

# STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

## PLAN OF PROPOSED IMPROVEMENT

# MEDFORD - PRENTICE

TAYLOR COUNTY LINE TO CTH A NORTH

STH 13

PRICE COUNTY

|                      |
|----------------------|
| STATE PROJECT NUMBER |
| 1610-41-70           |

| STATE PROJECT | FEDERAL PROJECT |          |
|---------------|-----------------|----------|
|               | PROJECT         | CONTRACT |
| 1610-41-70    | WISC 2022305    | 1        |
|               |                 |          |
|               |                 |          |

**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     |
| <del>Section No.</del> | <del>4</del> | <del>Right of Way Plat</del> |
| Section No.            | 5            | Plan and Profile             |
| Section No.            | 6            | Standard Detail Drawings     |
| Section No.            | 7            | Sign Plates                  |
| <del>Section No.</del> | <del>8</del> | <del>Structure Plans</del>   |
| Section No.            | 9            | Computer Earthwork Data      |
| Section No.            | 9            | Cross Sections               |

TOTAL SHEETS = 108



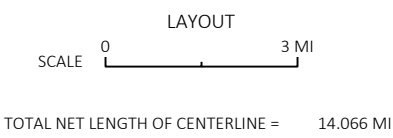
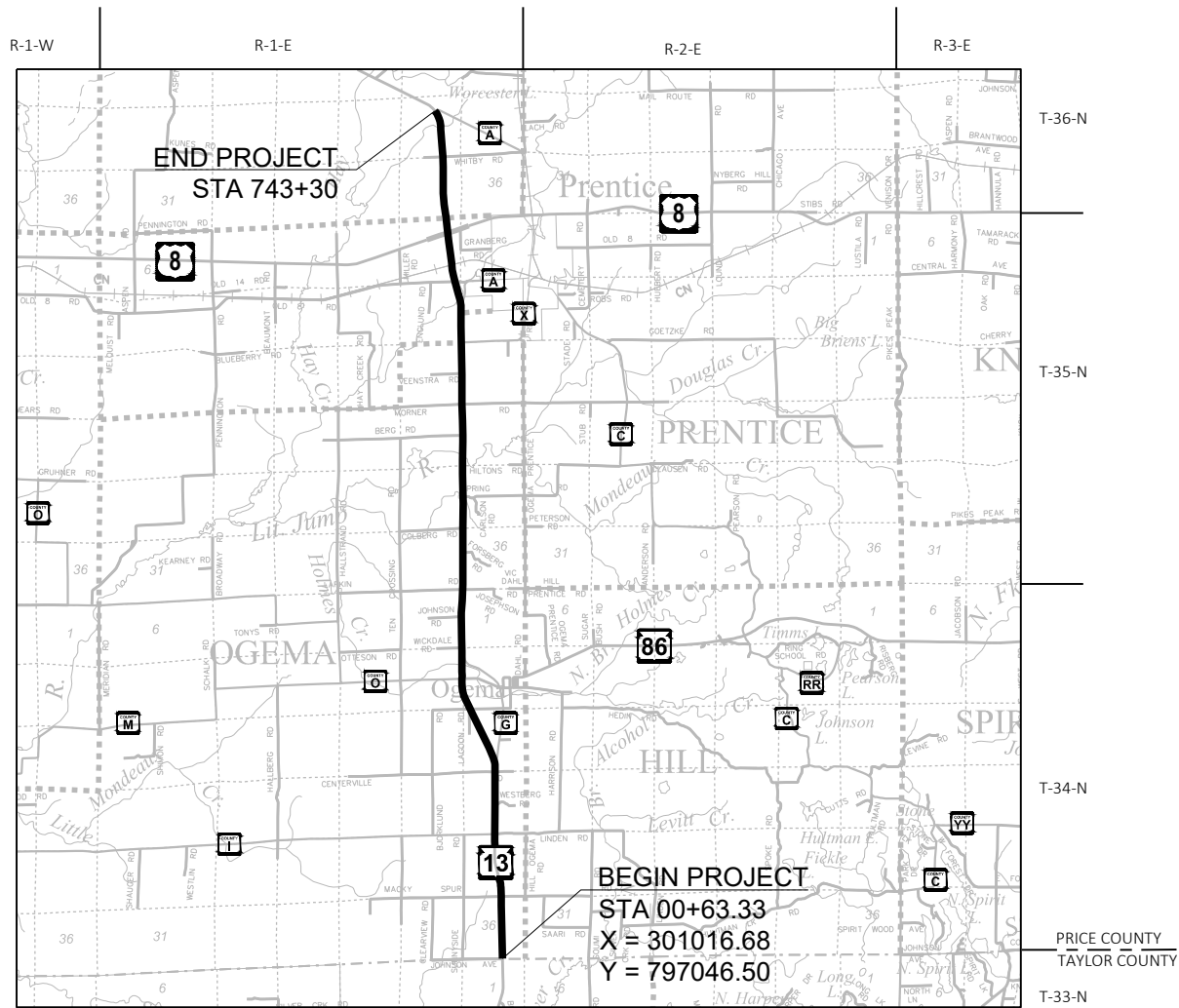
25

**DESIGN DESIGNATION**

|              |      |   |           |
|--------------|------|---|-----------|
| A.A.D.T.     | 2022 | = | 2574      |
| A.A.D.T.     | 2042 | = | 2728      |
| D.H.V.       |      | = | 301       |
| D.D.         |      | = | 60/40     |
| T.           |      | = | 17.8%     |
| DESIGN SPEED |      | = | 60 MPH    |
| ESALS        |      | = | 1,000,000 |

**CONVENTIONAL SYMBOLS**

| PLAN                           | PROFILE                                     |
|--------------------------------|---------------------------------------------|
| CORPORATE LIMITS               | GRADE LINE                                  |
| PROPERTY LINE                  | ORIGINAL GROUND                             |
| LOT LINE                       | MARSH OR ROCK PROFILE (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                | <b>UTILITIES</b>                            |
| REFERENCE LINE                 | ELECTRIC                                    |
| EXISTING CULVERT               | FIBER OPTIC                                 |
| PROPOSED CULVERT (Box or Pipe) | GAS                                         |
| COMBUSTIBLE FLUIDS             | SANITARY SEWER                              |
| MARSH AREA                     | STORM SEWER                                 |
| WOODED OR SHRUB AREA           | TELEPHONE                                   |
|                                | WATER                                       |
|                                | UTILITY PEDESTAL                            |
|                                | POWER POLE                                  |
|                                | TELEPHONE POLE                              |



HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), PRICE COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES. ELEVATIONS ARE REFERENCED TO NAVD 88 (2011). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

ORIGINAL PLANS PREPARED BY

**DAAR ENGINEERING, INC.**  
www.daarcorp.com  
Tomahawk, WI 54487  
715-224-3122

GREGORY R. BUBOLZ  
E-43683  
GLEASON  
WI  
PROFESSIONAL ENGINEER

10/11/2021   
(DATE) (SIGNATURE)

|                                                    |                         |
|----------------------------------------------------|-------------------------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                         |
| PREPARED BY                                        | DAAR ENGINEERING, INC.  |
| Surveyor                                           | DAAR ENGINEERING, INC.  |
| Designer                                           | STACY HAGENBUCHER, P.E. |
| Project Manager                                    | ZACH GRULING, P.E.      |
| Regional Examiner                                  | DAN ERVA, P.E.          |
| Regional Supervisor                                |                         |

APPROVED FOR THE DEPARTMENT

DATE: 10.19.21

E

PROJECT ID: 1610-41-70

COUNTY: PRICE

GENERAL NOTES

- 1 THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLAN ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN.
- 2 THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY LOCAL MUNICIPALITY OR PUBLIC AGENCY WHICH IS NOT A MEMBER OF DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.

UTILITY CONTACTS

CENTURYLINK-COMMUNICATION LINE  
 BEN BAKER  
 625 SOUTH AVE  
 HAWKINS, WI 54530  
 (715) 567-0725  
 Ben.baker@lumen.com

PRICE ELECTRIC COOPERATIVE INC-ELECTRICITY  
 BEN ORYSEN  
 W6803 SPRINGS DRIVE  
 P.O. BOX 110  
 PHILIPS, WI 54555  
 (715) 339-2155  
 Borysen@price-electric.com

OGEMA SANITARY DISTRICT 1- SEWER  
 JAMES GALLISTEL  
 N 1775 SMOKEY RD (P.O. BOX 665)  
 OGEMA, WI 54459-8204  
 (715) 767-5215  
 Gallistl@execpc.com

PRICE CTY TELEPHONE COMPANY- COMMUNICATION LINE  
 KIRK BOGDANOVIC  
 105 N AVON AVENUE  
 PHILLIPS, WI 54555-0108  
 (715) 339-7511  
 Kbogdanovic@norvado.com

XCEL ENERGY - GAS/PETROLEUM  
 SHARON ARNOLD  
 1751 LIBERTY ST  
 IRONWOOD, MI 49938  
 (715) 737-3303  
 Sharon.j.arnold@xcelenergy.com

XCEL ENERGY - ELECTRICITY-TRANSMISSION  
 MITCHELL DIENGER  
 414 NICOLLET MALL, 5TH FLOOR  
 MINNEAPOLIS, MN 55401  
 (612) 321-3109  
 Mitchell.a.dienger@xcelenergy.com

XCEL ENERGY - ELECTRICITY  
 ANDY HALOPKA  
 310 HICKORY HILLS LANE  
 PHILLIPS, WI 54555  
 (715) 737-1183  
 Andrew.a.halopka@xcelenergy.com

ORDER OF DETAIL SHEETS

- GENERAL NOTES
- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- TRAFFIC CONTROL PLAN

AS-BUILTS USED FOR PLAN DEVELOPMENT

- PROJECT NO: 1614-02-72, CONSTRUCTION YEAR: 1980
- PROJECT NO: 1610-02-70, CONSTRUCTION YEAR: 1983
- PROJECT NO: 1614-03-74, CONSTRUCTION YEAR: 1986
- PROJECT NO: 1614-09-70, CONSTRUCTION YEAR: 1992
- PROJECT NO: 1614-11-70, CONSTRUCTION YEAR: 1994
- PROJECT NO: 1610-41-60, CONSTRUCTION YEAR: 2011

RUNOFF COEFFICIENT TABLE

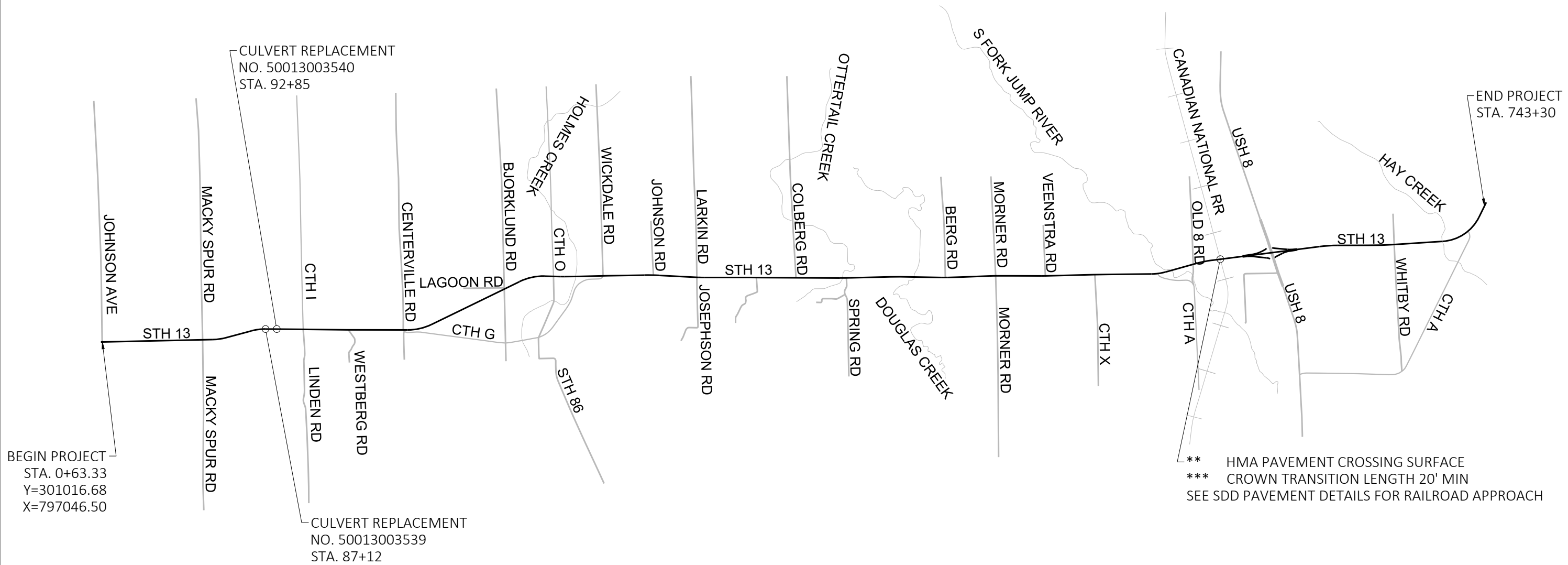
|                         | HYDROLOGIC SOIL GROUP |            |            |                       |            |            |                       |            |            |                       |            |            |
|-------------------------|-----------------------|------------|------------|-----------------------|------------|------------|---------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

TOTAL PROJECT AREA = 70.08 ACRES  
 TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.34 ACRES

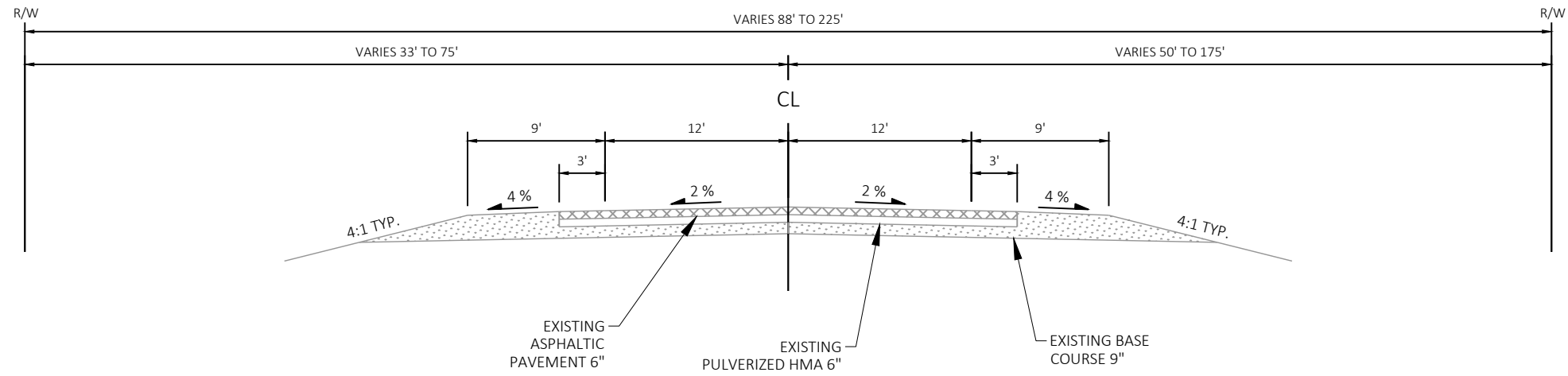
WDNR CONTACT

WENDY HENNIGES  
 WISCONSIN DEPARTMENT OF NATURAL RESOURCES  
 107 SUTLIFF AVENUE  
 RHINELANDER, WI 54501  
 (715) 365-8916  
 Wendy.Henniges@wisconsin.gov

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



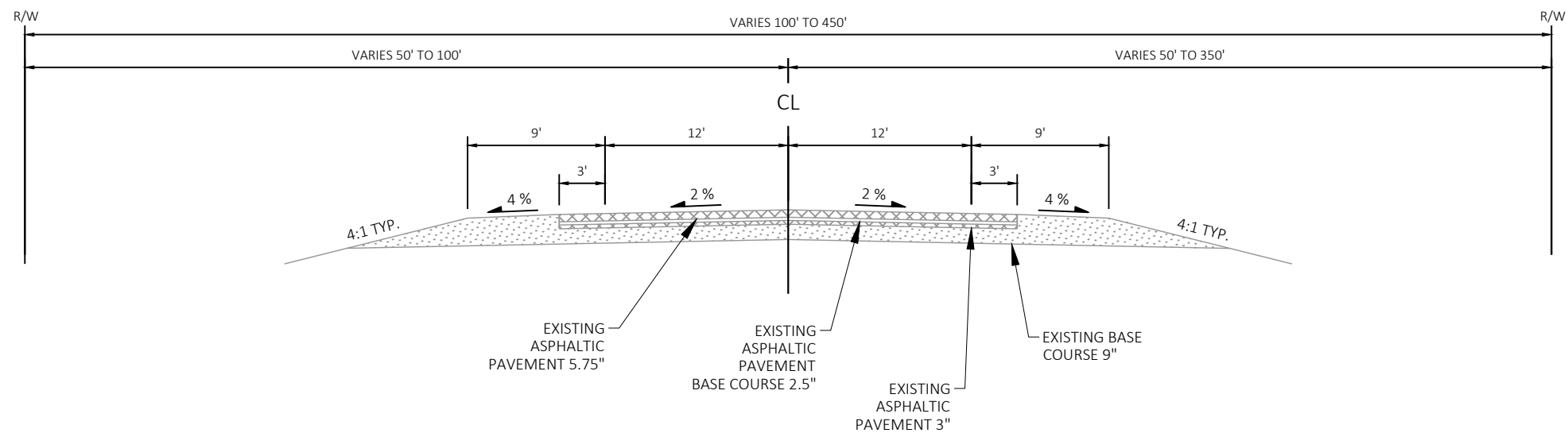
\*\* HMA PAVEMENT CROSSING SURFACE  
 \*\*\* CROWN TRANSITION LENGTH 20' MIN  
 SEE SDD PAVEMENT DETAILS FOR RAILROAD APPROACH



**EXISTING TYPICAL SECTION (STH 13)**

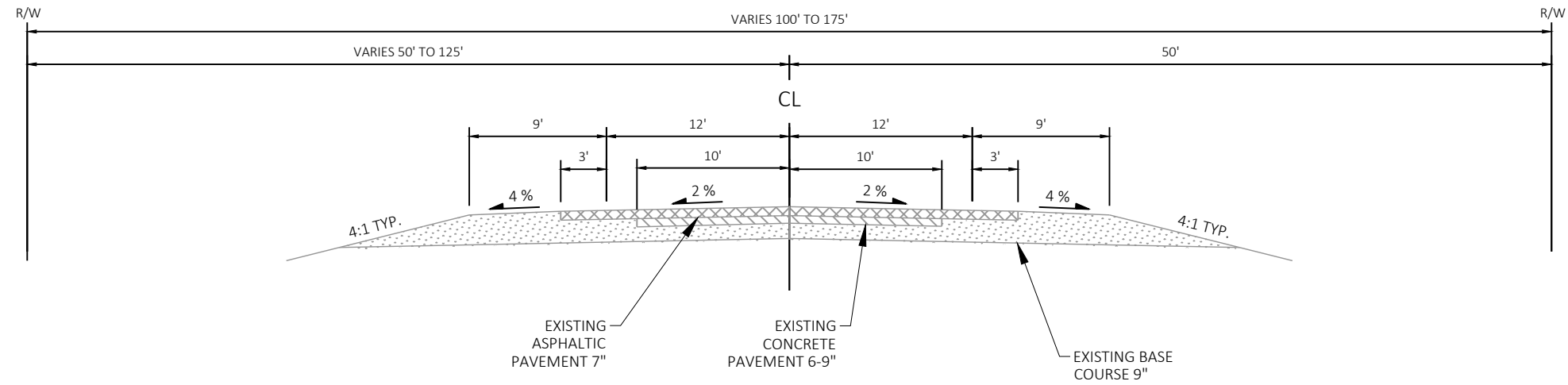
STA 0+63.33 - 135+00  
STA 270+00 - 553+50

\*EXCLUDES: CULVERT PIPE SECTIONS



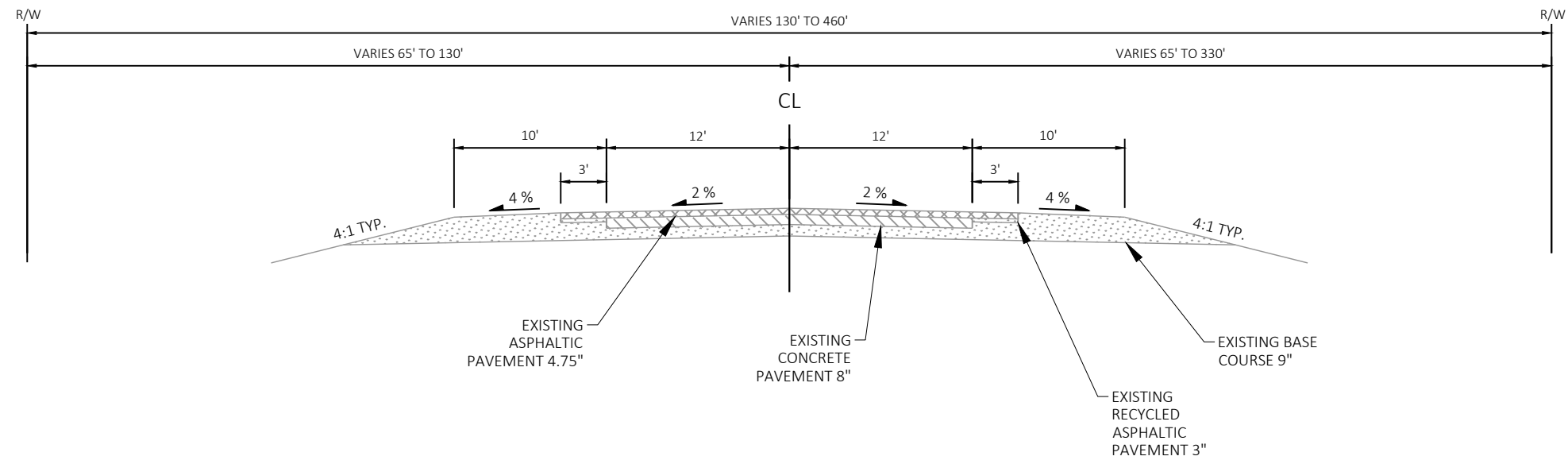
**EXISTING TYPICAL SECTION (STH 13)**

STA 135+00 - 270+00



**EXISTING TYPICAL SECTION (STH 13)**

STA 553+50 - 560+40

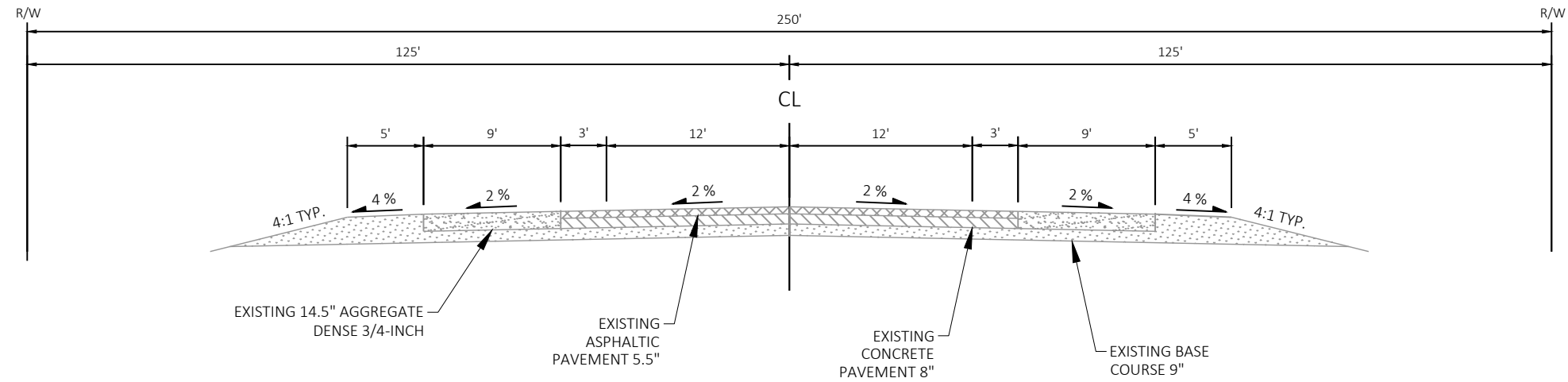


**EXISTING TYPICAL SECTION (STH 13)**

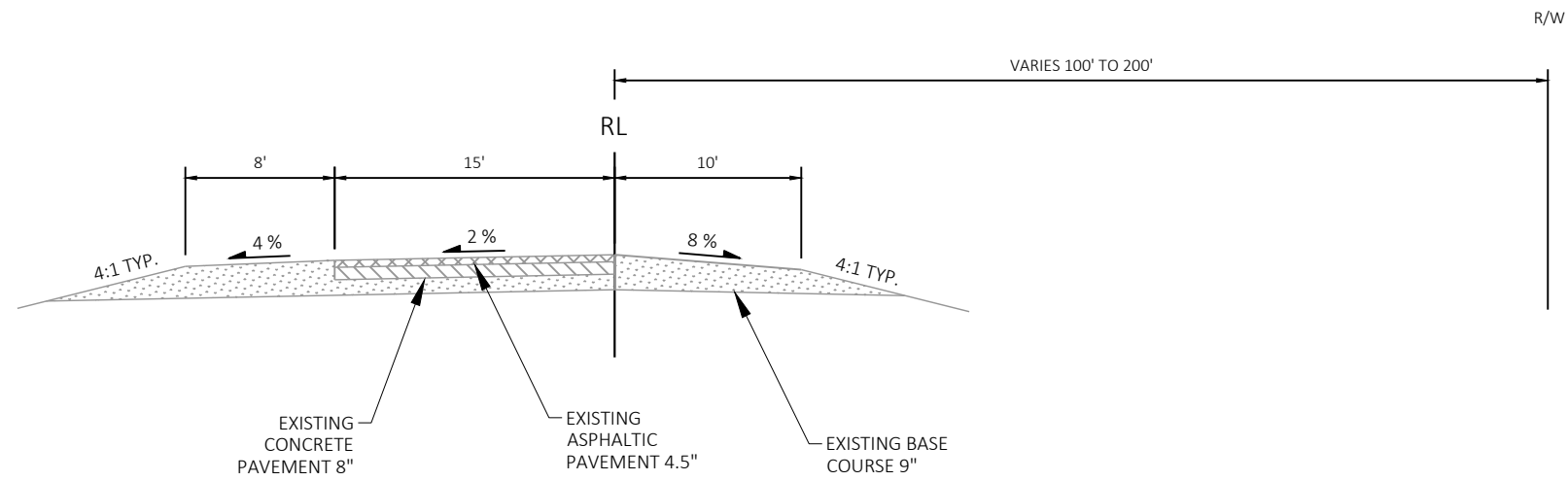
STA 560+40 - 592+05

STA 596+35 - 743+30

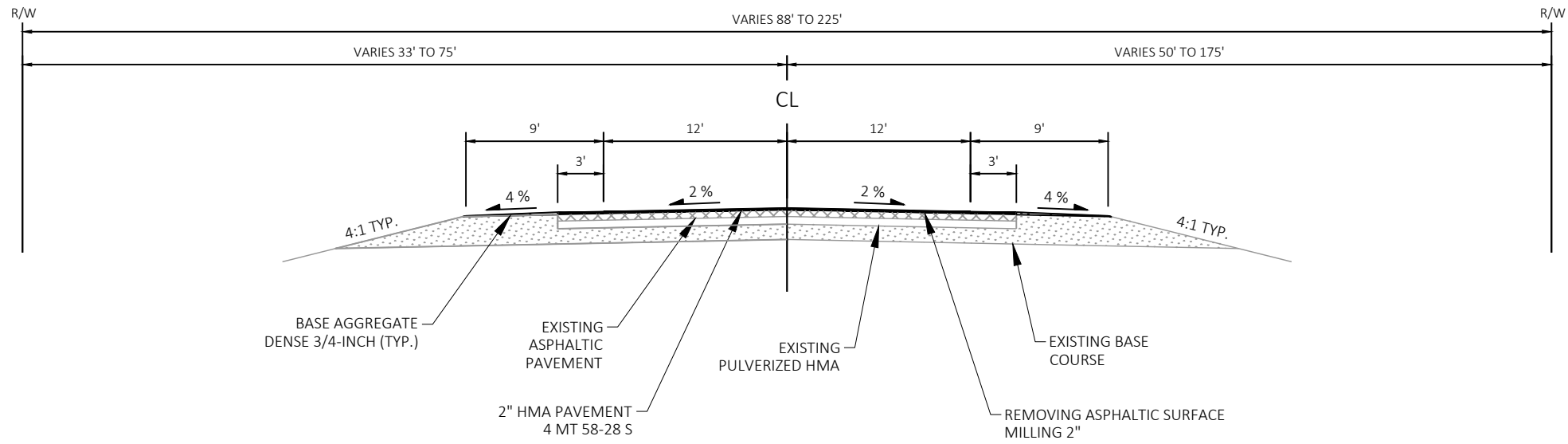
\*EXCLUDES: GUARDRAIL SECTIONS



**EXISTING TYPICAL SECTION (STH 13)**  
STA 592+05 - 596+35



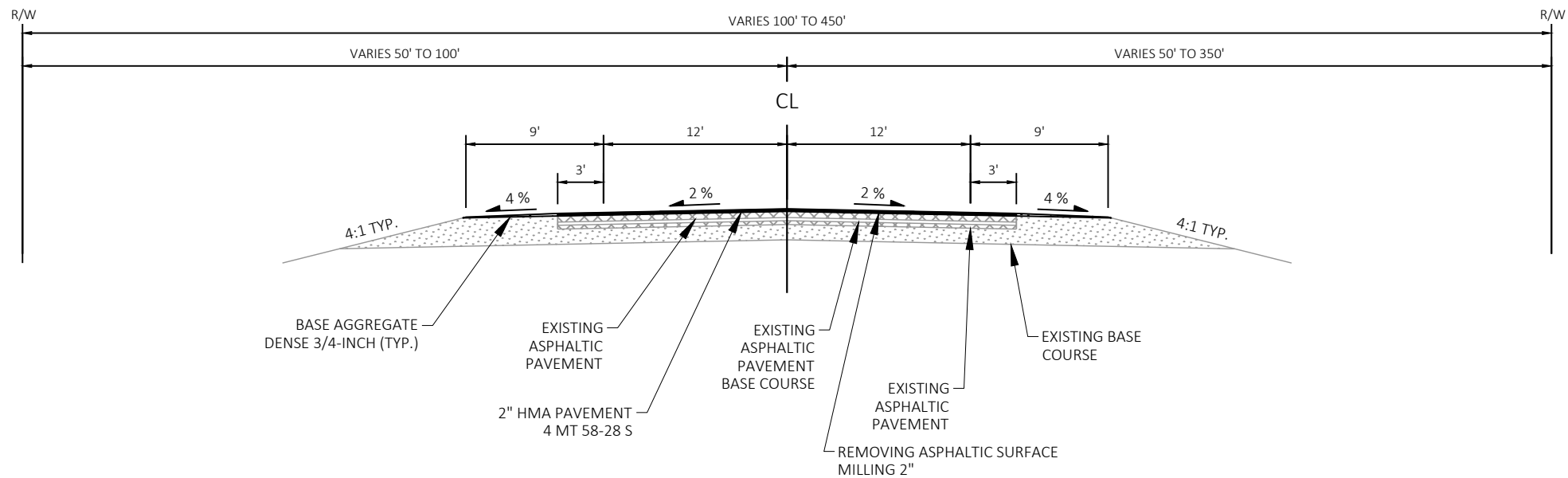
**EXISTING TYPICAL SECTION (USH 8 RAMPS)**



**FINISHED TYPICAL SECTION (STH 13)**

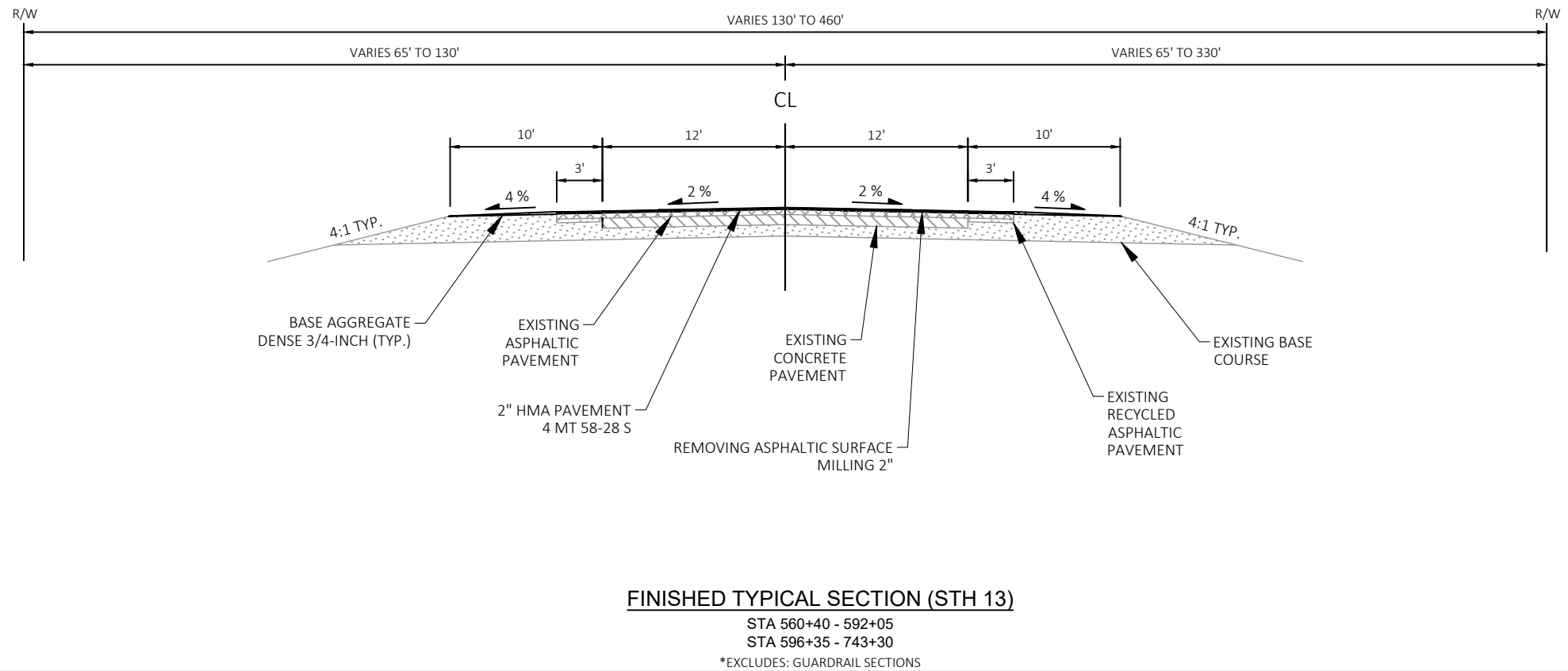
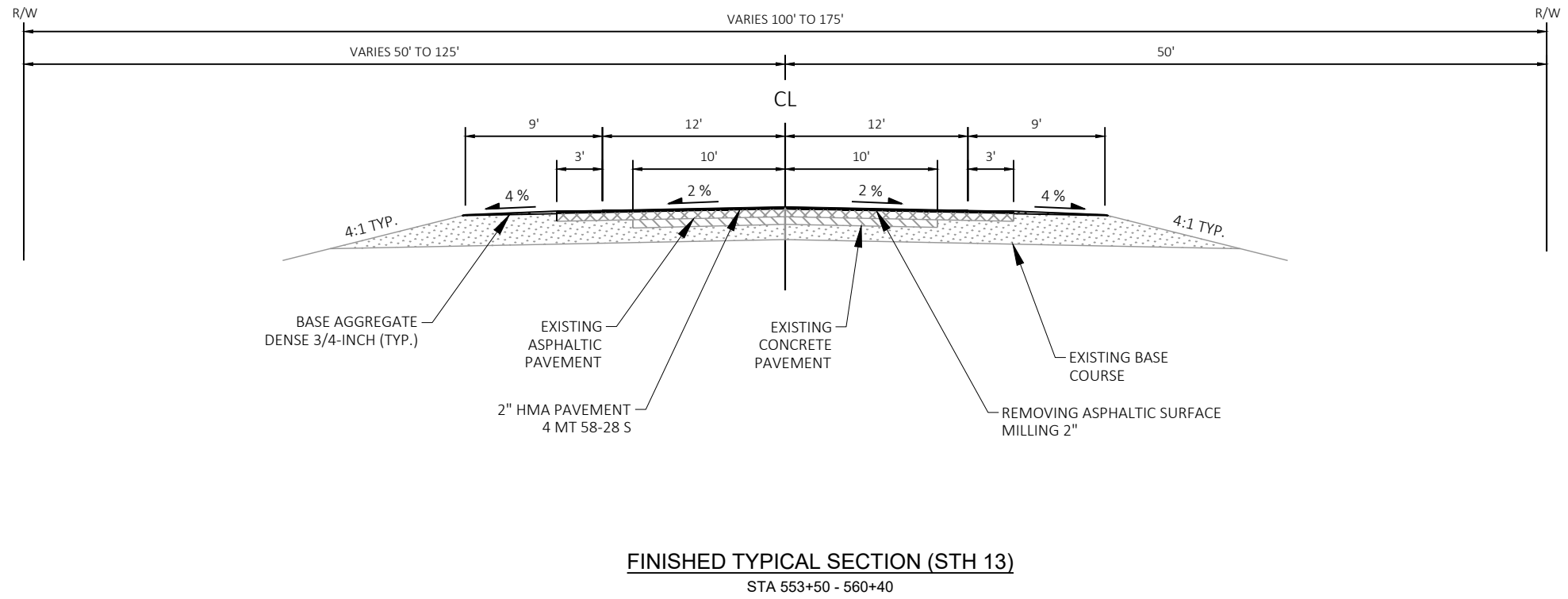
STA 0+63.33 - 135+00  
STA 270+00 - 553+50

\*EXCLUDES: CULVERT PIPE SECTIONS

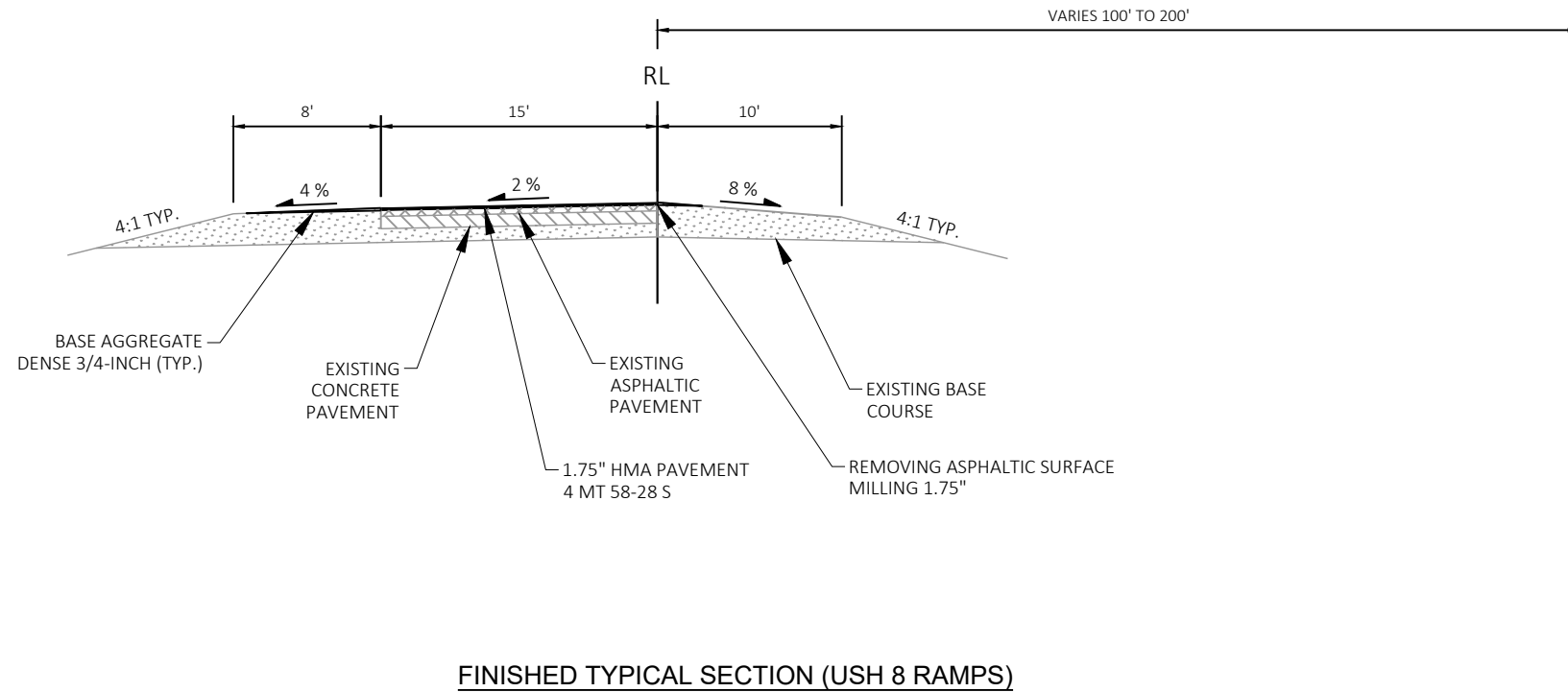
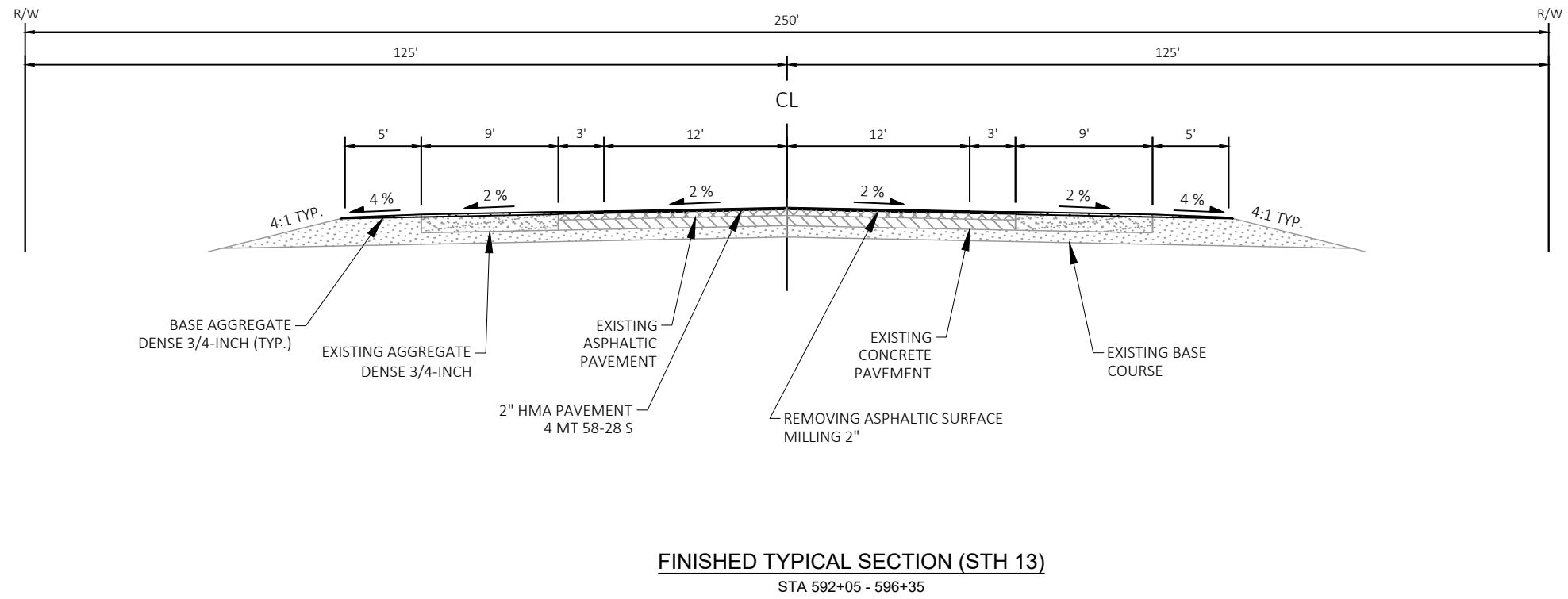


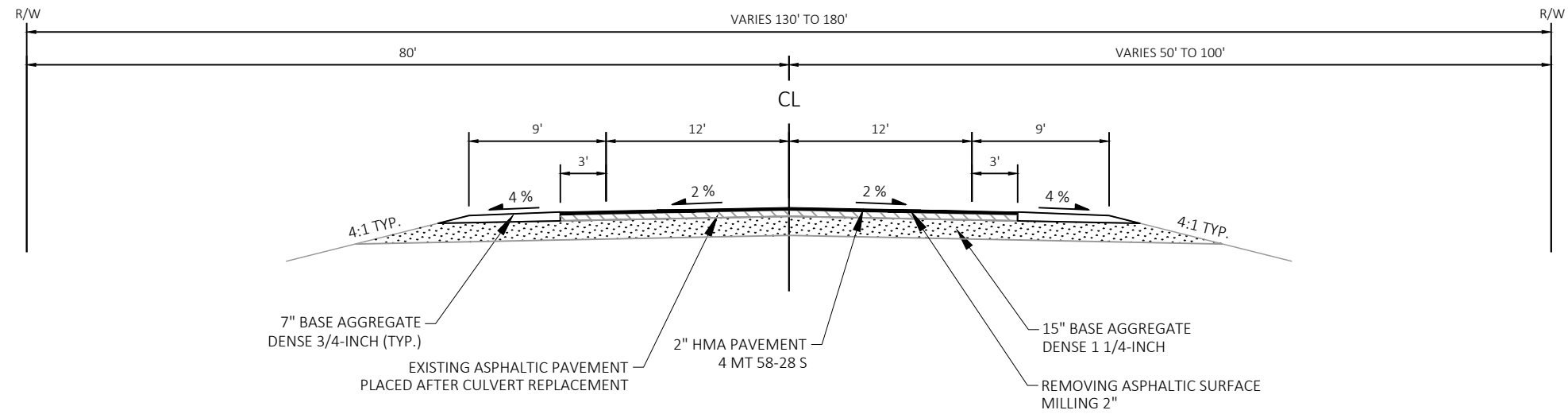
**FINISHED TYPICAL SECTION (STH 13)**

STA 135+00 - 270+00



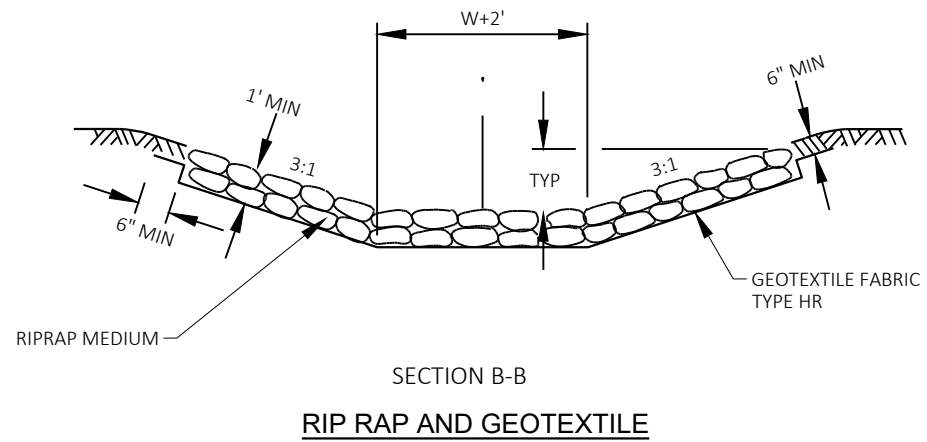
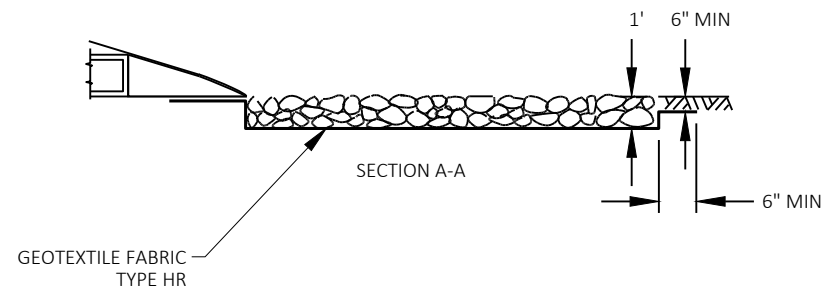
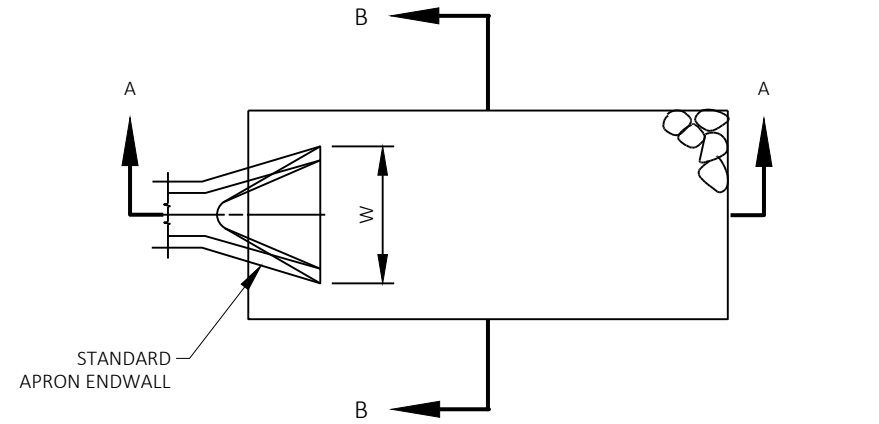




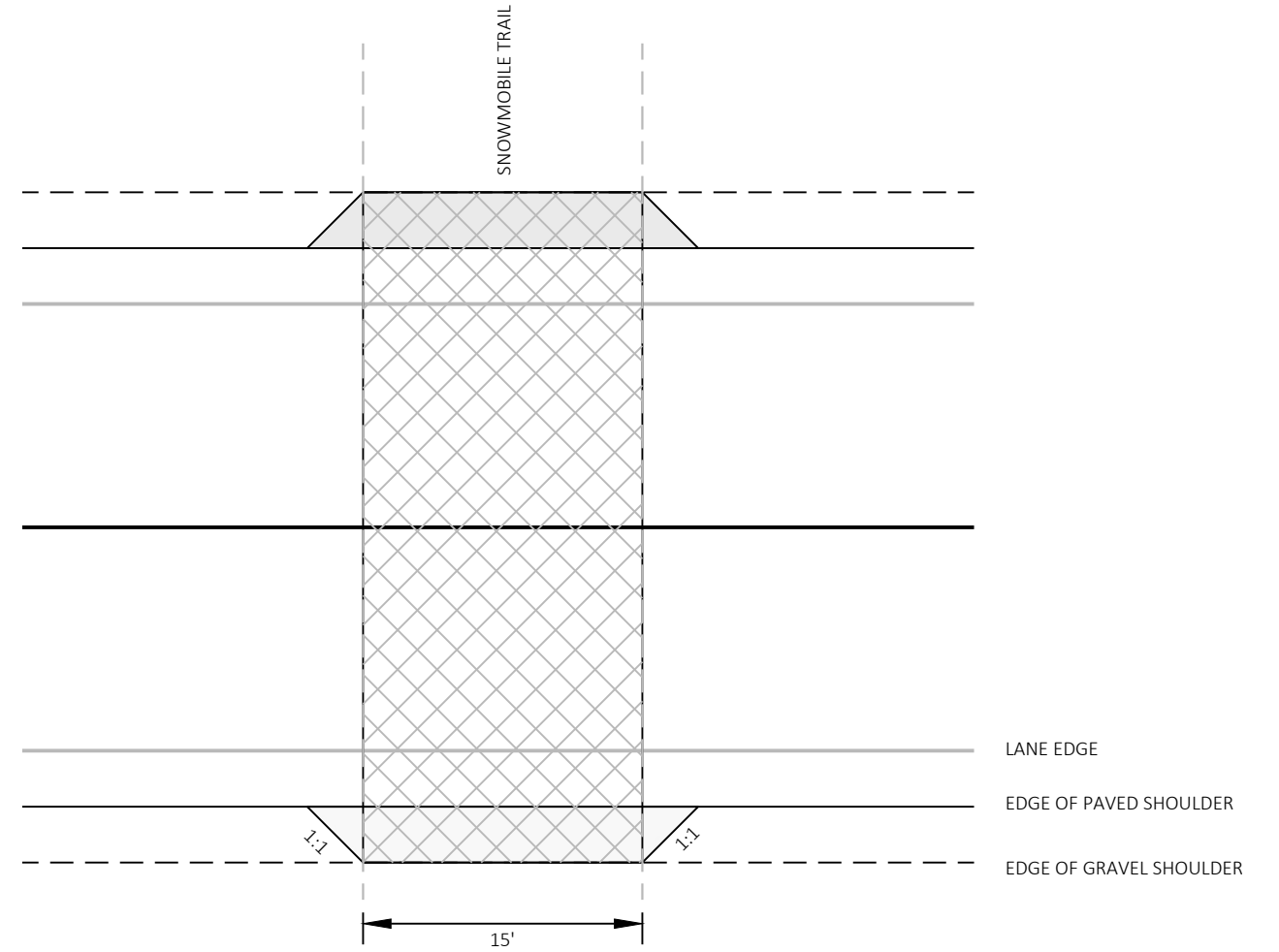




**FINISHED TYPICAL SECTION (STH 13) - CULVERT PIPE REPLACEMENTS**

STA 86+63 - 87+73  
 STA 92+34 - 93+44



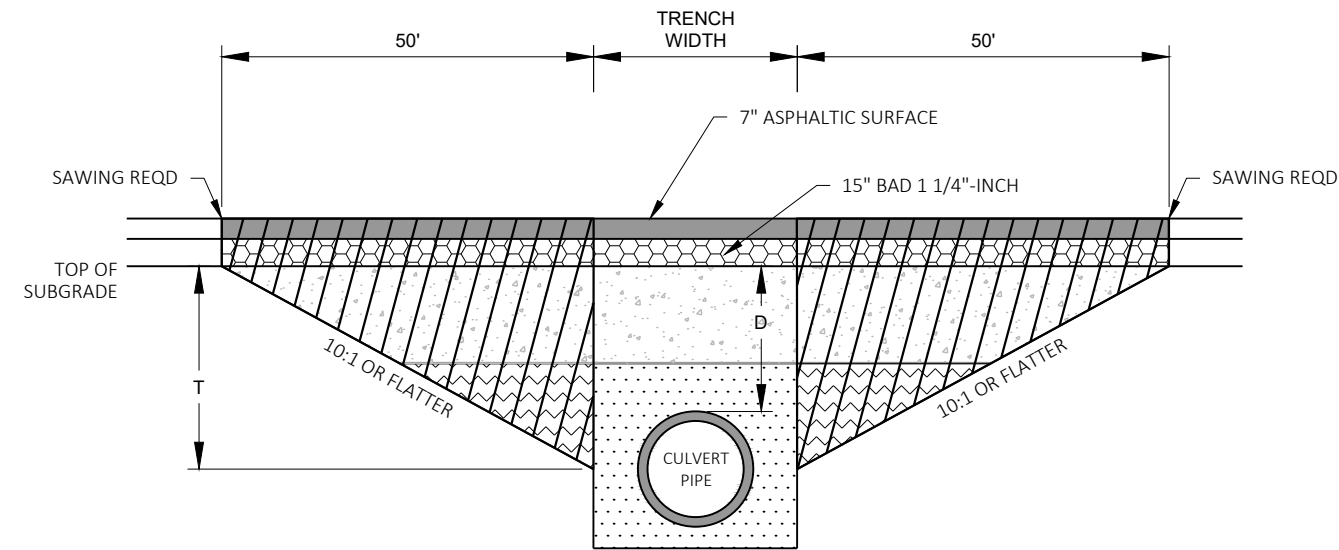
**RIP RAP AND GEOTEXTILE**



-  PROTECTIVE THERMOPLASTIC COATING AT SNOWMOBILE TRAIL CROSSING
-  HMA PAVEMENT WIDENING 2-INCHES
- NOTE: PREPARATION FOR PAVEMENT WIDENING FALLS UNDER PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS

**SNOWMOBILE TRAIL CROSSING  
WITH FULL WIDTH SHOULDERS AND PROTECTIVE COATING**

STA 712+50  
SKEW 30° LHF



TRANSITION CUT DEPTH (T) = THE LESSER OF DEPTH TO CENTER OF PIPE OR 5 FT.  
DO NOT EXTEND TRANSITION CUT BELOW HORIZONTAL CENTER OF PIPE.

DEPTH D < 6 FT

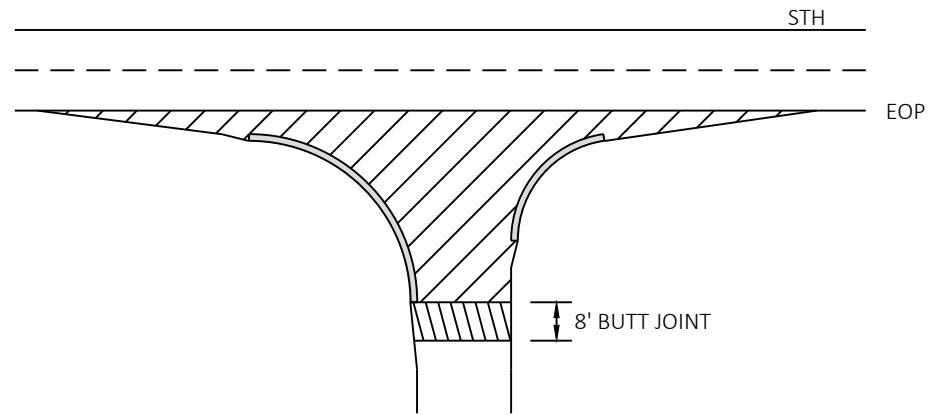
| KEY |                               |
|-----|-------------------------------|
|     | PROPOSED SURFACE              |
|     | PROPOSED BASE                 |
|     | TRENCH BACKFILL               |
|     | TRENCH OR FOUNDATION BACKFILL |
|     | FOUNDATION BACKFILL           |
|     | TRANSITION CUT                |



**NOTES**

TRANSITION CUT IS PAID AS EXCAVATION COMMON.  
TRANSITION CUT WIDTH IS FROM SUBGRADE SHOULDER POINT TO SUBGRADE SHOULDER POINT.  
BACKFILL THE TRANSITION CUT AREAS WITH FOUNDATION AND TRENCH BACKFILL AS SPECIFIED IN STANDARD SPEC 520.  
PERFORM CULVERT PIPE INSTALLATION BEFORE MILLING AND PAVING.

**CULVERT PIPE TRANSITION**

| ROUTE  | STA (CL) | DEPTH D (FT) | PIPE DIA (IN) | REMARKS        |
|--------|----------|--------------|---------------|----------------|
| STH 13 | 87+18    | 4.6          | 30            | C #50013003539 |
| STH 13 | 92+89    | 5.2          | 24            | C #50013003540 |

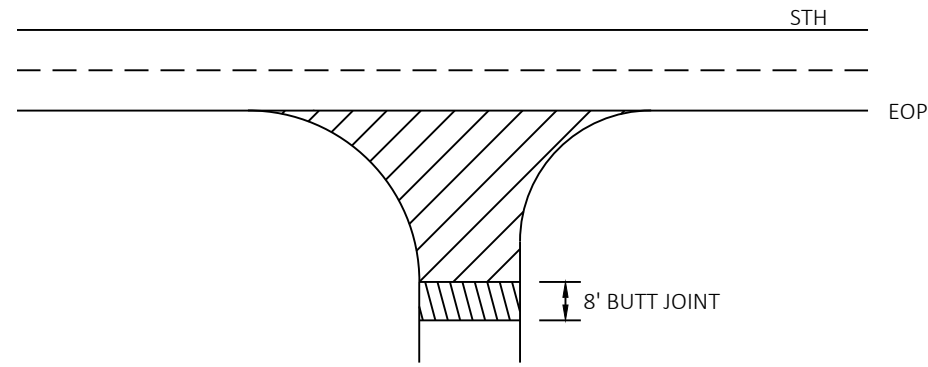




-  REMOVING ASPHALTIC SURFACE MILLING
-  REMOVING ASPHALTIC SURFACE BUTT JOINTS  
SEE BUTT JOINT DETAIL

NOTE: WHEN MATCHING TO AN UNPAVED SURFACE  
BUTT JOINT IS NOT REQUIRED

**SIDE ROADS**

WITH CURB AND GUTTER

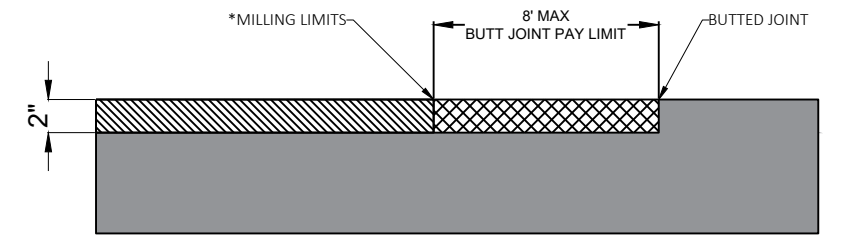





-  REMOVING ASPHALTIC SURFACE MILLING
-  REMOVING ASPHALTIC SURFACE BUTT JOINTS  
SEE BUTT JOINT DETAIL

NOTE: WHEN MATCHING TO AN UNPAVED SURFACE  
BUTT JOINT IS NOT REQUIRED

**SIDE ROADS**

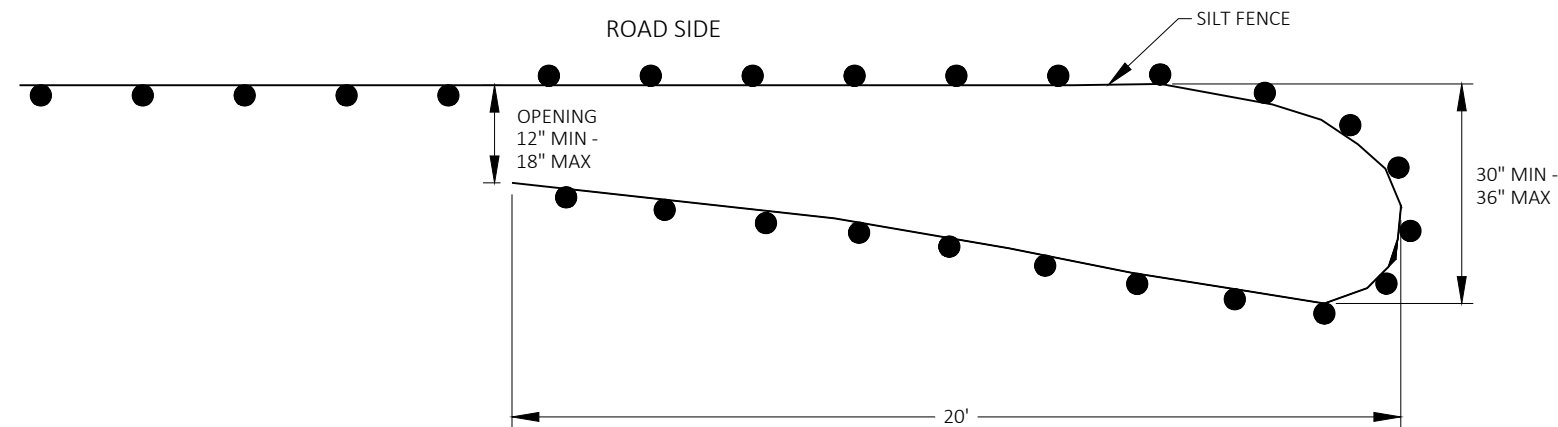
WITHOUT CURB AND GUTTER



-  REMOVING ASPHALTIC SURFACE MILLING
-  REMOVING ASPHALTIC SURFACE BUTT JOINTS
-  EXISTING PAVEMENT TO REMAIN

**BUTT JOINT DETAIL**

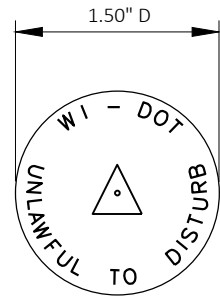
MAINLINE AND SIDE ROADS



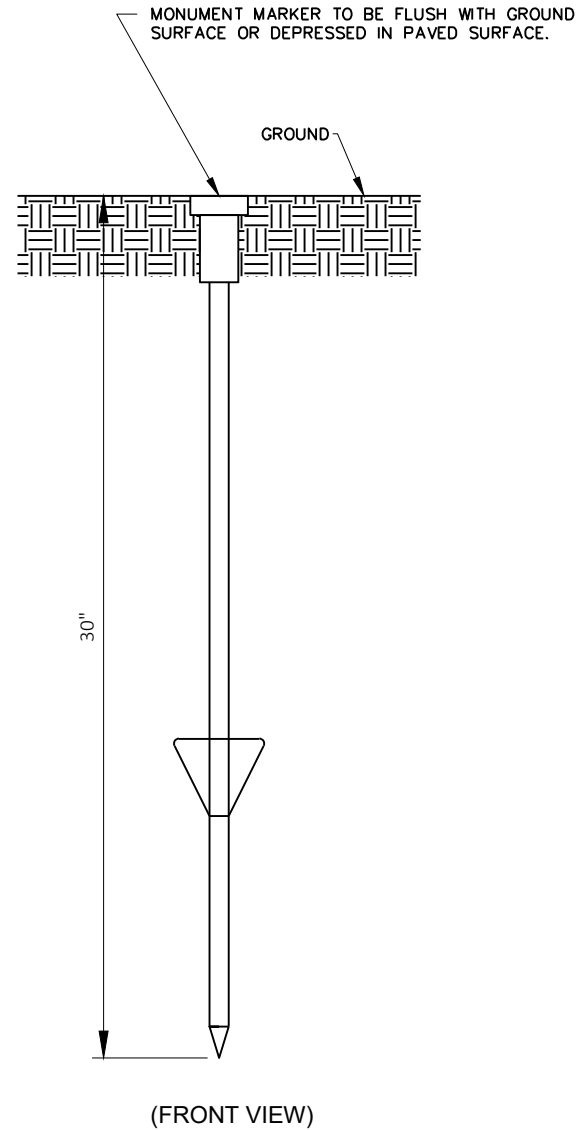
PLAN VIEW

**TEMPORARY SMALL ANIMAL TURN-AROUND**

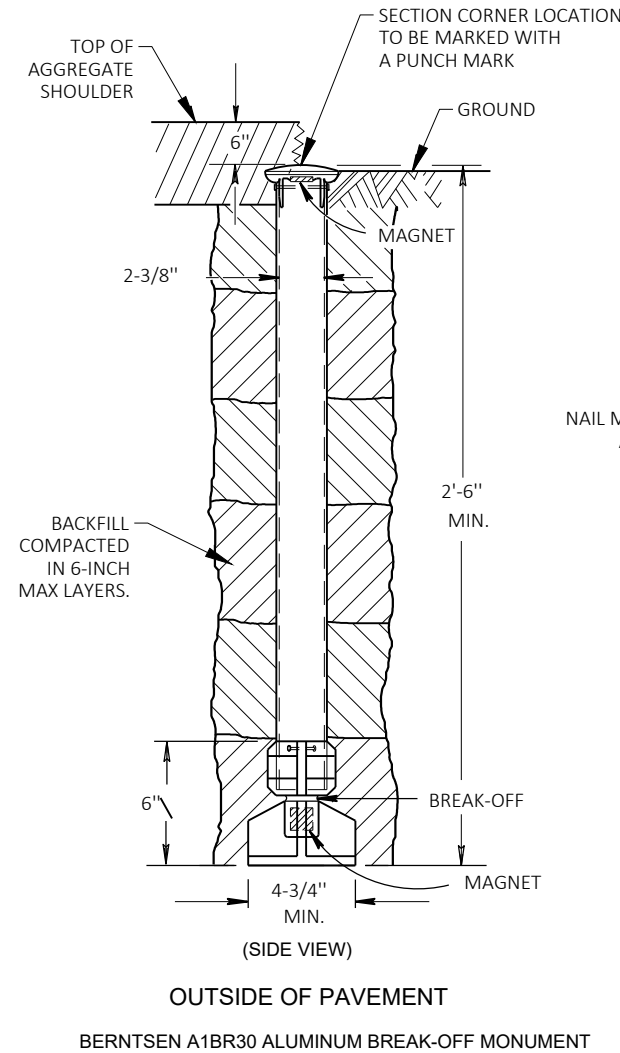
GENERAL NOTES:  
SILT FENCE POSTS FOR THE TURN-AROUND SHOULD BE ON THE OUTSIDE OF THE  
TURN-AROUND. AND TRENCHED IN ACCORDING TO SILT FENCE REQUIREMENTS.



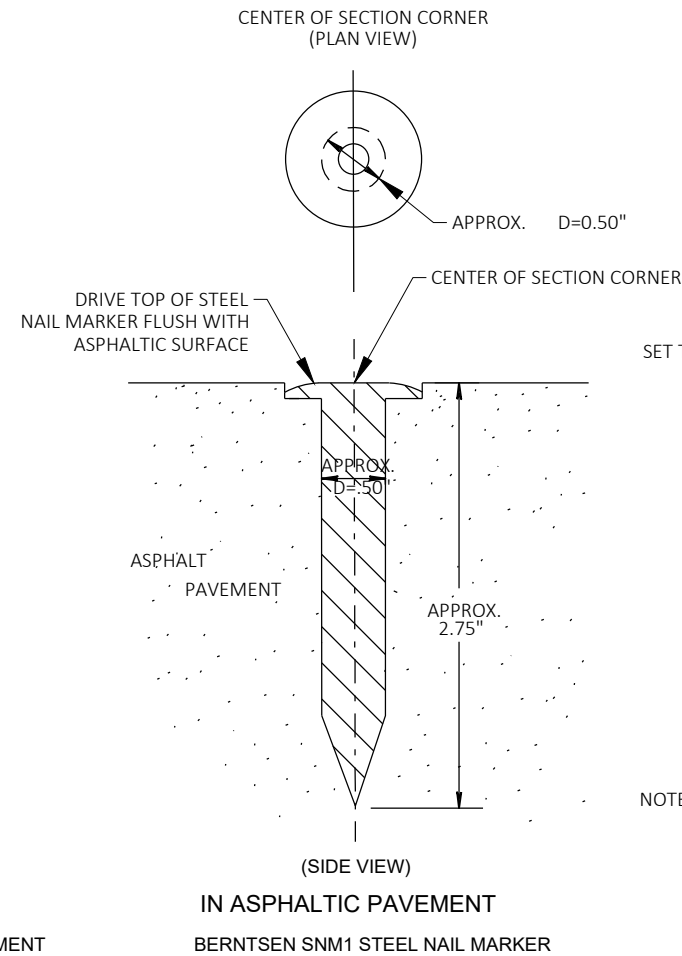
WIS DOT MONUMENT CAP MARKER LOGO (SSDR130)  
 CONTRACTOR TO ORDER LANDMARK REFERENCE MONUMENTS WITH THE ABOVE STAMPING



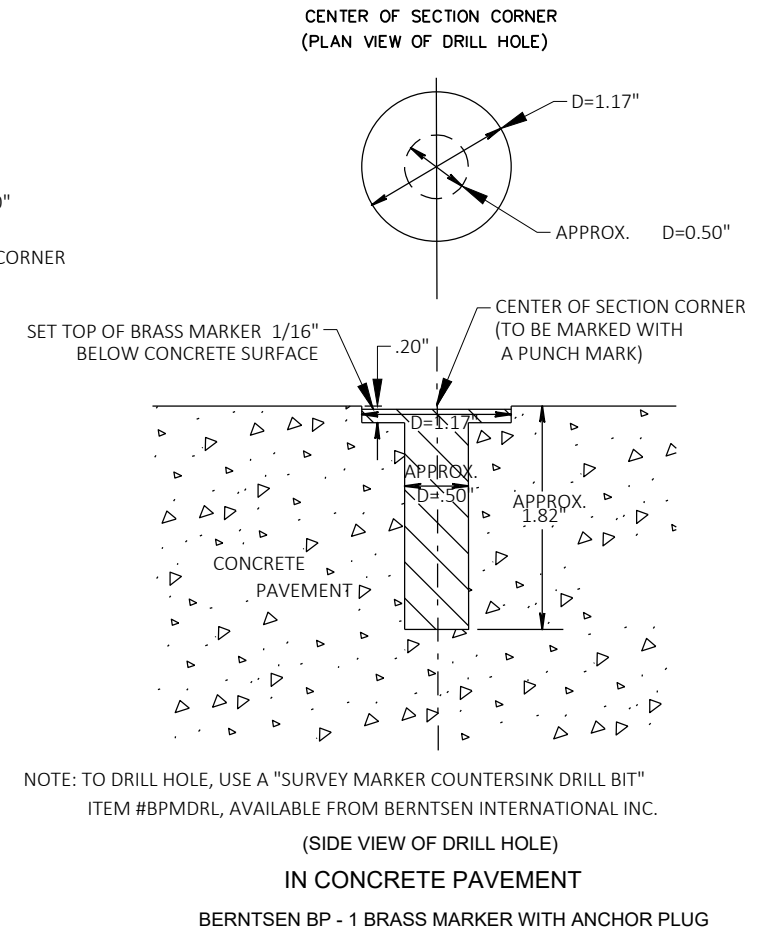
**BERNSTEN DRIVABLE MONUMENT SDDR130**  
 LANDMARK REFERENCE MONUMENT (TIES ONLY)



**BERNTSEN A1BR30 ALUMINUM BREAK-OFF MONUMENT**



**BERNTSEN SNM1 STEEL NAIL MARKER**



NOTE: TO DRILL HOLE, USE A "SURVEY MARKER COUNTERSINK DRILL BIT" ITEM #BPMRDL, AVAILABLE FROM BERNTSEN INTERNATIONAL INC.

**BERNTSEN BP - 1 BRASS MARKER WITH ANCHOR PLUG**

**SECTION CORNER MONUMENTS**

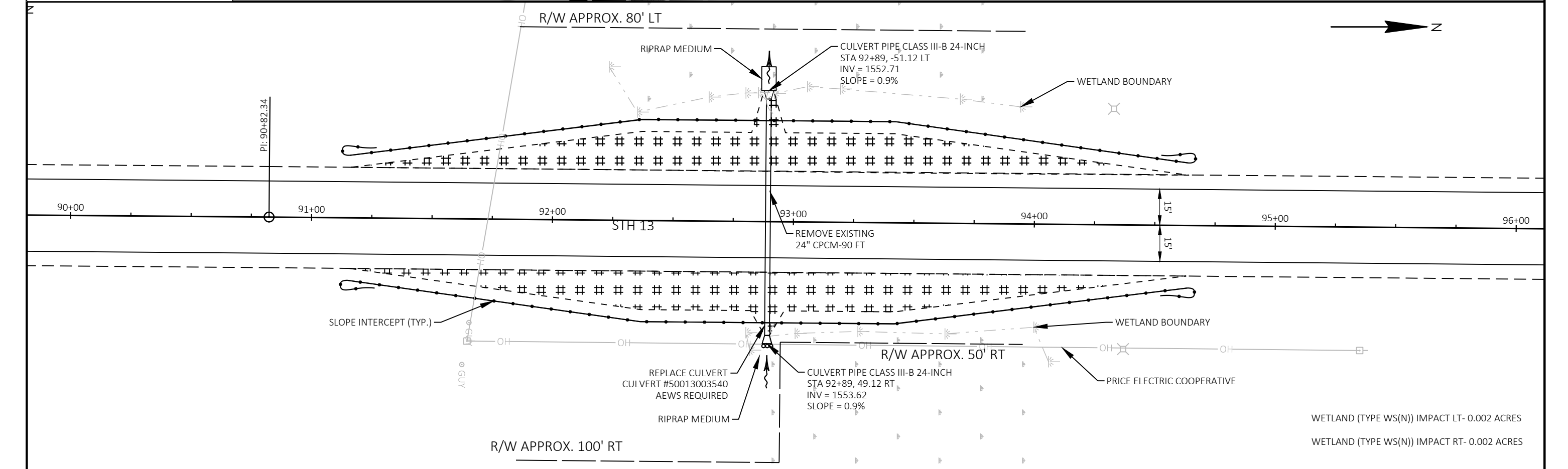
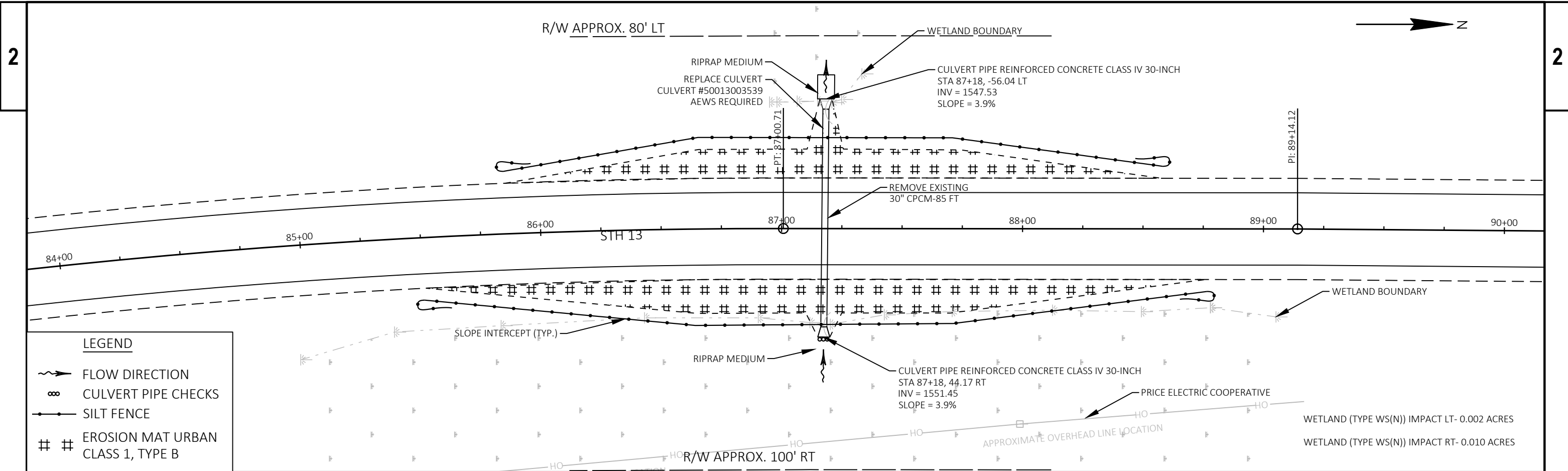
**GENERAL NOTES**

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.

LOCATE LANDMARK REFERENCE MONUMENTS OUTSIDE THE CONSTRUCTION LIMITS AND WITHIN WISDOT RIGHT OF WAY. LOCATION TO BE APPROVED BY THE ENGINEER.

CONTRACTOR WILL SUPPLY ALL REQUIRED SURVEY MONUMENTS.

**SECTION CORNER MONUMENT AND LANDMARK REFERENCE MONUMENT DETAIL**



# TC SIGN NUMBER  
 POST MOUNTED SIGN  
 WORK AREA

LEGEND

|   |  |   |  |
|---|--|---|--|
| 1 |  | 4 |  |
| 2 |  | 5 |  |
| 3 |  | 6 |  |

GENERAL NOTES:

DRAWINGS SHOW TRAFFIC CONTROL FOR A TYPICAL SITUATION. ADDITIONAL TRAFFIC CONTROL DEVICES MAY BE REQUIRED AND/OR LAYOUT DETAILS MODIFIED DEPENDING ON FIELD CONDITIONS AND THE CONTRACTOR'S METHODS OF OPERATION.

MAP SHOWN IS NOT TO SCALE.

SEE SDD "TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC" FOR ADDITIONAL DETAILS.

SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURES WITH FLAGGING OPERATION" FOR ADDITIONAL DETAILS.

SEE SDD "TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY"

ALL TRAFFIC CONTROL SIGNS ARE 48" X 48" UNLESS OTHERWISE STATED

PLACE SIGN G20-57 SEVEN DAYS PRIOR TO CONSTRUCTION, REMOVE AT THE START OF CONSTRUCTION.





LEGEND

2

**MB** PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

GENERAL NOTES:

DRAWINGS SHOW TRAFFIC CONTROL FOR A TYPICAL SITUATION. ADDITIONAL TRAFFIC CONTROL DEVICES MAY BE REQUIRED AND/OR LAYOUT DETAILS MODIFIED DEPENDING ON FIELD CONDITIONS AND THE CONTRACTOR'S METHODS OF OPERATION.

MAP SHOWN IS NOT TO SCALE.

PLACE PCMS SEVEN DAYS PRIOR TO RAMP CLOSURES.

|                       |               |                       |               |
|-----------------------|---------------|-----------------------|---------------|
| FRAME 1               | FRAME 2       | FRAME 1               | FRAME 2       |
| WIS 13 NB RAMP CLOSED | USE ALT ROUTE | WIS 13 SB RAMP CLOSED | USE ALT ROUTE |

|                  |               |
|------------------|---------------|
| FRAME 1          | FRAME 2       |
| US 8 RAMP CLOSED | USE ALT ROUTE |

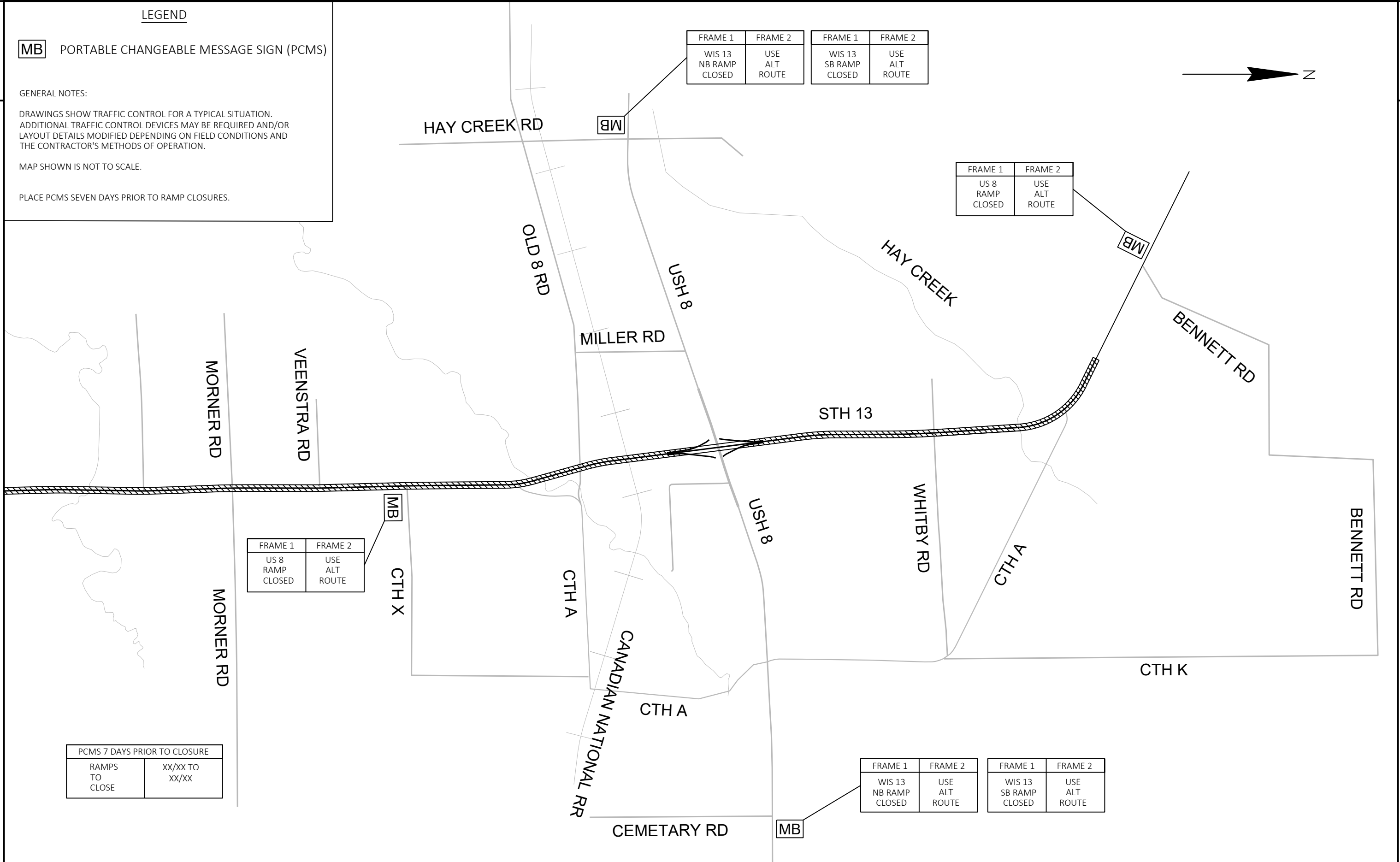
|                  |               |
|------------------|---------------|
| FRAME 1          | FRAME 2       |
| US 8 RAMP CLOSED | USE ALT ROUTE |

|                       |               |                       |               |
|-----------------------|---------------|-----------------------|---------------|
| FRAME 1               | FRAME 2       | FRAME 1               | FRAME 2       |
| WIS 13 NB RAMP CLOSED | USE ALT ROUTE | WIS 13 SB RAMP CLOSED | USE ALT ROUTE |

|                              |                |
|------------------------------|----------------|
| PCMS 7 DAYS PRIOR TO CLOSURE |                |
| RAMPS TO CLOSE               | XX/XX TO XX/XX |



2



PROJECT NO: 1610-41-70

HWY: STH 13

COUNTY: PRICE

TRAFFIC CONTROL

SHEET

E

Estimate Of Quantities

1610-41-70

| Line | Item       | Item Description                                              | Unit | Total       | Qty         |
|------|------------|---------------------------------------------------------------|------|-------------|-------------|
| 0002 | 203.0100   | Removing Small Pipe Culverts                                  | EACH | 2.000       | 2.000       |
| 0004 | 204.0115   | Removing Asphaltic Surface Butt Joints                        | SY   | 983.000     | 983.000     |
| 0006 | 204.0120   | Removing Asphaltic Surface Milling                            | SY   | 270,900.000 | 270,900.000 |
| 0008 | 205.0100   | Excavation Common                                             | CY   | 1,820.000   | 1,820.000   |
| 0010 | 208.1500.S | Temporary Lane Shift During Culvert Work                      | EACH | 4.000       | 4.000       |
| 0012 | 211.0400   | Prepare Foundation for Asphaltic Shoulders                    | STA  | 2.000       | 2.000       |
| 0014 | 213.0100   | Finishing Roadway (project) 01. 1610-41-70                    | EACH | 1.000       | 1.000       |
| 0016 | 305.0110   | Base Aggregate Dense 3/4-Inch                                 | TON  | 12,160.000  | 12,160.000  |
| 0018 | 305.0120   | Base Aggregate Dense 1 1/4-Inch                               | TON  | 1,160.000   | 1,160.000   |
| 0020 | 455.0605   | Tack Coat                                                     | GAL  | 19,220.000  | 19,220.000  |
| 0022 | 460.0105.S | HMA Percent Within Limits (PWL) Test Strip Volumetrics        | EACH | 1.000       | 1.000       |
| 0024 | 460.0110.S | HMA Percent Within Limits (PWL) Test Strip Density            | EACH | 1.000       | 1.000       |
| 0026 | 460.2000   | Incentive Density HMA Pavement                                | DOL  | 5,130.000   | 5,130.000   |
| 0028 | 460.2005   | Incentive Density PWL HMA Pavement                            | DOL  | 22,180.000  | 22,180.000  |
| 0030 | 460.2007   | Incentive Density HMA Pavement Longitudinal Joints            | DOL  | 37,130.000  | 37,130.000  |
| 0032 | 460.2010   | Incentive Air Voids HMA Pavement                              | DOL  | 29,170.000  | 29,170.000  |
| 0034 | 460.6224   | HMA Pavement 4 MT 58-28 S                                     | TON  | 30,190.000  | 30,190.000  |
| 0036 | 465.0105   | Asphaltic Surface                                             | TON  | 300.000     | 300.000     |
| 0038 | 465.0475   | Asphalt Centerline Rumble Strips 2-Lane Rural                 | LF   | 55,670.000  | 55,670.000  |
| 0040 | 520.1024   | Apron Endwalls for Culvert Pipe 24-Inch                       | EACH | 2.000       | 2.000       |
| 0042 | 520.3624   | Culvert Pipe Class III-B Non-metal 24-Inch                    | LF   | 88.000      | 88.000      |
| 0044 | 522.0430   | Culvert Pipe Reinforced Concrete Class IV 30-Inch             | LF   | 88.000      | 88.000      |
| 0046 | 522.1030   | Apron Endwalls for Culvert Pipe Reinforced Concrete 30-Inch   | EACH | 2.000       | 2.000       |
| 0048 | 606.0200   | Riprap Medium                                                 | CY   | 8.000       | 8.000       |
| 0050 | 614.0400   | Adjusting Steel Plate Beam Guard                              | LF   | 225.000     | 225.000     |
| 0052 | 614.0950   | Replacing Guardrail Posts and Blocks                          | EACH | 197.000     | 197.000     |
| 0054 | 618.0100   | Maintenance And Repair of Haul Roads (project) 01. 1610-41-70 | EACH | 1.000       | 1.000       |
| 0056 | 619.1000   | Mobilization                                                  | EACH | 1.000       | 1.000       |
| 0058 | 624.0100   | Water                                                         | MGAL | 235.000     | 235.000     |
| 0060 | 625.0100   | Topsoil                                                       | SY   | 1,630.000   | 1,630.000   |
| 0062 | 628.1504   | Silt Fence                                                    | LF   | 1,440.000   | 1,440.000   |
| 0064 | 628.1520   | Silt Fence Maintenance                                        | LF   | 1,440.000   | 1,440.000   |
| 0066 | 628.1905   | Mobilizations Erosion Control                                 | EACH | 4.000       | 4.000       |
| 0068 | 628.1910   | Mobilizations Emergency Erosion Control                       | EACH | 4.000       | 4.000       |
| 0070 | 628.2008   | Erosion Mat Urban Class I Type B                              | SY   | 1,630.000   | 1,630.000   |
| 0072 | 628.7555   | Culvert Pipe Checks                                           | EACH | 12.000      | 12.000      |
| 0074 | 629.0210   | Fertilizer Type B                                             | CWT  | 1.200       | 1.200       |
| 0076 | 630.0130   | Seeding Mixture No. 30                                        | LB   | 32.000      | 32.000      |
| 0078 | 630.0500   | Seed Water                                                    | MGAL | 8.000       | 8.000       |
| 0080 | 633.5200   | Markers Culvert End                                           | EACH | 4.000       | 4.000       |
| 0082 | 638.2102   | Moving Signs Type II                                          | EACH | 18.000      | 18.000      |
| 0084 | 642.5001   | Field Office Type B                                           | EACH | 1.000       | 1.000       |
| 0086 | 643.0300   | Traffic Control Drums                                         | DAY  | 960.000     | 960.000     |
| 0088 | 643.0420   | Traffic Control Barricades Type III                           | DAY  | 32.000      | 32.000      |
| 0090 | 643.0705   | Traffic Control Warning Lights Type A                         | DAY  | 64.000      | 64.000      |
| 0092 | 643.0900   | Traffic Control Signs                                         | DAY  | 3,800.000   | 3,800.000   |
| 0094 | 643.1000   | Traffic Control Signs Fixed Message                           | SF   | 36.000      | 36.000      |
| 0096 | 643.1050   | Traffic Control Signs PCMS                                    | DAY  | 48.000      | 48.000      |
| 0098 | 643.5000   | Traffic Control                                               | EACH | 1.000       | 1.000       |

Estimate Of Quantities

1610-41-70

| Line | Item     | Item Description                                                          | Unit | Total       | Qty         |
|------|----------|---------------------------------------------------------------------------|------|-------------|-------------|
| 0100 | 645.0120 | Geotextile Type HR                                                        | SY   | 15.000      | 15.000      |
| 0102 | 646.1020 | Marking Line Epoxy 4-Inch                                                 | LF   | 90,950.000  | 90,950.000  |
| 0104 | 646.1040 | Marking Line Grooved Wet Ref Epoxy 4-Inch                                 | LF   | 153,150.000 | 153,150.000 |
| 0106 | 646.3020 | Marking Line Epoxy 8-Inch                                                 | LF   | 900.000     | 900.000     |
| 0108 | 646.3555 | Marking Line Grooved Contrast Permanent Tape 8-Inch                       | LF   | 4,850.000   | 4,850.000   |
| 0110 | 646.5320 | Marking Railroad Crossings Epoxy                                          | EACH | 2.000       | 2.000       |
| 0112 | 646.6120 | Marking Stop Line Epoxy 18-Inch                                           | LF   | 182.000     | 182.000     |
| 0114 | 646.7220 | Marking Chevron Epoxy 24-Inch                                             | LF   | 208.000     | 208.000     |
| 0116 | 648.0100 | Locating No-Passing Zones                                                 | MI   | 14.070      | 14.070      |
| 0118 | 649.0120 | Temporary Marking Line Epoxy 4-Inch                                       | LF   | 81,835.000  | 81,835.000  |
| 0120 | 650.6000 | Construction Staking Pipe Culverts                                        | EACH | 2.000       | 2.000       |
| 0122 | 650.8000 | Construction Staking Resurfacing Reference                                | LF   | 79,270.000  | 79,270.000  |
| 0124 | 650.9910 | Construction Staking Supplemental Control (project) 01. 1610-41-70        | LS   | 1.000       | 1.000       |
| 0126 | 650.9920 | Construction Staking Slope Stakes                                         | LF   | 400.000     | 400.000     |
| 0128 | 690.0150 | Sawing Asphalt                                                            | LF   | 120.000     | 120.000     |
| 0130 | 740.0440 | Incentive IRI Ride                                                        | DOL  | 56,000.000  | 56,000.000  |
| 0132 | ASP.1T0A | On-the-Job Training Apprentice at \$5.00/HR                               | HRS  | 2,000.000   | 2,000.000   |
| 0134 | ASP.1T0G | On-the-Job Training Graduate at \$5.00/HR                                 | HRS  | 1,260.000   | 1,260.000   |
| 0136 | SPV.0060 | Special 01. Reestablish Section Corner Monuments                          | EACH | 14.000      | 14.000      |
| 0138 | SPV.0180 | Special 01. Protective Thermoplastic Coating At Snowmobile Trail Crossing | SY   | 50.000      | 50.000      |

**REMOVALS**

203.0100

REMOVING SMALL  
PIPE CULVERTS

| ROADWAY      | SIDE  | STA   | TO | STA | EACH     |
|--------------|-------|-------|----|-----|----------|
| STH 13       | LT/RT | 87+18 | -  |     | 1        |
| STH 13       | LT/RT | 92+89 | -  |     | 1        |
| <b>TOTAL</b> |       |       |    |     | <b>2</b> |

**EXCAVATION COMMON - PIPE TRANSITIONS**

205.0100  
EXCAVATION  
COMMON

| ROADWAY      | SIDE  | STA   | TO | STA | CY           |
|--------------|-------|-------|----|-----|--------------|
| STH 13       | LT/RT | 87+18 | -  |     | 910          |
| STH 13       | LT/RT | 92+89 | -  |     | 910          |
| <b>TOTAL</b> |       |       |    |     | <b>1,820</b> |

**AGGREGATE ITEMS**

305.0110      305.0120      624.0100  
BASE              BASE  
AGGREGATE      AGGREGATE      WATER  
DENSE            DENSE  
3/4-INCH        1 1/4-INCH

| ROADWAY      | STA    | TO | STA    | TON           | TON          | MGAL       |
|--------------|--------|----|--------|---------------|--------------|------------|
| STH 13       | 0+63   | -  | 560+40 | 8,400         | -            | -          |
| STH 13       | 86+63  | -  | 87+73  | 80            | 580          | -          |
| STH 13       | 92+34  | -  | 93+44  | 80            | 580          | -          |
| STH 13       | 560+40 | -  | 567+48 | 130           | -            | -          |
| STH 13       | 569+10 | -  | 592+05 | 400           | -            | -          |
| STH 13       | 592+05 | -  | 594+43 | 30            | -            | -          |
| STH 13       | 594+93 | -  | 596+35 | 20            | -            | -          |
| STH 13       | 596+35 | -  | 620+64 | 430           | -            | -          |
| STH 13       | 623+09 | -  | 743+30 | 2,100         | -            | -          |
| RAMP A       | 624+60 | -  | 631+00 | 120           | -            | -          |
| RAMP B       | 612+82 | -  | 620+97 | 150           | -            | -          |
| RAMP C       | 614+00 | -  | 619+48 | 100           | -            | -          |
| RAMP D       | 624+46 | -  | 631+31 | 120           | -            | -          |
| PROJECT      | 0+63   | -  | 743+30 | -             | -            | 235        |
| <b>TOTAL</b> |        |    |        | <b>12,160</b> | <b>1,160</b> | <b>235</b> |

**ASPHALTIC SURFACE MILLING**

204.0115      204.0120  
REMOVING      REMOVING  
ASPHALTIC      ASPHALTIC  
SURFACE        SURFACE  
BUTT JOINTS    MILLING

| ROADWAY        | SIDE  | STA    | TO | STA    | SY         | SY             |
|----------------|-------|--------|----|--------|------------|----------------|
| STH 13         | LT/RT | 0+63   | -  | 567+48 | 27         | 200,600        |
| MACKY SPUR RD  | LT    | 52+70  | -  |        | 22         | -              |
| MACKY SPUR RD  | RT    | 52+70  | -  |        | 21         | -              |
| CTH I          | LT    | 106+16 | -  |        | 30         | -              |
| LINDEN RD      | RT    | 106+16 | -  |        | 27         | -              |
| WESTBURG RD    | RT    | 130+55 | -  |        | 21         | -              |
| CENTERVILLE RD | LT    | 158+80 | -  |        | 21         | -              |
| CTH G          | RT    | 159+54 | -  |        | 24         | -              |
| BJORKLUND RD   | LT    | 216+27 | -  |        | 23         | -              |
| BJORKLUND RD   | RT    | 216+27 | -  |        | 23         | -              |
| CTH O          | LT    | 243+50 | -  |        | 48         | -              |
| CTH O          | RT    | 243+50 | -  |        | 47         | -              |
| WICKDALE RD    | LT    | 269+08 | -  |        | 20         | -              |
| WICKDALE RD    | RT    | 269+08 | -  |        | 22         | -              |
| JOHNSON RD     | LT    | 296+00 | -  |        | 25         | -              |
| LARKIN RD      | LT    | 318+88 | -  |        | 22         | -              |
| JOSEPHSON RD   | RT    | 318+88 | -  |        | 20         | -              |
| FORSBERG LN    | RT    | 350+10 | -  |        | 20         | -              |
| COLBERG RD     | LT    | 371+00 | -  |        | 20         | -              |
| SPRING RD      | RT    | 397+50 | -  |        | 21         | -              |
| BERG           | LT    | 449+50 | -  |        | 27         | -              |
| MORNER RD      | LT    | 475+80 | -  |        | 21         | -              |
| MORNER RD      | RT    | 475+80 | -  |        | 20         | -              |
| VEENSTRARD     | LT    | 502+00 | -  |        | 18         | -              |
| CTH X          | RT    | 528+00 | -  |        | 36         | -              |
| CTH A          | RT    | 561+34 | -  |        | 21         | -              |
| STH 13         | LT/RT | 567+48 | -  |        | 39         | -              |
| STH 13         | LT/RT | 569+10 | -  | 620+64 | 39         | 18,500         |
| OLD 8          | LT    | 580+17 | -  |        | 19         | -              |
| OLD 8          | RT    | 580+17 | -  |        | 22         | -              |
| USH 8 BRIDGE   | LT/RT | 620+64 | -  |        | 39         | -              |
| USH 8 BRIDGE   | LT/RT | 623+15 | -  |        | 39         | -              |
| USH 8 RAMP A   | LT    | 624+60 | -  |        | 13         | 2,700          |
| USH 8 RAMP B   | LT    | 620+97 | -  |        | 13         | 2,700          |
| USH 8 RAMP C   | RT    | 619+48 | -  |        | 13         | 2,800          |
| USH 8 RAMP D   | RT    | 624+46 | -  |        | 13         | 2,300          |
| WHITBY RD      | LT    | 686+50 | -  |        | 20         | -              |
| WHITBY RD      | RT    | 686+50 | -  |        | 20         | -              |
| CTH A          | RT    | 726+80 | -  |        | 20         | -              |
| STH 13         | LT/RT | 623+09 | -  | 743+30 | 27         | 41,300         |
| <b>TOTAL</b>   |       |        |    |        | <b>983</b> | <b>270,900</b> |

PROJECT NO: 1610-41-70

HWY: STH 13

COUNTY: PRICE

MISCELLANEOUS QUANTITIES

SHEET

E

3

**ASPHALT ITEMS**

| ROADWAY      | STA    | TO | STA    | GAL           | TON                          | TON                  | LF                                                       | COMMENTS     |
|--------------|--------|----|--------|---------------|------------------------------|----------------------|----------------------------------------------------------|--------------|
|              |        |    |        | 455.0605      | 460.6224                     | 465.0105             | 465.0475                                                 |              |
|              |        |    |        | TACK COAT     | HMA PAVEMENT<br>4 MT 58-28 S | ASPHALTIC<br>SURFACE | ASPHALTIC<br>CENTERLINE<br>RUMBLE STRIPS<br>2-LANE RURAL |              |
| STH 13       | 0+63   | -  | 567+48 | 14,100        | 22470                        | -                    | 41860                                                    |              |
| STH 13       | 569+10 | -  | 620+64 | 1,300         | 2070                         | -                    | 4210                                                     |              |
| STH 13       | 623+09 | -  | 743+30 | 2,900         | 4630                         | -                    | 9600                                                     |              |
| RAMP A       | 624+60 | -  | 636+47 | 200           | 260                          | -                    | -                                                        |              |
| RAMP B       | 607+19 | -  | 620+97 | 200           | 260                          | -                    | -                                                        |              |
| RAMP C       | 607+20 | -  | 619+48 | 200           | 270                          | -                    | -                                                        |              |
| RAMP D       | 624+46 | -  | 636+38 | 200           | 230                          | -                    | -                                                        |              |
| STH 13       | 86+63  | -  | 87+73  | 60            | -                            | 150                  | -                                                        | CULVERT PIPE |
| STH 13       | 92+34  | -  | 93+44  | 60            | -                            | 150                  | -                                                        | CULVERT PIPE |
| <b>TOTAL</b> |        |    |        | <b>19,220</b> | <b>30,190</b>                | <b>300</b>           | <b>55,670</b>                                            |              |

**HMA TEST STRIP**

| ROADWAY      | STA  | TO | STA    | EACH                                                                          | EACH                                                                      |
|--------------|------|----|--------|-------------------------------------------------------------------------------|---------------------------------------------------------------------------|
|              |      |    |        | 460.0105.S<br>HMA PERCENT<br>WITHIN LIMITS<br>(PWL) TEST STRIP<br>VOLUMETRICS | 460.0110.S<br>HMA PERCENT<br>WITHIN LIMITS<br>(PWL) TEST STRIP<br>DENSITY |
| STH 13       | 0+63 | -  | 743+30 | 1                                                                             | 1                                                                         |
| <b>TOTAL</b> |      |    |        | <b>1</b>                                                                      | <b>1</b>                                                                  |

3

**GUARDRAIL**

| ROADWAY      | SIDE | STATION | TO | STATION | LF                                     | COMMENTS          |
|--------------|------|---------|----|---------|----------------------------------------|-------------------|
|              |      |         |    |         | 614.0400                               |                   |
|              |      |         |    |         | ADJUSTING<br>STEEL PLATE<br>BEAM GUARD |                   |
| STH 13       | RT   | 623+62  | -  | 624+12  | 50                                     | USH 8 BRIDGE      |
| STH 13       | RT   | 569+00  | -  | 569+50  | 50                                     | JUMP RIVER BRIDGE |
| STH 13       | RT   | 569+80  | -  | 570+05  | 25                                     | JUMP RIVER BRIDGE |
| STH 13       | LT   | 569+43  | -  | 569+93  | 50                                     | JUMP RIVER BRIDGE |
| STH 13       | LT   | 565+09  | -  | 565+59  | 50                                     | JUMP RIVER BRIDGE |
| <b>TOTAL</b> |      |         |    |         | <b>225</b>                             |                   |

**GUARDRAIL**

| ROADWAY      | SIDE | STATION | TO | STATION | EACH                                          | COMMENTS                    |
|--------------|------|---------|----|---------|-----------------------------------------------|-----------------------------|
|              |      |         |    |         | 614.0950                                      |                             |
|              |      |         |    |         | REPLACING<br>GUARDRAIL<br>POSTS AND<br>BLOCKS |                             |
| STH 13       | LT   | 564+11  | -  | 567+59  | 48                                            | JUMP RIVER BRIDGE - SW QUAD |
| STH 13       | RT   | 564+88  | -  | 567+85  | 41                                            | JUMP RIVER BRIDGE - SE QUAD |
| STH 13       | LT   | 568+75  | -  | 570+23  | 19                                            | JUMP RIVER BRIDGE - NW QUAD |
| STH 13       | RT   | 569+00  | -  | 570+22  | 14                                            | JUMP RIVER BRIDGE - NE QUAD |
| STH 13       | LT   | 619+20  | -  | 620+68  | 19                                            | USH 8 BRIDGE - SW QUAD      |
| STH 13       | RT   | 619+28  | -  | 620+76  | 19                                            | USH 8 BRIDGE - SE QUAD      |
| STH 13       | LT   | 622+99  | -  | 624+46  | 18                                            | USH 8 BRIDGE - NW QUAD      |
| STH 13       | RT   | 623+07  | -  | 624+54  | 19                                            | USH 8 BRIDGE - NE QUAD      |
| <b>TOTAL</b> |      |         |    |         | <b>197</b>                                    |                             |

PROJECT NO: 1610-41-70

HWY: STH 13

COUNTY: PRICE

MISCELLANEOUS QUANTITIES

SHEET

E

| LOCATION                 | ROADWAY                  | STATION             | MIXTURE USE:   | UNDERLYING SURFACE             | BID ITEM                  | TONS  | THICKNESS | QUALITY MANAGEMENT PROGRAM TO BE USED FOR:        |                                                 |
|--------------------------|--------------------------|---------------------|----------------|--------------------------------|---------------------------|-------|-----------|---------------------------------------------------|-------------------------------------------------|
|                          |                          |                     |                |                                |                           |       |           | MIXTURE ACCEPTANCE                                | DENSITY ACCEPTANCE                              |
| DRIVING LANES<br>12-FOOT | STH 13 NB/SB<br>MAINLINE | 0+63 to<br>743+30   | Upper<br>Layer | Milled Existing<br>HMA Surface | HMA PAVEMENT 4 MT 58-28 S | 22180 | 2"        | PWL INCENTIVE AIR VOIDS<br>HMA PAVEMENT, 460.2010 | INCENTIVE DENSITY PWL<br>HMA PAVEMENT, 460.2005 |
| 3-FOOT<br>SHOULDERS      | STH 13 NB/SB<br>MAINLINE | 0+63 to<br>743+30   | Upper<br>Layer | Milled Existing<br>HMA Surface | HMA PAVEMENT 4 MT 58-28 S | 5550  | 2"        | PWL INCENTIVE AIR VOIDS<br>HMA PAVEMENT, 460.2010 | INCENTIVE DENSITY<br>HMA PAVEMENT, 460.2000     |
| INTERSECTIONS            | STH 13 NB/SB<br>MAINLINE | 0+63 to<br>743+30   | Upper<br>Layer | Milled Existing<br>HMA Surface | HMA PAVEMENT 4 MT 58-28 S | 1440  | 2"        | PWL INCENTIVE AIR VOIDS<br>HMA PAVEMENT, 460.2010 | INCENTIVE DENSITY<br>HMA PAVEMENT, 460.2000     |
| RAMP A                   | STH 13 NB<br>MAINLINE    | 624+60 to<br>636+47 | Upper<br>Layer | Milled Existing<br>HMA Surface | HMA PAVEMENT 4 MT 58-28 S | 260   | 1.75"     | QMP AS PER SS.460                                 | INCENTIVE DENSITY<br>HMA PAVEMENT, 460.2000     |
| RAMP B                   | STH 13 NB/SB<br>MAINLINE | 607+19 to<br>620+97 | Upper<br>Layer | Milled Existing<br>HMA Surface | HMA PAVEMENT 4 MT 58-28 S | 260   | 1.75"     | QMP AS PER SS.460                                 | INCENTIVE DENSITY<br>HMA PAVEMENT, 460.2000     |
| RAMP C                   | STH 13 NB/SB<br>MAINLINE | 607+20 to<br>619+48 | Upper<br>Layer | Milled Existing<br>HMA Surface | HMA PAVEMENT 4 MT 58-28 S | 270   | 1.75"     | QMP AS PER SS.460                                 | INCENTIVE DENSITY<br>HMA PAVEMENT, 460.2000     |
| RAMP D                   | STH 13 NB/SB<br>MAINLINE | 624+46 to<br>636+38 | Upper<br>Layer | Milled Existing<br>HMA Surface | HMA PAVEMENT 4 MT 58-28 S | 230   | 1.75"     | QMP AS PER SS.460                                 | INCENTIVE DENSITY<br>HMA PAVEMENT, 460.2000     |

**EROSION CONTROL**

| ROADWAY      | SIDE | STATION | TO | STATION       | 625.0100<br>TOPSOIL<br>SY | 628.1504<br>SILT FENCE<br>LF | 628.1520<br>SILT FENCE<br>MAINTENANCE<br>LF | 628.1905<br>MOBILIZATIONS<br>EROSION<br>CONTROL<br>EACH | 628.1910<br>MOBILIZATIONS<br>EMERGENCY<br>EROSION<br>CONTROL<br>EACH | 628.2008<br>EROSION MAT<br>URBAN CLASS I<br>TYPE B<br>SY | 628.7555<br>CULVERT<br>PIPE<br>CHECKS<br>EACH | 629.0210<br>FERTILIZER<br>TYPE B<br>CWT | 630.0130<br>SEEDING<br>MIXTURE<br>NO. 30<br>LB | 630.0500<br>SEED<br>WATER<br>MGAL | 633.5200<br>MARKERS<br>CULVERT<br>END<br>EACH |
|--------------|------|---------|----|---------------|---------------------------|------------------------------|---------------------------------------------|---------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------|-----------------------------------------------|-----------------------------------------|------------------------------------------------|-----------------------------------|-----------------------------------------------|
| STH 13       | LT   | 85+86   | -  | 88+58         | 280                       | 280                          | 280                                         | -                                                       | -                                                                    | 280                                                      | -                                             | 0.2                                     | 6                                              | 1.5                               | 1                                             |
| STH 13       | RT   | 85+50   | -  | 88+77         | 350                       | 330                          | 330                                         | -                                                       | -                                                                    | 350                                                      | 6                                             | 0.3                                     | 7                                              | 1.9                               | 1                                             |
| STH 13       | LT   | 91+16   | -  | 94+64         | 430                       | 350                          | 350                                         | -                                                       | -                                                                    | 430                                                      | -                                             | 0.3                                     | 8                                              | 2.3                               | 1                                             |
| STH 13       | RT   | 91+16   | -  | 94+64         | 420                       | 350                          | 350                                         | -                                                       | -                                                                    | 420                                                      | 6                                             | 0.3                                     | 8                                              | 2.3                               | 1                                             |
| STH 13       |      | PROJECT | -  | UNDISTRIBUTED | 150                       | 130                          | 130                                         | 4                                                       | 4                                                                    | 150                                                      | -                                             | 0.1                                     | 3                                              | -                                 | -                                             |
| <b>TOTAL</b> |      |         |    |               | <b>1,630</b>              | <b>1,440</b>                 | <b>1,440</b>                                | <b>4</b>                                                | <b>4</b>                                                             | <b>1,630</b>                                             | <b>12</b>                                     | <b>1.2</b>                              | <b>32</b>                                      | <b>8.0</b>                        | <b>4</b>                                      |

**CULVERT PIPES**

| ROADWAY      | STATION | TO | STATION | 520.1024<br>APRON ENDWALLS FOR<br>CULVERT PIPE 24-INCH<br>EACH | 520.3624<br>CULVERT PIPE<br>CLASS III-B NON-<br>METAL 24-INCH<br>*LF | 522.0430<br>CULVERT PIPE<br>REINFORCED<br>CONCRETE CLASS IV<br>30-INCH<br>LF | 522.1030<br>APRON ENDWALLS FOR<br>CULVERT PIPE<br>REINFORCED CONCRETE<br>30-INCH<br>EACH | 208.1500.S<br>TEMPORARY LANE<br>SHIFT DURING<br>CULVERT WORK<br>EACH |
|--------------|---------|----|---------|----------------------------------------------------------------|----------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| STH 13       | 87+18   | -  |         | -                                                              | -                                                                    | 88                                                                           | 2                                                                                        | 2                                                                    |
| STH 13       | 92+89   | -  |         | 2                                                              | 88                                                                   | -                                                                            | -                                                                                        | 2                                                                    |
| <b>TOTAL</b> |         |    |         | <b>2</b>                                                       | <b>88</b>                                                            | <b>88</b>                                                                    | <b>2</b>                                                                                 | <b>4</b>                                                             |

\*LENGTH BASED ON CONCRETE PIPE WITH CONCRETE ENDWALLS. ADJUST ACCORDINGLY IF PIPE MATERIAL OTHER THAN CONCRETE IS USED.

**RIPRAP**

| ROADWAY      | SIDE | STATION | TO | STATION | 606.0200<br>RIPRAP<br>MEDIUM<br>CY | 645.0120<br>GEOTEXTILE<br>TYPE HR<br>SY |
|--------------|------|---------|----|---------|------------------------------------|-----------------------------------------|
| STH 13       | LT   | 87+18   | -  |         | 4                                  | 8                                       |
| STH 13       | LT   | 92+89   | -  |         | 4                                  | 7                                       |
| <b>TOTAL</b> |      |         |    |         | <b>8</b>                           | <b>15</b>                               |

**MOVING SIGNS**

| ROADWAY      | LOCATION      | 638.2102<br>MOVING SIGNS<br>TYPE II<br>EACH | COMMENTS         |
|--------------|---------------|---------------------------------------------|------------------|
| STH 13       | UNDISTRIBUTED | 18                                          | NO PASSING SIGNS |
| <b>TOTAL</b> |               | <b>18</b>                                   |                  |

PROJECT NO: 1610-41-70

HWY: STH 13

COUNTY: PRICE

MISCELLANEOUS QUANTITIES

SHEET

E





**CONSTRUCTION STAKING**

| ROADWAY      | STATION TO STATION | 650.6000<br>CONSTRUCTION<br>STAKING PIPE<br>CULVERTS | 650.8000<br>CONSTRUCTION<br>STAKING<br>RESURFACING<br>REFERENCE | 650.9910<br>CONSTRUCTION<br>STAKING<br>SUPPLEMENTAL<br>CONTROL (PROJECT)<br>01. 1610-41-70 | 650.9920<br>CONSTRUCTION<br>STAKING SLOPE<br>STAKES |
|--------------|--------------------|------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------|-----------------------------------------------------|
|              |                    | EACH                                                 | LF                                                              | LS                                                                                         | LF                                                  |
| STH 13       | 87+18 -            | 1                                                    | -                                                               | -                                                                                          | 200                                                 |
| STH 13       | 92+89 -            | 1                                                    | -                                                               | -                                                                                          | 200                                                 |
| STH 13       | 0+63 - 743+30      | -                                                    | 74,270                                                          | 1                                                                                          | -                                                   |
| RAMP A       | 624+60 - 636+47    | -                                                    | 1,190                                                           | -                                                                                          | -                                                   |
| RAMP B       | 607+19 - 620+97    | -                                                    | 1,380                                                           | -                                                                                          | -                                                   |
| RAMP C       | 607+20 - 619+48    | -                                                    | 1,230                                                           | -                                                                                          | -                                                   |
| RAMP D       | 624+46 - 636+38    | -                                                    | 1,200                                                           | -                                                                                          | -                                                   |
| <b>TOTAL</b> |                    | <b>2</b>                                             | <b>79,270</b>                                                   | <b>1</b>                                                                                   | <b>400</b>                                          |

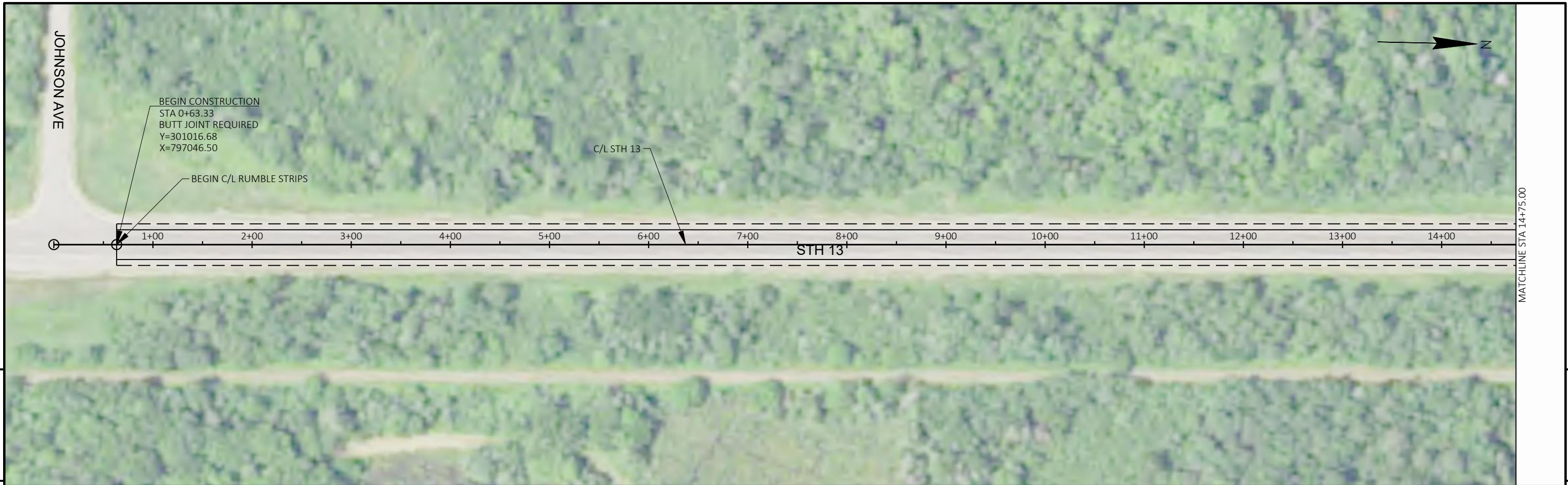
**LANDMARK REFERENCE MONUMENTS**

| ROADWAY      | STATION | OFFSET   | TOWNSHIP  | RANGE | EACH      |
|--------------|---------|----------|-----------|-------|-----------|
| STH 13       | 106+18  | 4.4' RT  | T34N      | R1E   | 1         |
| STH 13       | 158+78  | 0.5' LT  | T34N      | R1E   | 1         |
| STH 13       | 243+65  | 32.8' RT | T34N      | R1E   | 1         |
| STH 13       | 269+81  | 5.5' RT  | T34N      | R1E   | 1         |
| STH 13       | 296+23  | 5.4' LT  | T34N      | R1E   | 1         |
| STH 13       | 318+90  | 0.5' RT  | T34N/T35N | R1E   | 1         |
| STH 13       | 344+80  | 0.6' RT  | T35N      | R1E   | 1         |
| STH 13       | 370+97  | 1.3' LT  | T35N      | R1E   | 1         |
| STH 13       | 397+62  | 0.5' LT  | T35N      | R1E   | 1         |
| STH 13       | 423+36  | 0.5' LT  | T35N      | R1E   | 1         |
| STH 13       | 449+58  | 18.0' LT | T35N      | R1E   | 1         |
| STH 13       | 501+91  | 1.0' LT  | T35N      | R1E   | 1         |
| STH 13       | 527+94  | 0.7' LT  | T35N      | R1E   | 1         |
| STH 13       | 553+83  | 0.1' LT  | T35N      | R1E   | 1         |
| <b>TOTAL</b> |         |          |           |       | <b>14</b> |

SPV.0060.01  
REESTABLISH  
SECTION CORNER  
MONUMENTS

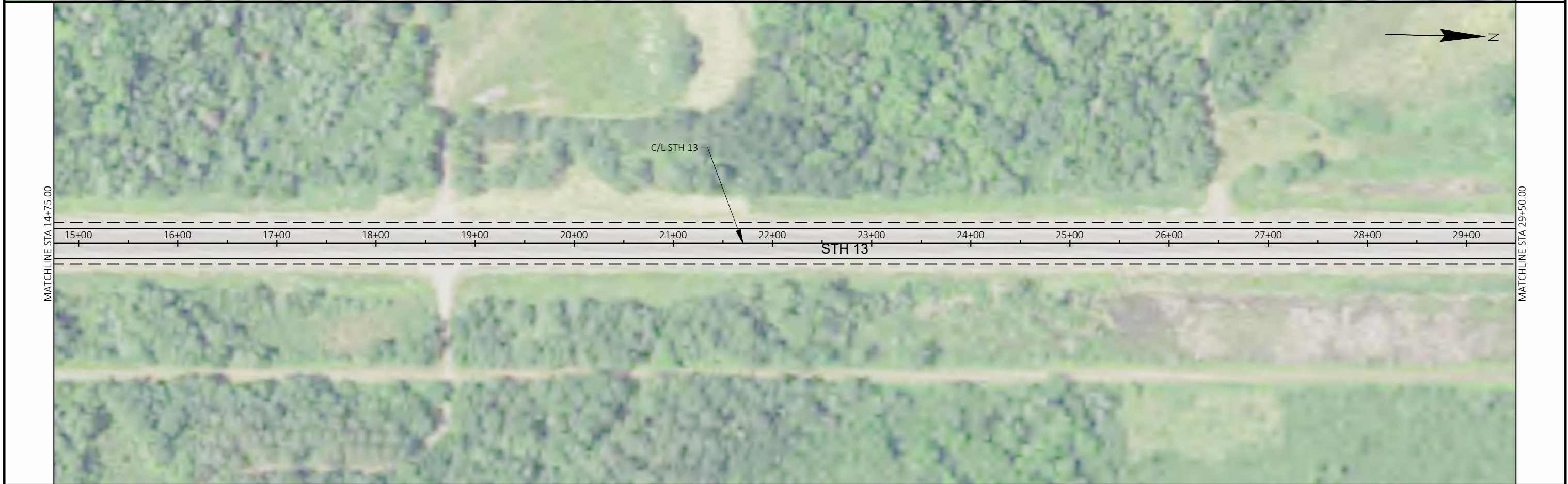
**SNOWMOBILE CROSSING**

| ROADWAY      | SIDE  | STATION TO STATION | 211.0400<br>PREPARE<br>FOUNDATION FOR<br>ASPHALTIC<br>SHOULDERS | SPV.0180.01<br>PROTECTIVE THERMOPLASTIC<br>COATING AT SNOWMOBILE<br>TRAIL CROSSINGS | STA      | SY        | COMMENTS     |
|--------------|-------|--------------------|-----------------------------------------------------------------|-------------------------------------------------------------------------------------|----------|-----------|--------------|
| STH 13       | LT/RT | 712+50 -           |                                                                 |                                                                                     | 2        | 50        | SKEW 30° LHF |
| <b>TOTAL</b> |       |                    |                                                                 |                                                                                     | <b>2</b> | <b>50</b> |              |

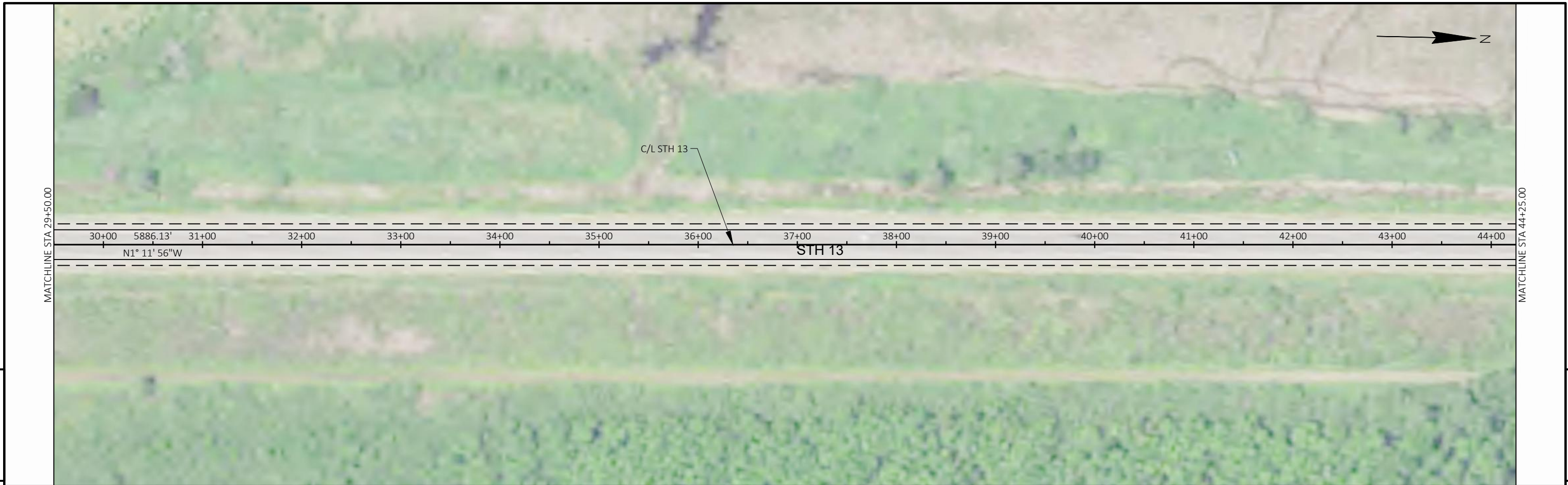


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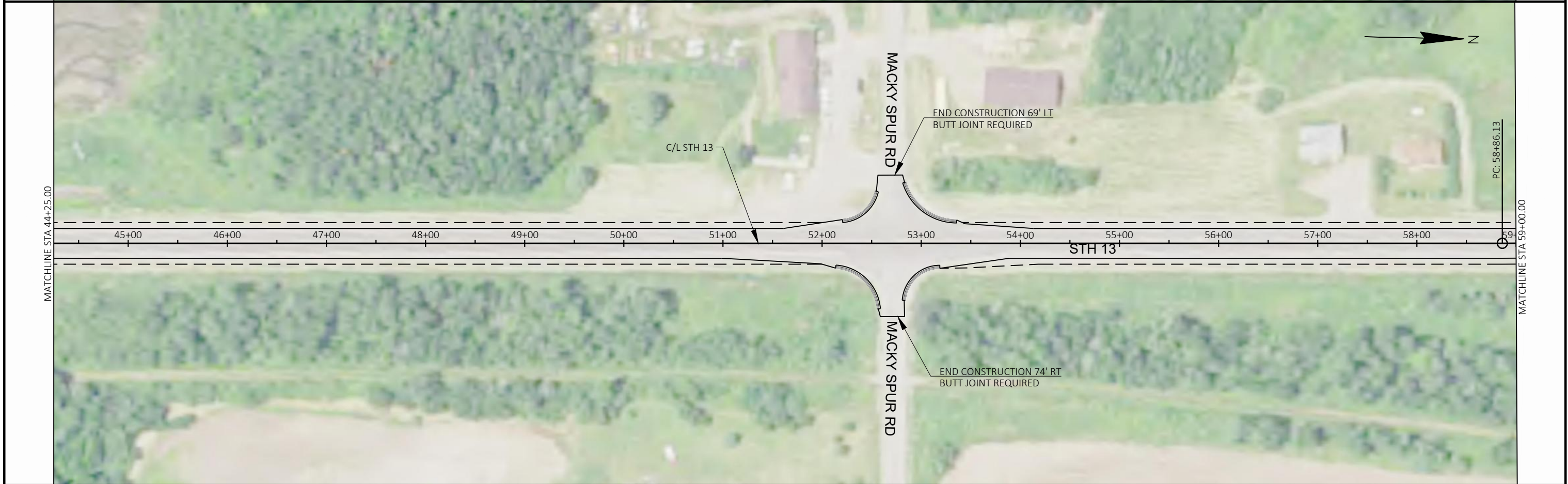


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|------------------------|-------------|---------------|------|-------|---|
| PROJECT NO: 1610-41-70 | HWY: STH 13 | COUNTY: PRICE | PLAN | SHEET | E |
|------------------------|-------------|---------------|------|-------|---|



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|                        |             |               |      |       |          |
|------------------------|-------------|---------------|------|-------|----------|
| PROJECT NO: 1610-41-70 | HWY: STH 13 | COUNTY: PRICE | PLAN | SHEET | <b>E</b> |
|------------------------|-------------|---------------|------|-------|----------|

PI STA = 62+30.11  
 Y = 307182.139  
 X = 796919.099  
 DELTA = 13°41'36"  
 D = 2°00'00"  
 T = 343.97'  
 L = 684.67'  
 R = 2864.79'  
 PC STA = 58+86.13  
 Y = 306838.243  
 X = 796926.297  
 PT STA = 65+70.80  
 Y = 307514.557  
 X = 796830.697  
 BK = N01°11'56.4"W  
 AH = N14°53'32.4"W

PT: 65+70.80

C/L STH 13

STH 13



MATCHLINE STA 59+00.00

MATCHLINE STA 73+75.00

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| BENCHMARK TABLE |          |             |               |           |
|-----------------|----------|-------------|---------------|-----------|
| POINT           | STATION  | OFFSET      | DESCRIPTION   | ELEVATION |
| BM 1            | 84+83.37 | 35.96 LT BM | 2' 3/4" REBAR | 1556.95   |

PC: 79+53.58

C/L STH 13

STH 13



CULVERT PIPE REINFORCED CONCRETE CLASS IV 30-INCH  
 STA 87+18, -56.04 LT  
 INV = 1547.53  
 SLOPE = 3.9%

BM 1

2' 3/4" REBAR

PT: 87+00.71

EXISTING R/W  
 REPLACE CULVERT  
 CULVERT #50013003539  
 AEW'S REQUIRED

MATCHLINE STA 88+50.00

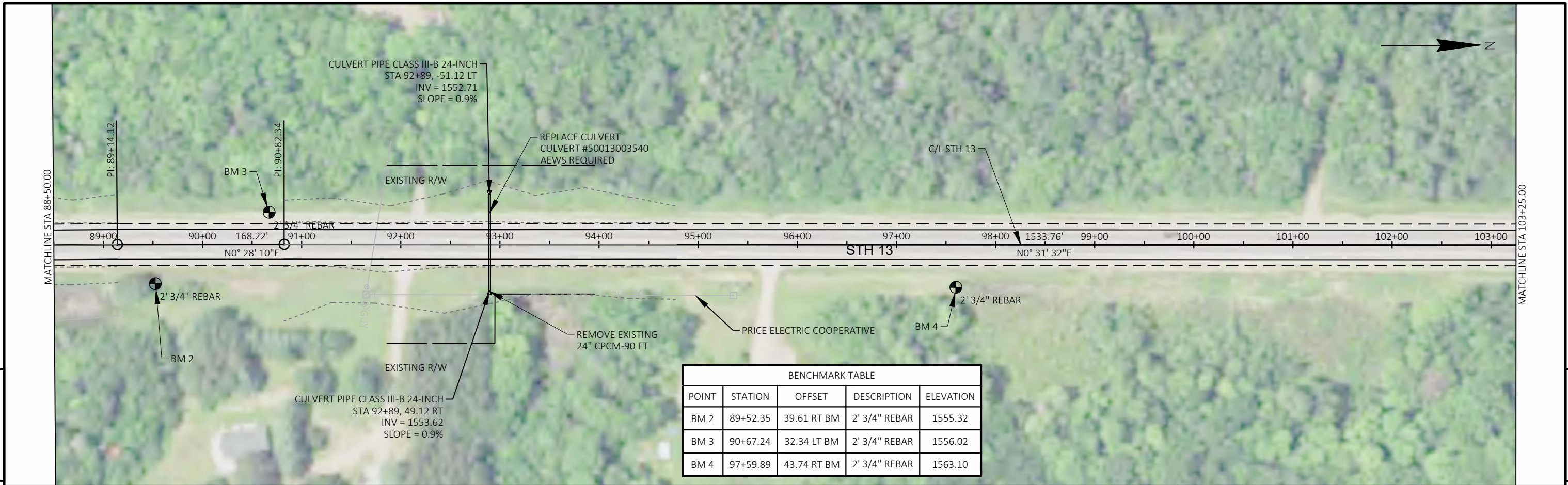
PI STA = 83+29.28  
 Y = 309213.972  
 X = 796378.762  
 DELTA = 14°56'33"  
 D = 2°00'00"  
 T = 375.70'  
 L = 747.13'  
 R = 2864.79'  
 PC STA = 79+53.58  
 Y = 308850.895  
 X = 796475.317  
 PT STA = 87+00.71  
 Y = 309589.668  
 X = 796379.091  
 BK = N14°53'32.4"W  
 AH = N00°03'00.9"E

REMOVE EXISTING  
 30" CPCM-85 FT

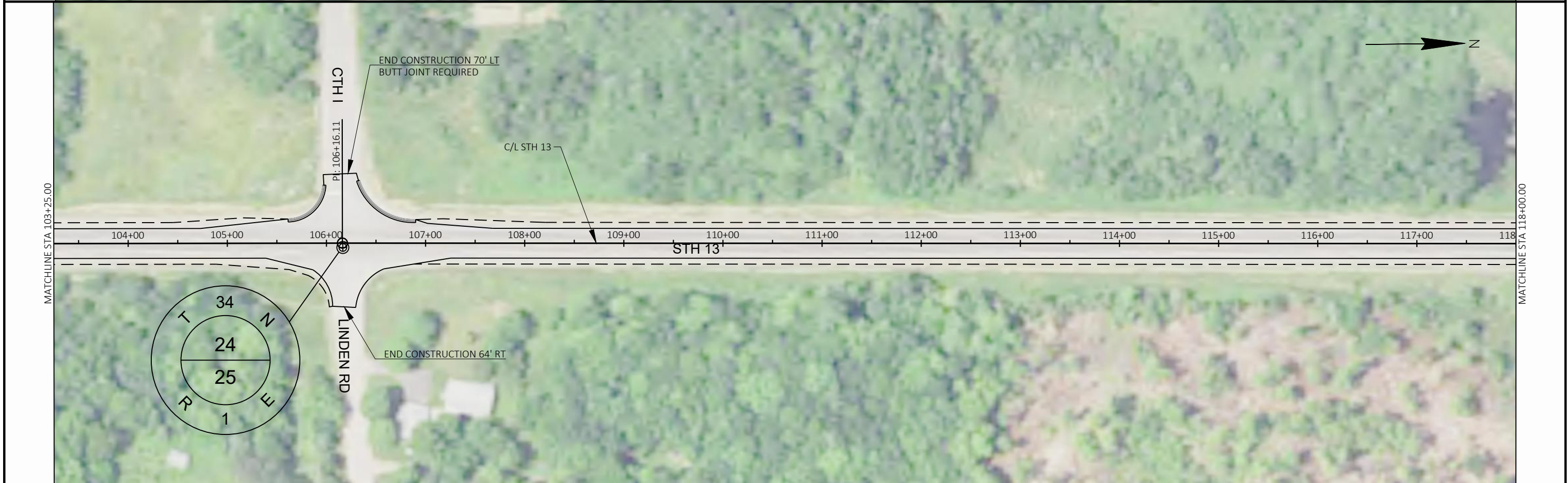
CULVERT PIPE REINFORCED CONCRETE CLASS IV 30-INCH  
 STA 87+18, 44.17 RT  
 INV = 1551.45  
 SLOPE = 3.9%

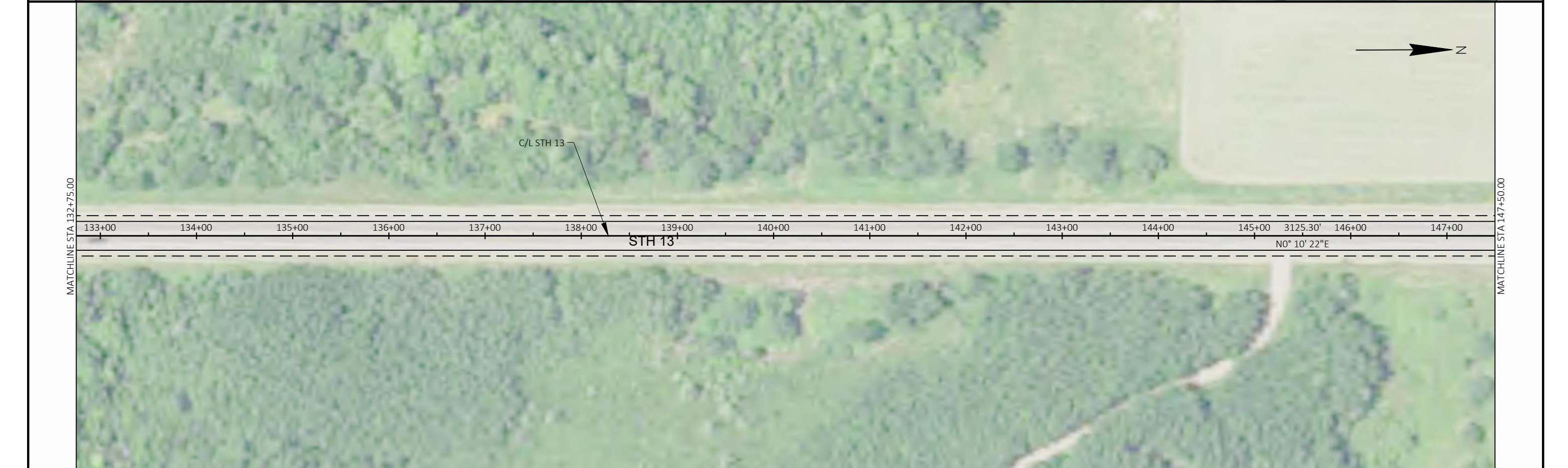
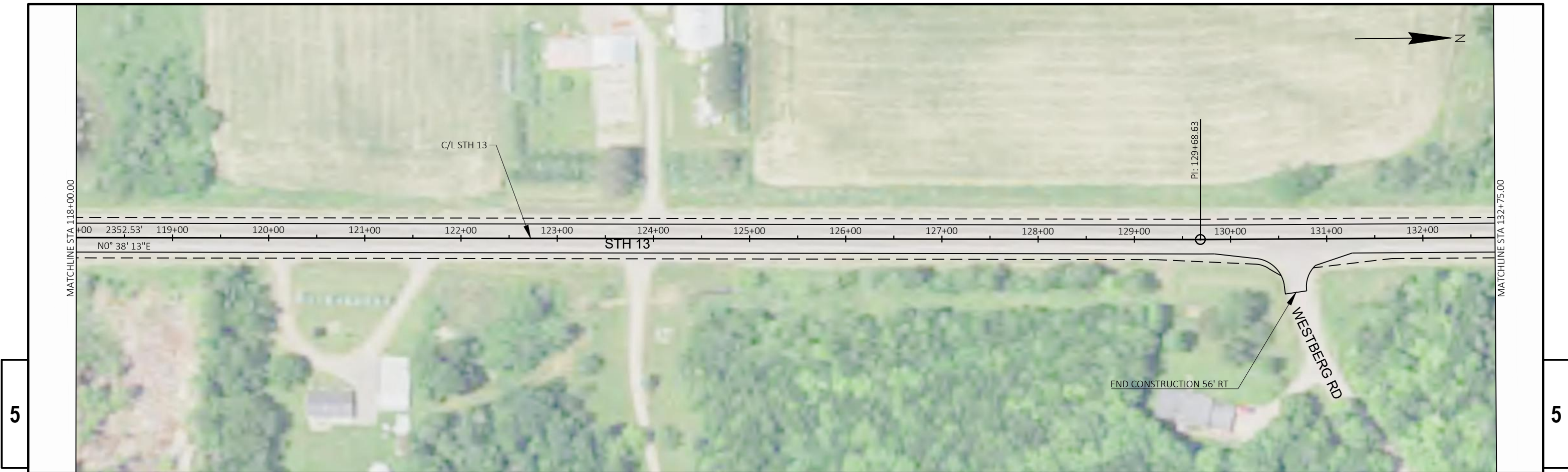
EXISTING R/W

PRICE ELECTRIC COOPERATIVE



| BENCHMARK TABLE |          |             |               |           |
|-----------------|----------|-------------|---------------|-----------|
| POINT           | STATION  | OFFSET      | DESCRIPTION   | ELEVATION |
| BM 2            | 89+52.35 | 39.61 RT BM | 2' 3/4" REBAR | 1555.32   |
| BM 3            | 90+67.24 | 32.34 LT BM | 2' 3/4" REBAR | 1556.02   |
| BM 4            | 97+59.89 | 43.74 RT BM | 2' 3/4" REBAR | 1563.10   |





|                        |             |               |      |       |          |
|------------------------|-------------|---------------|------|-------|----------|
| PROJECT NO: 1610-41-70 | HWY: STH 13 | COUNTY: PRICE | PLAN | SHEET | <b>E</b> |
|------------------------|-------------|---------------|------|-------|----------|

FILE NAME : O:\DESIGN\WC\1610-41-00, STH 13 SOUTH, PRICE COUNTY\C3D\16104100\SHEETSPLAN\050201-PN.DWG  
LAYOUT NAME - 05

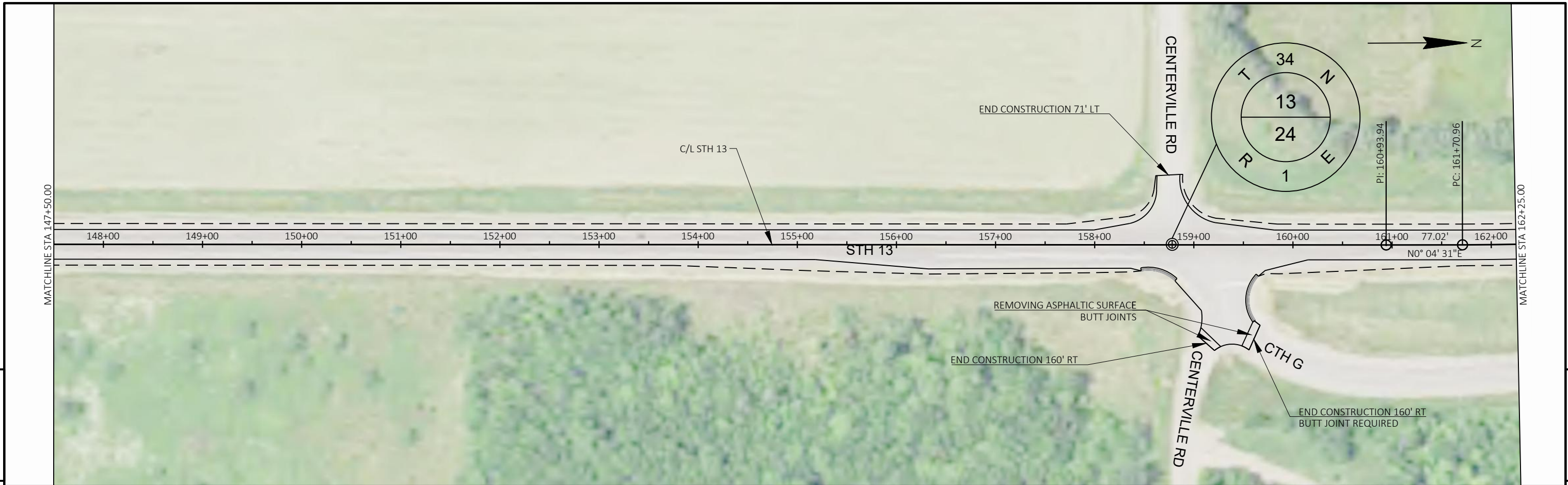
PLOT DATE : 9/27/2021 8:16 AM

PLOT BY : ETHAN HEROUX

PLOT NAME :

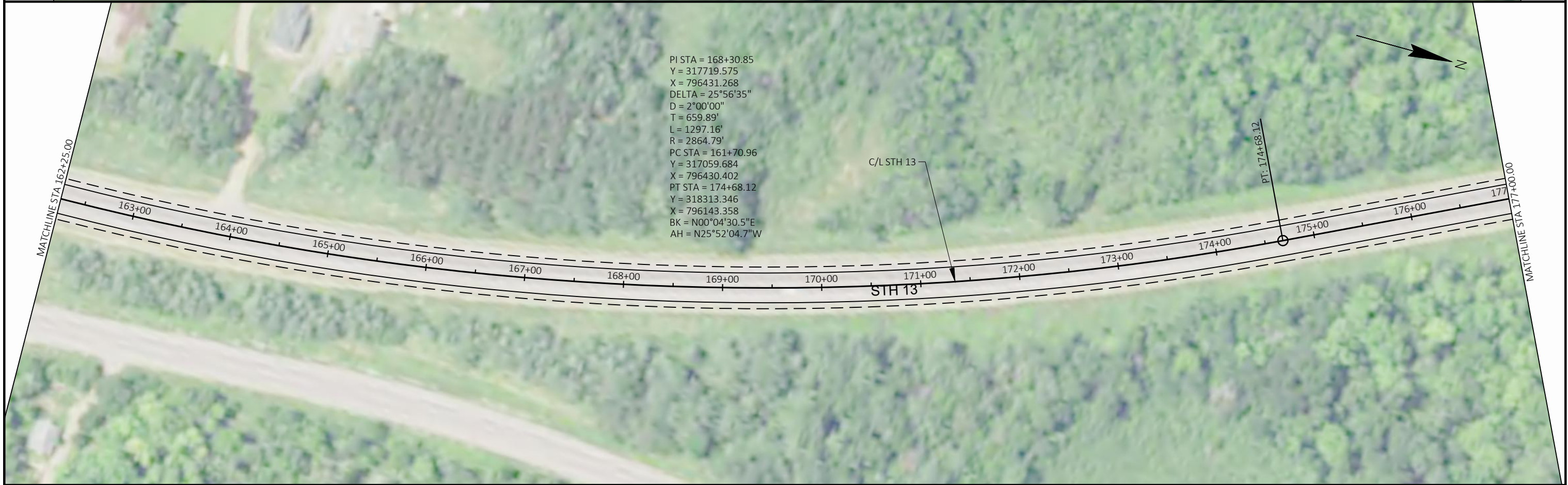
PLOT SCALE : 1 IN:100 FT

WISDOT/CADD SHEET 44

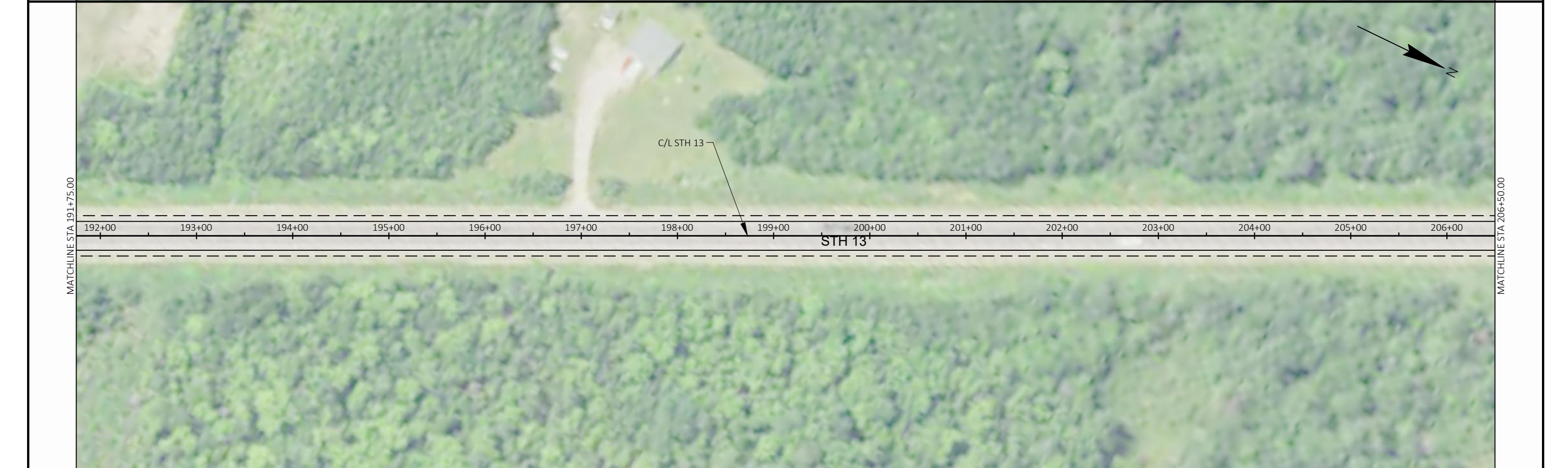
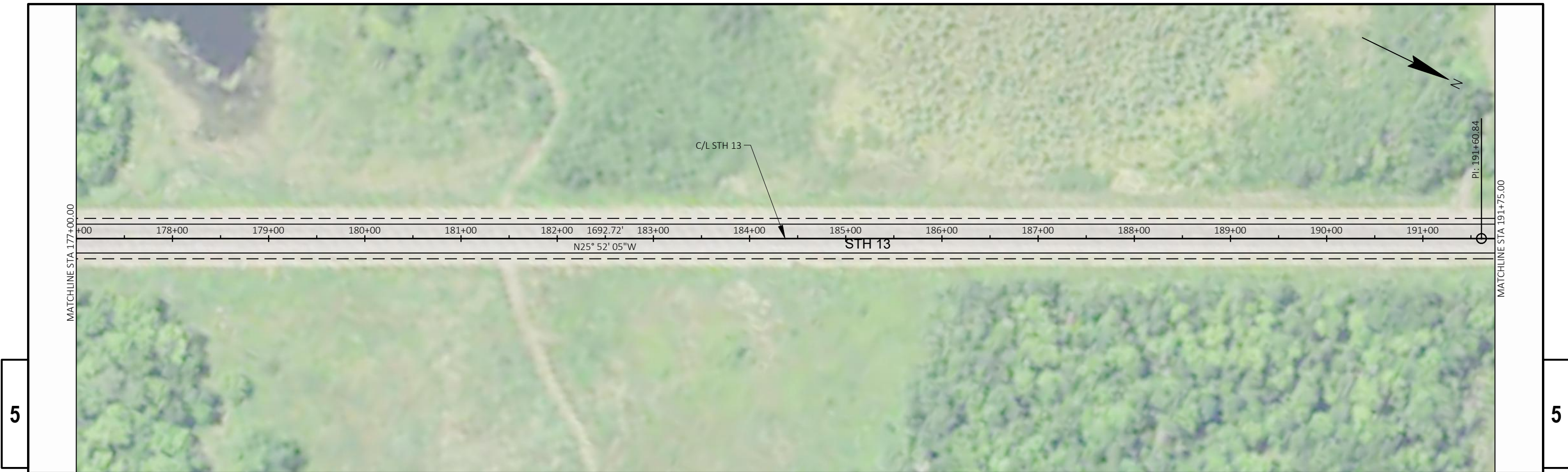


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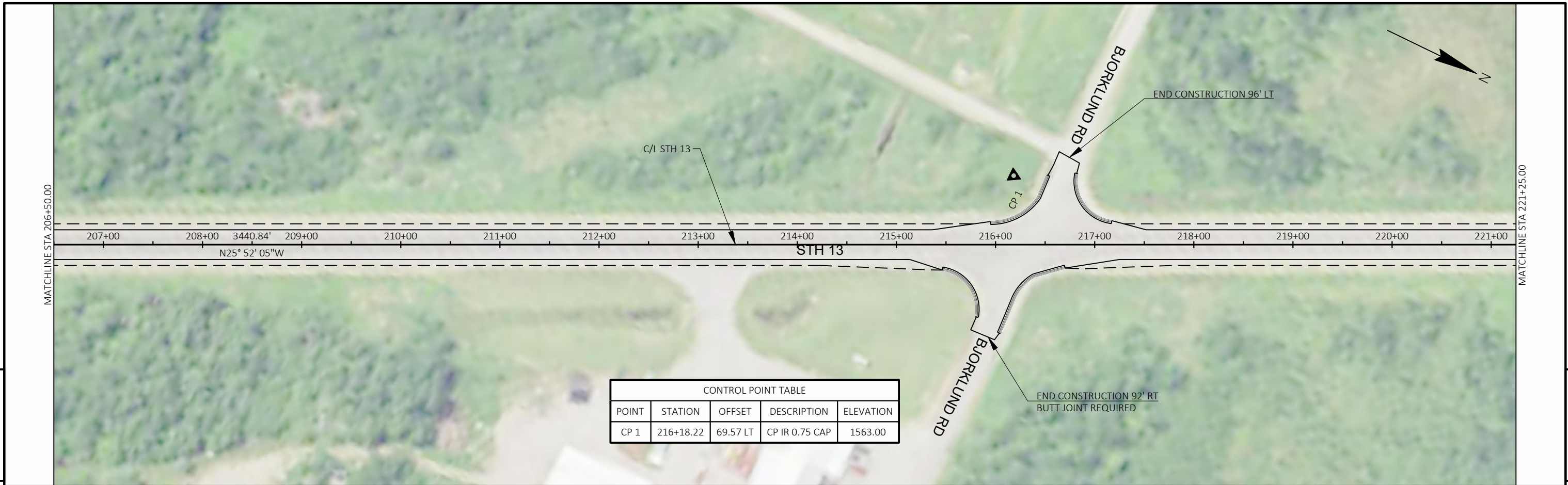


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| PROJECT NO: 1610-41-70 | HWY: STH 13 | COUNTY: PRICE | PLAN | SHEET | E |
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|------------------------|-------------|---------------|------|-------|----------|
| PROJECT NO: 1610-41-70 | HWY: STH 13 | COUNTY: PRICE | PLAN | SHEET | <b>E</b> |
|------------------------|-------------|---------------|------|-------|----------|





| CONTROL POINT TABLE |           |          |                |           |
|---------------------|-----------|----------|----------------|-----------|
| POINT               | STATION   | OFFSET   | DESCRIPTION    | ELEVATION |
| CP 1                | 216+18.22 | 69.57 LT | CP IR 0.75 CAP | 1563.00   |

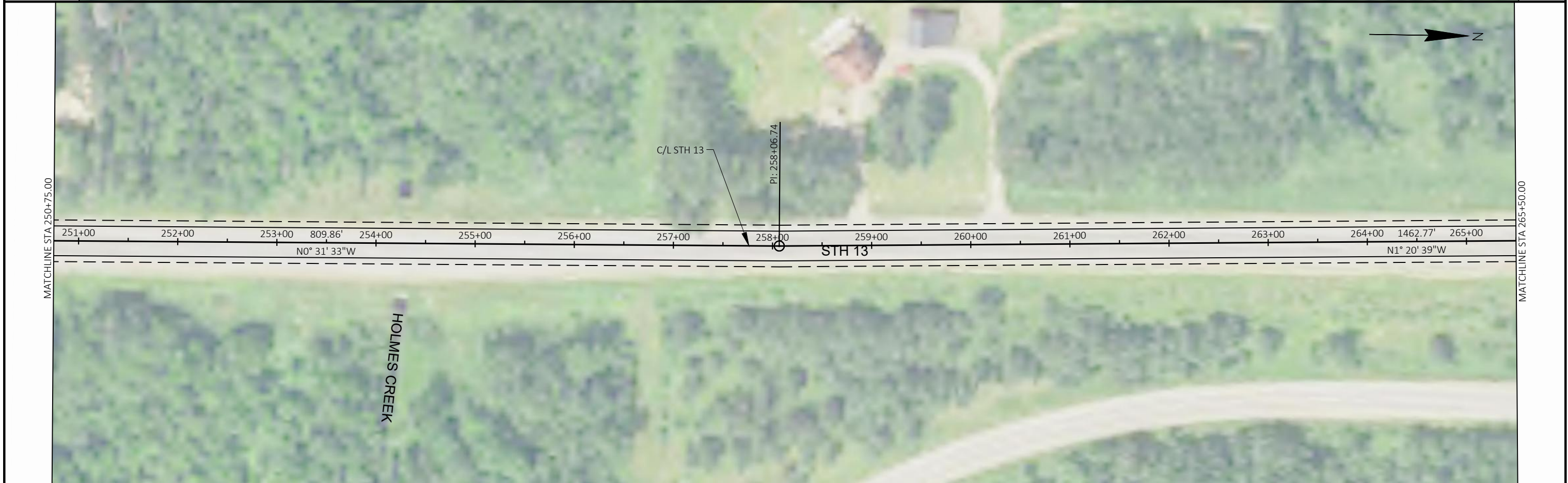
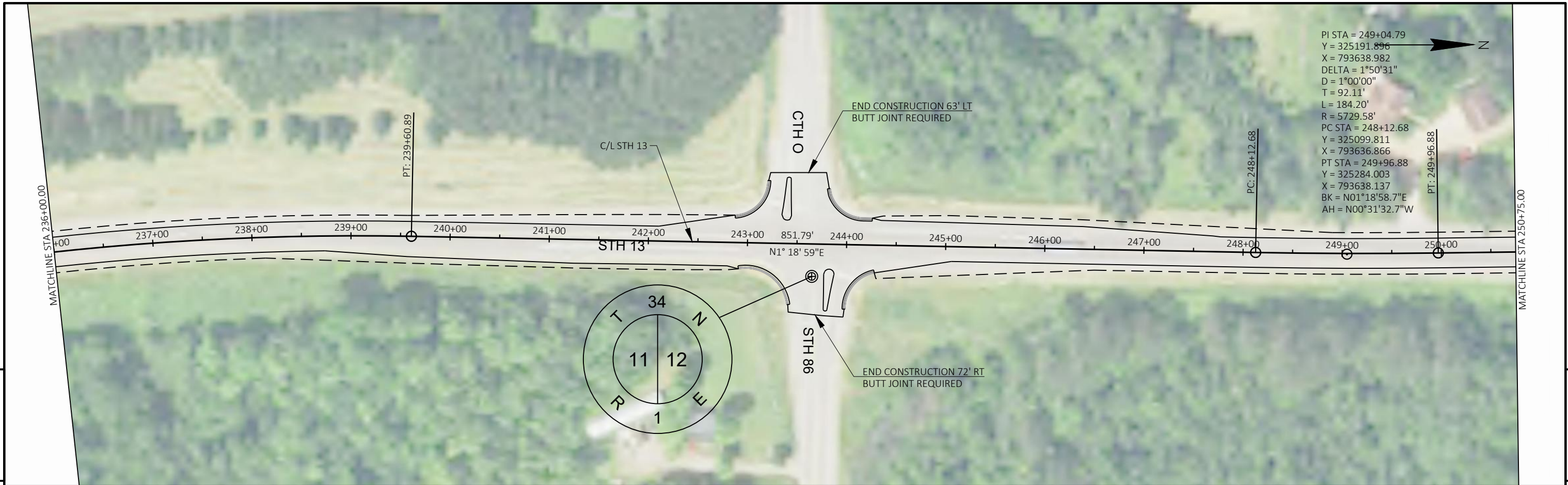
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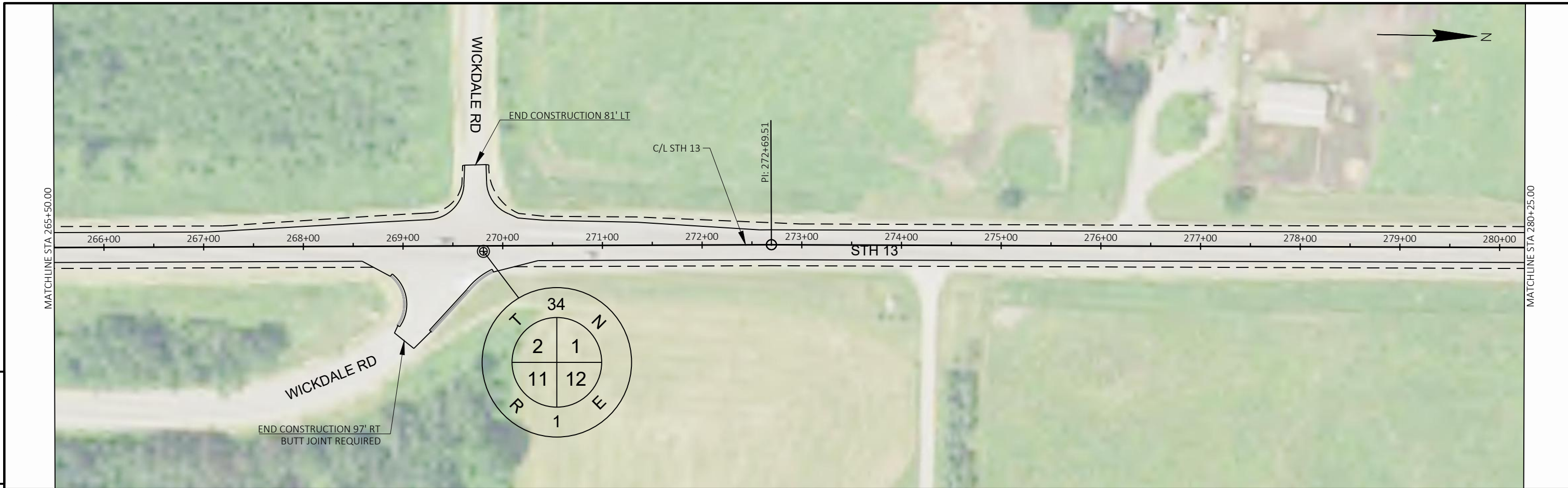


|                    |
|--------------------|
| PI STA = 232+94.33 |
| Y = 323555.782     |
| X = 793601.388     |
| DELTA = 27°11'03"  |
| D = 2°00'00"       |
| T = 692.65'        |
| L = 1359.21'       |
| R = 2864.79'       |
| PC STA = 226+01.68 |
| Y = 322932.534     |
| X = 793903.590     |
| PT STA = 239+60.89 |
| Y = 324248.248     |
| X = 793617.299     |
| BK = N25°52'04.7"W |
| AH = N01°18'58.7"E |

|                        |             |               |      |       |   |
|------------------------|-------------|---------------|------|-------|---|
| PROJECT NO: 1610-41-70 | HWY: STH 13 | COUNTY: PRICE | PLAN | SHEET | E |
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| PROJECT NO: 1610-41-70 | HWY: STH 13 | COUNTY: PRICE | PLAN | SHEET | E |
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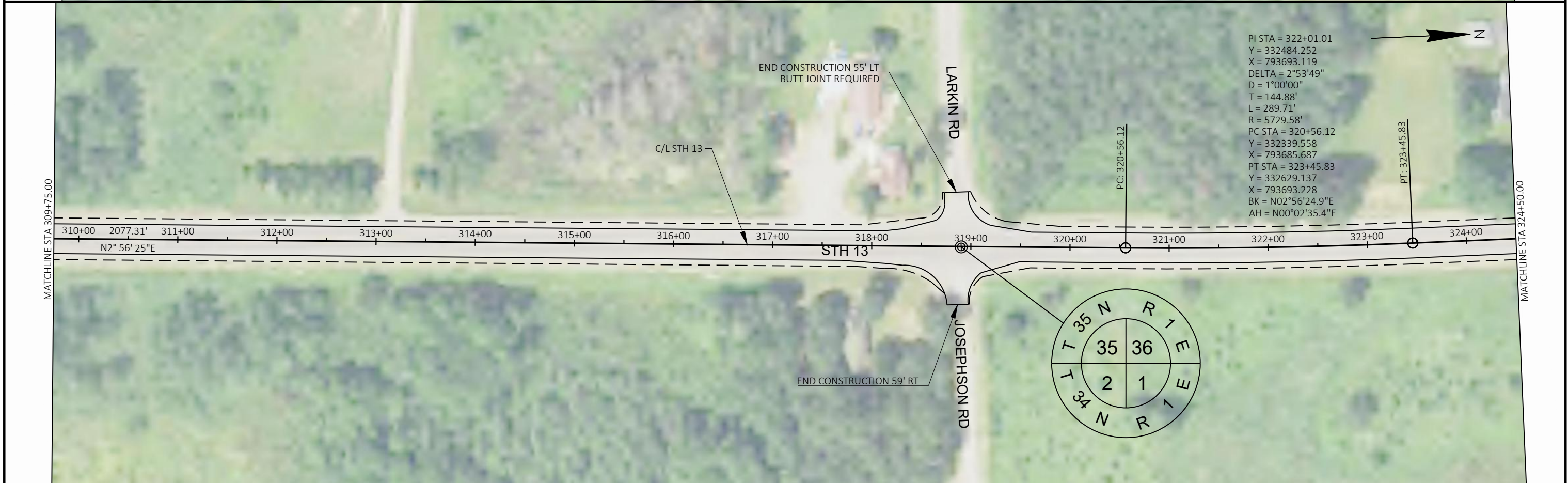
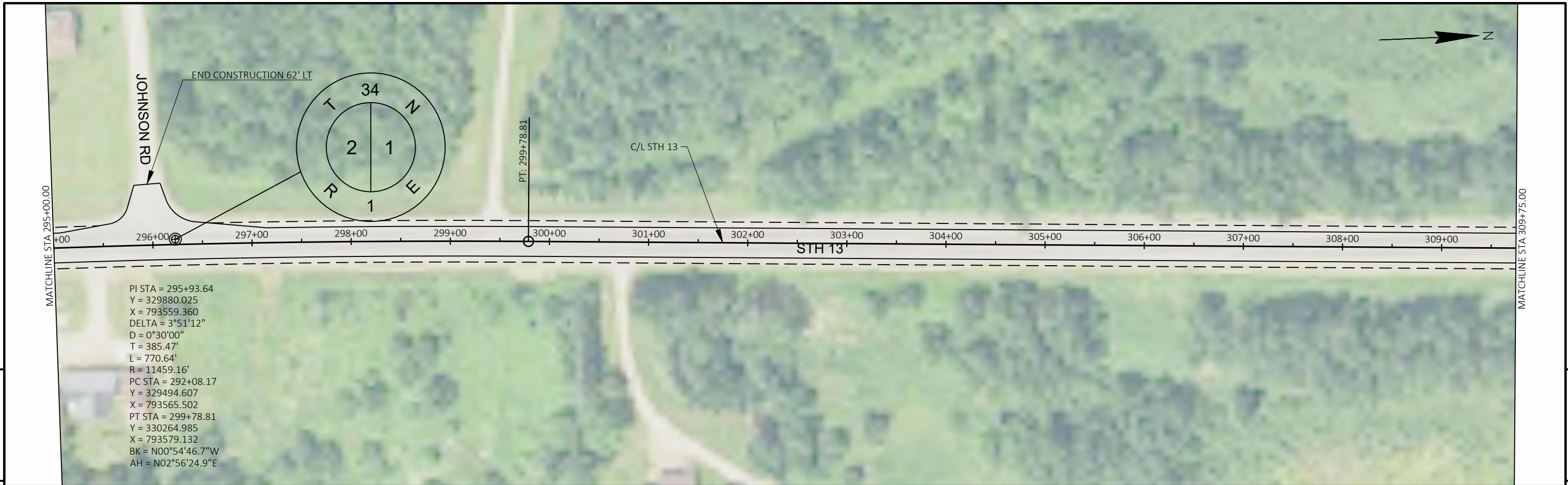


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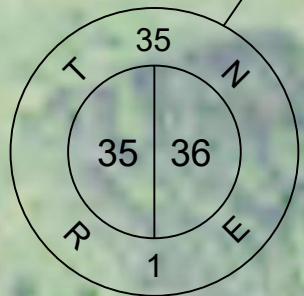
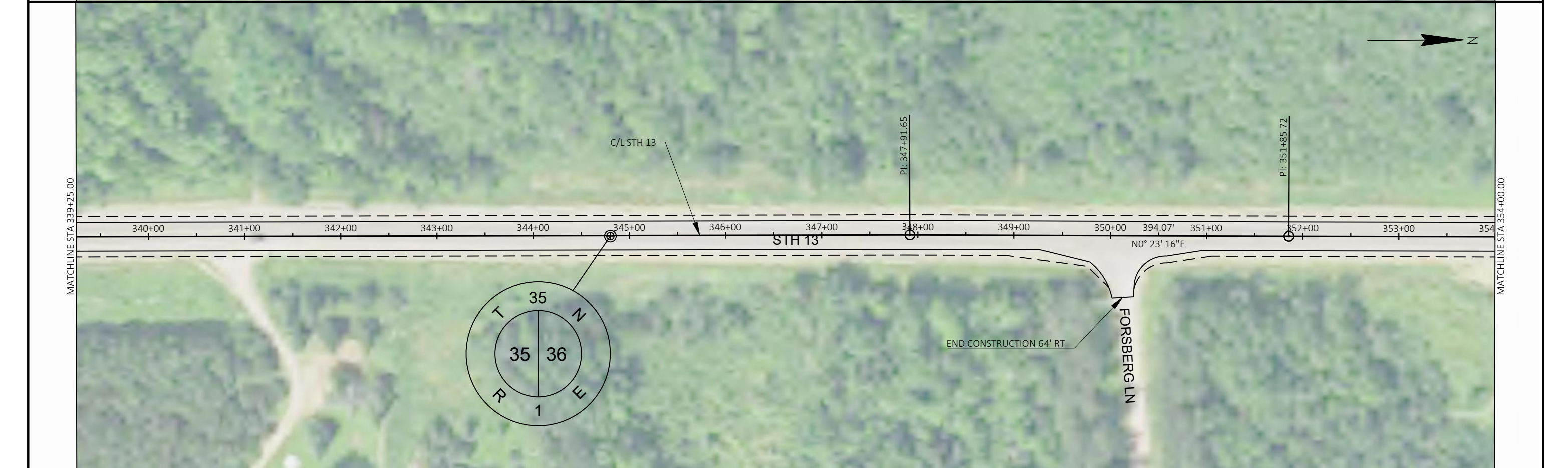
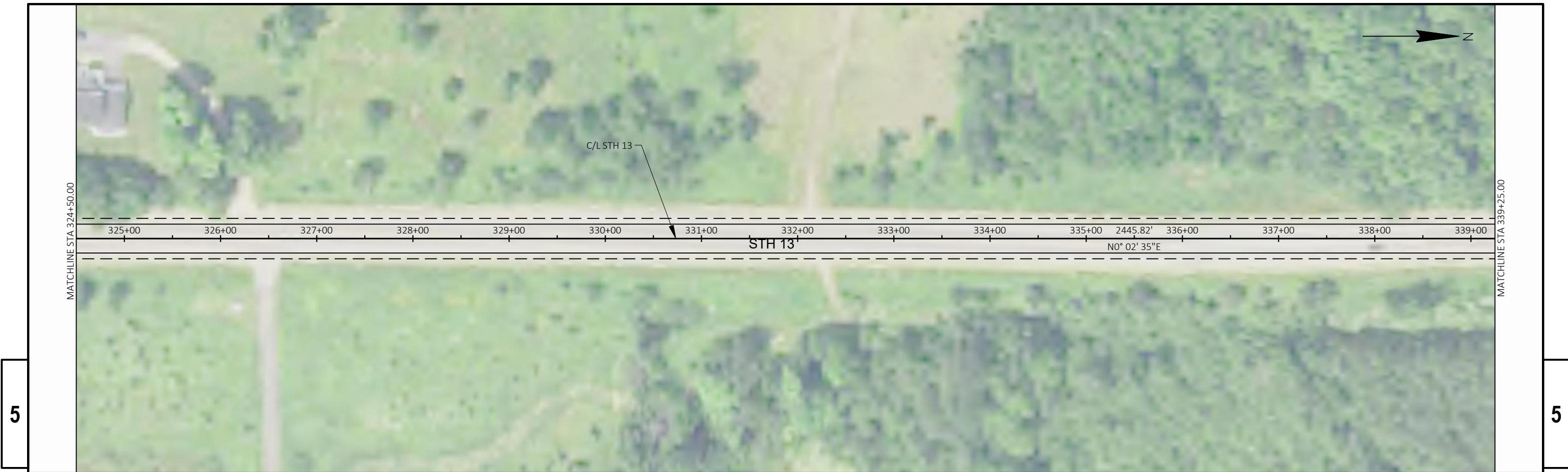
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| PROJECT NO: 1610-41-70 | HWY: STH 13 | COUNTY: PRICE | PLAN | SHEET | E |
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| PROJECT NO: 1610-41-70 | HWY: STH 13 | COUNTY: PRICE | PLAN | SHEET | <b>E</b> |
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PROJECT NO: 1610-41-70

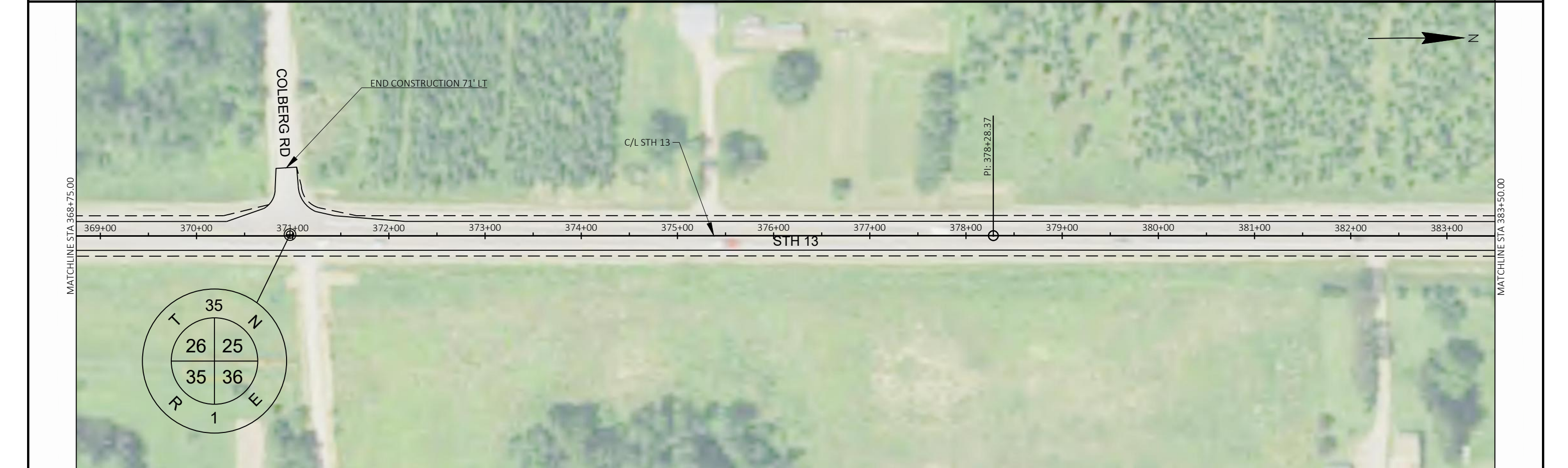
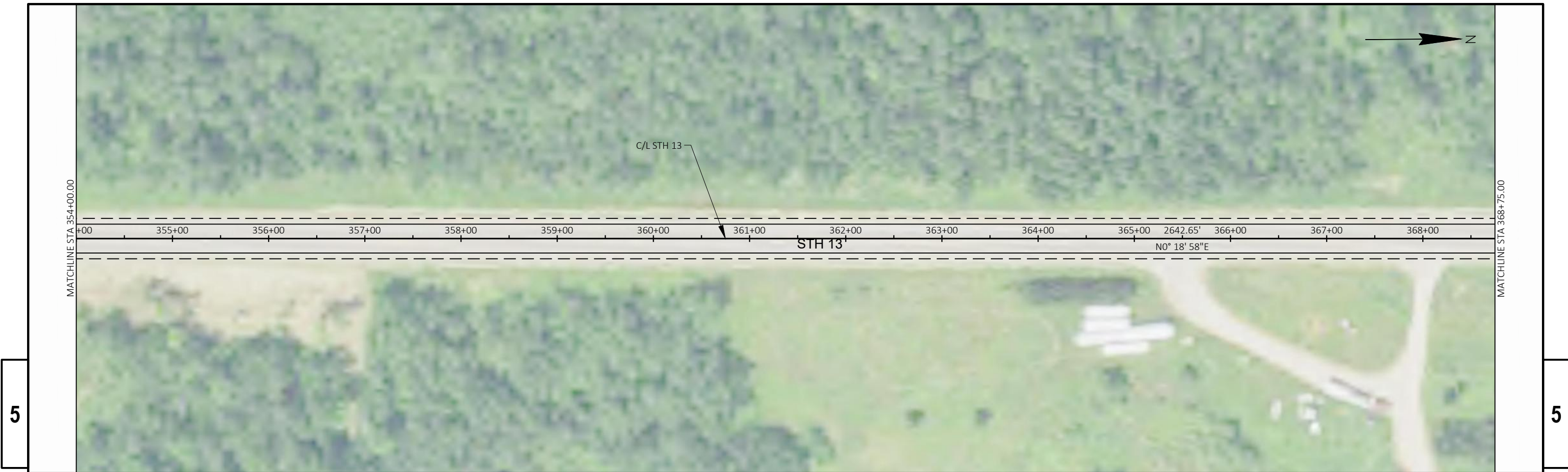
HWY: STH 13

COUNTY: PRICE

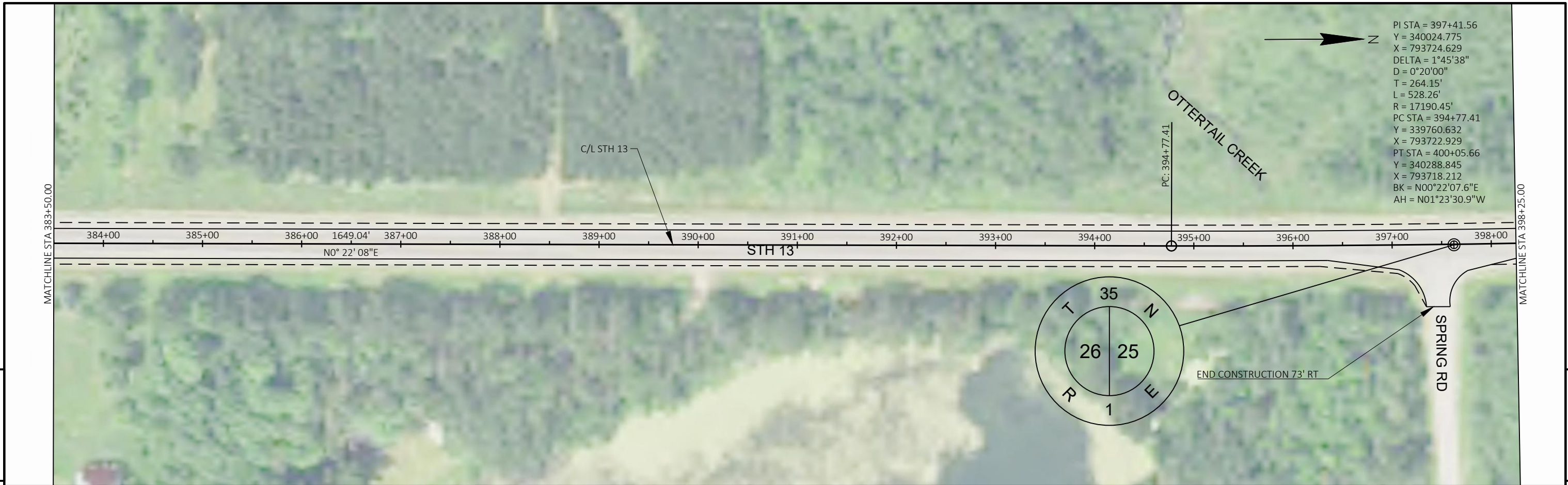
PLAN

SHEET

E

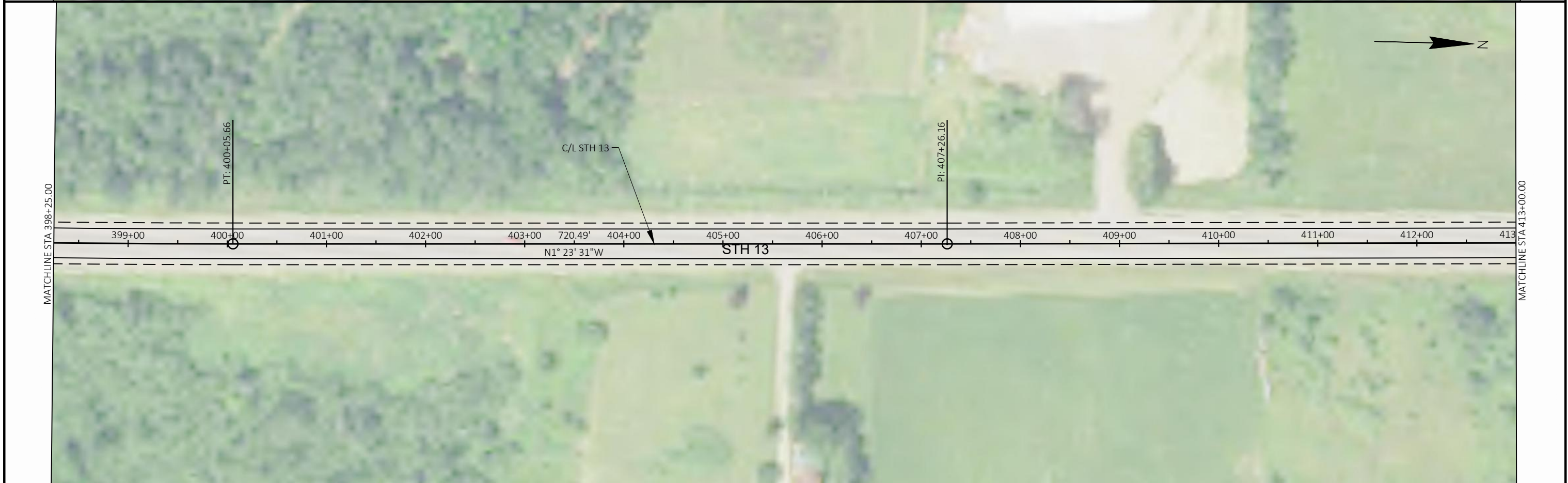


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|------------------------|-------------|---------------|------|-------|----------|
| PROJECT NO: 1610-41-70 | HWY: STH 13 | COUNTY: PRICE | PLAN | SHEET | <b>E</b> |
|------------------------|-------------|---------------|------|-------|----------|

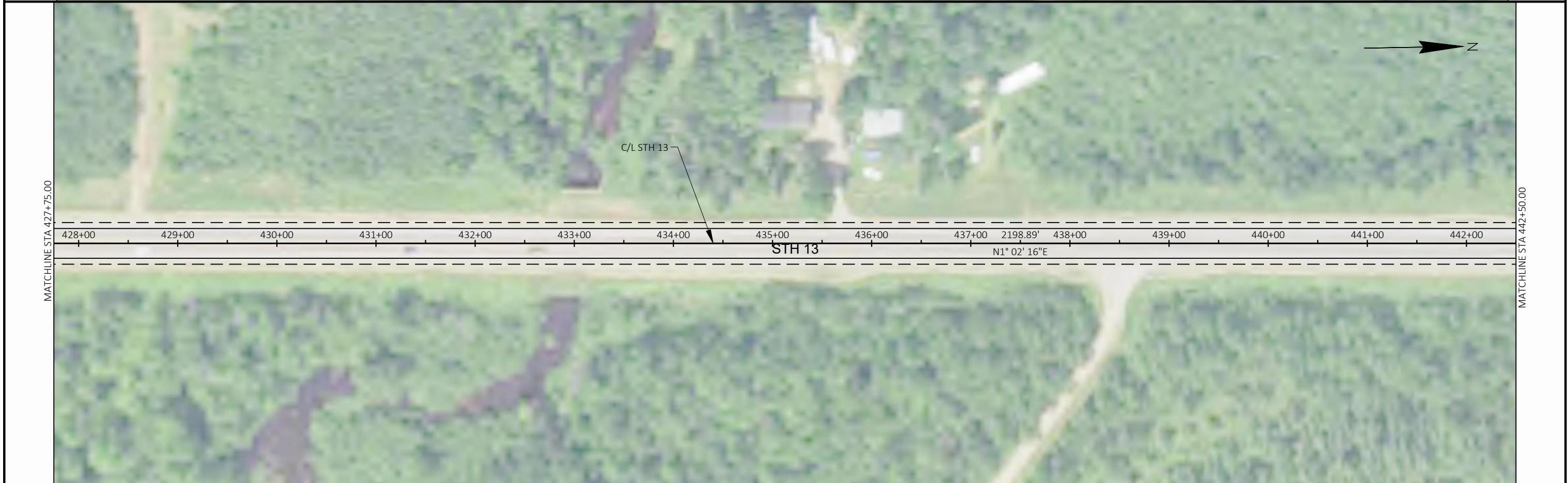
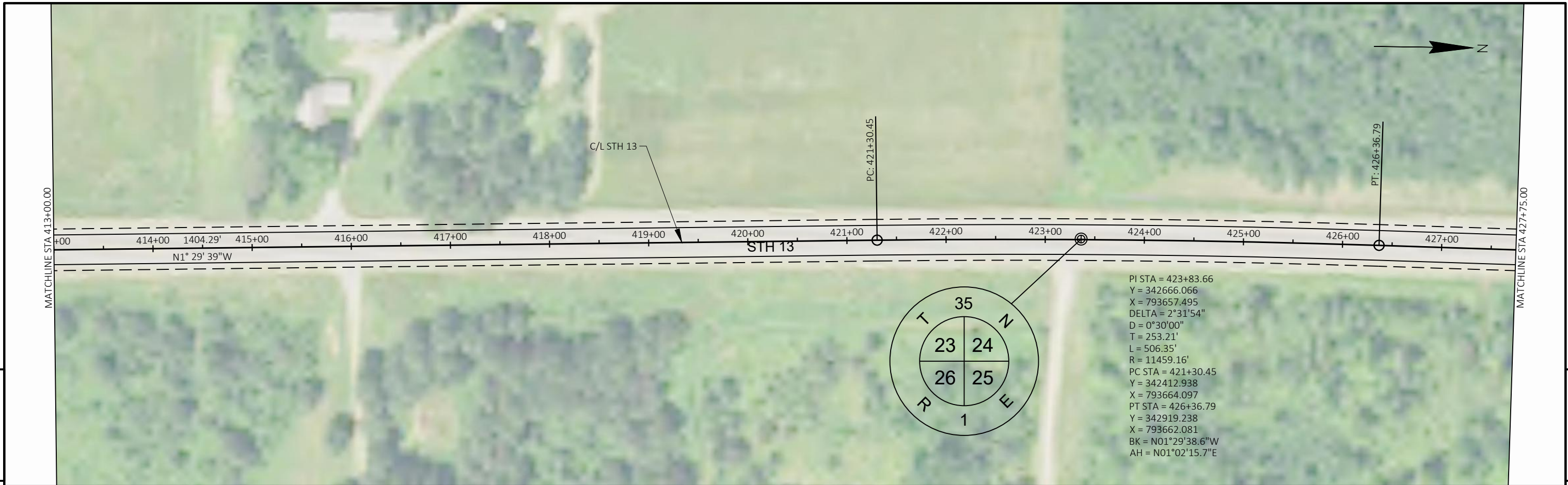


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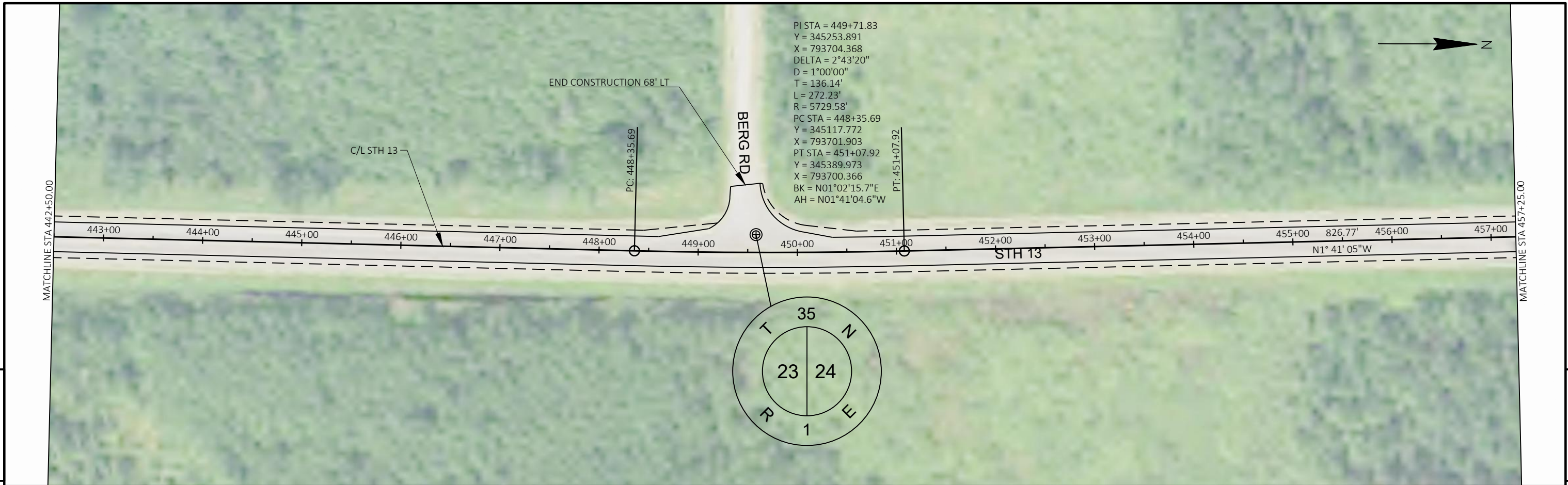


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|------------------------|-------------|---------------|------|-------|---|
| PROJECT NO: 1610-41-70 | HWY: STH 13 | COUNTY: PRICE | PLAN | SHEET | E |
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| PROJECT NO: 1610-41-70 | HWY: STH 13 | COUNTY: PRICE | PLAN | SHEET | <b>E</b> |
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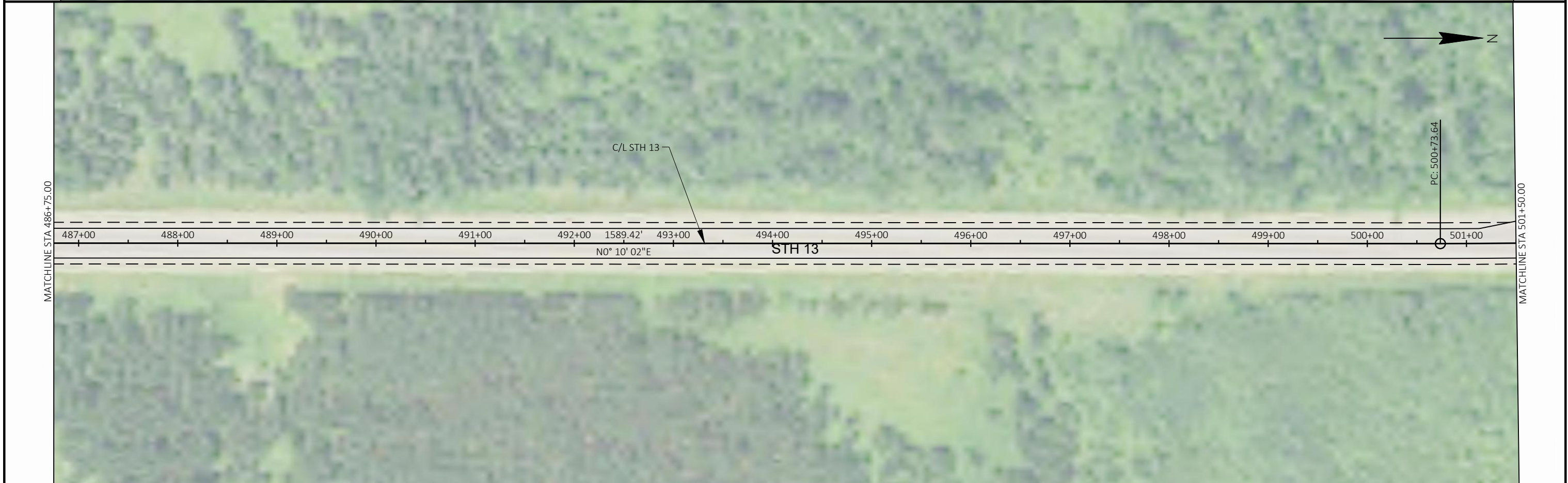
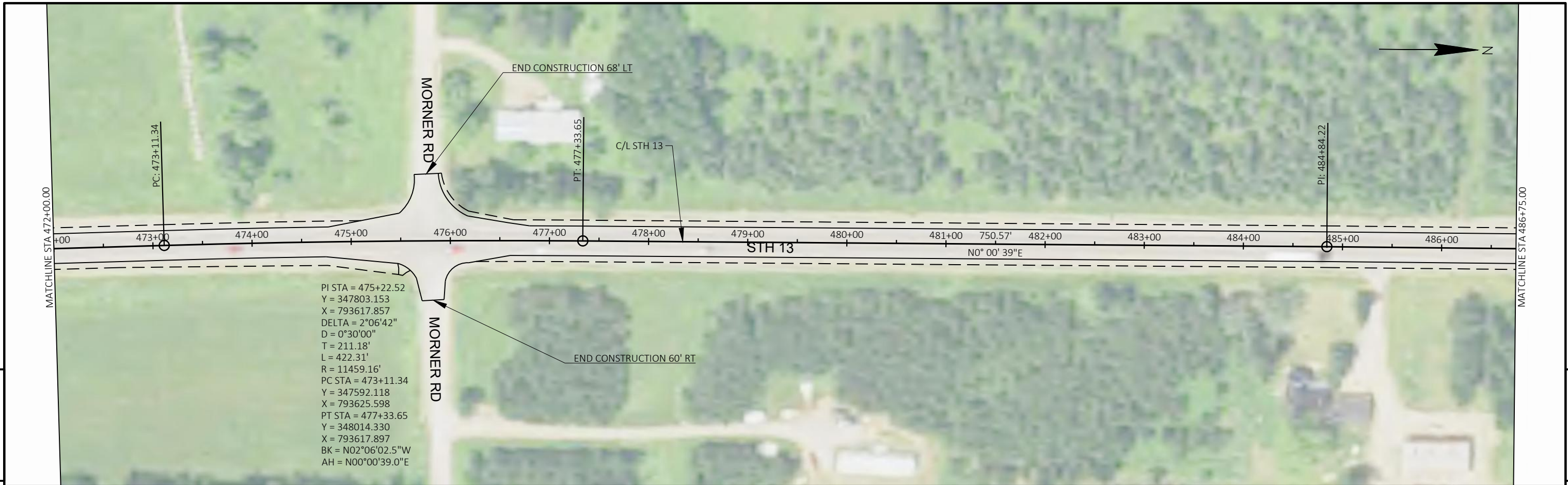


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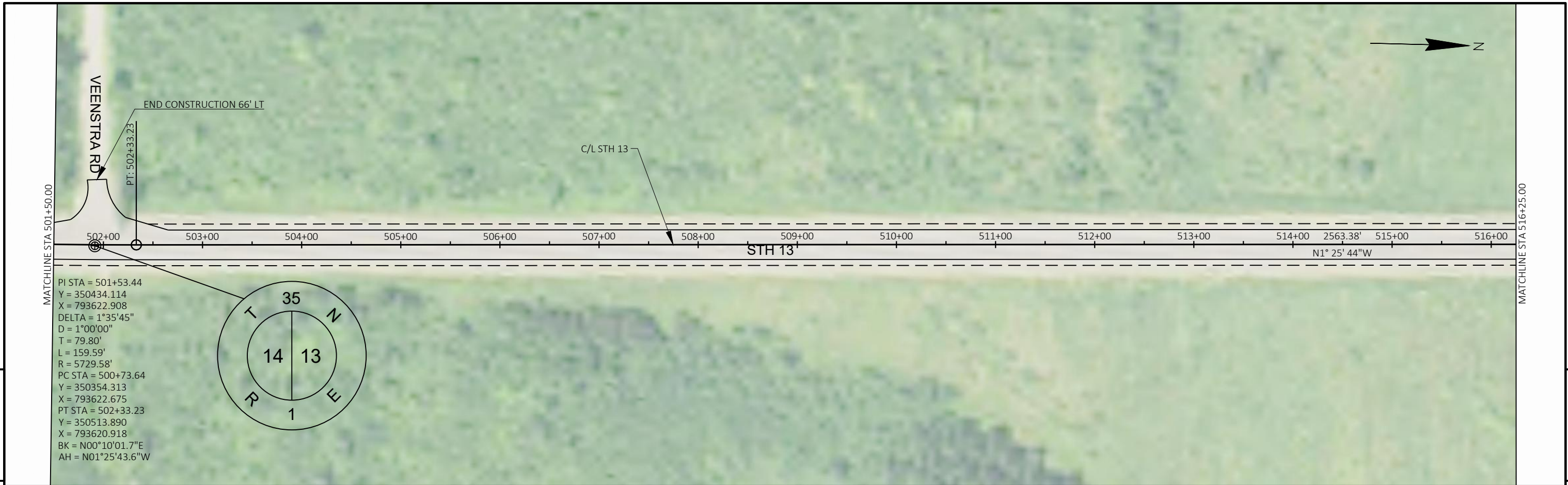
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| PROJECT NO: 1610-41-70 | HWY: STH 13 | COUNTY: PRICE | PLAN | SHEET | E |
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| PROJECT NO: 1610-41-70 | HWY: STH 13 | COUNTY: PRICE | PLAN | SHEET | E |
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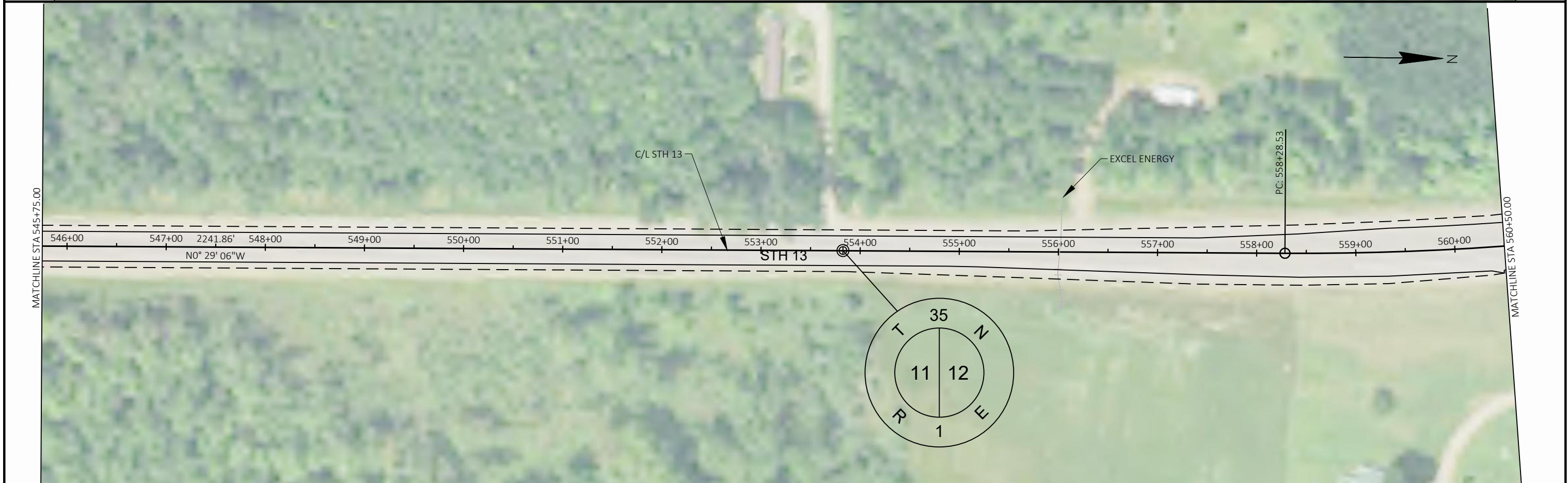


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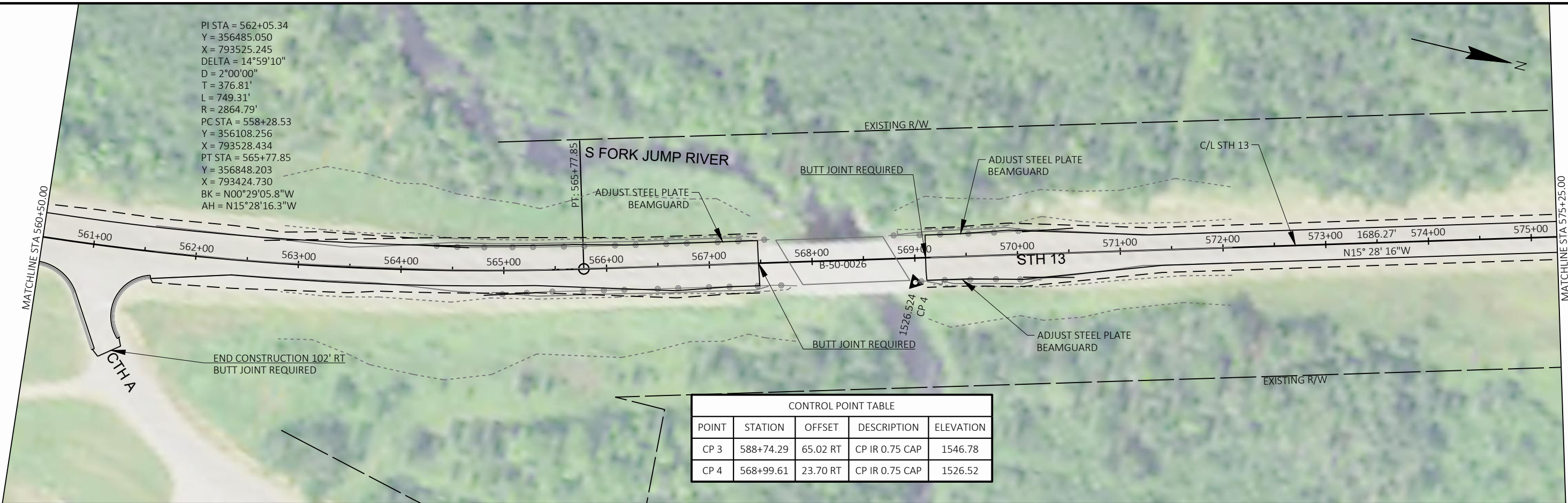


|                        |             |               |      |       |   |
|------------------------|-------------|---------------|------|-------|---|
| PROJECT NO: 1610-41-70 | HWY: STH 13 | COUNTY: PRICE | PLAN | SHEET | E |
|------------------------|-------------|---------------|------|-------|---|



|                        |             |               |      |       |          |
|------------------------|-------------|---------------|------|-------|----------|
| PROJECT NO: 1610-41-70 | HWY: STH 13 | COUNTY: PRICE | PLAN | SHEET | <b>E</b> |
|------------------------|-------------|---------------|------|-------|----------|

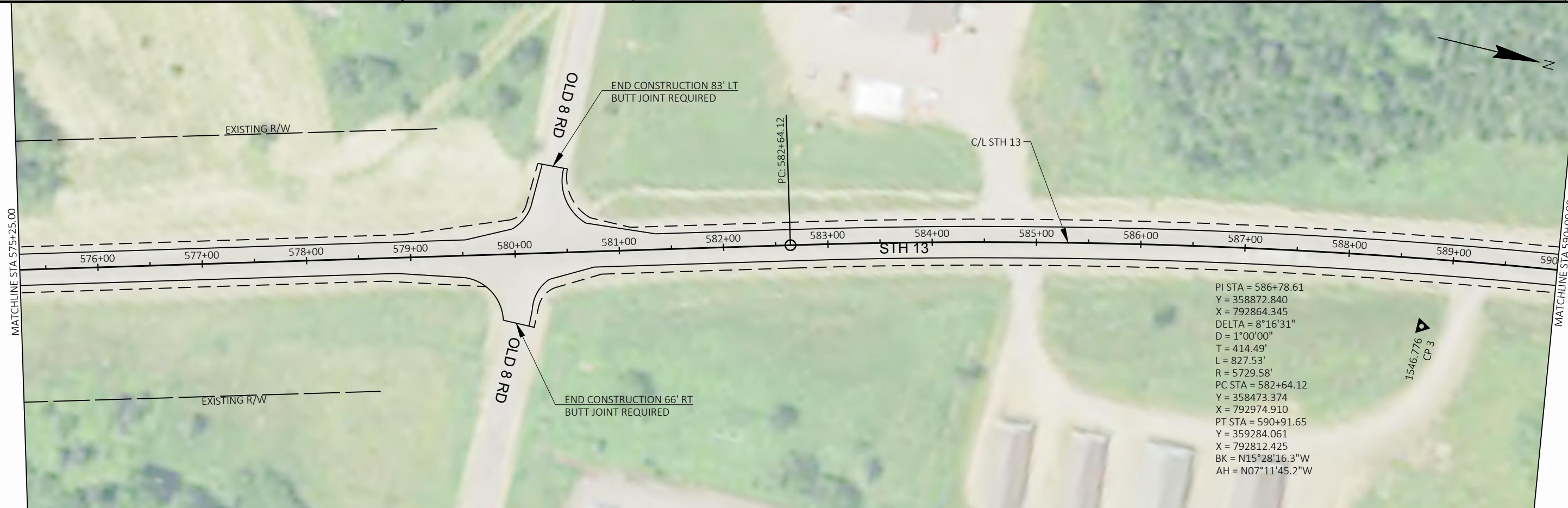
PI STA = 562+05.34  
 Y = 356485.050  
 X = 793525.245  
 DELTA = 14°59'10"  
 D = 2°00'00"  
 T = 376.81'  
 L = 749.31'  
 R = 2864.79'  
 PC STA = 558+28.53  
 Y = 356108.256  
 X = 793528.434  
 PT STA = 565+77.85  
 Y = 356848.203  
 X = 793424.730  
 BK = N00°29'05.8"W  
 AH = N15°28'16.3"W



| CONTROL POINT TABLE |           |          |                |           |
|---------------------|-----------|----------|----------------|-----------|
| POINT               | STATION   | OFFSET   | DESCRIPTION    | ELEVATION |
| CP 3                | 588+74.29 | 65.02 RT | CP IR 0.75 CAP | 1546.78   |
| CP 4                | 568+99.61 | 23.70 RT | CP IR 0.75 CAP | 1526.52   |

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PI STA = 586+78.61  
 Y = 358872.840  
 X = 792864.345  
 DELTA = 8°16'31"  
 D = 1°00'00"  
 T = 414.49'  
 L = 827.53'  
 R = 5729.58'  
 PC STA = 582+64.12  
 Y = 358473.374  
 X = 792974.910  
 PT STA = 590+91.65  
 Y = 359284.061  
 X = 792812.425  
 BK = N15°28'16.3"W  
 AH = N07°11'45.2"W

PROJECT NO: 1610-41-70

HWY: STH 13

COUNTY: PRICE

PLAN

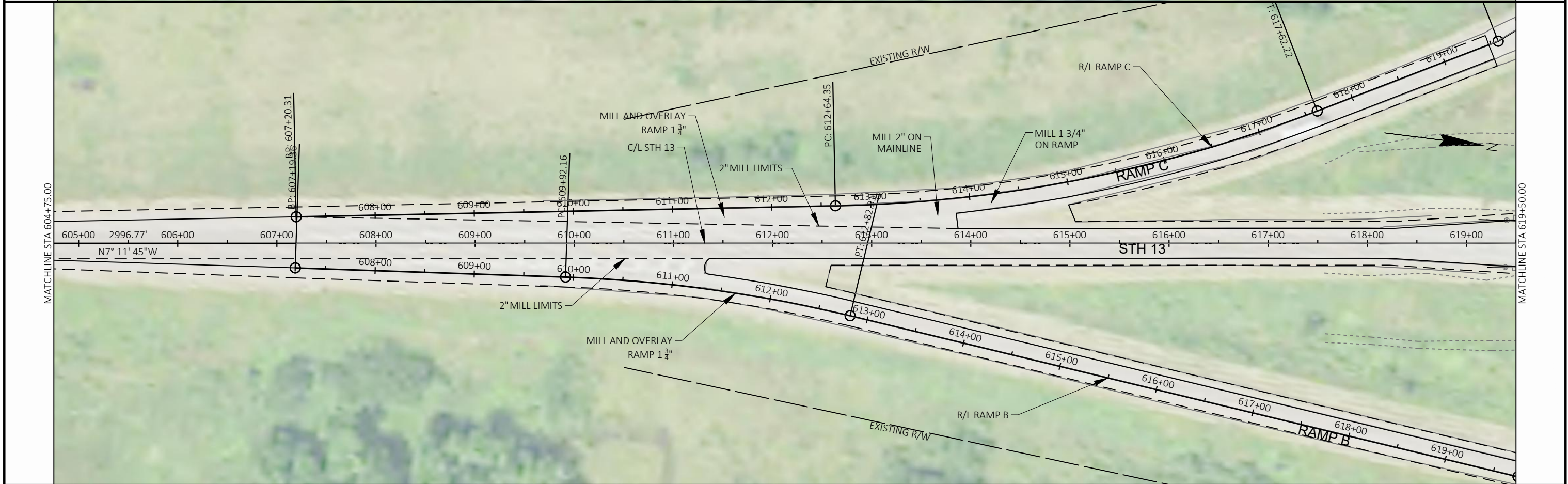
SHEET

E

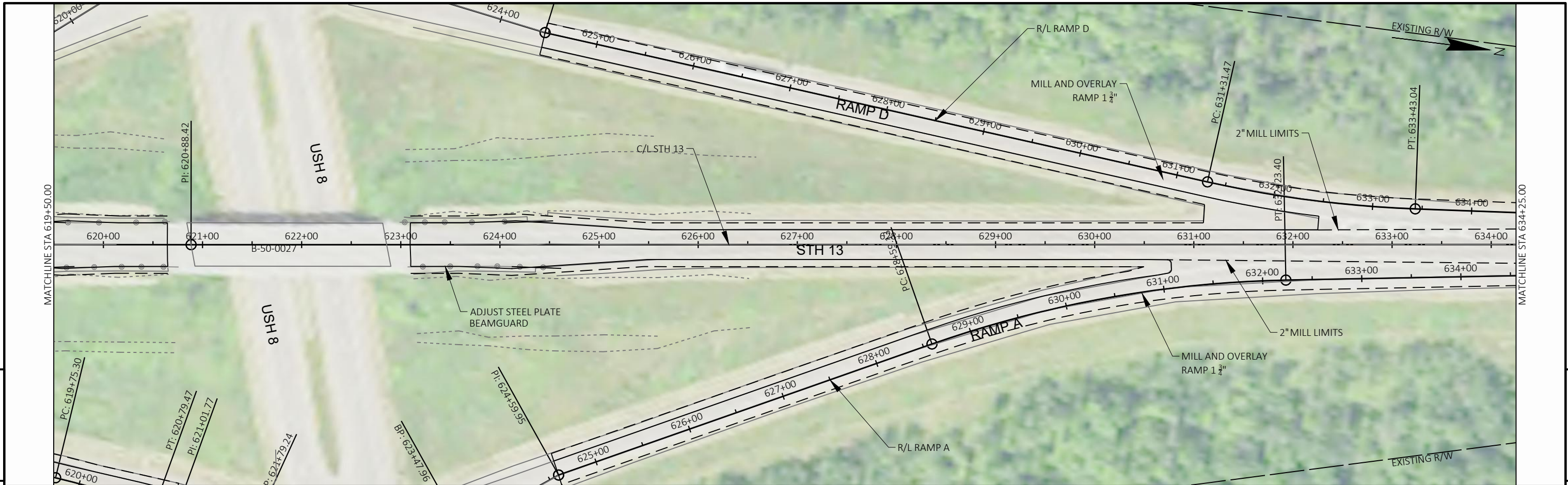


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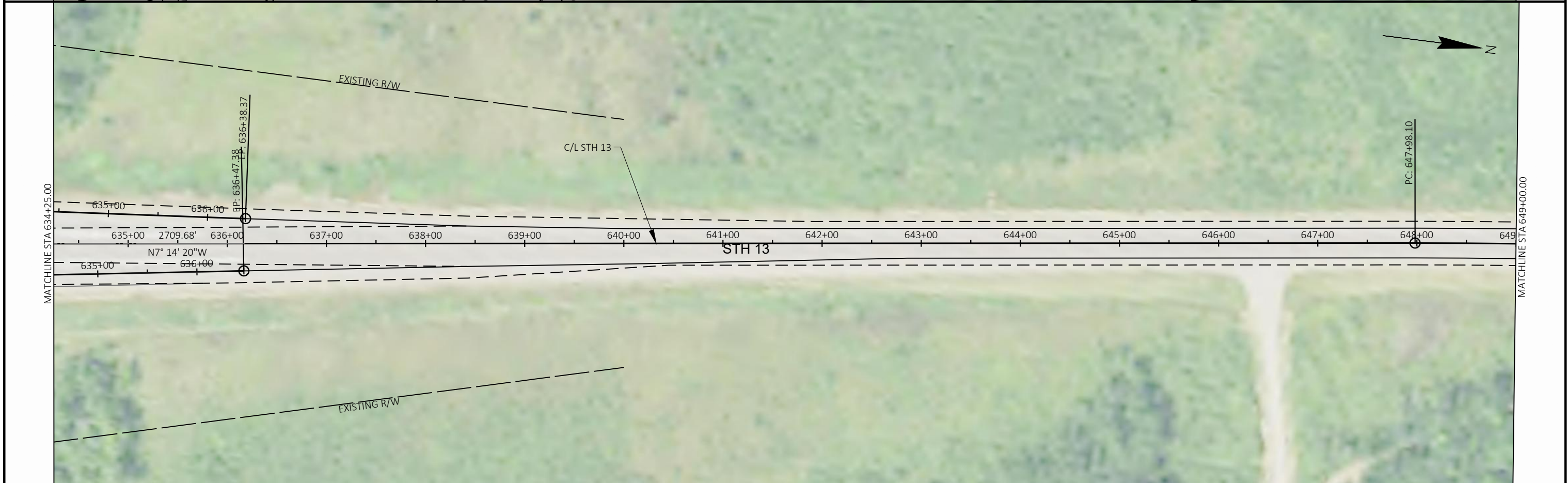


|                        |             |               |      |       |   |
|------------------------|-------------|---------------|------|-------|---|
| PROJECT NO: 1610-41-70 | HWY: STH 13 | COUNTY: PRICE | PLAN | SHEET | E |
|------------------------|-------------|---------------|------|-------|---|



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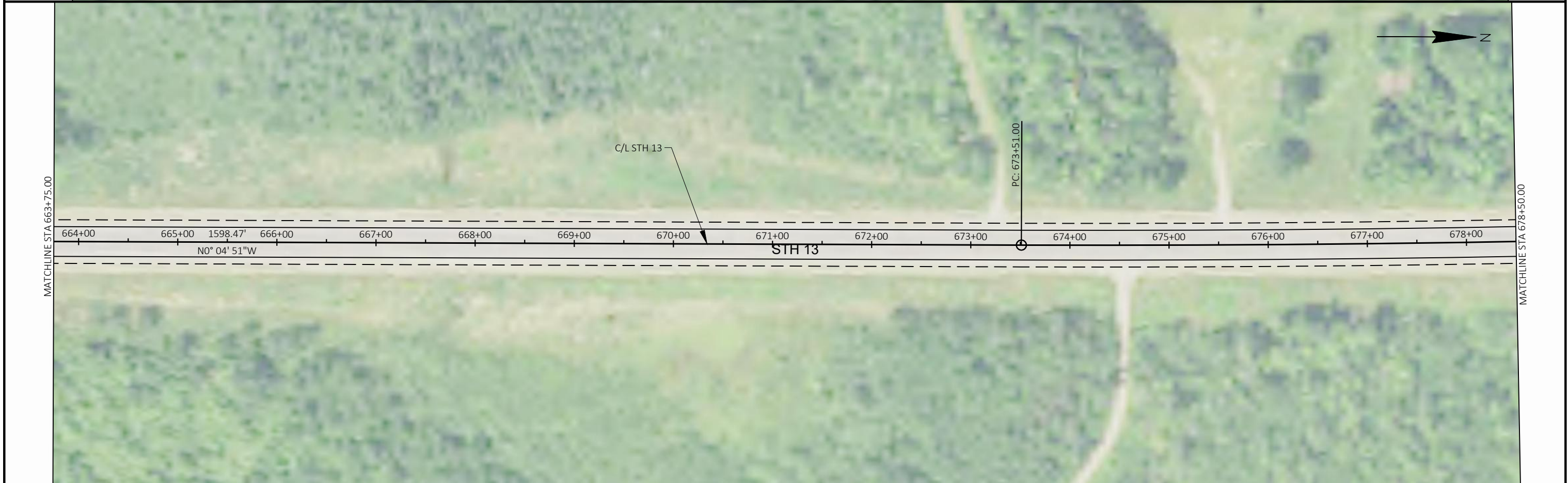
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|                        |             |               |      |       |   |
|------------------------|-------------|---------------|------|-------|---|
| PROJECT NO: 1610-41-70 | HWY: STH 13 | COUNTY: PRICE | PLAN | SHEET | E |
|------------------------|-------------|---------------|------|-------|---|



PI STA = 652+75.93  
 Y = 365419.334  
 X = 792035.390  
 DELTA = 7°09'29"  
 D = 0°45'00"  
 T = 477.83'  
 L = 954.42'  
 R = 7639.44'  
 PC STA = 647+98.10  
 Y = 364945.309  
 X = 792095.601  
 PT STA = 657+52.52  
 Y = 365897.167  
 X = 792034.716  
 BK = N07°14'20.4"W  
 AH = N00°04'50.9"W



1598.47'  
 N0° 04' 51"W

|                        |             |               |      |       |          |
|------------------------|-------------|---------------|------|-------|----------|
| PROJECT NO: 1610-41-70 | HWY: STH 13 | COUNTY: PRICE | PLAN | SHEET | <b>E</b> |
|------------------------|-------------|---------------|------|-------|----------|



PI STA = 680+60.22  
 Y = 368204.862  
 X = 792031.461  
 DELTA = 3°32'42"  
 D = 0°15'00"  
 T = 709.22'  
 L = 1417.99'  
 R = 22918.32'  
 PC STA = 673+51.00  
 Y = 367495.640  
 X = 792032.461  
 PT STA = 687+68.99  
 Y = 368912.666  
 X = 791986.610  
 BK = N00°04'50.9"W  
 AH = N03°37'32.9"W

END CONSTRUCTION 66' LT

C/L STH 13

WHITBY RD

PT: 687+68.99

STH 13

END CONSTRUCTION 69' RT

WHITBY RD



MATCHLINE STA 678+50.00

MATCHLINE STA 693+25.00

679+00 680+00 681+00 682+00 683+00 684+00 685+00 686+00 687+00 688+00 689+00 690+00 691+00 692+00 693+00

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MATCHLINE STA 693+25.00

MATCHLINE STA 708+00.00

C/L STH 13



694+00 695+00 696+00 697+00 698+00 699+00 700+00 2497.60' 701+00 702+00 703+00 704+00 705+00 706+00 707+00 708+00

N3° 37' 33"W

STH 13

PROJECT NO: 1610-41-70

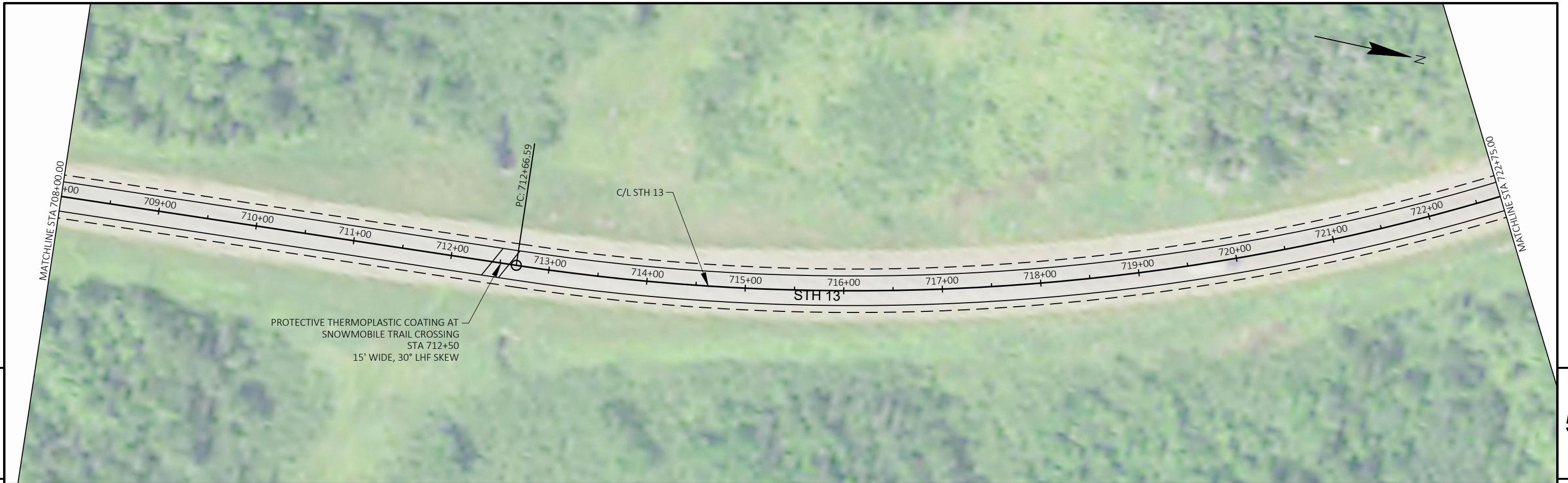
HWY: STH 13

COUNTY: PRICE

PLAN

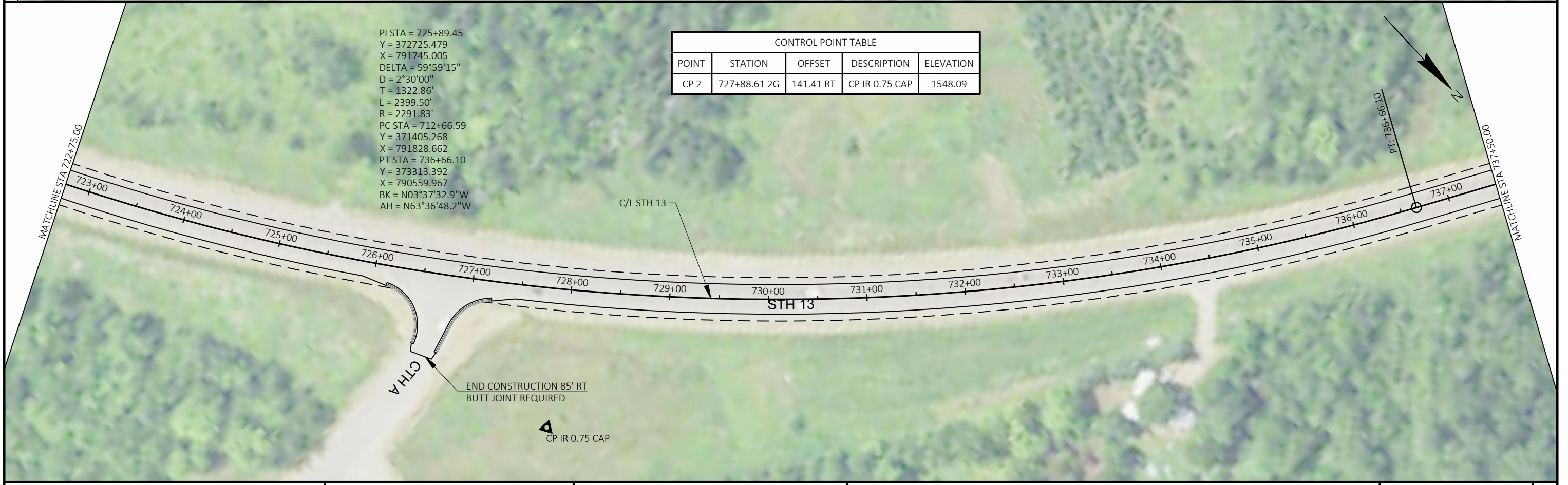
SHEET

E



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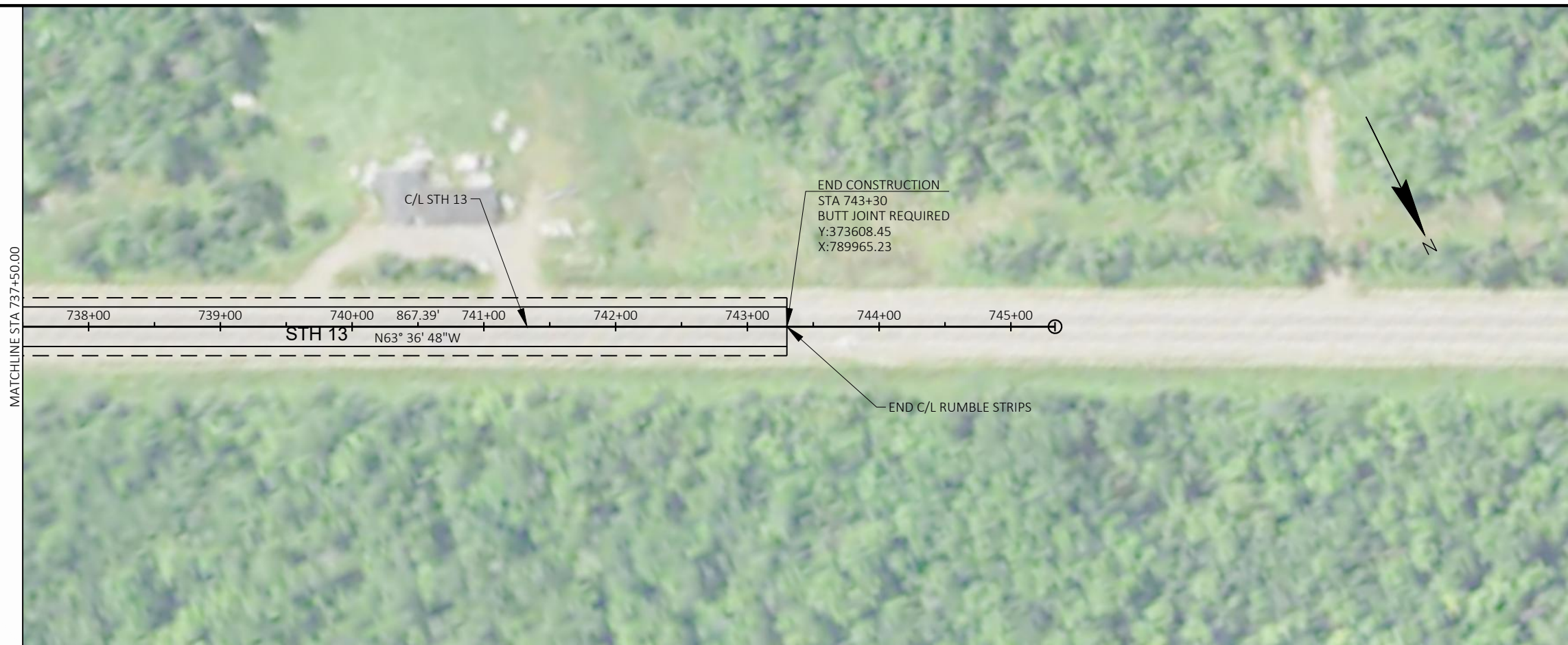


PI STA = 725+89.45  
 Y = 372725.479  
 X = 791745.005  
 DELTA = 59°59'15"  
 D = 2°30'00"  
 T = 1322.86'  
 L = 2399.50'  
 R = 2291.83'  
 PC STA = 712+66.59  
 Y = 371405.268  
 X = 791828.662  
 PT STA = 736+66.10  
 Y = 373313.392  
 X = 790559.967  
 BK = N03°37'32.9"W  
 AH = N63°36'48.2"W

| CONTROL POINT TABLE |              |           |                |           |
|---------------------|--------------|-----------|----------------|-----------|
| POINT               | STATION      | OFFSET    | DESCRIPTION    | ELEVATION |
| CP 2                | 727+88.61 2G | 141.41 RT | CP IR 0.75 CAP | 1548.09   |

PROJECT NO: 1610-41-70      HWY: STH 13      COUNTY: PRICE      PLAN      SHEET      E

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PROJECT NO: 1610-41-70

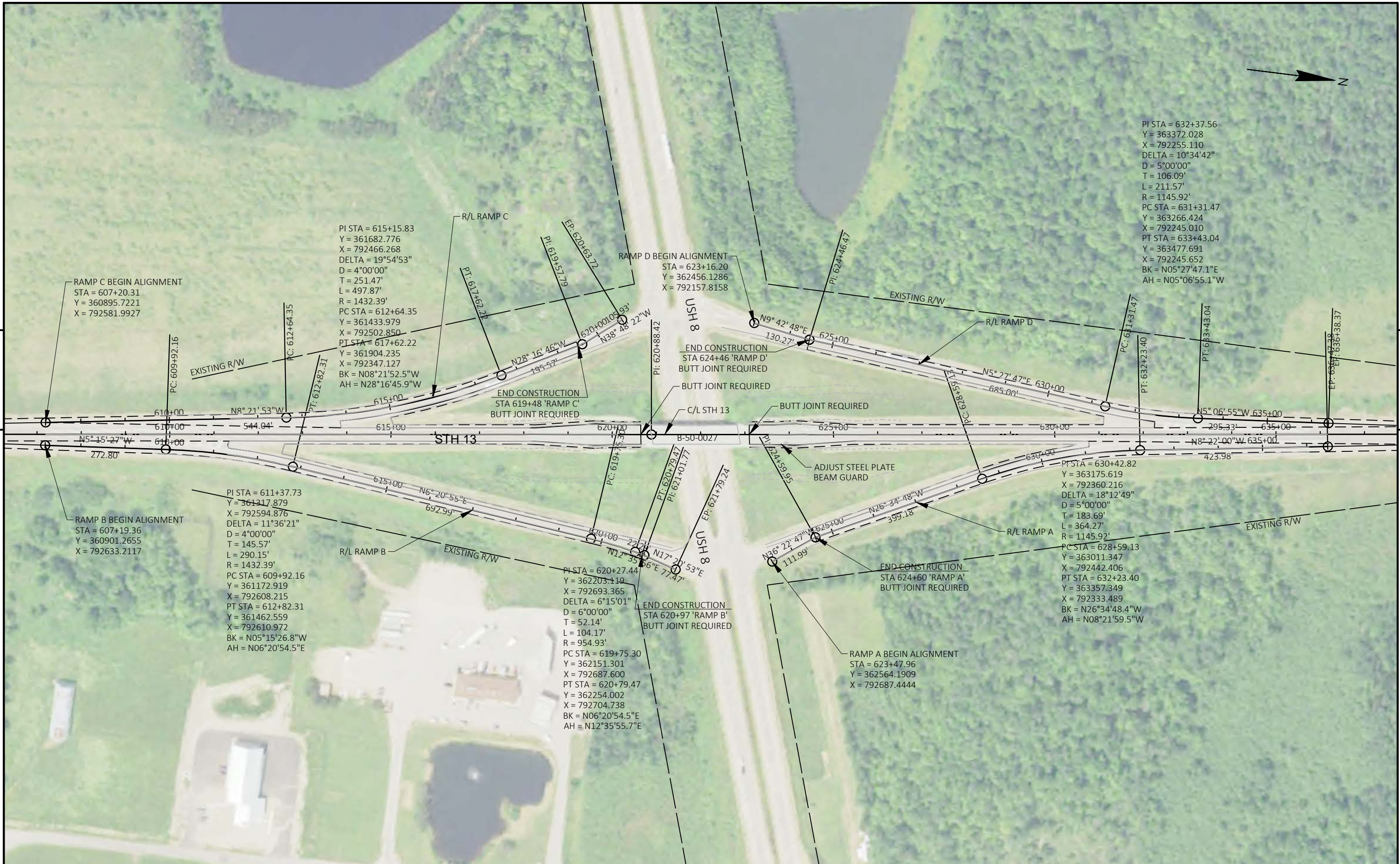
HWY: STH 13

COUNTY: PRICE

PLAN

SHEET

E



PI STA = 632+37.56  
 Y = 363372.028  
 X = 792255.110  
 DELTA = 10°34'42"  
 D = 5°00'00"  
 T = 106.09'  
 L = 211.57'  
 R = 1145.92'  
 PC STA = 631+31.47  
 Y = 363266.424  
 X = 792245.010  
 PT STA = 633+43.04  
 Y = 363477.691  
 X = 792245.652  
 BK = N05°27'47.1"E  
 AH = N05°06'55.1"W

PI STA = 615+15.83  
 Y = 361682.776  
 X = 792466.268  
 DELTA = 19°54'53"  
 D = 4°00'00"  
 T = 251.47'  
 L = 497.87'  
 R = 1432.39'  
 PC STA = 612+64.35  
 Y = 361433.979  
 X = 792502.850  
 PT STA = 617+62.22  
 Y = 361904.235  
 X = 792347.127  
 BK = N08°21'52.5"W  
 AH = N28°16'45.9"W

RAMP C BEGIN ALIGNMENT  
 STA = 607+20.31  
 Y = 360895.7221  
 X = 792581.9927

RAMP B BEGIN ALIGNMENT  
 STA = 607+19.36  
 Y = 360901.2655  
 X = 792633.2117

PI STA = 611+37.73  
 Y = 361317.879  
 X = 792594.876  
 DELTA = 11°36'21"  
 D = 4°00'00"  
 T = 145.57'  
 L = 290.15'  
 R = 1432.39'  
 PC STA = 609+92.16  
 Y = 361172.919  
 X = 792608.215  
 PT STA = 612+82.31  
 Y = 361462.559  
 X = 792610.972  
 BK = N05°15'26.8"W  
 AH = N06°20'54.5"E

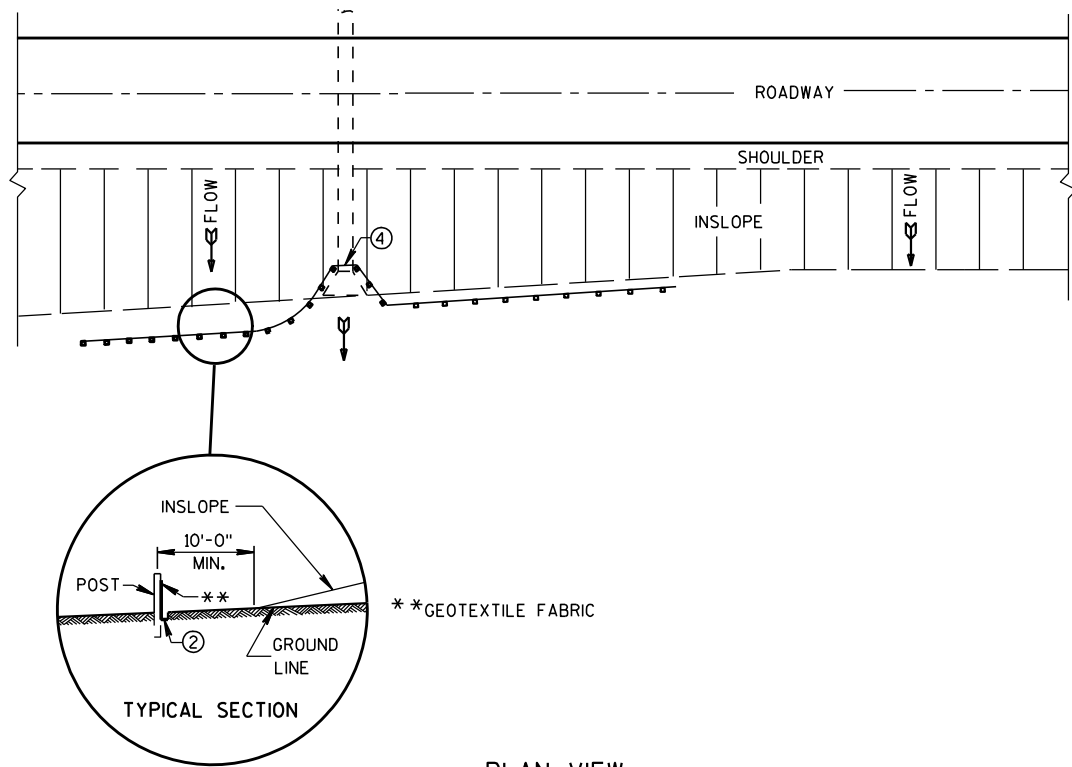
PI STA = 620+27.44  
 Y = 362203.119  
 X = 792693.365  
 DELTA = 6°15'01"  
 D = 6°00'00"  
 T = 52.14'  
 L = 104.17'  
 R = 954.93'  
 PC STA = 619+75.30  
 Y = 362151.301  
 X = 792687.600  
 PT STA = 620+79.47  
 Y = 362254.002  
 X = 792704.738  
 BK = N06°20'54.5"E  
 AH = N12°35'55.7"E

PI STA = 630+42.82  
 Y = 363175.619  
 X = 792360.216  
 DELTA = 18°12'49"  
 D = 5°00'00"  
 T = 183.69'  
 L = 364.27'  
 R = 1145.92'  
 PC STA = 628+59.13  
 Y = 363011.347  
 X = 792442.406  
 PT STA = 632+23.40  
 Y = 363357.349  
 X = 792333.489  
 BK = N26°34'48.4"W  
 AH = N08°21'59.5"W

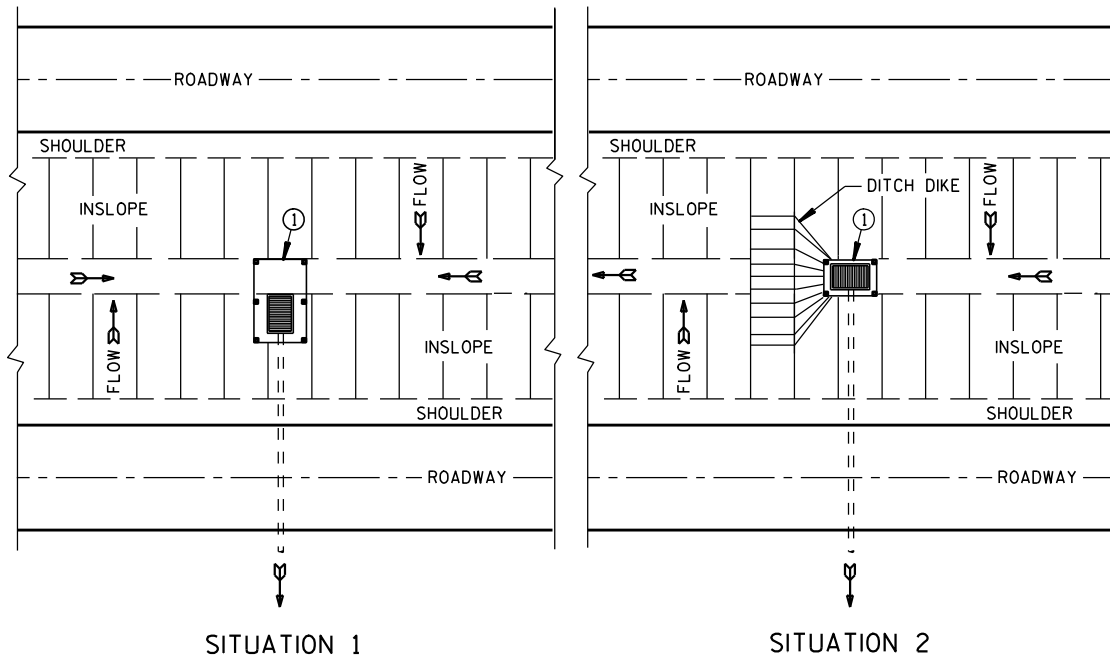
RAMP A BEGIN ALIGNMENT  
 STA = 623+47.96  
 Y = 362564.1909  
 X = 792687.4444

## Standard Detail Drawing List

|           |                                                                                                    |
|-----------|----------------------------------------------------------------------------------------------------|
| 08E09-06  | SILT FENCE                                                                                         |
| 08E15-01  | CULVERT PIPE CHECK                                                                                 |
| 08F01-11  | APRON ENDWALLS FOR CULVERT PIPE                                                                    |
| 08F04-08  | JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL                                            |
| 13A11-03A | 2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING                                                     |
| 13A11-03B | 2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING                                                     |
| 13B01-10  | PAVEMENT DETAILS FOR RAILROAD APPROACH                                                             |
| 13C19-03  | HMA LONGITUDINAL JOINTS                                                                            |
| 14B15-11A | STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS                                          |
| 14B15-11B | STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS                                          |
| 14B15-11C | STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS                                         |
| 14B20-11A | STEEL THRIE BEAM STRUCTURE APPROACH                                                                |
| 14B24-09A | STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL                                                   |
| 14B24-09B | STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL                                                   |
| 14B24-09C | STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL                                                   |
| 14B29-01  | SAFETY EDGE                                                                                        |
| 15A03-02A | FLEXIBLE MARKER POST FOR CULVERT END                                                               |
| 15A03-02B | FLEXIBLE MARKER POST FOR CULVERT END                                                               |
| 15C02-08A | BARRICADES AND SIGNS FOR MAINLINE CLOSURES                                                         |
| 15C02-08B | BARRICADES AND SIGNS FOR VARIOUS CLOSURES                                                          |
| 15C02-08D | ON RAMP LANE CLOSURE                                                                               |
| 15C02-08E | OFF RAMP LANE CLOSURE                                                                              |
| 15C04-05  | TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC |
| 15C08-20A | LONGITUDINAL MARKING (MAINLINE)                                                                    |
| 15C08-20B | PAVEMENT MARKING (TURN LANES)                                                                      |
| 15C08-20C | PAVEMENT MARKING (TURN LANES)                                                                      |
| 15C09-12A | SIGNING AND PAVEMENT MARKING DETAILS FOR RAILROAD-HIGHWAY GRADE CROSSINGS                          |
| 15C11-09B | CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS                                  |
| 15C12-08  | TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION                                           |
| 15C19-06A | MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY                                         |
| 15C31-04A | PAVEMENT MARKING EXIT RAMP AND PARALLEL EXIT RAMP                                                  |
| 15C31-04C | PAVEMENT MARKING ENTRANCE RAMP AND PARALLEL ENTRANCE RAMP                                          |
| 15C33-04  | STOP LINE AND CROSSWALK PAVEMENT MARKING                                                           |
| 15C35-04A | PAVEMENT MARKING (INTERSECTIONS)                                                                   |
| 15D16-04  | TRAFFIC CONTROL, EXIT RAMP CLOSURE                                                                 |
| 15D28-04  | TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY                               |
| 15D29-06  | TRAFFIC CONTROL, VEHICLE ENTRANCE/EXIT OR HAUL ROAD                                                |
| 15D39-02  | TRAFFIC CONTROL, DROP-OFF SIGNING                                                                  |
| 15D44-02  | TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES                                          |
| 15D45-03  | TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH LOOSE GRAVEL                                             |
| 15D48-01  | TRAFFIC CONTROL, LANE SHIFT IN FLAGGING OPERATION                                                  |
| 15D51-01  | TRAFFIC CONTROL, MOBILE OPERATIONS ON AN UNDIVIDED ROADWAY                                         |



PLAN VIEW  
TYPICAL APPLICATION OF SILT FENCE

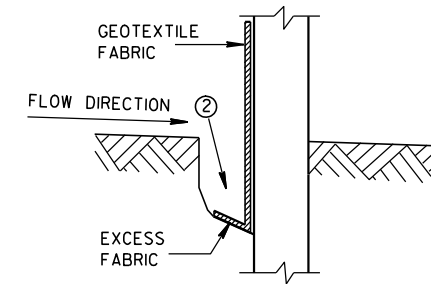


SITUATION 1 SITUATION 2  
PLAN VIEW  
SILT FENCE AT MEDIAN SURFACE DRAINS

**GENERAL NOTES**

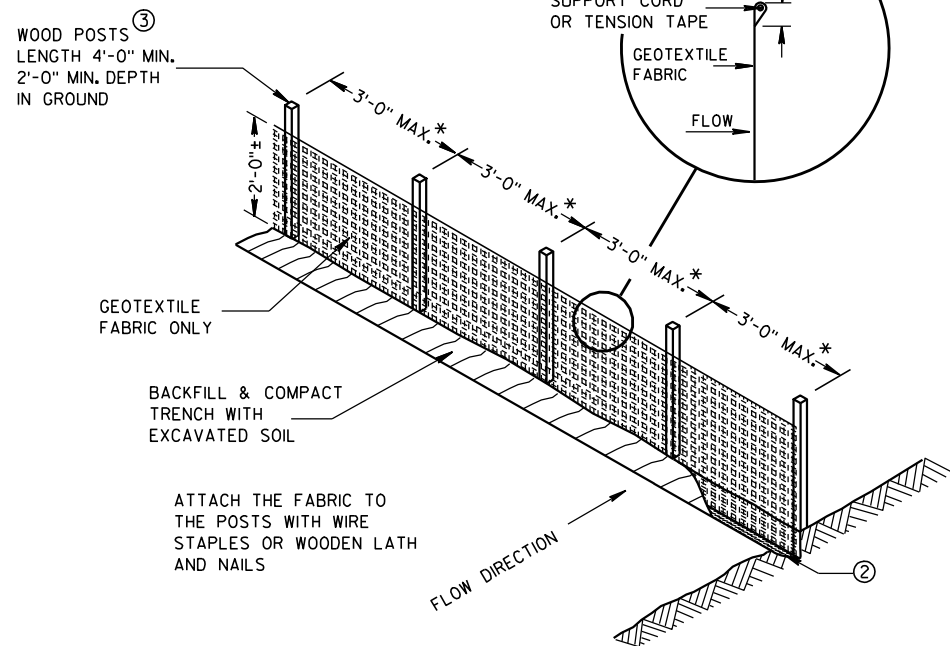
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

- 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 1 1/8" X 1 1/8" 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.



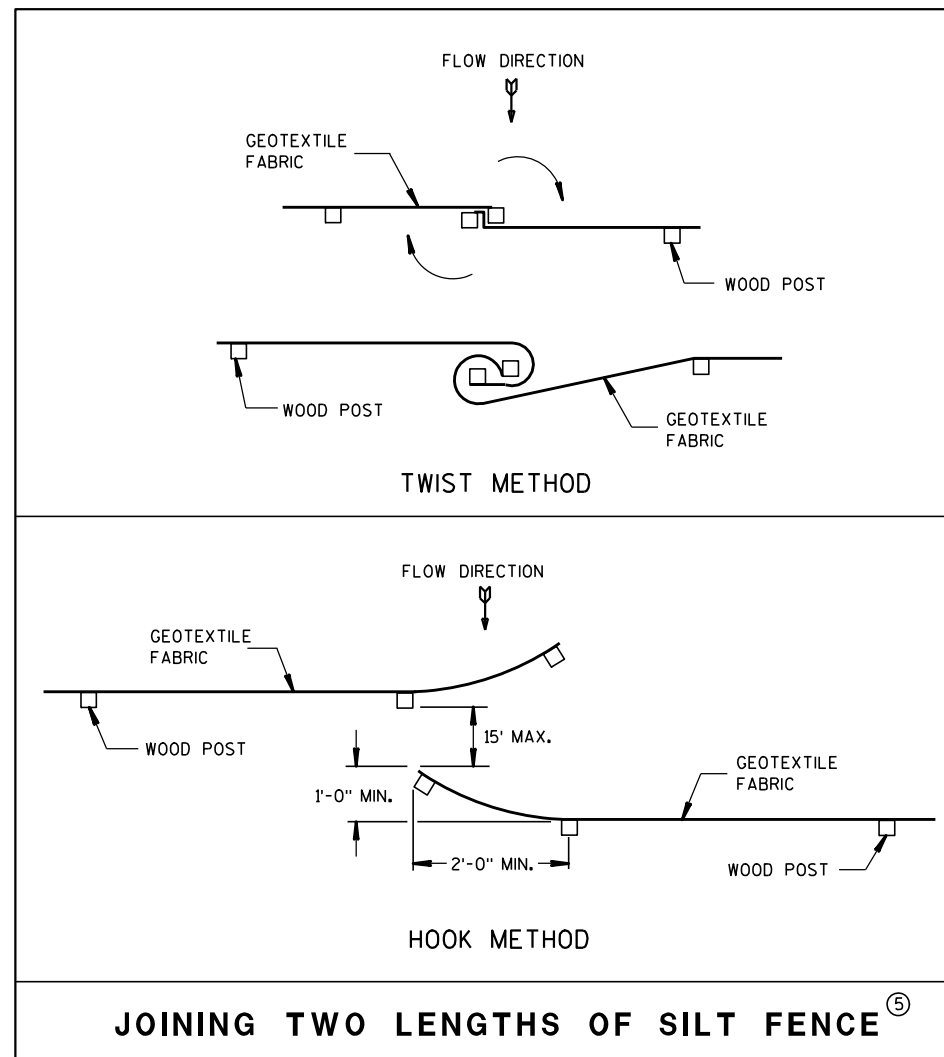
TRENCH DETAIL

NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS

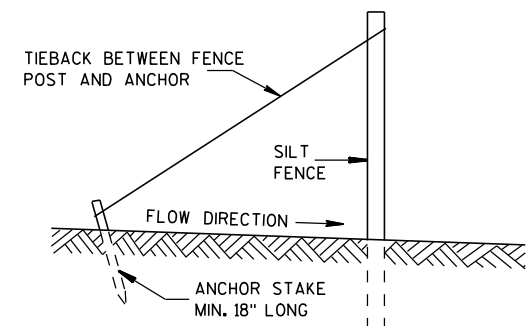


SILT FENCE

\* NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.



JOINING TWO LENGTHS OF SILT FENCE ⑤

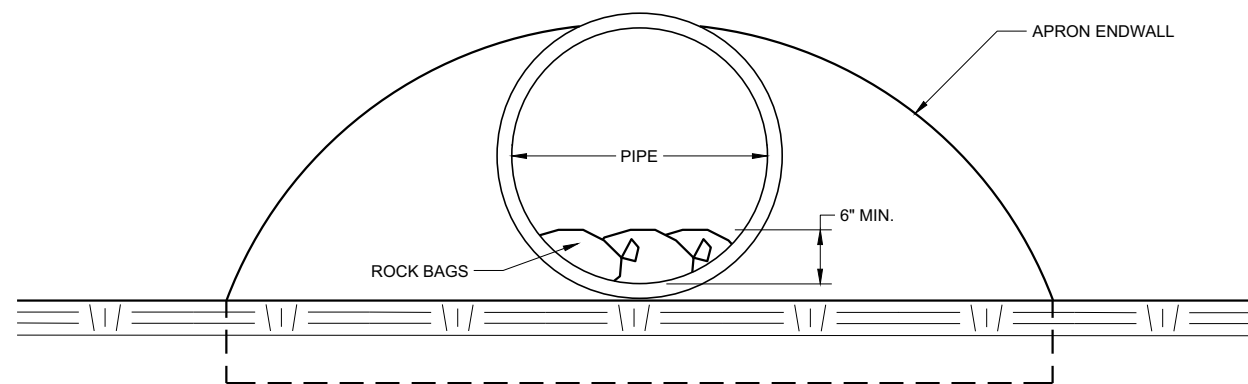


SILT FENCE TIE BACK  
(WHEN REQUIRED BY THE ENGINEER)

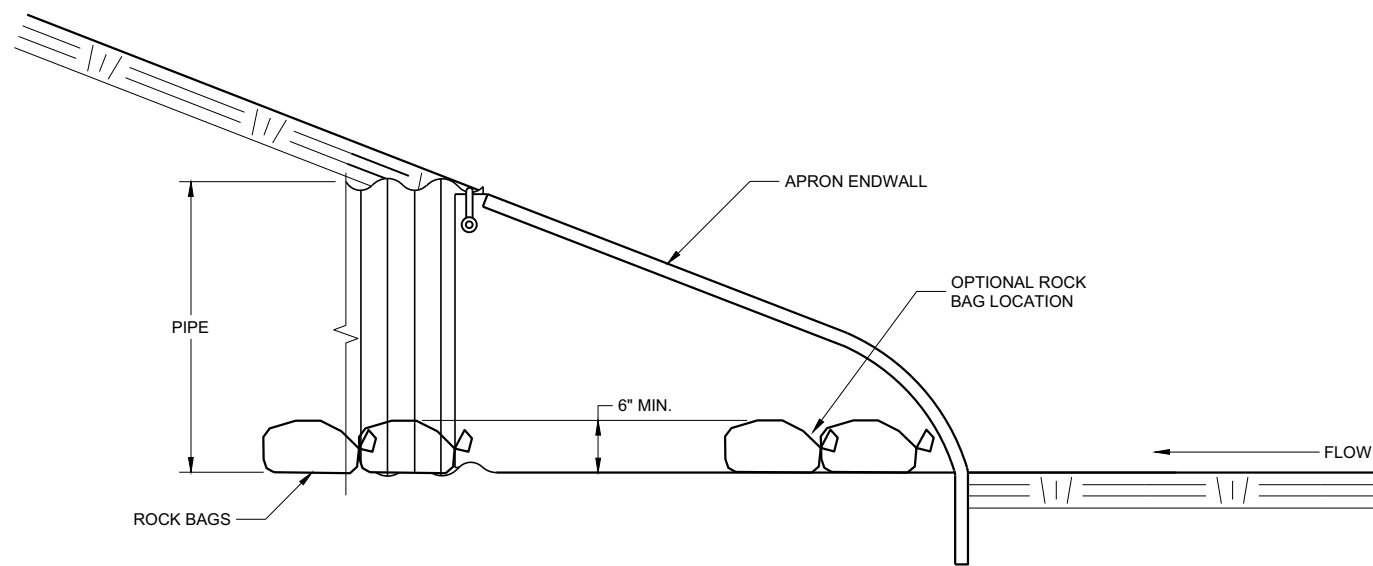
**SILT FENCE**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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



END VIEW



SIDE VIEW

**CULVERT PIPE CHECK**  
 (INSTALL ON INLET END ONLY)

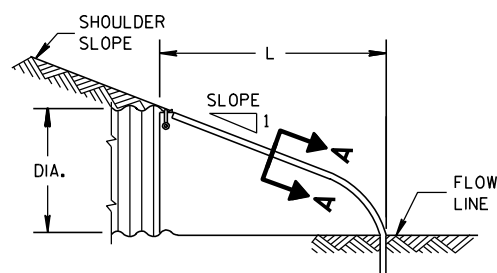
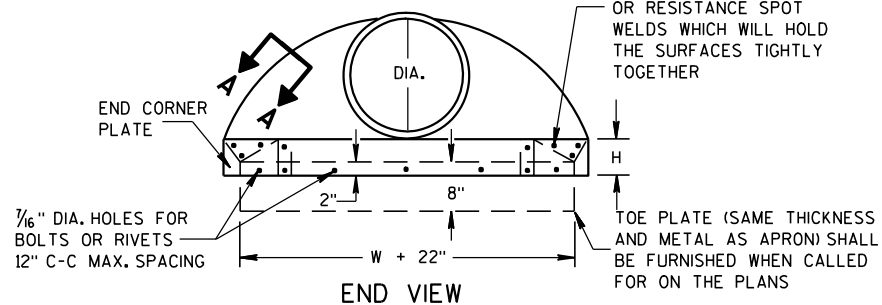
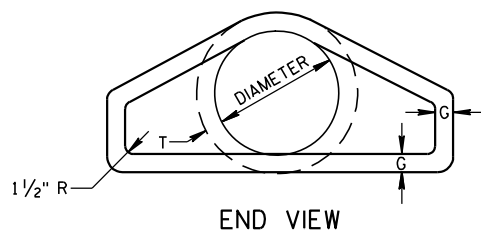
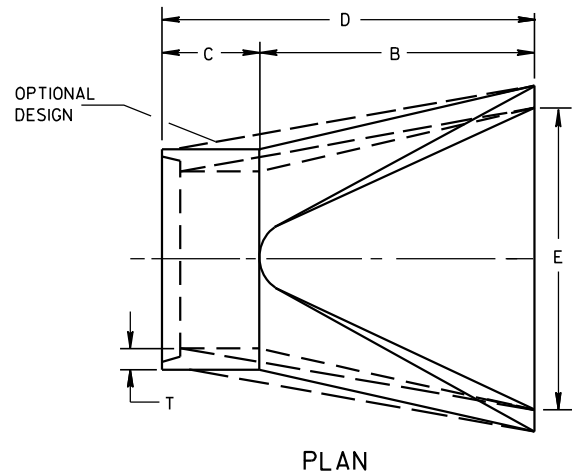
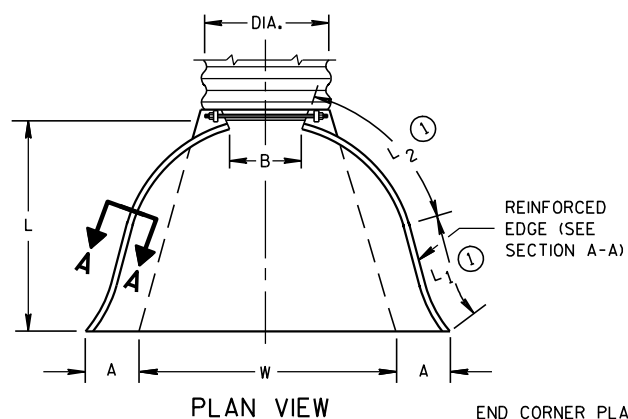
|                                                    |                                               |
|----------------------------------------------------|-----------------------------------------------|
| <b>CULVERT PIPE CHECK</b>                          |                                               |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                                               |
| APPROVED<br>May 2019<br>DATE                       | /S/ Daniel Schave<br>EROSION CONTROL ENGINEER |
| <small>FHWA</small>                                |                                               |

| METAL APRON ENDWALLS |                      |       |                     |          |         |             |    |        |         |               |       |
|----------------------|----------------------|-------|---------------------|----------|---------|-------------|----|--------|---------|---------------|-------|
| PIPE DIA. (IN.)      | MIN. THICK. (Inches) |       | DIMENSIONS (Inches) |          |         |             |    |        |         | APPROX. SLOPE | BODY  |
|                      | STEEL                | ALUM. | A (±1")             | B (MAX.) | H (±1") | L (±1 1/2") | L1 | L2     | W (±2") |               |       |
| 12                   | .064                 | .060  | 6                   | 6        | 6       | 21          | 12 | 17 1/2 | 24      | 2 1/2 to 1    | 1 Pc. |
| 15                   | .064                 | .060  | 7                   | 8        | 6       | 26          | 14 | 21 3/4 | 30      | 2 1/2 to 1    | 1 Pc. |
| 18                   | .064                 | .060  | 8                   | 10       | 6       | 31          | 15 | 28 1/4 | 36      | 2 1/2 to 1    | 1 Pc. |
| 21                   | .064                 | .060  | 9                   | 12       | 6       | 36          | 18 | 29 5/8 | 42      | 2 1/2 to 1    | 1 Pc. |
| 24                   | .064                 | .075  | 10                  | 13       | 6       | 41          | 18 | 37 1/4 | 48      | 2 1/2 to 1    | 1 Pc. |
| 30                   | .079                 | .075  | 12                  | 16       | 8       | 51          | 18 | 52 1/4 | 60      | 2 1/2 to 1    | 1 Pc. |
| 36                   | .079                 | .105  | 14                  | 19       | 9       | 60          | 24 | 59 3/4 | 72      | 2 1/2 to 1    | 2 Pc. |
| 42                   | .109                 | .105  | 16                  | 22       | 11      | 69          | 24 | 75 5/8 | 84      | 2 1/2 to 1    | 2 Pc. |
| 48                   | .109                 | .105  | 18                  | 27       | 12      | 78          | 24 | 81     | 90      | 2 1/4 to 1    | 3 Pc. |
| 54                   | .109                 | .105  | 18                  | 30       | 12      | 84          | 30 | 85 1/2 | 102     | 2 1/4 to 1    | 3 Pc. |
| 60                   | .109x                | .105x | 18                  | 33       | 12      | 87          | —  | —      | 114     | 2 to 1        | 3 Pc. |
| 66                   | .109x                | .105x | 18                  | 36       | 12      | 87          | —  | —      | 120     | 2 to 1        | 3 Pc. |
| 72                   | .109x                | .105x | 18                  | 39       | 12      | 87          | —  | —      | 126     | 2 to 1        | 3 Pc. |
| 78                   | .109x                | .105x | 18                  | 42       | 12      | 87          | —  | —      | 132     | 1 1/2 to 1    | 3 Pc. |
| 84                   | .109x                | .105x | 18                  | 45       | 12      | 87          | —  | —      | 138     | 1 1/2 to 1    | 3 Pc. |
| 90                   | .109x                | .105x | 18                  | 37       | 12      | 87          | —  | —      | 144     | 1 1/2 to 1    | 3 Pc. |
| 96                   | .109x                | .105x | 18                  | 35       | 12      | 87          | —  | —      | 150     | 1 1/2 to 1    | 3 Pc. |

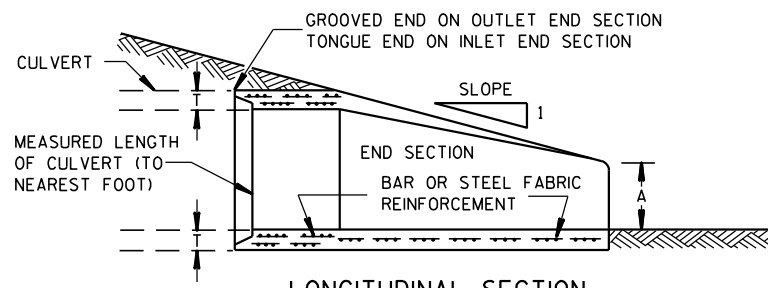
\* EXCEPT CENTER PANEL SEE GENERAL NOTES

| REINFORCED CONCRETE APRON ENDWALLS |                     |        |        |           |            |     |       |               |  |
|------------------------------------|---------------------|--------|--------|-----------|------------|-----|-------|---------------|--|
| PIPE DIA. (IN.)                    | DIMENSIONS (Inches) |        |        |           |            |     |       | APPROX. SLOPE |  |
|                                    | T                   | A      | B      | C         | D          | E   | G     |               |  |
| 12                                 | 2                   | 4      | 24     | 48 1/8    | 72 1/8     | 24  | 2     | 3 to 1        |  |
| 15                                 | 2 1/4               | 6      | 27     | 46        | 73         | 30  | 2 1/4 | 3 to 1        |  |
| 18                                 | 2 1/2               | 9      | 27     | 46        | 73         | 36  | 2 1/2 | 3 to 1        |  |
| 21                                 | 2 3/4               | 9      | 36     | 37 1/2    | 73 1/2     | 42  | 2 3/4 | 3 to 1        |  |
| 24                                 | 3                   | 9 1/2  | 43 1/2 | 30        | 73 1/2     | 48  | 3     | 3 to 1        |  |
| 27                                 | 3 1/4               | 10 1/2 | 49 1/2 | 24        | 73 1/2     | 54  | 3 1/4 | 3 to 1        |  |
| 30                                 | 3 1/2               | 12     | 54     | 19 3/4    | 73 1/2     | 60  | 3 1/2 | 3 to 1        |  |
| 36                                 | 4                   | 15     | 63     | 34 3/4    | 97 3/4     | 72  | 4     | 3 to 1        |  |
| 42                                 | 4 1/2               | 21     | 63     | 35        | 98         | 78  | 4 1/2 | 3 to 1        |  |
| 48                                 | 5                   | 24     | 72     | 26        | 98         | 84  | 5     | 3 to 1        |  |
| 54                                 | 5 1/2               | 27     | 65     | 33 1/4-35 | 98 1/4-100 | 90  | 5 1/2 | 2 1/2 to 1    |  |
| 60                                 | 6                   | 30-35  | 60     | 39        | 99         | 96  | 5     | 2 to 1        |  |
| 66                                 | 6 1/2               | 24-30  | 72-78  | 21-27     | 99         | 102 | 5 1/2 | 2 to 1        |  |
| 72                                 | 7                   | 24-36  | 78     | 21        | 99         | 108 | 6     | 2 to 1        |  |
| 78                                 | 7 1/2               | 24-36  | 78     | 21        | 99         | 114 | 6 1/2 | 2 to 1        |  |
| 84                                 | 8                   | 36     | 90 1/2 | 21        | 111 1/2    | 120 | 6 1/2 | 1 1/2 to 1    |  |
| 90                                 | 8 1/2               | 41     | 87 1/2 | 24        | 111 1/2    | 132 | 6 1/2 | 1 1/2 to 1    |  |

\* MINIMUM  
\*\* MAXIMUM

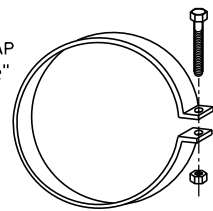


SIDE ELEVATION  
METAL ENDWALLS

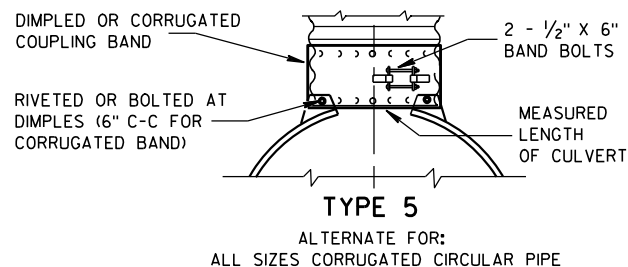
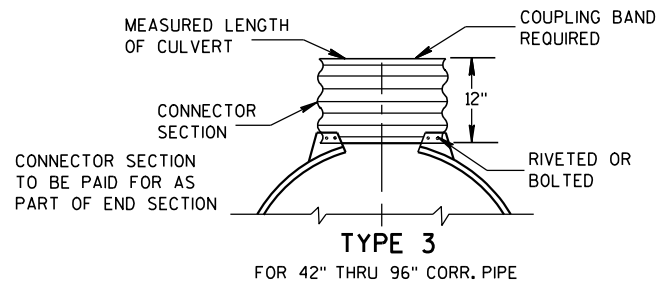
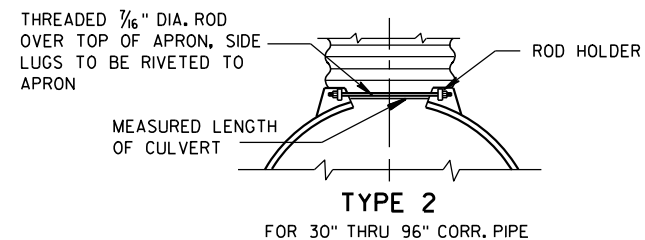
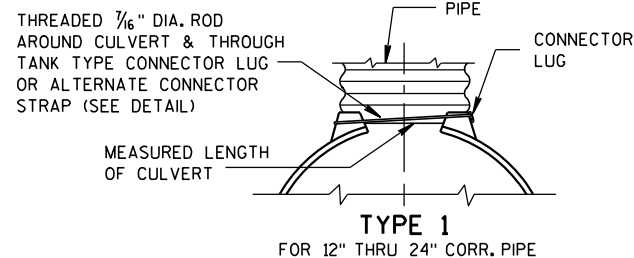


LONGITUDINAL SECTION  
CONCRETE ENDWALLS

1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



ALTERNATE FOR TYPE 1 CONNECTION  
END SECTION CONNECTOR STRAP



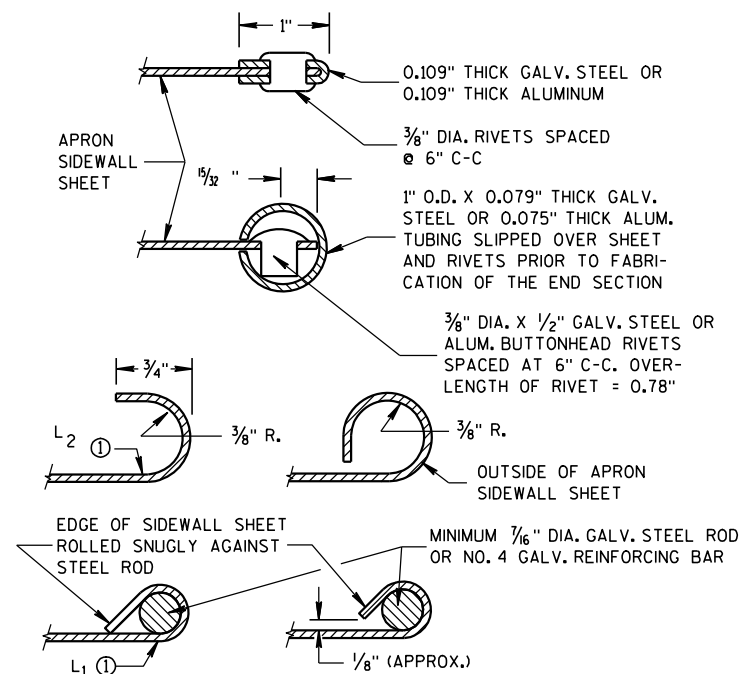
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

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

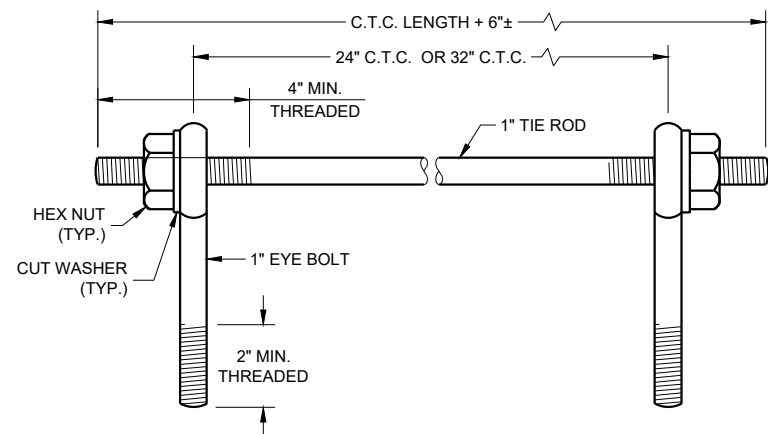
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR  
CULVERT PIPE

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

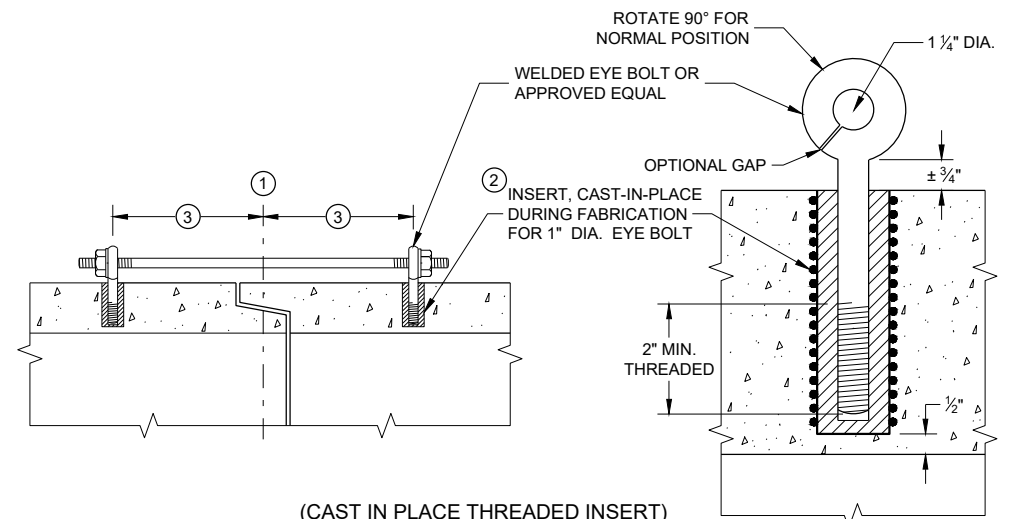
APPROVED  
11/30/94 DATE /S/ Rory L. Rhinesmith  
DATE CHIEF ROADWAY DEVELOPMENT ENGINEER  
FHWA





**EYE BOLTS AND TIE ROD**

**EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 1)**



(CAST IN PLACE THREADED INSERT)  
**LONGITUDINAL SECTIONS**

**GENERAL NOTES**

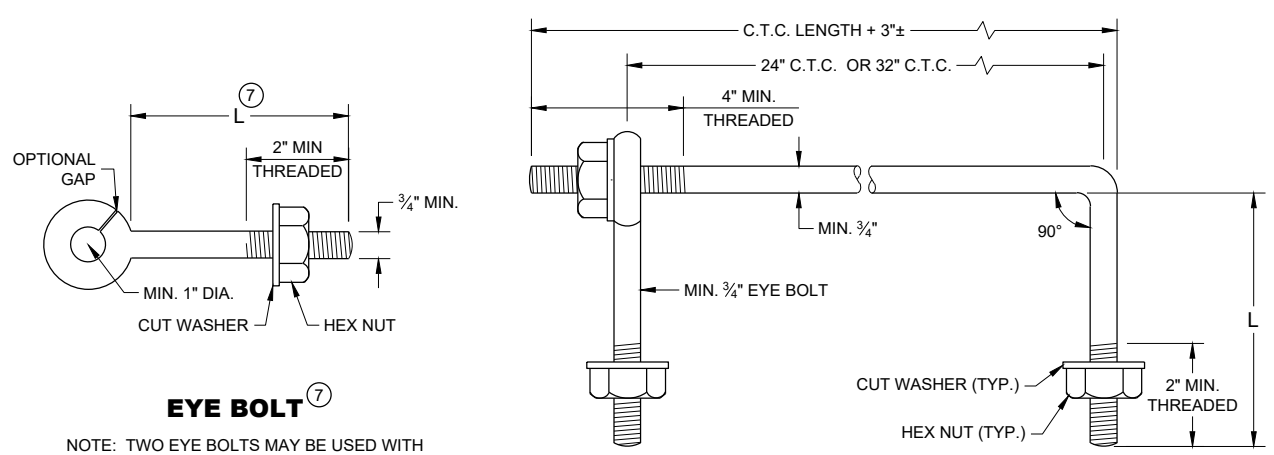
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE STANDARD SPECIFICATIONS AND THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1 AND 3 MAY BE USED FOR CATTLE PASSES, UNLESS OTHERWISE STATED IN THE CONTRACT. THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON ENDWALLS IF REQUIRED.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

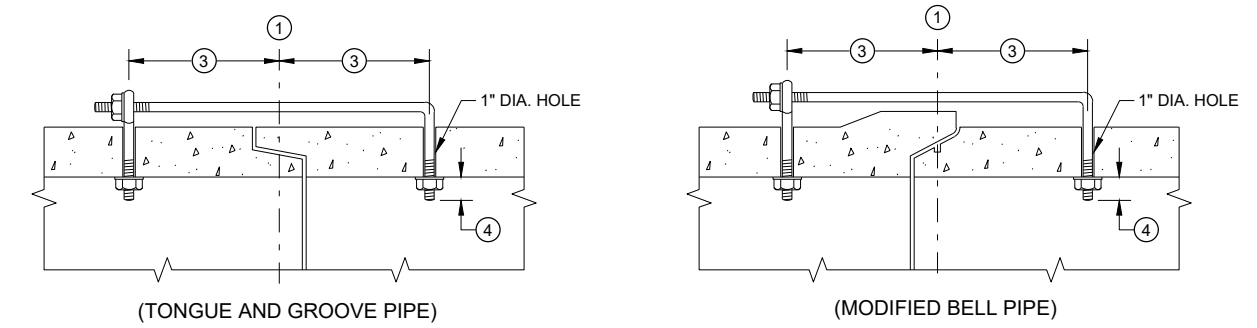
- ① CENTER LINE OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.
- ② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.
- ③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED PER THE APPLICABLE DETAIL, AND EQUAL DISTANCE FROM THE CENTERLINE OF THE JOINT.
- ④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.
- ⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.
- ⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.
- ⑦ EYE BOLT LENGTH DETERMINED BY WALL THICKNESS, BELL THICKNESS AND BOLT PROJECTION INSIDE PIPE.



**EYE BOLT AND TIE ROD**

**EYE BOLT**

NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" OR 38" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



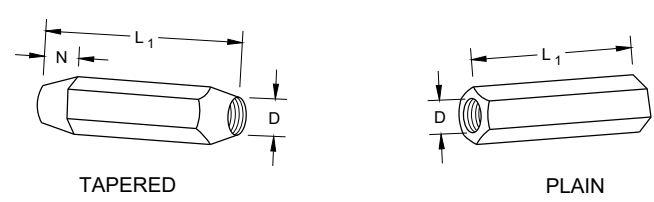
**LONGITUDINAL SECTION**  
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

**EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)**

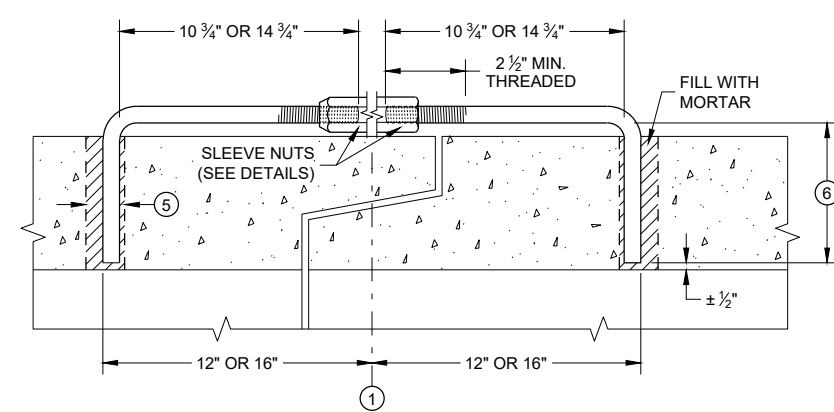
**ADJUSTABLE TIE ROD TABLE**

| PIPE DIAMETER | TIE ROD DIAMETER | D   | L <sub>1</sub> | N      |
|---------------|------------------|-----|----------------|--------|
| 12 - 60       | 5/8              | 5/8 | 5              | 1/2    |
| 66 - 84       | 3/4              | 3/4 | 5              | 1/2    |
| 90 - 144      | 1                | 1   | 7              | 1 1/16 |

DIMENSIONS SHOWN ARE IN INCHES

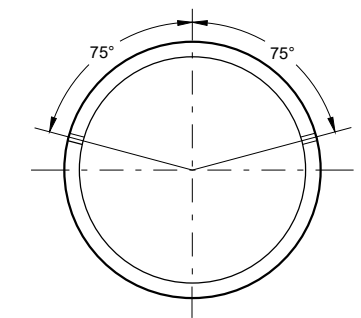


**RIGHT AND LEFT THREADS SLEEVE NUTS**



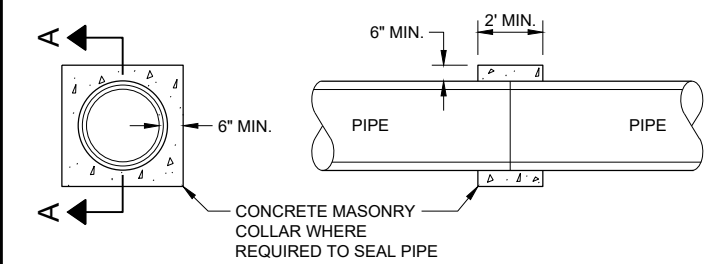
**LONGITUDINAL SECTION**

**ADJUSTABLE TIE ROD (ALTERNATE NO. 3)**



PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

**TRANSVERSE SECTION**



**SECTION A - A**  
**CONCRETE COLLAR DETAIL**

**JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
November 2021 /S/ Rodney Taylor  
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

SDD 08F04 - 08

SDD 08F04 - 08

**GENERAL NOTES**

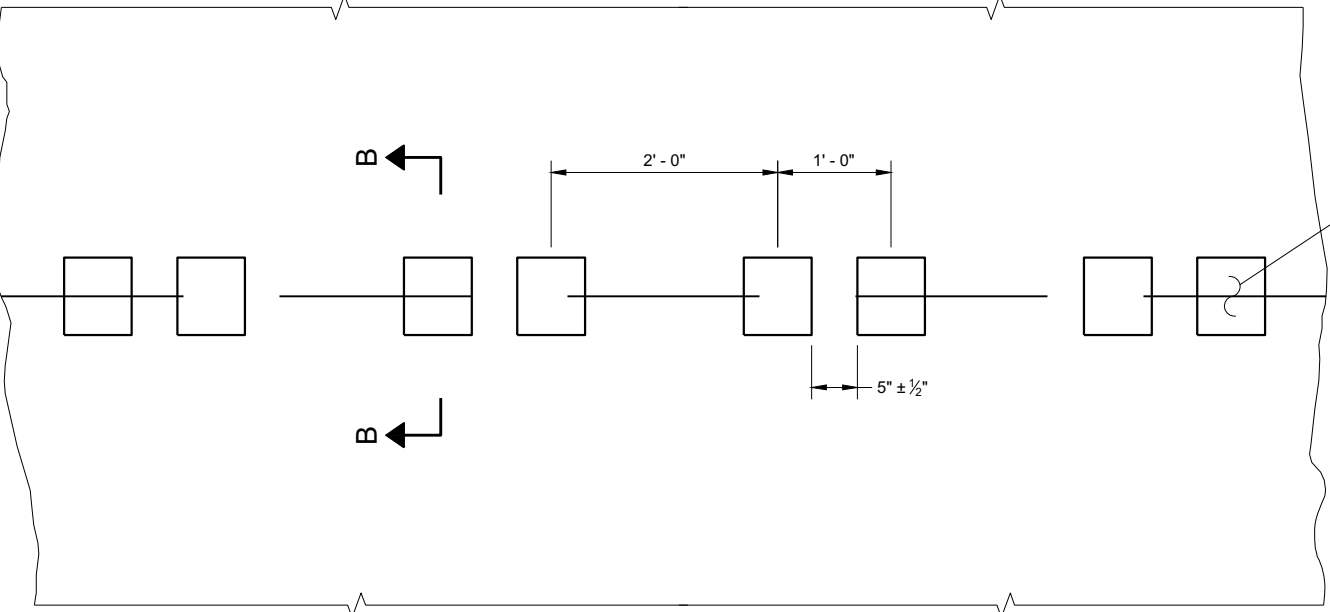
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

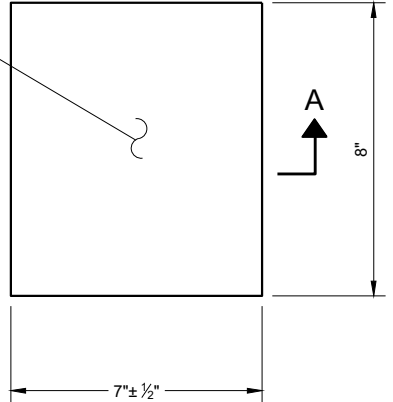
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

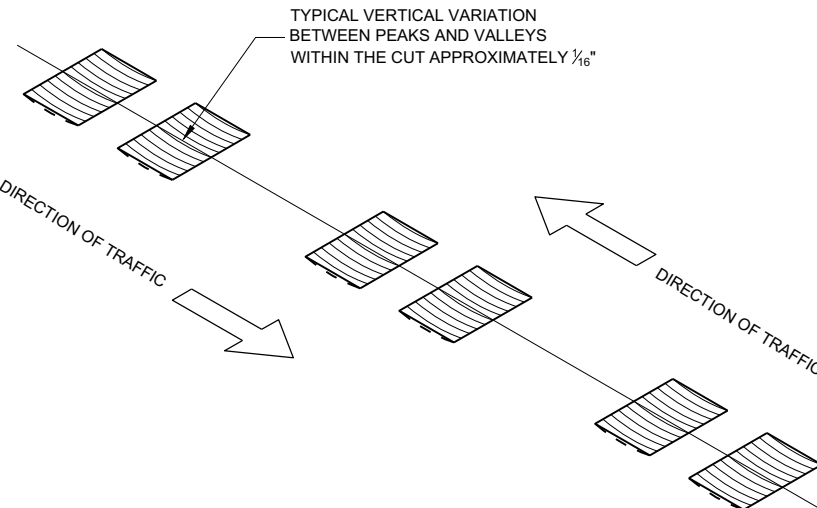
- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



**PLAN VIEW  
SHOULDER WITH GROOVES**

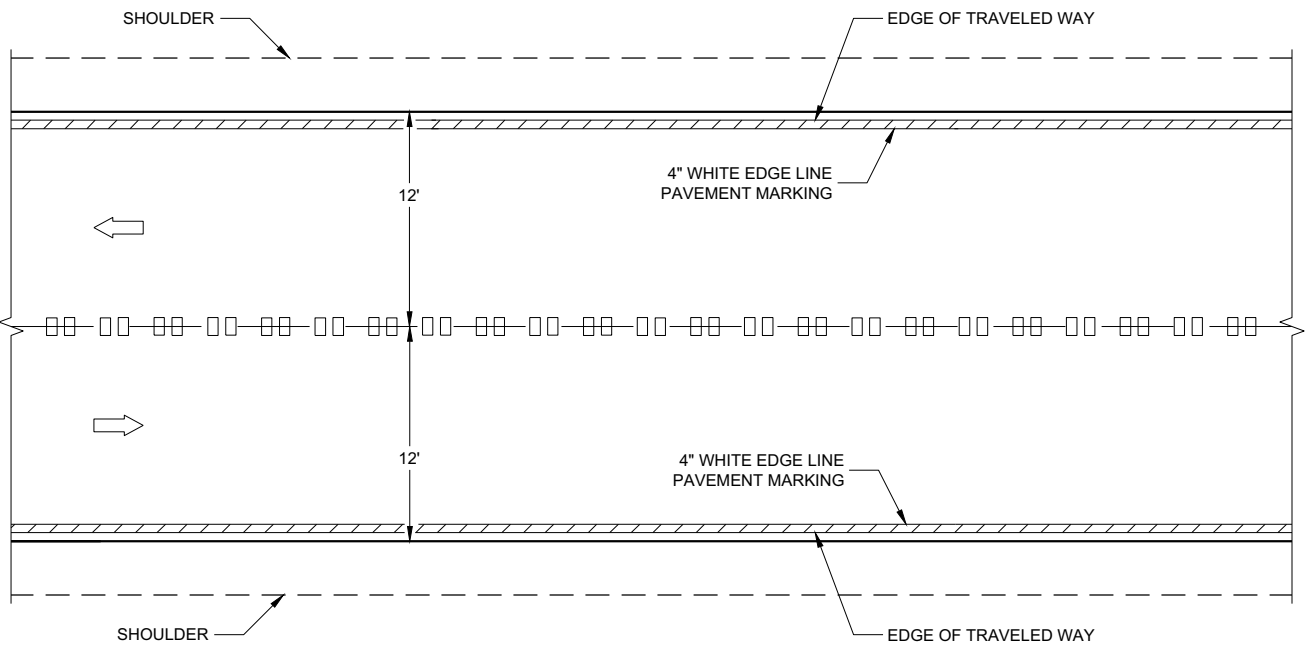


**PLAN VIEW  
(SINGLE GROOVE)**

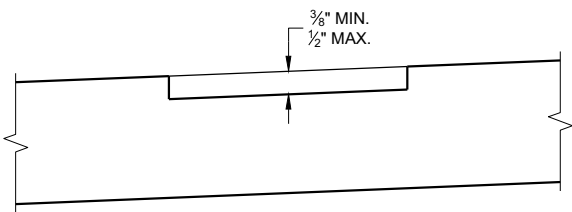


**ISOMETRIC**

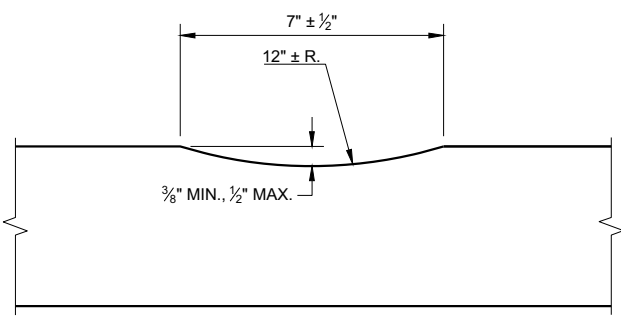
**PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP**



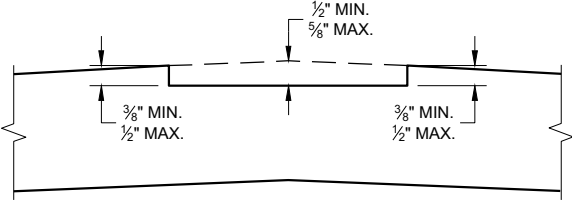
**CENTERLINE GROOVES ON TWO-WAY ROADWAYS**



**SECTION B - B  
SUPERELEVATED ROADWAY**



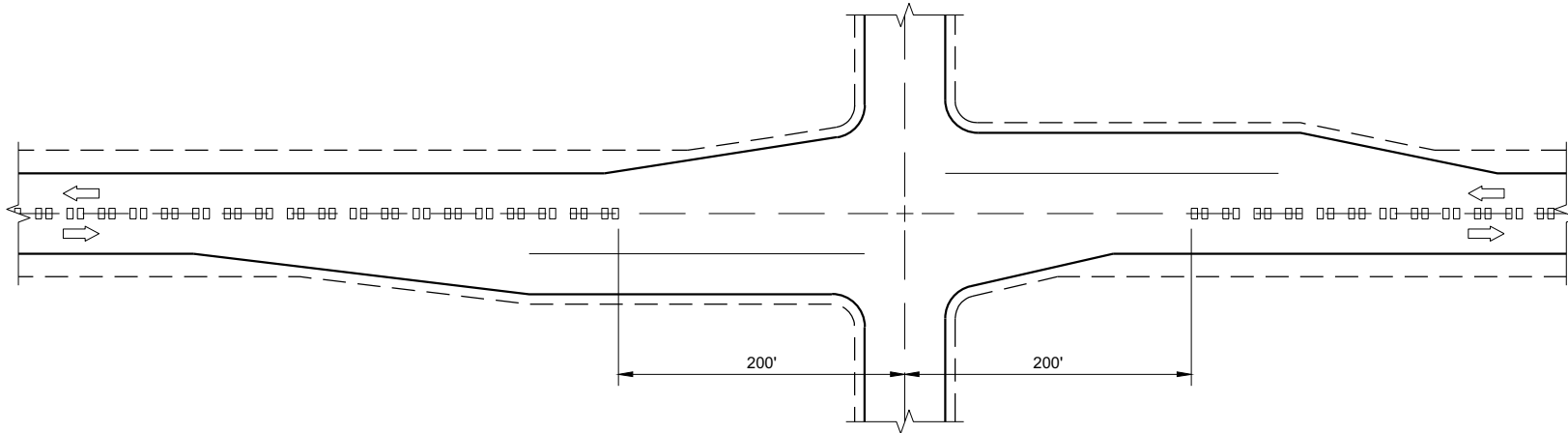
**SECTION A - A**



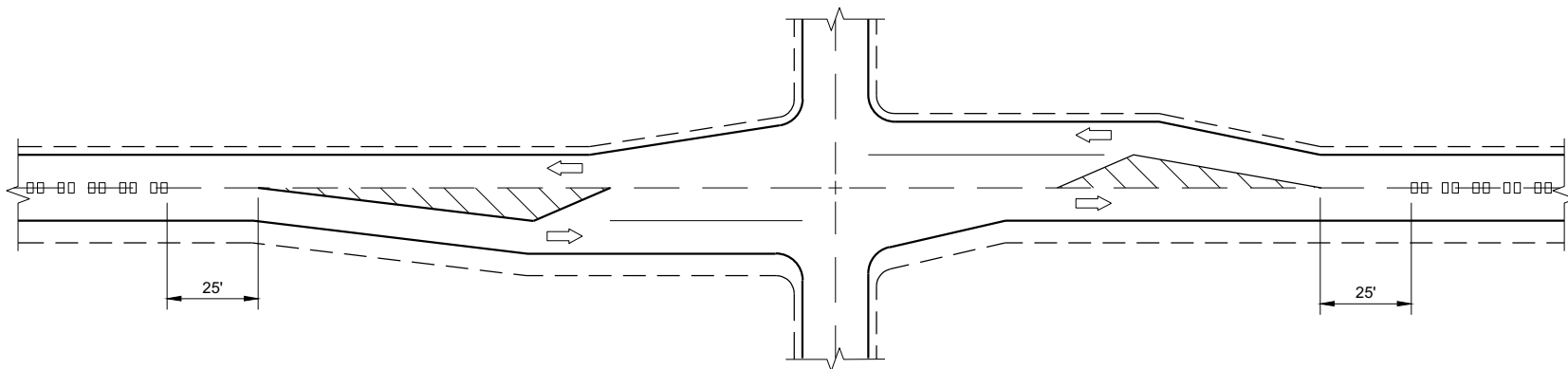
**SECTION B - B  
CROWNED ROADWAY**

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

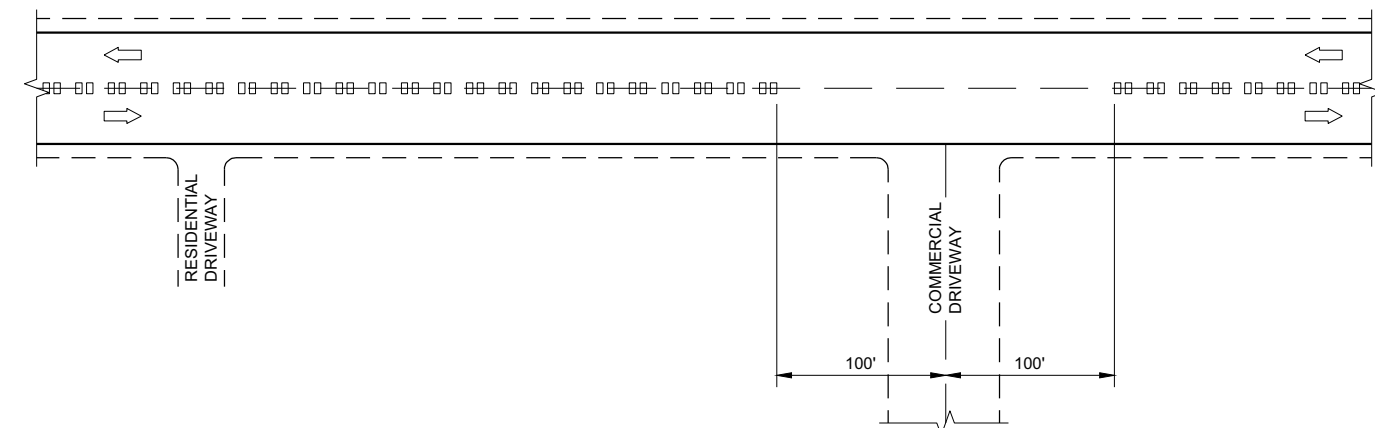
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



**CENTERLINE GROOVES AT INTERSECTIONS**



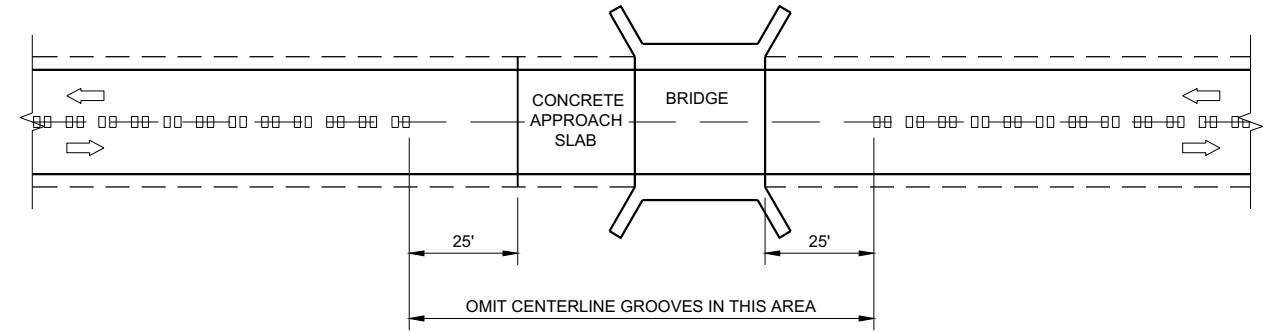
**CENTERLINE GROOVES AT INTERSECTIONS  
(WITH LEFT TURN LANES)**



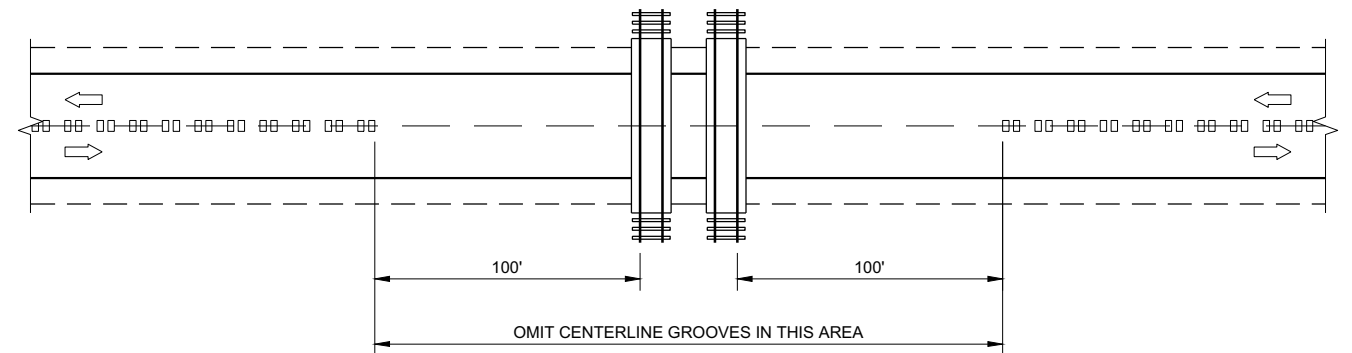
**CENTERLINE GROOVES AT DRIVEWAYS<sup>①</sup>**

**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**

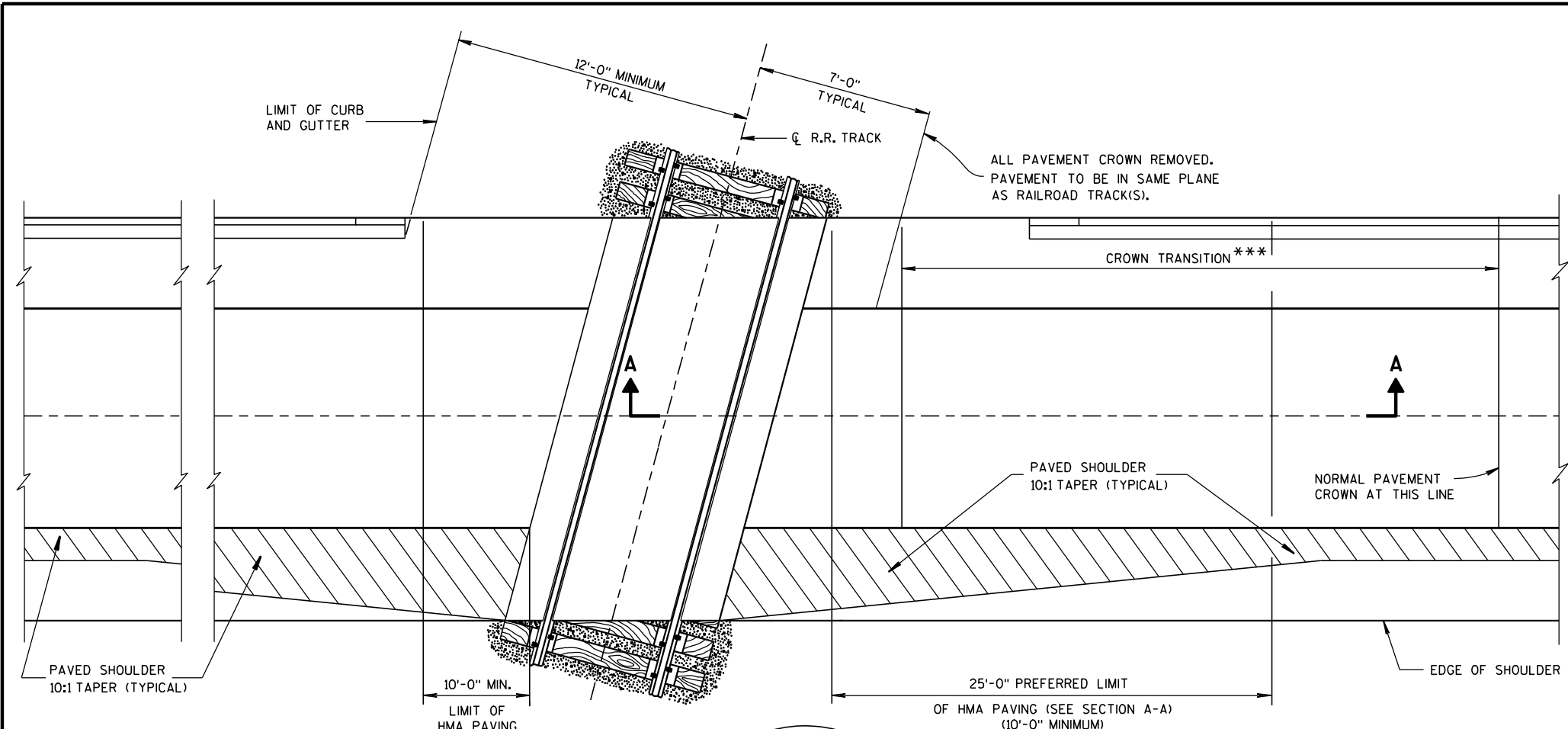
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SDD 13A11 - 03b

SDD 13A11 - 03b

|                                                              |                                                                |
|--------------------------------------------------------------|----------------------------------------------------------------|
| <b>2-LANE RURAL<br/>CENTERLINE RUMBLE STRIP,<br/>MILLING</b> |                                                                |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION           |                                                                |
| APPROVED<br>7/2018<br>DATE                                   | /S/ Rodney Taylor<br>ROADWAY STANDARDS DEVELOPMENT<br>ENGINEER |
| <small>FHWA</small>                                          |                                                                |



URBAN

RURAL

**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.

TIMBER, CONCRETE OR RUBBER CROSSING SURFACE MATERIAL, RAILS, TIES, BALLAST, GEOTEXTILE FABRIC AND CROSSING DRAINAGE SYSTEM BY OTHERS UNLESS OTHERWISE PROVIDED.

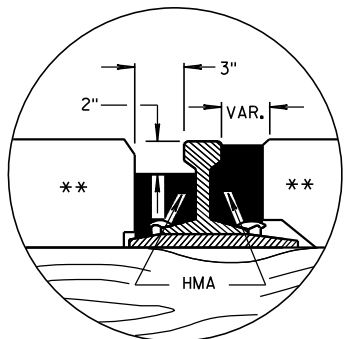
HMA PAVEMENT APPROACHES AND HMA PAVEMENT CROSSING SURFACES TO BE PLACED BY CONTRACTOR UNLESS OTHERWISE PROVIDED.

HMA FLANGEWAY AND FIELD FILLERS TO BE PLACED AND THOROUGHLY HAND COMPACTED BY THE CONTRACTOR WHEN NOT PROVIDED BY OTHERS. SEE DETAIL B. HMA FILLERS NOT REQUIRED WHEN RUBBER FILLERS ARE PROVIDED.

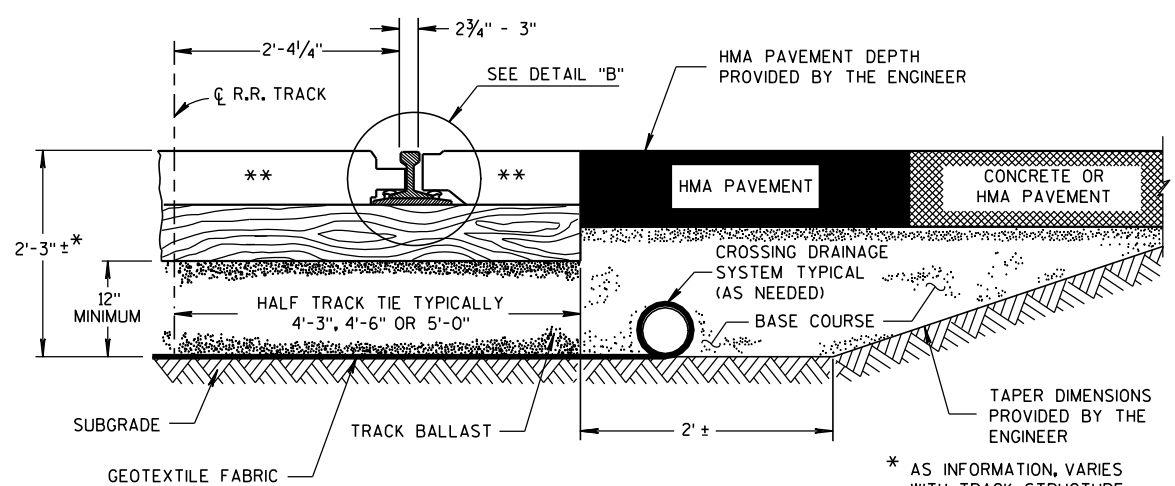
HMA PAVEMENT SHALL BE ROLLED PARALLEL TO THE TRACK.

\*\* CROSSING SURFACE MAY BE TIMBER, RUBBER, CONCRETE, HMA PAVEMENT OR A COMBINATION OF SUCH MATERIALS.

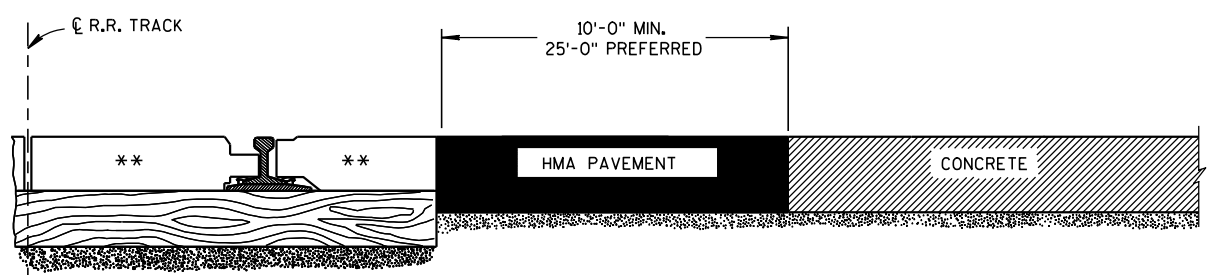
\*\*\* CROWN TRANSITION LENGTH SHOWN ELSEWHERE IN THE PLAN.



**DETAIL B  
HMA FLANGEWAY  
AND FIELD FILLERS**



**TYPICAL HALF SECTION**



**SECTION A-A  
CONCRETE PAVEMENT APPROACH**



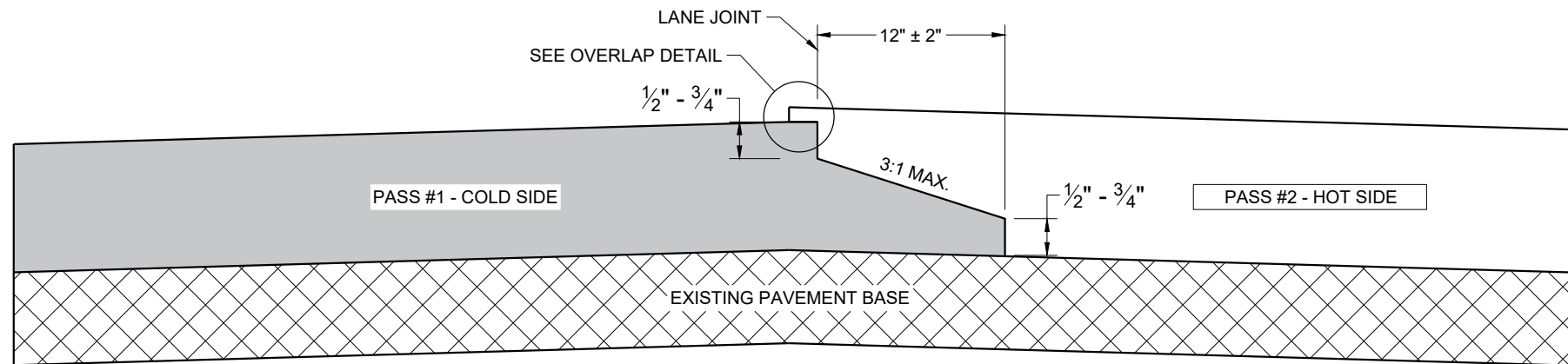
**SECTION A-A  
HMA PAVEMENT APPROACH**

**EXAMPLES OF PAVEMENT APPROACHES**

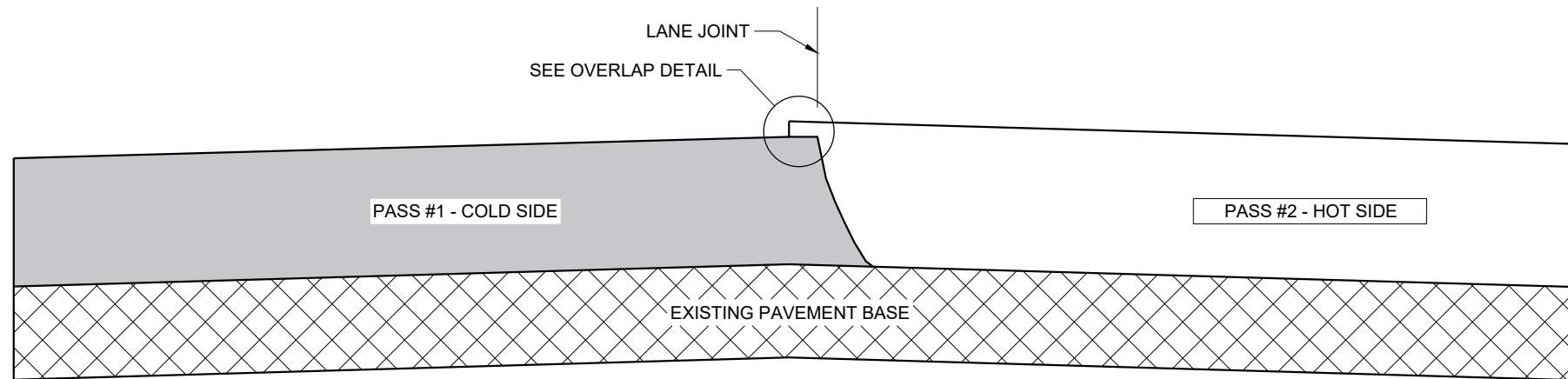
**PAVEMENT DETAILS  
FOR RAILROAD APPROACH**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

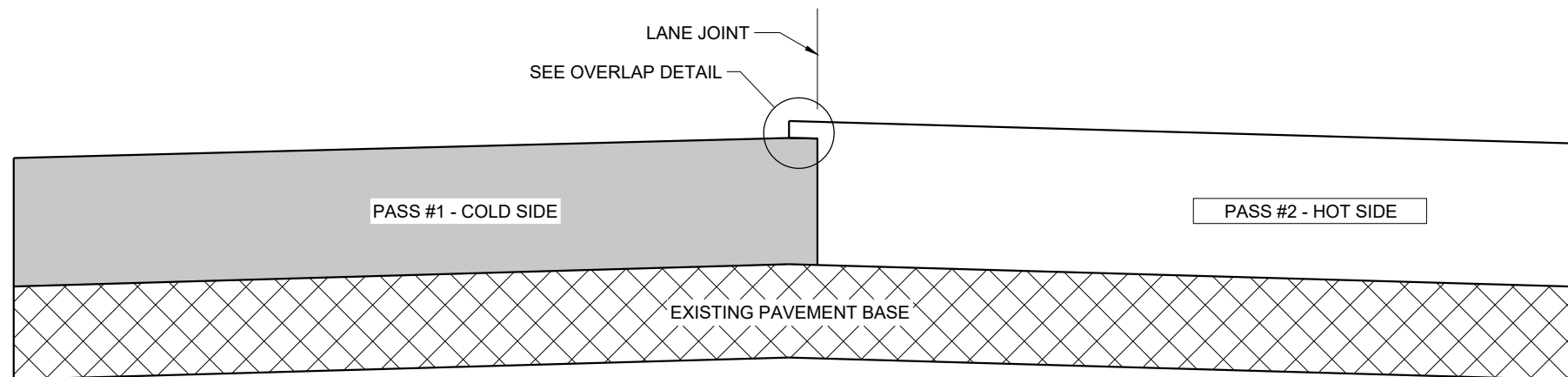
APPROVED  
8-28-09 /S/ Ronald E. Adams  
DATE CHIEF, RAILROADS & HARBORS SECTION  
FHWA



**TYPICAL PAVEMENT CROSS SECTION  
NOTCHED WEDGE JOINT**



**TYPICAL PAVEMENT CROSS SECTION  
VERTICAL JOINT**



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

**GENERAL NOTES**

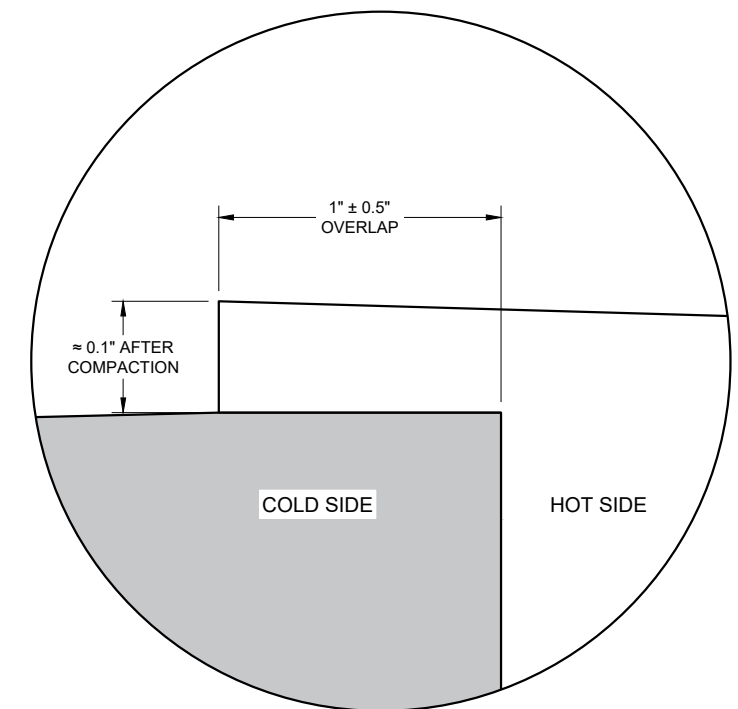
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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



**OVERLAP DETAIL (TYPICAL)**

6

6

SDD 13C19 - 03

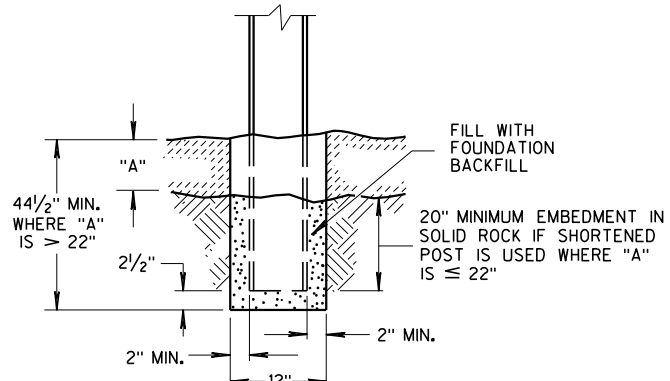
SDD 13C19 - 03

|                                                    |                                           |
|----------------------------------------------------|-------------------------------------------|
| <b>HMA LONGITUDINAL JOINTS</b>                     |                                           |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                                           |
| APPROVED<br>November 2020<br>DATE                  | /S/ Steven Hefel<br>HMA PAVEMENT ENGINEER |
| FHWA                                               |                                           |

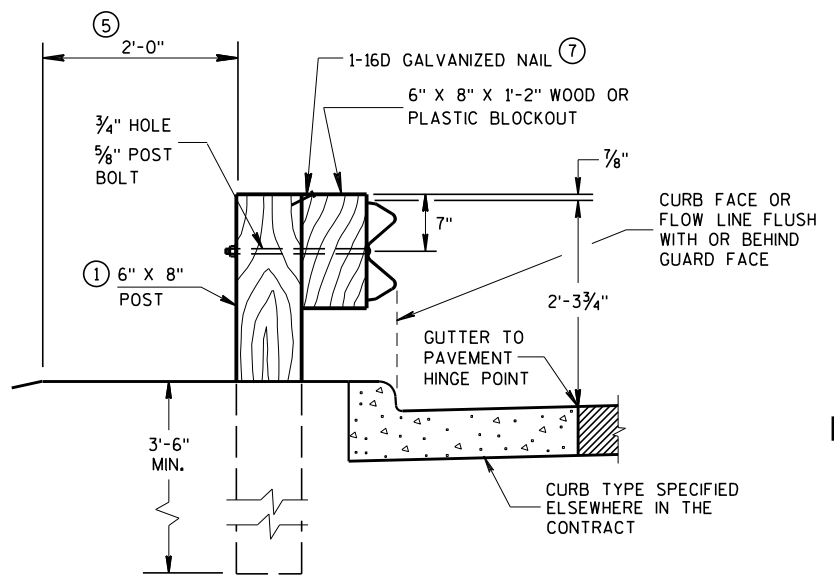
**GENERAL NOTES**

- ① W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS. APPROVED PLASTIC BLOCKOUT DESIGNS MAY VARY FROM THIS TYPICAL DETAIL WHEN USED IN CONJUNCTION WITH STEEL POSTS. DO NOT MIX STEEL POSTS AND WOOD POSTS IN A SINGLE INSTALLATION.
- ② USE STRUCTURAL STEEL POSTS CONFORMING TO ASTM A 36. GALVANIZED POSTS ACCORDING TO AASHTO M 111. EITHER SET THE POSTS IN DRILLED HOLES OR DRIVE TO GRADE. REMOVE MUSHROOMING CAUSED BY DRIVING AND REPAIR DAMAGED SPELTER COATING ON GALVANIZED POSTS.
- ③ INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ④ USE EITHER WOOD OR APPROVED PLASTIC BLOCKOUTS ON WOOD POSTS.
- ⑤ IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).
- ⑥ IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 1/2 INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN THE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATELY.
- ⑦ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

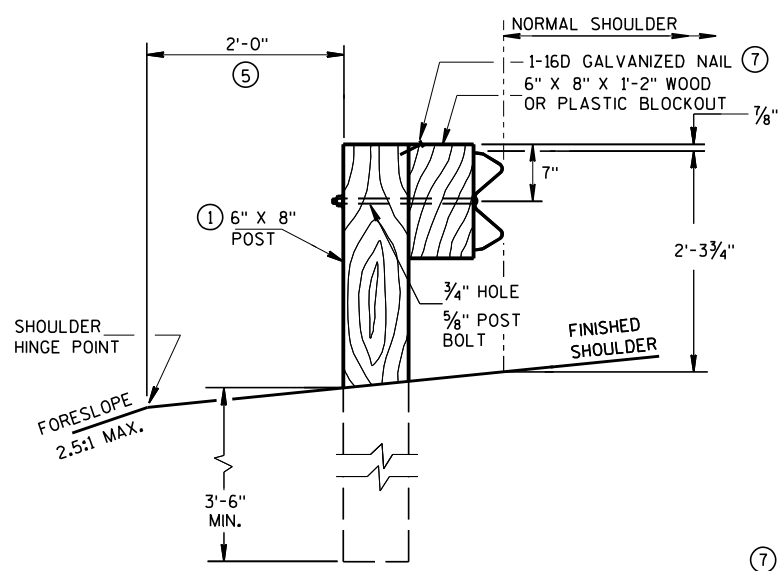
INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS. ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



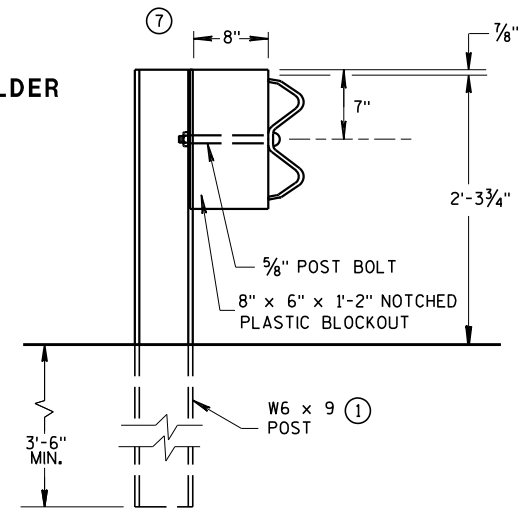
**END VIEW SETTING STEEL OR WOOD POST IN ROCK** ⑥



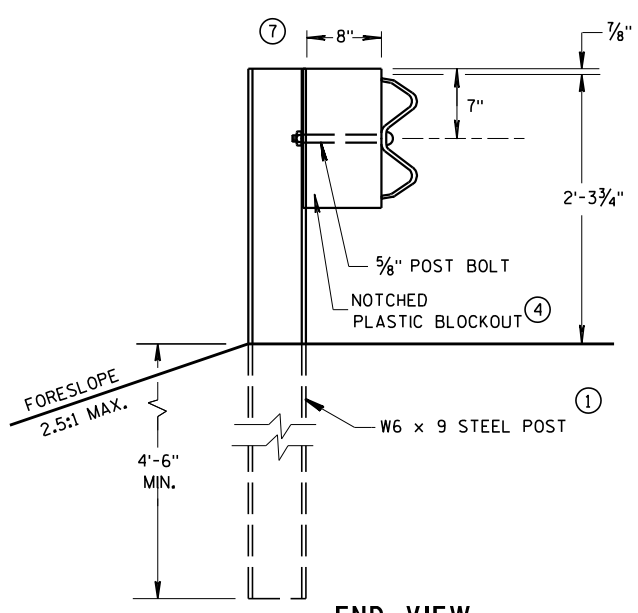
**END VIEW LOCATED ALONG A CURBED ROADWAY**



**END VIEW LOCATED ALONG A ROADWAY SHOULDER STANDARD INSTALLATION**

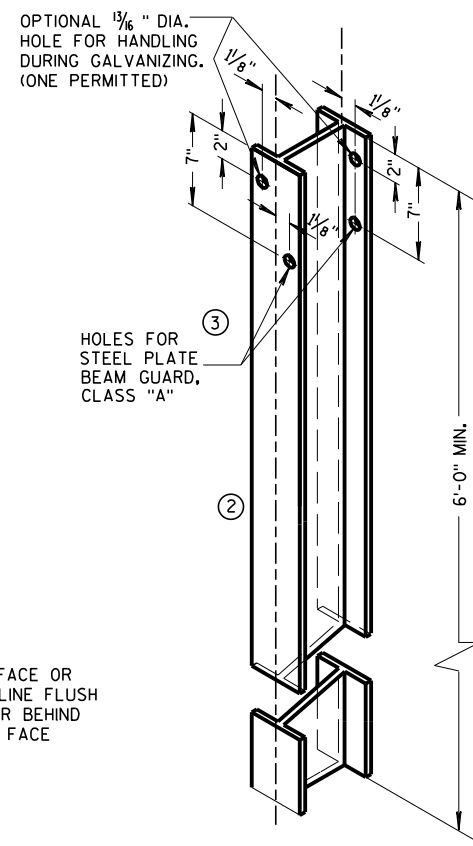


**END VIEW STEEL POST & NOTCHED PLASTIC BLOCKOUT ALTERNATIVE STANDARD INSTALLATION**

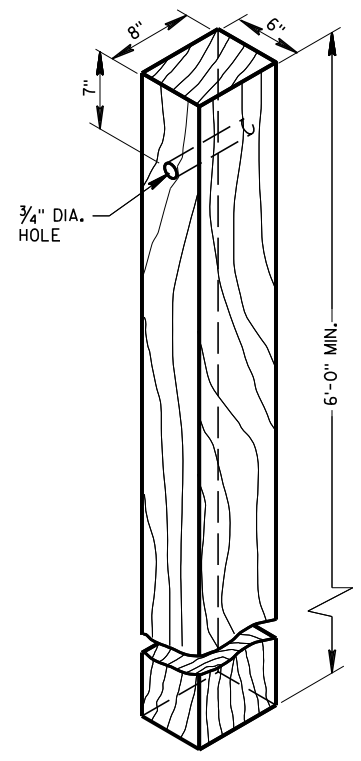


**END VIEW LONGER POST AT HALF POST SPACING W BEAM (LHW)**

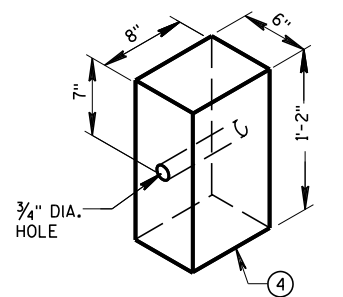
**TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD**



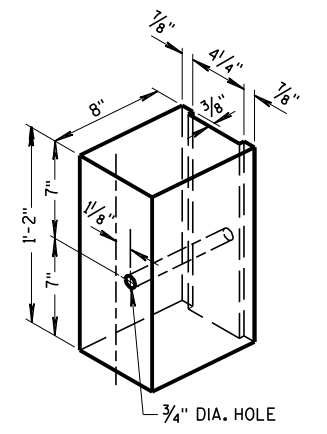
**STEEL POST & HOLE PUNCHING DETAIL (W6 X 9)** ①  
ALL HOLES 1/8" DIAMETER EXCEPT AS NOTED



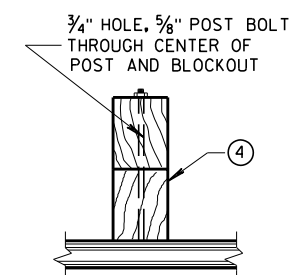
**WOOD POST (6" X 8") NOMINAL**



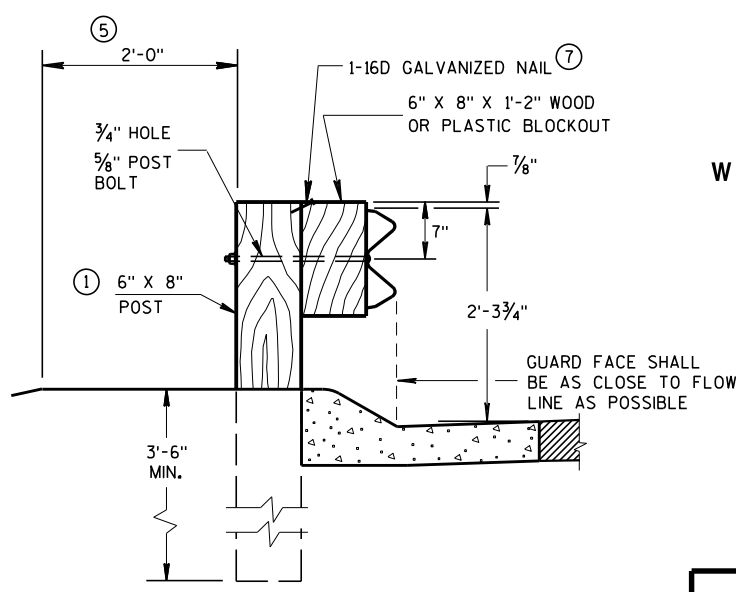
**WOOD OR PLASTIC BLOCKOUT FOR WOOD POSTS**



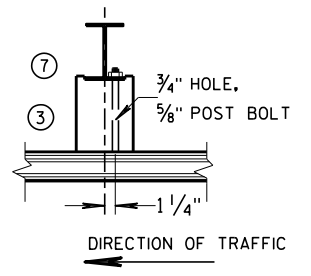
**TYPICAL NOTCHED PLASTIC BLOCKOUT FOR STEEL POSTS** ①



**PLAN VIEW WOOD POST, BLOCKOUT & BEAM**



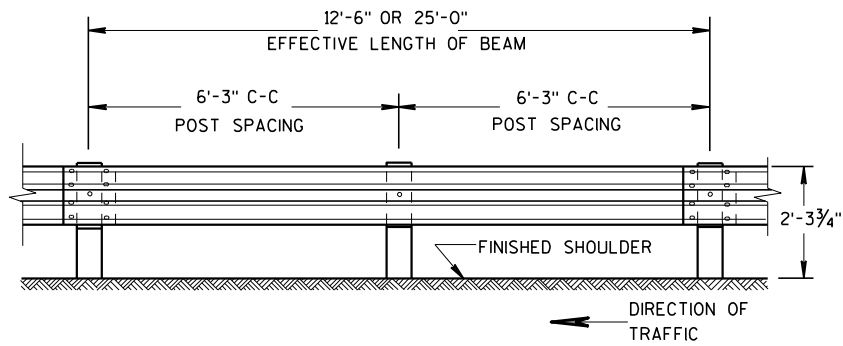
**END VIEW LOCATED ALONG A MOUNTABLE CURBED ROADWAY**



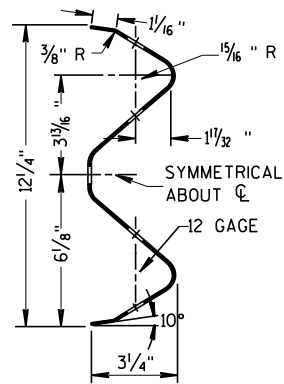
**PLAN VIEW STEEL POST, NOTCHED PLASTIC BLOCKOUT & BEAM**

**STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS**

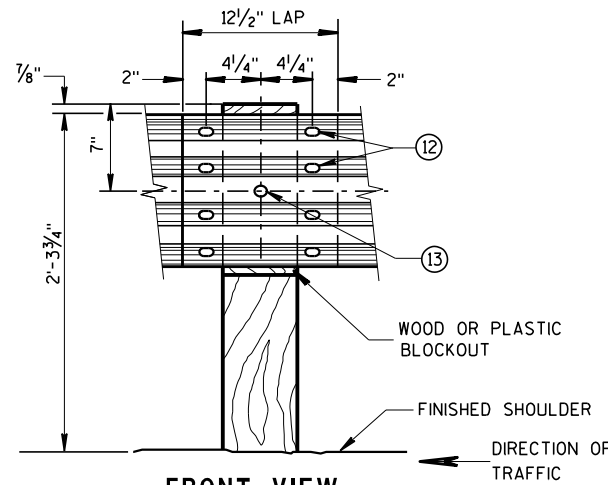
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



**FRONT VIEW  
POST SPACING STANDARD INSTALLATION**



**SECTION THRU W BEAM**

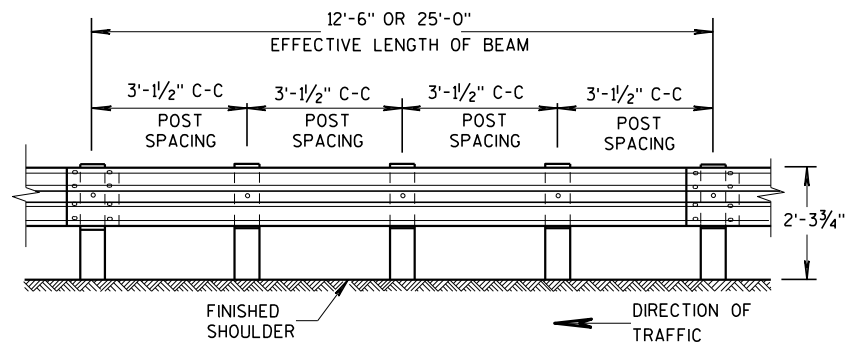


**FRONT VIEW  
BEAM SPLICE AT WOOD POST  
AND POST MOUNTING DETAIL**

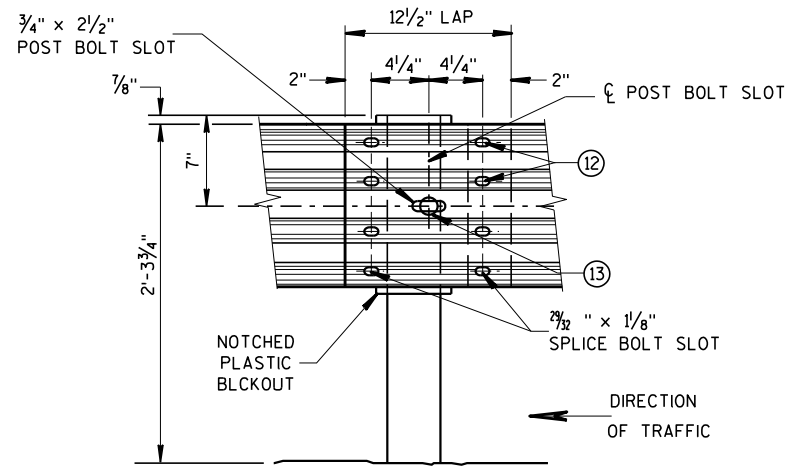
**GENERAL NOTES**

FURNISH GUARDRAIL DEFLECTORS FROM APPROVED PRODUCTS LIST.

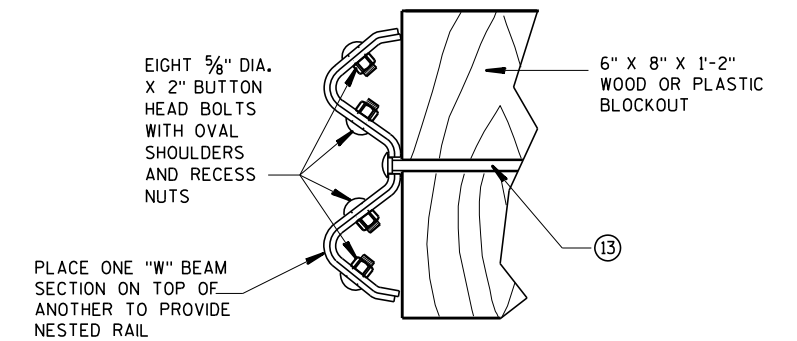
- ⑨ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINA. START REFLECTORS AT POST #9 AND SPACE EVENLY EVERY 100 FEET (MAX.) TO THE END OF GUARDRAIL RUN, USING A MINIMUM OF 3 REFLECTORS.
- ⑫ 8 - 5/8"  $\phi$  X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
- ⑬ 5/8" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH 5/8" DIA. F844 FLAT WASHER UNDER NUT.



**FRONT VIEW  
POST SPACING FOR LONGER POST  
AT HALF POST SPACING W BEAM (LHW)**

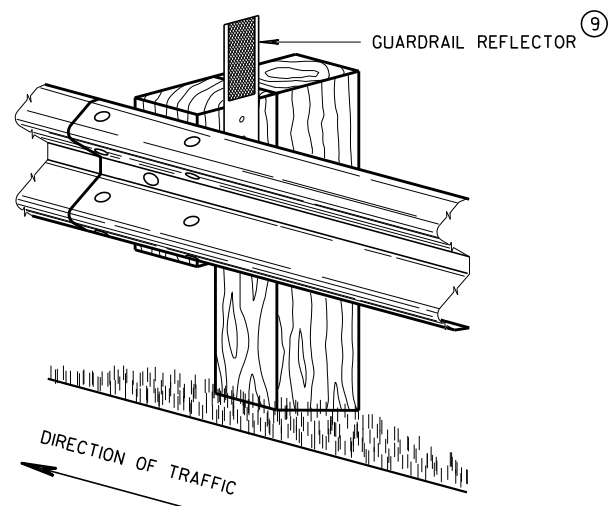


**FRONT VIEW  
BEAM SPLICE AT STEEL POST  
TYPICAL SPlicing DETAILS  
OF STEEL PLATE BEAM GUARD**

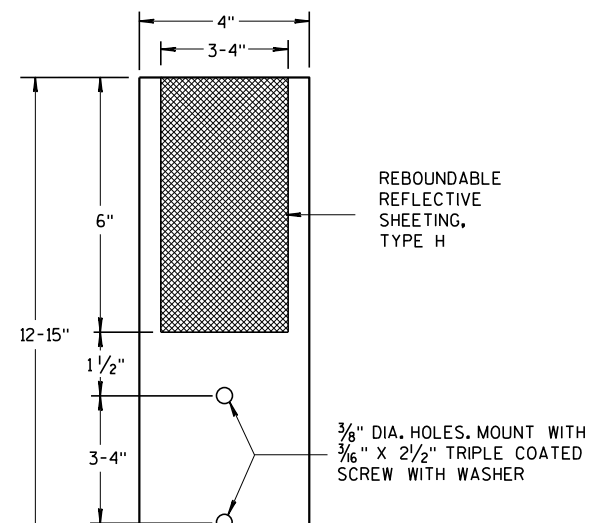


**NESTED W BEAM (NW)**  
USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR CONSTRUCTING NESTED W BEAM (NW)

\* USE DOUBLE SIDED WHITE GUARDRAIL REFLECTORS ON ROADWAYS WITH BI-DIRECTIONAL TRAFFIC (NO MEDIAN). USE SINGLE SIDED WHITE (RIGHT SIDE) AND SINGLE SIDED YELLOW (LEFT SIDE) ON ROADWAYS WITH MEDIAN SEPARATION.



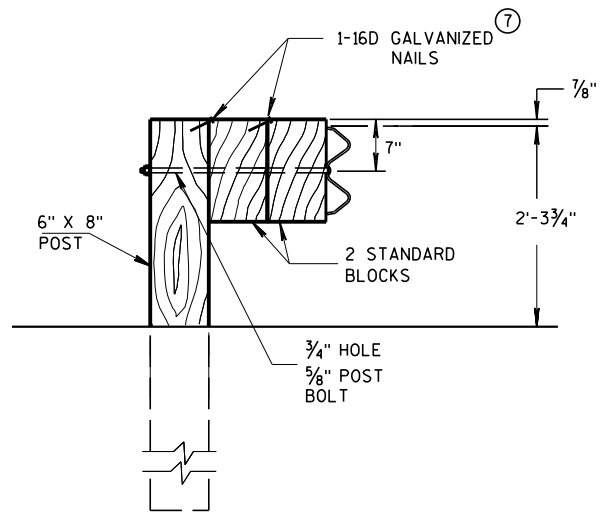
**4" X 12" GUARDRAIL REFLECTOR DETAIL  
AND TYPICAL INSTALLATION \***



**4" x 12" GUARDRAIL REFLECTOR**

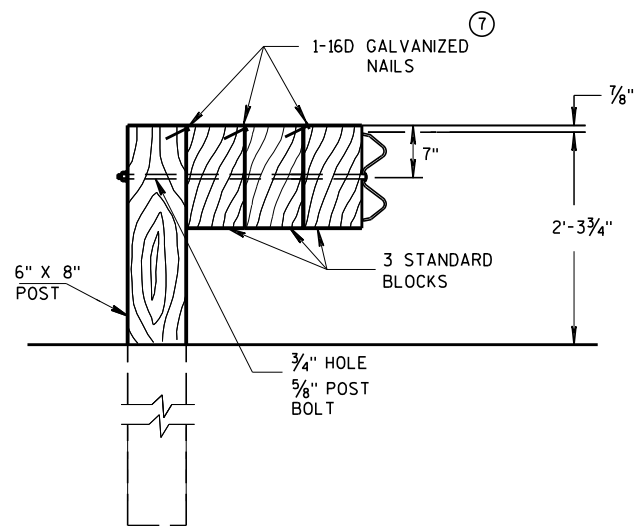
**STEEL PLATE BEAM GUARD,  
CLASS "A",  
INSTALLATION & ELEMENTS**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



**DETAIL FOR DOUBLE BLOCKS**

THE NUMBER OF DOUBLE BLOCK POSTS WITHIN A BARRIER RUN IS UNLIMITED

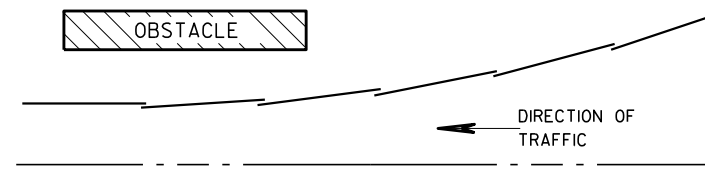


**DETAIL FOR TRIPLE BLOCKS**

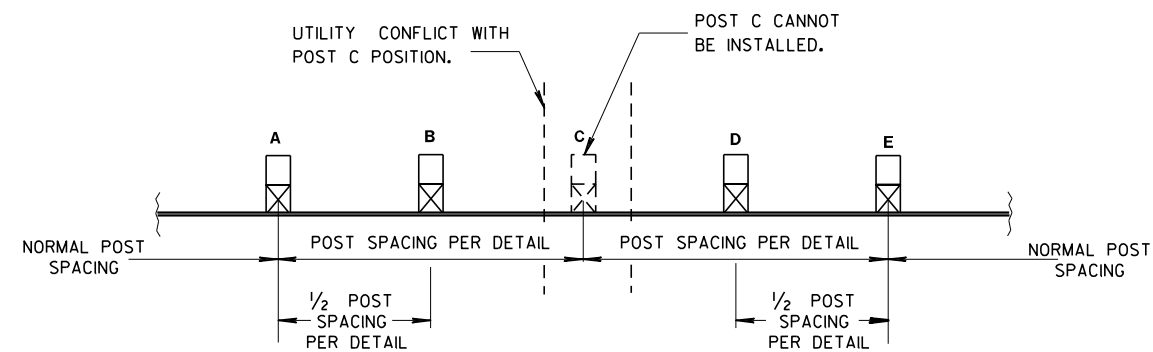
TRIPLE BLOCK DETAIL IS LIMITED TO ONE LOCATION WITHIN A BEAM GUARD RUN.

NOTES: USE DOUBLE OR TRIPLE BLOCKS WHEN UNDERGROUND OBSTACLES PREVENT THE POST FROM BEING INSTALLED.

DO NOT USE EXTRA 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.



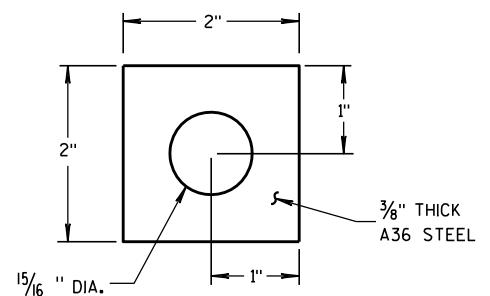
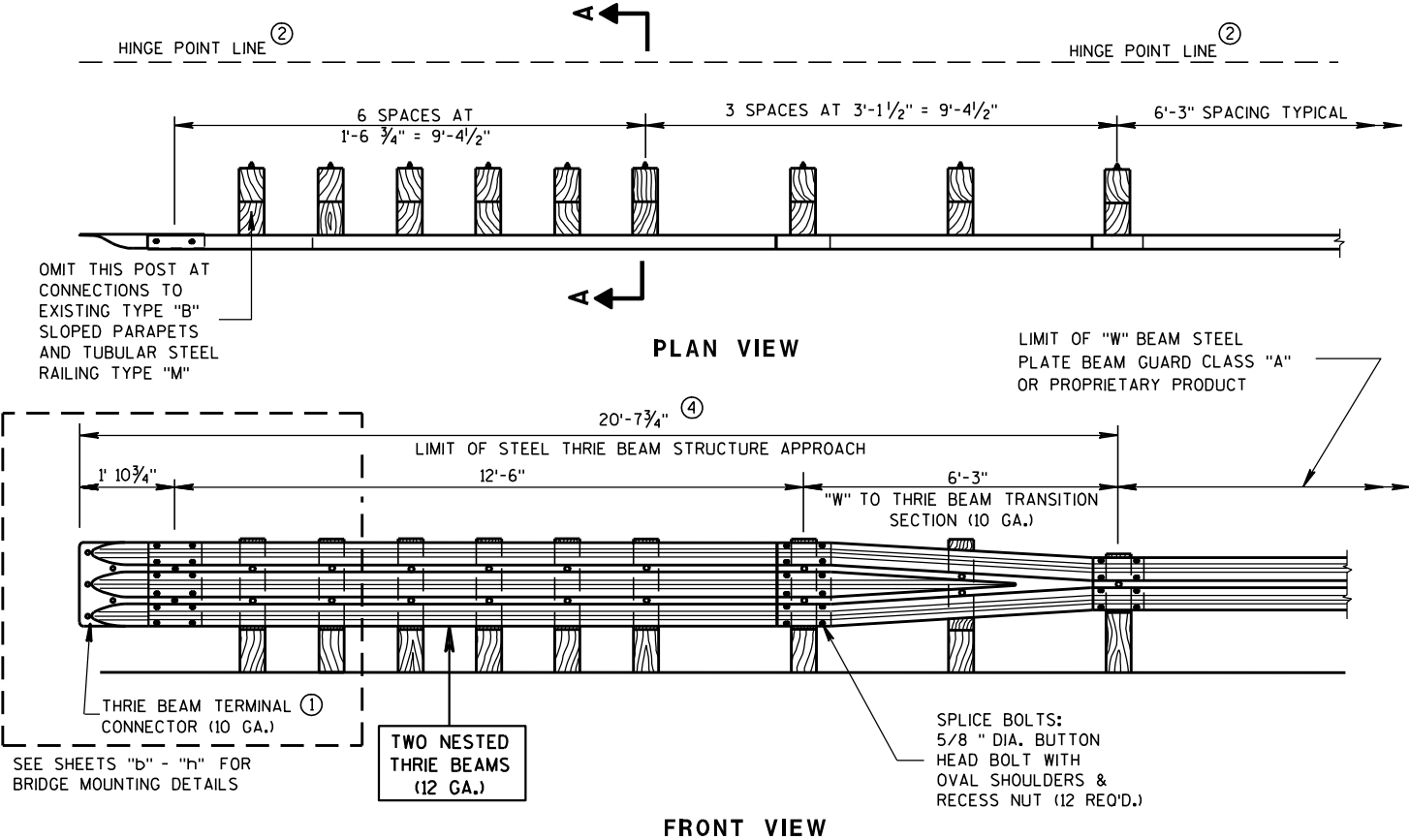
**PLAN VIEW  
BEAM LAPPING DETAIL**



**POST DRIVING FOR CONTINUOUS  
UNDERGROUND OBSTRUCTION**

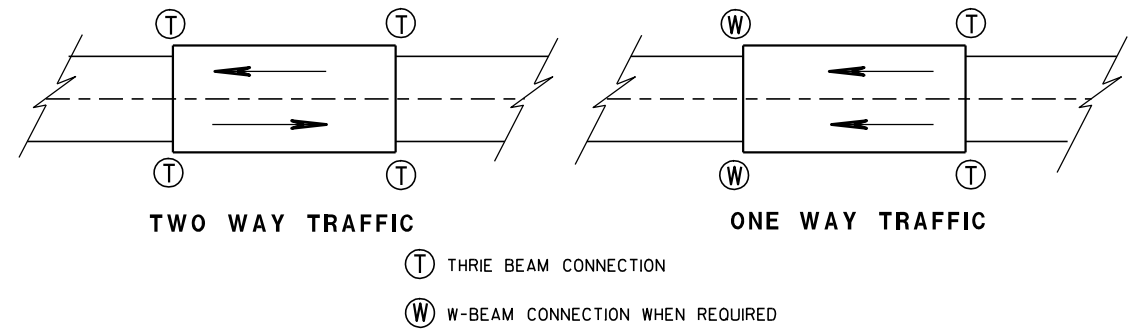
|                                                                               |                                                  |
|-------------------------------------------------------------------------------|--------------------------------------------------|
| <b>STEEL PLATE BEAM GUARD,<br/>CLASS "A",<br/>INSTALLATION &amp; ELEMENTS</b> |                                                  |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION                            |                                                  |
| APPROVED<br>June 2017                                                         | /s/ Rodney Taylor                                |
| DATE                                                                          | ROADWAY STANDARDS DEVELOPMENT<br>UNIT SUPERVISOR |
| FHWA                                                                          |                                                  |



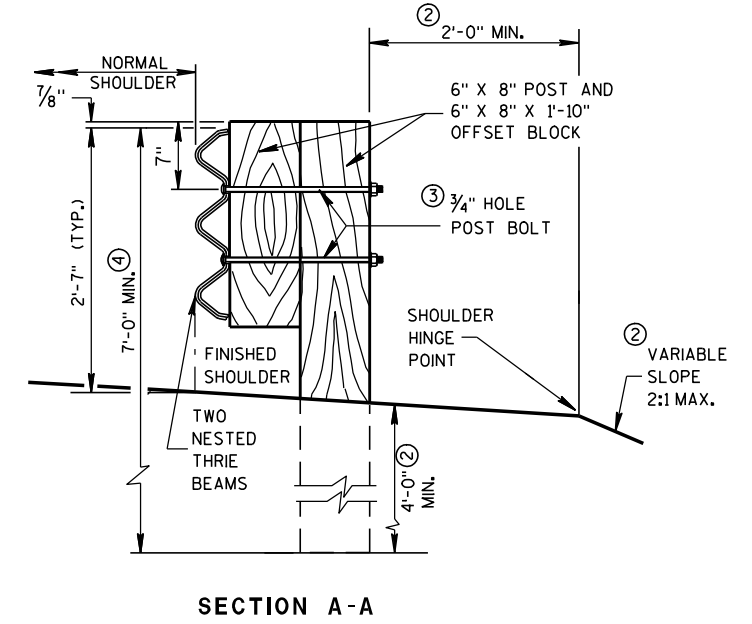
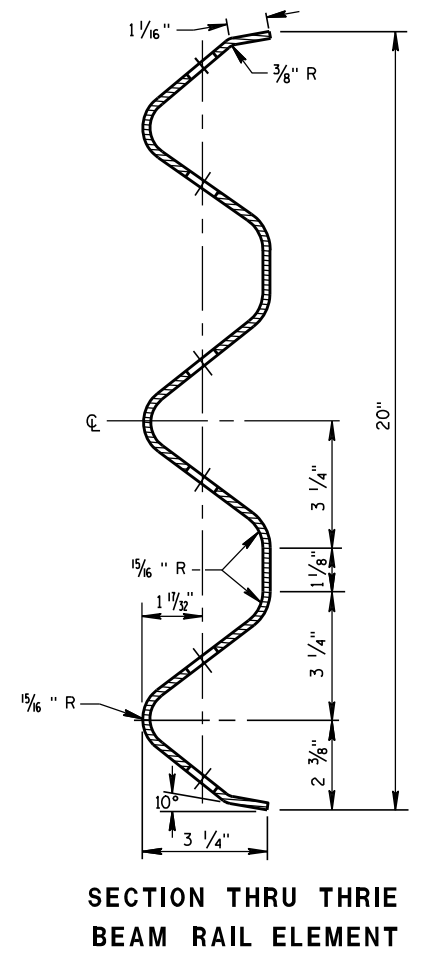
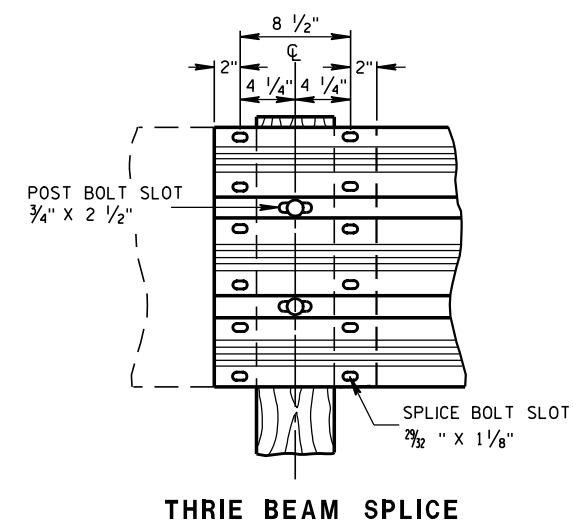
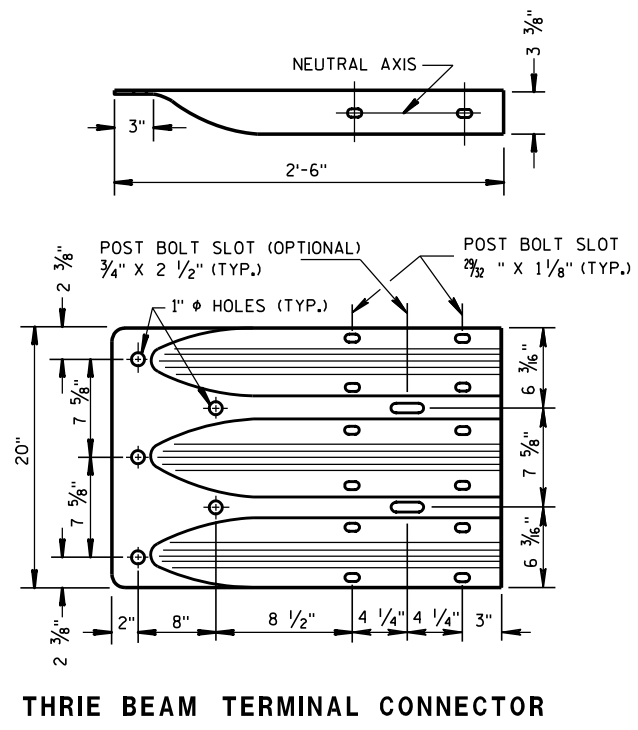


**GENERAL NOTES**

- BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS, DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3".
  - DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.
  - IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B15 FOR MORE DETAILS.
- ① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.
  - ② MINIMUM EMBEDMENT SHALL BE 4'-0". WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK SHOWN ON THE PLAN TYPICAL SECTIONS OR DETAILS, THE ENGINEER MAY ALLOW THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. OTHERWISE BUILD AS THE PLAN SHOWS OR AS THE ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST EMBEDMENT DEPTH TO 4'-6" OR MORE.
  - ③ POST BOLTS ARE 5/8" DIAMETER ASTM A307 BUTTON HEAD BOLT. A POST BOLT REQUIRES A 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX AND A 5/8" DIAMETER F844 FLAT WASHER. LENGTH OF POST BOLT MAY VARY.
  - ④ ALL WOOD POSTS MUST BE 6" X 8" AND AT LEAST 7'-0" LONG.



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



**STEEL THRIE BEAM STRUCTURE APPROACH**

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVED 8/31/2012 DATE /S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

**BILL OF MATERIALS**

| NOTE NO. | DESCRIPTION                                                                                          |
|----------|------------------------------------------------------------------------------------------------------|
| ①        | WOOD BREAKAWAY TERMINAL POST: 5 1/2" X 7 1/2" X 3'-9"                                                |
| ②        | STEEL TUBE TS 8" X 6" X 0.188", 6'-0"                                                                |
| ④        | WOOD BREAKAWAY CRT POST: 6" X 8" X 6'-0"                                                             |
| ⑤        | WOOD OFFSET BLOCKS: 6' X 8" X 1'-2"                                                                  |
| ⑥        | PIPE SLEEVE: 2" X 5 1/2" STANDARD PIPE                                                               |
| ⑦        | BEARING PLATE                                                                                        |
| ⑧        | BCT CABLE ASSEMBLY                                                                                   |
| ⑨        | CABLE ANCHOR BOX                                                                                     |
| ⑩        | STRUT & YOKE                                                                                         |
| ⑪        | STEEL PLATE BEAM, END PANEL 12 GA.                                                                   |
| ⑫        | STEEL PLATE BEAM: 12 GA. 13'-6 1/2"                                                                  |
| ⑬        | IMPACT HEAD                                                                                          |
| ⑭        | 0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS |

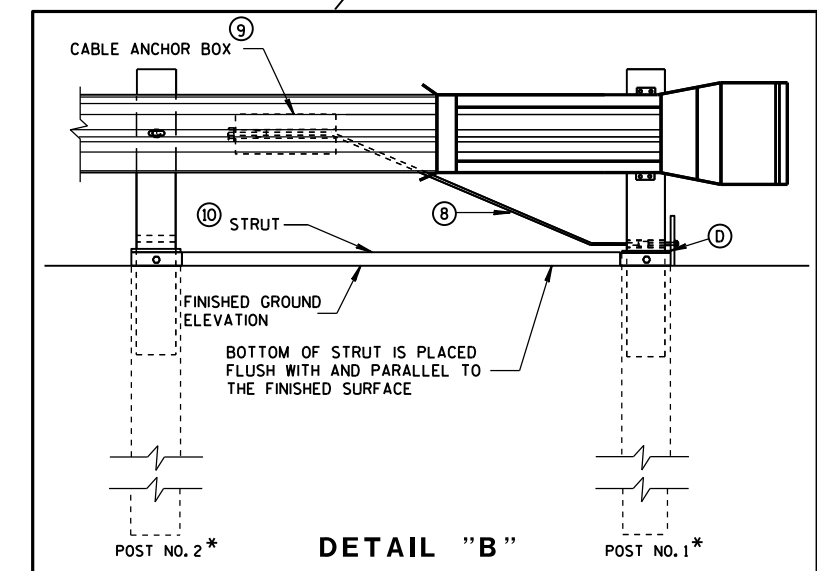
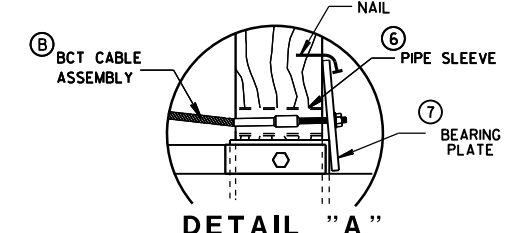
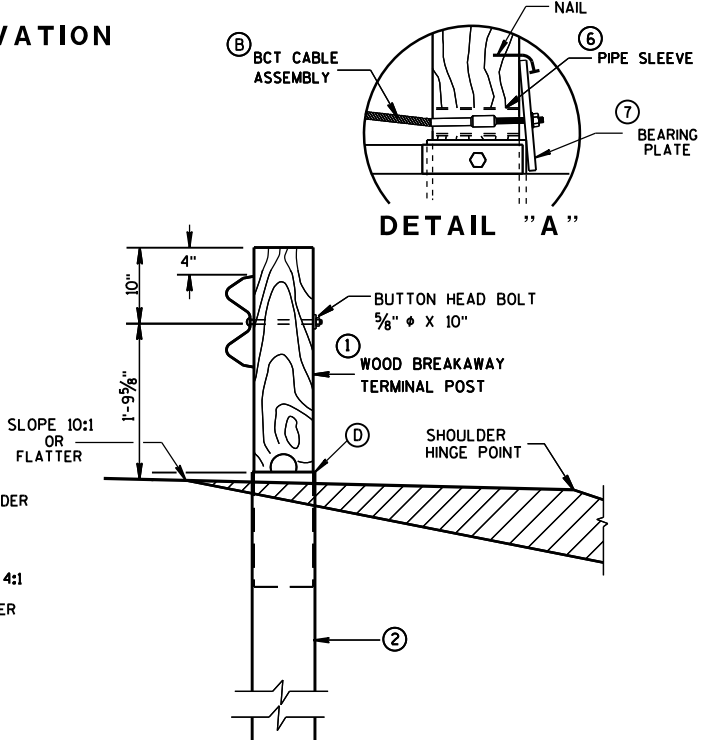
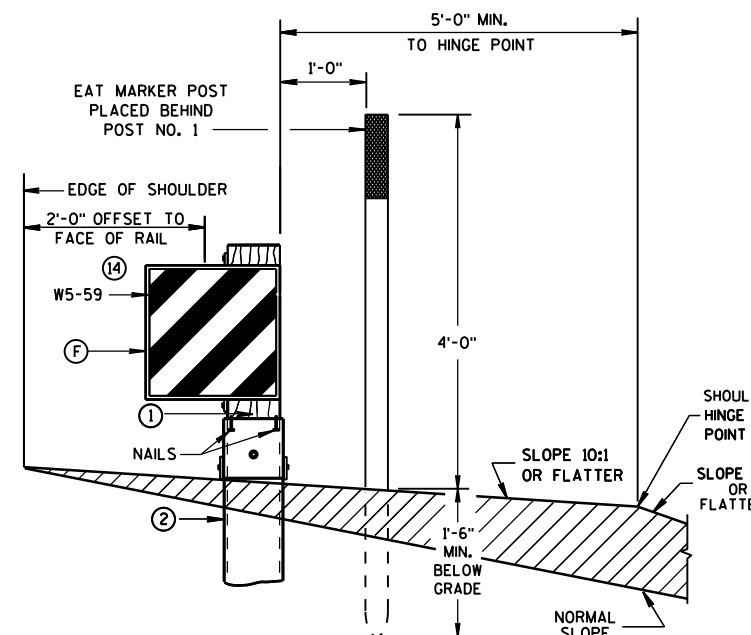
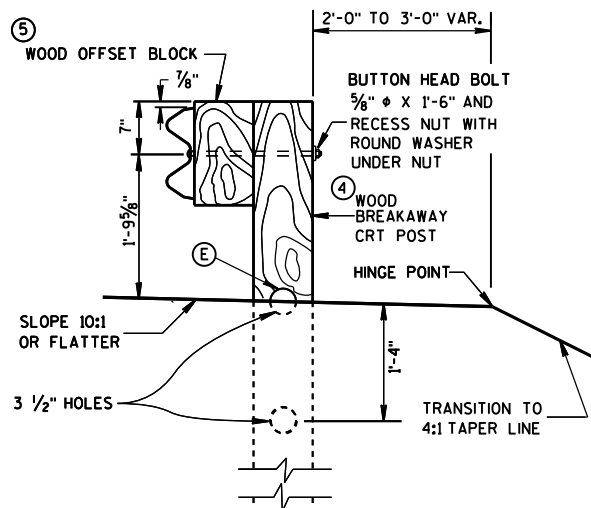
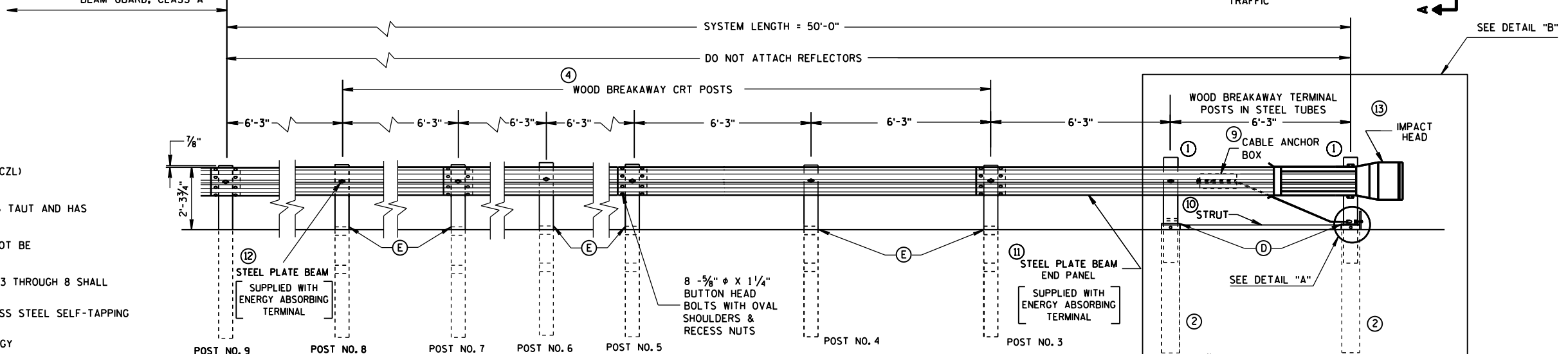
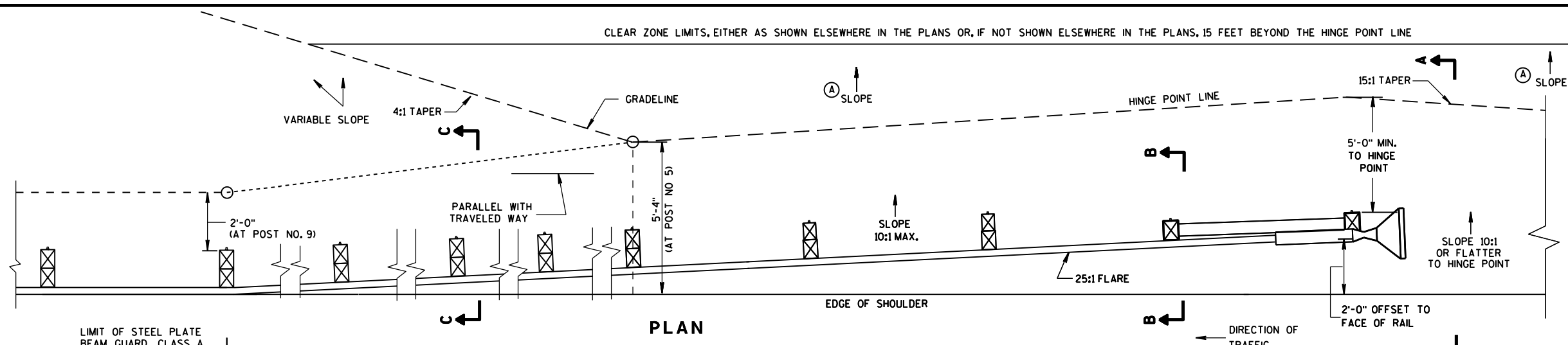
**GENERAL NOTES**

FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS.

- (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.
- (D) THE TOP OF THE STEEL TUBE ON POSTS 1 AND 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.
- (E) THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST 3 THROUGH 8 SHALL BE 3/4" ABOVE THE FINISHED GROUND LINE.
- (F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER.

STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.  
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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



**STEEL PLATE BEAM GUARD  
ENERGY ABSORBING TERMINAL**

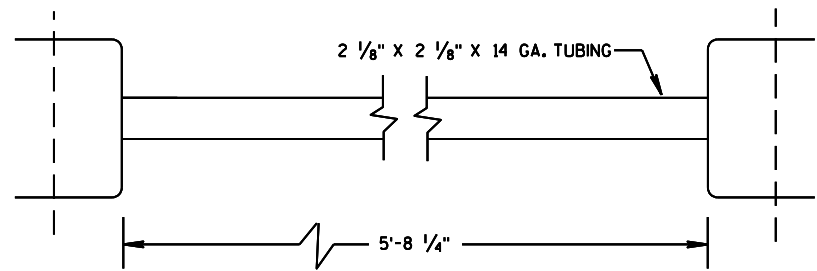
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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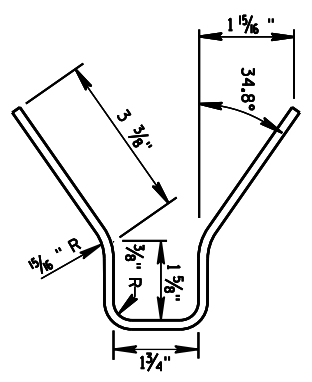
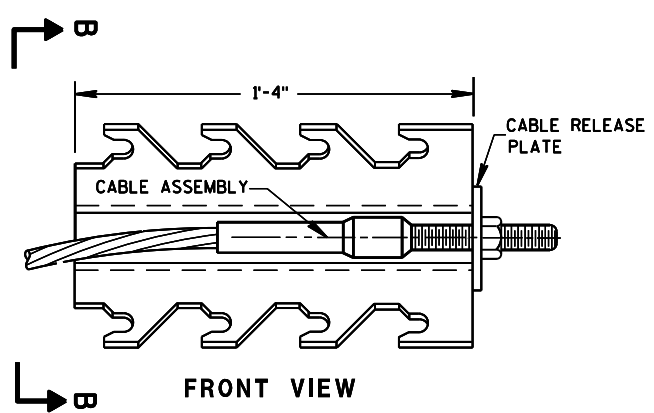
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S.D.D. 14 B 24-9a

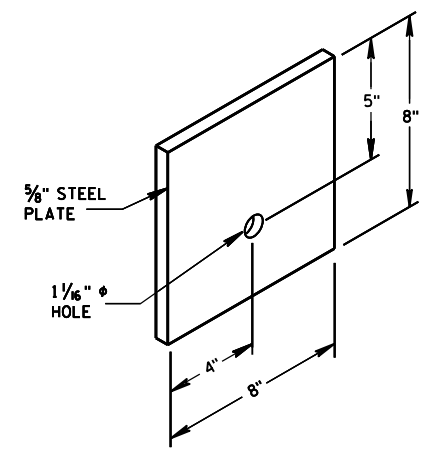
S.D.D. 14 B 24-9a



⑩ STRUT DETAIL



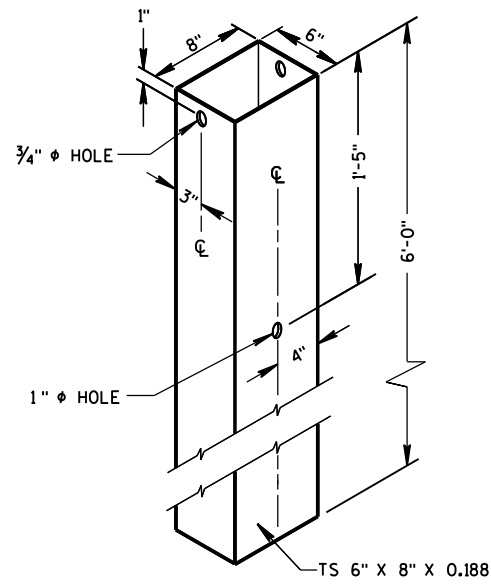
⑨ CABLE ANCHOR BOX



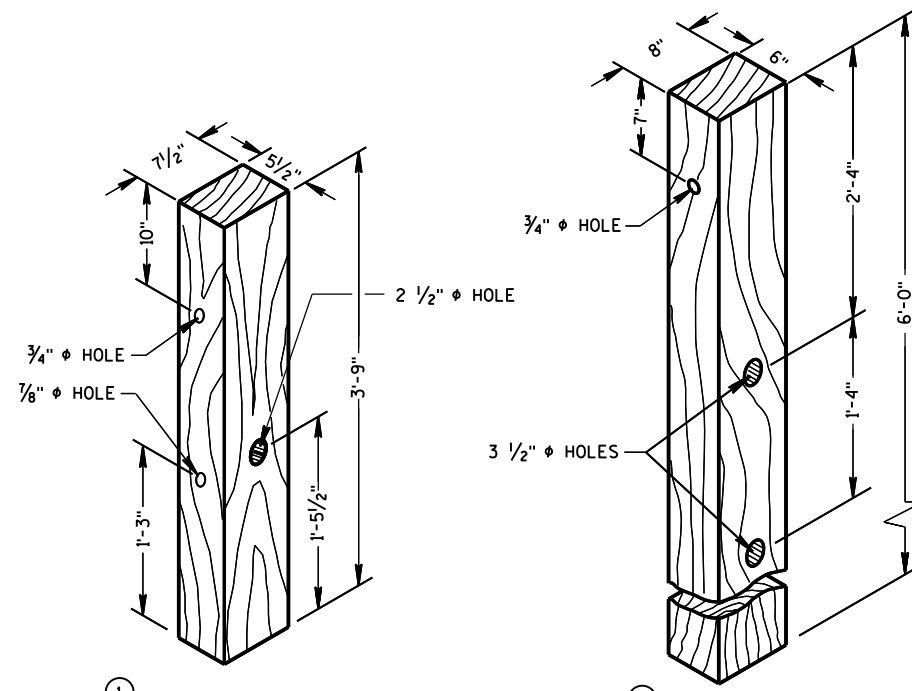
⑦ STEEL BEARING PLATE

6

6



② **72" STEEL TUBE**  
(POSTS NO. 1-2)



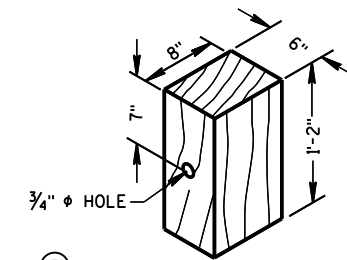
① **TERMINAL POST**

④ **CRT POST**  
(POSTS NO'S 5-8)

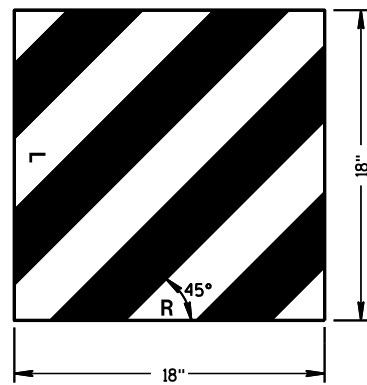
**WOOD BREAKAWAY POSTS**

**GENERAL NOTES**

WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 1/2" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH, PLACED IN THE HOLE AND BACKFILLED WITH ADEQUATELY COMPACTED MATERIAL EXCAVATED FROM THE HOLE.

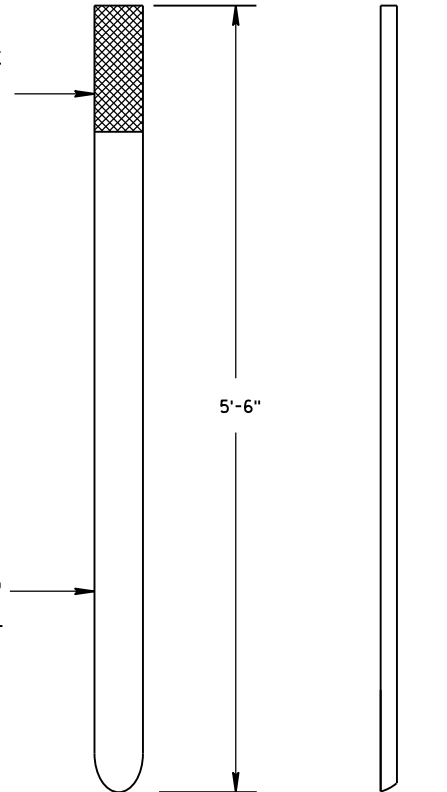


⑤ **WOOD OFFSET BLOCK**  
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



⑭ **REFLECTIVE SHEETING DETAILS**

TYPE H  
YELLOW REFLECTIVE  
SHEETING 3" X 9".  
SEE STANDARD  
SPECIFICATION 637.



FRONT VIEW      SIDE VIEW

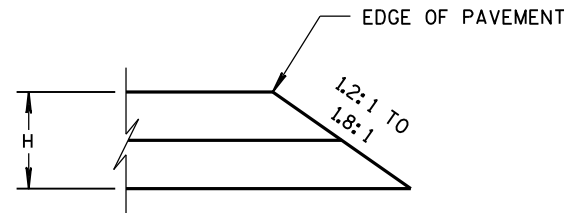
**E.A.T. MARKER POST**

E.A.T. MARKER  
POST (YELLOW)  
SEE APPROVED  
PRODUCTS LIST

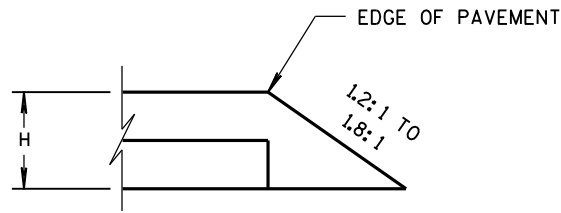
**STEEL PLATE BEAM GUARD  
ENERGY ABSORBING TERMINAL**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

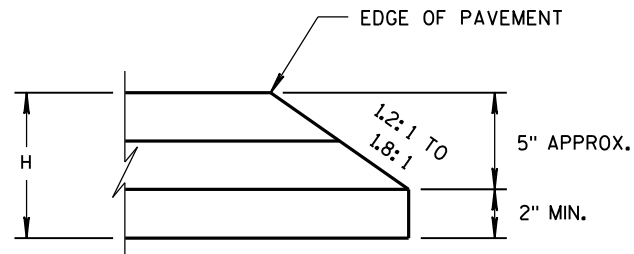
APPROVED  
June 2017 /S/ Rodney Taylor  
DATE ROADWAY STANDARDS DEVELOPMENT  
FHWA UNIT SUPERVISOR



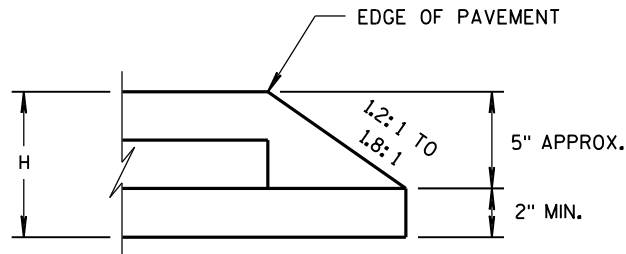
CONSTRUCTED WITH FINAL TWO LAYERS  
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER  
FOR H 5" OR LESS

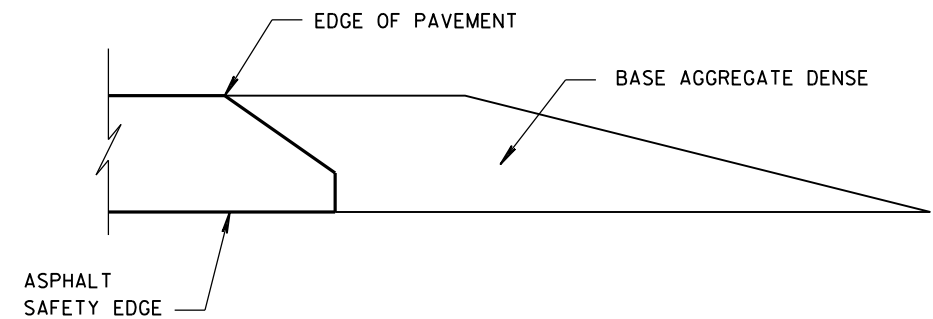


CONSTRUCTED WITH FINAL TWO LAYERS  
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER  
FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

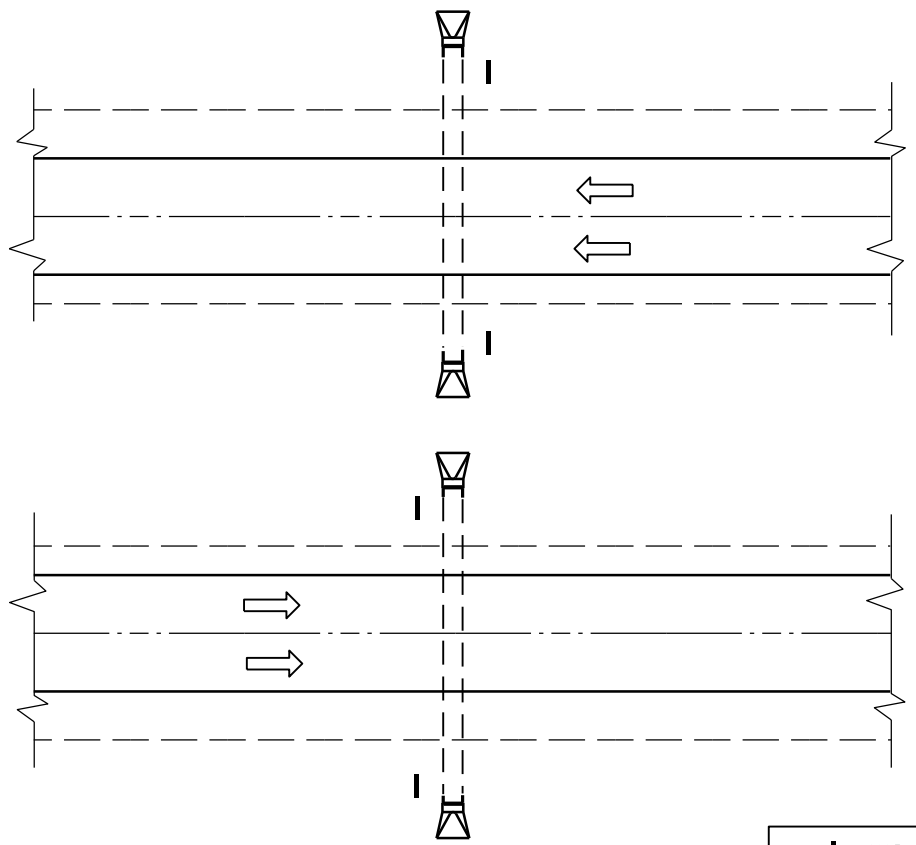
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6

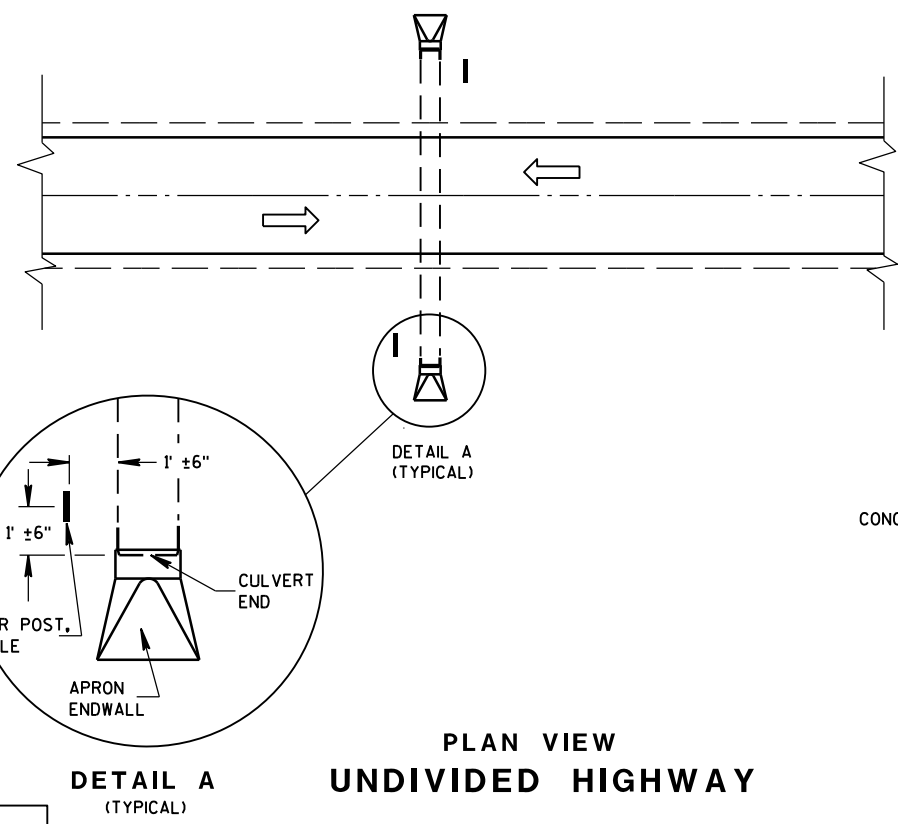
S.D.D. 14 B 29-1

S.D.D. 14 B 29-1

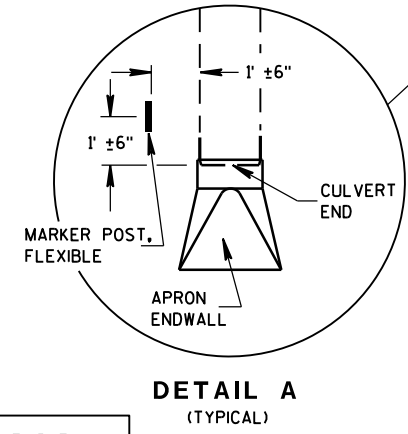
|                                                    |                                                                |
|----------------------------------------------------|----------------------------------------------------------------|
| SAFETY EDGE <sub>SM</sub>                          |                                                                |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                                                                |
| APPROVED<br>DATE                                   | /s/ Jerry H. Zogg<br>ROADWAY STANDARDS DEVELOPMENT<br>ENGINEER |
| FHWA                                               |                                                                |



PLAN VIEW  
DIVIDED HIGHWAY



PLAN VIEW  
UNDIVIDED HIGHWAY

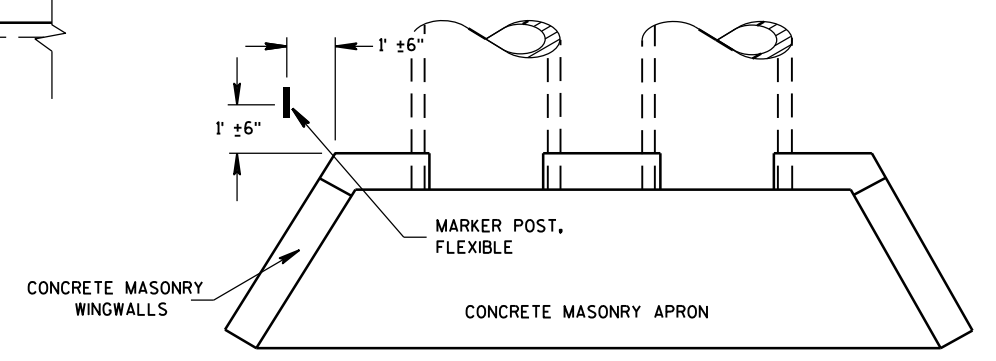


MARKER POST, FLEXIBLE  
DIRECTION OF TRAFFIC FLOW

FLEXIBLE MARKER POST LOCATION

GENERAL NOTES

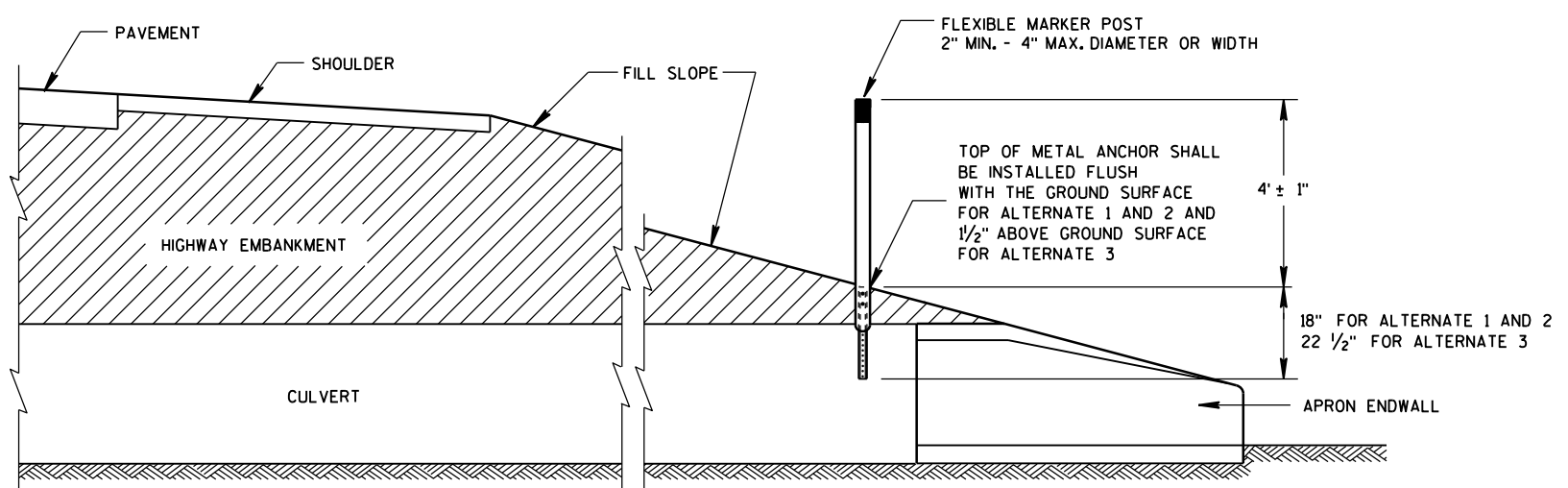
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



PLAN VIEW  
CONCRETE MASONRY ENDWALLS FOR  
CULVERT PIPE AND PIPE ARCH

6

6

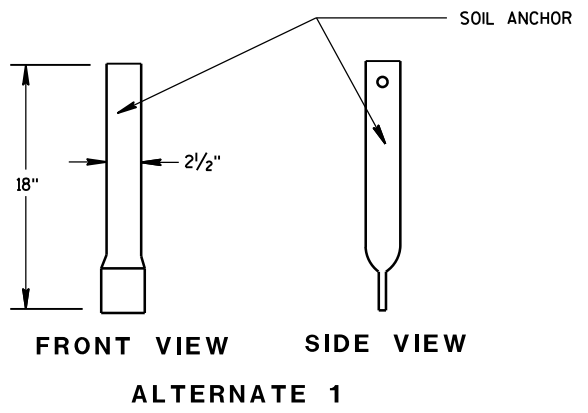
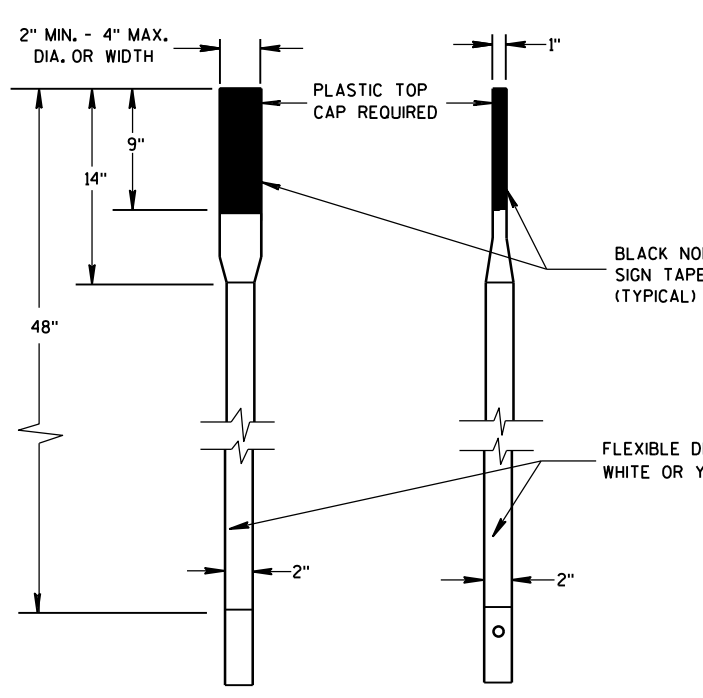


CROSS SECTION  
FLEXIBLE MARKER POST

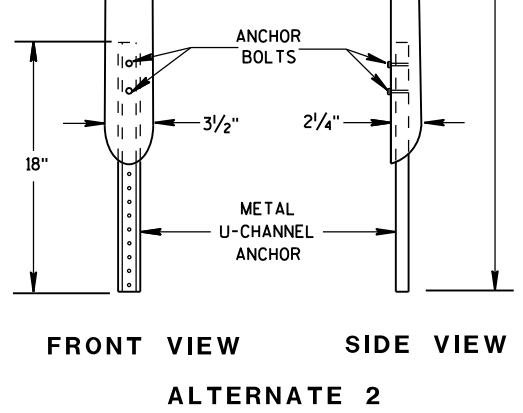
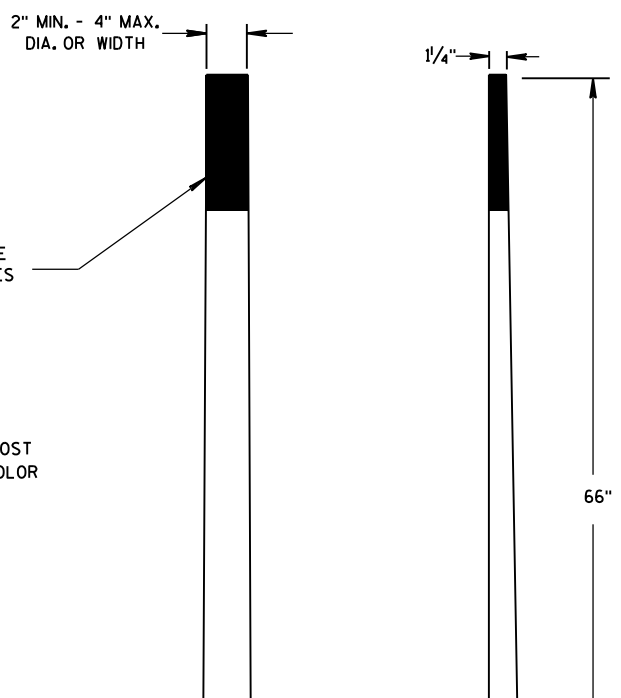
FLEXIBLE MARKER POST  
FOR CULVERT END  
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

S.D.D. 15 A 3-2a

S.D.D. 15 A 3-2a

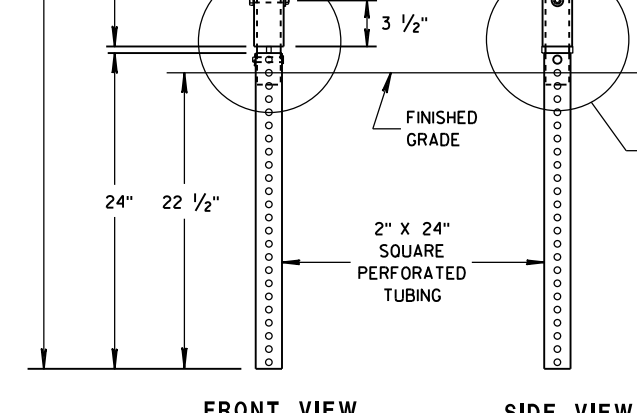
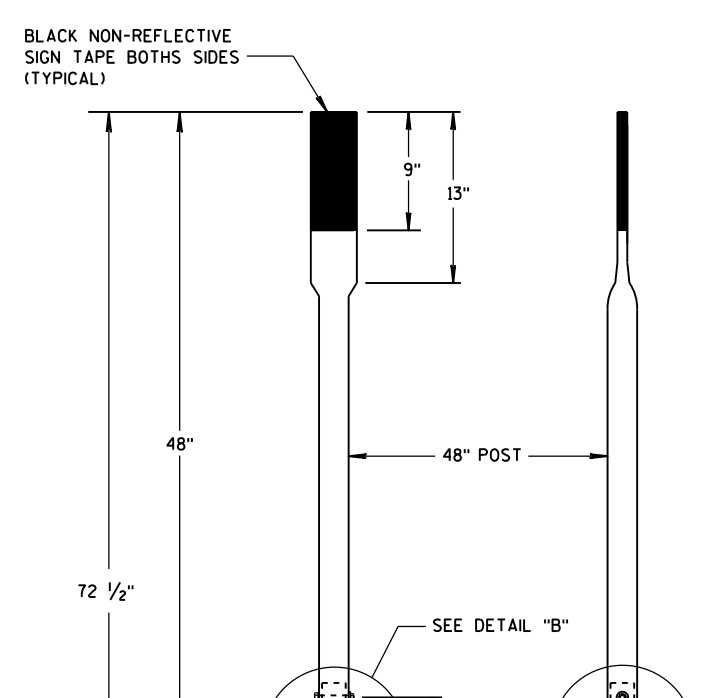


FRONT VIEW SIDE VIEW  
ALTERNATE 1

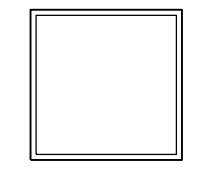


FRONT VIEW SIDE VIEW  
ALTERNATE 2

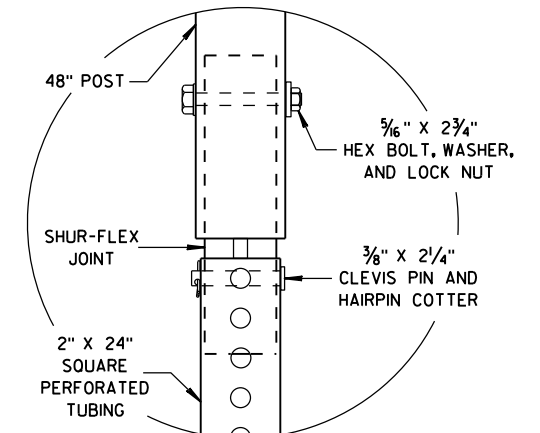
**FLEXIBLE MARKER POSTS**



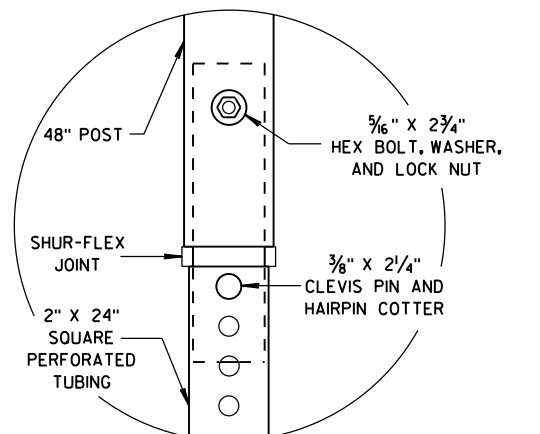
FRONT VIEW SIDE VIEW  
ALTERNATE 3



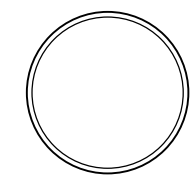
SECTION C-C



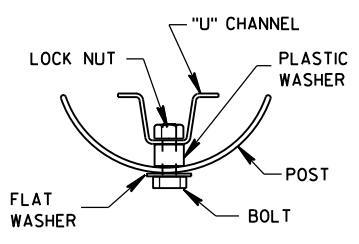
DETAIL B



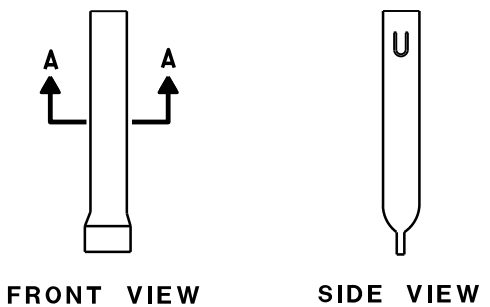
DETAIL C



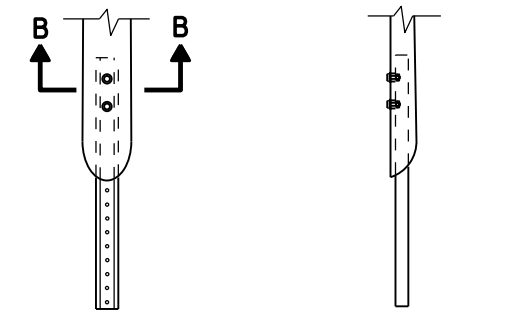
SECTION A-A



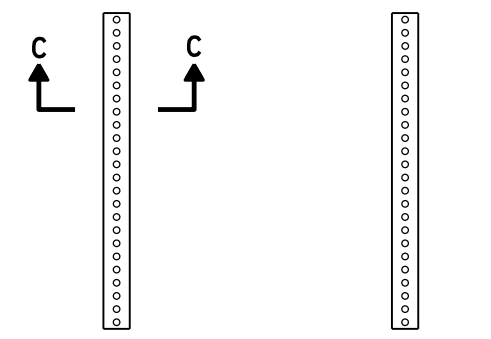
SECTION B-B



FRONT VIEW SIDE VIEW  
ALTERNATE 1



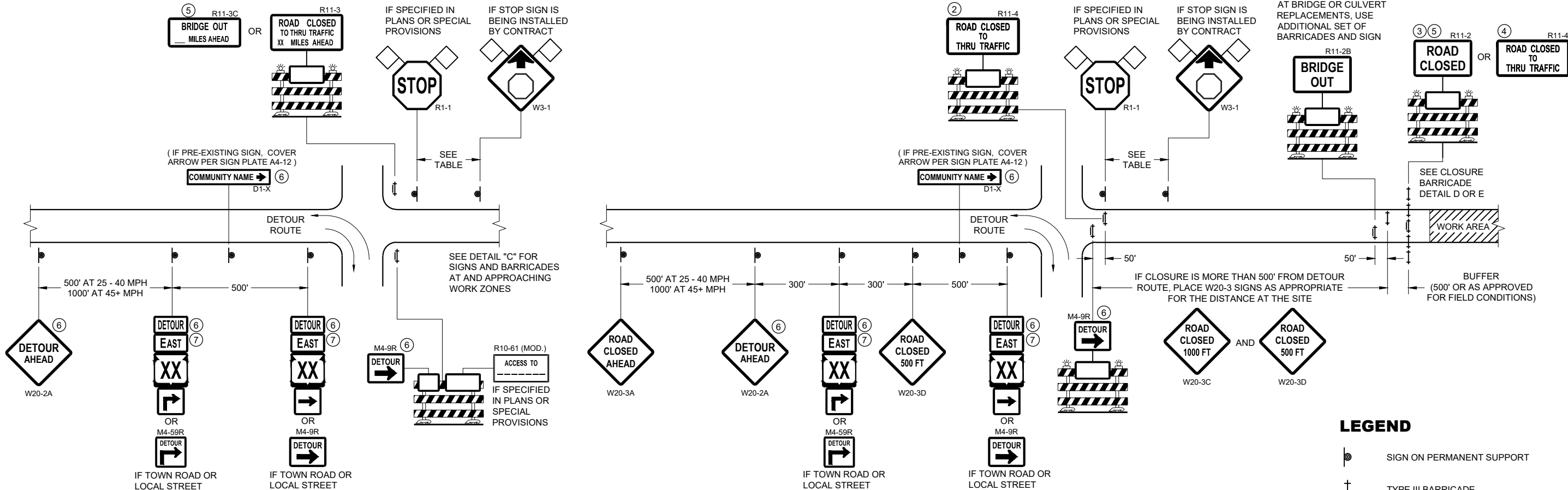
FRONT VIEW SIDE VIEW  
ALTERNATE 2



FRONT VIEW SIDE VIEW  
ALTERNATE 3

**FLEXIBLE MARKER POST ANCHORS**

|                                                    |                                                       |
|----------------------------------------------------|-------------------------------------------------------|
| <b>FLEXIBLE MARKER POST FOR CULVERT END</b>        |                                                       |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                                                       |
| APPROVED<br>10/1/2012<br>DATE                      | /S/ Travis Feltes<br>STATE TRAFFIC ENGINEER OF DESIGN |
| FHWA                                               |                                                       |



**DETAIL A  
MAINLINE CLOSURE WITH POSTED DETOUR**

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

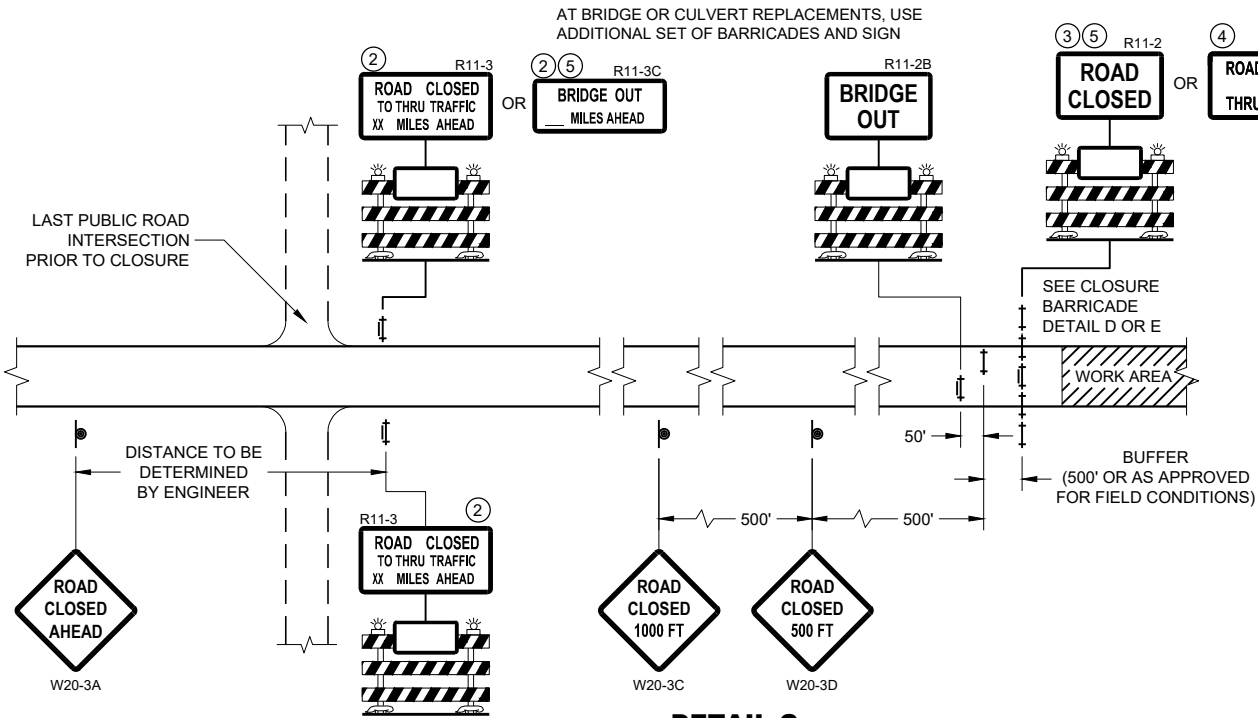
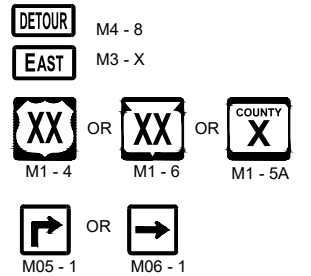
**DETAIL B  
MAINLINE CLOSURE WITH POSTED DETOUR**

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

**LEGEND**

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- FLAGS, 16" X 16" MIN. (ORANGE)

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



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

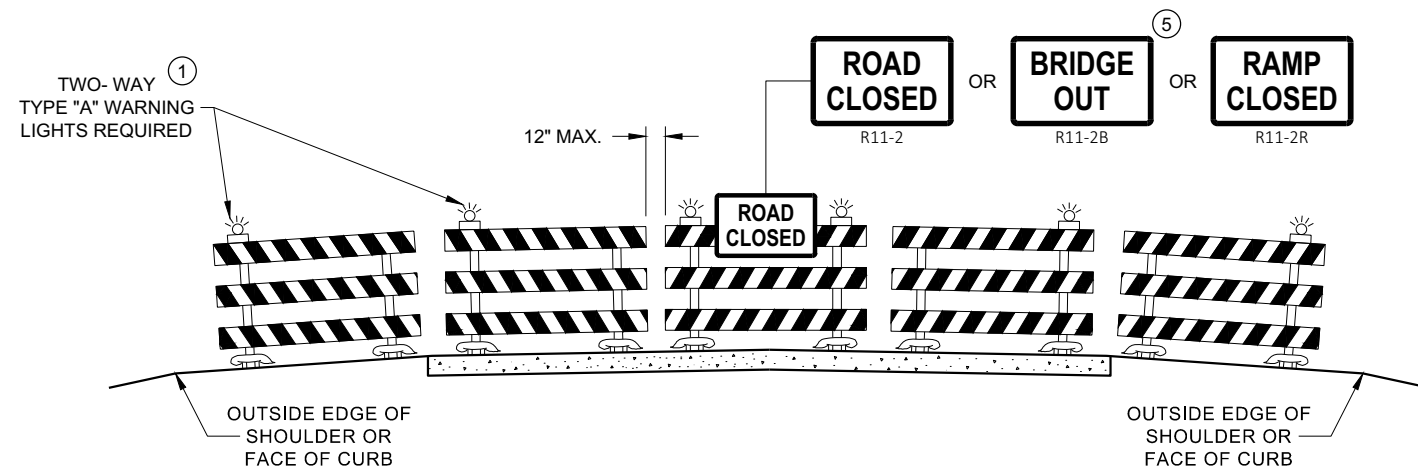
SEE SDD 15C2-SHEET "b"  
FOR GENERAL NOTES  
AND FOOTNOTES ① THROUGH ⑦

**BARRICADES AND SIGNS  
FOR MAINLINE CLOSURES**

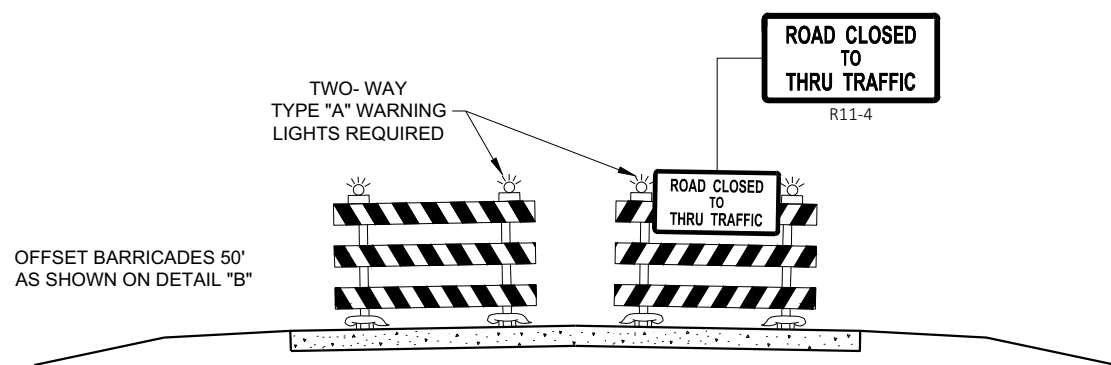
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2020 /S/ Andrew Heidtke  
DATE 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

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

**LEGEND**

- ⊙ SIGN ON PERMANENT SUPPORT
- TO EAST MO4 - 5
- TO EAST M3 - X
- XX M1 - 6 OR XX M1 - 4 OR XX M1 - 1
- M05 - 1 OR M06 - 1 OR M06 - 1

**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 ANY ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE TO ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT TO SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.
- THE SPACING BETWEEN TRAFFIC CONTROL AND TO 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 SHALL 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 FOLLOW:  
 M3 - X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS).  
 MO4 - 5 SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS).  
 M1 - 1, M1 - 4, AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS).  
 MO5 - 1, MO5 - 2, AND MO6 - 1, SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS).  
 W20 - 53A SHALL BE 48" X 48"
- \* PLACE "RAMP CLOSED BEGINNING" SIGN 7 CALENDAR DAYS PRIOR TO CLOSURE OR AS DIRECTED BY THE ENGINEER. SEE WISCONSIN STANDARD SIGN PLATES FOR LAYOUT.

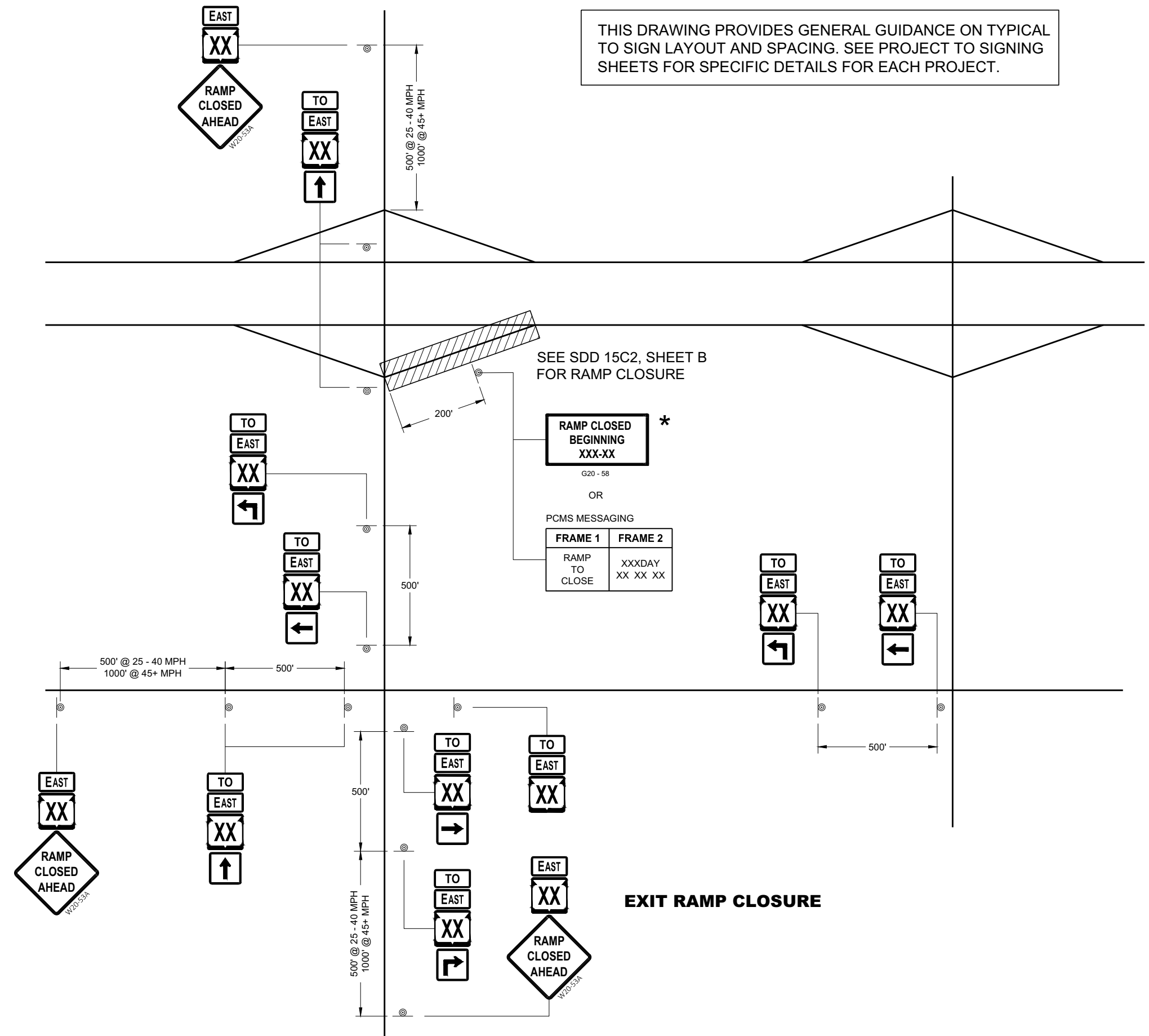
6

6

SDD 15C02 - 08d

SDD 15C02 - 08d

**EXIT RAMP CLOSURE**



|                                                    |                                          |
|----------------------------------------------------|------------------------------------------|
| <b>ON RAMP<br/>LANE CLOSURE</b>                    |                                          |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                                          |
| APPROVED<br>February 2020<br>DATE                  | /S/ Andrew Heidtke<br>WORK ZONE ENGINEER |
| FHWA                                               |                                          |

THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL "TO" MO-4 SIGN LAYOUT AND SPACING. SEE PROJECT TO SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.

**LEGEND**

- ⊙ SIGN ON PERMANENT SUPPORT
- PCMS PORTABLE CHANGEABLE MESSAGE SIGN
- TO MO4 - 5
- M1 - 4 OR M1 - 6 OR COUNTY M1 - 5A
- M05 - 1 OR M05 - 2 OR M06 - 1 OR M06 - 2 OR M06 - 4

**GENERAL NOTES**

- SEE SDD 15D16 "TRAFFIC CONTROL, EXIT RAMP CLOSURE" DETAIL FOR TRAFFIC CONTROL AT EXIT RAMP CLOSURE.
- THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- IF THERE ARE ANY ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE "TO" MO-4 ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT TO SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.
- THE SPACING BETWEEN TRAFFIC CONTROL AND "TO" MO-4 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 SHALL 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 FOLLOW:  
 MO4 - 5 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, MO5 - 2, AND MO6 - 1, SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS).
- ① ONLY ADD IF THERE ARE NO EXISTING ROUTE MARKERS FOR THE INTERSECTING ROADWAY.

SEE SDD 15D16 FOR RAMP CLOSURE

**EXIT RAMP CLOSURE**

6

6

SDD 15C02 - 08e

SDD 15C02 - 08e

PCMS

PCMS MESSAGING

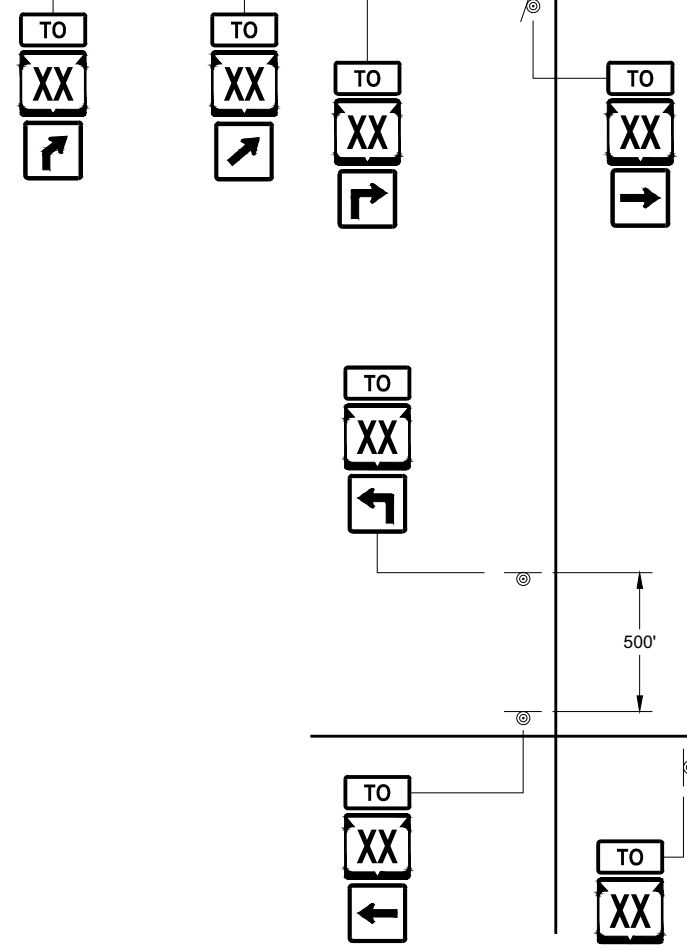
| FRAME 1              | FRAME 2           |
|----------------------|-------------------|
| EXIT<br>XX<br>CLOSED | USE<br>EXIT<br>XX |

OR

FIXED MESSAGE SIGN

HWY XX  
RAMP CLOSED  
USE EXIT XX

G20 - 56



**OFF RAMP  
LANE CLOSURE**

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.

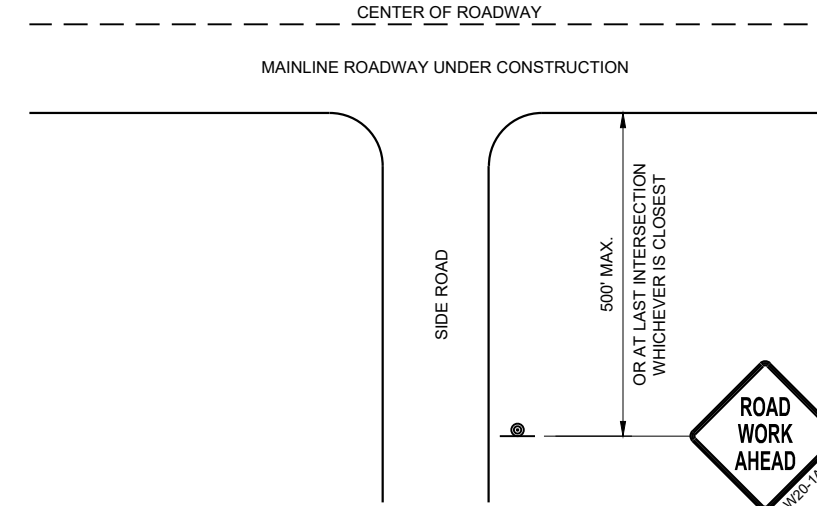
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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.

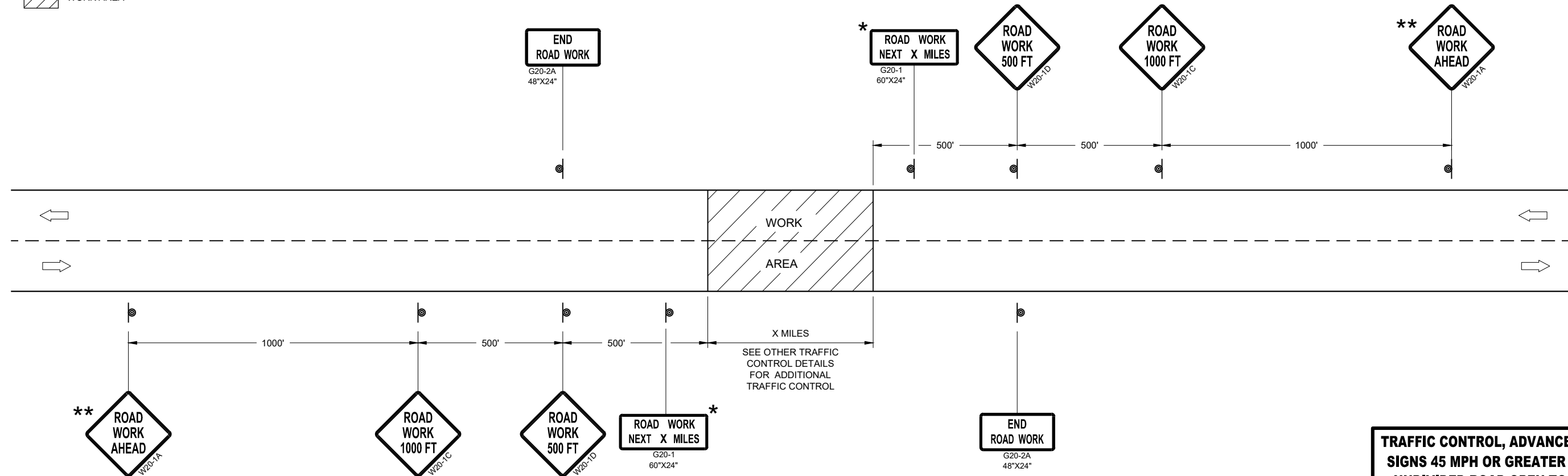
- \* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- \*\* PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

**LEGEND**

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



**TYPICAL SIDE ROAD APPROACH WARNING SIGN DETAIL**



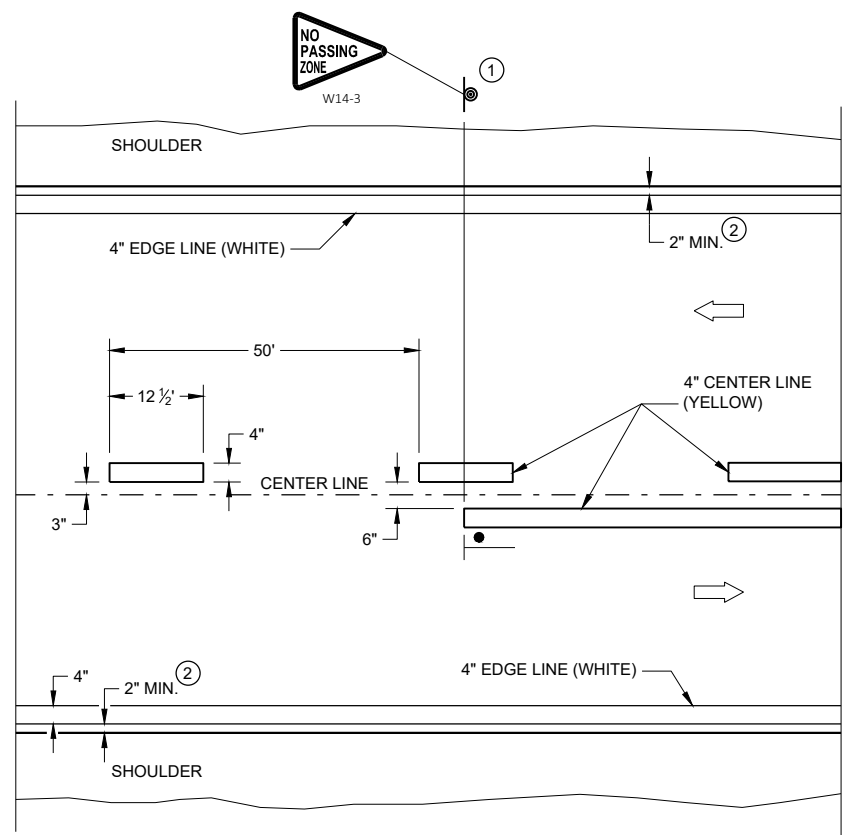
**TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER**

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

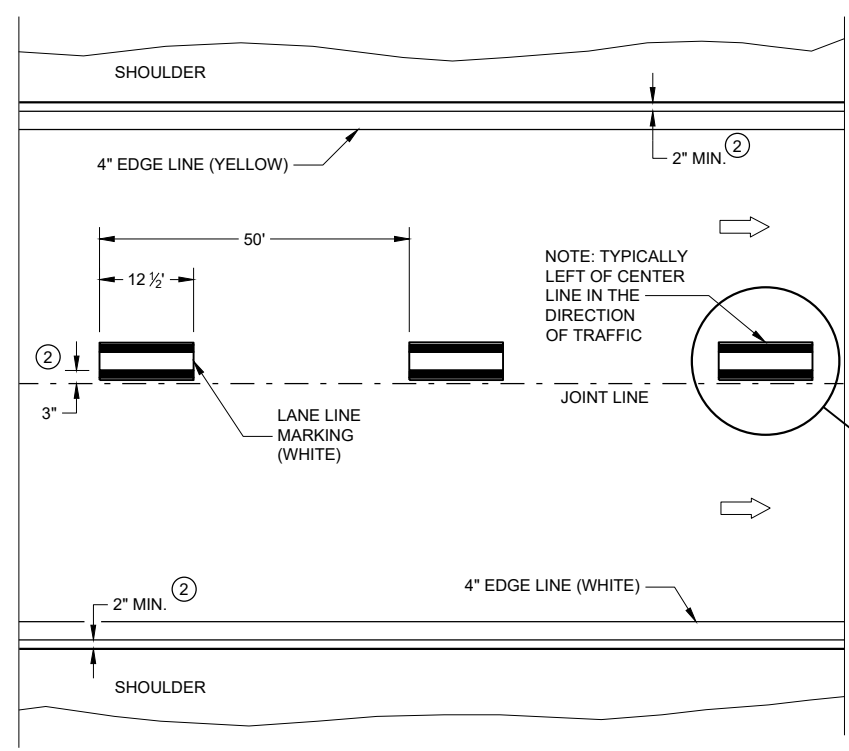
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

FHWA

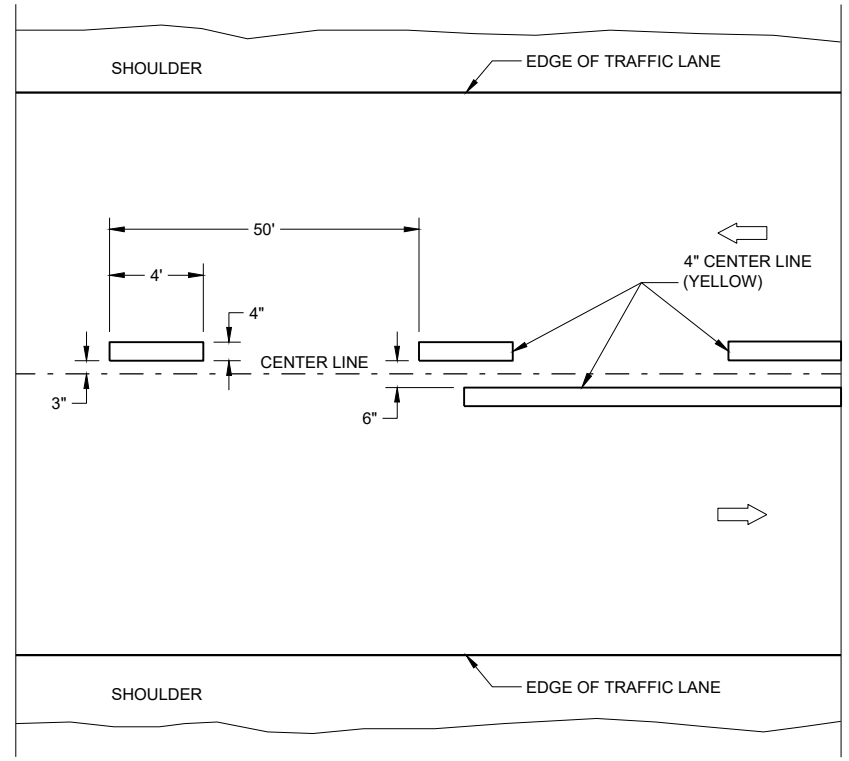


TWO WAY TRAFFIC

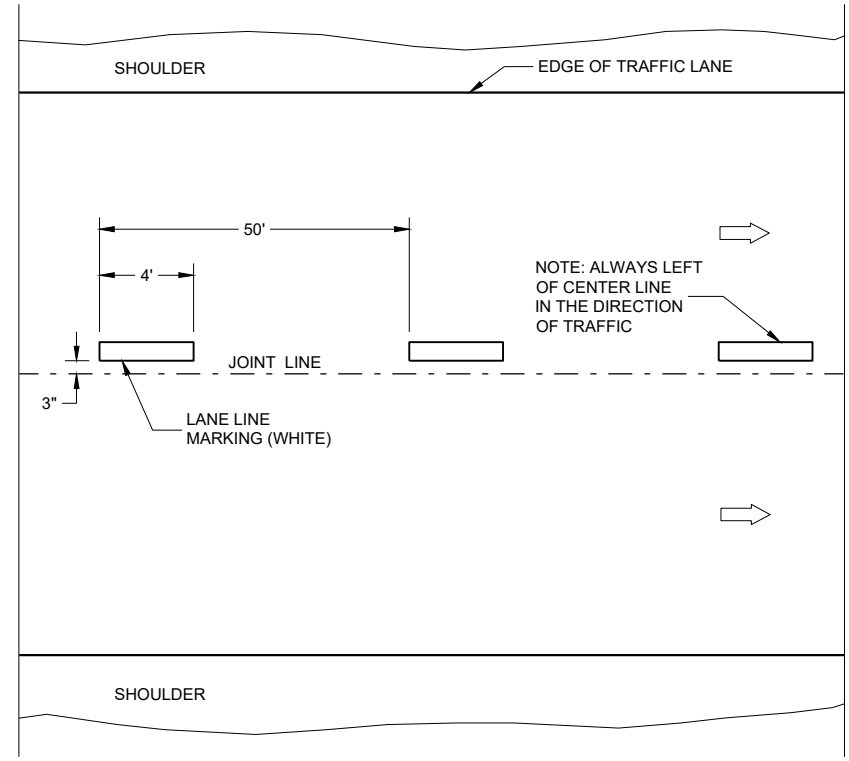


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

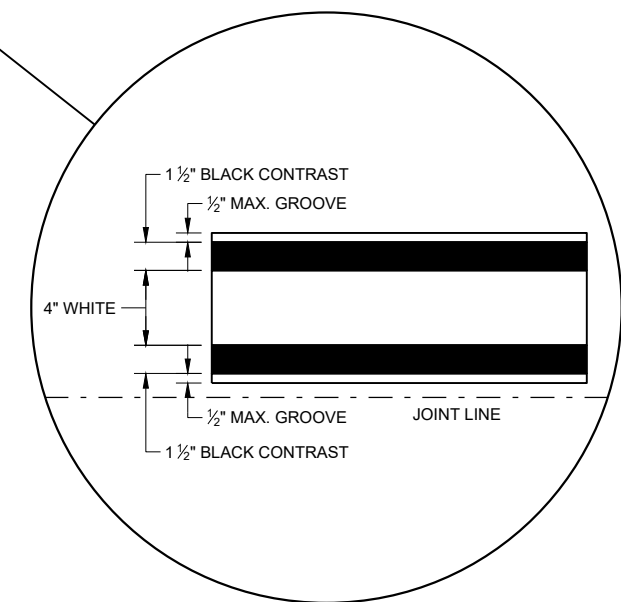
GENERAL NOTES

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 WITHIN 50 FEET OF THE "T" MARKING
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

LEGEND

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



LONGITUDINAL MARKING (MAINLINE)

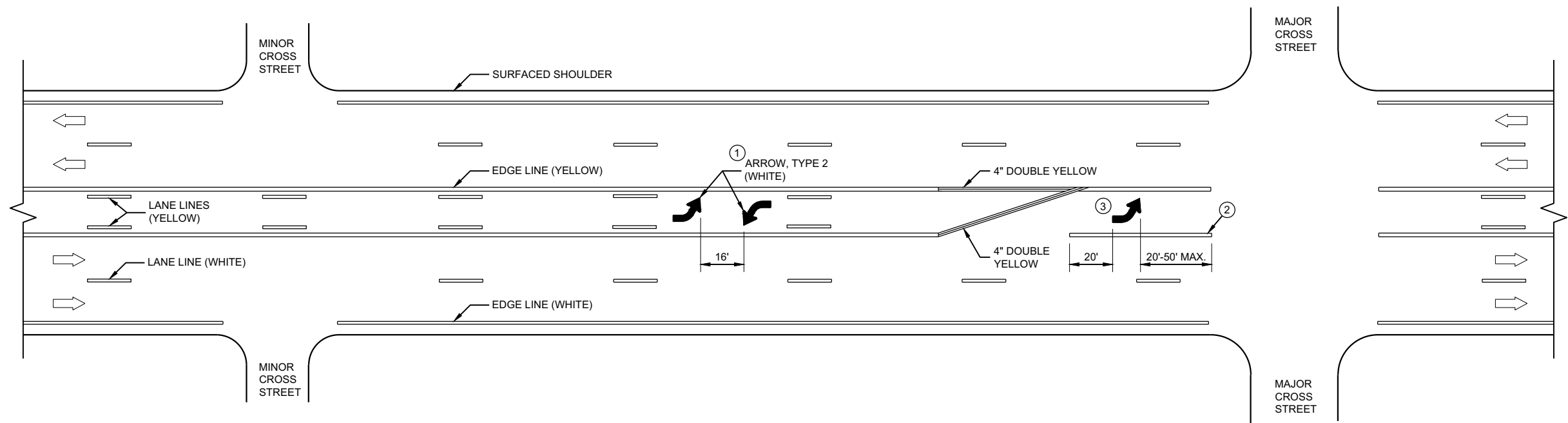
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVED  
 February 2020 /S/ Matthew Rauch  
 DATE STATEWIDE SIGNING AND MARKING ENGINEER  
 FHWA

**GENERAL NOTES**

- ① A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
- ② 8" WHITE
- ③ TURN BAY LENGTH OF LESS THAN 48' DOES NOT REQUIRE PAVEMENT ARROWS OR TEXT.

➡ DIRECTION OF TRAFFIC



**TWO WAY LEFT TURN LANE**

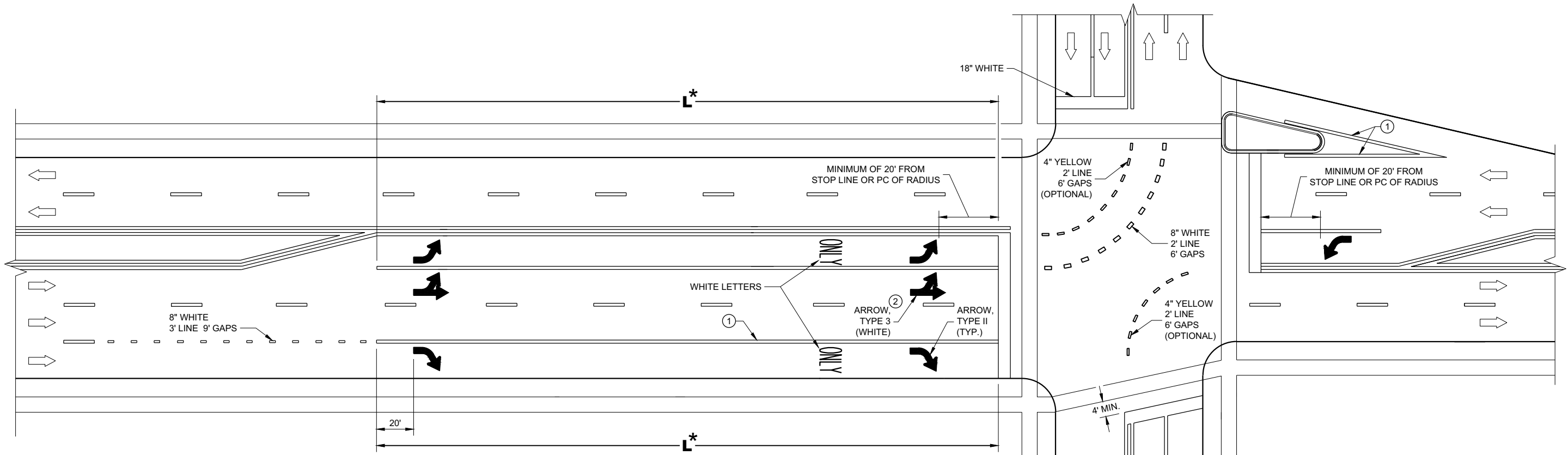
6

6

SDD 15C08 - 20b

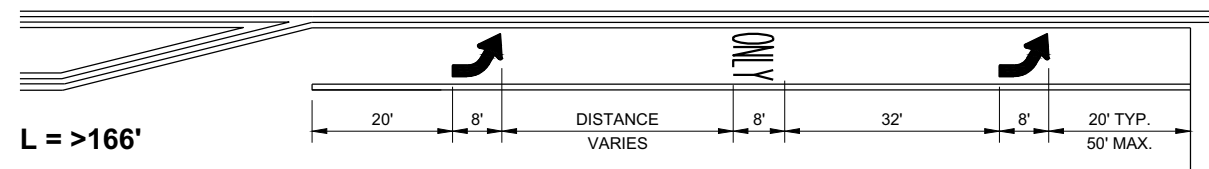
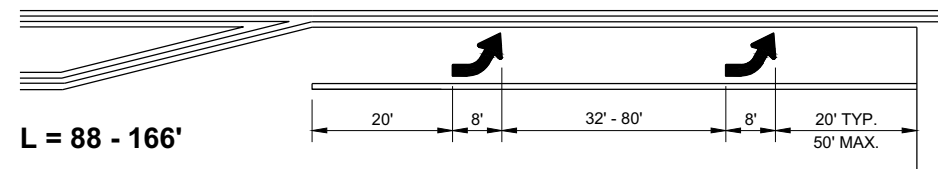
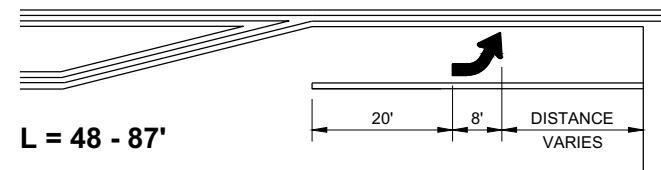
SDD 15C08 - 20b

|                                                            |
|------------------------------------------------------------|
| <p><b>PAVEMENT MARKING<br/>(TURN LANES)</b></p>            |
| <p>STATE OF WISCONSIN<br/>DEPARTMENT OF TRANSPORTATION</p> |



**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**

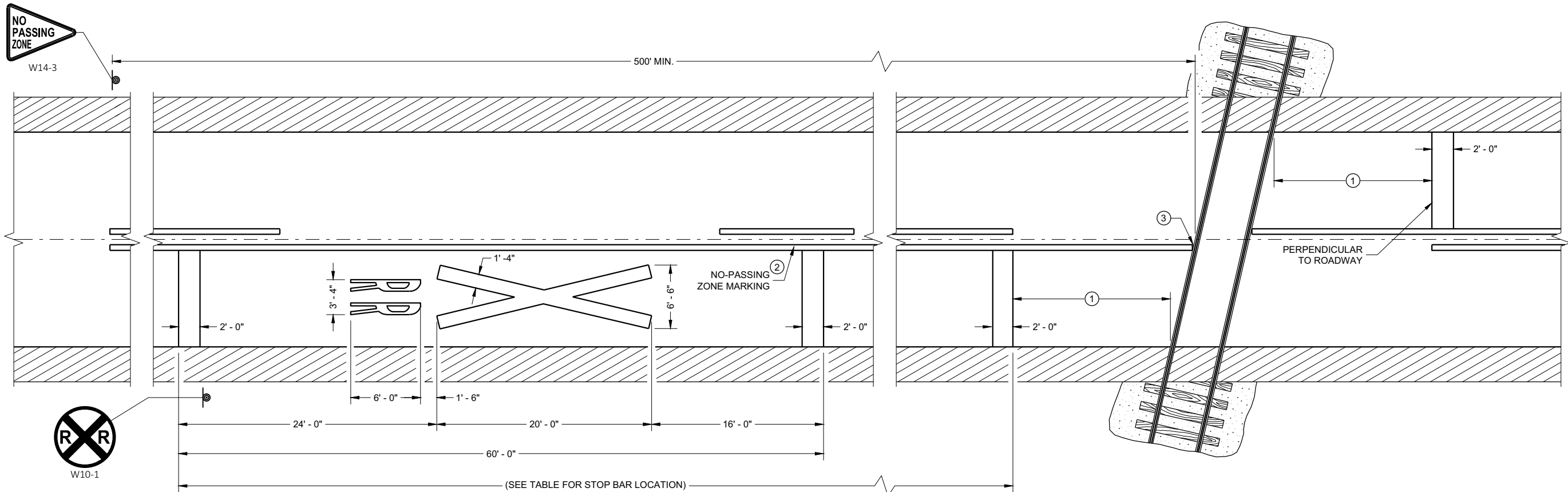
- ① 8" WHITE
- ② QUANTITY AND LOCATION OF TYPE 3 ARROWS ARE THE SAME AS THE TYPE II ARROWS IN THE ADJACENT TURN LANE. FOR TURN LANES WITH A PHYSICAL SEPARATION IN THE SAME DIRECTION OF TRAVEL, THE ARROWS AND "ONLY" MARKING MAY BE ELIMINATED.

➡ DIRECTION OF TRAFFIC

**L** = LENGTH OF TURN BAY

**PAVEMENT MARKING  
(TURN LANES)**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



**PAVEMENT MARKING**

**LEGEND**

⊙ SIGN ON PERMANENT SUPPORT

**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.

ON MULTI-LANE ROADS THE TRANSVERSE BANDS SHOULD EXTEND ACROSS ALL APPROACH LANES, AND INDIVIDUAL R X R SYMBOLS SHOULD BE USED IN EACH APPROACH LANE.

CENTER OR LANE LINES AND NO-PASSING ZONE MARKINGS SHOWN ON THIS DRAWING ARE REQUIRED AND PAID FOR UNDER OTHER ITEMS IN THE CONTRACT.

TRACE EXISTING SYMBOL WHERE EXISTING SYMBOLS ARE PLACED.

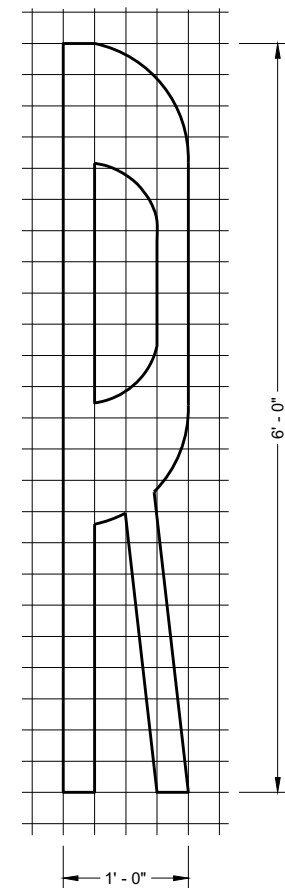
- ① MINIMUM 8' FROM ANY RAILROAD WARNING DEVICES (SIGNAL, GATES, ETC.) OR 25' FROM THE NEAREST RAIL, WHICHEVER DISTANCE IS GREATER.
- ② 500' MINIMUM. MARKING LIMITS MAY BE EXTENDED AS DIRECTED BY THE ENGINEER TO MEET ADJACENT NO-PASSING ZONE MARKINGS.
- ③ FOR MULTIPLE TRACK CROSSINGS, THE BARRIER LINE SHALL EXTEND TO THE NEAR RAIL OF THE FURTHEST TRACK IN THE DIRECTION OF HIGHWAY TRAVEL.

**DISTANCE TABLE**

TABLE BASED UPON 2C-4 WISCONSIN SUPPLEMENT OF MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

| POSTED SPEED (M.P.H.) | DIMENSION RANGE (FEET) |
|-----------------------|------------------------|
| 25                    | 150* - 250'            |
| 30                    | 200* - 300'            |
| 35                    | 250* - 450'            |
| 40                    | 300* - 500'            |
| 45                    | 400* - 650'            |
| 50                    | 550* - 800'            |
| 55                    | 750* - 1000'           |
| 60                    | 1000* - 1250'          |
| 65                    | 1000* - 1250'          |

\* THE MINIMUM DISTANCES IN THE TABLE ARE DESIRABLE AND SHOULD BE USED. THE DISTANCES MAY BE INCREASED UP TO THE MAXIMUM TO ALLOW FOR FIELD CONDITIONS SUCH AS THE CLOSED PROXIMITY OF DRIVEWAYS, BRIDGES, SIDE ROADS OR OTHER FEATURES THAT WOULD PROHIBIT THE MINIMUM DISTANCES FROM BEING USED.



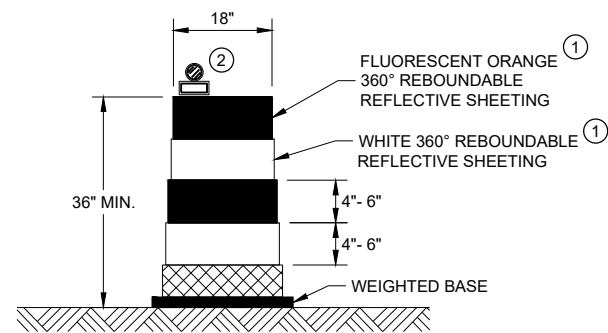
**SIGNING AND PAVEMENT MARKING DETAILS FOR RAILROAD - HIGHWAY GRADE CROSSINGS**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

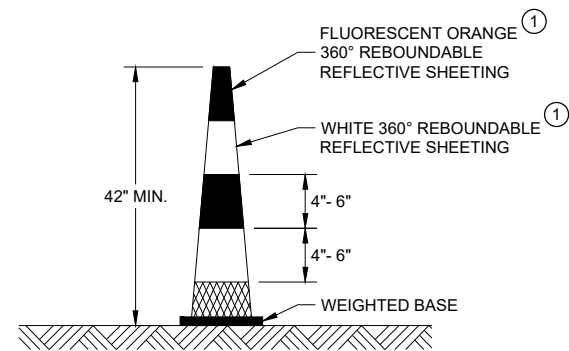
APPROVED  
February 2021 /S/ Matthew R. Rauch  
DATE STATE SIGNING AND MARKING ENGINEER

FHWA





**DRUM**

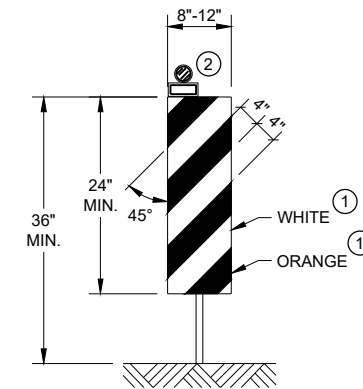


**42" CONE**

DO NOT USE IN TAPERS  
 1/2 SPACING OF DRUMS

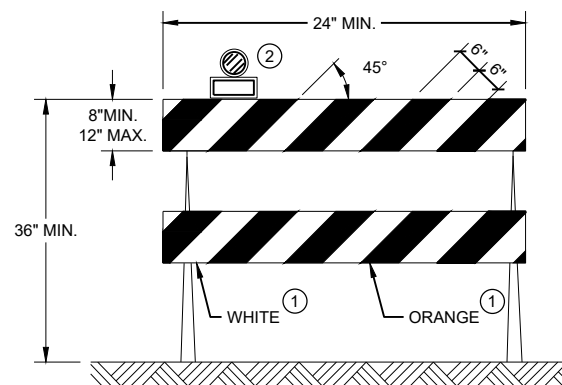
**GENERAL NOTES**

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



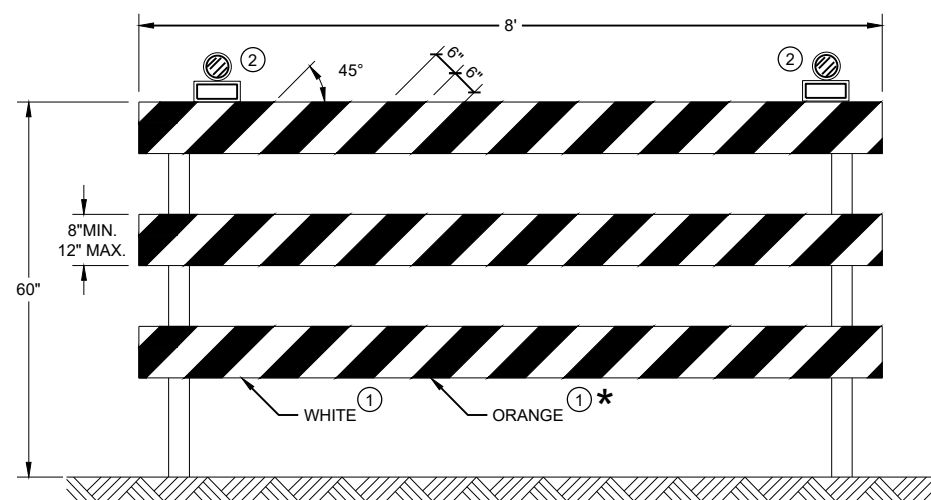
**VERTICAL PANEL**

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



**TYPE II BARRICADE**

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








**TYPE III BARRICADE**

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

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

|                                                                                  |                                          |
|----------------------------------------------------------------------------------|------------------------------------------|
| <b>CHANNELIZING DEVICES<br/>DRUMS, CONES, BARRICADES<br/>AND VERTICAL PANELS</b> |                                          |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION                               |                                          |
| APPROVED<br>May 2021<br>DATE                                                     | /S/ Andrew Heidtke<br>WORK ZONE ENGINEER |
| <small>FHWA</small>                                                              |                                          |

**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.

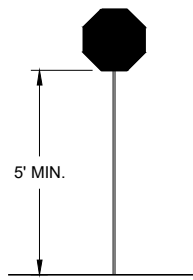
- ③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSE ACROSS THE LANE AT THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER

ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FROM 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.



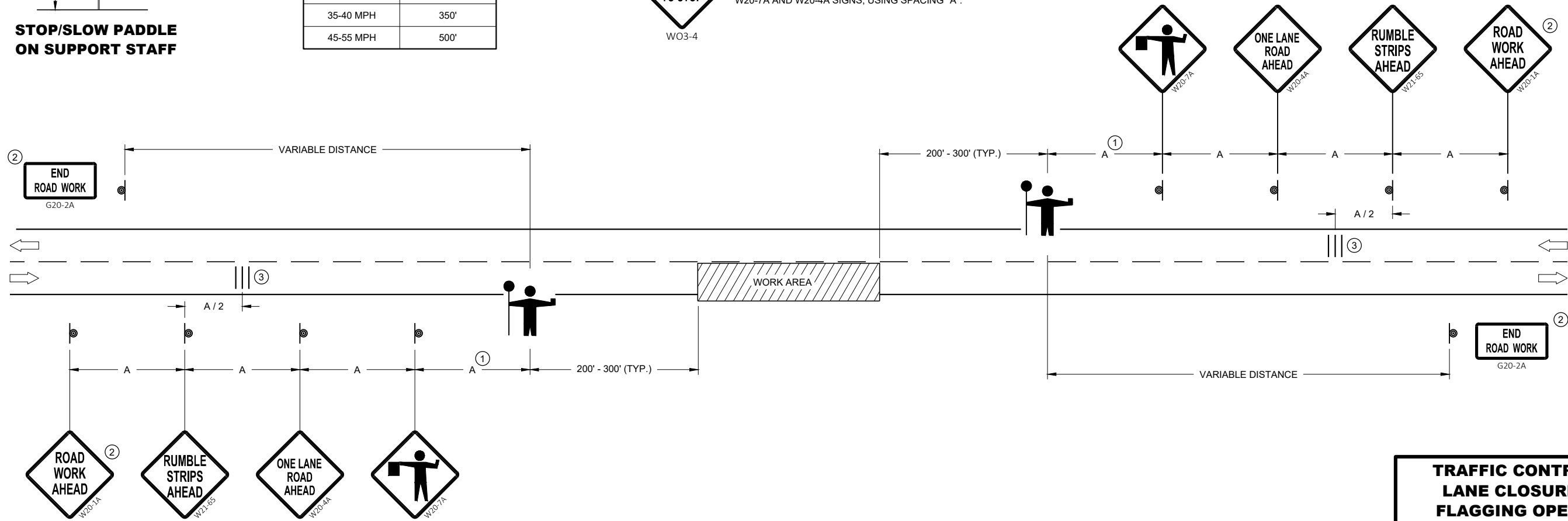
**STOP/SLOW PADDLE ON SUPPORT STAFF**

**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".



6

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SDD 15C12 - 08

SDD 15C12 - 08





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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
November 2021 /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.

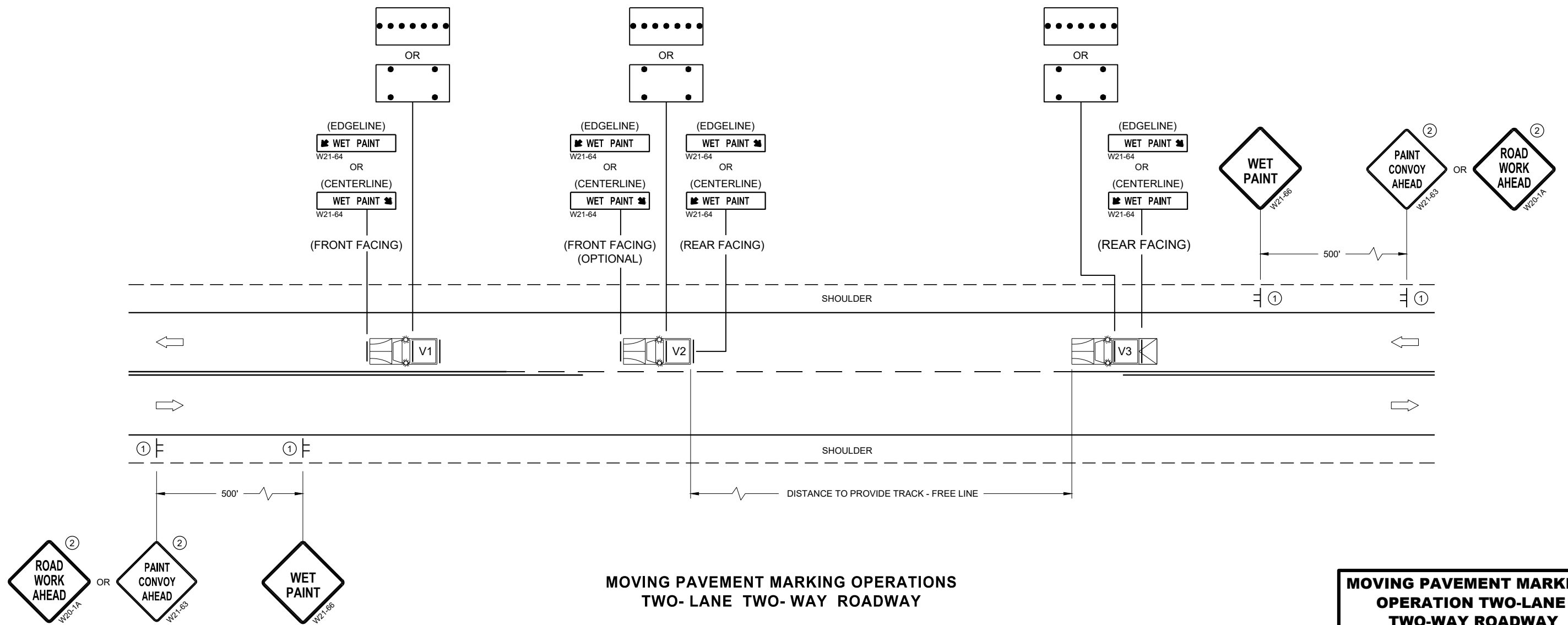
CONES SHOULD BE USED BETWEEN THE MARKING AND SHADOW VEHICLE AT 100 FOOT SPACING. CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.

CONES SHALL BE A MINIMUM OF 28" 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.

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**MOVING PAVEMENT MARKING OPERATIONS  
TWO-LANE TWO-WAY ROADWAY**

SDD 15C19 - 06a

SDD 15C19 - 06a

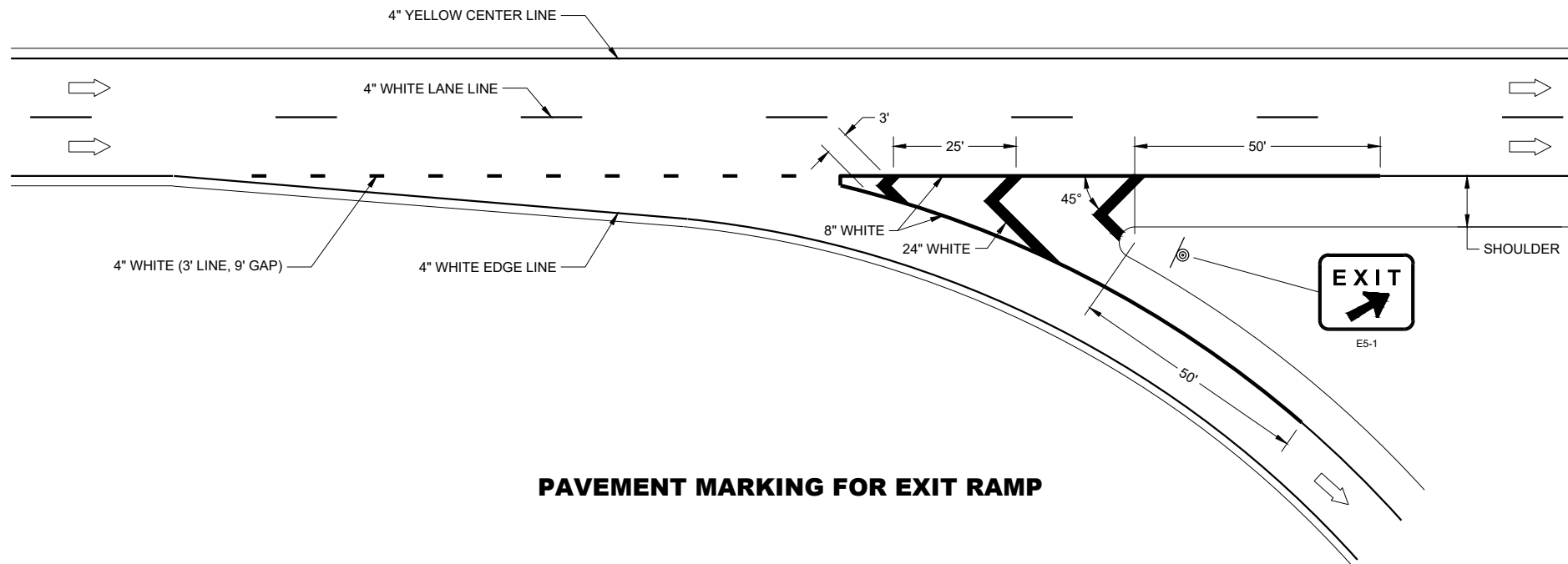
|                                                                           |                                          |
|---------------------------------------------------------------------------|------------------------------------------|
| <b>MOVING PAVEMENT MARKING<br/>OPERATION TWO-LANE<br/>TWO-WAY ROADWAY</b> |                                          |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION                        |                                          |
| APPROVED<br>November 2019<br>DATE                                         | /S/ Andrew Heidtke<br>WORK ZONE ENGINEER |
| FHWA                                                                      |                                          |

**GENERAL NOTES**

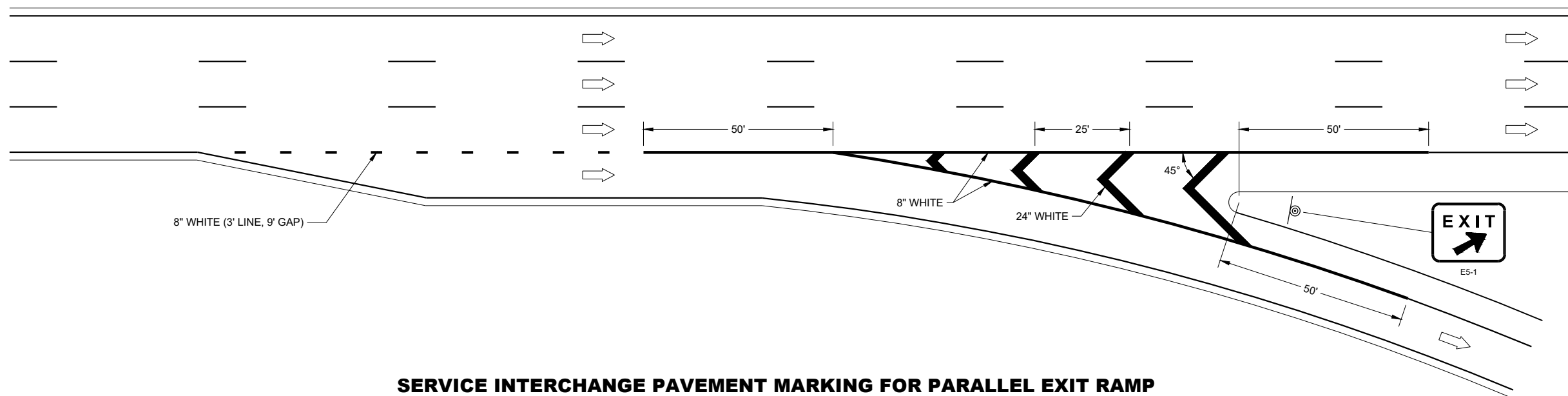
PLACE GROOVE 3 INCHES LEFT OF JOINT.

**LEGEND**

- ⊙ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAVEL



**PAVEMENT MARKING FOR EXIT RAMP**



**SERVICE INTERCHANGE PAVEMENT MARKING FOR PARALLEL EXIT RAMP**

**PAVEMENT MARKING,  
EXIT RAMP AND  
PARALLEL EXIT RAMP**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

6

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SDD 15C31 - 04a

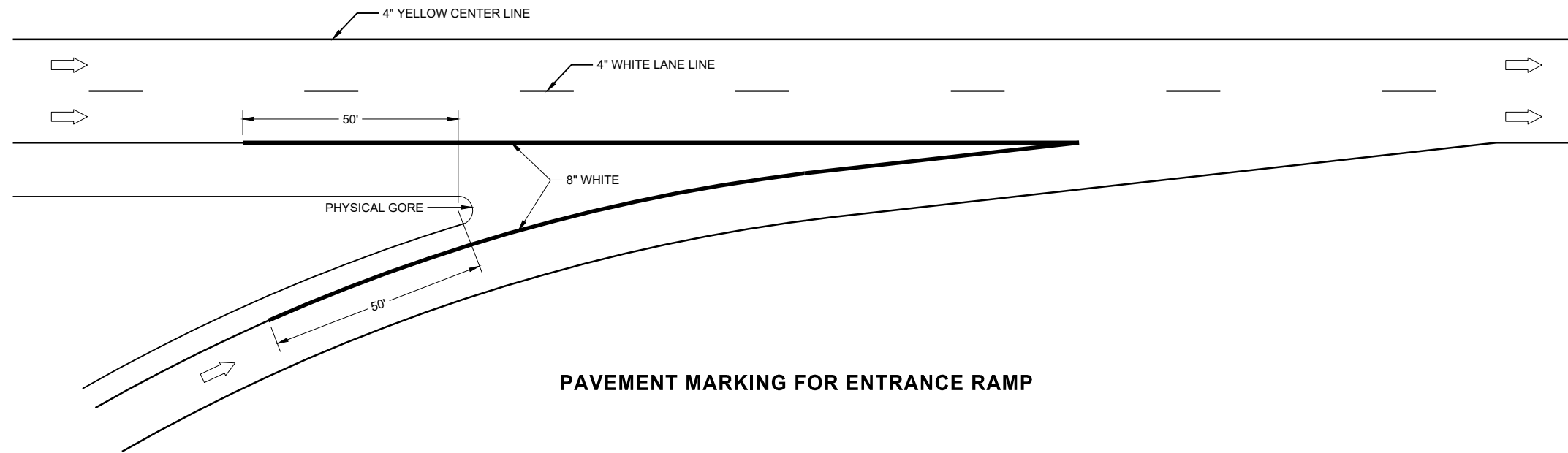
SDD 15C31 - 04a

**GENERAL NOTES**

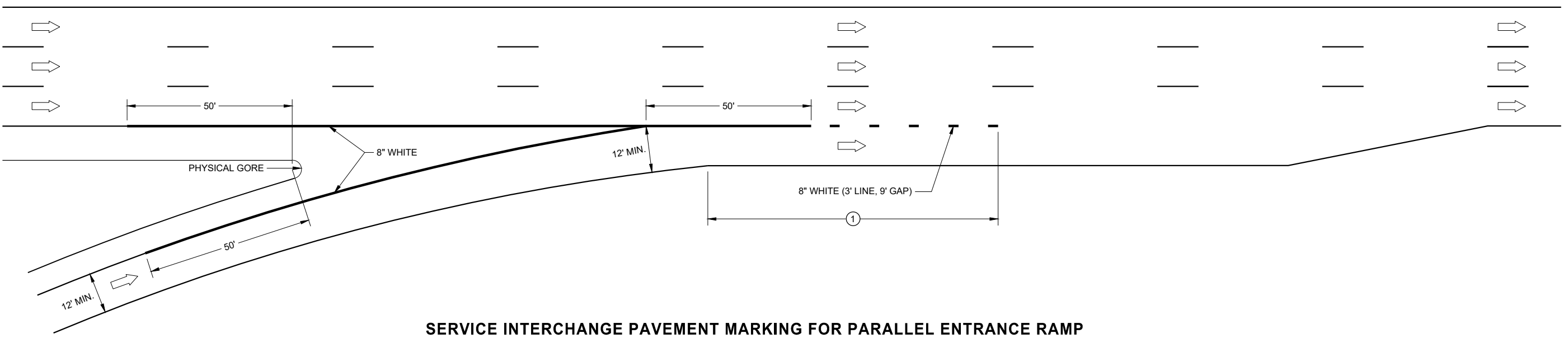
- PLACE GROOVE 3 INCHES LEFT OF JOINT.
- ① ½ LENGTH OF FULL WIDTH ACCELERATION LANE.

**LEGEND**

➡ DIRECTION OF TRAVEL



**PAVEMENT MARKING FOR ENTRANCE RAMP**



**SERVICE INTERCHANGE PAVEMENT MARKING FOR PARALLEL ENTRANCE RAMP**

6

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SDD 14C31 - 04c

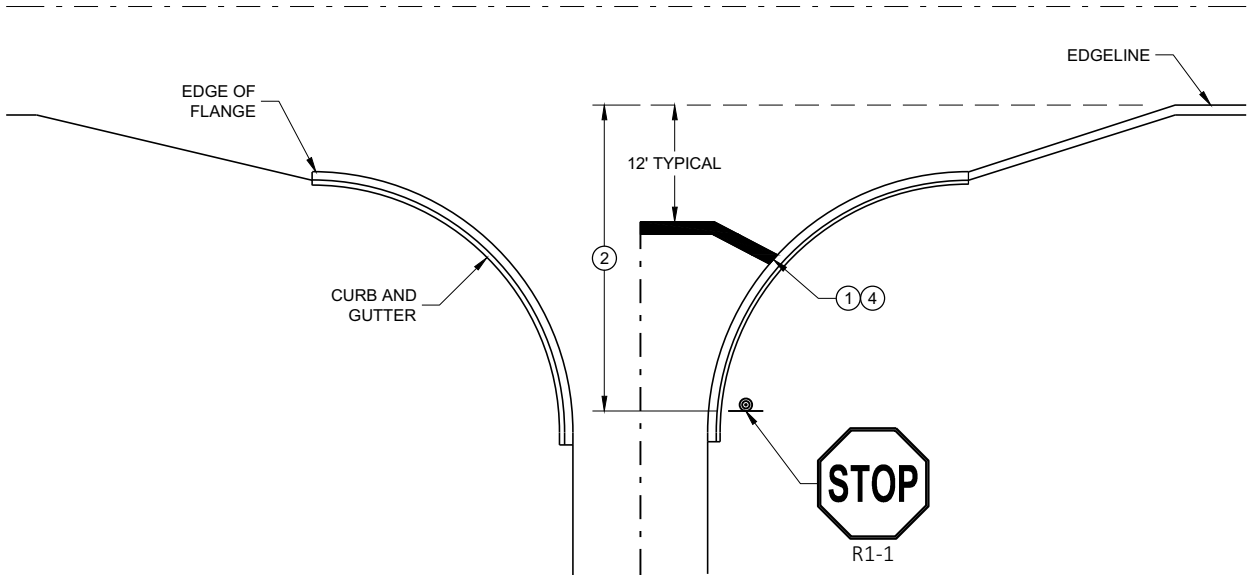
SDD 14C31 - 04c

|                                                                           |
|---------------------------------------------------------------------------|
| <b>PAVEMENT MARKING,<br/>ENTRANCE RAMP AND<br/>PARALLEL ENTRANCE RAMP</b> |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION                        |

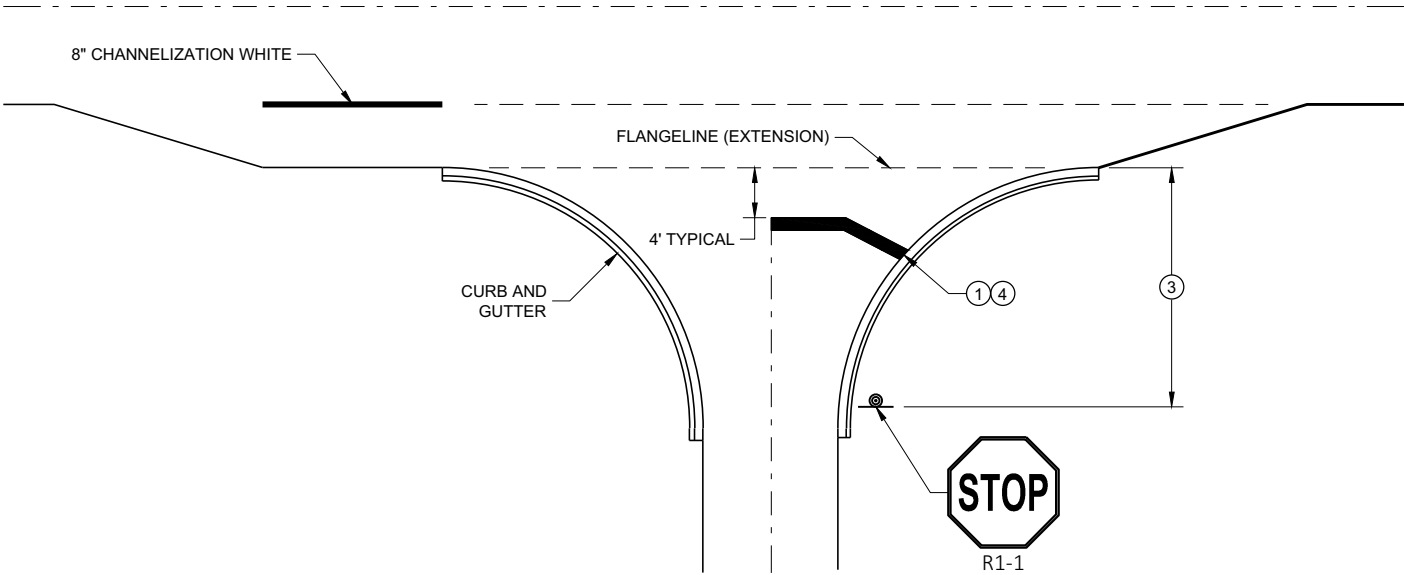
**GENERAL NOTES**

STOP SIGN SHALL BE PLACED A MINIMUM OF 6 FEET TO A MAXIMUM OF 50 FEET FROM THE EDGELINE LOCATION.

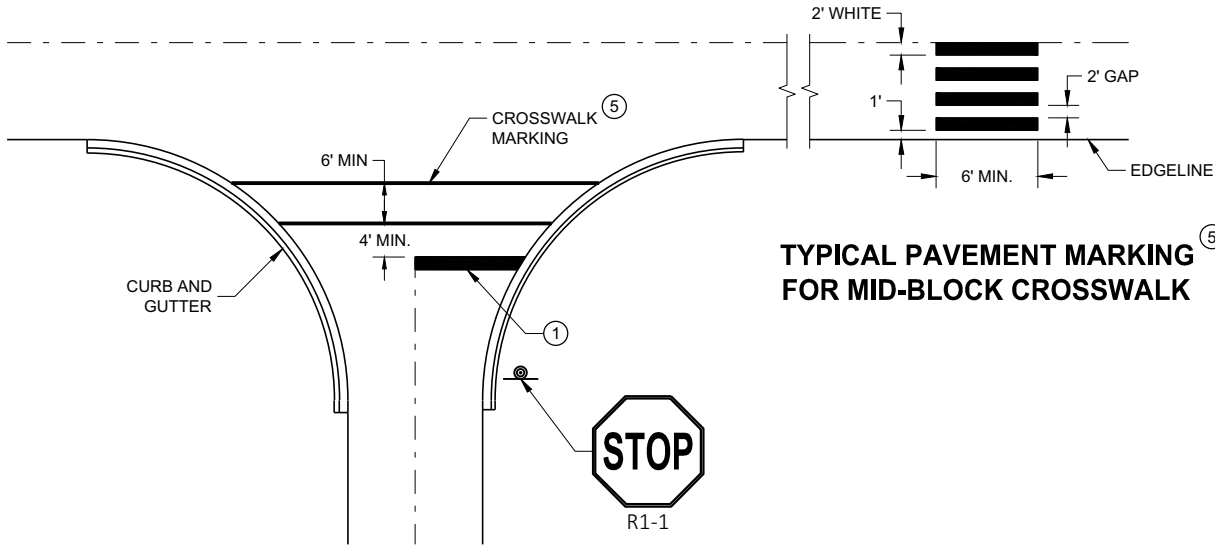
- ① 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- ② NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE.
- ③ NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION.
- ④ MOVE CLOSER TO THE EDGE OF TRAVEL LINE AS NEEDED FOR VISIBILITY AND SIGHT LINES (NO CLOSER THAN 4 FEET).
- ⑤ LADDER BAR CROSSWALKS SHOULD ONLY BE USED FOR MID BLOCK CROSSINGS. USE 2 - 6" TRANSVERSE LINES INSTEAD.



**TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER**

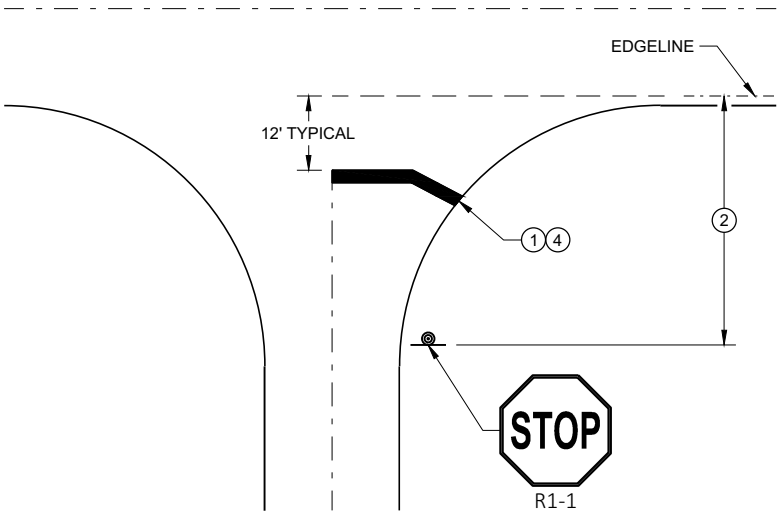


**TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE**



**TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING**

**TYPICAL PAVEMENT MARKING FOR MID-BLOCK CROSSWALK**



**TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER**

**STOP LINE AND CROSSWALK PAVEMENT MARKING**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
November 2019 /S/ Matthew Rauch  
DATE STATE SIGNING AND MARKING ENGINEER

FHWA

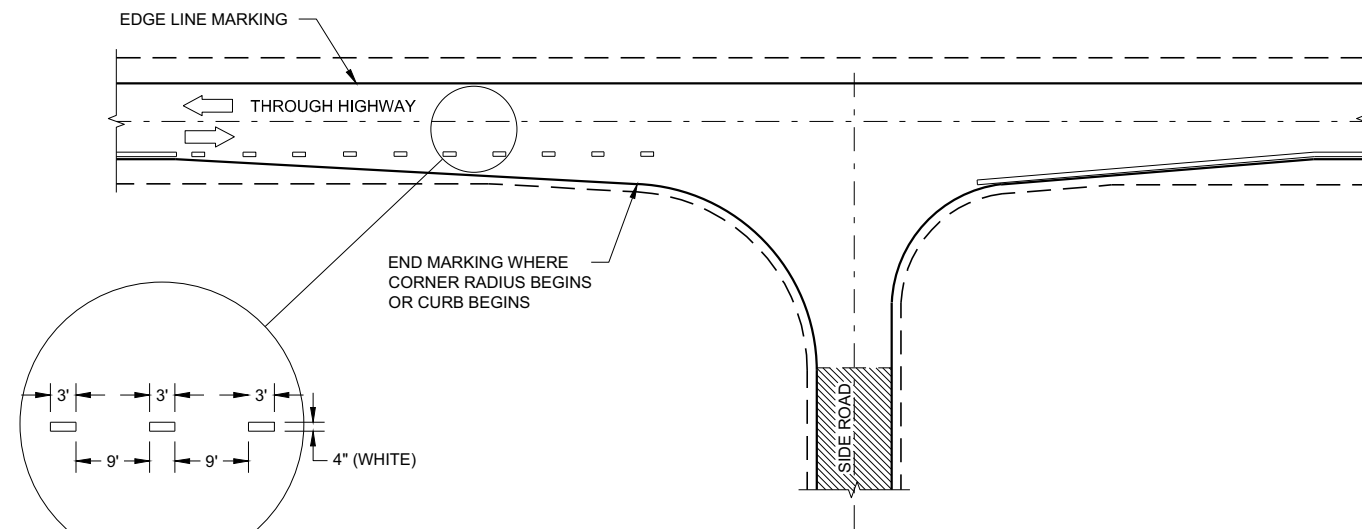
**GENERAL NOTES**

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

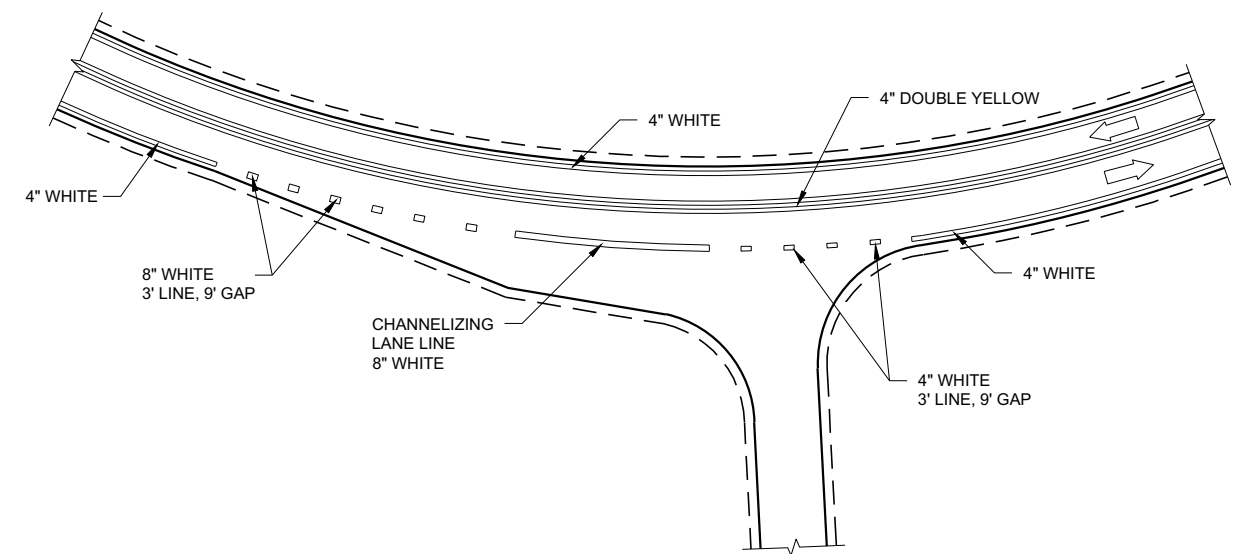
- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
- ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
- ③ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
- ④ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

**LEGEND**

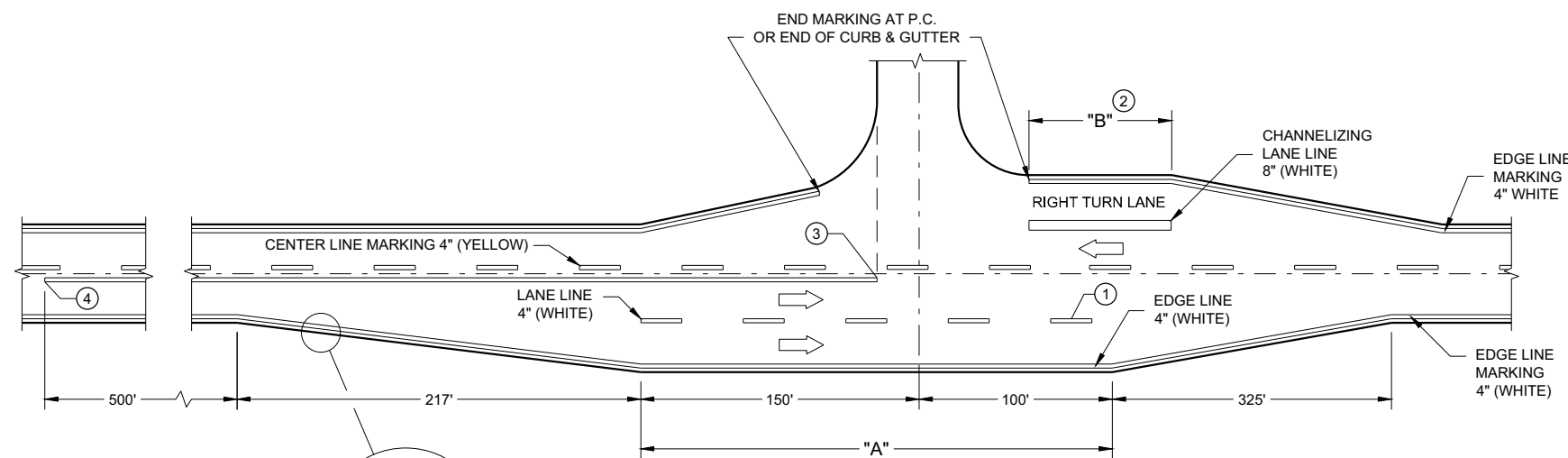
➡ DIRECTION OF TRAVEL



**MINOR INTERSECTION**



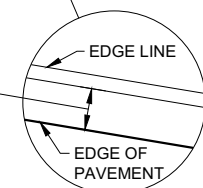
**INTERSECTION ON OUTSIDE OF CURVE**



**MAJOR INTERSECTIONS**

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)

BYPASS LANE PAVED SHOULDER  
WIDTH (AS SHOWN ELSEWHERE  
IN PLANS) - PLUS 2 INCHES



**PAVEMENT MARKING  
(INTERSECTIONS)**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

**LEGEND**

- † TYPE III BARRICADE
- †† TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- ⊙ SIGN ON PERMANENT SUPPORT
- ⚡ TYPE "A" WARNING LIGHT (FLASHING)
- ➡ DIRECTION OF TRAFFIC

**GENERAL NOTES**

THIS RAMP CLOSURE DETAIL IS TYPICAL FOR CLOSING A RIGHT SIDE EXIT RAMP. FOR A LEFT SIDE EXIT RAMP, REVERSE THE TRAFFIC CONTROL.

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

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 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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.

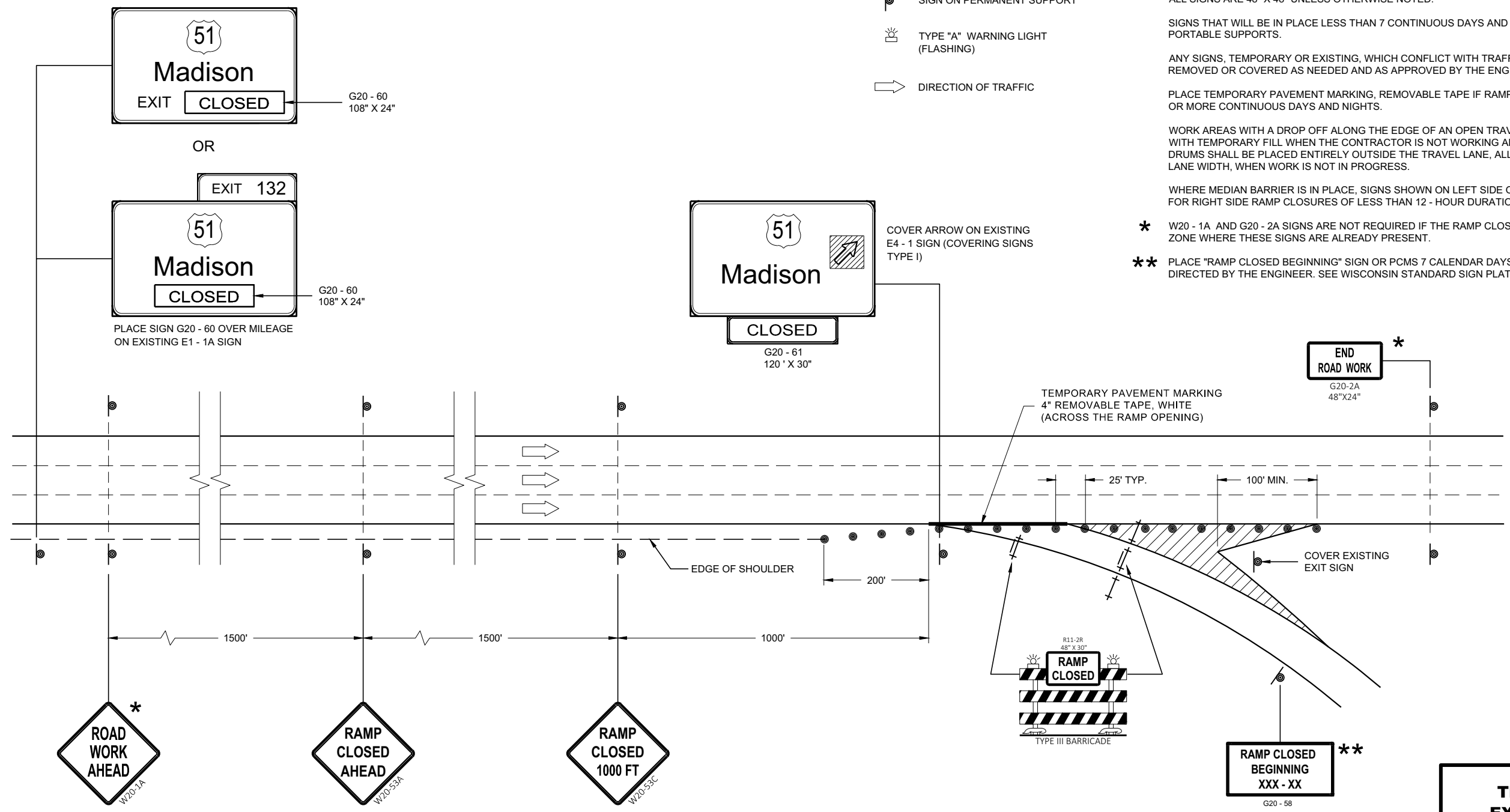
PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF RAMP CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

WORK AREAS WITH A DROP OFF ALONG THE EDGE OF AN OPEN TRAVEL LANE SHALL BE LEVELED WITH TEMPORARY FILL WHEN THE CONTRACTOR IS NOT WORKING ADJACENT TO THE TRAVEL LANE. DRUMS SHALL BE PLACED ENTIRELY OUTSIDE THE TRAVEL LANE, ALLOWING THE FULL UNOBSTRUCTED LANE WIDTH, WHEN WORK IS NOT IN PROGRESS.

WHERE MEDIAN BARRIER IS IN PLACE, SIGNS SHOWN ON LEFT SIDE OF ROADWAY MAY BE OMITTED FOR RIGHT SIDE RAMP CLOSURES OF LESS THAN 12 - HOUR DURATION.

\* W20 - 1A AND G20 - 2A SIGNS ARE NOT REQUIRED IF THE RAMP CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.

\*\* PLACE "RAMP CLOSED BEGINNING" SIGN OR PCMS 7 CALENDAR DAYS PRIOR TO CLOSURE OR AS DIRECTED BY THE ENGINEER. SEE WISCONSIN STANDARD SIGN PLATES FOR SIGN LAYOUT.



**TRAFFIC CONTROL,  
EXIT RAMP CLOSURE**





STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
November 2018 DATE /S/ Andrew Heidtke  
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA



**LEGEND**

-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM
-  DIRECTION OF TRAFFIC
-  WORK ZONE

**GENERAL NOTES**

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY THE REGIONAL TRAFFIC UNIT.

"WO" SIGN IS THE SAME AS "W" SIGN EXCEPT THE BACKGROUND IS ORANGE.

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

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

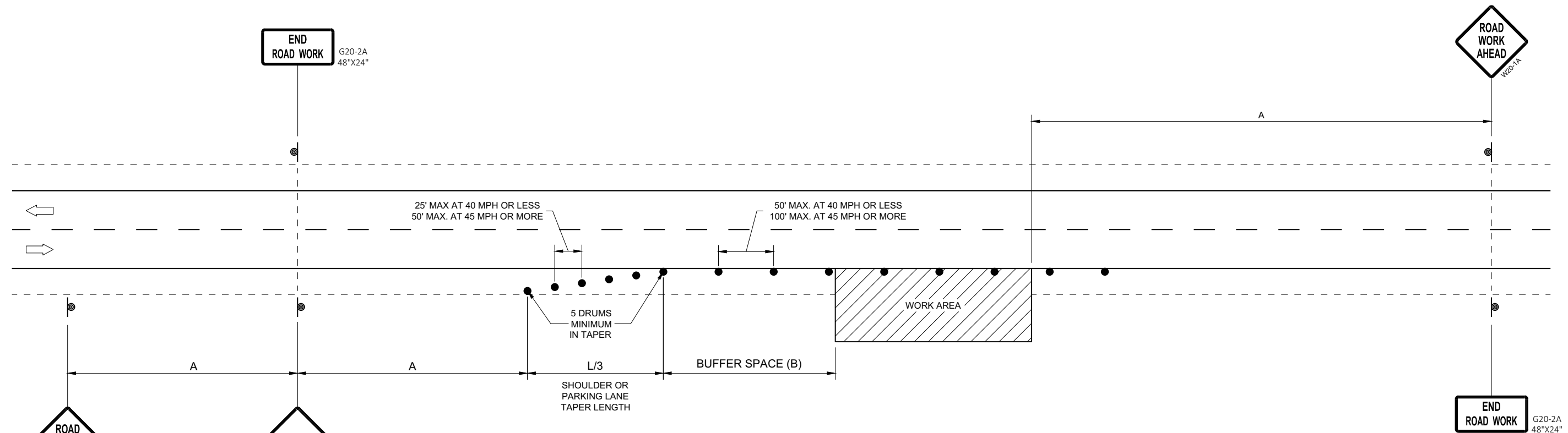
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

W20-1A AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.

6

6



OR  
IF TRAFFIC CONTROL DEVICES  
ENCROACH ONTO TRAVELED WAY, USE



| POSTED SPEED LIMIT<br>PRIOR TO WORK<br>STARTING (MPH) | ADVANCE<br>WARNING SIGN<br>SPACING (A) FEET | SHOULDER TAPER L / 3<br>W, LATERAL OFFSET (FT) |    |    |     |     |     | BUFFER<br>SPACE<br>(B) FEET |
|-------------------------------------------------------|---------------------------------------------|------------------------------------------------|----|----|-----|-----|-----|-----------------------------|
|                                                       |                                             | 3                                              | 4  | 5  | 6   | 7   | 8   |                             |
| 25                                                    | 200'                                        | 10                                             | 14 | 17 | 21  | 24  | 28  | 55                          |
| 30                                                    | 200'                                        | 15                                             | 20 | 25 | 30  | 35  | 40  | 85                          |
| 35                                                    | 350'                                        | 20                                             | 27 | 34 | 40  | 47  | 54  | 120                         |
| 40                                                    | 350'                                        | 26                                             | 35 | 44 | 53  | 62  | 70  | 170                         |
| 45                                                    | 500'                                        | 45                                             | 59 | 74 | 89  | 104 | 119 | 220                         |
| 50                                                    | 500'                                        | 50                                             | 66 | 83 | 99  | 116 | 132 | 280                         |
| 55                                                    | 500'                                        | 54                                             | 73 | 91 | 109 | 127 | 145 | 335'                        |

**TRAFFIC CONTROL, WORK ON  
SHOULDER OR PARKING LANE,  
UNDIVIDED ROADWAY**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION








APPROVED  
May 2020 /S/ Andrew Heidtke  
DATE STATEWIDE WORK ZONE TRAFFIC  
SAFETY ENGINEER

FHWA

SDD 15D28 - 04

SDD 15D28 - 04

**LEGEND**

-  SIGN ON TEMPORARY SUPPORT
-  SIGN ON PERMANENT SUPPORT
-  TYPE III BARRICADE
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TYPE "A" WARNING LIGHT (FLASHING)
-  DIRECTION OF TRAFFIC
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

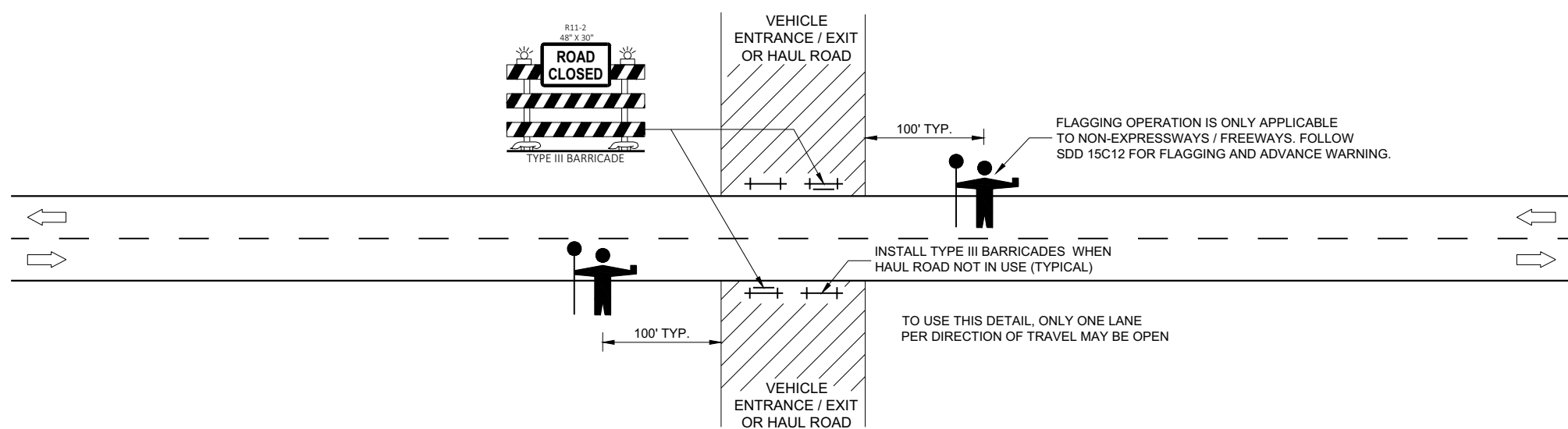
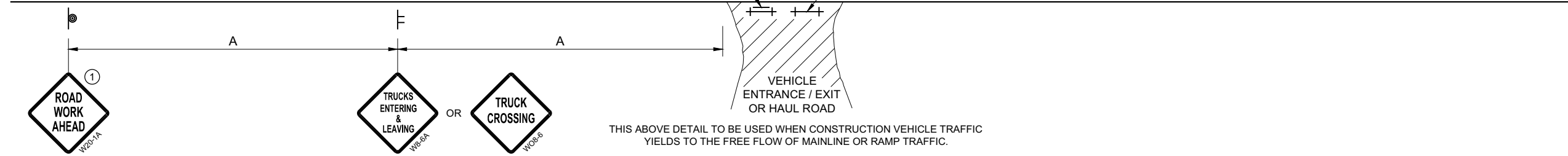
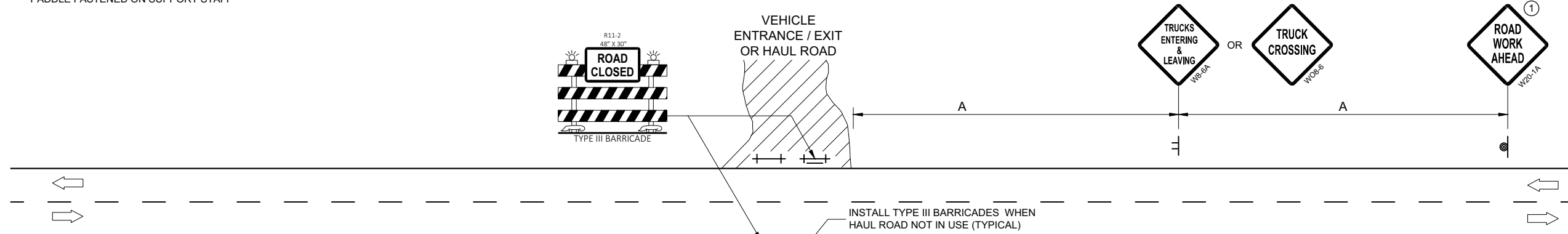
| POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH) | ADVANCE WARNING SIGN SPACING (A) FEET |
|-------------------------------------------------|---------------------------------------|
| 0-30                                            | 200'                                  |
| 35-40                                           | 350'                                  |
| 45-55                                           | 500'                                  |

**GENERAL NOTES**

- ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.
- "WO" SIGN IS THE SAME AS "W" SIGN EXCEPT THE BACKGROUND IS ORANGE.
- THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- WARNING SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.
- WHEN ACTIVITY REFLECTED BY THE SIGN IS NOT CURRENTLY TAKING PLACE, THE HIGHWAY SHALL BE RESTORED TO NORMAL CONDITION AND THE SIGNS SHALL BE REMOVED, COVERED OR TURNED AWAY FROM TRAFFIC.
- WHEN A SIDE ROAD OR RAMP INTERSECTS WITHIN THE ADVANCE SIGNING AREA, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND / OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.
- PLACE SIGNS ON BOTH SIDES IF USED ON DIVIDED HIGHWAY.
- ① THESE SIGNS ARE TO BE USED ONLY WHEN VEHICLE ENTRANCE / EXIT CONDITIONS ARE SEPARATED BY MORE THAN TWO MILES FROM PREVIOUS WORK AREA OR SIGNING OR AS DIRECTED BY THE ENGINEER.

6

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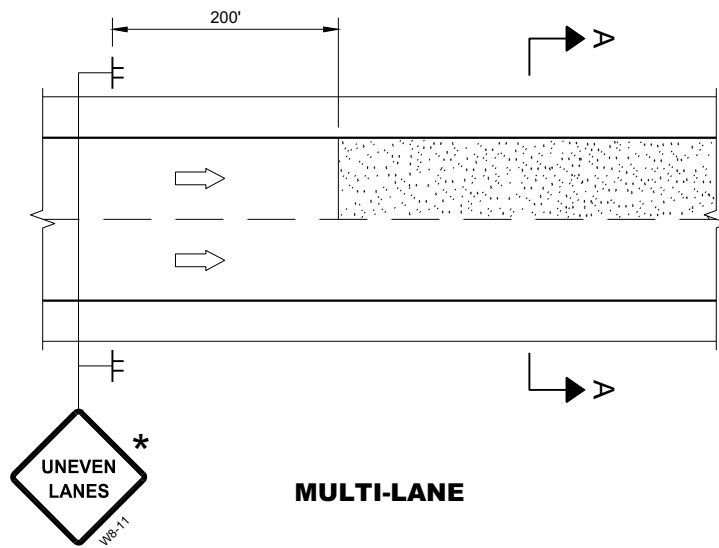
THIS DETAIL TO BE USED WHEN CONSTRUCTION WORK INCLUDING TRUCKING ACTIVITY REQUIRES MAINLINE TRAFFIC TO BE TEMPORARILY STOPPED IN ONE OR BOTH DIRECTIONS. DELAY TO HIGHWAY TRAFFIC SHALL BE MINIMIZED.

FLAGGING OPERATION IS ONLY APPLICABLE TO NON-EXPRESSWAYS / FREEWAYS. FOLLOW SDD 15C12 FOR FLAGGING AND ADVANCE WARNING.

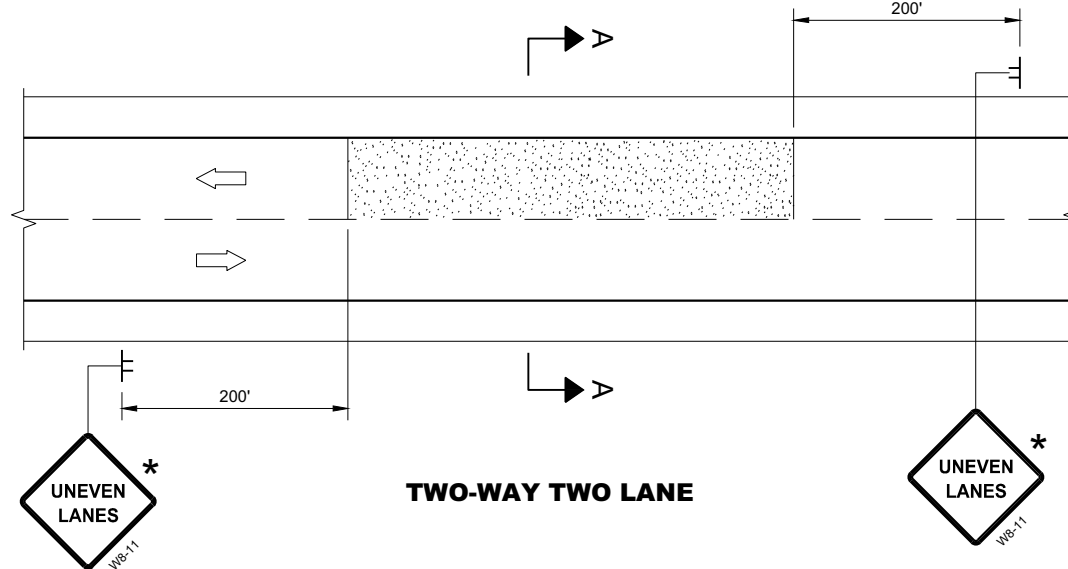
SDD 15D29 - 06

SDD 15D29 - 06

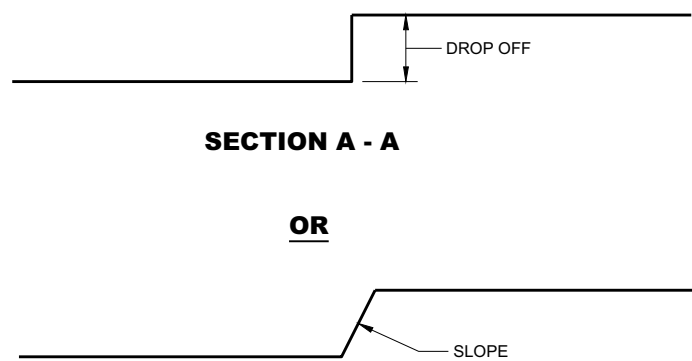
|                                                                    |                                          |
|--------------------------------------------------------------------|------------------------------------------|
| <b>TRAFFIC CONTROL,<br/>VEHICLE ENTRANCE/EXIT<br/>OR HAUL ROAD</b> |                                          |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION                 |                                          |
| APPROVED<br>May 2020<br>DATE                                       | /S/ Andrew Heidtke<br>WORK ZONE ENGINEER |
| FHWA                                                               |                                          |



**MULTI-LANE**



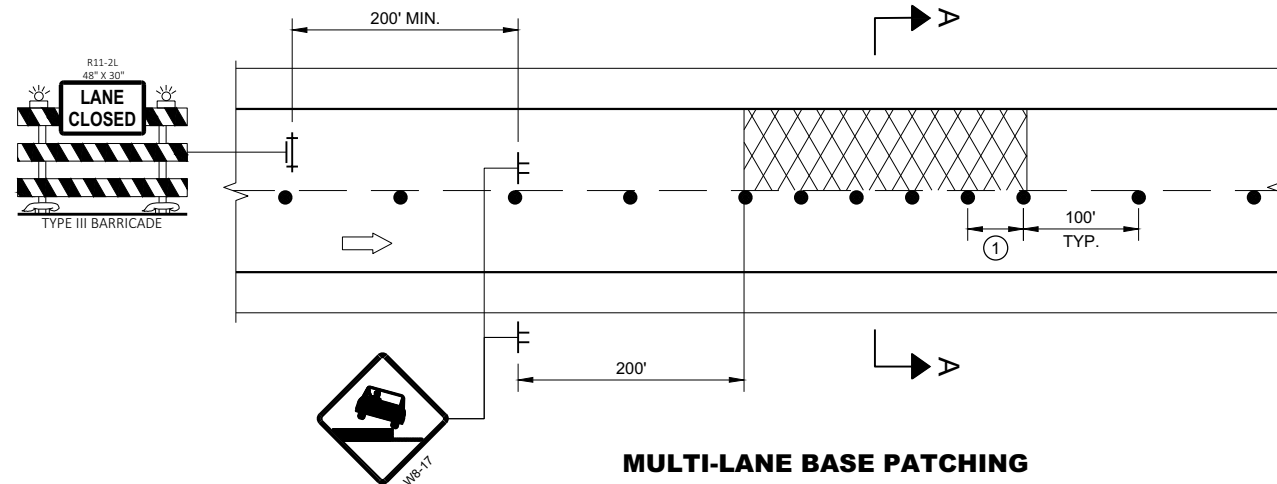
**TWO-WAY TWO LANE**



**SECTION A - A**

**OR**

**SECTION A - A**



**MULTI-LANE BASE PATCHING**

**ADJACENT LANE DROP-OFFS**

**GENERAL NOTES**

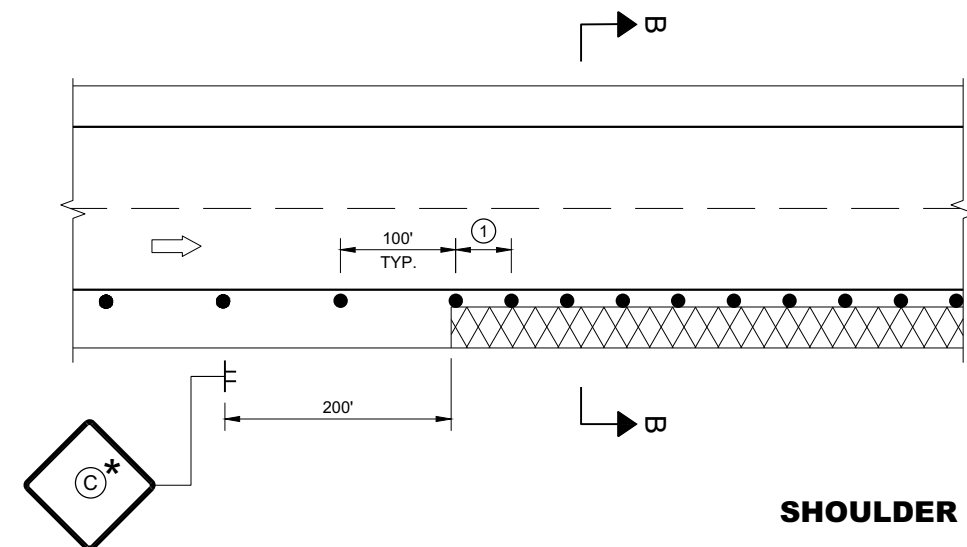
- FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.
- ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
- "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.
- \* IF THE DROP-OFF IS CONTINUOUS ALONG THE PROJECT, PLACE ADDITIONAL SIGNS EVERY 1 MILE AND AFTER EVERY ENTRANCE RAMP.
- ① USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

**LEGEND**

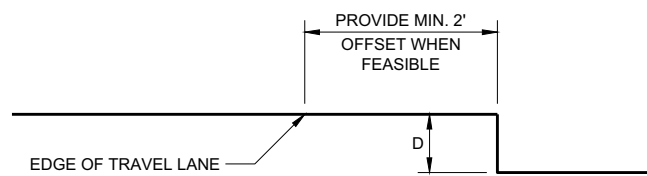
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- WORK AREA WITH DROP-OFF
- MILLED SURFACE

6

6



**SHOULDER DROP-OFFS**



**SECTION B - B**

| D                                     | SIGN (C)                                                                         |
|---------------------------------------|----------------------------------------------------------------------------------|
| < 2" WITH A SLOPE STEEPER THAN 3:1    | <br>W08-9                                                                        |
| 2" < 6" WITH A SLOPE STEEPER THAN 3:1 | <br>W8-9A<br>PROVIDE A 3:1 OR FLATTER SLOPE OF MATERIAL ADJACENT TO THE PAVEMENT |

SDD 15D39 - 02

SDD 15D39 - 02

**TRAFFIC CONTROL,  
DROP-OFF SIGNING**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
March 2018 /S/ Andrew Heidtke  
DATE DATE WORK ZONE ENGINEER

FHWA

**GENERAL NOTES**

DRAWING NOT TO SCALE. ALL SIGNS AND POSTS ON THIS SHEET SHALL BE PAID FOR WITH 'TRAFFIC CONTROL SIGNS' BID ITEM. ALL SIDE ROADS WHICH ARE UNDER CONSTRUCTION OF CURB AND GUTTER AND/OR GRADING SHALL BE ADEQUATELY SIGNED.

ALL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE WISCONSIN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (WMUTCD). SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISDOT STANDARD SIGN PLATES.

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

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

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

ALL SIGNS INAPPROPRIATE TO THE STATUS OF THE CONTROL ZONE, INCLUDING PRE-EXISTING SIGNS IN THE VICINITY, SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.

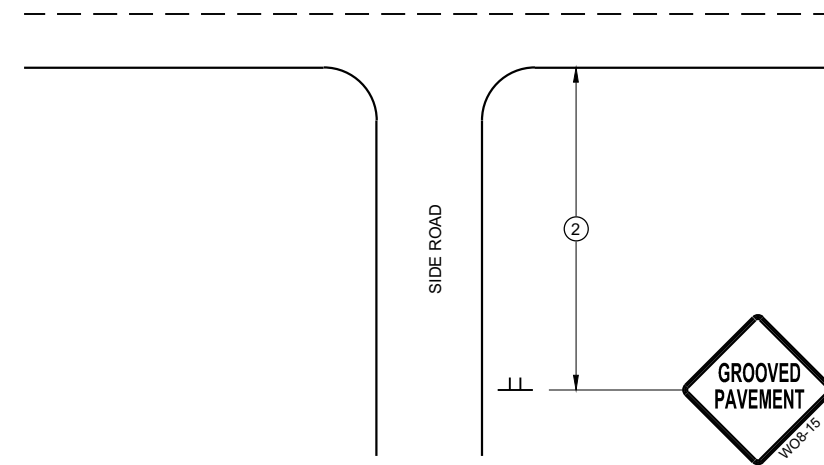
SEE 15C34 FOR ADDITIONAL TRAFFIC CONTROL SIGNING WHEN CENTERLINE PAVEMENT MAKINGS ARE MISSING. 'DO NOT PASS' SIGNS MUST BE INSTALLED ON THE SAME DAY AS MILLING OPERATIONS.

- ① PLACE SIGNS 350' IN ADVANCE OF MILLED SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.
- ② PLACE SIGN 200' MIN. FROM INTERSECTION AND 200' MIN. AFTER ADVANCE WARNING SIGN SHOWN IN SDD 15C04.

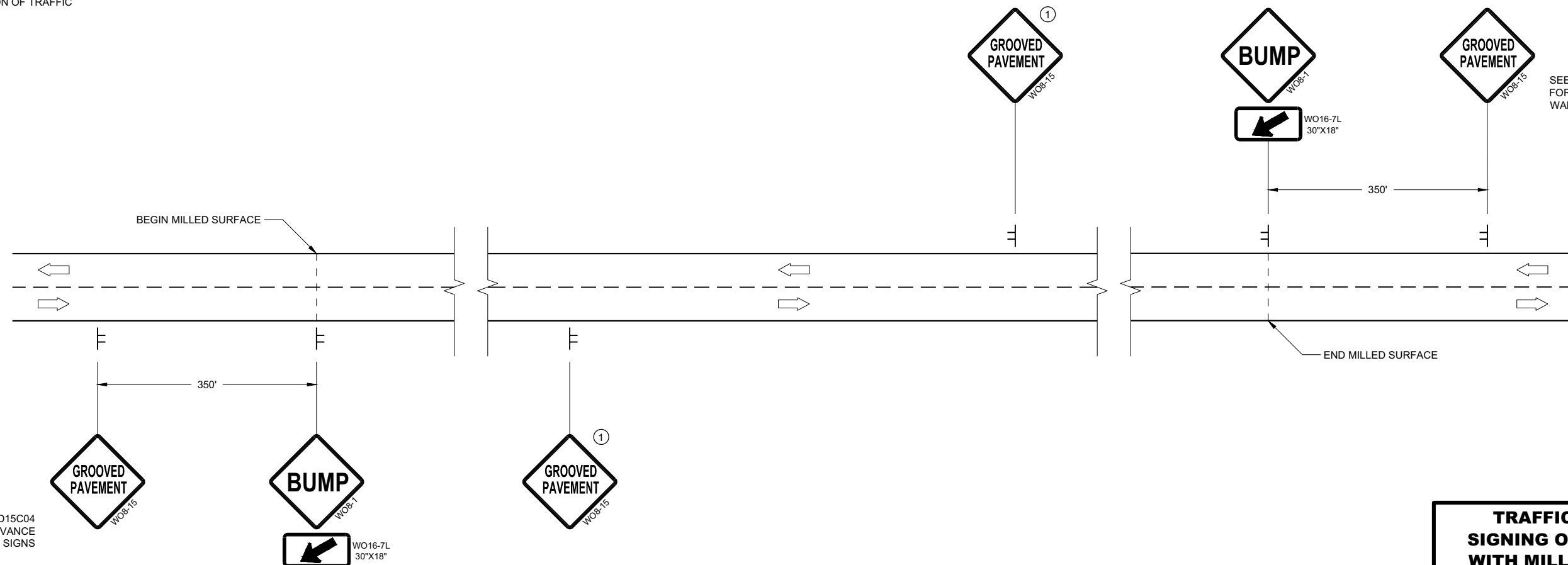
**LEGEND**

⊥ SIGN ON TEMPORARY SUPPORT

➡ DIRECTION OF TRAFFIC



**TYPICAL SIDE ROAD APPROACH SIGN DETAIL**



**DETAIL FOR SIGNING ON MILLED SURFACES**

SEE SDD15C04 FOR ADVANCE WARNING SIGNS

SEE SDD15C04 FOR ADVANCE WARNING SIGNS

**TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

FHWA

**GENERAL NOTES**

DRAWING NOT TO SCALE. ALL SIGNS AND POSTS ON THIS SHEET SHALL BE PAID FOR WITH 'TRAFFIC CONTROL SIGNS' BID ITEM. ALL SIDE ROADS WHICH ARE UNDER CONSTRUCTION OF CURB AND GUTTER AND/OR GRADING SHALL BE ADEQUATELY SIGNED.

ALL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE WISCONSIN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (WMUTCD). SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISDOT STANDARD SIGN PLATES.

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

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



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

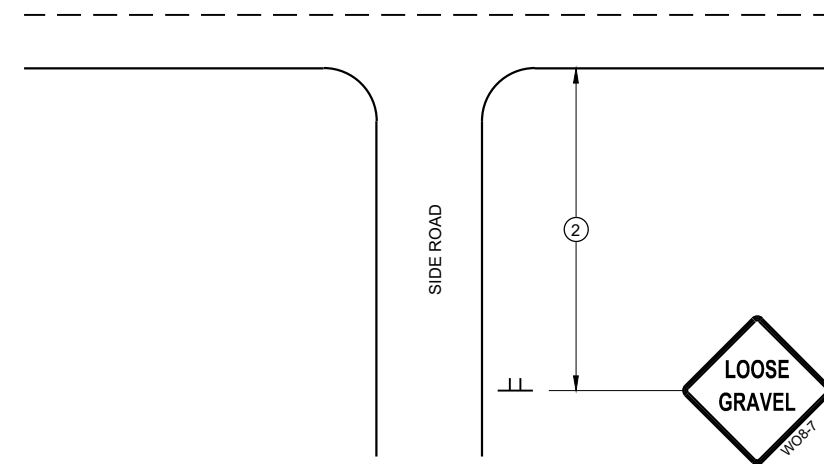
ALL SIGNS INAPPROPRIATE TO THE STATUS OF THE CONTROL ZONE, INCLUDING PRE-EXISTING SIGNS IN THE VICINITY, SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.

SEE 15C34 FOR ADDITIONAL TRAFFIC CONTROL SIGNING WHEN CENTERLINE PAVEMENT MAKINGS ARE MISSING. 'DO NOT PASS' SIGNS MUST BE INSTALLED ON THE SAME DAY AS MILLING OPERATIONS.

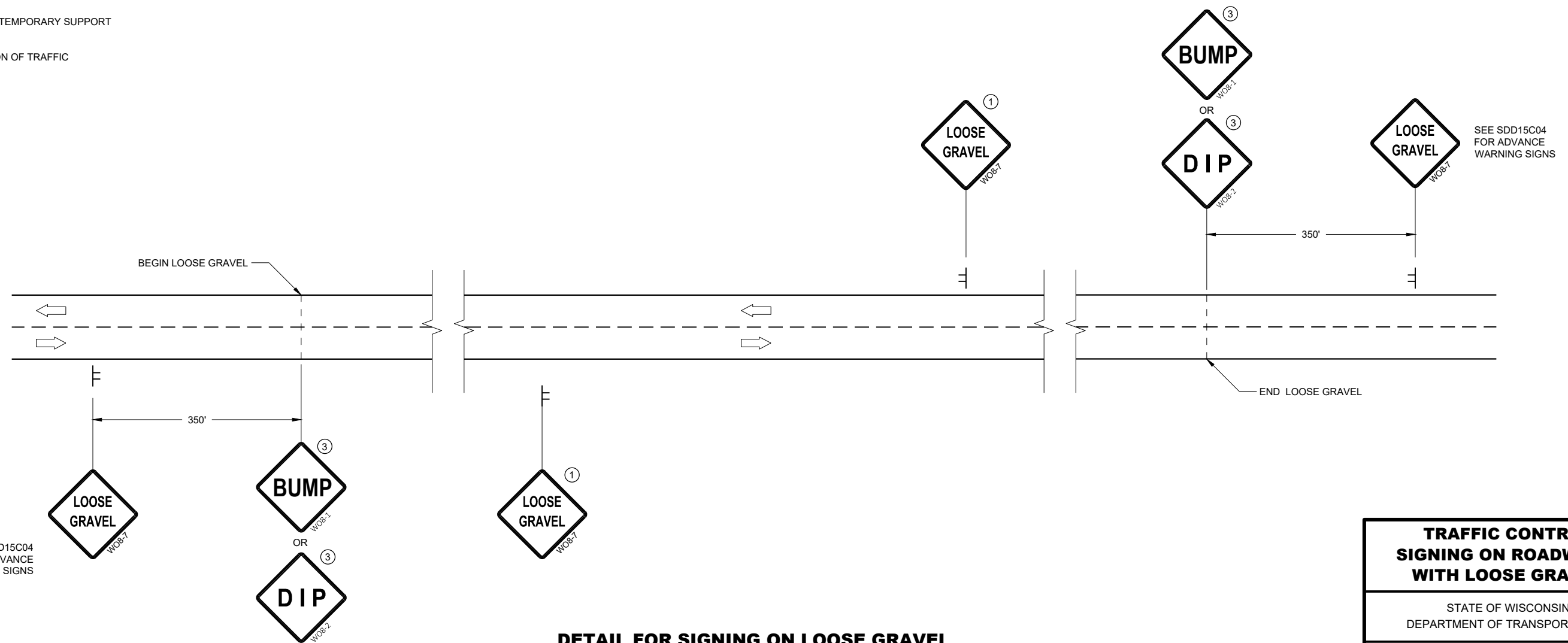
- ① PLACE SIGNS 350' IN ADVANCE OF CHIP SEALED OR LOOSE GRAVEL SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.
- ② PLACE SIGN 200' MIN. FROM INTERSECTION AND 200' MIN. AFTER ADVANCE WARNING SIGN SHOWN IN SDD 15C04.
- ③ ADD WO8-1 OR WO8-2 SIGN WHEN THE CONDITION IS PRESENT.

**LEGEND**

-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC



**TYPICAL SIDE ROAD APPROACH SIGN DETAIL**



SEE SDD15C04 FOR ADVANCE WARNING SIGNS

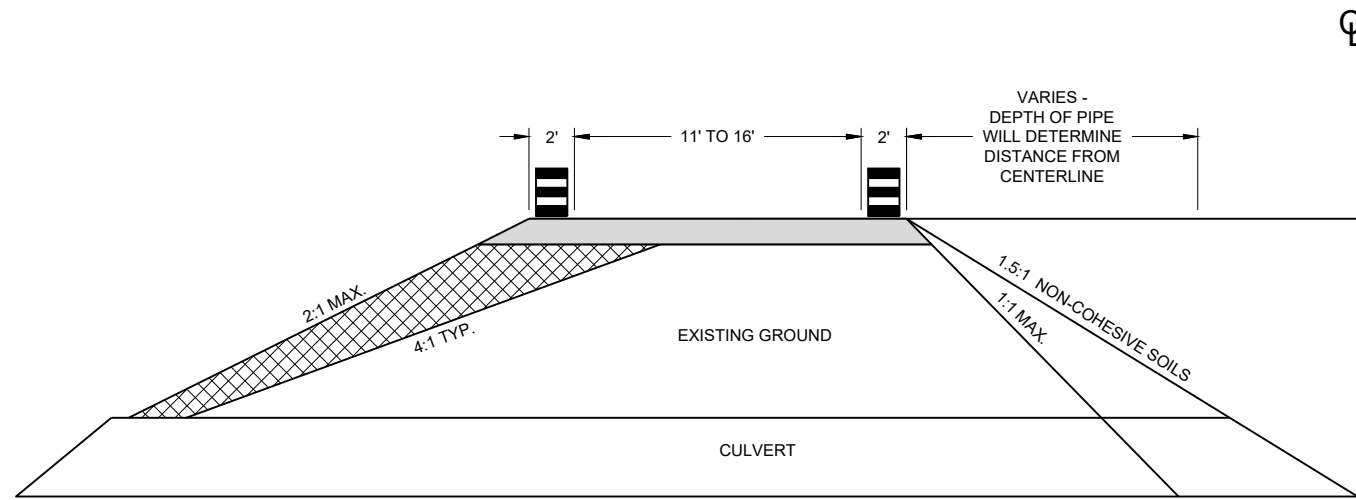
SEE SDD15C04 FOR ADVANCE WARNING SIGNS

**DETAIL FOR SIGNING ON LOOSE GRAVEL OR CHIP SEALED SURFACES**

**TRAFFIC CONTROL SIGNING ON ROADWAYS WITH LOOSE GRAVEL**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2021 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER  
FHWA



**CROSS SECTION**

**GENERAL NOTES**

USE 1:1 FOR COHESIVE CLAYS AND SILTS, LOAMS, SANDY CLAYS AND ANGULAR GRAVEL SOILS.  
 USE 1.5:1 FOR NON-COHESIVE SOILS.

THE TAPER SHOULD EXTEND ACROSS THE SHOULDER UNLESS DOING SO WOULD GREATLY CONFLICT WITH THE WORK OPERATION.






ALL LANE CLOSURE SIGNS SHALL BE REMOVED OR COVERED AND ALL DEVICES REMOVED BEYOND THE SHOULDER WHEN WORK IS NOT IN PROGRESS AND THE LANE IS RESTORED TO A SAFE OPERATING CONDITION.

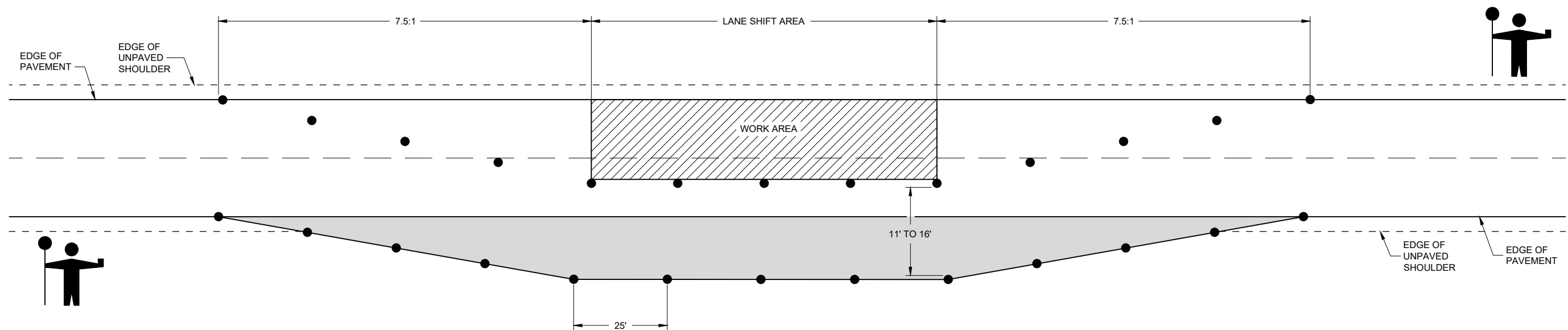
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

USE WITH SDD 15C12 "TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATIONS"

USE WITH SDD 15D45 "SIGNING ON ROADWAYS WITH LOOSE GRAVEL"

**LEGEND**

-  DRUM WITHOUT WARNING LIGHT
-  6" BASE AGGREGATE DENSE 1 1/2" - INCIDENTAL TO LANE SHIFT ITEM
-  FILL - INCIDENTAL TO LANE SHIFT ITEM
-  WORK AREA
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF



**LANE SHIFT IN FLAGGING OPERATION**





**TRAFFIC CONTROL,  
 TEMPORARY LANE SHIFT  
 DURING CULVERT WORK**

STATE OF WISCONSIN  
 DEPARTMENT OF TRANSPORTATION

APPROVED  
 February 2021 /S/ Andrew Heidtke  
 DATE WORK ZONE ENGINEER

FHWA

**LEGEND**

- V1 WORK VEHICLE
- V2 SHADOW VEHICLE
-  TRUCK MOUNTED ATTENUATOR (TMA)
-  FLASHING ARROW PANEL (CAUTION)
-  WORK AREA
-  DIRECTION OF TRAFFIC

| POSTED SPEED PRIOR TO WORK STARTING (MPH) | DECISION SIGHT DISTANCE (D) |
|-------------------------------------------|-----------------------------|
| 0 - 25                                    | 550'                        |
| 30                                        | 550'                        |
| 35                                        | 700'                        |
| 40                                        | 700'                        |
| 45                                        | 900'                        |
| 50                                        | 900'                        |
| 55                                        | 1200'                       |

**GENERAL NOTES**

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.

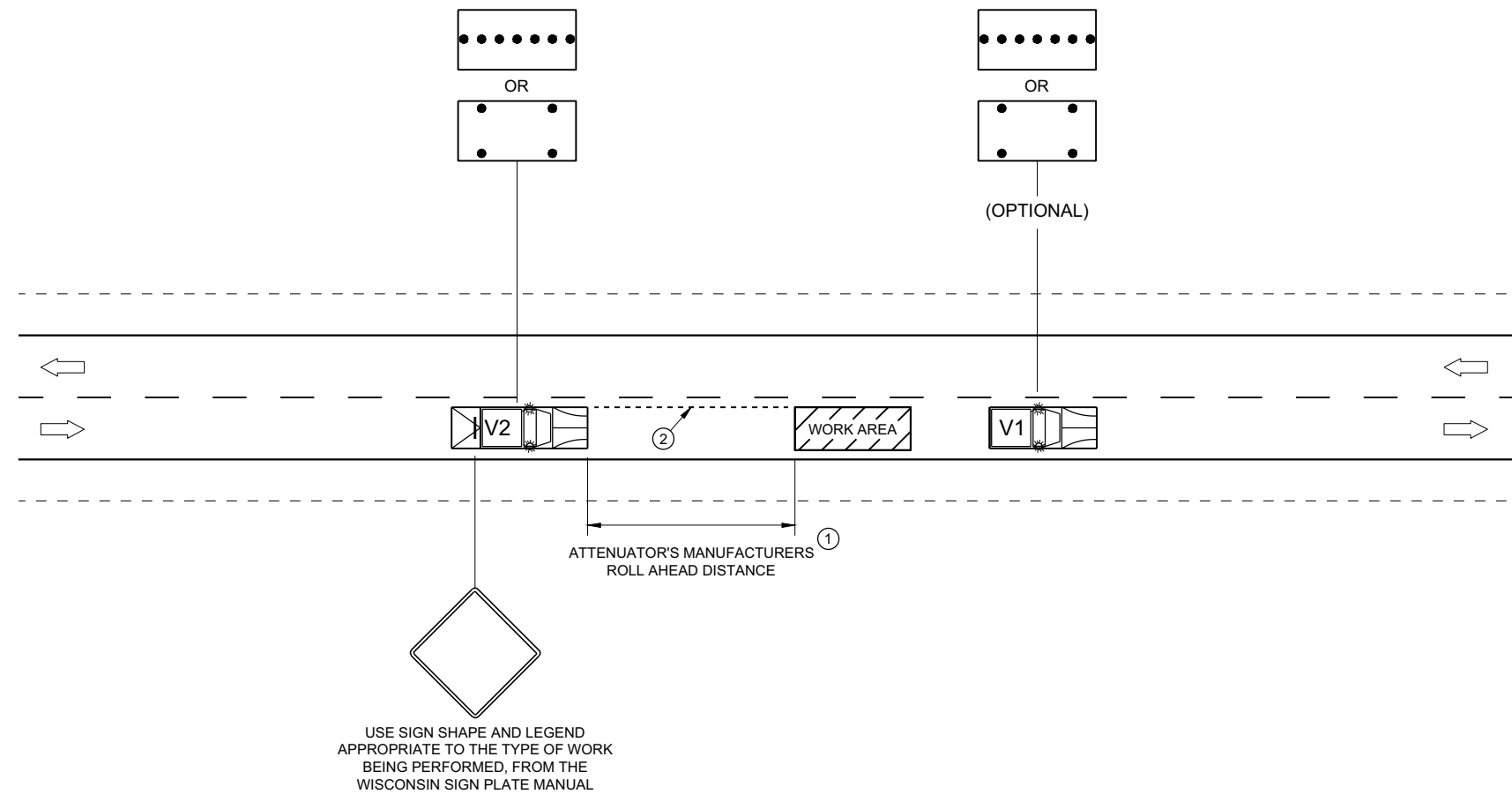
MOBILE IS WORK THAT MOVES CONTINUOUSLY OR MOVES AT LEAST THE DECISION SIGHT DISTANCE EVERY 15 MINUTES.

ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.

ALL ARROW PANELS SHALL BE REAR FACING, TYPE "B" OR "C", AND DISPLAYING THE FLASHING CAUTION MODE. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.

USE AN ATTENUATOR ON THE REARMOST VEHICLE THAT BLOCKS ALL OR PART OF THE TRAFFIC LANE.

- ① DISTANCE BETWEEN VEHICLES MAY INCREASE FROM THE ATTENUATOR'S ROLL AHEAD BASED ON TERRAIN, SIGHT DISTANCE, 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 OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.
- ② ALIGN LEFT SIDE OF SHADOW VEHICLE WITH EDGE OF WORK AREA.



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SDD 15D51 - 01

SDD 15D51 - 01

**TRAFFIC CONTROL,  
MOBILE OPERATIONS ON  
AN UNDIVIDED ROADWAY**

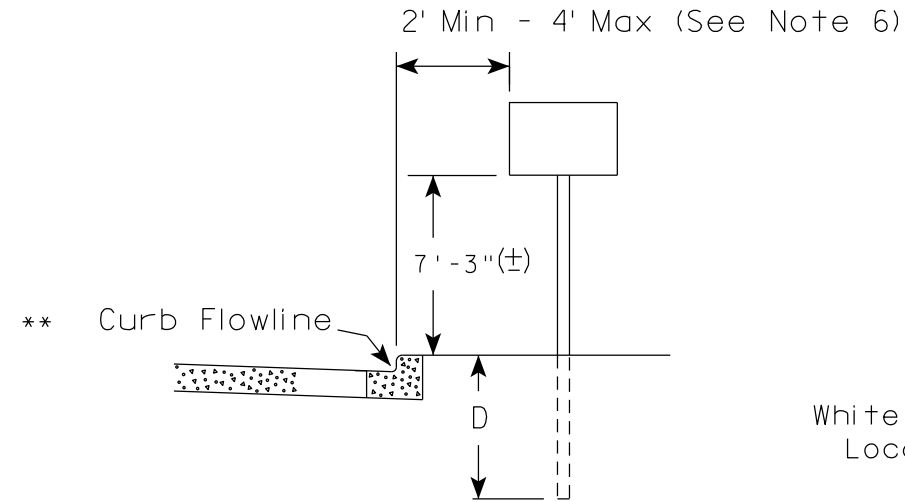
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2021 DATE /S/ Andrew Heidtke  
STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER

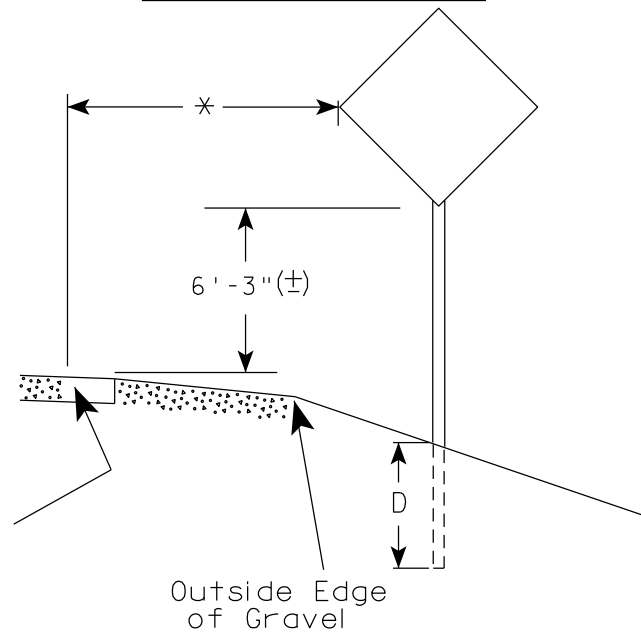
FHWA

URBAN AREA

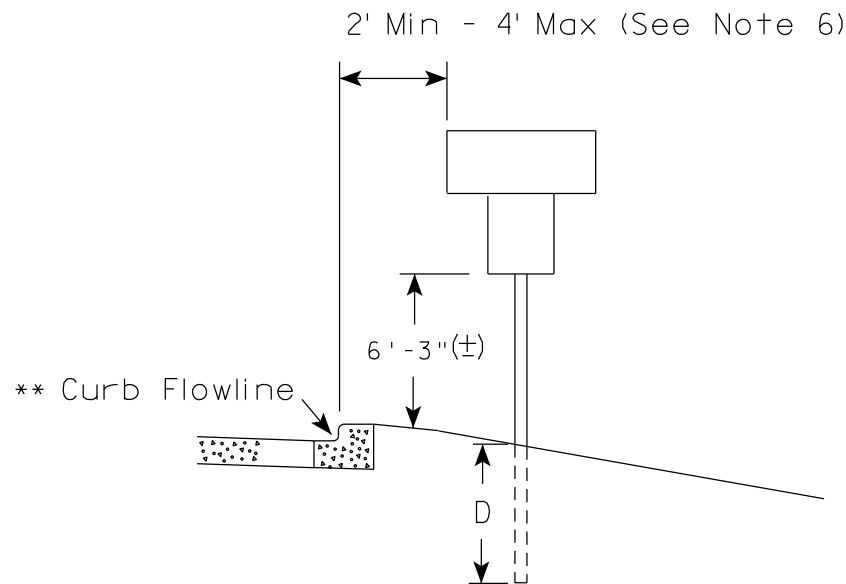
RURAL AREA (See Note 2)



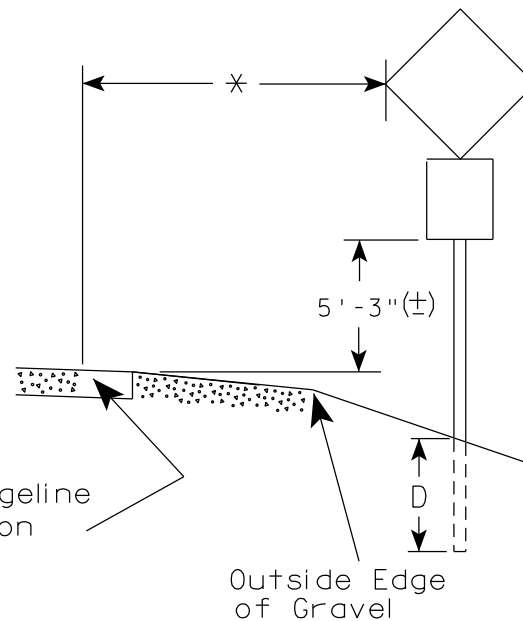
White Edgeline Location



Outside Edge of Gravel



White Edgeline Location



Outside Edge of Gravel

POST EMBEDMENT DEPTH

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

GENERAL NOTES

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

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

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

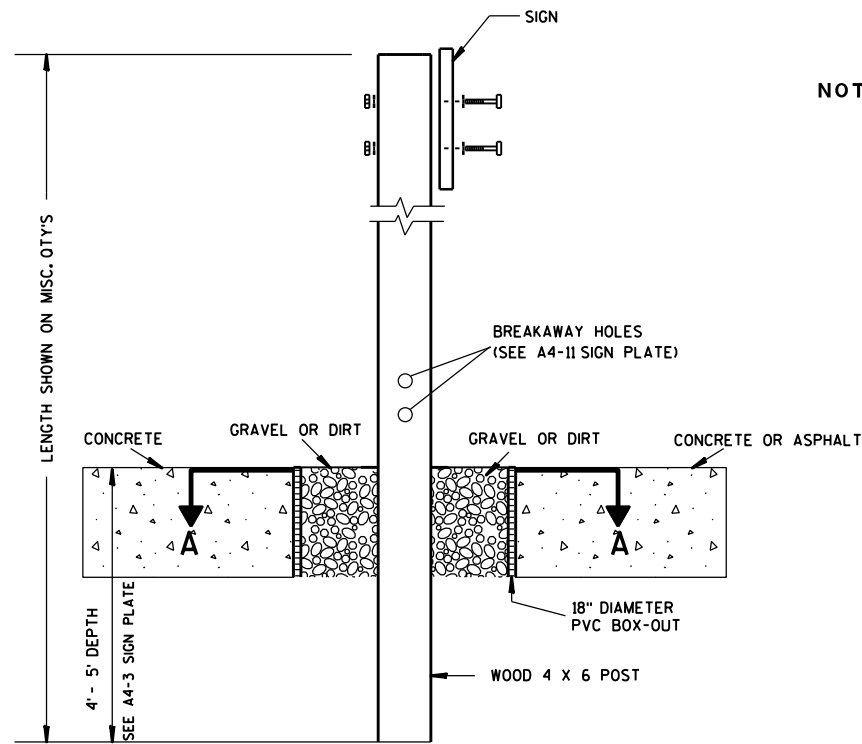
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 5/13/2020 PLATE NO. A4-3.22

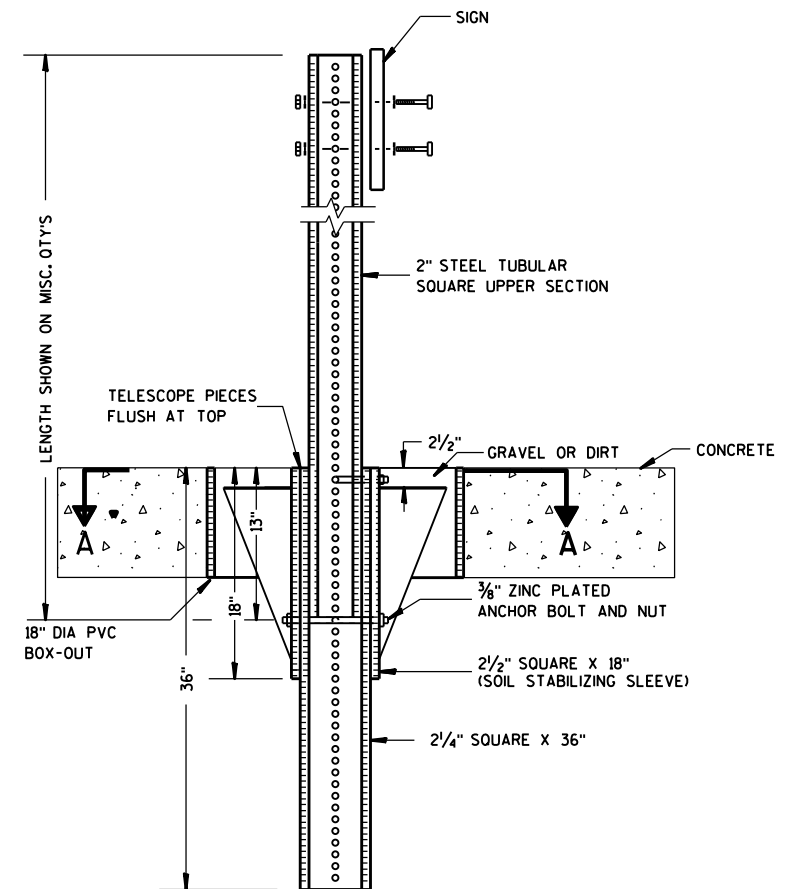




**ELEVATION VIEW**

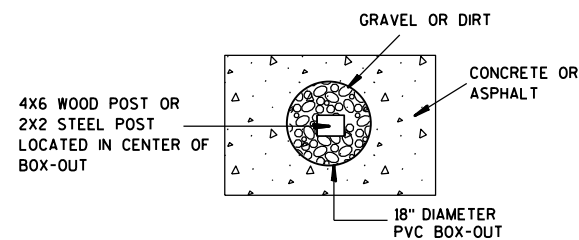
**DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT**

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



**ELEVATION VIEW**

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



**PLAN VIEW**

**FOR NEW CONCRETE/ ASPHALT INSTALLATIONS**

**SIGN POST  
BOX-OUTS  
A4-3B**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

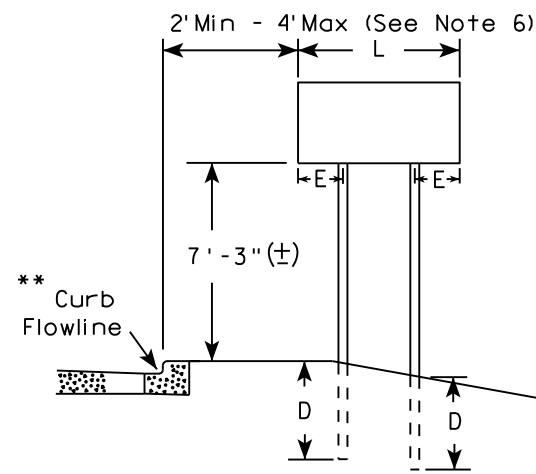
7

7

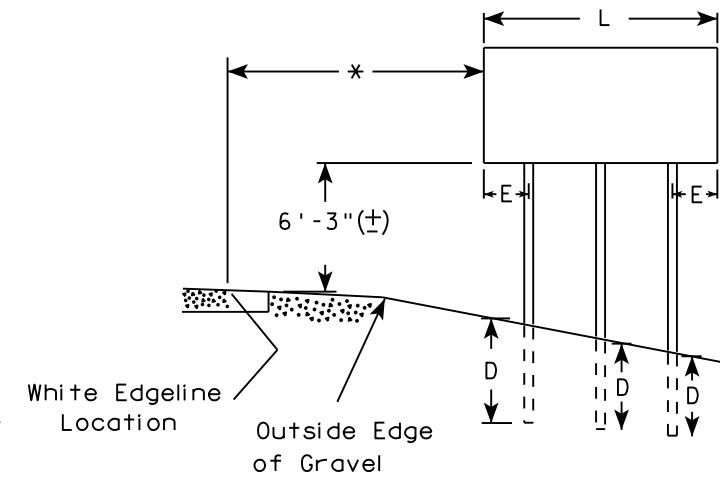
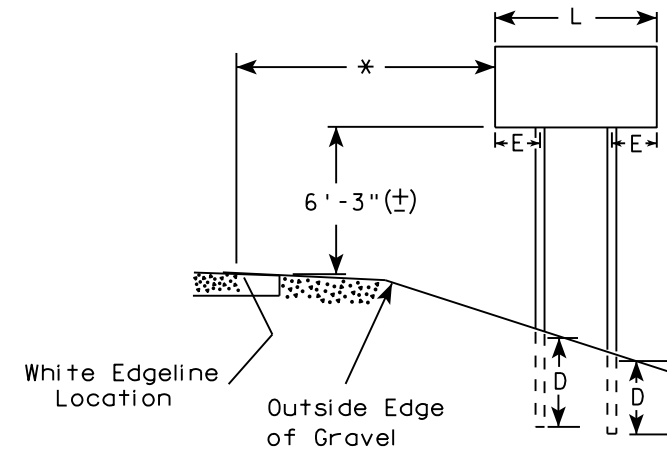
GENERAL NOTES

1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. J-Assemblies are considered to be one sign for mounting height.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

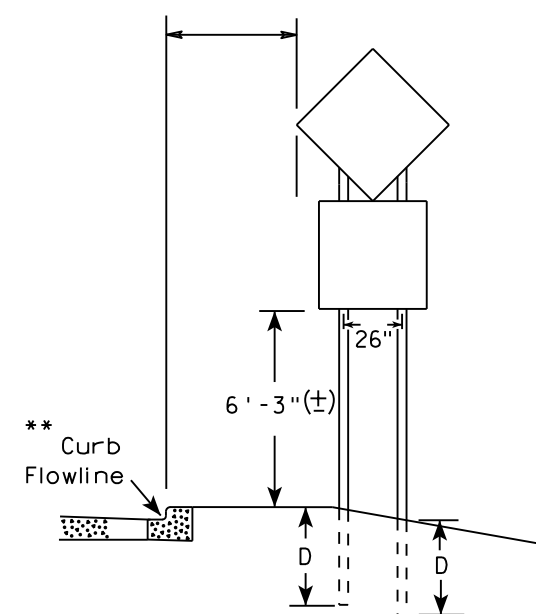
URBAN AREA



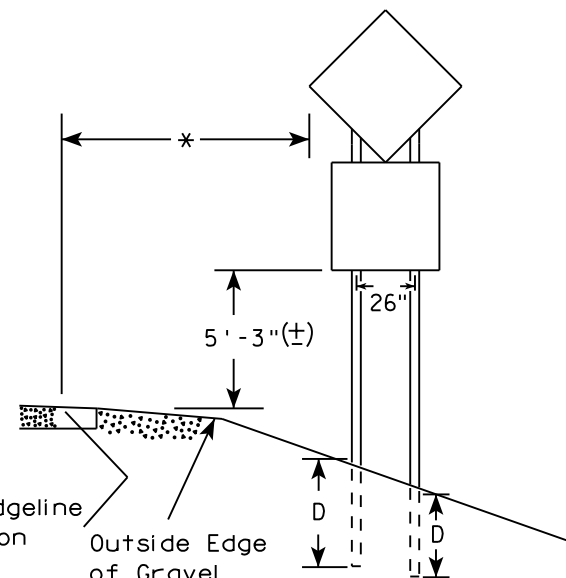
RURAL AREA (See Note 3)



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



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

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

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

\*\*\*

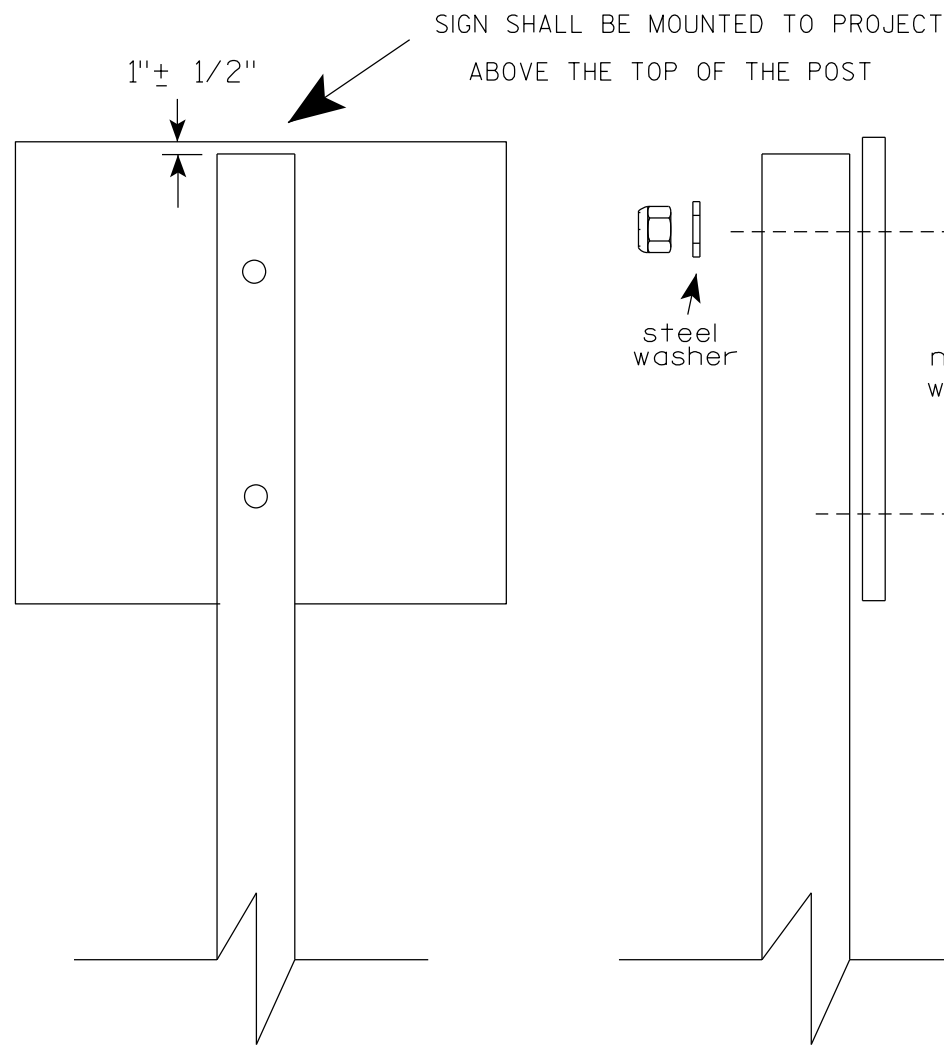
| SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED) |     |
|------------------------------------------------------|-----|
| L                                                    | E   |
| Greater than 108"<br>to 144"                         | 12" |

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION  
 APPROVED *Matthew R. Rauch*  
 For State Traffic Engineer  
 DATE 8/21/17 PLATE NO. A4-4.15



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

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

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

STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)

MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts

WOOD POSTS (4" x 6")

LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)  
3/8" X 4" (STRINGERS ON BACK OF SIGN)

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)  
3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)

RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL  
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -

1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL

1-1/4" O.D. X 3/8" I.D. X .080 NYLON

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

ATTACHMENT OF SIGNS  
TO POSTS

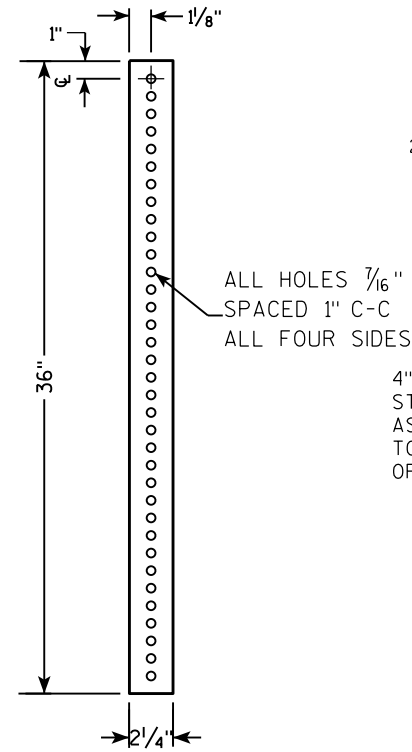
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*  
For State Traffic Engineer

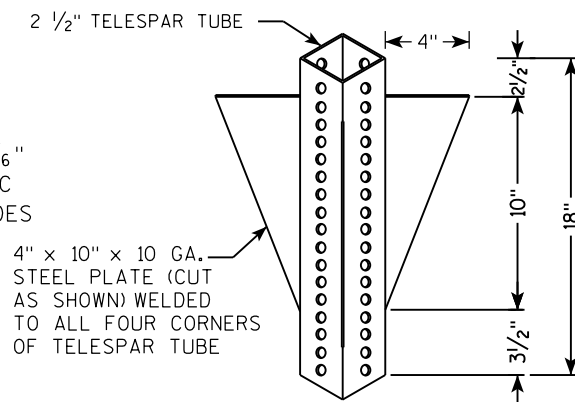
DATE 4/1/2020 PLATE NO. A4-8.9

**TELESCOPIC TUBING ANCHORS  
TWO PIECE SYSTEM**

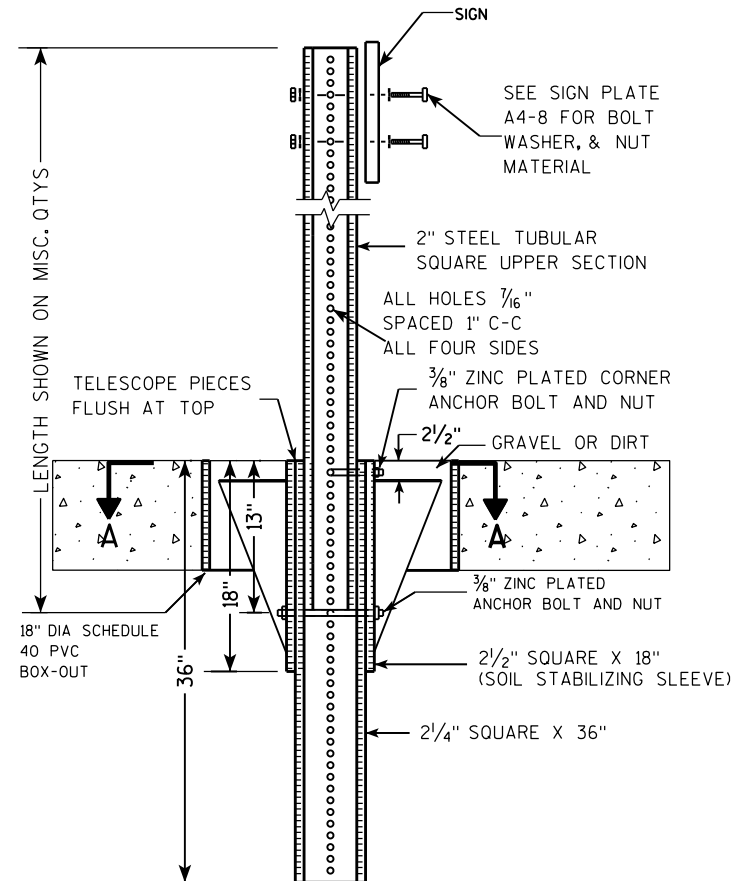
2 1/4" SQUARE  
12 GAUGE  
PERFORATED  
GALVANIZED FINISH



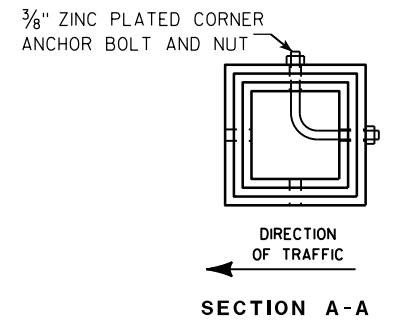
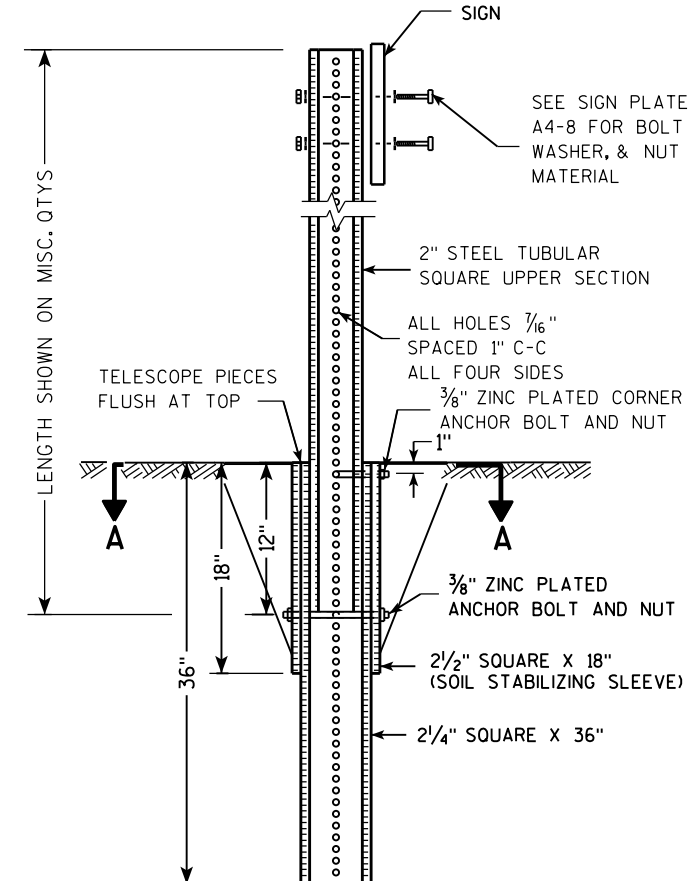
2 1/2" SQUARE  
12 GAUGE  
OMNI-DIRECTIONAL  
PERFORATED  
SOIL STABILIZING SLEEVE  
GALVANIZED FINISH



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



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



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

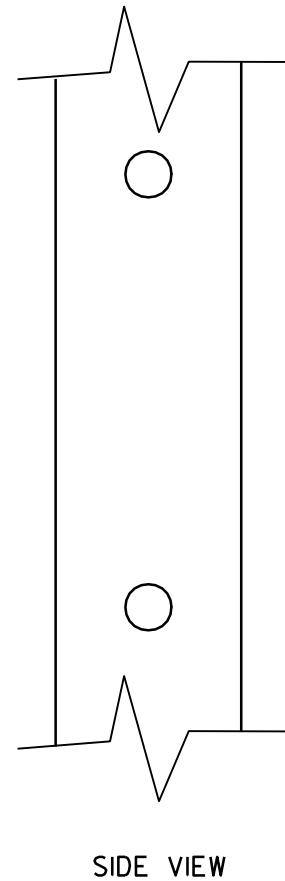
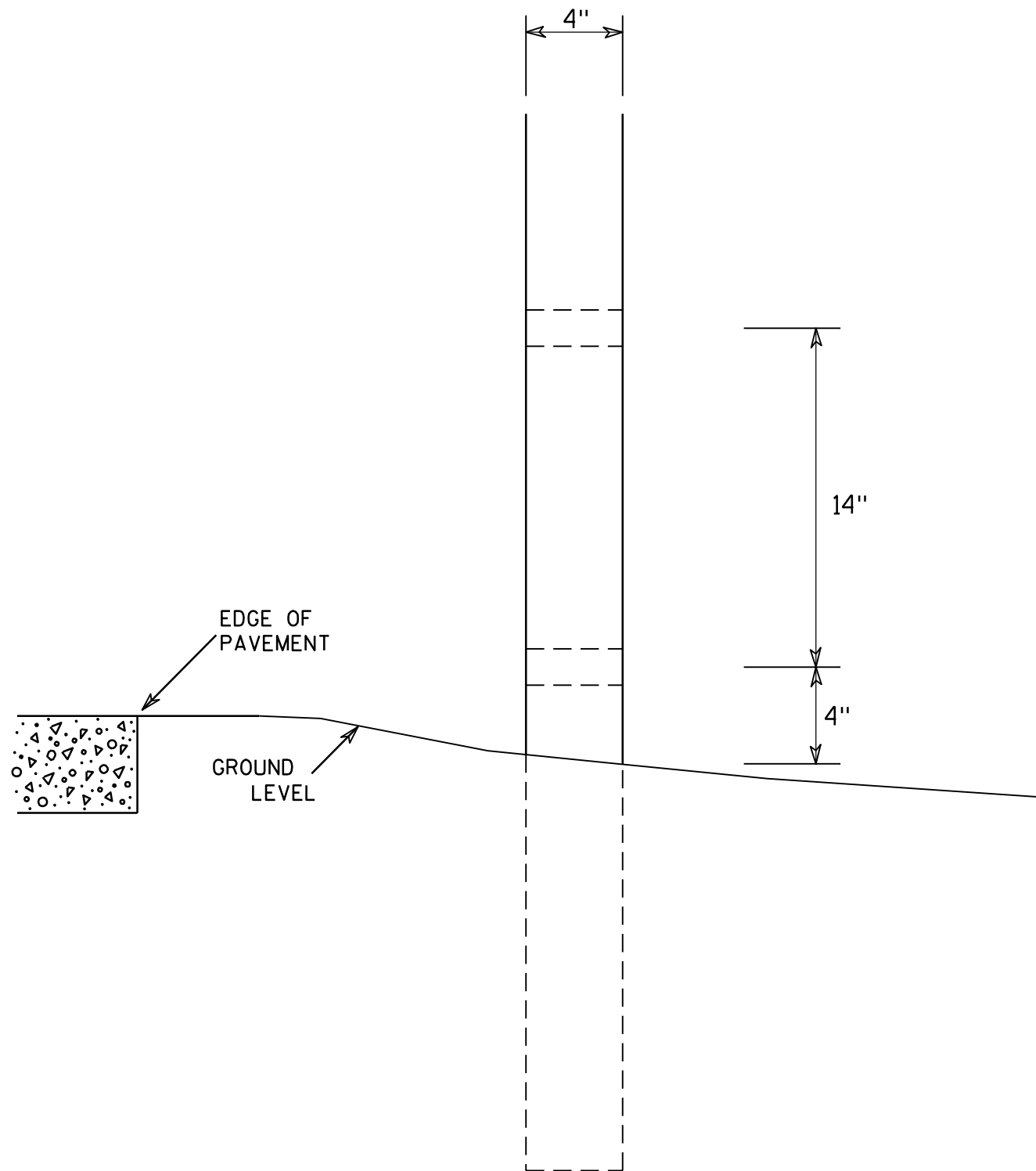
Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

**TUBULAR STEEL  
SIGN POST  
A4-9**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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



GENERAL NOTES

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

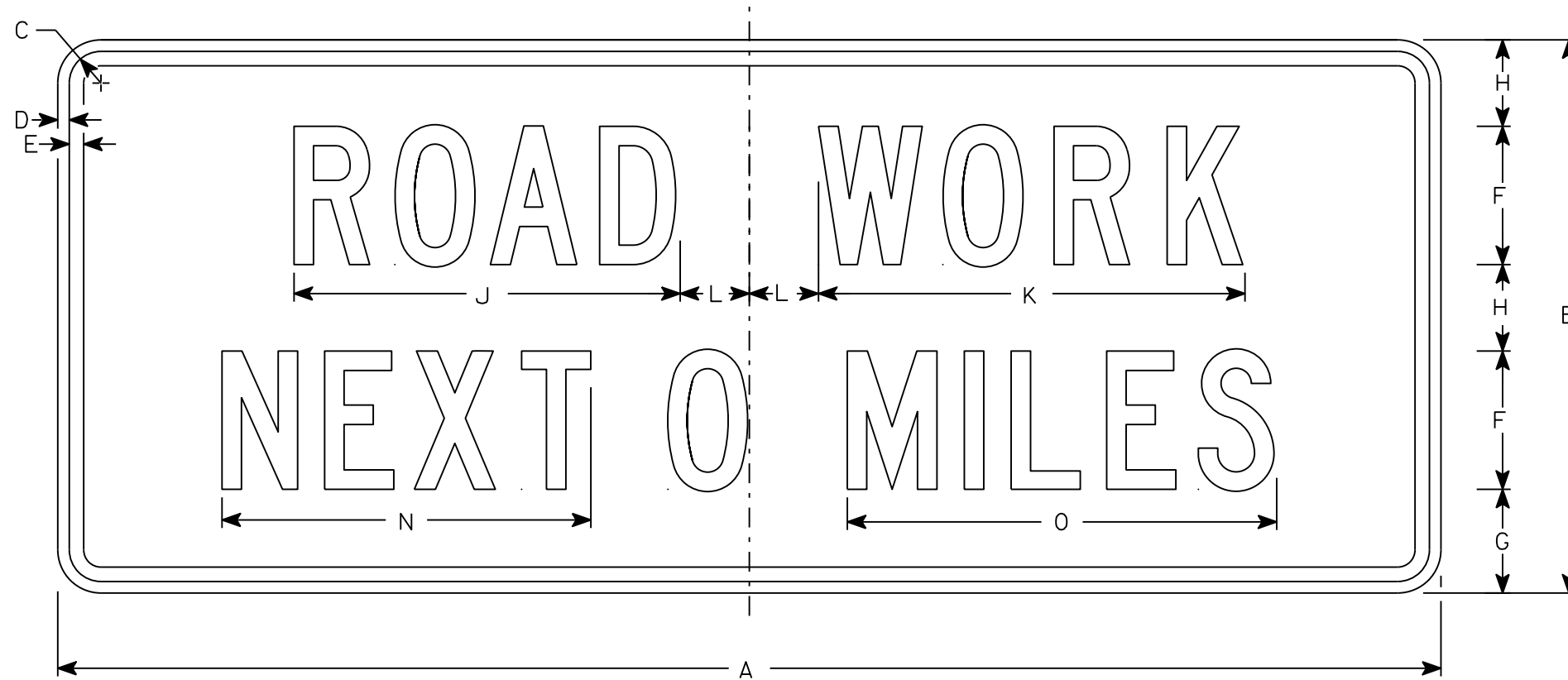
7

7

|                                          |                                                      |
|------------------------------------------|------------------------------------------------------|
| <b>4 X 6 WOOD POST<br/>MODIFICATIONS</b> |                                                      |
| <i>WISCONSIN DEPT OF TRANSPORTATION</i>  |                                                      |
| APPROVED                                 | <i>Chester J Spang</i><br>for State Traffic Engineer |
| DATE <u>3/27/97</u>                      | PLATE NO. <u>A4-11.2</u>                             |

NOTES

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



G20-1

7

7

| SIZE | A  | B  | C     | D   | E   | F | G     | H     | I | J      | K      | L | M | N  | O      | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |    |
|------|----|----|-------|-----|-----|---|-------|-------|---|--------|--------|---|---|----|--------|---|---|---|---|---|---|---|---|---|---|---|--------------|----|
| 1    |    |    |       |     |     |   |       |       |   |        |        |   |   |    |        |   |   |   |   |   |   |   |   |   |   |   |              |    |
| 2    | 60 | 24 | 1 3/8 | 1/2 | 5/8 | 6 | 4 1/2 | 3 3/4 |   | 16 3/4 | 18 1/2 | 3 |   | 16 | 18 5/8 |   |   |   |   |   |   |   |   |   |   |   |              | 10 |
| 3    |    |    |       |     |     |   |       |       |   |        |        |   |   |    |        |   |   |   |   |   |   |   |   |   |   |   |              |    |
| 4    | 60 | 24 | 1 3/8 | 1/2 | 5/8 | 6 | 4 1/2 | 3 3/4 |   | 16 3/4 | 18 1/2 | 3 |   | 16 | 18 5/8 |   |   |   |   |   |   |   |   |   |   |   |              | 10 |
| 5    |    |    |       |     |     |   |       |       |   |        |        |   |   |    |        |   |   |   |   |   |   |   |   |   |   |   |              |    |

STANDARD SIGN  
G20-1

WISCONSIN DEPT OF TRANSPORTATION

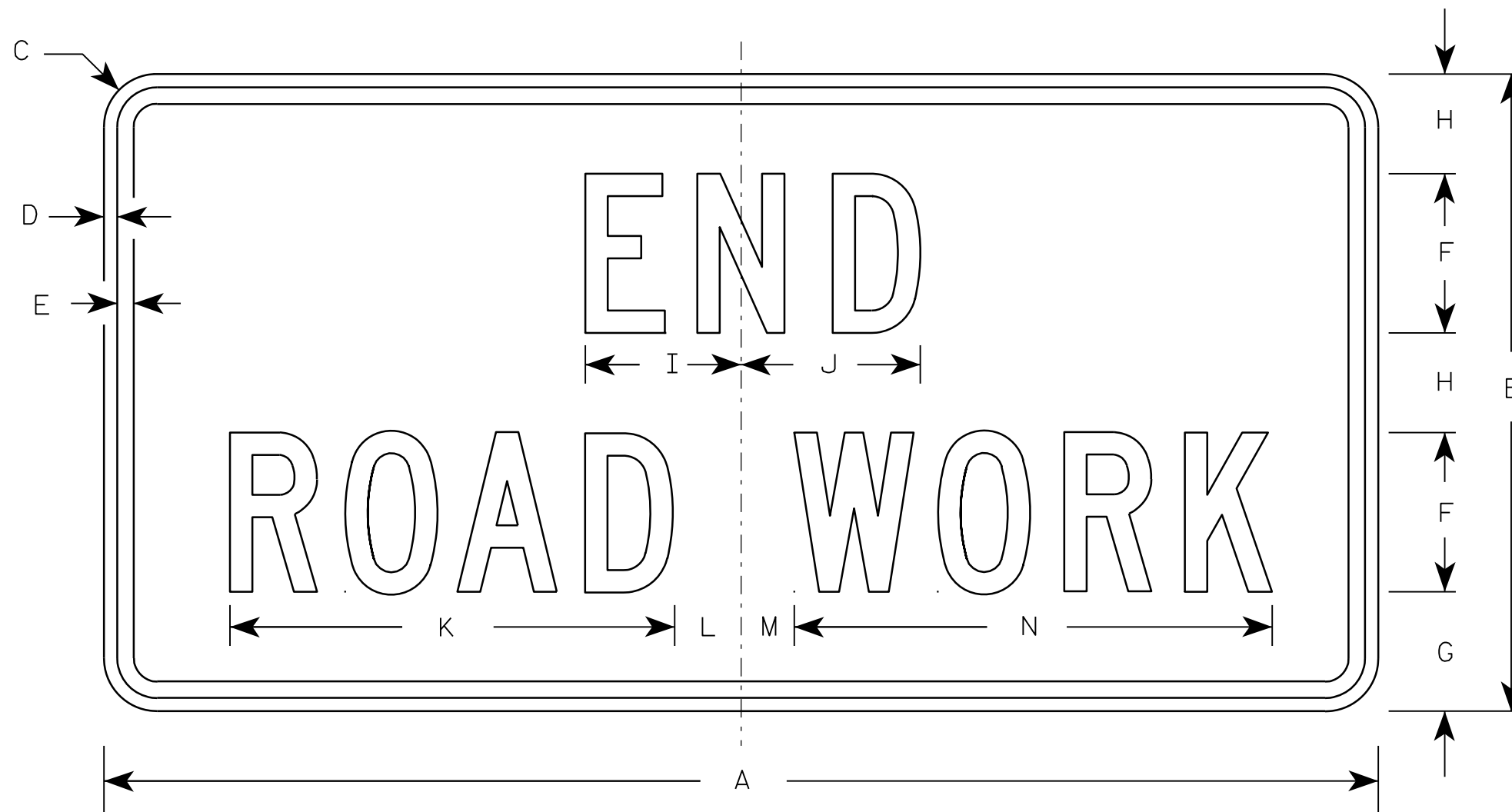
APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

DATE 3/14/17 PLATE NO. G20-1.8

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: \_\_\_\_\_ **E**

NOTES

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



G20-2A

Metric equivalent  
for this sign is:

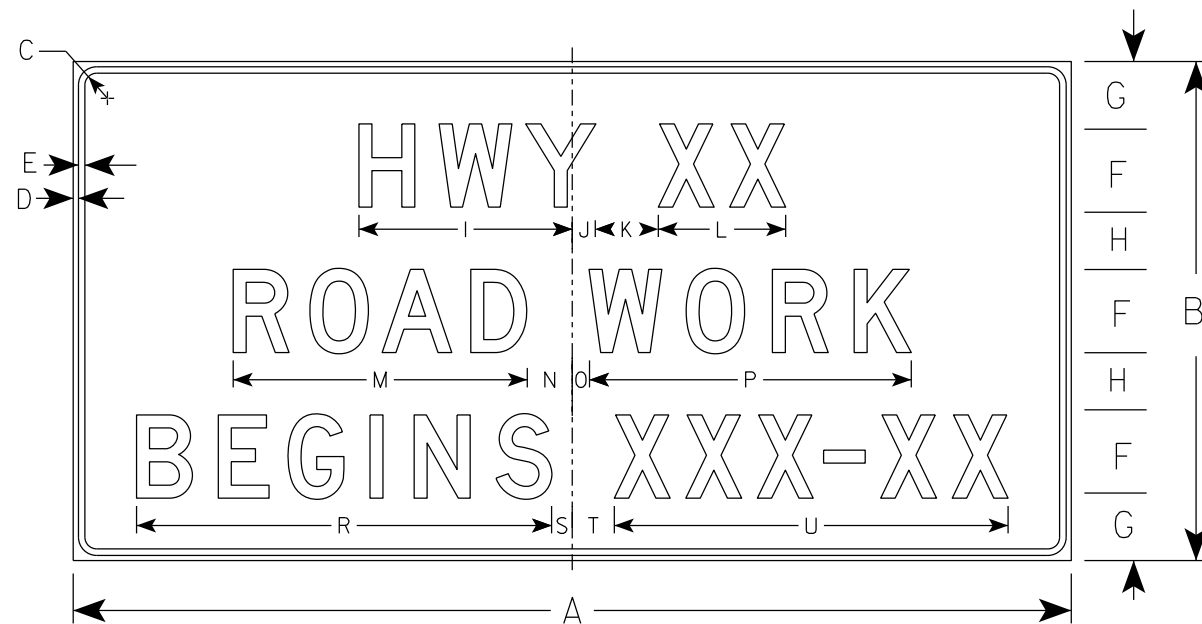
| SIZE |                  |
|------|------------------|
| 1    | 900 mm X 450 mm  |
| 2    | 1200 mm X 600 mm |
| 3    | 1200 mm X 600 mm |
| 4    | 1200 mm X 600 mm |
| 5    | 1200 mm X 600 mm |

| SIZE | A  | B  | C     | D   | E   | F | G     | H     | I     | J     | K      | L     | M     | N      | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. | Area<br>sq. |
|------|----|----|-------|-----|-----|---|-------|-------|-------|-------|--------|-------|-------|--------|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|-------------|
| 1    | 36 | 18 | 1 1/8 | 3/8 | 1/2 | 4 | 3 3/4 | 2 1/2 | 4 1/8 | 4 1/8 | 11 1/8 | 2     | 1     | 12 1/8 |   |   |   |   |   |   |   |   |   |   |   |   | 4.5             | 0.41        |
| 2    | 48 | 24 | 1 1/2 | 1/2 | 5/8 | 6 | 4 1/2 | 3 3/4 | 5 7/8 | 6 3/4 | 16 3/4 | 2 1/2 | 1 3/4 | 18 1/2 |   |   |   |   |   |   |   |   |   |   |   |   | 8.0             | 0.72        |
| 3    | 48 | 24 | 1 1/2 | 1/2 | 5/8 | 6 | 4 1/2 | 3 3/4 | 5 7/8 | 6 3/4 | 16 3/4 | 2 1/2 | 1 3/4 | 18 1/2 |   |   |   |   |   |   |   |   |   |   |   |   | 8.0             | 0.72        |
| 4    | 48 | 24 | 1 1/2 | 1/2 | 5/8 | 6 | 4 1/2 | 3 3/4 | 5 7/8 | 6 3/4 | 16 3/4 | 2 1/2 | 1 3/4 | 18 1/2 |   |   |   |   |   |   |   |   |   |   |   |   | 8.0             | 0.72        |
| 5    | 48 | 24 | 1 1/2 | 1/2 | 5/8 | 6 | 4 1/2 | 3 3/4 | 5 7/8 | 6 3/4 | 16 3/4 | 2 1/2 | 1 3/4 | 18 1/2 |   |   |   |   |   |   |   |   |   |   |   |   | 8.0             | 0.72        |

|                                  |                                                       |
|----------------------------------|-------------------------------------------------------|
| STANDARD SIGN<br>G20-2A          |                                                       |
| WISCONSIN DEPT OF TRANSPORTATION |                                                       |
| APPROVED                         | <i>Matthew R. Rauch</i><br>For State Traffic Engineer |
| DATE 9/30/09                     | PLATE NO. G20-2A.8                                    |

NOTES

1. Sign is Type II - Type F Reflective
2. Color:  
Background - Orange  
Message - Black
3. Message Series - D
4. Substitute appropriate numeral and adjust spacing to achieve proper balance.



G20-57

7

7

| SIZE | A  | B  | C     | D   | E   | F | G     | H     | I      | J     | K | L      | M      | N     | O     | P      | Q | R      | S     | T     | U      | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|----|-------|-----|-----|---|-------|-------|--------|-------|---|--------|--------|-------|-------|--------|---|--------|-------|-------|--------|---|---|---|---|---|-----------------|
| 1    |    |    |       |     |     |   |       |       |        |       |   |        |        |       |       |        |   |        |       |       |        |   |   |   |   |   |                 |
| 2    |    |    |       |     |     |   |       |       |        |       |   |        |        |       |       |        |   |        |       |       |        |   |   |   |   |   |                 |
| 3    | 72 | 36 | 1 1/8 | 1/2 | 5/8 | 6 | 5     | 4     | 15 5/8 | 1 5/8 | 5 | 9 1/4  | 21 1/4 | 3 1/2 | 1 1/2 | 23 1/4 |   | 29 7/8 | 1 3/4 | 3 1/4 | 28 1/2 |   |   |   |   |   | 18.0            |
| 4    | 96 | 48 | 2 1/4 | 3/4 | 1   | 8 | 6 1/2 | 5 1/2 | 20 5/8 | 2 1/4 | 6 | 12 1/4 | 28 1/4 | 4 3/8 | 1 5/8 | 31     |   | 39 1/4 | 2     | 4     | 37 7/8 |   |   |   |   |   | 32.0            |
| 5    |    |    |       |     |     |   |       |       |        |       |   |        |        |       |       |        |   |        |       |       |        |   |   |   |   |   |                 |

STANDARD SIGN  
G20-57

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*  
For State Traffic Engineer

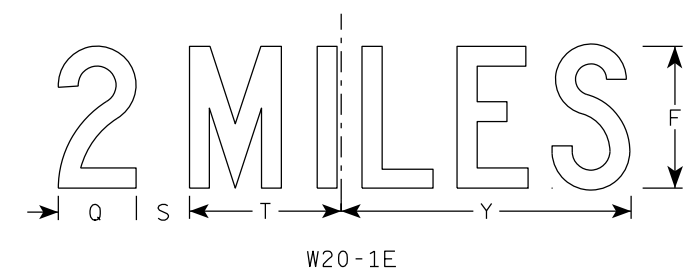
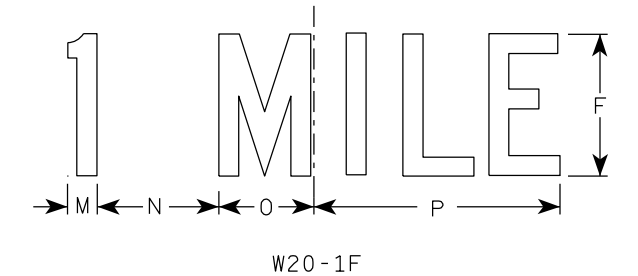
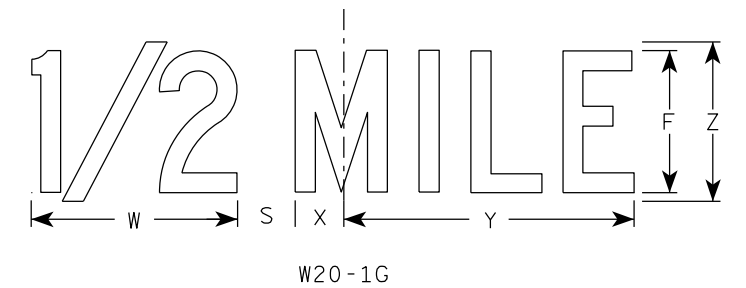
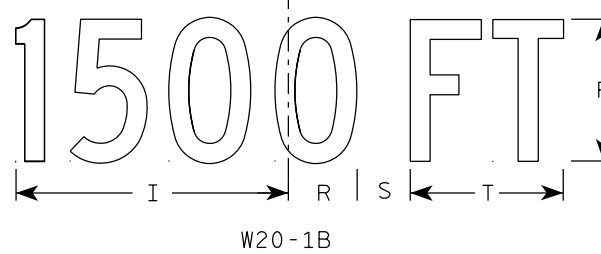
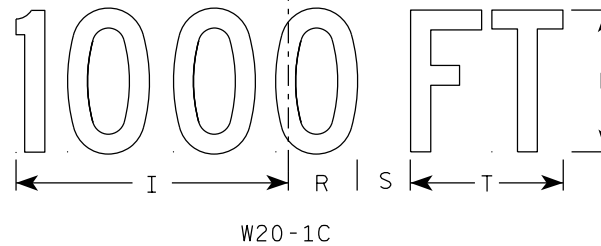
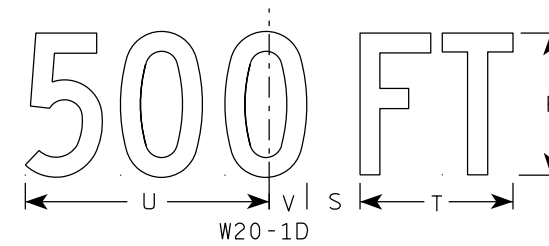
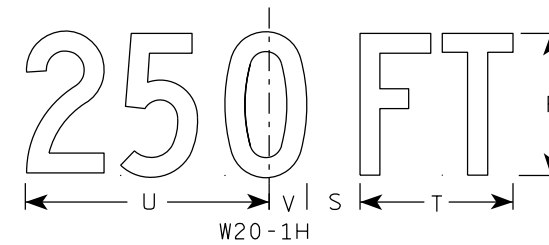
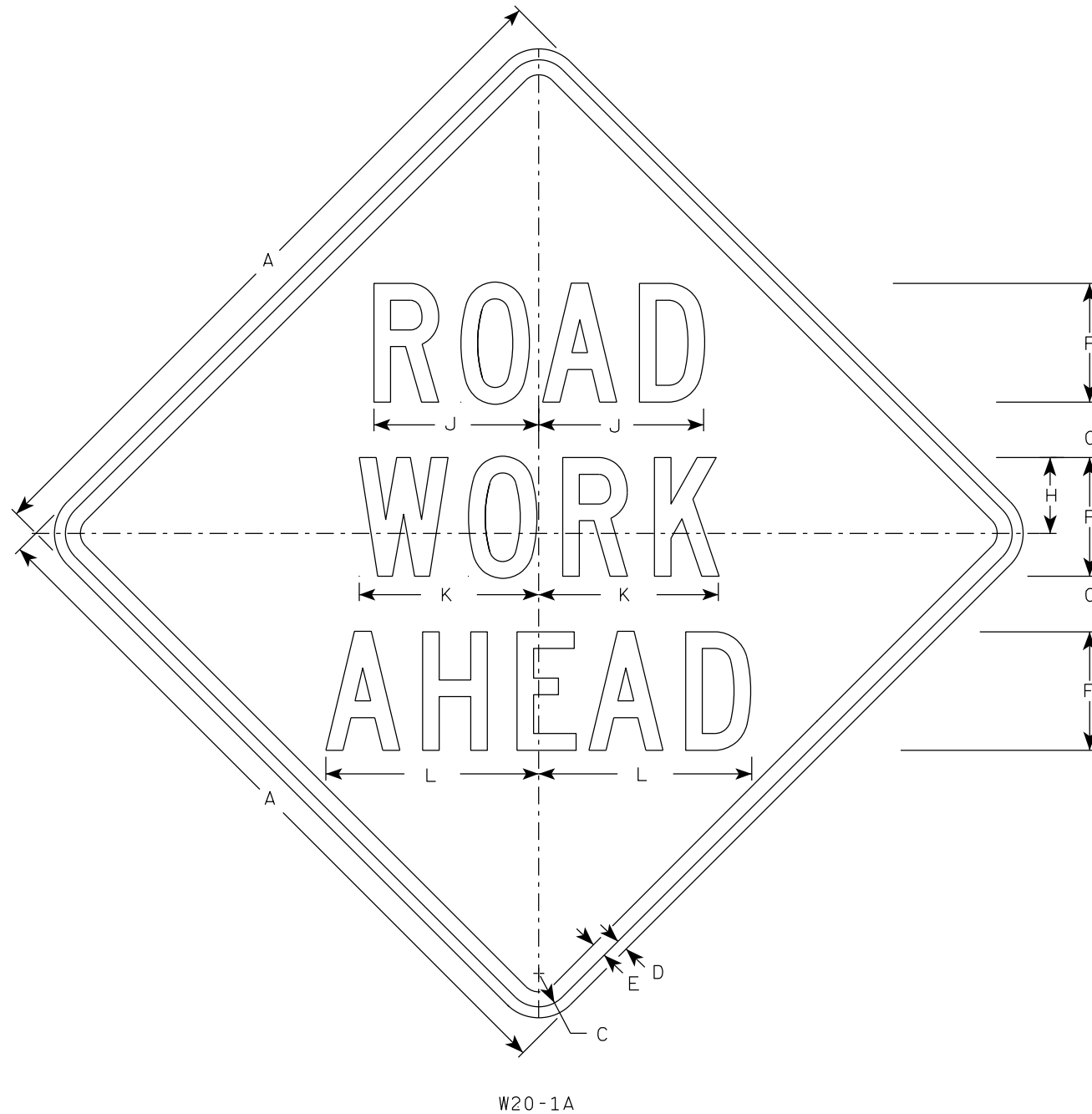
DATE 1/22/19 PLATE NO. G20-57.3

PROJECT NO: \_\_\_\_\_ HWY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ SHEET NO: **E**



**NOTES**

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



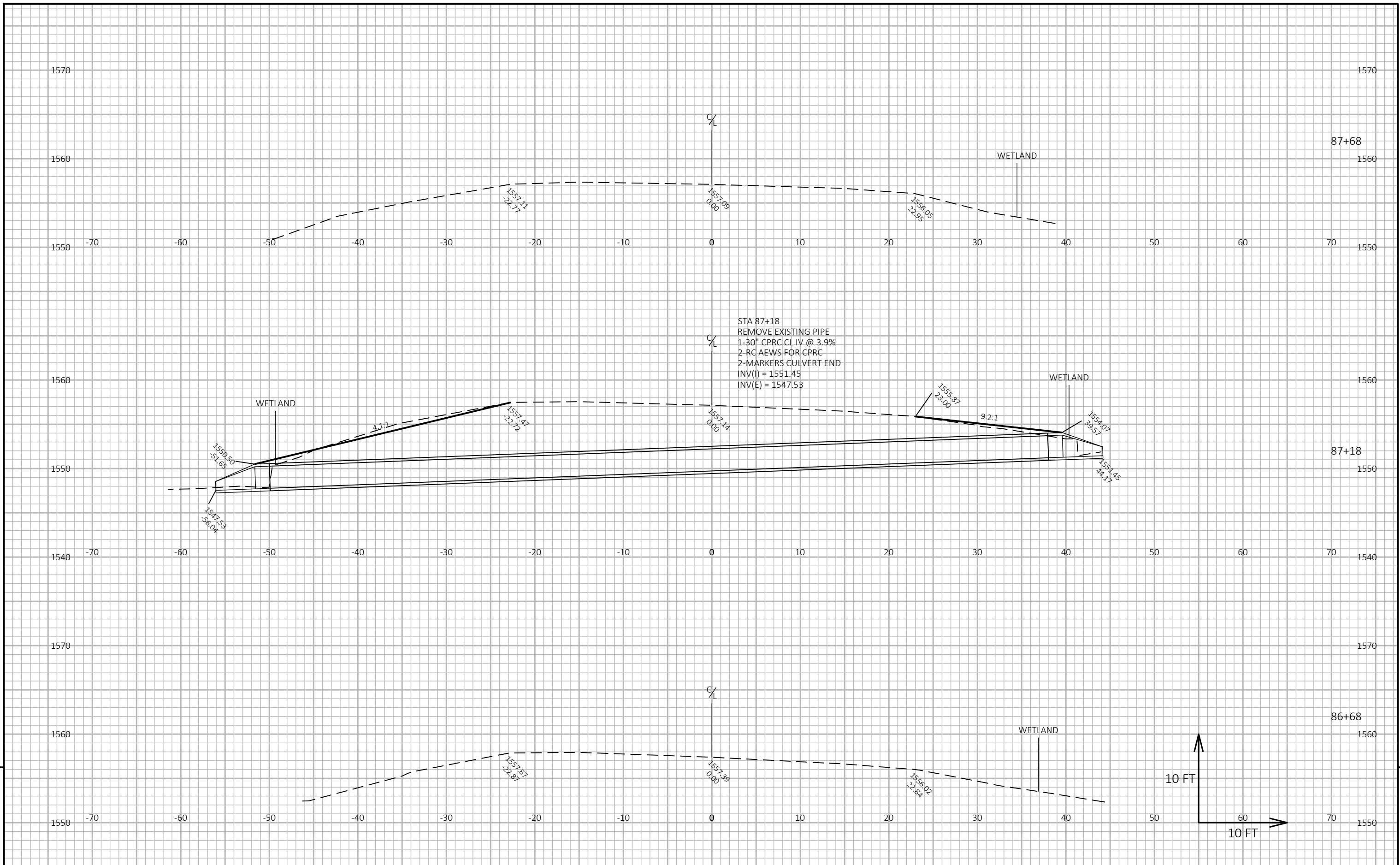
| SIZE | A  | B | C     | D   | E   | F | G     | H     | I      | J      | K      | L      | M     | N     | O     | P      | Q     | R     | S     | T     | U      | V     | W      | X     | Y      | Z | Area sq. ft. |
|------|----|---|-------|-----|-----|---|-------|-------|--------|--------|--------|--------|-------|-------|-------|--------|-------|-------|-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

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

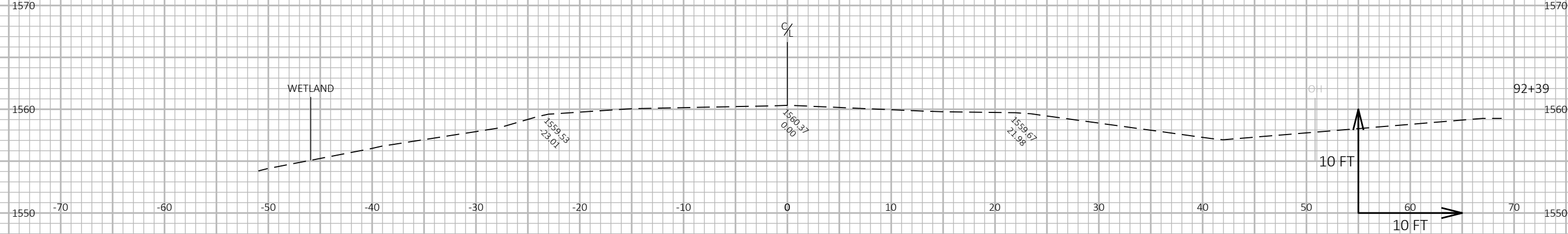
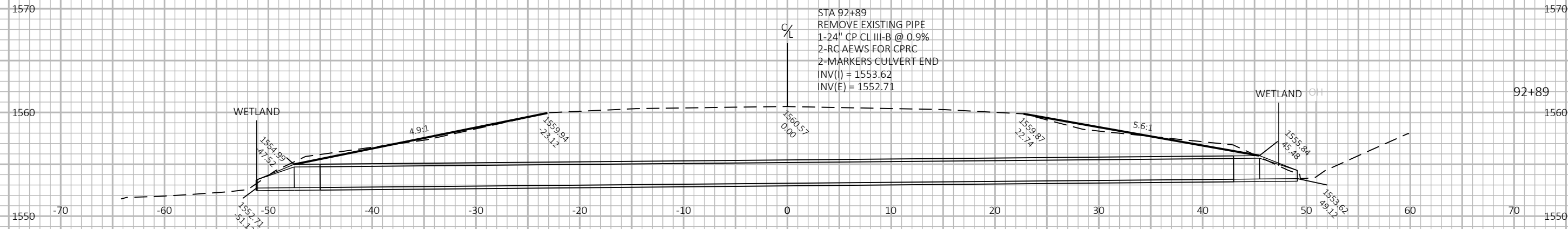
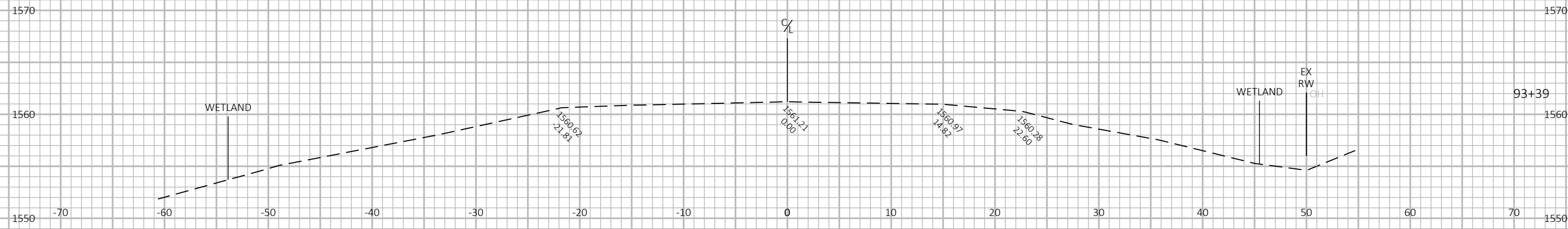
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

DATE 3/25/2020 PLATE NO. W20-1.11



|                        |             |               |                         |       |   |
|------------------------|-------------|---------------|-------------------------|-------|---|
| PROJECT NO: 1610-41-70 | HWY: STH 13 | COUNTY: PRICE | CROSS SECTIONS: CULVERT | SHEET | E |
|------------------------|-------------|---------------|-------------------------|-------|---|





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

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