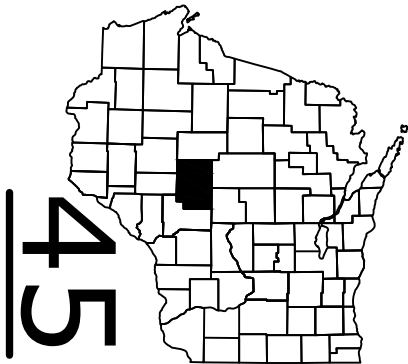


DECEMBER 2025  
ORDER OF SHEETS

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

TOTAL SHEETS = 62



DESIGN DESIGNATION 8880-05-06

|              |      |   |        |
|--------------|------|---|--------|
| A.A.D.T.     | 2026 | = | 590    |
| A.A.D.T.     | 2046 | = | 644    |
| D.H.V.       |      | = | 85     |
| D.D.         |      | = | 62/38  |
| T.           |      | = | 7.7%   |
| DESIGN SPEED |      | = | 50 MPH |
| ESALS        |      | = | 81,000 |

CONVENTIONAL SYMBOLS

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

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

CTH E - DORCHESTER

BR N FORK POPPLE RVR BR B-10-0261

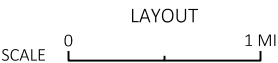
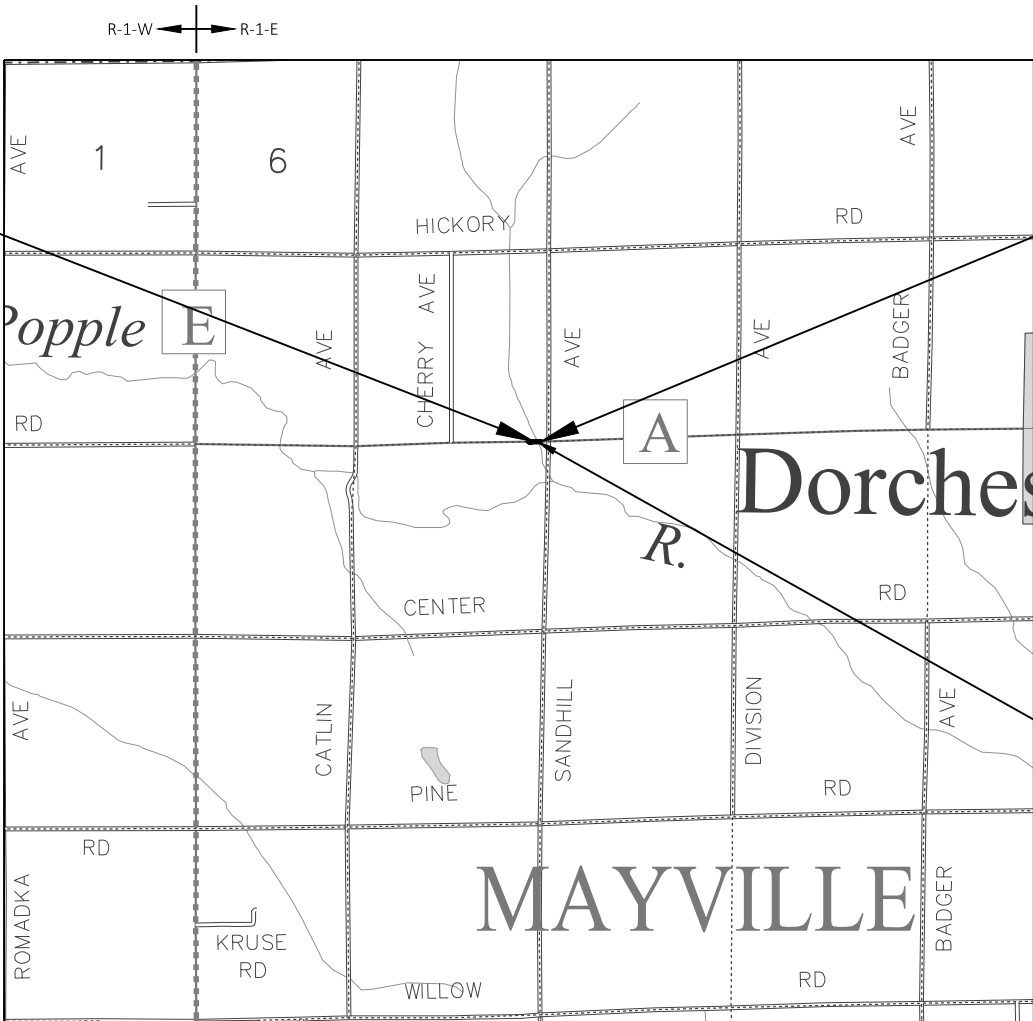
CTH A  
CLARK COUNTY

|                      |
|----------------------|
| STATE PROJECT NUMBER |
| 8880-05-76           |

BEGIN PROJECT  
STA 12+73.73  
Y: 511 359.036  
X: 736 295.487

END PROJECT  
STA 14+26.27

STRUCTURE B-10-0261  
STA 13+50



TOTAL NET LENGTH OF CENTERLINE = 0.064 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), CLARK COUNTY, NAD83 ( 2011 ), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES.

ELEVATIONS ARE REFERENCED TO NAVD 88 ( 2012 ). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 18.

| STATE PROJECT | FEDERAL PROJECT |          |
|---------------|-----------------|----------|
|               | PROJECT         | CONTRACT |
| 8880-05-76    | WISC 2026091    | 1        |
|               |                 |          |
|               |                 |          |

ACCEPTED FOR  
CLARK COUNTY  
  
Date: 2025.07.09 14:04:37 -05'00'  
(Signature and Title of Official)

ORIGINAL PLANS PREPARED BY  
  
Associated Engineers, Inc.  
619 EAST HOXIE STREET  
P.O. BOX 429  
SPRING GREEN, WISCONSIN 53588  
PHONE (608) 588-7866  
FAX (608) 588-7954

DATE: 7/19/25   
(Professional Engineer Signature)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PREPARED BY  
Surveyor: WESTBROOK ASSOCIATED ENGINEERS, INC.  
Designer: WESTBROOK ASSOCIATED ENGINEERS, INC.  
Project Manager: TOU YANG, P.E.  
Regional Examiner: NW REGION  
Regional Supervisor: TOU YANG, P.E.

APPROVED FOR THE DEPARTMENT  
DATE: 7/23/2025   
(Signature)

E

| STANDARD ABBREVIATIONS |                              |           |                                |
|------------------------|------------------------------|-----------|--------------------------------|
| ABUT                   | ABUTMENT                     | NOM       | NOMINAL                        |
| AC                     | ACRE                         | NC        | NORMAL CROWN                   |
| AGG                    | AGGREGATE                    | NB        | NORTHBOUND                     |
| AH                     | AHEAD                        | NO        | NUMBER                         |
| ∠                      | ANGLE                        | PAVT      | PAVEMENT                       |
| AADT                   | ANNUAL AVERAGE DAILY TRAFFIC | PLE       | PERMANENT LIMITED EASEMENT     |
| AEW                    | APRON ENDWALL                | PC        | POINT OF CURVATURE             |
| ASPH                   | ASPHALTIC                    | PI        | POINT OF INTERSECTION          |
| BK                     | BACK                         | PT        | POINT OF TANGENCY              |
| BAD                    | BASE AGGREGATE DENSE         | PCC       | PORTLAND CEMENT CONCRETE       |
| BL OR B/L              | BASE LINE                    | LB        | POUND                          |
| BM                     | BENCH MARK                   | PSI       | POUNDS PER SQUARE INCH         |
| CL OR C/L              | CENTER LINE                  | PE        | PRIVATE ENTRANCE               |
| Δ                      | CENTRAL ANGLE OR DELTA       | PROJ      | PROJECT                        |
| CE                     | COMMERCIAL ENTRANCE          | PL        | PROPERTY LINE                  |
| CONC                   | CONCRETE                     | PRW       | PROPOSED RIGHT OF WAY          |
| CONST                  | CONSTRUCTION                 | R         | RADIUS                         |
| CP                     | CONTROL POINT                | RL OR R/L | REFERENCE LINE                 |
| CO                     | COUNTY                       | REQD      | REQUIRED                       |
| CTH                    | COUNTY TRUCK HIGHWAY         | RT        | RIGHT                          |
| CY                     | CUBIC YARD                   | RHF       | RIGHT HAND FORWARD             |
| CP                     | CULVERT PIPE                 | R/W       | RIGHT OF WAY                   |
| EAT                    | ENERGY ABSORBING TERMINAL    | RD        | ROAD                           |
| ESALS                  | EQUIVALENT SINGLE AXLE LOADS | RDWY      | ROADWAY                        |
| EXC                    | EXCAVATION                   | SHLDR     | SHOULDER                       |
| EBS                    | EXCAVATION BELOW SUBGRADE    | SW        | SIDEWALK                       |
| EXIST                  | EXISTING                     | SB        | SOUTHBOUND                     |
| FERT                   | FERTILIZER                   | SPECS     | SPECIFICATIONS                 |
| FE                     | FIELD ENTRANCE               | SF        | SQUARE FEET                    |
| FL OR F/L              | FLOW LINE                    | SY        | SQUARE YARD                    |
| FT                     | FOOT                         | SDD       | STANDARD DETAIL DRAWINGS       |
| HES                    | HIGH EARLY STRENGTH          | STH       | STATE TRUNK HIGHWAY            |
| HE                     | HIGHWAY EASEMENT             | STA       | STATION                        |
| CWT                    | HUNDRED WEIGHT               | SE        | SUPERELEVATION                 |
| IN DIA                 | INCH DIAMETER                | SL OR S/L | SURVEY LINE                    |
| ID                     | INSIDE DIAMETER              | TEMP      | TEMPORARY                      |
| INTERS                 | INTERSECTION                 | TI        | TEMPORARY INTEREST             |
| IH                     | INTERSTATE HIGHWAY           | TLE       | TEMPORARY LIMITED EASEMENT     |
| INV                    | INVERT                       | T         | TRUCKS (PERCENT OF)            |
| JT                     | JOINT                        | TYP       | TYPICAL                        |
| LT                     | LEFT                         | USH       | UNITED STATES HIGHWAY          |
| LHF                    | LEFT HAND FORWARD            | VAR       | VARIABLE                       |
| L                      | LENGTH OF CURVE              | VC        | VERTICAL CURVE                 |
| LF                     | LINEAR FOOT                  | VPC       | VERTICAL POINT OF CURVATURE    |
| LC                     | LONG CHORD OF CURVE          | VPI       | VERTICAL POINT OF INTERSECTION |
| LS                     | LUMP SUM                     | VPT       | VERTICAL POINT OF TANGENCY     |
| MGAL                   | ONE THOUSAND GALLONS         | W         | WEST                           |
| ML OR M/L              | MATCH LINE                   | WB        | WESTBOUND                      |

WISCONSIN DNR LIAISON

BRAD BETTHAUSER  
CENTRAL REGION  
910 HWY 54 E  
BLACK RIVER FALLS, WI 54615  
PHONE: 715-213-9064  
EMAIL: BRADLEY.BETTHAUSER@WISCONSIN.GOV

WISDOT PROJECT MANAGER

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COUNTY HIGHWAY COMMISSIONER

BRIAN DUELL  
CLARK COUNTY HIGHWAY DEPARTMENT  
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LOYAL, WI 54446  
PHONE: 715-743-3680  
EMAIL: BRIAN.DUELL@CO.CLARK.WI.US

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EMAIL: APALMER@WESTBROOKENG.COM

UTILITIES CONTACTS

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ELECTRIC  
WADE MATYKA  
N1831 STATE HWY 13  
MEDFORD, WI 54451  
PHONE: 715-678-6204  
EMAIL: WADE@TAYLORELECTRIC.ORG

TDS TELECOMMUNICATIONS, LLC  
COMMUNICATIONS  
NATE ANDERSON  
525 JUNCTION ROAD  
MADISON, WI 53717  
PHONE: 715-965-0661  
EMAIL: NATE.ANDERSON@TDSTELECOM.COM



RUNOFF COEFFICIENT TABLE

| LAND USE:                | HYDROLOGIC SOIL GROUP |     |          |                       |     |          |                       |     |          |                       |     |          |
|--------------------------|-----------------------|-----|----------|-----------------------|-----|----------|-----------------------|-----|----------|-----------------------|-----|----------|
|                          | A                     |     |          | B                     |     |          | C                     |     |          | D                     |     |          |
|                          | SLOPE RANGE (PERCENT) |     |          | SLOPE RANGE (PERCENT) |     |          | SLOPE RANGE (PERCENT) |     |          | SLOPE RANGE (PERCENT) |     |          |
|                          | 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                   | .16 | .22      | .12                   | .20 | .27      | .15                   | .24 | .33      | .19                   | .28 | .38      |
|                          | .22                   | .30 | .38      | .26                   | .34 | .44      | .30                   | .37 | .50      | .34                   | .41 | .56      |
| MEDIAN STRIPTURF:        | .19                   | .20 | .24      | .19                   | .22 | .26      | .20                   | .23 | .30      | .20                   | .25 | .30      |
|                          | .24                   | .26 | .30      | .25                   | .28 | .33      | .26                   | .30 | .37      | .27                   | .32 | .40      |
| SIDE SLOPETURF:          |                       |     | .25      |                       |     | .27      |                       |     | .28      |                       |     | .30      |
|                          |                       |     | .32      |                       |     | .34      |                       |     | .36      |                       |     | .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 = 0.585 ACRES  
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.345 ACRES

ORDER OF SECTION 2 DETAIL SHEETS

- GENERAL NOTES
- TYPICAL SECTIONS
- BEAM GUARD DETAILS
- PERMANENT SIGNING AND MARKING
- ALIGNMENT DETAILS AND CONTROL POINTS

GENERAL NOTES

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

THE CONTRACTOR WILL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY OPERATIONS, OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS.

HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 112 LBS/SY/IN.

APPLY TACK COAT BETWEEN LAYERS OF HMA PAVEMENT AT A RATE OF 0.05 GAL/SY.

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

RIGHT OF WAY INFORMATION SHOWN ON THE PLANS IS APPROXIMATE.

THE CONTRACTOR IS TO WORK WITH UTMOST CARE AND PROTECT ALL SURVEY MARKERS. REMOVAL OF ANY SURVEY MARKER IS TO BE WITH THE APPROVAL OF THE ENGINEER.

WHEN THE QUANTITY OF THE ITEMS OF BASE AGGREGATE, SUBBASE OR HMA PAVEMENT IS MEASURED FOR PAYMENT BY THE TON OR CUBIC YARD, THE DEPTH OR THICKNESS OF THE LAYERS SHOWN ON THE PLAN IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL PREPARE AN EROSION CONTROL IMPLEMENTATION PLAN (ECIP) AND SUBMIT THE PLAN TO WISDOT AND WDNR FOR REVIEW AT LEAST 14 DAYS PRIOR TO THE PRECONSTRUCTION CONFERENCES.

EROSION CONTROL FEATURES AS SHOWN IN THE PLANS ARE AT APPROXIMATE LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE CONTRACTOR’S ECIP AND APPROVED BY THE ENGINEER. MAINTAIN EROSION CONTROL MEASURES UNTIL SUCH A TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY.

APPLY SEED, EROSION MAT, AND FERTILIZER TO ALL DISTURBED AREAS WITHIN 7 WORKING DAYS AFTER GRADING WORK IS COMPLETED.

BIODEGRADABLE NON-NETTED MATTING SHALL BE USED ALONG STREAM CORRIDORS.

REMOVAL OF ASPHALTIC SURFACES WHERE AN ABUTTING ASPHALTIC SURFACE IS TO REMAIN IN PLACE SHALL REQUIRE A SAW CUT MEETING THE APPROVAL OF THE ENGINEER IN THE FIELD.

THE PROPOSED SHOULDER WIDTH SHOWN IN THE TYPICAL SECTIONS ARE MINIMUM WIDTH. PERPETUATE EXISTING SHOULDERS THAT ARE WIDER THAN WHAT IS SHOWN IN THE TYPICAL SECTIONS.

THE CONTRACTOR’S PAVING OPERATION SHALL BE CONSISTENT WITH THE TYPICAL SECTIONS AND CONSTRUCTED TO PREVENT LONGITUDINAL JOINTS FROM BEING LOCATED WITHIN A DRIVING, TURNING, PASSING, OR PARKING LANE.

THE 5-INCH ASPHALTIC SURFACE SHALL BE CONSTRUCTED USING ONE (1) 3-INCH LOWER LAYER AND ONE (1) 2-INCH UPPER LAYER. THE PREFERRED LOWER LAYER IS 3-INCHES OF 3 LT 58-28 S. THE PREFERRED UPPER LAYER IS 2-INCHES OF 4 LT 58-28 S.

THE 2-INCH ASPHALTIC SURFACE OVERLAY SHALL BE CONSTRUCTED USING ONE (1) 2-INCH LAYER. THE PREFERRED LAYER IS 2-INCHES OF 4 LT 58-28 S.

SAWCUTS, AS SHOWN ON THE PLANS, ARE SUGGESTED LOCATIONS AND MAY BE ADJUSTED AT THE DISCRETION OF THE ENGINEER TO BETTER SUIT FIELD CONDITIONS.

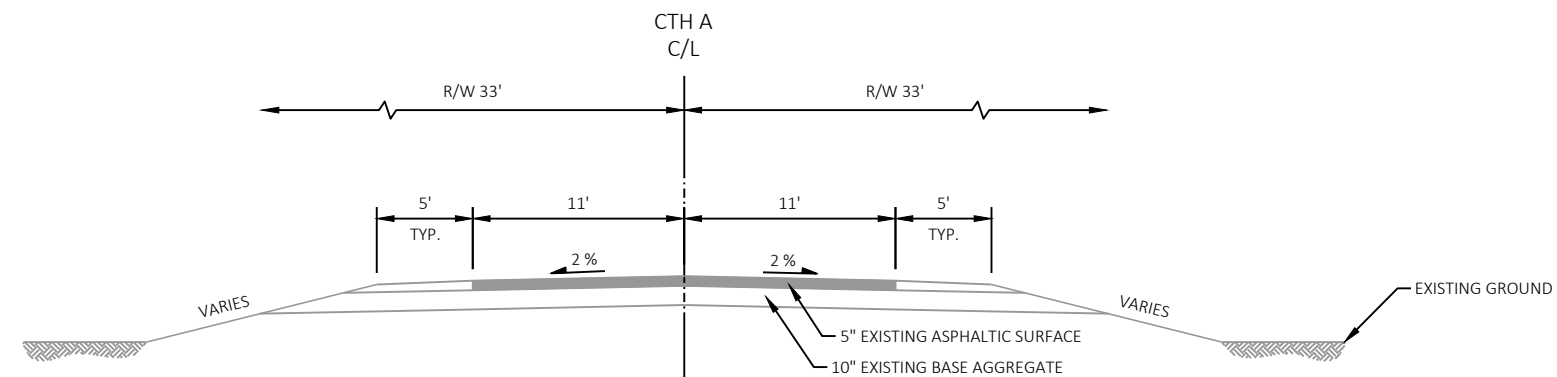
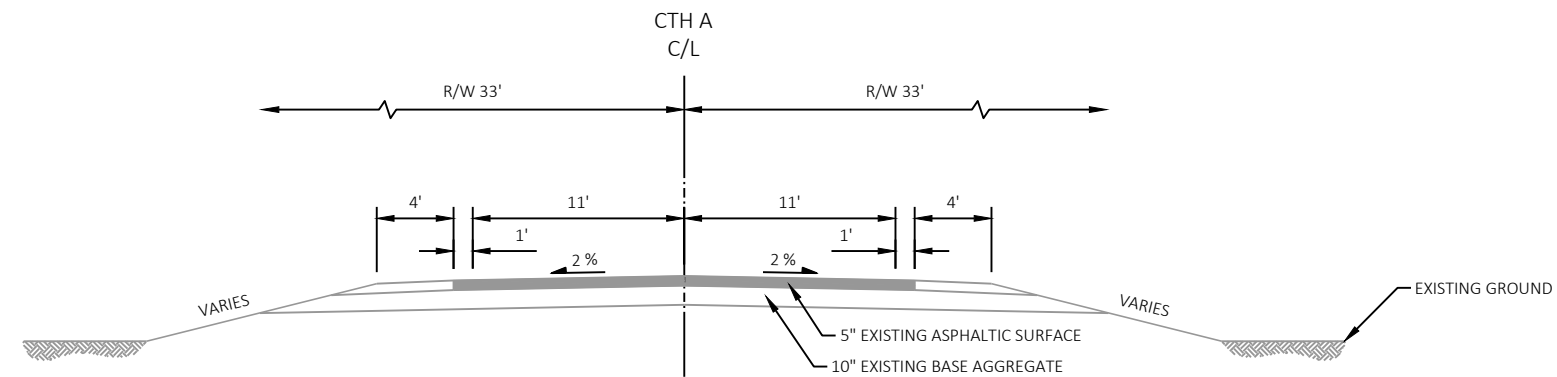
PRIOR TO PLACEMENT OF BEAM GUARD, THE SHOULDERS SHALL BE IN PLACE, SHAPED AND COMPACTED.

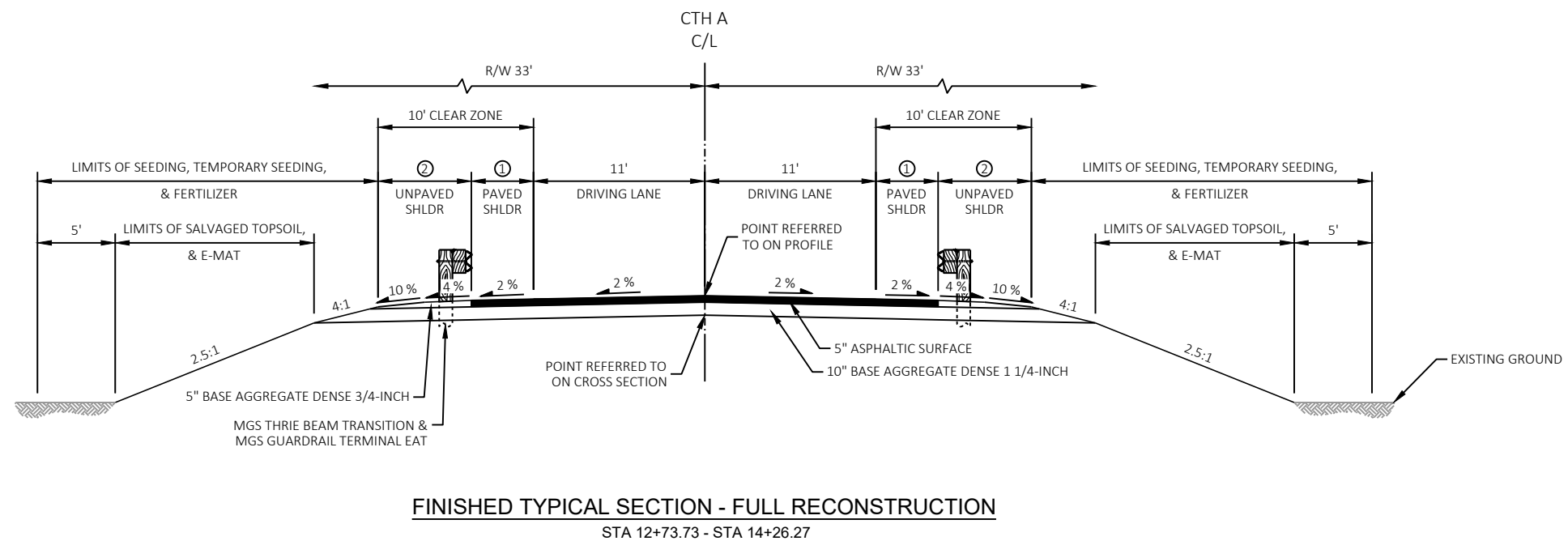
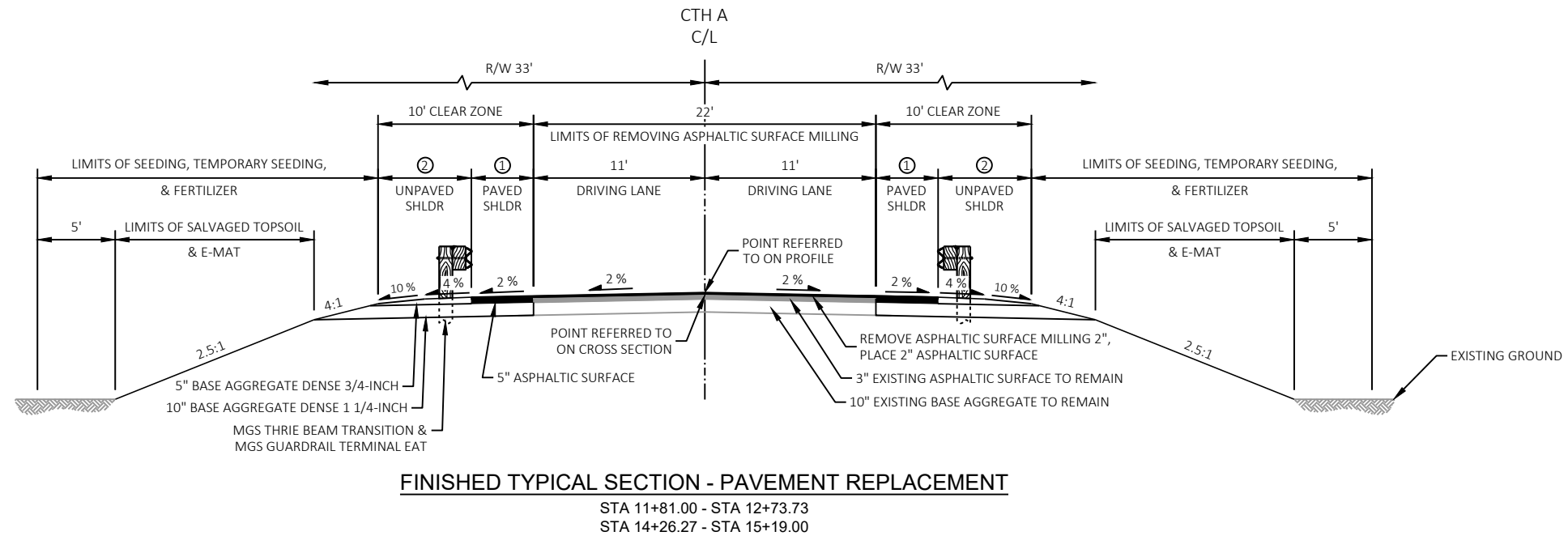
THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVEWAYS AT ALL TIMES EXCEPT WHEN PAVING OPERATIONS REQUIRE THE DRIVEWAY TO BE CLOSED. ACCESS TO DRIVEWAYS SHALL BE RE-ESTABLISHED IMMEDIATELY AFTER OPERATIONS ARE COMPLETED. ACCESS SHALL BE PROVIDED DURING ALL NON-WORKING HOURS.

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

DO NOT DRIVE OR STORE EQUIPMENT, OR STORE CONSTRUCTION MATERIALS IN ENVIRONMENTALLY SENSITIVE AREAS, WETLANDS OR WATERWAYS.

ADJUST DITCH GRADING AS NECESSARY TO FIELD CONDITIONS AND AS DIRECTED BY THE ENGINEER IN THE FIELD.





- ① PAVE TO FRONT FACE OF BEAM GUARD.  
VARIES 4' TO 6' WITH EAT TAPER.
- ② VARIES FROM 4' TO 5'11" WITH BEAM  
GUARD TAPER.

PROJECT NO: 8880-05-76

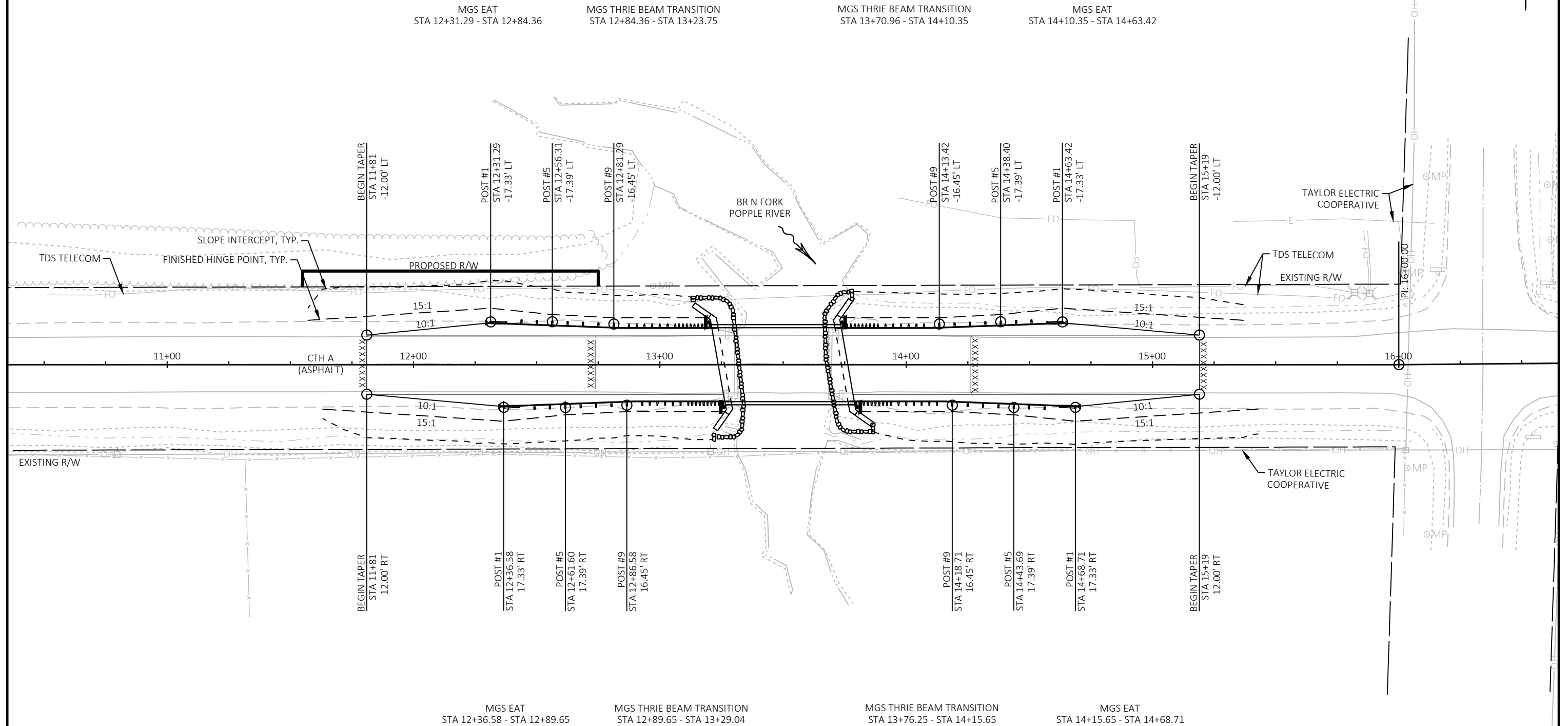
HWY: CTH A

COUNTY: CLARK

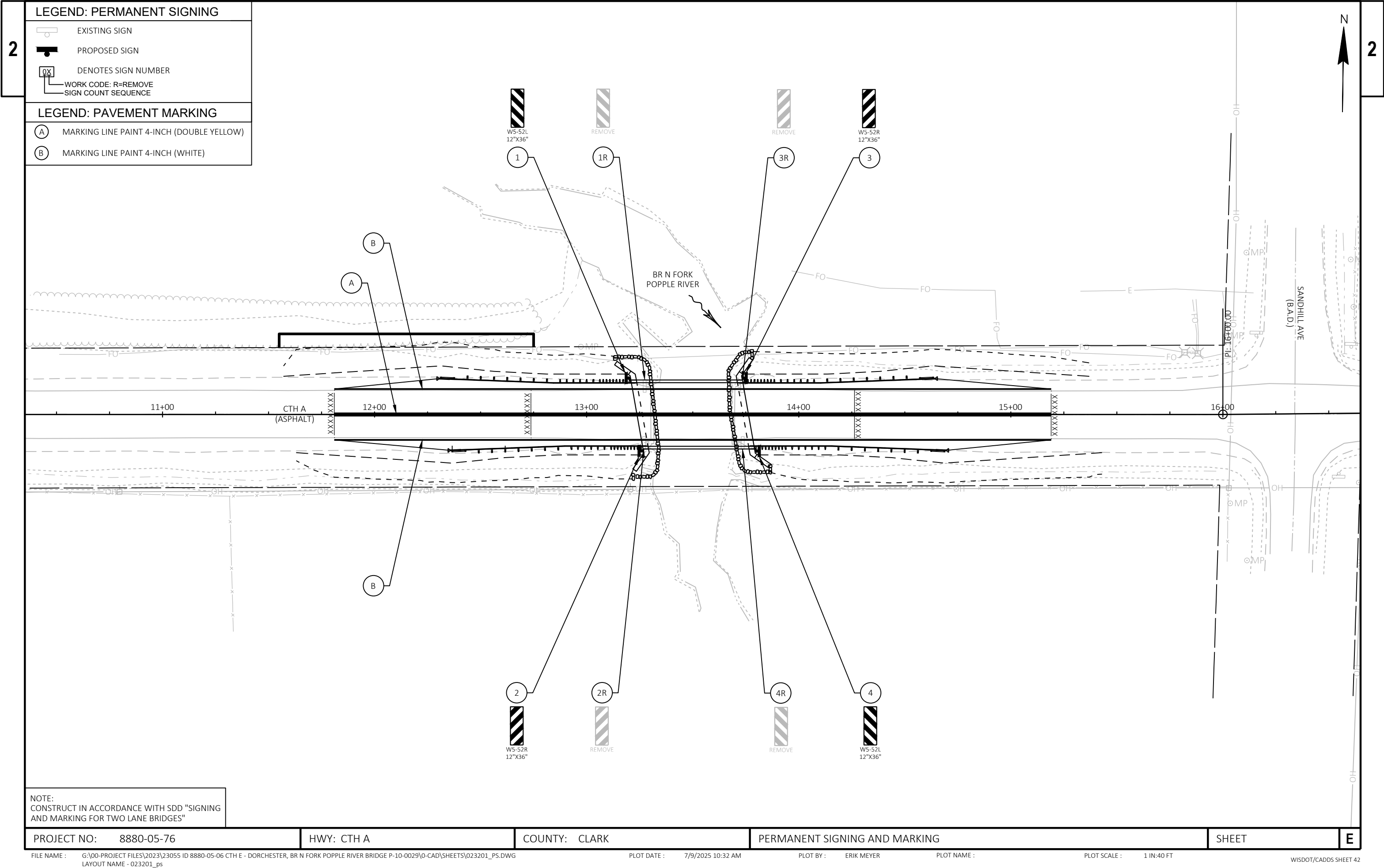
TYPICAL SECTIONS

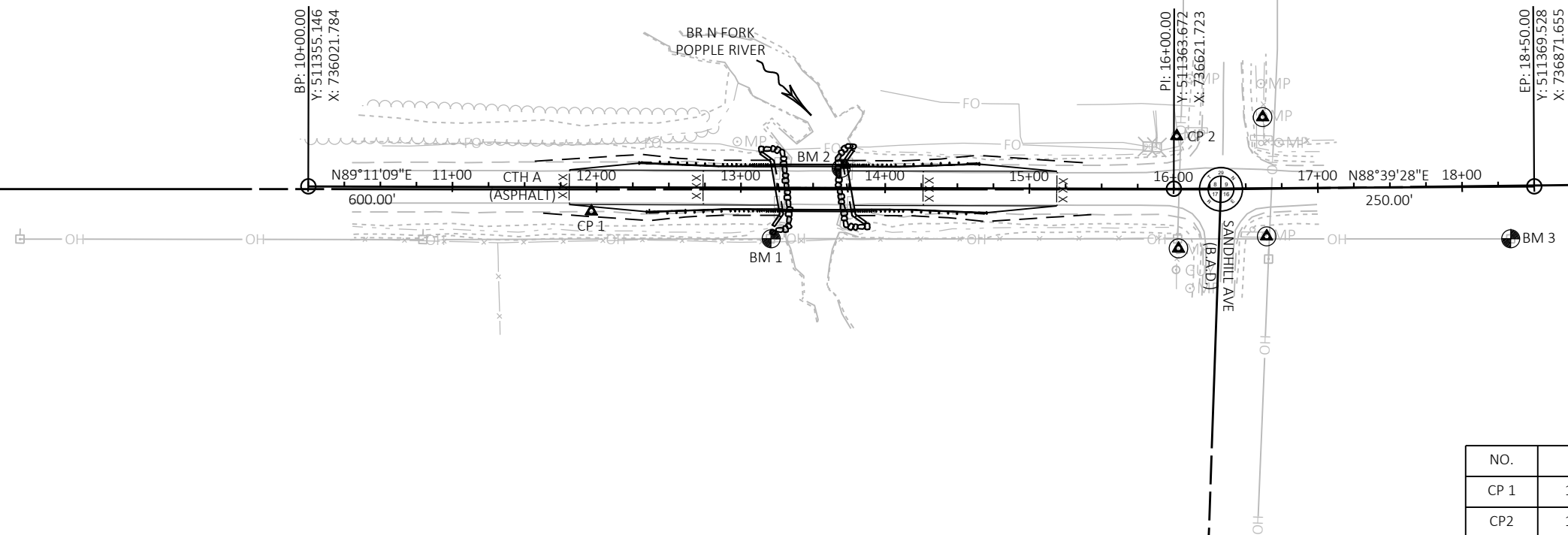
SHEET

E

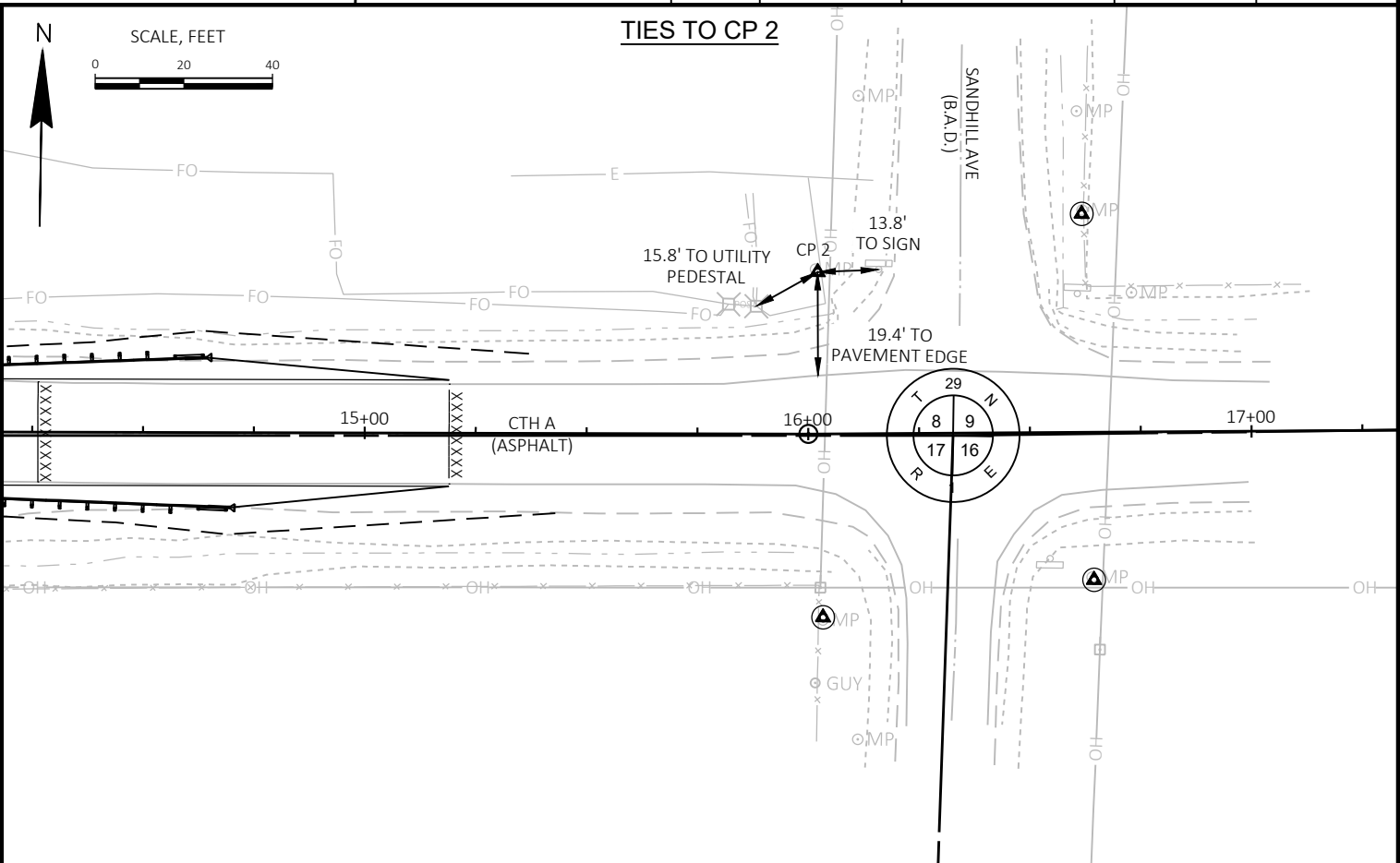


|                        |            |               |                    |       |   |
|------------------------|------------|---------------|--------------------|-------|---|
| PROJECT NO: 8880-05-76 | HWY: CTH A | COUNTY: CLARK | BEAM GUARD DETAILS | SHEET | E |
|------------------------|------------|---------------|--------------------|-------|---|





| <u>CONTROL POINTS</u> |          |                      |             |             |
|-----------------------|----------|----------------------|-------------|-------------|
| NO.                   | STATION  | DESCRIPTION          | Y           | X           |
| CP 1                  | 11+96.36 | 3/4" REBAR, 16.6' RT | 511 341.323 | 736 218.362 |
| CP2                   | 16+02.36 | 7/8" REBAR, 36.6' LT | 511 400.279 | 736 623.224 |



Estimate Of Quantities

8880-05-76

| Line | Item       | Item Description                                                          | Unit | Total      | Qty        |
|------|------------|---------------------------------------------------------------------------|------|------------|------------|
| 0002 | 203.0260   | Removing Structure Over Waterway Minimal Debris (structure) 01. P-10-29   | EACH | 1.000      | 1.000      |
| 0004 | 204.0120   | Removing Asphaltic Surface Milling                                        | SY   | 480.000    | 480.000    |
| 0006 | 205.0100   | Excavation Common                                                         | CY   | 238.000    | 238.000    |
| 0008 | 205.0508.S | Excavation, Hauling, and Disposal of Potential Creosote Contaminated Soil | TON  | 183.000    | 183.000    |
| 0010 | 206.1001   | Excavation for Structures Bridges (structure) 01. B-10-0261               | EACH | 1.000      | 1.000      |
| 0012 | 208.0100   | Borrow                                                                    | CY   | 164.000    | 164.000    |
| 0014 | 210.1500   | Backfill Structure Type A                                                 | TON  | 340.000    | 340.000    |
| 0016 | 213.0100   | Finishing Roadway (project) 01. 8880-05-76                                | EACH | 1.000      | 1.000      |
| 0018 | 305.0110   | Base Aggregate Dense 3/4-Inch                                             | TON  | 124.000    | 124.000    |
| 0020 | 305.0120   | Base Aggregate Dense 1 1/4-Inch                                           | TON  | 600.000    | 600.000    |
| 0022 | 455.0605   | Tack Coat                                                                 | GAL  | 50.000     | 50.000     |
| 0024 | 465.0105   | Asphaltic Surface                                                         | TON  | 193.000    | 193.000    |
| 0026 | 502.0100   | Concrete Masonry Bridges                                                  | CY   | 206.000    | 206.000    |
| 0028 | 502.3200   | Protective Surface Treatment                                              | SY   | 259.000    | 259.000    |
| 0030 | 505.0400   | Bar Steel Reinforcement HS Structures                                     | LB   | 4,730.000  | 4,730.000  |
| 0032 | 505.0600   | Bar Steel Reinforcement HS Coated Structures                              | LB   | 30,760.000 | 30,760.000 |
| 0034 | 513.4061   | Railing Tubular Type M                                                    | LF   | 110.000    | 110.000    |
| 0036 | 516.0500   | Rubberized Membrane Waterproofing                                         | SY   | 14.000     | 14.000     |
| 0038 | 550.0500   | Pile Points                                                               | EACH | 16.000     | 16.000     |
| 0040 | 550.1100   | Piling Steel HP 10-Inch X 42 Lb                                           | LF   | 800.000    | 800.000    |
| 0042 | 606.0300   | Riprap Heavy                                                              | CY   | 70.000     | 70.000     |
| 0044 | 612.0406   | Pipe Underdrain Wrapped 6-Inch                                            | LF   | 130.000    | 130.000    |
| 0046 | 614.2500   | MGS Thrie Beam Transition                                                 | LF   | 157.600    | 157.600    |
| 0048 | 614.2610   | MGS Guardrail Terminal EAT                                                | EACH | 4.000      | 4.000      |
| 0050 | 618.0100   | Maintenance and Repair of Haul Roads (project) 01. 8880-05-76             | EACH | 1.000      | 1.000      |
| 0052 | 619.1000   | Mobilization                                                              | EACH | 1.000      | 1.000      |
| 0054 | 624.0100   | Water                                                                     | MGAL | 7.400      | 7.400      |
| 0056 | 625.0500   | Salvaged Topsoil                                                          | SY   | 525.000    | 525.000    |
| 0058 | 628.1504   | Silt Fence                                                                | LF   | 860.000    | 860.000    |
| 0060 | 628.1520   | Silt Fence Maintenance                                                    | LF   | 1,372.000  | 1,372.000  |
| 0062 | 628.1905   | Mobilizations Erosion Control                                             | EACH | 4.000      | 4.000      |
| 0064 | 628.1910   | Mobilizations Emergency Erosion Control                                   | EACH | 3.000      | 3.000      |
| 0066 | 628.2008   | Erosion Mat Urban Class I Type B                                          | SY   | 525.000    | 525.000    |
| 0068 | 628.6005   | Turbidity Barriers                                                        | SY   | 160.000    | 160.000    |
| 0070 | 629.0210   | Fertilizer Type B                                                         | CWT  | 0.750      | 0.750      |
| 0072 | 630.0130   | Seeding Mixture No. 30                                                    | LB   | 55.000     | 55.000     |
| 0074 | 630.0200   | Seeding Temporary                                                         | LB   | 35.000     | 35.000     |
| 0076 | 630.0500   | Seed Water                                                                | MGAL | 26.000     | 26.000     |
| 0078 | 634.0612   | Posts Wood 4x6-Inch X 12-FT                                               | EACH | 4.000      | 4.000      |
| 0080 | 637.2230   | Signs Type II Reflective F                                                | SF   | 12.000     | 12.000     |
| 0082 | 638.2602   | Removing Signs Type II                                                    | EACH | 4.000      | 4.000      |
| 0084 | 638.3000   | Removing Small Sign Supports                                              | EACH | 4.000      | 4.000      |
| 0086 | 642.5001   | Field Office Type B                                                       | EACH | 1.000      | 1.000      |
| 0088 | 643.0420   | Traffic Control Barricades Type III                                       | DAY  | 1,475.000  | 1,475.000  |
| 0090 | 643.0705   | Traffic Control Warning Lights Type A                                     | DAY  | 2,655.000  | 2,655.000  |
| 0092 | 643.0900   | Traffic Control Signs                                                     | DAY  | 885.000    | 885.000    |
| 0094 | 643.5000   | Traffic Control                                                           | EACH | 1.000      | 1.000      |
| 0096 | 645.0111   | Geotextile Type DF Schedule A                                             | SY   | 72.000     | 72.000     |
| 0098 | 645.0120   | Geotextile Type HR                                                        | SY   | 155.000    | 155.000    |

Estimate Of Quantities

8880-05-76

| Line | Item       | Item Description                                                   | Unit | Total     | Qty       |
|------|------------|--------------------------------------------------------------------|------|-----------|-----------|
| 0100 | 646.1005   | Marking Line Paint 4-Inch                                          | LF   | 1,352.000 | 1,352.000 |
| 0102 | 650.4500   | Construction Staking Subgrade                                      | LF   | 334.000   | 334.000   |
| 0104 | 650.5000   | Construction Staking Base                                          | LF   | 334.000   | 334.000   |
| 0106 | 650.6501   | Construction Staking Structure Layout (structure) 01. B-10-0261    | EACH | 1.000     | 1.000     |
| 0108 | 650.9911   | Construction Staking Supplemental Control (project) 01. 8880-05-76 | EACH | 1.000     | 1.000     |
| 0110 | 650.9920   | Construction Staking Slope Stakes                                  | LF   | 334.000   | 334.000   |
| 0112 | 690.0150   | Sawing Asphalt                                                     | LF   | 92.000    | 92.000    |
| 0114 | 715.0502   | Incentive Strength Concrete Structures                             | DOL  | 1,236.000 | 1,236.000 |
| 0116 | 999.2005.S | Maintaining Bird Deterrent System (station) 01. 13+50              | EACH | 1.000     | 1.000     |
| 0118 | ASP.1T0A   | On-the-Job Training Apprentice at \$5.00/HR                        | HRS  | 300.000   | 300.000   |
| 0120 | ASP.1T0G   | On-the-Job Training Graduate at \$5.00/HR                          | HRS  | 300.000   | 300.000   |

NOTE: ALL ITEMS CATEGORY 0010 UNLESS NOTED OTHERWISE

## REMOVING ASPHALTIC SURFACE MILLING

|          |    |          |               |          |
|----------|----|----------|---------------|----------|
|          |    |          |               | 204,0120 |
| STATION  | TO | STATION  | LOCATION      | SY       |
| 11+81.00 | -  | 12+73.73 | WEST APPROACH | 240      |
| 14+26.27 | -  | 15+19.00 | EAST APPROACH | 240      |
|          |    |          | TOTAL         | 480      |

## EXCAVATION, HAULING, AND DISPOSAL OF POTENTIAL CREOSOTE CONTAMINATED SOIL

|               |            |
|---------------|------------|
|               | 205.0508.S |
| LOCATION      | TON        |
| WEST ABUTMENT | 91         |
| EAST ABUTMENT | 92         |
| TOTAL         | 183        |

## EARTHWORK

| DIVISION      | FROM/TO<br>STATION | 205.0100<br>COMMON<br>EXCAVATION<br>(1) | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL<br>(3) | AVAILABLE<br>MATERIAL<br>(4) | UNEXPANDED<br>FILL | EXPANDED FILL<br>(5) | MASS ORDINATE +/-<br>(6) | WASTE<br>(7) | 208.0100<br>BORROW |
|---------------|--------------------|-----------------------------------------|-----------------------------------------------|------------------------------|--------------------|----------------------|--------------------------|--------------|--------------------|
|               |                    | CUT<br>(2)                              |                                               |                              |                    | FACTOR<br>1.25       |                          |              |                    |
| WEST APPROACH | 11+57.00/13+21.79  | 116                                     | 59                                            | 57                           | 83                 | 104                  | -47                      |              |                    |
| EAST APPROACH | 13+78.21/15+43.00  | 122                                     | 60                                            | 62                           | 143                | 179                  | -117                     |              |                    |
| SUBTOTAL      |                    | 238                                     | 119                                           | 119                          | 226                | 283                  | -164                     | 0            | 164                |
| GRAND TOTAL   |                    | 238                                     | 119                                           | 119                          | 226                | 283                  | -164                     | 0            | 164                |

NOTES:

(1) EXCAVATION COMMON IS THE SUM OF THE CUT.

(2) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.

(3) SALVAGED/UNUSABLE PAVEMENT MATERIAL CONSISTS OF EXISTING ASPHALTIC PAVEMENT.

(4) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE PAVEMENT MATERIAL

(5) EXPANDED FILL FACTOR = 1.25, EXPANDED FILL = UNEXPANDED FILL \* FILL FACTOR

(6) 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.

(7) FACTORS USED TO COMPUTE ANTICIPATED WASTE AND THE COMPUTED WASTE VOLUME IDENTIFIED ARE FOR GENERAL INFORMATION ONLY.

## BASE AGGREGATE DENSE

|         |    |         |               | 305.0110<br>BASE<br>AGGREGATE<br>DENSE<br>3/4-INCH | 305.0120<br>BASE<br>AGGREGATE<br>DENSE<br>1 1/4-INCH | 624.0100<br><br><br><br>WATER |
|---------|----|---------|---------------|----------------------------------------------------|------------------------------------------------------|-------------------------------|
| STATION | TO | STATION | LOCATION      | TON                                                | TON                                                  | M GAL                         |
| 11+81   | -  | 13+24   | WEST APPROACH | 62                                                 | 300                                                  | 3.7                           |
| 13+76   | -  | 15+19   | EAST APPROACH | 62                                                 | 300                                                  | 3.7                           |
| TOTAL   |    |         |               | 124                                                | 600                                                  | 7.4                           |

ASPHALTIC SURFACE

|          |    |          |               |                  |                          |
|----------|----|----------|---------------|------------------|--------------------------|
|          |    |          |               | 455.0605         | 465.0105                 |
| STATION  | TO | STATION  | LOCATION      | TACK COAT<br>GAL | ASPHALTIC SURFACE<br>TON |
| 11+81.00 | -  | 13+23.73 | WEST APPROACH | 25               | 97                       |
| 13+76.27 | -  | 15+19.00 | EAST APPROACH | 25               | 96                       |
|          |    |          | TOTAL         | 50               | 193                      |

## MGS GUARDRAIL

| STATION  | TO | STATION  | LOCATION          | 614.2500<br>MGS<br>THRIE BEAM<br>TRANSITION<br>LF | 614.2610<br>MGS<br>GUARDRAIL<br>TERMINAL EAT<br>EACH |
|----------|----|----------|-------------------|---------------------------------------------------|------------------------------------------------------|
| 12+31.29 | -  | 13+23.75 | WEST APPROACH, LT | 39.4                                              | 1                                                    |
| 12+36.58 | -  | 13+29.04 | WEST APPROACH, RT | 39.4                                              | 1                                                    |
| 13+70.96 | -  | 14+63.43 | EAST APPROACH, LT | 39.4                                              | 1                                                    |
| 13+76.25 | -  | 14+68.71 | EAST APPROACH, RT | 39.4                                              | 1                                                    |
| TOTAL    |    |          |                   | 157.6                                             | 4                                                    |

## FINISHING ITEMS

| STATION  | TO | STATION  | LOCATION          | 625.0500            | 628.2008                                  | 629.0210             | 630.0130                     | 630.0200             | 630.0500      |
|----------|----|----------|-------------------|---------------------|-------------------------------------------|----------------------|------------------------------|----------------------|---------------|
|          |    |          |                   | SALVAGED<br>TOPSOIL | EROSION MAT<br>URBAN<br>CLASS I<br>TYPE B | FERTILIZER<br>TYPE B | SEEDING<br>MIXTURE<br>NO. 30 | SEEDING<br>TEMPORARY | SEED<br>WATER |
|          |    |          |                   | SY                  | SY                                        | CWT                  | LB                           | LB                   | MGAL          |
| 11+57.00 | -  | 13+19.38 | WEST APPROACH, LT | 113                 | 113                                       | 0.17                 | 12                           | 7                    | 5.8           |
| 11+63.00 | -  | 13+26.39 | WEST APPROACH, RT | 105                 | 105                                       | 0.15                 | 11                           | 7                    | 5.3           |
| 13+73.61 | -  | 15+37.00 | EAST APPROACH, LT | 84                  | 84                                        | 0.13                 | 10                           | 6                    | 4.6           |
| 13+80.62 | -  | 15+43.00 | EAST APPROACH, RT | 118                 | 118                                       | 0.15                 | 11                           | 7                    | 5.1           |
|          |    |          | UNDISTRIBUTED     | 105                 | 105                                       | 0.15                 | 11                           | 8                    | 5.2           |
|          |    |          | TOTAL             | 525                 | 525                                       | 0.75                 | 55                           | 35                   | 26.0          |

SILT FENCE

|               |    |         |                   | 628.1504   | 628.1520   |
|---------------|----|---------|-------------------|------------|------------|
|               |    |         |                   | SILT FENCE | SILT FENCE |
| STATION       | TO | STATION | LOCATION          | LF         | LF         |
| 11+54         | -  | 13+26   | WEST APPROACH, LT | 176        | 352        |
| 11+61         | -  | 13+31   | WEST APPROACH, RT | 172        | 344        |
| 13+70         | -  | 15+43   | EAST APPROACH, RT | 175        | 350        |
| 13+76         | -  | 15+38   | EAST APPROACH, LT | 163        | 326        |
| UNDISTRIBUTED |    |         |                   | 174        | ---        |
| TOTAL         |    |         |                   | 860        | 1,372      |

## MOBILIZATIONS EROSION CONTROL

|               | 628.1905        | 628.1910        |
|---------------|-----------------|-----------------|
|               | MOBILIZATIONS   | MOBILIZATIONS   |
|               | EROSION CONTROL | EROSION CONTROL |
| LOCATION      | EACH            | EACH            |
| ID 8880-05-76 | 4               | 3               |
| TOTAL         | 4               | 3               |

## TURBIDITY BARRIERS

|               |          |
|---------------|----------|
|               | 628.6005 |
| LOCATION      | SY       |
| WEST APPROACH | 64       |
| EAST APPROACH | 61       |
| UNDISTRIBUTED | 35       |
| TOTAL         | 160      |

PROJECT NO: 8880-05-76

HWY: CTH A

COUNTY: CLARK

MISCELLANEOUS QUANTITIES

SHEET

E

NOTE: ALL ITEMS CATEGORY 0010 UNLESS NOTED OTHERWISE

3

PERMANENT SIGNING

| STATION | LOCATION          | SIGN NUMBER | SIGN CODE | 634.0612                                  | 637.2230                               | 638.2602                             | 638.3000                                | REMARKS           |
|---------|-------------------|-------------|-----------|-------------------------------------------|----------------------------------------|--------------------------------------|-----------------------------------------|-------------------|
|         |                   |             |           | POSTS WOOD<br>4X6-INCH<br>X 12-FT<br>EACH | SIGNS<br>TYPE II<br>REFLECTIVE F<br>SF | REMOVING<br>SIGNS<br>TYPE II<br>EACH | REMOVING SMALL<br>SIGN SUPPORTS<br>EACH |                   |
| 13+20   | WEST APPROACH, LT | 1           | W5-52L    | 1                                         | 3                                      | ---                                  | ---                                     | BRIDGE HASH MARKS |
| 13+26   | WEST APPROACH, RT | 2           | W5-52R    | 1                                         | 3                                      | ---                                  | ---                                     | BRIDGE HASH MARKS |
| 13+28   | WEST APPROACH, RT | 2R          | W5-52R    | ---                                       | ---                                    | 1                                    | 1                                       | BRIDGE HASH MARKS |
| 13+29   | WEST APPROACH, LT | 1R          | W5-52L    | ---                                       | ---                                    | 1                                    | 1                                       | BRIDGE HASH MARKS |
| 13+72   | EAST APPROACH, LT | 3R          | W5-52R    | ---                                       | ---                                    | 1                                    | 1                                       | BRIDGE HASH MARKS |
| 13+72   | EAST APPROACH, RT | 4R          | W5-52L    | ---                                       | ---                                    | 1                                    | 1                                       | BRIDGE HASH MARKS |
| 13+74   | EAST APPROACH, LT | 3           | W5-52R    | 1                                         | 3                                      | ---                                  | ---                                     | BRIDGE HASH MARKS |
| 13+80   | EAST APPROACH, RT | 4           | W5-52L    | 1                                         | 3                                      | ---                                  | ---                                     | BRIDGE HASH MARKS |
| TOTAL   |                   |             |           | 4                                         | 12                                     | 4                                    | 4                                       |                   |

3

TRAFFIC CONTROL

| LOCATION      | DURATION<br>DAY | 643.0420                      |       | 643.0705                        |       | 643.0900                           |     | 643.5000                   |
|---------------|-----------------|-------------------------------|-------|---------------------------------|-------|------------------------------------|-----|----------------------------|
|               |                 | BARRICADES<br>TYPE III<br>NO. | DAY   | WARNING LIGHTS<br>TYPE A<br>NO. | DAY   | TRAFFIC<br>CONTROL<br>SIGNS<br>NO. | DAY | TRAFFIC<br>CONTROL<br>EACH |
| WEST APPROACH | 59              | 9                             | 531   | 18                              | 1,062 | 7                                  | 413 | ---                        |
| EAST APPROACH | 59              | 9                             | 531   | 18                              | 1,062 | 5                                  | 295 | ---                        |
| UNDISTRIBUTED | 59              | 7                             | 413   | 9                               | 531   | 3                                  | 177 | ---                        |
| PROJECT       | ---             | ---                           | ---   | ---                             | ---   | ---                                | --- | 1                          |
| TOTAL         |                 | 25                            | 1,475 | 45                              | 2,655 | 15                                 | 885 | 1                          |

PLACE TRAFFIC CONTROL IN ACCORDANCE WITH SDD 15C2 "BARRICADES AND SIGNS FOR MAINLINE, DETOUR, ON RAMP, OFF RAMP CLOSURES AND ADVANCED WIDTH RESTRICTION".  
PLACEMENT SUBJECT TO ENGINEER APPROVAL.

MARKING LINE PAINT 4-INCH

| STATION | TO | STATION | LOCATION      | 646.1005<br>LF | REMARKS       |
|---------|----|---------|---------------|----------------|---------------|
| 11+81   | -  | 15+19   | EDGE LINE, LT | 338            | SOLID WHITE   |
| 11+81   | -  | 15+19   | EDGE LINE, RT | 338            | SOLID WHITE   |
| 11+81   | -  | 15+19   | CENTERLINE    | 676            | DOUBLE YELLOW |
|         |    |         |               | 1,352          |               |

CONSTRUCTION STAKING

| STATION | TO | STATION | LOCATION      | 650.4500                                  | 650.5000                              | 650.6501.01                                                          | 650.9911.01                                                                  | 650.9920                                      |
|---------|----|---------|---------------|-------------------------------------------|---------------------------------------|----------------------------------------------------------------------|------------------------------------------------------------------------------|-----------------------------------------------|
|         |    |         |               | CONSTRUCTION<br>STAKING<br>SUBGRADE<br>LF | CONSTRUCTION<br>STAKING<br>BASE<br>LF | CONSTRUCTION<br>STAKING<br>STRUCTURE LAYOUT<br>01. B-10-0261<br>EACH | CONSTRUCTION<br>STAKING<br>SUPPLEMENTAL<br>CONTROL<br>01. 8880-05-76<br>EACH | CONSTRUCTION<br>STAKING<br>SLOPE STAKES<br>LF |
| 11+57   | -  | 13+24   | WEST APPROACH | 167                                       | 167                                   | ---                                                                  | ---                                                                          | 167                                           |
| 13+76   | -  | 15+43   | EAST APPROACH | 167                                       | 167                                   | ---                                                                  | ---                                                                          | 167                                           |
| PROJECT |    |         |               | ---                                       | ---                                   | 1                                                                    | 1                                                                            | ---                                           |
| TOTAL   |    |         |               | 334                                       | 334                                   | 1*                                                                   | 1                                                                            | 334                                           |

SAWING ASPHALT

| STATION  | LOCATION      | 690.0150<br>LF |
|----------|---------------|----------------|
| 11+81.00 | WEST APPROACH | 23             |
| 12+73.73 | WEST APPROACH | 23             |
| 14+26.27 | EAST APPROACH | 23             |
| 15+19.00 | EAST APPROACH | 23             |
| TOTAL    |               | 92             |

\* CATEGORY 0020

|                                                             |  |                                                    |  |                                      |                        |
|-------------------------------------------------------------|--|----------------------------------------------------|--|--------------------------------------|------------------------|
| SECTION LINE                                                |  | SECTION CORNER SYMBOL                              |  | R/W MONUMENT (TO BE SET)             |                        |
| QUARTER LINE                                                |  |                                                    |  | NON-MONUMENTED R/W POINT             |                        |
| SIXTEENTH LINE                                              |  | SECTION CORNER MONUMENT                            |  | FOUND IRON PIN (1-INCH UNLESS NOTED) | IP                     |
| NEW REFERENCE LINE                                          |  |                                                    |  |                                      |                        |
| NEW R/W LINE                                                |  | GEODETIC SURVEY MONUMENT                           |  |                                      |                        |
| EXISTING R/W OR HE LINE                                     |  | SIXTEENTH CORNER MONUMENT                          |  |                                      |                        |
| PROPERTY LINE                                               |  | SIGN                                               |  | OFF-PREMISE SIGN                     |                        |
| LOT, TIE & OTHER MINOR LINES                                |  |                                                    |  |                                      |                        |
| SLOPE INTERCEPT                                             |  |                                                    |  |                                      |                        |
| CORPORATE LIMITS                                            |  | ELECTRIC POLE                                      |  | <u>COMPENSABLE</u>                   | <u>NON-COMPENSABLE</u> |
| UNDERGROUND FACILITY (COMMUNICATIONS, ELECTRIC, ETC)        |  | TELEPHONE POLE                                     |  |                                      |                        |
| NEW R/W (FEE OR HE) (HATCHING VARIES BY OWNER)              |  | PEDESTAL (LABEL TYPE) (TV, TEL, ELEC, ETC.)        |  |                                      |                        |
| TEMPORARY LIMITED EASEMENT AREA                             |  | ACCESS RESTRICTED BY ACQUISITION                   |  |                                      |                        |
| EASEMENT AREA (PERMANENT LIMITED OR RESTRICTED DEVELOPMENT) |  | NO ACCESS (BY STATUTORY AUTHORITY)                 |  |                                      |                        |
| TRANSMISSION STRUCTURES                                     |  | ACCESS RESTRICTED (BY PREVIOUS PROJECT OR CONTROL) |  |                                      |                        |
|                                                             |  | NO ACCESS (NEW HIGHWAY)                            |  |                                      |                        |
| BUILDING                                                    |  | PARCEL NUMBER                                      |  | UTILITY NUMBER                       |                        |
| TO BE REMOVED                                               |  | PARALLEL OFFSETS                                   |  |                                      |                        |
| BRIDGE                                                      |  |                                                    |  |                                      |                        |
| CULVERT                                                     |  |                                                    |  |                                      |                        |

|                             |                                     |
|-----------------------------|-------------------------------------|
| WATER                       | W                                   |
| GAS                         | G                                   |
| TELEPHONE                   | T                                   |
| OVERHEAD TRANSMISSION LINES | OH                                  |
| ELECTRIC                    | E                                   |
| CABLE TELEVISION            | TV                                  |
| FIBER OPTIC                 | FO                                  |
| SANITARY SEWER              | SAN                                 |
| STORM SEWER                 | SS                                  |
| ELECTRIC TOWER              | <input checked="" type="checkbox"/> |

|                          |       |                             |        |
|--------------------------|-------|-----------------------------|--------|
| ACCESS RIGHTS            | AR    | POINT OF COMPOUND CURVE     | PCC    |
| ACRES                    | AC    | POINT OF INTERSECTION       | PI     |
| AHEAD                    | AH    | PROPERTY LINE               | PL     |
| ALUMINUM                 | ALUM  | RECORDED AS                 | (100') |
| AND OTHERS               | ET AL | REEL / IMAGE                | R/I    |
| BACK                     | BK    | REFERENCE LINE              | R/L    |
| BLOCK                    | BLK   | REMAINING                   | REM    |
| CENTERLINE               | C/L   | RESTRICTIVE DEVELOPMENT     | RDE    |
| CERTIFIED SURVEY MAP     | CSM   | EASEMENT                    |        |
| CONCRETE                 | CONC  | RIGHT                       | RT     |
| COUNTY                   | CO    | RIGHT OF WAY                | R/W    |
| COUNTY TRUNK HIGHWAY     | CTH   | SECTION                     | SEC    |
| DISTANCE                 | DIST  | SEPTIC VENT                 | SEP/V  |
| CORNER                   | COR   | SQUARE FEET                 | SF     |
| DOCUMENT NUMBER          | DOC   | STATE TRUNK HIGHWAY         | STH    |
| EASEMENT                 | EASE  | STATION                     | STA    |
| EXISTING                 | EX    | TELEPHONE PEDESTAL          | TP     |
| GAS VALVE                | GV    | TEMPORARY LIMITED           | TLE    |
| GRID NORTH               | GN    | EASEMENT                    |        |
| HIGHWAY EASEMENT         | HE    | TRANSPORTATION PROJECT PLAT | TPP    |
| IDENTIFICATION           | ID    | UNITED STATES HIGHWAY       | USH    |
| LAND CONTRACT            | LC    | VOLUME                      | V      |
| LEFT                     | LT    |                             |        |
| MONUMENT                 | MON   |                             |        |
| NATIONAL GEODETIC SURVEY | NGS   |                             |        |
| NUMBER                   | NO    |                             |        |
| OUTLOT                   | OL    |                             |        |
| PAGE                     | P     |                             |        |
| POINT OF TANGENCY        | PT    |                             |        |
| PERMANENT LIMITED        | PLE   |                             |        |
| EASEMENT                 |       |                             |        |
| POINT OF BEGINNING       | POB   |                             |        |
| POINT OF CURVATURE       | PC    |                             |        |

| <u>CURVE DATA ABBREVIATION</u> |  |                    |       |
|--------------------------------|--|--------------------|-------|
|                                |  | LONG CHORD         | LCH   |
|                                |  | LONG CHORD BEARING | LCB   |
|                                |  | RADIUS             | R     |
|                                |  | DEGREE OF CURVE    | D     |
|                                |  | CENTRAL ANGLE      | Δ/DEG |
|                                |  | LENGTH OF CURVE    | L     |
|                                |  | TANGENT            | T     |
|                                |  | DIRECTION AHEAD    | DA    |
|                                |  | DIRECTION BACK     | DB    |

|                    |                 |
|--------------------|-----------------|
| LONG CHORD         | LCH             |
| LONG CHORD BEARING | LCB             |
| RADIUS             | R               |
| DEGREE OF CURVE    | D               |
| CENTRAL ANGLE      | $\Delta$ /DELTA |
| LENGTH OF CURVE    | L               |
| TANGENT            | T               |
| DIRECTION AHEAD    | DA              |
| DIRECTION BACK     | DB              |

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), CLARK COUNTY, NAD83 (2011) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY 3/4" X 24" IRON REBARS), UNLESS OTHERWISE NOTED. AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

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

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.

FOR THE CURRENT ACCESS/DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF CLARK COUNTY.

PARCEL AND UTILITY IDENTIFICATION NUMBERS MAY NOT POINT TO ALL AREAS OF ACQUISITION, AS NOTED ON THE DETAIL PAGES.

INFORMATION FOR THE BASIS OF EXISTING HIGHWAY RIGHT-OF-WAY POINTS OF REFERENCE AND ACCESS CONTROL ARE LISTED ON THE DETAIL PAGES.



|                                                                                                              |                 |                 |
|--------------------------------------------------------------------------------------------------------------|-----------------|-----------------|
| R/W PROJECT NUMBER<br>8880-05-06                                                                             | SHEET<br>NUMBER | TOTAL<br>SHEETS |
| FEDERAL PROJECT NUMBER                                                                                       | 4.01            | 2               |
| <p>PLAT OF RIGHT OF WAY REQUIRED FOR</p> <p>CTH E - DORCHESTER</p> <p>BR N FORK POPPLE RVR BR, B-10-0261</p> |                 |                 |
| CTH A                                                                                                        | CLARK COUNTY    |                 |
| <p>CONSTRUCTION PROJECT NUMBER</p> <p>8880-05-76</p>                                                         |                 |                 |

**CAUTION:**  
THIS PLAT IS A GRAPHIC REPRESENTATION AND IS FOR  
REFERENCE PURPOSES ONLY. DEEDS MUST BE CHECKED TO  
DETERMINE PROPERTY BOUNDARIES AND ACCESS RIGHTS.

ACCEPTED FOR CLARK COUNTY

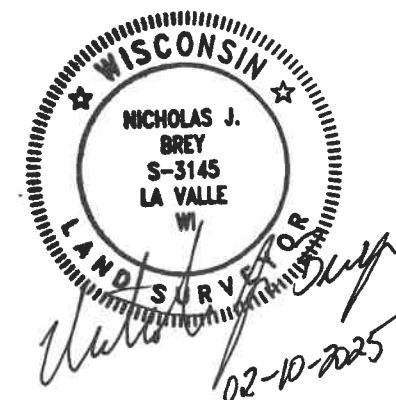
DATE: 02-11-2025 Brian Duell  
(SIGNATURE AND TITLE OF OFFICIAL)

ORIGINAL PLANS PREPARED BY



**WESTBROOK**  
Associated Engineers, Inc.

619 East Moxie St. | P.O. Box 429 | Spring Green, WI 53588  
P: (608) 888-7866 | F: (608) 888-7984 | [www.westbrookeng.com](http://www.westbrookeng.com)



DATE: 02-10-2025 Walter J. Bray  
(Professional Land Surveyor Signature)

| SCHEDULE OF LANDS AND INTERESTS REQUIRED |                          |                   |                    |          |       |
|------------------------------------------|--------------------------|-------------------|--------------------|----------|-------|
| PARCEL NUMBER                            | OWNER(S)                 | INTEREST REQUIRED | R/W REQUIRED ACRES |          |       |
|                                          |                          |                   | NEW                | EXISTING | TOTAL |
| 1                                        | CLARK CO-LINE DAIRY CORP | HE                | 0.017              | N/A      | 0.017 |

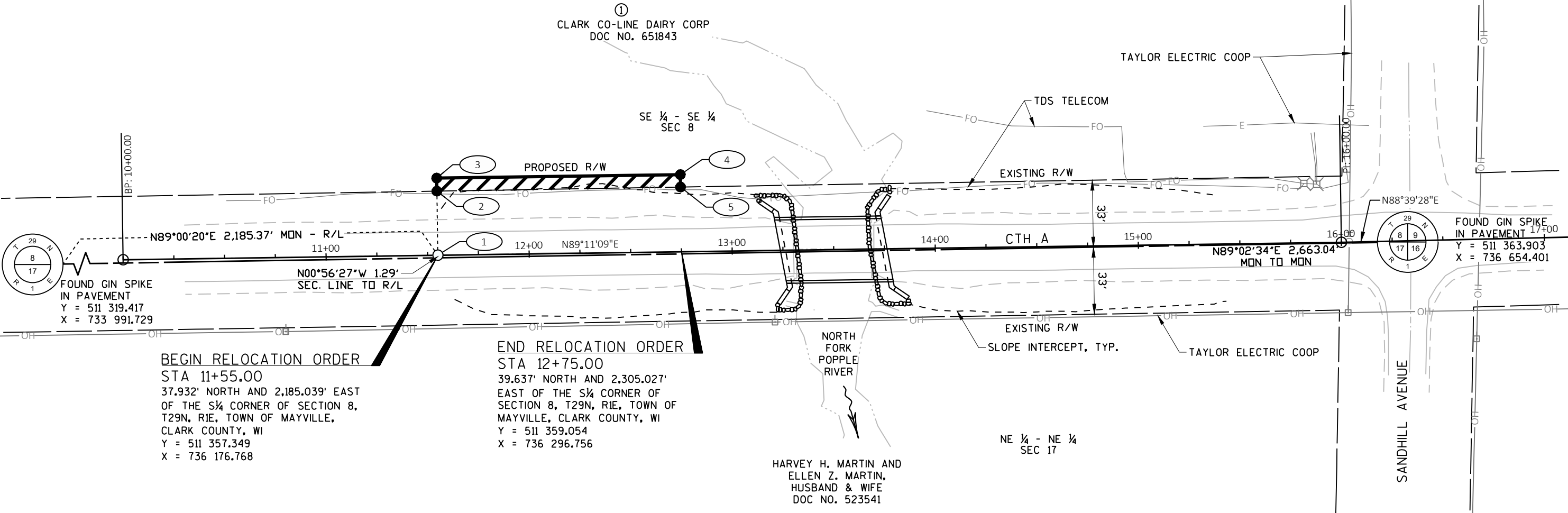
OWNERS NAMES ARE SHOWN FOR REFERENCE PURPOSED ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE IOWA COUNTY HIGHWAY DEPARTMENT.

| POINT TABLE  |          |           |             |             |
|--------------|----------|-----------|-------------|-------------|
| POINT NUMBER | STATION  | OFFSET    | Y           | X           |
| 1            | 11+55.00 | 0.00' RT  | 511 357.348 | 736 176.768 |
| 2            | 11+55.00 | 31.57' LT | 511 388.918 | 736 176.320 |
| 3            | 11+55.00 | 38.00' LT | 511 395.345 | 736 176.228 |
| 4            | 12+75.00 | 38.00' LT | 511 397.050 | 736 296.216 |
| 5            | 12+75.00 | 31.87' LT | 511 390.922 | 736 296.303 |

| R/W COURSE TABLE |               |          |
|------------------|---------------|----------|
| COURSE           | BEARING       | DISTANCE |
| 1-2              | N00° 48' 51"W | 31.57'   |
| 2-3              | N00° 48' 51"W | 6.43'    |
| 3-4              | N89° 11' 09"E | 120.00'  |
| 4-5              | S00° 48' 51"E | 6.13'    |
| 5-2              | S89° 02' 34"W | 120.00'  |

EXISTING RIGHT-OF-WAY FOR CTH A IS BASED ON THE SECTION LINE BETWEEN SECTIONS 8 & 17 ALL IN T29N, R1E, TOWN OF MAYVILLE, CLARK COUNTY, WISCONSIN, CSM 2369 & PLAT OF SURVEY BY PHILLIP D. HARGROVE DATED 7/07/2006.

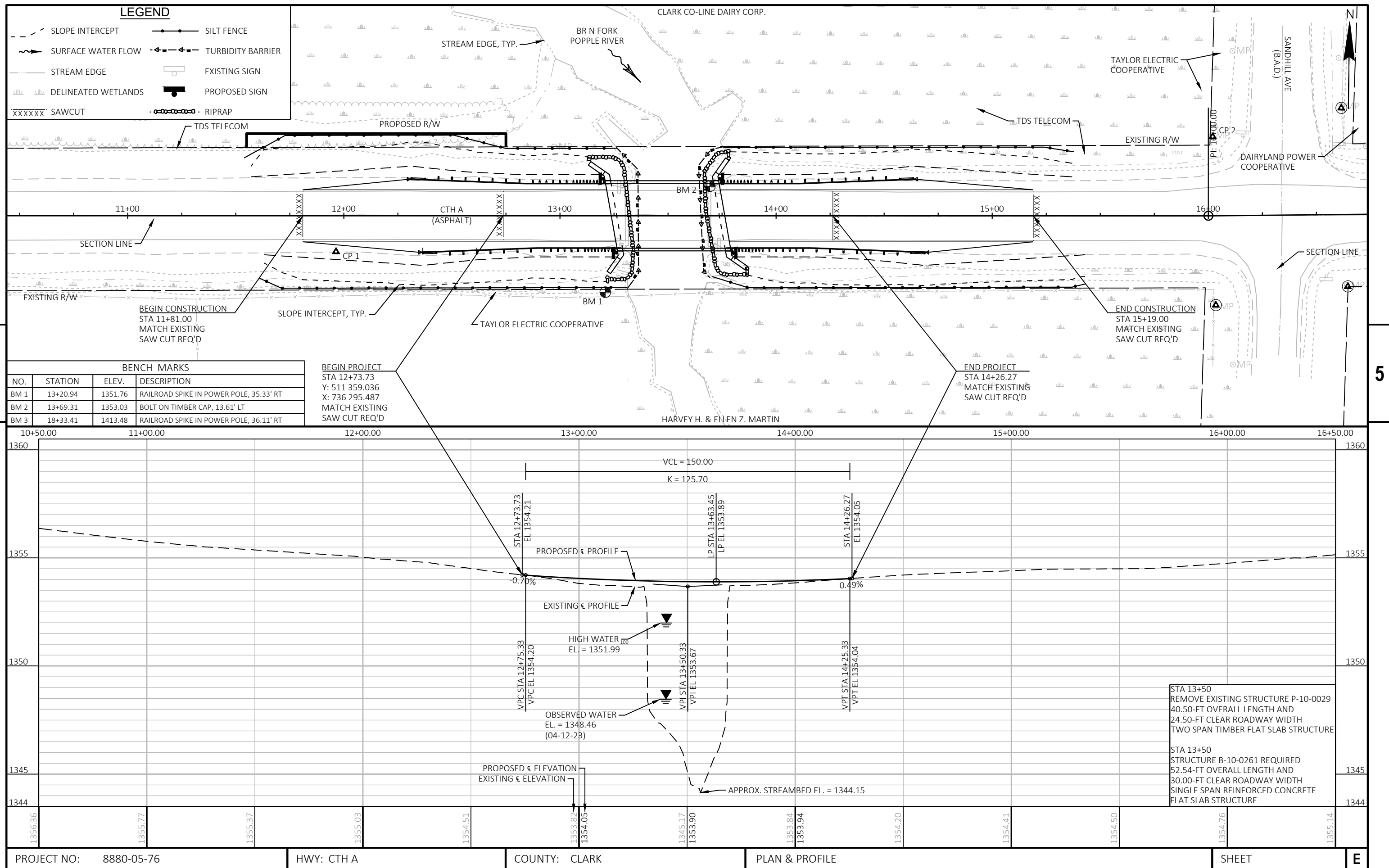
GN



TOWN OF MAYVILLE

|               |  |  |  |                 |  |                                                       |               |  |                                        |  |                 |  |   |
|---------------|--|--|--|-----------------|--|-------------------------------------------------------|---------------|--|----------------------------------------|--|-----------------|--|---|
| REVISION DATE |  |  |  | DATE 02/10/2025 |  | SCALE, FEET<br><div><div></div><div>02550</div></div> | HWY: CTH A    |  | STATE R/W PROJECT NUMBER 8880-05-06    |  | PLAT SHEET 4.02 |  |   |
|               |  |  |  | GRID FACTOR N/A |  |                                                       | COUNTY: CLARK |  | CONSTRUCTION PROJECT NUMBER 8880-05-76 |  | PS&E SHEET      |  | E |

E



Standard Detail Drawing List

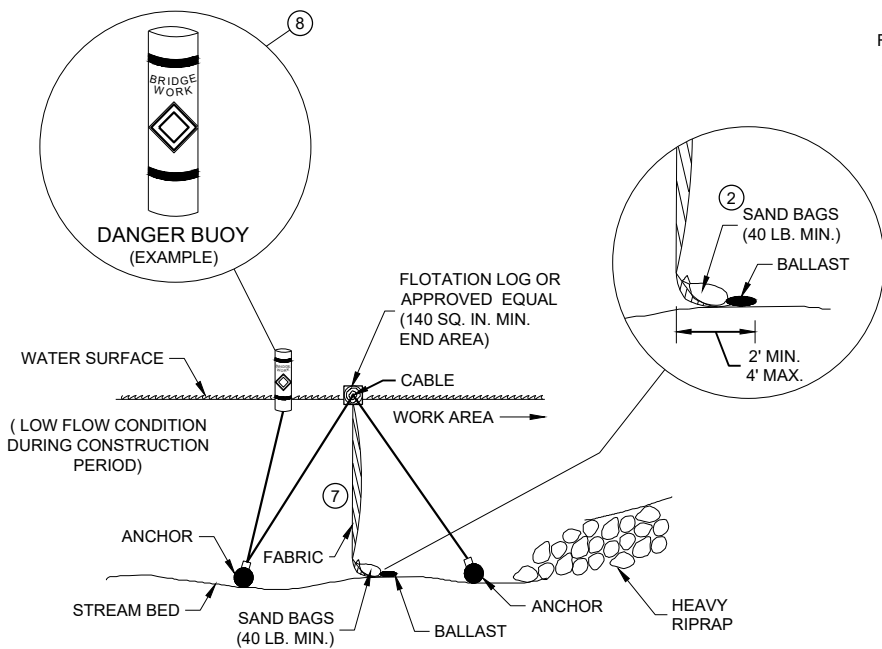
|           |                                                                   |
|-----------|-------------------------------------------------------------------|
| 08E09-06  | SILT FENCE                                                        |
| 08E11-02  | TURBIDITY BARRIER                                                 |
| 12A03-10  | NAME PLATE (STRUCTURES)                                           |
| 13C19-03  | HMA LONGITUDINAL JOINTS                                           |
| 14B42-07A | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL                          |
| 14B42-07B | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL                          |
| 14B42-07C | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL                          |
| 14B44-04A | MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)          |
| 14B44-04B | MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)          |
| 14B44-04C | MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)          |
| 14B45-05A | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)              |
| 14B45-05B | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)              |
| 14B45-05C | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)              |
| 14B45-05H | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)              |
| 15C02-09A | BARRICADES AND SIGNS FOR MAINLINE CLOSURES                        |
| 15C02-09B | BARRICADES AND SIGNS FOR VARIOUS CLOSURES                         |
| 15C06-12  | SIGNING & MARKING FOR TWO LANE BRIDGES                            |
| 15C08-23A | PERMANENT LONGITUDINAL PAVEMENT MARKINGS                          |
| 15C11-10B | CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS |



- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1½" X 1½" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.

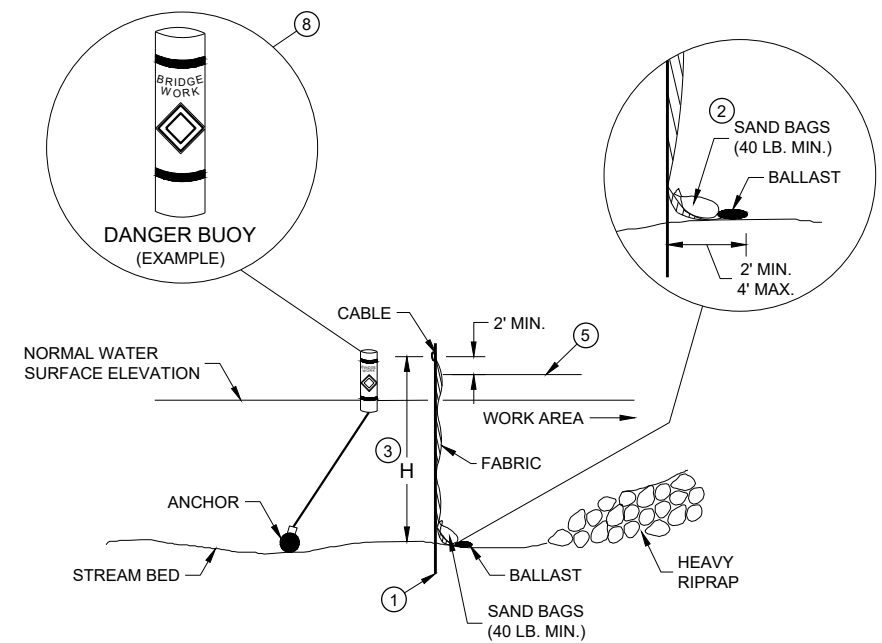


|                                                    |                                                                |
|----------------------------------------------------|----------------------------------------------------------------|
| SILT FENCE                                         |      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



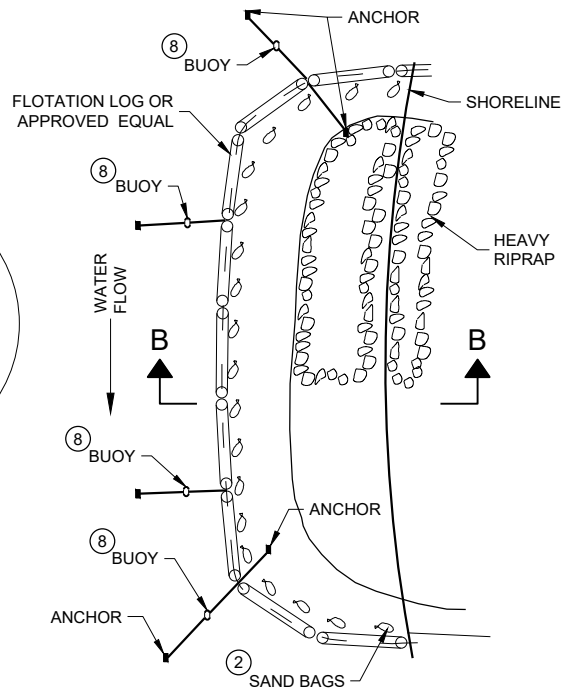
SECTION B - B

**TURBIDITY BARRIER - FLOAT ALTERNATIVE**  
**CAUTION - SEE NOTE 6**

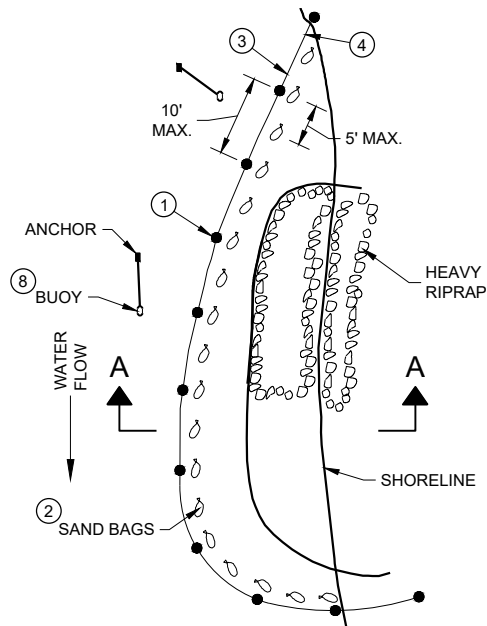


SECTION A - A

**TURBIDITY BARRIER - STANDARD POST INSTALLATION**



PLAN VIEW



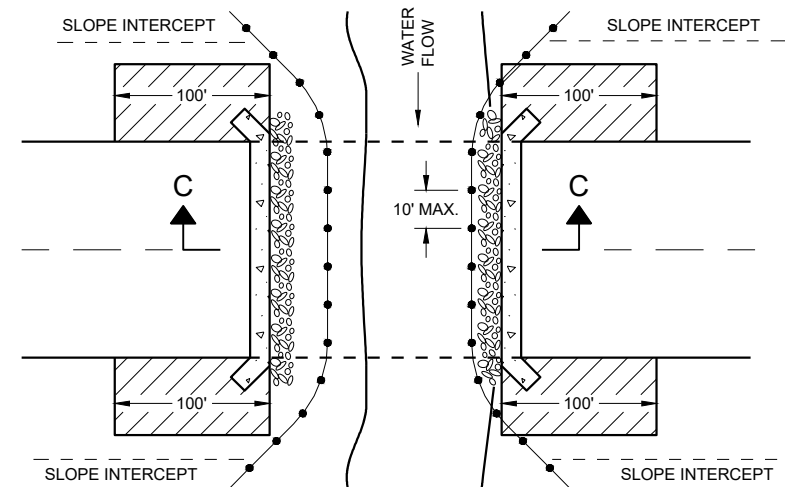
PLAN VIEW

**GENERAL NOTES**

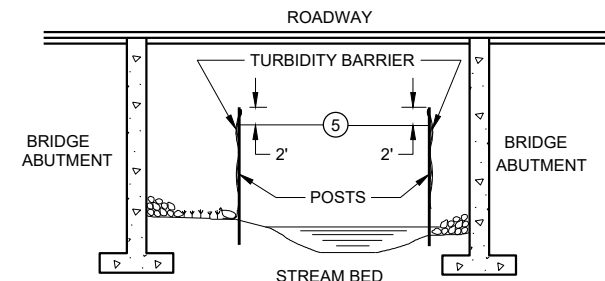
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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 SAND BAGS 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 FEET, 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 Q2 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 BEDROCK 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.



PLAN VIEW



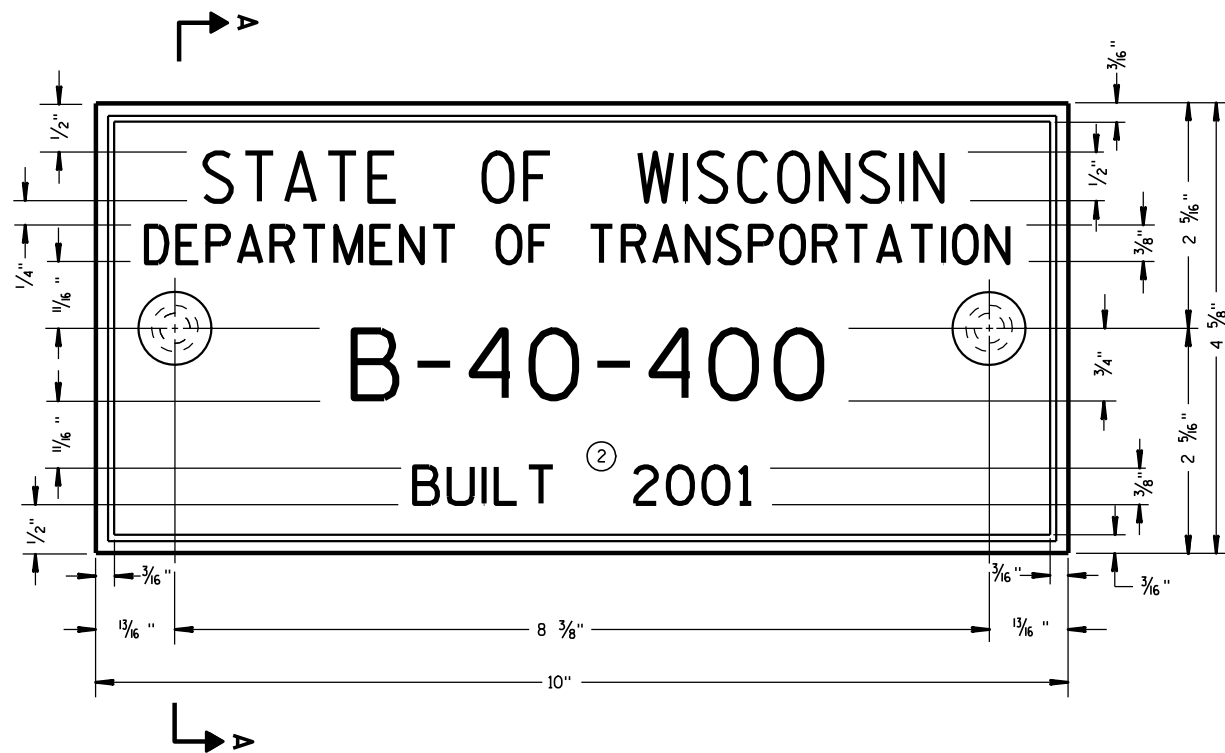
SECTION C - C

**TURBIDITY BARRIER DETAIL SHOWING**  
**TYPICAL PLACEMENT AT STRUCTURES**

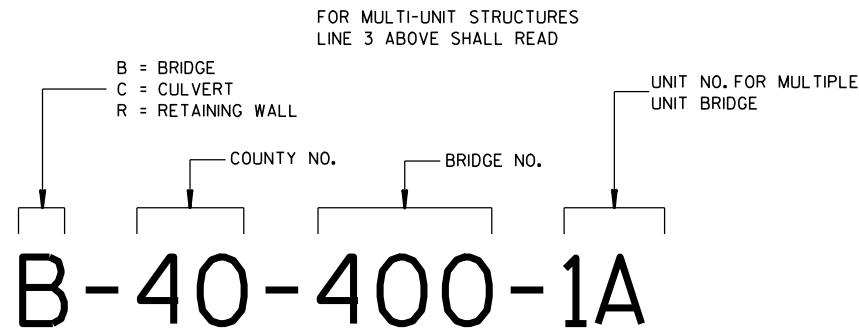
**TURBIDITY BARRIER**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
6/4/02 DATE /S/ Beth Cannestra  
DATE CHIEF ROADWAY DEVELOPMENT  
ENGINEER  
FHWA



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



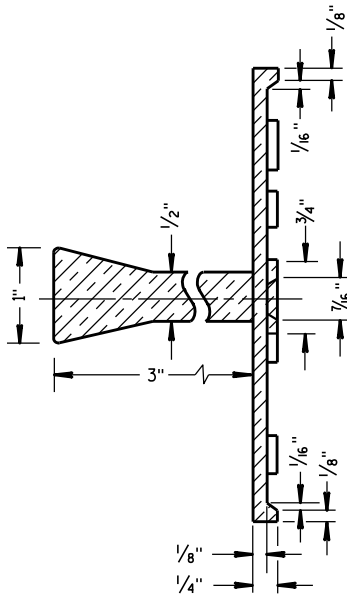
NUMBERING DESIGNATION  
MULTI-UNIT STRUCTURES

GENERAL NOTES

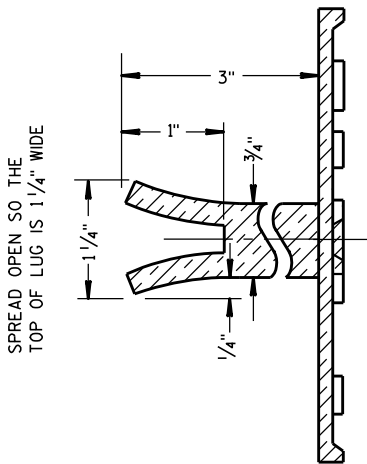
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

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

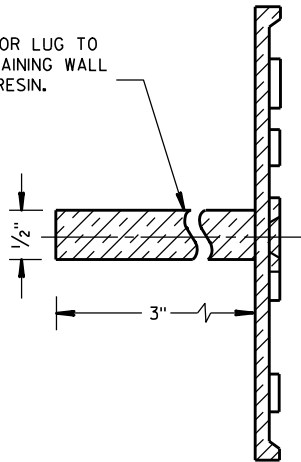


SECTION A-A



ALTERNATE LUG

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

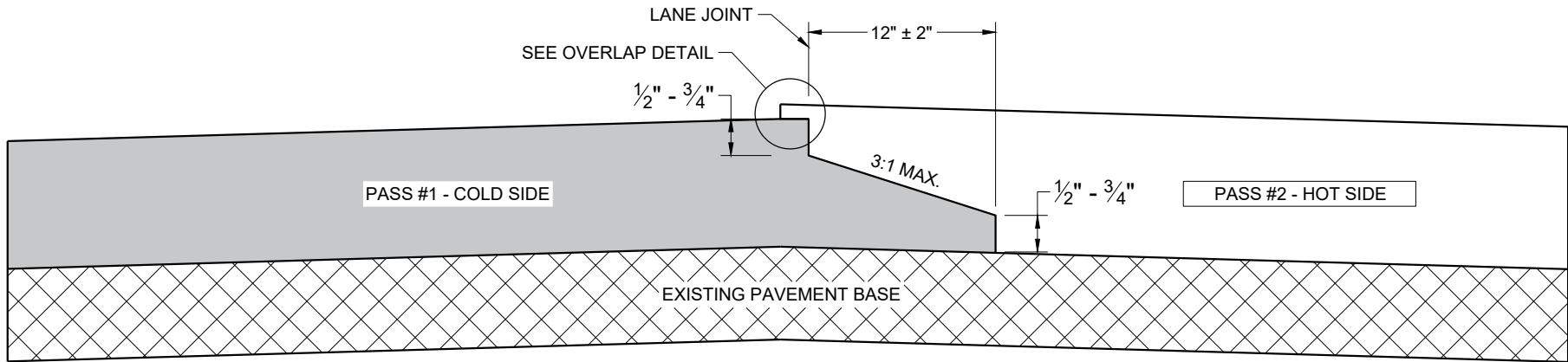


ALTERNATE LUG  
(FOR ATTACHMENT TO PRECAST STRUCTURES)

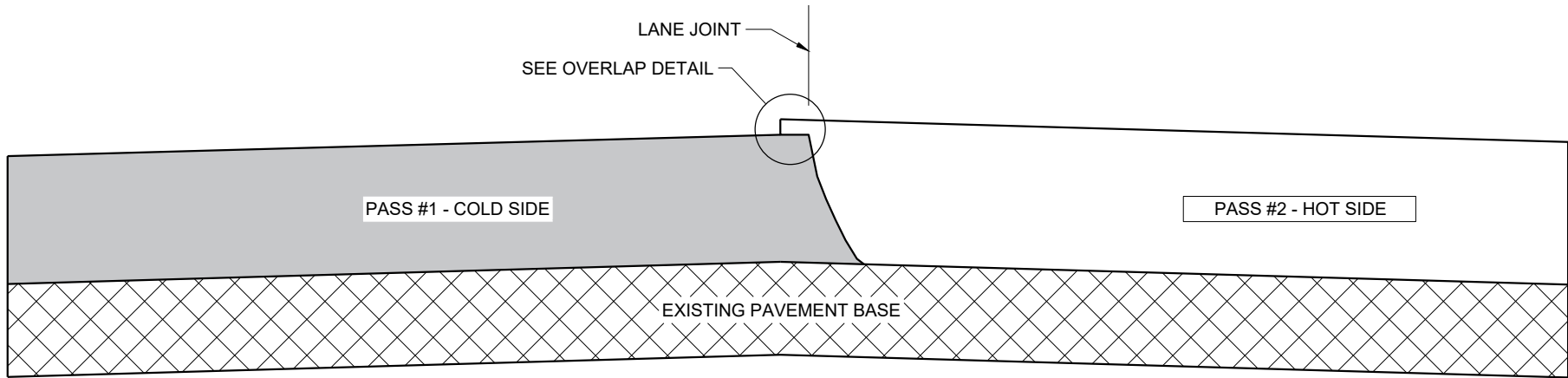
NAME PLATE  
(STRUCTURES)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

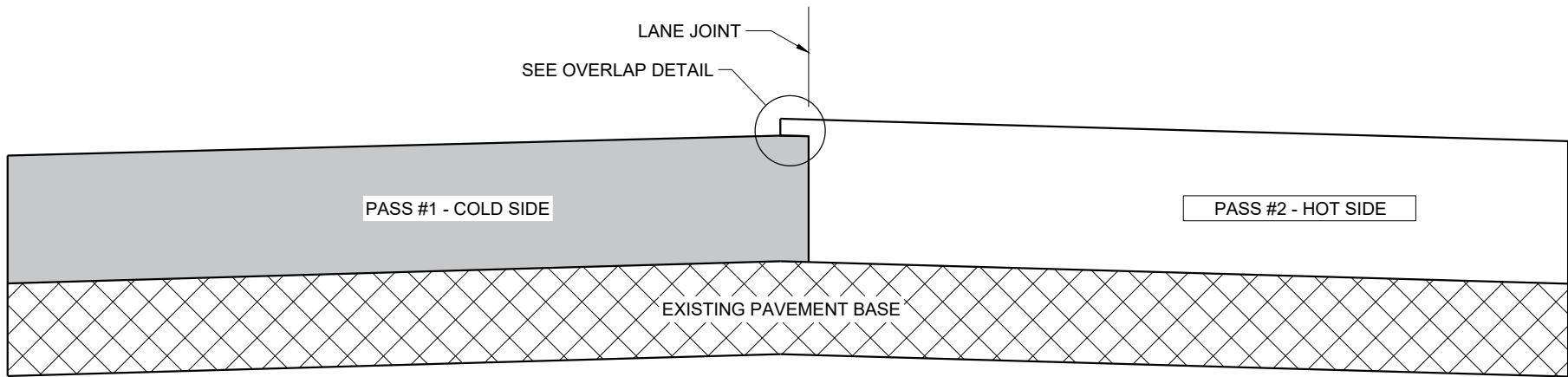
APPROVED  
3/26/10  
DATE  
/S/ Scot Becker  
CHIEF STRUCTURAL DEVELOPMENT ENGINEER  
FHWA



TYPICAL PAVEMENT CROSS SECTION  
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION  
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION  
VERTICAL JOINT (MILLED)

GENERAL NOTES

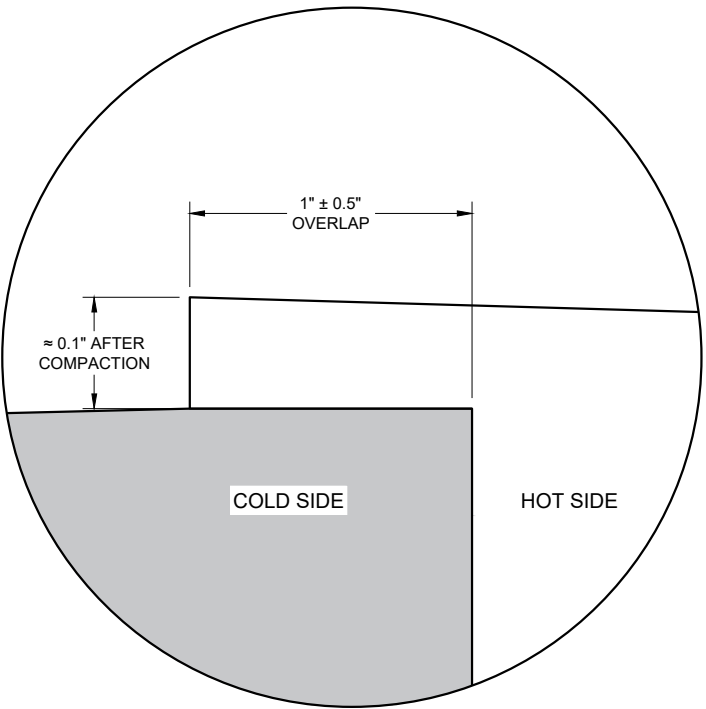
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

FOR ALL LONGITUDINAL JOINTS, ENSURE THE PAVER SCREED OVERLAPS THE PREVIOUSLY PLACED PAVEMENT BY  $1" \pm 0.5"$  AND THE HOT SIDE OF THE JOINT REMAINS HIGHER THAN THE COLD SIDE BY APPROXIMATELY  $0.1"$  AFTER FINAL COMPACTION. (IT WILL BE FLUSH WHEN PAVING IN ECHELON.)

ONLY REMOVE THE LONGITUDINAL NOTCHED WEDGE JOINT FOR SMA PAVEMENT OR AS DIRECTED BY THE ENGINEER TO ADDRESS SPECIFIC LENGTHS OF JOINT DAMAGED BY TRAFFIC.

WHEN MILLING BACK OR REMOVING ANY LONGITUDINAL JOINT, LIMIT THE MATERIAL REMOVED TO  $2"$  FROM THE TOP NOTCH OR FROM THE VERTICAL JOINT EDGE ON THE COLD SIDE OF THE JOINT.

USE LONGITUDINAL MILLED JOINT AS PLANS SHOW OR THE AS THE ENGINEER DIRECTS.



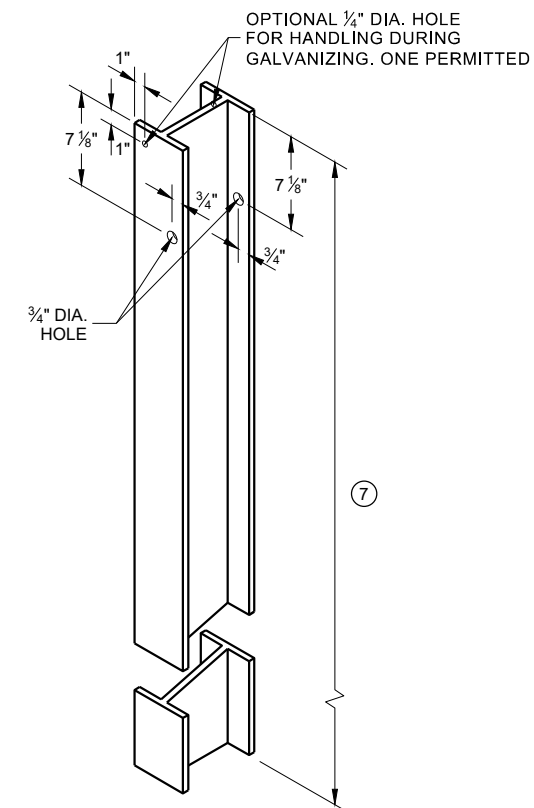
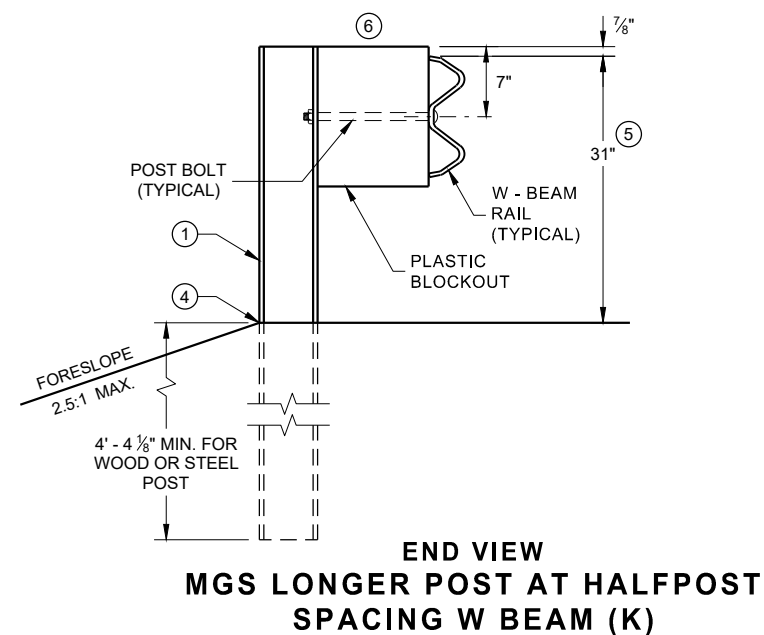
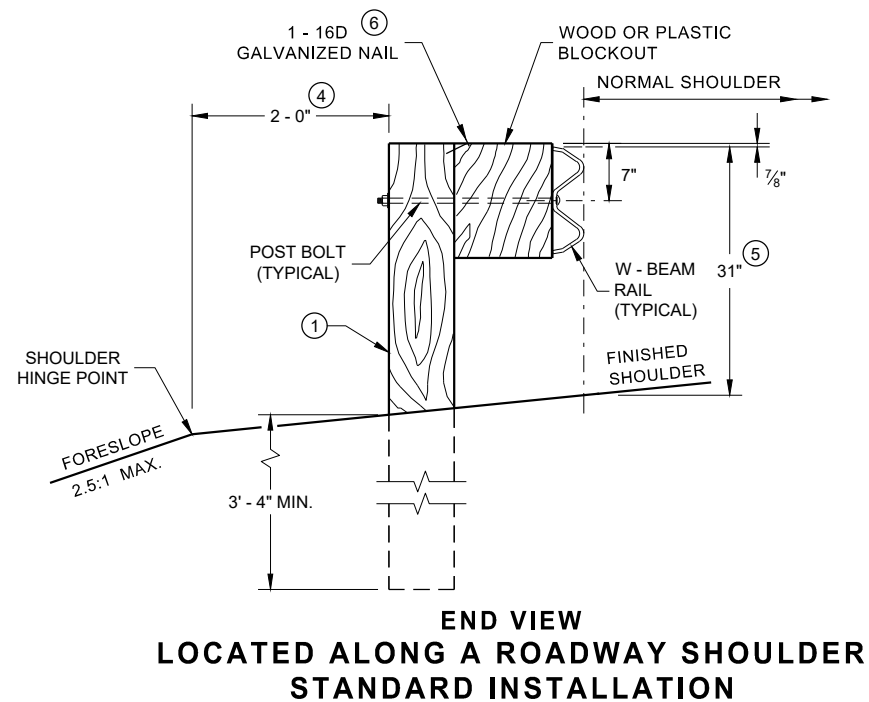
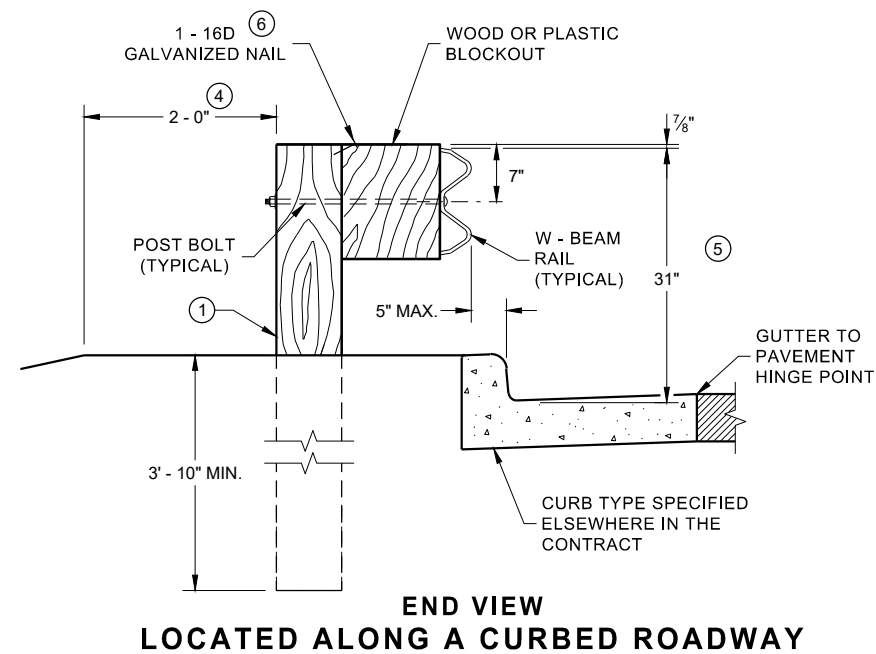
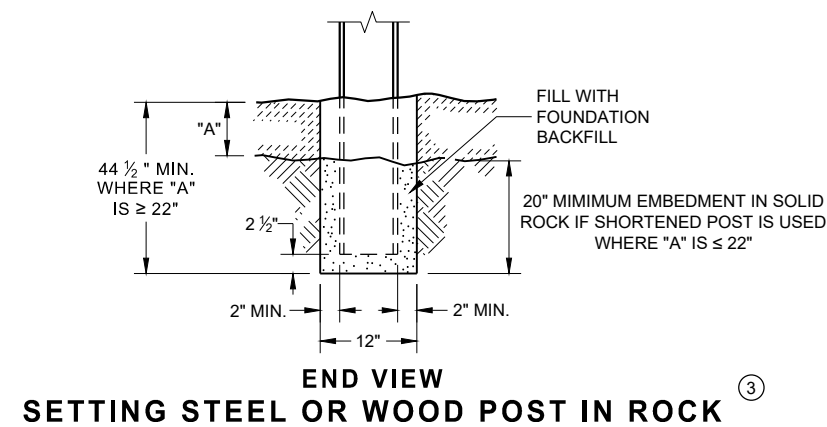
OVERLAP DETAIL (TYPICAL)

HMA LONGITUDINAL JOINTS

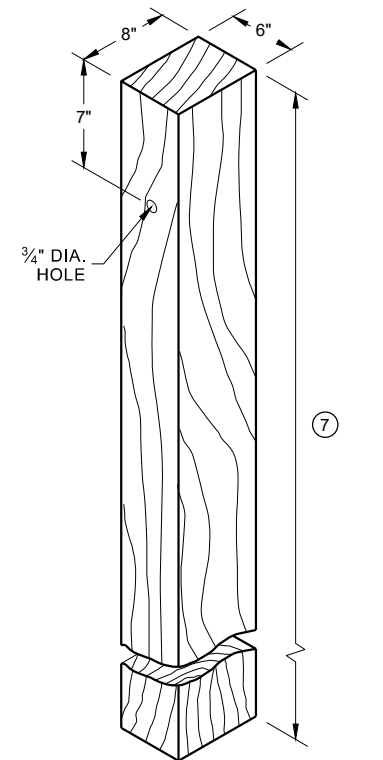
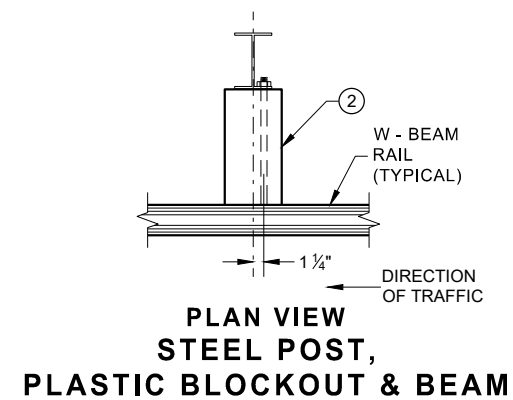
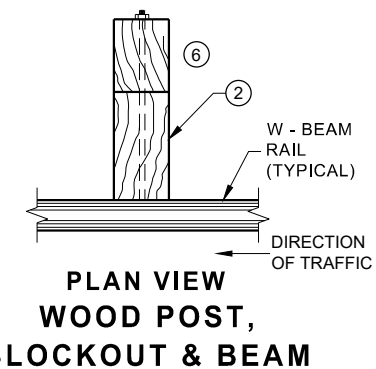
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
November 2020 /S/ Steven Hefel  
DATE HMA PAVEMENT ENGINEER  
FHWA

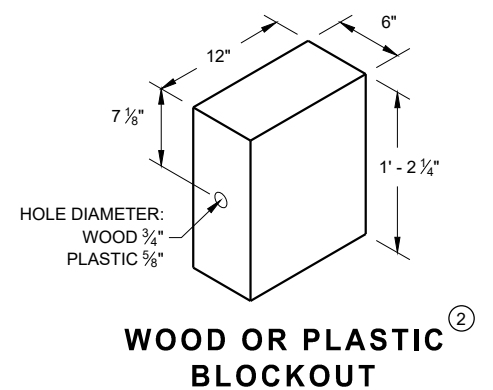
- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. 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  $\pm 1"$ . FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 3/4" TO 32".
- ⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ⑦ TOTAL POST LENGTH FOR TYPE K IS 7' - 0". TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".

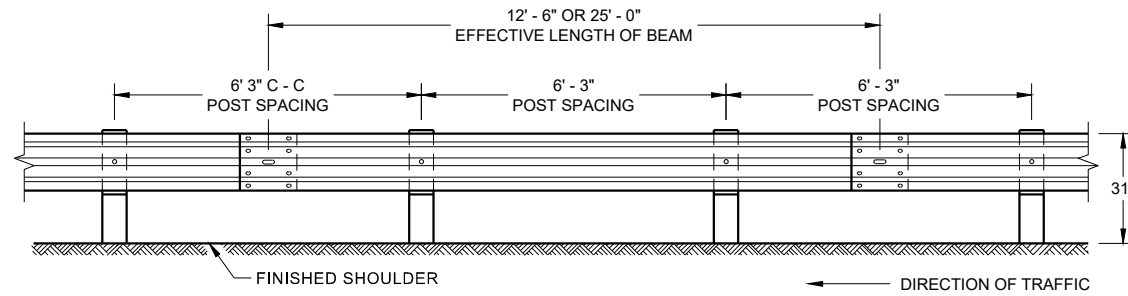


**STEEL POST & HOLE  
PUNCHING DETAIL  
(W 6 X 9) ①**

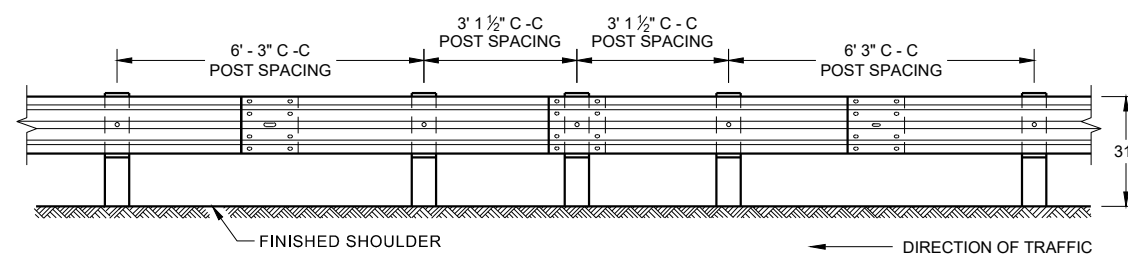


**WOOD POST (6" X 8") NOMINAL** <sup>(1)</sup>

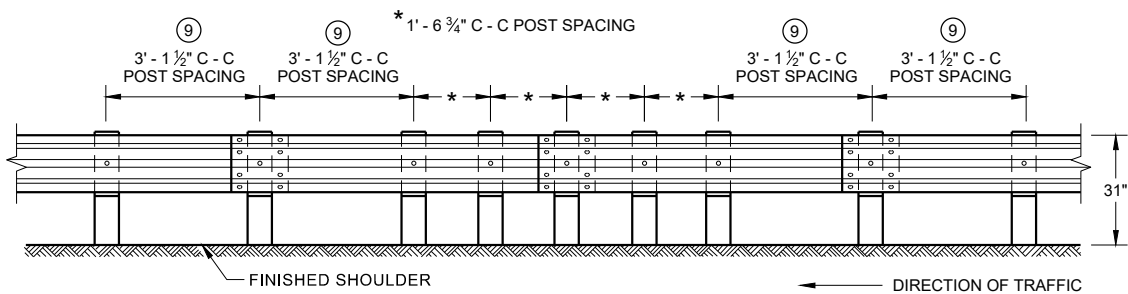




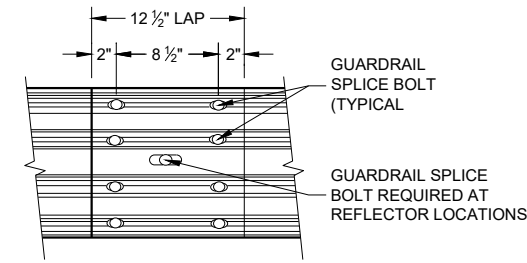
**FRONT VIEW  
POST SPACING STANDARD INSTALLATION**



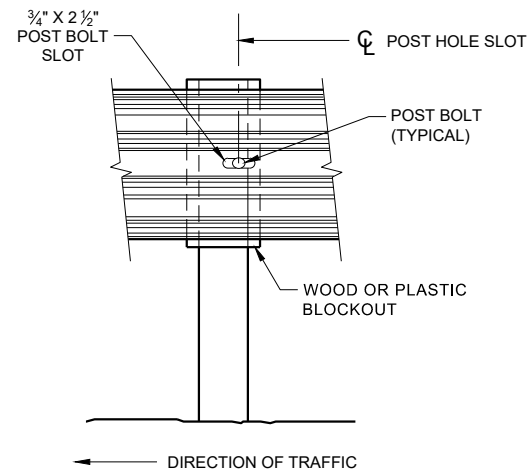
**FRONT VIEW  
HALF POST SPACING (HS) AND  
HALF POST SPACING WITH LONGER POSTS (K)**



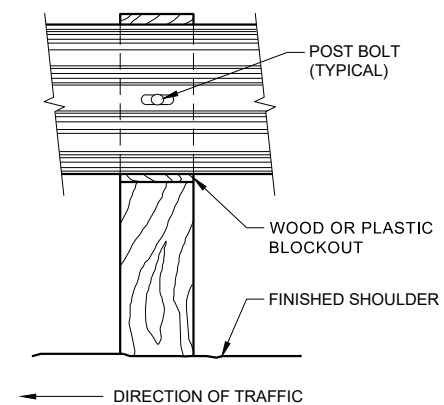
**FRONT VIEW  
QUARTER POST SPACING (QS)**



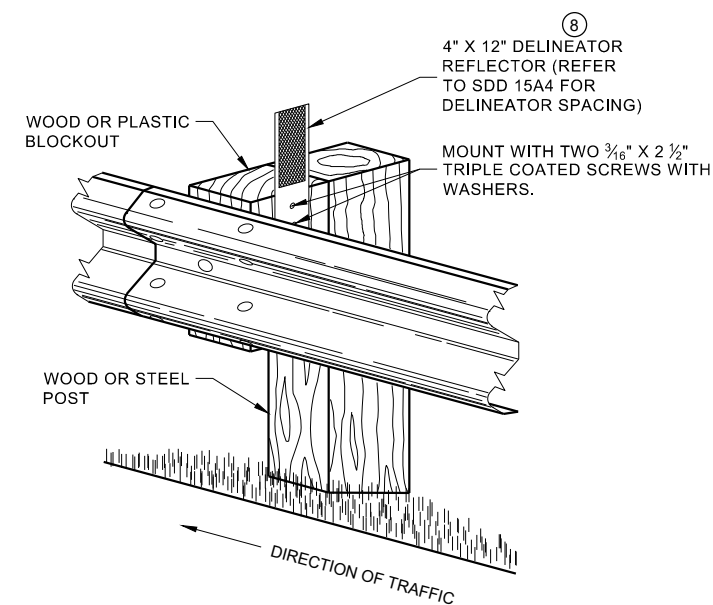
**FRONT VIEW  
MID-SPAN BEAM SPLICE**



**FRONT VIEW AT STEEL POST**



**FRONT VIEW AT WOOD POST**



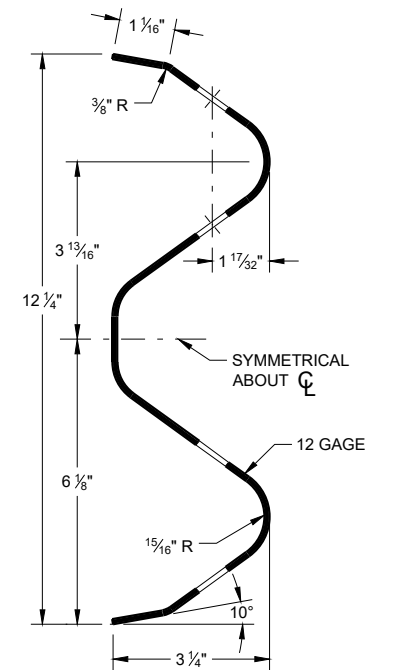
**ONE SIDED REFLECTOR DETAIL  
AND TYPICAL INSTALLATION**

## GENERAL NOTES

- 8 DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
- 9 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A  $\frac{3}{8}$ " DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES  $\frac{3}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND  $\frac{3}{8}$ " DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

GUARD RAIL SPLICE BOLTS ARE A  $\frac{3}{8}$ " DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES  $\frac{3}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



**SECTION THRU W-BEAM RAIL**

**MIDWEST GUARDRAIL SYSTEM  
(MGS) GUARDRAIL**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



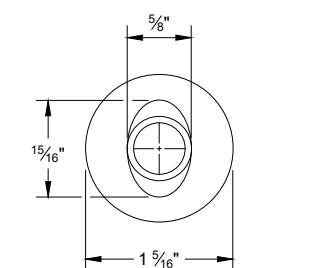
NOTE:

1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF  $\frac{3}{16}$ ".
2. IF THE BOLT EXTENDS MORE THAN  $\frac{1}{4}$ " FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

The drawing shows a side view and a top view of a bolt and nut assembly. The side view shows a bolt with a 45° chamfer, a threaded section of length T, and a total length L. The top view shows a nut with a 15/16" height and a 1-7/8" outer diameter. The bolt has a 5/8" diameter and a 5/8" - 11 THREAD PITCH. The nut has a 5/8" width and a 1-7/8" outer diameter. The bolt is shown with a 5/16" diameter and a 7/32" width. The nut is shown with a 5/8" width and a 1-7/8" outer diameter. The bolt is shown with a 5/8" diameter and a 5/8" - 11 THREAD PITCH. The nut is shown with a 5/8" width and a 1-7/8" outer diameter.

## POST BOLT TABLE

| L    | T (MIN.) |
|------|----------|
| 1 ¼" | 1 ½"     |
| 2"   | 1 ¾"     |
| 10"  | 4"       |
| 14"  | 4 ⅙"     |
| 18"  | 4"       |
| 21"  | 4 ⅙"     |
| 25"  | 4"       |



### ALTERNATE BOLT HEAD



1" X  $\frac{1}{16}$ " DEEP  
RECESS BOTH SIDES

$\frac{5}{8}$ " - 11 MODIFIED  
HEAVY HEX NUT

$\frac{11}{16}$ "

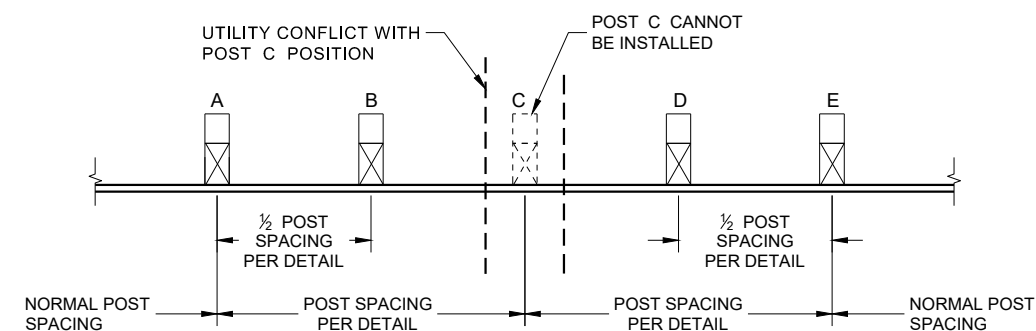
$1 \frac{5}{16}$ "

The drawing shows two views of a modified heavy hex nut. The left view is a side elevation showing a hexagonal nut with a central circular hole. A dashed rectangle indicates a recessed area on both the top and bottom faces. A dimension line at the bottom indicates a width of  $\frac{11}{16}$ ". The right view is a top-down view of the hex nut, showing the hexagonal outer profile and the central hole. A dimension line at the bottom indicates an outer diameter of  $1 \frac{5}{16}$ ". Two labels with leader lines point to the recessed areas: "1" X  $\frac{1}{16}$ " DEEP RECESS BOTH SIDES" and " $\frac{5}{8}$ " - 11 MODIFIED HEAVY HEX NUT".

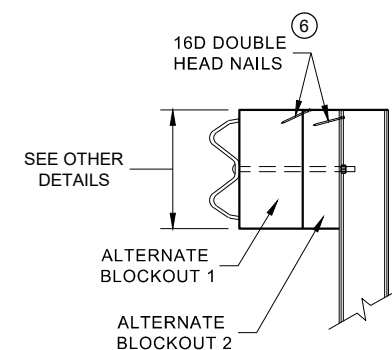
## POST BOLT, SPLICE BOLT AND RECESS NUT

A diagram showing a road with a dashed center line. A vehicle is represented by a rectangle with diagonal hatching, labeled "OBSTACLE". An arrow points to the right, labeled "DIRECTION OF TRAFFIC". The vehicle is positioned on the right side of the road, facing the direction of traffic.

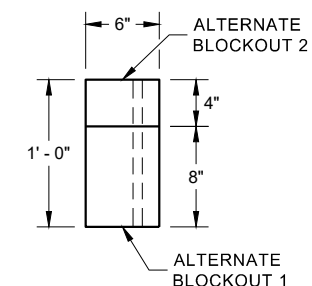
**PLAN VIEW  
BEAM LAPPING DETAIL**



## POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



### SIDE VIEW



### PLAN VIEW

## ALTERNATE WOOD BLOCKOUT DETAIL

## MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

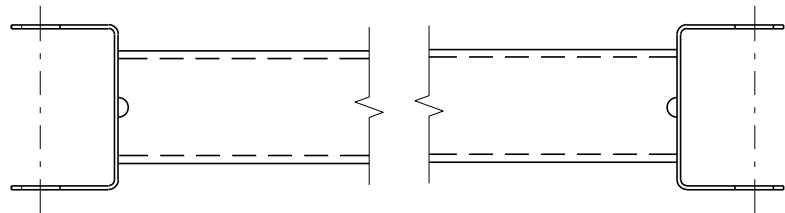
- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED
- (C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS. SEE MANUFACTURER'S INFORMATION.
- (D) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF - TAPPING SCREWS. ONE SCREW PER CORNER.
- (E) HARDWARE MAY VARY BETWEEN MANUFACTURER. SEE MANUFACTURER'S DRAWING FOR INFORMATION.

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.

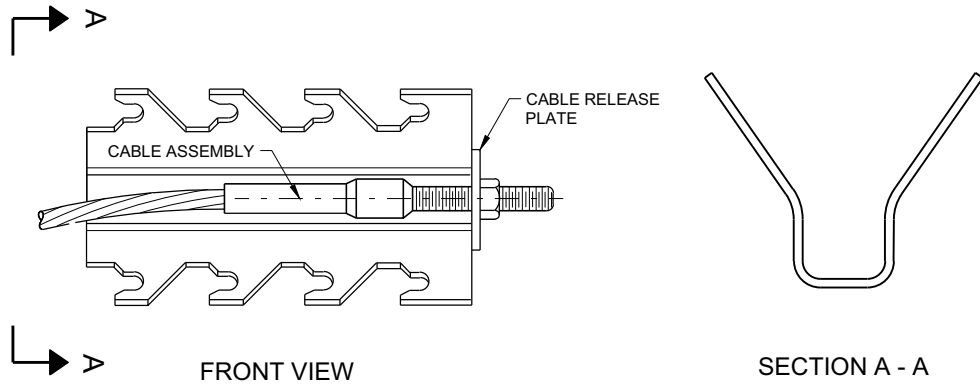


STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

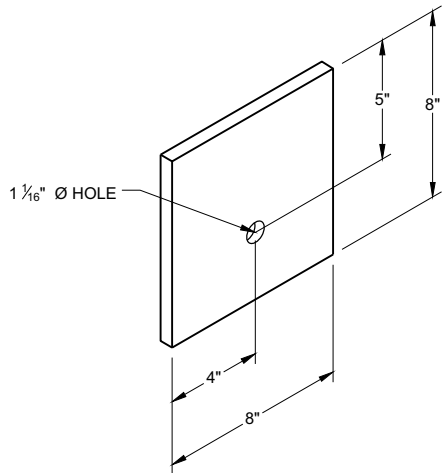


GENERIC GROUND STRUT 9 E

| BILL OF MATERIALS |                                                                                                                |
|-------------------|----------------------------------------------------------------------------------------------------------------|
| PART NO.          | DESCRIPTION<br>MATERIALS PROVIDED BY MGS EAT MANUFACTURER.<br>SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION. |
| 1                 | UPPER POST NO. 1 6" X 6" TUBE                                                                                  |
| 2                 | LOWER POST NO. 1                                                                                               |
| 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.<br>SECTIONS VARY IN LENGTH.                                  |
| 12                | IMPACT HEAD                                                                                                    |
| 13                | EAT MARKER POST - YELLOW<br>(SEE APPROVED PRODUCTS LIST)                                                       |
| 14                | SOIL PLATE                                                                                                     |
| 15                | UPPER POST NO. 2                                                                                               |
| 16                | LOWER POST NO. 2                                                                                               |



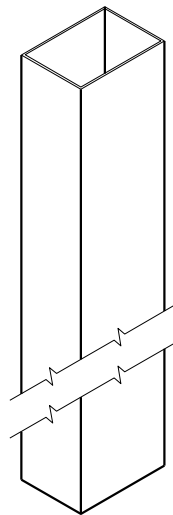
GENERIC ANCHOR CABLE BOX 9 E



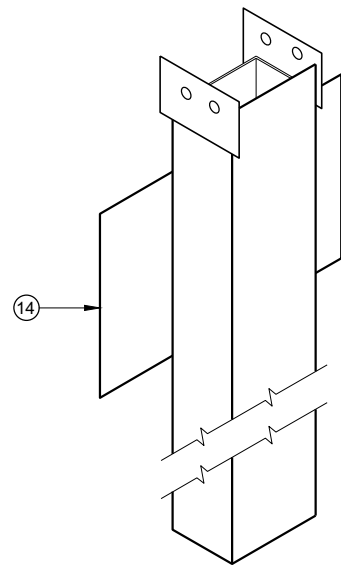
BEARING PLATE 6 E

MIDWEST GUARDRAIL SYSTEM  
ENERGY ABSORBING TERMINAL  
(MGS)

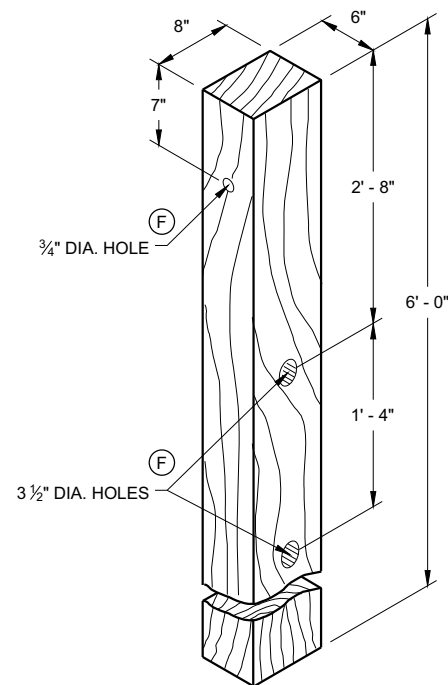
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



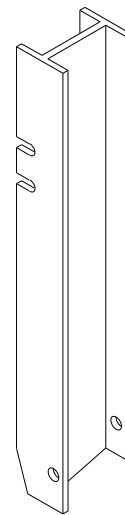
UPPER POST NO. 1<sup>(1) (E)</sup>



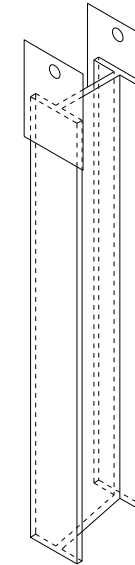
LOWER POST NO. 1<sup>(2) (E)</sup>



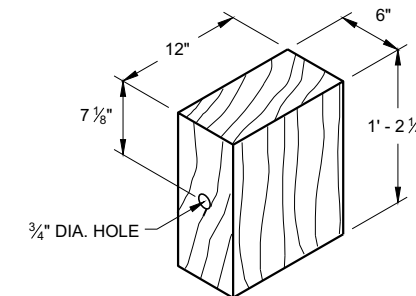
WOOD CRT POST<sup>(3) (E)</sup>  
POSTS NUMBER 3-9



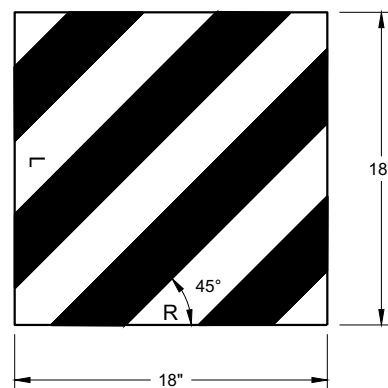
UPPER POST NO. 2<sup>(15) (E)</sup>



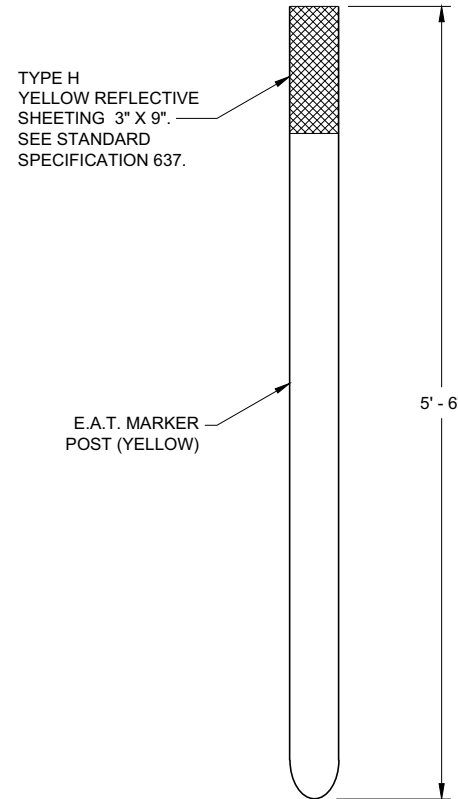
LOWER POST NO. 2<sup>(16) (E)</sup>



WOOD BLOCKOUT<sup>(4)</sup>  
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



REFLECTIVE SHEETING DETAIL<sup>(E)</sup>

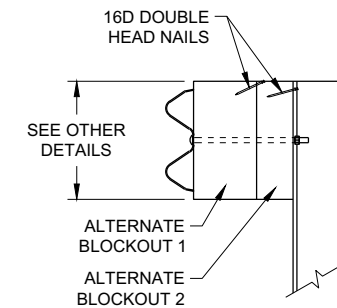


FRONT VIEW

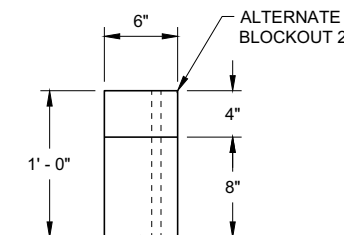


SIDE VIEW

E.A.T. MARKER POST<sup>(13)</sup>



SIDE VIEW



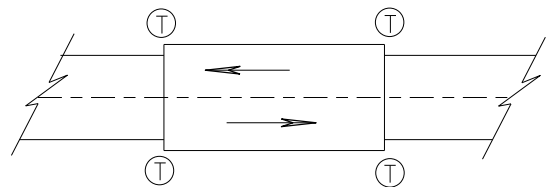
TOP VIEW

ALTERNATE WOOD  
BLOCKOUT DETAIL

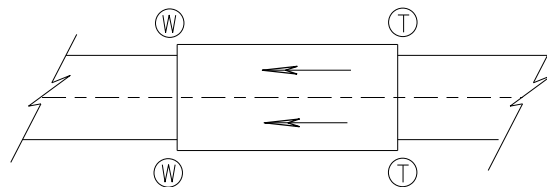
**MIDWEST GUARDRAIL SYSTEM  
ENERGY ABSORBING TERMINAL  
(MGS)**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
7/2018  
DATE  
/S/ Rodney Taylor  
ROADWAY STANDARDS DEVELOPMENT  
UNIT SUPERVISOR  
FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

### GENERAL NOTES

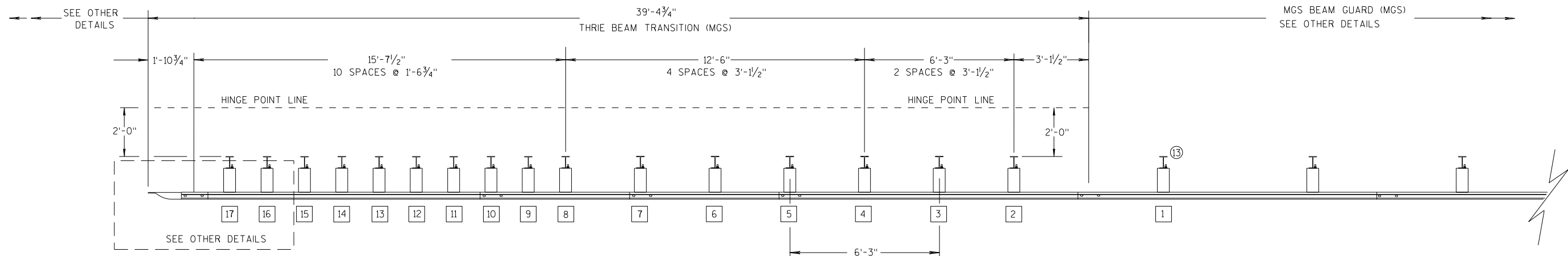
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

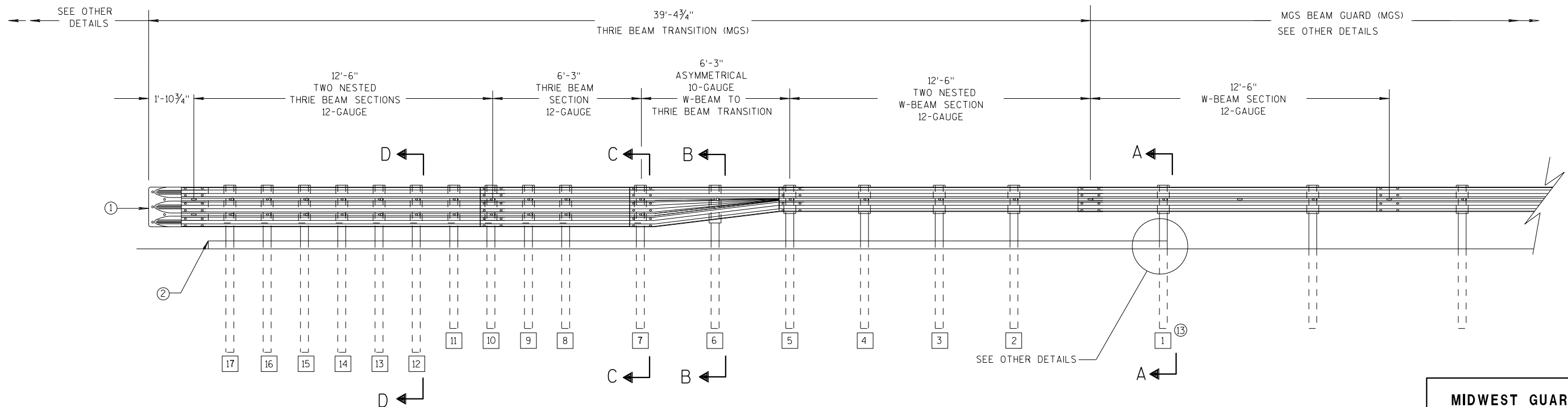
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

- ① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD14B42



PLAN VIEW



ELEVATION VIEW

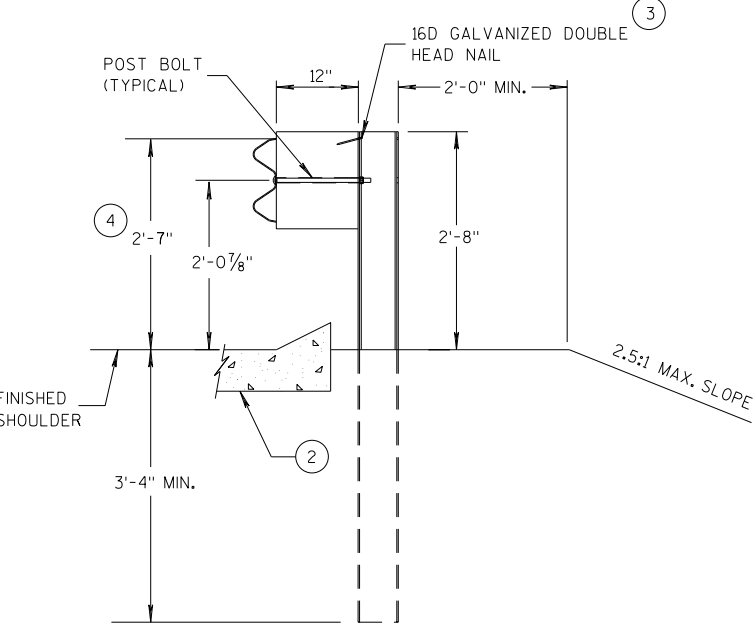
## MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)

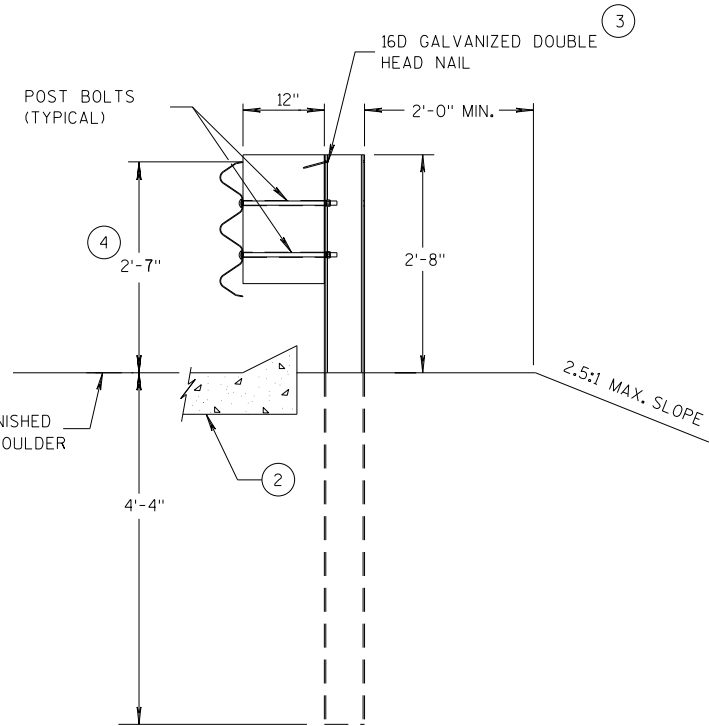
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

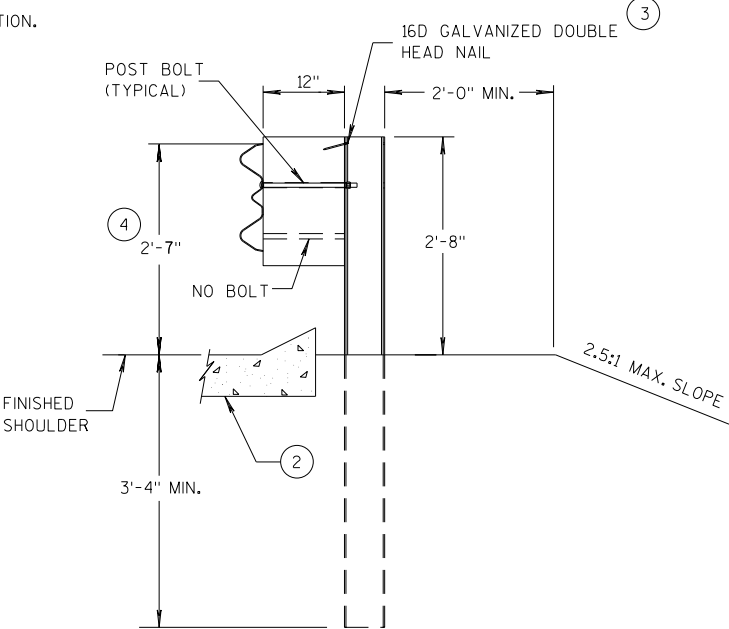
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS  $\pm 1"$ .
- 13 STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42



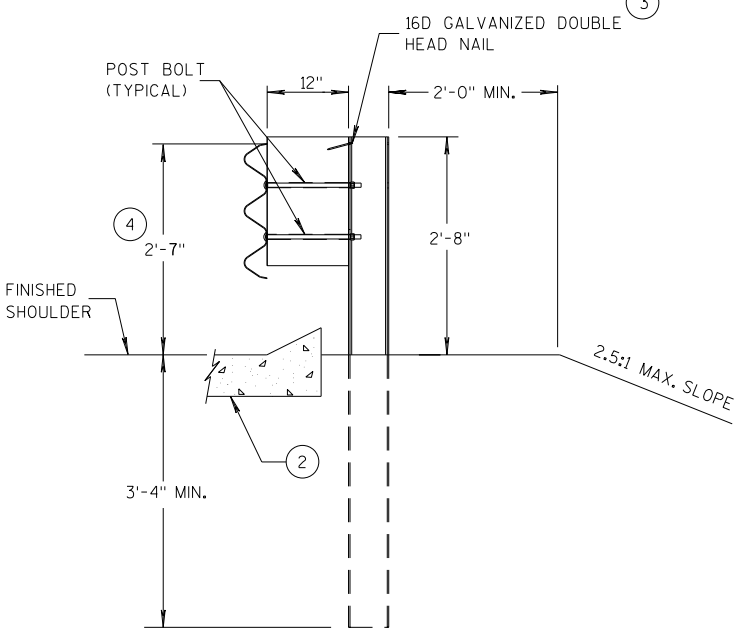
SECTION A-A  
POSTS 1-5



SECTION D-D  
POSTS 12-17



SECTION B-B  
POST 6



SECTION C-C  
POSTS 7-11

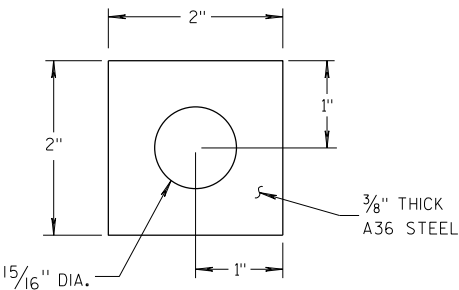
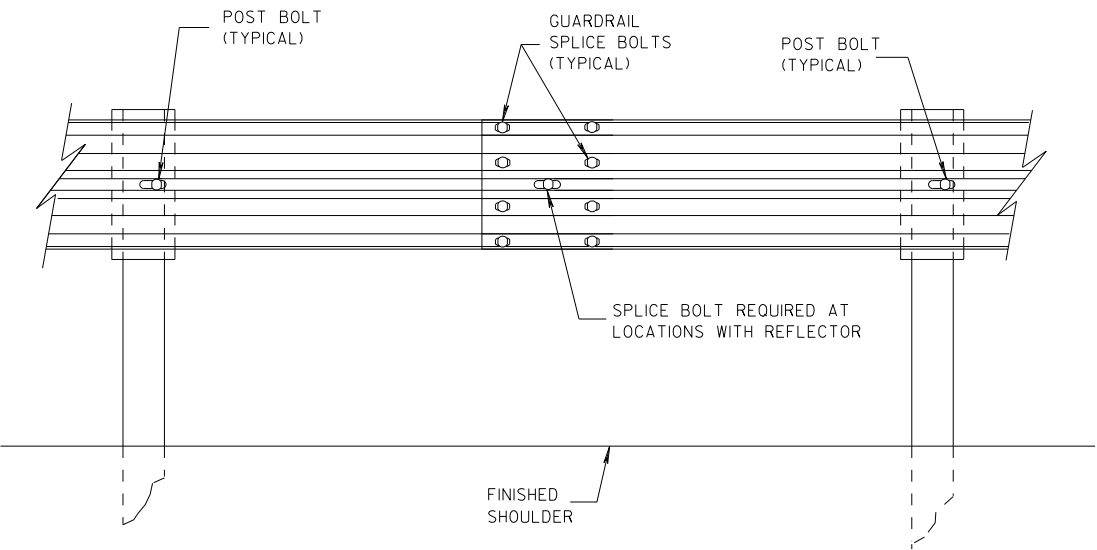
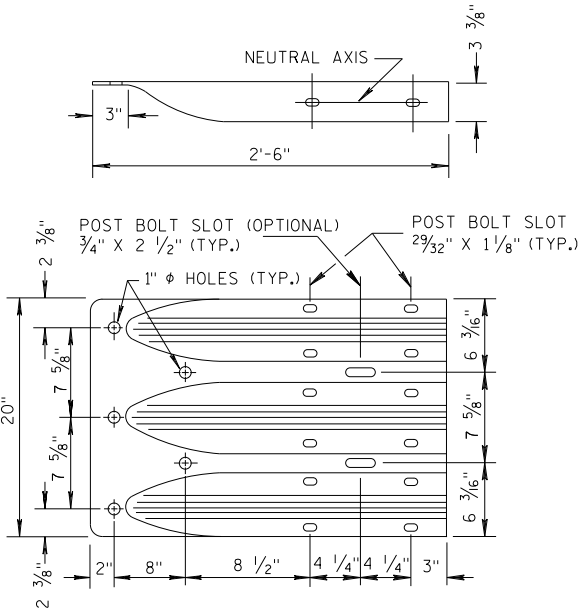


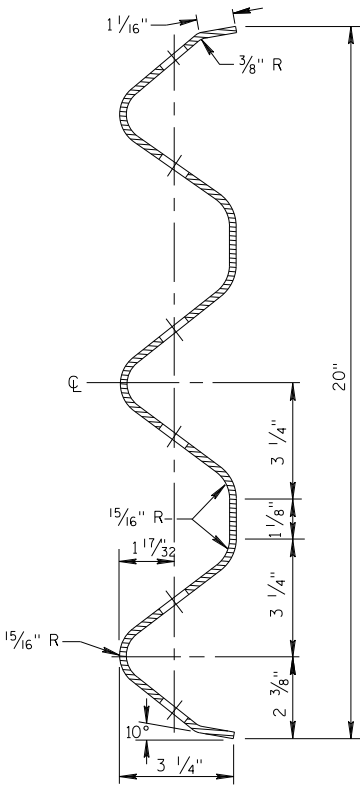
PLATE WASHER DETAIL



SPLICE DETAIL



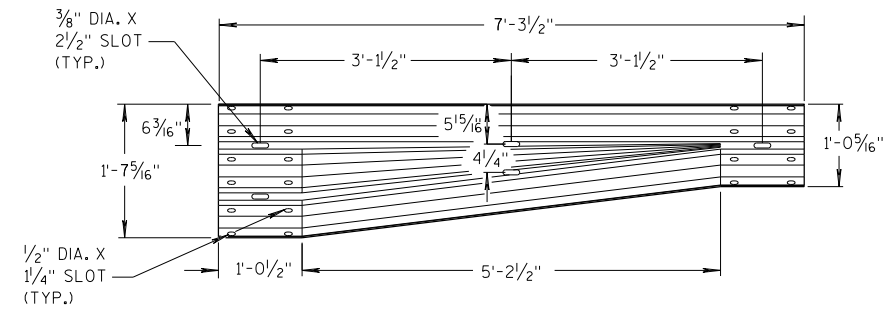
THRIE BEAM  
TERMINAL CONNECTOR



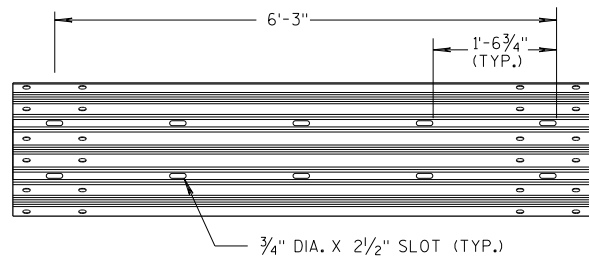
SECTION THRU THRIE  
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)

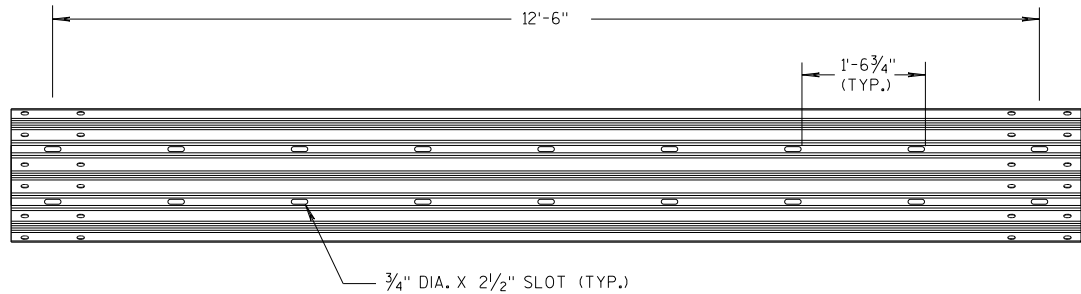
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



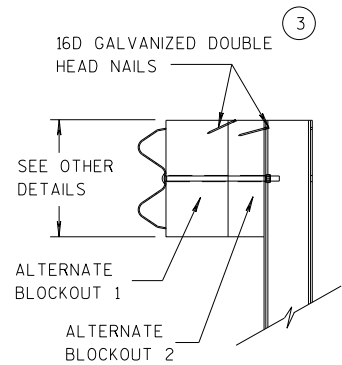
W-BEAM TO THRIE BEAM TRANSITION SECTION



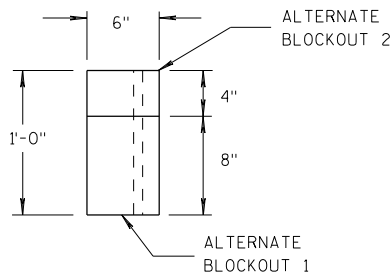
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

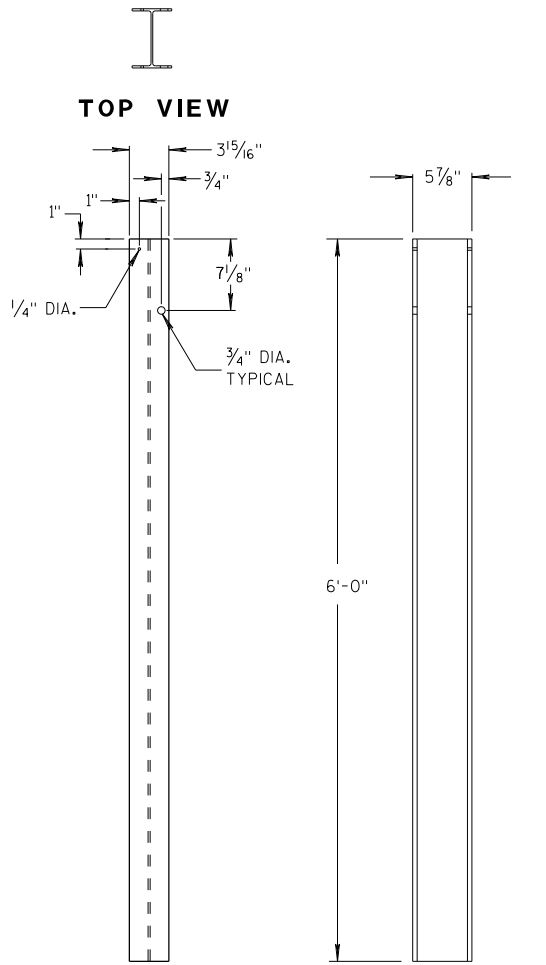


SIDE VIEW



TOP VIEW

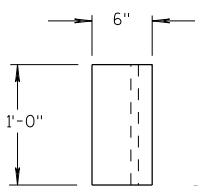
ALTERNATE WOOD BLOCKOUT DETAIL



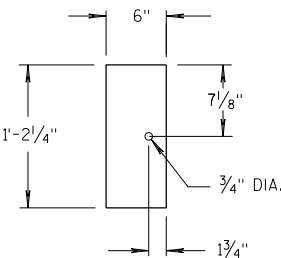
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

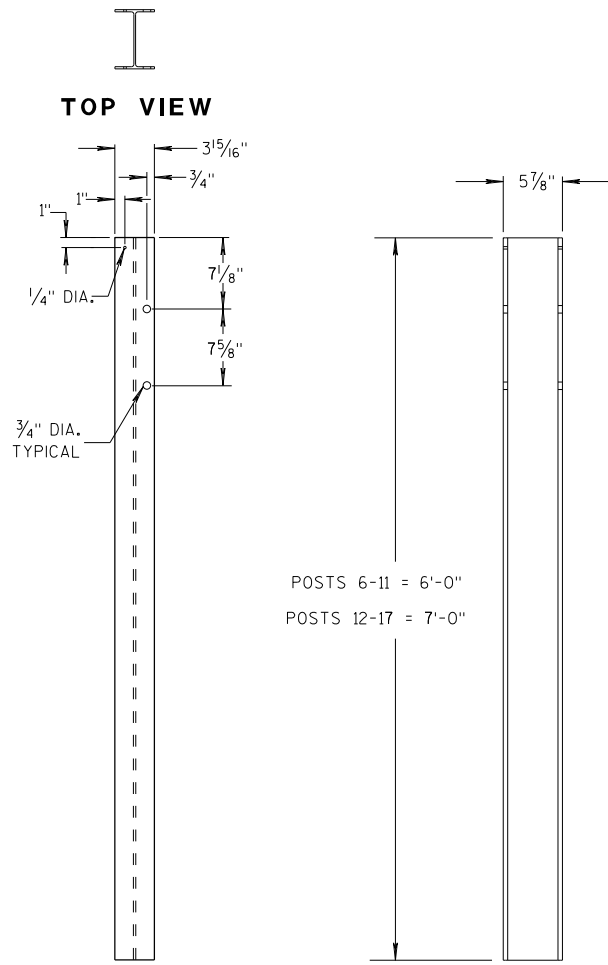


TOP VIEW



FRONT VIEW

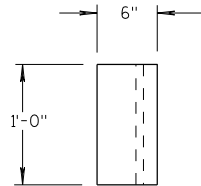
BLOCKOUT POSTS 1-5



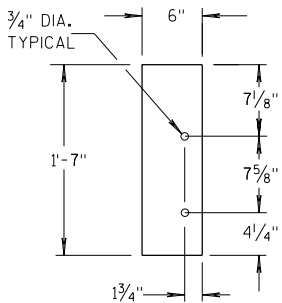
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17



TOP VIEW



FRONT VIEW

BLOCKOUT POSTS 6-17

### GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

⑤ WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

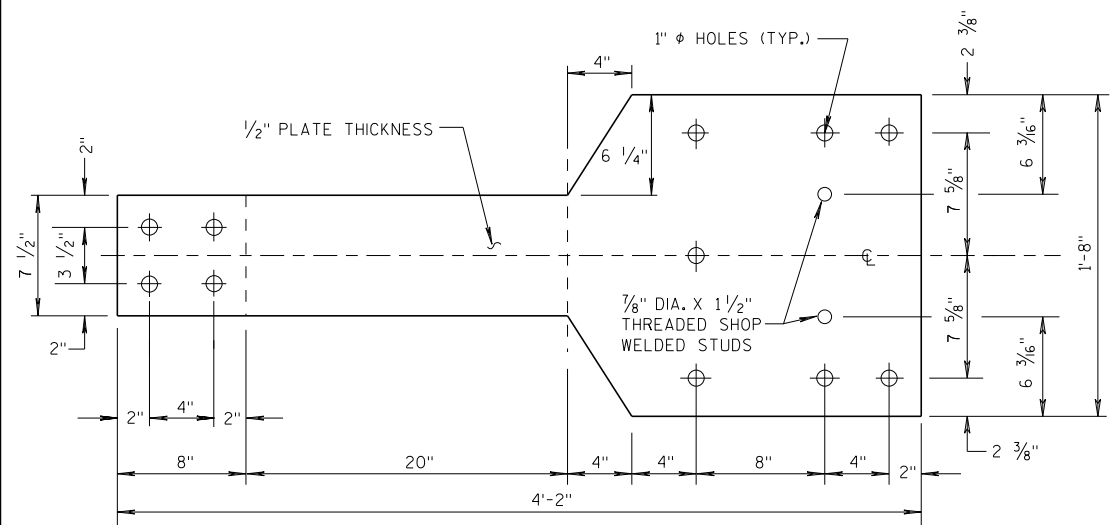
⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)

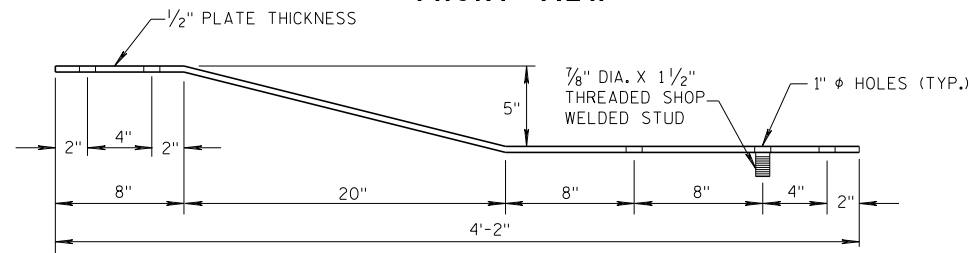
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

6

**S.D.D. 14 B 45-5h**

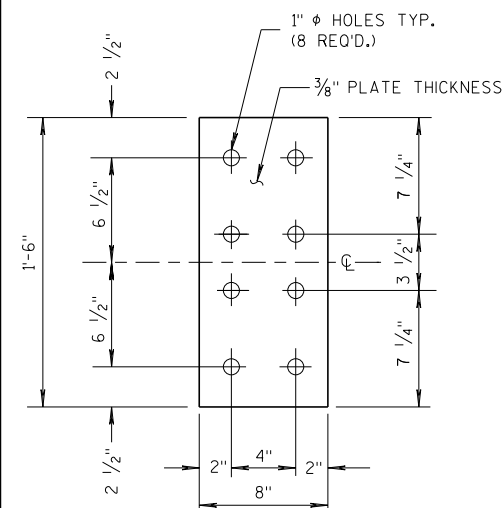


**FRONT VIEW**



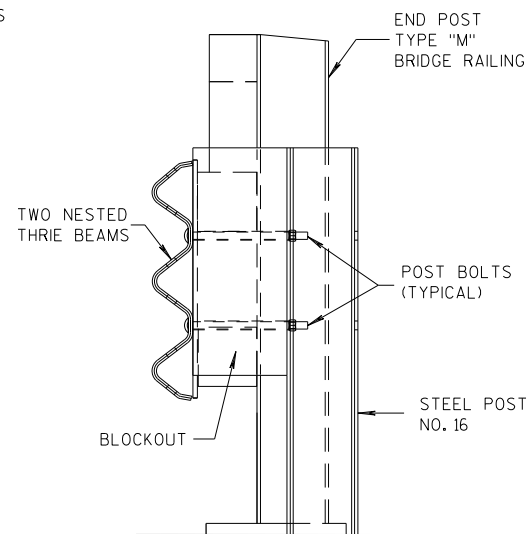
### PLAN VIEW

### BACK-UP PLATE DETAIL, TYPE "M"

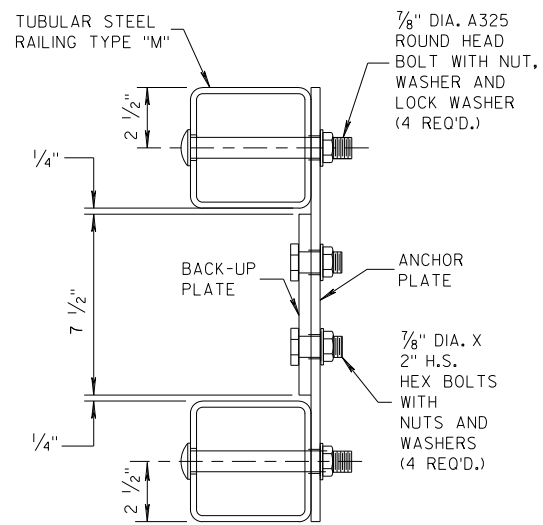


**FRONT VIEW**

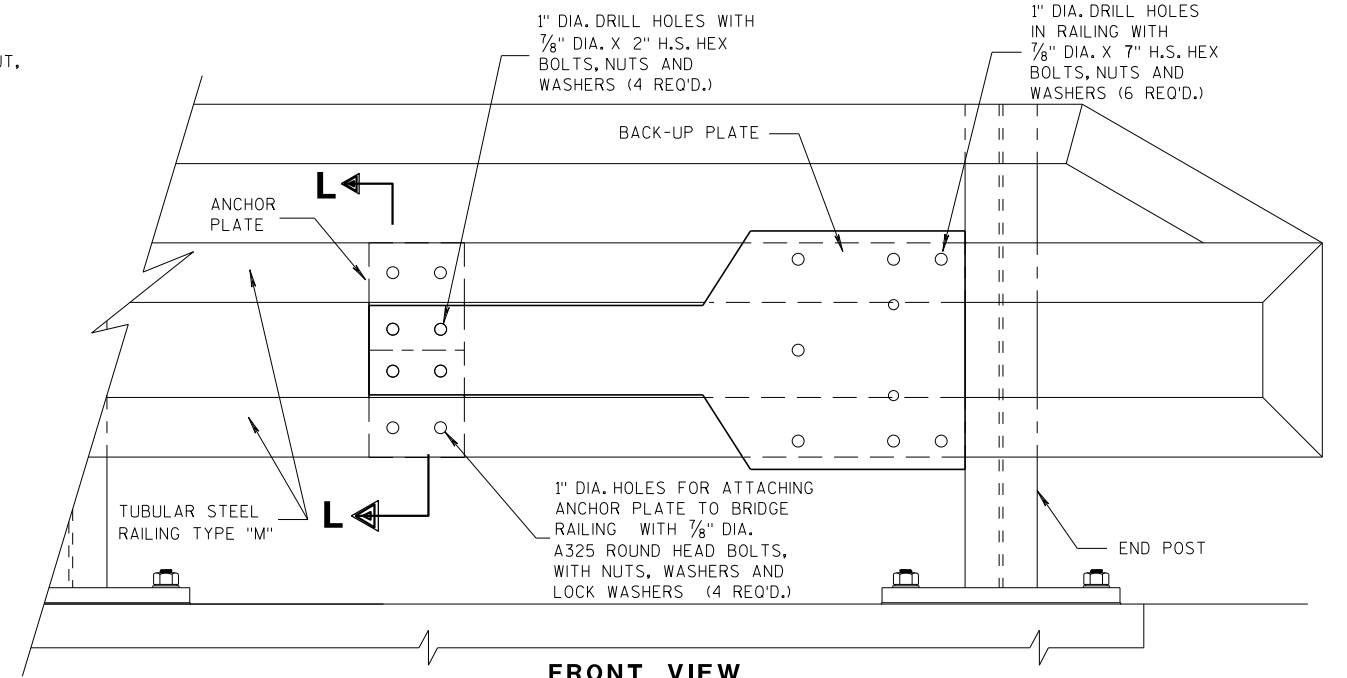
### ANCHOR PLATE DETAIL, TYPE "M"



**SECTION M-M**

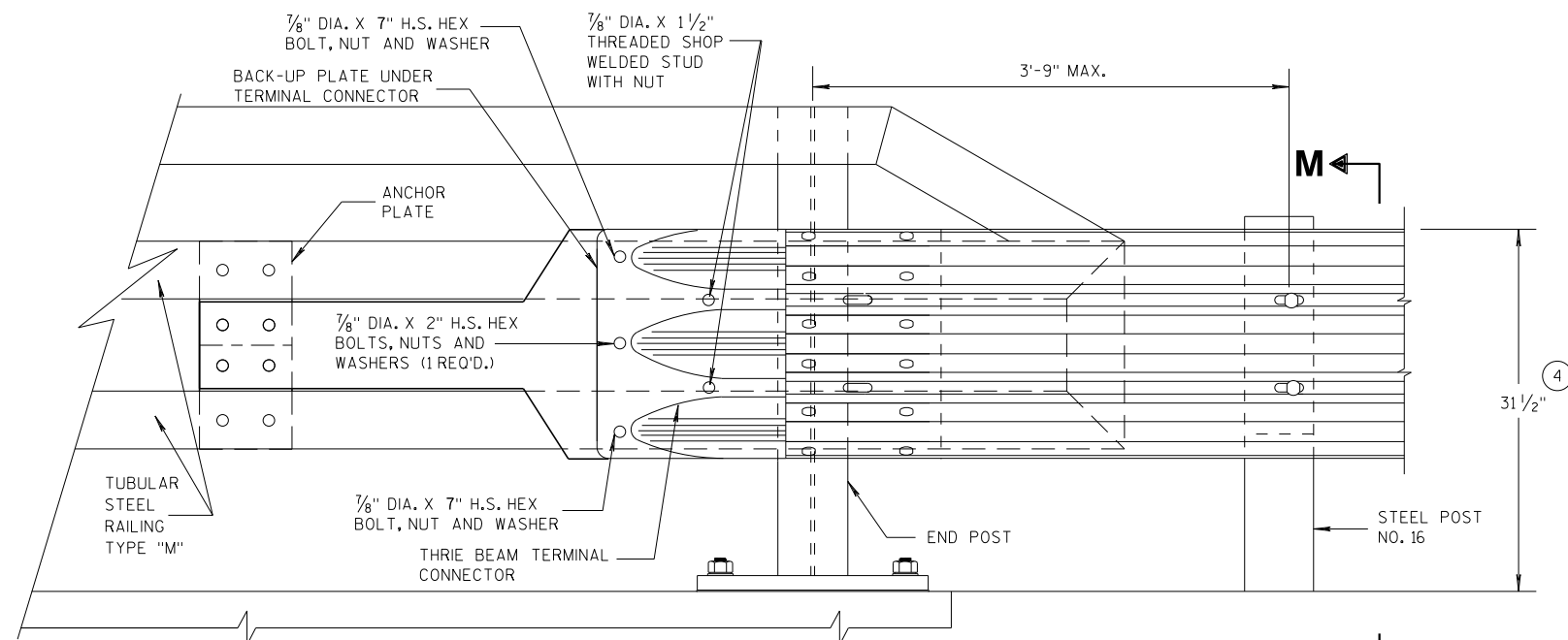


**SECTION L-L**

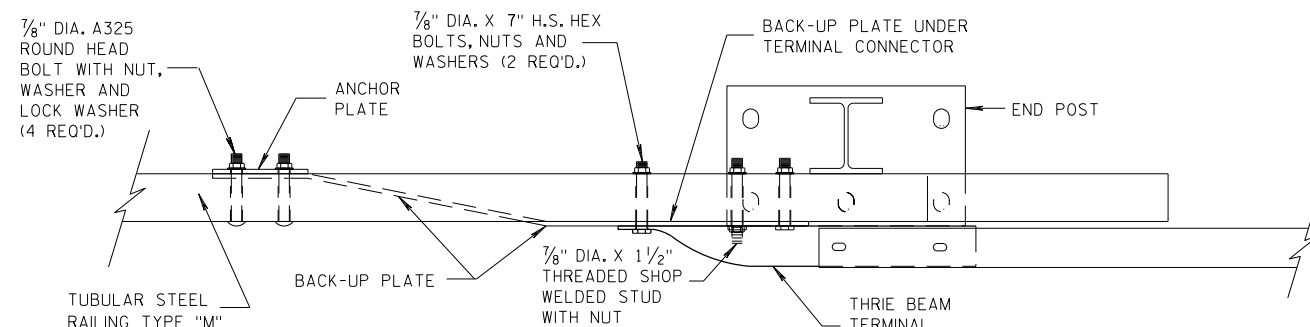


**FRONT VIEW**

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



**FRONT VIEW**



### PLAN VIEW

### THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

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

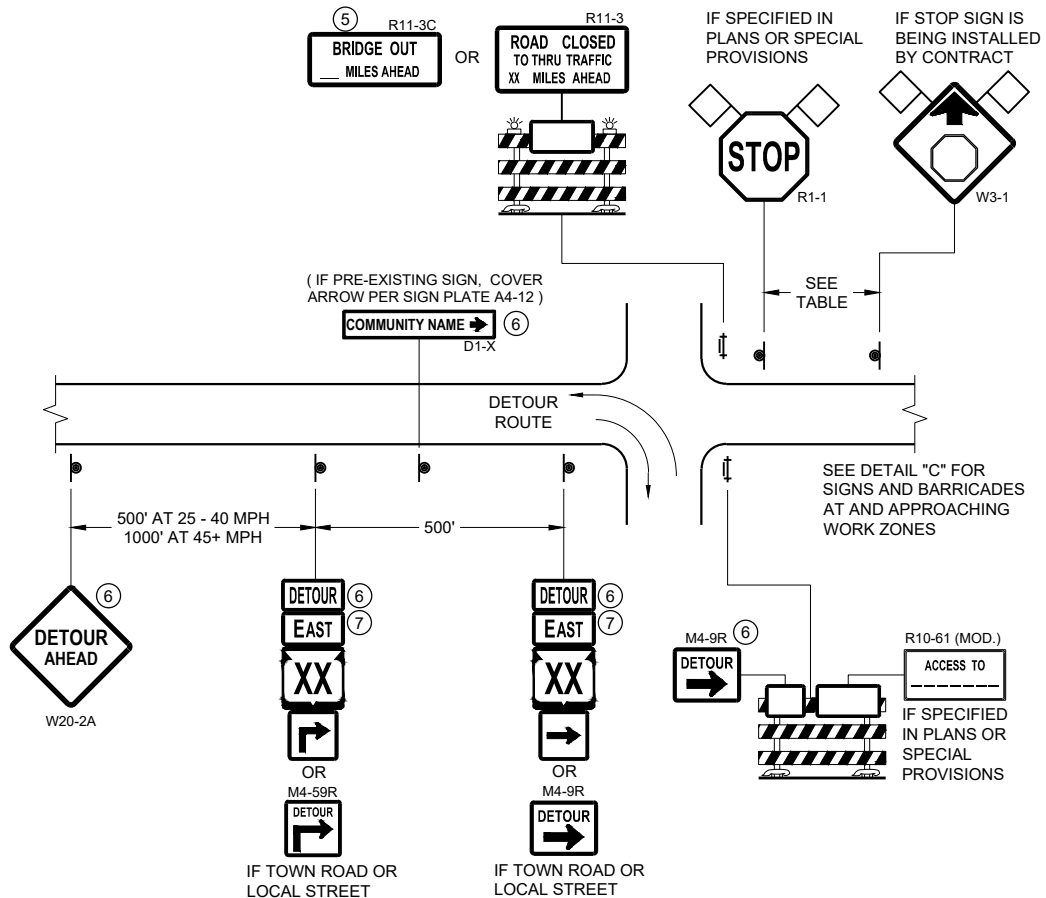
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
07/2018  
DATE  
FHWA

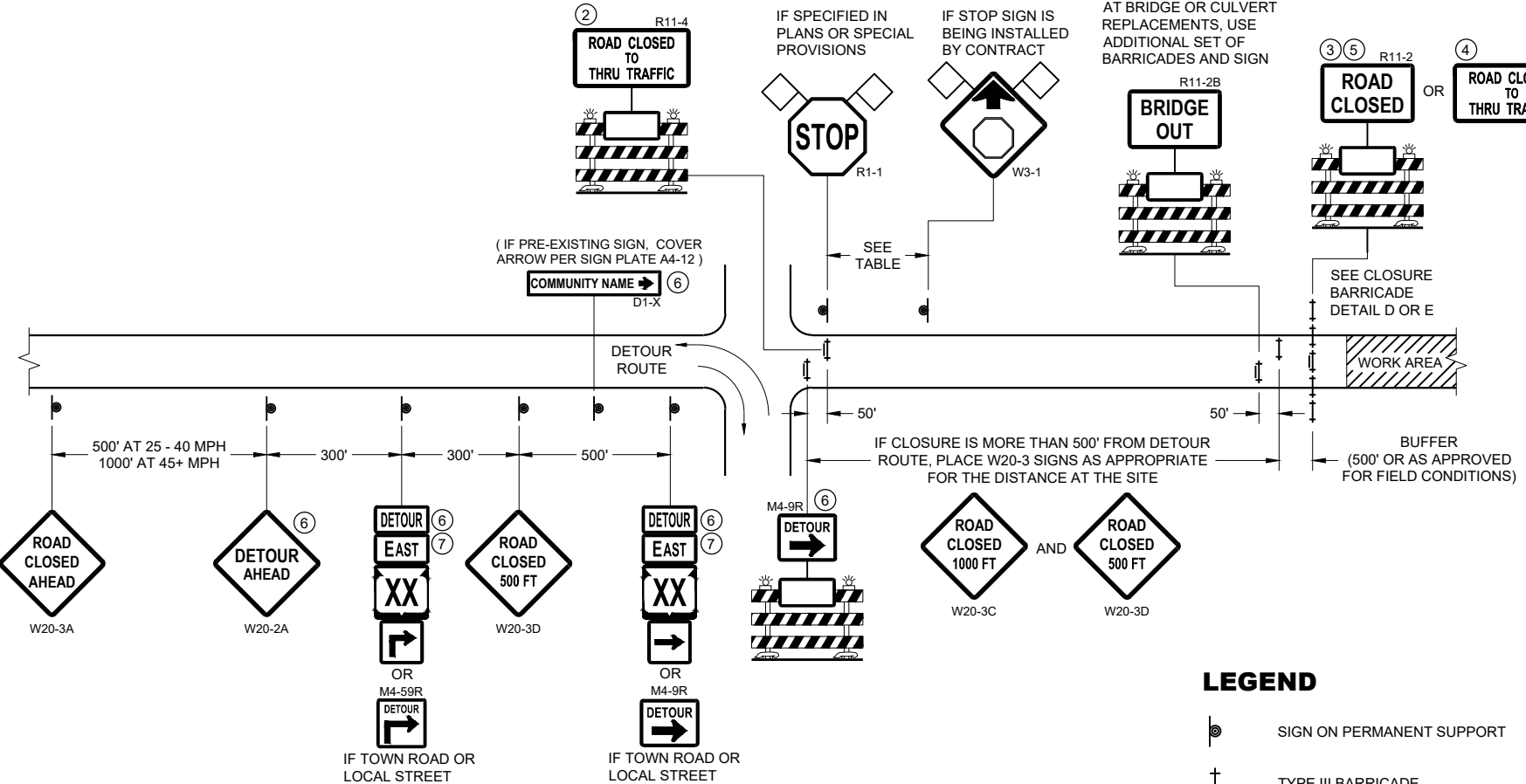
/S/ Rodney Taylor  
ROADWAY STANDARDS DEVELOPMENT  
UNIT SUPERVISOR

6

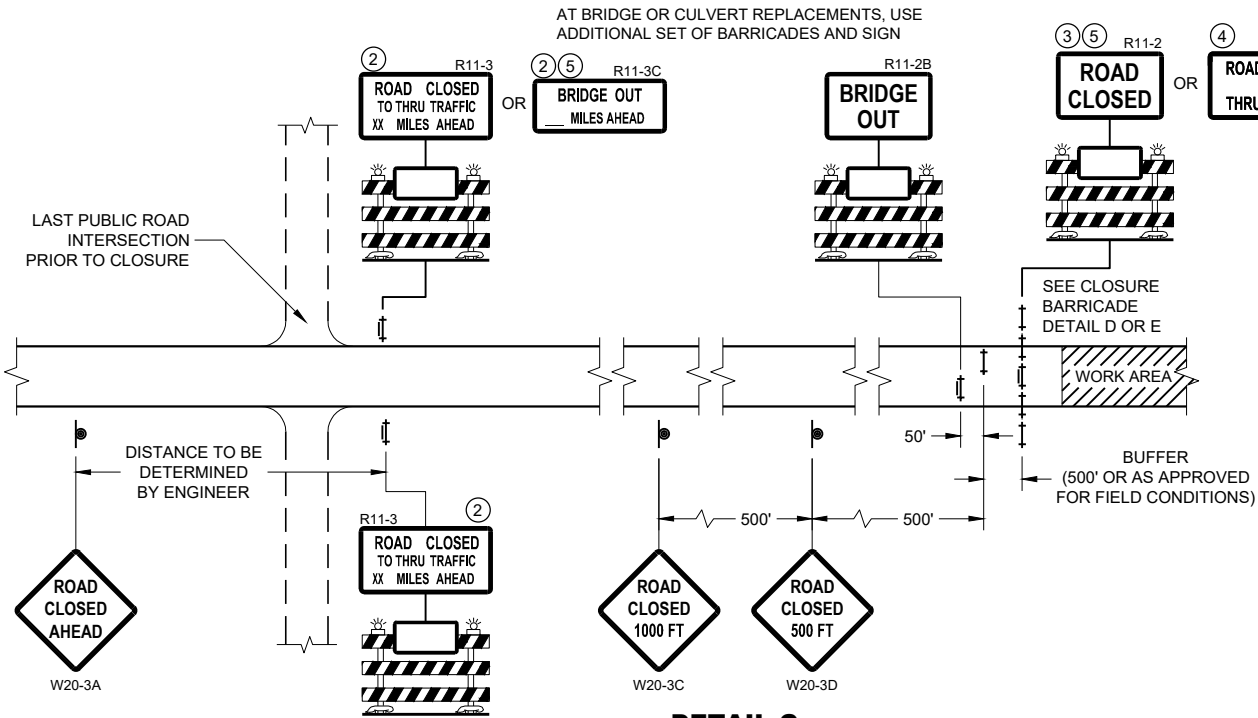
**S.D.D. 14 B 45-5h**



**DETAIL A**  
**MAINLINE CLOSURE WITH POSTED DETOUR**  
WORK ZONE GREATER THAN OR EQUAL TO ½ MILE FROM  
DETOUR ROUTE ( 1000 FEET IF URBAN )



**DETAIL B**  
**MAINLINE CLOSURE WITH POSTED DETOUR**  
WORK ZONE LESS THAN ½ MILE FROM  
DETOUR ROUTE ( 1000 FEET IF URBAN )



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

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

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

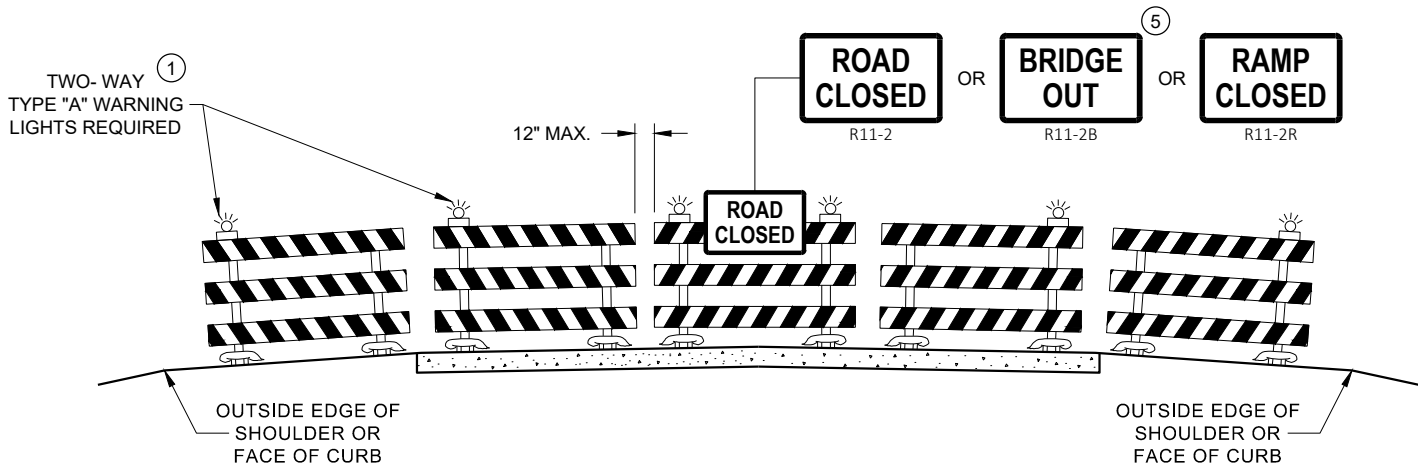
**LEGEND**

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

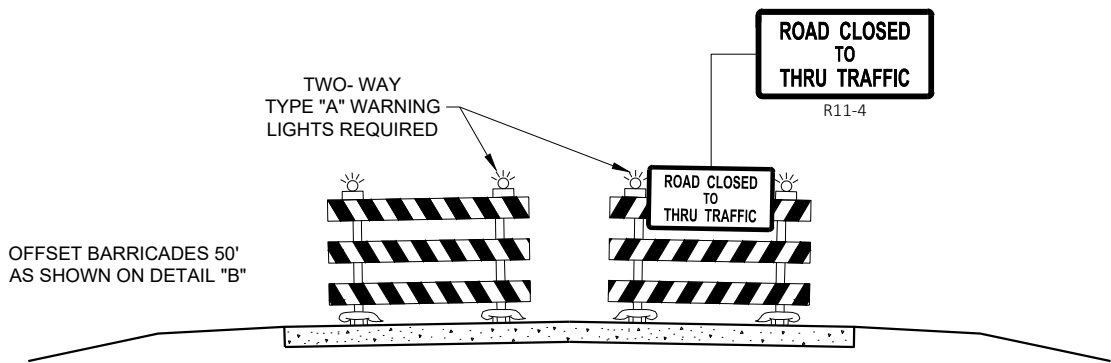
**BARRICADES AND SIGNS  
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2023 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER  
FHWA



**DETAIL D**  
**ROAD CLOSURE BARRICADE DETAIL**  
**APPROACH VIEW**



**DETAIL E**  
**LANE CLOSURE BARRICADE DETAIL**  
**APPROACH VIEW**

SEE SDD 15C2 - SHEET "a" FOR LEGEND

**GENERAL NOTES**

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

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

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

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

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

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

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

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

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

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

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

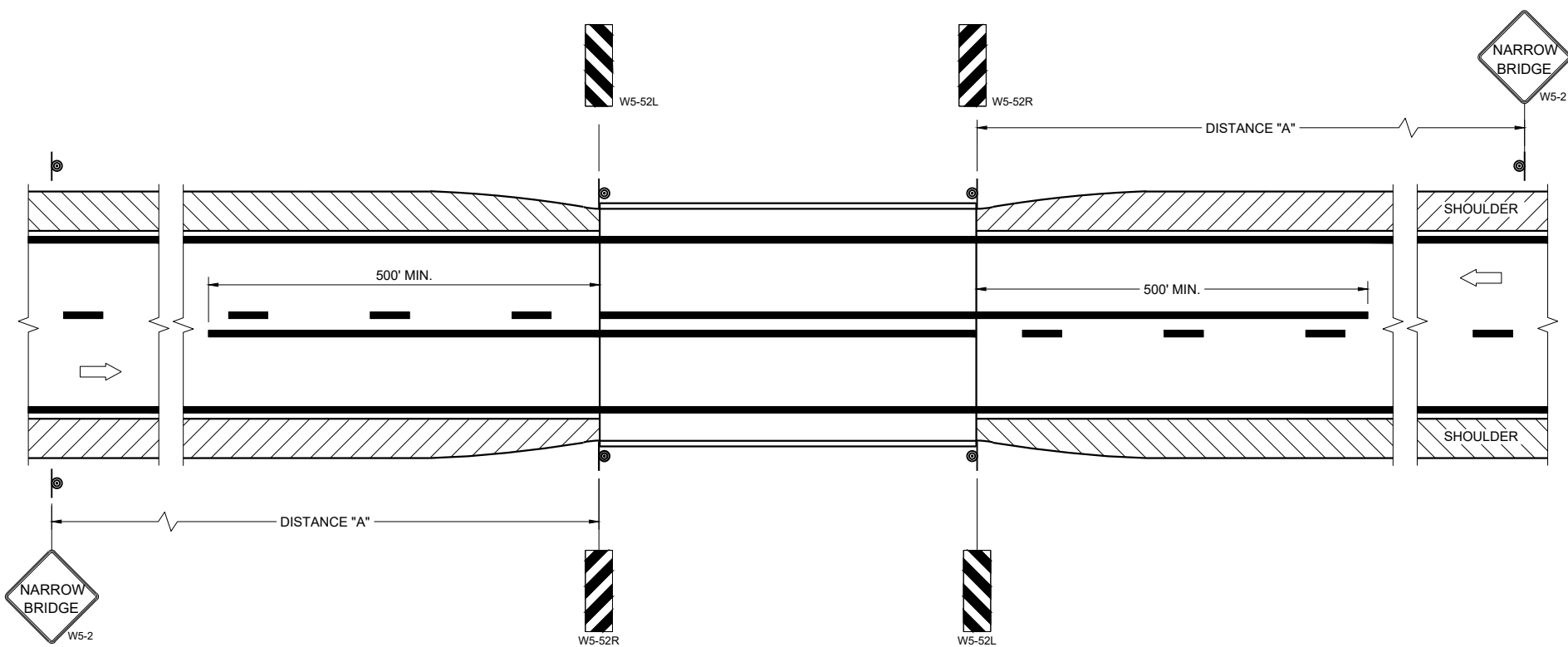
- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- 2 THESE SIGNS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

**BARRICADES AND SIGNS**  
**FOR**  
**VARIOUS CLOSURES**

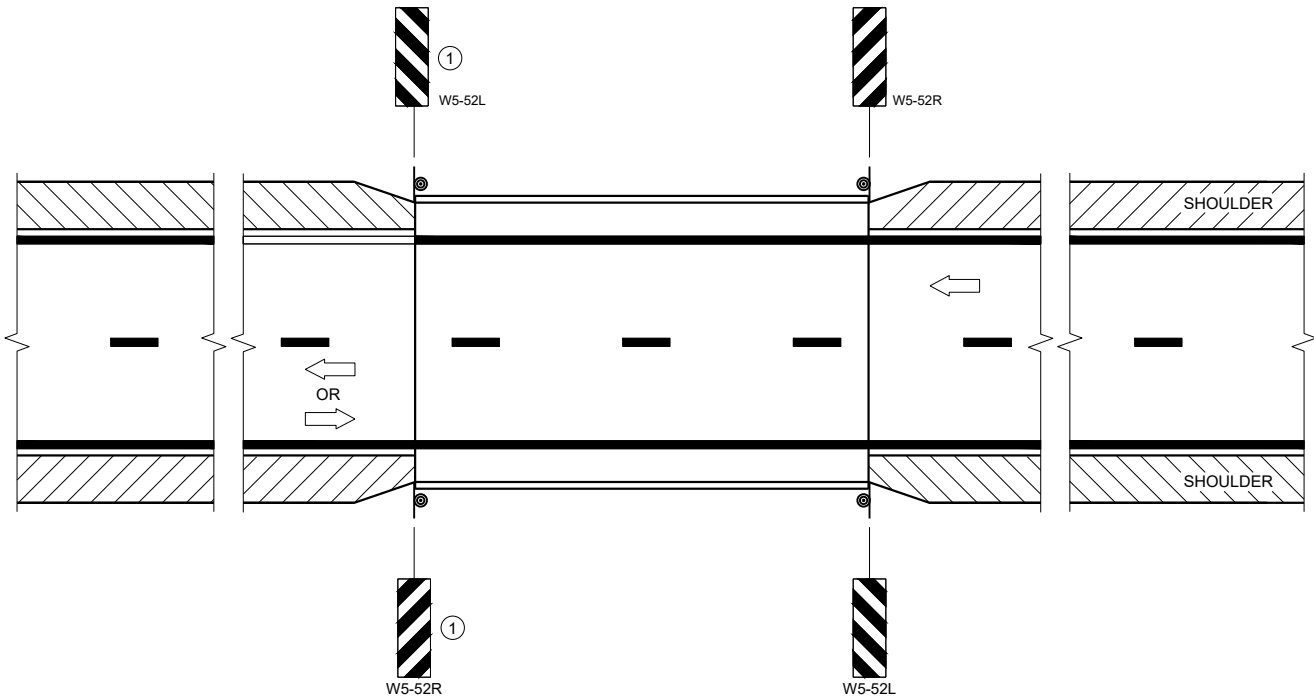
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2023 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER

FHWA



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



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

**GENERAL NOTES**

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

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

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

ON BRIDGE ONLY PROJECTS, PLACE 300 FEET OF EDGELINE.

OMIT EDGELINES ON ROADWAYS WITHOUT EXISTING EDGELINES.

① OMIT ON ONE-WAY TRAVELED WAYS.

**LEGEND**

⊙ SIGN ON PERMANENT SUPPORT

➡ DIRECTION OF TRAFFIC

**DISTANCE TABLE**

| POSTED OR 85TH PERCENTILE SPEED | DISTANCE "A" |
|---------------------------------|--------------|
| 25                              | 150'         |
| 30                              | 200'         |
| 35                              | 250'         |
| 40                              | 300'         |
| 45                              | 400'         |
| 50                              | 550'         |
| 55                              | 700'         |

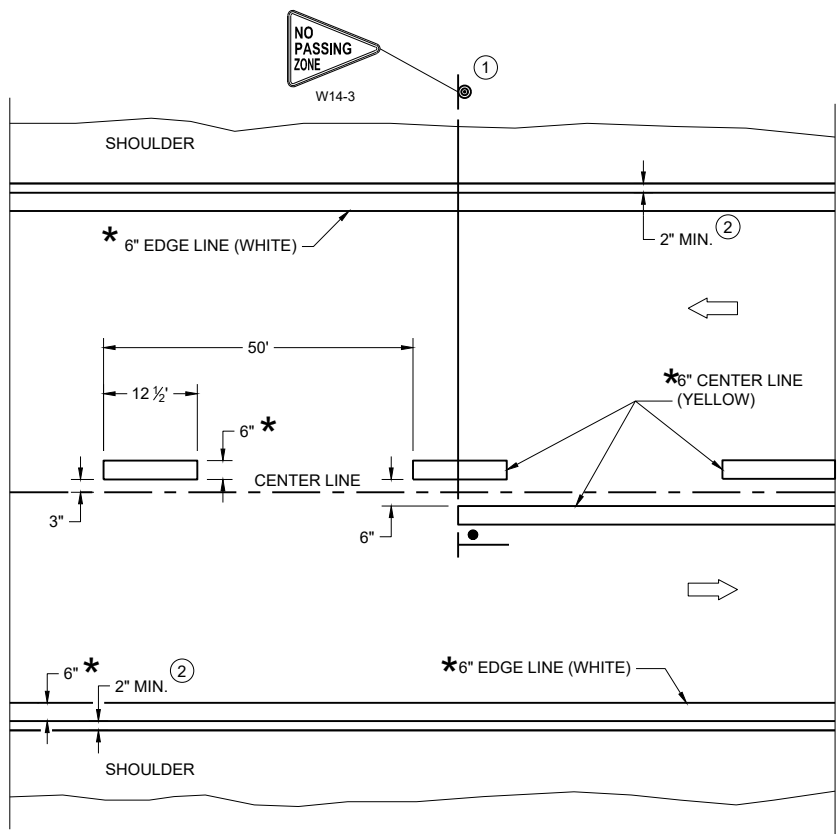
**SIGNING AND MARKING  
FOR TWO LANE BRIDGES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

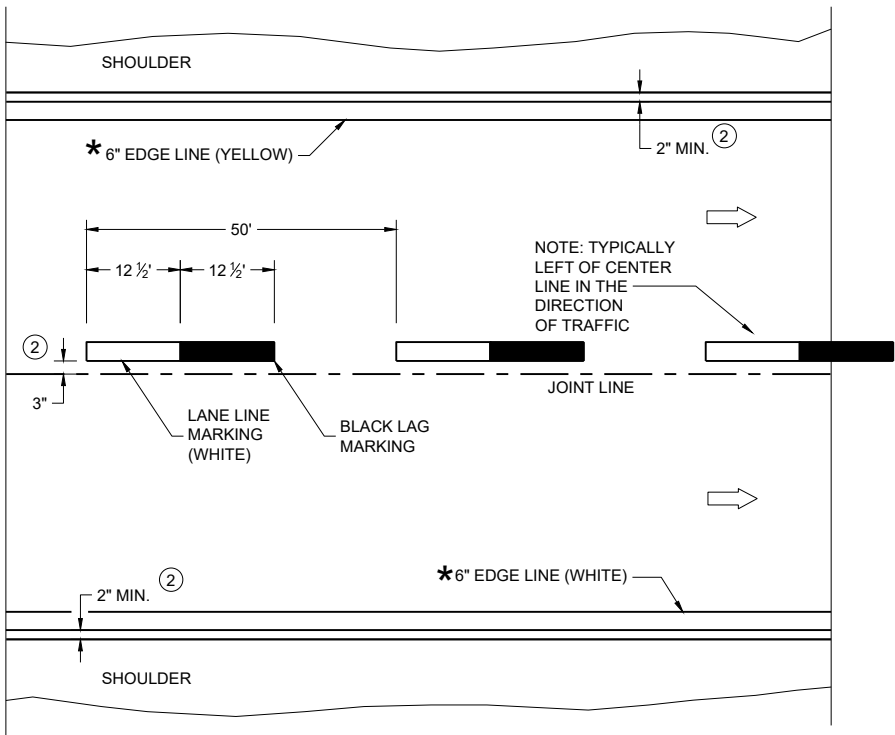
APPROVED  
May 2023  
DATE

/S/ Jeannie Silver  
Statewide Pavement Marking Engineer

FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

\*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

GENERAL NOTES

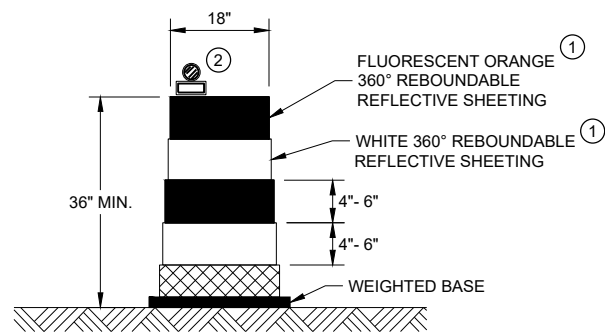
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

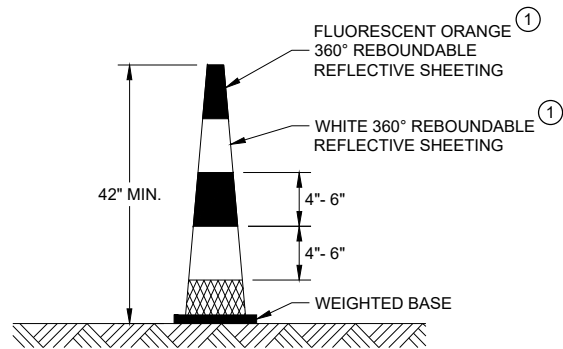
- "T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC

| PERMANENT LONGITUDINAL PAVEMENT MARKINGS           |                                                           |
|----------------------------------------------------|-----------------------------------------------------------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                                                           |
| APPROVED<br>May 2023<br>DATE                       | /S/ Jeannie Silver<br>Statewide Pavement Marking Engineer |
| FHWA                                               |                                                           |



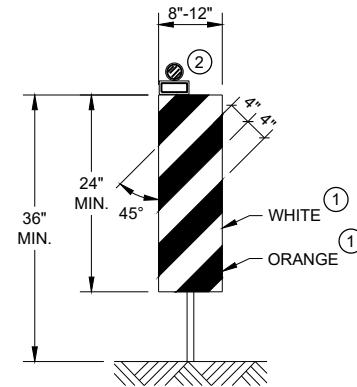
**DRUM**

BALLAST WIDTHS  
RANGE FROM 24"-36"



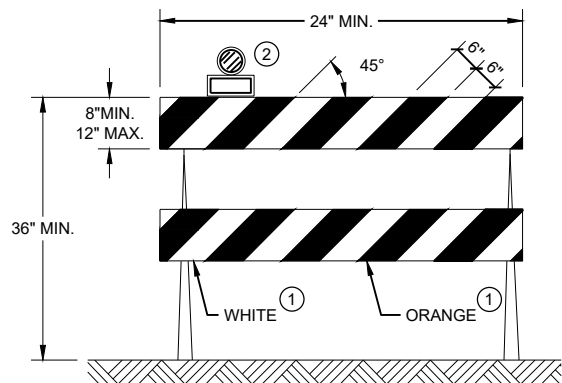
**42" CONE**

DO NOT USE IN TAPERS  
½ SPACING OF DRUMS  
BALLAST WIDTHS  
RANGE FROM 14"-20"



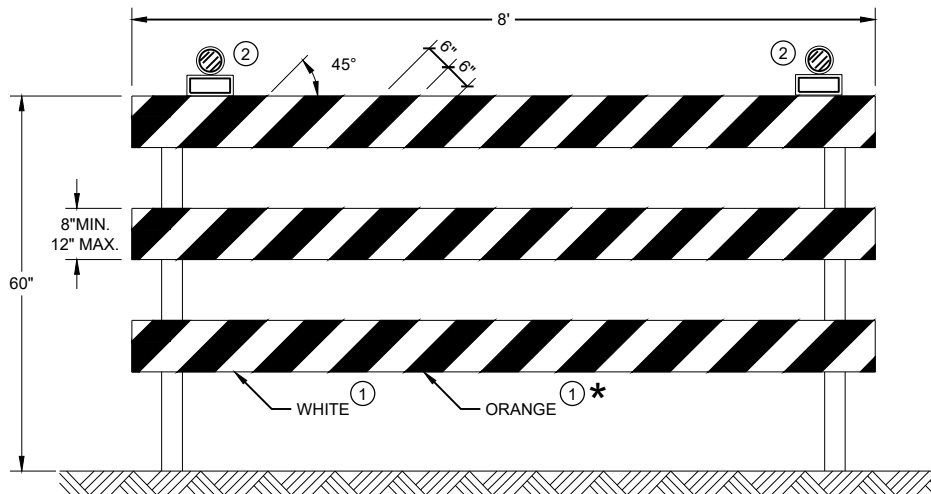
**VERTICAL PANEL**

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



**TYPE II BARRICADE**

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



**TYPE III BARRICADE**

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

\* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

**GENERAL NOTES**

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

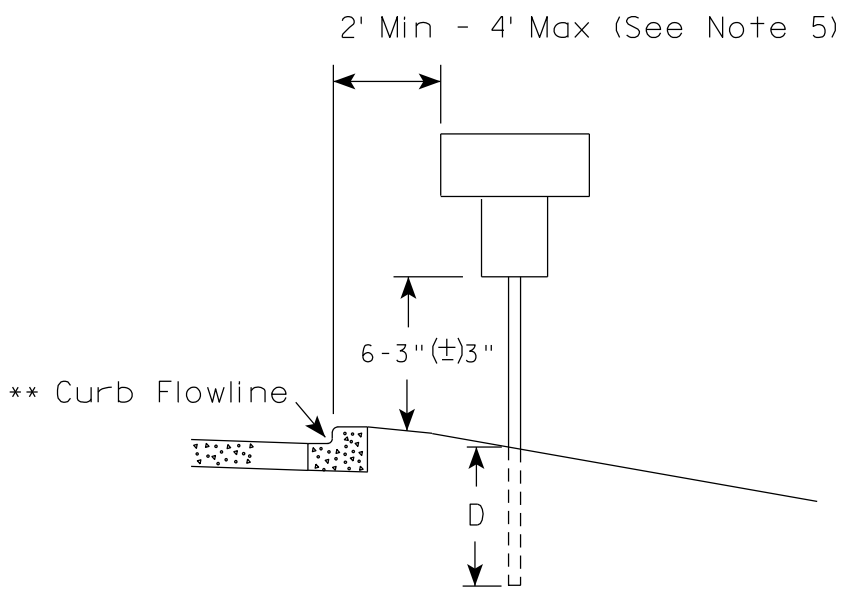
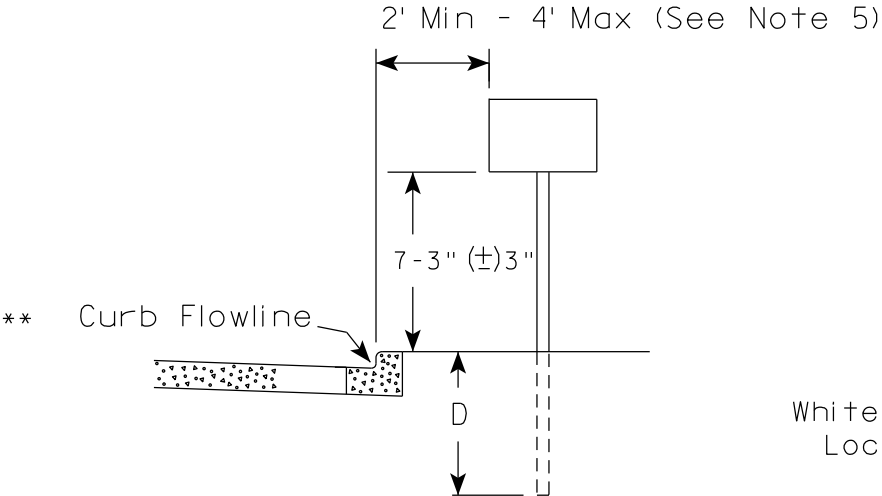
**CHANNELIZING DEVICES  
DRUMS, CONES, BARRICADES  
AND VERTICAL PANELS**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

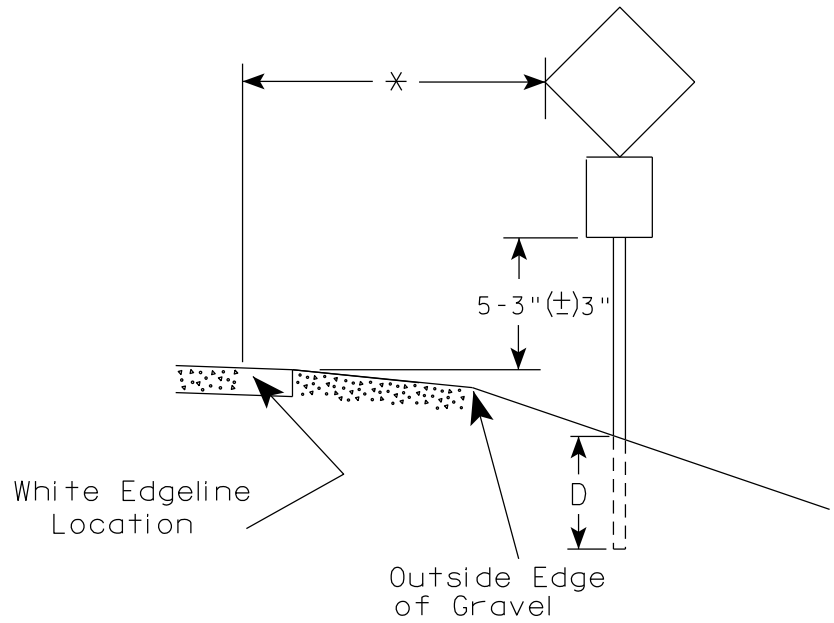
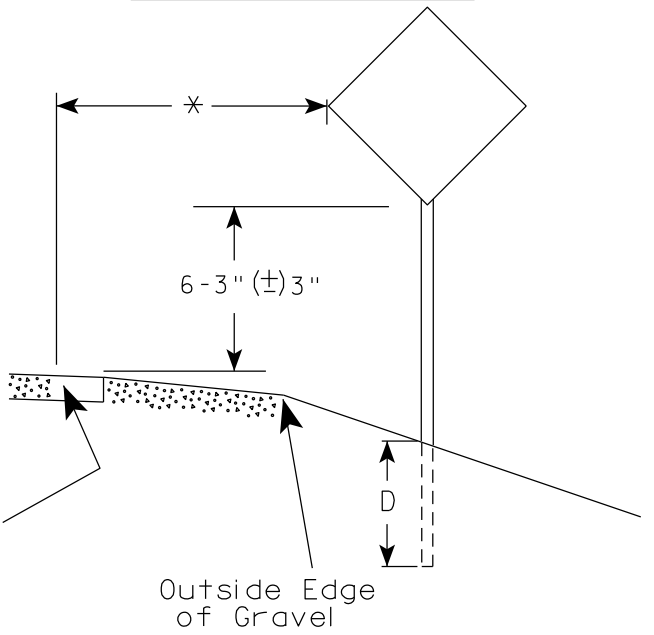
APPROVED  
November 2022 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER

FHWA

URBAN AREA



RURAL AREA (See Note 2)



POST EMBEDMENT DEPTH

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

GENERAL NOTES

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

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

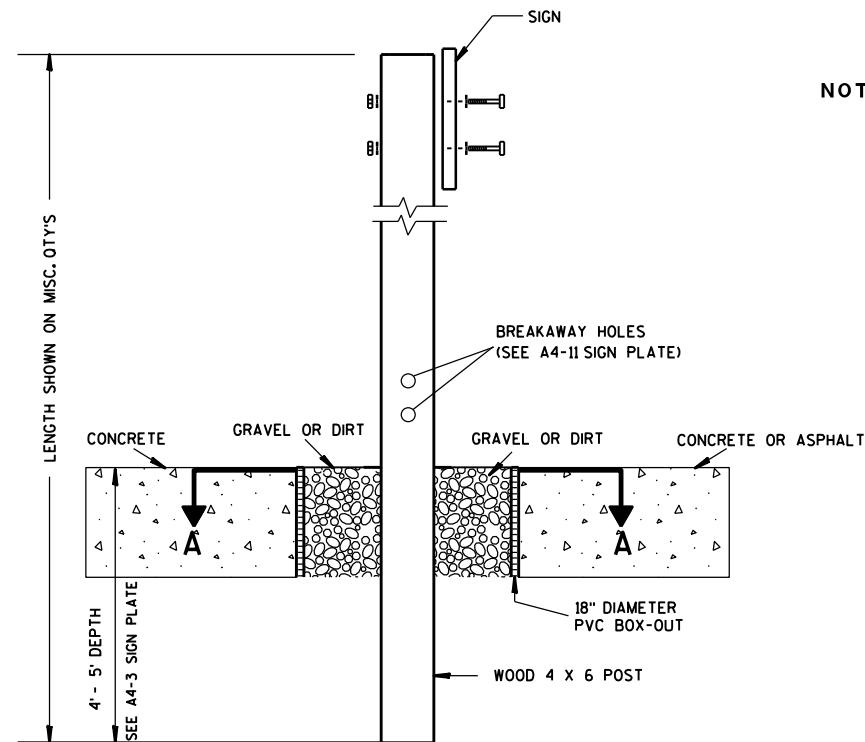
\* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION  
OF PERMANENT TYPE II  
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

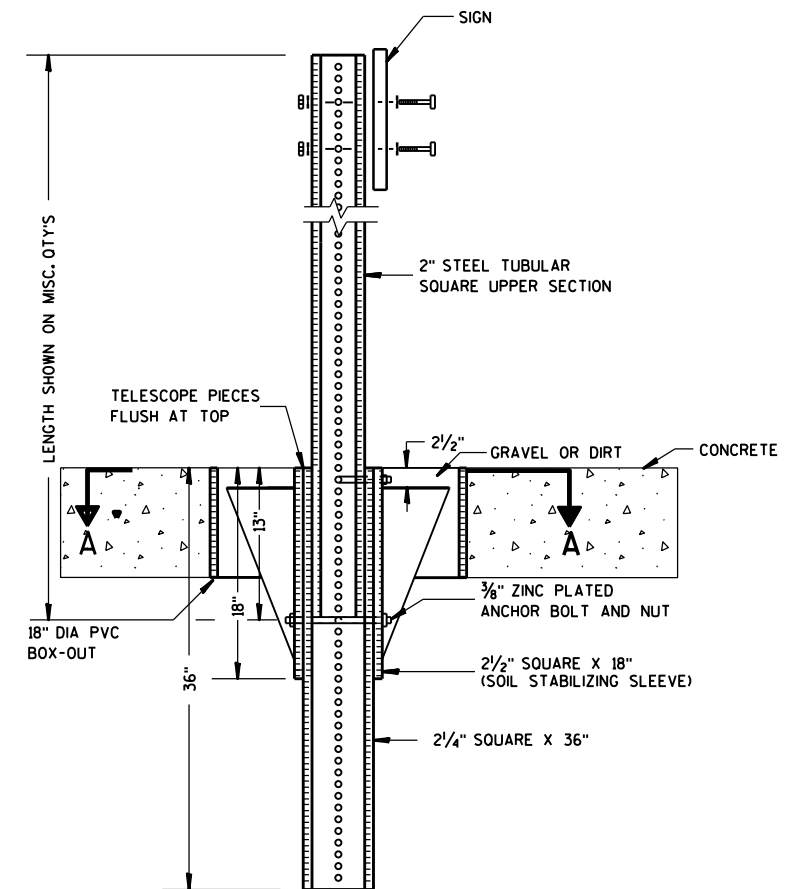
DATE 12/6/23 PLATE NO. A4-3.23



### ELEVATION VIEW

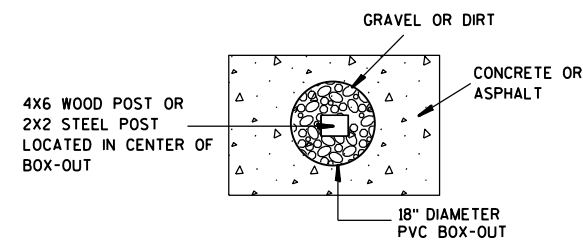
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



### ELEVATION VIEW

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



### PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST  
BOX-OUTS  
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

PROJECT NO:

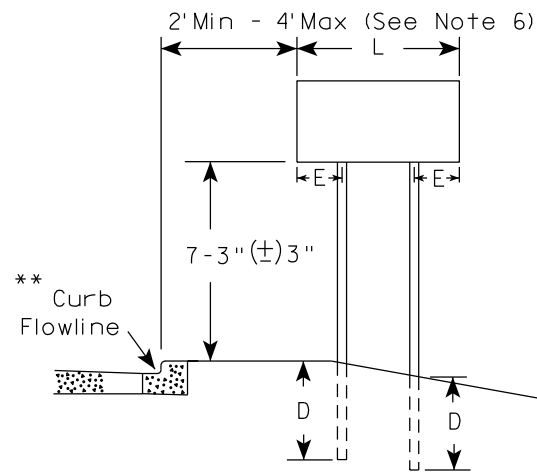
HWY:

COUNTY:

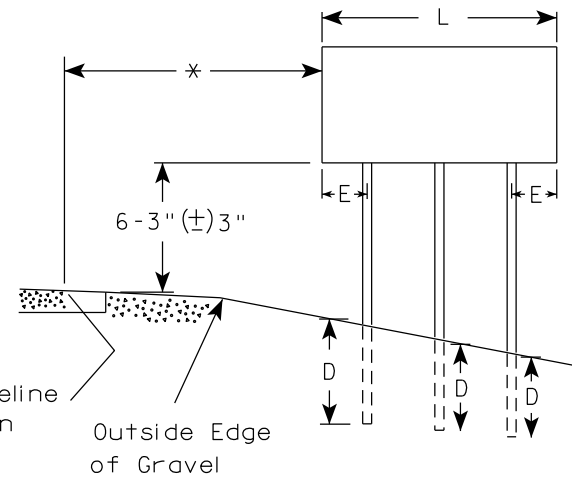
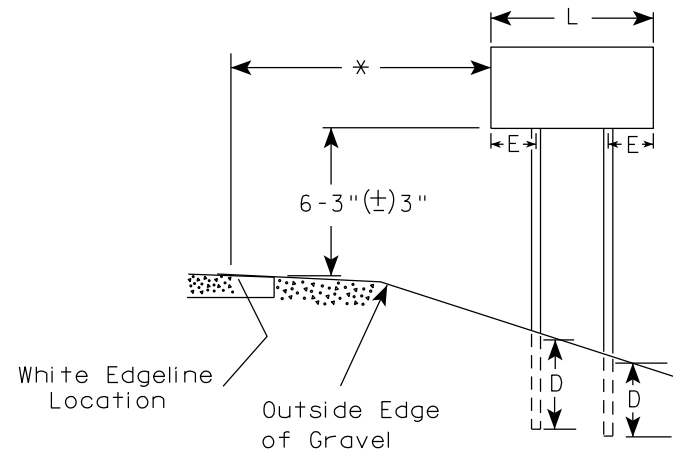
SHEET NO:

E

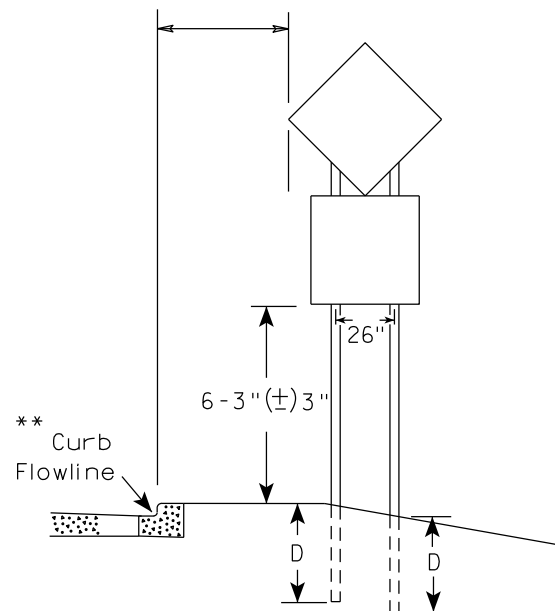
URBAN AREA



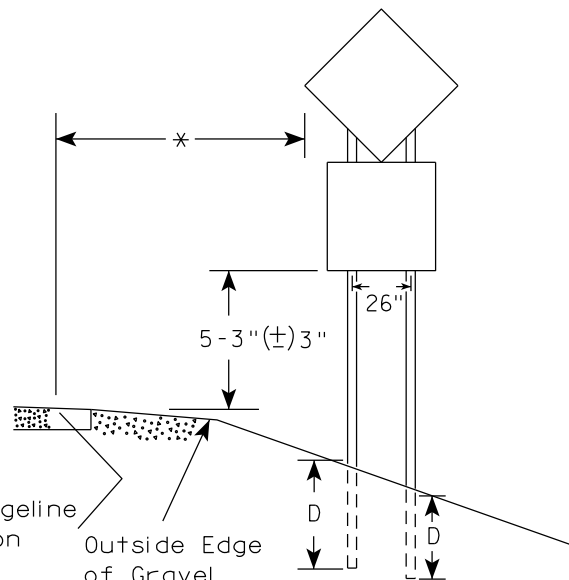
RURAL AREA (See Note 3)



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



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

\*\*\*

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

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

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION  
OF TYPE II SIGNS  
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 12/6/23 PLATE NO. A4-4.16

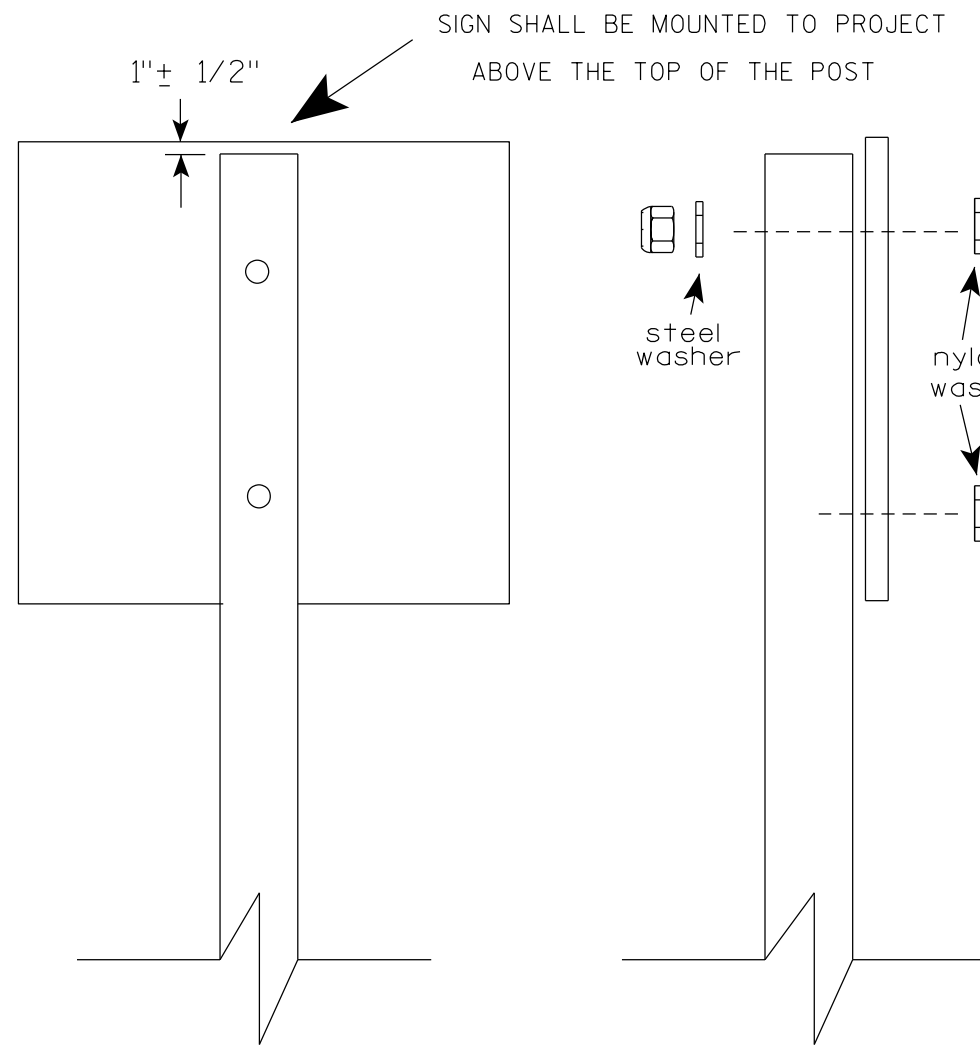
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



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

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

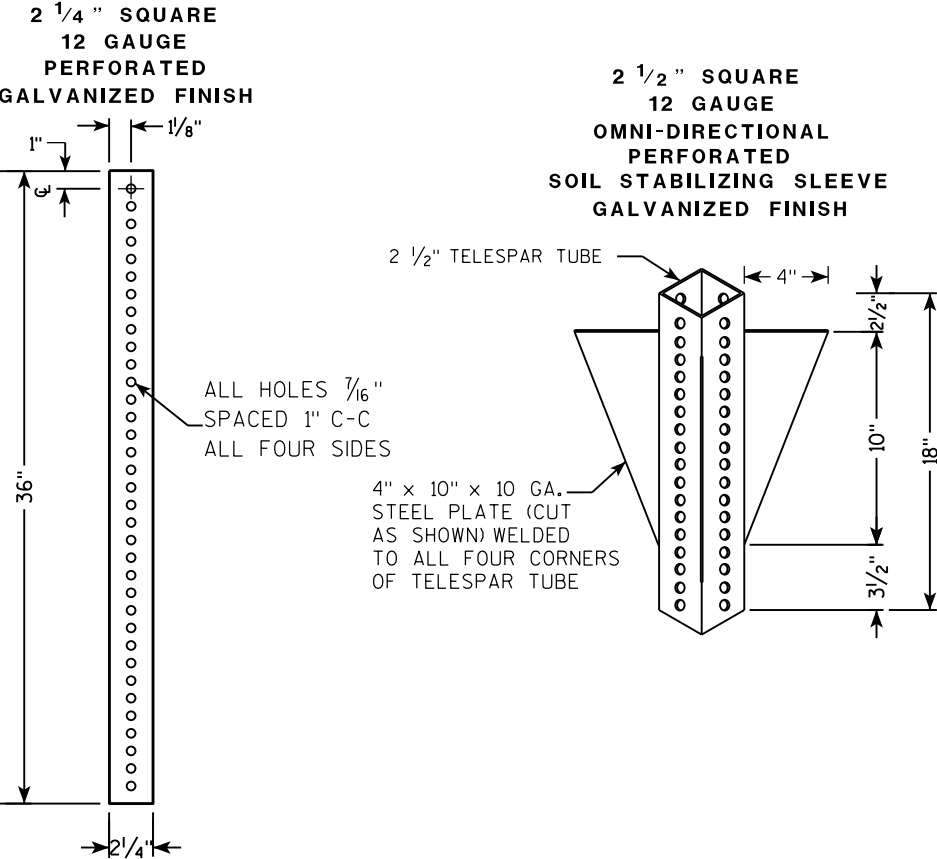
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

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

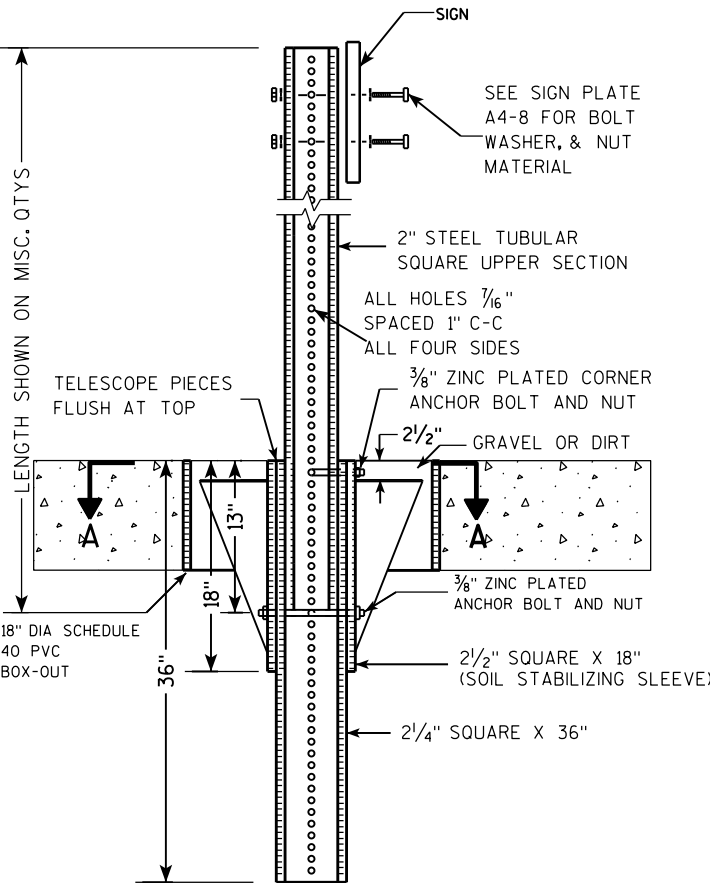
\* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

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

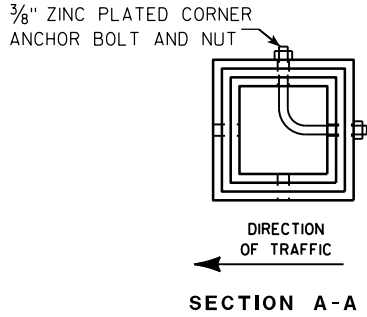
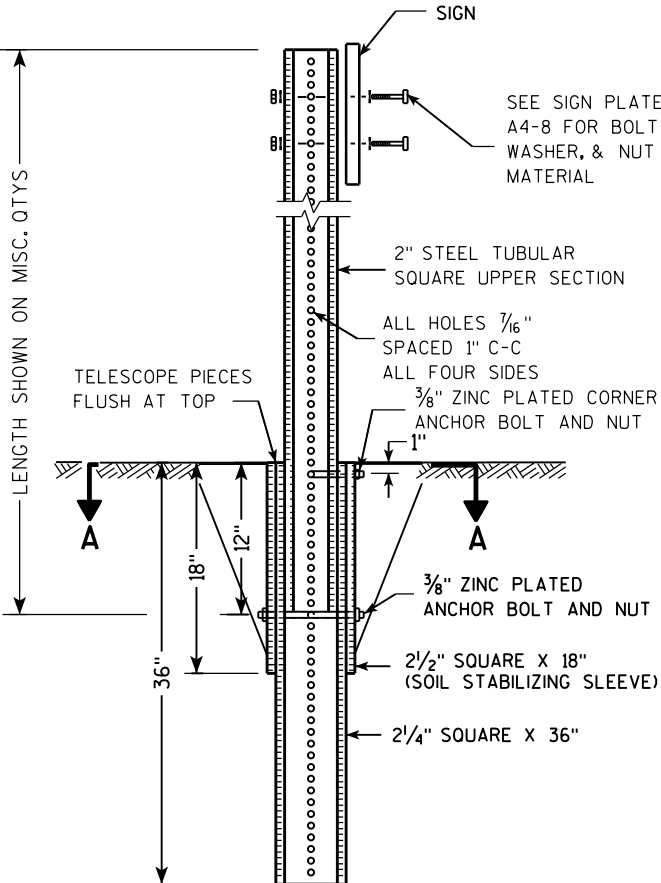
TELESCOPIC TUBING ANCHORS  
TWO PIECE SYSTEM



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



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



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

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

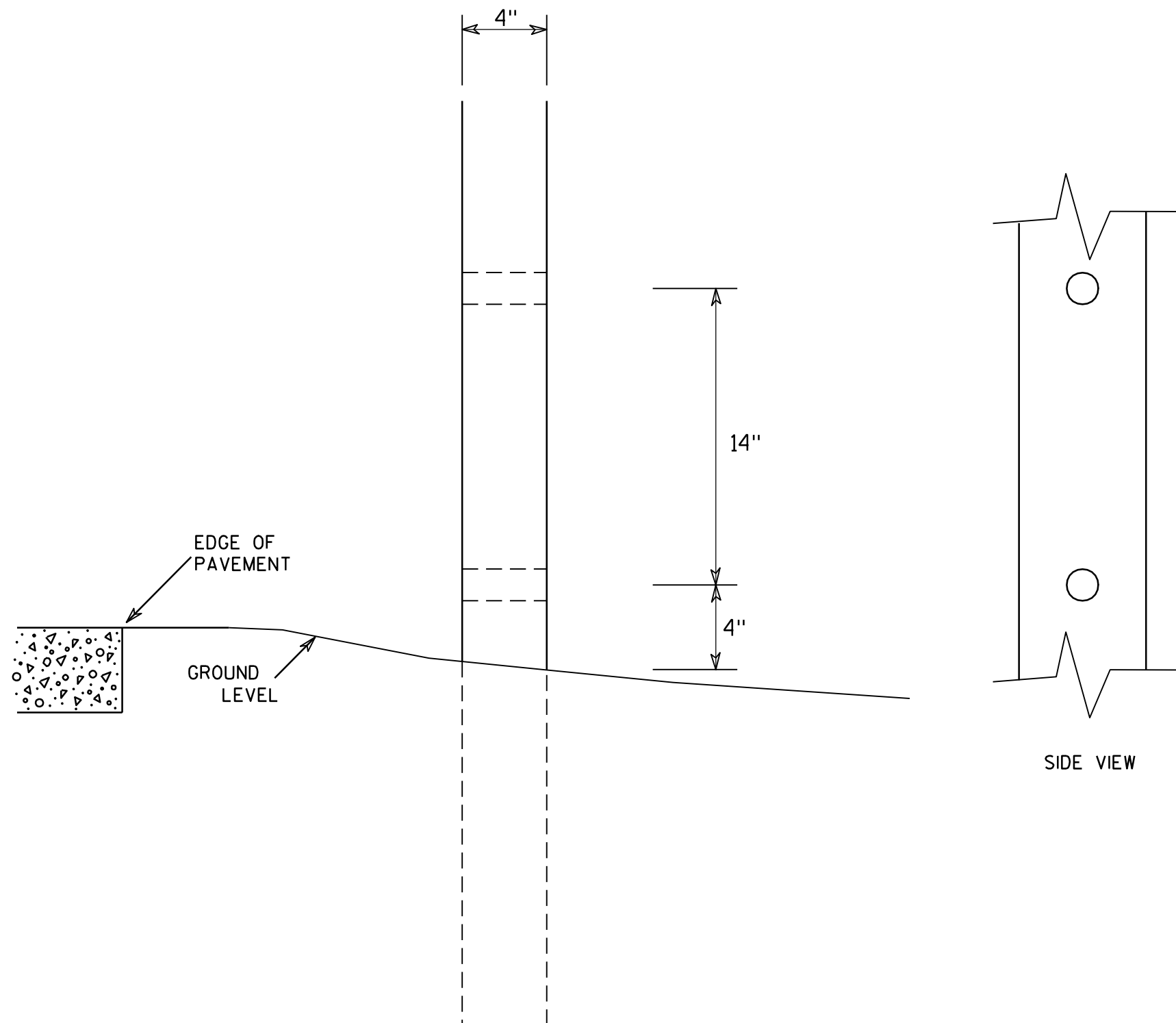
TUBULAR STEEL  
SIGN POST  
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

7



### GENERAL NOTES

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

7

## 4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

*Chester J. Spang*  
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

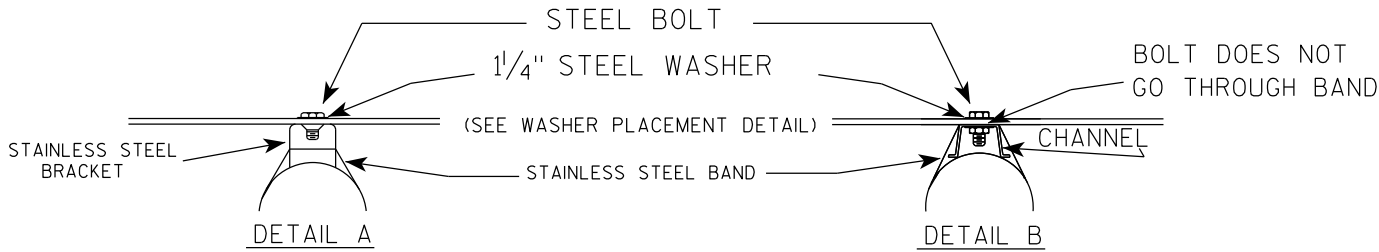
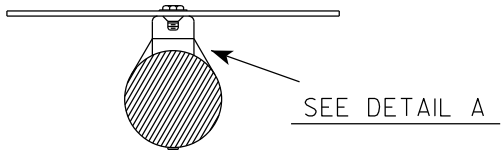
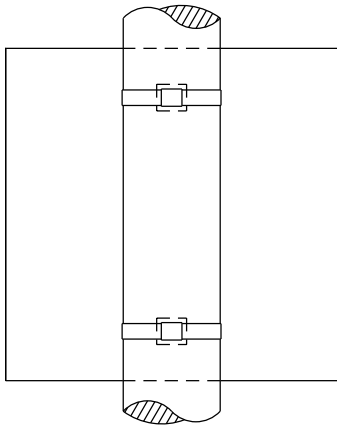
COUNTY:

SHEET NO:

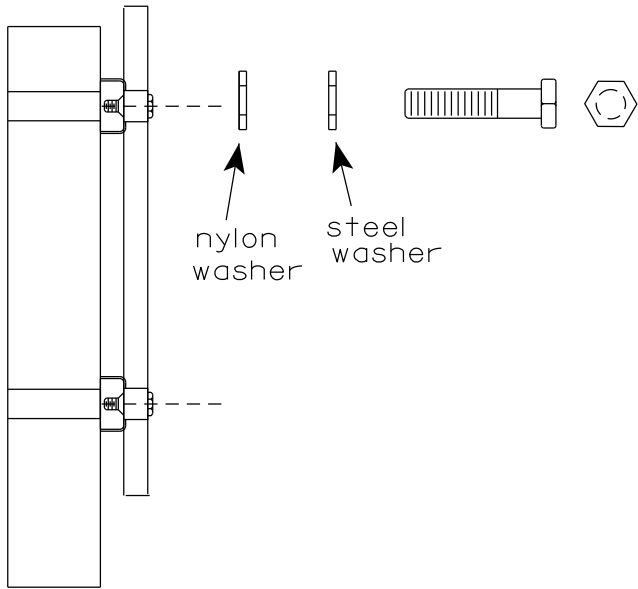
E

BANDING

SINGLE SIGN



WASHER PLACEMENT

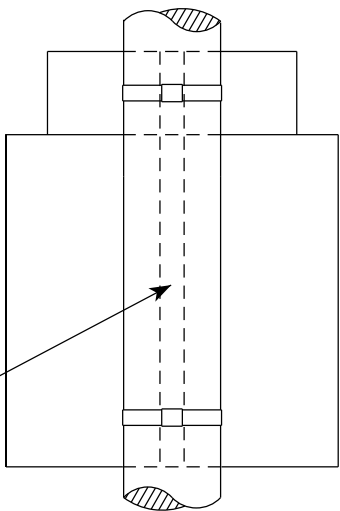


WASHERS (ALL POSTS) -  
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL  
1-1/4" O.D. X 3/8" I.D. X .080 NYLON  
FOR ALL TYPE H SIGNS

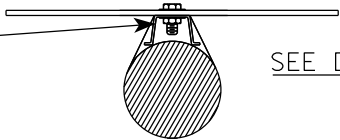
GENERAL NOTES

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

"J" ASSEMBLY



CHANNEL  
SEE TYPICAL PANEL  
INSTALLATION SHEET

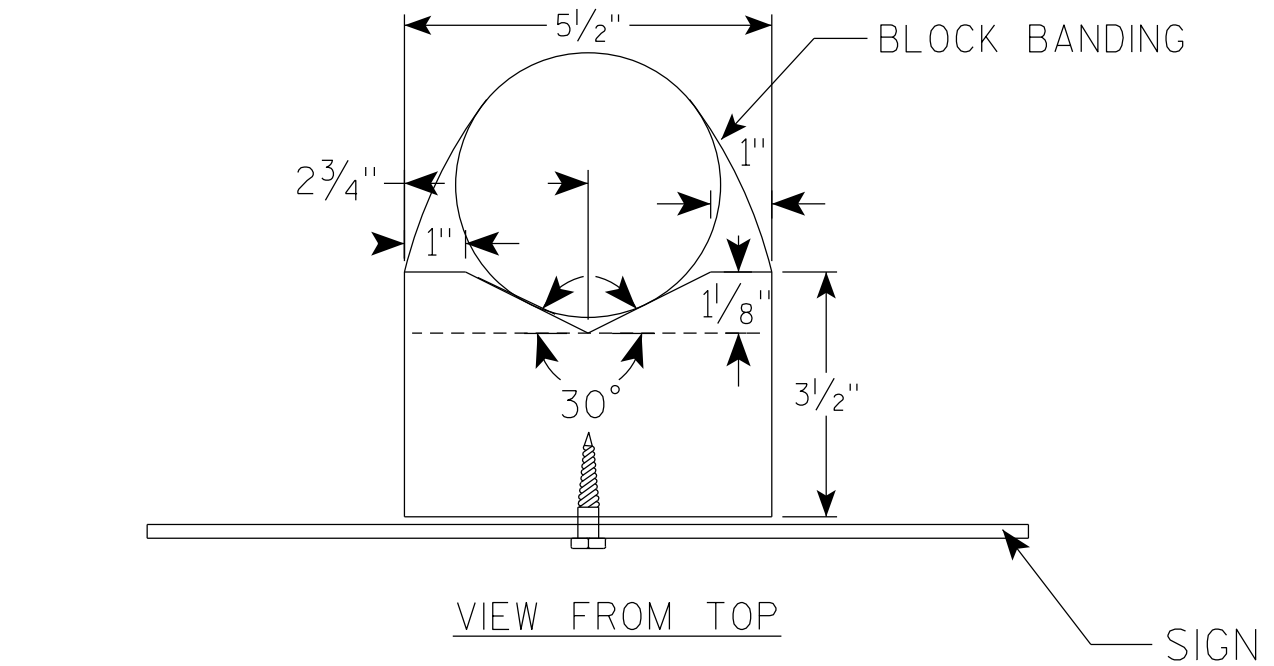
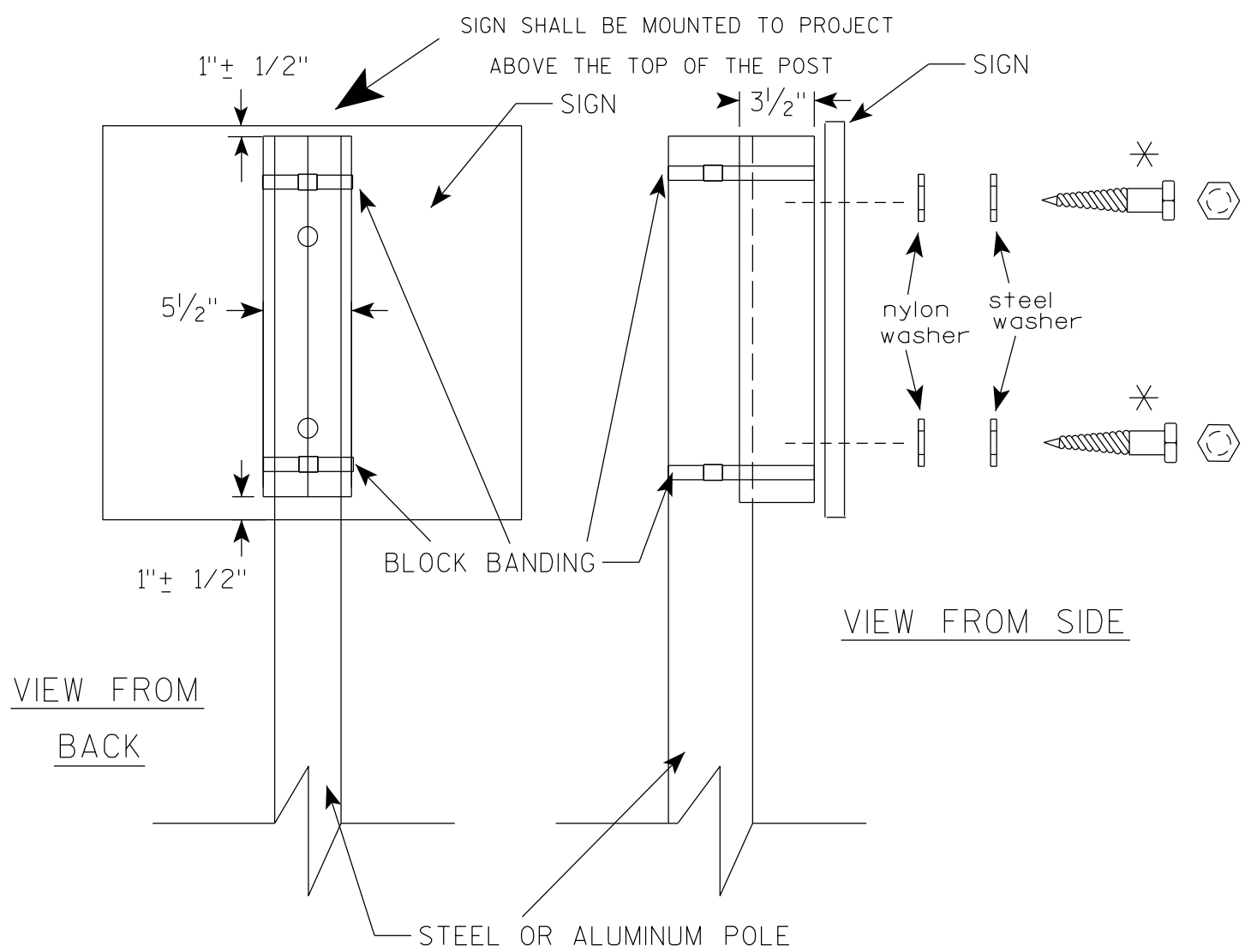


STANDARD SIGN  
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 6/10/19 PLATE NO. A5-9.4

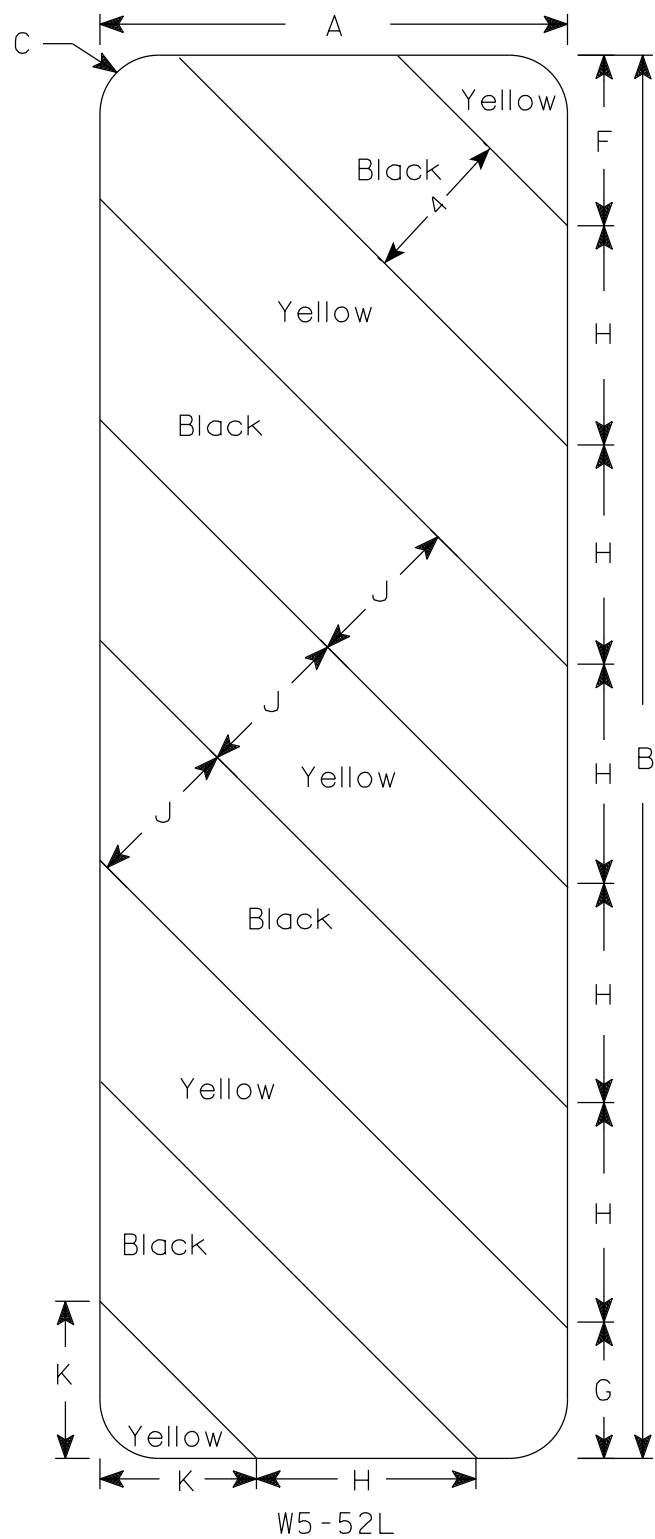


## GENERAL NOTES

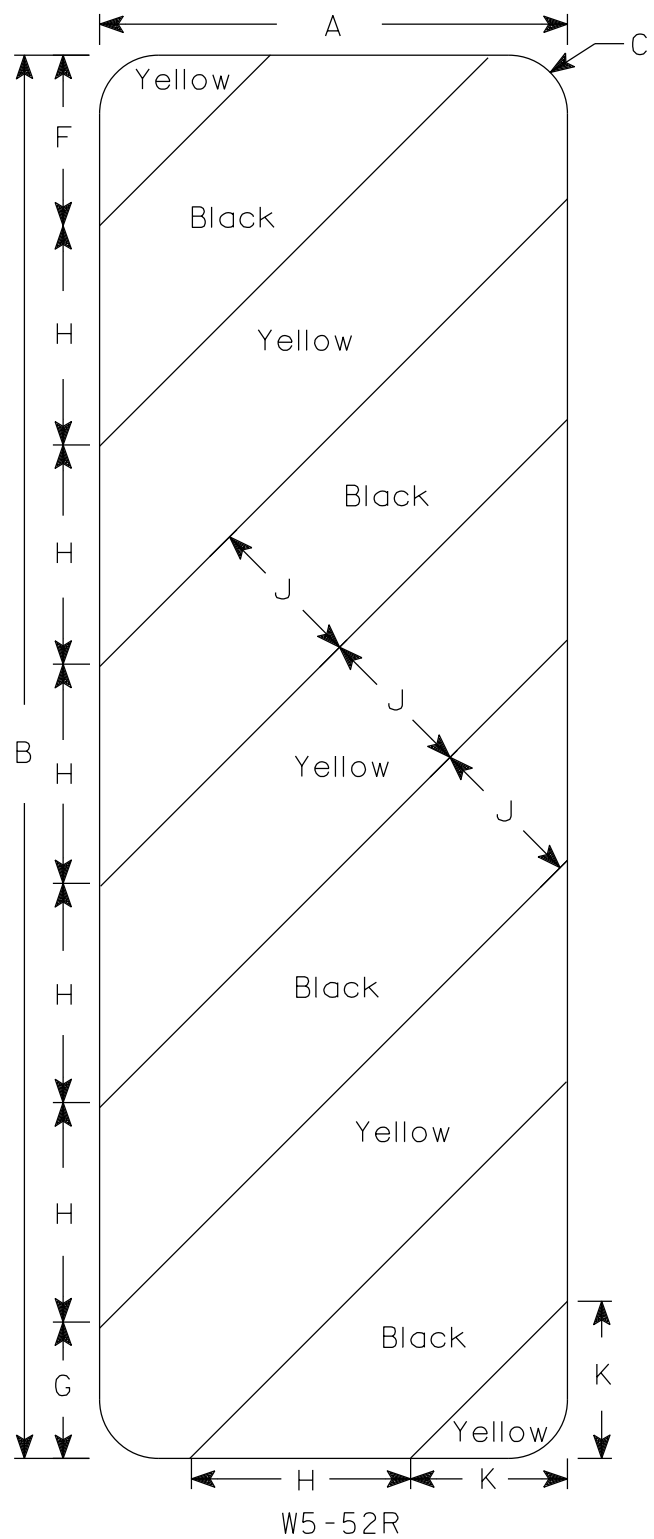
1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WISDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL,  $\frac{3}{4}$ " WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS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

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

|                                            |                                                       |
|--------------------------------------------|-------------------------------------------------------|
| BLOCK BANDING DETAIL<br>( V-BLOCK OPTION ) |                                                       |
| WISCONSIN DEPT OF TRANSPORTATION           |                                                       |
| APPROVED                                   | <i>Matthew R. Rauch</i><br>for State Traffic Engineer |
| DATE 4/19/2022                             | PLATE NO. A5-10.3                                     |



W5-52L



W5-52R

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
  - Background - Yellow
  - Message - Black
- 3. Alternate colors of stripes as shown.

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

STANDARD SIGN  
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

DATE 3/4/2024 PLATE NO. W5-52.10

## DESIGN DATA

## LIVE LOAD:

DESIGN LOADING \_\_\_\_\_ HL-93  
INVENTORY RATING FACTOR \_\_\_\_\_ RF=1.31  
OPERATING RATING FACTOR \_\_\_\_\_ RF=1.70  
WISCONSIN STANDARD PERMIT  
VEHICLE RATING (WIS.-SPV): \_\_\_\_\_ 250 KIPS

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

## MATERIAL PROPERTIES:

CONCRETE MASONRY, SLAB \_\_\_\_\_  $f'_c$  = 4,000 P.S.I.  
ALL OTHER \_\_\_\_\_  $f'_c$  = 3,500 P.S.I.  
HIGH-STRENGTH BAR STEEL \_\_\_\_\_  
REINFORCEMENT \_\_\_\_\_  $f_y$  = 60,000 P.S.I.

## FOUNDATION DATA:

ABUTMENTS TO BE SUPPORTED ON HP 10 X 42 PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 170 TONS PER PILE\*\* AT W. ABUT. AND 160 TONS PER PILE\*\* AT E. ABUT. AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 45 FT PILE LENGTHS AT W. ABUT. AND 55 FT PILE LENGTHS AT E. ABUT.

\*\*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 DYNAMIC FORMULA TO DETERMINE DRIVEN PILE CAPACITY.

## HYDRAULIC DATA:

100 YEAR DESIGN FREQUENCY:  
Q<sub>100</sub> \_\_\_\_\_ 1,130 C.F.S.  
DRAINAGE AREA \_\_\_\_\_ 5.6 SQ. MI.  
BRIDGE WATER AREA \_\_\_\_\_ 214 SQ. FT.  
BRIDGE VELOCITY \_\_\_\_\_ 5.27 F.P.S.  
HIGH WATER<sub>100</sub> EL. \_\_\_\_\_ 1352.30 FT.  
ROADWAY OVERTOPPING \_\_\_\_\_ NA  
SCOUR CRITICAL CODE \_\_\_\_\_ 5  
Q<sub>2</sub> \_\_\_\_\_ 290 C.F.S.  
Q<sub>2</sub> ELEVATION \_\_\_\_\_ 1349.60 FT.  
Q<sub>2</sub> VELOCITY \_\_\_\_\_ 2.44 F.P.S.

## NOTES

EXCAVATION AS INDICATED IN THE HATCH AREAS, TO BE INCLUDED IN THE BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES B-10-261".

G01 BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCLUDED WITH BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES B-10-261". LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

G02 "GEOTEXTILE TYPE DF SCHEDULE A" LIMITS. EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT FOR THE ENTIRE ABUTMENT BODY LENGTH.

G03 PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED IN "ABUTMENT DETAILS" SHEET.

G04 NAME PLATE REQUIRED AND BENCH MARK CAP (WHEN SUPPLIED). FOR LOCATION SEE "ABUTMENTS" SHEET.

G05 EXISTING TWO STEEL BEAMS, ONE ON EACH SIDE OF THE EXISTING TIMBER BENT, SHALL BE SALVAGED. CONTRACTOR SHALL COORDINATE WITH CLARK COUNTY ON DELIVERY. EXISTING STEEL PILES SUPPORTING THE EXISTING TWO STEEL BEAMS ARE TO BE REMOVED AND NOT SALVAGED. ALL COST ASSOCIATED WITH SALVAGING EXISTING STEEL BEAMS AND REMOVING EXISTING STEEL PILES SHALL BE INCLUDED WITH BID ITEM "REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS P-10-29".

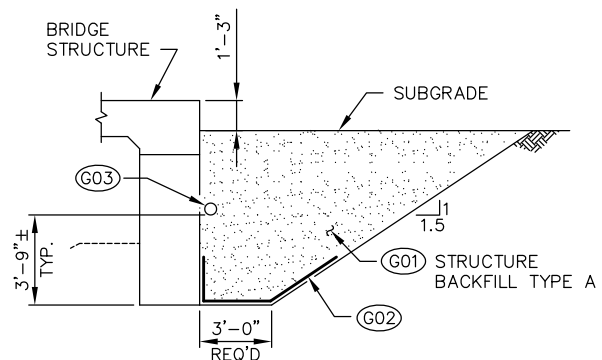
G06 EXISTING STEEL BEAM GUARD RAILING ATTACHED TO THE EXISTING TIMBER SUPERSTRUCTURE, SHALL BE SALVAGED. CONTRACTOR SHALL COORDINATE WITH CLARK COUNTY ON DELIVERY. ALL COST ASSOCIATED WITH SALVAGING EXISTING STEEL BEAM GUARD RAILING SHALL BE INCLUDED WITH BID ITEM "REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS P-10-29".

INDICATES WING NUMBER

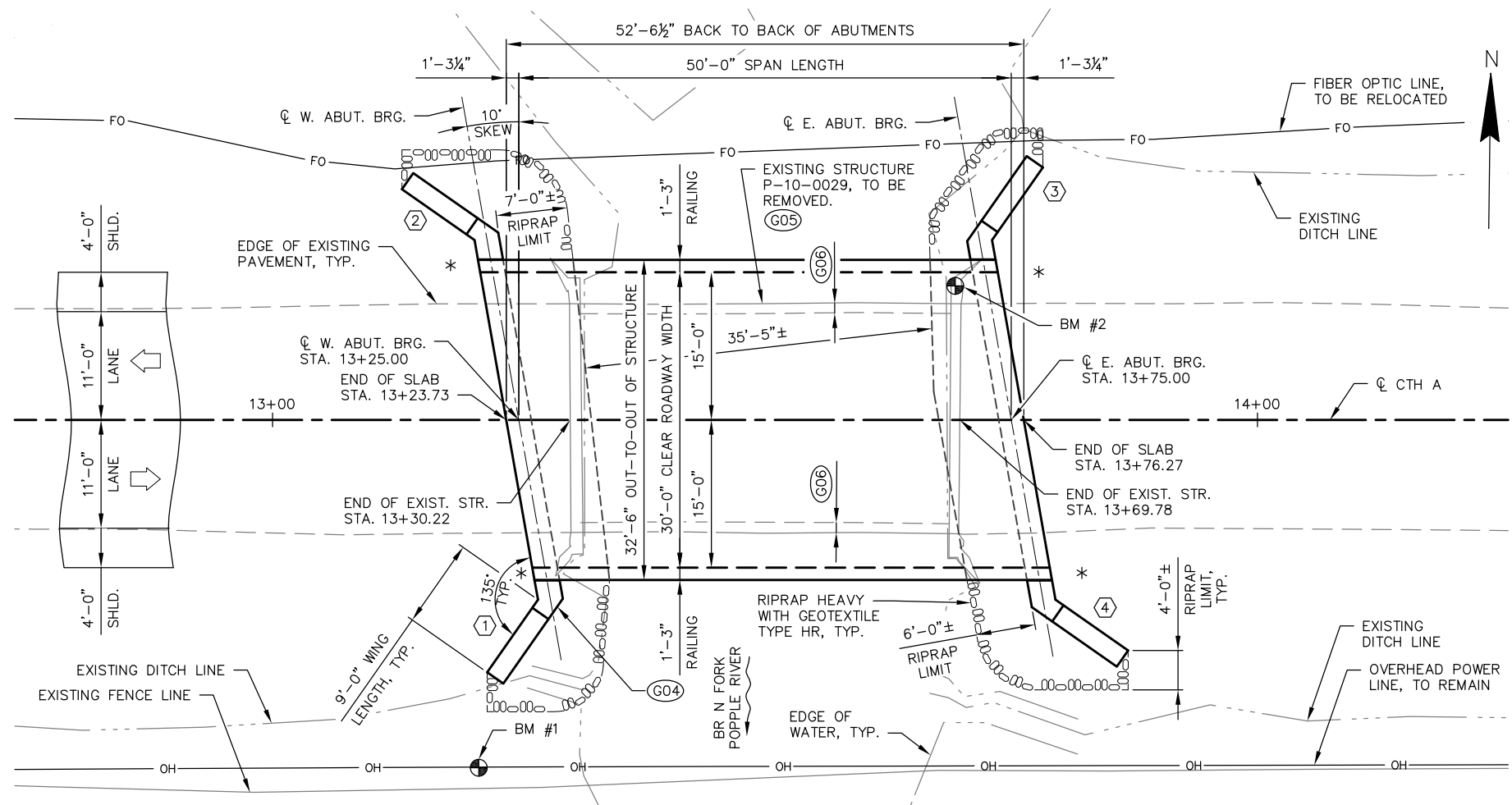
\* LOCATION OF BEAM GUARD ATTACHMENT

## LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION, GENERAL NOTES & QUANTITIES
3. SUBSURFACE EXPLORATION
4. ABUTMENTS
5. ABUTMENT DETAILS
6. SUPERSTRUCTURE
7. SUPERSTRUCTURE DETAILS
8. RAILING TUBULAR TYPE M

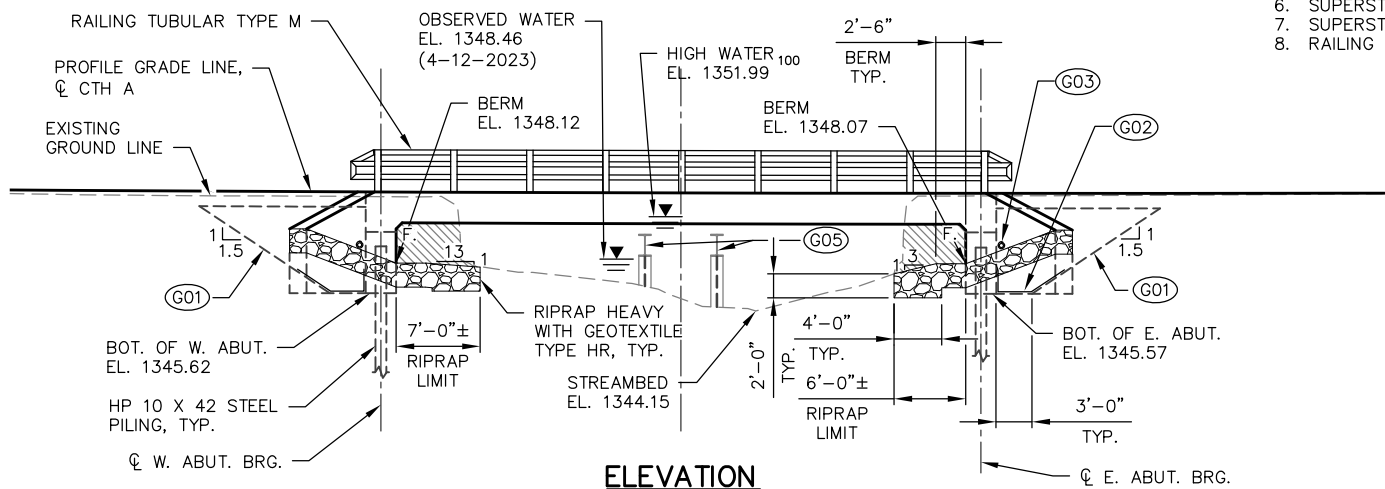


ABUTMENT BACKFILL DETAIL  
(TYPICAL AT BOTH ABUTMENTS)



PLAN B-10-261

(SINGLE SPAN CONCRETE FLAT SLAB BRIDGE)



ELEVATION

(NORMAL TO BRANCH NORTH FORK POPPLE RIVER, LOOKING NORTH)

## BENCH MARKS

| NO.   | STATION/OFFSET       | DESCRIPTION            | ELEVATION |
|-------|----------------------|------------------------|-----------|
| BM #1 | 13+20.94, 35.33' RT. | RR SPIKE IN POWER POLE | 1351.76   |
| BM #2 | 13+69.31, 13.61' LT. | BOLT ON TIMBER CAP     | 1353.03   |
| BM #3 | 18+33.41, 36.11' RT. | RR SPIKE IN POWER POLE | 1353.46   |

HORIZONTAL DATUM AND ADJUSTMENT: NAD 83 (2011)  
VERTICAL DATUM AND ADJUSTMENT: NAVD 88 (2012)  
COORDINATE REFERENCE SYSTEM: WISCRS CLARK CO.

## TRAFFIC DATA:

CTH A  
A.A.D.T. (2026) \_\_\_\_\_ 590  
A.A.D.T. (2046) \_\_\_\_\_ 644  
DESIGN SPEED \_\_\_\_\_ 50 M.P.H.

BRIDGE OFFICE CONTACT  
AARON BONK, P.E.  
(608) 261-0261

CONSULTANT CONTACT  
ANDY KNUTSON, P.E., S.E.  
(608) 588-7866

|                                                                                                               |       |                      |              |
|---------------------------------------------------------------------------------------------------------------|-------|----------------------|--------------|
| NO.                                                                                                           | DATE  | REVISION             | BY           |
|                                                                                                               |       |                      |              |
| 619 EAST HOXIE STREET<br>P.O. BOX 429<br>SPRING GREEN, WI 53588<br>PHONE (608) 588-7866<br>FAX (608) 588-7954 |       |                      |              |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION                                                            |       |                      |              |
| ACCEPTED                                                                                                      |       | JLR 08/04/25<br>DATE |              |
| CHIEF STRUCTURES DESIGN ENGINEER                                                                              |       |                      |              |
| STRUCTURE B-10-261                                                                                            |       |                      |              |
| CTH A OVER BR N FORK POPPLE RIVER                                                                             |       |                      |              |
| COUNTY                                                                                                        | CLARK | TOWN/CITY/VILLAGE    | MAYVILLE     |
| DESIGN SPEC.<br>AASHTO LRFD DESIGN SPEC.                                                                      |       |                      |              |
| DESIGNED BY                                                                                                   | JDO   | DESIGN CK'D.         | CDS          |
| DRAWN BY                                                                                                      | JDO   | PLANS CK'D.          | ACK          |
| GENERAL PLAN                                                                                                  |       |                      | SHEET 1 OF 8 |

## GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

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

BEVEL EXPOSED EDGES OF CONCRETE  $\frac{3}{4}$ " UNLESS OTHERWISE NOTED.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE FABRIC TYPE HR TO THE EXTENT SHOWN ON THE "GENERAL PLAN" SHEET AND THE ABUTMENT SHEETS.

THE BACKFILL QUANTITIES ARE BASED ON THE PAY LIMITS SHOWN ON THE PLANS AND MAY NOT REFLECT ACTUAL PLACED QUANTITIES. "BACKFILL STRUCTURE TYPE A" REQUIRED DIRECTLY BEHIND ABUTMENTS AND ABUTMENT WING FOR 3 FEET. BACKFILL PLACED BEYOND PAY LIMITS OR EXCEEDING PLAN QUANTITIES SHALL BE INCLUDED WITH "EXCAVATION FOR STRUCTURES BRIDGES B-10-261".

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

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-10-261" SHALL BE THE EXISTING GROUND LINE.

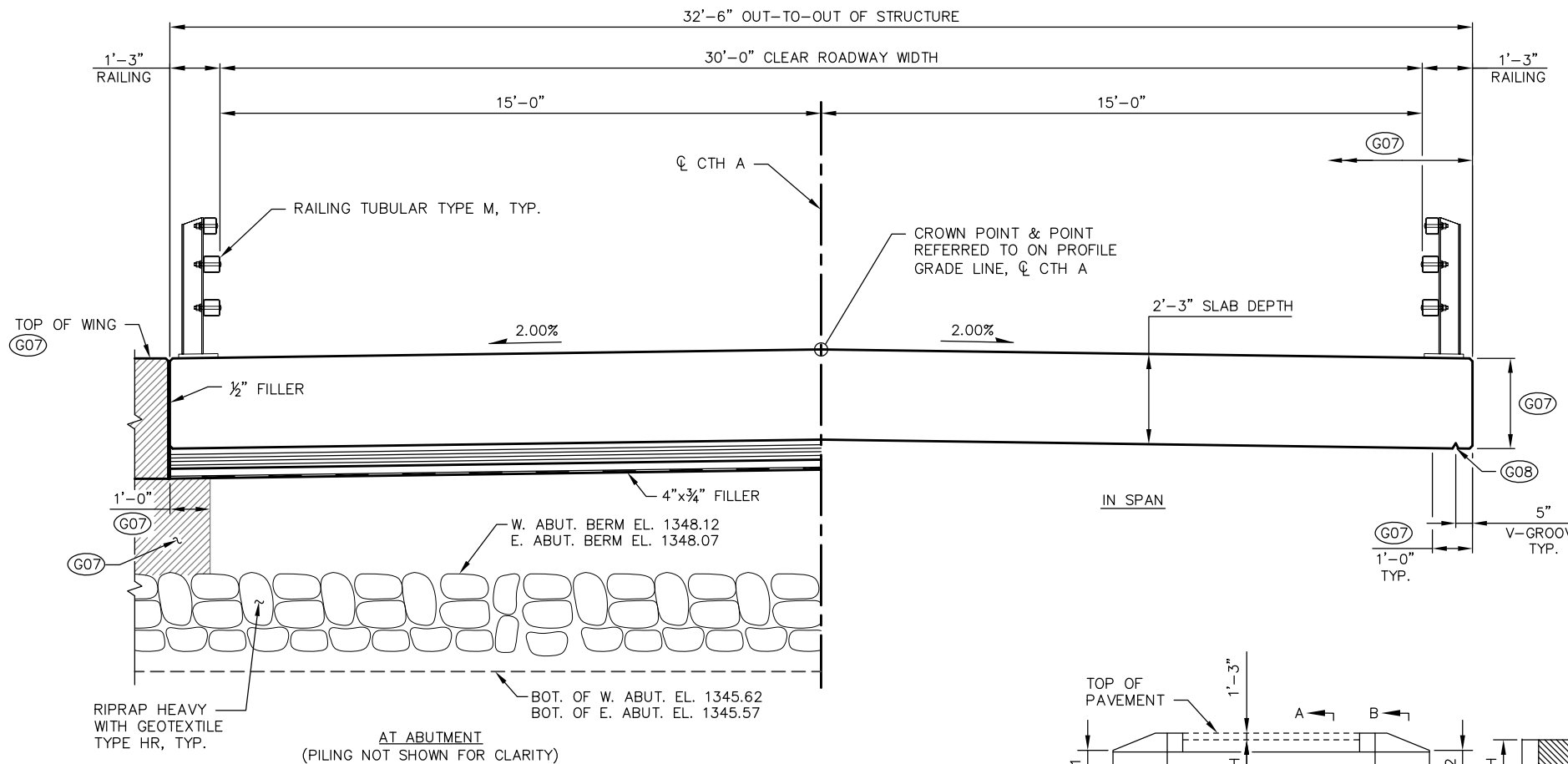
AT ABUTMENTS, CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.

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

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

DO NOT PLACE FILL ABOVE 3'-0" FROM BOTTOM OF ABUTMENT UNTIL SUPERSTRUCTURE IS IN PLACE.

THE EXISTING STRUCTURE (P-10-29) IS A TWO-SPAN TIMBER FLAT SLAB STRUCTURE WITH AN OVERALL WIDTH OF 25.5-FT AND TOTAL LENGTH OF 40.5 FT AND IS TO BE REMOVED. ALL COSTS ASSOCIATED WITH SALVAGING THE EXISTING STEEL BEAMS, SALVAGING THE EXISTING STEEL BEAM GUARD RAILING, REMOVING THE EXISTING STEEL PILES, AND REMOVING THE EXISTING STRUCTURE P-10-29 SHALL BE INCLUDED PER BID ITEM "REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS P-10-29".



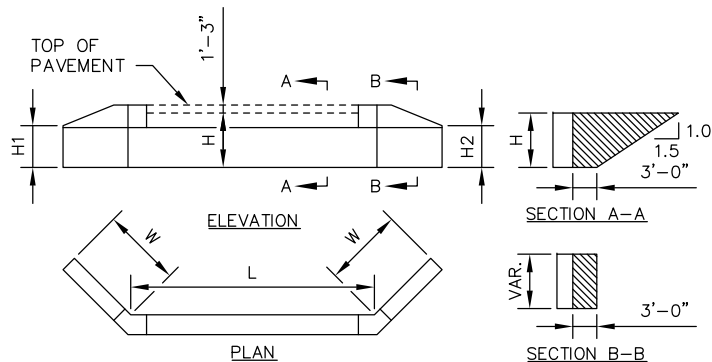
## CROSS SECTION THRU ROADWAY

(LOOKING EAST)

## NOTES

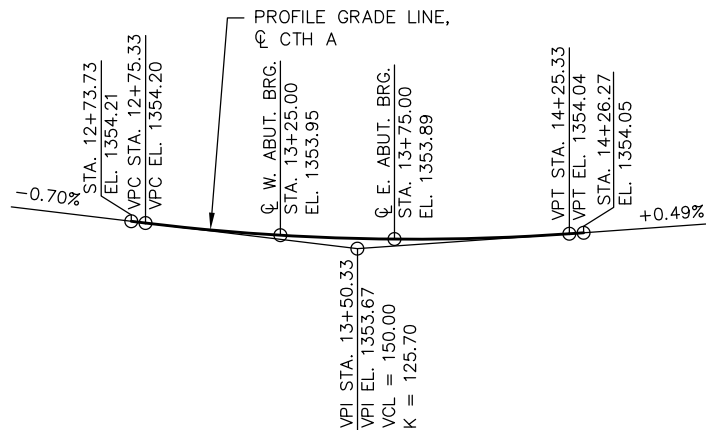
G07 COAT WITH "PROTECTIVE SURFACE TREATMENT" AS PER THE STANDARD SPECIFICATIONS. PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO ENTIRE EXPOSED TOP OF SLAB, INCLUDING THE SLAB EDGES AND 1'-0" UNDER THE SLAB, THE TOP AND EXTERIOR EXPOSED FACE OF WINGS, AND THE FRONT FACE OF THE ABUTMENTS TO 1'-0" PAST THE EDGE OF SLAB.

G08  $\frac{3}{4}$ " V-GROOVE REQ'D. EXTEND V-GROOVE TO 6" FROM FRONT FACE OF ABUTMENT.



## ABUTMENT BACKFILL DIAGRAM

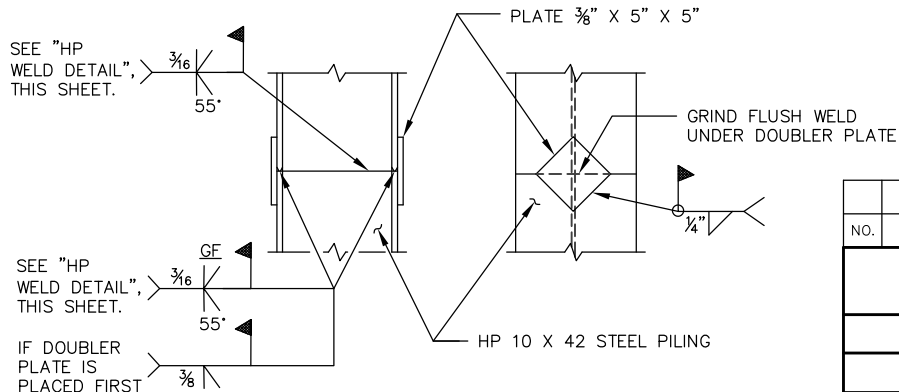
L = ABUTMENT BODY LENGTH AT BACKFACE (FT)  
H = AVERAGE ABUTMENT FILL HEIGHT (FT)  
H1 = WING 1 HEIGHT AT TIP (FT)  
H2 = WING 2 HEIGHT AT TIP (FT)  
W = WING LENGTH (FT)  
EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS AND 1.00 FOR TON BID ITEMS)  
 $V_{CF} = (L)(3.0')(H) + (L)(0.5)(1.5H)(H) + (3')(0.5)(H1+H2+H+H)(W)$   
 $V_{CY} = V_{CF}(EF)/27$   
 $V_{TON} = V_{CY}(2.0)$



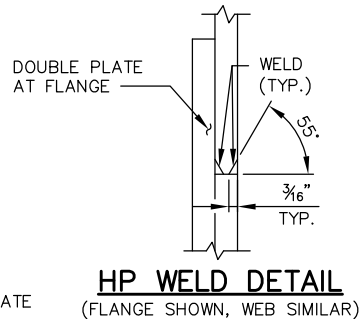
## PROFILE GRADE LINE, CL CTH A

## TOTAL ESTIMATED QUANTITIES

| ITEM NO.       | BID ITEMS                                               | UNIT | W. ABUT. | E. ABUT. | SUPER. | TOTALS                            |
|----------------|---------------------------------------------------------|------|----------|----------|--------|-----------------------------------|
| 203.0260       | REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS P-10-29 | EACH | ---      | ---      | ---    | 1                                 |
| 206.1001       | EXCAVATION FOR STRUCTURES BRIDGES B-10-261              | EACH | ---      | ---      | ---    | 1                                 |
| 210.1500       | BACKFILL STRUCTURE TYPE A                               | TON  | 170      | 170      | ---    | 340                               |
| 502.0100       | CONCRETE MASONRY BRIDGES                                | CY   | 29.2     | 29.2     | 147.4  | 206                               |
| 502.3200       | PROTECTIVE SURFACE TREATMENT                            | SY   | 17       | 17       | 225    | 259                               |
| 505.0400       | BAR STEEL REINFORCEMENT HS STRUCTURES                   | LB   | 2365     | 2365     | ---    | 4730                              |
| 505.0600       | BAR STEEL REINFORCEMENT HS COATED STRUCTURES            | LB   | 1440     | 1440     | 27880  | 30760                             |
| 513.4061       | RAILING TUBULAR TYPE M                                  | LF   | ---      | ---      | 110    | 110                               |
| 516.0500       | RUBBERIZED MEMBRANE WATERPROOFING                       | SY   | 7        | 7        | ---    | 14                                |
| 550.0500       | PILE POINTS                                             | EACH | 8        | 8        | ---    | 16                                |
| 550.1100       | PIILING STEEL HP 10-INCH X 42 LB                        | LF   | 360      | 440      | ---    | 800                               |
| 606.0300       | RIPRAP HEAVY                                            | CY   | 35       | 35       | ---    | 70                                |
| 612.0406       | PIPE UNDERDRAIN WRAPPED 6-INCH                          | LF   | 65       | 65       | ---    | 130                               |
| 645.0111       | GEOTEXTILE TYPE DF SCHEDULE A                           | SY   | 36       | 36       | ---    | 72                                |
| 645.0120       | GEOTEXTILE TYPE HR                                      | SY   | 81       | 74       | ---    | 155                               |
| (NON-BID ITEM) | FILLER                                                  | SIZE |          |          |        | $\frac{1}{2}$ " & $\frac{3}{4}$ " |



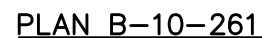
## PILE SPLICE DETAILS

HP WELD DETAIL  
(FLANGE SHOWN, WEB SIMILAR)

| NO.                                                | DATE | REVISION   | BY           |
|----------------------------------------------------|------|------------|--------------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |            |              |
| STRUCTURE B-10-261                                 |      |            |              |
| DRAWN BY JDO                                       |      | PLANS CK'D | ACK          |
| CROSS SECTION,<br>GENERAL NOTES &<br>QUANTITIES    |      |            | SHEET 2 OF 8 |

| BORING #                                                     | DATE COMPLETED | NORTHING (Y) | EASTING (X) |
|--------------------------------------------------------------|----------------|--------------|-------------|
| BORING B-1                                                   | 4/11/2023      | 511353.5     | 736342.1    |
| BORING B-2                                                   | 4/11/2023      | 511366.8     | 736401.5    |
| BORINGS COMPLETED BY: CHOSEN VALLEY TESTING, INC.            |                |              |             |
| SUBSURFACE INVESTIGATION REPORT: CHOSEN VALLEY TESTING, INC. |                |              |             |
| ALL COORDINATES REFERENCED TO WISCRS, CLARK COUNTY           |                |              |             |

 INDICATES WING NUMBER  
 \* LOCATION OF BEAM GUARD ATTACHMENT

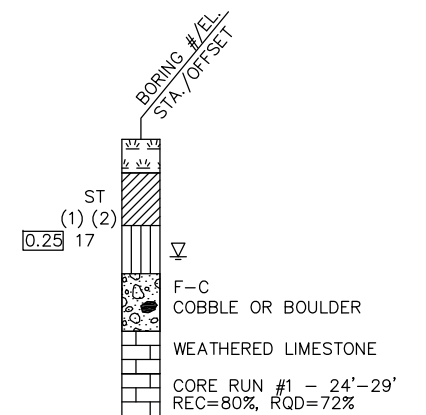


## MATERIAL SYMBOLS

## MATERIAL SYMBOLS

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

LEGEND OF BORING



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

GROUND WATER ELEVATION

 AT TIME OF DRILLING  
 END OF DRILLING  
 AFTER DRILLING

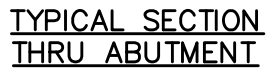
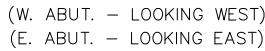
## ABBREVIATIONS

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

## SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

|                                                    |      |                   |    |
|----------------------------------------------------|------|-------------------|----|
|                                                    |      |                   |    |
| NO.                                                | DATE | REVISION          | BY |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |                   |    |
| STRUCTURE B-10-261                                 |      |                   |    |
| DRAWN<br>BY JDO                                    |      | PLANS<br>CK'D ACK |    |
| SUBSURFACE<br>EXPLORATION                          |      | SHEET 3 OF 8      |    |
|                                                    |      |                   |    |



F.F. – FRONT FACE  
B.F. – BACK FACE

## ABUTMENTS

COATED = 2,880 LBS.  
UNCOATED = 4,730 LBS.BILL OF BARS  
BOTH ABUTMENTS

| MARK | COATED | W. ABUT. | E. ABUT. | LENGTH  | BENT | BAR SERIES | LOCATION                               |
|------|--------|----------|----------|---------|------|------------|----------------------------------------|
| A501 |        | 76       | 76       | 5'-11"  | X    |            | BODY - STIRRUP - F.F. & B.F.           |
| A502 |        | 38       | 38       | 6'-7"   | X    |            | BODY - STIRRUP - TOP                   |
| A403 |        | 30       | 30       | 3'-1"   | X    |            | BODY - TIES                            |
| A504 |        | 18       | 18       | 20'-2"  |      |            | BODY - F.F.                            |
| A805 |        | 18       | 18       | 24'-11" | X    |            | BODY - B.F.                            |
| A506 | X      | 32       | 32       | 2'-0"   |      |            | BODY - TOP DOWELS                      |
| A407 | X      | 48       | 48       | 8'-10"  | X    | ▲          | WINGS 1 THRU 4 - STIRRUP - F.F. & B.F. |
| A408 | X      | 18       | 18       | 7'-7"   |      |            | WINGS 1 THRU 4 - F.F. & B.F.           |
| A509 | X      | 18       | 18       | 11'-9"  | X    |            | WINGS 1 THRU 4 - F.F.                  |
| A410 | X      | 2        | 2        | 10'-2"  |      |            | WINGS 1 THRU 4 - F.F.                  |
| A411 | X      | 2        | 2        | 7'-9"   |      |            | WINGS 1 THRU 4 - F.F.                  |
| A412 | X      | 2        | 2        | 5'-3"   |      |            | WINGS 1 THRU 4 - F.F.                  |
| A413 | X      | 2        | 2        | 10'-6"  | X    |            | WINGS 1 THRU 4 - F.F. - TOP            |
| A814 | X      | 18       | 18       | 13'-3"  | X    |            | WINGS 1 THRU 4 - B.F.                  |
| A415 | X      | 2        | 2        | 8'-8"   |      |            | WINGS 1 THRU 4 - B.F.                  |
| A416 | X      | 2        | 2        | 6'-4"   |      |            | WINGS 1 THRU 4 - B.F.                  |
| A417 | X      | 2        | 2        | 3'-9"   |      |            | WINGS 1 THRU 4 - B.F.                  |
| A418 | X      | 2        | 2        | 8'-11"  | X    |            | WINGS 1 THRU 4 - B.F. - TOP            |
| A419 | X      | 4        | 4        | 4'-7"   | X    |            | WINGS 1 AND 3 - F.F. CORNER            |
| A420 | X      | 4        | 4        | 3'-9"   | X    |            | WINGS 2 AND 4 - F.F. CORNER            |
| A421 | X      | 8        | 8        | 2'-8"   | X    |            | WINGS 1 THRU 4 - B.F. CORNER           |
| A422 | X      | 8        | 8        | 4'-0"   | X    |            | WINGS 1 THRU 4 - TOP CORNER            |

THE FIRST DIGIT OF A BAR MARK SIGNIFIES THE BAR SIZE.

ALL BAR BEND DIMENSIONS ARE OUT TO OUT OF BAR.

BUNDLE EACH ABUTMENT BARS SEPARATELY.

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

## NOTES

DO NOT PLACE FILL ABOVE 3'-0" FROM THE BOTTOM OF THE ABUTMENT UNTIL SUPERSTRUCTURE IS IN PLACE.

WEST AND EAST ABUTMENT TO BE SUPPORTED ON HP 10 X 42 PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 170 TONS PER PILE AT THE WEST ABUTMENT AND 160 TONS PER PILE AT THE EAST ABUTMENT AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 45 FT PILE LENGTHS AT THE WEST ABUTMENT AND 55 FT PILE LENGTHS AT THE EAST ABUTMENT.

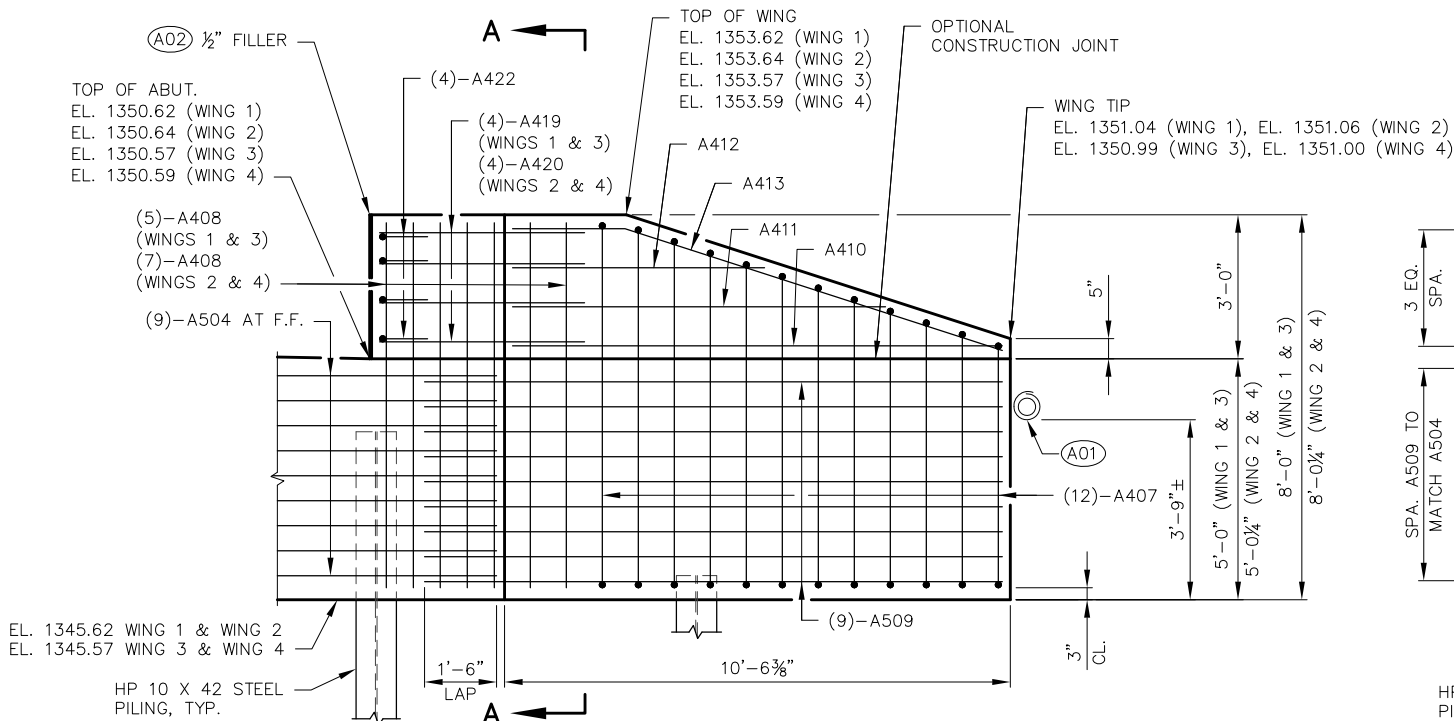
SEE "CROSS SECTION, GENERAL NOTES &amp; QUANTITIES" SHEET FOR HP 10 X 42 PILE SPLICE DETAILS.

(A01) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON THIS SHEET. RODENT SHIELD SHALL BE INCLUDED WITH THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

(A02) SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE.) ½" FILLER TO EXTEND FROM BRIDGE SEAT TO TOP OF WING.

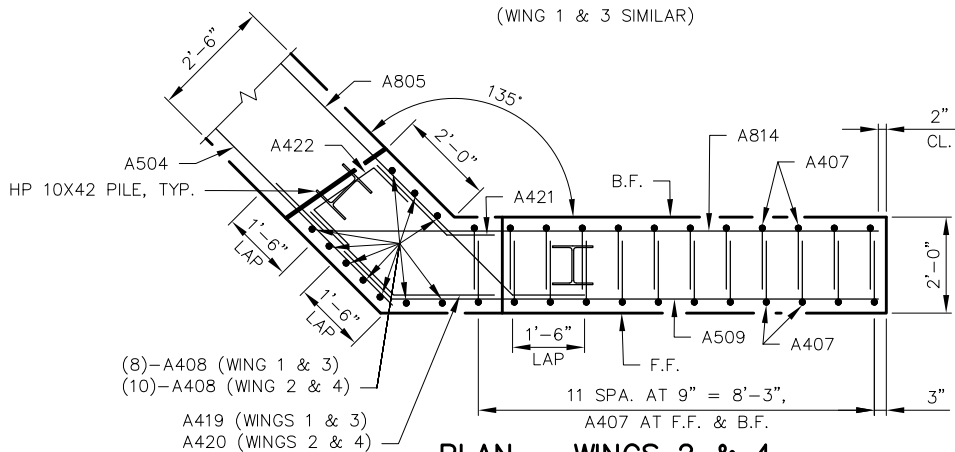
F.F. - FRONT FACE  
B.F. - BACK FACE

| NO.                                                | DATE | REVISION   | BY           |
|----------------------------------------------------|------|------------|--------------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |            |              |
| STRUCTURE B-10-261                                 |      |            |              |
| DRAWN BY JDO                                       |      | PLANS CK'D | ACK          |
| ABUTMENT DETAILS                                   |      |            | SHEET 5 OF 8 |



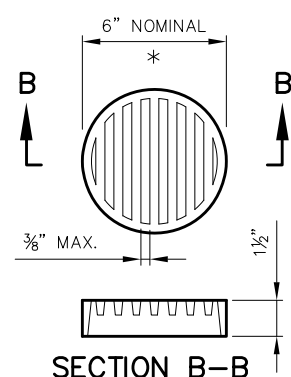
## F.F. ELEVATION - WINGS 2 &amp; 4

(WING 1 &amp; 3 SIMILAR)



## PLAN - WINGS 2 &amp; 4

(WING 1 &amp; 3 SIMILAR)



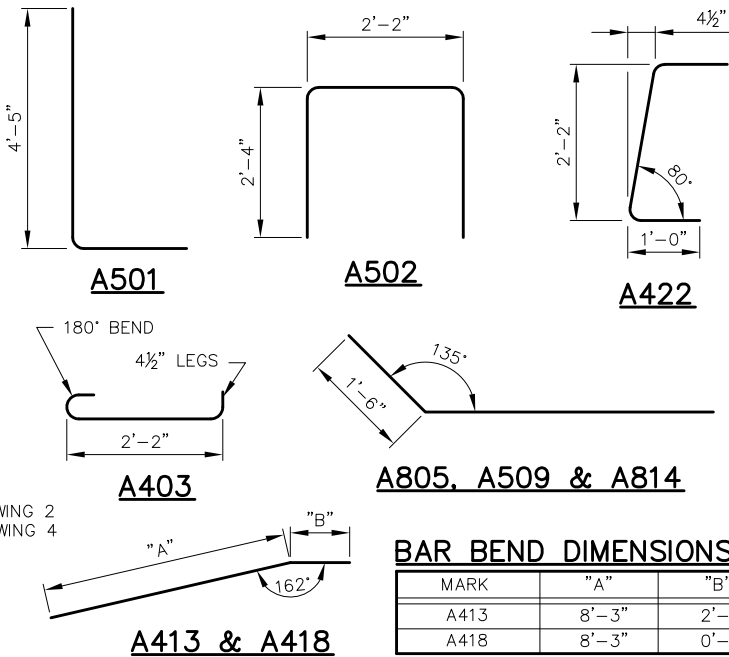
## SECTION B-B

## RODENT SHIELD DETAIL

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

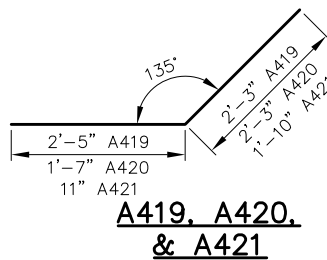
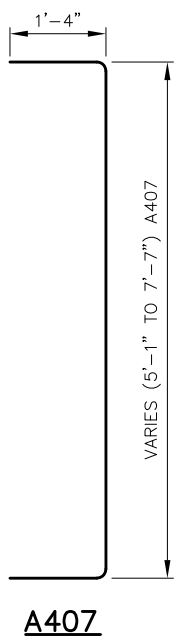
THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH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

THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE INCLUDED WITH THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".



## BAR BEND DIMENSIONS

| MARK | "A"   | "B"   |
|------|-------|-------|
| A413 | 8'-3" | 2'-4" |
| A418 | 8'-3" | 0'-9" |



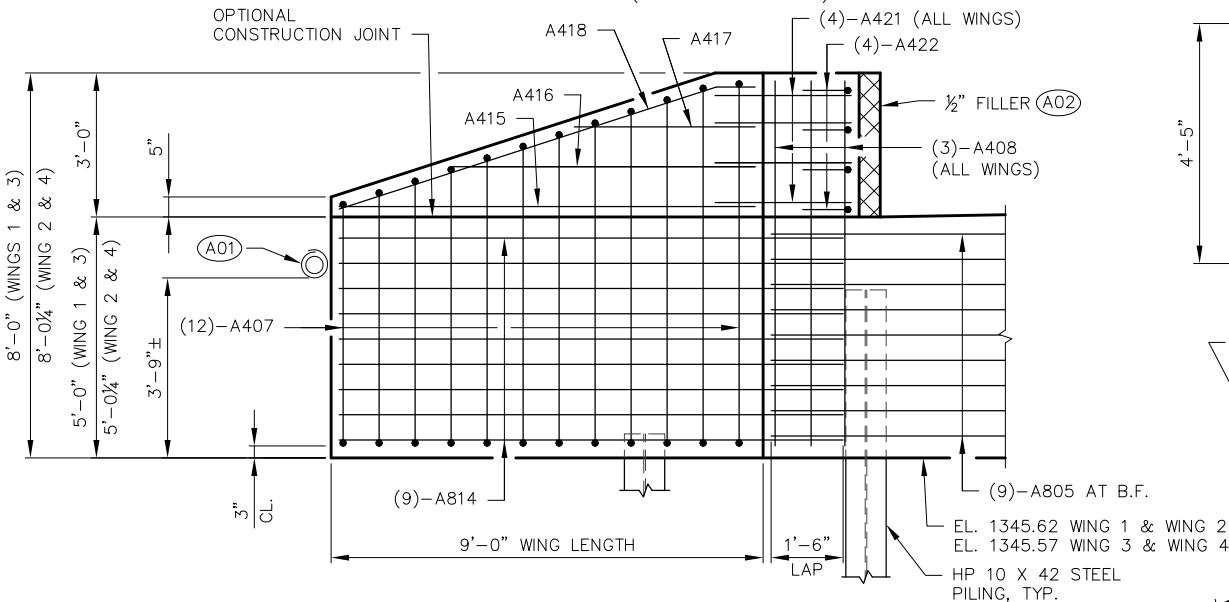
## BAR SERIES TABLE

| MARK | NO. REQ'D      | LENGTH          |
|------|----------------|-----------------|
| A407 | 8 SERIES OF 12 | 7'-7" TO 10'-1" |

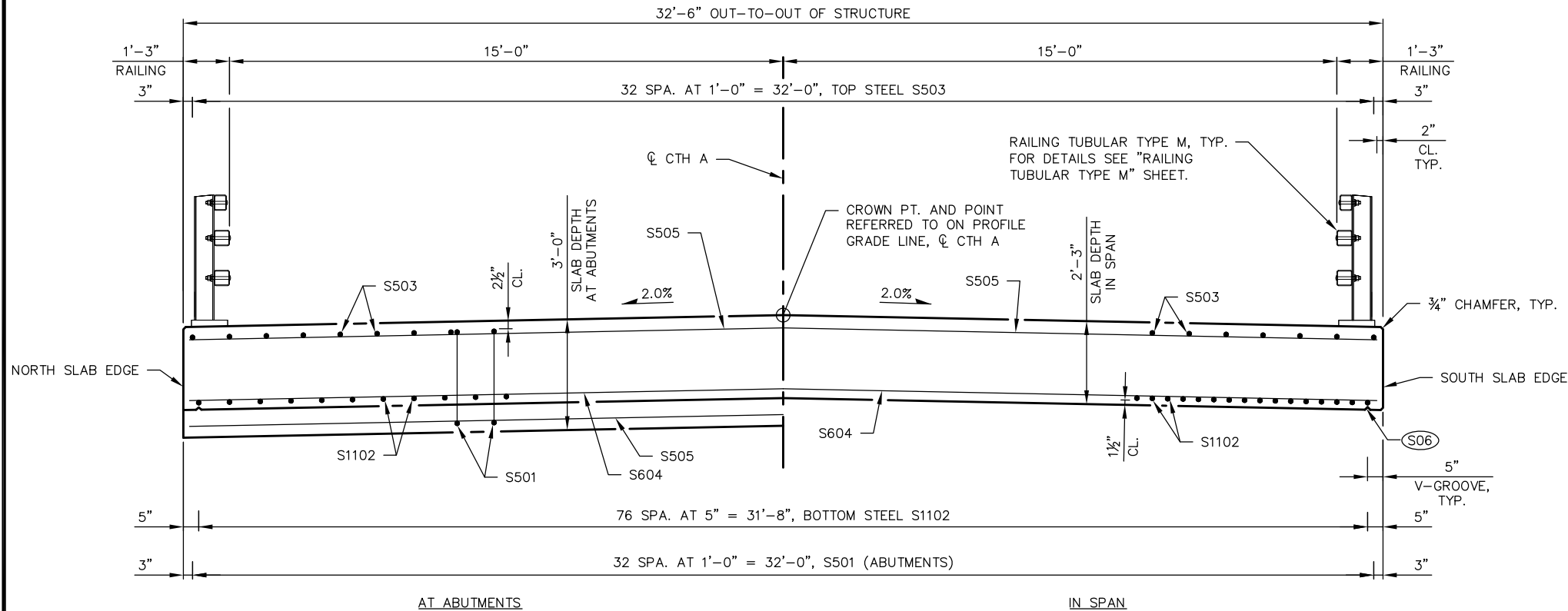
BUNDLE AND TAG EACH SERIES SEPARATELY.

## B.F. ELEVATION - WINGS 2 &amp; 4

(WING 1 &amp; 3 SIMILAR)







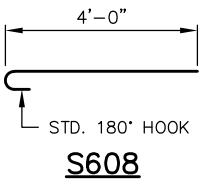
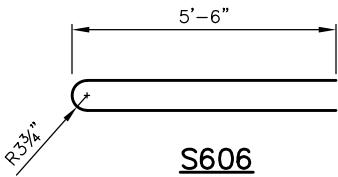
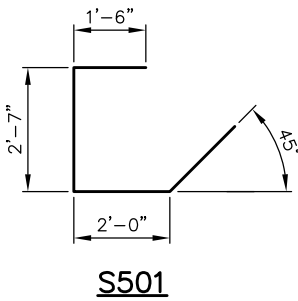
CROSS SECTION THRU ROADWAY  
(LOOKING EAST)

SURVEY TOP OF SLAB ELEVATIONS

|                 | CL W. ABUT. BRG. | 5/10 PT. | CL E. ABUT. BRG. |
|-----------------|------------------|----------|------------------|
| NORTH SLAB EDGE |                  |          |                  |
| CL CTH A        |                  |          |                  |
| SOUTH SLAB EDGE |                  |          |                  |

PRIOR TO RELEASING SLAB FALSEWORK, TAKE TOP OF SLAB ELEVATIONS AT THE CL OF ABUTMENTS AND AT 5/10 POINTS TO VERIFY CAMBER. TAKE ELEVATIONS ALONG EDGE OF SLAB AND REFERENCE LINE. RECORD THE ELEVATIONS IN THE ABOVE TABLE FOR THE "AS BUILT" PLANS.

| TOP OF SLAB ELEVATIONS |                 |          |                 |
|------------------------|-----------------|----------|-----------------|
| SPAN PT                | SOUTH SLAB EDGE | CL CTH A | NORTH SLAB EDGE |
| CL W. ABUT.            | 1353.62         | 1353.95  | 1353.64         |
| 0.1                    | 1353.61         | 1353.93  | 1353.62         |
| 0.2                    | 1353.59         | 1353.92  | 1353.61         |
| 0.3                    | 1353.59         | 1353.91  | 1353.60         |
| 0.4                    | 1353.58         | 1353.90  | 1353.59         |
| 0.5                    | 1353.57         | 1353.90  | 1353.58         |
| 0.6                    | 1353.57         | 1353.89  | 1353.57         |
| 0.7                    | 1353.57         | 1353.89  | 1353.57         |
| 0.8                    | 1353.57         | 1353.89  | 1353.57         |
| 0.9                    | 1353.57         | 1353.89  | 1353.57         |
| CL E. ABUT.            | 1353.59         | 1353.89  | 1353.57         |



NOTES

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

(S06) 3/4" V-GROOVE. EXTEND V-GROOVE TO 6" FROM FRONT FACE OF ABUTMENT BODY. V-GROOVES ARE REQUIRED.

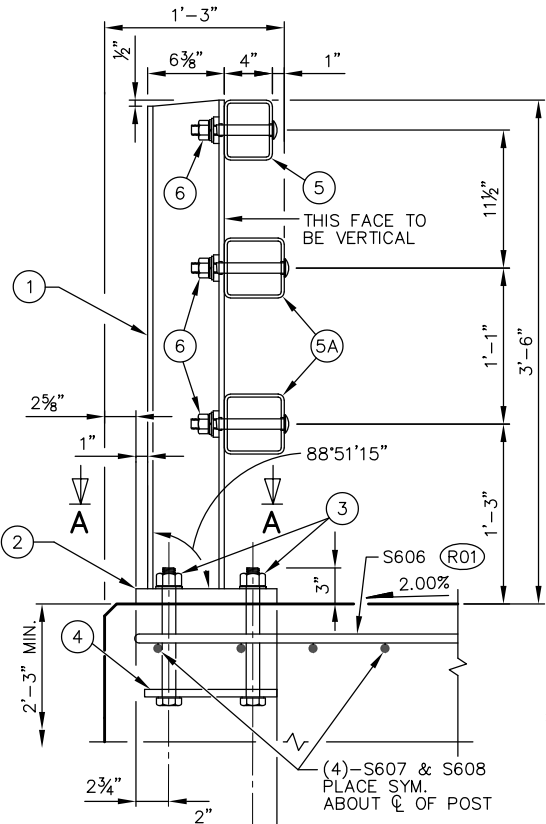
|                                                    |      |            |              |
|----------------------------------------------------|------|------------|--------------|
| NO.                                                | DATE | REVISION   | BY           |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |            |              |
| STRUCTURE B-10-261                                 |      |            |              |
| DRAWN BY JDO                                       |      | PLANS CK'D | ACK          |
| SUPERSTRUCTURE<br>DETAILS                          |      |            | SHEET 7 OF 8 |

LEGEND

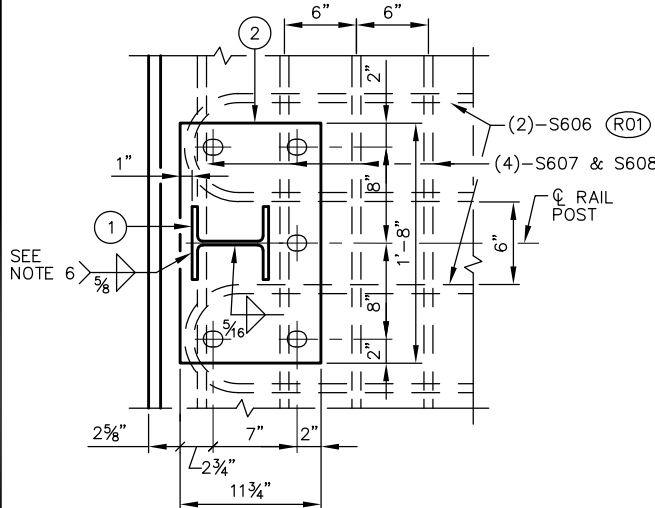
- 1 W6 x 25 WITH 1 1/8" x 1 1/2" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- 2 PLATE 1 1/4" x 11 3/4" x 1'-8" WITH 1 7/16" DIA. OVERSIZED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN.
- 3 ASTM A449 - 1 1/8" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED). 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-9" LONG IN ABUTMENT WINGS. AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-3" LONG. USE 10 3/4" LONG AT ALL OTHER LOCATIONS. (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTABILITY.)
- 4 5/8" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1 3/16" DIA. HOLES FOR ANCHOR BOLTS NO. 3
- 5 TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- 5A TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- 6 7/8" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/16" x 1 5/8" x 1 5/8" MIN. WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)
- 7 1/2" THK. BACK-UP PLATE WITH 2 - 7/8" x 1 1/2" THREADED SHOP WELDED STUDS (NO. 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.
- 8 1" DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5A FOR 7/8" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.
- 9 SPLICE SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE "SLIDING FIT".
- 10 3/8" x 3 5/8" x 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.
- 10A 3/8" x 2 5/8" x 2'-4" PLATE USED IN NO. 5, 3/8" x 3 5/8" x 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.
- 11 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER. USE 1 5/16" x 1 1/4" LONGIT. SLOTTED HOLES IN PLATE NO. 10A. AT FIELD JOINTS AND 1 5/16" x 2 1/4" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A. PROVIDE 1 5/16" DIA. ROUND HOLES IN TUBES NO. 5 AND NO. 5A.
- 12 7/8" DIA. x 1 1/2" LONG THREADED SHOP WELDED STUDS (2 REQ'D.)
- 13 3/8" x 8" x 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.
- 14 7/8" DIA. x 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).
- 15 1" DIA. HOLES IN TUBES NO. 5A FOR 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

NOTES

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

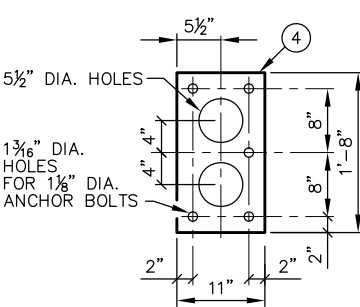


SECTION THRU RAILING ON DECK

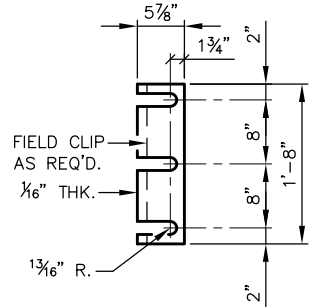


SECTION A-A

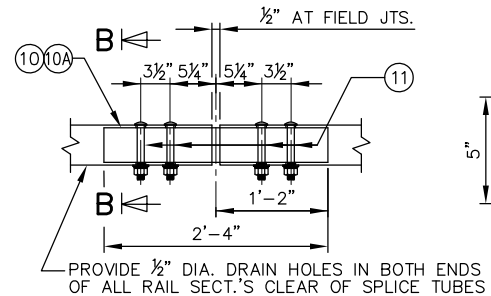
(R01) TIE TO TOP MAT OF STEEL.



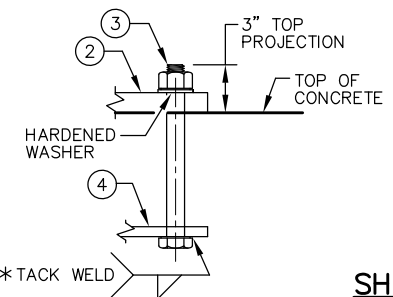
ANCHOR PLATE AT RAIL TO DECK CONNECTION



POST SHIM DETAIL



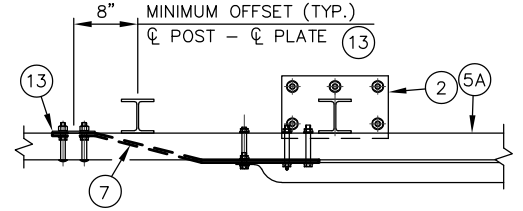
FIELD ERECTION JOINT DETAIL



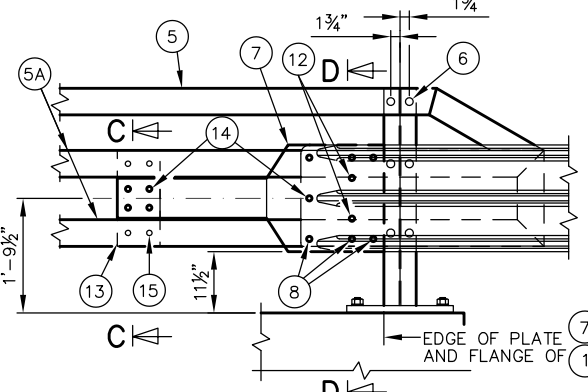
ANCHOR BOLTS

\* ANCHOR BOLT ASSEMBLY MAY BE TACK WELDED, EITHER IN THE SHOP, OR IN THE FIELD AFTER THE ANCHOR PLATE IS PLACED.

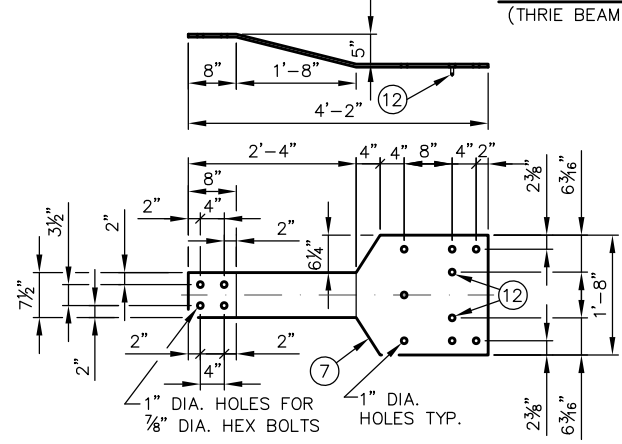
SHOP RAIL SPLICE DETAIL (LOCATION MUST BE SHOWN ON SHOP DRAWINGS)



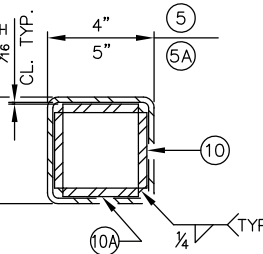
TOP VIEW AT END POST (THRIE BEAM RAIL ATTACHMENT)



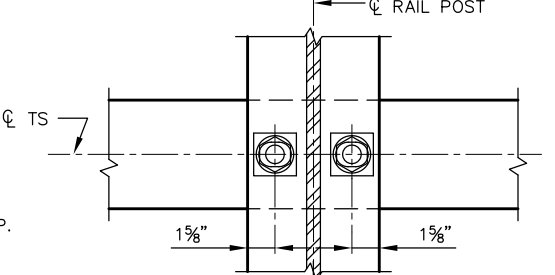
DETAIL AT END POST (THRIE BEAM RAIL ATTACHMENT)



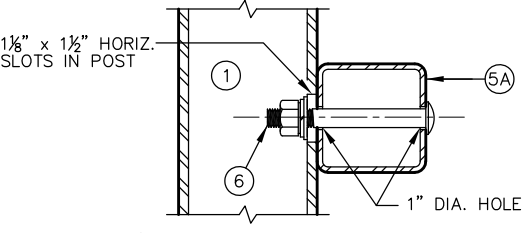
BACK-UP PLATE DETAIL AT BEAM GUARD ATTACHMENTS



SECTION B-B



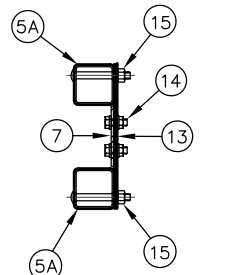
SECTION THRU POST WEB



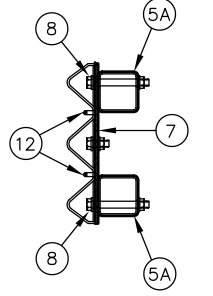
SECTION THRU RAIL

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

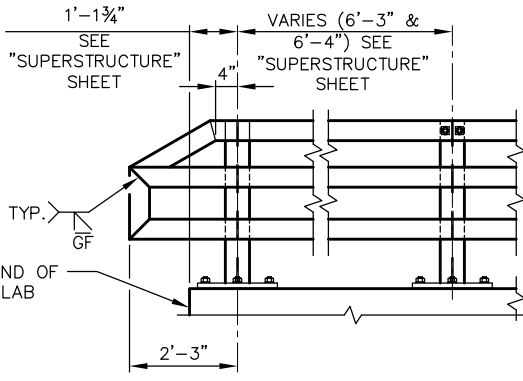
TYPICAL RAIL TO POST CONNECTIONS



SECTION C-C



SECTION D-D



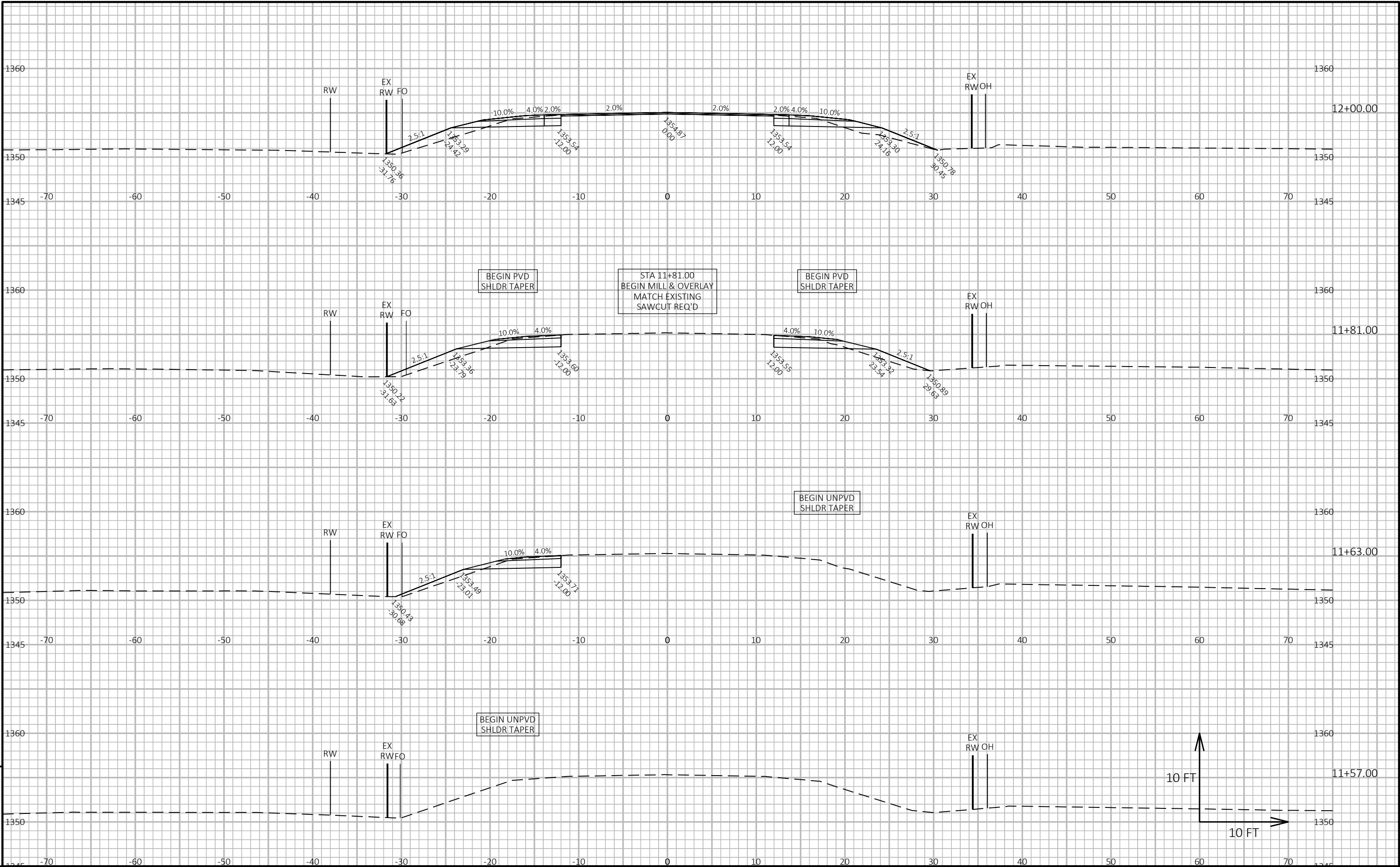
PART ELEVATION OF RAILING

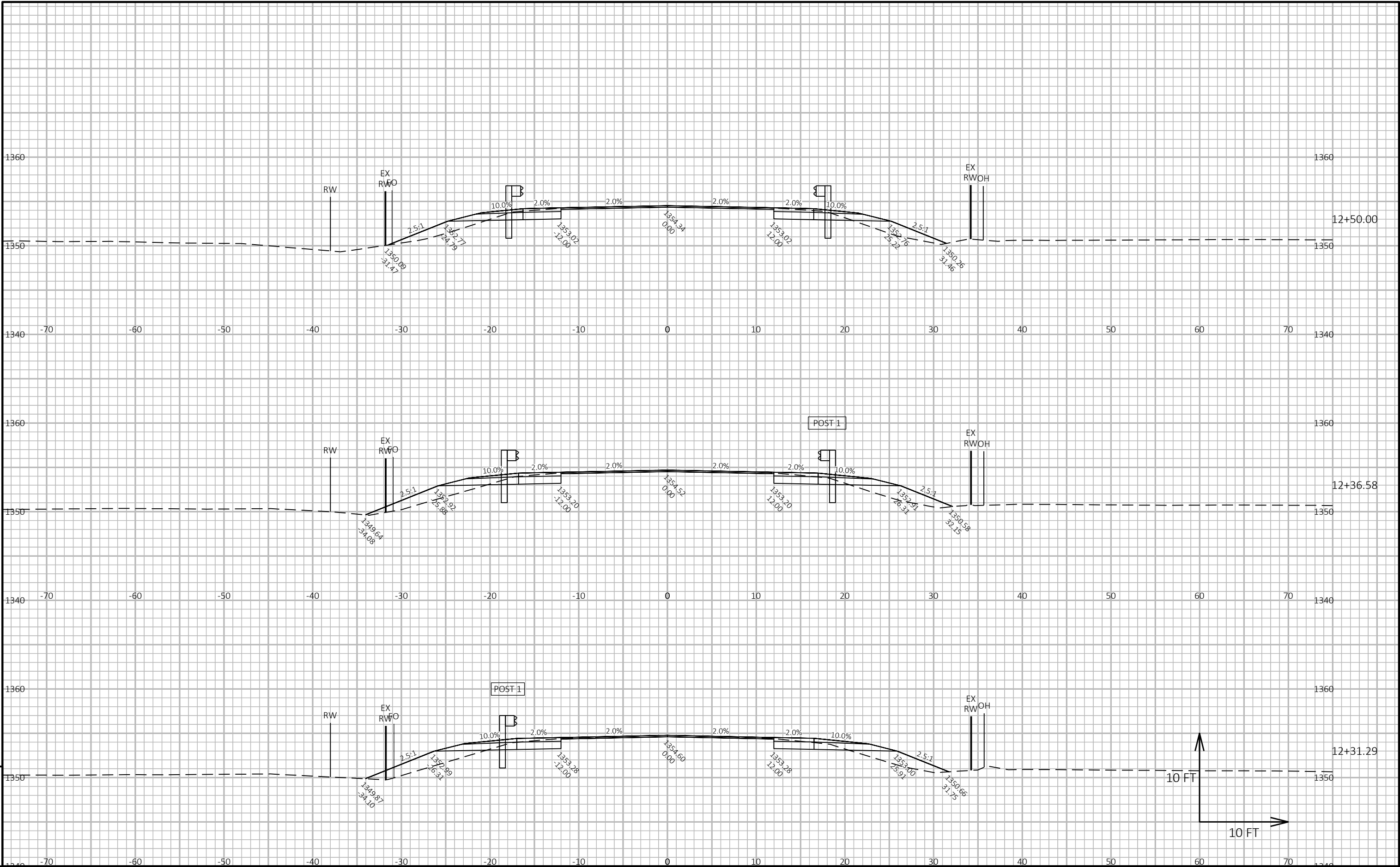
| NO.                                                | DATE | REVISION   | BY           |
|----------------------------------------------------|------|------------|--------------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |            |              |
| STRUCTURE B-10-261                                 |      |            |              |
| DRAWN BY JDO                                       |      | PLANS CK'D | ACK          |
| RAILING TUBULAR<br>TYPE M                          |      |            | SHEET 8 OF 8 |

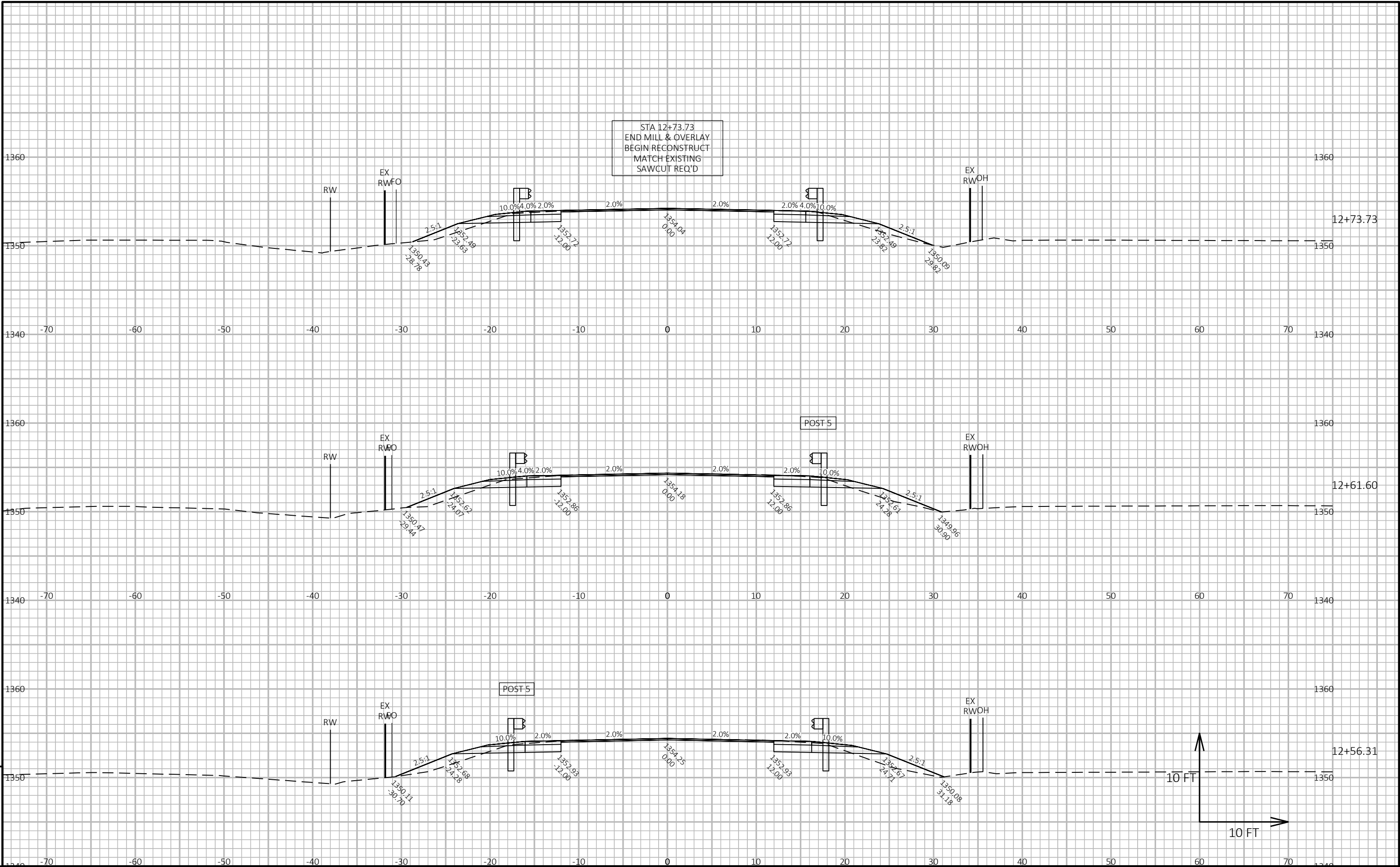
| STATION             | DISTANCE | AREA (SF) |                                        |       | INCREMENTAL VOL (CY) (UNADJUSTED) |                                                  |                | CUMULATIVE VOL (CY)   |                       |                        |
|---------------------|----------|-----------|----------------------------------------|-------|-----------------------------------|--------------------------------------------------|----------------|-----------------------|-----------------------|------------------------|
|                     |          | CUT       | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL | FILL  | CUT<br>NOTE 1                     | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL<br>NOTE 2 | FILL<br>NOTE 3 | CUT<br>1.00<br>NOTE 1 | EXPANDED FILL<br>1.25 | MASS ORDNATE<br>NOTE 4 |
|                     |          |           |                                        |       |                                   |                                                  |                |                       |                       |                        |
| 11+57.00            | 0.00     | 8.34      | 10.00                                  | 0.00  | 0                                 | 0                                                | 0              | 0                     | 0                     | 0                      |
| 11+63.00            | 6.00     | 8.27      | 10.00                                  | 4.48  | 2                                 | 2                                                | 0              | 2                     | 0                     | 0                      |
| 11+81.00            | 18.00    | 15.51     | 10.00                                  | 12.64 | 8                                 | 7                                                | 6              | 10                    | 8                     | -7                     |
| 12+00.00            | 19.00    | 13.47     | 10.00                                  | 13.07 | 10                                | 7                                                | 9              | 20                    | 19                    | -15                    |
| 12+31.29            | 31.29    | 12.60     | 9.17                                   | 23.58 | 15                                | 11                                               | 21             | 35                    | 45                    | -37                    |
| 12+36.58            | 5.29     | 13.34     | 9.17                                   | 22.65 | 3                                 | 2                                                | 5              | 38                    | 51                    | -42                    |
| 12+50.00            | 13.42    | 14.91     | 9.17                                   | 16.55 | 7                                 | 5                                                | 10             | 45                    | 64                    | -53                    |
| 12+56.31            | 6.31     | 15.56     | 9.17                                   | 13.95 | 4                                 | 2                                                | 4              | 49                    | 69                    | -56                    |
| 12+61.60            | 5.29     | 16.05     | 9.17                                   | 10.89 | 3                                 | 2                                                | 2              | 52                    | 71                    | -57                    |
| 12+73.73            | 12.13    | 16.08     | 9.17                                   | 8.47  | 7                                 | 4                                                | 4              | 59                    | 76                    | -59                    |
| 12+81.29            | 7.56     | 38.19     | 9.17                                   | 9.29  | 8                                 | 3                                                | 2              | 67                    | 79                    | -57                    |
| 12+86.58            | 5.29     | 36.51     | 9.17                                   | 8.49  | 7                                 | 2                                                | 2              | 74                    | 81                    | -54                    |
| 13+00.00            | 13.42    | 32.60     | 9.17                                   | 10.60 | 17                                | 5                                                | 5              | 91                    | 88                    | -49                    |
| 13+21.79            | 21.79    | 28.37     | 9.17                                   | 21.58 | 25                                | 7                                                | 13             | 116                   | 104                   | -47                    |
| STRUCTURE B-10-0261 |          |           |                                        |       |                                   |                                                  |                |                       |                       |                        |
| DIVISION 1 TOTALS   |          |           |                                        |       | 116                               | 59                                               | 83             |                       |                       |                        |

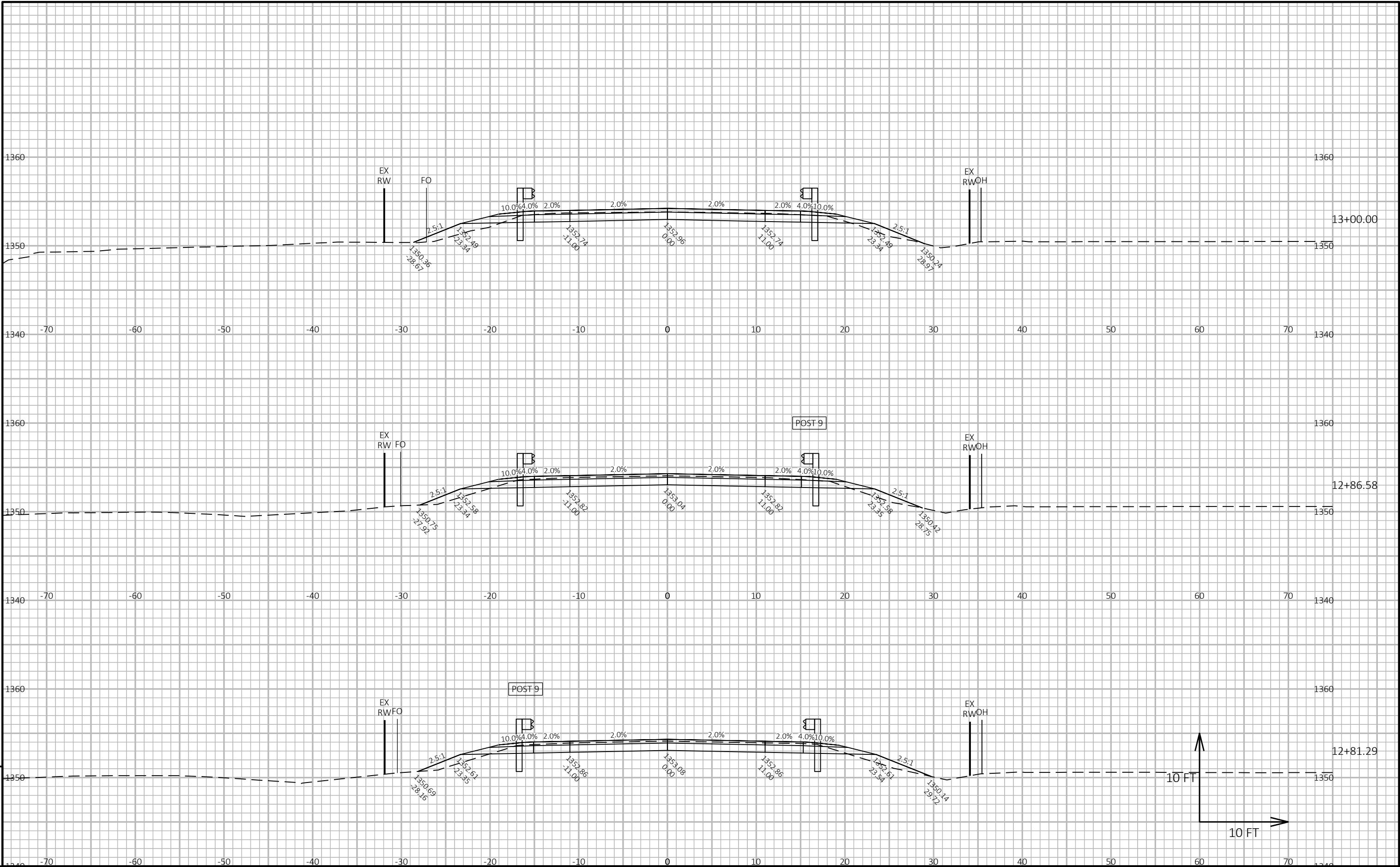
| STATION             | DISTANCE | AREA (SF) |                                        |       | INCREMENTAL VOL (CY) (UNADJUSTED) |                                                  |                | CUMULATIVE VOL (CY)   |                       |                        |
|---------------------|----------|-----------|----------------------------------------|-------|-----------------------------------|--------------------------------------------------|----------------|-----------------------|-----------------------|------------------------|
|                     |          | CUT       | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL | FILL  | CUT<br>NOTE 1                     | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL<br>NOTE 2 | FILL<br>NOTE 3 | CUT<br>1.00<br>NOTE 1 | EXPANDED FILL<br>1.25 | MASS ORDNATE<br>NOTE 4 |
|                     |          |           |                                        |       |                                   |                                                  |                |                       |                       |                        |
| STRUCTURE B-10-0261 |          |           |                                        |       |                                   |                                                  |                |                       |                       |                        |
| 13+78.21            | 0.00     | 34.78     | 9.17                                   | 18.78 | 0                                 | 0                                                | 0              | 0                     | 0                     | 0                      |
| 14+00.00            | 21.79    | 41.07     | 9.17                                   | 18.96 | 31                                | 7                                                | 15             | 31                    | 19                    | 5                      |
| 14+13.42            | 13.42    | 45.27     | 9.17                                   | 12.82 | 21                                | 5                                                | 8              | 52                    | 29                    | 11                     |
| 14+18.71            | 5.29     | 46.06     | 9.17                                   | 15.14 | 9                                 | 2                                                | 3              | 61                    | 33                    | 15                     |
| 14+26.27            | 7.56     | 15.59     | 9.17                                   | 20.27 | 9                                 | 3                                                | 5              | 70                    | 39                    | 14                     |
| 14+38.40            | 12.13    | 13.76     | 9.17                                   | 28.42 | 7                                 | 4                                                | 11             | 77                    | 53                    | 4                      |
| 14+43.69            | 5.29     | 13.10     | 9.17                                   | 29.96 | 3                                 | 2                                                | 6              | 80                    | 60                    | -3                     |
| 14+50.00            | 6.31     | 12.80     | 10.00                                  | 30.72 | 3                                 | 2                                                | 7              | 83                    | 69                    | -11                    |
| 14+63.42            | 13.42    | 12.09     | 10.00                                  | 34.51 | 6                                 | 5                                                | 16             | 89                    | 89                    | -30                    |
| 14+68.71            | 5.29     | 11.86     | 10.00                                  | 36.29 | 2                                 | 2                                                | 7              | 91                    | 98                    | -39                    |
| 15+00.00            | 31.29    | 11.10     | 10.00                                  | 26.18 | 13                                | 12                                               | 36             | 104                   | 143                   | -83                    |
| 15+19.00            | 19.00    | 13.13     | 10.00                                  | 19.99 | 9                                 | 7                                                | 16             | 113                   | 163                   | -101                   |
| 15+37.00            | 18.00    | 6.86      | 10.00                                  | 12.57 | 7                                 | 7                                                | 11             | 120                   | 176                   | -114                   |
| 15+43.00            | 6.00     | 7.01      | 10.00                                  | 5.94  | 2                                 | 2                                                | 2              | 122                   | 179                   | -117                   |
|                     |          |           | DIVISION 2 TOTALS                      |       | 122                               | 60                                               | 143            |                       |                       |                        |
|                     |          |           | PROJECT TOTALS                         |       | 238                               | 119                                              | 226            |                       |                       |                        |

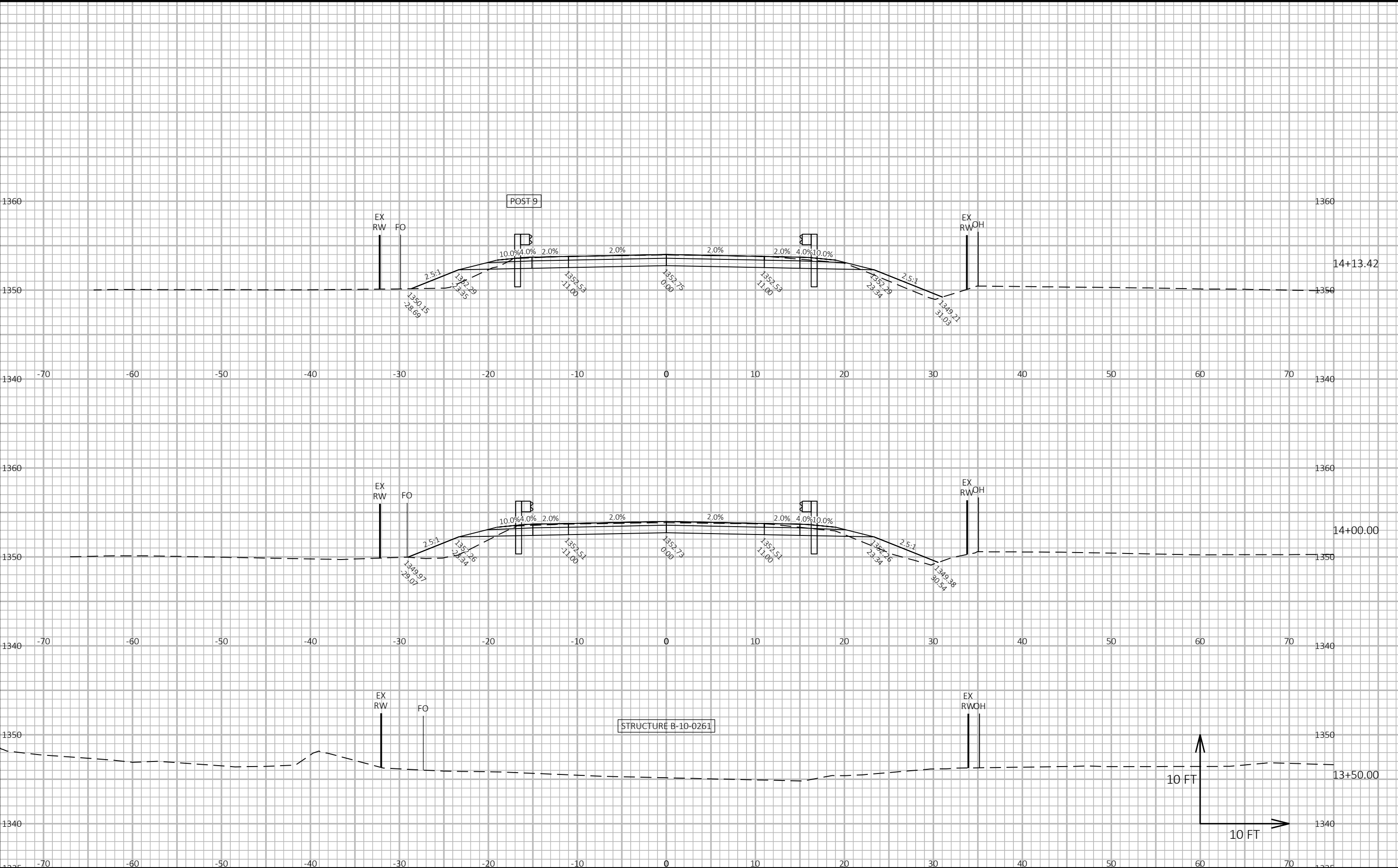
|                                         |                                                                                                                                          |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| NOTES:                                  |                                                                                                                                          |
| 1 - CUT                                 | CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL.                                                                                        |
| 2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL | THIS DOES NOT SHOW UP IN CROSS SECTIONS. INCLUDES EXISTING PAVEMENT.                                                                     |
| 3 - FILL                                | DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME.                                                                                           |
| 4 - MASS ORDNATE                        | [(CUT) - (FILL * FILL FACTOR) - (SALVAGED / UNUSABLE PAVEMENT MATERIAL)]                                                                 |
|                                         | PLUS QUANTITIY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS QUANTITY INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION. |

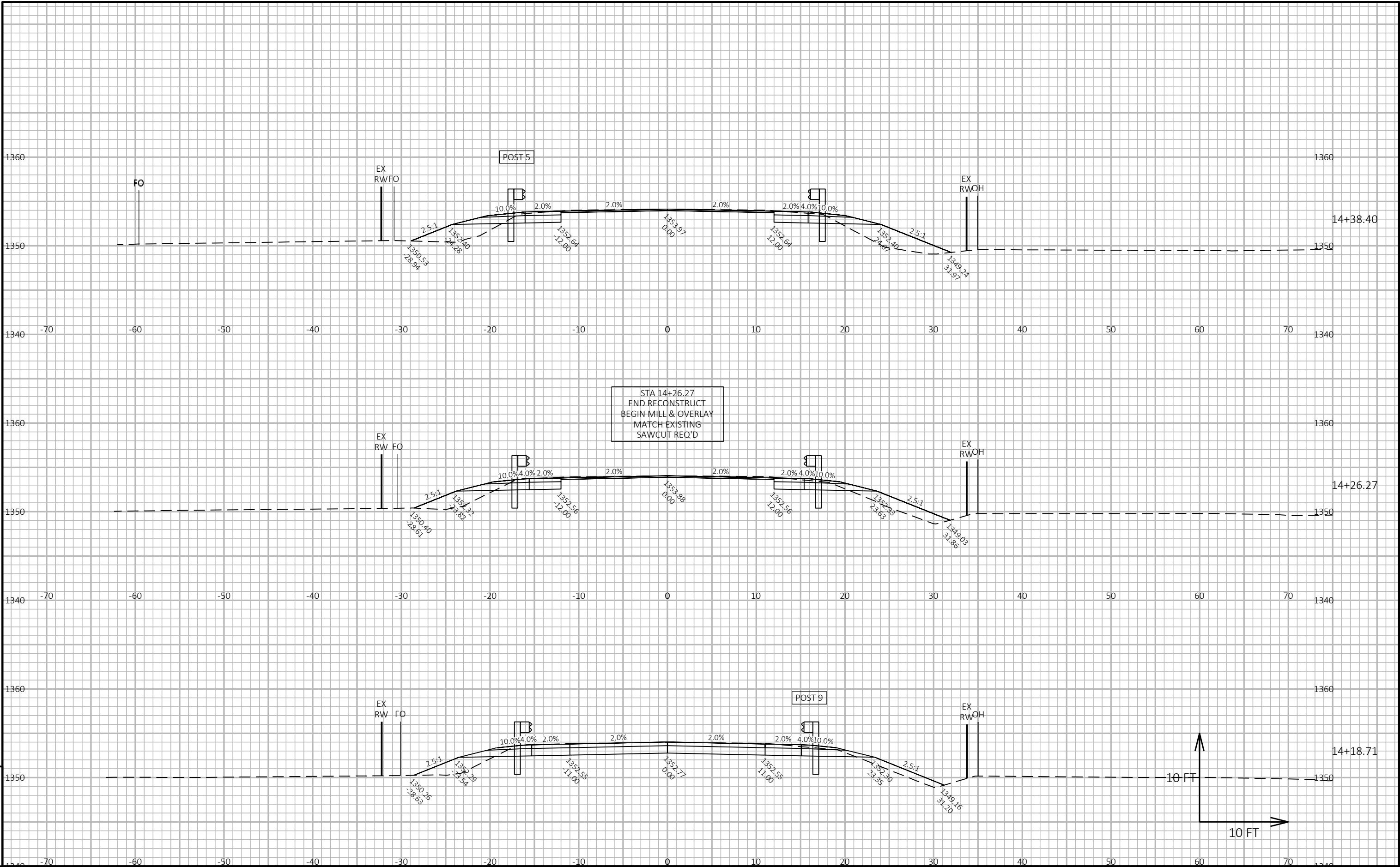




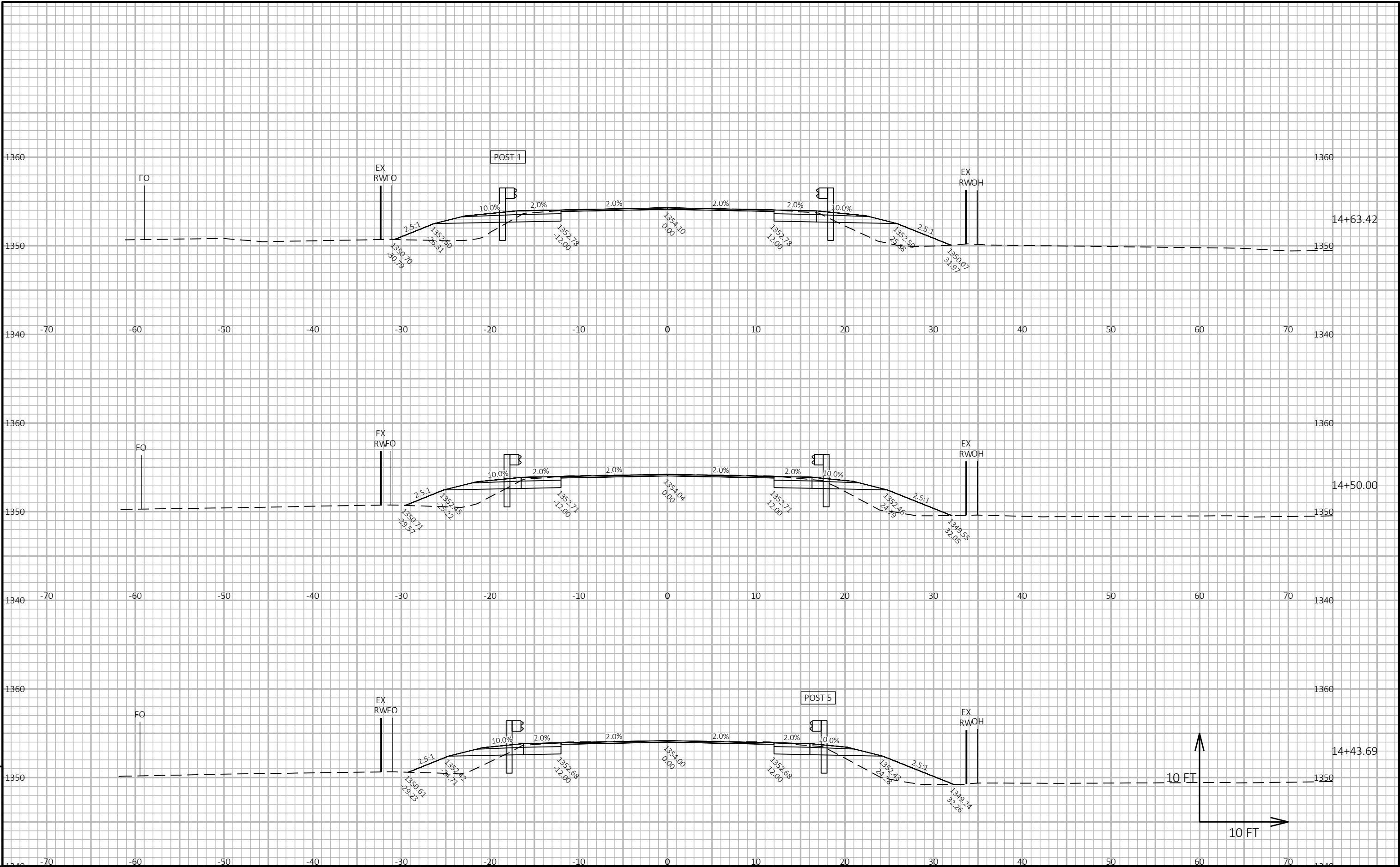




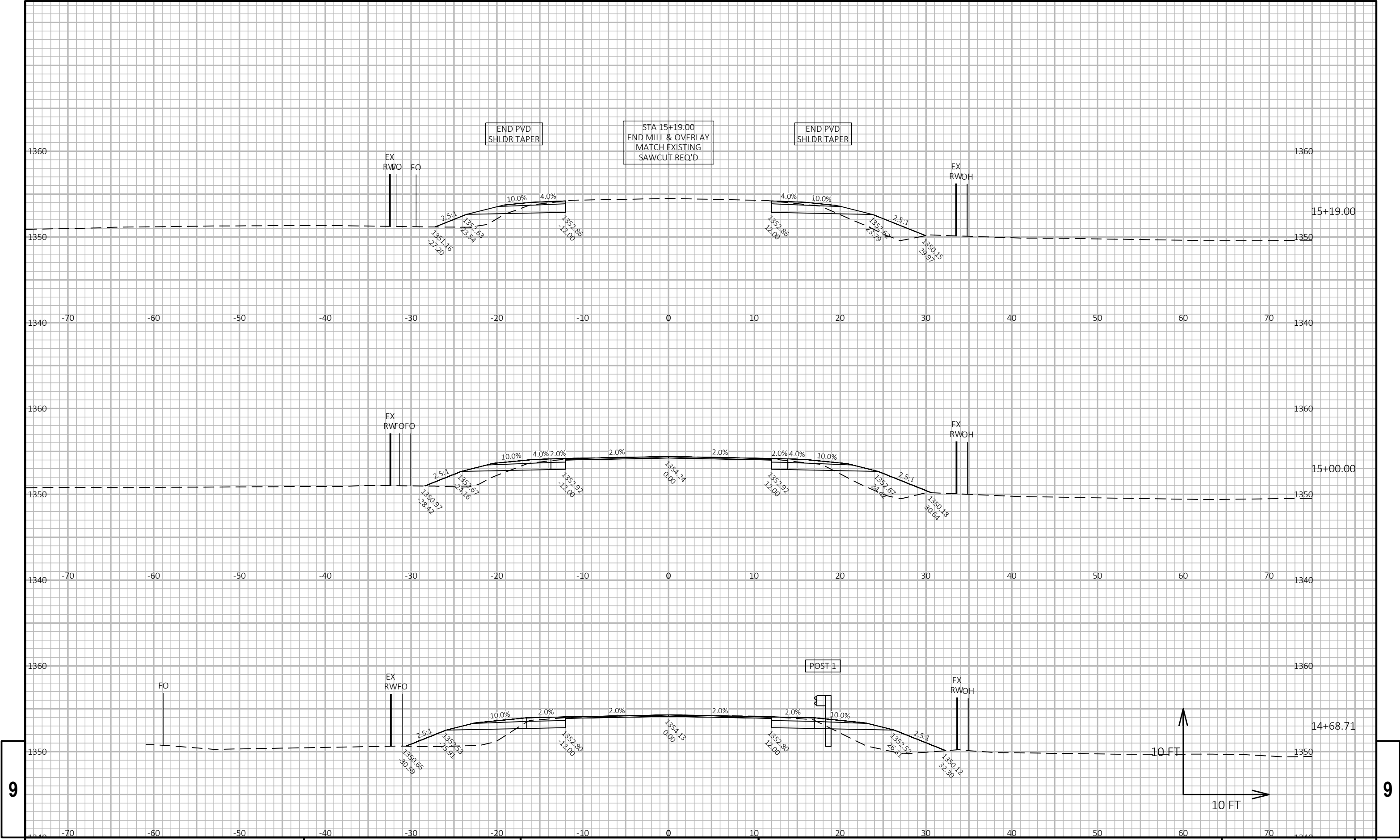




|                        |            |               |                |       |   |
|------------------------|------------|---------------|----------------|-------|---|
| PROJECT NO: 8880-05-76 | HWY: CTH A | COUNTY: CLARK | CROSS SECTIONS | SHEET | E |
|------------------------|------------|---------------|----------------|-------|---|

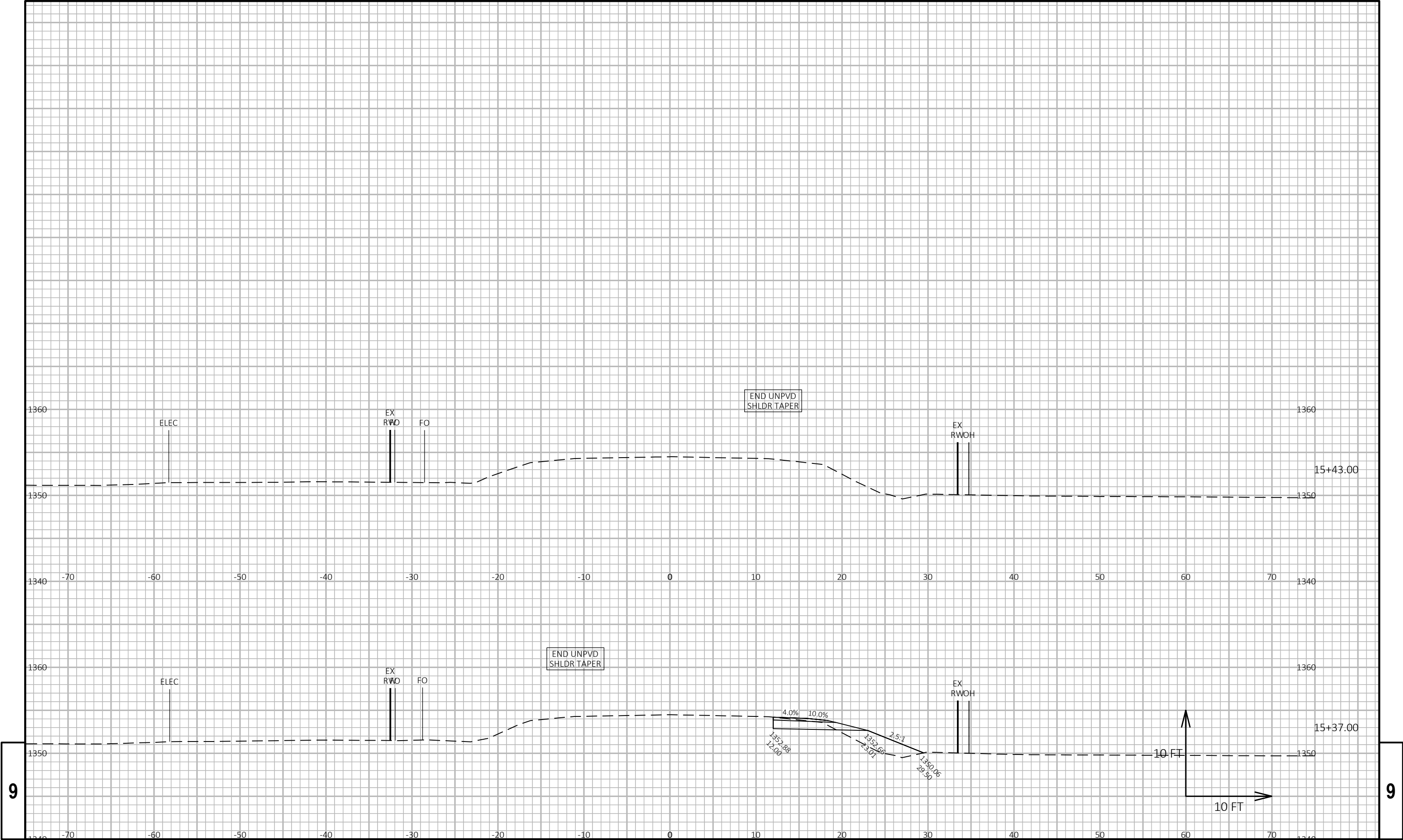


|                        |            |               |                |       |   |
|------------------------|------------|---------------|----------------|-------|---|
| PROJECT NO: 8880-05-76 | HWY: CTH A | COUNTY: CLARK | CROSS SECTIONS | SHEET | E |
|------------------------|------------|---------------|----------------|-------|---|

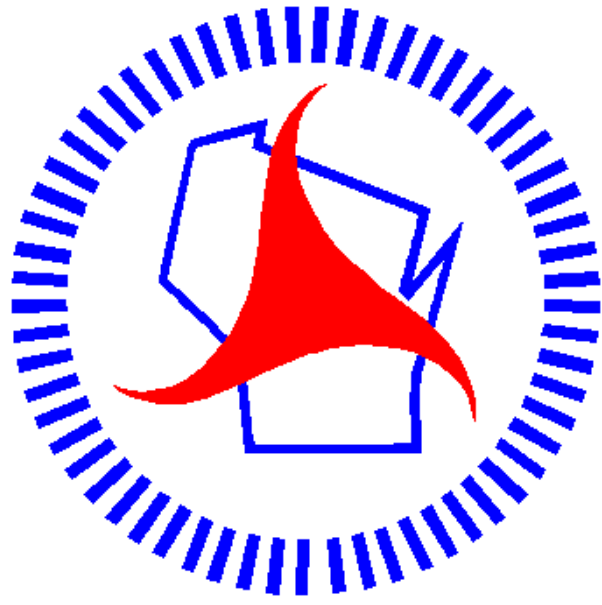


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|   |  |                        |  |            |  |               |  |                |  |       |  |   |
|---|--|------------------------|--|------------|--|---------------|--|----------------|--|-------|--|---|
| 9 |  | PROJECT NO: 8880-05-76 |  | HWY: CTH A |  | COUNTY: CLARK |  | CROSS SECTIONS |  | SHEET |  | E |
|---|--|------------------------|--|------------|--|---------------|--|----------------|--|-------|--|---|



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

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