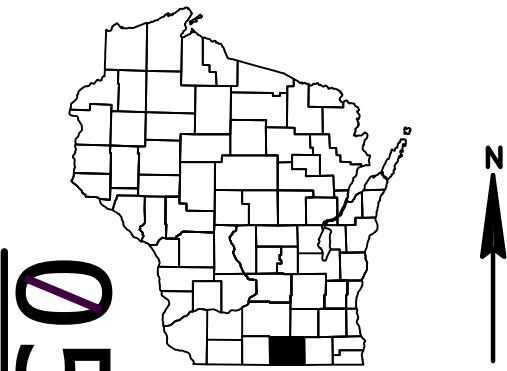


MAD PROJECT ID: 5571-00-81 & 5670-03-70 WITH: COUNTY: ROCK

MARCH 2021

| 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 =  |   | 106                          |



| DESIGN DESIGNATION | 5571-00-81    | 5670-03-70  |
|--------------------|---------------|-------------|
| A.A.D.T.           | = 2400 (2020) | 3000 (2023) |
| A.A.D.T.           | = 2800 (2040) | 3380 (2043) |
| D.H.V.             | = 9.2%        |             |
| D.D.               | = 60/40       | 60/40       |
| T.                 | = 16.9%       | 11%         |
| DESIGN SPEED       | = 60 MPH      | 40/60 MPH   |
| ESALS              | = 720,000     | 760,000     |

CONVENTIONAL SYMBOLS

| PLAN                              | PROFILE                                        |
|-----------------------------------|------------------------------------------------|
| CORPORATE LIMITS                  | GRADE LINE                                     |
| PROPERTY LINE                     | ORIGINAL GROUND                                |
| LOT LINE                          | MARSH OR ROCK PROFILE<br>(To be noted as such) |
| LIMITED HIGHWAY EASEMENT          | SPECIAL DITCH                                  |
| EXISTING RIGHT OF WAY             | GRADE ELEVATION                                |
| PROPOSED OR NEW R/W LINE          | CULVERT (Profile View)                         |
| SLOPE INTERCEPT                   | UTILITIES                                      |
| REFERENCE LINE                    | ELECTRIC                                       |
| EXISTING CULVERT                  | FIBER OPTIC                                    |
| PROPOSED CULVERT<br>(Box or Pipe) | GAS                                            |
| COMBUSTIBLE FLUIDS                | SANITARY SEWER                                 |
|                                   | STORM SEWER                                    |
|                                   | TELEPHONE                                      |
|                                   | WATER                                          |
|                                   | UTILITY PEDESTAL                               |
|                                   | POWER POLE                                     |
|                                   | TELEPHONE POLE                                 |
| MARSH AREA                        |                                                |
| WOODED OR SHRUB AREA              |                                                |

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

BELOIT - EVANSVILLE

BR ALLEN CREEK B-53-945

STH 213  
ROCK COUNTY

MONROE - EVANSVILLE

STH 213 - GARRISON DRIVE

STH 59  
ROCK COUNTY

| STATE PROJECT NUMBER |
|----------------------|
| 5571-00-81           |

| STATE PROJECT NUMBER |
|----------------------|
| 5670-03-70           |

ID: 5571-00-81  
PROJECT LOCATION  
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Y=287015.044

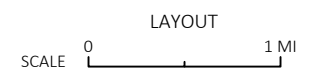
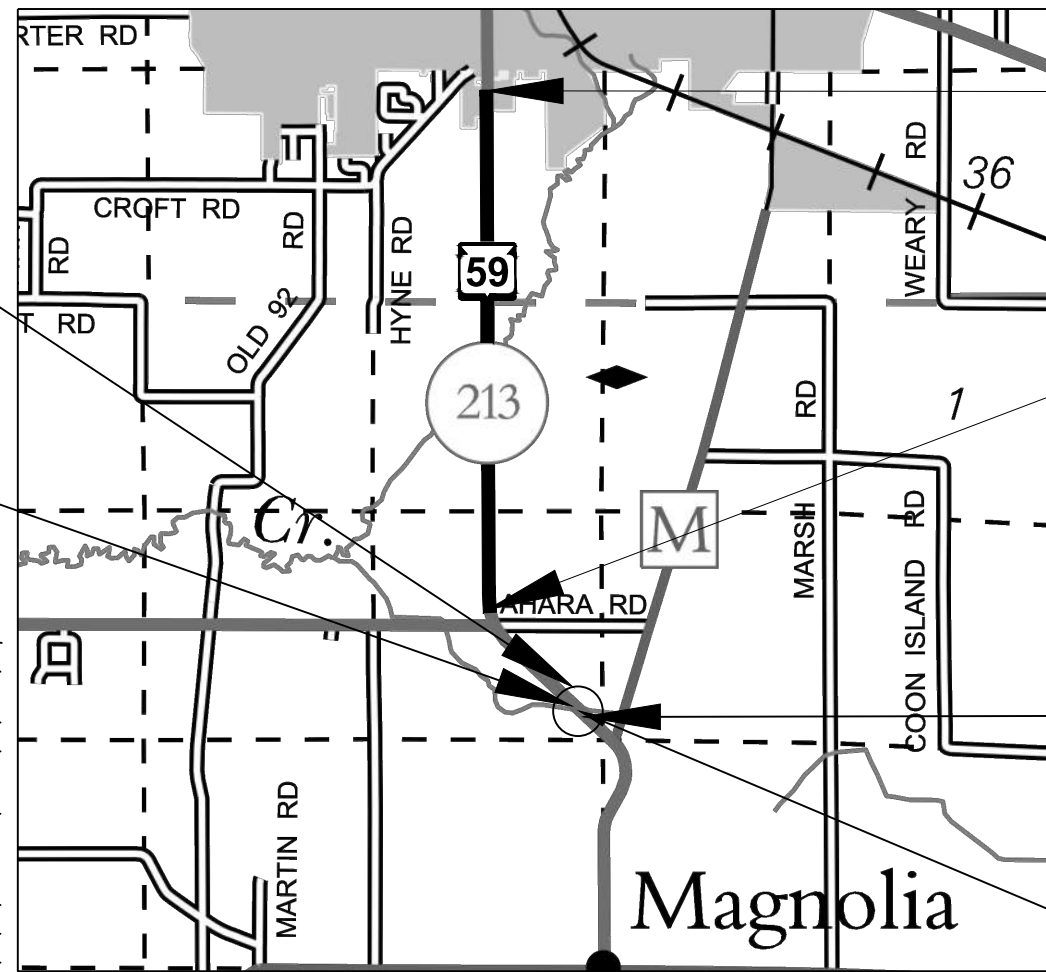
ID: 5571-00-81  
END PROJECT  
STA 111+50

ID: 5670-03-70  
END PROJECT  
STA 1288+20

ID: 5670-03-70  
BEGIN PROJECT  
STA 1165+20  
X= 419217.69  
Y= 289293.87

ID: 5571-00-81  
BEGIN PROJECT  
STA 103+50

STRUCTURE B-53-945/B-53-293  
STA 106+90.66 - STA 107+23.34



5571-00-81: TOTAL NET LENGTH OF CENTERLINE = 0.152 MI  
5670-03-70: TOTAL NET LENGTH OF CENTERLINE = 2.32 MI

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

ELEVATIONS SHOWN ON THIS PLAN ARE IN REFERENCE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988, NAVD (2012).

| STATE PROJECT | FEDERAL PROJECT |          |
|---------------|-----------------|----------|
|               | PROJECT         | CONTRACT |
| 5571-00-81    | WISC 2021222    | 1        |
| 5670-03-70    | WISC 2021223    | 1        |
|               |                 |          |
|               |                 |          |

| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                   |
|----------------------------------------------------|-------------------|
| PREPARED BY                                        | SURVEYOR          |
| Designer                                           | LORRAINE BETZEL   |
| Project Manager                                    | CHRIS HAZARD      |
| Regional Examiner                                  | REGIONAL EXAMINER |
| Regional Supervisor                                | KURT JOHNSON      |
| APPROVED FOR THE DEPARTMENT                        |                   |
| DATE: 9-25-20                                      | (Signature)       |

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 SHALL COORDINATE HIS CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE.

DIMENSIONS GIVEN FOR EXISTING FEATURES SHALL BE CONSIDERED AS APPROXIMATE AND MEASURED IN THE FIELD FOR MATCHING PURPOSES.

EXACT EROSION CONTROL DEVICE LOCATIONS WILL BE DETERMINED BY THE ENGINEER. EROSION CONTROL DEVICES SHALL BE PLACED IN SEQUENCE WITH CONSTRUCTION OPERATIONS OR AS DETERMINED BY THE ENGINEER.

DETAILS OF CONSTRUCTION NOT SHOWN ON THE PLAN SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER

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

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

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE FERTILIZED SEEDED AND MULCHED.

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

APPLY TACK COAT BETWEEN LAYERS OF PAVEMENT AND TO MILLED SURFACES. THE APPLICATION RATE IS 0.07 GALLONS PER SQUARE YARD BETWEEN THE MILLED SURFACE, 0.05 GALLONS PER SQUARE YARD BETWEEN NEW HMA PAVEMENT LAYERS, OR AS DIRECTED BY THE ENGINEER.

THE LOWER LAYER OF HMA PAVEMENT IS TO BE PLACED ON THE SAME DAY OF MILLING TO MINIMIZE DAMAGE TO THE REMAINING PAVEMENT.

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

PAVING LIMITS AT INTERSECTIONS AND AT THE PROJECT BEGINNING AND END ARE TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

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

THE LOCATION OF STOP LINES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.

PRIOR TO PLACEMENT OF MGS RAIL, THE SHOULDERS SHALL BE IN PLACE, SHAPED AND COMPACTED.

BEAM GUARD WILL BE REPLACED THE SAME DAY IT IS REMOVED.

DURING EXCAVATION, ANY RIGID CONCRETE PAVEMENT REMOVED WILL BE PAID FOR AS REMOVING PAVEMENT. REMOVING ANY CRUSHED CONCRETE PAVEMENT WILL BE PAID FOR AS COMMON EXCAVATION.

EXCAVATION BELOW SUBGRADE (EBS) IS NOT USED TO BALACE YARDAGE AND IS NOT SHOWN ON THE CROSS SECTIONS BUT IS MEASURED AND PAID FOR AS COMMON EXCAVATION.

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SHELLEY NELSON  
DNR LIAISON  
3911 FISH HATCHERY RD  
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Shelley.Nelson@wisconsin.gov

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WISDOT PROJECT MANAGER  
2101 WRIGHT STREET  
MADISON, WI 53704  
(608) 245-2652  
Christopher.Hazard@dot.wi.gov

DESIGN CONTACT  
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DESIGN ENGINEER  
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(608) 246-3279  
Lorraine.Betzel@dot.wi.gov

LIST OF STANDARD ABBREVIATIONS

|              |                                 |             |                                |
|--------------|---------------------------------|-------------|--------------------------------|
| AADT         | ANNUAL AVERAGE DAILY TRAFFIC    | PT          | POINT                          |
| ASPH         | ASPHALT                         | PC          | POINT OF CURVATURE             |
| AVG          | AVERAGE                         | PI          | POINT OF INTERSECTION          |
| BK           | BACK                            | PT          | POINT OF TANGENCY              |
| BL           | BASE LINE                       | LB          | POUND                          |
| BM           | BENCH MARK                      | PSI         | POUNDS PER SQUARE INCH         |
| BR           | BRIDGE                          | PE          | PRIVATE ENTRANCE               |
| CL or C/L    | CENTER LINE                     | PROJ        | PROJECT                        |
| CE           | COMERCIAL ENTRANCE              | PL          | PROPERTY LINE                  |
| CONC         | CONCRETE                        | R           | RADIUS                         |
| CO           | COUNTY                          | RL or R/L   | REFERENCE LINE                 |
| CTH          | COUNTY TRUNK HIGHWAY            | REBAR       | REINFORCEMENT BAR              |
| CR           | CREEK                           | REINF       | REINFORCING or REINFORCEMENT   |
| CR           | CRUSHED                         | REQD        | REQUIRED                       |
| CABC         | CRUSHED AGGREGATE BASE CONCRETE | RT          | RIGHT                          |
| CY or CUYD   | CUBIC YARD                      | R/W         | RIGHT-OF-WAY                   |
| CULV         | CULVERT                         | RD          | ROAD                           |
| CP           | CULVERT PIPE                    | RDWY        | ROADWAY                        |
| C & G        | CURB AND GUTTER                 | SALV        | SALVAGED                       |
| DHV          | DESIGN HOUR VOLUME              | SAN         | SANITARY SEWER                 |
| DIA          | DIAMETER                        | SEC         | SECTION                        |
| E            | EAST                            | SHLDR       | SHOULDER                       |
| X            | EAST GRID COORDINATE            | S           | SOUTH                          |
| EB           | EASTBOUND                       | SB          | SOUTHBOUND                     |
| ELEC         | ELECTRIC (AL)                   | SPECS       | SPECIFICATIONS                 |
| EL or ELEV   | ELEVATION                       | SQ          | SQUARE                         |
| EMB          | EMBANKMENT                      | SF or SQ FT | SQUARE FEET                    |
| EW           | ENDWALL                         | SY or SQ YD | SQUARE YARD                    |
| ESALS        | EQUIVALENT SINGLE AXLE LOADS    | STD         | STANDARD                       |
| EXC          | EXCAVATION                      | SDD         | STANDARD DETAILS DRAWINGS      |
| EBS          | EXCAVATION BELOW SUBGRADE       | STH         | STATE TRUNK HIGHWAYS           |
| EXIST        | EXISTING                        | STA         | STATION                        |
| FERT         | FERTILIZE                       | SS          | STORM SEWER                    |
| FE           | FIELD ENTRANCE                  | STR         | STRUCTURE or STRUCTURAL        |
| FG           | FINISHED GRADE                  | SE          | SUPERELEVATION                 |
| FAB          | FLASHING ARROW BOARD            | SURF        | SURFACE                        |
| FL or F/L    | FLOW LINE                       | SL or S/L   | SURVEY LINE                    |
| FT           | FOOT                            | T           | TANGENT                        |
| CWT          | HUNDREDWEIGHT                   | TEL         | TELEPHONE                      |
| IN DIA       | INCH DIAMETER                   | TEMP        | TEMPORARY                      |
| INL          | INLET                           | TLE         | TEMPORARY LIMITED EASEMENT     |
| ID           | INSIDE DIAMETER                 | T           | TON                            |
| INV          | INVERT                          | TC          | TOP OF CURB                    |
| IP           | IRON PIPE or PIN                | T           | TRUCKS (PERCENT OF)            |
| JT           | JOINT                           | TYP         | TYPICAL                        |
| LT           | LEFT                            | UG          | UNDERGROUND                    |
| L            | LENGTH OF CURVE                 | USH         | UNITED STATES HIGHWAY          |
| LIN FT or LF | LINEAR FOOT                     | VAR         | VARIABLE                       |
| LS           | LUMP SUM                        | VC          | VERTICAL CURVE                 |
| MH           | MANHOLE                         | VPC         | VERTICAL POINT OF CURVE        |
| M            | MARSH                           | VPI         | VERTICAL POINT OF INTERSECTION |
| ML or M/L    | MATCH LINE                      | VPT         | VERTICAL POINT OF TANGENCY     |
| MB           | MESSAGE BOARD                   | VOL         | VOLUME                         |
| NOM          | NOMINAL                         | W           | WATER                          |
| NC           | NORMAL CROWN                    | WV          | WATER VALVE                    |
| N            | NORTH                           | W           | WEST                           |
| Y            | NORTH GRID COORDINATE           | WB          | WEST BOUND                     |
| NB           | NORTHBOUND                      | YD          | YARD                           |
| NO           | NUMBER                          |             |                                |
| PAVT         | PAVEMENT                        |             |                                |
| PERM         | PERMANENT                       |             |                                |
| PLE          | PERMANENT LIMITED EASEMENT      |             |                                |

UTILITY CONTACTS 5571-00-81:

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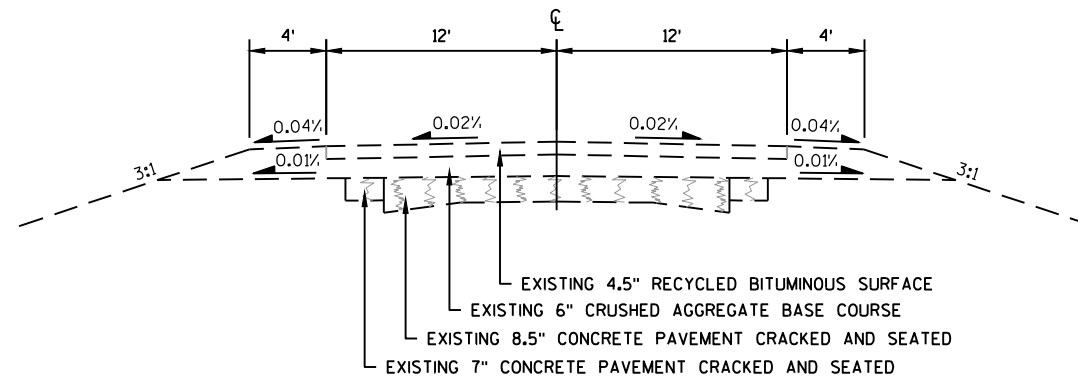
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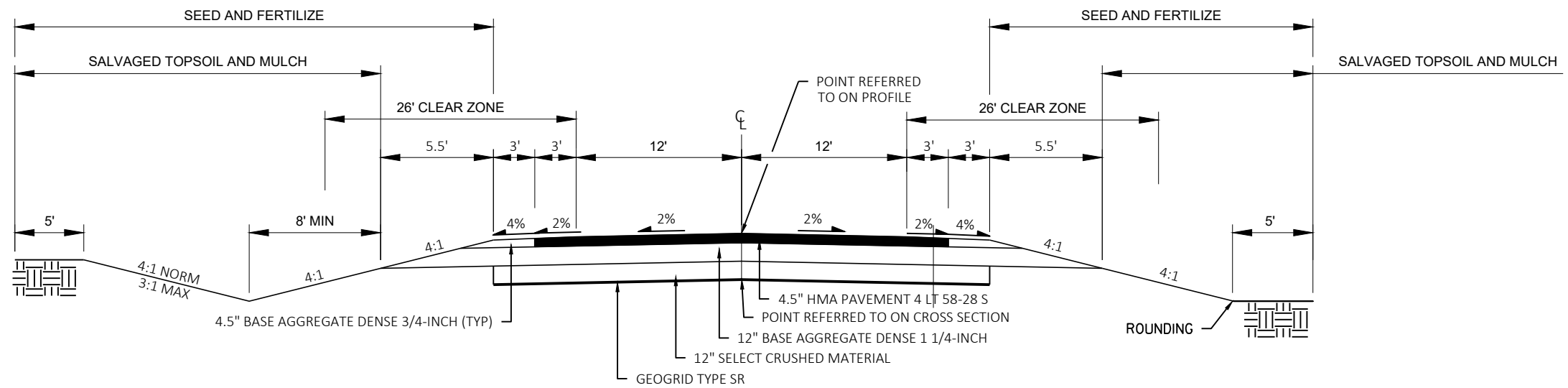
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Sergio.Gonzalez@nngco.com

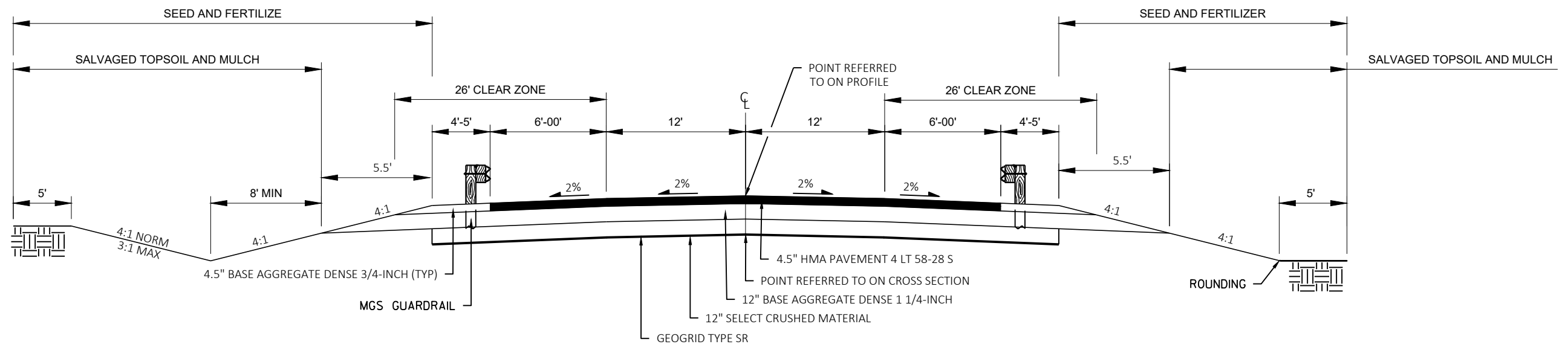




EXISTING TYPICAL SECTION



PROPOSED TYPICAL SECTIONS  
STA 103+50 TO 104+35.50  
STA 109+78.3 TO 111+50.00

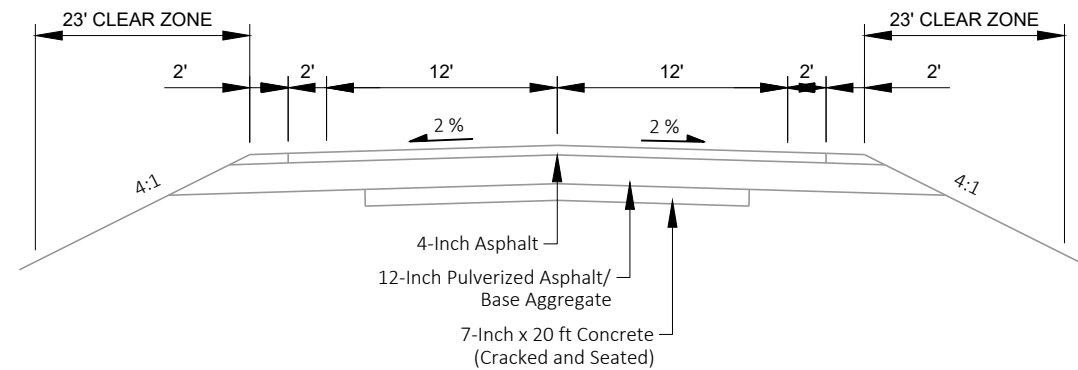


PROPOSED TYPICAL SECTIONS  
STA 104+35.50 TO STA 106+63.35  
STA 107+50.57 TO STA 109+78.30

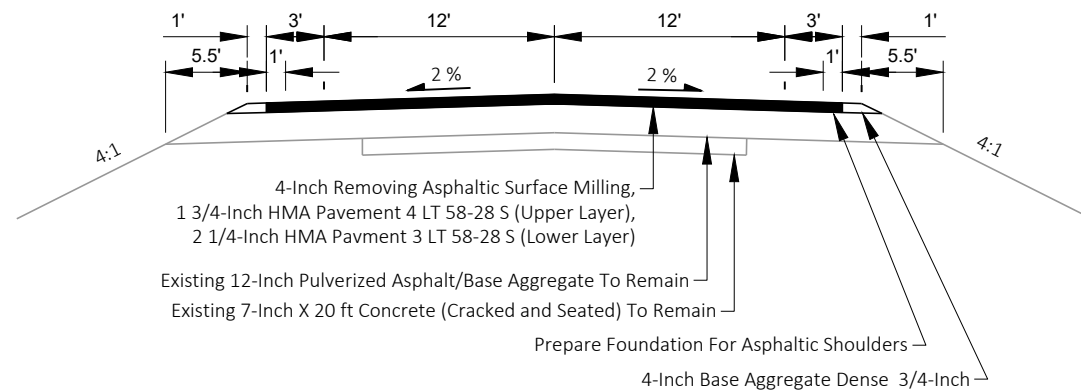


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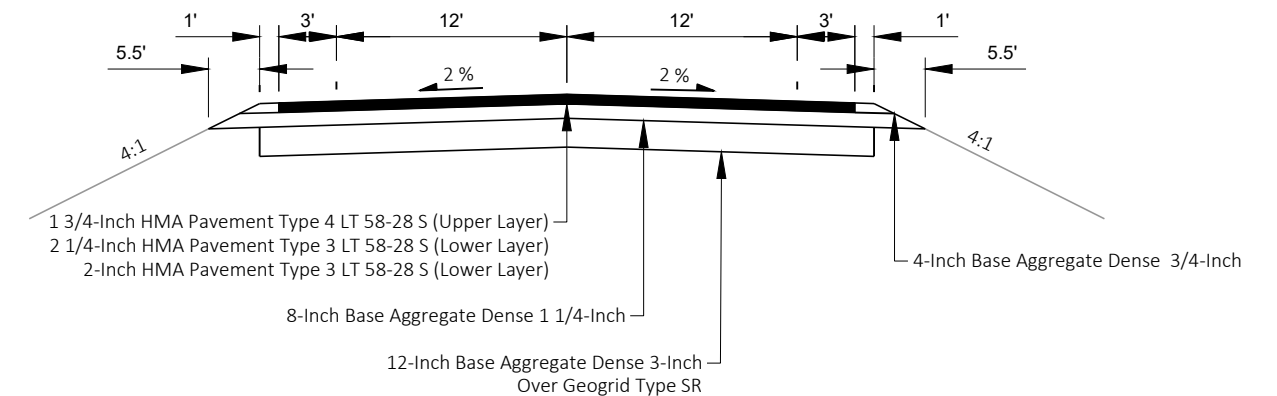




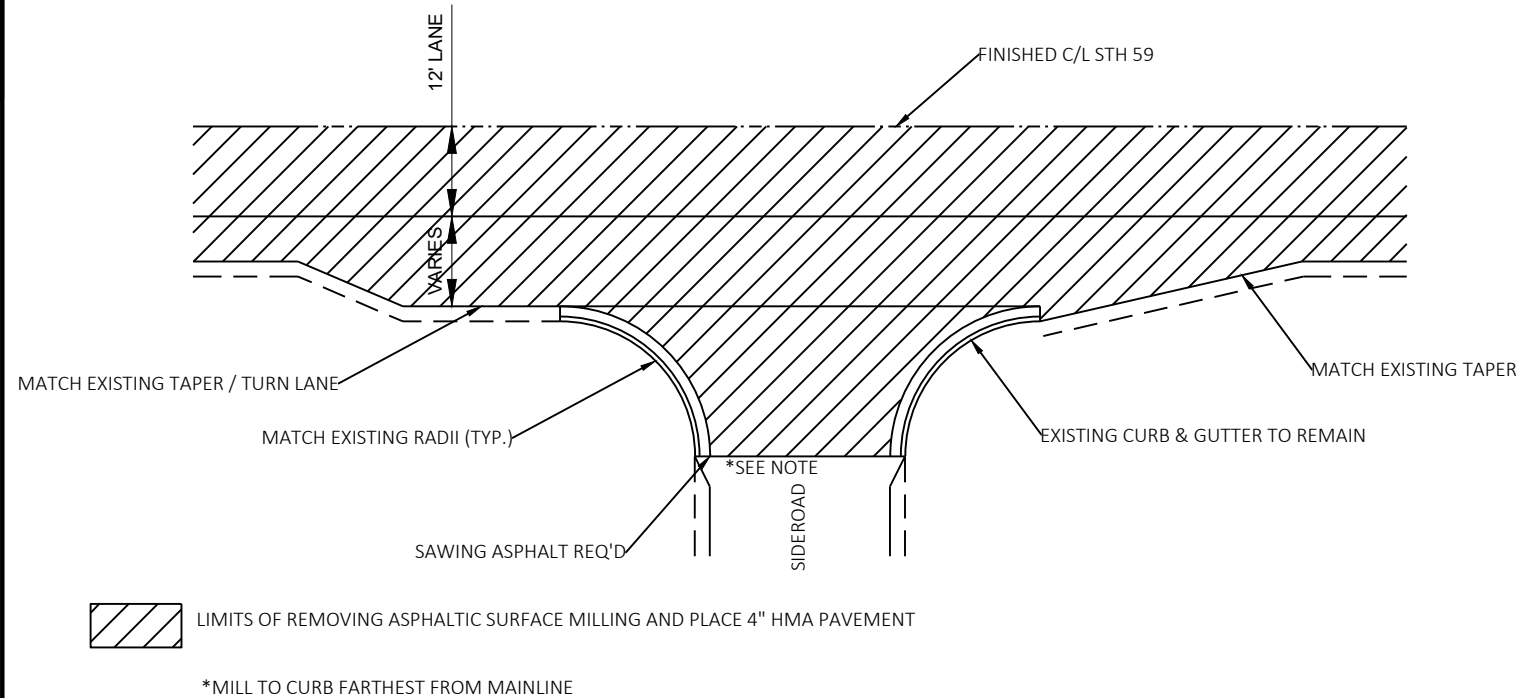
**TYPICAL EXISTING SECTION**  
STA 1165+20 - STA 1288+20



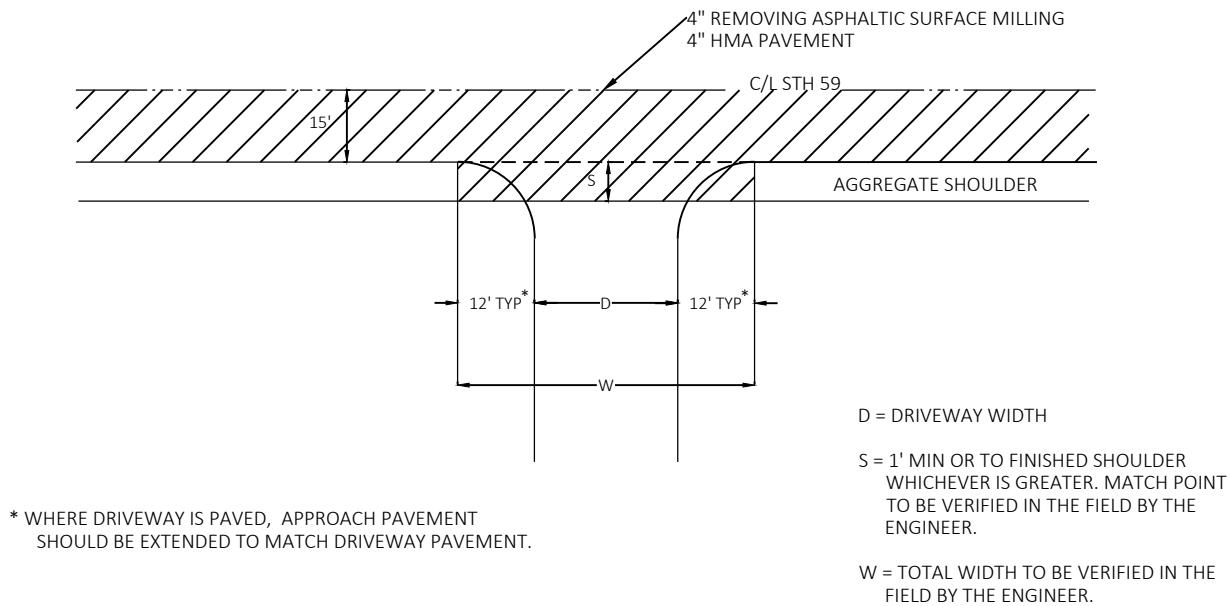
**TYPICAL PROPOSED SECTION**  
MILL AND OVERLAY  
STA 1165+20 - STA 1209+70  
STA 1213+57 - STA 1288+20



**TYPICAL PROPOSED SECTION**  
PAVEMENT STRUCTURE RECONSTRUCTION SECTION  
STA 1209+70 - STA 1212+34



TYPICAL SIDEROAD DETAIL WITH CURB & GUTTER



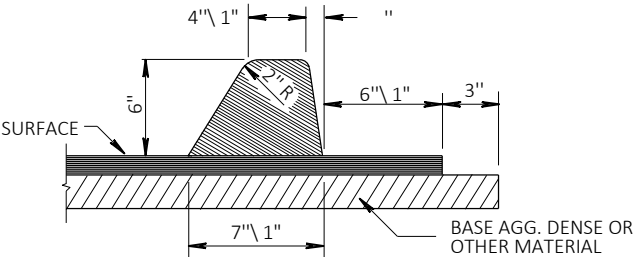
TYPICAL DRIVEWAY & FIELD ENTRANCE DETAIL

ROADWAY BORING SUMMARY TABLE

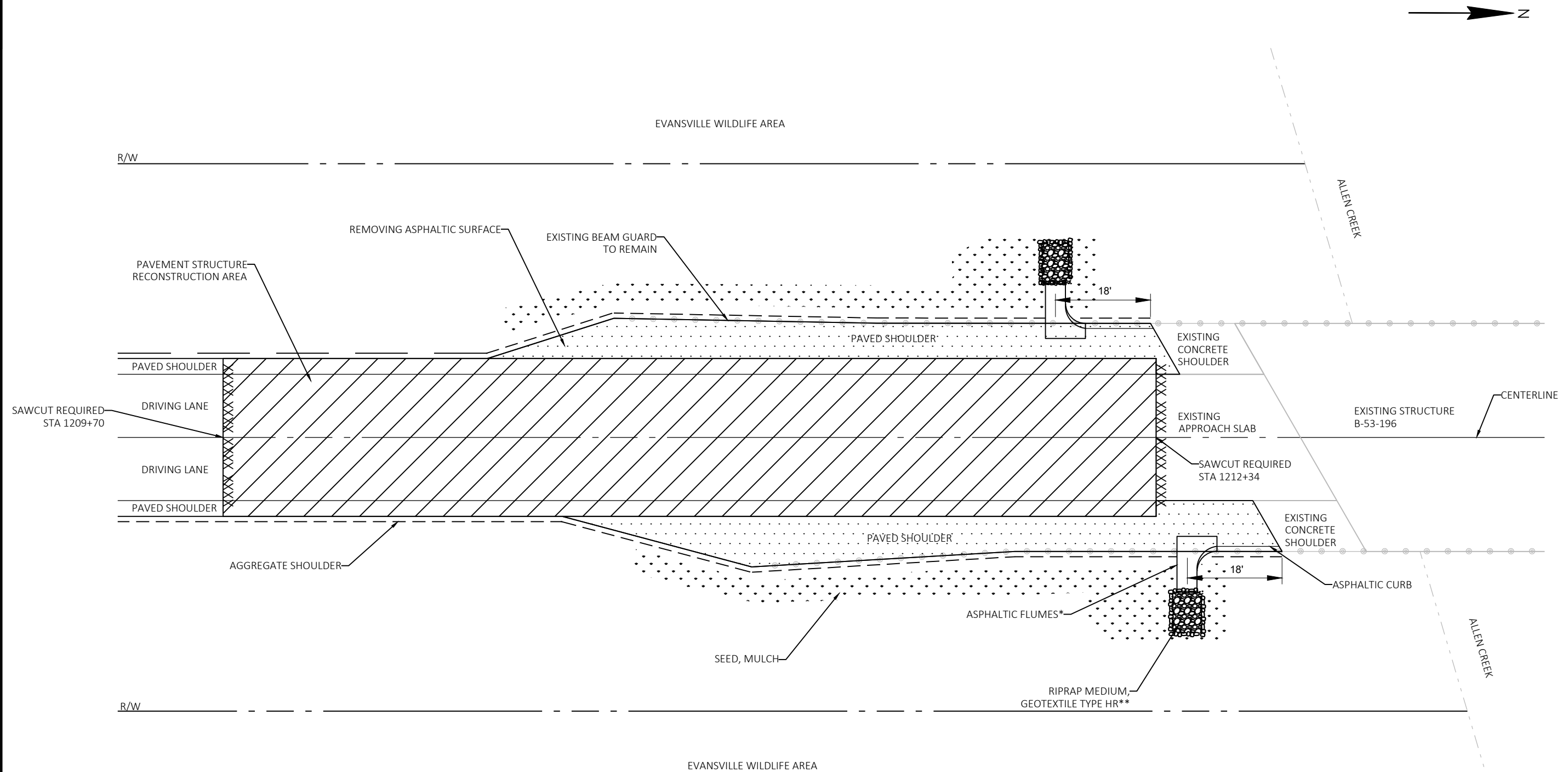
EXISTING STH 59  
BORINGS TAKEN 06/25/2019

| BORING # | STA.    | OFFSET | BITUMINOUS | SAND/BASE | CONCRETE | BASE |
|----------|---------|--------|------------|-----------|----------|------|
| 1        | 1212+20 | 17' LT | 4          | 22        |          |      |
| 2        | 1212+25 | 7' LT  | 5.5        | 23.5      |          |      |
| 3        | 1212+05 | 6' RT  | 5          | 20        |          |      |
| 4        | 1212+42 | 15' RT | 4.5        | 19.5      |          |      |
| 5        | 1211+33 | 17' LT | 3          | 22        |          |      |
| 6        | 1211+25 | 6' LT  | 5          | 5         | 7        |      |
| 7        | 1211+19 | 9' RT  | 8          | 7         | 7        |      |
| 8        | 1211+50 | 17' RT | 3          | 19        |          |      |
| 9        | 1209+96 | 7' LT  | 10         | 8         | 9        |      |
| 10       | 1209+88 | 6' RT  | 10         | 9         | 8        |      |

NOTE: ALL DEPTHS ARE IN INCHES  
ALL STATIONING IS APPROXIMATE



ASPHALTIC CURB DETAIL

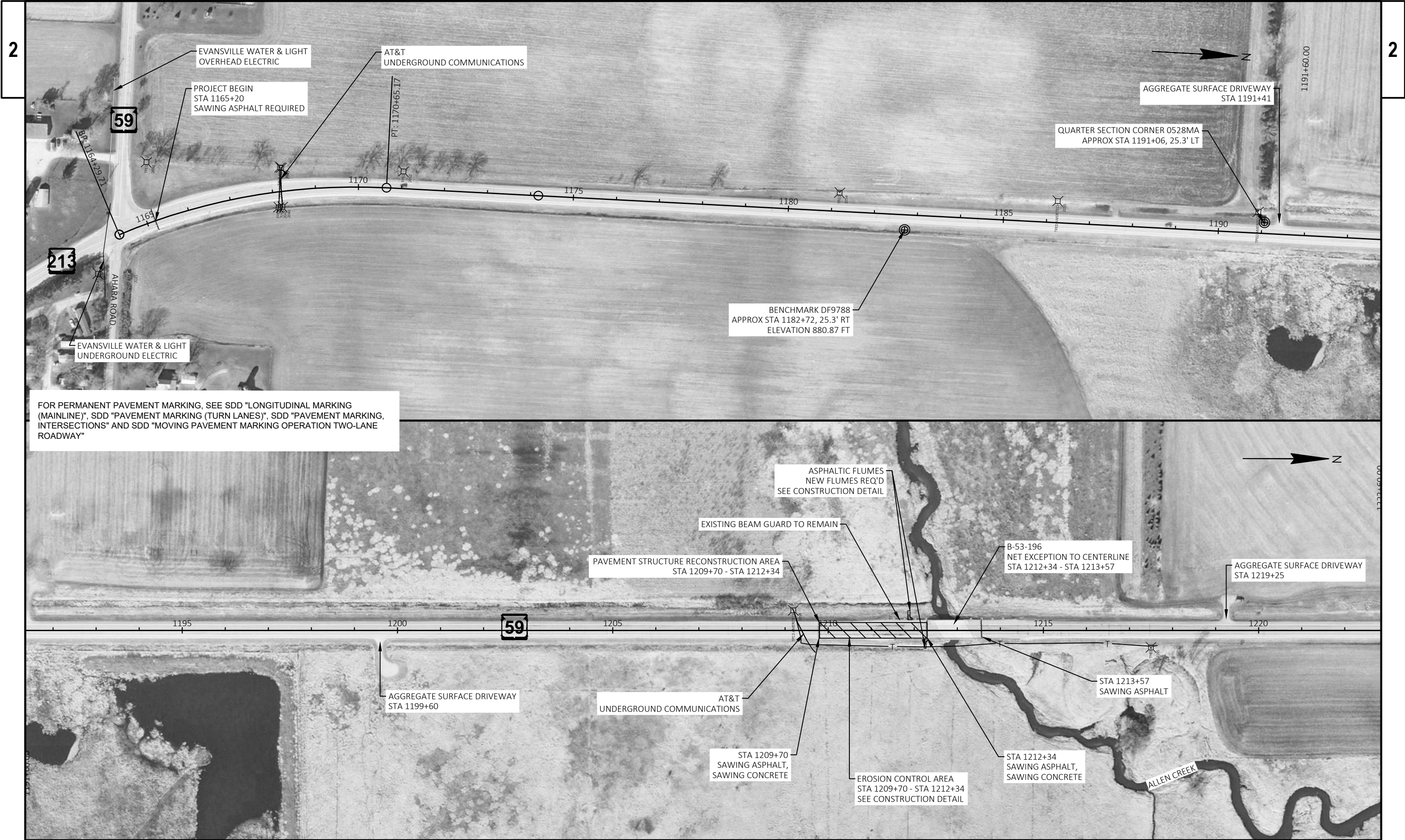


NOTES:  
INSTALL ASPHALTIC FLUMES AND RIPRAP SUCH THAT  
RESTORATION INCLUDING SEED AND MULCH CAN BE  
COMPLETED THE SAME DAY OR PRIOR TO THE NEXT  
RAINFALL EVENT.

\* EXTEND ASPHALTIC FLUME 4' DOWN SLOPE OF DITCH

\*\* EXTEND RIPRAP FROM THE END OF THE ASPHALTIC FLUMES TO THE BOTTOM OF THE DITCH

### DETAIL FOR ASPHALTIC FLUMES & ASPHALTIC CURB

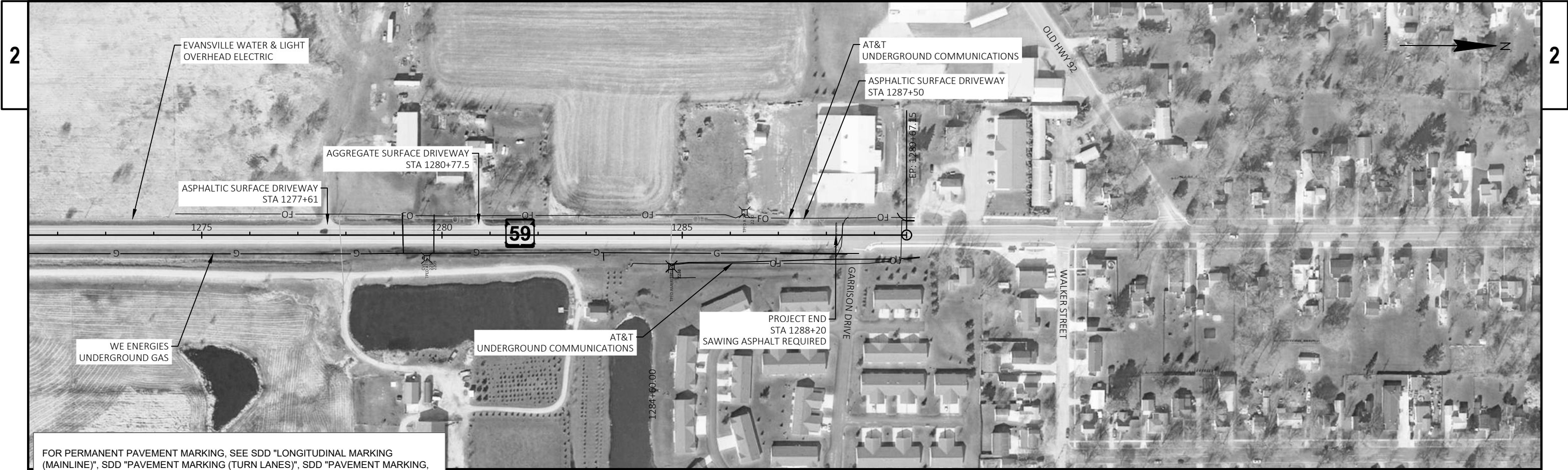


FOR PERMANENT PAVEMENT MARKING, SEE SDD "LONGITUDINAL MARKING (MAINLINE)", SDD "PAVEMENT MARKING (TURN LANES)", SDD "PAVEMENT MARKING, INTERSECTIONS" AND SDD "MOVING PAVEMENT MARKING OPERATION TWO-LANE ROADWAY"

|                        |             |              |              |       |   |
|------------------------|-------------|--------------|--------------|-------|---|
| PROJECT NO: 5670-03-70 | HWY: STH 59 | COUNTY: ROCK | PLAN DETAILS | SHEET | E |
|------------------------|-------------|--------------|--------------|-------|---|

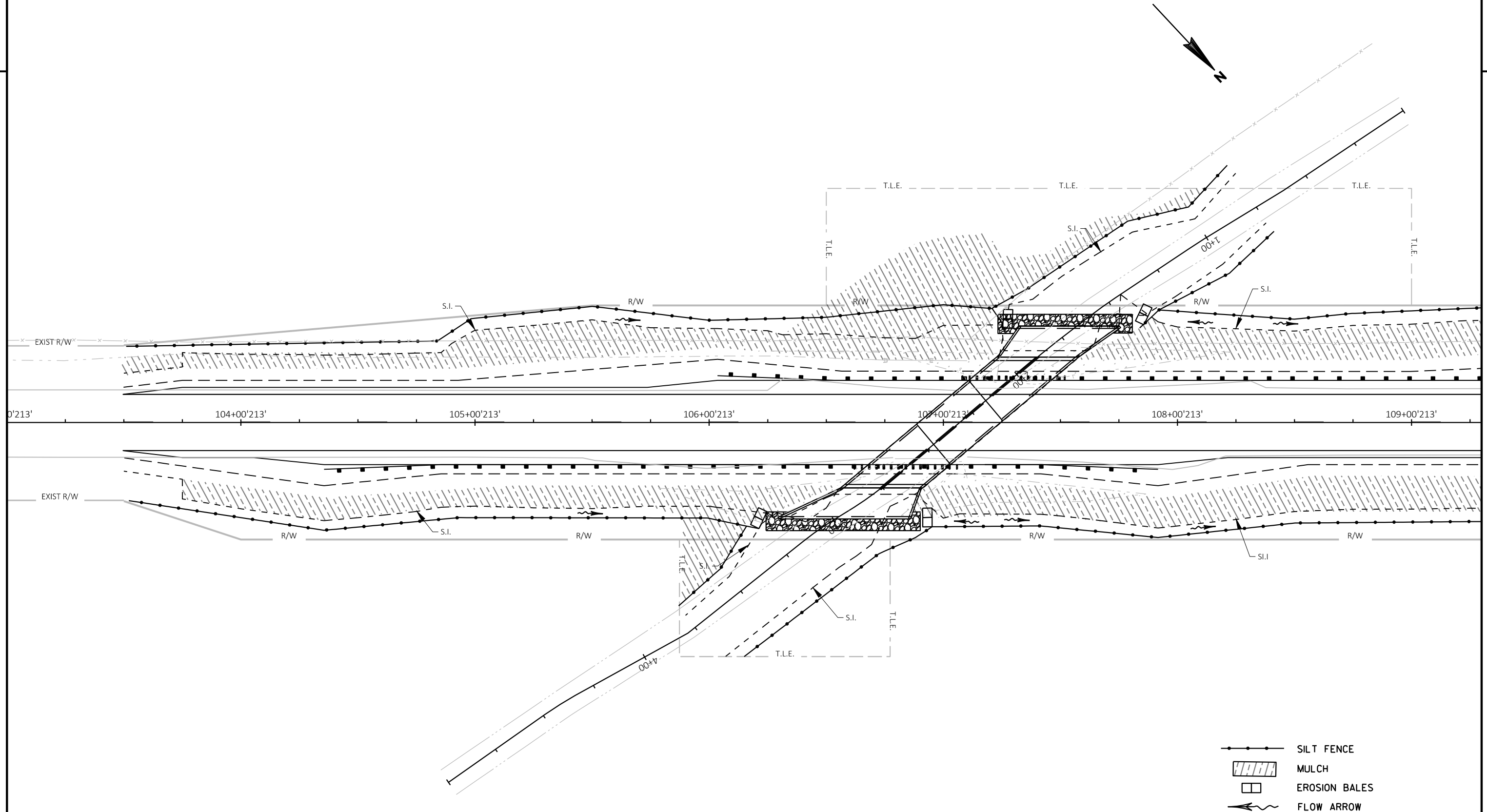




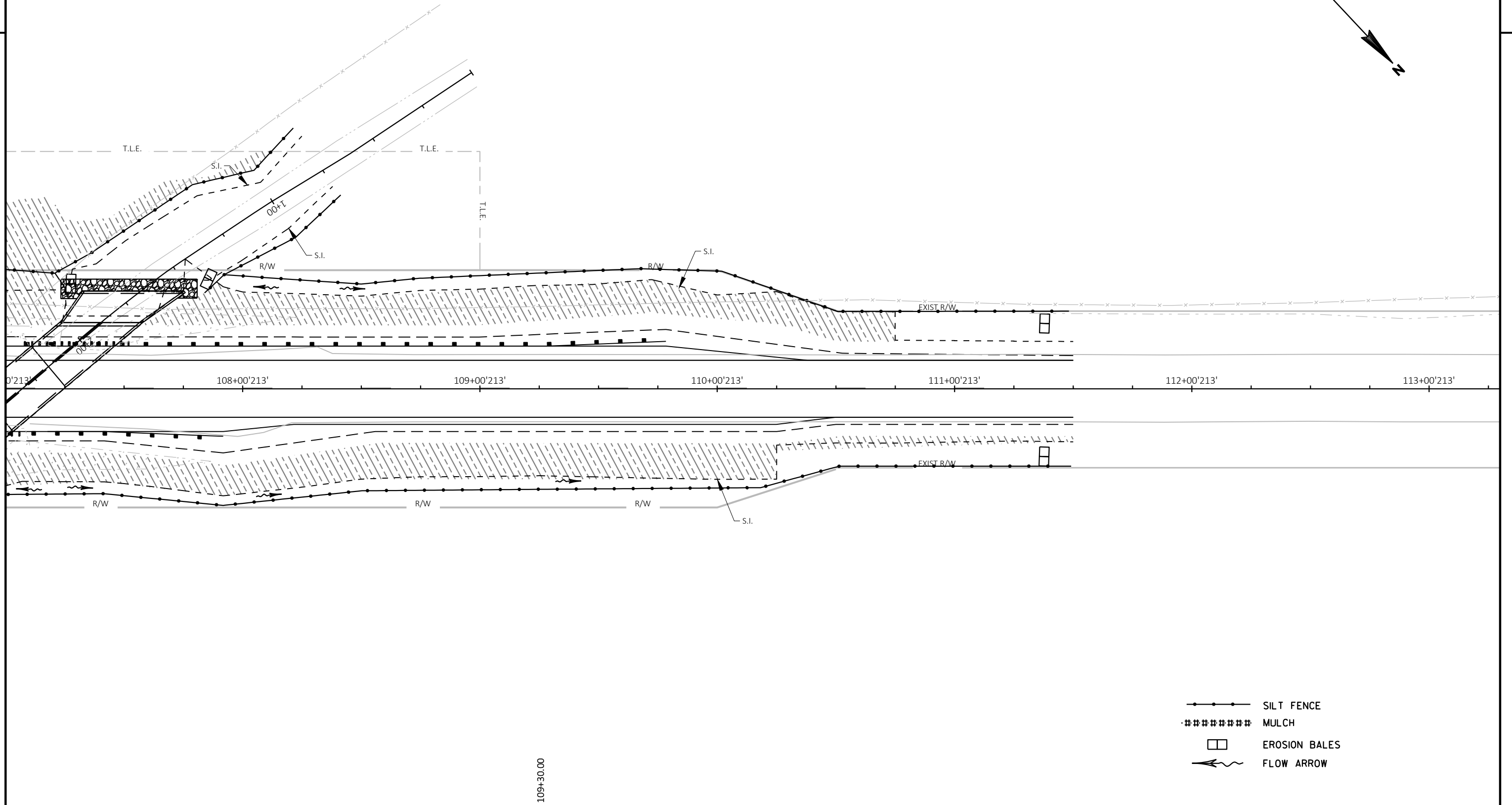


FOR PERMANENT PAVEMENT MARKING, SEE SDD "LONGITUDINAL MARKING (MAINLINE)", SDD "PAVEMENT MARKING (TURN LANES)", SDD "PAVEMENT MARKING, INTERSECTIONS" AND SDD "MOVING PAVEMENT MARKING OPERATION TWO-LANE ROADWAY"

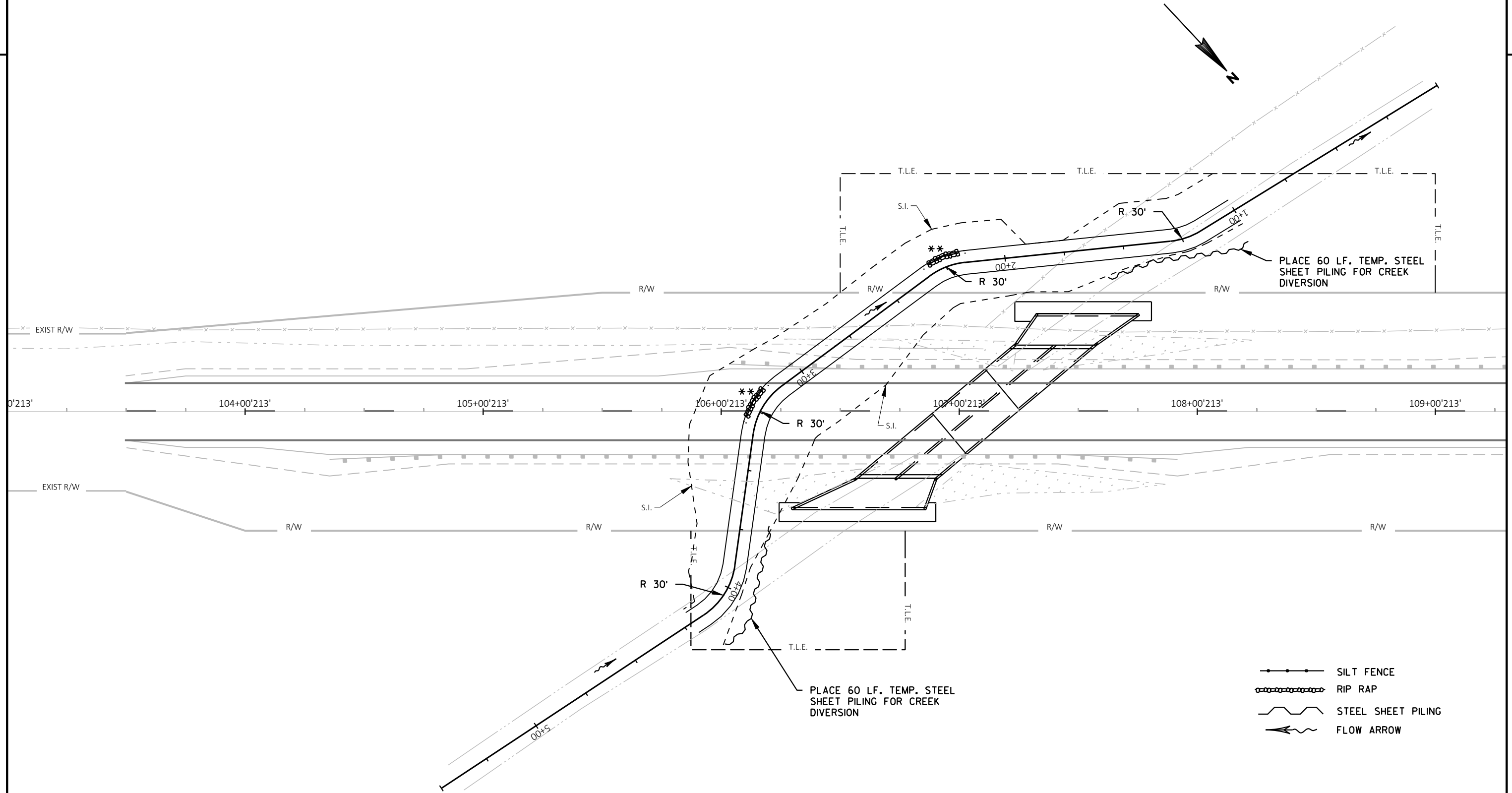


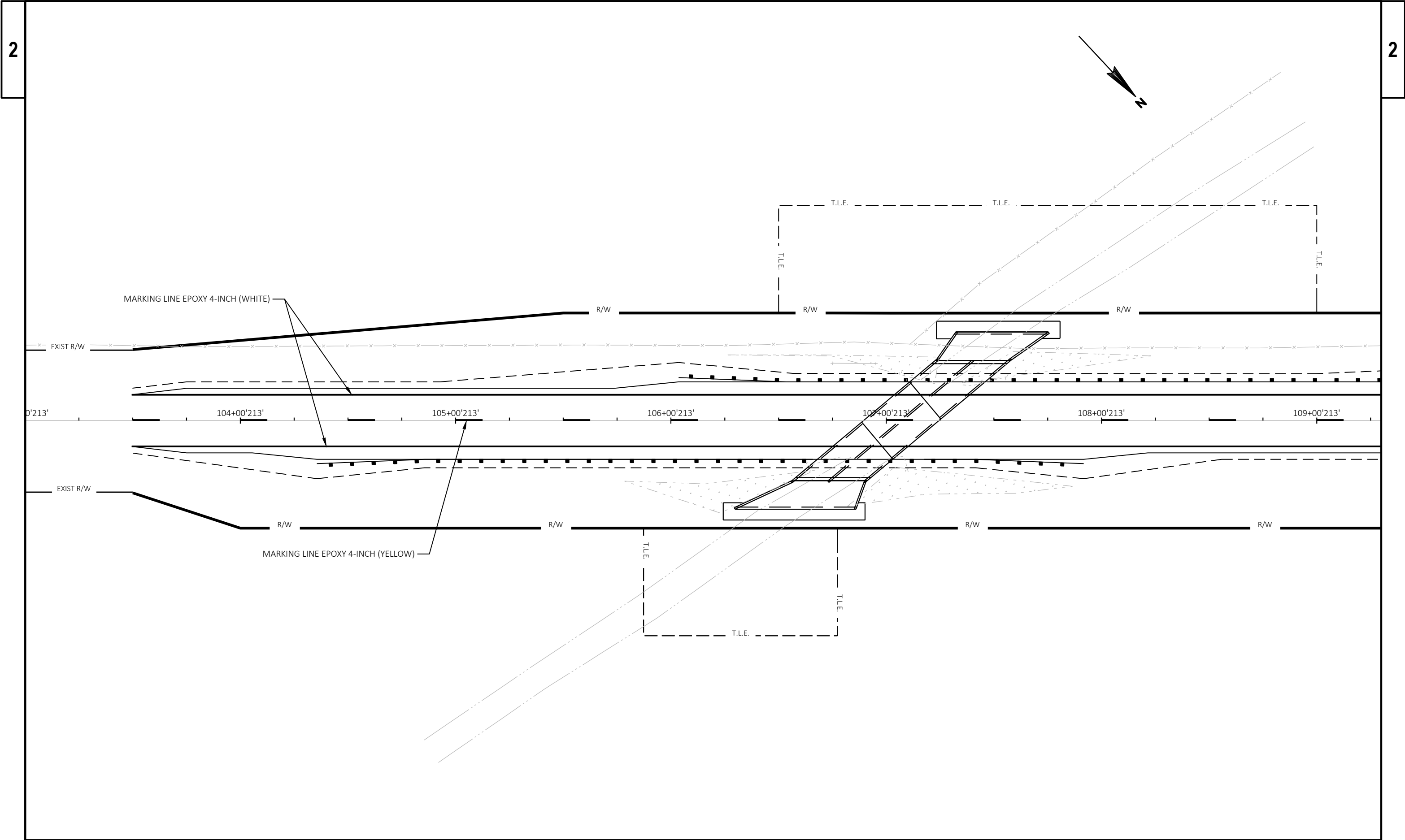


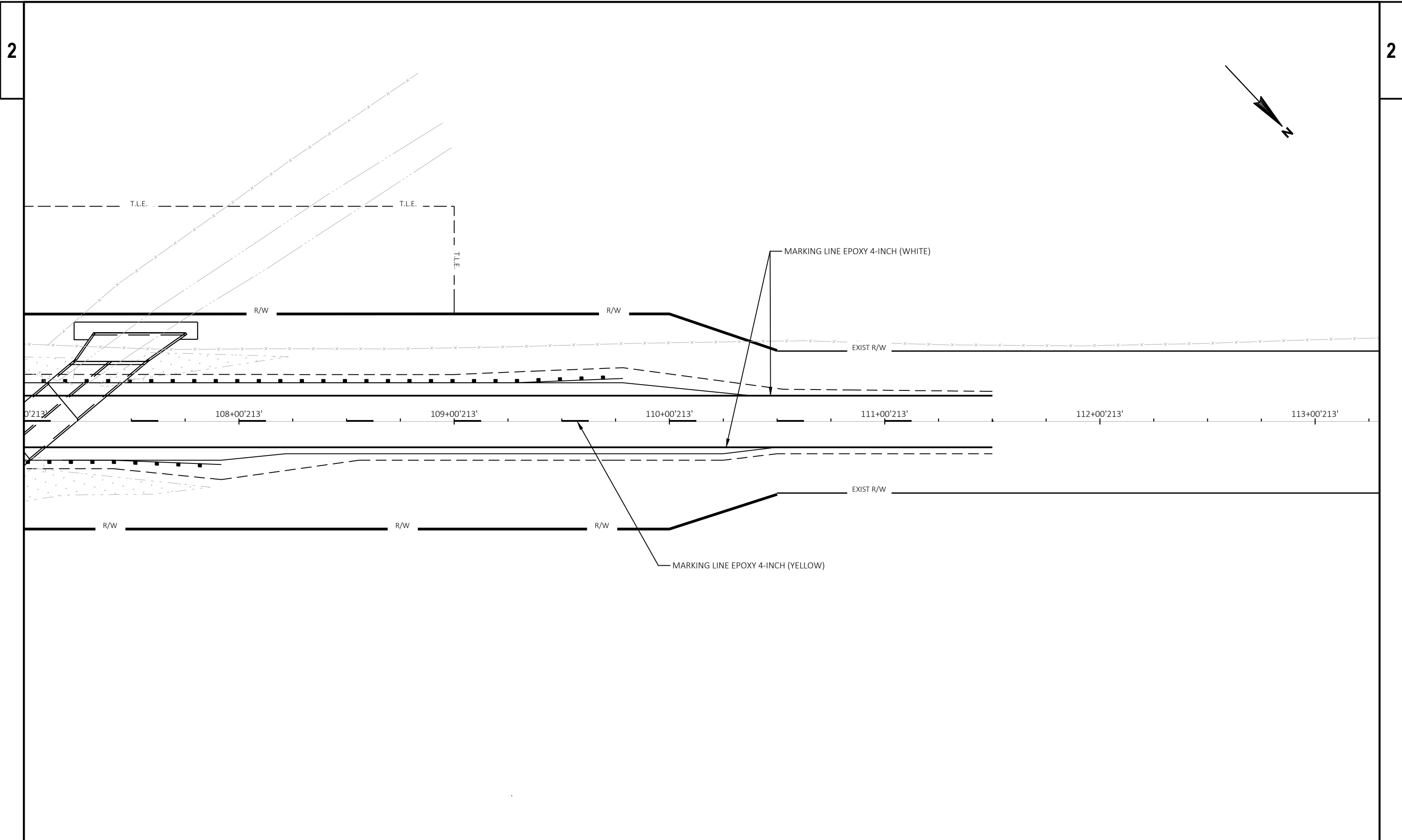




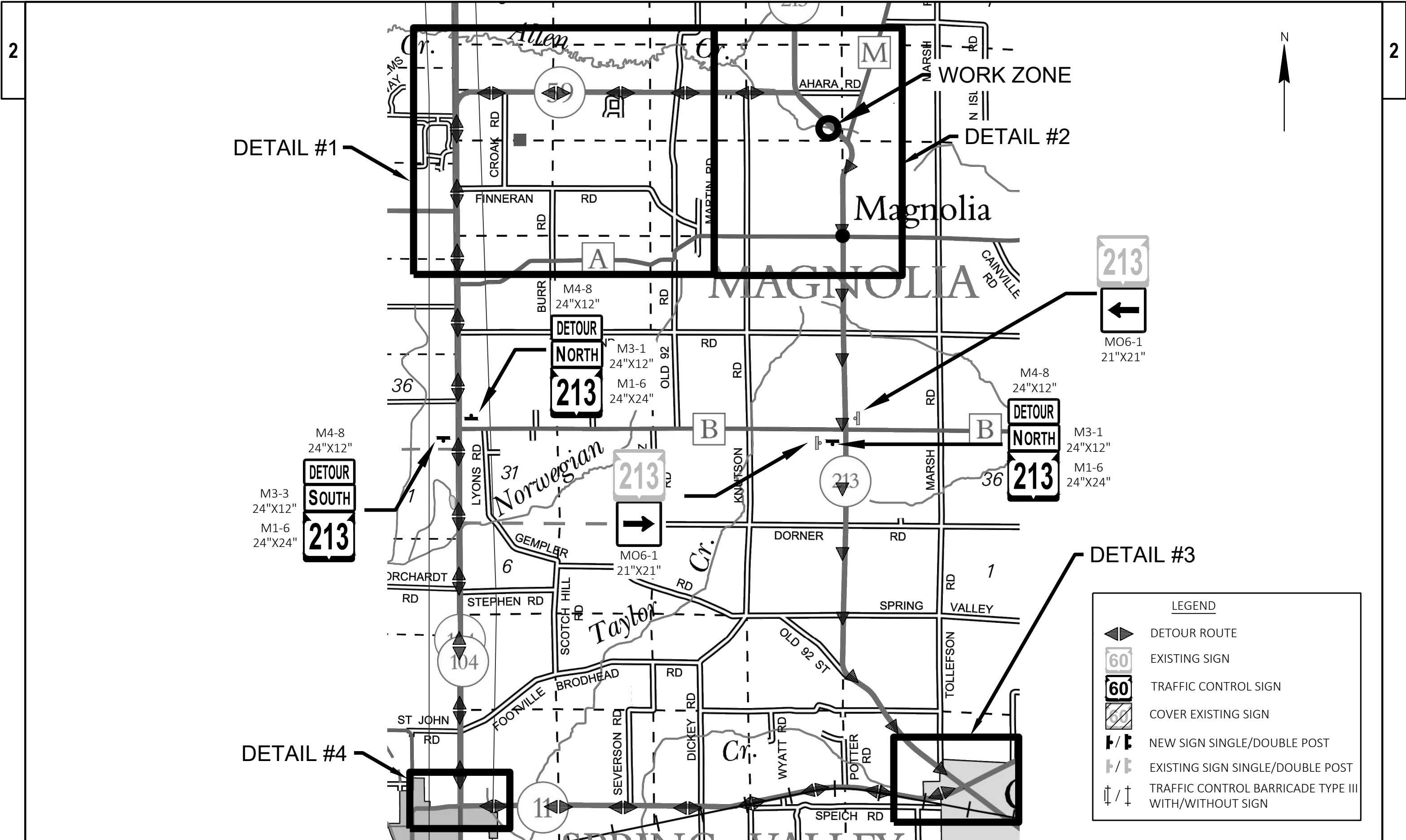
\*\* PLACE MEDIUM RIP RAP (SEE PROPOSED TYPICAL SECTION FOR TEMPORARY CHANNEL



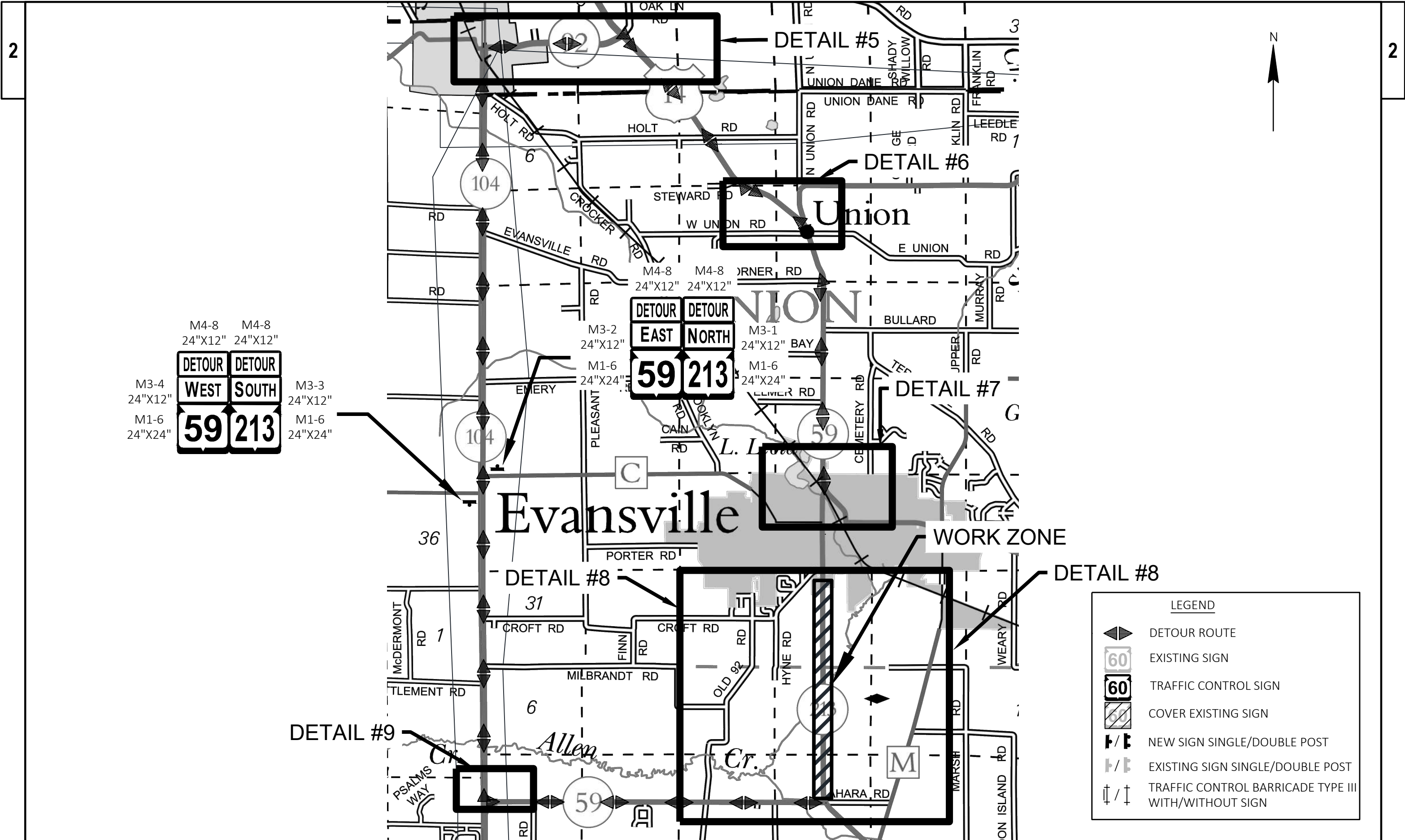


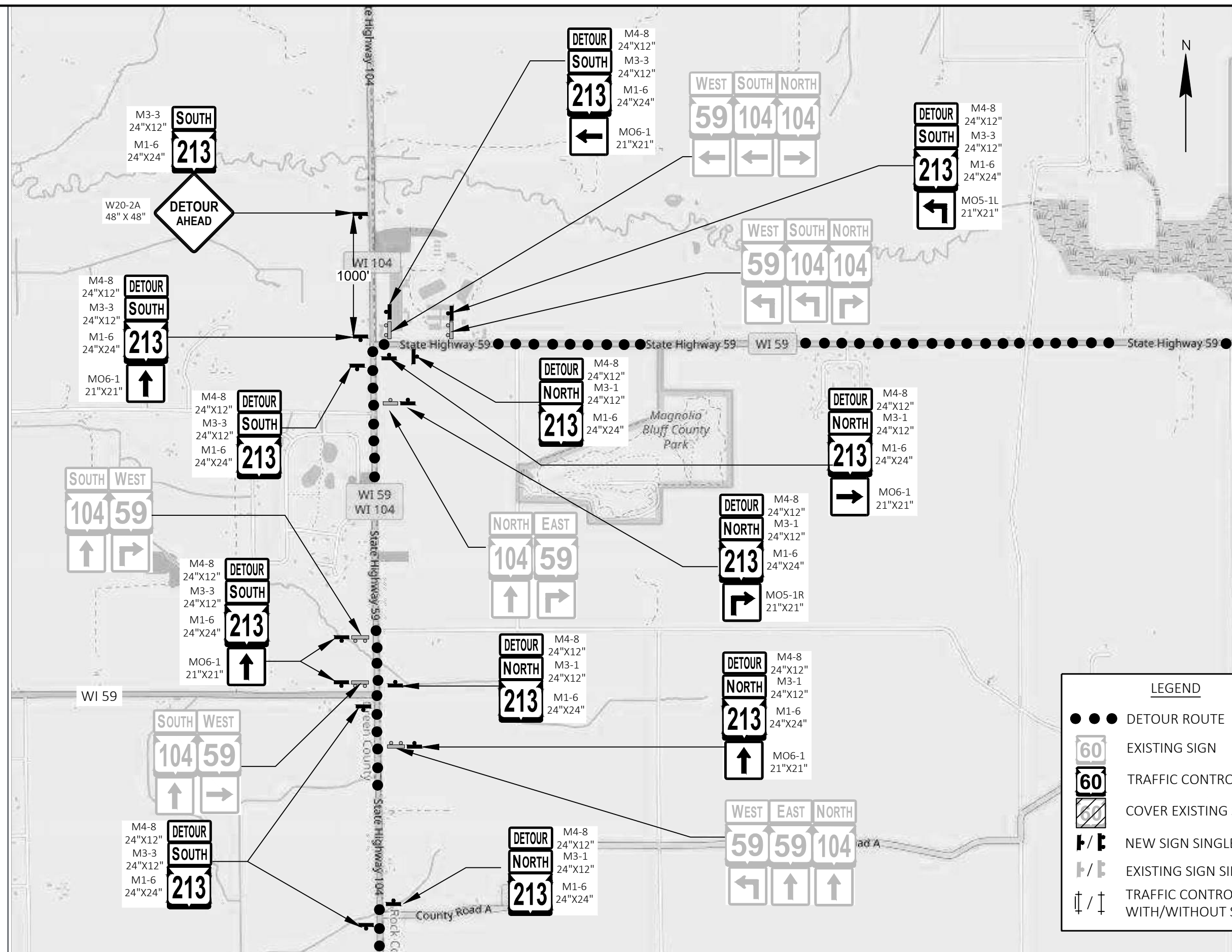


|                        |              |              |                  |       |   |
|------------------------|--------------|--------------|------------------|-------|---|
| PROJECT NO: 5571-00-81 | HWY: STH 213 | COUNTY: ROCK | PAVEMENT MARKING | SHEET | E |
|------------------------|--------------|--------------|------------------|-------|---|









PROJECT NO: 5571-00-81

HWY: STH 213

COUNTY: ROCK

DETOUR DETAIL #1

SHEET

E

FILE NAME : N:\PDS\C3D\56700300\027001\_DT.DWG  
LAYOUT NAME - DETAIL #1

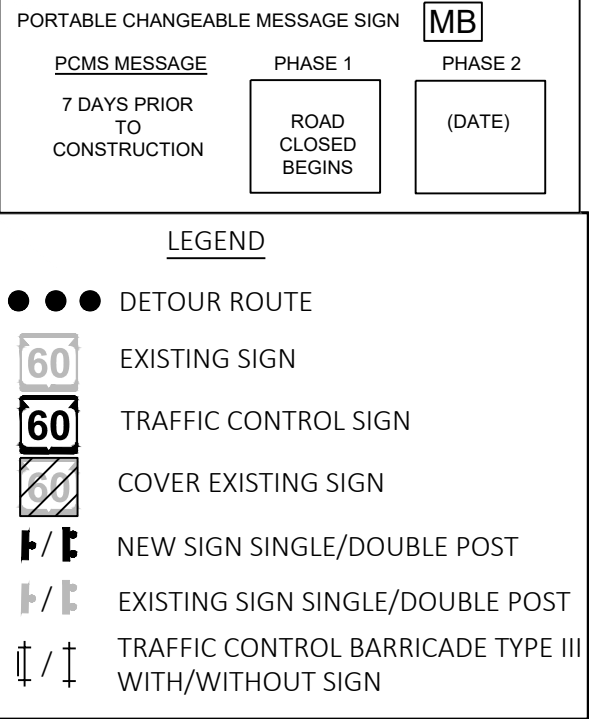
PLOT DATE : 6/25/2020 9:52 AM

PLOT BY : COLE, RYAN DAVID

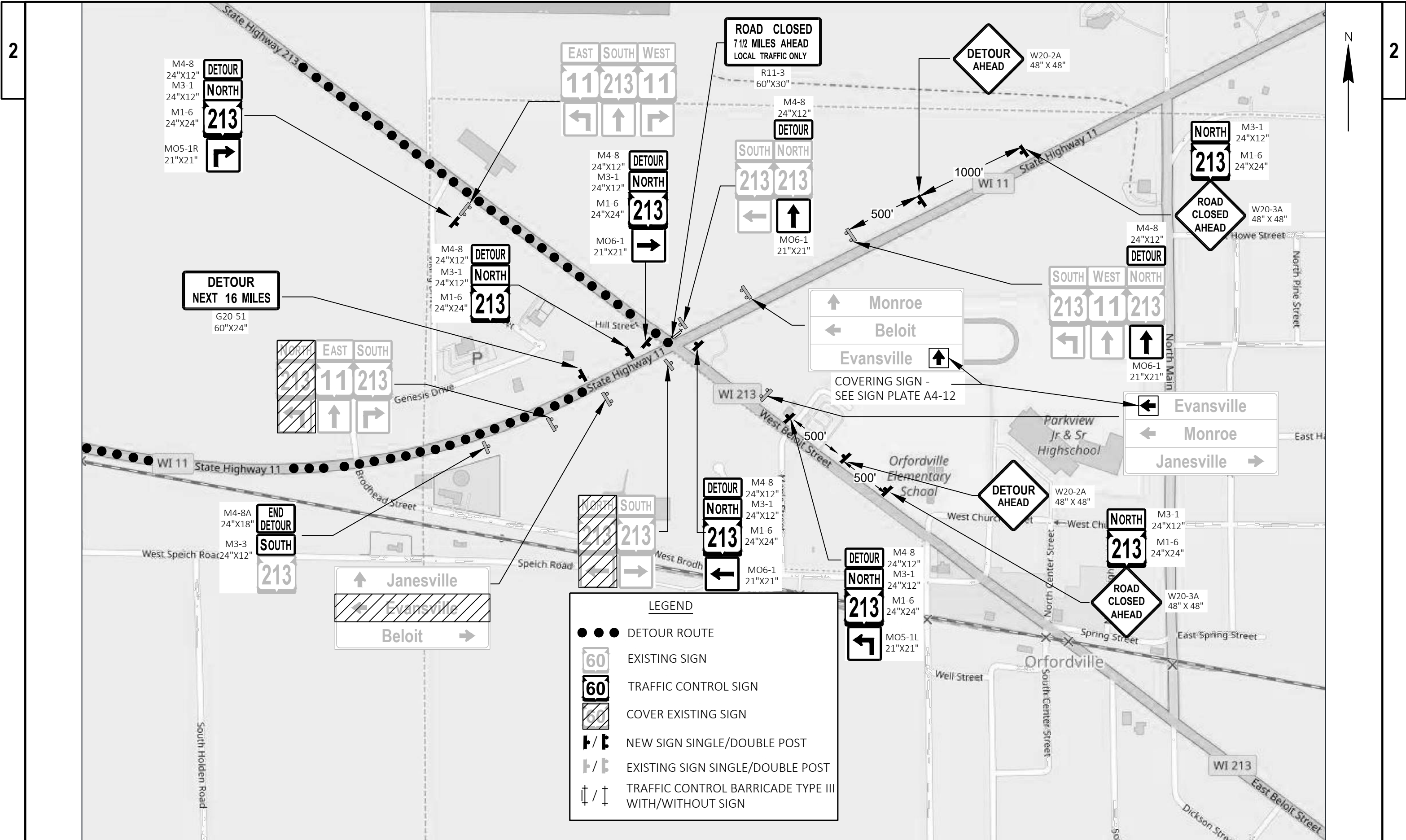
PLOT NAME :

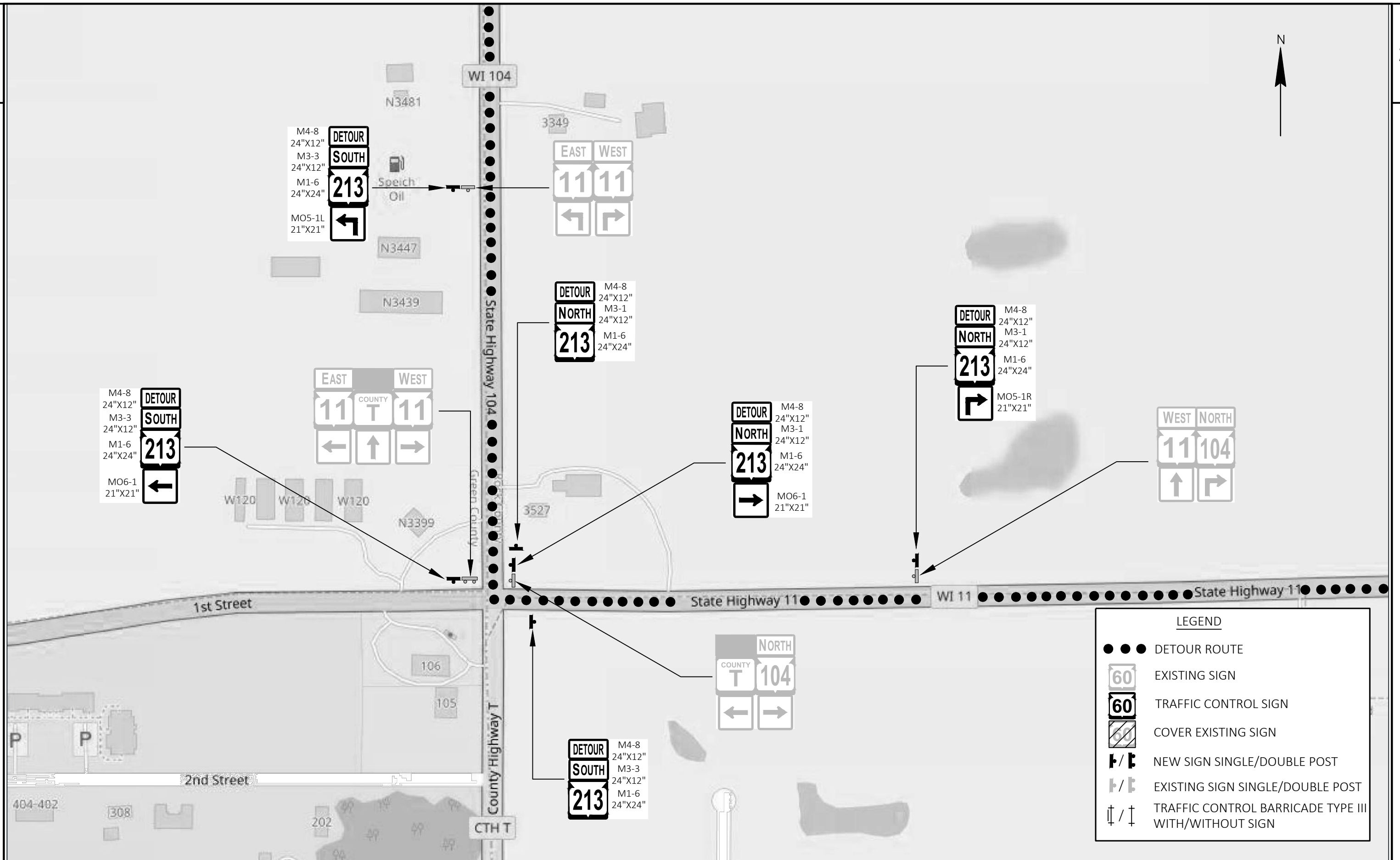
PLOT SCALE : Custom

WISDOT/CADDs SHEET 42

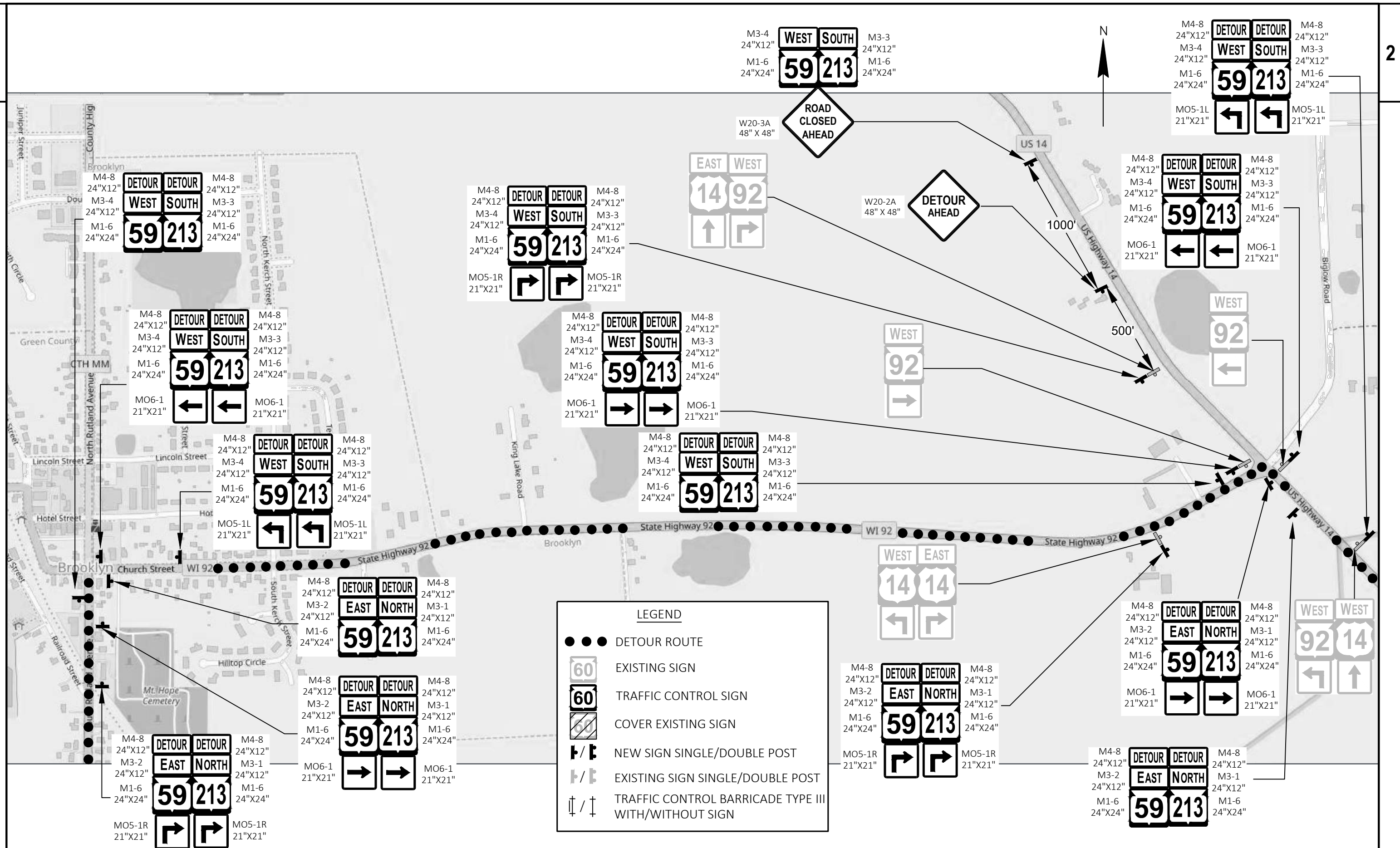




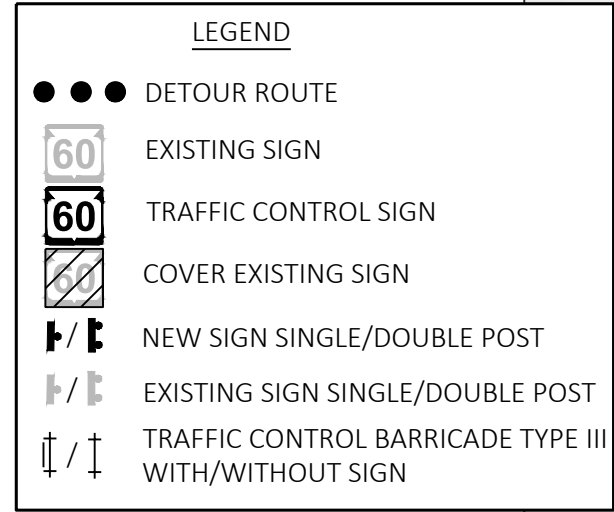


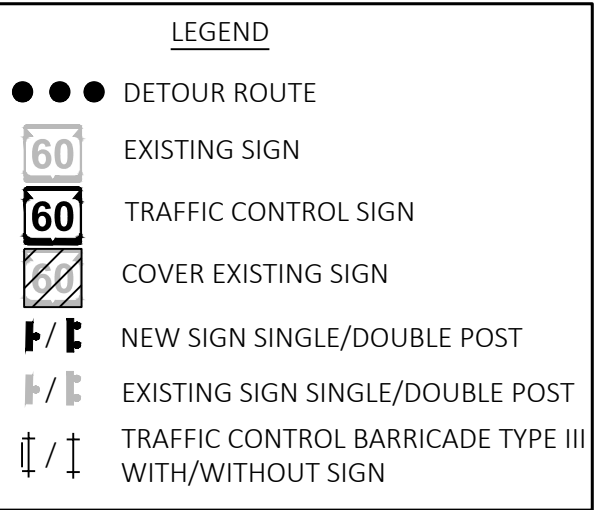






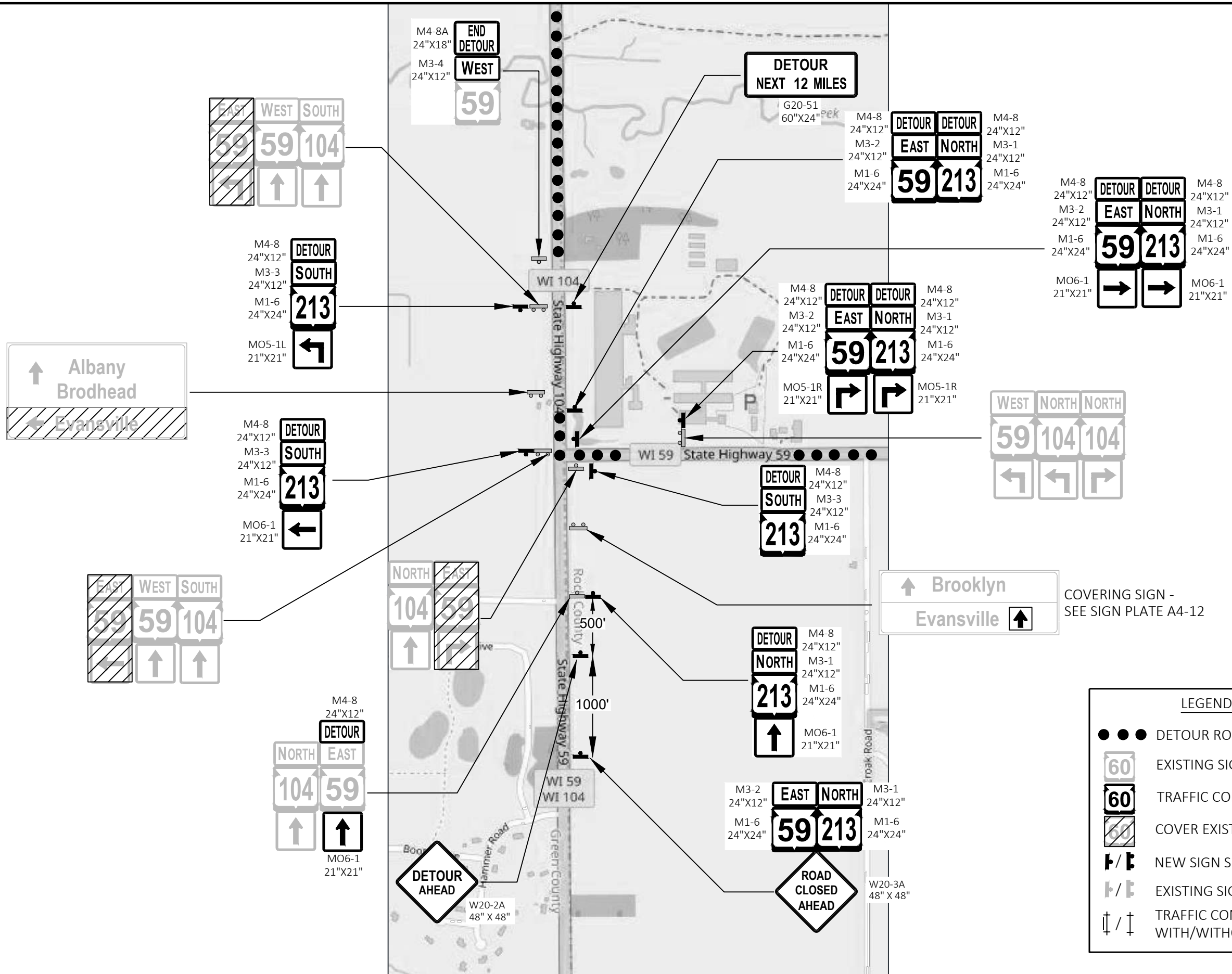














Estimate Of Quantities

|      |          | 5571-00-81                                                       |      | 5670-03-70 |            |            |
|------|----------|------------------------------------------------------------------|------|------------|------------|------------|
| Line | Item     | Item Description                                                 | Unit | Total      | Qty        | Qty        |
| 0002 | 201.0105 | Clearing                                                         | STA  | 2.000      | 2.000      |            |
| 0004 | 201.0205 | Grubbing                                                         | STA  | 2.000      | 2.000      |            |
| 0006 | 203.0200 | Removing Old Structure (station) 01. 107+07                      | LS   | 1.000      | 1.000      |            |
| 0008 | 204.0100 | Removing Concrete Pavement                                       | SY   | 2,469.000  | 1,879.000  | 590.000    |
| 0010 | 204.0110 | Removing Asphaltic Surface                                       | SY   | 150.000    |            | 150.000    |
| 0012 | 204.0120 | Removing Asphaltic Surface Milling                               | SY   | 37,600.000 |            | 37,600.000 |
| 0014 | 204.0165 | Removing Guardrail                                               | LF   | 349.000    | 349.000    |            |
| 0016 | 204.0170 | Removing Fence                                                   | LF   | 906.000    | 906.000    |            |
| 0018 | 205.0100 | Excavation Common                                                | CY   | 5,123.000  | 4,291.000  | 832.000    |
| 0020 | 206.2000 | Excavation for Structures Culverts (structure) 01. B-53-293      | LS   | 1.000      | 1.000      |            |
| 0022 | 208.0100 | Borrow                                                           | CY   | 769.000    | 769.000    |            |
| 0024 | 209.1100 | Backfill Granular Grade 1                                        | CY   | 669.000    | 669.000    |            |
| 0026 | 210.2500 | Backfill Structure Type B                                        | TON  | 1,595.000  | 1,595.000  |            |
| 0028 | 211.0100 | Prepare Foundation for Asphaltic Paving (project) 01. 5670-03-70 | LS   | 1.000      |            | 1.000      |
| 0030 | 211.0400 | Prepare Foundation for Asphaltic Shoulders                       | STA  | 237.000    |            | 237.000    |
| 0032 | 213.0100 | Finishing Roadway (project) 01. 5571-00-81                       | EACH | 1.000      | 1.000      |            |
| 0034 | 213.0100 | Finishing Roadway (project) 02. 5670-03-70                       | EACH | 1.000      |            | 1.000      |
| 0036 | 305.0110 | Base Aggregate Dense 3/4-Inch                                    | TON  | 1,218.000  | 223.000    | 995.000    |
| 0038 | 305.0120 | Base Aggregate Dense 1 1/4-Inch                                  | TON  | 3,704.000  | 2,914.000  | 790.000    |
| 0040 | 305.0130 | Base Aggregate Dense 3-Inch                                      | TON  | 700.000    |            | 700.000    |
| 0042 | 311.0115 | Breaker Run                                                      | CY   | 143.000    | 143.000    |            |
| 0044 | 312.0110 | Select Crushed Material                                          | TON  | 2,193.000  | 2,193.000  |            |
| 0046 | 455.0605 | Tack Coat                                                        | GAL  | 4,269.000  | 143.000    | 4,126.000  |
| 0048 | 460.2000 | Incentive Density HMA Pavement                                   | DOL  | 6,460.000  | 460.000    | 6,000.000  |
| 0050 | 460.5223 | HMA Pavement 3 LT 58-28 S                                        | TON  | 5,322.000  |            | 5,322.000  |
| 0052 | 460.5224 | HMA Pavement 4 LT 58-28 S                                        | TON  | 4,761.000  | 717.000    | 4,044.000  |
| 0054 | 465.0310 | Asphaltic Curb                                                   | LF   | 20.000     |            | 20.000     |
| 0056 | 465.0315 | Asphaltic Flumes                                                 | SY   | 8.000      |            | 8.000      |
| 0058 | 465.0475 | Asphalt Centerline Rumble Strips 2-Lane Rural                    | LF   | 11,848.000 |            | 11,848.000 |
| 0060 | 504.0100 | Concrete Masonry Culverts                                        | CY   | 289.000    | 289.000    |            |
| 0062 | 505.0400 | Bar Steel Reinforcement HS Structures                            | LB   | 12,450.000 | 12,450.000 |            |
| 0064 | 505.0600 | Bar Steel Reinforcement HS Coated Structures                     | LB   | 19,270.000 | 19,270.000 |            |
| 0066 | 512.1000 | Piling Steel Sheet Temporary                                     | SF   | 1,400.000  | 1,400.000  |            |
| 0068 | 516.0500 | Rubberized Membrane Waterproofing                                | SY   | 31.000     | 31.000     |            |
| 0070 | 606.0200 | Riprap Medium                                                    | CY   | 24.000     | 12.000     | 12.000     |
| 0072 | 606.0300 | Riprap Heavy                                                     | CY   | 46.000     | 46.000     |            |
| 0074 | 614.2300 | MGS Guardrail 3                                                  | LF   | 437.500    | 437.500    |            |
| 0076 | 614.2310 | MGS Guardrail 3 HS                                               | LF   | 150.000    | 150.000    |            |

Estimate Of Quantities

|      |          | 5571-00-81                                                    |      | 5670-03-70 |            |            |
|------|----------|---------------------------------------------------------------|------|------------|------------|------------|
| Line | Item     | Item Description                                              | Unit | Total      | Qty        | Qty        |
| 0078 | 614.2610 | MGS Guardrail Terminal EAT                                    | EACH | 4.000      | 4.000      |            |
| 0080 | 614.8010 | Anchor Post Assembly Top Mount                                | EACH | 22.000     | 22.000     |            |
| 0082 | 616.0100 | Fence Woven Wire (height) 01. 4 feet                          | LF   | 906.000    | 906.000    |            |
| 0084 | 618.0100 | Maintenance And Repair of Haul Roads (project) 01. 5571-00-81 | EACH | 1.000      | 1.000      |            |
| 0086 | 618.0100 | Maintenance And Repair of Haul Roads (project) 02. 5670-03-70 | EACH | 1.000      |            | 1.000      |
| 0088 | 619.1000 | Mobilization                                                  | EACH | 1.000      | 0.500      | 0.500      |
| 0090 | 624.0100 | Water                                                         | MGAL | 15.030     | 0.030      | 15.000     |
| 0092 | 625.0500 | Salvaged Topsoil                                              | SY   | 4,751.000  | 4,751.000  |            |
| 0094 | 627.0200 | Mulching                                                      | SY   | 5,698.000  | 5,443.000  | 255.000    |
| 0096 | 628.1104 | Erosion Bales                                                 | EACH | 32.000     | 32.000     |            |
| 0098 | 628.1504 | Silt Fence                                                    | LF   | 1,500.000  | 1,500.000  |            |
| 0100 | 628.1520 | Silt Fence Maintenance                                        | LF   | 1,500.000  | 1,500.000  |            |
| 0102 | 628.1905 | Mobilizations Erosion Control                                 | EACH | 4.000      | 4.000      |            |
| 0104 | 628.1910 | Mobilizations Emergency Erosion Control                       | EACH | 4.000      | 4.000      |            |
| 0106 | 628.2004 | Erosion Mat Class I Type B                                    | SY   | 500.000    | 500.000    |            |
| 0108 | 628.5505 | Polyethylene Sheeting                                         | SY   | 1,546.000  | 1,546.000  |            |
| 0110 | 629.0210 | Fertilizer Type B                                             | CWT  | 3.000      | 3.000      |            |
| 0112 | 630.0130 | Seeding Mixture No. 30                                        | LB   | 77.000     | 77.000     |            |
| 0114 | 630.0170 | Seeding Mixture No. 70                                        | LB   | 1.000      |            | 1.000      |
| 0116 | 630.0200 | Seeding Temporary                                             | LB   | 24.000     | 24.000     |            |
| 0118 | 630.0500 | Seed Water                                                    | MGAL | 17.000     | 14.000     | 3.000      |
| 0120 | 642.5001 | Field Office Type B                                           | EACH | 1.000      |            | 1.000      |
| 0122 | 643.0300 | Traffic Control Drums                                         | DAY  | 140.000    | 70.000     | 70.000     |
| 0124 | 643.0420 | Traffic Control Barricades Type III                           | DAY  | 892.000    | 712.000    | 180.000    |
| 0126 | 643.0705 | Traffic Control Warning Lights Type A                         | DAY  | 1,268.000  | 1,068.000  | 200.000    |
| 0128 | 643.0900 | Traffic Control Signs                                         | DAY  | 15,655.000 | 10,235.000 | 5,420.000  |
| 0130 | 643.0920 | Traffic Control Covering Signs Type II                        | EACH | 22.000     | 10.000     | 12.000     |
| 0132 | 643.1050 | Traffic Control Signs PCMS                                    | DAY  | 28.000     | 14.000     | 14.000     |
| 0134 | 643.5000 | Traffic Control                                               | EACH | 1.000      | 0.660      | 0.340      |
| 0136 | 645.0105 | Geotextile Type C                                             | SY   | 457.000    | 457.000    |            |
| 0138 | 645.0120 | Geotextile Type HR                                            | SY   | 141.000    | 105.000    | 36.000     |
| 0140 | 645.0220 | Geogrid Type SR                                               | SY   | 4,622.000  | 3,522.000  | 1,100.000  |
| 0142 | 646.1020 | Marking Line Epoxy 4-Inch                                     | LF   | 26,600.000 | 2,000.000  | 24,600.000 |
| 0144 | 646.1040 | Marking Line Grooved Wet Ref Epoxy 4-Inch                     | LF   | 6,995.000  |            | 6,995.000  |
| 0146 | 646.3020 | Marking Line Epoxy 8-Inch                                     | LF   | 173.000    |            | 173.000    |
| 0148 | 646.5020 | Marking Arrow Epoxy                                           | EACH | 2.000      |            | 2.000      |
| 0150 | 646.5120 | Marking Word Epoxy                                            | EACH | 1.000      |            | 1.000      |
| 0152 | 650.4500 | Construction Staking Subgrade                                 | LF   | 1,028.000  | 764.000    | 264.000    |

Estimate Of Quantities

|      |          | 5571-00-81                                                         |      | 5670-03-70 |           |            |
|------|----------|--------------------------------------------------------------------|------|------------|-----------|------------|
| Line | Item     | Item Description                                                   | Unit | Total      | Qty       | Qty        |
| 0154 | 650.5000 | Construction Staking Base                                          | LF   | 1,028.000  | 764.000   | 264.000    |
| 0156 | 650.6500 | Construction Staking Structure Layout (structure) 01. B-53-293     | LS   | 1.000      | 1.000     |            |
| 0158 | 650.8000 | Construction Staking Resurfacing Reference                         | LF   | 12,300.000 |           | 12,300.000 |
| 0160 | 650.9910 | Construction Staking Supplemental Control (project) 01. 5571-00-81 | LS   | 1.000      | 1.000     |            |
| 0162 | 650.9910 | Construction Staking Supplemental Control (project) 02. 5670-03-70 | LS   | 1.000      |           | 1.000      |
| 0164 | 650.9920 | Construction Staking Slope Stakes                                  | LF   | 934.000    | 764.000   | 170.000    |
| 0166 | 690.0150 | Sawing Asphalt                                                     | LF   | 279.000    | 104.000   | 175.000    |
| 0168 | 690.0250 | Sawing Concrete                                                    | LF   | 40.000     |           | 40.000     |
| 0170 | 715.0502 | Incentive Strength Concrete Structures                             | DOL  | 1,734.000  | 1,734.000 |            |
| 0172 | 740.0440 | Incentive IRI Ride                                                 | DOL  | 9,225.000  |           | 9,225.000  |
| 0174 | ASP.1T0A | On-the-Job Training Apprentice at \$5.00/HR                        | HRS  | 2,400.000  | 2,400.000 |            |
| 0176 | ASP.1T0G | On-the-Job Training Graduate at \$5.00/HR                          | HRS  | 2,160.000  | 2,160.000 |            |
| 0178 | SPV.0060 | Special 01. Sand Bags                                              | EACH | 108.000    | 108.000   |            |
| 0180 | SPV.0060 | Special 02. Verify Landmark Reference Monuments                    | EACH | 3.000      |           | 3.000      |

EXCAVATION SUMMARY

| DIVISION            | FROM/TO STATION  | LOCATION | 205.0100<br>COMMON<br>EXCAVATION<br>(1) | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL<br>(2) | AVAILABLE<br>MATERIAL<br>(3) | UNEXPANDED<br>FILL | EXPANDED FILL<br>(4) | MASS ORDINATE +/-<br>(5) | WASTE (6) | COMMENT |
|---------------------|------------------|----------|-----------------------------------------|-----------------------------------------------|------------------------------|--------------------|----------------------|--------------------------|-----------|---------|
|                     |                  |          | CUT<br>(1)                              |                                               |                              |                    | FACTOR<br>1.25       |                          |           |         |
| DIVISION 1          | 103+50/111+50    |          |                                         |                                               |                              |                    |                      |                          |           |         |
| STH 213             |                  |          | 2,579                                   | 307                                           | 2,272                        | 1,262              | 1,578                | 695                      | 695       |         |
| DIVISION 1 SUBTOTAL |                  |          | 2,579                                   | 307                                           | 2,272                        | 1,262              | 1,578                | 695                      | 695       |         |
| DIVISION 2          |                  |          |                                         |                                               |                              |                    |                      |                          |           |         |
| STREAM BED          | 00+75/04+00      |          | 354                                     | 0                                             | 354                          | 1                  | 1                    | 353                      | 353       |         |
| DIVISION 2 SUBTOTAL |                  |          | 354                                     | 0                                             | 354                          | 1                  | 1                    | 353                      | 353       |         |
| DIVISION 3          |                  |          |                                         |                                               |                              |                    |                      |                          |           |         |
| TEMP CHANNEL        | 00+100/04+21.374 |          | 1,358                                   | 33                                            | 1,325                        | 0                  | 0                    | 1,325                    | 1,325     |         |
| DIVISION 3 SUBTOTAL |                  |          | 1,358                                   | 33                                            | 1,325                        | 0                  | 0                    | 1,325                    | 1,325     |         |
| GRAND TOTAL         |                  |          | 4,291                                   | 340                                           | 3,951                        | 1,263              | 1,579                | 2,372                    | 2,372     |         |
| TOTAL COMMON EXC    |                  |          | 4,291                                   |                                               |                              |                    |                      |                          |           |         |

NOTES:

(1) SALVAGED/UNSUABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.

(2) SALVAGED/UNUSABLE PAVEMENT MATERIAL

(3) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSUABLE PAVEMENT MATERIAL

(4) EXPANDED FILL FACTOR = 1.25

DEPENDING ON SELECTIONS:

OR

OR

OR

EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED MARSH - REDUCED EBS) \* FILL FACTOR

EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED EBS) \* FILL FACTOR

EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED MARSH) \* FILL FACTOR

EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK) \* FILL FACTOR

(5) 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.

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



CLEARING & GRUBBING

| CATEGORY   | STATION | TO | STATION | LOCATION | 201.0105        | 201.0205        | REMARKS |
|------------|---------|----|---------|----------|-----------------|-----------------|---------|
|            |         |    |         |          | CLEARING<br>STA | GRUBBING<br>STA |         |
| 0010       | 106+25  | -  | 108+25  | LT       | 2               | 2               |         |
| TOTAL 0010 |         |    |         |          | 2               | 2               |         |

REMOVING CONCRETE PAVEMENT

| CATEGORY   | STATION | TO | STATION | LOCATION | 204.0100                            | REMARKS |
|------------|---------|----|---------|----------|-------------------------------------|---------|
|            |         |    |         |          | REMOVING CONCRETE<br>PAVEMENT<br>SY |         |
| 0010       | 103+50  | -  | 106+94  |          | 841                                 |         |
|            | 107+25  | -  | 111+50  |          | 1,038                               |         |
| TOTAL 0010 |         |    |         |          | 1,879                               |         |

REMOVING FENCE

| CATEGORY   | STATION | TO | STATION | LOCATION | 204.0170                | REMARKS |
|------------|---------|----|---------|----------|-------------------------|---------|
|            |         |    |         |          | REMOVING<br>FENCE<br>LF |         |
| 0010       | 103+50  | -  | 111+50  | LT       | 906                     |         |
| TOTAL 0010 |         |    |         |          | 906                     |         |

REMOVING GUARDRAIL

| CATEGORY   | STATION | TO | STATION | LOCATION | 204.0165                    | REMARKS |
|------------|---------|----|---------|----------|-----------------------------|---------|
|            |         |    |         |          | REMOVING<br>GUARDRAIL<br>LF |         |
| 0010       | 106+31  | -  | 107+12  | LT       | 81                          |         |
|            | 105+85  | -  | 106+79  | RT       | 94                          |         |
|            | 107+39  | -  | 108+31  | LT       | 93                          |         |
|            | 107+07  | -  | 107+87  | RT       | 81                          |         |
| TOTAL 0010 |         |    |         |          | 349                         |         |

EXCAVATION

| CATEGORY   | STATION | TO | STATION | LOCATION     | 208.0100     | 209.1100                              | REMARKS |
|------------|---------|----|---------|--------------|--------------|---------------------------------------|---------|
|            |         |    |         |              | BORROW<br>CY | BACKFILL<br>GRANULAR GRADE<br>1<br>CY |         |
| 0010       | 103+50  | -  | 111+50  | TEMP CHANNEL | 769          | 669                                   |         |
| TOTAL 0010 |         |    |         |              | 769          | 669                                   |         |

BASE COURSE ITEMS

|            |         |    |         |          |                |                  |                |         |
|------------|---------|----|---------|----------|----------------|------------------|----------------|---------|
|            |         |    |         |          | 305.0110       | 305.0120         | 312.0110       |         |
|            |         |    |         |          | BASE           | BASE             |                |         |
|            |         |    |         |          | AGGREGATE      | AGGREGATE        |                |         |
|            |         |    |         |          | DENSE 3/4-INCH | DENSE 1 1/4-INCH | SELECT CRUSHED |         |
|            |         |    |         |          | TON            | TON              | MATERIAL       |         |
| CATEGORY   | STATION | TO | STATION | LOCATION | TON            | TON              | TON            | REMARKS |
| 0010       | 103+50  | -  | 104+35  |          | 19             | 272              | 233            |         |
|            | 104+35  | -  | 106+90  |          | 78             | 982              | 792            |         |
|            | 106+90  | -  | 107+25  |          | 11             | 135              | -              |         |
|            | 107+25  | -  | 109+78  |          | 78             | 978              | 770            |         |
|            | 109+78  | -  | 111+50  |          | 38             | 547              | 397            |         |
| TOTAL 0010 |         |    |         |          | 223            | 2,914            | 2,193          |         |

ASPHALT PAVEMENT ITEMS

455.0605      460.5224

TACK COAT      HMA PAVEMENT  
4 LT 58-28 S

| CATEGORY   | STATION | TO | STATION | LOCATION | GAL | TON | REMARKS |
|------------|---------|----|---------|----------|-----|-----|---------|
| 0010       | 103+50  | -  | 111+50  |          | 143 | 717 |         |
| TOTAL 0010 |         |    |         |          | 143 | 717 |         |

RIPRAP MEDIUM

606.0200

RIPRAP MEDIUM

| CATEGORY   | STATION | TO | STATION | LOCATION            | CY  | REMARKS |
|------------|---------|----|---------|---------------------|-----|---------|
| 0010       | 1+23    | -  | 1+38    | TEMP CHANNEL CORNER | 2.8 |         |
|            | 2+09    | -  | 2+24    | TEMP CHANNEL CORNER | 2.8 |         |
|            | 3+34    | -  | 3+49    | TEMP CHANNEL CORNER | 2.8 |         |
|            | 3+81    | -  | 3+96    | TEMP CHANNEL CORNER | 2.8 |         |
| TOTAL 0010 |         |    |         |                     | 12  |         |

| CATEGORY   | STATION | TO | STATION | LOCATION | LF    | LF  | EACH | EACH | REMARKS |
|------------|---------|----|---------|----------|-------|-----|------|------|---------|
| 0010       | 106+03  |    |         | LT       | -     | -   | 1    | -    |         |
|            | 106+53  | -  | 106+91  | LT       | 50    | -   | -    | -    |         |
|            | 106+91  | -  | 107+66  | LT       | -     | 75  | -    | -    |         |
|            | 107+13  | -  | 107+44  | LT       | -     | -   | -    | 11   |         |
|            | 107+44  | -  | 109+28  | LT       | 187.5 | -   | -    | -    |         |
|            | 109+78  |    |         | LT       | -     | -   | 1    | -    |         |
|            | 104+35  |    |         | RT       | -     | -   | 1    | -    |         |
|            | 104+85  | -  | 106+48  | RT       | 175   | -   | -    | -    |         |
|            | 106+48  | -  | 107+23  | RT       | -     | 75  | -    | -    |         |
|            | 106+70  | -  | 107+01  | RT       | -     | -   | -    | 11   |         |
|            | 107+23  | -  | 107+42  | RT       | 25    | -   | -    | -    |         |
|            | 107+92  |    |         | RT       | -     | -   | 1    | -    |         |
| TOTAL 0010 |         |    |         |          | 437.5 | 150 | 4    | 22   |         |

PILING STEEL SHEET TEMPORARY

512.1000  
PILING STEEL SHEET  
TEMPORARY

| CATEGORY   | STATION | TO | STATION | LOCATION | SF    | REMARKS |
|------------|---------|----|---------|----------|-------|---------|
| 0010       | 1+00    | -  | 1+60    | LT       | 840   |         |
| 0010       | 3+70    |    | 4+10    | LT       | 560   |         |
| TOTAL 0010 |         |    |         |          | 1,400 |         |

BEAM GUARD

614.2300      614.2310      614.2610      614.8010  
MGS GUARDRAIL    MGS GUARDRAIL    MGS GUARDRAIL    ANCHOR POST  
3                      3 HS                      TERMINAL EAT    ASSEMBLY TOP  
                                                                                 MOUNT

| CATEGORY   | STATION | TO | STATION | LOCATION | LF    | LF  | EACH | EACH | REMARKS |
|------------|---------|----|---------|----------|-------|-----|------|------|---------|
| 0010       | 106+03  |    |         | LT       | -     | -   | 1    | -    |         |
|            | 106+53  | -  | 106+91  | LT       | 50    | -   | -    | -    |         |
|            | 106+91  | -  | 107+66  | LT       | -     | 75  | -    | -    |         |
|            | 107+13  | -  | 107+44  | LT       | -     | -   | -    | 11   |         |
|            | 107+44  | -  | 109+28  | LT       | 187.5 | -   | -    | -    |         |
|            | 109+78  |    |         | LT       | -     | -   | 1    | -    |         |
|            | 104+35  |    |         | RT       | -     | -   | 1    | -    |         |
|            | 104+85  | -  | 106+48  | RT       | 175   | -   | -    | -    |         |
|            | 106+48  | -  | 107+23  | RT       | -     | 75  | -    | -    |         |
|            | 106+70  | -  | 107+01  | RT       | -     | -   | -    | 11   |         |
|            | 107+23  | -  | 107+42  | RT       | 25    | -   | -    | -    |         |
|            | 107+92  |    |         | RT       | -     | -   | 1    | -    |         |
| TOTAL 0010 |         |    |         |          | 437.5 | 150 | 4    | 22   |         |

FENCE WOVEN WIRE (4 FEET)

| 616.0100.01<br>FENCE WOVEN<br>WIRE (HEIGHT) (4<br>FEET) |         |    |         |          |     |
|---------------------------------------------------------|---------|----|---------|----------|-----|
| CATEGORY                                                | STATION | TO | STATION | LOCATION | LF  |
| 0010                                                    | 103+50  | -  | 111+50  | LT       | 906 |
| TOTAL 0010                                              |         |    |         |          | 906 |

LANDSCAPE ITEMS

|            |               |    |         |          | 625.0500<br>SALVAGED<br>TOPSOIL | 627.0200<br>MULCHING | 628.2004<br>EROSION MAT<br>CLASS I TYPE B | 629.0210<br>FERTILIZER TYPE<br>B | 630.0130<br>SEEDING<br>MIXTURE NO. 30 | 630.0200<br>SEEDING<br>TEMPORARY | 630.0500<br>SEED WATER |               |
|------------|---------------|----|---------|----------|---------------------------------|----------------------|-------------------------------------------|----------------------------------|---------------------------------------|----------------------------------|------------------------|---------------|
| CATEGORY   | STATION       | TO | STATION | LOCATION | SY                              | SY                   | SY                                        | CWT                              | LB                                    | LB                               | MGAL                   | REMARKS       |
| 0010       | 103+50        | -  | 106+35  | LT       | 105                             | 105                  | -                                         | 0                                | 2                                     | -                                | 0.4                    | NO FERTILIZER |
|            | 103+50        | -  | 105+81  | RT       | 2,389                           | 2,389                | -                                         | 2                                | 43                                    | -                                | 6.0                    |               |
|            | 105+81        | -  | 106+53  | RT       | -                               | 192                  | -                                         | 0                                | 1                                     | 5                                | 0.5                    |               |
|            | 106+35        | -  | 107+33  | LT       | 574                             | 574                  | -                                         | 0                                | 1                                     | 15                               | 1.4                    |               |
|            | 106+88        | -  | 107+13  | RT       | 304                             | 304                  | -                                         | 0                                | 5                                     | -                                | 0.8                    |               |
|            |               |    |         |          |                                 |                      |                                           |                                  |                                       |                                  |                        |               |
|            | 107+13        | -  | 111+50  | RT       | 681                             | 681                  | -                                         | 0                                | 12                                    | -                                | 1.7                    |               |
|            | 107+74        | -  | 108+11  | LT       | 116                             | 116                  | -                                         | -                                | 1                                     | 3                                | 0.4                    |               |
|            | 108+11        | -  | 111+50  | LT       | 582                             | 582                  | -                                         | 0                                | 10                                    | -                                | 1.5                    |               |
|            | UNDISTRIBUTED |    |         |          | -                               | 500                  | 500                                       | -                                | -                                     | -                                | 1.3                    |               |
| TOTAL 0010 |               |    |         |          | 4,751                           | 5,443                | 500                                       | 3                                | 77                                    | 24                               | 14                     |               |

EROSION BALES

| 628.1104<br>EROSION BALES |         |          |      |         |
|---------------------------|---------|----------|------|---------|
| CATEGORY                  | STATION | LOCATION | EACH | REMARKS |
| 0010                      | 106+21  | RT       | 8    |         |
|                           | 106+90  | RT       | 8    |         |
|                           | 107+25  | LT       | 8    |         |
|                           | 107+85  | LT       | 8    |         |
| TOTAL 0010                |         |          | 32   |         |

SILT FENCE

| 628.1504<br>SILT FENCE |         |    |         |          | 628.1520<br>SILT FENCE<br>MAINTENANCE | REMARKS |
|------------------------|---------|----|---------|----------|---------------------------------------|---------|
| CATEGORY               | STATION | TO | STATION | LOCATION | LF                                    |         |
| 0010                   | 103+50  | -  | 111+50  | LT       | 750                                   | 750     |
|                        | 103+50  | -  | 111+50  | RT       | 750                                   | 750     |
| TOTAL 0010             |         |    |         |          | 1,500                                 | 1,500   |



EROSION CONTROL MOBILIZATION

|            |            |         |          | 628.1905        | 628.1910                  | REMARKS |
|------------|------------|---------|----------|-----------------|---------------------------|---------|
|            |            |         |          | MOBILIZATIONS   | MOBILIZATIONS             |         |
|            |            |         |          | EROSION CONTROL | EMERGENCY EROSION CONTROL |         |
| CATEGORY   | STATION TO | STATION | LOCATION | EACH            | EACH                      |         |
| 0010       | 1+00 -     | 4+22    |          | 2               | 2                         |         |
|            | 103+50 -   | 111+50  |          | 2               | 2                         |         |
| TOTAL 0010 |            |         |          | 4               | 4                         |         |

POLYETHYLENE SHEETING

|            |         |    |         |              |              |         |
|------------|---------|----|---------|--------------|--------------|---------|
|            |         |    |         |              | 628.5505     |         |
|            |         |    |         |              | POLYETHYLENE |         |
|            |         |    |         |              | SHEETING     |         |
| CATEGORY   | STATION | TO | STATION | LOCATION     | SY           | REMARKS |
| 0010       | 1+00    | -  | 4+21    | TEMP CHANNEL | 1,546        |         |
| TOTAL 0010 |         |    |         |              | 1,546        |         |

TRAFFIC CONTROL DETOUR

|            |          | 643.0300                  | 643.0420                                | 643.0705                                  | 643.0900                  | 643.0920                                    | 643.1050                                      |                                |
|------------|----------|---------------------------|-----------------------------------------|-------------------------------------------|---------------------------|---------------------------------------------|-----------------------------------------------|--------------------------------|
|            |          | TRAFFIC CONTROL DRUMS DAY | TRAFFIC CONTROL BARRICADES TYPE III DAY | TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY | TRAFFIC CONTROL SIGNS DAY | TRAFFIC CONTROL COVERING SIGNS TYPE II EACH | TRAFFIC CONTROL COVERING SIGNS TYPE II CYCLES | TRAFFIC CONTROL SIGNS PCMS DAY |
| CATEGORY   | LOCATION |                           |                                         |                                           |                           |                                             |                                               |                                |
| 0010       | PROJECT  | 70                        | 712                                     | 1,068                                     | 10,235                    | 10                                          | 1                                             | 14                             |
| TOTAL 0010 |          | 70                        | 712                                     | 1,068                                     | 10,235                    | 10                                          |                                               | 14                             |

GEOGRID TYPE SR

|            |         |    |         |          |              |         |
|------------|---------|----|---------|----------|--------------|---------|
|            |         |    |         |          | 645.0220     |         |
|            |         |    |         |          | GEOGRID TYPE |         |
|            |         |    |         |          | SR           |         |
| CATEGORY   | STATION | TO | STATION | LOCATION | SY           | REMARKS |
| <hr/>      |         |    |         |          |              |         |
| 0010       | 103+50  | -  | 111+50  | CENTER   | 3,522        |         |
|            |         |    |         |          | <hr/>        |         |
| TOTAL 0010 |         |    |         |          | 3,522        |         |

PAVEMENT MARKING

|            |         |    |         |          | 646.1020     |         |
|------------|---------|----|---------|----------|--------------|---------|
|            |         |    |         |          | MARKING LINE |         |
|            |         |    |         |          | EPOXY 4-INCH |         |
| CATEGORY   | STATION | TO | STATION | LOCATION | LF           | REMARKS |
| 0010       | 103+50  | -  | 111+50  | LT       | 800          | WHITE   |
|            | 103+50  | -  | 111+50  | RT       | 800          | WHITE   |
|            | 103+50  | -  | 111+50  | CENTER   | 400          | YELLOW  |
| TOTAL 0010 |         |    |         |          | 2,000        |         |

CONSTRUCTION STAKING

|               |                    | 650.4500                      |     | 650.5000                  |    | 650.6500.01                                 |     | 650.9910.01                                                      |         | 650.9920                          |  |
|---------------|--------------------|-------------------------------|-----|---------------------------|----|---------------------------------------------|-----|------------------------------------------------------------------|---------|-----------------------------------|--|
|               |                    | CONSTRUCTION STAKING SUBGRADE |     | CONSTRUCTION STAKING BASE |    | CONSTRUCTION STAKING (STRUCTURE) (B-53-293) |     | CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) (5571-00-81) |         | CONSTRUCTION STAKING SLOPE STAKES |  |
| CATEGORY      | STATION TO STATION | LOCATION                      | LF  | LF                        | LS | LS                                          | LS  | LF                                                               | REMARKS |                                   |  |
| 0010          | 103+50 - 106+89    |                               | 339 | 339                       | -  | -                                           | 339 |                                                                  |         |                                   |  |
|               | 107+25 - 111+50    |                               | 425 | 425                       | -  | -                                           | 425 |                                                                  |         |                                   |  |
|               | 103+50 - 111+50    | PROJECT                       | -   | -                         | -  | 1                                           | -   |                                                                  |         |                                   |  |
| TOTAL 0010    |                    |                               | 764 | 764                       | 0  | 1                                           | 764 |                                                                  |         |                                   |  |
| 0020          | 107+07             | B-53-293                      |     |                           | 1  |                                             | -   |                                                                  |         |                                   |  |
| TOTAL 0020    |                    |                               | 0   | 0                         | 1  | 0                                           | 0   |                                                                  |         |                                   |  |
| PROJECT TOTAL |                    |                               | 764 | 764                       | 1  | 1                                           | 764 |                                                                  |         |                                   |  |

SAWING ASPHALT

|            |         | 690.0150       |     |         |  |
|------------|---------|----------------|-----|---------|--|
|            |         | SAWING ASPHALT |     |         |  |
| CATEGORY   | STATION | LOCATION       | LF  | REMARKS |  |
| 0010       | 103+50  | STH 213        | 26  |         |  |
|            | 105+75  | STH 213        | 26  |         |  |
|            | 106+75  | STH 213        | 26  |         |  |
|            | 111+50  | STH 213        | 26  |         |  |
| TOTAL 0010 |         |                | 104 |         |  |

SAND BAGS

|            |                    | SPV.0060.01         |      |         |  |
|------------|--------------------|---------------------|------|---------|--|
|            |                    | SPECIAL (SAND BAGS) |      |         |  |
| CATEGORY   | STATION TO STATION | LOCATION            | EACH | REMARKS |  |
| 0010       | 1+00 - 4+21        | TEMP CHANNEL        | 108  |         |  |
| TOTAL 0010 |                    |                     | 108  |         |  |

EARTHWORK SUMMARY

| DIVISION            | FROM/TO STATION | LOCATION | 205.0100<br>COMMON EXCAVATION<br>(1) |                       | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL<br>(4) | AVAILABLE<br>MATERIAL<br>(5) | UNEXPANDED<br>FILL | EXPANDED FILL<br>(6) | MASS ORDINATE +/-<br>(7) | WASTE | COMMENT |
|---------------------|-----------------|----------|--------------------------------------|-----------------------|-----------------------------------------------|------------------------------|--------------------|----------------------|--------------------------|-------|---------|
|                     |                 |          | CUT<br>(2)                           | EBS EXCAVATION<br>(3) |                                               |                              |                    | FACTOR<br>1.25       |                          |       |         |
| DIVISION 1          | 1209+70/1212+34 |          |                                      |                       |                                               |                              |                    |                      |                          |       |         |
| STH_59_EBS          |                 |          | 793                                  | 39                    | 207                                           | 586                          | 0                  | -39                  | 625                      | 625   |         |
| DIVISION 1 SUBTOTAL |                 |          | 793                                  | 39                    | 207                                           | 586                          | 0                  | -39                  | 625                      | 625   |         |
| GRAND TOTAL         |                 |          | 793                                  | 39                    | 207                                           | 586                          | 0                  | -39                  | 625                      | 625   |         |
| TOTAL COMMON EXC    |                 |          | 832                                  |                       |                                               |                              |                    |                      |                          |       |         |

NOTES:

(1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100

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

(3) EBS EXCAVATION TO BE BACKFILLED WITH SELECT BORROW MATERIAL. NOTE: THIS IS DESIGNERS CHOICE, CAN BE BACKFILLED WITH BORROW, OR CUT AS WELL.

(4) SALVAGED/UNUSABLE PAVEMENT MATERIAL

(5)) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSUABLE PAVEMENT MATERIAL

(6) EXPANDED FILL FACTOR = 1.25

DEPENDING ON SELECTIONS:

EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED MARSH - REDUCED EBS) \* FILL FACTOR

OR

EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED EBS) \* FILL FACTOR

OR

EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED MARSH) \* FILL FACTOR

OR

EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK) \* FILL FACTOR

(7) 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.

REMOVALS

| CATEGORY | STATION | TO | STATION | LOCATION   | 204.0100                   | 204.0110                               | 204.0120                                          | REMARKS |
|----------|---------|----|---------|------------|----------------------------|----------------------------------------|---------------------------------------------------|---------|
|          |         |    |         |            | REMOVING<br>PAVEMENT<br>SY | REMOVING<br>ASPHALTIC<br>SURFACE<br>SY | REMOVING<br>ASPHALTIC<br>SURFACE<br>MILLING<br>SY |         |
| 0010     | 1165+20 | -  | 1209+70 |            | -                          | -                                      | 14,300                                            |         |
| 0010     | 1209+70 | -  | 1212+34 |            | 590                        | 150                                    | -                                                 |         |
| 0010     | 1213+57 | -  | 1288+20 |            | -                          | -                                      | 23,300                                            |         |
|          |         |    |         | TOTAL 0010 | 590                        | 150                                    | 37,600                                            |         |

| CATEGORY | STATION | TO | STATION | LOCATION   | 205.0100                   | REMARKS |
|----------|---------|----|---------|------------|----------------------------|---------|
|          |         |    |         |            | EXCAVATION<br>COMMON<br>CY |         |
| 0010     | 1209+70 | -  | 1212+34 |            | 832                        |         |
|          |         |    |         | TOTAL 0010 | 832                        |         |

| CATEGORY | STATION | TO | STATION | LOCATION   | 211.0400                                                   | REMARKS |
|----------|---------|----|---------|------------|------------------------------------------------------------|---------|
|          |         |    |         |            | PREPARE<br>FOUNDATION<br>FOR ASPHALTIC<br>SHOULDERS<br>STA |         |
| 0010     | 1165+20 | -  | 1209+70 |            | 89                                                         |         |
| 0010     | 1214+55 | -  | 1288+20 |            | 148                                                        |         |
|          |         |    |         | TOTAL 0010 | 237                                                        |         |

BASE COURSE ITEMS

| CATEGORY | STATION | TO | STATION | LOCATION   | 305.0110                                   | 305.0120                                         | 305.0130                                 | REMARKS |
|----------|---------|----|---------|------------|--------------------------------------------|--------------------------------------------------|------------------------------------------|---------|
|          |         |    |         |            | BASE<br>AGGREGATE<br>DENSE 3/4-INCH<br>TON | BASE<br>AGGREGATE<br>DENSE 1 1/4-<br>INCH<br>TON | BASE<br>AGGREGATE<br>DENSE 3-INCH<br>TON |         |
| 0010     | 1165+20 | -  | 1290+70 |            | 350                                        | -                                                | -                                        |         |
| 0010     | 1209+70 | -  | 1212+34 |            | 55                                         | 790                                              | 700                                      |         |
| 0010     | 1213+57 | -  | 1288+20 |            | 590                                        | -                                                | -                                        |         |
|          |         |    |         | TOTAL 0010 | 995                                        | 790                                              | 700                                      |         |

ASPHALT ITEMS

| CATEGORY | STATION | TO | STATION | LOCATION   | 455.0605         | 460.5223                            | 460.5224                            | REMARKS |
|----------|---------|----|---------|------------|------------------|-------------------------------------|-------------------------------------|---------|
|          |         |    |         |            | TACK COAT<br>GAL | HMA PAVEMENT<br>3 LT 58-28 S<br>TON | HMA PAVEMENT<br>4 LT 58-28 S<br>TON |         |
| 0010     | 1165+20 | -  | 1209+70 |            | 1,530            | 1,930                               | 1,500                               |         |
| 0010     | 1209+70 | -  | 1212+34 |            | 106              | 252                                 | 104                                 |         |
| 0010     | 1213+57 | -  | 1288+20 |            | 2,490            | 3,140                               | 2,440                               |         |
|          |         |    |         | TOTAL 0010 | 4,126            | 5,322                               | 4,044                               |         |

| 465.0475<br>ASPHALT<br>CENTERLINE<br>RUMBLE STRIPS<br>2-LANE RURAL |         |    |         |          |        |         |
|--------------------------------------------------------------------|---------|----|---------|----------|--------|---------|
| CATEGORY                                                           | STATION | TO | STATION | LOCATION | LF     | REMARKS |
| 0010                                                               | 1166+30 | -  | 1212+05 |          | 4,575  |         |
| 0010                                                               | 1213+82 | -  | 1286+55 |          | 7,273  |         |
| TOTAL 0010                                                         |         |    |         |          | 11,848 |         |

| 465.0315<br>ASPHALTIC<br>FLUMES |         |          |    |  | REMARKS |
|---------------------------------|---------|----------|----|--|---------|
| CATEGORY                        | STATION | LOCATION | SY |  |         |
| 0010                            | 1211+88 | LT       | 4  |  |         |
| 0010                            | 1212+25 | RT       | 4  |  |         |
| TOTAL 0010                      |         |          | 8  |  |         |

| 624.0100<br>WATER<br>MGAL |         |    |         |          |      |         |
|---------------------------|---------|----|---------|----------|------|---------|
| CATEGORY                  | STATION | TO | STATION | LOCATION | MGAL | REMARKS |
| 0010                      | 1165+20 | -  | 1288+20 |          | 15   |         |
| TOTAL 0010                |         |    |         |          | 15   |         |

LANDSCAPING ITEMS

|            |         |    |         |          |                |                      |                    |         |
|------------|---------|----|---------|----------|----------------|----------------------|--------------------|---------|
|            |         |    |         |          | 627.0200       | 630.0170             | 630.0500           |         |
|            |         |    |         |          |                | SEEDING              |                    |         |
| CATEGORY   | STATION | TO | STATION | LOCATION | MULCHING<br>SY | MIXTURE NO. 70<br>LB | SEED WATER<br>MGAL | REMARKS |
| 0010       | 1211+00 | -  | 1212+70 |          | 255            | 1                    | 3                  |         |
| TOTAL 0010 |         |    |         |          | 255            | 1                    | 3                  |         |

| 465.0310<br>ASPHALTIC CURB |         |    |         |          |    |         |
|----------------------------|---------|----|---------|----------|----|---------|
| CATEGORY                   | STATION | TO | STATION | LOCATION | LF | REMARKS |
| 0010                       | 1211+88 | -  | 1211+98 | LT       | 10 |         |
| 0010                       | 1212+25 | -  | 1212+35 | RT       | 10 |         |
| TOTAL 0010                 |         |    |         |          | 20 |         |

RIPRAP ITEMS

|            |         |          | 606.0200        | 645.0120 |         |
|------------|---------|----------|-----------------|----------|---------|
|            |         |          | GEOTEXTILE TYPE |          |         |
|            |         |          | RIPRAP MEDIUM   | HR       |         |
| CATEGORY   | STATION | LOCATION | CY              | SY       | REMARKS |
| 0010       | 1211+88 | LT       | 7               | 22       |         |
| 0010       | 1212+25 | RT       | 5               | 14       |         |
| TOTAL 0010 |         |          | 12              | 36       |         |



TRAFFIC CONTROL ITEMS

|            |                  |                |       | 643.0300                 |       | 643.0420                               |       | 643.0705                                    |       | 643.0900                 |        | 643.0920                                        |     | 643.1050                      |  | REMARKS |
|------------|------------------|----------------|-------|--------------------------|-------|----------------------------------------|-------|---------------------------------------------|-------|--------------------------|--------|-------------------------------------------------|-----|-------------------------------|--|---------|
|            |                  |                |       | TRAFFIC CONTROL<br>DRUMS |       | TRAFFIC CONTROL<br>BARRICADES TYPE III |       | TRAFFIC CONTROL<br>WARNING LIGHTS<br>TYPE A |       | TRAFFIC CONTROL<br>SIGNS |        | TRAFFIC<br>CONTROL<br>COVERING SIGNS<br>TYPE II |     | TRAFFIC CONTROL<br>SIGNS PCMS |  |         |
| CATEGORY   | STAGE            | DAYS PER STAGE | *EACH | DAY                      | *EACH | DAY                                    | *EACH | DAY                                         | *EACH | DAY                      | **EACH | *EACH                                           | DAY |                               |  |         |
| 0010       | PRE CONSTRUCTION | 7              | 10    | 70                       | -     | -                                      | -     | -                                           | -     | -                        | -      | -                                               | 2   | 14                            |  |         |
| 0010       | DETOUR           | 20             | -     | -                        | 9     | 180                                    | 10    | 200                                         | 271   | 5420                     | 12     | -                                               | -   |                               |  |         |
| TOTAL 0010 |                  |                |       | 70                       | 180   |                                        | 200   |                                             | 5,420 |                          | 12     | 14                                              |     |                               |  |         |

\*FOR INFORMATIONAL PURPOSES ONLY  
\*\*ONE CYCLE FOR TRAFFIC CONTROL COVERING SIGN TYPE 1 DURING C

|          |         |    |         |            |              |         |
|----------|---------|----|---------|------------|--------------|---------|
|          |         |    |         |            | 645.0220     |         |
|          |         |    |         |            | GEOGRID TYPE |         |
|          |         |    |         |            | SR           |         |
| CATEGORY | STATION | TO | STATION | LOCATION   | SY           | REMARKS |
| 0010     | 1209+70 | -  | 1212+34 | TOTAL 0010 | <u>1,100</u> |         |
|          |         |    |         |            | 1,100        |         |

PAVEMENT MARKING

|          |         |    |         |            | 646.1020     | 646.1040     | 646.3020     | 646.5020    | 646.5120     | REMARKS |
|----------|---------|----|---------|------------|--------------|--------------|--------------|-------------|--------------|---------|
|          |         |    |         |            |              | MARKING LINE |              |             |              |         |
|          |         |    |         |            |              | GROOVED WET  |              |             |              |         |
|          |         |    |         |            | MARKING LINE | REF EPOXY 4- | MARKING LINE | MARKING     | MARKING WORD |         |
|          |         |    |         |            | EPOXY 4-INCH | INCH         | EPOXY 8-INCH | ARROW EPOXY | EPOXY        |         |
| CATEGORY | STATION | TO | STATION | LOCATION   | WHITE        | YELLOW       | WHITE        |             |              |         |
|          |         |    |         |            | LF           | LF           | LF           | EACH        | EACH         |         |
| 0010     | 1165+20 | -  | 1288+20 | TOTAL 0010 | 24,600       | 6,995        | 173          | 2           | 1            |         |
|          |         |    |         |            |              | 24,600       | 6,995        | 173         | 2            | 1       |

CONSTRUCTION STAKING

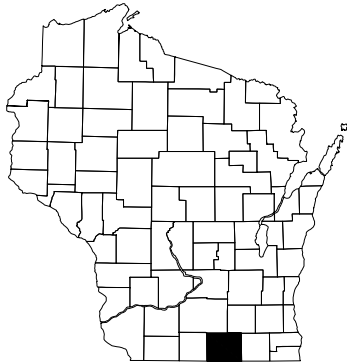
|          |         |    |         |            |  | 650.4500     | 650.5000     | 650.8000     | 650.9920     |         |  |
|----------|---------|----|---------|------------|--|--------------|--------------|--------------|--------------|---------|--|
|          |         |    |         |            |  | CONSTRUCTION | CONSTRUCTION | CONSTRUCTION | CONSTRUCTION |         |  |
|          |         |    |         |            |  | STAKING      | STAKING      | STAKING      | STAKING      |         |  |
|          |         |    |         |            |  | SUBGRADE     | STAKING      | RESURFACING  | SLOPE        |         |  |
|          |         |    |         |            |  | LF           | BASE         | REFERENCE    | STAKES       |         |  |
| CATEGORY | STATION | TO | STATION | LOCATION   |  | LF           | LF           | LF           | LF           | REMARKS |  |
| 0010     | 1165+20 | -  | 1288+20 |            |  | -            | -            | 12,300       | -            |         |  |
| 0010     | 1209+70 | -  | 1212+34 |            |  | 264          | 264          | -            | 170          |         |  |
|          |         |    |         | TOTAL 0010 |  | 264          | 264          | 12,300       | 170          |         |  |

|          |         |          |            | 690.0150 |         |  |
|----------|---------|----------|------------|----------|---------|--|
|          |         |          |            | SAWING   |         |  |
|          |         |          |            | ASPHALT  |         |  |
| CATEGORY | STATION | LOCATION |            | LF       | REMARKS |  |
| 0010     | 1165+20 |          |            | 45       |         |  |
| 0010     | 1209+70 |          |            | 28       |         |  |
| 0010     | 1212+34 |          |            | 30       |         |  |
| 0010     | 1213+57 |          |            | 44       |         |  |
| 0010     | 1288+20 |          |            | 28       |         |  |
|          |         |          | TOTAL 0010 | 175      |         |  |

|          |         |          |            | 690.0250 |         |  |
|----------|---------|----------|------------|----------|---------|--|
|          |         |          |            | SAWING   |         |  |
|          |         |          |            | CONCRETE |         |  |
| CATEGORY | STATION | LOCATION |            | LF       | REMARKS |  |
| 0010     | 1209+70 |          |            | 20       |         |  |
| 0010     | 1212+34 |          |            | 20       |         |  |
|          |         |          | TOTAL 0010 | 40       |         |  |

|          |         |          |            | SPV.0060.02  |         |  |
|----------|---------|----------|------------|--------------|---------|--|
|          |         |          |            | SPECIAL (02. |         |  |
|          |         |          |            | VERIFY       |         |  |
|          |         |          |            | LANDMARK     |         |  |
|          |         |          |            | REFERENCE    |         |  |
|          |         |          |            | MONUMENTS)   |         |  |
| CATEGORY | STATION | LOCATION |            | EACH         | REMARKS |  |
| 0010     | 1191+06 | 25.3' LT |            | 1            |         |  |
| 0010     | 1239+51 | 83.3' RT |            | 1            |         |  |
| 0010     | 1239+51 | 39.0' LT |            | 1            |         |  |
|          |         |          | TOTAL 0010 | 3            |         |  |

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION  
TRANSPORTATION PROJECT PLAT TITLE SHEET  
5571-00-21  
BELOIT - EVANSVILLE  
(BR ALLEN CREEK B-53-945)  
STH 213  
ROCK COUNTY



CONVENTIONAL SYMBOLS

|                                                             |       |                           |  |                                      |    |
|-------------------------------------------------------------|-------|---------------------------|--|--------------------------------------|----|
| SECTION LINE                                                | ----- | SECTION CORNER SYMBOL     |  | R/W MONUMENT (TO BE SET)             | •  |
| QUARTER LINE                                                | ----- | SECTION CORNER MONUMENT   |  | NON-MONUMENTED R/W POINT             | o  |
| SIXTEENTH LINE                                              | ----- | GEODETIC SURVEY MONUMENT  |  | FOUND IRON PIN (1-INCH UNLESS NOTED) | IP |
| NEW REFERENCE LINE                                          | ----- | SIXTEENTH CORNER MONUMENT |  | OFF-PREMISE SIGN                     |    |
| NEW R/W LINE                                                | ----- | SIGN                      |  | COMPENSABLE                          |    |
| EXISTING R/W OR HE LINE                                     | ----- | PARCEL NUMBER             |  | NON-COMPENSABLE                      |    |
| PROPERTY LINE                                               | ----- | UTILITY NUMBER            |  |                                      |    |
| LOT, TIE & OTHER MINOR LINES                                | ----- |                           |  |                                      |    |
| SLOPE INTERCEPT                                             | ----- |                           |  |                                      |    |
| CORPORATE LIMITS                                            | ----- |                           |  |                                      |    |
| UNDERGROUND FACILITY (COMMUNICATIONS, ELECTRIC, ETC)        | ----- |                           |  |                                      |    |
| NEW R/W (FEE OR HE) (HATCHING VARIES BY OWNER)              | ----- |                           |  |                                      |    |
| TEMPORARY LIMITED EASEMENT AREA                             | ----- |                           |  |                                      |    |
| EASEMENT AREA (PERMANENT LIMITED OR RESTRICTED DEVELOPMENT) | ----- |                           |  |                                      |    |
| TRANSMISSION STRUCTURES                                     | ----- |                           |  |                                      |    |
| BUILDING                                                    | ----- |                           |  |                                      |    |
| BRIDGE                                                      | ----- |                           |  |                                      |    |

CONVENTIONAL ABBREVIATIONS

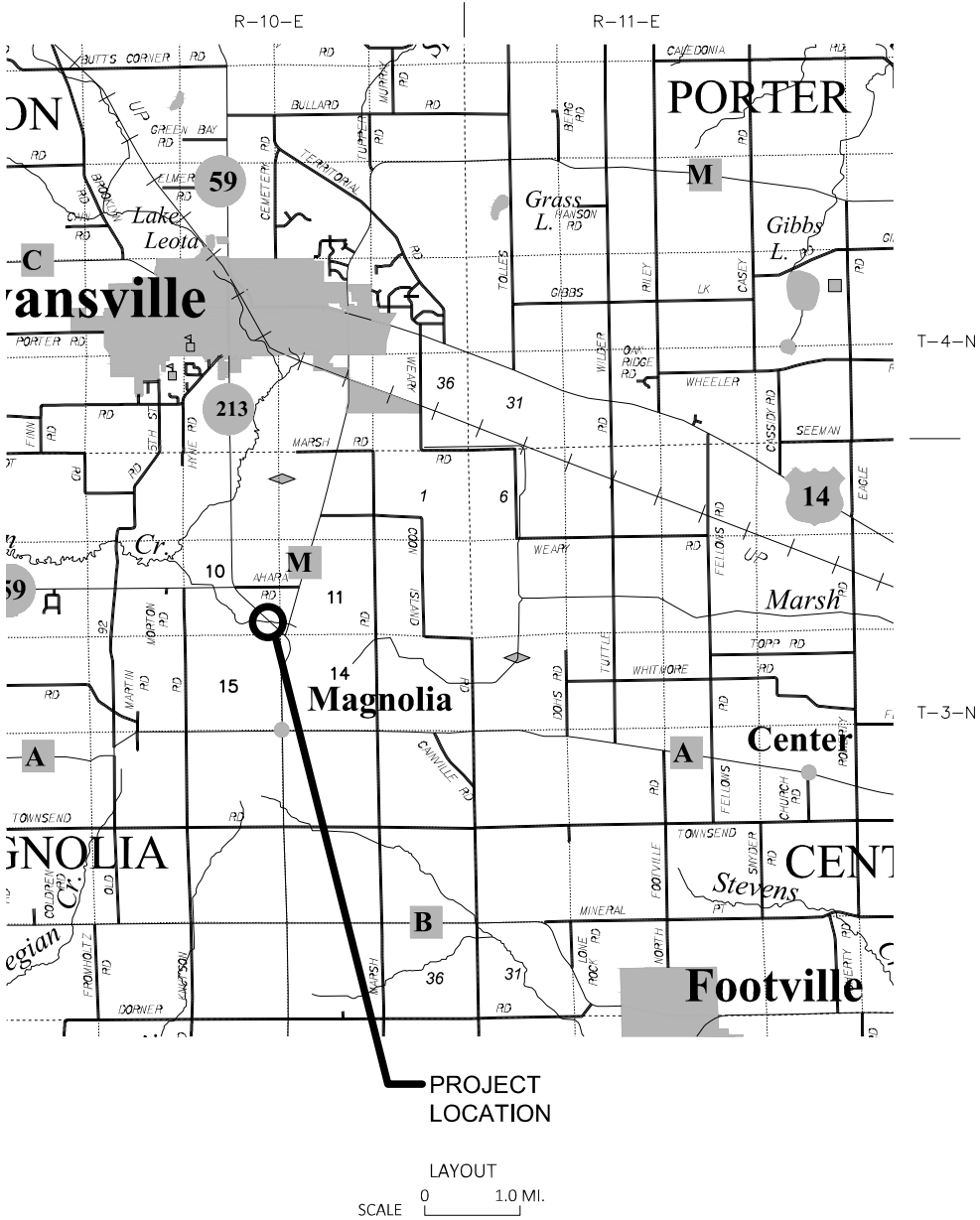
|                            |       |                        |          |
|----------------------------|-------|------------------------|----------|
| ACCESS RIGHTS              | AR    | POINT OF INTERSECTION  | PI       |
| ACRES                      | AC    | PROPERTY LINE          | PL       |
| AHEAD                      | AH    | RECORDED AS            | (100 ' ) |
| ALUMINUM                   | ALUM  | REEL / IMAGE           | R/I      |
| AND OTHERS                 | ET AL | REFERENCE LINE         | R/L      |
| BACK                       | BK    | REMAINING              | REM      |
| BLOCK                      | BLK   | RESTICTIVE DEVELOPMENT | RDE      |
| CENTERLINE                 | C/L   | EASEMENT               |          |
| CERTIFIED SURVEY MAP       | CSM   | RIGHT                  | RT       |
| CONCRETE                   | CONC  | RIGHT OF WAY           | R/W      |
| COUNTY                     | CO    | SECTION                | SEC      |
| COUNTY TRUNK HIGHWAY       | CTH   | SEPTIC VENT            | SEPV     |
| DISTANCE                   | DIST  | SQUARE FEET            | SF       |
| CORNER                     | COR   | STATE TRUNK HIGHWAY    | STH      |
| DOCUMENT NUMBER            | DOC   | STATION                | STA      |
| EASEMENT                   | EASE  | TELEPHONE PEDESTAL     | TP       |
| EXISTING                   | EX    | TEMPORARY LIMITED      | TLE      |
| GAS VALVE                  | GV    | EASEMENT               |          |
| GRID NORTH                 | GN    | TRANSPORTATION PROJECT | TPP      |
| HIGHWAY EASEMENT           | HE    | PLAT                   |          |
| 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 EASEMENT | PLE   |                        |          |
| POINT OF BEGINNING         | POB   |                        |          |
| POINT OF CURVATURE         | PC    |                        |          |
| POINT OF COMPOUND CURVE    | PCC   |                        |          |

CURVE DATA

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

CONVENTIONAL UTILITY SYMBOLS

|     |                    |
|-----|--------------------|
| W   | WATER              |
| G   | GAS                |
| T   | TELEPHONE          |
| OH  | OVERHEAD           |
| —   | TRANSMISSION LINES |
| E   | ELECTRIC           |
| TV  | CABLE TELEVISION   |
| FO  | FIBER OPTIC        |
| SAN | SANITARY SEWER     |
| SS  | STORM SEWER        |



THE NOTES, CONVENTIONAL SIGNS, AND ABBREVIATIONS ARE ASSOCIATED WITH EACH TRANSPORTATION PROJECT PLAT FOR PROJECT 5571-00-21

NOTES:

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), ROCK COUNTY, NAD83 (2011), IN U.S. 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.

ALL RIGHT-OF-WAY LINES DEPICTED IN THE NON-ACQUISITION AREAS ARE INTENDED TO RE-ESTABLISH EXISTING RIGHT-OF-WAY LINES AS DETERMINED FROM PREVIOUS PROJECTS, OTHER RECORDED DOCUMENTS, OR FROM CENTERLINE OF EXISTING PAVEMENTS.

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.

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

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

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

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

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

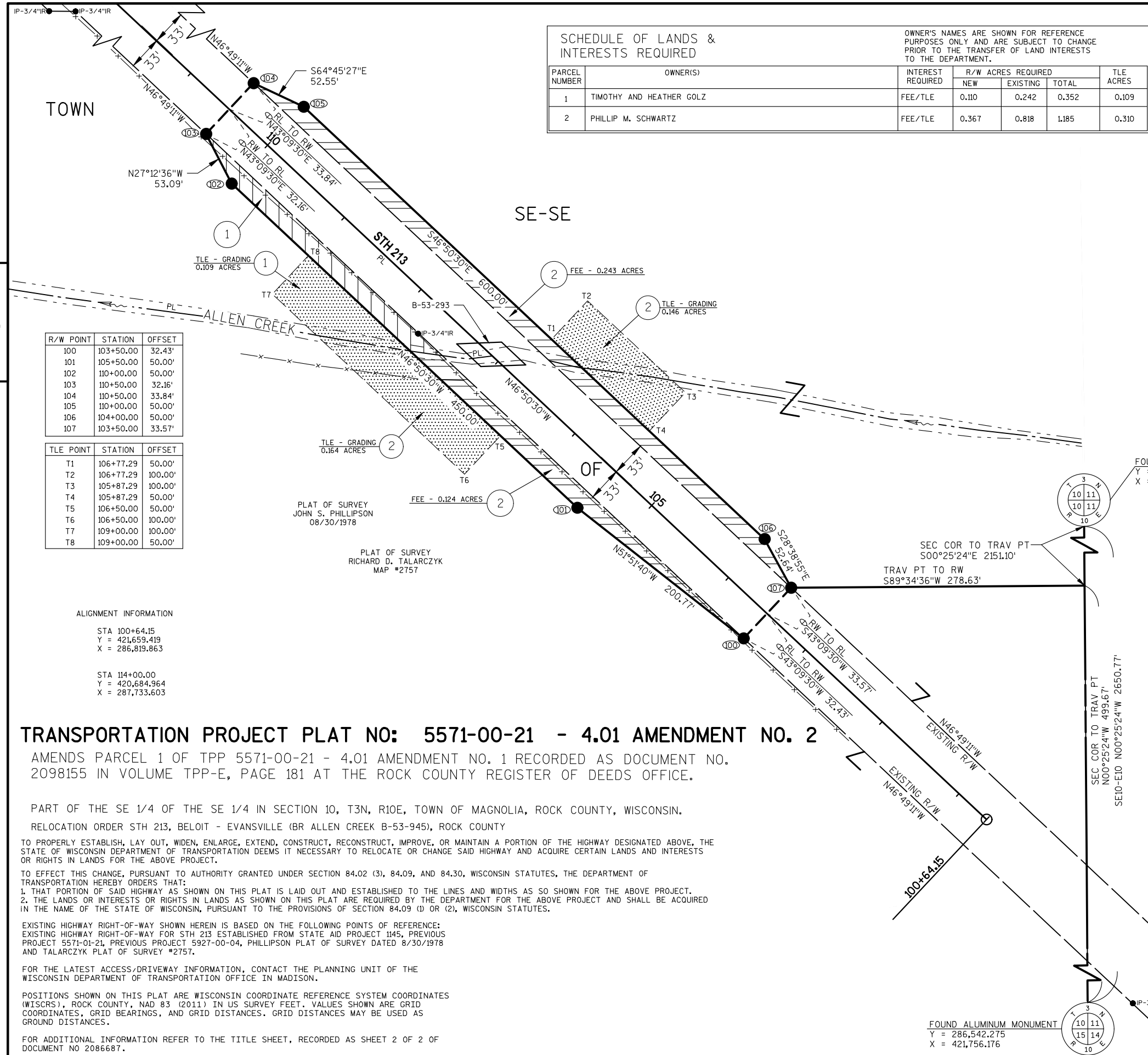
FOR THE LATEST ACCESS/DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION OFFICE IN MADISON

PARCEL IDENTIFICATION NUMBERS MAY NOT POINT TO ALL AREAS OF ACQUISITION, AS NOTED ON THE SCHEDULE OF LANDS & INTERESTS REQUIRED.

EXISTING HIGHWAY RIGHT-OF-WAY SHOWN HEREIN IS BASED ON THE FOLLOWING POINTS OF REFERENCE:

EXISTING HIGHWAY RIGHT-OF-WAY FOR STH 213 ESTABLISHED FROM STATE AID PROJECT 1145, PREVIOUS PROJECT 5571-01-21, PREVIOUS PROJECT 5927-00-04, PHILLIPSON PLAT OF SURVEY DATED 8/30/1978 AND TALARCZYK PLAT OF SURVEY #2757.

RESERVED FOR REGISTER OF DEEDS  
PROJECT NUMBER 5571-00-21 -4.01  
SHEET 2 OF 2  
AMENDMENT NO:



|                       |                |
|-----------------------|----------------|
| DATE: AUGUST 11, 2017 | REVISION DATE: |
|-----------------------|----------------|

4

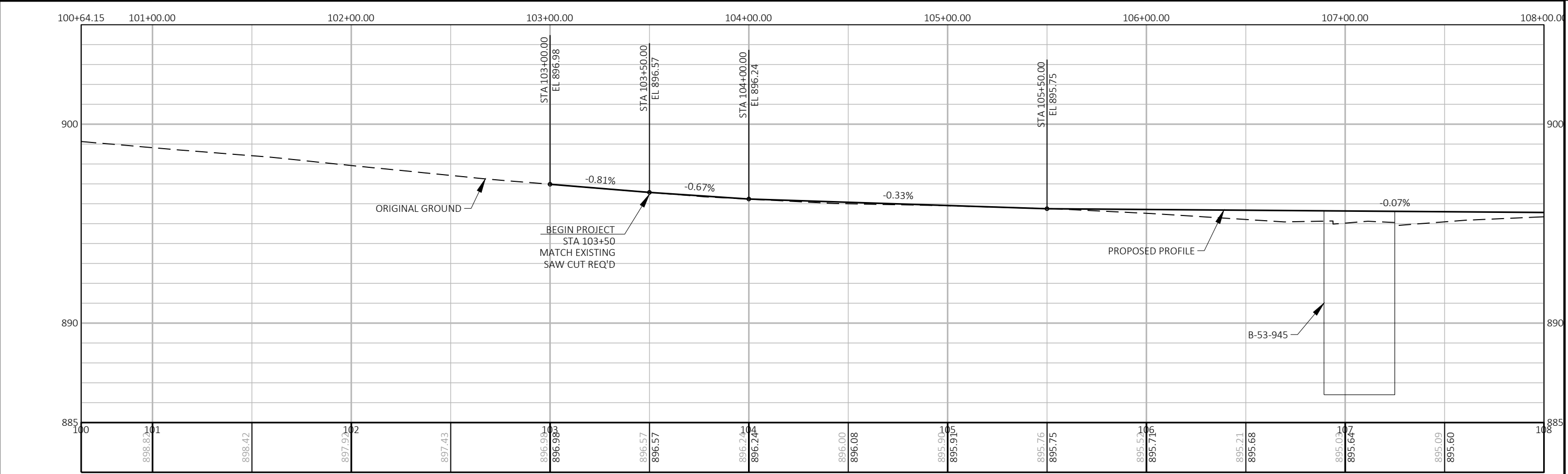
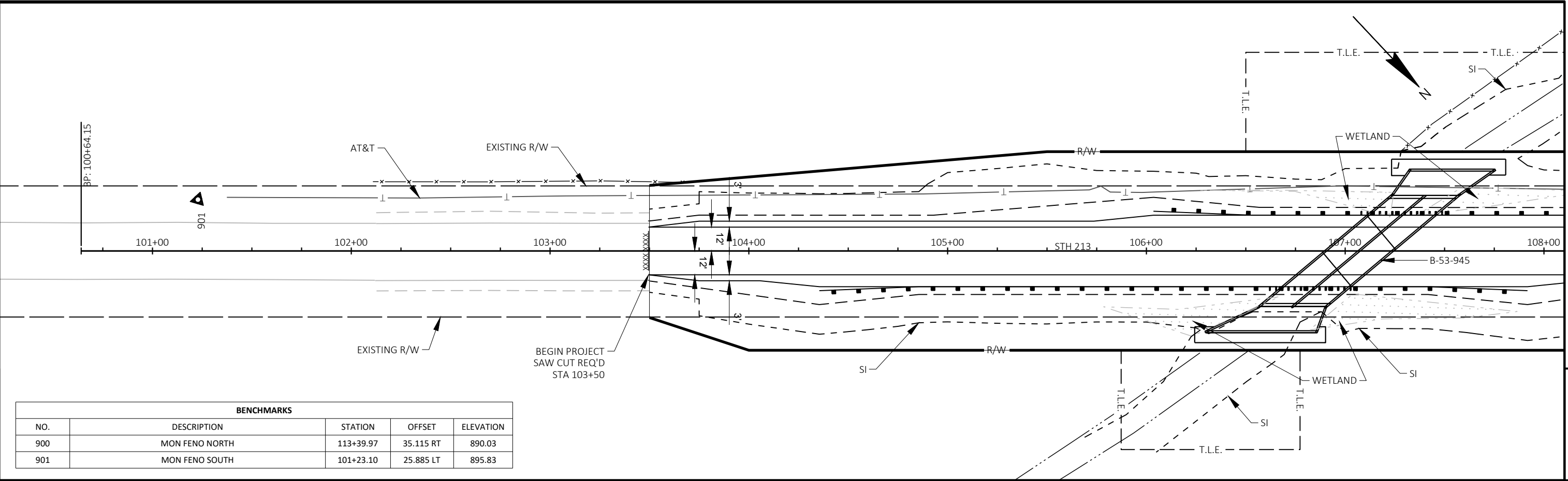
R/W MONUMENT POINT NUMBER AND COORDINATE TABLE

4

| R/W POINT | Y           | X           |
|-----------|-------------|-------------|
| 100       | 286,991.726 | 421,428.719 |
| 101       | 287,115.716 | 421,270.810 |
| 102       | 287,423.523 | 420,942.550 |
| 103       | 287,470.734 | 420,918.276 |
| 104       | 287,518.879 | 420,963.421 |
| 105       | 287,496.470 | 421,010.952 |
| 106       | 287,120.261 | 421,412.158 |
| 107       | 287,039.871 | 421,473.864 |

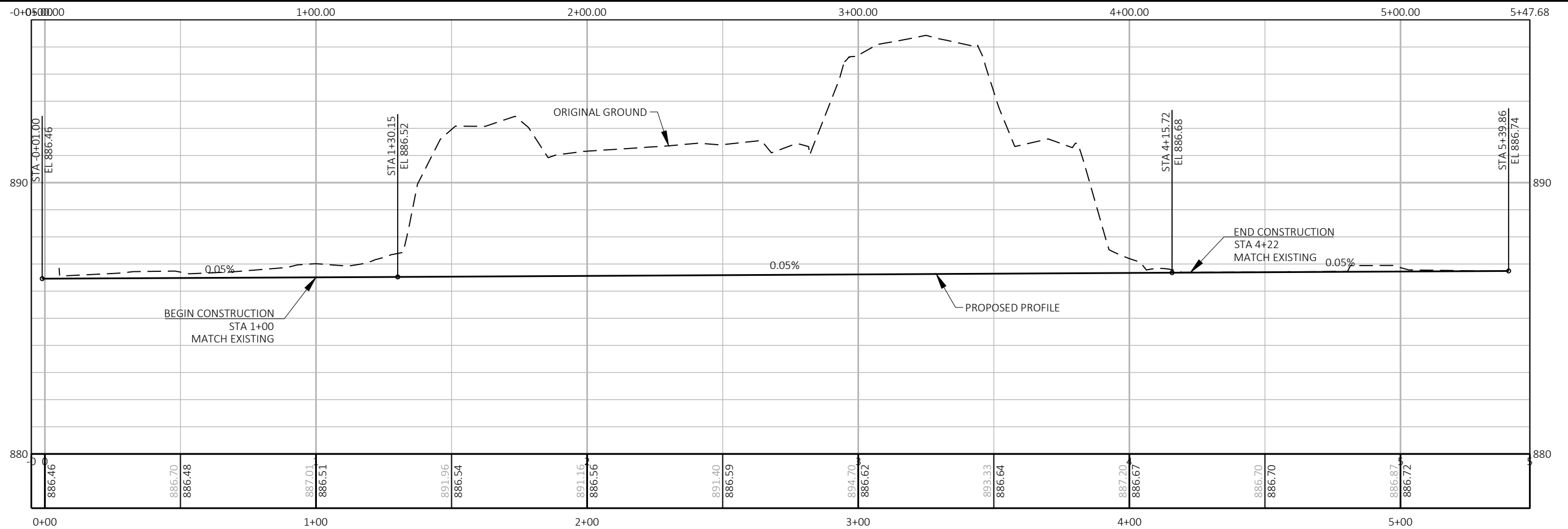
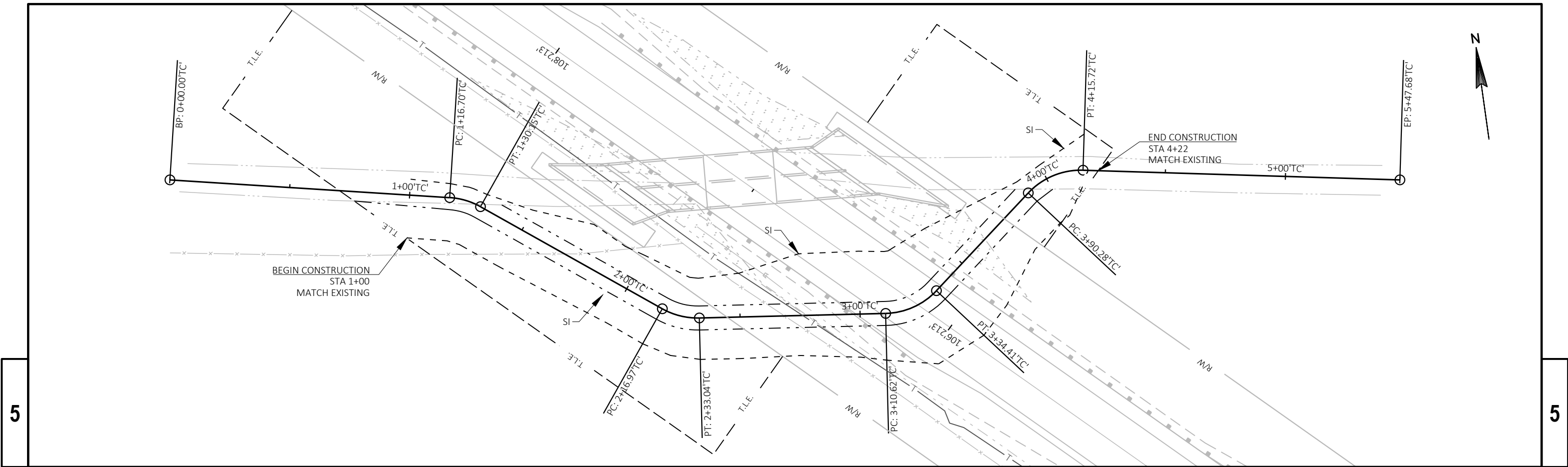
POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COORDINATE REFERENCE SYSTEM COORDINATES (WISCRS), ROCK COUNTY, NAD 83 (2011) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

| BENCHMARKS |                |           |           |           |
|------------|----------------|-----------|-----------|-----------|
| NO.        | DESCRIPTION    | STATION   | OFFSET    | ELEVATION |
| 900        | MON FENO NORTH | 113+39.97 | 35.115 RT | 890.03    |
| 901        | MON FENO SOUTH | 101+23.10 | 25.885 LT | 895.83    |

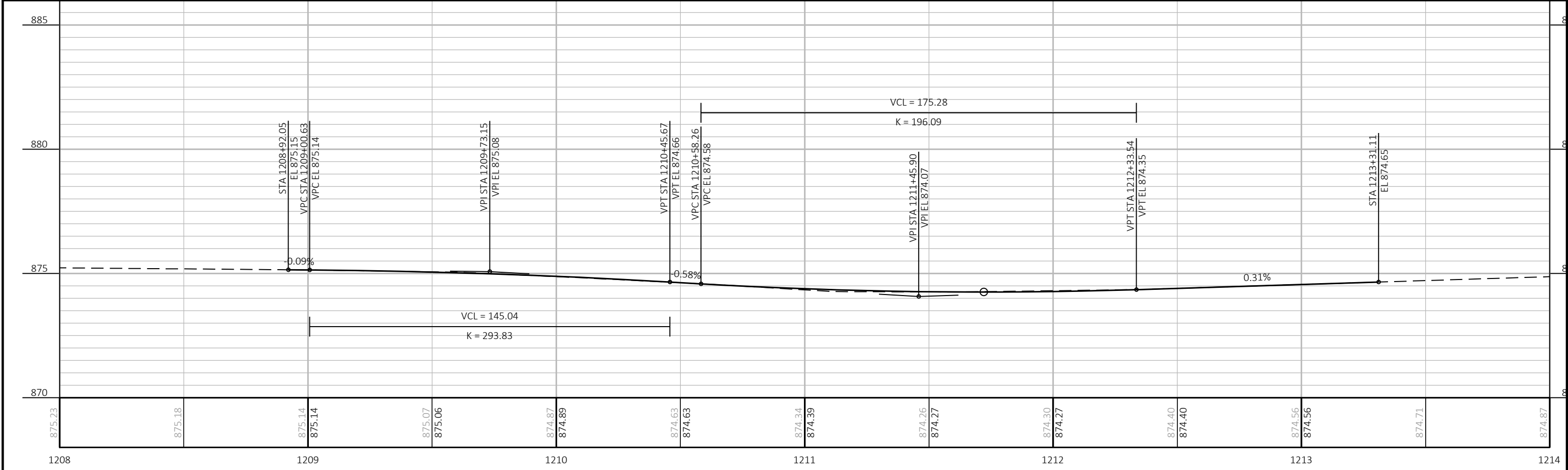
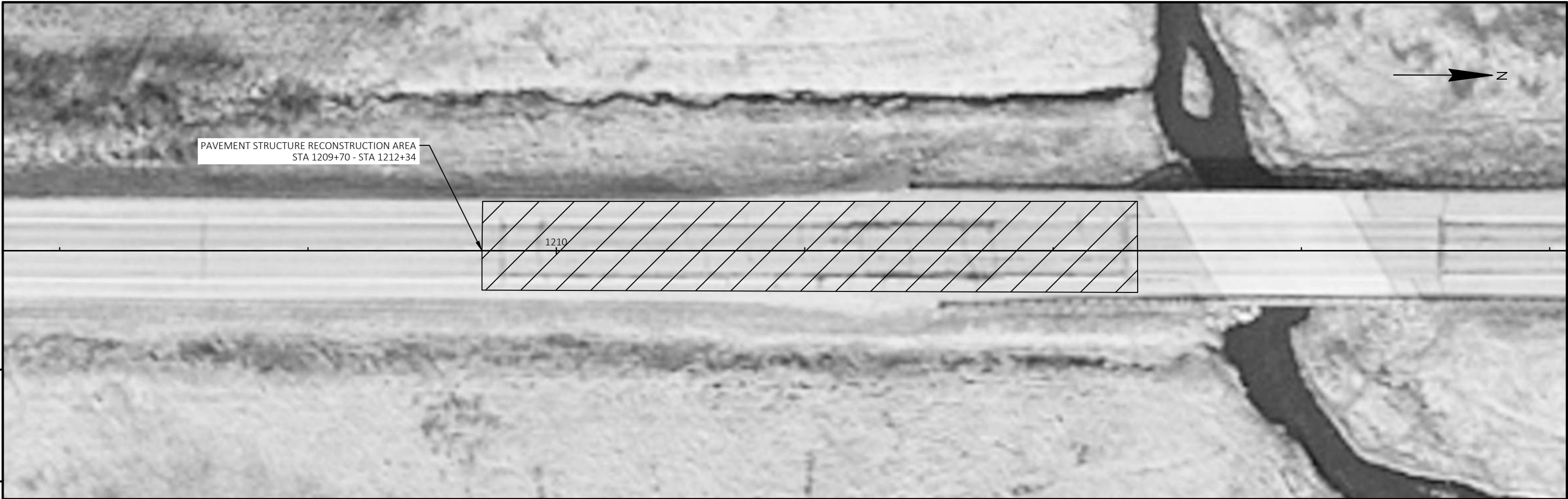








|                        |              |              |                                     |         |
|------------------------|--------------|--------------|-------------------------------------|---------|
| PROJECT NO: 5571-00-81 | HWY: STH 213 | COUNTY: ROCK | PLAN AND PROFILE: TEMPORARY CHANNEL | SHEET E |
|------------------------|--------------|--------------|-------------------------------------|---------|



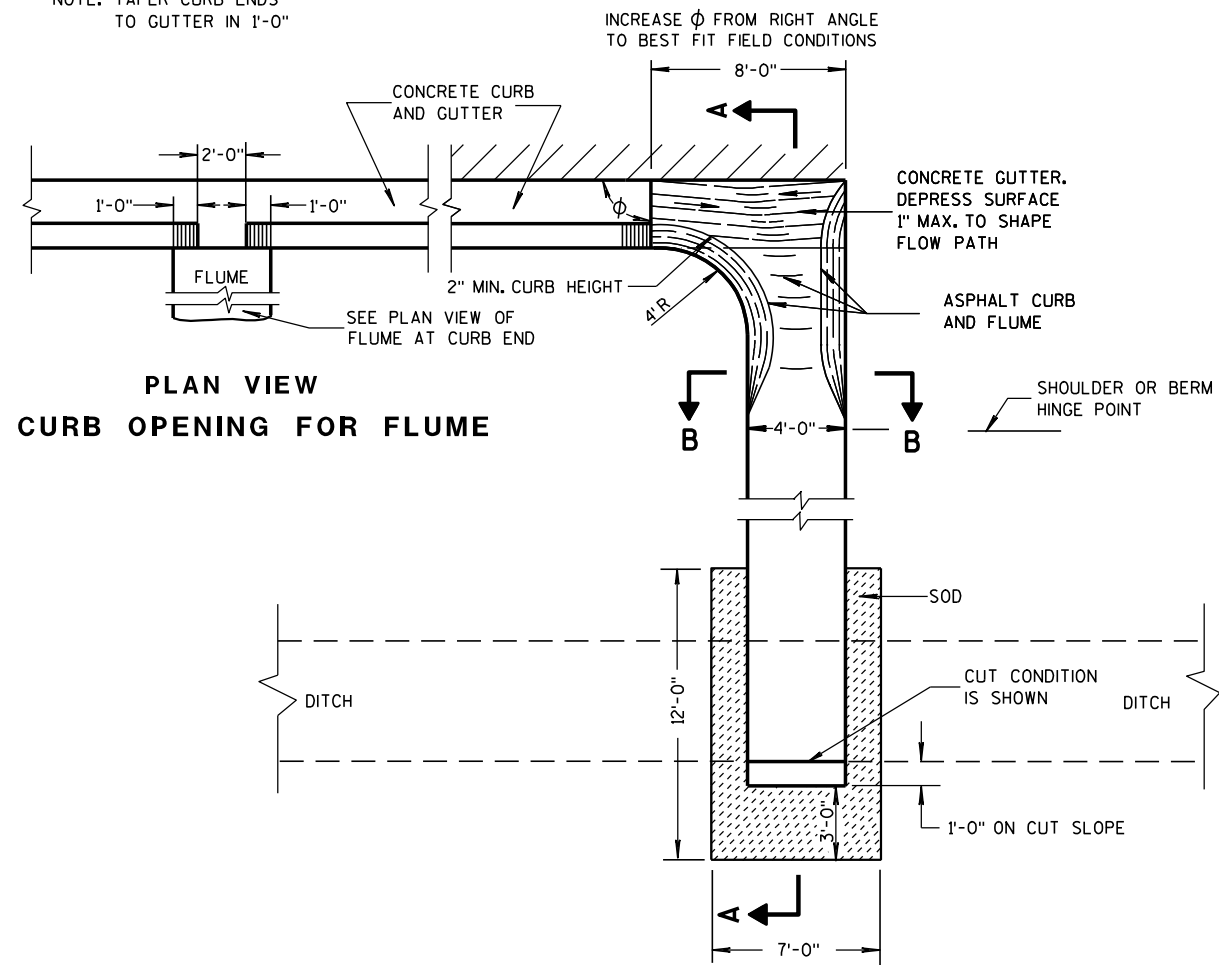
|                        |             |              |                          |       |   |
|------------------------|-------------|--------------|--------------------------|-------|---|
| PROJECT NO: 5670-03-70 | HWY: STH 59 | COUNTY: ROCK | PLAN AND PROFILE: STH 59 | SHEET | E |
|------------------------|-------------|--------------|--------------------------|-------|---|

Standard Detail Drawing List

|           |                                                                                                    |
|-----------|----------------------------------------------------------------------------------------------------|
| 08D04-05  | CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES                                                         |
| 08E08-03  | TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS                                    |
| 08E09-06  | SILT FENCE                                                                                         |
| 13A11-03A | 2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING                                                     |
| 13A11-03B | 2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING                                                     |
| 13C19-03  | HMA LONGITUDINAL JOINTS                                                                            |
| 14B42-06A | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL                                                           |
| 14B42-06B | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL                                                           |
| 14B42-06C | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL                                                           |
| 14B42-06D | 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)                                           |
| 14B51-01A | ANCHOR POST ASSEMBLY TOP-MOUNTED                                                                   |
| 14B51-01B | ANCHOR POST ASSEMBLY TOP-MOUNTED                                                                   |
| 14B51-01C | ANCHOR POST ASSEMBLY TOP-MOUNTED                                                                   |
| 15A01-13A | MARKER POST FOR RIGHT-OF-WAY                                                                       |
| 15B01-08A | FENCE WOVEN WIRE                                                                                   |
| 15B01-08B | FENCE WOVEN WIRE                                                                                   |
| 15C02-08A | BARRICADES AND SIGNS FOR MAINLINE CLOSURES                                                         |
| 15C02-08B | BARRICADES AND SIGNS FOR VARIOUS CLOSURES                                                          |
| 15C02-08C | DETOUR SIGNING FOR MAINLINE CLOSURES                                                               |
| 15C04-05  | TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC |
| 15C06-09  | SIGNING & MARKING FOR TWO LANE BRIDGES                                                             |
| 15C08-20A | LONGITUDINAL MARKING (MAINLINE)                                                                    |
| 15C08-20C | PAVEMENT MARKING (TURN LANES)                                                                      |
| 15C12-07  | TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION                                           |
| 15C19-06A | MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY                                         |
| 15C35-04A | PAVEMENT MARKING (INTERSECTIONS)                                                                   |
| 15D38-02A | TEMPORARY TRAFFIC CONTROL SIGN MOUNTING                                                            |
| 15D38-02B | ATTACHMENT OF SIGNS TO POSTS                                                                       |
| 16A01-07  | LANDMARK REFERENCE MONUMENTS AND COVERS                                                            |

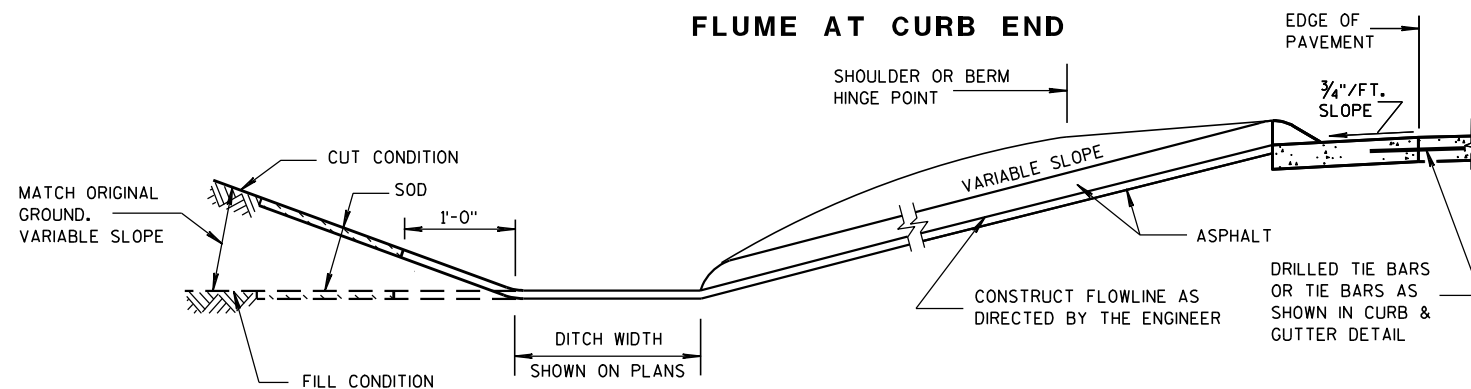
## ASPHALTIC FLUME

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

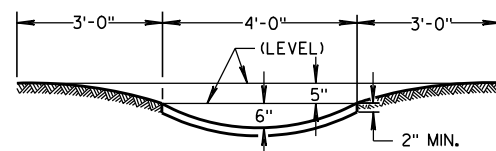


PLAN VIEW  
CURB OPENING FOR FLUME

PLAN VIEW  
FLUME AT CURB END



SECTION A-A



SECTION B-B

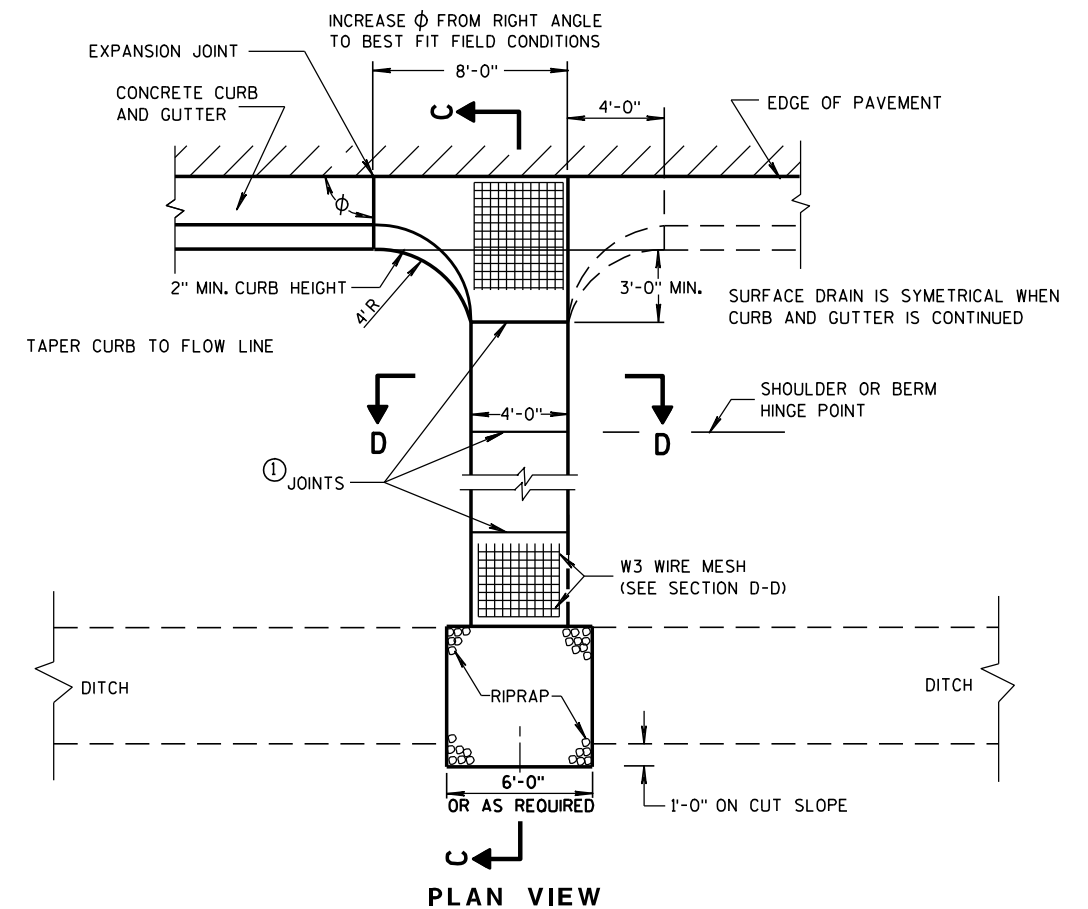
## GENERAL NOTES

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

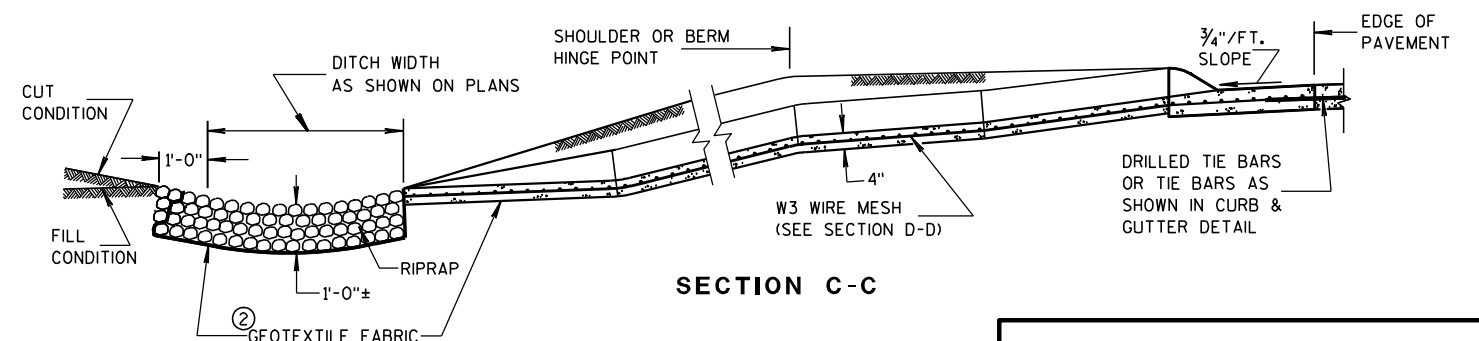
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

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

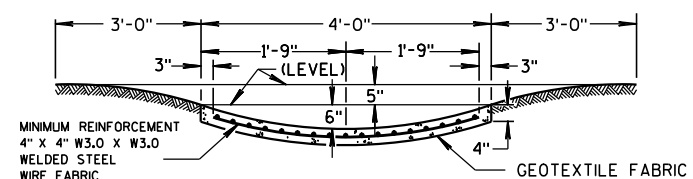
## ③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

## CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

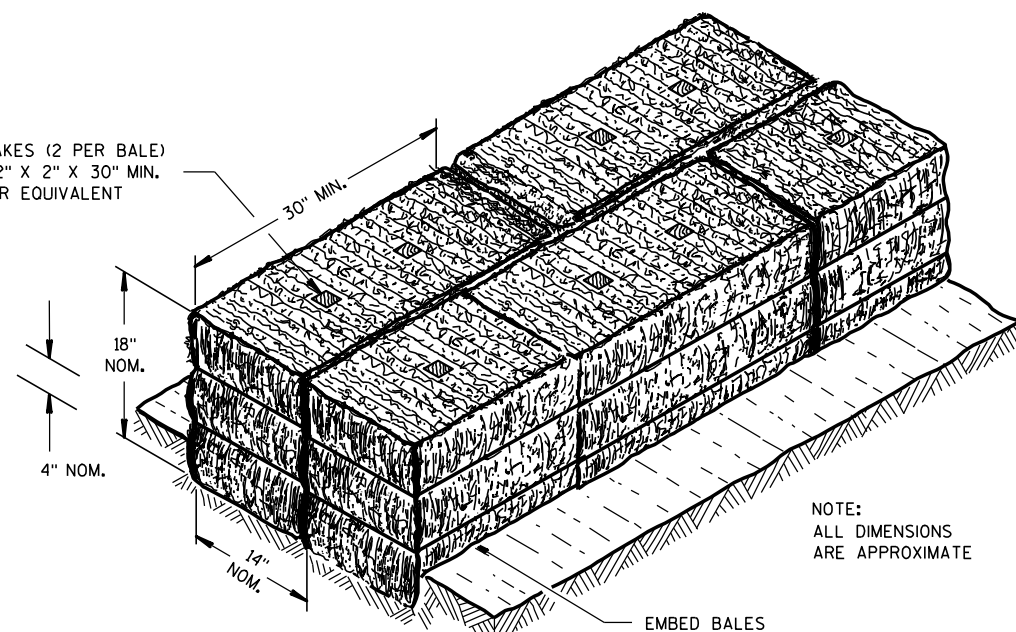
9-4-08

DATE

FHWA

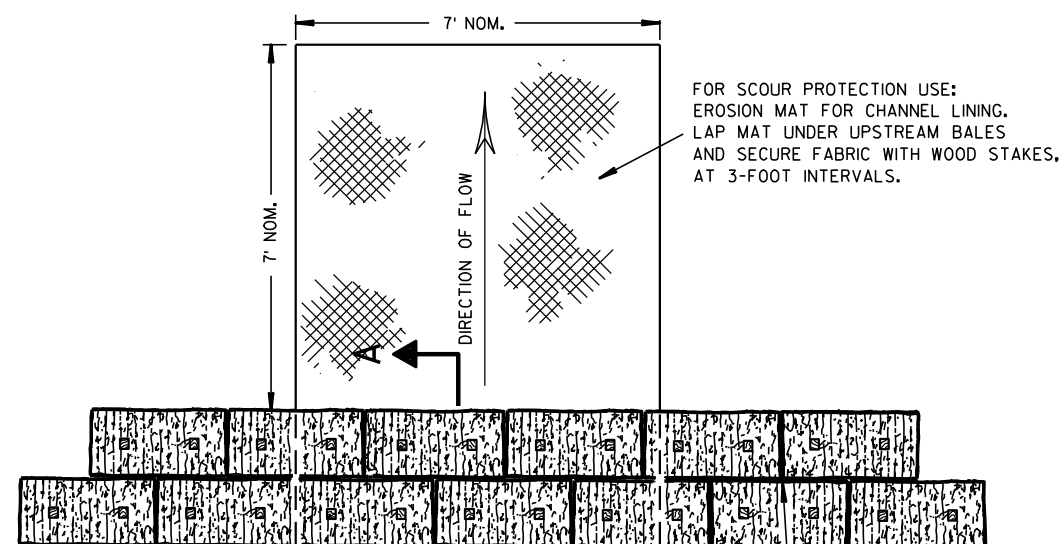
/S/ Jerry H. Zogg  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER

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



NOTE:  
ALL DIMENSIONS  
ARE APPROXIMATE

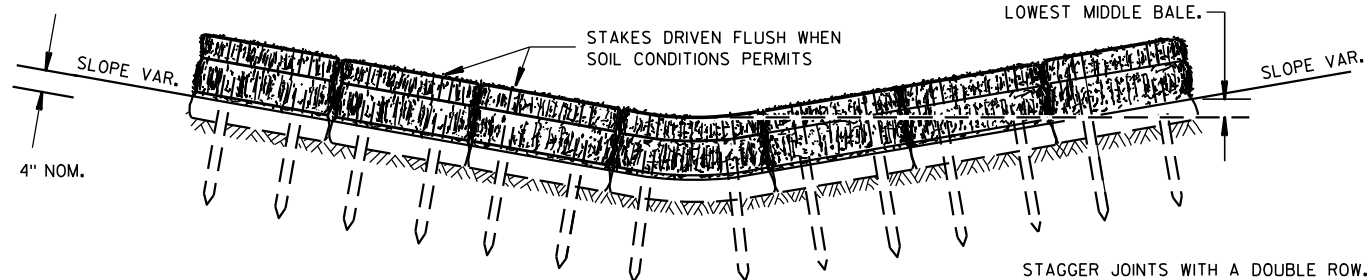
SECTION A-A



PLAN VIEW

STAGGER JOINTS BETWEEN ADJACENT  
ROWS OF BALES.

BOTTOM ELEVATION OF END BALE SHALL  
BE EQUAL TO OR GREATER THAN TOP OF  
LOWEST MIDDLE BALE.



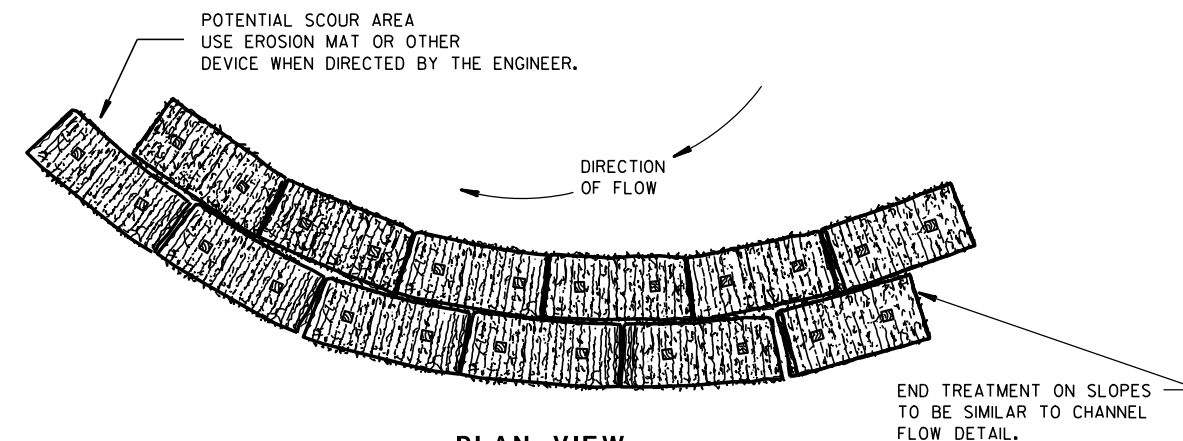
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

## GENERAL NOTES

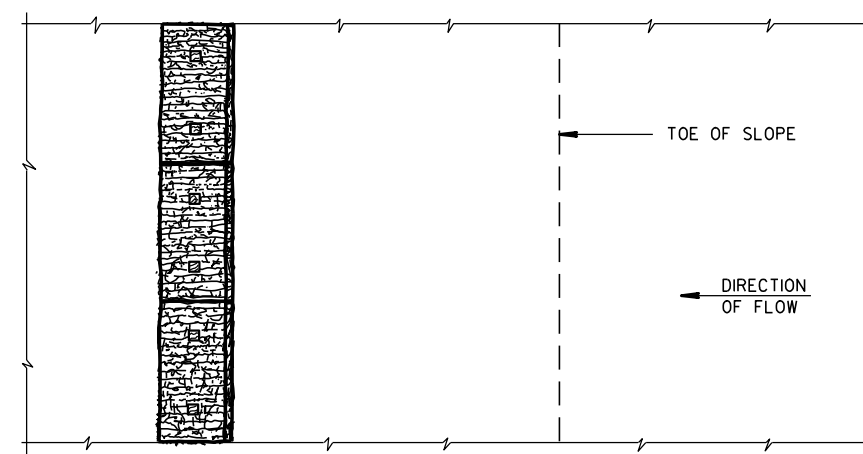
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

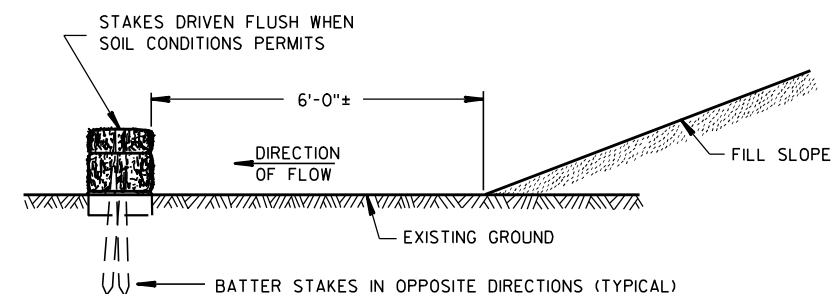


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF  
EROSION BALES / TEMPORARY  
DITCH CHECKS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02  
DATE

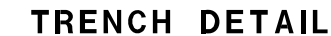
FHWA

/S/ Beth Canestra  
CHIEF ROADWAY DEVELOPMENT ENGINEER

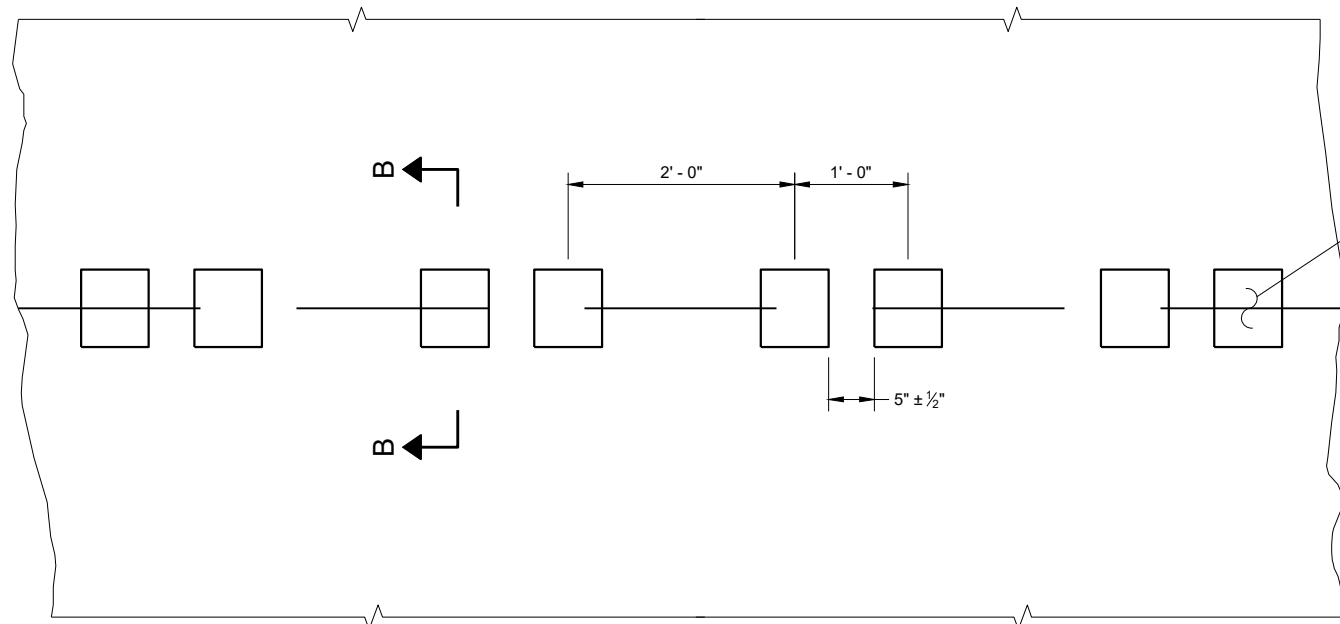




- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS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



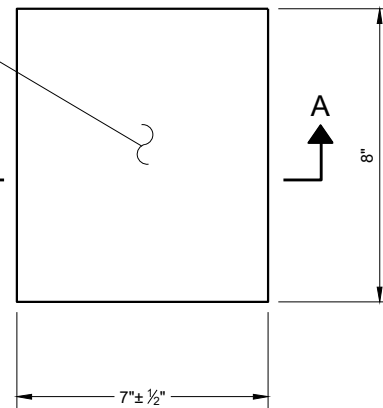
|                                                                                                   |                                                                                         |
|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------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



PLAN VIEW  
SHOULDER WITH GROOVES

6

PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP



PLAN VIEW  
(SINGLE GROOVE)

GENERAL NOTES

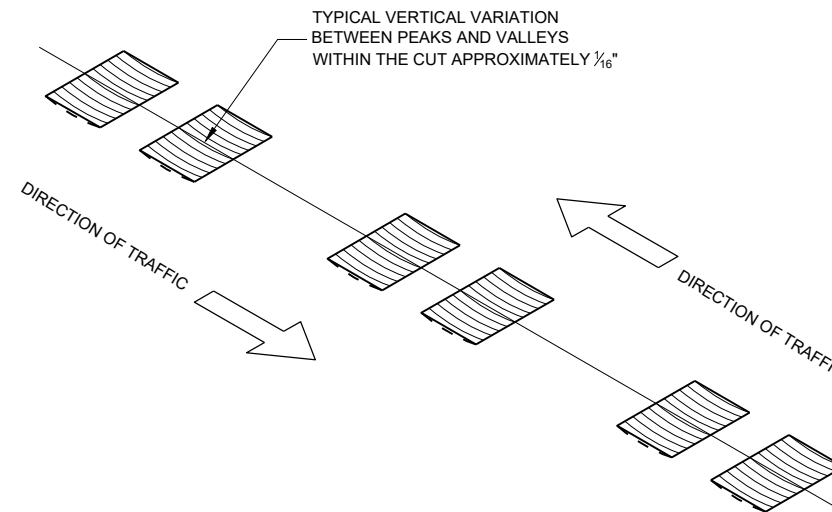
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

DO NOT MILL CENTERLINE GROOVES THROUGH ANY INTERSECTION, MARKED CROSSWALK, NON-MOTORIZED PATH CROSSING, OR SNOWMOBILE CROSSING.

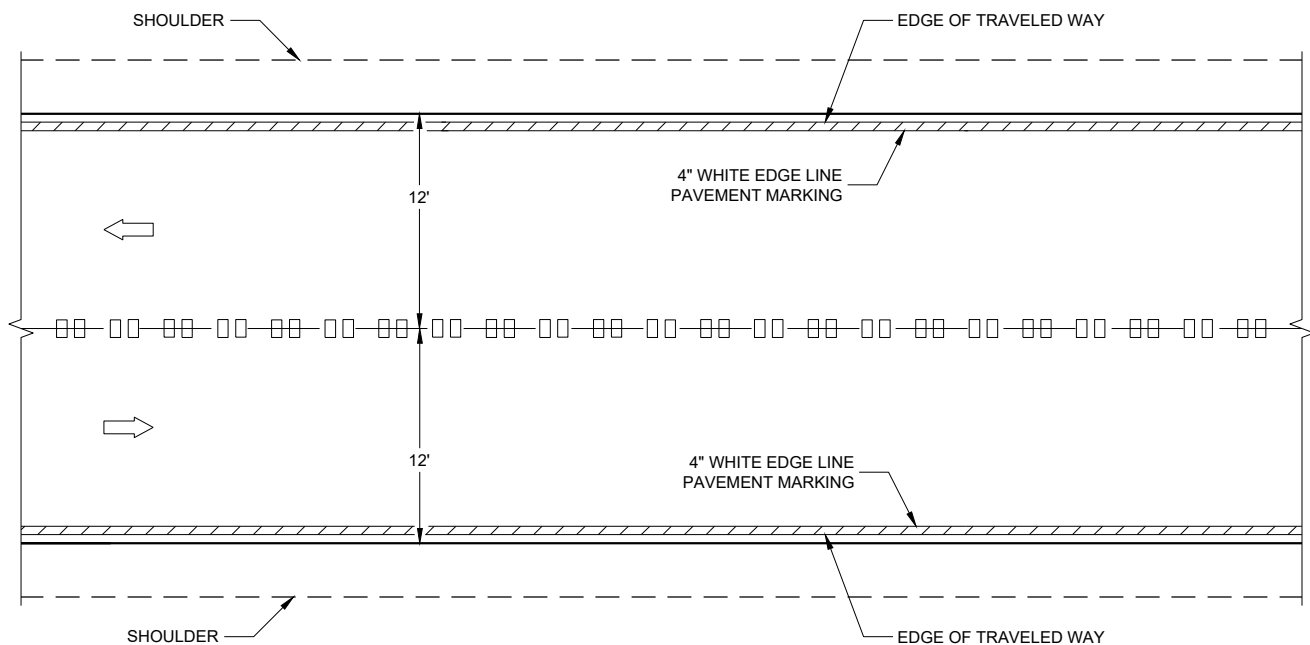
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

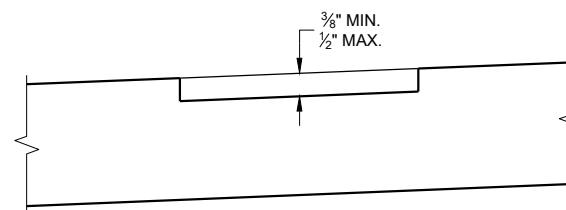
- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



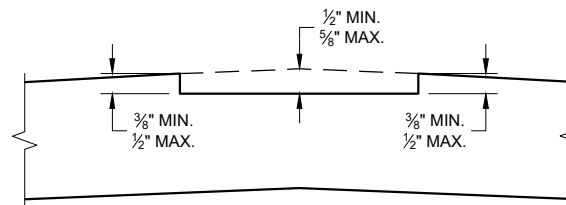
ISOMETRIC



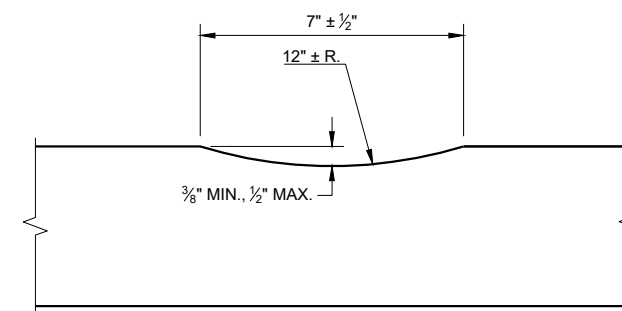
CENTERLINE GROOVES ON TWO-WAY ROADWAYS



SECTION B - B  
SUPERELEVATED ROADWAY



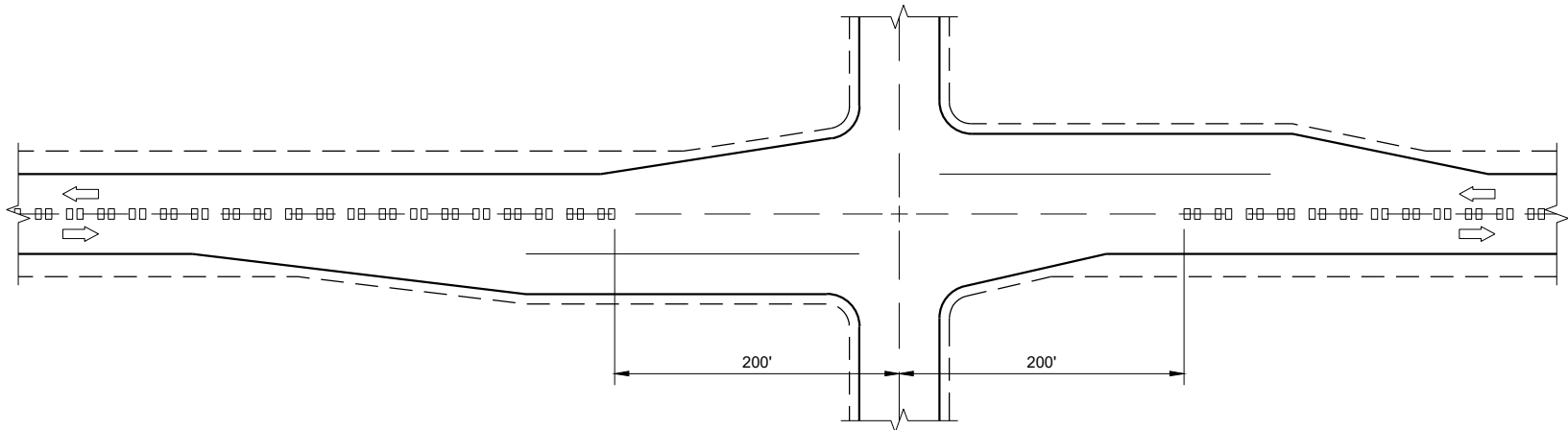
SECTION B - B  
CROWNED ROADWAY



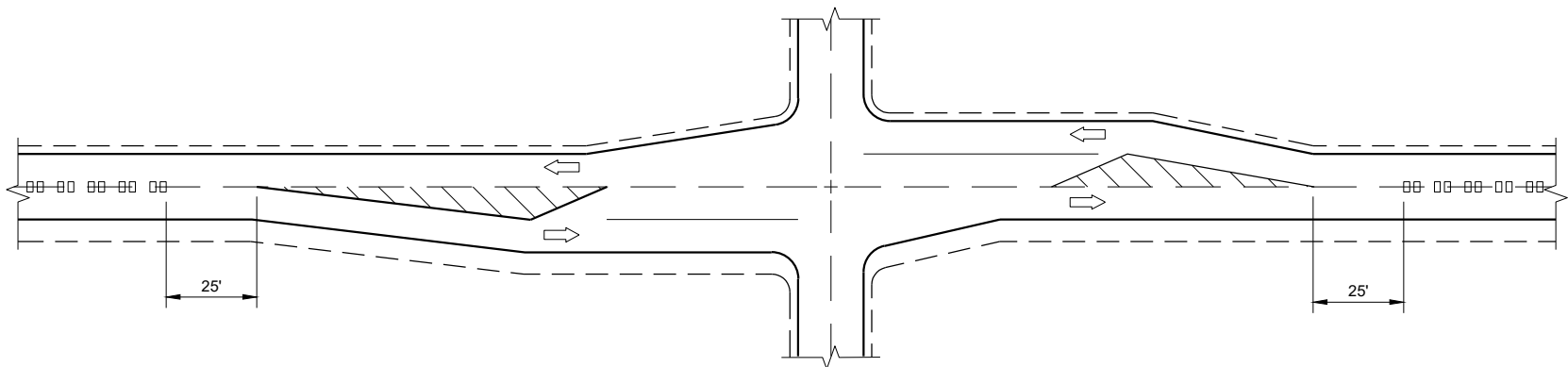
SECTION A - A

**2-LANE RURAL  
CENTER LINE RUMBLE STRIP,  
MILLING**

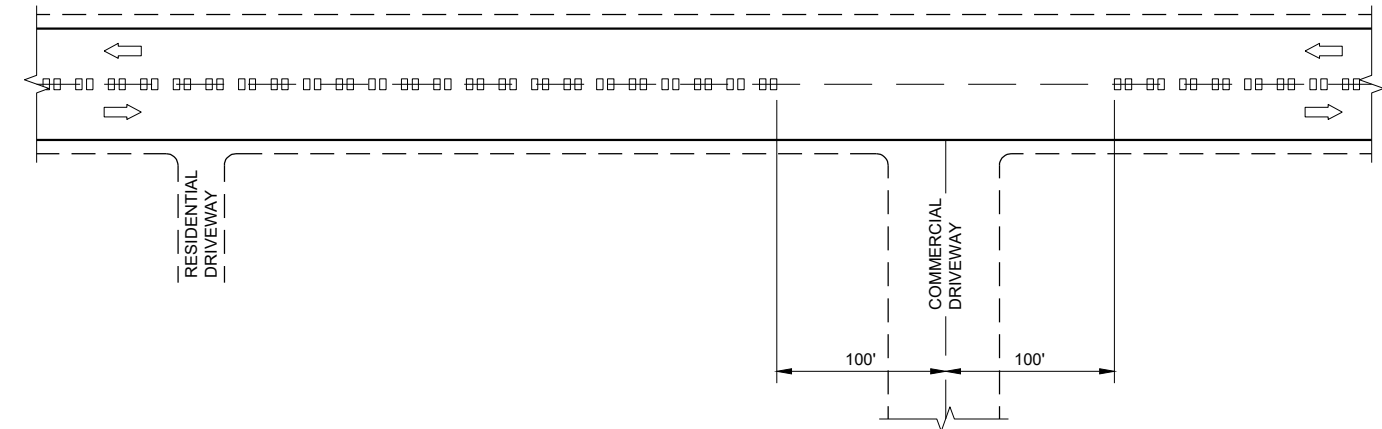
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



CENTERLINE GROOVES AT INTERSECTIONS



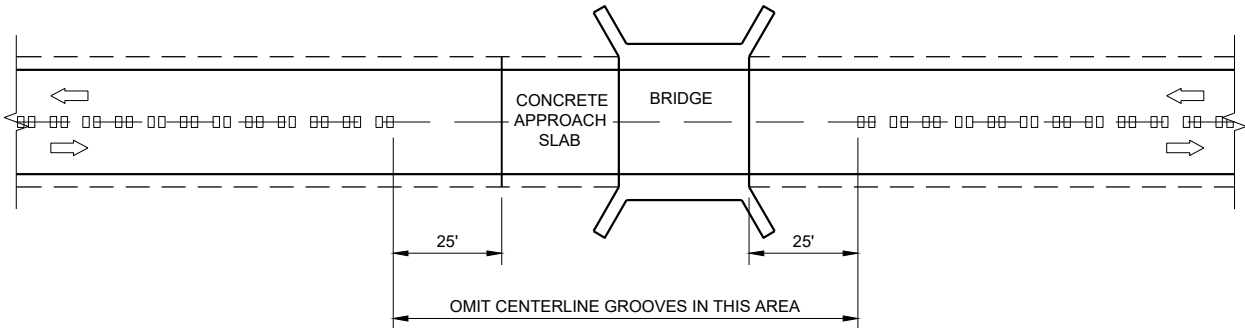
CENTERLINE GROOVES AT INTERSECTIONS  
(WITH LEFT TURN LANES)



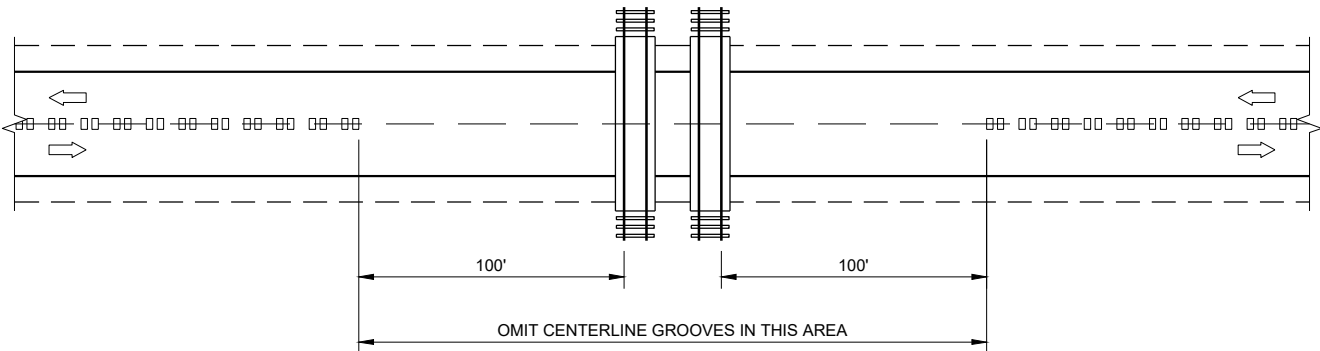
CENTERLINE GROOVES AT DRIVEWAYS<sup>①</sup>

GENERAL NOTES

- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



CENTERLINE GROOVES AT BRIDGES



CENTERLINE GROOVES AT RAILROADS

2-LANE RURAL  
CENTERLINE RUMBLE STRIP,  
MILLING

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

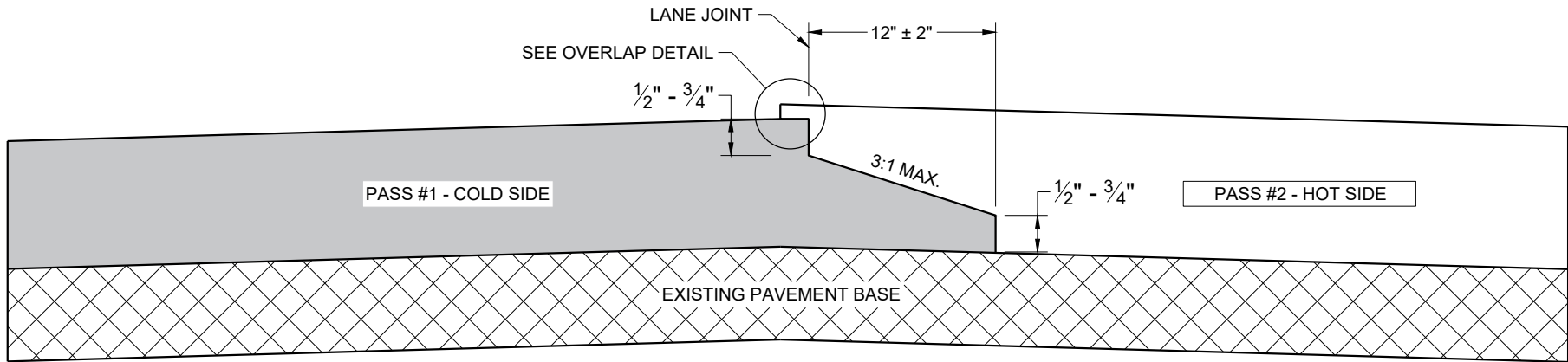
APPROVED

7/2018

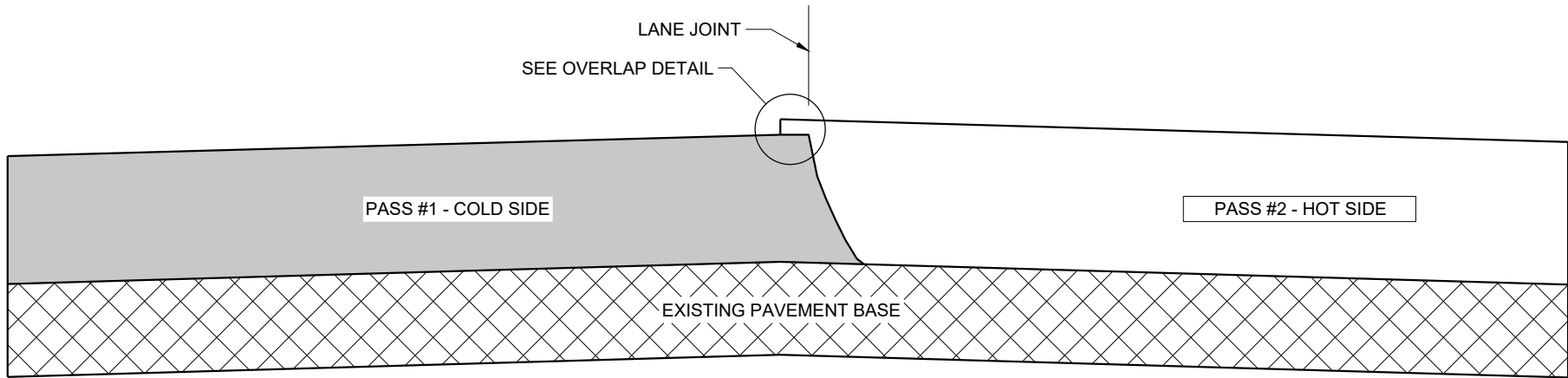
DATE

FHWA

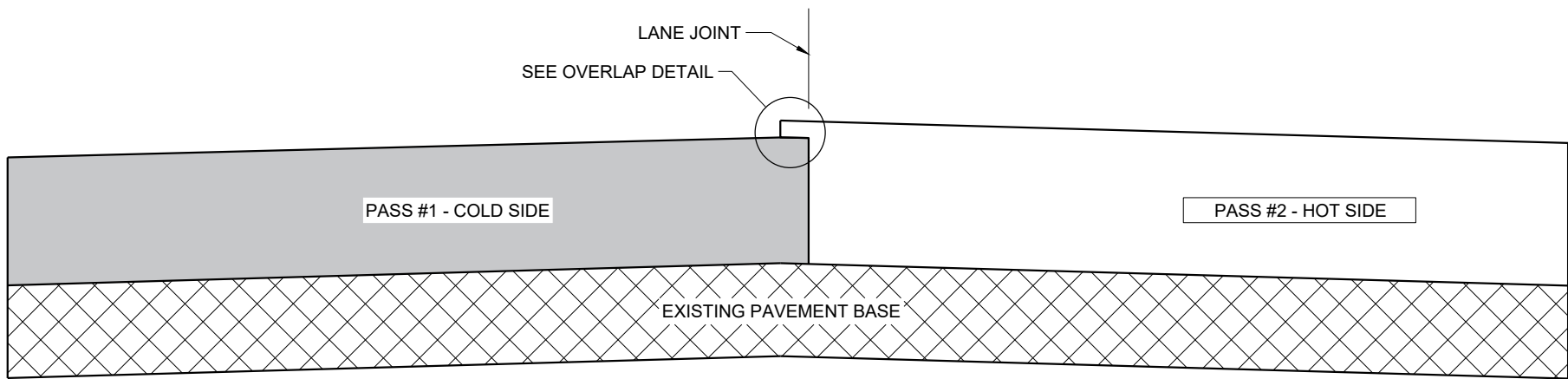
/S/ Rodney Taylor  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER



**TYPICAL PAVEMENT CROSS SECTION  
NOTCHED WEDGE JOINT**



**TYPICAL PAVEMENT CROSS SECTION  
VERTICAL JOINT**



**TYPICAL PAVEMENT CROSS SECTION  
VERTICAL JOINT (MILLED)**

**GENERAL NOTES**

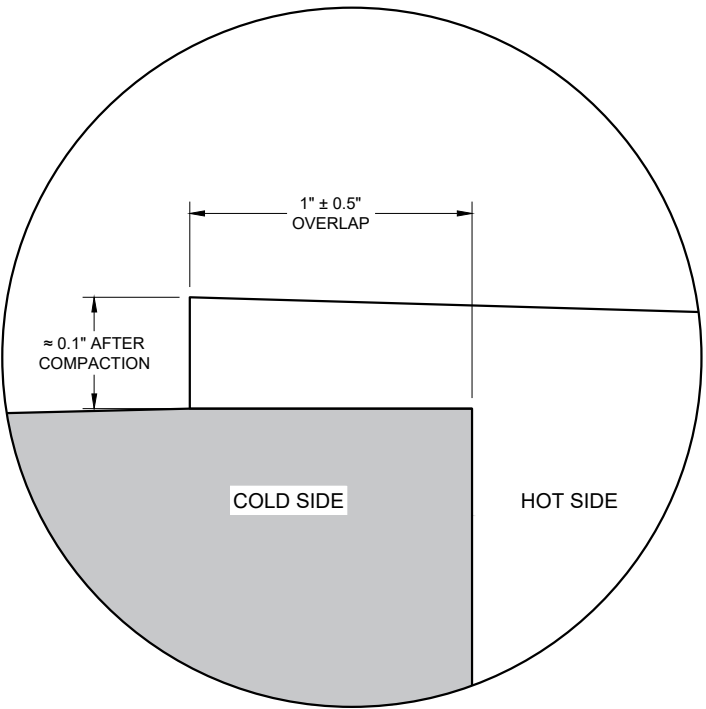
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

FOR ALL LONGITUDINAL JOINTS, ENSURE THE PAVER SCREED OVERLAPS THE PREVIOUSLY PLACED PAVEMENT BY 1" ± 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.



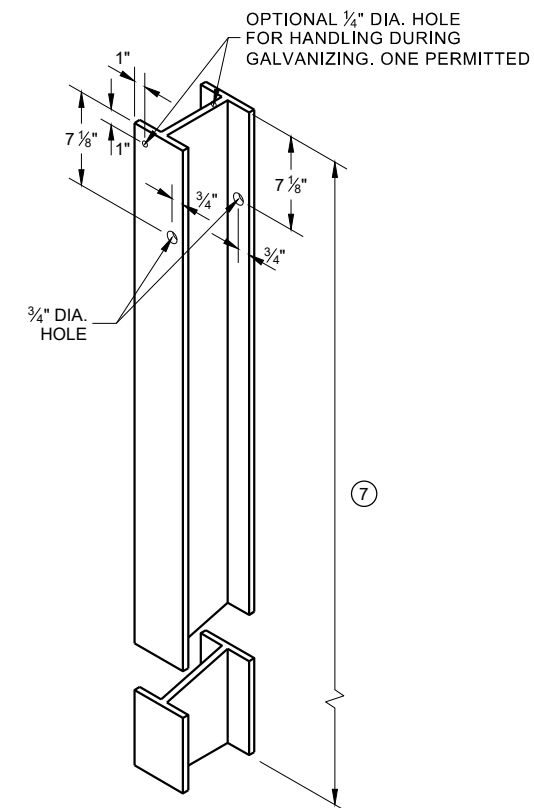
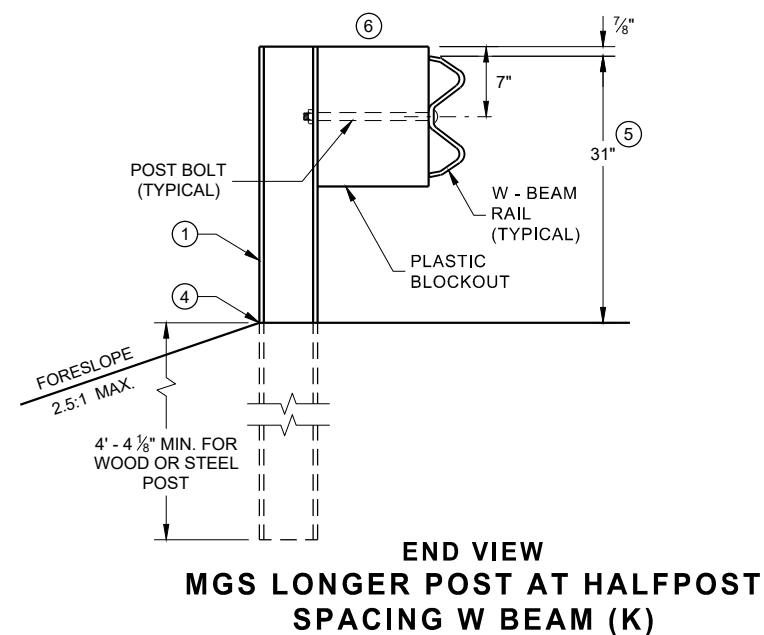
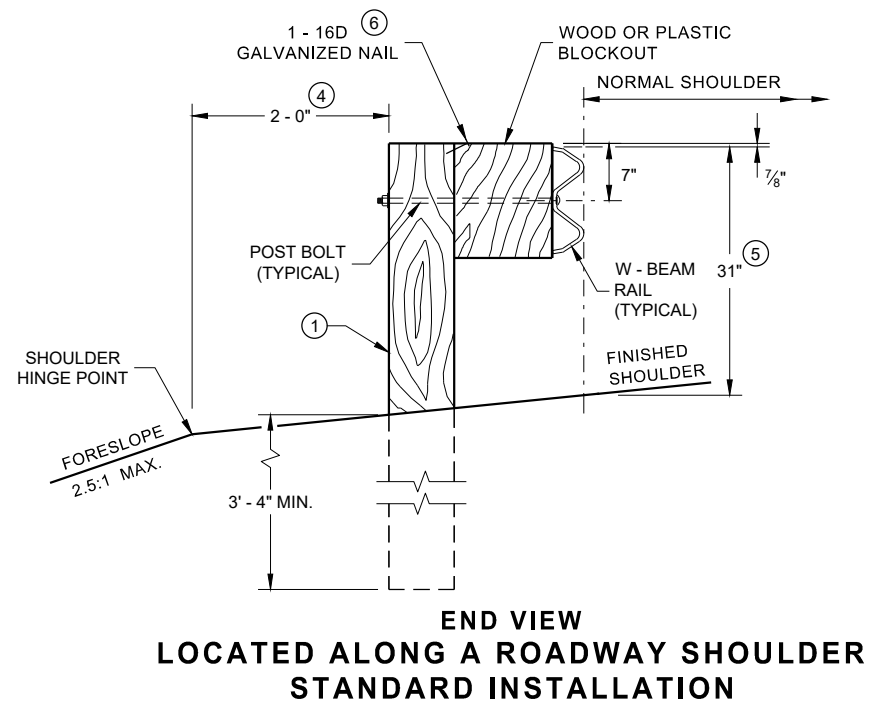
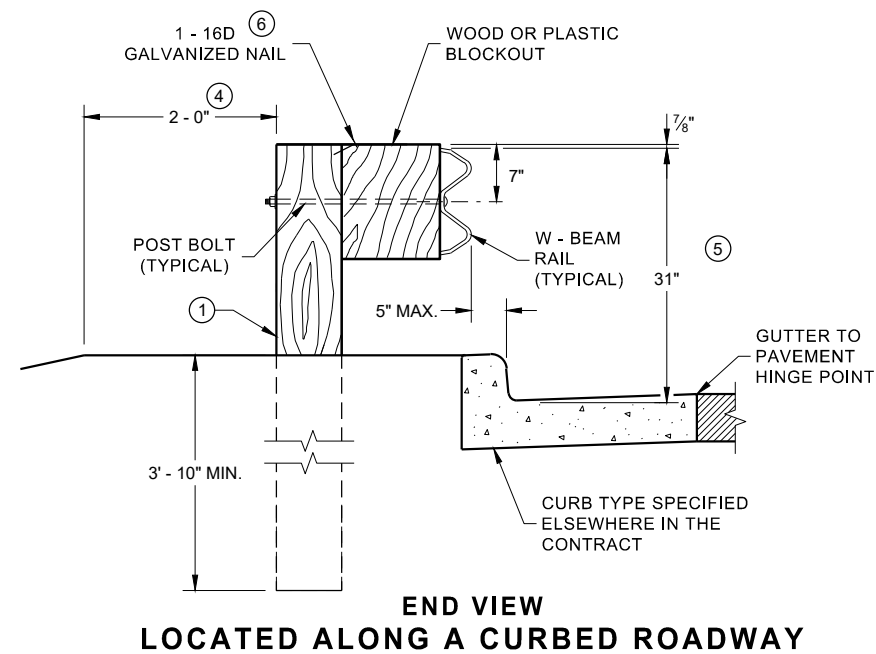
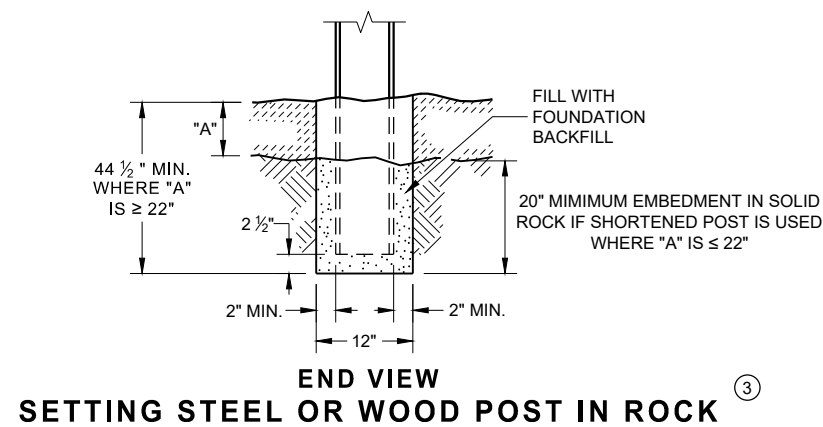
**OVERLAP DETAIL (TYPICAL)**

**HMA LONGITUDINAL JOINTS**

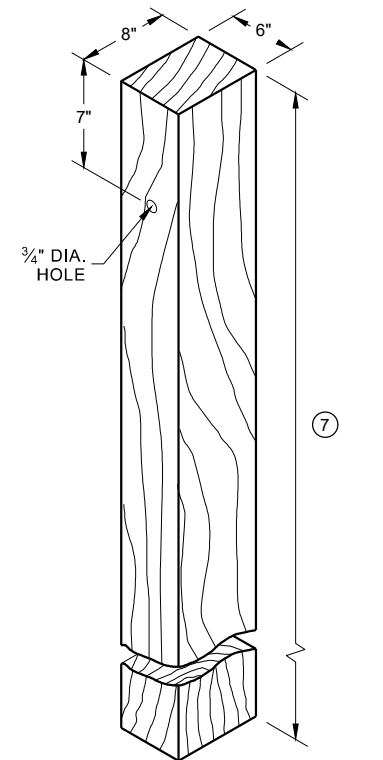
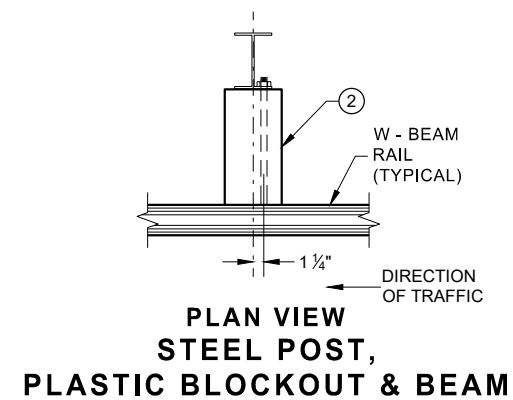
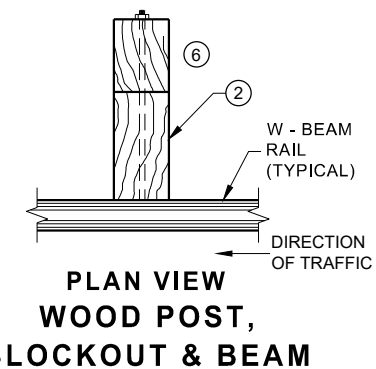
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

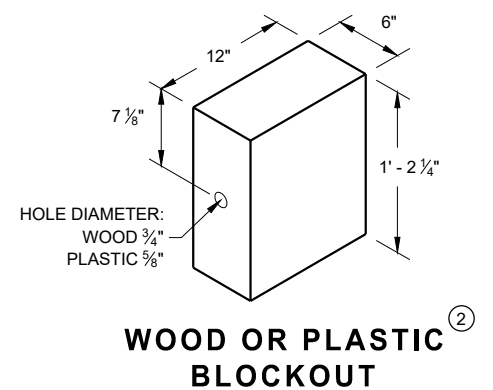
- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. 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 +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".

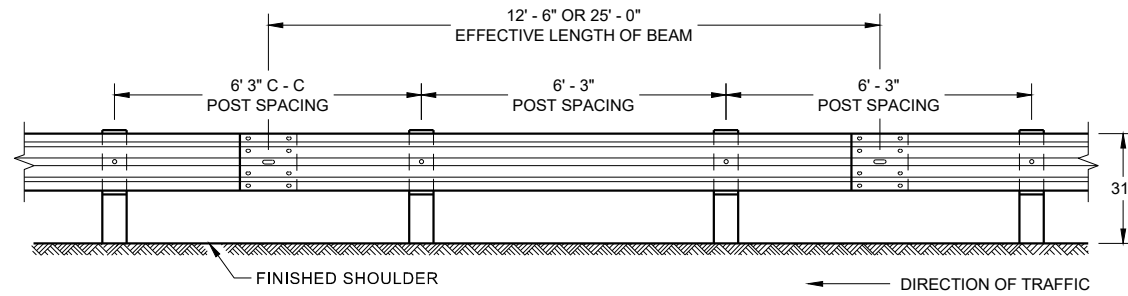


**STEEL POST & HOLE  
PUNCHING DETAIL  
(W 6 X 9) ①**

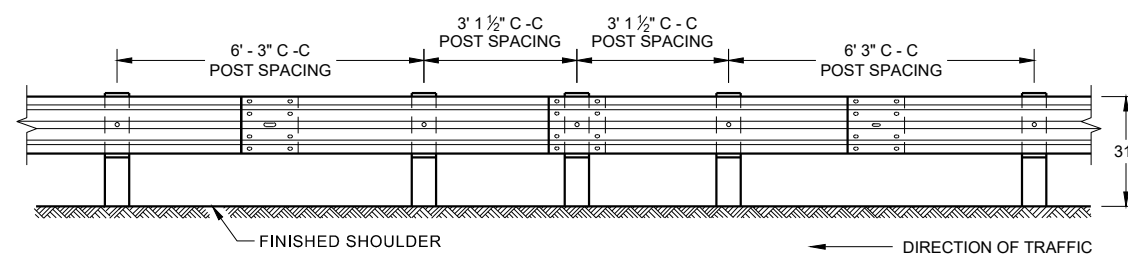


**WOOD POST (6" X 8") NOMINAL** <sup>(1)</sup>

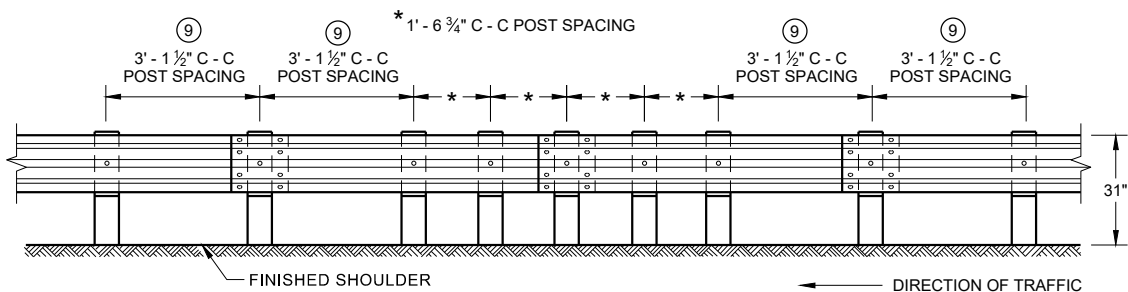




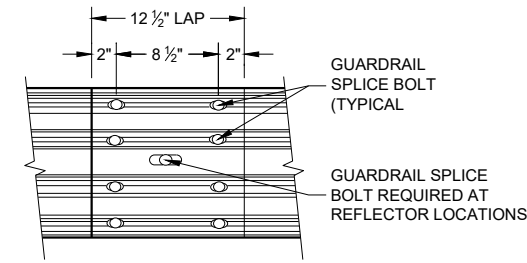
**FRONT VIEW  
POST SPACING STANDARD INSTALLATION**



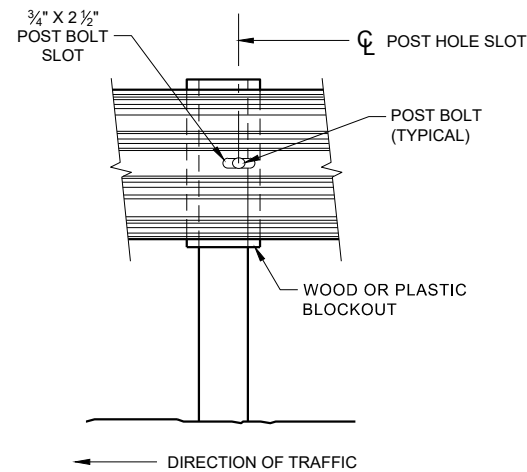
**FRONT VIEW  
HALF POST SPACING (HS) AND  
HALF POST SPACING WITH LONGER POSTS (K)**



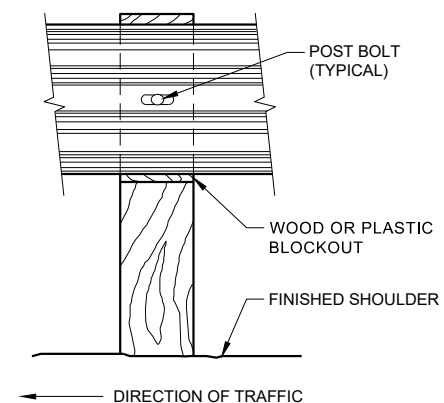
**FRONT VIEW  
QUARTER POST SPACING (QS)**



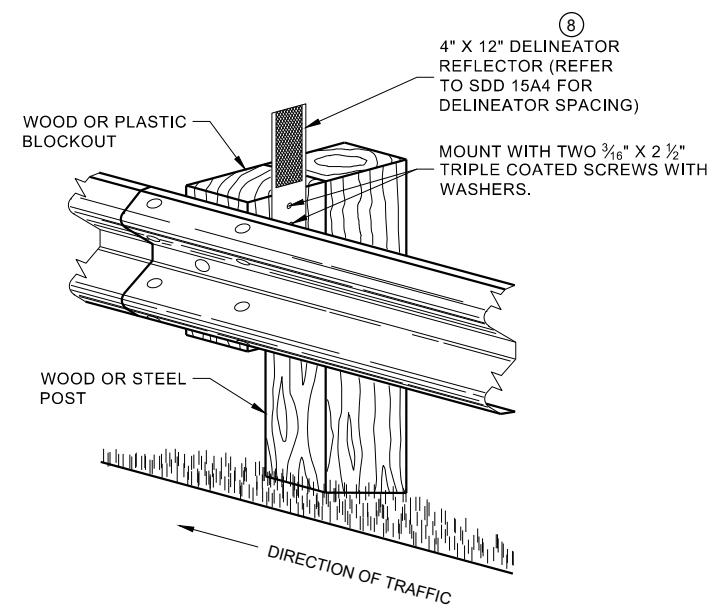
**FRONT VIEW  
MID-SPAN BEAM SPLICE**



**FRONT VIEW AT STEEL POST**



**FRONT VIEW AT WOOD POST**



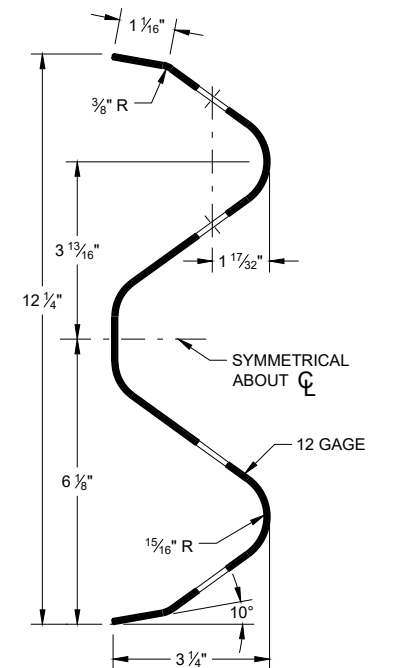
**ONE SIDED REFLECTOR DETAIL  
AND TYPICAL INSTALLATION**

## 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 3/4" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/4" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

GUARD RAIL SPLICE BOLTS ARE A 3/4" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

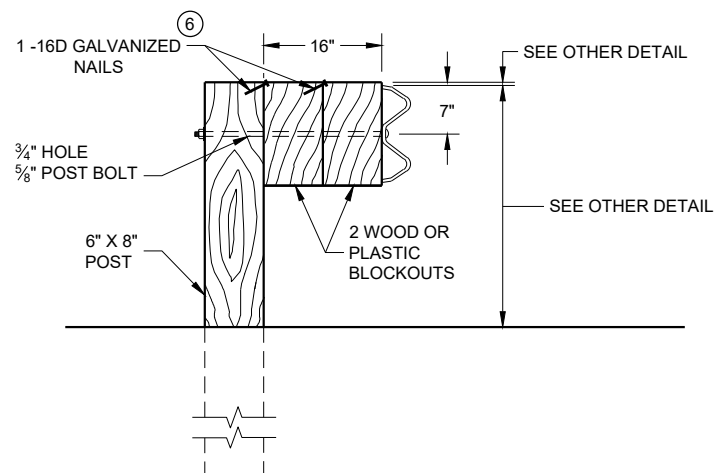


**SECTION THRU W-BEAM RAIL**

**MIDWEST GUARDRAIL SYSTEM  
(MGS) GUARDRAIL**

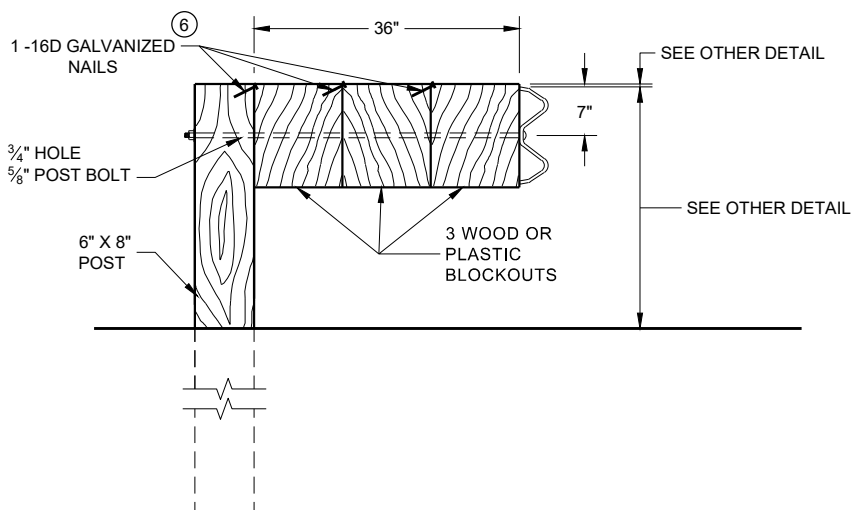
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION





### DETAIL FOR 16" BLOCKOUT DEPTH

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



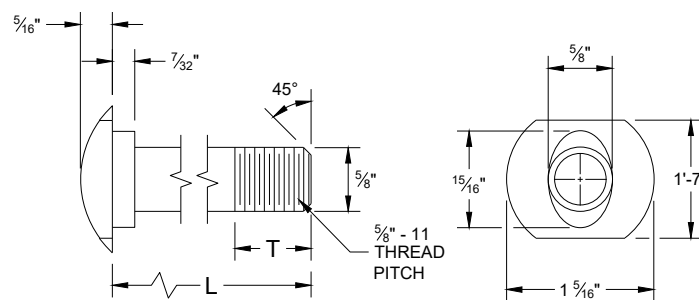
### DETAIL FOR 36" BLOCKOUT DEPTH

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

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

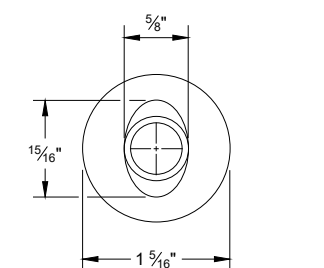
#### NOTE:

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

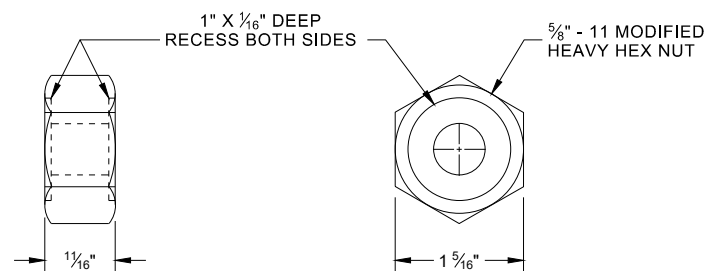


### POST BOLT TABLE

| L      | T (MIN.) |
|--------|----------|
| 1 1/4" | 1 1/8"   |
| 2"     | 1 3/4"   |
| 10"    | 4"       |
| 14"    | 4 1/16"  |
| 18"    | 4"       |
| 21"    | 4 1/16"  |
| 25"    | 4"       |

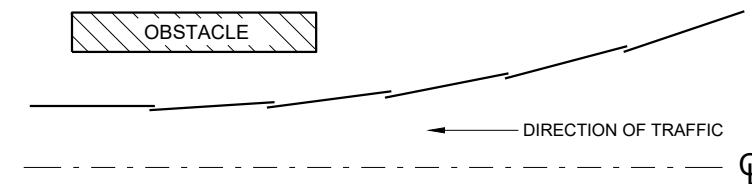


### ALTERNATE BOLT HEAD

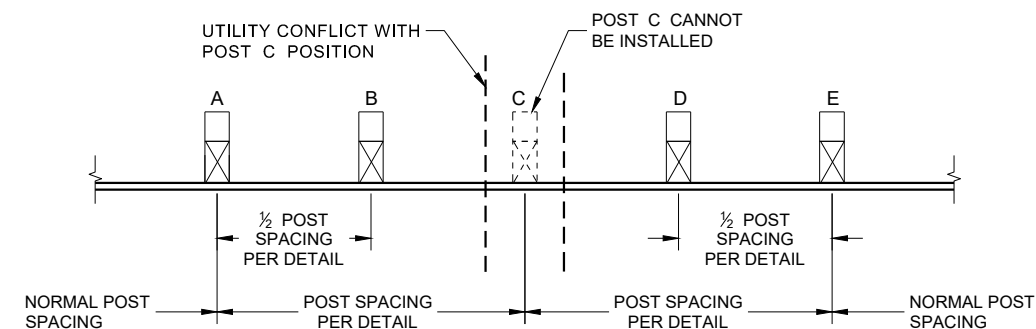


### POST BOLT, SPLICE BOLT AND RECESS NUT

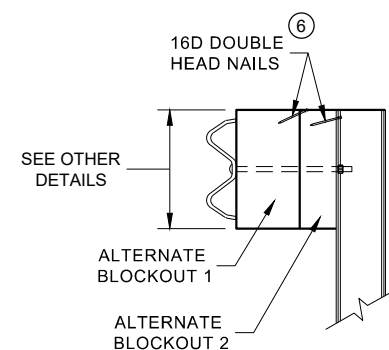
- ⑥ WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



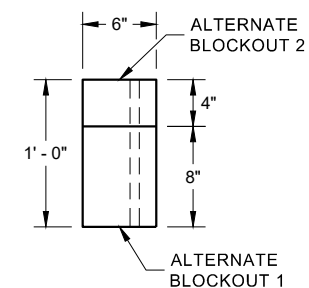
### PLAN VIEW BEAM LAPPING DETAIL



### POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



### SIDE VIEW

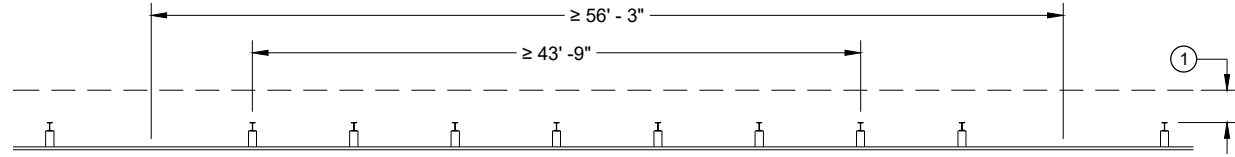


### PLAN VIEW

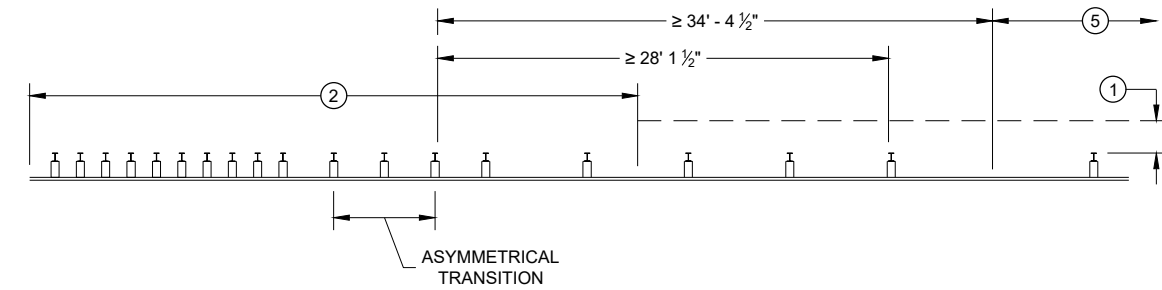
### ALTERNATE WOOD BLOCKOUT DETAIL

**MIDWEST GUARDRAIL SYSTEM  
(MGS) GUARDRAIL**

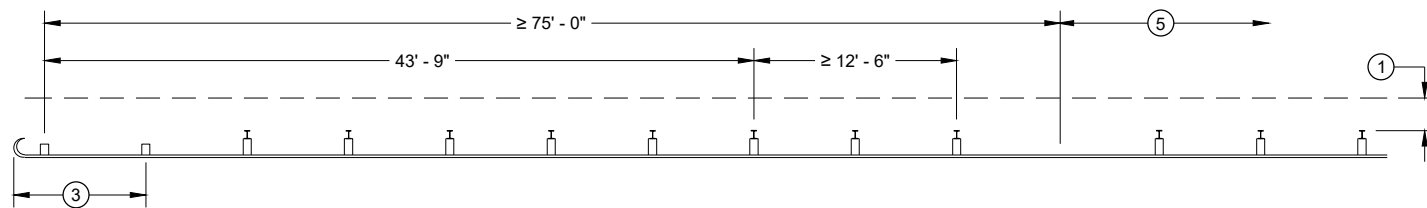
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



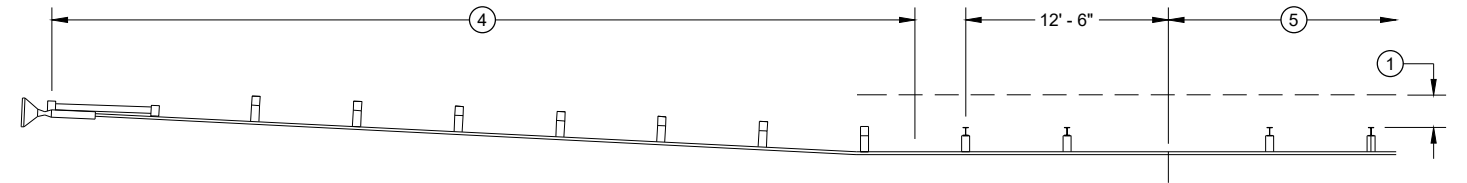
MISSING POST IN NORMAL BEAM GUARD RUN



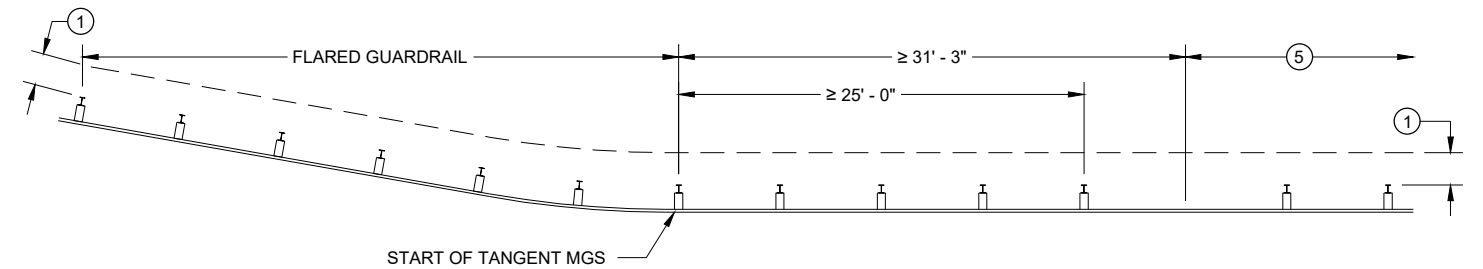
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



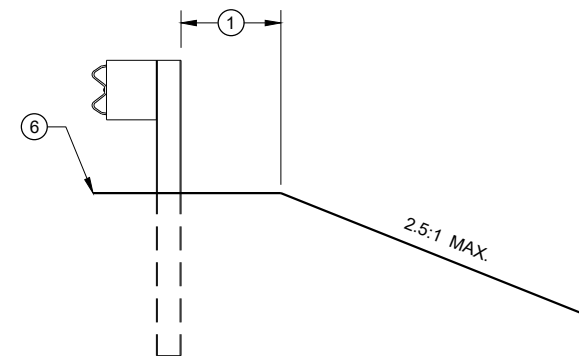
MISSING POST IN NORMAL BEAM GUARD RUN  
NEAR TYPE 2 TERMINAL



MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



MISSING POST IN NORMAL BEAM GUARD RUN  
NEAR FLARED BEAM GUARD



CROSS SECTION VIEW

- (1) MINIMUM OF 2 FEET OF GRADING BEHIND POST.
- (2) SEE SDD 14B45 FOR MORE DETAILS.
- (3) SEE SDD 14B47 FOR MORE DETAILS.
- (4) SEE SDD 14B44 FOR MORE DETAILS.
- (5) SEE MISSING POST IN NORMAL BEAM GUARD RUN FOR DISTANCE TO NEXT MISSING POST AND AREA FOR WELL DRAINED, COMPACTED SOILS.
- (6) SEE PLAN FOR SHOULDER DESIGN.

**MIDWEST GUARDRAIL SYSTEM  
(MGS) GUARDRAIL**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

GENERAL NOTES

- (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.

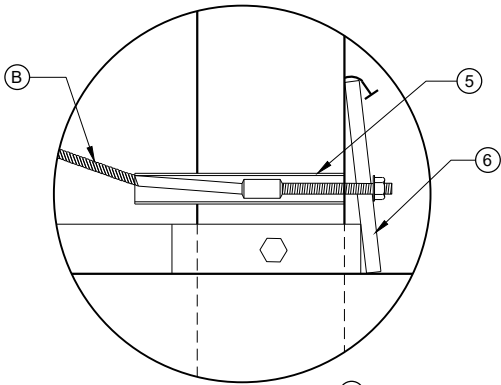
SEE SDD 14B42 FOR MORE INFORMATION.

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

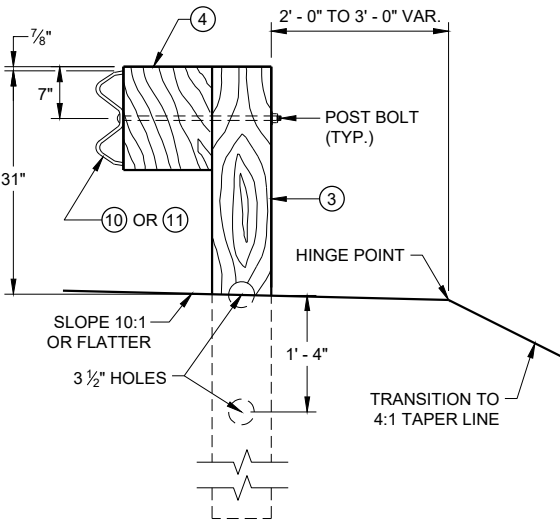
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

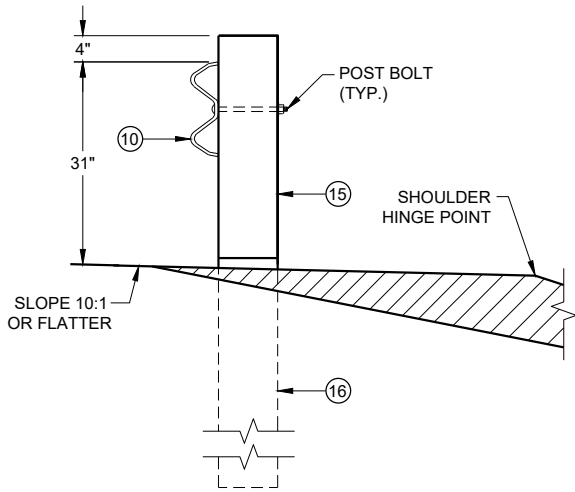
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



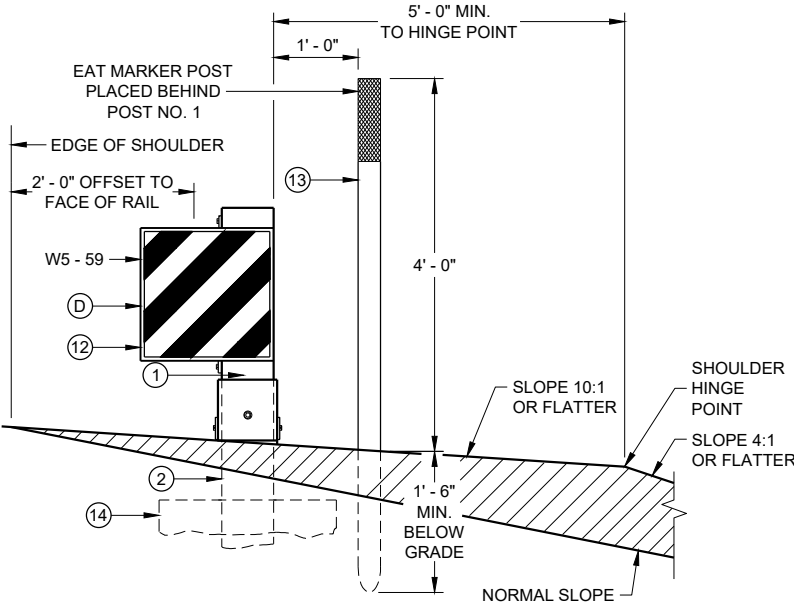
DETAIL "A"



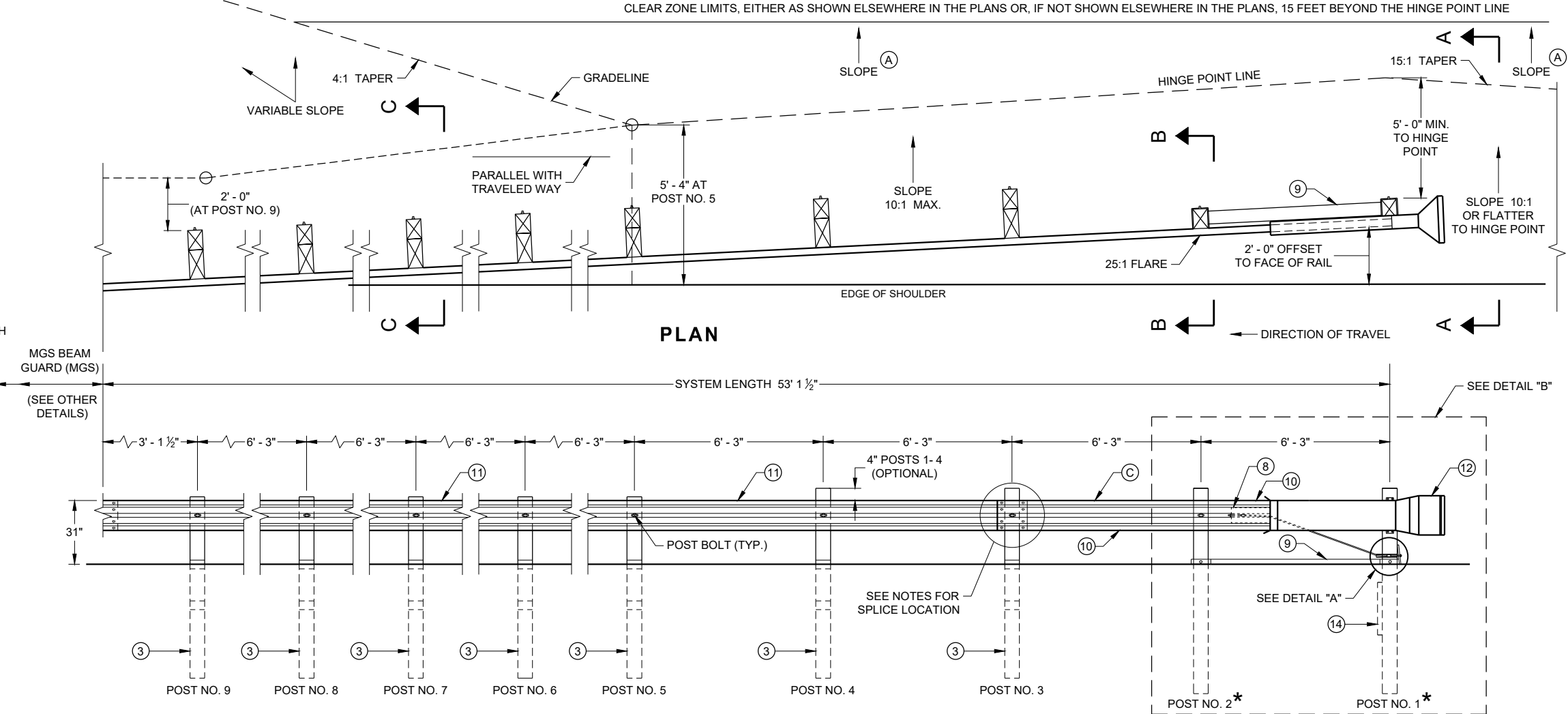
SECTION C - C  
TYPICAL AT POST NOS. 3 - 9



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

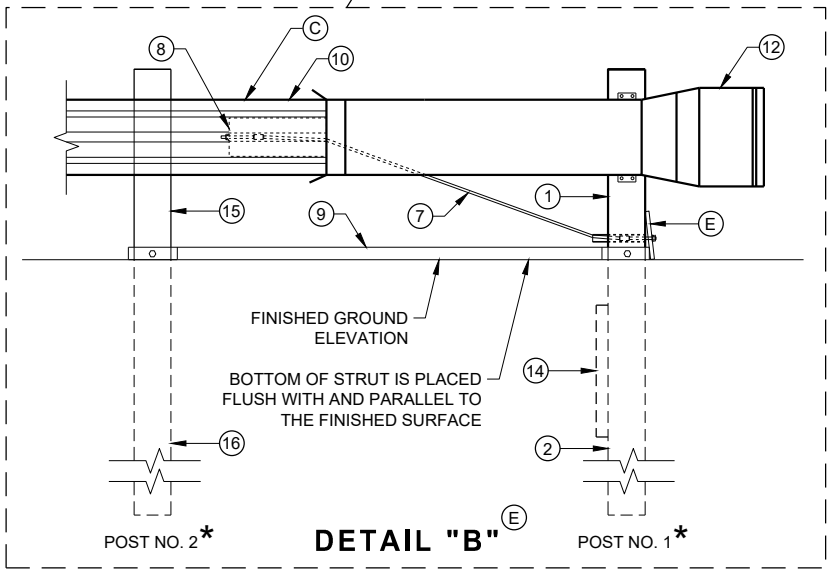


SECTION A - A  
TYPICAL AT POST NO. 1\*



PLAN

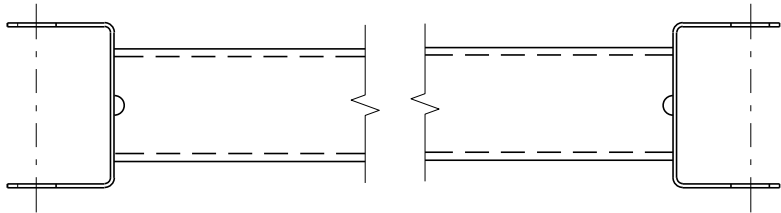
ELEVATION



DETAIL "B"

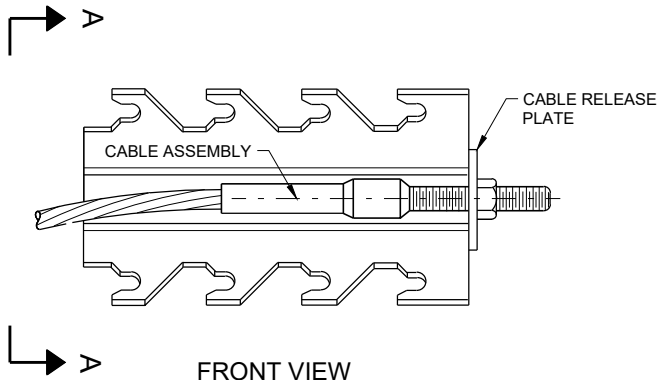
**MIDWEST GUARDRAIL SYSTEM  
ENERGY ABSORBING TERMINAL  
(MGS)**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

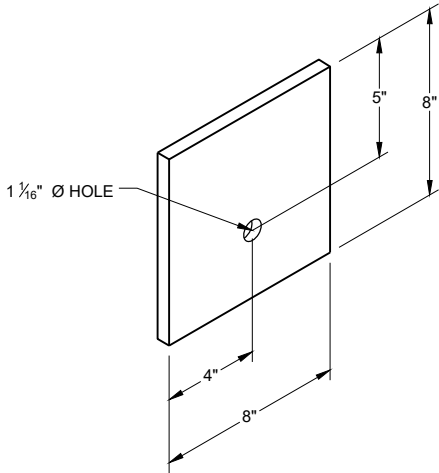
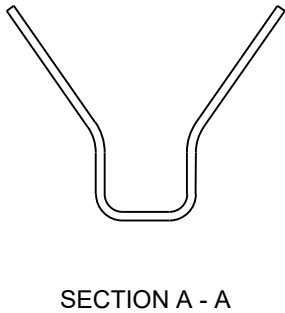


GENERIC GROUND STRUT<sup>⑨</sup> <sup>Ⓔ</sup>

| 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                                                                                               |



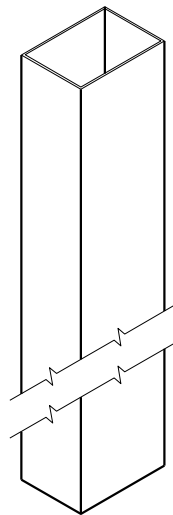
GENERIC ANCHOR CABLE BOX<sup>⑨</sup> <sup>Ⓔ</sup>



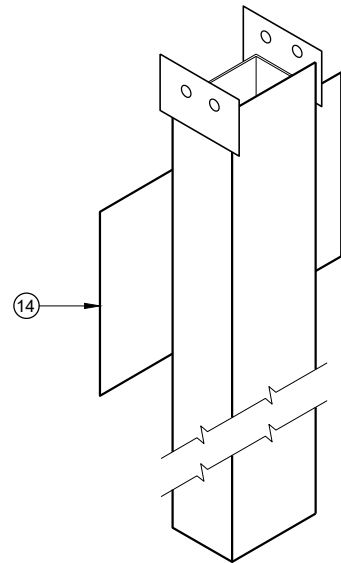
BEARING PLATE<sup>⑥</sup> <sup>Ⓔ</sup>

MIDWEST GUARDRAIL SYSTEM  
ENERGY ABSORBING TERMINAL  
(MGS)

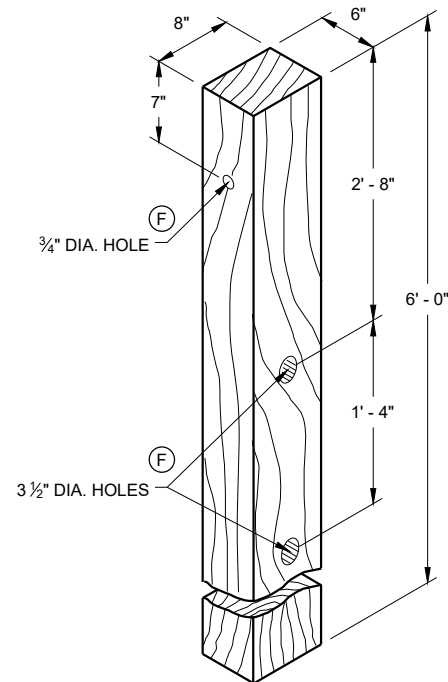
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



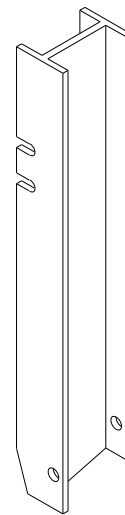
UPPER POST NO. 1 <sup>(1)</sup> (E)



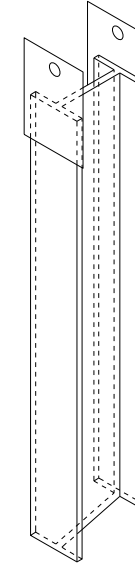
LOWER POST NO. 1 <sup>(2)</sup> (E)



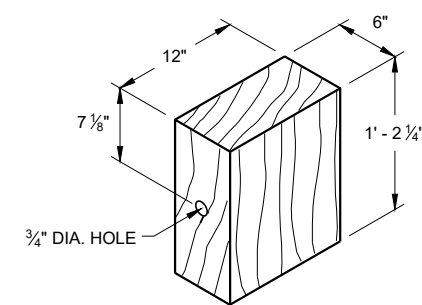
WOOD CRT POST <sup>(3)</sup> (E)  
POSTS NUMBER 3-9



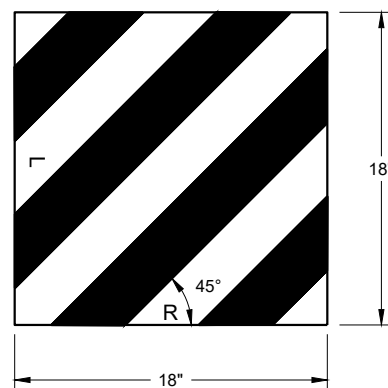
UPPER POST NO. 2 <sup>(15)</sup> (E)



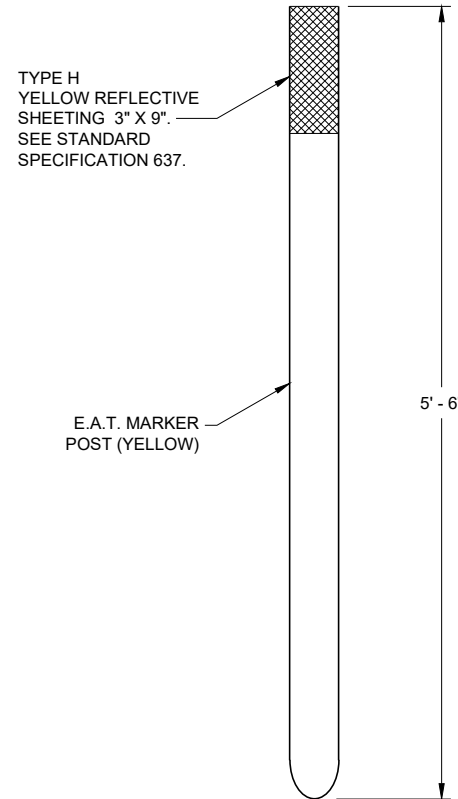
LOWER POST NO. 2 <sup>(16)</sup> (E)



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

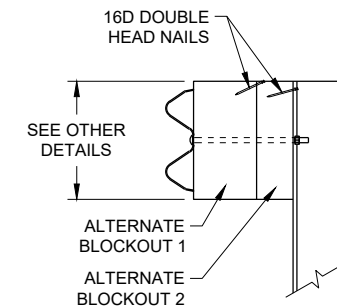


REFLECTIVE SHEETING DETAIL <sup>(E)</sup>



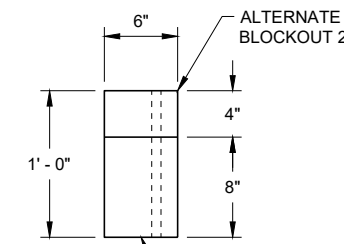
FRONT VIEW SIDE VIEW

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



SIDE VIEW

ALTERNATE WOOD  
BLOCKOUT DETAIL

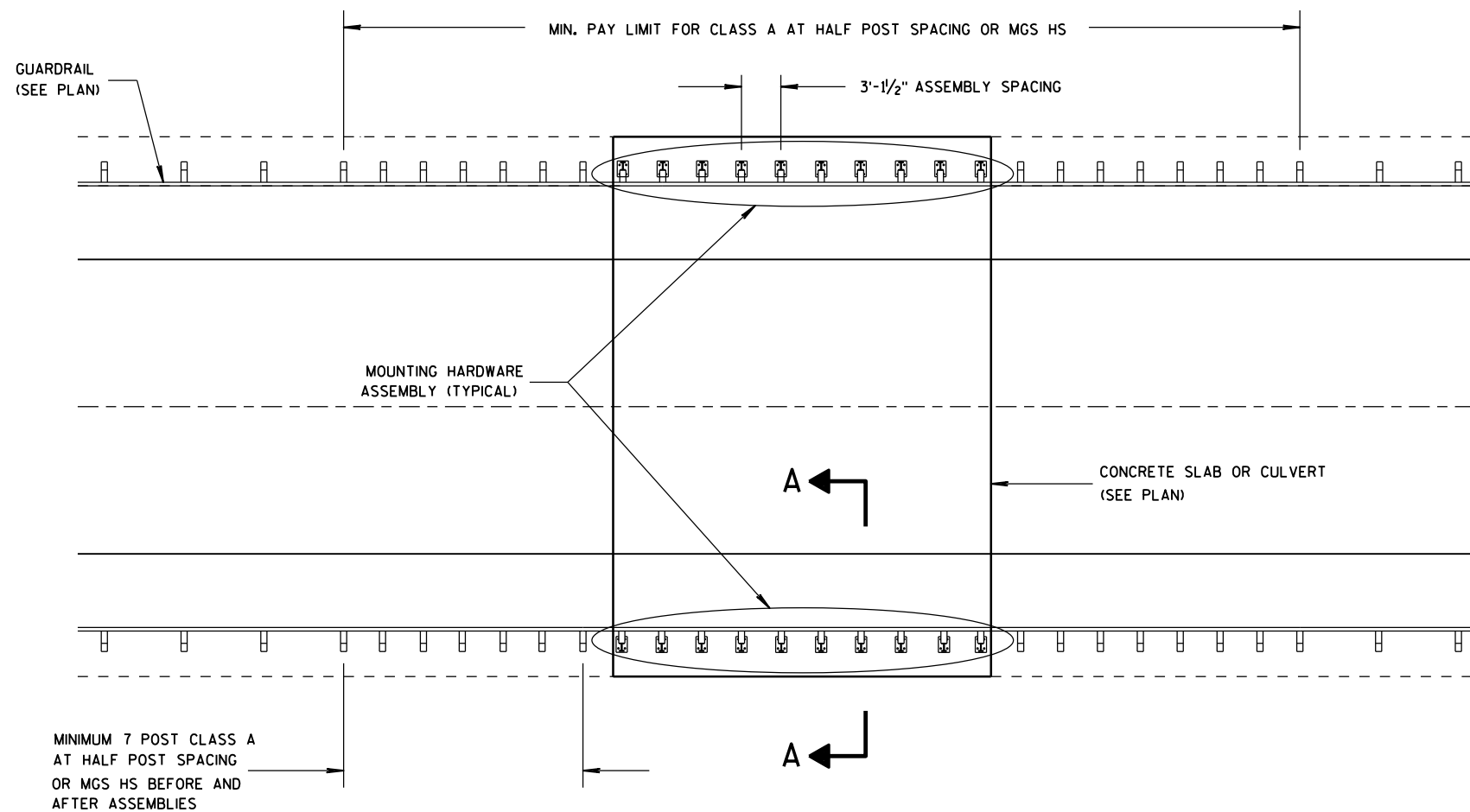


TOP VIEW

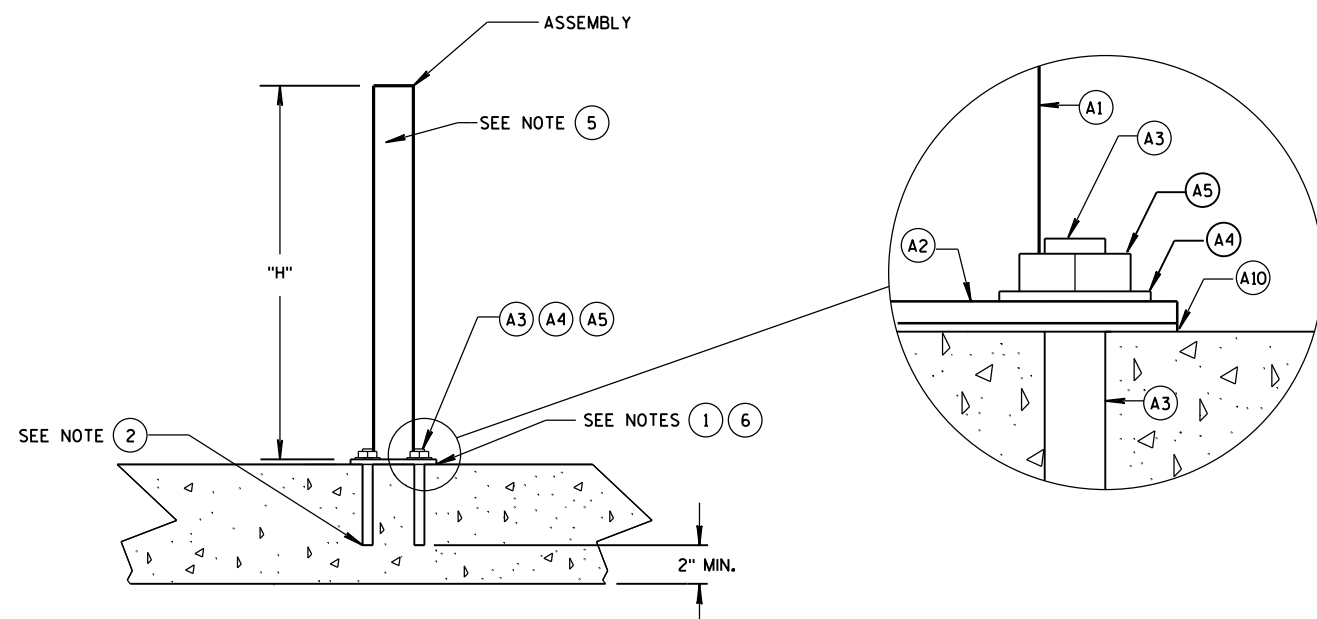
**MIDWEST GUARDRAIL SYSTEM  
ENERGY ABSORBING TERMINAL  
(MGS)**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

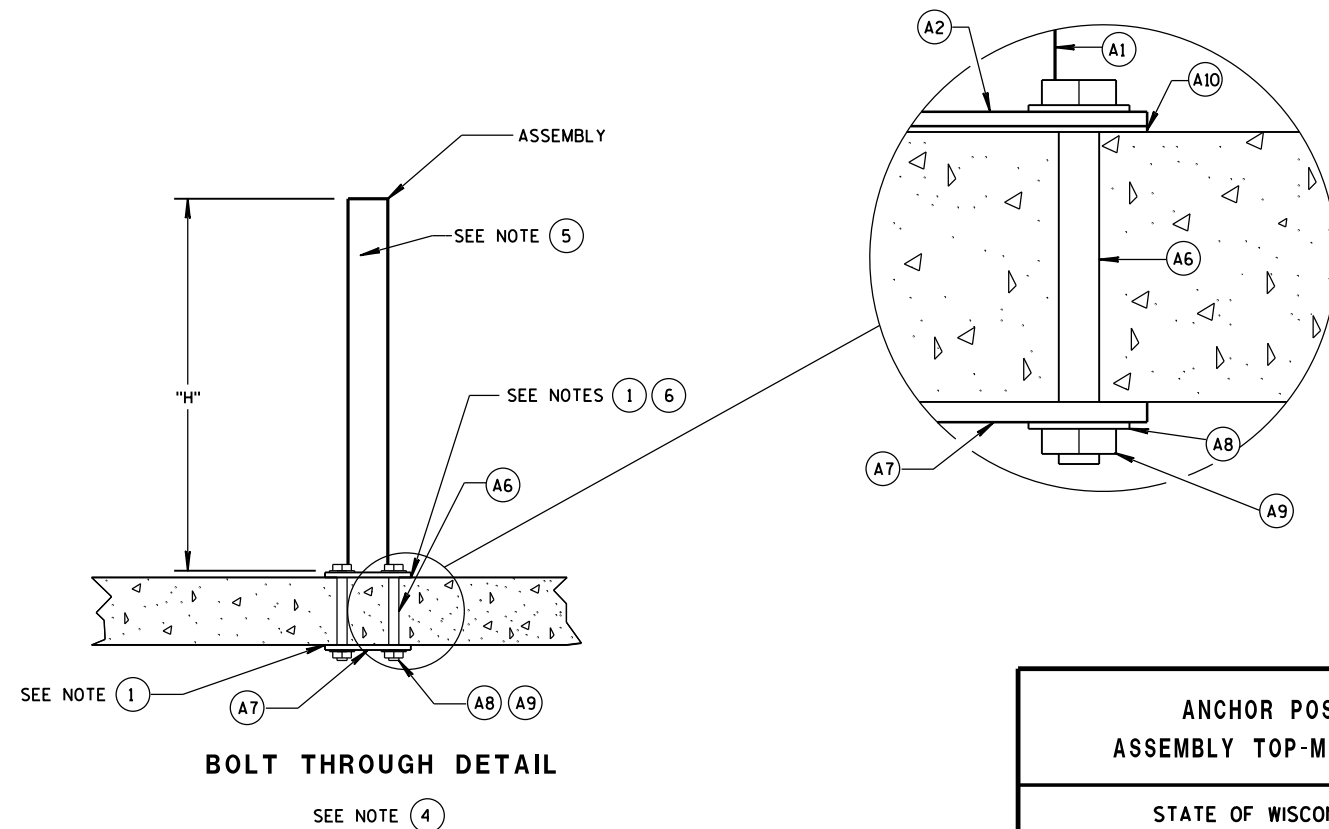


PLAN VIEW



ADHESIVE ANCHOR DETAIL

SEE NOTE (4)



BOLT THROUGH DETAIL

SEE NOTE (4)

## GENERAL NOTES

HOLES DRILLED INTO CONCRETE SLAB OR CULVERT ARE 1/8-INCH DIAMETER.

POST BASE PLATE (AND BOTTOM PLATES IF USED) 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 CUTS. CUT BOTTOM OF POST SO THAT POST WILL BE VERTICAL WHEN POST ASSEMBLY IS PLACED ON TOP OF CONCRETE. HEX BOLTS AND THREADED RODS ARE TO BE PLACED PERPENDICULAR TO THE BASE PLATE.

"H" DIMENSION WILL VARY. SEE PLAN FOR "H" DIMENSION. CONTRACTOR HAS OPTION OF INSTALLING POSTS THAT ARE TALLER THAN "H" DIMENSION AND CUT POSTS TO PROPER "H" DIMENSION IN THE FIELD. IF ELECTING TO FIELD CUT POSTS, DRILL HOLES AT APPROPRIATE LOCATIONS AND APPLY GALVANIZATION.

GALVANIZE STEEL COMPONENTS AFTER FABRICATION PER SECTION 614 OF THE WISCONSIN DEPT. OF TRANSPORTATION STANDARD SPECIFICATIONS.

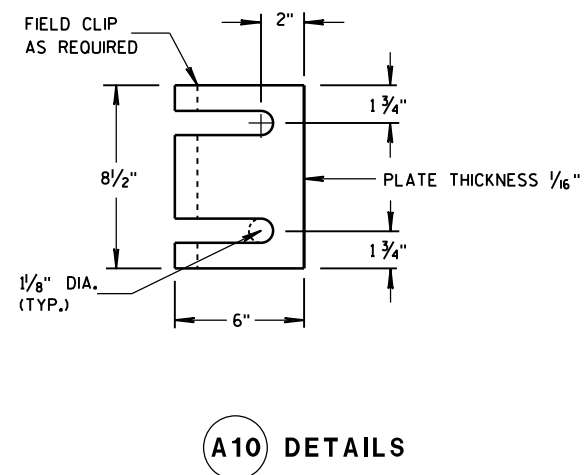
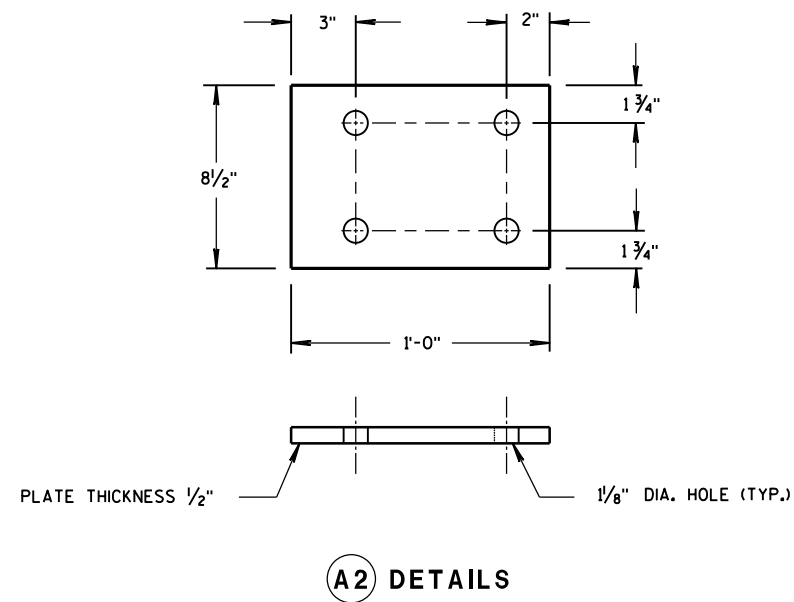
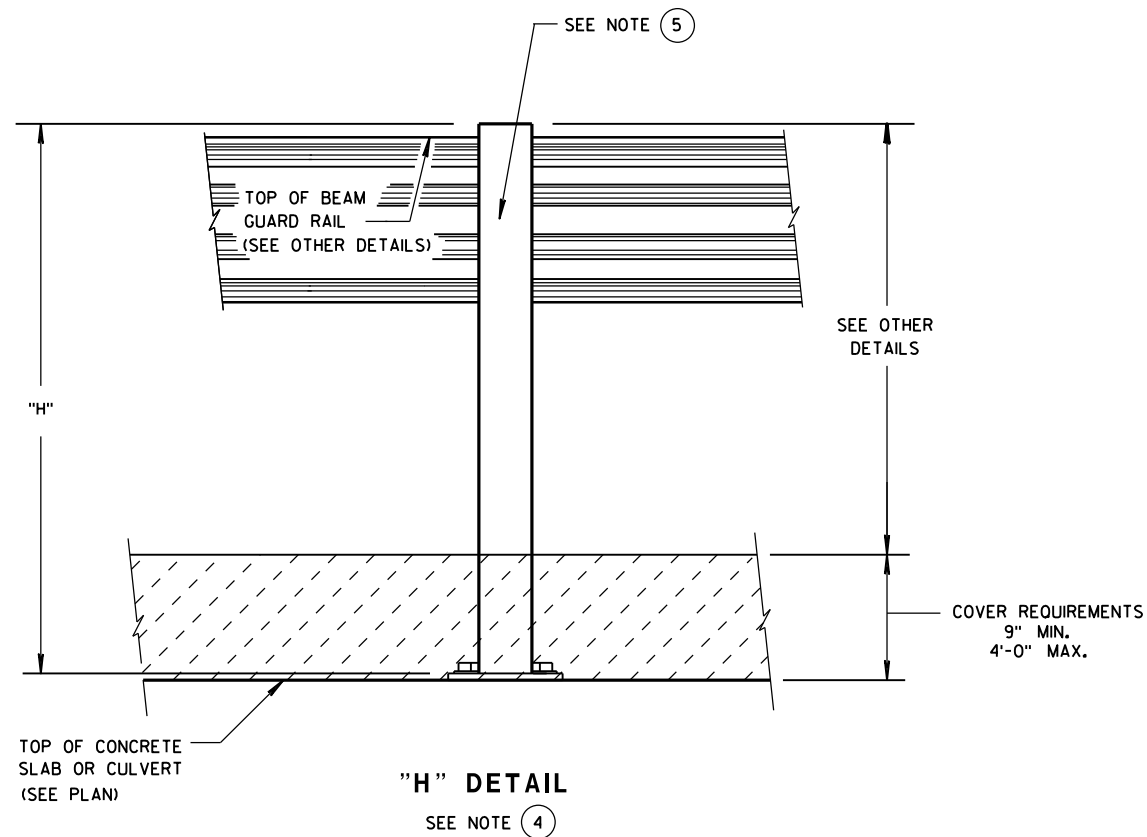
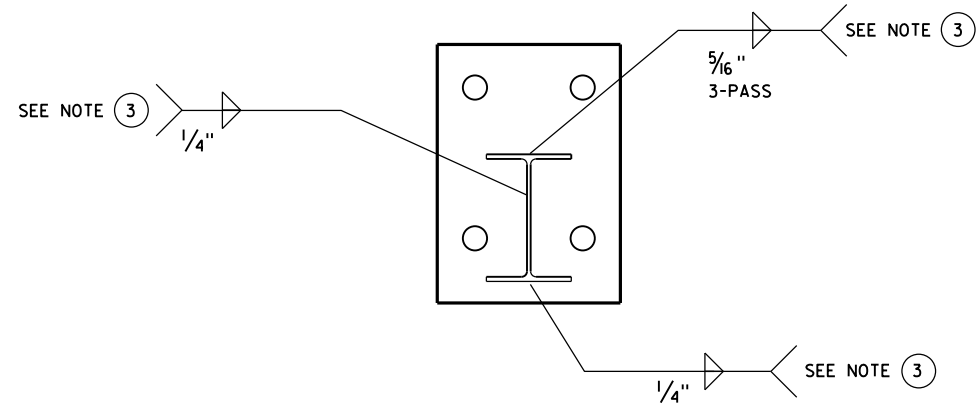
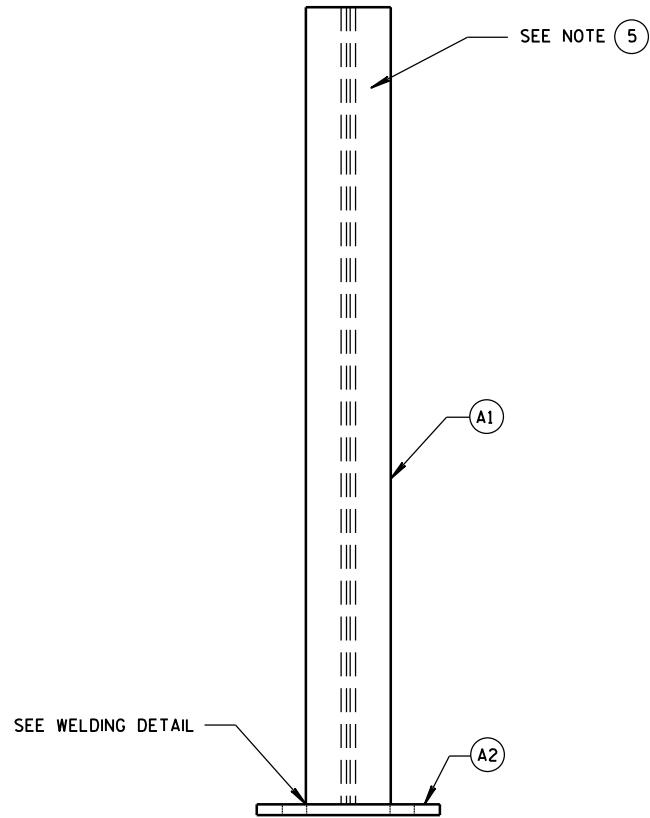
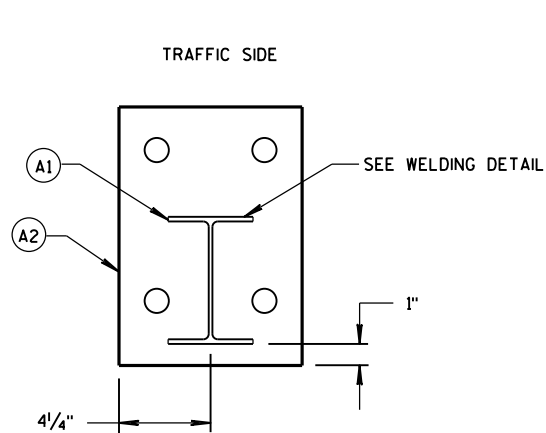
INSTALL 1 NUT AND 1 WASHER WHERE APPLICABLE. PROVIDE SUFFICIENT LENGTH OF BOLT OR THREADED ROD TO ALLOW FOR 1/4-INCH TO 1/2-INCH OF THREAD TO BEYOND THE NUT.

- ① PLACE NON-STAINING, GRAY NON-BITUMINOUS JOINT SEALER ON THE BOTTOM (A2) AND IN DRILL HOLES FOR BOLT THROUGH OPTION.
- ② BOND STRENGTH OF ADHESIVE IS 1,305 PSI OR GREATER WITH A MINIMUM EMBEDMENT DEPTH OF 8-INCHES. IF MINIMUM EMBEDMENT CANNOT BE ACHIEVED BOLT THROUGH STRUCTURE.
- ③ USE GAS-METAL ARC WELDING (GMAW) PROCESS WITH ER70S-3 WELDING WIRE AND ARGON-OXYGEN OR CO2 COVER GAS.
- ④ OTHER COMPONENT OF BARRIER SYSTEM NOT SHOWN. SEE OTHER STANDARD DETAIL DRAWINGS. SEE SDD 14 B 15 OR SDD 14 B 42 FOR MORE DETAILS.
- ⑤ HOLES TO MOUNT BEAM GUARD AND BLOCK NOT SHOWN ON DRAWINGS. SEE OTHER STANDARD DETAIL DRAWINGS. SEE SDD 14 B 15 OR SDD 14 B 42 FOR MORE DETAILS.
- ⑥ ADD AND ADJUST SHIM PLATES AS NECESSARY TO INSTALL POST PLUMB. SEE (A10) FOR DETAIL.

ANCHOR POST  
ASSEMBLY TOP-MOUNTED

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION







MATERIALS LIST

| ITEM  | DESCRIPTION          | MATERIAL SPECIFICATIONS                                                             | NOTES                                      |
|-------|----------------------|-------------------------------------------------------------------------------------|--------------------------------------------|
| (A1)  | W6x9 or W6x8.5       | ASTM A992, 50 KSI MIN.<br>ASTM A709 GRADE 50<br>OR ASTM A36                         | SEE SDD 14B15 OR 14B42<br>LENGTH WILL VARY |
| (A2)  | STEEL BASE PLATE     | ASTM A992 50 KSI MIN.,<br>ASTM A529 GRADE 50,<br>ASTM A572 GRADE 50,<br>OR ASTM A36 |                                            |
| (A3)  | 1" DIA. THREADED ROD | SAE J429 GRADE 2,<br>ASTM A307 GRADE C,<br>OR ASTM F1554 GRADE 36                   | LENGTH WILL VARY                           |
| (A4)  | 1" DIA. FLAT WASHER  | ASTM F844                                                                           |                                            |
| (A5)  | 1" HEX NUT           | ASTM A563A                                                                          |                                            |
| (A6)  | 1" DIA. HEX BOLT     | ASTM A307                                                                           | LENGTH WILL VARY                           |
| (A7)  | PLATE WASHER         | ASTM A992 50 KSI MIN.,<br>ASTM A529 GRADE 50,<br>ASTM A572 GRADE 50,<br>OR ASTM A36 |                                            |
| (A8)  | 1" DIA. FLAT WASHER  | ASTM F844                                                                           |                                            |
| (A9)  | 1" DIA. HEX NUT      | ASTM A563A                                                                          |                                            |
| (A10) | SHIM PLATE           | SEE (A2)                                                                            | 4 MAX PER POST                             |

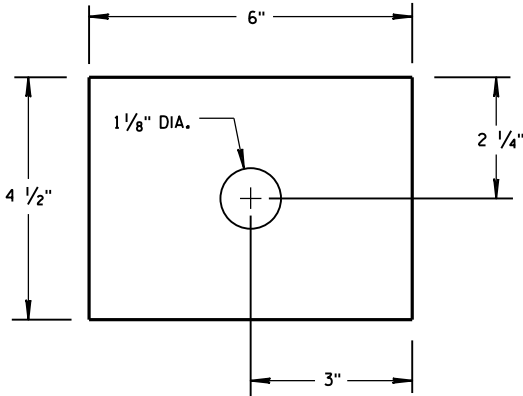
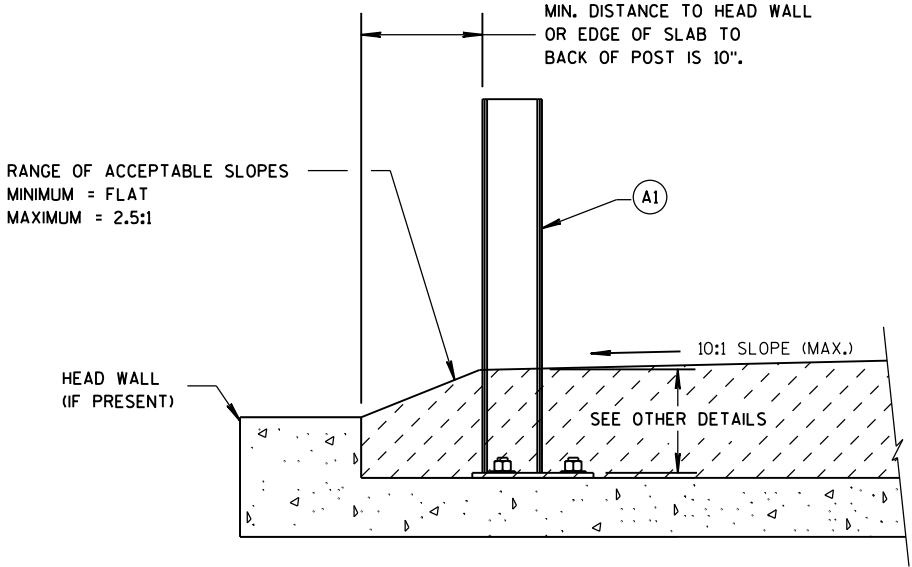
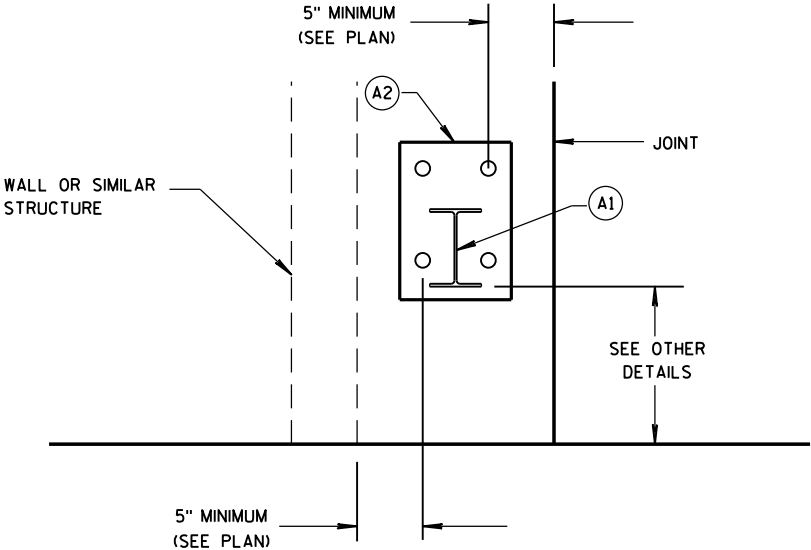


PLATE WASHER - (A7)



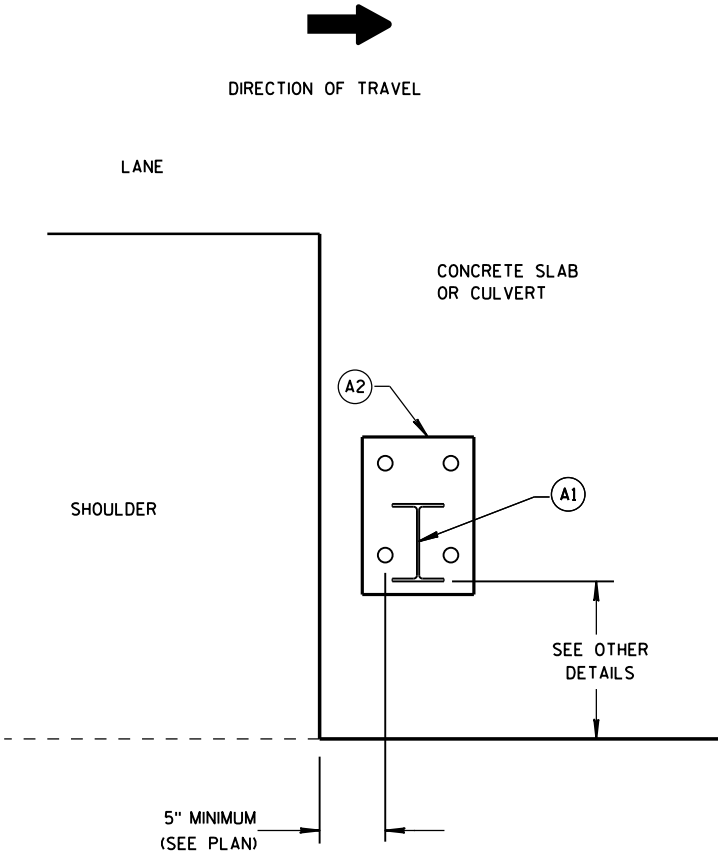
SECTION A-A

SEE NOTE (4)



OBSTRUCTION AND JOINT PLACEMENT

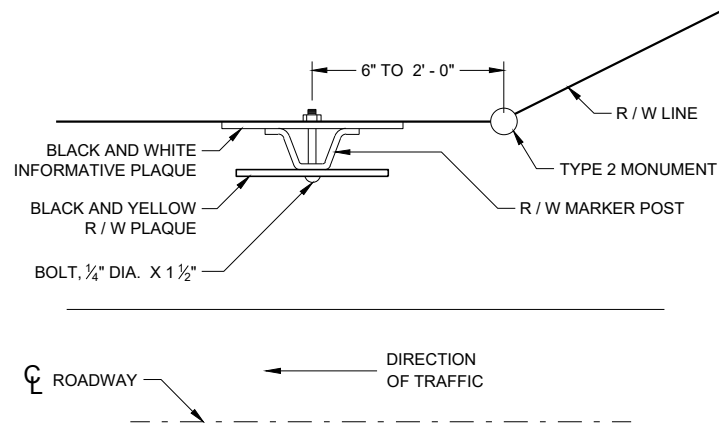
SEE NOTE (4)



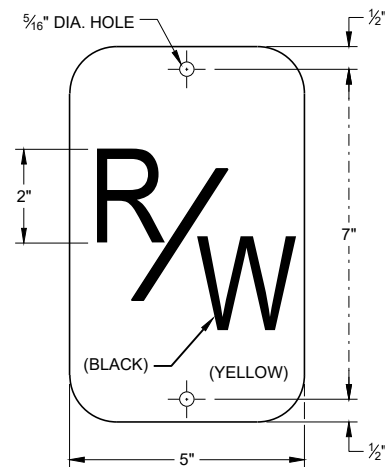
EDGE PLACEMENT

SEE NOTE (4)

|                                                    |                                                                |
|----------------------------------------------------|----------------------------------------------------------------|
| ANCHOR POST<br>ASSEMBLY TOP-MOUNTED                |                                                                |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                                                                |
| APPROVED<br>June 2014<br>DATE                      | /S/ Jerry H. Zogg<br>ROADWAY STANDARDS DEVELOPMENT<br>ENGINEER |
| FHWA                                               |                                                                |

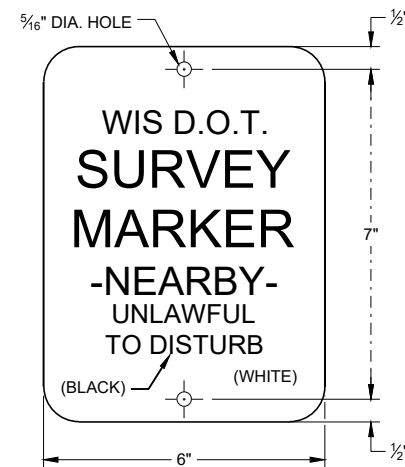


**PLAN VIEW  
STEEL MARKER POST**



**R / W PLAQUE**

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



**INFORMATIVE PLAQUE**

## GENERAL NOTES

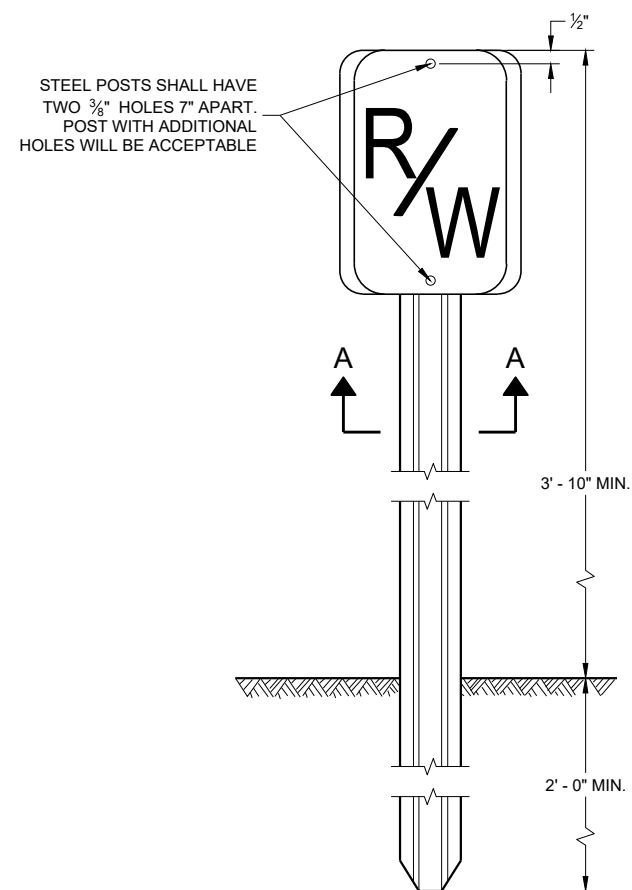
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

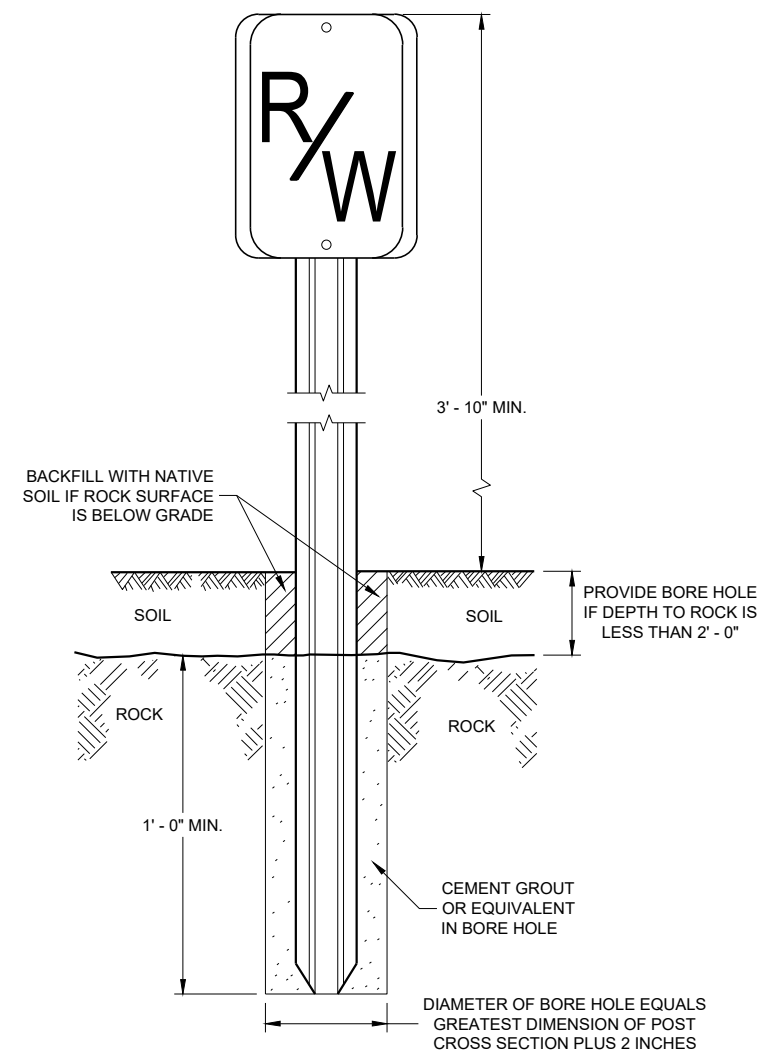
THE "R/W" PLAQUE SHALL FACE THE ROADWAY AND THE INFORMATIVE PLAQUE SHALL FACE AWAY FROM THE ROADWAY. "R/W" AND INFORMATIVE PLAQUES WILL BE FURNISHED BY THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

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

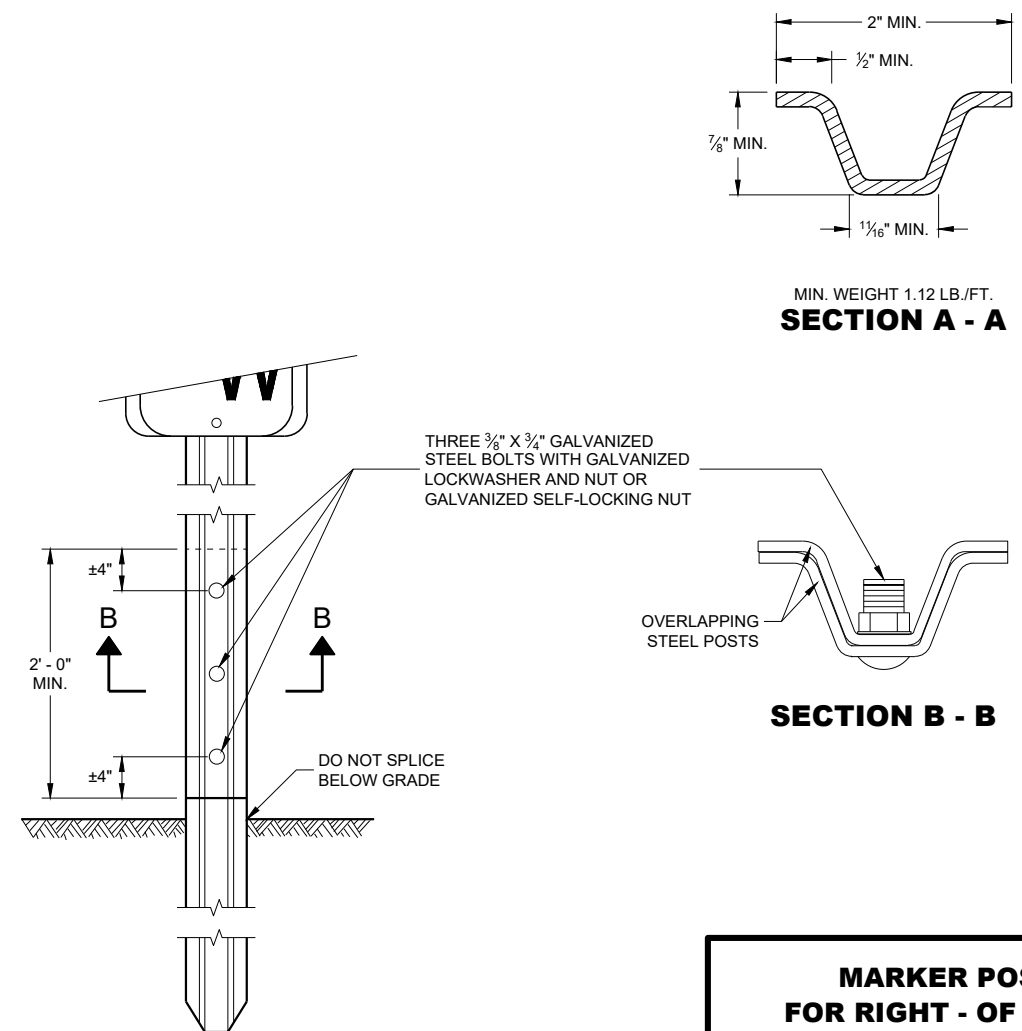
- ① IN AREAS OF SOLID ROCK, DRILL A BORE HOLE 2" GREATER THAN THE WIDEST DIMENSION OF THE POST CROSS SECTION INTO THE ROCK A MINIMUM DEPTH OF 12 INCHES. CUT OR SPLICE THE POST SO THAT A MINIMUM LENGTH OF 3' - 10" PROTRUDES ABOVE THE GROUND. BLOW OUT THE BORE HOLE IN THE ROCK USING COMPRESSED AIR. FILL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



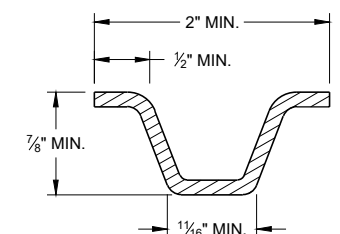
**FRONT VIEW  
STEEL MARKER POST**



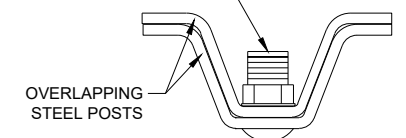
**FRONT VIEW  
ROCK INSTALLATION** ①



**FRONT VIEW  
SPLICE DETAIL**



MIN. WEIGHT 1.12 LB./FT.  
**SECTION A - A**



**SECTION B - B**

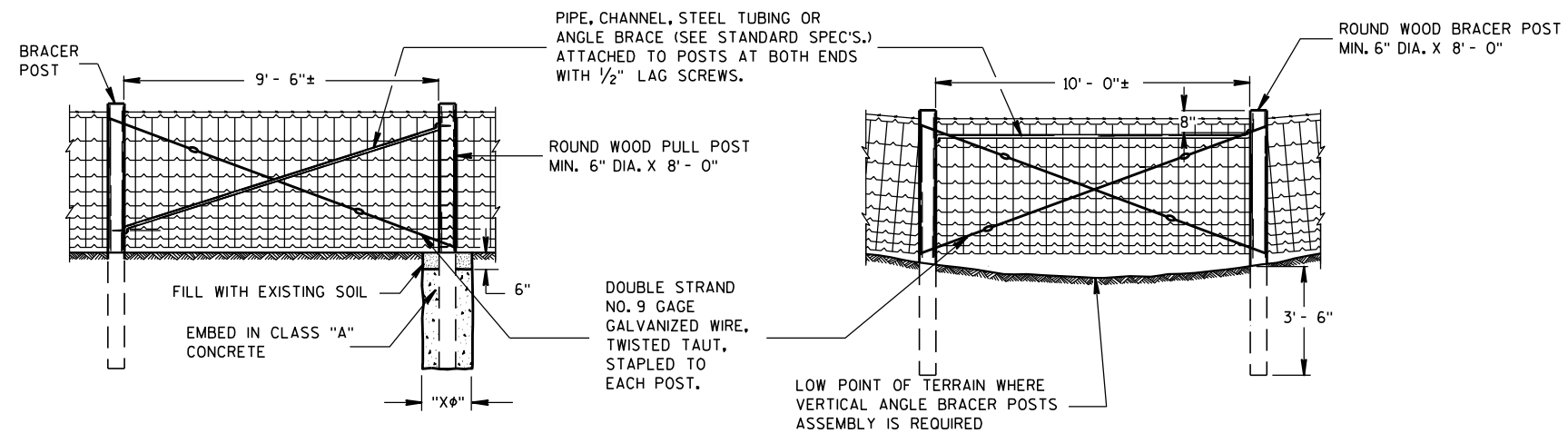
## MARKER POST FOR RIGHT - OF - WAY

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
2/18/2016  
DATE  
/S/ Ray Kumapayi  
CHIEF SURVEYING AND MAPPING  
ENGINEER

FHWA

ILLUSTRATION SHOWS POSITION OF STANDARD STEEL BRACE, DOUBLE STRAND GALVANIZED WIRE, AND THE POST TO BE EMBEDDED IN CONCRETE WHEN WIRE FENCE IS INSTALLED FROM LEFT TO RIGHT. THE BRACES SHALL BE POSITIONED ON THE OPPOSITE DIAGONALS AND THE OPPOSITE POST SHALL BE EMBEDDED IN CONCRETE WHEN WIRE FENCE IS INSTALLED FROM RIGHT TO LEFT.



## PULL OR STRETCHER POSTS ASSEMBLY

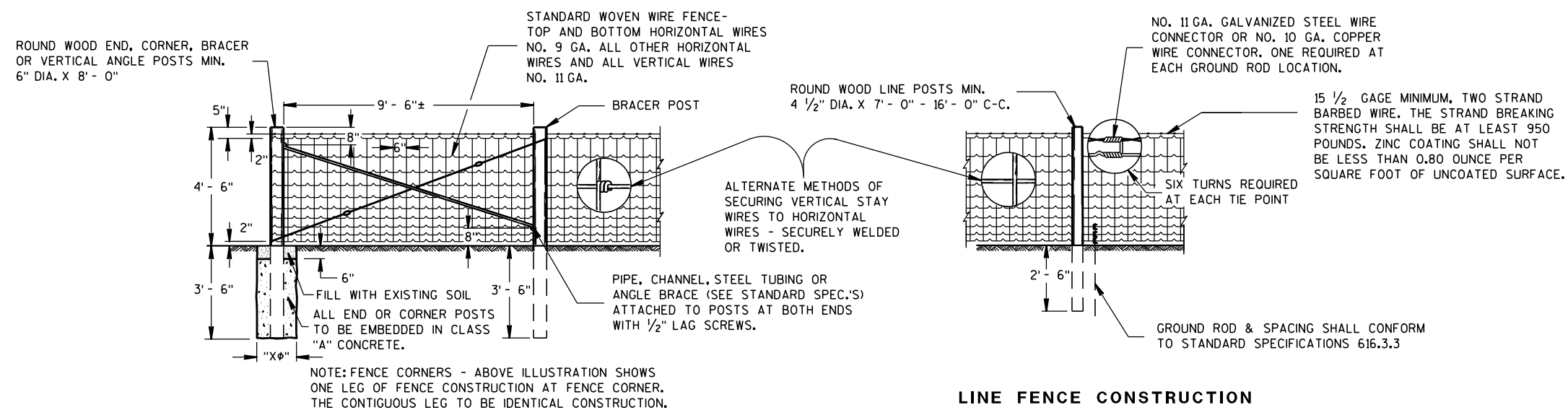
## VERTICAL ANGLE BRACER POSTS ASSEMBLY

"X $\phi$ " = DIAMETER OF THE POST PLUS 12".

FENCE STAPLES SHOULD NEVER BE DRIVEN VERTICALLY INTO WOOD POSTS (WITH BOTH LEGS PARALLEL WITH THE WOOD GRAIN). DOING SO CAN SEPARATE THE GRAIN AND SIGNIFICANTLY REDUCE THE HOLDING POWER. ROTATING THE STAPLES SLIGHTLY OFF VERTICAL STRADDLES THE GRAIN AND PROVIDES MORE RESISTANCE TO PULL-OUT.

DO NOT STAPLE WIRE TIGHT TO THE LINE POSTS. ALLOW MOVEMENT OF WIRE FOR EXPANSION AND CONTRACTION. STAPLE ARRANGEMENT SHALL BE THE SAME FOR ALL OTHER POSTS EXCEPT THAT THEY SHALL BE DRIVEN TIGHT TO POSTS. ALL STAPLES SHALL BE 2" X 9 GAGE AND SHALL BE MANUFACTURED FROM GALVANIZED WIRE OR HOT DIP GALVANIZED AFTER FORMING. STAPLES SHALL HAVE SLASH-CUT POINTS.

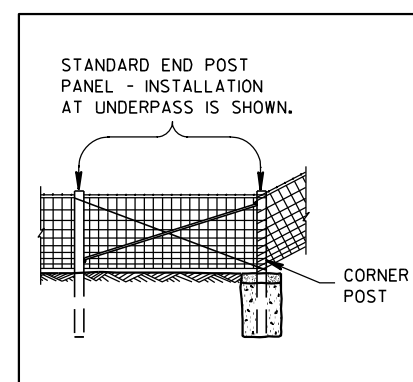
FENCE SHALL BE LOCATED 3'-0" INSIDE  
THE RIGHT OF WAY LINE UNLESS  
OTHERWISE INDICATED ON THE PLANS.



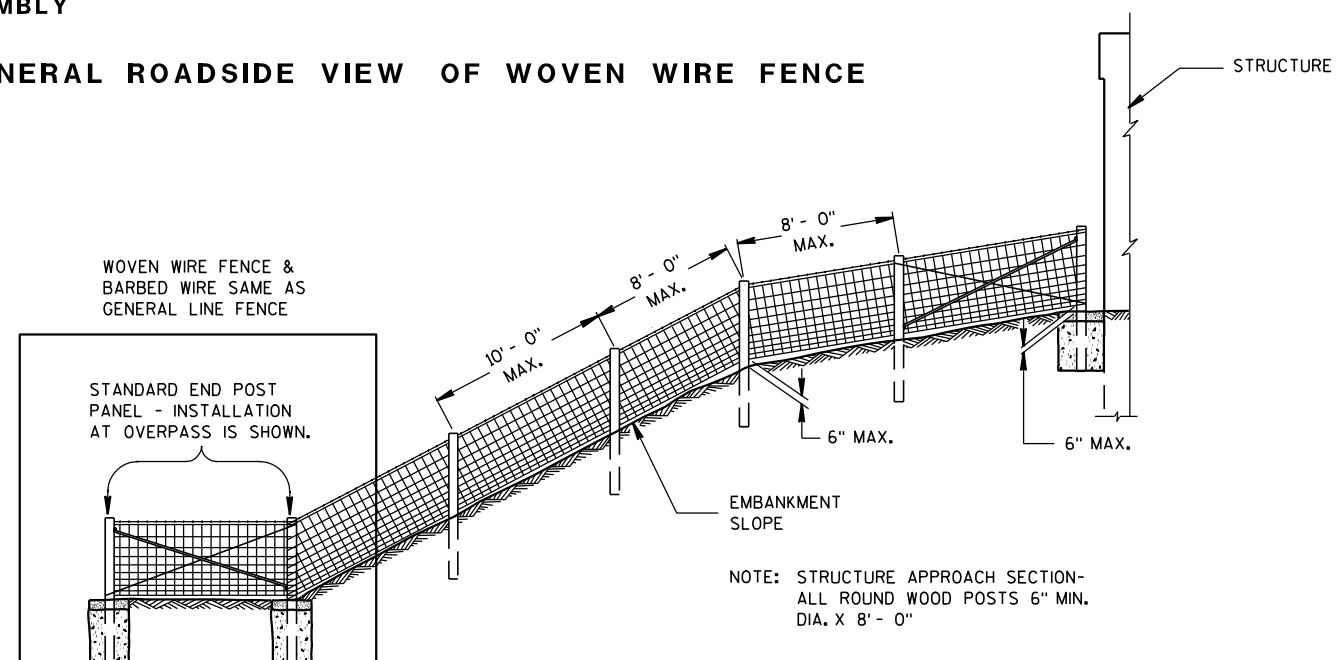
## LINE FENCE CONSTRUCTION

## END OR CORNER POSTS ASSEMBLY

### GENERAL ROADSIDE VIEW OF WOVEN WIRE FENCE



### ALTERNATE FENCE DESIGN AT STRUCTURE



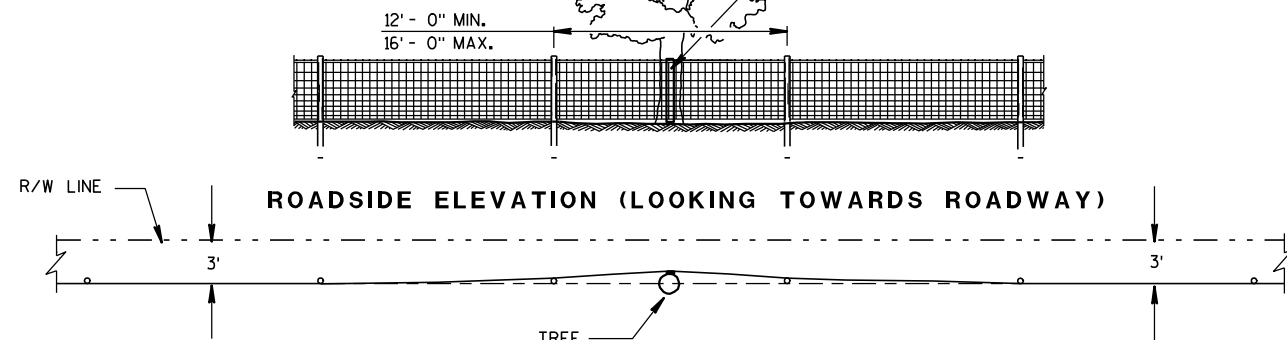
### FENCE DESIGN AT STRUCTURE APPROACH

## FENCE WOVEN WIRE

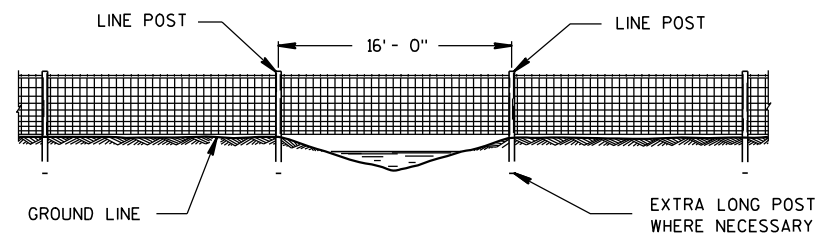
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

NOTE: TREE IN NORMAL FENCE LINE SPECIFICALLY ORDERED BY ENGINEER TO REMAIN IN PLACE.

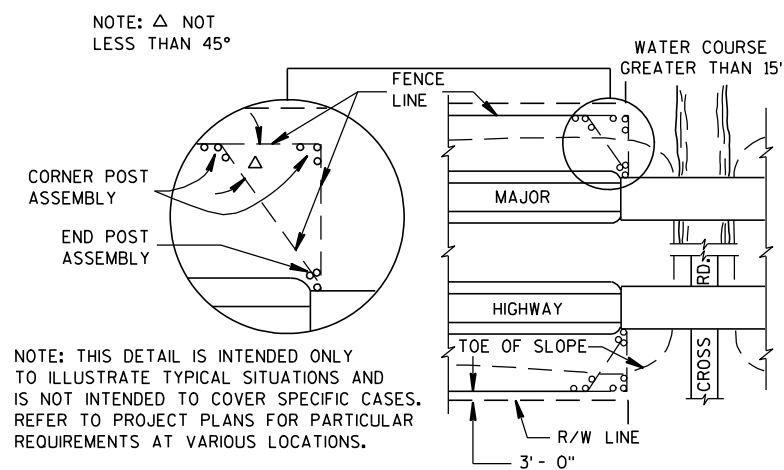
2" X 6" DOUGLAS FIR OR SO. YELLOW PINE PLACED BETWEEN TREE AND WOVEN WIRE FENCE. WOVEN WIRE FENCE AND BARBED WIRE TO BE STAPLED TO 2" X 6" LIKE AS TO LINE POST. 2" X 6" NOT FASTENED TO TREE.



PLAN VIEW  
FENCE DESIGN AT TREES REMAINING  
IN NORMAL FENCE LINE

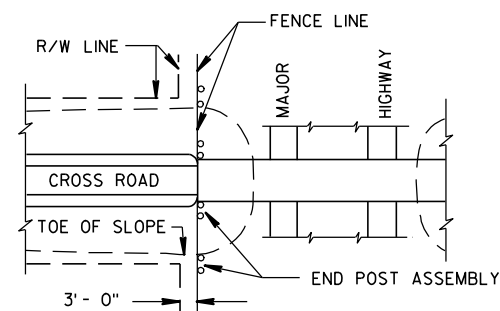


FENCE CONSTRUCTION OVER STREAM  
COURSES OF 15 FT. OR LESS IN WIDTH

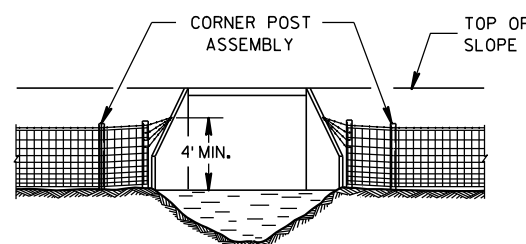


PLAN VIEW  
MAJOR HIGHWAY OVERPASS OR STREAM COURSE  
CROSSING OF GREATER THAN 15 FT. IN WIDTH

FENCE LOCATION AT STRUCTURES

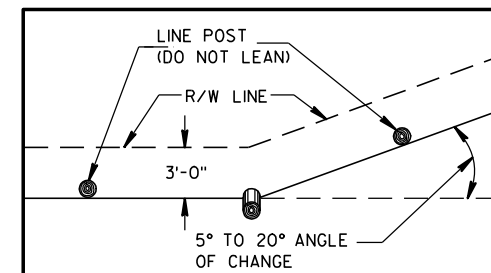
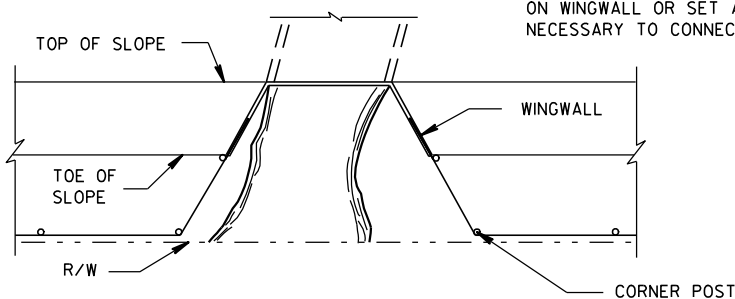


PLAN VIEW  
MAJOR HIGHWAY UNDERPASS

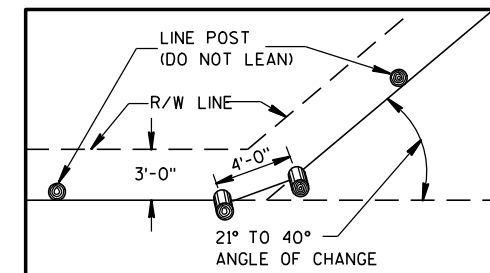


FENCE INSTALLATION TO WINGWALLS

NOTE: PLACE A MINIMUM OF 4 STRANDS OF BARBED WIRE, 6" MAXIMUM CENTERS IN FAN SHAPE CONNECTED TO AN EYE BOLT ON WINGWALL OR SET A LONE POST WHEN NECESSARY TO CONNECT BARBED WIRE.



PLAN VIEW  
SINGLE POST CORNER

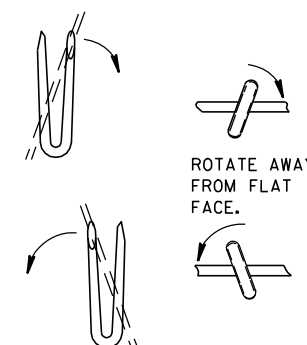


PLAN VIEW  
DOUBLE POST CORNER

## RIGHT OF WAY LINE CHANGE 40° AND LESS

NOTE: SINGLE AND DOUBLE POSTS SHALL BE A MIN. 6" DIA. X 8'-0" WITH A LEAN OF 4" TOWARD THE OUTSIDE OF THE CURVE.

WHEN THE RIGHT OF WAY LINE CHANGE IS MORE THAN 40° USE THE CORNER OR STRETCHER POSTS ASSEMBLY.



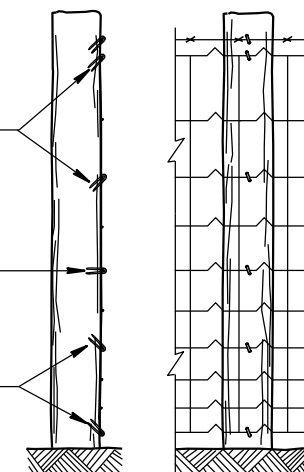
LINE POST

NOTE: WHEN POSTS ARE DRIVEN THE SMALL END SHALL BE DOWN.

STAPLES SLOPED DOWNWARD FOR SUSTAINED GRADES AND OVER KNOLLS.

STAPLES LEVEL FOR LEVEL GROUND.

SLOPE UPWARDS WHEN FENCE TENDS TO LIFT.



END ELEVATION  
FARM SIDE ELEVATION  
FENCE MOUNTING DETAIL

## FENCE WOVEN WIRE

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

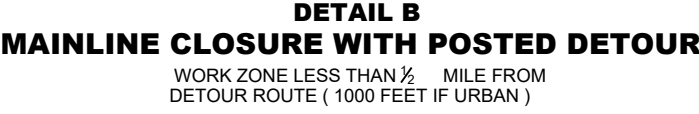
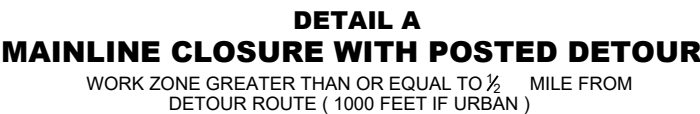
APPROVED

4/4/2008

DATE

FHWA

/S/ Jerry H. Zogg  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER

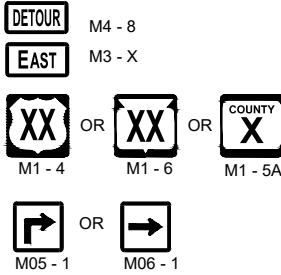


| SPEED LIMIT (MPH) | "STOP AHEAD" ADVANCE WARNING DISTANCE (FT) |
|-------------------|--------------------------------------------|
| 25                | 200                                        |
| 30                | 200                                        |
| 35                | 350       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

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



|                                                                                       |                                       |
|---------------------------------------------------------------------------------------|---------------------------------------|
|    | 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)        |

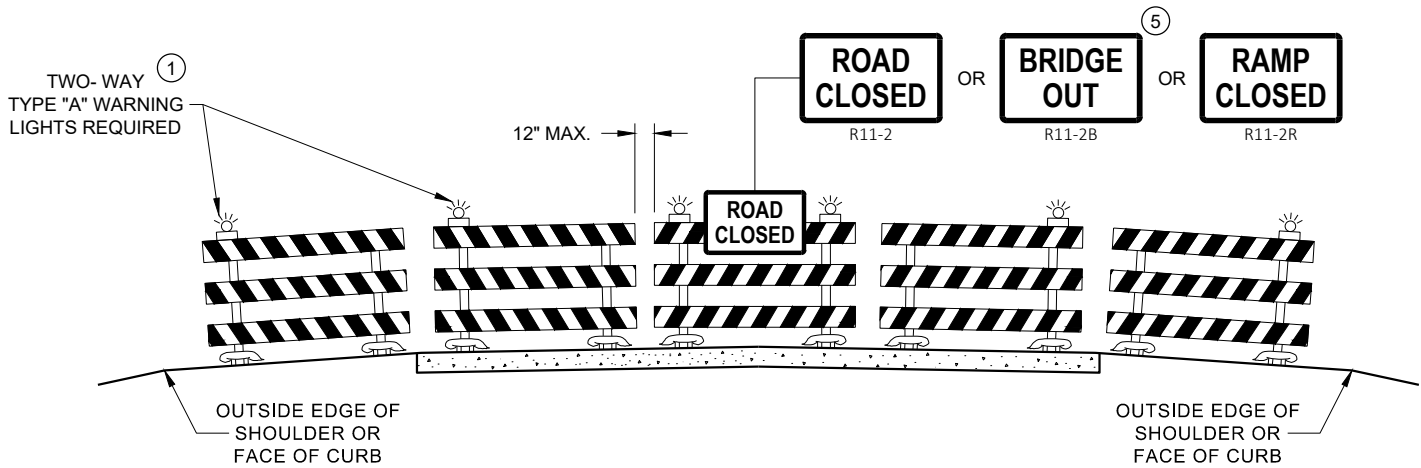


## BARRICADES AND SIGNS FOR MAINLINE CLOSURES

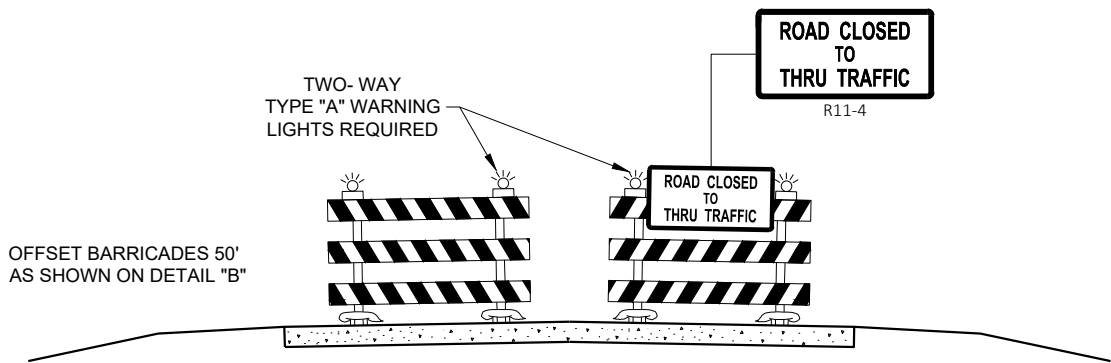
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2020  
DATE

/S/ Andrew Heidtke  
WORK ZONE ENGINEER



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



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

SEE SDD 15C2 - SHEET "a" FOR LEGEND

**GENERAL NOTES**

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

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

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

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

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

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

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

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

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

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

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

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

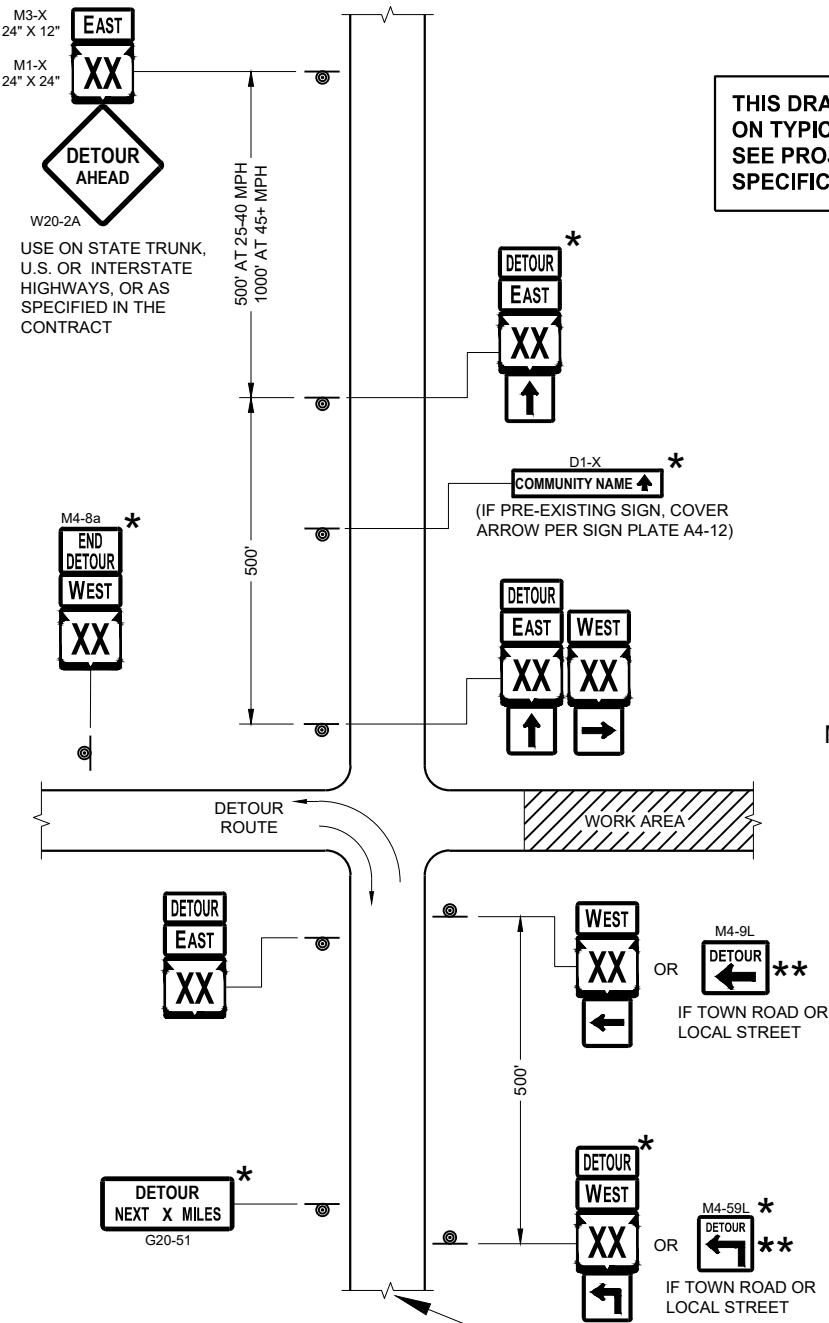
**BARRICADES AND SIGNS  
FOR  
VARIOUS CLOSURES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

FHWA

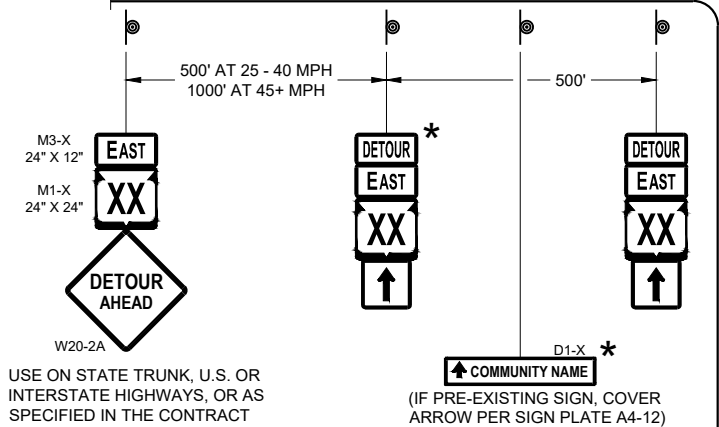




SEE SPECIFIC PROJECT DETOUR  
SIGNING DETAIL SHEETS AND  
DETAIL A OR B ON SDD SHEET 15C02 - SHEET "a"

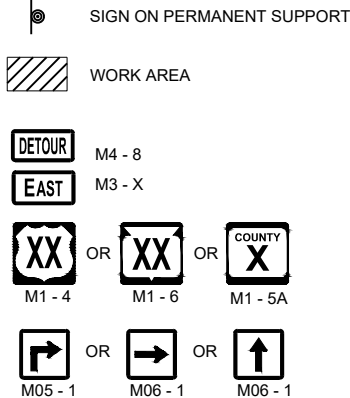
THIS DRAWING PROVIDES GENERAL GUIDANCE  
ON TYPICAL DETOUR SIGN LAYOUT AND SPACING.  
SEE PROJECT DETOUR SIGNING SHEETS FOR  
SPECIFIC DETAILS FOR EACH PROJECT.

MATCH POINT



DETAIL F  
DETOUR SIGNING

LEGEND



GENERAL NOTES

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

IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

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

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

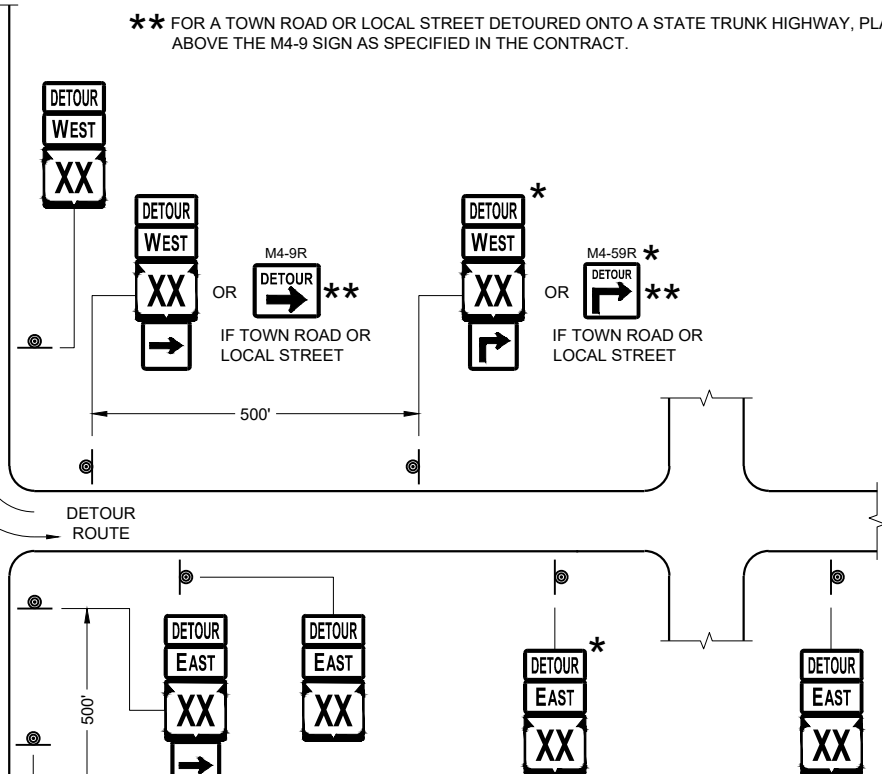
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

SIGN SIZES SHALL BE AS FOLLOWS:

- M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-9 AND M4-59 SHALL BE 30" X 24"
- M4-8a SHALL BE 24" X 18"
- G20-51 SHALL BE 60" X 24"
- W20-2A SHALL BE 48" X 48"
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

- \* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.
- \*\* FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.



PLACE SIGNS BEYOND INTERSECTIONS  
WITH STATE OR COUNTY TRUNK  
HIGHWAYS OR AT 4 MILE MAXIMUM  
SPACING (4 BLOCKS IF URBAN AREA)

DETOUR SIGNING  
FOR MAINLINE CLOSURES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

FHWA



GENERAL NOTES

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

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

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

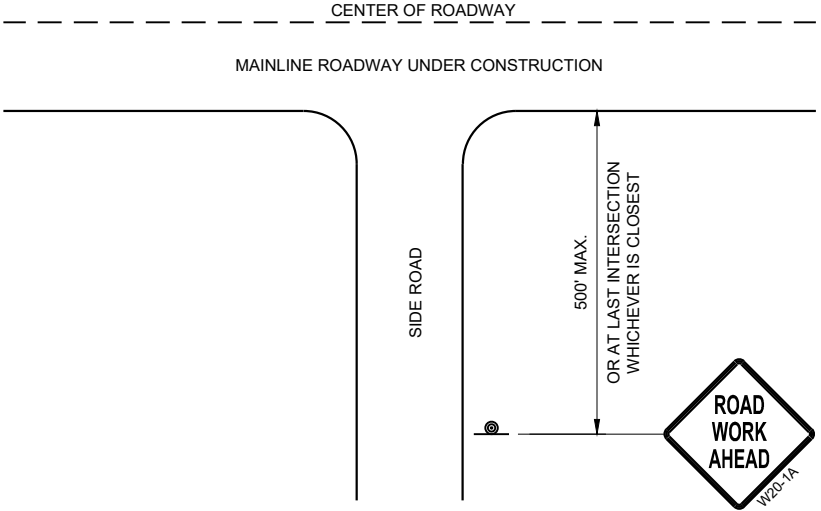
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

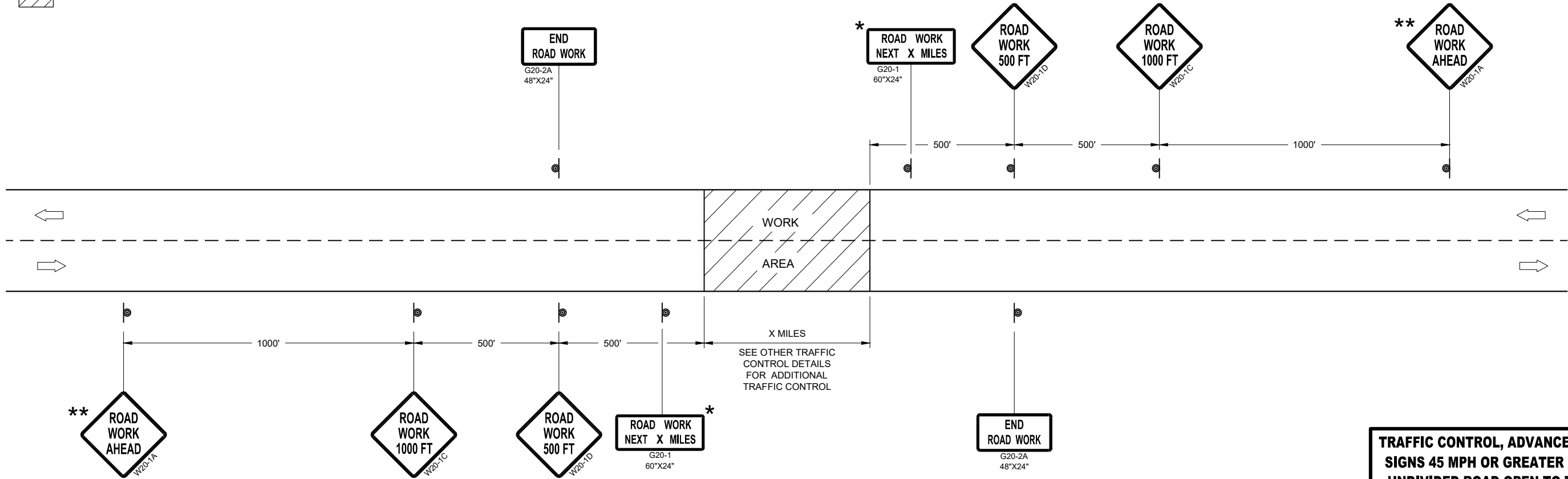
- \* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- \*\* PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC
-  WORK AREA



TYPICAL SIDE ROAD APPROACH  
WARNING SIGN DETAIL

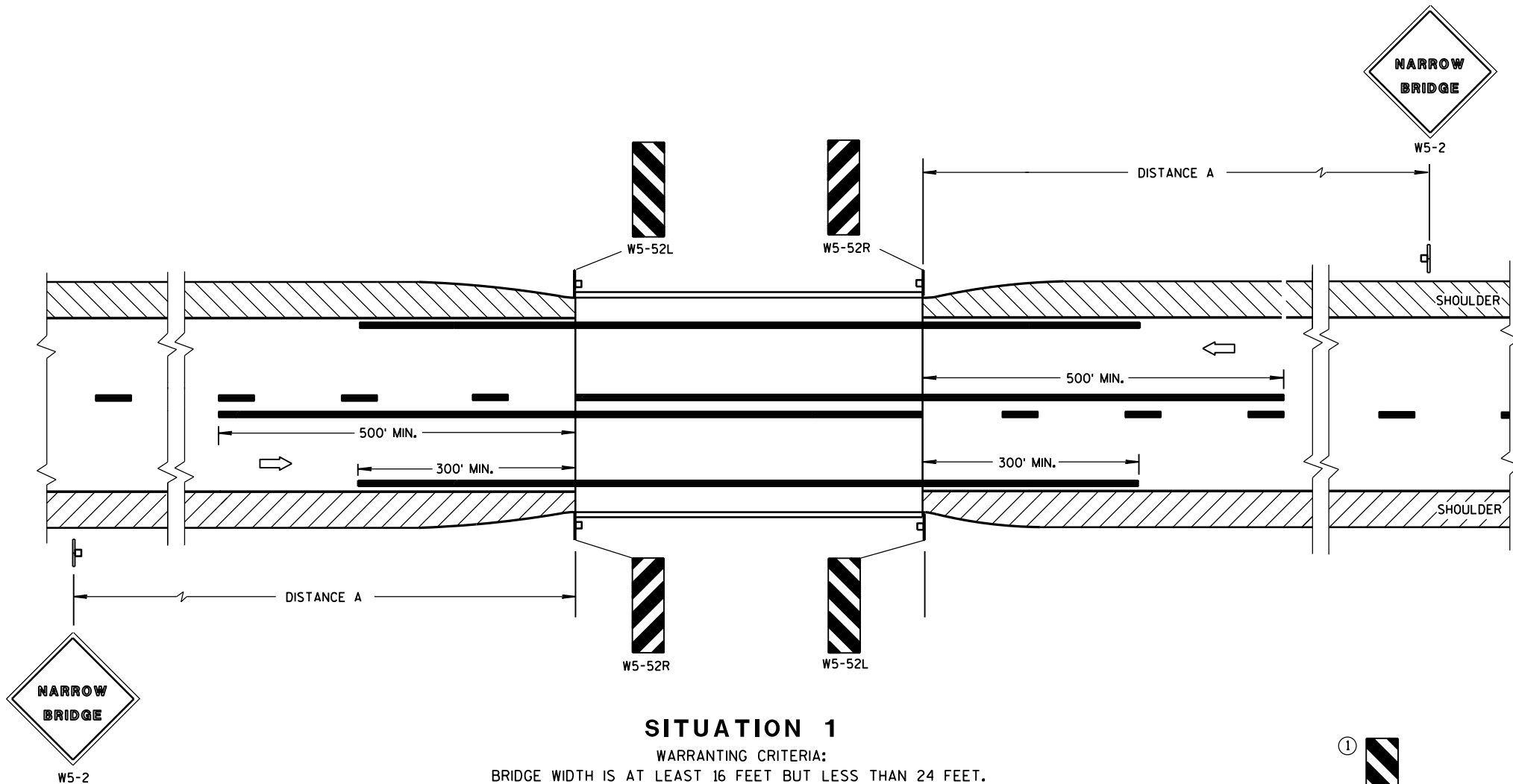


TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

TRAFFIC CONTROL, ADVANCE WARNING  
SIGNS 45 MPH OR GREATER TWO-WAY  
UNDIVIDED ROAD OPEN TO TRAFFICE

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

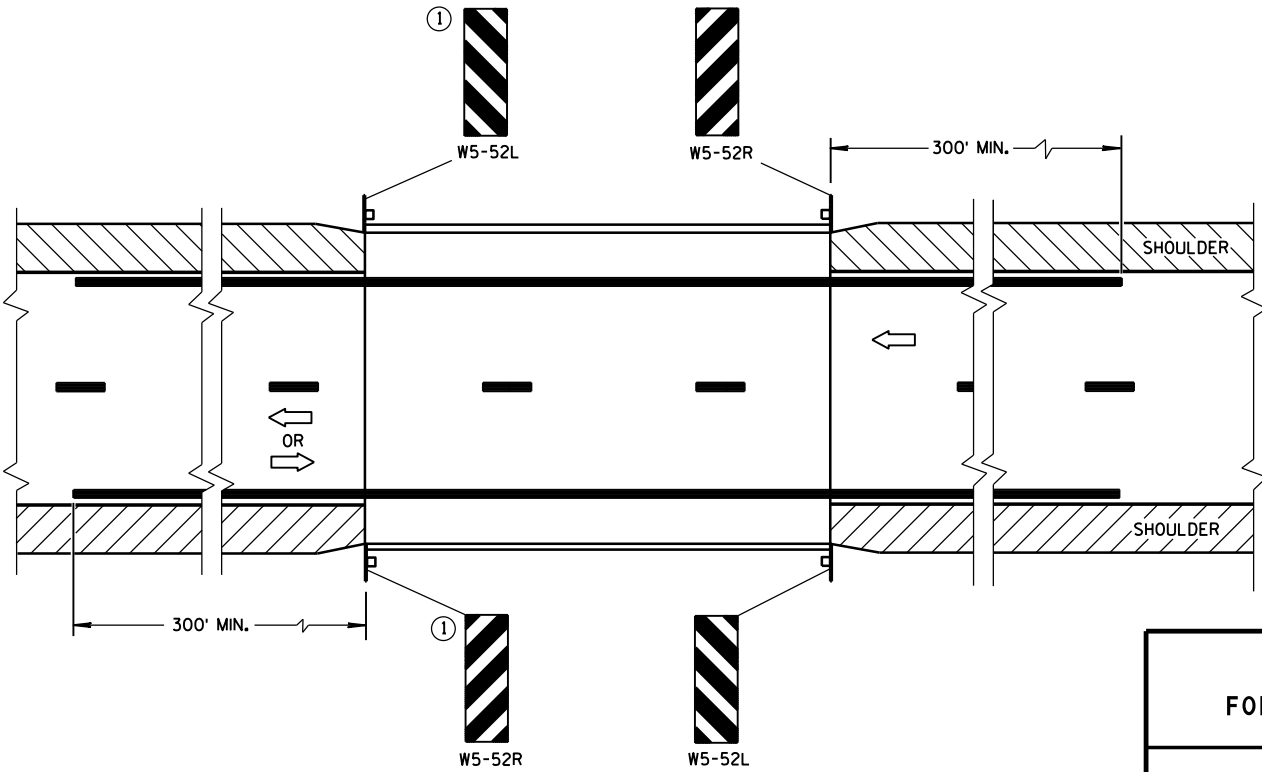


**SITUATION 1**

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

**DISTANCE TABLE**

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



**SITUATION 2**

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

**GENERAL NOTES**

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

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

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

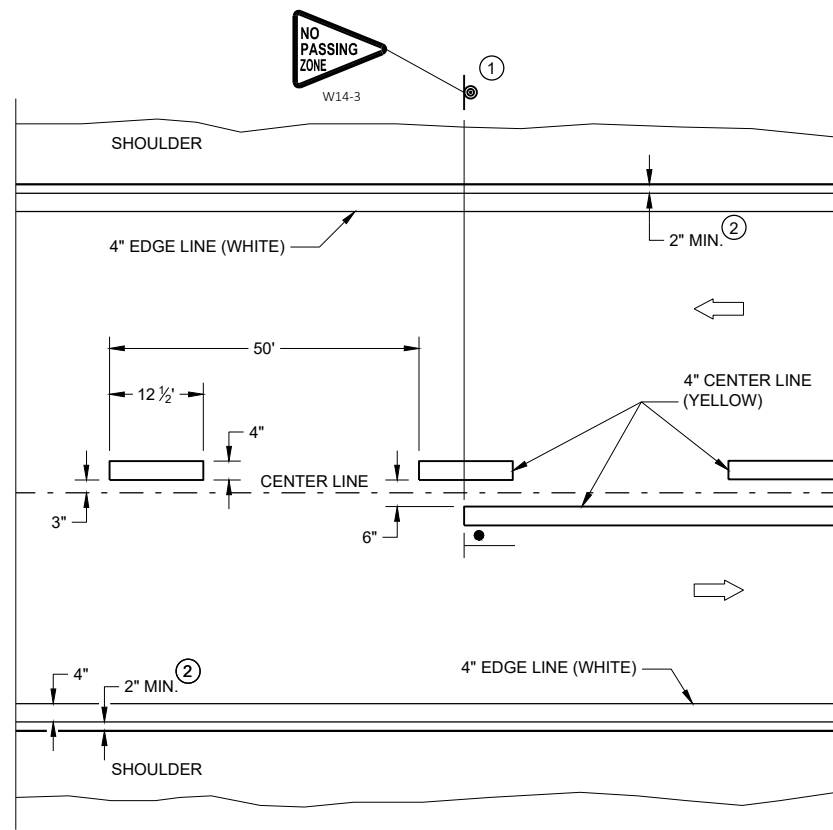
① OMIT ON ONE-WAY TRAVELLED WAYS.

➡ DIRECTION OF TRAFFIC

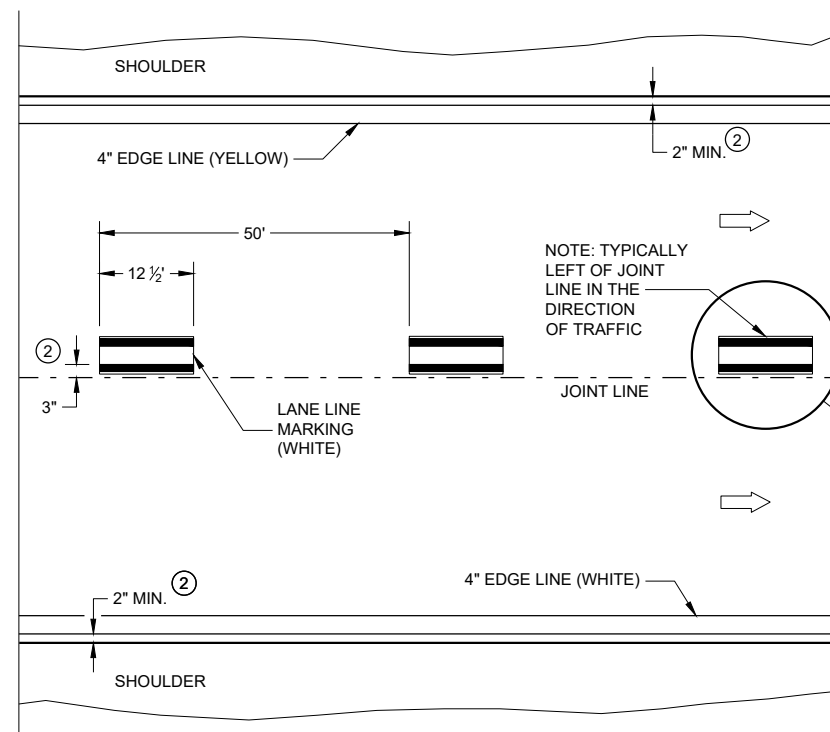
**SIGNING & MARKING  
FOR TWO LANE BRIDGES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

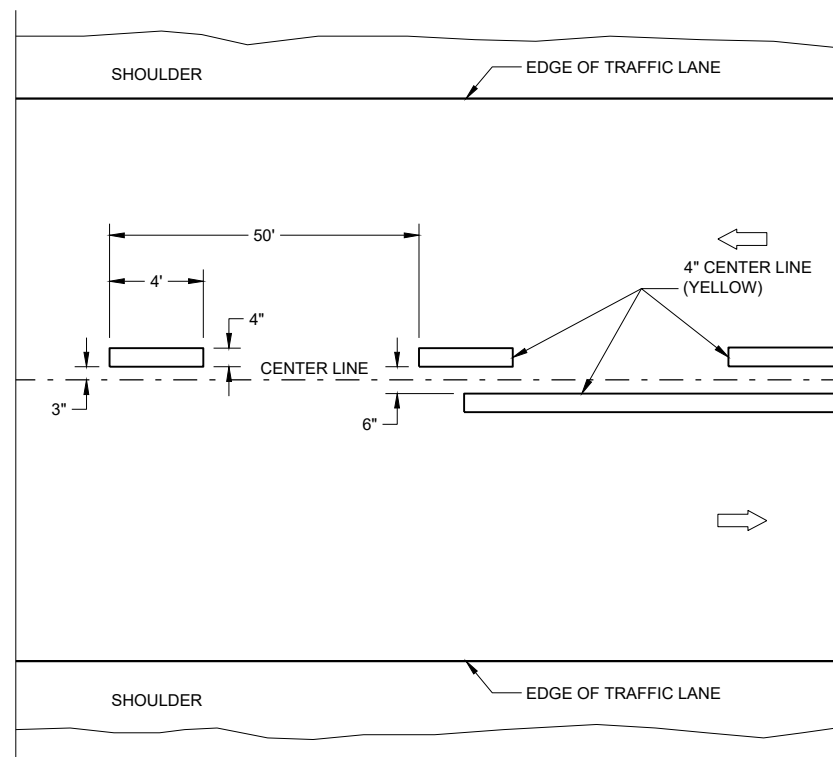


## TWO WAY TRAFFIC

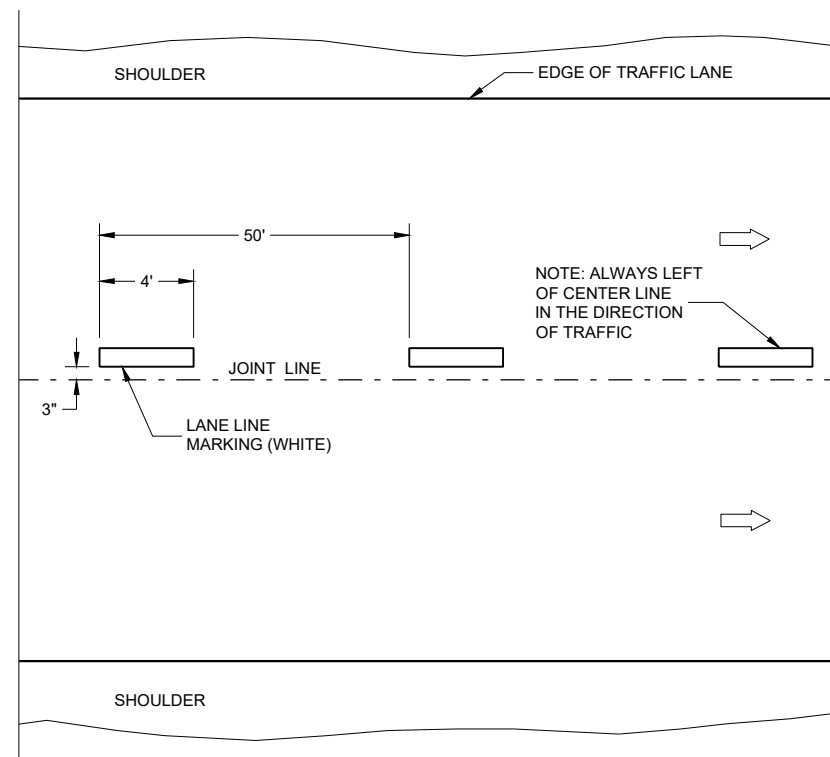


## ONE WAY TRAFFIC

## PERMANENT PAVEMENT MARKING



## TWO WAY TRAFFIC



## ONE WAY TRAFFIC

## TEMPORARY PAVEMENT MARKING

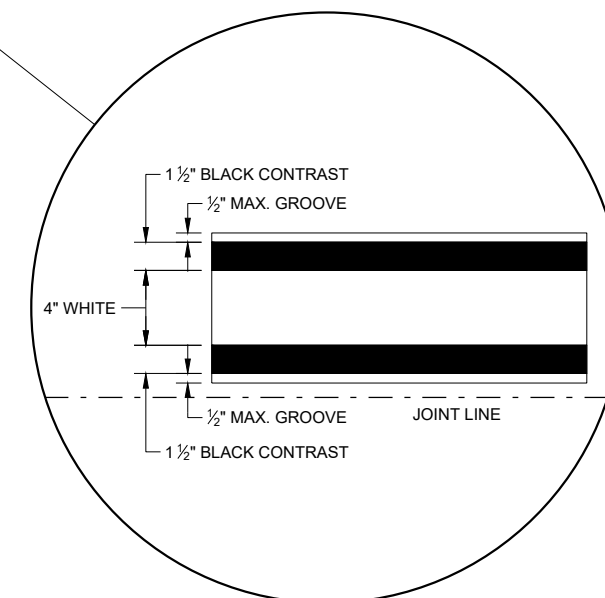
## GENERAL NOTES

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 WITH 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

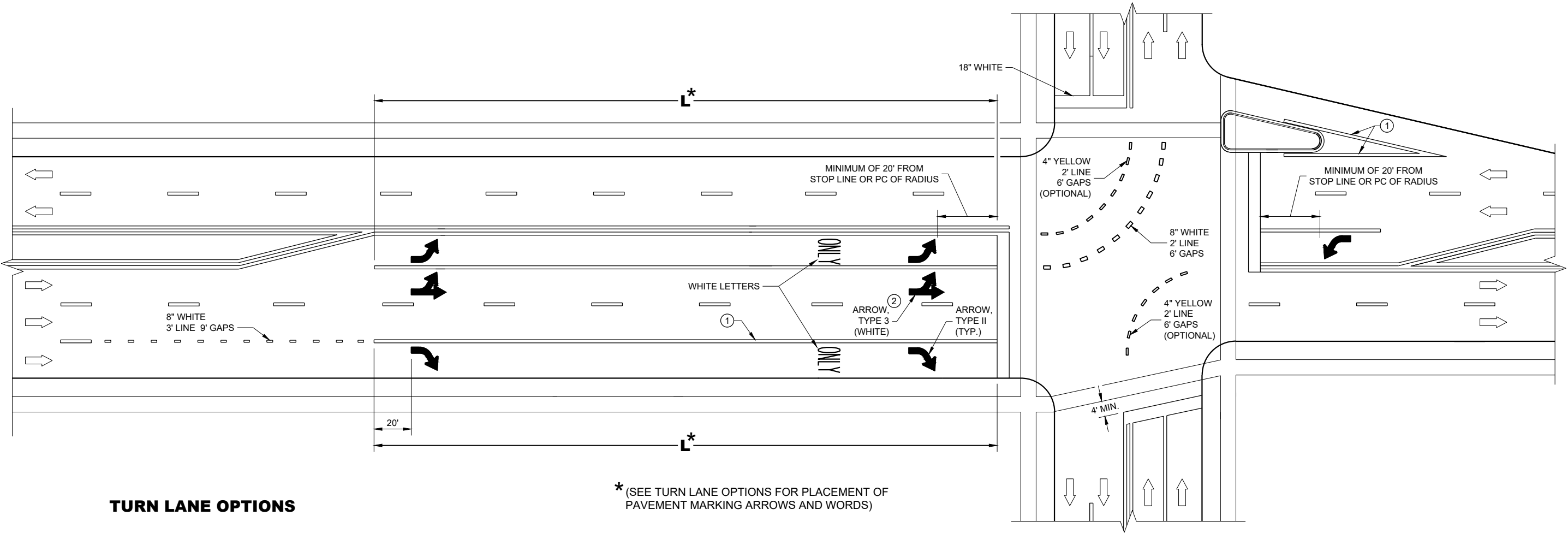


### LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

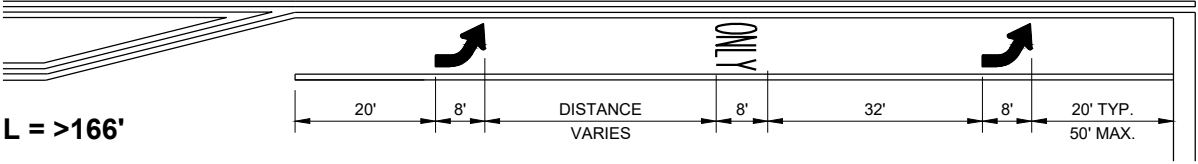
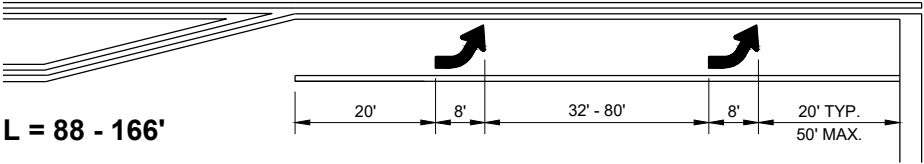
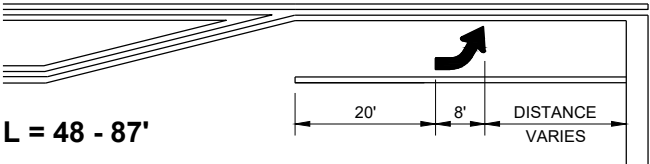
APPROVED  
February 2020  
DATE

/S/ Matthew Rauch  
STATEWIDE SIGNING AND MARKING  
ENGINEER



TURN LANE OPTIONS

LENGTH OF TURN BAY ( **L** ) OF 0 - 47' DOES NOT REQUIRE PAVEMENT MARKING ARROWS OR WORDS



\*(SEE TURN LANE OPTIONS FOR PLACEMENT OF PAVEMENT MARKING ARROWS AND WORDS)

GENERAL NOTES

- ① 8" WHITE
- ② QUANTITY AND LOCATION OF TYPE 3 ARROWS ARE THE SAME AS THE TYPE II ARROWS IN THE ADJACENT TURN LANE. FOR TURN LANES WITH A PHYSICAL SEPARATION IN THE SAME DIRECTION OF TRAVEL, THE ARROWS AND "ONLY" MARKING MAY BE ELIMINATED.

➡ DIRECTION OF TRAFFIC

**L** = LENGTH OF TURN BAY

PAVEMENT MARKING  
(TURN LANES)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

LEGEND

-  SIGN ON PORTABLE OR PERMANENT SUPPORT
-  TEMPORARY PORTABLE RUMBLE STRIP ARRAY
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

GENERAL NOTES

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

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

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

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

THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

FLAGGING

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

① FOR MOVING WORK OPERATIONS, POST ADDITIONAL W20-7A FLAGGER SIGNS AT APPROXIMATELY 3,500' INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.

② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.

TEMPORARY PORTABLE RUMBLE STRIPS

UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.

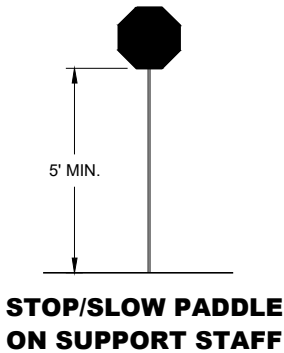
③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.

ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FOR THE APPROVED PRODUCTS LIST.

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.

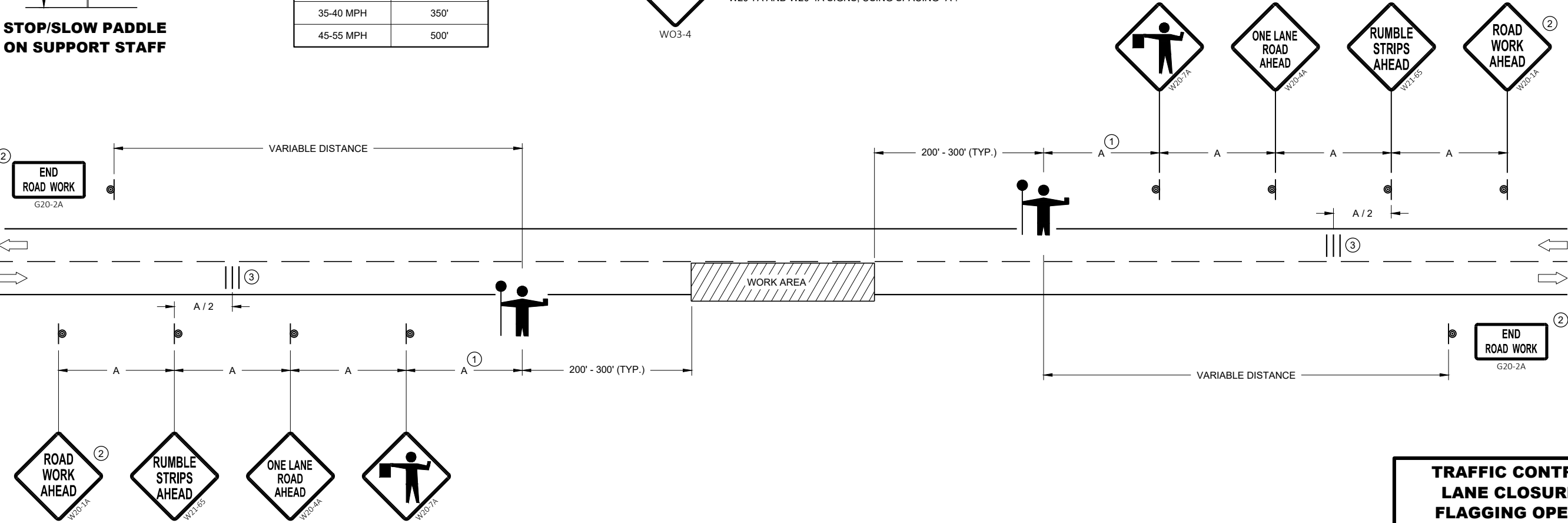


SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

| SPEED LIMIT | SPACING "A" |
|-------------|-------------|
| 25-30 MPH   | 200'        |
| 35-40 MPH   | 350'        |
| 45-55 MPH   | 500'        |



USE OF W03-4 SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7A AND W20-4A SIGNS, USING SPACING "A".



TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

**TRAFFIC CONTROL FOR  
LANE CLOSURE WITH  
FLAGGING OPERATION**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2019 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER

FHWA

LEGEND

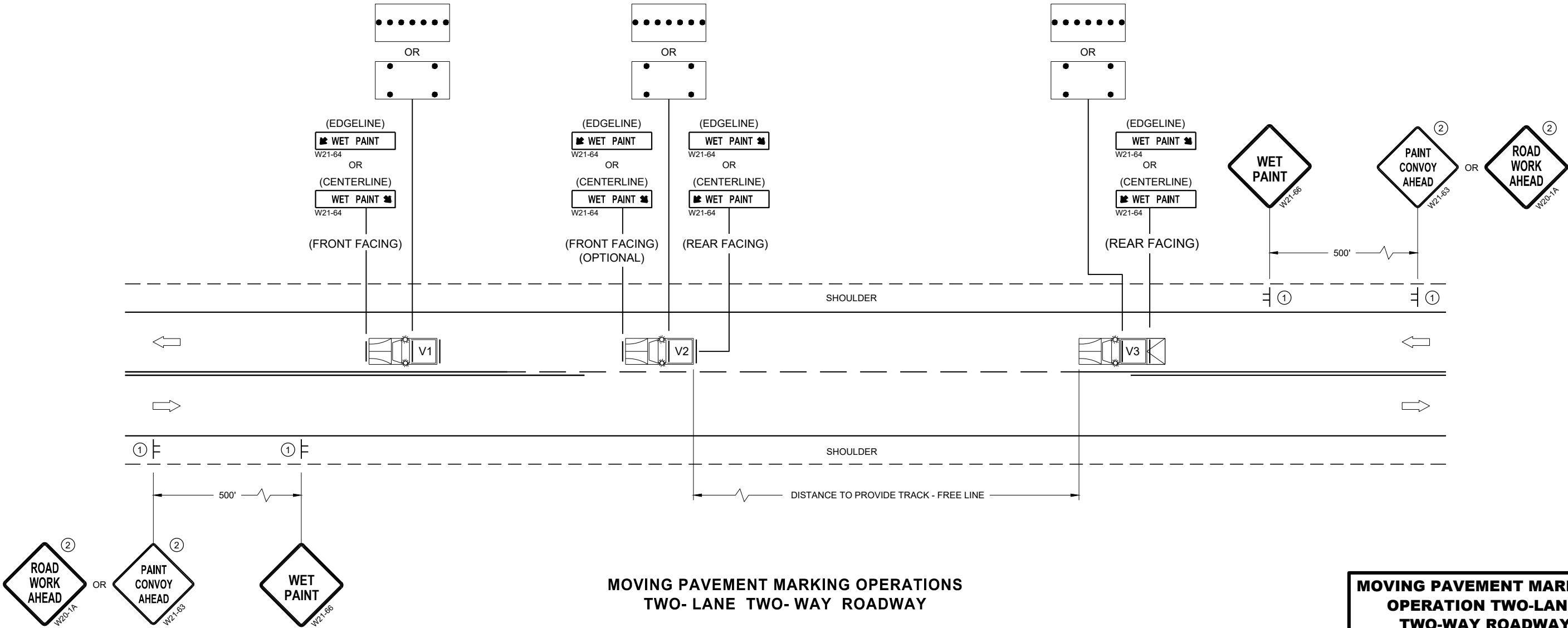
- V1 LEAD VEHICLE
- V2 MARKING VEHICLE
- V3 SHADOW VEHICLE
-  TRUCK MOUNTED ATTENUATOR (TMA)
-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC
-  FLASHING ARROW PANEL (CAUTION)

GENERAL NOTES

- ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.
- ALL VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL OPERATING IN CAUTION MODE. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.
- ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE SPECIFIED.
- DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL AND HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.
- THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.

- WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC.
- CONES SHOULD BE USED BETWEEN THE MARKING AND SHADOW VEHICLE AT 100 FOOT SPACING. CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.
- CONES SHALL BE A MINIMUM OF 18" FOR WET PAVEMENT MARKING .

- ① SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.
- ② IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1A OR W21-63 ARE NOT REQUIRED.

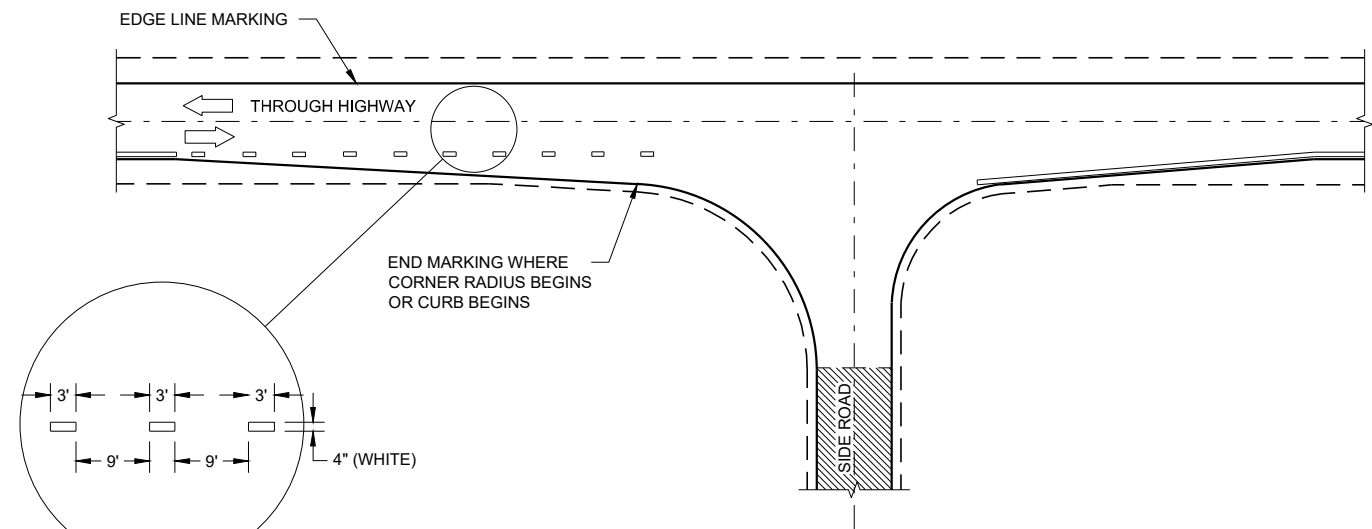


MOVING PAVEMENT MARKING  
OPERATION TWO-LANE  
TWO-WAY ROADWAY

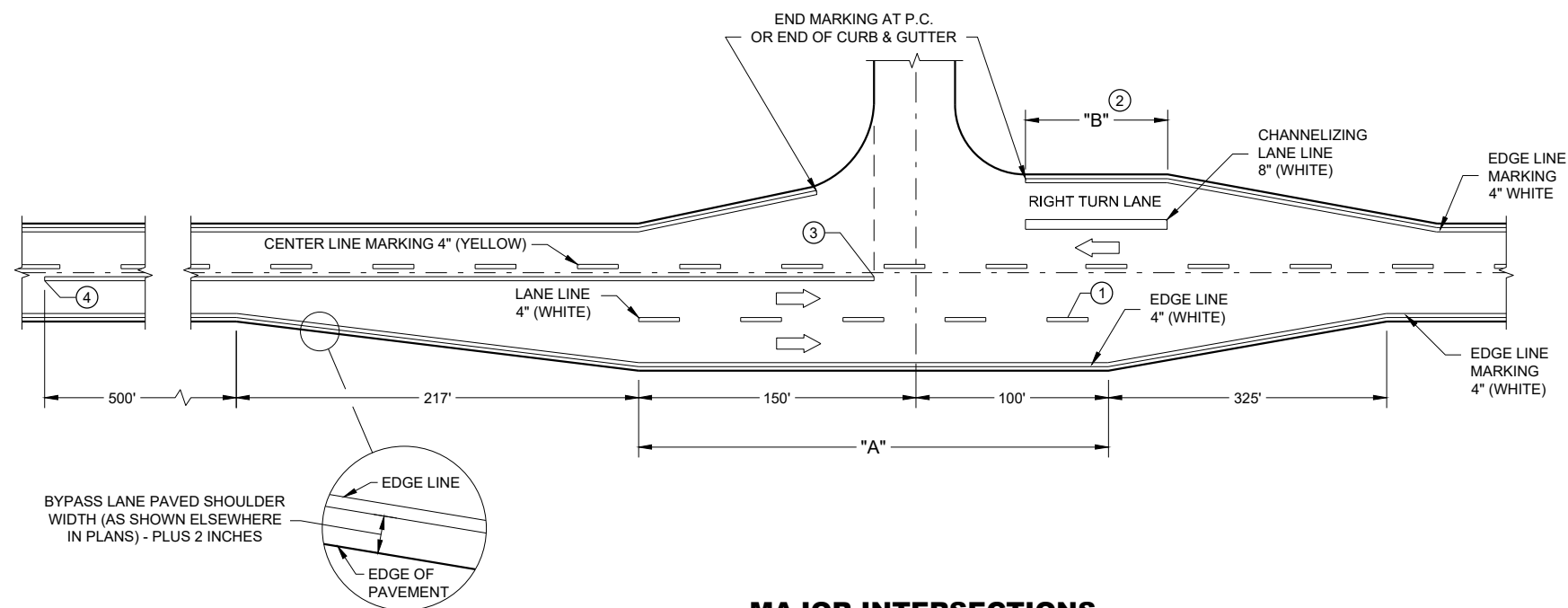
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
November 2019 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER  
FHWA





MINOR INTERSECTION



MAJOR INTERSECTIONS  
(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)

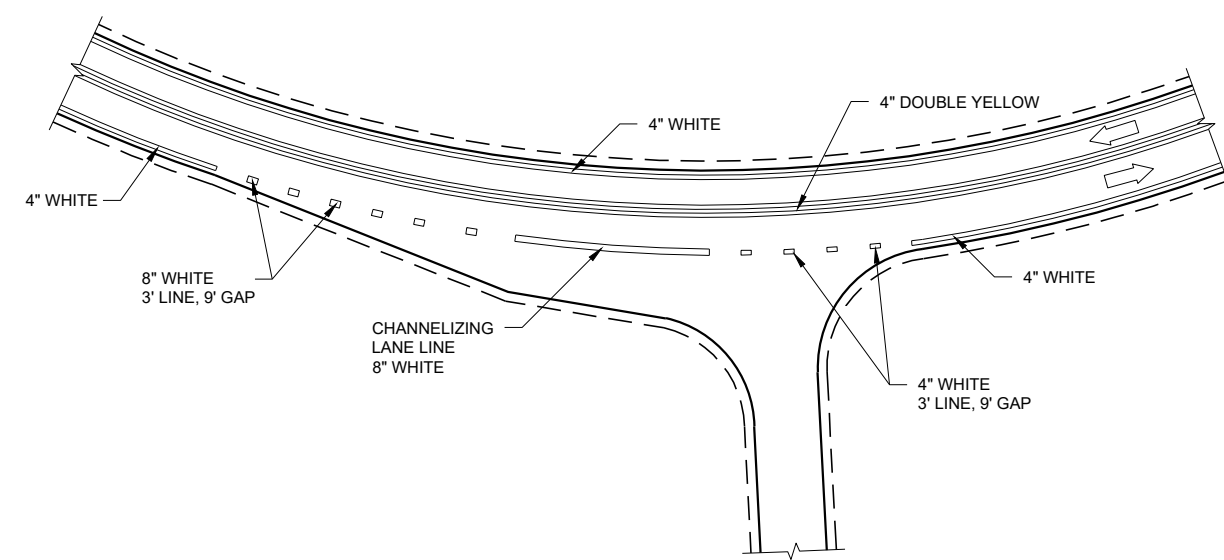
GENERAL NOTES

OMIT EDGE LINES THROUGH INTERSECTIONS. CONTINUE EDGE LINES THROUGH DRIVEWAYS.

- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
- ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
- ③ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
- ④ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

LEGEND

➡ DIRECTION OF TRAVEL

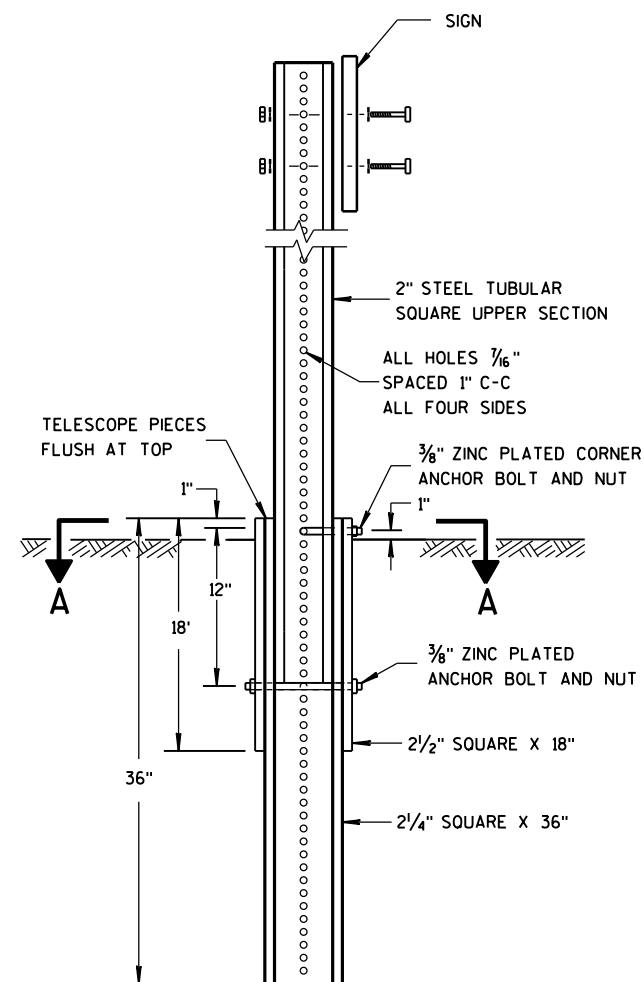


INTERSECTION ON OUTSIDE OF CURVE

PAVEMENT MARKING  
(INTERSECTIONS)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION





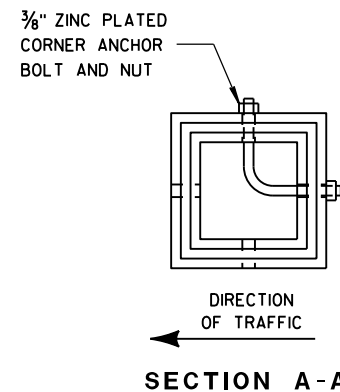
DETAIL OF TUBULAR  
STEEL SIGN POST

TUBULAR STEEL POSTS

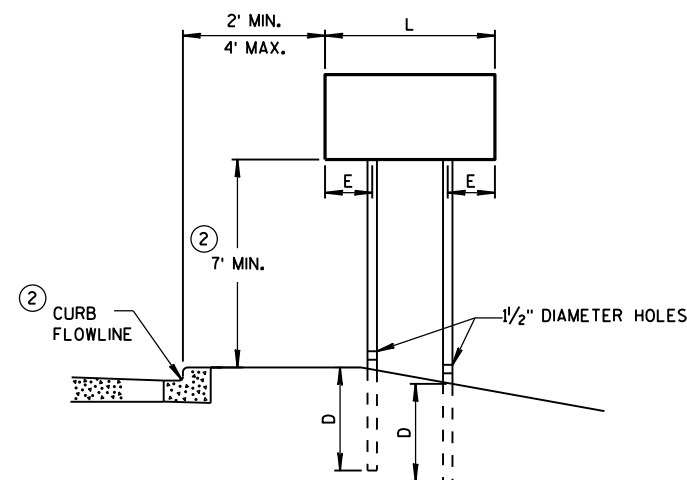
| AREA OF SIGN<br>INSTALLATION<br>(SQ. FT.)      | NUMBER OF<br>REQUIRED TUBULAR<br>STEEL POSTS |
|------------------------------------------------|----------------------------------------------|
| 9 OR LESS                                      | 1                                            |
| GREATER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

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL  
BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED  
ON TUBULAR STEEL POSTS.



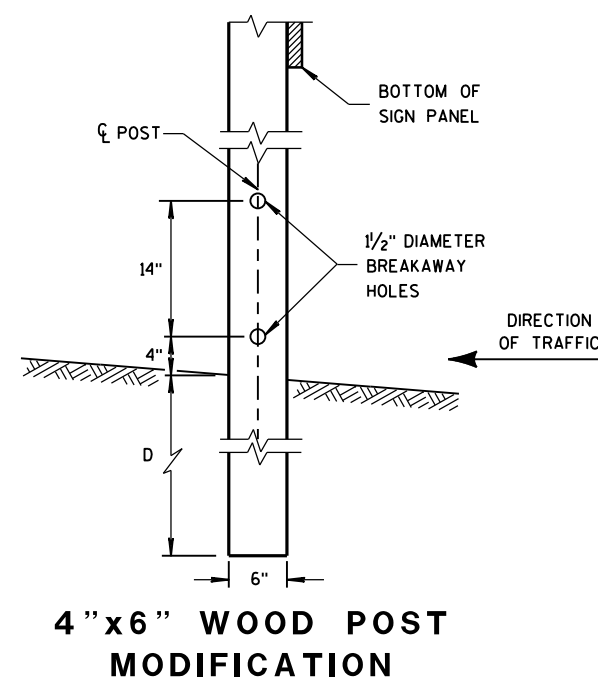
SECTION A-A



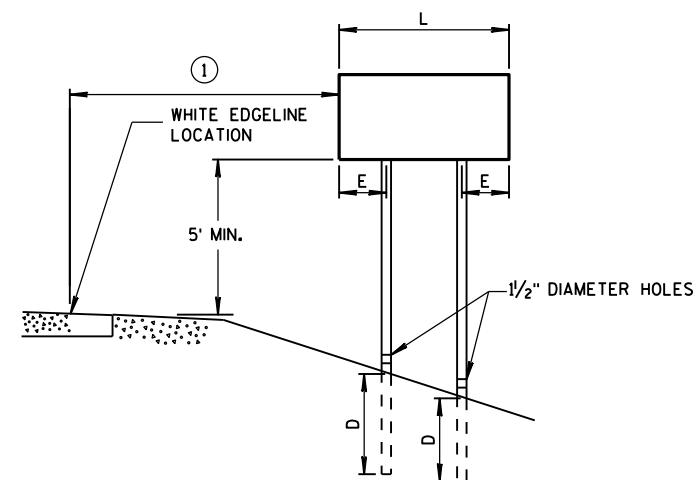
URBAN AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

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



4 "x6 " WOOD POST  
MODIFICATION



RURAL AREA

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

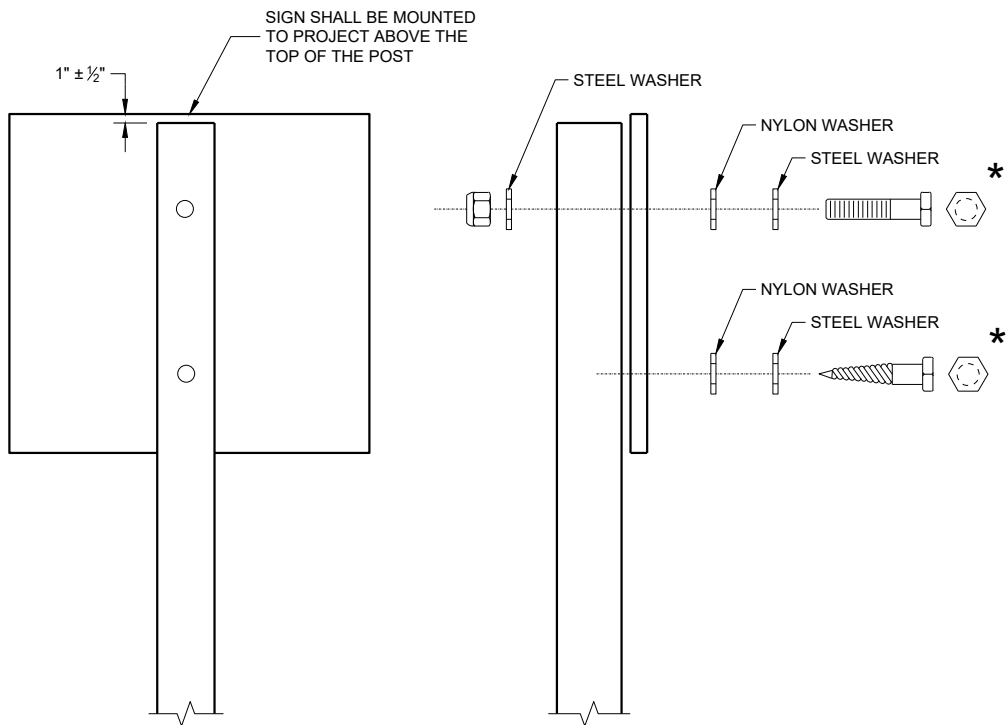
SEE NOTE ③

GENERAL NOTES

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

TEMPORARY TRAFFIC CONTROL  
SIGN MOUNTING

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



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

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

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

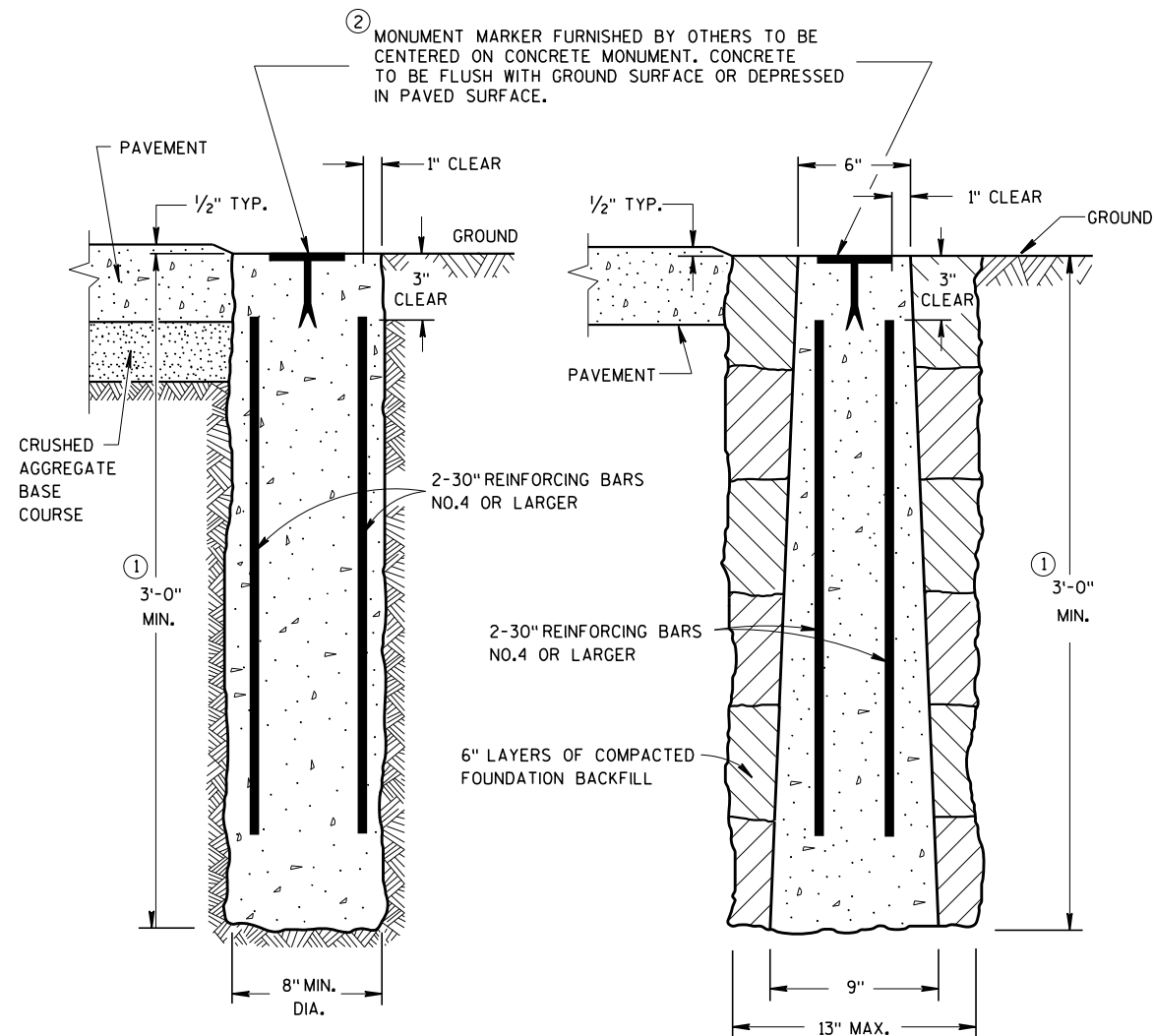
WOOD POST (4" x 6")  
LAG SCREWS - 3/8" x 3"  
MACHINE BOLTS - 5/16" x 6 1/2" OR 7" LENGTH W/NUTS

SQUARE STEEL POST (2" x 2")  
MACHINE BOLTS - 3/8" x 3 1/4" LENGTH W/NUTS  
RIVETS - 3/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM  
BODY/MANDREL O.D. FLANGE 0.720 - 0.765 INCH,  
GRIP RANGE 0.042 - 0.375 INCH

WASHERS (ALL POSTS) -  
1 1/4" O.D. x 3/8" I.D. x 1/16" STEEL  
1 1/4" O.D. x 3/8" I.D. x 0.080 NYLON

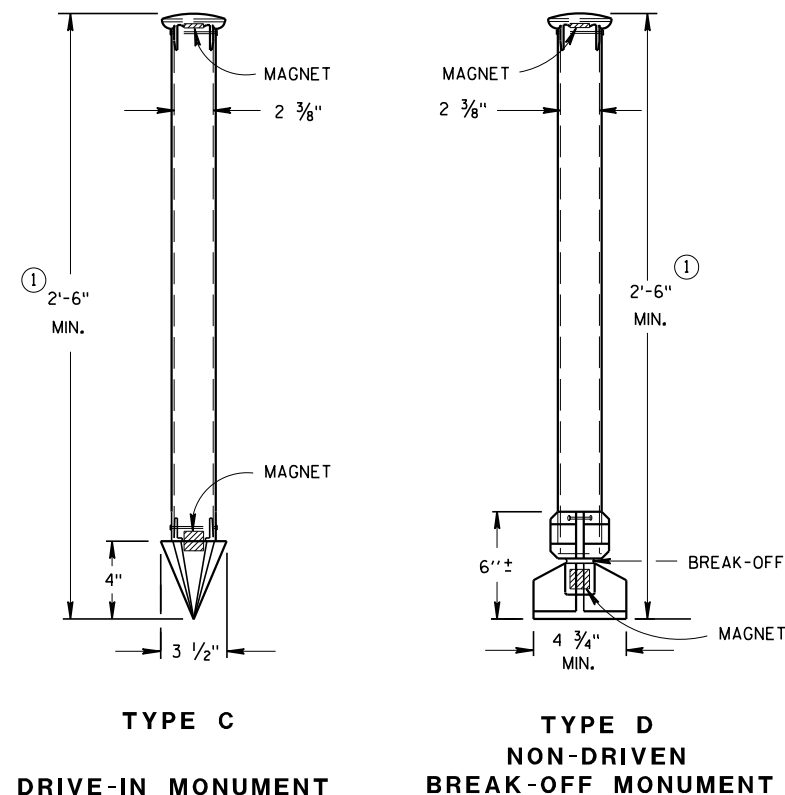
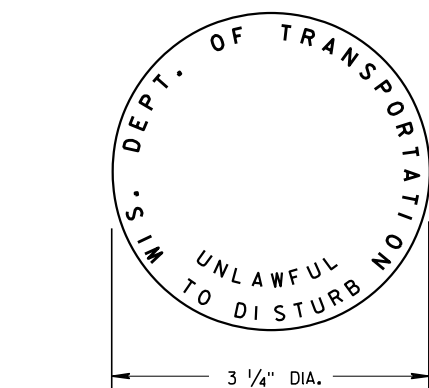
\* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION  
PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM  
SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH  
THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER  
THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

|                                                    |                                          |
|----------------------------------------------------|------------------------------------------|
| ATTACHMENT OF SIGNS<br>TO POSTS                    |                                          |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                                          |
| APPROVED<br>June 2017<br>DATE                      | /S/ Andrew Heidtke<br>WORK ZONE ENGINEER |
| FHWA                                               |                                          |

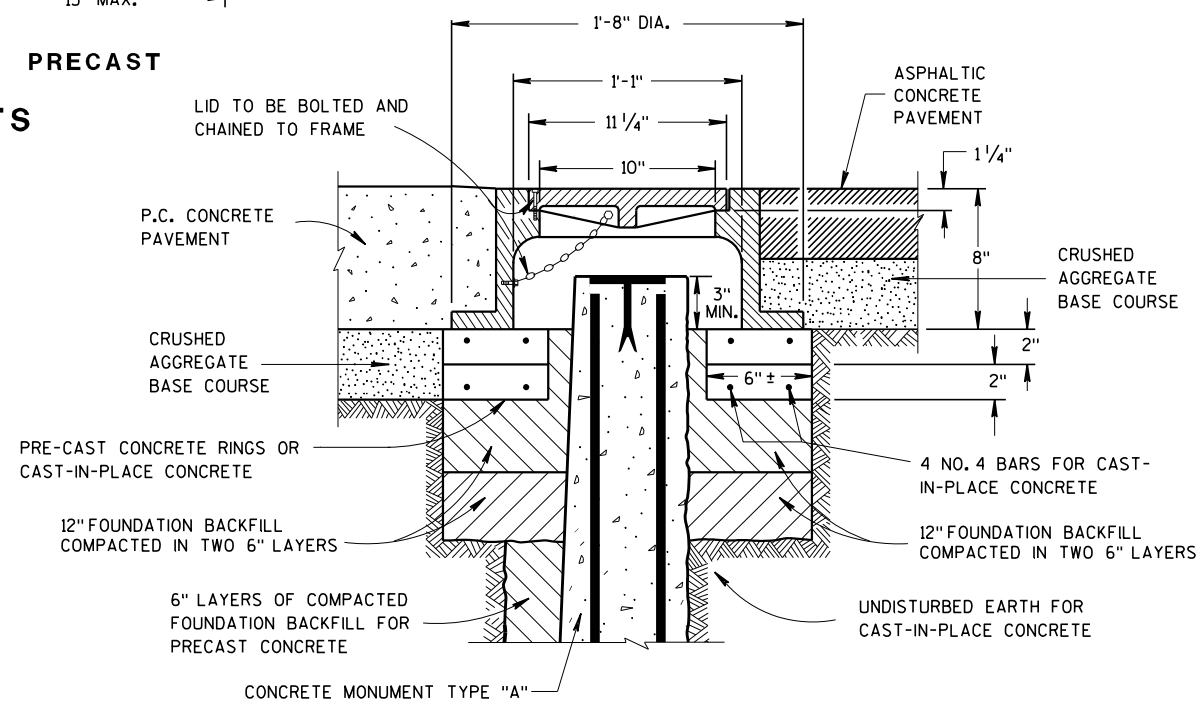
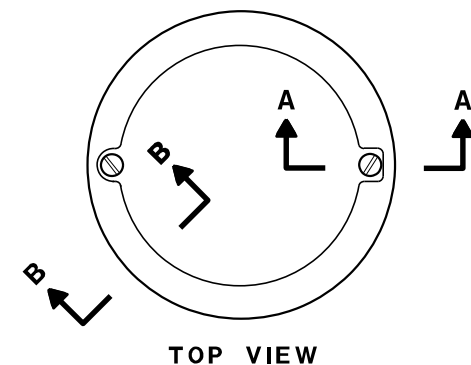


**CAST-IN-PLACE  
CONCRETE MONUMENTS**  
TYPE A

**PRECAST**



**ALUMINUM MONUMENTS**  
(INCLUDES MARKER)



**CAST IRON MONUMENT COVER**  
(APPROXIMATE WEIGHT 95 LBS)

## 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.

DETAILED DRAWINGS OF PROPOSED ALTERNATE DESIGNS FOR METAL MONUMENTS OR MONUMENT COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

PERMANENT MAGNETS SHALL BE INSERTED NEAR THE TOP AND BOTTOM OF ALL ALUMINUM MONUMENTS SO THE MONUMENT CAN EASILY BE DETECTED BY A METAL DETECTOR.

THE CAST IRON MONUMENT COVER SHALL BE A "NON-ROCKING" TYPE. ADJUSTMENT OF THE COVER TO GRADE MAY BE ACCOMPLISHED BY THE USE OF MORTAR AND BRICK, OR BY EITHER PRECAST OR CAST-IN-PLACE REINFORCED CONCRETE GRADE RINGS.

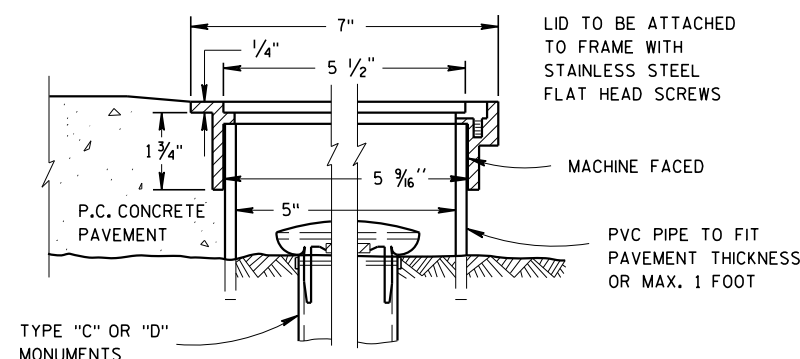
MONUMENTS SHALL BE LOCATED AND PLACED AT THE DIRECTION OF THE ENGINEER.

ALUMINUM MONUMENTS AND MONUMENT COVERS SHALL BE MADE FROM AN ALUMINUM AND MAGNESIUM ALLOY AS DETERMINED BY THE MANUFACTURER.

THE MONUMENT COVERS DETAILED ON THIS DRAWING ARE NOT EQUAL ALTERNATES. MONUMENT COVERS SHALL BE CAST IRON UNLESS ALUMINUM IS SPECIFIED ELSEWHERE IN THE CONTRACT.

MONUMENT SHALL BE CAST-IN-PLACE CONCRETE UNLESS PRECAST CONCRETE OR ALUMINUM MONUMENTS ARE SPECIFIED IN THE CONTRACT OR PERMITTED BY THE ENGINEER

- ① MINIMUM LENGTH SHALL BE 4'-0" FOR MONUMENTS INSTALLED IN PAVED AREAS.
- ② AN OFFICIAL COUNTY MONUMENT MARKER SUPPLIED BY A COUNTY MAY BE REQUIRED FOR SOME SECTION CORNERS AND WITNESS MONUMENTS INSTEAD OF THIS WIS DOT MARKER.



**SECTION B-B SECTION A-A  
ALUMINUM MONUMENT COVER**

(APPROXIMATE WEIGHT 2 LBS)  
(FOR CONCRETE PAVEMENT ONLY)

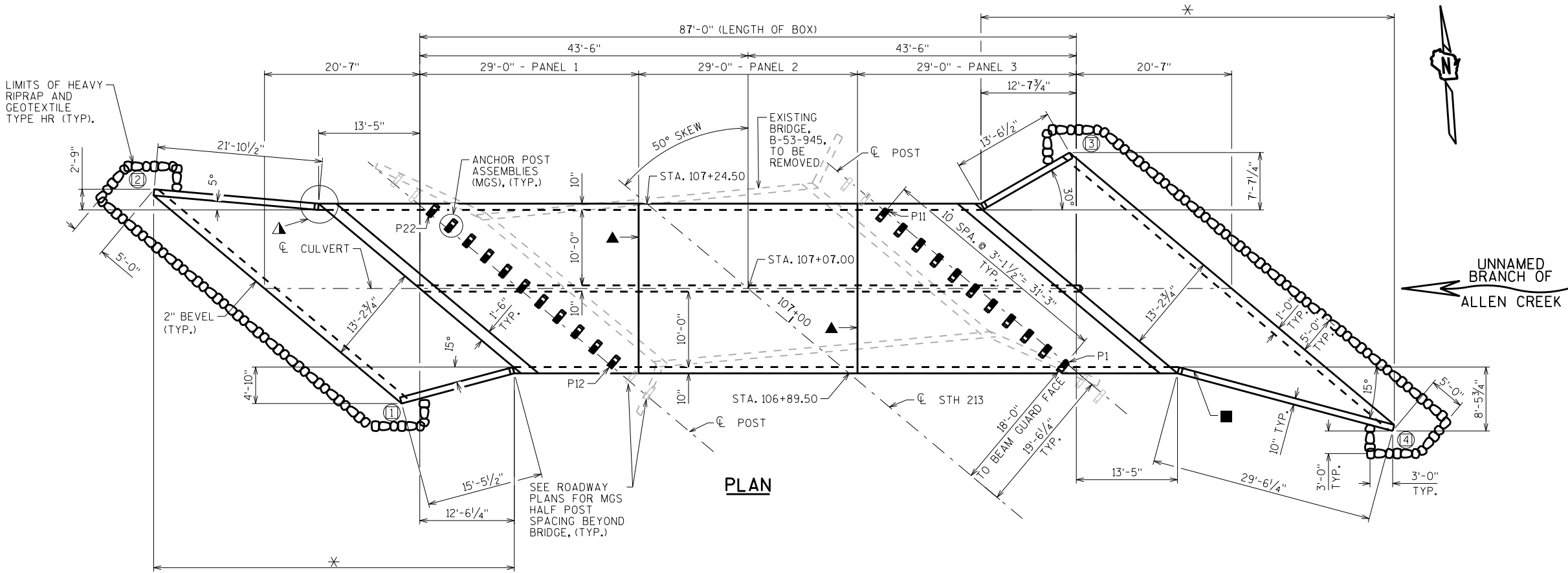
## LANDMARK REFERENCE MONUMENTS AND COVERS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

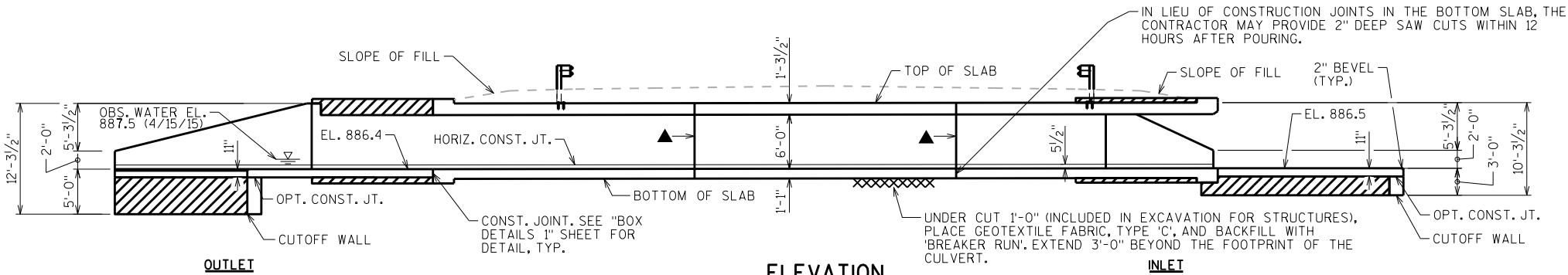
APPROVED  
March 2018 /S/ Raymond A. Kumapayi  
DATE CHIEF SURVEYING AND MAPPING ENGINEER  
FHWA

- ▲ SEE CORNER DETAILS ON "APRON DETAILS" SHEET
- NAME PLATE LOCATION (SEE "QUANTITIES & NOTES" SHEET)
- \* BUILD APRON AND END OF BOX LEVEL
- INDICATES WING NUMBER
- ▲ VERT. CONST. JOINT (TYP.)

NOTE: STRUCTURE BACKFILL REQUIRED BEHIND ALL WING WALLS.



PLAN



ELEVATION

LIST OF DRAWINGS

1. LAYOUT
2. QUANTITIES & NOTES
3. BOX DETAILS 1
4. BOX DETAILS 2
5. APRON
6. APRON DETAILS
7. SUBSURFACE EXPLORATION

STRUCTURE DESIGN CONTACTS:

BRETT FOLLETT (608) 266-0214  
AARON BONK (608) 261-0261

DESIGN DATA

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

**EARTHLOAD:**  
DESIGNED FOR 1.5 TO 2.0 FT. OF FILL.

**MATERIAL PROPERTIES:**  
CONCRETE MASONRY:  $f'_c = 4,000$  P.S.I.  
BAR STEEL REINFORCEMENT:  $f_y = 60,000$  P.S.I.

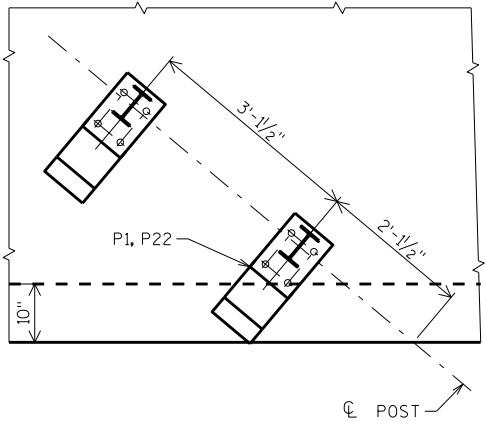
TRAFFIC VOLUME

**STH 213**  
ADT = 2800 (2040)  
R.D.S. = 55 M.P.H.

HYDRAULIC DATA

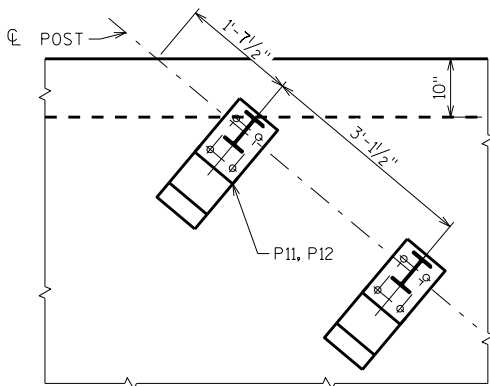
**100 YEAR FREQUENCY**  
 $Q_{100} = 200$  C.F.S.  
 $VEL_{100} = 2.5$  F.P.S.  
 $HW_{100} = EL. 891.65$   
WATERWAY AREA = 120 SQ. FT.  
DRAINAGE AREA = 4.3 SQ. MI.  
ROADWAY OVERTOPPING = N/A  
SCOUR CRITICAL CODE = 8

**2 YEAR FREQUENCY**  
 $Q_2 = 155$  C.F.S.  
 $VEL_2 = 2.1$  F.P.S.  
 $HW_2 = EL. 890.74$



EDGE GUARDRAIL POST SPACING

EDGE POSTS P1, P22 SHOWN



EDGE GUARDRAIL POST SPACING

EDGE POSTS P11, P12 SHOWN

|                                                       |         |                |              |
|-------------------------------------------------------|---------|----------------|--------------|
| NO.                                                   | DATE    | REVISION       | BY           |
| BUREAU OF STRUCTURES                                  |         |                |              |
| ACCEPTED <i>[Signature]</i> DMB 11/03/20              |         |                |              |
| CHIEF STRUCTURES DESIGN ENGINEER DATE                 |         |                |              |
| STRUCTURE B-53-293                                    |         |                |              |
| STH 213 OVER UNNAMED BRANCH OF ALLEN CREEK            |         |                |              |
| COUNTY                                                | ROCK    | TOWN           | MAGNOLIA     |
| DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS |         |                |              |
| DESIGNED BY                                           | BAF     | DESIGNED CK'D. | EMK          |
| DRAWN BY                                              | BAF/JPH | PLANS CK'D.    | EK/BF        |
| LAYOUT                                                |         |                | SHEET 1 OF 7 |

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 3/4" UNLESS OTHERWISE NOTED.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES CULVERTS B-53-293" SHALL BE THE EXISTING GROUNDLINE.

ALL VOLUME WHICH CANNOT BE PLACED BEFORE CULVERT CONSTRUCTION AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL WITHIN THE LENGTH OF THE CULVERT INCLUDING THE APRON WING WALLS.

THE QUANTITY FOR BACKFILL STRUCTURE IS CALCULATED BASED ON THE DETAIL SHOWN IN THE PLANS.

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

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

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

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

DETAILS SHOWN FOR POSTS, PLATES, ANCHORAGE SYSTEM AND INSTALLATION, BLOCKS, AND GUARD RAIL ARE NOT PART OF THE STRUCTURE CONTRACT, BUT ARE BID PER THE ROADWAY DESIGN PLANS.

POST BASE PLATES (AND BOTTOM PLATES IF USED) 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 CUTS.

CUT BOTTOM OF POST SO THAT POST WILL BE VERTICAL WHEN POST ASSEMBLY IS PLACED ON TOP OF THE CULVERT. ALONG THE ROADWAY THE POST WILL BE NORMAL TO GRADE LINE. HEX BOLTS AND THREADED RODS ARE TO BE PLACED PERPENDICULAR TO THE BASE PLATE.

POST, BASE PLATE (AND BOTTOM PLATE IF USED), AND SHIMS SHALL BE GALVANIZED AFTER FABRICATION.

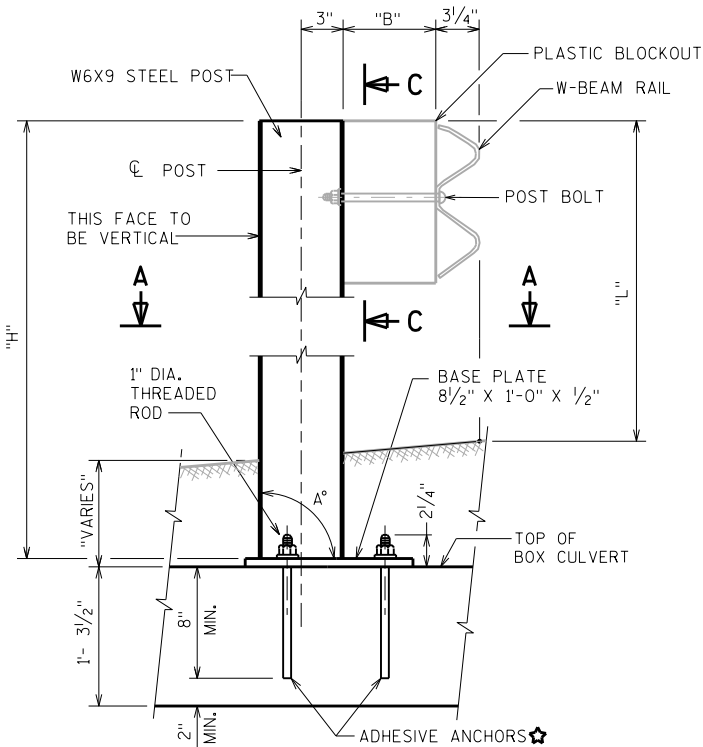
PRIOR TO GALVANIZING, ALL STEEL POSTS AND PLATES SHALL BE GIVEN A NO. 6 COMMERCIAL BLAST CLEANING BY SSPC SPECS.

ALL MATERIAL USED IN POSTS AND PLATES SHALL BE MADE FROM MATERIAL CONFORMING TO ASTM DESIGNATION A709 GRADE 50 OR 50S.

HEX BOLTS, THREADED RODS, HEX NUTS AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F1554 GRADE 36, AND SHALL BE GALVANIZED. RODS ARE TO BE FULLY THREADED AND BOLTS TO BE THREADED 3". CHAMFER TOP OF BOLTS AND RODS BEFORE THREADING.

☆ ADHESIVE ANCHORS 1-INCH. EMBED IN CONCRETE AS DETAILED. CHARACTERISTIC BOND STRENGTH SHALL MEET OR EXCEED 1305 PSI FOR UNCRACKED CONCRETE.

STEEL SHIMS MAY BE USED BETWEEN PLATES AND SLAB WHERE REQUIRED FOR ALIGNMENT.

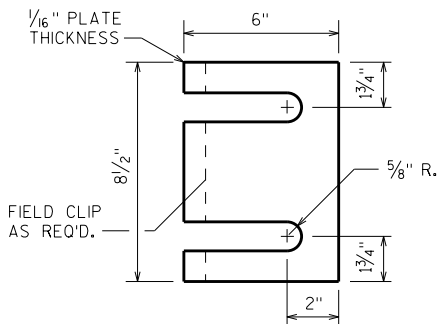


GUARDRAIL POST ANCHOR  
(ELEVATION VIEW)

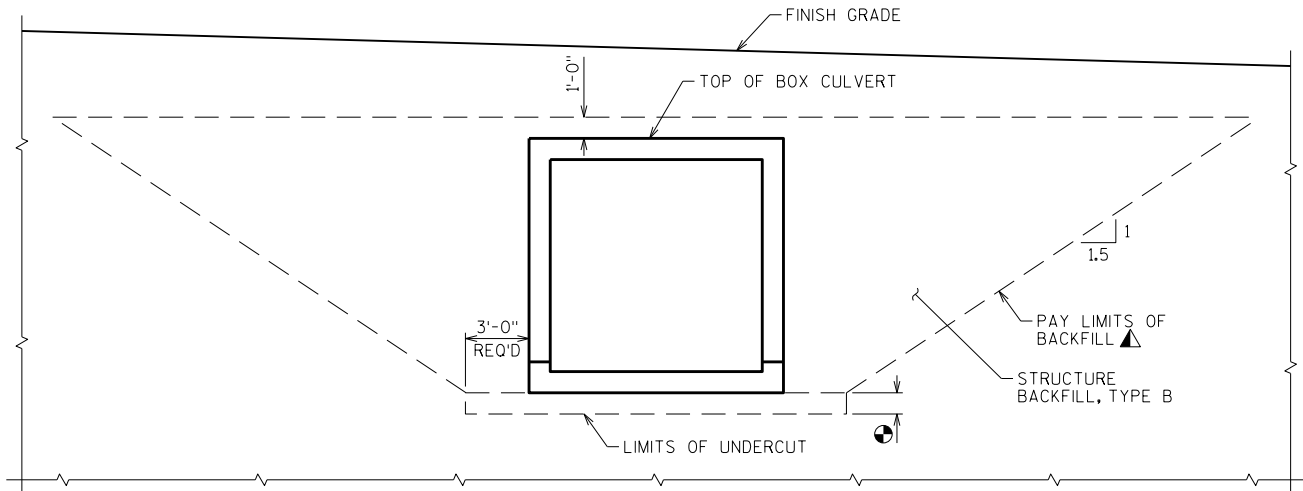
|               | "L"       | "B" | "X"    | "Y"  |
|---------------|-----------|-----|--------|------|
| MGS GUARDRAIL | 2'-7 1/8" | 12" | 7 1/8" | 3/4" |

POST HEIGHT

| POST NO. | "H"    |
|----------|--------|
| P1-P8    | 49.5"  |
| P9-P11   | 49.25" |
| P12-P15  | 49.75" |
| P16-P22  | 49.5"  |



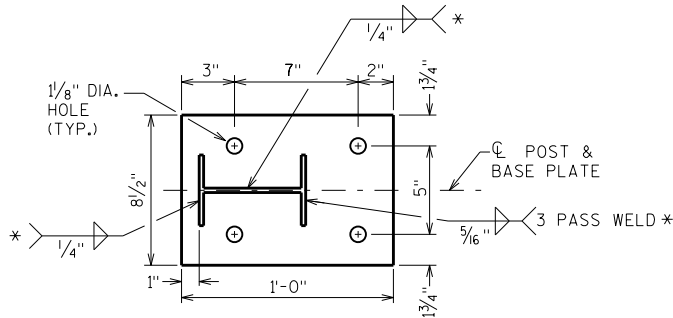
STEEL SHIM DETAIL  
4 PER POST



TYPICAL SECTION  
THRU BOX CULVERT

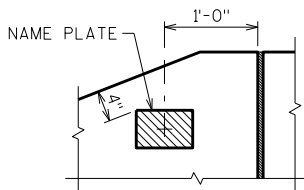
▲ BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

⊗ UNDER CUT 1'-0". EXCAVATION FOR UNDER CUT TO BE INCLUDED IN EXCAVATION FOR STRUCTURES. PLACE "GEOTEXTILE TYPE C" AND BACKFILL WITH "BREAKER RUN".

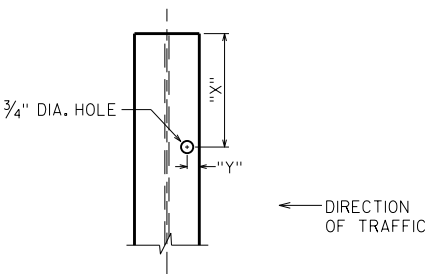


SECTION A-A  
POST & BASE PLATE

\* WELDING IS TO BE COMPLETED USING THE GAS-METAL ARC WELDING (GMAW) PROCESS WITH ER70S-3 WELDING WIRE AND ARGON-OXYGEN OR CO<sub>2</sub> COVER GAS.



NAME PLATE LOCATION  
WING 4



SECTION C-C

HOLE IN POST FLANGE ON APPROACHING TRAFFIC SIDE

TOTAL ESTIMATED QUANTITIES

| BID ITEM NUMBER | BID ITEMS                                    | UNIT | TOTALS |
|-----------------|----------------------------------------------|------|--------|
| 203.0200        | REMOVING OLD STRUCTURE STA. 107+07           | LS   | 1      |
| 206.2000        | EXCAVATION FOR STRUCTURES CULVERTS B-53-293  | LS   | 1      |
| 210.2500        | BACKFILL STRUCTURE TYPE B                    | TON  | 1595   |
| 311.0115        | BREAKER RUN                                  | CY   | 143    |
| 504.0100        | CONCRETE MASONRY CULVERTS                    | CY   | 289    |
| 505.0400        | BAR STEEL REINFORCEMENT HS STRUCTURES        | LB   | 12,450 |
| 505.0600        | BAR STEEL REINFORCEMENT HS COATED STRUCTURES | LB   | 19,270 |
| 516.0500        | RUBBERIZED MEMBRANE WATERPROOFING            | SY   | 31     |
| 606.0300        | RIPRAP HEAVY                                 | CY   | 46     |
| 645.0105        | GEOTEXTILE TYPE C                            | SY   | 457    |
| 645.0120        | GEOTEXTILE TYPE HR                           | SY   | 105    |
|                 |                                              |      |        |
|                 |                                              |      |        |
|                 | NON-BID ITEMS                                |      |        |
|                 | FILLER                                       | EACH | 3/4"   |
|                 |                                              |      |        |

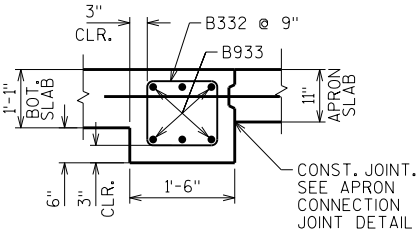
|                                                                                 |          |          |                   |
|---------------------------------------------------------------------------------|----------|----------|-------------------|
|                                                                                 |          |          |                   |
| NO.                                                                             | DATE     | REVISION | BY                |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |          |          |                   |
| STRUCTURE B-53-293                                                              |          |          |                   |
|                                                                                 | DRAWN BY | BAF      | PLANS CK'D. EK/BF |
| QUANTITIES & NOTES                                                              |          | SHEET 2  |                   |

SCALE = 1:100

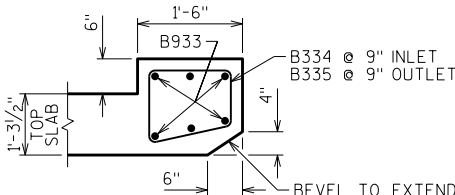
BAR SERIES TABLE

| BAR MARK | NO. REQ'D.          | LENGTH            |
|----------|---------------------|-------------------|
| B402     | 4 SERIES OF 14 BARS | 5'-3" TO 11'-2"   |
| B403     | 2 SERIES OF 11 BARS | 1'-10" TO 6'-4"   |
| B505     | 2 SERIES OF 24 BARS | 2'-7" TO 13'-0"   |
| B507     | 2 SERIES OF 23 BARS | 1'-8" TO 11'-8"   |
| B510     | 2 SERIES OF 47 BARS | 0'-10" TO 21'-9"  |
| B511     | 2 SERIES OF 47 BARS | 0'-10" TO 21'-9"  |
| B418     | 2 SERIES OF 11 BARS | 28'-11" TO 40'-8" |
| B419     | 2 SERIES OF 11 BARS | 16'-6" TO 28'-2"  |
| B420     | 2 SERIES OF 10 BARS | 29'-6" TO 40'-1"  |
| B421     | 2 SERIES OF 10 BARS | 17'-1" TO 27'-8"  |
| B429     | 2 SERIES OF 10 BARS | 29'-6" TO 40'-1"  |
| B430     | 2 SERIES OF 10 BARS | 17'-1" TO 27'-8"  |

BUNDLE AND TAG EACH SERIES SEPARATELY.



SECTION THRU BOTTOM SLAB HEADER



SECTION THRU TOP SLAB HEADER

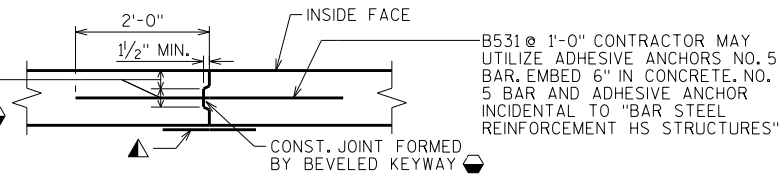
|                                                                                 |      |                   |    |
|---------------------------------------------------------------------------------|------|-------------------|----|
| NO.                                                                             | DATE | REVISION          | BY |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |                   |    |
| STRUCTURE B-53-293                                                              |      |                   |    |
| DRAWN BY JPH                                                                    |      | PLANS CK'D. EK/BF |    |
| BOX DETAILS 1                                                                   |      | SHEET 3           |    |

BILL OF BARS

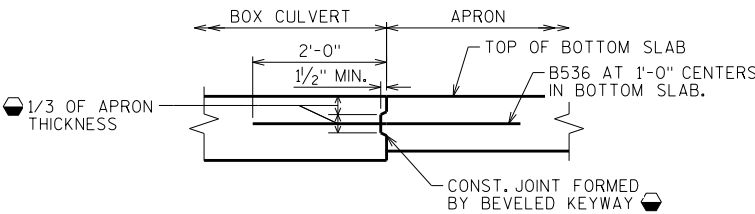
THE FIRST OR FIRST AND SECOND DIGIT OF THE MARK SIGNIFIES THE BAR SIZE. THE DIMENSION IN THE BENT COLUMN IS THE OUT TO OUT HORIZONTAL LEG OF A "L" SHAPED BAR. LONGER BARS OF THE SAME SIZE MAY BE SUBSTITUTED FOR SHORTER BARS. PAYMENT BASED ON BAR LENGTHS AS DETAILED.

| BAR MARK | COAT | NO. REQ'D. | LENGTH  | BENT  | BAR SERIES | LOCATION                                |
|----------|------|------------|---------|-------|------------|-----------------------------------------|
| B401     | X    | 368        | 11'-5"  | 6'-8" |            | CORNERS                                 |
| B402     | X    | 56         | 8'-3"   | 6'-8" | X          | CORNERS @ WINGS 1&4                     |
| B403     | X    | 44         | 4'-1"   |       | X          | TOP SLAB - CORNERS @ WINGS 2&3 - HORIZ. |
| B504     | X    | 78         | 13'-6"  |       |            | TOP SLAB - HORIZ.                       |
| B505     | X    | 48         | 7'-10"  |       | X          | TOP SLAB - HORIZ. - ENDS                |
| B506     |      | 80         | 11'-8"  |       |            | BOTTOM SLAB - HORIZ.                    |
| B507     |      | 46         | 6'-8"   |       | X          | BOTTOM SLAB - HORIZ. - ENDS             |
| B508     | X    | 58         | 22'-0"  |       |            | TOP SLAB - HORIZ.                       |
| B509     |      | 58         | 22'-0"  |       |            | BOTTOM SLAB - HORIZ.                    |
| B510     | X    | 94         | 11'-4"  |       | X          | TOP SLAB - HORIZ. - ENDS                |
| B511     |      | 94         | 11'-4"  |       | X          | BOTTOM SLAB - HORIZ. - ENDS             |
| B412     |      | 96         | 6'-0"   |       |            | EXTERIOR WALLS - VERT.                  |
| B413     |      | 192        | 2'-8"   |       |            | WALL DOWELS - EXTERIOR & INTERIOR       |
| B414     | X    | 96         | 7'-4"   | 6'-5" |            | INTERIOR WALL - VERT.                   |
| B415     |      | 16         | 41'-4"  |       |            | EXTERIOR WALL - HORIZ.                  |
| B416     |      | 22         | 28'-4"  |       |            | INTERIOR WALL - HORIZ.                  |
| B417     |      | 16         | 15'-6"  |       |            | EXTERIOR WALL - HORIZ.                  |
| B418     | X    | 22         | 34'-10" |       | X          | TOP SLAB - HORIZ.                       |
| B419     | X    | 22         | 22'-4"  |       | X          | TOP SLAB - HORIZ.                       |
| B420     | X    | 20         | 34'-10" |       | X          | TOP SLAB - HORIZ.                       |
| B421     | X    | 20         | 22'-5"  |       | X          | TOP SLAB - HORIZ.                       |
| B422     |      | 2          | 35'-6"  |       |            | BOTTOM SLAB - HORIZ.                    |
| B423     |      | 2          | 33'-10" |       |            | BOTTOM SLAB - HORIZ.                    |
| B424     |      | 2          | 23'-2"  |       |            | BOTTOM SLAB - HORIZ.                    |
| B425     |      | 2          | 21'-9"  |       |            | BOTTOM SLAB - HORIZ.                    |
| B426     | X    | 4          | 41'-2"  |       |            | TOP SLAB/EXTERIOR WALL - VERT.          |
| B427     | X    | 2          | 28'-3"  |       |            | TOP SLAB/INTERIOR WALL - VERT.          |
| B428     | X    | 4          | 15'-4"  |       |            | TOP SLAB/EXTERIOR WALL - VERT.          |
| B429     |      | 20         | 34'-10" |       | X          | BOTTOM SLAB - HORIZ.                    |
| B430     |      | 20         | 22'-5"  |       | X          | BOTTOM SLAB - HORIZ.                    |
| B531     |      | 134        | 4'-0"   |       |            | VERT. CONST. JOINT TIE                  |
| B332     | X    | 94         | 4'-9"   |       | X          | HEADER-STIRRUP-VERT.                    |
| B933     | X    | 24         | 34'-6"  |       |            | HEADER-HORIZ.                           |
| B334     | X    | 47         | 5'-5"   |       | X          | HEADER-STIRRUP-VERT.-INLET              |
| B335     | X    | 47         | 5'-8"   |       | X          | HEADER-STIRRUP-VERT.-OUTLET             |
| B536     |      | 70         | 4'-0"   |       |            | APRON CONNECTION JOINT TIE              |

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

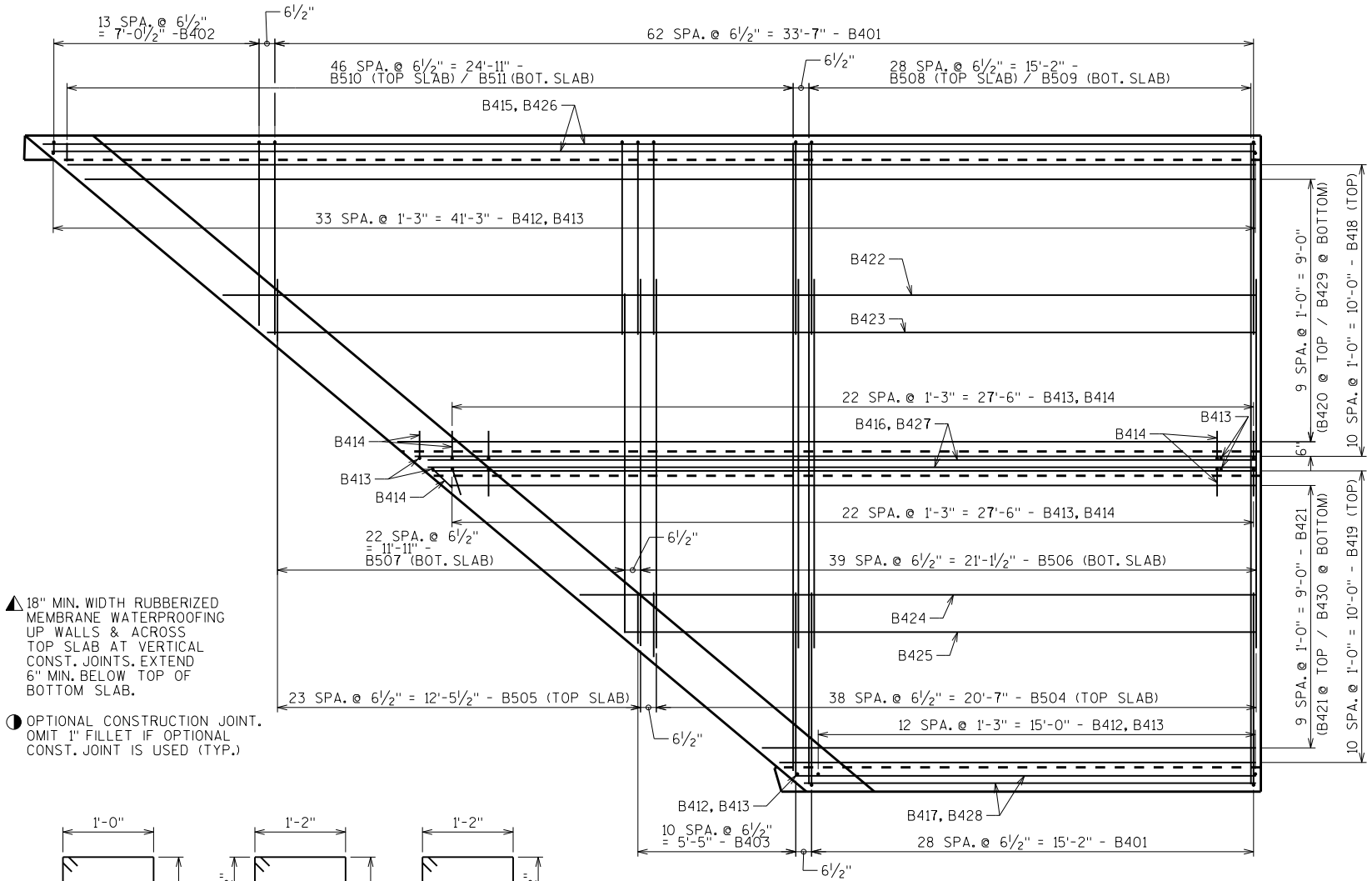


VERTICAL CONSTRUCTION JOINT

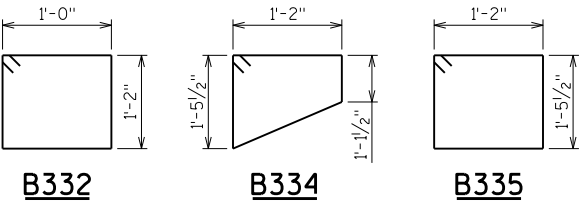


APRON CONNECTION DETAIL

IN LIEU OF CONSTRUCTION JOINTS IN THE BOTTOM SLAB, THE CONTRACTOR MAY USE 2" DEEP SAW CUTS WITHIN 12 HOURS AFTER POURING.



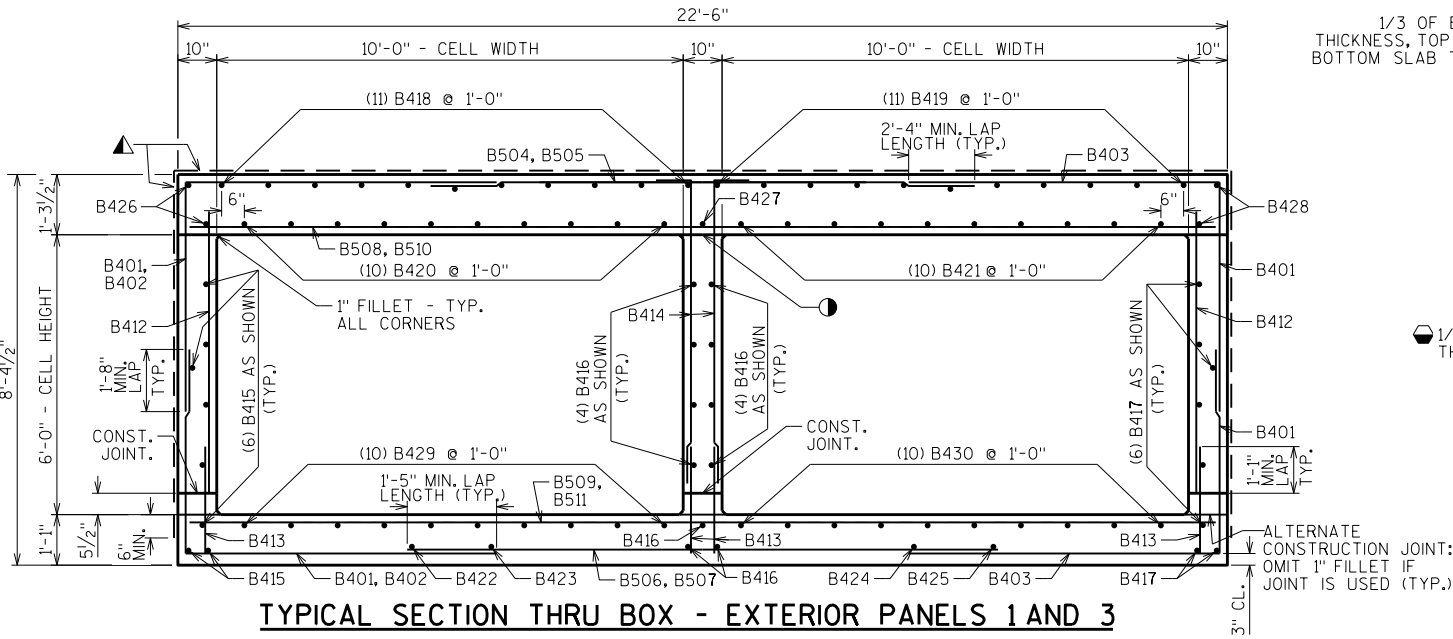
PLAN VIEW OF EXTERIOR PANELS 1 & 3



B332

B334

B335



TYPICAL SECTION THRU BOX - EXTERIOR PANELS 1 AND 3

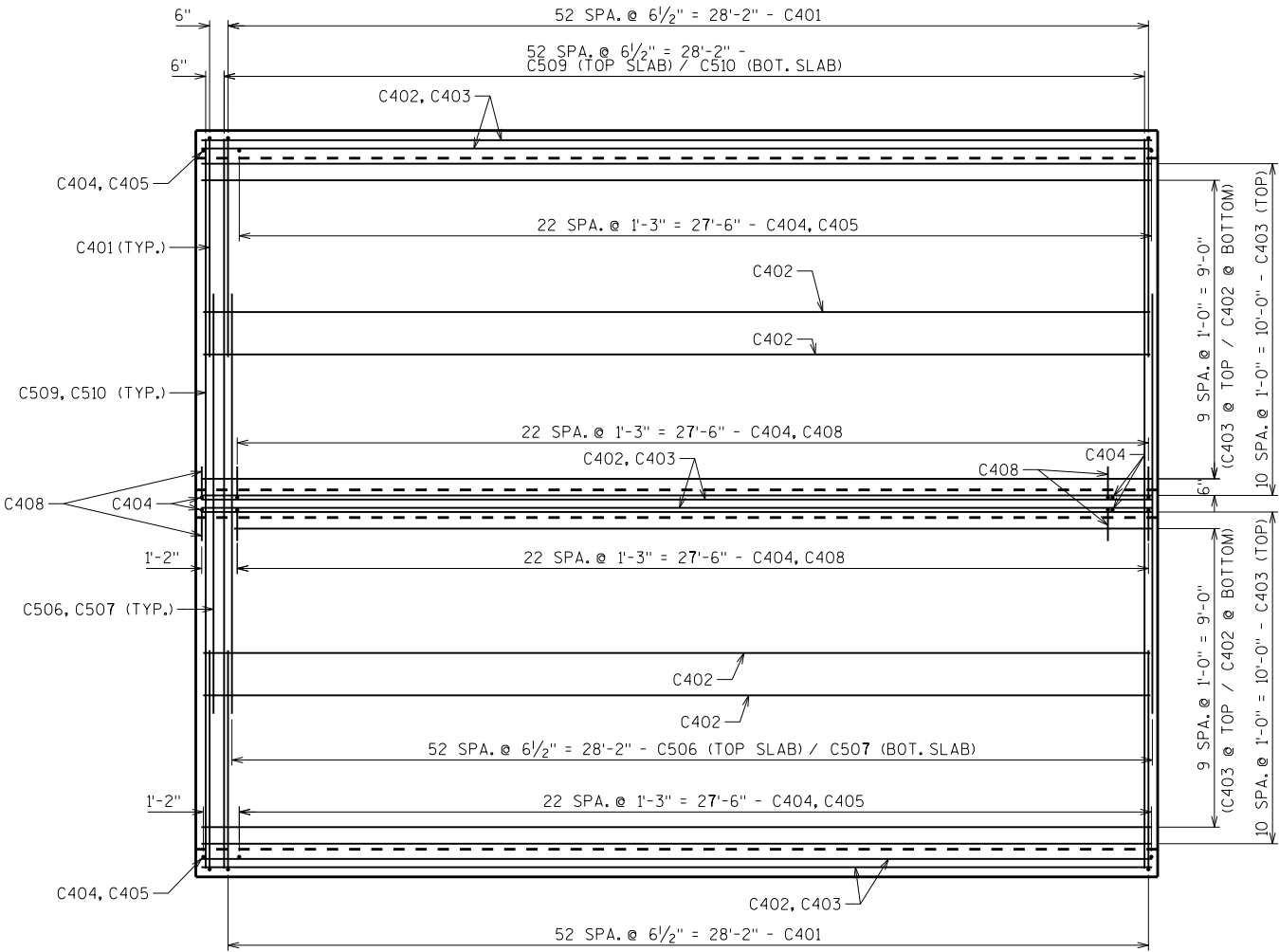


BILL OF BARS

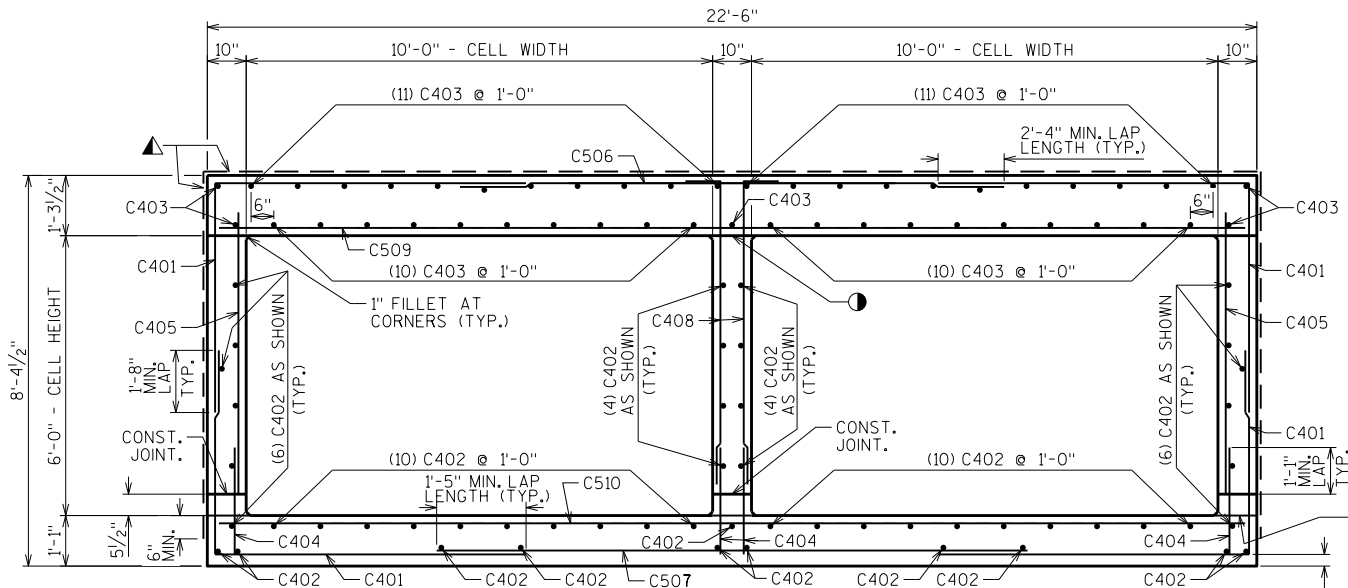
THE FIRST OR FIRST AND SECOND DIGIT OF THE MARK SIGNIFIES THE BAR SIZE. THE DIMENSION IN THE BENT COLUMN IS THE OUT TO OUT HORIZONTAL LEG OF A "L" SHAPED BAR. LONGER BARS OF THE SAME SIZE MAY BE SUBSTITUTED FOR SHORTER BARS. PAYMENT BASED ON BAR LENGTHS AS DETAILED.

| BAR MARK | COAT | NO. REQ'D. | LENGTH | BENT  | BAR SERIES | LOCATION                           |
|----------|------|------------|--------|-------|------------|------------------------------------|
| C401     | X    | 216        | 11'-5" | 6'-8" |            | CORNERS                            |
| C402     |      | 51         | 28'-8" |       |            | BOTTOM SLAB & VERT. WALLS - HORIZ. |
| C403     | X    | 47         | 28'-8" |       |            | TOP SLAB - HORIZ.                  |
| C404     |      | 96         | 2'-8"  |       |            | WALL DOWELS - EXTERIOR & INTERIOR  |
| C405     |      | 48         | 6'-0"  |       |            | EXTERIOR WALLS - VERT.             |
| C506     | X    | 54         | 13'-6" |       |            | TOP SLAB - HORIZ.                  |
| C507     |      | 54         | 11'-8" |       |            | BOTTOM SLAB - HORIZ.               |
| C408     | X    | 48         | 7'-4"  | 6'-5" |            | INTERIOR WALL - VERT.              |
| C509     | X    | 54         | 22'-0" |       |            | TOP SLAB - HORIZ.                  |
| C510     |      | 54         | 22'-0" |       |            | BOTTOM SLAB - HORIZ.               |
|          |      |            |        |       |            |                                    |

NOTE:  
SEE SHEET 3 FOR VERTICAL CONSTRUCTION JOINT DETAIL



PLAN VIEW OF INTERIOR PANEL 2



TYPICAL SECTION THRU BOX - INTERIOR PANEL 2

▲ 18" MIN. WIDTH RUBBERIZED MEMBRANE WATERPROOFING UP WALLS & ACROSS TOP SLAB AT VERTICAL CONST. JOINTS. EXTEND 6" MIN. BELOW TOP OF BOTTOM SLAB.

● OPTIONAL CONSTRUCTION JOINT. OMIT 1" FILLET IF OPTIONAL CONST. JOINT IS USED (TYP.)

ALTERNATE CONSTRUCTION JOINT: OMIT 1" FILLET IF JOINT IS USED (TYP.)

|                                                                                 |      |              |                   |
|---------------------------------------------------------------------------------|------|--------------|-------------------|
|                                                                                 |      |              |                   |
| NO.                                                                             | DATE | REVISION     | BY                |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |              |                   |
| STRUCTURE B-53-293                                                              |      |              |                   |
|                                                                                 |      | DRAWN BY JPH | PLANS CK'D. EK/BF |
| BOX DETAILS 2                                                                   |      | SHEET 4      |                   |



|                                                                                        |      |              |                          |
|----------------------------------------------------------------------------------------|------|--------------|--------------------------|
|                                                                                        |      |              |                          |
| NO.                                                                                    | DATE | REVISION     | BY                       |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br><b>STRUCTURES DESIGN SECTION</b> |      |              |                          |
| <b>STRUCTURE B-53-293</b>                                                              |      |              |                          |
|                                                                                        |      | DRAWN BY JPH | PLANS CK'D. <b>EK/BF</b> |
| <b>APRON</b>                                                                           |      | SHEET 5      |                          |
|                                                                                        |      |              |                          |



BILL OF BARS

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

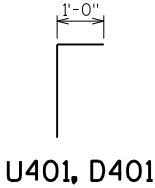
| BAR MARK | COAT | NO. REQ'D | LENGTH  | BENT | BAR SERIES | LOCATION                            |
|----------|------|-----------|---------|------|------------|-------------------------------------|
| U401     |      | 27        | 5'-6"   | X    |            | OUTLET APRON AND CUTOFF WALL VERT.  |
| U402     |      | 5         | 42'-6"  |      |            | OUTLET APRON AND CUTOFF WALL HORIZ. |
| U403     |      | 12        | 38'-11" |      | ▲          | OUTLET APRON SLAB HORIZ.            |
| U404     |      | 23        | 20'-1"  |      |            | OUTLET APRON HORIZ.                 |
| U405     |      | 3         | 10'-0"  |      | ▲          | OUTLET APRON SLAB HORIZ.            |
| U406     |      | 1         | 10'-7"  |      |            | OUTLET APRON SLAB HORIZ.            |
| U507     | X    | 2         | 21'-10" |      |            | WING 2 HORIZ. TOP BOTH FACES        |
| U408     |      | 2         | 21'-5"  |      |            | WING 2 HORIZ. APRON SLAB            |
| U409     | X    | 2         | 21'-5"  |      |            | WING 2 HORIZ. BOTTOM BOTH FACES     |
| U410     | X    | 6         | 12'-8"  |      | ▲          | WING 2 HORIZ.                       |
| U411     | X    | 9         | 4'-9"   |      |            | WING 2 VERT. BACK FACE              |
| U512     | X    | 17        | 10'-6"  | X    | ▲          | WING 2 VERT. BACK FACE              |
| U413     | X    | 14        | 10'-9"  | X    | ▲          | WING 2 VERT. BACK FACE              |
| U414     | X    | 16        | 4'-1"   |      | ▲          | WING 2 VERT. FRONT FACE             |
| U515     | X    | 2         | 15'-8"  |      |            | WING 1 HORIZ. TOP BOTH FACES        |
| U416     |      | 2         | 15'-0"  |      |            | WING 1 HORIZ. APRON SLAB            |
| U417     | X    | 2         | 15'-0"  |      |            | WING 1 HORIZ. BOTTOM BOTH FACES     |
| U418     | X    | 6         | 8'-11"  |      | ▲          | WING 1 HORIZ.                       |
| U419     | X    | 7         | 4'-9"   |      |            | WING 1 VERT. BACK FACE              |
| U520     | X    | 13        | 10'-5"  | X    | ▲          | WING 1 VERT. BACK FACE              |
| U421     | X    | 10        | 10'-8"  | X    | ▲          | WING 1 VERT. BACK FACE              |
| U422     | X    | 12        | 4'-1"   |      | ▲          | WING 1 VERT. FRONT FACE             |
| U423     | X    | 28        | 2'-2"   |      |            | WINGS 1 & 2 DOWELS FRONT FACE       |
| D401     |      | 36        | 3'-6"   | X    |            | INLET APRON AND CUTOFF WALL VERT.   |
| D402     |      | 6         | 28'-5"  |      |            | INLET APRON AND CUTOFF WALL HORIZ.  |
| D403     |      | 24        | 23'-4"  |      | ▲          | INLET APRON SLAB HORIZ.             |
| D404     |      | 23        | 20'-1"  |      |            | INLET APRON HORIZ.                  |
| D405     |      | 6         | 9'-6"   |      | ▲          | INLET APRON SLAB HORIZ.             |
| D406     |      | 7         | 10'-0"  |      | ▲          | INLET APRON SLAB HORIZ.             |
| D507     | X    | 2         | 13'-11" |      |            | WING 3 HORIZ. TOP BOTH FACES        |
| D408     |      | 2         | 13'-1"  |      |            | WING 3 HORIZ. APRON SLAB            |
| D409     | X    | 2         | 13'-1"  |      |            | WING 3 HORIZ. BOTTOM BOTH FACES     |
| D410     | X    | 6         | 7'-10"  |      | ▲          | WING 3 HORIZ.                       |
| D411     | X    | 6         | 4'-9"   |      |            | WING 3 VERT. BACK FACE              |
| D512     | X    | 11        | 10'-6"  | X    | ▲          | WING 3 VERT. BACK FACE              |
| D413     | X    | 9         | 10'-9"  | X    | ▲          | WING 3 VERT. BACK FACE              |
| D414     | X    | 10        | 4'-1"   |      | ▲          | WING 3 VERT. FRONT FACE             |
| D515     | X    | 2         | 29'-4"  |      |            | WING 4 HORIZ. TOP BOTH FACES        |
| D416     |      | 2         | 29'-1"  |      |            | WING 4 HORIZ. APRON SLAB            |
| D417     | X    | 2         | 29'-1"  |      |            | WING 4 HORIZ. BOTTOM BOTH FACES     |
| D418     | X    | 6         | 17'-2"  |      | ▲          | WING 4 HORIZ.                       |
| D419     | X    | 11        | 4'-9"   |      |            | WING 4 VERT. BACK FACE              |
| D520     | X    | 21        | 10'-7"  | X    | ▲          | WING 4 VERT. BACK FACE              |
| D421     | X    | 20        | 10'-11" | X    | ▲          | WING 4 VERT. BACK FACE              |
| D422     | X    | 21        | 4'-1"   |      | ▲          | WING 4 VERT. FRONT FACE             |
| D423     | X    | 31        | 2'-2"   |      |            | WINGS 3 & 4 DOWELS FRONT FACE       |

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

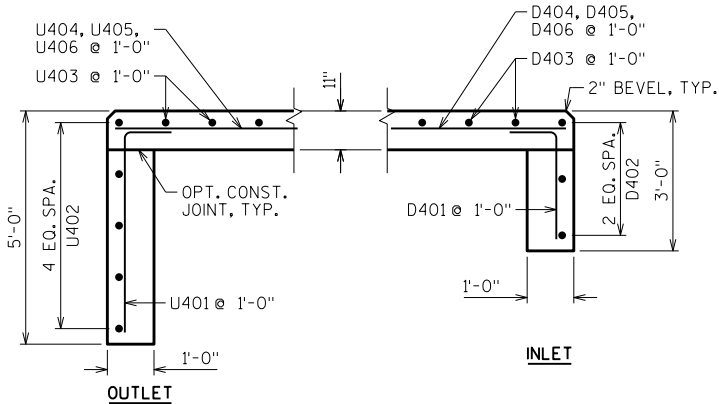
BAR SERIES TABLE

| BAR MARK | NO. REQ'D      | LENGTH             |
|----------|----------------|--------------------|
| U403     | 1 SERIES OF 12 | 34'-11" TO 42'-11" |
| U405     | 1 SERIES OF 3  | 5'-1" TO 14'-11"   |
| U410     | 2 SERIES OF 3  | 6'-7" TO 18'-9"    |
| U512     | 1 SERIES OF 17 | 9'-6" TO 11'-6"    |
| U413     | 1 SERIES OF 14 | 9'-2" TO 12'-3"    |
| U414     | 1 SERIES OF 16 | 1'-5" TO 6'-8"     |
| U418     | 2 SERIES OF 3  | 4'-8" TO 13'-2"    |
| U520     | 1 SERIES OF 13 | 9'-4" TO 11'-5"    |
| U421     | 1 SERIES OF 10 | 9'-3" TO 12'-1"    |
| U422     | 1 SERIES OF 12 | 1'-5" TO 6'-8"     |
| D403     | 2 SERIES OF 12 | 18'-5" TO 28'-3"   |
| D405     | 1 SERIES OF 6  | 2'-3" TO 16'-10"   |
| D406     | 1 SERIES OF 7  | 2'-4" TO 17'-7"    |
| D410     | 2 SERIES OF 3  | 4'-1" TO 11'-6"    |
| D512     | 1 SERIES OF 11 | 9'-6" TO 11'-6"    |
| D413     | 1 SERIES OF 9  | 9'-3" TO 12'-2"    |
| D414     | 1 SERIES OF 10 | 1'-5" TO 6'-8"     |
| D418     | 2 SERIES OF 3  | 8'-11" TO 25'-4"   |
| D520     | 1 SERIES OF 21 | 9'-8" TO 11'-5"    |
| D421     | 1 SERIES OF 20 | 9'-3" TO 12'-7"    |
| D422     | 1 SERIES OF 21 | 1'-5" TO 6'-8"     |

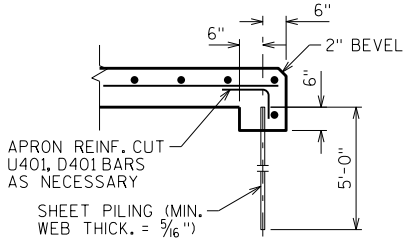
BUNDLE AND TAG EACH SERIES SEPARATELY



U512, U413, U520, U421, D512, D413, D520, D421

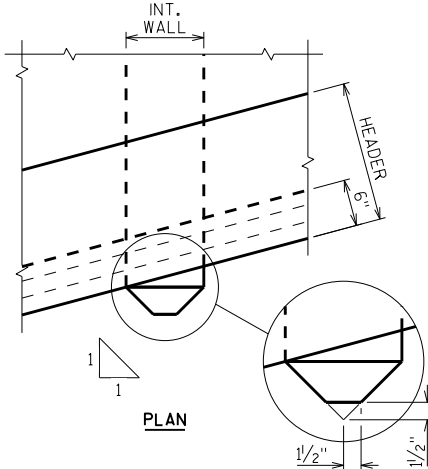


CUT-OFF WALLS

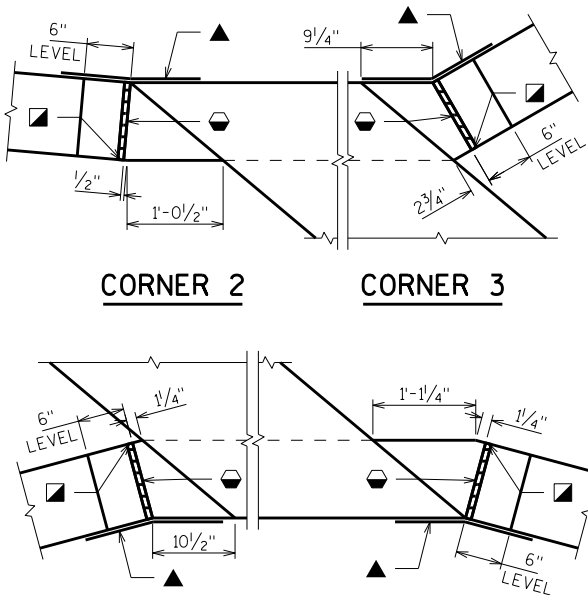


ALTERNATE CUT-OFF WALLS

THE ABOVE ALTERNATIVE MAY BE USED IN LIEU OF CAST-IN-PLACE CONCRETE CUT-OFF WALLS. PAYMENT WILL BE BASED ON THE CONCRETE CUT-OFF WALLS.



INLET NOSE DETAILS



CORNER DETAILS

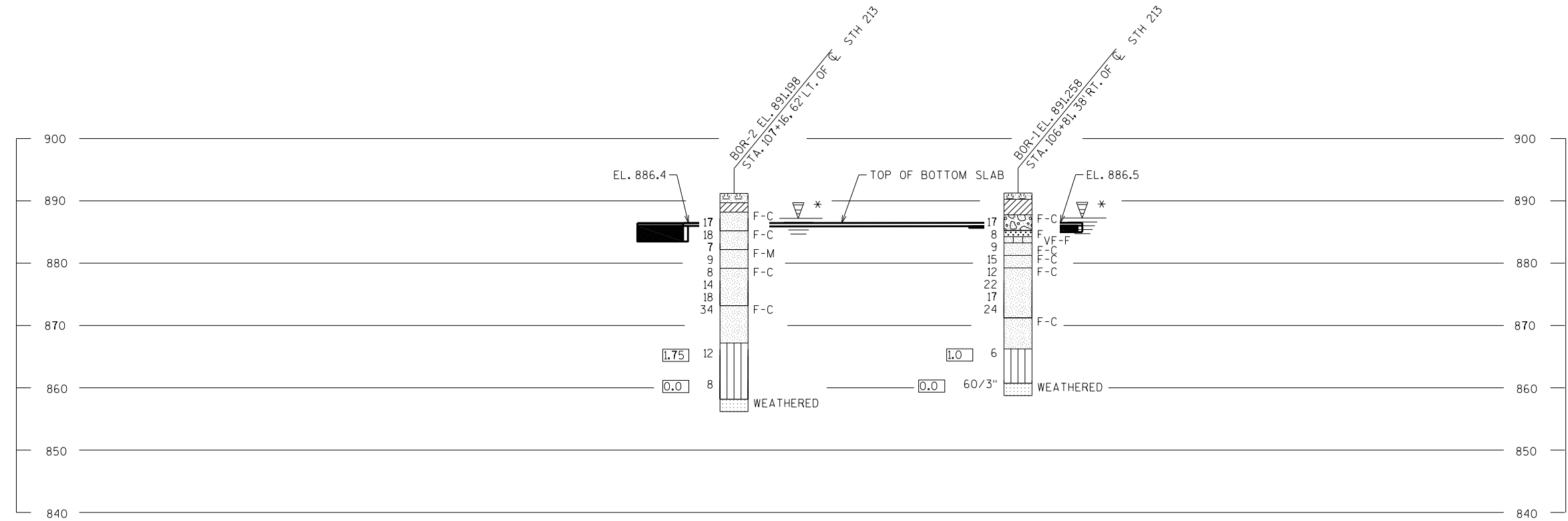
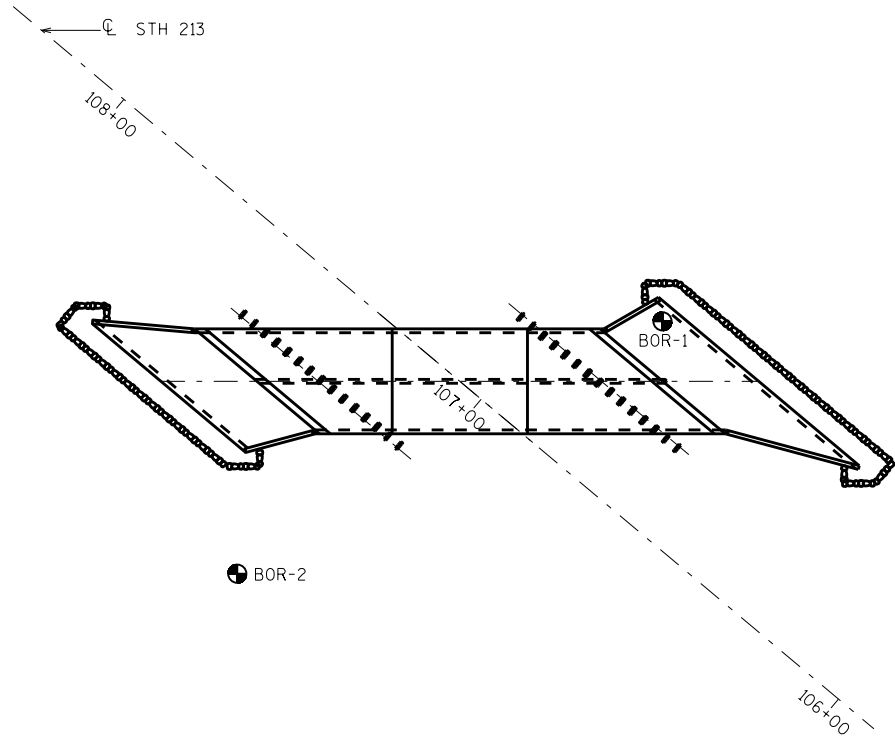
- 3/4" FILLER, TYP. EXTEND FILLER FROM HORIZ. CONST. JT. TO TOP OF WING.
- 1" BEVEL, TYP.
- 18" RUBBERIZED MEMBRANE WATERPROOFING. EXTEND FROM HORIZ. CONST. JT. TO TOP OF WALL.

STATE PROJECT NUMBER

5571-00-81

|                                                                                 |      |                   |    |
|---------------------------------------------------------------------------------|------|-------------------|----|
| NO.                                                                             | DATE | REVISION          | BY |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |                   |    |
| STRUCTURE B-53-293                                                              |      |                   |    |
| DRAWN BY JPH                                                                    |      | PLANS CK'D. EK/BF |    |
| APRON DETAILS                                                                   |      | SHEET 6           |    |

| BORING #                                                  | DATE COMPLETED | NORTHING (Y) | EASTING (X) |
|-----------------------------------------------------------|----------------|--------------|-------------|
| 1                                                         | 3/27/2018      | 287270       | 421235      |
| 2                                                         | 3/27/2018      | 287221       | 421141      |
| BORINGS COMPLETED BY: WISDOT                              |                |              |             |
| REPORT COMPLETED BY: WISDOT                               |                |              |             |
| ALL COORDINATES REFERENCED TO WCCS NAD 83(91) ROCK COUNTY |                |              |             |
| COORDINATES COLLECTED USING NON-SURVEY GRADE EQUIPMENT    |                |              |             |



8

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

STATE PROJECT NUMBER

5571-00-81

MATERIAL SYMBOLS

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

LEGEND OF BORING

(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

▽ AT TIME OF DRILLING

▽ END OF DRILLING

▽ AFTER DRILLING

ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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

|                                                                                 |      |                  |    |
|---------------------------------------------------------------------------------|------|------------------|----|
| NO.                                                                             | DATE | REVISION         | BY |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |                  |    |
| STRUCTURE B-53-293                                                              |      |                  |    |
| DRAWN BY JPH                                                                    |      | PLANS CKD. EK/BF |    |
| SUBSURFACE EXPLORATION                                                          |      | SHEET 7          |    |

8

SCALE = 20

| DIVISION 1 - STH 213 |              |          |           |                                                          |        |                                   |                                                  |                |                     |                                 |                        |
|----------------------|--------------|----------|-----------|----------------------------------------------------------|--------|-----------------------------------|--------------------------------------------------|----------------|---------------------|---------------------------------|------------------------|
| STATION              | REAL STATION | DISTANCE | AREA (SF) |                                                          |        | INCREMENTAL VOL (CY) (UNADJUSTED) |                                                  |                | CUMULATIVE VOL (CY) |                                 |                        |
|                      |              |          | CUT       | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL<br>(AVERAGE AREA) | FILL   | CUT<br>NOTE 1                     | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL<br>NOTE 2 | FILL<br>NOTE 3 | CUT<br>NOTE 1       | EXPANDED FILL<br>1.25<br>NOTE 1 | MASS ORDNATE<br>NOTE 4 |
|                      |              |          |           |                                                          |        |                                   |                                                  |                |                     |                                 |                        |
| 103+50               | 10350.00     | 0.00     | 95.28     | 0.00                                                     | 6.86   | 0                                 | 0                                                | 0              | 0                   | 0                               | 0                      |
| 104+00               | 10400.00     | 50.00    | 95.65     | 10.79                                                    | 15.97  | 177                               | 20                                               | 21             | 177                 | 26                              | 131                    |
| 105+00               | 10500.00     | 100.00   | 103.60    | 12.14                                                    | 13.01  | 369                               | 45                                               | 54             | 546                 | 94                              | 387                    |
| 106+00               | 10600.00     | 100.00   | 92.27     | 11.06                                                    | 24.26  | 363                               | 41                                               | 69             | 909                 | 180                             | 623                    |
| 107+00               | 10700.00     | 100.00   | 29.00     | 4.99                                                     | 118.94 | 225                               | 18                                               | 265            | 1,134               | 511                             | 499                    |
| 108+00               | 10800.00     | 100.00   | 94.03     | 10.32                                                    | 55.00  | 228                               | 38                                               | 322            | 1,362               | 914                             | 286                    |
| 109+00               | 10900.00     | 100.00   | 96.44     | 12.46                                                    | 47.17  | 353                               | 46                                               | 189            | 1,715               | 1,150                           | 357                    |
| 110+00               | 11000.00     | 100.00   | 94.17     | 12.29                                                    | 30.15  | 353                               | 46                                               | 143            | 2,068               | 1,329                           | 485                    |
| 111+00               | 11100.00     | 100.00   | 90.79     | 9.69                                                     | 37.91  | 343                               | 36                                               | 126            | 2,411               | 1,486                           | 635                    |
| 111+50               | 11150.00     | 50.00    | 90.49     | 9.00                                                     | 41.01  | 168                               | 17                                               | 73             | 2,579               | 1,578                           | 695                    |

| DIVISION 2 - STREAM BED |              |          |           |                                                          |      |                                   |                                                  |                |                     |                                 |                        |
|-------------------------|--------------|----------|-----------|----------------------------------------------------------|------|-----------------------------------|--------------------------------------------------|----------------|---------------------|---------------------------------|------------------------|
| STATION                 | REAL STATION | DISTANCE | AREA (SF) |                                                          |      | INCREMENTAL VOL (CY) (UNADJUSTED) |                                                  |                | CUMULATIVE VOL (CY) |                                 |                        |
|                         |              |          | CUT       | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL<br>(AVERAGE AREA) | FILL | CUT<br>NOTE 1                     | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL<br>NOTE 2 | FILL<br>NOTE 3 | CUT<br>NOTE 1       | EXPANDED FILL<br>1.25<br>NOTE 1 | MASS ORDNATE<br>NOTE 4 |
|                         |              |          |           |                                                          |      |                                   |                                                  |                |                     |                                 |                        |
| 00+75                   | 75.00        | 0.00     | 7.78      | 0.00                                                     | 0.02 | 0                                 | 0                                                | 0              | 0                   | 0                               | 0                      |
| 01+00                   | 100.00       | 25.00    | 8.65      | 0.00                                                     | 0.00 | 8                                 | 0                                                | 0              | 8                   | 0                               | 8                      |
| 02+00                   | 200.00       | 100.00   | 68.18     | 0.00                                                     | 0.00 | 142                               | 0                                                | 0              | 150                 | 0                               | 150                    |
| 03+00                   | 300.00       | 100.00   | 13.15     | 0.00                                                     | 0.00 | 151                               | 0                                                | 0              | 301                 | 0                               | 301                    |
| 04+00                   | 400.00       | 100.00   | 15.62     | 0.00                                                     | 0.47 | 53                                | 0                                                | 1              | 354                 | 1                               | 353                    |

| DIVISION 3 - TEMP CHANNEL |              |          |           |                                                          |      |                                   |                                        |        |                     |               |               |
|---------------------------|--------------|----------|-----------|----------------------------------------------------------|------|-----------------------------------|----------------------------------------|--------|---------------------|---------------|---------------|
| STATION                   | REAL STATION | DISTANCE | AREA (SF) |                                                          |      | INCREMENTAL VOL (CY) (UNADJUSTED) |                                        |        | CUMULATIVE VOL (CY) |               |               |
|                           |              |          | CUT       | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL<br>(AVERAGE AREA) | FILL | CUT                               | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL | FILL   | CUT                 | EXPANDED FILL | MASS ORDINATE |
|                           |              |          |           |                                                          |      |                                   |                                        |        |                     |               |               |
|                           |              |          |           |                                                          |      | NOTE 1                            | NOTE 2                                 | NOTE 3 | NOTE 1              | NOTE 2        | NOTE 4        |
| 00+100                    | 100.00       | 0.00     | 25.62     | 0.00                                                     | 0.00 | 0                                 | 0                                      | 0      | 0                   | 0             | 0             |
| 01+50                     | 150.00       | 50.00    | 97.12     | 0.00                                                     | 0.00 | 114                               | 0                                      | 0      | 114                 | 0             | 114           |
| 02+00                     | 200.00       | 50.00    | 96.80     | 0.00                                                     | 0.00 | 180                               | 0                                      | 0      | 294                 | 0             | 294           |
| 02+50                     | 250.00       | 50.00    | 109.63    | 0.00                                                     | 0.00 | 191                               | 0                                      | 0      | 485                 | 0             | 485           |
| 03+00                     | 300.00       | 50.00    | 214.49    | 3.68                                                     | 0.00 | 300                               | 7                                      | 0      | 785                 | 0             | 778           |
| 03+50                     | 350.00       | 50.00    | 188.47    | 14.05                                                    | 0.00 | 373                               | 26                                     | 0      | 1,158               | 0             | 1,125         |
| 04+00                     | 400.00       | 50.00    | 17.84     | 0.00                                                     | 0.00 | 191                               | 0                                      | 0      | 1,349               | 0             | 1,316         |
| 04+21.374                 | 421.37       | 21.37    | 4.38      | 0.00                                                     | 0.37 | 9                                 | 0                                      | 0      | 1,358               | 0             | 1,325         |

TEMP BYPASS CHANNEL NOTES

THE TEMPORARY BYPASS CHANNEL SHALL BE BACKFILLED WITH GRANULAR BACKFILL WITHIN THE ROADWAY LIMITS ESTABLISHED BY 1:1 SLOPES EXTENDING FROM THE ROADWAY SUBGRADE SHOULDER POINTS. GRANULAR BACKFILL SHALL BE MEASURED AND PAID SEPARATELY FROM OTHER ITEMS.

- ESTIMATED GRANULAR BACKFILL: 669 CY

CUT MATERIAL GENERATED FROM EXCAVATION OF THE TEMP. BYPASS CHANNEL TO BE SALVAGED AND USED FOR BACKFILL OF THE TEMPORARY BYPASS CHANNEL OUTSIDE OF THE ROADWAY LIMITS. PLACEMENT OF THIS BACKFILL MATERIAL TO BE PAID UNDER THE ITEM “BORROW”

- ESTIMATE BORROW: 769 CY
- WASTE: 1,325 CY

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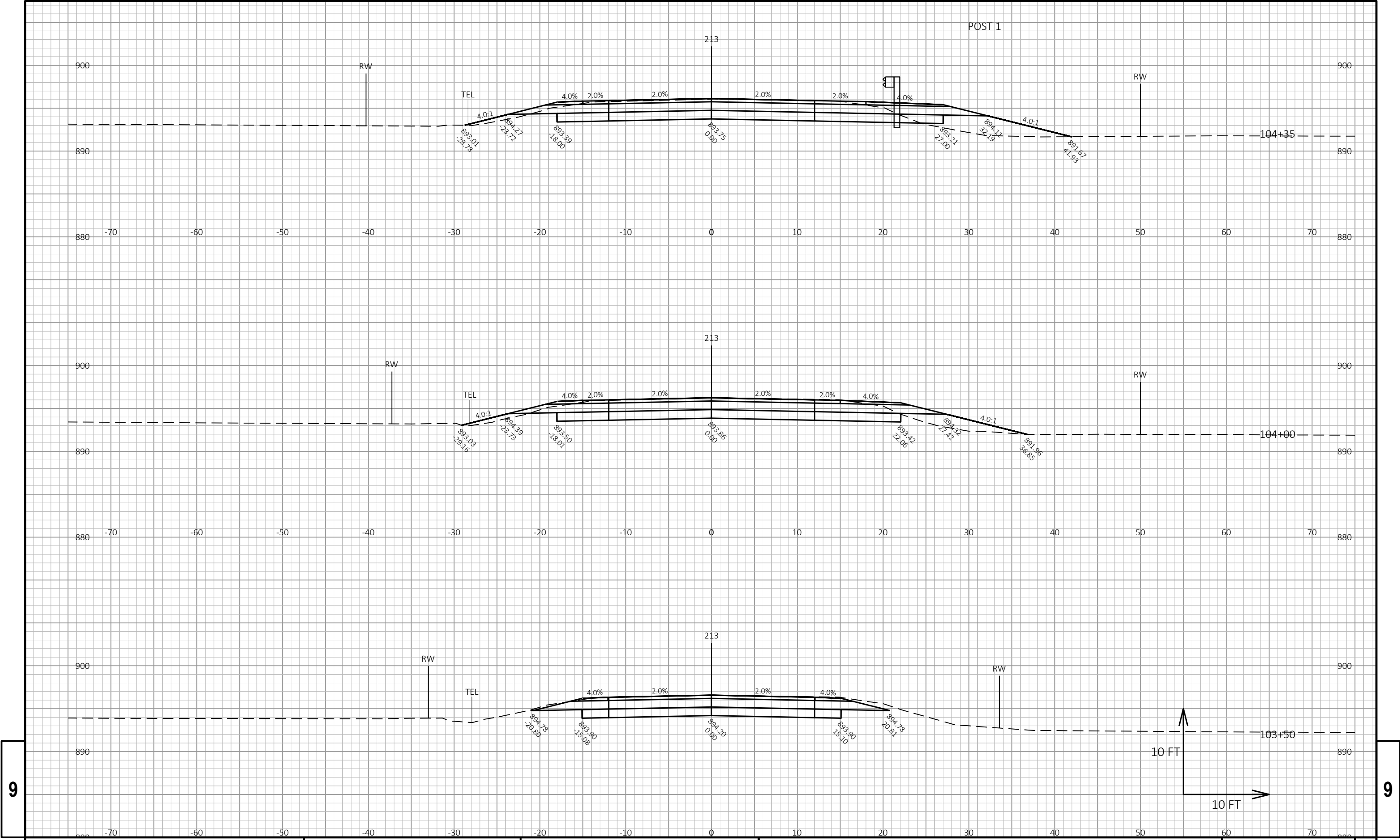
|                                         |                                                                                                                                                                                                                |                                                                                                                  |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Notes:                                  |                                                                                                                                                                                                                |                                                                                                                  |
| 1 - CUT                                 | CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL                                                                                                                                                               |                                                                                                                  |
| 2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL | THIS DOES NOT SHOW UP IN CROSS SECTIONS                                                                                                                                                                        |                                                                                                                  |
| 3 - FILL                                | DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME                                                                                                                                                                  |                                                                                                                  |
| 4 - MASS ORDINATE                       | IF MARSH OR EBS TO BE BACKFILLED WITH COMMON OR BORROW:<br>[[CUT - SALVAGED PAVT - EXPANDED MARSH EXC - EXPANDED EBS) - ((FILL - REDUCED MARSH IN FILL - REDUCED EBS IN FILL - EXPANDED ROCK) * FILL FACTOR)]] | NOTE 4 - SELECT ONE BASED ON MASS HAUL INPUT DIALOG SELECTION. EBS AND MARSH EXC USED OUTSIDE 1:1 IN FILL SLOPES |
| 4 - MASS ORDINATE                       | IF MARSH AND EBS TO BE BACKFILLED WITH GRANULAR:<br>[CUT - SALVAGED PAVT - ((FILL - REDUCED MARSH IN FILL - REDUCED EBS IN FILL - EXPANDED ROCK) * FILL FACTOR)]]                                              | EBS AND MARSH EXC USED OUTSIDE 1:1 IN FILL SLOPES                                                                |
| 4 - MASS ORDINATE                       | IF MARSH AND EBS TO BE BACKFILLED WITH COMMON OR BORROW:<br>[[CUT - SALVAGED PAVT - EXPANDED MARSH EXC - EXPANDED EBS) - ((FILL - EXPANDED ROCK) * FILL FACTOR)]]                                              | MARSH AND EBS ARE NOT USABLE OUTSIDE THE 1:1 SLOPES                                                              |
| 4 - MASS ORDINATE                       | IF MARSH AND EBS TO BE BACKFILLED WITH GRANULAR: [CUT - SALVAGED PAVT - ((FILL - EXPANDED ROCK) * FILL FACTOR)]]                                                                                               | MARSH AND EBS ARE NOT USABLE OUTSIDE THE 1:1 SLOPES                                                              |

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| PROJECT NO: 5571-00-81 | HWY: STH 213 | COUNTY: ROCK | COMPUTER EARTHWORK DATA | SHEET: | E |
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DIVISION 1 - P\_STH 59

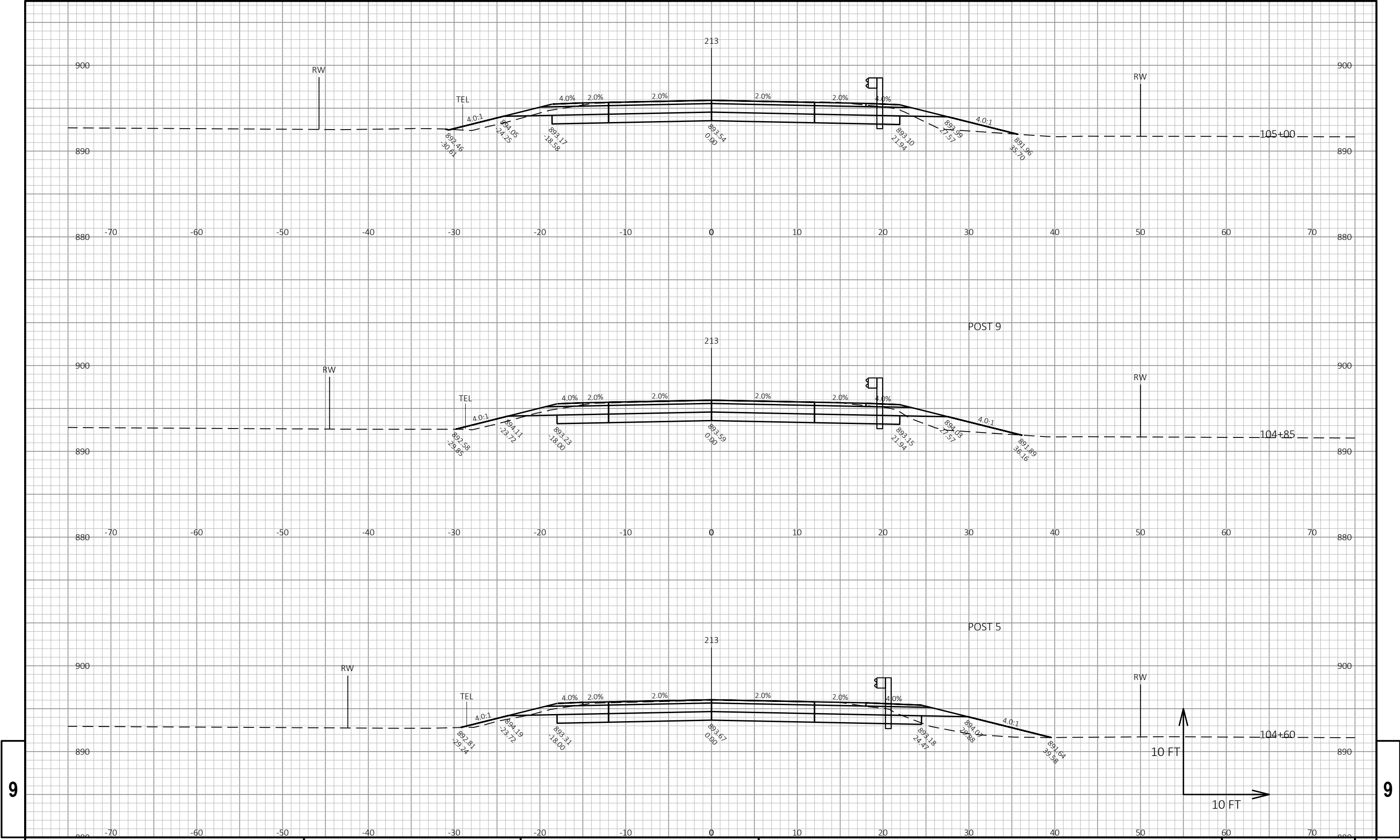
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|---------|-----------------|----------|-----------|-----------------------------------------------|--------|--------|-----------------------------------|-----------------------------------------------|------|-----|---------------------|------------------|--------------------------|------------------------|------------------|
|         |                 |          | CUT       | SALVAGED/<br>UNUSABLE<br>PAVEMENT<br>MATERIAL | FILL   | EBS    | CUT                               | SALVAGED/<br>UNUSABLE<br>PAVEMENT<br>MATERIAL | FILL | EBS | CUT                 | EXPANDED<br>FILL | EXPANDED EBS<br>BACKFILL | REDUCED EBS IN<br>FILL | MASS<br>ORDINATE |
|         |                 |          |           |                                               |        |        |                                   |                                               |      |     |                     |                  |                          |                        |                  |
|         |                 |          |           |                                               |        |        |                                   |                                               |      |     |                     |                  |                          |                        |                  |
|         |                 |          |           |                                               |        |        |                                   |                                               |      |     |                     |                  |                          |                        |                  |
| NOTE 1  | NOTE 2          | NOTE 3   | NOTE 1    | NOTE 5                                        | NOTE 7 | NOTE 8 |                                   |                                               |      |     |                     |                  |                          |                        |                  |
| 1209+70 | 120970.00       | 0.00     | 79.83     | 21.00                                         | 0.00   | 3.99   | 0                                 | 0                                             | 0    | 0   | 0                   | 0                | 0                        | 0                      | 0                |
| 1210+00 | 121000.00       | 30.00    | 81.13     | 21.00                                         | 0.03   | 4.06   | 89                                | 23                                            | 0    | 4   | 89                  | -4               | 5                        | 3                      | 70               |
| 1210+50 | 121050.00       | 50.00    | 83.95     | 21.00                                         | 0.00   | 4.20   | 153                               | 39                                            | 0    | 8   | 242                 | -12              | 15                       | 10                     | 192              |
| 1211+00 | 121100.00       | 50.00    | 92.41     | 21.00                                         | 0.01   | 4.62   | 163                               | 39                                            | 0    | 8   | 405                 | -20              | 25                       | 16                     | 324              |
| 1211+50 | 121150.00       | 50.00    | 87.22     | 21.33                                         | 0.01   | 4.36   | 166                               | 39                                            | 0    | 8   | 571                 | -28              | 35                       | 22                     | 459              |
| 1212+00 | 121200.00       | 50.00    | 64.53     | 21.67                                         | 0.00   | 3.23   | 141                               | 40                                            | 0    | 7   | 712                 | -35              | 44                       | 28                     | 567              |
| 1212+34 | 121234.00       | 34.00    | 63.94     | 21.67                                         | 0.00   | 3.20   | 81                                | 27                                            | 0    | 4   | 793                 | -39              | 49                       | 31                     | 625              |



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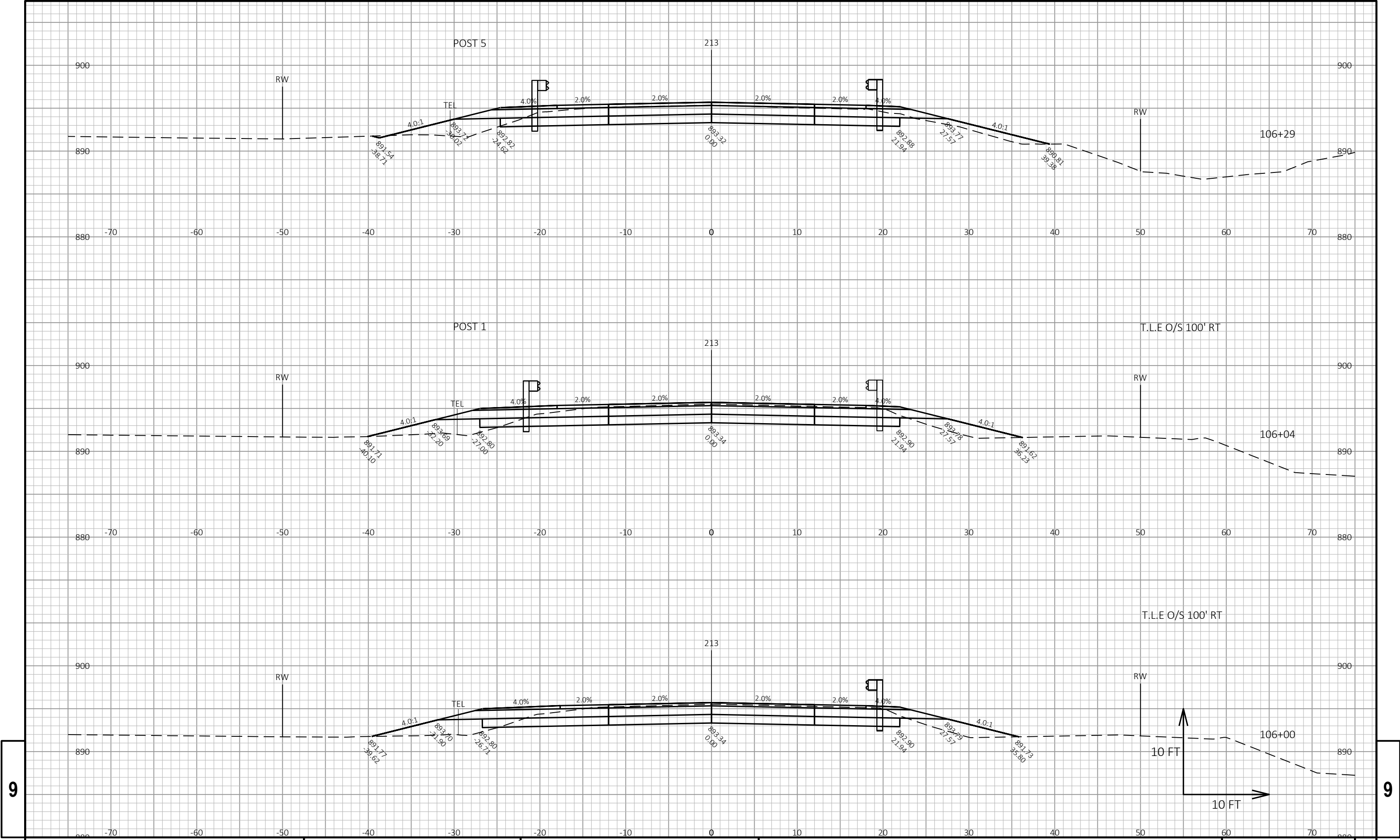




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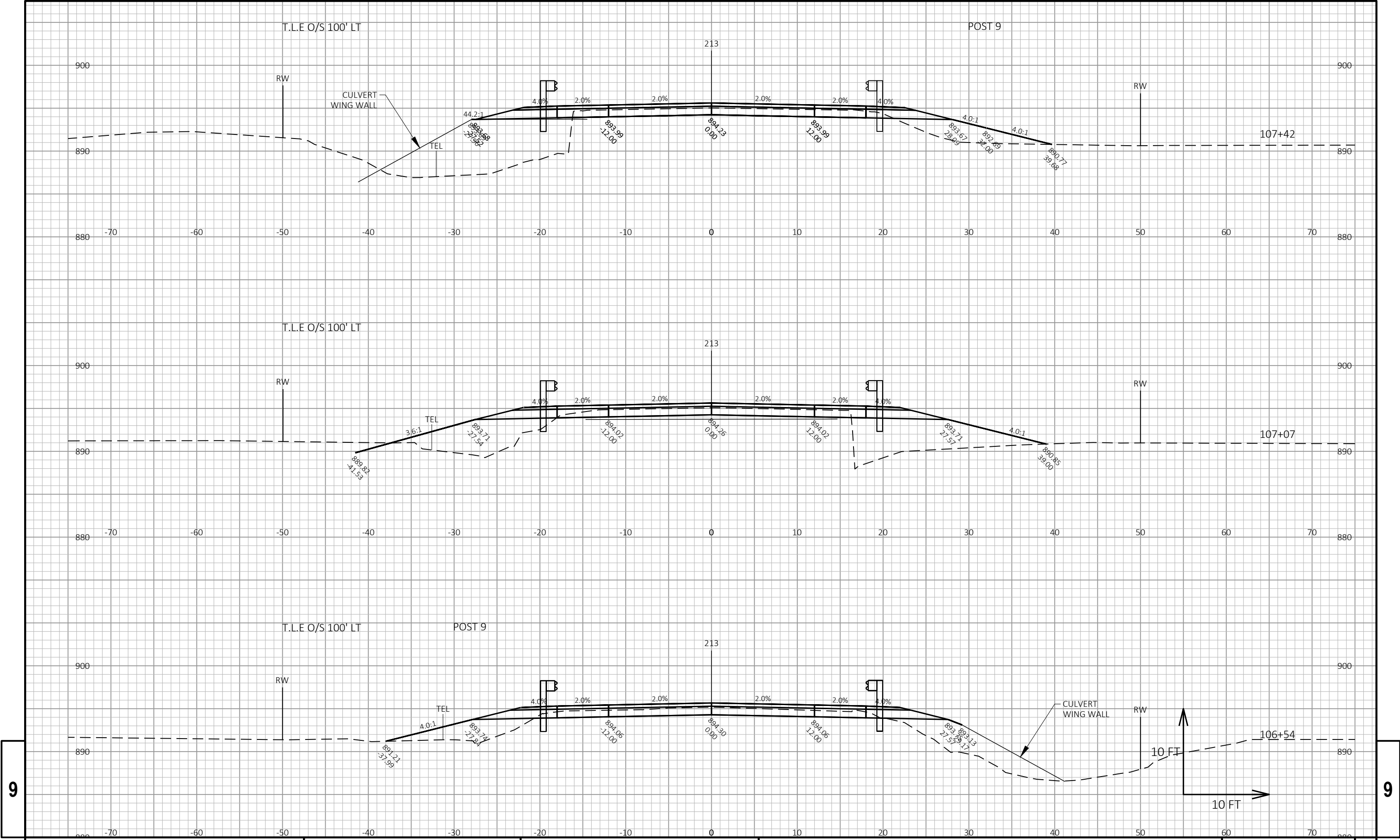
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| PROJECT NO: 5571-00-81 | HWY: STH 213 | COUNTY: ROCK | CROSS SECTIONS: STH 213 | SHEET | E |
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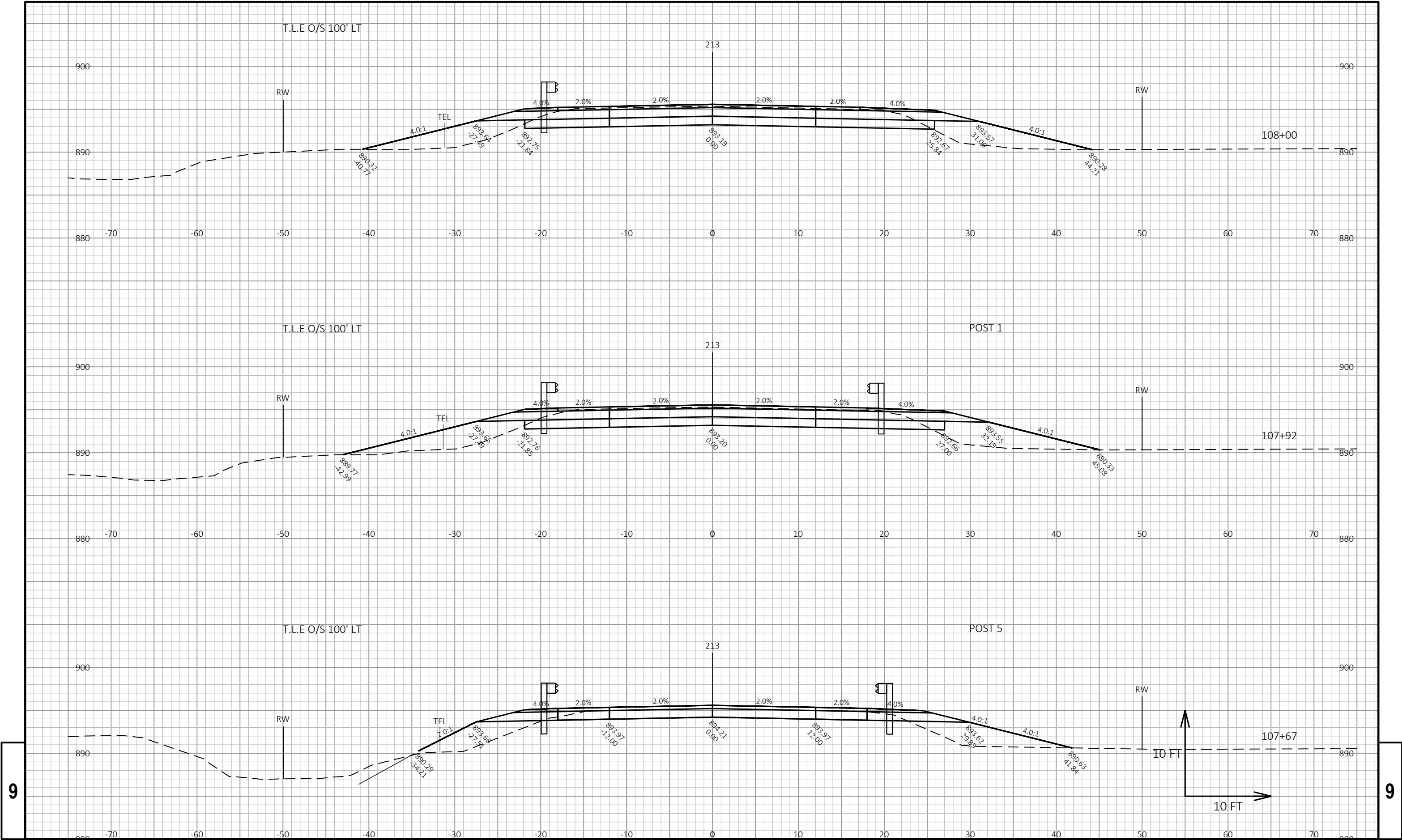




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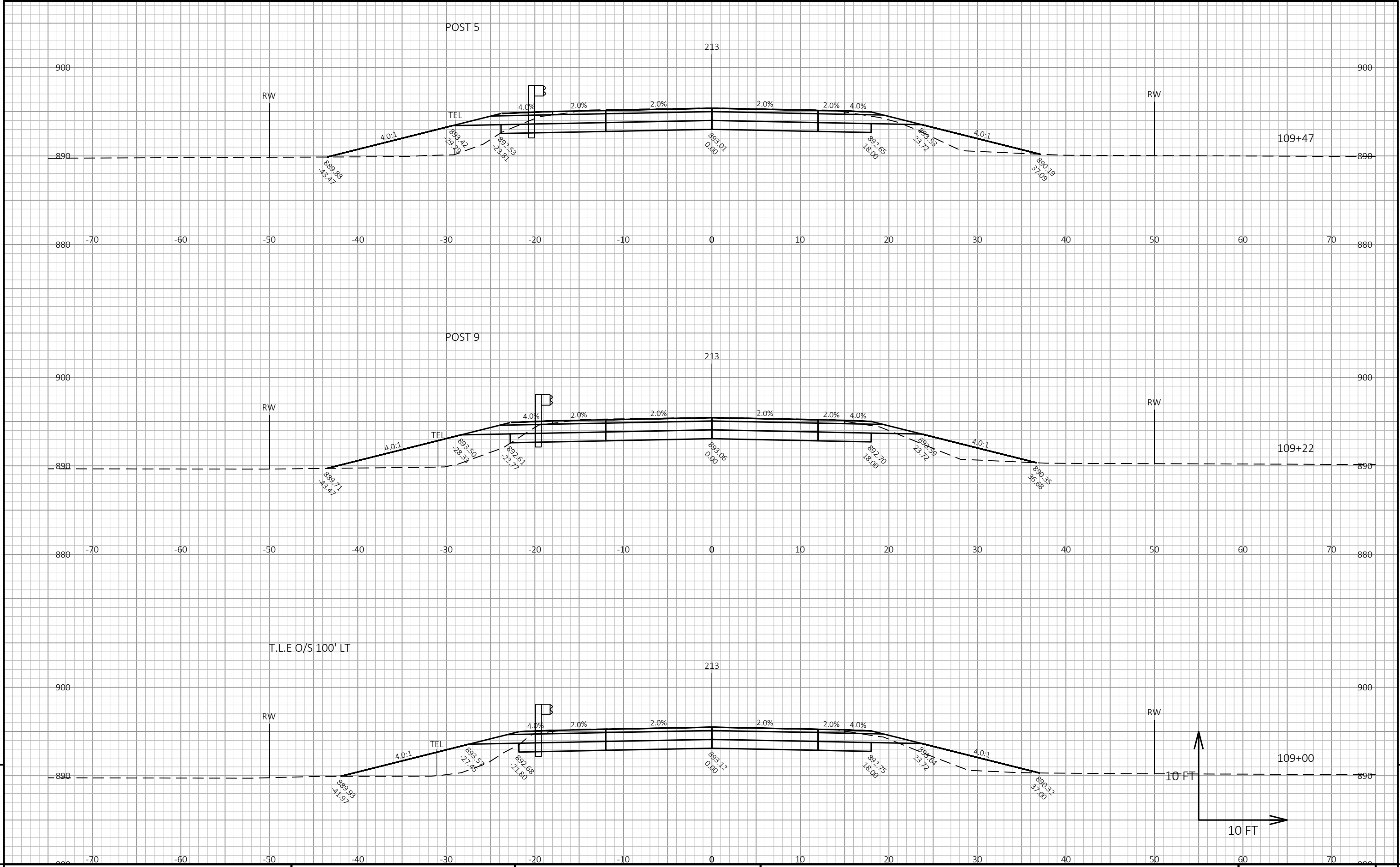
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| PROJECT NO: 5571-00-81 | HWY: STH 213 | COUNTY: ROCK | CROSS SECTIONS: STH 213 | SHEET | E |
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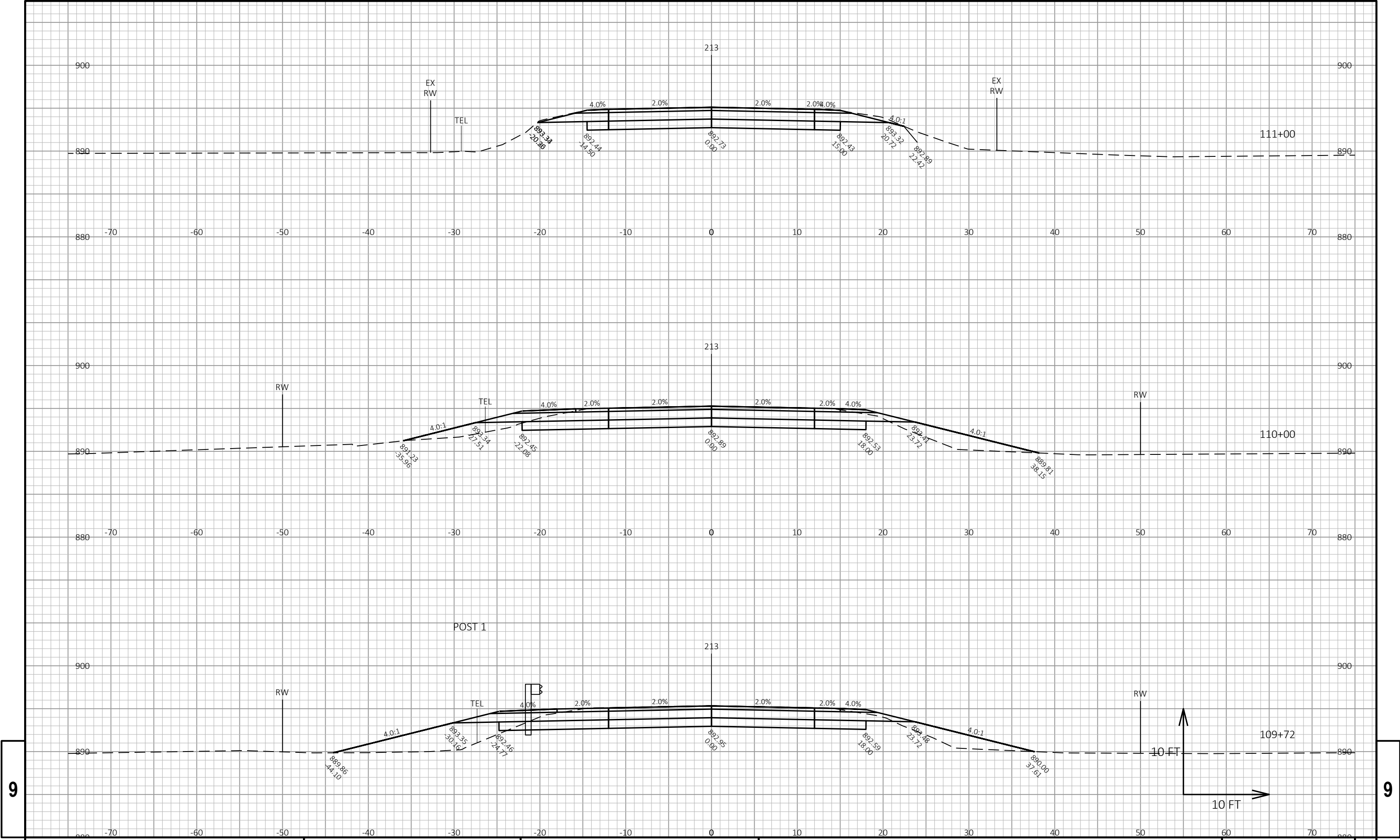
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| PROJECT NO: 5571-00-81 | HWY: STH 213 | COUNTY: ROCK | CROSS SECTIONS: STH 213 | SHEET | E |
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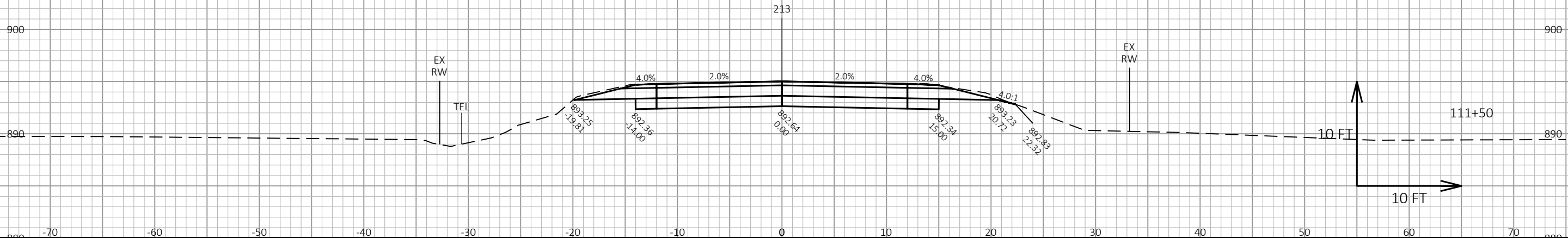


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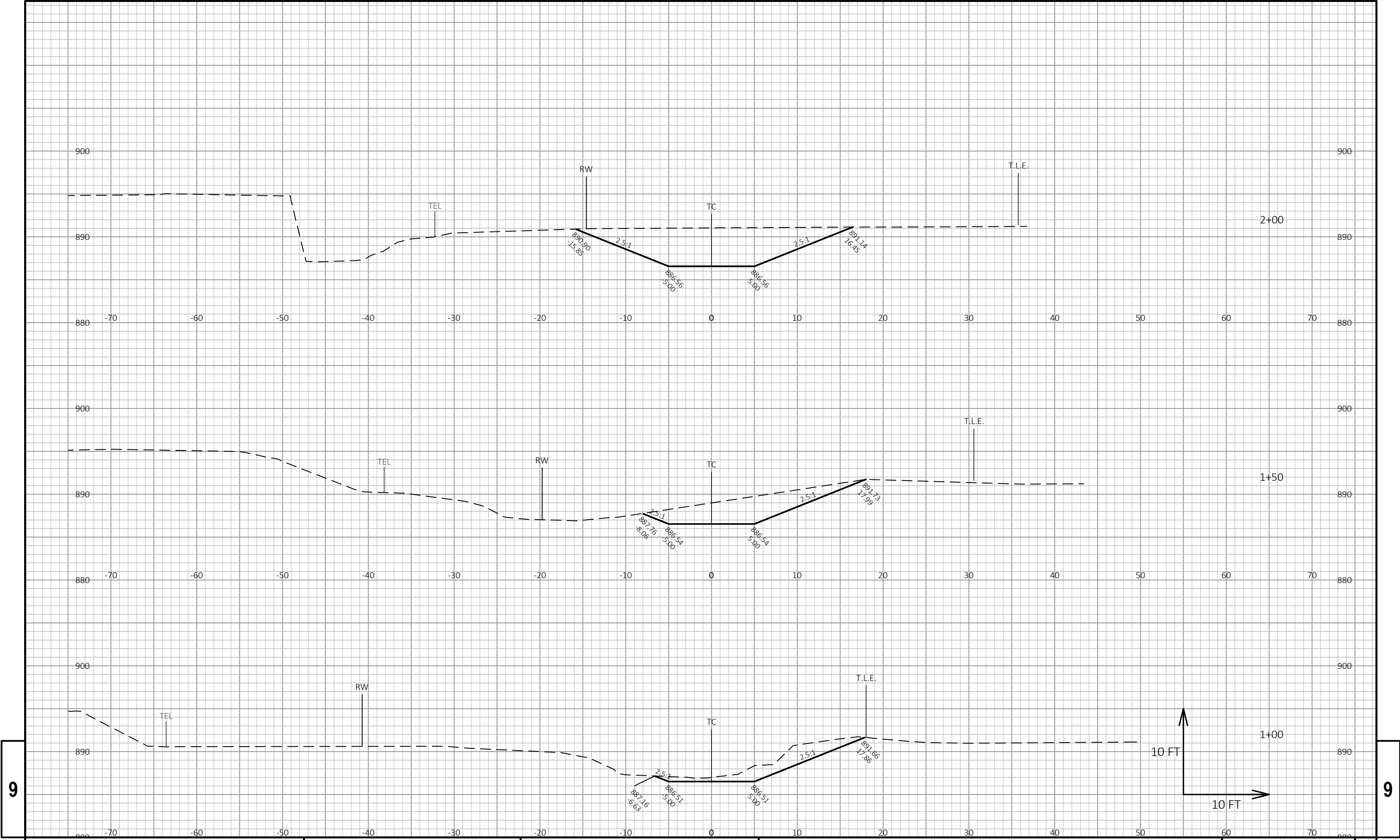
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| PROJECT NO: 5571-00-81 | HWY: STH 213 | COUNTY: ROCK | CROSS SECTIONS: STH 213 | SHEET | E |
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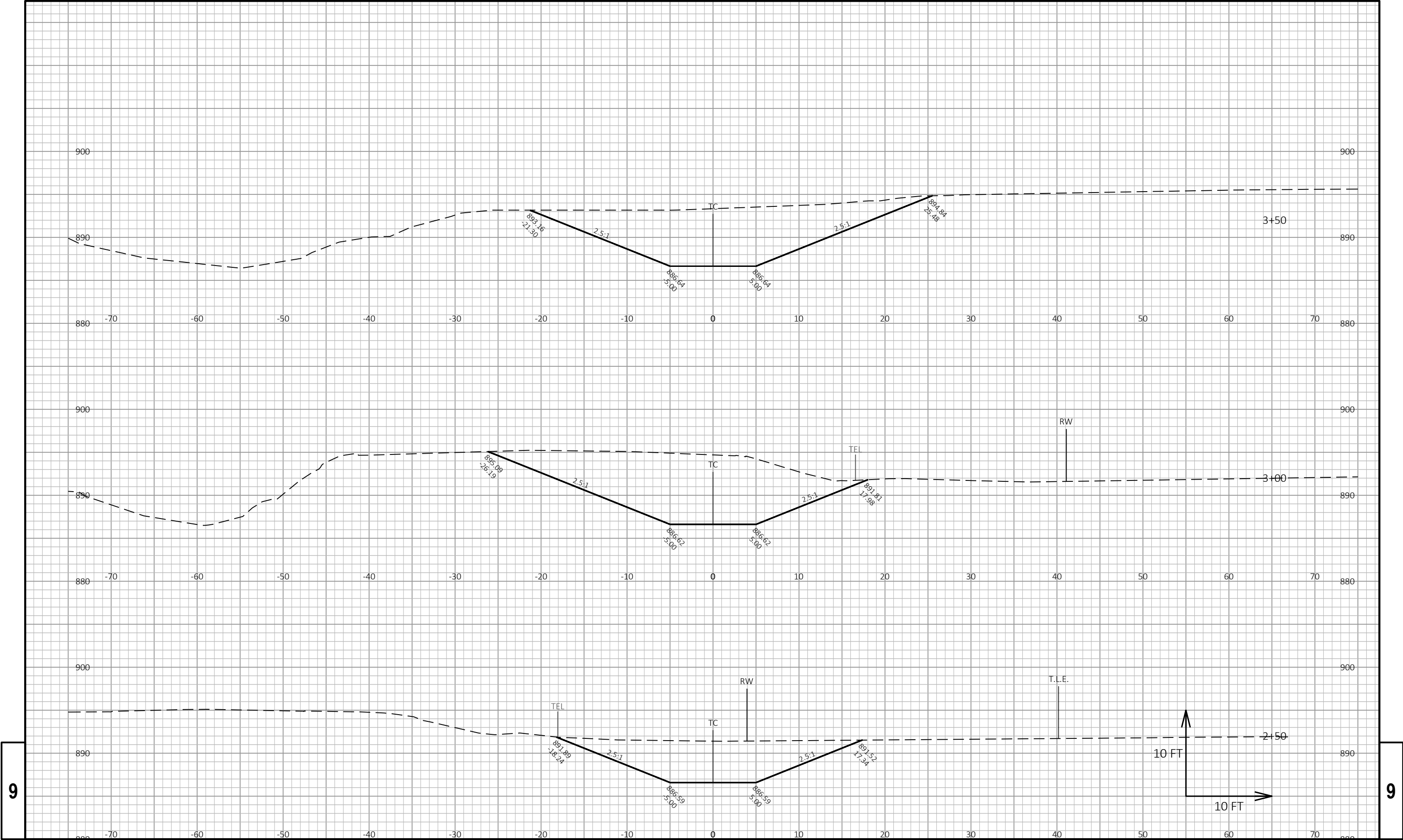


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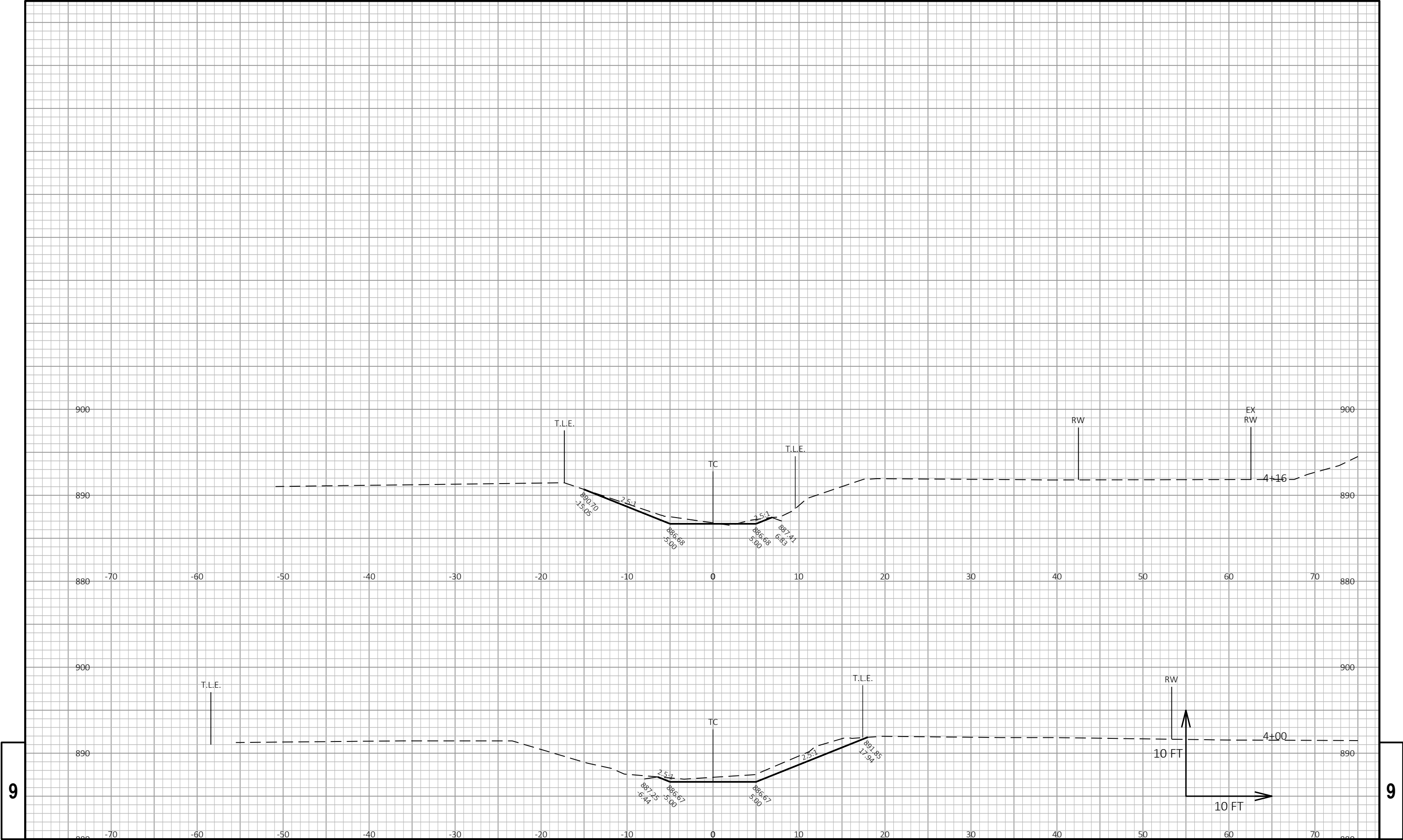
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| PROJECT NO: 5571-00-81 | HWY: STH 213 | COUNTY: ROCK | CROSS SECTIONS: TEMPORARY CHANNEL | SHEET | E |
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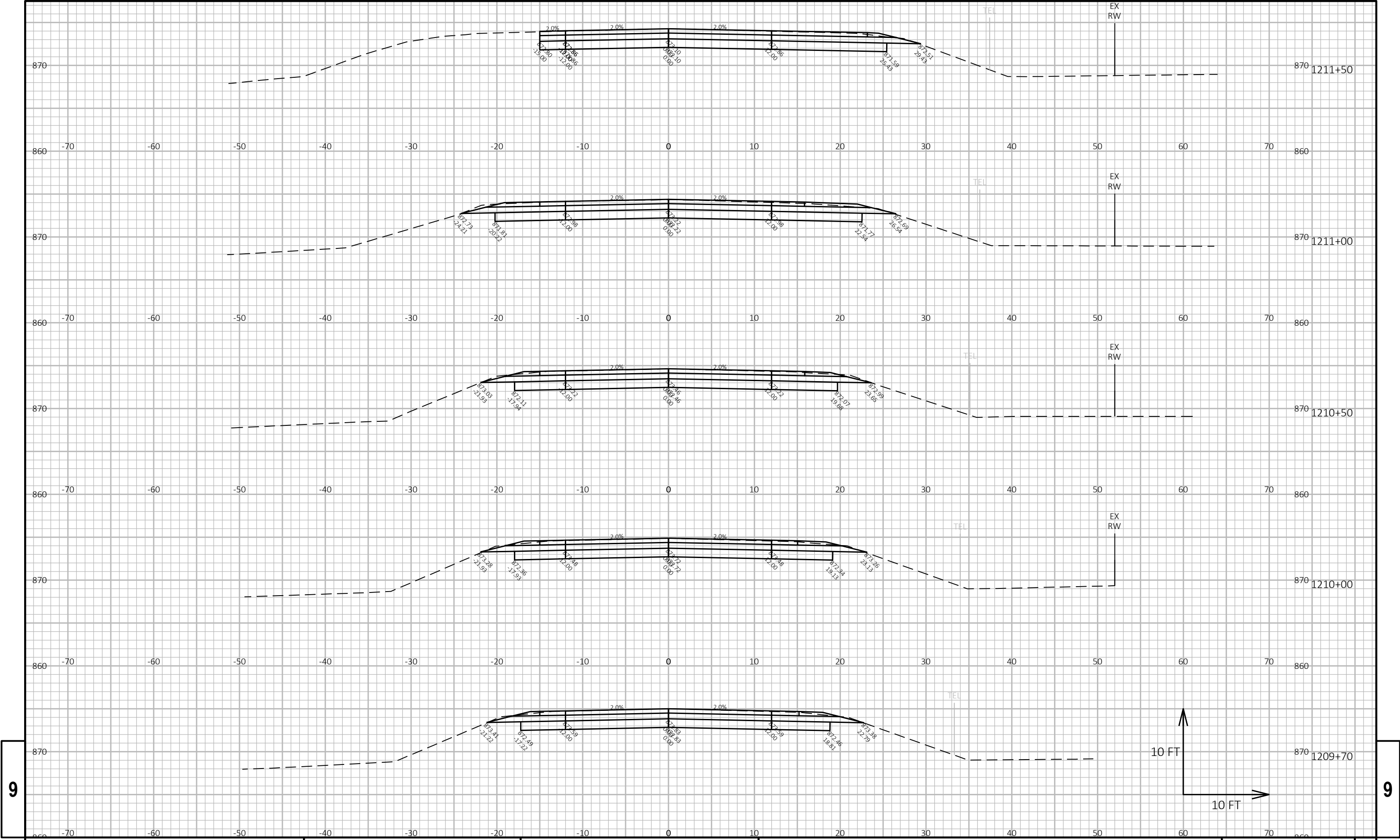
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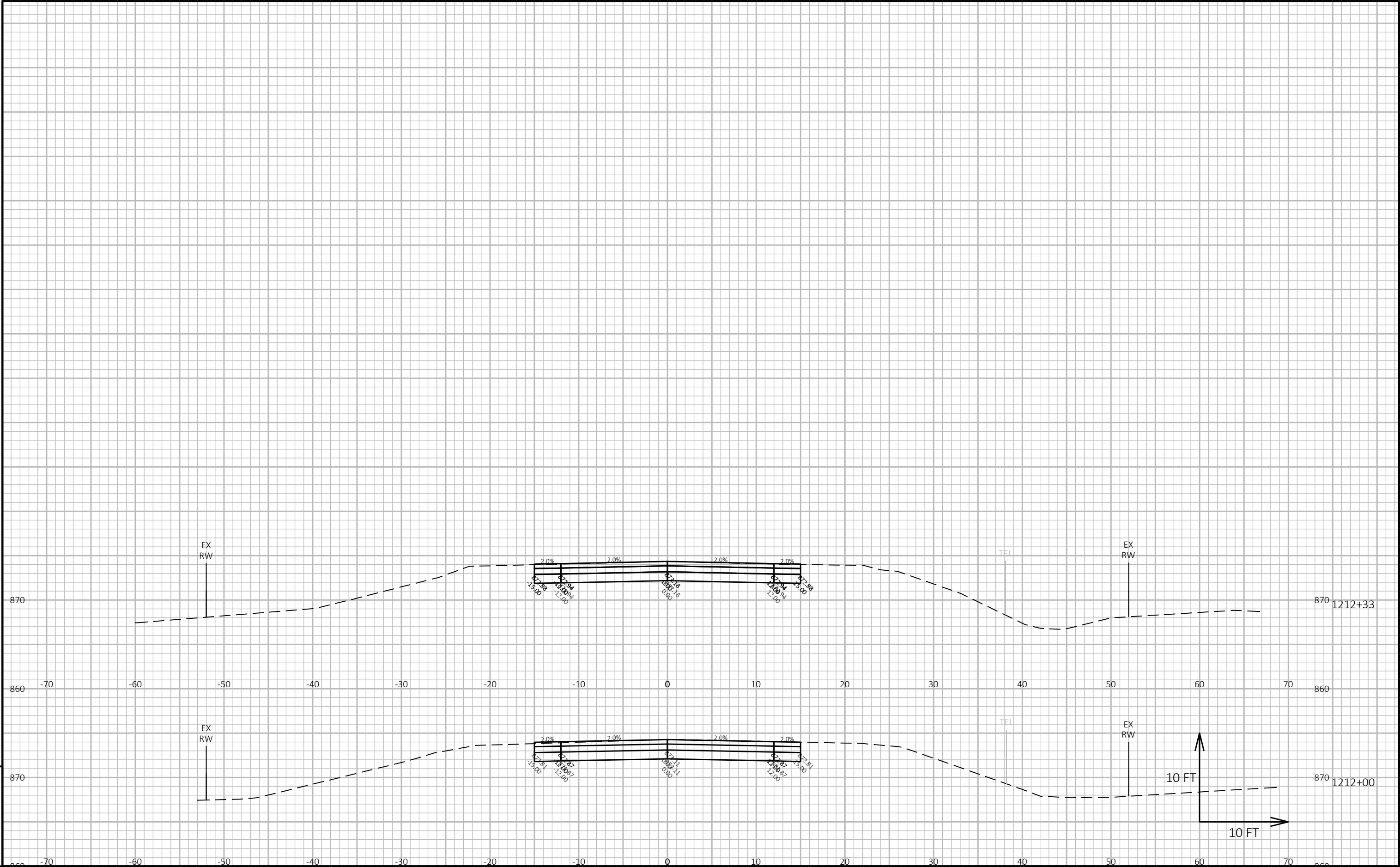


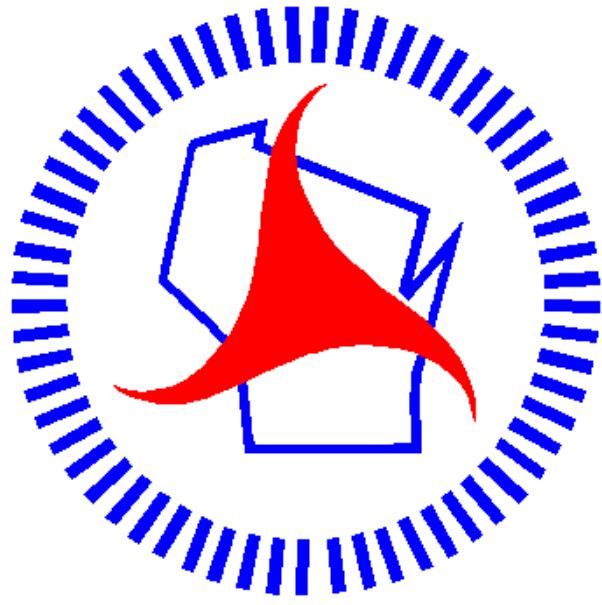


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| PROJECT NO: 5670-03-70 | HWY: STH 59 | COUNTY: ROCK | CROSS SECTIONS: PAVEMENT STRUCTURE RECONSTRUCTION | SHEET | E |
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