

PROJECT ID: 4485-02-71  
WITH: N/A

COUNTY: CALUMET

ORDER OF SHEETS

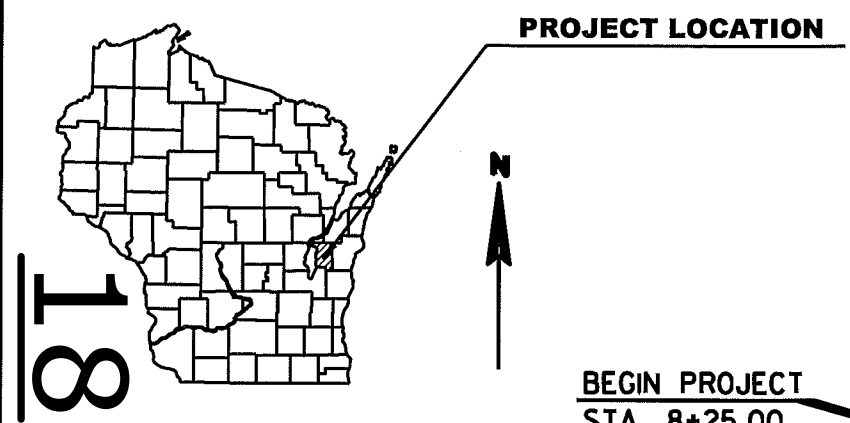
- Section No. 1 Title
- Section No. 2 Typical Sections and Details (Includes Erosion Control Plan)
- Section No. 3 Estimate of Quantities
- Section No. 3 Miscellaneous Quantities
- Section No. 4 Right of Way Plot
- Section No. 5 Plan and Profile
- Section No. 6 Standard Detail Drawings
- Section No.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

TOTAL SHEETS = 60

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION  
PLAN OF PROPOSED IMPROVEMENT

T CHILTON, CTH E  
KILLSNAKE RIVER BRIDGE  
CTH E  
CALUMET COUNTY

| STATE PROJECT | FEDERAL PROJECT |          |
|---------------|-----------------|----------|
|               | PROJECT         | CONTRACT |
| 4485-02-71    |                 |          |
|               |                 |          |
|               |                 |          |
|               |                 |          |



STATE PROJECT NUMBER  
4485-02-71

BEGIN PROJECT  
STA. 8+25.00  
Y=493604.564  
X=890681.476

END PROJECT  
STA. 11+00.00

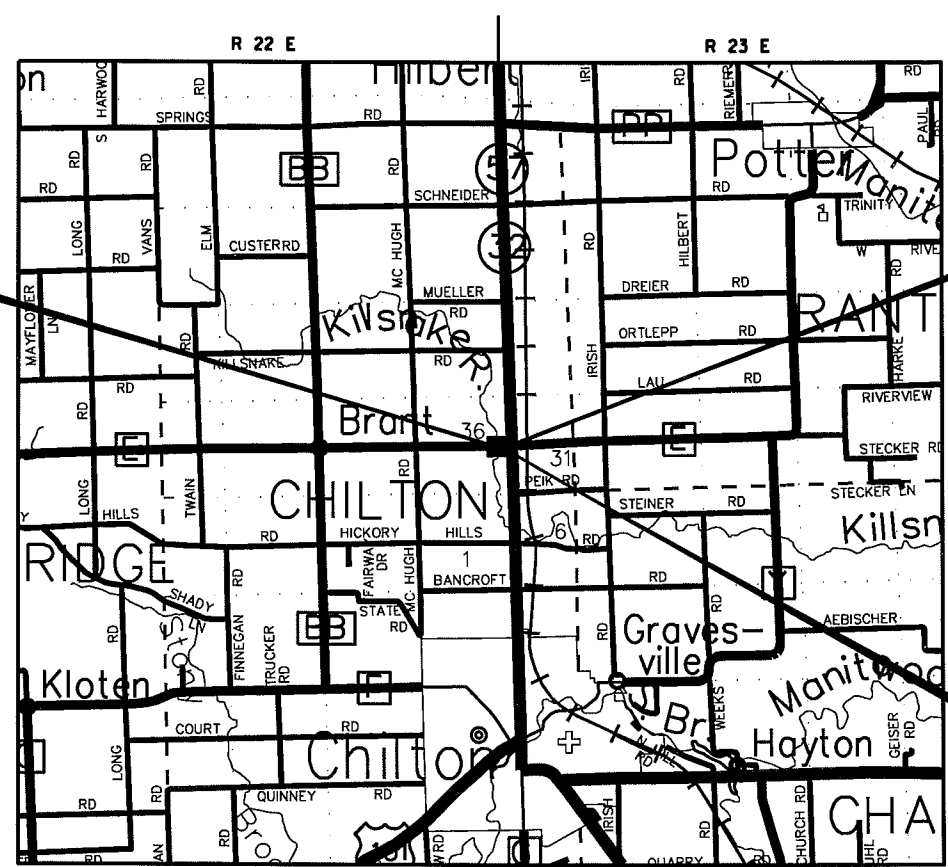
DESIGN DESIGNATION

- A.A.D.T. (2013) = 1,050
- A.A.D.T. (2033) = 1,150
- D.H.V. (2033) = 140
- D.D. = 60/40
- T. = 5.6%
- DESIGN SPEED = 55 MPH
- ESALS = 189,800

CONVENTIONAL SYMBOLS

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

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



LAYOUT  
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.052 MI. RURAL

"Coordinates on this plan are referenced to the Calumet County Coordinate System, Calumet Zone, NAD 83 (1991)"

APPROVED FOR  
CALUMET COUNTY

4/3/13  
DATE

Michael J. Otter  
COUNTY HIGHWAY COMMISSIONER

ORIGINAL PLANS PREPARED BY  
**AYRES ASSOCIATES**

PHILLIP J. VERVILLE III  
E-36336  
GREEN BAY, WI

PROFESSIONAL ENGINEER

DATE: 4/3/13

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PREPARED BY  
Surveyor: AYRES ASSOCIATES  
Designer: AYRES ASSOCIATES  
Management Consultant: SEH  
C.O. Examiner:

APPROVED FOR THE DEPARTMENT

DATE: 4/3/13  
Management Consultant Signature

GENERAL NOTES

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

FILL EXPANSION FACTOR IS 30%.

CONSTRUCT 4-INCH HMA PAVEMENT WITH A 1¾" UPPER LAYER AND A 2 ¼" LOWER LAYER. PROPERTY LINES AS SHOWN ARE APPROXIMATE.

NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.

BEARING SHOWN ON THIS PLAN ARE TRUE BEARINGS TO THE NEAREST SECOND.

ALL TIES ON THIS PLAN ARE HORIZONTAL UNLESS DESCRIBED OTHERWISE.

THE EXACT LOCATION AND WIDTH OF FIELD ENTRANCES WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

ENTRANCES ARE TO BE REPLACED IN KIND.

THE EXACT LOCATION AND LENGTHS OF CULVERT PIPES WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

PRIOR TO ORDERING DRAINAGE PIPES, THE CONTRACTOR WILL VERIFY RELATED DRAINAGE INFORMATION IN THE PLAN WITH THE ENGINEER IN THE FIELD.

PLACE EROSION CONTROL MEASURES AS SHOWN ON THE EROSION CONTROL PLAN. THE EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

DISTURBED AREAS WITHIN THE RIGHT OF WAY, EXCEPT THE AREAS WITHIN THE FINISHED SUBGRADE SHOULDER POINTS ARE TO BE FERTILIZED, SEEDED, AND EROSION MAT AS DIRECTED BY THE ENGINEER.

ELEVATIONS SHOWN ON THE ROADWAY CROSS SECTIONS ARE SUBGRADE ELEVATIONS AT THE CENTERLINE OF THE ROADWAY.

WISDOT WILL FURNISH A BENCHMARK MONUMENT TO BE SET BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER IN THE FIELD

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

RUNOFF COEFFICIENT TABLE

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

TOTAL PROJECT AREA = 0.7 ACRES  
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.7 ACRES  
SOIL GROUP C

UTILITIES

**\*\* WISCONSIN PUBLIC SERVICE CORPORATION**

700 NORTH ADAMS STREET  
PO BOX 19001  
GREEN BAY, WISCONSIN 54307  
ATTENTION: LORIBUTRY  
E-MAIL: LABUTRY@INTEGRYSGROUP.COM

**TELEPHONE 920-433-1703**

**\*\* FRONTIER COMMUNICATIONS**

118 DIVISION STREET  
PLYMOUTH, WISCONSIN 53073  
ATTENTION: MR. RYAN OSNESS  
E-MAIL: RYAN.D.OSNESS@FTR.COM

**TELEPHONE 920-893-7455**

DNR LIAISON

**DEPARTMENT OF NATURAL RESOURCES**      **TELEPHONE 1-920-662-5472**

P.O. BOX 10448  
GREEN BAY, WISCONSIN 54307  
ATTENTION: MR. MATT SCHAEVE  
E-MAIL: MATTHEW.SCAEVE@WISCONSIN.GOV

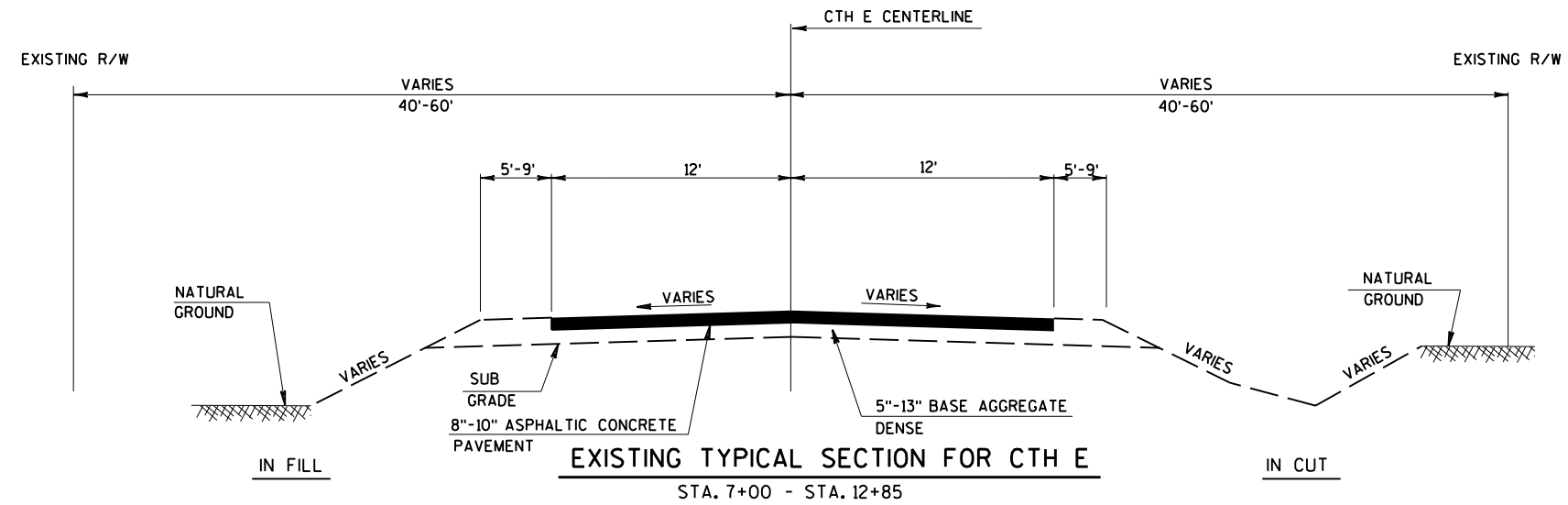
\*\* -MEMBER OF DIGGER'S HOTLINE



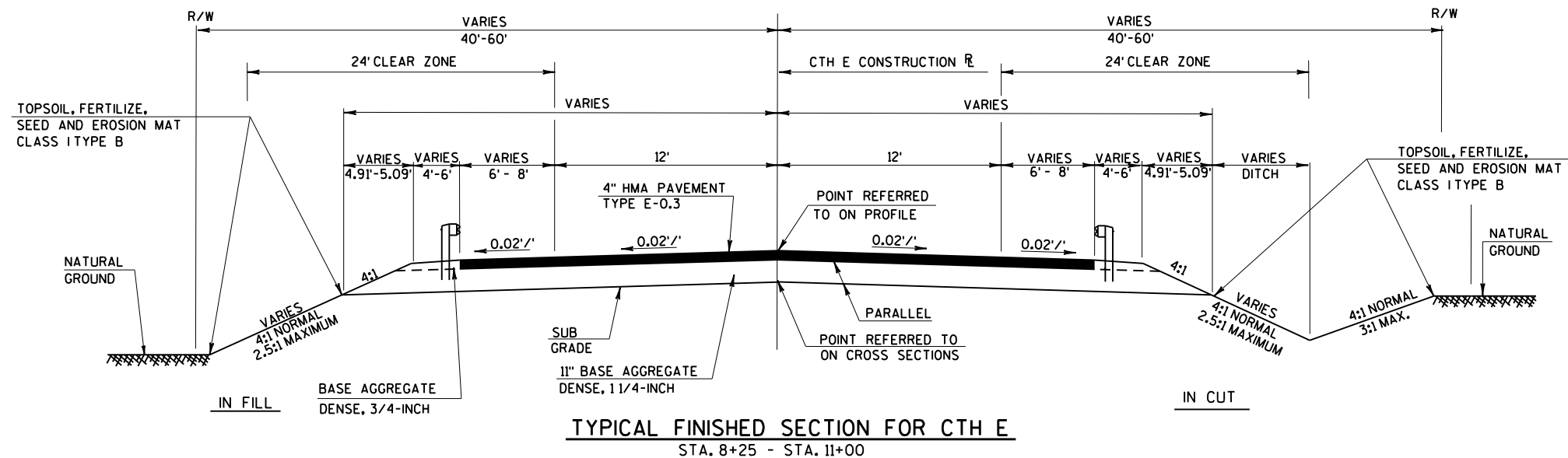
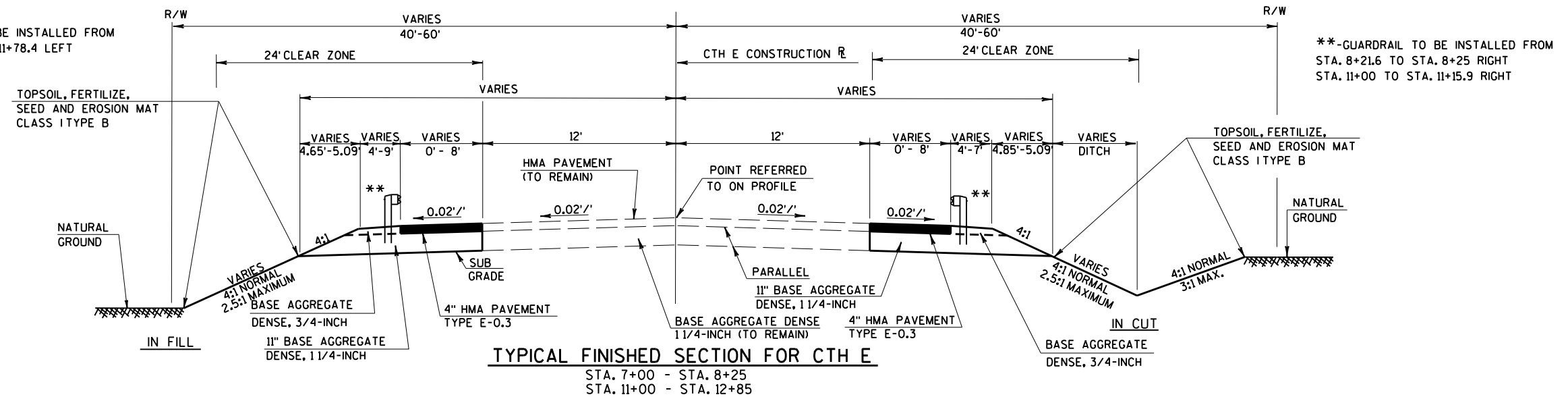
Call 811 3 Work Days Before You Dig  
or Toll Free (800) 242-8511  
Hearing Impaired TDD (800) 542-2289  
www.DiggersHotline.com

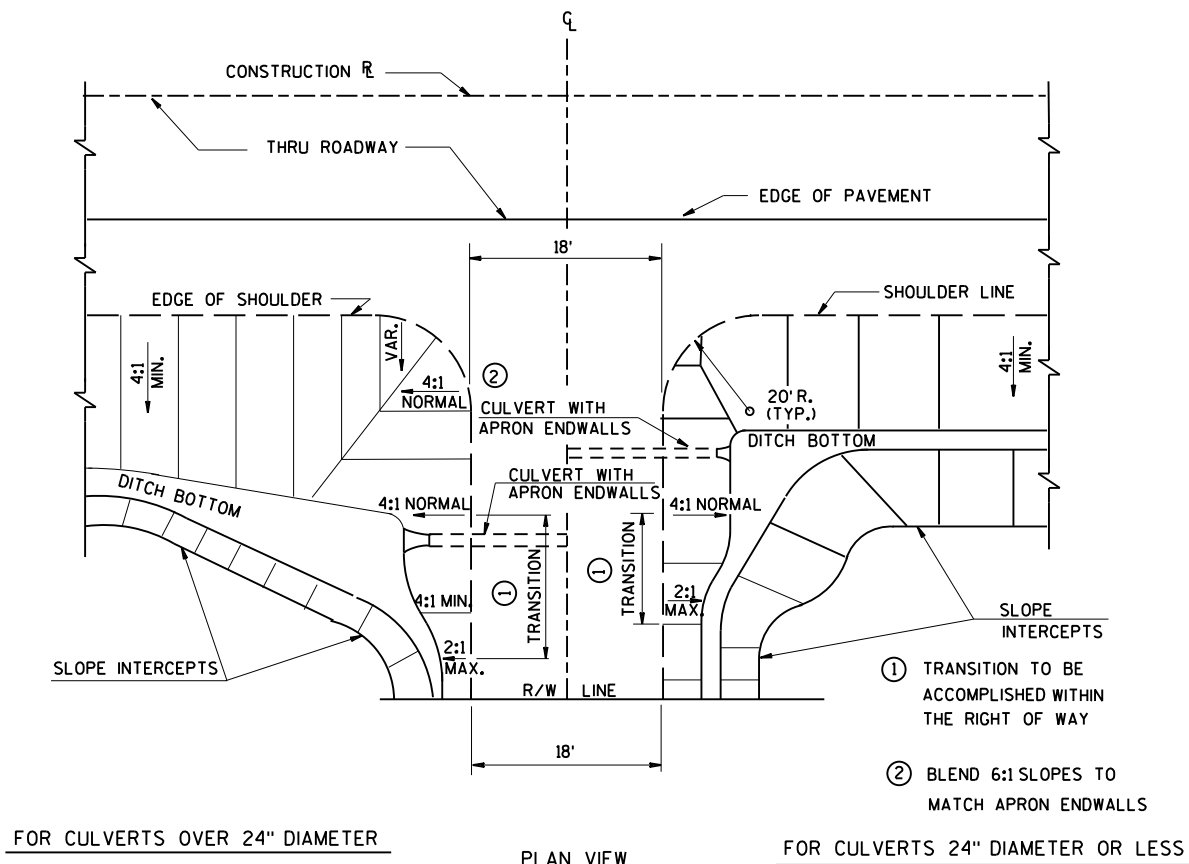
STANDARD ABBREVIATIONS

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



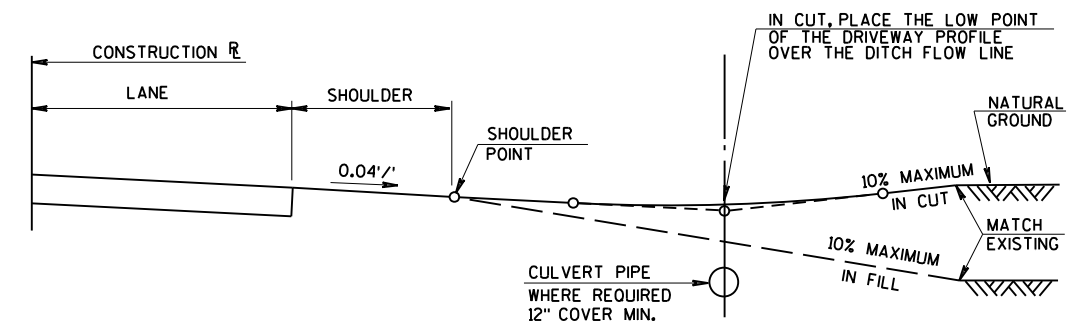
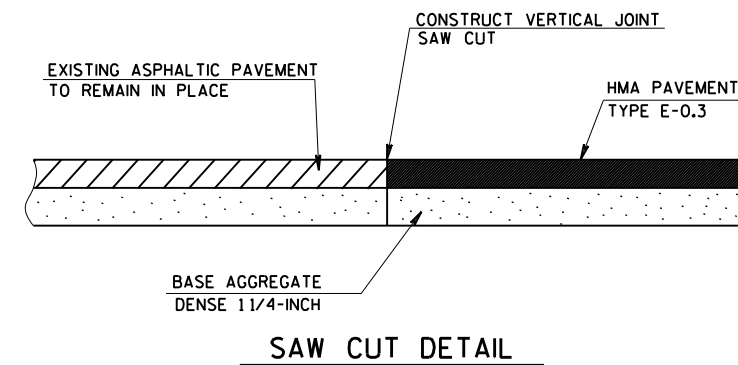
\*\* - GUARDRAIL TO BE INSTALLED FROM  
STA. 11+00 TO STA. 11+78.4 LEFT



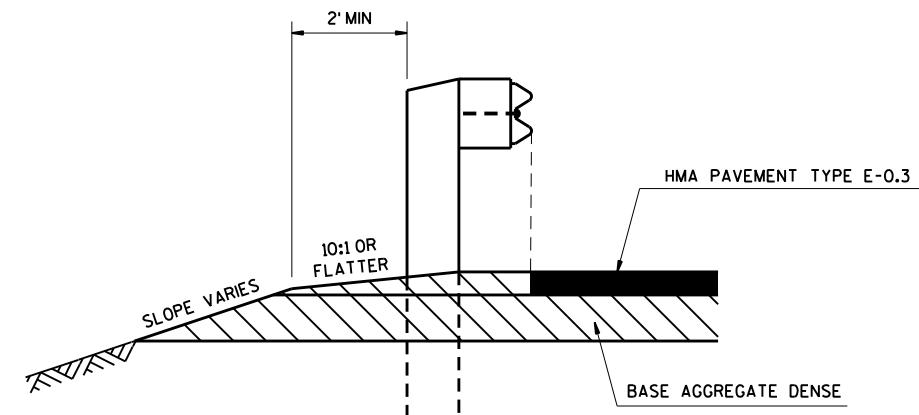


PRIVATE ENTRANCE GRADING DETAIL

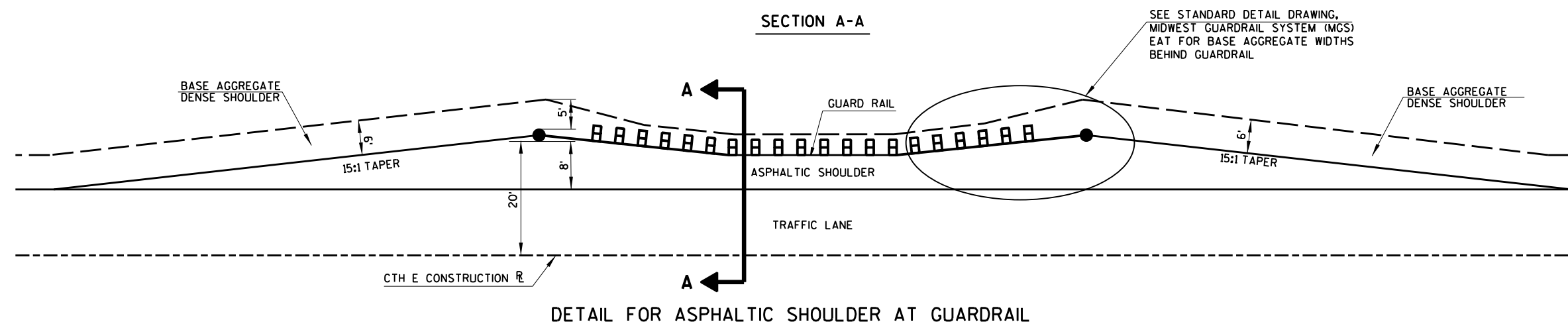
STA. 7+15 LT.

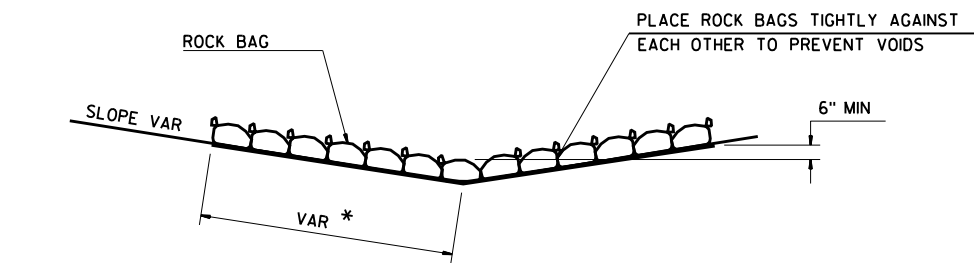


TYPICAL DRIVEWAY PROFILES

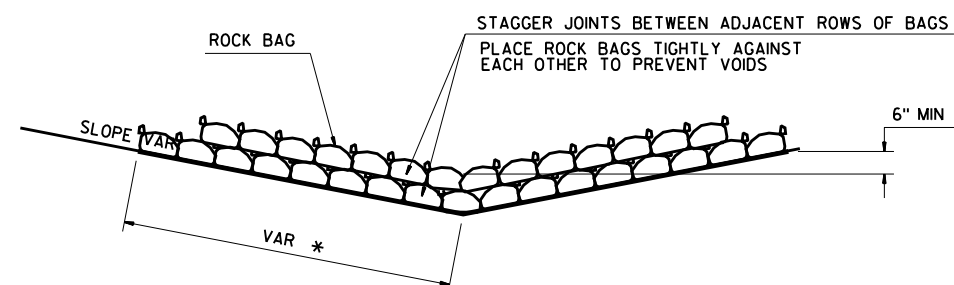


SECTION A-A





SIDE VIEW (SINGLE LAYER)

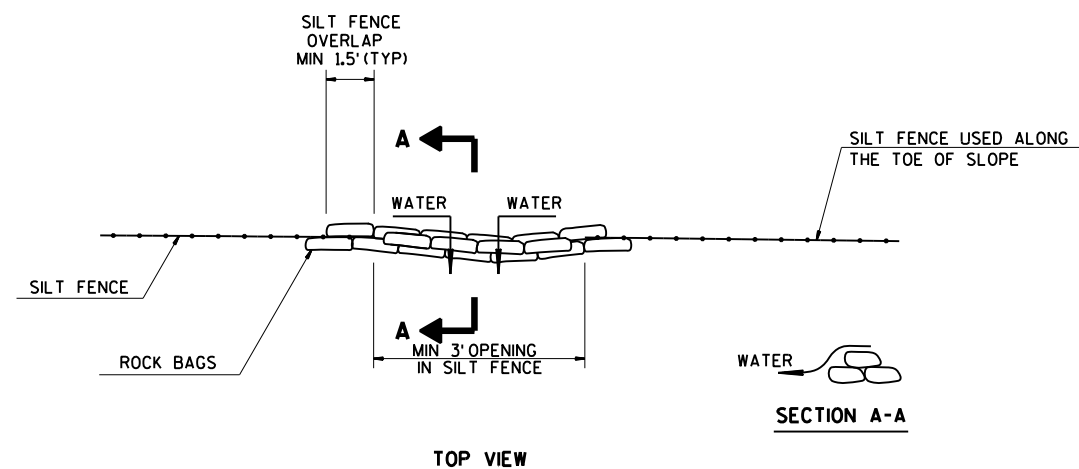


LENGTH AND NUMBER OF BAGS MAY VARY  
\* DEPENDING ON DESIRED DEPTH OF WATER POOL

SIDE VIEW (MULTIPLE LAYER)

**ROCK BAGS DITCH CHECK**

PAID AS ROCK BAGS  
(SEE MISCELLANEOUS QUANTITIES FOR LOCATIONS)

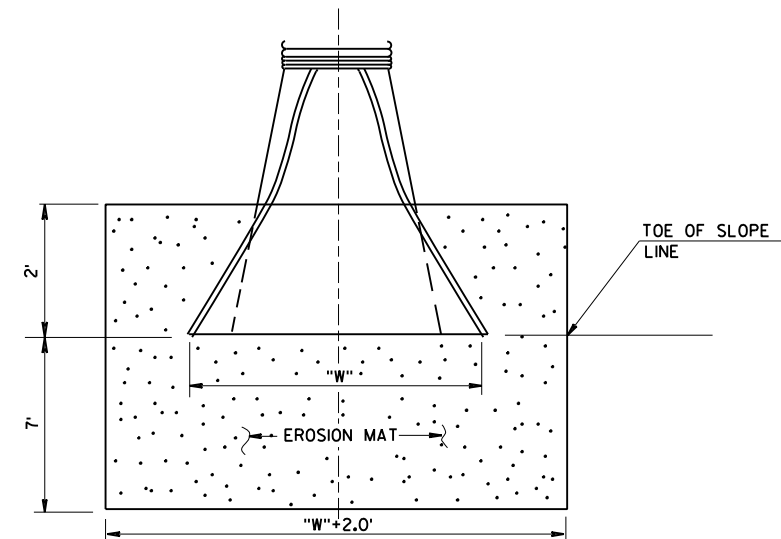


TOP VIEW

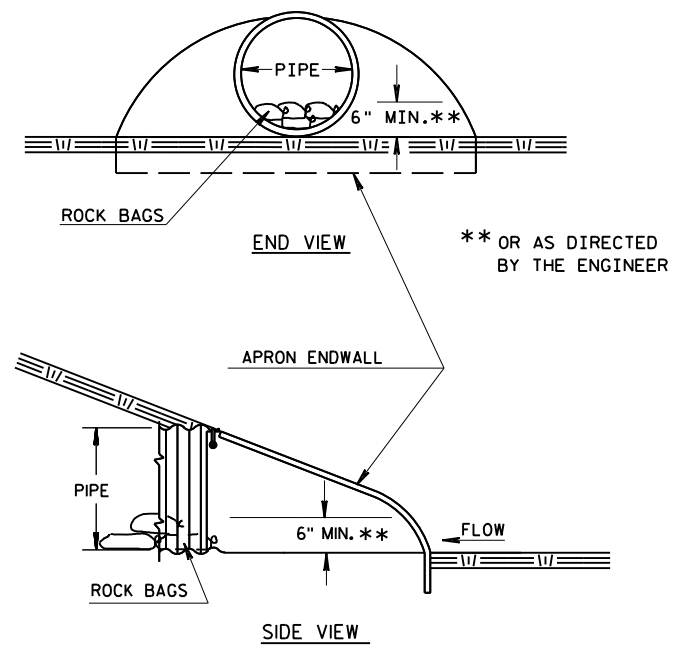
SECTION A-A

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

PAID AS ROCK BAGS  
(SEE MISCELLANEOUS QUANTITIES FOR LOCATIONS)

**EROSION MAT AT END OF PIPE**

(CONCRETE OR METAL)  
(SEE MISCELLANEOUS QUANTITIES FOR LOCATIONS)



END VIEW

\*\* OR AS DIRECTED  
BY THE ENGINEER

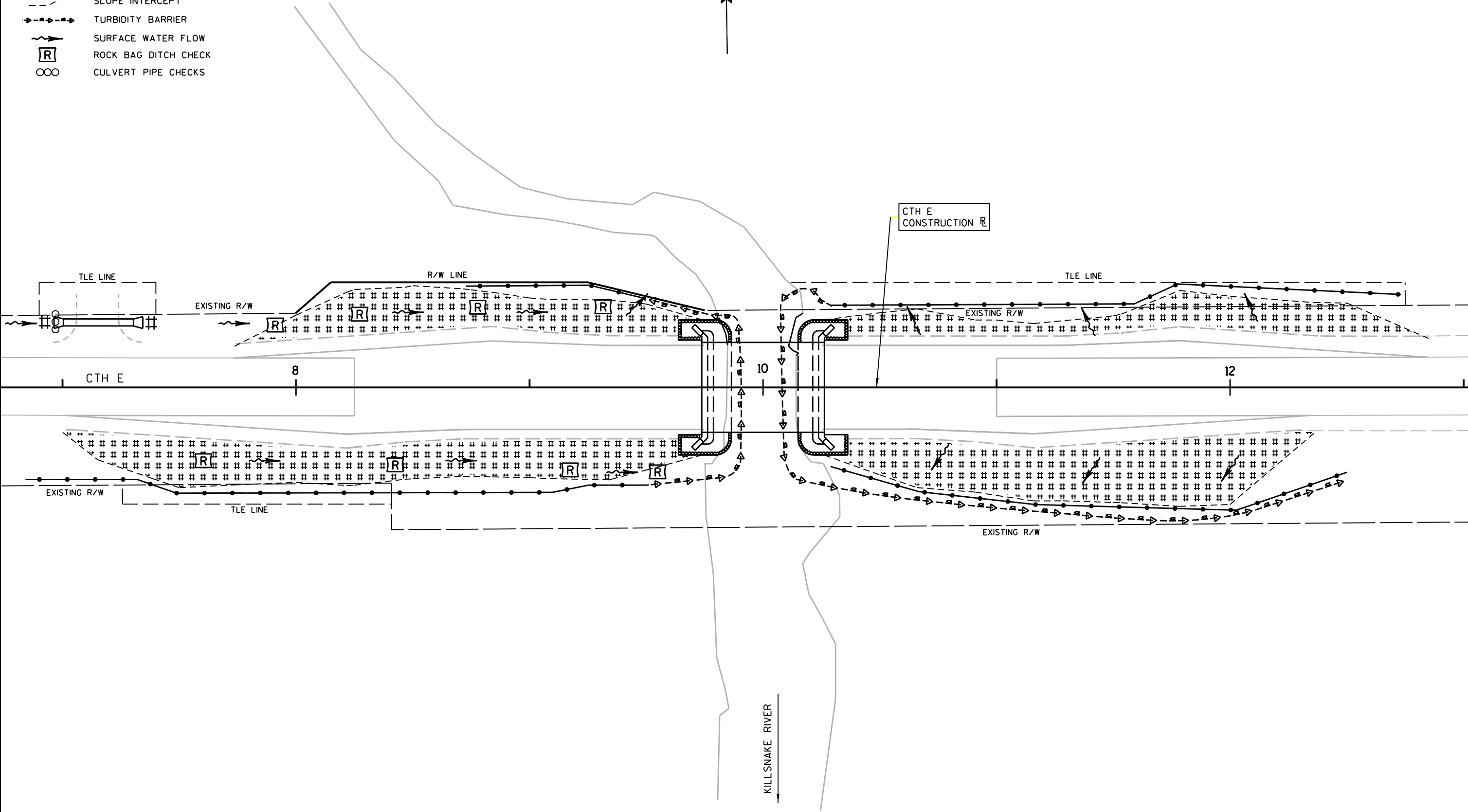
APRON ENDWALL

SIDE VIEW

**CULVERT PIPE CHECKS**

LEGEND

- ##### EROSION MAT CLASS I, TYPE B
- SILT FENCE
- - - SLOPE INTERCEPT
- ▲—▲—▲—▲—▲— TURBIDITY BARRIER
- ~> SURFACE WATER FLOW
- [R] ROCK BAG DITCH CHECK
- ooo CULVERT PIPE CHECKS



| DATE 29MAY13 |            | E S T I M A T E O F Q U A N T I T I E S                     |      |            |            |
|--------------|------------|-------------------------------------------------------------|------|------------|------------|
| LINE         |            |                                                             |      | 4485-02-71 |            |
| NUMBER       | ITEM       | ITEM DESCRIPTION                                            | UNIT | TOTAL      | QUANTITY   |
| 0010         | 201.0105   | CLEARING                                                    | STA  | 1.000      | 1.000      |
| 0020         | 201.0205   | GRUBBING                                                    | STA  | 1.000      | 1.000      |
| 0030         | 203.0100   | REMOVING SMALL PIPE CULVERTS                                | EACH | 1.000      | 1.000      |
| 0040         | 203.0500.S | REMOVING OLD STRUCTURE OVER WATERWAY (STATION) 01. 10+00    | LS   | 1.000      | 1.000      |
| 0050         | 204.0165   | REMOVING GUARDRAIL                                          | LF   | 235.000    | 235.000    |
| 0060         | 205.0100   | EXCAVATION COMMON **P**                                     | CY   | 371.000    | 371.000    |
| 0070         | 206.1000   | EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 01. B-08-0115 | LS   | 1.000      | 1.000      |
| 0080         | 208.0100   | BORROW **P**                                                | CY   | 326.000    | 326.000    |
| 0090         | 210.0100   | BACKFILL STRUCTURE                                          | CY   | 270.000    | 270.000    |
| 0100         | 211.0400   | PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS                  | STA  | 7.000      | 7.000      |
| 0110         | 213.0100   | FINISHING ROADWAY (PROJECT) 01. 4485-02-71                  | EACH | 1.000      | 1.000      |
| 0120         | 305.0110   | BASE AGGREGATE DENSE 3/4-INCH                               | TON  | 170.000    | 170.000    |
| 0130         | 305.0120   | BASE AGGREGATE DENSE 1 1/4-INCH                             | TON  | 1,380.000  | 1,380.000  |
| 0140         | 455.0105   | ASPHALTIC MATERIAL PG58-28                                  | TON  | 16.000     | 16.000     |
| 0150         | 455.0605   | TACK COAT                                                   | GAL  | 31.000     | 31.000     |
| 0160         | 460.1100   | HMA PAVEMENT TYPE E-0.3                                     | TON  | 270.000    | 270.000    |
| 0170         | 460.2000   | INCENTIVE DENSITY HMA PAVEMENT                              | DOL  | 180.000    | 180.000    |
| 0180         | 502.0100   | CONCRETE MASONRY BRIDGES                                    | CY   | 235.000    | 235.000    |
| 0190         | 502.3200   | PROTECTIVE SURFACE TREATMENT                                | SY   | 265.000    | 265.000    |
| 0200         | 505.0405   | BAR STEEL REINFORCEMENT HS BRIDGES                          | LB   | 5,340.000  | 5,340.000  |
| 0210         | 505.0605   | BAR STEEL REINFORCEMENT HS COATED BRIDGES                   | LB   | 28,610.000 | 28,610.000 |
| 0220         | 513.4060   | RAILING TUBULAR TYPE M (STRUCTURE) 01. B-08-0115            | LS   | 1.000      | 1.000      |
| 0230         | 516.0500   | RUBBERIZED MEMBRANE WATERPROOFING                           | SY   | 22.000     | 22.000     |
| 0240         | 521.0721   | PIPE ARCH CORRUGATED STEEL 21X15-INCH                       | LF   | 30.000     | 30.000     |
| 0250         | 521.1221   | APRON ENDWALLS FOR PIPE ARCH STEEL 21X15-INCH               | EACH | 2.000      | 2.000      |
| 0260         | 550.0500   | PILE POINTS                                                 | EACH | 12.000     | 12.000     |
| 0270         | 550.1100   | PIILING STEEL HP 10-INCH X 42 LB                            | LF   | 300.000    | 300.000    |
| 0280         | 606.0300   | RIPRAP HEAVY                                                | CY   | 110.000    | 110.000    |
| 0290         | 612.0406   | PIPE UNDERDRAIN WRAPPED 6-INCH                              | LF   | 160.000    | 160.000    |
| 0300         | 614.2300   | MGS GUARDRAIL 3                                             | LF   | 125.000    | 125.000    |
| 0310         | 614.2500   | MGS THRIE BEAM TRANSITION                                   | LF   | 158.000    | 158.000    |
| 0320         | 614.2610   | MGS GUARDRAIL TERMINAL EAT                                  | EACH | 4.000      | 4.000      |
| 0330         | 619.1000   | MOBILIZATION                                                | EACH | 1.000      | 1.000      |
| 0340         | 624.0100   | WATER                                                       | MGAL | 7.000      | 7.000      |
| 0350         | 625.0100   | TOPSOIL                                                     | SY   | 1,680.000  | 1,680.000  |
| 0360         | 628.1504   | SILT FENCE                                                  | LF   | 1,120.000  | 1,120.000  |
| 0370         | 628.1520   | SILT FENCE MAINTENANCE                                      | LF   | 2,240.000  | 2,240.000  |
| 0380         | 628.1905   | MOBILIZATIONS EROSION CONTROL                               | EACH | 5.000      | 5.000      |
| 0390         | 628.1910   | MOBILIZATIONS EMERGENCY EROSION CONTROL                     | EACH | 2.000      | 2.000      |
| 0400         | 628.2004   | EROSION MAT CLASS I TYPE B                                  | SY   | 2,200.000  | 2,200.000  |
| 0410         | 628.6005   | TURBIDITY BARRIERS                                          | SY   | 290.000    | 290.000    |
| 0420         | 628.7555   | CULVERT PIPE CHECKS                                         | EACH | 3.000      | 3.000      |
| 0430         | 628.7570   | ROCK BAGS                                                   | EACH | 110.000    | 110.000    |
| 0440         | 629.0210   | FERTILIZER TYPE B                                           | CWT  | 1.000      | 1.000      |
| 0450         | 630.0120   | SEEDING MIXTURE NO. 20                                      | LB   | 60.000     | 60.000     |
| 0460         | 630.0200   | SEEDING TEMPORARY                                           | LB   | 31.000     | 31.000     |
| 0470         | 634.0612   | POSTS WOOD 4X6-INCH X 12-FT                                 | EACH | 4.000      | 4.000      |
| 0480         | 637.0202   | SIGNS REFLECTIVE TYPE II                                    | SF   | 12.000     | 12.000     |

|              |          |                                                                    |                                         |           |           |
|--------------|----------|--------------------------------------------------------------------|-----------------------------------------|-----------|-----------|
| DATE 29MAY13 |          |                                                                    | E S T I M A T E O F Q U A N T I T I E S |           |           |
| LINE         |          |                                                                    | 4485-02-71                              |           |           |
| NUMBER       | ITEM     | ITEM DESCRIPTION                                                   | UNIT                                    | TOTAL     | QUANTITY  |
| 0490         | 642.5001 | FIELD OFFICE TYPE B                                                | EACH                                    | 1.000     | 1.000     |
| 0500         | 643.0100 | TRAFFIC CONTROL (PROJECT) 01. 4485-02-71                           | EACH                                    | 1.000     | 1.000     |
| 0510         | 643.0420 | TRAFFIC CONTROL BARRICADES TYPE III                                | DAY                                     | 165.000   | 165.000   |
| 0520         | 643.0705 | TRAFFIC CONTROL WARNING LIGHTS TYPE A                              | DAY                                     | 330.000   | 330.000   |
| 0530         | 643.0900 | TRAFFIC CONTROL SIGNS                                              | DAY                                     | 165.000   | 165.000   |
| 0540         | 645.0120 | GEOTEXTILE FABRIC TYPE HR                                          | SY                                      | 270.000   | 270.000   |
| 0550         | 646.0106 | PAVEMENT MARKING EPOXY 4-INCH                                      | LF                                      | 1,317.000 | 1,317.000 |
| 0560         | 650.4500 | CONSTRUCTION STAKING SUBGRADE                                      | LF                                      | 533.000   | 533.000   |
| 0570         | 650.5000 | CONSTRUCTION STAKING BASE                                          | LF                                      | 533.000   | 533.000   |
| 0580         | 650.6500 | CONSTRUCTION STAKING STRUCTURE LAYOUT (STRUCTURE) 01. B-08-0115    | LS                                      | 1.000     | 1.000     |
| 0590         | 650.9910 | CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 4485-02-71 | LS                                      | 1.000     | 1.000     |
| 0600         | 650.9920 | CONSTRUCTION STAKING SLOPE STAKES                                  | LF                                      | 533.000   | 533.000   |
| 0610         | 690.0150 | SAWING ASPHALT                                                     | LF                                      | 550.000   | 550.000   |
| 0620         | 715.0502 | INCENTIVE STRENGTH CONCRETE STRUCTURES                             | DOL                                     | 1,410.000 | 1,410.000 |
| 0630         | SPV.0060 | SPECIAL 01. UTILITY LINE OPENINGS                                  | EACH                                    | 2.000     | 2.000     |

CLEARING AND GRUBBING

| STATION | TO | STATION | LOCATION  | 201.0105<br>CLEARING<br>STA | 201.0205<br>GRUBBING<br>STA |
|---------|----|---------|-----------|-----------------------------|-----------------------------|
| 8+50    | -  | 9+00    | CTH E, LT | 1                           | 1                           |
| TOTALS  |    |         |           | 1                           | 1                           |

REMOVING SMALL PIPE CULVERTS

| STATION | LOCATION  | 203.0100<br>EACH | DESCRIPTION |
|---------|-----------|------------------|-------------|
| 8+30    | CTH E, LT | 1                | 18", CMCP   |
| TOTAL   |           | 1                |             |

REMOVING GUARDRAIL

| STATION | TO | STATION | LOCATION  | 204.0165<br>LF | DESCRIPTION |
|---------|----|---------|-----------|----------------|-------------|
| 9+23    | -  | 9+81    | CTH E, LT | 58             | NW QUADRANT |
| 9+22    | -  | 9+82    | CTH E, RT | 60             | SW QUADRANT |
| 10+17   | -  | 10+74   | CTH E, LT | 57             | NE QUADRANT |
| 10+17   | -  | 10+77   | CTH E, RT | 60             | SE QUADRANT |
| TOTAL   |    |         |           | 235            |             |

PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS

| STATION | TO | STATION | LOCATION  | 211.0400<br>STA |
|---------|----|---------|-----------|-----------------|
| 7+00    | -  | 8+25    | CTH E, RT | 2               |
| 7+74    | -  | 8+25    | CTH E, LT | 1               |
| 11+00   | -  | 12+36   | CTH E, RT | 2               |
| 11+00   | -  | 12+85   | CTH E, LT | 2               |
| TOTAL   |    |         |           | 7               |

EARTHWORK SUMMARY

| Division         | From/To Station | Location            | Common Excavation<br>(item #205.0100) | Unusable<br>Pavement Material<br>(4) | Available<br>Material (5) | Unexpanded<br>Fill | Expanded Fill<br>(13) | Mass Ordinate<br>+/- (14) | Borrow<br><br>(item #208.0100) | Comment: |
|------------------|-----------------|---------------------|---------------------------------------|--------------------------------------|---------------------------|--------------------|-----------------------|---------------------------|--------------------------------|----------|
|                  |                 |                     | Cut                                   |                                      |                           |                    | Factor<br>1.30        |                           |                                |          |
| 1                | 7+15            | CTH E, FE LT        | 0                                     | 0                                    | 0                         | 10                 | 13                    | -13                       | 13                             |          |
|                  | 7+00 - 8+25     | CTH E (SW SHOULDER) | 3                                     | 0                                    | 3                         | 44                 | 57                    | -54                       | 54                             |          |
|                  | 7+73 - 8+25     | CTH E (NW SHOULDER) | 5                                     | 0                                    | 5                         | 5                  | 6                     | -1                        | 1                              |          |
|                  | 8+25 - 11+00    | CTH E               | 363                                   | 166                                  | 197                       | 182                | 236                   | -39                       | 39                             |          |
|                  | 11+00 - 12+36   | CTH E (SE SHOULDER) | 0                                     | 0                                    | 0                         | 155                | 201                   | -201                      | 201                            |          |
|                  | 11+00 - 12+85   | CTH E (NE SHOULDER) | 0                                     | 0                                    | 0                         | 14                 | 18                    | -18                       | 18                             |          |
| Division 1 Total |                 |                     | 371                                   | 166                                  | 205                       | 409                | 531                   | -326                      | 326                            |          |

4) Unusable Pavement Material = Existing Asphaltic Pavement

5) Available Material = Cut - Unusable Pavement Material

13) Expanded Fill. Factor = 1.3   Expanded Fill = Unexpanded Fill \* Fill Factor

14) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

BASE AGGREGATE DENSE AND WATER

| STATION  | TO   | STATION | LOCATION     | 305.0110<br>3/4-INCH<br>TON | 305.0120<br>1 1/4-INCH<br>TON | 624.0100<br>WATER<br>MGAL |
|----------|------|---------|--------------|-----------------------------|-------------------------------|---------------------------|
| 7+00     | -    | 9+73.75 | CTH E        | 75                          | 750                           | 4                         |
| 10+26.25 | -    | 12+85   | CTH E        | 75                          | 630                           | 2                         |
|          | 7+15 |         | CTH E, FE LT | 20                          | -                             | 1                         |
| TOTALS   |      |         |              | 170                         | 1,380                         | 7                         |

HMA PAVEMENT

| STATION  | TO | STATION | LOCATION | 455.0105<br>ASPHALTIC<br>MATERIAL<br>PG58-28<br>(5.5%)<br>TON | 455.0605<br>TACK<br>COAT<br><br>GAL | 460.1100<br>HMA<br>PAVEMENT<br>TYPE E-0.3<br><br>TON |
|----------|----|---------|----------|---------------------------------------------------------------|-------------------------------------|------------------------------------------------------|
| 7+00     | -  | 8+25    | CTH E    | 1.5                                                           | 2                                   | 18                                                   |
| 8+25     | -  | 9+73.75 | CTH E    | 8.0                                                           | 16                                  | 141                                                  |
| 10+26.25 | -  | 11+00   | CTH E    | 4.0                                                           | 8                                   | 69                                                   |
| 11+00    | -  | 12+85   | CTH E    | 2.5                                                           | 5                                   | 42                                                   |
| TOTALS   |    |         |          | 16                                                            | 31                                  | 270                                                  |

CULVERT PIPES AND ENDWALLS

| STATION | LOCATION  | 521.0721<br>PIPE ARCH<br>CORRUGATED<br>STEEL<br>21x15-INCH<br>LF | 521.1221<br>APRON<br>ENDWALLS<br>PIPE ARCH<br>STEEL<br>21x15-INCH<br>EACH | THICKNESS<br>STEEL<br>INCH |
|---------|-----------|------------------------------------------------------------------|---------------------------------------------------------------------------|----------------------------|
| 7+29    | CTH E, LT | 30                                                               | 2                                                                         | 0.064                      |
| TOTALS  |           | 30                                                               | 2                                                                         |                            |

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED

TOPSOIL, FERTILIZER, AND SEED

| STATION       | TO | STATION | LOCATION  | 625.0100<br>TOPSOIL<br>SY | 629.0210<br>FERTILIZER<br>TYPE B<br>CWT | 630.0120<br>SEEDING<br>MIXTURE NO. 20<br>LB | 630.0200<br>SEEDING<br>TEMPORARY<br>LB |
|---------------|----|---------|-----------|---------------------------|-----------------------------------------|---------------------------------------------|----------------------------------------|
| 7+00          | -  | 9+73.75 | CTH E, RT | 490                       | 0.3                                     | 15                                          | 8                                      |
| 7+74          | -  | 9+73.75 | CTH E, LT | 350                       | 0.2                                     | 10                                          | 5                                      |
| 10+26.25      | -  | 12+35   | CTH E, RT | 520                       | 0.3                                     | 15                                          | 8                                      |
| 10+26.25      | -  | 12+85   | CTH E, LT | 320                       | 0.2                                     | 10                                          | 5                                      |
| UNDISTRIBUTED |    |         |           |                           |                                         | 10                                          | 5                                      |
| TOTALS        |    |         |           | 1,680                     | 1.0                                     | 60                                          | 31                                     |

\*NOTE: - FERTILIZER NOT TO BE PLACED WITHIN 20' OF THE KILLSNAKE RIVER.  
- TEMPORARY SEEDING TO BE PLACED AT A RATE OF 1.5 POUNDS PER 1,000 SQUARE FEET WHEN PLACED IN COMBINATION WITH SEEDING MIXTURE NO. 20.

MGS GUARDRAIL

| STATION  | TO | STATION | LOCATION | 614.2300<br>GUARDRAIL 3<br>LF | 614.2500<br>THRIE BEAM<br>TRANSITION<br>LF | 614.2610<br>TERMINAL EAT<br>EACH |
|----------|----|---------|----------|-------------------------------|--------------------------------------------|----------------------------------|
| 8+21.8   | -  | 9+73.75 | CTH E    | 62.5                          | 79                                         | 2                                |
| 10+26.25 | -  | 11+78.4 | CTH E    | 62.5                          | 79                                         | 2                                |
| TOTALS   |    |         |          | 125                           | 158                                        | 4                                |

REMARKS:

- POST LOCATIONS FOR MGS GUARDRAIL EAT SHOWN BELOW.  
- POST LOCATIONS NEED TO BE FIELD VERIFIED TO DETERMINE EXACT LOCATIONS FROM THE EXACT LOCATION OF THE RAILING ON THE STRUCTURE

| STATION | LOCATION  | POST # |
|---------|-----------|--------|
| 8+21.6  | CTH E, RT | 1      |
| 8+46.6  | CTH E, RT | 5      |
| 8+71.6  | CTH E, RT | 9      |
| 8+84.1  | CTH E, LT | 1      |
| 9+09.1  | CTH E, LT | 5      |
| 9+34.1  | CTH E, LT | 9      |
| 10+65.9 | CTH E, RT | 9      |
| 10+90.9 | CTH E, RT | 5      |
| 11+15.9 | CTH E, RT | 1      |
| 11+28.4 | CTH E, LT | 9      |
| 11+53.4 | CTH E, LT | 5      |
| 11+78.4 | CTH E, LT | 1      |

EROSION MAT CLASS I TYPE B

| STATION       | TO | STATION | LOCATION  | 628.2004<br>SY |
|---------------|----|---------|-----------|----------------|
| 7+00          | -  | 9+73.75 | CTH E, RT | 490            |
| 7+74          | -  | 9+73.75 | CTH E, LT | 350            |
| 10+26.25      | -  | 12+36   | CTH E, RT | 520            |
| 10+26.25      | -  | 12+85   | CTH E, LT | 320            |
| 7+15          |    |         |           | 150            |
| UNDISTRIBUTED |    |         |           | 370            |
| TOTAL         |    |         |           | 2,200          |

ROCK BAGS

| STATION       | LOCATION  | 628.7570<br>EACH | REMARKS           |
|---------------|-----------|------------------|-------------------|
| 7+65          | CTH E, RT | 10               | DITCH BOTTOM      |
| 7+85          | CTH E, LT | 10               | DITCH BOTTOM      |
| 8+25          | CTH E, LT | 10               | DITCH BOTTOM      |
| 8+45          | CTH E, RT | 10               | DITCH BOTTOM      |
| 8+85          | CTH E, LT | 10               | DITCH BOTTOM      |
| 9+15          | CTH E, RT | 10               | DITCH BOTTOM      |
| 9+40          | CTH E, LT | 15               | SILT FENCE RELIEF |
| 9+50          | CTH E, RT | 15               | SILT FENCE RELIEF |
| UNDISTRIBUTED |           | 20               |                   |
| TOTAL         |           | 110              |                   |

SILT FENCE

| STATION          | TO | STATION | LOCATION  | 628.1504<br>SILT FENCE<br>LF | 628.1520<br>MAINTENANCE<br>LF |
|------------------|----|---------|-----------|------------------------------|-------------------------------|
| 7+00             | -  | 9+50    | CTH E, RT | 270                          | 540                           |
| 8+75             | -  | 9+50    | CTH E, LT | 90                           | 180                           |
| 10+26.25         | -  | 12+36   | CTH E, RT | 230                          | 460                           |
| 10+26.25         | -  | 12+85   | CTH E, LT | 280                          | 560                           |
| UNDISTRIBUTED    |    |         |           | 140                          | 280                           |
| BRIDGE QUADRANTS |    |         |           | 110                          | 220                           |
| TOTALS           |    |         |           | 1,120                        | 2,240                         |

\*NOTE: QUANTITY OF SILT FENCE LISTED UNDER "BRIDGE QUANDRANTS" IS TO BE INSTALLED AFTER TURBIDITY BARRIERS HAVE BEEN REMOVED. SILT FENCE TO BE INSTALLED UP TO RIP RAP IN ALL FOUR QUADRANTS OF THE BRIDGE.

TURBIDITY BARRIERS

| STATION          | LOCATION  | 628.6005<br>SY |
|------------------|-----------|----------------|
| WEST ABUTMENT    | CTH E     | 140            |
| EAST ABUTMENT    | CTH E     | 100            |
| 10+26.25 - 12+36 | CTH E, RT | 50             |
| TOTAL            |           | 290            |

CULVERT PIPE CHECKS

| STATION | LOCATION  | 628.7555<br>EACH |
|---------|-----------|------------------|
| 7+15    | CTH E, LT | 3                |
| TOTAL   |           | 3                |

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED

TRAFFIC CONTROL SUMMARY

| LOCATION              | APPROXIMATE<br>SERVICE<br>DAYS | 643.0420<br>BARRICADES<br>TYPE III |      | 643.0705<br>WARNING LIGHTS<br>TYPE A |      | 643.0900<br>SIGNS |      |                                                                              |
|-----------------------|--------------------------------|------------------------------------|------|--------------------------------------|------|-------------------|------|------------------------------------------------------------------------------|
|                       |                                | NO. IN<br>SERVICE                  | DAYS | NO. IN<br>SERVICE                    | DAYS | NO. IN<br>SERVICE | DAYS |                                                                              |
| CTH E / CTH BB        | 55                             | 1                                  | 55   | 2                                    | 110  | 1                 | 55   | BRIDGE OUT 0.5 MILES AHEAD                                                   |
| CTH E / MCHUGH ROAD   | 55                             | 2                                  | 110  | 4                                    | 220  | 2                 | 110  | BRIDGE OUT STAGGER - SEE BARRICADES AND SIGNS FOR MAINLINE CLOSURES DETAIL C |
| WEST WORK ZONE LIMITS | 55                             | 5                                  | 275  | 6                                    | 330  | 3                 | 165  | SEE BARRICADES AND SIGNS FOR MAINLINE CLOSURES DETAIL D                      |
| EAST WORK ZONE LIMITS | 55                             | 5                                  | 275  | 6                                    | 330  | 1                 | 55   | SEE BARRICADES AND SIGNS FOR MAINLINE CLOSURES DETAIL D                      |
| CTH E / STH 32/57     | 55                             | -                                  | -    | -                                    | -    | 2                 | 110  | SEE BARRICADES AND SIGNS FOR MAINLINE CLOSURES DETAIL B                      |
| TOTALS                |                                |                                    | 165  |                                      | 330  |                   | 165  |                                                                              |

SIGNS REFLECTIVE TYPE II AND WOOD POSTS

| STATION     | LOCATION | 634.0612<br>WOOD POSTS | 637.0202<br>SIGNS |                |
|-------------|----------|------------------------|-------------------|----------------|
|             |          | 4"x6"x12'<br>EACH      | W5-52L<br>S.F.    | W5-52R<br>S.F. |
| NW QUADRANT | CTH E    | 1                      | -                 | 3              |
| SW QUADRANT | CTH E    | 1                      | 3                 | -              |
| NE QUADRANT | CTH E    | 1                      | 3                 | -              |
| SE QUADRANT | CTH E    | 1                      | -                 | 3              |
| SUBTOTALS   |          | 4                      | 6                 | 6              |
| TOTALS      |          | 4                      | 12                |                |

PAVEMENT MARKING

| STATION   | TO | STATION | LOCATION  | 646.0106<br>EPOXY<br>4-INCH<br>YELLOW<br>LF | 646.0106<br>EPOXY<br>4-INCH<br>WHITE<br>LF |
|-----------|----|---------|-----------|---------------------------------------------|--------------------------------------------|
|           |    |         |           |                                             |                                            |
| 7+01      | -  | 12+36   | CTH E, RT | -                                           | 535                                        |
| 7+74      | -  | 12+85   | CTH E, LT | -                                           | 511                                        |
| 8+25      | -  | 11+00   | CTH E     | 271                                         | -                                          |
| SUBTOTALS |    |         |           | 271                                         | 1,046                                      |
| TOTAL     |    |         |           | 1,317                                       |                                            |

SAWING ASPHALT

| STATION       | LOCATION  | 690.0150<br>LF | REMARKS           |
|---------------|-----------|----------------|-------------------|
| 8+25          | CTH E     | 25             | START LIMITS      |
| 11+00         | CTH E     | 25             | END LIMITS        |
| 7+00 - 8+25   | CTH E, RT | 137            | SHOULDER WIDENING |
| 7+74 - 8+25   | CTH E, LT | 53             | SHOULDER WIDENING |
| 11+00 - 12+36 | CTH E, RT | 125            | SHOULDER WIDENING |
| 11+00 - 12+85 | CTH E, LT | 185            | SHOULDER WIDENING |
| TOTAL         |           | 550            |                   |

CONSTRUCTION STAKING

| STATION   | TO | STATION | LOCATION | 650.4500<br>SUBGRADE | 650.5000<br>BASE | 650.6500<br>STRUCTURE<br>LAYOUT | 650.9910<br>SUPPLEMENTAL<br>CONTROL | 650.9920<br>SLOPE<br>STAKES | GROUP<br>CODE |
|-----------|----|---------|----------|----------------------|------------------|---------------------------------|-------------------------------------|-----------------------------|---------------|
|           |    |         |          | LF                   | LF               | LS                              | LS                                  | LF                          |               |
| 7+00      | -  | 8+25    | CTH E    | 125                  | 125              | -                               | 1                                   | 125                         | 0010          |
| 8+25      | -  | 9+73.75 | CTH E    | 149                  | 149              | -                               | -                                   | 149                         | 0010          |
| 10+26.25  | -  | 11+00   | CTH E    | 74                   | 74               | -                               | -                                   | 74                          | 0010          |
| 11+00     | -  | 12+85   | CTH E    | 185                  | 185              | -                               | -                                   | 185                         | 0010          |
| SUBTOTALS |    |         |          | 533                  | 533              | 0                               | 1                                   | 533                         | 0010          |
| 10+00     |    | CTH E   |          | -                    | -                | 1                               | -                                   | -                           | 0020          |
| SUBTOTALS |    |         |          | 0                    | 0                | 1                               | 0                                   | 0                           | 0020          |
| TOTALS    |    |         |          | 533                  | 533              | 1                               | 1                                   | 533                         |               |

UTILITY LINE OPENINGS

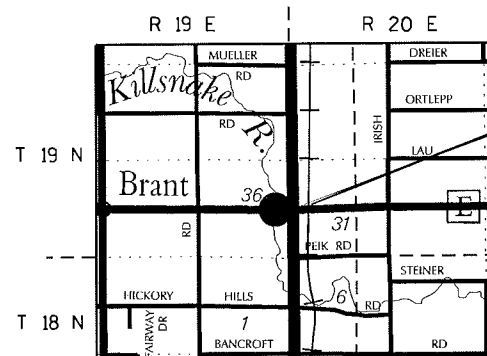
| STATION | APPROX.<br>OFFSET | LOCATION | SPV.0060.01 | REMARKS               |
|---------|-------------------|----------|-------------|-----------------------|
| EACH    |                   |          |             |                       |
| 6+96    | 23' LT            | CTH E    | 1           | LOCATING UTILITY LINE |
| 7+34    | 22' LT            | CTH E    | 1           | LOCATING UTILITY LINE |
| TOTAL   |                   |          | 2           |                       |

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE STATED

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

| CONVENTIONAL SYMBOLS       |                      |                                             |
|----------------------------|----------------------|---------------------------------------------|
| FOUND IRON PIPE/PIN        | IF (IF UNLESS NOTED) | PROPOSED R/W LINE                           |
| R/W MONUMENT               | • (SET)              | EXISTING H.E. LINE                          |
| R/W STANDARD               | • (SET)              | PROPERTY LINE                               |
| SIGN                       | ISIGN                | LOT & TIE LINES                             |
| SECTION CORNER MONUMENT    | □                    | SLOPE INTERCEPTS                            |
| SECTION CORNER SYMBOL      | □                    | CORPORATE LIMITS                            |
| FEE (HATCH VARIES)         | NO ACCESS            | NO ACCESS (BY PREVIOUS ACQUISITION/CONTROL) |
| TEMPORARY LIMITED EASEMENT | NO ACCESS            | NO ACCESS (BY ACQUISITION)                  |
| PERMANENT LIMITED EASEMENT | NO ACCESS            | NO ACCESS (BY STATUTORY AUTHORITY)          |
| R/W BOUNDARY POINT         | RWB20                | SECTION LINE                                |
| PARCEL NUMBER              | 102                  | QUARTER LINE                                |
| UTILITY PARCEL NUMBER      | 102                  | SIXTEENTH LINE                              |
| SIGN NUMBER (OFF PREMISE)  | 21-                  | EXISTING CENTERLINE                         |
| BUILDING                   | □                    | PROPOSED REFERENCE LINE                     |
|                            |                      | PARALLEL OFFSET                             |

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



TOTAL NET LENGTH OF RELOCATION ORDER = 0.029 MILES

# NOTES

COORDINATES AND BEARINGS ON THIS PLAT ARE ORIENTED TO THE WISCONSIN COUNTY COORDINATE SYSTEM, CALUMET COUNTY ZONE, NAD 83 (2007) 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 (1"x24" IRON PIPE WEIGHING 1.13 LBS./LN.FT.) 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.

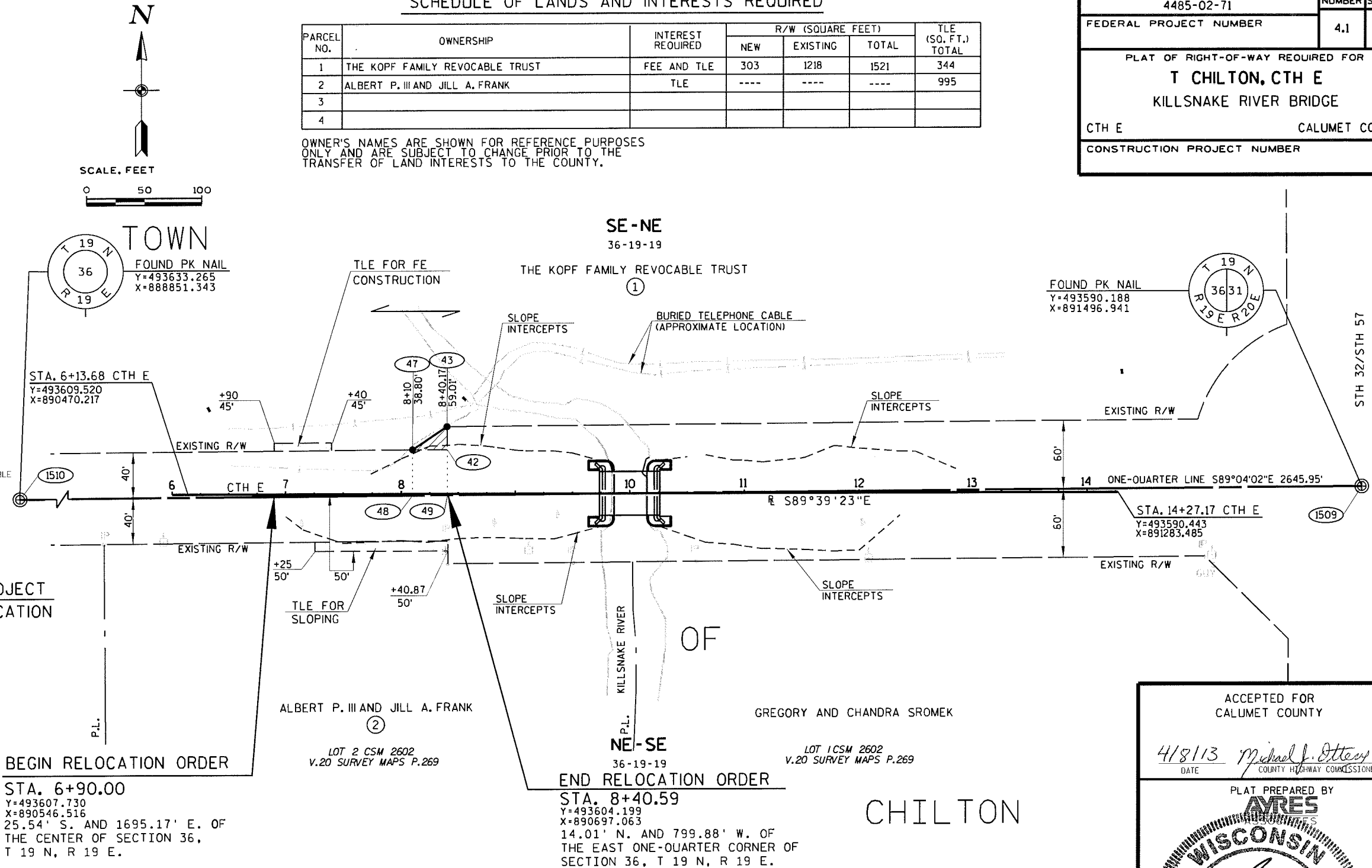
EXISTING RIGHT-OF-WAY FOR CTH E WAS DETERMINED FROM V. 401 DEEDS, P. 132, AS DOC. NO. 129959 AND CERTIFIED SURVEY MAP NO. 2602 RECORDED IN VOL. 20 SURVEY MAPS P. 269 AS DOC. NO. 362259.

## SCHEDULE OF LANDS AND INTERESTS REQUIRED

| PARCEL NO. | OWNERSHIP                       | INTEREST REQUIRED | R/W (SQUARE FEET) |          |       | TLE (SQ. FT.) TOTAL |
|------------|---------------------------------|-------------------|-------------------|----------|-------|---------------------|
|            |                                 |                   | NEW               | EXISTING | TOTAL |                     |
| 1          | THE KOPF FAMILY REVOCABLE TRUST | FEE AND TLE       | 303               | 1218     | 1521  | 344                 |
| 2          | ALBERT P. III AND JILL A. FRANK | TLE               | ----              | ----     | ----  | 995                 |
| 3          |                                 |                   |                   |          |       |                     |
| 4          |                                 |                   |                   |          |       |                     |

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

|                                   |            |                |              |
|-----------------------------------|------------|----------------|--------------|
| R/W PROJECT NUMBER                | 4485-02-71 | SHEET NUMBER   | TOTAL SHEETS |
| FEDERAL PROJECT NUMBER            |            | 4.1            | 1            |
| PLAT OF RIGHT-OF-WAY REQUIRED FOR |            |                |              |
| T CHILTON, CTH E                  |            |                |              |
| KILLSNAKE RIVER BRIDGE            |            |                |              |
| CTH E                             |            | CALUMET COUNTY |              |
| CONSTRUCTION PROJECT NUMBER       |            |                |              |



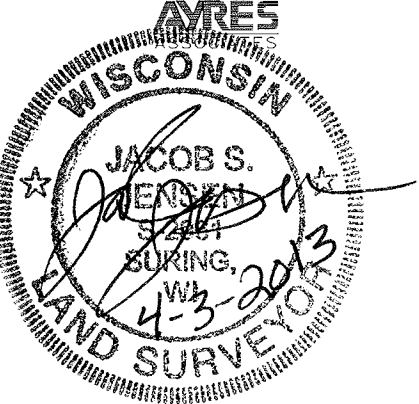
## PARCEL 1

| COURSE  | BEARING       | DISTANCE | PT NO | Y          | X          |
|---------|---------------|----------|-------|------------|------------|
| 1509-49 | N 89°04'02" W | 800.00'  | 1509  | 493590.188 | 891496.941 |
| 49-48   | N 89°04'02" W | 30.60'   | 49    | 493603.212 | 890697.047 |
| 48-47   | N 01°20'37" E | 40.00'   | 48    | 493603.710 | 890666.454 |
| 47-43   | N 57°30'50" E | 36.31'   | 47    | 493643.700 | 890667.392 |
| 43-42   | S 00°55'58" W | 20.00'   | 43    | 493663.204 | 890698.024 |
| 42-49   | S 00°55'58" W | 40.00'   | 42    | 493643.207 | 890697.698 |

ACCEPTED FOR  
CALUMET COUNTY

4/8/13  
DATE  
Michael J. Ottens  
COUNTY HIGHWAY COMMISSIONER

PLAT PREPARED BY

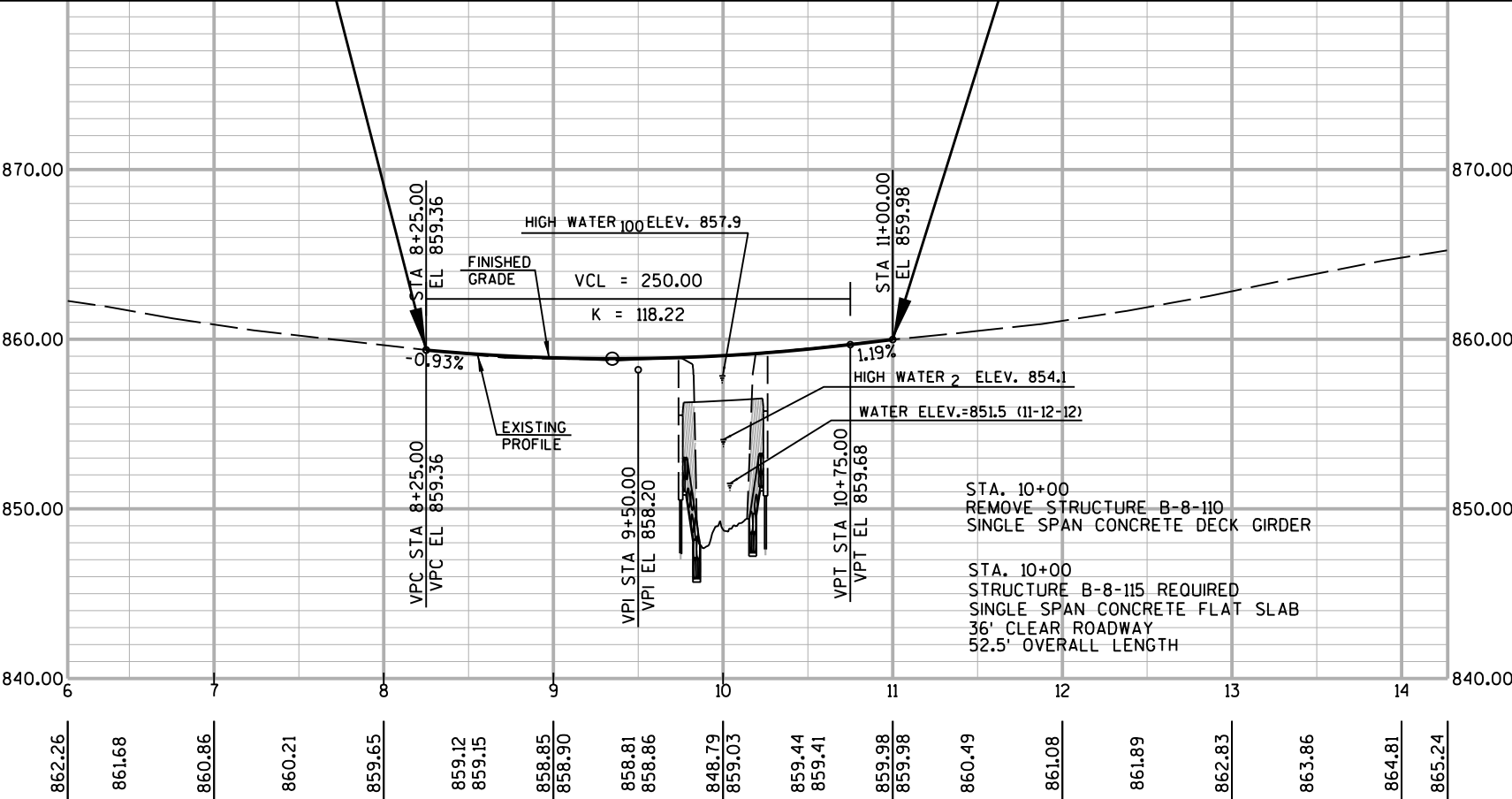
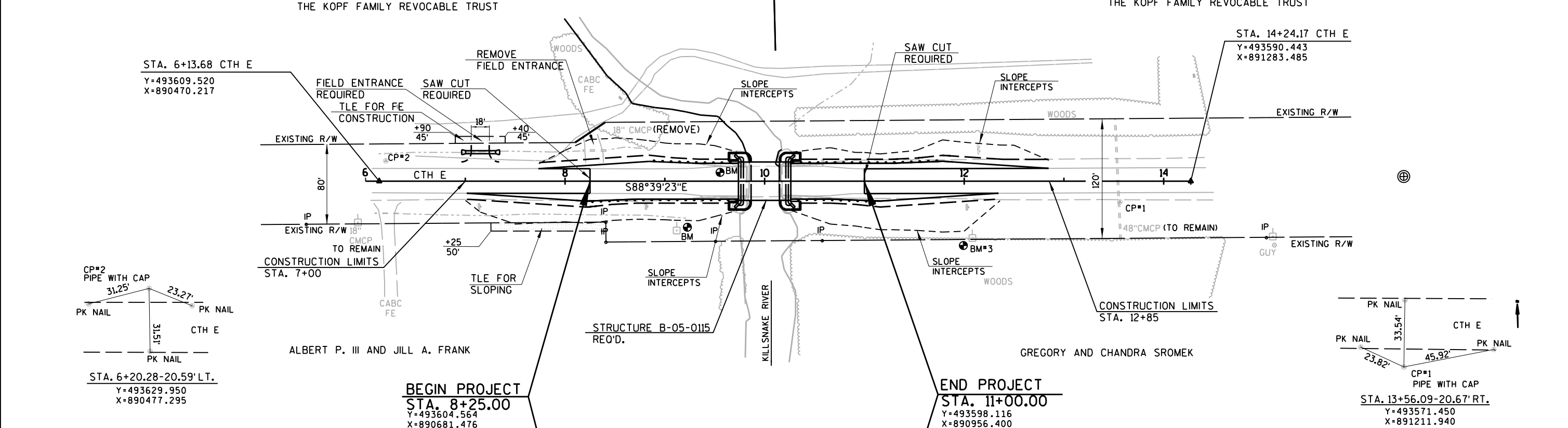


JACOB S. JENSEN, R.L.S.  
S-2961  
DATE

REVISION DATE

E

| BENCH MARKS |       |                                  |        |
|-------------|-------|----------------------------------|--------|
| NO.         | STA.  | DESCRIPTION                      | ELEV.  |
| 1           | 9+11  | SPK. IN PP-50' RT.               | 856.18 |
| 2           | 9+81  | CHIS. COX ON NW WINGWALL-17' LT. | 857.62 |
| 3           | 12+08 | SPK. IN PP*1919 36R3-57' RT.     | 854.10 |

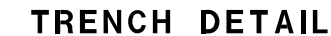


Standard Detail Drawing List

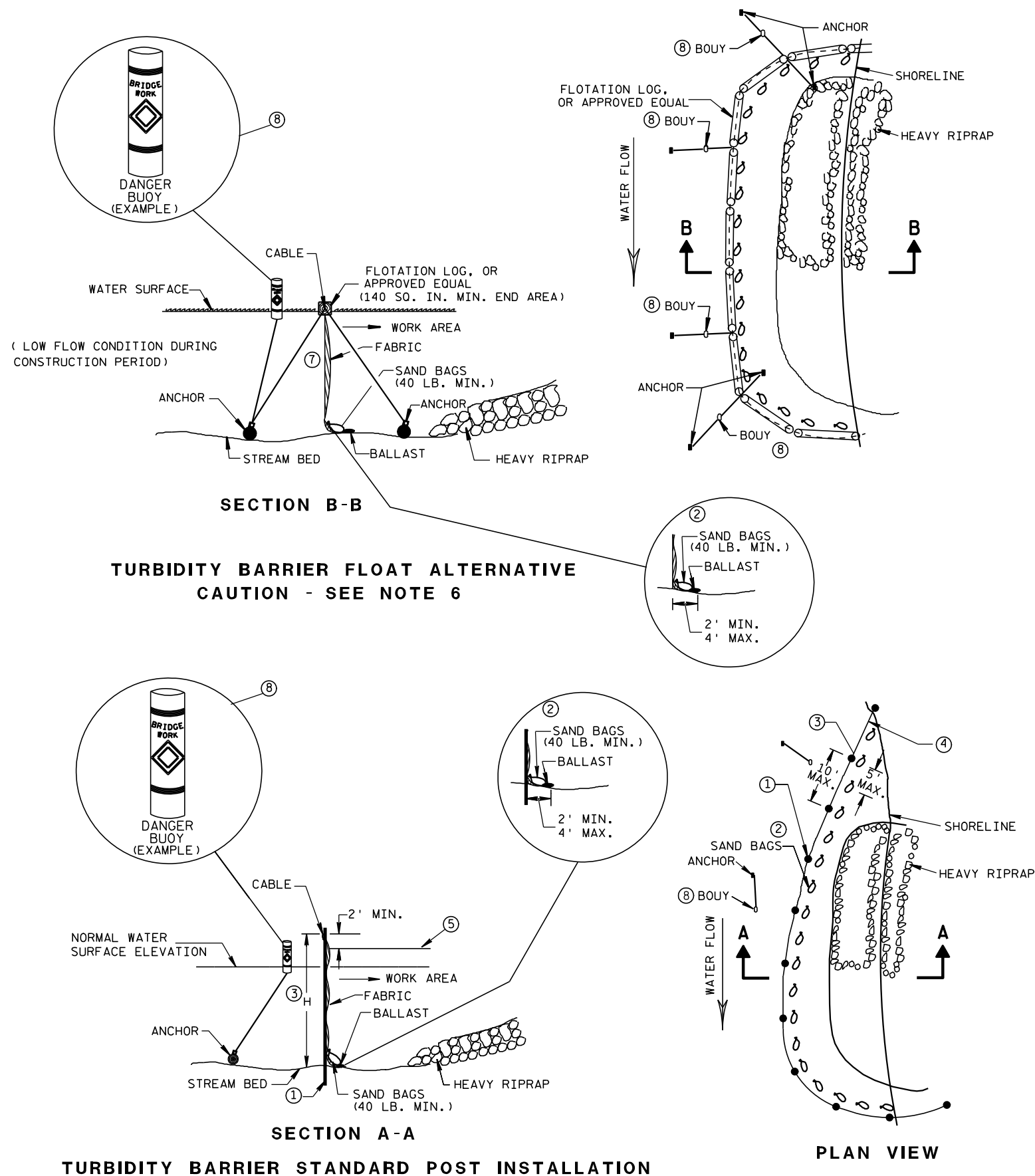
|           |                                                          |
|-----------|----------------------------------------------------------|
| 08E09-06  | SILT FENCE                                               |
| 08E11-02  | TURBIDITY BARRIER                                        |
| 08F02-01  | APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE         |
| 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                 |
| 14B44-01A | MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS) |
| 14B44-01B | MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS) |
| 14B44-01C | MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS) |
| 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)     |
| 14B45-03H | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)     |
| 15C02-04A | BARRICADES AND SIGNS FOR MAINLINE CLOSURES               |
| 15C02-04B | BARRICADES AND SIGNS FOR MAINLINE CLOSURES               |
| 15C06-05  | SIGNING & MARKING FOR TWO LANE BRIDGES                   |
| 15C08-15A | PAVEMENT MARKING (MAINLINE)                              |



- 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.



|                                                                                                     |                                                                                   |
|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <div style="text-align: center;"><h1>SILT FENCE</h1></div>                                          |                                                                                   |
| <div style="text-align: center;"><h2>STATE OF WISCONSIN<br/>DEPARTMENT OF TRANSPORTATION</h2></div> |                                                                                   |
| <div>APPROVED</div> <div><u>4-29-05</u></div> <div><u>DATE</u></div>                                | <div><u>/S/ Beth Canestra</u></div> <div>CHIEF ROADWAY DEVELOPMENT ENGINEER</div> |

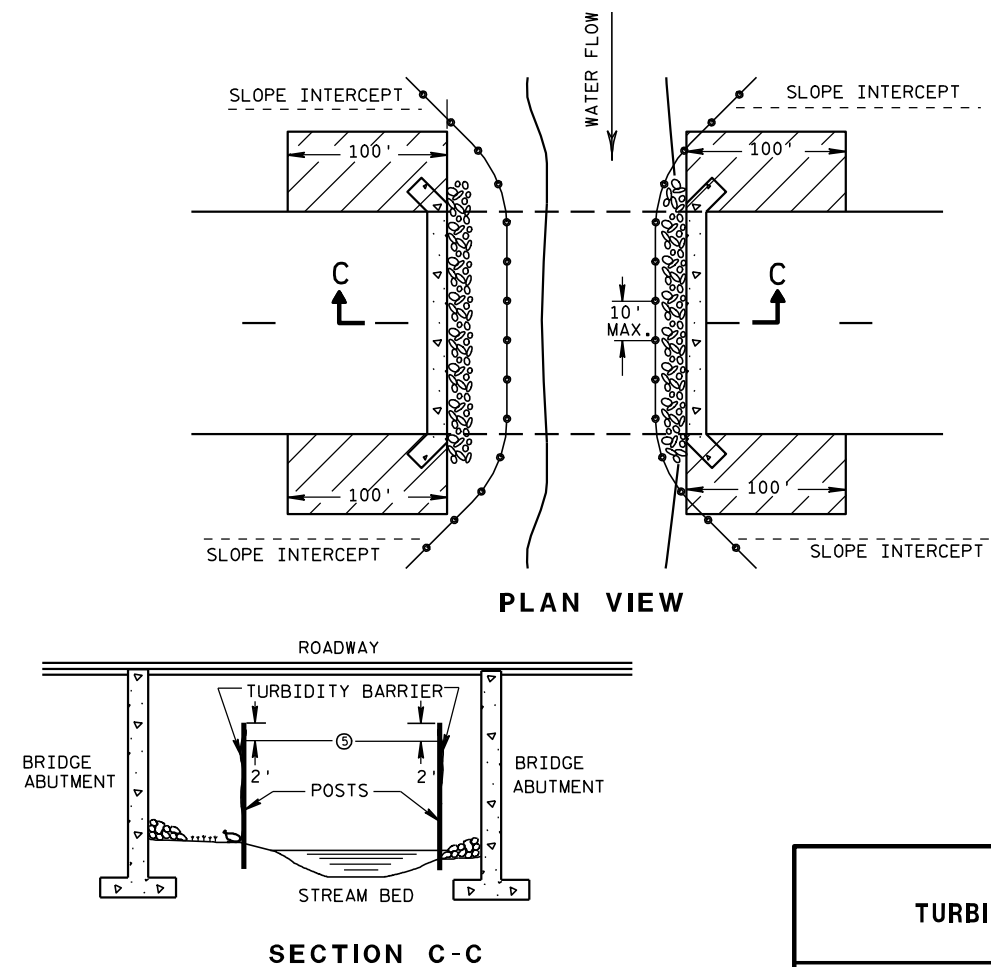


## GENERAL NOTES

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

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

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



## TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

### TURBIDITY BARRIER

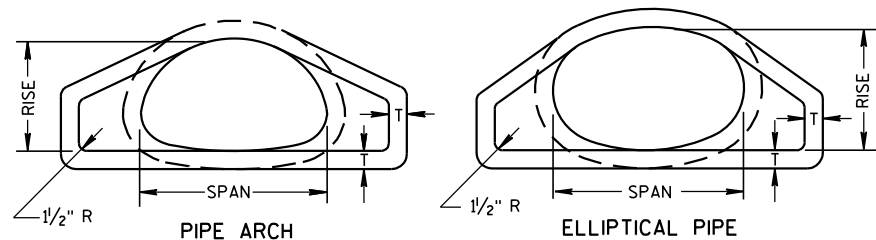
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

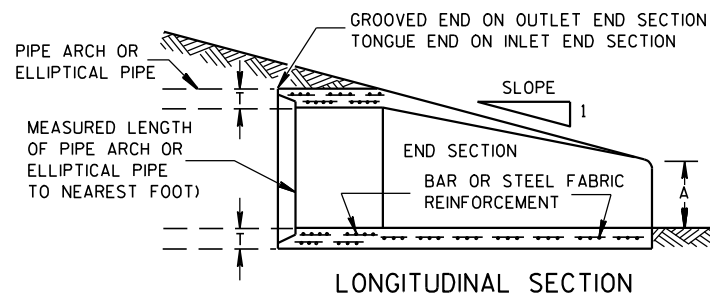
6/04/02  
DATE

FHWA

/S/ Beth Connestra  
CHIEF ROADWAY DEVELOPMENT ENGINEER

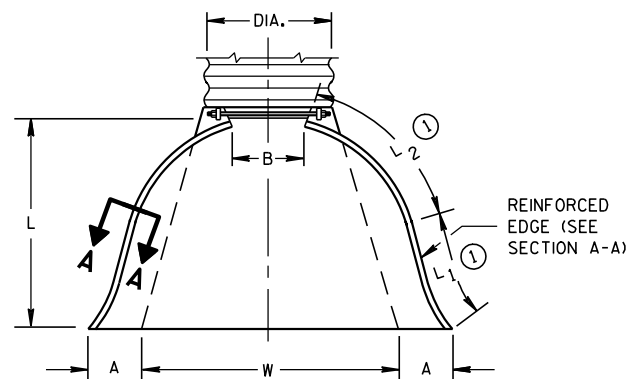


END VIEW



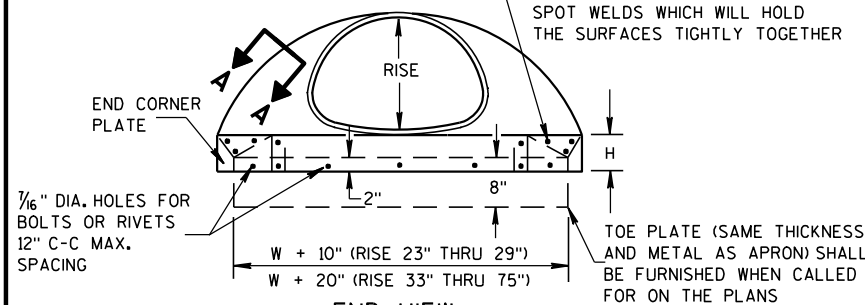
LONGITUDINAL SECTION

## CONCRETE ENDWALLS

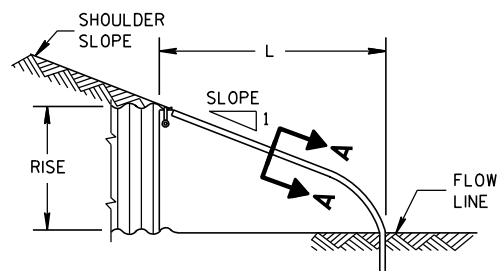
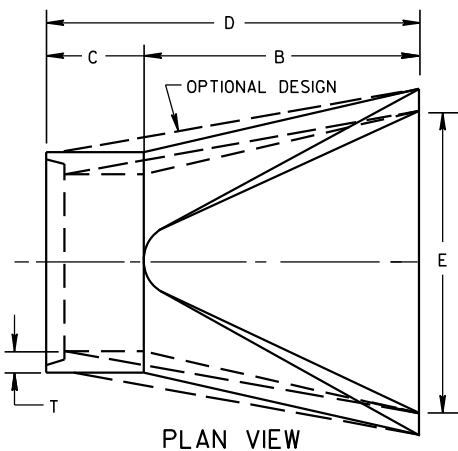


PLAN VIEW

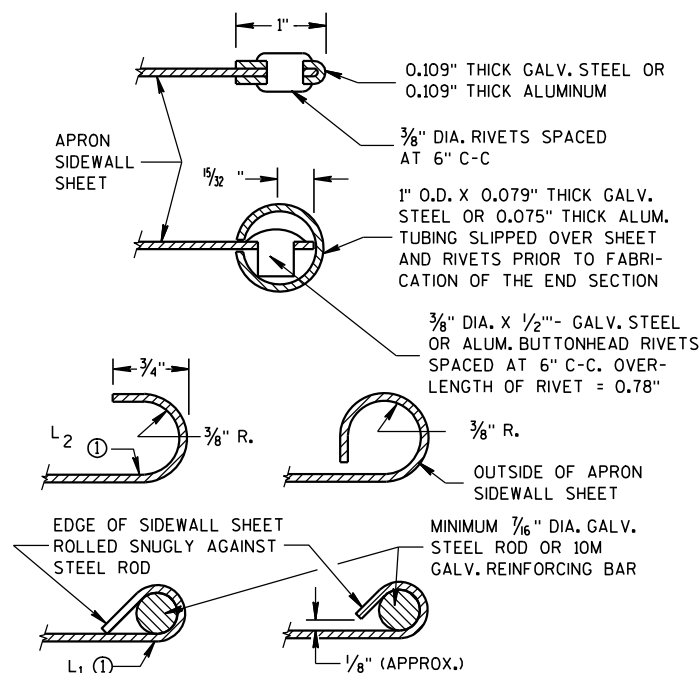
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



END VIEW

SIDE ELEVATION  
METAL ENDWALLS

PLAN VIEW



SECTION A-A

| 2- 2 <sup>2</sup> / <sub>3</sub> " x 1 <sup>1</sup> / <sub>2</sub> " CORRUGATIONS |          |      |                         |       |                     |             |            |                                         |                     |                                |            |                                    |       |
|-----------------------------------------------------------------------------------|----------|------|-------------------------|-------|---------------------|-------------|------------|-----------------------------------------|---------------------|--------------------------------|------------|------------------------------------|-------|
| EQUIV.<br>DIA.<br>(Inches)                                                        | (Inches) |      | MIN. THICK.<br>(Inches) |       | DIMENSIONS (Inches) |             |            |                                         |                     |                                |            | APPROX.<br>SLOPE                   | BODY  |
|                                                                                   | SPAN     | RISE | STEEL                   | ALUM. | A<br>(±1")          | B<br>(MAX.) | H<br>(±1") | L<br>(±1 <sup>1</sup> / <sub>2</sub> ") | L <sub>1</sub><br>① | L <sub>2</sub><br>①            | W<br>(±2") |                                    |       |
| 15                                                                                | 17       | 13   | .064                    | .060  | 7                   | 9           | 6          | 19                                      | 14                  | 16                             | 30         | 2 <sup>1</sup> / <sub>2</sub> to 1 | 1 Pc. |
| 18                                                                                | 21       | 15   | .064                    | .060  | 7                   | 10          | 6          | 23                                      | 14                  | 19 <sup>3</sup> / <sub>8</sub> | 36         | 2 <sup>1</sup> / <sub>2</sub> to 1 | 1 Pc. |
| 21                                                                                | 24       | 18   | .064                    | .060  | 8                   | 12          | 6          | 28                                      | 18                  | 21 <sup>3</sup> / <sub>4</sub> | 42         | 2 <sup>1</sup> / <sub>2</sub> to 1 | 1 Pc. |
| 24                                                                                | 28       | 20   | .064                    | .060  | 9                   | 14          | 6          | 32                                      | 18                  | 27 <sup>1</sup> / <sub>2</sub> | 48         | 2 <sup>1</sup> / <sub>2</sub> to 1 | 1 Pc. |
| 30                                                                                | 35       | 24   | .079                    | .075  | 10                  | 16          | 6          | 39                                      | 18                  | 37 <sup>5</sup> / <sub>8</sub> | 60         | 2 <sup>1</sup> / <sub>2</sub> to 1 | 1 Pc. |
| 36                                                                                | 42       | 29   | .079                    | .075  | 12                  | 18          | 8          | 46                                      | 24                  | 45 <sup>3</sup> / <sub>8</sub> | 75         | 2 <sup>1</sup> / <sub>2</sub> to 1 | 1 Pc. |
| 42                                                                                | 49       | 33   | .109                    | .105  | 13                  | 21          | 9          | 53                                      | 24                  | 54 <sup>3</sup> / <sub>4</sub> | 85         | 2 <sup>1</sup> / <sub>2</sub> to 1 | 2 Pc. |
| 48                                                                                | 57       | 38   | .109                    | .105  | 18                  | 26          | 12         | 63                                      | 24                  | 68                             | 90         | 2 <sup>1</sup> / <sub>2</sub> to 1 | 3 Pc. |
| 54                                                                                | 64       | 43   | .109                    | .105  | 18                  | 30          | 12         | 70                                      | 24                  | 72 <sup>3</sup> / <sub>4</sub> | 102        | 2 <sup>1</sup> / <sub>4</sub> to 1 | 3 Pc. |
| 60                                                                                | 71       | 47   | .109*                   | .105* | 18                  | 33          | 12         | 77                                      | 30                  | 82 <sup>1</sup> / <sub>4</sub> | 114        | 2 <sup>1</sup> / <sub>4</sub> to 1 | 3 Pc. |
| 66                                                                                | 77       | 52   | .109*                   | .105* | 18                  | 36          | 12         | 77                                      | —                   | —                              | 126        | 2 to 1                             | 3 Pc. |
| 72                                                                                | 83       | 57   | .109*                   | .105* | 18                  | 39          | 12         | 77                                      | —                   | —                              | 138        | 2 to 1                             | 3 Pc. |

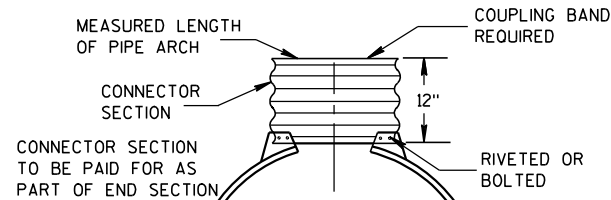
| 3" X 1" CORRUGATIONS       |          |      |                         |       |                     |             |            |                |         |         |            |                  |       |
|----------------------------|----------|------|-------------------------|-------|---------------------|-------------|------------|----------------|---------|---------|------------|------------------|-------|
| EQUIV.<br>DIA.<br>(Inches) | (Inches) |      | MIN. THICK.<br>(Inches) |       | DIMENSIONS (Inches) |             |            |                |         |         |            | APPROX.<br>SLOPE | BODY  |
|                            | SPAN     | RISE | STEEL                   | ALUM. | A<br>(±1")          | B<br>(MAX.) | H<br>(±1") | L<br>(±1 1/2") | L1<br>⓪ | L2<br>⓪ | W<br>(±2") |                  |       |
| 48                         | 53       | 41   | .109                    | .105  | 18                  | 26          | 12         | 63             | 24      | 72¾     | 90         | 2½ to 1          | 2 Pc. |
| 54                         | 60       | 46   | .109                    | .105  | 18                  | 30          | 12         | 70             | 30      | 82¼     | 102        | 2 to 1           | 2 Pc. |
| 60                         | 66       | 51   | .109*                   | .105* | 18                  | 33          | 12         | 77             | —       | —       | 114        | 1½ to 1          | 3 Pc. |
| 66                         | 73       | 55   | .109*                   | .105* | 18                  | 36          | 12         | 77             | —       | —       | 126        | 1½ to 1          | 3 Pc. |
| 72                         | 81       | 59   | .109*                   | .105* | 18                  | 39          | 12         | 77             | —       | —       | 138        | 2 to 1           | 3 Pc. |
| 78                         | 87       | 63   | .109*                   | .105* | 22                  | 38          | 12         | 77             | —       | —       | 148        | 1½ to 1          | 3 Pc. |
| 84                         | 95       | 67   | .109*                   | .105* | 22                  | 34          | 12         | 77             | —       | —       | 162        | 1½ to 1          | 3 Pc. |
| 90                         | 103      | 71   | .109*                   | .105* | 22                  | 38          | 12         | 77             | —       | —       | 174        | 1½ to 1          | 3 Pc. |
| 96                         | 112      | 75   | .109*                   | .105* | 24                  | 40          | 12         | 77             | —       | —       | 174        | 1½ to 1          | 3 Pc. |

NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED.

\* EXCEPT CENTER PANEL  
SEE GENERAL NOTES

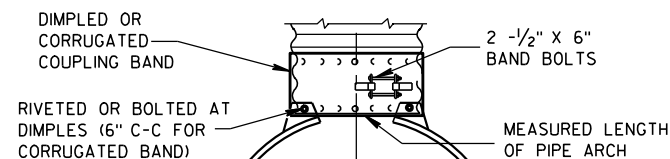
TYPE 2

FOR 17" X 13" THRU 112" X 75" PIPE ARCH



TYPE 3

FOR 64" X 43" THRU 112" X 75" PIPE ARCH



TYPE 5

ALTERNATE FOR:  
ALL SIZES CORRUGATED PIPE ARCHESNOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL,  
AND CORRUGATED BAND FITS INSIDE ENDWALL.

## CONNECTION DETAILS

## REINFORCED CONCRETE PIPE ARCH

| EQUIV. DIA. (Inches) | DIMENSIONS (Inches) |         |       |        |    |    |     |     | APPROX. SLOPE |
|----------------------|---------------------|---------|-------|--------|----|----|-----|-----|---------------|
|                      | ** SPAN             | ** RISE | T     | A      | B  | C  | D   | E   |               |
| 24                   | 29                  | 18      | 3     | 8 1/2  | 39 | 33 | 72  | 48  | 3 to 1        |
| 30                   | 36                  | 22      | 3 1/2 | 9 1/2  | 50 | 46 | 96  | 60  | 3 to 1        |
| 36                   | 44                  | 27      | 4     | 11 1/8 | 60 | 36 | 96  | 72  | 3 to 1        |
| 42                   | 51                  | 31      | 4 1/2 | 15 1/8 | 60 | 36 | 96  | 78  | 3 to 1        |
| 48                   | 58                  | 36      | 5     | 21     | 60 | 36 | 96  | 84  | 3 to 1        |
| 54                   | 65                  | 40      | 5 1/2 | 25 1/2 | 60 | 36 | 96  | 90  | 3 to 1        |
| 60                   | 73                  | 45      | 6     | 31     | 60 | 36 | 96  | 96  | 3 to 1        |
| 72                   | 88                  | 54      | 7     | 31     | 60 | 39 | 99  | 120 | 2 to 1        |
| 84                   | 102                 | 62      | 8     | 28 1/2 | 83 | 19 | 102 | 144 | 2 to 1        |

## REINFORCED CONCRETE ELLIPTICAL PIPE

| EQUIV. DIA. (Inches) | DIMENSIONS (Inches) |         |       |        |    |    |    |    | APPROX. SLOPE |
|----------------------|---------------------|---------|-------|--------|----|----|----|----|---------------|
|                      | ** SPAN             | ** RISE | T     | A      | B  | C  | D  | E  |               |
| 24                   | 30                  | 19      | 3 1/4 | 8 1/2  | 39 | 33 | 72 | 48 | 3 to 1        |
| 30                   | 38                  | 24      | 3 3/4 | 9 1/2  | 54 | 18 | 72 | 60 | 3 to 1        |
| 36                   | 45                  | 29      | 4 1/2 | 11 1/8 | 60 | 24 | 84 | 72 | 2 1/2 to 1    |
| 42                   | 53                  | 34      | 5     | 15 1/4 | 60 | 36 | 96 | 78 | 2 1/2 to 1    |
| 48                   | 60                  | 38      | 5 1/2 | 21     | 60 | 36 | 96 | 84 | 2 1/2 to 1    |
| 54                   | 68                  | 43      | 6     | 25 1/2 | 60 | 36 | 96 | 90 | 2 1/2 to 1    |
| 60                   | 76                  | 48      | 6 1/2 | 30     | 60 | 36 | 96 | 96 | 2 1/2 to 1    |

\*\*NOMINAL SIZE

## GENERAL NOTES

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

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

ALL THREE PIECE STEEL APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE ARCH PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 77" X 52" THROUGH 112" X 75" APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

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

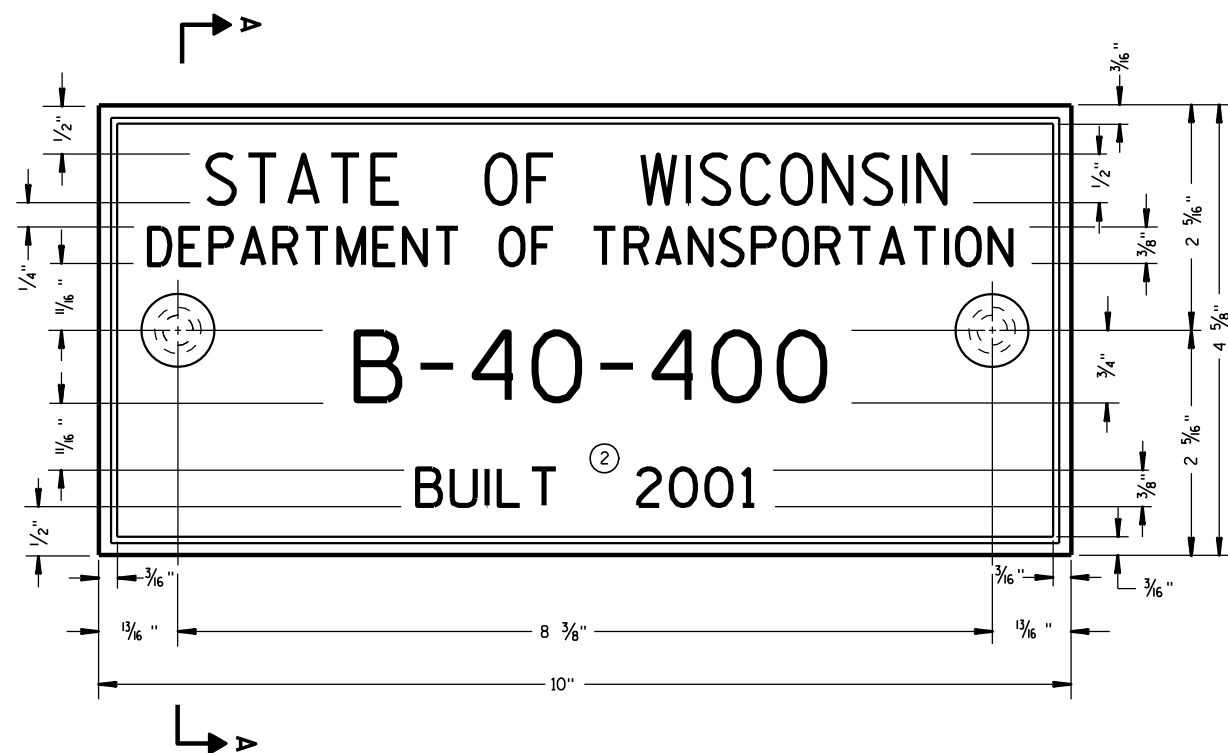
① FOR PIPE ARCH SIZES UP TO 73" X 55" A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR  
PIPE ARCH AND  
ELLIPTICAL PIPESTATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

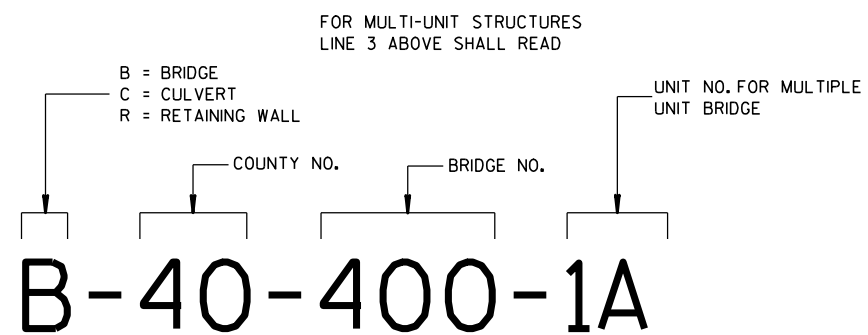
APPROVED

11/30/94  
DATE/S/ Rory L. Rhinesmith  
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA



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



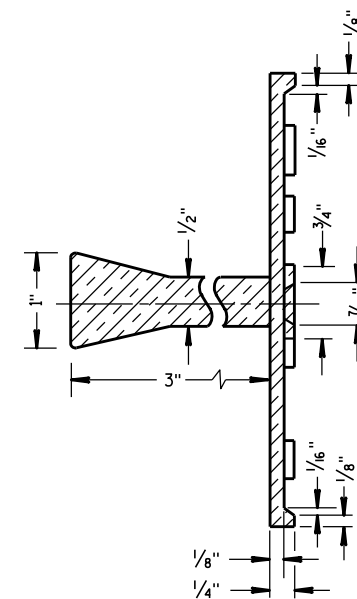
**NUMBERING DESIGNATION  
MULTI-UNIT STRUCTURES**

## GENERAL NOTES

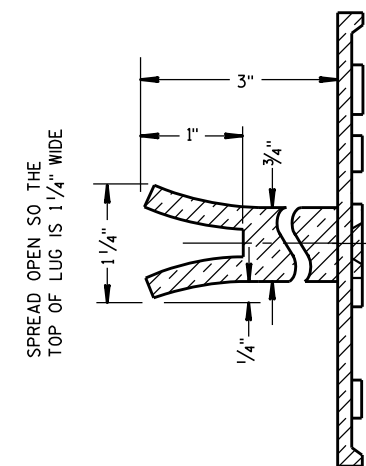
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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.

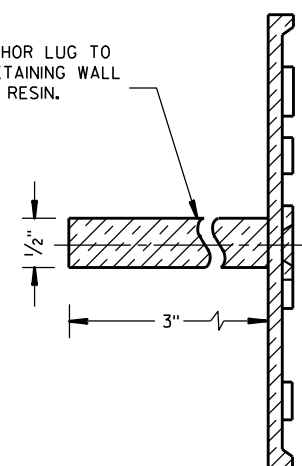


**SECTION A-A**



**ALTERNATE LUG**

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



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

**NAME PLATE  
(STRUCTURES)**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

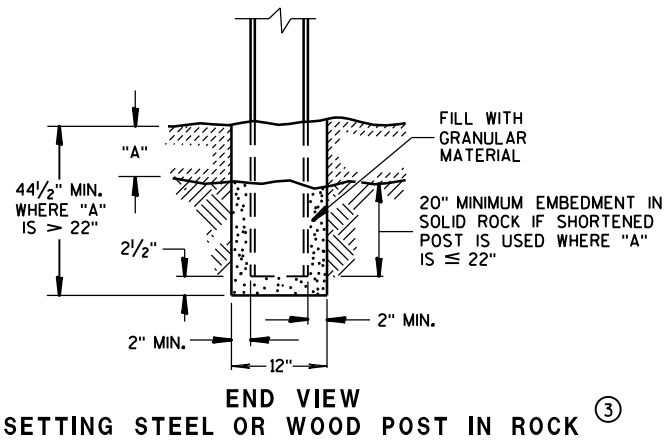
3/26/10  
DATE

FHWA

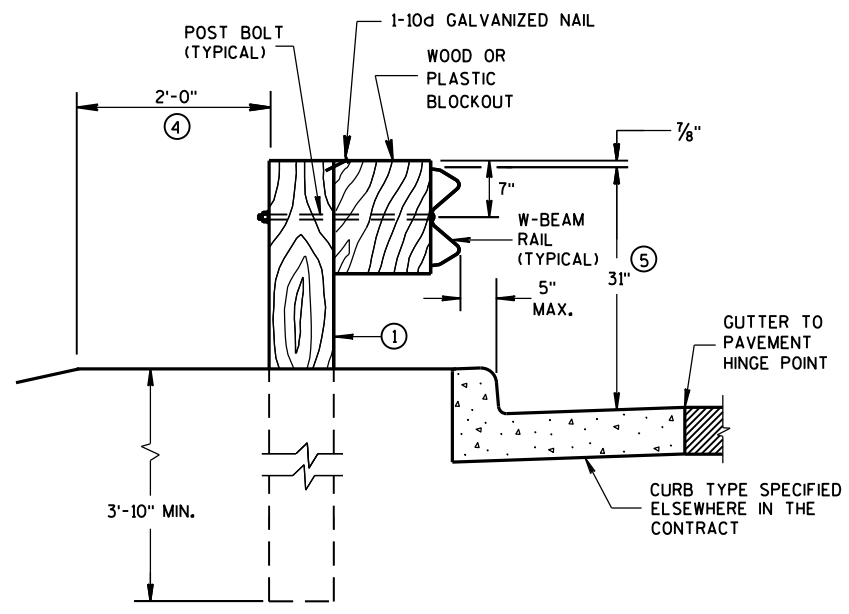
/S/ Scot Becker  
CHIEF STRUCTURAL DEVELOPMENT ENGINEER

GENERAL NOTES

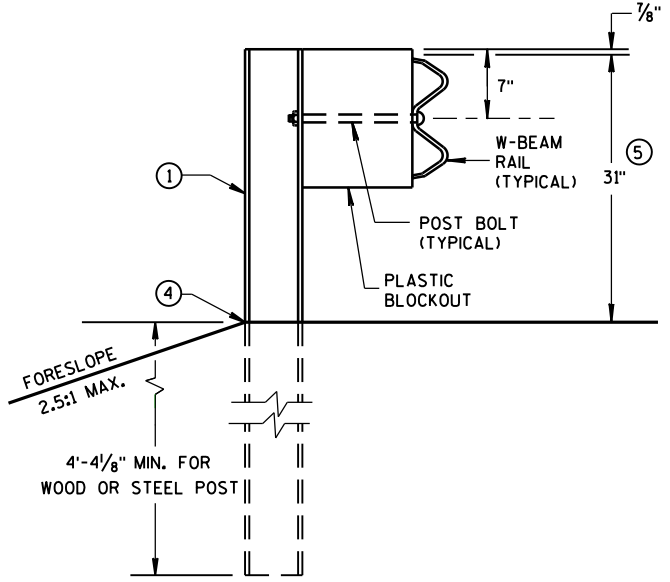
- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL.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



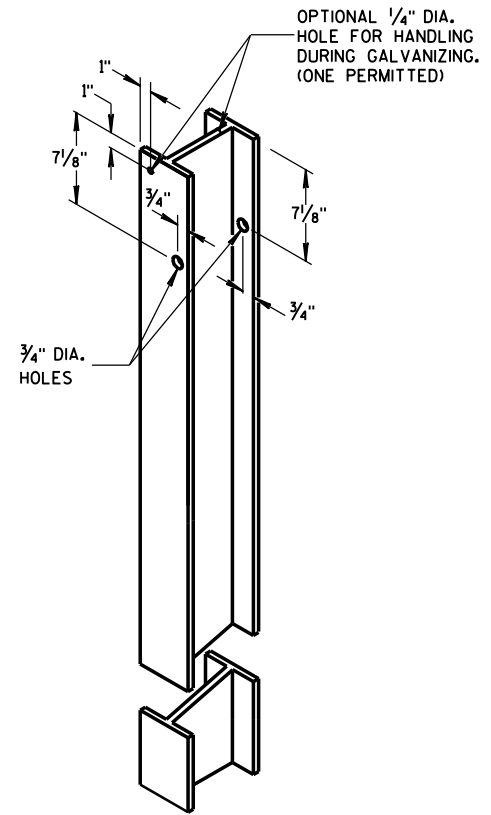
END VIEW  
SETTING STEEL OR WOOD POST IN ROCK ③



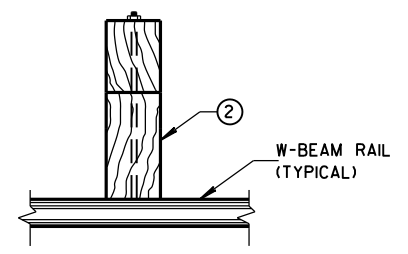
END VIEW  
LOCATED ALONG A CURBED ROADWAY



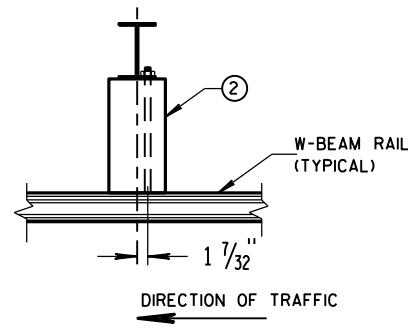
END VIEW  
MGS LONGER POST AT HALFPST SPACING W BEAM (K)



STEEL POST &  
HOLE PUNCHING DETAIL  
(w6X9) ①



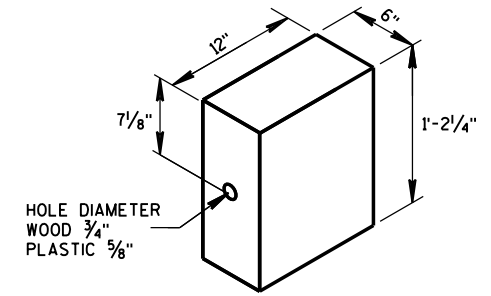
PLAN VIEW  
WOOD POST,  
BLOCKOUT & BEAM



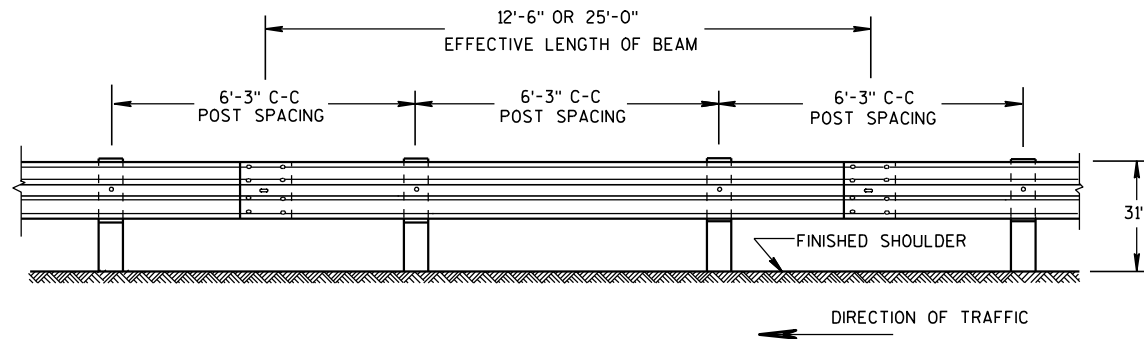
PLAN VIEW  
STEEL POST,  
PLASTIC BLOCKOUT & BEAM



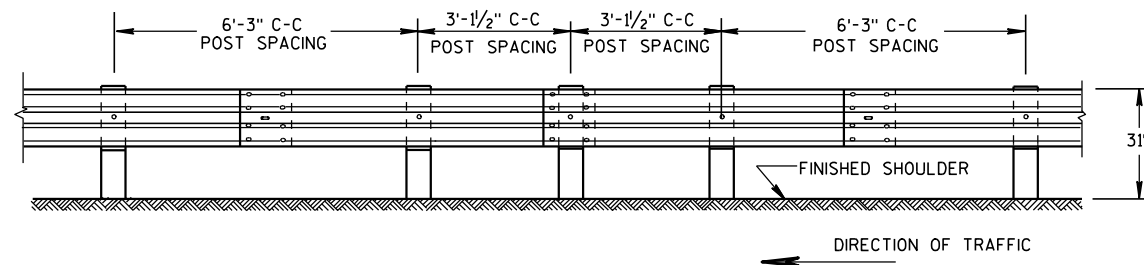
WOOD POST  
(6" X 8") NOMINAL ①



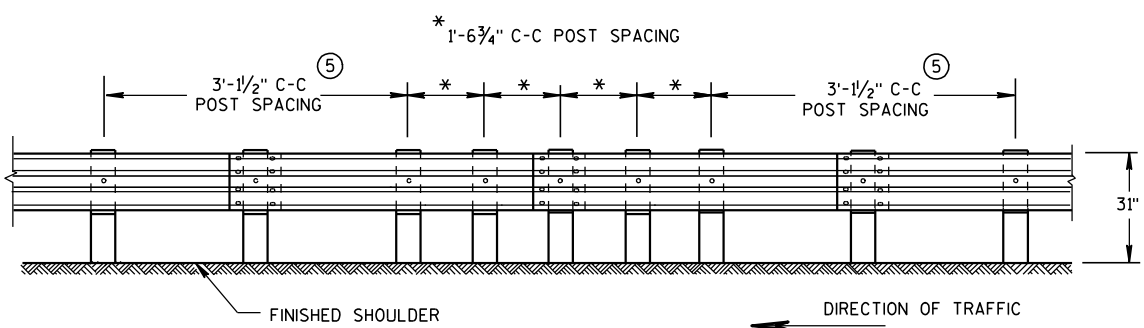
WOOD OR  
PLASTIC BLOCKOUT ②



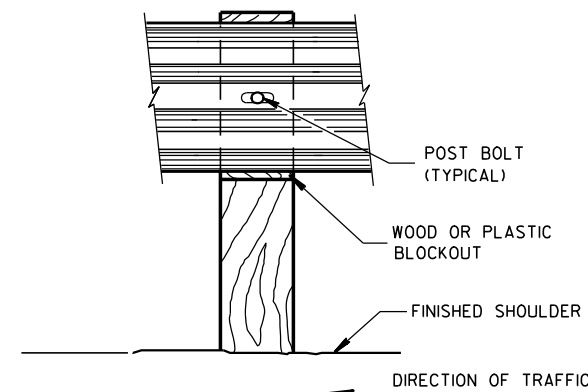
**FRONT VIEW**  
**POST SPACING STANDARD INSTALLATION**



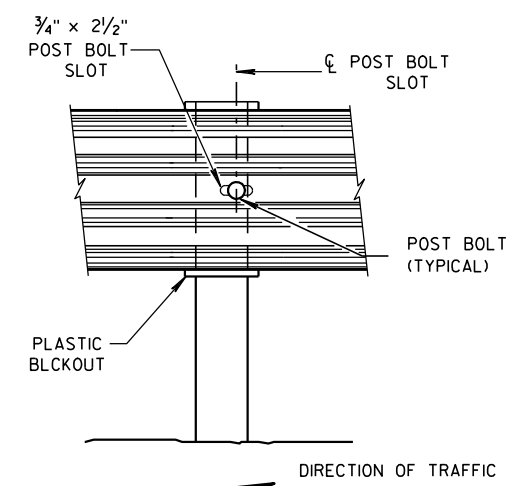
**FRONT VIEW**  
**HALF POST SPACING (HS) AND  
HALF POST SPACING WITH LONGER POSTS (K)**



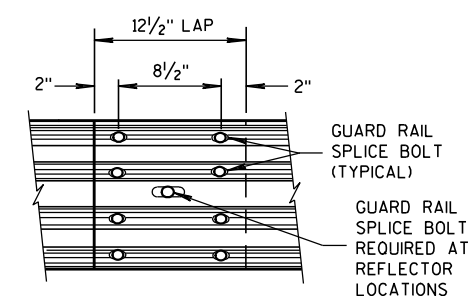
**FRONT VIEW**  
**QUARTER POST SPACING (QS)**



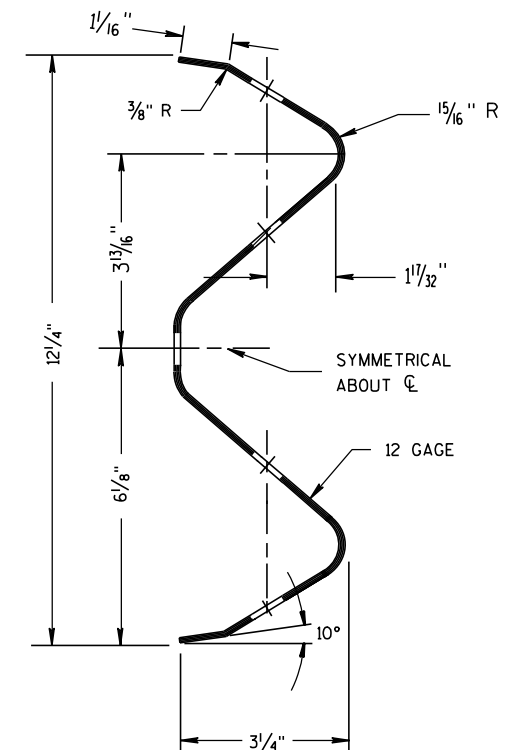
**FRONT VIEW AT WOOD POST**



**FRONT VIEW AT STEEL POST**



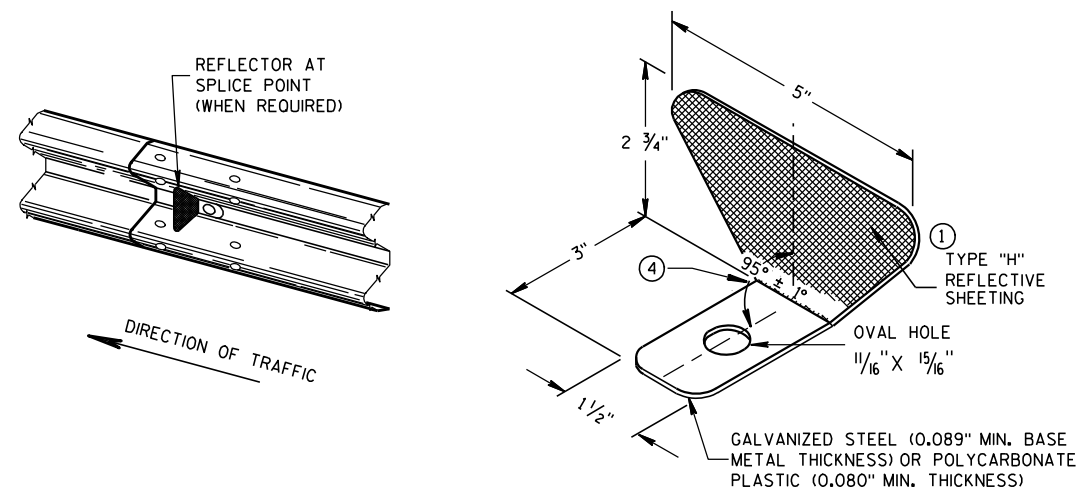
**FRONT VIEW  
MID-SPAN BEAM SPLICE**



**SECTION THRU W-BEAM RAIL**

**REFLECTOR SPACING**

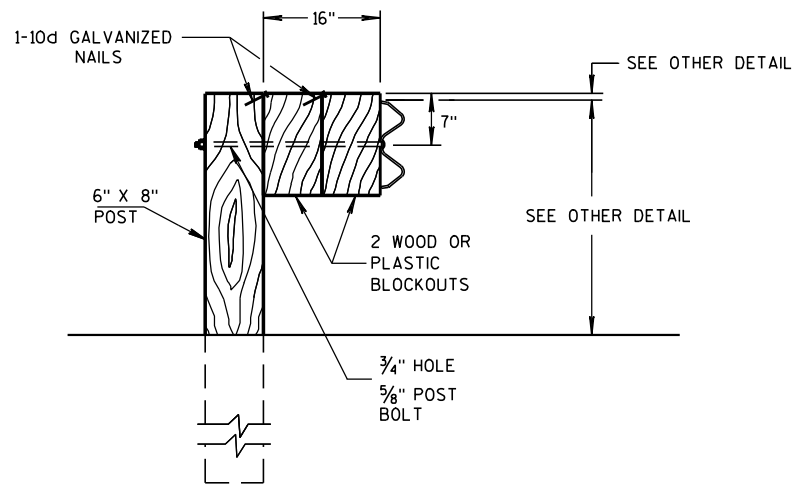
|                 | BEAM GUARD LENGTH | REFLECTOR SPACING | NO. SURFACES REFLECTORIZED | MIN. NO. REFLECTORS |
|-----------------|-------------------|-------------------|----------------------------|---------------------|
| ONE WAY TRAFFIC | < 200'            | 50' C-C           | 1                 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



**ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION**

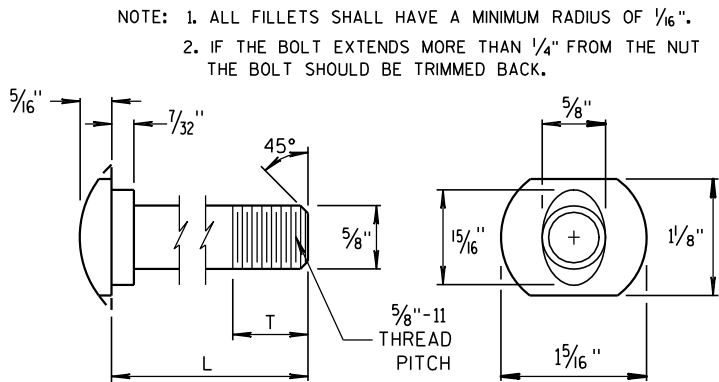
**GENERAL NOTES**

- 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° ± 1° 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 5/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 5/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.
- GUARD RAIL SPLICE BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

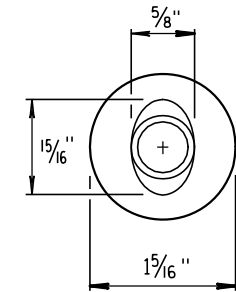


### DETAIL FOR 16" BLOCKOUT DEPTH

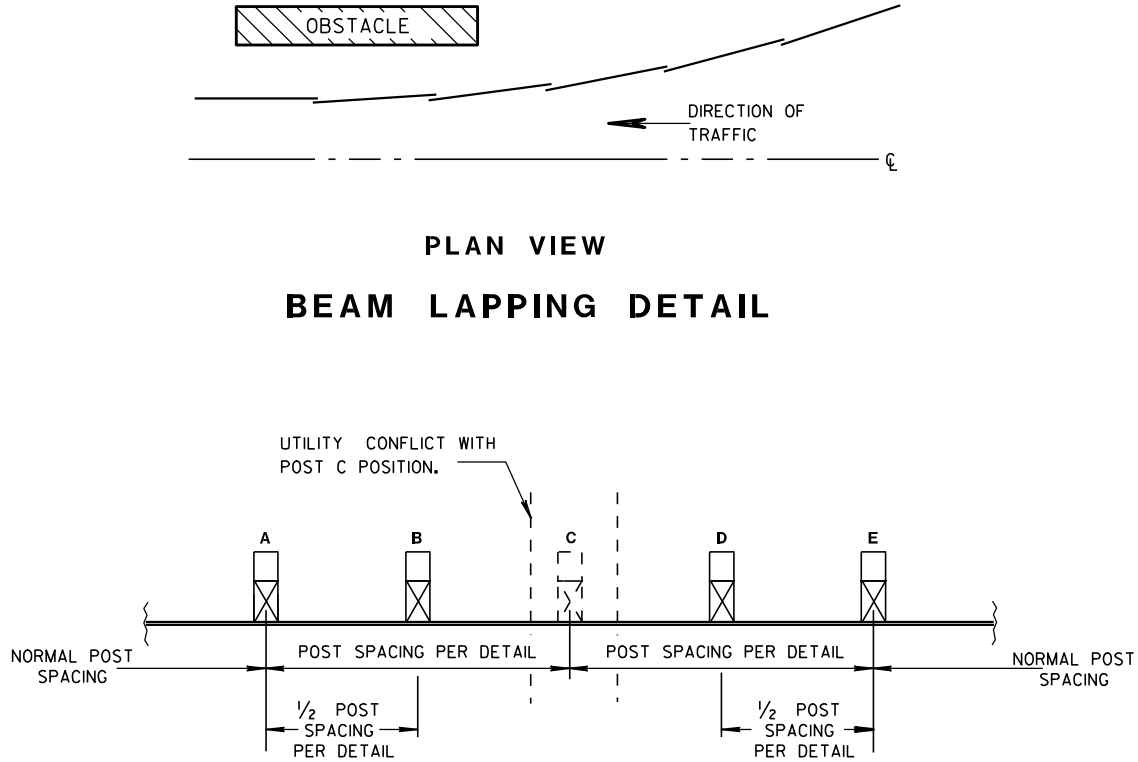
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



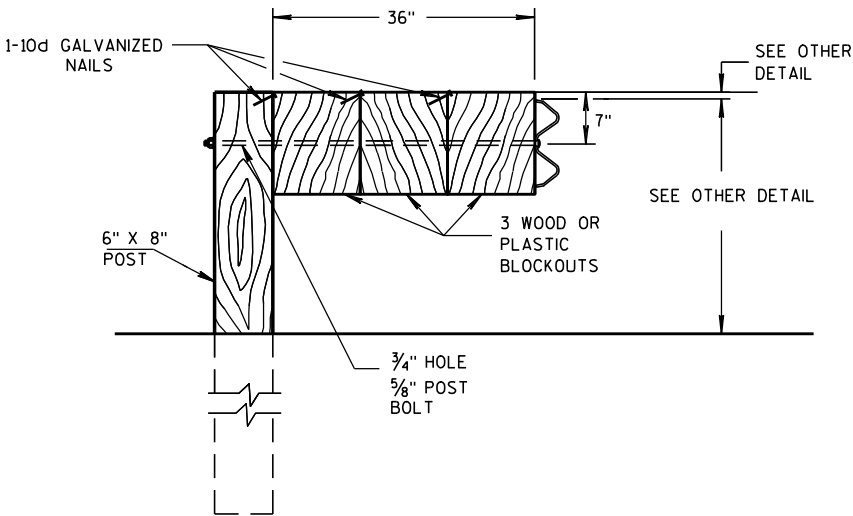
POST BOLT TABLE



ALTERNATE BOLT HEAD



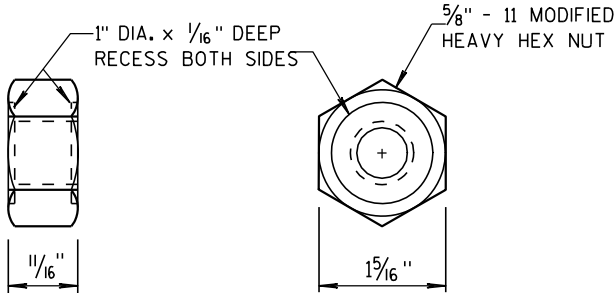
### POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



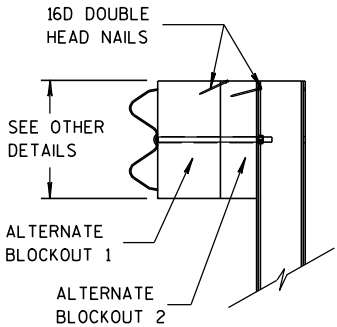
### DETAIL FOR 36" BLOCKOUT DEPTH

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.

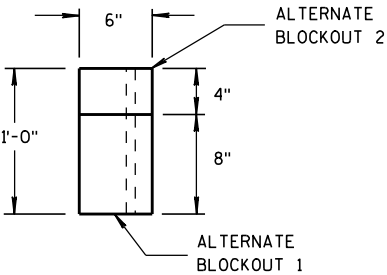
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.



### POST BOLT AND RECESS NUT



SIDE VIEW



TOP VIEW

### ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
11/15/2011  
DATE  
/S/ Jerry H. Zogg  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER  
FHWA

GENERAL NOTES

- (A) THE SLOPE IN THE AREA BOUNDED BY THE EXTENDED VEHICLE RUNOUT PATH (EVRP), THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.
- (C) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.
- (D) THE TOP OF THE STEEL TUBE ON POST 1 AND POST 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.
- (E) SHEETING IS ATTACHED TO 0.040 ALUMINUM SHEET AND ATTACHED TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER OF E.A.T.
- (F) 1/2" DIAMETER X 3" LONG LAG BOLT AND WASHER.
- (G) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.
- (H) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

SEE SDD 14B42 FOR MORE INFORMATION.

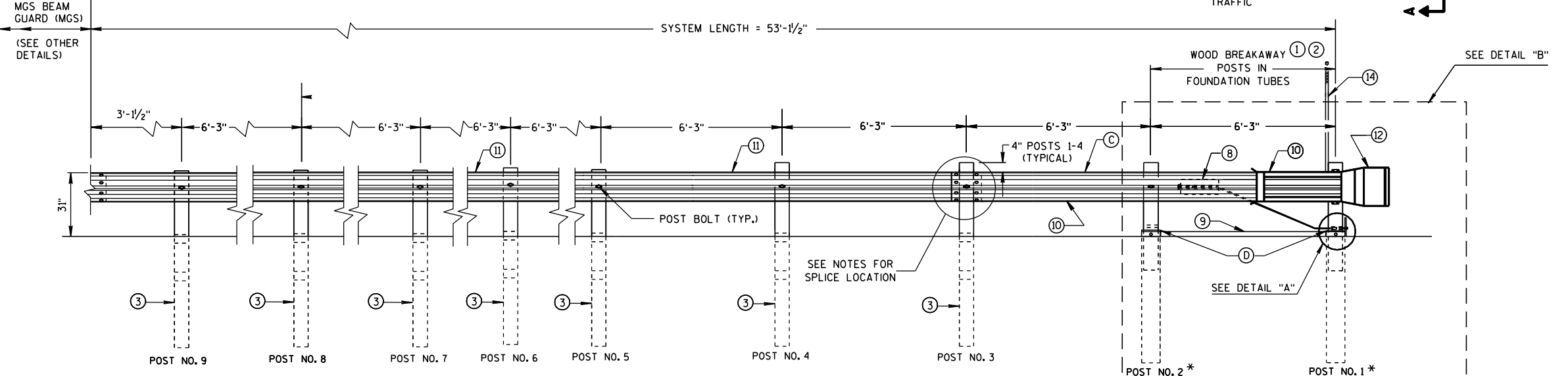
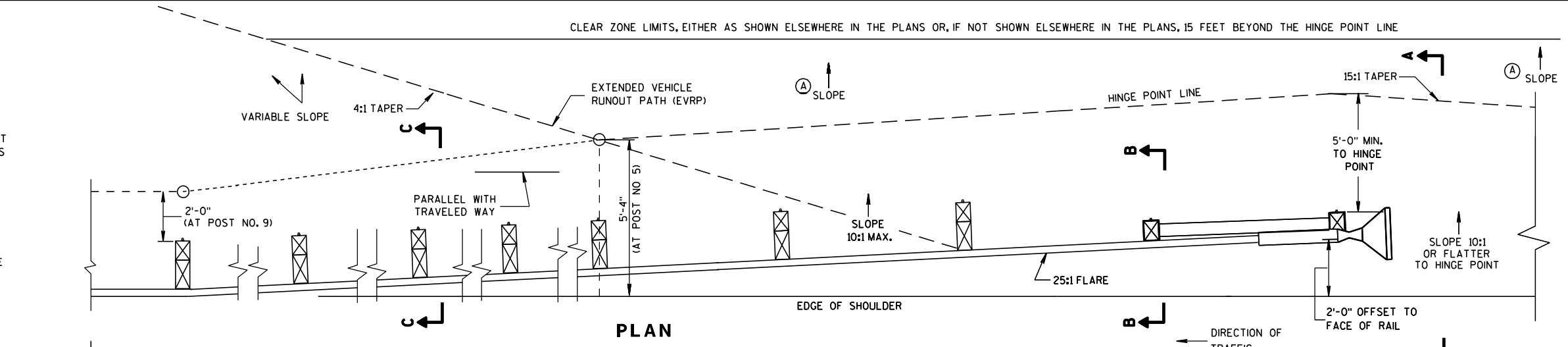
\* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

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

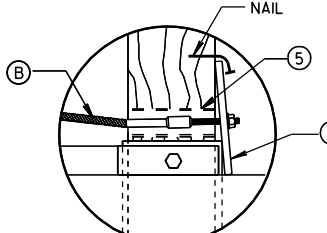
W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

PATTERN AND COLORS ON REFLECTIVE SHEETING TYPE H ARE TO CONFORM TO OM3-L OR OM3-R OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

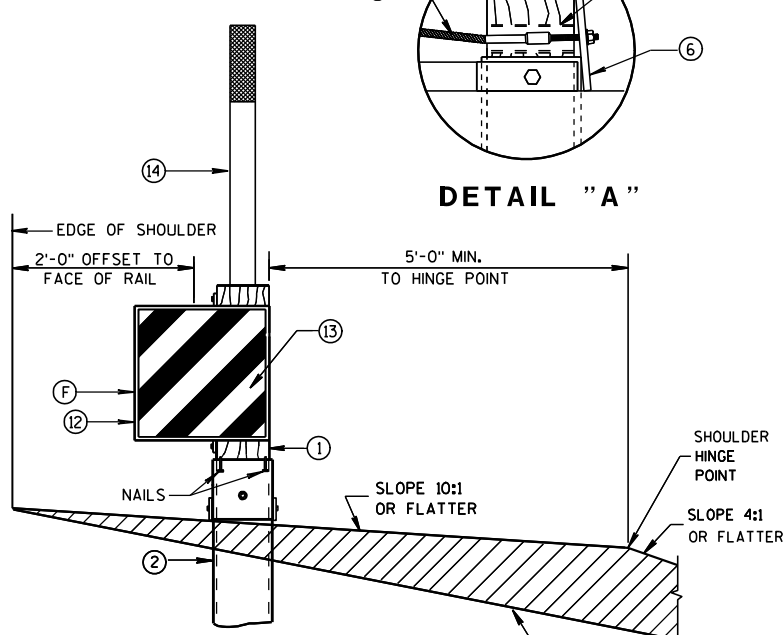
THE CENTER OF THE UPPER 3/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE ( $\pm \frac{3}{4}$ ")



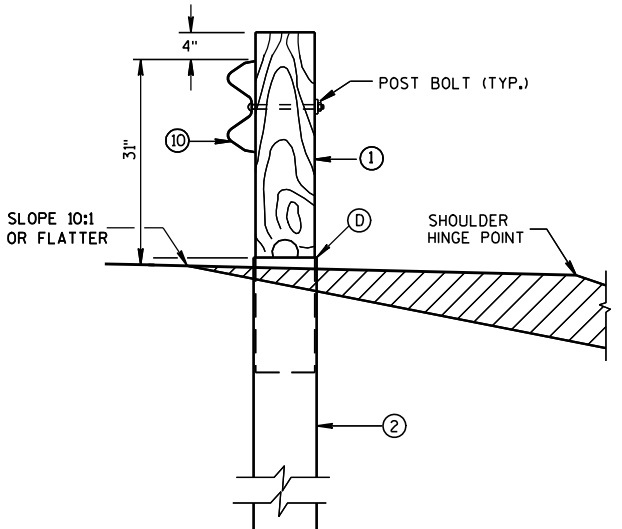
ELEVATION



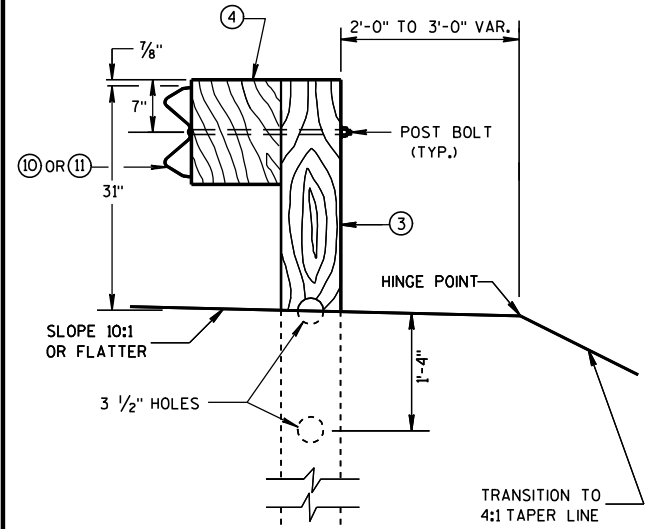
DETAIL "A"



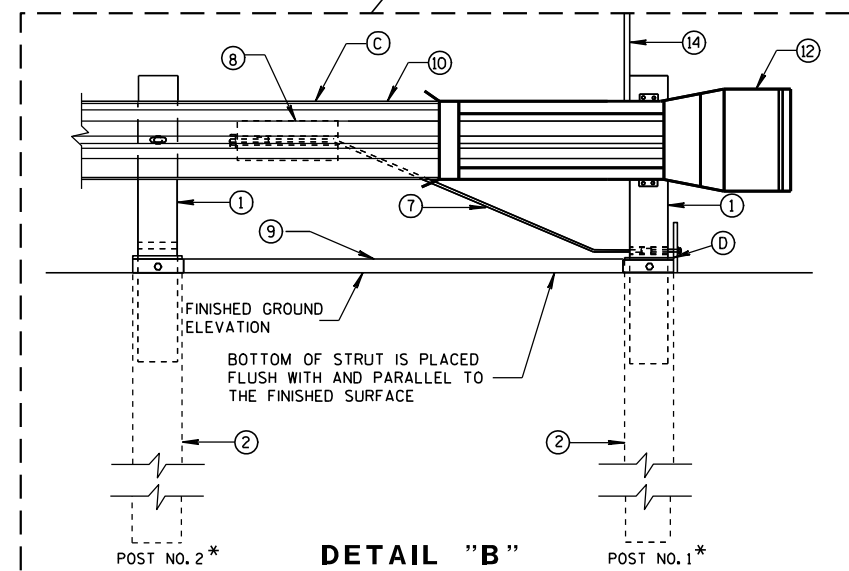
SECTION A-A  
TYPICAL AT POST NO. 1\*



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



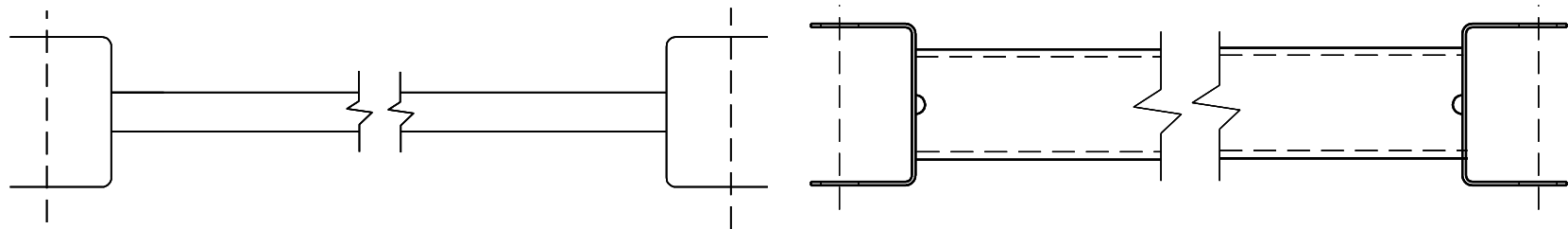
SECTION C-C  
TYPICAL AT POST NOS. 3-9



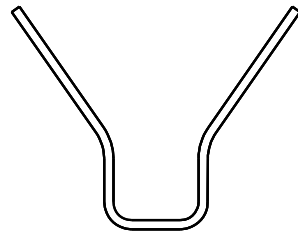
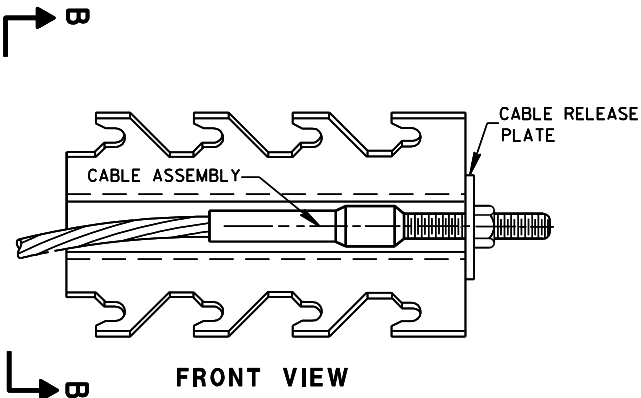
DETAIL "B"

MIDWEST GUARDRAIL SYSTEM  
ENERGY ABSORBING TERMINAL  
(MGS)

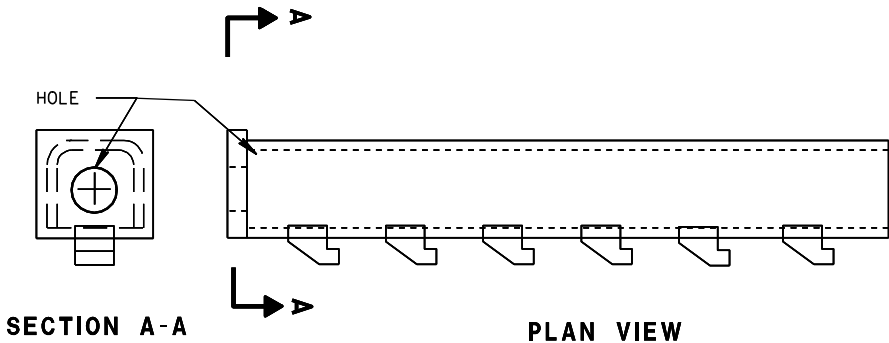
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



GENERIC GROUND STRUT



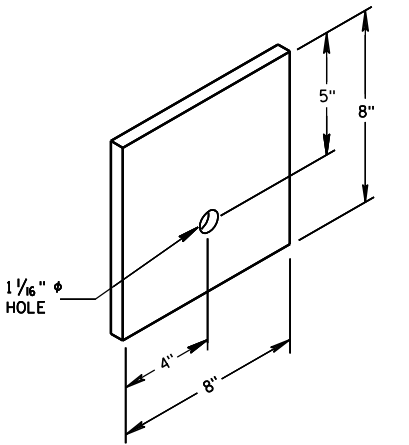
SECTION B-B



GENERIC ANCHOR CABLE BOX

BILL OF MATERIALS

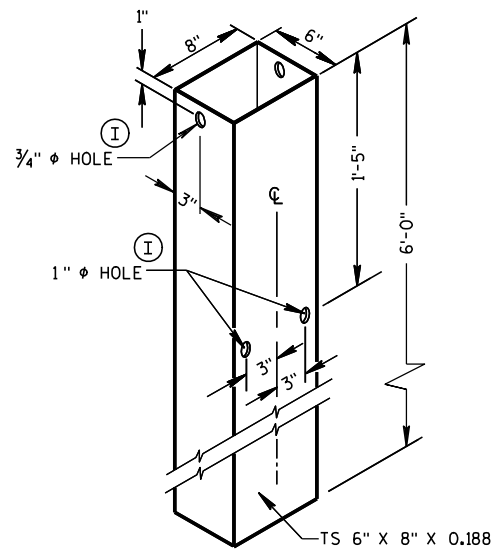
| PART NO.                                                                                     | DESCRIPTION                                                                                               |
|----------------------------------------------------------------------------------------------|---------------------------------------------------------------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



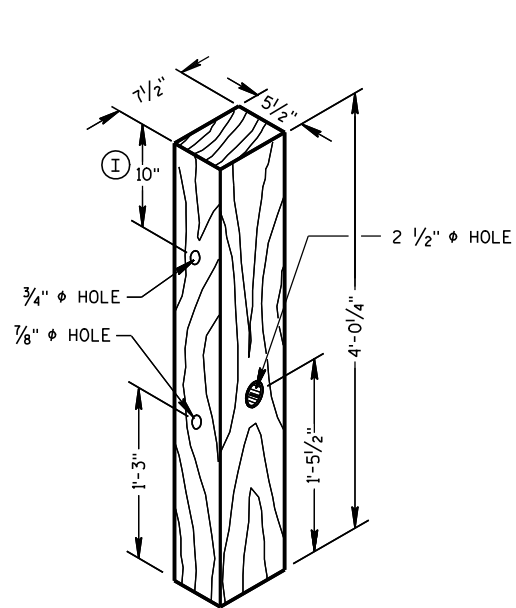
BEARING PLATE

MIDWEST GUARDRAIL SYSTEM  
ENERGY ABSORBING TERMINAL  
(MGS)

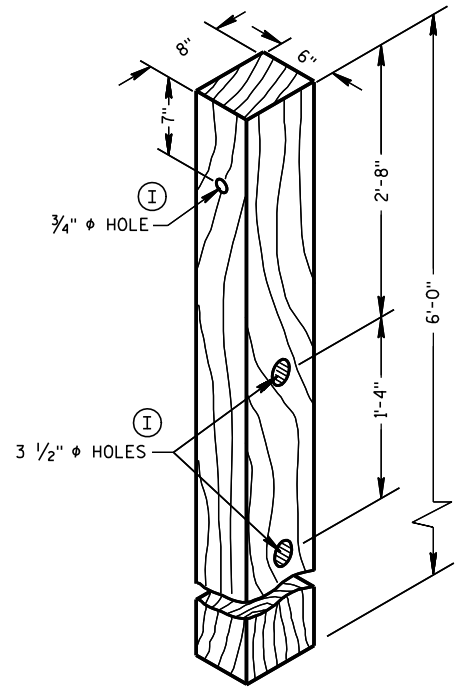
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



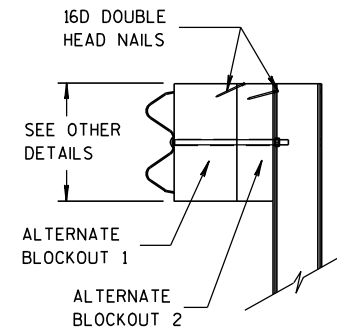
FOUNDATION TUBE ②



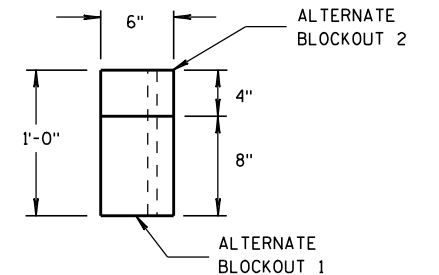
WOOD BREAKAWAY POST ①



WOOD CRT POST ③

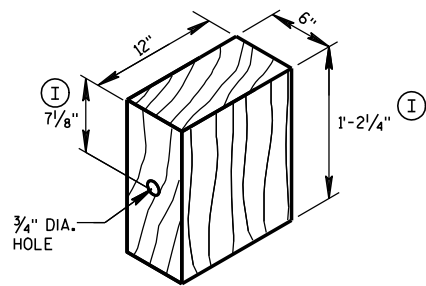


SIDE VIEW



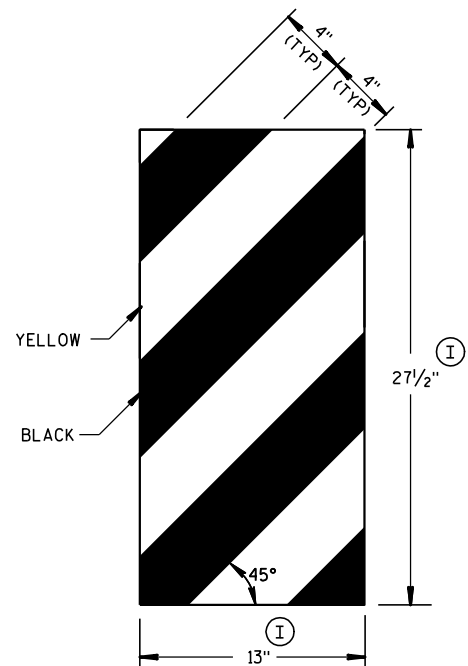
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

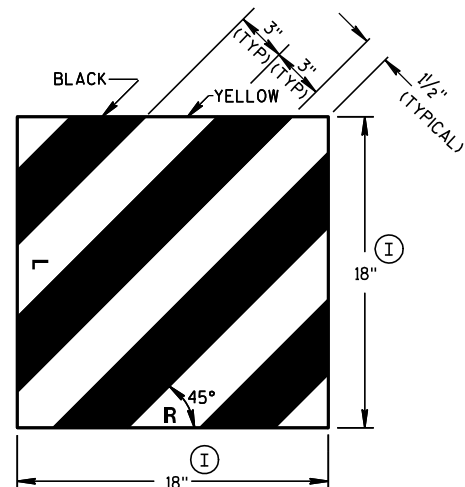


WOOD BLOCKOUT ④

YELLOW REFLECTIVE TAPE  
3" X 9" TYPE H  
REFLECTIVE SHEETING



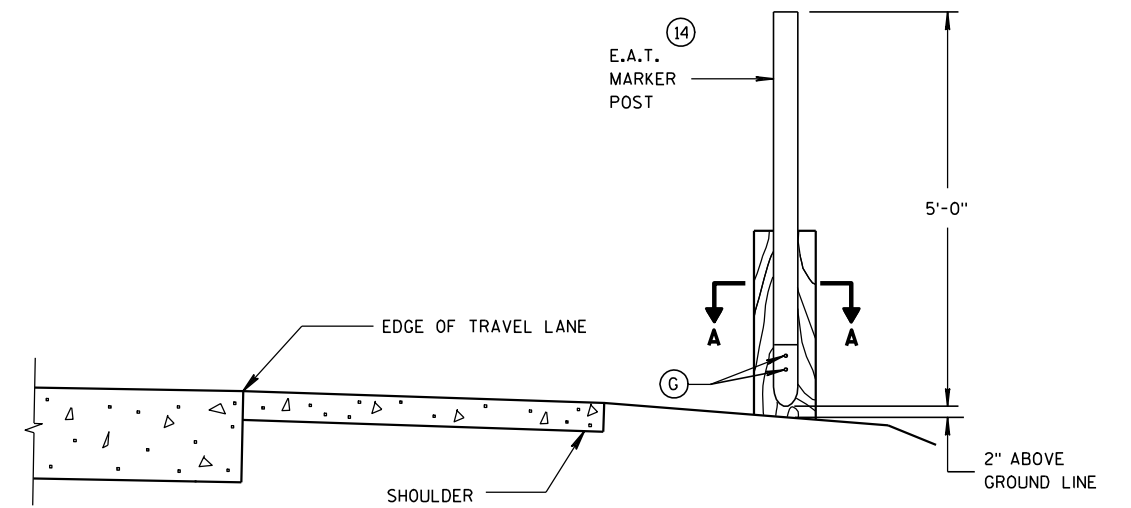
GENERIC REFLECTIVE SHEETING ⑬ ④



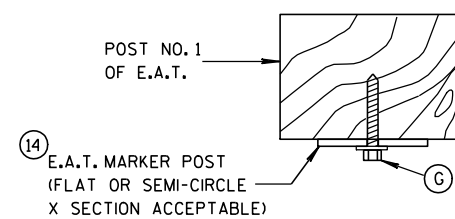
FRONT VIEW

SIDE VIEW

E.A.T. MARKER POST ⑭



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

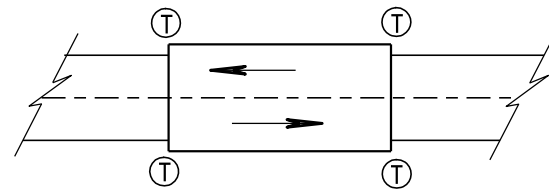


SECTION A-A

MIDWEST GUARDRAIL SYSTEM  
ENERGY ABSORBING TERMINAL  
(MGS)

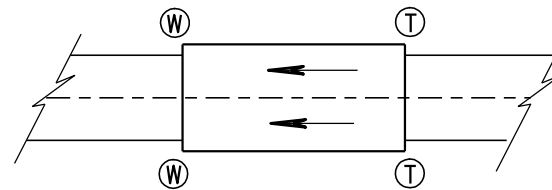
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
5/23/2011  
DATE  
/S/ Jerry H. Zogg  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER  
FHWA



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".

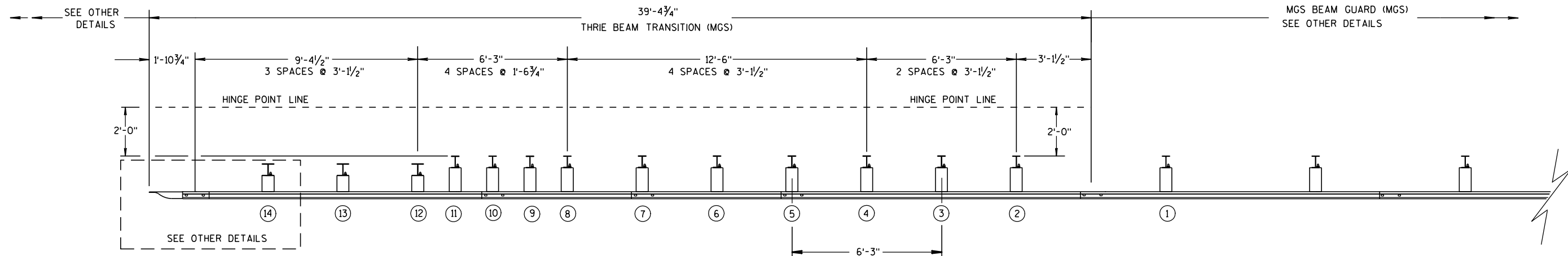
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

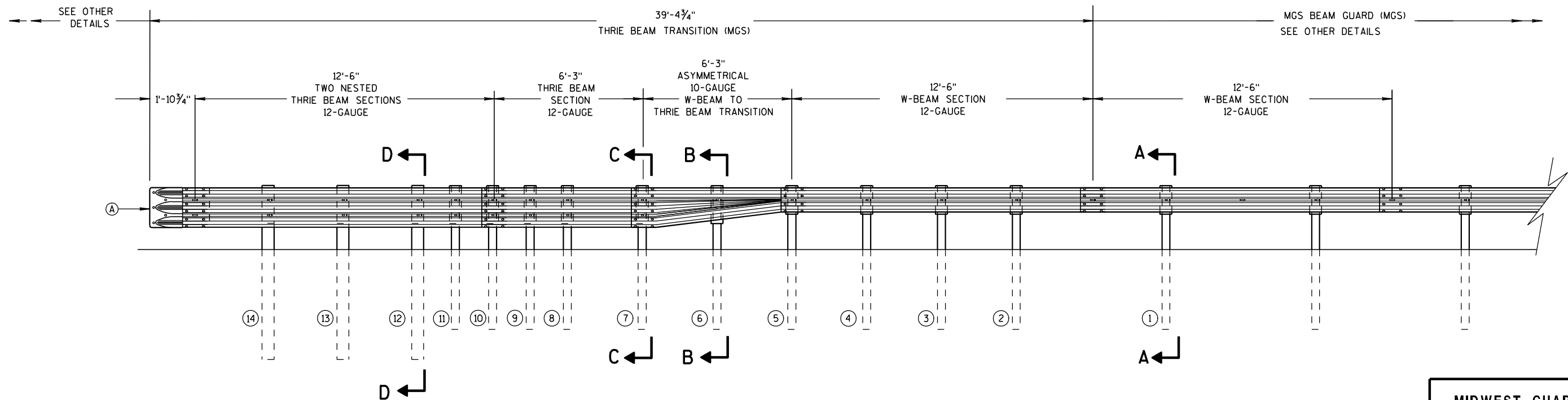
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

Ⓐ 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

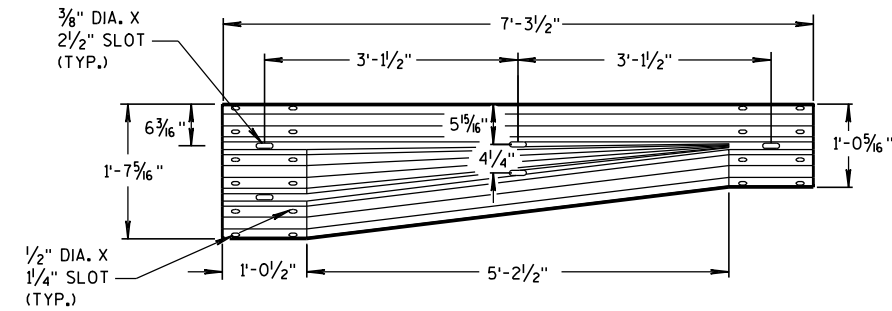
## 6

**S.D.D. 14 B 45-3b**

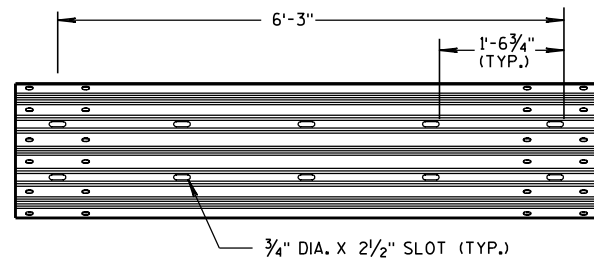


STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

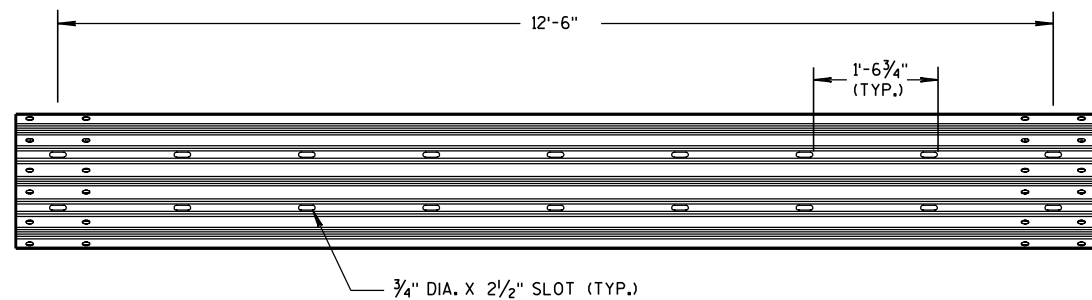
**S.D.D. 14 B 45-3b**



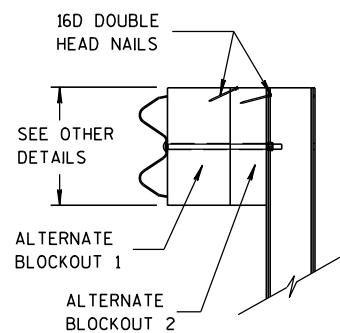
W-BEAM TO THRIE BEAM TRANSITION SECTION



6'-3" THRIE BEAM SECTION

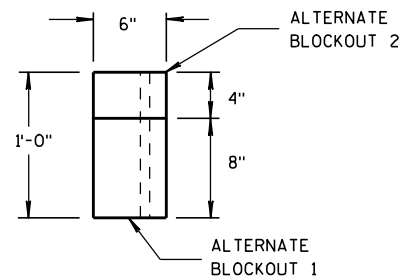


12'-6" THRIE BEAM SECTION

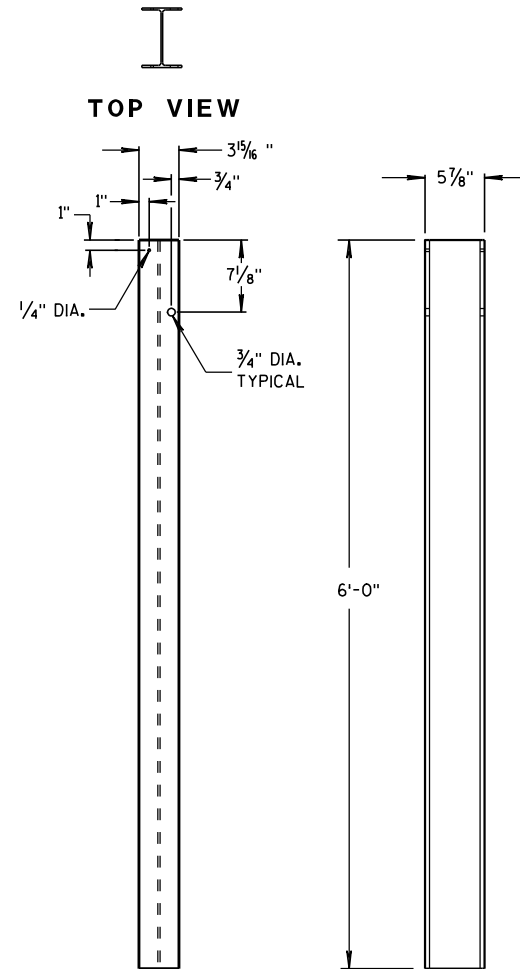


SIDE VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



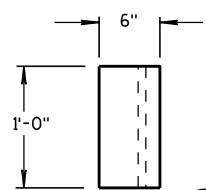
TOP VIEW



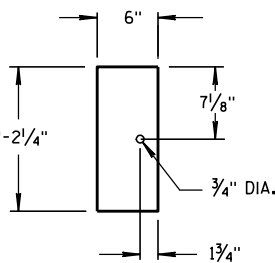
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

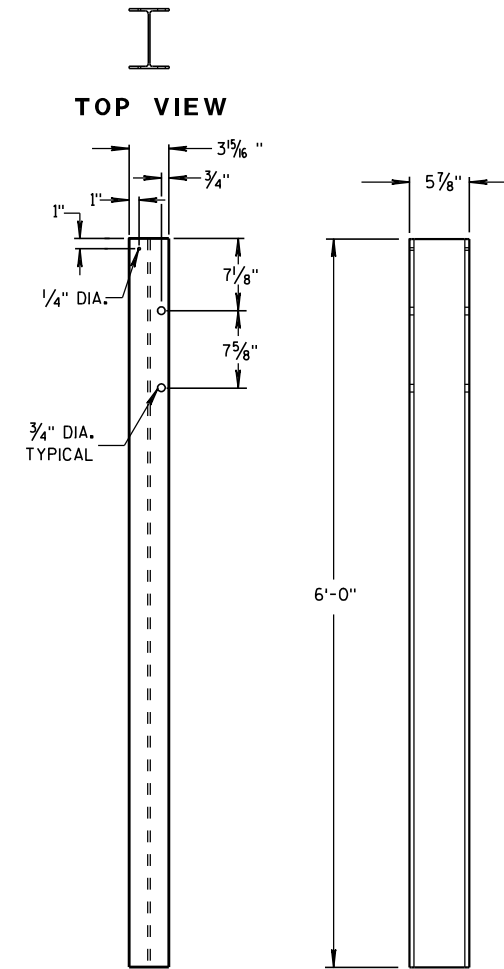


TOP VIEW



FRONT VIEW

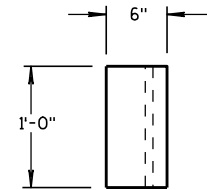
BLOCKOUT POSTS 1-5



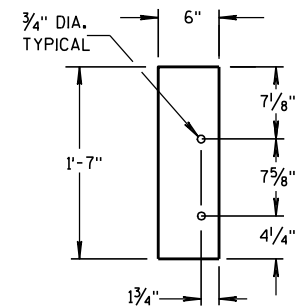
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-11

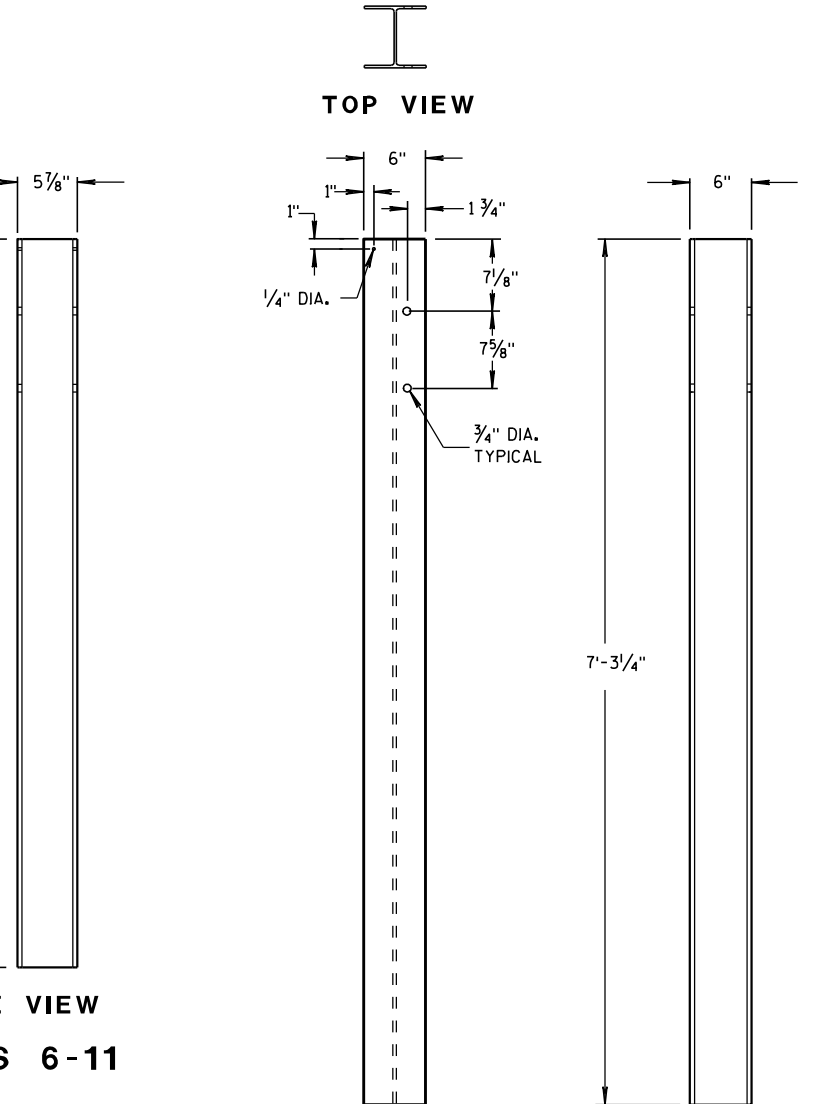


TOP VIEW



FRONT VIEW

BLOCKOUT POSTS 6-11



FRONT VIEW

SIDE VIEW

STEEL POSTS 12-14

STEEL POST SIZES

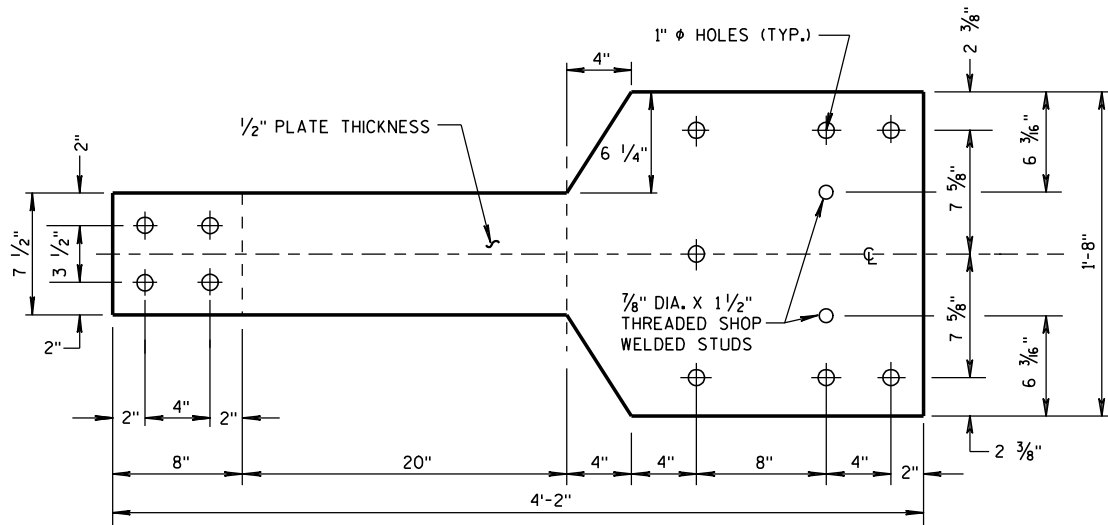
| POST NUMBER | SECTION TYPE | LENGTH  |
|-------------|--------------|---------|
| ①           | W6x9         | 72"     |
| ②           | W6x9         | 72"     |
| ③           | W6x9         | 72"     |
| ④           | W6x9         | 72"     |
| ⑤           | W6x9         | 72"     |
| ⑥           | 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)

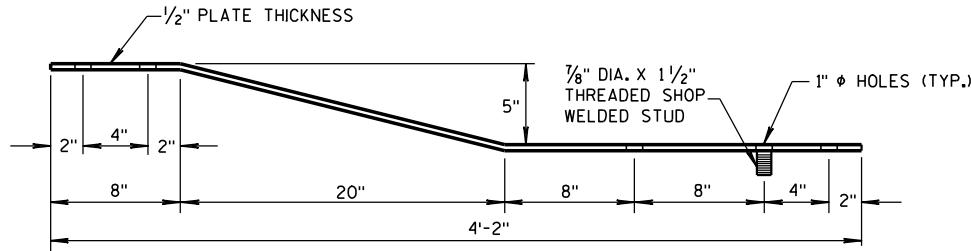
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

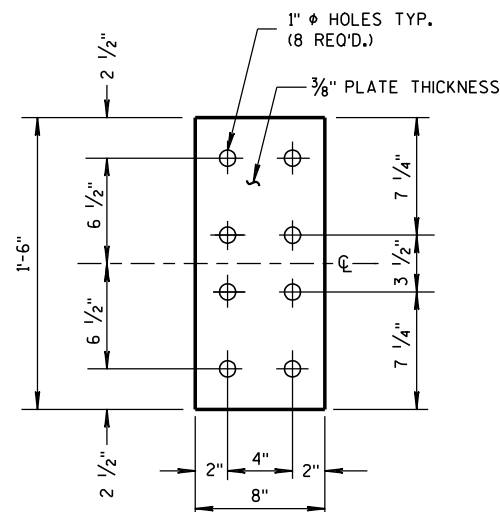
(B) TOLERANCE FOR TOP OF W-BEAM RAIL IS  $\pm 1"$ .



FRONT VIEW

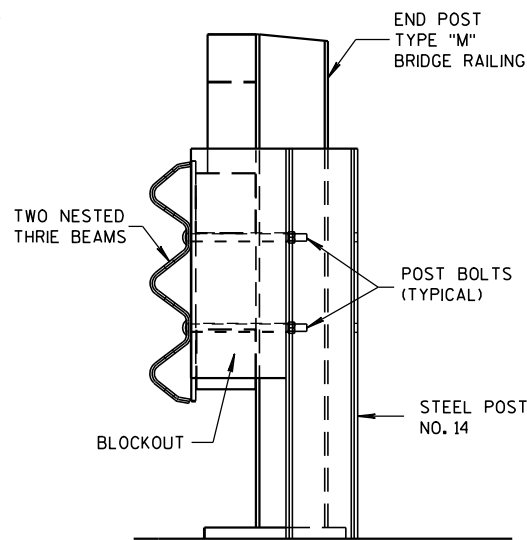


PLAN VIEW  
BACK-UP PLATE DETAIL, TYPE "M"

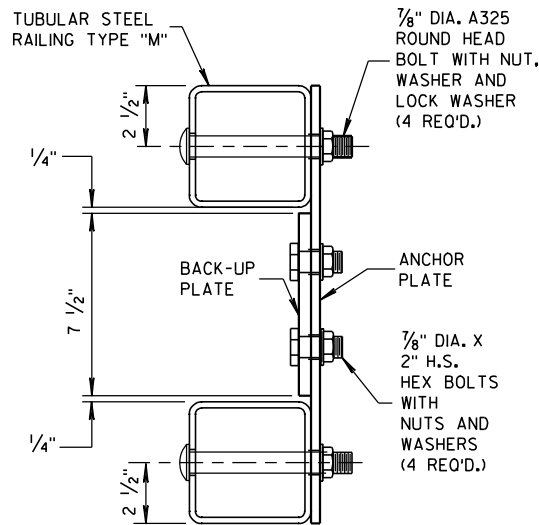


FRONT VIEW

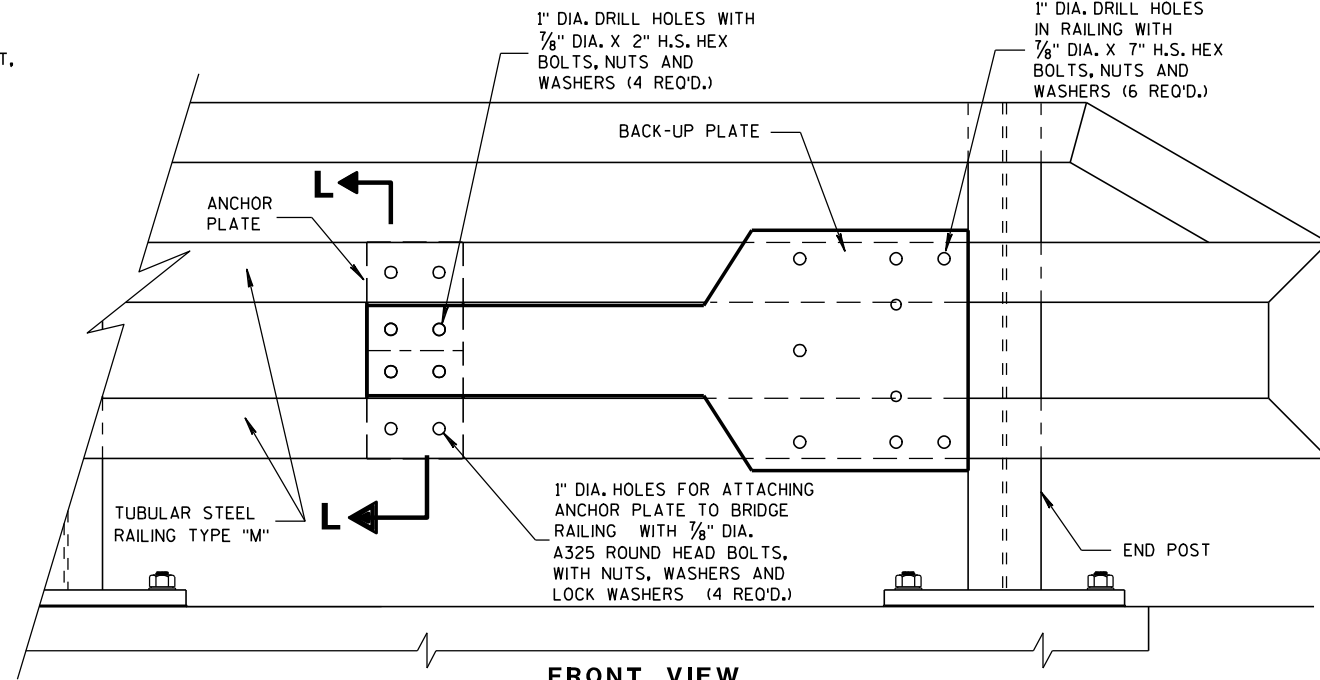
ANCHOR  
PLATE DETAIL,  
TYPE "M"



SECTION M-M

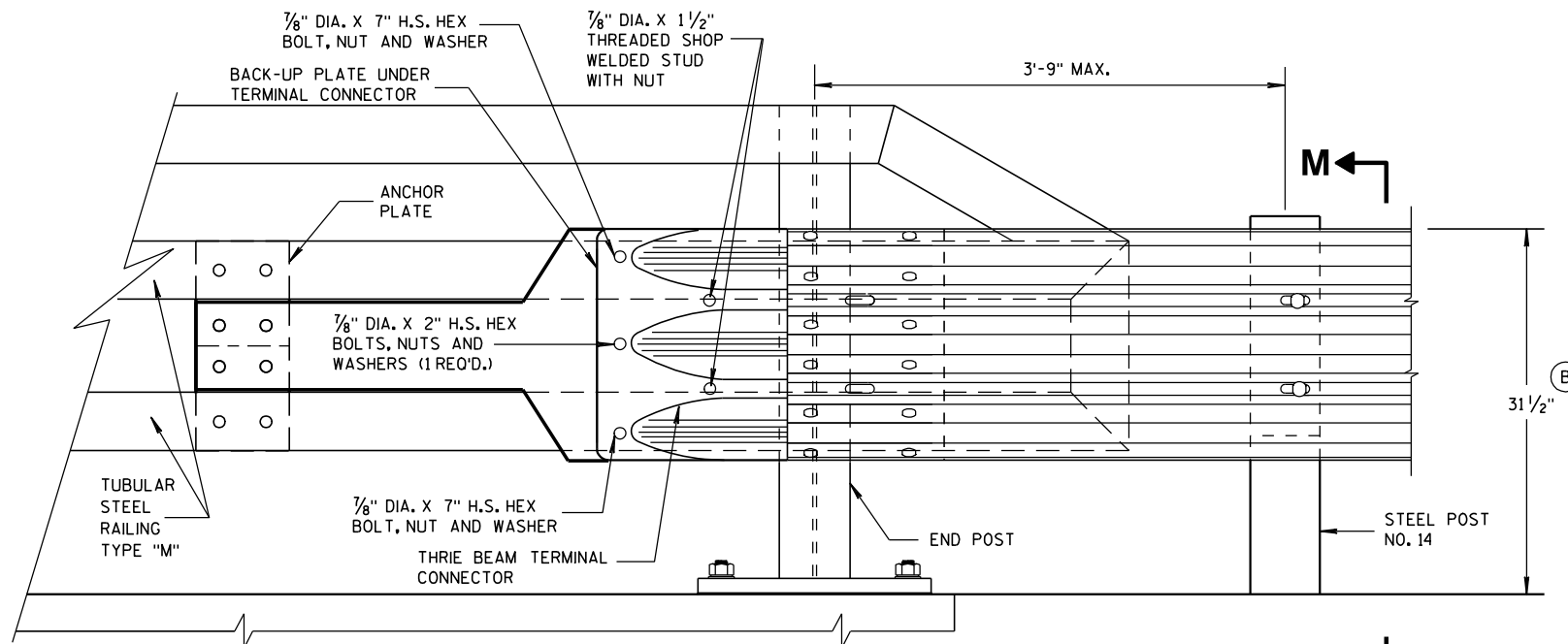


SECTION L-L

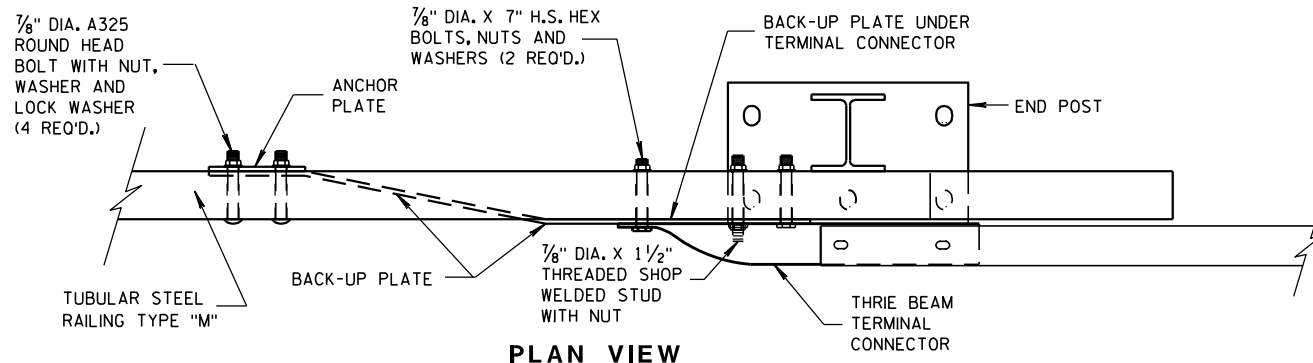


FRONT VIEW

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



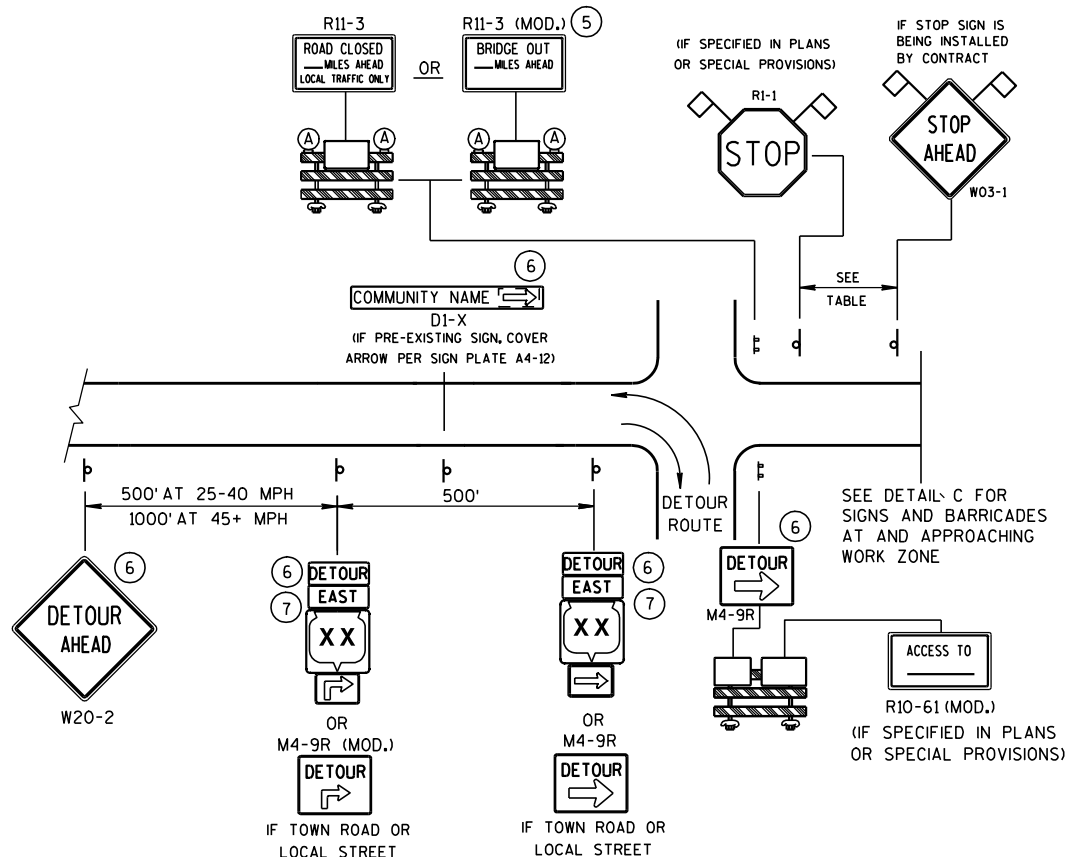
FRONT VIEW



PLAN VIEW

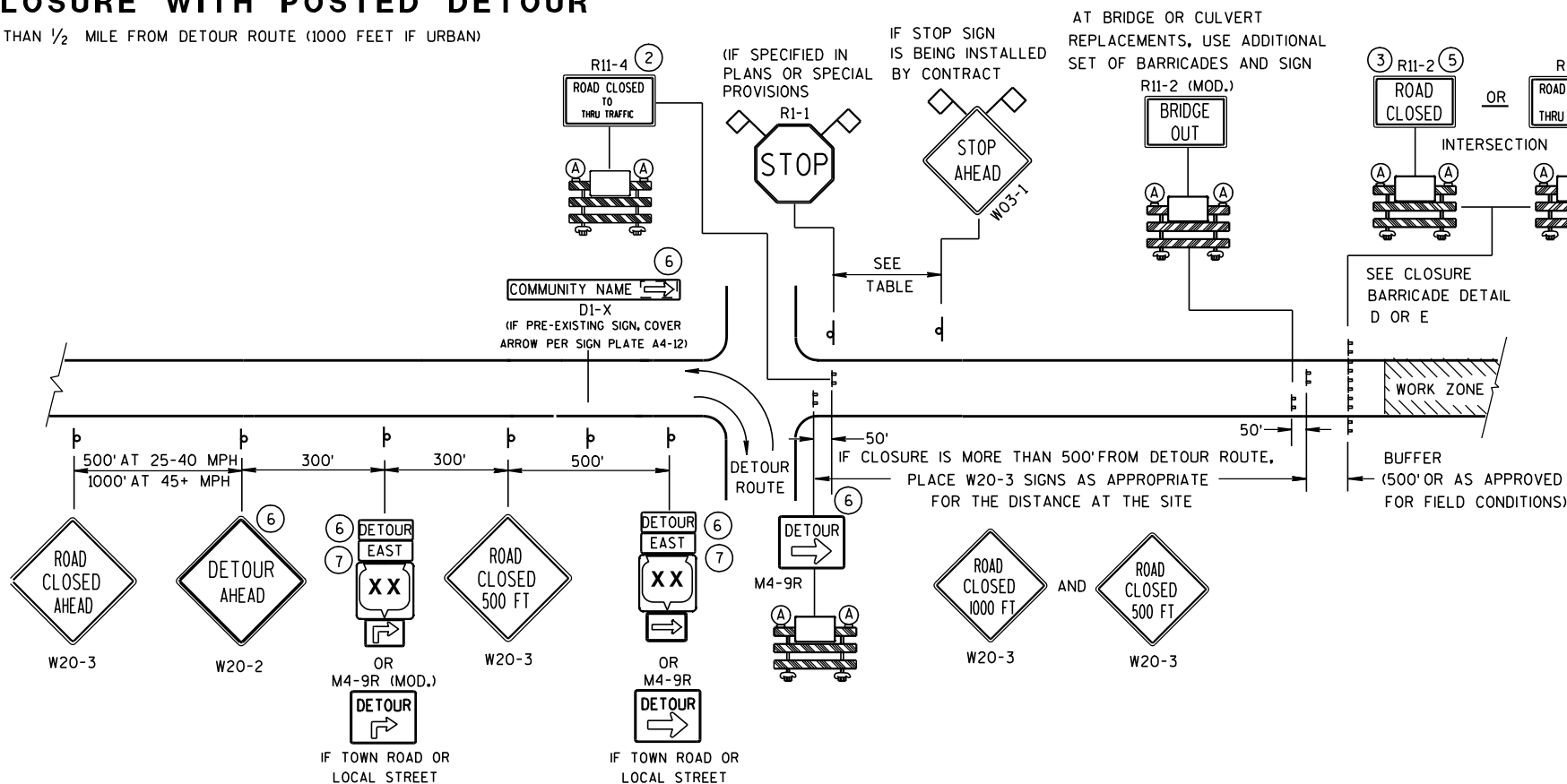
THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

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



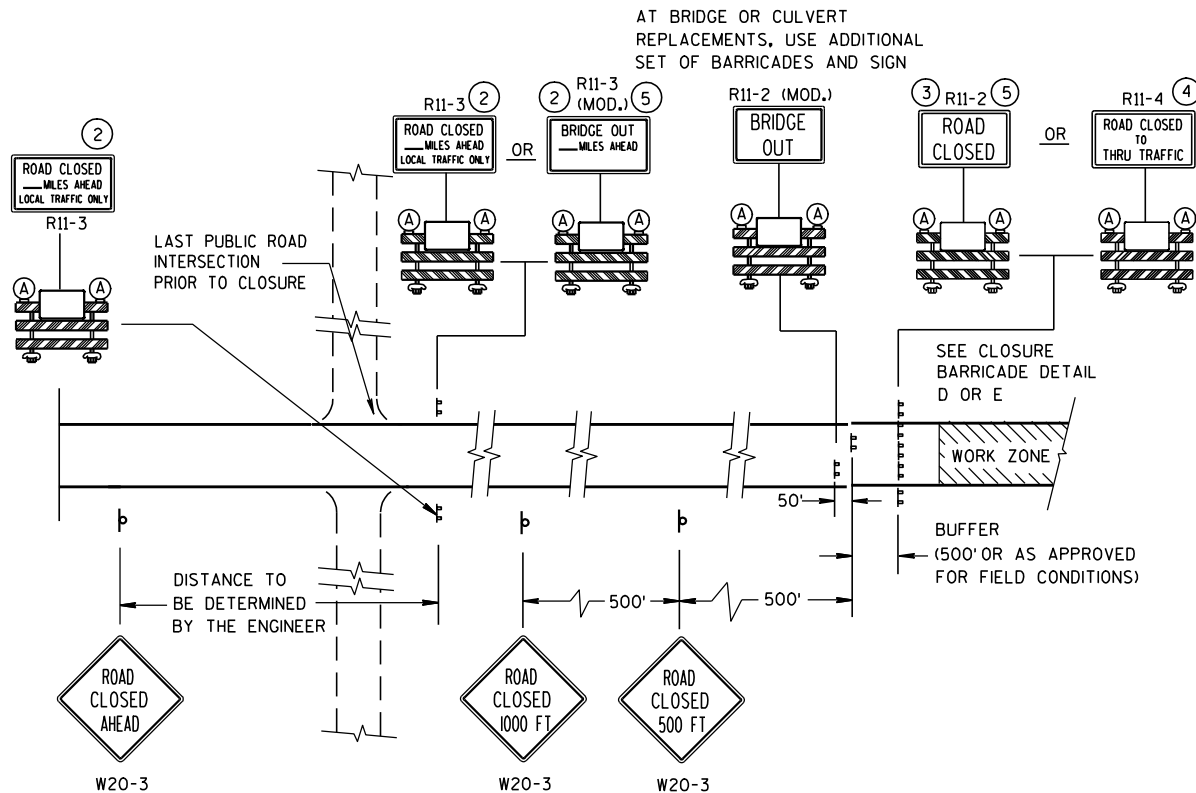
**DETAIL A**  
**MAINLINE CLOSURE WITH POSTED DETOUR**

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



**DETAIL B**  
**MAINLINE CLOSURE WITH POSTED DETOUR**

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



**DETAIL C**  
**MAINLINE CLOSURE, NO POSTED DETOUR**

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

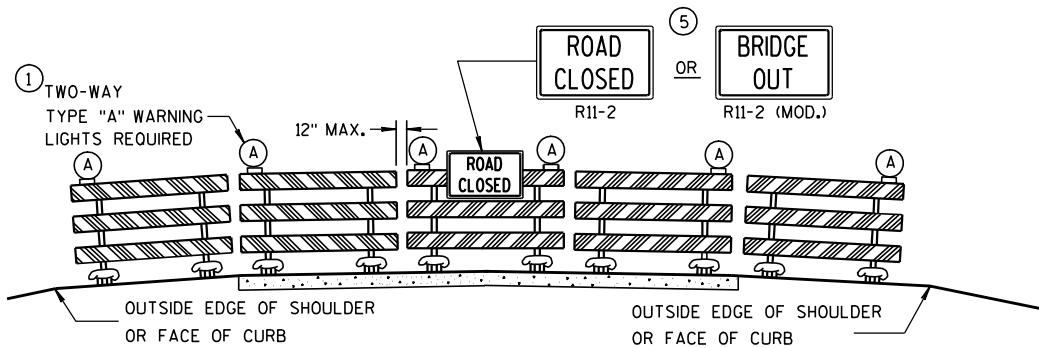
SEE SDD 15C2-4b  
FOR GENERAL NOTES  
AND FOOTNOTES ① THROUGH ⑦

**LEGEND**

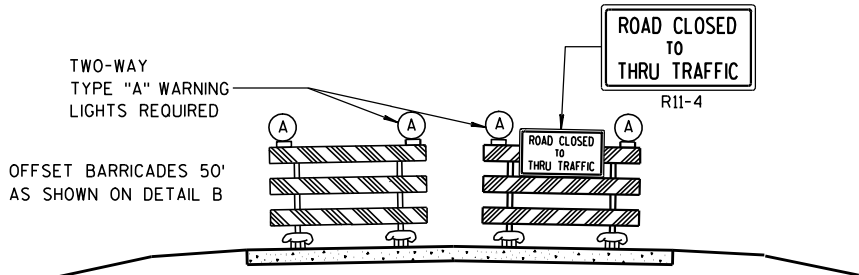
- POST MOUNTED SIGN
- TYPE III BARRICADES
- TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT (FOR NIGHT USE)
- WORK ZONE
- DETOUR EAST M4-8 M3-X
- MI-4 OR MI-5A OR MI-6
- MO5-1 OR MO6-1
- FLAGS, 16" X 16" MIN., (ORANGE)

**BARRICADES AND SIGNS  
FOR  
MAINLINE CLOSURES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



DETAIL D  
ROAD CLOSURE BARRICADE DETAIL  
APPROACH VIEW



DETAIL E  
LANE CLOSURE BARRICADE DETAIL  
APPROACH VIEW

SEE SDD 15C2-4a FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

THE REFLECTIVE SHEETING USED ON R11-2, R11-3, R11-4, R10-61 AND R1-1 SIGNS SHALL COMPLY WITH SUBSECTION 637.2.2.2 OF THE STANDARD SPECIFICATIONS.

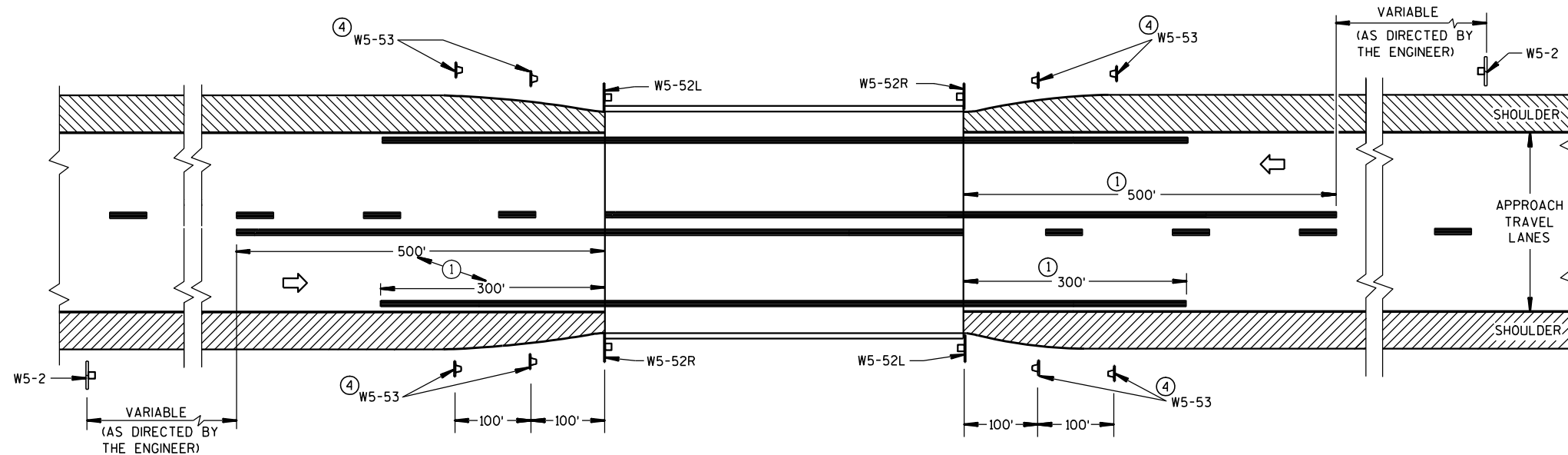
"WO AND "MO" SIGNS ARE THE SAME AS "W" AND "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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

- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X AND M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1-1 SHALL BE 36" X 36".

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

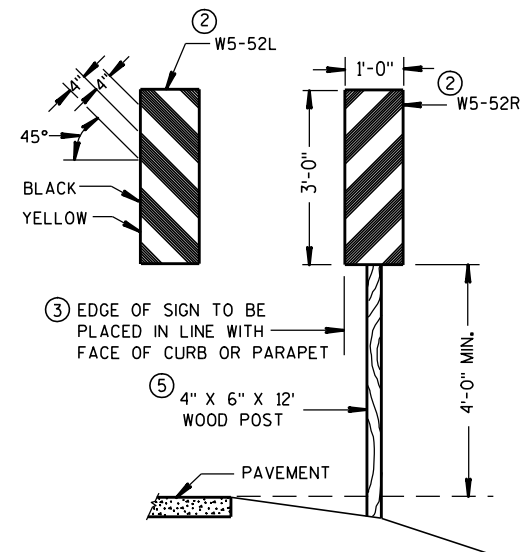
| BARRICADES AND SIGNS<br>FOR<br>MAINLINE CLOSURES   |                                                           |
|----------------------------------------------------|-----------------------------------------------------------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                                                           |
| APPROVED                                           |                                                           |
| 9/16/03<br>DATE                                    | /S/ Thomas N. Notbohm<br>CHIEF SIGNS AND MARKING ENGINEER |
| FHWA                                               |                                                           |



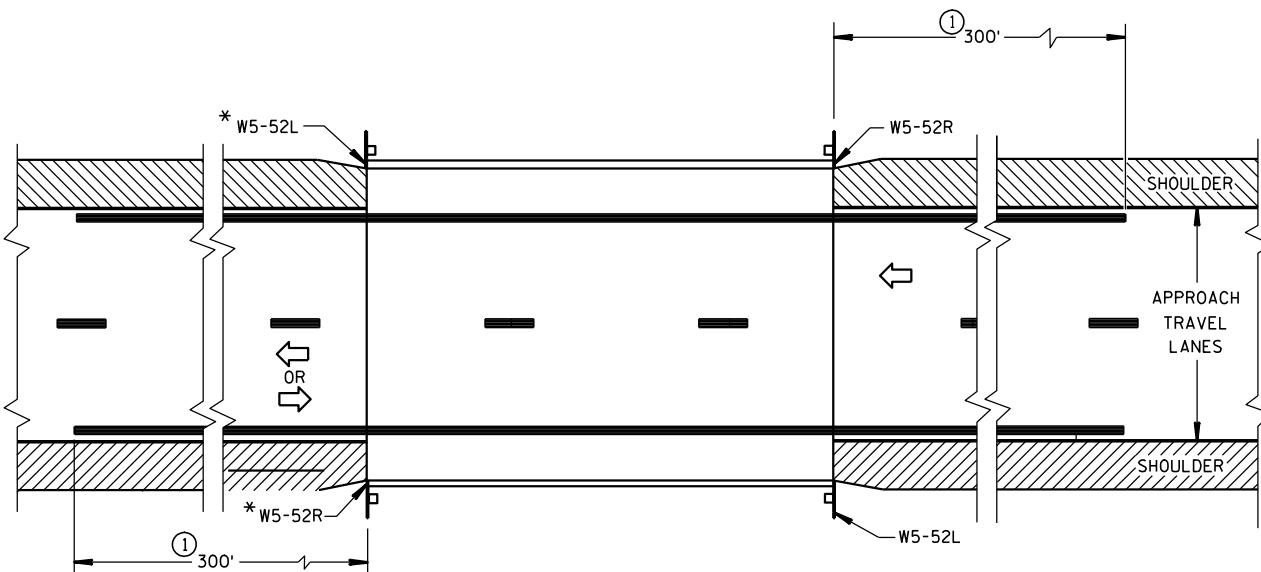
### SITUATION 1

WARRANTING CRITERION:

BRIDGE WIDTH IS AT LEAST 18 FEET BUT LESS THAN 24 FEET



### OBJECT MARKER PLACEMENT



### SITUATION 2

WARRANTING CRITERIA:

1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE IS LESS THAN 6 FEET WIDER (ON EACH SIDE) THAN APPROACH TRAVEL LANES.

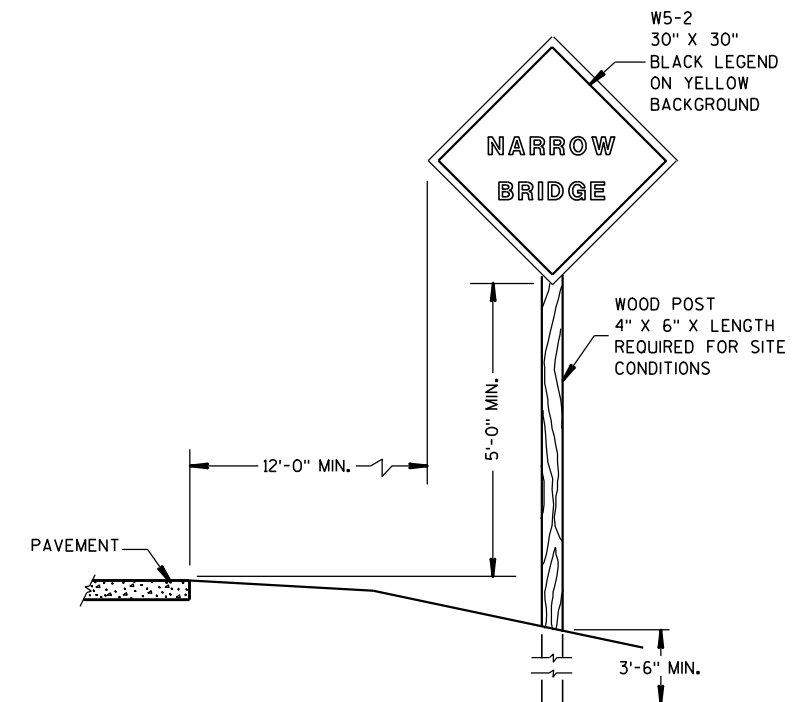
\*OMIT ON ONE-WAY TRAVELLED WAYS

### GENERAL NOTES

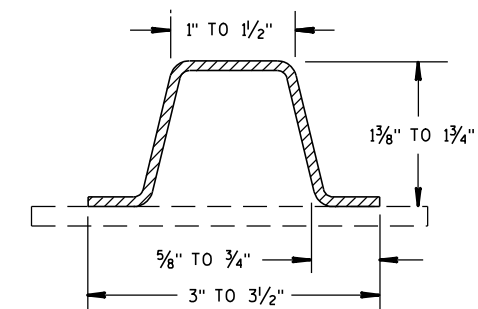
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

PAVEMENT MARKING SHOWN ON THIS DRAWING IS NOT REQUIRED UNLESS OTHERWISE SPECIFIED IN THE CONTRACT. WHEN SPECIFIED, PAVEMENT MARKING SHALL CONFORM TO THIS DRAWING AND OTHER CONTRACT REQUIREMENTS.

- ① MINIMUM DISTANCE UNLESS OTHERWISE SHOWN ON THE PLAN.
- ② FACE OF OBJECT MARKERS W5-52R AND W5-52L SHALL BE COVERED WITH TYPE H REFLECTIVE SHEETING.
- ③ LOCATE OBJECT MARKER POST(S) BEHIND GUARDRAIL WHEN PRESENT.
- ④ OBJECT MARKERS (W5-53) SHALL BE LOCATED ALONG A LINE FLARED AWAY FROM THE BRIDGE CORNER TO DELINEATE THE NARROWING OF THE SHOULDER OR BERM.
- ⑤ A 12 FOOT DELINEATOR POST MAY BE USED INSTEAD OF A WOOD POST.
- ⑥ NON-BID ITEM. INCIDENTAL TO OTHER ITEMS.



### SIGN PLACEMENT



### SECTION A-A

(MINIMUM WEIGHT 1.9 LBS. PER FT. AFTER GALVANIZING)

### SIGNING & MARKING FOR TWO LANE BRIDGES

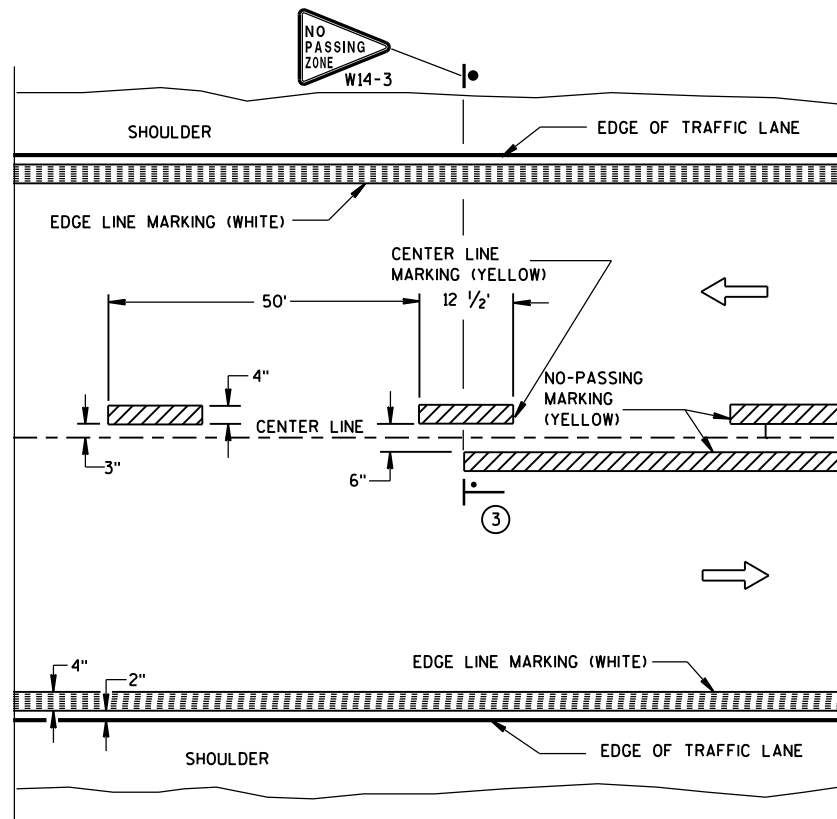
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

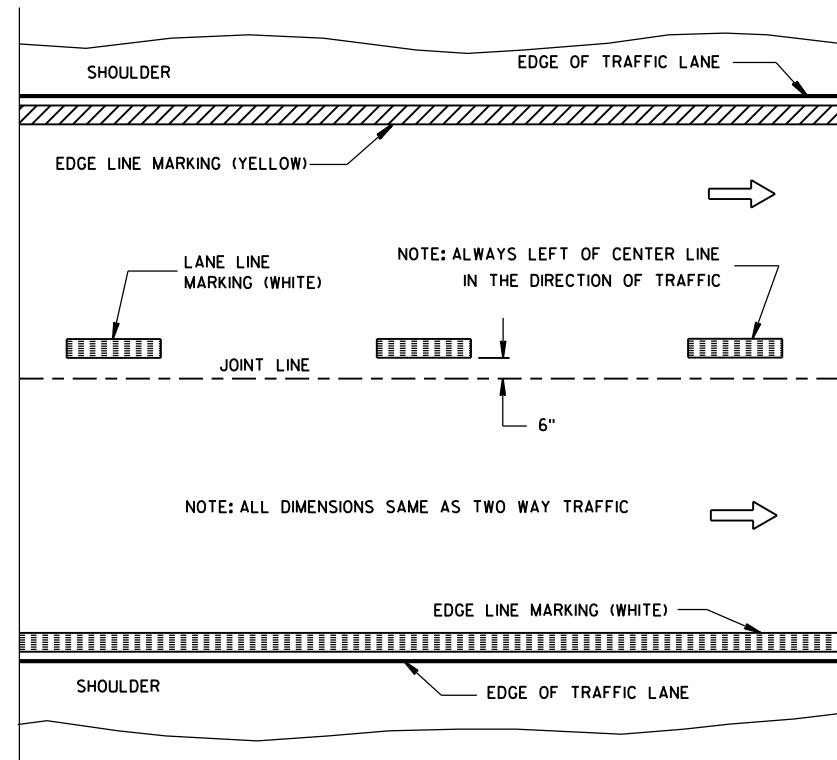
9/5/06  
DATE

FHWA

/S/ Thomas N. Notbohm  
STATE TRAFFIC ENGINEER OF DESIGN

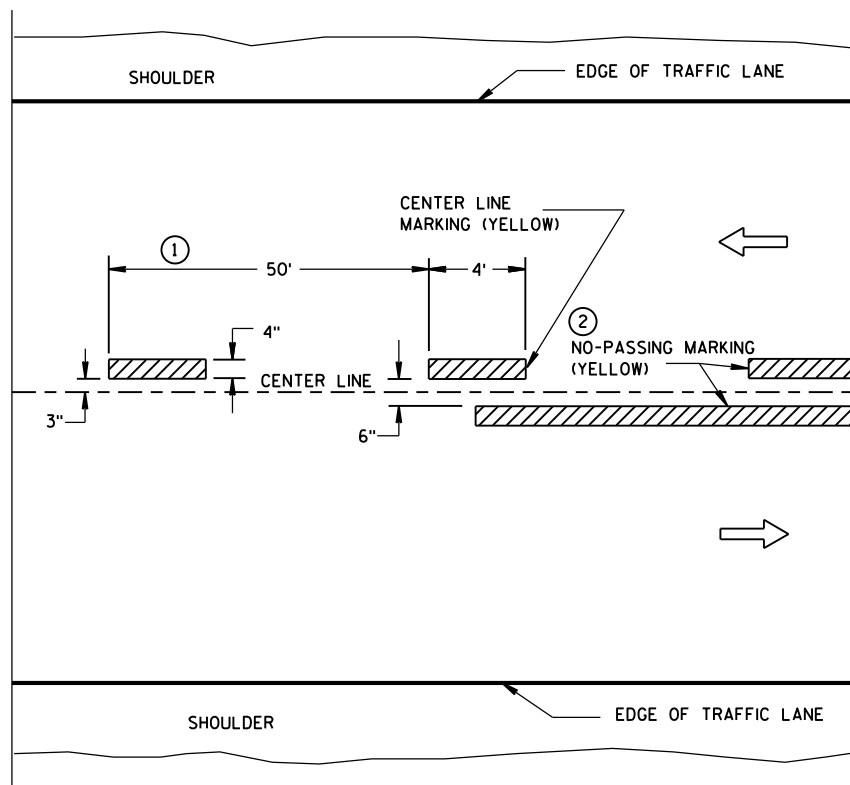


TWO WAY TRAFFIC

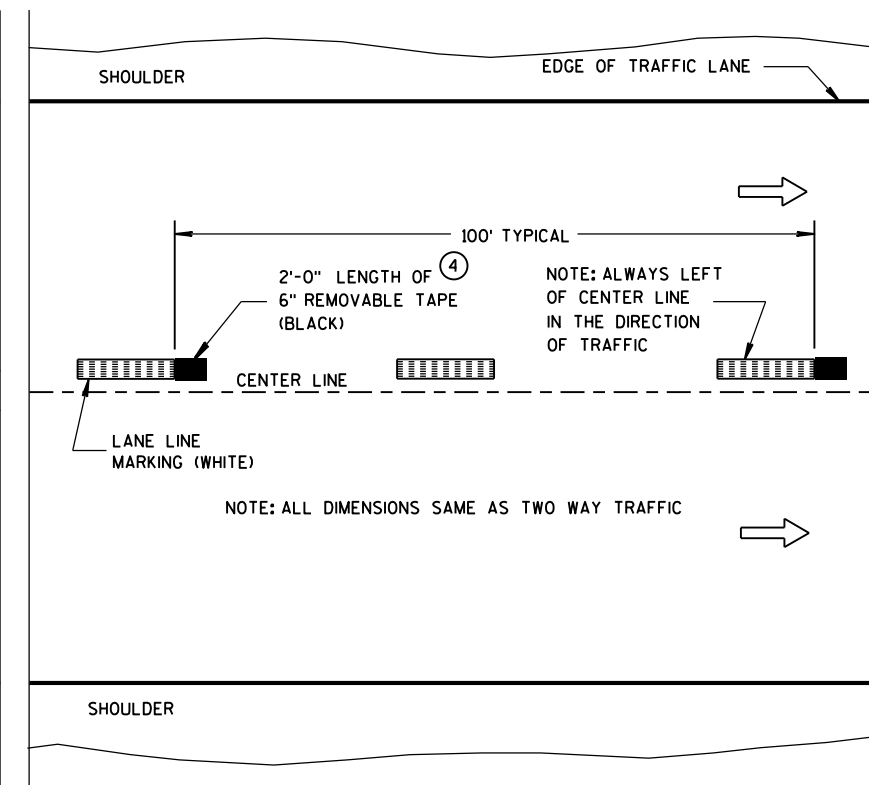


ONE WAY TRAFFIC

## PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

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

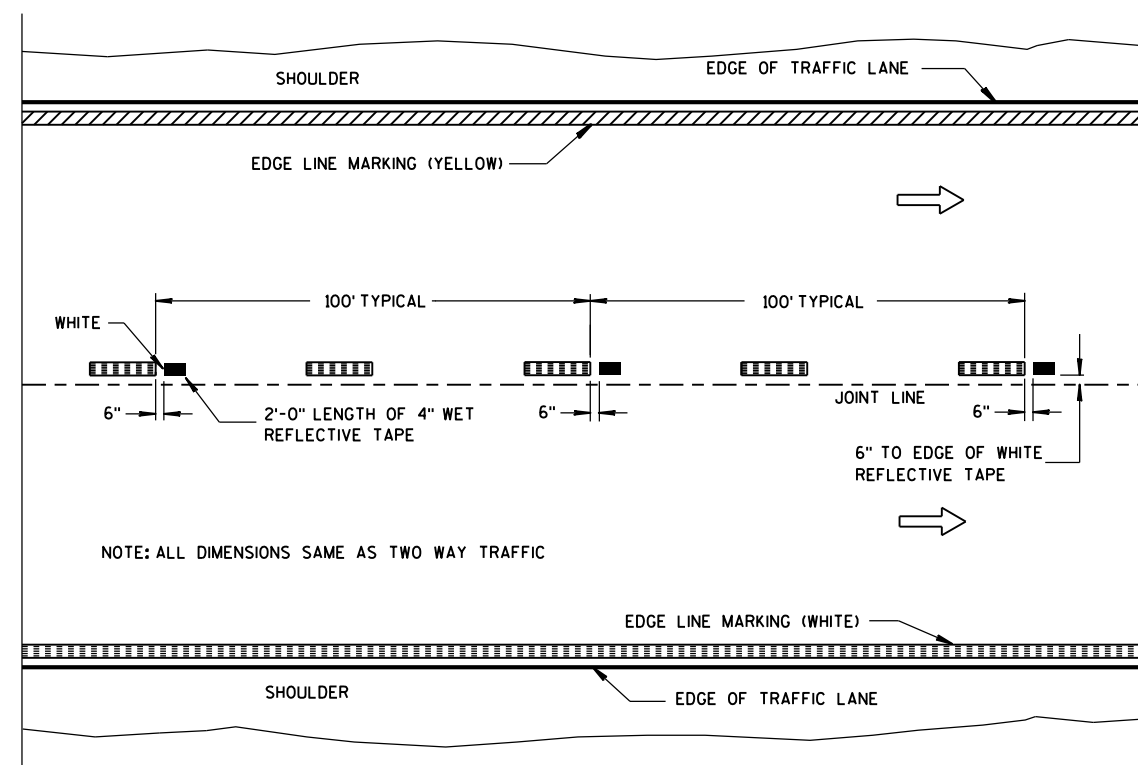
## GENERAL NOTES

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

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

## NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL



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

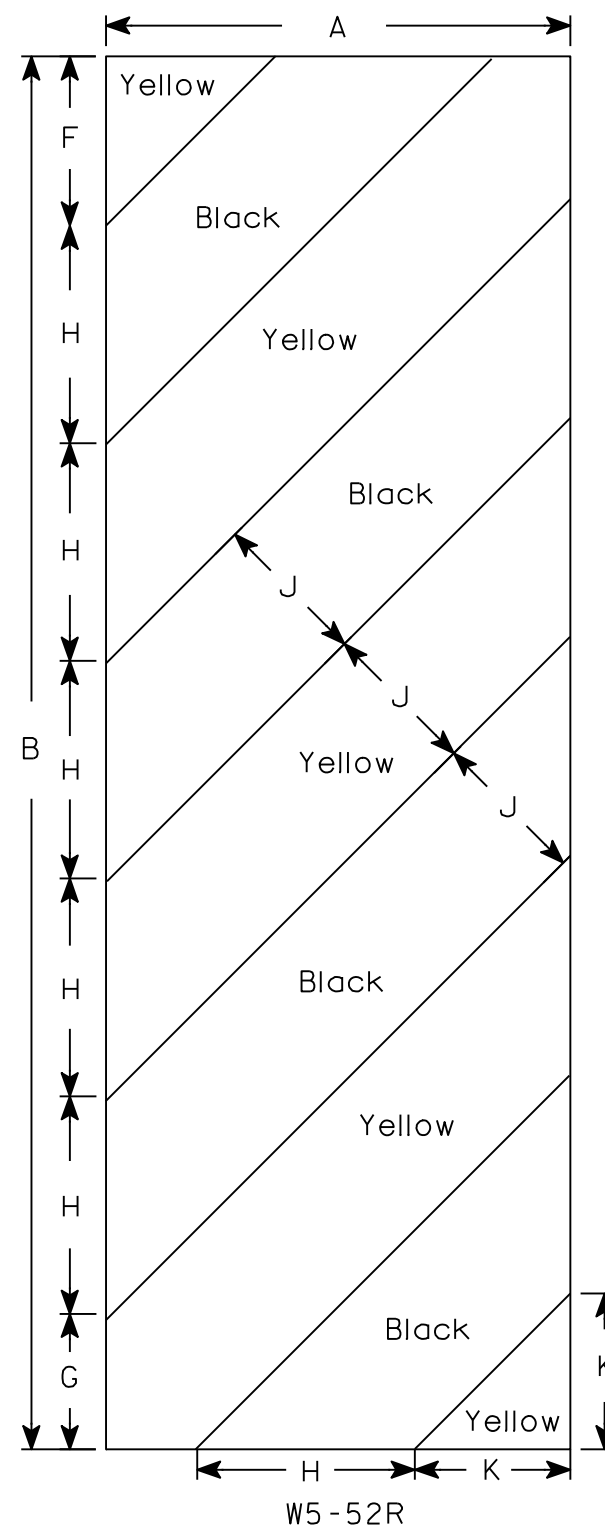
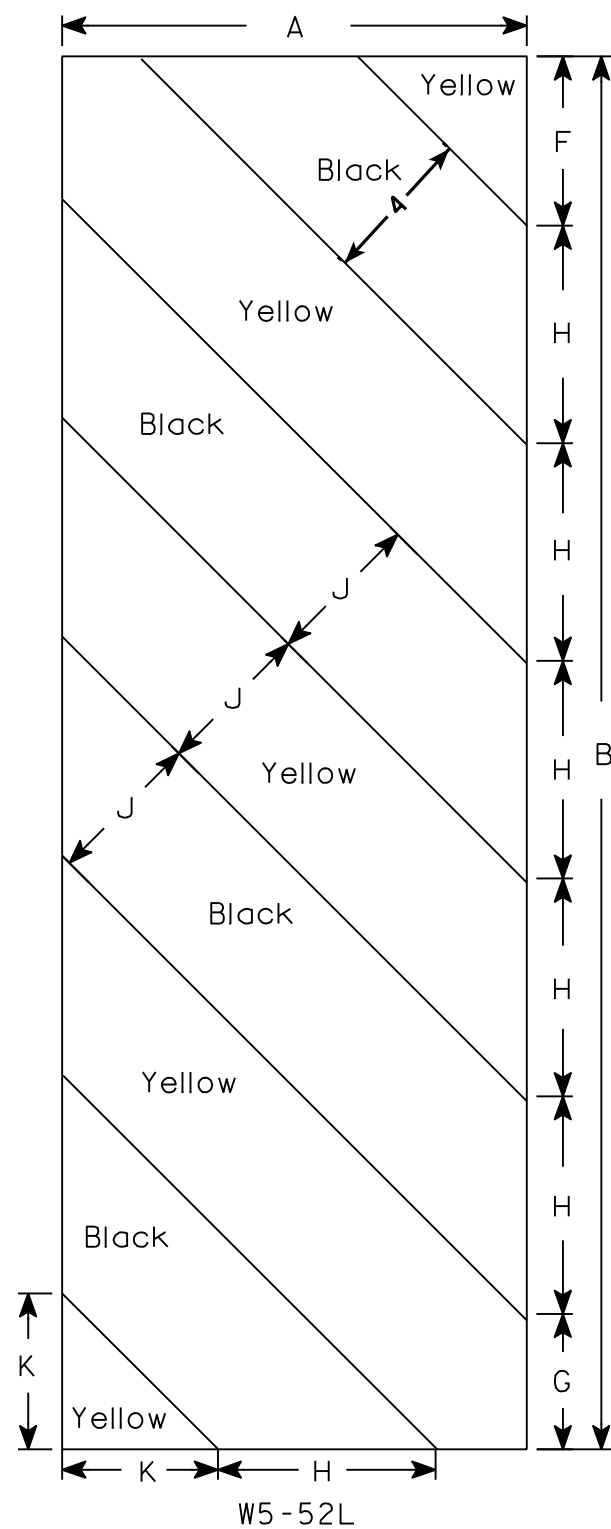
## LEGEND

- "T" MARKING
- POST MOUNTED SIGN

PAVEMENT MARKING  
(MAINLINE)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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



## NOTES

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

[illegible]

STANDARD SIGN  
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch  
for State Traffic Engineer  
DATE 5/29/12 PLATE NO. W5-52.9

PROJECT NO:

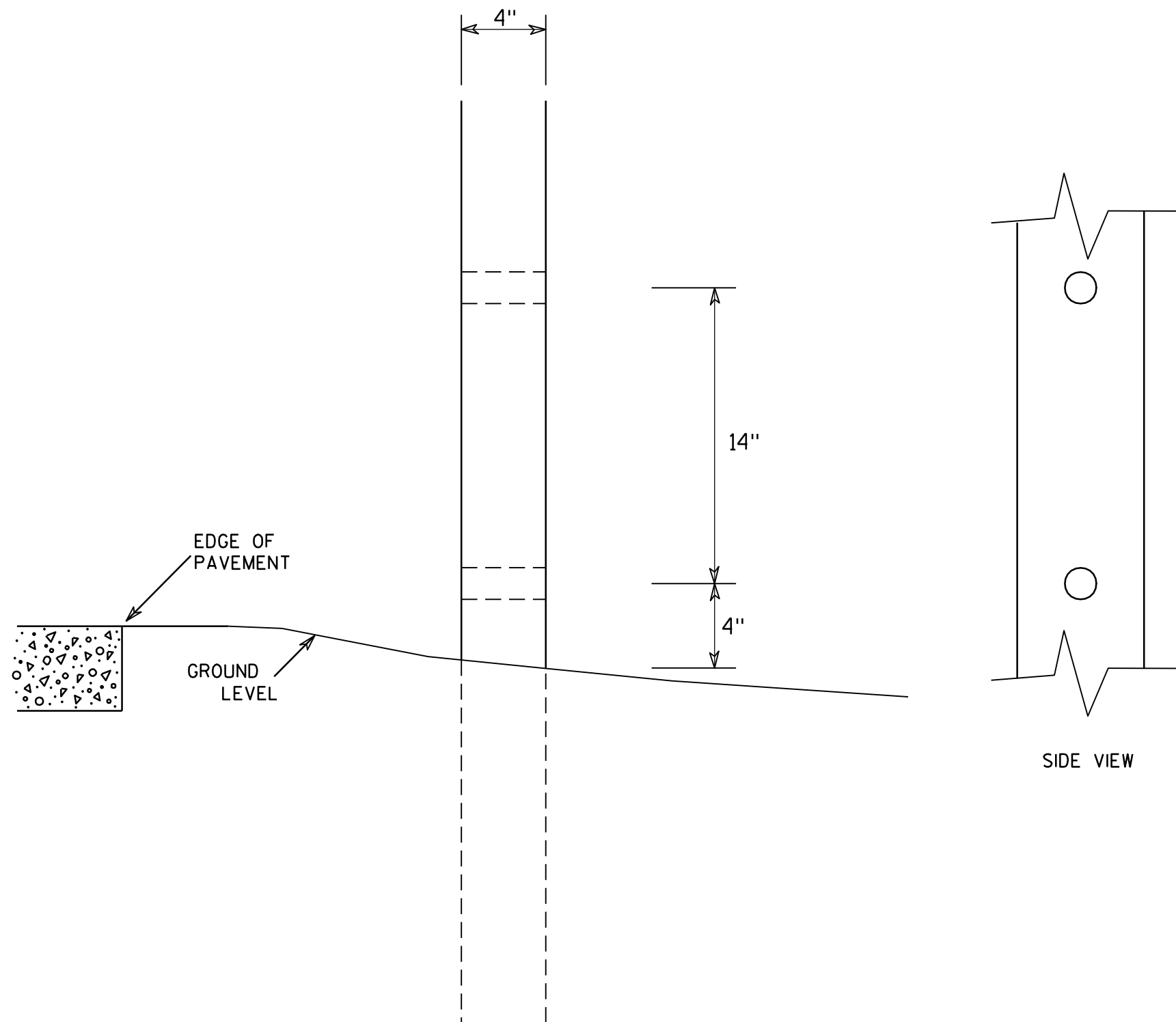
HWY:

COUNTY:

SHEET NO:

E

7



### GENERAL NOTES

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

7

### 4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

*Chester J. Spang*  
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

COUNTY:

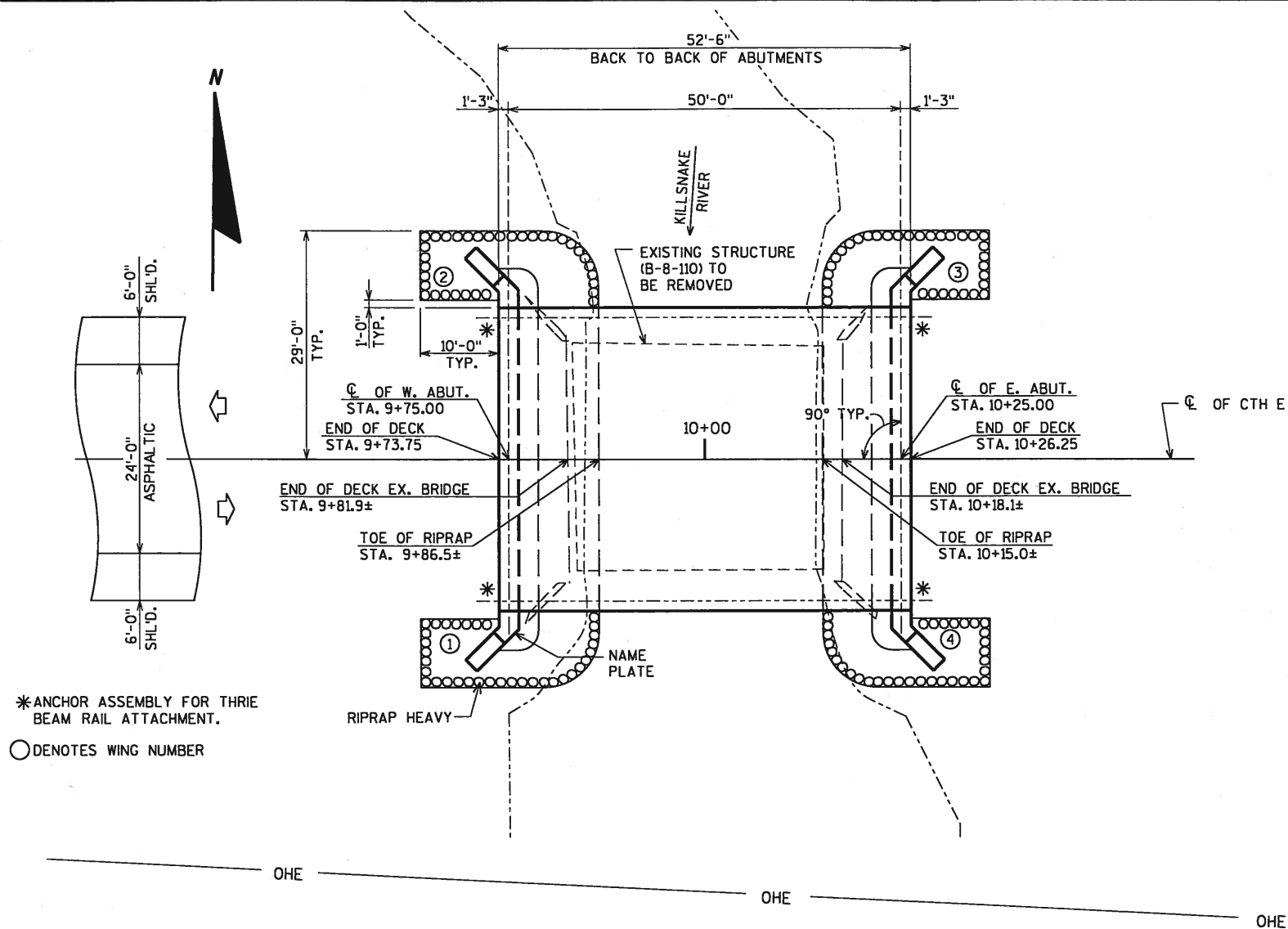
SHEET NO:

E

\$PRNAME\$  
U:\45-0370.00 - Calumet Co, CTH E over Killsnake River\BRIDGE\450370 gp.dgn

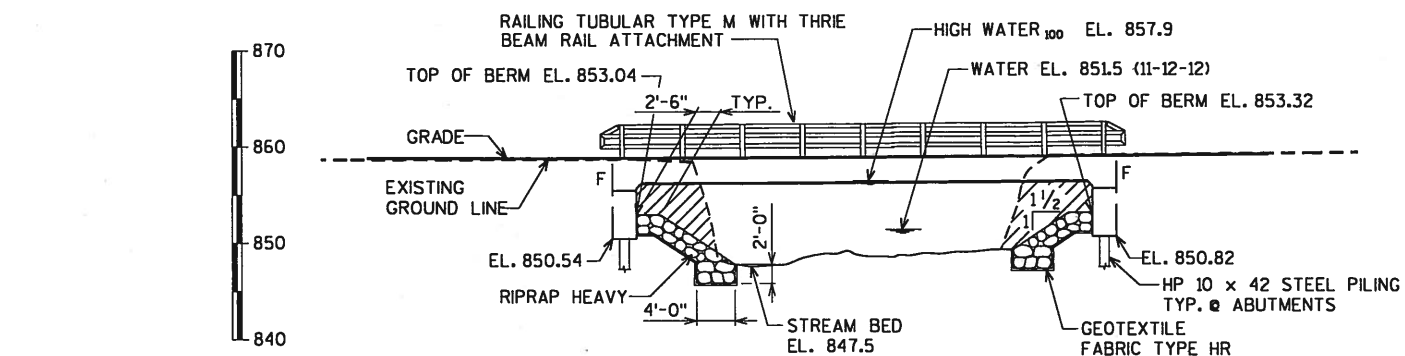
DATE: 2-26-13  
DATE: 2-27-13  
DATE: 2-26-13  
CHECKED BY: AEB  
BACK CHECKED BY: AEB  
CORRECTED BY: CJM

8

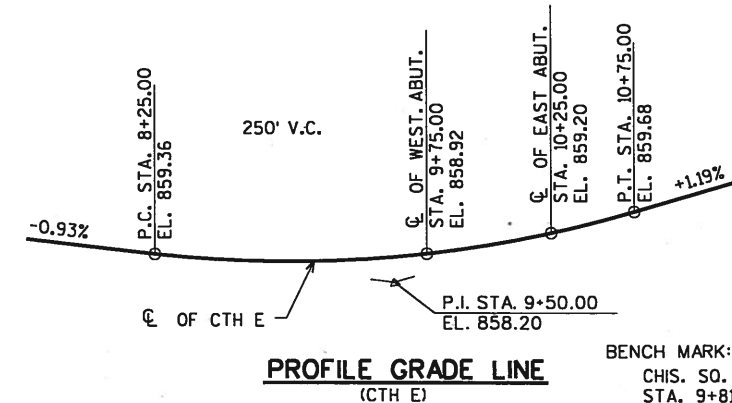


\*ANCHOR ASSEMBLY FOR THRIE  
BEAM RAIL ATTACHMENT.  
○ DENOTES WING NUMBER

**PLAN**  
SINGLE SPAN CONCRETE FLAT SLAB



**ELEVATION**



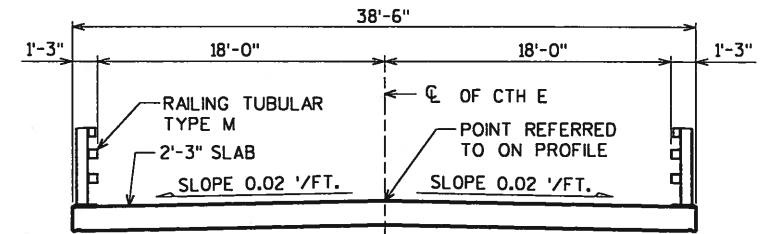
**PROFILE GRADE LINE**  
(CTH E)

BENCH MARK:  
CHIS. SQ. IN NW WINGWALL  
STA. 9+81.0, 16' LT.  
EL. 857.62

**LIST OF DRAWINGS**

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

COST OF EXCAVATION IN THE HATCHED AREAS  
SHALL BE INCLUDED IN THE CONTRACT LUMP  
SUM PRICE FOR "EXCAVATION FOR STRUCTURES  
BRIDGES B-8-115".



**CROSS SECTION THRU ROADWAY**

**DESIGN DATA**

**LIVE LOAD:**

DESIGN LOADING: HL-93  
INVENTORY RATING FACTOR: 1.20  
OPERATING RATING FACTOR: 1.56  
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = 250 KIPS

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

**ULTIMATE DESIGN STRESSES:**

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

**HYDRAULIC DATA:**

**100 YEAR FLOOD**

DRAINAGE AREA = 23.4 sq. mi.  
WATERWAY AREA = 303 sq. ft.  
 $V = 7.2$  f.p.s.  
 $Q_{100} = 2,250$  c.f.s.  
HIGH WATER<sub>100</sub> EL. 857.9  
 $Q_2 = 600$  c.f.s.  
HIGH WATER<sub>2</sub> EL. 854.1  
RDWY. OVERFLOW = N/A  
SCOUR CRITICAL CODE = 8  
DATUM = NAVD88

REGULATORY  $Q_{100} = 3,710$  c.f.s.  
REGULATORY HIGH WATER<sub>100</sub> EL. 860.1

**FOUNDATION DATA:**

ABUTMENTS TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS)  
DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 170 #TONS PER PILE AS DETERMINED  
BY THE MODIFIED GATES DYNAMIC FORMULA.  
ESTIMATED LENGTH 25'-0".

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

**TRAFFIC DATA:**

A.D.T. = 1,050 (2013)  
A.D.T. = 1,150 (2033)  
R.D.S. = 55 M.P.H.

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

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION  
ACCEPTED *William C. Dreher* KAR **05/07/13**  
CHIEF STRUCTURES DESIGN ENGINEER DATE

**STRUCTURE B-8-115**

CTH E OVER KILLSNAKE RIVER

COUNTY CALUMET TOWN/CITY/VILLAGE CHILTON

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY JCK DESIGN CKD. CJM DRAWN BY CJM PLANS CKD. DNS

**GENERAL PLAN**

SHEET 1 OF 11

\$PRJNAME\$  
U:\45-0370.00 - Calumet Co, CTH E over Killsnake River\BRIDGE#450370 gp.dgn

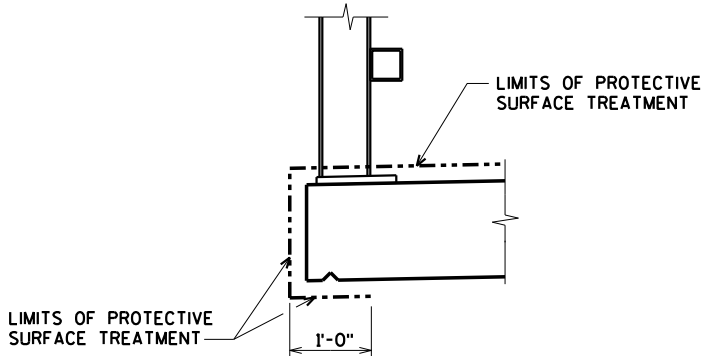
8

STATE PROJECT NUMBER

4485-02-71

**TOTAL ESTIMATED QUANTITIES**

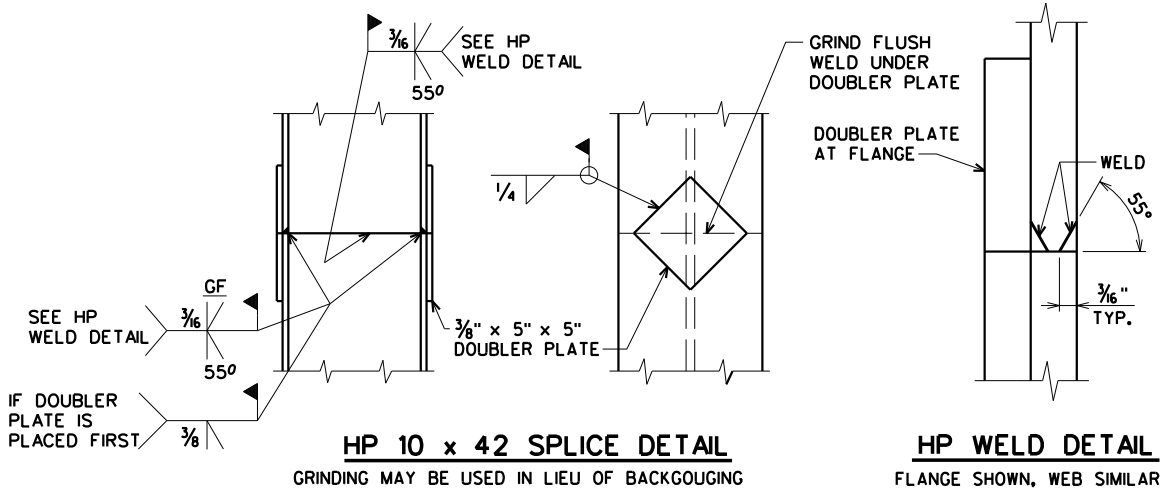
| BID ITEM NUMBER | BID ITEMS                                          | UNIT | W. ABUT. | E. ABUT. | SUPER. | TOTAL       | CATEGORY 20 | CATEGORY 30 |
|-----------------|----------------------------------------------------|------|----------|----------|--------|-------------|-------------|-------------|
| 203.0500.S      | REMOVING OLD STRUCTURE OVER WATERWAY STATION 10+00 | LS   | -----    | -----    | -----  | 1           | 1           | -----       |
| 206.1000        | EXCAVATION FOR STRUCTURES BRIDGES B-8-115          | LS   | -----    | -----    | -----  | 1           | 1           | -----       |
| 210.0100        | BACKFILL STRUCTURE                                 | CY   | 135      | 135      | -----  | 270         | 238         | 32          |
| 502.0100        | CONCRETE MASONRY BRIDGES                           | CY   | 30.0     | 30.0     | 175.0  | 235         | 203         | 32          |
| 502.3200        | PROTECTIVE SURFACE TREATMENT                       | SY   | -----    | -----    | 265    | 265         | 230         | 35          |
| 505.0405        | BAR STEEL REINFORCEMENT HS BRIDGES                 | LB   | 2,670    | 2,670    | -----  | 5,340       | 4,510       | 830         |
| 505.0605        | BAR STEEL REINFORCEMENT HS COATED BRIDGES          | LB   | 770      | 770      | 27,070 | 28,610      | 24,150      | 4,460       |
| 513.4060        | RAILING TUBULAR TYPE M B-8-115                     | LS   | -----    | -----    | -----  | 1           | 1           | -----       |
| 516.0500        | RUBBERIZED MEMBRANE WATERPROOFING                  | SY   | 11       | 11       | -----  | 22          | 22          | -----       |
| 550.0500        | PILE POINTS                                        | EACH | 6        | 6        | -----  | 12          | 12          | -----       |
| 550.1100        | PILING STEEL HP 10-INCH x 42 LB                    | LF   | 150      | 150      | -----  | 300         | 300         | -----       |
| 606.0300        | RIPRAP HEAVY                                       | CY   | 60       | 50       | -----  | 110         | 102         | 8           |
| 612.0406        | PIPE UNDERDRAIN WRAPPED 6-INCH                     | LF   | 80       | 80       | -----  | 160         | 160         | -----       |
| 645.0120        | GEOTEXTILE FABRIC TYPE HR                          | SY   | 140      | 130      | -----  | 270         | 252         | 18          |
|                 |                                                    |      |          |          |        |             |             |             |
|                 |                                                    |      |          |          |        |             |             |             |
|                 | NON-BID ITEMS                                      |      |          |          |        |             |             |             |
|                 | FILLER                                             | SIZE | -----    | -----    | -----  | 1/2" & 3/4" | -----       | 1/2" & 3/4" |
|                 |                                                    |      |          |          |        |             |             |             |
|                 |                                                    |      |          |          |        |             |             |             |



**PROTECTIVE SURFACE TREATMENT DETAIL**

**GENERAL NOTES**

DRAWINGS SHALL NOT BE SCALED.  
BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS SHOWN OR NOTED OTHERWISE.  
THE FIRST DIGIT OF A THREE DIGIT BAR NO. AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR NO. SIGNIFIES THE BAR SIZE.  
JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M 153, TYPE I, II OR III OR A.A.S.H.T.O. DESIGNATION M 213.  
THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE FABRIC HR TO THE EXTENT SHOWN ON THE GENERAL PLAN SHEET AND IN THE ABUTMENT DETAILS.  
SLAB FALSEWORK SHALL BE SUPPORTED ON PILES UNLESS OTHERWISE APPROVED BY THE ENGINEER.  
THE EXISTING GROUND LINE SHALL BE THE UPPER LIMIT FOR EXCAVATION FOR STRUCTURES.  
THE EXISTING STRUCTURE, B-18-110, TO BE REMOVED, IS A SINGLE SPAN CONCRETE DECK GIRDER BRIDGE WIDENED WITH PRECAST CONCRETE BOX BEAMS, 36.2 FT. LONG WITH A 30.0 FT. CLEAR ROADWAY WIDTH.  
AT BACKFACE OF ABUTMENTS ALL EXCAVATED VOLUME NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH BACKFILL STRUCTURE.  
PROTECTIVE SURFACE TREATMENT IS TO BE APPLIED AS SHOWN IN DETAIL ON THIS SHEET.



**HP WELD DETAIL**  
FLANGE SHOWN, WEB SIMILAR

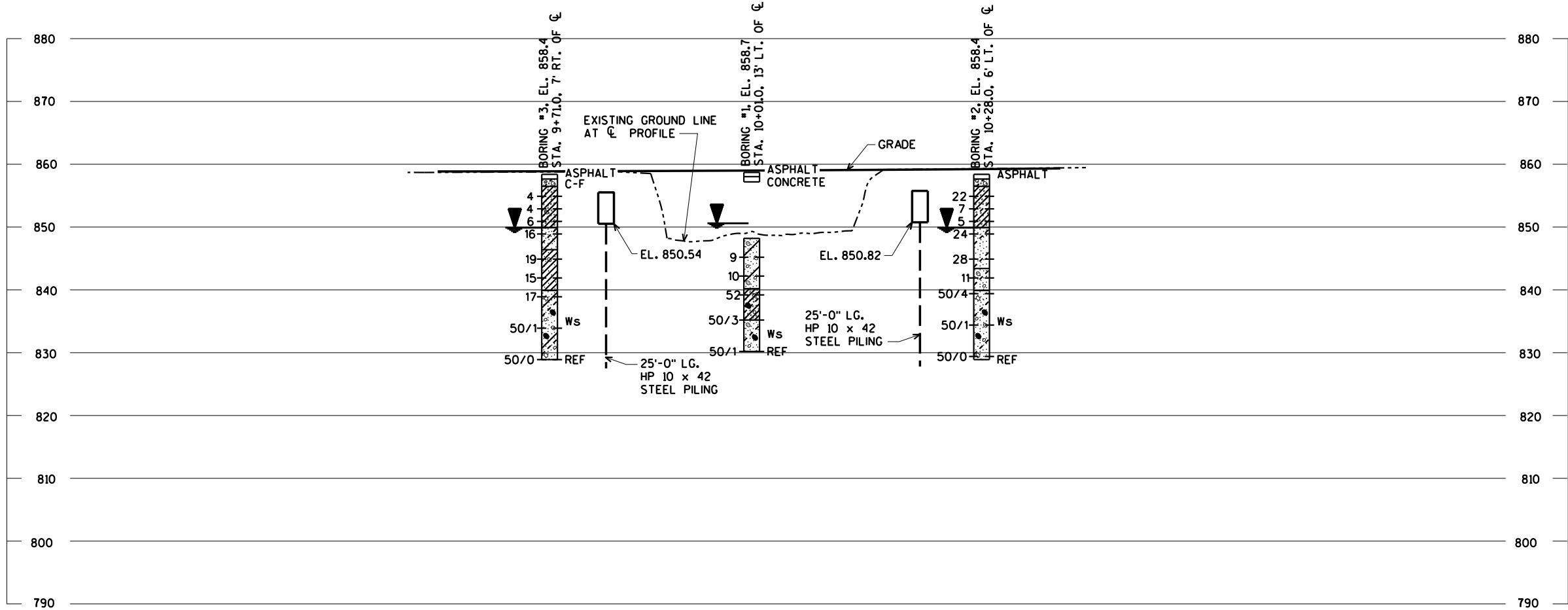
8

|                                                    |      |               |                 |
|----------------------------------------------------|------|---------------|-----------------|
| NO.                                                | DATE | REVISION      | BY              |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |               |                 |
| STRUCTURE B-8-115                                  |      |               |                 |
| DRAWN BY                                           |      | CJM           | PLANS CK'D. AEB |
| QUANTITIES AND NOTES                               |      | SHEET 2 OF 11 |                 |

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

\$PRNAME\$  
U:\45-0370.00 - Colu met Co, CTH E over Killsnake River\BRIDGE\450370 soils.dgn

8



880  
870  
860  
850  
840  
830  
820  
810  
800  
790

9+00

C.O. OF W. ABUT.  
STA. 9+75.00

10+00

BORING #1

BORING #2

C.O. OF E. ABUT.  
STA. 10+25.00

BORINGS TAKEN BY:  
GEOTECHNICAL DRILLING CONTRACTORS, LLC  
WAUSAU, WI  
NOVEMBER 27, 2012

GEOTECHNICAL REPORT BY:  
RIVER VALLEY TESTING, INC.  
NEENAH, WI  
DECEMBER 19, 2012

11+00

KILLSNAKE RIVER

N

STATE PROJECT NUMBER

4485-02-71

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

LEGEND OF BORING

ELEV. BORING NO.  
STA.  
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.

8

| NO.                                                | DATE | REVISION      | BY              |
|----------------------------------------------------|------|---------------|-----------------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |               |                 |
| STRUCTURE B-8-115                                  |      |               |                 |
| DRAWN BY                                           |      | CLS           | PLANS CK'D. AEB |
| SUBSURFACE EXPLORATION                             |      | SHEET 3 OF 11 |                 |

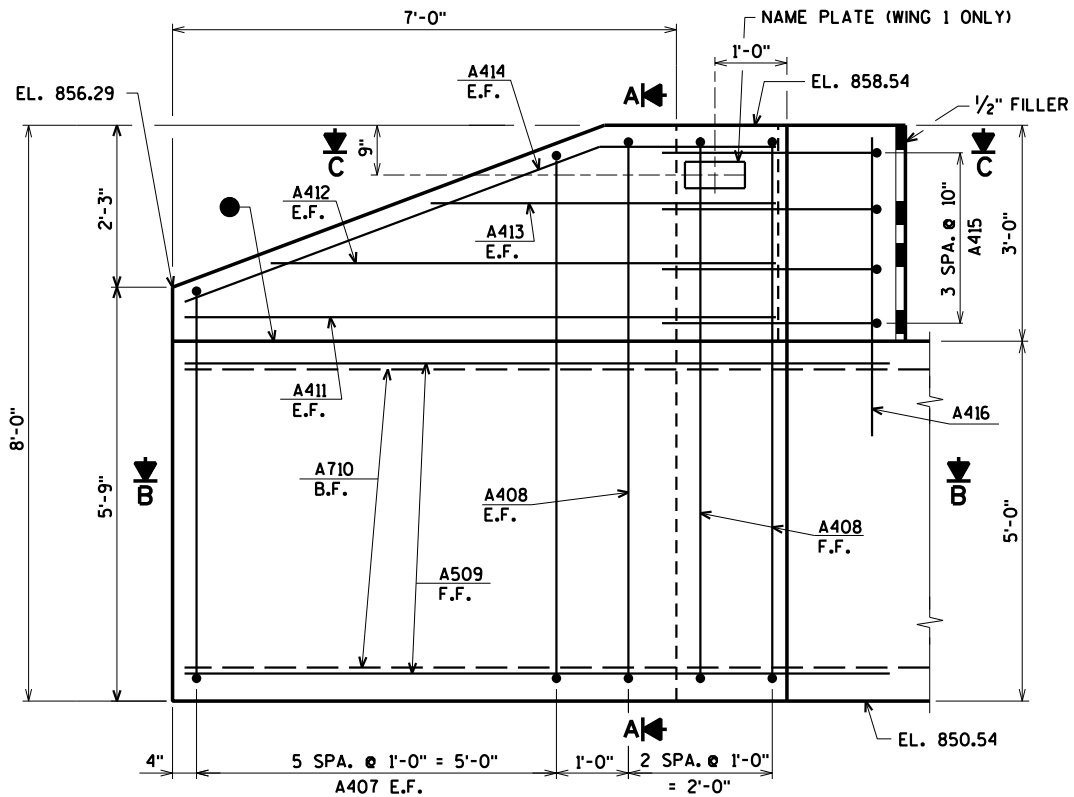
\$PRFNAME\$  
U:±45-0370.00 - Calumet Co, CTH E over Killsnake River±BRIDGE±450370wa.dgn

4485-02-71

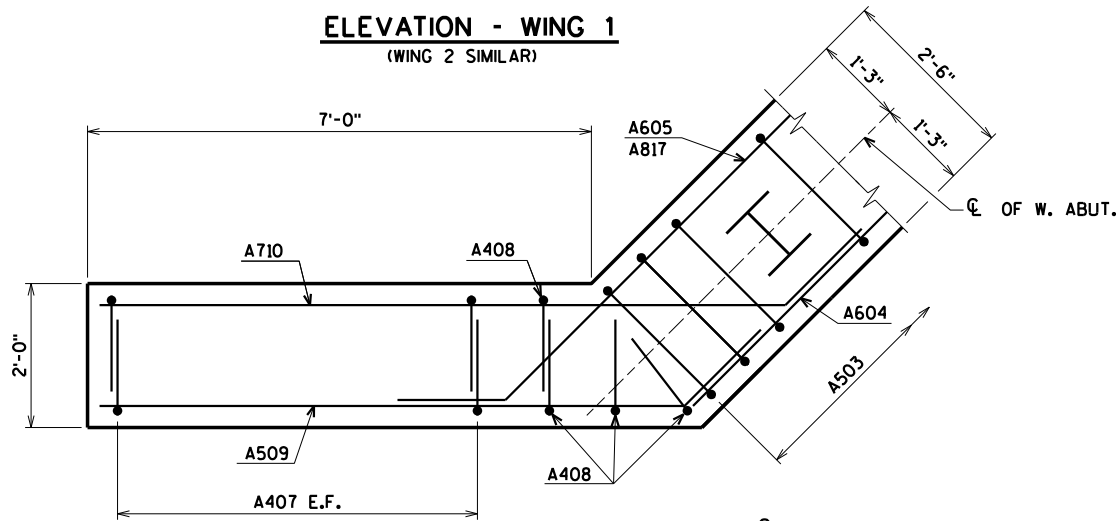


- |                                                    |      |                |     |
|----------------------------------------------------|------|----------------|-----|
|                                                    |      |                |     |
| NO.                                                | DATE | REVISION       | BY  |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |                |     |
| STRUCTURE B-8-115                                  |      |                |     |
|                                                    |      | DRAWN<br>BY    | CJM |
|                                                    |      | PLANS<br>CK'D. | AEB |
| WEST<br>ABUTMENT                                   |      | SHEET 4 OF 11  |     |

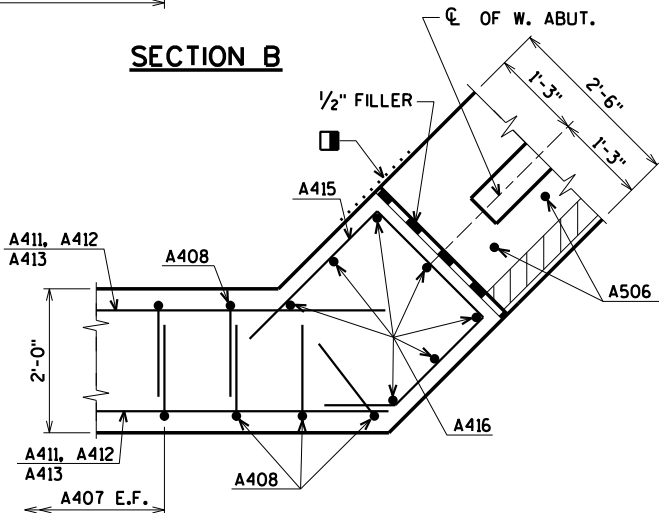
\$PRNAME\$  
U:\45-0370.00 - Columet Co. CTH E. over Kilsnake River\BRIDGE\450370wa.dgn



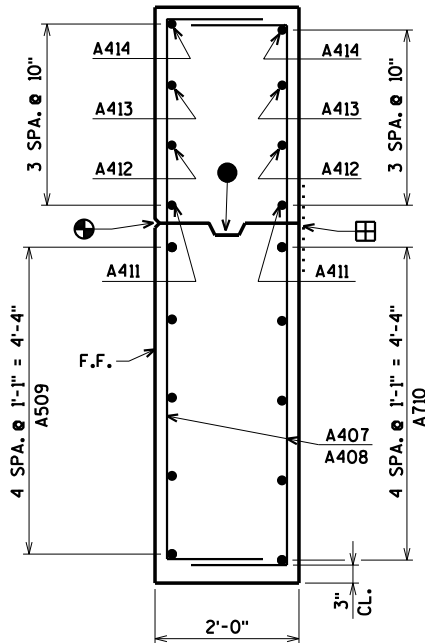
ELEVATION - WING 1  
(WING 2 SIMILAR)



SECTION B

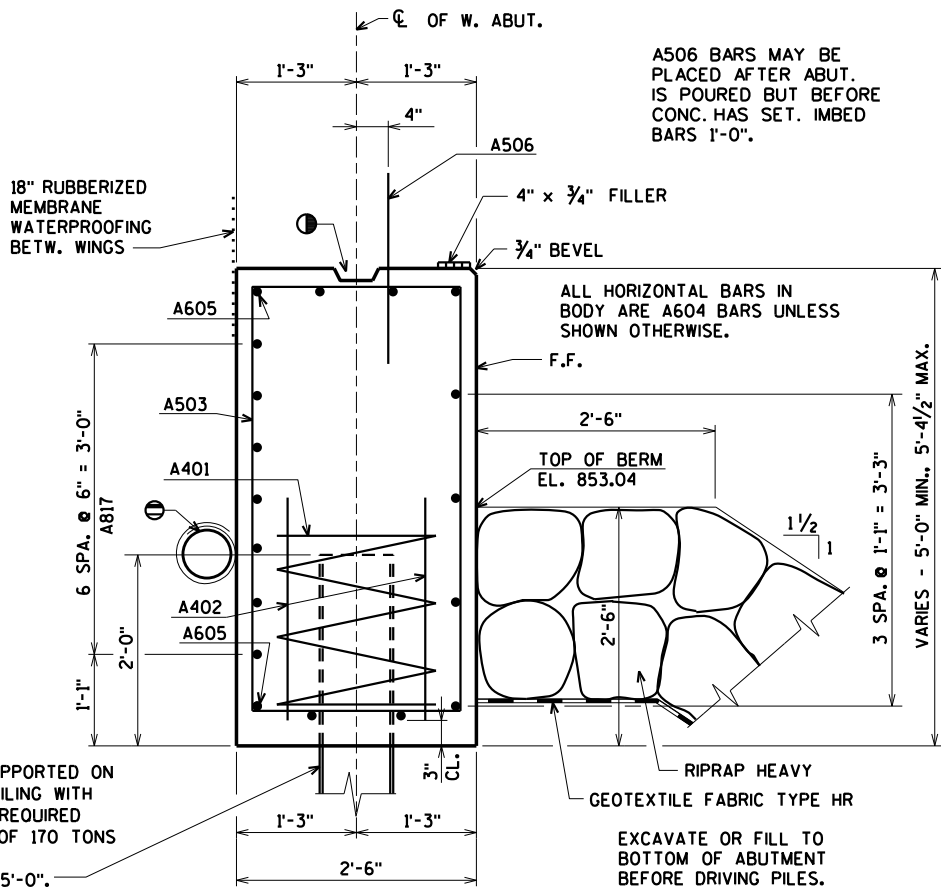


SECTION C



SECTION A

ABUTMENT TO BE SUPPORTED ON HP 10 x 42 STEEL PILING WITH PILE POINTS WITH A REQUIRED DRIVING RESISTANCE OF 170 TONS PER PILE ESTIMATED LENGTH 25'-0".



TYPICAL SECTION THRU BODY

PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON SDD REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN. RODENT SHIELD TO BE INCLUDED IN BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".

KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".

18" RUBBERIZED MEMBRANE WATERPROOFING ON BACK FACE. NOT REQUIRED IF CONST. JT. IS NOT USED.

OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.

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

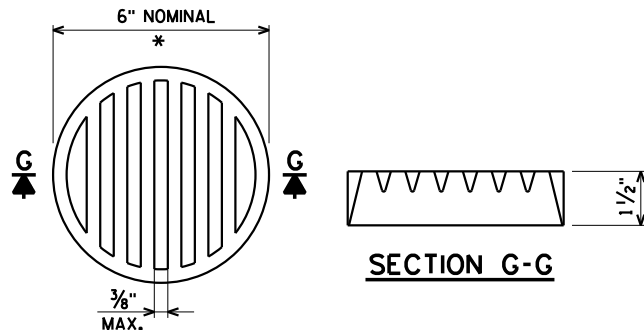
VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING WALL.

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

F.F. DENOTES FRONT FACE



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

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

THE RODENT SHIELD SHALL BE 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 SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 x 1-INCH SHEET METAL SCREWS.

RODENT SHIELD DETAIL

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

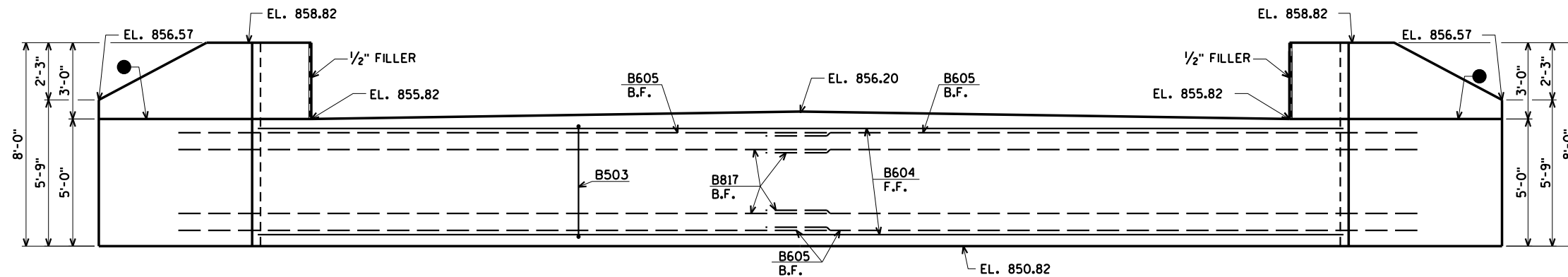
| NO.                                                | DATE | REVISION        | BY |
|----------------------------------------------------|------|-----------------|----|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |                 |    |
| STRUCTURE B-8-115                                  |      |                 |    |
| DRAWN BY CJM                                       |      | PLANS CK'D. AEB |    |
| WEST ABUTMENT WING DETAILS                         |      | SHEET 5 OF 11   |    |

\$PRJNAME\$  
U:\45-0370.00 - Calumet Co., CTH E over Killsnake River\BRIDGE\450370EA.dgn

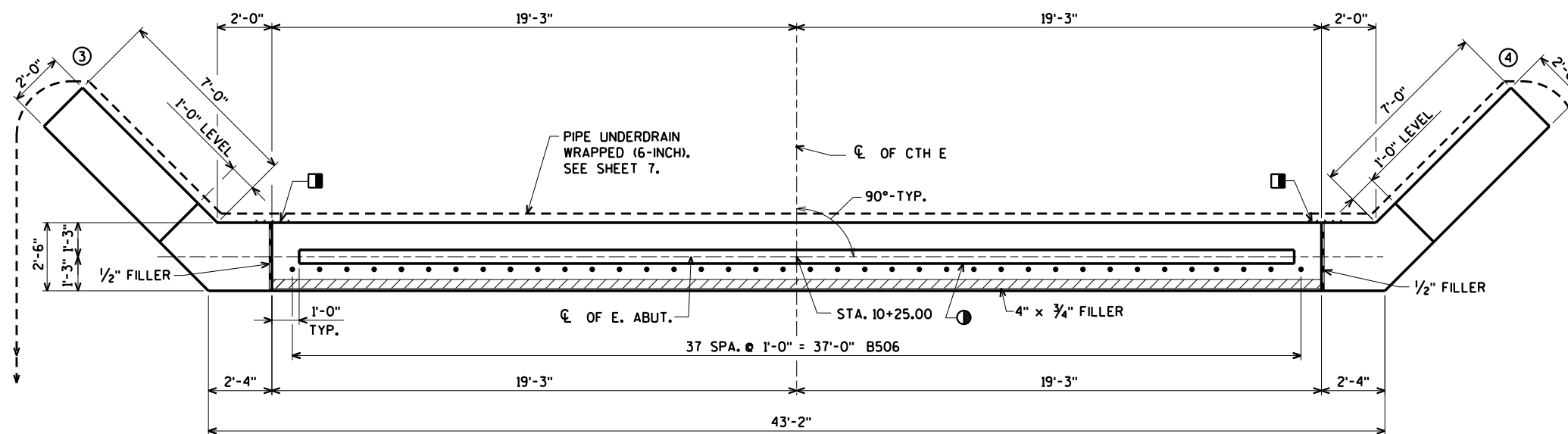
NOTE: SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF  
1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT  
SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE.)

STATE PROJECT NUMBER

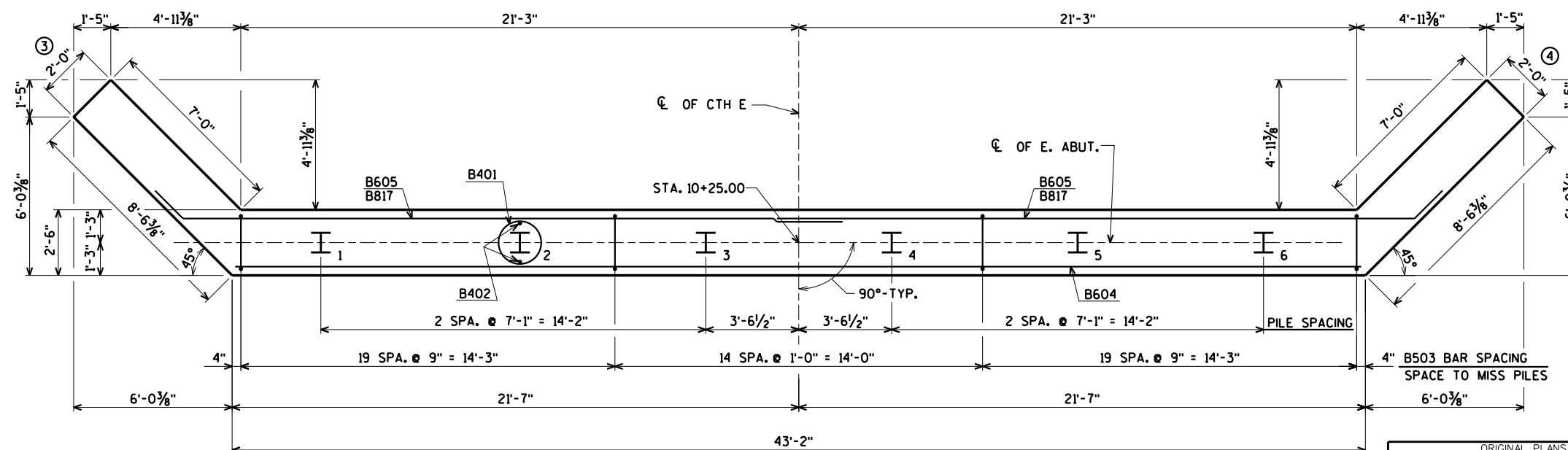
4485-02-71



**ELEVATION**  
(LOOKING EAST)



**PLAN**



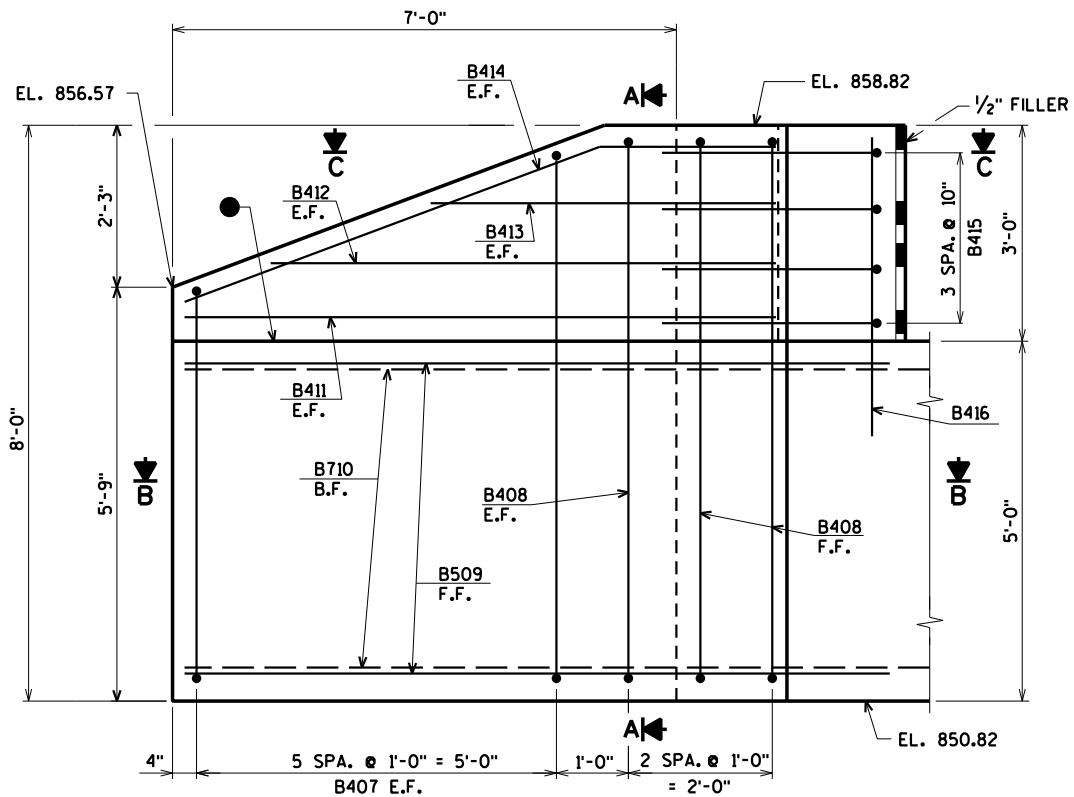
**PILE LAYOUT**

- OPT. KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6" WITH RUBBERIZED MEMBRANE WATERPROOFING ON B.F.
  - ① KEYED CONST. JOINT - FORMED BY A BEVELED 2" x 6".
  - VERTICAL 18" RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM BRIDGE SEAT TO TOP OF WING WALL.
- FOR PILE SPlice DETAIL SEE SHEET 2.
- B.F. DENOTES BACK FACE  
F.F. DENOTES FRONT FACE

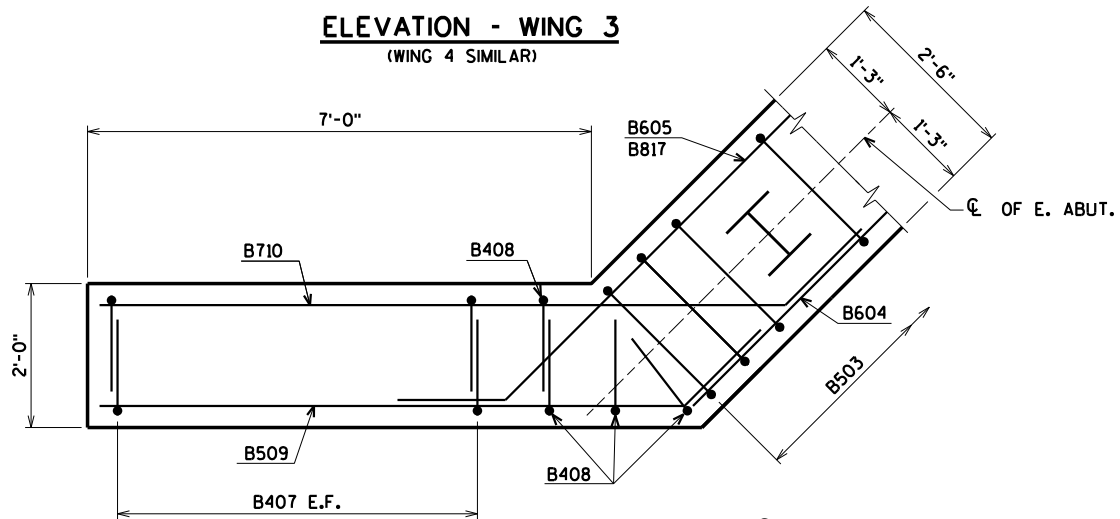
| NO.                                                | DATE | REVISION        | BY |
|----------------------------------------------------|------|-----------------|----|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |                 |    |
| STRUCTURE B-8-115                                  |      |                 |    |
| DRAWN BY CJM                                       |      | PLANS CK'D. AEB |    |
| EAST ABUTMENT                                      |      | SHEET 6 OF 11   |    |

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

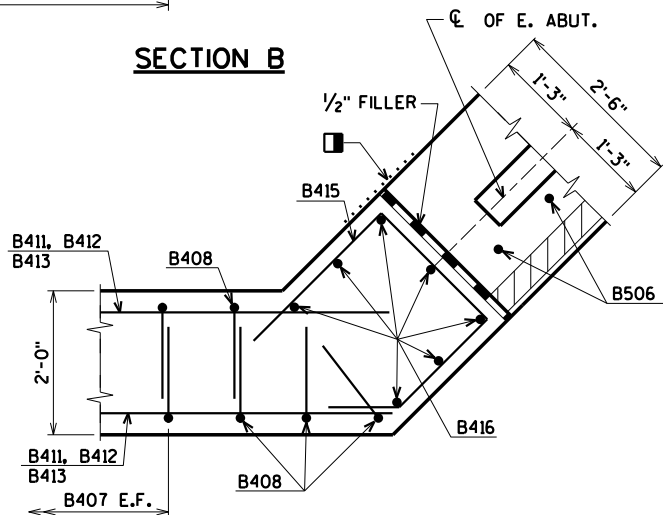
\$PRNAME\$  
U:\45-0370.00 - Columet Co. CTH E. over Kilsnake River\BRIDGE\450370EA.dgn



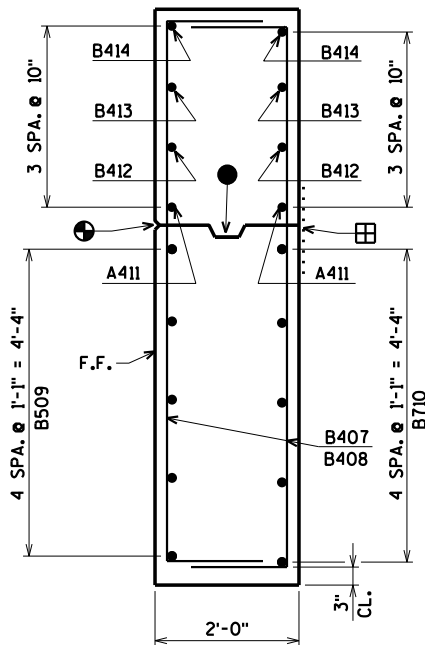
ELEVATION - WING 3  
(WING 4 SIMILAR)



SECTION B

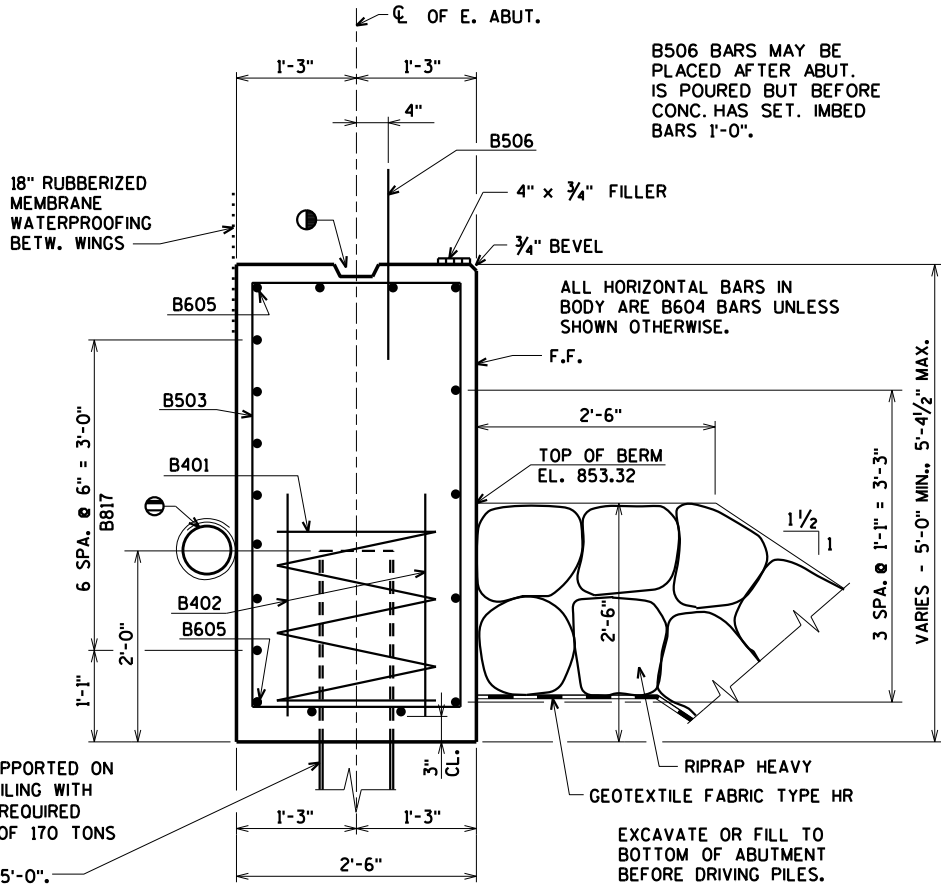


SECTION C



SECTION A

ABUTMENT TO BE SUPPORTED ON  
HP 10 x 42 STEEL PILING WITH  
PILE POINTS WITH A REQUIRED  
DRIVING RESISTANCE OF 170 TONS  
PER PILE  
ESTIMATED LENGTH 25'-0".



TYPICAL SECTION THRU BODY

PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5%  
MIN. TO SUITABLE DRAINAGE. ATTACH RODENT  
SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED  
ON SDD REINFORCED CONCRETE APRON ENDWALL  
FOR PIPE UNDERDRAIN. RODENT SHIELD TO BE INCLUDED  
IN BID PRICE OF "PIPE UNDERDRAIN WRAPPED 6-INCH".

KEYED CONST. JOINT - FORMED  
BY A BEVELED 2" x 6".

18" RUBBERIZED MEMBRANE WATERPROOFING  
ON BACK FACE. NOT REQUIRED IF CONST.  
JT. IS NOT USED.

OPT. KEYED CONST. JOINT - FORMED  
BY A BEVELED 2" x 6" WITH RUBBERIZED  
MEMBRANE WATERPROOFING ON B.F.

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

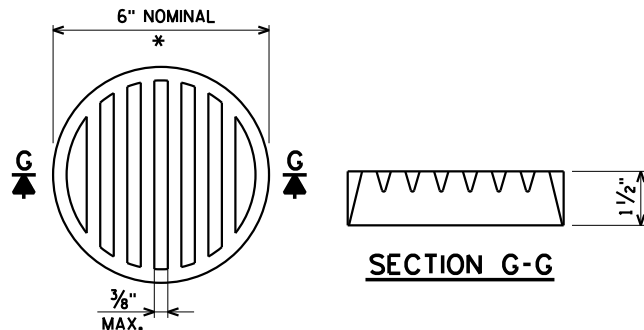
VERTICAL 18" RUBBERIZED MEMBRANE  
WATERPROOFING TO EXTEND FROM  
BRIDGE SEAT TO TOP OF WING WALL.

FOR PILE SPLICE DETAIL SEE SHEET 2.

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

F.F. DENOTES FRONT FACE



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

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

THE RODENT SHIELD SHALL BE 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 SHIELD SHALL BE  
FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 x 1-INCH  
SHEET METAL SCREWS.

RODENT SHIELD DETAIL

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

| NO.                                                | DATE | REVISION        | BY            |
|----------------------------------------------------|------|-----------------|---------------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |                 |               |
| STRUCTURE B-8-115                                  |      |                 |               |
| DRAWN BY CJM                                       |      | PLANS CK'D. AEB |               |
| EAST ABUTMENT<br>WING DETAILS                      |      |                 | SHEET 7 OF 11 |

\$PRNAME\$  
U:\45-0370.00 - Calumet Co., CTH E over Killsnake River\BRIDGE\450370EA.dgn

8

BILL OF BARS - WEST ABUTMENT

| BAR NO. | COATED BAR | NO. REQ'D. | LENGTH | BENT BAR | BUNDLED | BAR SERIES | 2,670# UNCOATED<br>770# COATED |
|---------|------------|------------|--------|----------|---------|------------|--------------------------------|
|         |            |            |        |          |         |            | LOCATION                       |
| A401    |            | 6          | 28-0   | X        |         |            | BODY @ PILES                   |
| A402    |            | 12         | 2-3    |          |         |            | BODY @ PILES                   |
| A503    |            | 53         | 13-10  | X        |         |            | BODY VERT.                     |
| A604    |            | 9          | 42-11  |          |         |            | BODY HORIZ. F.F.               |
| A605    |            | 4          | 26-6   | X        |         |            | BODY HORIZ. B.F.               |
| A506    | X          | 38         | 2-0    |          |         |            | BODY DOWELS                    |
| A407    | X          | 24         | 8-10   | X        |         | ⊗          | WINGS 1 & 2 VERT. E.F.         |
| A408    | X          | 8          | 10-1   | X        |         |            | WINGS 1 & 2 VERT. E.F.         |
| A509    | X          | 10         | 9-9    | X        |         |            | WINGS 1 & 2 HORIZ. F.F.        |
| A710    | X          | 10         | 11-4   | X        |         |            | WINGS 1 & 2 HORIZ. B.F.        |
| A411    | X          | 4          | 8-3    |          |         |            | WINGS 1 & 2 HORIZ. E.F.        |
| A412    | X          | 4          | 7-1    |          |         |            | WINGS 1 & 2 HORIZ. E.F.        |
| A413    | X          | 4          | 4-11   |          |         |            | WINGS 1 & 2 HORIZ. E.F.        |
| A414    | X          | 4          | 8-7    | X        |         |            | WINGS 1 & 2 DIAG. E.F.         |
| A415    | X          | 8          | 8-5    | X        |         |            | WINGS 1 & 2 HORIZ.             |
| A416    | X          | 14         | 3-11   |          |         |            | WINGS 1 & 2 VERT.              |
| A817    |            | 14         | 27-8   | X        |         |            | BODY HORIZ. B.F.               |
|         |            |            |        |          |         |            |                                |
|         |            |            |        |          |         |            |                                |
|         |            |            |        |          |         |            |                                |

BENDING DIMENSIONS ARE OUT TO OUT OF BARS.

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

B.F. DENOTES BACK FACE

E.F. DENOTES EACH FACE

F.F. DENOTES FRONT FACE

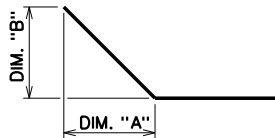
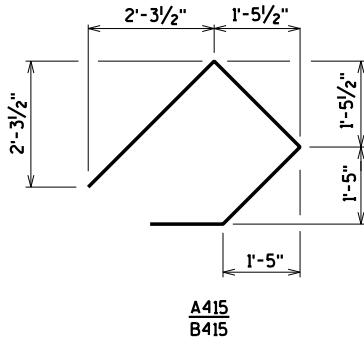
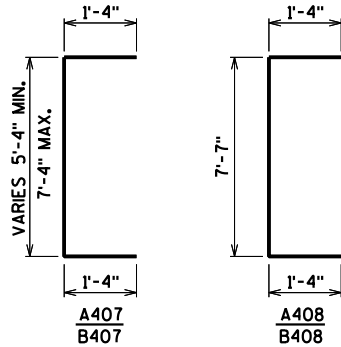
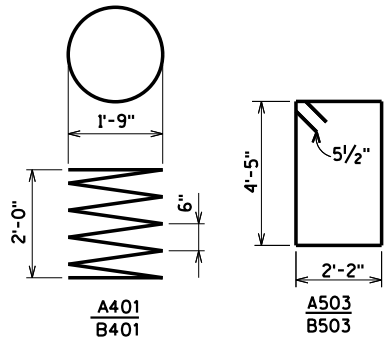
BAR SERIES TABLE

| BAR MARK | NO REQ'D.     | LENGTH           |
|----------|---------------|------------------|
| A407     | 4 SERIES OF 6 | 7'-10" TO 9'-10" |
| B407     | 4 SERIES OF 6 | 7'-10" TO 9'-10" |

BUNDLE AND TAG EACH SERIES SEPARATELY.

BILL OF BARS - EAST ABUTMENT

| BAR NO. | COATED BAR | NO. REQ'D. | LENGTH | BENT BAR | BUNDLED | BAR SERIES | 2,670# UNCOATED<br>770# COATED |
|---------|------------|------------|--------|----------|---------|------------|--------------------------------|
|         |            |            |        |          |         |            | LOCATION                       |
| B401    |            | 6          | 28-0   | X        |         |            | BODY @ PILES                   |
| B402    |            | 12         | 2-3    |          |         |            | BODY @ PILES                   |
| B503    |            | 53         | 13-10  | X        |         |            | BODY VERT.                     |
| B604    |            | 9          | 42-11  |          |         |            | BODY HORIZ. F.F.               |
| B605    |            | 4          | 26-6   | X        |         |            | BODY HORIZ. B.F.               |
| B506    | X          | 38         | 2-0    |          |         |            | BODY DOWELS                    |
| B407    | X          | 24         | 8-10   | X        |         | ⊗          | WINGS 3 & 4 VERT. E.F.         |
| B408    | X          | 8          | 10-1   | X        |         |            | WINGS 3 & 4 VERT. E.F.         |
| B509    | X          | 10         | 9-9    | X        |         |            | WINGS 3 & 4 HORIZ. F.F.        |
| B710    | X          | 10         | 11-4   | X        |         |            | WINGS 3 & 4 HORIZ. B.F.        |
| B411    | X          | 4          | 8-3    |          |         |            | WINGS 3 & 4 HORIZ. E.F.        |
| B412    | X          | 4          | 7-1    |          |         |            | WINGS 3 & 4 HORIZ. E.F.        |
| B413    | X          | 4          | 4-11   |          |         |            | WINGS 3 & 4 HORIZ. E.F.        |
| B414    | X          | 4          | 8-7    | X        |         |            | WINGS 3 & 4 DIAG. E.F.         |
| B415    | X          | 8          | 8-5    | X        |         |            | WINGS 3 & 4 HORIZ.             |
| B416    | X          | 14         | 3-11   |          |         |            | WINGS 3 & 4 VERT.              |
| B817    |            | 14         | 27-8   | X        |         |            | BODY HORIZ. B.F.               |
|         |            |            |        |          |         |            |                                |
|         |            |            |        |          |         |            |                                |
|         |            |            |        |          |         |            |                                |



| BAR NO. | DIM. "A"  | DIM. "B"  |
|---------|-----------|-----------|
| A605    | 1'-0 3/4" | 1'-0 3/4" |
| A509    | 1'-0 3/4" | 1'-0 3/4" |
| A710    | 1'-0 3/4" | 1'-0 3/4" |
| A414    | 5'-9"     | 2'-2"     |
| A817    | 1'-0 3/4" | 1'-0 3/4" |
| B605    | 1'-0 3/4" | 1'-0 3/4" |
| B509    | 1'-0 3/4" | 1'-0 3/4" |
| B710    | 1'-0 3/4" | 1'-0 3/4" |
| B414    | 5'-9"     | 2'-2"     |
| B817    | 1'-0 3/4" | 1'-0 3/4" |

|                                                    |      |          |                 |
|----------------------------------------------------|------|----------|-----------------|
| NO.                                                | DATE | REVISION | BY              |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |          |                 |
| STRUCTURE B-8-115                                  |      |          |                 |
| DRAWN BY                                           |      | CJM      | PLANS CK'D. AEB |
| ABUTMENT<br>BILL OF BARS                           |      |          | SHEET 8 OF 11   |

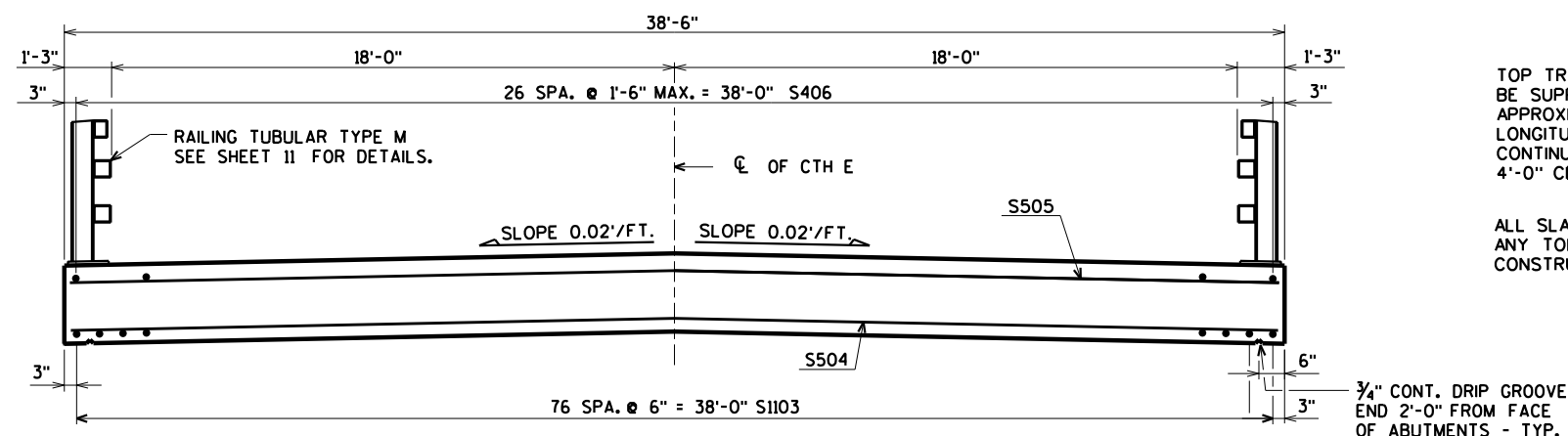
ORIGINAL PLANS PREPARED BY  
**AYRES ASSOCIATES**  
3433 Oakwood Hills Parkway  
Eau Claire, WI 54701  
www.AyresAssociates.com

8

[illegible]

The image contains three technical drawings of structural shapes, each with dimensions and labels.

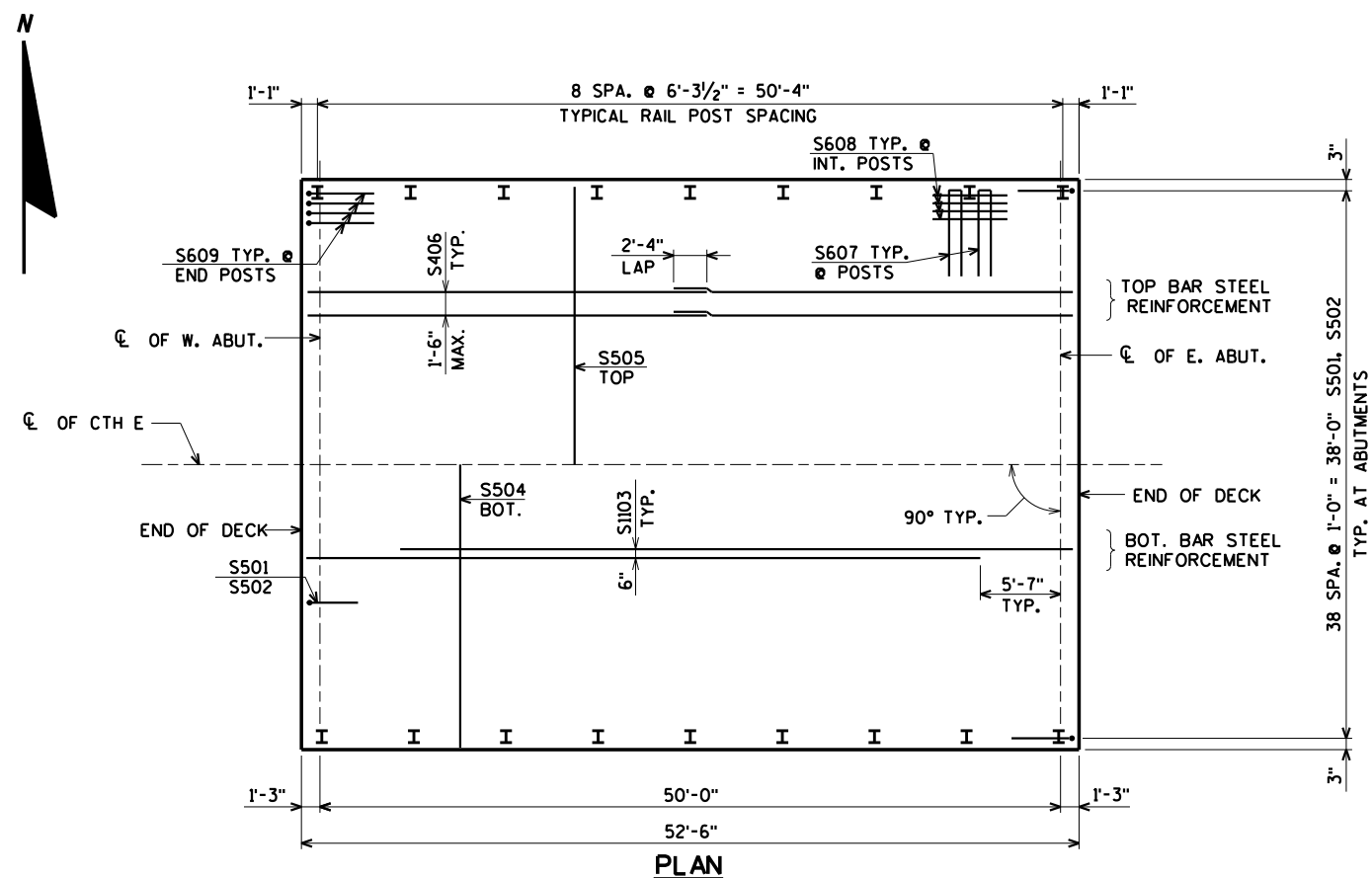
- S501:** An L-shaped profile. The horizontal leg has a total width of 2'-1" and a vertical height of 1'-9". The vertical leg has a width of 1'-9". The label S501 is centered below the horizontal leg.
- S609:** An L-shaped profile. The horizontal leg has a total width of 5'-0" and a vertical height of 1'-6". The vertical leg is labeled "VERT. LEG" with an arrow pointing to it. The label S609 is centered above the horizontal leg, and S502 is centered below the horizontal leg.
- S607:** A U-shaped profile. The horizontal leg has a width of 10" and a vertical height of 5'-9". The label S607 is centered below the horizontal leg.



### CROSS SECTION THRU ROADWAY

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

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

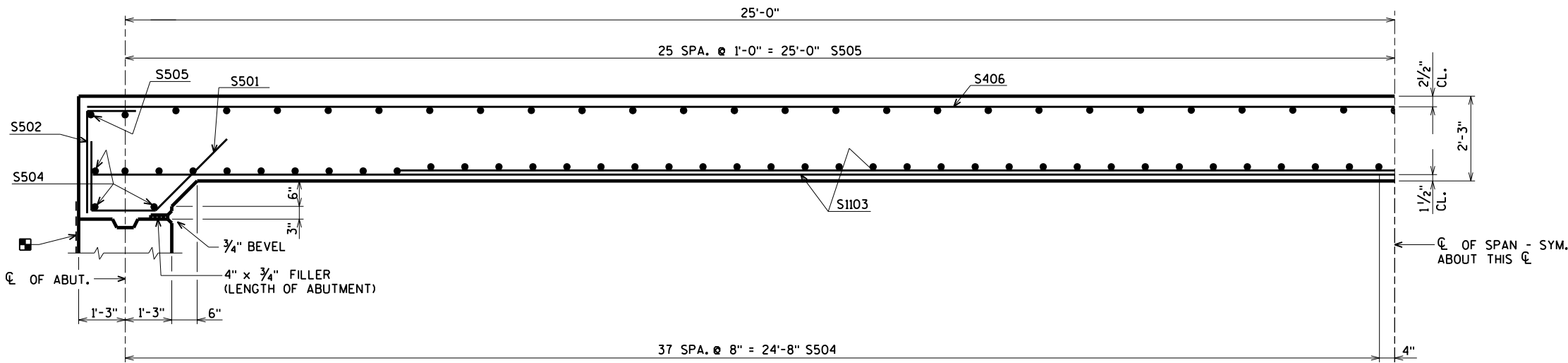


### PLAN

\$PRNAME\$  
U:\45-0370.00 - Calumet Co. CTH E over Killsnake River\BRIDGE\450370su.dgn

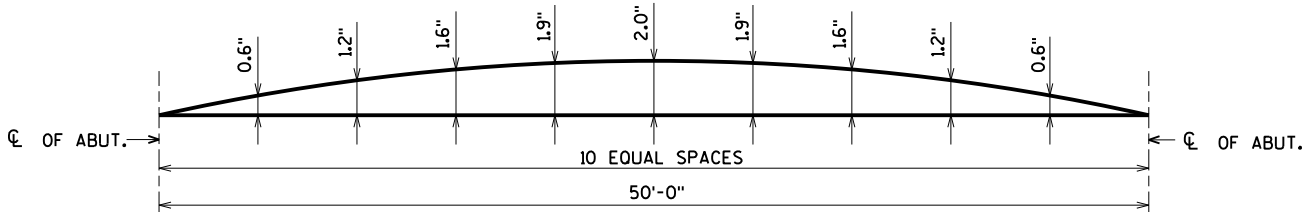
STATE PROJECT NUMBER

4485-02-71



**PART LONGITUDINAL SECTION**

18" RUBBERIZED MEMBRANE WATERPROOFING



**CAMBER DIAGRAM**

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

**TOP OF DECK ELEVATIONS**

| LOCATION         | CL. OF W. ABUT. | 0.1 PT. | 0.2 PT. | 0.3 PT. | 0.4 PT. | 0.5 PT. | 0.6 PT. | 0.7 PT. | 0.8 PT. | 0.9 PT. | CL. OF E. ABUT. |
|------------------|-----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-----------------|
| N. EDGE OF SLAB  | 858.54          | 858.56  | 858.58  | 858.60  | 858.62  | 858.65  | 858.68  | 858.71  | 858.74  | 858.78  | 858.82          |
| CL. OF STRUCTURE | 858.92          | 858.94  | 858.96  | 858.98  | 859.00  | 859.03  | 859.06  | 859.09  | 859.12  | 859.16  | 859.20          |
| S. EDGE OF SLAB  | 858.54          | 858.56  | 858.58  | 858.60  | 858.62  | 858.65  | 858.68  | 858.71  | 858.74  | 858.78  | 858.82          |

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

|                                                    |      |          |                    |
|----------------------------------------------------|------|----------|--------------------|
| NO.                                                | DATE | REVISION | BY                 |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |          |                    |
| STRUCTURE B-8-115                                  |      |          |                    |
| DRAWN<br>BY                                        |      | CJM      | PLANS<br>CK'D. AEB |
| SUPERSTRUCTURE<br>DETAILS                          |      |          | SHEET 10 OF 11     |

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



EARTHWORK - CTH E (SW SHOULDER WIDENING)

| STATION | AREA (SF) |                               |        | Incremental Vol (CY) (Unadjusted) |                               |        | Cumulative Vol (CY) |                      | Mass Ordinate |
|---------|-----------|-------------------------------|--------|-----------------------------------|-------------------------------|--------|---------------------|----------------------|---------------|
|         | Cut       | Unusable<br>Pavement Material | Fill   | Cut                               | Unusable<br>Pavement Material | Fill   | Cut<br>1.00         | Expanded Fill<br>1.3 |               |
|         | Note 1    | Note 2                        | Note 3 | Note 1                            | Note 2                        | Note 3 | Note 1              | Note 1               | Note 8        |
| 7+00.00 | 0.0       | 0.0                           | 0.0    |                                   |                               |        |                     |                      |               |
| 7+50.00 | 1.1       | 0.0                           | 12.3   | 1                                 | 0                             | 11     | 1                   | 15                   | -14           |
| 7+73.60 | 0.7       | 0.0                           | 11.1   | 1                                 | 0                             | 10     | 2                   | 28                   | -26           |
| 8+00.00 | 0.7       | 0.0                           | 11.2   | 1                                 | 0                             | 11     | 3                   | 42                   | -40           |
| 8+21.60 | 1.0       | 0.0                           | 13.7   | 1                                 | 0                             | 10     | 3                   | 55                   | -52           |
| 8+25.00 | 1.0       | 0.0                           | 14.1   | 0                                 | 0                             | 2      | 3                   | 57                   | -54           |

TOTALS: 3 0 44

EARTHWORK - CTH E (NW SHOULDER WIDENING)

| STATION | AREA (SF) |                               |        | Incremental Vol (CY) (Unadjusted) |                               |        | Cumulative Vol (CY) |                      | Mass Ordinate |
|---------|-----------|-------------------------------|--------|-----------------------------------|-------------------------------|--------|---------------------|----------------------|---------------|
|         | Cut       | Unusable<br>Pavement Material | Fill   | Cut                               | Unusable<br>Pavement Material | Fill   | Cut<br>1.00         | Expanded Fill<br>1.3 |               |
|         | Note 1    | Note 2                        | Note 3 | Note 1                            | Note 2                        | Note 3 | Note 1              | Note 1               | Note 8        |
| 7+73.60 | 0.0       | 0.0                           | 0.0    |                                   |                               |        |                     |                      |               |
| 8+00.00 | 0.0       | 0.0                           | 5.1    | 0                                 | 0                             | 2      | 0                   | 3                    | -3            |
| 8+21.60 | 9.6       | 0.0                           | 0.0    | 4                                 | 0                             | 2      | 4                   | 6                    | -2            |
| 8+25.00 | 10.2      | 0.0                           | 0.0    | 1                                 |                               | 0      | 5                   | 6                    | -1            |

TOTALS: 5 0 5

|                                |                                                         |
|--------------------------------|---------------------------------------------------------|
| 1 - Cut                        | Cut includes Unusable Pavement Material                 |
| 2 - Unusable Pavement Material | This does not show up in cross sections                 |
| 3 - Fill                       | Does not include Unusable Pavement Material Volume      |
| 8 - Mass Ordinate              | Cut - (Fill * Fill Factor) - Unusable Pavement Material |

EARTHWORK - CTH E

| STATION  | AREA (SF) |                               |        | Incremental Vol (CY) (Unadjusted) |                               |        | Cumulative Vol (CY) |                      | Mass Ordinate<br>Note 8 |
|----------|-----------|-------------------------------|--------|-----------------------------------|-------------------------------|--------|---------------------|----------------------|-------------------------|
|          | Cut       | Unusable<br>Pavement Material | Fill   | Cut                               | Unusable<br>Pavement Material | Fill   | Cut<br>1.00         | Expanded Fill<br>1.3 |                         |
|          | Note 1    | Note 2                        | Note 3 | Note 1                            | Note 2                        | Note 3 | Note 1              |                      |                         |
| 8+25.00  | 62.3      | 18.8                          | 14.1   |                                   |                               |        |                     |                      |                         |
| 8+46.60  | 47.6      | 18.8                          | 27.6   | 44                                | 15                            | 17     | 44                  | 22                   | 7                       |
| 8+50.00  | 47.2      | 18.8                          | 27.7   | 6                                 | 2                             | 3      | 50                  | 26                   | 6                       |
| 8+71.60  | 42.9      | 18.8                          | 29.6   | 36                                | 15                            | 23     | 86                  | 56                   | -2                      |
| 8+84.10  | 41.5      | 18.8                          | 31.2   | 20                                | 9                             | 14     | 106                 | 74                   | -10                     |
| 9+00.00  | 42.1      | 18.8                          | 24.5   | 25                                | 11                            | 16     | 130                 | 96                   | -18                     |
| 9+09.10  | 42.2      | 18.8                          | 21.4   | 14                                | 6                             | 8      | 144                 | 106                  | -20                     |
| 9+34.10  | 41.9      | 20.6                          | 15.5   | 39                                | 18                            | 17     | 183                 | 128                  | -21                     |
| 9+50.00  | 40.4      | 22.1                          | 17.9   | 24                                | 13                            | 10     | 207                 | 141                  | -22                     |
| 9+73.75  | 35.8      | 22.1                          | 7.2    | 34                                | 19                            | 11     | 241                 | 155                  | -23                     |
| 10+00.00 | 0.0       | 0.0                           | 0.0    | 0                                 | 0                             | 0      | 241                 | 155                  | -23                     |
| 10+26.25 | 36.5      | 22.1                          | 8.7    | 0                                 | 0                             | 0      | 241                 | 155                  | -23                     |
| 10+50.00 | 43.8      | 22.1                          | 17.7   | 35                                | 19                            | 12     | 276                 | 170                  | -22                     |
| 10+65.90 | 46.5      | 22.1                          | 25.1   | 27                                | 13                            | 13     | 303                 | 186                  | -25                     |
| 10+90.90 | 48.9      | 18.8                          | 32.7   | 44                                | 19                            | 27     | 347                 | 221                  | -34                     |
| 11+00.00 | 48.4      | 18.8                          | 36.6   | 16                                | 6                             | 12     | 363                 | 236                  | -39                     |

TOTALS: 363 166 182

|                                |                                                         |
|--------------------------------|---------------------------------------------------------|
| 1 - Cut                        | Cut includes Unusable Pavement Material                 |
| 2 - Unusable Pavement Material | This does not show up in cross sections                 |
| 3 - Fill                       | Does not include Unusable Pavement Material Volume      |
| 8 - Mass Ordinate              | Cut - (Fill * Fill Factor) - Unusable Pavement Material |

EARTHWORK - CTH E (SE SHOULDER WIDENING)

| STATION  | AREA (SF) |                               |      | Incremental Vol (CY) (Unadjusted) |                               |        | Cumulative Vol (CY) |                      | Mass Ordinate<br>Note 8 |
|----------|-----------|-------------------------------|------|-----------------------------------|-------------------------------|--------|---------------------|----------------------|-------------------------|
|          | Cut       | Unusable<br>Pavement Material | Fill | Cut                               | Unusable<br>Pavement Material | Fill   | Cut<br>1.00         | Expanded Fill<br>1.3 |                         |
|          | Note 1    |                               |      | Note 1                            | Note 2                        | Note 3 | Note 1              |                      |                         |
| 11+00.00 | 0.0       | 0.0                           | 36.4 |                                   |                               |        |                     |                      |                         |
| 11+15.90 | 0.0       | 0.0                           | 43.2 | 0                                 | 0                             | 23     | 0                   | 30                   | -30                     |
| 11+28.40 | 0.0       | 0.0                           | 41.5 | 0                                 | 0                             | 20     | 0                   | 56                   | -56                     |
| 11+50.00 | 0.0       | 0.0                           | 36.6 | 0                                 | 0                             | 31     | 0                   | 97                   | -97                     |
| 11+53.40 | 0.0       | 0.0                           | 39.5 | 0                                 | 0                             | 5      | 0                   | 103                  | -103                    |
| 11+78.40 | 0.0       | 0.0                           | 34.4 | 0                                 | 0                             | 34     | 0                   | 147                  | -147                    |
| 12+00.00 | 0.0       | 0.0                           | 25.8 | 0                                 | 0                             | 24     | 0                   | 179                  | -179                    |
| 12+36.00 | 0.0       | 0.0                           | 0.0  | 0                                 | 0                             | 17     | 0                   | 201                  | -201                    |

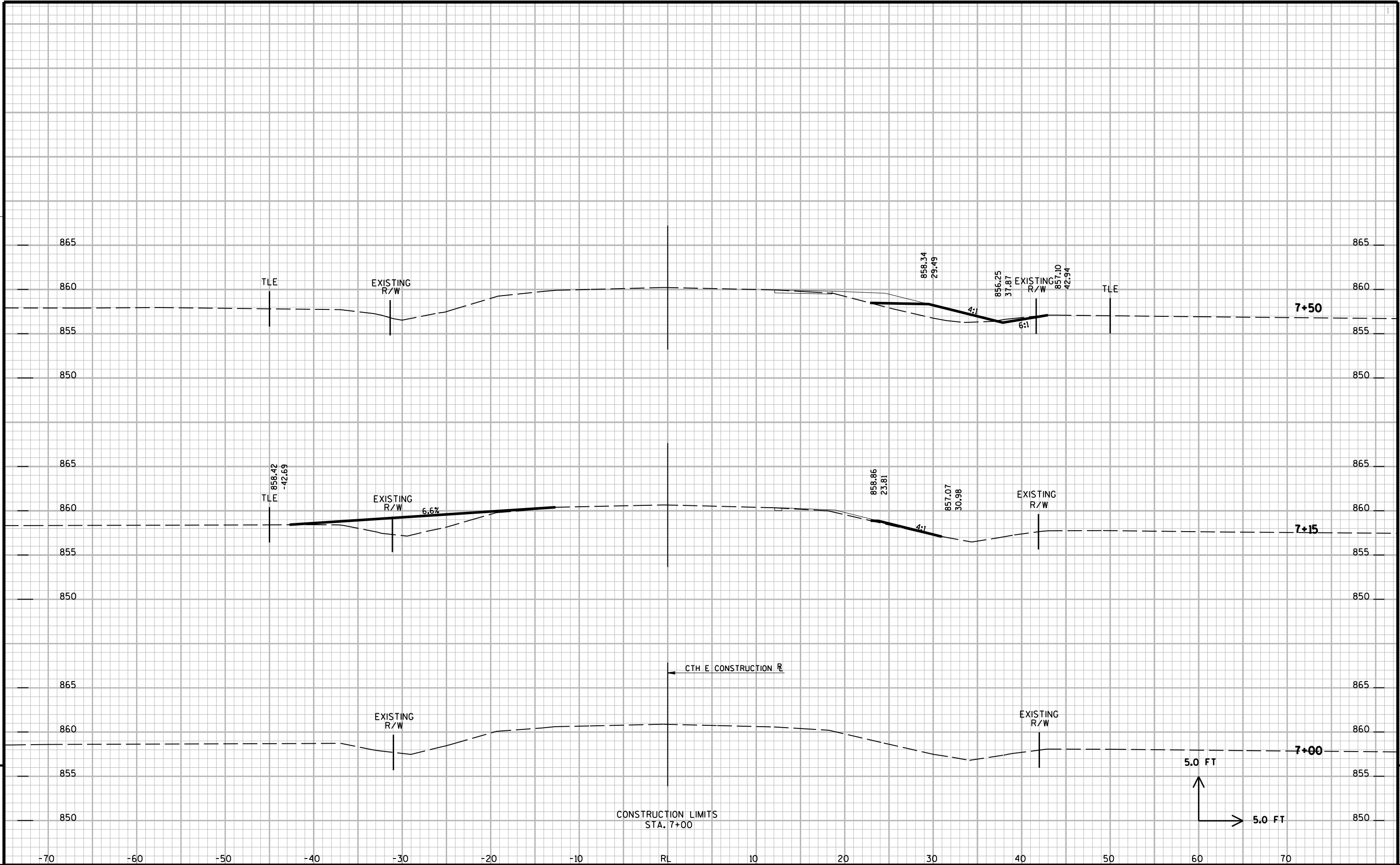
TOTALS: 0 0 155

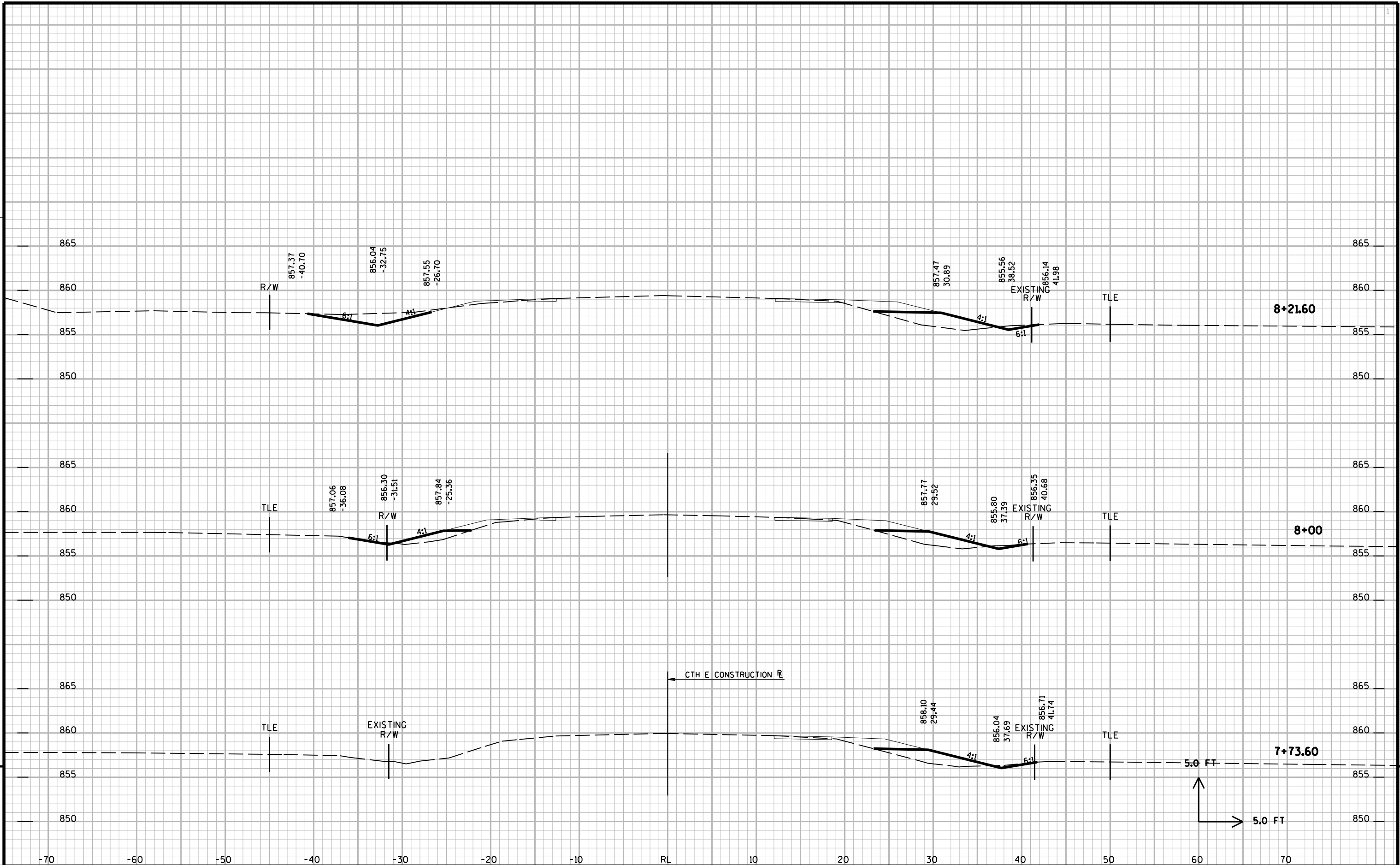
EARTHWORK - CTH E (NE SHOULDER WIDENING)

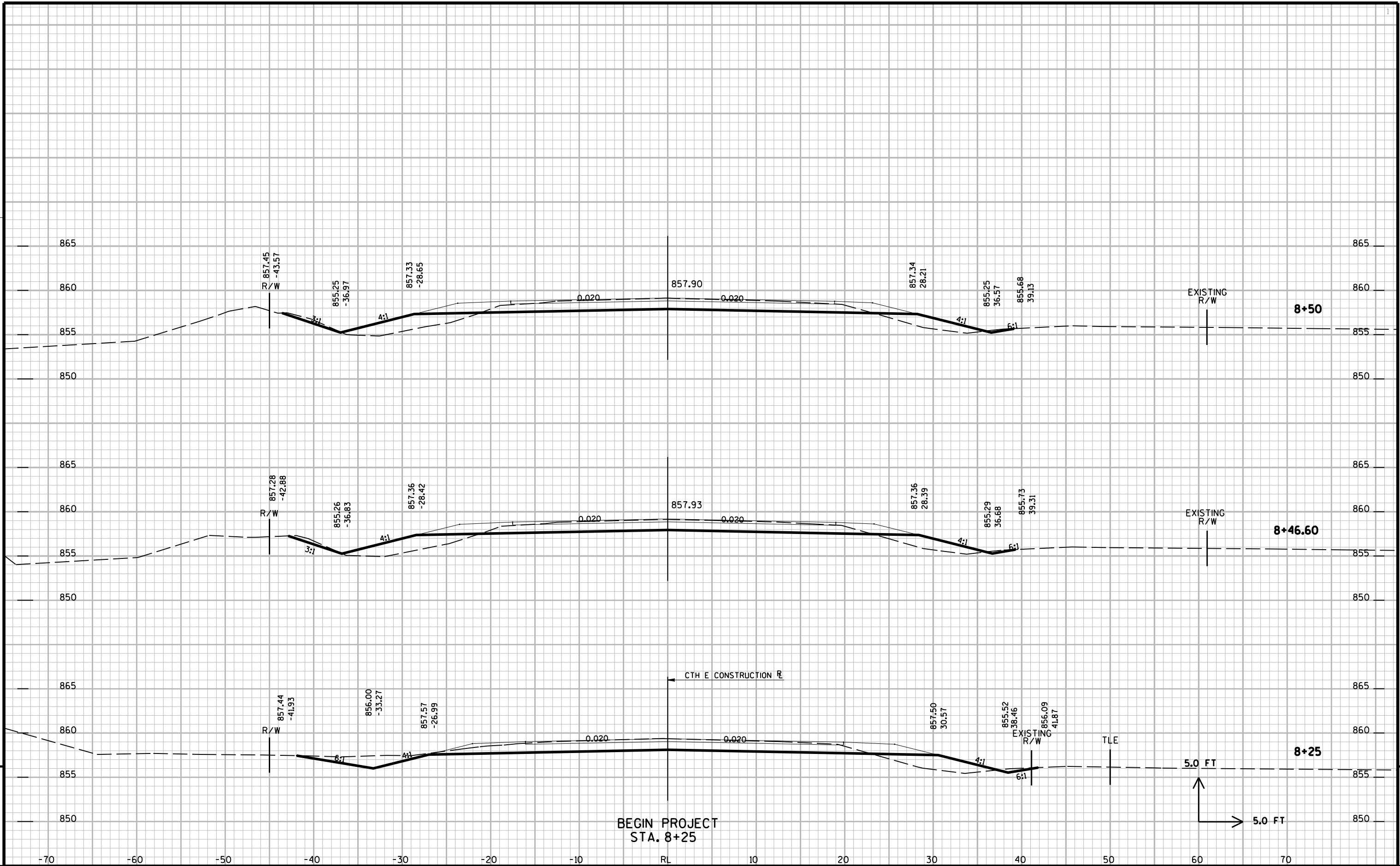
| STATION  | AREA (SF) |                               |      | Incremental Vol (CY) (Unadjusted) |                               |        | Cumulative Vol (CY) |                      | Mass Ordinate<br>Note 8 |
|----------|-----------|-------------------------------|------|-----------------------------------|-------------------------------|--------|---------------------|----------------------|-------------------------|
|          | Cut       | Unusable<br>Pavement Material | Fill | Cut                               | Unusable<br>Pavement Material | Fill   | Cut<br>1.00         | Expanded Fill<br>1.3 |                         |
|          | Note 1    |                               |      | Note 1                            | Note 2                        | Note 3 | Note 1              |                      |                         |
| 11+00.00 | 0.0       | 0.0                           | 0.1  |                                   |                               |        |                     |                      |                         |
| 11+15.90 | 0.0       | 0.0                           | 0.0  | 0                                 | 0                             | 0      | 0                   | 0                    | 0                       |
| 11+28.40 | 0.0       | 0.0                           | 0.0  | 0                                 | 0                             | 0      | 0                   | 0                    | 0                       |
| 11+50.00 | 0.0       | 0.0                           | 0.3  | 0                                 | 0                             | 0      | 0                   | 0                    | 0                       |
| 11+53.40 | 0.0       | 0.0                           | 0.4  | 0                                 | 0                             | 0      | 0                   | 0                    | 0                       |
| 11+78.40 | 0.0       | 0.0                           | 7.6  | 0                                 | 0                             | 4      | 0                   | 5                    | -5                      |
| 12+00.00 | 0.0       | 0.0                           | 4.7  | 0                                 | 0                             | 5      | 0                   | 11                   | -11                     |
| 12+36.00 | 0.0       | 0.0                           | 1.2  | 0                                 | 0                             | 4      | 0                   | 17                   | -17                     |
| 12+50.00 | 0.0       | 0.0                           | 1.2  | 0                                 | 0                             | 1      | 0                   | 17                   | -17                     |
| 12+85.00 | 0.0       | 0.0                           | 0.0  | 0                                 | 0                             | 1      | 0                   | 18                   | -18                     |

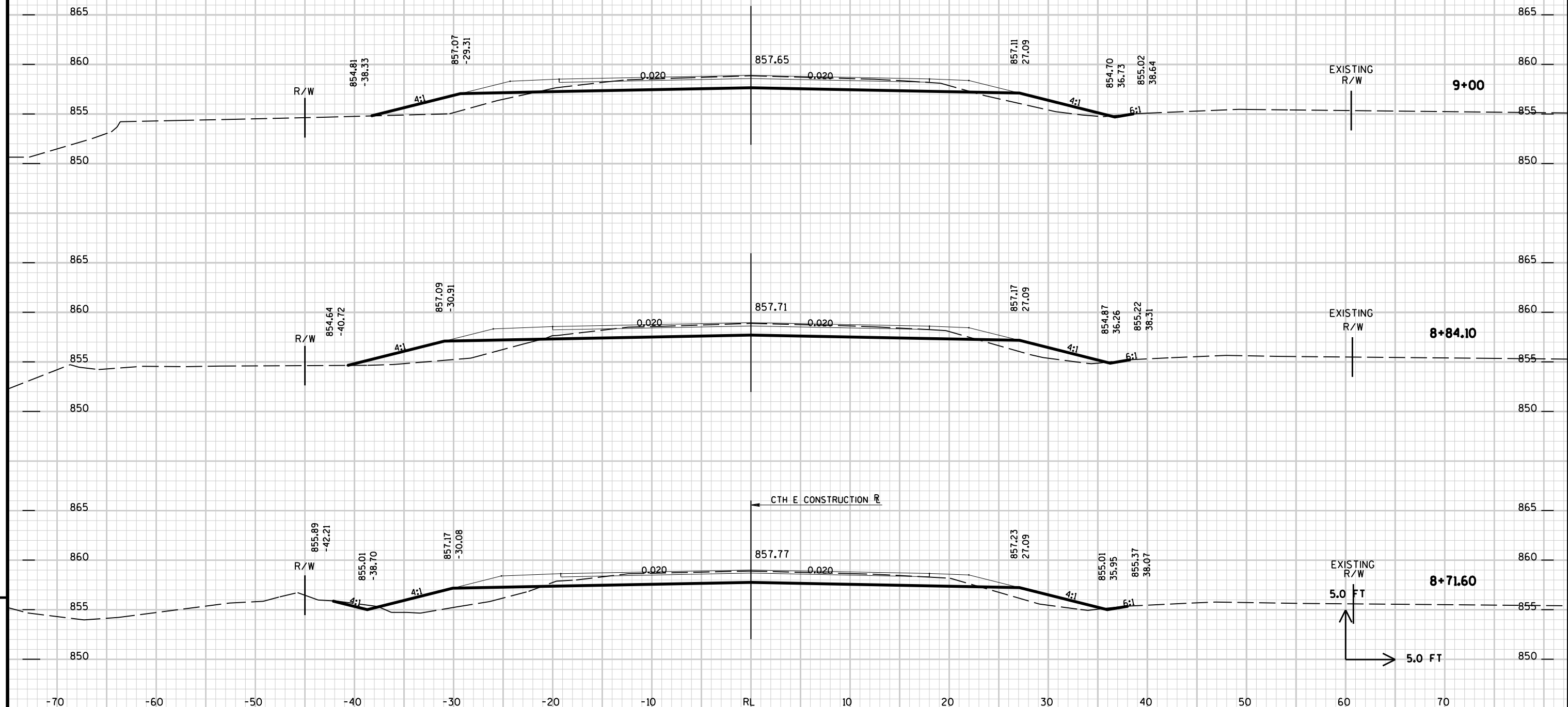
TOTALS: 0 0 14

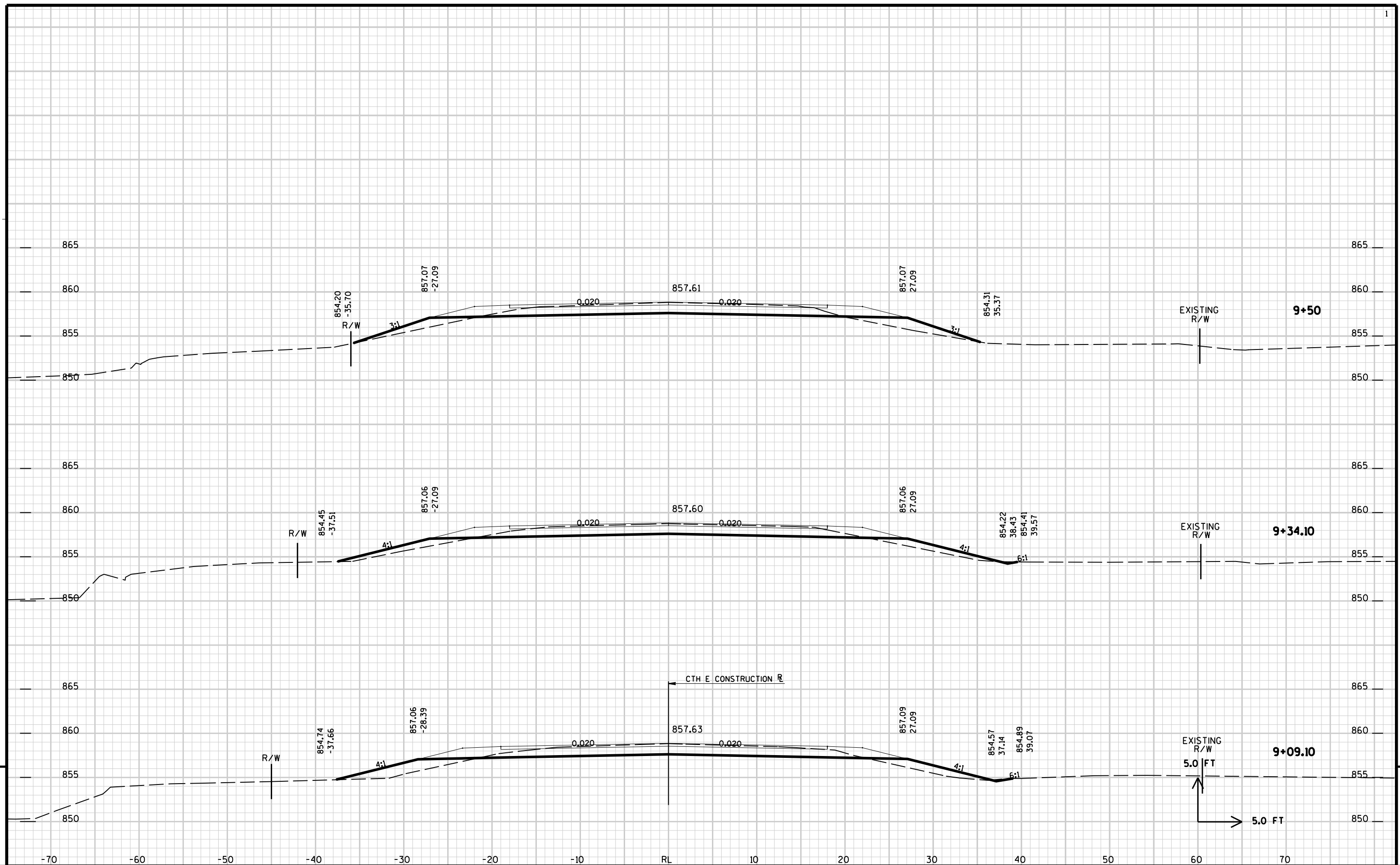
|                                |                                                         |
|--------------------------------|---------------------------------------------------------|
| 1 - Cut                        | Cut includes Unusable Pavement Material                 |
| 2 - Unusable Pavement Material | This does not show up in cross sections                 |
| 3 - Fill                       | Does not include Unusable Pavement Material Volume      |
| 8 - Mass Ordinate              | Cut - (Fill * Fill Factor) - Unusable Pavement Material |

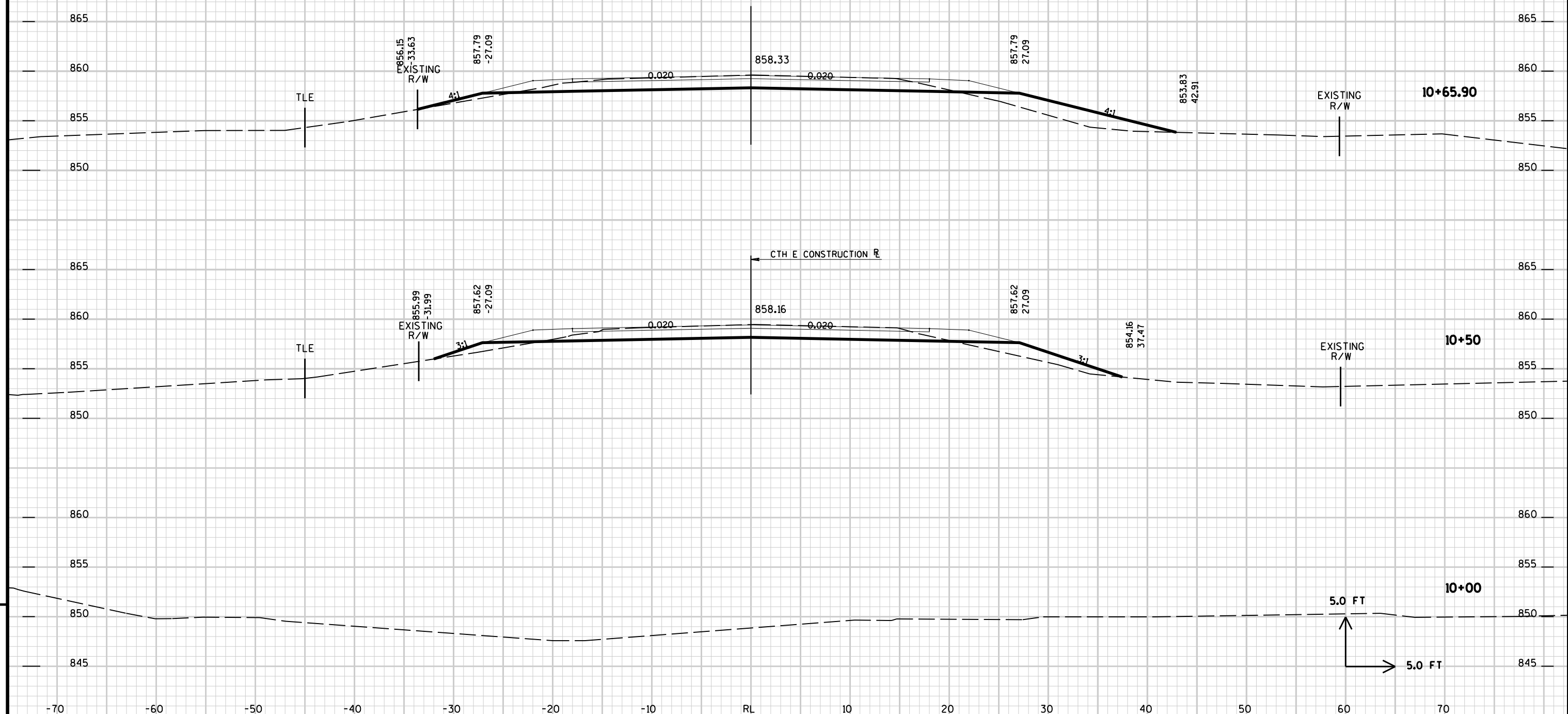






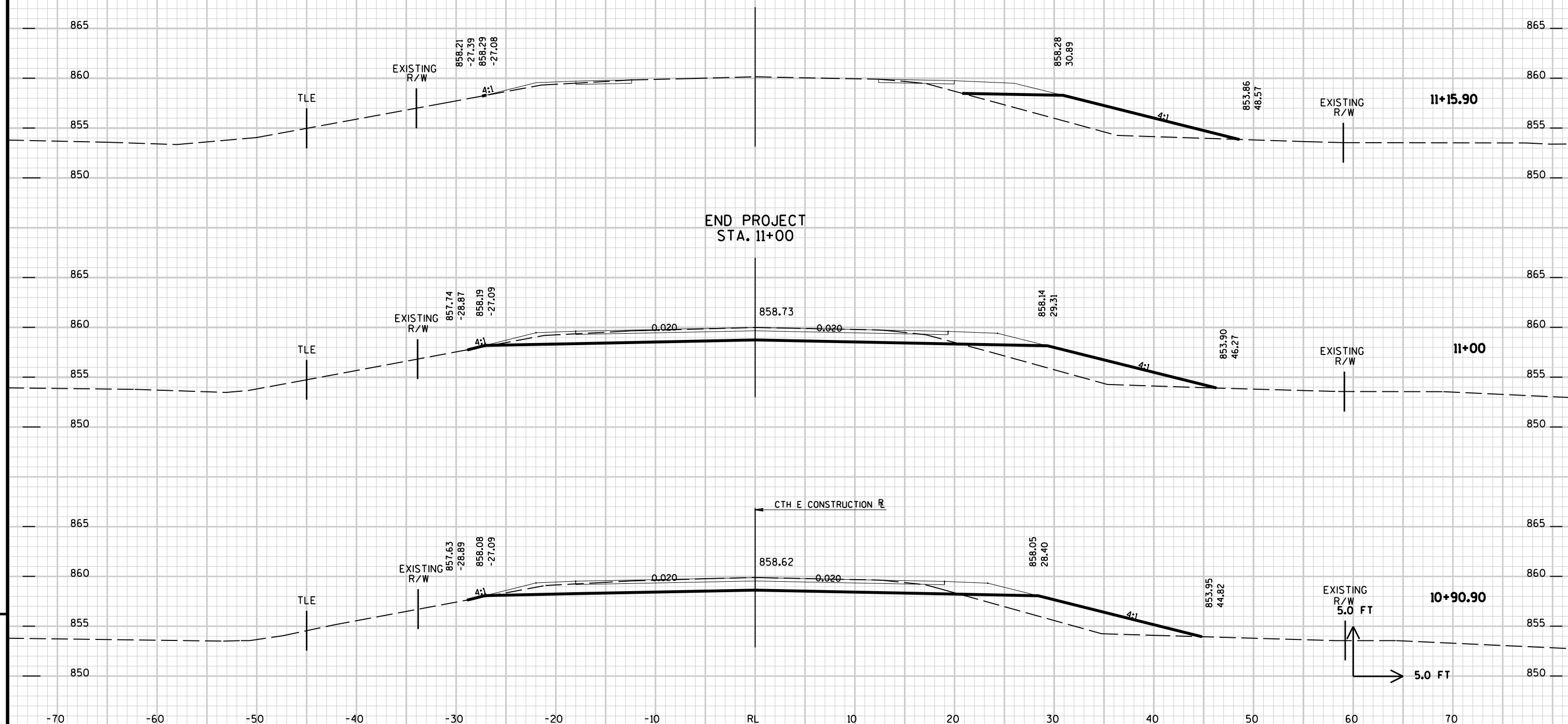






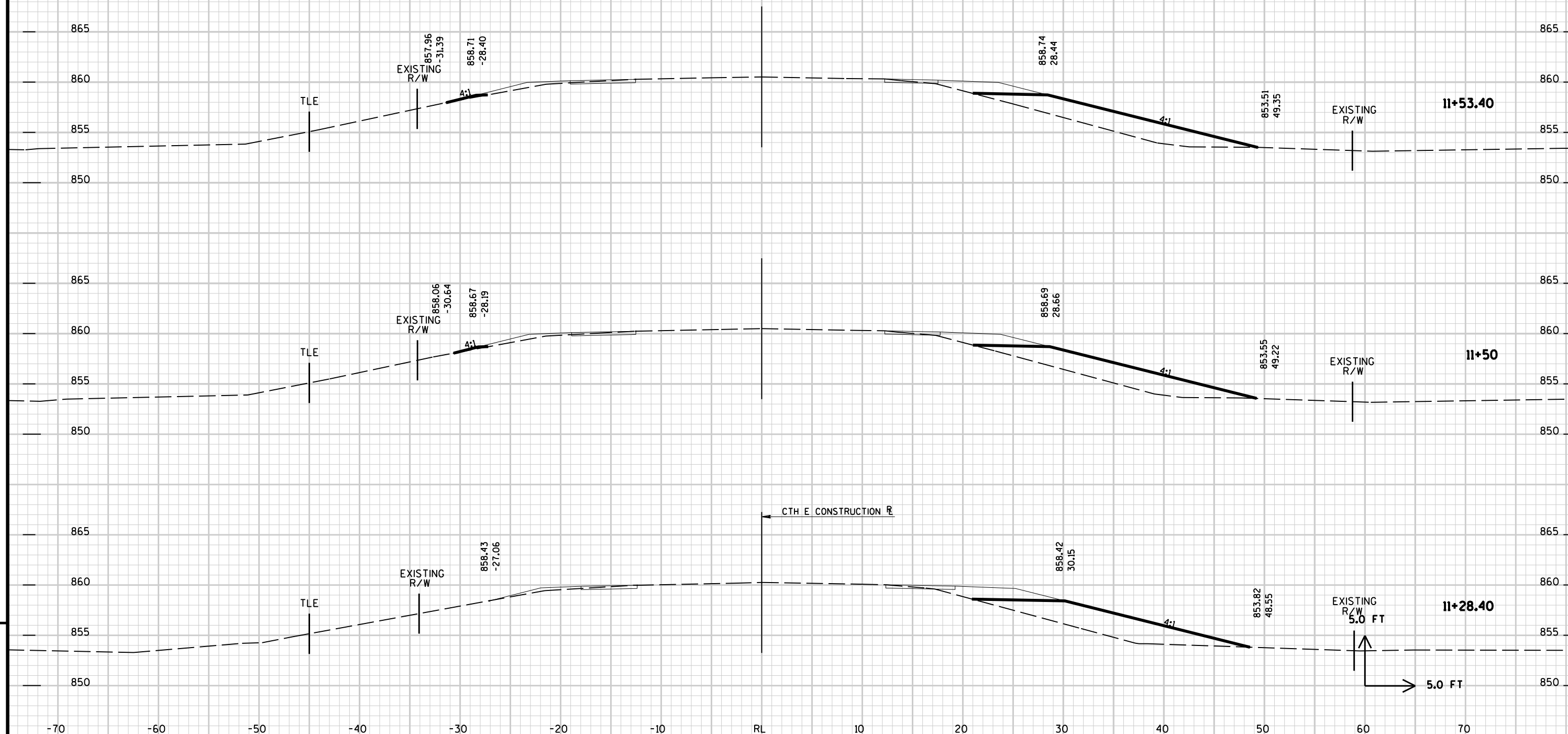
9

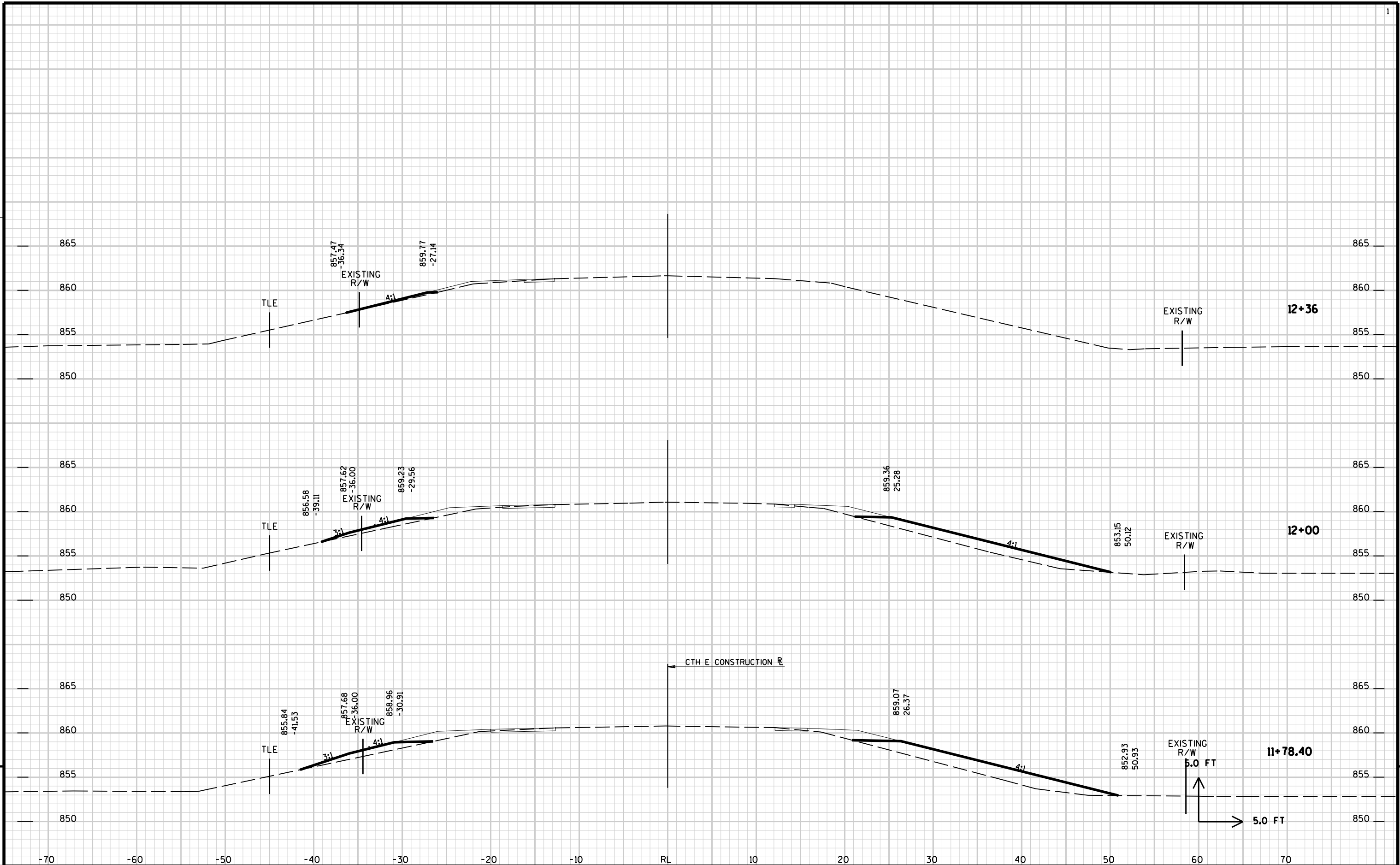
9



9

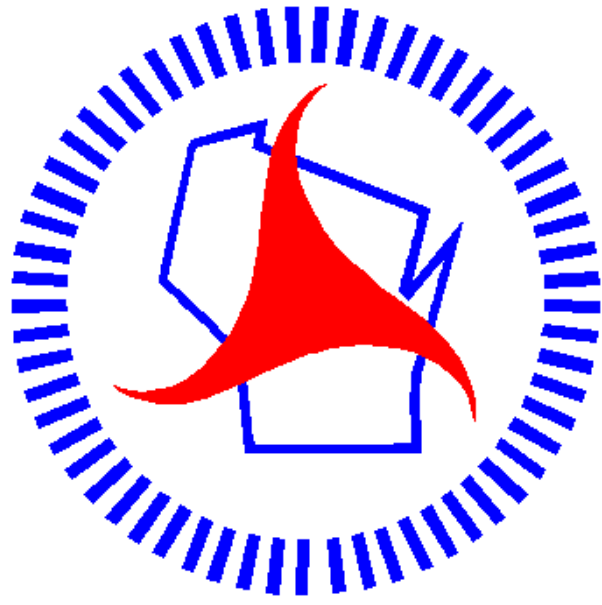
9







## Notes



## *Wisconsin Department of Transportation*

Dedicated people creating transportation solutions  
through innovation and exceptional service.

<http://www.dot.wisconsin.gov>