

RHI

SEPTEMBER 2017

ORDER OF SHEETS

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

TOTAL SHEETS = 70



DESIGN DESIGNATION 1176-15-71

| | | | |
|--------------|------|---|--------|
| A.A.D.T. | 2019 | = | 16,800 |
| A.A.D.T. | 2039 | = | 20,200 |
| D.H.V. | | = | 2,600 |
| D.D. | | = | 71/29 |
| T. | | = | 24.1% |
| DESIGN SPEED | | = | 70 MPH |
| ESALS | | = | NA |

CONVENTIONAL SYMBOLS

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

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

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

WAUSAU-MERRILL

BRIDGE ABUTMENT B-35-0028

USH 51

LINCOLN COUNTY

STATE PROJECT NUMBER

1176-15-71

END PROJECT 1176-15-71

STA 303+50.00'N'

Y=122,263.446

X=403,428.968

STRUCTURE B-35-0028

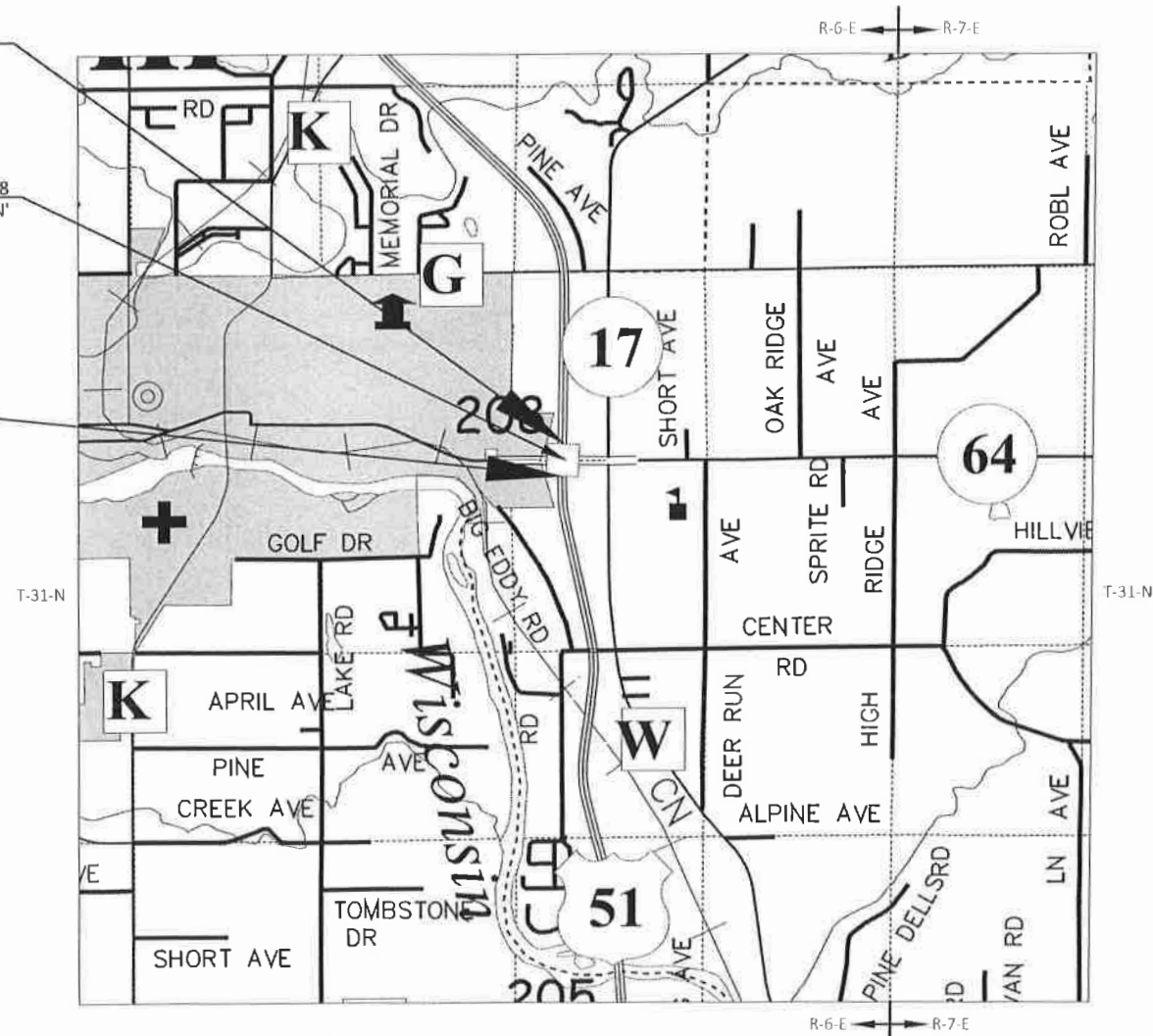
STA 295+66.90'N' - STA 297+60.32'N'

BEGIN PROJECT 1176-15-71

STA 282+00.00'N'

Y=120,117.219

X=403,470.876



LAYOUT
SCALE 0 1 MI

TOTAL NET LENGTH OF CENTERLINE = 0.000 MILES

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, LINCOLN COUNTY, NAD83 (2007), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES. ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 NAVD 88 (2012)

STATE PROJECT

1176-15-71

FEDERAL PROJECT

PROJECT

WISC 2017480

CONTRACT

1

ORIGINAL PLANS PREPARED BY

MSA
PROFESSIONAL SERVICES

TRANSPORTATION • MUNICIPAL • RECREATION
DEVELOPMENT • ENVIRONMENTAL

2901 International Lane, Suite 300 Madison, WI 53704
608-242-7779 1-800-446-0679 Fax: 608-242-5664



DATE: 4/18/17 *Rielly O'Donnell*
(Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

| | |
|---------------------|---------------------------------|
| Surveyor | WISDOT NC REGION |
| Designer | MSA PROFESSIONAL SERVICES, INC. |
| Project Manager | JED PETERS |
| Regional Examiner | CHERYL SIMON |
| Regional Supervisor | ROBIN STAFFORD |

APPROVED FOR THE DEPARTMENT

DATE: 4-19-17

J.P.R.
(Signature)

E

UTILITY CONTACTS

| | |
|--------------------------------------|-------------------------------------|
| ANR - GAS | ATC - ELECTRICITY |
| DUANE PRONDZINSKI | DOUG VOSBERG |
| 2629 SUNSET DRIVE | 5303 FEN OAK DRIVE |
| STEVENS POINT, WI 54482 | MADISON, WI 53718 |
| OFFICE: 715-460-4322 | 608-977-7950 |
| MOBILE: 715-460-4322 | DVOSBER@ATCLLC.COM |
| DUANE_PRONDZINSKI@TRANSCANADA.COM | |
| | |
| FRONTIER COMMUNICATIONS OF WI LLC - | NET LEC LLC - COMMUNICATION |
| BRIAN DOMPKE | DENNIS LAFAVE |
| 521 4TH STREET | 1700 INDUSTRIAL DRIVE |
| WAUSAU, WI 54403 | GREEN BAY, WI 54302 |
| OFFICE: 715-358-5372 | 920-619-9774 |
| MOBILE: 715-203-9257 | DLAFAVE@MI-TECH.US |
| BRIAN.DOMPKE@FTR.COM | |
| | |
| WISCONSIN PUBLIC SERVICE-ELECTRICITY | WISCONSIN PUBLIC SERVICE - GAS |
| CLAYTON VIRCKS | FRANCIS MARTIN |
| 1700 SHERMAN STREET | 1700 SHERMAN STREET |
| P.O. BOX 1166 | P.O. BOX 1166 |
| WAUSAU, WI 54402 | WAUSAU, WI 54402 |
| OFFICE: 715-848-7317 | OFFICE: 715-848-7387 |
| MOBILE: 715-573-7806 | MOBILE: 715-573-2025 |
| CHVIRCKS@WISCONSINPUBLICSERVICE.COM | FEMARTIN@WISCONSINPUBLICSERVICE.COM |

DNR CONTACT

JON SIMONSEN
ENVIRONMENTAL ANALYSIS & REVIEW SPECIALIST
DNR NORTHERN REGION
107 SUTLIFF AVE
RHINELANDER, WI 54501
(715) 367-1936
JONATHAN.SIMONSEN@WISCONSIN.GOV

GENERAL NOTES

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

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

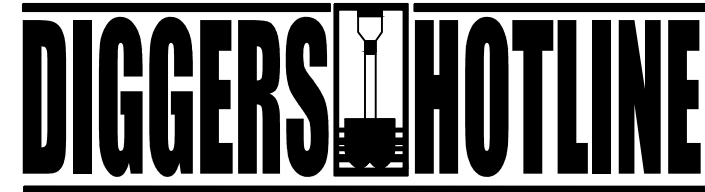
ALL DISTURBED AREAS WITHIN THE RIGHT OF WAY, SHALL BE TOPSOILED, FERTILIZED, AND SEEDED AS DIRECTED BY THE ENGINEER.

RESTORATION OF EXPOSED SLOPES AND DITCHES SHALL TAKE PLACE IMMEDIATELY AFTER FINISHED GRADING IS COMPLETE.

WHEN THE QUANTITY OF ITEMS OF BASE AGGREGATE OR HMA PAVEMENT IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLANS IS APPROXIMATE. THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF MATERIAL AS DIRECTED BY THE ENGINEER.

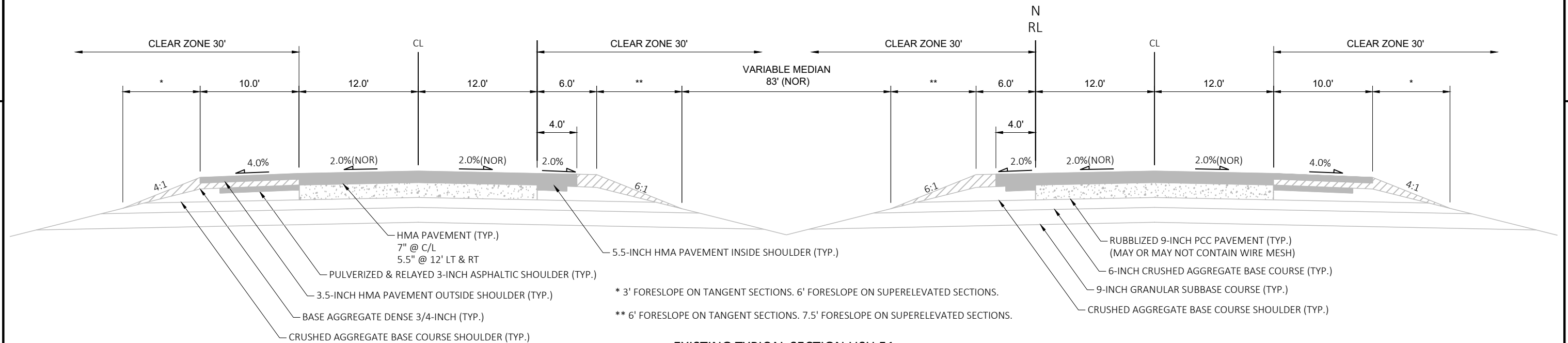
ORDER OF SECTION 2 SHEETS:

GENERAL NOTES
PROJECT OVERVIEW
TYPICAL SECTIONS
TRAFFIC CONTROL AND CONSTRUCTION STAGING

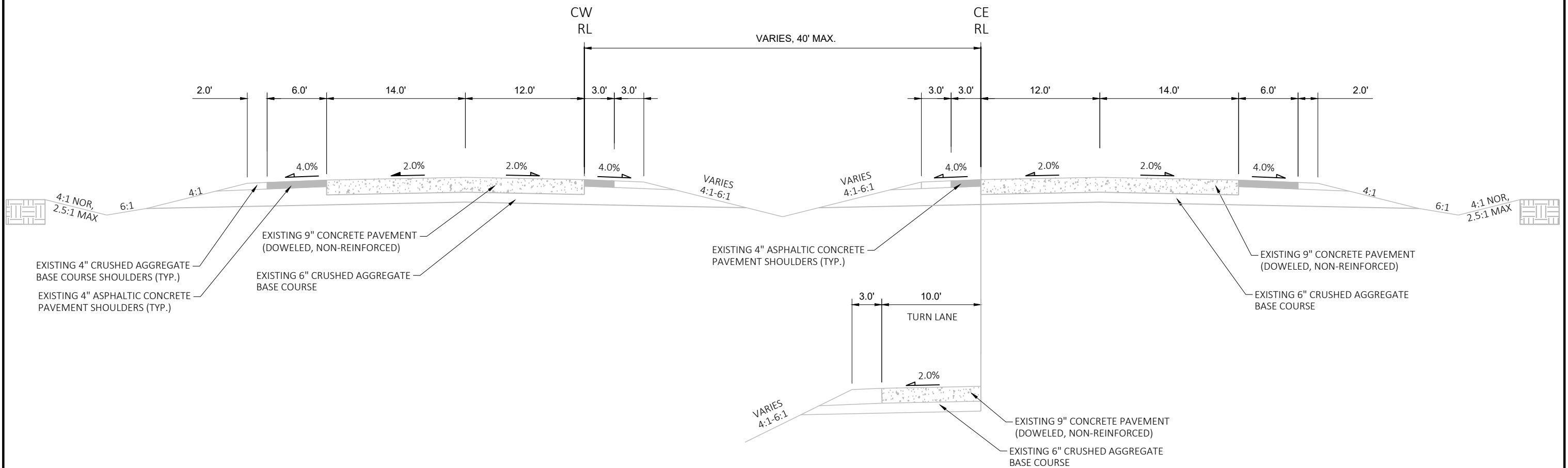


Dial 811 or (800)242-8511

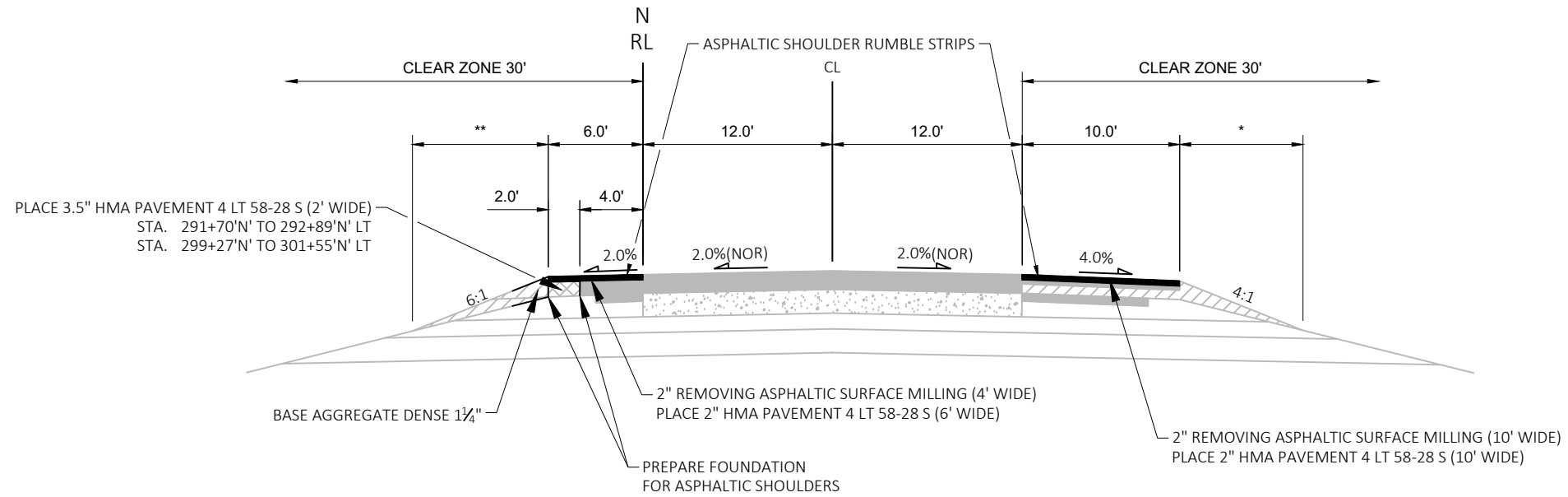
www.DiggersHotline.com



EXISTING TYPICAL SECTION USH 51
STA 282+00'N' TO 295+50'N'
STA 297+81'N' TO 303+50'N'



EXISTING TYPICAL SECTION STH 64
STA 90+43'CE' TO 113+15'CE'



PROPOSED TYPICAL SECTION USH 51

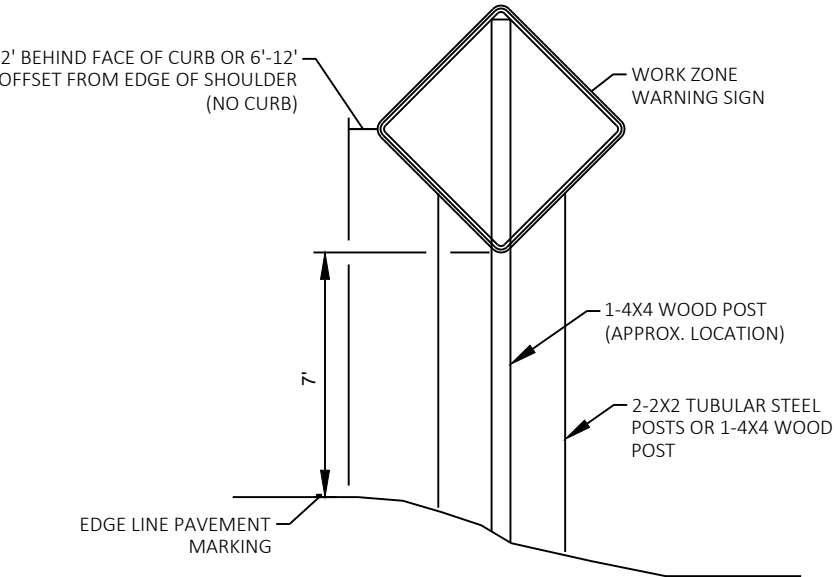
STA 282+00'N' TO 295+50'N' RT
STA 291+70'N' TO 295+50'N' LT
STA 297+81'N' TO 301+55'N' LT
STA 297+81'N' TO 303+50'N' RT

* 3' FORESLOPE ON TANGENT SECTIONS. 6' FORESLOPE ON SUPERELEVATED SECTIONS.

** 6' FORESLOPE ON TANGENT SECTIONS. 7.5' FORESLOPE ON SUPERELEVATED SECTIONS.

GENERAL NOTES FOR TRAFFIC CONTROL

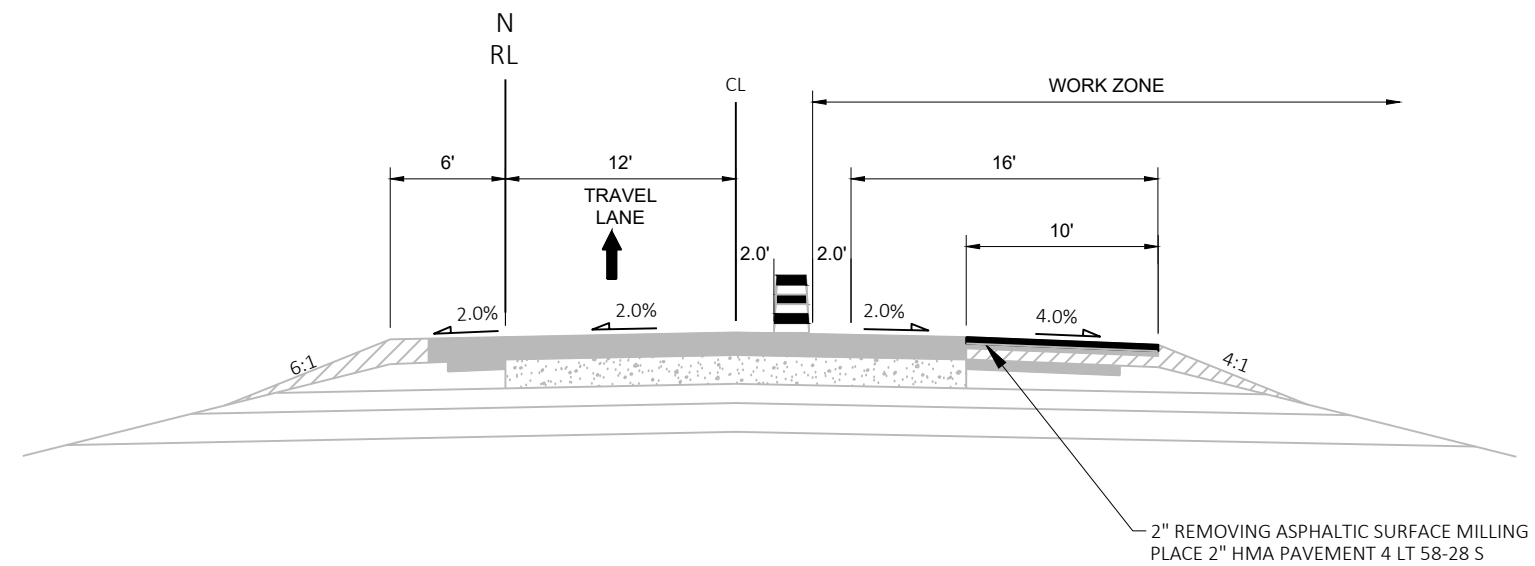
- 1) THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
- 2) ALL "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- 3) A FLAGGER MAY BE REQUIRED WHERE CONSTRUCTION VEHICLES ENTER OR LEAVE WORK AREAS IF WARRANTED BY CONDITIONS OR AS DIRECTED BY THE ENGINEER.
- 4) ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
- 5) TRAFFIC CONTROL DRUMS IN TAPERS, SHALL BE EQUIPPED WITH TRAFFIC CONTROL LIGHTS TYPE "C", ONE WAY LIGHTS IN TAPERS ONLY, UNLESS OTHERWISE SHOWN, DRUMS SHALL BE SPACED AT 50-FT OC IN TAPERS AND 100-FT OC ON TANGRENTS OR AS OTHERWISE SHOWN.
- 6) ALL TYPE III BARRICADES WITH SIGNS SHALL BE 8' WIDE, UNLESS OTHERWISE NOTED, AND EQUIPPED WITH TWO TYPE "A" (LOW INTENSITY FLASHING) LIGHTS.
- 7) ALL TEMPORARY PAVEMENT MARKINGS ON PERMANENT PAVEMENT SHALL BE REMOVABLE TAPE.
- 8) ALL EXISTING CONFLICTING PAVEMENT MARKING SHALL BE REMOVED OR COVERED.
- 9) ALL TEMPORARY STOP SIGNS SHALL HAVE TWO FLAGS MOUNTED ABOVE THE SIGN.
- 10) "W" SERIES SIGNS SHALL HAVE A REFLECTIVE ORANGE BACKGROUND, PER STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED.
- 11) BARRICADE STRIPES ARE TO BE SLOPED DOWNWARD IN THE DIRECTION OF TRAFFIC FLOW.
- 12) PERMANENT SIGNING AND PAVEMENT MARKING SHALL BE PLACED IN THE EARLIEST STAGE SO AS NOT TO CONFLICT WITH SUBSEQUENT STAGES.



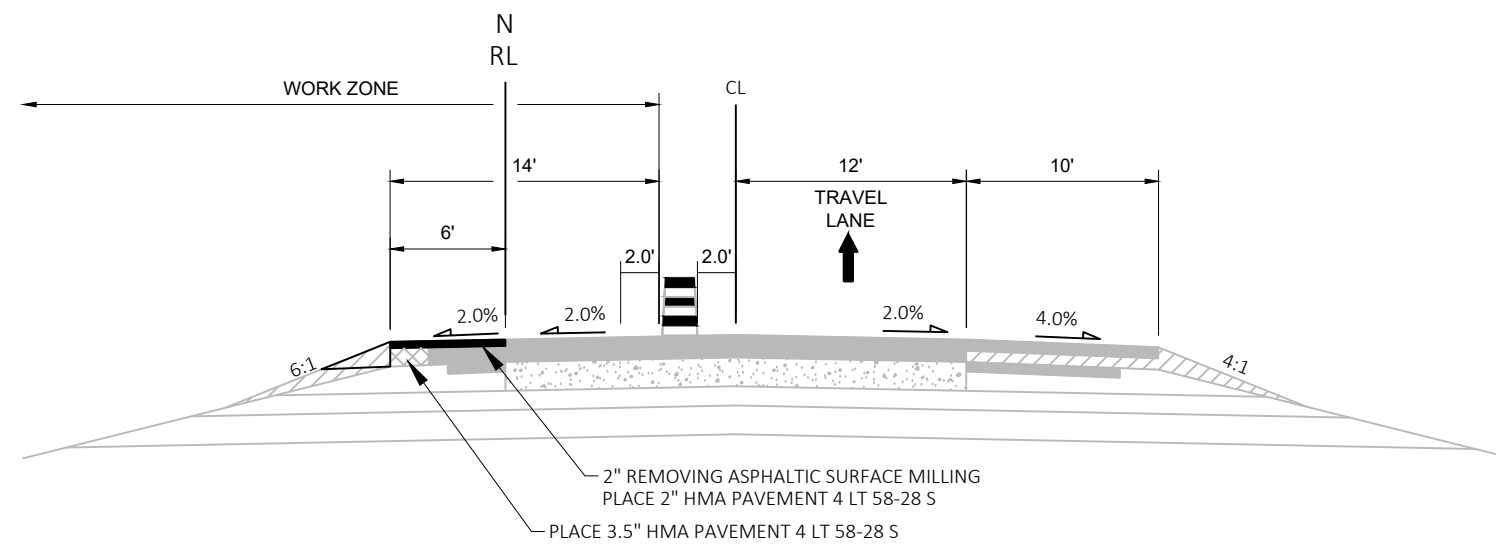
TYPICAL TEMPORARY TRAFFIC CONTROL DETAIL
MOUNTING ON FIXED SUPPORT
LONG TERM (7 DAYS OR MORE)

SPEED REDUCTION

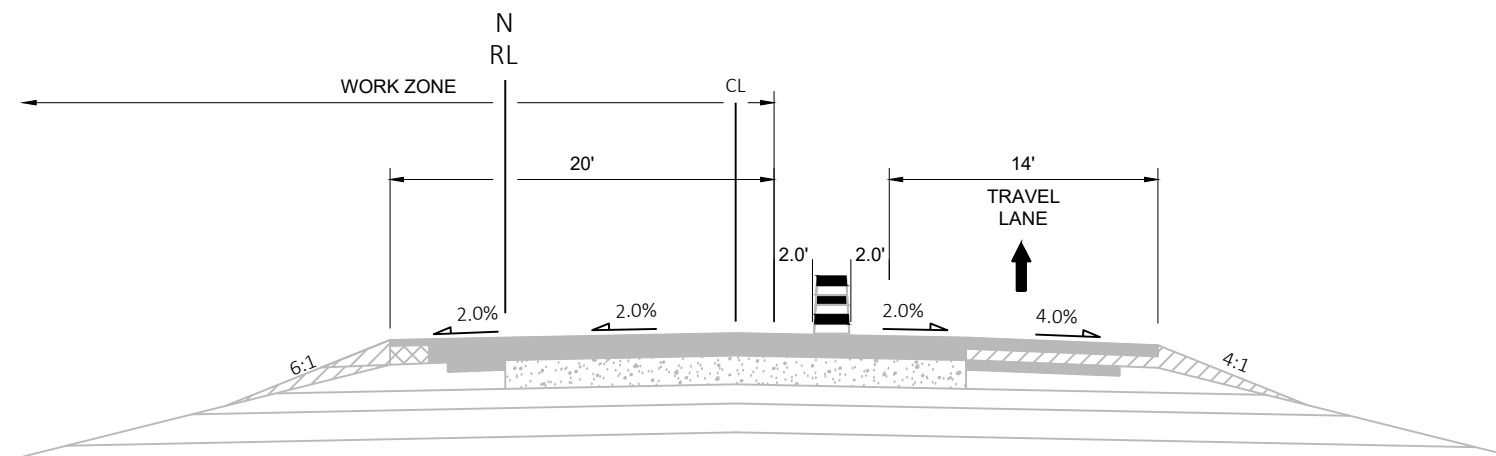
FOR STAGE 3 AND STAGE 4, REDUCE THE SPEED LIMIT OF NORTHBOUND USH 51 TO 55 MPH. SEE SDD "TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 MPH WITH BARRIER".



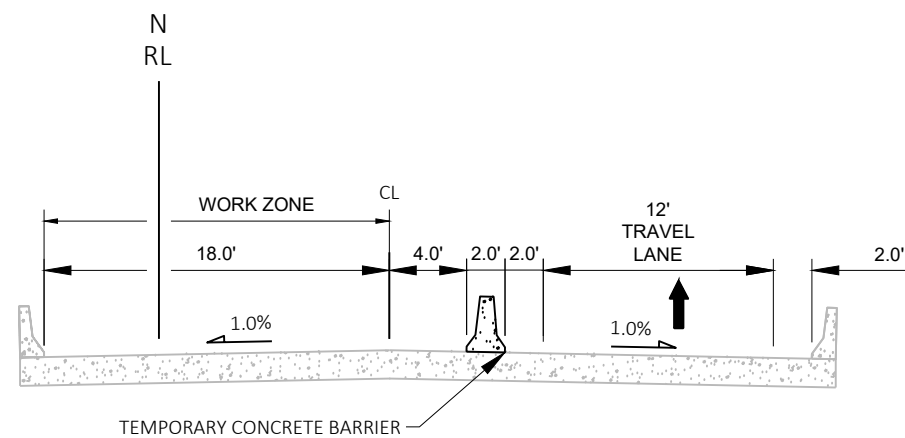
TRAFFIC CONTROL TYPICAL SECTION
USH 51
STAGE 1



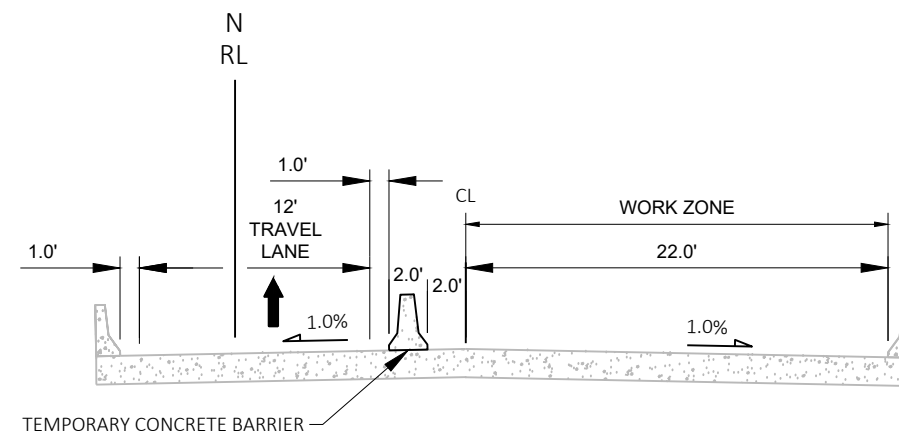
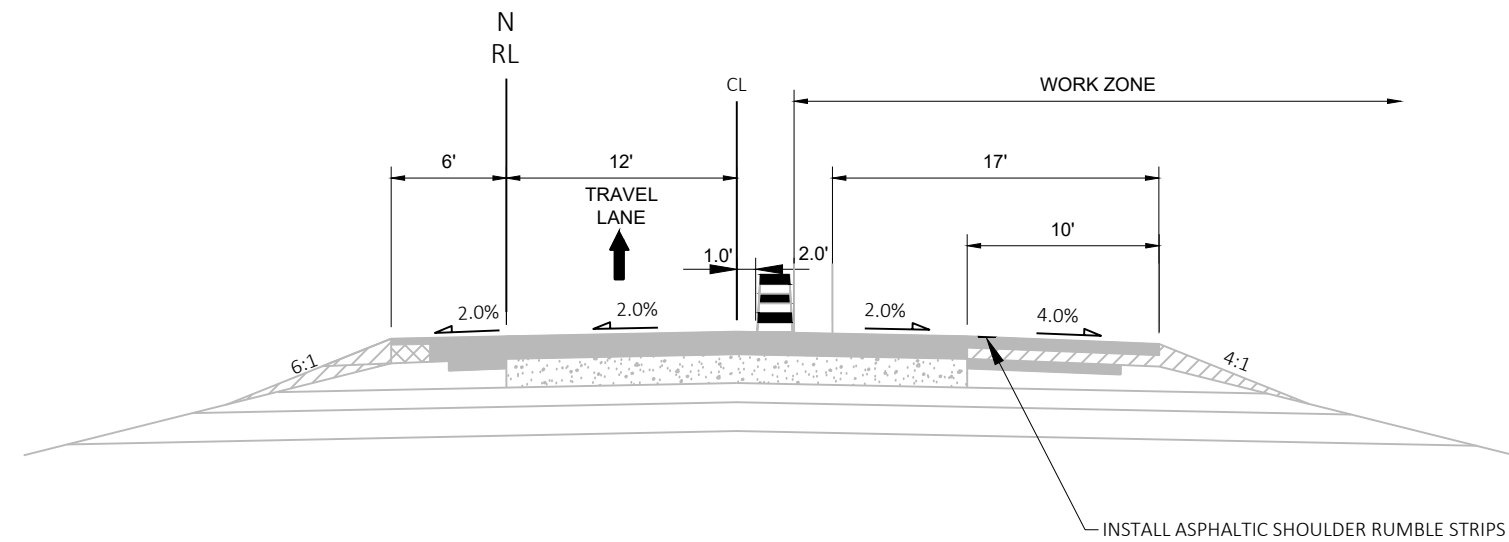
TRAFFIC CONTROL TYPICAL SECTION
USH 51
STAGE 2

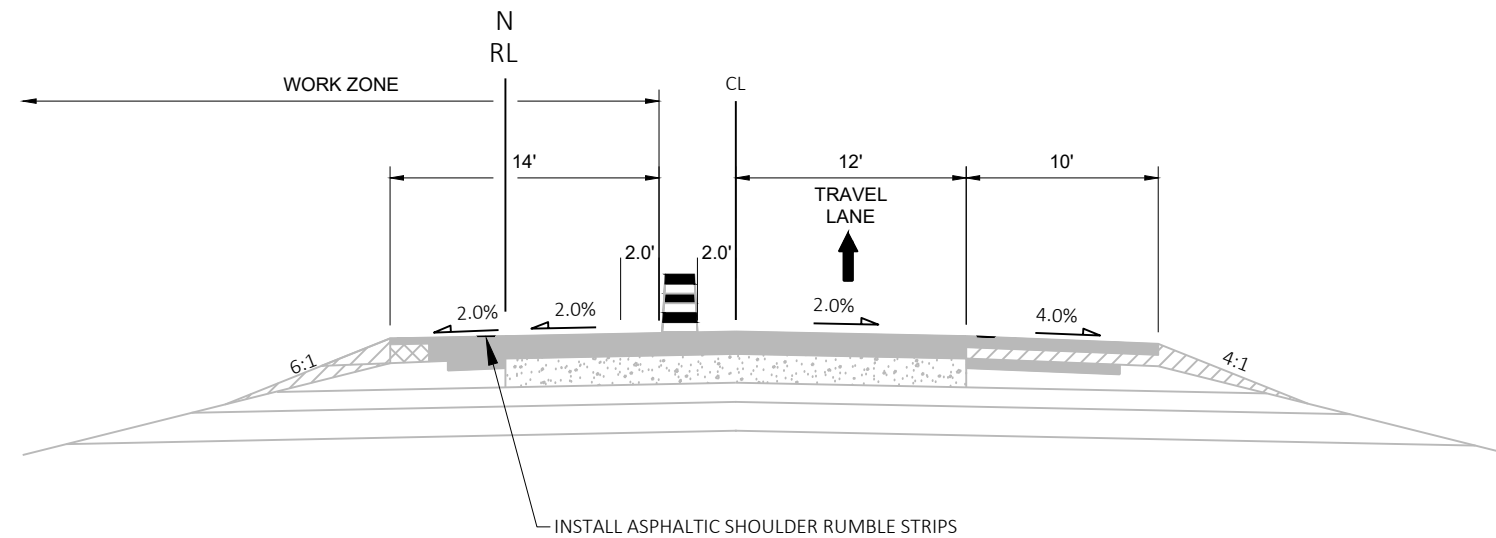


TRAFFIC CONTROL TYPICAL SECTION
USH 51
STAGE 3

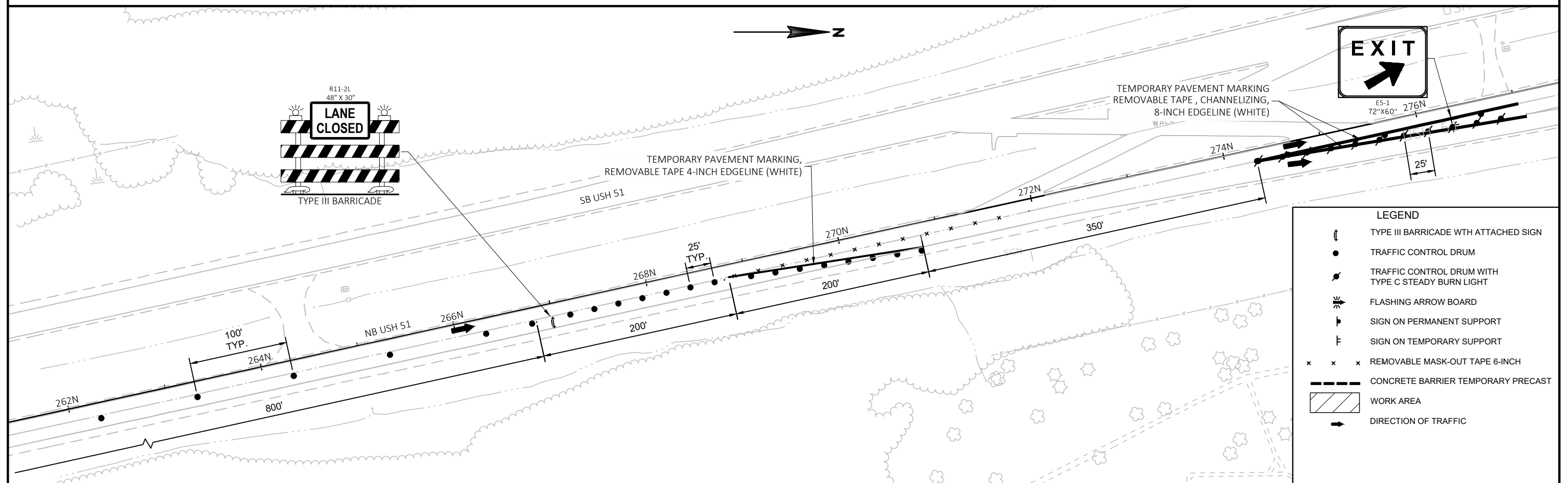
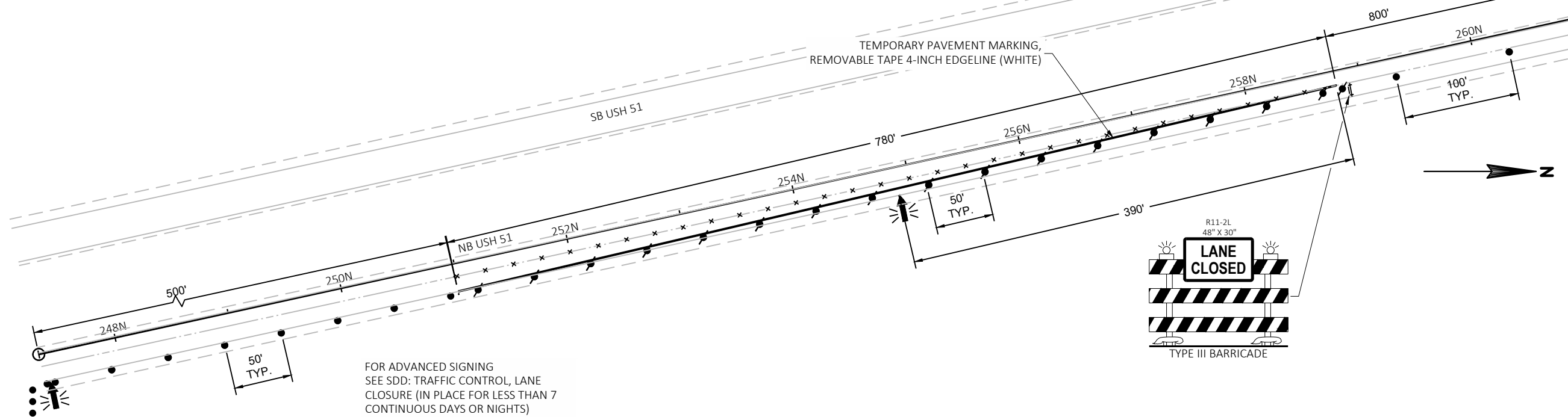


TRAFFIC CONTROL TYPICAL SECTION
USH 51 B-35-0028
STAGE 3





TRAFFIC CONTROL TYPICAL SECTION
USH 51
STAGE 5



PROJECT NO: 1176-15-71

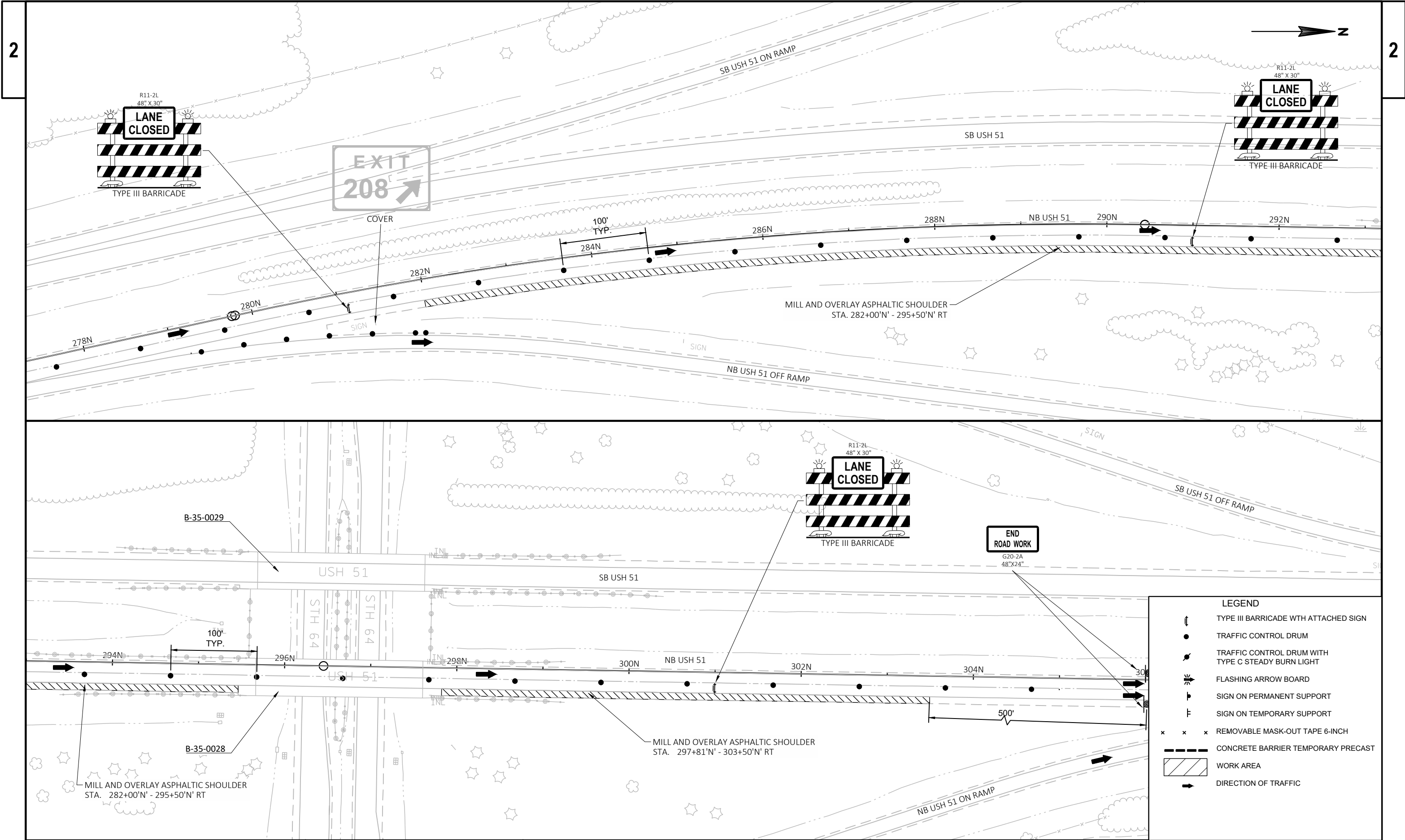
HWY: USH 51

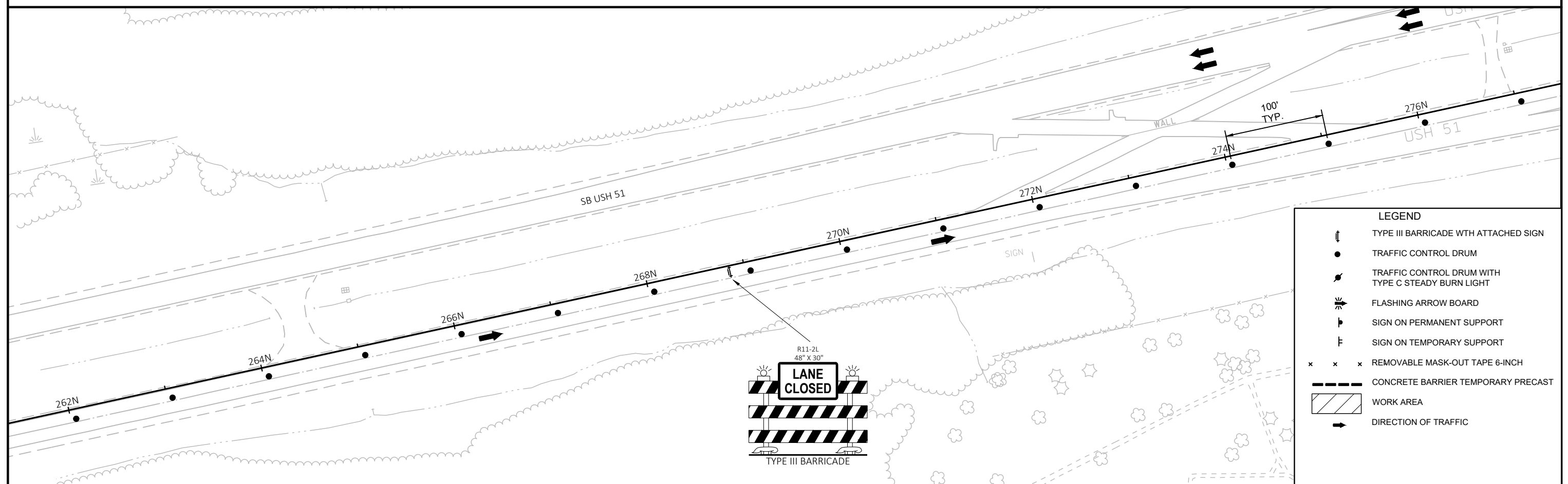
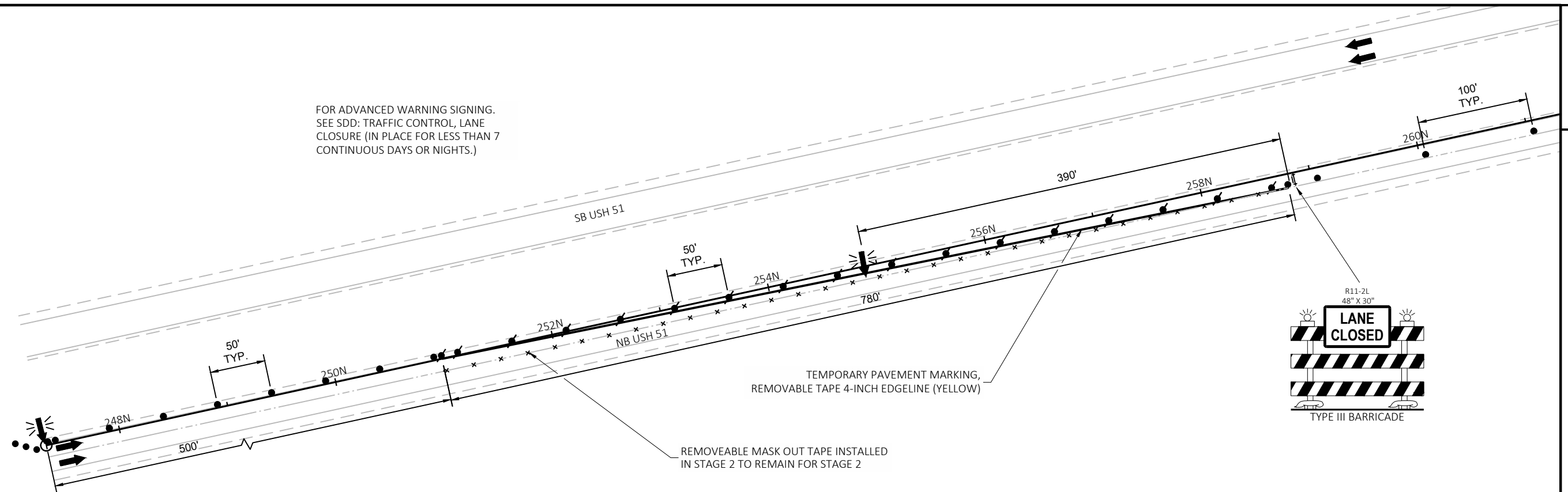
COUNTY: LINCOLN

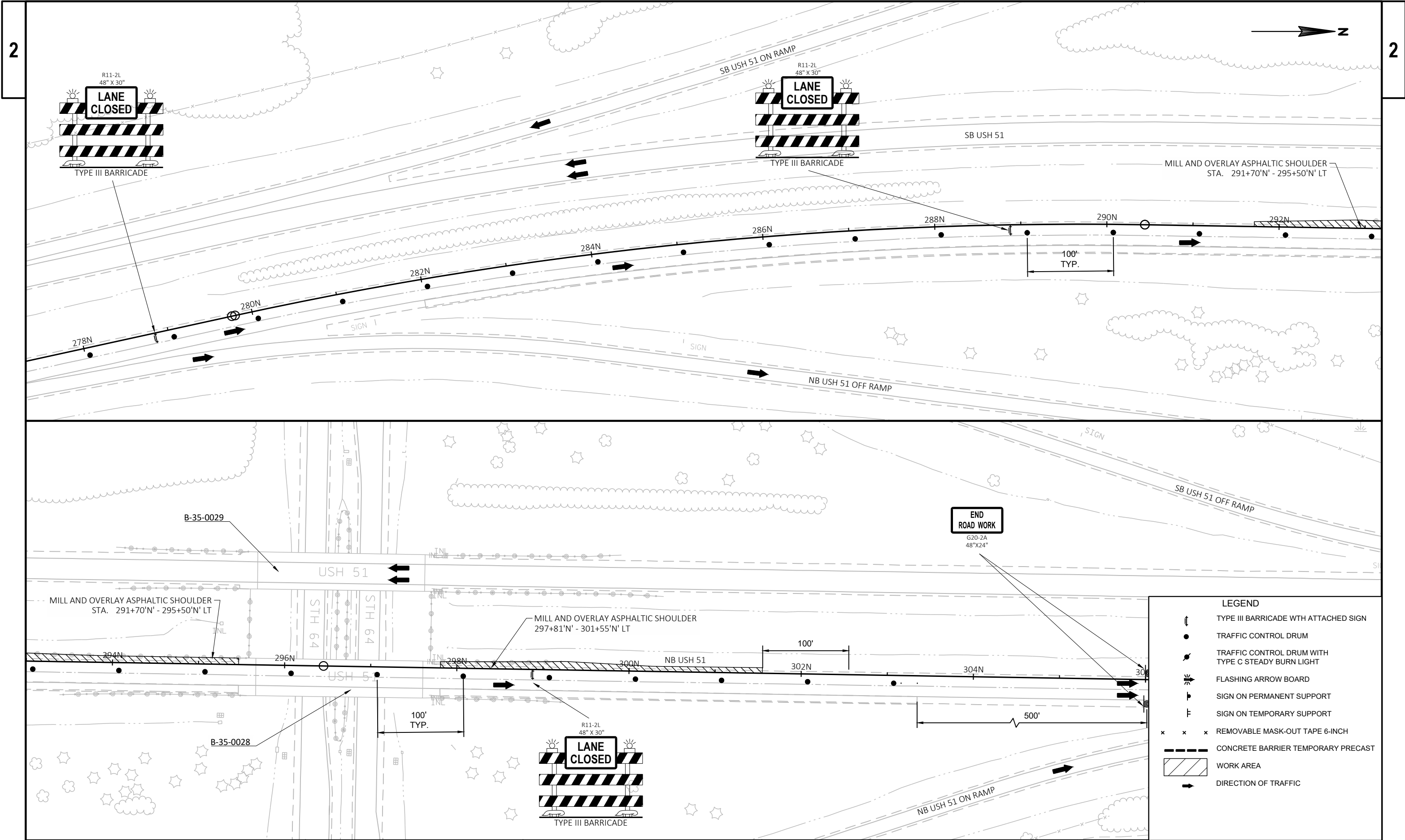
STAGE CONSTRUCTION - USH 51 STAGE 1

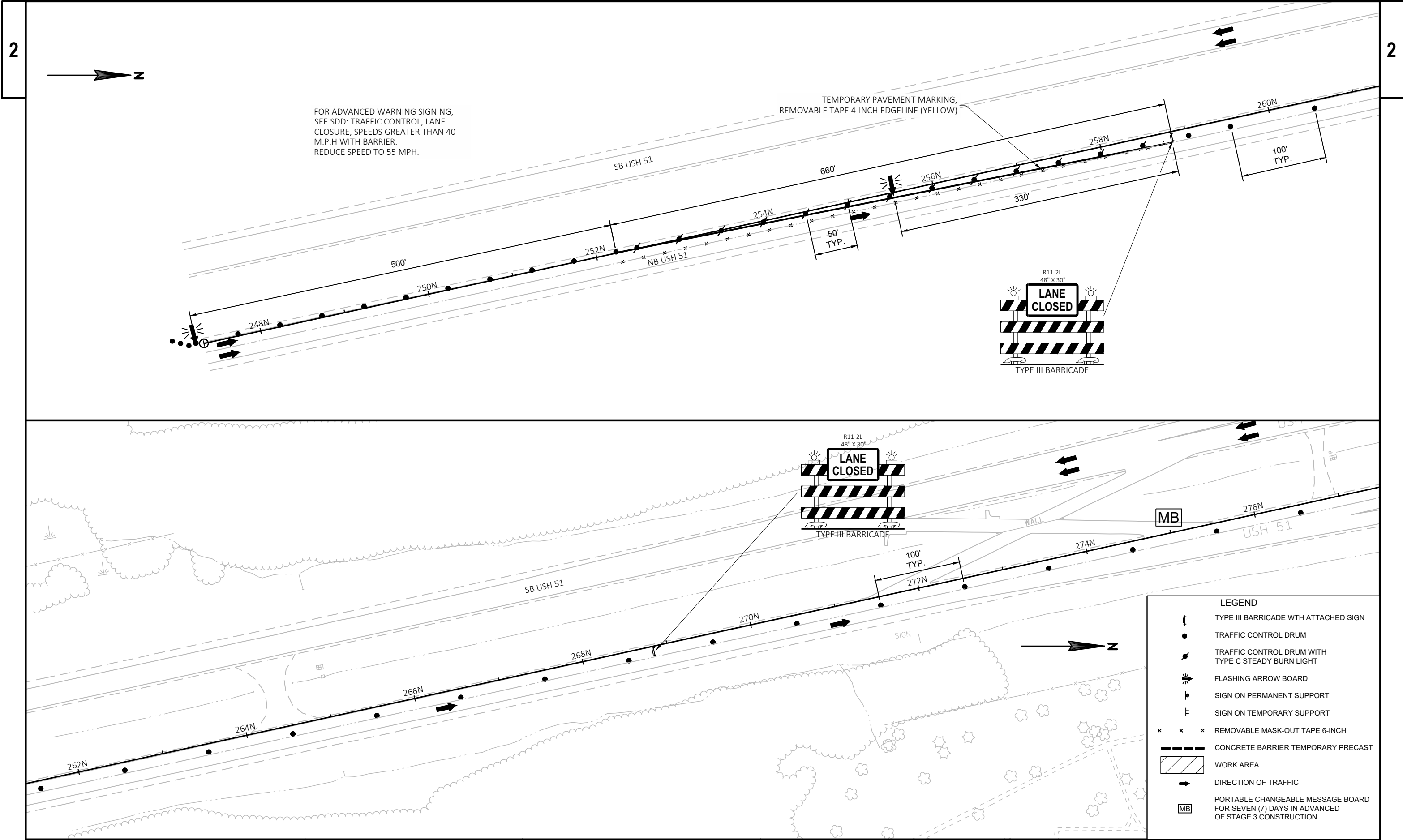
SHEET

E



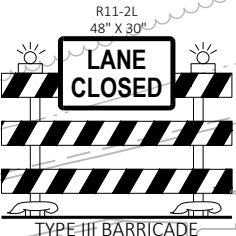
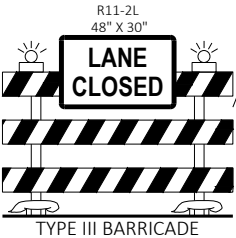




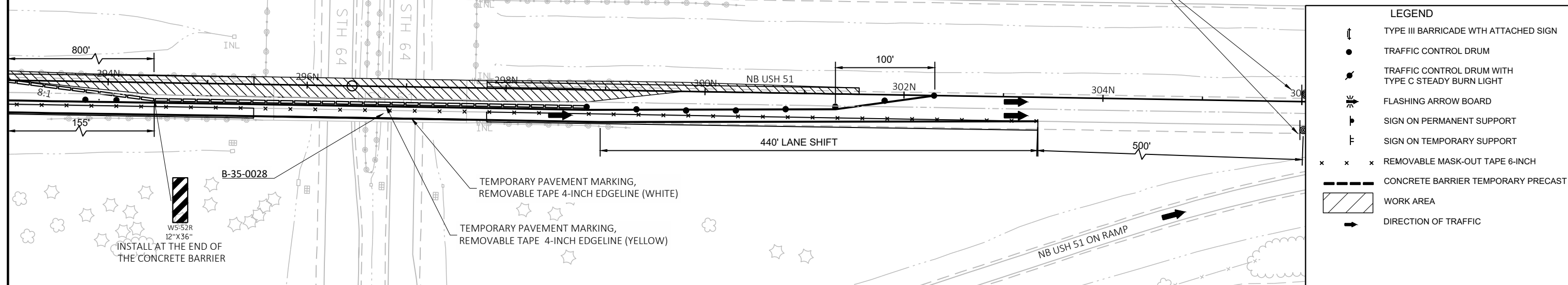
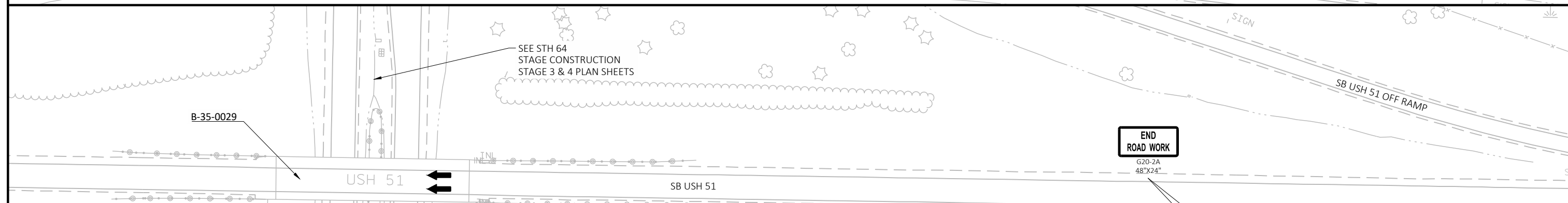


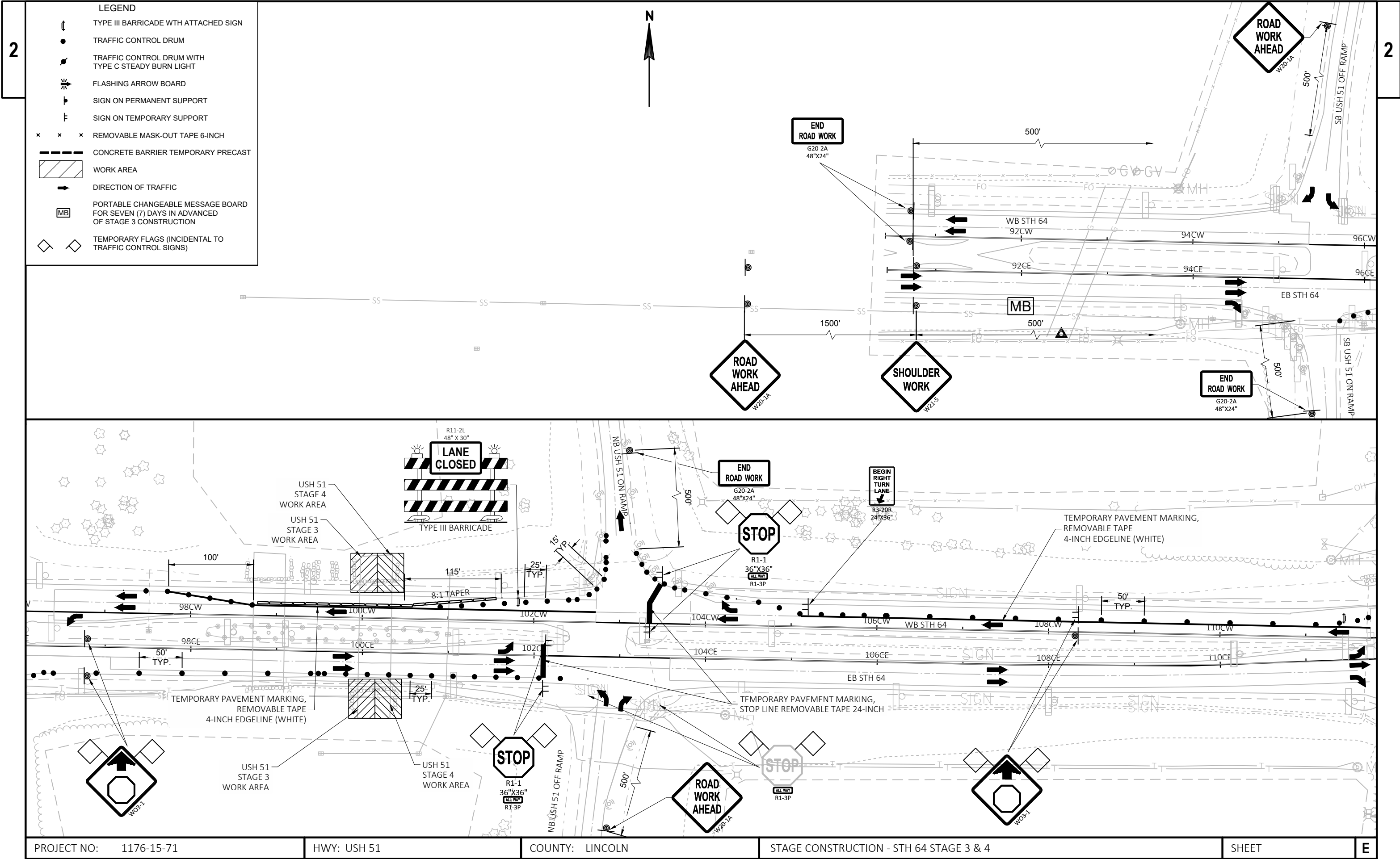
FOR ADVANCED WARNING SIGNING,
SEE SDD: TRAFFIC CONTROL, LANE
CLOSURE, SPEEDS GREATER THAN 40
M.P.H WITH BARRIER.
REDUCE SPEED TO 55 MPH.

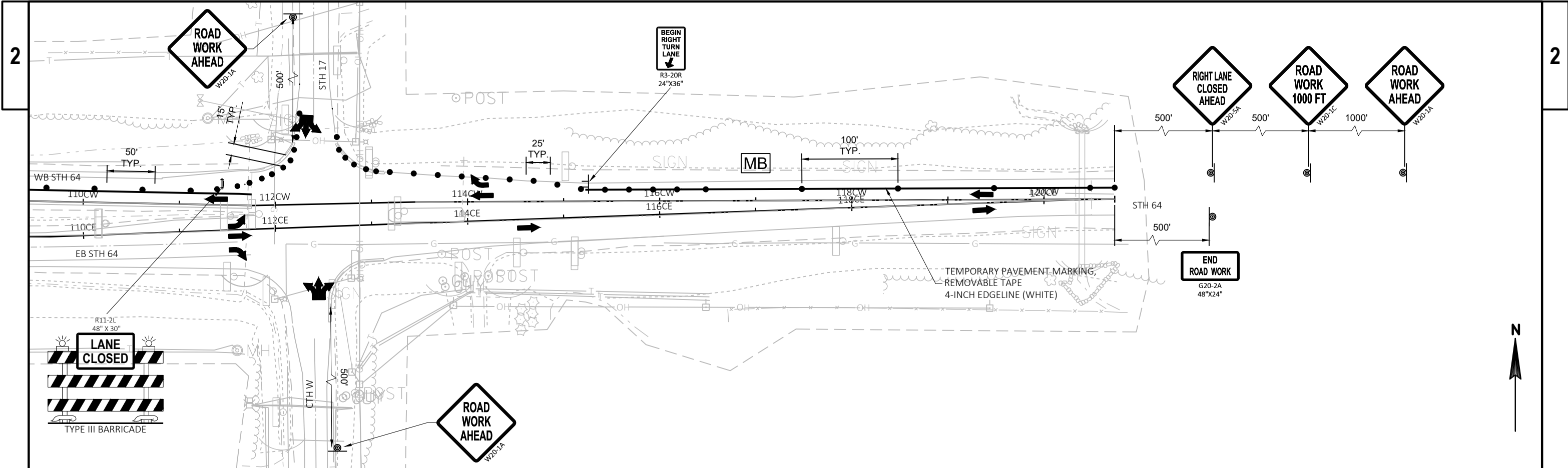
TEMPORARY PAVEMENT MARKING,
REMOVABLE TAPE 4-INCH EDGETINE (YELLOW)



- LEGEND
- TYPE III BARRICADE WITH ATTACHED SIGN
 - TRAFFIC CONTROL DRUM
 - TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
 - FLASHING ARROW BOARD
 - SIGN ON PERMANENT SUPPORT
 - SIGN ON TEMPORARY SUPPORT
 - REMOVABLE MASK-OUT TAPE 6-INCH
 - CONCRETE BARRIER TEMPORARY PRECAST
 - WORK AREA
 - DIRECTION OF TRAFFIC
 - PORTABLE CHANGEABLE MESSAGE BOARD FOR SEVEN (7) DAYS IN ADVANCED OF STAGE 3 CONSTRUCTION



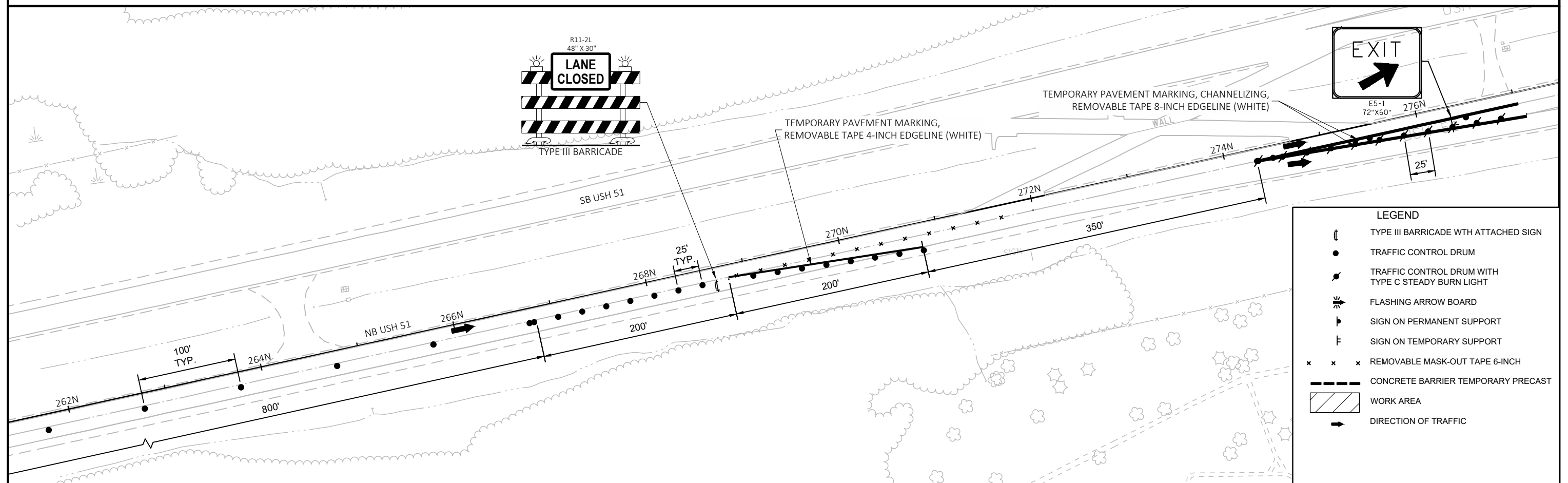
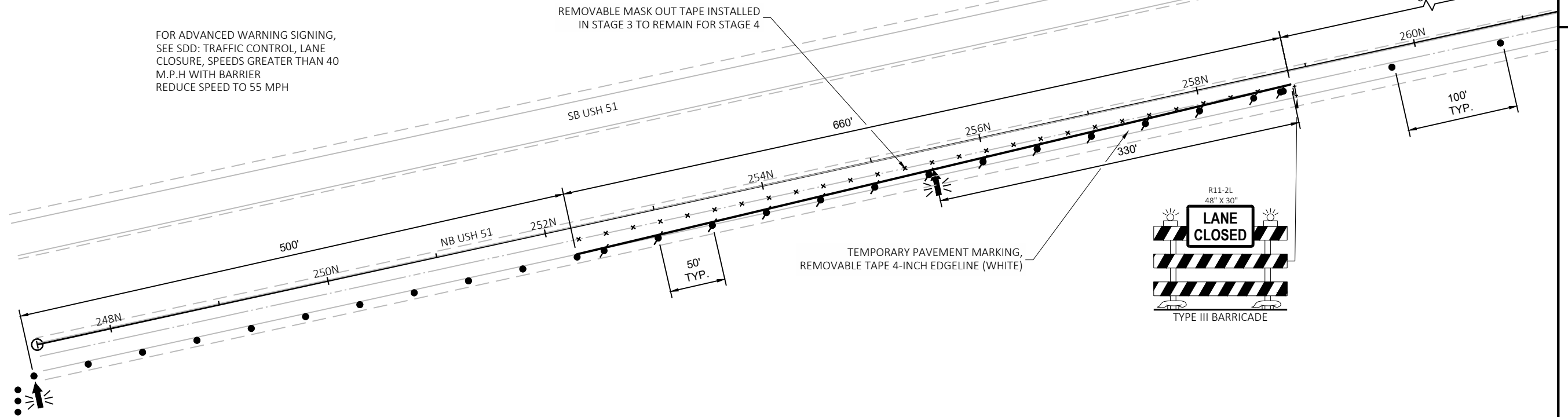




| LEGEND | |
|--------|--|
| | TYPE III BARRICADE WITH ATTACHED SIGN |
| | TRAFFIC CONTROL DRUM |
| | TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT |
| | FLASHING ARROW BOARD |
| | SIGN ON PERMANENT SUPPORT |
| | SIGN ON TEMPORARY SUPPORT |
| | REMOVABLE MASK-OUT TAPE 6-INCH |
| | CONCRETE BARRIER TEMPORARY PRECAST |
| | WORK AREA |
| | DIRECTION OF TRAFFIC |
| | PORTABLE CHANGEABLE MESSAGE BOARD FOR SEVEN (7) DAYS IN ADVANCED OF STAGE 3 CONSTRUCTION |



FOR ADVANCED WARNING SIGNING,
SEE SDD: TRAFFIC CONTROL, LANE
CLOSURE, SPEEDS GREATER THAN 40
M.P.H WITH BARRIER
REDUCE SPEED TO 55 MPH



PROJECT NO: 1176-15-71

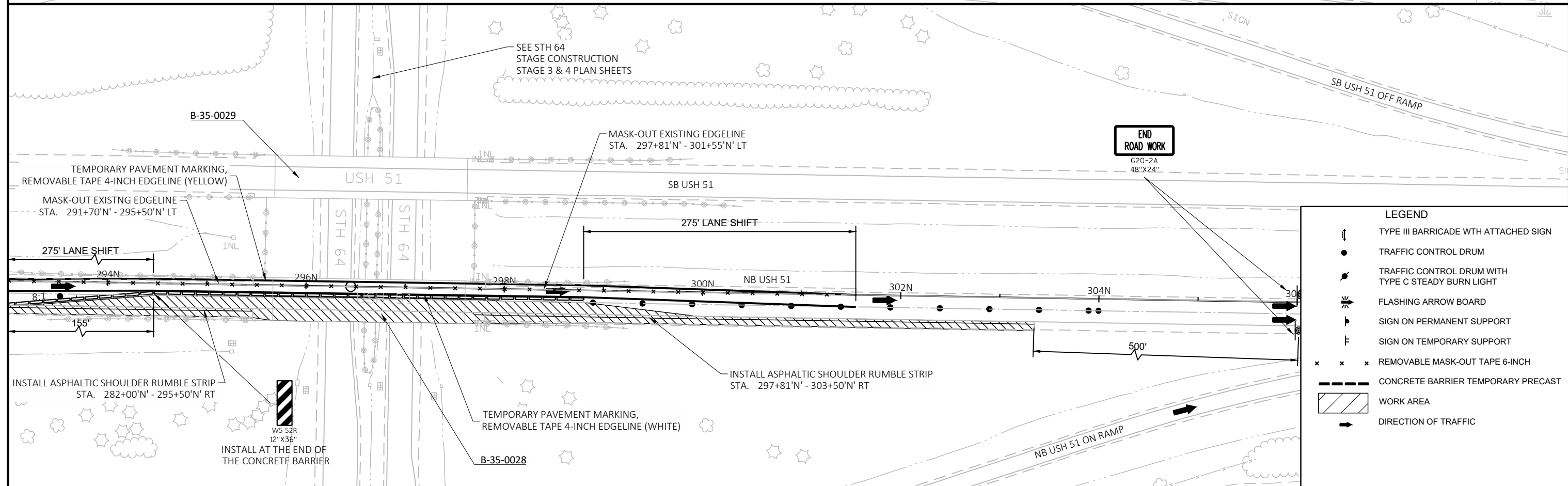
HWY: USH 51

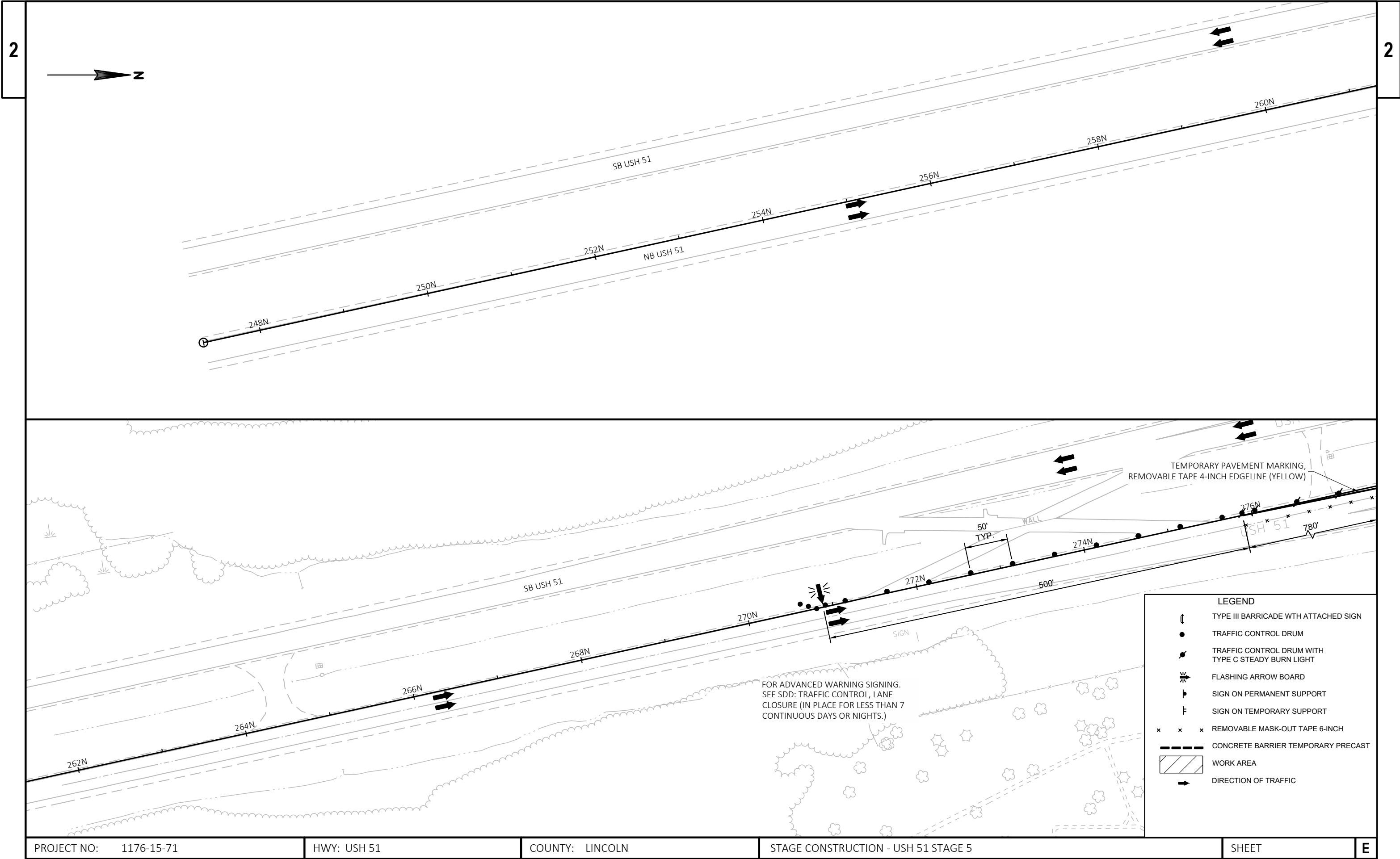
COUNTY: LINCOLN

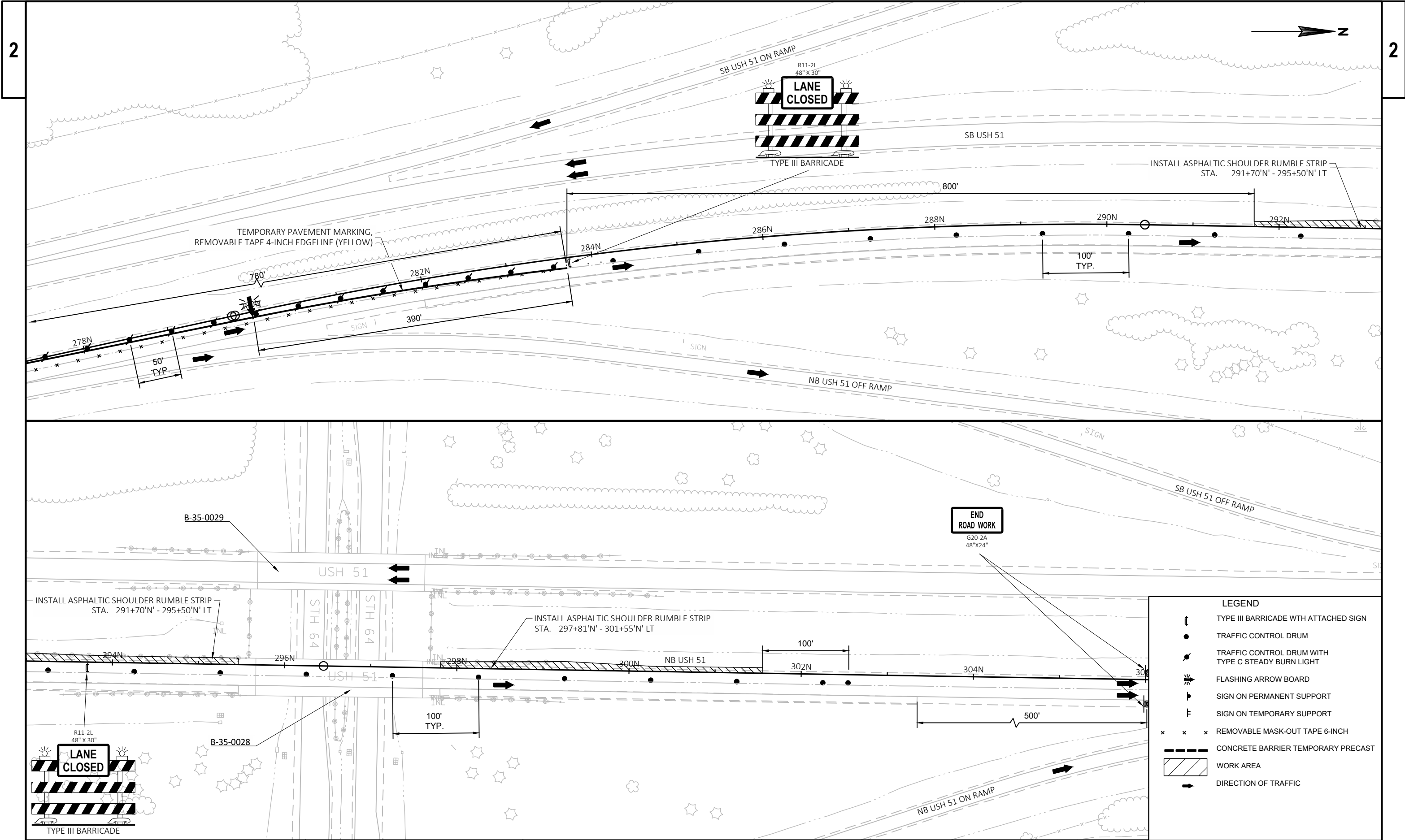
STAGE CONSTRUCTION - USH 51 STAGE 4

SHEET

E







Estimate Of Quantities

1176-15-71

| Line | Item | Item Description | Unit | Total | Qty |
|------|------------|---|------|-----------|-----------|
| 0002 | 203.0200 | Removing Old Structure (station) 01. 297+60 | LS | 1.000 | 1.000 |
| 0004 | 204.0100 | Removing Pavement | SY | 55.000 | 55.000 |
| 0006 | 204.0120 | Removing Asphaltic Surface Milling | SY | 2,510.000 | 2,510.000 |
| 0008 | 204.0190 | Removing Surface Drains | EACH | 2.000 | 2.000 |
| 0010 | 206.1000 | Excavation for Structures Bridges (structure) 01. B-35-0028 | LS | 1.000 | 1.000 |
| 0012 | 210.1500 | Backfill Structure Type A | TON | 195.000 | 195.000 |
| 0014 | 211.0400 | Prepare Foundation for Asphaltic Shoulders | STA | 28.000 | 28.000 |
| 0016 | 213.0100 | Finishing Roadway (project) 01. 1176-15-71 | EACH | 1.000 | 1.000 |
| 0018 | 305.0120 | Base Aggregate Dense 1 1/4-Inch | TON | 26.000 | 26.000 |
| 0020 | 415.0410 | Concrete Pavement Approach Slab | SY | 55.000 | 55.000 |
| 0022 | 416.0610 | Drilled Tie Bars | EACH | 9.000 | 9.000 |
| 0024 | 416.1010 | Concrete Surface Drains | CY | 8.000 | 8.000 |
| 0026 | 450.1100.S | Asphaltic Mixture For Extreme Conditions | TON | 325.000 | 325.000 |
| 0028 | 455.0605 | Tack Coat | GAL | 64.000 | 64.000 |
| 0030 | 460.2000 | Incentive Density HMA Pavement | DOL | 210.000 | 210.000 |
| 0032 | 460.5224 | HMA Pavement 4 LT 58-28 S | TON | 325.000 | 325.000 |
| 0034 | 465.0400 | Asphaltic Shoulder Rumble Strips | LF | 2,675.000 | 2,675.000 |
| 0036 | 502.0100 | Concrete Masonry Bridges | CY | 44.000 | 44.000 |
| 0038 | 502.3200 | Protective Surface Treatment | SY | 9.000 | 9.000 |
| 0040 | 502.3210 | Pigmented Surface Sealer | SY | 166.000 | 166.000 |
| 0042 | 502.4204 | Adhesive Anchors No. 4 Bar | EACH | 24.000 | 24.000 |
| 0044 | 502.4205 | Adhesive Anchors No. 5 Bar | EACH | 8.000 | 8.000 |
| 0046 | 502.4206 | Adhesive Anchors No. 6 Bar | EACH | 4.000 | 4.000 |
| 0048 | 502.4208 | Adhesive Anchors No. 8 Bar | EACH | 8.000 | 8.000 |
| 0050 | 505.0400 | Bar Steel Reinforcement HS Structures | LB | 1,430.000 | 1,430.000 |
| 0052 | 505.0600 | Bar Steel Reinforcement HS Coated Structures | LB | 2,640.000 | 2,640.000 |
| 0054 | 506.2105 | Bearing Pads | SF | 3.000 | 3.000 |
| 0056 | 509.1500 | Concrete Surface Repair | SF | 20.000 | 20.000 |
| 0058 | 511.1200 | Temporary Shoring (structure) 01. B-35-0028 | SF | 100.000 | 100.000 |
| 0060 | 516.0500 | Rubberized Membrane Waterproofing | SY | 10.000 | 10.000 |
| 0062 | 550.1100 | Piling Steel HP 10-Inch X 42 Lb | LF | 70.000 | 70.000 |
| 0064 | 603.8000 | Concrete Barrier Temporary Precast Delivered | LF | 880.000 | 880.000 |
| 0066 | 603.8125 | Concrete Barrier Temporary Precast Installed | LF | 1,470.000 | 1,470.000 |
| 0068 | 604.0500 | Slope Paving Crushed Aggregate | SY | 65.000 | 65.000 |
| 0070 | 611.8115 | Adjusting Inlet Covers | EACH | 2.000 | 2.000 |
| 0072 | 612.0406 | Pipe Underdrain Wrapped 6-Inch | LF | 70.000 | 70.000 |
| 0074 | 614.0150 | Anchor Assemblies for Steel Plate Beam Guard | EACH | 2.000 | 2.000 |
| 0076 | 618.0100 | Maintenance And Repair of Haul Roads (project) 01. 1176-15-71 | EACH | 1.000 | 1.000 |

Estimate Of Quantities

1176-15-71

| Line | Item | Item Description | Unit | Total | Qty |
|------|------------|--|------|------------|------------|
| 0078 | 619.1000 | Mobilization | EACH | 1.000 | 1.000 |
| 0080 | 624.0100 | Water | MGAL | 0.500 | 0.500 |
| 0082 | 625.0500 | Salvaged Topsoil | SY | 180.000 | 180.000 |
| 0084 | 628.1504 | Silt Fence | LF | 190.000 | 190.000 |
| 0086 | 628.1520 | Silt Fence Maintenance | LF | 190.000 | 190.000 |
| 0088 | 628.1905 | Mobilizations Erosion Control | EACH | 1.000 | 1.000 |
| 0090 | 628.1910 | Mobilizations Emergency Erosion Control | EACH | 1.000 | 1.000 |
| 0092 | 628.2027 | Erosion Mat Class II Type C | SY | 170.000 | 170.000 |
| 0094 | 628.7015 | Inlet Protection Type C | EACH | 2.000 | 2.000 |
| 0096 | 629.0210 | Fertilizer Type B | CWT | 0.100 | 0.100 |
| 0098 | 630.0120 | Seeding Mixture No. 20 | LB | 5.000 | 5.000 |
| 0100 | 642.5201 | Field Office Type C | EACH | 1.000 | 1.000 |
| 0102 | 643.0100 | Traffic Control (project) 01. 1176-15-71 | EACH | 1.000 | 1.000 |
| 0104 | 643.0300 | Traffic Control Drums | DAY | 16,975.000 | 16,975.000 |
| 0106 | 643.0420 | Traffic Control Barricades Type III | DAY | 494.000 | 494.000 |
| 0108 | 643.0705 | Traffic Control Warning Lights Type A | DAY | 988.000 | 988.000 |
| 0110 | 643.0715 | Traffic Control Warning Lights Type C | DAY | 2,186.000 | 2,186.000 |
| 0112 | 643.0800 | Traffic Control Arrow Boards | DAY | 184.000 | 184.000 |
| 0114 | 643.0900 | Traffic Control Signs | DAY | 4,353.000 | 4,353.000 |
| 0116 | 643.0920 | Traffic Control Covering Signs Type II | EACH | 2.000 | 2.000 |
| 0118 | 643.1050 | Traffic Control Signs PCMS | DAY | 21.000 | 21.000 |
| 0120 | 645.0111 | Geotextile Type DF Schedule A | SY | 41.000 | 41.000 |
| 0122 | 646.0106 | Pavement Marking Epoxy 4-Inch | LF | 60.000 | 60.000 |
| 0124 | 646.0841.S | Pavement Marking Grooved Wet Reflective Contrast Tape 4-Inch | LF | 13.000 | 13.000 |
| 0126 | 649.0400 | Temporary Pavement Marking Removable Tape 4-Inch | LF | 11,880.000 | 11,880.000 |
| 0128 | 649.0506 | Temporary Pavement Marking Removable Mask-Out Tape 6-Inch | LF | 3,825.000 | 3,825.000 |
| 0130 | 649.0801 | Temporary Pavement Marking Removable Tape 8-Inch | LF | 1,100.000 | 1,100.000 |
| 0132 | 649.1400 | Temporary Pavement Marking Stop Line Removable Tape 24-Inch | LF | 88.000 | 88.000 |
| 0134 | 650.6500 | Construction Staking Structure Layout (structure) 01. B-35-0028 | LS | 1.000 | 1.000 |
| 0136 | 650.8000 | Construction Staking Resurfacing Reference | LF | 2,675.000 | 2,675.000 |
| 0138 | 650.9910 | Construction Staking Supplemental Control (project) 01. 1176-15-71 | LS | 1.000 | 1.000 |
| 0140 | 690.0150 | Sawing Asphalt | LF | 60.000 | 60.000 |
| 0142 | 690.0250 | Sawing Concrete | LF | 21.000 | 21.000 |
| 0144 | 715.0415 | Incentive Strength Concrete Pavement | DOL | 500.000 | 500.000 |
| 0146 | 715.0502 | Incentive Strength Concrete Structures | DOL | 500.000 | 500.000 |
| 0148 | ASP.1T0A | On-the-Job Training Apprentice at \$5.00/HR | HRS | 150.000 | 150.000 |

Estimate Of Quantities

1176-15-71

| Line | Item | Item Description | Unit | Total | Qty |
|------|----------|--|------|---------|---------|
| 0150 | ASP.1T0G | On-the-Job Training Graduate at \$5.00/HR | HRS | 300.000 | 300.000 |
| 0152 | SPV.0060 | Special 01. Cleaning and Painting Bearings and Girder Ends | EACH | 3.000 | 3.000 |
| 0154 | SPV.0090 | Special 01. Remove and Reinstall Guardrail | LF | 60.000 | 60.000 |
| 0156 | SPV.0105 | Special 01. Bridge Jacking and Temporary Support of Superstructure | LS | 1.000 | 1.000 |

3

| REMOVING PAVEMENT | | | |
|---------------------|----------|--|---|
| STATION - STATION | LOCATION | 204.0100 REMOVING PAVEMENT SY | 204.0190 REMOVING SURFACE DRAINS EA |
| CATEGORY CODE 0010 | | | |
| STAGE 3 | | | |
| 297+60'N - 297+81'N | RT | 27 | 1 |
| STAGE 3 SUBTOTALS | | 27 | 1 |
| STAGE 4 | | | |
| 297+60'N - 297+81'N | RT | 28 | 1 |
| STAGE 4 SUBTOTALS | | 28 | 1 |
| TOTALS | | 55 | 2 |

CONCRETE PAVEMENT

| STATION - STATION | LOCATION | 415.0410 CONCRETE PAVEMENT APPROACH SLAB SY | 416.1010 CONCRETE SURFACE DRAIN CY | 305.0120* BASE AGGREGATE DENSE 1-1/4 INCH TON | 690.0250 SAWING CONCRETE LF |
|------------------------------|----------|--|--|---|--------------------------------------|
| CATEGORY CODE 0010 | | | | | |
| STAGE 3 | | | | | |
| 297+60'N - 297+81'N | RT | 27 | 3 | 9 | 21 |
| STAGE 3 SUBTOTALS | | 27 | 3 | 9 | 21 |
| STAGE 4 | | | | | |
| 297+60'N - 297+81'N | RT | 28 | 5 | 9 | -- |
| STAGE 4 SUBTOTALS | | 28 | 5 | 9 | -- |
| TOTALS | | 55 | 8 | 18 | 21 |
| *QUANTITIES LISTED ELSEWHERE | | | | | |

DRILLED TIE BARS

| FINISHING ROADWAY | | 416.0610 EACH | |
|--------------------|------------------|---------------------|------|
| STATION - STATION | 213.0100 EACH | CATEGORY CODE 0010 | |
| PROJECT 1176-15-71 | 1 | STAGE 4 | |
| | | 297+60'N - 297+81'N | RT 9 |
| TOTALS | | STAGE 4 SUBTOTALS 9 | |
| | | TOTALS 9 | |

EROSION CONTROL MOBILIZATIONS ITEMS

| LOCATION | 628.1905 EROSION CONTROL EACH | 628.1910 EMERGENCY EROSION CONTROL EACH |
|--------------------|-------------------------------------|--|
| CATEGORY CODE 0010 | | |
| PROJECT | 1 | 1 |
| TOTALS | | 1 |

| MILLING AND ASPHALTIC PAVEMENT ITEMS | | | | | | | | | |
|--------------------------------------|----------|---|---|---|---|---|---------------------------------|---|-------------------------------------|
| STATION - STATION | LOCATION | 204.0120 REMOVING ASPHALTIC SURFACE MILLING SY | 211.0400 PREPARE FOUNDATION FOR ASPHATIC SHOULDERS STA | 305.0120* BASE AGGREGATE DENSE 1-1/4 INCH TON | 460.5224 HMA PAVEMENT 4 LT 58-28 S TON | 450.1100.S ASPHALTIC MIXTURE FOR EXTREME CONDITIONS TON | 455.0605 TACK COAT GAL | 650.8000 CONSTRUCTION STAKING RESURFACING REFERENCE LF | 690.0150 SAWING ASPHALT LF |
| CATEGORY CODE 0010 | | | | | | | | | |
| STAGE 1 | | | | | | | | | |
| 282+00'N - 295+50'N | RT | 1,500 | 14 | -- | 170 | 170 | 38 | 1,350 | -- |
| 297+81'N - 303+50'N | RT | 630 | 6 | -- | 70 | 70 | 16 | 570 | -- |
| STAGE 1 SUBTOTALS | | 2,130 | 20 | -- | 240 | 240 | 54 | 1,920 | -- |
| STAGE 2 | | | | | | | | | |
| 291+70'N - 295+50'N | LT | 180 | 4 | 4 | 32 | 32 | 5 | 380 | -- |
| 297+81'N - 301+55'N | LT | 200 | 4 | 4 | 33 | 33 | 5 | 375 | -- |
| STAGE 2 SUBTOTALS | | 380 | 8 | 8 | 65 | 65 | 10 | 755 | -- |
| STAGE 3 | | | | | | | | | |
| UNDISTRIBUTED | LT | -- | -- | -- | 10 | 10 | -- | -- | 30 |
| STAGE 3 SUBTOTALS | | -- | -- | -- | 10 | 10 | -- | -- | 30 |
| STAGE 4 | | | | | | | | | |
| UNDISTRIBUTED | RT | -- | -- | -- | 10 | 10 | -- | -- | 30 |
| STAGE 4 SUBTOTALS | | -- | -- | -- | 10 | 10 | -- | -- | 30 |
| TOTALS | | 2,510 | 28 | 8 | 325 | 325 | 64 | 2,675 | 60 |

*QUANTITIES LISTED ELSEWHERE

ASPHALTIC SHOULDER RUMBLE STIRPS

| STATION - STATION | LOCATION | 465.0400 LF |
|---------------------|----------|----------------|
| CATEGORY CODE 0010 | | |
| STAGE 4 | | |
| 282+00'N - 295+50'N | RT | 1,350 |
| 297+81'N - 303+50'N | RT | 570 |
| STAGE 4 SUBTOTALS | | 1,920 |
| STAGE 5 | | |
| 291+70'N - 295+50'N | LT | 380 |
| 297+81'N - 301+55'N | LT | 375 |
| STAGE 5 SUBTOTALS | | 755 |
| TOTALS | | 2,675 |

ADJUSTING INLET COVERS

| STATION - STATION | LOCATION | 611.8115 ADJUSTING INLET COVERS EACH | 628.7015 INLET PROTECTION TYPE C LF |
|--------------------|----------|---|--|
| CATEGORY CODE 0010 | | | |
| STAGE 3 | | | |
| 297+72 | LT | 1 | 1 |
| STAGE 3 SUBTOTALS | | 1 | 1 |
| STAGE 4 | | | |
| 297+72 | RT | 1 | 1 |
| STAGE 4 SUBTOTALS | | 1 | 1 |
| TOTALS | | 2 | 2 |

WATER

| STATION - STATION | LOCATION | 624.0100 MGAL |
|-----------------------|----------|------------------|
| CATEGORY CODE 0010 | | |
| STAGE 3 | | |
| 297+52 'N - 297+94 'N | LT | 0.25 |
| STAGE 3 SUBTOTAL | | |
| STAGE 4 | | |
| 297+52 'N - 297+94 'N | RT | 0.25 |
| STAGE 4 SUBTOTAL | | |
| TOTAL | | 0.50 |

LANDSCAPING ITEMS

| STATION - STATION | LOCATION | 625.0500 SALVAGED TOPSOIL SY | 629.0210 FERTILIZER TYPE B CWT | 630.0120 SEED MIX NO. 20 LBS |
|--|----------|---------------------------------------|---|---------------------------------------|
| CATEGORY CODE 0010 | | | | |
| STAGE 3 | | | | |
| 297+52 'N - 297+94 'N UNDISTRIBUTED | LT | 69 21 | 0.04 0.01 | 1.9 .6 |
| STAGE 3 SUBTOTALS | | 90 | 0.05 | 2.5 |
| STAGE 4 | | | | |
| 297+52 'N - 297+94 'N UNDISTRIBUTED | RT | 69 21 | 0.04 0.01 | 1.9 .6 |
| STAGE 4 SUBTOTALS | | 90 | 0.05 | 2.5 |
| TOTALS | | 180 | 0.10 | 5 |

SILT FENCE

| STATION - STATION | LOCATION | 628.1504 SILT FENCE LF | 628.1520 SILT FENCE MAINTENANCE LF |
|--|----------|------------------------------|---|
| CATEGORY CODE 0010 | | | |
| STAGE 3 | | | |
| 297+52 'N - 297+94 'N UNDISTRIBUTED | LT | 75 20 | 75 20 |
| STAGE 3 SUBTOTALS | | 95 | 95 |
| STAGE 4 | | | |
| 297+52 'N - 297+94 'N UNDISTRIBUTED | RT | 75 20 | 75 20 |
| STAGE 4 SUBTOTALS | | 95 | 95 |
| TOTALS | | 190 | 190 |

EROSION MAT

| STATION - STATION | LOCATION | 628.2027 CLASS II TYPE C SY |
|--|----------|--------------------------------------|
| CATEGORY CODE 0010 | | |
| STAGE 3 | | |
| 297+52 'N - 297+94 'N UNDISTRIBUTED | LT | 70 15 |
| STAGE 3 SUBTOTALS | | 85 |
| STAGE 4 | | |
| 297+52 'N - 297+94 'N UNDISTRIBUTED | RT | 70 15 |
| STAGE 4 SUBTOTALS | | 85 |
| TOTALS | | 170 |

3

PAVEMENT MARKING

| STATION - STATION | LOCATION | 646.0106 PAV'T MARKING EPOXY 4-INCH | | 646.0841.S PAV'T MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH | |
|---------------------|----------|--|--------|--|----|
| | | WHITE | YELLOW | | |
| | | LF | LF | | LF |
| | | CATEGORY CODE 0010 | | | |
| STAGE 3 | | | | | |
| 297+60'N - 297+81'N | RT | 0 | 30 | 13 | |
| STAGE 3 SUBTOTALS | | 0 | 30 | 13 | |
| STAGE 4 | | | | | |
| 297+60'N - 297+81'N | RT | 30 | 0 | 0 | |
| STAGE 4 SUBTOTALS | | 30 | 0 | 0 | |
| TOTALS | | 60 | | 13 | |

BEAM GUARD ITEMS

| STATION - STATION | LOCATION | SPV.0090.01 REMOVE AND REINSTALL GUARDRAIL LF |
|---------------------|----------|---|
| CATEGORY CODE 0010 | | |
| STAGE 3 | | |
| 291+96'N - 301+31'N | LT | 30 |
| STAGE 3 SUBTOTALS | | 30 |
| STAGE 4 | | |
| 291+96'N - 301+31'N | RT | 30 |
| STAGE 4 SUBTOTALS | | 30 |
| TOTALS | | 60 |

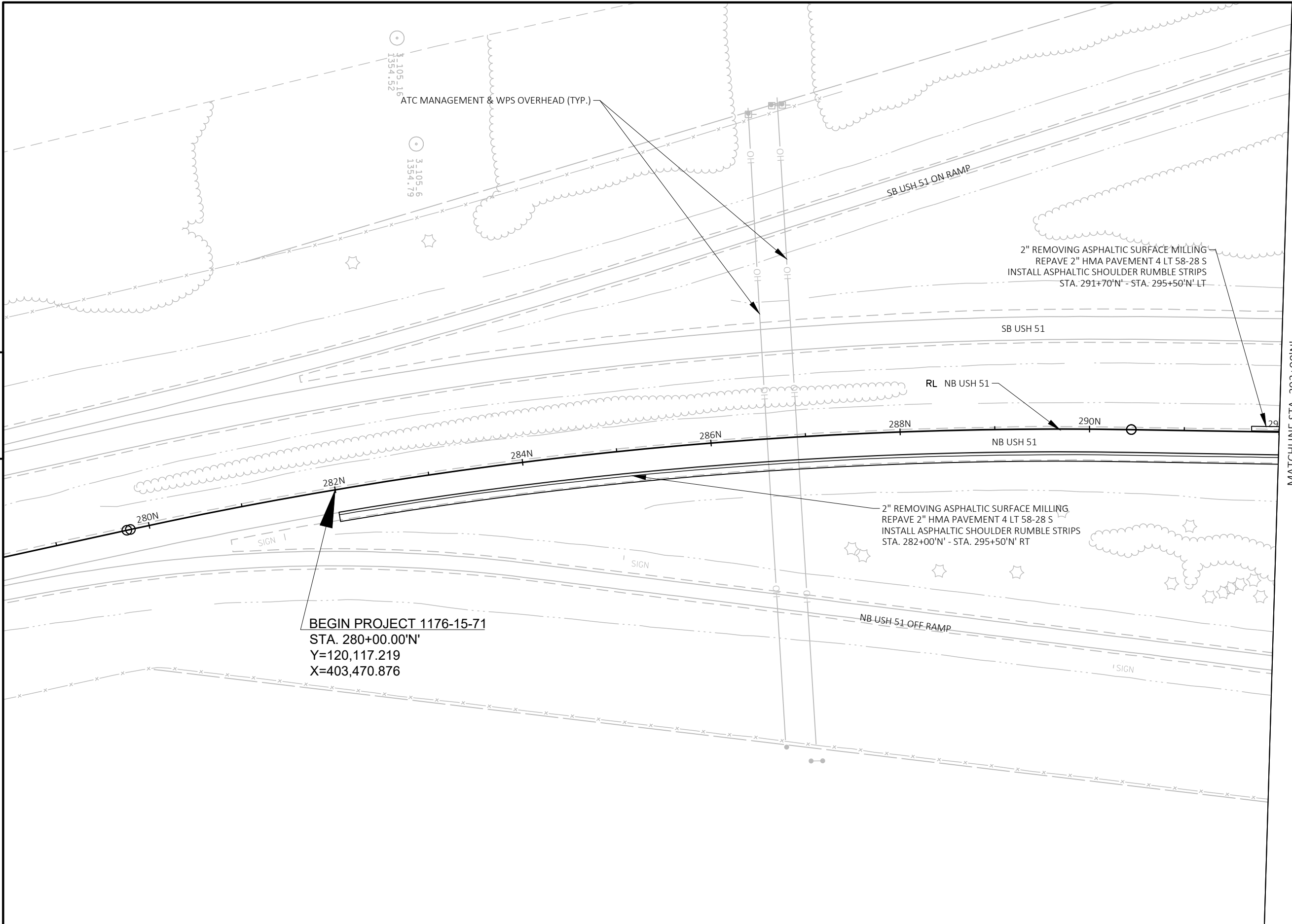
CONCRETE BARRIER TEMPORARY PRECAST

| STATION - STATION | LOCATION | 603.8000 | 603.8125 |
|------------------------|----------|--|--|
| | | CONCRETE BARRIER TEMPORARY PRECAST DELIVERED | CONCRETE BARRIER TEMPORARY PRECAST INSTALLED |
| | | LF | LF |
| CATEGORY CODE 0010 | | | |
| STAGE 3 | | | |
| 293+00'N - 298+80'N | RT | 590 | 590 |
| 98+70'CW' - 101+60'CW' | LT | 290 | 290 |
| STAGE 3 SUBTOTALS | | 880 | 880 |
| STAGE 4 | | | |
| 293+00'N - 298+80'N | RT | -- | 590 |
| STAGE 4 SUBTOTALS | | -- | 590 |
| CATEGORY 0010 TOTALS | | 880 | 1,470 |

3

TRAFFIC CONTROL ITEMS

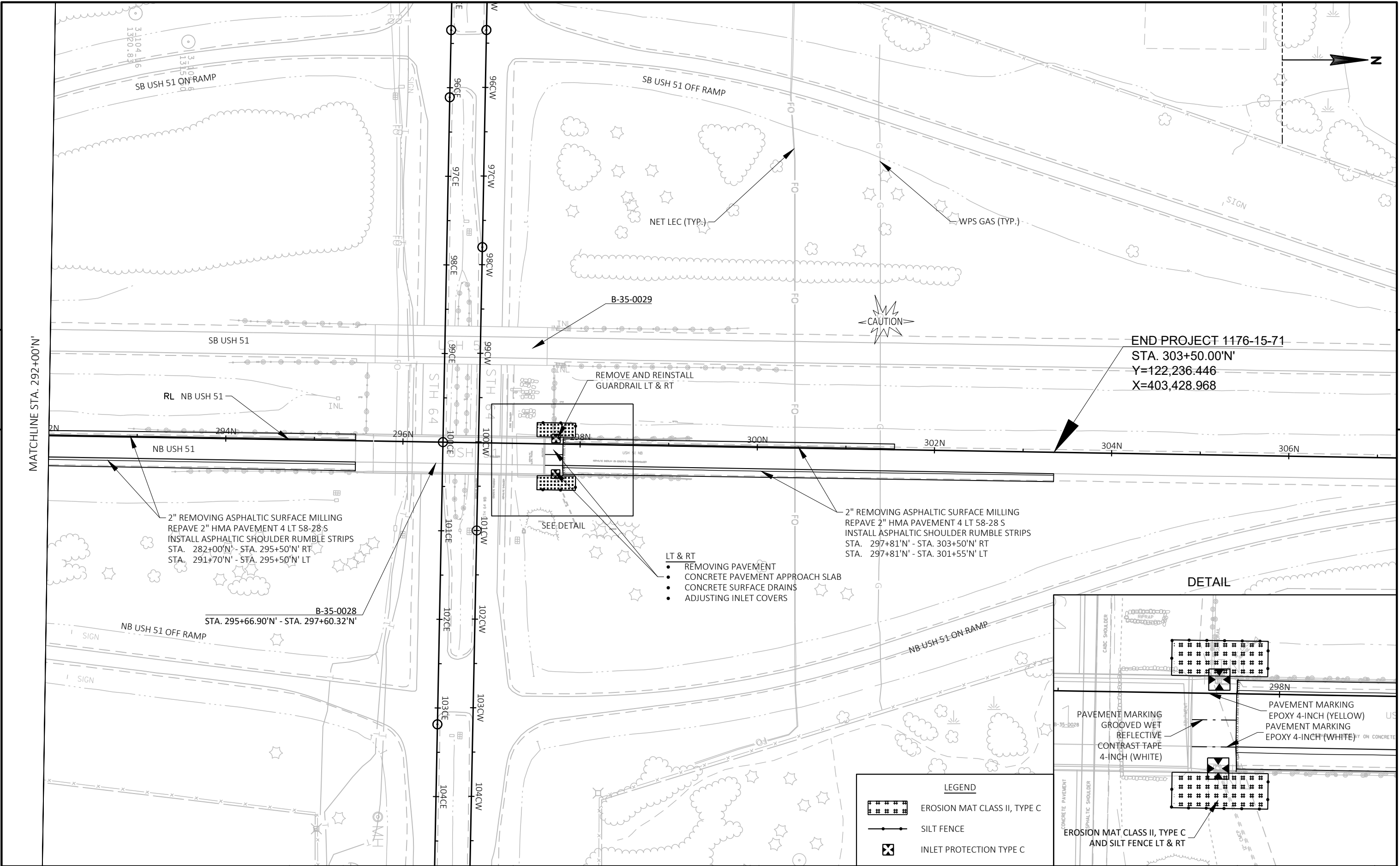
| CATEGORY 0010 | DAYS | 643.0300 DRUMS | | 643.0420 BARRICADES TYPE III | | 643.0705 WARNING LIGHTS TYPE A | | 643.0715 WARNING LIGHTS TYPE C | | 643.0800 ARROW BOARDS | | 643.0900 SIGNS | | 643.0920 COVERING SIGNS TYPE II | | 643.1050 PCMS | | 649.0506 TEMPORARY PAV'T MARKING MASK-OUT TAPE 6-INCH L.F. | | 649.0400 TEMPORARY MARKING TAPE, 4-INCH WHITE L.F. YELLO L.F. | | 649.0801 TEMPORARY PAV'T MARKING REMOVABLE TAPE, 8-INCH WHITE L.F. | | 649.1400 TEMPORARY PAV'T MARKING STOP LINE REMOVABLE TAPE, 24-INCH WHITE L.F. | |
|---------------|------|-------------------|--------|------------------------------------|------|--------------------------------------|------|--------------------------------------|-------|--------------------------|------|-------------------|-------|------------------------------------|------|------------------|------|---|-------|--|---------------|---|--|--|--|
| | | NO. | DAYS | NO. | DAYS | NO. | DAYS | NO. | DAYS | NO. | DAYS | NO. | DAYS | CYCLES | EACH | NO. | DAYS | | | WHITE L.F. | YELLO L.F. | | | | |
| STAGE | | | | | | | | | | | | | | | | | | | | | | | | | |
| STAGE 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| USH 51 | 2 | 95 | 190 | 4 | 8 | 8 | 16 | 28 | 56 | 2 | 4 | 16 | 32 | 1 | 1 | 0 | 0 | 275 | 980 | -- | 550 | -- | | | |
| SUBTOTALS: | | 95 | 190 | 4 | 8 | 8 | 16 | 28 | 56 | 2 | 4 | 16 | 32 | | 1 | 0 | 0 | 275 | 980 | 0 | 550 | 0 | | | |
| | | | | | | | | | | | | | | | | | | | | 980 | | | | | |
| STAGE 2 | | | | | | | | | | | | | | | | | | | | | | | | | |
| USH 51 | 2 | 73 | 146 | 5 | 10 | 10 | 20 | 16 | 32 | 2 | 4 | 15 | 30 | 0 | 0 | 0 | 0 | 0 | | 780 | -- | -- | | | |
| SUBTOTALS: | | 73 | 146 | 5 | 10 | 10 | 20 | 16 | 32 | 2 | 4 | 15 | 30 | | 0 | 0 | 0 | 0 | 0 | 780 | 0 | 0 | | | |
| | | | | | | | | | | | | | | | | | | | | 780 | | | | | |
| STAGE 3 | | | | | | | | | | | | | | | | | | | | | | | | | |
| USH 51 | 40 | 74 | 2,960 | 3 | 120 | 6 | 240 | 22 | 880 | 2 | 80 | 18 | 720 | 0 | 0 | 1 | 7 | 2,295 | 2,125 | 2,685 | -- | -- | | | |
| STH 64 | 40 | 110 | 4,400 | 2 | 80 | 4 | 160 | 0 | 0 | 0 | 0 | 31 | 1,240 | 0 | 0 | 2 | 14 | 0 | 1,710 | -- | -- | 88 | | | |
| SUBTOTALS: | | 184 | 7,360 | 5 | 200 | 10 | 400 | 22 | 880 | 2 | 80 | 49 | 1,960 | | 0 | 3 | 21 | 2,295 | 3,835 | 2,685 | 0 | 88 | | | |
| | | | | | | | | | | | | | | | | | | | | 6,520 | | | | | |
| STAGE 4 | | | | | | | | | | | | | | | | | | | | | | | | | |
| USH 51 | 45 | 93 | 4,185 | 4 | 180 | 8 | 360 | 26 | 1,170 | 2 | 90 | 20 | 900 | 1 | 1 | 0 | 0 | 1,060 | 1,840 | 980 | 550 | -- | | | |
| STH 64 | 45 | 110 | 4,950 | 2 | 90 | 4 | 180 | 0 | 0 | 0 | 0 | 31 | 1,395 | 0 | 0 | 0 | 0 | 0 | -- | -- | -- | -- | | | |
| SUBTOTALS: | | 203 | 9,135 | 6 | 270 | 12 | 540 | 26 | 1,170 | 2 | 90 | 51 | 2,295 | | 1 | 0 | 0 | 1,060 | 1,840 | 980 | 550 | 0 | | | |
| | | | | | | | | | | | | | | | | | | | | 2,820 | | | | | |
| STAGE 5 | | | | | | | | | | | | | | | | | | | | | | | | | |
| USH 51 | 3 | 48 | 144 | 2 | 6 | 4 | 12 | 16 | 48 | 2 | 6 | 12 | 36 | 0 | 0 | 0 | 0 | 195 | 0 | 780 | -- | -- | | | |
| SUBTOTALS: | | 48 | 144 | 2 | 6 | 4 | 12 | 16 | 48 | 2 | 6 | 12 | 36 | | 0 | 0 | 0 | 195 | 0 | 780 | 0 | 0 | | | |
| | | | | | | | | | | | | | | | | | | | | 780 | | | | | |
| 0010 TOTALS: | | | 16,975 | | 494 | | 988 | | 2,186 | | 184 | | 4,353 | | 2 | | 21 | 3,825 | 6,655 | 5,225 | 1,100 | 88 | | | |
| | | | | | | | | | | | | | | | | | | | | 11,880 | | | | | |

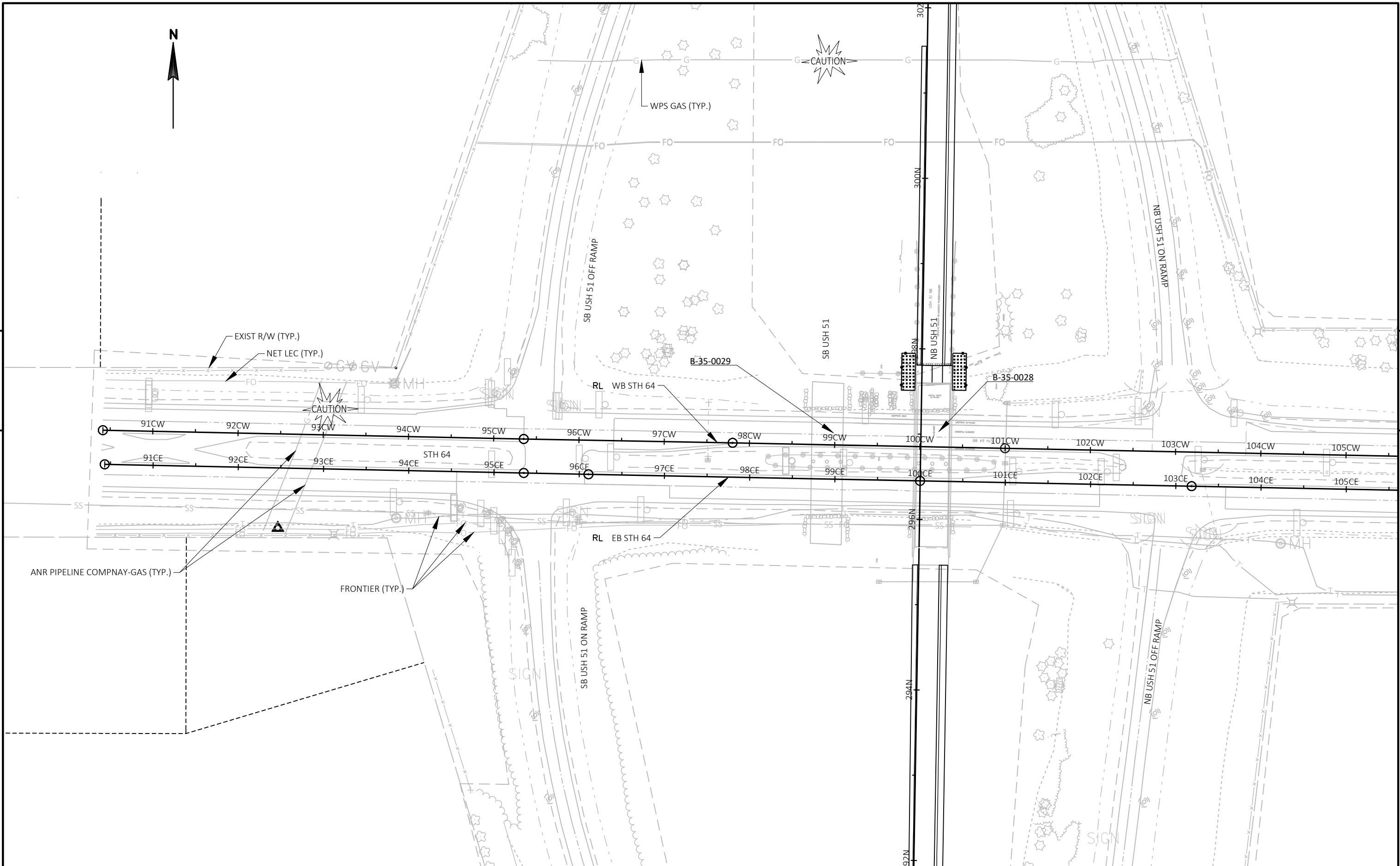


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| | | | | | |
|------------------------|-------------|-----------------|--------------|-------|---|
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|------------------------|-------------|-----------------|--------------|-------|---|

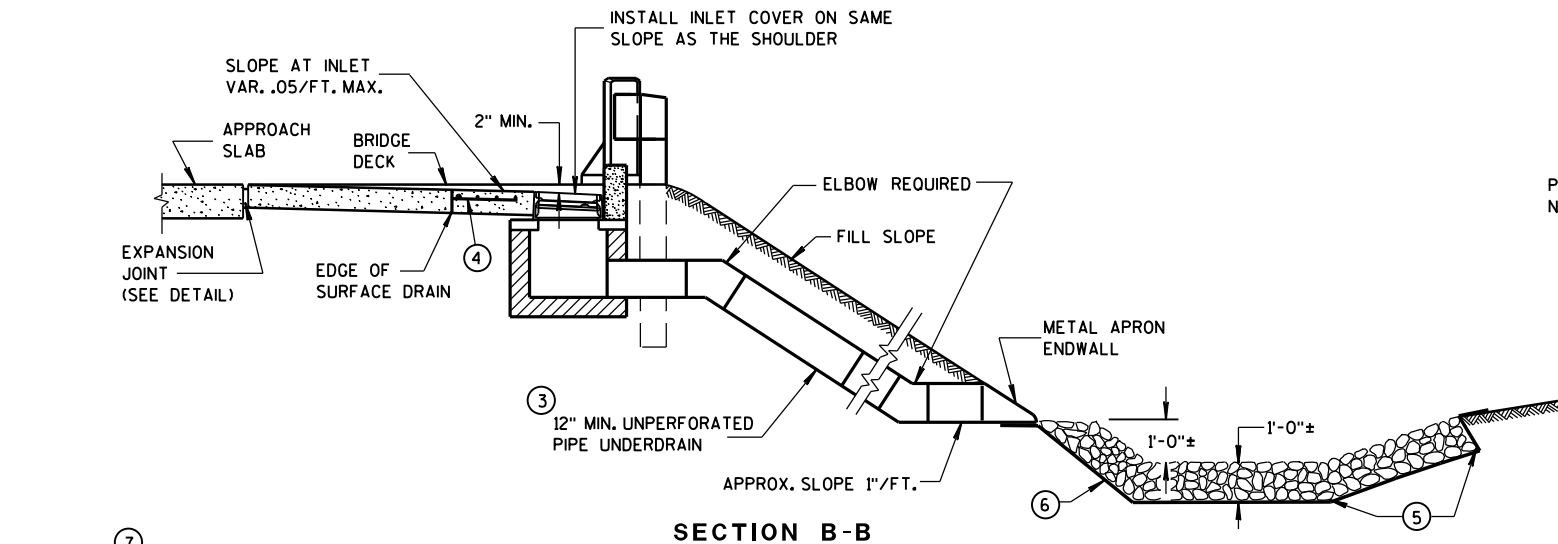




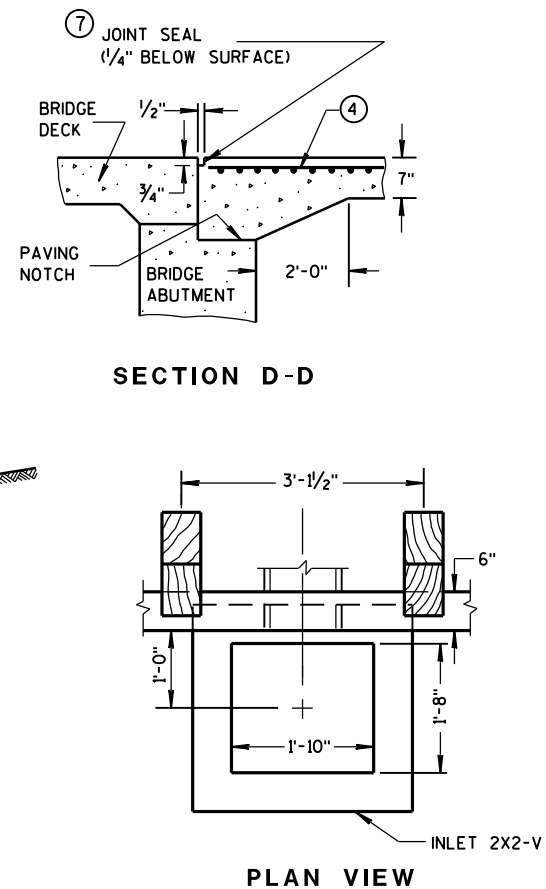
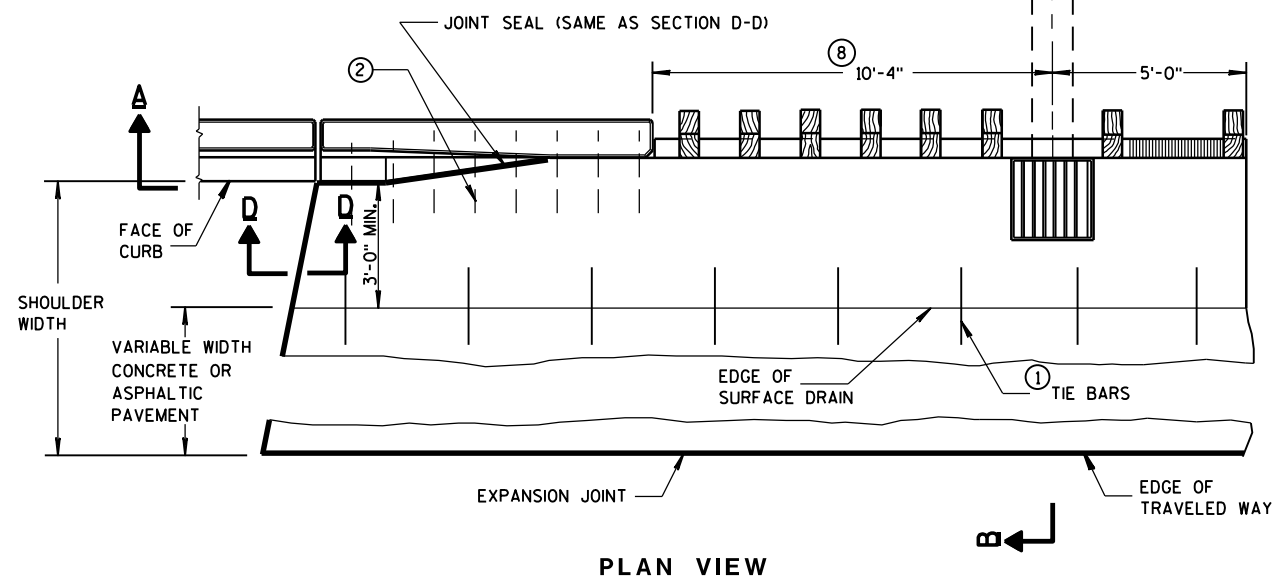
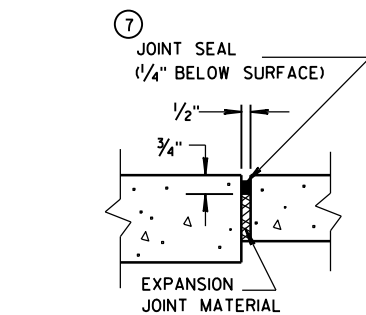
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|------------------------|-------------|-----------------|--------------|-------|---|
| PROJECT NO: 1176-15-71 | HWY: USH 51 | COUNTY: LINCOLN | PLAN: STH 64 | SHEET | E |
|------------------------|-------------|-----------------|--------------|-------|---|

Standard Detail Drawing List

| | |
|-----------|--|
| 08D03-06 | CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES |
| 08E09-06 | SILT FENCE |
| 08E10-02 | INLET PROTECTION TYPE A, B, C AND D |
| 13A05-05A | SHOULDER RUMBLE STRIP, MILLING |
| 13A05-05B | SHOULDER RUMBLE STRIP, MILLING |
| 13B02-08A | CONCRETE PAVEMENT APPROACH SLAB |
| 13C01-18 | CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES |
| 14B07-14A | CONCRETE BARRIER TEMPORARY PRECAST, 12' -6" |
| 14B07-14B | CONCRETE BARRIER TEMPORARY PRECAST, 12' -6" |
| 14B07-14C | CONCRETE BARRIER TEMPORARY PRECAST, 12' -6" |
| 14B07-14D | CONCRETE BARRIER TEMPORARY PRECAST, 12' -6" |
| 14B07-14E | CONCRETE BARRIER TEMPORARY PRECAST, 12' -6" |
| 14B07-14F | CONCRETE BARRIER TEMPORARY PRECAST, 12' -6" |
| 14B07-14G | CONCRETE BARRIER TEMPORARY PRECAST, 12' -6" |
| 14B07-14H | CONCRETE BARRIER TEMPORARY PRECAST, 12' -6" |
| 14B08-02A | CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS |
| 14B08-02B | CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS |
| 14B08-02C | CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS |
| 14B08-02D | CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS |
| 14B08-02E | CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS |
| 14B15-09A | STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS |
| 14B15-09B | STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS |
| 14B15-09C | STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS |
| 14B20-11A | STEEL THREE BEAM STRUCTURE APPROACH |
| 14B20-11B | STEEL THREE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END PARAPETS |
| 14B20-11G | STEEL THREE BEAM STRUCTURE APPROACH, CONNECTOR PLATE DETAIL |
| 15C08-17A | LONGITUDINAL MARKING (MAINLINE) |
| 15D03-04 | TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER |
| 15D12-06A | TRAFFIC CONTROL, LANE CLOSURE |
| 15D12-06B | TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION |
| 15D20-04 | TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY |
| 15D21-04 | TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE |



EXPANSION JOINT DETAIL

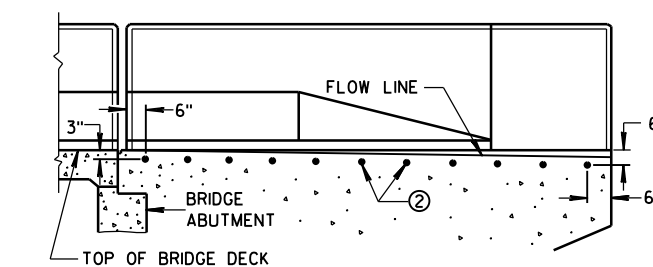
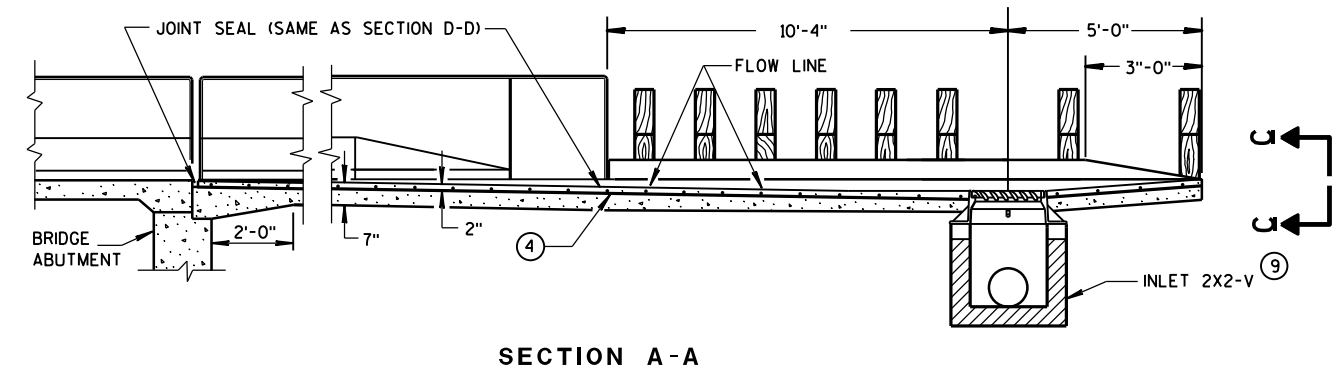
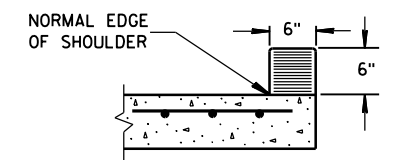


GENERAL NOTES

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

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

- ① NO. 4 X 2'-0" TIE BARS SPACED AT 3'-0" CENTERS TO BE USED ONLY WHEN ADJACENT TO P.C. CONCRETE.
- ② NO. 4 X 2'-0" TIE BARS SPACED AT 12" CENTERS TO BE PLACED BY BRIDGE CONTRACTOR, OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- ③ THE PIPE UNDERDRAIN MAY BE ANY ONE OF THE SIX MATERIALS LISTED IN THE STANDARD SPECIFICATIONS SECTION 612.2 EXCEPT DRAIN TILE.
- ④ MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- ⑤ LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.
- ⑥ GEOTEXTILE FABRIC, TYPE 'R'
- ⑦ HOT POURED SEALANT UNLESS OTHERWISE SPECIFIED.
- ⑧ THIS DIMENSION MAY VARY DEPENDING ON THE SPACING OF POSTS FOR THE STEEL PLATE BEAM GUARD. THE TYPICAL LOCATION FOR THE SURFACE DRAIN IS WHERE THE POST SPACING WIDENS TO 3'-1 1/2".
- ⑨ SEE CURRENT STANDARD DETAIL DRAWINGS 8A5 AND 8C7 FOR DETAILS.

LOCATION OF
TIE BARS IN WINGWALL

SECTION C-C

CONCRETE SURFACE DRAINS
DROP INLET TYPE
AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9/4/08

DATE

FHWA

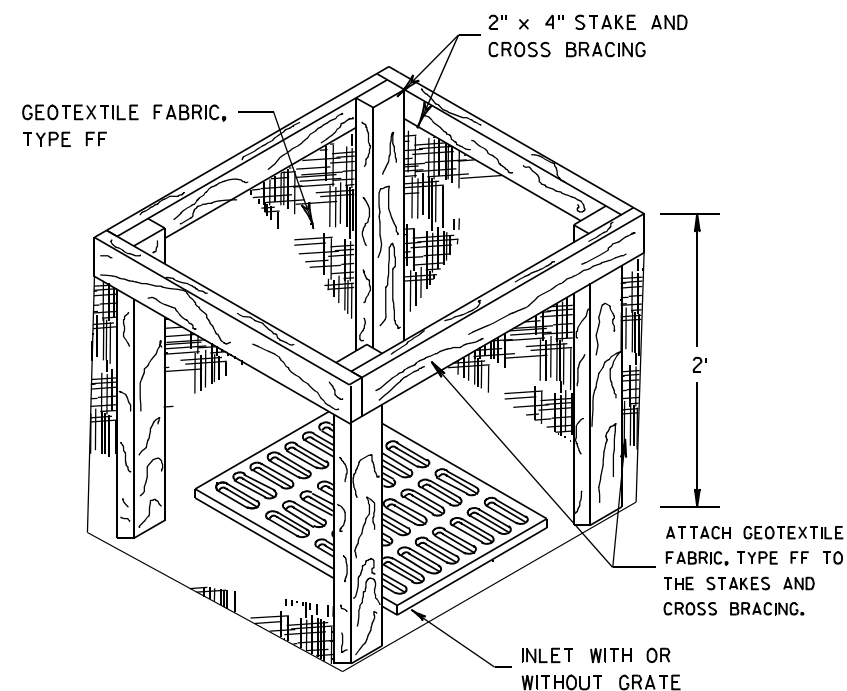
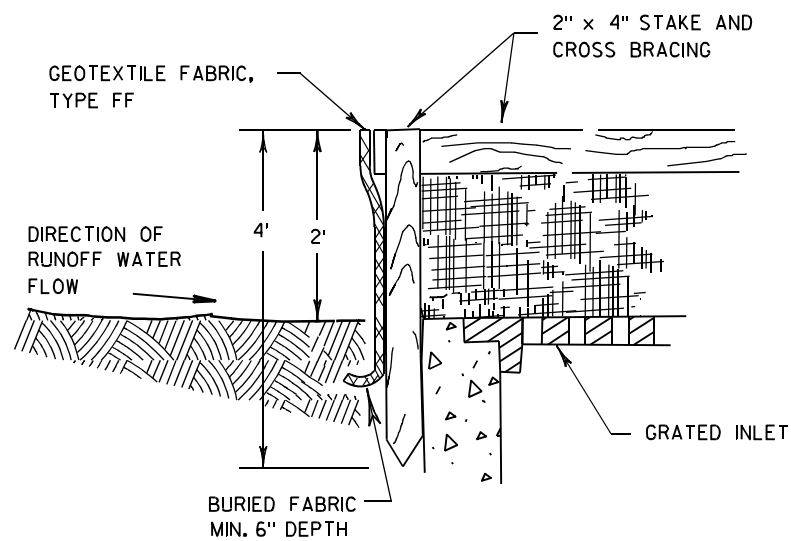
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



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



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



INLET PROTECTION, TYPE A

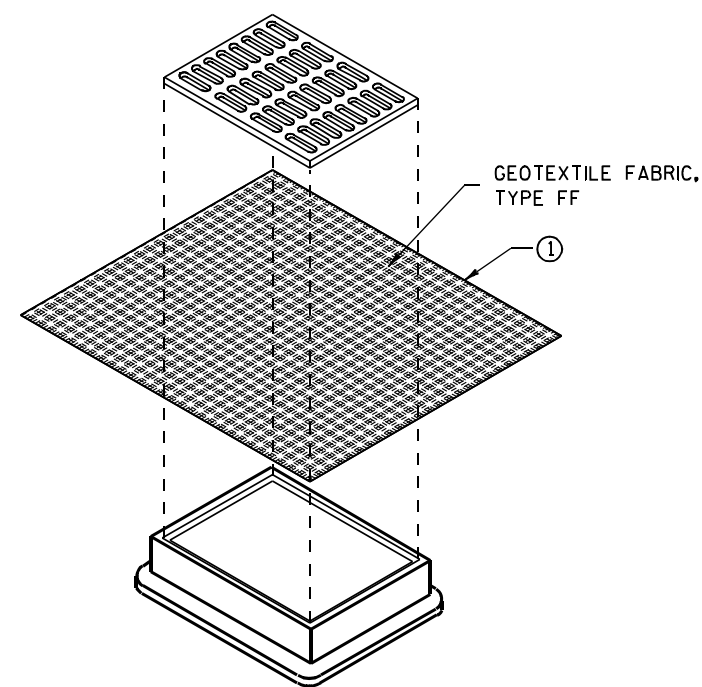
GENERAL NOTES

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

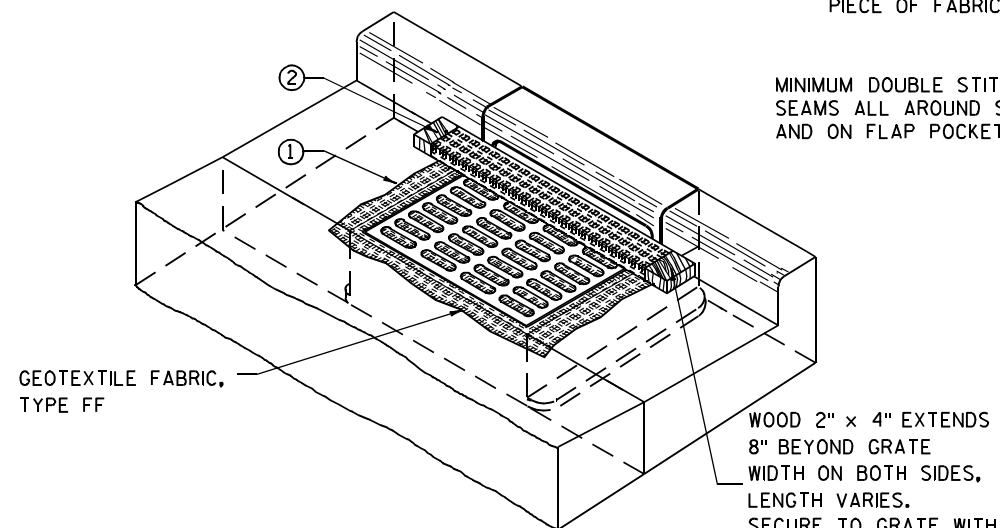
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- ① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
- ③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.



**INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)**

(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

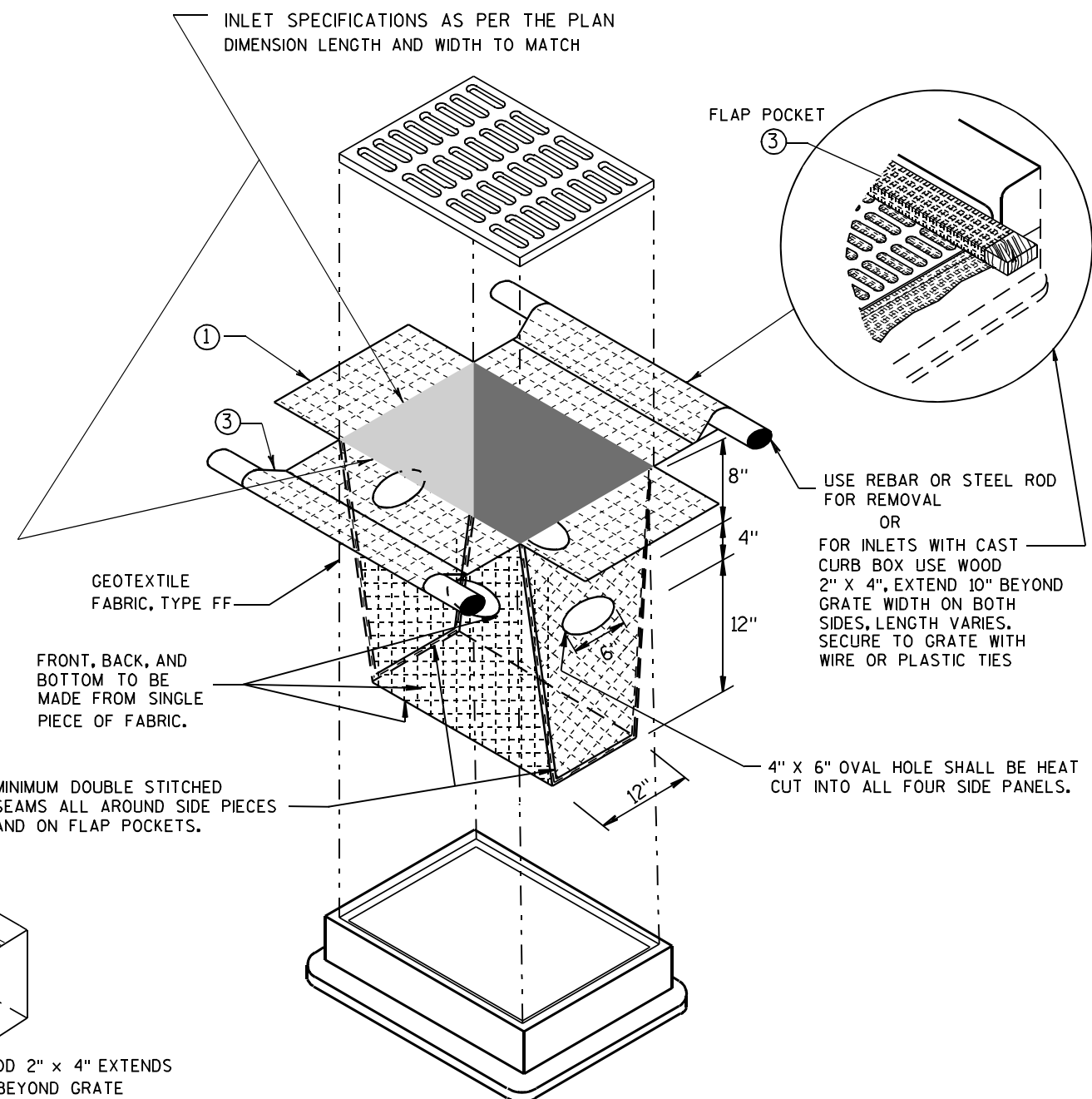
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLower THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.



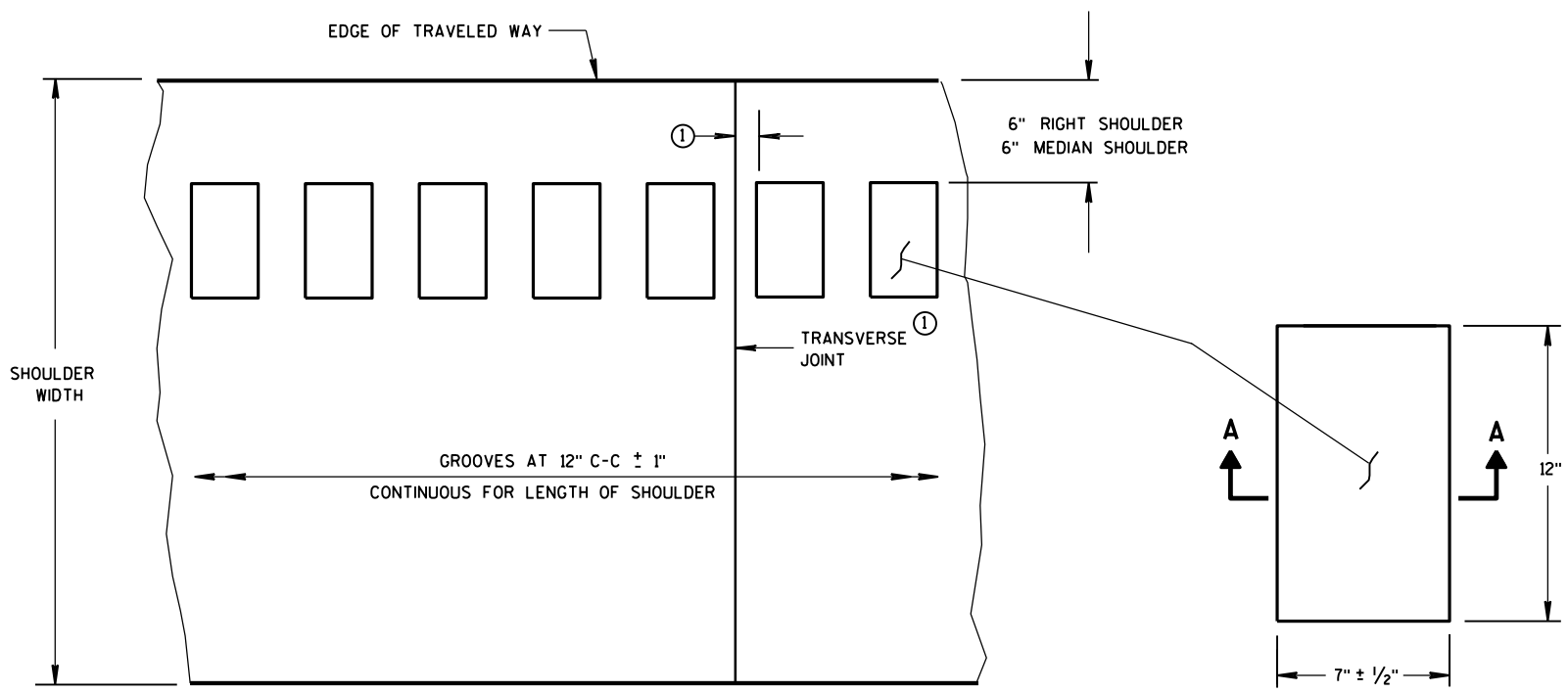
INLET PROTECTION, TYPE D

(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX AS PER NOTE ②)

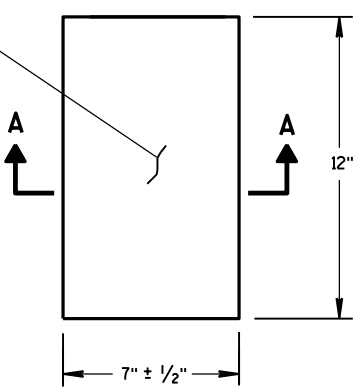
**INLET PROTECTION
TYPE A, B, C, AND D**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02 /S/ Beth Cannestra
DATE
FHWA CHIEF ROADWAY DEVELOPMENT ENGINEER



PLAN VIEW
SHOULDER WITH GROOVES



PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR MILLED RUMBLE STRIP

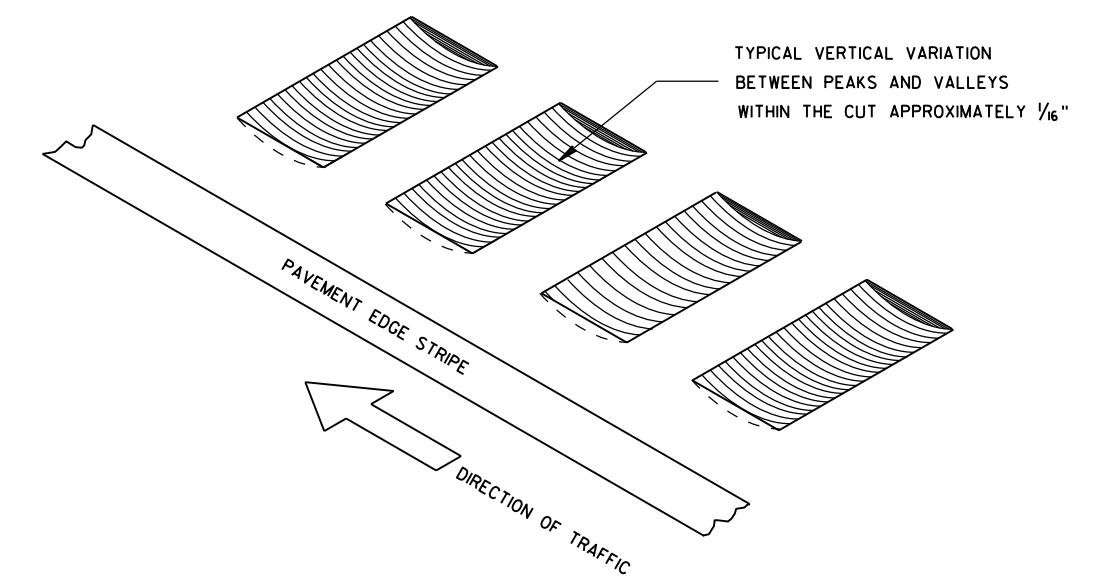
GENERAL NOTES

DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

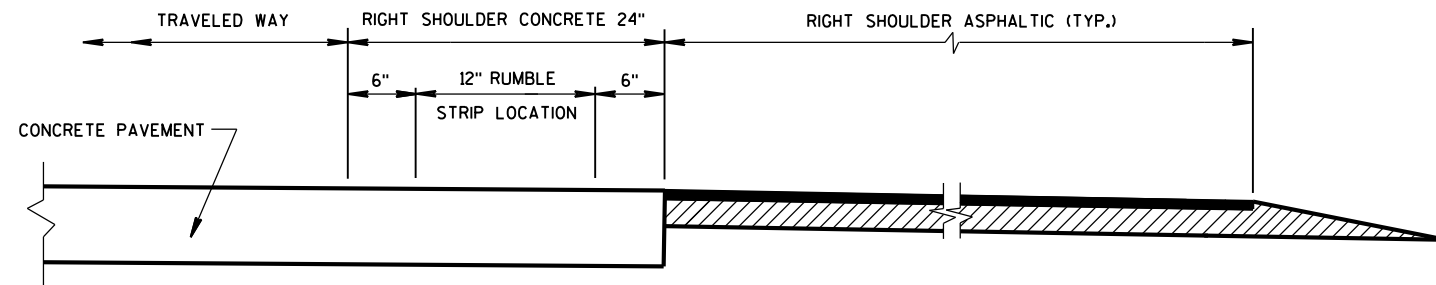
RUMBLE STRIPS ON EXPRESSWAYS

DO NOT INSTALL RUMBLE STRIPS ACROSS SIDE ROAD INTERSECTIONS, COMMERCIAL DRIVEWAYS, PRIVATE DRIVEWAYS OR ADJACENT TO RIGHT TURN LANES, LEFT TURN LANES, TURN LANE TAPERS, BRIDGE DECKS, BRIDGE APPROACHES, OR 100 FEET IN ADVANCE OF RAILROAD CROSSING. THE ATTACHED STANDARD DETAIL DRAWING SHOWS THE LOCATION OF THE RUMBLE STRIPS AT INTERCHANGE AREAS.

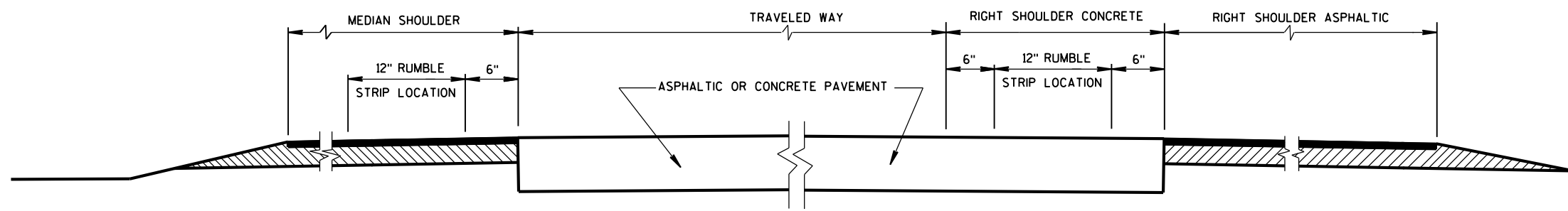
① CONCRETE PAVEMENT - RUMBLE STRIPS SHALL BE A MINIMUM OF 6" AWAY FROM TRANSVERSE JOINTS.



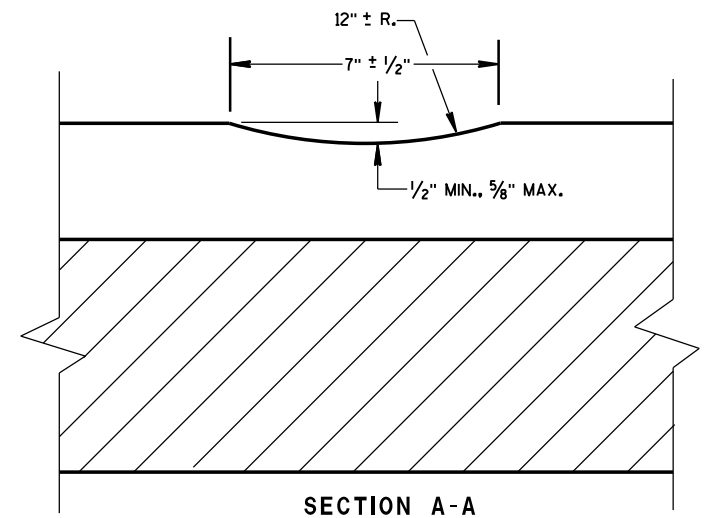
ISOMETRIC



SECTION VIEW
CONCRETE PAVEMENT EXTENDS INTO RIGHT SHOULDER)



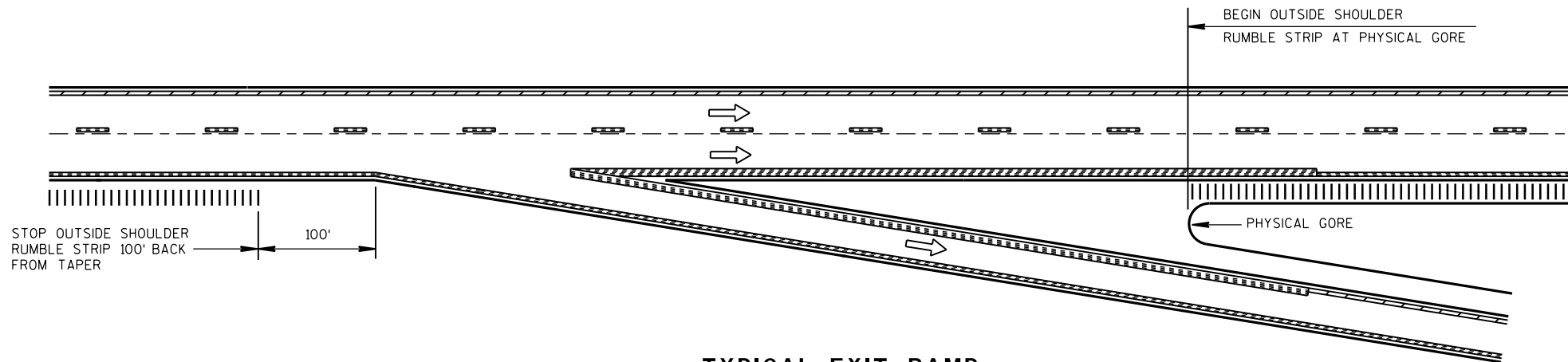
SECTION VIEW
TYPICAL LOCATIONS OF SHOULDER RUMBLE STRIPS
IN RURAL DIVIDED HIGHWAYS
(ONE ROADWAY IS SHOWN)



SECTION A-A

SHOULDER RUMBLE STRIP,
MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



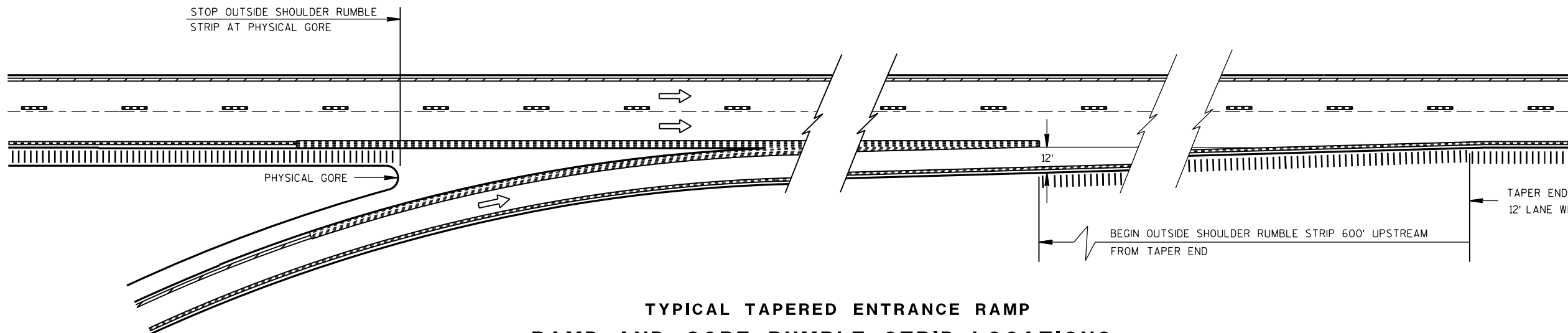
TYPICAL EXIT RAMP

NOTES:

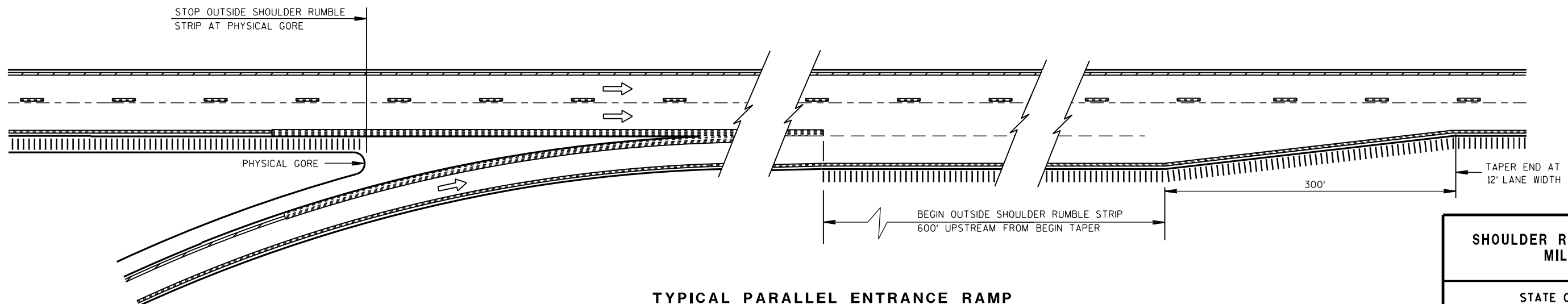
NO RUMBLE STRIP ON EXIT, DIRECTIONAL, OR ENTRANCE RAMPS, EXCEPT NEAR THE ENTRANCE TAPER END AND ALONG THE PARALLEL RAMP AREA AS SHOWN.

PAVEMENT MARKING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.

NOTE:
ARROW SYMBOL (→)
SHOWS DIRECTION OF TRAVEL



**TYPICAL TAPERED ENTRANCE RAMP
RAMP AND GORE RUMBLE STRIP LOCATIONS**



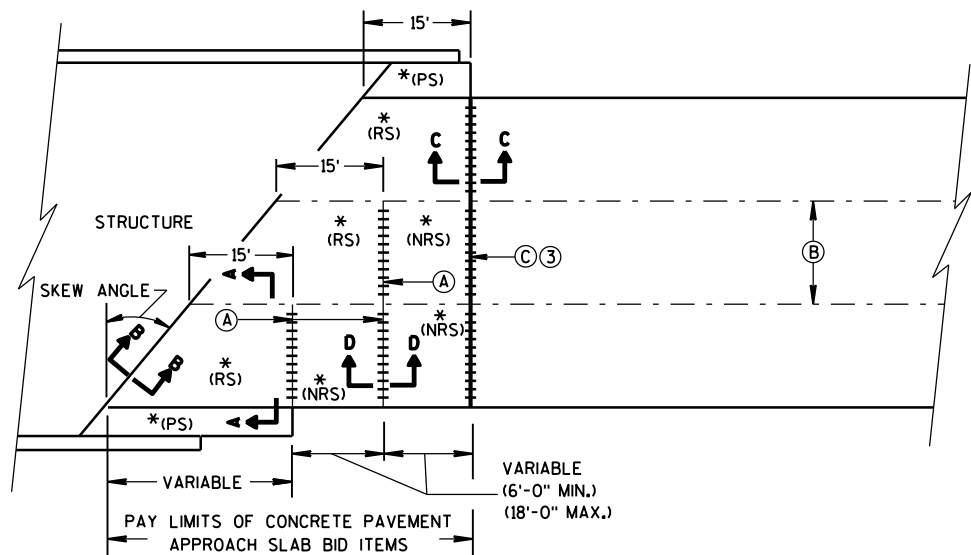
**TYPICAL PARALLEL ENTRANCE RAMP
RAMP AND GORE RUMBLE STRIP LOCATIONS**

**SHOULDER RUMBLE STRIP,
MILLING**

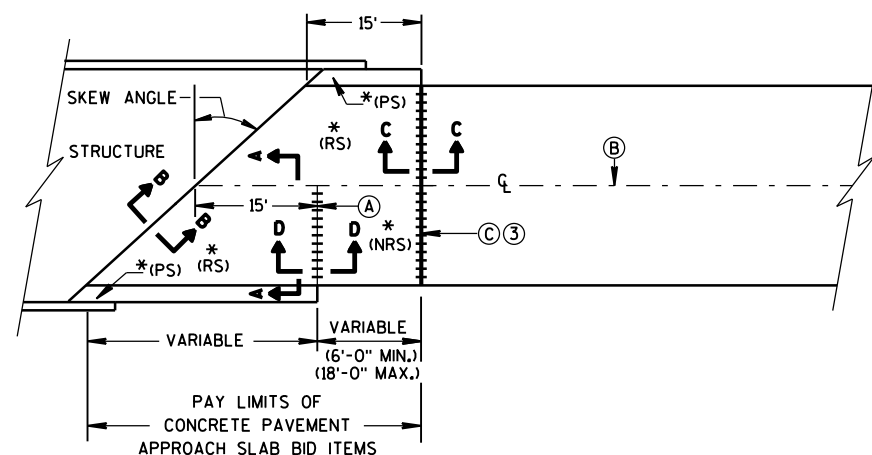
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/17/2012
DATE
FHWA

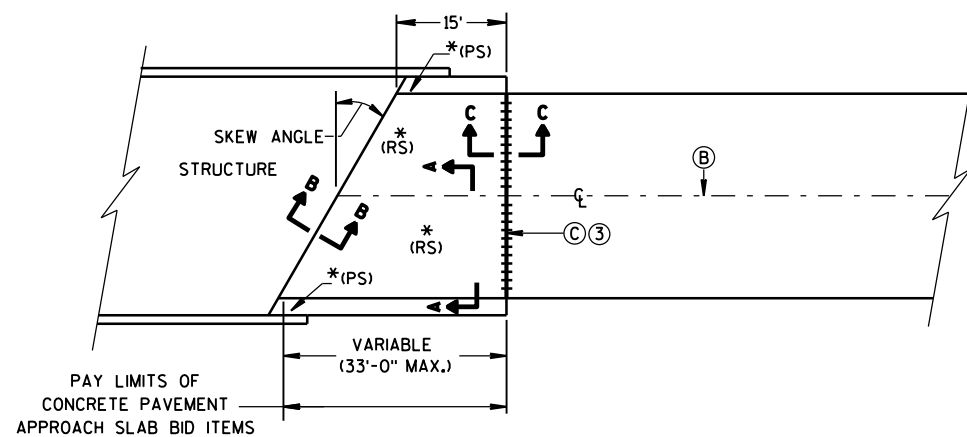
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



**SKewed APPROACH
(PAVEMENT MORE THAN 2 LANES)**



**SKews > 20°
(PAVEMENT WIDTH ≤ 30')**

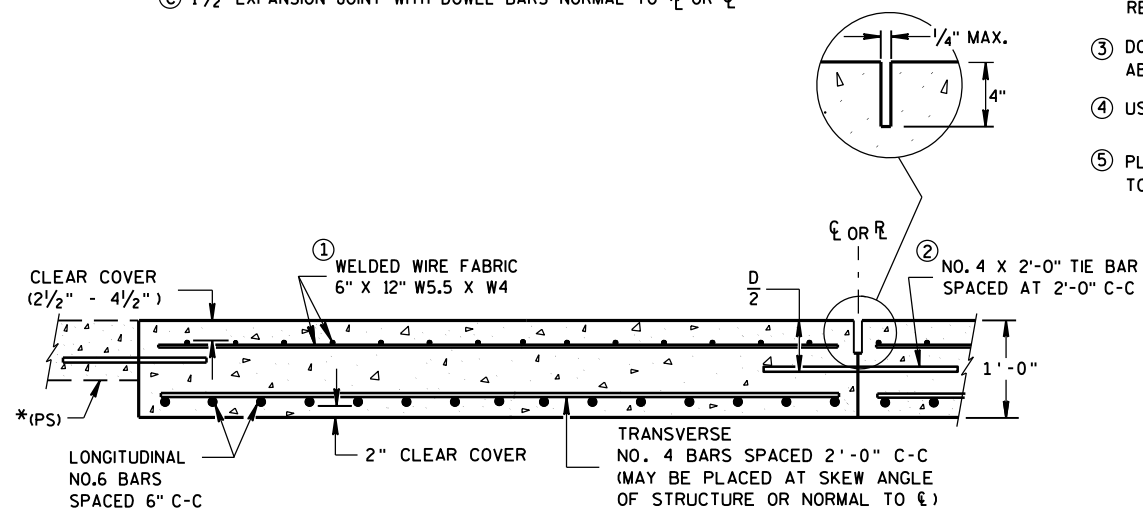


**SKews ≤ 20°
(PAVEMENT WIDTH ≤ 30')
APPROACH SLAB AND ADJACENT PAVEMENT**

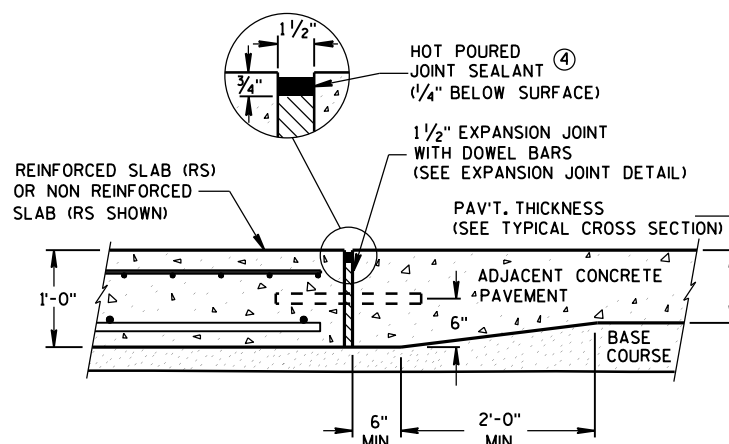
* (RS) = REINFORCED CONCRETE SLAB
* (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
(SEE DETAILS ELSEWHERE IN THE PLAN)
* (NRS) = NON-REINFORCED CONCRETE SLAB

*** STANDARD DOWEL BAR DIAMETER
(SEE SDD 13C11, & SDD 13C13)

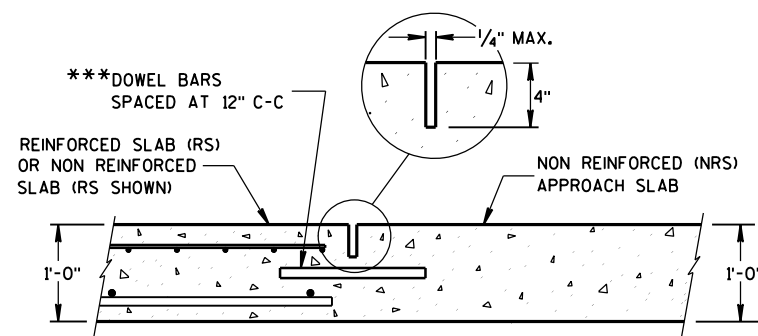
- (A) STANDARD CONTRACTION JOINT NORMAL TO ℓ OR ℓ_c
(B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.
(C) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℓ OR ℓ_c



**SECTION A-A
REINFORCEMENT POSITIONING DETAIL**



**SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT**



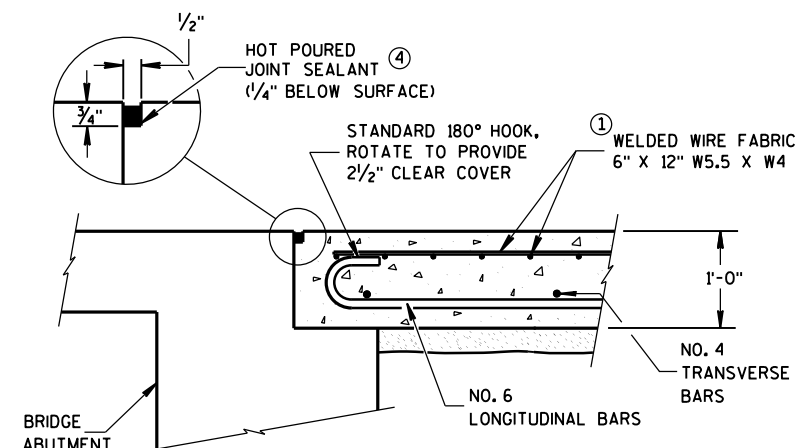
**SECTION D-D
CONTRACTION JOINT**

GENERAL NOTES

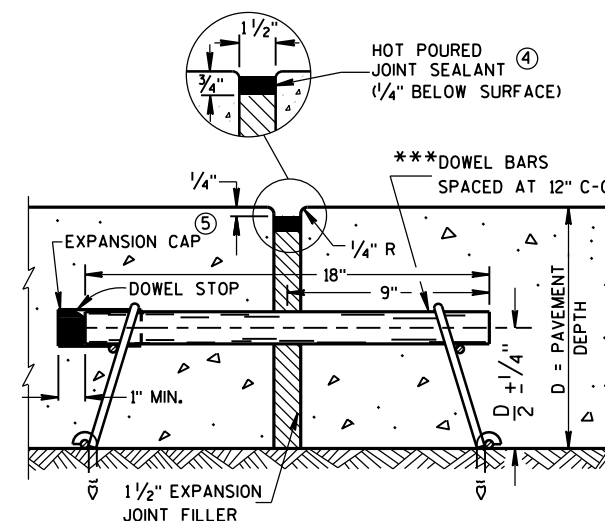
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

- THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.
- THE CONTRACTOR MAY OMIT TIE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.
- DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.
- USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.
- PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.



**SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT**

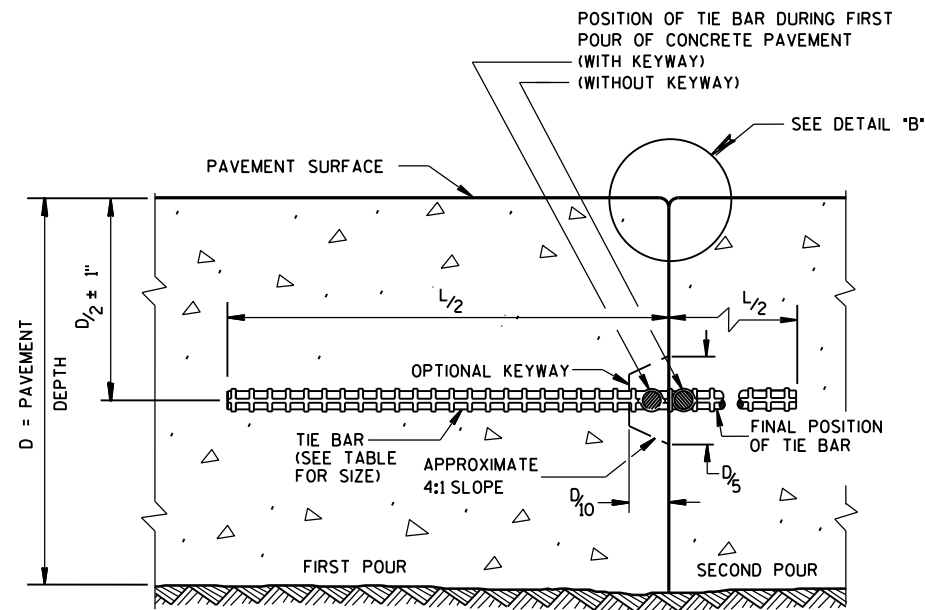


EXPANSION JOINT DETAIL

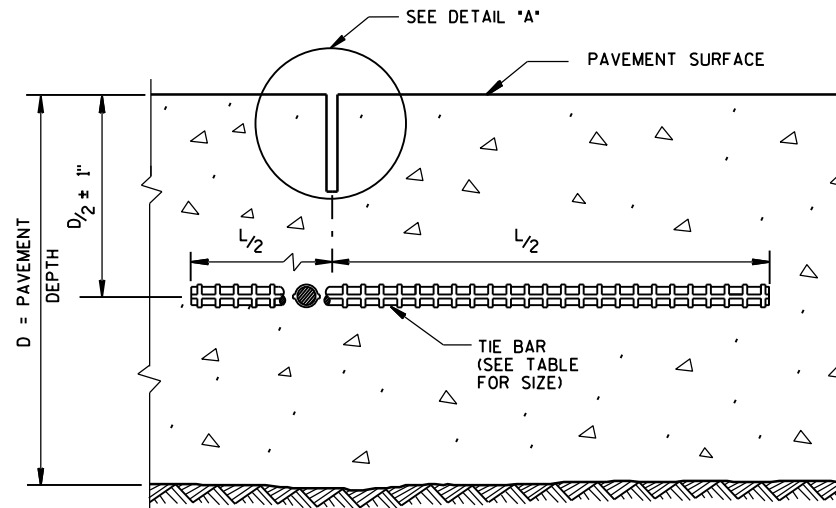
**CONCRETE PAVEMENT
APPROACH SLAB**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 /S/ Peter Kemp, P.E.
DATE PAVEMENT SUPERVISOR
FHWA



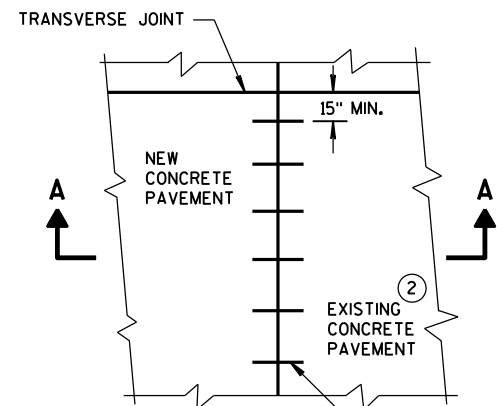
CONSTRUCTION JOINT



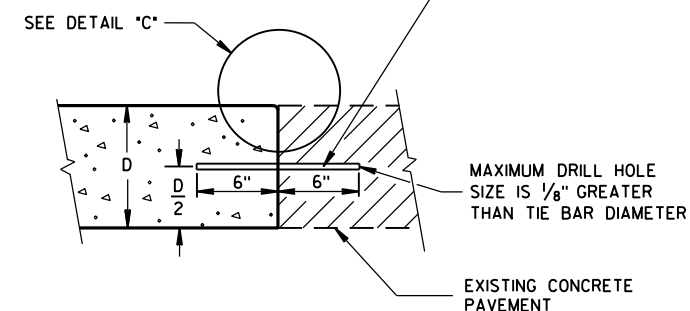
SAWED JOINT

GENERAL NOTES

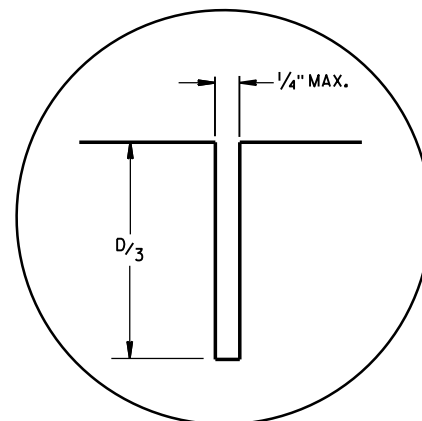
- DO NOT SEAL OR FILL LONGITUDINAL JOINTS.
- CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.
- CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.
- ① ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.
- ② PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.



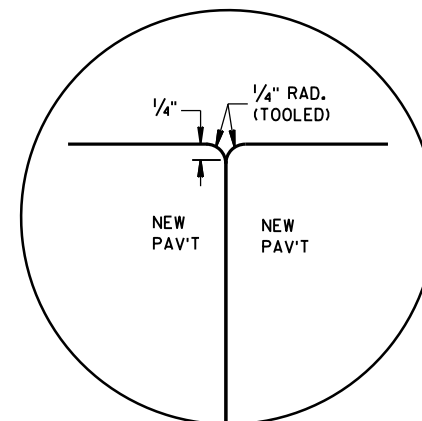
PLAN VIEW



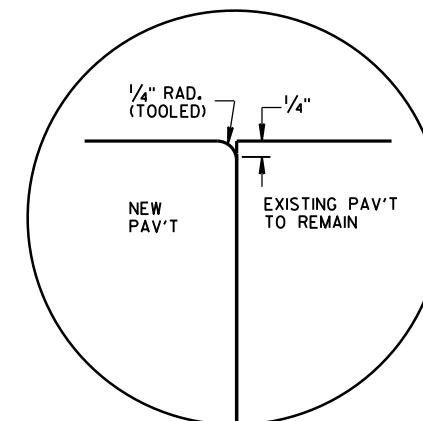
SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT
TIE BARS ANCHORED
INTO EXISTING PAVEMENT



DETAIL "A"



DETAIL "B"

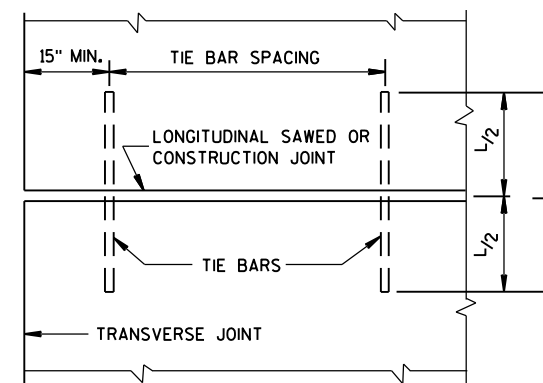


DETAIL "C"

TIE BAR TABLE

| PAVEMENT DEPTH (D) | TIE BAR SIZE | TIE BAR LENGTH (L) | MAX. TIE BAR SPACING |
|--------------------|--------------|--------------------|----------------------|
| < 10 1/2" | NO. 4 | 30" | 36" |
| ≥ 10 1/2" | NO. 5 | 36" | 36" |
| | NO. 4 * | 30" | 24" ** |

- * SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)
- ** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

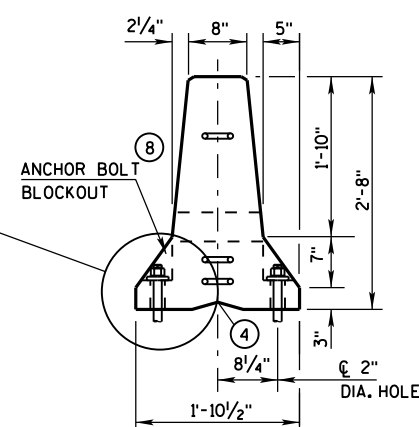
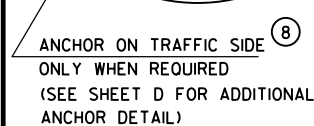


PLAN VIEW
SHOWING LOCATION OF TIE BARS

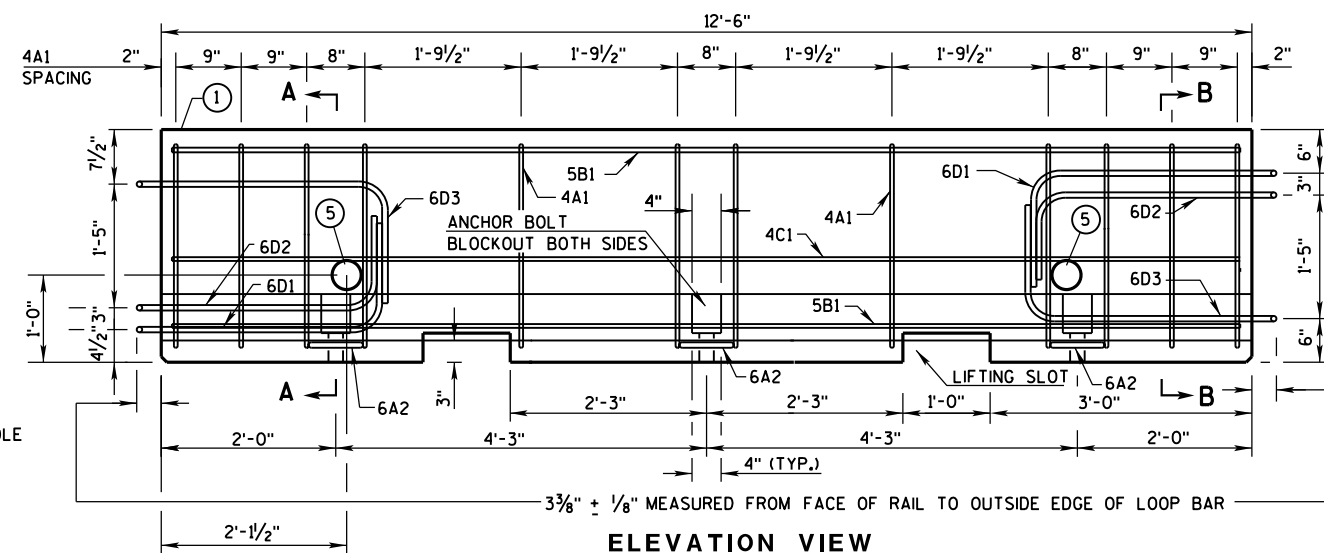
CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

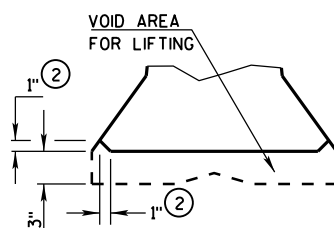
APPROVED
June, 2015 /S/ Peter Kemp, P.E.
DATE PAVEMENT SUPERVISOR
FHWA



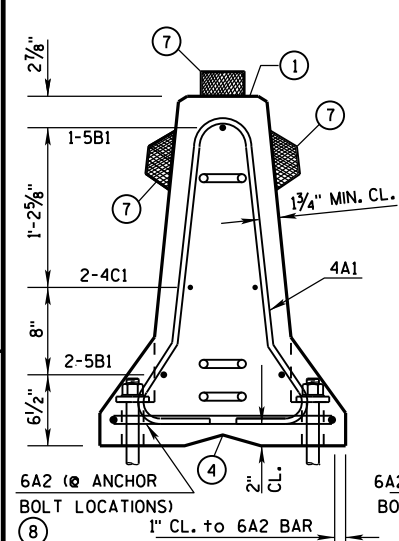
END VIEW



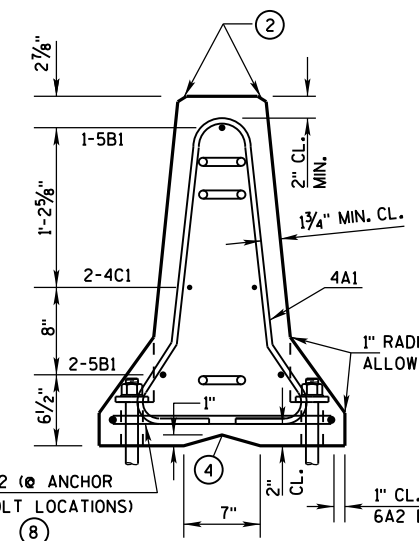
ELEVATION VIEW



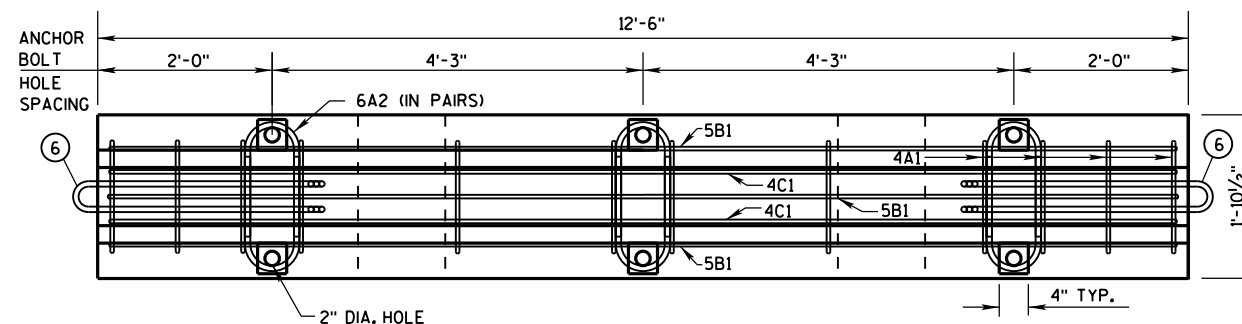
DETAIL "B"
LIFTING SLOT DETAIL



SECTION A-A
(STIRRUP PLACEMENT)

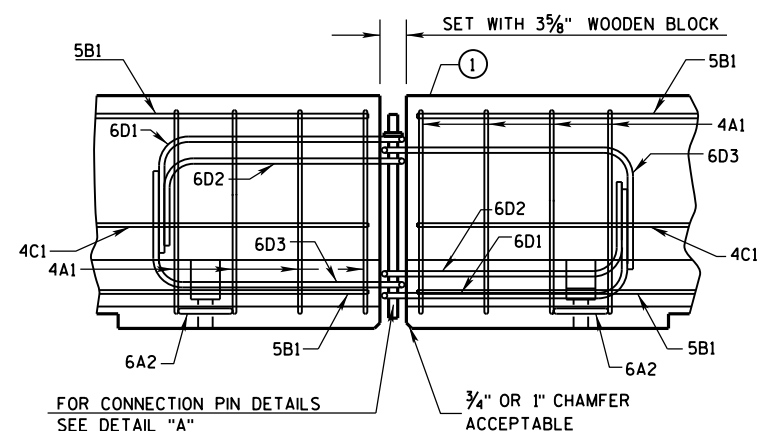


SECTION B-B
(STIRRUP PLACEMENT)

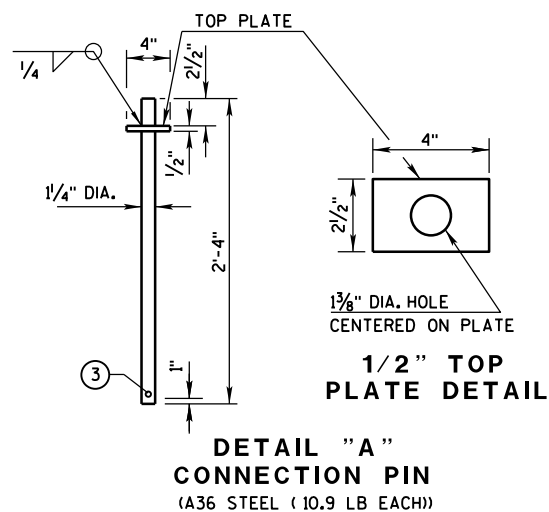


PLAN VIEW

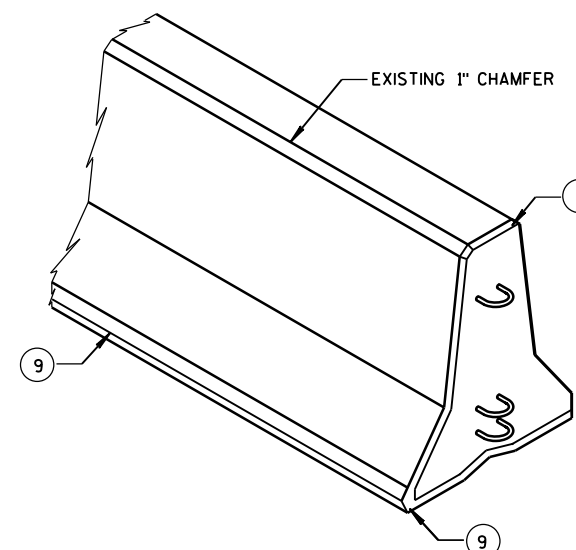
DETAILS OF BARRIER SECTION



DETAILS OF BARRIER CONNECTION



DETAIL "A"
CONNECTION PIN
(A36 STEEL (10.9 LB EACH))



GENERAL NOTES

THESE GENERAL NOTES APPLY TO SHEETS 14B7-14(d) THRU 14B7-14(h).

DO NOT INTERMIX CONCRETE BARRIER TEMPORARY PRCAST, 12'-6" (CBTP12.5) WITH OTHER TEMPORARY CONCRETE BARRIERS.

USE ASTM A-615, GRADE 60, DEFORMED STEEL BARS FOR BARS 4A1, 6A2, 5B1 AND 4C1 IN THE BARRIER SECTION AND FOR 4V1, 4V2, 4V3, 4V4, 4V5, 4V6, 4F1, 4F2 AND 5F3 IN THE BARRIER TAPER SECTION.

LOOP BARS 6D1, 6D2 AND 6D3 SHALL BE $\frac{3}{4}$ " SMOOTH STEEL BARS WITH A MINIMUM YIELD STRENGTH OF 60 KSI, A TENSILE STRENGTH OF NOT LESS THAN 1.25 TIMES THE YIELD STRENGTH BUT A MINIMUM OF 80 KSI, A MINIMUM 14% ELONGATION IN 8 INCHES AND PASSING A 180 DEGREE BEND TEST USING A $3\frac{1}{2}$ " PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN $\frac{1}{8}$ " OF THE PLAN DIMENSION.

CONSTRUCT LIFTING SLOTS AS SPECIFIED ON THE PLANS TO FACILITATE THE DRAINAGE OF WATER AFTER INSTALLATION.

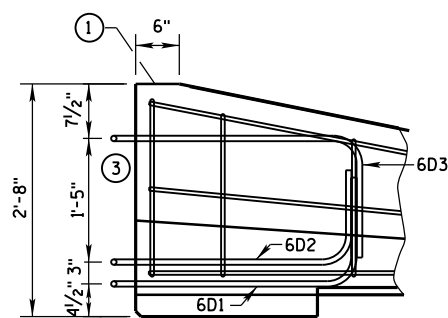
PLACE BARRIER ON A PAVED SURFACE. REMOVE ALL LOOSE DIRT AND SAND FROM THE ROADWAY SURFACE PRIOR TO PLACEMENT OF THE BARRIER.

INSTALL MECHANICAL OR ADHESIVE ANCHORS PER MANUFACTURER'S RECOMMENDATIONS.
PROVIDE MANUFACTURER'S INFORMATION TO PROJECT ENGINEER.

- ① MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
 - a. TYPE: WICBTP
 - b. MANUFACTURER
 - c. DATE MANUFACTURED (MONTH AND YEAR)
- ② 1" CHAMFER TO PREVENT SPALLING.
- ③ A $\frac{3}{8}$ " HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..
- ④ "V" NOTCH IS OPTIONAL.
- ⑤ THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).
- ⑥ NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.
- ⑦ USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURES INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED TO THE RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART. PROVIDE TOP MOUNTED DELINEATORS IN ADDITION TO THE SIDE MOUNTED DELINEATORS ON ALL BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAN 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.
- ⑧ SEE SHEET D FOR ANCHORING CRITERIA.
- ⑨ 1" CHAMFER OPTIONAL.

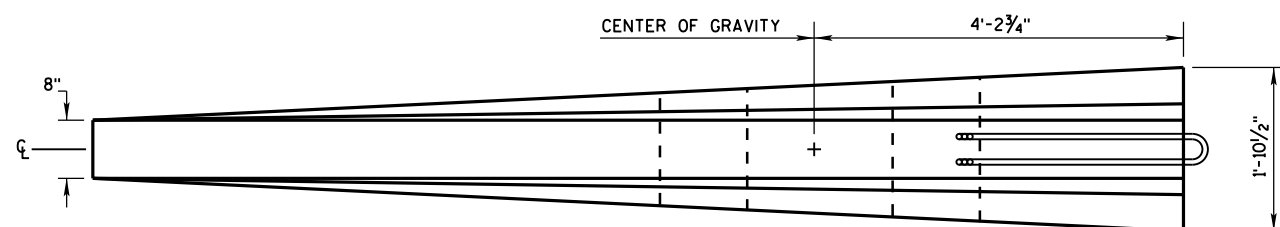
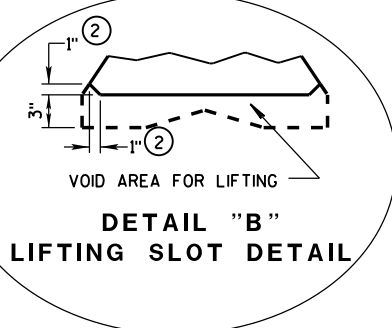
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



- ① MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
 - a. TYPE WICBTP
 - b. MANUFACTURER
 - c. DATE MANUFACTURED (MONTH AND YEAR)
- ② 1" CHAMFER TO PREVENT SPALLING.
- ③ NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

LOOP BAR ASSEMBLY INVERTED
FOR OPPOSITE END.
(FOR CONNECTION TO RIGHT END OF BARRIER)



**CHAMFER
DETAIL**

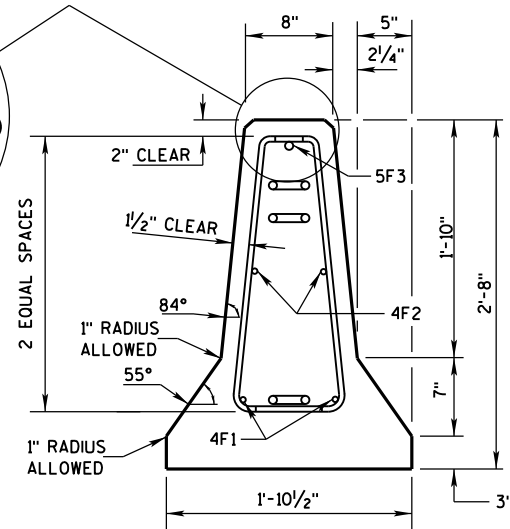


Diagram illustrating the placement of a barrier on a curve. The diagram shows a cross-section of the barrier and the road surface. Key dimensions and specifications include:

- 10"± OFFSET**: The distance from the centerline to the barrier.
- 5°± MAX.**: The maximum angle of the barrier relative to the centerline.
- 12'-6"**: The length of the barrier segments.
- BARRIER ON CURVE**: The title of the diagram.
- END SECTION**: The section of the barrier at the end of the curve.

FLARE AT BARRIER END

| POSTED SPEED, (MPH) | FLARE RATE |
|------------------------|---------------|
| 40 OR LESS | 6:1 |
| 45 OR GREATER | 8:1 |

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

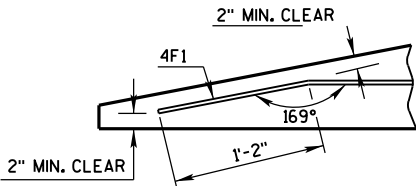
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

DETAILS OF BARRIER TAPER SECTION

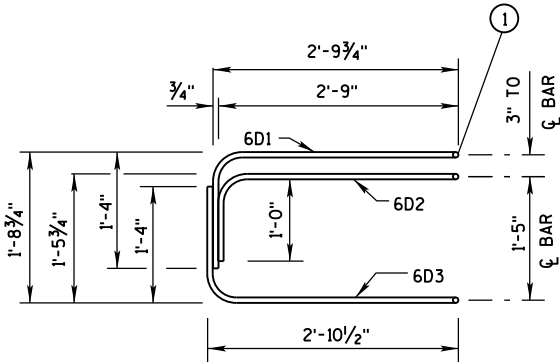
BARRIER TAPER SECTION
BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

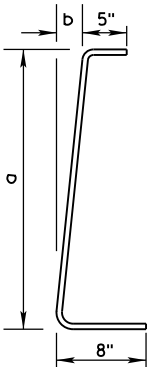
| BAR | BAR SIZE | NO. OF BARS | LENGTH FT. |
|---------------|----------|-------------|------------|
| 4V1 | 4 | 2 | 1'-11" |
| 4V2 | 4 | 2 | 2'-2" |
| 4V3 | 4 | 2 | 2'-6" |
| 4V4 | 4 | 2 | 2'-9" |
| 4V5 | 4 | 2 | 3'-2" |
| 4V6 | 4 | 2 | 3'-4" |
| 4F1 | 4 | 2 | 12'-0" |
| 4F2 | 4 | 2 | 7'-6" |
| 5F3 | 5 | 1 | 11'-9" |
| LOOP ASSEMBLY | | | |
| 6D1 | 6 | 1 | 8'-5" |
| 6D2 | 6 | 1 | 7'-7" |
| 6D3 | 6 | 1 | 8'-6" |



DETAIL "C"
BENT BAR DETAIL



ELEVATION
LOOP BAR ASSEMBLY



4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

| BAR | a | b |
|-----|-----------|--------|
| V1 | 10" | 1" |
| V2 | 1'-1" | 1 1/4" |
| V3 | 1'-5" | 1 5/8" |
| V4 | 1'-8" | 1 7/8" |
| V5 | 2'-0 1/2" | 2 3/8" |
| V6 | 2'-3" | 2 3/4" |

TAPER BARRIER SECTION

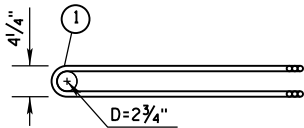
GENERAL NOTES

① NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

BARRIER SECTION
BILL OF MATERIALS

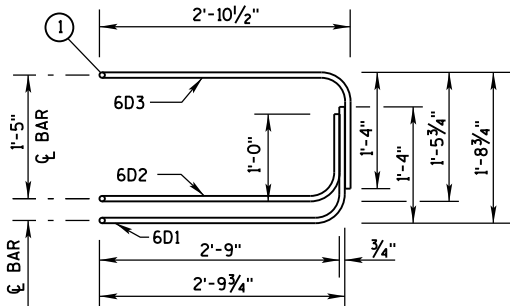
(PER 12'-6" BARRIER SECTION)

| BAR | BAR SIZE | NO. OF BARS | LENGTH FT. |
|---------------|----------|-------------|------------|
| 4A1 | 4 | 12 | 6'-0" |
| 6A2 | 6 | 6 | 2'-11" |
| 5B1 | 5 | 3 | 12'-2" |
| 4C1 | 4 | 2 | 12'-2" |
| LOOP ASSEMBLY | | | |
| 6D1 | 6 | 2 | 8'-5" |
| 6D2 | 6 | 2 | 7'-7" |
| 6D3 | 6 | 2 | 8'-6" |

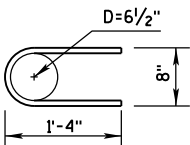


PLAN VIEW
LOOP BAR ASSEMBLY

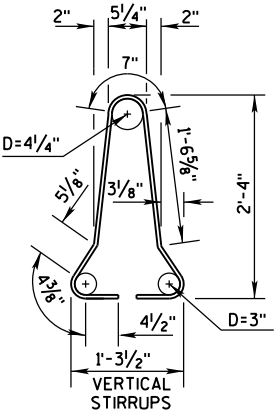
(MARKED END SHOWN, INVERT FOR OTHER END)



ELEVATION VIEW



6A2

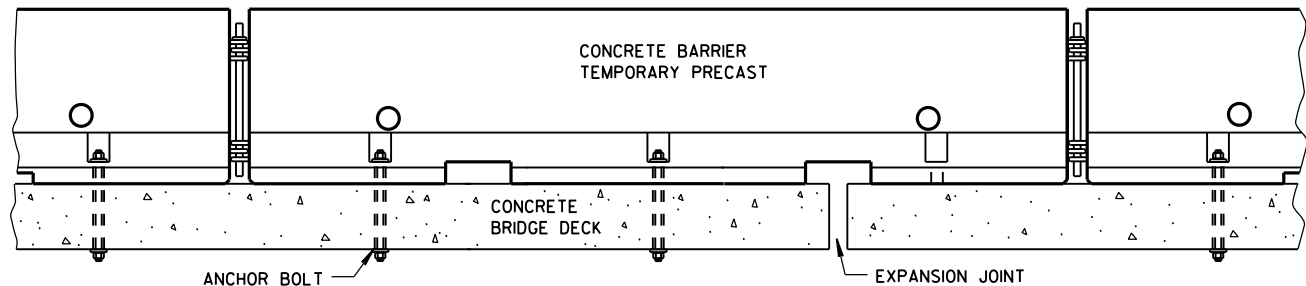
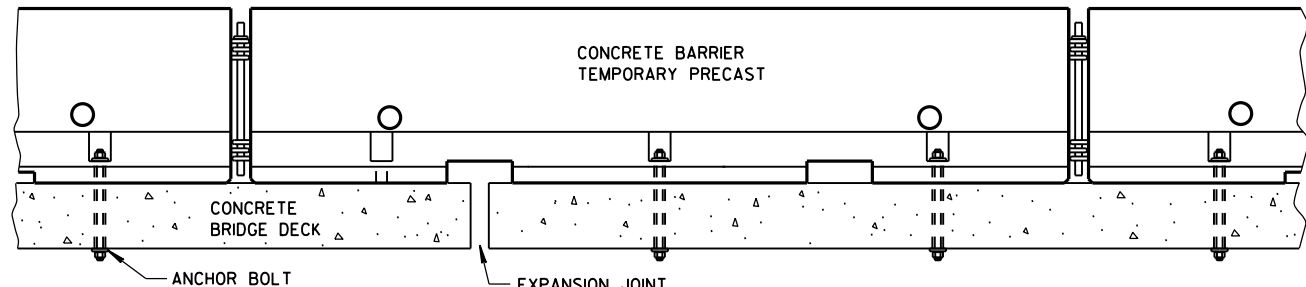


4A1

BARRIER SECTION

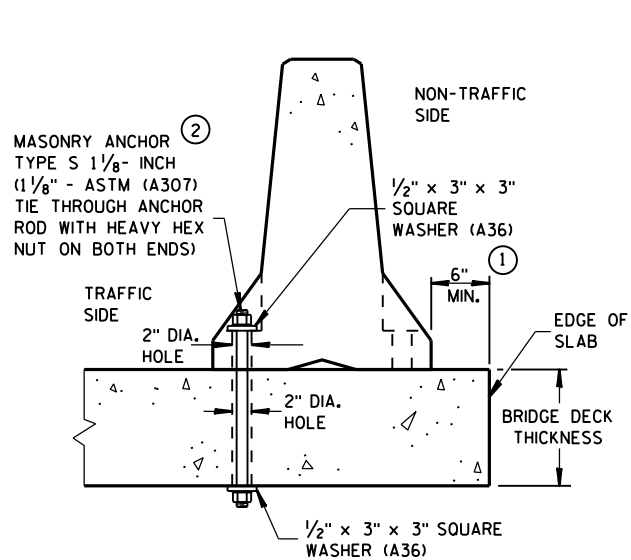
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



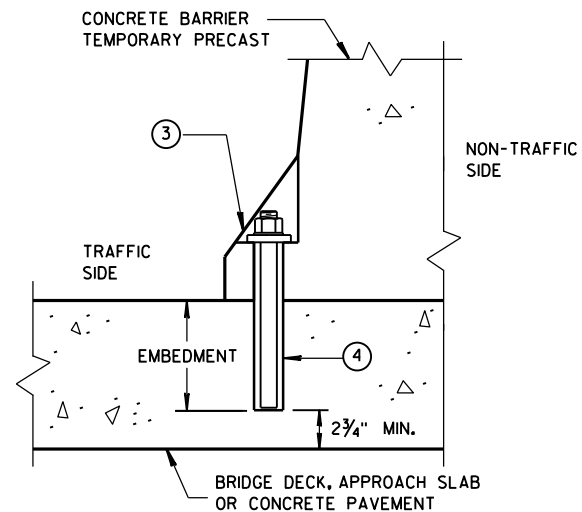
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

(NO SINGLE CONCRETE BARRIER SECTION SHALL BE ANCHORED TO BOTH THE BRIDGE DECK AND THE APPROACH SLAB. ALL ANCHOR BOLT LOCATIONS SHALL BE ANCHORED TO THE DECK IN ACCORDANCE WITH THE DETAIL. NO MORE THAN ONE ANCHOR BOLT SHALL BE ELIMINATED FROM A BARRIER SECTION WHEN SPANNING AN EXPANSION JOINT.)



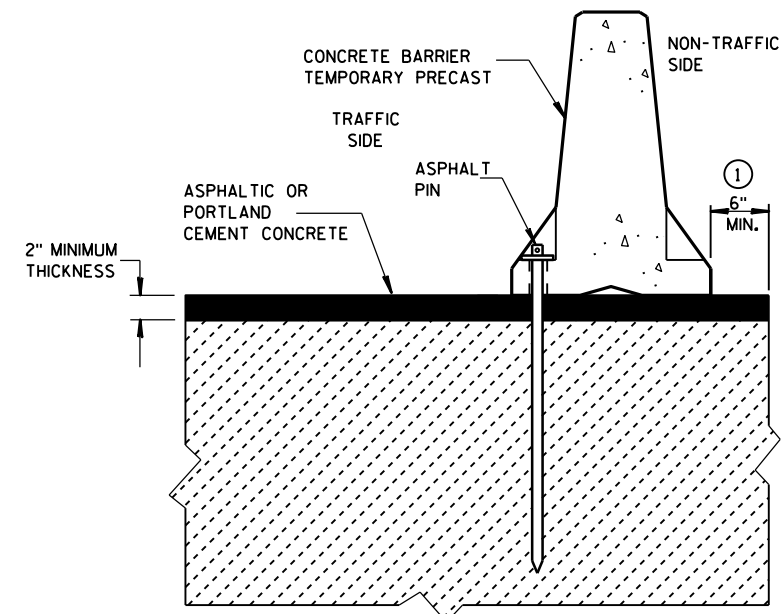
THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOT USE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)



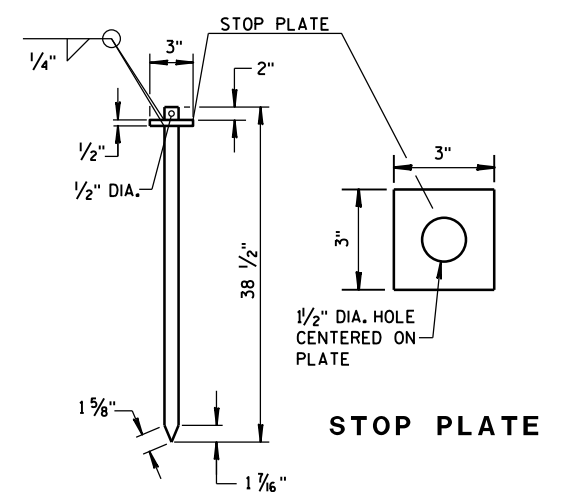
REMOVABLE ADHESIVE BONDED ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)

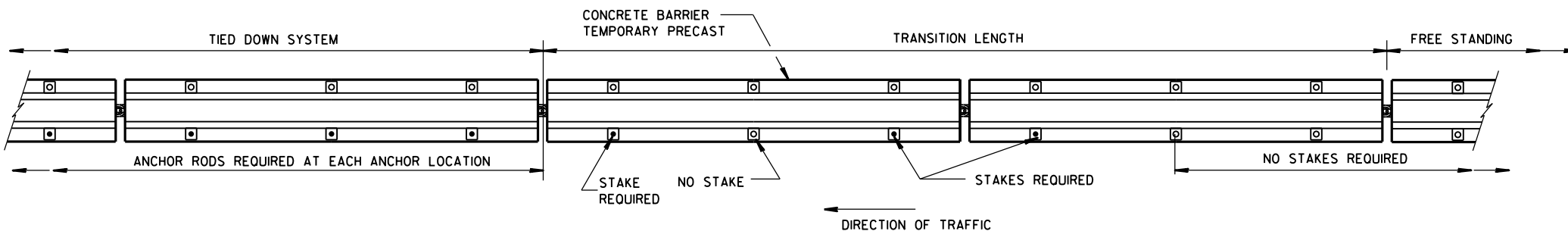


STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)



ASPHALT PIN
(ASTM A36 STEEL)



PLAN VIEW

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

GENERAL NOTES

- ① CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" SHALL BE ANCHORED IF:
THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V,
FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT,
IS LESS THAN 4 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF
AND THE POSTED SPEED IS 45 MPH OR GREATER, OR

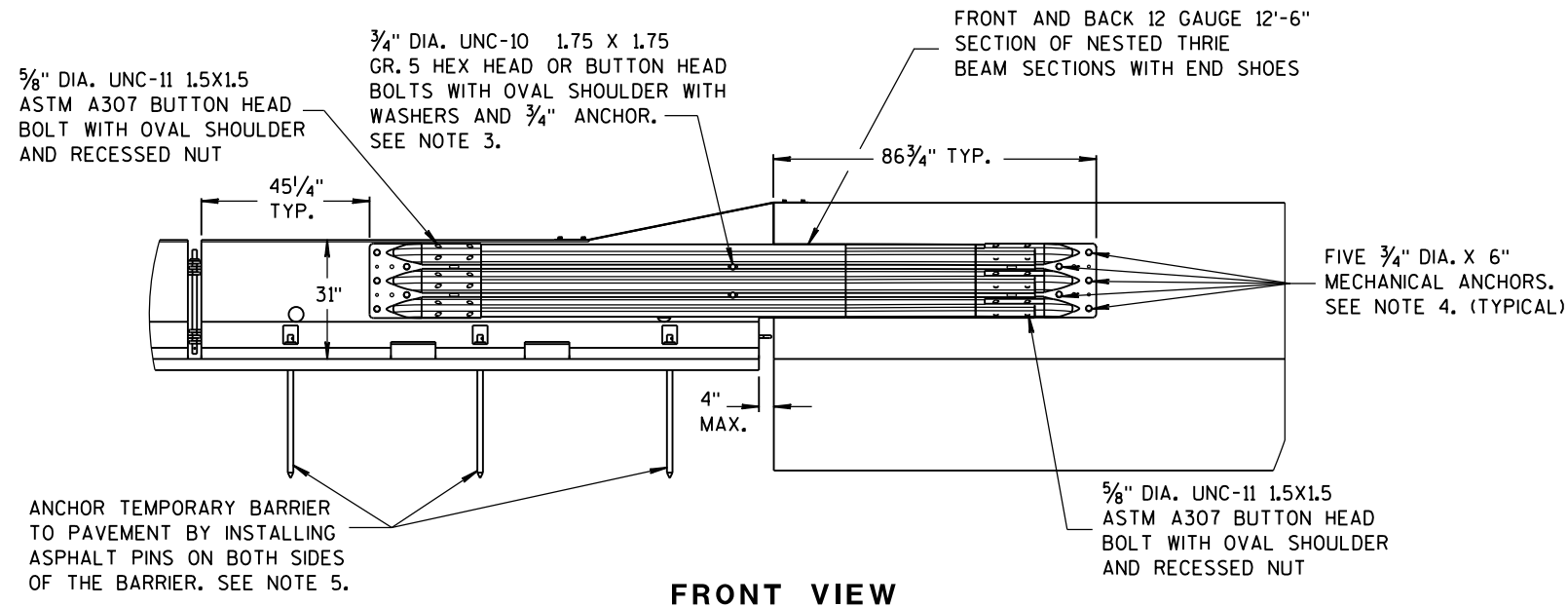
THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V,
FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT,
IS LESS THAN 2 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF
AND THE POSTED SPEED IS 40 MPH OR LESS.
- ② ANCHORING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST.

WITH THE APPROVAL OF THE ENGINEER, REMOVABLE ADHESIVE BONDED ANCHOR BOLT
INSTALLATION MAY BE USED IN LIEU OF THROUGH BOLTED ANCHOR INSTALLATION. THE ADHESIVE
BONDED ANCHOR BOLT MUST BE REMOVABLE. USE ASTM (A307) MASONRY ANCHORS TYPE
S 1 1/8"-INCH, EMBEDDED TO A DEPTH SUFFICIENT TO DEVELOP THE ULTIMATE CAPACITY OF THE
ANCHOR BOLT AND PROVIDE DOCUMENTATION TO CONFIRM THIS.

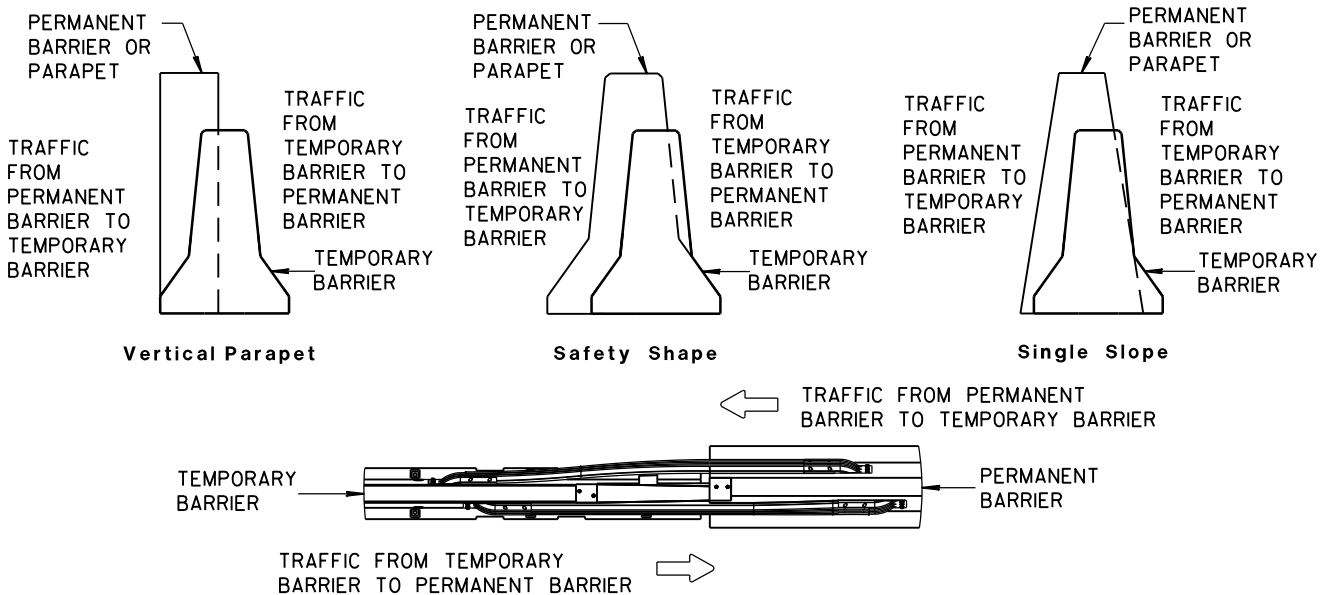
UPON REMOVAL OR RELOCATION OF THE BARRIER UNITS, REMOVE ALL ANCHOR BOLTS AND COMPLETELY
FILL IN THE REMAINING HOLES IN CONCRETE BRIDGE DECKS, CONCRETE APPROACH SLABS AND CON-
CRETE PAVEMENTS THAT ARE TO REMAIN, WITH A NON-SHRINK COMMERCIAL GROUT OR MATERIAL
IDENTIFIED ON THE CURRENT WISDOT APPROVED PRODUCTS LIST.
- ③ 1/8" DIAMETER A307 THREADED ROD, 1/2" x 3" x 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL,
ASTM A563A HEAVY HEX NUT.
- ④ ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5/4" EMBEDMENT. SEE 603.2
AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



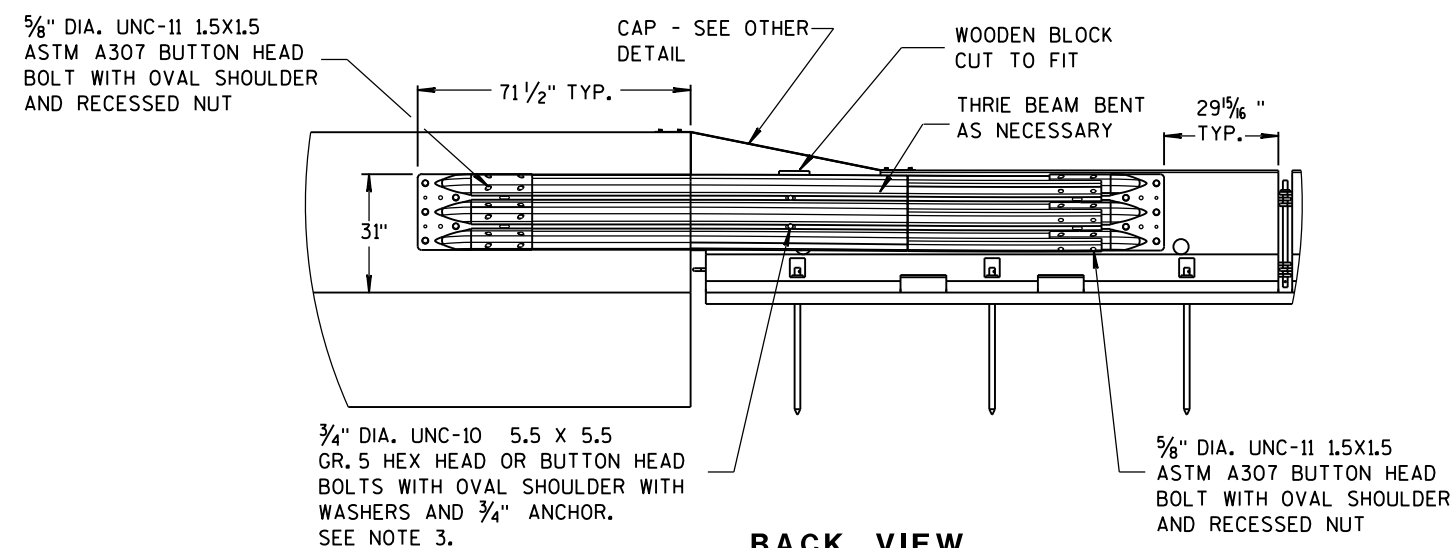
FRONT VIEW



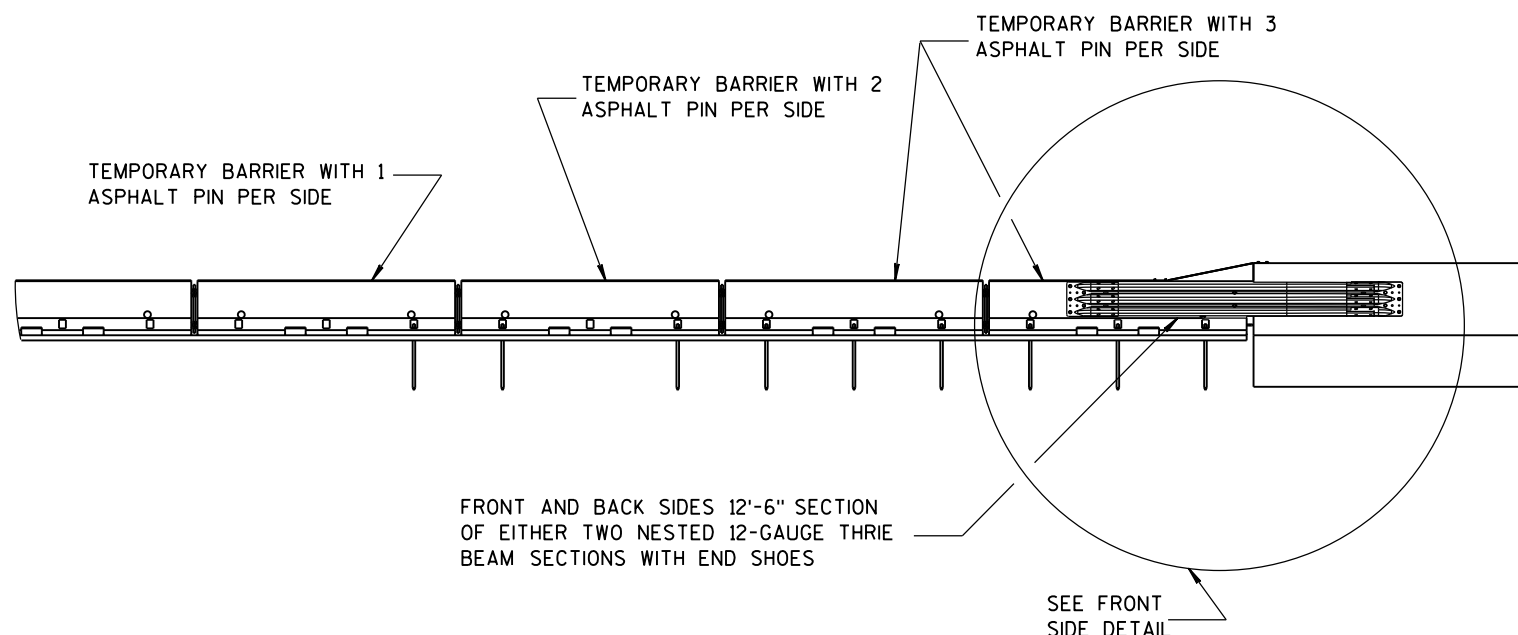
TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

NOTES

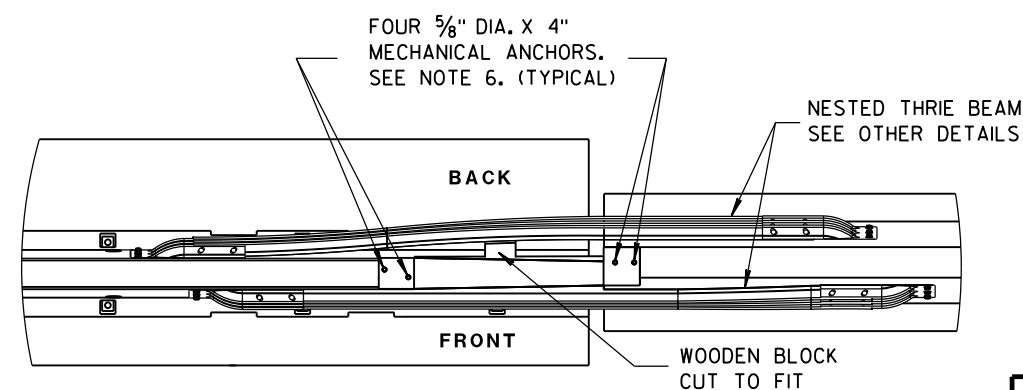
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS.
4. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS.
5. MAY BE USED ON CONCRETE OR ASPHALT PAVEMENTS. ASPHALT OPTION SHOWN. FOR CONCRETE OPTION SEE OTHER DETAILS.
6. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.



BACK VIEW



FRONT VIEW

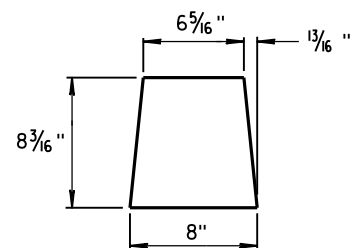


PLAN VIEW

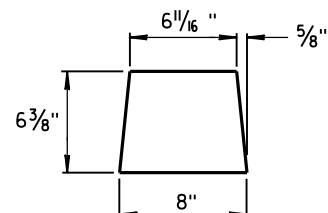
BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

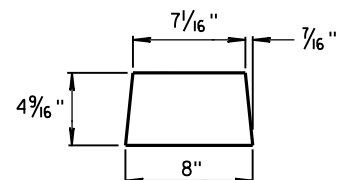
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



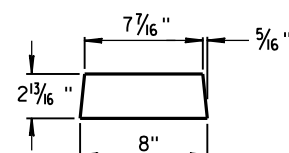
GUSSET 1



GUSSET 2

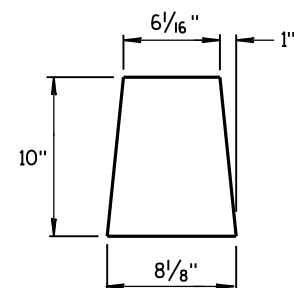


GUSSET 3

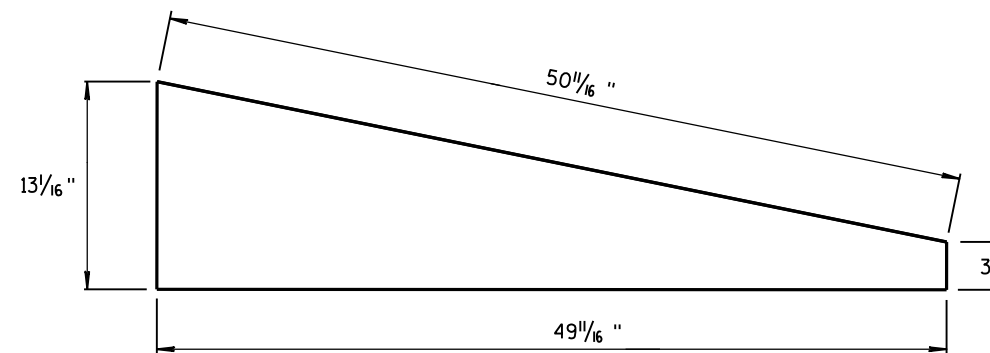


GUSSET 4

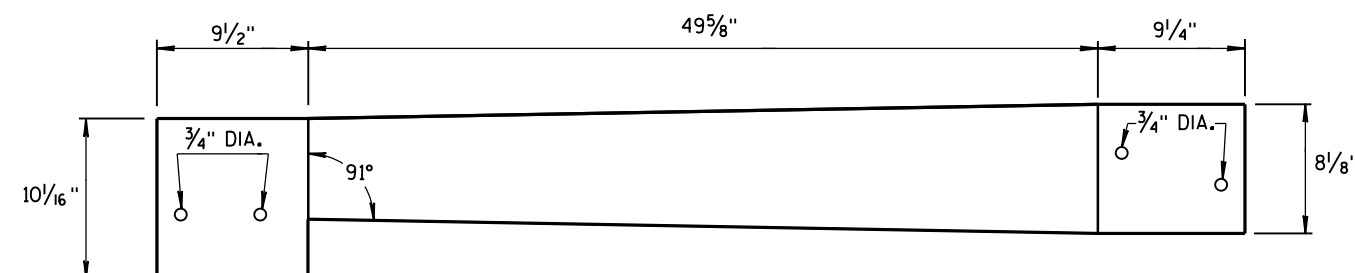
GUSSETS



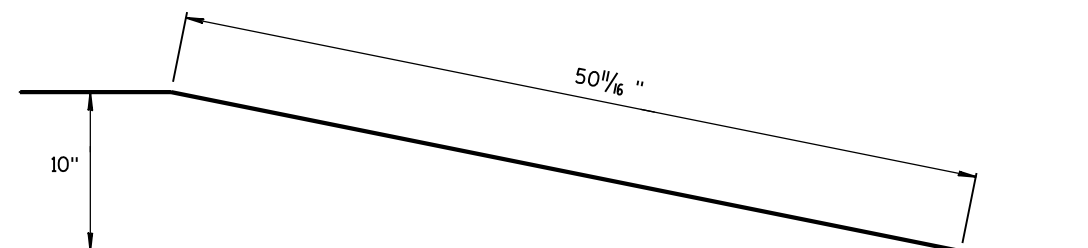
END PLATE



SIDE PLATE

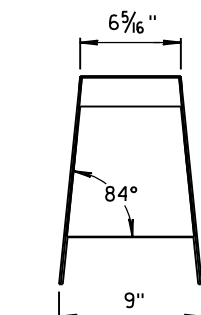
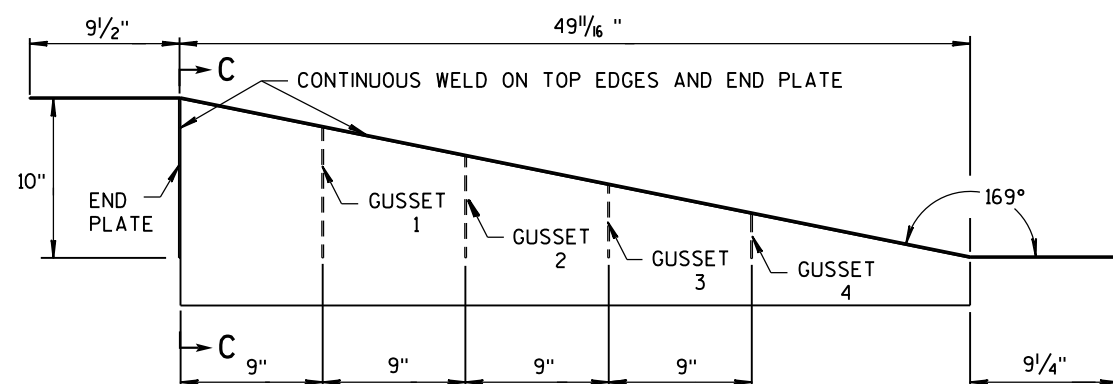
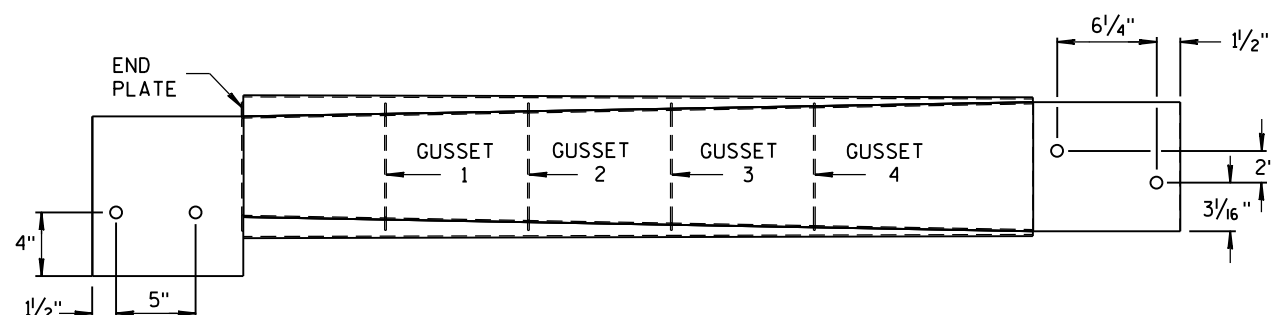


TOP PLATE



**SIDE, TOP AND END PLATES FOR CAP
FROM TEMPORARY CONCRETE BARRIER
TO 42" PERMANENT CONCRETE BARRIER**

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 GALVANIZED STEEL.



SECTION C-C

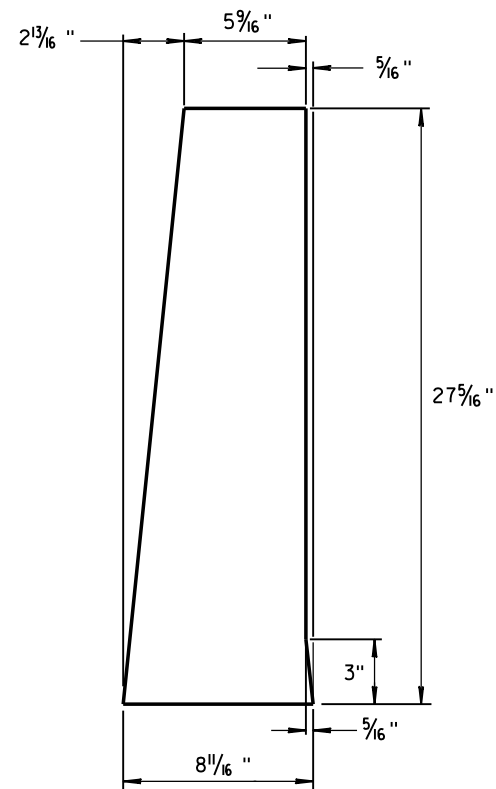
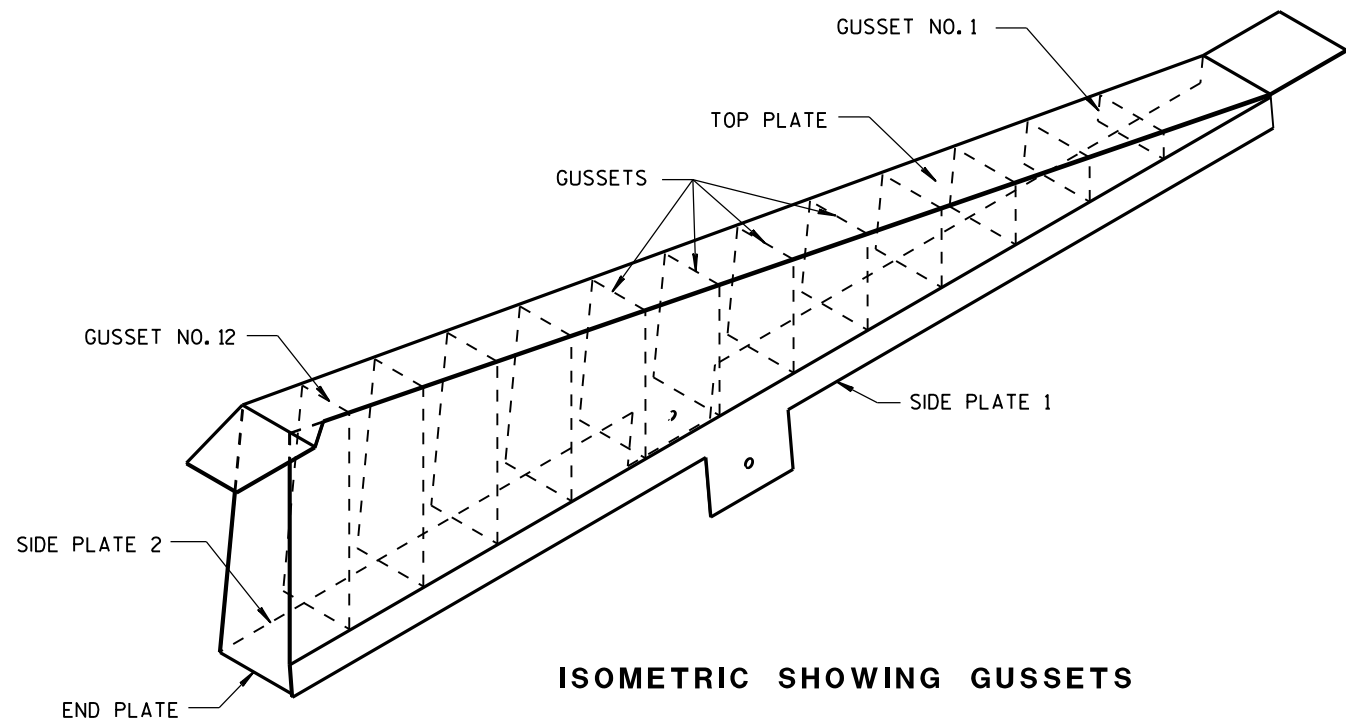
NOTES

1. FOUR GUSSETS AND END PLATE ARE STITCH WELDED ON THREE SIDES.
2. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE, AND GUSSETS.

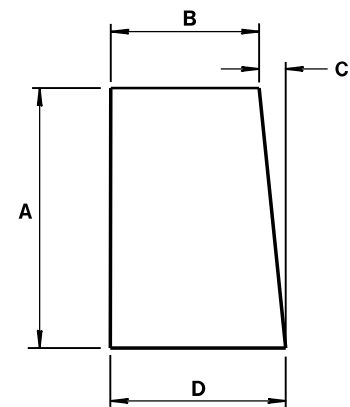
**CAP DETAILS FOR TEMPORARY CONCRETE
BARRIER TO 42" PERMANENT CONCRETE BARRIER**

**CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



END PLATE
1/8" STEEL PLATE

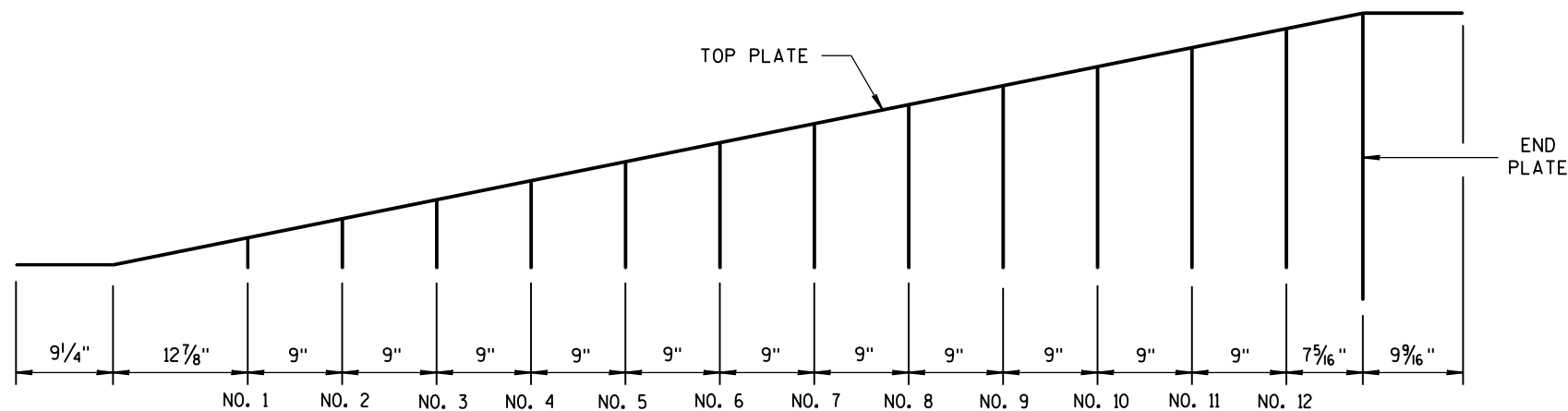


GUSSETS 1 - 12
ALL GUSSETS 1/8" STEEL PLATE

| GUSSET DIMENSIONS | | | | |
|-------------------|------------|-----------|-----------|----------|
| GUSSET NO. | A | B | C | D |
| 1 | 2 7/8" | 7 3/4" | 1/4" | 8 |
| 2 | 4 1/16 " | 7 9/16 " | 1/2" | 8 |
| 3 | 6 1/2" | 7 3/8" | 1 1/16 " | 8 1/16 " |
| 4 | 8 5/16" | 7 3/16" | 7/8" | 8 1/16" |
| 5 | 10 1/8" | 7" | 1 1/16 " | 8 1/16" |
| 6 | 11 5/16 " | 6 13/16 " | 1 1/4" | 8 1/16" |
| 7 | 13 3/4" | 6 5/8" | 1 7/16 " | 8 1/16" |
| 8 | 15 9/16 " | 6 7/16 " | 1 9/16 " | 8 1/16" |
| 9 | 17 3/8" | 6 1/4" | 1 13/16 " | 8 1/16" |
| 10 | 19 3/16" | 6 1/16" | 1 15/16 " | 8 1/16" |
| 11 | 21" | 5 7/8" | 2 3/16" | 8 1/16" |
| 12 | 22 13/16 " | 5 11/16 " | 2 5/16" | 8 1/16" |

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 STEEL AND GALVANIZED.

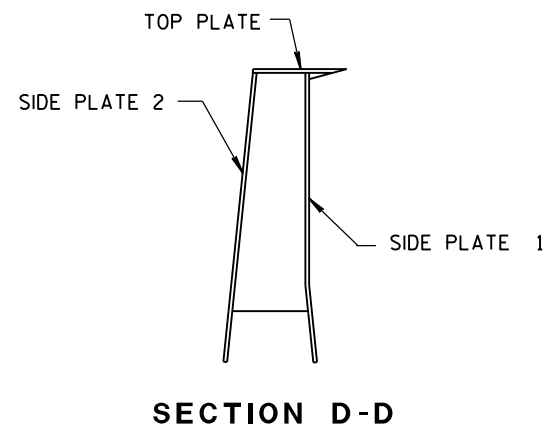
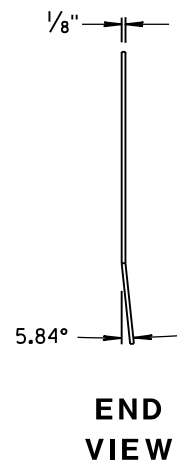
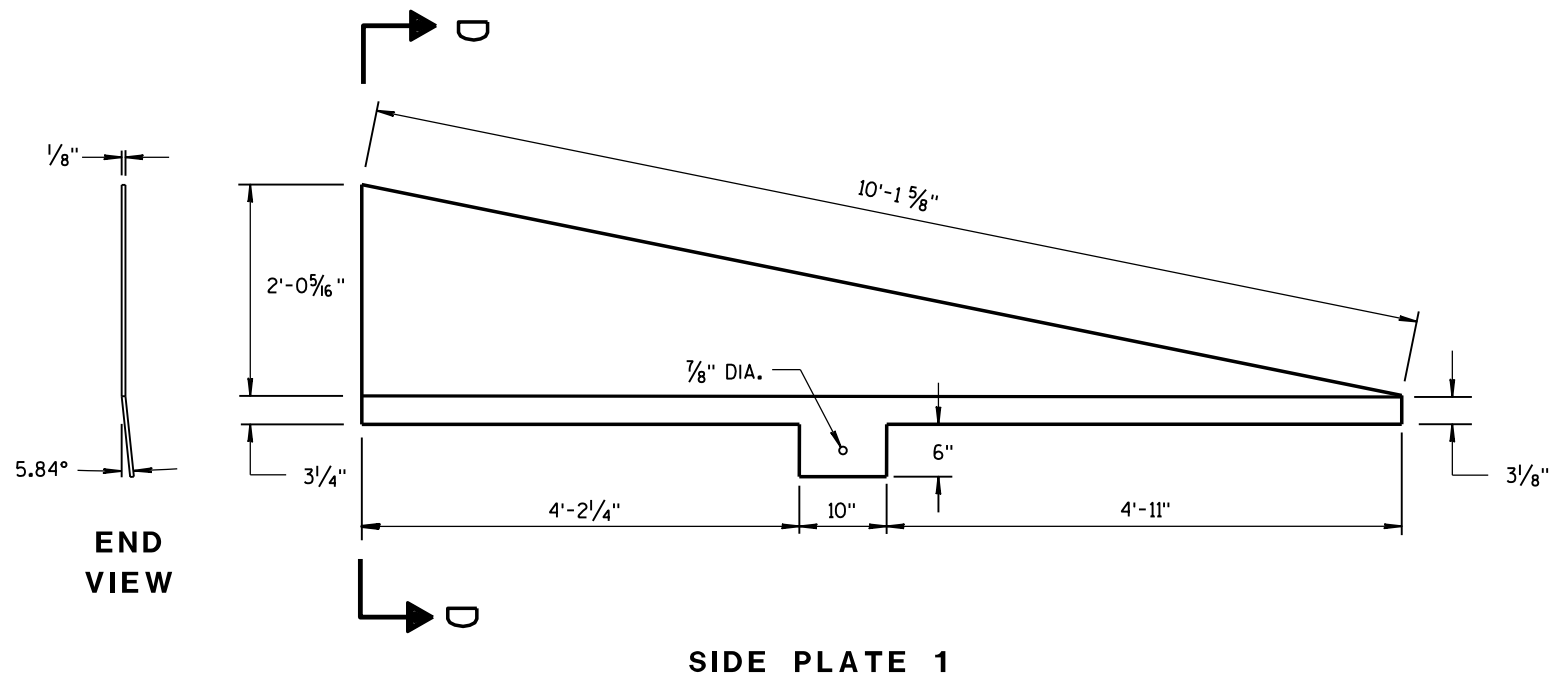
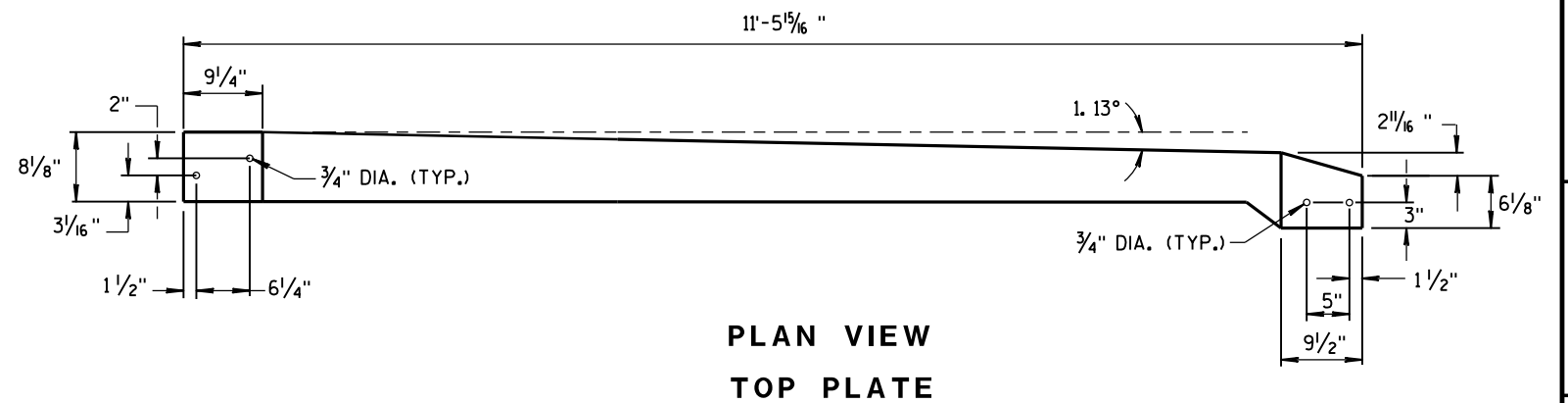
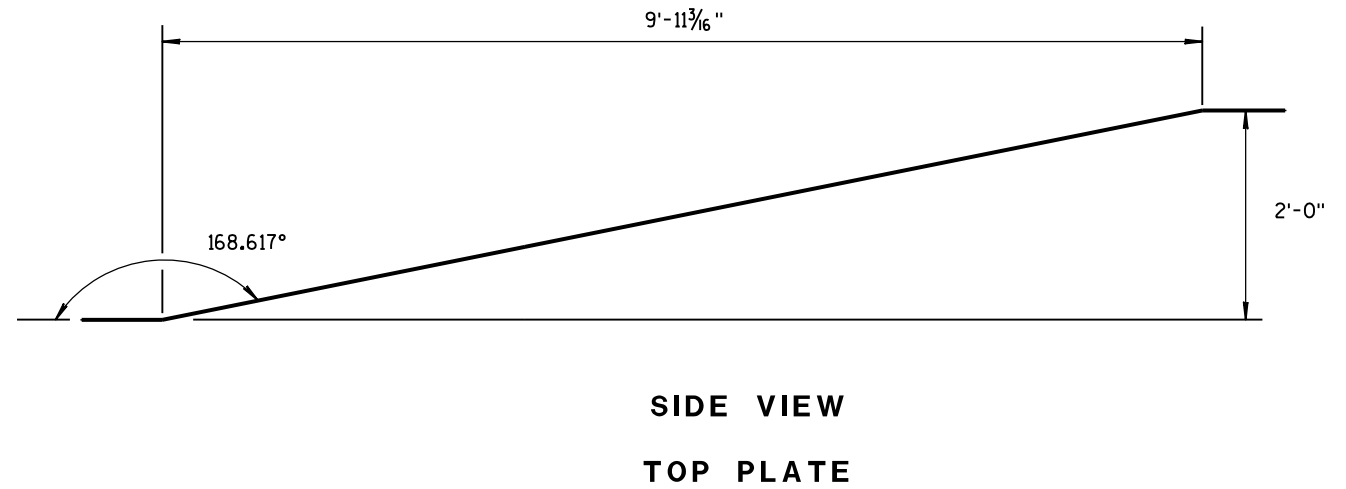
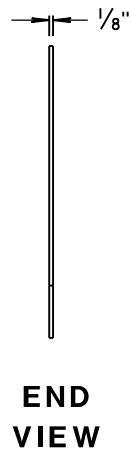
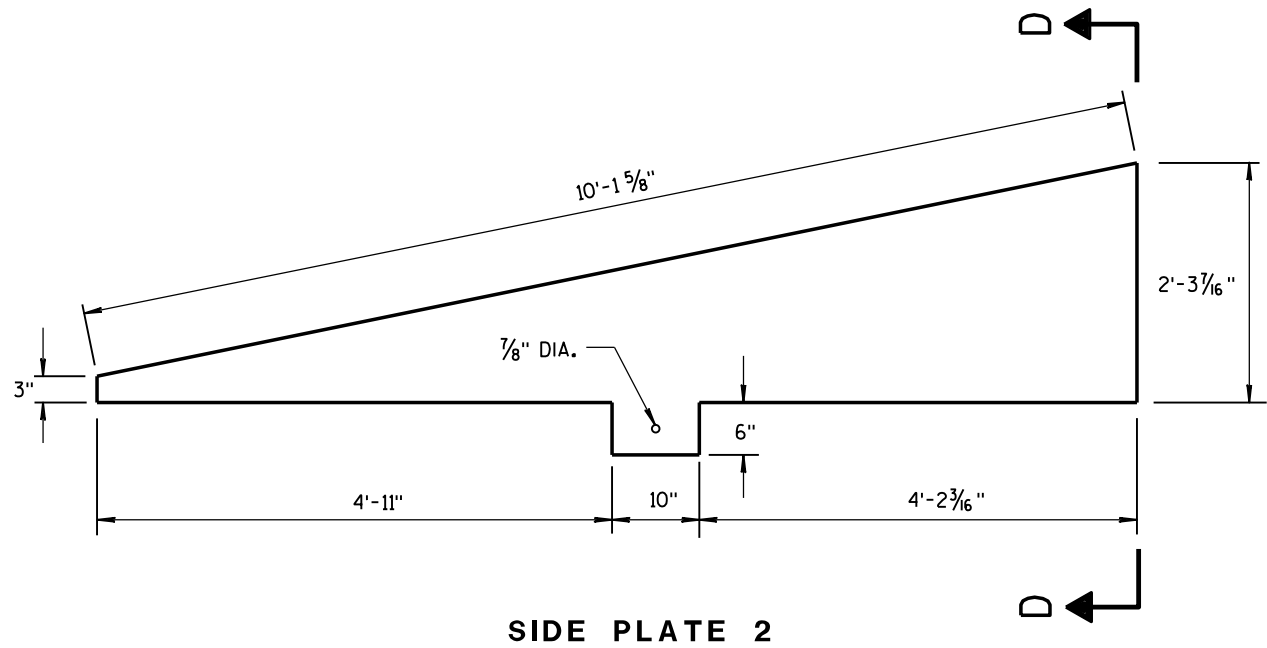
GUSSETS AND END PLATE ARE STITCH WELDED ON 3 SIDES. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE AND GUSSETS.



CAP DETAILS FOR TEMPORARY CONCRETE
BARRIER TO 56" PERMANENT CONCRETE BARRIER

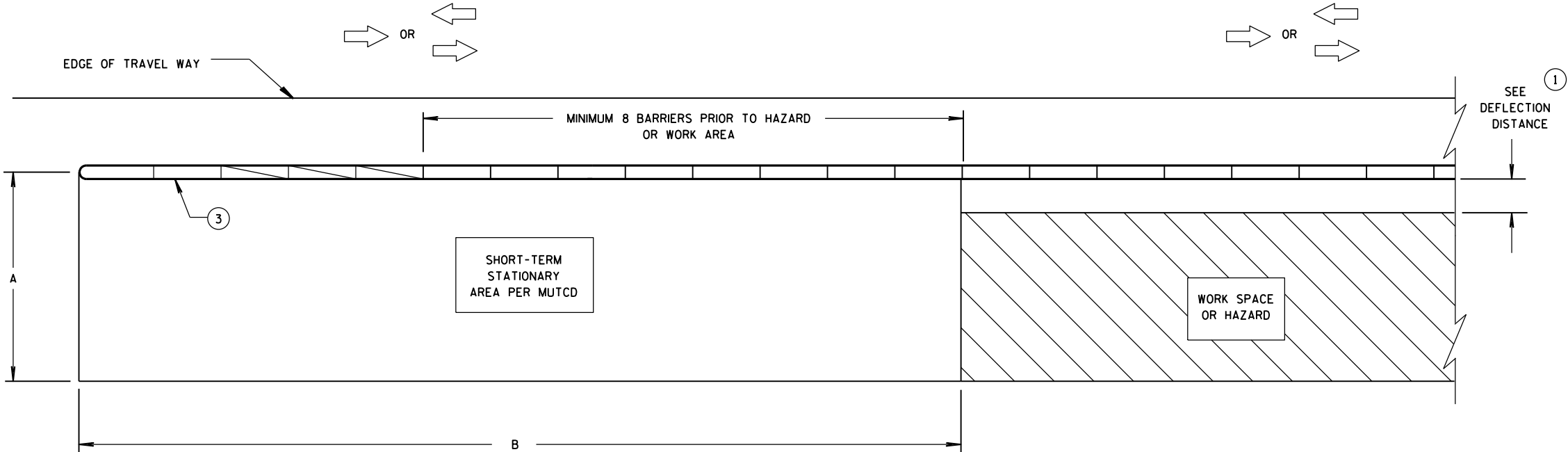
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

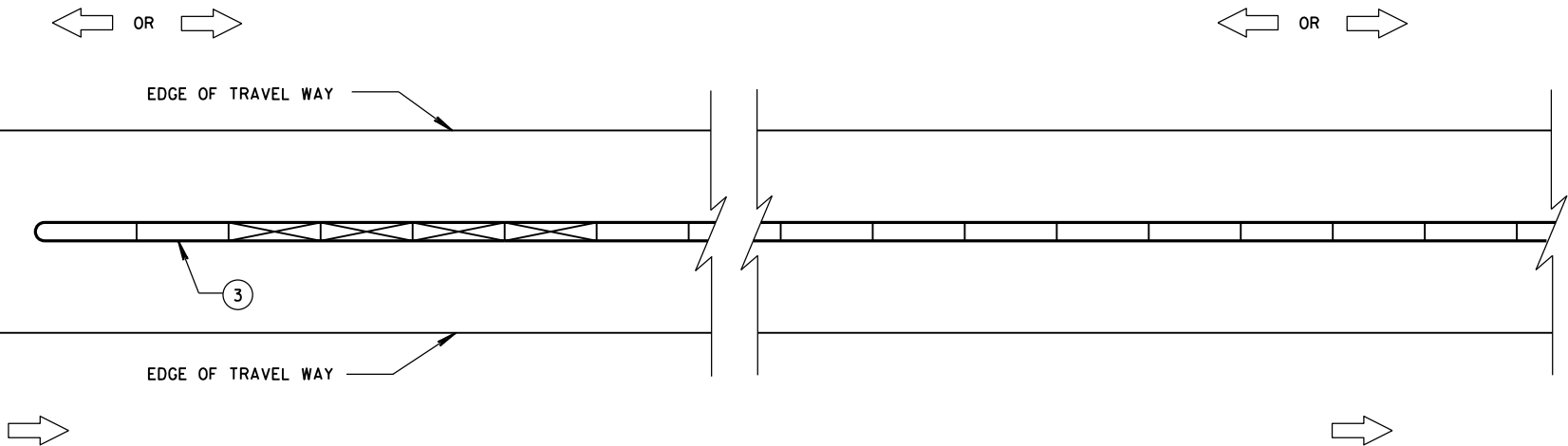


**CAP DETAILS FOR TEMPORARY CONCRETE
BARRIER TO 56" PERMANENT CONCRETE BARRIER**

| | |
|--|---|
| CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED June 2014 DATE | /S/ Jerry H. Zogg ROADWAY STANDARD DEVELOPMENT ENGINEER |
| FHWA | |



**CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER
INSTALLATION FOR TRAFFIC ON ONE SIDE OF BARRIER**



**CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER
INSTALLATION FOR TRAFFIC ON BOTH SIDES OF BARRIER**

GENERAL NOTES

SEE STANDARD DETAIL DRAWING 14B7 FOR MORE INFORMATION.

DETAILS PROVIDE A GENERAL LAYOUT OF TEMPORARY CONCRETE BARRIER, CRASH CUSHIONS, SAND BARREL ARRAYS AND TIE DOWN TRANSITIONS. DETAILS PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.

ADDITIONAL TEMPORARY BARRIER MAY BE REQUIRED TO PROTECT TRAVELING PUBLIC FROM HAZARDS, CONTRACTOR'S OPERATIONS OR TO CONTROL TRAFFIC.

TEMPORARY BARRIER MAY BE REQUIRED TO BE ANCHORED TO PAVEMENT OR BRIDGE DECK.

FOR DETAILS ON CRASH CUSHION OR SAND BARREL ARRAYS SEE OTHER SECTIONS OF THE PLAN AND MANUFACTURE'S DETAILS.

SLOPES LEADING TO TEMPORARY BARRIER, CRASH CUSHION OR SAND BARREL ARRAY ARE 10:1 OR LESS.

- ① FOR DEFLECTION INFORMATION SEE STANDARD DETAIL DRAWING 14B7.
- ② VALUES PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.
- ③ ANCHOR TEMPORARY BARRIER ACCORDING TO CRASH CUSHION OR SAND BARREL MANUFACTURER'S RECOMMENDATIONS. IF MANUFACTURER'S RECOMMENDATIONS ARE NOT PROVIDED, ANCHOR 3 PINS ON TRAFFIC SIDE.

DIMENSION A TABLE ②

| FACILITY | POSTED SPEED MPH | DIMENSION A | |
|------------------------|--------------------------------|-------------|------------|
| | | MIN. FT | MAX. FT |
| FREEWAY/EXPRESSWAY | ALL | 15 | 20 |
| NON-FREEWAY/EXPRESSWAY | GREATER THAN OR EQUAL TO 45 | 10 | 15 |
| NON-FREEWAY/EXPRESSWAY | LESS THAN 45 | 8 | 10 |
| AADT LESS THAN 1,500 | ALL | 8 | 10 |

DIMENSION B TABLE ②

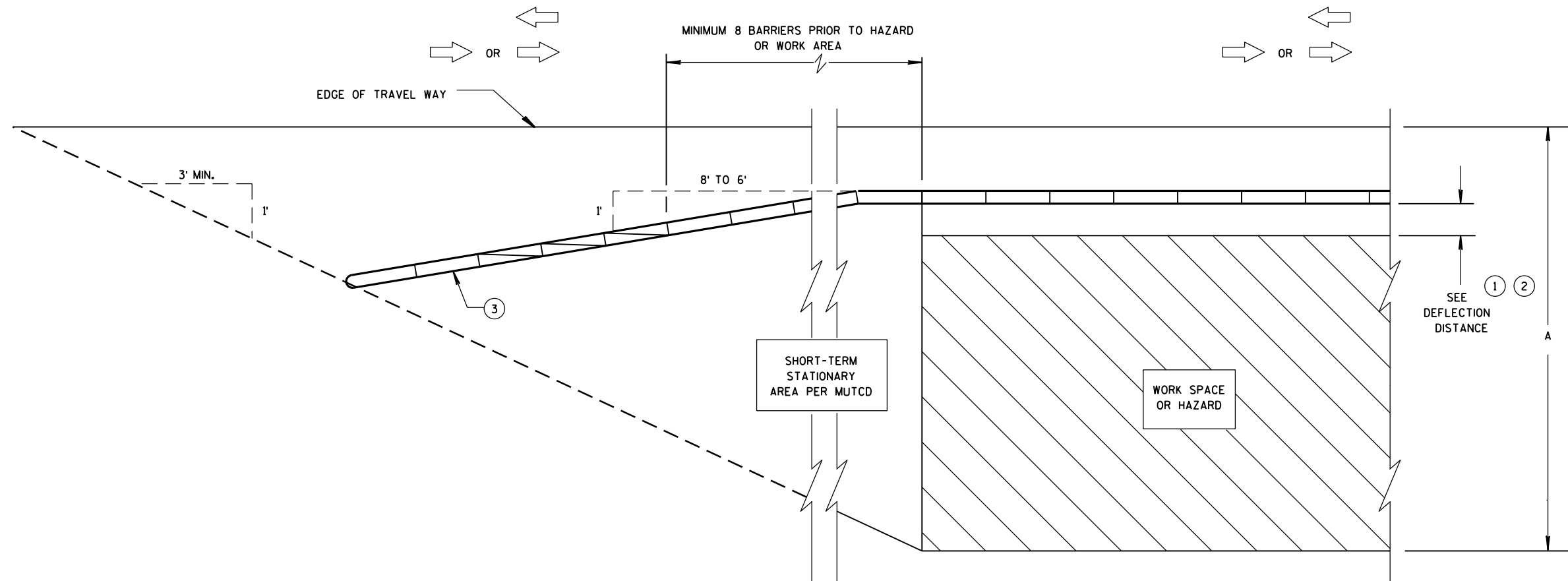
| POSTED SPEEDS MPH | DIMENSION B FT |
|----------------------|-------------------|
| 20 | 115 |
| 25 | 155 |
| 30 | 200 |
| 35 | 250 |
| 40 | 305 |
| 45 | 360 |
| 50 | 425 |
| 55 | 495 |
| 60 | 570 |
| 65 | 645 |

LEGEND

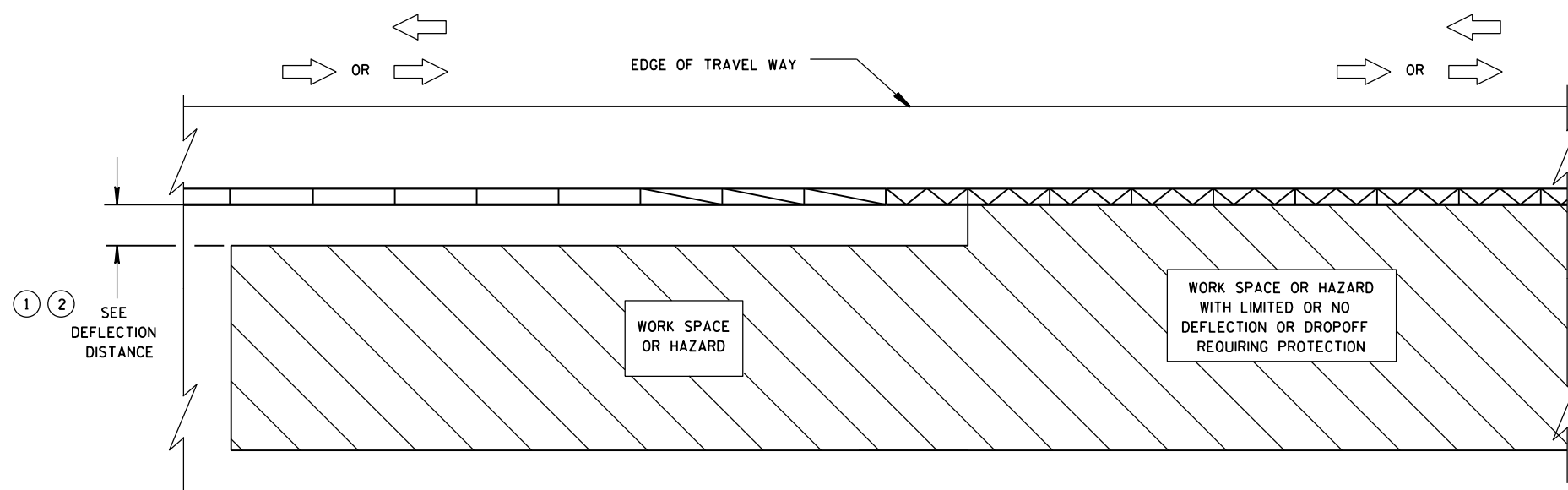
- DIRECTION OF TRAVEL →
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

**CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



**CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER
INSTALLATION FOR TRAFFIC ON ONE SIDE - FLARED INSTALLATION**



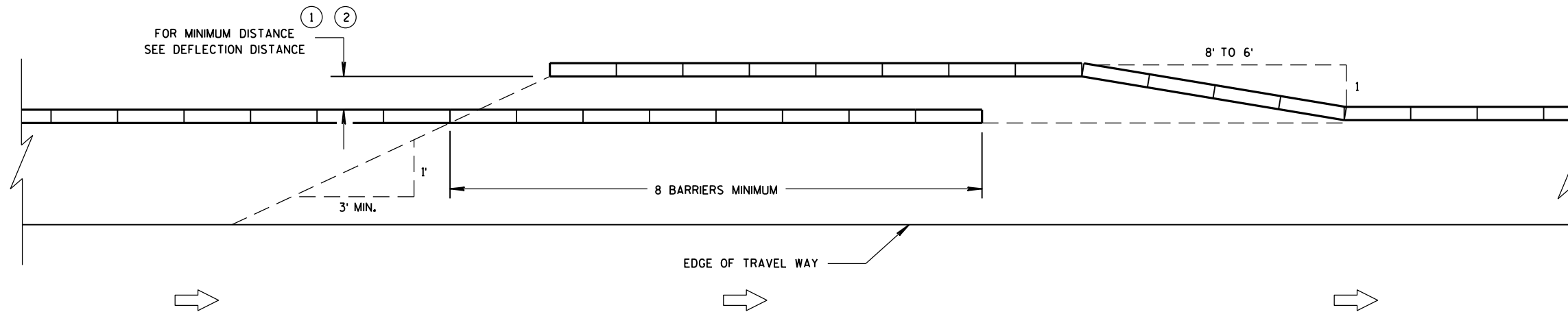
**TRANSITION FROM FREE STANDING TEMPORARY BARRIER
TO ANCHORED BARRIER**

LEGEND

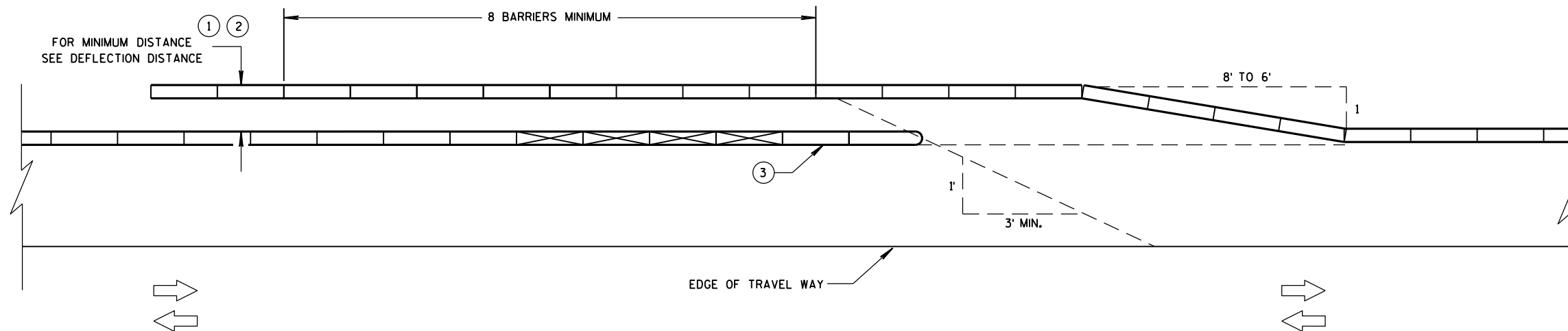
| | |
|---|--|
| DIRECTION OF TRAVEL | |
| CRASH CUSHION OR SAND BARREL ARRAY | |
| SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS | |
| SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS | |
| 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER | |
| PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET | |
| FREE STANDING TEMPORARY BARRIER | |

**CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS**

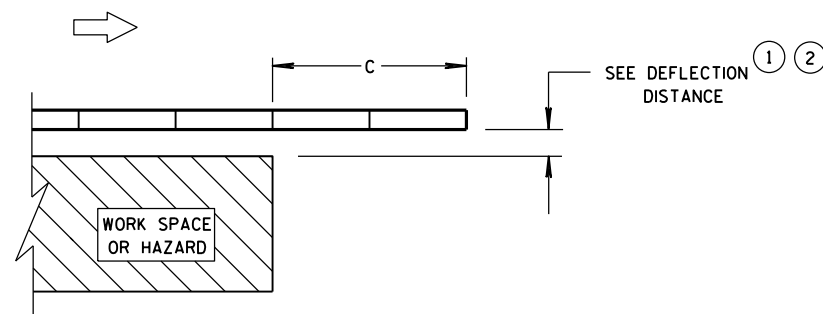
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



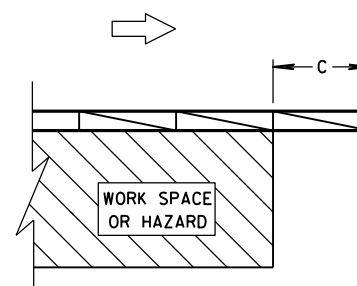
TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC



TEMPORARY BARRIER OVERLAP - TWO-WAY TRAFFIC



**ENDING TEMPORARY BARRIER
DOWNSTREAM - UNANCHORED**



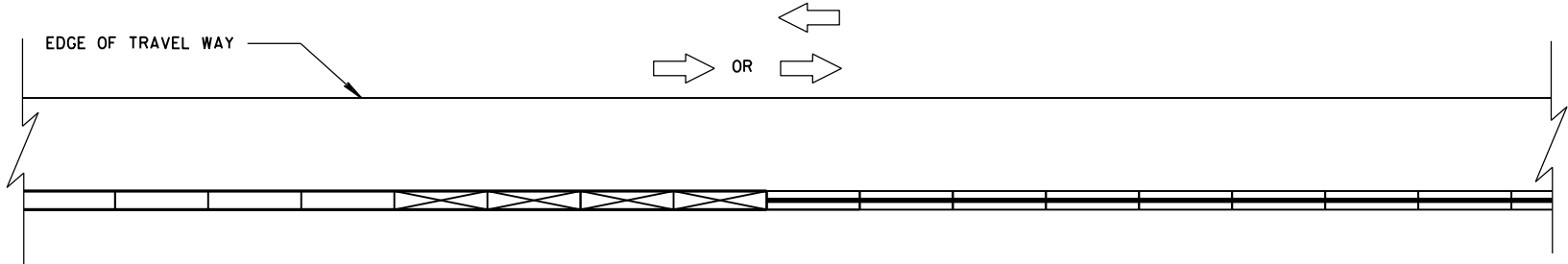
**ENDING TEMPORARY BARRIER
DOWNSTREAM - ANCHORED**

LEGEND

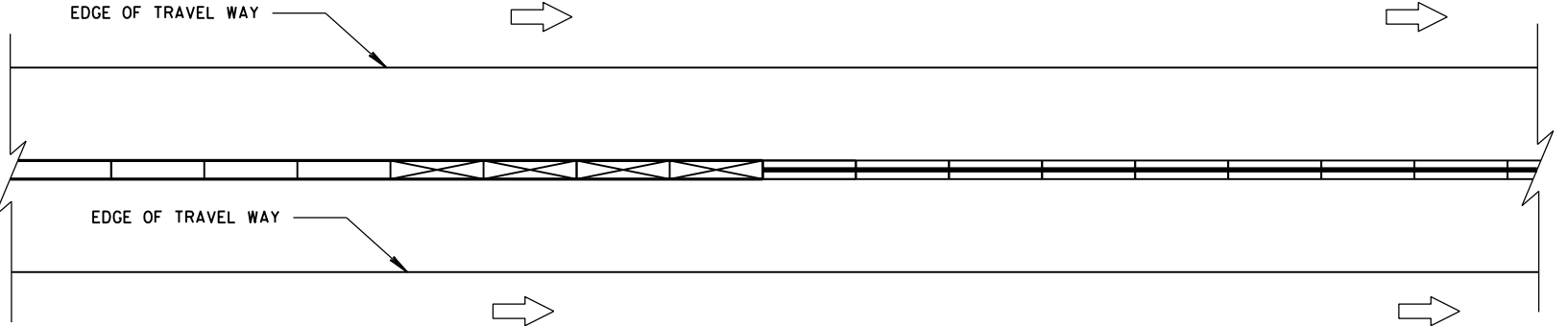
| | |
|---|--|
| DIRECTION OF TRAVEL | |
| CRASH CUSHION OR SAND BARREL ARRAY | |
| SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS | |
| SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS | |
| 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER | |
| PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET | |
| FREE STANDING TEMPORARY BARRIER | |

**CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



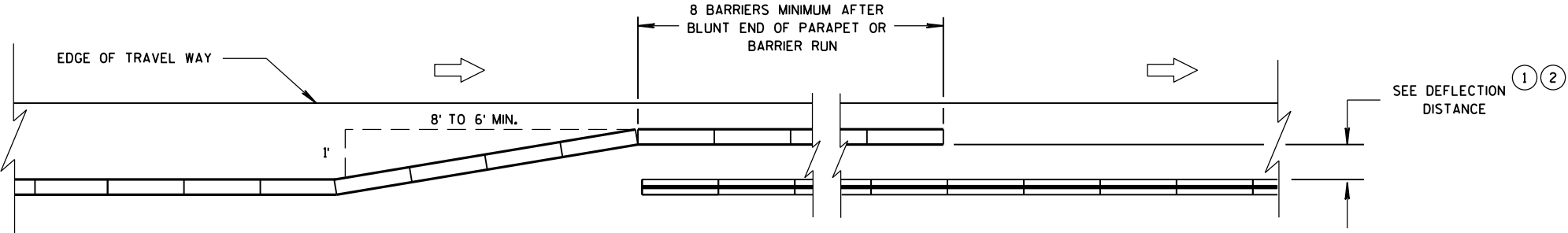
CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON ONE SIDE



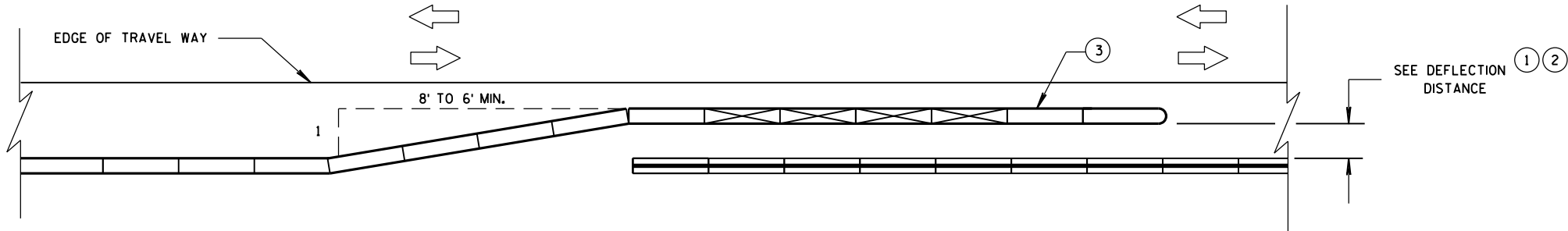
CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON BOTH SIDES

LEGEND

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
ONE WAY TRAFFIC



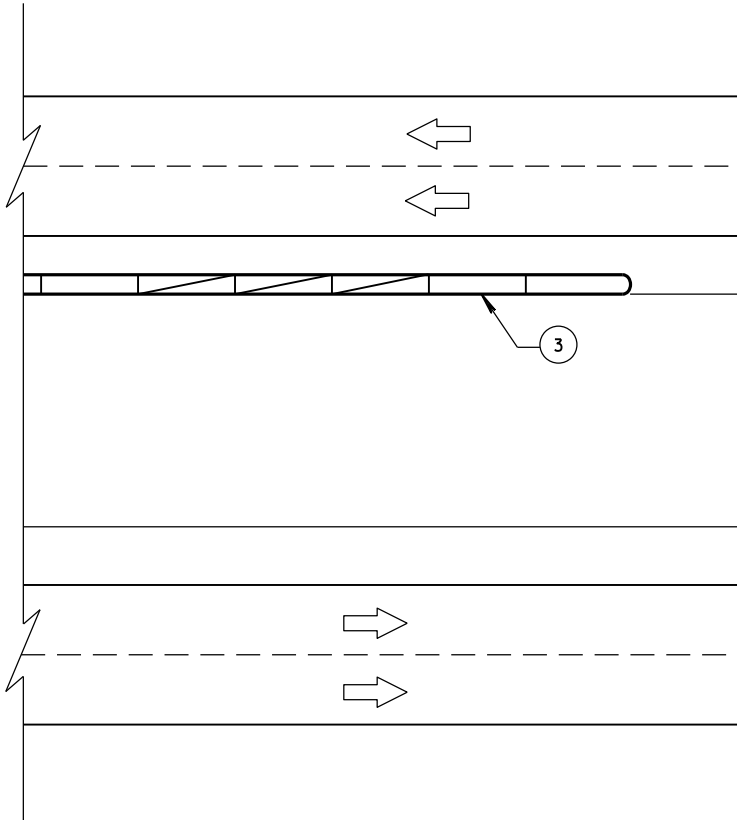
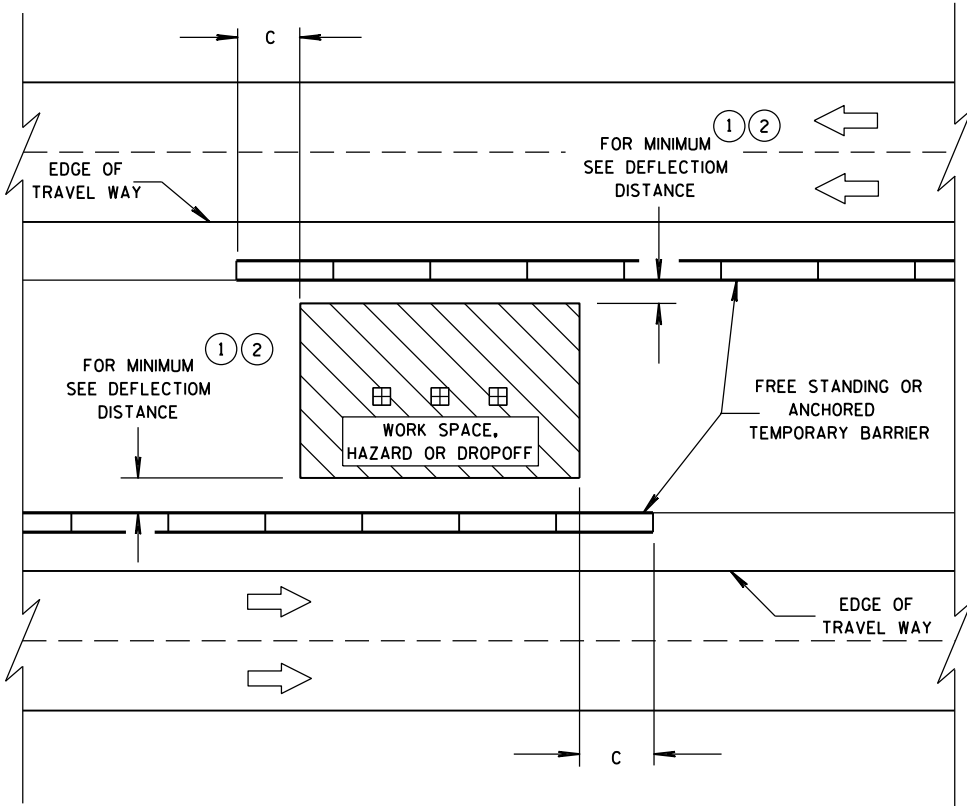
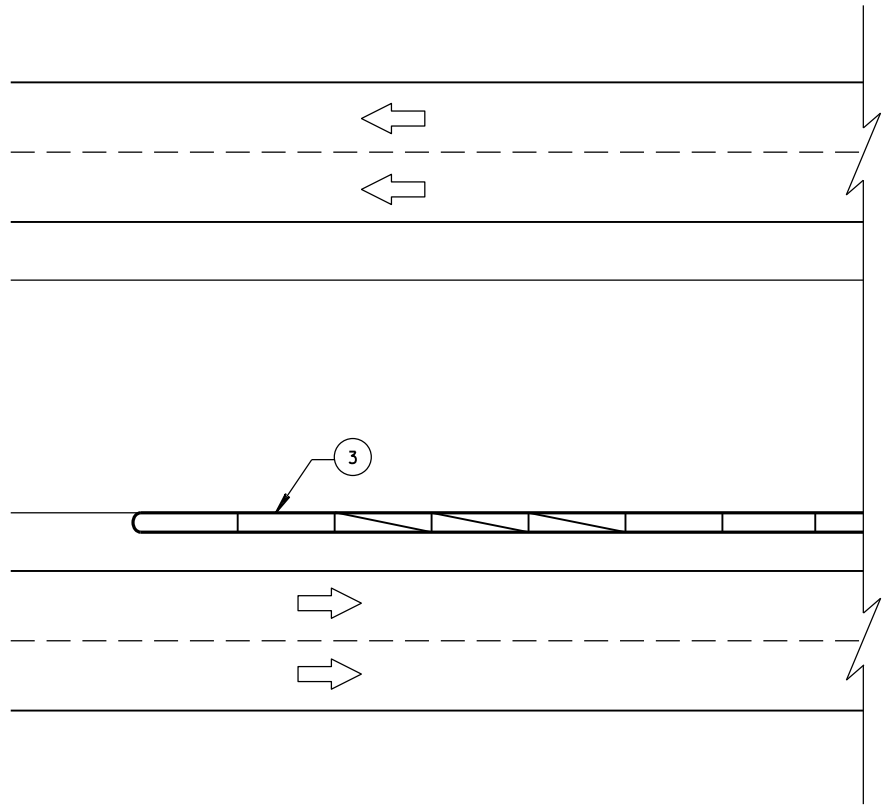
OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
TWO WAY TRAFFIC

LEGEND

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

DIMENSION C TABLE ²

| AVAILABLE DEFLECTION DISTANCE | MINIMUM LENGTH OF BARRIER BEYOND HAZARD FT |
|--|--|
| GREATER THAN 8' | 12.5 |
| LESS THAN OR EQUAL TO 8' BUT GREATER THAN 4' | 50 |
| LESS THAN OR EQUAL TO 4' | 100 |



CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

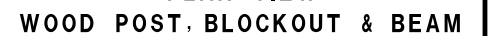
APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA ENGINEER

6

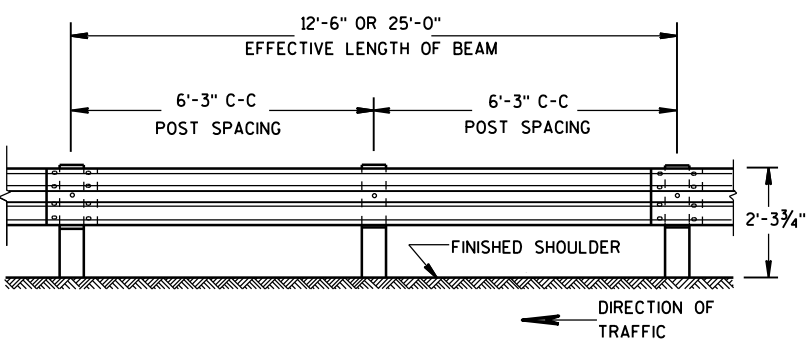
- S.D.D. 14 B 15-9a



TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

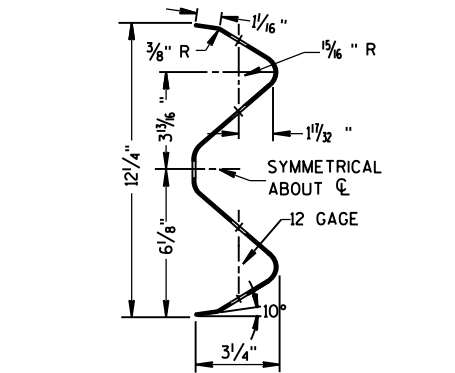


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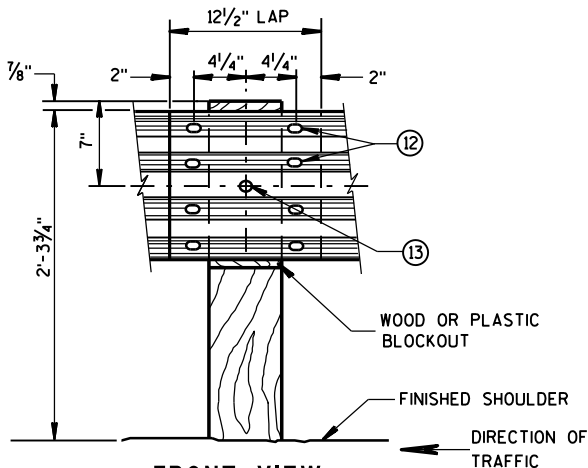


FRONT VIEW

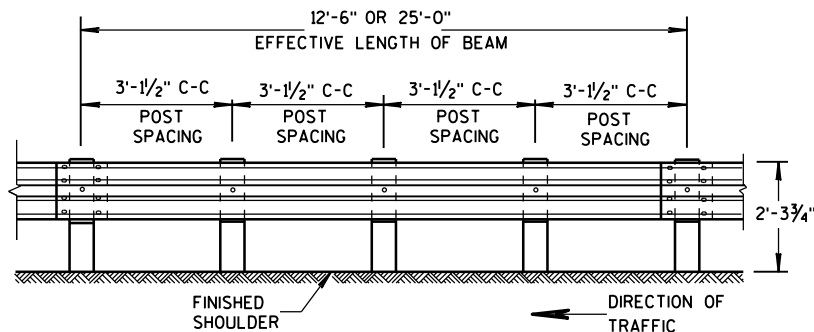
POST SPACING STANDARD INSTALLATION



SECTION THRU W BEAM

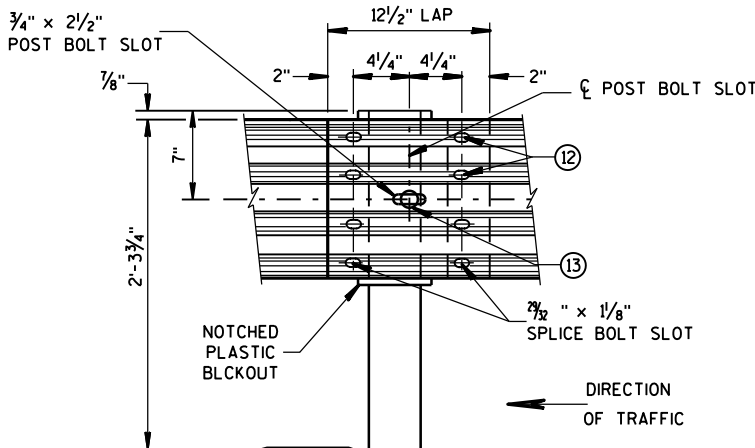


FRONT VIEW
BEAM SPLICE AT WOOD POST
AND POST MOUNTING DETAIL



FRONT VIEW

POST SPACING FOR LONGER POST AT HALF POST SPACING W BEAM (LHW)

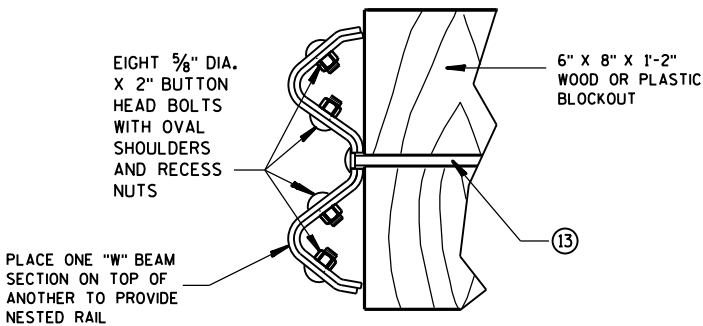


FRONT VIEW
BEAM SPLICE AT STEEL POST

TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD

GENERAL NOTES

- ⑧ PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.
- ⑨ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
- ⑩ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
- ⑪ PROVIDE AN ANGLE OF BEND OF $90^\circ \pm 1^\circ$ FOR TWO-SIDED REFLECTORS.
- ⑫ 8 - 5/8" ϕ 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.

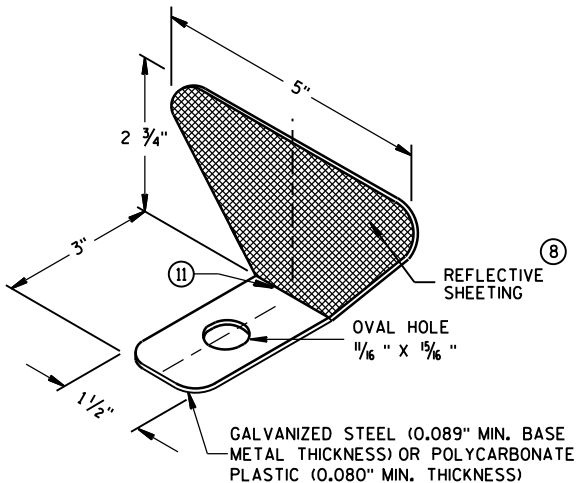
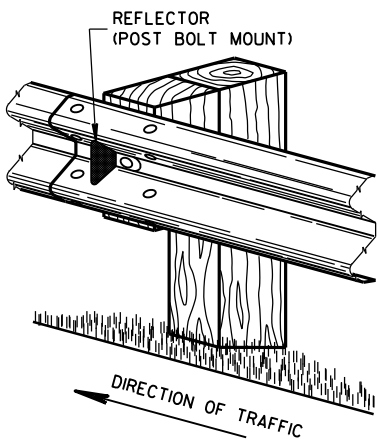


NESTED W BEAM (NW)

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

REFLECTOR SPACING ⑨

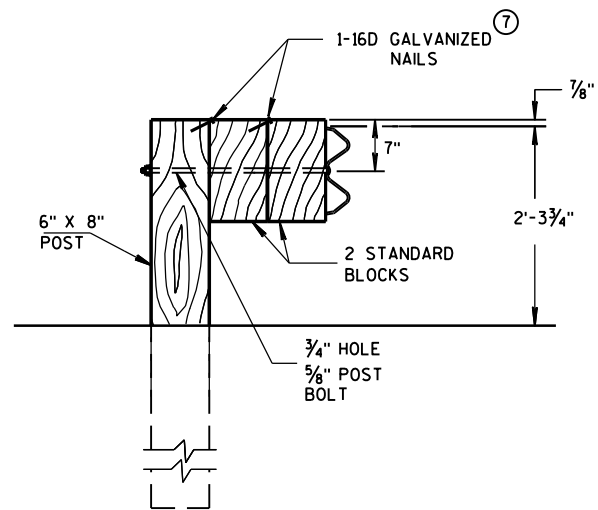
| | BEAM GUARD LENGTH | REFLECTOR SPACING | NO. SURFACES REFLECTORIZED | MIN. NO. REFLECTORS |
|-----------------|-------------------|-------------------|----------------------------|---------------------|
| ONE WAY TRAFFIC | < 200' | 50' C-C | 1 | 3 |
| | > 200' | 100' C-C | 1 | |
| TWO WAY TRAFFIC | < 200' | 25' C-C | 1 ⑩ | 6 |
| | > 200' | 50' C-C | 1 | |
| TWO WAY TRAFFIC | < 200' | 50' C-C | 2 ⑪ | 3 |
| | > 200' | 100' C-C | 2 | |



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

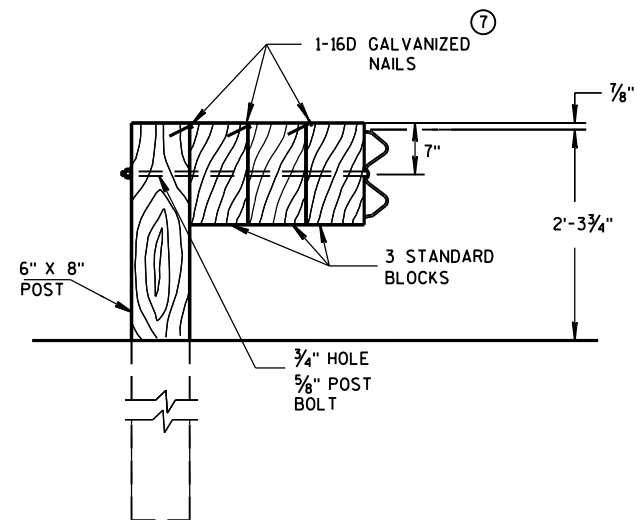
STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR DOUBLE BLOCKS

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

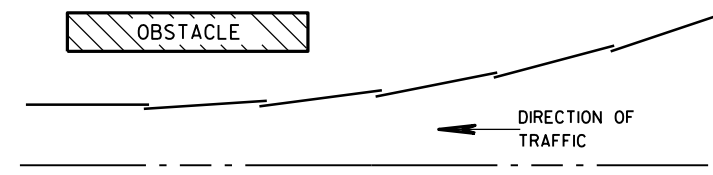


DETAIL FOR TRIPLE BLOCKS

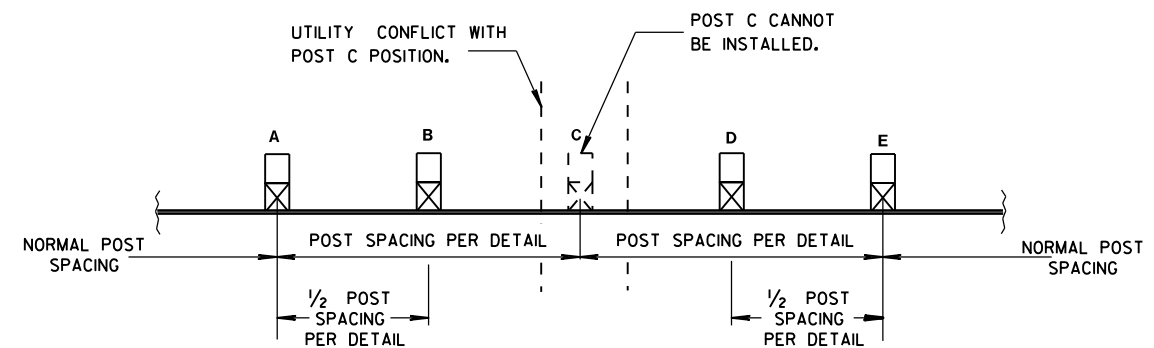
TRIPLE BLOCK DETAIL IS LIMITED TO ONE
LOCATION WITHIN A BEAM GUARD RUN.

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

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

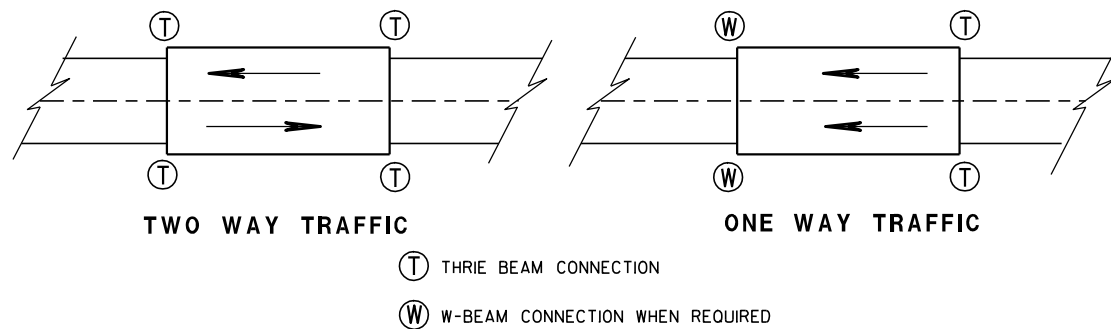
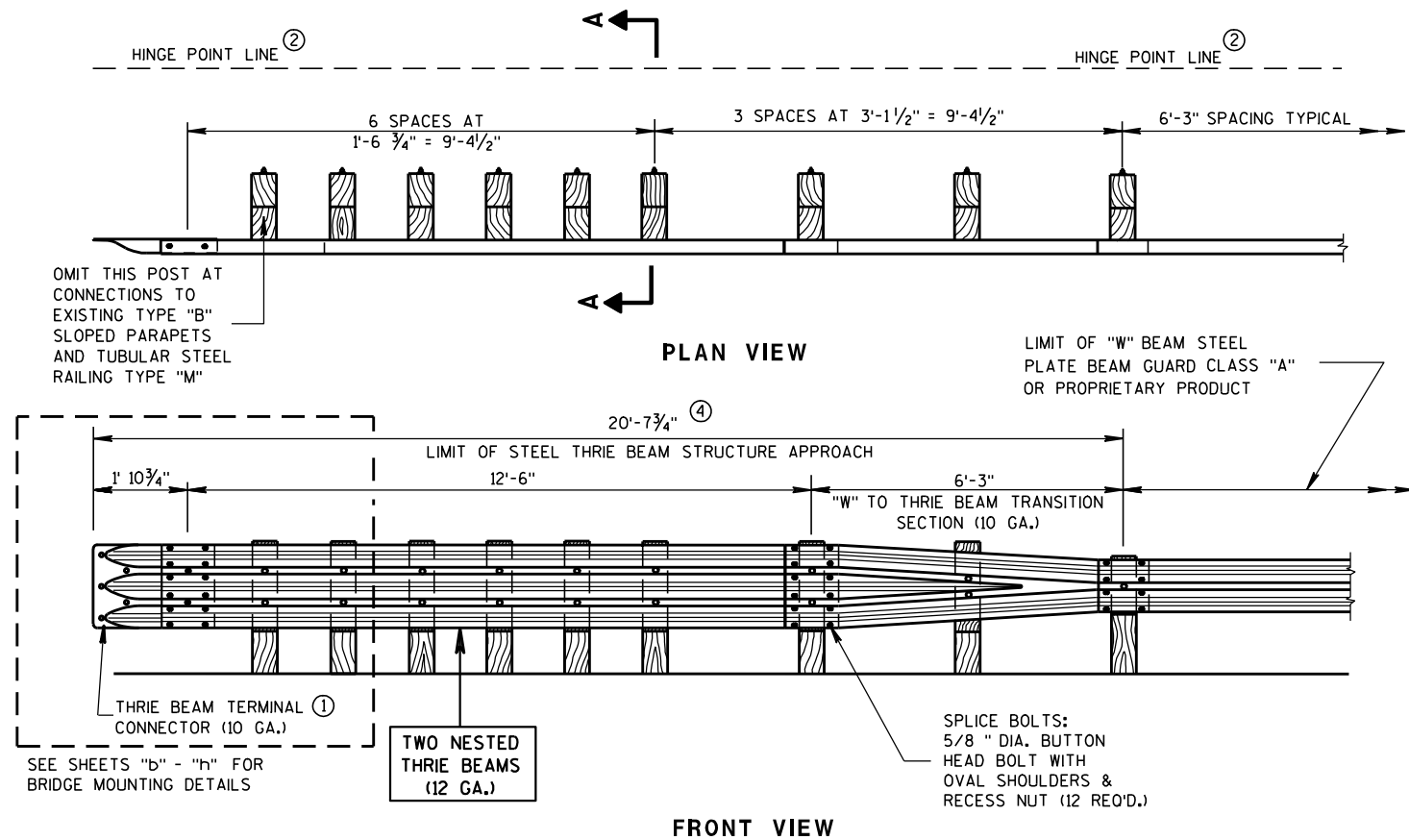
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

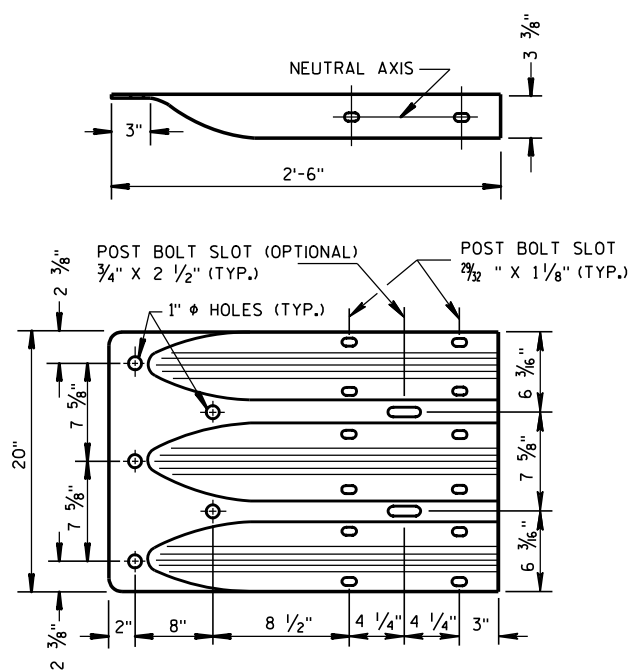
June 2016
DATE

FHWA

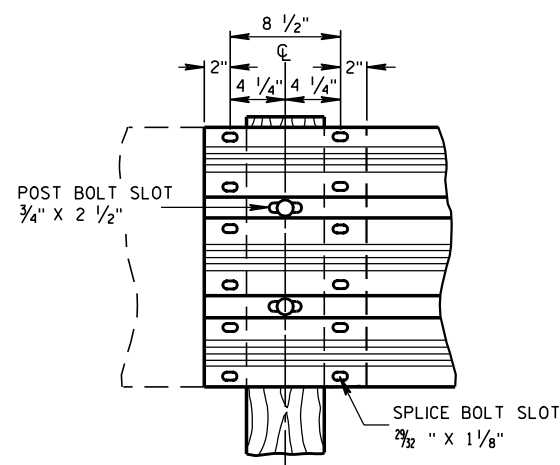
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



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



THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE

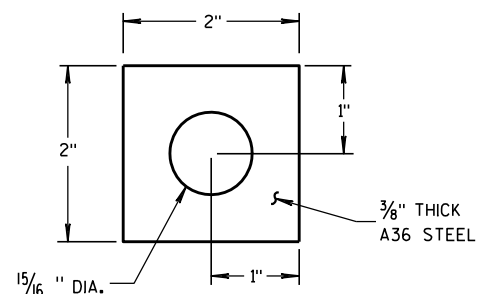
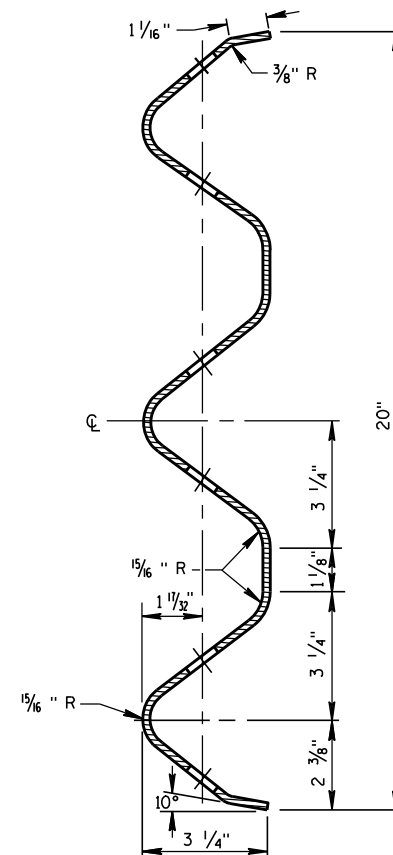


PLATE WASHER DETAIL



SECTION THRU THRIE BEAM RAIL ELEMENT

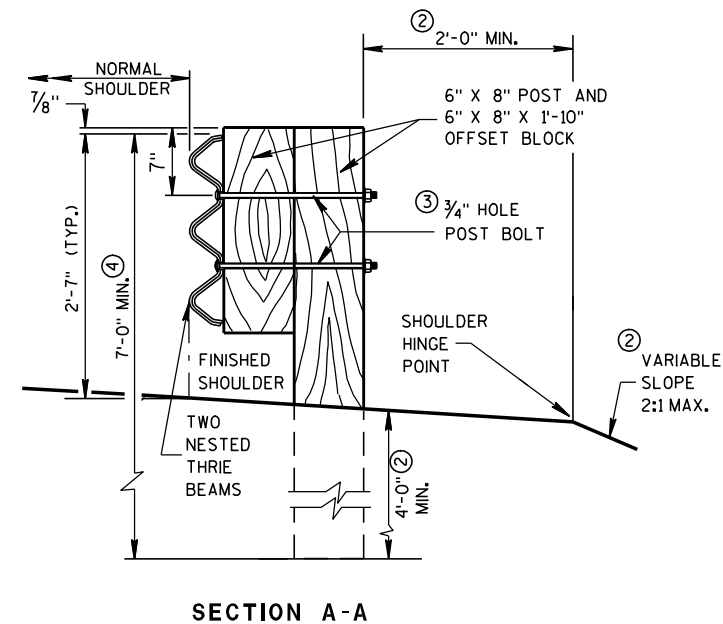
GENERAL NOTES

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.



STEEL THRIE BEAM STRUCTURE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012

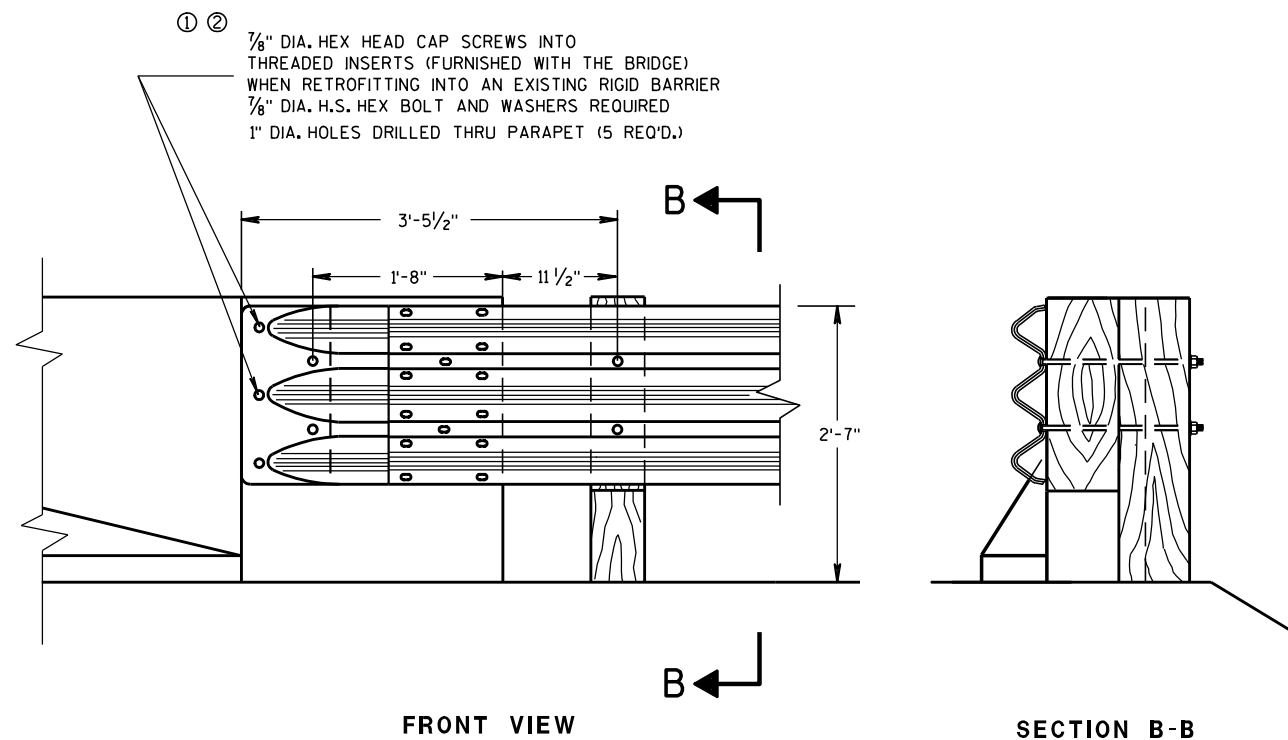
DATE

FHWA

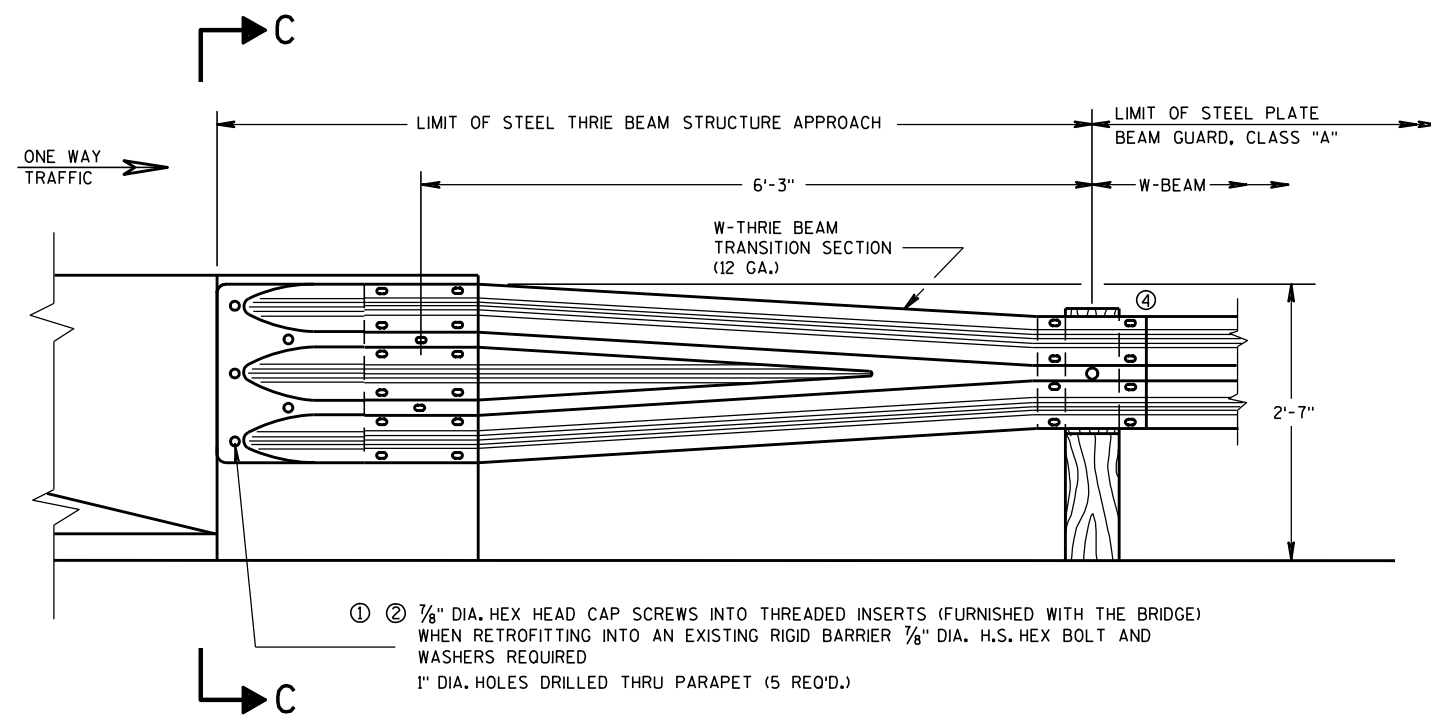
/s/ Jerry H. Zogg

ROADWAY STANDARDS DEVELOPMENT

ENGINEER



THRIE BEAM CONNECTION TO BRIDGE
PARAPET WITH SQUARE ENDS



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

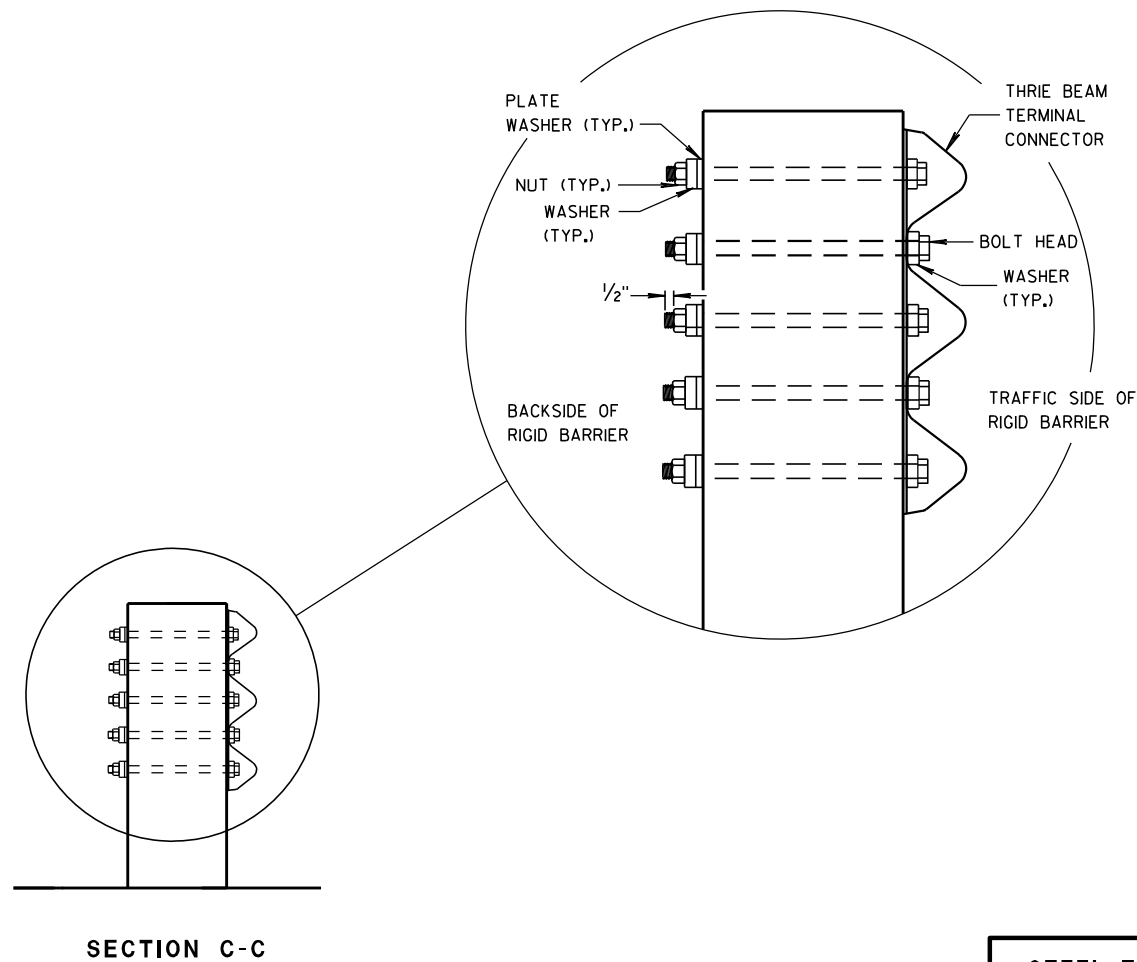
GENERAL NOTES

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

BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A325, A449 AND GALVANIZED PER STANDARD SPECIFICATIONS 614.

- ① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM TERMINAL CONNECTOR. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".
- ④ W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POST WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

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.



STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END PARAPETS

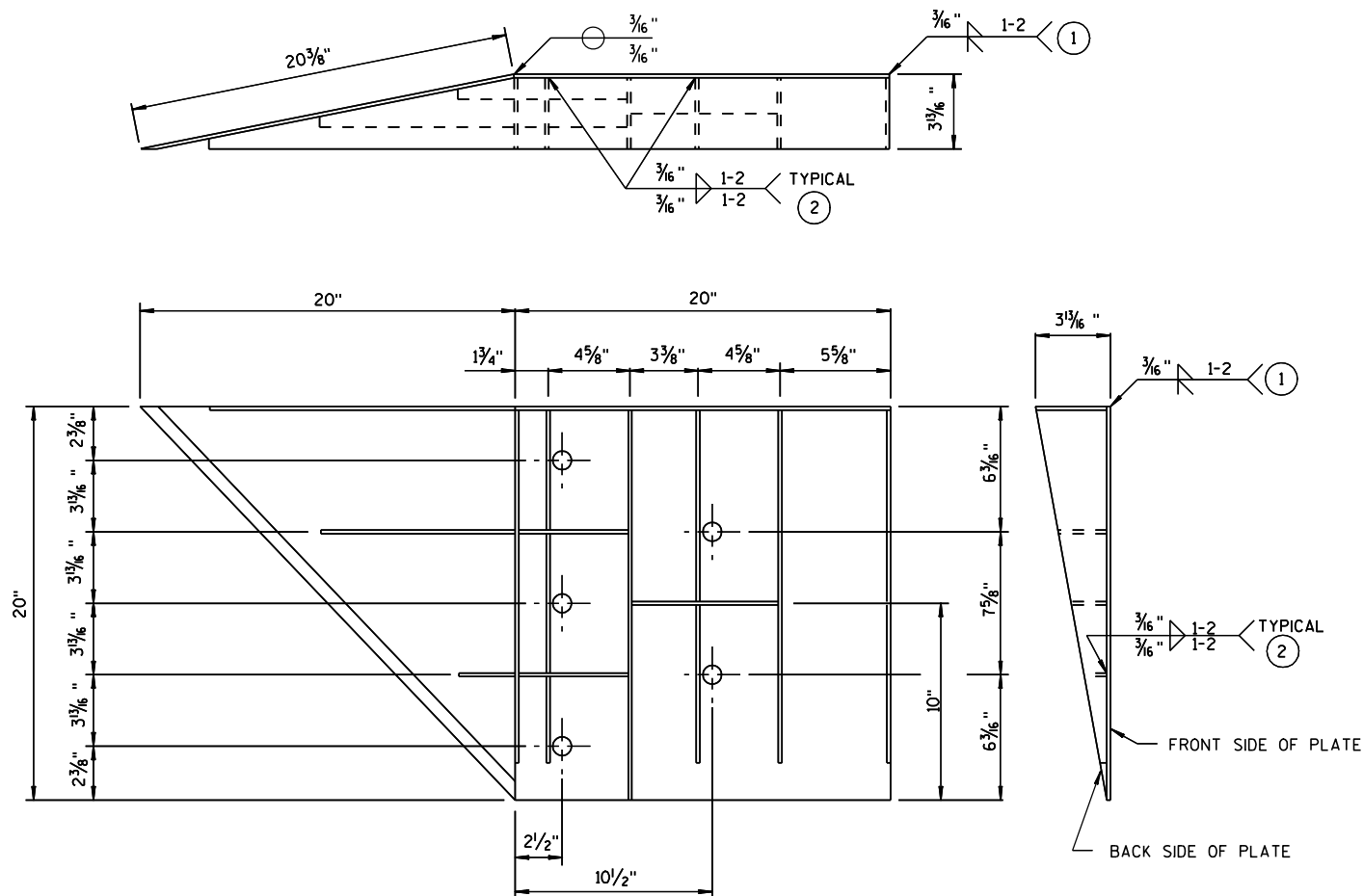
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012
DATE

FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



WELDING INSTRUCTION
(VIEWED FROM BACK SIDE OF PLATE)

| CONNECTOR PLATE DIMENSION (PER ASSEMBLY) | | | | |
|---|----------|-------|------------------------------------|-----------|
| PLATE | QUANTITY | SHAPE | SIZE (A x B x C x D) | THICKNESS |
| P1 | 1 | | 20" x 20" | 3/16" |
| P2 | 1 | | 20" x 20" x 28 5/16" | 3/16" |
| P3 | 1 | | 39" x 3 5/8" x 20" x 19 5/16" | 3/16" |
| S1 | 4 | | 18 7/16" x 3 5/8" x 18 3/4" | 1/4" |
| S2 | 1 | | 10 1/4" x 2 7/16" x 10 3/8" x 1/2" | 1/4" |
| S3 | 1 | | 3" x 1 1/16" x 3 1/8" x 1/2" | 1/4" |
| S4 | 1 | | 6 1/8" x 2 1/16" | 1/4" |
| S5 | 1 | | 6 1/8" x 1 1/16" | 1/4" |
| S6 | 1 | | 7 3/4" x 1 3/4" | 1/4" |
| S7 | 1 | | 2 9/16" x 6" x 3 5/8" x 5 7/8" | 1/4" |
| S8 | 1 | | 1 7/32" x 7 1/2" x 2 1/2" x 7 3/8" | 1/4" |
| S9 | 1 | | 6 1/16" x 6 3/16" x 1 1/32" | 1/4" |
| S10 | 1 | | 1 7/8" x 9 7/8" x 3 5/8" x 9 1/16" | 1/4" |
| S11 | 1 | | 8 1/2" x 8 3/4" x 1 1/16" | 1/4" |

STEEL THRIE BEAM STRUCTURE APPROACH

GENERAL NOTES

- COVER PLATE PANELS ARE 3/16" THICK.
- ALL STIFFENERS ARE 1/4" THICK.
- CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.
- FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.
- ALL HOLE DIAMETERS SHALL BE 1".
- FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

- 1 STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND 3/16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.
- 2 STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD BY 1" LONG SPACED AT 2".

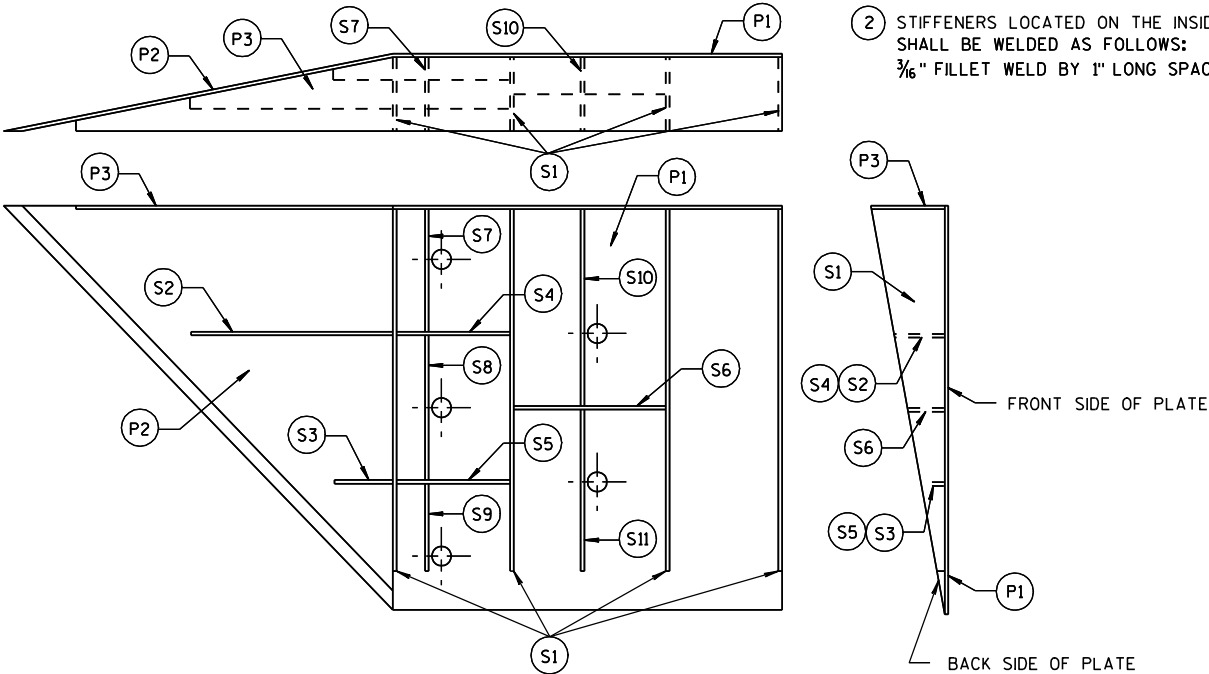


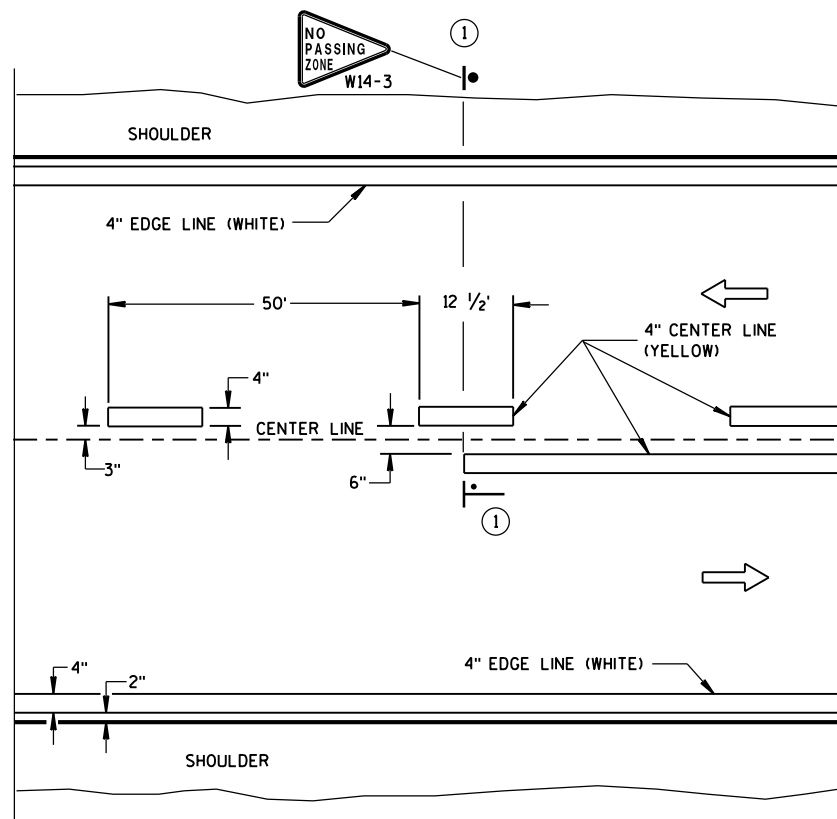
PLATE AND STIFFENER IDENTIFICATION
(VIEWED FROM BACK SIDE OF PLATE)

STEEL THRIE BEAM
STRUCTURE APPROACH,
CONNECTOR PLATE DETAIL

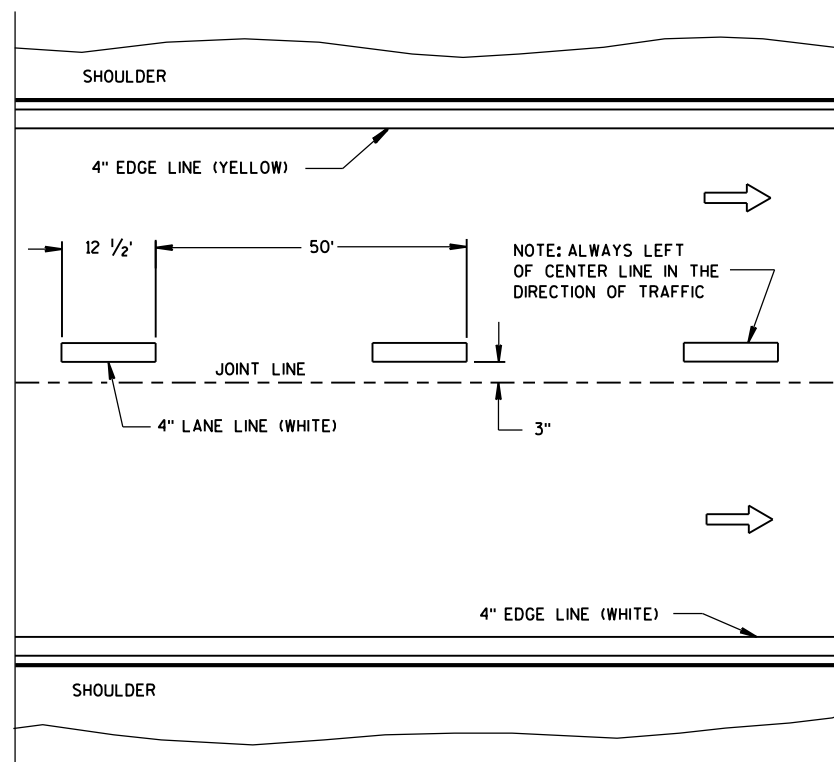
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012
DATE
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

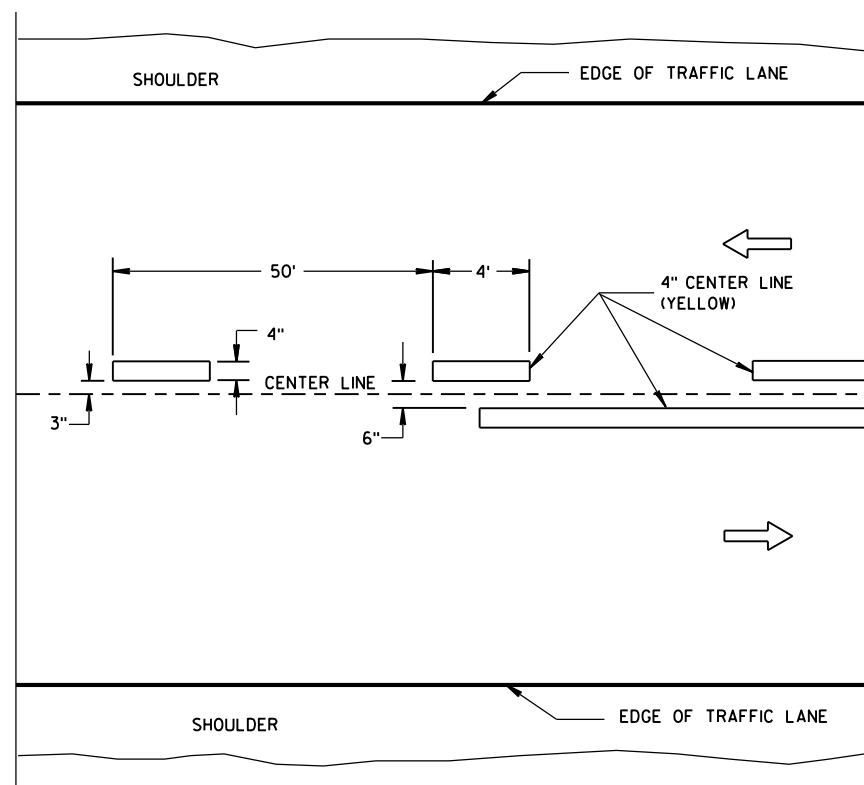


TWO WAY TRAFFIC

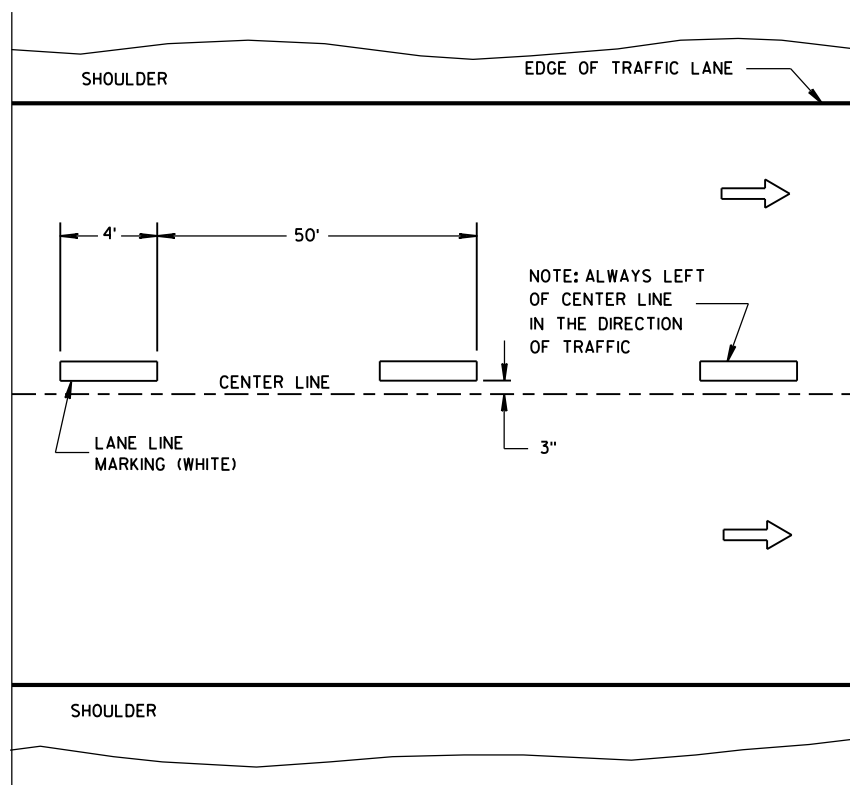


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

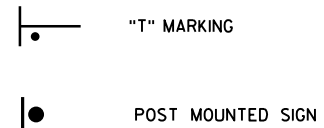
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

- ① NO PASSING ZONE W14-3 SIGN SHALL BE LOCATED WITHIN 50 FEET OF THE "T" MARKING.

NOTE

ARROW SYMBOL () SHOWS DIRECTION OF TRAVEL

LEGEND



| | |
|--|---|
| LONGITUDINAL MARKING (MAINLINE) | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED Sept., 2016 | /S/ Matthew R. Rauch |
| DATE | STATE SIGNING AND MARKING ENGINEER |
| FHWA | |

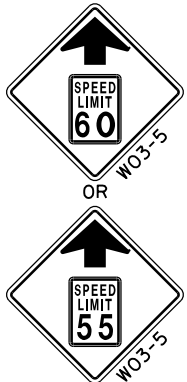
LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- REMOVING PAVEMENT MARKING
- CONCRETE BARRIER TEMPORARY PRECAST
- DIRECTION OF TRAFFIC
- WORK AREA

| L, TAPER LENGTH (MPH) | | | | | | |
|-----------------------|------------------------|-----|-----|-----|-----|------|
| SPEED (MPH) | W, LATERAL OFFSET (FT) | | | | | |
| | 10 | 11 | 12 | 13 | 14 | 15 |
| 45 | 450 | 495 | 540 | 585 | 630 | 675 |
| 50 | 500 | 550 | 600 | 650 | 700 | 750 |
| 55 | 550 | 605 | 660 | 715 | 770 | 825 |
| 60 | 600 | 660 | 720 | 780 | 840 | 900 |
| 65 | 650 | 715 | 780 | 845 | 910 | 975 |
| 70 | 700 | 770 | 840 | 910 | 980 | 1050 |



INSTALL ON EACH APPROACH AT THE CLOSEST INTERSECTION WITH A STATE OR COUNTY TRUNK HIGHWAY, OR AS DIRECTED BY THE ENGINEER. WIDTH ON SIGN TO BE APPROX. 1 FOOT LESS THAN AVAILABLE WIDTH (OMIT IF AVAILABLE WIDTH IS MORE THAN 16 FEET).



LOCATED 2600 FEET IN ADVANCE OF R2-1 SIGN AND 500 FEET BEYOND THE "ROAD WORK 1 MILE" SIGN.



OR



R2-1 48"x60" (BLACK AND WHITE) LOCATED 500 FEET BEYOND W20-5G SIGN.

IF THE REGULATORY SPEED HAS BEEN REDUCED, A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. THERE SHOULD BE A SPEED LIMIT SIGN INCORPORATED A MINIMUM OF EVERY 2 OR 3 MILES.

* INCLUDE RESUME SPEED LIMIT SIGN A MINIMUM OF 200 FEET (500 FEET DESIRABLE) AFTER END ROAD WORK SIGNS.

GENERAL NOTES

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

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 SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

"W0" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

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

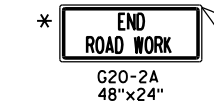
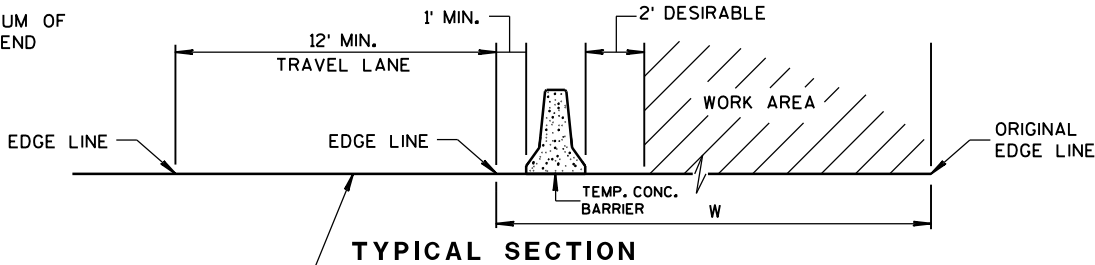
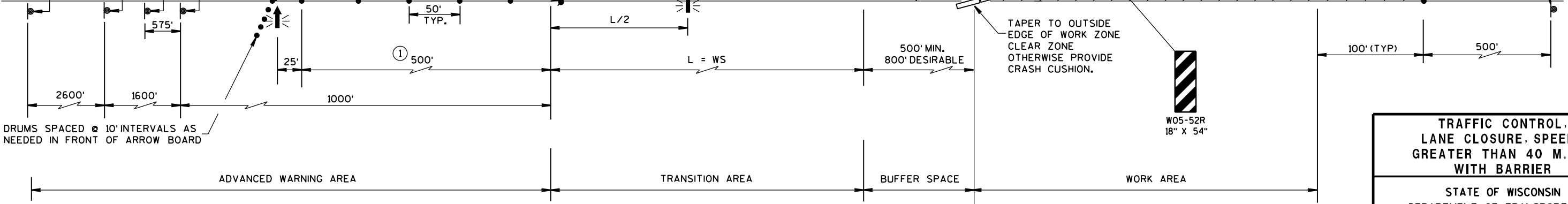
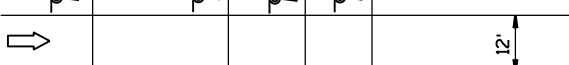
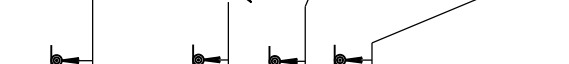
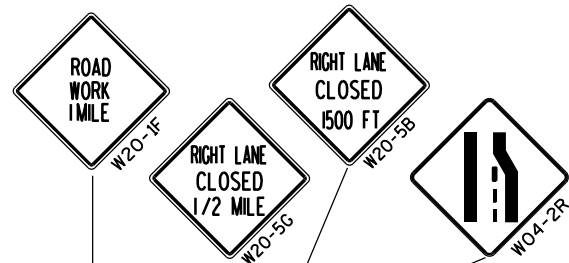
1 CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUM TAPER.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.



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|---|--|
| TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H. WITH BARRIER | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED Sept., 2016 DATE | /S/ Peter Amakobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER |
| FHWA | |

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMENENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKING
- DIRECTION OF TRAFFIC
- WORK AREA

GENERAL NOTES

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 SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET, (500 FEET DESIREABLE) DISTANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

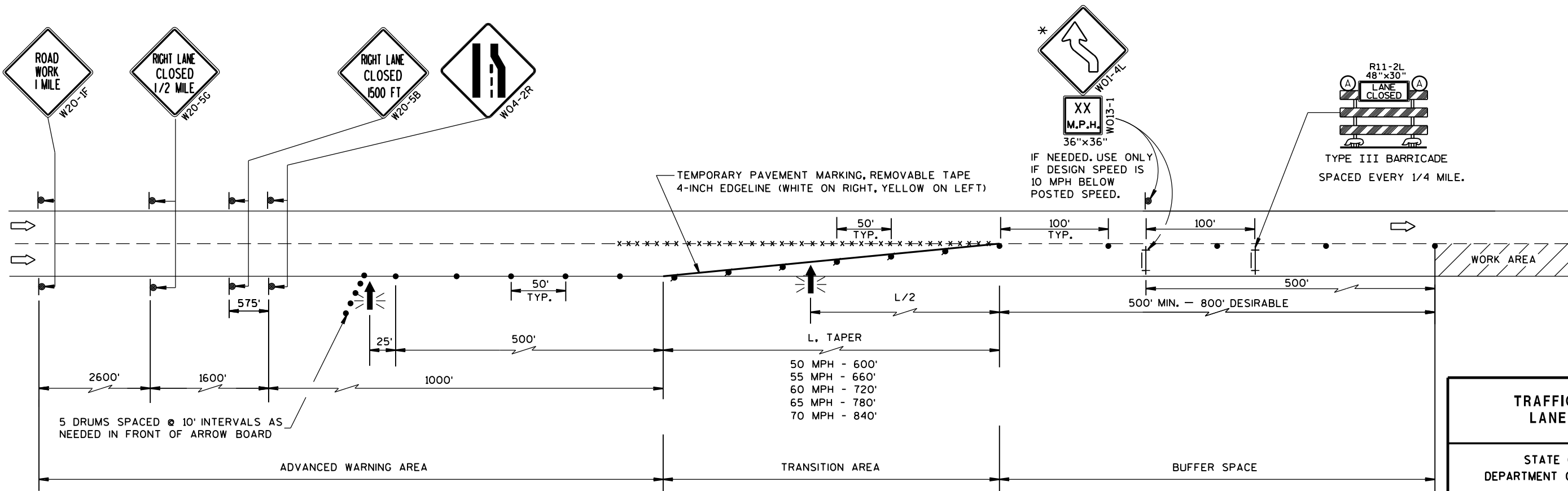
REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 4 OR MORE DAYS AND NIGHTS.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE CLOSURE MUST MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

* THE LEFT REVERSE CURVE SIGN (WO1-4L) IS ONLY REQUIRED WHEN THIS DETAIL IS USED IN COMBINATION WITH "SINGLE LANE CROSSOVER" DETAIL.



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| TRAFFIC CONTROL, LANE CLOSURE | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED March 2016 DATE | /S/ Peter Amakobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER |
| FHWA | |

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKING
- DIRECTION OF TRAFFIC
- WORK AREA

GENERAL NOTES

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 SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET, (500 FEET DESIREABLE) DISTANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

"W0" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

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. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 4 OR MORE DAYS AND NIGHTS.

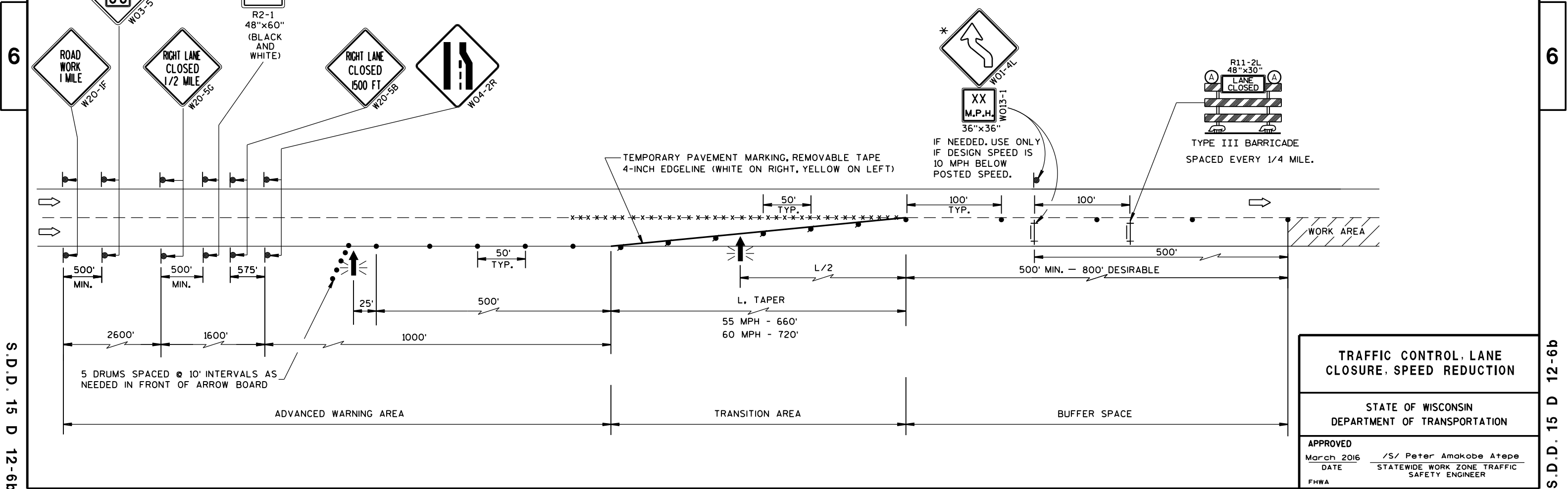
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

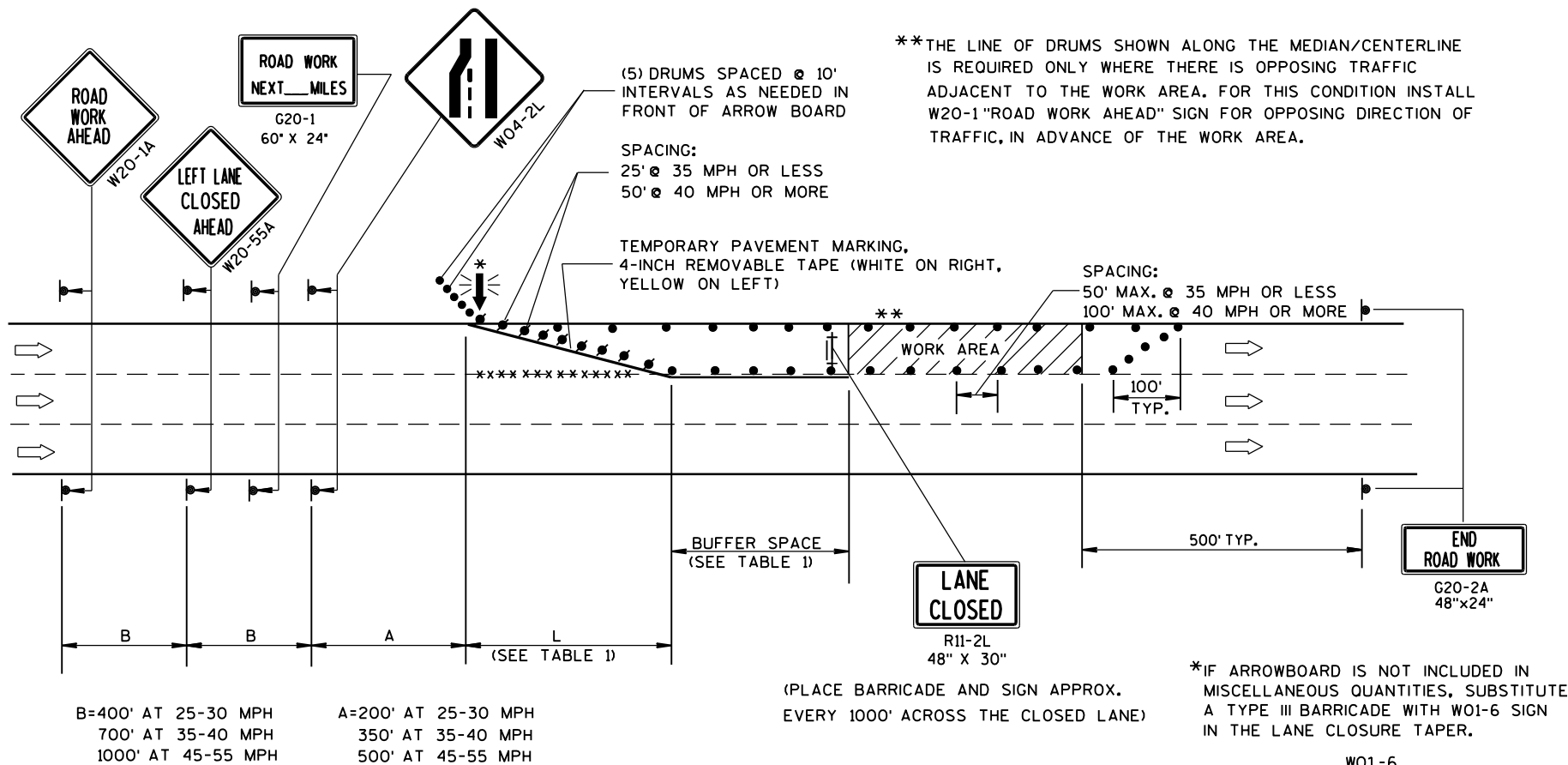
ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE CLOSURE MUST MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

* THE LEFT REVERSE CURVE SIGN (W01-4L) IS ONLY REQUIRED WHEN THIS DETAIL IS USED IN COMBINATION WITH "SINGLE LANE CROSSOVER" DETAIL.

** A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. THERE SHOULD BE A SPEED LIMIT SIGN INCORPORATED A MINIMUM OF EVERY 2 OR 3 MILES. INCLUDE A RESUME SPEED LIMIT SIGN 200 FEET MINIMUM (500 FEET DESIREABLE) BEYOND THE "END OF ROADWORK" SIGN.



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| TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED March 2016 DATE | /S/ Peter Amakobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER |
| FHWA | |



GENERAL NOTES

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

THIS DETAIL MAY BE USED FOR ROADWAYS WITH EITHER TWO OR THREE LANES IN EACH DIRECTION.

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 DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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 DISTRICT TRAFFIC UNIT.

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

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, 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.

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

ON UNDIVIDED ROADWAYS, OMIT THE SIGNS SHOWN ON LEFT SIDE OF ROAD.

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

OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROWBOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROWBOARDS AND LANE CLOSURE DRUMS.

PLACE THE ARROWBOARD AS CLOSE AS POSSIBLE TO THE BEGINNING OF THE LANE CLOSURE TAPER, PREFERABLY ON THE SHOULDER OR TERRACE.

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

BARRICADES IN A CLOSED LANE 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.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

TABLE 1
TAPER AND BUFFER SPACE
FOR 12' LANE WIDTH

| S | L | BUFFER SPACE |
|----|------|--------------|
| 25 | 125' | 55' |
| 30 | 180' | 85' |
| 35 | 245' | 120' |
| 40 | 320' | 170' |
| 45 | 540' | 220' |
| 50 | 600' | 280' |
| 55 | 660' | 335' |

FOR LANE WIDTH OTHER THAN 12':

L = WS AT 45 MPH OR GREATER

$L = \frac{WS^2}{60}$ AT 40 MPH OR LESS

L = TAPER LENGTH IN FEET

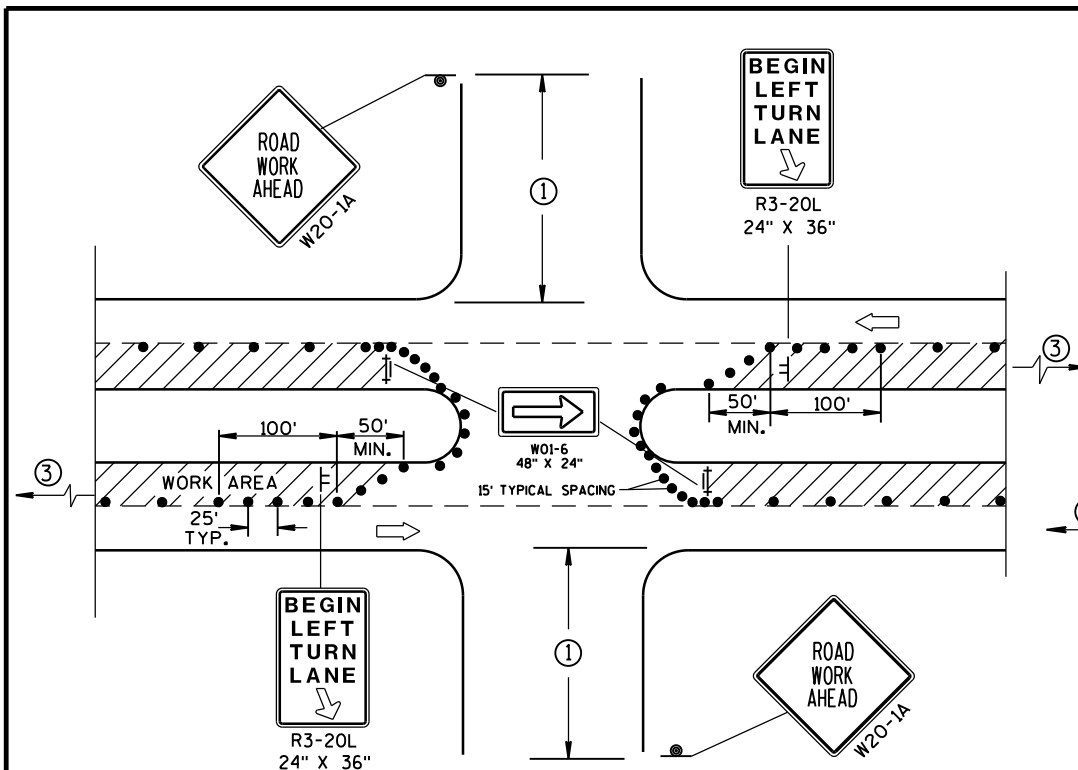
S = NON-CONSTRUCTION SPEED LIMIT (MPH)

W = WIDTH OF LANE CLOSURE

LEGEND

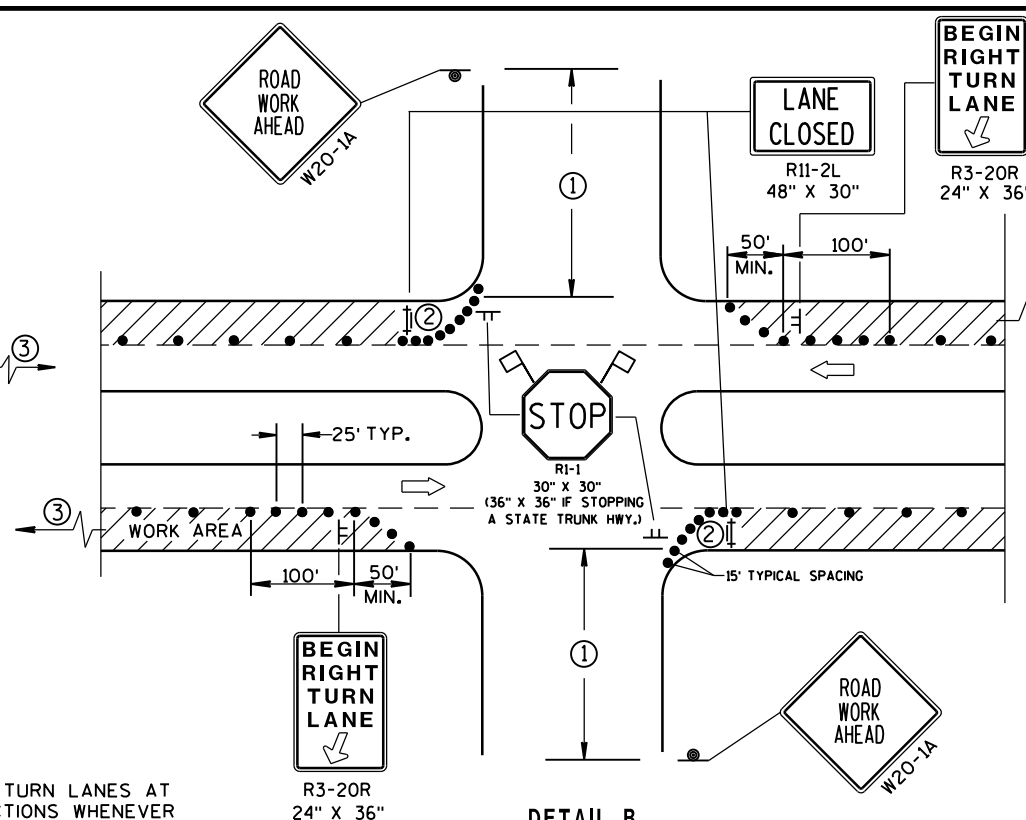
- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- DIRECTION OF TRAFFIC
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- WORK AREA

| | |
|--|---|
| TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED June 2016 DATE | /S/ Peter Amakobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER |
| FHWA | |



DETAIL A
FOR LEFT LANE CLOSURE AT
INTERSECTION OR MEDIAN OPENING

PROVIDE TURN LANES AT INTERSECTIONS WHENEVER STAGING OF WORK ALLOWS. TAPER AND TURN LANE LENGTHS BASED ON FIELD CONDITIONS AS APPROVED BY THE ENGINEER.



DETAIL B
FOR RIGHT LANE CLOSURE
AT INTERSECTION

GENERAL NOTES

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 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.

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 DISTRICT TRAFFIC UNIT.

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

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, 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.

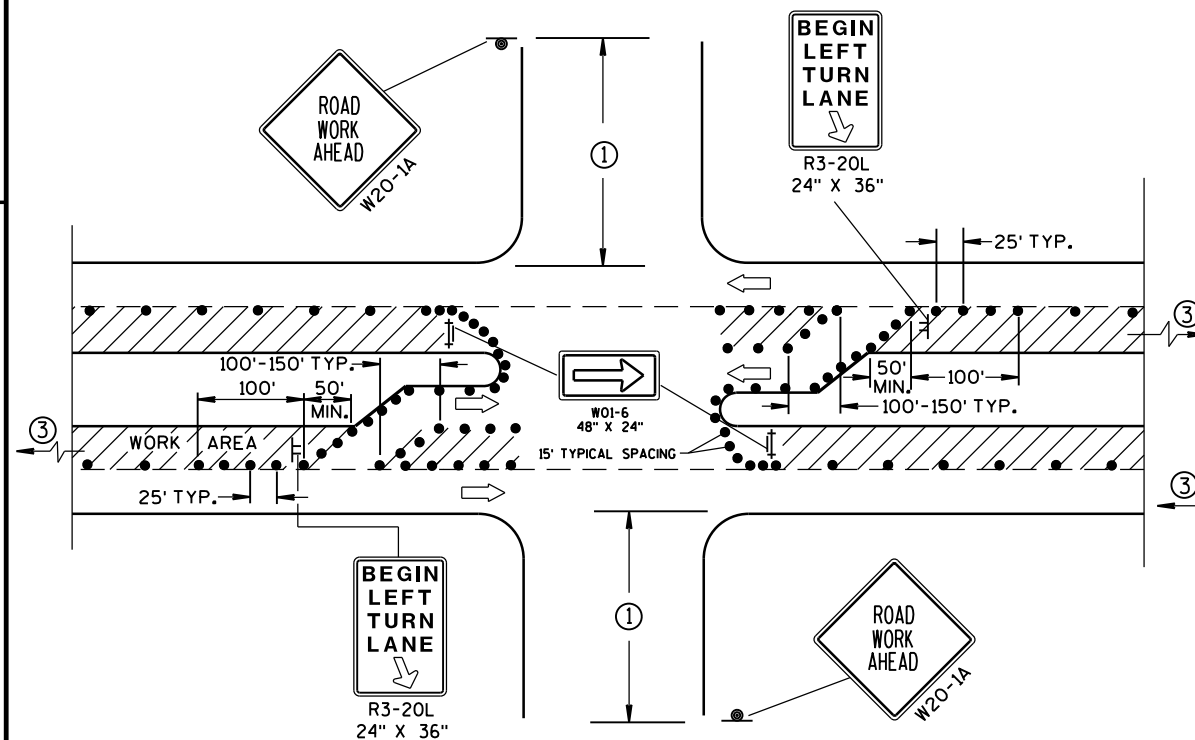
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

BARRICADES IN A CLOSED LANE 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.

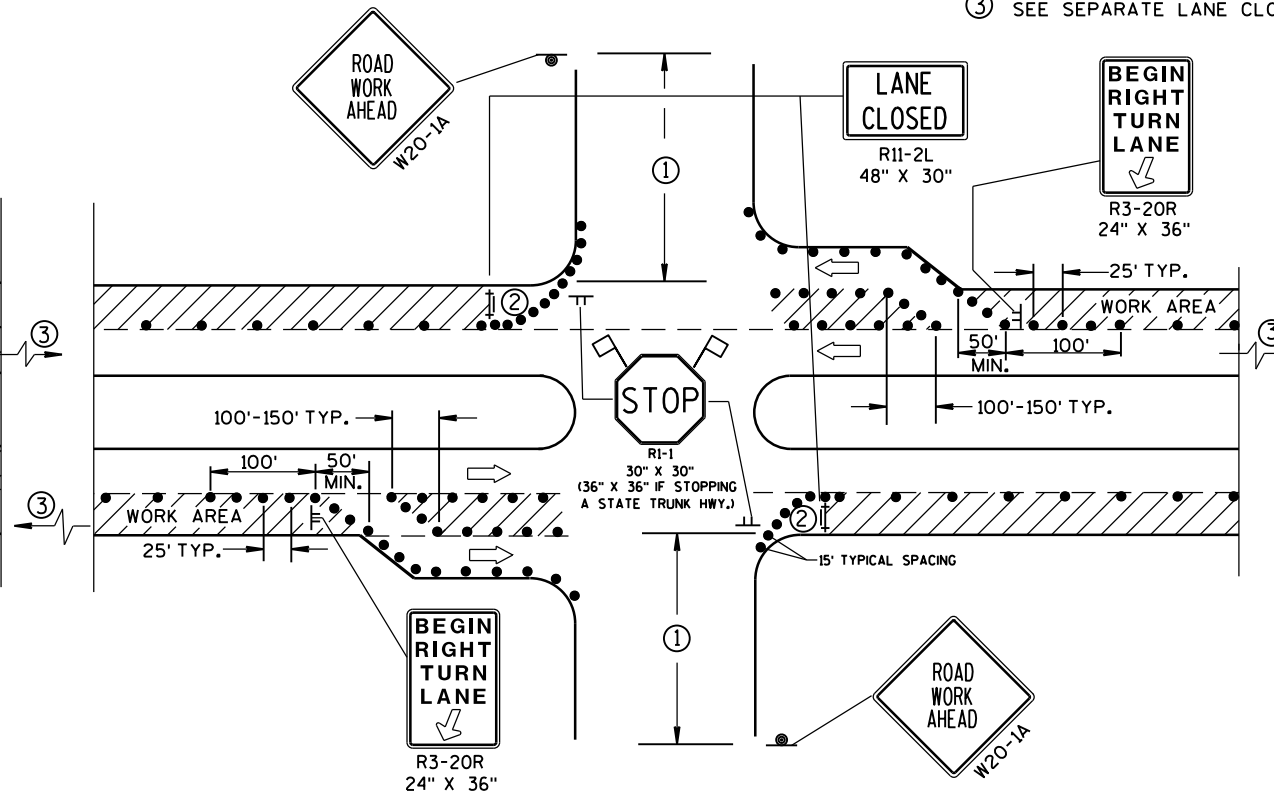
- ① 500' TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.
350' IF 35-40 MPH.
200' IF 25-30 MPH.
- ② ALSO USE BARRICADE AND 15-FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS.
- ③ SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.

LEGEND

- TRAFFIC CONTROL DRUM
- ⊙ SIGN ON PERMANENT SUPPORT
- ⊢ SIGN ON TEMPORARY SUPPORT (5' MIN. MOUNTING HEIGHT)
- ⊢ TYPE III BARRICADE WITH ATTACHED SIGN AND TYPE "A" WARNING LIGHT (FLASHING)
- ➡ DIRECTION OF TRAFFIC
- ⚑ FLAGS, 16" X 16" MIN., (ORANGE)
- ▨ WORK AREA



DETAIL C
FOR LEFT LANE CLOSURE AT INTERSECTION OR
MEDIAN OPENING (WITH LEFT TURN BAY OPEN)

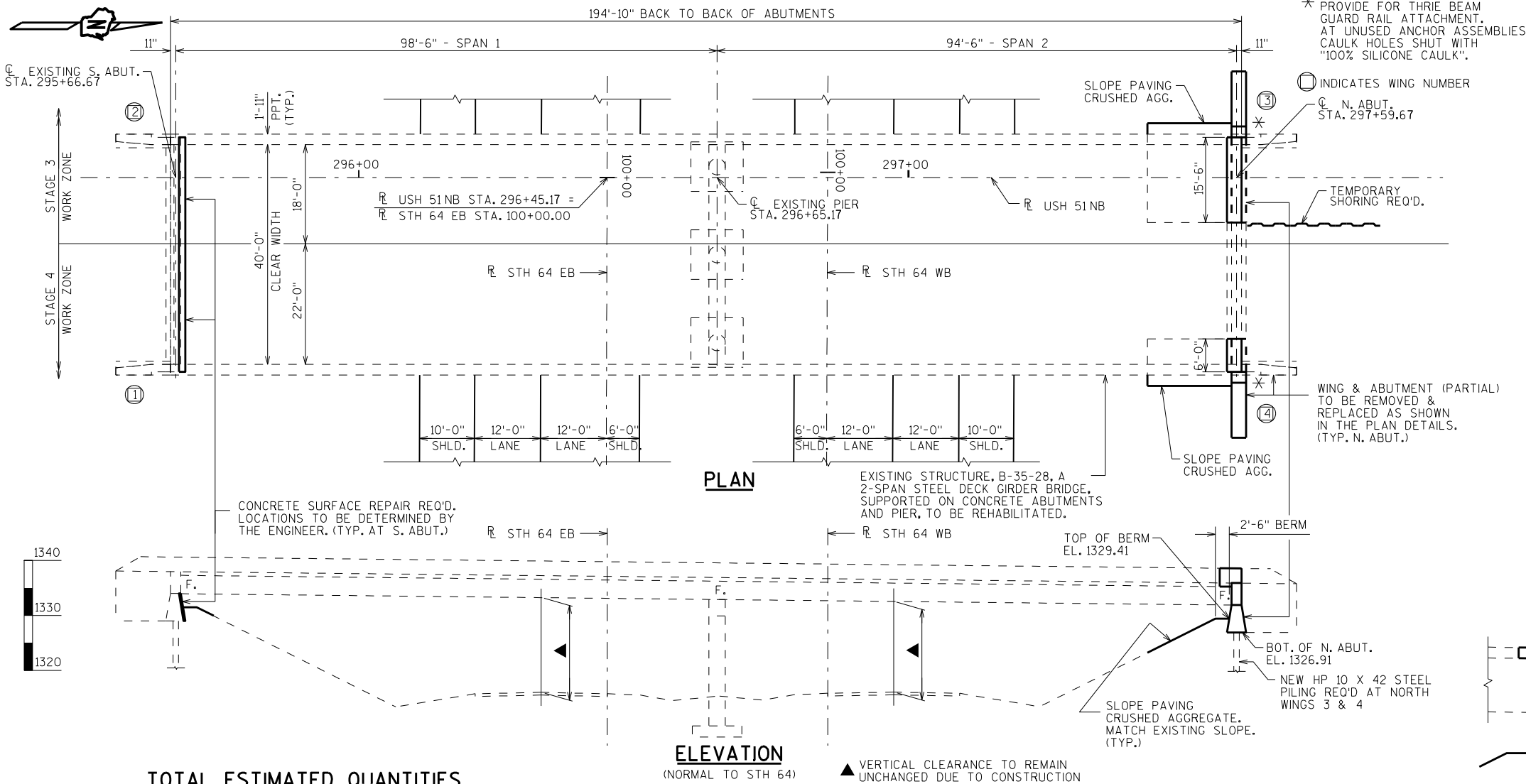


DETAIL D
FOR RIGHT LANE CLOSURE AT INTERSECTION
(WITH RIGHT TURN BAY OPEN)

TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016 /S/ Peter Anakobe Atepe
DATE STATEWIDE WORK ZONE TRAFFIC
FHWA SAFETY ENGINEER



DESIGN DATA

LIVE LOAD:
DESIGN RATING: HS-20
INVENTORY RATING: HS-20
OPERATING RATING: HS-34
MAXIMUM STANDARD PERMIT VEHICLE LOAD = 220 KIPS

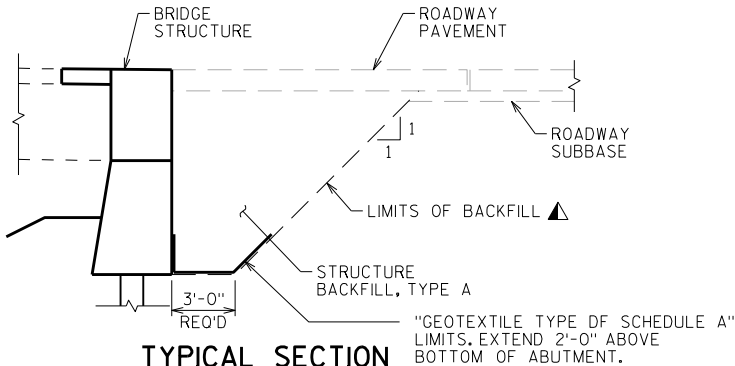
MATERIAL PROPERTIES:
CONCRETE MASONRY:
DECK, DIAPHRAGMS & PARAPETS
ALL OTHER
f'c = 4,000 P.S.I.
f'c = 3,500 P.S.I.
BAR STEEL REINFORCEMENT:
GRADE 60
fy = 60,000 P.S.I.

FOUNDATION DATA

WINGS TO BE SUPPORTED ON HP 10 X 42 STEEL PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS ** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 35'-0" LONG.
** THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

LIST OF DRAWINGS

1. ABUTMENT REPAIRS
2. REMOVALS & STAGING
3. NORTH ABUTMENT
4. NORTH ABUTMENT DETAILS
5. SUPERSTRUCTURE & PARAPET REPAIR DETAILS
6. PARAPET DETAILS



TYPICAL SECTION
THRU ABUTMENT

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

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.
THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.
BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE NOTED.
AT THE BACK FACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.
THE QUANTITY FOR BACKFILL STRUCTURE IS CALCULATED BASED ON THE DETAIL SHOWN ON THIS SHEET.
PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE REPAIRED TOP OF DECK.
PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND THE TOP OF THE EXISTING AND NEW PARAPETS.
THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH SLOPE PAVING MATERIAL TO THE EXTENT SHOWN ON SHEET 1 AND THE ABUTMENT DETAILS.
DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.
THE SUPERSTRUCTURE SHALL BE JACKED AND TEMPORARILY SUPPORTED DURING CONSTRUCTION OF THE NEW PORTION OF THE NORTH ABUTMENT. THIS CONSTRUCTION OPERATION SHALL BE PAID UNDER THE LUMP SUM BID ITEM 'BRIDGE JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE'.

PRIOR TO POURING NEW CONCRETE DIAPHRAGM, CLEAN AND PAINT EXISTING STEEL GIRDER ENDS. PAINTING LIMITS SHALL BE FROM THE GIRDER END TO 1'-0" BEYOND THE FACE OF THE CONCRETE DIAPHRAGM. THIS WORK WILL BE PAID UNDER THE BID ITEM "CLEANING AND PAINTING BEARINGS AND GIRDER ENDS". THE BEARINGS AND GIRDER ENDS SHALL BE PAINTED FEDERAL COLOR NO. 25240, BLUE.

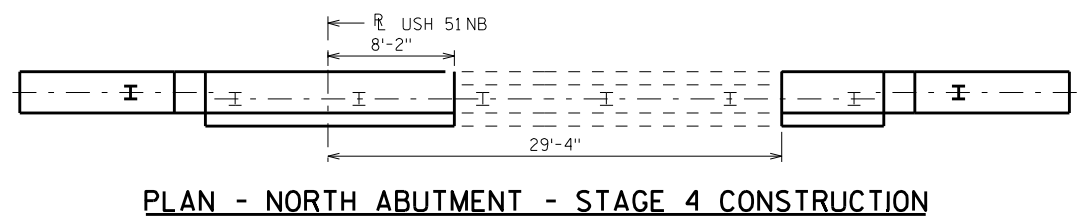
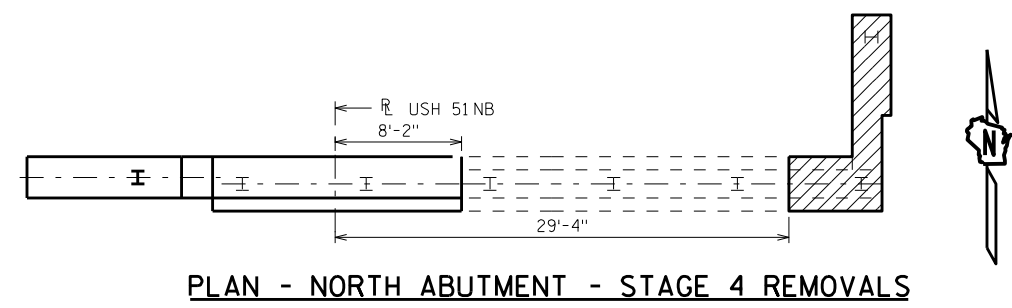
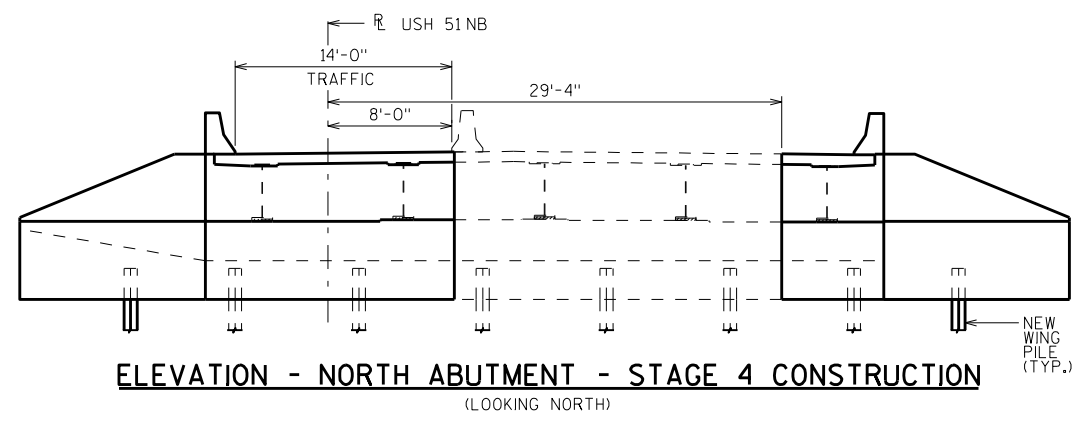
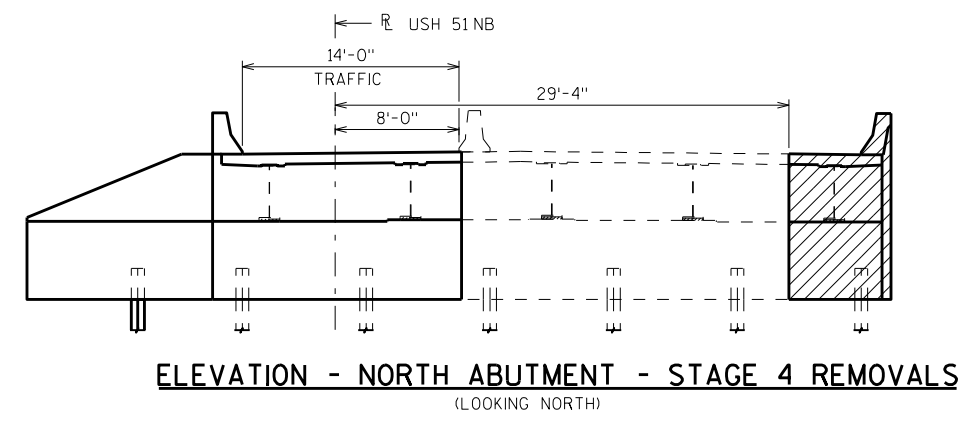
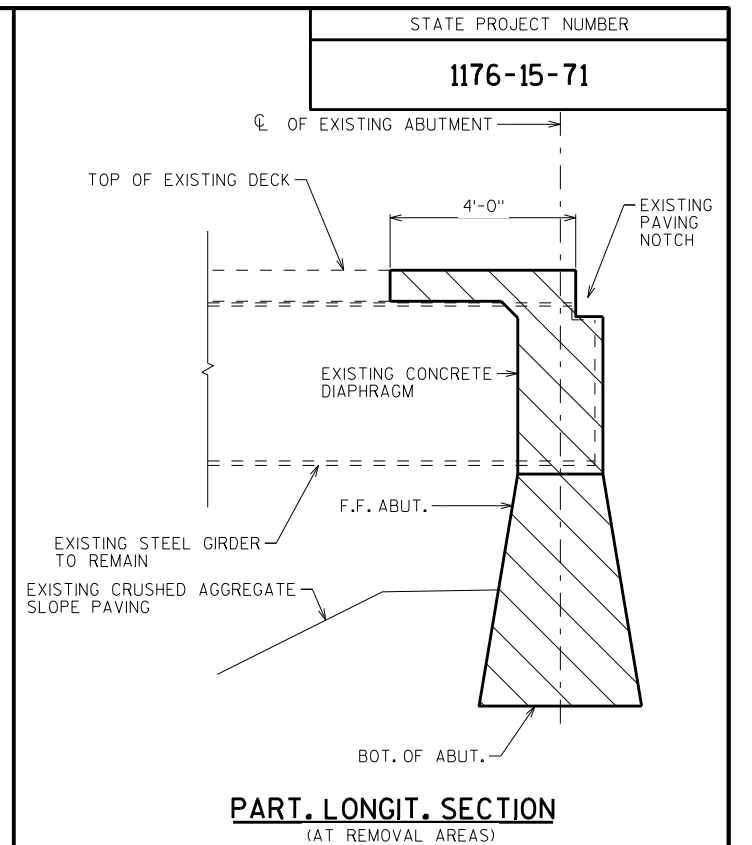
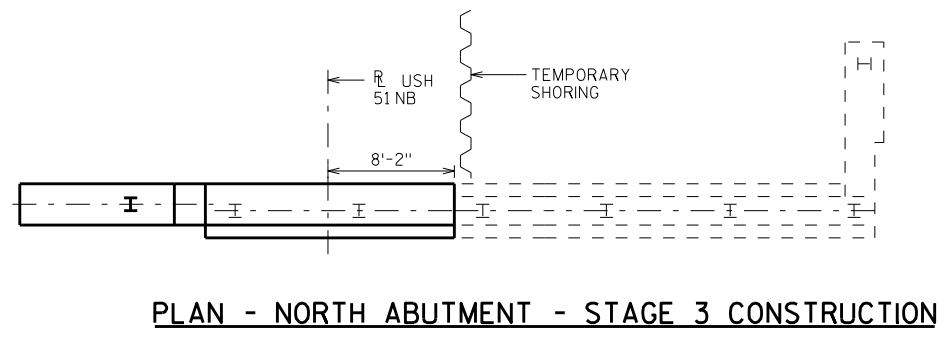
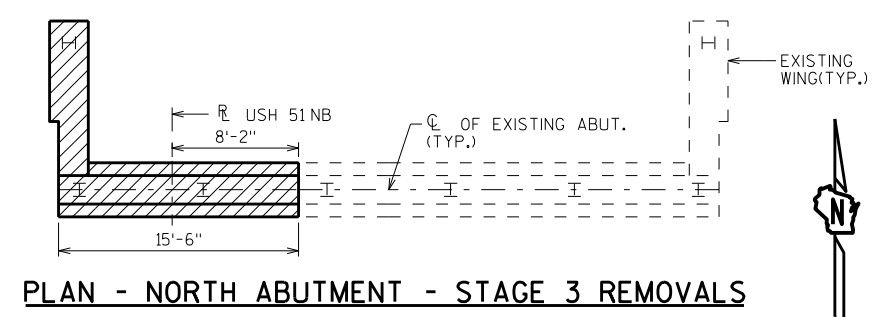
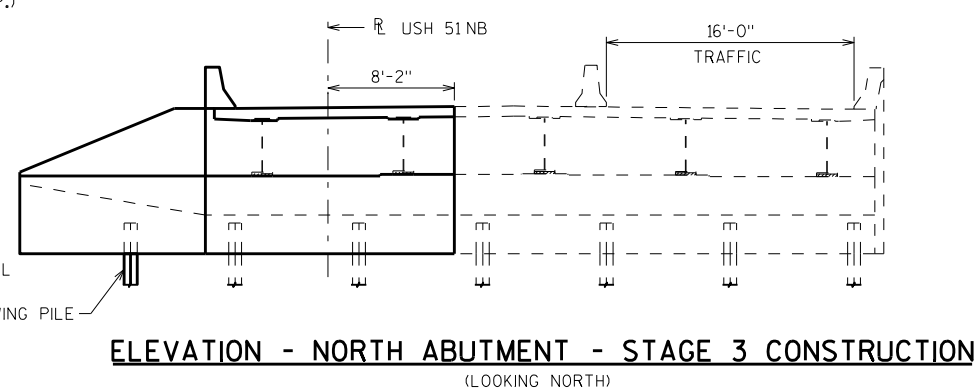
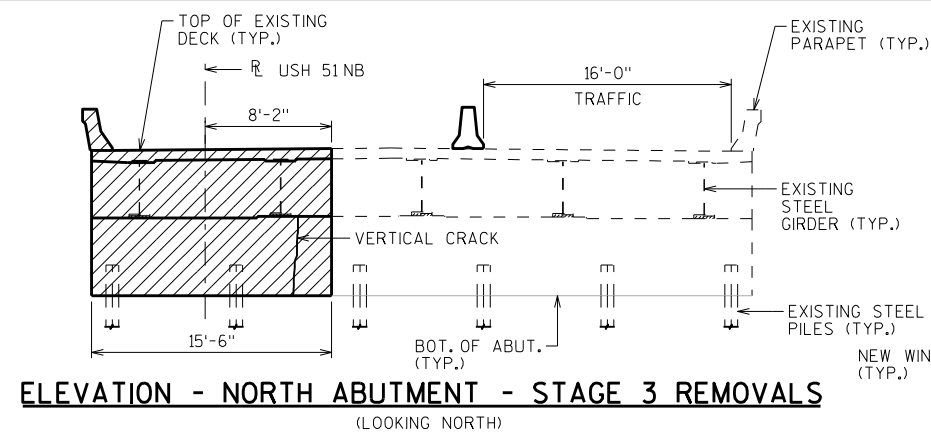
TOTAL ESTIMATED QUANTITIES

| BID ITEM NUMBER | BID ITEMS | UNIT | SUPER. | SOUTH ABUT. | NORTH ABUT. | TOTALS |
|-----------------|--|------|--------|-------------|-------------|------------|
| 203.0200 | REMOVING OLD STRUCTURE STA. 297+60 | LS | — | — | — | 1 |
| 206.1000 | EXCAVATION FOR STRUCTURES BRIDGES B-35-28 | LS | — | — | — | 1 |
| 210.1500 | BACKFILL STRUCTURE TYPE A | TON | — | — | 195 | 195 |
| 502.0100 | CONCRETE MASONRY BRIDGES | CY | 12 | — | 32 | 44 |
| 502.3200 | PROTECTIVE SURFACE TREATMENT | SY | 9 | — | — | 9 |
| 502.3210 | PIGMENTED SURFACE SEALER | SY | 166 | — | — | 166 |
| 502.4204 | ADHESIVE ANCHORS NO. 4 BARS | EACH | 12 | — | 12 | 24 |
| 502.4205 | ADHESIVE ANCHORS NO. 5 BARS | EACH | 8 | — | — | 8 |
| 502.4206 | ADHESIVE ANCHORS NO. 6 BARS | EACH | — | — | 4 | 4 |
| 502.4208 | ADHESIVE ANCHORS NO. 8 BARS | EACH | — | — | 8 | 8 |
| 505.0400 | BAR STEEL REINFORCEMENT HS STRUCTURES | LB | — | — | 1430 | 1430 |
| 505.0600 | BAR STEEL REINFORCEMENT HS COATED STRUCTURES | LB | 1470 | — | 1170 | 2640 |
| 506.2105 | BEARING PADS | SF | 3 | — | — | 3 |
| 509.1500 | CONCRETE SURFACE REPAIR | SF | — | 20 | — | 20 |
| 511.1200 | TEMPORARY SHORING B-35-28 | SF | — | — | 100 | 100 |
| 516.0500 | RUBBERIZED MEMBRANE WATERPROOFING | SY | — | — | 10 | 10 |
| 550.1100 | PILING STEEL HP 10-INCH X 42 LB | LF | — | — | 70 | 70 |
| 604.0500 | SLOPE PAVING CRUSHED AGGREGATE | SY | — | 10 | 55 | 65 |
| 612.0406 | PIPE UNDERDRAIN WRAPPED 6-INCH | LF | — | — | 70 | 70 |
| 614.0150 | ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD | EACH | 2 | — | — | 2 |
| 645.0111 | GEOTEXTILE TYPE DF SCHEDULE A | SY | 41 | — | — | 41 |
| SPV.0060 | CLEANING AND PAINTING BEARINGS AND GIRDER ENDS | EACH | 3 | — | — | 3 |
| SPV.0105 | BRIDGE JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE | LS | — | — | — | 1 |
| | NON-BID ITEMS | | | | | |
| | FILLER | SIZE | — | — | — | 1/2", 3/4" |

STATE PROJECT NUMBER
1176-15-71

STRUCTURE DESIGN CONTACTS:
BRANDAN BURGER (608) 267-4019
LAURA SHADEWALD (608) 267-9592

| | | | |
|--|---------|-------------------|--------------|
| NO. | DATE | REVISION | BY |
| BUREAU OF STRUCTURES | | | |
| ACCEPTED <i>William C. Decker</i> 7/10/17 CHIEF STRUCTURES DESIGN ENGINEER DATE | | | |
| STRUCTURE B-35-28 | | | |
| USH 51NB OVER STH 64 | | | |
| COUNTY | LINCOLN | TOWN/CITY/VILLAGE | PINE RIVER |
| DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS | | | |
| DESIGNED BY | BLB | DESIGNED CK'D. | MJL |
| DRAWN BY | BLB | PLANS CK'D. | MJL |
| ABUTMENT REPAIRS | | | SHEET 1 OF 6 |



NOTES

REMOVE PARAPETS, DECK, CONCRETE DIAPHRAGM AND ABUTMENT TO THE LIMITS SHOWN.

SALVAGE REINFORCING STEEL EXTENDING FROM REMAINING PORTIONS OF DECK, DIAPHRAGM AND ABUTMENTS TO THE EXTENT POSSIBLE.

SALVAGE ABUTMENT PILING AND USE IN CONSTRUCTION OF THE NEW ABUTMENT. DO NOT DAMAGE EXISTING PILING DURING CONCRETE REMOVAL OPERATIONS.

SALVAGE EXISTING STEEL GIRDERS. DO NOT DAMAGE GIRDERS DURING CONCRETE REMOVAL OPERATIONS.

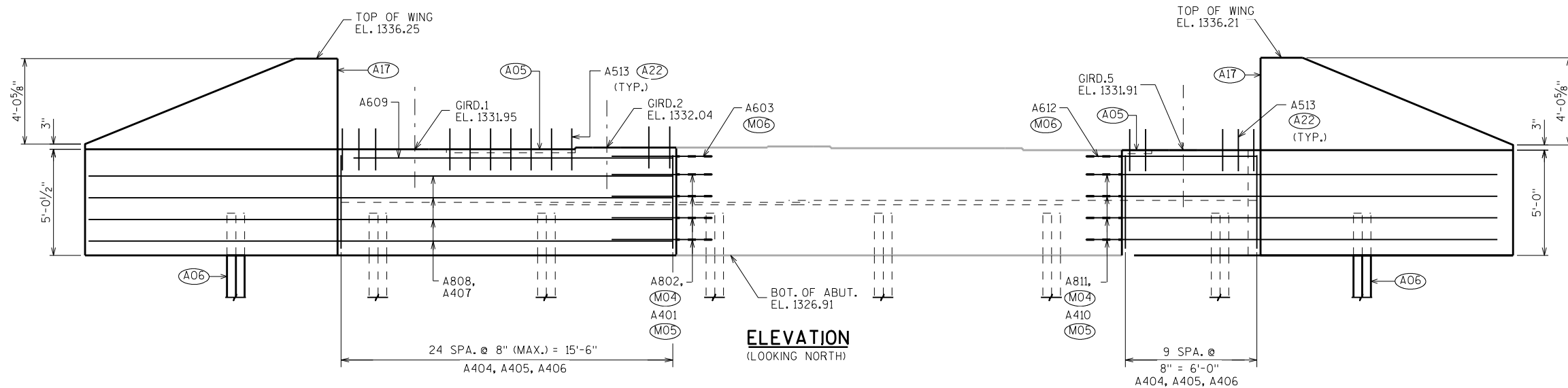
ALL REMOVALS SHALL BE DEFINED BY A 1" DEEP SAW CUT.

LEGEND

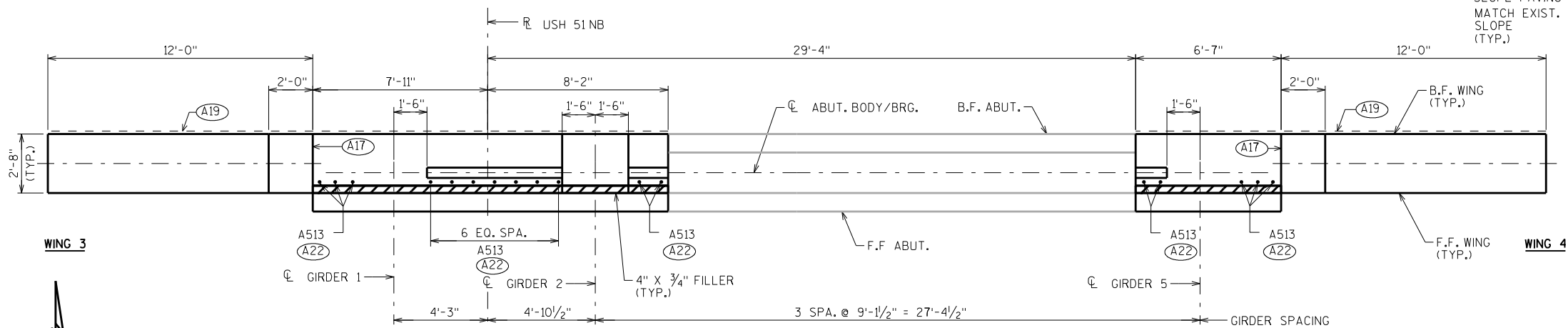
INDICATES AREAS OF CONCRETE REMOVAL

| | | | |
|---|------|----------|-----------------|
| STATE PROJECT NUMBER | | | |
| 1176-15-71 | | | |
| NO. | DATE | REVISION | BY |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION | | | |
| STRUCTURE B-35-28 | | | |
| DRAWN BY | | BLB | PLANS CK'D. MJL |
| REMOVALS & STAGING | | | SHEET 2 |

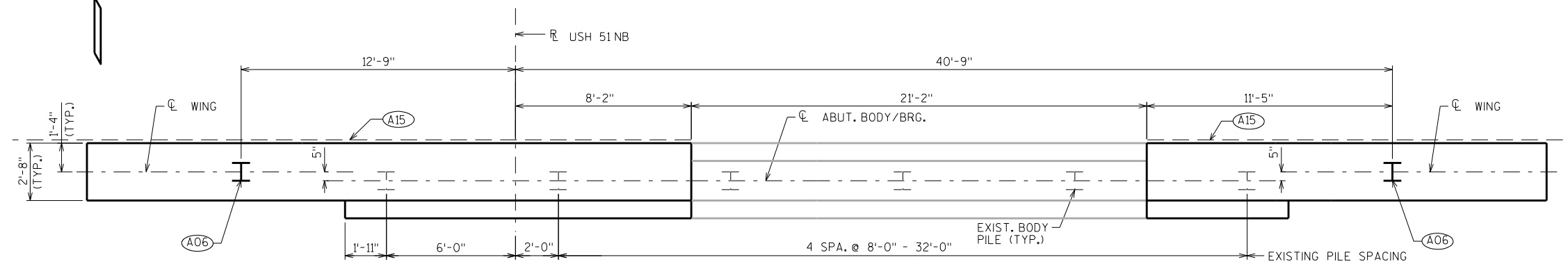
SCALE = 6.00



ELEVATION
(LOOKING NORTH)



PLAN



PILE PLAN

(M05) ADHESIVE ANCHORS NO. 4 BARS. EMBED 10\"

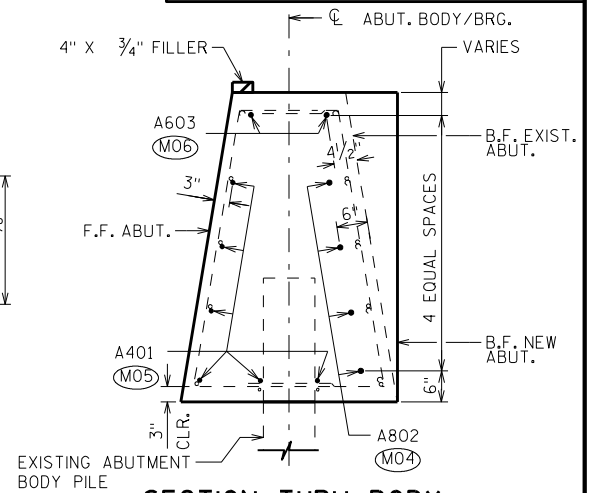
(M06) ADHESIVE ANCHORS NO. 6 BARS. EMBED 12\"

● LAP WITH CORRESPONDING ADHESIVE ANCHORS OF THE SAME SIZE.

(A22) BARS @ 1'-0\"

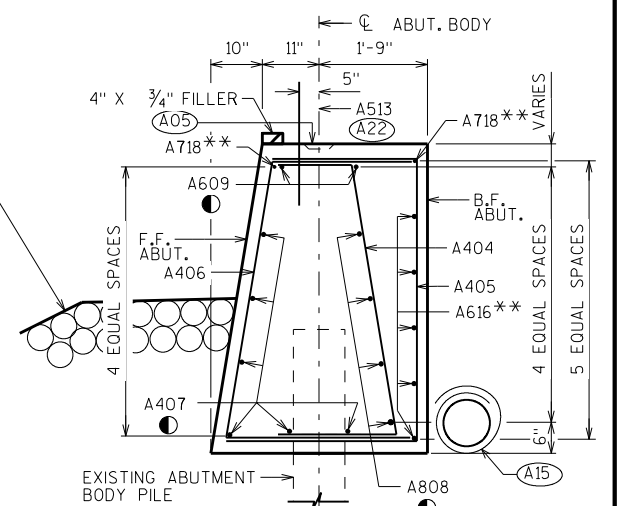
(M04) ADHESIVE ANCHORS NO. 8 BARS. EMBED 12\"

** EXTEND BARS FULL LENGTH INTO ABUTMENT.



SECTION THRU BODY

(AT EXISTING/NEW INTERFACE)
(STAGE 3 CONST., STAGE 4 SIMILAR)



SECTION THRU BODY

(SHOWING NEW PORTION OF ABUTMENT)
(STAGE 3 CONST., STAGE 4 SIMILAR)

(A05) CONST. JOINT-FORMED BY BEVELED 2 x 6 BETWEEN BEAM SEATS.

(A06) SUPPORT WINGS ON HP 10 x 42 STEEL PILING, ESTIMATED 35'-0\"

(A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.

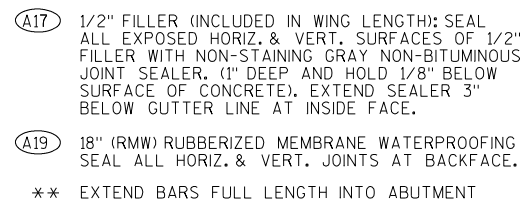
(A17) 1/2\"

(A19) 18\"

| NO. | DATE | REVISION | BY |
|---|------|----------|-----------------|
| | | | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION | | | |
| STRUCTURE B-35-28 | | | |
| DRAWN BY | | BLB | PLANS CK'D. MJL |
| NORTH ABUTMENT | | SHEET 3 | |



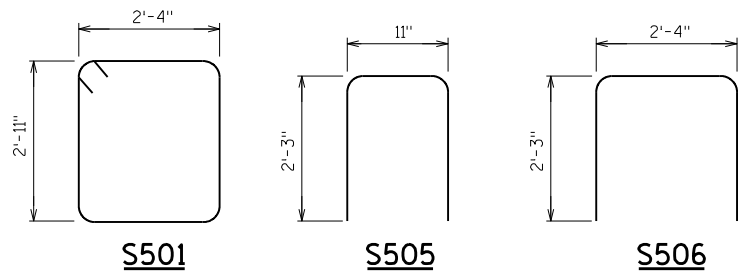
FLANGE SHOWN, WEB SIMILAR



BILL OF BARS

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

| BAR MARK | COAT | NO. REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION |
|------------|------|------------|--------|------|------------|-------------------------------------|
| S501 | X | 22 | 11'-2" | X | | DIAPHRAGM AT ABUT. - VERT. |
| (M05) S402 | X | 12 | 3'-2" | | | DIAPHRAGM AT ABUT. - HORIZ. |
| S403 | X | 6 | 7'-9" | | | DIAPHRAGM AT ABUT. - HORIZ. |
| S404 | X | 12 | 2'-9" | | | DIAPHRAGM AT ABUT. - HORIZ. |
| S505 | X | 16 | 5'-2" | X | | DIAPHRAGM AT ABUT. - VERT. |
| S506 | X | 6 | 6'-7" | X | | DIAPHRAGM AT ABUT. AT PPTS. - VERT. |
| (M07) S507 | X | 8 | 3'-7" | | | ANCHOR - DECK - HORIZ. |
| S508 | X | 20 | 3'-8" | | | DECK - LONGIT. - STAGE 2 |
| S509 | X | 21 | 3'-8" | | | DECK - LONGIT. - STAGE 2 |
| S510 | X | 4 | 5'-1" | | | DECK - LONGIT. - UNDER PPT. |
| S611 | X | 10 | 15'-2" | | | DECK - TRANS. - STAGE 2 |
| S612 | X | 3 | 15'-9" | | | DECK - TRANS. - STAGE 2 |
| S513 | X | 6 | 3'-8" | | | DECK - LONGIT. - STAGE 3 |
| S514 | X | 7 | 3'-8" | | | DECK - LONGIT. - STAGE 3 |
| S515 | X | 4 | 5'-1" | | | DECK - LONGIT. - UNDER PPT. |
| S616 | X | 10 | 5'-8" | | | DECK - TRANS. - STAGE 3 |
| S617 | X | 3 | 6'-3" | | | DECK - TRANS. - STAGE 3 |
| S618 | X | 8 | 1'-7" | | | DECK - UNDER PPT. |

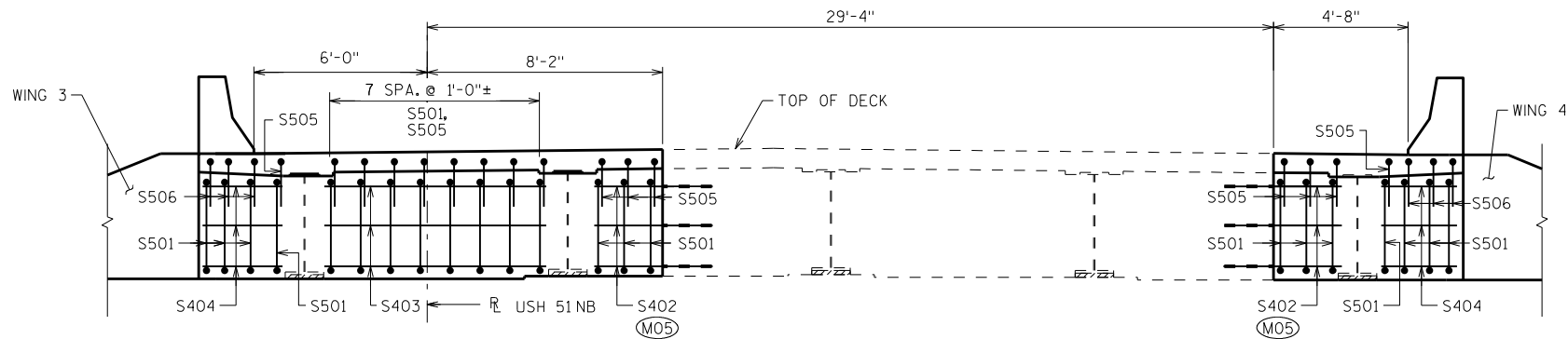
(M07) ADHESIVE ANCHORS NO. 5 BARS.
EMBED 12" IN CONCRETE.(M05) ADHESIVE ANCHORS NO. 4 BARS.
EMBED 10" IN CONCRETE.

ROUTE OUT $\frac{1}{4}$ " X $\frac{3}{8}$ " DEEP AT JOINT.
FILL IN WITH LOW VISCOSITY CRACK
SEALER PER THE APPROVED PRODUCTS
LIST. (INCIDENTAL TO BID ITEM
"CONCRETE MASONRY BRIDGES")

DECK CONSTRUCTION JOINT
DETAIL

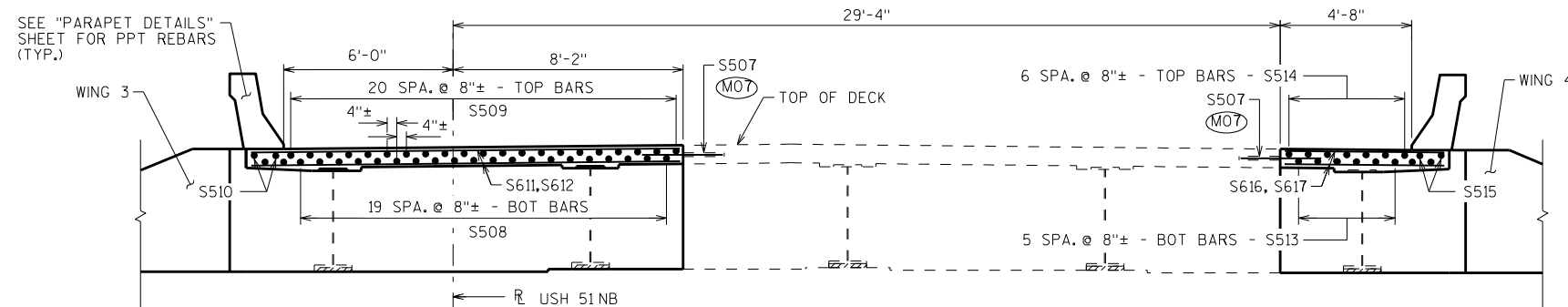
| NO. | DATE | REVISION | BY |
|---|------|----------|-----------------|
| | | | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION | | | |
| STRUCTURE B-35-28 | | | |
| DRAWN BY | | BLB | PLANS CK'D. MJL |
| SUPERSTRUCTURE & PARAPET REPAIR DETAILS | | | SHEET 5 |

SCALE = 3:00



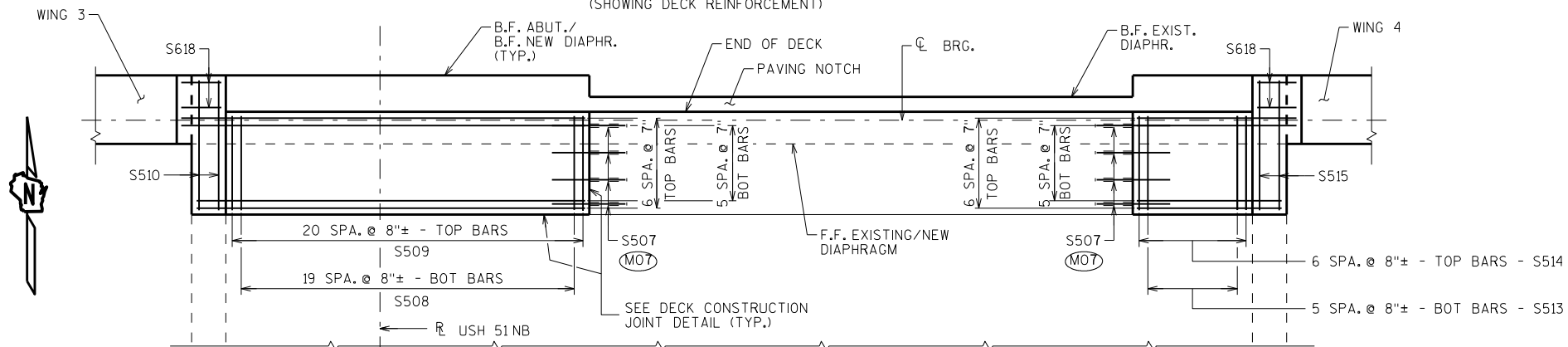
CROSS SECTION THRU ROADWAY AT N. ABUT. REPAIR

(SHOWING DIAPHRAGM REINFORCEMENT)



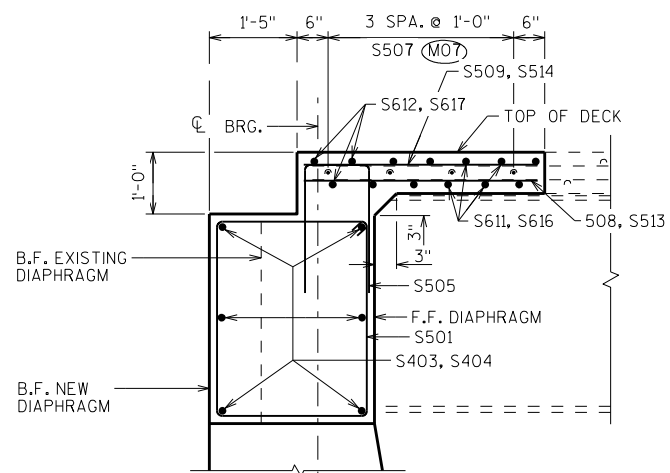
CROSS SECTION THRU ROADWAY AT N. ABUT. REPAIR

(SHOWING DECK REINFORCEMENT)



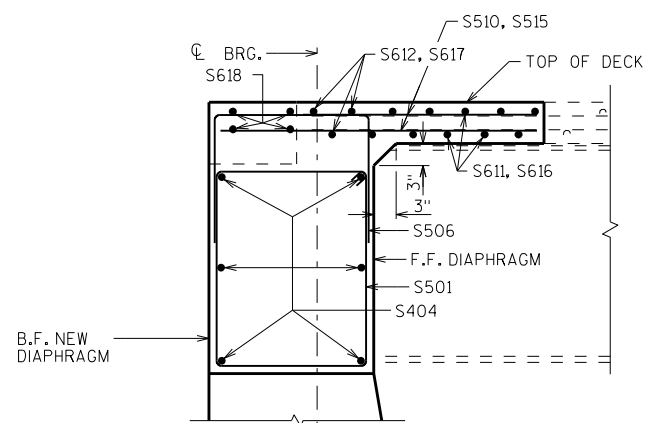
PARTIAL PLAN AT N. ABUTMENT REPAIR

(SHOWING DECK REINFORCEMENT)



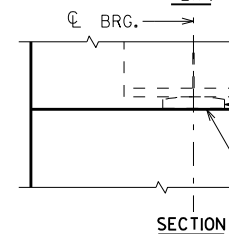
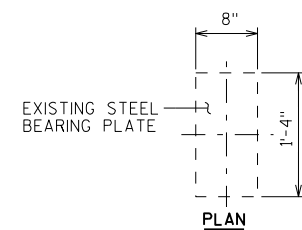
PART. LONGIT. SECTION AT N. ABUT. REPAIR

(BETWEEN PARAPETS)



PART. LONGIT. SECTION AT N. ABUT. REPAIR

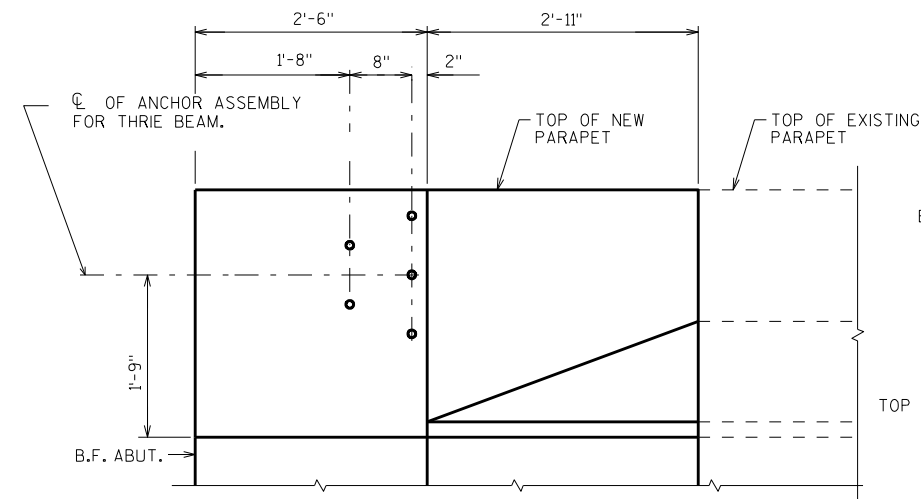
(UNDER PARAPET)

FIXED BEARING
AT ABUTMENTS

SALVAGE, CLEAN, PAINT AND REUSE
EXISTING STEEL BEARING PLATE.
PAID FOR UNDER THE BID ITEM "CLEANING
AND PAINTING BEARINGS AND GIRDER ENDS".
F.F. ABUT.
REPLACE $\frac{1}{8}$ " BEARING PAD

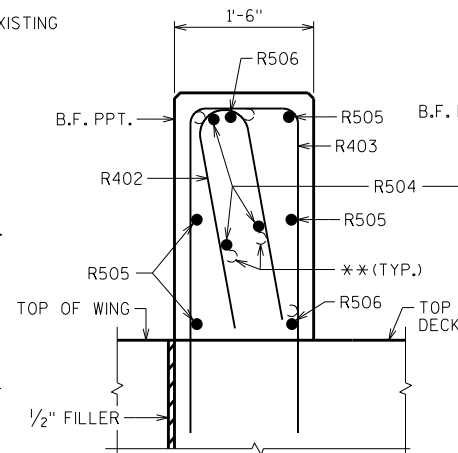
FOR ABUTMENT PARAPETS

| BAR MARK | NO. REO'D. | | LENGTH | BENT | LOCATION |
|-------------|----------------|----------------|--------|------|-----------------|
| | NORTH ABUT. | SOUTH ABUT. | | | |
| R401 | 2 | X | 4'-8" | X | PARAPET - VERT. |
| R402 | 26 | X | 4'-11" | X | PARAPET - VERT. |
| R403 | 16 | X | 8'-0" | X | PARAPET - VERT. |
| R504 | 6 | X | 5'-1" | | PARAPET - HOR. |
| R505 | 8 | X | 2'-4" | | PARAPET - HOR. |
| R506 | 4 | X | 5'-1" | X | PARAPET - HOR. |
| R407 | 8 | X | 7'-0" | X | PARAPET - VERT. |
| R408 | 8 | X | 2'-9" | X | PARAPET - VERT. |

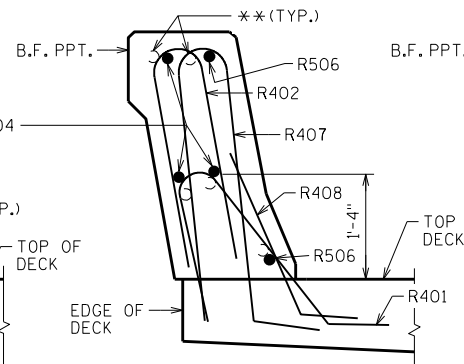


INSIDE ELEVATION

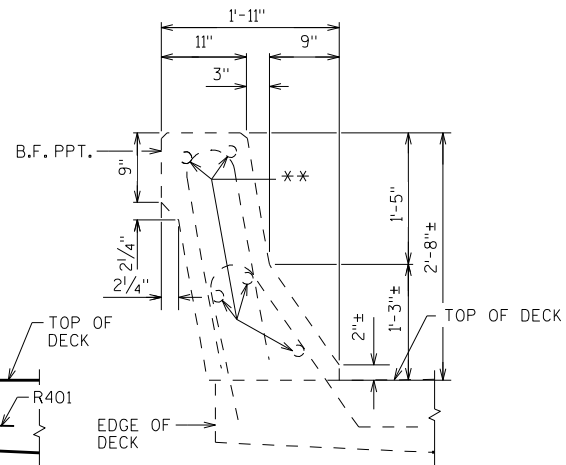
(EAST PPT. SHOWN, WEST PPT. SIMILAR)



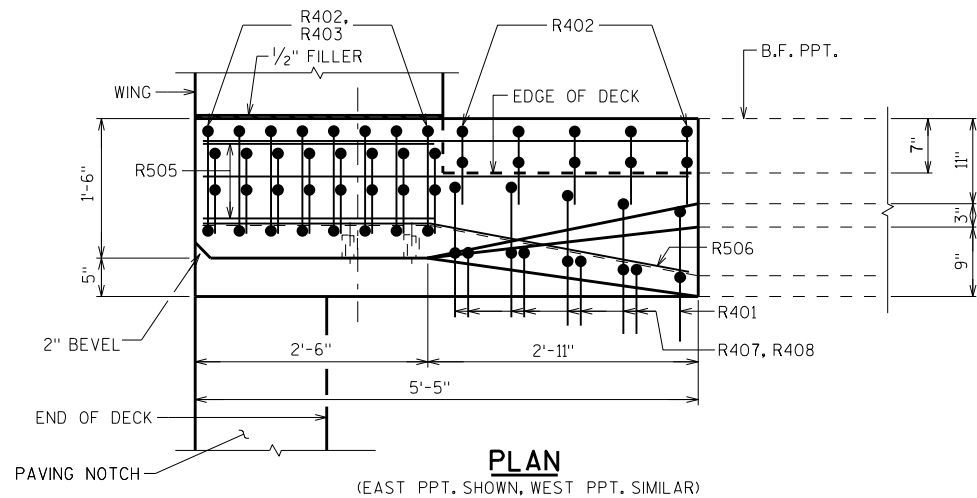
SECTION A - A



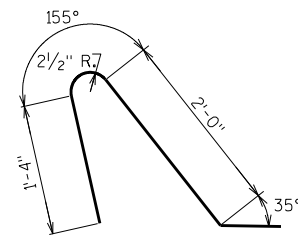
SECTION B - B



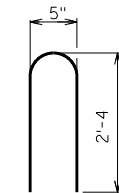
SECTION C - C



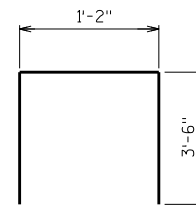
PLAN
(EAST PPT. SHOWN, WEST PPT. SIMILAR)



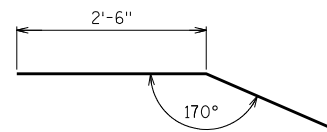
R401



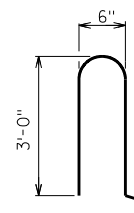
R402



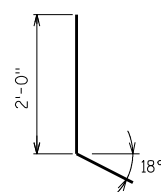
R403



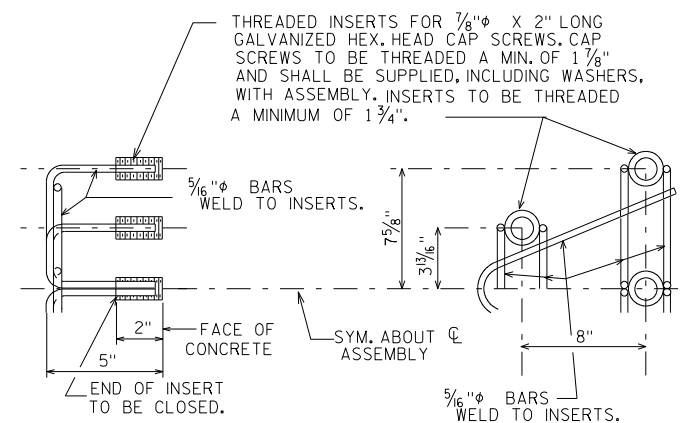
R506



R407

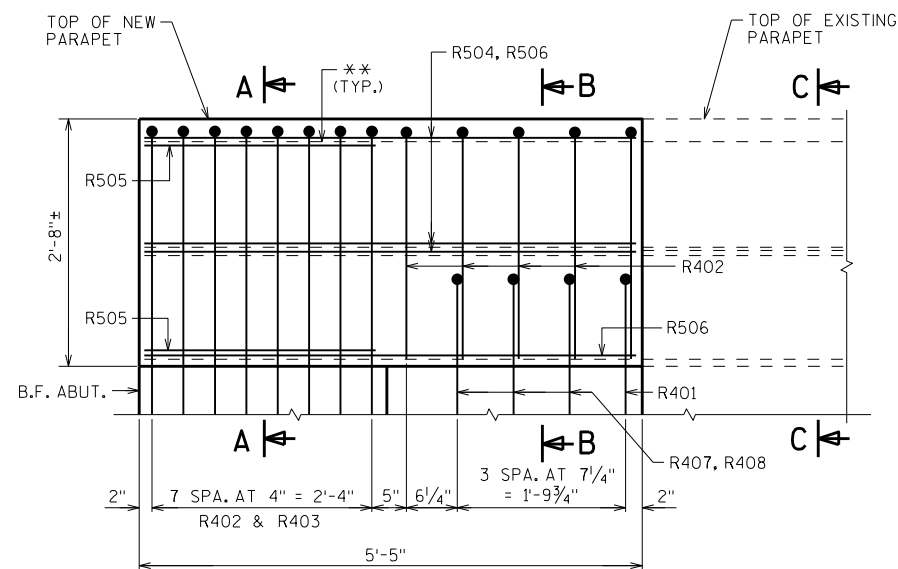


R408



DETAIL OF ANCHOR ASSEMBLY

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



OUTSIDE ELEVATION
(WEST PPT. SHOWN, EAST PPT. SIMILAR)

**EXISTING PARAPET BARS. DURING CONCRETE REMOVAL, TAKE CARE NOT TO DAMAGE EXISTING REINFORCEMENT. SALVAGE, STRAIGHTEN, AND INCORPORATE IN NEW CONSTRUCTION, AS SHOWN.

| | | | | | |
|--|------|-------------|---------|----------------|------------|
| | | | | | |
| NO. | DATE | REVISION | | | BY |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION | | | | | |
| STRUCTURE B-35-28 | | | | | |
| | | DRAWN BY | BLB | PLANS CK'D. | MJL |
| PARAPET DETAILS | | | SHEET 6 | | |
| | | | | | |



Wisconsin Department of Transportation

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through innovation and exceptional service.

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