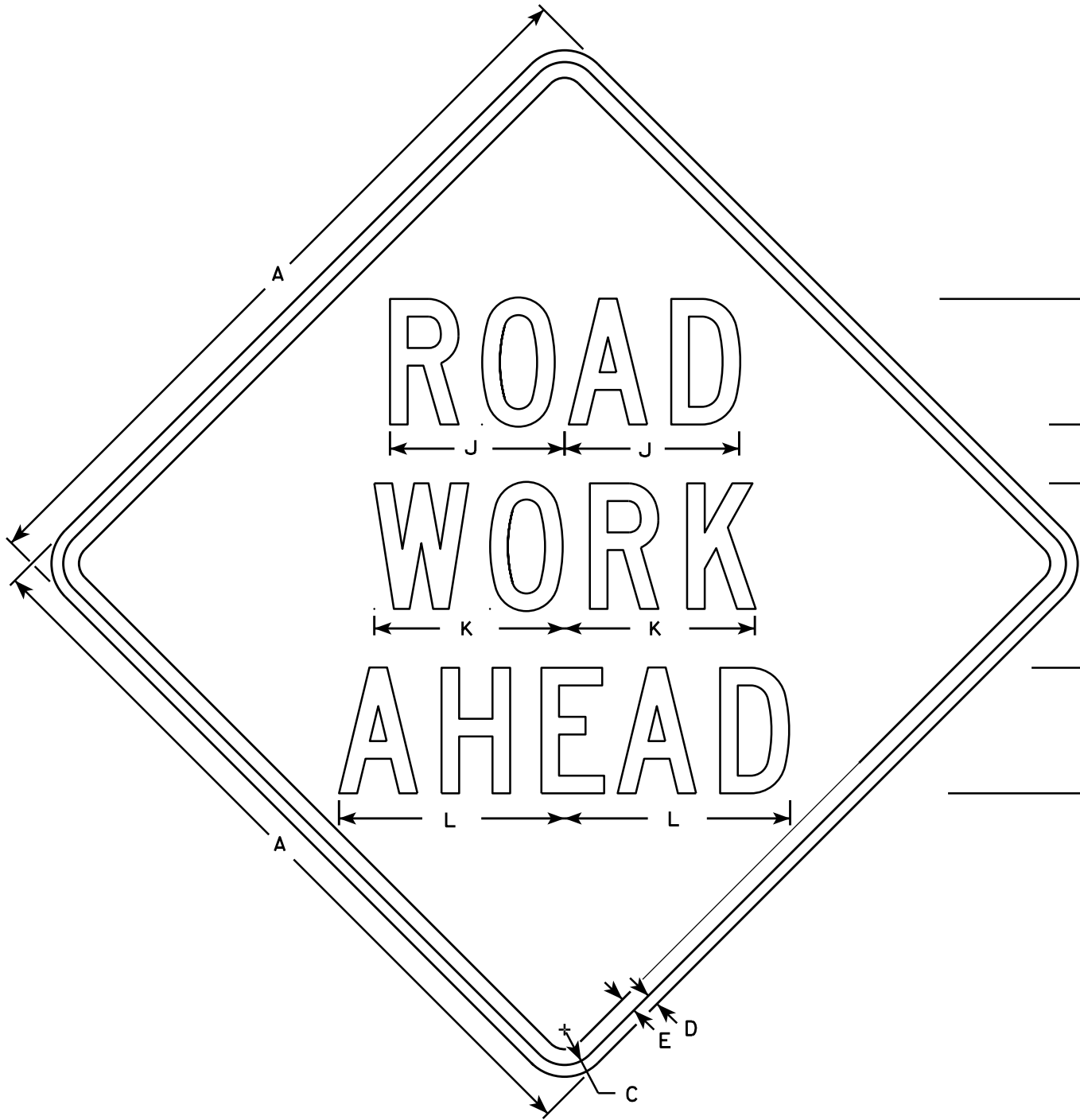
PROJECT NO:

HWY:

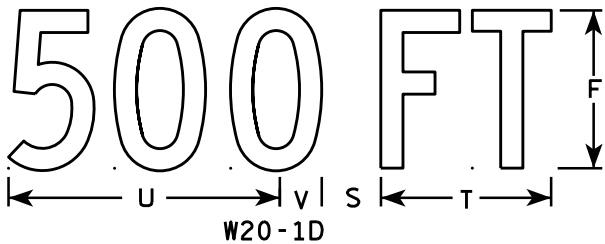
COUNTY:

SHEET NO:

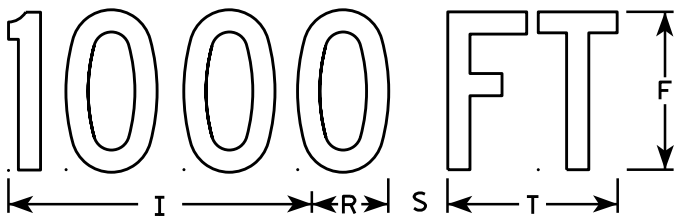
E



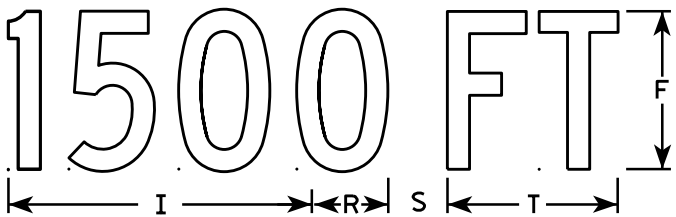
W20-1A



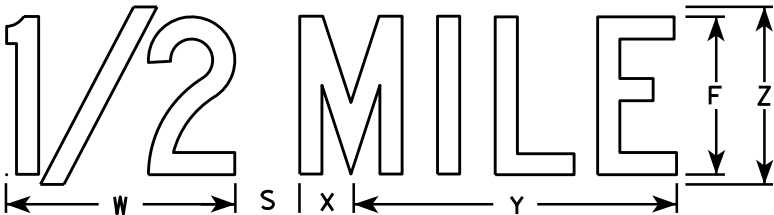
W20-1D



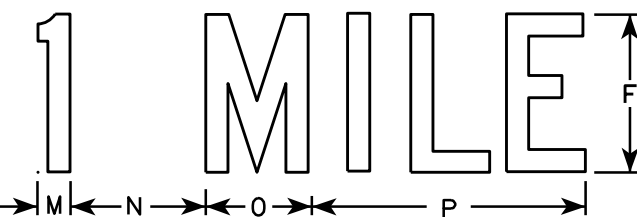
W20-1C



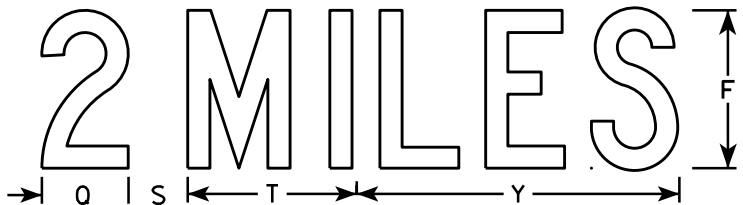
W20-1B



W20-1G



W20-1F



W20-1E

NOTES

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

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

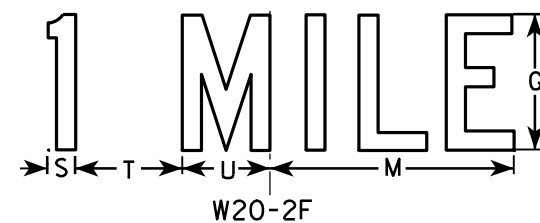
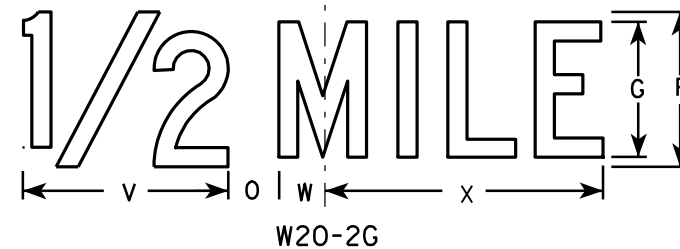
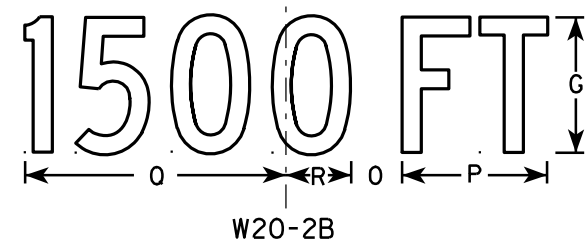
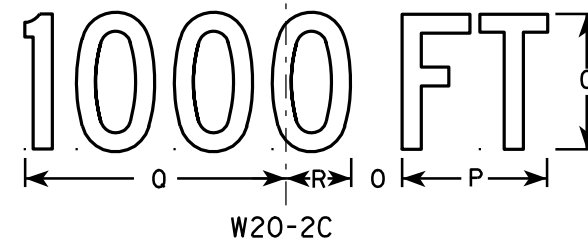
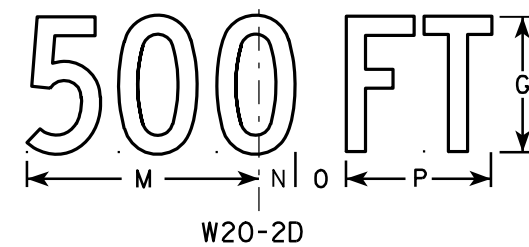
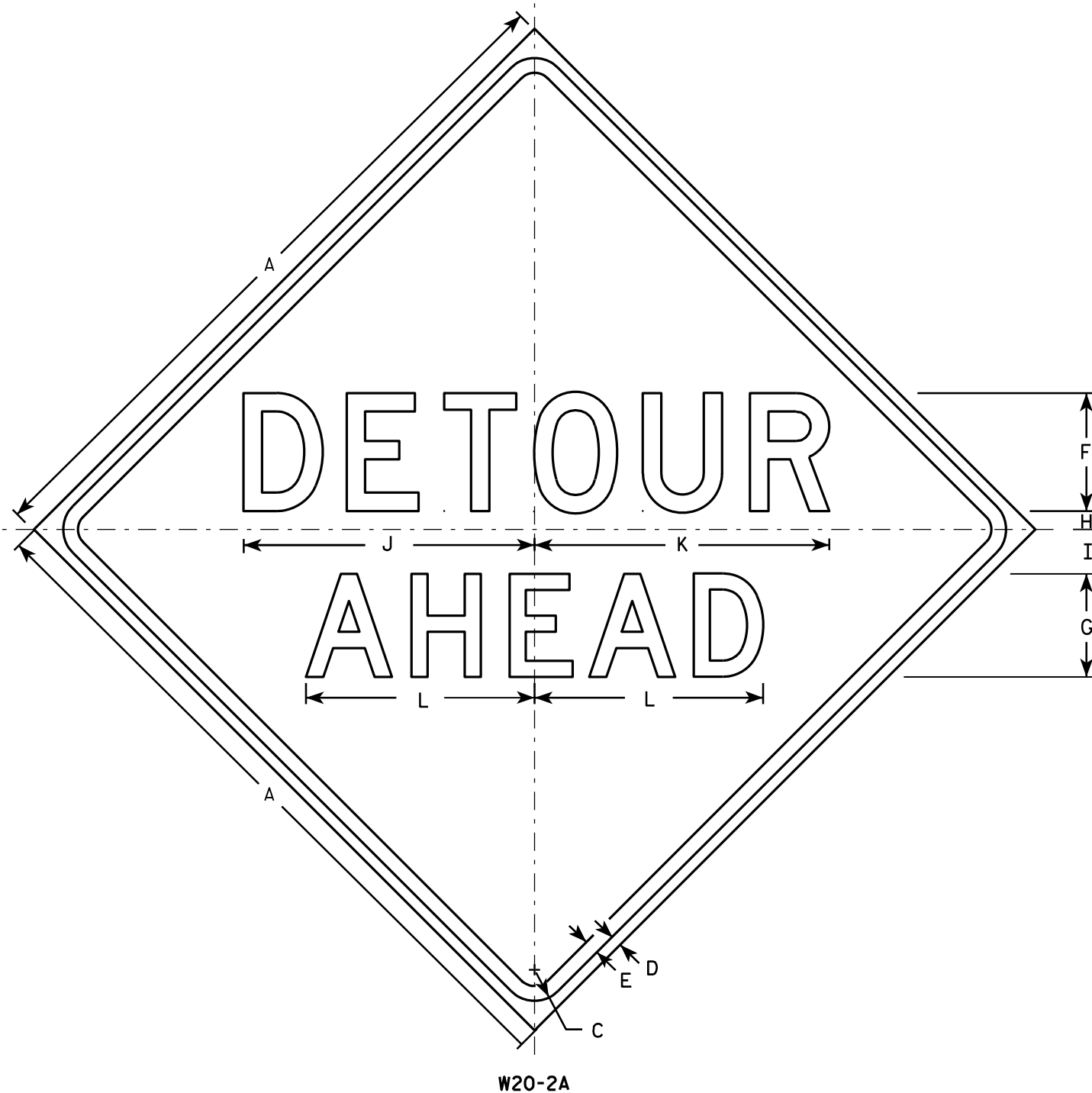
STANDARD SIGN  
W20-1A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED \_\_\_\_\_  
State Traffic Engineer

DATE 5/07/15 PLATE NO. W20-1.10



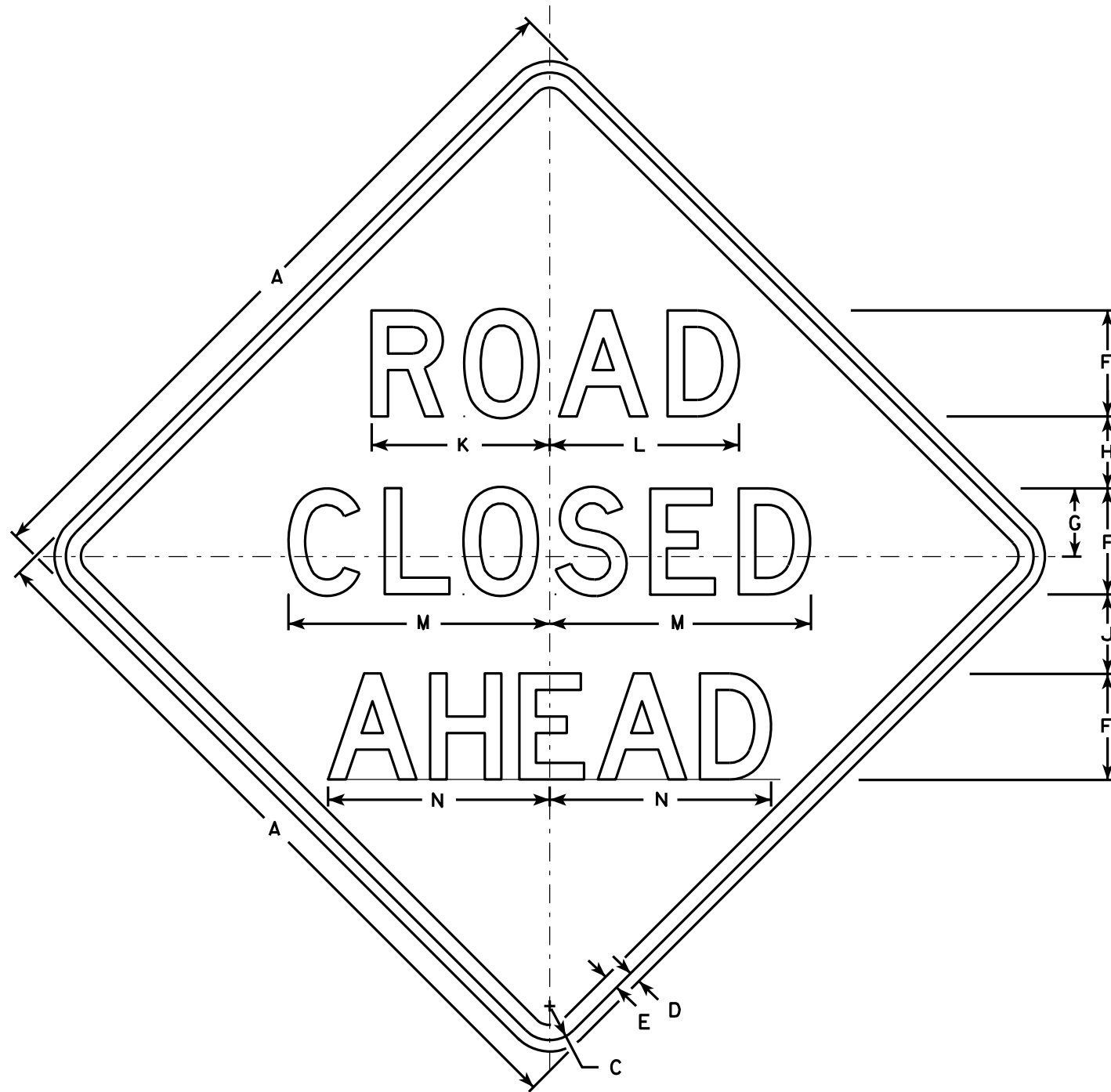


# NOTES

- Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:  
Background - Orange  
Message - Black
- Message Series - See note 5
- 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.
- Line 1 is Series D.  
Line 2 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<br>sq. ft. |
|------|----|---|-------|-----|-----|---|---|-------|-------|--------|----|--------|----|-------|-------|-------|--------|-------|-------|-------|-------|--------|-------|--------|---|---|-----------------|
| 1    | 36 |   | 1 5/8 | 5/8 | 3/4 | 6 | 5 | 1     | 2 1/4 | 14 3/4 | 15 | 11 5/8 | 9  | 1 3/8 | 1 7/8 | 5 5/8 | 10 1/8 | 2 1/2 | 1 1/8 | 4 1/2 | 3 1/2 | 8      | 1 3/4 | 10 3/4 |   |   | 9.0             |
| 2S   | 48 |   | 2 1/4 | 3/4 | 1   | 8 | 7 | 1 1/4 | 3     | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6     | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 |   |   | 16.0            |
| 2M   | 48 |   | 2 1/4 | 3/4 | 1   | 8 | 7 | 1 1/4 | 3     | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6     | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 |   |   | 16.0            |
| 3    | 48 |   | 2 1/4 | 3/4 | 1   | 8 | 7 | 1 1/4 | 3     | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6     | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 |   |   | 16.0            |
| 4    | 48 |   | 2 1/4 | 3/4 | 1   | 8 | 7 | 1 1/4 | 3     | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6     | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 |   |   | 16.0            |
| 5    | 48 |   | 2 1/4 | 3/4 | 1   | 8 | 7 | 1 1/4 | 3     | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6     | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 |   |   | 16.0            |

|                                  |                                                       |
|----------------------------------|-------------------------------------------------------|
| STANDARD SIGN                    |                                                       |
| W20-2A,B,C,D,F & G               |                                                       |
| WISCONSIN DEPT OF TRANSPORTATION |                                                       |
| APPROVED                         | <i>Matthew R. Rauch</i><br>for State Traffic Engineer |
| DATE 3/18/11                     | PLATE NO. W20-2.6                                     |



W20-3A

500 FT

W20-3D

1000 FT

W20-3C

1500 FT

W20-3B

1/2 MILE

W20-3G

1 MILE

W20-3F

# NOTES

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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<br>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:

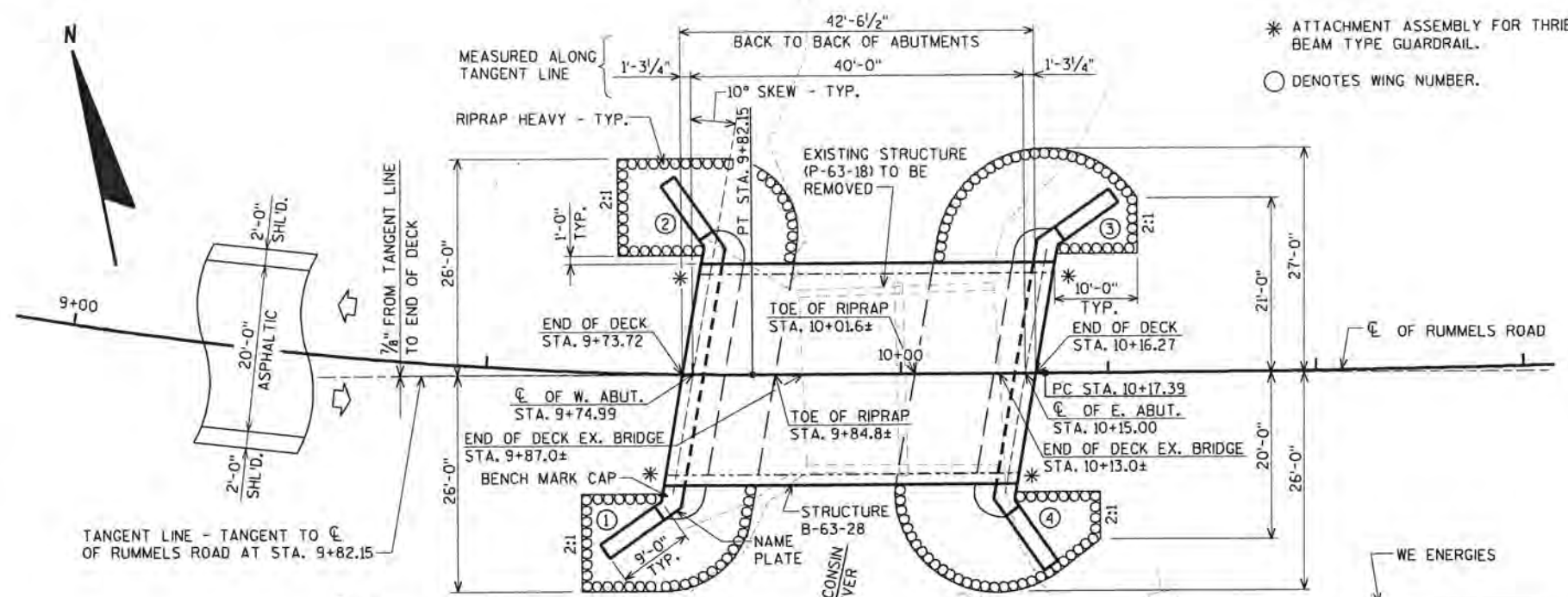
HWY:

COUNTY:

SHEET NO:

E



**CURVE DATA**

P.I. STA. 9+13.60  
 $\Delta = 15^\circ 20' 45''$   
 $D = 11^\circ 07' 31''$   
 $R = 515.00'$   
 $T = 69.38'$   
 $L = 137.94'$   
 $E = 4.65'$   
 $S.E. = 0.02\%$

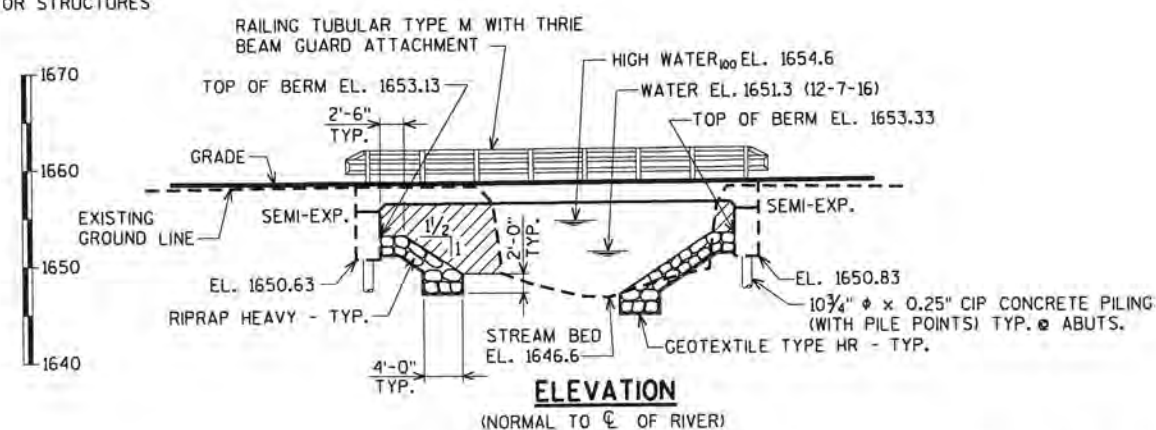
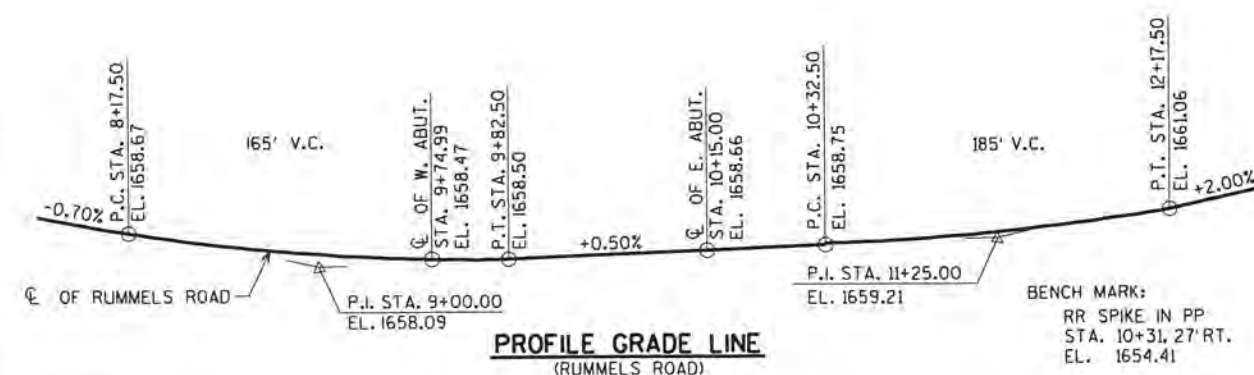
**PLAN**

SINGLE SPAN CONCRETE FLAT SLAB BRIDGE

**CURVE DATA**

P.I. STA. 12+60.87  
 $\Delta = 9^\circ 56' 23''$   
 $D = 2^\circ 02' 47''$   
 $R = 2800.00'$   
 $T = 243.48'$   
 $L = 485.74'$   
 $E = 10.57'$   
 $S.E. = 0.02\%$

COST OF EXCAVATION OR FILL IN THE HATCHED AREAS SHALL BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR "EXCAVATION FOR STRUCTURES BRIDGES B-63-28".

**ELEVATION**(NORMAL TO  $\phi$  OF RIVER)**PROFILE GRADE LINE**

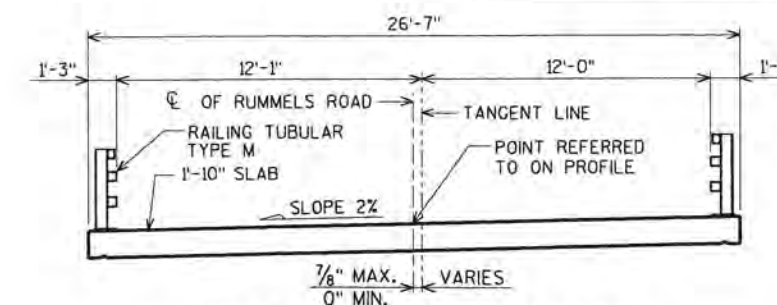
(RUMMELES ROAD)

**LIST OF DRAWINGS**

1. GENERAL PLAN
2. QUANTITIES AND NOTES
3. SUBSURFACE EXPLORATION
4. WEST ABUTMENT
5. WEST ABUTMENT WING DETAILS
6. WEST ABUTMENT BILL OF BARS AND DETAILS
7. EAST ABUTMENT
8. EAST ABUTMENT WING DETAILS
9. EAST ABUTMENT BILL OF BARS AND DETAILS
10. SUPERSTRUCTURE
11. SUPERSTRUCTURE DETAILS
12. RAILING TUBULAR TYPE M

\* ATTACHMENT ASSEMBLY FOR THRIE BEAM TYPE GUARDRAIL.

○ DENOTES WING NUMBER.

**TYPICAL SECTION THRU BRIDGE**

(LOOKING EAST)

**DESIGN DATA****LIVE LOAD:**

DESIGN LOADING: HL-93  
 INVENTORY RATING FACTOR: 1.11  
 OPERATING RATING FACTOR: 1.44  
 WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20" S.F.

**MATERIAL PROPERTIES:**

CONCRETE MASONRY { SUPERSTRUCTURE  $f'_c = 4,000$  p.s.i.  
 ALL OTHER  $f'_c = 3,500$  p.s.i.  
 HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60)  $f_y = 60,000$  p.s.i.

**HYDRAULIC DATA:****100 YEAR FREQUENCY**

$Q_{100} = 595$  c.f.s.  
 $VEL. = 3.7$  f.p.s.  
 $HW_{100} = EL. 1654.6$   
 WATERWAY AREA = 159 sq. ft.  
 DRAINAGE AREA = 78.3 sq. mi.  
 ROADWAY OVERTOPPING = N/A  
 SCOUR CRITICAL CODE = 8  
 DATUM = NAVD88 (2012)

**2 YEAR FREQUENCY**

$Q_2 = 280$  c.f.s.  
 $VEL. = 2.7$  f.p.s.  
 $HW_2 = EL. 1652.8$

**FOUNDATION DATA:**

ABUTMENTS TO BE SUPPORTED ON  $10\frac{3}{4}" \times 0.25"$  CIP CONCRETE PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 120 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 70'-0".

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

**TRAFFIC DATA:**

A.A.D.T. = 238 (2019)  
 A.A.D.T. = 290 (2039)  
 R.D.S. = <25 M.P.H.



BRIDGE OFFICE CONTACT:  
 WILLIAM DREHER  
 (608)-266-8489

CONSULTANT CONTACT:  
 CHRIS MCMAHON  
 (715)-834-3161

| NO.                                                                                                      | DATE  | REVISION                                                                       | BY            |
|----------------------------------------------------------------------------------------------------------|-------|--------------------------------------------------------------------------------|---------------|
| ORIGINAL PLANS PREPARED BY                                                                               |       |                                                                                |               |
| <b>AYRES ASSOCIATES</b><br>3433 Oakwood Hills Parkway<br>Eau Claire, WI 54701<br>www.AyresAssociates.com |       |                                                                                |               |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION                                                       |       |                                                                                |               |
| ACCEPTED                                                                                                 |       | <i>William C. Dreher</i> SDR 11/12/18<br>CHIEF STRUCTURES DESIGN ENGINEER DATE |               |
| <b>STRUCTURE B-63-28</b>                                                                                 |       |                                                                                |               |
| RUMMELES ROAD OVER THE WISCONSIN RIVER                                                                   |       |                                                                                |               |
| COUNTY                                                                                                   | VILAS | TOWN/VILLAGE                                                                   | CONOVER       |
| DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS                                                    |       |                                                                                |               |
| DESIGNED BY                                                                                              | CJM   | DESIGN CK'D.                                                                   | AEB           |
| DRAWN BY                                                                                                 | CLS   | PLANS CK'D.                                                                    | CBM           |
| <b>GENERAL PLAN</b>                                                                                      |       |                                                                                | SHEET 1 OF 12 |

\$PRNAME\$  
U:\45-0438.00 - Vilas Co.Rumries Road\Structures\450438 gp.dgn

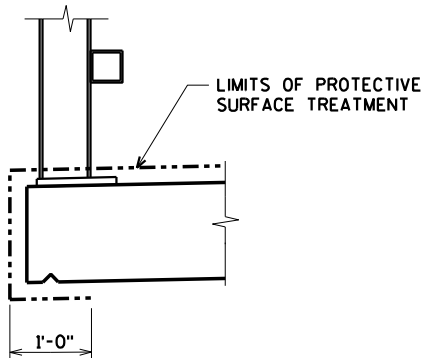
STATE PROJECT NUMBER

9898-01-70

**TOTAL ESTIMATED QUANTITIES**

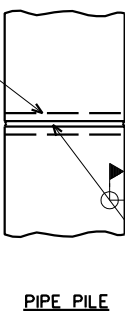
| BID ITEM NUMBER | BID ITEMS                                                              | UNIT | W. ABUT. | E. ABUT. | SUPER. | TOTAL       |
|-----------------|------------------------------------------------------------------------|------|----------|----------|--------|-------------|
| 203.0600.S      | REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 10+00 | LS   | -----    | -----    | -----  | 1           |
| 206.1000        | EXCAVATION FOR STRUCTURES BRIDGES B-63-28                              | LS   | -----    | -----    | -----  | 1           |
| 210.1500        | BACKFILL STRUCTURE TYPE A                                              | TON  | 180      | 180      | -----  | 360         |
| 502.0100        | CONCRETE MASONRY BRIDGES                                               | CY   | 26       | 26       | 82     | 134         |
| 502.3200        | PROTECTIVE SURFACE TREATMENT                                           | SY   | -----    | -----    | 150    | 150         |
| 505.0400        | BAR STEEL REINFORCEMENT HS STRUCTURES                                  | LB   | 2,240    | 2,240    | -----  | 4,480       |
| 505.0600        | BAR STEEL REINFORCEMENT HS COATED STRUCTURES                           | LB   | 1,330    | 1,330    | 15,050 | 17,710      |
| 513.4061        | RAILING TUBULAR TYPE M                                                 | LF   | -----    | -----    | 89     | 89          |
| 516.0500        | RUBBERIZED MEMBRANE WATERPROOFING                                      | SY   | 6        | 6        | -----  | 12          |
| 550.0500        | PILE POINTS                                                            | EACH | 7        | 7        | -----  | 14          |
| 550.2104        | PILING CIP CONCRETE 10 3/4" x 0.25-INCH                                | LF   | 490      | 490      | -----  | 980         |
| 606.0300        | RIPRAP HEAVY                                                           | CY   | 60       | 75       | -----  | 135         |
| 612.0406        | PIPE UNDERDRAIN WRAPPED 6-INCH                                         | LF   | 75       | 75       | -----  | 150         |
| 645.0111        | GEOTEXTILE TYPE DF SCHEDULE A                                          | SY   | 50       | 50       | -----  | 100         |
| 645.0120        | GEOTEXTILE TYPE HR                                                     | SY   | 130      | 145      | -----  | 275         |
| NON-BID ITEMS   |                                                                        |      |          |          |        |             |
|                 | FILLER                                                                 | SIZE | -----    | -----    | -----  | 1/2" & 3/4" |
|                 |                                                                        |      |          |          |        |             |
|                 |                                                                        |      |          |          |        |             |

- FILL VOIDS IN RIPRAP HEAVY WITH BASE AGGREGATE DENSE 3/4-INCH TO FULLY FILL ALL VOIDS AND LEAVE, ON AVERAGE, TWO INCHES ABOVE THE LOWEST ROCK POINTS WHERE THEY ABUT EACH OTHER, BASE AGGREGATE DENSE 3/4-INCH TO BE INCIDENTAL TO THE BID ITEM "RIPRAP HEAVY".

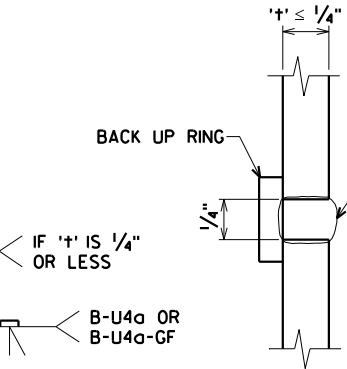


**PROTECTIVE SURFACE TREATMENT DETAIL**

BACK UP RING  
3/16" MIN. THICKNESS  
FOR SMAW AND 1/4" MIN.  
THICKNESS FOR FCAW

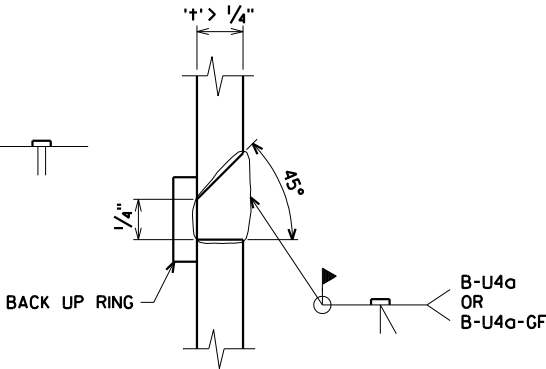


**PIPE PILE**

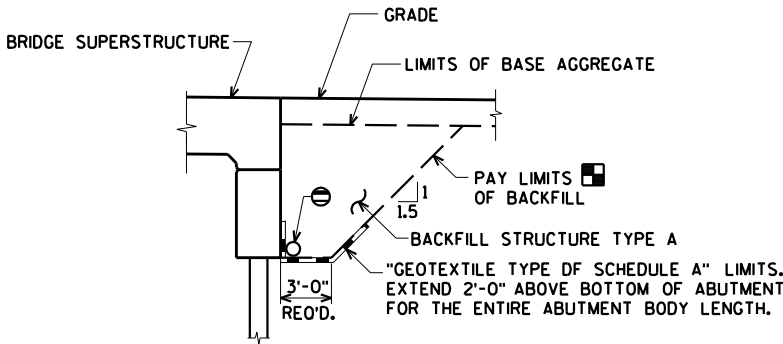


**PILE SPLICE DETAIL**

CAST-IN-PLACE PILE SHELL MATERIAL SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.



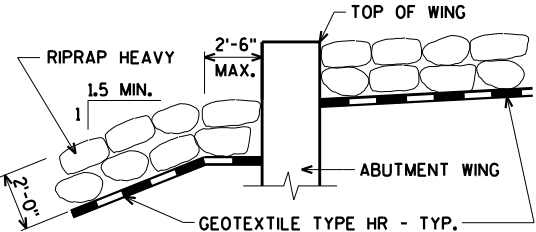
**CIP PILE WELD DETAIL**



**BACKFILL STRUCTURE LIMITS THRU ABUTMENT**

- BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- ⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SHEET 6.

NOTE: PLACE RIPRAP HEAVY AS SHOWN ON GENERAL PLAN SHEET



**TYPICAL FILL SECTION AT WING TIPS**

**GENERAL NOTES**

DRAWINGS SHALL NOT BE SCALED.  
BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS SHOWN OR NOTED OTHERWISE.  
THE FIRST DIGIT OF A THREE DIGIT BAR NO. AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR NO. SIGNIFIES THE BAR SIZE. JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M 153, TYPE I, II OR III OR A.A.S.H.T.O. DESIGNATION M 213.  
THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE TYPE HR TO THE EXTENT SHOWN ON THE GENERAL PLAN SHEET AND IN THE ABUTMENT DETAILS.  
SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS AN ALTERNATIVE METHOD IS APPROVED BY THE ENGINEER.  
THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-63-28" SHALL BE THE EXISTING GROUNDLINE.  
THE EXISTING STRUCTURE, P-63-18, TO BE REMOVED, IS A TWO SPAN TIMBER STRINGER BRIDGE, 26.0 FOOT LONG WITH A 21.9 FOOT CLEAR ROADWAY WIDTH.  
AT THE BACK FACE OF ABUTMENTS, ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH BACKFILL STRUCTURE TYPE A.  
PROTECTIVE SURFACE TREATMENT IS TO BE APPLIED AS SHOWN IN DETAIL ON THIS SHEET.  
BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS NOTED OTHERWISE.  
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.

| NO.                                                | DATE | REVISION      | BY              |
|----------------------------------------------------|------|---------------|-----------------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |               |                 |
| STRUCTURE B-63-28                                  |      |               |                 |
| DRAWN BY                                           |      | CLS           | PLANS CK'D. JLB |
| QUANTITIES AND NOTES                               |      | SHEET 2 OF 12 |                 |

\$PRNAME\$  
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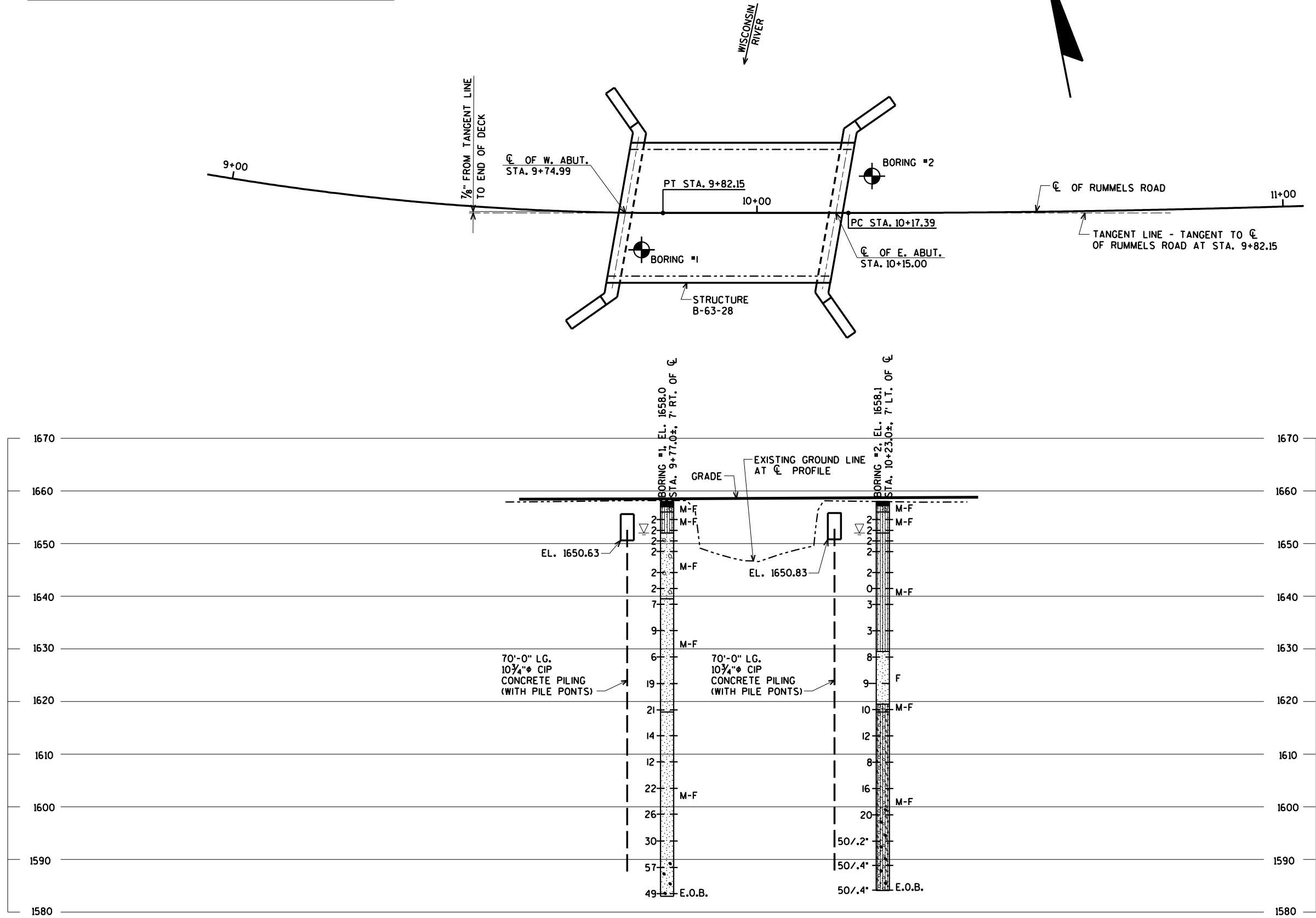
8

| BORING # | DATE COMPLETED | NORTHING (Y) | EASTING (X) |
|----------|----------------|--------------|-------------|
| 1        | MAY 30, 2017   | 170019.78    | 498223.40   |
| 2        | MAY 30, 2017   | 170025.07    | 498269.08   |

BORINGS COMPLETED BY: GEOTECHNICAL DRILLING CONTRACTORS, LLC

REPORT COMPLETED BY: RIVER VALLEY TESTING CORP.

ALL COORDINATES REFERENCED TO WCCS NAD 83(91) VILAS COUNTY



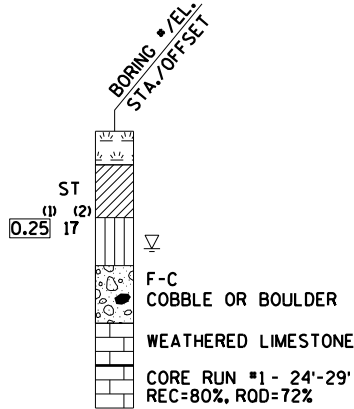
STATE PROJECT NUMBER

9898-01-70

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, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES 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.

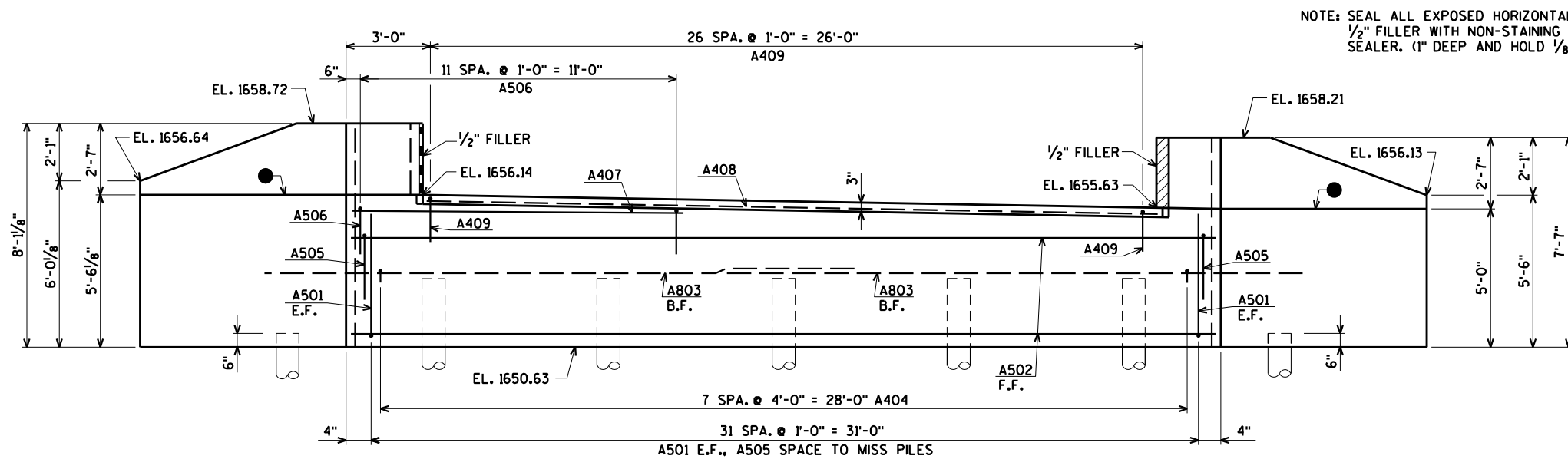
8

|                                                    |      |               |                 |
|----------------------------------------------------|------|---------------|-----------------|
| NO.                                                | DATE | REVISION      | BY              |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |               |                 |
| STRUCTURE B-63-28                                  |      |               |                 |
| DRAWN BY                                           |      | CLS           | PLANS CK'D. JLB |
| SUBSURFACE EXPLORATION                             |      | SHEET 3 OF 12 |                 |

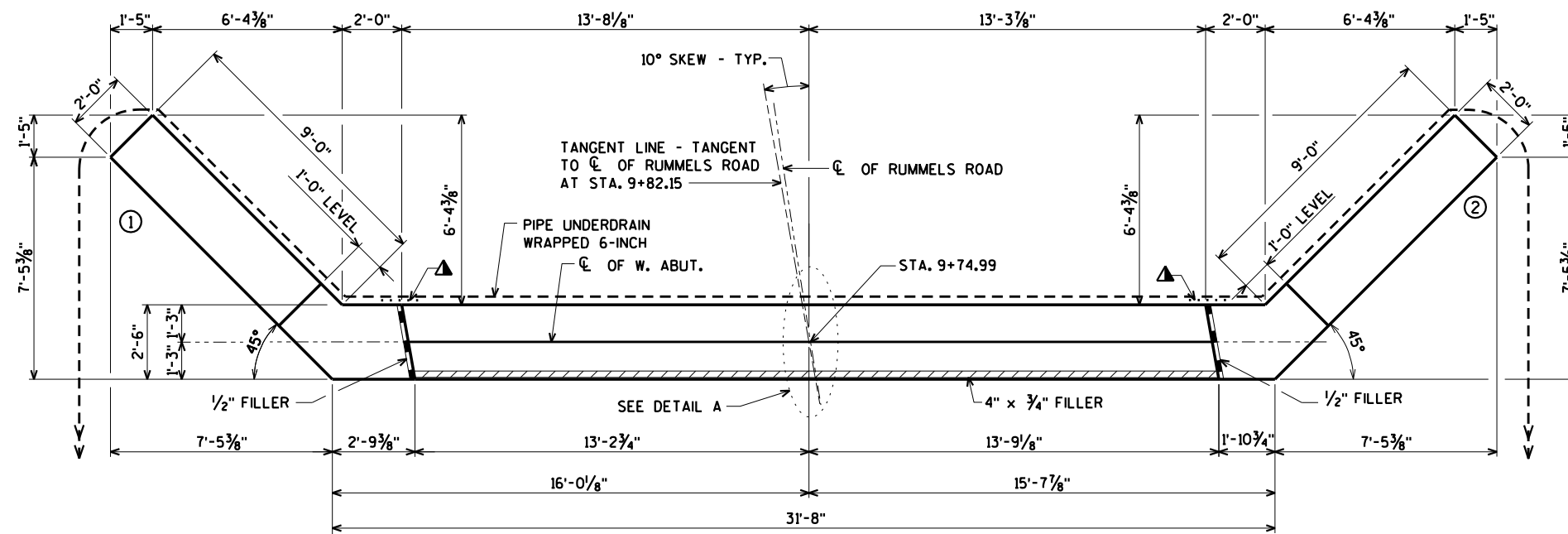


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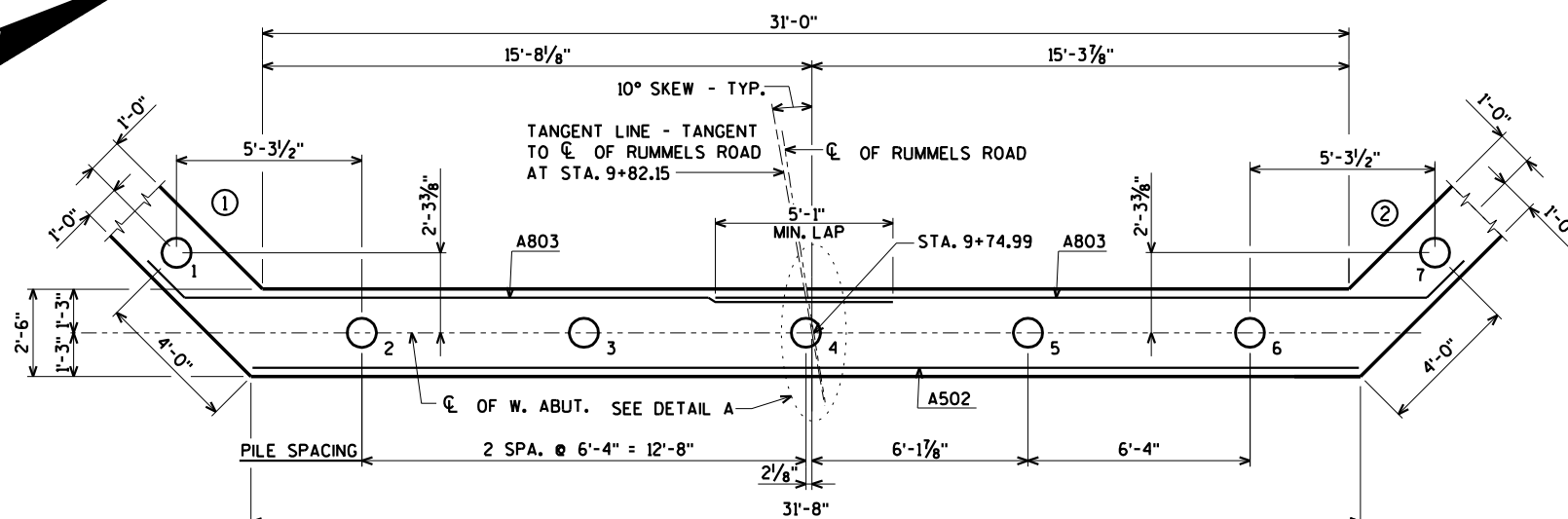
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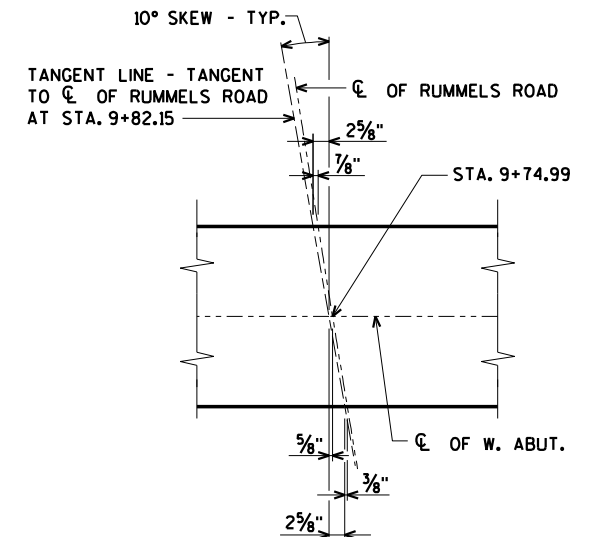
**ELEVATION**  
(LOOKING WEST)



**PLAN**



**PILE LAYOUT**



**DETAIL A**

- OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" x 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F. (RUBBERIZED MEMBRANE WATERPROOFING INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES" IF CONST. JOINT IS USED).

- ▲ 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING.

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE.

F.F. DENOTES FRONT FACE.

E.F. DENOTES EACH FACE.

8

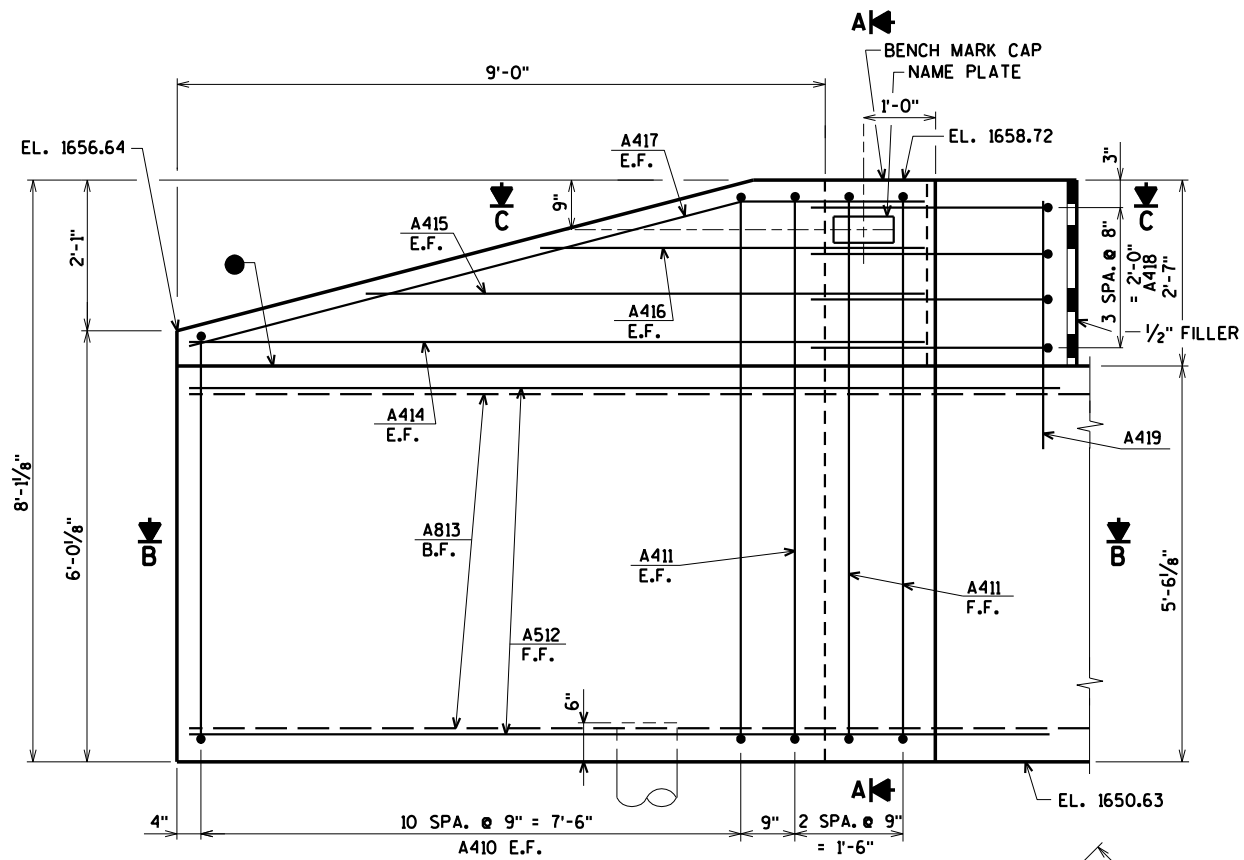
| NO.                                                | DATE | REVISION      | BY              |
|----------------------------------------------------|------|---------------|-----------------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |               |                 |
| STRUCTURE B-63-28                                  |      |               |                 |
| DRAWN BY                                           |      | CLS           | PLANS CK'D. JLB |
| WEST ABUTMENT                                      |      | SHEET 4 OF 12 |                 |

ORIGINAL PLANS PREPARED BY  
**AYRES ASSOCIATES**  
3433 Oakwood Hills Parkway  
Eau Claire, WI 54701  
www.AyresAssociates.com

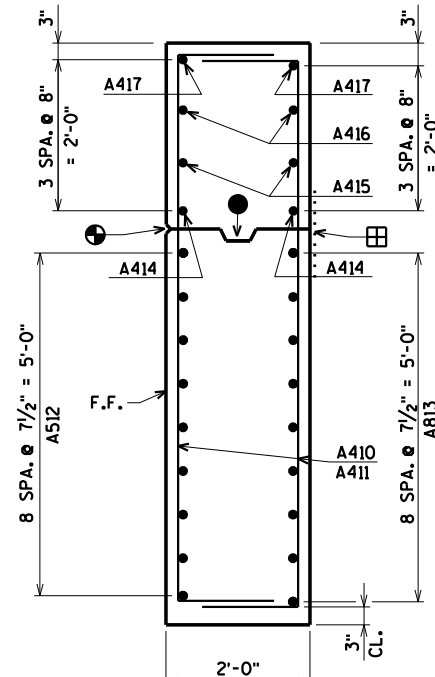
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STATE PROJECT NUMBER

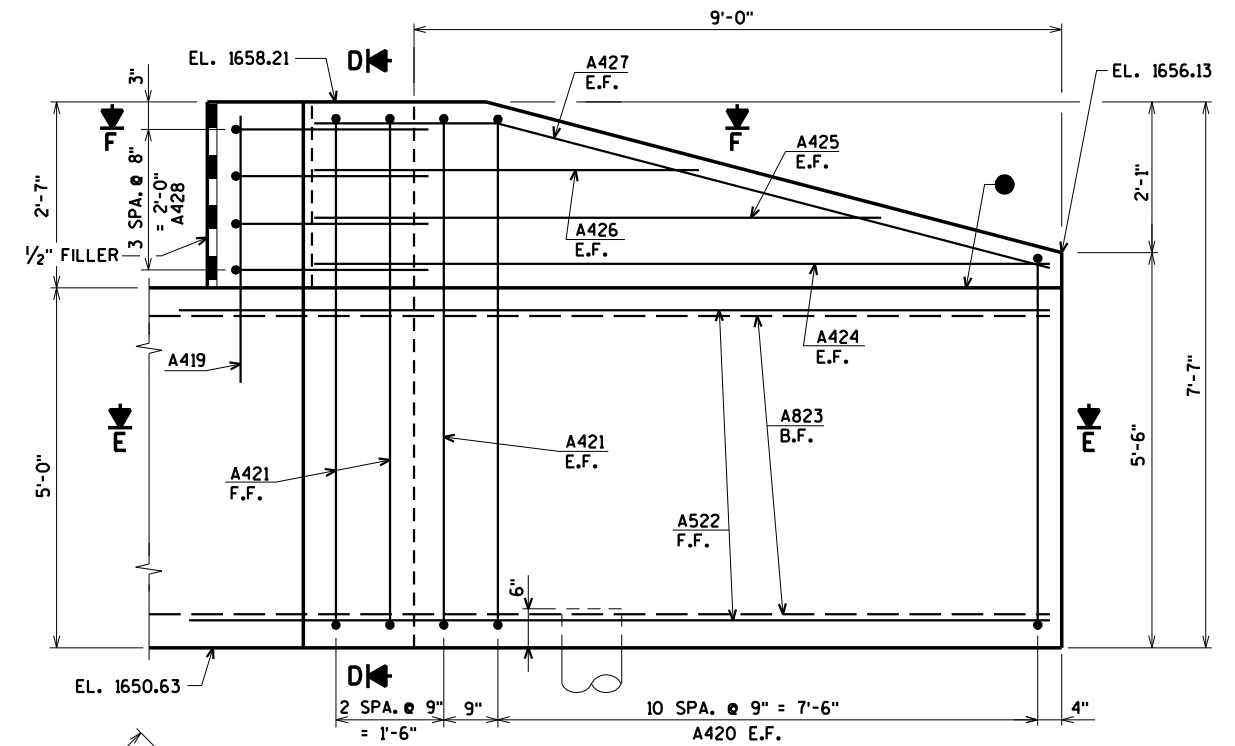
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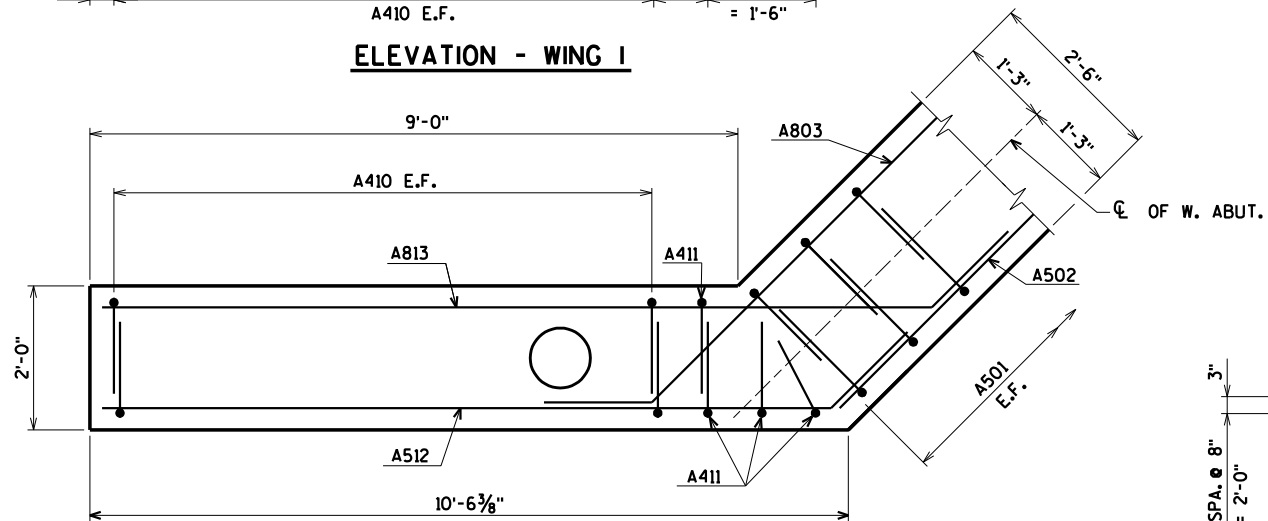
ELEVATION - WING 1



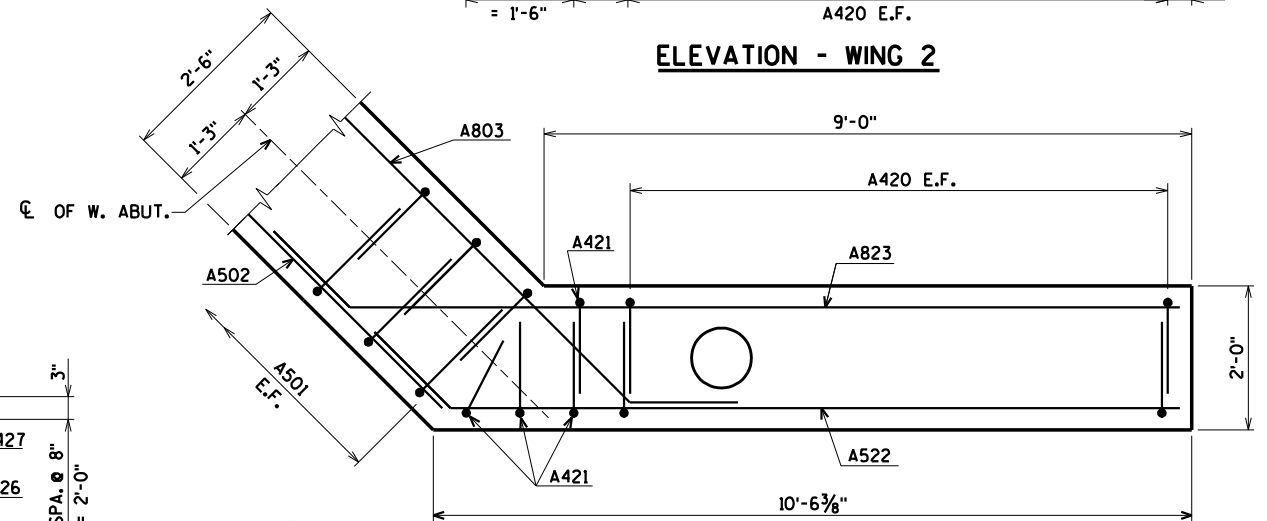
SECTION A



ELEVATION - WING 2



SECTION B



SECTION E

■ RUBBERIZED MEMBRANE WATERPROOFING IF CONST. JOINT IS USED (COST INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES")

● OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" x 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F. (RUBBERIZED MEMBRANE WATERPROOFING INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES" IF CONST. JOINT IS USED).

⊕ 3/4" 'V' GROOVE ON F.F. OF WING WALL NOT REQUIRED IF CONST. JT. IS NOT USED.

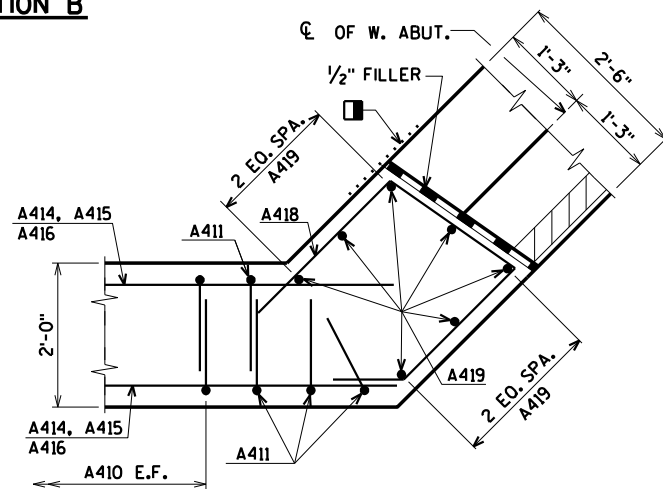
■ VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING WALL.

FOR PILE SPLICE DETAIL SEE SHEET 2.

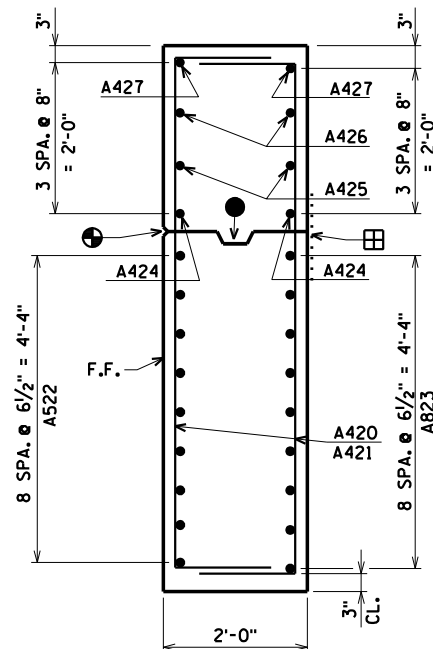
B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

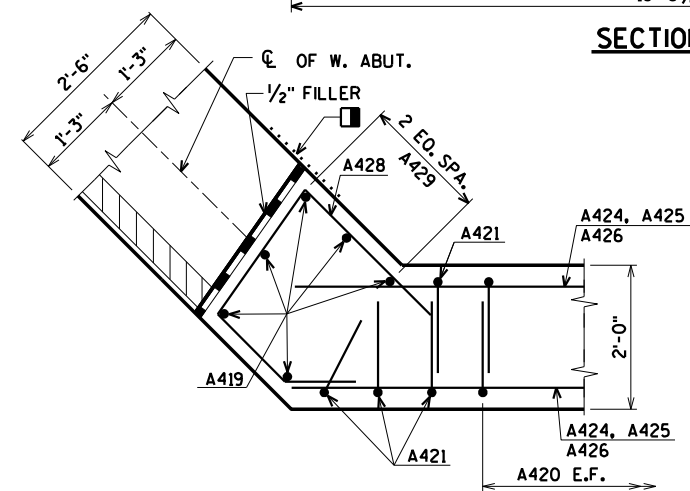
F.F. DENOTES FRONT FACE



SECTION C



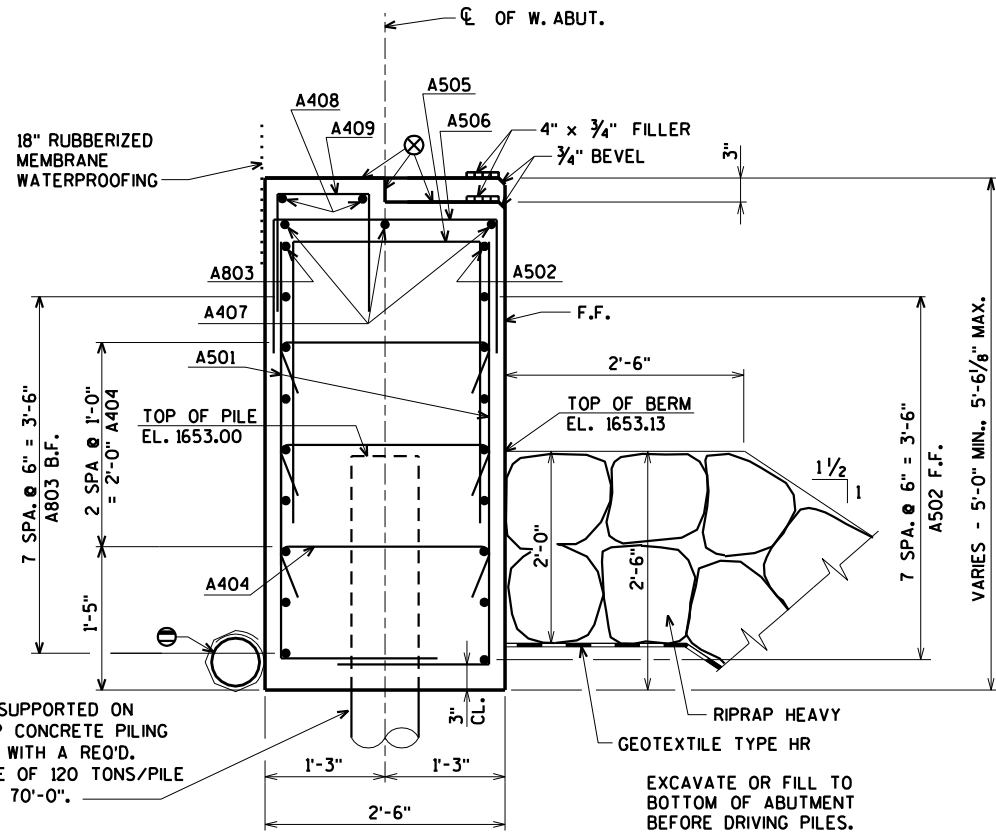
SECTION D



SECTION F

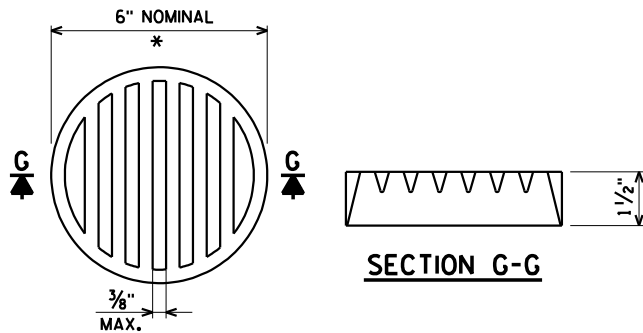
ORIGINAL PLANS PREPARED BY  
**AYRES ASSOCIATES**  
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|----------------------------------------------------|------|---------------|-----------------|
|                                                    |      |               |                 |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |               |                 |
| STRUCTURE B-63-28                                  |      |               |                 |
| DRAWN BY                                           |      | CLS           | PLANS CK'D. JLB |
| WEST ABUTMENT WING DETAILS                         |      | SHEET 5 OF 12 |                 |



TYPICAL SECTION THRU BODY

NOTE: DO NOT PLACE FILL ABOVE THREE FEET FROM BOTTOM OF ABUTMENT UNTIL SUPERSTRUCTURE IS IN PLACE.



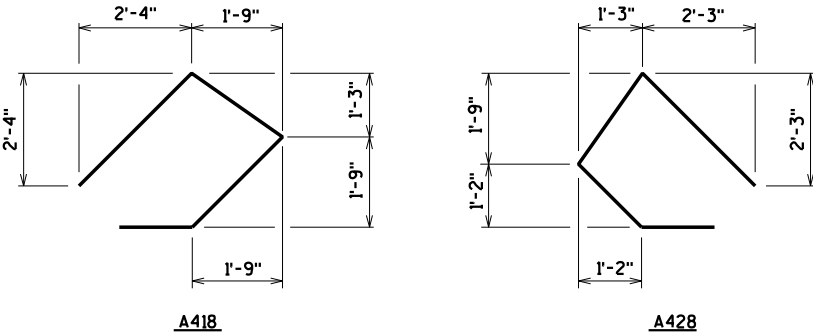
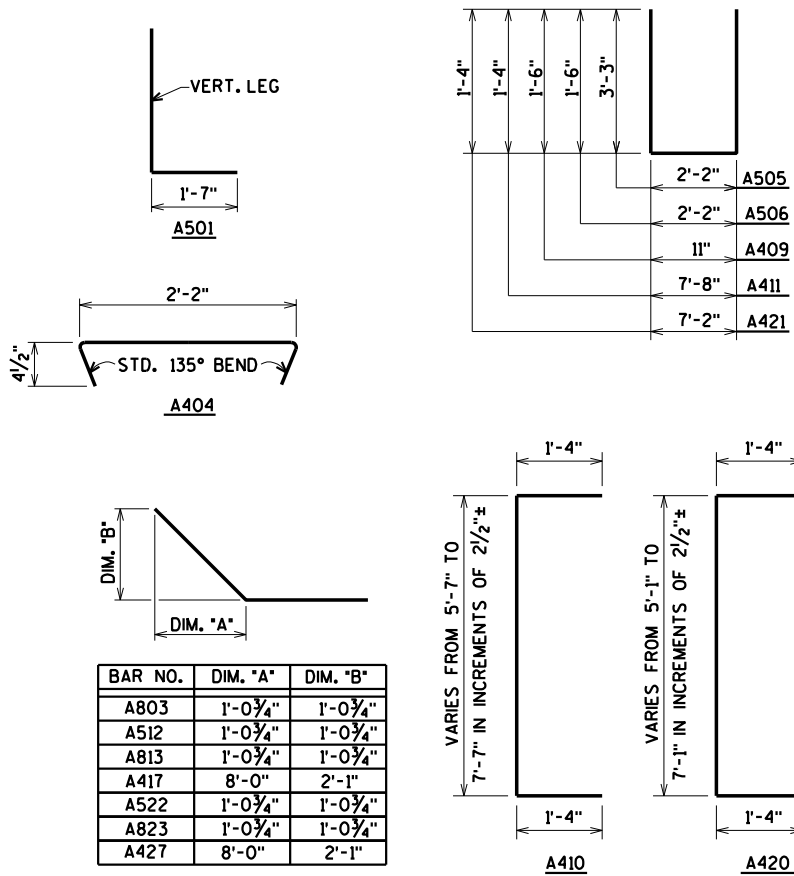
SECTION G-G

\* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

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 EXPOSED END OF 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.

RODENT SHIELD DETAIL



⊗ STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING SUPERSTRUCTURE. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. FOR RODENT SHIELD SEE DETAIL ON THIS SHEET.

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE.

F.F. DENOTES FRONT FACE.

E.F. DENOTES EACH FACE.

BILL OF BARS

| BAR NO. | COATED BAR | NO. REQ'D. | LENGTH | BENT BAR | BUNDLE | BAR SERIES | 2,240# UNCOATED<br>1,330# COATED |
|---------|------------|------------|--------|----------|--------|------------|----------------------------------|
|         |            |            |        |          |        |            | LOCATION                         |
| A501    |            | 64         | 5-9    | X        |        |            | BODY VERT. E.F.                  |
| A502    |            | 9          | 31-6   |          |        |            | BODY HORIZ. F.F.                 |
| A803    |            | 18         | 21-10  | X        |        |            | BODY HORIZ. B.F.                 |
| A404    |            | 24         | 2-9    | X        |        |            | BODY TIES                        |
| A505    |            | 32         | 8-5    | X        |        |            | BODY VERT. TOP                   |
| A506    |            | 12         | 4-11   | X        |        |            | BODY VERT. TOP                   |
| A407    |            | 3          | 11-9   |          |        |            | BODY HORIZ. TOP                  |
| A408    |            | 2          | 26-8   |          |        |            | BODY HORIZ. TOP NOTCH            |
| A409    |            | 27         | 3-9    | X        |        |            | BODY VERT. TOP NOTCH             |
| A410    | X          | 22         | 9-1    | X        |        | ⊗          | WING 1 VERT. E.F.                |
| A411    | X          | 4          | 10-2   | X        |        |            | WING 1 VERT. E.F.                |
| A512    | X          | 9          | 11-9   | X        |        |            | WING 1 HORIZ. F.F.               |
| A813    | X          | 9          | 13-1   | X        |        |            | WING 1 HORIZ. B.F.               |
| A414    | X          | 2          | 10-1   |          |        |            | WING 1 HORIZ. E.F.               |
| A415    | X          | 2          | 7-7    |          |        |            | WING 1 HORIZ. E.F.               |
| A416    | X          | 2          | 5-1    |          |        |            | WING 1 HORIZ. E.F.               |
| A417    | X          | 2          | 10-4   | X        |        |            | WING 1 DIAG. E.F.                |
| A418    | X          | 4          | 9-1    | X        |        |            | WING 1 HORIZ.                    |
| A419    | X          | 13         | 3-11   |          |        |            | WINGS 1 & 2 VERT.                |
| A420    | X          | 22         | 8-7    | X        |        | ⊗          | WING 2 VERT. E.F.                |
| A421    | X          | 4          | 9-8    | X        |        |            | WING 2 VERT. E.F.                |
| A522    | X          | 9          | 11-9   | X        |        |            | WING 2 HORIZ. F.F.               |
| A823    | X          | 9          | 13-1   | X        |        |            | WING 2 HORIZ. B.F.               |
| A424    | X          | 2          | 10-1   |          |        |            | WING 2 HORIZ. E.F.               |
| A425    | X          | 2          | 7-7    |          |        |            | WING 2 HORIZ. E.F.               |
| A426    | X          | 2          | 5-1    |          |        |            | WING 2 HORIZ. E.F.               |
| A427    | X          | 2          | 10-4   | X        |        |            | WING 2 DIAG. E.F.                |
| A428    | X          | 4          | 8-2    | X        |        |            | WING 2 HORIZ.                    |

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

⊗ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

BAR SERIES TABLE

| BAR MARK | NO REQ'D.      | LENGTH          |
|----------|----------------|-----------------|
| A410     | 2 SERIES OF 11 | 8'-1" TO 10'-1" |
| A420     | 2 SERIES OF 11 | 7'-7" TO 9'-7"  |

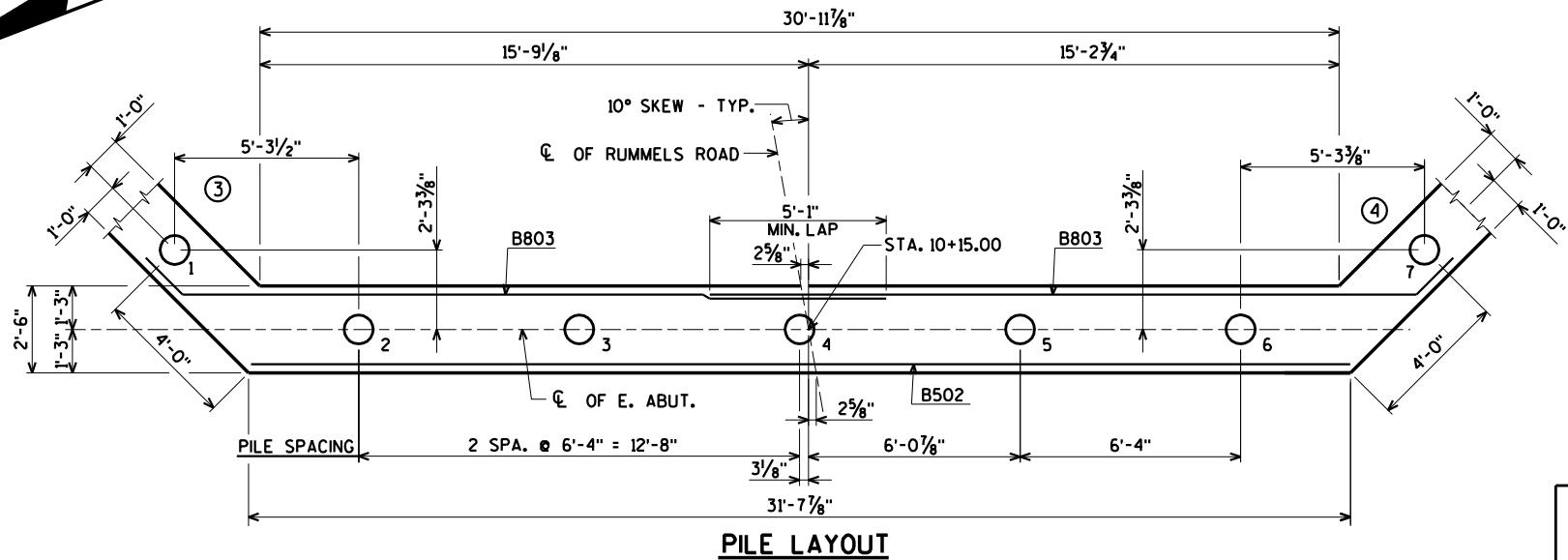
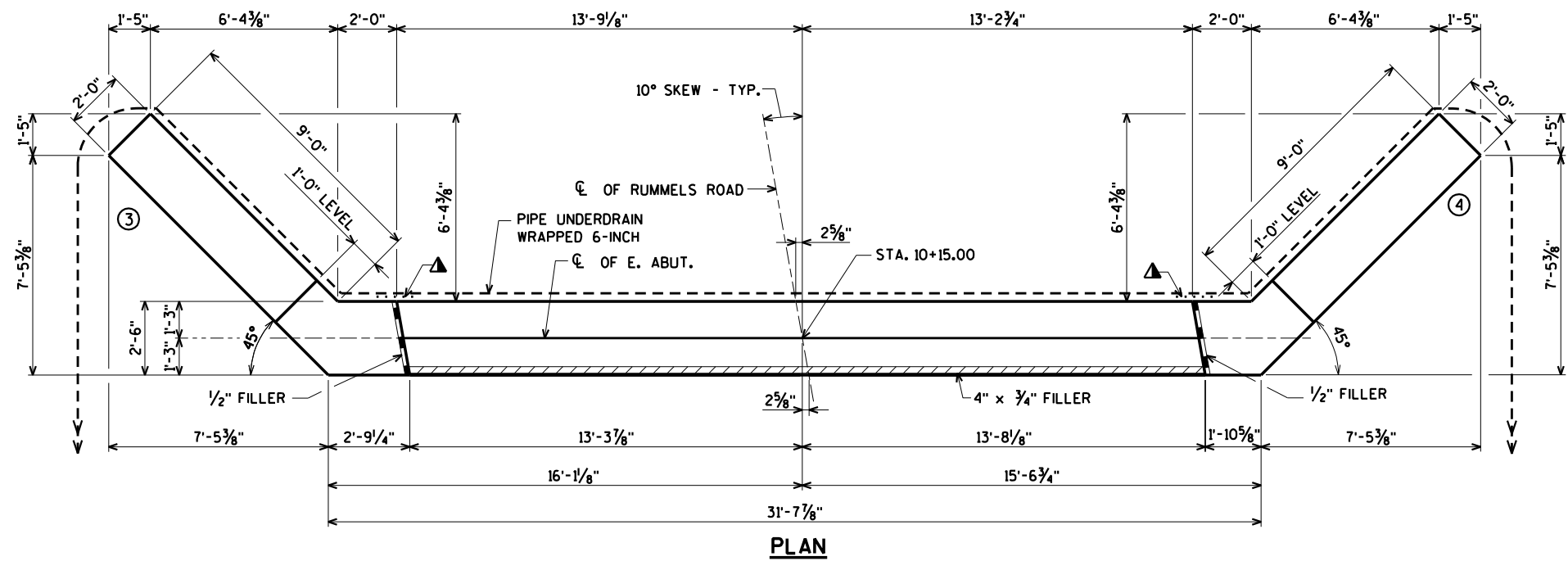
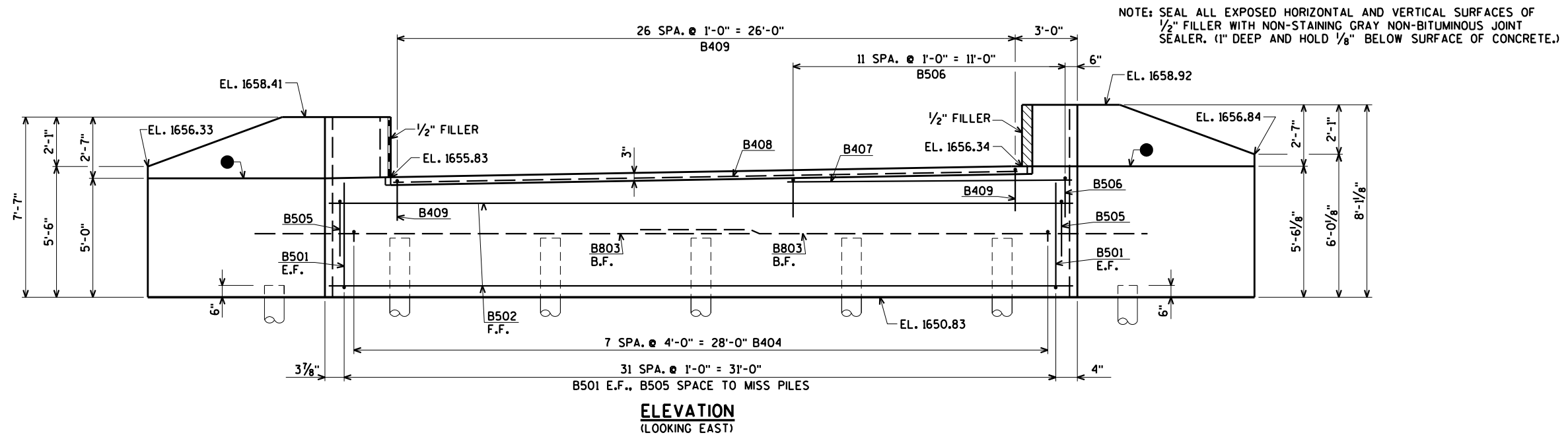
BUNDLE AND TAG EACH SERIES SEPARATELY.

|                                                    |      |             |               |
|----------------------------------------------------|------|-------------|---------------|
| NO.                                                | DATE | REVISION    | BY            |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |             |               |
| STRUCTURE B-63-28                                  |      |             |               |
| DRAWN BY                                           | CLS  | PLANS CK'D. | JLB           |
| WEST ABUTMENT<br>BILL OF BARS<br>AND DETAILS       |      |             | SHEET 6 OF 12 |

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STATE PROJECT NUMBER

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● OPT. KEYED CONST. JOINT - FORMED BY A SURFACED BEVELED 2" x 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F. (RUBBERIZED MEMBRANE WATERPROOFING INCIDENTAL TO BID ITEM "CONCRETE MASONRY BRIDGES" IF CONST. JOINT IS USED).

▲ 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING.

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE.

F.F. DENOTES FRONT FACE.

E.F. DENOTES EACH FACE.

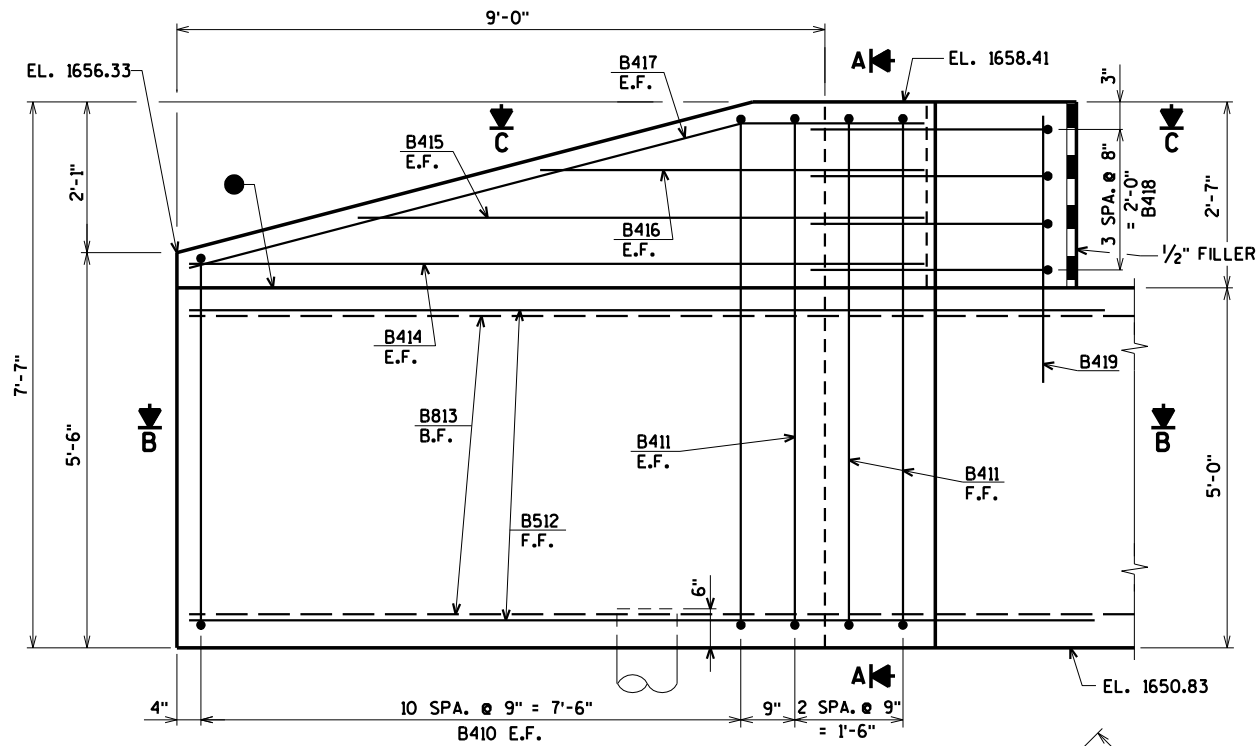
| NO.                                                | DATE | REVISION | BY              |
|----------------------------------------------------|------|----------|-----------------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |          |                 |
| STRUCTURE B-63-28                                  |      |          |                 |
| DRAWN BY                                           |      | CLS      | PLANS CK'D. JLB |
| EAST ABUTMENT                                      |      |          | SHEET 7 OF 12   |

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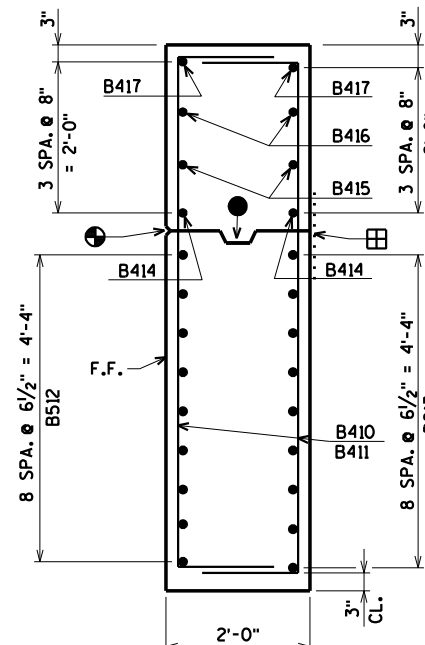
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STATE PROJECT NUMBER

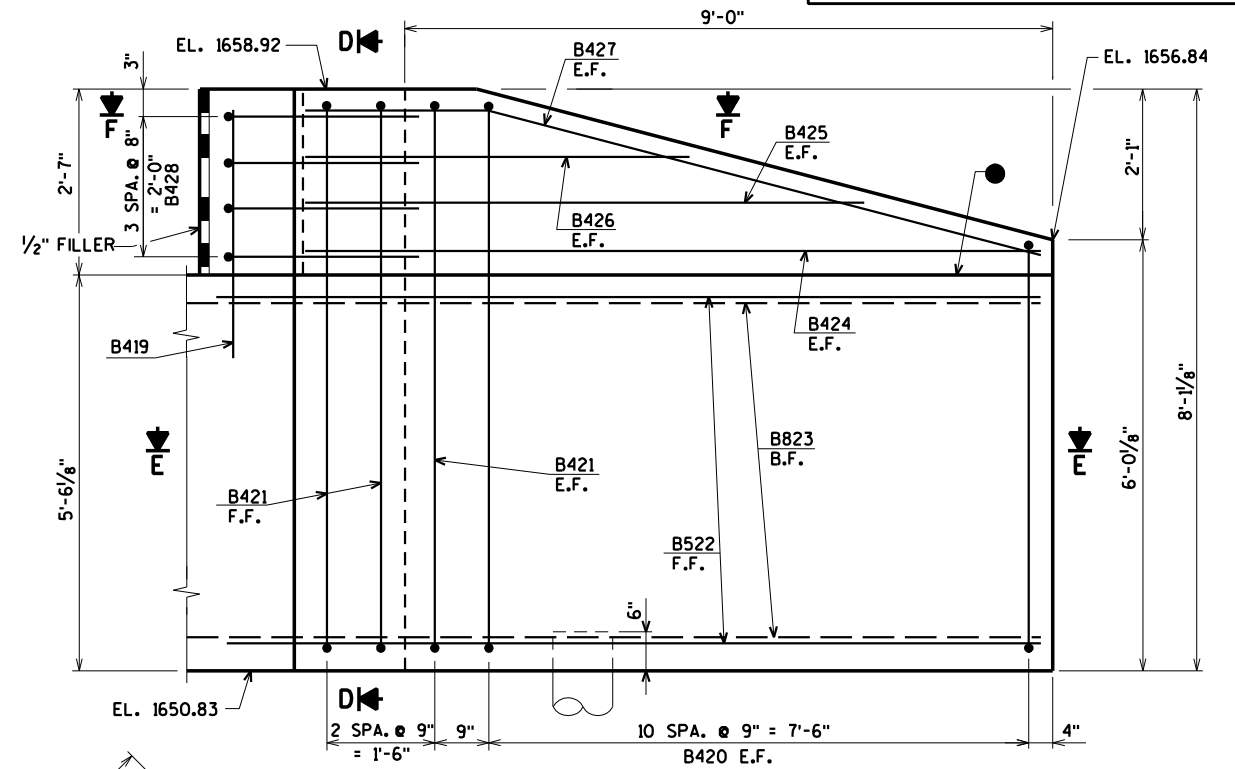
9898-01-70



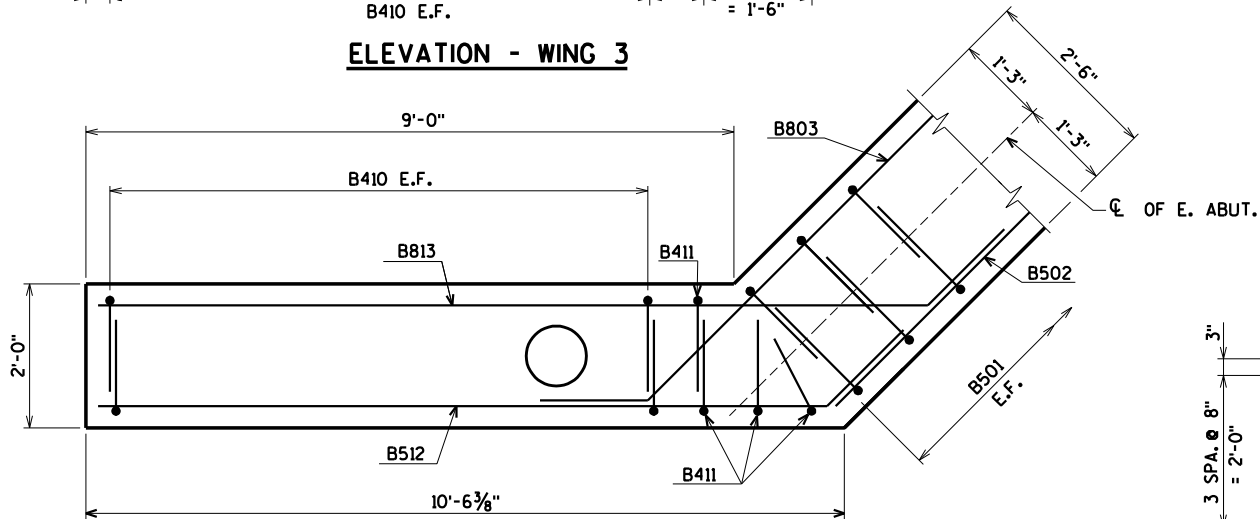
ELEVATION - WING 3



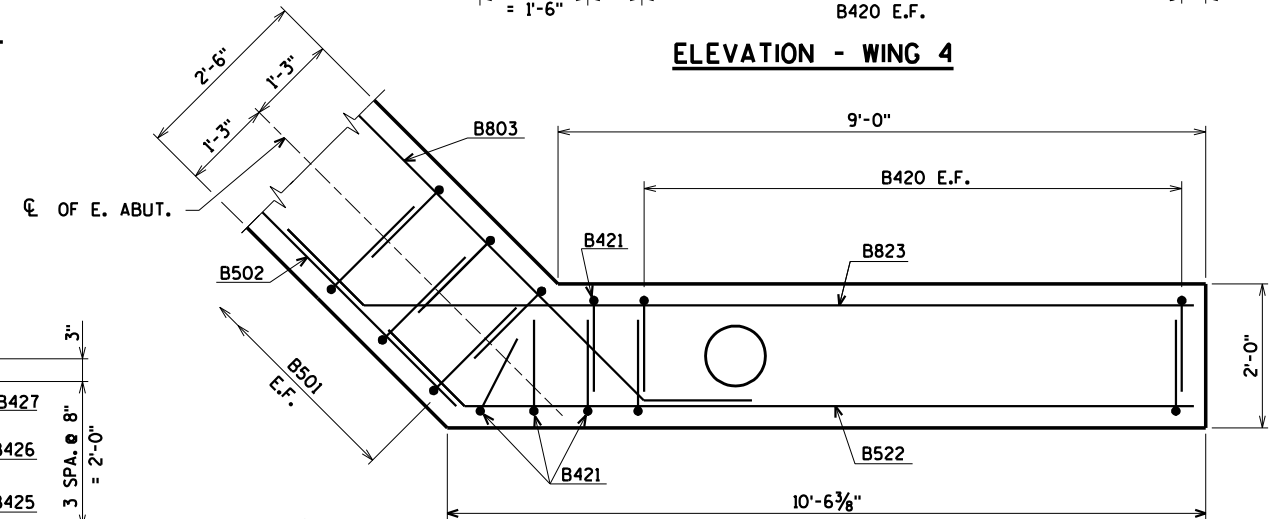
SECTION A



ELEVATION - WING 4



SECTION B



SECTION E

■ RUBBERIZED MEMBRANE WATERPROOFING  
IF CONST. JOINT IS USED (COST INCIDENTAL  
TO BID ITEM "CONCRETE MASONRY BRIDGES")

● OPT. KEYED CONST. JOINT - FORMED BY A  
SURFACED BEVELED 2" x 6" WITH RUBBERIZED  
MEMBRANE WATERPROOFING ON B.F.  
(RUBBERIZED MEMBRANE WATERPROOFING INCIDENTAL  
TO BID ITEM "CONCRETE MASONRY BRIDGES" IF  
CONST. JOINT IS USED).

⊕ 3/4" 'V' GROOVE ON F.F. OF WING WALL  
NOT REQUIRED IF CONST. JT. IS NOT USED.

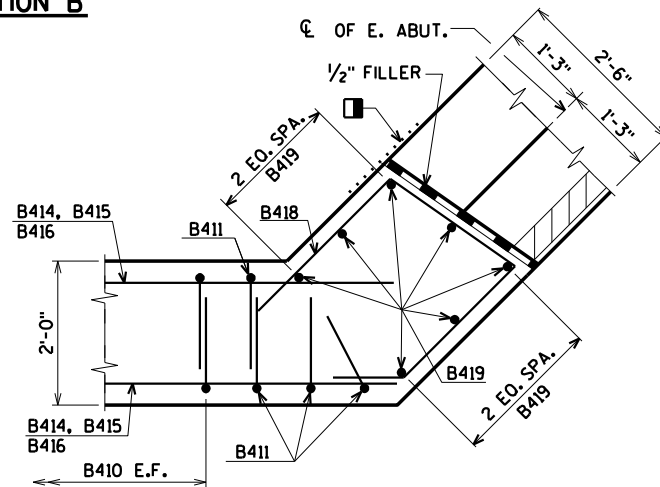
■ VERTICAL 18" RUBBERIZED MEMBRANE  
WATERPROOFING TO EXTEND FROM  
BRIDGE SEAT TO TOP OF WING WALL.

FOR PILE SPlice DETAIL SEE SHEET 2.

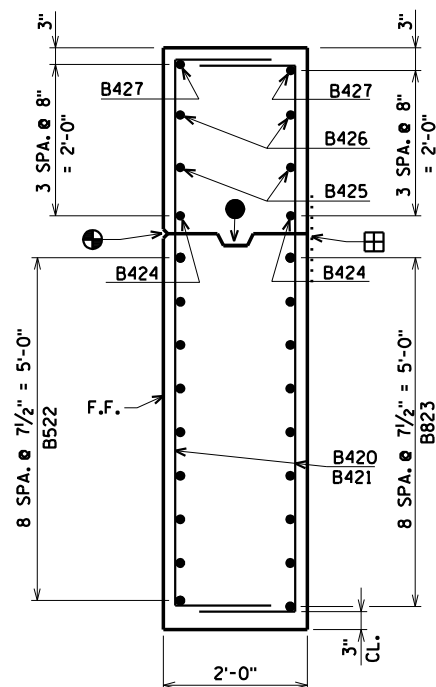
B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

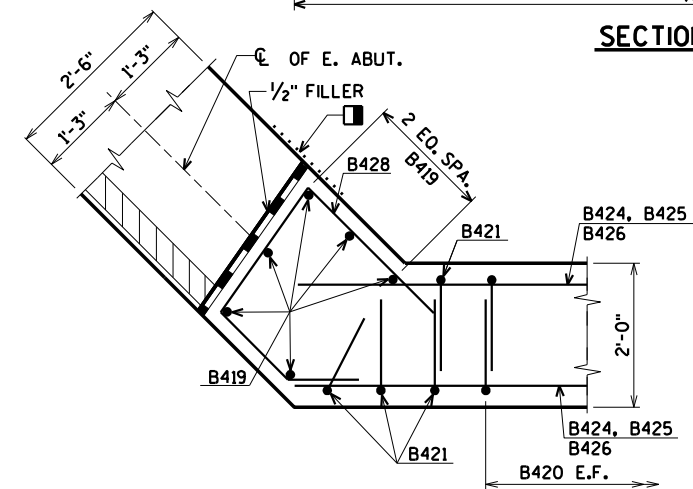
F.F. DENOTES FRONT FACE



SECTION C



SECTION D



SECTION F

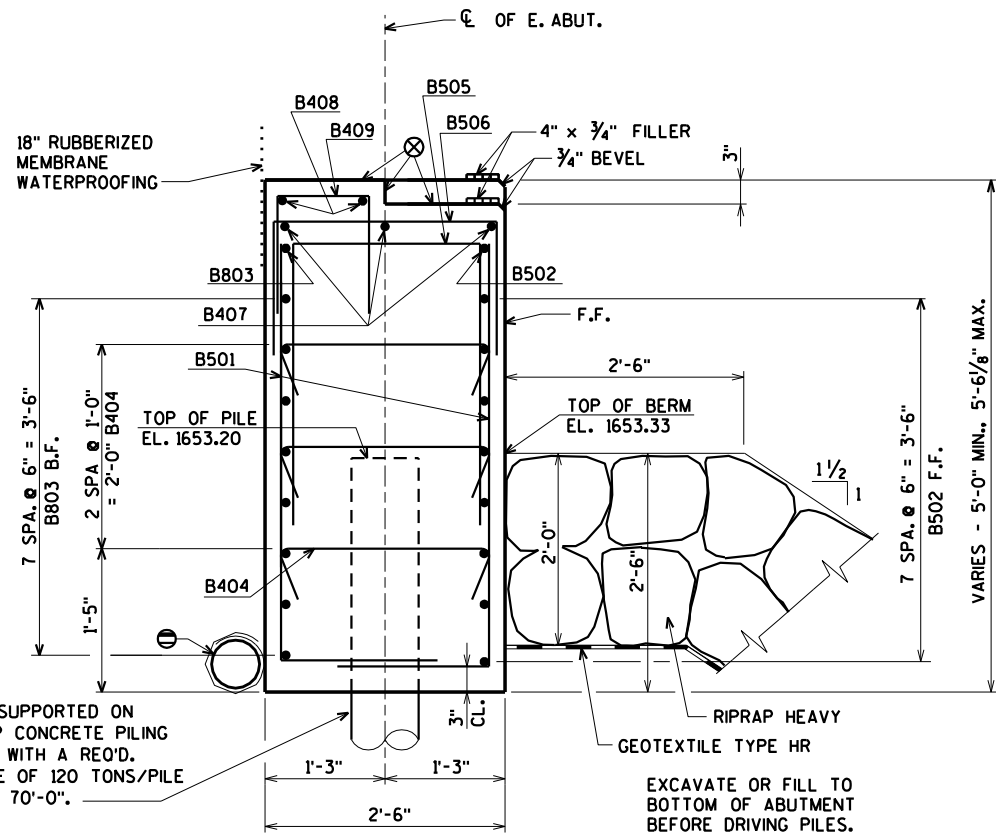
ORIGINAL PLANS PREPARED BY  
**AYRES ASSOCIATES**  
3433 Oakwood Hills Parkway  
Eau Claire, WI 54701  
www.AyresAssociates.com

| NO.                                                | DATE | REVISION      | BY              |
|----------------------------------------------------|------|---------------|-----------------|
|                                                    |      |               |                 |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |               |                 |
| STRUCTURE B-63-28                                  |      |               |                 |
| DRAWN BY                                           |      | CLS           | PLANS CK'D. JLB |
| EAST ABUTMENT WING DETAILS                         |      | SHEET 8 OF 12 |                 |



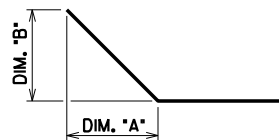
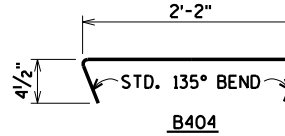
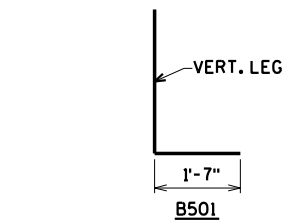
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U:\45-0438,00 - Vilas Co. Rumies Road\Structures\450438 ea.dgn

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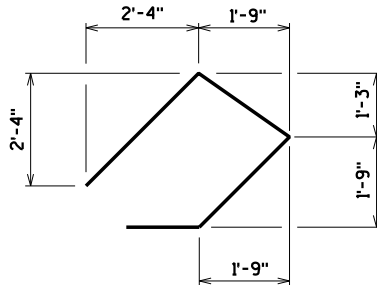
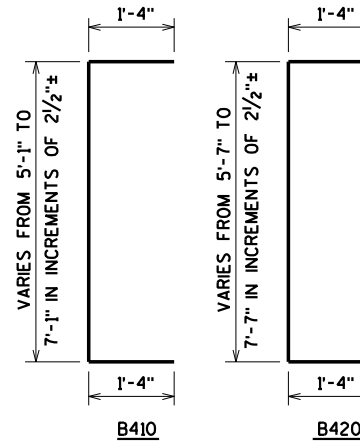
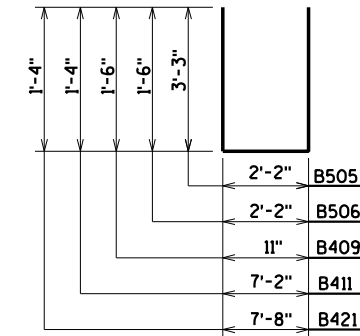


**TYPICAL SECTION THRU BODY**

NOTE: DO NOT PLACE FILL ABOVE THREE FEET FROM BOTTOM OF ABUTMENT UNTIL SUPERSTRUCTURE IS IN PLACE.



| BAR NO. | DIM. "A"  | DIM. "B"  |
|---------|-----------|-----------|
| B803    | 1'-0 3/4" | 1'-0 3/4" |
| B512    | 1'-0 3/4" | 1'-0 3/4" |
| B813    | 1'-0 3/4" | 1'-0 3/4" |
| B417    | 8'-0"     | 2'-1"     |
| B522    | 1'-0 3/4" | 1'-0 3/4" |
| B823    | 1'-0 3/4" | 1'-0 3/4" |
| B427    | 8'-0"     | 2'-1"     |



**B418**

**B428**

⊗ STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING SUPERSTRUCTURE. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN. FOR RODENT SHIELD SEE DETAIL ON SHEET 6.

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE.

F.F. DENOTES FRONT FACE.

E.F. DENOTES EACH FACE.

STATE PROJECT NUMBER

9898-01-70

**BILL OF BARS**

| BAR NO. | COATED BAR | NO. REQ'D. | LENGTH | BENT BAR | BUNDLE | BAR SERIES | 2,240# UNCOATED<br>1,330# COATED |
|---------|------------|------------|--------|----------|--------|------------|----------------------------------|
|         |            |            |        |          |        |            | LOCATION                         |
| B501    |            | 64         | 5-9    | X        |        |            | BODY VERT. E.F.                  |
| B502    |            | 9          | 31-6   |          |        |            | BODY HORIZ. F.F.                 |
| B803    |            | 18         | 21-10  | X        |        |            | BODY HORIZ. B.F.                 |
| B404    |            | 24         | 2-9    | X        |        |            | BODY TIES                        |
| B505    |            | 32         | 8-5    | X        |        |            | BODY VERT. TOP                   |
| B506    |            | 12         | 4-11   | X        |        |            | BODY VERT. TOP                   |
| B407    |            | 3          | 11-9   |          |        |            | BODY HORIZ. TOP                  |
| B408    |            | 2          | 26-8   |          |        |            | BODY HORIZ. TOP NOTCH            |
| B409    |            | 27         | 3-9    | X        |        |            | BODY VERT. TOP NOTCH             |
| B410    | X          | 22         | 8-7    | X        | ⊗      |            | WING 3 VERT. E.F.                |
| B411    | X          | 4          | 9-8    | X        |        |            | WING 3 VERT. E.F.                |
| B512    | X          | 9          | 11-9   | X        |        |            | WING 3 HORIZ. F.F.               |
| B813    | X          | 9          | 13-1   | X        |        |            | WING 3 HORIZ. B.F.               |
| B414    | X          | 2          | 10-1   |          |        |            | WING 3 HORIZ. E.F.               |
| B415    | X          | 2          | 7-7    |          |        |            | WING 3 HORIZ. E.F.               |
| B416    | X          | 2          | 5-1    |          |        |            | WING 3 HORIZ. E.F.               |
| B417    | X          | 2          | 10-4   | X        |        |            | WING 3 DIAG. E.F.                |
| B418    | X          | 4          | 9-1    | X        |        |            | WING 3 HORIZ.                    |
| B419    | X          | 13         | 3-11   |          |        |            | WINGS 3 & 4 VERT.                |
| B420    | X          | 22         | 9-1    | X        | ⊗      |            | WING 4 VERT. E.F.                |
| B421    | X          | 4          | 10-2   | X        |        |            | WING 4 VERT. E.F.                |
| B522    | X          | 9          | 11-9   | X        |        |            | WING 4 HORIZ. F.F.               |
| B823    | X          | 9          | 13-1   | X        |        |            | WING 4 HORIZ. B.F.               |
| B424    | X          | 2          | 10-1   |          |        |            | WING 4 HORIZ. E.F.               |
| B425    | X          | 2          | 7-7    |          |        |            | WING 4 HORIZ. E.F.               |
| B426    | X          | 2          | 5-1    |          |        |            | WING 4 HORIZ. E.F.               |
| B427    | X          | 2          | 10-4   | X        |        |            | WING 4 DIAG. E.F.                |
| B428    | X          | 4          | 8-2    | X        |        |            | WING 4 HORIZ.                    |

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

⊗ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

**BAR SERIES TABLE**

| BAR MARK | NO REQ'D.      | LENGTH          |
|----------|----------------|-----------------|
| B410     | 2 SERIES OF 11 | 7'-7" TO 9'-7"  |
| B420     | 2 SERIES OF 11 | 8'-1" TO 10'-1" |

BUNDLE AND TAG EACH SERIES SEPARATELY.

| NO.                                                | DATE | REVISION | BY              |
|----------------------------------------------------|------|----------|-----------------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |          |                 |
| STRUCTURE B-63-28                                  |      |          |                 |
| DRAWN BY                                           |      | CLS      | PLANS CK'D. JLB |
| EAST ABUTMENT<br>BILL OF BARS<br>AND DETAILS       |      |          | SHEET 9 OF 12   |

ORIGINAL PLANS PREPARED BY  
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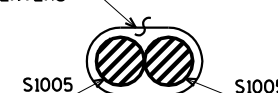
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[illegible]

TOP TRANSVERSE BARS IN SLAB SHALL BE SUPPORTED BY INDIVIDUAL BAR CHAIRS AT APPROXIMATELY 3'-0" CENTERS EACH WAY. BOTTOM LONGITUDINAL BARS SHALL BE SUPPORTED BY CONTINUOUS BAR CHAIRS AT APPROXIMATELY 4'-0" CENTERS.

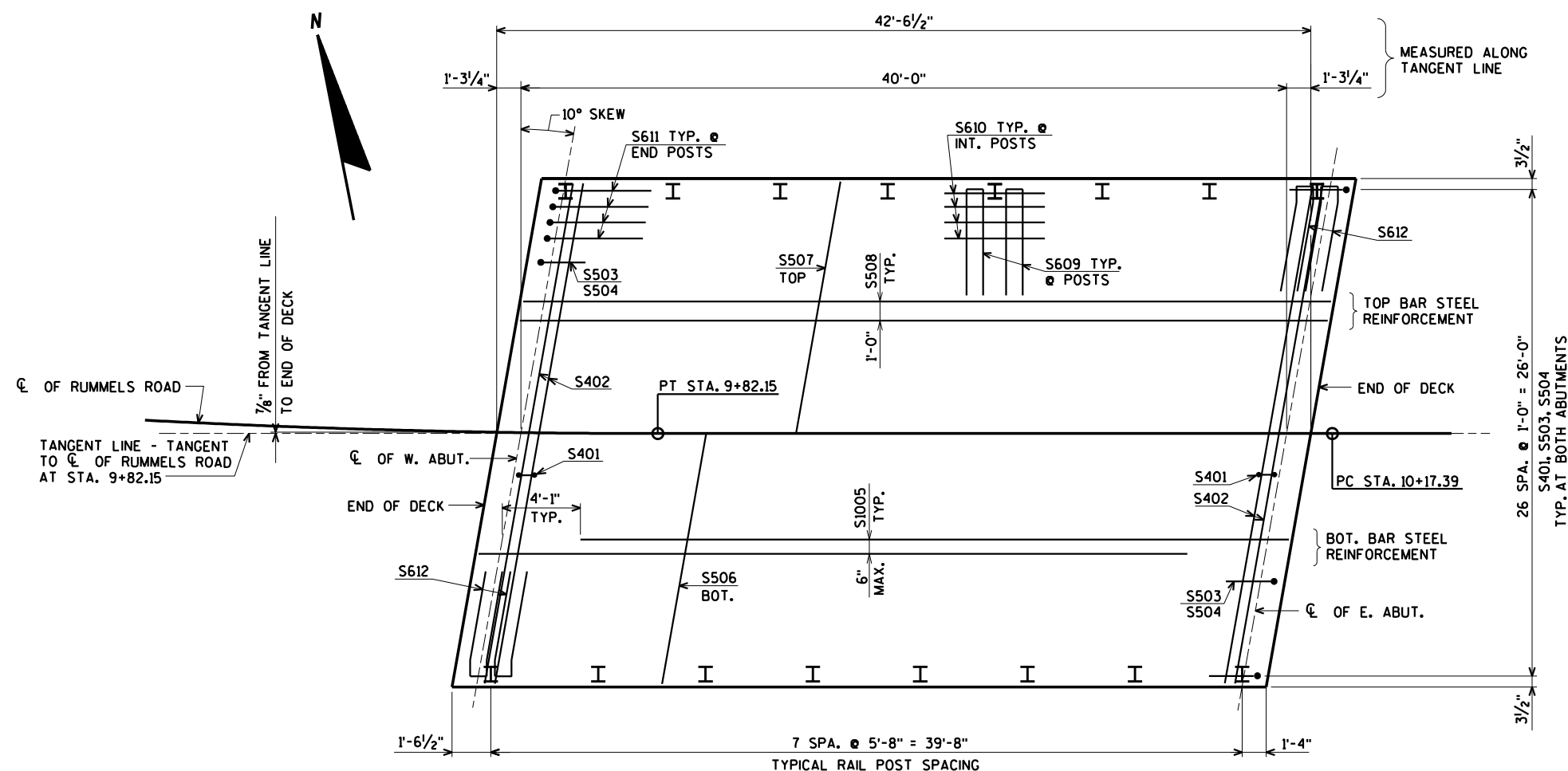
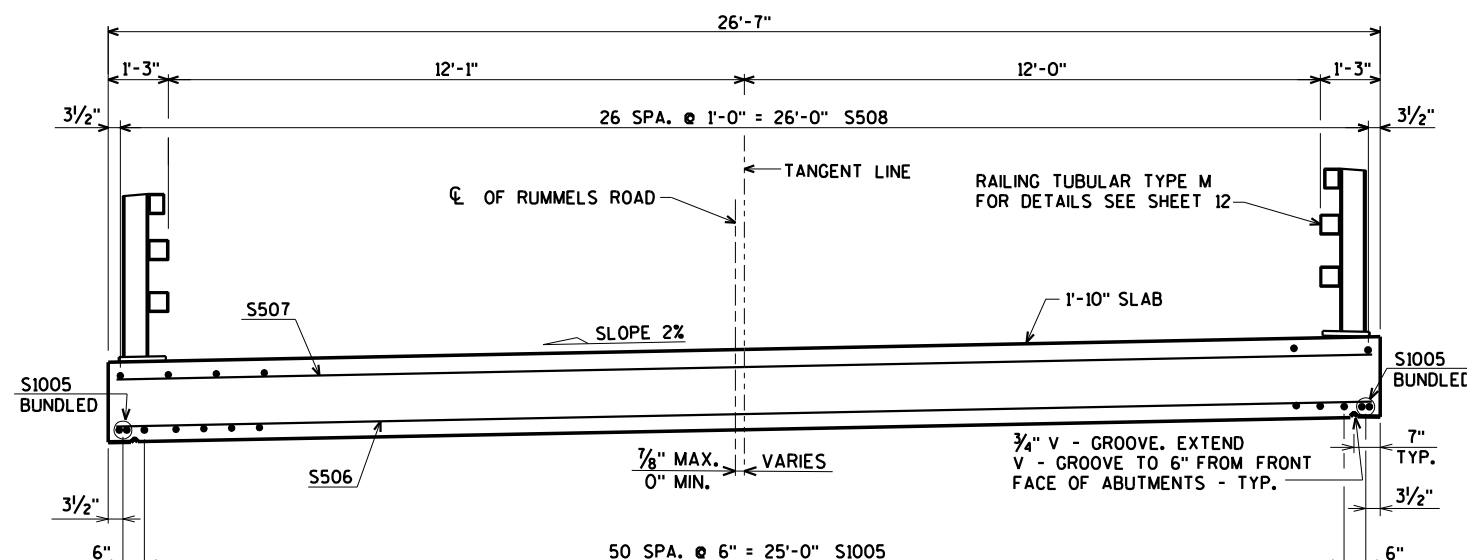
ALL SLAB THICKNESS DIMENSIONS ARE MINIMUM.  
ANY TOLERANCES NECESSARY TO CORRECT  
CONSTRUCTION DISCREPANCIES ARE TO BE PLUS (+).

WIRE BARS TOGETHER  
@ 2'-0" CENTERS

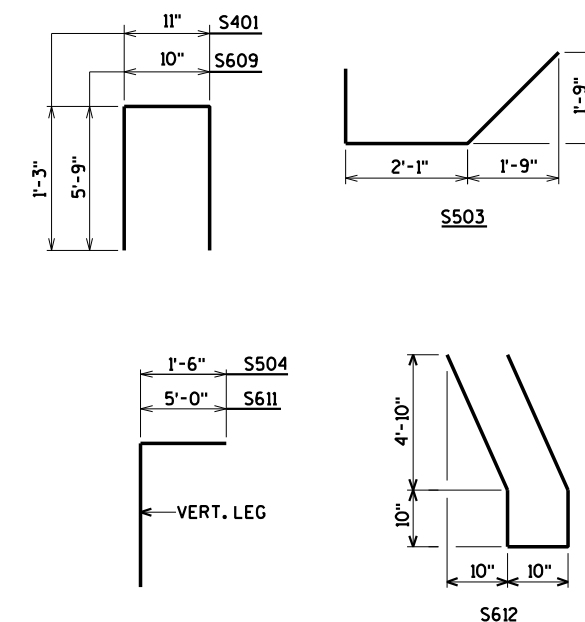


## BUNDLING DETAIL

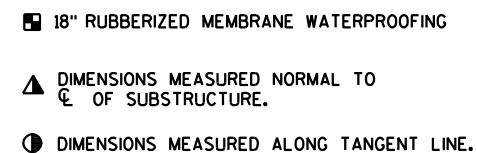
**CROSS SECTION THRU BRIDGE**  
(LOOKING EAST)



## PLAN



|                                                    |      |             |                 |
|----------------------------------------------------|------|-------------|-----------------|
|                                                    |      |             |                 |
| NO.                                                | DATE | REVISION    | BY              |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |             |                 |
| STRUCTURE B-63-28                                  |      |             |                 |
| DRAWN BY                                           |      | CLS         | PLANS CK'D. JLE |
| SUPERSTRUCTURE                                     |      | SHEET 10 OF |                 |



The diagram shows a parabolic arch with a total span of 40'-0". The arch is divided into 10 equal spaces by 11 vertical lines. The vertical distances from the horizontal centerline to the arch at these points are labeled as follows:

| Point               | Distance from Centerline (ft-in) |
|---------------------|----------------------------------|
| 1 (Left Abutment)   | 0'-0"                            |
| 2                   | 4'-0"                            |
| 3                   | 8'-0"                            |
| 4                   | 12'-0"                           |
| 5                   | 16'-0"                           |
| 6 (Crown)           | 20'-0"                           |
| 7                   | 24'-0"                           |
| 8                   | 28'-0"                           |
| 9                   | 32'-0"                           |
| 10                  | 36'-0"                           |
| 11 (Right Abutment) | 40'-0"                           |

The vertical distances are: 0.4", 0.7", 1.0", 1.2", 1.2", 1.2", 1.0", 0.7", and 0.4". The horizontal distance between each of the 10 equal spaces is 4'-0".

CAMBER SPANS AS SHOWN TO PROVIDE  
FOR DEAD LOAD DEFLECTION & FUTURE  
CREEP. CAMBER DOES NOT INCLUDE  
ALLOWANCE FOR FORM SETTLEMENT.

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE  $\mathbb{C}$  OF ABUTMENTS, AND AT  $\frac{1}{2}$  PT. TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGE OF SLAB AND CROWN OR  $\mathbb{C}$ .

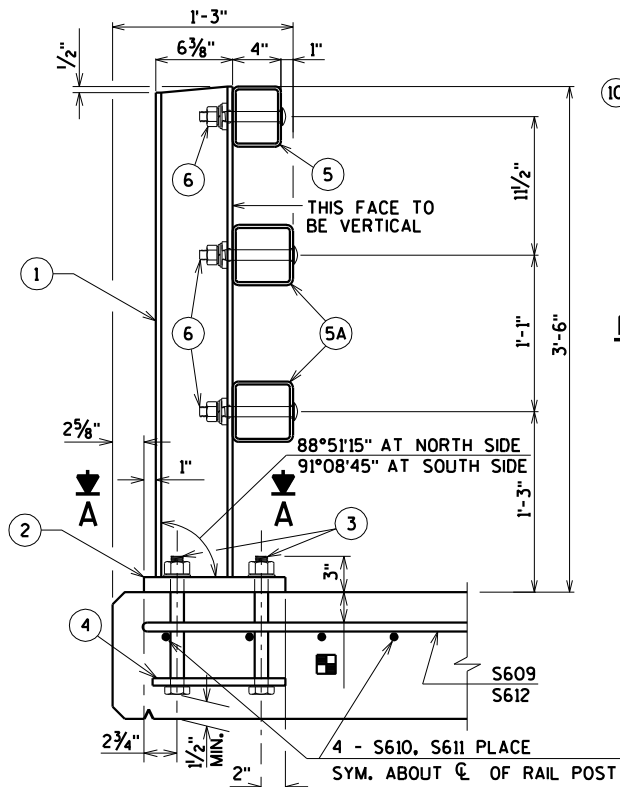
| LOCATION        | ℄ OF<br>W. ABUT. | 0.1     | 0.2     | 0.3     | 0.4     | 0.5     | 0.6     | 0.7     | 0.8     | 0.9     | ℄ OF<br>E. ABUT. |
|-----------------|------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|------------------|
| N. EDGE OF SLAB | 1658.21          | 1658.23 | 1658.25 | 1658.27 | 1658.29 | 1658.31 | 1658.33 | 1658.35 | 1658.37 | 1658.39 | 1658.41          |
| TANGENT LINE    | 1658.47          | 1658.49 | 1658.50 | 1658.52 | 1658.54 | 1658.56 | 1658.58 | 1658.60 | 1658.62 | 1658.64 | 1658.66          |
| S. EDGE OF SLAB | 1658.72          | 1658.74 | 1658.76 | 1658.78 | 1658.80 | 1658.82 | 1658.84 | 1658.86 | 1658.88 | 1658.90 | 1658.92          |

ELEVATIONS SHOWN ARE FINISHED DECK AND DO NOT INCLUDE ALLOWANCES OF DEAD LOAD DEFLECTION AND FUTURE CREEP.

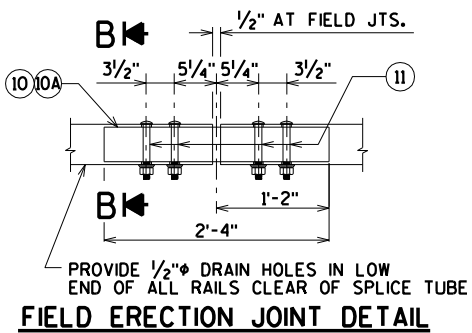
|                                                    |      |          |                 |
|----------------------------------------------------|------|----------|-----------------|
|                                                    |      |          |                 |
| NO.                                                | DATE | REVISION | BY              |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |          |                 |
| STRUCTURE B-63-28                                  |      |          |                 |
| DRAWN BY                                           |      | CLS      | PLANS CK'D. JLB |
| SUPERSTRUCTURE DETAILS                             |      |          | SHEET 11 OF 12  |

LEGEND

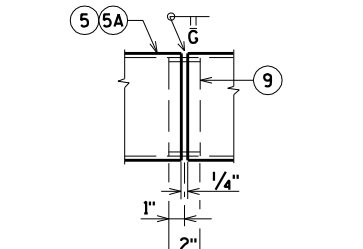
- W6 x 25 WITH 1/8" x 1/2" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- PLATE 1/4" x 11 3/4" x 1'-8" WITH 1 5/8" x 1 5/8" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.
- ASTM A449 - 1/6" 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.)~~
- 5/8" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1 5/8" DIA. HOLES FOR ANCHOR BOLTS NO. 3
- 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.
- 7/8" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/8" x 1 5/8" x 1 5/8" WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)
- 1/2" THK. BACK-UP PLATE WITH 2 - 7/8" x 1/2" THREADED SHOP WELDED STUDS (NO. 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.
- 1" DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5A FOR 7/8" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.
- SPLICE SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE "SLIDING FIT".
- 3/8" x 3 5/8" x 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.
- 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.
- 7/8" 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 5/8" x 2 1/4" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A.~~
- 7/8" DIA. x 1/2" LONG THREADED SHOP WELDED STUDS (2 REQ'D.).
- 3/8" x 8" x 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.
- 7/8" DIA. x 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).
- 1" HOLES IN TUBES NO. 5A FOR 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.



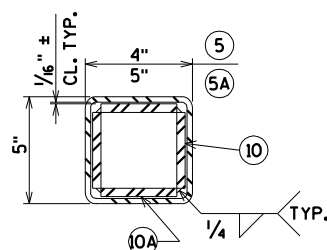
SECTION THRU RAILING ON DECK



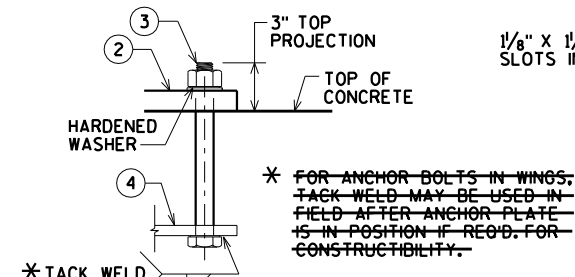
FIELD ERECTION JOINT DETAIL



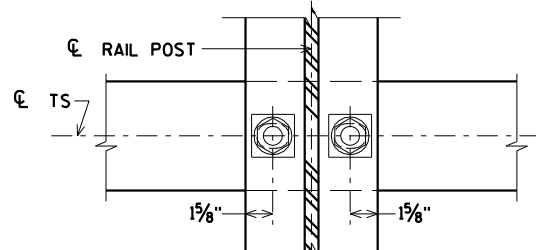
SHOP RAIL SPLICE DETAIL  
(LOCATION MUST BE SHOWN ON THE SHOP DRAWINGS)



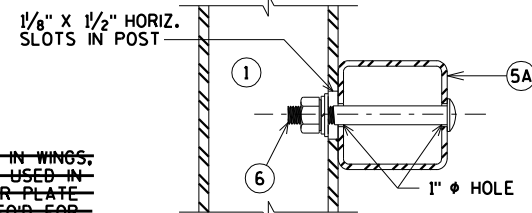
SECTION B



ANCHOR BOLTS



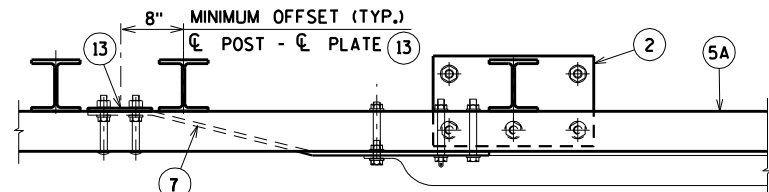
SECTION THRU POST WEB



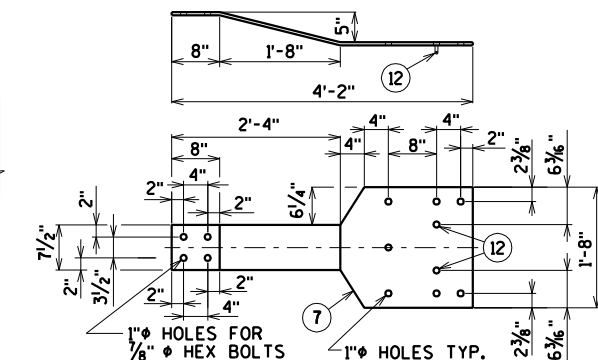
SECTION THRU RAIL

NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

TYPICAL RAIL TO POST CONNECTIONS



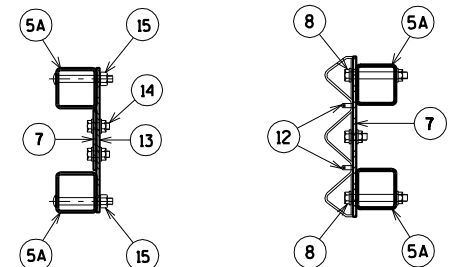
TOP VIEW AT END POST  
(THRIE BEAM RAIL ATTACHMENT)



BACK-UP PLATE DETAIL  
(AT BEAM GUARD ATTACHMENT)

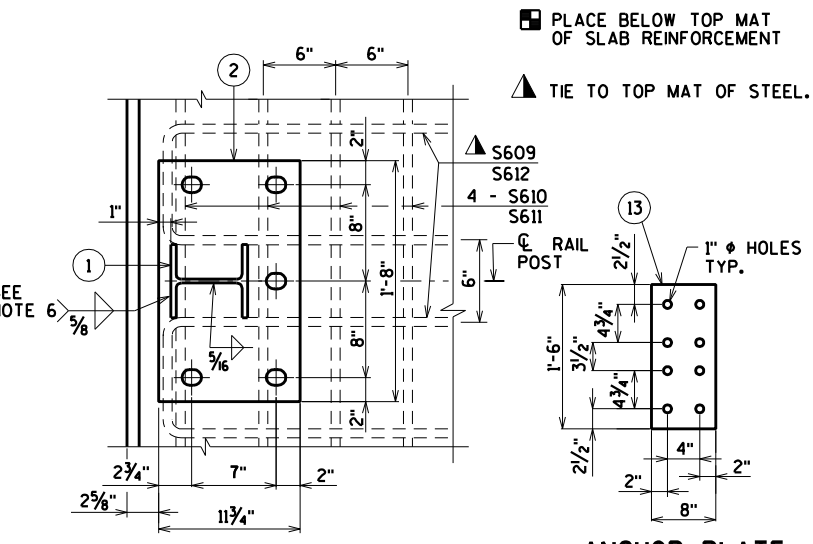
GENERAL NOTES

- BID ITEM SHALL BE "RAILING TUBULAR TYPE M" WHICH INCLUDES ALL ITEMS SHOWN.
- 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.
- THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN.
- 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.
- ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
- WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
- 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.
- 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.
- 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 S.S.P.C. SPECIFICATIONS.
- WHEN PAINTING IS REQUIRED, ALL MATERIAL EXCEPT ANCHORAGE DETAIL (NO. 3 & 4) SHALL BE PAINTED OVER GALVANIZING WITH APPROVED TIE COAT AND TOP COAT.



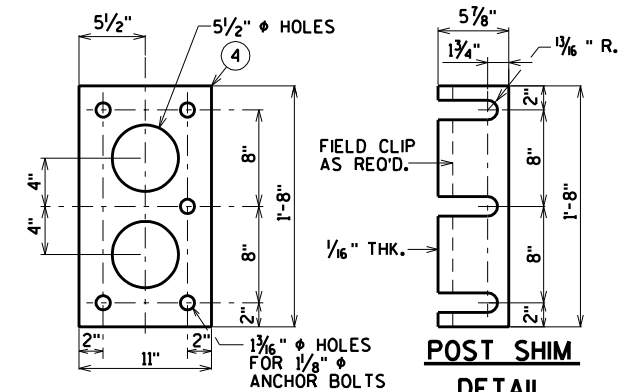
SECTION C

SECTION D



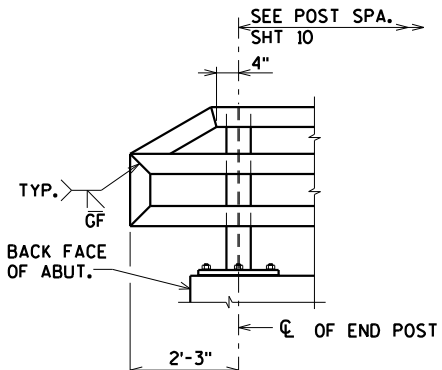
SECTION A

ANCHOR PLATE  
(AT BEAM GUARD ATTACHMENT)



ANCHOR PLATE  
(AT RAIL TO DECK CONNECTION)

POST SHIM  
DETAIL



PART ELEVATION OF RAILING

DETAIL AT END POST  
(THRIE BEAM RAIL ATTACHMENT)

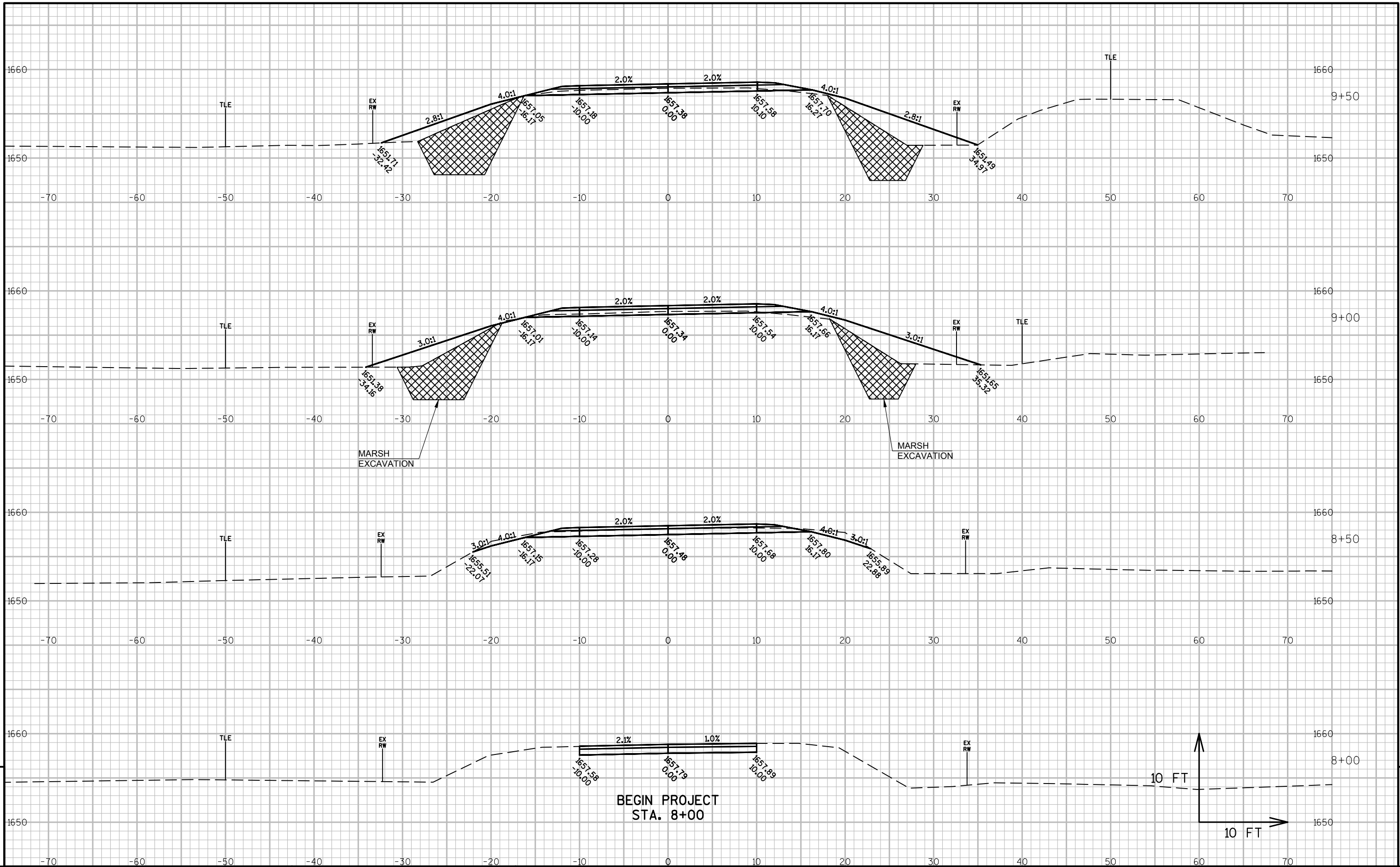
| NO.                                                | DATE | REVISION        | BY             |
|----------------------------------------------------|------|-----------------|----------------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |                 |                |
| STRUCTURE B-63-28                                  |      |                 |                |
| DRAWN BY CLS                                       |      | PLANS CK'D. JLB |                |
| RAILING TUBULAR<br>TYPE M                          |      |                 | SHEET 12 OF 12 |

EARTHWORK - RUMMELS ROAD

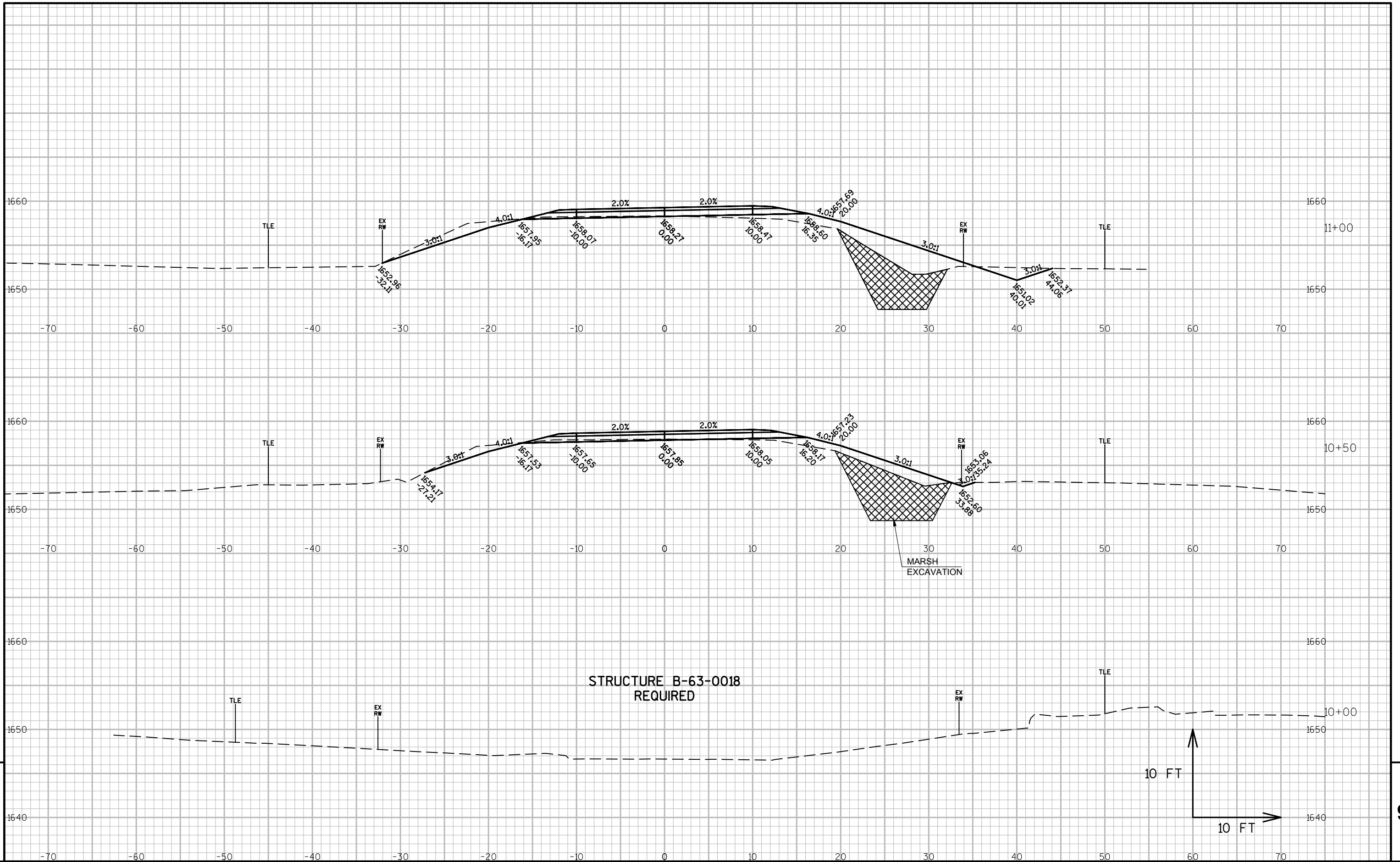
| STATION  | AREA (SF) |                               |       |           | Incremental Vol (CY) (Unadjusted) |                                         |                |           | Cumulative Vol (CY)   |                       |                                              | Mass Ordinate |
|----------|-----------|-------------------------------|-------|-----------|-----------------------------------|-----------------------------------------|----------------|-----------|-----------------------|-----------------------|----------------------------------------------|---------------|
|          | Cut       | Unusable<br>Pavement Material | Fill  | Marsh Exc | Cut<br>Note 1                     | Unusable<br>Pavement Material<br>Note 2 | Fill<br>Note 3 | Marsh Exc | Cut<br>1.00<br>Note 1 | Expanded Fill<br>1.30 | Expanded Marsh<br>Backfill<br>1.50<br>Note 4 |               |
|          |           |                               |       |           |                                   |                                         |                |           |                       |                       |                                              |               |
|          |           |                               |       |           |                                   |                                         |                |           |                       |                       |                                              |               |
| 8+00     | 18.0      | 6                             | 0     | 0         | 0                                 | 0                                       | 0              | 0         | 0                     | 0                     | 0                                            | 0             |
| 8+50     | 23.9      | 6                             | 0     | 81        | 39                                | 11                                      | 0              | 75        | 39                    | 0                     | 113                                          | 28            |
| 9+00     | 6.9       | 6                             | 43.8  | 96        | 29                                | 11                                      | 41             | 164       | 67                    | 53                    | 358                                          | -8            |
| 9+50     | 11.5      | 6                             | 38.4  | 0         | 17                                | 11                                      | 76             | 89        | 84                    | 152                   | 492                                          | -101          |
| 9+73.73  | 16.0      | 6                             | 105.4 | 0         | 12                                | 5                                       | 63             | 0         | 96                    | 234                   | 492                                          | -176          |
| B-63-28  |           |                               |       |           |                                   |                                         |                |           |                       |                       |                                              |               |
| 10+16.27 | 9.1       | 6                             | 110.9 | 0         | 0                                 | 0                                       | 0              | 0         | 96                    | 234                   | 492                                          | -176          |
| 10+50    | 9.6       | 6                             | 19.2  | 55        | 12                                | 7                                       | 81             | 34        | 108                   | 339                   | 543                                          | -277          |
| 11+00    | 18.5      | 6                             | 39.1  | 48        | 26                                | 11                                      | 54             | 95        | 134                   | 410                   | 686                                          | -333          |
| 11+50    | 16.8      | 6                             | 53.2  | 51        | 33                                | 11                                      | 85             | 92        | 167                   | 521                   | 824                                          | -422          |
| 12+00    | 3.4       | 6                             | 63.5  | 45        | 19                                | 11                                      | 108            | 89        | 186                   | 661                   | 957                                          | -555          |
| 12+50    | 8.0       | 6                             | 50.2  | 83        | 11                                | 11                                      | 105            | 119       | 196                   | 798                   | 1,135                                        | -693          |
| 13+00    | 18        | 6                             | 0     | 0         | 24                                | 11                                      | 46             | 77        | 220                   | 858                   | 1,250                                        | -740          |

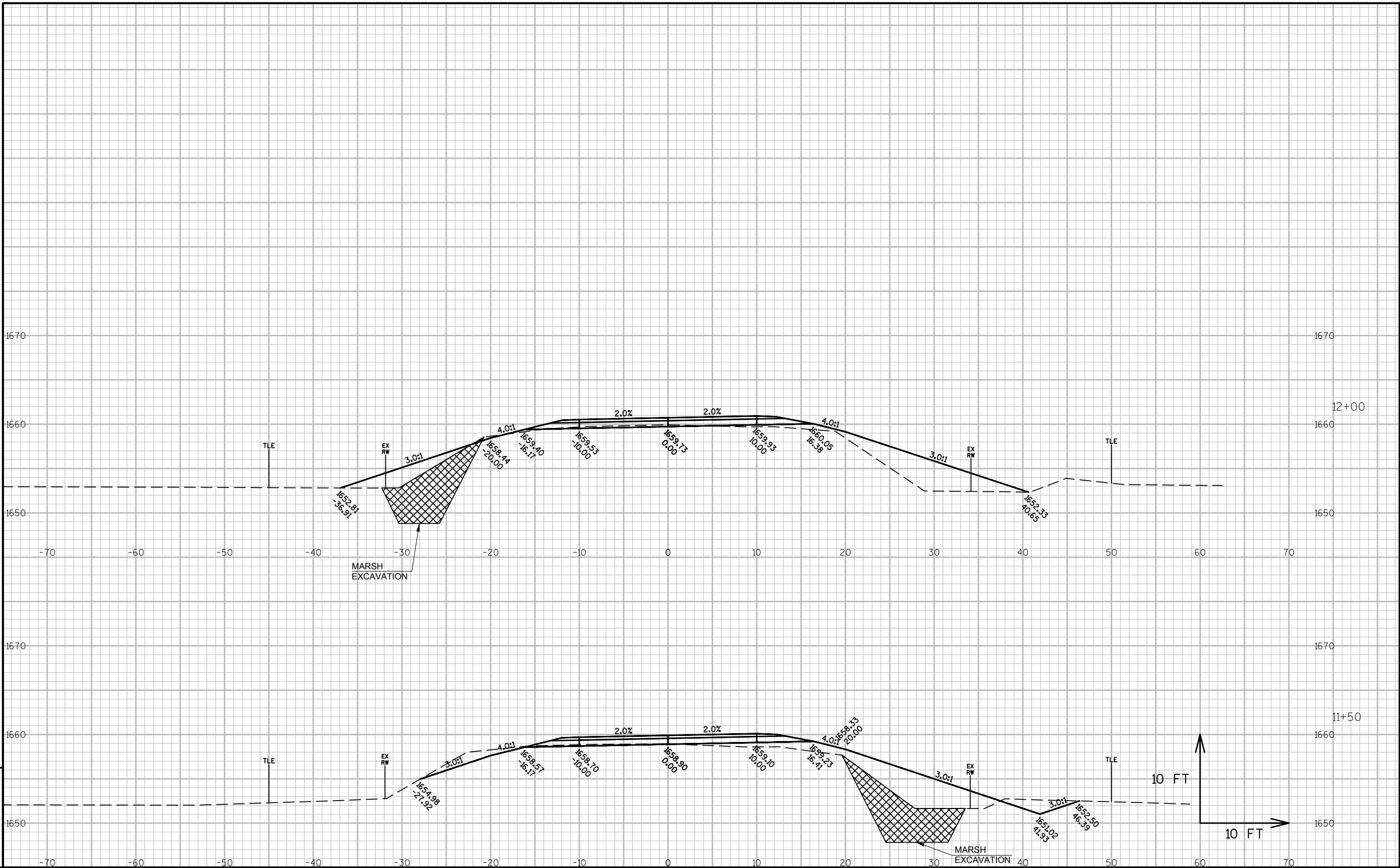
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|                                |                                                    |
|--------------------------------|----------------------------------------------------|
| Notes:                         |                                                    |
| 1 - Cut                        | Cut includes existing asphalt and base material    |
| 2 - Unusable Pavement Material | Does not show up in cross sections                 |
| 3 - Fill                       | Does not include Unusable Pavement Material Volume |
| 4 - Expanded Marsh Backfill    | Will be backfilled with Select Borrow              |
| 8 - Mass Ordinate              | Cut - (Fill * Fill Factor)                         |
| 8 - Mass Ordinate              | Mass Ordinate does not include Marsh Excavation    |

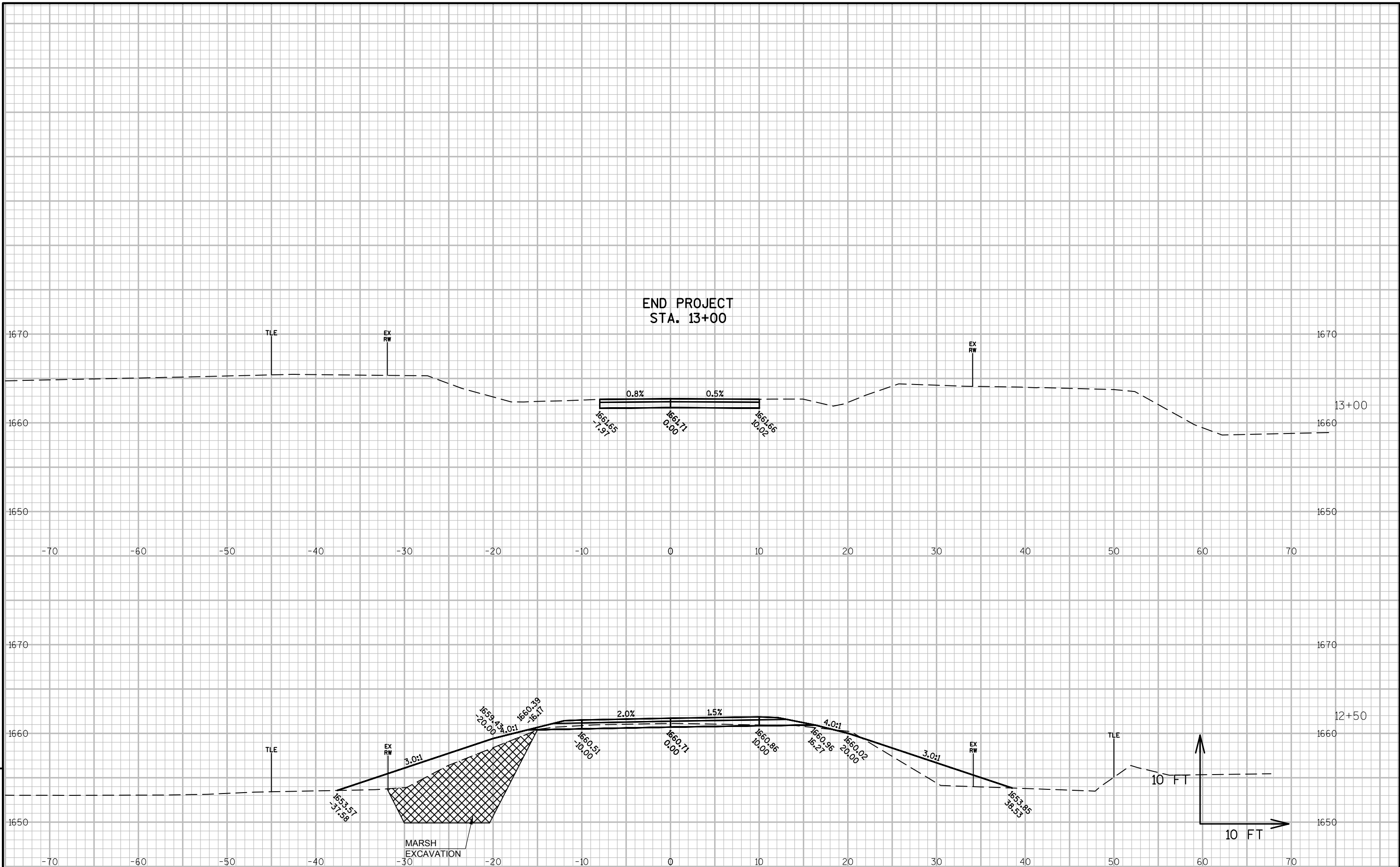


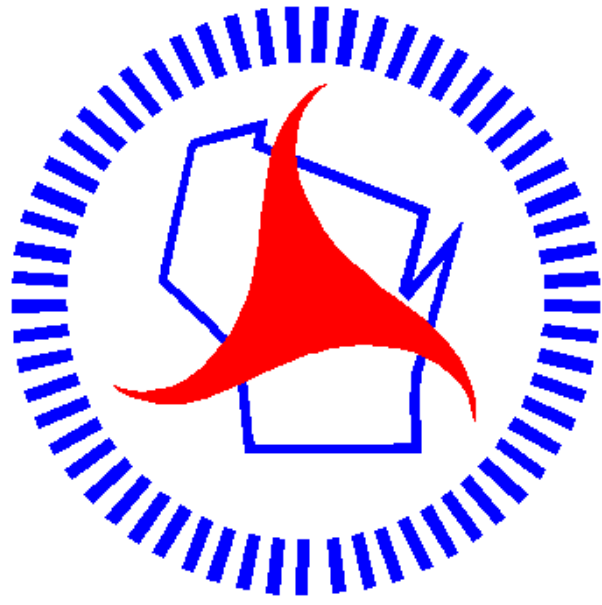












## ***Wisconsin Department of Transportation***

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