



GENERAL NOTES

- CURVE DATA IS BASED ON ARC DEFINITION.
- LOCATION OF UNDERGROUND UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
- CROSS SLOPES AS SHOWN ON THE TYPICAL SECTION WILL VARY AT THE INTERSECTIONS. SEE DETAIL SHEETS AND CROSS SECTIONS FOR SLOPES AND GRADES.
- ALL RADII ARE MEASURED TO EDGE OF PAVEMENT OR FLAG OF CURB UNLESS OTHERWISE SHOWN OR NOTED ON THE PLAN.
- EXPANSION JOINTS TO BE CONSTRUCTED AT ALL RADIUS POINTS IN CURB AND GUTTER OR AT LOCATIONS SHOWN ON THE PLAN.
- NO TREES OR SHRUBS SHALL BE REMOVED UNLESS SUCH TREES OR SHRUBS HAVE BEEN DESIGNATED FOR REMOVAL BY THE ENGINEER.
- WHEN PORTIONS OF EXISTING ASPHALTIC SURFACES ARE TO BE REMOVED TO ACCOMMODATE NEW CONSTRUCTION, THE LINE OF SUCH REMOVAL SHALL BE NEATLY DELINEATED WITH A SAW CUT JOINT THROUGH THE ASPHALTIC SURFACE SO THAT REMOVAL OF THE ASPHALT SHALL BE ACCOMPLISHED WITHOUT DAMAGE TO REMAINING PORTIONS. THE LOCATION OF SAW JOINTS AND THE AMOUNT REMOVED AT SIDE ROADS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- REMOVE EXISTING OLD CULVERTS AS SHOWN ON THE PLANS.
- PAVEMENT REMOVAL WILL BE TO THE NEAREST JOINT OR A SAWED EDGE WILL BE REQUIRED AS DIRECTED BY THE ENGINEER.
- DISTURBED AREAS WITHIN THE RIGHT OF WAY ARE TO BE TOPSOILED, FERTILIZED, SEEDED, AND MULCHED AS DIRECTED BY THE ENGINEER.
- TOPSOIL OR SALVAGED TOPSOIL WHERE REQUIRED, IS TO BE PLACED ON ALL CUT AND FILL SLOPES TO AN APPROXIMATE DEPTH OF 4 INCHES AT THE TIME OF PLACING.
- IN THE PERFORMANCE OF THE WORK UNDER THE ITEM "MULCHING", ALL AREAS SEEDED AND FERTILIZED SHALL BE MULCHED AS DIRECTED BY THE ENGINEER.
- CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVEWAYS AT ALL TIMES EXCEPT WHEN PIPE LAYING OPERATIONS REQUIRE THE DRIVEWAY TO BE CLOSED. ACCESS TO DRIVEWAY SHALL BE RE-ESTABLISHED IMMEDIATELY AFTER PIPE IN DRIVEWAY AREA IS INSTALLED. ACCESS SHALL BE PROVIDED DURING ALL NON-WORKING HOURS.
- THE EXACT LOCATION OF ACCESS POINTS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER, EXCEPT FOR THE CONTROLLED LOCATIONS SHOWN ON THE PLAT.
- THE EXACT LOCATION OF PRIVATE ENTRANCES IS TO BE DETERMINED IN THE FIELD BY THE ENGINEER, EXCEPT FOR THE CONTROLLED LOCATIONS SHOWN ON THE PLAT.
- EASEMENTS FOR P.E. AND F.E. CONSTRUCTION HAVE BEEN OBTAINED.
- WHEN THE QUANTITIES OF ASPHALTIC PAVEMENT IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OF THICKNESS OF THE MATERIAL THAT IS SHOWN ON THE PLANS IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.
- THE RATE OF APPLICATION FOR TACK COAT IS COMPUTED AT 0.025 GAL/SY.
- ASPHALTIC PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 112 LB/SY/IN
- 3.5" HMA PAVEMENT SHALL BE PLACED IN TWO LAYERS. THE 12.5mm GRADATION MAY BE USED FOR BOTH LAYERS.
- COORDINATES AND BEARINGS REFERENCED IN THE PLAN ARE IN A WISCONSIN COUNTY COORDINATE SYSTEM, CRAWFORD COUNTY.
- PLAN ELEVATIONS: NORTH AMERICAN VERTICAL DATUM 1988 (1991) ADJUSTMENT
- THE CONTRACTOR IS TO WORK WITH UTMOST CARE AND PROTECT ALL SURVEY MARKERS AND SHALL BE RESPONSIBLE FOR REMONUMENTATION IF NECESSARY.
- THE ENGINEER SHALL CONFIRM THE LOCATION OF EROSION CONTROL ITEMS. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL SUCH TIME AS THE ENGINEER DETERMINES THE MEASURES ARE NO LONGER NECESSARY. AT THAT TIME, THE CONTRACTOR SHALL REMOVE THE TEMPORARY EROSION CONTROL ITEM(S).
- NO EQUIPMENT OR MATERIALS SHALL BE STORED OR IMPACT ANY WETLANDS OR WATERWAYS.

STANDARD ABBREVIATIONS

|           |                           |         |                             |
|-----------|---------------------------|---------|-----------------------------|
| AC.       | ACRE                      | MAX.    | MAXIMUM                     |
| AGG.      | AGGREGATE                 | MGAL    | 1000 GALLONS                |
| AH        | AHEAD                     | MIN.    | MINIMUM                     |
| <         | ANGLE                     | N.C.    | NORMAL CROWN OR NO CHANGE   |
| AE, AEW   | APRON ENDWALL             | N       | NORTH                       |
| ASPH.     | ASPHALTIC                 | NO.     | NUMBER                      |
| A.D.T.    | AVERAGE DAILY TRAFFIC     | PAV'T   | PAVEMENT                    |
| B.F.      | BACK FACE                 | P.L.E.  | PERMANENT LIMITED EASEMENT  |
| BK.       | BACK                      | P.C.    | POINT OF CURVATURE          |
| BEG.      | BEGIN                     | P.I.    | POINT OF INTERSECTION       |
| B.M.      | BENCH MARK                | P.T.    | POINT OF TANGENCY           |
| C/L       | CENTER LINE               | V.P.C.  | VERTICAL POINT OF CURVATURE |
|           |                           |         | VERTICAL POINT OF           |
| D         | CENTRAL ANGLE OR DELTA    | V.P.I.  | INTERSECTION                |
|           | CORRUGATED METAL CULVERT  |         |                             |
| C.M.C.P.  | PIPE                      | V.P.T.  | VERTICAL POINT OF TANGENCY  |
| C.M.P.    | CORRUGATED METAL PIPE     | PCC     | PORTLAND CEMENT CONCRETE    |
| CO.       | COUNTY                    | P.E.    | PRIVATE ENTRANCE            |
| CTH       | COUNTY TRUNK HIGHWAY      | P.L.    | PROPERTY LINE               |
| CR.       | CREEK                     | R       | RADIUS OR RANGE             |
|           | CRUSHED AGGREGATE BASE    |         |                             |
| C.A.B.C.  | COURSE                    | R/L     | REFERENCE LINE              |
|           |                           | R.C.C.P | REINFORCED CONCRETE CULVERT |
| C.Y.      | CUBIC YARD                | .       | PIPE                        |
| C.P.      | CULVERT PIPE              | RT      | RIGHT                       |
| C. & G.   | CURB AND GUTTER           | REQ'D   | REQUIRED                    |
| D         | DEGREE OF CURVE           | R.H.F.  | RIGHT HAND FORWARD          |
| D.H.V.    | DESIGN HOUR VOLUME        | R/W     | RIGHT OF WAY                |
| DIA.      | DIAMETER                  | R.      | RIVER                       |
| DISCH.    | DISCHARGE                 | RD.     | ROAD                        |
| EA        | EACH                      | SHLD.   | SHOULDER(S)                 |
| E         | EAST                      | SHR.    | SHRINKAGE                   |
| ELEC.     | ELECTRIC(AL), ELEC. CABLE | S       | SOUTH                       |
| EL.,      |                           |         |                             |
| ELEV.     | ELEVATION                 | S.F.    | SQUARE FOOT (FEET)          |
| EXC.      | EXCAVATION                | SDD     | STANDARD DETAIL DRAWING(S)  |
| F.F.      | FACE TO FACE              | STH     | STATE TRUNK HIGHWAY         |
| FERT.     | FERTILIZER                | STA.    | STATION                     |
| F.E.      | FIELD ENTRANCE            | S.E.    | SUPERELEVATION              |
| F/L, F.L. | FLOW LINE                 | S/L     | SURVEY LINE                 |
| CWT.      | HUNDRED WEIGHT            | T       | TANGENT                     |
| INL       | INLET                     | TEL.    | TELEPHONE                   |
| INTER.    | INTERSECTION              | TEMP.   | TEMPORARY                   |
| JT.       | JOINT                     | T.L.E.  | TEMPORARY LIMITED EASEMENT  |
| LT        | LEFT                      | T.O.C.  | TOP OF CURB                 |
| L.H.F.    | LEFT HAND FORWARD         | T.      | (TRUCKS) PERCENT OF         |
| L.        | LENGTH OF CURVE           | TYP.    | TYPICAL                     |
| L.F.      | LINEAR FOOT(FEET)         | UNCL.   | UNCLASSIFIED                |
| LC.       | LONG CHORD                | U.G.    | UNDERGROUND (CABLE)         |
| LS        | LUMP SUM                  | V.C.    | VERTICAL CURVE              |
| M.P.      | MARKER POST               | W       | WEST                        |

UTILITY COMPANIES & PERSONNEL

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SOILS ENGINEER CONTACT

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PAVEMENT DESIGN ENGINEER CONTACT

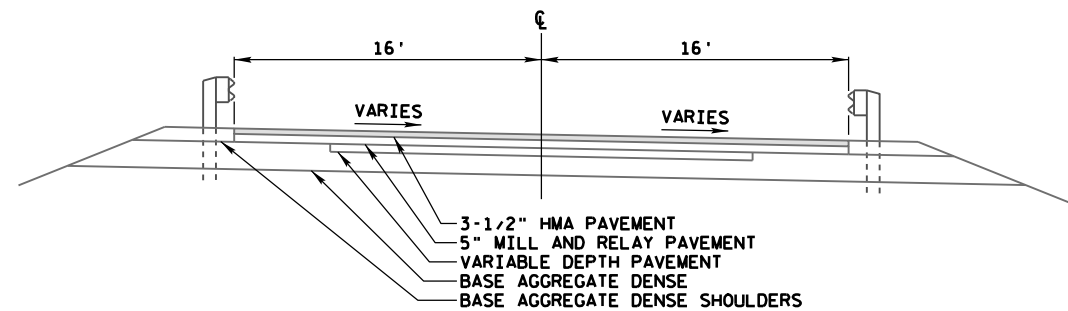
Wisconsin Department of Transportation  
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Pavement Engineer  
ATTN: Tim McCarthy  
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DNR CONTACT

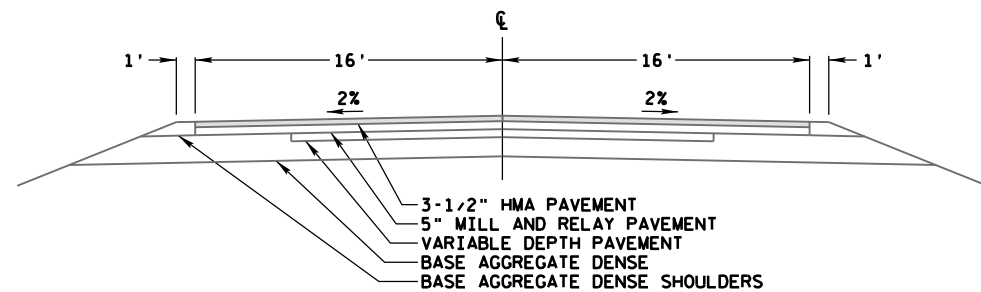
Wisconsin Department of Natural Resources  
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ATTN: Karen Kalvelage  
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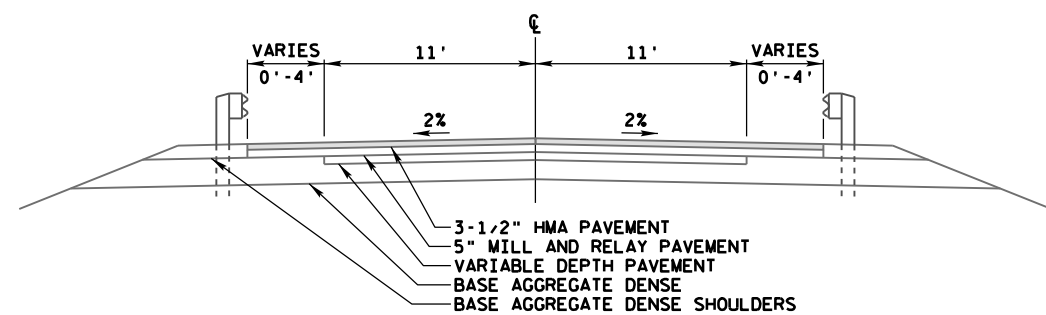
Toll Free (800) 242-8511  
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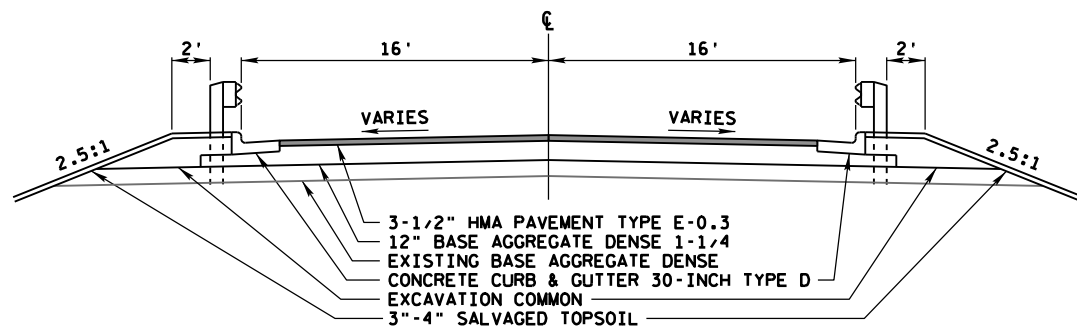
**EXISTING TYPICAL SECTION - STH 171**  
C-12-1703 APPROACHES, STATION 55+50 TO 59+80



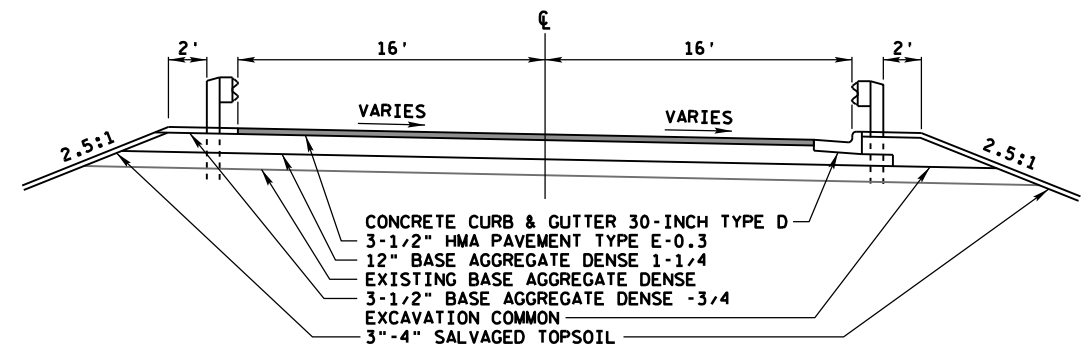
**EXISTING TYPICAL SECTION - STH 171**  
B-12-0170 APPROACHES - STATION 151+00 TO 153+30, STATION 154+85 TO 157+00



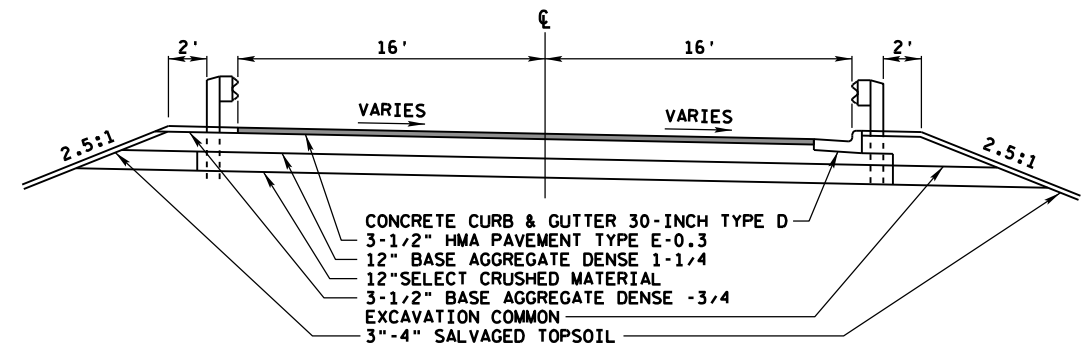
**EXISTING TYPICAL SECTION - STH 171**  
B-12-0170 APPROACHES - STATION 153+30 TO 154+05, STATION 154+29 TO 154+85



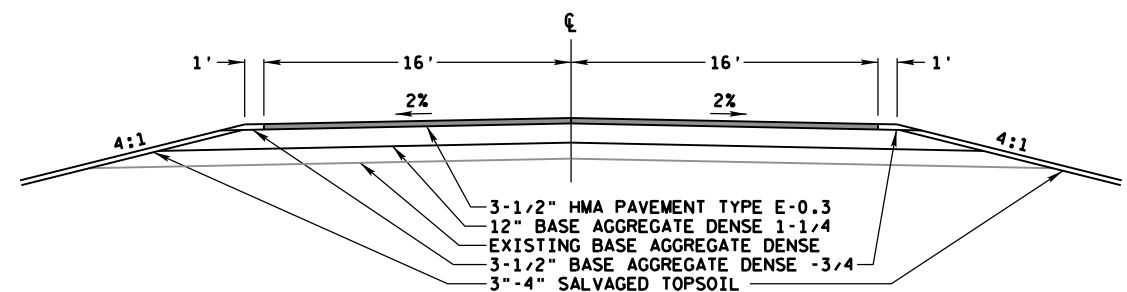
**FINISHED TYPICAL SECTION - STH 171**  
C-12-0181 APPROACHES - STATION 52+76 TO 55+50



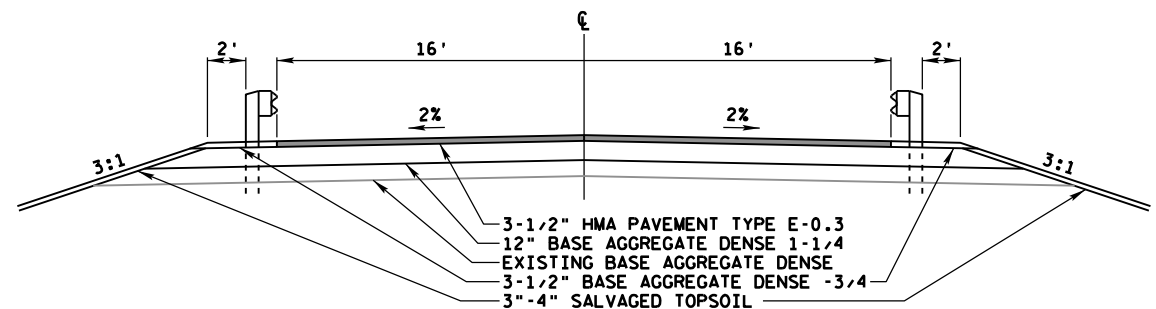
**FINISHED TYPICAL SECTION - STH 171**  
C-12-0181 APPROACHES - STATION 55+50 TO 57+28, STATION 58+28 TO 58+80



**FINISHED TYPICAL SECTION - STH 171**  
OVER C-12-0181 - STATION 57+28 TO 58+28



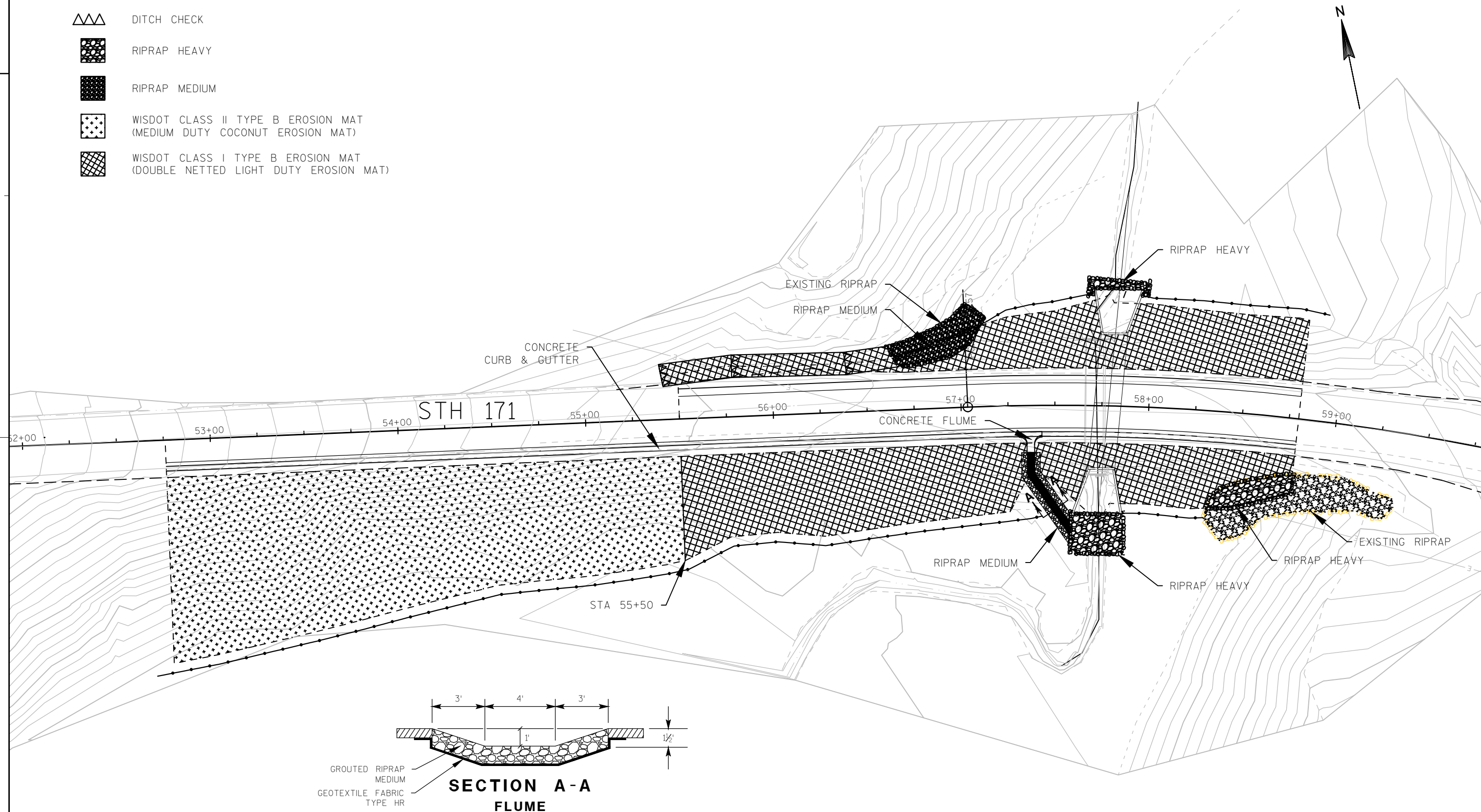
**FINISHED TYPICAL SECTION - STH 171**  
B-12-0180 APPROACHES - STATION 151+50 TO 153+05, STATION 155+35 TO 156+40



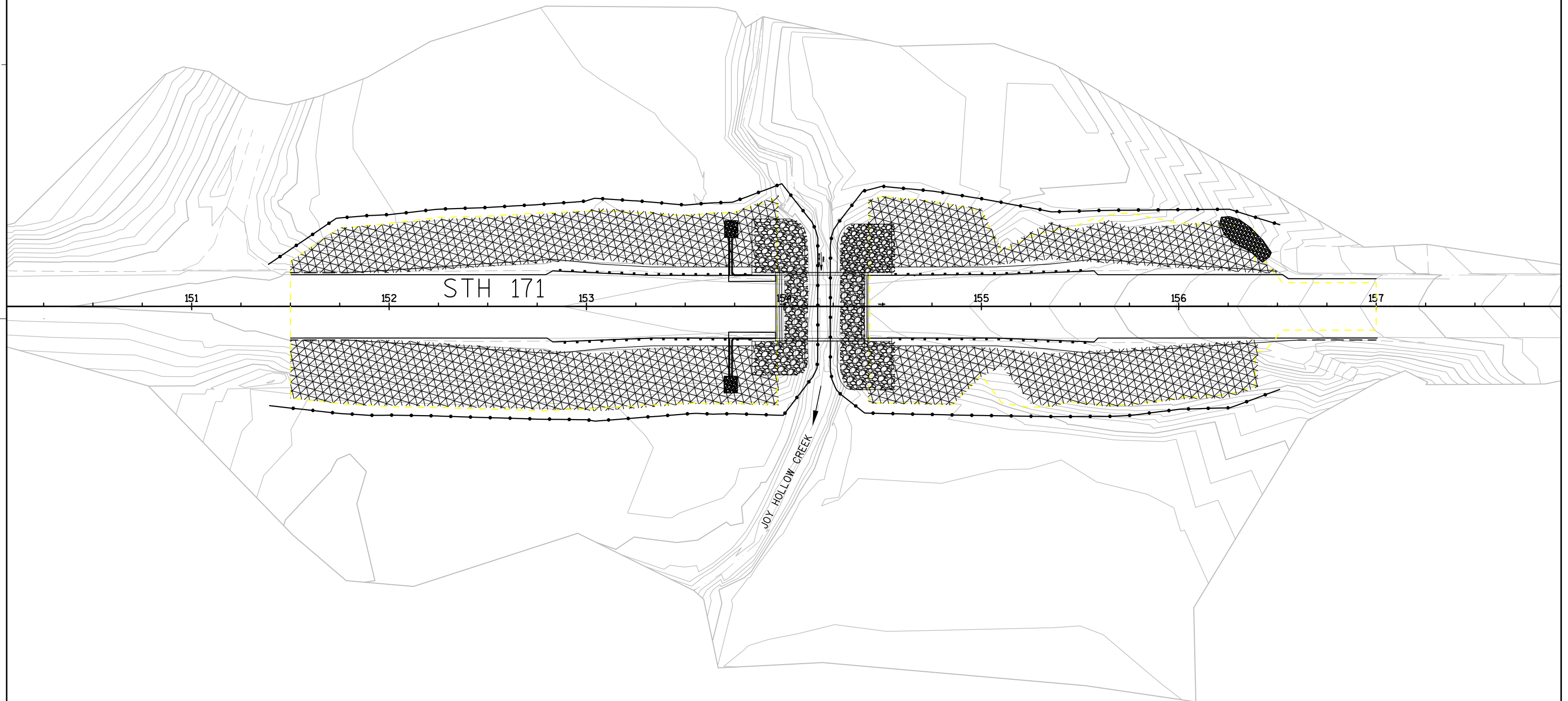
**FINISHED TYPICAL SECTION - STH 171**  
B-12-0180 APPROACHES - STATION 153+05 TO 153+97, STATION 154+43 TO 155+35

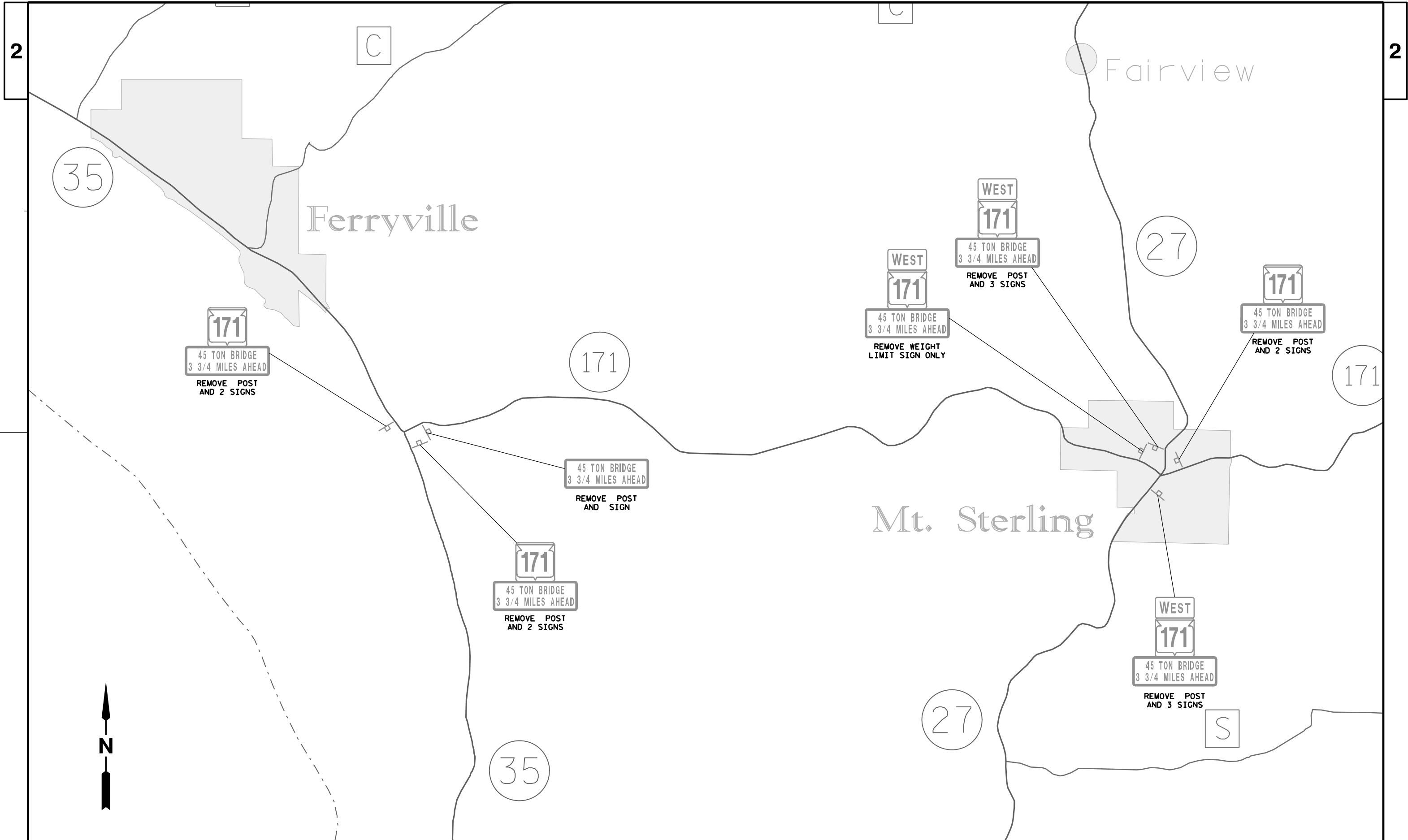


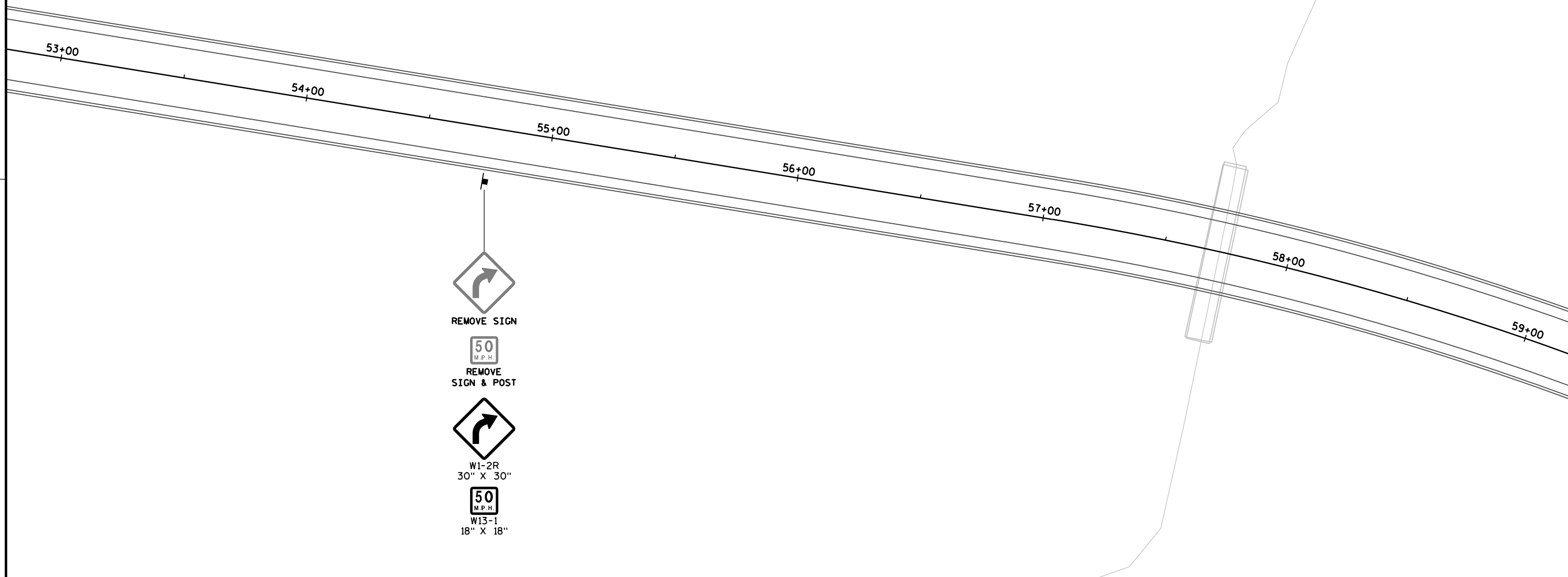
- SILT FENCE
- △△△ DITCH CHECK
- RIPRAP HEAVY
- RIPRAP MEDIUM
- WISDOT CLASS II TYPE B EROSION MAT  
(MEDIUM DUTY COCONUT EROSION MAT)
- WISDOT CLASS I TYPE B EROSION MAT  
(DOUBLE NETTED LIGHT DUTY EROSION MAT)

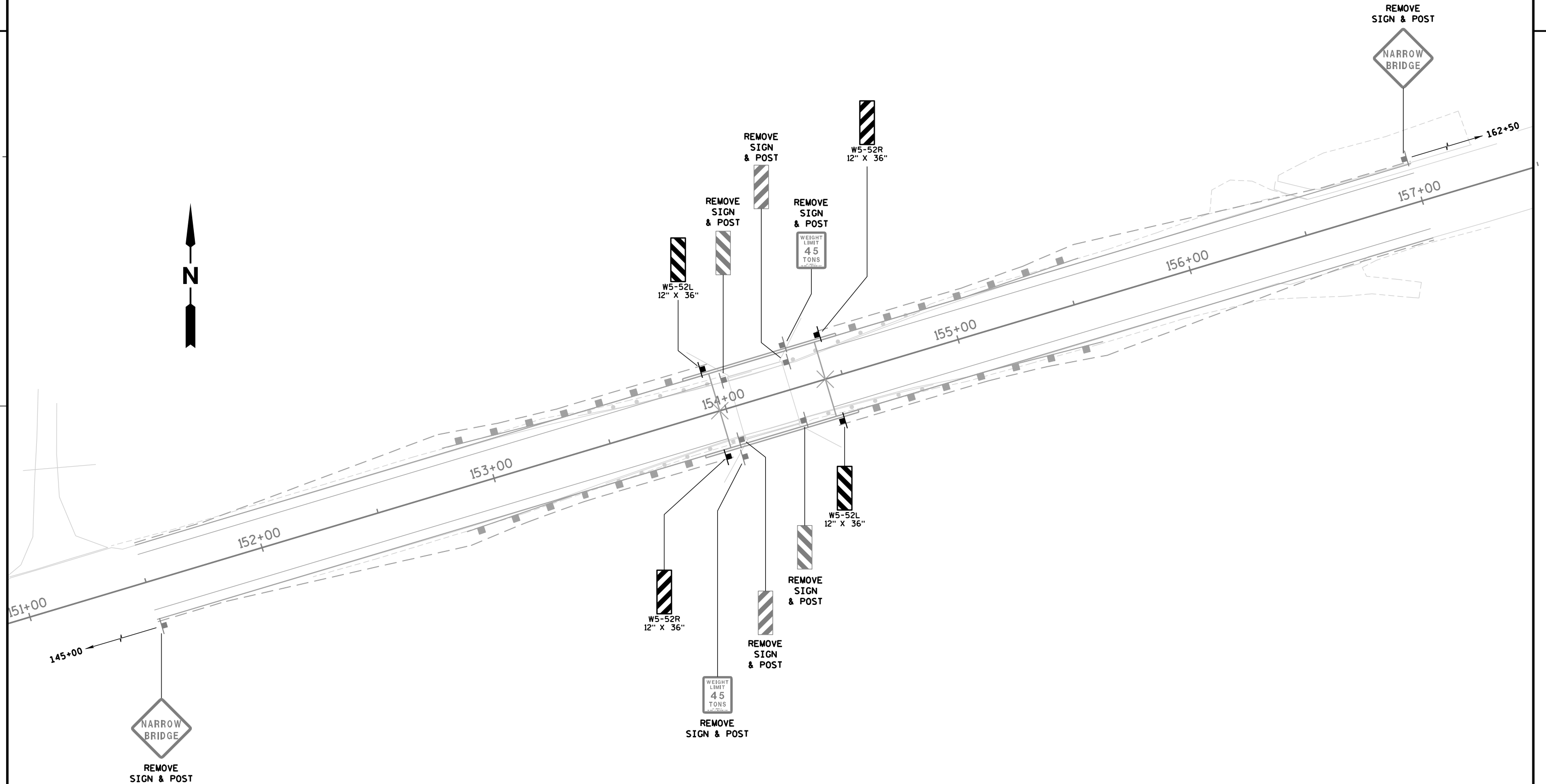


- SILT FENCE
-  RIPRAP HEAVY
-  RIPRAP MEDIUM
-  SEED WITH PROPERLY ANCHORED MULCH







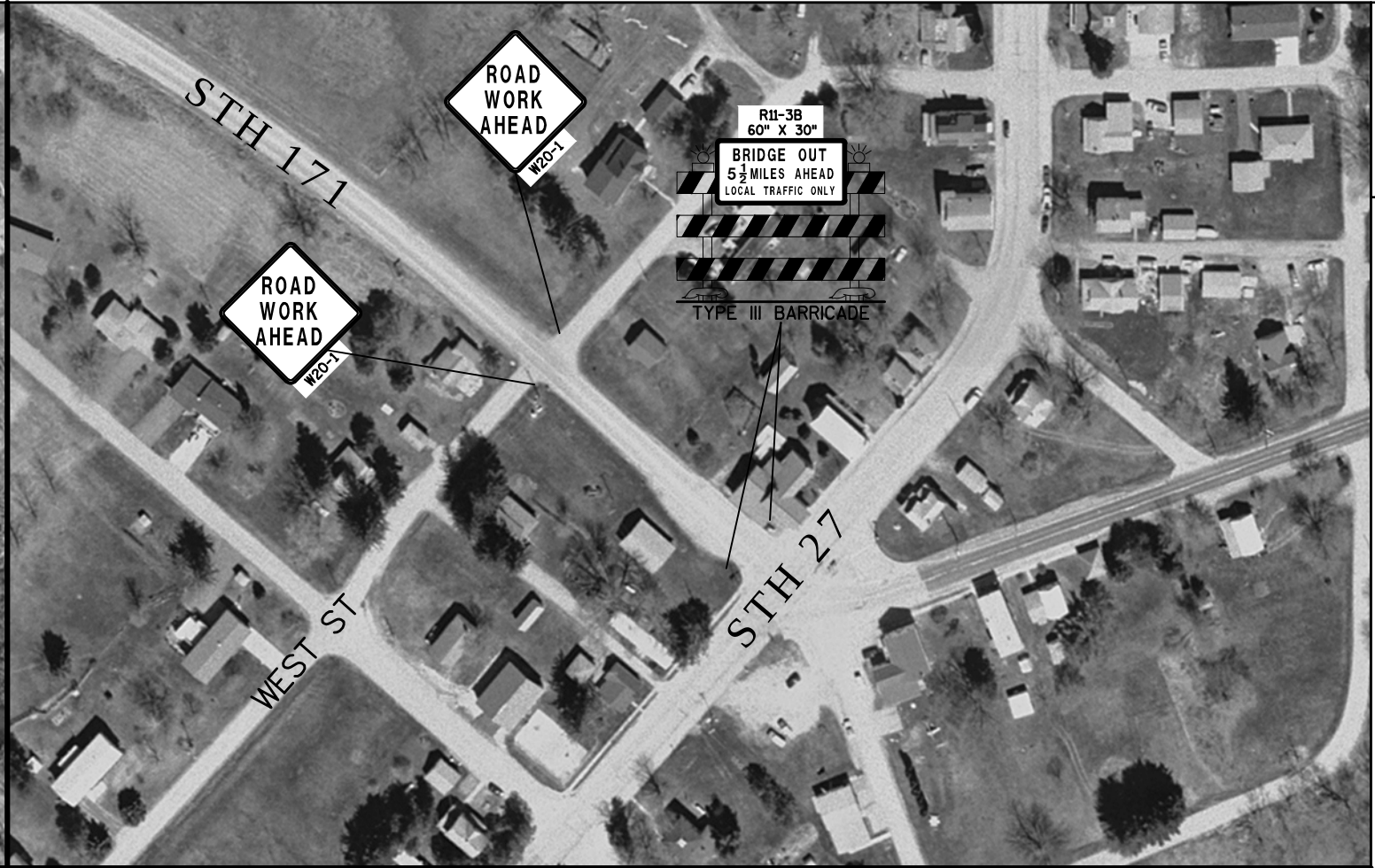




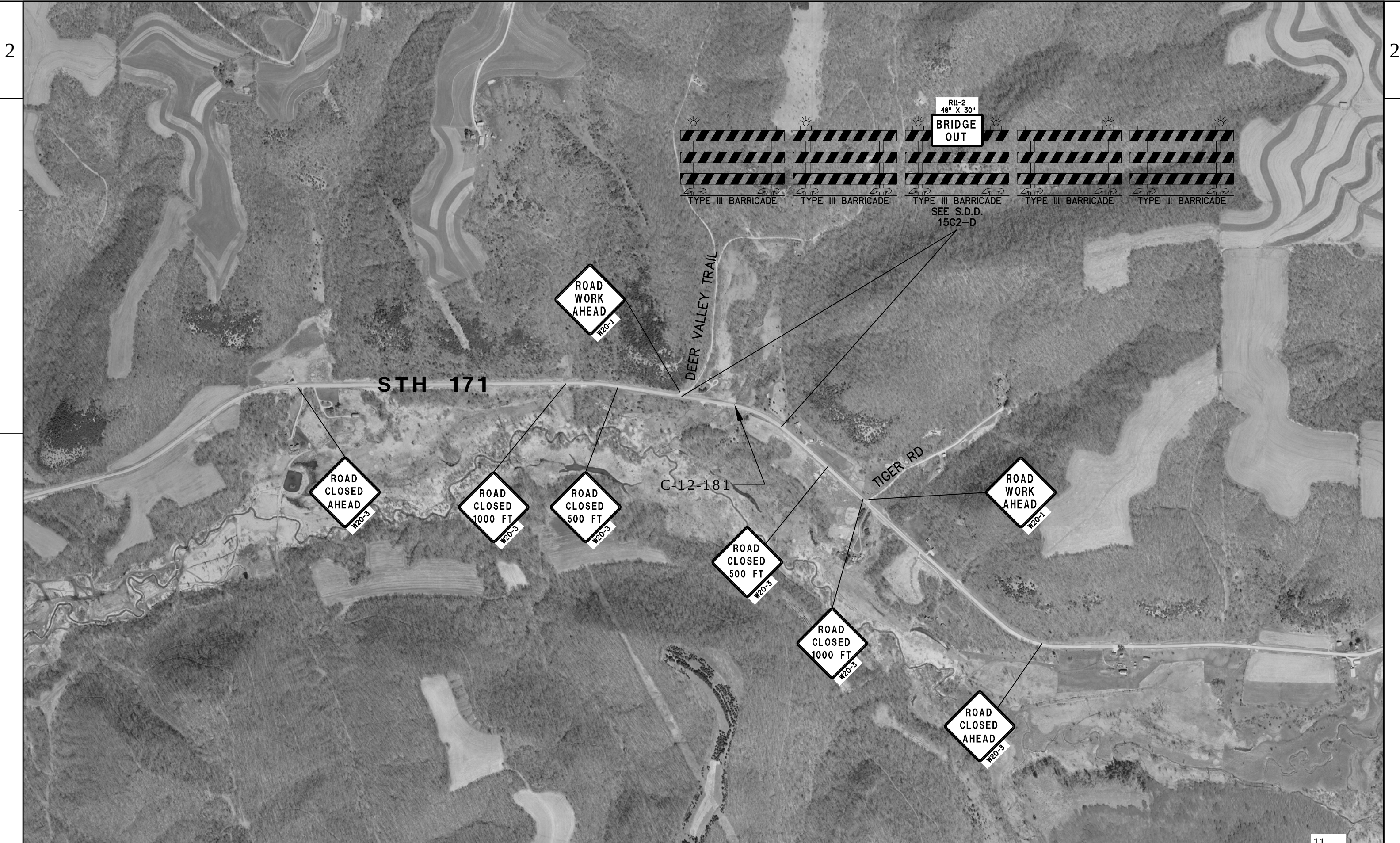
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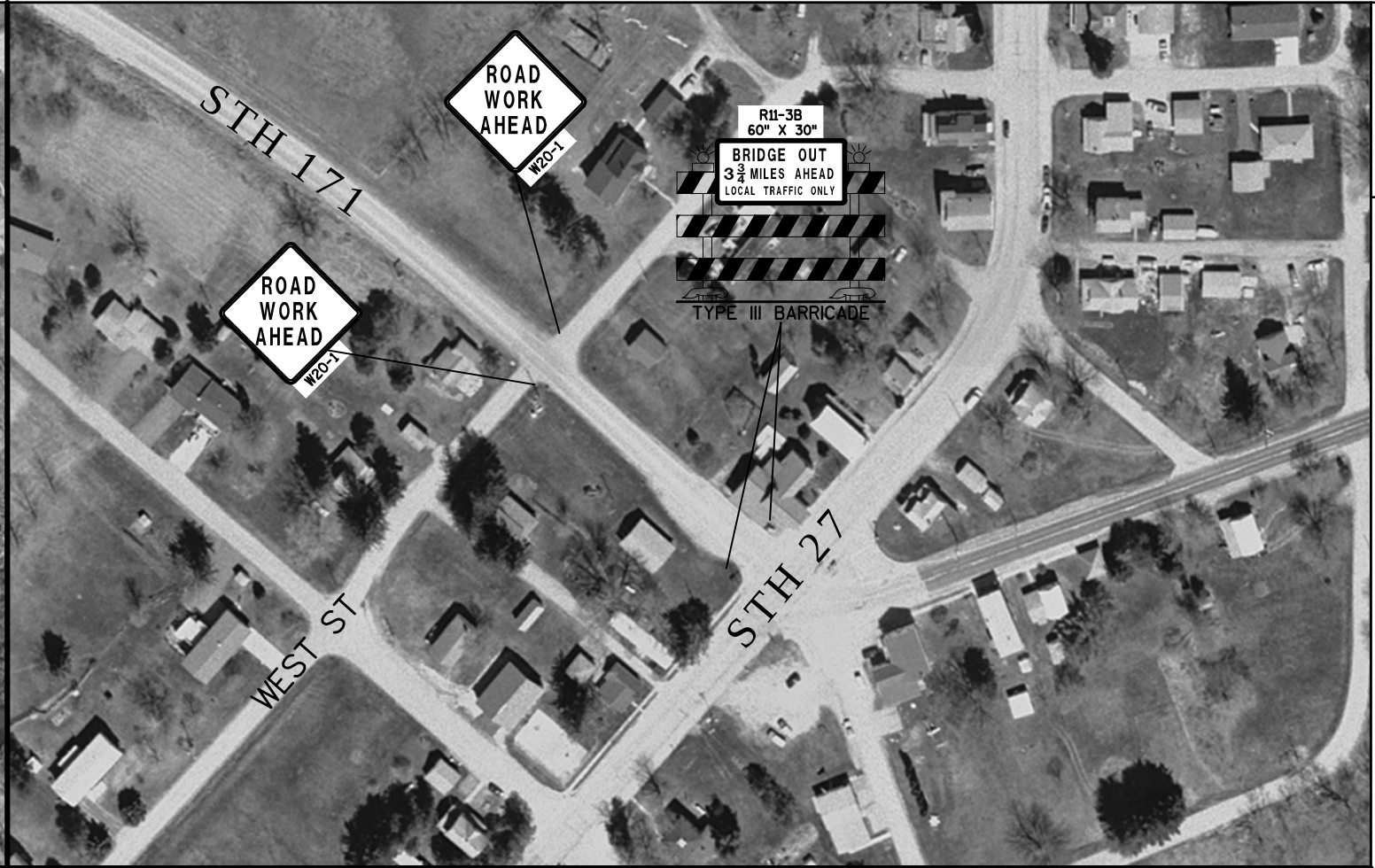




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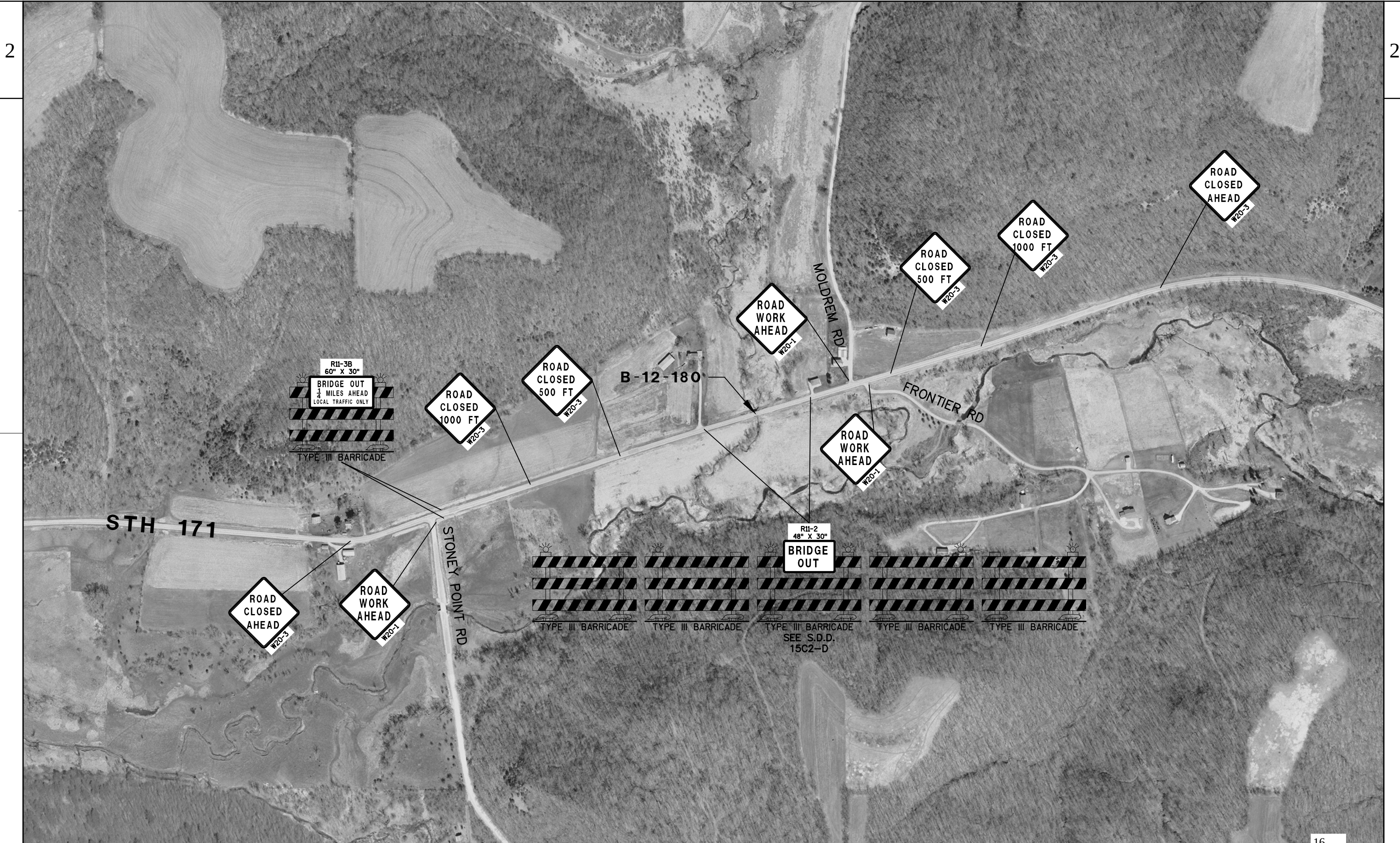




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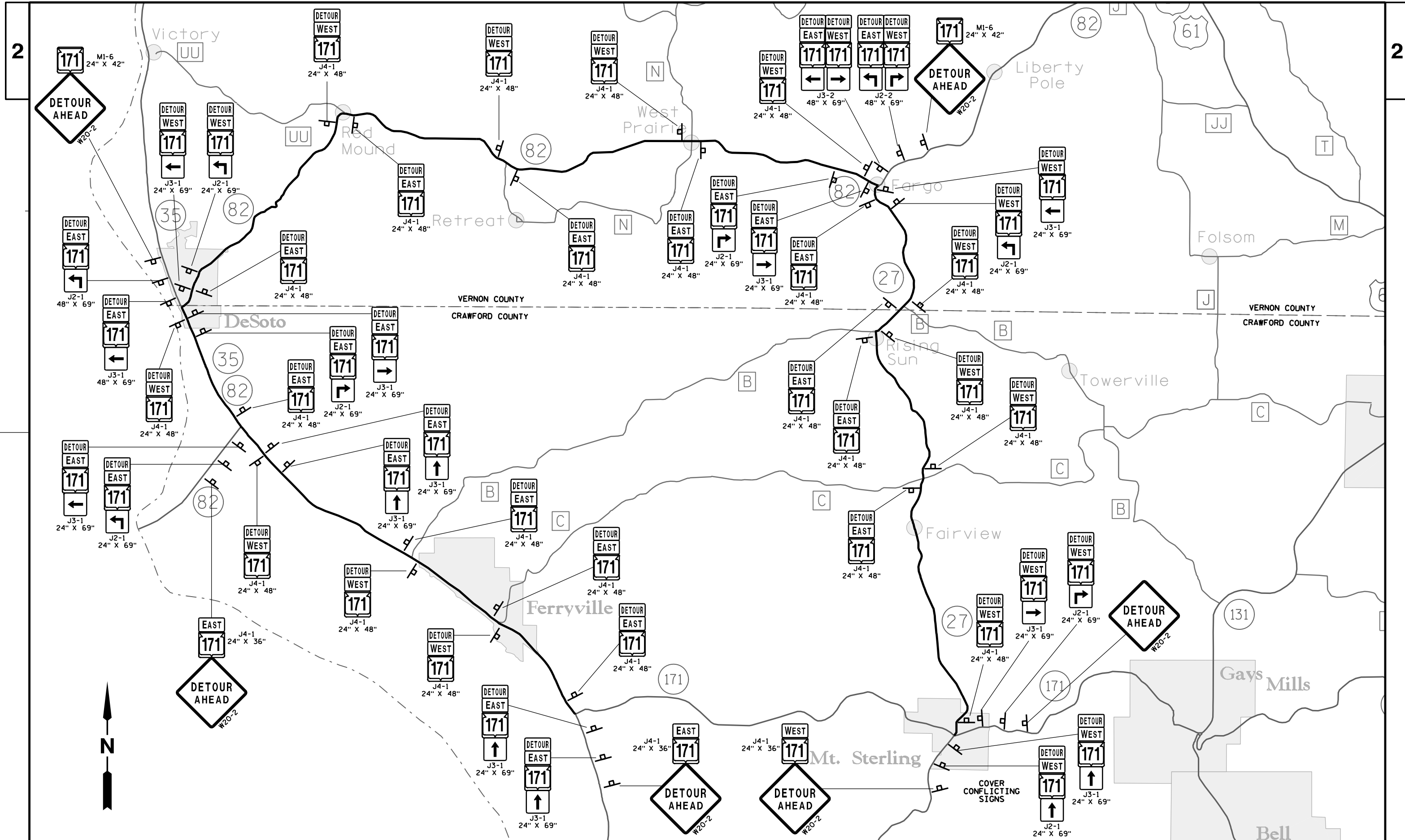












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| DATE 19SEP13 |            | E S T I M A T E O F Q U A N T I T I E S                                              |      |            |            |
|--------------|------------|--------------------------------------------------------------------------------------|------|------------|------------|
| LINE         |            |                                                                                      |      |            | 5790-01-81 |
| NUMBER       | ITEM       | ITEM DESCRIPTION                                                                     | UNIT | TOTAL      | QUANTITY   |
| 0010         | 201.0105   | CLEARING                                                                             | STA  | 2.000      | 2.000      |
| 0020         | 201.0205   | GRUBBING                                                                             | STA  | 2.000      | 2.000      |
| 0030         | 203.0200   | REMOVING OLD STRUCTURE (STATION) 01. 57+78                                           | LS   | 1.000      | 1.000      |
| 0040         | 203.0700.S | REMOVING OLD STRUCTURE OVER WATERWAY WITH DEBRIS CAPTURE SYSTEM (STATION) 01. 154+16 | LS   | 1.000      | 1.000      |
| 0050         | 204.0165   | REMOVING GUARDRAIL                                                                   | LF   | 244.000    | 244.000    |
| 0060         | 205.0100   | EXCAVATION COMMON                                                                    | CY   | 1,942.000  | 1,942.000  |
| 0070         | 206.1000   | EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 01. B-12-0180                          | LS   | 1.000      | 1.000      |
| 0080         | 206.2000   | EXCAVATION FOR STRUCTURES CULVERTS (STRUCTURE) 01. C-12-0181                         | LS   | 1.000      | 1.000      |
| 0090         | 206.5000   | COFFERDAMS (STRUCTURE) 01. C-12-0181                                                 | LS   | 1.000      | 1.000      |
| 0100         | 208.0100   | BORROW                                                                               | CY   | 8,686.000  | 8,686.000  |
| 0110         | 210.0100   | BACKFILL STRUCTURE                                                                   | CY   | 1,800.000  | 1,800.000  |
| 0120         | 213.0100   | FINISHING ROADWAY (PROJECT) 01. 5790-01-81                                           | EACH | 1.000      | 1.000      |
| 0130         | 305.0110   | BASE AGGREGATE DENSE 3/4-INCH                                                        | TON  | 67.000     | 67.000     |
| 0140         | 305.0120   | BASE AGGREGATE DENSE 1 1/4-INCH                                                      | TON  | 2,170.000  | 2,170.000  |
| 0150         | 311.0115   | BREAKER RUN                                                                          | CY   | 110.000    | 110.000    |
| 0160         | 312.0110   | SELECT CRUSHED MATERIAL                                                              | TON  | 210.000    | 210.000    |
| 0170         | 416.0610   | DRILLED TIE BARS                                                                     | EACH | 22.000     | 22.000     |
| 0180         | 416.1010   | CONCRETE SURFACE DRAINS                                                              | CY   | 4.500      | 4.500      |
| 0190         | 455.0105   | ASPHALTIC MATERIAL PG58-28                                                           | TON  | 37.000     | 37.000     |
| 0200         | 455.0605   | TACK COAT                                                                            | GAL  | 84.000     | 84.000     |
| 0210         | 460.1100   | HMA PAVEMENT TYPE E-0.3                                                              | TON  | 657.000    | 657.000    |
| 0220         | 460.2000   | INCENTIVE DENSITY HMA PAVEMENT                                                       | DOL  | 525.600    | 525.600    |
| 0230         | 490.0200   | SALVAGED ASPHALTIC PAVEMENT MILLING                                                  | SY   | 3,335.000  | 3,335.000  |
| 0240         | 502.0100   | CONCRETE MASONRY BRIDGES                                                             | CY   | 164.000    | 164.000    |
| 0250         | 502.3200   | PROTECTIVE SURFACE TREATMENT                                                         | SY   | 220.000    | 220.000    |
| 0260         | 503.0136   | PRESTRESSED GIRDER TYPE I 36-INCH                                                    | LF   | 176.000    | 176.000    |
| 0270         | 504.0100   | CONCRETE MASONRY CULVERTS                                                            | CY   | 248.000    | 248.000    |
| 0280         | 505.0405   | BAR STEEL REINFORCEMENT HS BRIDGES                                                   | LB   | 4,070.000  | 4,070.000  |
| 0290         | 505.0410   | BAR STEEL REINFORCEMENT HS CULVERTS                                                  | LB   | 30,120.000 | 30,120.000 |
| 0300         | 505.0605   | BAR STEEL REINFORCEMENT HS COATED BRIDGES                                            | LB   | 17,420.000 | 17,420.000 |
| 0310         | 505.0610   | BAR STEEL REINFORCEMENT HS COATED CULVERTS                                           | LB   | 3,530.000  | 3,530.000  |
| 0320         | 506.2605   | BEARING PADS ELASTOMERIC NON-LAMINATED                                               | EACH | 8.000      | 8.000      |
| 0330         | 506.4000   | STEEL DIAPHRAGMS (STRUCTURE) 01. B-12-0180                                           | EACH | 3.000      | 3.000      |
| 0340         | 516.0500   | RUBBERIZED MEMBRANE WATERPROOFING                                                    | SY   | 52.000     | 52.000     |
| 0350         | 550.1100   | PILING STEEL HP 10-INCH X 42 LB                                                      | LF   | 450.000    | 450.000    |
| 0360         | 601.0411   | CONCRETE CURB & GUTTER 30-INCH TYPE D                                                | LF   | 844.000    | 844.000    |
| 0370         | 606.0200   | RIPRAP MEDIUM                                                                        | CY   | 38.000     | 38.000     |
| 0380         | 606.0300   | RIPRAP HEAVY                                                                         | CY   | 458.000    | 458.000    |
| 0390         | 606.0600   | GROUTED RIPRAP MEDIUM                                                                | CY   | 27.000     | 27.000     |
| 0400         | 612.0406   | PIPE UNDERDRAIN WRAPPED 6-INCH                                                       | LF   | 158.000    | 158.000    |
| 0410         | 614.0150   | ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD                                         | EACH | 4.000      | 4.000      |
| 0420         | 614.0920   | SALVAGED RAIL                                                                        | LF   | 1,195.000  | 1,195.000  |
| 0430         | 614.0925   | SALVAGED GUARDRAIL END TREATMENTS                                                    | EACH | 4.000      | 4.000      |
| 0440         | 614.2300   | MGS GUARDRAIL 3                                                                      | LF   | 1,245.000  | 1,245.000  |
| 0450         | 614.2500   | MGS THRIE BEAM TRANSITION                                                            | LF   | 160.000    | 160.000    |

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| DATE 19SEP13 |          | E S T I M A T E O F Q U A N T I T I E S                            |      |            |            |
|--------------|----------|--------------------------------------------------------------------|------|------------|------------|
| LINE         |          |                                                                    |      | 5790-01-81 |            |
| NUMBER       | ITEM     | ITEM DESCRIPTION                                                   | UNIT | TOTAL      | QUANTITY   |
| 0460         | 614.2610 | MGS GUARDRAIL TERMINAL EAT                                         | EACH | 8.000      | 8.000      |
| 0470         | 618.0100 | MAINTENANCE AND REPAIR OF HAUL ROADS                               | EACH | 1.000      | 1.000      |
|              |          | (PROJECT) 01. 5790-01-81                                           |      |            |            |
| 0480         | 619.1000 | MOBILIZATION                                                       | EACH | 1.000      | 1.000      |
| 0490         | 625.0100 | TOPSOIL                                                            | SY   | 6,000.000  | 6,000.000  |
| 0500         | 625.0500 | SALVAGED TOPSOIL                                                   | SY   | 650.000    | 650.000    |
| 0510         | 627.0200 | MULCHING                                                           | SY   | 3,000.000  | 3,000.000  |
| 0520         | 628.1504 | SILT FENCE                                                         | LF   | 1,900.000  | 1,900.000  |
| 0530         | 628.1520 | SILT FENCE MAINTENANCE                                             | LF   | 480.000    | 480.000    |
| 0540         | 628.1905 | MOBILIZATIONS EROSION CONTROL                                      | EACH | 2.000      | 2.000      |
| 0550         | 628.1910 | MOBILIZATIONS EMERGENCY EROSION CONTROL                            | EACH | 6.000      | 6.000      |
| 0560         | 628.2004 | EROSION MAT CLASS I TYPE B                                         | SY   | 2,000.000  | 2,000.000  |
| 0570         | 628.2023 | EROSION MAT CLASS II TYPE B                                        | SY   | 2,300.000  | 2,300.000  |
| 0580         | 628.7504 | TEMPORARY DITCH CHECKS                                             | LF   | 40.000     | 40.000     |
| 0590         | 629.0210 | FERTILIZER TYPE B                                                  | CWT  | 5.000      | 5.000      |
| 0600         | 630.0120 | SEEDING MIXTURE NO. 20                                             | LB   | 72.000     | 72.000     |
| 0610         | 630.0175 | SEEDING MIXTURE NO. 75                                             | LB   | 23.000     | 23.000     |
| 0620         | 630.0200 | SEEDING TEMPORARY                                                  | LB   | 21.000     | 21.000     |
| 0630         | 630.0300 | SEEDING BORROW PIT                                                 | LB   | 5.000      | 5.000      |
| 0640         | 633.5100 | MARKERS ROW                                                        | EACH | 16.000     | 16.000     |
| 0650         | 634.0612 | POSTS WOOD 4X6-INCH X 12-FT                                        | EACH | 4.000      | 4.000      |
| 0660         | 634.0616 | POSTS WOOD 4X6-INCH X 16-FT                                        | EACH | 1.000      | 1.000      |
| 0670         | 637.2230 | SIGNS TYPE II REFLECTIVE F                                         | SF   | 20.500     | 20.500     |
| 0680         | 638.2602 | REMOVING SIGNS TYPE II                                             | EACH | 24.000     | 24.000     |
| 0690         | 638.3000 | REMOVING SMALL SIGN SUPPORTS                                       | EACH | 16.000     | 16.000     |
| 0700         | 642.5001 | FIELD OFFICE TYPE B                                                | EACH | 1.000      | 1.000      |
| 0710         | 643.0100 | TRAFFIC CONTROL (PROJECT) 01. 5790-01-81                           | EACH | 1.000      | 1.000      |
| 0720         | 643.0420 | TRAFFIC CONTROL BARRICADES TYPE III                                | DAY  | 1,140.000  | 1,140.000  |
| 0730         | 643.0705 | TRAFFIC CONTROL WARNING LIGHTS TYPE A                              | DAY  | 1,800.000  | 1,800.000  |
| 0740         | 643.0900 | TRAFFIC CONTROL SIGNS                                              | DAY  | 2,220.000  | 2,220.000  |
| 0750         | 643.2000 | TRAFFIC CONTROL DETOUR (PROJECT) 01. 5790-01-81                    | EACH | 1.000      | 1.000      |
| 0760         | 643.3000 | TRAFFIC CONTROL DETOUR SIGNS                                       | DAY  | 10,440.000 | 10,440.000 |
| 0770         | 645.0105 | GEOTEXTILE FABRIC TYPE C                                           | SY   | 360.000    | 360.000    |
| 0780         | 645.0120 | GEOTEXTILE FABRIC TYPE HR                                          | SY   | 810.000    | 810.000    |
| 0790         | 645.0130 | GEOTEXTILE FABRIC TYPE R                                           | SY   | 16.000     | 16.000     |
| 0800         | 646.0106 | PAVEMENT MARKING EPOXY 4-INCH                                      | LF   | 3,040.000  | 3,040.000  |
| 0810         | 650.4500 | CONSTRUCTION STAKING SUBGRADE                                      | LF   | 1,095.000  | 1,095.000  |
| 0820         | 650.5000 | CONSTRUCTION STAKING BASE                                          | LF   | 1,095.000  | 1,095.000  |
| 0830         | 650.6500 | CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 01. B-12-0180    | LS   | 1.000      | 1.000      |
| 0840         | 650.6500 | CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 02. C-12-181     | LS   | 1.000      | 1.000      |
| 0850         | 650.9910 | CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 5790-01-81 | LS   | 1.000      | 1.000      |
| 0860         | 650.9920 | CONSTRUCTION STAKING SLOPE STAKES                                  | LF   | 1,095.000  | 1,095.000  |
| 0870         | 690.0150 | SAWING ASPHALT                                                     | LF   | 402.000    | 402.000    |
| 0880         | 715.0502 | INCENTIVE STRENGTH CONCRETE STRUCTURES                             | DOL  | 4,120.000  | 4,120.000  |

3

CLEARING AND GRUBBING

|            |         |    |         |          | CLEARING<br>201.0105 | GRUBBING<br>201.0205 |          |
|------------|---------|----|---------|----------|----------------------|----------------------|----------|
| CATEGORY   | STATION | TO | STATION | LOCATION | STA                  | STA                  | REMARKS  |
| 0010       | 151+50  | -  | 156+40  | RT       | 1                    | 1                    | B-12-170 |
| 0010       | 52+76   | -  | 58+80   | RT       | 1                    | 1                    | C-12-171 |
| TOTAL 0010 |         |    |         |          | 2                    | 2                    |          |

BEAM GUARD REMOVALS

| CATEGORY           | STATION | TO | STATION | LOCATION | REMOVING  | SALVAGED | SALVAGED  | REMARKS           |
|--------------------|---------|----|---------|----------|-----------|----------|-----------|-------------------|
|                    |         |    |         |          | GUARDRAIL | RAIL     | GUARDRAIL |                   |
|                    |         |    |         |          | 204.0165  | 614.0920 | 614.0925  |                   |
|                    |         |    |         |          | LF        | LF       | EACH      |                   |
| C-12-181 WORK ZONE |         |    |         |          |           |          |           |                   |
| 0010               | 51+42   | -  | 59+87   | RT       |           | 845      | 2         | SALVAGE TO COUNTY |
| 0010               | 56+21   | -  | 59+71   | LT       |           | 350      | 2         | SALVAGE TO COUNTY |
| B-12-180 WORK ZONE |         |    |         |          |           |          |           |                   |
| 0010               | 153+41  | -  | 154+05  | LT       | 64        |          |           |                   |
| 0010               | 153+44  | -  | 154+05  | RT       | 61        |          |           |                   |
| 0010               | 154+28  | -  | 154+86  | RT       | 58        |          |           |                   |
| 0010               | 154+28  | -  | 154+89  | LT       | 61        |          |           |                   |
| TOTAL 0010         |         |    |         |          | 244       | 1195     | 4         |                   |

SAWING ASPHALT

|                    |         |    |         |                       | 690.0150 |                  |
|--------------------|---------|----|---------|-----------------------|----------|------------------|
| CATEGORY           | STATION | TO | STATION | LOCATION              | LF       | REMARKS          |
| C-12-181 WORK ZONE |         |    |         |                       |          |                  |
| 0010               | 52+76   | -  | 52+76   | STH 171, BY C-12-0181 | 16       | ALONG CENTERLINE |
| 0010               | 52+76   | -  | 55+50   | STH 171, BY C-12-0181 | 274      |                  |
| 0010               | 55+50   | -  | 55+50   | STH 171, BY C-12-0181 | 16       |                  |
| 0010               | 58+80   | -  | 58+80   | STH 171, BY C-12-0181 | 32       |                  |
| B-12-180 WORK ZONE |         |    |         |                       |          |                  |
| 0010               | 151+50  | -  | 151+50  | STH 171, BY B-12-0180 | 32       |                  |
| 0010               | 156+40  | -  | 156+40  | STH 171, BY B-12-0180 | 32       |                  |
| TOTAL 0010         |         |    |         |                       | 402      |                  |

EARTHWORK

| CATEGORY           | STATION | TO | STATION | LOCATION | SALVAGED  | EXCAVATION | BORROW   | REMARKS      |
|--------------------|---------|----|---------|----------|-----------|------------|----------|--------------|
|                    |         |    |         |          | ASPHALTIC | COMMON     |          |              |
|                    |         |    |         |          | PAVEMENT  |            |          |              |
|                    |         |    |         |          | MILLING   |            |          |              |
|                    |         |    |         |          | 490.0200  | 205.0100   | 208.0100 |              |
| SY                 | CY      | CY |         |          |           |            |          |              |
| C-12-181 WORK ZONE |         |    |         |          |           |            |          |              |
| 0010               | 52+76   | -  | 55+50   | RT       | 459       | 245        | 2529     | HALF SECTION |
| 0010               | 55+50   | -  | 58+80   | M/L      | 1100      | 594        | 1695     | FULL SECTION |
| B-12-180 WORK ZONE |         |    |         |          |           |            |          |              |
| 0010               | 151+50  | -  | 153+30  | M/L      | 680       | 335        | 1169     | FULL SECTION |
| 0010               | 153+30  | -  | 153+97  | M/L      | 208       | 90         | 1188     | FULL SECTION |
| 0010               | 154+43  | -  | 154+85  | M/L      | 132       | 168        | 1591     | FULL SECTION |
| 0010               | 155+00  | -  | 157+00  | M/L      | 756       | 510        | 514      | FULL SECTION |
| TOTAL 0010         |         |    |         |          | 3335      | 1942       | 8686     |              |

AGGREGATE MATERIAL

| CATEGORY           | STATION   | TO | STATION   | LOCATION | BASE       | BASE         | SELECT   | REMARKS                     |
|--------------------|-----------|----|-----------|----------|------------|--------------|----------|-----------------------------|
|                    |           |    |           |          | AGGREGATE  | AGGREGATE    | CRUSHED  |                             |
|                    |           |    |           |          | DENSE 3/4- | DENSE 1 1/4- | MATERIAL |                             |
|                    |           |    |           |          | INCH       | INCH         |          |                             |
|                    |           |    |           |          | 305.0110   | 305.0120     | 312.0110 |                             |
| C-12-181 WORK ZONE |           |    |           |          |            |              |          |                             |
| 0010               | 52+76     | -  | 55+50     |          | 10         | 325          | 0        | HALF SECTION                |
| 0010               | 55+50     | -  | 58+80     |          | 24         | 785          | 210      | FULL SECTION                |
| B-12-180 WORK ZONE |           |    |           |          |            |              |          |                             |
| 0010               | 151+50    | -  | 153+97.25 |          | 18         | 590          | 0        | FULL SECTION WEST OF BRIDGE |
| 0010               | 154+42.75 |    | 156+40    |          | 15         | 470          | 0        | FULL SECTION EAST OF BRIDGE |
| TOTAL 0010         |           |    |           |          | 67         | 2170         | 210      |                             |

APHALTIC PAVEMENT MATERIAL

| CATEGORY           | STATION | TO | STATION | LOCATION             | ASPHALTIC | TACK     | HMA        | REMARKS                          |
|--------------------|---------|----|---------|----------------------|-----------|----------|------------|----------------------------------|
|                    |         |    |         |                      | MATERIAL  | COAT     | PAVEMENT   |                                  |
|                    |         |    |         |                      | PG58-28   |          | TYPE E-0.3 |                                  |
|                    |         |    |         |                      | 455.0105  | 455.0605 | 460.1100   |                                  |
|                    |         |    |         |                      | TON       | GAL      | TON        |                                  |
| C-12-181 WORK ZONE |         |    |         |                      |           |          |            |                                  |
| 0010               | 5276    | -  | 5550    | STH 171, BY C-12-181 | 5         | 11       | 84         | HALF SECTION                     |
| 0010               | 5550    | -  | 5880    | STH 171, BY C-12-181 | 12        | 28       | 218        | FULL SECTION                     |
| B-12-180 WORK ZONE |         |    |         |                      |           |          |            |                                  |
| 0010               | 15150   | -  | 15397   | STH 171, BY B-12-180 | 10        | 22       | 174        | FULL SECTION - WEST OF STRUCTURE |
| 0010               | 15443   | -  | 15700   | STH 171, BY B-12-180 | 10        | 23       | 181        | FULL SECTION - EAST OF STRUCTURE |
| TOTAL 0010         |         |    |         |                      | 37        | 84       | 657        |                                  |



3

CURB & GUTTER AND SURFACE DRAINS

| CATEGORY           | STATION TO | STATION  | LOCATION | DRILLED  | CONCRETE | CONCRETE       | REMARKS          |
|--------------------|------------|----------|----------|----------|----------|----------------|------------------|
|                    |            |          |          | TIE BARS | SURFACE  | CURB & GUTTER  |                  |
|                    |            |          |          | 416.0610 | 416.1010 | 30-INCH TYPE D |                  |
|                    |            |          |          | EACH     | CY       | LF             |                  |
| C-12-181 WORK ZONE |            |          |          |          |          |                |                  |
| 0010               | 51+43      | - 59+87  | RT       |          |          | 844            | BOX CULVERT      |
| B-12-180 WORK ZONE |            |          |          |          |          |                |                  |
| 0010               | 153+72     | - 154+00 | RT       | 11       | 2.25     |                | SW QUAD B-12-170 |
| 0010               | 153+72     | - 154+00 | LT       | 11       | 2.25     |                | NW QUAD B-12-170 |
| TOTAL 0010         |            |          |          | 22       | 4.50     | 844            |                  |

PAVEMENT MARKING EPOXY 4-INCH

| CATEGORY   | STATION TO | STATION  | LOCATION              | 646.0106 | REMARKS                           |
|------------|------------|----------|-----------------------|----------|-----------------------------------|
|            |            |          |                       | LF       |                                   |
| 0010       | 52+76      | - 58+80  | STH 171, BY C-12-0181 | 1555     | C-12-0181 BOX CULVERT REPLACEMENT |
| 0010       | 151+50     | - 156+40 | STH 171, BY B-12-0180 | 1485     | B-12-0180 BRIDGE REPLACEMENT      |
| TOTAL 0010 |            |          |                       | 3040     |                                   |

MGS GUARDRAIL

| CATEGORY           | STATION TO | STATION  | LOCATION | MGS         | MGS THRIE | MGS       | REMARKS               |
|--------------------|------------|----------|----------|-------------|-----------|-----------|-----------------------|
|                    |            |          |          | GUARDRAIL 3 | BEAM      | GUARDRAIL |                       |
|                    |            |          |          | 614.2300    | 614.2500  | 614.2610  |                       |
|                    |            |          |          | LF          | LF        | EACH      |                       |
| C-12-181 WORK ZONE |            |          |          |             |           |           |                       |
| 0010               | 51+42      |          | RT       |             |           | 1         | SOUTH SIDE OF STH 171 |
| 0010               | 56+21      |          | LT       |             |           | 1         | NORTH SIDE OF STH 171 |
| 0010               | 51+42      | - 59+87  | RT       | 845         |           |           | SOUTH SIDE OF STH 171 |
| 0010               | 56+21      | - 59+71  | LT       | 350         |           |           | NORTH SIDE OF STH 171 |
| 0010               | 59+71      |          | LT       |             |           | 1         | NORTH SIDE OF STH 171 |
| 0010               | 59+87      |          | RT       |             |           | 1         | SOUTH SIDE OF STH 171 |
| B-12-180 WORK ZONE |            |          |          |             |           |           |                       |
| 0010               | 152+83     |          | RT       |             |           | 1         | SW QUAD - B-12-180    |
| 0010               | 152+83     |          | LT       |             |           | 1         | NW QUAD - B-12-180    |
| 0010               | 153+36     | - 153+49 | RT       | 12.5        |           |           | SW QUAD - B-12-181    |
| 0010               | 153+36     | - 153+49 | LT       | 12.5        |           |           | NW QUAD - B-12-181    |
| 0010               | 153+49     | - 153+88 | RT       |             | 40        |           | SW QUAD - B-12-182    |
| 0010               | 153+49     | - 153+88 | LT       |             | 40        |           | NW QUAD - B-12-182    |
| 0010               | 154+52     | - 154+91 | RT       |             | 40        |           | SE QUAD - B-12-180    |
| 0010               | 154+52     | - 154+91 | LT       |             | 40        |           | NE QUAD - B-12-180    |
| 0010               | 154+91     | - 155+04 | RT       | 12.5        |           |           | SE QUAD - B-12-181    |
| 0010               | 154+91     | - 155+04 | LT       | 12.5        |           |           | NE QUAD - B-12-181    |
| 0010               | 155+04     | - 155+57 | RT       |             |           | 1         | SE QUAD - B-12-182    |
| 0010               | 155+04     | - 155+57 | LT       |             |           | 1         | NE QUAD - B-12-182    |
| TOTAL 0010         |            |          |          | 1245        | 160       | 8         |                       |

RIPRAP AND GEOTEXTILE FABRIC

| CATEGORY           | STATION TO | STATION | LOCATION | HEAVY    | MEDIUM   | GROUTED  | GEOTEXTILE | GEOTEXTILE | REMARKS                       |
|--------------------|------------|---------|----------|----------|----------|----------|------------|------------|-------------------------------|
|                    |            |         |          | RIPRAP   | RIPRAP   | RIPRAP   | FABRIC     | FABRIC     |                               |
|                    |            |         |          | 606.0300 | 606.0200 | 606.0600 | TYPE HR    | TYPE R     |                               |
|                    |            |         |          | CY       | CY       | CY       | SY         | SY         |                               |
| C-12-181 WORK ZONE |            |         |          |          |          |          |            |            |                               |
| 0010               | 56+65      | -       | 57+11    | LT       | 20       |          | 40         |            | EMBANKMENT NW - C-12-181      |
| 0010               | 57+32      | -       | 57+59    | RT       |          | 27       | 79         |            | ASPHALTIC FLUME SW - C-12-181 |
| 0010               | 57+59      | -       | 57+91    | RT       | 41       |          |            |            | SOUTH APRON - C-12-181        |
| 0010               | 57+67      | -       | 57+98    | LT       | 14       |          |            |            | NORTH APRON - C-12-181        |
| 0010               | 58+34      | -       | 58+80    | RT       | 36       |          | 54         |            | EMBANKMENT SE - C-12-181      |
| B-12-180 WORK ZONE |            |         |          |          |          |          |            |            |                               |
| 0010               | 153+85     | -       | 154+12   | RT       | 1.5      |          |            | 8          | SW QUADFLUME - B-12-0180      |
| 0010               | 153+85     | -       | 154+12   | LT       | 1.5      |          |            | 8          | NW QUAD FLUME - B-12-0180     |
| 0010               | 156+21     | -       | 156+47   | RT       | 15       |          | 30         |            | NE EMBANKMENT - B-12-180      |
| TOTAL 0010         |            |         |          | 91       | 38       | 27       | 203        | 16         |                               |

3

RESTORATION ITEMS

| CATEGORY           | STATION | TO | STATION    | LOCATION | TOPSOIL  | SALVAGED | FERTILIZER | SEEDING | SEEDING | SEEDING   | SEEDING | REMARKS                     |
|--------------------|---------|----|------------|----------|----------|----------|------------|---------|---------|-----------|---------|-----------------------------|
|                    |         |    |            |          | 625.0100 | 625.0500 | 629.0210   | NO. 20  | NO. 75  | TEMPORARY | BORROW  |                             |
|                    |         |    |            |          | SY       | SY       | TYPE B     | MIXTURE | MIXTURE | LB        | PIT     |                             |
|                    |         |    |            |          |          |          |            |         |         |           |         |                             |
|                    |         |    |            |          |          |          | CWT        | LB      | LB      | LB        | LB      |                             |
| C-12-181 WORK ZONE |         |    |            |          |          |          |            |         |         |           |         |                             |
| 0010               | 52+76   | -  | 55+50      | RT       | 2275     |          | 1.5        |         | 16      | 7         |         | SW EMBANKMENT - C-12-181    |
| 0010               | 55+50   | -  | 57+35      | RT       | 935      |          | 0.7        |         | 5       | 3         |         | SW EMBANKMENT - C-12-181    |
| 0010               | 56+54   | -  | 58+80      | LT       | 240      | 390      | 0.4        | 2       |         | 1         |         | NORTH EMBANKMENT - C-12-181 |
| 0010               | 57+39   | -  | 58+80      | RT       |          | 260      | 0.3        |         | 2       | 1         |         | SE EMBANKMENT - C-12-181    |
| B-12-180 WORK ZONE |         |    |            |          |          |          |            |         |         |           |         |                             |
| 0010               | 151+50  | -  | 153+97     | LT       | 820      |          | 0.6        | 22      |         | 3         |         | SW QUAD - B-12-0180         |
| 0010               | 151+50  | -  | 153+97     | RT       | 650      |          | 0.4        | 19      |         | 2         |         | NW QUAD - B-12-0180         |
| 0010               | 154+43  | -  | 156+40     | LT       | 465      |          | 0.3        | 14      |         | 1         |         | NE QUAD - B-12-0180         |
| 0010               | 154+43  | -  | 156+40     | RT       | 535      |          | 0.4        | 15      |         | 2         |         | SE QUAD - B-12-0180         |
| 0010               |         |    | BORROW PIT |          |          |          | 0.4        |         |         | 1         | 5       | UNDISTRIBUTED               |
| TOTAL 0010         |         |    |            |          | 6000     | 650      | 5.00       | 72      | 23      | 21        | 5       |                             |

EROSION CONTROL ITEMS

| CATEGORY           | STATION | TO | STATION | LOCATION | MULCHING | SILT FENCE | SILT FENCE | MOBILIZATIONS | MOBILIZATIONS | EROSION | EROSION  | TEMPORARY | REMARKS                          |
|--------------------|---------|----|---------|----------|----------|------------|------------|---------------|---------------|---------|----------|-----------|----------------------------------|
|                    |         |    |         |          | 627.0200 | 628.1504   | 628.1520   | EROSION       | EROSION       | MAT     | MAT      | DITCH     |                                  |
|                    |         |    |         |          | SY       | LF         | LF         | CONTROL       | CONTROL       | CLASS I | CLASS II | CHECKS    |                                  |
|                    |         |    |         |          |          |            |            | EACH          | EACH          | TYPE B  | TYPE B   |           |                                  |
| C-12-181 WORK ZONE |         |    |         |          |          |            |            |               |               |         |          |           |                                  |
| 0010               | 52+67   | -  | 57+43   | RT       | 500      | 480        | 175        | 1             | 3             | 1100    | 2275     | 40        | SW SECTION - C-12-181            |
| 0010               | 56+54   | -  | 58+80   | LT       |          | 100        |            |               |               | 630     |          |           | NORTH SIDE OF STH 171 - C-12-181 |
| 0010               | 57+14   | -  | 57+70   | LT       |          | 60         |            |               |               |         |          |           | SOUTH SIDE OF STH 171 - C-12-181 |
| 0010               | 57+39   | -  | 58+80   | RT       |          | 45         |            |               |               | 260     |          |           | SOUTH SIDE OF STH 171 - C-12-181 |
| B-12-180 WORK ZONE |         |    |         |          |          |            |            |               |               |         |          |           |                                  |
| 0010               | 151+39  | -  | 154+17  | M/L      | 1470     | 660        | 305        | 1             | 3             |         |          |           | WEST - B-12-180                  |
| 0010               | 154+24  | -  | 156+40  | M/L      | 1000     | 550        |            |               |               |         |          |           | EAST - B-12-180                  |
| TOTAL 0010         |         |    |         |          | 3000     | 1900       | 480        | 2             | 6             | 2000    | 2300     | 40        |                                  |

CONSTRUCTION STAKING

| CATEGORY   | STATION | TO | STATION | LOCATION | CONSTRUCTION | CONSTRUCTION | CONSTRUCTION | CONSTRUCTION | CONSTRUCTION | REMARKS              |
|------------|---------|----|---------|----------|--------------|--------------|--------------|--------------|--------------|----------------------|
|            |         |    |         |          | STAKING      | STAKING      | STAKING      | STAKING      | STAKING      |                      |
|            |         |    |         |          | SUBGRADE     | BASE         | LAYOUT       | SUPPLEMENTAL | SLOPE STAKES |                      |
|            |         |    |         |          | 650.4500     | 650.5000     | (STRUCTURE)  | (PROJECT)    |              |                      |
|            |         |    |         |          | LF           | LF           | LS           | LS           | LF           |                      |
| 0010       | 52+76   | -  | 58+80   | M/L      | 605          | 605          |              | 0.5          | 605          | STH 171, BY C-12-181 |
| 0010       | 151+50  | -  | 156+40  | M/L      | 490          | 490          |              | 0.5          | 490          | STH 171, BY B-12-180 |
| 0010       |         |    |         | C/L      |              |              | 0.5          |              |              | C-12-181             |
| 0010       | 154+21  |    |         | C/L      |              |              | 0.5          |              |              | B-12-180             |
| TOTAL 0010 |         |    |         |          | 1095         | 1095         | 1            | 1            | 1095         |                      |



3

PERMENANT SIGNING

| CATEGORY   | DESCRIPTION                          | SIGN CODE  | SIZE    | STATION | LOCATION | POSTS WOOD                      | POSTS WOOD                      | SIGNS                               | REMOVING                     | REMOVING                              | REMARKS                                  |
|------------|--------------------------------------|------------|---------|---------|----------|---------------------------------|---------------------------------|-------------------------------------|------------------------------|---------------------------------------|------------------------------------------|
|            |                                      |            |         |         |          | 4X6-INCH X<br>12-FT<br>634.0612 | 4X6-INCH X<br>16-FT<br>634.0616 | TYPE II<br>REFLECTIVE F<br>637.2230 | SIGNS<br>TYPE II<br>638.2602 | SMALL<br>SIGN<br>SUPPORTS<br>638.3000 |                                          |
|            |                                      |            |         |         |          | EACH                            | EACH                            | SF                                  | EACH                         | EACH                                  |                                          |
| 0010       | WARNING (CURVE)                      | W1-2R      | 30 X 30 | 54+75   | RT       |                                 | 1                               | 6.25                                | 2                            | 1                                     | TWO SIGNS - SINGLE POST                  |
|            | ADVISORY SPEED LIMIT                 | W13-1 (50) | 18 X 18 |         |          |                                 |                                 | 2.25                                |                              |                                       |                                          |
| 0010       | NARROW BRIDGE                        |            |         | 145+00  | RT       |                                 |                                 |                                     | 1                            | 1                                     | STH 171 EB SOUTH SIDE                    |
| 0010       | BRIDGE HAZARD PANEL                  | W5-52L     | 12 X 36 | 153+97  | LT       | 1                               |                                 | 3.00                                |                              |                                       | NW QUAD - B-12-180                       |
| 0010       | BRIDGE HAZARD PANEL                  | W5-52R     | 12 X 36 | 153+97  | RT       | 1                               |                                 | 3.00                                |                              |                                       | SW QUAD - B-12-180                       |
| 0010       | BRIDGE HAZARD PANEL                  |            |         | 154+10  | LT       |                                 |                                 |                                     | 1                            | 1                                     | NW QUAD - B-12-0170                      |
| 0010       | BRIDGE HAZARD PANEL                  |            |         | 154+05  | RT       |                                 |                                 |                                     | 1                            | 1                                     | SW QUAD - B-12-0170                      |
| 0010       | WEIGHT LIMIT 45 TONS                 |            |         | 154+05  | RT       |                                 |                                 |                                     | 1                            | 1                                     | SW QUAD - B-12-0170                      |
| 0010       | WEIGHT LIMIT 45 TONS                 |            |         | 154+30  | RT       |                                 |                                 |                                     | 1                            | 1                                     | SE QUAD - B-12-0170                      |
| 0010       | BRIDGE HAZARD PANEL                  |            |         | 154+30  | RT       |                                 |                                 |                                     | 1                            | 1                                     | NE QUAD - B-12-0170                      |
| 0010       | BRIDGE HAZARD PANEL                  |            |         | 154+30  | LT       |                                 |                                 |                                     | 1                            | 1                                     | NE QUAD - B-12-0170                      |
| 0010       | BRIDGE HAZARD PANEL                  | W5-52L     | 12 X 36 | 154+43  | LT       | 1                               |                                 | 3.00                                |                              |                                       | NE QUAD - B-12-180                       |
| 0010       | BRIDGE HAZARD PANEL                  | W5-52R     | 12 X 36 | 154+43  | RT       | 1                               |                                 | 3.00                                |                              |                                       | SE QUAD - B-12-180                       |
| 0010       | NARROW BRIDGE                        |            |         | 162+50  | LT       |                                 |                                 |                                     | 1                            | 1                                     | STH 171 WB NORTH SIDE                    |
| 0010       | WEIGHT LIMIT, 45 TON BRIDGE (ONLY)   |            |         |         | RT       |                                 |                                 |                                     | 1                            | 1                                     | STH 171 WB, MT. STERLING (W. of STH 27)  |
| 0010       | STH 171 ROUTE MARKER                 |            |         |         | RT       |                                 |                                 |                                     | 2                            | 1                                     | STH 171 WB, MT. STERLING (E. of STH 27)  |
| 0010       | WEIGHT LIMIT, 45 TON BRIDGE 3 3/4 MI |            |         |         |          |                                 |                                 |                                     |                              |                                       |                                          |
| 0010       | WEST - STH 171 ROUTE MARKER          |            |         |         | RT       |                                 |                                 |                                     | 3                            | 1                                     | STH 27 NB, MT. STERLING (S. of STH 171)  |
| 0010       | WEIGHT LIMIT, 45 TON BRIDGE 3 3/4 MI |            |         |         |          |                                 |                                 |                                     |                              |                                       |                                          |
| 0010       | WEST - STH 171 ROUTE MARKER          |            |         |         | RT       |                                 |                                 |                                     | 3                            | 1                                     | STH 27 SB, MT. STERLING (N. of STH 171)  |
| 0010       | WEIGHT LIMIT, 45 TON BRIDGE 3 3/4 MI |            |         |         | RT       |                                 |                                 |                                     | 1                            | 1                                     | STH 171 EB, EAST OF STH 35 INTERSECTION  |
| 0010       | WEIGHT LIMIT, STH 171                |            |         |         | RT       |                                 |                                 |                                     | 2                            | 1                                     | STH 35 NB, SOUTH OF STH 171 INTERSECTION |
| 0010       | 45 TONS BRIDGE 3 3/4 MI              |            |         |         |          |                                 |                                 |                                     |                              |                                       |                                          |
| 0010       | WEIGHT LIMIT, STH 171                |            |         |         | RT       |                                 |                                 |                                     | 2                            | 1                                     | STH 35 SB, NORTH OF STH 171 INTERSECTION |
| 0010       | 45 TONS BRIDGE 3 3/4 MI              |            |         |         |          |                                 |                                 |                                     |                              |                                       |                                          |
| TOTAL 0010 |                                      |            |         |         |          | 4                               | 1                               | 20.50                               | 24                           | 16                                    |                                          |

TRAFFIC CONTROL DETOUR ITEMS

| CATEGORY                     | DESCRIPTON                    | SIGN CODE  | SIZE    | EACH | DAYS | TRAFFIC                                    | TRAFFIC                                | REMARKS                             |
|------------------------------|-------------------------------|------------|---------|------|------|--------------------------------------------|----------------------------------------|-------------------------------------|
|                              |                               |            |         |      |      | CONTROL<br>DETOUR<br>(PROJECT)<br>643.2000 | CONTROL<br>DETOUR<br>SIGNS<br>643.3000 |                                     |
|                              |                               |            |         |      |      | EACH                                       | DAYS                                   |                                     |
| DETOUR ROUTE TRAFFIC CONTROL |                               |            |         |      |      |                                            |                                        |                                     |
| 0010                         | ENTIRE PROJECT (DETOUR ROUTE) |            |         |      |      | 1                                          |                                        |                                     |
| 0010                         | DETOUR                        | M4-8       | 24 X 12 | 46   | 60   |                                            | 2760                                   | SEE DETOUR LAYOUT AND S.D.D.        |
| 0010                         | EAST                          | M3-2       | 24 X 12 | 26   | 60   |                                            | 1560                                   | SEE DETOUR LAYOUT AND S.D.D.        |
| 0010                         | WEST                          | M3-4       | 24 X 12 | 23   | 60   |                                            | 1380                                   | SEE DETOUR LAYOUT AND S.D.D.        |
| 0010                         | 171 ROUTE MARKER              | M1-6 (171) | 24 X 24 | 51   | 60   |                                            | 3060                                   | SEE DETOUR LAYOUT AND S.D.D.        |
| 0010                         | LEFT/AHEAD/RIGHT ARROWS       | M06-1      | 21 X 21 | 12   | 60   |                                            | 720                                    | SEE DETOUR LAYOUT AND S.D.D.        |
| 0010                         | LEFT TURN ARROW               | M05-1L     | 21 X 21 | 5    | 60   |                                            | 300                                    | SEE DETOUR LAYOUT AND S.D.D.        |
| 0010                         | RIGTH TURN ARROW              | M05-1R     | 21 X 21 | 5    | 60   |                                            | 300                                    | SEE DETOUR LAYOUT AND S.D.D.        |
| 0010                         | DETOUR AHEAD                  | W20-2      | 48 X 48 | 6    | 60   |                                            | 360                                    | SEE DETOUR LAYOUT AND S.D.D.        |
| CATEGORY 0010 TOTALS         |                               |            |         |      |      | 1                                          | 10440                                  | **S.D.D. - STANDARD DETAIL DRAWINGS |

3

TRAFFIC CONTROL ITEMS

| CATEGORY                                    | DESCRIPTION                                  | SIGN CODE | SIZE    | EACH | DAYS | TRAFFIC CONTROL | TRAFFIC CONTROL | TRAFFIC CONTROL | TRAFFIC CONTROL | REMARKS                                   |
|---------------------------------------------|----------------------------------------------|-----------|---------|------|------|-----------------|-----------------|-----------------|-----------------|-------------------------------------------|
|                                             |                                              |           |         |      |      | (PROJECT)       | BARRICADES      | WARNING LIGHTS  | SIGNS           |                                           |
|                                             |                                              |           |         |      |      | 643.0100        | 643.0420        | 643.0705        | 643.0900        |                                           |
| TRAFFIC CONTROL FOR C-12-181                |                                              |           |         |      |      |                 |                 |                 |                 |                                           |
| 0010                                        | STAGE 1 C-12-181 (CONSTRUCTION ZONE)         |           |         |      |      | 0.5             |                 |                 |                 |                                           |
| 0010                                        | BRIDGE OUT 2 MI AHEAD LOCAL TRAFFIC ONLY     | R11-3B    | 60 X 30 | 2    | 30   |                 | 60              | 120             | 60              | ADVANCE WARNING SIGN - STH 35 & STH 171   |
| 0010                                        | ROAD CLOSED AHEAD                            | W20-3     | 48 x 48 | 1    | 30   |                 |                 |                 | 30              | SEE S.D.D 15 C 4-1                        |
| 0010                                        | ROAD CLOSED 1000 FT                          | W20-3     | 48 x 48 | 1    | 30   |                 |                 |                 | 30              | SEE S.D.D 15 C 4-1                        |
| 0010                                        | ROAD CLOSED 500 FT                           | W20-3     | 48 x 48 | 1    | 30   |                 |                 |                 | 30              | SEE S.D.D 15 C 4-1                        |
| 0010                                        | END ROAD WORK (WEST BOUND)                   | G20-2A    | 48 X 24 | 1    | 30   |                 |                 |                 | 30              | SEE S.D.D 15 C 4-1                        |
| 0010                                        | ROAD WORK AHEAD                              | W20-1     | 48 x 48 | 1    | 30   |                 |                 |                 | 30              | DEER VALLEY TRAIL                         |
| 0010                                        | BRIDGE OUT (AT PROJECT SITE C-12-181)        | R11-2     | 48 X 30 | 5    | 30   |                 | 150             | 180             | 150             | SEE S.D.D 15 C 2-4b (DETAIL D)            |
| 0010                                        | BRIDGE OUT (AT PROJECT SITE C-12-181)        | R11-2     | 48 X 30 | 5    | 30   |                 | 150             | 180             | 150             | SEE S.D.D 15 C 2-4b (DETAIL D)            |
| 0010                                        | ROAD CLOSED 500 FT                           | W20-3     | 48 x 48 | 1    | 30   |                 |                 |                 | 30              | SEE S.D.D 15 C 4-1                        |
| 0010                                        | ROAD CLOSED 1000 FT                          | W20-3     | 48 x 48 | 1    | 30   |                 |                 |                 | 30              | SEE S.D.D 15 C 4-1                        |
| 0010                                        | ROAD WORK AHEAD                              | W20-1     | 48 x 48 | 1    | 30   |                 |                 |                 | 30              | TIGER ROAD                                |
| 0010                                        | ROAD CLOSED AHEAD                            | W20-3     | 48 x 48 | 1    | 30   |                 |                 |                 | 30              | SEE S.D.D 15 C 4-1                        |
| 0010                                        | BRIDGE OUT 1 1/2 MI AHEAD LOCAL TRAFFIC ONLY | R11-3B    | 60 X 30 | 2    | 30   |                 | 60              | 120             | 60              | ADVANCE WARNING SIGNS                     |
| 0010                                        | ROAD WORK AHEAD                              | W20-1     | 48 x 48 | 1    | 30   |                 |                 |                 | 30              | STONEY POINT ROAD                         |
| 0010                                        | ROAD WORK AHEAD                              | W20-1     | 48 x 48 | 1    | 30   |                 |                 |                 | 30              | MOLDREM ROAD                              |
| 0010                                        | ROAD WORK AHEAD                              | W20-1     | 48 x 48 | 1    | 30   |                 |                 |                 | 30              | FRONTIER ROAD                             |
| 0010                                        | END ROAD WORK (EAST BOUND)                   | G20-2A    | 48 x 24 | 1    | 30   |                 |                 |                 | 30              | FRONTIER ROAD                             |
| 0010                                        | ROAD WORK AHEAD                              | W20-1     | 48 x 48 | 1    | 30   |                 |                 |                 | 30              | STARLITE DRIVE                            |
| 0010                                        | ROAD WORK AHEAD                              | W20-1     | 48 x 48 | 1    | 30   |                 |                 |                 | 30              | CAMPFIRE DRIVE                            |
| 0010                                        | BRIDGE OUT 3 1/2 MI AHEAD LOCAL TRAFFIC ONLY | R11-3B    | 60 X 30 | 2    | 30   |                 | 60              | 120             | 60              | COPPER CREEK ROAD                         |
| 0010                                        | ROAD WORK AHEAD                              | W20-1     | 48 x 48 | 1    | 30   |                 |                 |                 | 30              | COPPER CREEK ROAD                         |
| 0010                                        | ROAD WORK AHEAD                              | W20-1     | 48 x 48 | 1    | 30   |                 |                 |                 | 30              | WEST STREET - MT. STERLING                |
| 0010                                        | ROAD WORK AHEAD                              | W20-1     | 48 x 48 | 1    | 30   |                 |                 |                 | 30              | WEST STREET - MT. STERLING                |
| 0010                                        | BRIDGE OUT 5 1/2 MI AHEAD LOCAL TRAFFIC ONLY | R11-3B    | 60 X 30 | 2    | 30   |                 | 60              | 120             | 60              | ADVANCE WARNING SIGN - STH 171 & STH 27   |
| STAGE 1 TRAFFIC CONTROL TOTALS FOR C-12-181 |                                              |           |         |      |      | 0.5             | 540             | 840             | 1080            |                                           |
| TRAFFIC CONTROL FOR B-12-180                |                                              |           |         |      |      |                 |                 |                 |                 |                                           |
| 0010                                        | STAGE 1 C-12-181 (CONSTRUCTION ZONE)         |           |         |      |      | 0.5             |                 |                 |                 |                                           |
| 0010                                        | BRIDGE OUT 3 3/4 MI AHEAD LOCAL TRAFFIC ONLY | R11-3B    | 60 X 30 | 2    | 30   |                 | 60              | 120             | 60              | ADVANCE WARNING SIGN - STH 35 & STH 171   |
| 0010                                        | END ROAD WORK (WEST BOUND)                   | G20-2A    | 48 X 24 | 1    | 30   |                 |                 |                 | 30              | SEE S.D.D 15 C 4-1                        |
| 0010                                        | ROAD WORK AHEAD                              | W20-1     | 48 x 48 | 1    | 30   |                 |                 |                 | 30              | DEER VALLEY TRAIL                         |
| 0010                                        | ROAD WORK AHEAD                              | W20-1     | 48 x 48 | 1    | 30   |                 |                 |                 | 30              | TIGER ROAD                                |
| 0010                                        | BRIDGE OUT 1 1/2 MI AHEAD LOCAL TRAFFIC ONLY | R11-3B    | 60 X 30 | 2    | 30   |                 | 60              | 120             | 60              | ADVANCE WARNING SIGNS - TIGER ROAD        |
| 0010                                        | ROAD CLOSED AHEAD                            | W20-3     | 48 x 48 | 1    | 30   |                 |                 |                 | 30              | SEE S.D.D 15 C 4-1                        |
| 0010                                        | ROAD WORK AHEAD                              | W20-1     | 48 x 48 | 1    | 30   |                 |                 |                 | 30              | STONEY POINT ROAD                         |
| 0010                                        | BRIDGE OUT 1/4 MI AHEAD LOCAL TRAFFIC ONLY   | R11-3B    | 60 X 30 | 2    | 30   |                 | 60              | 120             | 60              | ADVANCE WARNING SIGNS - STONEY POINT ROAD |
| 0010                                        | ROAD CLOSED 1000 FT                          | W20-3     | 48 x 48 | 1    | 30   |                 |                 |                 | 30              | SEE S.D.D 15 C 4-1                        |
| 0010                                        | ROAD CLOSED 500 FT                           | W20-3     | 48 x 48 | 1    | 30   |                 |                 |                 | 30              | SEE S.D.D 15 C 4-1                        |
| 0010                                        | BRIDGE OUT (AT PROJECT SITE C-12-181)        | R11-2     | 48 X 30 | 5    | 30   |                 | 150             | 180             | 150             | SEE S.D.D 15 C 2-4b (DETAIL D)            |
| 0010                                        | BRIDGE OUT (AT PROJECT SITE C-12-181)        | R11-2     | 48 X 30 | 5    | 30   |                 | 150             | 180             | 150             | SEE S.D.D 15 C 2-4b (DETAIL D)            |
| 0010                                        | ROAD WORK AHEAD                              | W20-1     | 48 x 48 | 1    | 30   |                 |                 |                 | 30              | MOLDREM ROAD                              |
| 0010                                        | ROAD WORK AHEAD                              | W20-1     | 48 x 48 | 1    | 30   |                 |                 |                 | 30              | FRONTIER ROAD                             |
| 0010                                        | ROAD CLOSED 500 FT                           | W20-3     | 48 x 48 | 1    | 30   |                 |                 |                 | 30              | SEE S.D.D 15 C 4-1                        |
| 0010                                        | END ROAD WORK (EAST BOUND)                   | G20-2A    | 48 X 24 | 1    | 30   |                 |                 |                 | 30              | FRONTIER ROAD                             |
| 0010                                        | ROAD CLOSED 1000 FT                          | W20-3     | 48 x 48 | 1    | 30   |                 |                 |                 | 30              | SEE S.D.D 15 C 4-1                        |
| 0010                                        | ROAD CLOSED AHEAD                            | W20-3     | 48 x 48 | 1    | 30   |                 |                 |                 | 30              | SEE S.D.D 15 C 4-1                        |
| 0010                                        | ROAD WORK AHEAD                              | W20-1     | 48 x 48 | 1    | 30   |                 |                 |                 | 30              | STARLITE DRIVE                            |
| 0010                                        | ROAD WORK AHEAD                              | W20-1     | 48 x 48 | 1    | 30   |                 |                 |                 | 30              | CAMPFIRE DRIVE                            |
| 0010                                        | BRIDGE OUT 1 1/2 MI AHEAD LOCAL TRAFFIC ONLY | R11-3B    | 60 X 30 | 2    | 30   |                 | 60              | 120             | 60              | COPPER CREEK ROAD                         |
| 0010                                        | ROAD WORK AHEAD                              | W20-1     | 48 x 48 | 1    | 30   |                 |                 |                 | 30              | COPPER CREEK ROAD                         |
| 0010                                        | ROAD WORK AHEAD                              | W20-1     | 48 x 48 | 1    | 30   |                 |                 |                 | 30              | WEST STREET - MT. STERLING                |
| 0010                                        | ROAD WORK AHEAD                              | W20-1     | 48 x 48 | 1    | 30   |                 |                 |                 | 30              | WEST STREET - MT. STERLING                |
| 0010                                        | BRIDGE OUT 3 3/4 MI AHEAD LOCAL TRAFFIC ONLY | R11-3B    | 60 X 30 | 2    | 30   |                 | 60              | 120             | 60              | ADVANCE WARNING SIGN - STH 171 & STH 27   |
| STAGE 2 TRAFFIC CONTROL TOTALS FOR B-12-180 |                                              |           |         |      |      | 0.5             | 600             | 960             | 1140            |                                           |
| CATEGORY 0010 TOTALS                        |                                              |           |         |      |      | 1               | 1140            | 1800            | 2220            |                                           |



STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

TRANSPORTATION PROJECT PLAT TITLE SHEET

PROJECT NO. 5790-01-21

FERRYVILLE - MT. STERLING ROAD

STH 171

CRAWFORD COUNTY



4

NOTES:

COORDINATES AND BEARINGS SHOWN ON THIS PLAT ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM, CRAWFORD COUNTY ZONE, NAD83 (2011) ADJUSTMENT. THE COORDINATES SHOWN ARE GRID COORDINATES AND ARE TO BE USED AS GRID OR GROUND VALUES ON THIS PLAT.

RIGHT-OF-WAY MONUMENTS ARE TYPE 2 (3/4"Ø REBARS) AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

RIGHT-OF-WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY SYSTEM OR OTHER "SURVEYS OF PUBLIC RECORD".

PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES, EXCLUDING RIGHT-OF-WAY LINES, AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

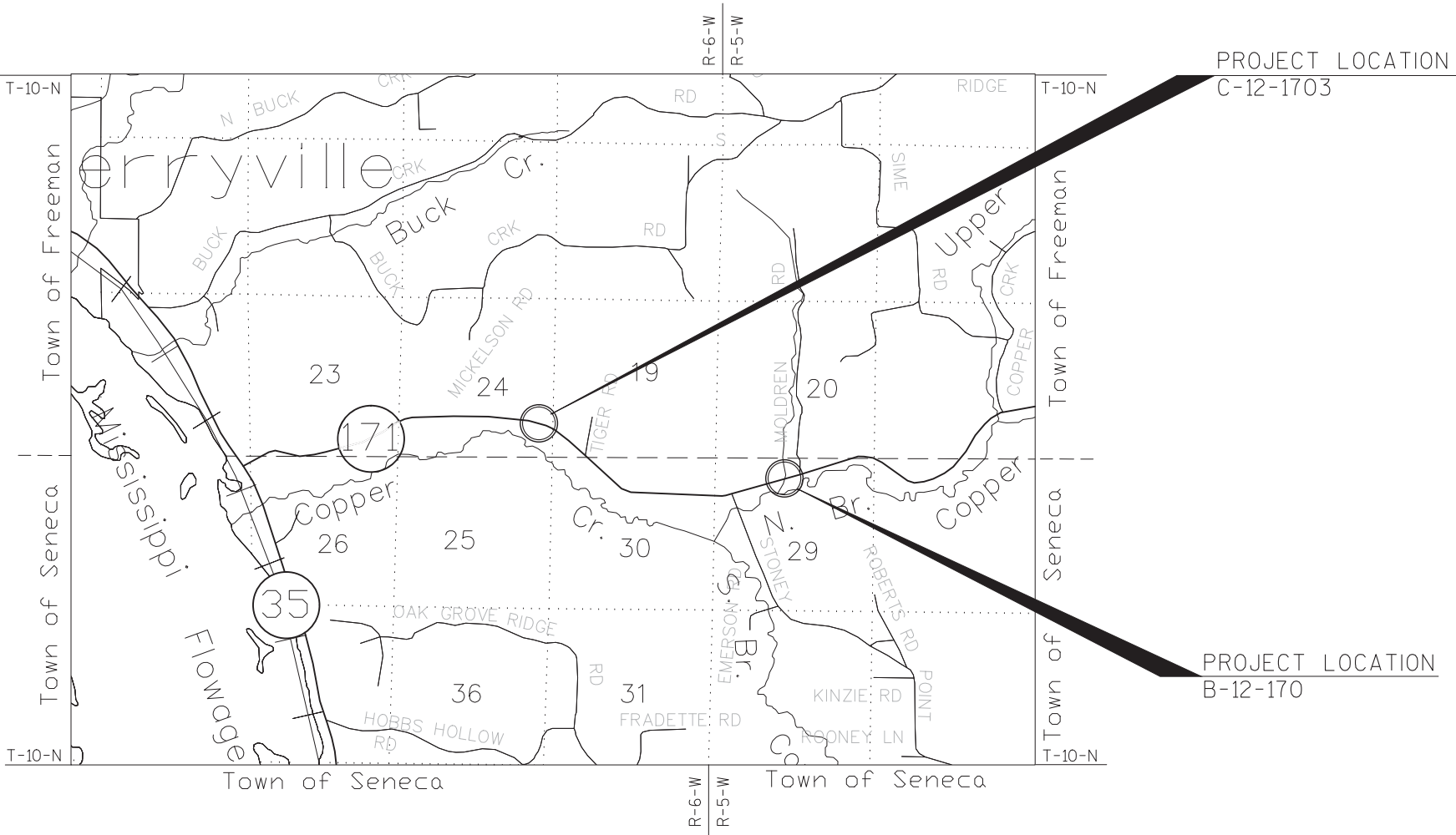
EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINTS OF REFERENCE:  
EXISTING HIGHWAY RIGHT-OF-WAY FOR S.T.H. 171 ESTABLISHED FROM PREVIOUS PROJECT 9279A.

A **TEMPORARY LIMITED EASEMENT (TLE)** IS A RIGHT FOR CONSTRUCTION PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON AND THE RIGHT OF INGRESS AND EGRESS, AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM NECESSARY OR DESIRABLE. ALL TLEs EXPIRE AT THE COMPLETION OF THE CONSTRUCTION PROJECT FOR WHICH THIS INSTRUMENT IS GIVEN.

A **PERMANENT LIMITED EASEMENT (PLE)** IS A RIGHT FOR CONSTRUCTION AND MAINTENANCE PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON AND THE RIGHT OF INGRESS AND EGRESS, AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM NECESSARY OR DESIRABLE. BUT WITHOUT PREJUDICE TO THE OWNER'S RIGHT TO MAKE OR CONSTRUCT IMPROVEMENT ON SAID LANDS OR TO FLATTEN THE SLOPES, PROVIDING SAID ACTIVITIES WILL NOT IMPAIR OR OTHERWISE ADVERSELY AFFECT THE HIGHWAY FACILITIES.

A **HIGHWAY EASEMENT (HE)** IS AN EASEMENT FOR HIGHWAY PURPOSES, AS LONG AS SO USED, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM NECESSARY OR DESIRABLE.

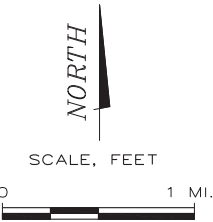
DIMENSIONING FOR THE NEW RIGHT-OF-WAY IS MEASURED ALONG AND PERPENDICULAR TO NEW REFERENCE LINES.



| CONVENTIONAL ABBREVIATIONS |        |                            |       |
|----------------------------|--------|----------------------------|-------|
| ACCESS POINT               | AP     | RELEASE OF RIGHTS          | ROR   |
| ACCESS RIGHTS              | AR     | REMAINING                  | REM.  |
| ACRES                      | AC.    | RIGHT-OF-WAY               | R/W   |
| AND OTHERS                 | ET.AL  | SECTION                    | SEC.  |
| CENTERLINE                 | C/L    | STATION                    | STA.  |
| CERTIFIED SURVEY MAP       | CSM    | TEMPORARY LIMITED EASEMENT | TLE   |
| CORNER                     | COR.   | VOLUME                     | V.    |
| DOCUMENT                   | DOC.   |                            |       |
| EASEMENT                   | EASE.  | CURVE DATA                 |       |
| HIGHWAY EASEMENT           | H.E.   | LONG CHORD                 | LCH   |
| LAND CONTRACT              | LC     | LONG CHORD BEARING         | LCB   |
| MONUMENT                   | MON.   | RADIUS                     | R     |
| PAGE                       | P.     | DEGREE OF CURVE            | D     |
| PERMANENT LIMITED EASEMENT | PLE    | CENTRAL ANGLE OR DELTA     | DELTA |
| PROPERTY LINE              | PL     | LENGTH OF CURVE            | L     |
| RECORDED AS                | (100') | TANGENT                    | TAN   |
| REFERENCE LINE             | R/L    |                            |       |

| CONVENTIONAL SYMBOLS |                                             |
|----------------------|---------------------------------------------|
| (1" UNLESS NOTED)    |                                             |
| ○ (SET)              | PROPOSED R/W LINE                           |
| △ (SET)              | EXISTING H.E. LINE                          |
| ISIGN                | PROPERTY LINE                               |
|                      | LOT & TIE LINES                             |
|                      | SLOPE INTERCEPTS                            |
|                      | CORPORATE LIMITS                            |
|                      | NO ACCESS (BY PREVIOUS ACQUISITION/CONTROL) |
|                      | NO ACCESS (BY ACQUISITION)                  |
|                      | NO ACCESS (BY STATUTORY AUTHORITY)          |
|                      | SECTION LINE                                |
|                      | QUARTER LINE                                |
|                      | SIXTEENTH LINE                              |
|                      | EXISTING CENTERLINE                         |
|                      | PROPOSED REFERENCE LINE                     |
|                      | PARALLEL OFFSET                             |

| CONVENTIONAL UTILITY SYMBOLS |             |
|------------------------------|-------------|
| WATER                        | —W—         |
| GAS                          | —G—         |
| TELEPHONE                    | —T—         |
| OVERHEAD                     | —OH—        |
| TRANSMISSION LINES           | —E—         |
| ELECTRIC                     | —TV—        |
| CABLE TELEVISION             | —FO—        |
| FIBER OPTIC                  | —SAN—       |
| SANITARY SEWER               | —SS—        |
| STORM SEWER                  | NON         |
|                              | COMPENSABLE |
|                              | COMPENSABLE |
|                              | COMPENSABLE |
| POWER POLE                   | ■           |
| TELEPHONE POLE               | ■           |
| TELEPHONE PEDESTAL           | ■           |
| ELECTRIC TOWER               | ⊠           |



**JEWELL**  
associates engineers, inc.  
Engineers - Planners - Surveyors

I HEREBY CERTIFY THAT THIS PLAT MEETS ALL REQUIREMENTS OF SECTION 84.095, WISCONSIN STATUTES. THIS WAS PREPARED BY OR UNDER THE DIRECTION OF

|                                                                                             |           |      |
|---------------------------------------------------------------------------------------------|-----------|------|
| PRINTED NAME                                                                                | SIGNATURE | DATE |
| THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE WISCONSIN DEPARTMENT OF TRANSPORTATION. |           |      |
| PRINTED NAME                                                                                | SIGNATURE | DATE |

RESERVED FOR REGISTER OF DEEDS  
PROJECT NUMBER  
AMENDMENT NO:

ACCEPTED FOR RECORDING AND FILING IN THE OFFICE OF THE REGISTER OF DEEDS IN \_\_\_\_\_ COUNTY, WISCONSIN AT \_\_\_\_\_ M ON \_\_\_\_\_ AS DOCUMENT # \_\_\_\_\_ AND FILED IN \_\_\_\_\_

SIGNATURE OF REGISTER OF DEEDS

SCHEDULE OF LANDS & INTERESTS REQUIRED

| PARCEL NUMBER | OWNER (S)                                          | INTEREST REQUIRED | R/W ACRES REQUIRED |          |       | T.L.E. ACRES | P.L.E. ACRES |
|---------------|----------------------------------------------------|-------------------|--------------------|----------|-------|--------------|--------------|
|               |                                                    |                   | NEW                | EXISTING | TOTAL |              |              |
| 1             | DENNIS R. ANDERT                                   | FEE, TLE          | 0.12               | --       | 0.12  | 0.05         | --           |
| 2             | CHRISTOPHER J. SMITH AND SUE SMITH                 | FEE, TLE          | 0.02               | --       | 0.02  | 0.01         | --           |
| 3             | STATE OF WISCONSIN DEPARTMENT OF NATURAL RESOURCES | PLE, TLE          | --                 | --       | --    | 0.64         | 0.12         |

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

TRANSPORTATION PROJECT PLAT NO: 5790-01-21 - 4.01 AMENDMENT 1

THIS AMENDS PARCEL 3 OF TRANSPORTATION PROJECT PLAT 5790-01-21-4.01, RECORDED AS DOCUMENT #319829 AND FILED IN 2 PLATS 75 IN THE OFFICE OF THE REGISTER OF DEEDS IN CRAWFORD COUNTY.

PART OF PARCEL 3 OF TRANSPORTATION PROJECT PLAT 5790-01-21-4.01, LOCATED IN SECTION 24, TOWN 10 NORTH, RANGE 6 WEST, TOWN OF FREEMAN, CRAWFORD COUNTY, WISCONSIN.

RELOCATION ORDER STH 171 CRAWFORD COUNTY

TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3) AND 84.09, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:

- THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
- THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.

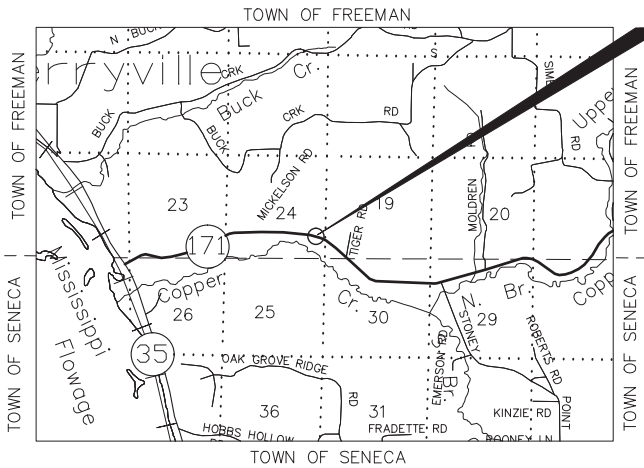
FOR ADDITIONAL INFORMATION REFER TO THE TITLE SHEET, SHEET 2 OF 2 OF TRANSPORTATION PROJECT PLAT #5970-01-21-4.01, RECORDED AS DOCUMENT #319829 AND FILED IN 2 PLATS 75 IN THE OFFICE OF THE REGISTER OF DEEDS IN CRAWFORD COUNTY.

DOCUMENT # \_\_\_\_\_

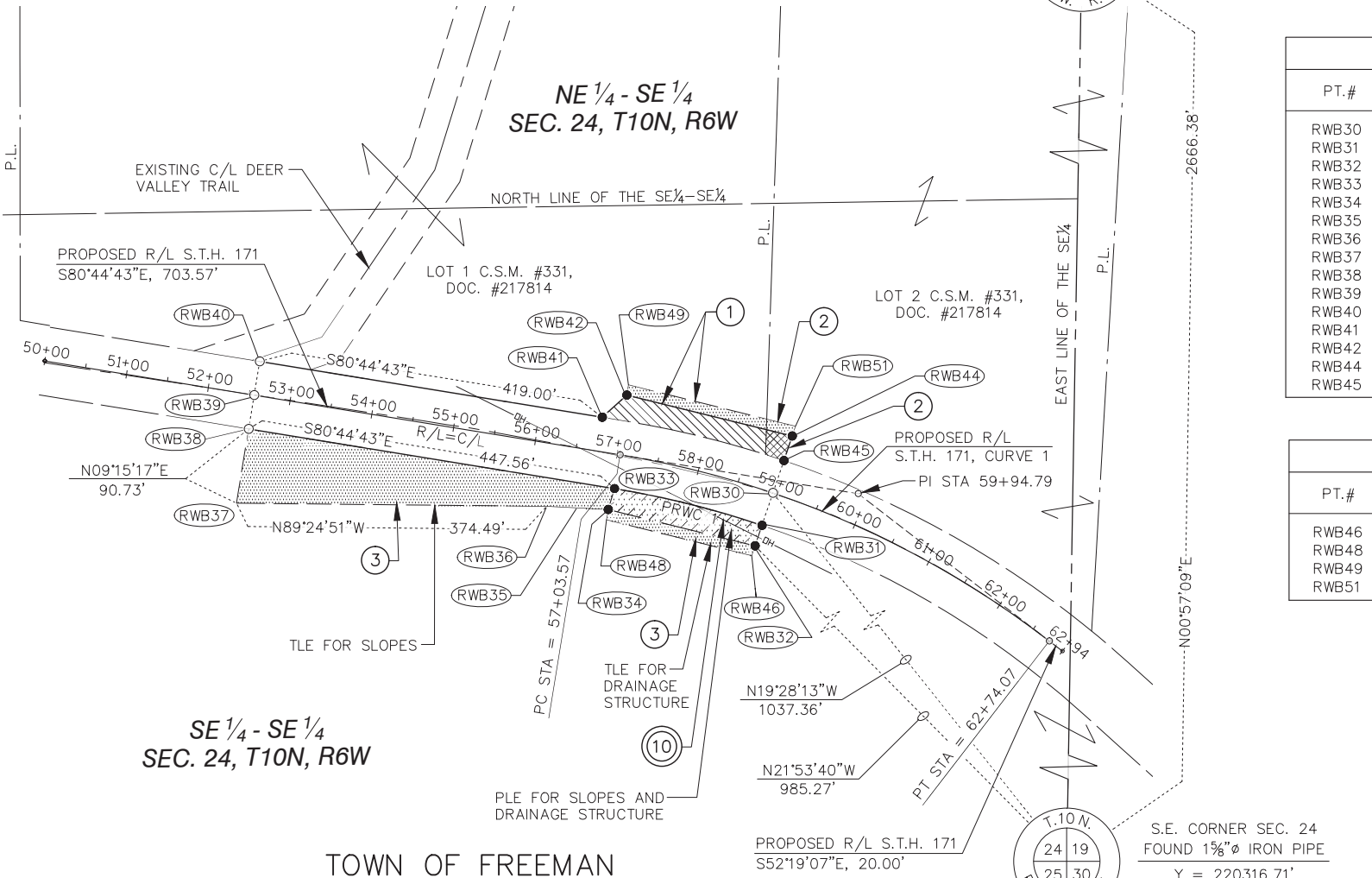
ACCEPTED FOR RECORDING IN THE OFFICE OF THE REGISTER OF DEEDS IN CRAWFORD COUNTY, WISCONSIN AT \_\_\_\_ M. ON \_\_\_\_\_, 2013

SIGNATURE OF REGISTER OF DEEDS \_\_\_\_\_

RESERVED FOR REGISTER OF DEEDS  
PROJECT NUMBER 5790-01-21-4.01  
AMENDMENT 1



PROJECT LOCATION  
C-12-1703



| PLE & R/W COURSE TABLE |              |          |
|------------------------|--------------|----------|
| PT. TO PT.             | DIRECTION    | DISTANCE |
| RWB30 TO RWB31         | S18°43'22\"W | 41.25'   |
| RWB31 TO RWB32         | S18°43'22\"W | 26.15'   |
| RWB32 TO RWB34         | S76°06'11\"E | 182.62'  |
| RWB34 TO RWB33         | N17°00'02\"E | 26.39'   |
| RWB34 TO RWB35         | N87°00'59\"W | 37.83'   |
| RWB35 TO RWB36         | N87°03'46\"W | 36.41'   |
| RWB38 TO RWB39         | N09°15'17\"E | 41.25'   |
| RWB39 TO RWB40         | N09°15'17\"E | 41.25'   |
| RWB41 TO RWB42         | N47°54'52\"E | 40.02'   |
| RWB42 TO RWB44         | S76°05'35\"E | 205.71'  |
| RWB44 TO RWB45         | S18°43'22\"W | 31.25'   |
| RWB45 TO RWB30         | S18°43'22\"W | 41.25'   |

| COORDINATE TABLE - PLE, R/W, & R/L POINTS |          |          |           |           |
|-------------------------------------------|----------|----------|-----------|-----------|
| PT.#                                      | STATION  | OFFSET   | Y         | X         |
| RWB30                                     | 58+93.97 | 0.00     | 221294.75 | 350679.63 |
| RWB31                                     | 58+93.97 | 41.25 R  | 221255.68 | 350666.39 |
| RWB32                                     | 58+93.97 | 67.40 R  | 221230.91 | 350658.00 |
| RWB33                                     | 57+03.56 | 41.25 R  | 221300.01 | 350488.45 |
| RWB34                                     | 57+00.00 | 67.40 R  | 221274.77 | 350480.73 |
| RWB35                                     | 56+62.40 | 71.53 R  | 221276.74 | 350442.95 |
| RWB36                                     | 56+26.21 | 75.54 R  | 221278.61 | 350406.59 |
| RWB37                                     | 52+56.00 | 131.98 R | 221282.44 | 350032.12 |
| RWB38                                     | 52+56.00 | 41.25 R  | 221371.99 | 350046.7  |
| RWB39                                     | 52+56.00 | 0.00 R   | 221412.70 | 350053.35 |
| RWB40                                     | 52+56.00 | 41.25 L  | 221453.41 | 350059.98 |
| RWB41                                     | 56+75.00 | 41.25 L  | 221386.03 | 350473.53 |
| RWB42                                     | 57+00.00 | 72.50 L  | 221412.85 | 350503.23 |
| RWB44                                     | 58+93.97 | 72.50 L  | 221363.41 | 350702.9  |
| RWB45                                     | 58+93.97 | 41.25 L  | 221333.81 | 350692.88 |

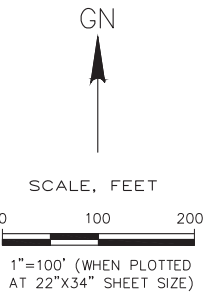
| COORDINATE TABLE - TLE POINTS |          |         |           |           |
|-------------------------------|----------|---------|-----------|-----------|
| PT.#                          | STATION  | OFFSET  | Y         | X         |
| RWB46                         | 58+93.97 | 79.90 R | 221219.07 | 350653.99 |
| RWB48                         | 57+00.00 | 79.90 R | 221262.43 | 350478.72 |
| RWB49                         | 57+00.00 | 85.00 L | 221425.19 | 350505.24 |
| RWB51                         | 58+93.97 | 85.00 L | 221375.25 | 350706.92 |

UTILITY INTERESTS REQUIRED

| UTILITY NUMBER | OWNER (S)                        | INTEREST REQUIRED |
|----------------|----------------------------------|-------------------|
| 10             | SCENIC RIVERS ENERGY COOPERATIVE | RELEASE OF RIGHTS |

R/L CURVE 1  
P.L. STA. = 59+94.79  
Y = 221293.88  
X = 350782.52  
DELTA = 28°22'02\"

PRWC 1  
R = 1111.03'  
L = 183.60'  
CH = 183.39'  
LCB = N76°00'41\"W



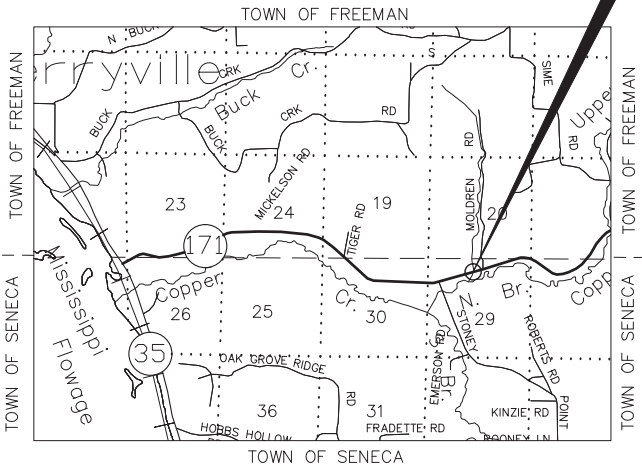


SCHEDULE OF LANDS & INTERESTS REQUIRED

| PARCEL NUMBER | OWNER (S)                     | INTEREST REQUIRED | R/W ACRES REQUIRED |          |       | T.L.E. ACRES | P.L.E. ACRES |
|---------------|-------------------------------|-------------------|--------------------|----------|-------|--------------|--------------|
|               |                               |                   | NEW                | EXISTING | TOTAL |              |              |
| 4             | RICHARD D. KRICHHOFF          | FEE               | 0.23               | --       | 0.23  | --           | --           |
| 5             | RICK J. SIME AND MARY P. SIME | FEE               | 0.21               | --       | 0.21  | --           | --           |

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

PROJECT LOCATION  
B-12-170



| R/W COURSE TABLE |             |          |
|------------------|-------------|----------|
| PT. TO PT.       | DIRECTION   | DISTANCE |
| 52 TO 53         | S16°39'27"E | 41.25'   |
| 53 TO 54         | S16°39'27"E | 16.81'   |
| 55 TO 56         | N16°39'27"W | 16.81'   |
| 56 TO 57         | N16°39'27"W | 41.25'   |
| 57 TO 58         | N16°39'27"W | 41.25'   |
| 58 TO 59         | N73°20'33"E | 38.00'   |
| 59 TO 60         | N16°39'27"W | 19.89'   |
| 61 TO 62         | S16°39'27"E | 19.89'   |
| 62 TO 52         | S16°39'27"E | 41.25'   |

UTILITY INTERESTS REQUIRED

| UTILITY NUMBER | OWNER (S)   | INTEREST REQUIRED |
|----------------|-------------|-------------------|
| 11             | CENTURYLINK | RELEASE OF RIGHTS |

TRANSPORTATION PROJECT PLAT NO: 5790-01-21 - 4.02

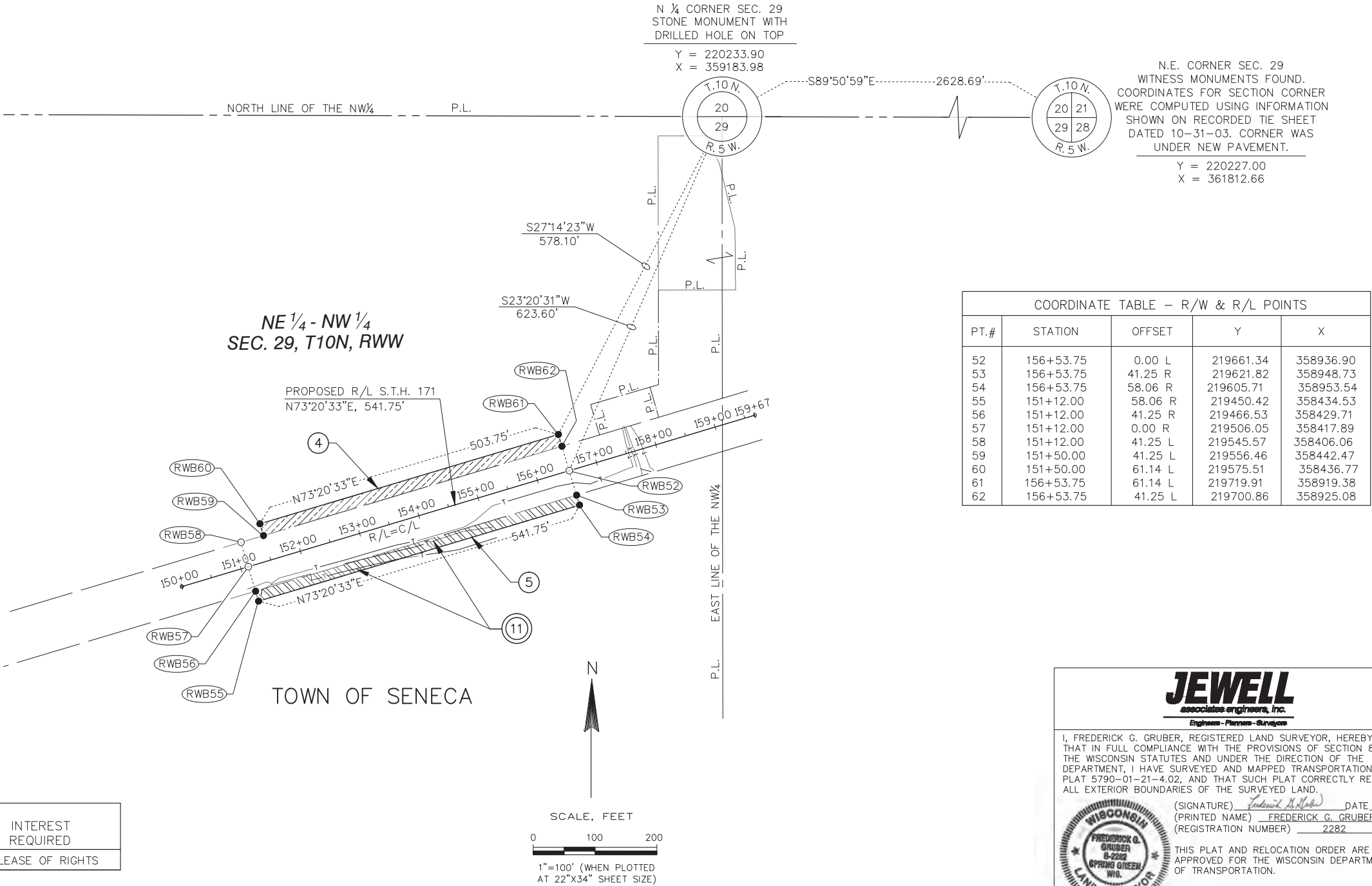
THAT PART OF THE NE¼-NW¼ OF SECTION 29, TOWN 10 NORTH, RANGE 5 WEST, TOWN OF SENECA, CRAWFORD COUNTY, WISCONSIN.

RELOCATION ORDER STH 171 CRAWFORD COUNTY

TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3) AND 84.09, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:  
1. THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.  
2. THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.

FOR ADDITIONAL INFORMATION REFER TO THE TITLE SHEET, SHEET 2 OF 2 OF TRANSPORTATION PROJECT PLAT 5970-01-21-4.01, RECORDED AS DOCUMENT # \_\_\_\_\_ AND FILED IN \_\_\_\_\_.



| COORDINATE TABLE - R/W & R/L POINTS |           |         |           |           |
|-------------------------------------|-----------|---------|-----------|-----------|
| PT.#                                | STATION   | OFFSET  | Y         | X         |
| 52                                  | 156+53.75 | 0.00 L  | 219661.34 | 358936.90 |
| 53                                  | 156+53.75 | 41.25 R | 219621.82 | 358948.73 |
| 54                                  | 156+53.75 | 58.06 R | 219605.71 | 358953.54 |
| 55                                  | 151+12.00 | 58.06 R | 219450.42 | 358434.53 |
| 56                                  | 151+12.00 | 41.25 R | 219466.53 | 358429.71 |
| 57                                  | 151+12.00 | 0.00 R  | 219506.05 | 358417.89 |
| 58                                  | 151+12.00 | 41.25 L | 219545.57 | 358406.06 |
| 59                                  | 151+50.00 | 41.25 L | 219556.46 | 358442.47 |
| 60                                  | 151+50.00 | 61.14 L | 219575.51 | 358436.77 |
| 61                                  | 156+53.75 | 61.14 L | 219719.91 | 358919.38 |
| 62                                  | 156+53.75 | 41.25 L | 219700.86 | 358925.08 |

**JEWELL**  
associates engineers, inc.  
Engineers - Planners - Surveyors

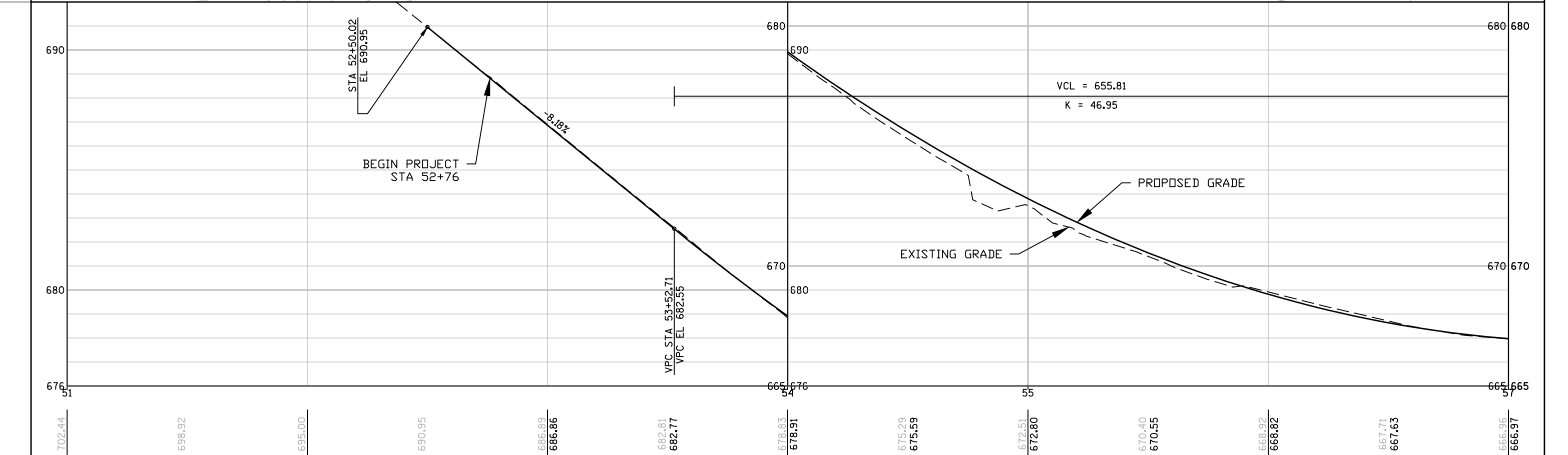
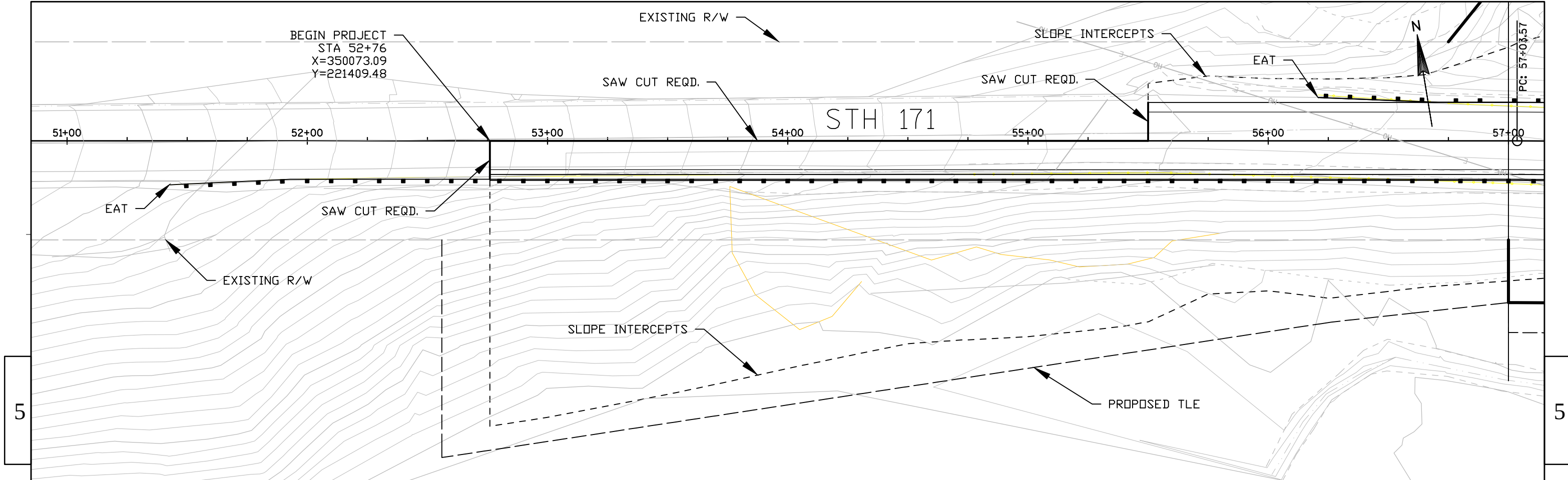
I, FREDERICK G. GRUBER, REGISTERED LAND SURVEYOR, HEREBY CERTIFY THAT IN FULL COMPLIANCE WITH THE PROVISIONS OF SECTION 84.095 OF THE WISCONSIN STATUTES AND UNDER THE DIRECTION OF THE DEPARTMENT, I HAVE SURVEYED AND MAPPED TRANSPORTATION PROJECT PLAT 5790-01-21-4.02, AND THAT SUCH PLAT CORRECTLY REPRESENTS ALL EXTERIOR BOUNDARIES OF THE SURVEYED LAND.



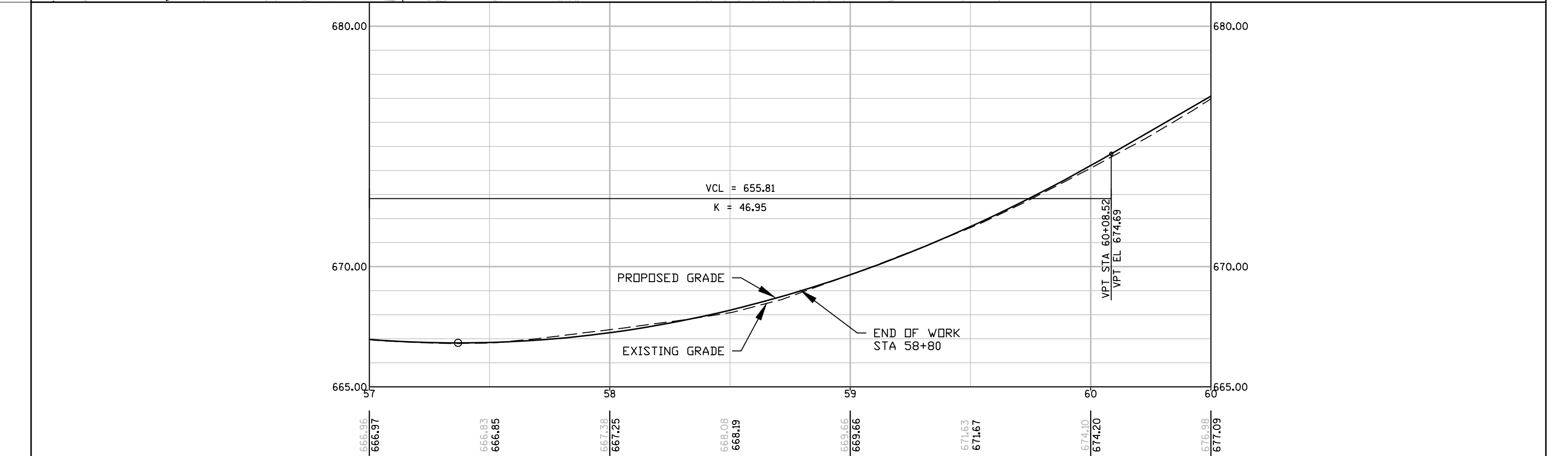
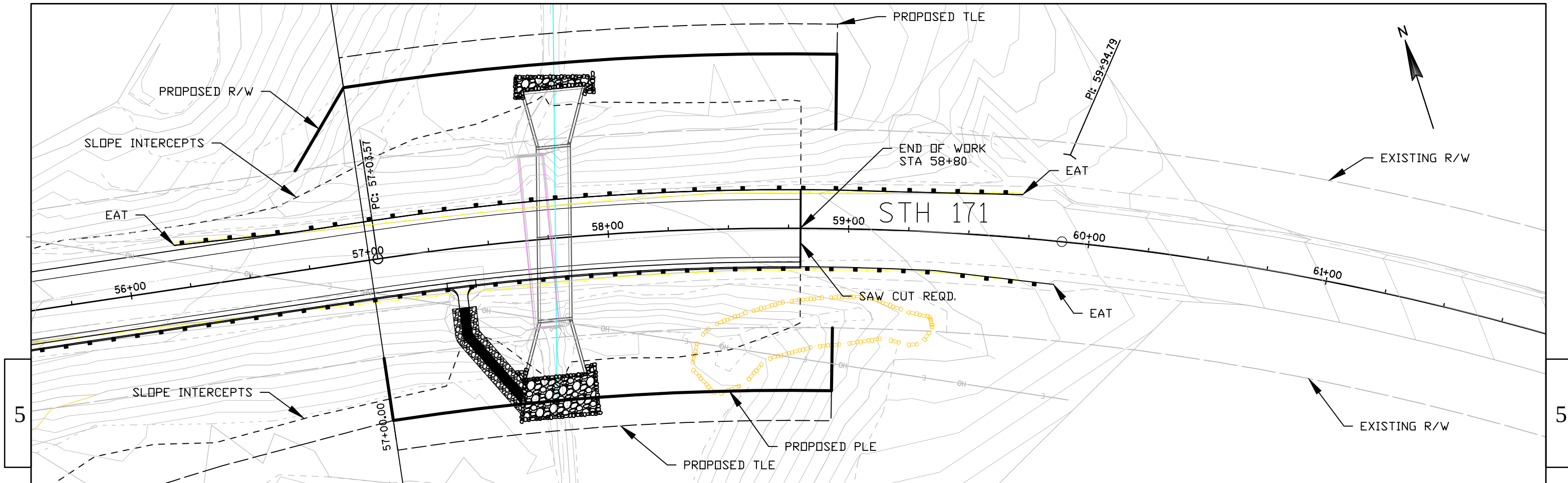
(SIGNATURE) Frederick G. Gruber DATE 3/25/13  
(PRINTED NAME) FREDERICK G. GRUBER  
(REGISTRATION NUMBER) 2282

THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

(SIGNATURE) \_\_\_\_\_ DATE \_\_\_\_\_  
(PRINTED NAME) \_\_\_\_\_







PROJECT NO: 5790-01-01

HWY: STH 171

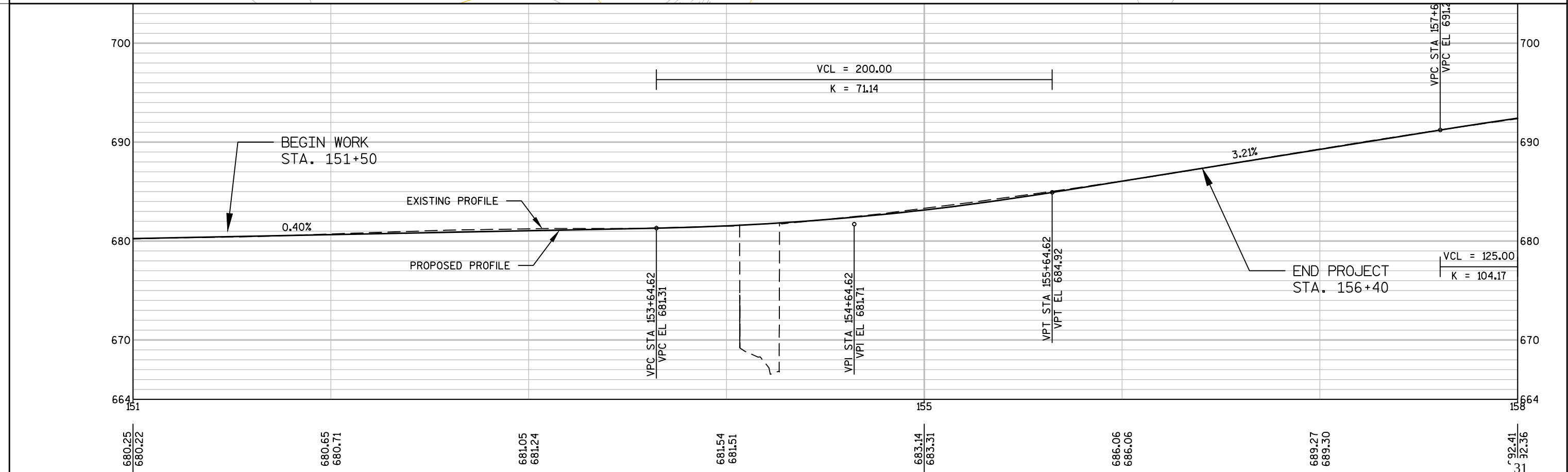
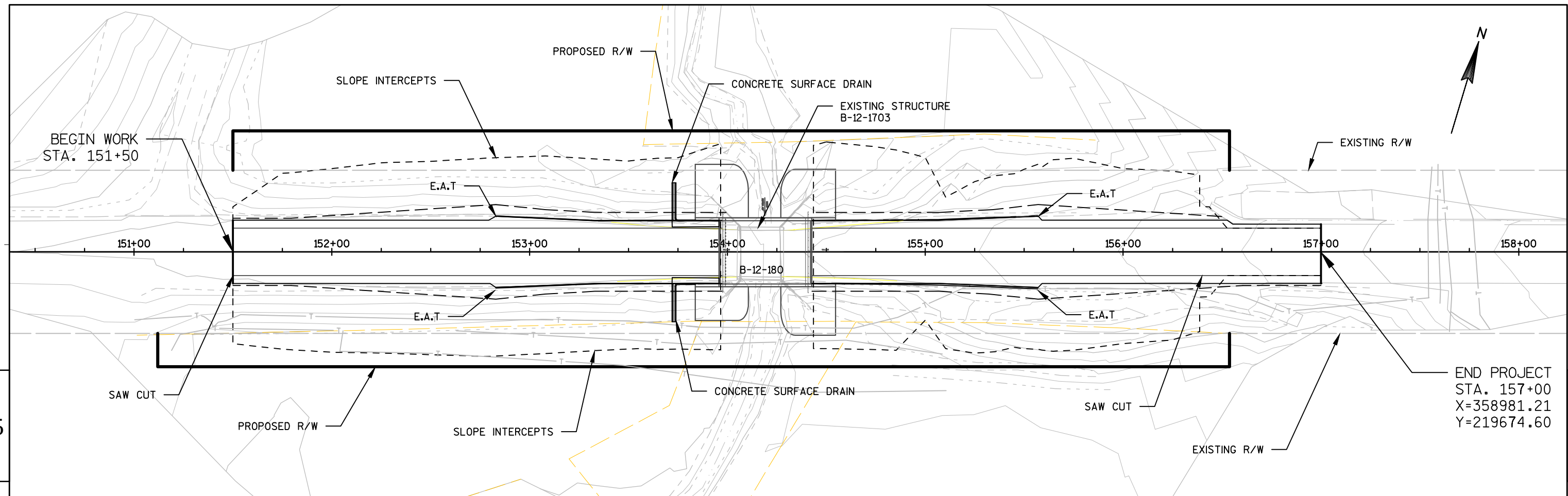
COUNTY: CRAWFORD

PLAN AND PROFILE: C-12-181

SHEET

30

E

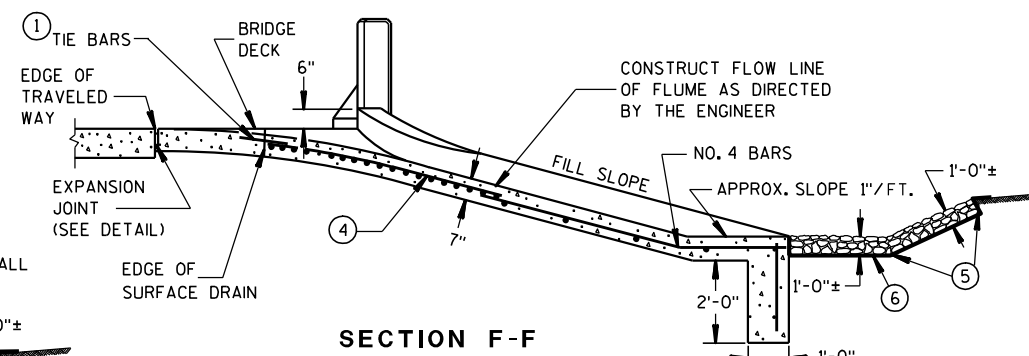




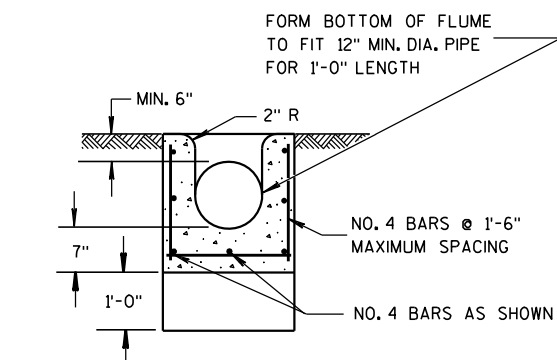
Standard Detail Drawing List

|           |                                                                 |
|-----------|-----------------------------------------------------------------|
| 08D01-17  | CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES                |
| 08D02-06  | CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES                |
| 08D04-05  | CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES                      |
| 08E08-03  | TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS |
| 08E09-06  | SILT FENCE                                                      |
| 12A03-10  | NAME PLATE (STRUCTURES)                                         |
| 14B42-02A | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL                        |
| 14B42-02B | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL                        |
| 14B42-02C | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL                        |
| 14B45-03A | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)            |
| 14B45-03B | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)            |
| 14B45-03C | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)            |
| 14B45-03D | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)            |
| 14B45-03E | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)            |
| 14B45-03F | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)            |
| 14B45-03G | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)            |
| 14B45-03H | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)            |
| 14B45-03I | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)            |
| 14B45-03J | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)            |
| 15A01-11  | MARKER POST FOR RIGHT-OF-WAY                                    |
| 15C08-16A | PAVEMENT MARKING (MAINLINE)                                     |

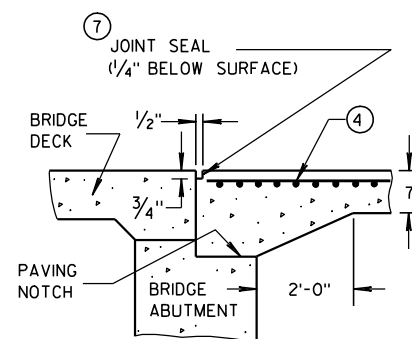




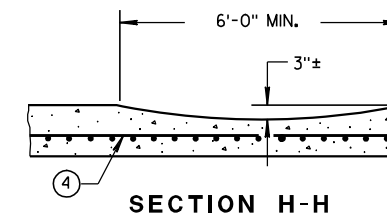
## SECTION F-F



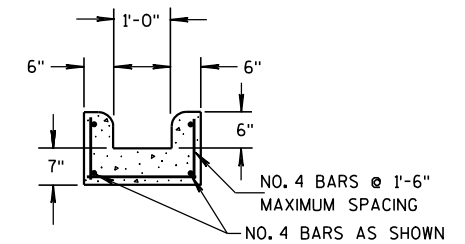
**SECTION C-C**



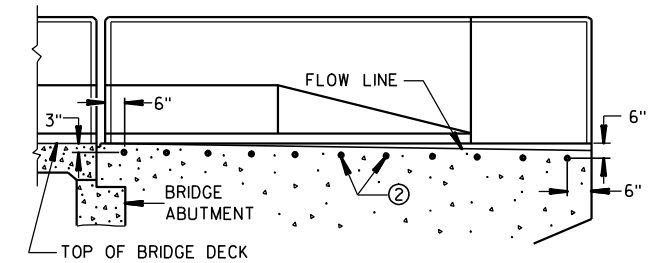
**SECTION D-D**



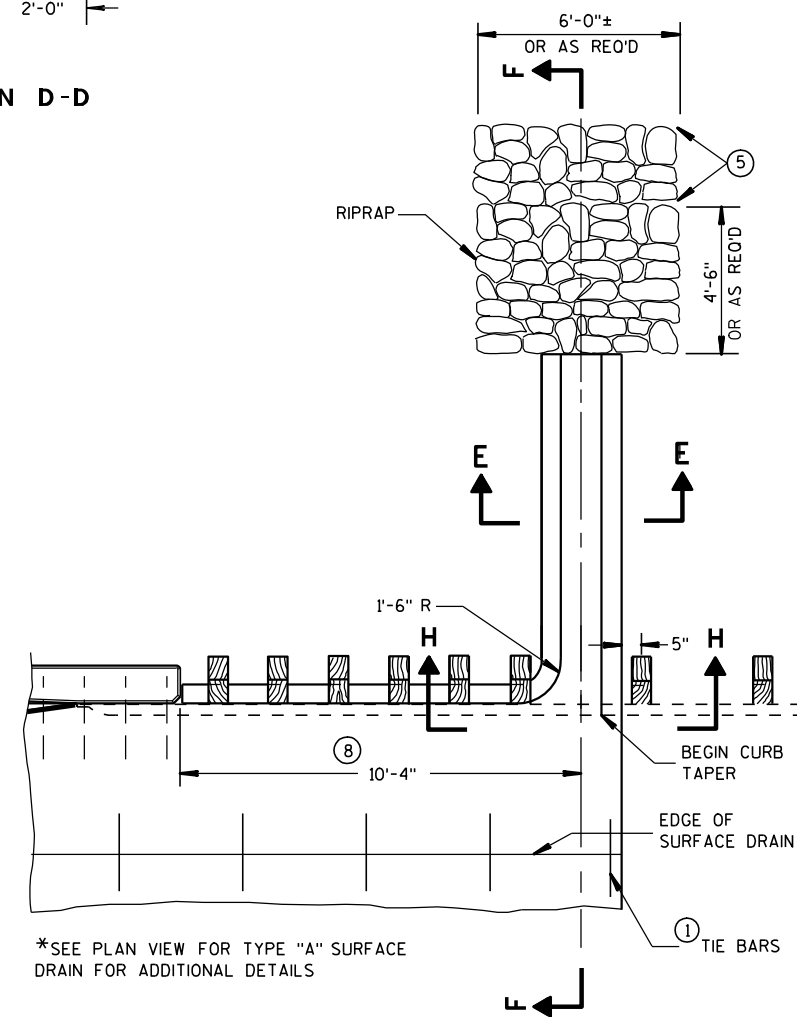
SECTION H-H



## SECTION E-E



### LOCATION OF TIE BARS IN WINGWALL



\* PARTIAL PLAN VIEW  
SURFACE DRAIN WITHOUT PIPE  
TYPE "B"

## 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.

ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR  
UNLESS OTHERWISE SHOWN OR NOTED.

- ① NO. 4 X 2'-0" TIE BARS SPACED AT 3'-0" CENTERS TO BE USED ONLY WHEN ADJACENT TO P.C. CONCRETE.
- ② NO. 4 X 2'-0" TIE BARS SPACED AT 12" CENTERS TO BE PLACED BY BRIDGE CONTRACTOR, OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- ③ PIPE UNDERDRAIN MAY BE ANY OF THE MATERIALS LISTED IN SECTION 612.2 OF THE STANDARD SPECIFICATIONS EXCEPT DRAIN TILE.
- ④ MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- ⑤ LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.
- ⑥ GEOTEXTILE FABRIC, TYPE 'R'
- ⑦ HOT POURED SEALANT UNLESS OTHERWISE SPECIFIED.
- ⑧ THIS DIMENSION MAY VARY DEPENDING ON THE SPACING OF POSTS FOR THE STEEL PLATE BEAM GUARD. THE TYPICAL LOCATION FOR THE SURFACE DRAIN IS WHERE THE POST SPACING WIDENS TO 3'-1/2".

# CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES

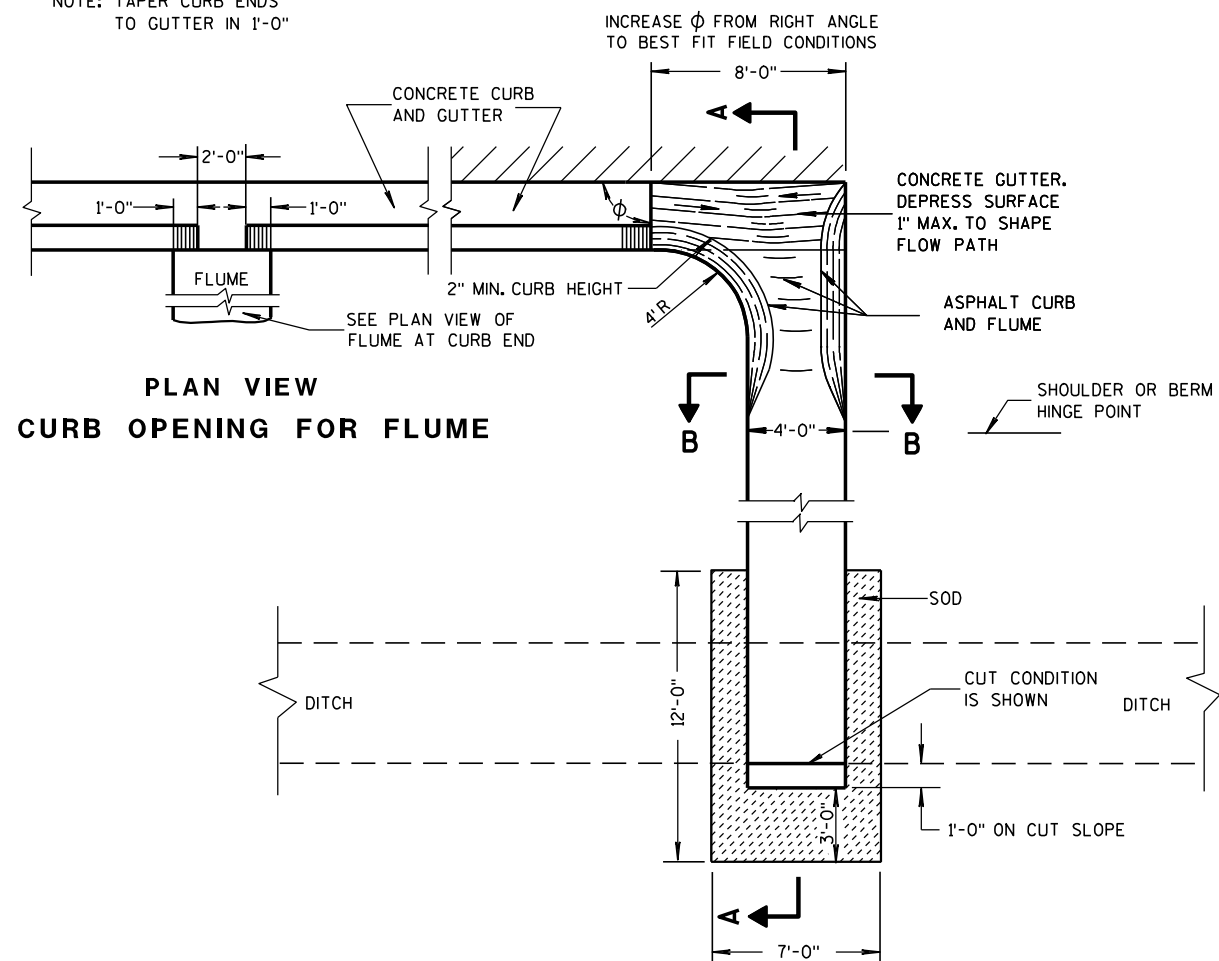
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
9/4/08 /S/ Jerry H. Zoon  
DATE ROADWAY STANDARDS 34 'MENT  
ENGINEER



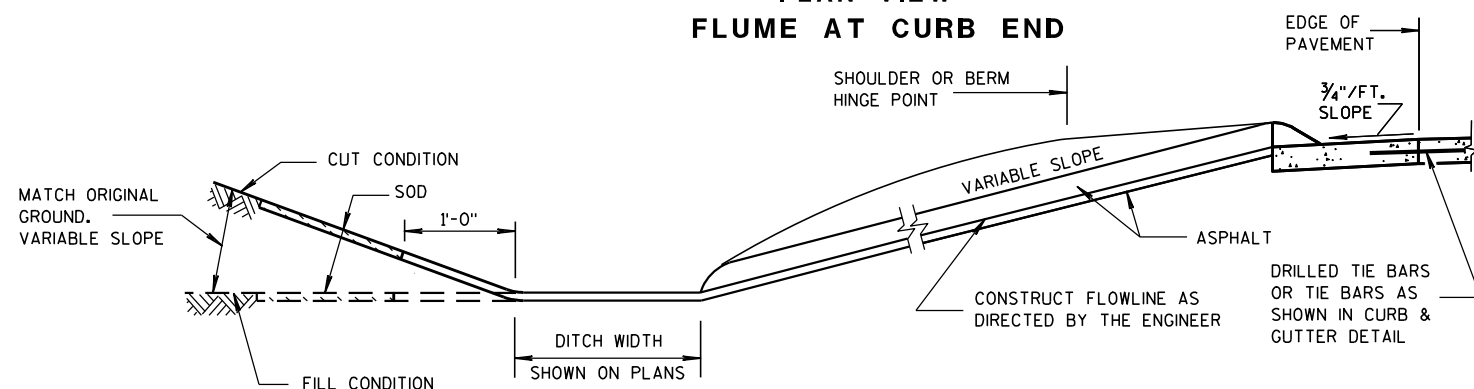
## ASPHALTIC FLUME

NOTE: TAPER CURB ENDS  
TO GUTTER IN 1'-0"

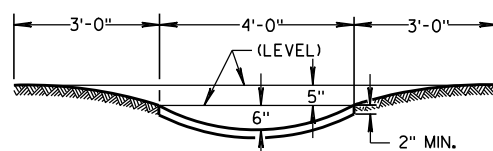


PLAN VIEW  
CURB OPENING FOR FLUME

PLAN VIEW  
FLUME AT CURB END



SECTION A-A



SECTION B-B

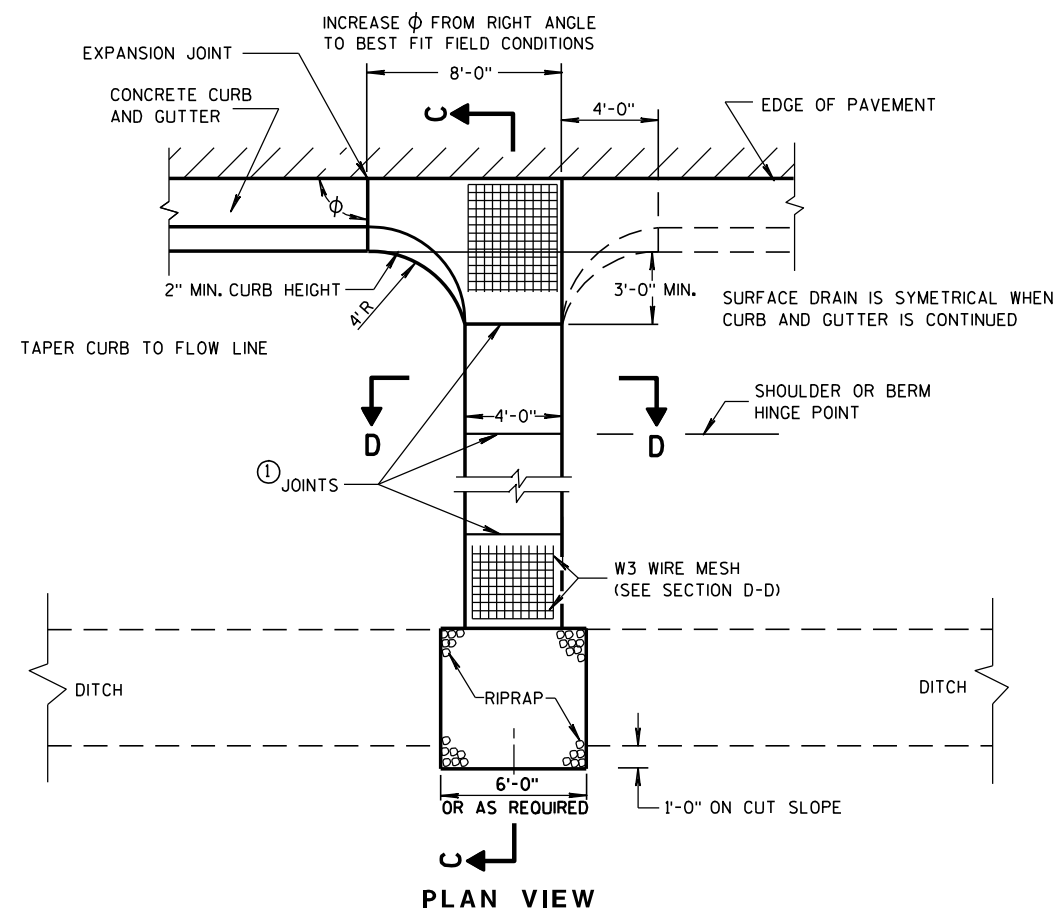
## GENERAL NOTES

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

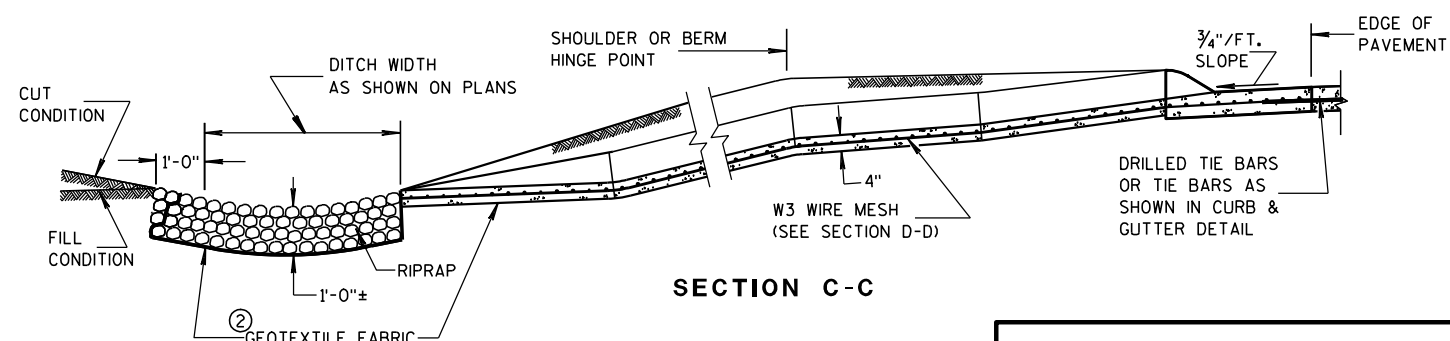
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

- ① JOINTS SHALL BE 1/8" TO 1/4" INCH WIDE BY 1 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

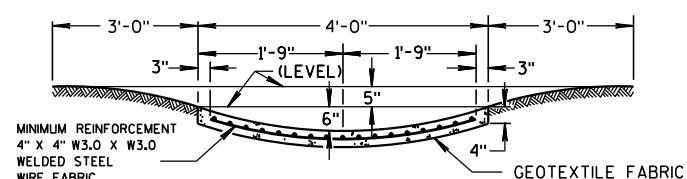
## ③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



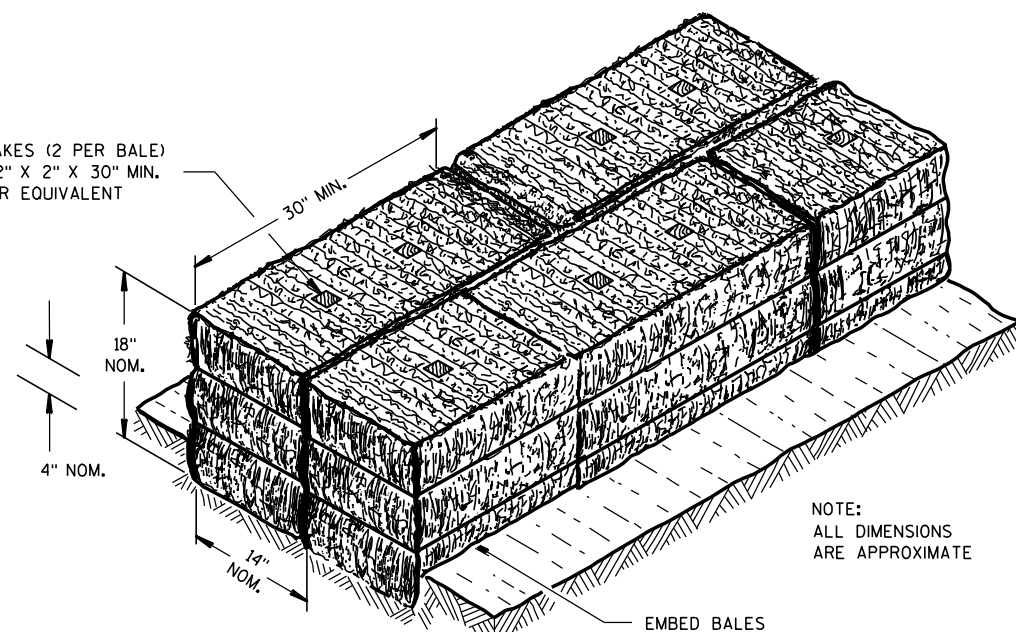
SECTION D-D

## CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

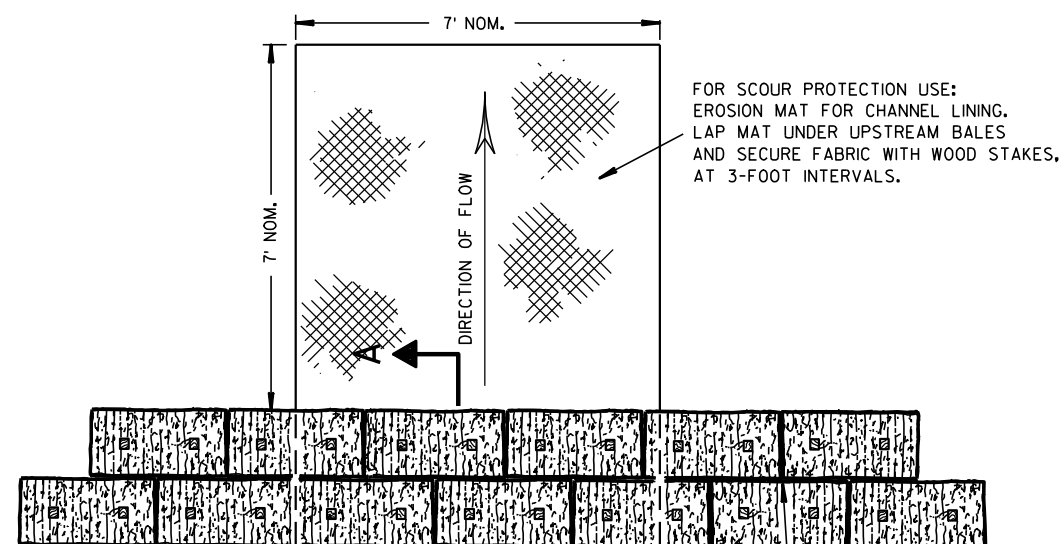
APPROVED  
9-4-08 /S/ Jerry H. Zapp  
DATE ROADWAY STANDARDS 35  
FHWA ENGINEER

WOOD STAKES (2 PER BALE)  
NOMINAL 2" X 2" X 30" MIN.  
LENGTH OR EQUIVALENT

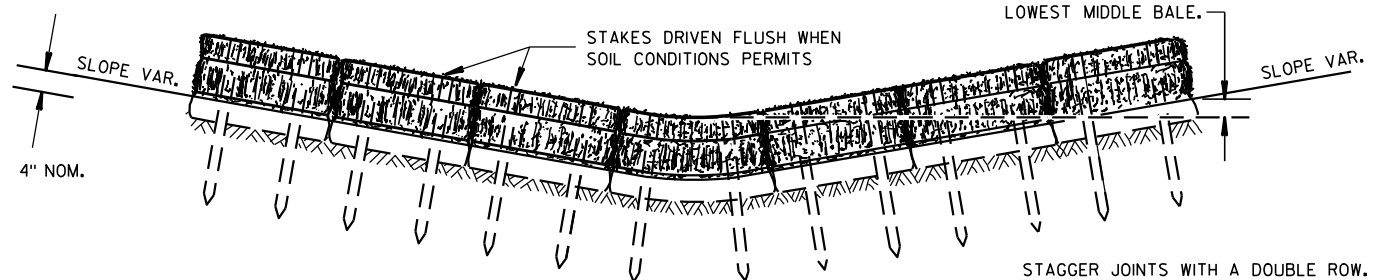


NOTE:  
ALL DIMENSIONS  
ARE APPROXIMATE

SECTION A-A



PLAN VIEW



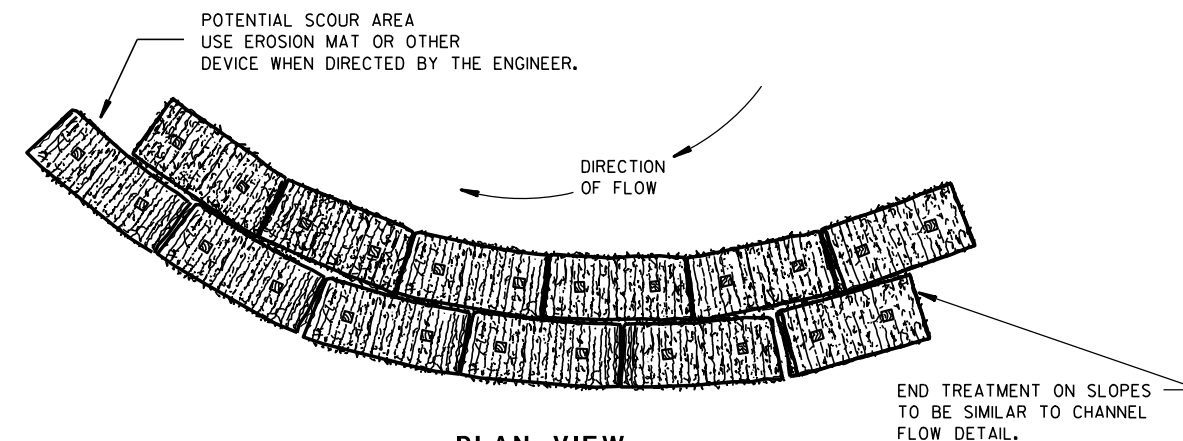
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

## GENERAL NOTES

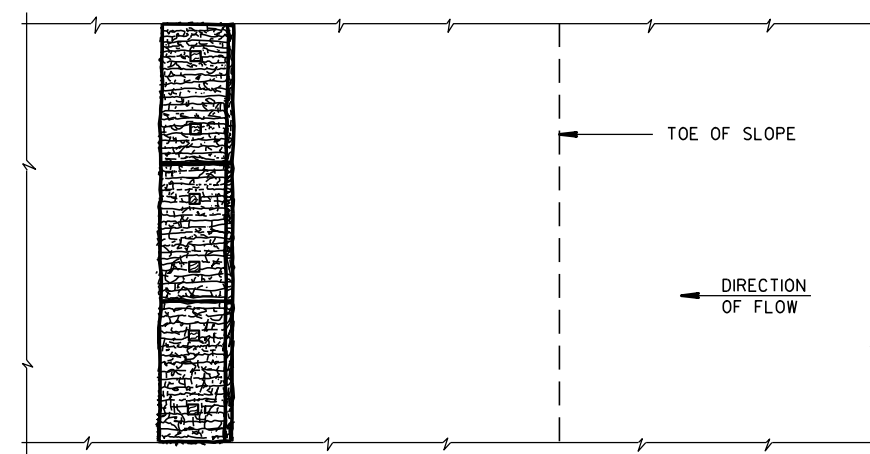
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

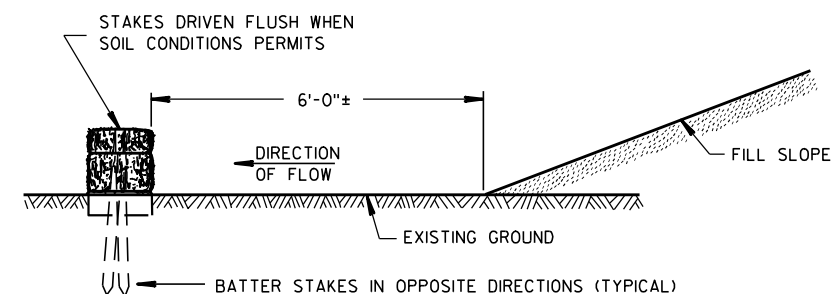


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

## TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

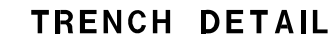
6/04/02  
DATE

FHWA

/S/ Beth Connors  
CHIEF ROADWAY DEVELOPER 36  
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.



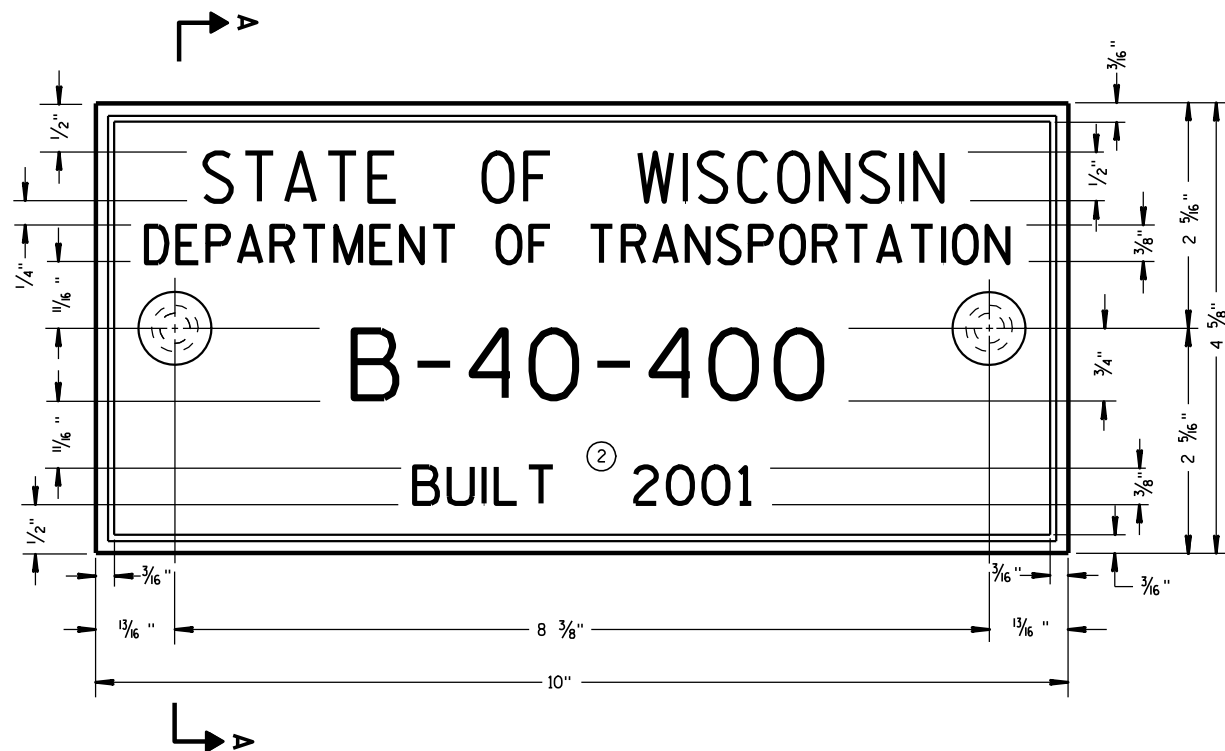
SILT FENCE

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

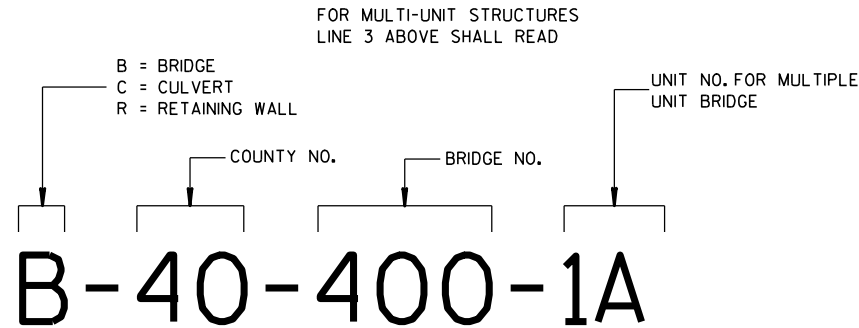
APPROVED  
4-29-05 /S/ Beth Connolly  
DATE CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA





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



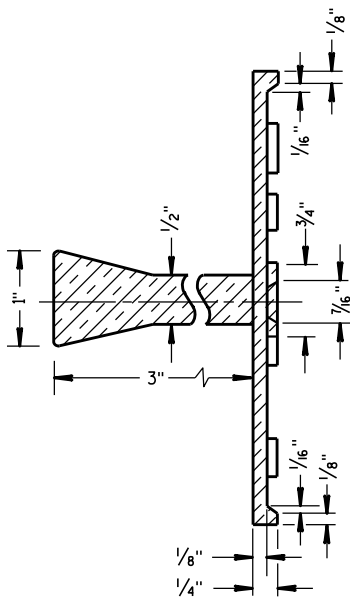
NUMBERING DESIGNATION  
MULTI-UNIT STRUCTURES

GENERAL NOTES

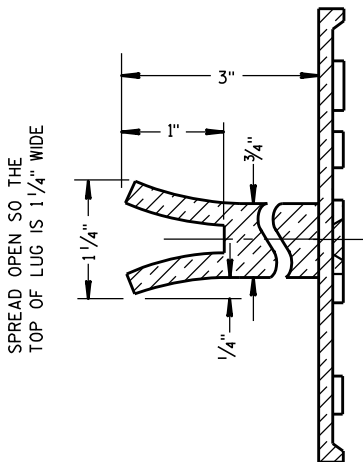
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

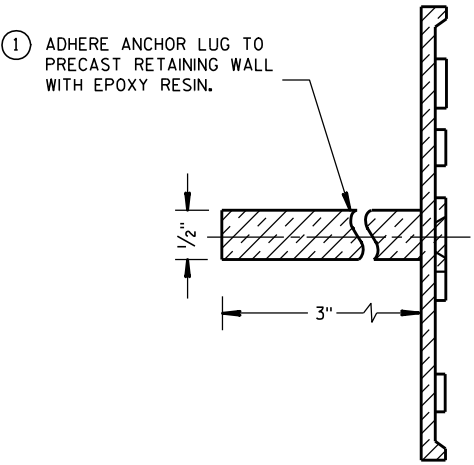
- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



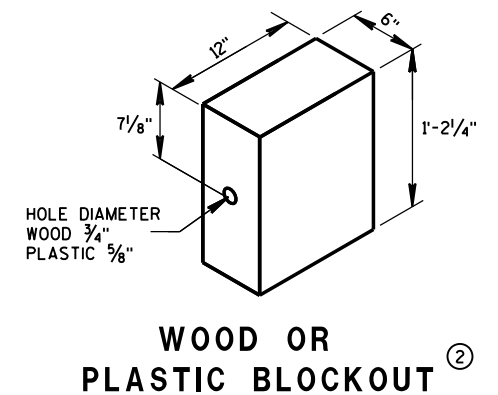
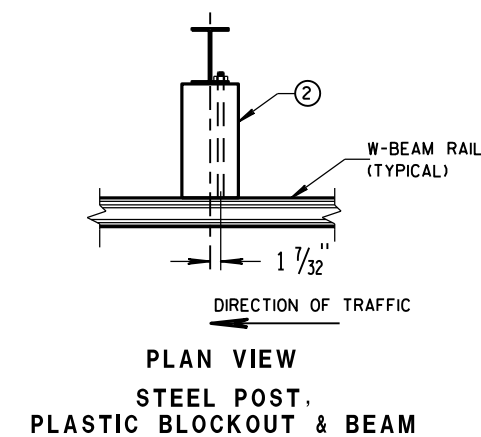
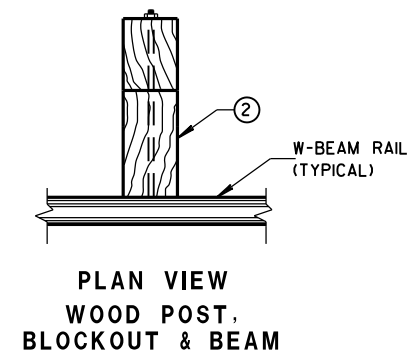
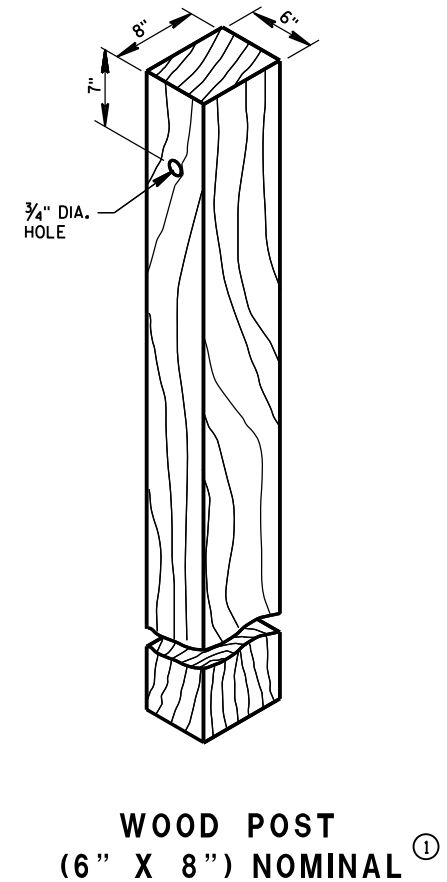
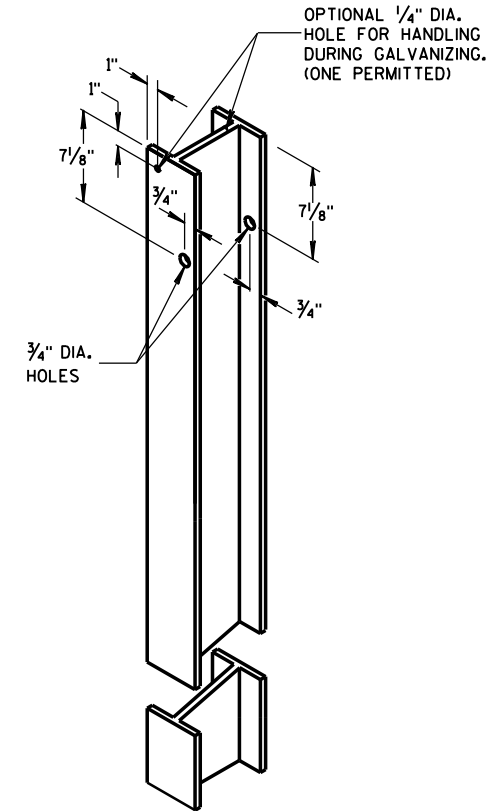
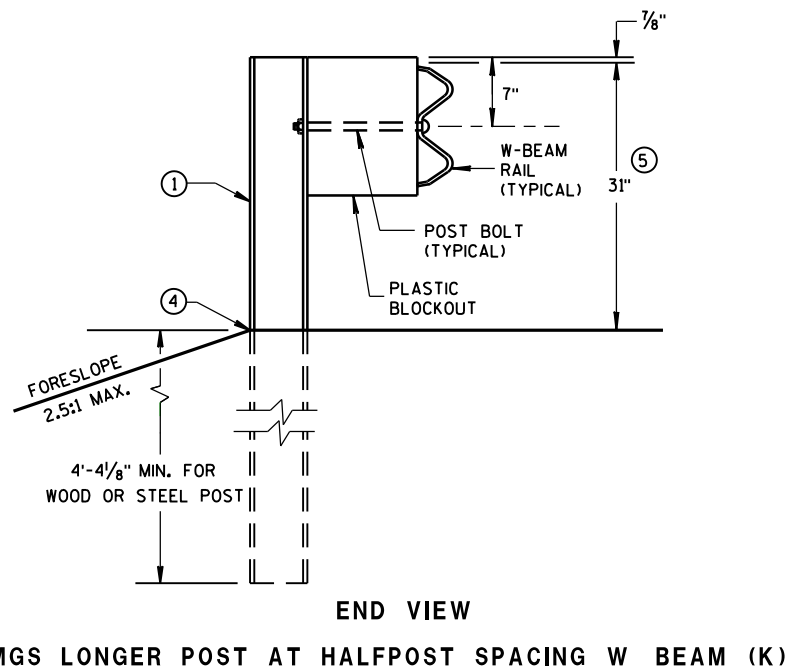
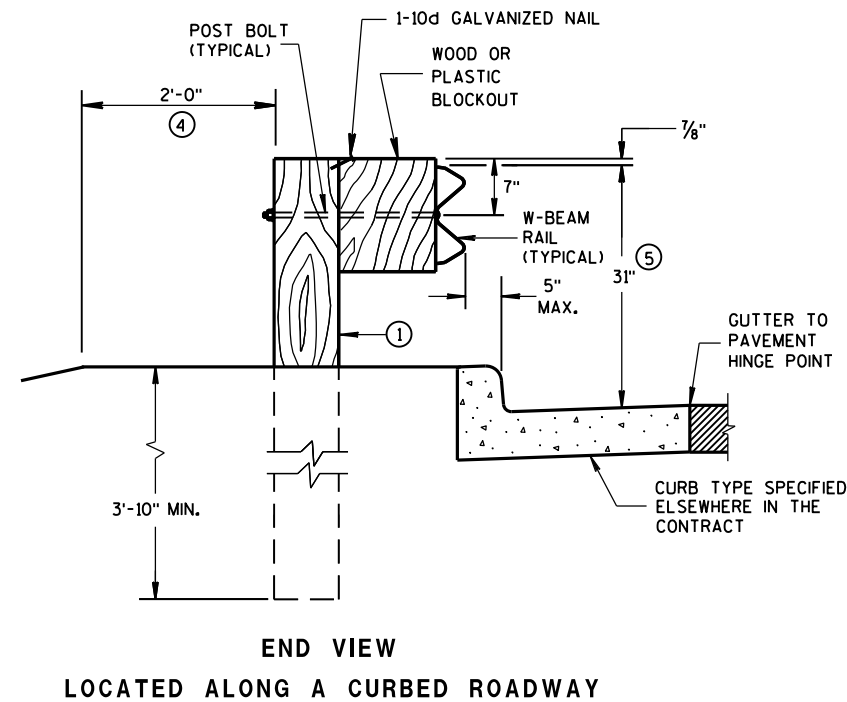
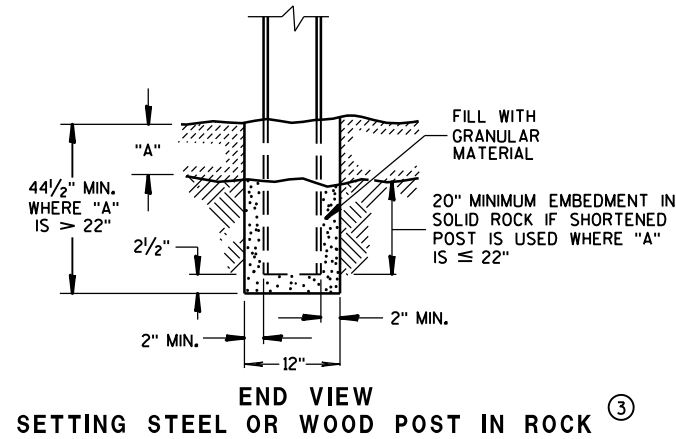
- ① ADHERE ANCHOR LUG TO PRECAST RETAINING WALL WITH EPOXY RESIN.

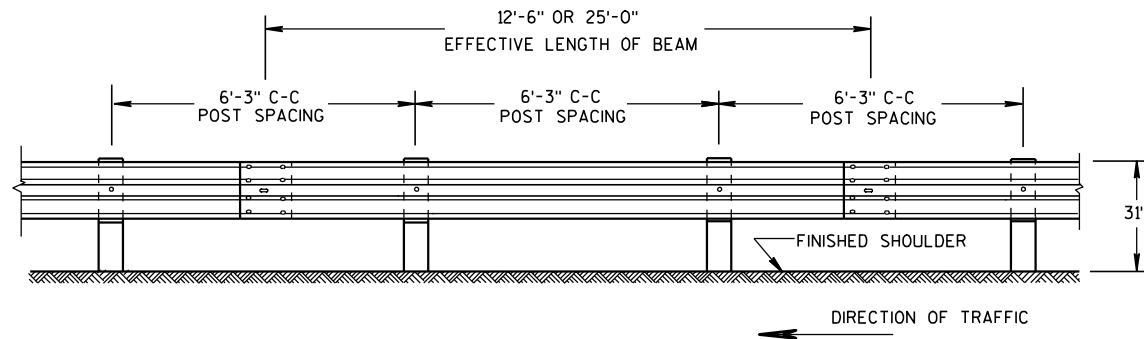
ALTERNATE LUG  
(FOR ATTACHMENT TO PRECAST STRUCTURES)

| NAME PLATE<br>(STRUCTURES)                         |                                                   |      |
|----------------------------------------------------|---------------------------------------------------|------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                                                   |      |
| APPROVED<br>DATE<br>3/26/10                        | CHIEF STRUCTURAL DEVELOPER<br>/S/ Scot Beck<br>38 | JEER |

6

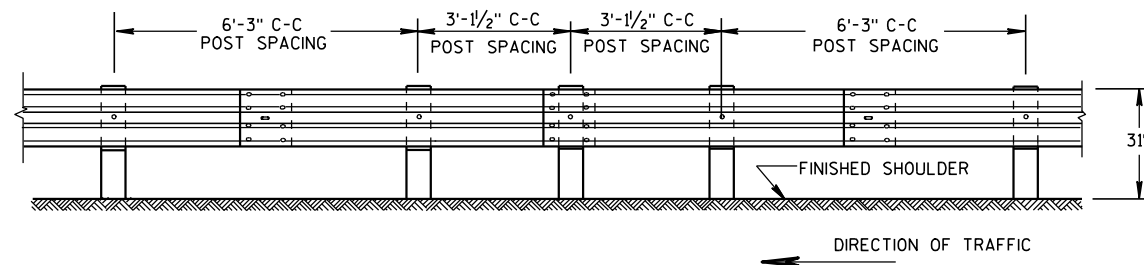
- S.D.D. 14 B 42-2a**





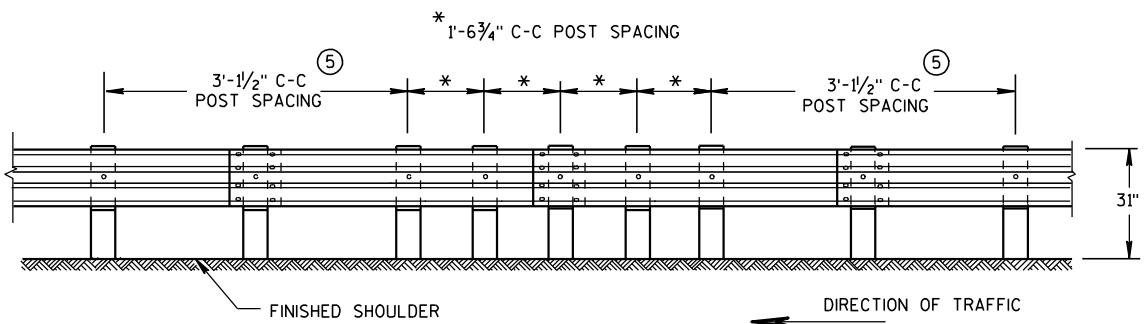
FRONT VIEW

## POST SPACING STANDARD INSTALLATION



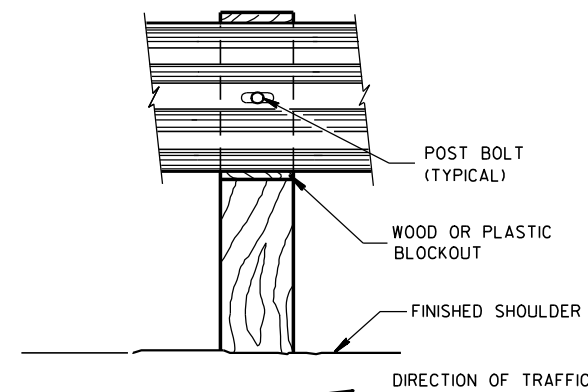
FRONT VIEW

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

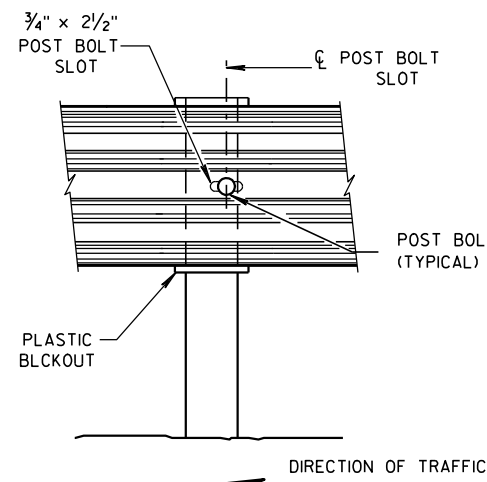


FRONT VIEW

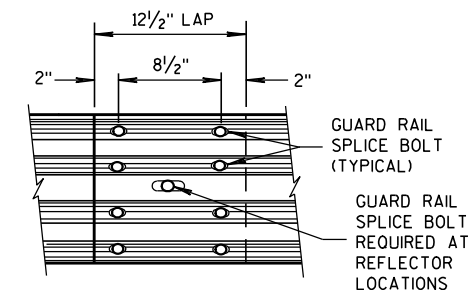
## QUARTER POST SPACING (QS)



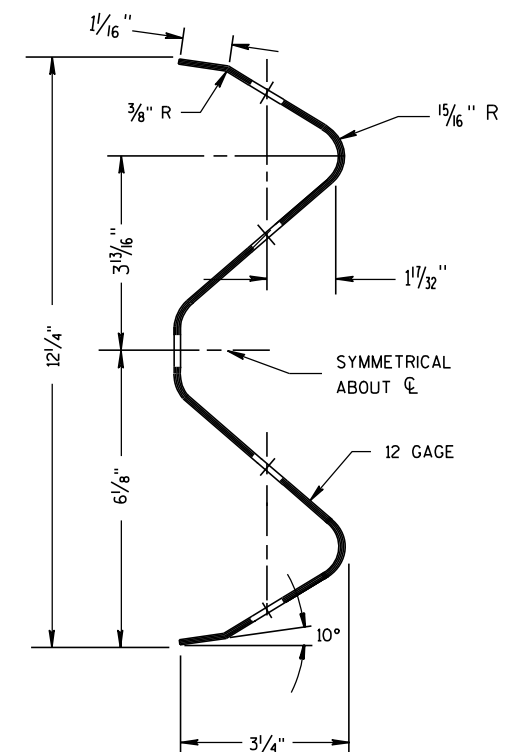
FRONT VIEW AT WOOD POST



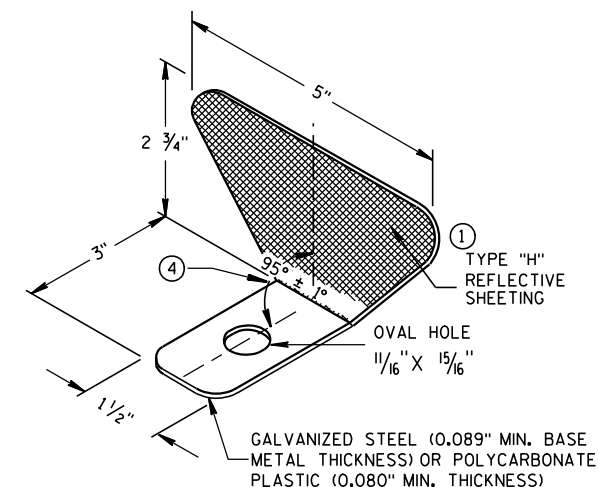
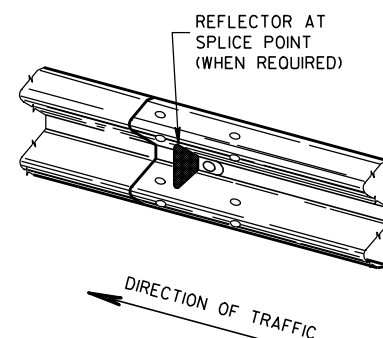
FRONT VIEW AT STEEL POST



FRONT VIEW  
MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL



## ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

## GENERAL NOTES

- ① PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.
- ② DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
- ③ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
- ④ PROVIDE AN ANGLE OF BEND OF  $90^\circ \pm 1^\circ$  FOR TWO-SIDED REFLECTORS.
- ⑤ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A  $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES  $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND  $\frac{5}{8}$ " DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

GUARD RAIL SPLICE BOLTS ARE A  $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES  $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

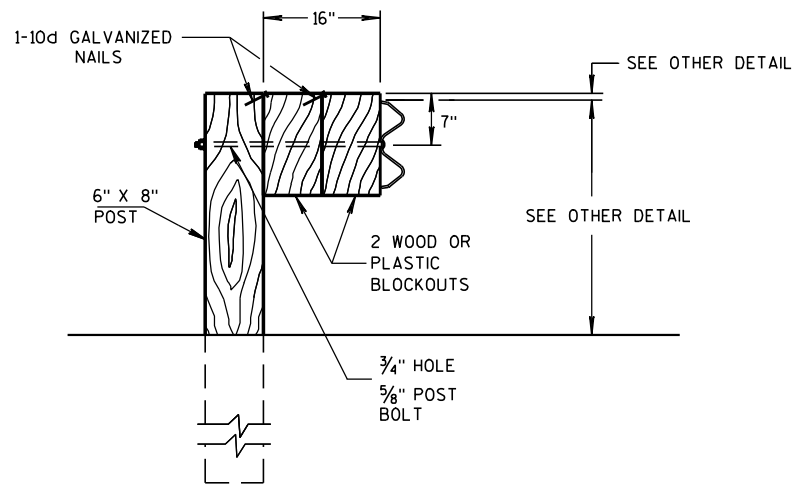
## REFLECTOR SPACING

|                 | BEAM GUARD LENGTH | REFLECTOR SPACING | NO. SURFACES REFLECTORIZED | MIN. NO. REFLECTORS |
|-----------------|-------------------|-------------------|----------------------------|---------------------|
| ONE WAY TRAFFIC | < 200'            | 50' C-C           | 1                          | 3                   |
|                 | > 200'            | 100' C-C          | 1                          |                     |
| TWO WAY TRAFFIC | < 200'            | 25' C-C           | 1 ③                        | 6                   |
|                 | > 200'            | 50' C-C           | 1                          |                     |
| TWO WAY TRAFFIC | < 200'            | 50' C-C           | 2 ④                        | 3                   |
|                 | > 200'            | 100' C-C          | 2                          |                     |

## MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

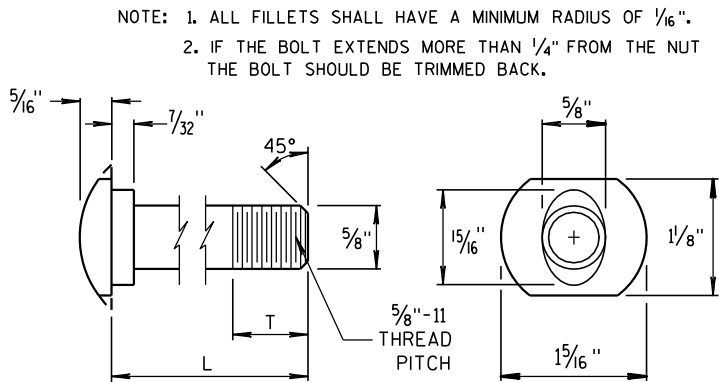
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



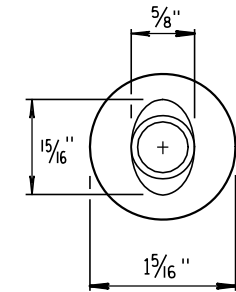


### DETAIL FOR 16" BLOCKOUT DEPTH

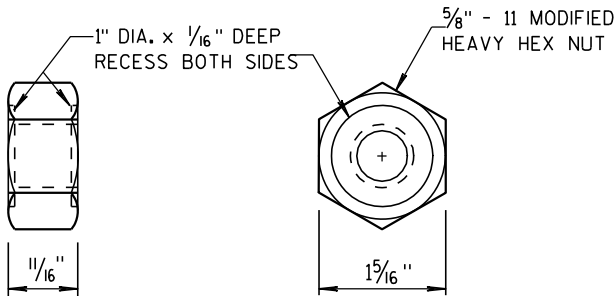
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



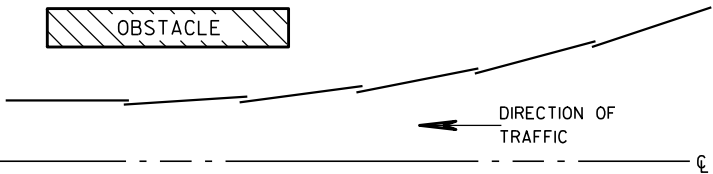
POST BOLT TABLE



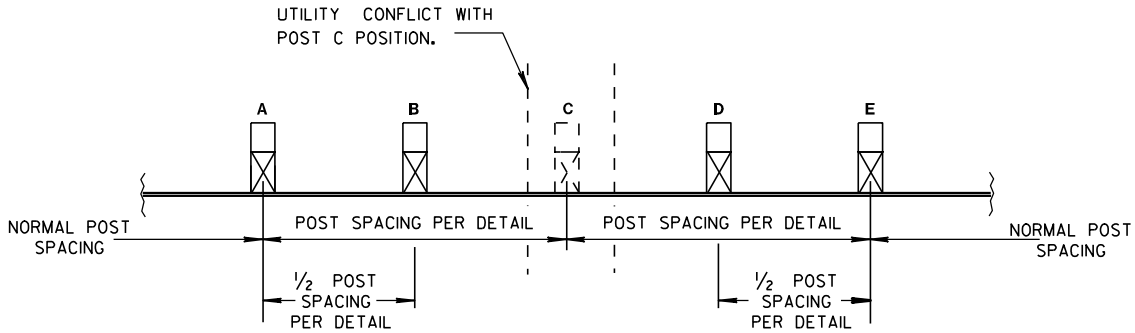
ALTERNATE BOLT HEAD



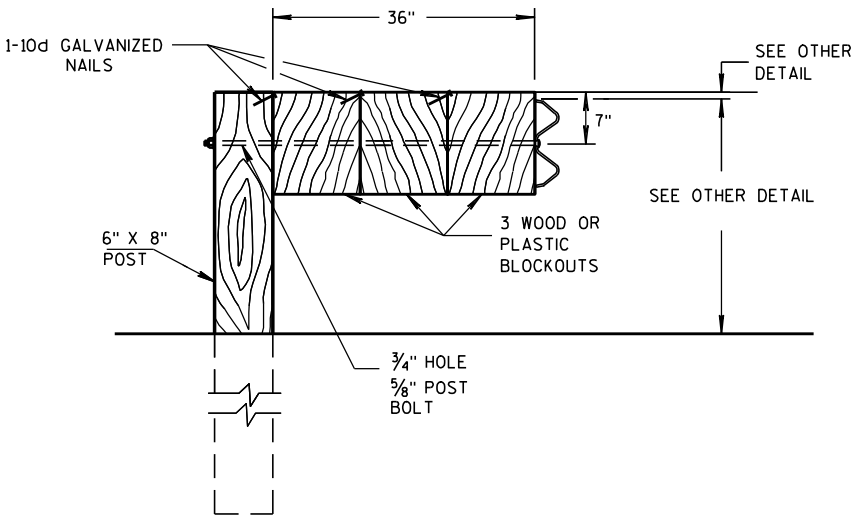
POST BOLT AND RECESS NUT



PLAN VIEW  
BEAM LAPPING DETAIL



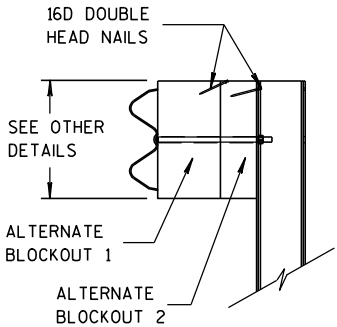
POST DRIVING FOR CONTINUOUS  
UNDERGROUND OBSTRUCTION



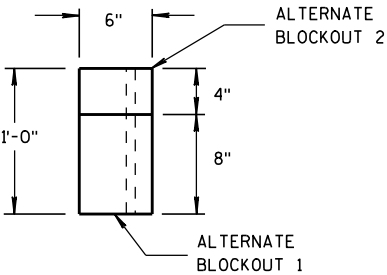
### DETAIL FOR 36" BLOCKOUT DEPTH

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

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



SIDE VIEW



TOP VIEW

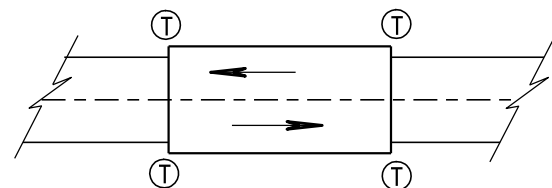
ALTERNATE WOOD  
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM  
(MGS) GUARDRAIL

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

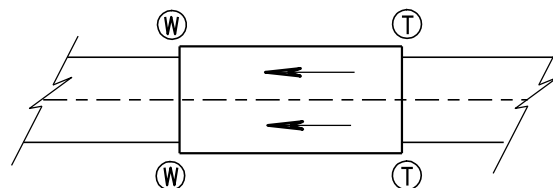
APPROVED  
DATE 11/15/2011  
FHW

15/ Jerry H. 3000  
ROADWAY STANDARDS 41  
ENGINEER ENT



TWO WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION



ONE WAY TRAFFIC

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

## GENERAL NOTES

BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3".

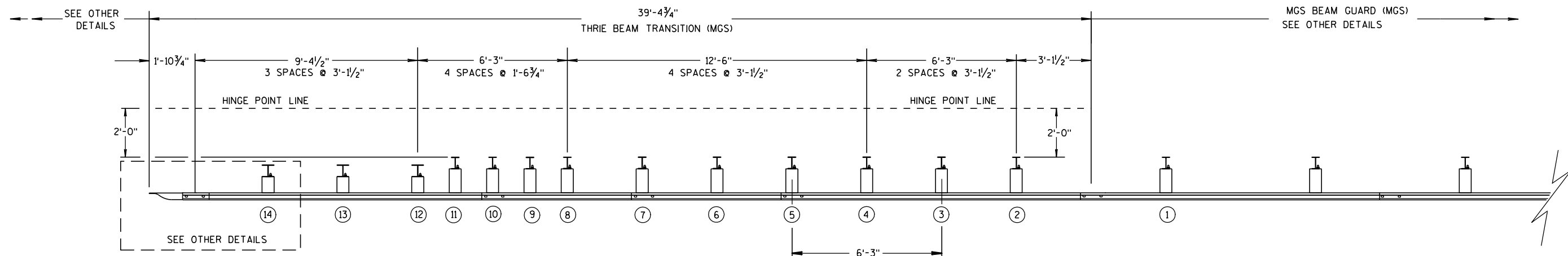
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

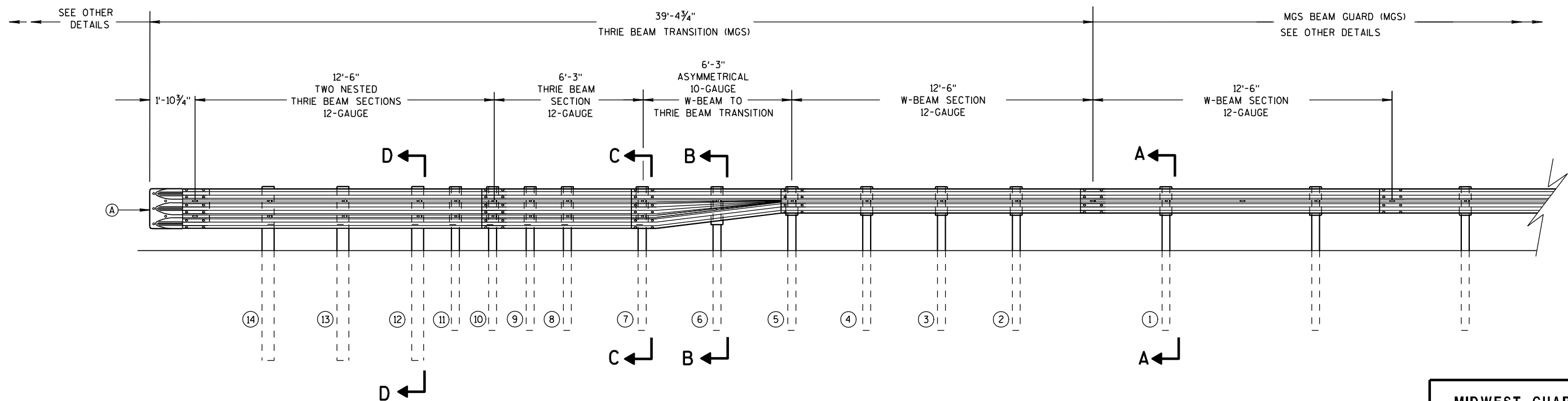
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

Ⓐ BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

## TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE



PLAN VIEW



ELEVATION VIEW

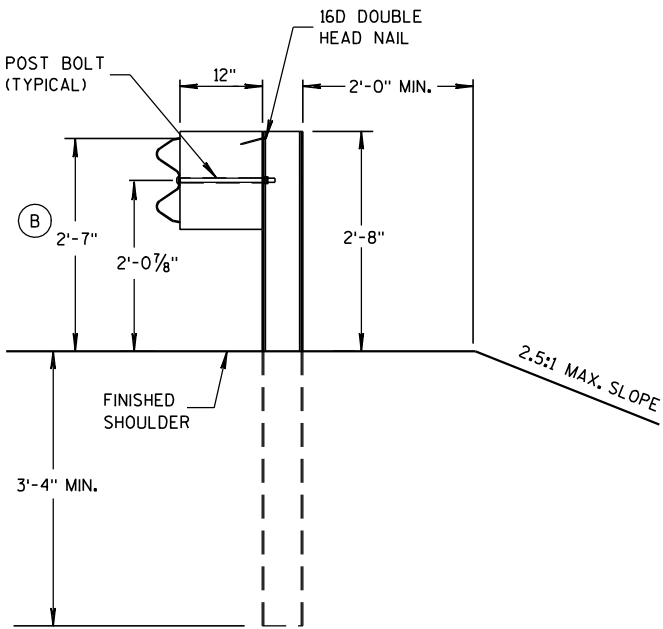
## MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)

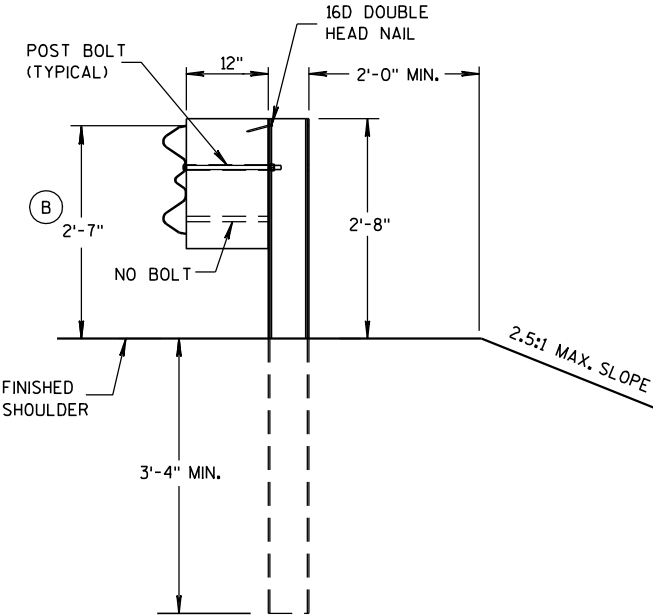
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

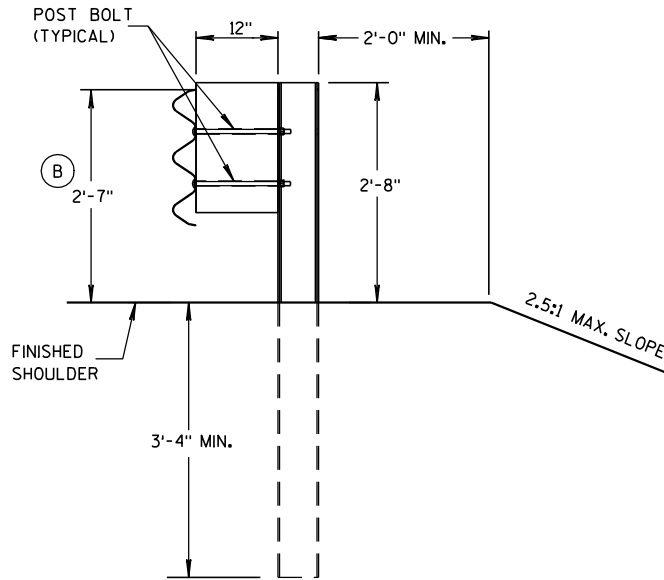
(B) TOLERANCE FOR TOP OF W-BEAM RAIL IS  $\pm 1"$ .



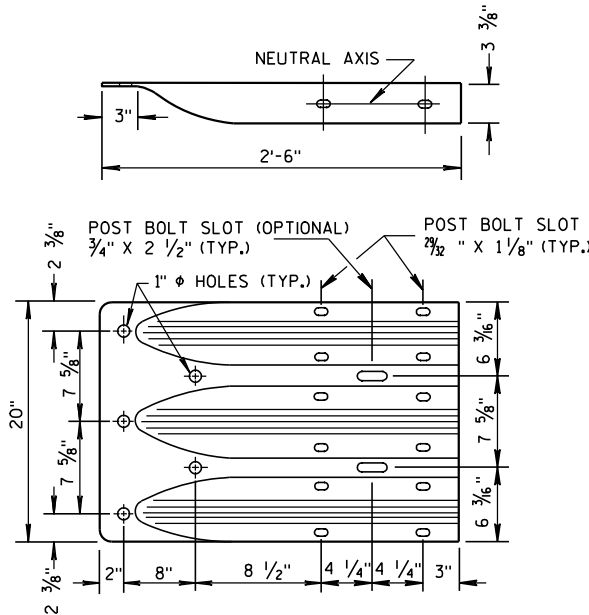
SECTION A-A  
POSTS 1-5



SECTION B-B  
POST 6



SECTION C-C  
POSTS 7-11



THRIE BEAM  
TERMINAL CONNECTOR

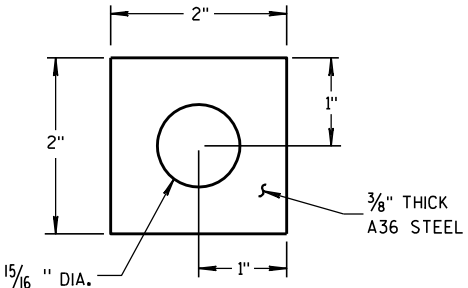
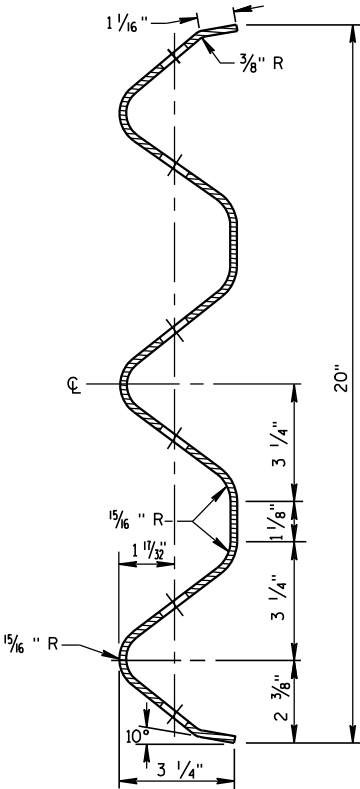
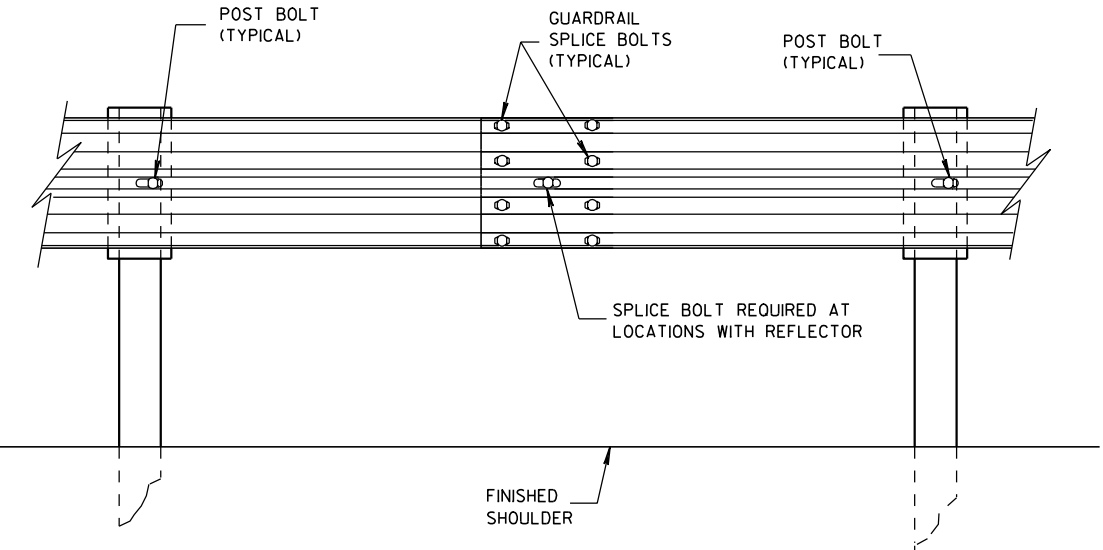


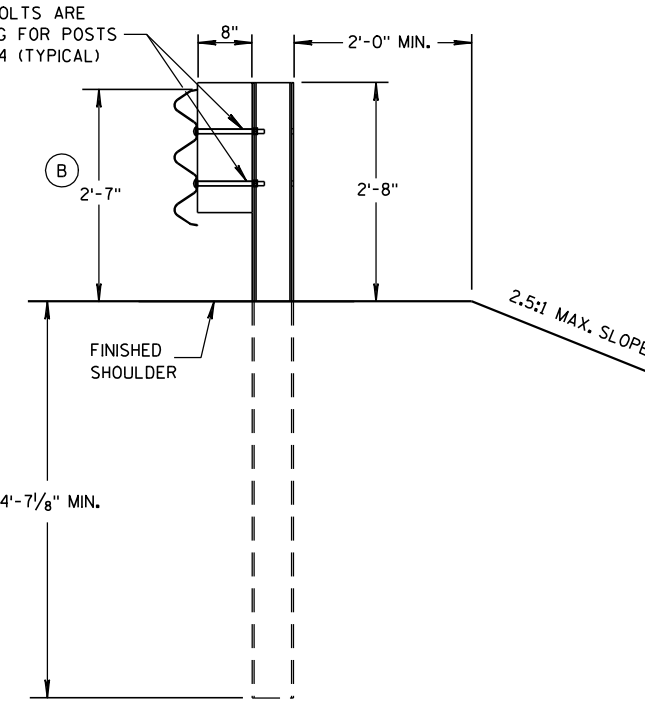
PLATE WASHER DETAIL



SECTION THRU THRIE  
BEAM RAIL ELEMENT



SPLICE DETAIL

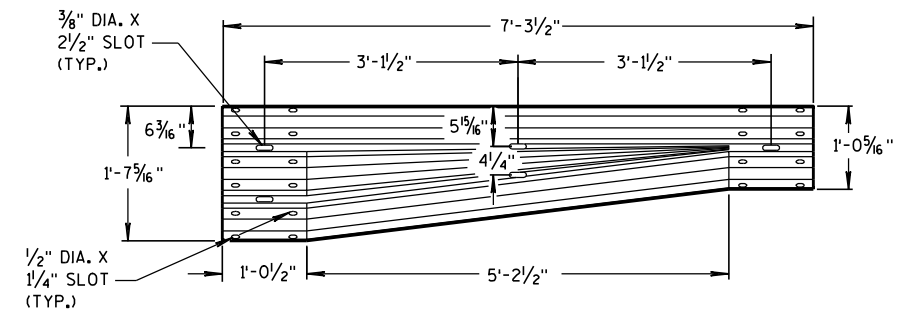


SECTION D-D  
POSTS 12-14

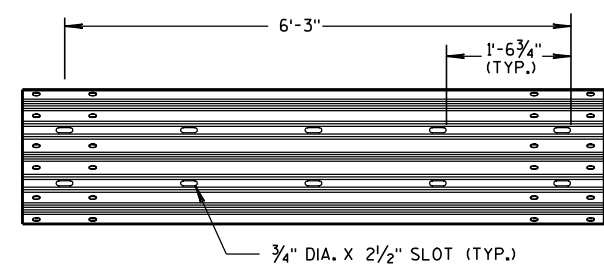
MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

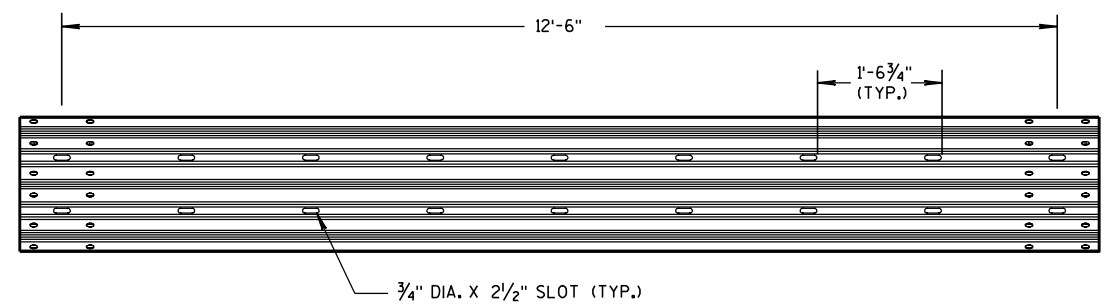




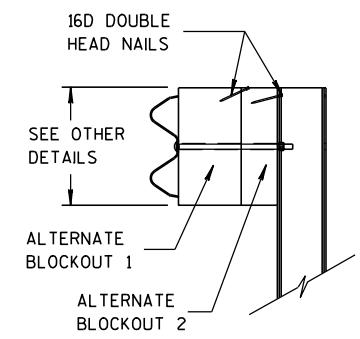
W-BEAM TO THRIE BEAM TRANSITION SECTION



6'-3" THRIE BEAM SECTION

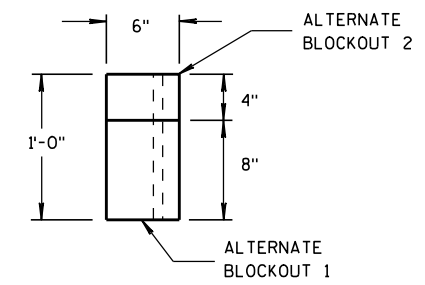


12'-6" THRIE BEAM SECTION

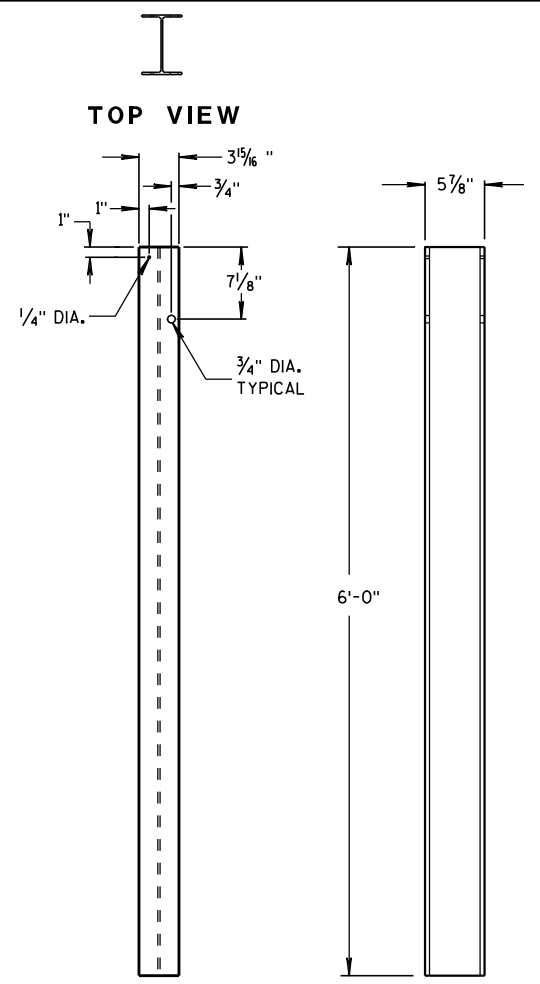


SIDE VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



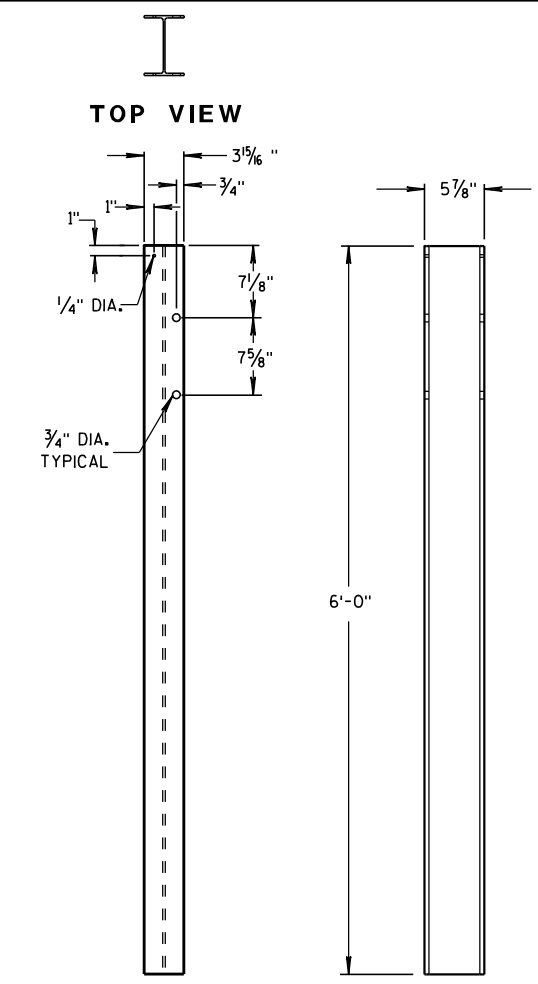
TOP VIEW



FRONT VIEW

SIDE VIEW

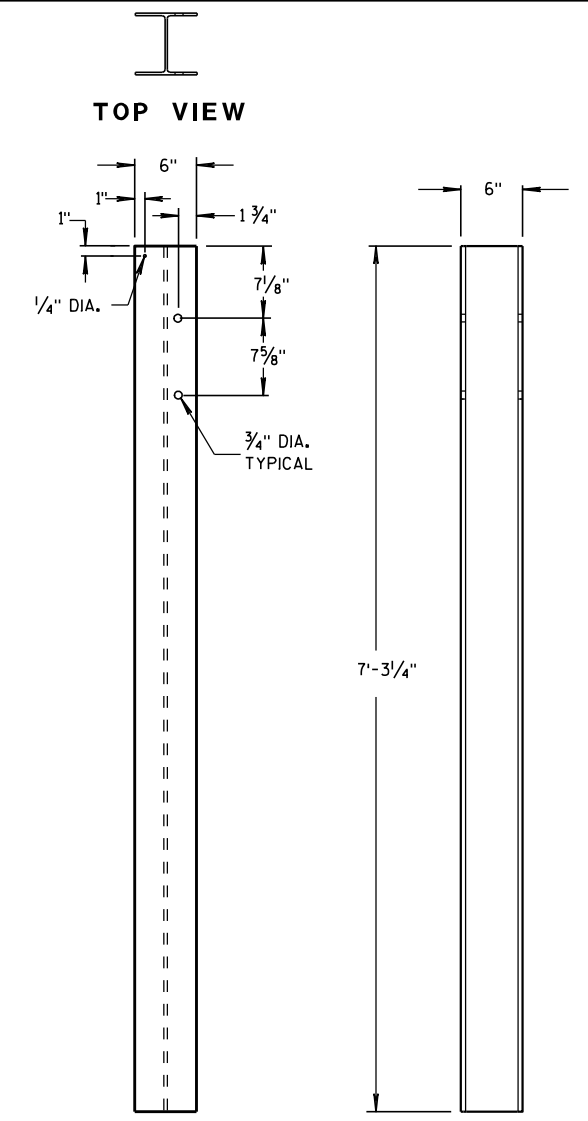
STEEL POSTS 1-5



FRONT VIEW

SIDE VIEW

STEEL POSTS 6-11

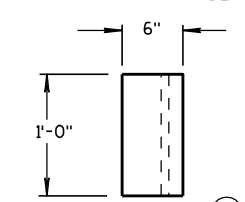


FRONT VIEW

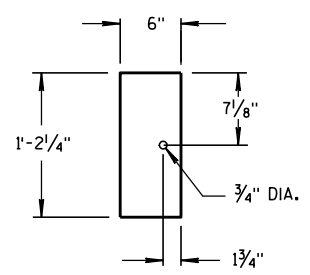
SIDE VIEW

STEEL POSTS 12-14

① WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

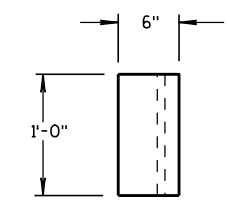


TOP VIEW

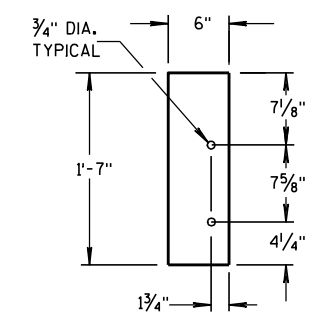


FRONT VIEW

BLOCKOUT POSTS 1-5

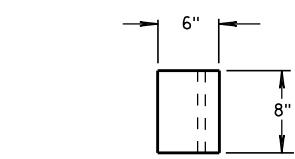


TOP VIEW

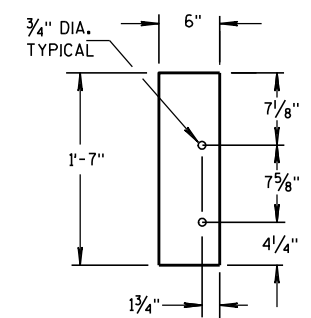


FRONT VIEW

BLOCKOUT POSTS 6-11



TOP VIEW



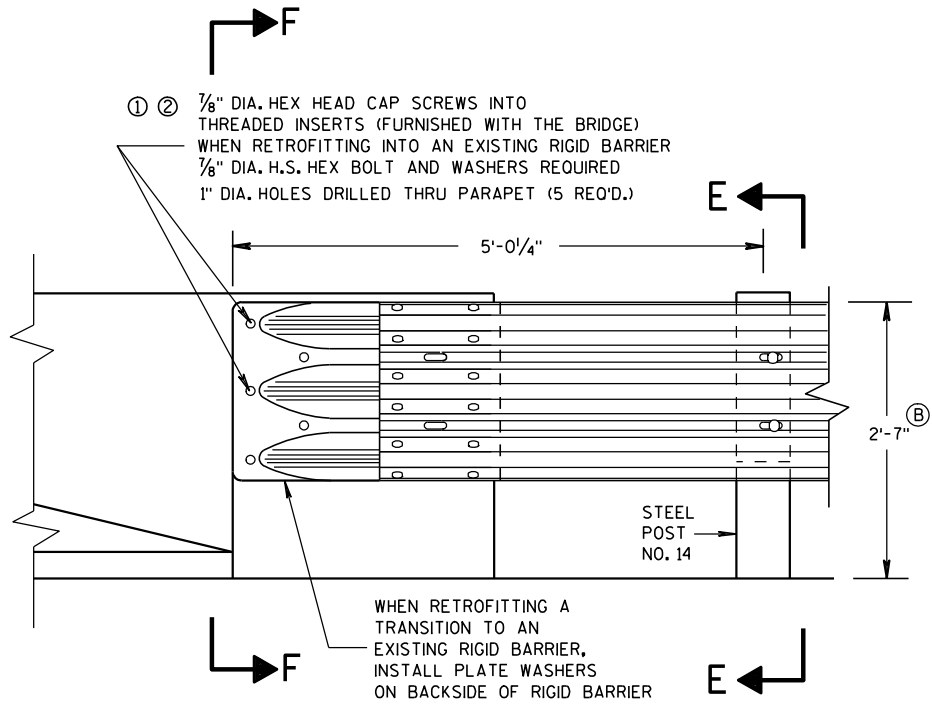
FRONT VIEW

BLOCKOUT POSTS 12-14

STEEL POST SIZES

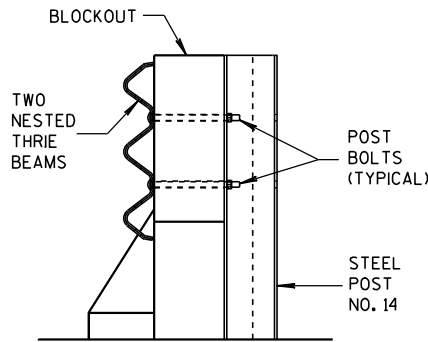
| POST NUMBER | SECTION TYPE | LENGTH  |
|-------------|--------------|---------|
| ①           | W6x9         | 72"     |
| ②           | W6x9         | 72"     |
| ③           | W6x9         | 72"     |
| ④           | W6x9         | 72"     |
| ⑤           | W6x9         | 72"     |
| ⑥           | W6x9         | 72"     |
| ⑦           | W6x9         | 72"     |
| ⑧           | W6x9         | 72"     |
| ⑨           | W6x9         | 72"     |
| ⑩           | W6x9         | 72"     |
| ⑪           | W6x9         | 72"     |
| ⑫           | W6x15        | 87 1/8" |
| ⑬           | W6x15        | 87 1/8" |
| ⑭           | W6x15        | 87 1/8" |

MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)



FRONT VIEW

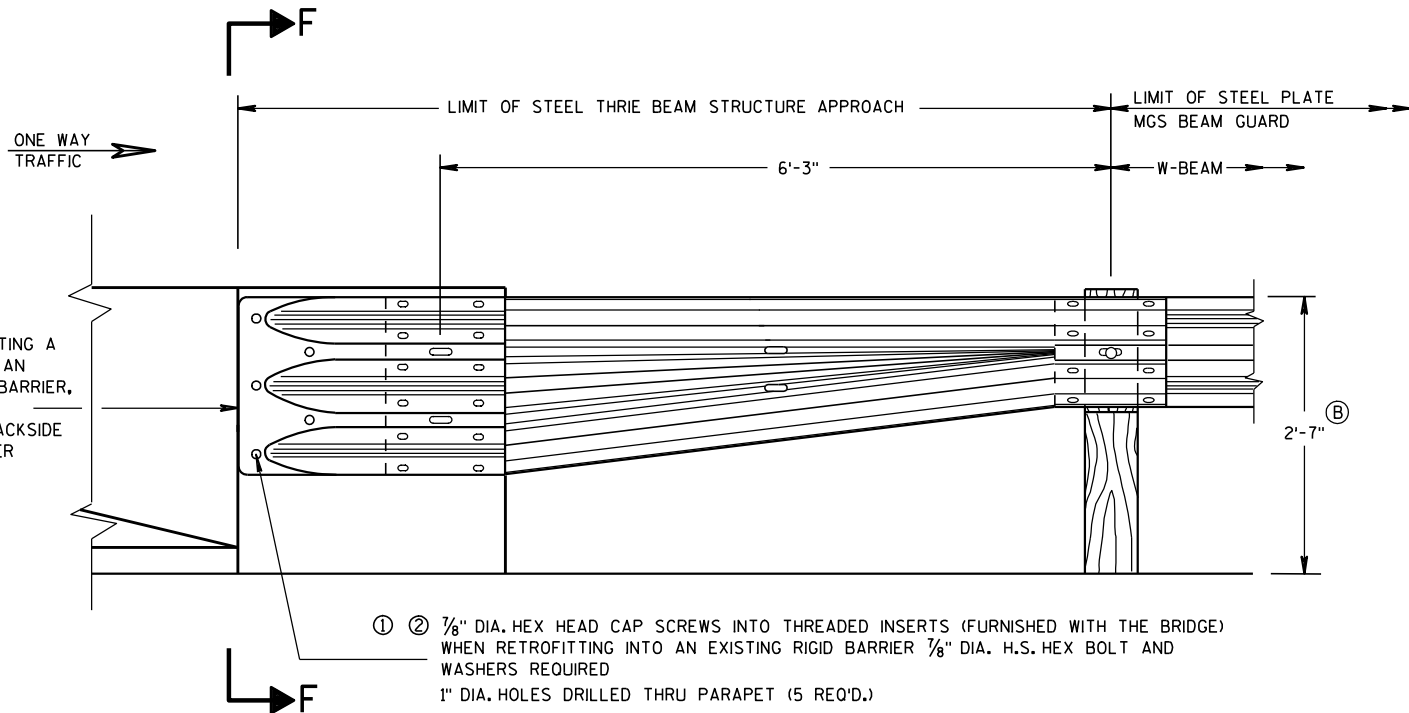
THRIE BEAM CONNECTION TO BRIDGE  
PARAPET WITH SQUARE ENDS



SECTION E-E

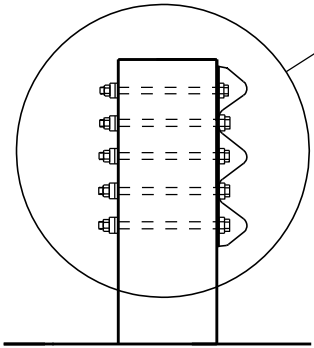
GENERAL NOTES

- THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.
- ① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
  - ② BOLTS MAY BE A325 BOLTS OR A449 BOLTS, BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
  - ③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".
- ② TOLERANCE FOR TOP OF BEAM IS ± 1".

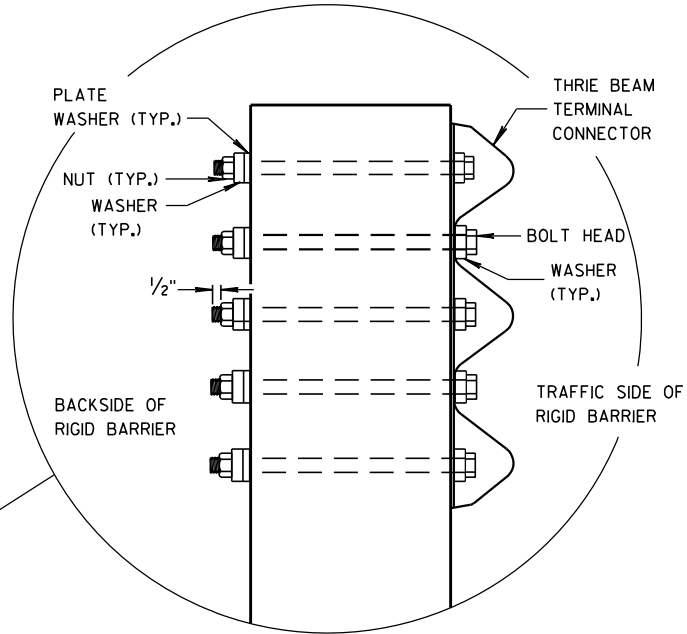


FRONT VIEW

W BEAM TRANSITION AND CONNECTION TO  
BRIDGE PARAPETS WITH SQUARE ENDS  
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)



SECTION F-F

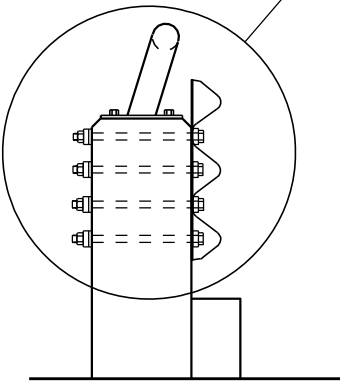
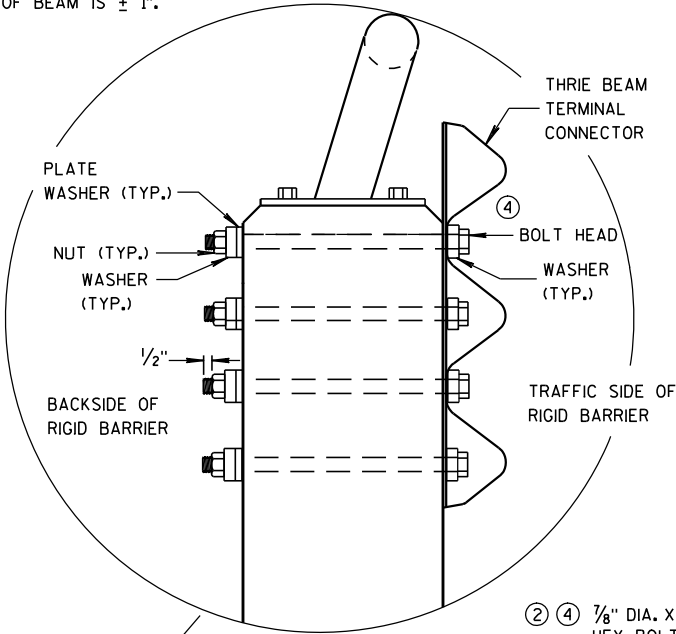


|                                                         |                                                         |     |
|---------------------------------------------------------|---------------------------------------------------------|-----|
| MIDWEST GUARDRAIL SYSTEM<br>THRIE BEAM TRANSITION (MGS) |                                                         |     |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION      |                                                         |     |
| APPROVED<br>8/31/2012<br>DATE                           | /S/ Jerry H. Zapp<br>ROADWAY STANDARDS (45)<br>ENGINEER | ENT |
| FHWA                                                    |                                                         |     |

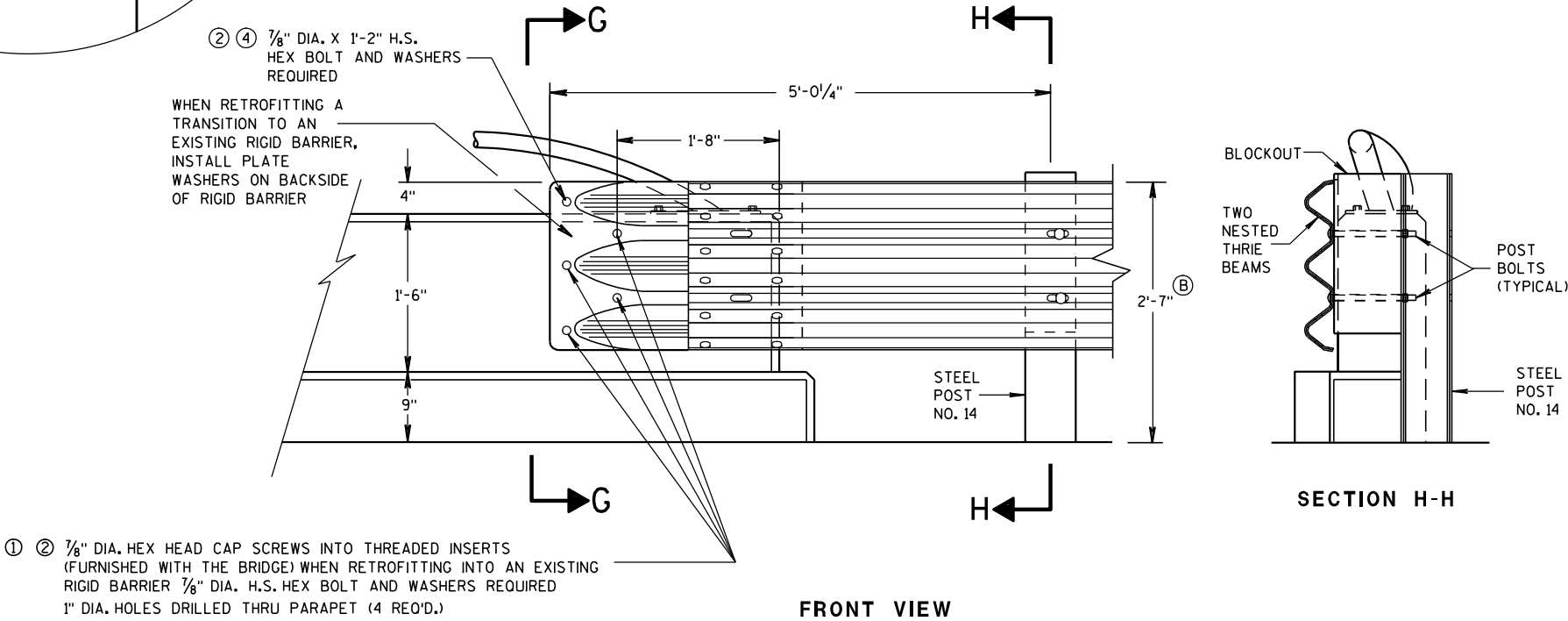
GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSITION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

- ① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X  $\frac{5}{8}$ " THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3  $\frac{1}{2}$ ". BLOCK IS INCIDENTAL TO THE CONTRACT.
- ④ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.
- ⑤ TOLERANCE FOR TOP OF BEAM IS  $\pm 1"$ .



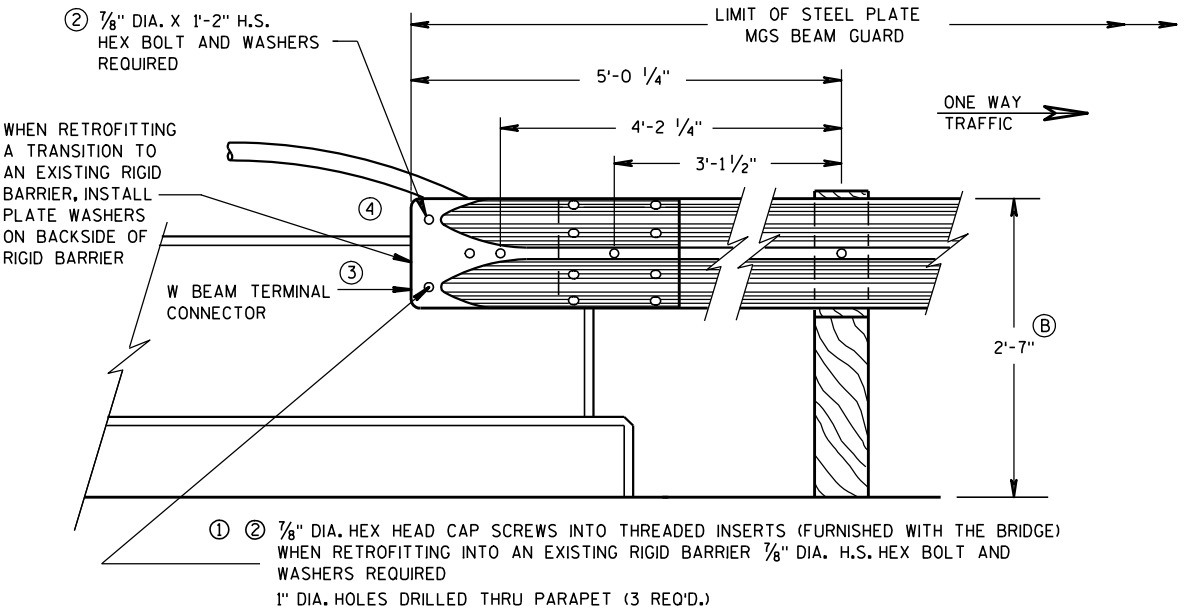
SECTION G-G



FRONT VIEW

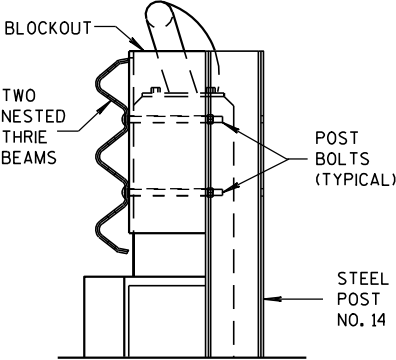
THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

- ① ②  $\frac{7}{8}$ " DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER  $\frac{7}{8}$ " DIA. H.S. HEX BOLT AND WASHERS REQUIRED 1" DIA. HOLES DRILLED THRU PARAPET (4 REQ'D.)



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET  
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)



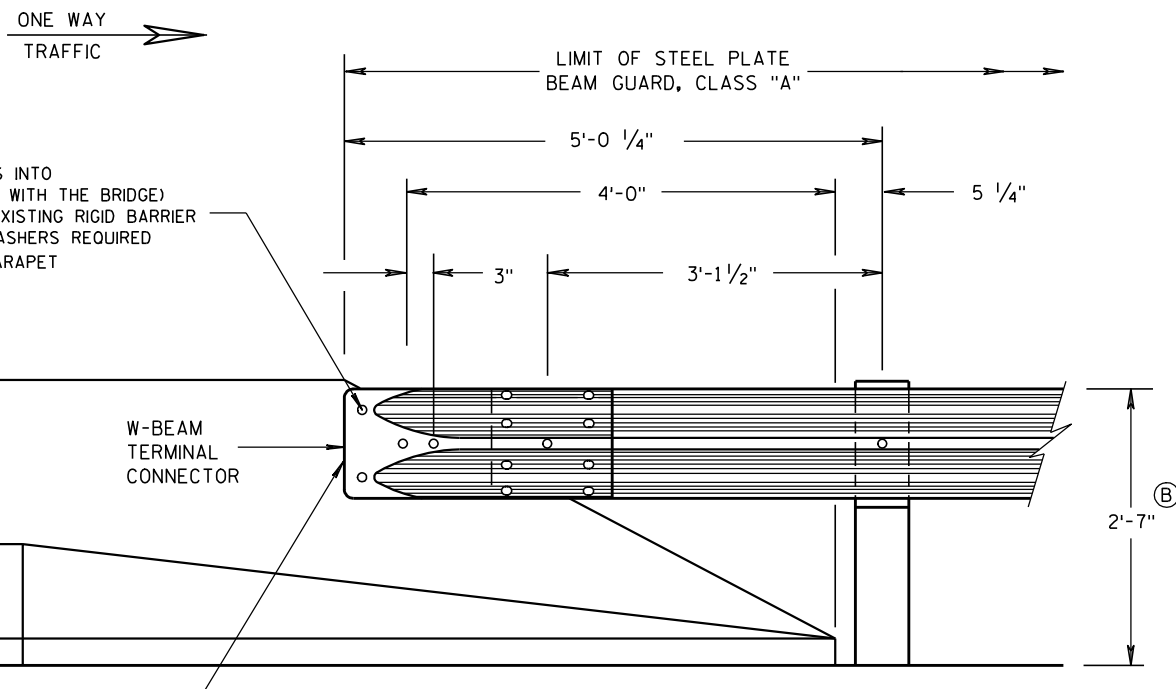
SECTION H-H

MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
8-31-2012 /S/ Jerry H. Zogg  
DATE ROADWAY STANDARDS 146 ENT  
FHWA ENGINEER





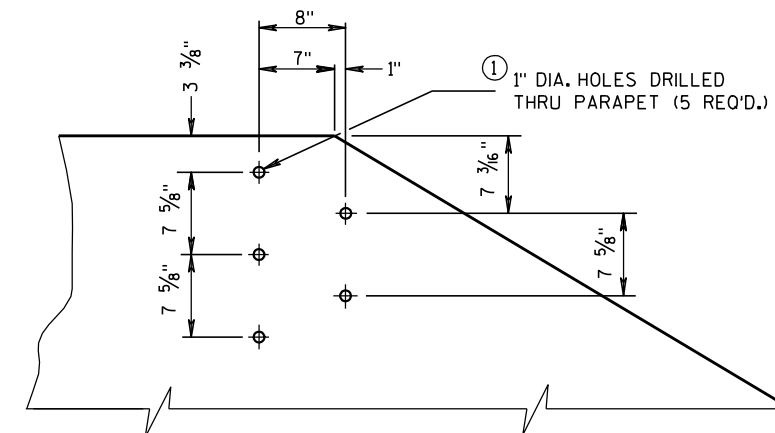
FRONT VIEW

### W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

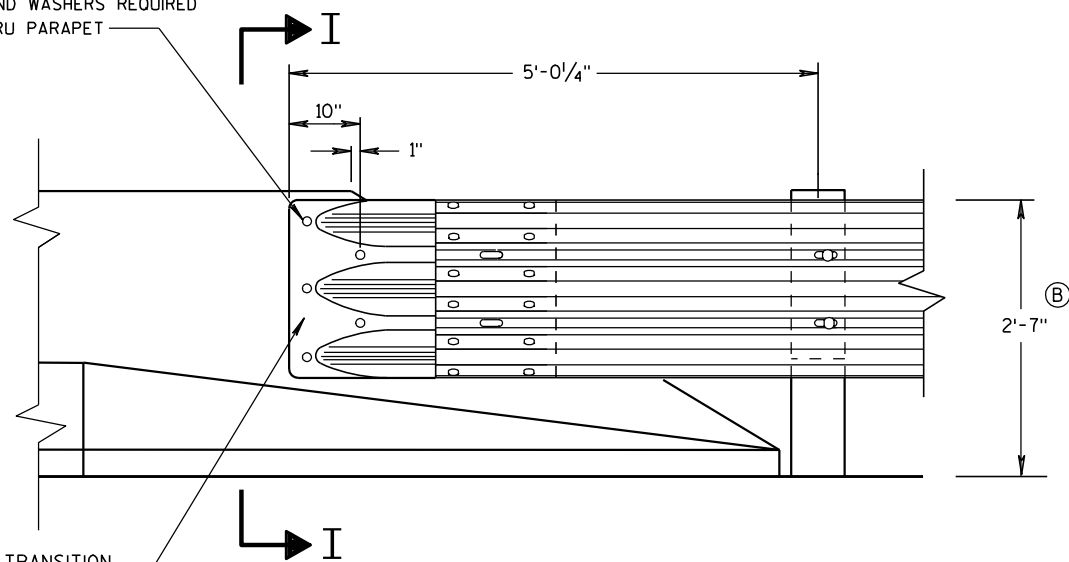
### GENERAL NOTES

- ① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ③ TOLERANCE FOR TOP OF BEAM IS  $\pm 1"$ .



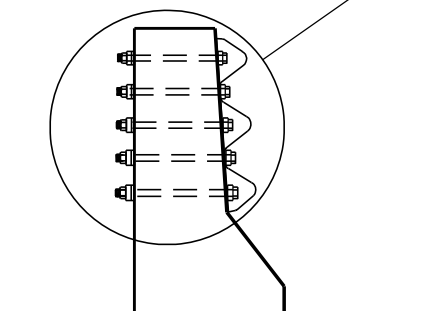
### DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION

- ① ② 1/8" DIA. HEX HEAD CAP SCREWS INTO  
THREADED INSERTS (FURNISHED WITH THE BRIDGE)  
WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER  
1/8" DIA. H.S. HEX BOLT AND WASHERS REQUIRED  
1" DIA. HOLES DRILLED THRU PARAPET  
(5 REQ'D.)

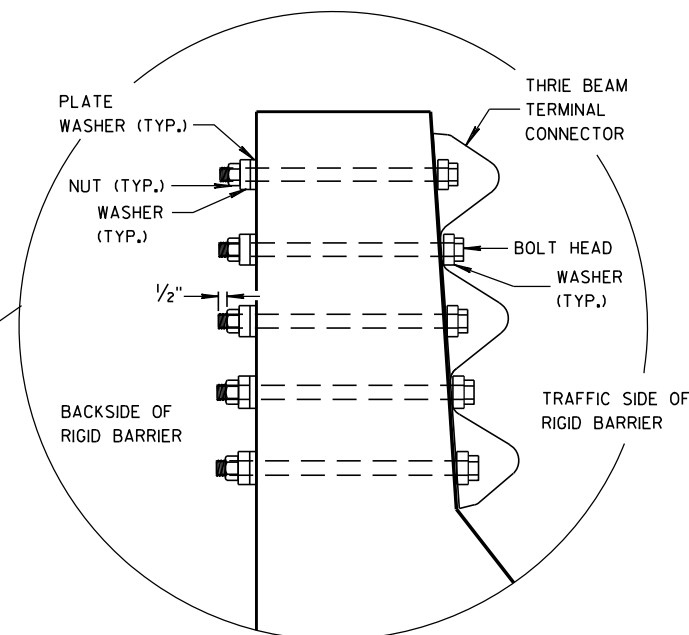


FRONT VIEW

### THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS



SECTION I-I



MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012

DATE

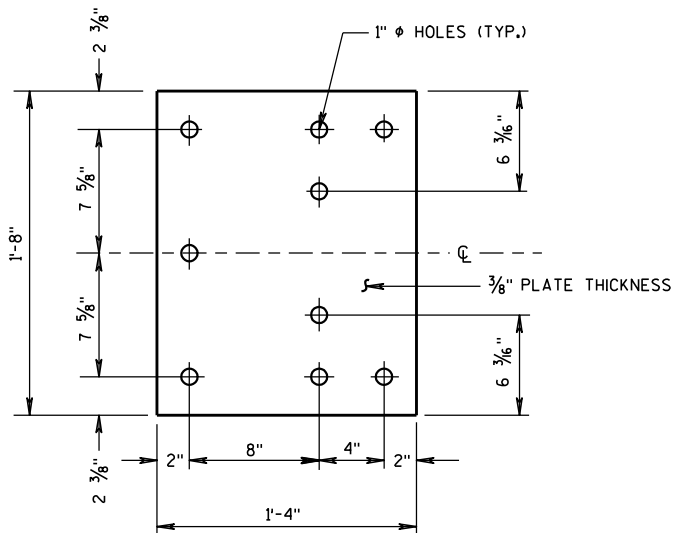
FHWA

/S/ Jerry H. Zopp

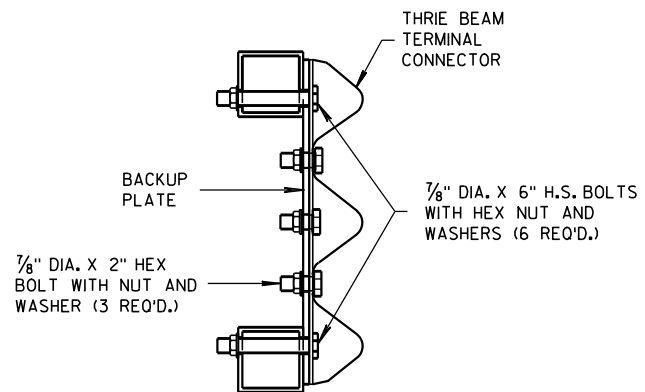
ROADWAY STANDARDS 47

ENGINEER

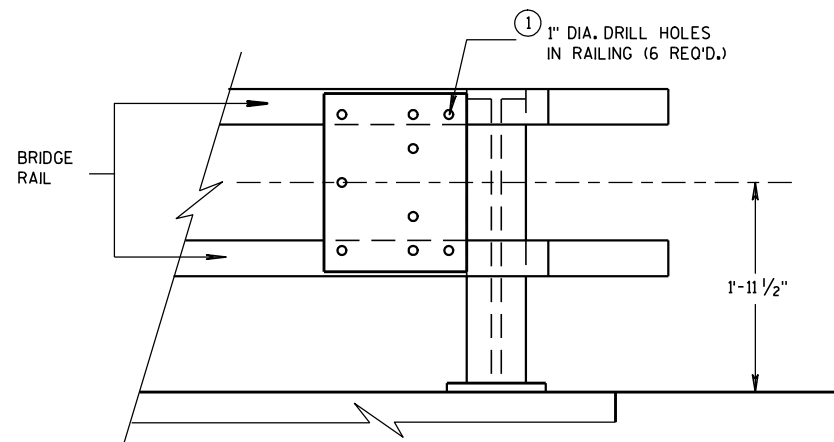
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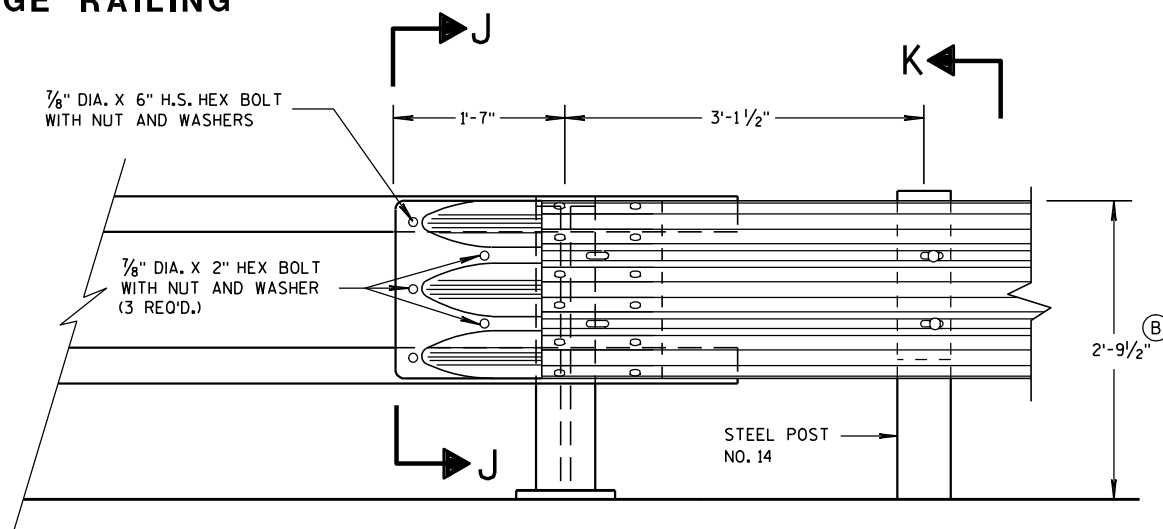
BACK-UP PLATE DETAIL



SECTION J-J

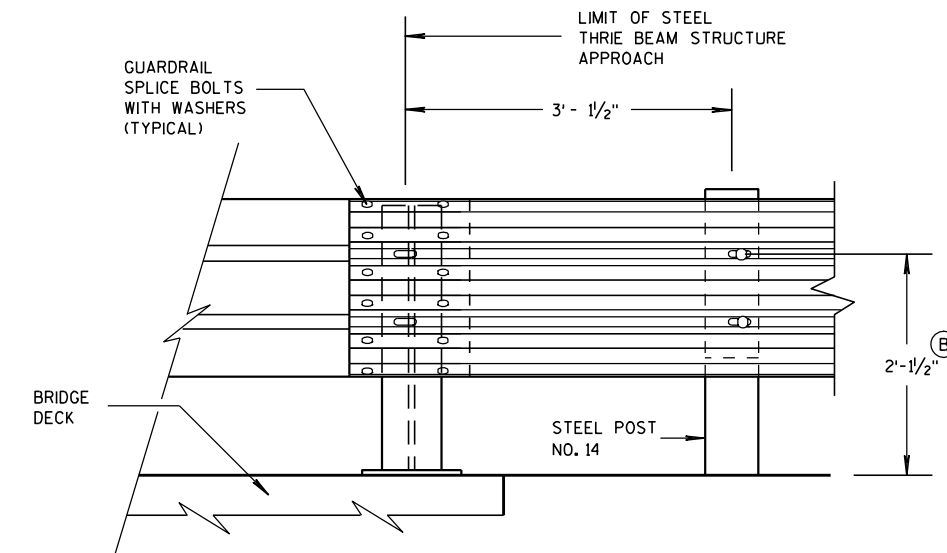


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



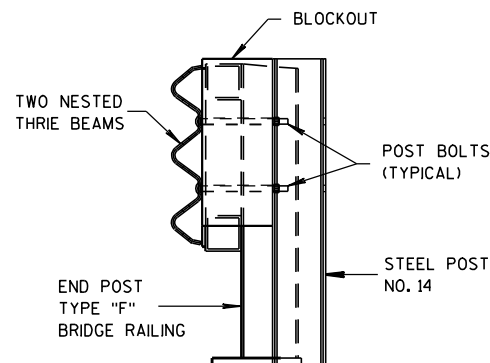
FRONT VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"



FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



SECTION K-K

## GENERAL NOTES

- ① DRILLING HOLES THROUGH THE PAPER, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ② TOLERANCE FOR TOP OF BEAM IS  $\pm 1"$ .

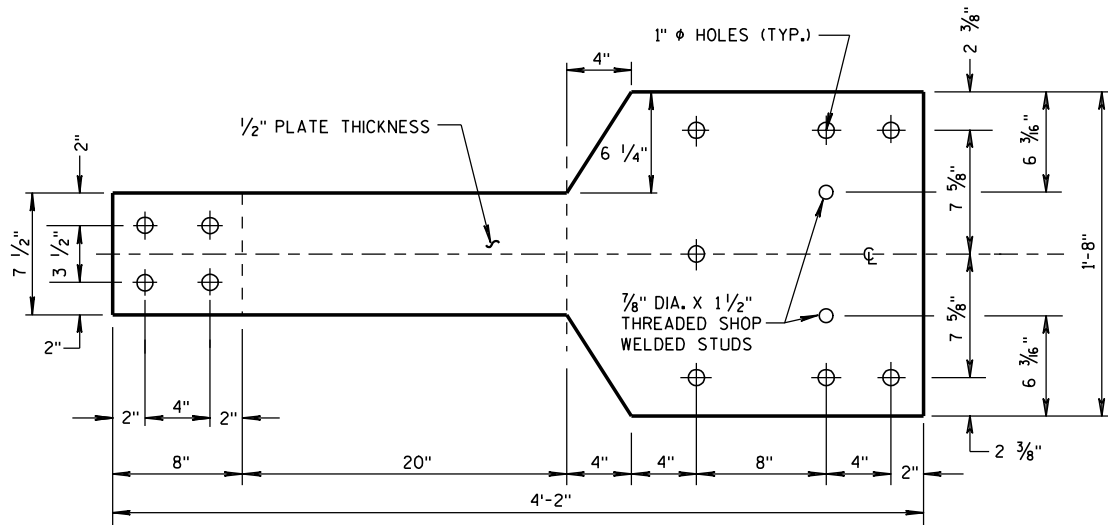
MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

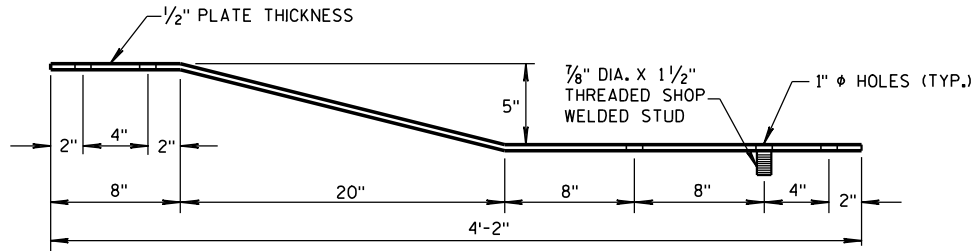
APPROVED  
8/31/2012 DATE /S/ Jerry H. Zeng  
ROADWAY STANDARDS [48] ENGINEER  
FHWA

GENERAL NOTES

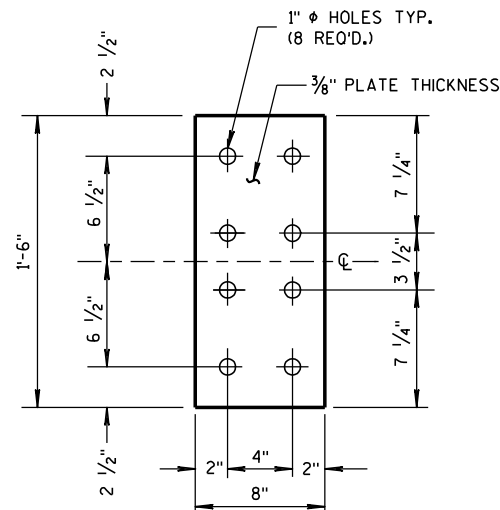
(B) TOLERANCE FOR TOP OF W-BEAM RAIL IS  $\pm 1"$ .



FRONT VIEW

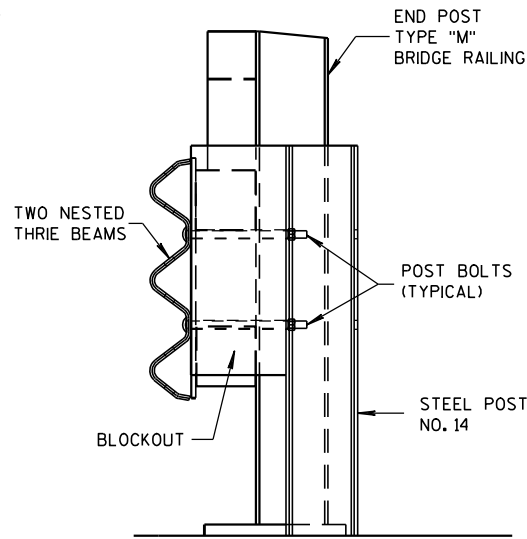


PLAN VIEW  
BACK-UP PLATE DETAIL, TYPE "M"

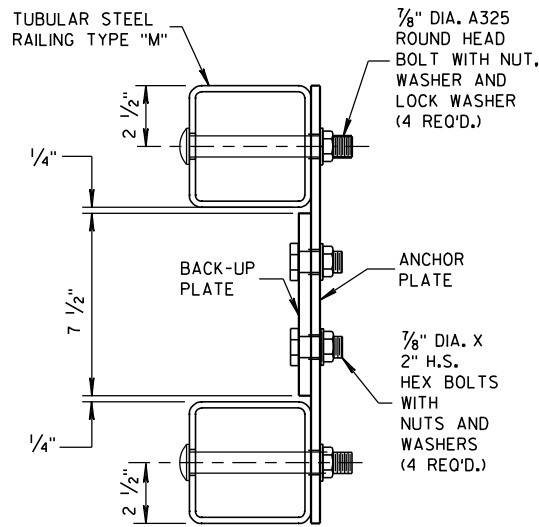


FRONT VIEW

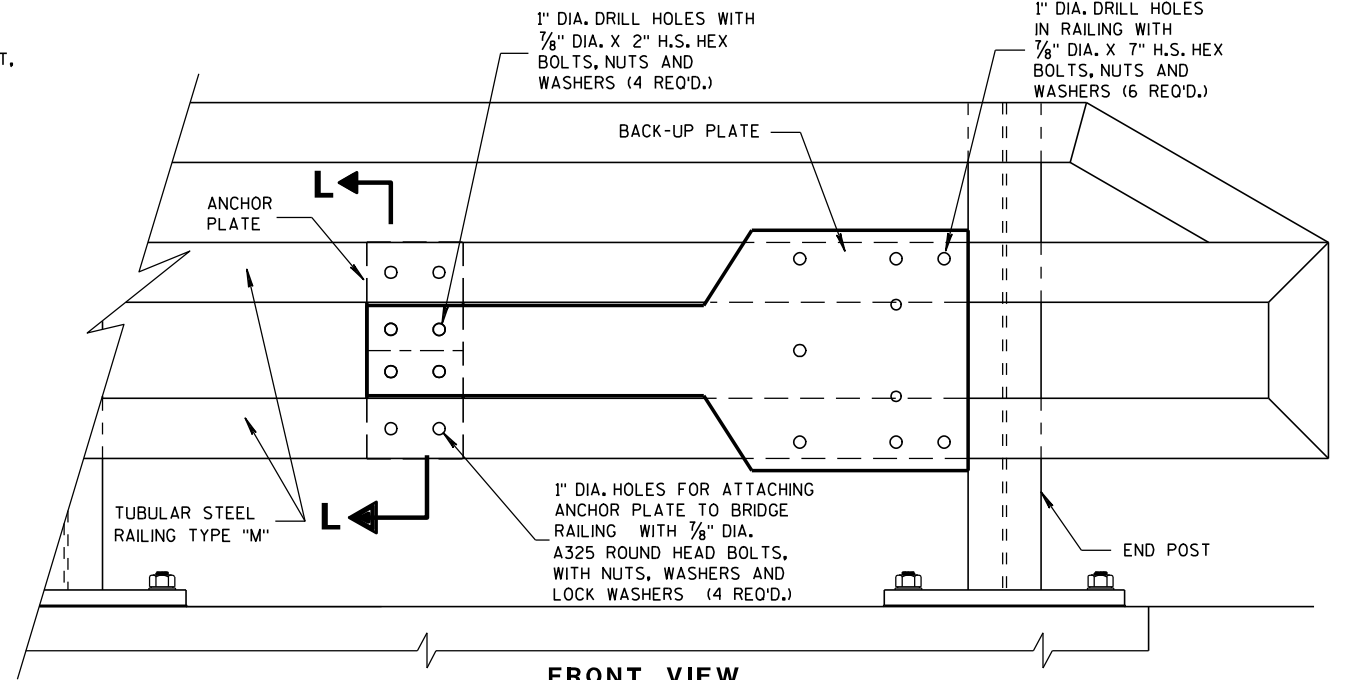
ANCHOR  
PLATE DETAIL,  
TYPE "M"



SECTION M-M

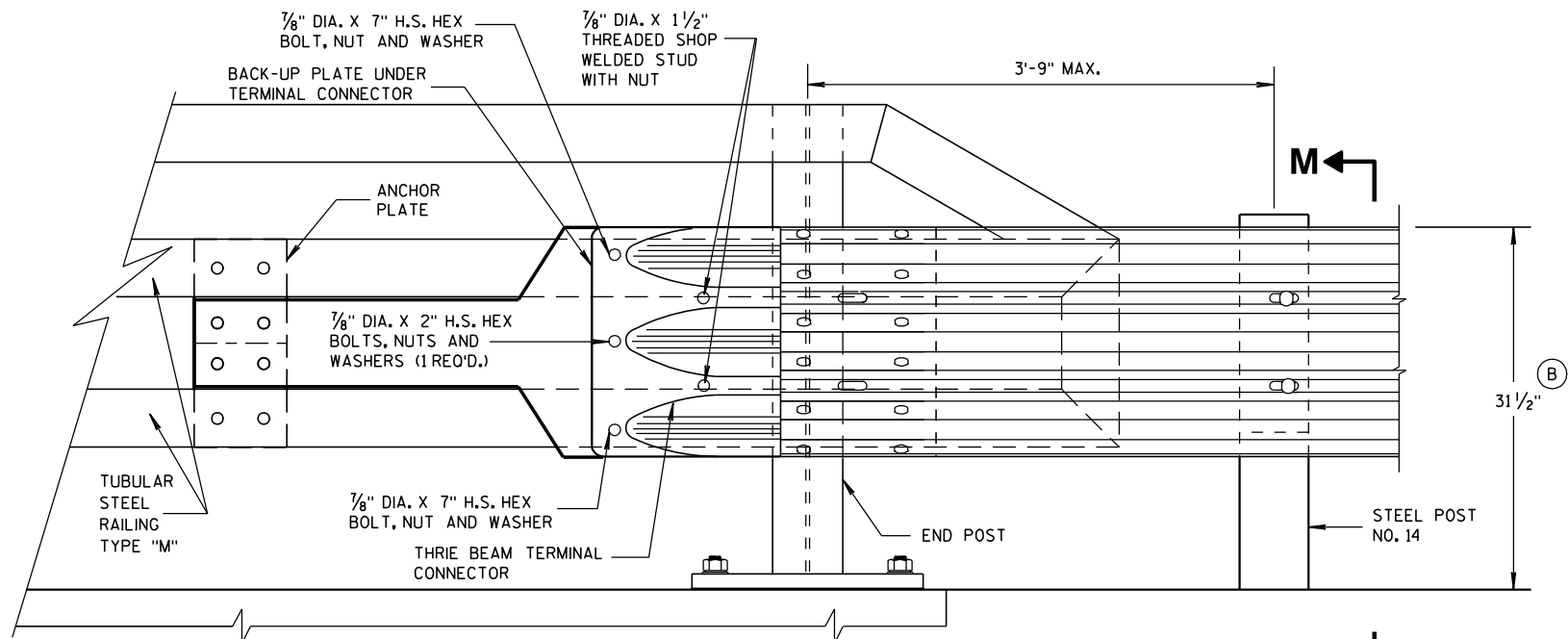


SECTION L-L

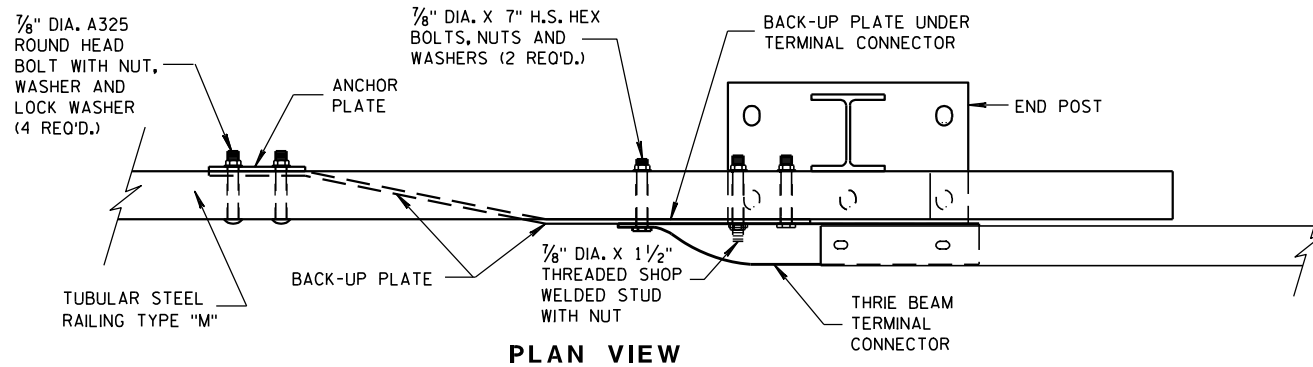


FRONT VIEW

ANCHOR AND BACK-UP PLATE MOUNTING TO BRIDGE RAILING, TYPE "M"



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
8-31-2012 DATE /S/ Jerry H. Zoon  
ROADWAY STANDARDS 49 ENT  
FHWA ENGINEER



## SINGLE SLOPE CONNECTION PLATE

COVER PLATE PANELS ARE  $\frac{3}{16}$ " THICK.

ALL STIFFENERS ARE  $\frac{1}{4}$ " THICK.

CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.

FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

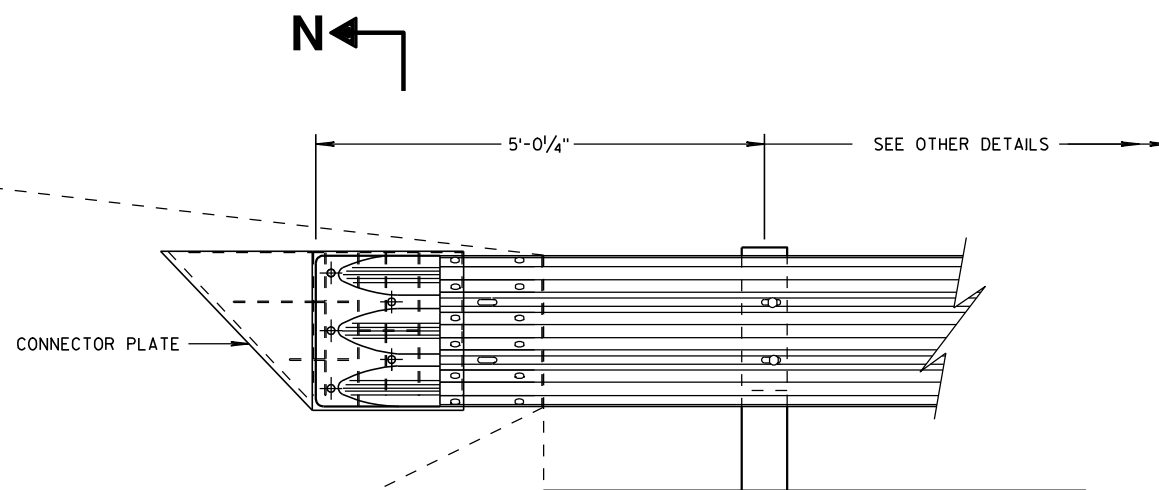
- ① STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:  
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND  $\frac{3}{8}$ " FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.
- ② STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:  
 $\frac{3}{8}$ " FILLET WELD BY 1" LONG SPACED AT 2".

APPROVED

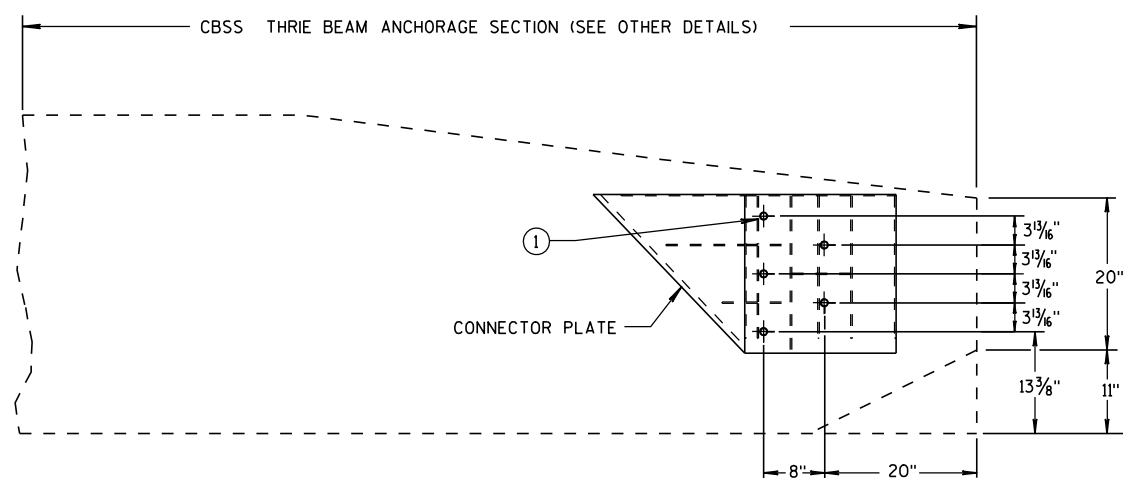
8/31/2012 /S/ Jerry H 7-11  
DATE ROADWAY STANDARDS 50 AMENT  
ENGINEER

FHWA





**THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER**

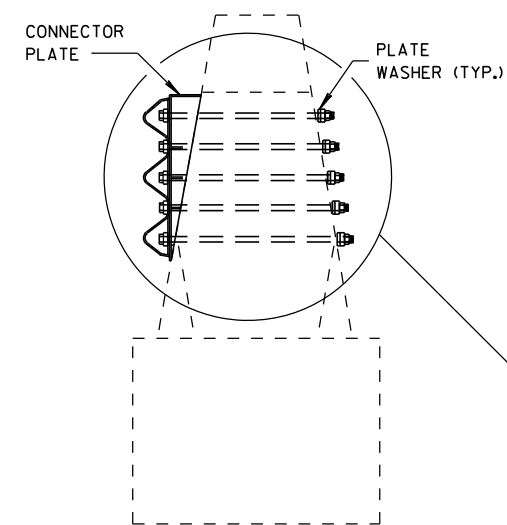


**SINGLE SLOPE CONNECTION PLATE PLACEMENT**

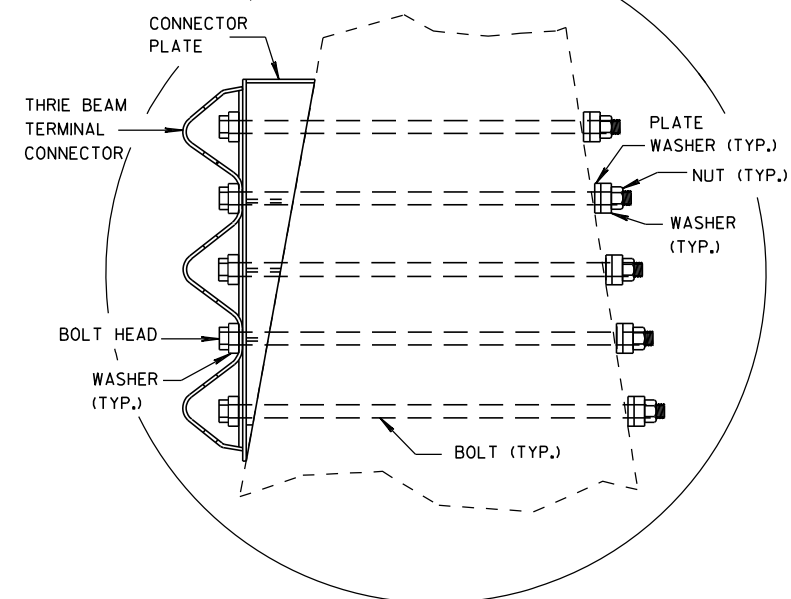
## GENERAL NOTES

CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

- ① BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



**SECTION N-N**



**MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012

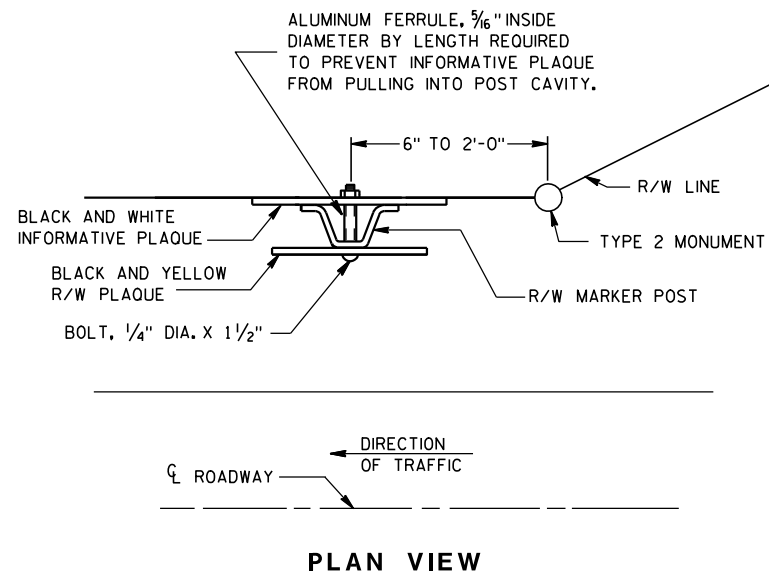
DATE

FHWA

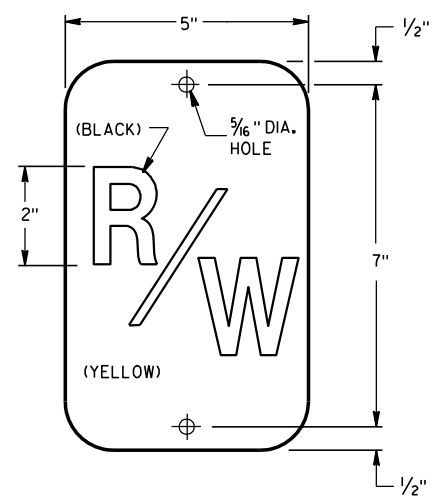
/S/ Jerry H. [Signature]

ROADWAY STANDARDS (51) ENT

ENGINEER

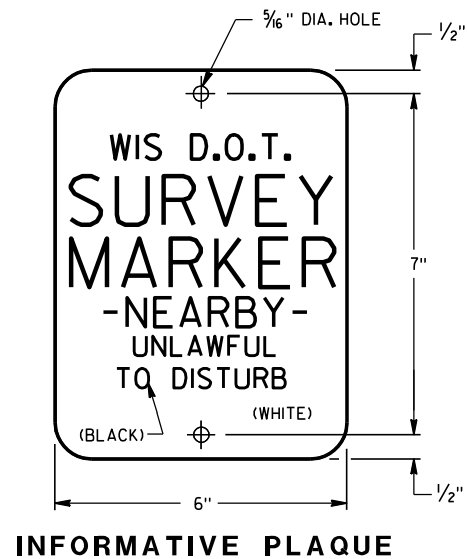


PLAN VIEW



R/W PLAQUE

THE RIGHT-OF-WAY PLAQUE AND INFORMATIVE PLAQUE WILL BE FURNISHED BY THE WISCONSIN DEPARTMENT OF TRANSPORTATION.



INFORMATIVE PLAQUE

## GENERAL NOTES

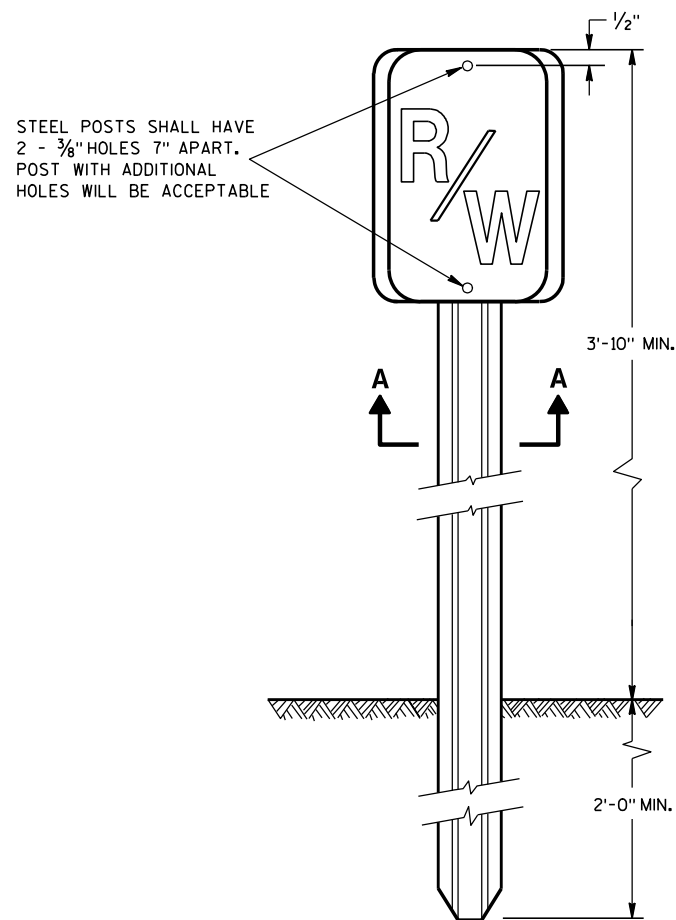
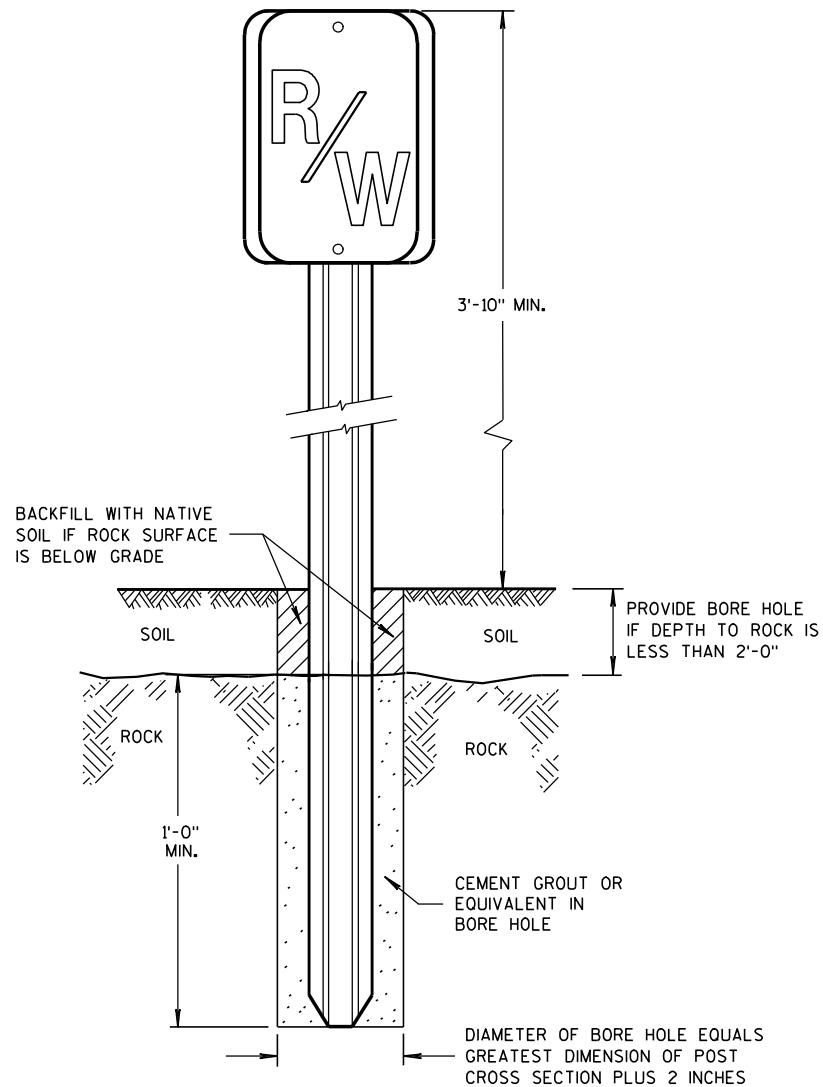
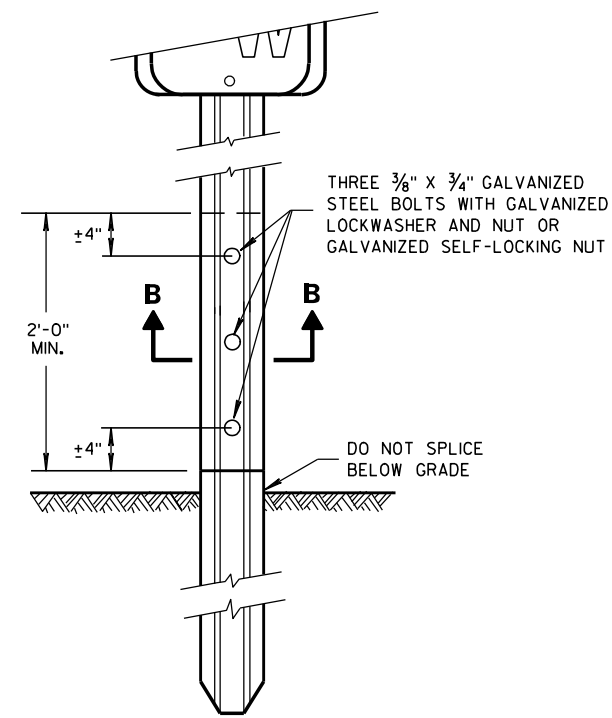
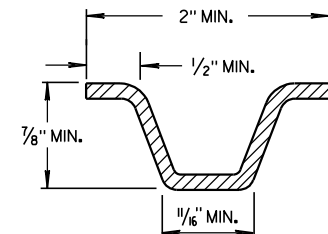
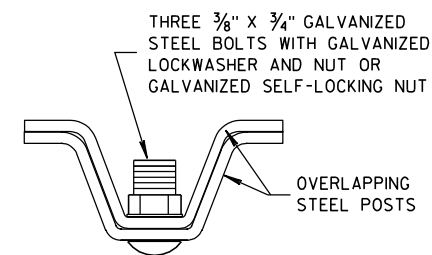
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

A STEEL MARKER POST FOR RIGHT-OF-WAY SHALL BE PLACED IN THE RIGHT-OF-WAY, WITH THE BACK OF THE POST ON THE LONGER RIGHT-OF-WAY TANGENT, 6 INCHES TO 24 INCHES FROM EACH TYPE 2 MONUMENT TO SERVE AS A GUARD POST, AND AT OTHER LOCATIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

THE "R/W" PLAQUE SHALL FACE THE ROADWAY AND THE INFORMATIVE PLAQUE SHALL FACE AWAY FROM THE ROADWAY. R/W AND INFORMATIVE PLAQUES WILL BE FURNISHED BY THE DEPARTMENT OF TRANSPORTATION.

STEEL MARKER POSTS SHALL MEET THE MINIMUM MATERIAL REQUIREMENTS FOR STEEL DELINEATOR POSTS; EXCEPT POSTS PAINTED WITH FEDERAL YELLOW ENAMEL NEED NOT BE ZINC COATED.

- ① IN AREAS OF SOLID ROCK, DRILL A BORE HOLE 2" GREATER THAN THE WIDEST DIMENSION OF THE POST CROSS SECTION INTO THE ROCK TO A MINIMUM DEPTH OF 12 INCHES. CUT OR SPLICE THE POST SO THAT A MINIMUM LENGTH OF 3'10" PROTRUDES ABOVE THE GROUND. BLOW OUT THE BORE HOLE IN THE ROCK USING COMPRESSED AIR. FILL THE BORE HOLE WITH CEMENT GROUT, OR EQUIVALENT, DEPENDING ON THE STABILITY OF THE ROCK.

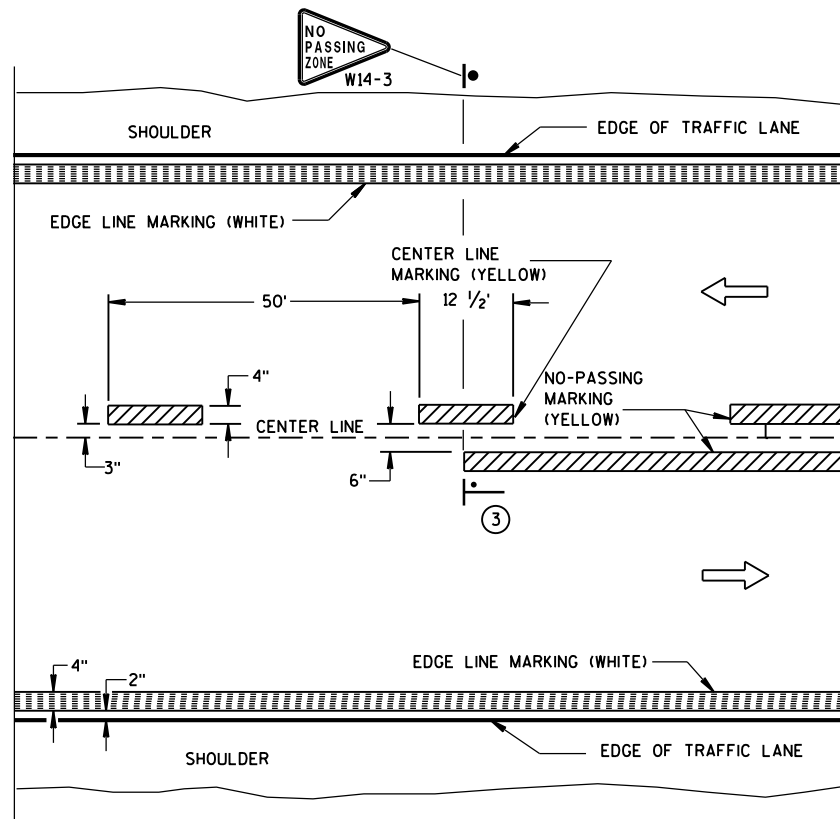
FRONT VIEW  
STEEL MARKER POSTFRONT VIEW  
ROCK INSTALLATION<sup>①</sup>FRONT VIEW  
SPLICE DETAILMIN. WEIGHT 1.12 LB./FT.  
SECTION A-A

SECTION B-B

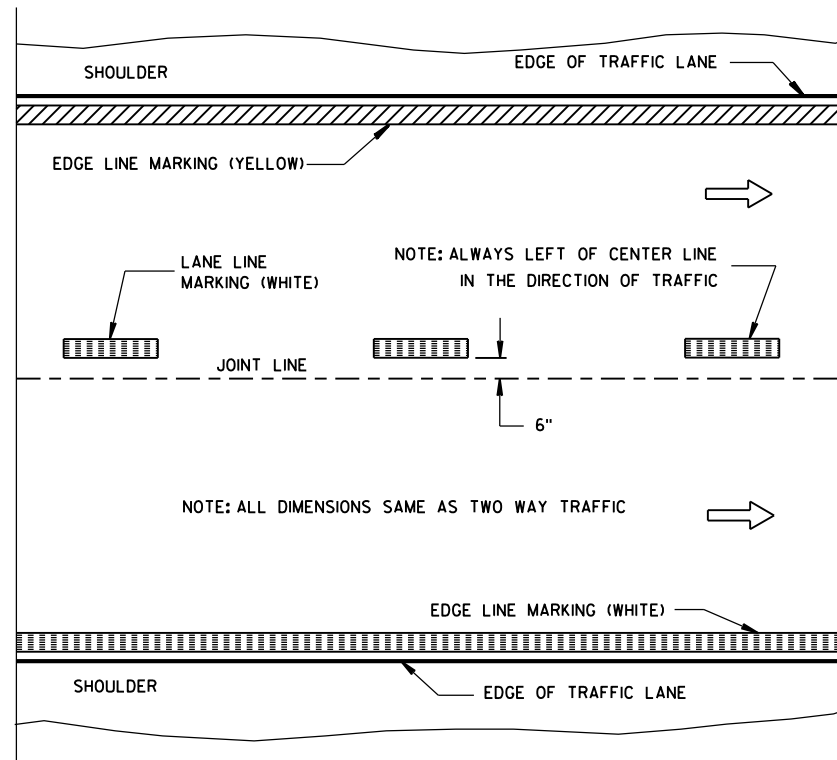
MARKER POST  
FOR RIGHT-OF-WAY

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
4/27/09 /S/ Ray Kumapovi  
DATE CHIEF SURVEYING AND M 52 SINEER  
FHWA

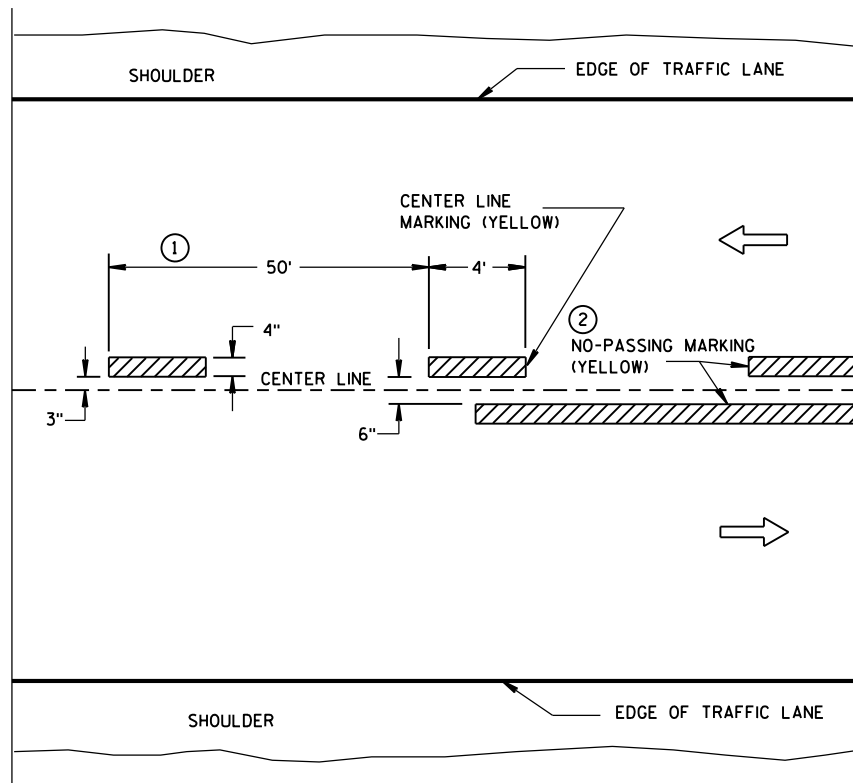


TWO WAY TRAFFIC

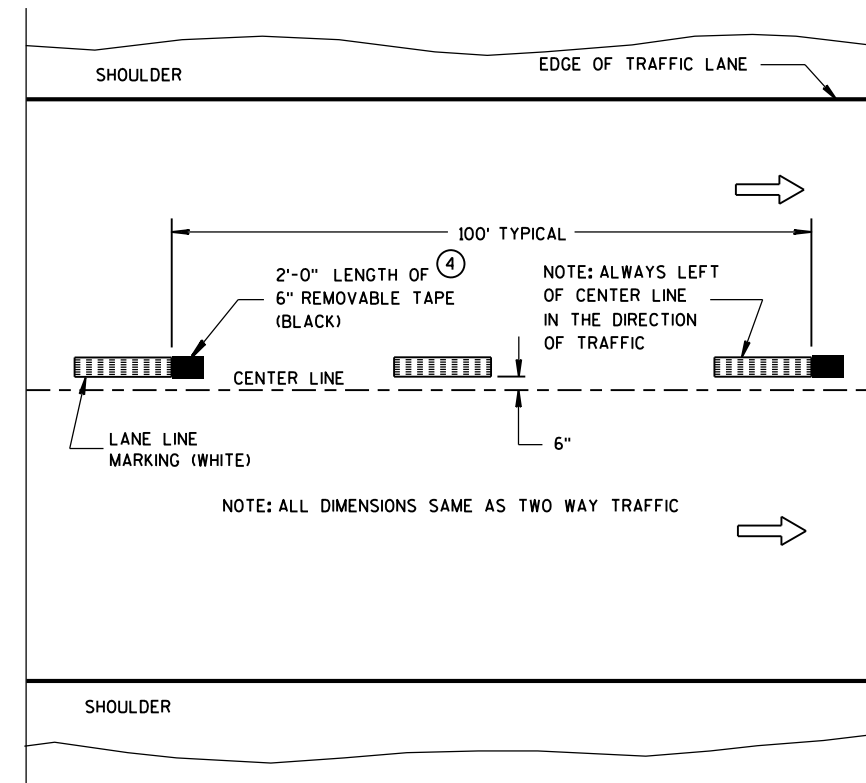


ONE WAY TRAFFIC

## PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

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

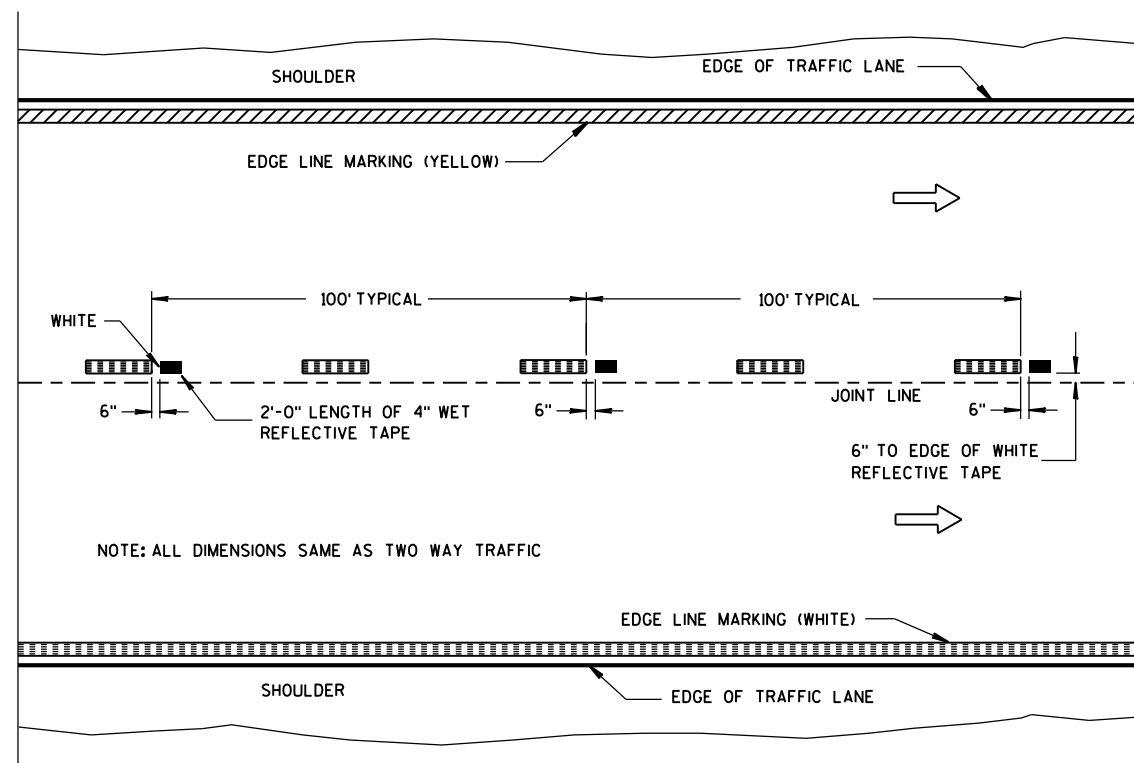
## GENERAL NOTES

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

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

## NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL



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

## LEGEND

- "T" MARKING
- POST MOUNTED SIGN

PAVEMENT MARKING  
(MAINLINE)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

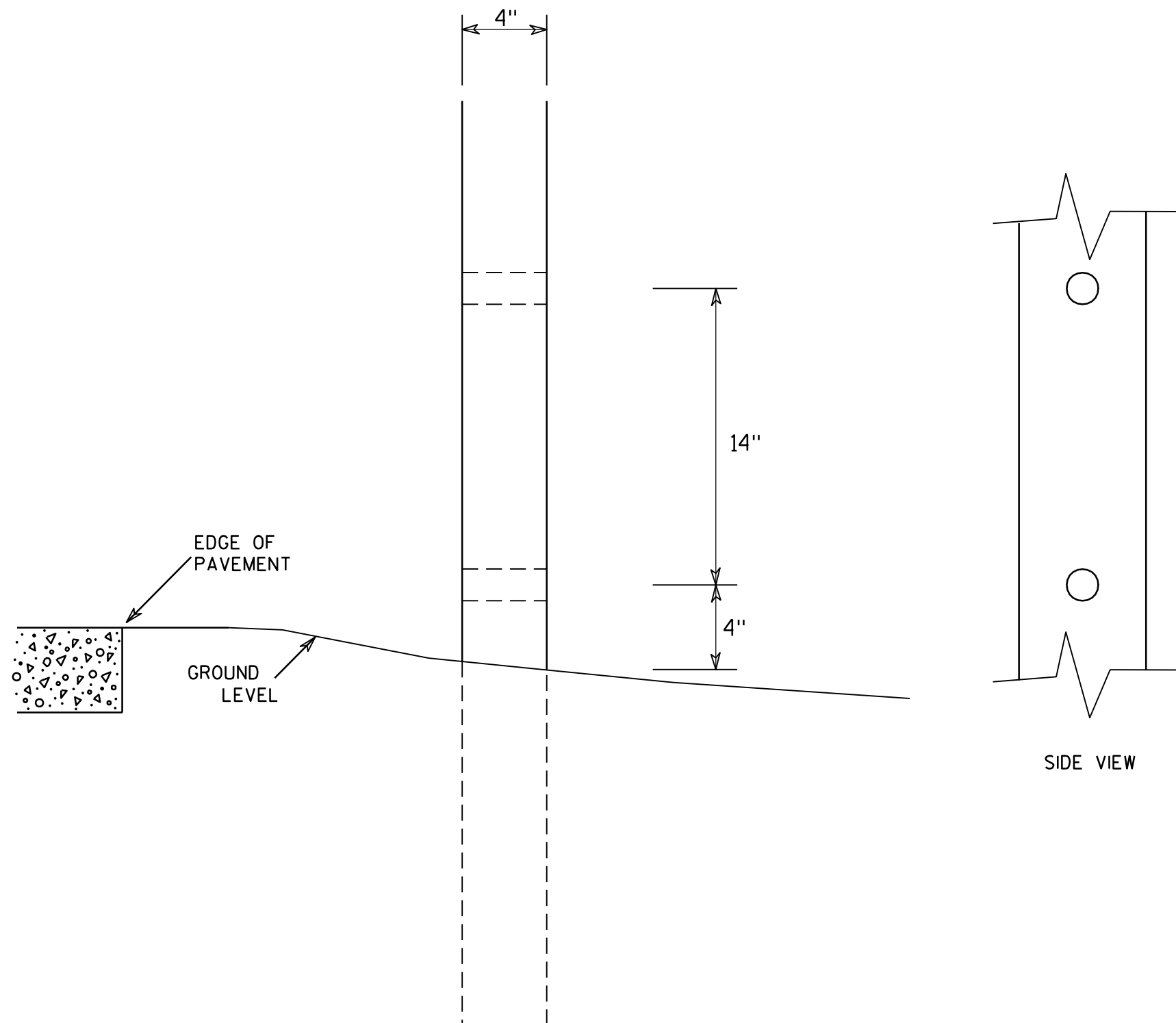
APPROVED

5-13-2013  
DATE

FHWA

/S/ Travis Feltes  
STATE TRAFFIC E 53

7



### GENERAL NOTES

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

7

### 4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

*Chester J. Spang*  
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

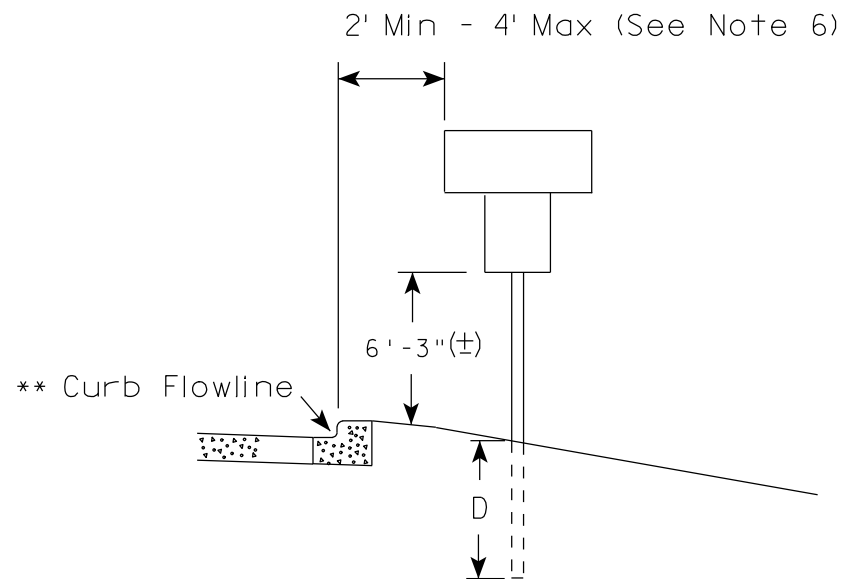
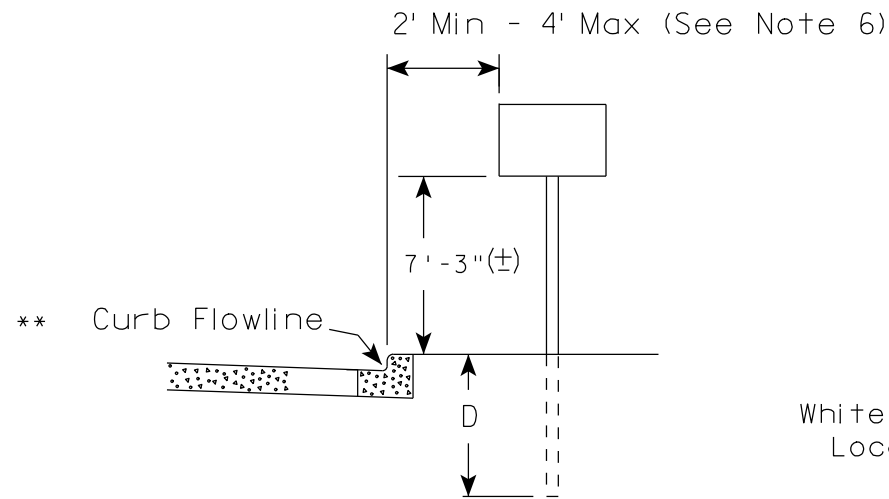
COUNTY:

SHEET NO: 54

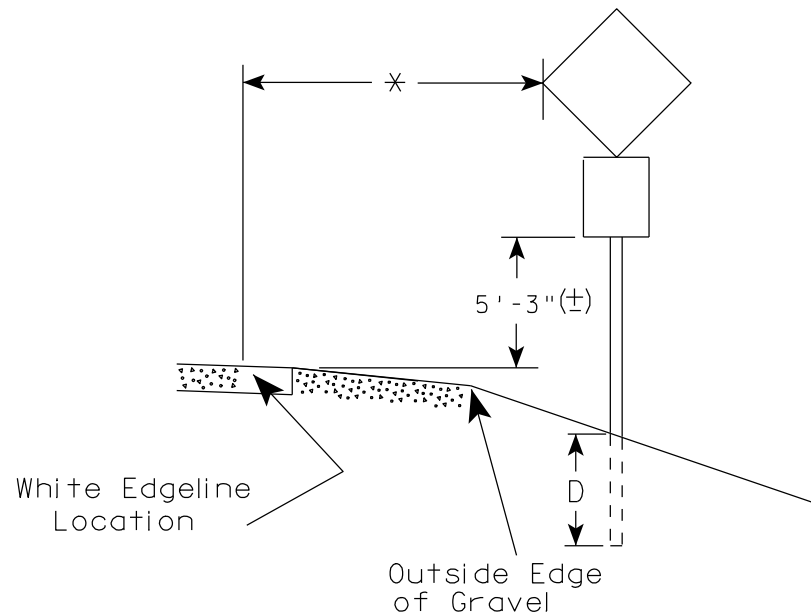
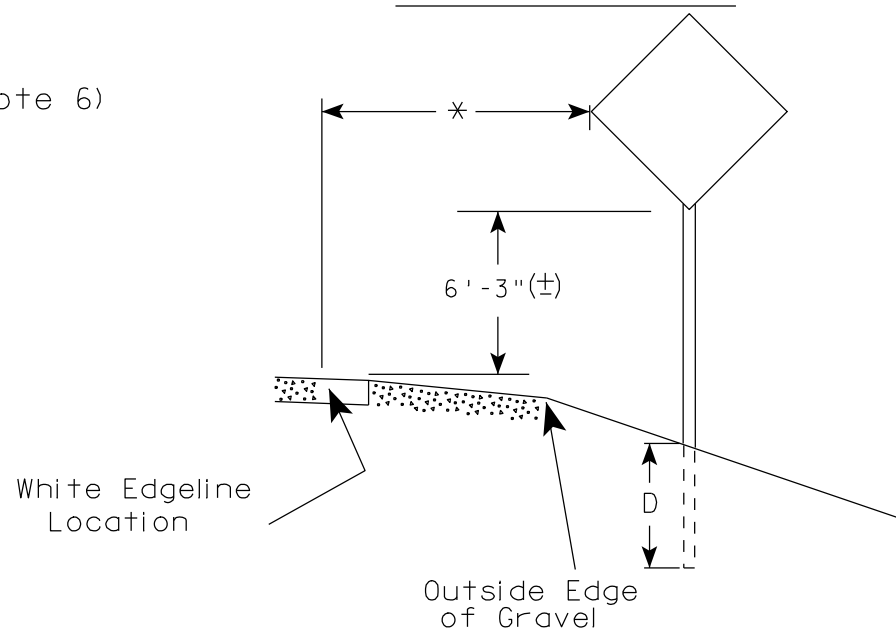
E



# URBAN AREA



# RURAL AREA (See Note 2)



## GENERAL NOTES

1. Signs wider than 4 feet or larger than 20 sq. ft. shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding stop signs (R1-1F) 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) & End of Road Markers (W5-56 & W5-56A) shall be mounted at a height of 4'-3" (+).

## POST EMBEDMENT DEPTH

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

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

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

TYPICAL INSTALLATION  
OF PERMANENT TYPE II  
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 5/24/2013 PLATE NO. A4-3.17

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 55

E

# GENERAL NOTES

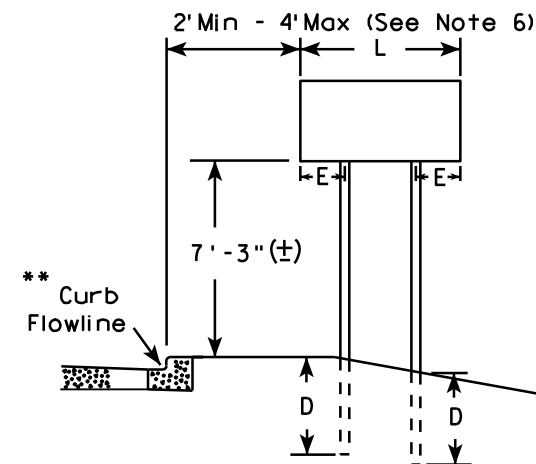
- For multiple post installations, individual post spacing shall be greater than 3'-6".
- See tables below for required number of posts.
- For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
- The (±) tolerance for mounting height is 3 inches.
- Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
- Offset distance shall be consistent with existing signs or consistent throughout length of project.
- Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
- The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series) & End of Road Markers (W5-56 & W5-56A) shall be mounted at a height of 4"-3" (±).

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

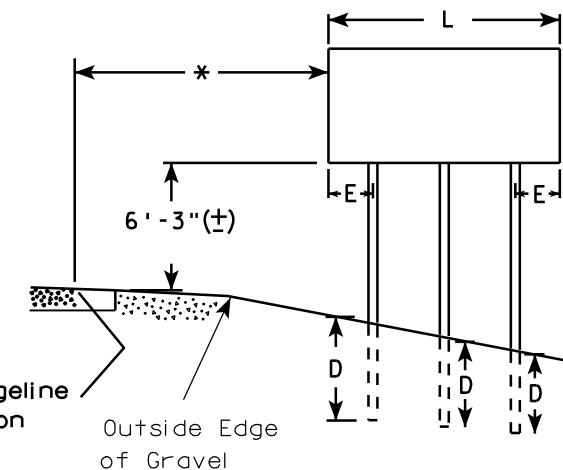
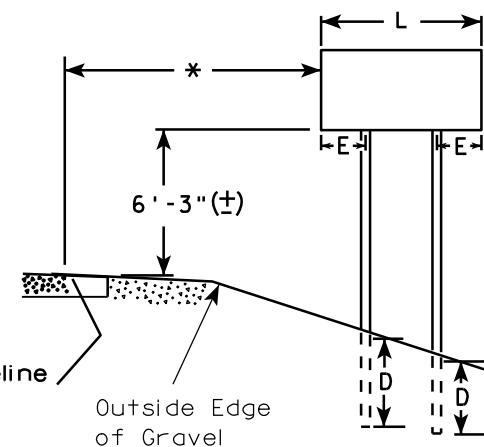
\*\* The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of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

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

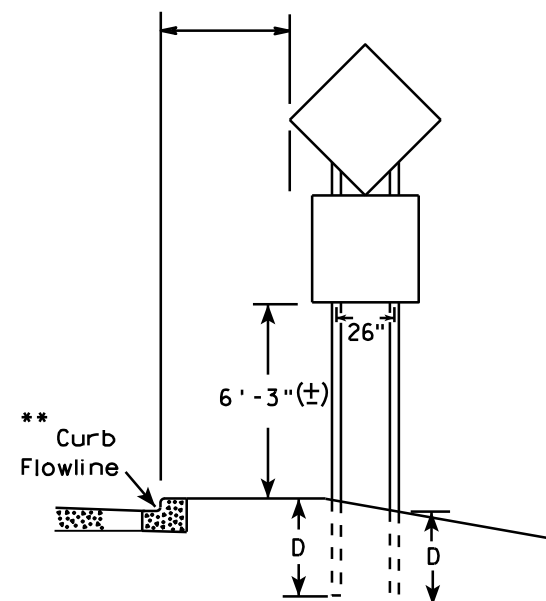
## URBAN AREA



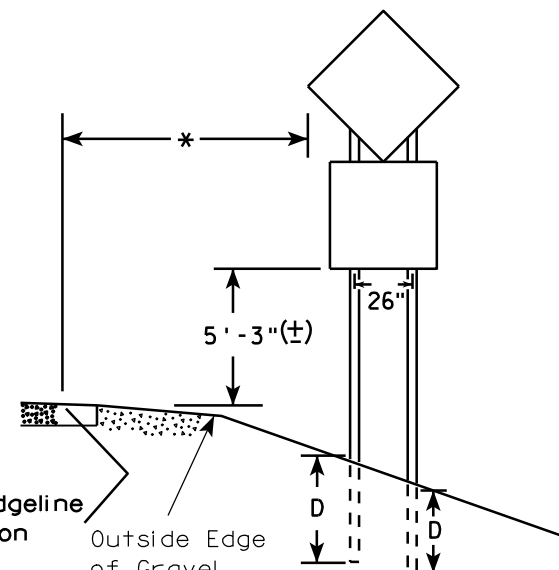
## RURAL AREA (See Note 3)



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



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

### SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)

| L                                 | E   |
|-----------------------------------|-----|
| Greater than 48"<br>Less than 60" | 12" |
| 60" to 120"                       | L/5 |

### SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)

| L                                   | E   |
|-------------------------------------|-----|
| Greater than 120"<br>less than 168" | 12" |

### SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)

| L                | E   |
|------------------|-----|
| 168" and greater | 12" |

### POST EMBEDMENT DEPTH

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

### TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION  
 APPROVED *Matthew R. Rauch*  
 For State Traffic Engineer  
 DATE 9/21/2011 PLATE NO. A4-4.11

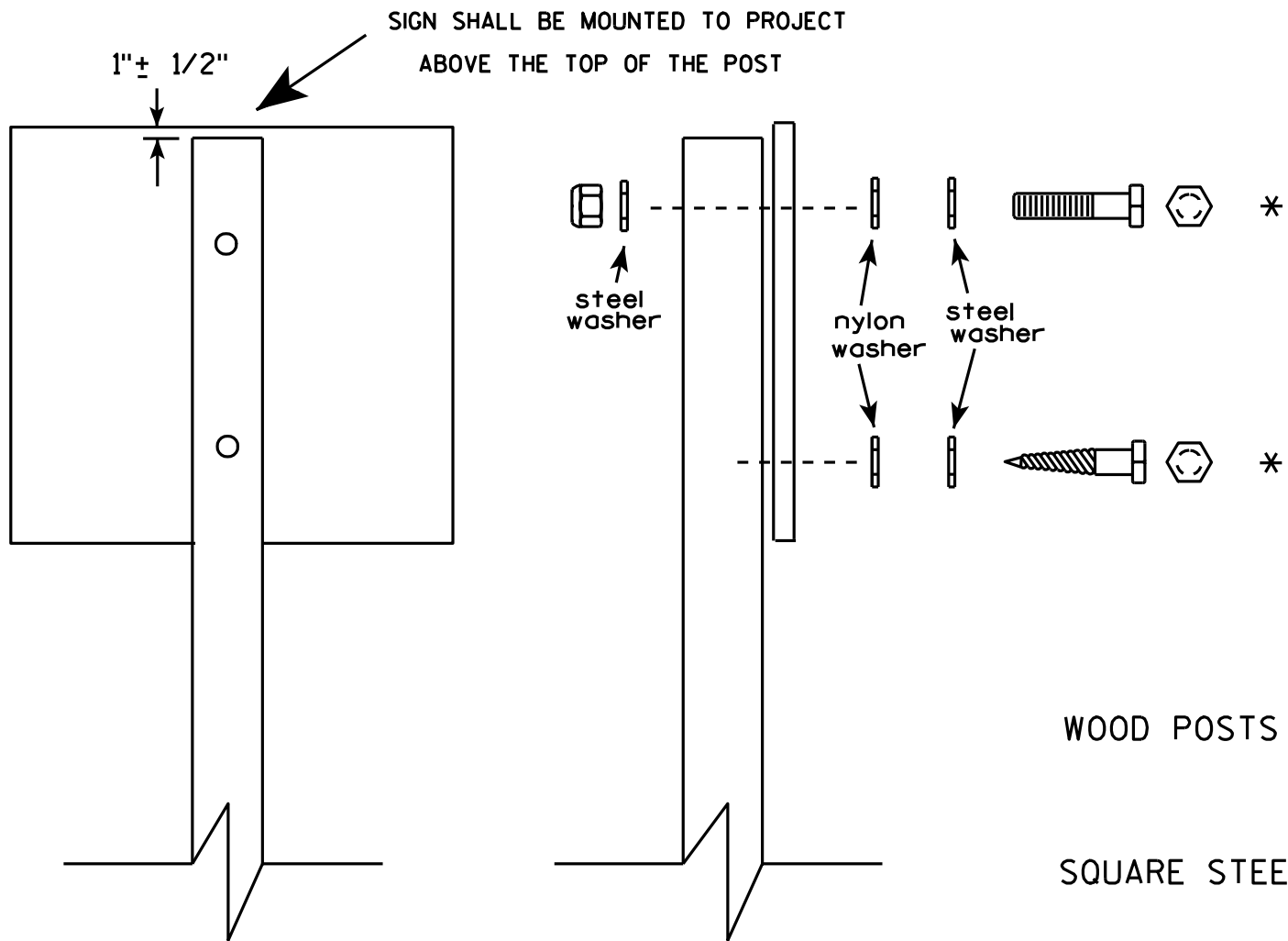
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 56

E

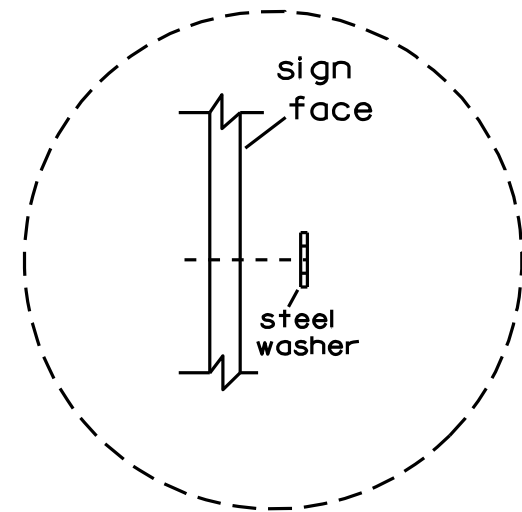


Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

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

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

- WOOD POSTS (4" x 4" or 4" x 6")  
LAG SCREWS - 3/8" X 3"  
MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts
- SQUARE STEEL POSTS (2" x 2")  
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts  
RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL  
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -  
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL  
1-1/4" O.D. X 3/8" I.D. X .080 NYLON for all Type H signs.



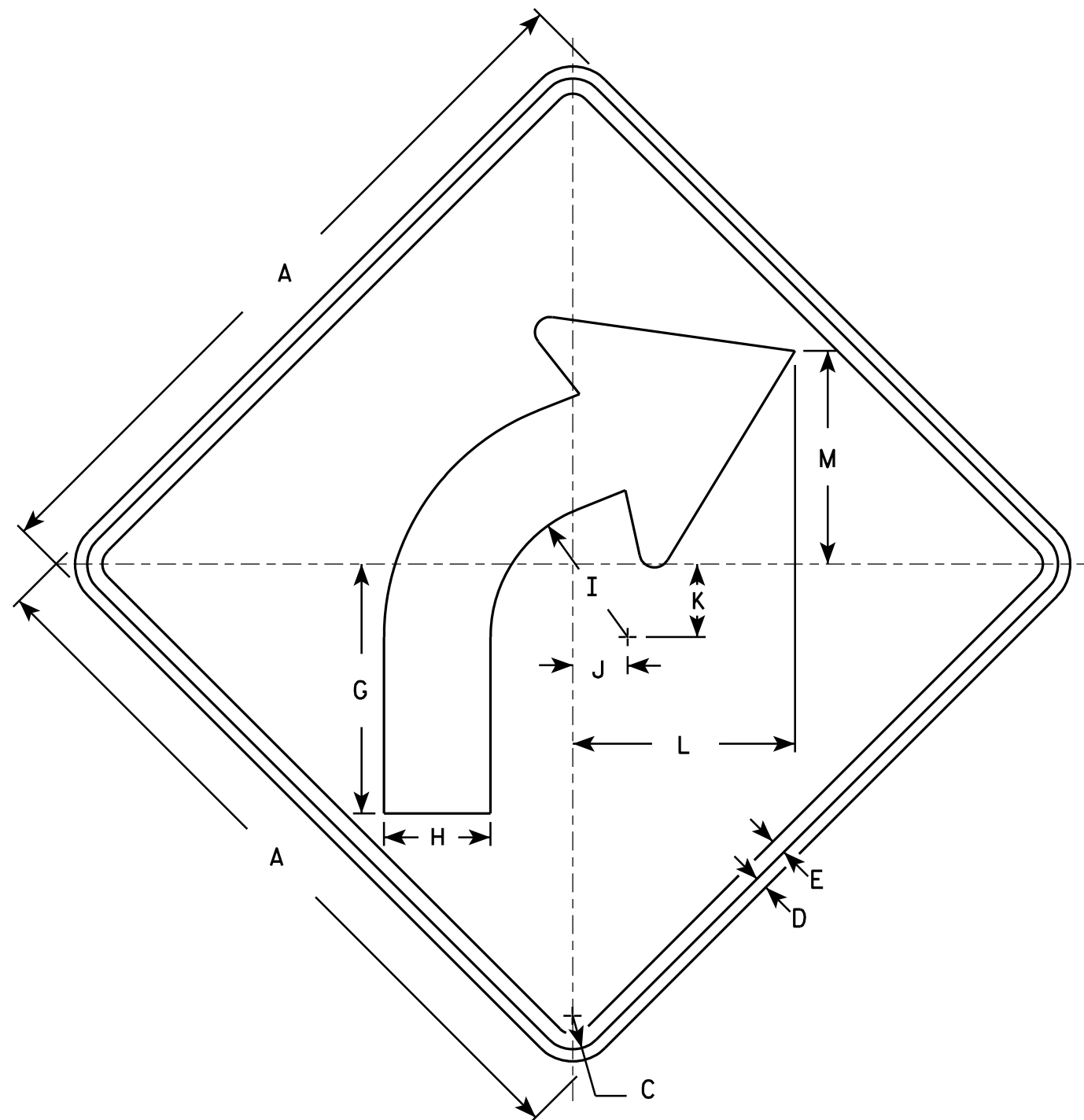
Washer Placement when Sign Has Other Than Type H or Type F Face

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

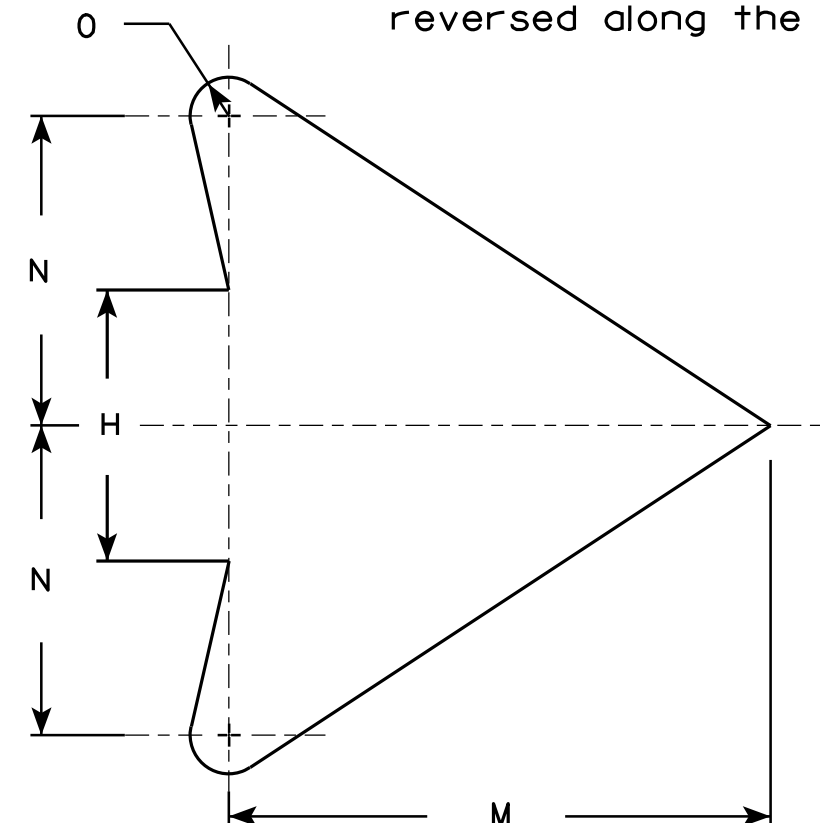
|                                  |                                                       |
|----------------------------------|-------------------------------------------------------|
| ATTACHMENT OF SIGNS<br>TO POSTS  |                                                       |
| WISCONSIN DEPT OF TRANSPORTATION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

# NOTES

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



W1-2R



ARROW DETAIL

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

## STANDARD SIGN W1-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

PROJECT NO:

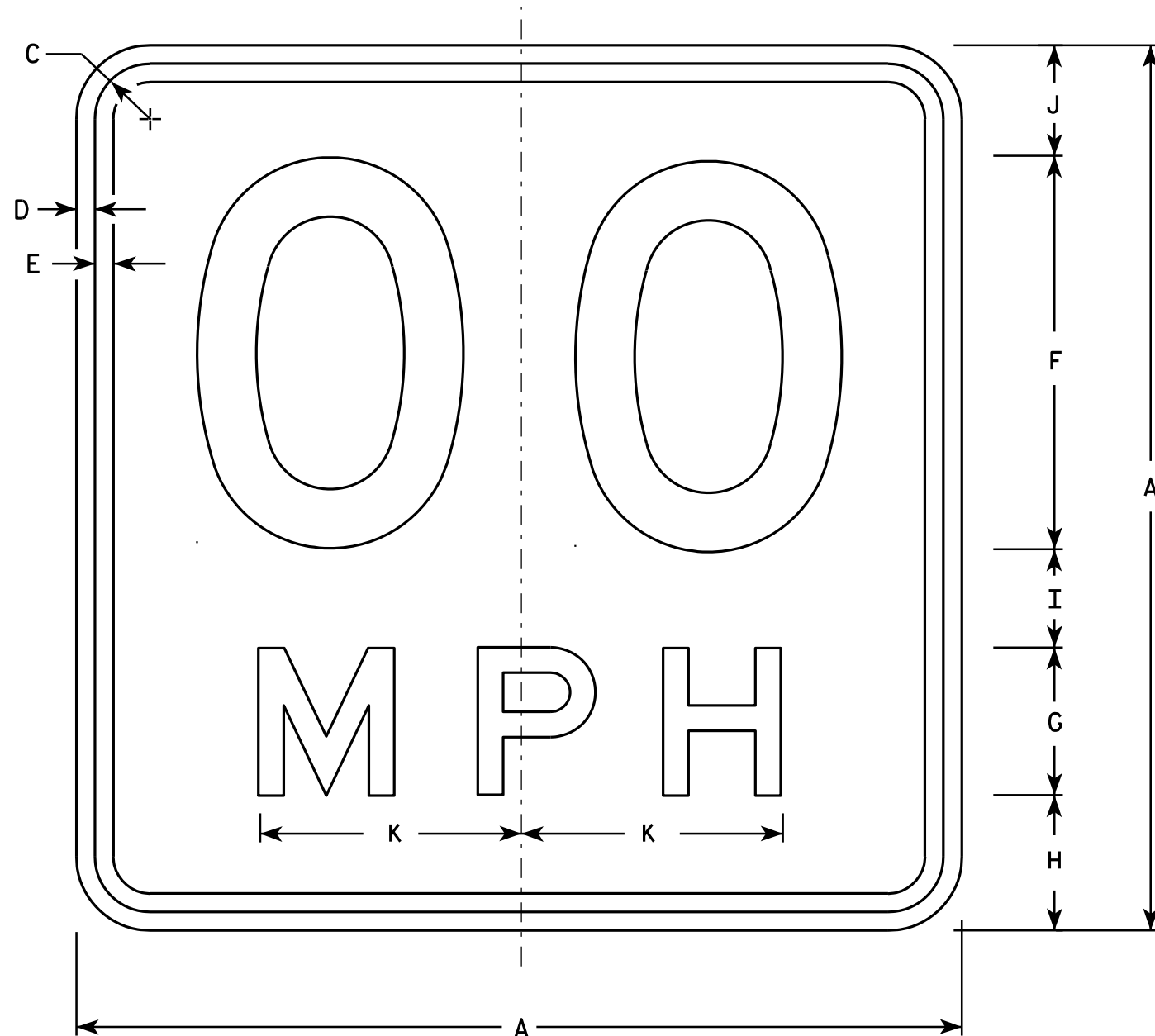
HWY:

COUNTY:

SHEET NO: 58

E





### NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:  
Background - Yellow  
Message - Black
3. Message Series - See Note 6
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically space about centerline to achieve proper balance.
6. Line 1 is Series D  
Line 2 is Series E

W13-1

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

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

### STANDARD SIGN

W13-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

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

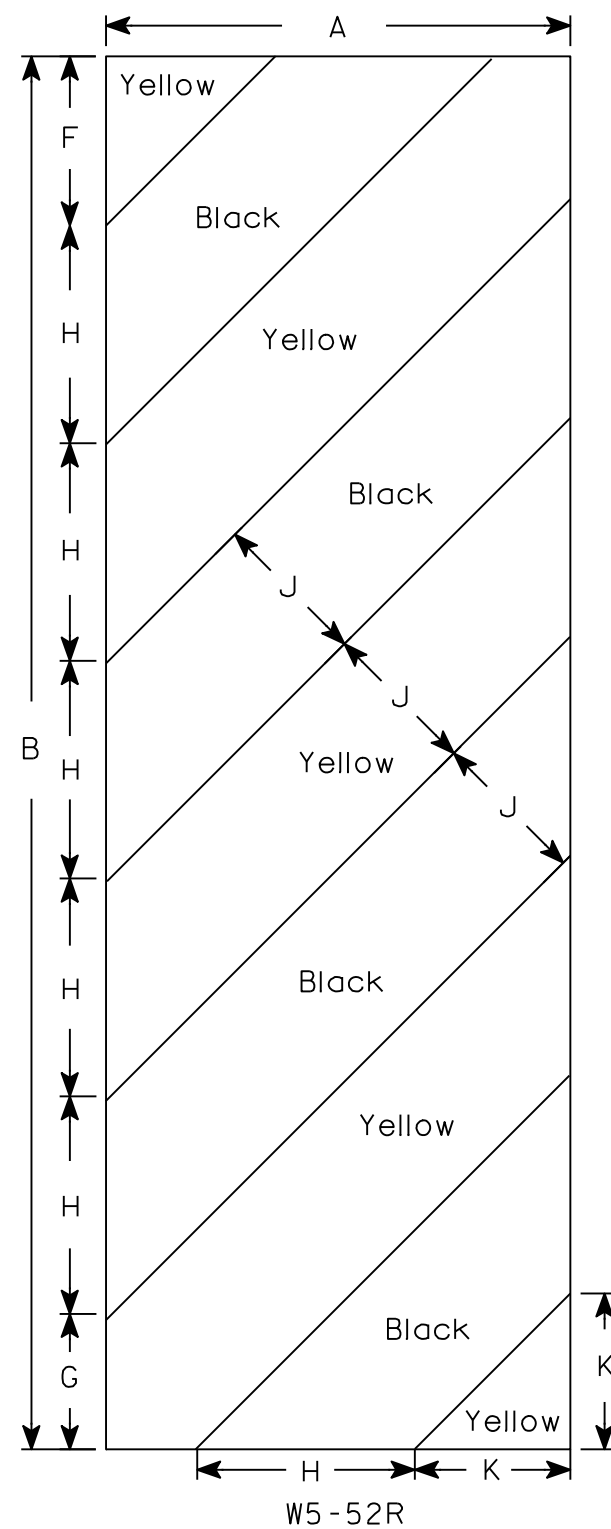
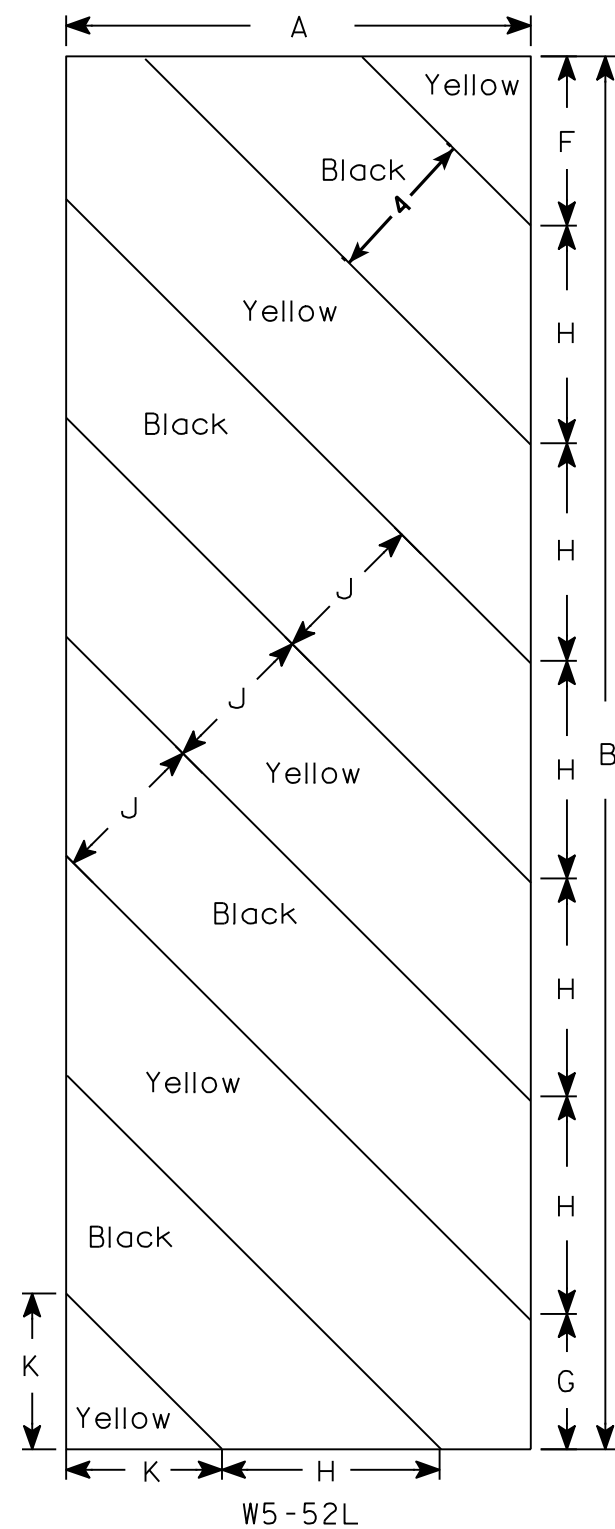
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 59

E



NOTES

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

| SIZE | A  | B  | C | D | E | F     | G     | H     | I   | J | K      | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|----|---|---|---|-------|-------|-------|-----|---|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    |    |    |   |   |   |       |       |       |     |   |        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 2S   | 12 | 36 |   |   |   | 4 3⁄8 | 3 1⁄2 | 5 5⁄8 | 45° | 4 | 4      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 3.0             |
| 2M   | 12 | 36 |   |   |   | 4 3⁄8 | 3 1⁄2 | 5 5⁄8 | 45° | 4 | 4      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 3.0             |
| 3    | 18 | 54 |   |   |   | 6     | 5 1⁄2 | 8 1⁄2 | 45° | 6 | 6 9⁄16 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 6.75            |
| 4    |    |    |   |   |   |       |       |       |     |   |        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 5    |    |    |   |   |   |       |       |       |     |   |        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |

STANDARD SIGN  
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

## DESIGN DATA

## LIVE LOAD:

DESIGN LOADING: HL-93  
INVENTORY RATING FACTOR: RF=1.19  
OPERATING RATING FACTOR: RF=1.54  
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 250 (KIPS)  
STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

## ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY SLAB —  $f'_c$  = 4,000 P.S.I. ALL OTHER —  $f'_c$  = 3,500 P.S.I.  
BAR STEEL REINFORCEMENT, GRADE 60 —  $f_y$  = 60,000 P.S.I.  
36" PRESTRESSED GIRDERS, CONCRETE MASONRY —  $f'_c$  = 8,000 P.S.I.  
10 STRANDS- 0.6" DIA. WITH ULTIMATE TENSILE STRENGTH OF 270,000 P.S.I.

## FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10X42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS \*\* PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 45'-0" LONG (WEST AND EAST ABUTMENTS).

\*\* 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.

## HYDRAULIC DATA

## 100 YEAR FREQUENCY

$Q_{100}$  = 970 C.F.S.  
VEL. = 7.37 F.P.S.  
HW. = EL. 674.78  
WATERWAY AREA = 132 SQ. FT.  
DRAINAGE AREA = 2.4 SQ. MI.  
ROAD OVERTOPPING = NA  
SCOUR CRITICAL CODE = 8

## 2 YEAR FREQUENCY

$Q_2$  = 130 C.F.S.  
HW.<sub>2</sub> = EL. 670.18

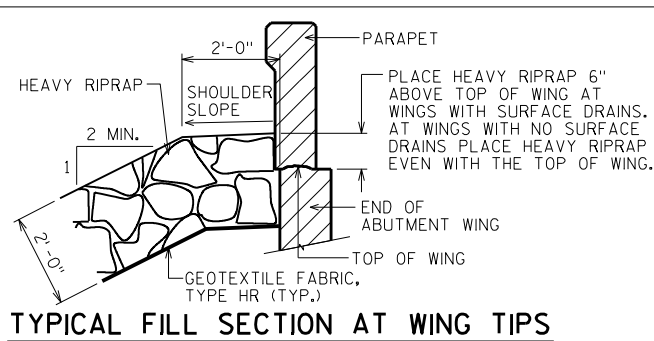
## TRAFFIC VOLUME

## STH 171

A.D.T. = 690 (2033)  
R.D.S. = 60 M.P.H.

## STRUCTURE DESIGN CONTACT:

AARON BONK (608) 261-0261  
KENT BAHLER (608) 266-8490



TYPICAL FILL SECTION AT WING TIPS

## LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. WEST ABUTMENT
5. WEST ABUTMENT DETAILS
6. EAST ABUTMENT
7. EAST ABUTMENT DETAILS
8. 36" PRESTRESSED GIRDER DETAILS
9. STEEL DIAPHRAGM
10. SUPERSTRUCTURE
11. SUPERSTRUCTURE DETAILS
12. SLOPED FACE PARAPET LF

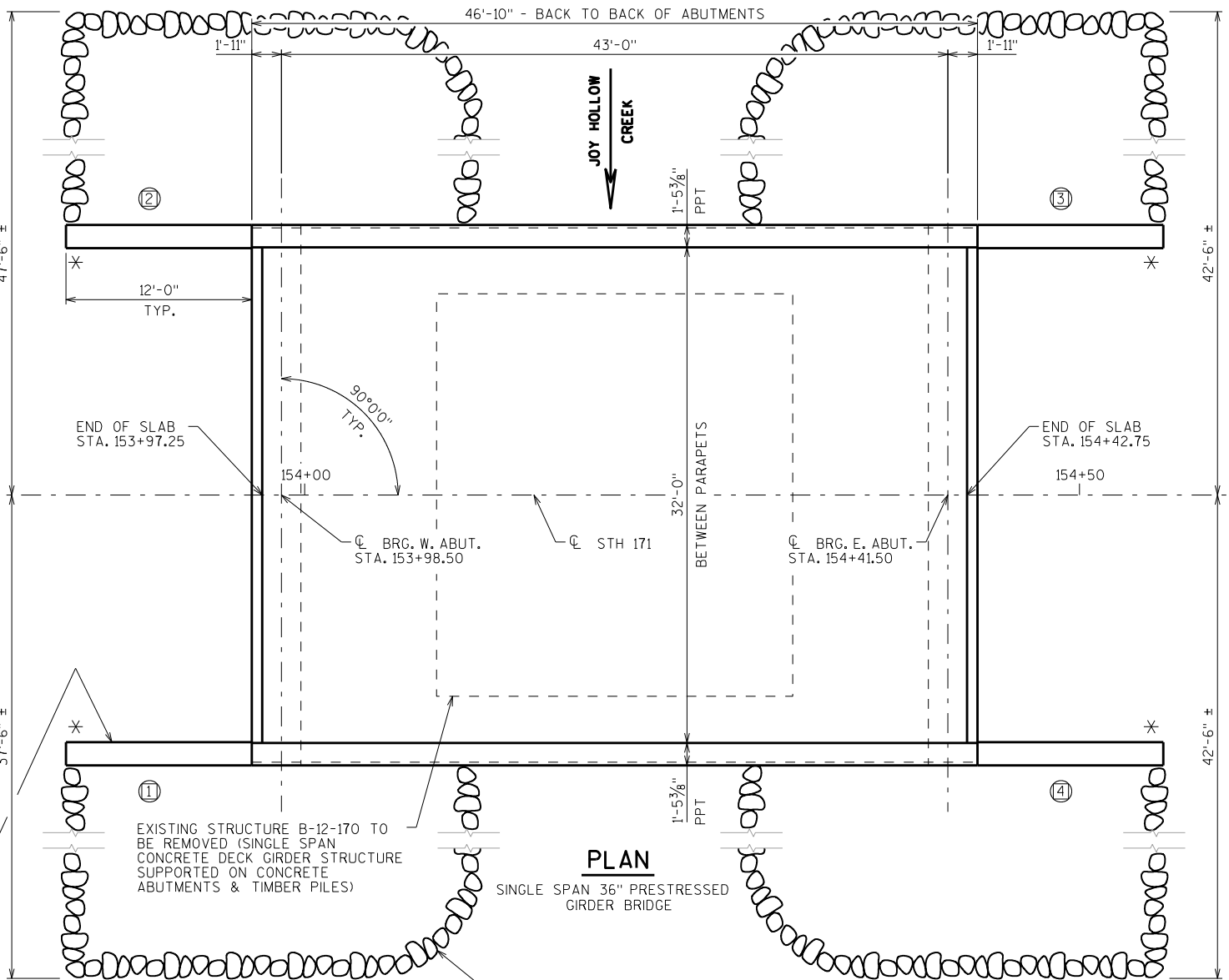
| NO.                                                                                                                                                                                                                                                        | DATE         | REVISION          | BY                     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------|------------------------|
| ACCEPTED  Plans Prepared By <b>WISDOT</b><br><b>BUREAU OF STRUCTURES</b><br>ACCEPTED <i>William C. Dreher</i> <b>12/6/11</b><br>CHIEF STRUCTURES DESIGN ENGINEER DATE |              |                   |                        |
| <b>STRUCTURE B-12-180</b>                                                                                                                                                                                                                                  |              |                   |                        |
| STH 171 OVER JOY HOLLOW CREEK                                                                                                                                                                                                                              |              |                   |                        |
| COUNTY                                                                                                                                                                                                                                                     | CRAWFORD     | TOWN/CITY/VILLAGE | SENECA                 |
| DESIGN SPEC. AASHTO LRFD DESIGN SPEC. 5th EDITION                                                                                                                                                                                                          |              |                   |                        |
| DESIGNED BY                                                                                                                                                                                                                                                | DESIGN CK'D. | DRAWN MSC BY      | PLANS CK'D. <b>NAR</b> |
| <b>GENERAL PLAN</b>                                                                                                                                                                                                                                        |              |                   | SHEET 1 OF 12          |
|                                                                                                                                                                                                                                                            |              |                   | 61                     |

\* PROVIDE FOR THREE BEAM GUARD RAIL ATTACHMENT AT UNUSED ANCHOR ASSEMBLIES CAULK HOLES SHUT WITH "100% SILICONE CAULK".

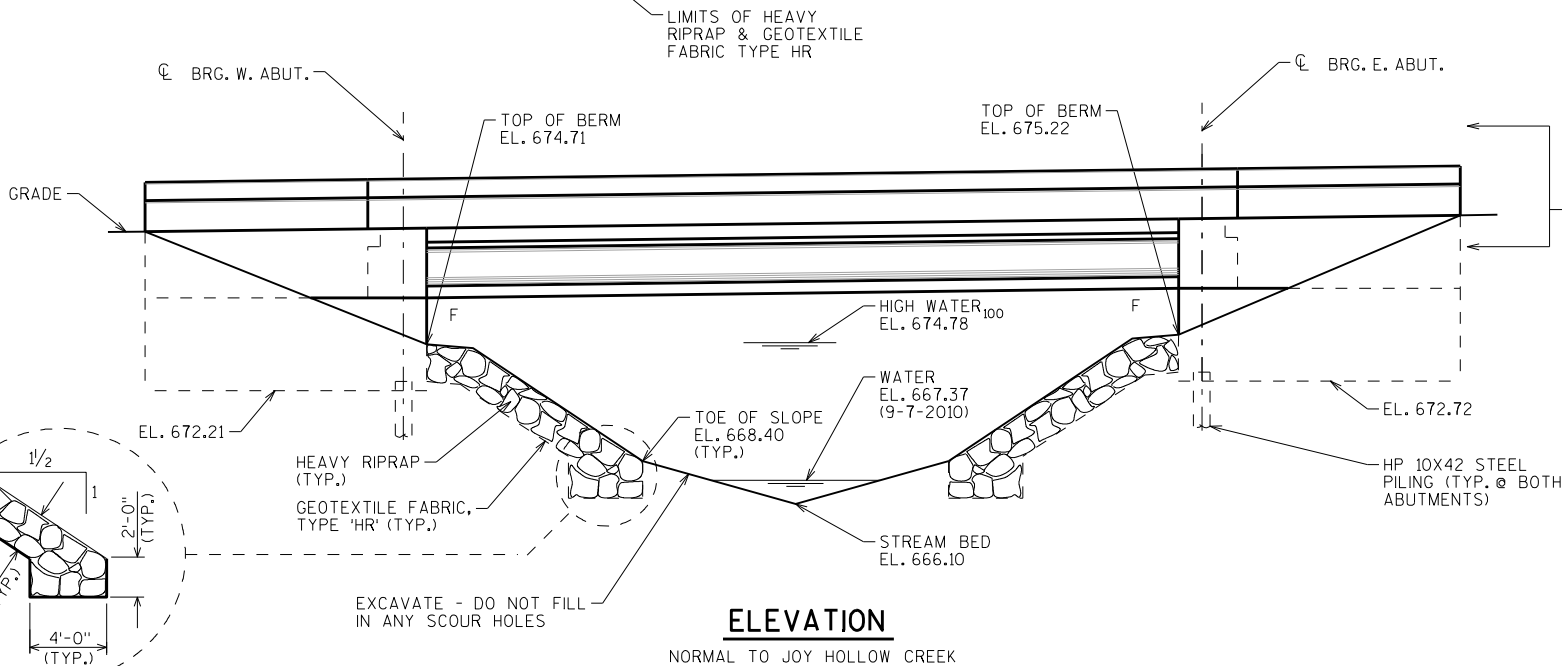
Ⓢ INDICATES WING NUMBER

SURFACE DRAIN ANCHORS REQUIRED AT WINGS 1 & 2.

NAME PLATE & BENCH MARK CAP (WHEN SUPPLIED) - FOR LOCATION SEE SLOPED FACE PARAPET LF SHEET 12.

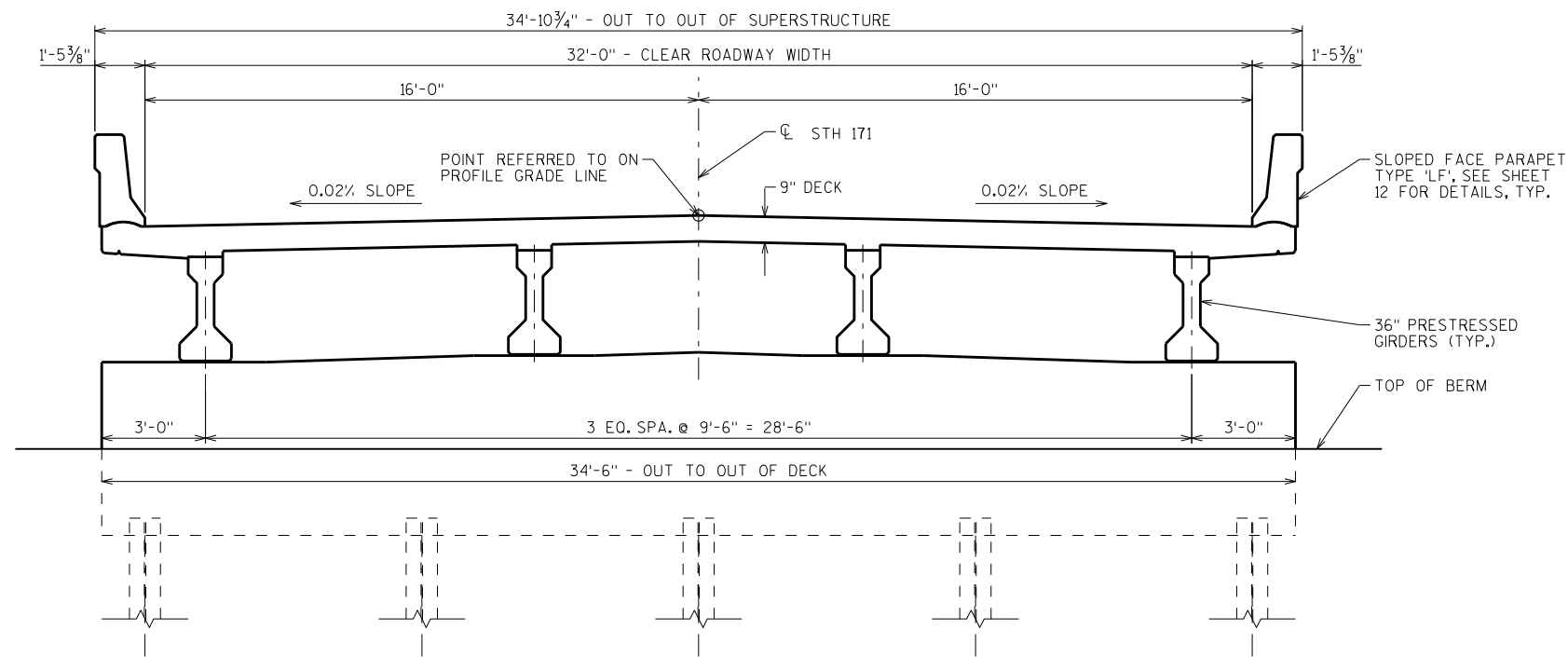
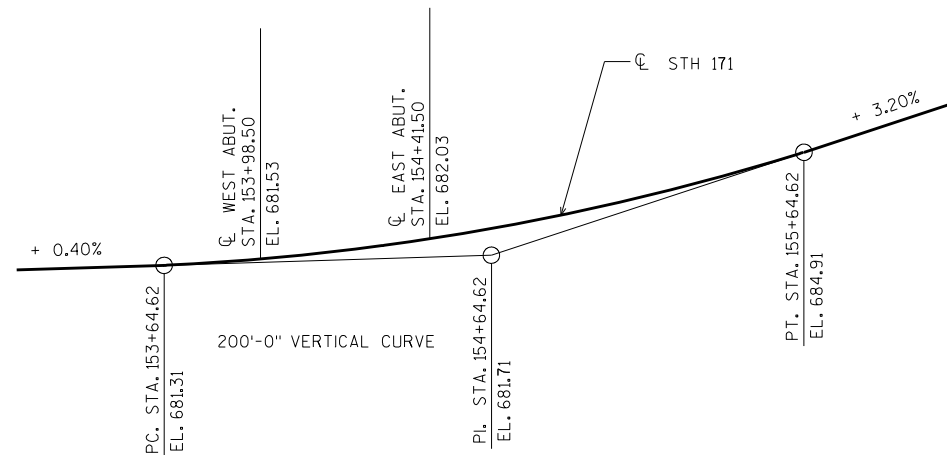


PLAN



ELEVATION

NORMAL TO JOY HOLLOW CREEK

CROSS SECTION THRU ROADWAY - LOOKING EAST (B-12-180)PROFILE GRADE LINE STH 171TOTAL ESTIMATED QUANTITIES

| BID ITEM NUMBER | BID ITEMS                                                                   | UNIT | SUPER. | WEST ABUT. | EAST ABUT. | TOTALS      |
|-----------------|-----------------------------------------------------------------------------|------|--------|------------|------------|-------------|
| 203.0700.S      | REMOVING OLD STRUCTURE OVER WATERWAY WITH DEBRIS CAPTURE SYSTEM STA. 154+15 | LS   | —      | —          | —          | 1           |
| 206.1000        | EXCAVATION FOR STRUCTURES BRIDGES B-12-180                                  | LS   | —      | —          | —          | 1           |
| 210.0100        | BACKFILL STRUCTURE                                                          | CY   | —      | 115        | 115        | 230         |
| 502.0100        | CONCRETE MASONRY BRIDGES                                                    | CY   | 80     | 42         | 42         | 164         |
| 502.3200        | PROTECTIVE SURFACE TREATMENT                                                | SY   | 220    | —          | —          | 220         |
| 503.0136        | PRESTRESSED GIRDER TYPE 136-INCH                                            | LF   | 176    | —          | —          | 176         |
| 505.0405        | BAR STEEL REINFORCEMENT HS BRIDGES                                          | LB   | —      | 2035       | 2035       | 4070        |
| 505.0605        | BAR STEEL REINFORCEMENT HS COATED BRIDGES                                   | LB   | 12890  | 2260       | 2270       | 17420       |
| 506.2605        | BEARING PADS ELASTOMERIC NON-LAMINATED                                      | EACH | —      | 4          | 4          | 8           |
| 506.4000        | STEEL DIAPHRAGMS B-12-180                                                   | EACH | 3      | —          | —          | 3           |
| 516.0500        | RUBBERIZED MEMBRANE WATERPROOFING                                           | SY   | —      | 11         | 11         | 22          |
| 550.1100.S      | PIILING STEEL HP 10-INCH X 42 LB                                            | LF   | —      | 225        | 225        | 450         |
| 606.0300        | RIPRAP HEAVY                                                                | CY   | —      | 165        | 170        | 335         |
| 612.0406        | PIPE UNDERDRAIN WRAPPED 6-INCH                                              | LF   | —      | 79         | 79         | 158         |
| 614.0150        | ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD                                | EACH | —      | 2          | 2          | 4           |
| 645.0120        | GEOTEXTILE FABRIC TYPE HR                                                   | SY   | —      | 255        | 265        | 520         |
|                 | NON-BID ITEMS                                                               |      |        |            |            |             |
|                 | BRIDGE SEAT PROTECTION                                                      | L.S. | —      | —          | —          | 1           |
|                 | FILLER                                                                      | SIZE | —      | —          | —          | 1/2" & 3/4" |

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

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

ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.

THE GRADATION OF THE STRUCTURE BACKFILL SHALL MEET THE REQUIREMENTS OF SECTION 209.2.2 OF THE STANDARD SPECIFICATIONS FOR GRADE 1 MATERIAL.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE TOP OF DECK SURFACE AND THE FRONT FACE AND THE TOP OF THE PARAPET, INCLUDING PARAPETS ON ABUTMENT WINGS.

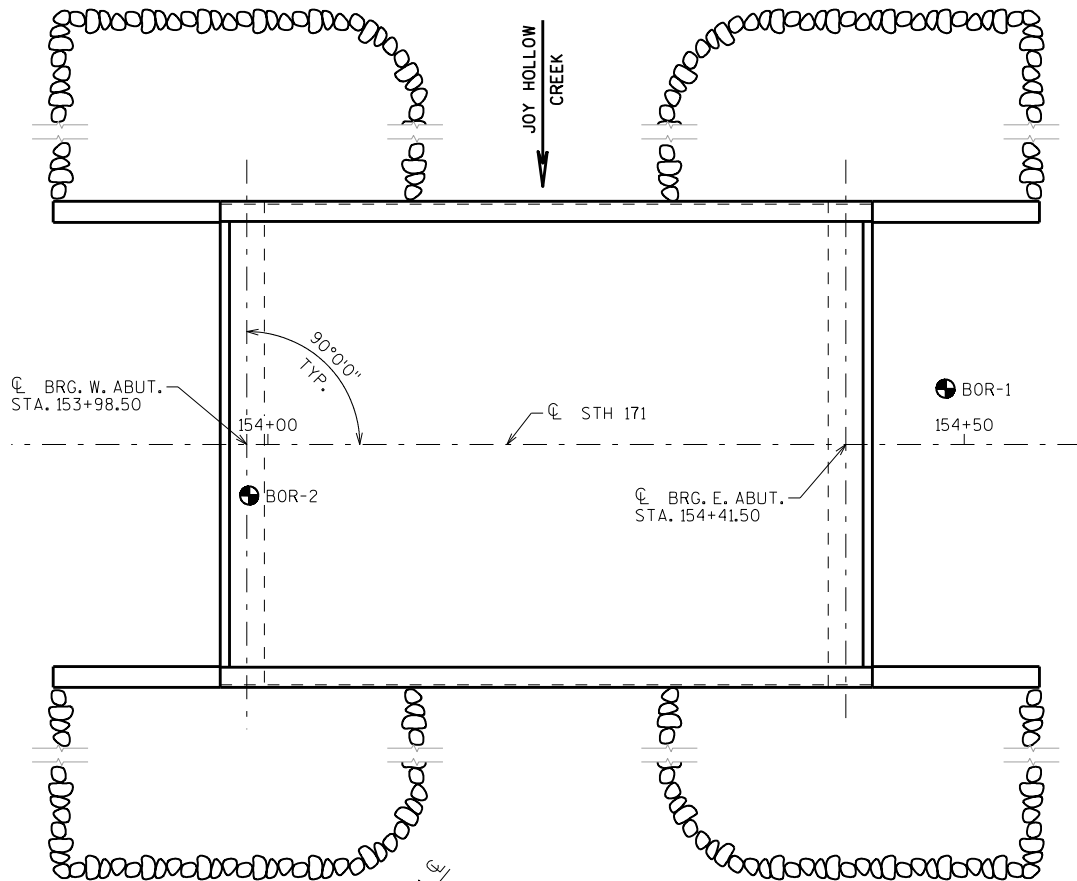
THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE FABRIC TYPE 'HR' TO THE EXTENT SHOWN ON SHEET 1 AND IN THE ABUTMENT DETAILS.

AT ABUTMENTS, HP 12X53 STEEL PILING MAY BE USED IN LIEU OF HP 10X42 STEEL PILING. PAYMENT SHALL BE BASED ON BID PRICE FOR HP 10X42 STEEL PILING.

ALL FIELD CONNECTIONS SHALL BE MADE WITH 3/4" DIAMETER A325 HIGH-TENSILE STRENGTH BOLTS UNLESS OTHERWISE SHOWN OR NOTED.

|                                                                                 |          |          |                 |
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|                                                                                 |          |          |                 |
| NO.                                                                             | DATE     | REVISION | BY              |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |          |          |                 |
| STRUCTURE B-12-180                                                              |          |          |                 |
|                                                                                 | DRAWN BY | AMB      | PLANS CK'D. NAR |
| CROSS SECTION & QUANTITIES                                                      |          |          | SHEET 2         |
|                                                                                 |          |          | 62              |





STATE PROJECT NUMBER

5790-01-81

ABBREVIATIONS

F — FINE  
WS — WEATHERED

M — MEDIUM  
SO — SOUND

C — COARSE

MATERIAL SYMBOLS

TOPSOIL  
SAND  
GRAVEL

SILT  
PEAT  
CLAY

SANDSTONE  
LIMESTONE  
IGNEOUS ROCK

LEGEND OF PROBING

PROBING NO.  
STA.  
ELEVATION  
7 AVERAGE BLOWS PER FOOT  
REFUSAL 95/6

95/6=95 BLOWS FOR 6" PENETRATION  
PROBING TAKEN WITH A 350# WT. FALLING 18" ON A 2" O.D. POINT.

LEGEND OF BORING

ELEV.  
BORING NO.  
STA.

UNCONFINED STRENGTH  
BLOWS PER FT. USING 140# WT. FALLING 30"

WASH SAMPLE

SHELBY TUBE — S.T.

GROUND WATER ELEVATION

NO GROUND WATER OBSERVED ABOVE THIS ELEVATION

SANDY GRAVEL  
F. BOULDERS OR COBBLES  
SAND  
SILTY CLAY  
SO  
LIMESTONE

UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

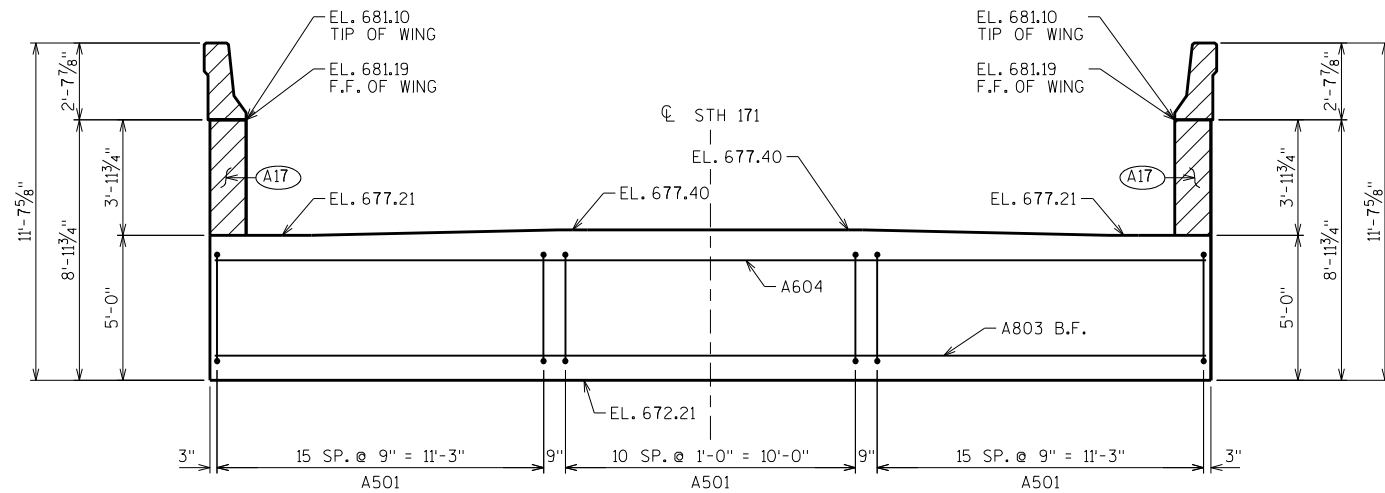
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| NO.                                                                             |  | DATE |  | REVISION    |  |         |  | BY                        |  |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |  |      |  |             |  |         |  |                           |  |
| STRUCTURE B-12-180                                                              |  |      |  |             |  |         |  |                           |  |
|                                                                                 |  |      |  | DRAWN<br>BY |  | AMB     |  | PLANS<br>CK'D. <b>NAR</b> |  |
| SUBSURFACE<br>EXPLORATION                                                       |  |      |  |             |  | SHEET 3 |  |                           |  |
|                                                                                 |  |      |  |             |  | 63      |  |                           |  |

\* THE GROUND WATER ELEVATION WAS DETERMINED FROM WHERE THE SOIL SAMPLE WAS DESCRIBED AS WET.

8

8

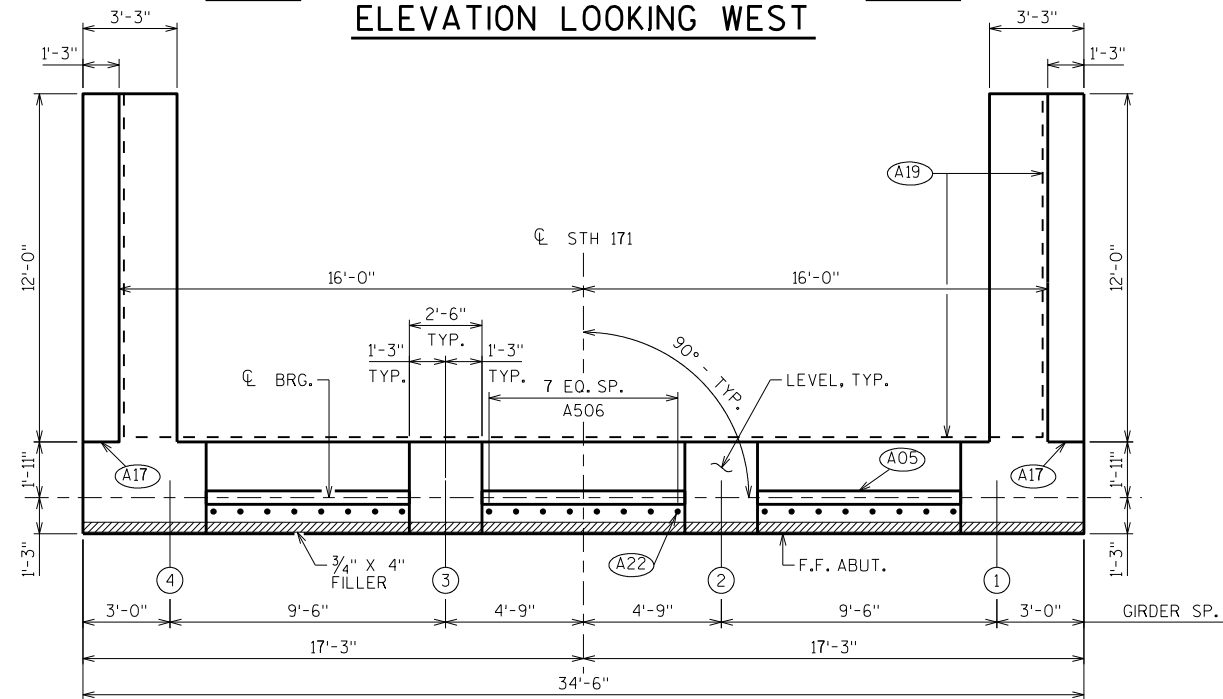
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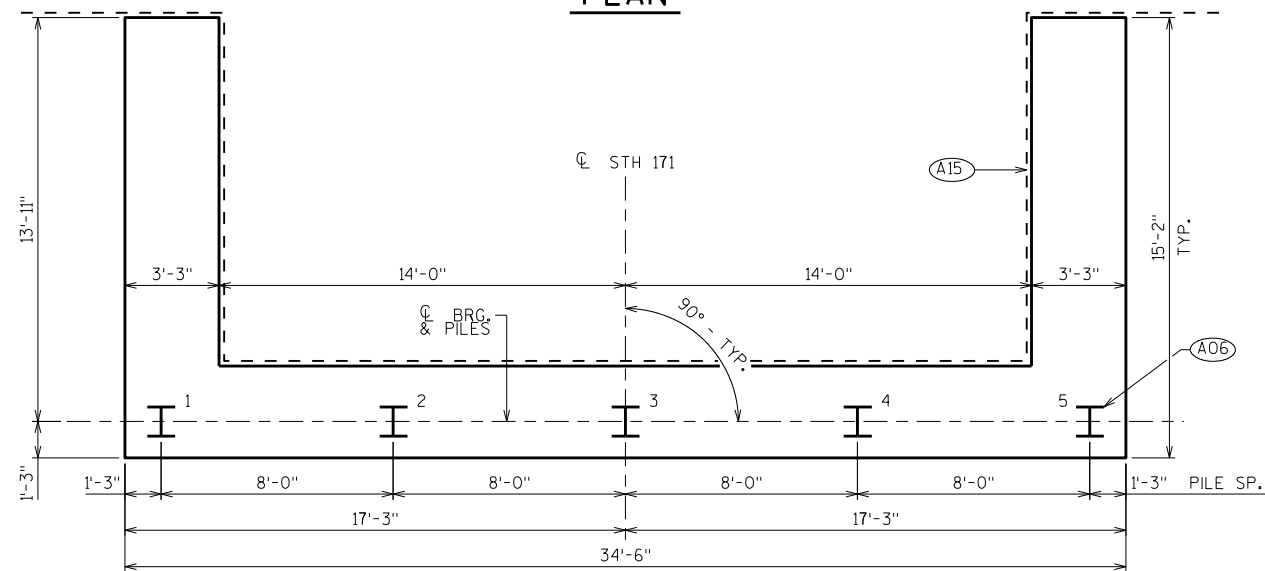
WING 1

ELEVATION LOOKING WEST

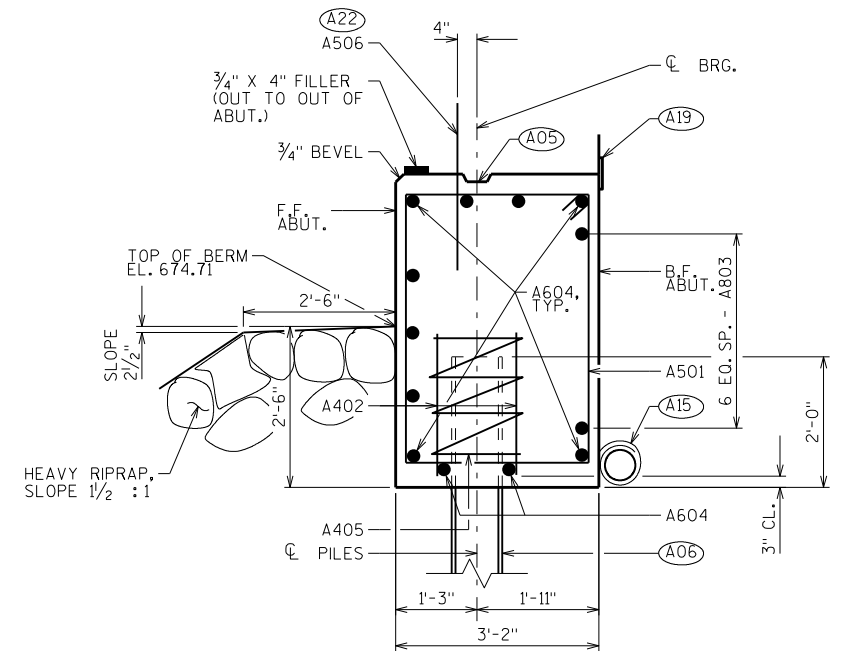
WING 2



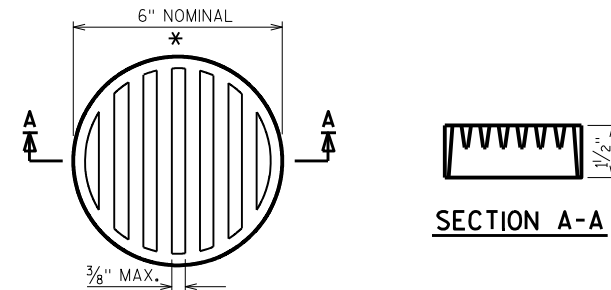
PLAN



PILE PLAN



SECTION THRU BODY



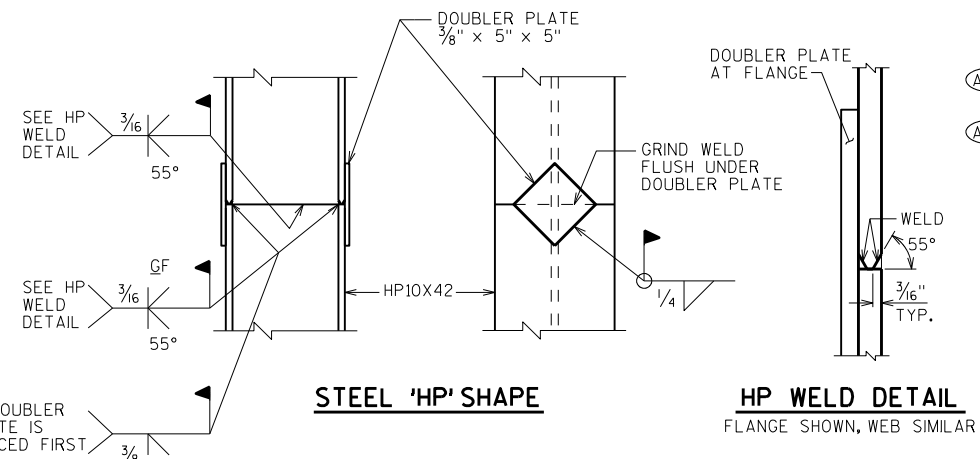
RODENT SCREEN DETAIL

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

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

THE RODENT SCREEN 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 SCREEN TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SCREEN SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH SHEET METAL SCREWS.

- (A05) CONSTRUCTION JOINT-FORMED BY BEVELED 2 x 6 BETWEEN BEAM SEATS.
- (A06) SUPPORT ABUTMENT ON HP 10 x 42 STEEL PILING, ESTIMATED 45'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE.
- (A15) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED.
- (A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (A22) A506 BARS SPACED @ 1'-0" CTRS. BETWEEN BEAM SEATS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)



STEEL 'HP' SHAPE

PILE DETAILS

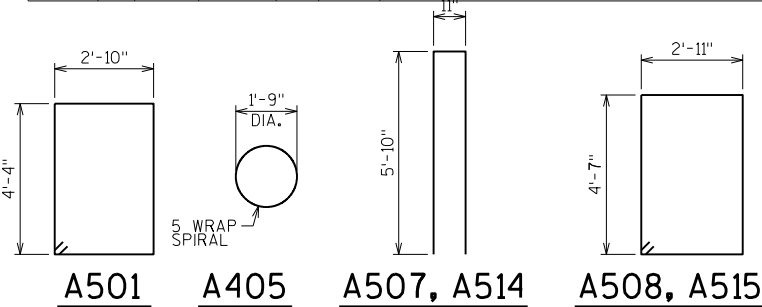
| NO.                                                                             | DATE | REVISION | BY              |
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| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |          |                 |
| STRUCTURE B-12-180                                                              |      |          |                 |
| DRAWN BY                                                                        |      | AMB      | PLANS CK'D. NAR |
| WEST ABUTMENT                                                                   |      | SHEET 4  |                 |
|                                                                                 |      | 64       |                 |

BILL OF BARS

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

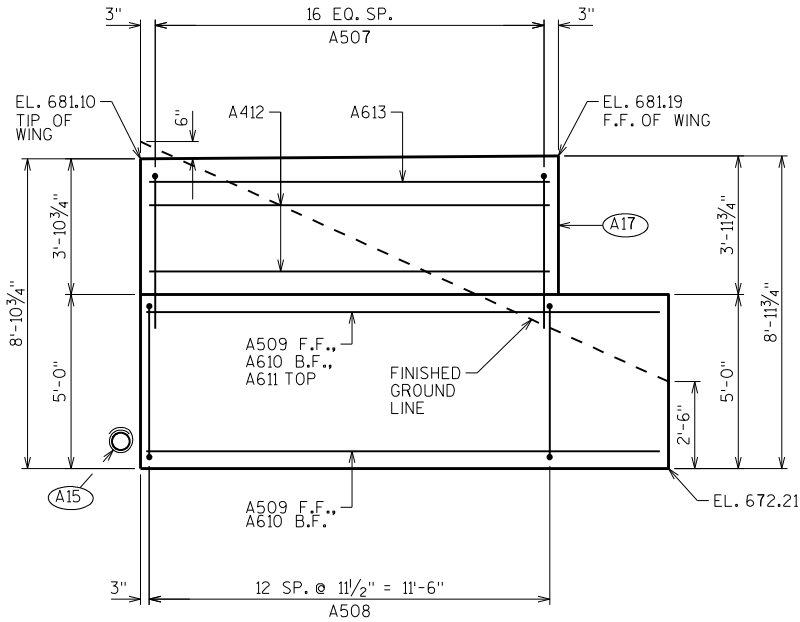
▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

| BAR MARK | COAT | NO. REQ'D. | LENGTH  | BENT | BAR SERIES | LOCATION                    |
|----------|------|------------|---------|------|------------|-----------------------------|
| A501     |      | 43         | 15'-0"  | X    |            | BODY-STIRRUPS               |
| A402     |      | 10         | 2'-3"   |      |            | PILES- 2 PER PILE           |
| A803     |      | 7          | 34'-2"  |      |            | BODY-HORIZONTAL             |
| A604     |      | 11         | 34'-2"  |      |            | BODY-HORIZONTAL             |
| A405     |      | 5          | 28'-0"  | X    |            | PILES-1 PER PILE            |
| A506     |      | 24         | 2'-0"   |      |            | BODY-VERT DOWEL             |
| A507     | X    | 17         | 12'-4"  | X    |            | WING 1-VERTICAL             |
| A508     | X    | 13         | 15'-8"  | X    |            | WING 1-STIRRUP              |
| A509     | X    | 6          | 14'-10" |      |            | WING 1-HORIZONTAL           |
| A610     | X    | 7          | 14'-10" |      |            | WING 1-HORIZONTAL           |
| A611     | X    | 2          | 14'-10" |      |            | WING 1-HORIZONTAL           |
| A412     | X    | 9          | 11'-8"  |      |            | WING 1-HORIZONTAL           |
| A613     | X    | 2          | 11'-8"  |      |            | WING 1-HORIZONTAL           |
| A514     | X    | 17         | 12'-4"  | X    |            | WING 2-VERTICAL             |
| A515     | X    | 13         | 15'-8"  | X    |            | WING 2-STIRRUP              |
| A516     | X    | 6          | 14'-10" |      |            | WING 2-HORIZONTAL           |
| A617     | X    | 7          | 14'-10" |      |            | WING 2-HORIZONTAL           |
| A618     | X    | 2          | 14'-10" |      |            | WING 2-HORIZONTAL           |
| A419     | X    | 9          | 11'-8"  |      |            | WING 2-HORIZONTAL           |
| A620     | X    | 2          | 11'-8"  |      |            | WING 2-HORIZONTAL           |
| A421     | X    | 24         | 2'-0"   |      |            | WINGS-SURFACE DRAIN ANCHORS |

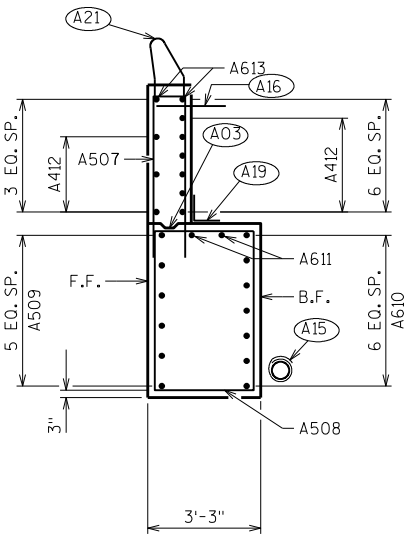


- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" R.M.W. @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A15) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED (SEE SHEET 4 FOR INFORMATION).
- (A16) A421 BARS SPACED @ 1'-0" CTRS. EMBED 1'-0" INTO WING CONC. LOCATE 3" DOWN FROM TOP OF WING @ BACKFACE TO 6" DOWN @ WING TIP. (DRILLED IN EPOXY ANCHORED #4 BARS 2'-0" LONG MAY BE USED.) COST INCIDENTAL TO BID ITEM "BAR STEEL REINFORCEMENT HS COATED BRIDGES".
- (A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (A21) FOR PPT. BARS & DIMENSION SEE PARAPET SHT. 12

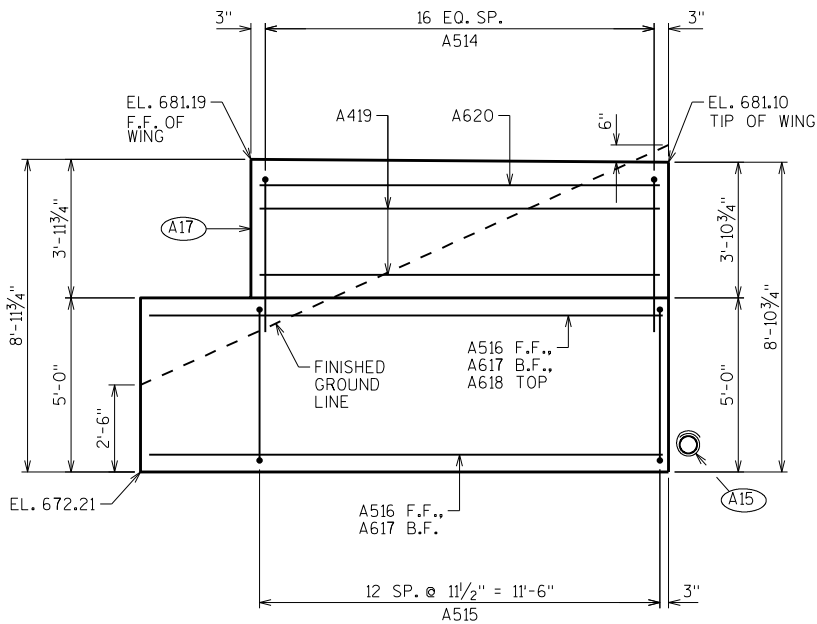
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| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |  |         |             |     |
| STRUCTURE B-12-180                                                              |  |         |             |     |
| DRAWN BY                                                                        |  | AMB     | PLANS CK'D. | NAR |
| WEST ABUTMENT<br>DETAILS                                                        |  | SHEET 5 |             | 65  |



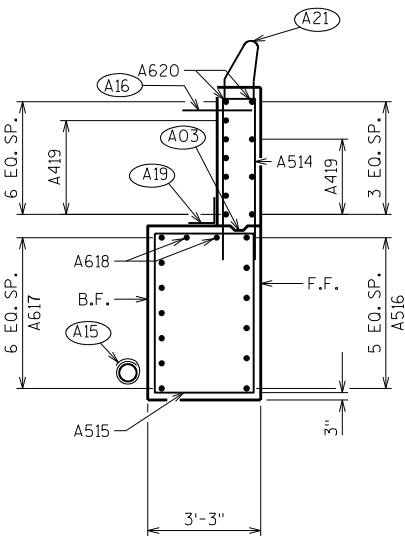
WING 1 ELEVATION



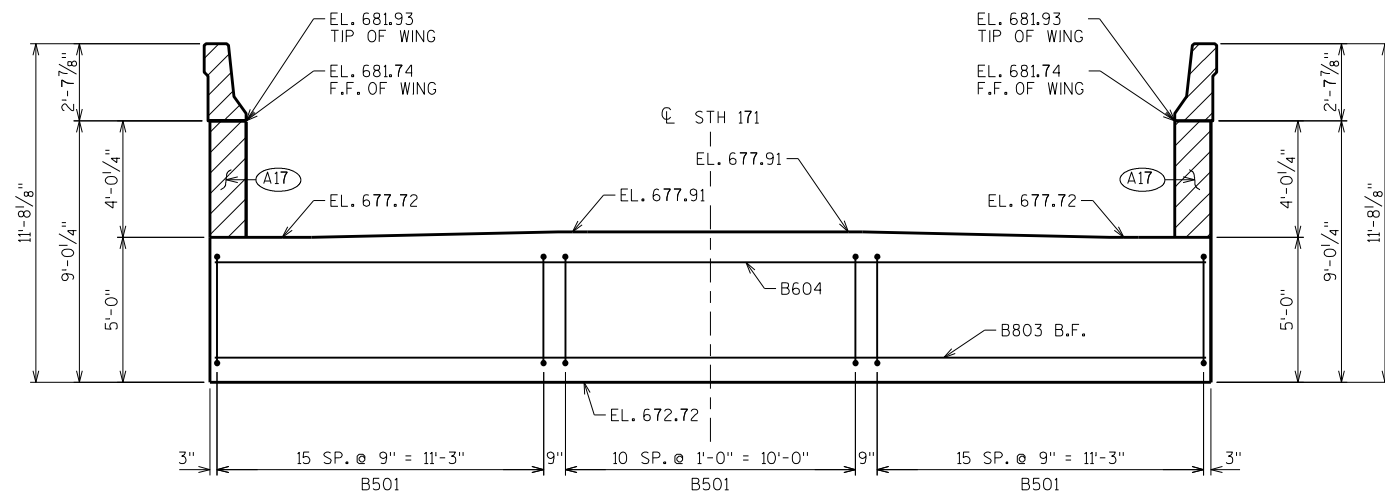
WING 1 SECTION



WING 2 ELEVATION



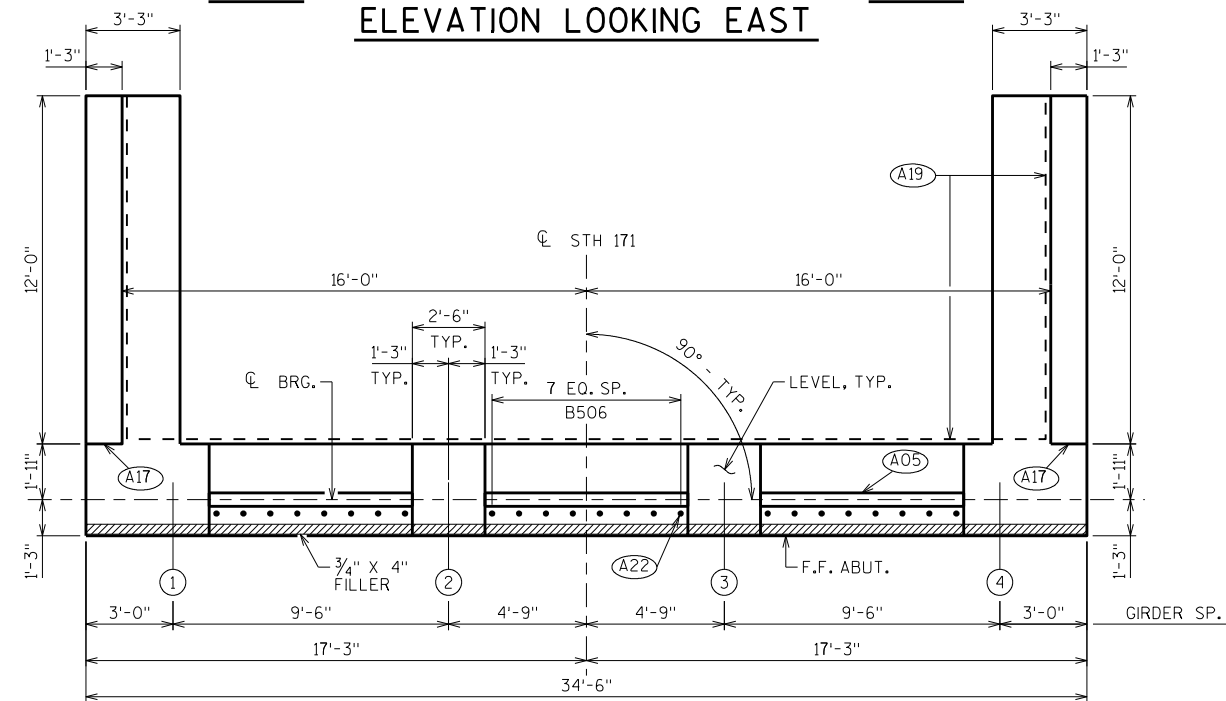
WING 2 SECTION



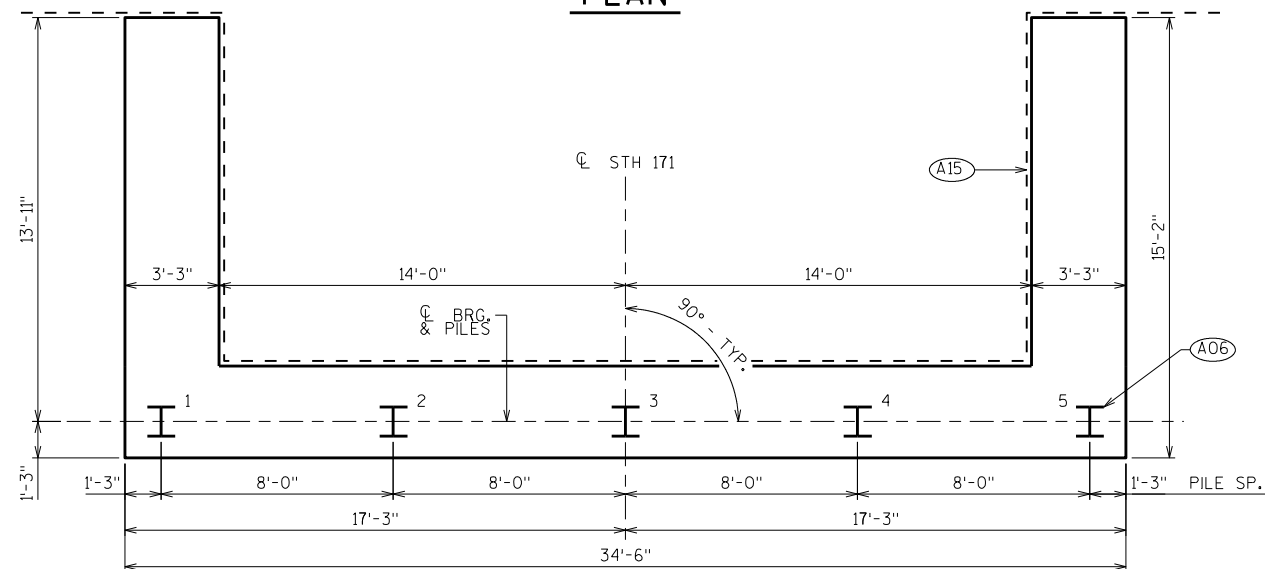
WING 3

ELEVATION LOOKING EAST

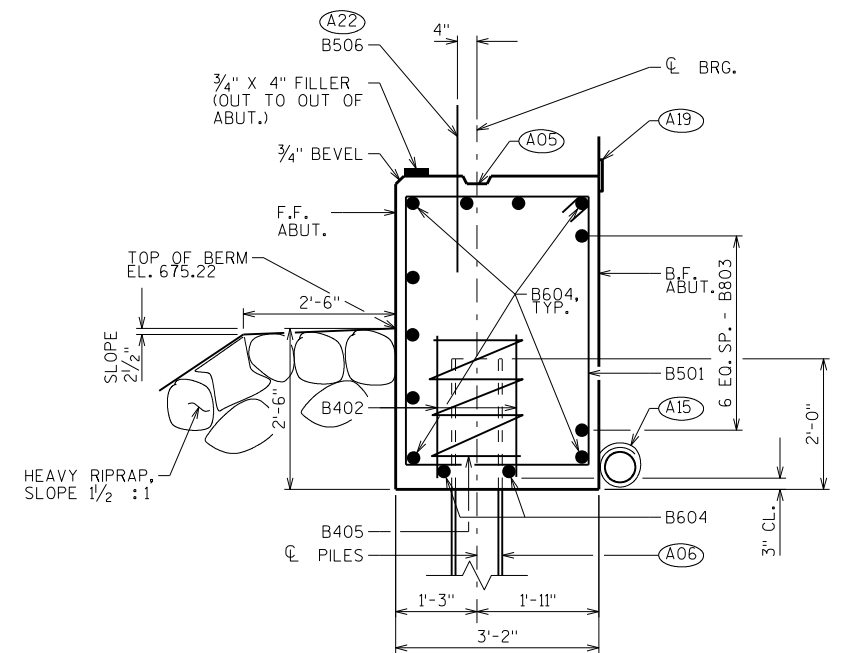
WING 4



PLAN

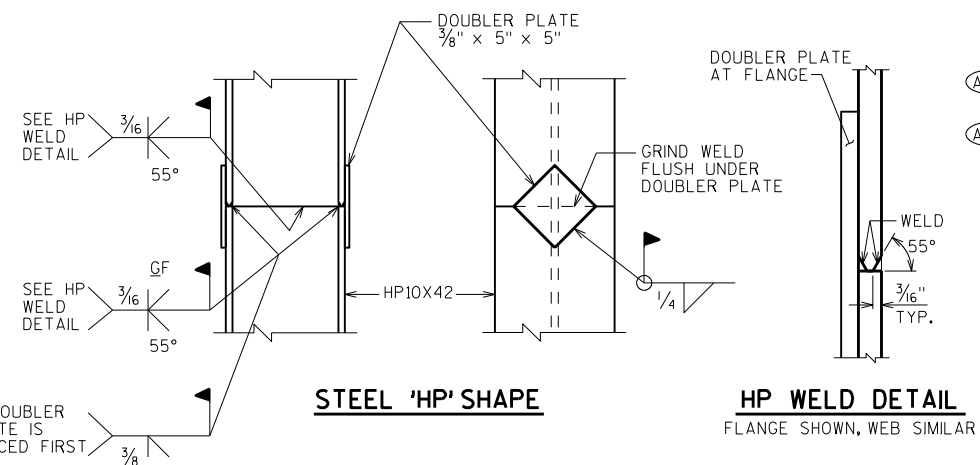


PILE PLAN



SECTION THRU BODY

- (A05) CONSTRUCTION JOINT-FORMED BY BEVELED 2 x 6 BETWEEN BEAM SEATS.
- (A06) SUPPORT ABUTMENT ON HP 10 x 42 STEEL PILING, ESTIMATED 45'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE.
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STEEL 'HP' SHAPE

PILE DETAILS

HP WELD DETAIL  
FLANGE SHOWN, WEB SIMILAR

| NO.                                                                             | DATE | REVISION | BY              |
|---------------------------------------------------------------------------------|------|----------|-----------------|
|                                                                                 |      |          |                 |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |          |                 |
| STRUCTURE B-12-180                                                              |      |          |                 |
| DRAWN BY                                                                        |      | AMB      | PLANS CK'D. NAR |
| EAST ABUTMENT                                                                   |      | SHEET 6  |                 |
|                                                                                 |      | 66       |                 |

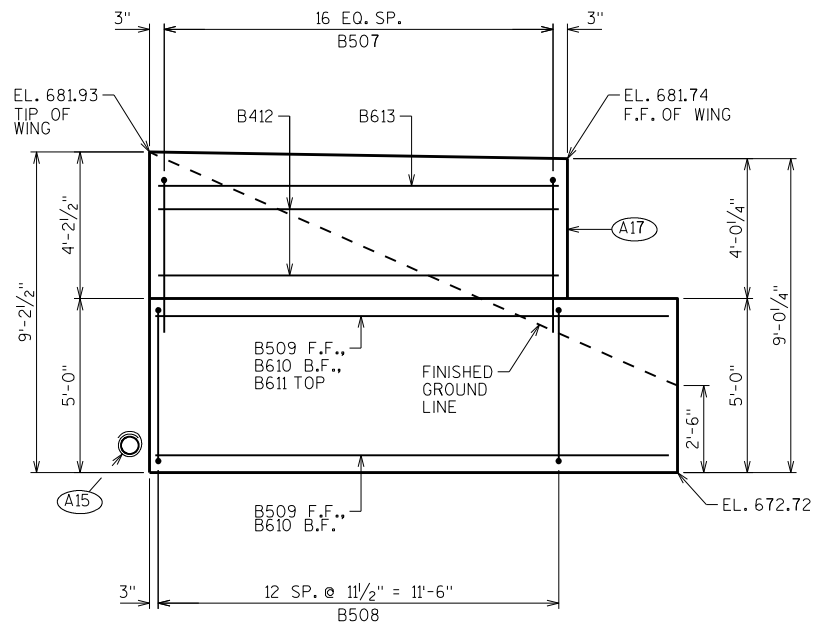
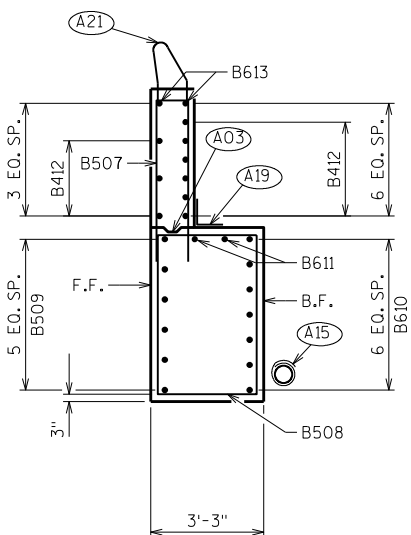
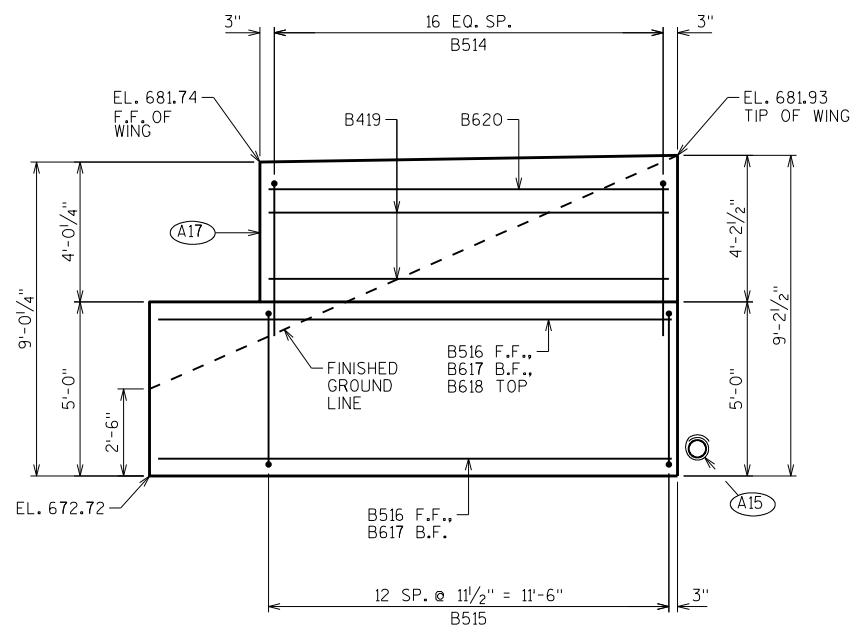
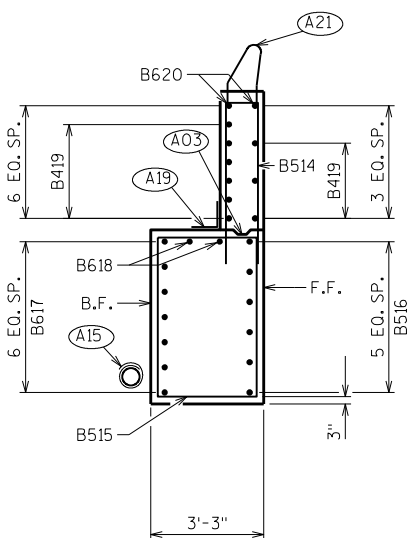
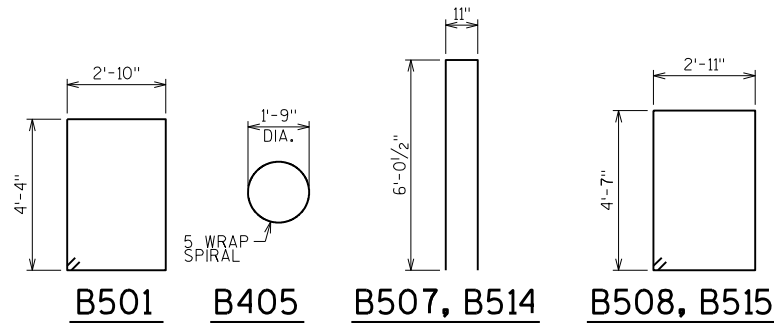


**BILL OF BARS**

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

▲ 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 MARK | COAT | NO. REQ'D. | LENGTH  | BENT | BAR SERIES | LOCATION          |
|----------|------|------------|---------|------|------------|-------------------|
| B501     |      | 43         | 15'-0"  | X    |            | BODY-STIRRUPS     |
| B402     |      | 10         | 2'-3"   |      |            | PILES- 2 PER PILE |
| B803     |      | 7          | 34'-2"  |      |            | BODY-HORIZONTAL   |
| B604     |      | 11         | 34'-2"  |      |            | BODY-HORIZONTAL   |
| B405     |      | 5          | 28'-0"  | X    |            | PILES-1 PER PILE  |
| B506     |      | 24         | 2'-0"   |      |            | BODY-VERT DOWEL   |
| B507     | X    | 17         | 12'-9"  | X    |            | WING 3-VERTICAL   |
| B508     | X    | 13         | 15'-8"  | X    |            | WING 3-STIRRUP    |
| B509     | X    | 6          | 14'-10" |      |            | WING 3-HORIZONTAL |
| B610     | X    | 7          | 14'-10" |      |            | WING 3-HORIZONTAL |
| B611     | X    | 2          | 14'-10" |      |            | WING 3-HORIZONTAL |
| B412     | X    | 9          | 11'-8"  |      |            | WING 3-HORIZONTAL |
| B613     | X    | 2          | 11'-8"  |      |            | WING 3-HORIZONTAL |
| B514     | X    | 17         | 12'-9"  | X    |            | WING 4-VERTICAL   |
| B515     | X    | 13         | 15'-8"  | X    |            | WING 4-STIRRUP    |
| B516     | X    | 6          | 14'-10" |      |            | WING 4-HORIZONTAL |
| B617     | X    | 7          | 14'-10" |      |            | WING 4-HORIZONTAL |
| B618     | X    | 2          | 14'-10" |      |            | WING 4-HORIZONTAL |
| B419     | X    | 9          | 11'-8"  |      |            | WING 4-HORIZONTAL |
| B620     | X    | 2          | 11'-8"  |      |            | WING 4-HORIZONTAL |

**WING 3 ELEVATION****WING 3 SECTION****WING 4 ELEVATION****WING 4 SECTION**

- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" R.M.W. @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A15) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED (SEE SHEET 4 FOR INFORMATION).
- (A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (A21) FOR PPT. BARS & DIMENSION SEE PARAPET SHT.

| NO.                                                                             | DATE | REVISION | BY              |
|---------------------------------------------------------------------------------|------|----------|-----------------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |          |                 |
| STRUCTURE B-12-180                                                              |      |          |                 |
| DRAWN BY                                                                        |      | AMB      | PLANS CK'D. NAR |
| EAST ABUTMENT DETAILS                                                           |      | SHEET 7  |                 |
|                                                                                 |      | 67       |                 |

**GIRDER NOTES**

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY FOR BONDING TO THE SLAB, EXCEPT THE OUTSIDE 2" OF GIRDER, WHICH SHALL BE TROWEL FINISHED.

DO NOT APPLY CONCRETE SEALER TO SURFACES RECEIVING APPLICATION OF CONCRETE STAINING.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS.

PRESTRESSING STRANDS SHALL BE 0.6 $\phi$  - 7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 psi.

STRANDS SHALL BE FLUSH WITH THE END OF GIRDER. FOR GIRDER ENDS EMBEDDED COMPLETELY IN CONCRETE, ENDS OF STRANDS SHALL BE COATED WITH NON-BITUMINOUS JOINT SEALER. FOR GIRDER ENDS THAT ARE FINALLY EXPOSED, COAT THE GIRDER ENDS, EXPOSED STRAND ENDS AND ALL NON-BONDING SURFACES WITHIN 2 FEET OF THE GIRDER ENDS WITH A NON-PIGMENTED EPOXY CONFORMING TO AASHTO M-235 TYPE III, GRADE 2, CLASS B OR C. THE EPOXY SHALL BE APPLIED AT LEAST 3 DAYS AFTER MOIST CURING HAS CEASED AND PRIOR TO THE APPLICATION OF THE SEALER.

BEND EACH END OF #4 STIRRUPS 4/2" AND #5 STIRRUPS 6".

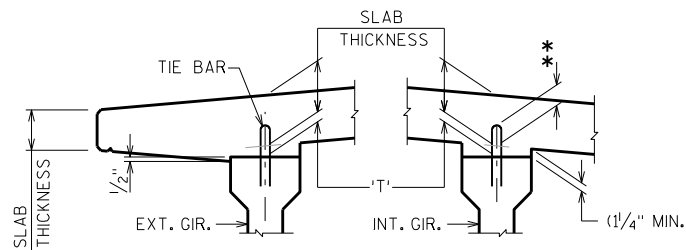
FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL DIAPHRAGM" SHEET.

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT. IF THE FABRICATOR WANTS TO BUILD A BAR STEEL CAGE BY WELDING LONGITUDINAL REINFORCEMENT TO THE #4 STIRRUPS, 10PTION IS AVAILABLE:

USE ASTM A706, GRADE 60 REINFORCEMENT AND THE STIRRUP SPACING AS SHOWN ON THE PLANS.

AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A497 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT CHIEF, (608)266-5161.

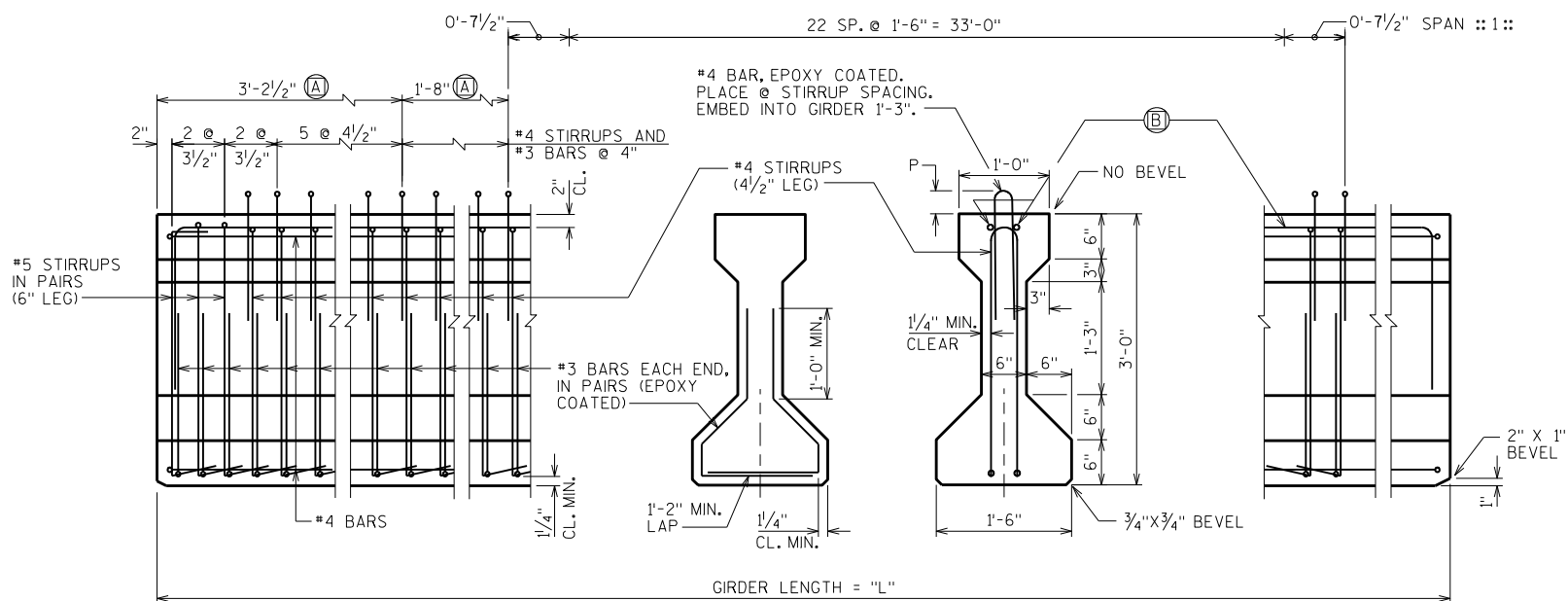
**SLAB HAUNCH DETAIL**

IF 1/4" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. THE PLAN SLAB THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN 1/2" OR, \*\* IF 3" MINIMUM DECK EMBEDMENT OF TIE BAR CANNOT BE OBTAINED.

TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT  $\phi$  OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEV. AT FINAL GRADE  
- TOP OF GIRDER ELEVATION  
+ DEAD LOAD DEFLECTION  
- SLAB THICKNESS  
= HAUNCH HEIGHT 'T'

NOTE: AN AVERAGE HAUNCH ('T') OF 2.50" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".

**SIDE VIEW & TYP. SECTION IN SPAN (A)** DETAIL TYP. AT EACH END

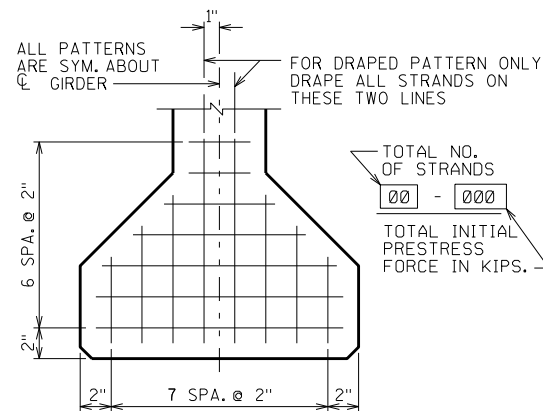
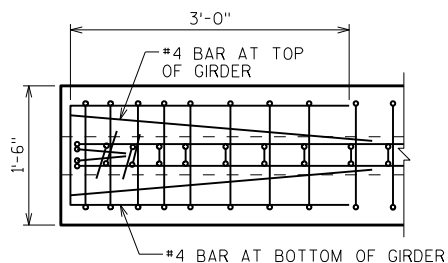
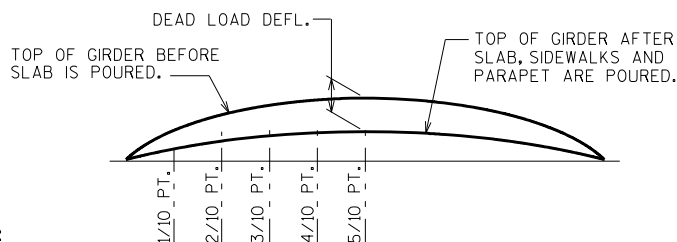
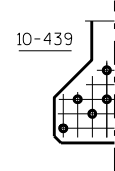
(B) 2-BARS BEND DOWN 16 BAR DIA. AT ENDS

SPAN :: 1 :: 2- #5, 2'-5" MIN. LAP

\* THE THEORETICAL INITIAL CAMBER VALUE AT THE TIME OF STRAND RELEASE AT MIDSPAN MULTIPLIED BY A FACTOR OF 1.4 TO ACCOUNT FOR CAMBER GROWTH FROM THE TIME OF STRAND RELEASE TO JOB SITE PLACEMENT.

| SPAN | CAMBER (IN.) * |
|------|----------------|
| 1    | 0.64           |
|      |                |
|      |                |
|      |                |
|      |                |

THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T'. USE ACTUAL GIRDER SHOTS. THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.

**TYP. STRAND PATTERN****TOP VIEW OF GIRDER ENDS****DEAD LOAD DEFLECTION DIAGRAM****UNDRAPED PATTERN**

0.6"  $\phi$  STRANDS

\* MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

| GIRDER DATA |        |                   |                       |      |      |      |      |      |      |      |      |                            |                       |                       |                       |                      |                      |               |       |          |                  |      |                      |               |
|-------------|--------|-------------------|-----------------------|------|------|------|------|------|------|------|------|----------------------------|-----------------------|-----------------------|-----------------------|----------------------|----------------------|---------------|-------|----------|------------------|------|----------------------|---------------|
| SPAN        | GIRDER | GIRDER LENGTH "L" | DEAD LOAD DEFL. (IN.) |      |      |      |      |      |      |      |      | CONC. STRGTH. f'c (p.s.i.) | "P" 1ST 1/3 OF GIRDER | "P" MID 1/3 OF GIRDER | "P" END 1/3 OF GIRDER | DIA. OF STRAND (IN.) | DRAPED PATTERN       |               |       |          | UNDRAPED PATTERN |      |                      |               |
|             |        |                   | 1/10                  | 2/10 | 3/10 | 4/10 | 5/10 | 6/10 | 7/10 | 8/10 | 9/10 |                            |                       |                       |                       |                      | TOTAL NO. OF STRANDS | f'ci (P.S.I.) | (IN.) |          |                  |      | TOTAL NO. OF STRANDS | f'ci (P.S.I.) |
|             |        |                   |                       |      |      |      |      |      |      |      |      |                            |                       |                       |                       |                      |                      |               | "A"   | "B" MIN. | "B" MAX.         | "C"  |                      |               |
| 1           | ALL    | 44.00             | 0.1                   | 0.2  | 0.2  | 0.3  | 0.3  | 0.3  | 0.2  | 0.2  | 0.1  | 8000                       | 6                     | 6                     | 6                     | 0.60                 |                      |               |       |          | 10               | 6400 |                      |               |
|             |        |                   |                       |      |      |      |      |      |      |      |      |                            |                       |                       |                       |                      |                      |               |       |          |                  |      |                      |               |
|             |        |                   |                       |      |      |      |      |      |      |      |      |                            |                       |                       |                       |                      |                      |               |       |          |                  |      |                      |               |
|             |        |                   |                       |      |      |      |      |      |      |      |      |                            |                       |                       |                       |                      |                      |               |       |          |                  |      |                      |               |
|             |        |                   |                       |      |      |      |      |      |      |      |      |                            |                       |                       |                       |                      |                      |               |       |          |                  |      |                      |               |

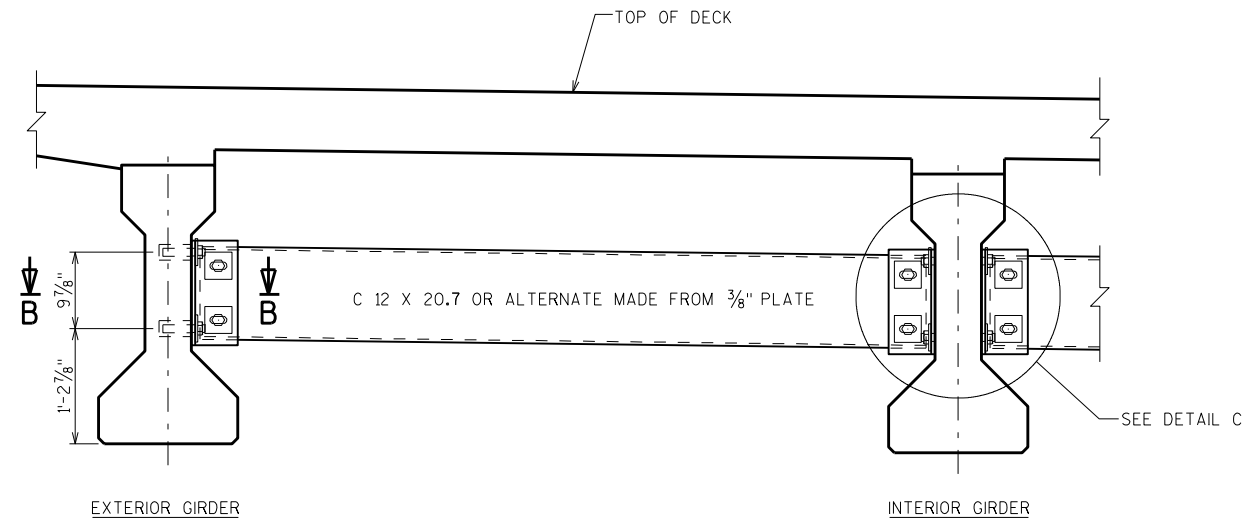
## NOTES

ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE  
CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT  
PRICE BID FOR "STEEL DIAPHRAGMS B-12-180", EACH.

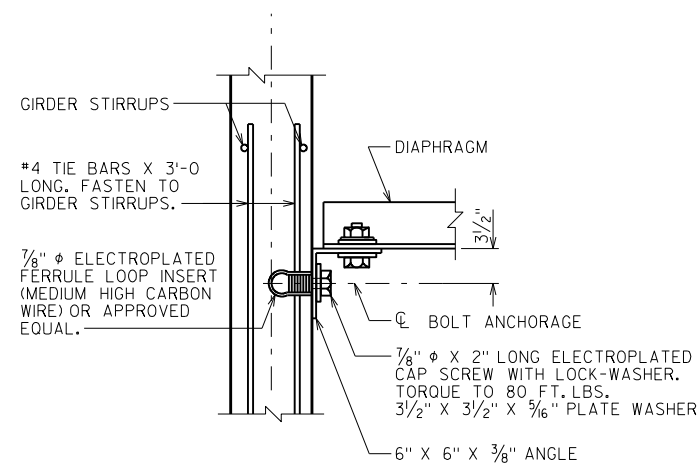
EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE  
ASTM A709 GRADE 36. ALL BOLTS, NUTS AND WASHERS  
SHALL BE ASTM A325 TYPE 1.

ALL DIAPHRAGM STRUCTURAL STEEL SHOWN SHALL BE HOT-DIPPED GALVANIZED. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. GALVANIZED NUTS SHALL BE TAPPED OVERSIZED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A563 AND SHALL MEET THE REQUIREMENTS OF SUPPLEMENTARY REQUIREMENT S1 OF ASTM A563, LUBRICANT AND TEST FOR COATED NUTS.

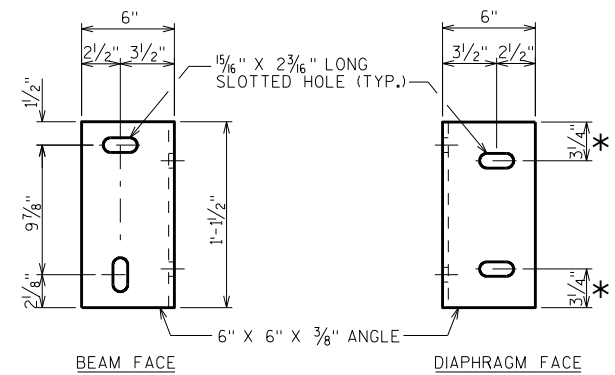


PART TRANSVERSE SECTION AT DIAPHRAGM



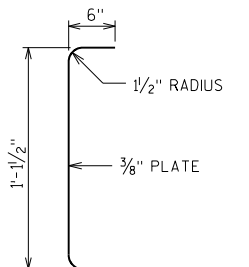
SECTION B-B

(FOR EXTERIOR ATTACHMENT)

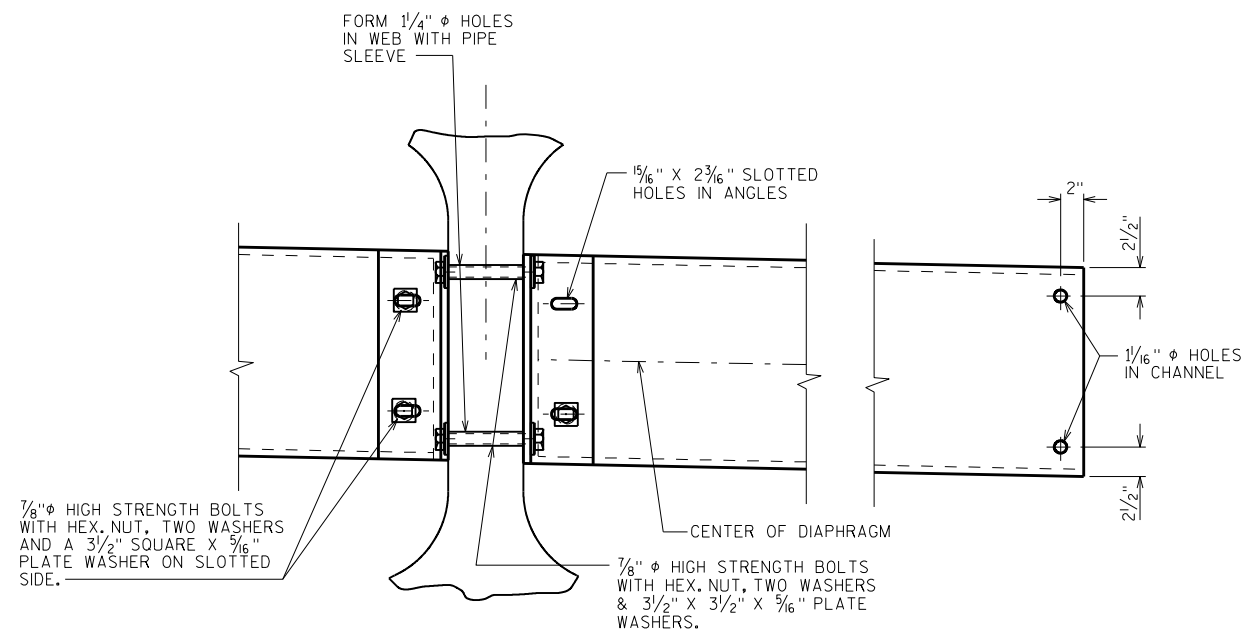


## DIAPHRAGM SUPPORT

\* 2 1/2" FOR ALTERNATE PLATE DIAPHRAGM



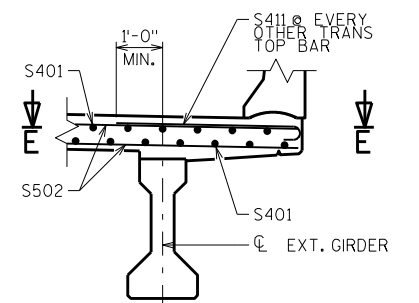
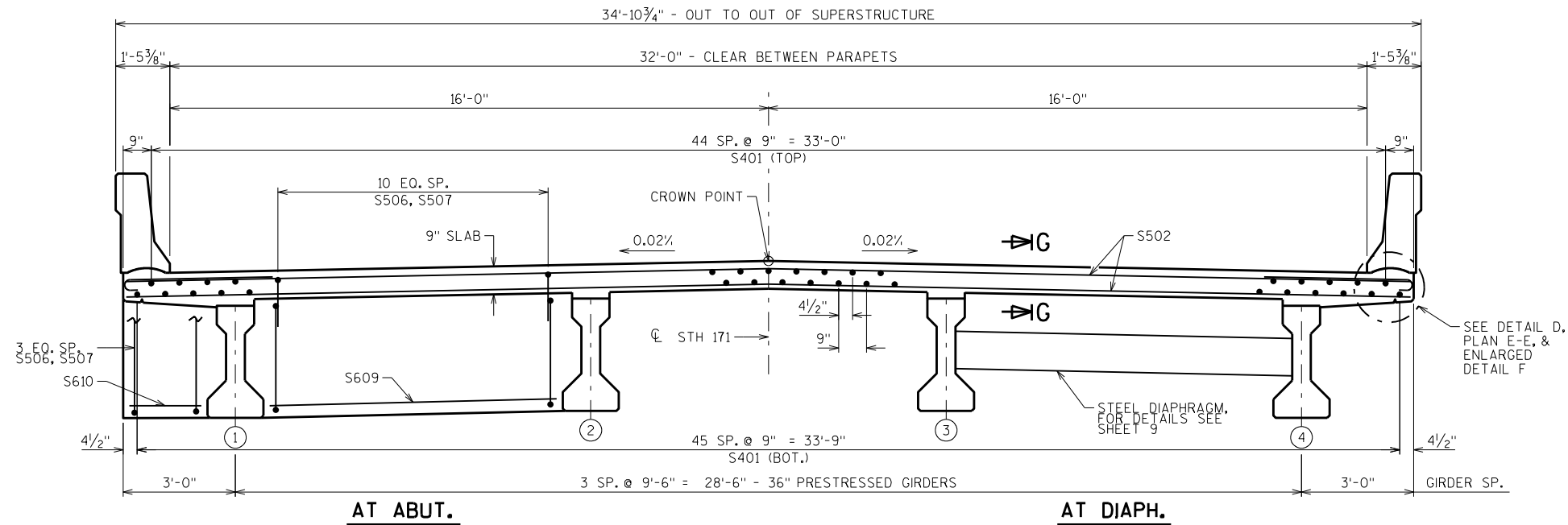
SECTION THRU  
ALTERNATE DIAPHRAGM



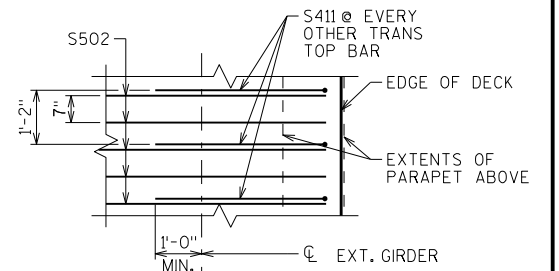
DETAIL C

(FOR CONTINUOUS LINE OF DIAPHRAGMS)

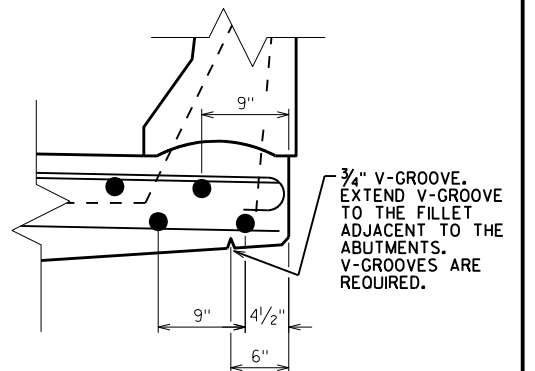
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|                                                                                 |          |          |                        |
| NO.                                                                             | DATE     | REVISION | BY                     |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |          |          |                        |
| STRUCTURE B-12-180                                                              |          |          |                        |
|                                                                                 | DRAWN BY | AMB      | PLANS CK'D. <b>NAR</b> |
| STEEL<br><br>DIAPHRAGM                                                          |          | SHEET 9  |                        |
|                                                                                 |          | 69       |                        |



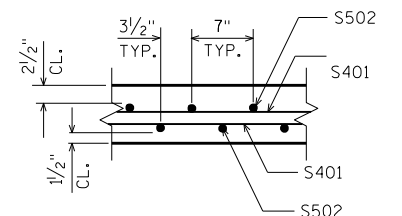
DETAIL D



PLAN E-E



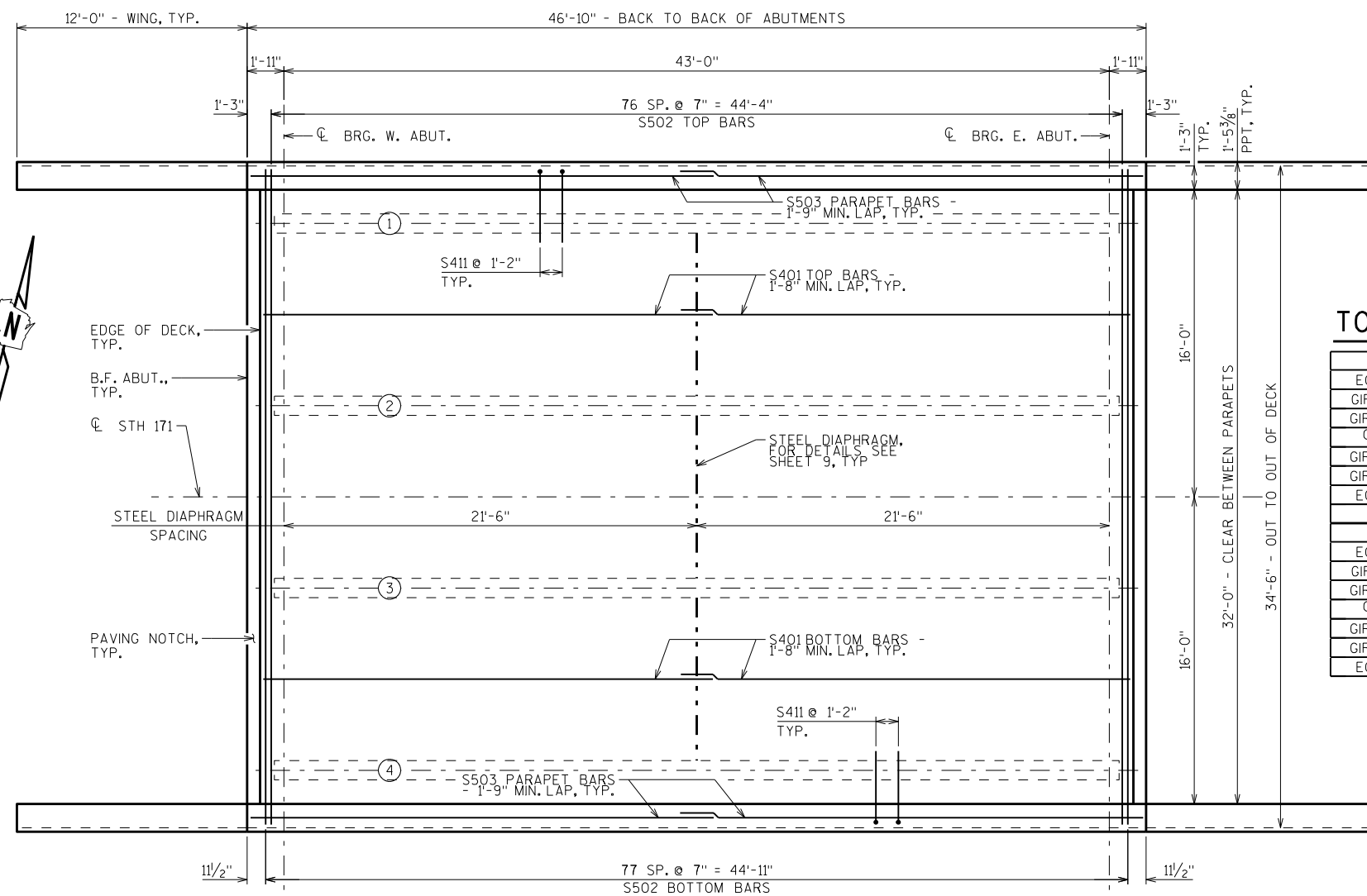
DETAIL F



SECTION G-G

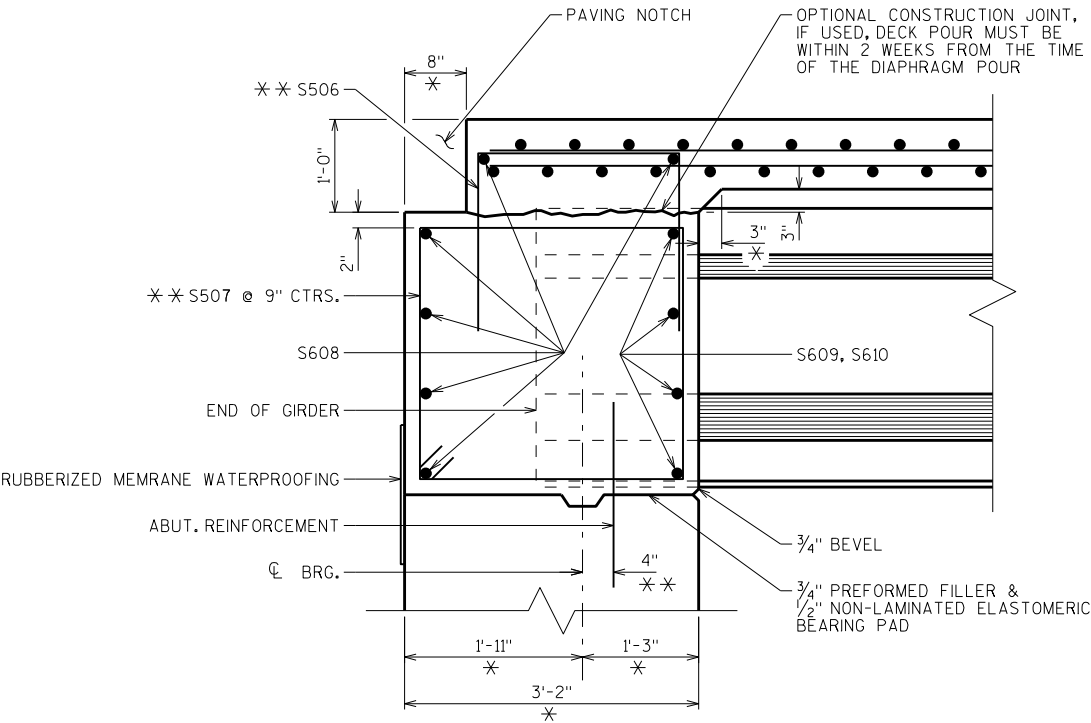
TOP OF DECK ELEVATIONS

|        | W. ABUT. | 1/10   | 2/10   | 3/10   | 4/10   | 5/10     |
|--------|----------|--------|--------|--------|--------|----------|
| EOD    | 681.21   | 681.24 | 681.29 | 681.33 | 681.38 | 681.43   |
| GIR. 1 | 681.24   | 681.28 | 681.32 | 681.37 | 681.41 | 681.46   |
| GIR. 2 | 681.43   | 681.47 | 681.51 | 681.56 | 681.60 | 681.65   |
| CL     | 681.53   | 681.56 | 681.61 | 681.65 | 681.70 | 681.75   |
| GIR. 3 | 681.43   | 681.47 | 681.51 | 681.56 | 681.60 | 681.65   |
| GIR. 4 | 681.24   | 681.28 | 681.32 | 681.37 | 681.41 | 681.46   |
| EOD    | 681.21   | 681.24 | 681.29 | 681.33 | 681.38 | 681.43   |
|        | 5/10     | 6/10   | 7/10   | 8/10   | 9/10   | E. ABUT. |
| EOD    | 681.43   | 681.48 | 681.53 | 681.59 | 681.65 | 681.71   |
| GIR. 1 | 681.46   | 681.51 | 681.57 | 681.62 | 681.68 | 681.75   |
| GIR. 2 | 681.65   | 681.70 | 681.76 | 681.81 | 681.87 | 681.94   |
| CL     | 681.75   | 681.80 | 681.85 | 681.91 | 681.97 | 682.03   |
| GIR. 3 | 681.65   | 681.70 | 681.76 | 681.81 | 681.87 | 681.94   |
| GIR. 4 | 681.46   | 681.51 | 681.57 | 681.62 | 681.68 | 681.75   |
| EOD    | 681.43   | 681.48 | 681.53 | 681.59 | 681.65 | 681.71   |



SUPERSTRUCTURE PLAN

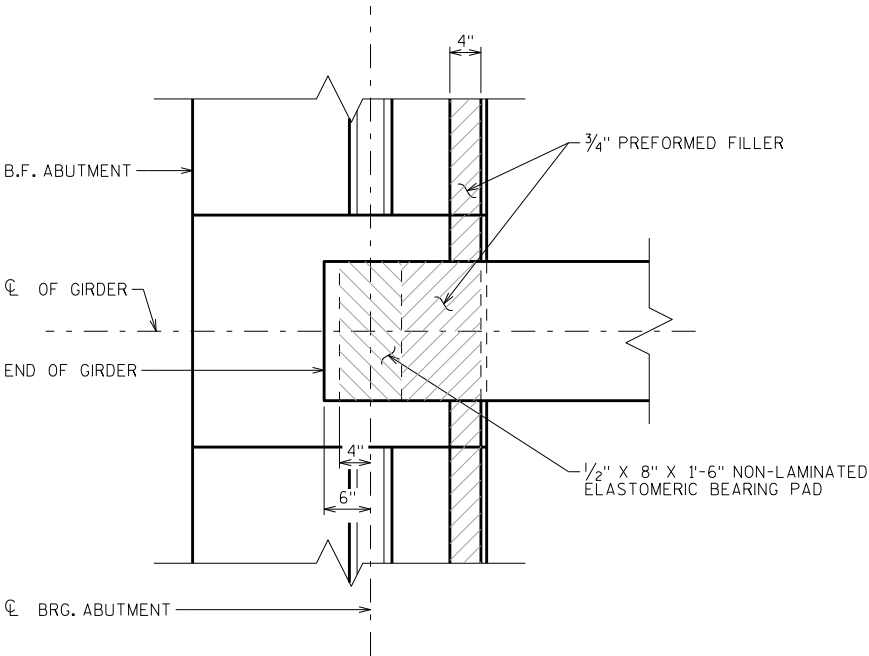
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|                                                                                 |      |          |                 |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |          |                 |
| STRUCTURE B-12-180                                                              |      |          |                 |
| DRAWN BY                                                                        |      | AMB      | PLANS CK'D. NAR |
| SUPERSTRUCTURE                                                                  |      | SHEET 10 |                 |
|                                                                                 |      | 70       |                 |



\* DIMENSION IS TAKEN NORMAL TO  $\phi$  OF SUBSTRUCTURE UNITS.

\*\* DIMENSION IS TAKEN PARALLEL TO THE  $\phi$  OF THE GIRDER.

PARTIAL LONGITUDINAL SECTION



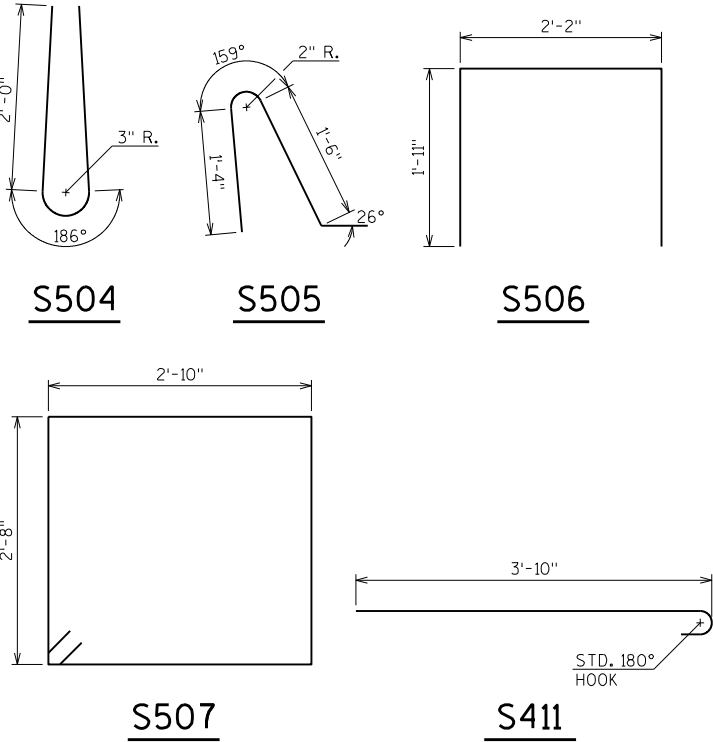
BEARING PAD DETAIL

BILL OF BARS

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

▲ 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 MARK | COAT | NO. REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION                    |
|----------|------|------------|--------|------|------------|-----------------------------|
| S401     | X    | 182        | 23'-6" |      |            | LONGITUDINAL TOP & BOTTOM   |
| S502     | X    | 155        | 34'-2" |      |            | TRANSVERSE TOP & BOTTOM     |
| S503     | X    | 20         | 24'-2" |      |            | PARAPET LF - HORIZ.         |
| S504     | X    | 142        | 4'-10" | X    |            | PARAPET LF - VERT.          |
| S505     | X    | 142        | 4'-2"  | X    |            | PARAPET LF - VERT.          |
| S506     | X    | 82         | 5'-11" | X    |            | ABUTMENT DIAPHRAGM - VERT.  |
| S507     | X    | 82         | 11'-8" | X    |            | ABUTMENT DIAPHRAGM - VERT.  |
| S608     | X    | 12         | 34'-2" |      |            | ABUTMENT DIAPHRAGM - HORIZ. |
| S609     | X    | 24         | 7'-8"  |      |            | ABUTMENT DIAPHRAGM - HORIZ. |
| S610     | X    | 16         | 1'-11" |      |            | ABUTMENT DIAPHRAGM - HORIZ. |
| S411     | X    | 78         | 4'-4"  | X    |            | TRANSVERSE TOP EDGE OF DECK |

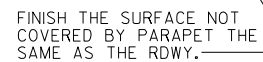


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| NO.                                                                             | DATE | REVISION | BY              |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |          |                 |
| STRUCTURE B-12-180                                                              |      |          |                 |
| DRAWN BY                                                                        |      | AMB      | PLANS CK'D. NAR |
| SUPERSTRUCTURE DETAILS                                                          |      | SHEET 11 |                 |
|                                                                                 |      | 71       |                 |





### INSIDE ELEVATION



SECTION H-H



SECTION K-K

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

| BAR<br>MARK | COAT | WEST<br>ABUT. | EAST<br>ABUT. | LENGTH | BENT | BAR<br>SERIES | LOCATION       |
|-------------|------|---------------|---------------|--------|------|---------------|----------------|
| R501        | X    | 28            | 28            | 4-7    | X    |               | PARAPET VERT.  |
| R502        | X    | 16            | 16            | 2-4    | X    |               | PARAPET VERT.  |
| R503        | X    | 16            | 16            | 4-7    | X    |               | PARAPET VERT.  |
| R504        | X    | 8             | 8             | 11-7   |      |               | PARAPET HORIZ. |
| R505        | X    | 44            | 44            | 4-10   | X    |               | PARAPET VERT.  |
| R506        | X    | 2             | 2             | 11-7   | X    |               | PARAPET HORIZ. |
|             |      |               |               |        |      |               |                |
|             |      |               |               |        |      |               |                |
|             |      |               |               |        |      |               |                |
|             |      |               |               |        |      |               |                |
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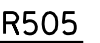
## PLAN

R501

R502



R503

R505

R506

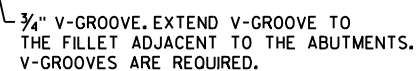
— THREADED INSERTS FOR  $\frac{7}{8}$ "  $\phi$  X 2" LONG GALVANIZED HEX HEAD CAP SCREWS. CAP SCREWS TO BE THREADED A MIN. OF  $\frac{1}{8}$ " AND SHALL BE SUPPLIED, INCLUDING WASHERS, WITH ASSEMBLY. INSERTS TO BE THREADED A MINIMUM OF  $\frac{1}{4}$ ".



NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

ASSEMBLY SHALL BE BID ITEM "ANCHOR  
ASSEMBLIES FOR STEEL PLATE BEAM  
GUARD", EACH.


$$\frac{1}{\phi}$$

$$K \mid \Phi$$


SECTION THRU PARAPET ON BRIDGE

● CONST. JOINT - STRIKE OFF AS SHOWN.

■ R502 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE R502 BARS CORRECTLY ALONG TRANSITION OF PARAPET.

▽ R501 AND R503 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED.

|                                                                                        |      |          |                        |
|----------------------------------------------------------------------------------------|------|----------|------------------------|
|                                                                                        |      |          |                        |
| NO.                                                                                    | DATE | REVISION | BY                     |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br><b>STRUCTURES DESIGN SECTION</b> |      |          |                        |
| <b>STRUCTURE B-12-180</b>                                                              |      |          |                        |
| DRAWN BY                                                                               |      | AMB      | PLANS CK'D. <b>NAR</b> |
| <b>SLOPED FACE<br/>PARAPET LF</b>                                                      |      | SHEET 12 |                        |
|                                                                                        |      | 72       |                        |

## DESIGN DATA

LIVE LOAD: HL-93  
INVENTORY RATING FACTOR: RF=1.05  
OPERATING RATING FACTOR: RF=1.35  
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 255 (KIPS)

EARTH LOAD: DESIGNED FOR 18.0 FT. OF FILL.

ULTIMATE DESIGN STRESSES:  
CONCRETE MASONRY, GRADE A-FA  $f'_c = 3,500$  P.S.I.  
HIGH STRENGTH BAR STEEL REINFORCEMENT  $f_y = 60,000$  P.S.I.

## TRAFFIC VOLUME

STH 171  
A.D.T. = 690 (2033)  
R.D.S. = 60 M.P.H.

## HYDRAULIC DATA

100 YEAR FREQUENCY  
 $Q_{100} = 700$  C.F.S.  
VEL. = 8.6 F.P.S.  
HW. = EL. 658.7  
DRAINAGE AREA = 1.2 SQ. MI.  
OVERTOPPING RDWY = N.A.  
SCOUR CRITICAL CODE = 8  
2 YEAR FREQUENCY  
 $Q_2 = 70$  C.F.S.  
HW. = EL. 654.0

## TOTAL ESTIMATED QUANTITIES

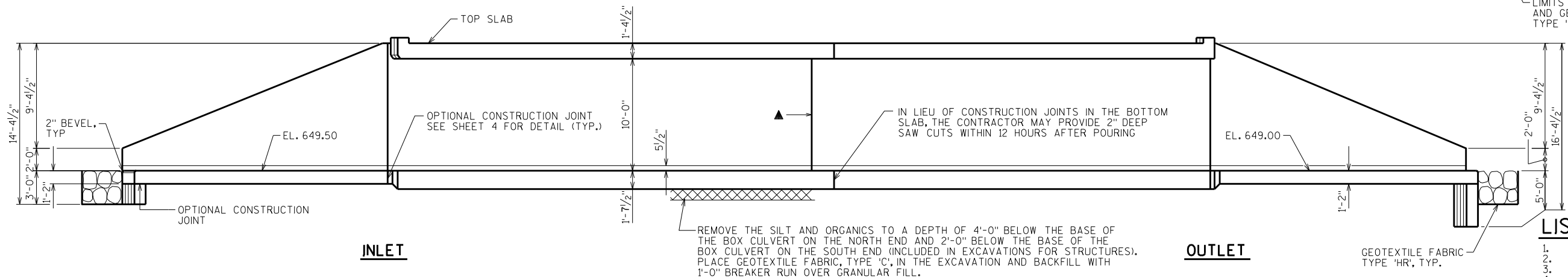
## BID ITEMS

|          |                                             |       |    |
|----------|---------------------------------------------|-------|----|
| 203.0200 | REMOVING OLD STRUCTURE STA 57+78.00         | 1     | LS |
| 206.2000 | EXCAVATION FOR STRUCTURES CULVERTS C-12-181 | 1     | LS |
| 206.5000 | COFFERDAMS C-12-181                         | 1     | LS |
| 210.0100 | BACKFILL STRUCTURE                          | 1570  | CY |
| 311.0115 | BREAKER RUN                                 | 110   | CY |
| 504.0100 | CONCRETE MASONRY CULVERTS                   | 248   | CY |
| 505.0410 | BAR STEEL REINFORCEMENT HS CULVERTS         | 30120 | LB |
| 505.0610 | BAR STEEL REINFORCEMENT HS COATED CULVERTS  | 3530  | LB |
| 516.0500 | RUBBERIZED MEMBRANE WATERPROOFING           | 30    | SY |
| 606.0300 | RIPRAP HEAVY                                | 32    | CY |
| 645.0105 | GEOTEXTILE FABRIC TYPE C                    | 360   | SY |
| 645.0120 | GEOTEXTILE FABRIC TYPE HR                   | 87    | SY |

## NON-BID ITEMS

FILLER 3/4" SIZE

## ELEVATION



INLET

OUTLET

## GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

THE UPPER LIMITS OF EXCAVATION FOR STRUCTURES SHALL BE THE EXISTING GROUNDLINE.

ALL SPACES EXCAVATED AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TO THE TOP OF THE BOX WITHIN THE LENGTH OF THE CULVERT.

THE CONCRETE IN THE CUTOFF WALLS MAY BE PLACED UNDERWATER IF THE EXCAVATION CANNOT BE DEWATERED.

PLACE A 18" (MIN.) WIDE SHEET OF 'RUBBERIZED MEMBRANE WATERPROOFING' ON TOP SLAB OVER ALL CONSTRUCTION JOINTS AND EXTEND DOWN TO BOTTOM OF OUTSIDE WALLS.

THE CONTRACTOR MAY FURNISH A PRECAST CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE BOX CULVERT WITH THE ACCEPTANCE OF THE SHOP DRAWINGS BY THE STRUCTURES DEVELOPMENT SECTION. THE PRECAST CONCRETE BOX CULVERT SHALL CONFORM TO PRECAST DETAILS ON CHAPTER 36 STANDARDS OF THE CURRENT WISC. DOT BRIDGE MANUAL. PAYMENT FOR THE PRECAST CULVERT SHALL BE BASED ON THE QUANTITIES AND PRICES BID FOR THE ITEMS LISTED IN THE "TOTAL ESTIMATED QUANTITIES."

CONTRACTOR MAY ELECT TO SUBSTITUTE #10R #2 CONCRETE COARSE AGGREGATE, SELECT CRUSHED MATERIAL OR OTHER GRANULAR MATERIAL AS APPROVED BY THE FIELD ENGINEER, IN LIEU OF THE BREAKER RUN, TO BE UTILIZED AS A CONSTRUCTION PLATFORM FOR THE BOX. THE CONTRACTOR IS RESPONSIBLE FOR BASE STABILITY WITH ANY SUBSTITUTED MATERIAL.

STATE PROJECT NUMBER

5790-01-81



NOTE: STRUCTURE BACKFILL  
REQUIRED BEHIND ALL  
WING WALLS.

UNNAMED TRIB.  
TO COPPER CREEK

▲ SEE CORNER DETAILS

■ NAME PLATE LOCATION (SEE  
SHEET 4)

\* BUILD APRON AND END OF  
BOX LEVEL

▲ VERT. CONSTRUCTION JOINT

○ INDICATES WING NUMBER

LIMITS OF HEAVY RIPRAP  
AND GEOTEXTILE FABRIC  
TYPE 'HR', TYP.

## LIST OF DRAWINGS

1. LAYOUT
2. BOX DETAILS
3. APRON DETAILS
4. DETAILS
5. SUBSURFACE EXPLORATION

STRUCTURE DESIGN CONTACT:

AARON BONK (608) 261-0261

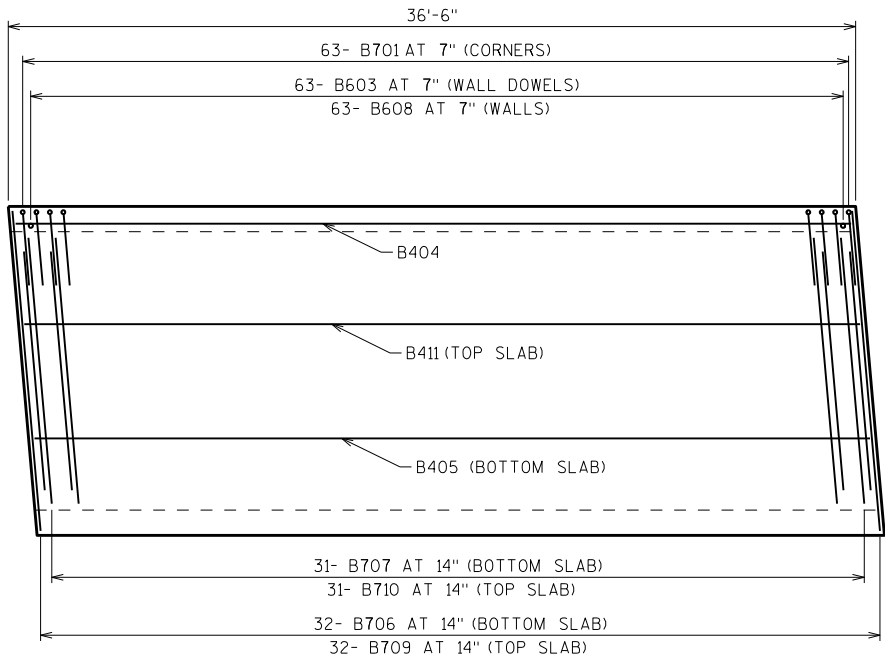
KENT BAHLER (608) 266-8490

|                                                                                                                                                                                                                                                   |          |                   |              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------------|--------------|
| NO.                                                                                                                                                                                                                                               | DATE     | REVISION          | BY           |
|  Plans Prepared By <b>WISDOT</b><br><b>BUREAU OF STRUCTURES</b><br>ACCEPTED <i>William C. Dieker</i> <b>11/6/12</b><br>CHIEF STRUCTURES DESIGN ENGINEER DATE |          |                   |              |
| <b>STRUCTURE C-12-181</b>                                                                                                                                                                                                                         |          |                   |              |
| STH 171 OVER UNNAMED TRIB. TO COPPER CREEK                                                                                                                                                                                                        |          |                   |              |
| COUNTY                                                                                                                                                                                                                                            | CRAWFORD | TOWN/CITY/VILLAGE | FREEMAN      |
| DESIGN SPEC. AASHTO LRFD DESIGN SPEC. 5th EDITION                                                                                                                                                                                                 |          |                   |              |
| DESIGNED BY                                                                                                                                                                                                                                       | MLH      | DESIGN CK'D.      | AMB          |
| DRAWN BY                                                                                                                                                                                                                                          | AMB      | PLANS CK'D.       | NAR          |
| LAYOUT                                                                                                                                                                                                                                            |          |                   | SHEET 1 OF 5 |
|                                                                                                                                                                                                                                                   |          |                   | 73           |

## BILL OF BARS

THE FIRST OR FIRST AND SECOND DIGIT OF THE MARK SIGNIFIES THE BAR SIZE. THE DIMENSION IN THE BENT COLUMN IS THE OUT TO OUT HORIZONTAL LEG OF A "L" SHAPED BAR. LONGER BARS OF THE SAME SIZE MAY BE SUBSTITUTED FOR SHORTER BARS. PAYMENT BASED ON BAR LENGTHS AS DETAILED.

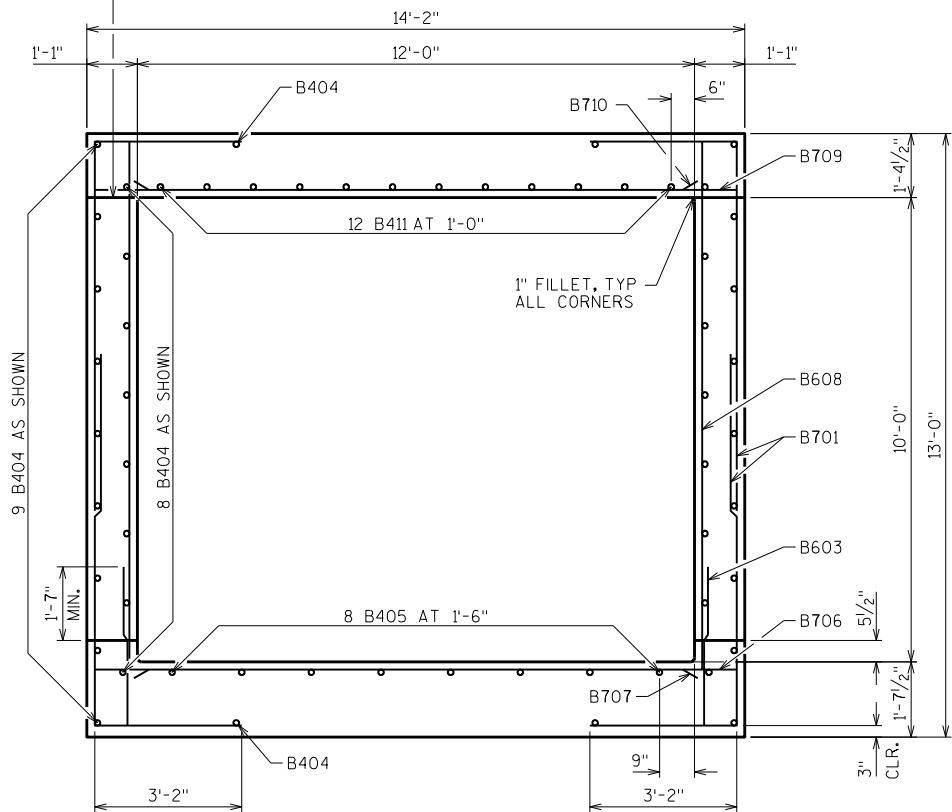
| BAR MARK | COAT | NO. REQ'D. | LENGTH  | BENT  | BAR SERIES | LOCATION                 |
|----------|------|------------|---------|-------|------------|--------------------------|
| B701     |      | 504        | 11'-3"  | 3'-2" | NO         | CORNERS                  |
| B603     |      | 252        | 3'-5"   | NO    | NO         | WALLS - DOWELS VERT.     |
| B404     |      | 76         | 36'-0"  | NO    | NO         | TOP & BOTTOM SLAB & WALL |
| B405     |      | 16         | 36'-0"  | NO    | NO         | BOTTOM SLAB LONGIT.      |
| B706     |      | 64         | 13'-10  | NO    | NO         | BOTTOM SLAB TRANS.       |
| B707     |      | 62         | 11'-6"  | NO    | NO         | BOTTOM SLAB TRANS.       |
| B608     |      | 252        | 10'-9"  | NO    | NO         | WALLS VERT.              |
| B709     |      | 64         | 13'-10" | NO    | NO         | TOP SLAB TRANS.          |
| B710     |      | 62         | 11'-6"  | NO    | NO         | TOP SLAB TRANS.          |
| B411     |      | 24         | 36'-0"  | NO    | NO         | TOP SLAB LONGIT.         |
| B412     |      | 4          | 13'-9"  | NO    | NO         | HEADERS HORIZ.           |
| B313     |      | 38         | 3'-6"   | YES   | NO         | HEADERS STIRRUPS VERT.   |
| B514     |      | 48         | 4'-0"   | NO    | NO         | VERT. CONST. JOINT       |



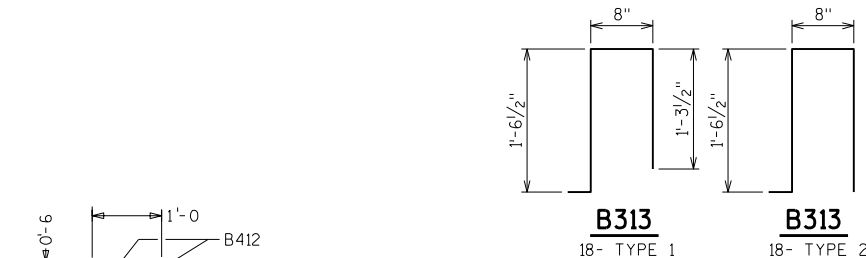
## PLAN VIEW OF EXTERIOR PANEL

USE IDENTICAL STEEL IN OTHER PANELS.  
APRON AND HEADER ARE NOT SHOWN.

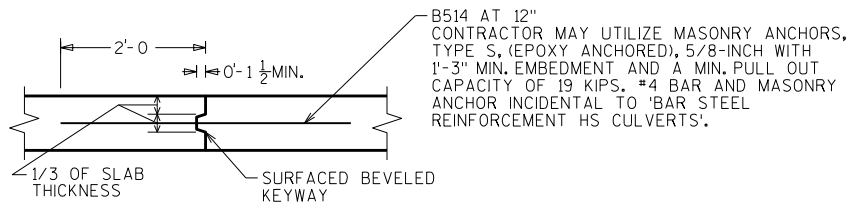
OPTIONAL CONST. JOINT - OMIT  
1" FILLET IF OPTIONAL CONST.  
JOINT IS USED



## TYPICAL SECTION THRU BOX



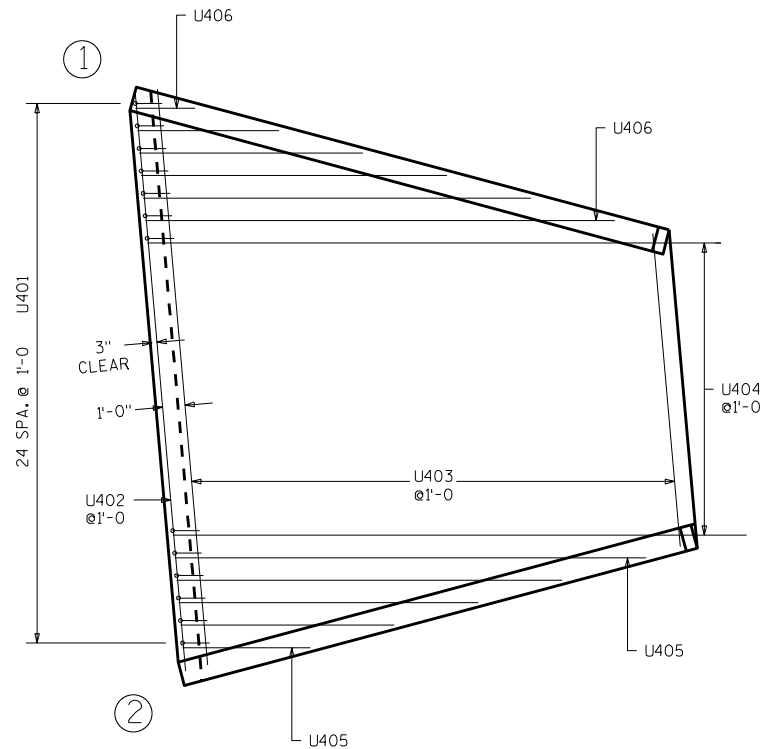
## SECTION THRU TOP HEADER



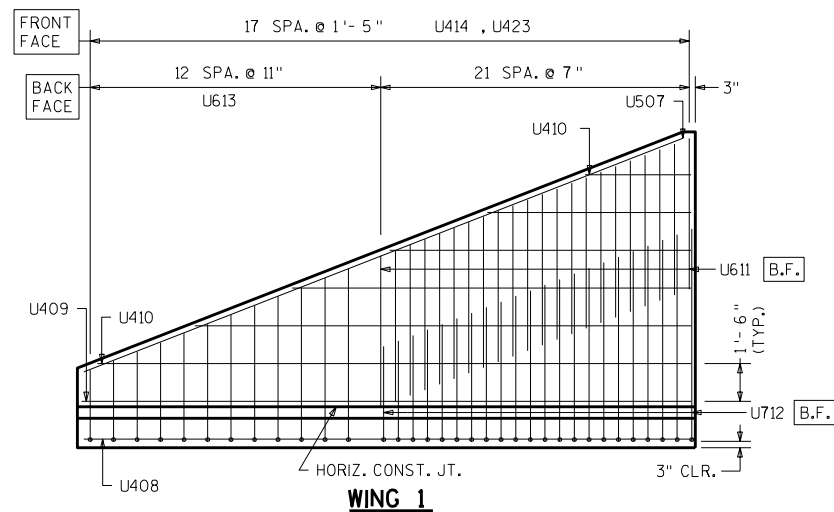
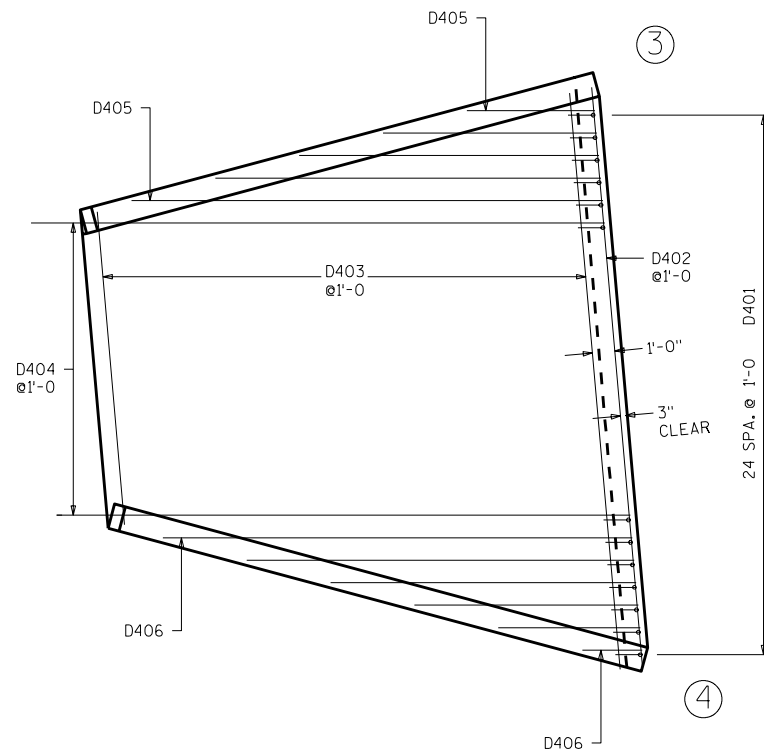
## VERTICAL CONSTRUCTION JOINT

2" DEEP SAW CUT WITHIN 12 HOURS AFTER POURING MAY  
BE USED IN LIEU OF CONST. JT. IN BOTTOM SLAB.

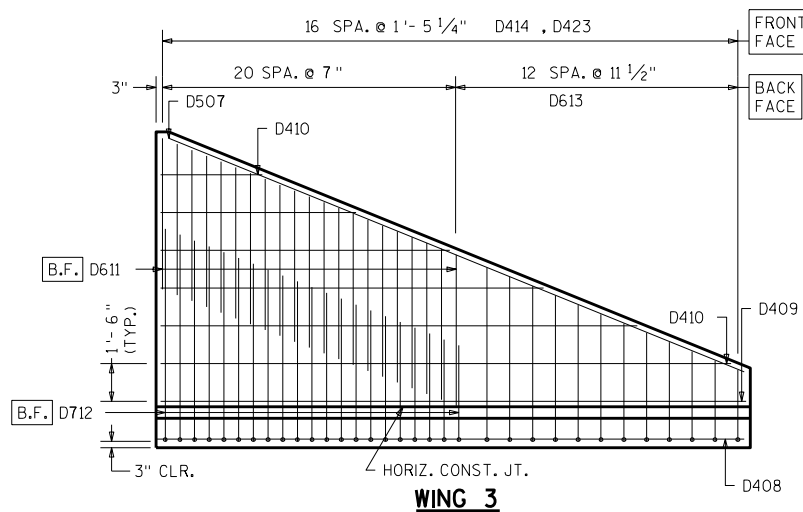
|                                                                                 |      |                 |    |
|---------------------------------------------------------------------------------|------|-----------------|----|
| NO.                                                                             | DATE | REVISION        | BY |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |                 |    |
| STRUCTURE C-12-181                                                              |      |                 |    |
| DRAWN BY AMB                                                                    |      | PLANS CK'D. NAR |    |
| BOX<br>DETAILS                                                                  |      | SHEET 2         |    |
|                                                                                 |      | 74              |    |



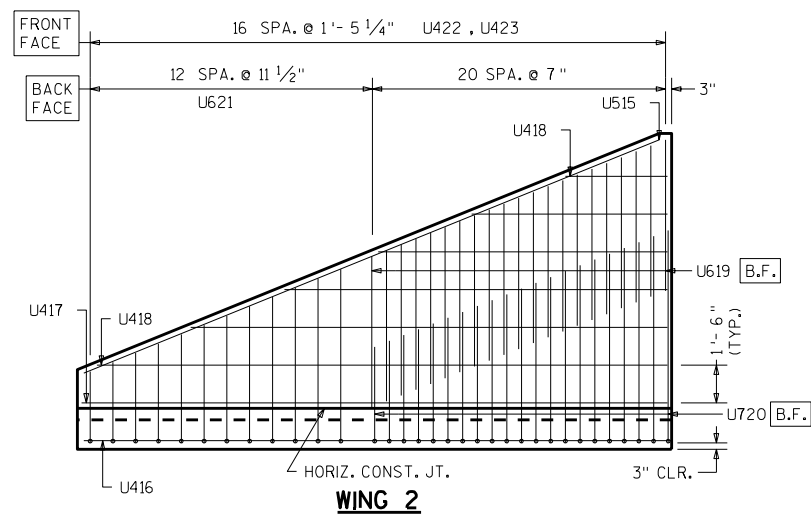
**APRON REINF.**



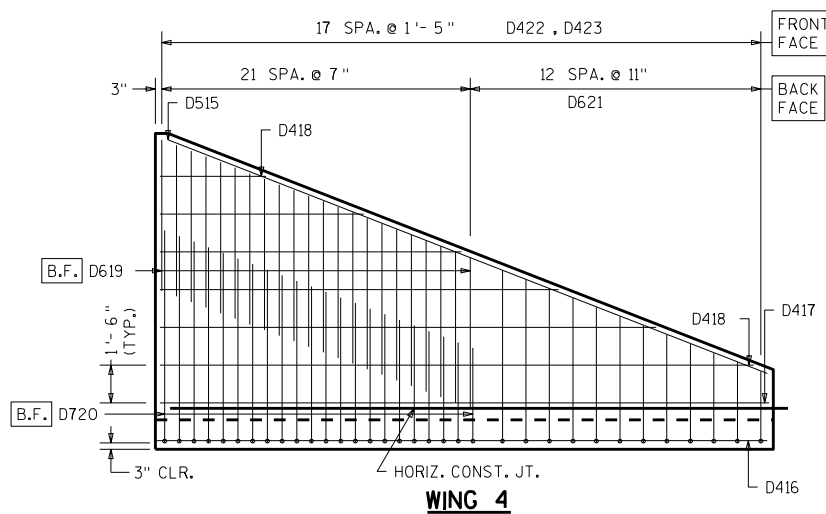
**WING 1**



**WING 3**

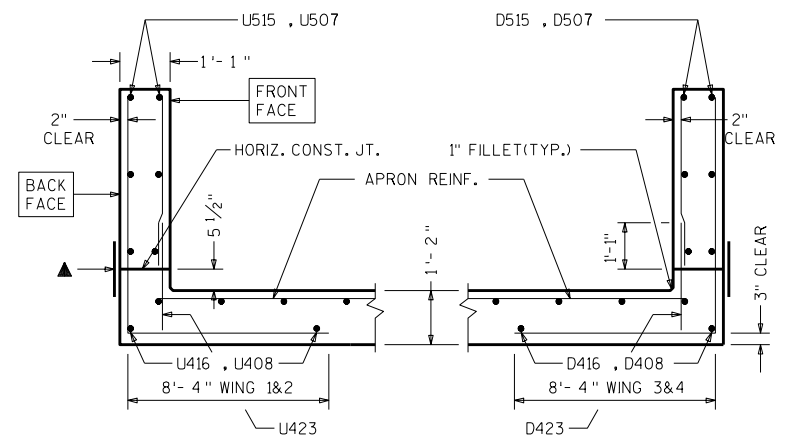


**WING 2**

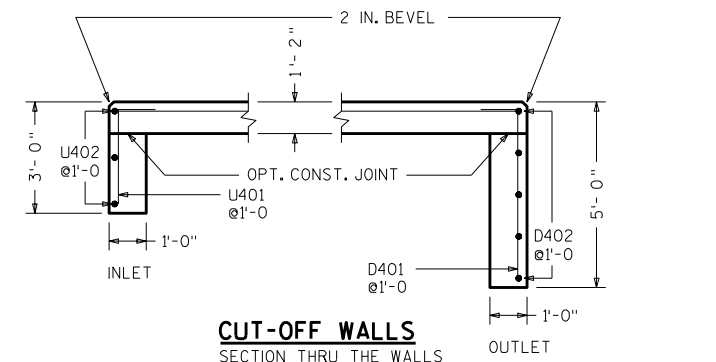


**WING 4**

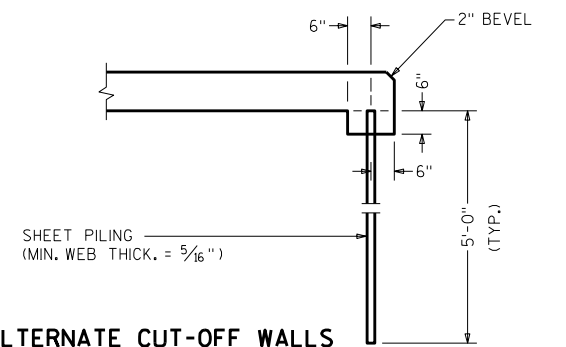
▲ 18" RUBBERIZED MEMBRANE WATER-PROOFING. PLACE ALONG HORIZ. CONST. JT. FOR ENTIRE WING LENGTH (TYP.).



**SECTION THRU WINGS**  
AT RIGHT ANGLES TO WING WALLS



**CUT-OFF WALLS**  
SECTION THRU THE WALLS



**ALTERNATE CUT-OFF WALLS**  
THE ABOVE ALT. MAY BE USED IN LIEU OF THE CAST-IN-PLACE CONC. CUT-OFF WALLS. PAYMENT WILL BE BASED ON THE CONC. CUT-OFF WALLS.

| NO.                                                                             | DATE | REVISION        | BY |
|---------------------------------------------------------------------------------|------|-----------------|----|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |                 |    |
| STRUCTURE C-12-181                                                              |      |                 |    |
| DRAWN BY AMB                                                                    |      | PLANS CK'D. NAR |    |
| APRON DETAILS                                                                   |      | SHEET 3         |    |
|                                                                                 |      | 75              |    |

SCALE = 3/8"

BILL OF BARS

THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE.  
THE DIMENSION IN THE BENT COLUMN IS THE OUT TO OUT HORIZONTAL LEG OF AN L - SHAPED BAR.

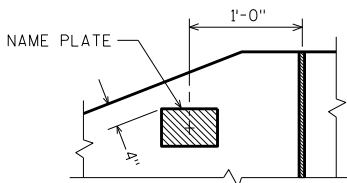
| BAR MARK | COAT | NO. REQ'D. | LENGTH  | BENT  | BAR SERIES | LOCATION                            |
|----------|------|------------|---------|-------|------------|-------------------------------------|
| U401     |      | 25         | 3 - 6   | 1 - 0 |            | INLET APRON AND CUTOFF WALL         |
| U402     |      | 3          | 25 - 3  |       |            | INLET APRON AND CUTOFF WALL         |
| U403     |      | 23         | 19 - 10 |       | *          | " APRON                             |
| U404     |      | 14         | 25 - 6  |       |            | " APRON                             |
| U405     |      | 5          | 13 - 4  |       | *          | " APRON                             |
| U406     |      | 6          | 12 - 0  |       | *          | " APRON                             |
| U507     |      | 2          | 25 - 8  |       |            | WING 1 -HORIZONTAL - BOTH FACES     |
| U408     |      | 2          | 24 - 3  |       |            | WING "-HORIZONTAL -APRON BOTT. SLAB |
| U409     |      | 2          | 24 - 3  |       |            | WING "-HORIZONTAL - BOTH FACES      |
| U410     |      | 12         | 14 - 1  |       | *          | WING "-HORIZONTAL - BOTH FACES      |
| U611     |      | 22         | 6 - 0   |       |            | WING "-VERTICAL - BACK FACE         |
| U712     | X    | 22         | 14 - 0  | 8 - 4 | *          | WING "-VERTICAL - BACK FACE         |
| U613     | X    | 12         | 13 - 1  | 8 - 4 | *          | WING "-VERTICAL - BACK FACE         |
| U414     |      | 18         | 6 - 1   |       | *          | WING "-VERTICAL - FRONT FACE        |
| U515     |      | 2          | 24 - 9  |       |            | WING 2 -HORIZONTAL - BOTH FACES     |
| U416     |      | 2          | 23 - 3  |       |            | WING "-HORIZONTAL -APRON BOTT. SLAB |
| U417     |      | 2          | 23 - 3  |       |            | WING "-HORIZONTAL - BOTH FACES      |
| U418     |      | 12         | 13 - 7  |       | *          | WING "-HORIZONTAL - BOTH FACES      |
| U619     |      | 21         | 6 - 0   |       |            | WING "-VERTICAL - BACK FACE         |
| U720     | X    | 21         | 14 - 1  | 8 - 4 | *          | WING "-VERTICAL - BACK FACE         |
| U621     | X    | 12         | 13 - 1  | 8 - 4 | *          | WING "-VERTICAL - BACK FACE         |
| U422     |      | 17         | 6 - 2   |       | *          | WING "-VERTICAL - FRONT FACE        |
| U423     | X    | 35         | 2 - 6   |       |            | WINGS 1 AND 2 - DOWELS - FRONT FACE |
| D401     |      | 25         | 5 - 6   | 1 - 0 |            | OUTLET APRON AND CUTOFF WALL        |
| D402     |      | 5          | 25 - 3  |       |            | OUTLET APRON AND CUTOFF WALL        |
| D403     |      | 23         | 19 - 10 |       | *          | " APRON                             |
| D404     |      | 14         | 25 - 6  |       |            | " APRON                             |
| D405     |      | 5          | 13 - 4  |       | *          | " APRON                             |
| D406     |      | 6          | 12 - 0  |       | *          | " APRON                             |
| D507     |      | 2          | 24 - 9  |       |            | WING 3 -HORIZONTAL - BOTH FACES     |
| D408     |      | 2          | 23 - 3  |       |            | WING "-HORIZONTAL -APRON BOTT. SLAB |
| D409     |      | 2          | 23 - 3  |       |            | WING "-HORIZONTAL - BOTH FACES      |
| D410     |      | 12         | 13 - 7  |       | *          | WING "-HORIZONTAL - BOTH FACES      |
| D611     |      | 21         | 6 - 0   |       |            | WING "-VERTICAL - BACK FACE         |
| D712     | X    | 21         | 14 - 1  | 8 - 4 | *          | WING "-VERTICAL - BACK FACE         |
| D613     | X    | 12         | 13 - 1  | 8 - 4 | *          | WING "-VERTICAL - BACK FACE         |
| D414     |      | 17         | 6 - 2   |       | *          | WING "-VERTICAL - FRONT FACE        |
| D515     |      | 2          | 25 - 8  |       |            | WING 4 -HORIZONTAL - BOTH FACES     |
| D416     |      | 2          | 24 - 3  |       |            | WING "-HORIZONTAL -APRON BOTT. SLAB |
| D417     |      | 2          | 24 - 3  |       |            | WING "-HORIZONTAL - BOTH FACES      |
| D418     |      | 12         | 14 - 1  |       | *          | WING "-HORIZONTAL - BOTH FACES      |
| D619     |      | 22         | 6 - 0   |       |            | WING "-VERTICAL - BACK FACE         |
| D720     | X    | 22         | 14 - 0  | 8 - 4 | *          | WING "-VERTICAL - BACK FACE         |
| D621     | X    | 12         | 13 - 1  | 8 - 4 | *          | WING "-VERTICAL - BACK FACE         |
| D422     |      | 18         | 6 - 1   |       | *          | WING "-VERTICAL - FRONT FACE        |
| D423     | X    | 35         | 2 - 6   |       |            | WINGS 3 AND 4 - DOWELS - FRONT FACE |

\* 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

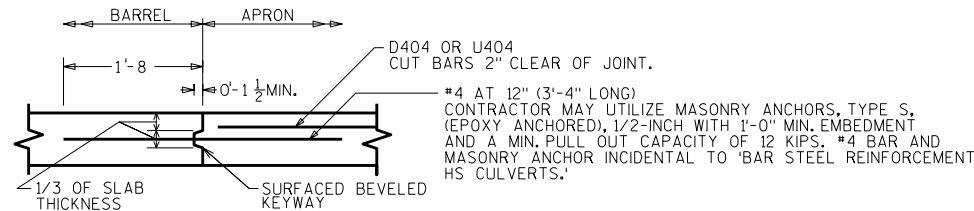
--- BUNDLE AND TAG EACH SERIES SEPARATELY

| BAR MARK | NO. REQ'D.     | LENGTHS FOR EACH SERIES |
|----------|----------------|-------------------------|
| U403     | 1 SERIES OF 23 | 14 - 0 TO 25 - 9        |
| U405     | 1 SERIES OF 5  | 5 - 8 TO 21 - 0         |
| U406     | 1 SERIES OF 6  | 2 - 11 TO 21 - 1        |
| U410     | 2 SERIES OF 6  | 4 - 6 TO 23 - 8         |
| U712     | 1 SERIES OF 22 | 11 - 8 TO 16 - 5        |
| U613     | 1 SERIES OF 12 | 11 - 0 TO 15 - 3        |
| U414     | 1 SERIES OF 18 | 1 - 5 TO 10 - 9         |
| U418     | 2 SERIES OF 6  | 4 - 4 TO 22 - 10        |
| U720     | 1 SERIES OF 21 | 11 - 9 TO 16 - 5        |
| U621     | 1 SERIES OF 12 | 11 - 0 TO 15 - 3        |
| U422     | 1 SERIES OF 17 | 1 - 6 TO 10 - 9         |
| D403     | 1 SERIES OF 23 | 14 - 0 TO 25 - 9        |
| D405     | 1 SERIES OF 5  | 5 - 8 TO 21 - 0         |
| D406     | 1 SERIES OF 6  | 2 - 11 TO 21 - 1        |
| D410     | 2 SERIES OF 6  | 4 - 4 TO 22 - 10        |
| D712     | 1 SERIES OF 21 | 11 - 9 TO 16 - 5        |
| D613     | 1 SERIES OF 12 | 11 - 0 TO 15 - 3        |
| D414     | 1 SERIES OF 17 | 1 - 6 TO 10 - 9         |
| D418     | 2 SERIES OF 6  | 4 - 6 TO 23 - 8         |
| D720     | 1 SERIES OF 22 | 11 - 8 TO 16 - 5        |
| D621     | 1 SERIES OF 12 | 11 - 0 TO 15 - 3        |
| D422     | 1 SERIES OF 18 | 1 - 5 TO 10 - 9         |



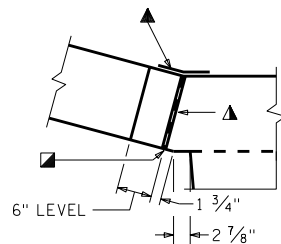
NAME PLATE LOCATION

WING 4

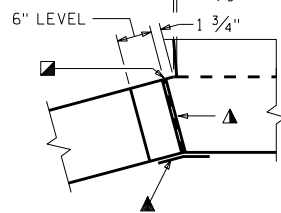


OPTIONAL CONSTRUCTION JOINT

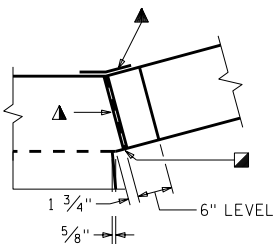
2" DEEP SAW CUT WITHIN 12 HOURS AFTER POURING MAY BE USED IN LIEU OF CONST. JT. IN BOTTOM SLAB.



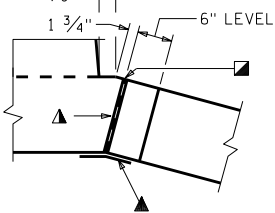
CORNER 1



CORNER 2



CORNER 3



CORNER 4

CORNER DETAILS

▲ 3/4" FILLER TYPICAL. EXTEND FILLER FROM HORIZ. CONST. JT. TO TOP OF WING.

■ 1" BEVEL TYPICAL

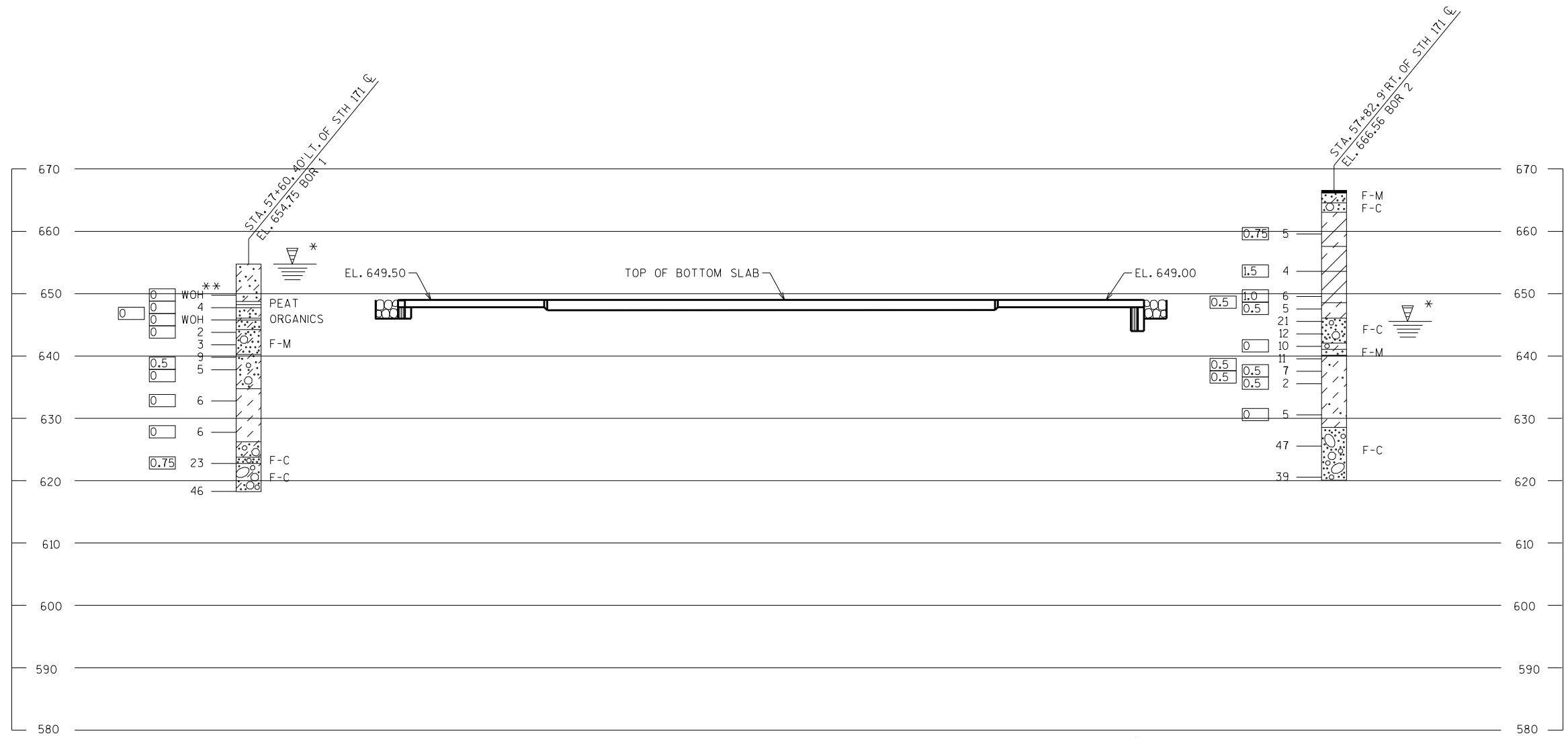
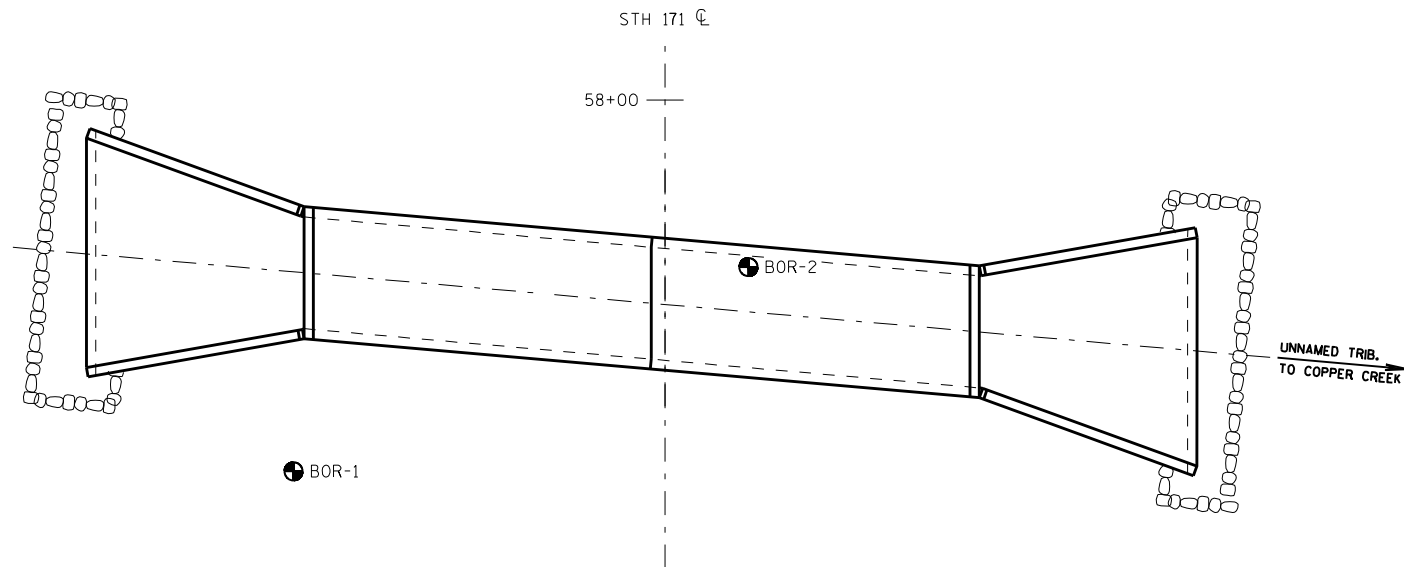
▲ 18" RUBBERIZED MEMBRANE WATER-PROOFING. EXTEND FROM HORIZ. CONST. JT. TO TOP OF WALL.

|                                                                                 |      |              |                 |
|---------------------------------------------------------------------------------|------|--------------|-----------------|
|                                                                                 |      |              |                 |
| NO.                                                                             | DATE | REVISION     | BY              |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |              |                 |
| STRUCTURE C-12-181                                                              |      |              |                 |
|                                                                                 |      | DRAWN BY AMB | PLANS CK'D. NAR |
| DETAILS                                                                         |      | SHEET 4      |                 |
|                                                                                 |      | 76           |                 |

SCALE = 3.84



STH 171 OVER UNNAMED TRIBUTARY TO  
COPPER CREEK  
FERRYVILLE - MT STERLING



\* THE GROUND WATER ELEVATION WAS DETERMINED FROM  
WHERE THE SOIL SAMPLE WAS DESCRIBED AS WET.  
\*\*WOH = WEIGHT OF HAMMER

STATE PROJECT NUMBER

**5790-01-81**

ABBREVIATIONS

F — FINE M — MEDIUM C — COARSE  
WS — WEATHERED SO — SOUND

MATERIAL SYMBOLS

TOPSOIL SILT SANDSTONE  
SAND PEAT LIMESTONE  
GRAVEL CLAY IGNEOUS ROCK

LEGEND OF PROBING

PROBING NO.  
STA.  
ELEVATION  
7 AVERAGE BLOWS PER FOOT  
REFUSAL 95/6  
95/6=95 BLOWS FOR 6"  
PENETRATION  
PROBING TAKEN WITH  
A 350# WT.  
FALLING 18" ON A 2"  
O.D. POINT.

LEGEND OF BORING

BORING NO.  
STA.  
ELEV.  
UNCONFINED STRENGTH 7.7  
BLOWS PER FT. USING 140# WT. FALLING 30"  
WASH SAMPLE  
SHELBY TUBE S.T.  
GROUND WATER ELEVATION  
NO GROUND WATER OBSERVED ABOVE THIS ELEVATION  
SANDY GRAVEL  
F. BOULDERS OR COBBLES  
SAND  
SILTY CLAY  
SO LIMESTONE

UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

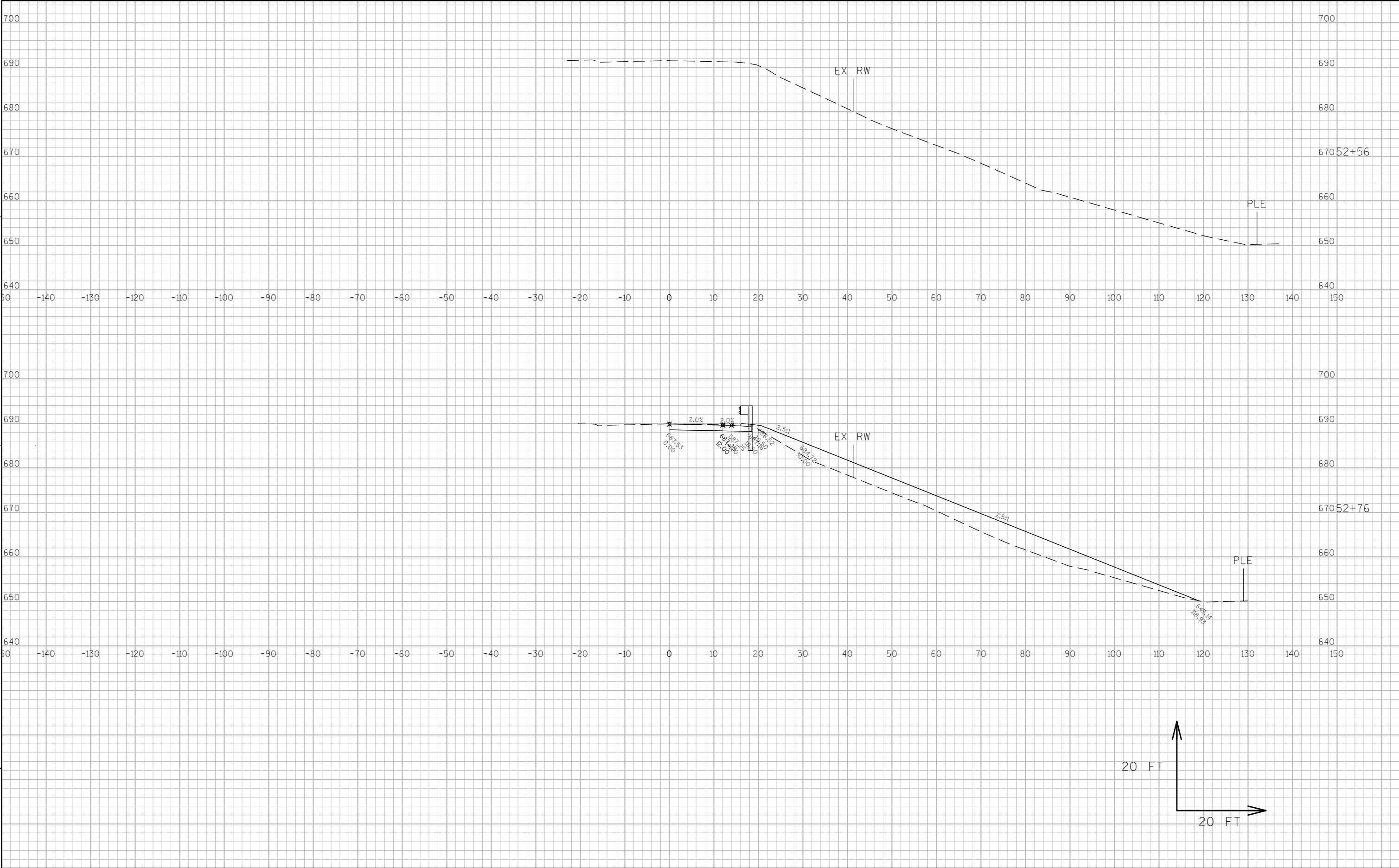
SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

| NO.                                                                             | DATE | REVISION | BY             |
|---------------------------------------------------------------------------------|------|----------|----------------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |          |                |
| STRUCTURE C-12-181                                                              |      |          |                |
| DRAWN BY                                                                        |      | AMB      | PLANS CKD. NAR |
| SUBSURFACE EXPLORATION                                                          |      | SHEET 5  | 77             |

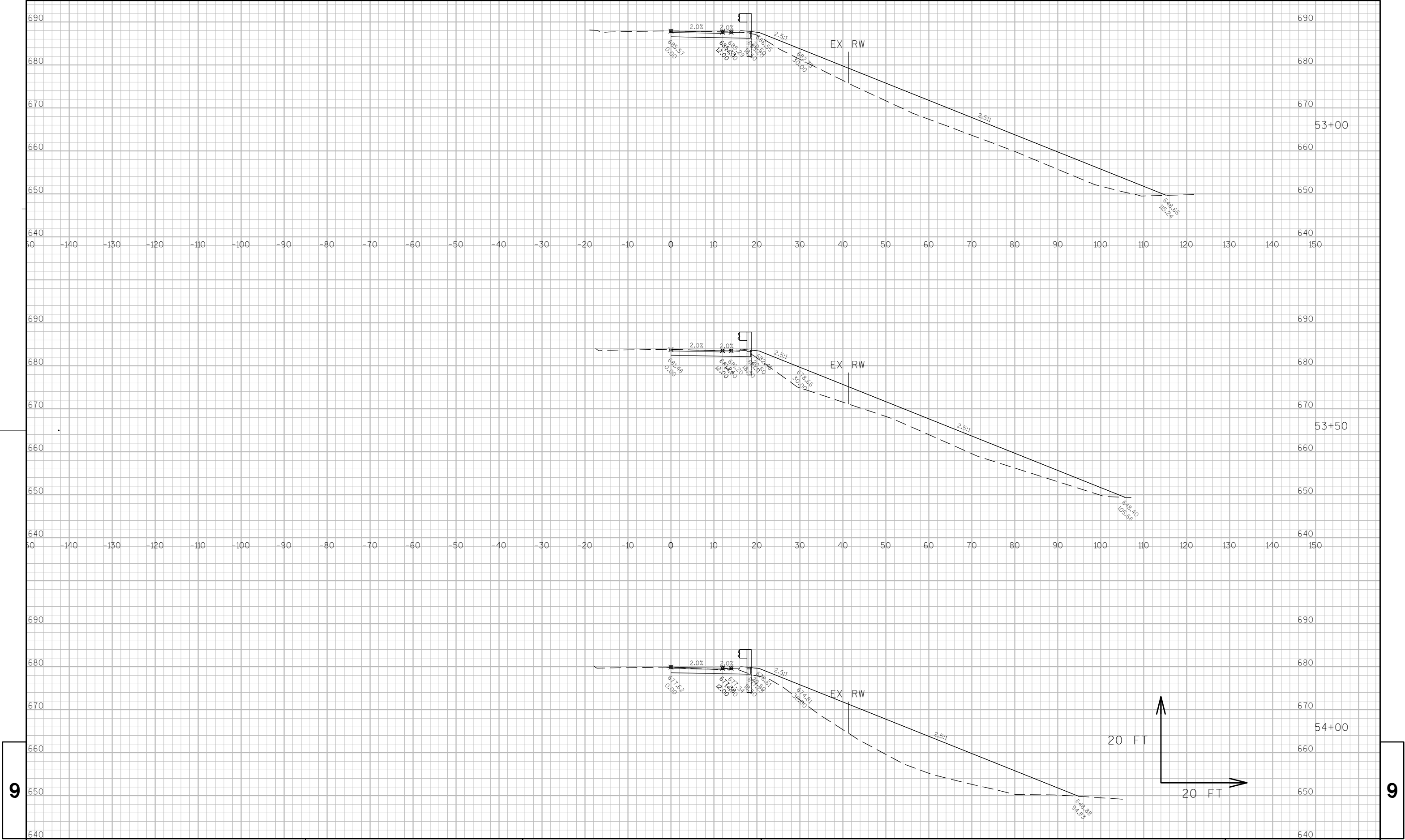
SCALE = 10

| EARTH WORK SUMMARY TABLE                                                                                                                                                                     |                  |                            |                                                                                                   |                    |                                           |                        |                 |                    |                         |       |                  |                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------------|---------------------------------------------------------------------------------------------------|--------------------|-------------------------------------------|------------------------|-----------------|--------------------|-------------------------|-------|------------------|--------------------------------------------|
| Division                                                                                                                                                                                     | From /To Station | Location                   | Common Excavation (1)                                                                             | (item # 205.0100)  | Salvaged / Unusable Pavement Material (4) | Available Material (5) | Unexpanded Fill | Expanded Fill (13) | Mass Ordinate + /- (14) | Waste | Borrow           | Comment:                                   |
|                                                                                                                                                                                              |                  |                            | CY Cut (2)                                                                                        | EBS Excavation (3) | CY                                        | CY                     | CY              | CY                 | CY                      | CY    | CY               |                                            |
| Division 1                                                                                                                                                                                   |                  |                            |                                                                                                   |                    |                                           |                        |                 |                    |                         |       | (item #208.0100) |                                            |
| BOX CULVERT C-12-181                                                                                                                                                                         | 52+76/58+80      | C-12-181 Project Site      | 839                                                                                               | 0                  | 284                                       | 555                    | 3,823           | 4,778              | -4,224                  | 0     | -4,224           | Box Culvert Replacement Section            |
| Division 1 Subtotal                                                                                                                                                                          |                  |                            | 839                                                                                               | 0                  | 284                                       | 555                    | 3,823           | 4,778              | -4,224                  | 0     | -4,224           |                                            |
| Division 2                                                                                                                                                                                   |                  |                            |                                                                                                   |                    |                                           |                        |                 |                    |                         |       |                  |                                            |
| WEST BRIDGE APPROACH B-12-180                                                                                                                                                                | 52+76/153+97     | Beginning to B-12-180      | 425                                                                                               | 0                  | 273                                       | 152                    | 2,262           | 2,828              | -2,676                  | 0     | -2,676           | West Portion of Bridge Replacement Section |
| Division 2 Subtotal                                                                                                                                                                          |                  |                            | 425                                                                                               | 0                  | 273                                       | 152                    | 2,262           | 2,828              | -2,676                  | 0     | -2,676           | B-12-180                                   |
| Division 3                                                                                                                                                                                   |                  |                            |                                                                                                   |                    |                                           |                        |                 |                    |                         |       |                  |                                            |
| EAST BRIDGE APPROACH B-12-180                                                                                                                                                                | 153+97/156+40    | B-12-180 to End of Project | 708                                                                                               | 0                  | 273                                       | 435                    | 2,262           | 2,828              | -2,393                  | 0     | -2,393           | East Portion of Bridge Replacement Section |
| Division 3 Subtotal                                                                                                                                                                          |                  |                            | 708                                                                                               | 0                  | 273                                       | 435                    | 2,262           | 2,828              | -2,393                  | 0     | -2,393           |                                            |
| Grand Total                                                                                                                                                                                  |                  |                            | 1,971.81                                                                                          | 0.00               | 829.83                                    | 1,141.99               | 8,347.45        | 10,434.31          | -9,292.32               | 0.00  | -9,292.32        |                                            |
| Total Common Exc                                                                                                                                                                             |                  |                            | 1,971.81                                                                                          |                    |                                           |                        |                 |                    |                         |       |                  |                                            |
| 1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100                                                                                                  |                  |                            |                                                                                                   |                    |                                           |                        |                 |                    |                         |       |                  |                                            |
| 2) Salvaged/Unsuable Pavement Material is included in Cut.                                                                                                                                   |                  |                            |                                                                                                   |                    |                                           |                        |                 |                    |                         |       |                  |                                            |
| 3) EBS Excavation to be backfilled with Select Borrow material. Note: this is designers choice, can be backfilled with Borrow, or Cut as well.                                               |                  |                            |                                                                                                   |                    |                                           |                        |                 |                    |                         |       |                  |                                            |
| 4) Salvaged/Unusable Pavement Material                                                                                                                                                       |                  |                            |                                                                                                   |                    |                                           |                        |                 |                    |                         |       |                  |                                            |
| 5) Available Material = Cut - Salvaged/Unusuable Pavement Material                                                                                                                           |                  |                            |                                                                                                   |                    |                                           |                        |                 |                    |                         |       |                  |                                            |
| 13) Expanded Fill. Factor = 1.25                                                                                                                                                             |                  |                            |                                                                                                   |                    |                                           |                        |                 |                    |                         |       |                  |                                            |
| Depending on selections:                                                                                                                                                                     |                  |                            | Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh - Reduced EBS) * Fill Factor |                    |                                           |                        |                 |                    |                         |       |                  |                                            |
|                                                                                                                                                                                              |                  | Or                         | Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced EBS) * Fill Factor                 |                    |                                           |                        |                 |                    |                         |       |                  |                                            |
|                                                                                                                                                                                              |                  | Or                         | Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh) * Fill Factor               |                    |                                           |                        |                 |                    |                         |       |                  |                                            |
|                                                                                                                                                                                              |                  | Or                         | Expanded Fill = (Unexpanded Fill - Rock* Rock Factor) * 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. |                  |                            |                                                                                                   |                    |                                           |                        |                 |                    |                         |       |                  |                                            |
| 15) Use 111,764 CY of material from Division 1. Borrow Excavation item number 208.0100                                                                                                       |                  |                            |                                                                                                   |                    |                                           |                        |                 |                    |                         |       |                  |                                            |
|                                                                                                                                                                                              |                  |                            |                                                                                                   |                    |                                           |                        |                 |                    |                         |       |                  |                                            |
|                                                                                                                                                                                              |                  |                            |                                                                                                   |                    |                                           |                        |                 |                    |                         |       |                  |                                            |



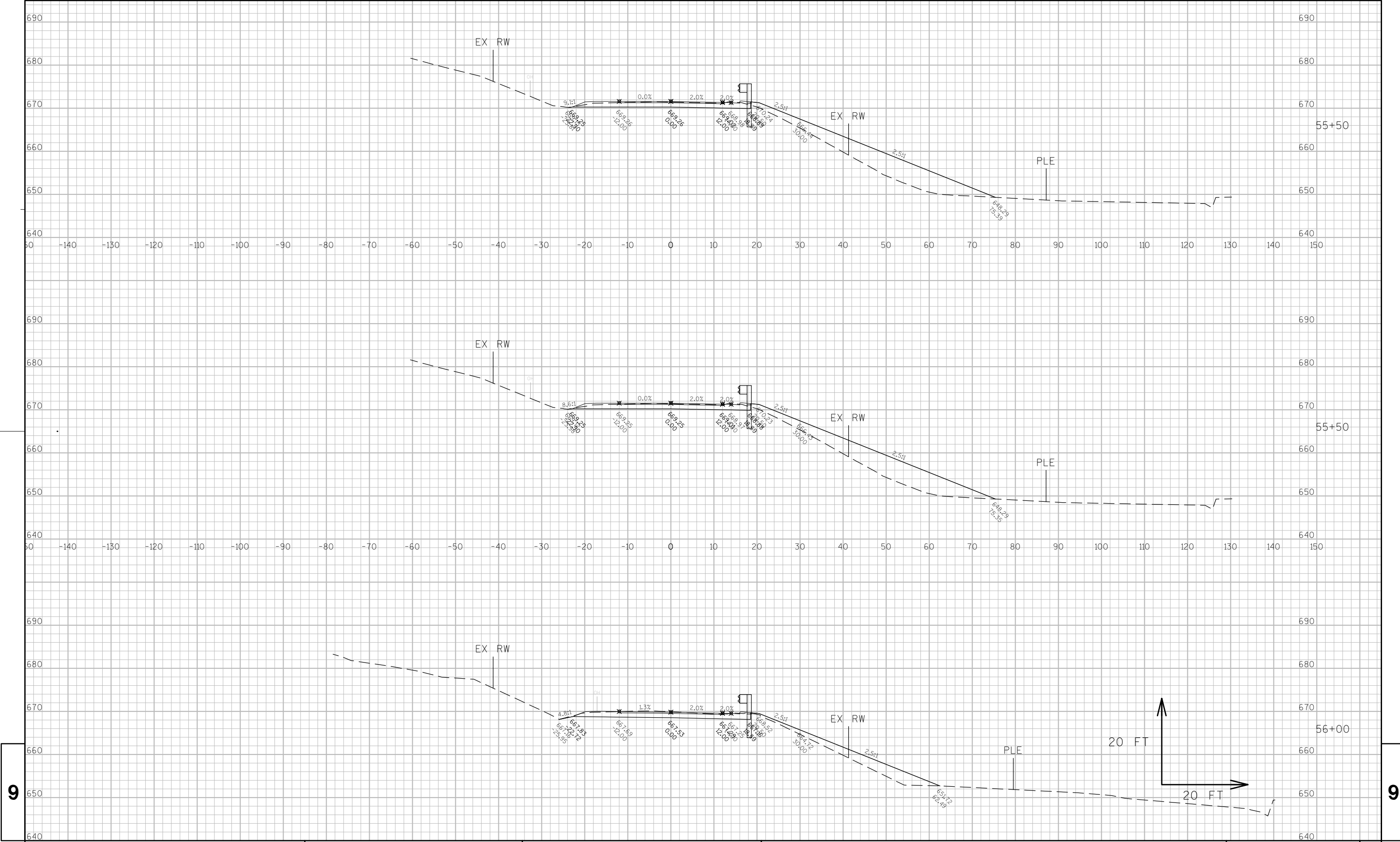
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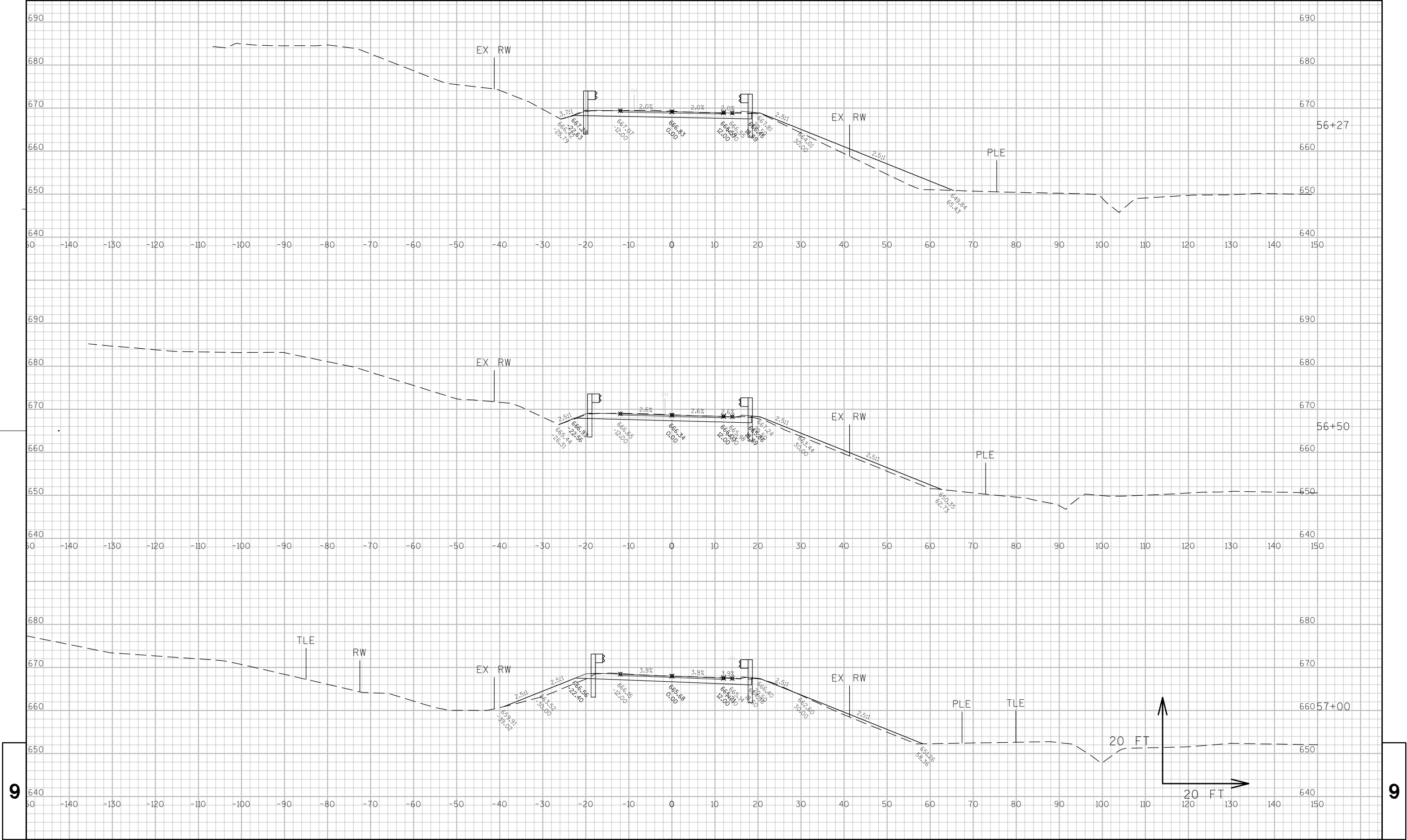
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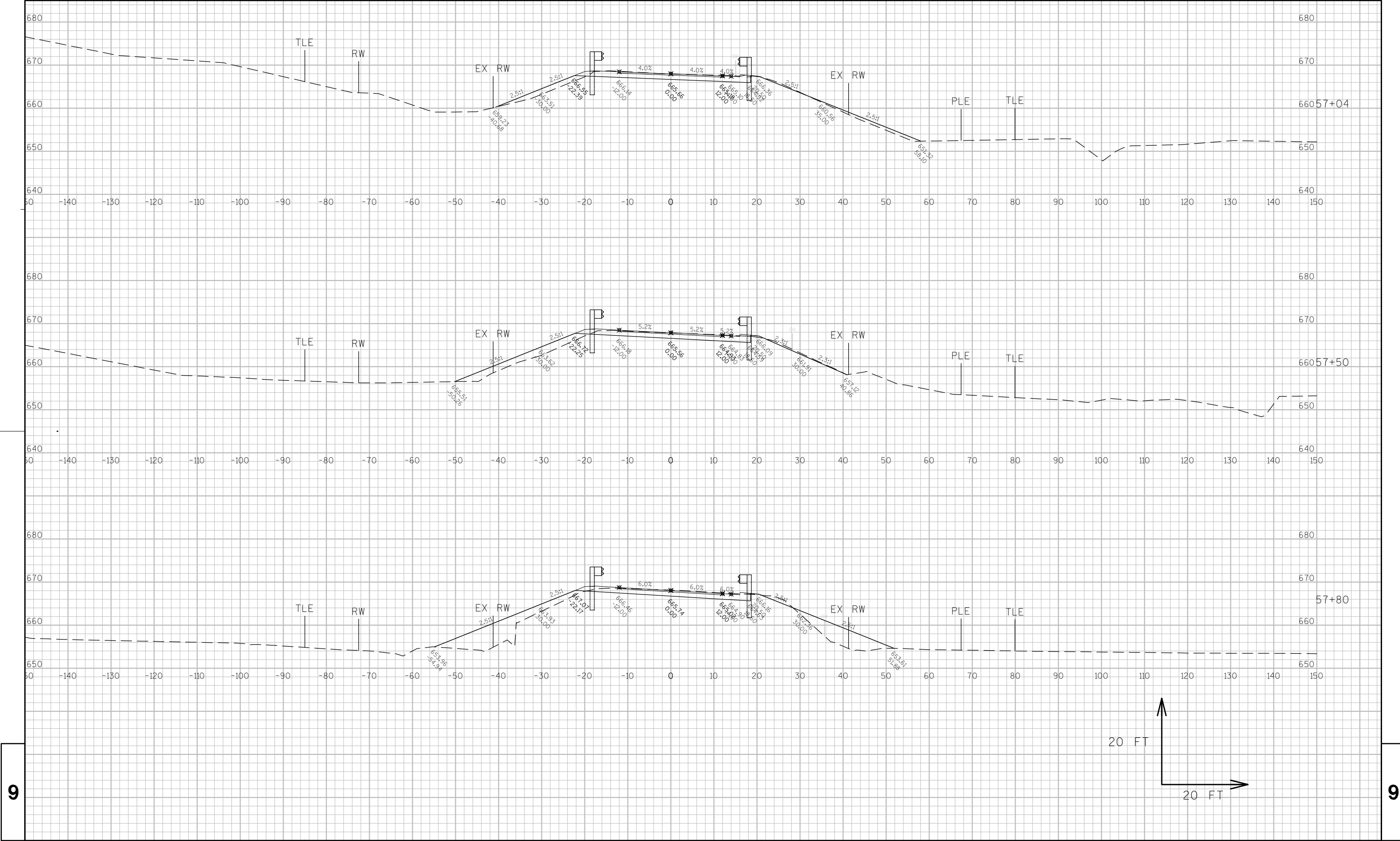


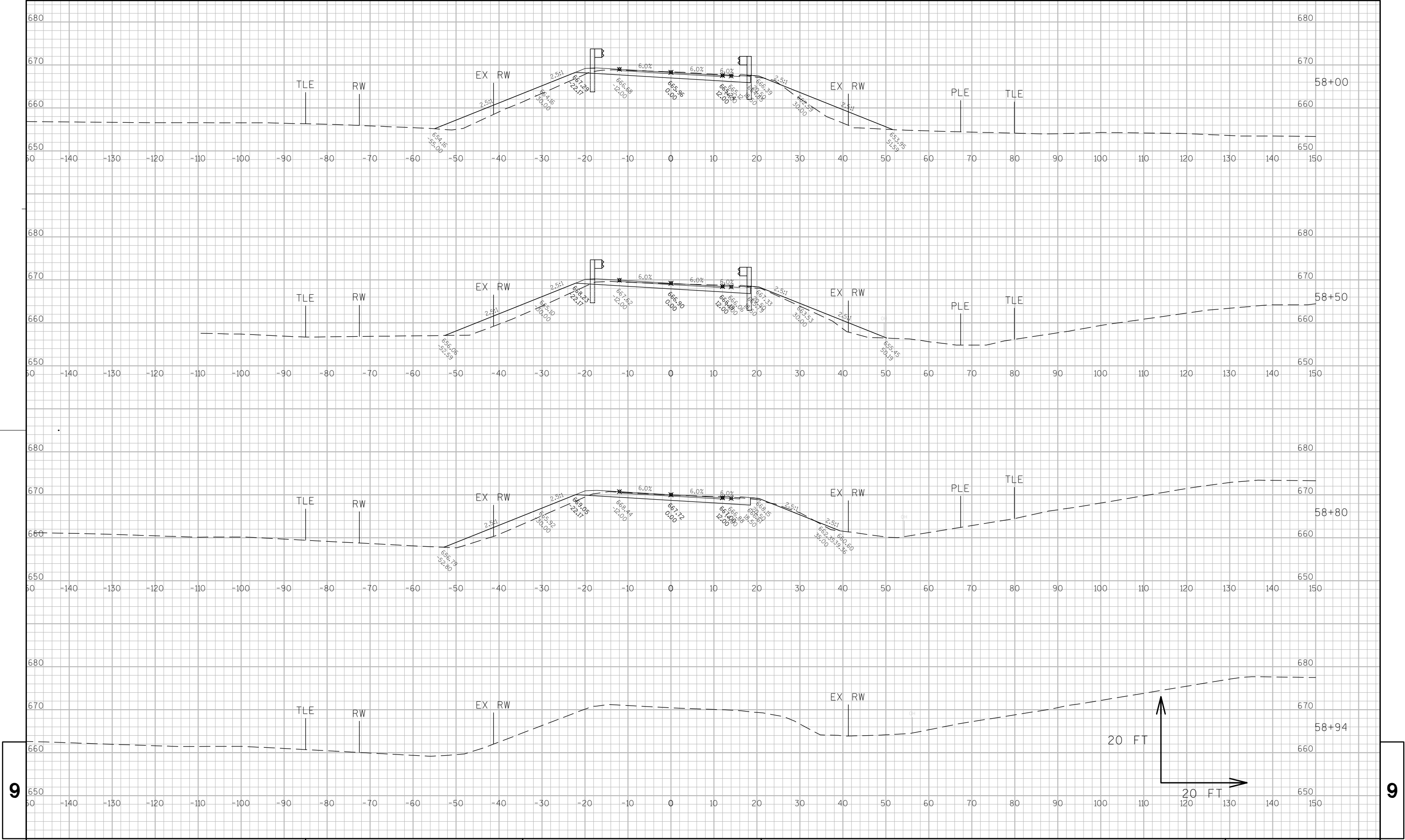


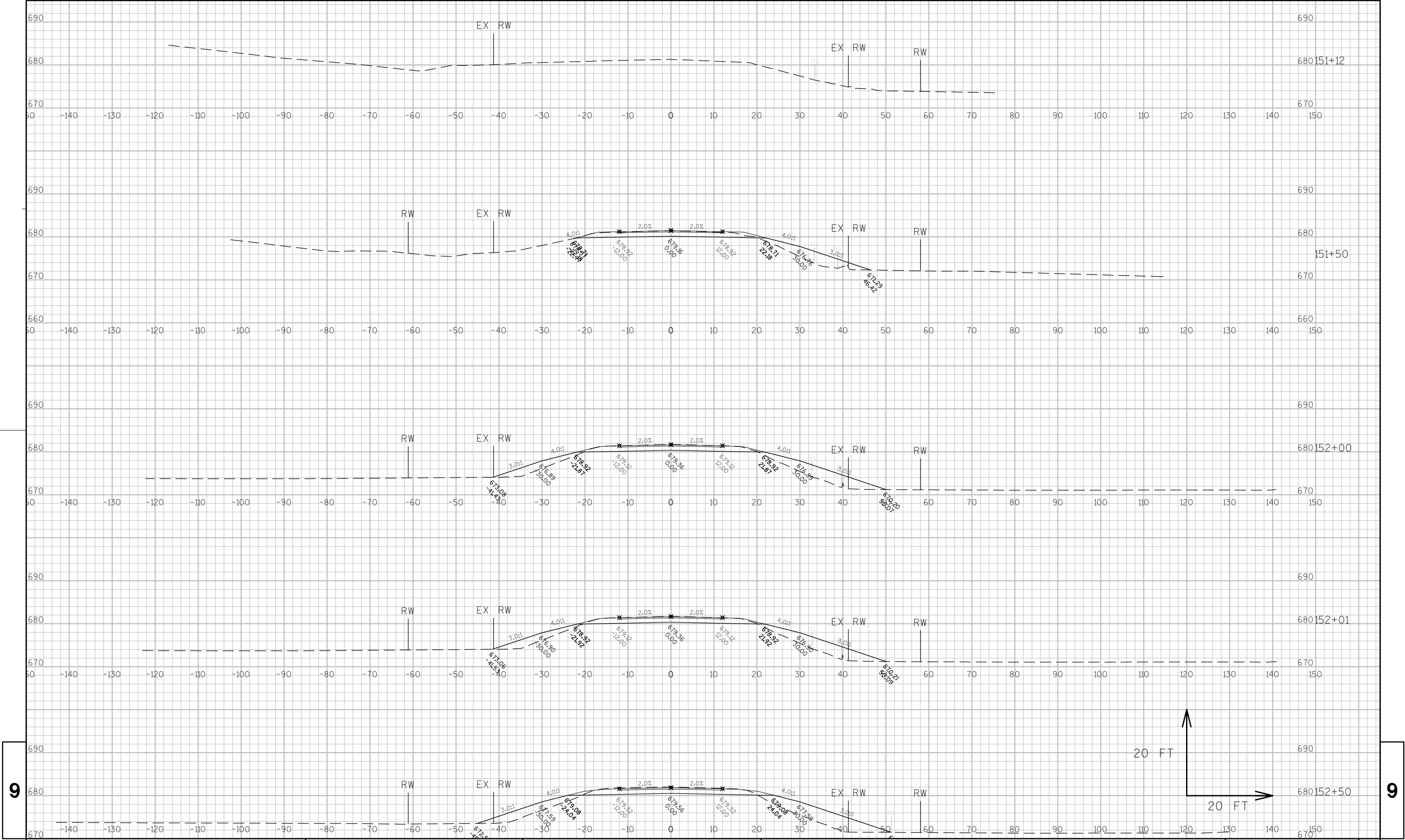




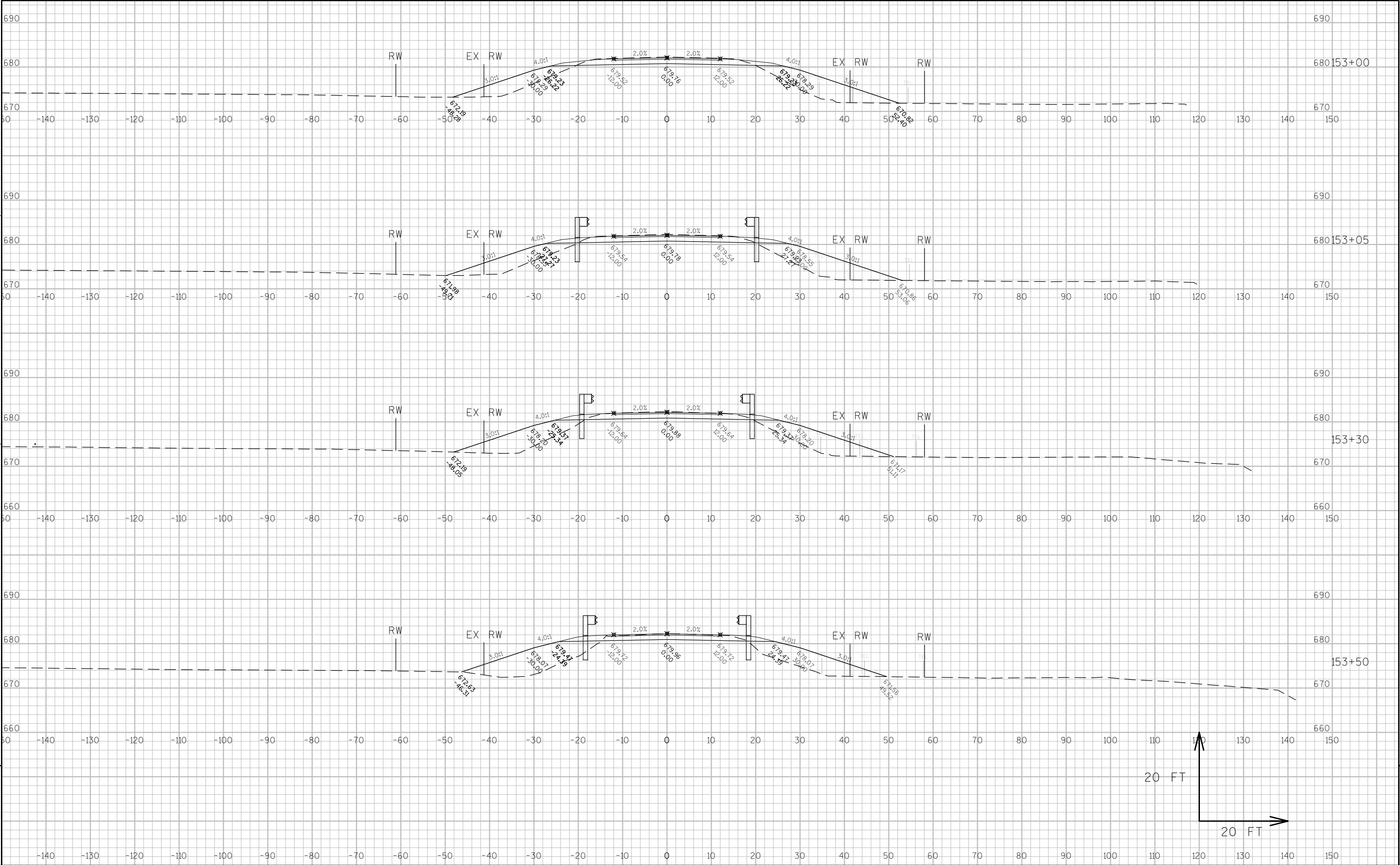


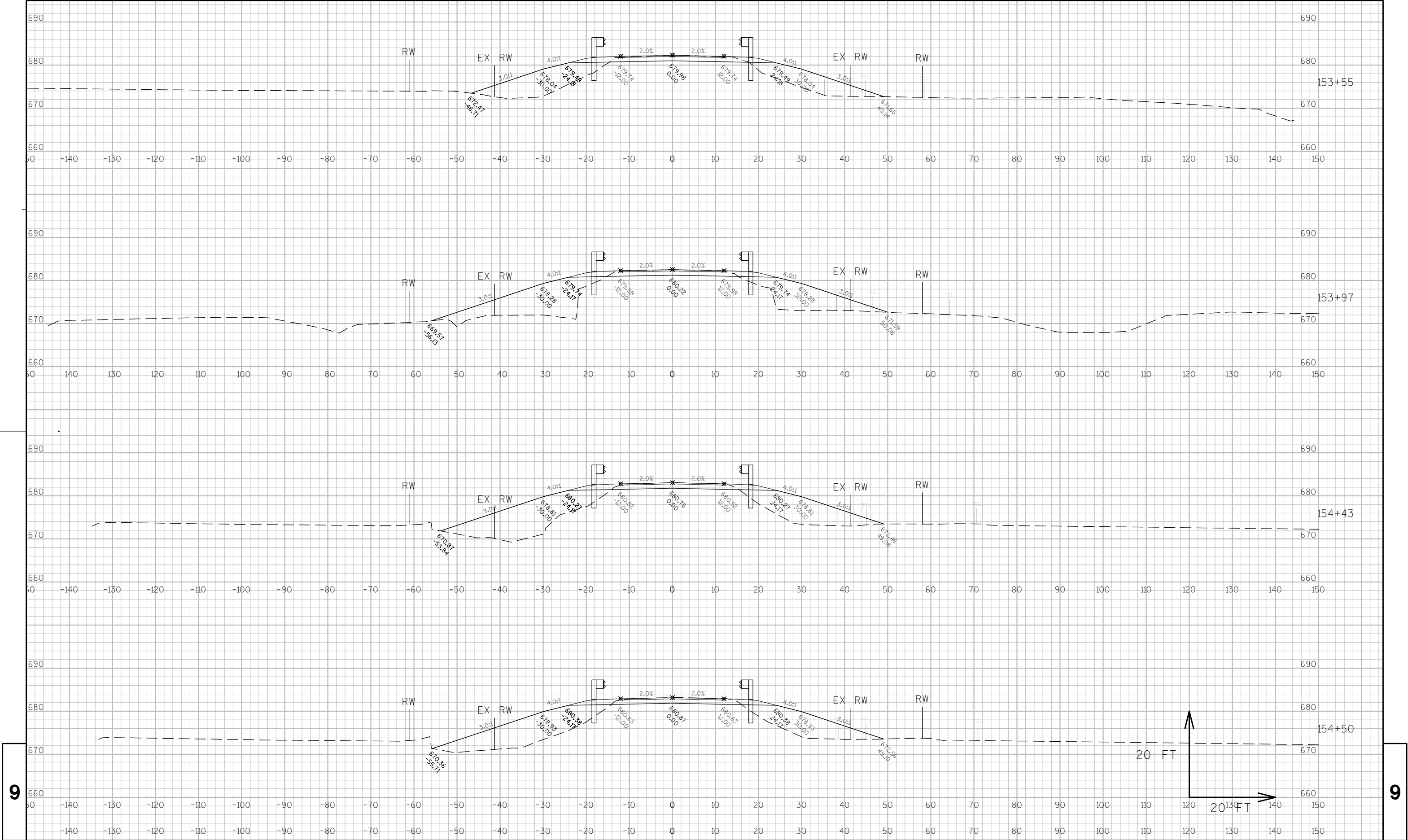


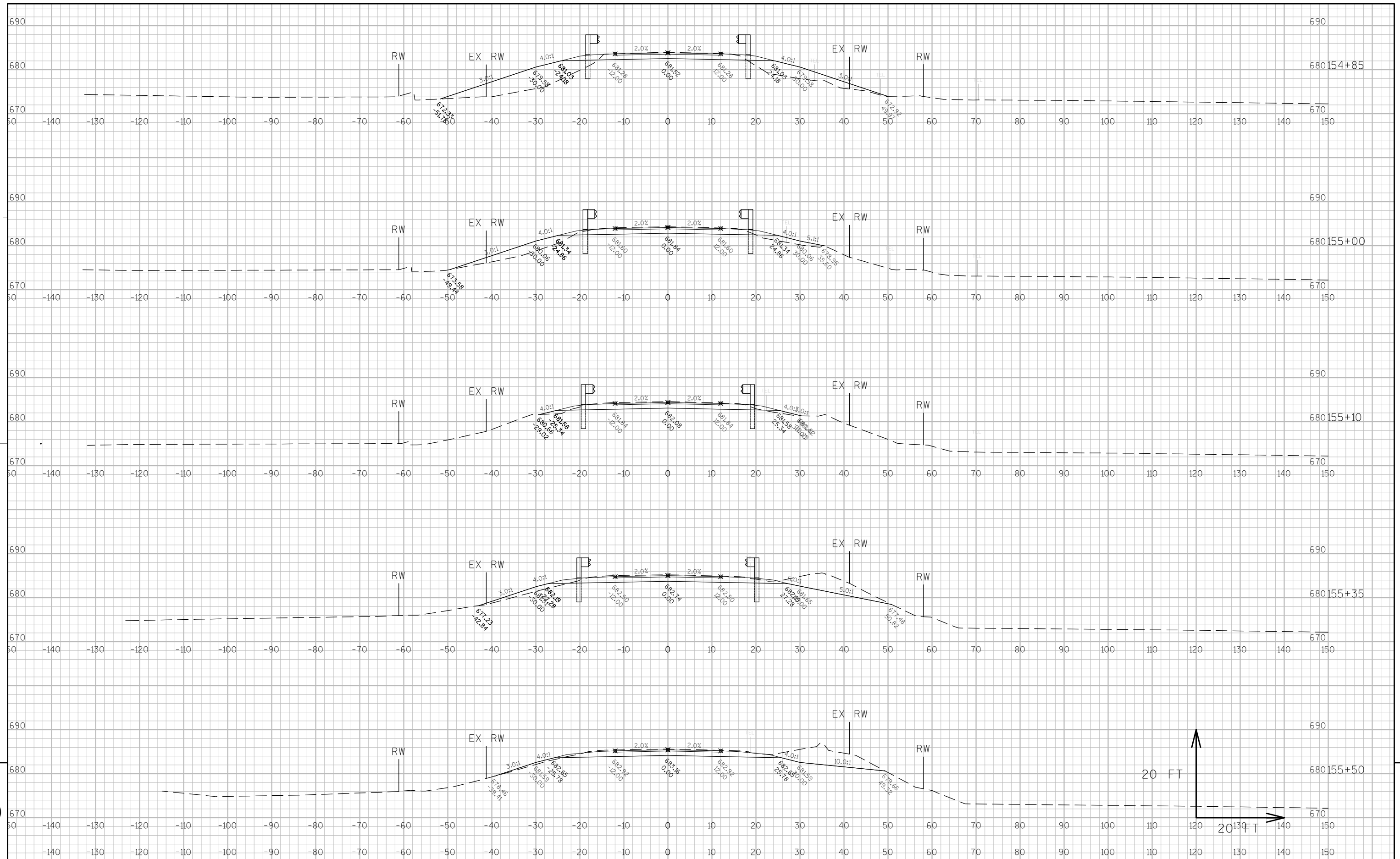








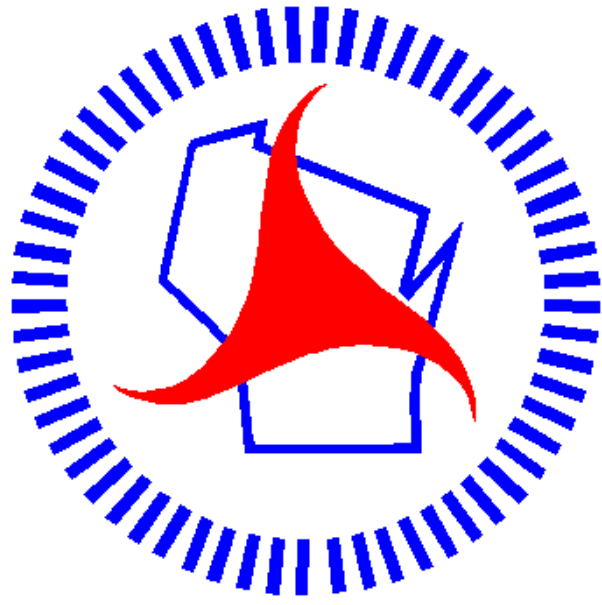






## Notes





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