

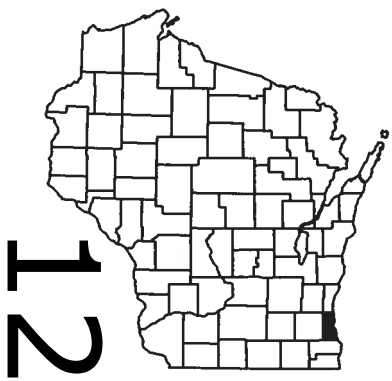
WKE

Feb 08, 2022

ORDER OF SHEETS

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

TOTAL SHEETS = 130



DESIGN DESIGNATION

| | | | |
|--------------|------|---|-----------|
| A.A.D.T. | 2019 | = | 26,868 |
| A.A.D.T. | 2042 | = | 40,759 |
| D.H.V. | | = | 3,788 |
| D.D. | | = | 55%/45% |
| T. | | = | 4.2% |
| DESIGN SPEED | | = | 45 MPH |
| ESALS | | = | 1.616,722 |

CONVENTIONAL SYMBOLS

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

| | |
|--|-------|
| | ROCK |
| | LABEL |
| | 36.56 |
| | |
| | E |
| | FO |
| | G |
| | SAN |
| | SS |
| | T |
| | W |
| | |
| | |
| | |

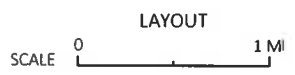
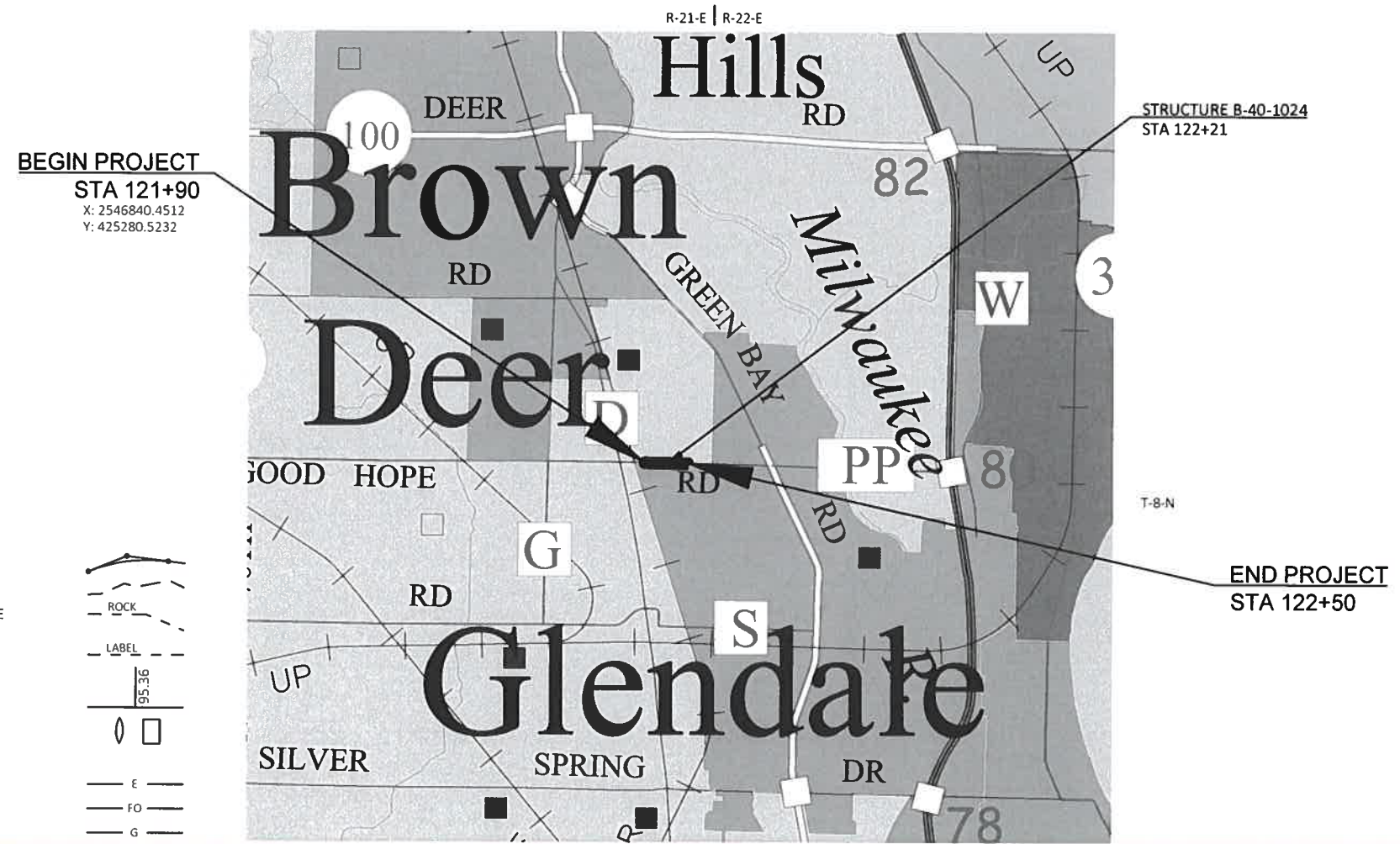
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

CTH PP (GOOD HOPE ROAD)
BRIDGE OVER BR MILWAUKEE RIVER

CTH PP
MILWAUKEE COUNTY

STATE PROJECT NUMBER
2130-15-70



TOTAL NET LENGTH OF CENTERLINE = 0.011 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE BASED ON WISCONSIN STATE PLANE SYSTEM, SOUTH ZONE, NORTH AMERICAN HORIZONTAL DATUM OF 1927 (NAD27) IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES.

ELEVATIONS ARE REFERENCED TO NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD1929).

| STATE PROJECT | FEDERAL PROJECT | |
|---------------|-----------------|----------|
| | PROJECT | CONTRACT |
| 2130-15-70 | | |
| | | |
| | | |
| | | |

ACCEPTED FOR
MILWAUKEE COUNTY DEPARTMENT OF TRANSPORTATION
Date: 10/20/21
Date: 10-20-21

ORIGINAL PLANS PREPARED BY
Michael Baker INTERNATIONAL
LINDSAY M. KAUFMANN
E-434390
MILWAUKEE, WI
DATE: 11/01/2021

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PREPARED BY
Surveyor: BAXTER & WOODMAN, CONSULTING ENGINEERS
Designer: MICHAEL BAKER INTERNATIONAL
Project Manager: MICHAEL BAIRD, PE
Regional Examiner:
Regional Supervisor: JEFFREY BOHEN, PE

APPROVED FOR THE DEPARTMENT
DATE: 10/27/2021
Michael J. Baird (Signature)

COUNTY: MILWAUKEE

PROJECT ID: 2130-15-70

GENERAL NOTES

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

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. IT IS THE CONTRACTORS RESPONSIBILITY TO HAVE ALL UTILITIES LOCATED BEFORE EXCAVATIONS.

ALL CURB AND GUTTER RADII SHOWN ON THE PLANS ARE MEASURED TO THE FLANGE LINE. DISTANCES SHOWN FOR CURB AND GUTTER IN RADII ARE MEASURED ALONG THE FLANGE LINE.

EXPANSION JOINTS SHALL BE CONSTRUCTED AT ALL RADIUS POINTS IN CURB AND GUTTER.

CONSTRUCTION JOINTS IN CURB AND GUTTER SHALL BE SPACED AT 15 FEET MINIMUM.

DISTURBED AREAS WITHIN THE PROJECT LIMITS SHALL BE RESTORED WITH 4" TOPSOIL, FERTILIZER, AND SOD AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

ASPHALTIC SURFACE TO BE PLACED IN ONE LIFT AND THE QUANTITY IS MEASURED FOR PAYMENT BY THE TON. THE DEPTH OR THICKNESS OF THE COURSE SHOWN ON THE PLANS IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND UPON THE DISTRIBUTION OF MATERIAL AS DIRECTED BY THE ENGINEER.

THE EXACT LOCATION OF EROSION CONTROL DEVICES SHALL BE DETERMINED IN THE FIELD, AND AS DIRECTED BY THE ENGINEER.

ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED IN PLACE UNTIL SUCH TIME AS THE ENGINEER DETERMINES THAT THEY ARE NO LONGER NEEDED.

INLET PROTECTION, TYPE B SHALL BE USED ON ALL INLETS/CATCH BASINS.

A VERTICAL SAWCUT SHALL BE MADE THROUGH EXISTING DRIVEWAYS AND PAVEMENTS AT MATCHES.

ALL EXISTING DRIVEWAYS, WHEN DISTURBED, SHALL BE REPLACED IN THEIR EXISTING LOCATIONS UNLESS SPECIFIED IN THE PLAN OR DIRECTED BY THE ENGINEER.

ALL CONCRETE SHALL BE REMOVED IN SUCH A MANNER AS TO AVOID DISTURBANCE OF EXISTING BASE COURSE.

ALL ELEVATIONS AND TIE-IN POINTS REQUIRE FIELD VERIFICATION BY THE CONTRACTOR INCLUDING PAVEMENT, CURB & GUTTER, INLETS, AND MANHOLES.

TRANSVERSE JOINTS TO BE LAID OUT PER SDD CONCRETE PAVEMENT JOINTING AND CONCRETE PAVEMENT REPAIR AND REPLACEMENT.

TRAFFIC CONTROL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AN 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 FT (500 FT DESIRABLE) DISTANCE TO EXISTING SIGNS.

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED IN THE PLANS.

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

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

ALL EXISTING CONFLICTING PAVEMENT MARKING SHOULD BE REMOVED.

ORDER OF SECTION 2 DETAIL SHEETS

- GENERAL NOTES
- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- REMOVAL PLAN
- PLAN DETAILS
- EROSION CONTROL
- PAVEMENT MARKING AND SIGNING
- STAGING AND TRAFFIC CONTROL PLAN

UTILITY CONTACTS

AT&T - COMMUNICATIONS
 JAY BULANEK
 2005 PEWAUKEE RD
 WAUKESHA, WI 53188
 PHONE: (262) 896-7669 (OFFICE)
 PHONE: (414) 491-2855 (MOBILE)
 EMAIL: JB5175@ATT.COM

CHARTER - COMMUNICATIONS
 CHARLES BRASILE
 1320 N. MARTIN LUTHER KING DR.
 MILWAUKEE, WI 53212
 PHONE: (414) 430-5812
 EMAIL: WIS.ENGINEERING@CHARTER.COM

MIDWEST FIBER NETWORKS - COMMUNICATIONS
 RICHARD TRGOVEC
 6070 N. FLINT RD
 GLENDALE, WI 53209
 PHONE: (414) 672-5612
 EMAIL: RTRGOVEC@MIDWESTFIBERNETWORKS.COM

CITY OF GLENDALE - WATER/SANITARY SEWER
 CHARLIE IMIG
 5909 N MILWAUKEE RIVER PARKWAY
 GLENDALE, WI 53209
 PHONE: (414) 228-1746
 EMAIL: C.IMIG@GLENDALE-WI.GOV

MMSD - SEWER
 JAMES ROMANOWSKI
 260 W. SEEBOTH STREET
 MILWAUKEE, WI 53204
 PHONE: (414) 225-2241
 EMAIL: JROMANOWSKI@MMSD.COM

MILWAUKEE COUNTY COMMUNICATIONS
 SCOTT SCHWEITZER
 10320 W. WATERTOWN PLANK RD
 1ST FLOOR
 WAUWATOSA, WI 53226
 PHONE: (414) 257-6566
 EMAIL: SCOTT.SCHWEITZER@MILWAUKEECOUNTYWI.GOV

WE ENERGIES - GAS AND ELECTRIC
 ALEX DANTINNE
 500 S. SEEBOTH STREET
 WEST ALLIS, WI 53214
 PHONE: (920) 621-6903
 EMAIL: ALEX.DANTINNE@DAARCORP.COM

SEWRPC - STRUCTURES
 ROB MERRY
 W239 N1812 ROCKWOOD DR
 P.O. BOX 1607
 WAUKESHA, WI 53187-1607
 PHONE: (262) 547-6722 EXT. 289
 EMAIL: RMERRY@SEWRPC.ORG

WISDOT ITS
 JOHN MITTELSTADT
 433 W ST. PAUL AVE
 MILWAUKEE, WI 53202
 PHONE: (608) 205-7859
 EMAIL: JOHN.MITTELSTADT@DOT.WI.GOV



AGENCIES

MILWAUKEE COUNTY

ANDREA WEDDLE-HENNING
 DIRECTOR OF TRANSPORTATION ENGINEERING
 TRANSPORTATION SERVICES DIVISION
 10320 W. WATERTOWN PLANK RD: 2ND FLOOR
 WAUWATOSA, WI 53226
 PHONE: (414) 257-5910
 EMAIL: ANDREA.WEDDLE-HENNING@MILWAUKEECOUNTYWI.GOV

EDUARDO SANTIAGO
 DIRECTOR
 HIGHWAY MAINTENANCE DIVISION
 10190 W. WATERTOWN PLANK RD
 1ST FLOOR
 WAUWATOSA, WI 53226
 PHONE: (414) 257-4563
 EMAIL: EDUARDO.SANTIAGO@MILWAUKEECOUNTYWI.GOV

SARAH TOOMSEN
 MANAGER OF PLANNING & DEVELOPMENT
 PARKS DEPARTMENT
 9480 WATERTOWN PLANK RD
 WAUWATOSA, WI 53226
 PHONE: (414) 257-7389
 EMIAL: SARAH.TOOMSEN@MILWAUKEECOUNTYWI.GOV

BLAKE PRUSAK
 MECHANICAL SERVICES MANAGER
 PARKS DEPARTMENT
 9480 WATERTOWN PLANK RD
 WAUWATOSA, WI 53226
 PHONE: (414) 258-2322
 EMAIL: BLAKE.PRUSAK@MILWAUKEECOUNTYWI.GOV

DESIGN CONTACT

MICHAEL BAKER INTERNATIONAL
 JASON SADOWSKI
 250 E. WISCONSIN AVE, SUITE 1725
 MILWAUKEE, WI 53202
 PHONE: (414) 751-9986
 EMAIL: JASON.SADOWSKI@MBAKERINTL.COM

DNR CONTACT

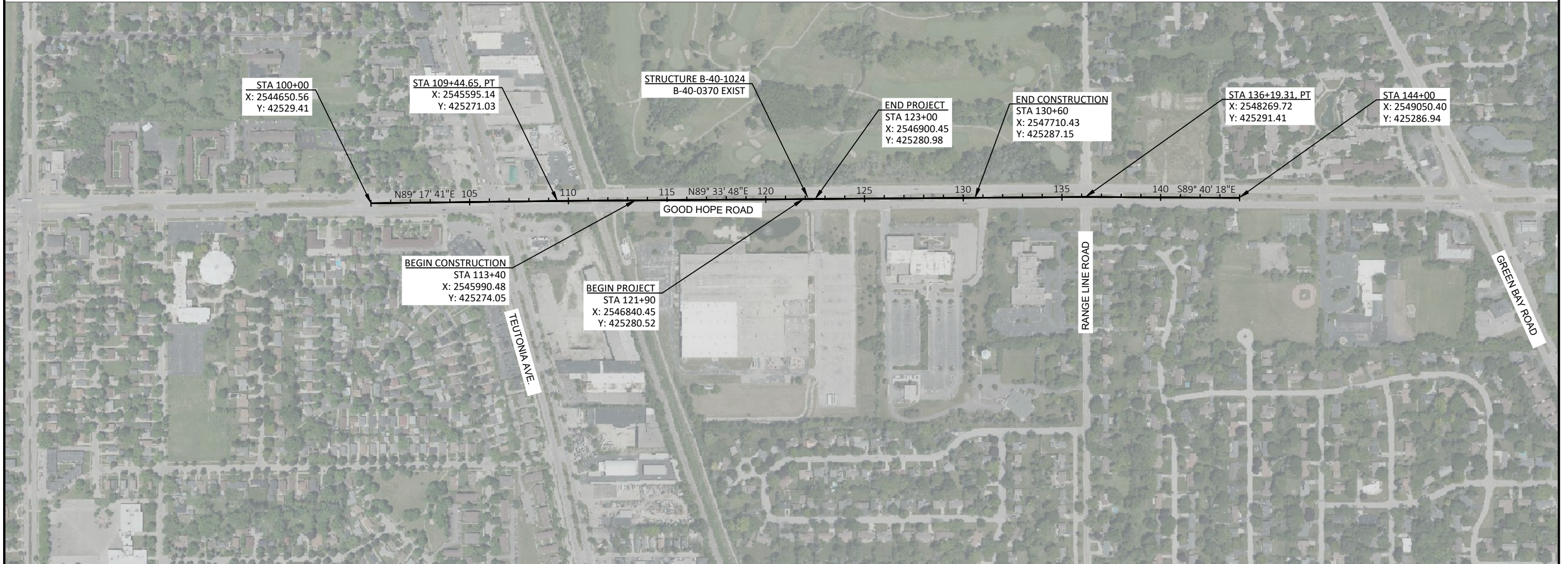
KRISTINA BETZOLD
 ENVIRONMENTAL ANALYSIS AND REVIEW SPECIALIST
 WISCONSIN DEPARTMENT OF NATURAL RESOURCES
 2300 N. DR. MARTIN LUTHER KING JR. DR
 MILWAUKEE, WI 53212
 PHONE: (414) 507-4946
 EMAIL: KRISTINA.BETZOLD@WI.GOV

RAILROAD CONTACT

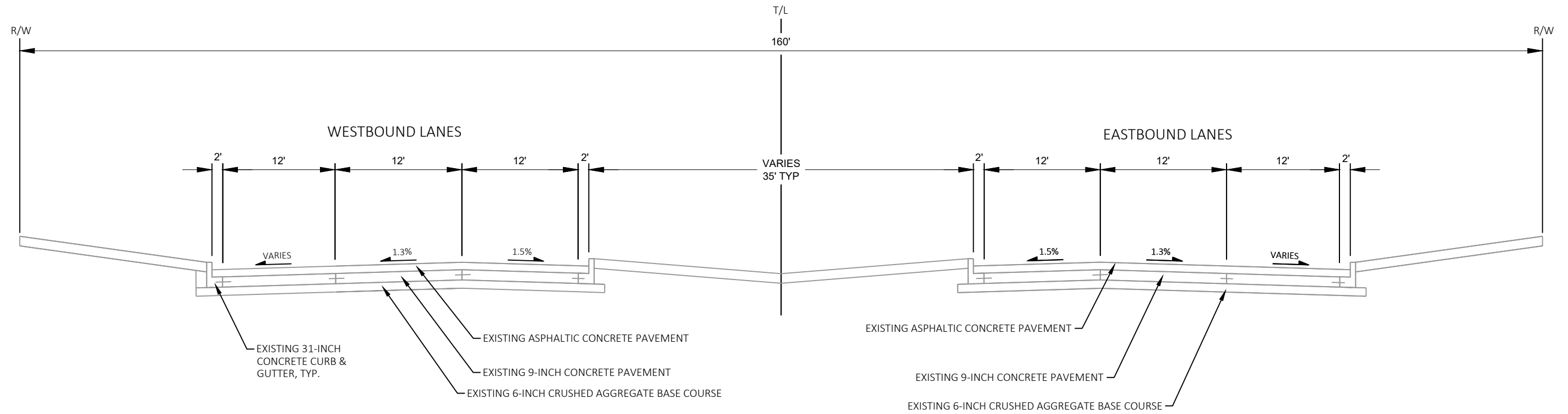
JACKIE MACEWICZ
 CN - MANAGER PUBLIC WORKS
 STEVENS POINT, WI
 PHONE: 715.345.2503
 EMAIL: JACKIE.MACEWICZ@CN.CA

MCTS

MELANIE FLYNN
 COORDINATOR OF STREET SUPERVISION
 MILWAUKEE COUNTY TRANSIT SYSTEM
 1942 N. 17TH STREET
 MILWAUKEE, WI 53205
 PHONE: (414) 343-1764
 EMAIL: MFLYNN@MCTS.ORG

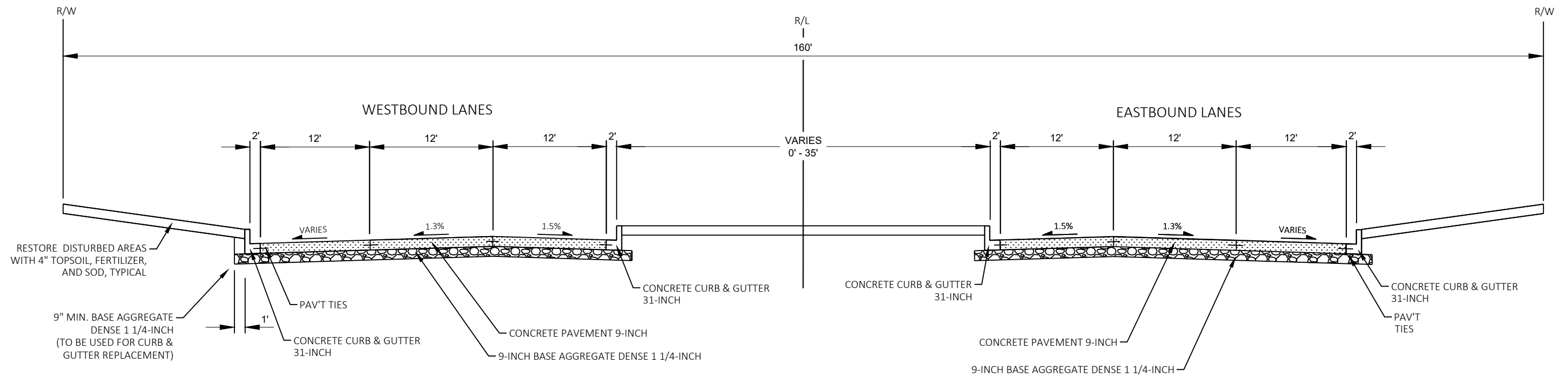


| | | | | | |
|------------------------|-------------|-------------------|------------------|-------|---|
| PROJECT NO: 2130-15-70 | HWY: CTH PP | COUNTY: MILWAUKEE | PROJECT OVERVIEW | SHEET | E |
|------------------------|-------------|-------------------|------------------|-------|---|



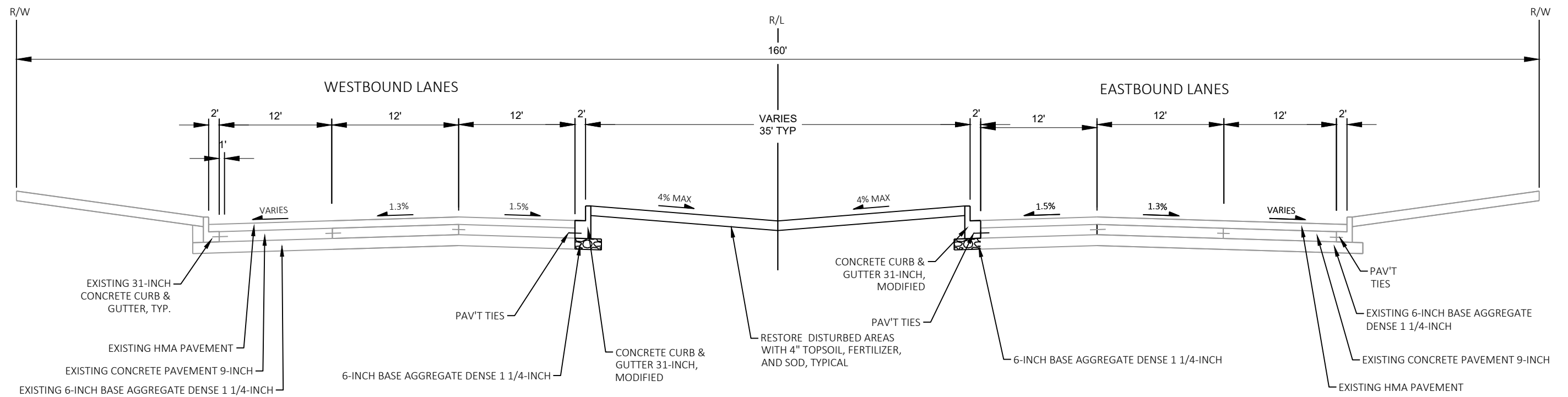
EXISTING TYPICAL SECTION

STA 113+40 TO STA 130+60



PROPOSED TYPICAL SECTION

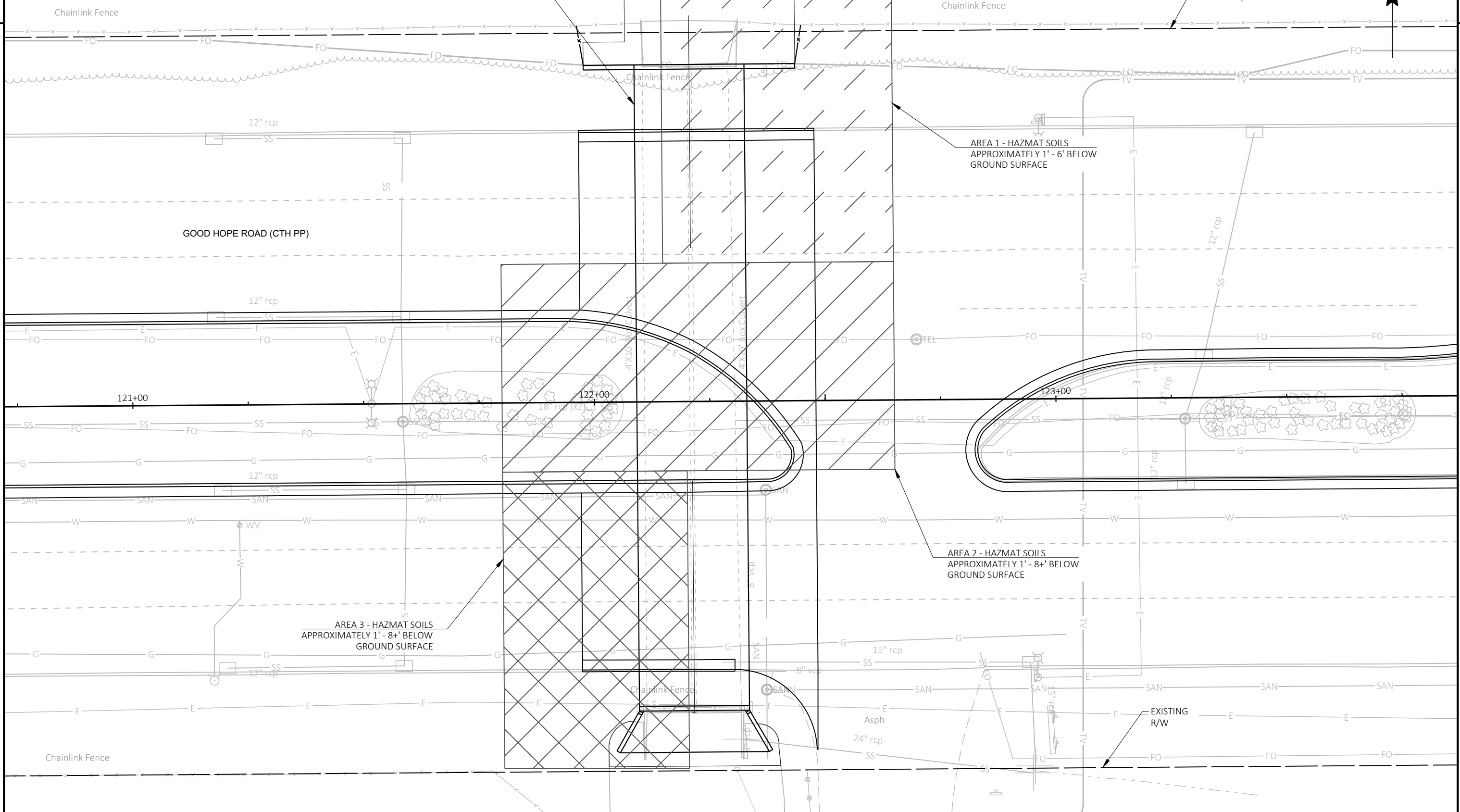
STA 121+90 TO STA 122+50



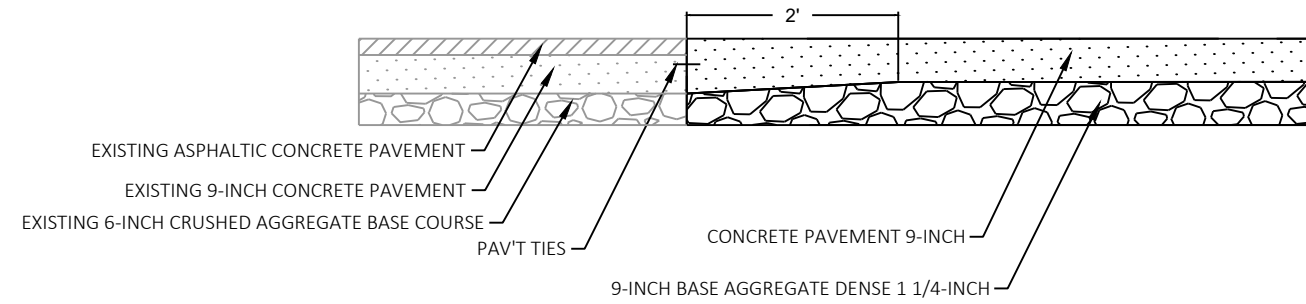
PROPOSED TYPICAL SECTION

STA 113+40 TO STA 121+90
STA 122+50 TO STA 130+60

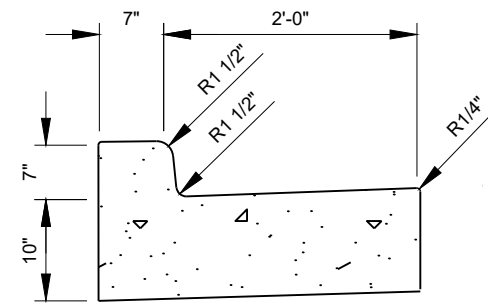
PROPOSED STRUCTURE B-40-1024
TO REPLACE EXISTING STRUCTURE B-40-0370



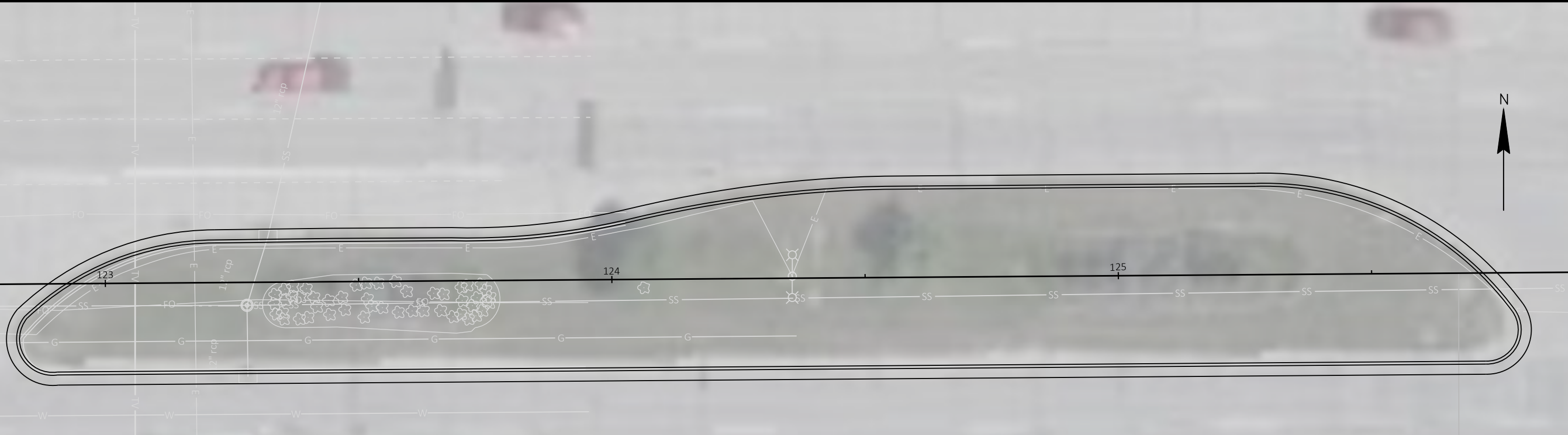
| | | | | | |
|------------------------|-------------|-------------------|--|-------|----------|
| PROJECT NO: 2130-15-70 | HWY: CTH PP | COUNTY: MILWAUKEE | CONSTRUCTION DETAILS - CONTAMINATED SOIL AREAS | SHEET | E |
|------------------------|-------------|-------------------|--|-------|----------|



CONCRETE PAVEMENT TRANSITION



CONCRETE CURB & GUTTER 31-INCH, MODIFIED



GOOD HOPE ROAD (CTH PP)

124+00.24
57.96' RT

124+19.08
58.04' RT

124+50.31
58.18' RT

124+67.67
58.18' RT

DRIVEWAY APPROACH PAVEMENT
PER SDD DRIVEWAYS WITHOUT
CURB AND GUTTER

R18'

124+18.07
74.19' RT

124+19.07
74.20' RT

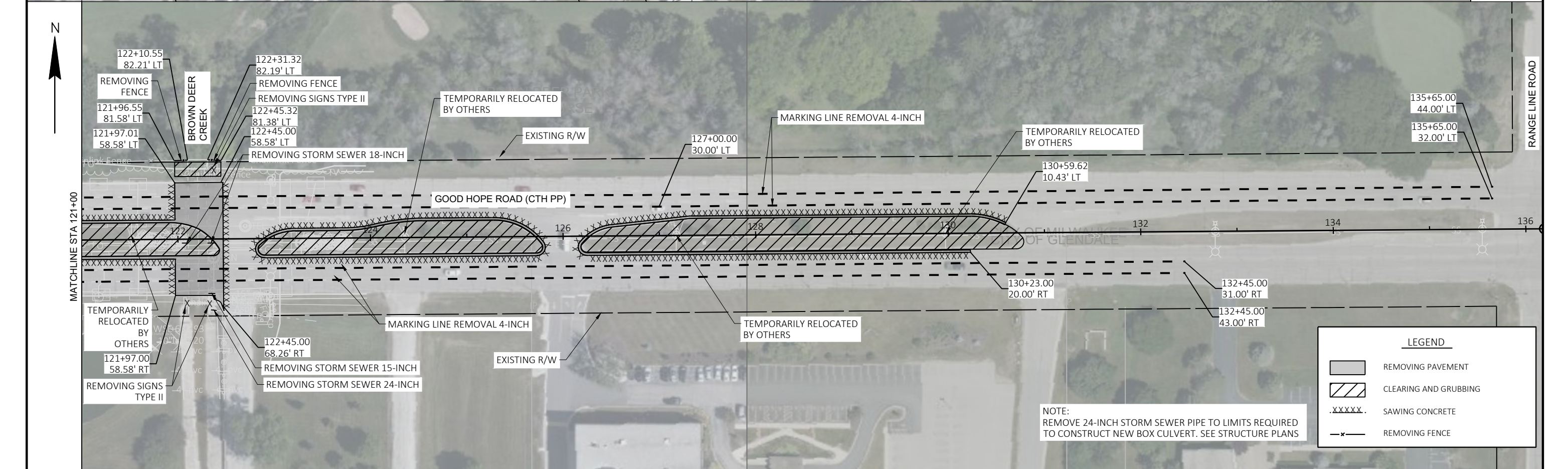
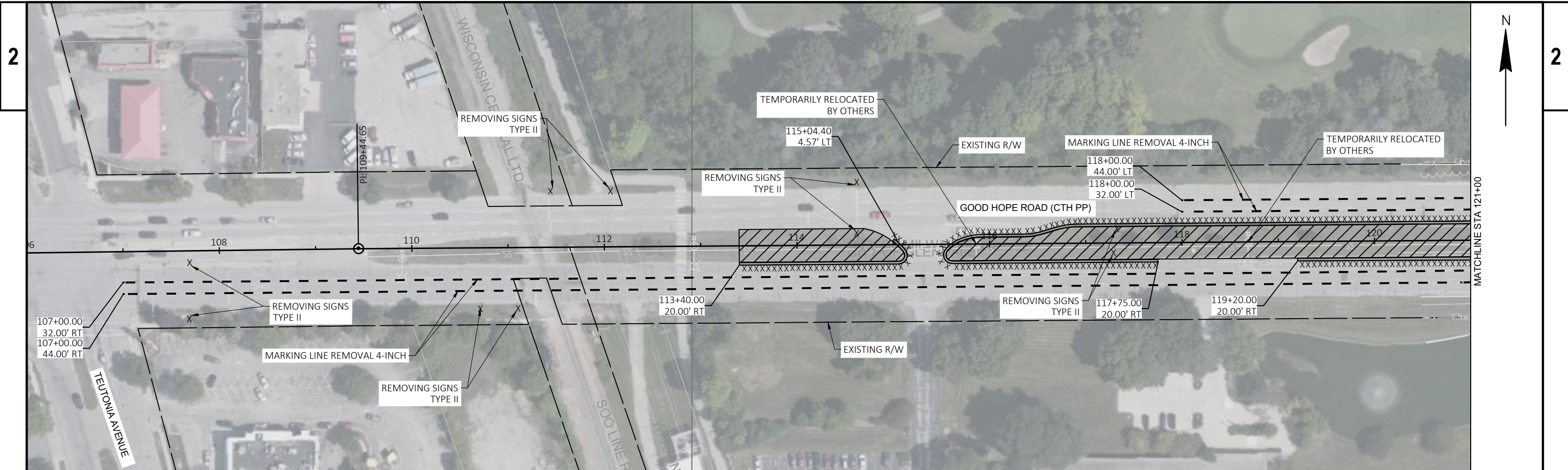
DRIVEWAY APPROACH PAVEMENT
PER SDD DRIVEWAYS WITHOUT
CURB AND GUTTER

R18'

124+48.77
74.30' RT

124+49.77
74.40' RT

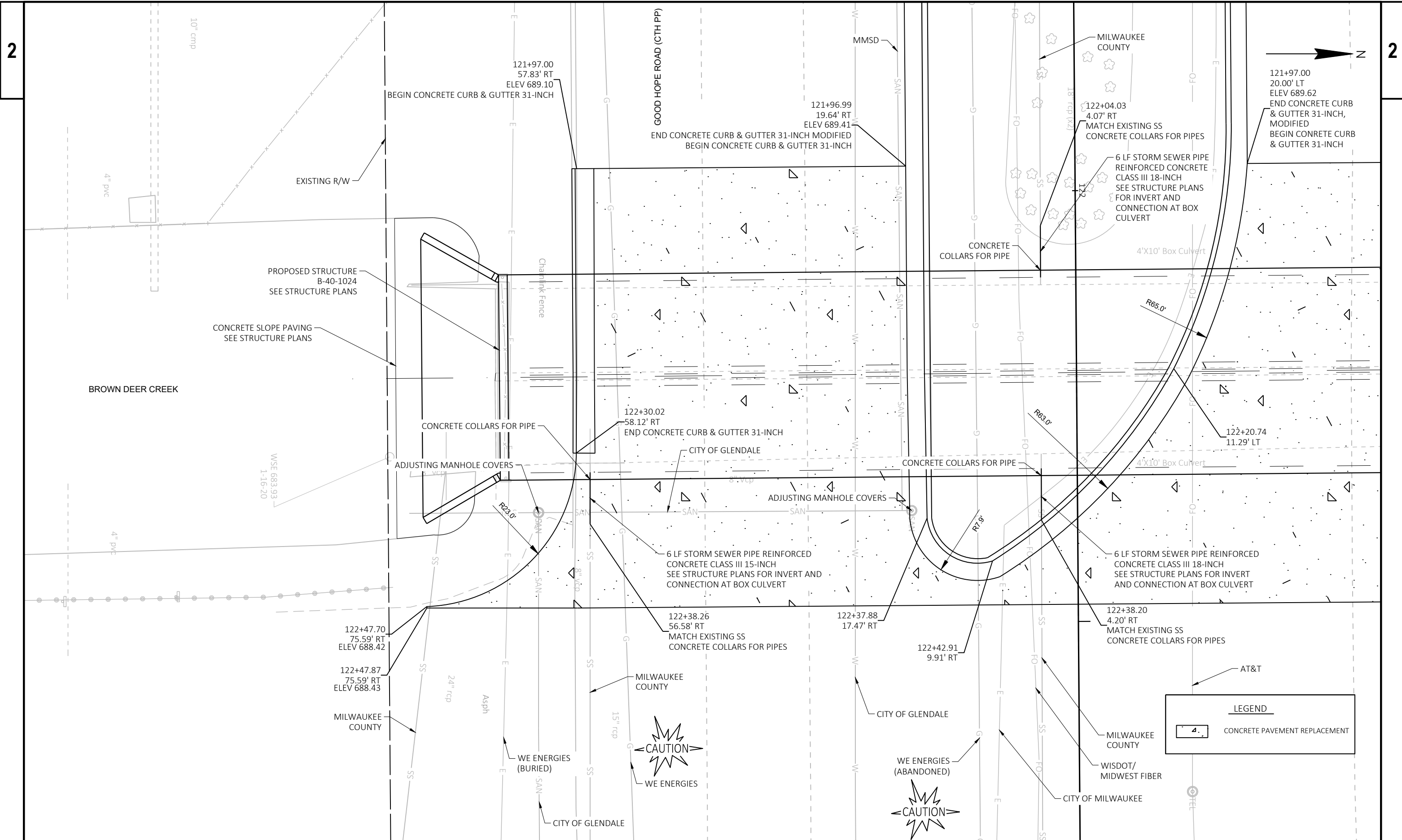
EXISTING
R/W

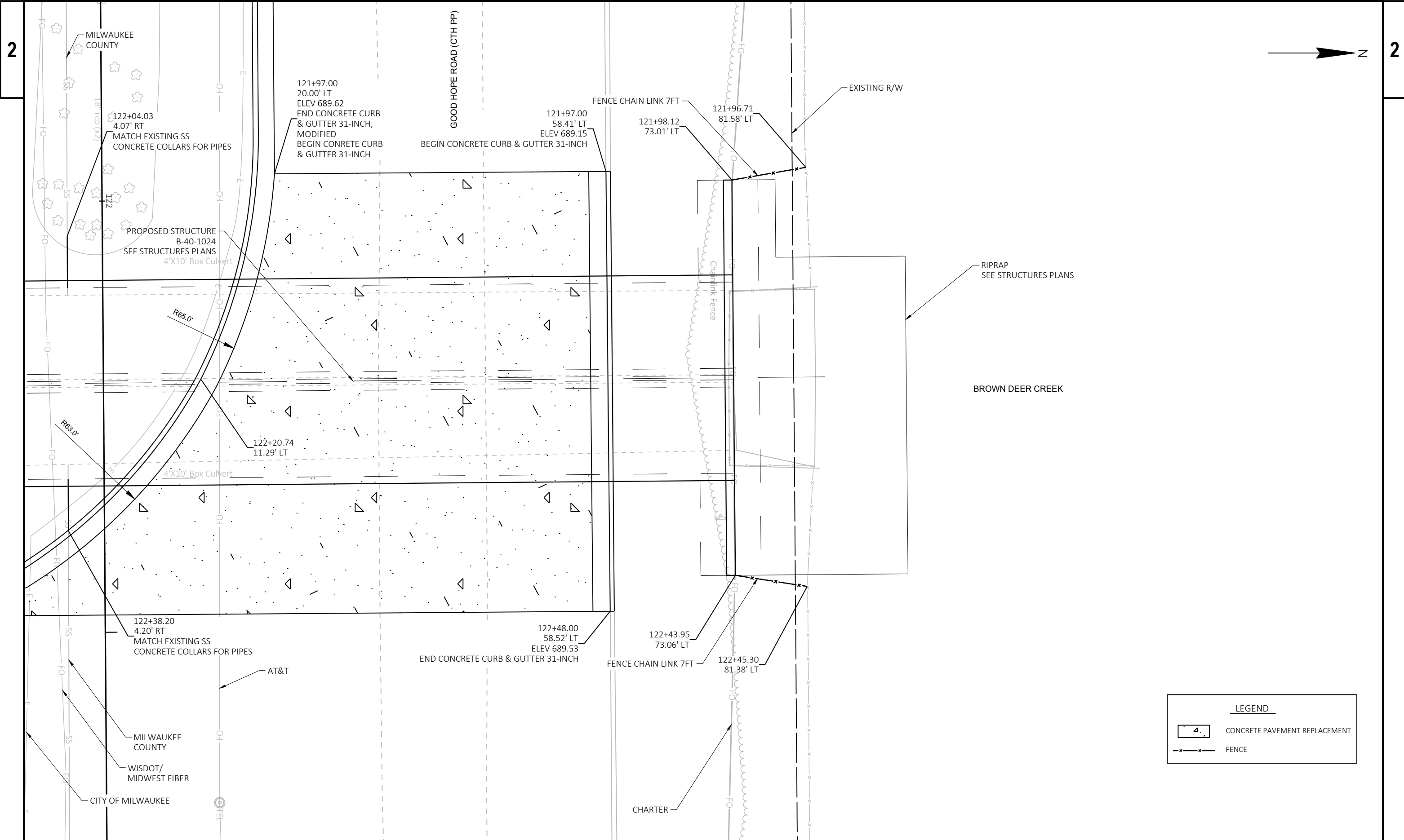


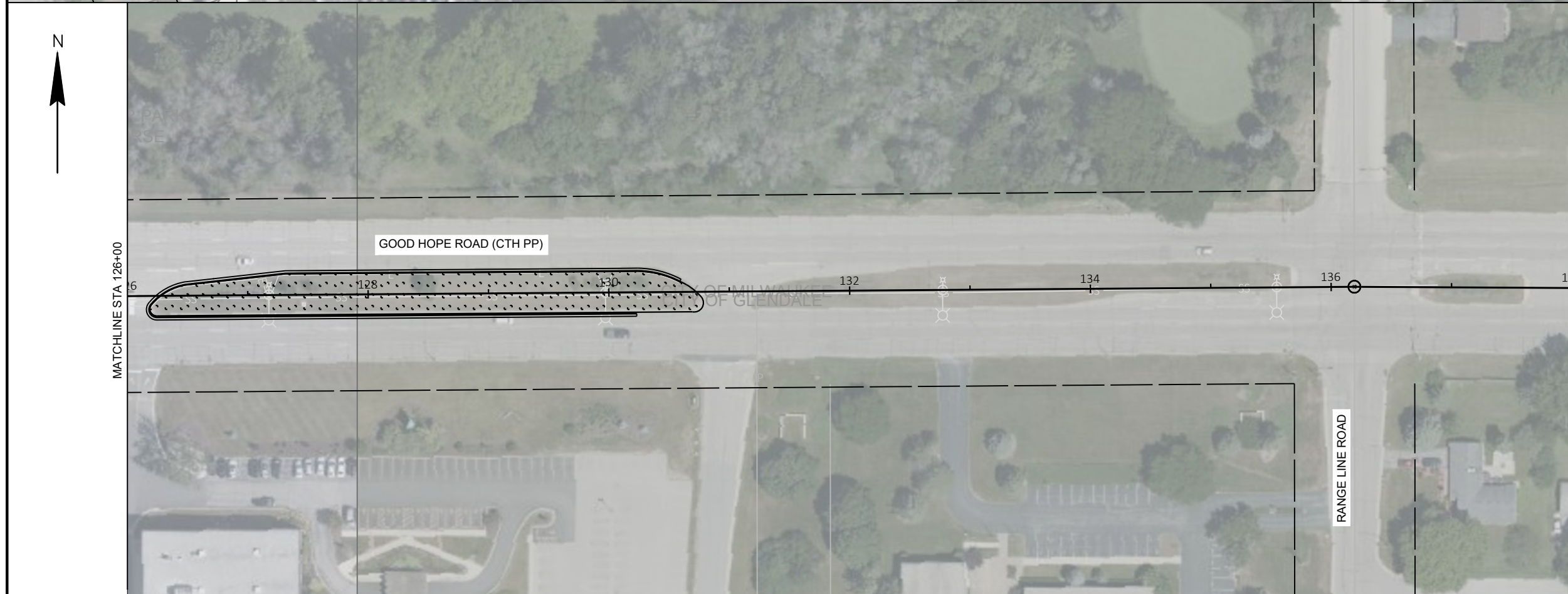
LEGEND

- REMOVING PAVEMENT
- CLEARING AND GRUBBING
- SAWING CONCRETE
- REMOVING FENCE

NOTE:
REMOVE 24-INCH STORM SEWER PIPE TO LIMITS REQUIRED TO CONSTRUCT NEW BOX CULVERT. SEE STRUCTURE PLANS







LEGEND

 SOD LAWN

| | | | | | |
|------------------------|-------------|-------------------|-----------------|-------|---|
| PROJECT NO: 2130-15-70 | HWY: CTH PP | COUNTY: MILWAUKEE | EROSION CONTROL | SHEET | E |
|------------------------|-------------|-------------------|-----------------|-------|---|

NOTE:
SILT FENCE TO BE ESTABLISHED IN PRE-STAGE AND
REESTABLISHED IN STAGES 1 AND 2 AS NEEDED



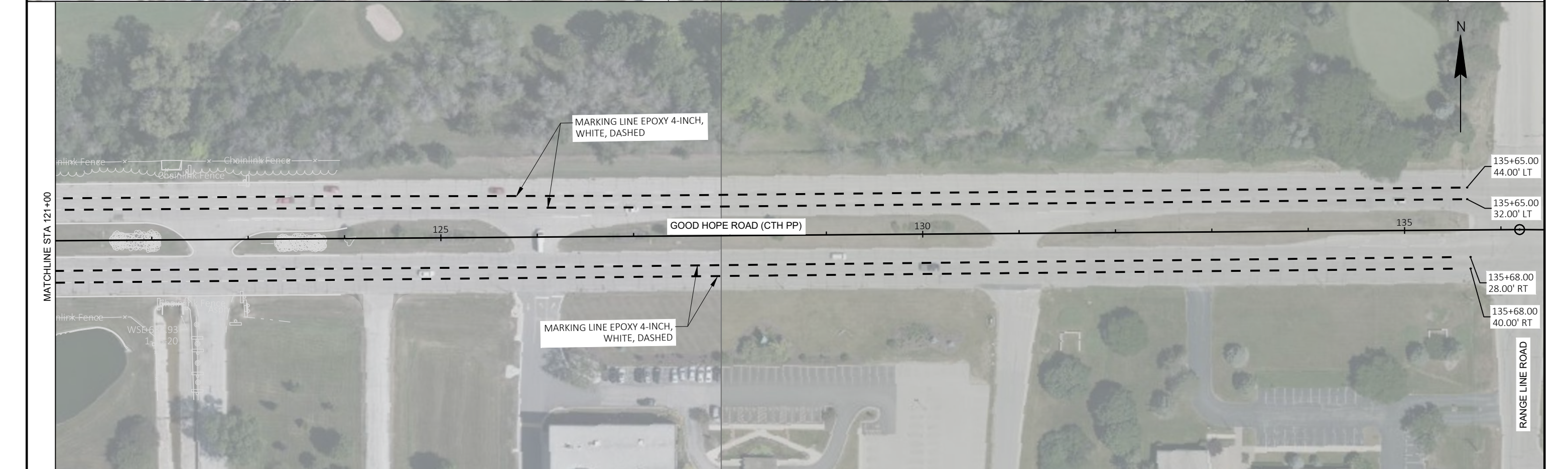
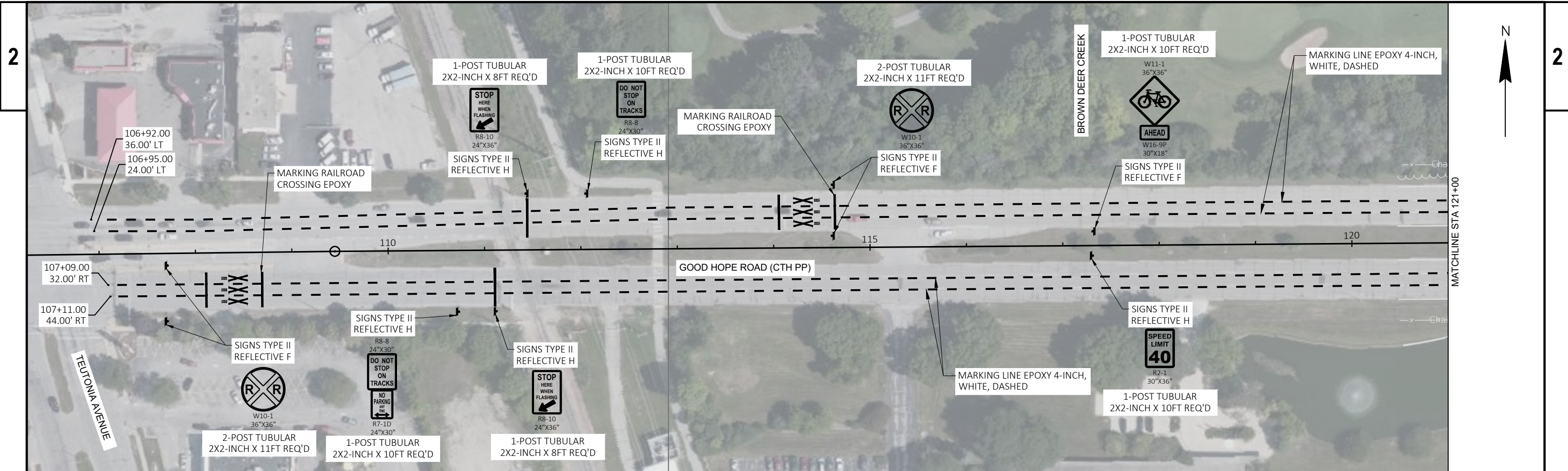
MATCHLINE STA 126+00

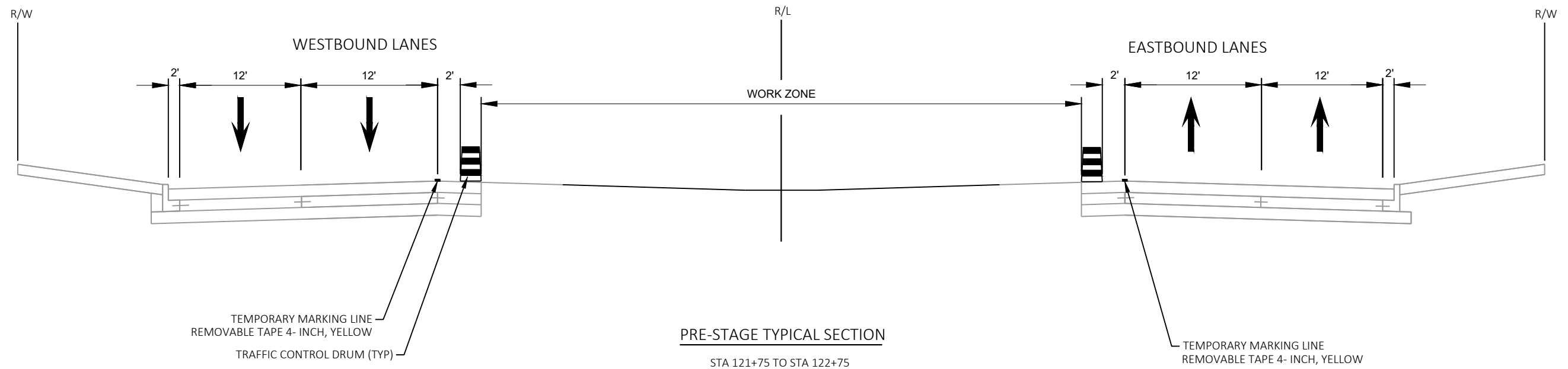


LEGEND

- SILT FENCE
- INLET PROTECTION TYPE B
INSTALL IN PRE-STAGE

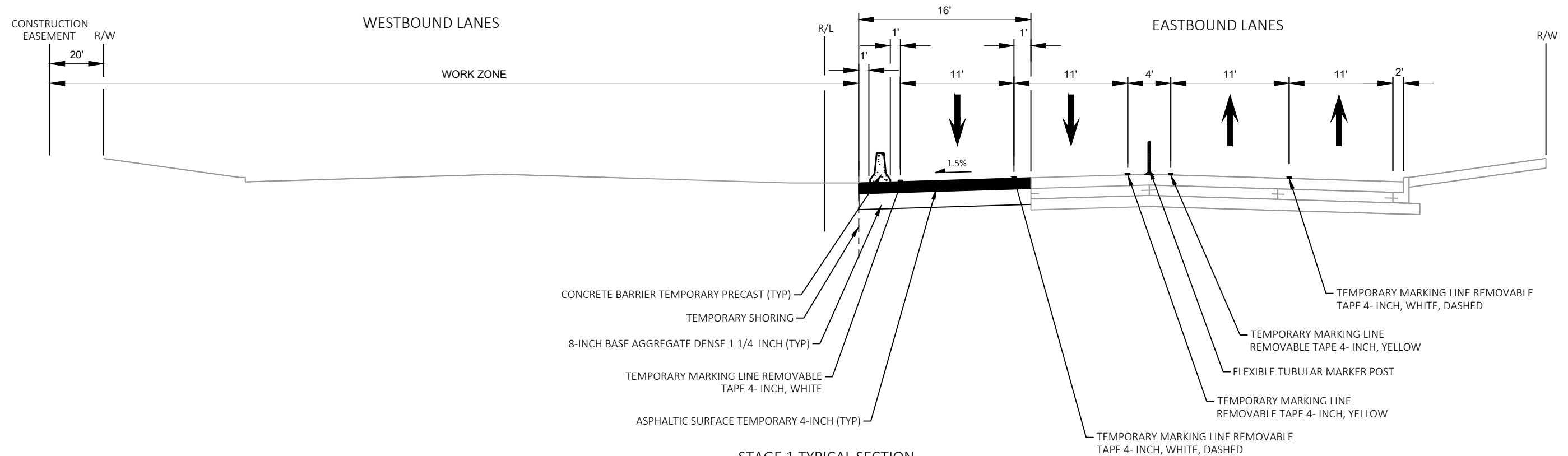
| | | | | | |
|------------------------|-------------|-------------------|-----------------------------|-------|----------|
| PROJECT NO: 2130-15-70 | HWY: CTH PP | COUNTY: MILWAUKEE | EROSION CONTROL - TEMPORARY | SHEET | E |
|------------------------|-------------|-------------------|-----------------------------|-------|----------|





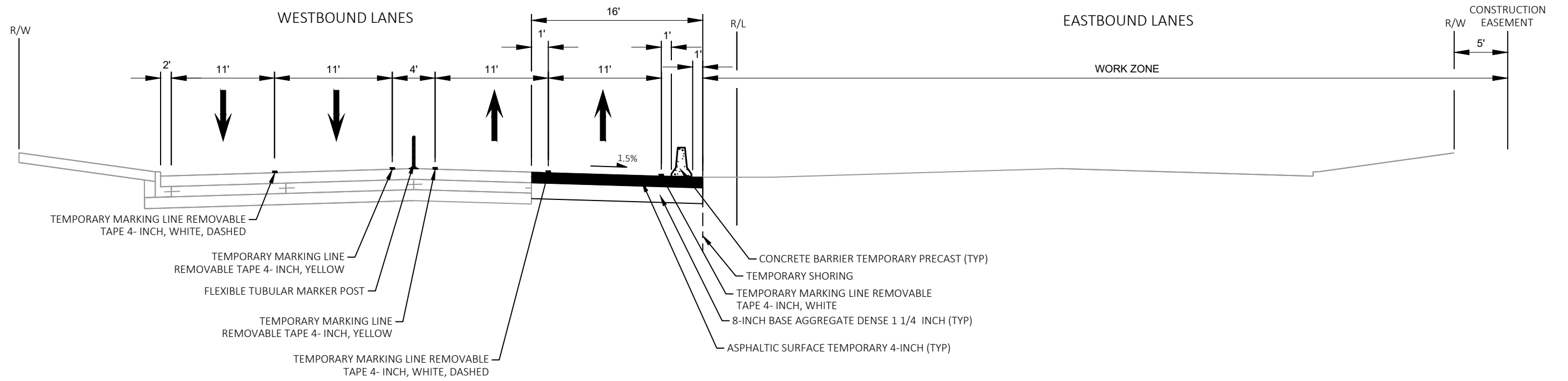
PRE-STAGE TYPICAL SECTION

STA 121+75 TO STA 122+75



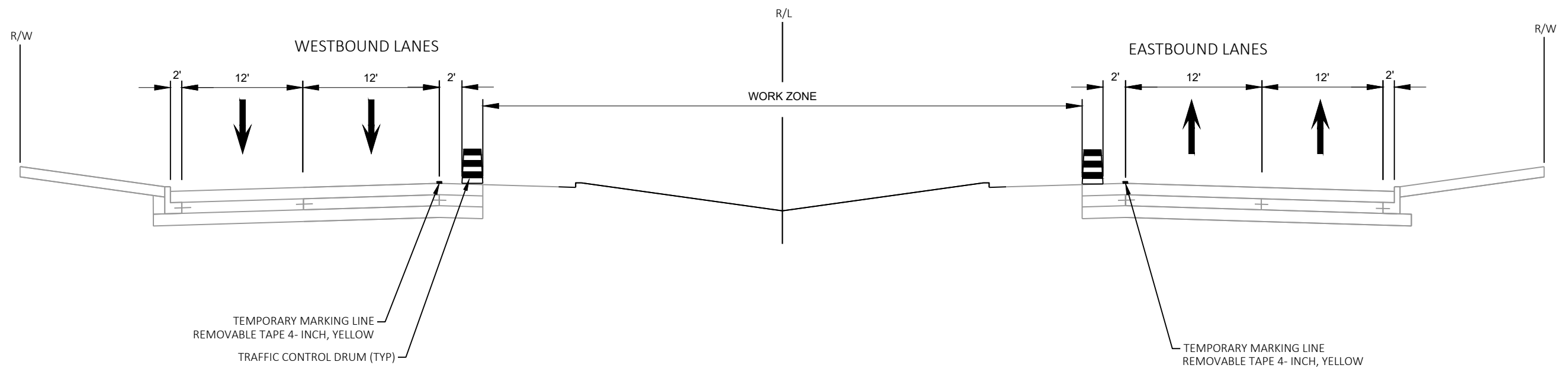
STAGE 1 TYPICAL SECTION

STA 121+75 TO STA 122+75



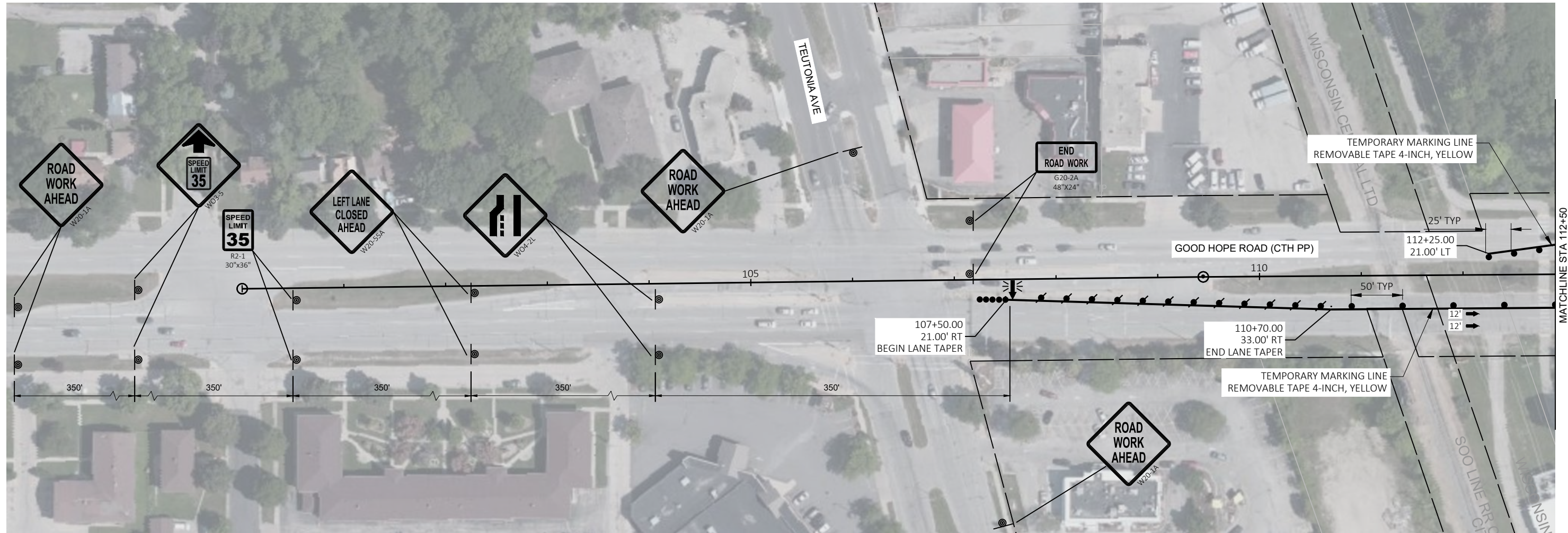
STAGE 2 TYPICAL SECTION

STA 121+75 TO STA 122+75



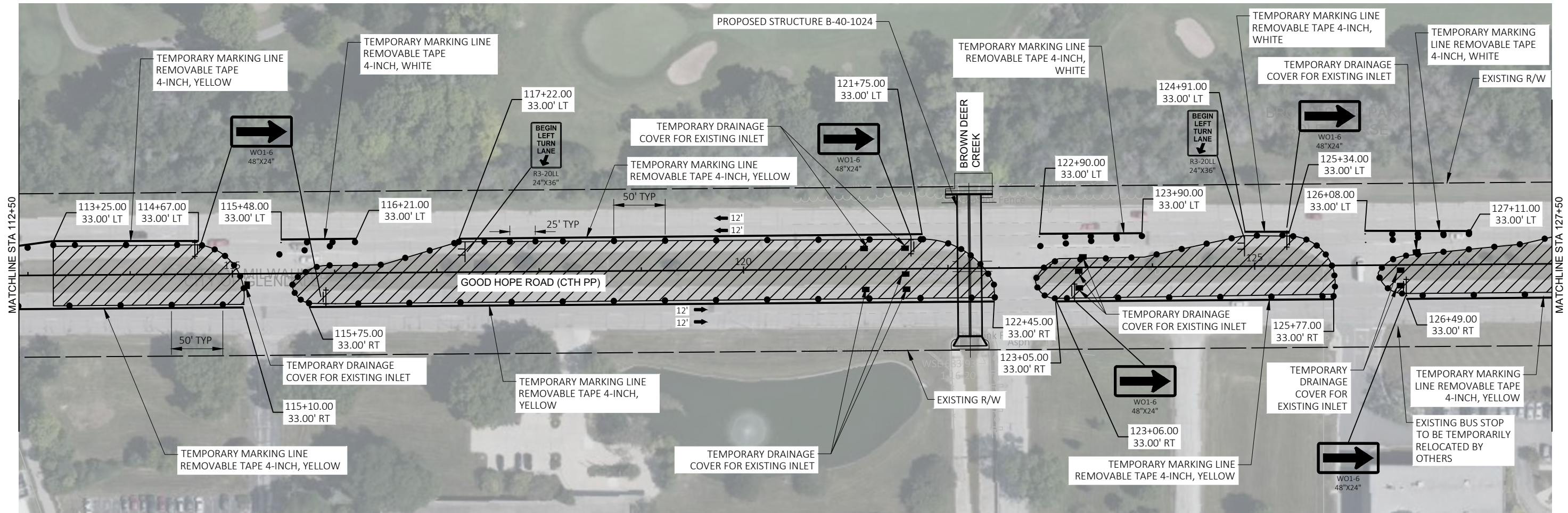
STAGE 3 TYPICAL SECTION

STA 121+75 TO STA 122+75



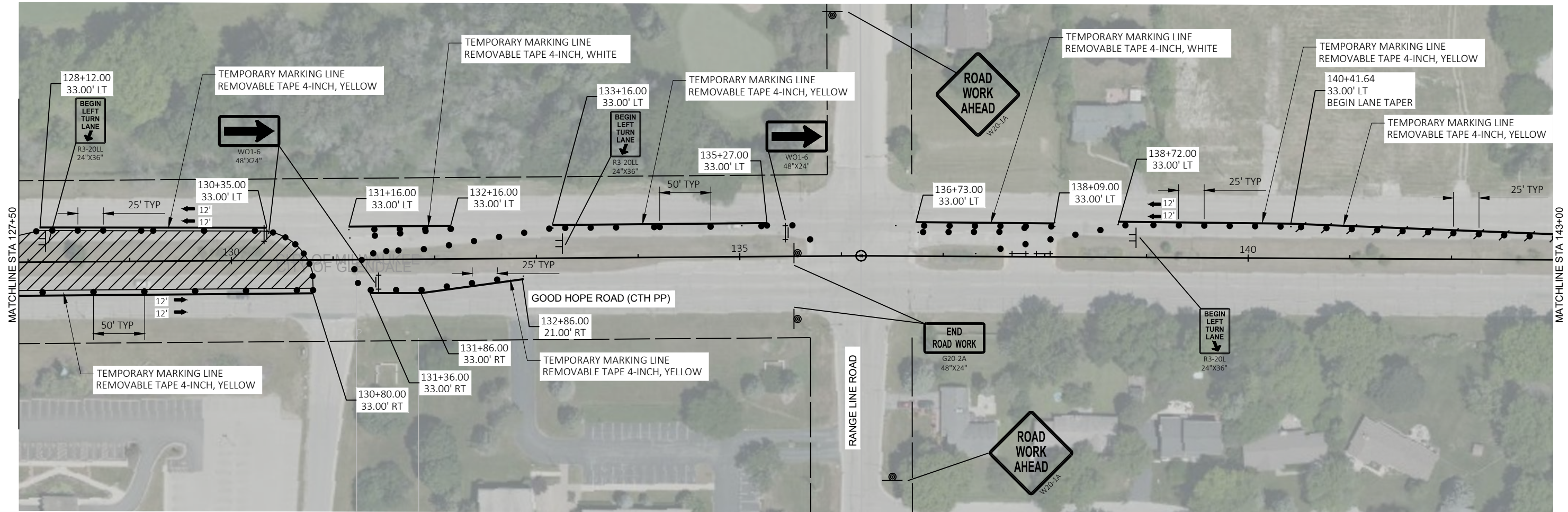
LEGEND

| | |
|---|---|
| <ul style="list-style-type: none"> ⊥ TYPE III BARRICADE ⊥ TYPE III BARRICADE WITH ATTACHED SIGN ● TRAFFIC CONTROL DRUM ● TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT ⊙ FLEXIBLE TUBULAR MARKER POST ⊥ SIGN ON TEMPORARY SUPPORT ⊥ SIGN ON PERMANENT SUPPORT | <ul style="list-style-type: none"> Ⓐ TRAFFIC CONTROL WARNING LIGHT TYPE A ↔ FLASHING ARROW BOARD → DIRECTION OF TRAFFIC ▨ WORK AREA ▬ CONCRETE BARRIER CC PORTABLE CRASH CUSHION ■ ASPHALTIC SURFACE TEMPORARY |
|---|---|



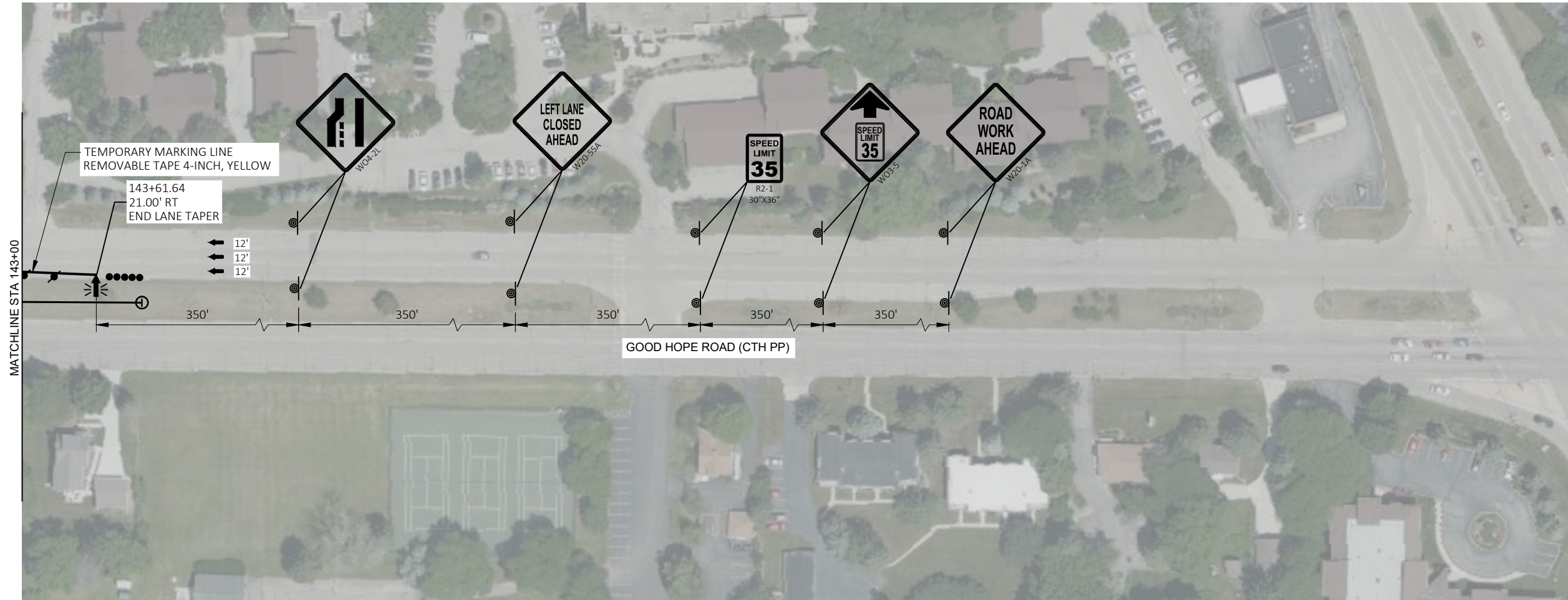
LEGEND

| | | | |
|--|--|--|--------------------------------------|
| | TYPE III BARRICADE | | TRAFFIC CONTROL WARNING LIGHT TYPE A |
| | TYPE III BARRICADE WITH ATTACHED SIGN | | FLASHING ARROW BOARD |
| | TRAFFIC CONTROL DRUM | | DIRECTION OF TRAFFIC |
| | TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT | | WORK AREA |
| | FLEXIBLE TUBULAR MARKER POST | | CONCRETE BARRIER |
| | SIGN ON TEMPORARY SUPPORT | | PORTABLE CRASH CUSHION |
| | SIGN ON PERMANENT SUPPORT | | ASPHALTIC SURFACE TEMPORARY |



LEGEND

| | |
|---|---|
| <ul style="list-style-type: none"> ⋈ TYPE III BARRICADE ⋈ TYPE III BARRICADE WITH ATTACHED SIGN ● TRAFFIC CONTROL DRUM ● TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT ⊙ FLEXIBLE TUBULAR MARKER POST ⊢ SIGN ON TEMPORARY SUPPORT ⊣ SIGN ON PERMANENT SUPPORT | <ul style="list-style-type: none"> (A) TRAFFIC CONTROL WARNING LIGHT TYPE A ⚡ FLASHING ARROW BOARD ➔ DIRECTION OF TRAFFIC ▨ WORK AREA ▬ CONCRETE BARRIER CC PORTABLE CRASH CUSHION ■ ASPHALTIC SURFACE TEMPORARY |
|---|---|



MATCHLINE STA 143+00

TEMPORARY MARKING LINE
REMOVABLE TAPE 4-INCH, YELLOW

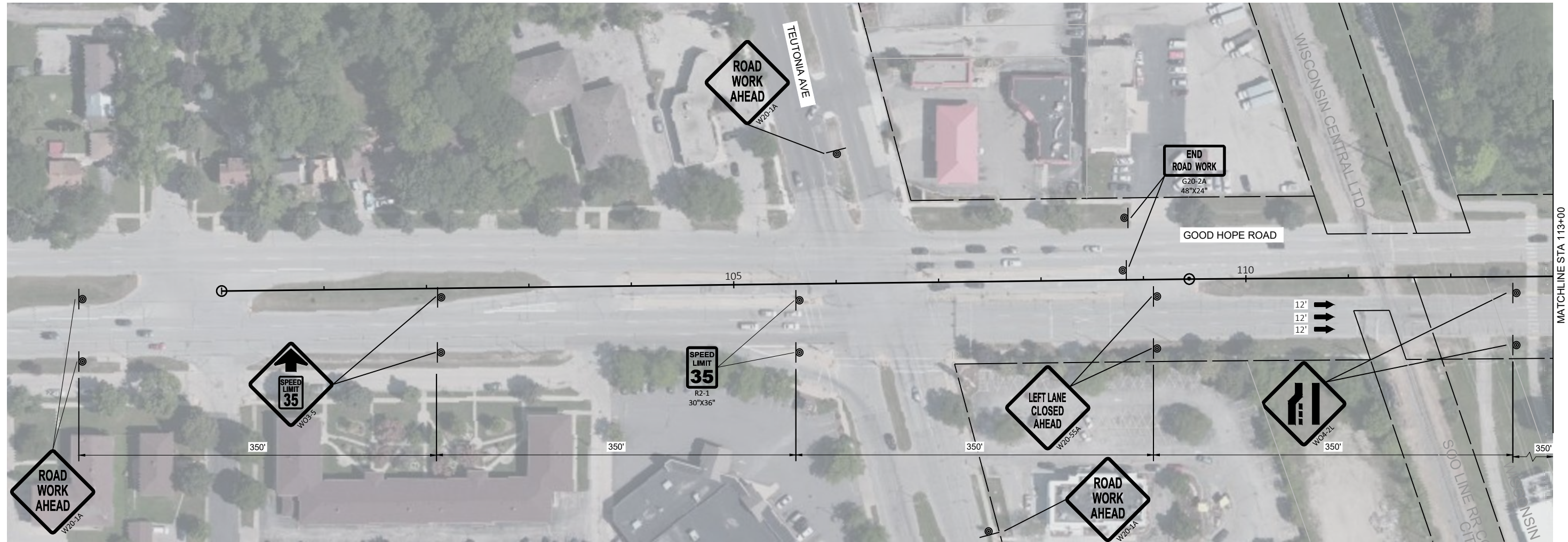
143+61.64
21.00' RT
END LANE TAPER

12'
12'
12'

GOOD HOPE ROAD (CTH PP)











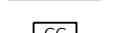
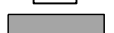

LEGEND

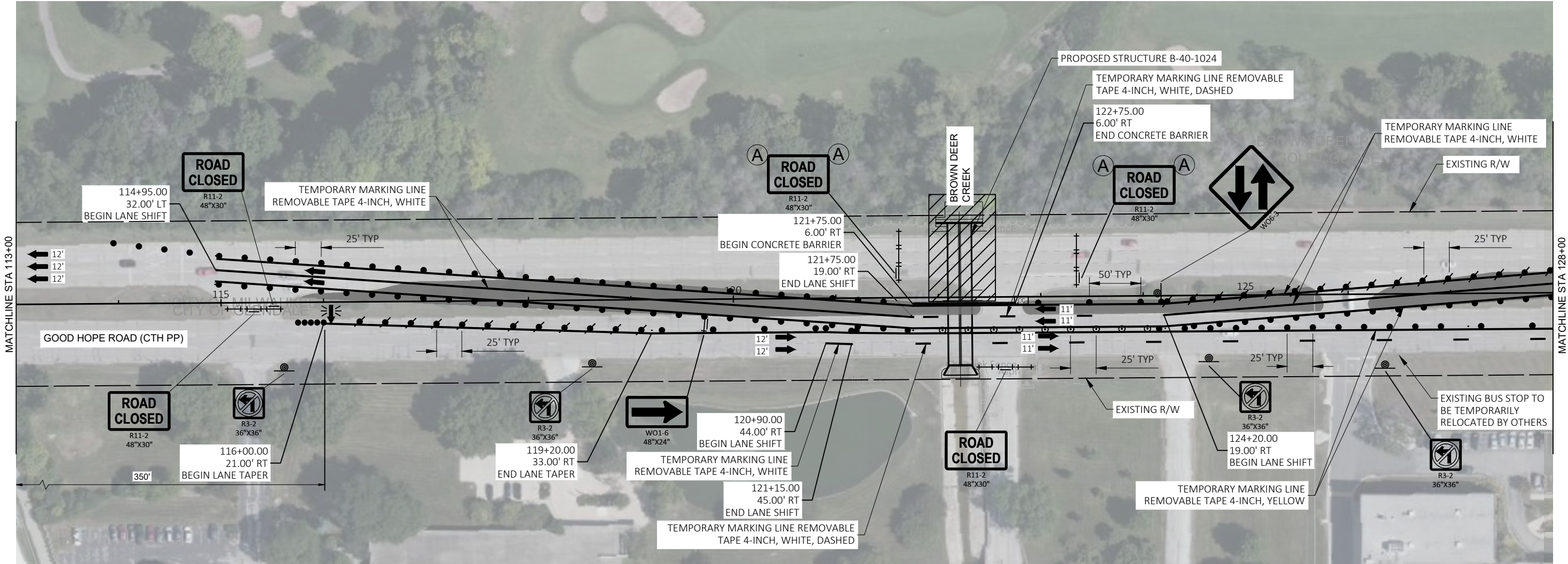
- ⊕ TYPE III BARRICADE
- ⊕ TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- ⊙ TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- ⊙ FLEXIBLE TUBULAR MARKER POST
- ⊢ SIGN ON TEMPORARY SUPPORT
- ⊣ SIGN ON PERMANENT SUPPORT
- ⓐ TRAFFIC CONTROL WARNING LIGHT TYPE A
- ↔ FLASHING ARROW BOARD
- DIRECTION OF TRAFFIC
- ▨ WORK AREA
- ▬ CONCRETE BARRIER
- CC PORTABLE CRASH CUSHION
- ASPHALTIC SURFACE TEMPORARY



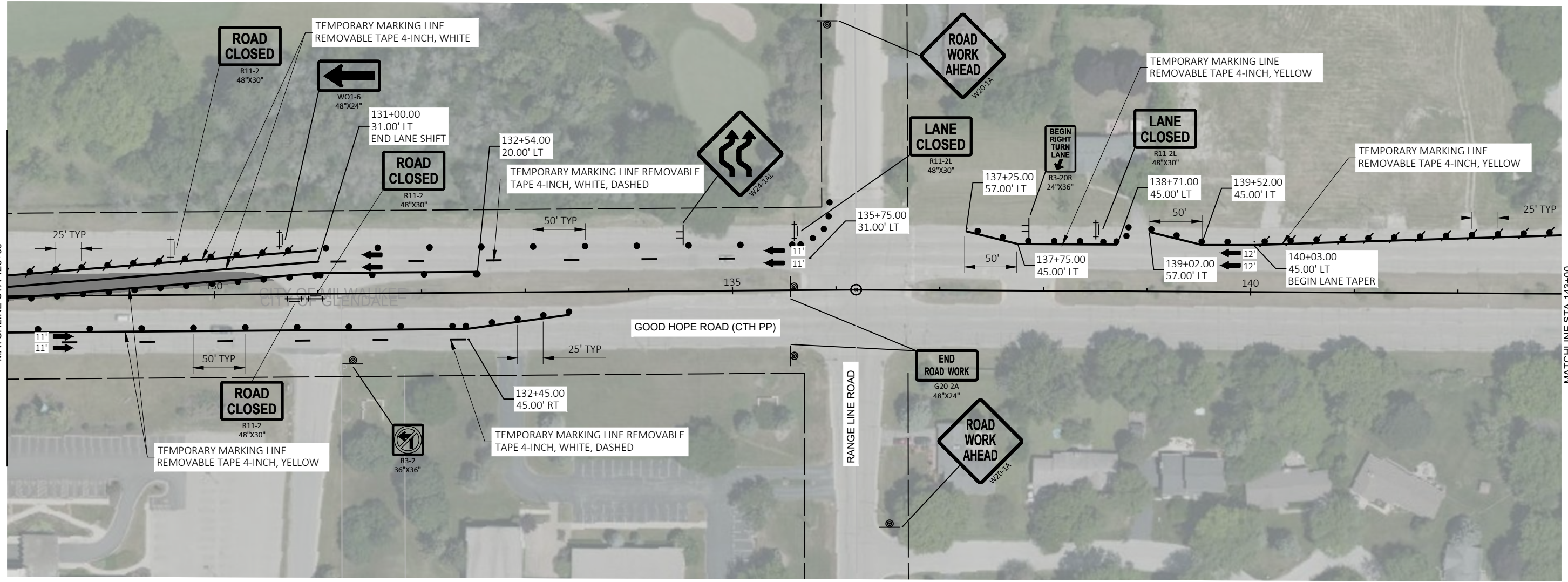
MATCHLINE STA 113+00

LEGEND

-  TYPE III BARRICADE
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
-  FLEXIBLE TUBULAR MARKER POST
-  SIGN ON TEMPORARY SUPPORT
-  TRAFFIC CONTROL WARNING LIGHT TYPE A
-  WORK AREA
-  FLASHING ARROW BOARD
-  DIRECTION OF TRAFFIC
-  CONCRETE BARRIER
-  PORTABLE CRASH CUSHION
-  ASPHALTIC SURFACE TEMPORARY

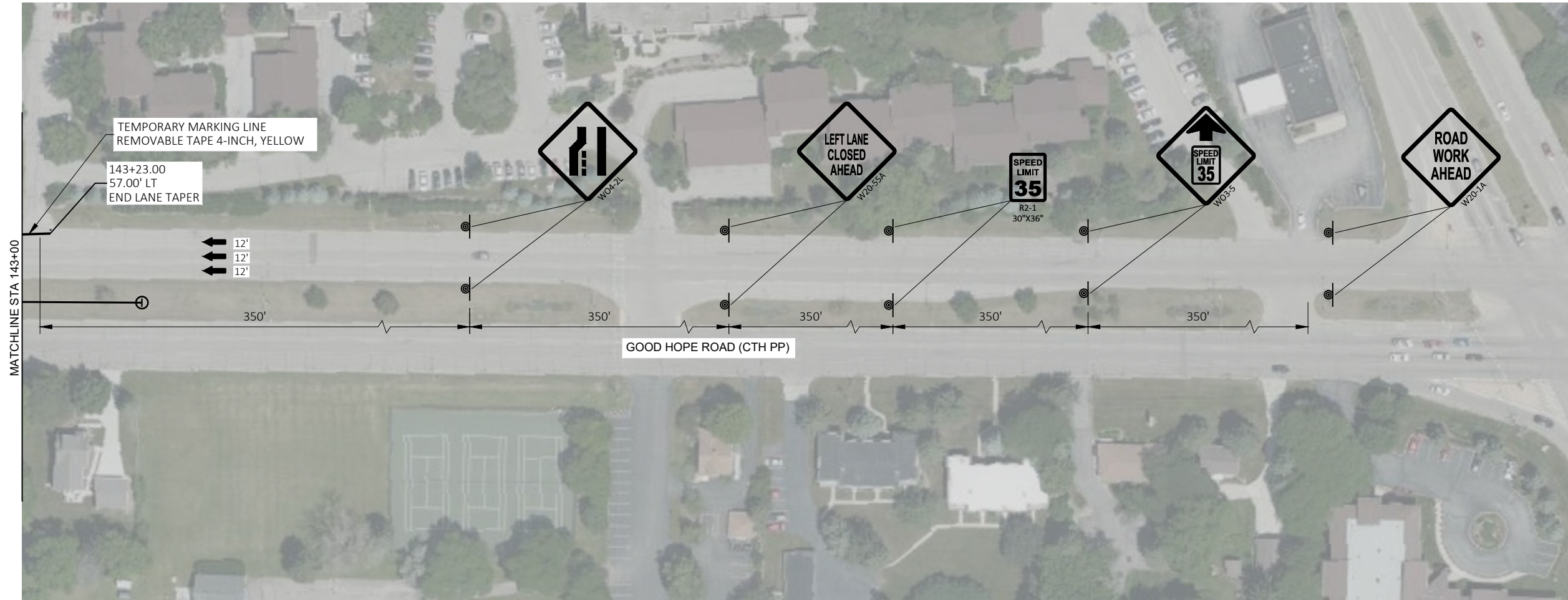


| LEGEND | |
|--------|--|
| | TYPE III BARRICADE |
| | TYPE III BARRICADE WITH ATTACHED SIGN |
| | TRAFFIC CONTROL DRUM |
| | TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT |
| | FLEXIBLE TUBULAR MARKER POST |
| | SIGN ON TEMPORARY SUPPORT |
| | TRAFFIC CONTROL WARNING LIGHT TYPE A |
| | WORK AREA |
| | FLASHING ARROW BOARD |
| | DIRECTION OF TRAFFIC |
| | CONCRETE BARRIER |
| | PORTABLE CRASH CUSHION |
| | ASPHALTIC SURFACE TEMPORARY |

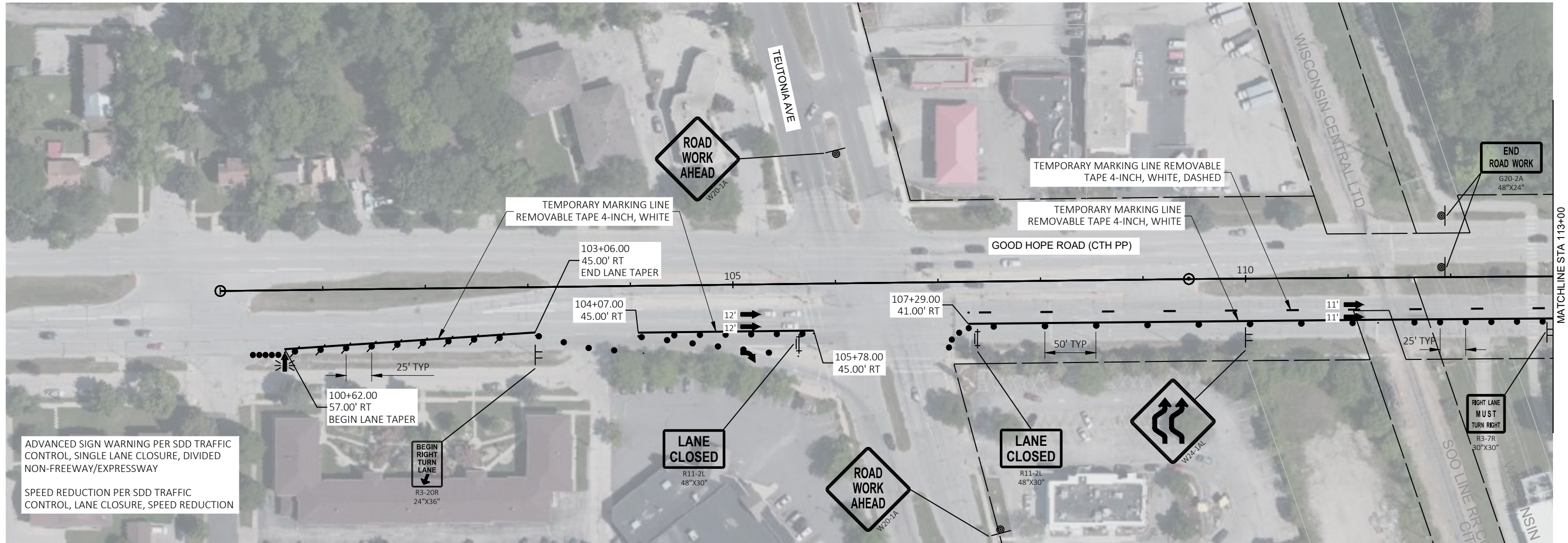


LEGEND

| | |
|--|--|
| <ul style="list-style-type: none"> ⋈ TYPE III BARRICADE ⋈ TYPE III BARRICADE WITH ATTACHED SIGN ● TRAFFIC CONTROL DRUM ● TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT ⊙ FLEXIBLE TUBULAR MARKER POST ⊥ SIGN ON TEMPORARY SUPPORT Ⓐ TRAFFIC CONTROL WARNING LIGHT TYPE A | <ul style="list-style-type: none"> WORK AREA FLASHING ARROW BOARD DIRECTION OF TRAFFIC CONCRETE BARRIER PORTABLE CRASH CUSHION ASPHALTIC SURFACE TEMPORARY |
|--|--|



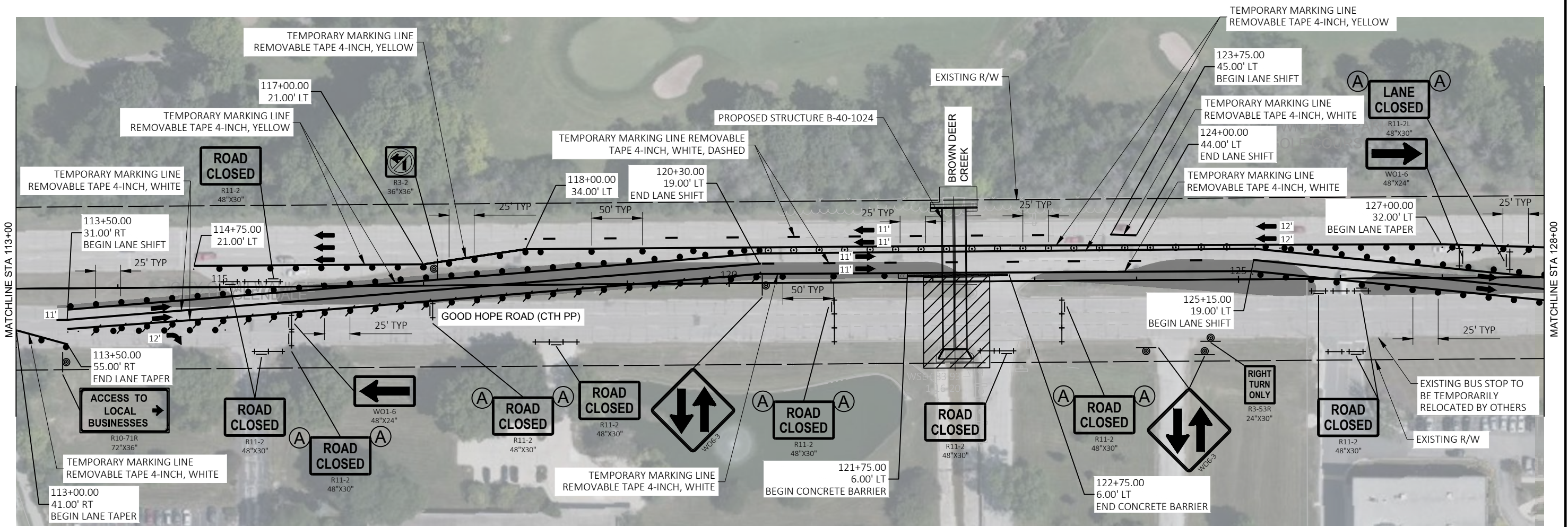
| LEGEND | | | |
|--------|--|--|-----------------------------|
| | TYPE III BARRICADE | | WORK AREA |
| | TYPE III BARRICADE WITH ATTACHED SIGN | | FLASHING ARROW BOARD |
| | TRAFFIC CONTROL DRUM | | DIRECTION OF TRAFFIC |
| | TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT | | CONCRETE BARRIER |
| | FLEXIBLE TUBULAR MARKER POST | | PORTABLE CRASH CUSHION |
| | SIGN ON TEMPORARY SUPPORT | | ASPHALTIC SURFACE TEMPORARY |
| | TRAFFIC CONTROL WARNING LIGHT TYPE A | | |



ADVANCED SIGN WARNING PER SDD TRAFFIC CONTROL, SINGLE LANE CLOSURE, DIVIDED NON-FREWAY/EXPRESSWAY

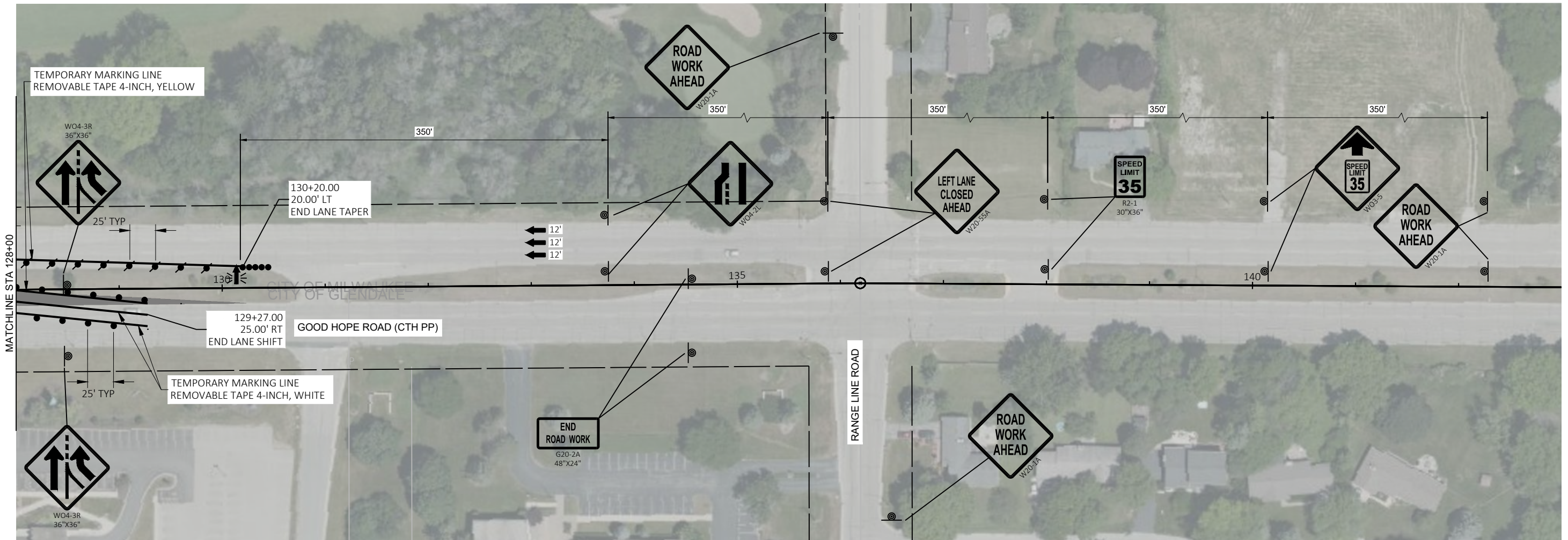
SPEED REDUCTION PER SDD TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION

| LEGEND | |
|--------|--|
| | TYPE III BARRICADE |
| | TYPE III BARRICADE WITH ATTACHED SIGN |
| | TRAFFIC CONTROL DRUM |
| | TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT |
| | FLEXIBLE TUBULAR MARKER POST |
| | SIGN ON TEMPORARY SUPPORT |
| | TRAFFIC CONTROL WARNING LIGHT TYPE A |
| | WORK AREA |
| | FLASHING ARROW BOARD |
| | DIRECTION OF TRAFFIC |
| | CONCRETE BARRIER |
| | PORTABLE CRASH CUSHION |
| | ASPHALTIC SURFACE TEMPORARY |



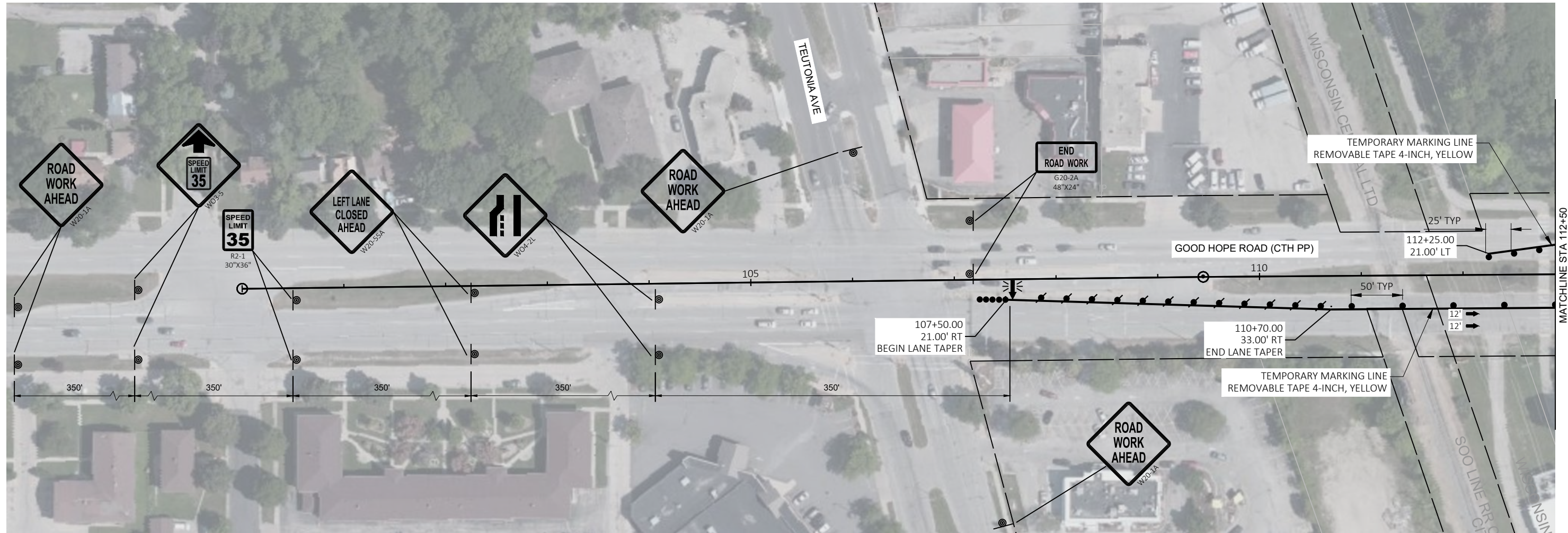
LEGEND

| | | | |
|--|--|--|-----------------------------|
| | TYPE III BARRICADE | | WORK AREA |
| | TYPE III BARRICADE WITH ATTACHED SIGN | | FLASHING ARROW BOARD |
| | TRAFFIC CONTROL DRUM | | DIRECTION OF TRAFFIC |
| | TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT | | CONCRETE BARRIER |
| | FLEXIBLE TUBULAR MARKER POST | | PORTABLE CRASH CUSHION |
| | SIGN ON TEMPORARY SUPPORT | | ASPHALTIC SURFACE TEMPORARY |
| | TRAFFIC CONTROL WARNING LIGHT TYPE A | | |



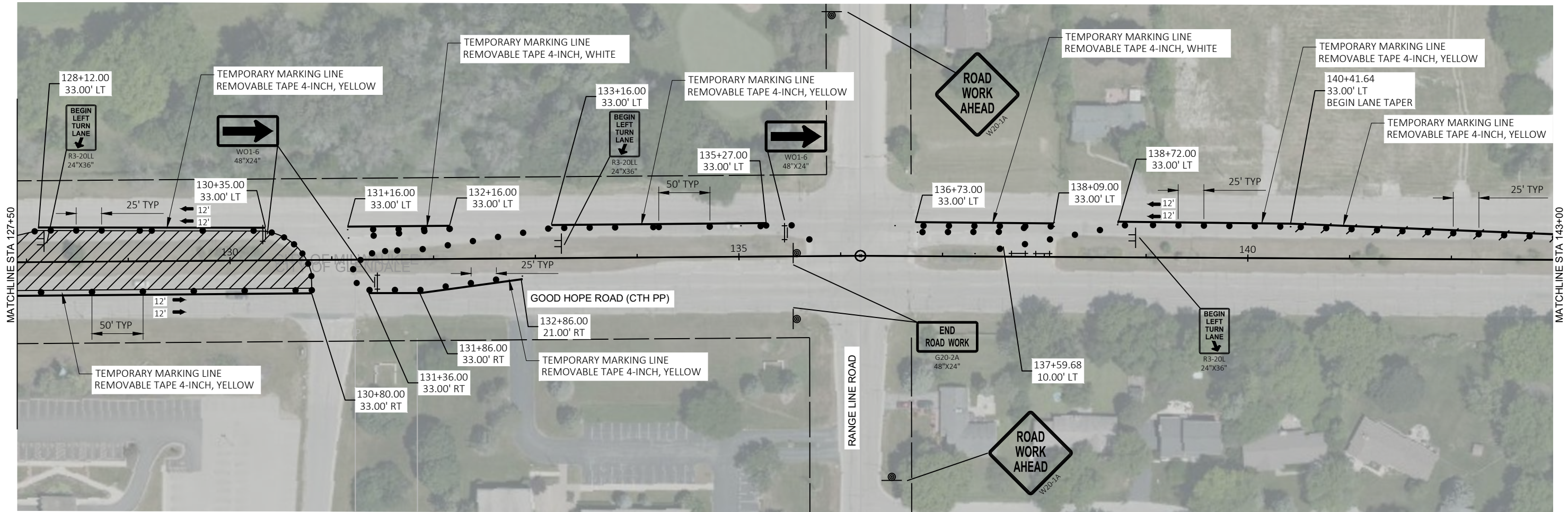
LEGEND

| | |
|--|--|
| <ul style="list-style-type: none"> ⋈ TYPE III BARRICADE ⋈ TYPE III BARRICADE WITH ATTACHED SIGN ● TRAFFIC CONTROL DRUM ⦿ TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT ○ FLEXIBLE TUBULAR MARKER POST ⊥ SIGN ON TEMPORARY SUPPORT Ⓐ TRAFFIC CONTROL WARNING LIGHT TYPE A | <ul style="list-style-type: none"> WORK AREA FLASHING ARROW BOARD DIRECTION OF TRAFFIC CONCRETE BARRIER PORTABLE CRASH CUSHION ASPHALTIC SURFACE TEMPORARY |
|--|--|



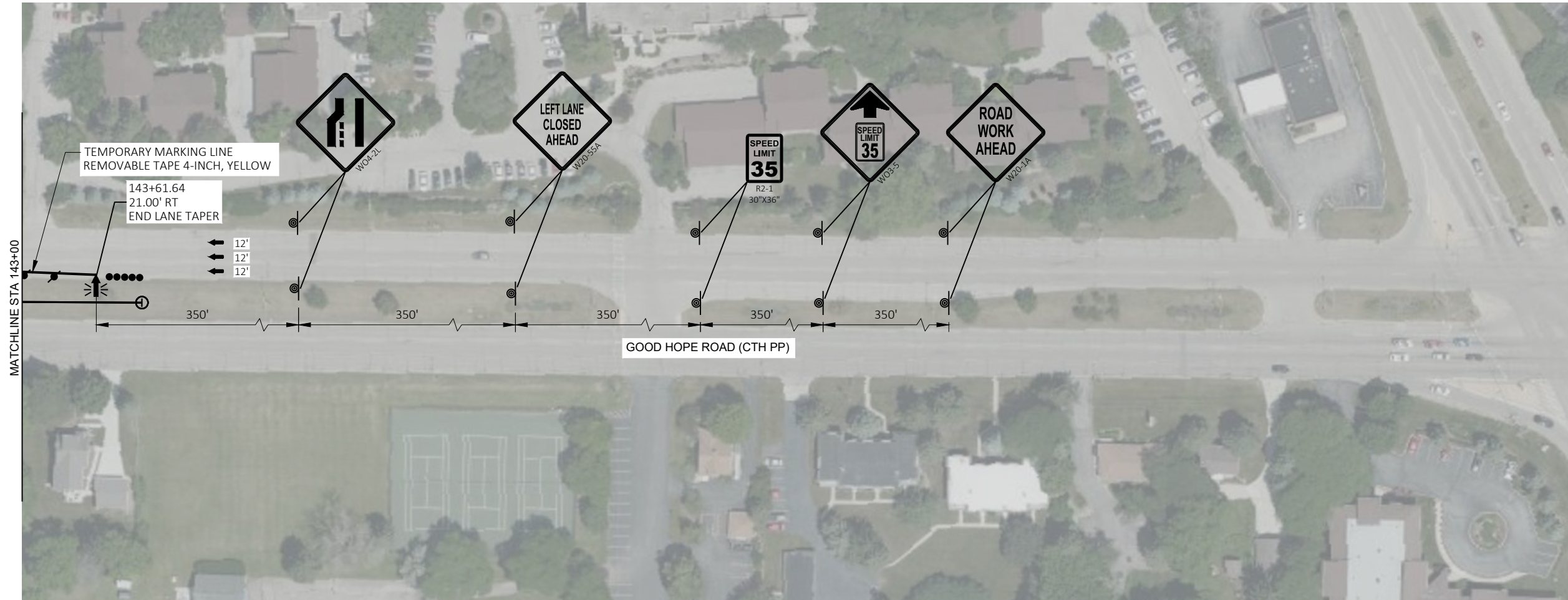
LEGEND

| | |
|---|---|
| <ul style="list-style-type: none"> ⊥ TYPE III BARRICADE ⊥ TYPE III BARRICADE WITH ATTACHED SIGN ● TRAFFIC CONTROL DRUM ● TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT ⊙ FLEXIBLE TUBULAR MARKER POST ⊥ SIGN ON TEMPORARY SUPPORT ⊥ SIGN ON PERMANENT SUPPORT | <ul style="list-style-type: none"> Ⓐ TRAFFIC CONTROL WARNING LIGHT TYPE A ↔ FLASHING ARROW BOARD → DIRECTION OF TRAFFIC ▨ WORK AREA ▬ CONCRETE BARRIER CC PORTABLE CRASH CUSHION ■ ASPHALTIC SURFACE TEMPORARY |
|---|---|



LEGEND

| | |
|---|---|
| <ul style="list-style-type: none"> ⋮ TYPE III BARRICADE ⋮ TYPE III BARRICADE WITH ATTACHED SIGN ● TRAFFIC CONTROL DRUM ● TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT ⊙ FLEXIBLE TUBULAR MARKER POST ⊢ SIGN ON TEMPORARY SUPPORT ⊣ SIGN ON PERMANENT SUPPORT | <ul style="list-style-type: none"> (A) TRAFFIC CONTROL WARNING LIGHT TYPE A ⚡ FLASHING ARROW BOARD ➔ DIRECTION OF TRAFFIC ▨ WORK AREA ▬ CONCRETE BARRIER CC PORTABLE CRASH CUSHION ■ ASPHALTIC SURFACE TEMPORARY |
|---|---|



LEGEND

- ⊕ TYPE III BARRICADE
- ⊕ TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- ⊕ TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- ⊙ FLEXIBLE TUBULAR MARKER POST
- ⊢ SIGN ON TEMPORARY SUPPORT
- ⊣ SIGN ON PERMANENT SUPPORT
- ⓐ TRAFFIC CONTROL WARNING LIGHT TYPE A
- ↔ FLASHING ARROW BOARD
- DIRECTION OF TRAFFIC
- ▨ WORK AREA
- ▬ CONCRETE BARRIER
- CC PORTABLE CRASH CUSHION
- ASPHALTIC SURFACE TEMPORARY

Estimate Of Quantities

2130-15-70

| Line | Item | Item Description | Unit | Total | Qty |
|------|------------|---|------|-----------|-----------|
| 0002 | 201.0110 | Clearing | SY | 450.000 | 450.000 |
| 0004 | 201.0210 | Grubbing | SY | 450.000 | 450.000 |
| 0006 | 203.0260 | Removing Structure Over Waterway Minimal Debris (structure) 01. B-40-0370 | EACH | 1.000 | 1.000 |
| 0008 | 204.0100 | Removing Concrete Pavement | SY | 538.000 | 538.000 |
| 0010 | 204.0150 | Removing Curb & Gutter | LF | 2,868.000 | 2,868.000 |
| 0012 | 204.0170 | Removing Fence | LF | 28.000 | 28.000 |
| 0014 | 204.0245 | Removing Storm Sewer (size) 01. 15-INCH | LF | 8.000 | 8.000 |
| 0016 | 204.0245 | Removing Storm Sewer (size) 02. 18-INCH | LF | 15.000 | 15.000 |
| 0018 | 204.0245 | Removing Storm Sewer (size) 03. 24-INCH | LF | 6.000 | 6.000 |
| 0020 | 205.0100 | Excavation Common | CY | 3,846.000 | 3,846.000 |
| 0022 | 205.0501.S | Excavation, Hauling, and Disposal of Petroleum Contaminated Soil | TON | 1,173.000 | 1,173.000 |
| 0024 | 206.2000 | Excavation for Structures Culverts (structure) 01. B-40-1024 | LS | 1.000 | 1.000 |
| 0026 | 210.2500 | Backfill Structure Type B | TON | 1,178.000 | 1,178.000 |
| 0028 | 213.0100 | Finishing Roadway (project) 01. 2130-15-70 | EACH | 1.000 | 1.000 |
| 0030 | 305.0120 | Base Aggregate Dense 1 1/4-Inch | TON | 3,167.000 | 3,167.000 |
| 0032 | 311.0115 | Breaker Run | CY | 263.000 | 263.000 |
| 0034 | 415.0090 | Concrete Pavement 9-Inch | SY | 488.000 | 488.000 |
| 0036 | 416.0610 | Drilled Tie Bars | EACH | 1,102.000 | 1,102.000 |
| 0038 | 416.0620 | Drilled Dowel Bars | EACH | 165.000 | 165.000 |
| 0040 | 465.0120 | Asphaltic Surface Driveways and Field Entrances | TON | 4.000 | 4.000 |
| 0042 | 465.0125 | Asphaltic Surface Temporary | TON | 1,294.000 | 1,294.000 |
| 0044 | 502.3200 | Protective Surface Treatment | SY | 340.000 | 340.000 |
| 0046 | 504.0100 | Concrete Masonry Culverts | CY | 30.000 | 30.000 |
| 0048 | 504.2000.S | Precast Concrete Box Culvert (ft X ft) 01. 10FT x 4FT | LF | 280.000 | 280.000 |
| 0050 | 505.0400 | Bar Steel Reinforcement HS Structures | LB | 560.000 | 560.000 |
| 0052 | 505.0600 | Bar Steel Reinforcement HS Coated Structures | LB | 1,590.000 | 1,590.000 |
| 0054 | 505.0904 | Bar Couplers No. 4 | EACH | 12.000 | 12.000 |
| 0056 | 511.1100 | Temporary Shoring | SF | 620.000 | 620.000 |
| 0058 | 516.0500 | Rubberized Membrane Waterproofing | SY | 107.000 | 107.000 |
| 0060 | 520.8000 | Concrete Collars for Pipe | EACH | 6.000 | 6.000 |
| 0062 | 601.0331 | Concrete Curb & Gutter 31-Inch | LF | 3,065.000 | 3,065.000 |
| 0064 | 603.8000 | Concrete Barrier Temporary Precast Delivered | LF | 200.000 | 200.000 |
| 0066 | 603.8125 | Concrete Barrier Temporary Precast Installed | LF | 200.000 | 200.000 |
| 0068 | 603.8500 | Anchoring Concrete Barrier Temporary Precast | LF | 200.000 | 200.000 |
| 0070 | 608.0315 | Storm Sewer Pipe Reinforced Concrete Class III 15-Inch | LF | 9.000 | 9.000 |
| 0072 | 608.0318 | Storm Sewer Pipe Reinforced Concrete Class III 18-Inch | LF | 17.000 | 17.000 |
| 0074 | 611.8110 | Adjusting Manhole Covers | EACH | 2.000 | 2.000 |
| 0076 | 611.8115 | Adjusting Inlet Covers | EACH | 12.000 | 12.000 |
| 0078 | 612.0406 | Pipe Underdrain Wrapped 6-Inch | LF | 42.000 | 42.000 |
| 0080 | 614.0905 | Crash Cushions Temporary | EACH | 2.000 | 2.000 |
| 0082 | 616.0205 | Fence Chain Link 5-FT | LF | 40.000 | 40.000 |
| 0084 | 616.0207 | Fence Chain Link 7-FT | LF | 64.000 | 64.000 |
| 0086 | 618.0100 | Maintenance And Repair of Haul Roads (project) 01. 2130-15-70 | EACH | 1.000 | 1.000 |
| 0088 | 619.1000 | Mobilization | EACH | 1.000 | 1.000 |
| 0090 | 624.0100 | Water | MGAL | 48.500 | 48.500 |
| 0092 | 625.0500 | Salvaged Topsoil | SY | 5,723.000 | 5,723.000 |
| 0094 | 628.1504 | Silt Fence | LF | 72.000 | 72.000 |
| 0096 | 628.1520 | Silt Fence Maintenance | LF | 72.000 | 72.000 |
| 0098 | 628.1905 | Mobilizations Erosion Control | EACH | 2.000 | 2.000 |

Estimate Of Quantities

2130-15-70

| Line | Item | Item Description | Unit | Total | Qty |
|------|------------|--|------|------------|------------|
| 0100 | 628.1910 | Mobilizations Emergency Erosion Control | EACH | 3.000 | 3.000 |
| 0102 | 628.7010 | Inlet Protection Type B | EACH | 18.000 | 18.000 |
| 0104 | 629.0210 | Fertilizer Type B | CWT | 3.600 | 3.600 |
| 0106 | 631.0300 | Sod Water | MGAL | 96.000 | 96.000 |
| 0108 | 631.1000 | Sod Lawn | SY | 5,723.000 | 5,723.000 |
| 0110 | 634.0808 | Posts Tubular Steel 2x2-Inch X 8-FT | EACH | 2.000 | 2.000 |
| 0112 | 634.0810 | Posts Tubular Steel 2x2-Inch X 10-FT | EACH | 4.000 | 4.000 |
| 0114 | 634.0811 | Posts Tubular Steel 2x2-Inch X 11-FT | EACH | 4.000 | 4.000 |
| 0116 | 637.2210 | Signs Type II Reflective H | SF | 34.500 | 34.500 |
| 0118 | 637.2230 | Signs Type II Reflective F | SF | 41.030 | 41.030 |
| 0120 | 638.2602 | Removing Signs Type II | EACH | 13.000 | 13.000 |
| 0122 | 638.3000 | Removing Small Sign Supports | EACH | 13.000 | 13.000 |
| 0124 | 642.5201 | Field Office Type C | EACH | 1.000 | 1.000 |
| 0126 | 643.0300 | Traffic Control Drums | DAY | 17,641.000 | 17,641.000 |
| 0128 | 643.0420 | Traffic Control Barricades Type III | DAY | 1,513.000 | 1,513.000 |
| 0130 | 643.0500 | Traffic Control Flexible Tubular Marker Posts | EACH | 30.000 | 30.000 |
| 0132 | 643.0600 | Traffic Control Flexible Tubular Marker Bases | EACH | 30.000 | 30.000 |
| 0134 | 643.0705 | Traffic Control Warning Lights Type A | DAY | 354.000 | 354.000 |
| 0136 | 643.0715 | Traffic Control Warning Lights Type C | DAY | 3,370.000 | 3,370.000 |
| 0138 | 643.0800 | Traffic Control Arrow Boards | DAY | 160.000 | 160.000 |
| 0140 | 643.0900 | Traffic Control Signs | DAY | 3,866.000 | 3,866.000 |
| 0142 | 643.1050 | Traffic Control Signs PCMS | DAY | 14.000 | 14.000 |
| 0144 | 645.0105 | Geotextile Type C | SY | 560.000 | 560.000 |
| 0146 | 645.0120 | Geotextile Type HR | SY | 120.000 | 120.000 |
| 0148 | 646.1020 | Marking Line Epoxy 4-Inch | LF | 2,867.000 | 2,867.000 |
| 0150 | 646.5320 | Marking Railroad Crossings Epoxy | EACH | 6.000 | 6.000 |
| 0152 | 646.9000 | Marking Removal Line 4-Inch | LF | 2,158.000 | 2,158.000 |
| 0154 | 649.0150 | Temporary Marking Line Removable Tape 4-Inch | LF | 23,340.000 | 23,340.000 |
| 0156 | 650.4000 | Construction Staking Storm Sewer | EACH | 18.000 | 18.000 |
| 0158 | 650.4500 | Construction Staking Subgrade | LF | 1,825.000 | 1,825.000 |
| 0160 | 650.5000 | Construction Staking Base | LF | 1,721.000 | 1,721.000 |
| 0162 | 650.5500 | Construction Staking Curb Gutter and Curb & Gutter | LF | 1,806.000 | 1,806.000 |
| 0164 | 650.6500 | Construction Staking Structure Layout (structure) 01. B-40-1024 | LS | 1.000 | 1.000 |
| 0166 | 650.7000 | Construction Staking Concrete Pavement | LF | 104.000 | 104.000 |
| 0168 | 650.9910 | Construction Staking Supplemental Control (project) 01. 2130-15-70 | LS | 1.000 | 1.000 |
| 0170 | 690.0250 | Sawing Concrete | LF | 3,080.000 | 3,080.000 |
| 0172 | 715.0502 | Incentive Strength Concrete Structures | DOL | 500.000 | 500.000 |
| 0174 | 715.0720 | Incentive Compressive Strength Concrete Pavement | DOL | 500.000 | 500.000 |
| 0176 | 999.2000.S | Installing and Maintaining Bird Deterrent System (station) 01. Station | EACH | 1.000 | 1.000 |
| 0178 | SPV.0035 | Special 01. Riprap Heavy Special | CY | 70.000 | 70.000 |
| 0180 | SPV.0060 | Special 01. Temporary Drainage Cover For Existing Inlet | EACH | 12.000 | 12.000 |
| 0182 | SPV.0060 | Special 02. Temporary Stream Diversion B-40-1024 | EACH | 1.000 | 1.000 |
| 0184 | SPV.0180 | Special 01. Slope Paving Concrete Special | SY | 17.000 | 17.000 |
| 0186 | SPV.0195 | Special 01. Management of Solid Waste | TON | 272.000 | 272.000 |

3

3

| PROJECT ID | STAGE | STATION | TO | STATION | LOCATION | 201.0110 Clearing SY | 201.0210 Grubbing SY |
|-----------------------|-----------|---------|----|---------|----------|----------------------------|----------------------------|
| 2130-15-70 | PRE-STAGE | 113+40 | - | 130+78 | MEDIAN | 450 | 450 |
| Contract Total | | | | | | 450 | 450 |

| PROJECT ID | STAGE | STATION | TO | STATION | LOCATION | 204.0100 Removing Concrete Pavement SY | 204.0150 Removing Curb & Gutter LF | 204.0170 Removing Fence LF | 204.0245.01 Removing Storm Sewer 15-INCH LF | 204.0245.02 Removing Storm Sewer 18-INCH LF | 204.0245.03 Removing Storm Sewer 24-INCH LF | 205.0100 Excavation Common CY |
|-----------------------|-----------|---------|----|---------|----------|---|--|----------------------------------|--|--|--|-------------------------------------|
| 2130-15-70 | PRE-STAGE | 113+40 | - | 115+14 | EB | | 202 | | | | | |
| | PRE-STAGE | 113+40 | - | 115+14 | MEDIAN | | | | | | | 93 |
| | PRE-STAGE | 115+52 | - | 122+45 | MEDIAN | | | | | | | 959 |
| | PRE-STAGE | 115+52 | - | 117+75 | EB | | 243 | | | | | |
| | PRE-STAGE | 115+60 | - | 121+97 | WB | | 641 | | | | | |
| | PRE-STAGE | 119+20 | - | 121+97 | EB | | 278 | | | | | |
| | PRE-STAGE | 122+80 | - | 125+81 | EB | | 340 | | | | | |
| | PRE-STAGE | 122+80 | - | 125+81 | MEDIAN | | | | | | | 374 |
| | PRE-STAGE | 122+89 | - | 125+75 | WB | | 295 | | | | | |
| | PRE-STAGE | 126+15 | - | 130+23 | EB | | 427 | | | | | |
| | PRE-STAGE | 126+16 | - | 130+60 | MEDIAN | | | | | | | 497 |
| | PRE-STAGE | 126+24 | - | 130+61 | WB | | 442 | | | | | |
| | STAGE 1 | 121+97 | - | 122+11 | WB | | | 14 | | | | |
| | STAGE 1 | 121+97 | - | 122+48 | WB | 281 | | | | | | |
| | STAGE 1 | 122+31 | - | 122+45 | WB | | | 14 | | | | |
| | STAGE 2 | 121+97 | - | 122+48 | EB | 257 | | | | | | |
| | STAGE 2 | 122+09 | - | 122+16 | MEDIAN | | | | | 7 | | |
| | STAGE 2 | 122+34 | - | 122+40 | EB | | | | | | 6 | |
| | STAGE 2 | 122+36 | - | 122+43 | EB | | | | 8 | | | |
| | STAGE 2 | 122+36 | - | 122+43 | MEDIAN | | | | | 8 | | |
| | STAGE 3 | 113+40 | - | 115+14 | MEDIAN | | | | | | | 93 |
| | STAGE 3 | 115+52 | - | 122+45 | MEDIAN | | | | | | | 959 |
| | STAGE 3 | 122+80 | - | 125+81 | MEDIAN | | | | | | | 374 |
| | STAGE 3 | 126+16 | - | 130+60 | MEDIAN | | | | | | | 497 |
| Contract Total | | | | | | 538 | 2,868 | 28 | 8 | 15 | 6 | 3,846 |

| PROJECT ID | STAGE | STATION | TO | STATION | LOCATION | 305.0120 | 415.0090 | 416.0610 | 416.0620 | 465.0120 | 465.0125 |
|-----------------------|-----------|---------|----|---------|----------|--|-----------------------------------|--------------------------|----------------------------|---|---------------------------------------|
| | | | | | | Base Aggregate Dense 1 1/4-Inch TON | Concrete Pavement 9-Inch SY | Drilled Tie Bars EACH | Drilled Dowel Bars EACH | Asphaltic Surface Driveways and Field Entrances TON | Asphaltic Surface Temporary TON |
| 2130-15-70 | PRE-STAGE | 113+40 | - | 115+14 | MEDIAN | 124 | | | | | 63 |
| | PRE-STAGE | 115+52 | - | 122+45 | MEDIAN | 1,279 | | | | | 645 |
| | PRE-STAGE | 122+80 | - | 125+81 | MEDIAN | 499 | | | | | 252 |
| | PRE-STAGE | 126+16 | - | 130+60 | MEDIAN | 662 | | | | | 334 |
| | STAGE 1 | 121+97 | - | 121+97 | WB | | | | 29 | | |
| | STAGE 1 | 121+97 | - | 122+48 | WB | 146 | 259 | 51 | | | |
| | STAGE 1 | 122+48 | - | 122+48 | WB | | | | 46 | | |
| | STAGE 2 | 121+97 | - | 121+97 | EB | | | | 29 | | |
| | STAGE 2 | 121+97 | - | 122+48 | EB | 133 | 229 | 53 | | | |
| | STAGE 2 | 122+48 | - | 122+48 | EB | | | | 61 | | |
| | STAGE 2 | 124+00 | - | 124+19 | EB | 4 | | | | 2 | |
| | STAGE 2 | 124+49 | - | 124+68 | EB | 3 | | | | 2 | |
| | STAGE 3 | 113+40 | - | 115+14 | EB | 22 | | 68 | | | |
| | STAGE 3 | 115+52 | - | 117+75 | EB | 27 | | 81 | | | |
| | STAGE 3 | 115+60 | - | 122+38 | WB | | | 230 | | | |
| | STAGE 3 | 115+60 | - | 121+97 | WB | 69 | | | | | |
| | STAGE 3 | 119+20 | - | 121+97 | EB | 31 | | | | | |
| | STAGE 3 | 119+20 | - | 122+45 | EB | | | 115 | | | |
| | STAGE 3 | 122+80 | - | 125+81 | EB | 38 | | 114 | | | |
| | STAGE 3 | 122+89 | - | 125+75 | WB | 33 | | 99 | | | |
| | STAGE 3 | 126+16 | - | 130+23 | EB | 48 | | 143 | | | |
| | STAGE 3 | 126+23 | - | 130+60 | WB | 49 | | 148 | | | |
| Contract Total | | | | | | 3,167 | 488 | 1,102 | 165 | 4 | 1,294 |

3

| | | | | | | 520.8000 |
|-----------------------|--------------|----------------|-----------|----------------|-----------------|----------------------------------|
| | | | | | | Concrete Collars for Pipe |
| PROJECT ID | STAGE | STATION | TO | STATION | LOCATION | EACH |
| 2130-15-70 | STAGE 2 | 122+04 | - | 122+04 | MEDIAN | 1 |
| | STAGE 2 | 122+10 | - | 122+10 | MEDIAN | 1 |
| | STAGE 2 | 122+32 | - | 122+32 | EB | 1 |
| | STAGE 2 | 122+32 | - | 122+32 | MEDIAN | 1 |
| | STAGE 2 | 122+38 | - | 122+38 | EB | 1 |
| | STAGE 2 | 122+38 | - | 122+38 | MEDIAN | 1 |
| Contract Total | | | | | | 6 |

3

| | | | | | | 601.0331 |
|-----------------------|--------------|----------------|-----------|----------------|-----------------|---|
| | | | | | | Concrete Curb & Gutter 31-Inch |
| PROJECT ID | STAGE | STATION | TO | STATION | LOCATION | LF |
| 2130-15-70 | STAGE 1 | 121+97 | - | 122+47 | WB | 50 |
| | STAGE 2 | 121+97 | - | 122+30 | EB | 34 |
| | STAGE 3 | 113+40 | - | 115+14 | EB | 202 |
| | STAGE 3 | 115+52 | - | 117+75 | EB | 243 |
| | STAGE 3 | 115+60 | - | 122+38 | WB | 688 |
| | STAGE 3 | 119+20 | - | 122+45 | EB | 344 |
| | STAGE 3 | 122+80 | - | 125+81 | EB | 340 |
| | STAGE 3 | 122+89 | - | 125+75 | WB | 295 |
| | STAGE 3 | 126+16 | - | 130+23 | EB | 427 |
| | STAGE 3 | 126+23 | - | 130+60 | WB | 442 |
| Contract Total | | | | | | 3,065 |

| | | | | | | 603.8000 | 603.8125 | 603.8500 | 614.0905 |
|-----------------------|--------------|----------------|-----------|----------------|-----------------|---|---|---|---------------------------------|
| | | | | | | Concrete Barrier Temporary Precast | Concrete Barrier Temporary Precast | Anchoring Concrete Barrier Temporary | Crash Cushions Temporary |
| | | | | | | Delivered | Installed | Precast | |
| PROJECT ID | STAGE | STATION | TO | STATION | LOCATION | LF | LF | LF | EACH |
| 2130-15-70 | STAGE 1 | 121+75 | - | 122+75 | MEDIAN | 100 | 100 | 100 | |
| | STAGE 1 | 122+75 | - | 122+75 | MEDIAN | | | | 1 |
| | STAGE 2 | 121+75 | - | 122+75 | MEDIAN | 100 | 100 | 100 | |
| | STAGE 2 | 121+75 | - | 121+75 | MEDIAN | | | | 1 |
| Contract Total | | | | | | 200 | 200 | 200 | 2 |

| PROJECT ID | STAGE | STATION | TO | STATION | LOCATION | 608.0315 | 608.0318 |
|-----------------------|---------|---------|----|---------|----------|--|--|
| | | | | | | Storm Sewer Pipe Reinforced Concrete Class III 15-Inch LF | Storm Sewer Pipe Reinforced Concrete Class III 18-Inch LF |
| 2130-15-70 | STAGE 2 | 122+09 | - | 122+17 | MEDIAN | | 8 |
| | STAGE 2 | 122+35 | - | 122+43 | EB | 9 | |
| | STAGE 2 | 122+35 | - | 122+43 | MEDIAN | | 9 |
| Contract Total | | | | | | 9 | 17 |

| PROJECT ID | STAGE | STATION | LOCATION | 611.8110 | 611.8115 |
|-----------------------|---------|---------|----------|----------------------------------|--------------------------------|
| | | | | Adjusting Manhole Covers EACH | Adjusting Inlet Covers EACH |
| 2130-15-70 | STAGE 2 | 122+38 | EB | 2 | |
| | STAGE 3 | 115+14 | MEDIAN | | 1 |
| | STAGE 3 | 121+18 | WB | | 1 |
| | STAGE 3 | 121+19 | EB | | 1 |
| | STAGE 3 | 121+59 | EB | | 1 |
| | STAGE 3 | 121+62 | MEDIAN | | 1 |
| | STAGE 3 | 121+62 | WB | | 1 |
| | STAGE 3 | 123+25 | MEDIAN | | 1 |
| | STAGE 3 | 123+28 | EB | | 1 |
| | STAGE 3 | 123+30 | WB | | 1 |
| | STAGE 3 | 126+42 | EB | | 1 |
| | STAGE 3 | 126+43 | MEDIAN | | 1 |
| | STAGE 3 | 126+58 | WB | | 1 |
| Contract Total | | | | 2 | 12 |

| 616.0207 Fence Chain Link 7-FT | | | | | | |
|-----------------------------------|---------|---------|----|---------|----------|-----------|
| PROJECT ID | STAGE | STATION | TO | STATION | LOCATION | LF |
| 2130-15-70 | STAGE 1 | 121+97 | - | 121+98 | WB | 9 |
| | STAGE 1 | 122+44 | - | 122+45 | WB | 9 |
| Contract Total | | | | | | 18 |

| PROJECT ID | STAGE | STATION | TO | STATION | LOCATION | 624.0100 | 625.0500 | 628.1905 | 628.1910 |
|-----------------------|-----------|---------|----|---------|----------|---------------|------------------------|---------------------------------------|---|
| | | | | | | Water MGAL | Salvaged Topsoil SY | Mobilizations Erosion Control EACH | Mobilizations Emergency Erosion Control EACH |
| 2130-15-70 | PRE-STAGE | 113+40 | - | 115+11 | MEDIAN | | 604 | | |
| | PRE-STAGE | 113+40 | - | 115+14 | MEDIAN | 1.85 | | | |
| | PRE-STAGE | 115+52 | - | 122+45 | MEDIAN | 19.18 | | | |
| | PRE-STAGE | 115+55 | - | 122+43 | MEDIAN | | 2,414 | | |
| | PRE-STAGE | 122+27 | - | 122+27 | MEDIAN | | | 1 | |
| | PRE-STAGE | 122+80 | - | 125+81 | MEDIAN | 7.47 | | | |
| | PRE-STAGE | 122+83 | - | 125+78 | MEDIAN | | 914 | | |
| | PRE-STAGE | 126+16 | - | 130+60 | MEDIAN | 9.93 | | | |
| | PRE-STAGE | 126+19 | - | 130+78 | MEDIAN | | 1,604 | | |
| | STAGE 1 | 121+80 | - | 122+60 | WB | | 116 | | |
| | STAGE 1 | 121+97 | - | 122+48 | WB | 1.94 | | | |
| | STAGE 1 | 122+27 | - | 122+27 | MEDIAN | | | | 1 |
| | STAGE 2 | 121+90 | - | 122+46 | EB | | 71 | | |
| | STAGE 2 | 121+97 | - | 122+48 | EB | 1.76 | | | |
| | STAGE 2 | 122+27 | - | 122+27 | MEDIAN | | | | 1 |
| | STAGE 2 | 124+00 | - | 124+19 | EB | 0.06 | | | |
| | STAGE 2 | 124+49 | - | 124+68 | EB | 0.05 | | | |
| | STAGE 3 | 113+40 | - | 115+14 | EB | 0.44 | | | |
| | STAGE 3 | 115+52 | - | 117+75 | EB | 0.53 | | | |
| | STAGE 3 | 115+60 | - | 121+97 | WB | 1.38 | | | |
| | STAGE 3 | 119+20 | - | 121+97 | EB | 0.61 | | | |
| | STAGE 3 | 122+27 | - | 122+27 | MEDIAN | | | 1 | 1 |
| | STAGE 3 | 122+80 | - | 125+81 | EB | 0.75 | | | |
| | STAGE 3 | 122+89 | - | 125+75 | WB | 0.64 | | | |
| | STAGE 3 | 126+16 | - | 130+23 | EB | 0.94 | | | |
| | STAGE 3 | 126+23 | - | 130+60 | WB | 0.97 | | | |
| Contract Total | | | | | | 48.50 | 5,723 | 2 | 3 |

| PROJECT ID | STAGE | STATION | TO | STATION | LOCATION | 628.1504 Silt Fence LF | 628.1520 Silt Fence Maintenance LF | 628.7010 Inlet Protection Type B EACH | 629.0210 Fertilizer Type B CWT | 631.0300 Sod Water MGAL | 631.1000 Sod Lawn SY |
|-----------------------|-----------|---------|----|---------|----------|------------------------------|--|---|--------------------------------------|-------------------------------|----------------------------|
| 2130-15-70 | PRE-STAGE | 115+13 | - | 115+13 | MEDIAN | | | 1 | | | |
| | PRE-STAGE | 121+19 | - | 121+19 | WB | | | 2 | | | |
| | PRE-STAGE | 121+20 | - | 121+20 | EB | | | 1 | | | |
| | PRE-STAGE | 121+22 | - | 121+22 | EB | | | 1 | | | |
| | PRE-STAGE | 121+57 | - | 121+57 | MEDIAN | | | 1 | | | |
| | PRE-STAGE | 121+59 | - | 121+59 | EB | | | 2 | | | |
| | PRE-STAGE | 121+60 | - | 121+60 | WB | | | 2 | | | |
| | PRE-STAGE | 122+95 | - | 122+95 | EB | | | 1 | | | |
| | PRE-STAGE | 123+26 | - | 123+26 | MEDIAN | | | 1 | | | |
| | PRE-STAGE | 123+28 | - | 123+28 | EB | | | 1 | | | |
| | PRE-STAGE | 123+33 | - | 123+33 | WB | | | 1 | | | |
| | PRE-STAGE | 123+44 | - | 123+44 | WB | | | 1 | | | |
| | PRE-STAGE | 126+39 | - | 126+39 | MEDIAN | | | 1 | | | |
| | PRE-STAGE | 126+45 | - | 126+45 | EB | | | 1 | | | |
| | PRE-STAGE | 126+61 | - | 126+61 | WB | | | 1 | | | |
| | STAGE 1 | 121+80 | - | 122+60 | WB | | | | 0.07 | 2 | 116 |
| | STAGE 1 | 121+98 | - | 122+13 | WB | 36 | 36 | | | | |
| | STAGE 1 | 122+31 | - | 122+51 | WB | 36 | 36 | | | | |
| | STAGE 2 | 121+90 | - | 122+46 | EB | | | | 0.04 | 1 | 71 |
| | STAGE 3 | 113+40 | - | 115+11 | MEDIAN | | | | 0.38 | 10 | 604 |
| | STAGE 3 | 115+55 | - | 122+43 | MEDIAN | | | | 1.52 | 41 | 2,414 |
| | STAGE 3 | 122+83 | - | 125+78 | MEDIAN | | | | 0.58 | 15 | 914 |
| | STAGE 3 | 126+19 | - | 130+78 | MEDIAN | | | | 1.01 | 27 | 1,604 |
| Contract Total | | | | | | 72 | 72 | 18 | 3.60 | 96 | 5,723 |

3

3

| PROJECT ID | STAGE | STATION | LOCATION | SIGN CODE | SIGN SIZE | DESCRIPTION | 634.0808 | 634.0810 | 634.0811 | 637.2210 | 637.2230 |
|-----------------------|-----------|---------|----------|-----------|-----------|------------------------------------|--|---|---|-------------------------------------|-------------------------------------|
| | | | | | | | Posts Tubular Steel 2x2-Inch x 8-FT EACH | Posts Tubular Steel 2x2-Inch x 10-FT EACH | Posts Tubular Steel 2x2-Inch x 11-FT EACH | Signs Type II Reflective H SF | Signs Type II Reflective F SF |
| 2130-15-70 | PRE-STAGE | 107+68 | EB | W10-1 | 36"X36" | RAILROAD CROSSING | | | 1 | | 7.07 |
| | PRE-STAGE | 107+68 | MEDIAN | W10-1 | 36"X36" | RAILROAD CROSSING | | | 1 | | 7.07 |
| | PRE-STAGE | 110+70 | EB | R8-8 | 24"X30" | DO NOT STOP ON TRACKS | | 1 | | 5 | |
| | PRE-STAGE | 110+70 | EB | R7-1D | 24"X30" | NO PARKING ANY TIME (DOUBLE ARROW) | | | | 5 | |
| | PRE-STAGE | 111+09 | EB | R8-10 | 24"X36" | STOP HERE WHEN FLASHING (ARROW) | 1 | | | 6 | |
| | PRE-STAGE | 111+45 | WB | R8-10 | 24"X36" | STOP HERE WHEN FLASHING (ARROW) | 1 | | | 6 | |
| | PRE-STAGE | 112+08 | WB | R8-8 | 24"X30" | DO NOT STOP ON TRACKS | | 1 | | 5 | |
| | PRE-STAGE | 114+66 | MEDIAN | W10-1 | 36"X36" | RAILROAD CROSSING | | | 1 | | 7.07 |
| | PRE-STAGE | 114+66 | WB | W10-1 | 36"X36" | RAILROAD CROSSING | | | 1 | | 7.07 |
| | STAGE 3 | 117+28 | MEDIAN | R2-1 | 30"X36" | SPEED LIMIT 40 MPH | | 1 | | 7.5 | |
| | STAGE 3 | 117+33 | MEDIAN | W11-1 | 36"X36" | BIKE CROSSING | | | | | 9 |
| | STAGE 3 | 117+33 | MEDIAN | W16-9P | 30"X18" | CONVENTIONAL ARROW AHEAD PLAQUE | | 1 | | | 3.75 |
| Contract Total | | | | | | | 2 | 4 | 4 | 34.5 | 41.03 |

| PROJECT ID | STAGE | LOCATION | STATION | 638.2602 | 638.3000 |
|-----------------------|-----------|----------|---------|--------------------------------|--------------------------------------|
| | | | | Removing Signs Type II EACH | Removing Small Sign Supports EACH |
| 2130-15-70 | PRE-STAGE | EB | 107+68 | 1 | 1 |
| | PRE-STAGE | EB | 110+71 | 1 | 1 |
| | PRE-STAGE | EB | 111+10 | 1 | 1 |
| | PRE-STAGE | MEDIAN | 107+68 | 1 | 1 |
| | PRE-STAGE | MEDIAN | 114+66 | 1 | 1 |
| | PRE-STAGE | MEDIAN | 117+29 | 1 | 1 |
| | PRE-STAGE | MEDIAN | 117+34 | 1 | 1 |
| | PRE-STAGE | WB | 111+46 | 1 | 1 |
| | PRE-STAGE | WB | 112+09 | 1 | 1 |
| | PRE-STAGE | WB | 114+66 | 1 | 1 |
| | STAGE 1 | WB | 122+33 | 1 | 1 |
| | STAGE 2 | EB | 122+04 | 1 | 1 |
| | STAGE 2 | EB | 122+28 | 1 | 1 |
| Contract Total | | | | 13 | 13 |

| PROJECT ID | STAGE | LOCATION | DAYS | 643.0300 | 643.0715 | 643.0800 |
|-----------------------|-----------|----------|------|-----------------------|---------------------------------------|------------------------------|
| | | | | Traffic Control Drums | Traffic Control Warning Lights Type C | Traffic Control Arrow Boards |
| | | | | DAY | DAY | DAY |
| 2130-15-70 | PRE-STAGE | EB | 15 | 1,057 | 193 | 15 |
| | PRE-STAGE | MEDIAN | 15 | 882 | | |
| | PRE-STAGE | WB | 15 | 1,714 | 193 | 15 |
| | STAGE 1 | EB | 26 | 1,332 | 333 | 26 |
| | STAGE 1 | MEDIAN | 26 | 1,494 | | |
| | STAGE 1 | WB | 26 | 2,703 | 1,043 | 26 |
| | STAGE 2 | EB | 25 | 2,222 | 927 | 25 |
| | STAGE 2 | MEDIAN | 25 | 1,969 | | 25 |
| | STAGE 2 | WB | 25 | 857 | 321 | |
| | STAGE 3 | EB | 14 | 987 | 180 | 14 |
| | STAGE 3 | MEDIAN | 14 | 824 | | |
| | STAGE 3 | WB | 14 | 1,600 | 180 | 14 |
| Contract Total | | | | 17,641 | 3,370 | 160 |

| PROJECT ID | STAGE | LOCATION | DAYS | 643.0420 | 643.0705 | 643.0500 | 643.0600 |
|-----------------------|-----------|----------|------|-------------------------------------|---------------------------------------|---|---|
| | | | | Traffic Control Barricades Type III | Traffic Control Warning Lights Type A | Traffic Control Flexible Tubular Marker Posts | Traffic Control Flexible Tubular Marker Bases |
| | | | | DAY | DAY | EACH | EACH |
| 2130-15-70 | PRE-STAGE | EB | 15 | 60 | | | |
| | PRE-STAGE | MEDIAN | 15 | 60 | | | |
| | PRE-STAGE | WB | 15 | 45 | | | |
| | STAGE 1 | EB | 26 | 104 | | 10 | 10 |
| | STAGE 1 | MEDIAN | 26 | 182 | 104 | | |
| | STAGE 1 | WB | 26 | 208 | | | |
| | STAGE 2 | EB | 25 | 575 | 200 | | |
| | STAGE 2 | MEDIAN | 25 | 125 | 50 | | |
| | STAGE 2 | WB | 25 | | | 20 | 20 |
| | STAGE 3 | EB | 14 | 56 | | | |
| | STAGE 3 | MEDIAN | 14 | 56 | | | |
| | STAGE 3 | WB | 14 | 42 | | | |
| Contract Total | | | | 1,513 | 354 | 30 | 30 |

3

3

| PROJECT ID | STAGE | LOCATION | DAYS | 643.0900 | 643.1050 |
|------------|-----------------------|----------|------|-----------------------|----------------------------|
| | | | | Traffic Control Signs | Traffic Control Signs PCMS |
| | | | | DAY | DAY |
| 2130-15-70 | PRE-STAGE | EB | 15 | 240 | |
| | PRE-STAGE | EB | 7 | | 7 |
| | PRE-STAGE | MEDIAN | 15 | 150 | |
| | PRE-STAGE | WB | 15 | 240 | |
| | PRE-STAGE | WB | 7 | | 7 |
| | STAGE 1 | EB | 26 | 520 | |
| | STAGE 1 | MEDIAN | 26 | 234 | |
| | STAGE 1 | WB | 26 | 494 | |
| | STAGE 2 | EB | 25 | 800 | |
| | STAGE 2 | MEDIAN | 25 | 400 | |
| | STAGE 2 | WB | 25 | 200 | |
| | STAGE 3 | EB | 14 | 224 | |
| | STAGE 3 | MEDIAN | 14 | 140 | |
| | STAGE 3 | WB | 14 | 224 | |
| | Contract Total | | | | 3,866 |

| PROJECT ID | STAGE | LOCATION | COLOR | 649.0150 |
|------------|-----------------------|----------|--------|--|
| | | | | Temporary Marking Line Removable Tape 4-Inch |
| | | | | LF |
| 2130-15-70 | PRE-STAGE | EB | Yellow | 2,265 |
| | PRE-STAGE | WB | White | 562 |
| | PRE-STAGE | WB | Yellow | 1,631 |
| | STAGE 1 | EB | White | 654 |
| | STAGE 1 | EB | Yellow | 3,918 |
| | STAGE 1 | WB | White | 2,972 |
| | STAGE 1 | WB | White | 692 |
| | STAGE 2 | EB | White | 572 |
| | STAGE 2 | EB | White | 2,195 |
| | STAGE 2 | WB | White | 292 |
| | STAGE 2 | WB | Yellow | 3,129 |
| | STAGE 3 | EB | Yellow | 2,265 |
| | STAGE 3 | WB | White | 562 |
| | STAGE 3 | WB | Yellow | 1,631 |
| | Contract Total | | | |

3

| PROJECT ID | STATION | TO | STATION | LOCATION | COLOR | 646.1020 | 646.5320 |
|-----------------------|---------|----|---------|----------|-------|---------------------------|---------------------------------|
| | | | | | | Marking Line Epoxy 4-Inch | Marking Railroad Crossing Epoxy |
| | | | | | | LF | EACH |
| 2130-15-70 | 106+92 | - | 135+65 | WB | White | 719 | |
| | 106+95 | - | 135+65 | WB | White | 718 | |
| | 107+09 | - | 135+68 | EB | White | 715 | |
| | 107+11 | - | 135+68 | EB | White | 715 | |
| | 108+43 | - | 108+43 | EB | White | | 3 |
| | 114+31 | - | 114+31 | WB | White | | 3 |
| Contract Total | | | | | | 2,867 | 6 |

| PROJECT ID | LOCATION | 646.9000 |
|-----------------------|----------|-----------------------------|
| | | Marking Removal Line 4-Inch |
| | | LF |
| 2130-15-70 | EB | 1,274 |
| | WB | 884 |
| Contract Total | | 2,158 |

3

| PROJECT ID | STAGE | STATION | TO | STATION | LOCATION | 650.4000 | 650.4500 | 650.5000 | 650.5500 | 650.7000 | |
|------------|-----------------------|---------|----|---------|----------|----------------------------------|-------------------------------|---------------------------|--|--|------------|
| | | | | | | Construction Staking Storm Sewer | Construction Staking Subgrade | Construction Staking Base | Construction Staking Curb Gutter and Curb & Gutter | Construction Staking Concrete Pavement | |
| | | | | | | EACH | LF | LF | LF | LF | |
| 2130-15-70 | PRE-STAGE | 113+45 | - | 130+66 | MEDIAN | | 1,721 | 1,721 | | | |
| | PRE-STAGE | 115+14 | - | 115+14 | MEDIAN | 1 | | | | | |
| | PRE-STAGE | 121+18 | - | 121+18 | WB | 1 | | | | | |
| | PRE-STAGE | 121+19 | - | 121+19 | EB | 1 | | | | | |
| | PRE-STAGE | 121+59 | - | 121+59 | EB | 1 | | | | | |
| | PRE-STAGE | 121+62 | - | 121+62 | MEDIAN | 1 | | | | | |
| | PRE-STAGE | 121+62 | - | 121+62 | WB | 1 | | | | | |
| | PRE-STAGE | 122+04 | - | 122+04 | MEDIAN | 1 | | | | | |
| | PRE-STAGE | 122+10 | - | 122+10 | MEDIAN | 1 | | | | | |
| | PRE-STAGE | 122+32 | - | 122+32 | MEDIAN | 1 | | | | | |
| | PRE-STAGE | 122+38 | - | 122+38 | MEDIAN | 1 | | | | | |
| | PRE-STAGE | 123+25 | - | 123+25 | MEDIAN | 1 | | | | | |
| | PRE-STAGE | 123+28 | - | 123+28 | EB | 1 | | | | | |
| | PRE-STAGE | 123+30 | - | 123+30 | WB | 1 | | | | | |
| | PRE-STAGE | 126+42 | - | 126+42 | EB | 1 | | | | | |
| | PRE-STAGE | 126+43 | - | 126+43 | MEDIAN | 1 | | | | | |
| | PRE-STAGE | 126+58 | - | 126+58 | WB | 1 | | | | | |
| | STAGE 1 | 121+97 | - | 122+48 | WB | | | 52 | | 51 | 52 |
| | STAGE 2 | 121+97 | - | 122+30 | EB | | | | | 34 | |
| | STAGE 2 | 121+97 | - | 122+48 | EB | | | 52 | | | 52 |
| | STAGE 2 | 122+32 | - | 122+32 | EB | 1 | | | | | |
| | STAGE 2 | 122+38 | - | 122+38 | EB | 1 | | | | | |
| | STAGE 3 | 113+45 | - | 130+66 | MEDIAN | | | | | 1,721 | |
| | Contract Total | | | | | | 18 | 1,825 | 1,721 | 1,806 | 104 |

3

3

| | | | | | | 690.0250 |
|------------|-----------------------|---------|----|---------|----------|-----------------|
| | | | | | | Sawing Concrete |
| PROJECT ID | STAGE | STATION | TO | STATION | LOCATION | LF |
| 2130-15-70 | PRE-STAGE | 113+40 | - | 115+14 | EB | 202 |
| | PRE-STAGE | 115+52 | - | 117+75 | EB | 243 |
| | PRE-STAGE | 115+60 | - | 121+97 | WB | 641 |
| | PRE-STAGE | 119+20 | - | 121+97 | EB | 277 |
| | PRE-STAGE | 122+80 | - | 125+81 | EB | 340 |
| | PRE-STAGE | 122+89 | - | 125+75 | WB | 295 |
| | PRE-STAGE | 126+16 | - | 130+23 | EB | 427 |
| | PRE-STAGE | 126+23 | - | 130+60 | WB | 442 |
| | STAGE 1 | 121+97 | - | 121+97 | WB | 39 |
| | STAGE 1 | 122+48 | - | 122+48 | WB | 59 |
| | STAGE 2 | 121+97 | - | 121+97 | EB | 39 |
| | STAGE 2 | 122+48 | - | 122+48 | EB | 76 |
| | Contract Total | | | | | |

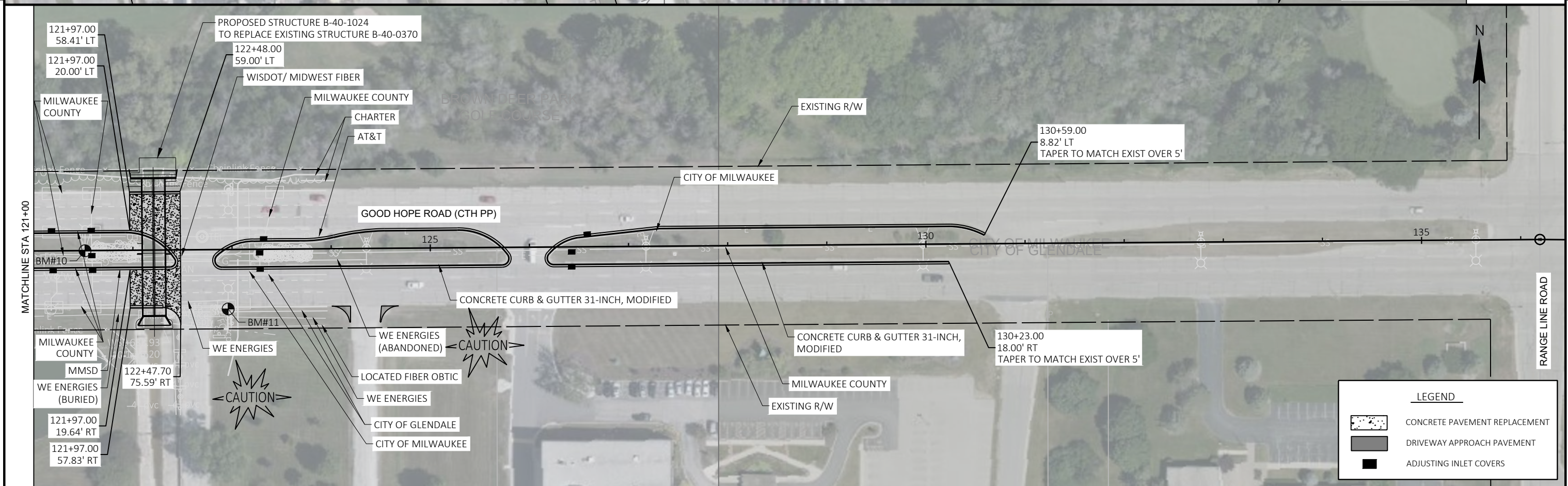
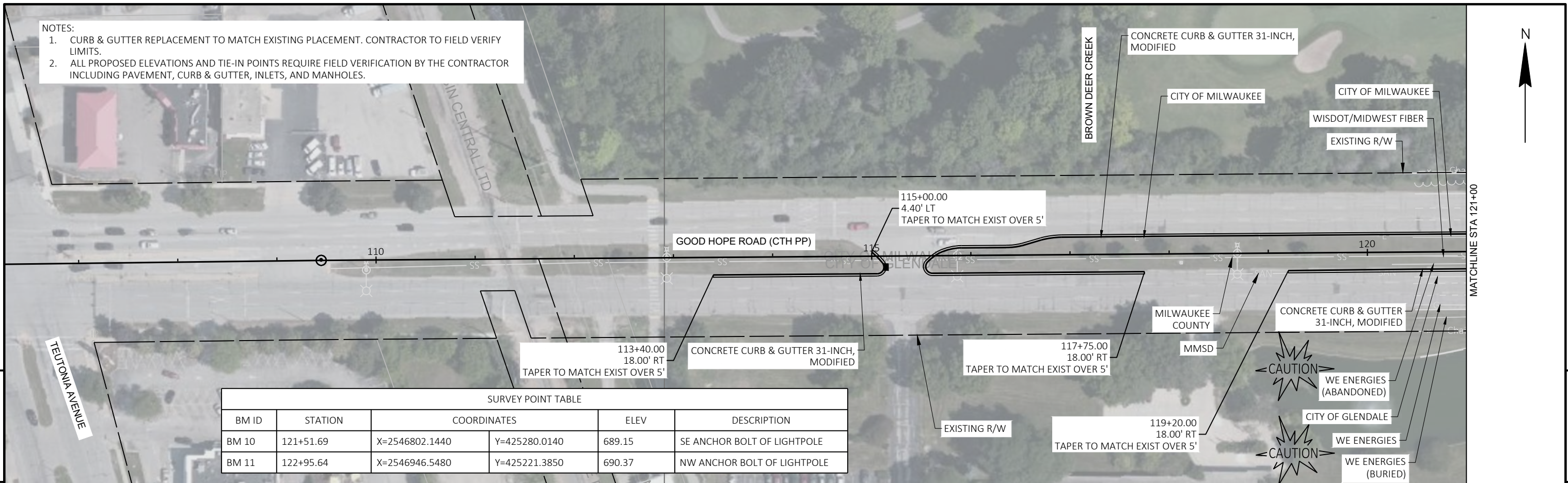
| | | | | | SPV.0060.01 |
|------------|-----------------------|---------|----------|--|---|
| | | | | | Temporary Drainage Cover For Existing Inlet |
| PROJECT ID | STAGE | STATION | LOCATION | | EACH |
| 2130-15-70 | PRE-STAGE | 115+14 | MEDIAN | | 1 |
| | PRE-STAGE | 121+18 | WB | | 1 |
| | PRE-STAGE | 121+19 | EB | | 1 |
| | PRE-STAGE | 121+59 | EB | | 1 |
| | PRE-STAGE | 121+62 | MEDIAN | | 1 |
| | PRE-STAGE | 121+62 | WB | | 1 |
| | PRE-STAGE | 123+25 | MEDIAN | | 1 |
| | PRE-STAGE | 123+28 | EB | | 1 |
| | PRE-STAGE | 123+30 | WB | | 1 |
| | PRE-STAGE | 126+42 | EB | | 1 |
| | PRE-STAGE | 126+43 | MEDIAN | | 1 |
| | PRE-STAGE | 126+58 | WB | | 1 |
| | Contract Total | | | | |

| | | | | | 205.0501.S | | | |
|-----------------------|---------|----------|----|---------|--|-------------|--|--|
| | | | | | Excavation, Hauling, and Disposal of Petroleum Contaminated Soil | SPV.0195.01 | | |
| | | | | | Management of Solid Waste | | | |
| PROJECT ID | STATION | LOCATION | TO | STATION | TON | TON | | |
| 2130-15-70 | 121+80 | EB | - | 122+20 | 476 | | | |
| | 121+80 | WB | - | 122+65 | 697 | | | |
| | 122+15 | WB | - | 122+65 | | 272 | | |
| Contract Total | | | | | 1,173 | 272 | | |

| ITEM # | DESCRIPTION | UNIT | Sum of Quantity |
|-------------|--|------|-----------------|
| 213.0100.01 | Finishing Roadway 2130-15-70 | EACH | 1 |
| 618.0100 | Maintenance and Repair of Haul Roads 2130-15-70 | EACH | 1 |
| 619.1000 | Mobilization | EACH | 0.5 |
| 642.5201 | Field Office Type C | EACH | 1 |
| 650.6500.01 | Construction Staking Structure Layout B-40-1024 | LS | 1 |
| 650.9910 | Construction Staking Supplemental Control 2130-15-70 | LS | 1 |
| 999.2000.S | Installing and Maintaining Bird Deterrent System | EACH | 1 |
| SPV.0060.02 | Temporary Stream Diversion B-40-1024 | EACH | 1 |

- NOTES:
1. CURB & GUTTER REPLACEMENT TO MATCH EXISTING PLACEMENT. CONTRACTOR TO FIELD VERIFY LIMITS.
 2. ALL PROPOSED ELEVATIONS AND TIE-IN POINTS REQUIRE FIELD VERIFICATION BY THE CONTRACTOR INCLUDING PAVEMENT, CURB & GUTTER, INLETS, AND MANHOLES.

| SURVEY POINT TABLE | | | | | |
|--------------------|-----------|----------------|---------------|--------|-----------------------------|
| BM ID | STATION | COORDINATES | | ELEV | DESCRIPTION |
| BM 10 | 121+51.69 | X=2546802.1440 | Y=425280.0140 | 689.15 | SE ANCHOR BOLT OF LIGHTPOLE |
| BM 11 | 122+95.64 | X=2546946.5480 | Y=425221.3850 | 690.37 | NW ANCHOR BOLT OF LIGHTPOLE |

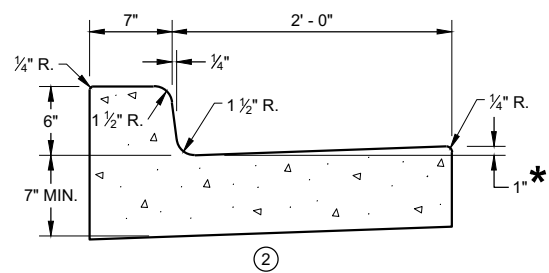


| LEGEND | |
|--------|-------------------------------|
| | CONCRETE PAVEMENT REPLACEMENT |
| | DRIVEWAY APPROACH PAVEMENT |
| | ADJUSTING INLET COVERS |

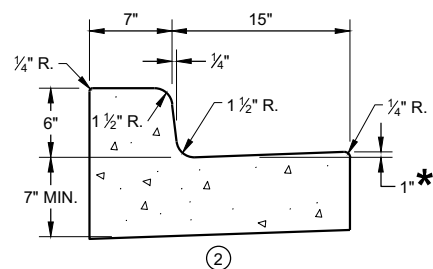
PROJECT NO: 2130-15-70 HWY:CTH PP COUNTY: MILWAUKEE PLAN SHEET E

Standard Detail Drawing List

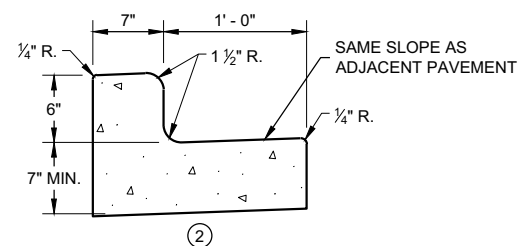
| | |
|-----------|--|
| 08D16-11 | CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES |
| 08D21-01 | DRIVEWAYS WITHOUT CURB & GUTTER |
| 08E09-06 | SILT FENCE |
| 08E10-02 | INLET PROTECTION TYPE A, B, C AND D |
| 08F04-07 | JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL |
| 12A03-10 | NAME PLATE (STRUCTURES) |
| 13C09-15B | CONCRETE PAVEMENT REPAIR AND REPLACEMENT |
| 13C09-15C | CONCRETE PAVEMENT REPAIR AND REPLACEMENT |
| 13C18-07A | CONCRETE PAVEMENT JOINTING |
| 13C18-07B | CONCRETE PAVEMENT STEEL REINFORCEMENT |
| 13C18-07D | CONCRETE PAVEMENT JOINT TYPES AT UTILITY FIXTURES |
| 13C18-07E | CONCRETE PAVEMENT JOINTING AND STEEL REINFORCEMENT IN ROUNDABOUTS |
| 13C18-07F | CONCRETE PAVEMENT INTERSECTION BOXOUT FOR INTEGRAL CURB AND GUTTER |
| 14B07-15A | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" |
| 14B07-15B | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" |
| 14B07-15C | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" |
| 14B07-15D | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" |
| 14B07-15E | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" |
| 14B07-15F | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" |
| 14B07-15G | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" |
| 14B07-15H | CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" |
| 14B07-15I | 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 |
| 15B03-15A | FENCE CHAIN LINK |
| 15B03-15B | FENCE CHAIN LINK |
| 15C02-08B | BARRICADES AND SIGNS FOR VARIOUS CLOSURES |
| 15C08-20A | LONGITUDINAL MARKING (MAINLINE) |
| 15C09-12A | SIGNING AND PAVEMENT MARKING DETAILS FOR RAILROAD-HIGHWAY GRADE CROSSINGS |
| 15C11-09A | CHANNELIZING DEVICES FLEXIBLE TUBULAR MARKER POST |
| 15C11-09B | CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS |
| 15D12-09B | TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION |
| 15D20-05A | TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY |
| 15D21-07A | TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE |
| 15D21-07B | TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE |
| 15D40-02A | TRAFFIC CONTROL, FULL LANE SHIFT NON-FREEWAY OR MULTILANE DIVIDED 45 MPH AND UNDER |



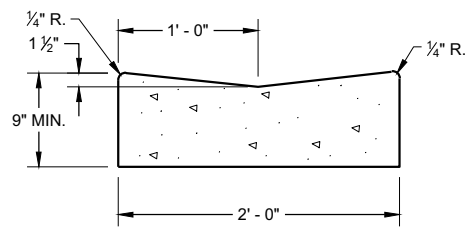
CONCRETE CURB AND GUTTER 31" ①



CONCRETE CURB AND GUTTER 22" ①

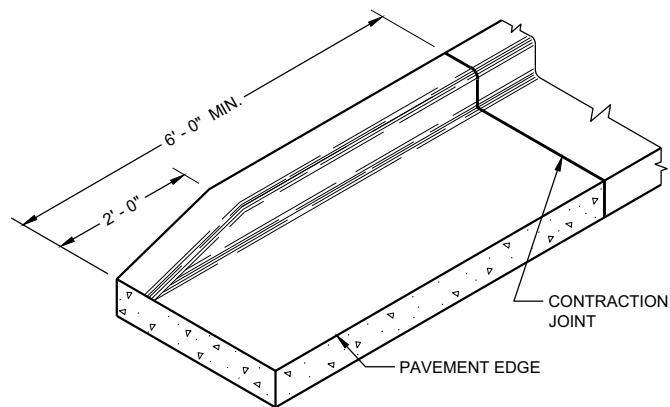


CONCRETE CURB AND GUTTER 19" ①

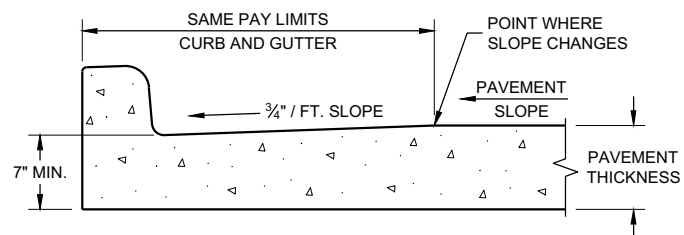


CONCRETE GUTTER 24" ①

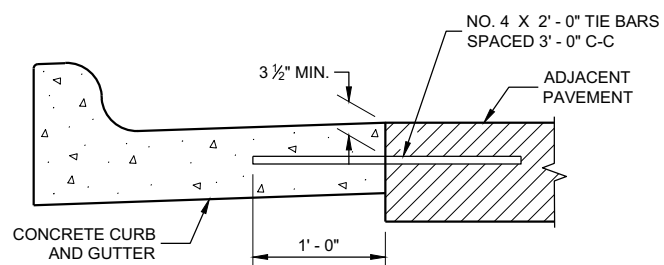
* TO BE MEASURED TO A MAXIMUM OF 3" WHERE DRAINAGE PROBLEMS EXIST.



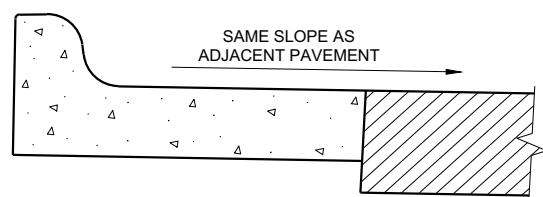
END SECTION CURB AND GUTTER



PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB AND GUTTER



TYPICAL TIE BAR LOCATION ①



HIGH SIDE SECTION ③
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

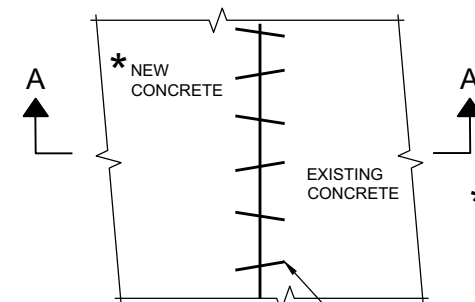
DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

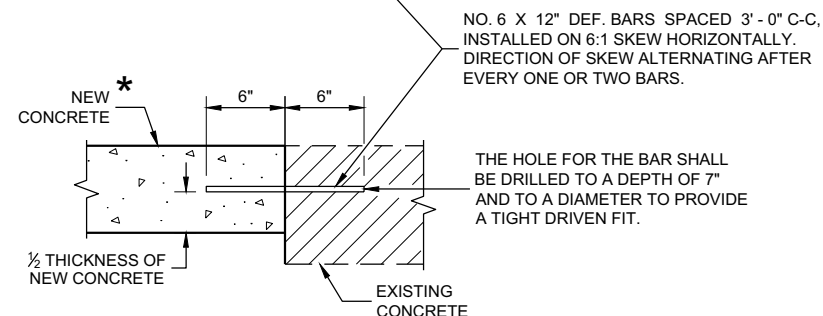
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE COURSE AND UNCLASSIFIED EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

- ① WHEN PLACED ADJACENT TO NEW CONCRETE, TIE BARS ARE REQUIRED FOR CURB AND GUTTER 31", 22", 19" AND CONCRETE GUTTER 24".
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE COURSE PROVIDED A 7" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ WHEN HIGH SIDE CURB SECTION IS REQUIRED, THE LOCATION(S) WILL BE NOTED ON THE PLANS



PLAN VIEW



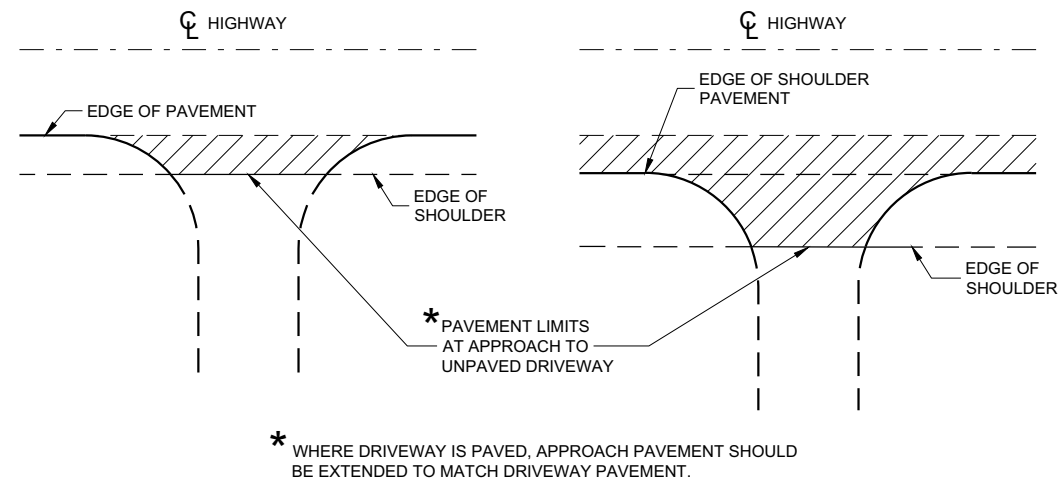
**SECTION A - A
PAVEMENT TIES**

**CONCRETE GUTTER,
CURB AND GUTTER AND
PAVEMENT TIES**
(For Optional use in Milwaukee Co. Only)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2020 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER

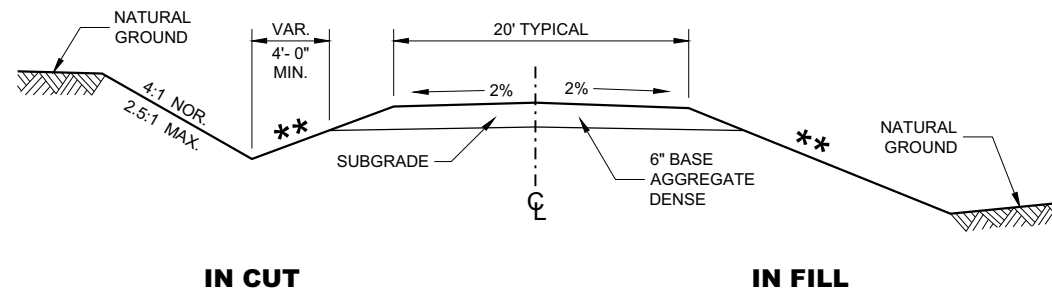
FHWA



PLAN VIEW
(UNPAVED SHOULDER ON HIGHWAY)

PLAN VIEW
(PAVED SHOULDER ON HIGHWAY)

**RURAL DRIVEWAY INTERSECTION DETAIL
(NO CURB AND GUTTER OR SIDEWALK)**

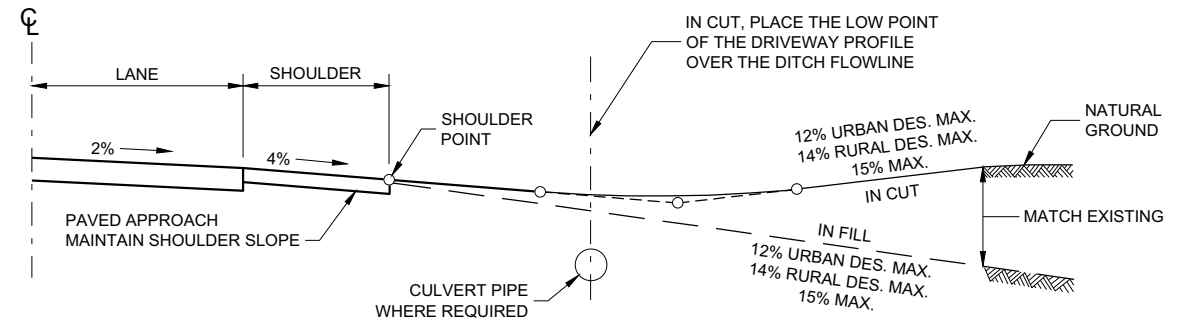


IN CUT **IN FILL**

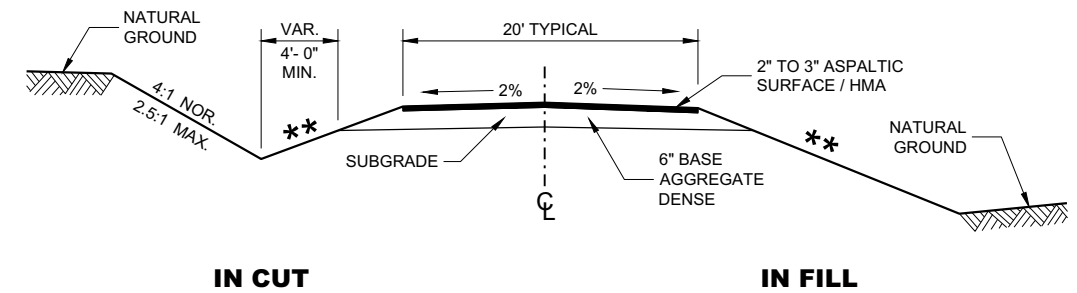
**TYPICAL CROSS SECTION FOR
PRIVATE DRIVE OR FIELD ENTRANCE
AGGREGATE SURFACE**

** SLOPE CAN VARY WITH SPEED. SEE 11-45-30.6.2

| POSTED SPEED MPH | MAX. SLOPE |
|------------------|------------|
| <35 | 4:1 |
| ≥ 35 TO < 60 | 6:1 |
| ≥60 | 10:1 |



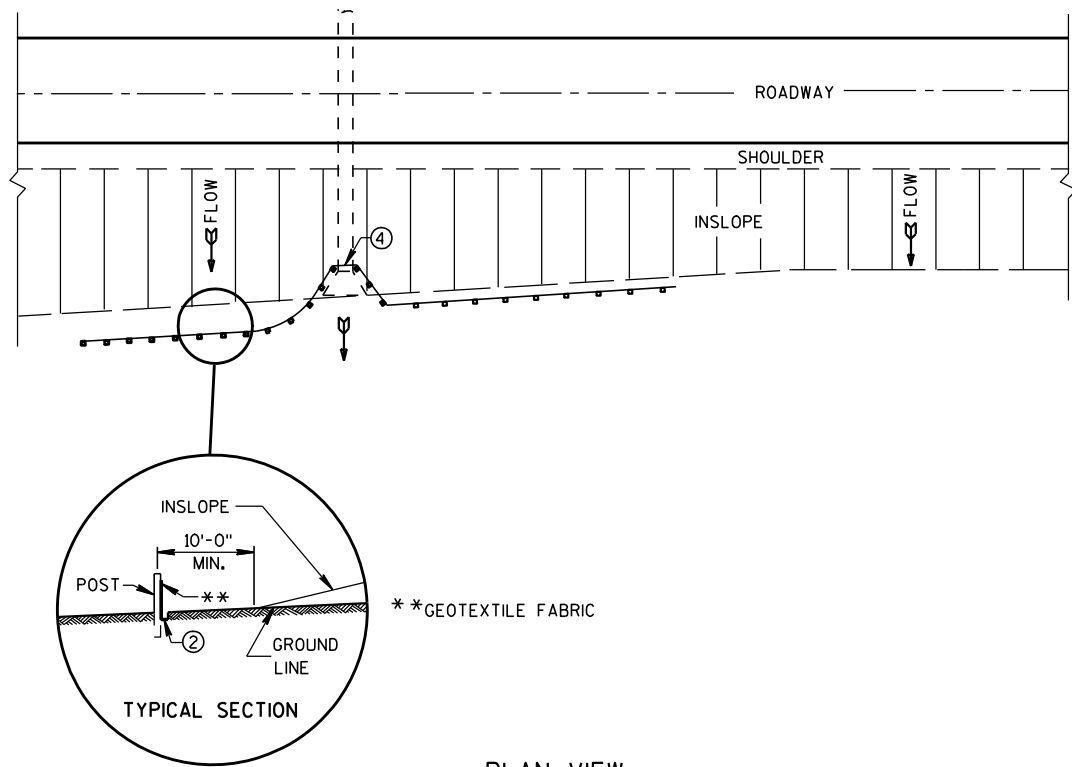
TYPICAL DRIVEWAY PROFILES



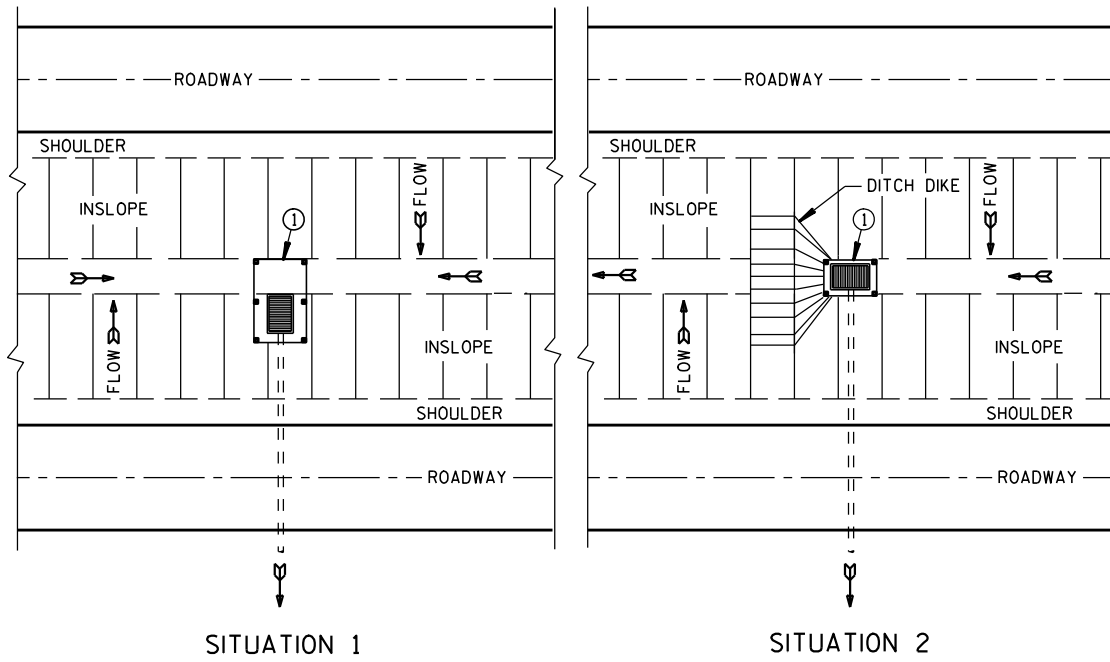
IN CUT **IN FILL**

**TYPICAL CROSS SECTION FOR
PRIVATE DRIVE OR FIELD ENTRANCE
ASPHALTIC SURFACE**

| | |
|--|---|
| DRIVEWAYS WITHOUT CURB AND GUTTER | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED December 2017 DATE | /S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR |
| FHWA | |



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

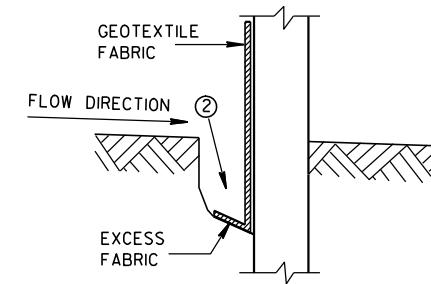


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

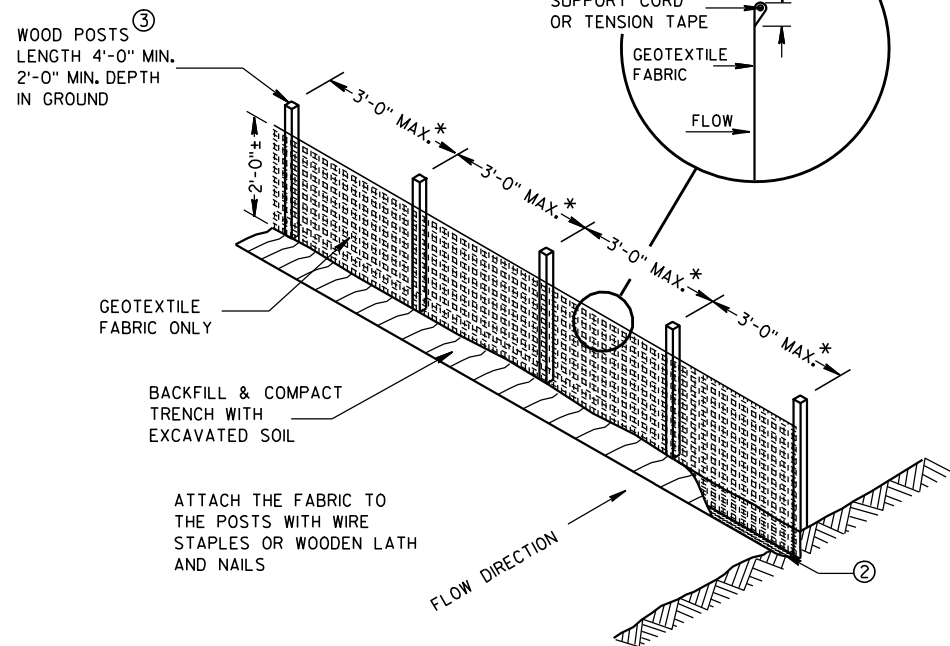
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1 1/8" X 1 1/8" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.

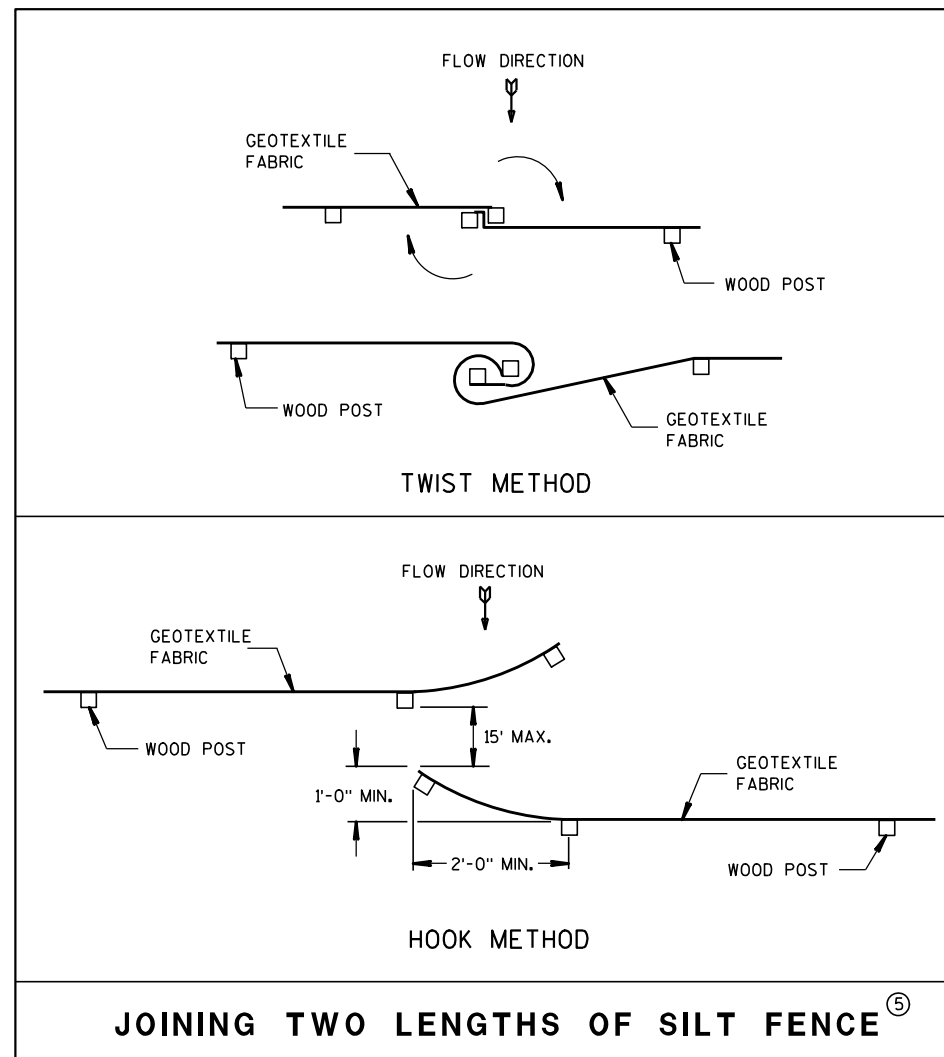


TRENCH DETAIL

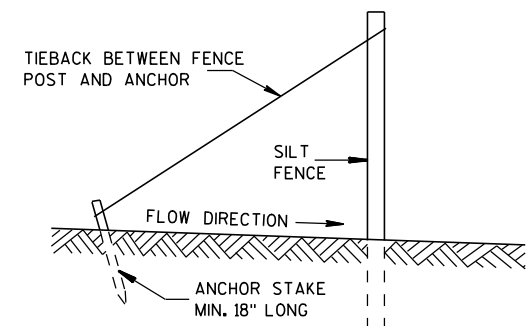
NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS



SILT FENCE



JOINING TWO LENGTHS OF SILT FENCE ⑤

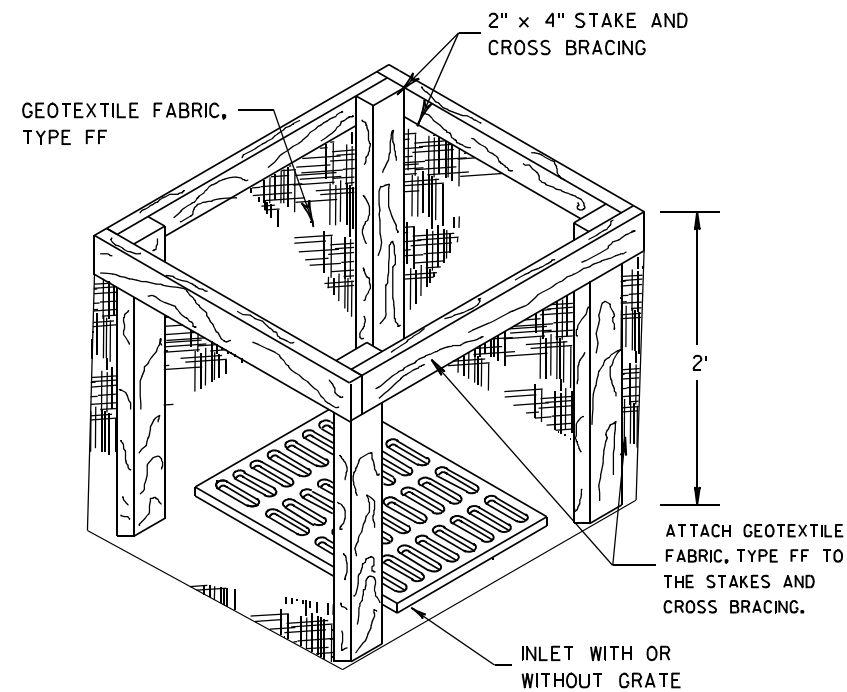
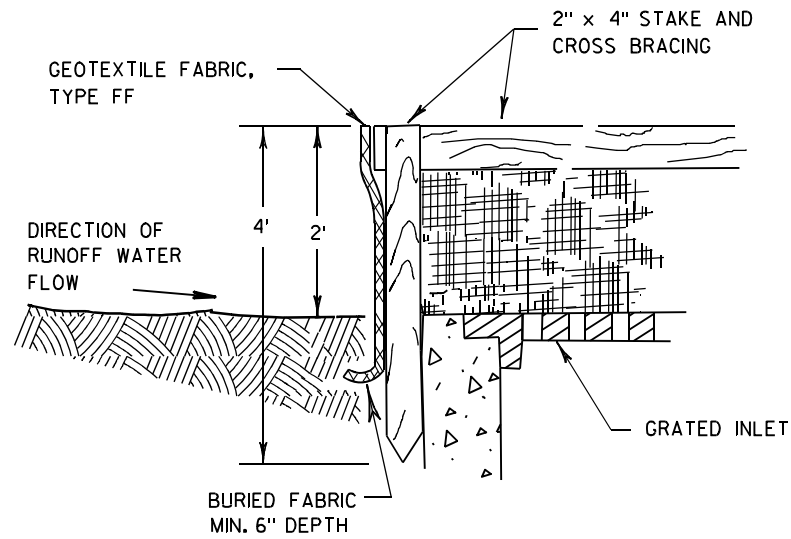


SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



INLET PROTECTION, TYPE A

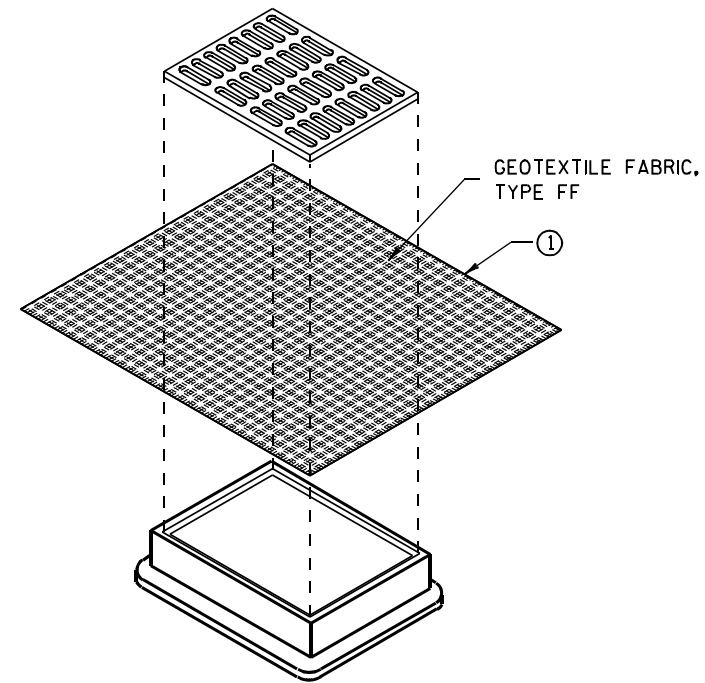
GENERAL NOTES

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.

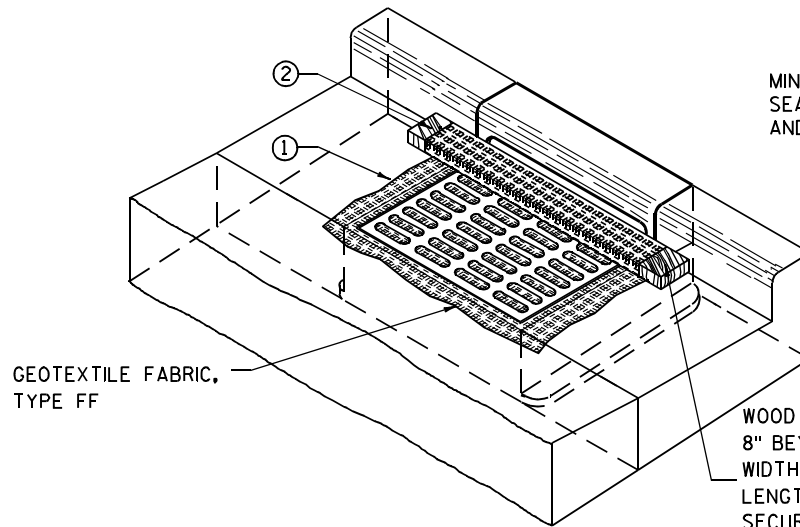
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- 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.

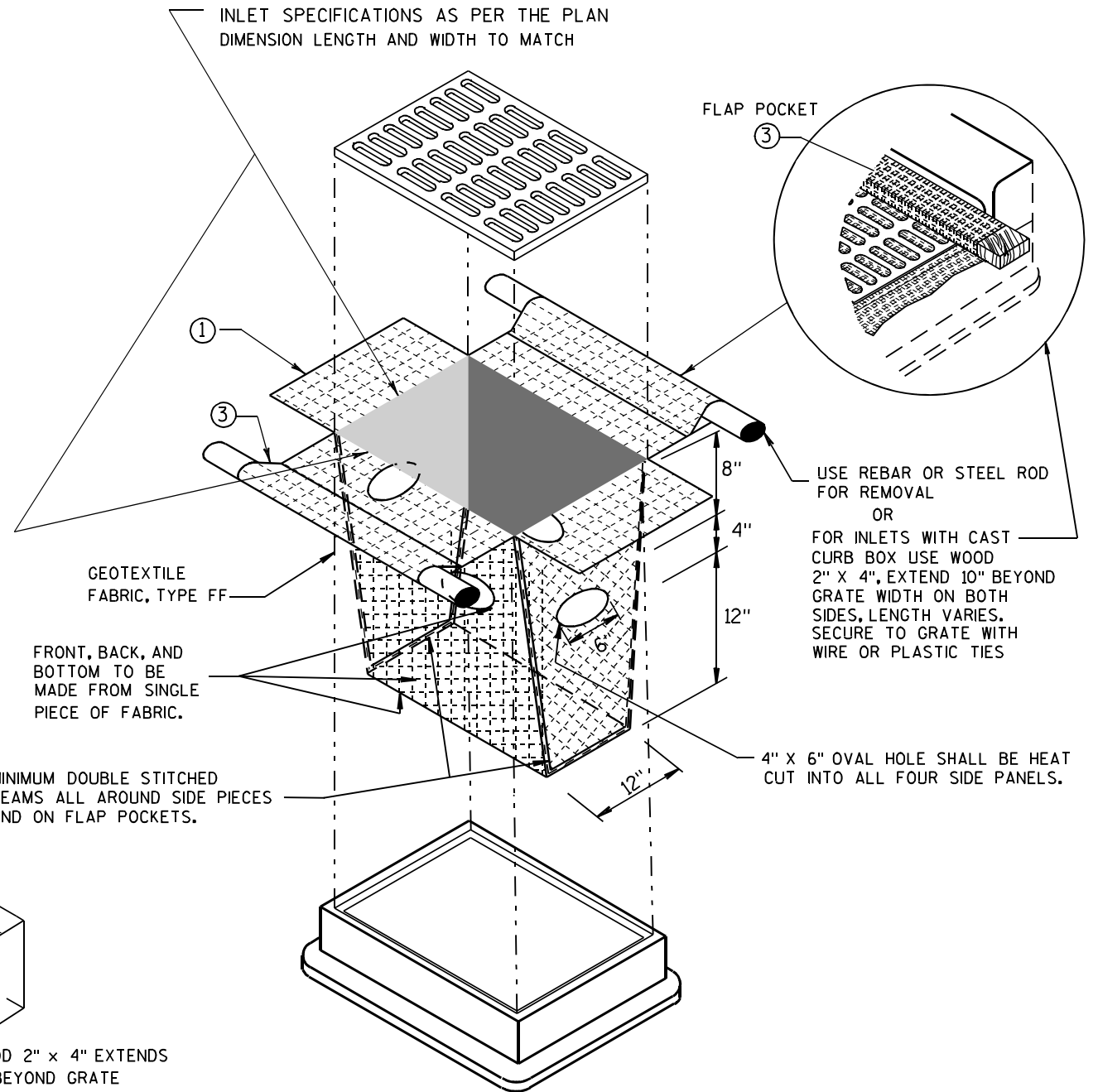
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

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.



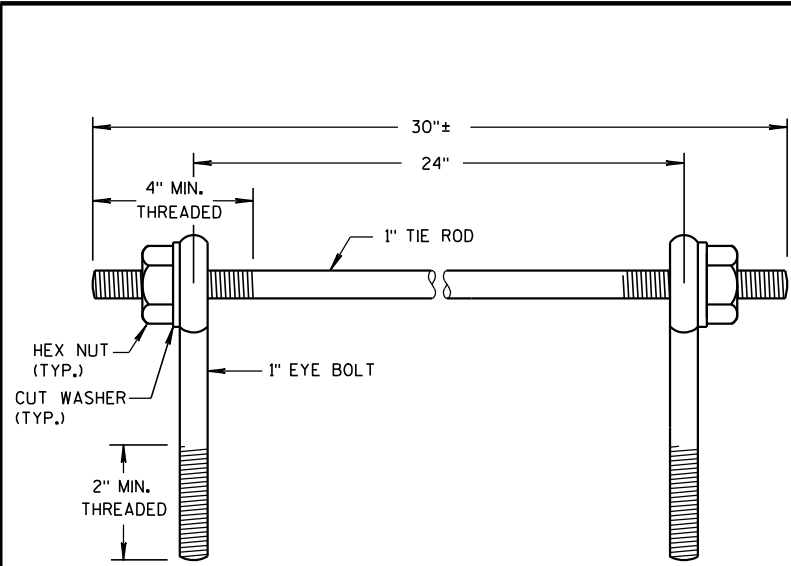
INLET PROTECTION, TYPE D

(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**

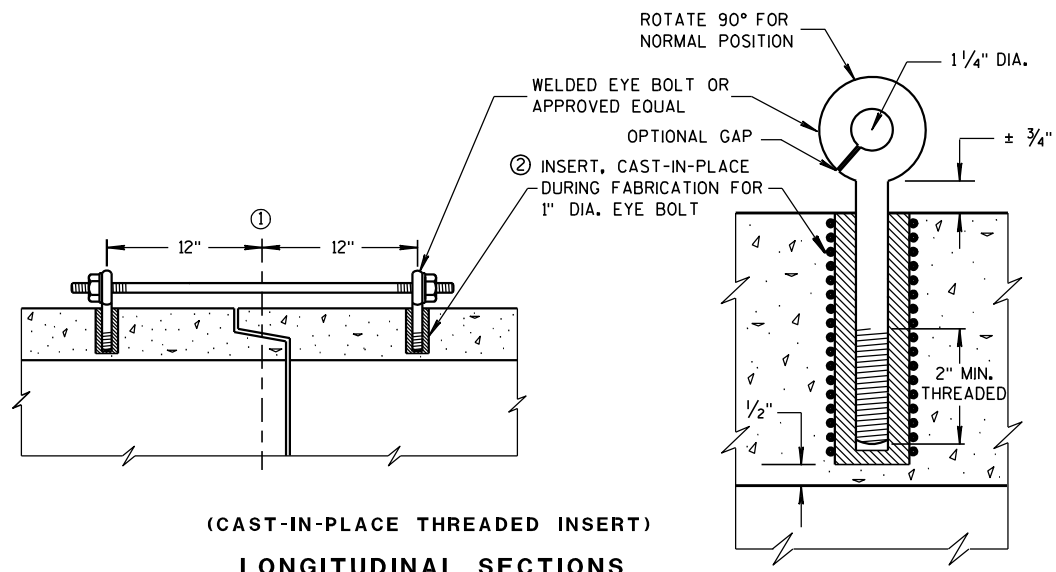
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



EYE BOLTS AND TIE ROD

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



(CAST-IN-PLACE THREADED INSERT)
LONGITUDINAL SECTIONS

GENERAL NOTES

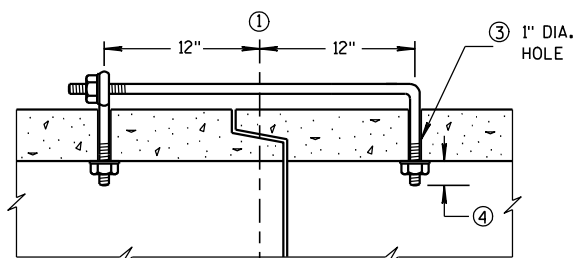
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

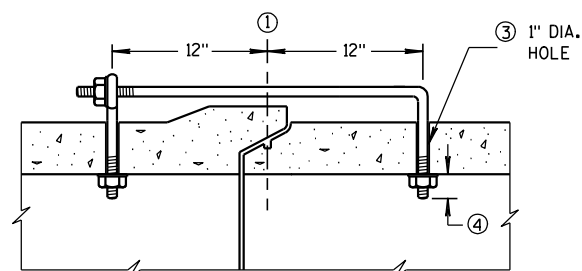
DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

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

- ① ϕ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.
- ② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.
- ③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12 INCHES FROM ϕ OF TONGUE AND GROOVE.
- ④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.
- ⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.
- ⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN $\frac{1}{2}$ INCH OF THE INNER SURFACE OF THE PIPE.



(TONGUE & GROOVE PIPE)



(MODIFIED BELL PIPE)
LONGITUDINAL SECTION

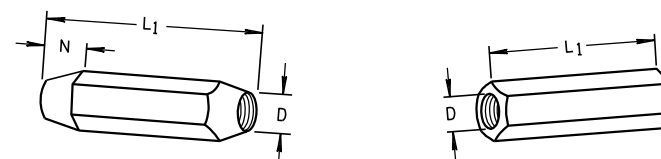
EYE BOLT DIMENSION TABLE

| PIPE SIZE | L = LENGTH | |
|------------|----------------------|--------------------|
| | TONGUE & GROOVE PIPE | MODIFIED BELL PIPE |
| 18" TO 24" | 4 1/2" | 6 1/4" |
| 30" | 5" | 7" |
| 36" | 5 1/2" | 7" |
| 42" | 6" | |
| 48" | 6 1/2" | |
| 60" | 7 1/2" | |
| 66" | 8" | |

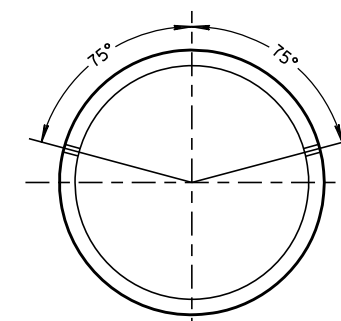
ADJUSTABLE TIE ROD TABLE

| PIPE DIAMETER | TIE ROD DIAMETER | D | L ₁ | N |
|---------------|------------------|-----|----------------|-------|
| 12-60 | 5/8 | 5/8 | 5 | 1/2 |
| 66-84 | 3/4 | 3/4 | 5 | 1/2 |
| 90-108 | 1 | 1 | 7 | 1 1/6 |

DIMENSIONS SHOWN ARE IN INCHES

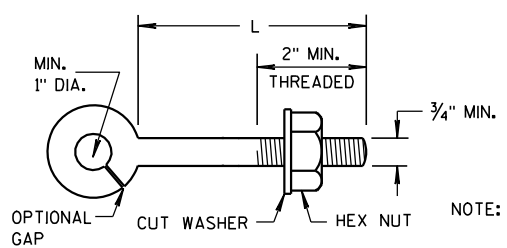


TAPERED PLAIN
RIGHT AND LEFT THREADS
SLEEVE NUTS



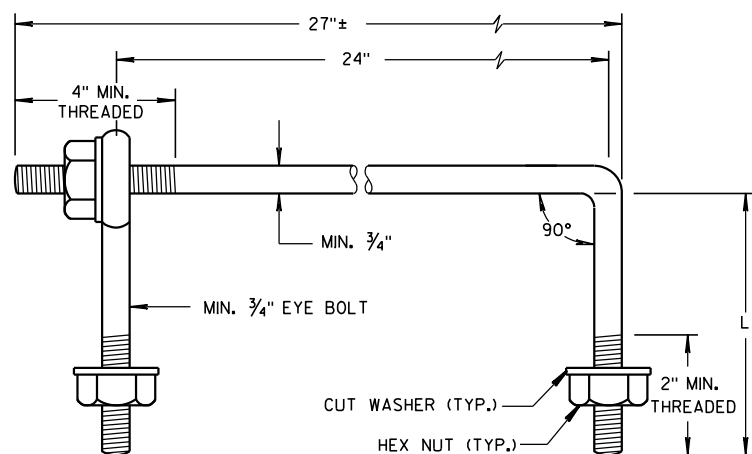
PLACEMENT OF (2) CAST-IN-PLACE
INSERTS OR HOLES DURING FABRICATION
FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



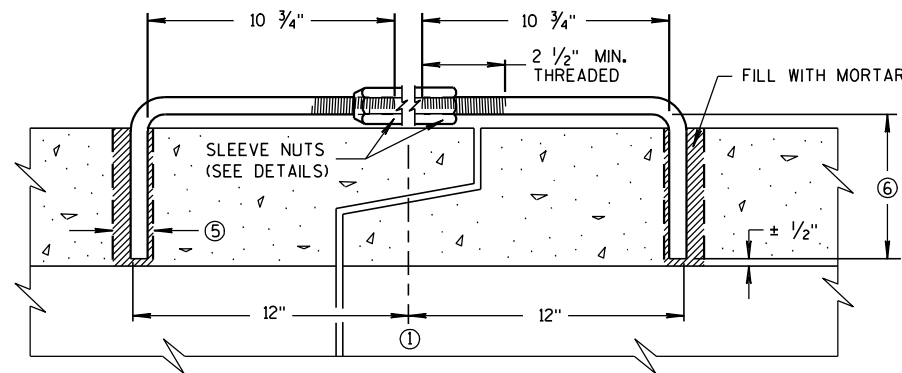
EYE BOLT

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

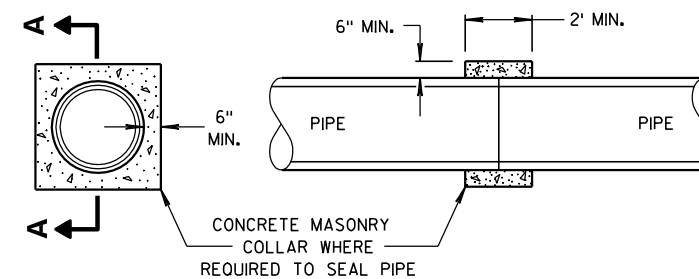


EYE BOLT AND TIE ROD

(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)
EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)



LONGITUDINAL SECTION
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)
ADJUSTABLE TIE ROD (ALTERNATE NO. 3)

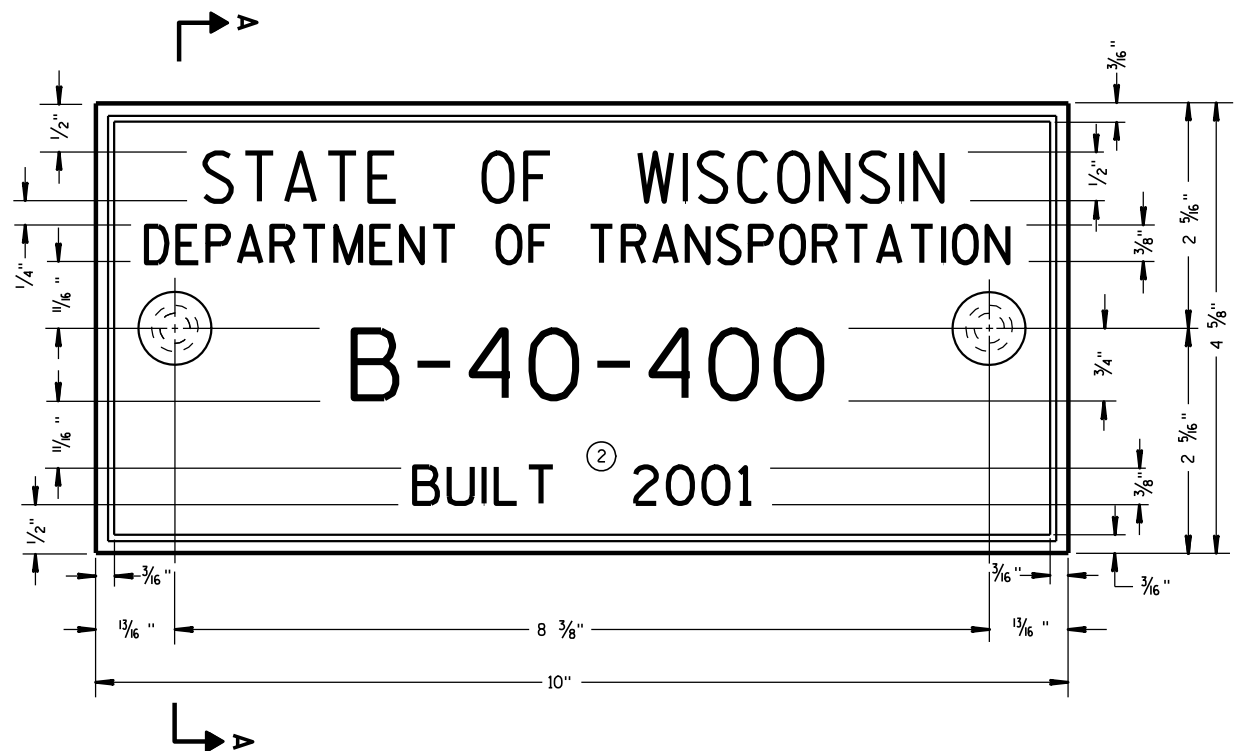


SECTION A-A
CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE
PIPE AND CONCRETE
COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



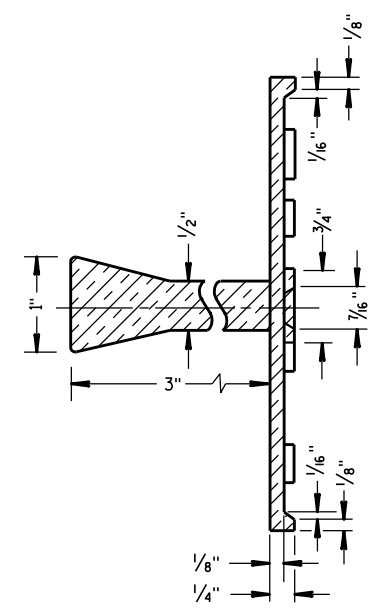
TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)

GENERAL NOTES

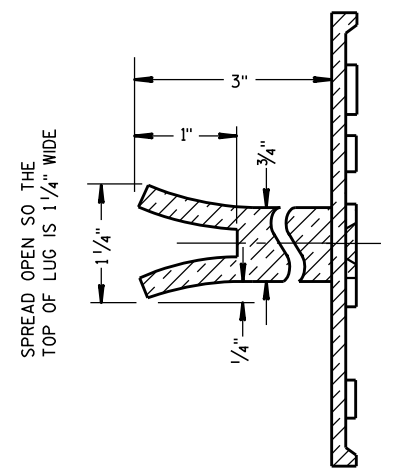
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

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



SECTION A-A



ALTERNATE LUG

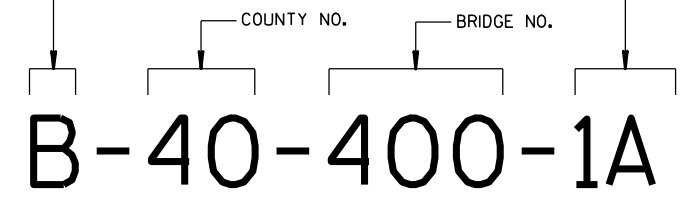
6

6

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

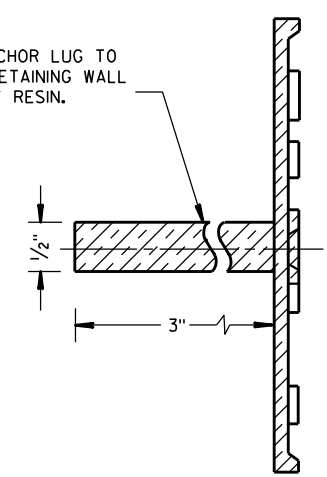
B = BRIDGE
C = CULVERT
R = RETAINING WALL

UNIT NO. FOR MULTIPLE
UNIT BRIDGE



**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

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

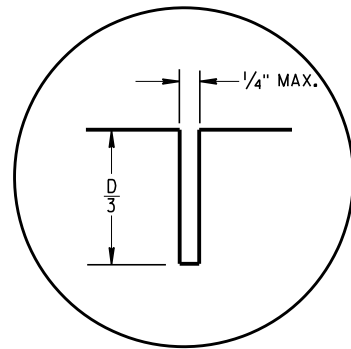


ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

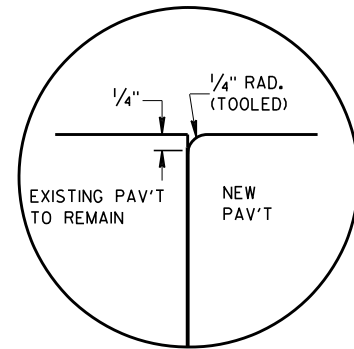
S.D.D. 12 A 3-10

S.D.D. 12 A 3-10

| | |
|--|--|
| NAME PLATE (STRUCTURES) | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED DATE 3/26/10 | /S/ Scot Becker CHIEF STRUCTURAL DEVELOPMENT ENGINEER |
| FHWA | |

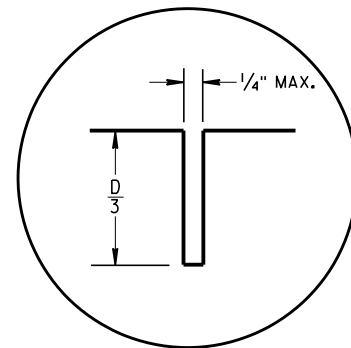


C1

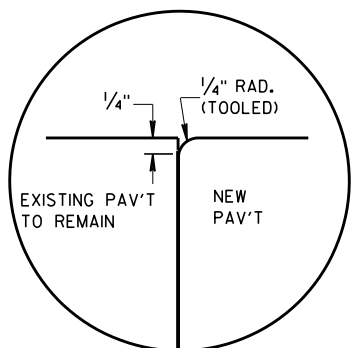


C2

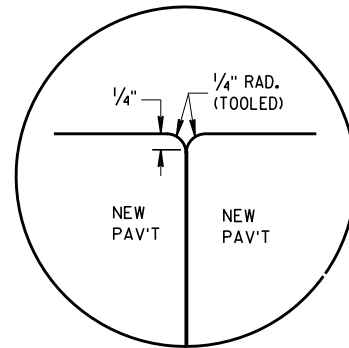
TRANSVERSE JOINTS



L1



L2



L3

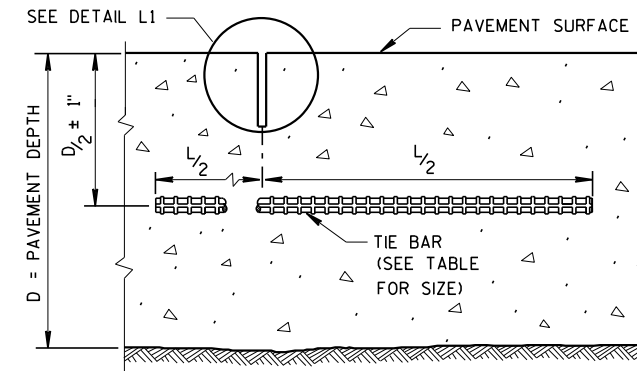
LONGITUDINAL JOINTS

TIE BAR TABLE

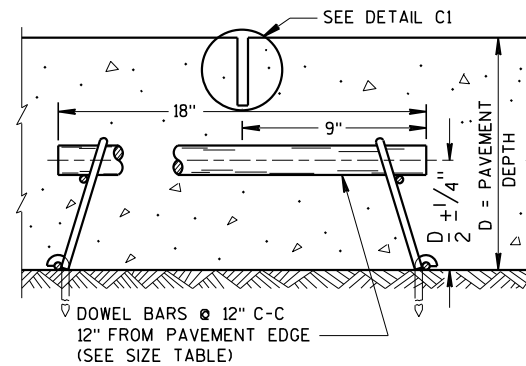
| PAVEMENT DEPTH (D) | TIE BAR SIZE | TIE BAR LENGTH (L) | MAX. TIE BAR SPACING |
|--------------------|--------------|--------------------|----------------------|
| < 10 1/2" | NO. 4 | 30" | 36" |
| ≥ 10 1/2" | NO. 5 | 36" | 36" |
| | NO. 4* | 30" | 24" ** |

* 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.



**SECTION C-C
SAWED LONGITUDINAL JOINT**



**SECTION F-F
CONTRACTION JOINT**

GENERAL NOTES

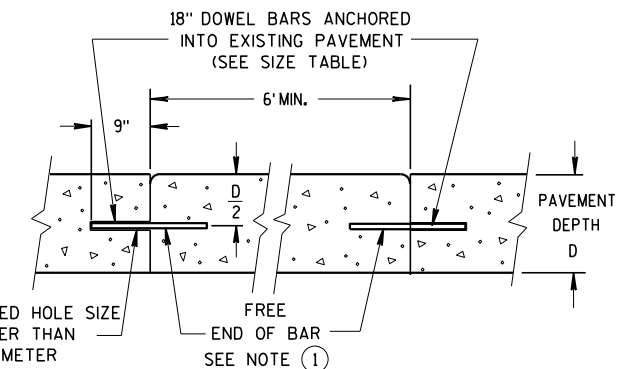
INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

CONCRETE PAVEMENT REPAIRS OF EXISTING NONDOWELED CONCRETE PAVEMENTS DO NOT NEED TO BE DOWELED.

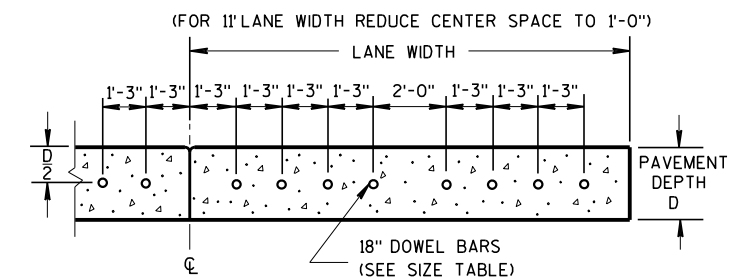
ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

FOR MULTI-LANE CONCRETE PAVEMENT REPLACEMENTS, PROVIDE A MINIMUM DISTANCE OF 15 INCHES FROM ALL TRANSVERSE JOINTS OR EDGES OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

- ① APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.



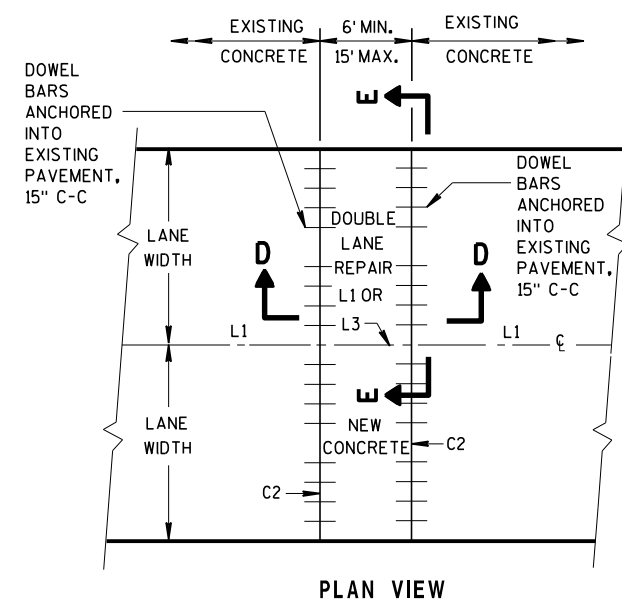
SECTION D-D



**SECTION E-E
DRILLED DOWEL BAR CONSTRUCTION JOINT**

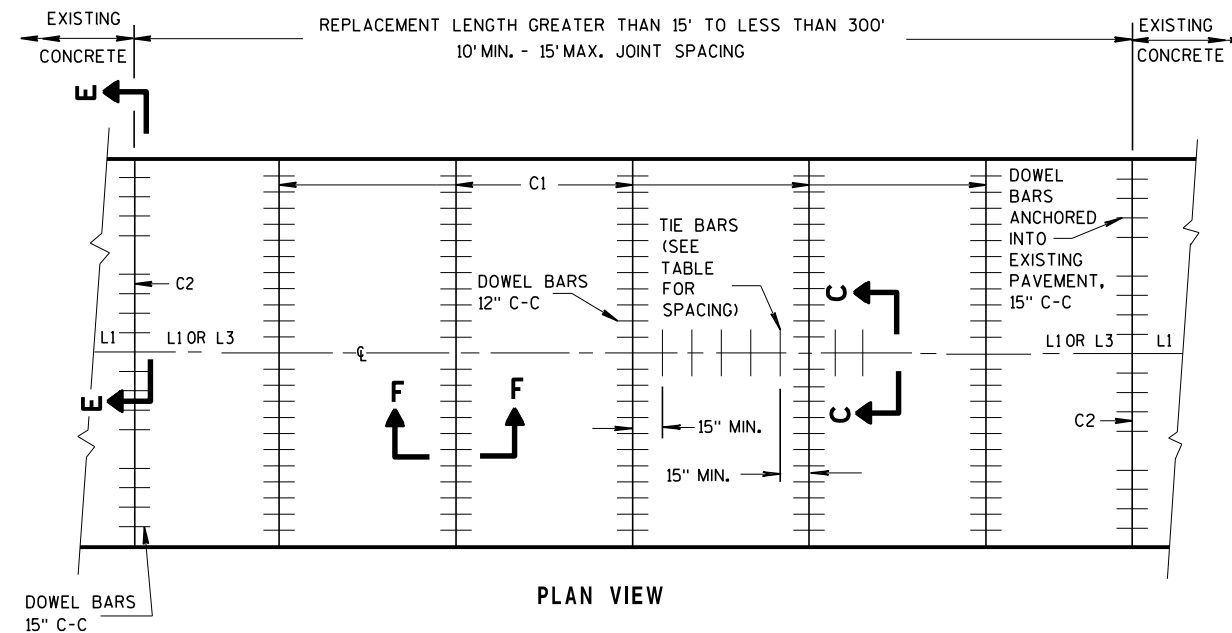
PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

| PAVEMENT DEPTH (D) | DOWEL BAR DIAMETER | DRILLED DOWEL BAR DIAMETER | CONTRACTION JOINT SPACING |
|--------------------|--------------------|----------------------------|---------------------------|
| 5 1/2", 6", 6 1/2" | NONE | NONE | 12' |
| 7", 7 1/2" | 1" | 1" | 14' |
| 8", 8 1/2" | 1 1/4" | 1 1/4" | 15' |
| 9", 9 1/2" | 1 1/4" | 1 1/4" | 15' |
| 10" & ABOVE | 1 1/2" | 1 1/4" | 15' |



PLAN VIEW

MULTI-LANE CONCRETE PAVEMENT REPAIR



PLAN VIEW

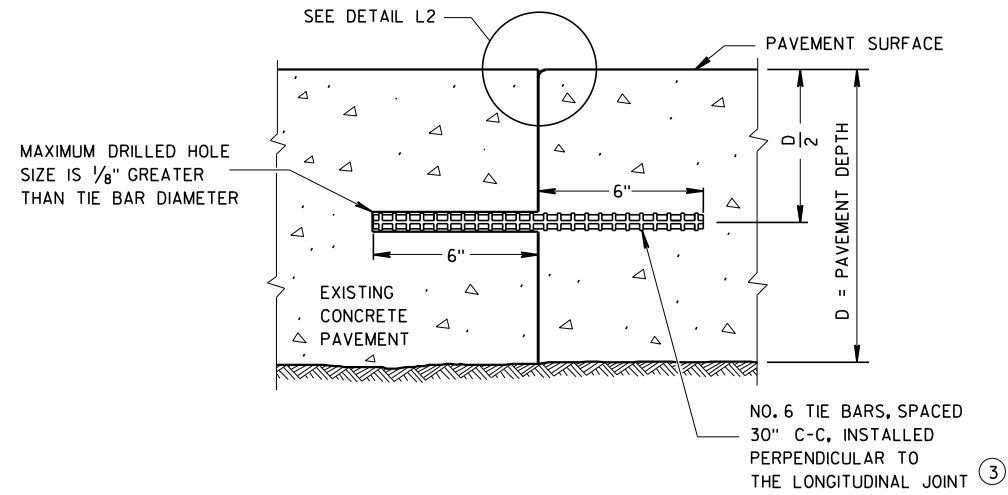
MULTI-LANE CONCRETE PAVEMENT REPLACEMENT

CONCRETE PAVEMENT REPAIR AND REPLACEMENT

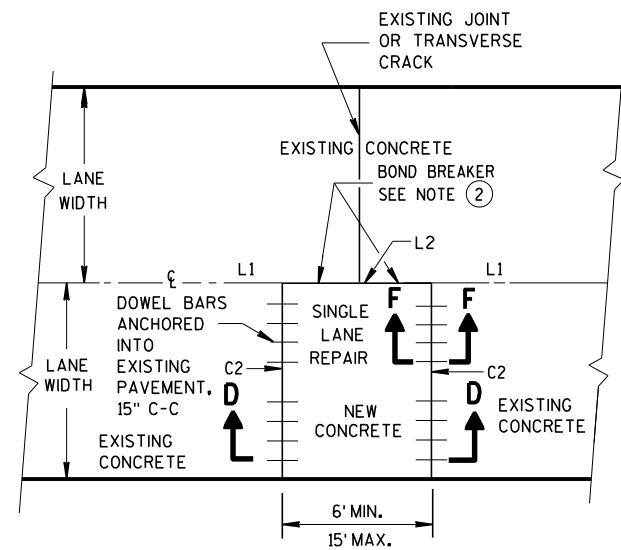
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

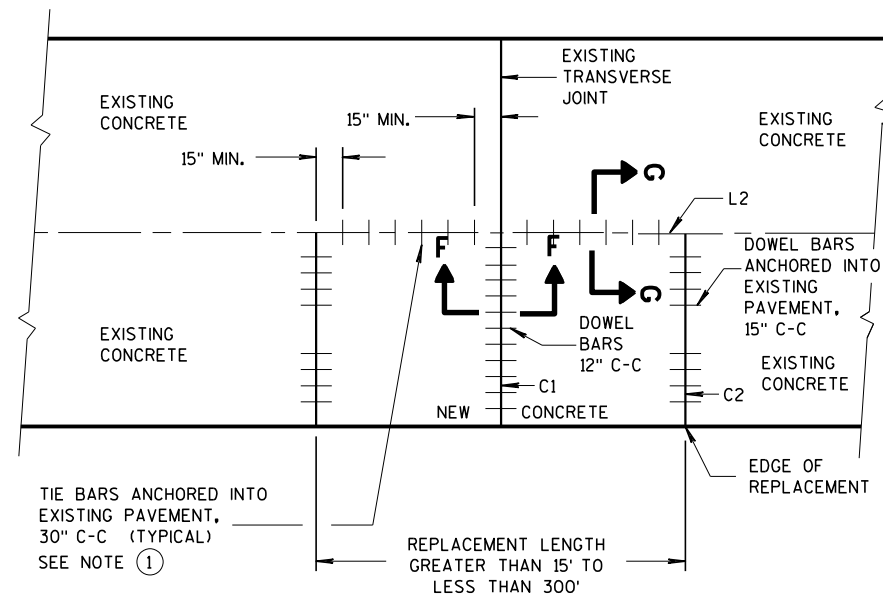
- ① WITH THE APPROVAL OF THE ENGINEER, FOR SINGLE LANE PAVEMENT REPLACEMENTS LESS THAN 30 FEET IN LENGTH, THE CONTRACTOR MAY INSTALL DRILLED TIE BARS ON 6:1 SKEW HORIZONTALLY, DIRECTION OF SKEW ALTERNATING WITH EACH SUCCESSIVE BAR. DRIVE SKEWED TIE BARS TO A DEPTH OF 6 INCHES IN A HOLE OF SUCH A DIAMETER AS TO PROVIDE A TIGHT DRIVEN FIT.
- ② USE AN ENGINEER-APPROVED BOND BREAKER (E.G. RELEASE AGENT, CURING COMPOUND) FOR SINGLE LANE REPAIRS UP TO 15 FEET IN LENGTH.
- ③ ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



SECTION G-G
**TIE BARS ANCHORED
 INTO EXISTING PAVEMENT**

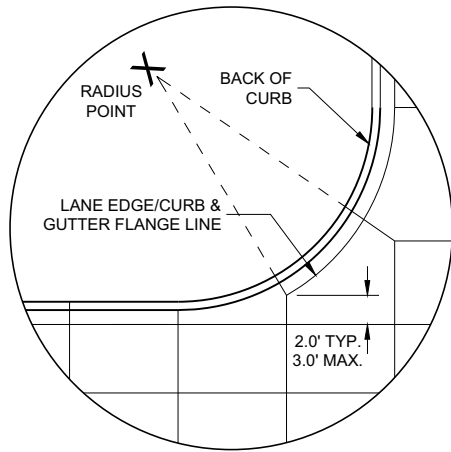


PLAN VIEW
**SINGLE LANE
 CONCRETE PAVEMENT REPAIR**

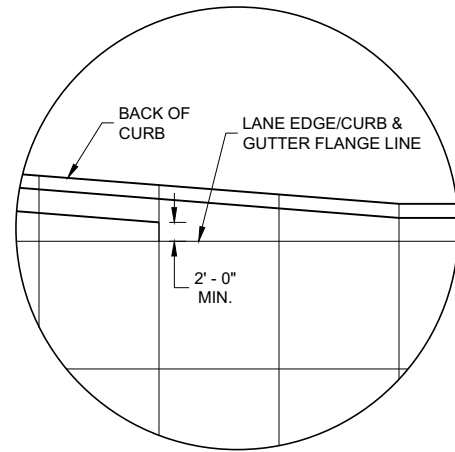


PLAN VIEW
**SINGLE LANE
 CONCRETE PAVEMENT REPLACEMENT**

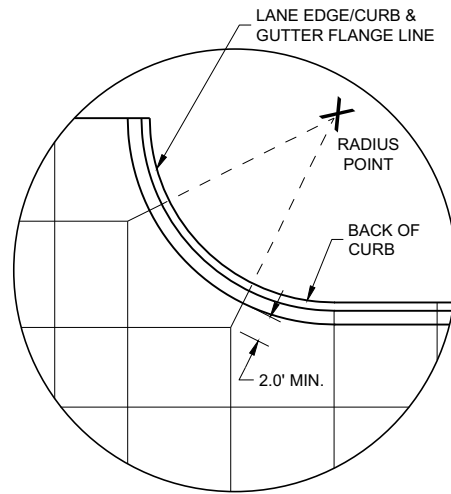
| | |
|---|---|
| CONCRETE PAVEMENT REPAIR AND REPLACEMENT | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED March 2018 DATE | /s/ Peter Kemp, P.E. PAVEMENT SUPERVISOR |
| FHWA | |



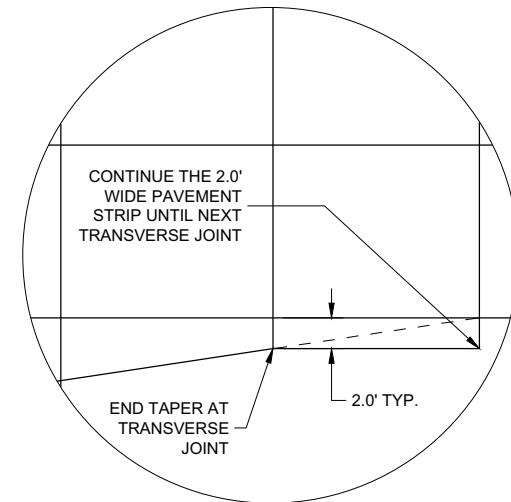
DETAIL "A"



DETAIL "B"



DETAIL "C"

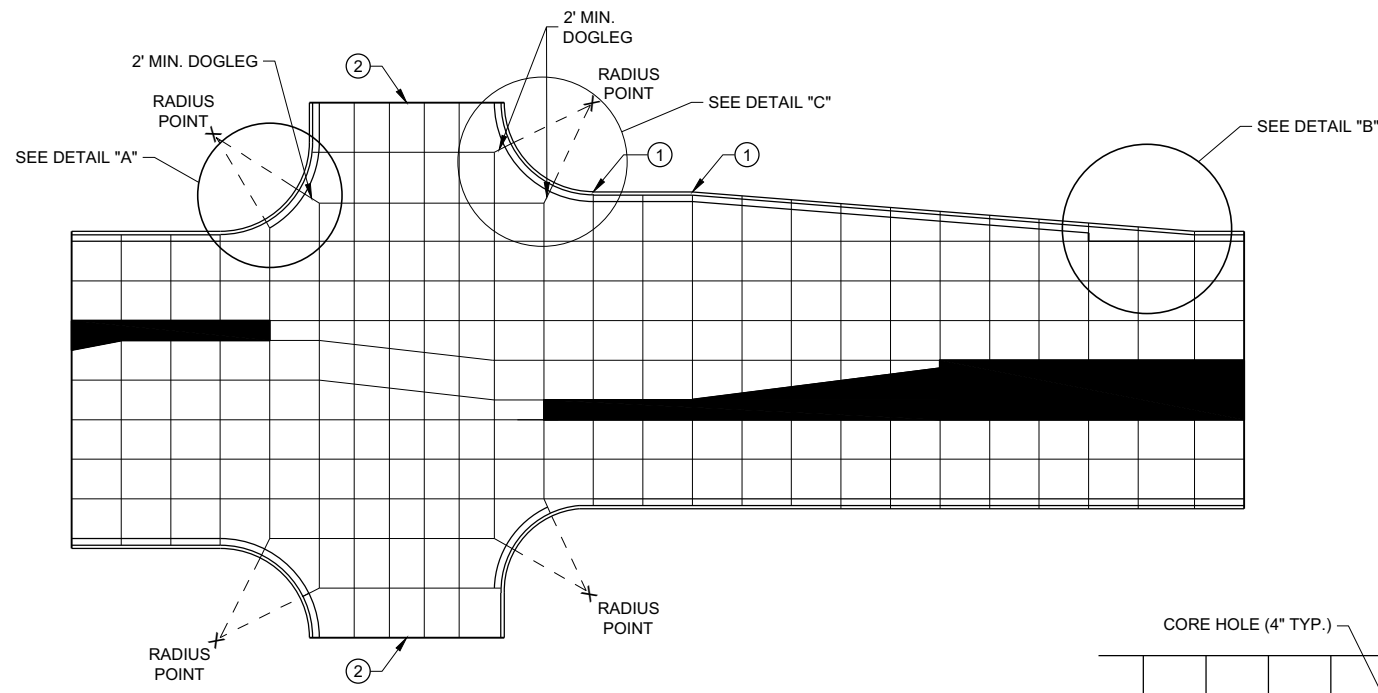


DETAIL "D"

GENERAL NOTES

- THE PRIMARY ROADWAY CONTROLS THE TRANSVERSE JOINT PATTERN.
- ALIGN NEW JOINTS WITH EXISTING JOINTS OR CRACKS.
- CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE ROADWAY.
- ADJUST TRANSVERSE JOINTS TO ALIGN WITH UTILITY FIXTURES (E.G MANHOLES AND INLETS) IN THE PAVEMENT STRUCTURE WHEN POSSIBLE. WATER VALVES DO NOT REQUIRE JOINT ADJUSTMENT.
- AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.
- SEE TABLE FOR TRANSVERSE JOINT SPACING. JOINT SPACING SPECIFIED IS MAXIMUM AND ACTUAL SPACING CAN BE ADJUSTED TO ACCOMMODATE INTERSECTIONS.
- AVOID ANGLES LESS THAN 60° BY DOGLEGGING JOINTS THROUGH CURVE RADIUS POINTS. USE 90° ANGLES WHEN POSSIBLE.
- CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

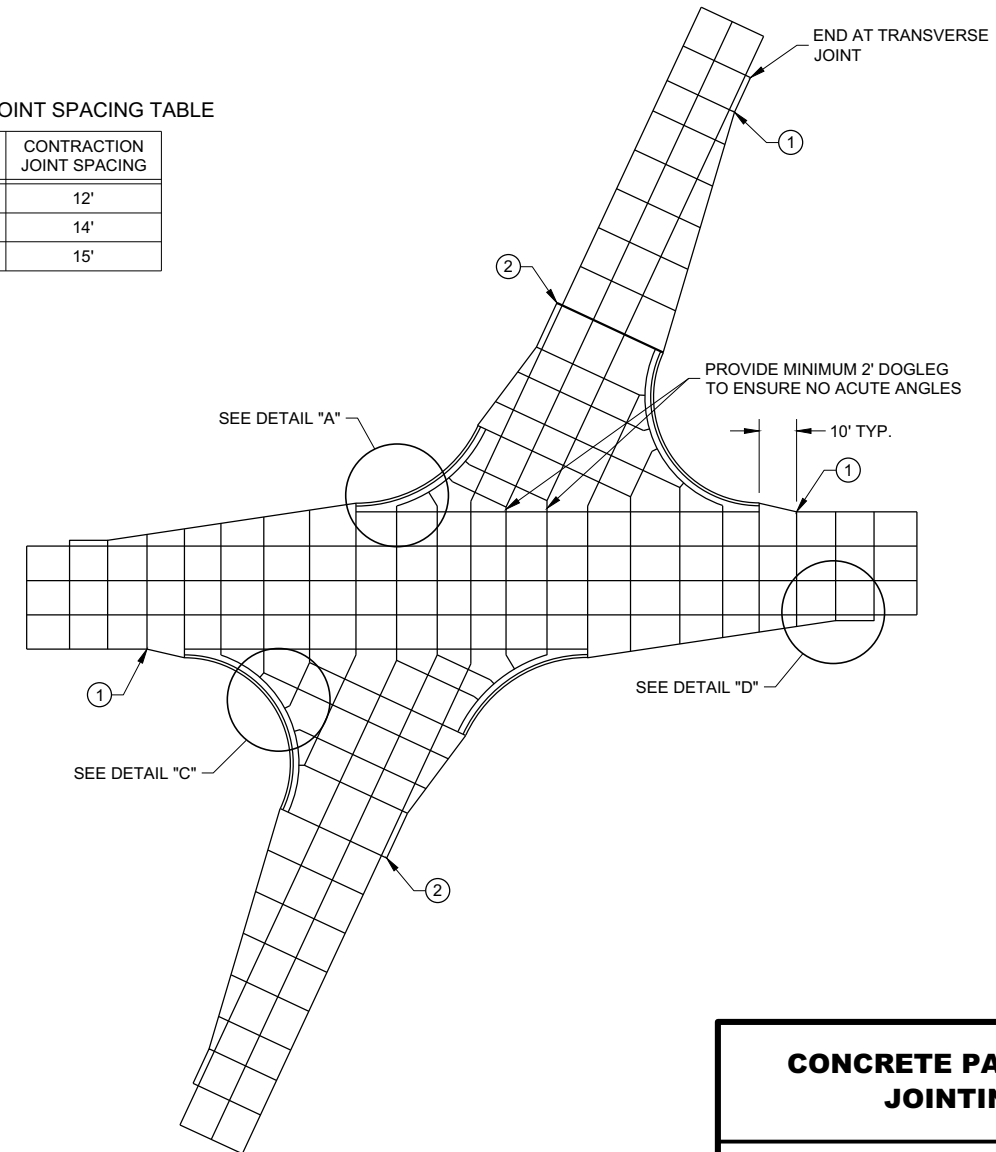
- ① PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
- ② CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
- ③ THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM THESE JOINTING DETAILS.



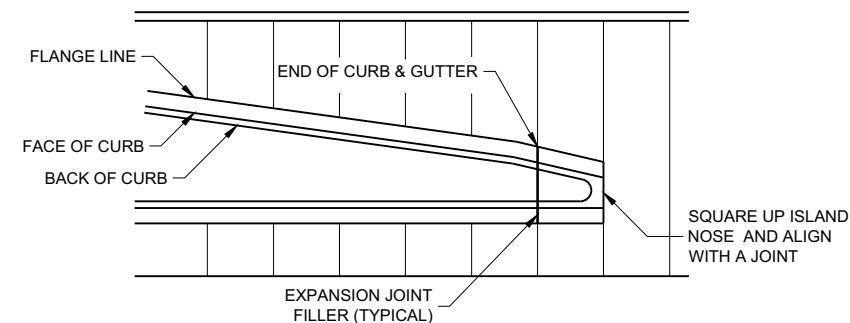
STANDARD INTERSECTION

PAVEMENT DEPTH AND JOINT SPACING TABLE

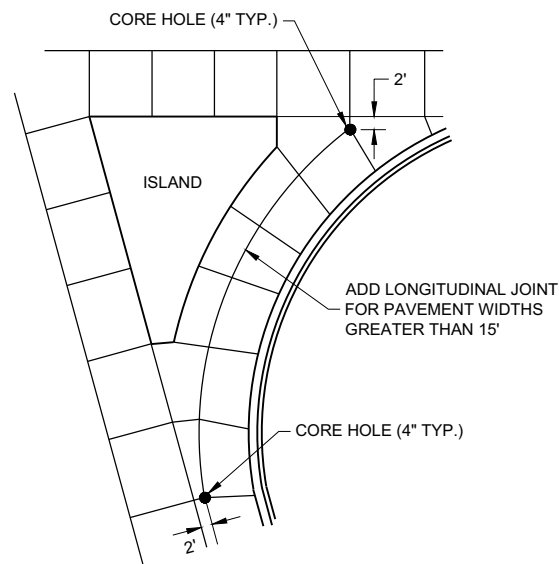
| PAVEMENT DEPTH (D) | CONTRACTION JOINT SPACING |
|--------------------|---------------------------|
| 6", 6 1/2" | 12' |
| 7", 7 1/2" | 14' |
| 8" & ABOVE | 15' |



SKEWED INTERSECTION



APPROACH TO MEDIAN



LARGE RIGHT TURN

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

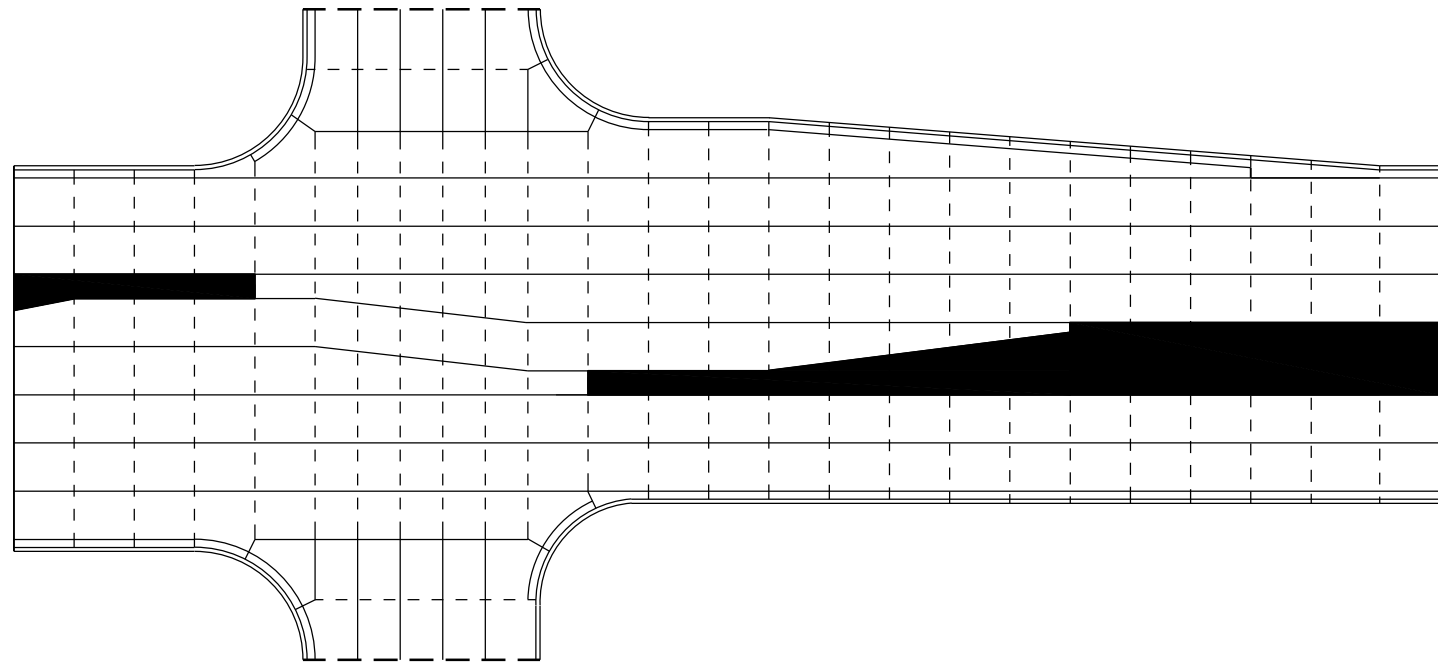
LEGEND

- POTENTIAL DOWELED EXPANSION JOINT
- - - DOWELED JOINT
- TIED JOINT

GENERAL NOTES

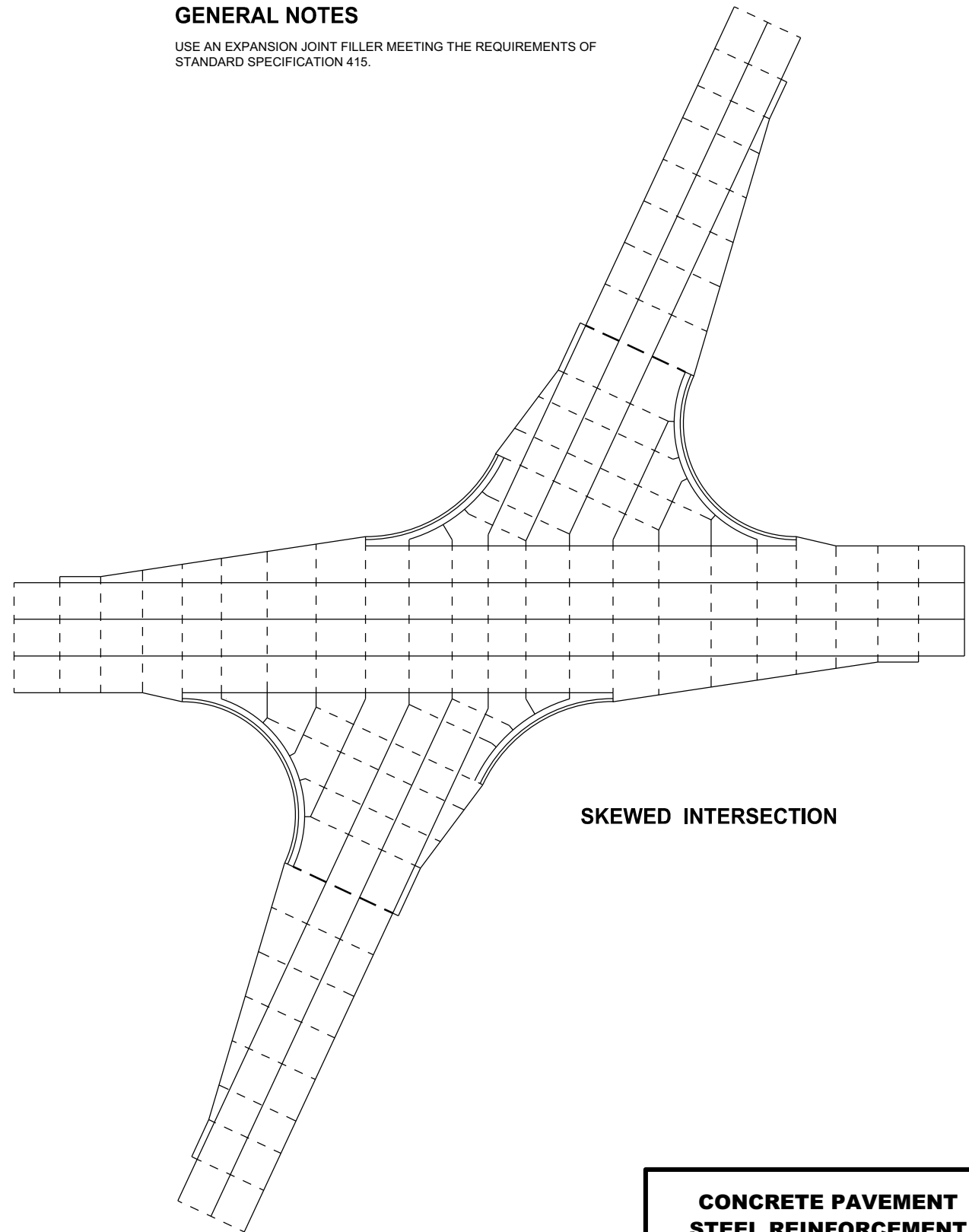
USE AN EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 415.

6



STANDARD INTERSECTION

6



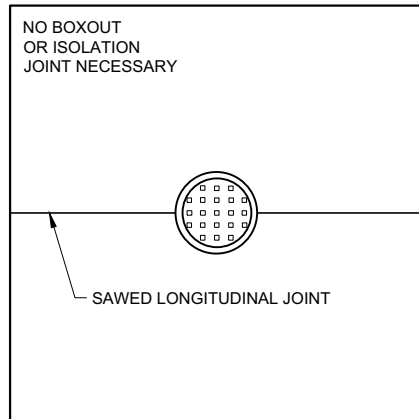
SKEWED INTERSECTION

SDD 13C18 - 07b

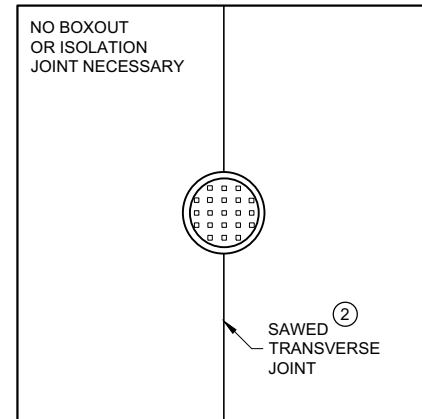
SDD 13C18 - 07b

**CONCRETE PAVEMENT
STEEL REINFORCEMENT**

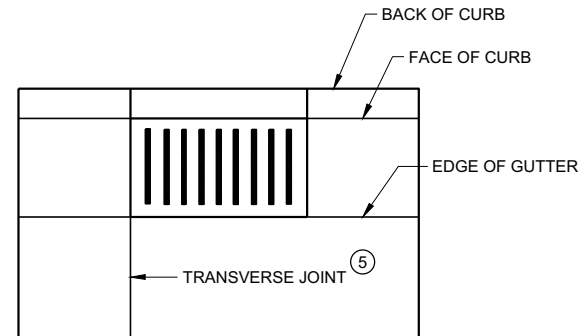
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



MANHOLE WITH LONGITUDINAL JOINT



MANHOLE WITH TRANSVERSE JOINT

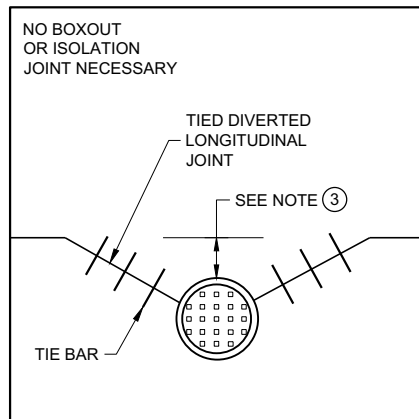


INLET WITH TRANSVERSE JOINT

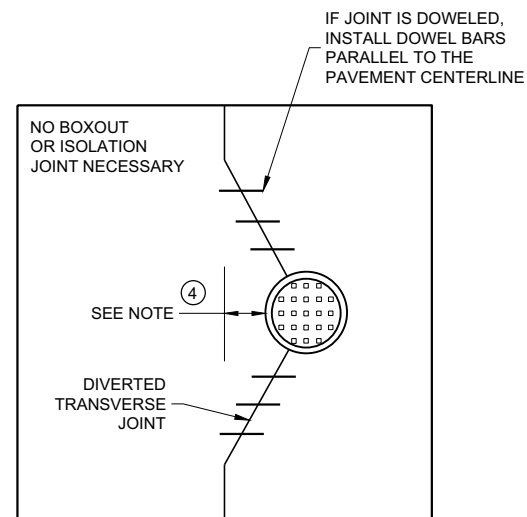
GENERAL NOTES

- ① USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1 FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.
- ② ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.
- ③ IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE OF MANHOLE IS 2 FEET OR LESS, DIVERT THE LONGITUDINAL JOINT AT A 2:1 TAPER RATE TO THE CENTER OF THE MANHOLE. IF THE DISTANCE IS GREATER THAN 2 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REINFORCEMENT REBAR AROUND THE MANHOLE.
- ④ IF THE DISTANCE FROM THE EDGE OF THE MANHOLE TO THE NEAREST TRANSVERSE JOINT IS LESS 4 FEET OR LESS, REDIRECT JOINT TO INTERSECT THE CENTER OF THE MANHOLE. IF DISTANCE IS GREATER THAN 4 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REINFORCEMENT REBAR AROUND THE MANHOLE.
- ⑤ ALIGN TRANSVERSE JOINT WITH ONE EDGE OF INLET WHEN PRACTICAL.

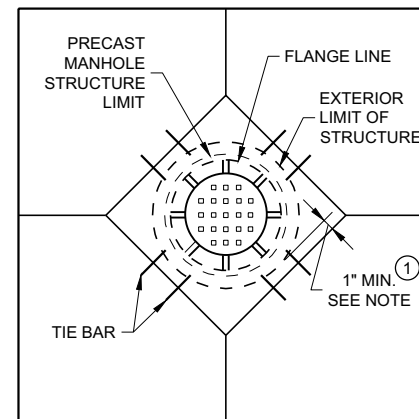
6



MANHOLE WITH DIVERTED LONGITUDINAL CONTRACTION JOINT



MANHOLE WITH DIVERTED TRANSVERSE CONTRACTION JOINT



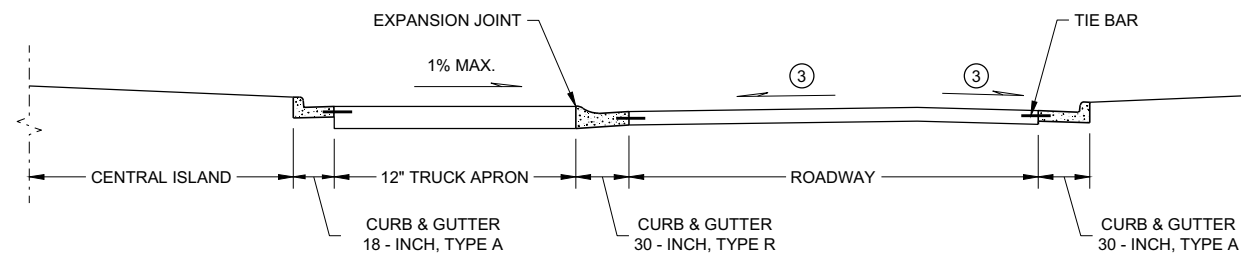
DIAGONAL MANHOLE BOXOUT FOR CONSTRUCTION JOINTS

6

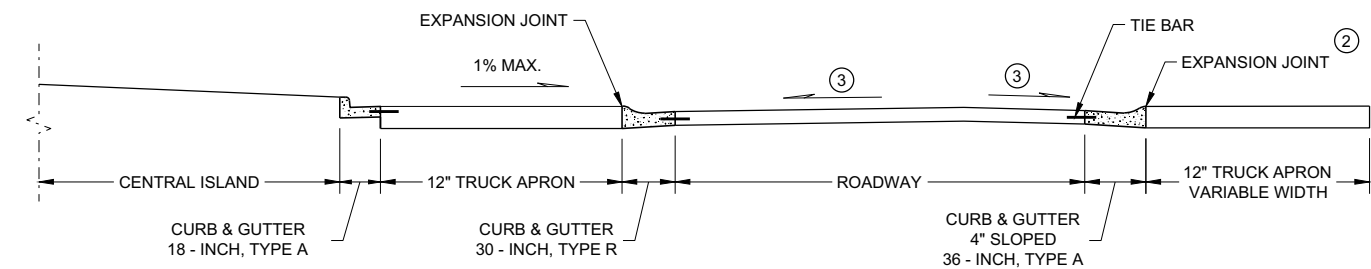
SDD 13C18 - 07d

SDD 13C18 - 07d

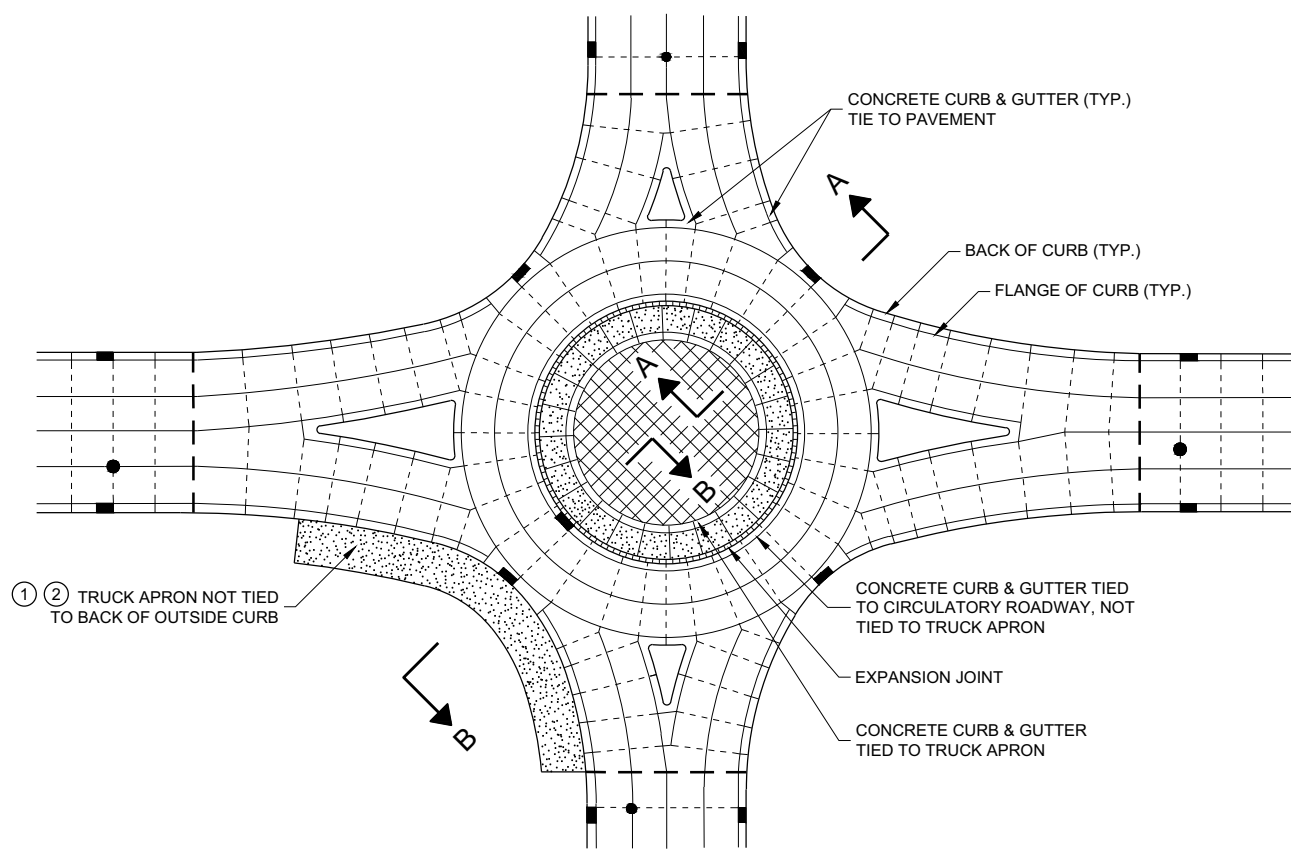
| | |
|---|--|
| CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED November 2018 DATE | /s/ Peter Kemp P.E. PAVEMENT SUPERVISOR |
| FHWA | |



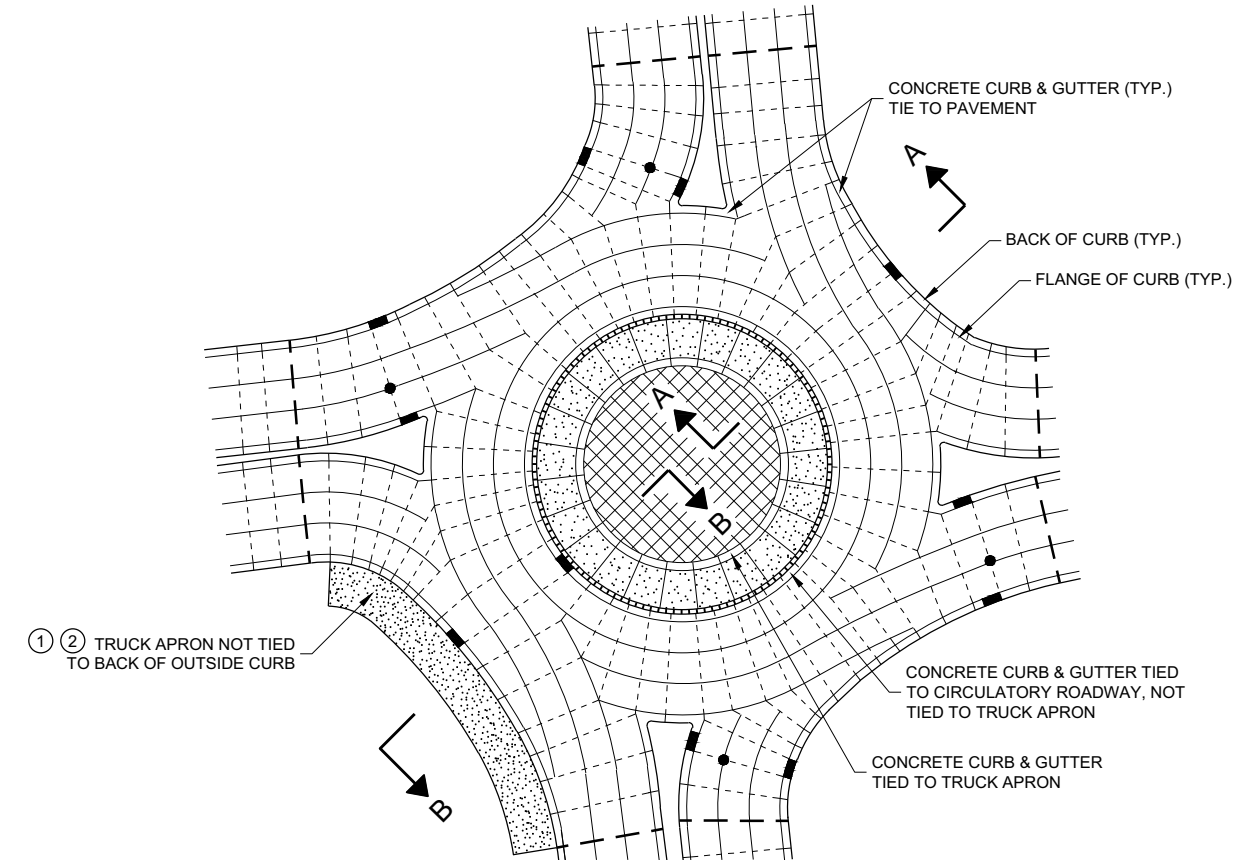
SECTION A - A



SECTION B - B



ISOLATED CIRCLE JOINT LAYOUT FOR ROUNDABOUTS



PINWHEEL JOINT LAYOUT FOR ROUNDABOUTS

GENERAL NOTES

MAXIMUM JOINT SPACING IS IN ACCORDANCE WITH THE TABLE SHOWN ON SDD 13C18 - SHEET "a"
 USE EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 415.
 DO NOT DOWEL OR TIE THE TRUCK APRON TRANSVERSE JOINTS.

- ① DESIGNER DETERMINES SIZE AND LOCATION(S) OF TRUCK APRON TO ACCOMMODATE TRACKING OF OVERSIZE / OVERWEIGHT VEHICLES.
- ② TIE THE OUTSIDE TRUCK APRON TO THE BACK SIDE OF CURB ONLY WHEN ENTIRE TRUCK APRON IS LESS THAN 3 FEET.
- ③ CONFORM TO PLAN CONSTRUCTION DETAILS FOR CIRCULATORY ROADWAY CROSS SLOPE.

LEGEND

- DOWELED JOINT
- TIED JOINT
- ===== EXPANSION JOINT
- — — — POTENTIAL DOWELED EXPANSION JOINT
- [Stippled Box] TRUCK APRON
- [Cross-hatched Box] CENTRAL ISLAND
- ● UTILITY STRUCTURES

CONCRETE PAVEMENT JOINTING AND STEEL REINFORCEMENT IN ROUNDABOUTS

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

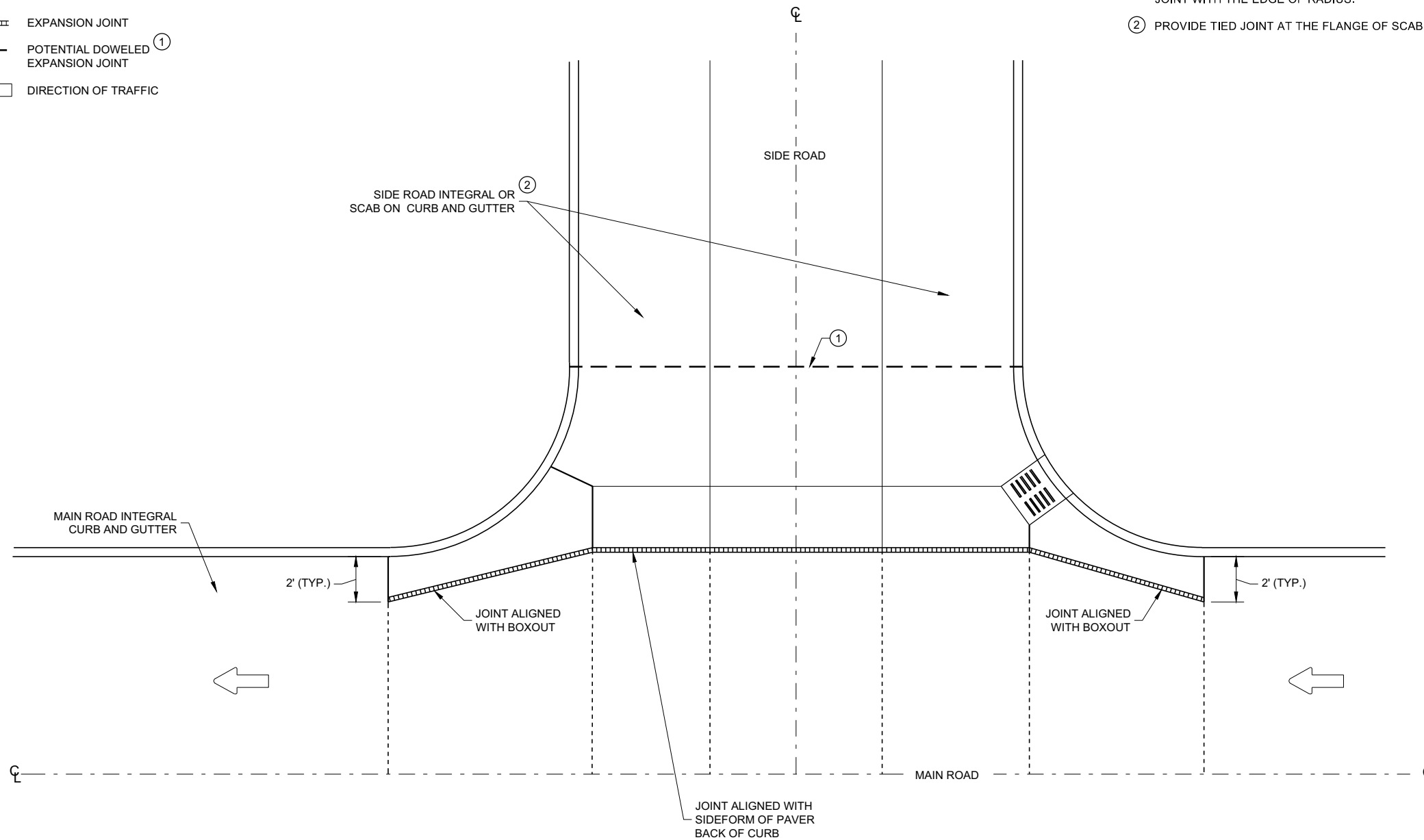
APPROVED
 November 2018 /S/ Peter Kemp P.E.
 DATE DATE PAVEMENT SUPERVISOR
 FHWA

LEGEND

- DOWELED JOINT
- TIED JOINT
- ▨▨▨▨ EXPANSION JOINT
- — — — POTENTIAL DOWELED ^① EXPANSION JOINT
- ← DIRECTION OF TRAFFIC

GENERAL NOTES

- ① CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH THE EDGE OF RADIUS.
- ② PROVIDE TIED JOINT AT THE FLANGE OF SCAB ON CURB IF SCAB ON CURB AND GUTTER IS USE.



INTERSECTION BOXOUT FOR INTEGRAL CURB AND GUTTER

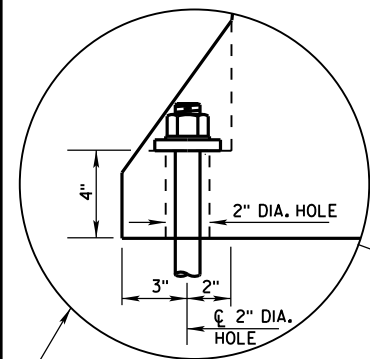
| | |
|---|--|
| CONCRETE PAVEMENT INTERSECTION BOXOUT FOR INTEGRAL CURB AND GUTTER | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED November 2018 DATE | /S/ Peter Kemp P.E. ROADWAY STANDARDS DEVELOPMENT ENGINEER |
| FHWA | |

6

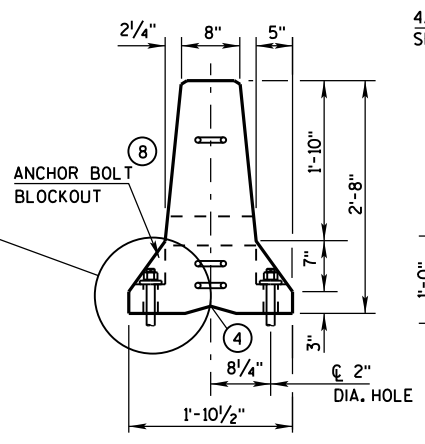
6

SDD 13C18 - 07f

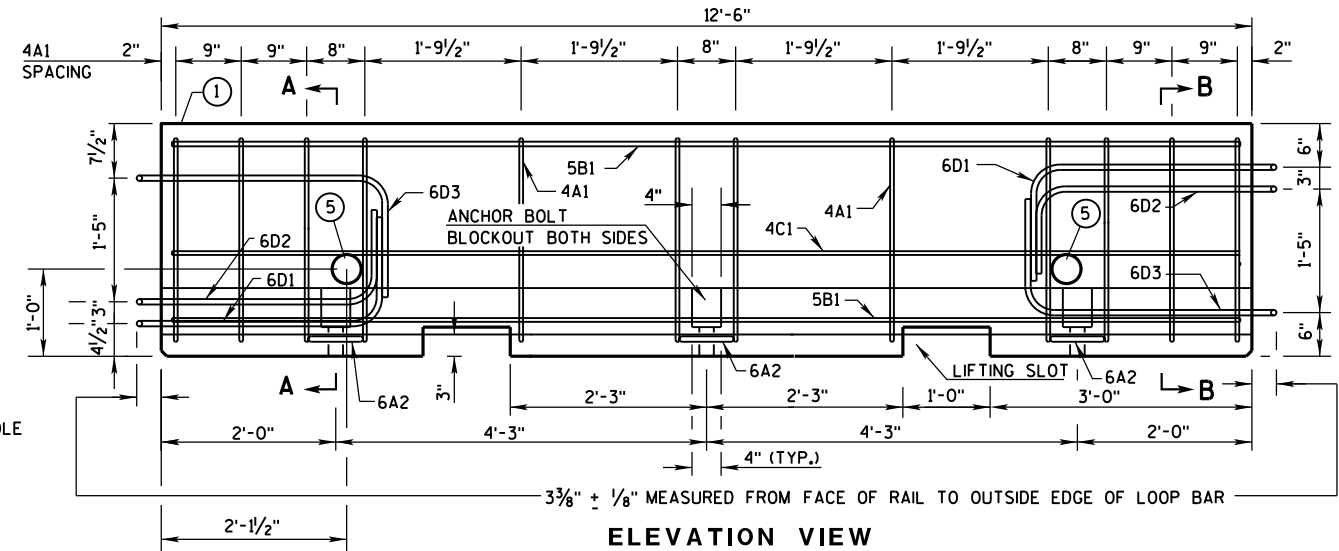
SDD 13C18 - 07f



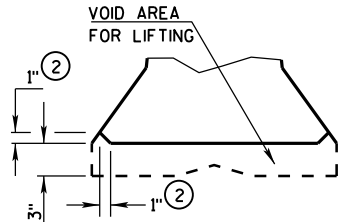
ANCHOR ON TRAFFIC SIDE (8) ONLY WHEN REQUIRED (SEE SHEET D FOR ADDITIONAL ANCHOR DETAIL)



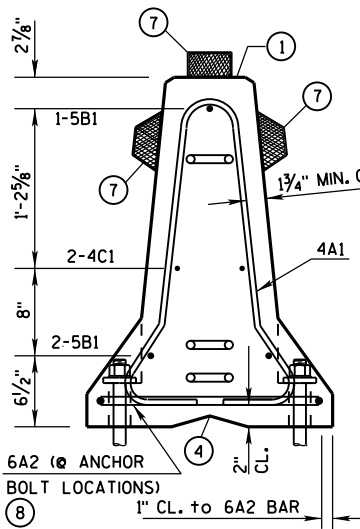
END VIEW



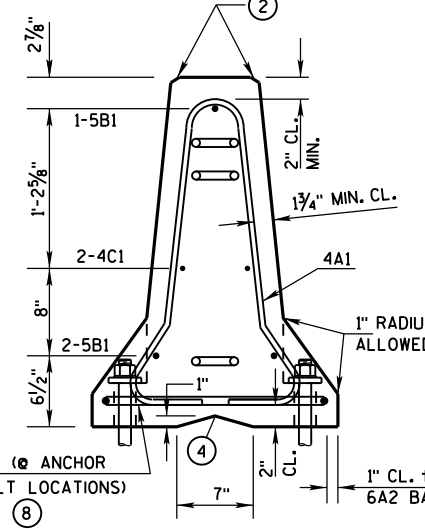
ELEVATION VIEW



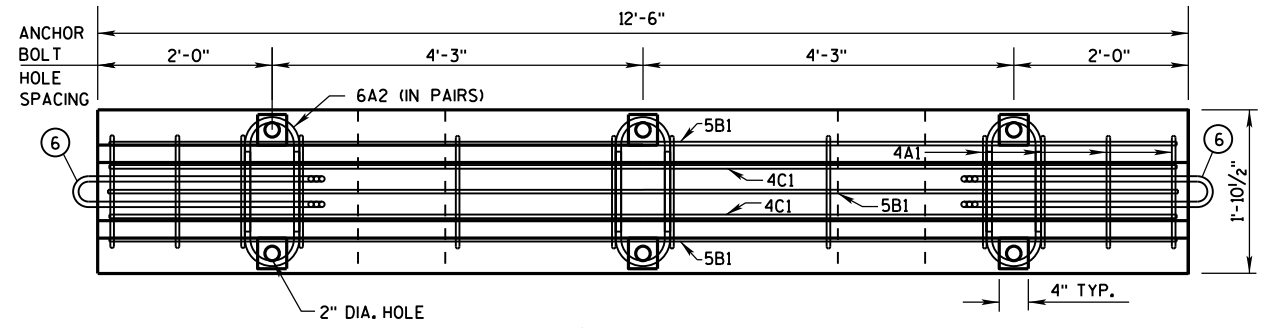
DETAIL "B" LIFTING SLOT DETAIL



SECTION A-A (STIRRUP PLACEMENT)



SECTION B-B (STIRRUP PLACEMENT)



PLAN VIEW

DETAILS OF BARRIER SECTION

GENERAL NOTES

THESE GENERAL NOTES APPLY TO SHEETS 14B7-15(d) THRU 14B7-15(i).

DO NOT INTERMIX CONCRETE BARRIER TEMPORARY PRECAST, 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 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 3-1/2" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN 1/8" OF THE PLAN DIMENSION.

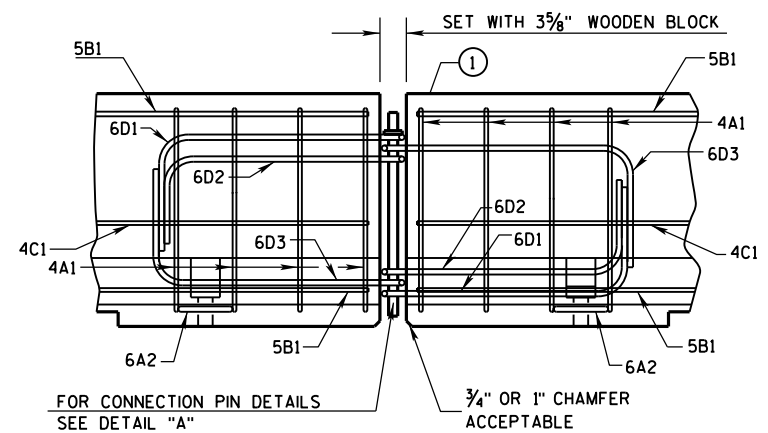
CONSTRUCT LIFTING SLOTS AS SPECIFIED ON THE PLANS TO FACILITATE THE DRAINAGE OF WATER AFTER INSTALLATION.

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

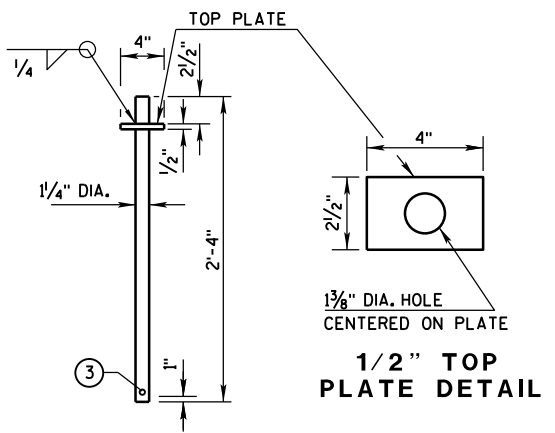
INSTALL MECHANICAL OR ADHESIVE ANCHORS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE MANUFACTURER'S INFORMATION TO PROJECT ENGINEER.

- 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 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 MANUFACTURER'S 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 HOW TO ANCHOR BARRIER. SEE SHEET E FOR WHEN TO ANCHOR BARRIER.
- 9 1" CHAMFER OPTIONAL.

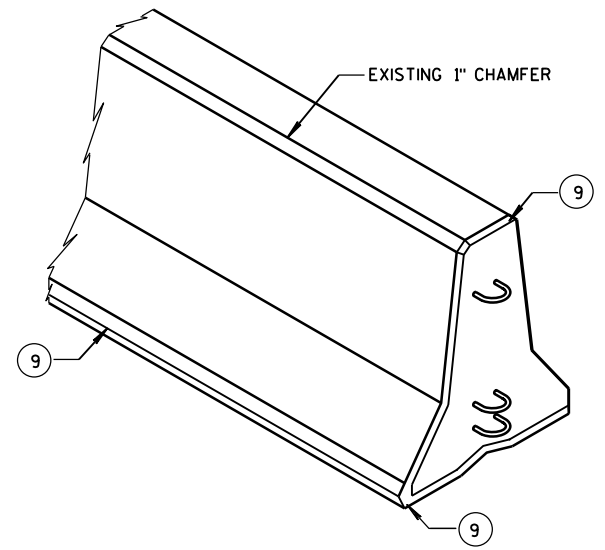
f'c = 4,000 psi



DETAILS OF BARRIER CONNECTION



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



CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

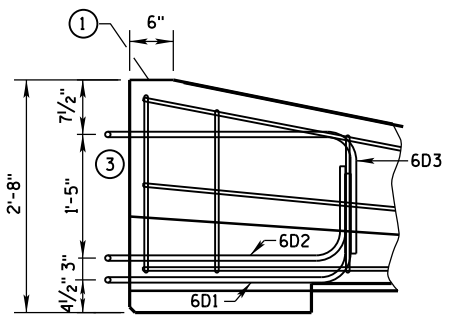
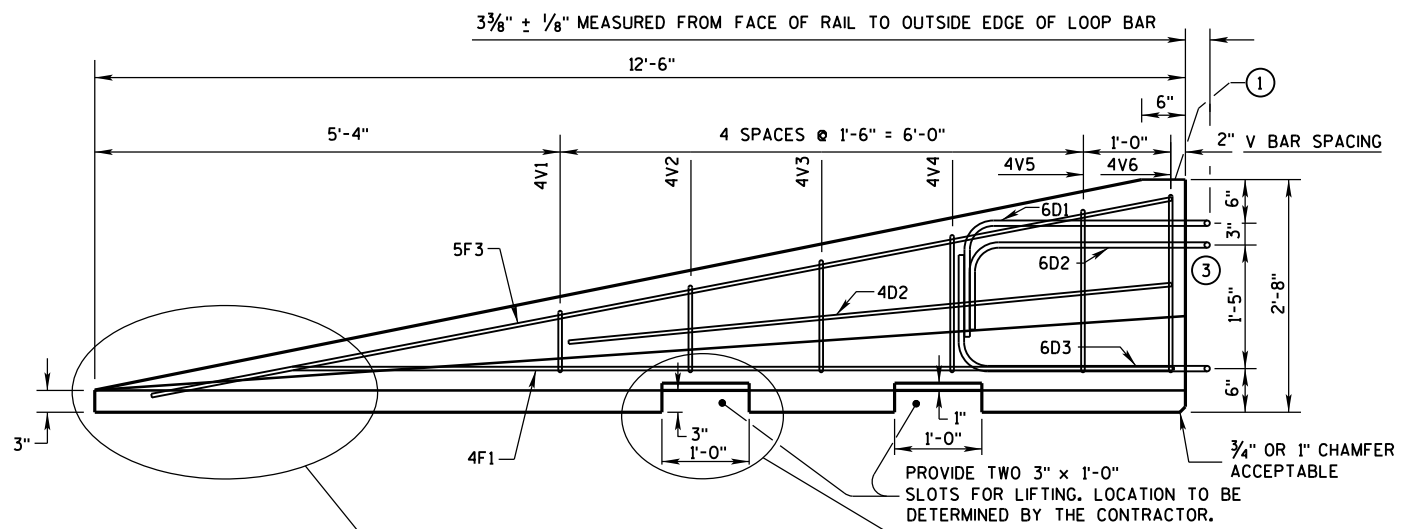
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

6

S.D.D. 14 B 7-15a

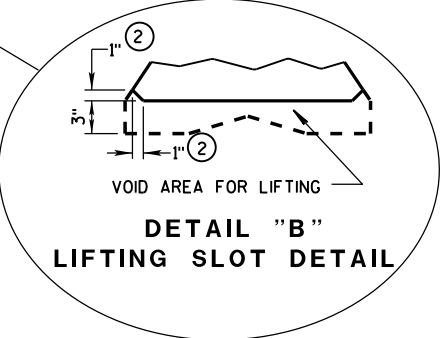
S.D.D. 14 B 7-15a



GENERAL NOTES

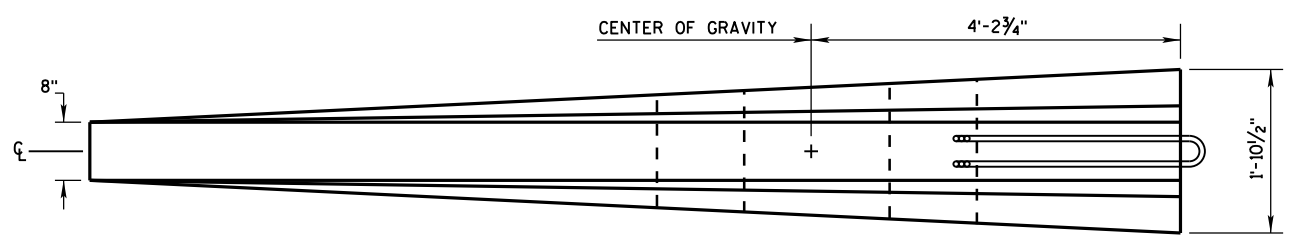
- ① MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
 - a. TYPE WICBTP
 - b. MANUFACTURER
 - c. DATE MANUFACTURED (MONTH AND YEAR)
- ② 1" CHAMFER TO PREVENT SPALLING.
- ③ NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

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

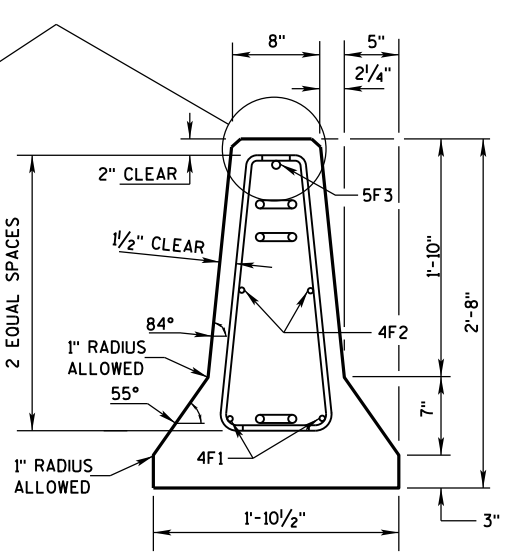
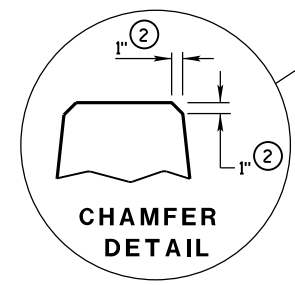


SIDE ELEVATION
 (FOR CONNECTION TO LEFT END OF BARRIER)

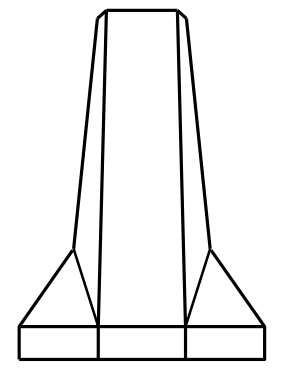
SEE DETAIL "C", BENT BAR DETAIL



PLAN VIEW

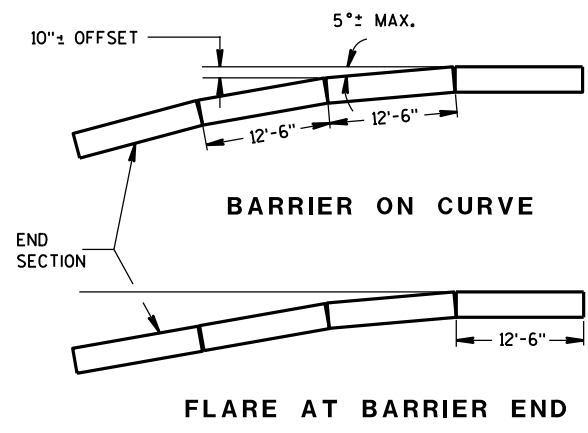


END SECTION



FRONT ELEVATION

DETAILS OF BARRIER TAPER SECTION



| 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

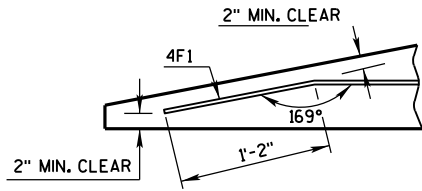
GENERAL NOTES

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

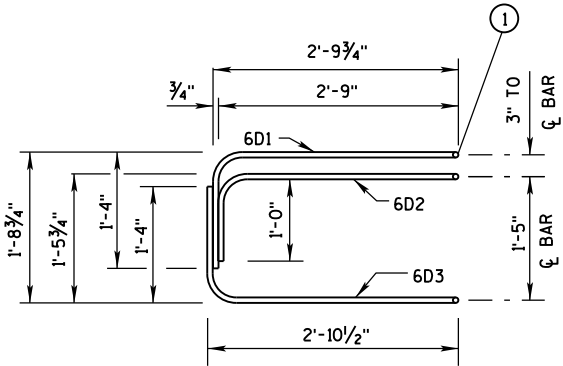
**BARRIER TAPER SECTION
BILL OF MATERIALS**
(PER 12'-6" BARRIER TAPER SECTION)

| 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" |

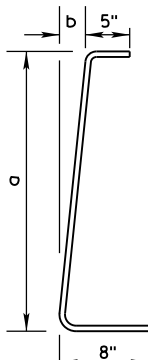
| LOOP ASSEMBLY | | | |
|---------------|---|---|-------|
| 6D1 | 6 | 1 | 8'-5" |
| 6D2 | 6 | 1 | 7'-7" |
| 6D3 | 6 | 1 | 8'-6" |



**DETAIL "C"
BENT BAR DETAIL**



**ELEVATION
LOOP BAR ASSEMBLY**



| BAR | a | b |
|-----|-----------|--------|
| V1 | 10" | 1" |
| V2 | 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" |

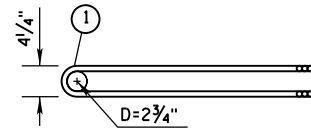
4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

TAPER BARRIER SECTION

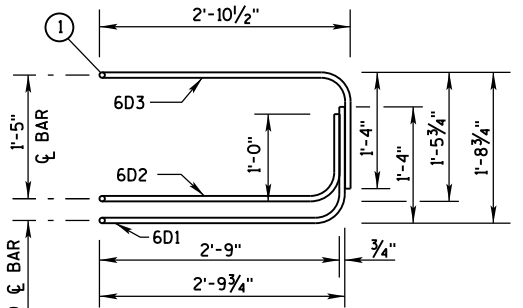
**BARRIER SECTION
BILL OF MATERIALS**
(PER 12'-6" BARRIER SECTION)

| 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" |

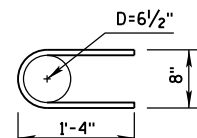
| LOOP ASSEMBLY | | | |
|---------------|---|---|-------|
| 6D1 | 6 | 2 | 8'-5" |
| 6D2 | 6 | 2 | 7'-7" |
| 6D3 | 6 | 2 | 8'-6" |



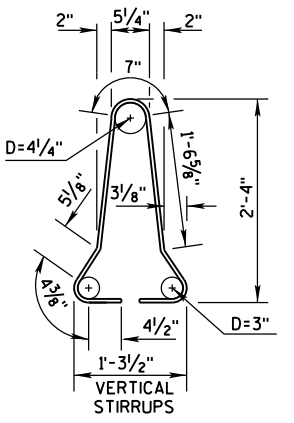
**PLAN VIEW
LOOP BAR ASSEMBLY**
(MARKED END SHOWN, INVERT FOR OTHER END)



ELEVATION VIEW



6A2

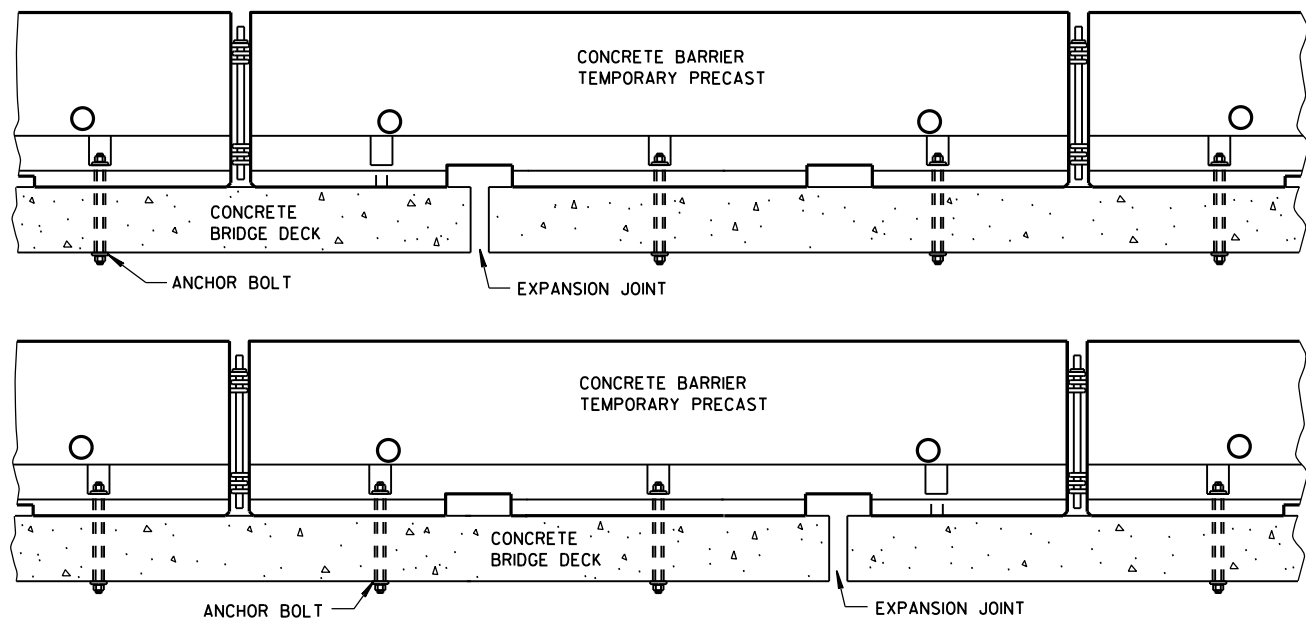


4A1

BARRIER SECTION

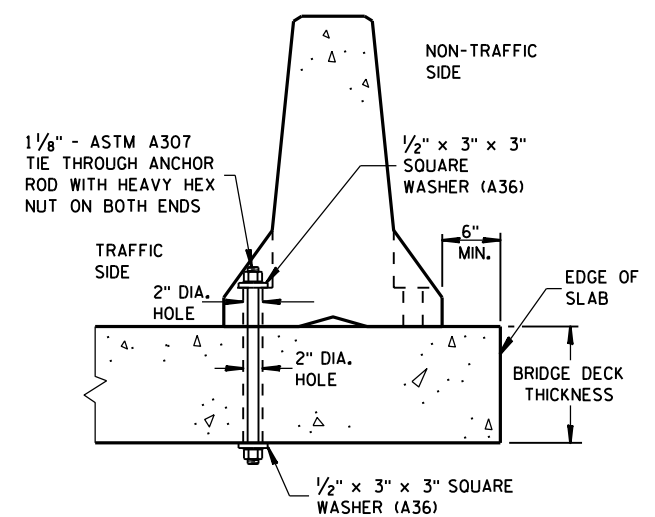
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



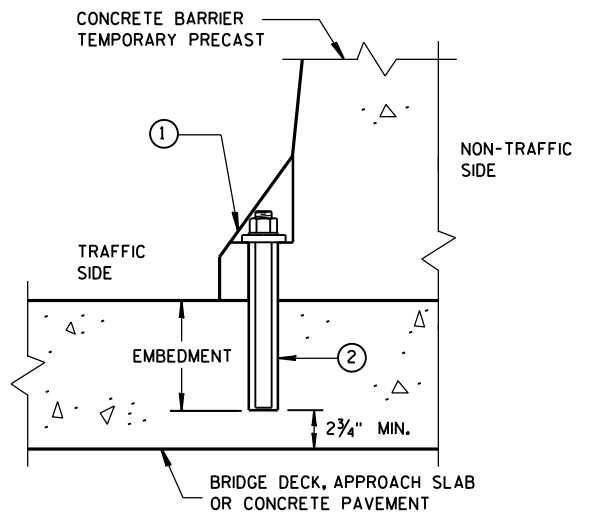
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

(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.)



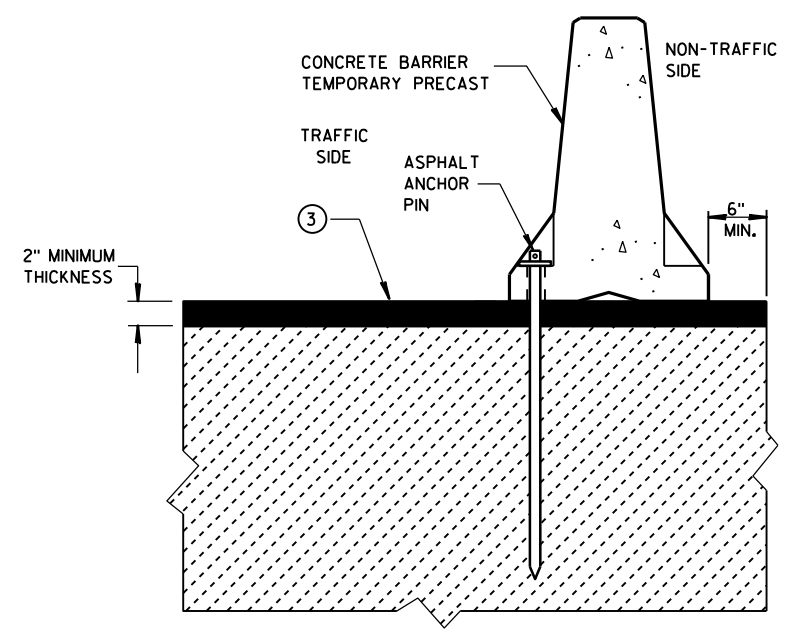
THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

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

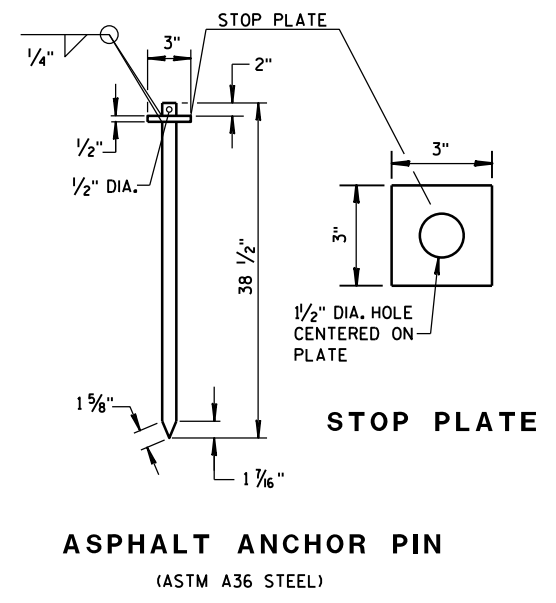


REMOVABLE ADHESIVE ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)



STAKE DOWN INSTALLATION FOR ASPHALTIC SURFACE



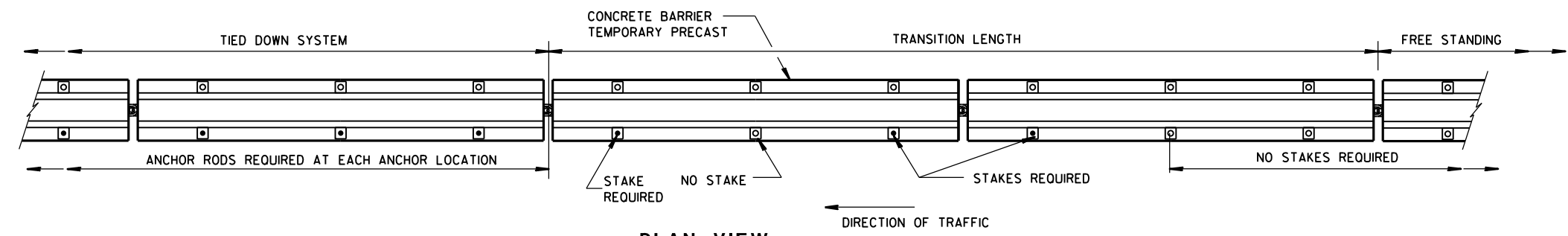
ASPHALT ANCHOR PIN (ASTM A36 STEEL)

GENERAL NOTES

SEE SHEET E FOR WHEN TO ANCHOR. OTHER PARTS OF THE PLAN MAY SHOW ADDITIONAL LOCATIONS REQUIRING ANCHORING.

REMOVE ALL ANCHORS WHEN NO LONGER NEEDED. FILL CONCRETE PAVEMENTS, DECKS AND APPROACH SLABS WITH NON-SHRINK COMMERCIAL GROUT FROM THE APPROVED PRODUCT LIST. FILL ASPHALT PAVEMENTS WITH ASTM D6690 TYPE II RUBBERIZED CRACK FILLER.

- ① 1/8" DIAMETER A307 THREADED ROD, 1/2" X 3" X 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL, ASTM A563A HEAVY HEX NUT.
- ② 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.
- ③ ASPHALT SURFACE SHOWN. CONTRACTOR MAY DRILL THROUGH CONCRETE PAVEMENT AND THEN DRIVE ASPHALT ANCHOR PIN.



FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

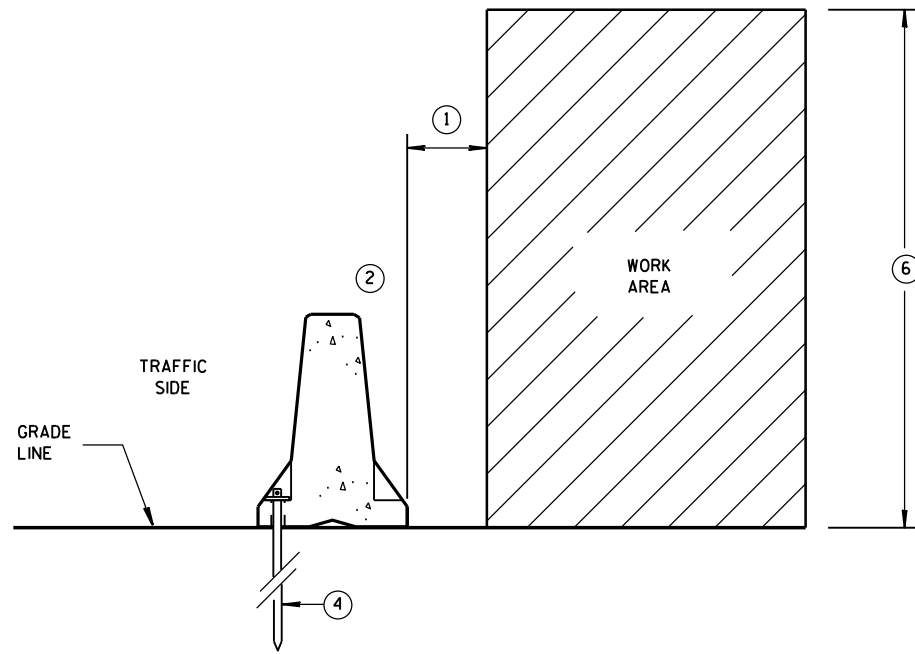
(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

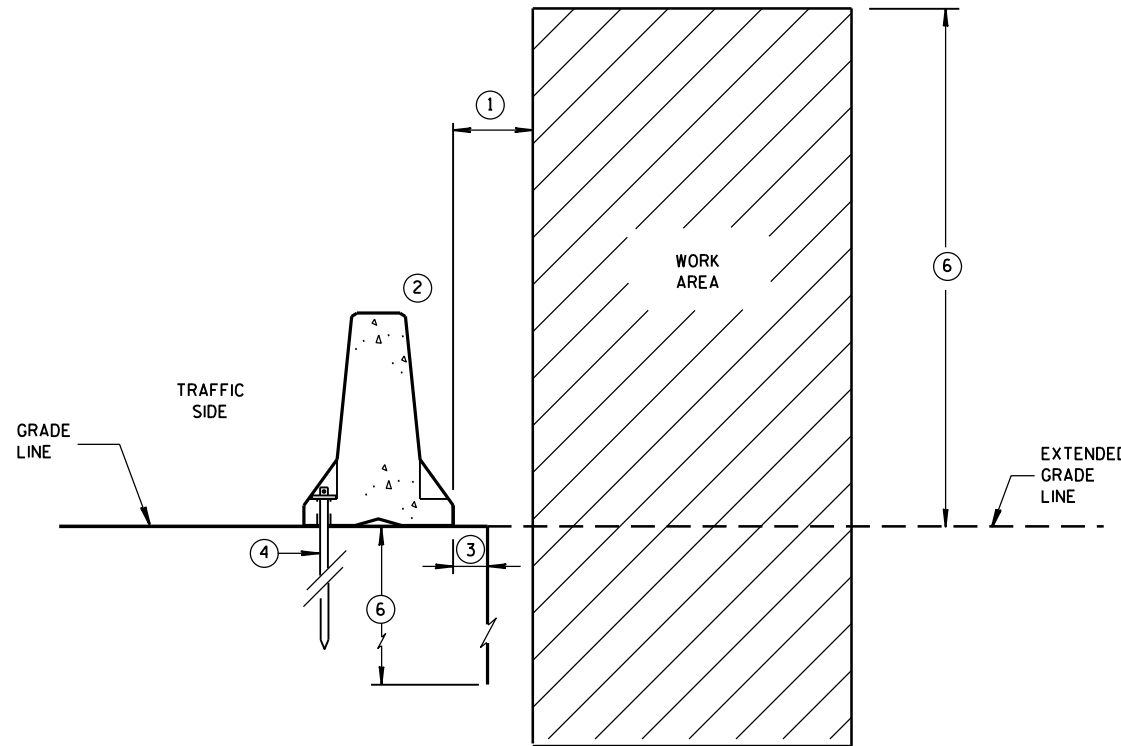
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

- ① WHEN OBJECTS EXTEND ABOVE THE GRADE, A MINIMUM OF 1 FOOT IS REQUIRED FROM BACK OF BARRIER TO OBJECT. SEE OTHER DETAILS FOR THE MINIMUM OFFSET FROM BACK OF BARRIER TO SLOPES OR VERTICAL DROPS.
- ② OBJECTS ARE NOT TO BE PLACED ON, MOUNTED TO, OR LEANED AGAINST THE BARRIER WITHOUT PERMISSION OF THE PROJECT ENGINEER.
- ③ SEE OTHER DETAIL ON SHEET "D" FOR SPACE REQUIREMENTS.
- ④ SEE BOLT THROUGH DECK, REMOVABLE ADHESIVE ANCHOR, OR A STAKE DOWN FOR ASPHALTIC SURFACE TREATMENT DETAILS. ASPHALTIC ANCHOR SHOWN.
- ⑤ DEPTH OF 3 FEET OR MORE.
- ⑥ Y = 6'-6".

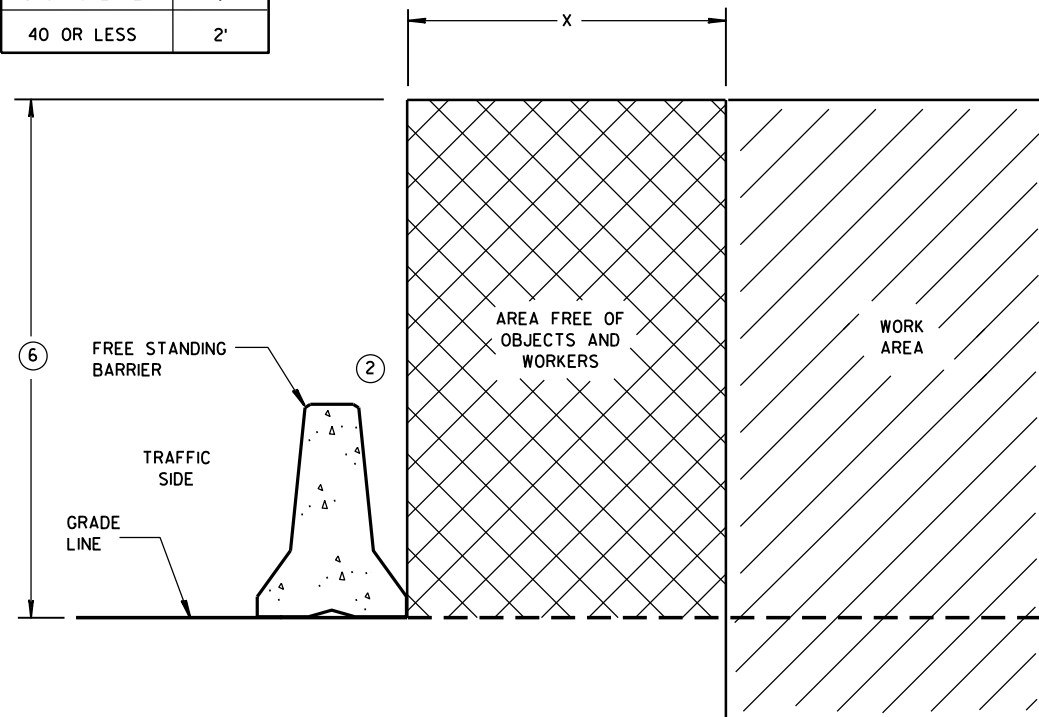


ANCHORED BARRIER SPACE REQUIREMENTS FOR HAZARDS EXTENDED ABOVE THE GRADE LINE

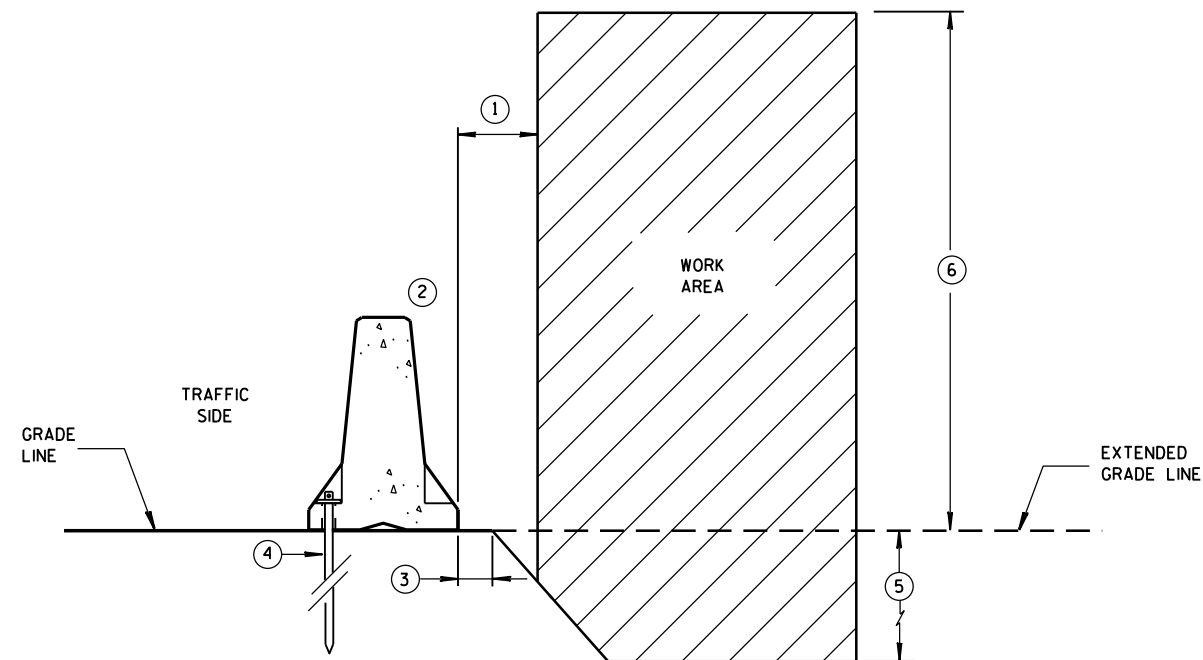


ANCHORED BARRIER SPACE REQUIREMENTS ON VERTICAL DROP OFFS

| POSTED SPEED MPH | X |
|------------------|----|
| 45 OR GREATER | 4' |
| 40 OR LESS | 2' |



FREE STANDING BARRIER SPACE REQUIREMENTS



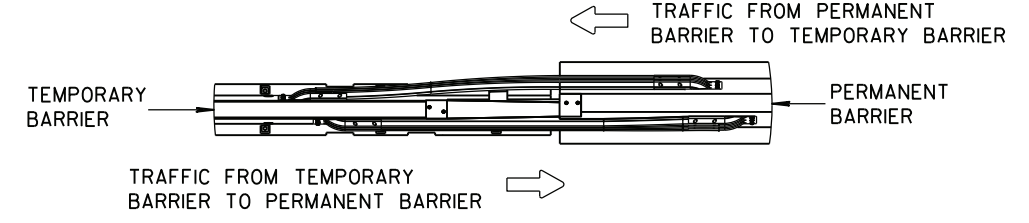
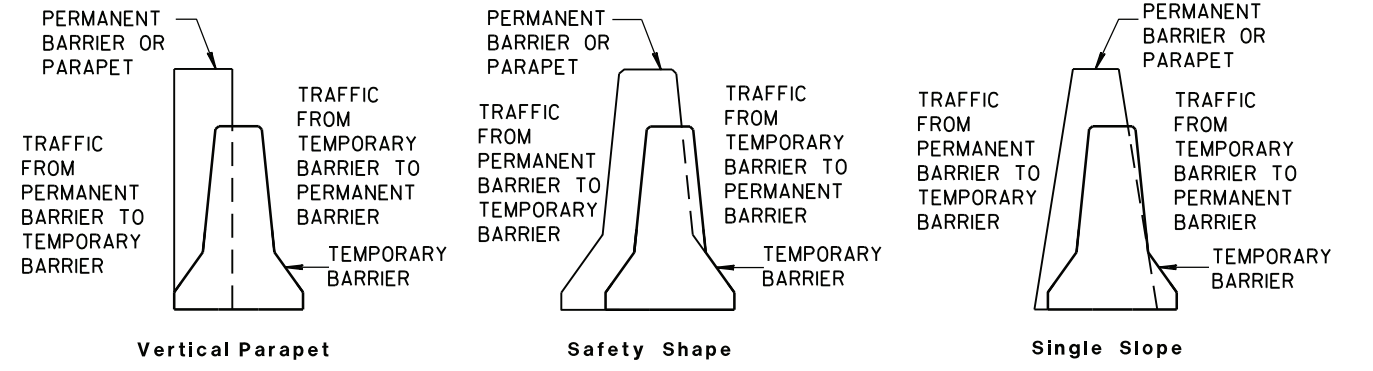
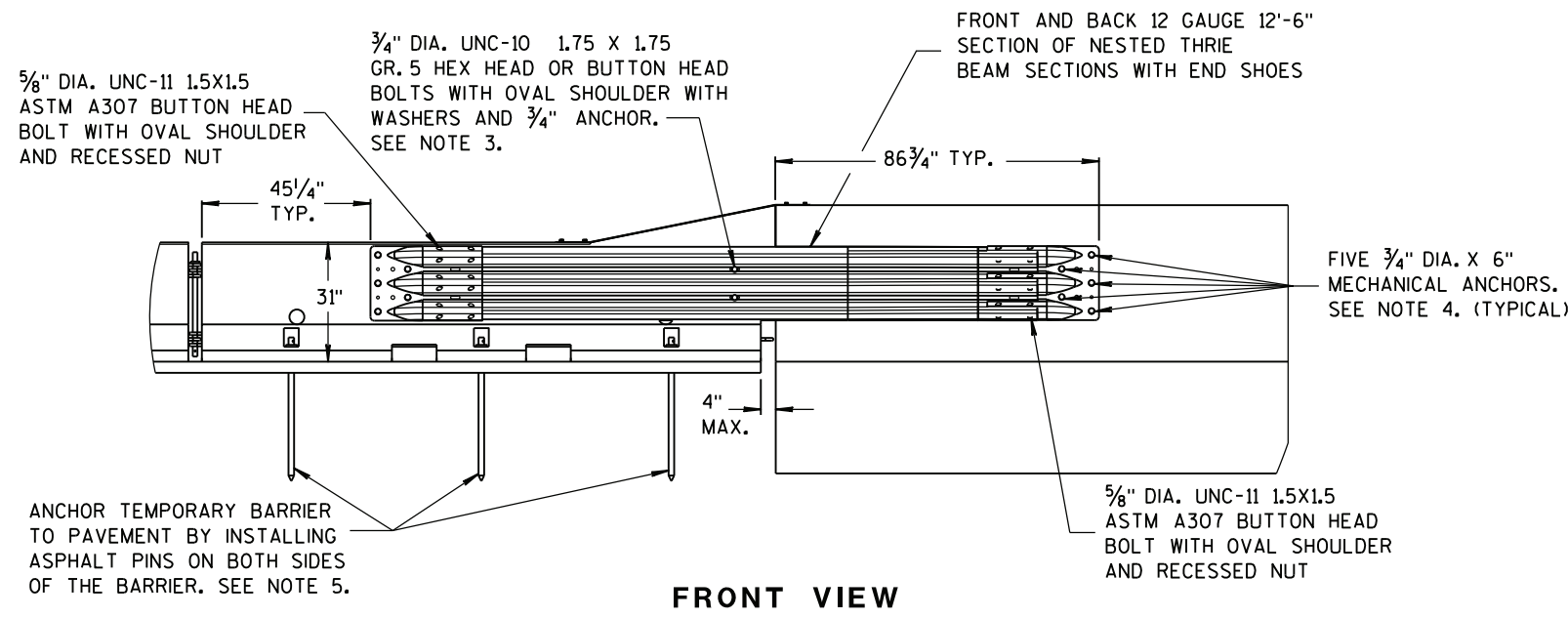
ANCHORED BARRIER SPACE REQUIREMENTS ON SLOPES

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

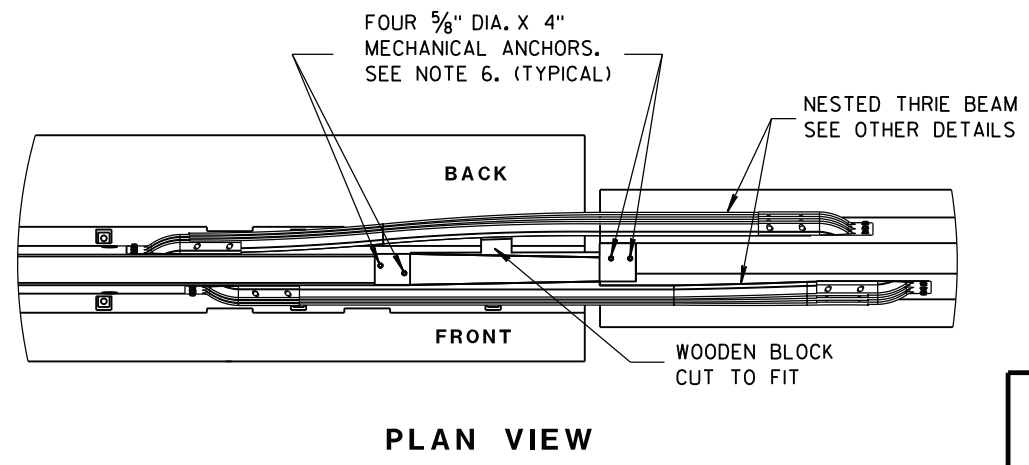
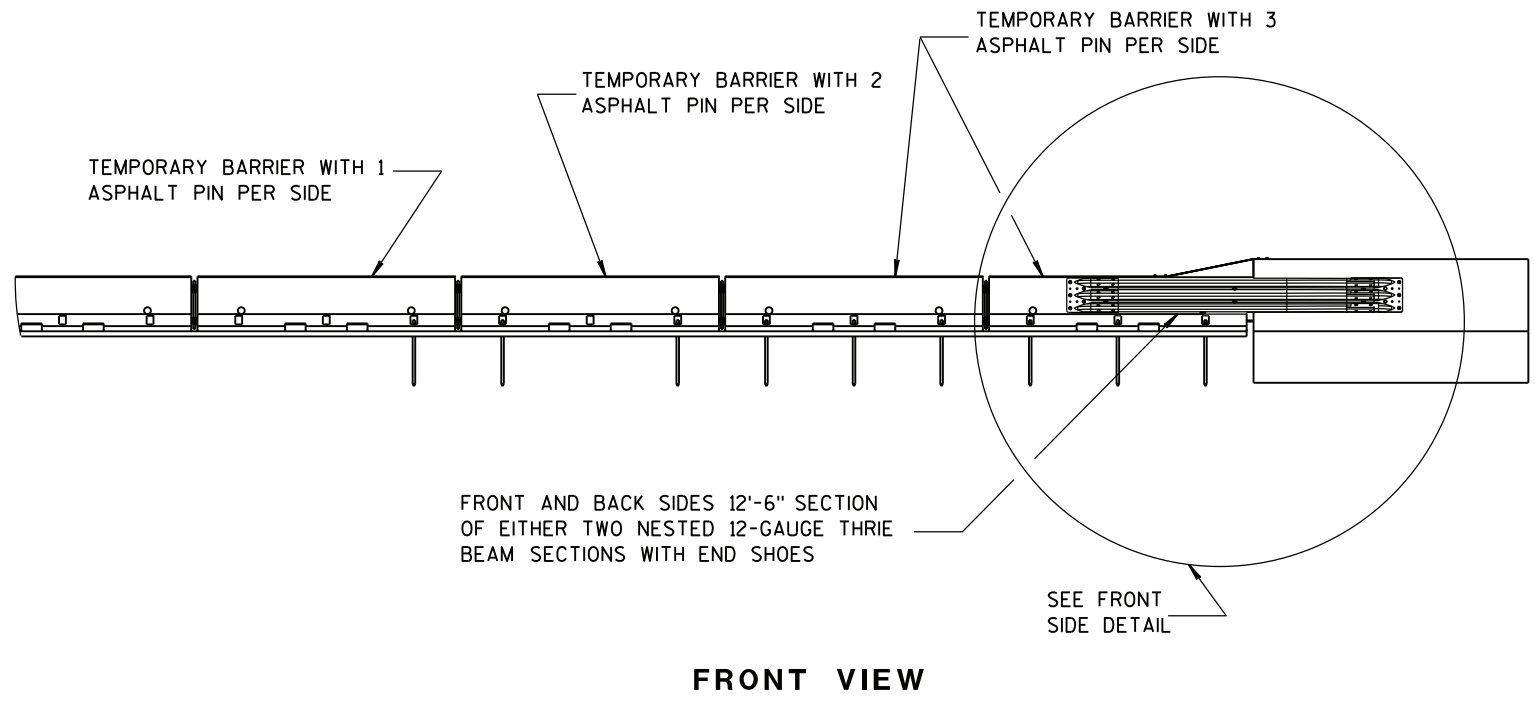
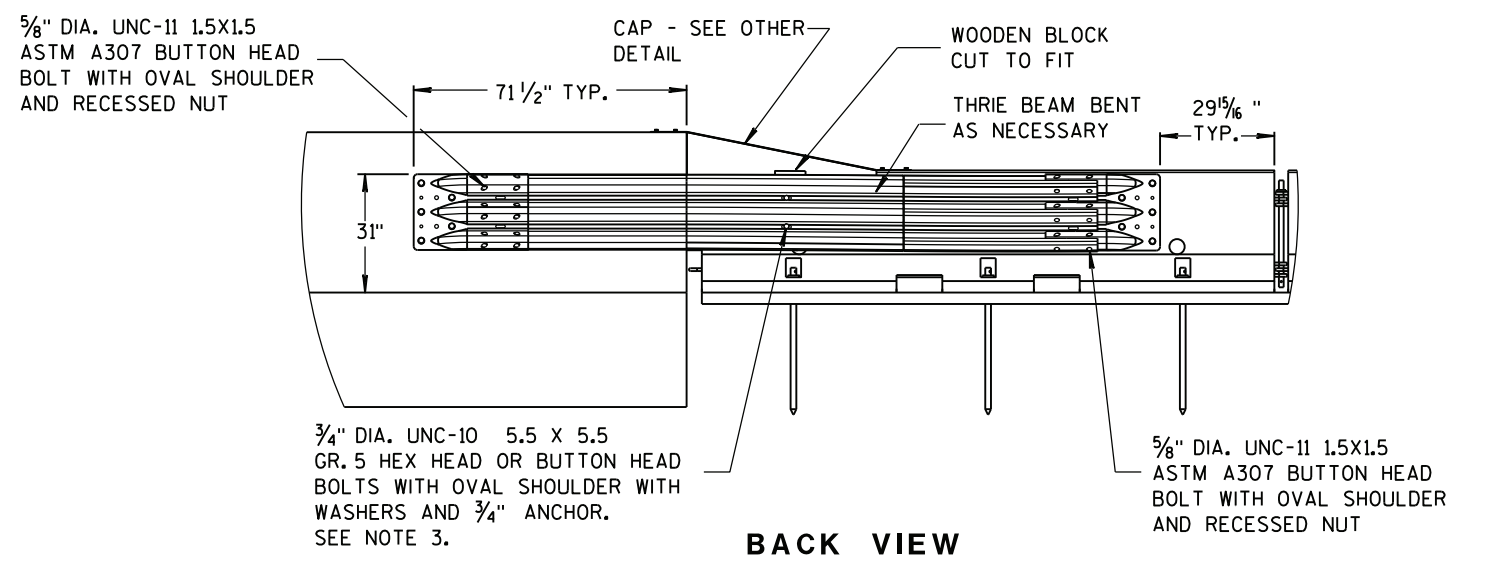
6

6



TEMPORARY BARRIER PLACEMENT FOR TRANSITION TO TIED DOWN SYSTEM

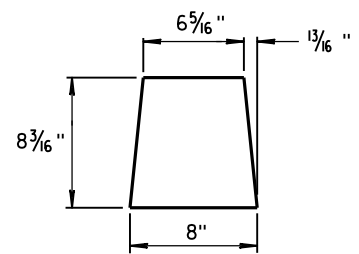
- NOTES**
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
 2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
 3. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE 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.



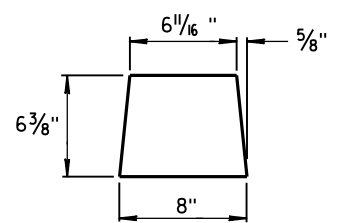
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

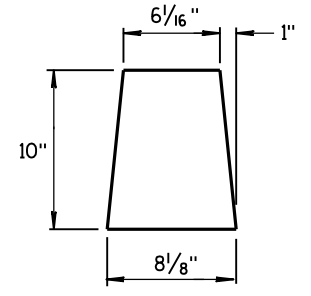
TRANSITION TO TIED DOWN SYSTEM



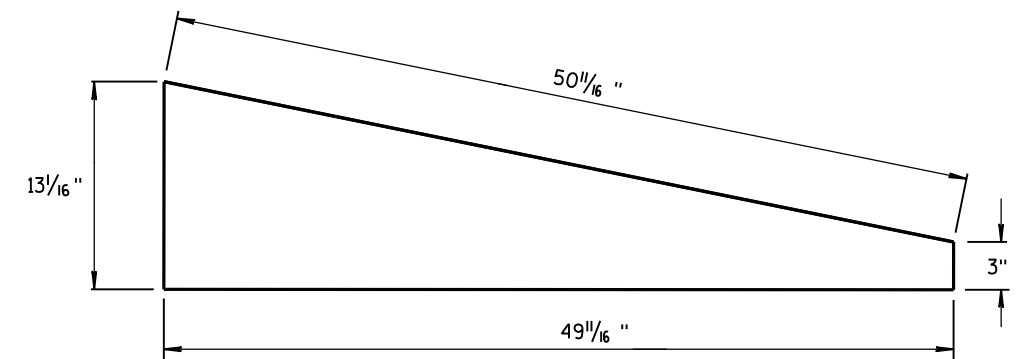
GUSSET 1



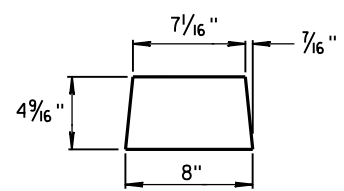
GUSSET 2



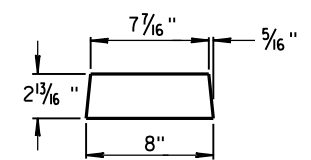
END PLATE



SIDE PLATE

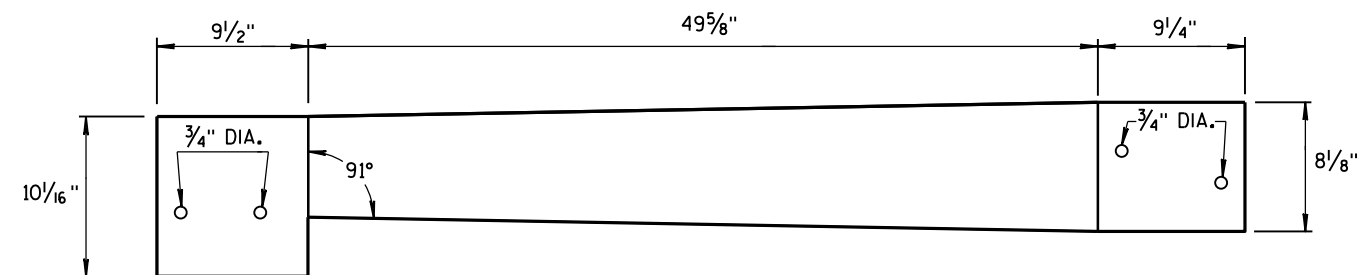


GUSSET 3

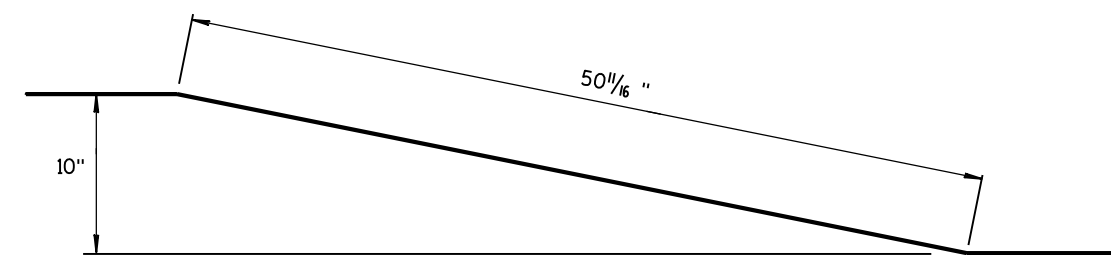


GUSSET 4

GUSSETS

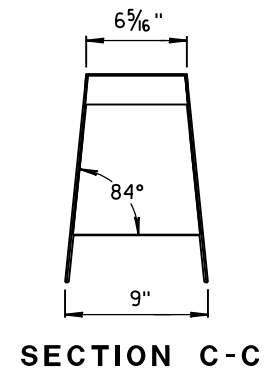
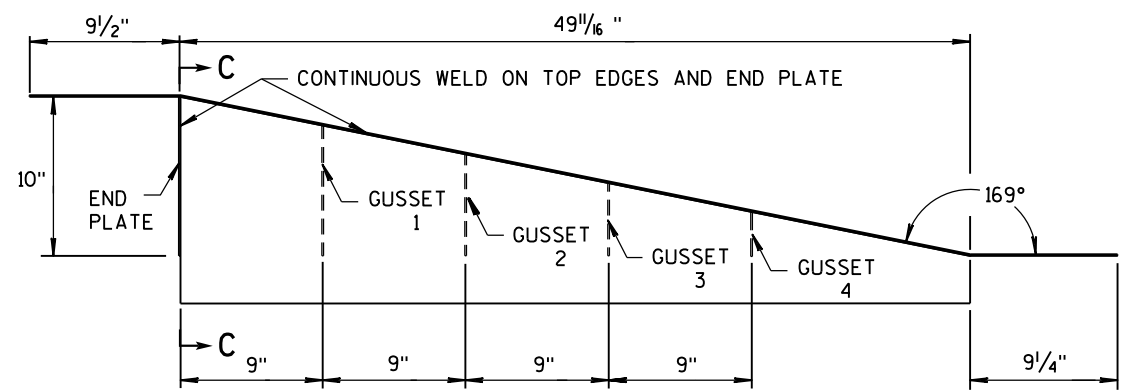
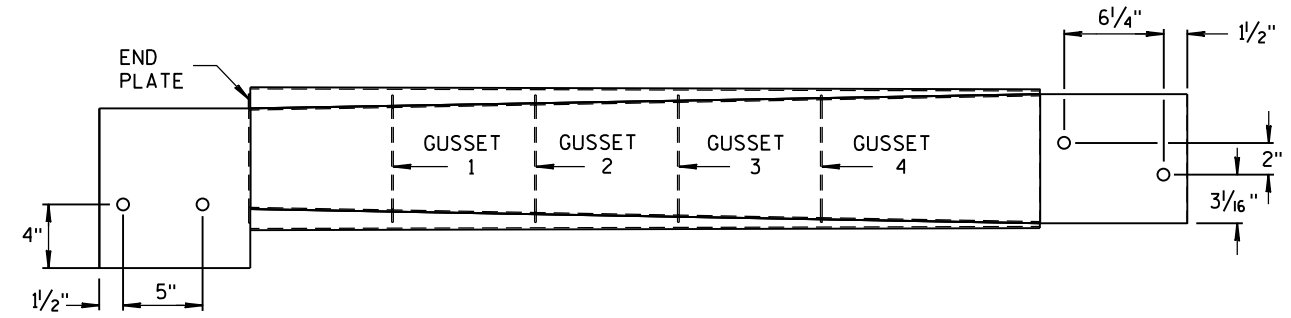


TOP PLATE



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

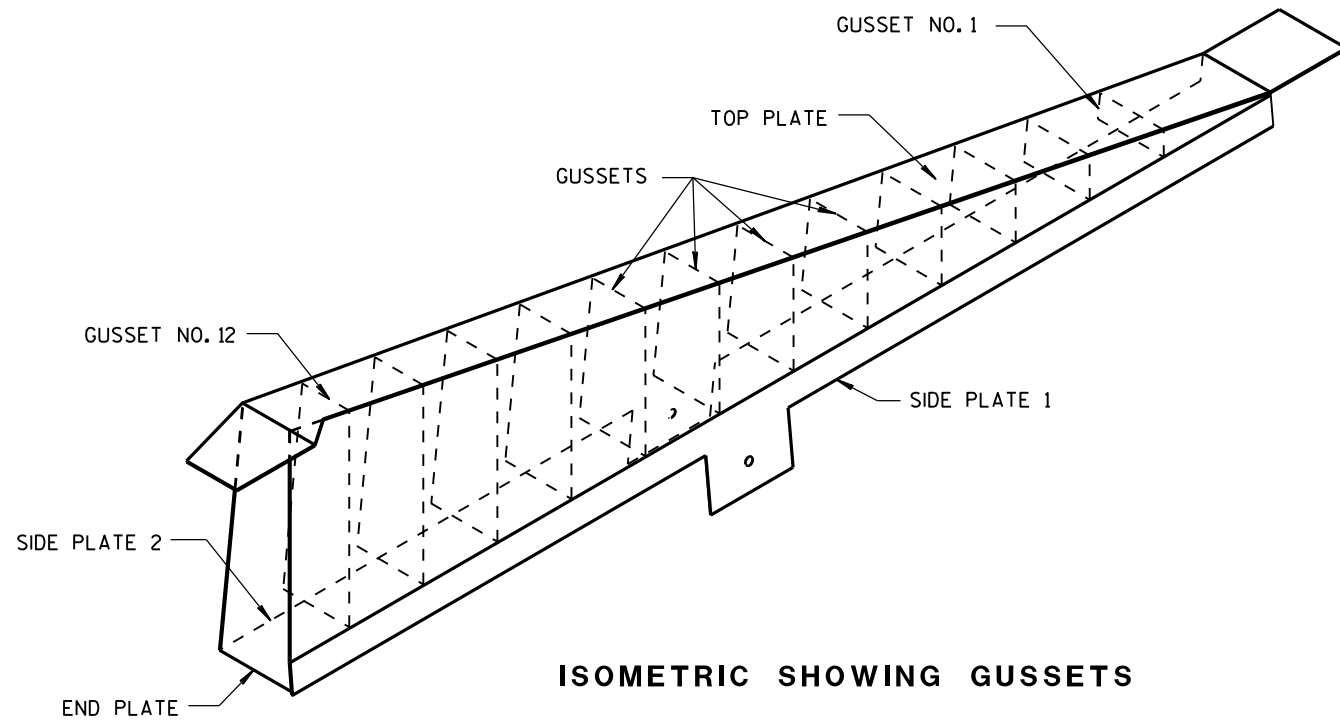
NOTES

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.

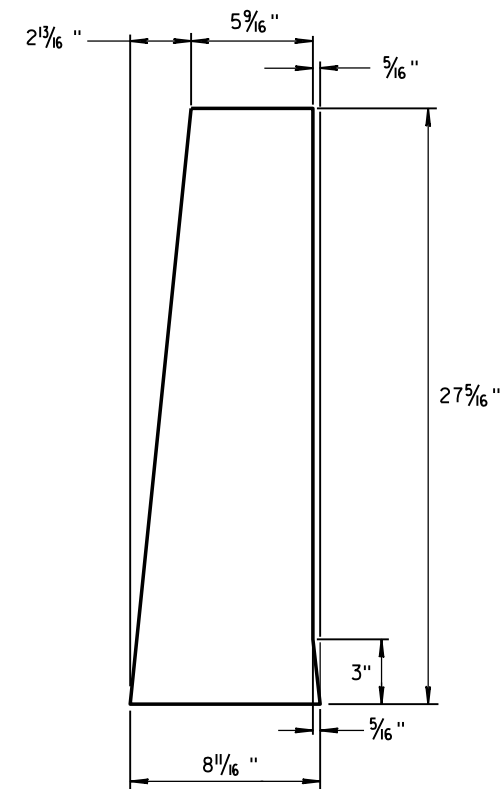
CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 42" PERMANENT CONCRETE BARRIER

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

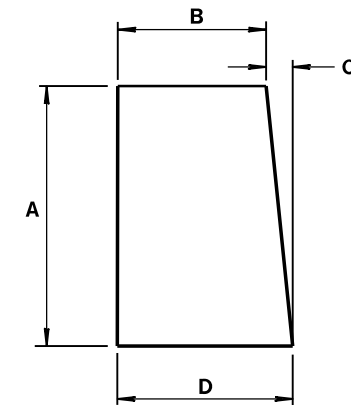


ISOMETRIC SHOWING GUSSETS



END PLATE

1/8" STEEL PLATE



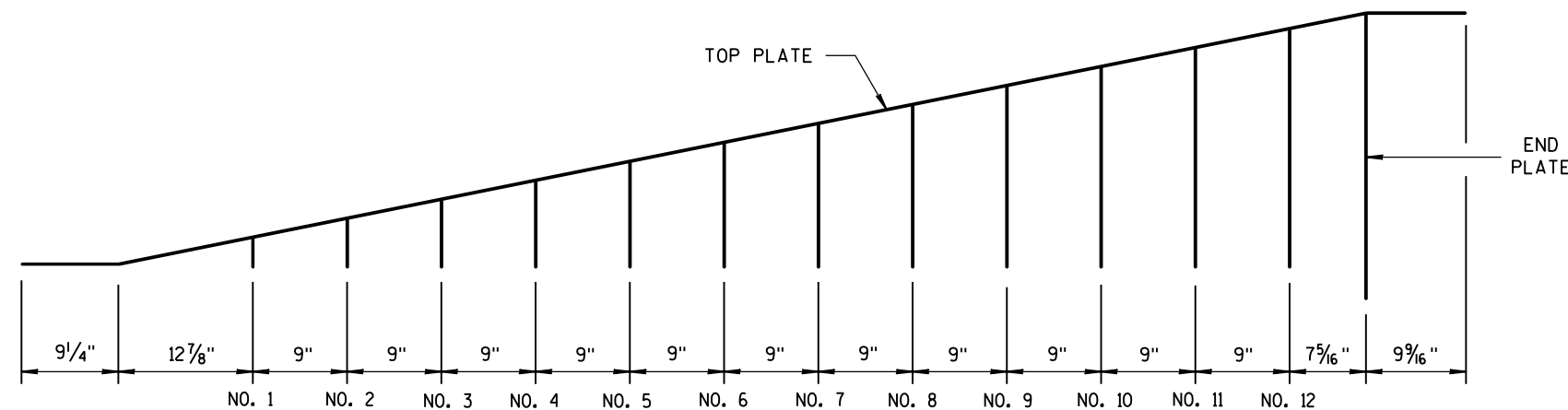
GUSSETS 1 - 12

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 7/16" | 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 3/16" | 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.

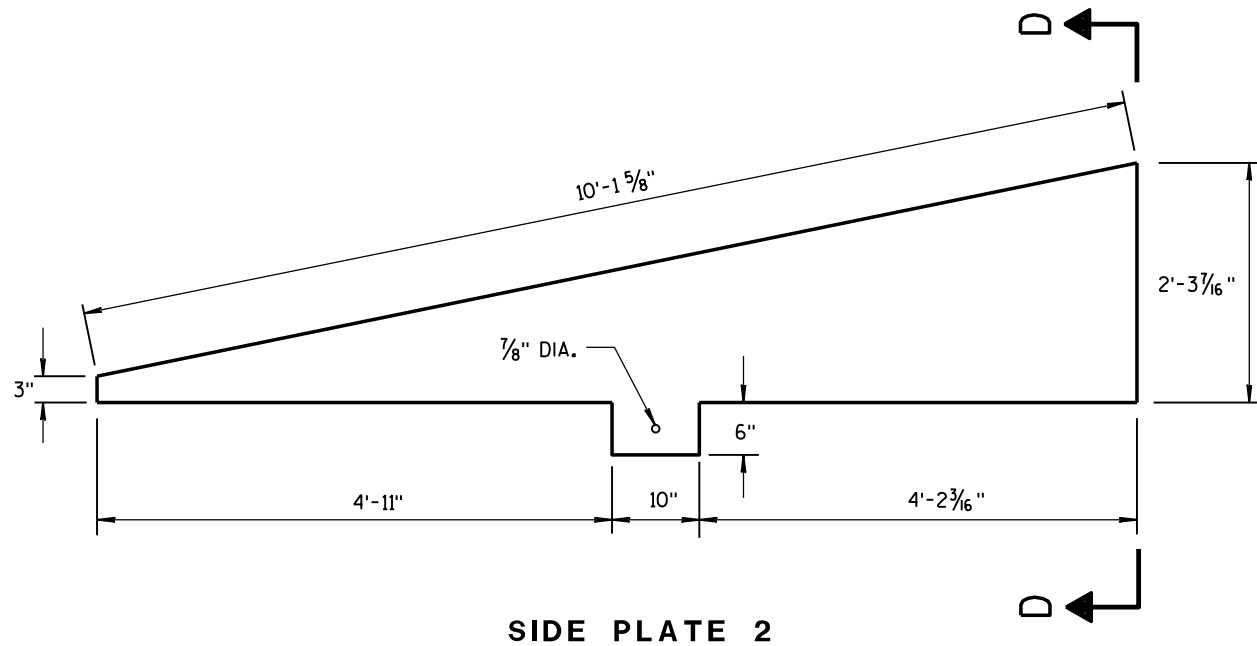


GUSSET LOCATION

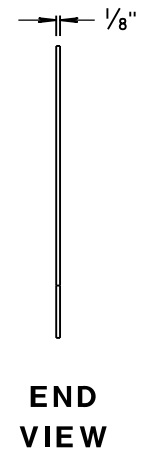
CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

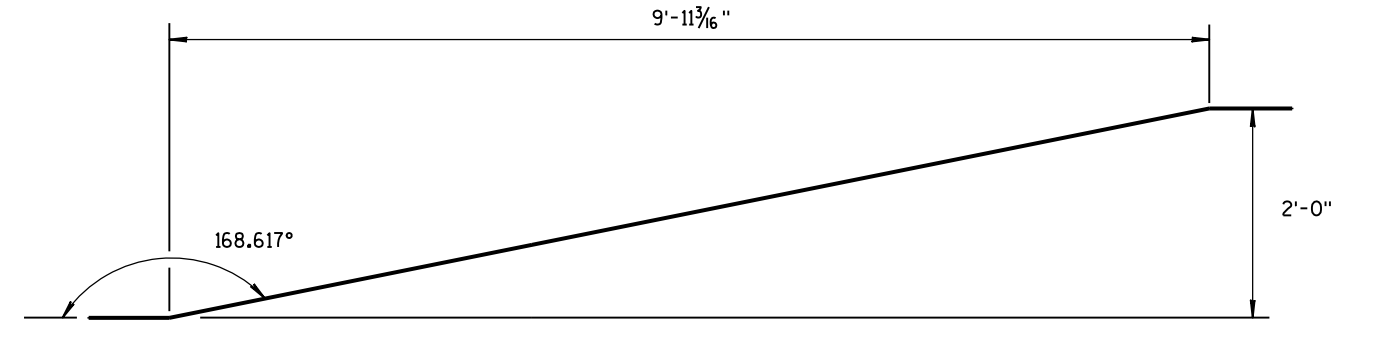
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



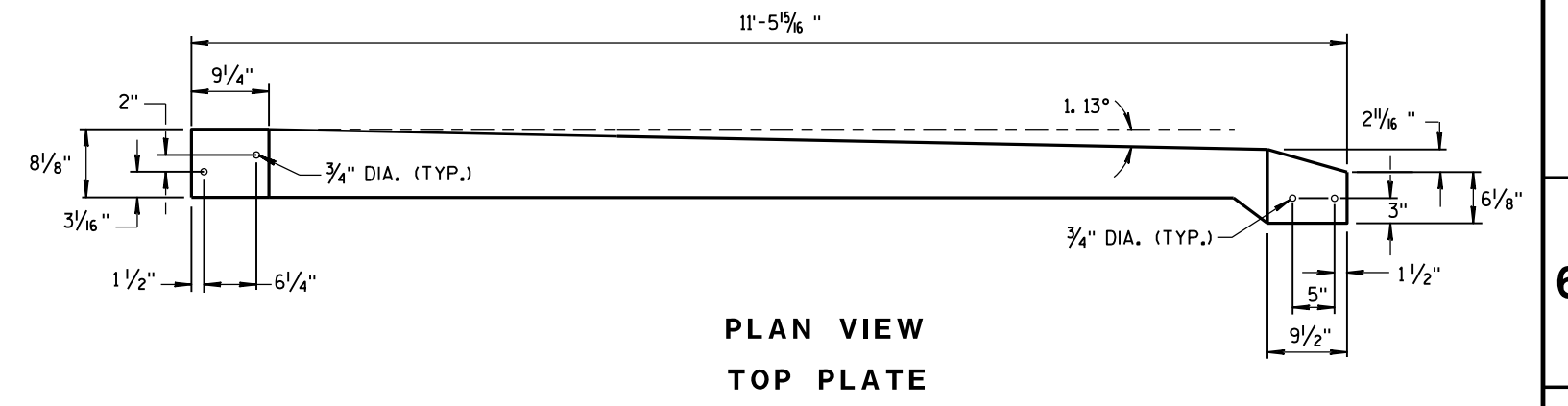
SIDE PLATE 2



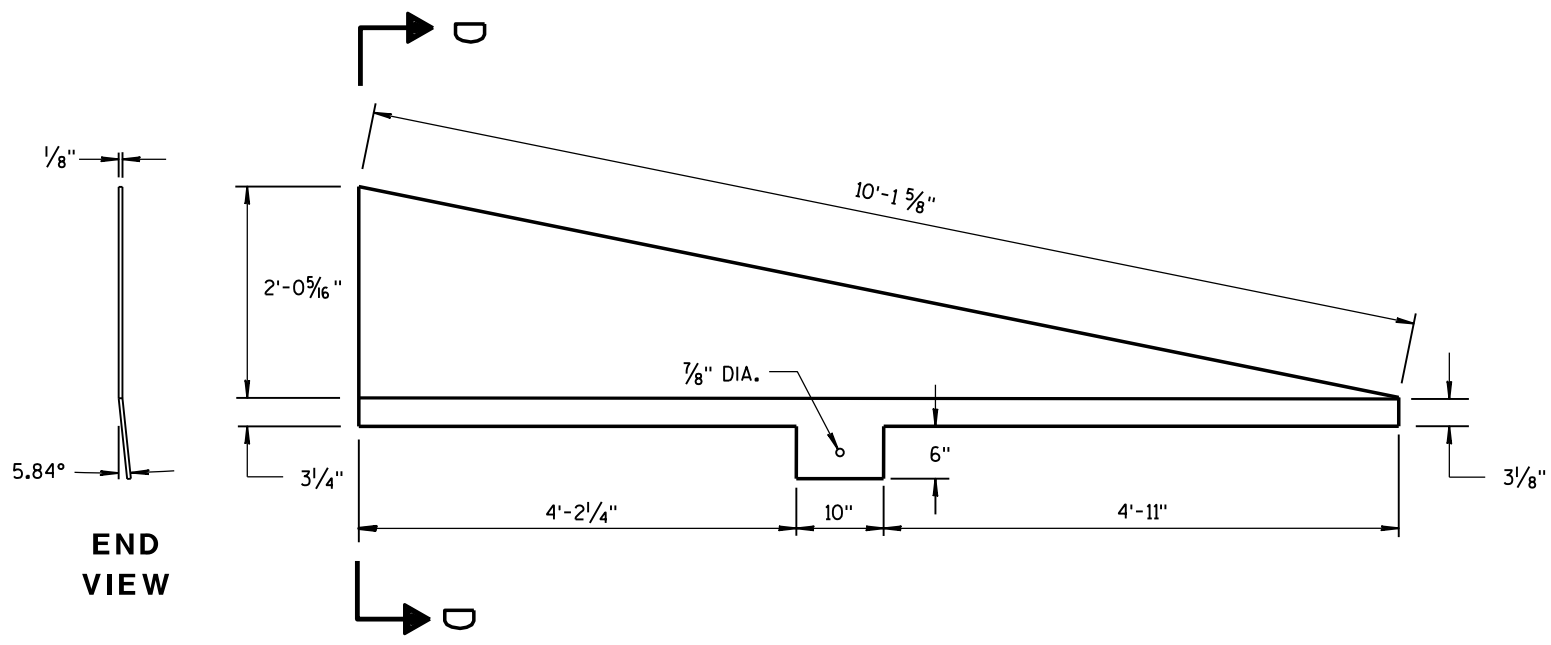
END VIEW



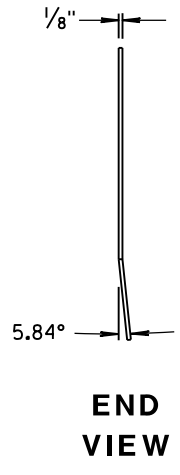
**SIDE VIEW
TOP PLATE**



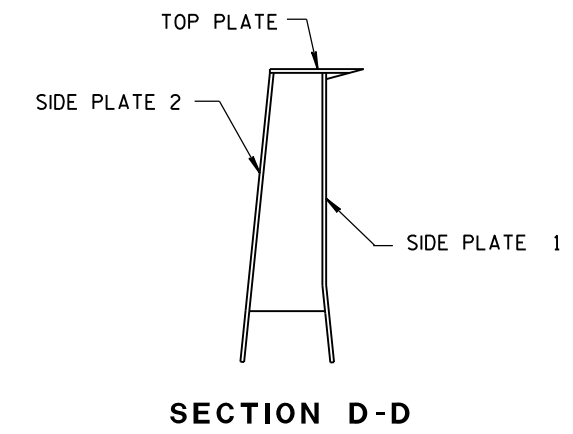
**PLAN VIEW
TOP PLATE**



SIDE PLATE 1



END VIEW



SECTION D-D

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

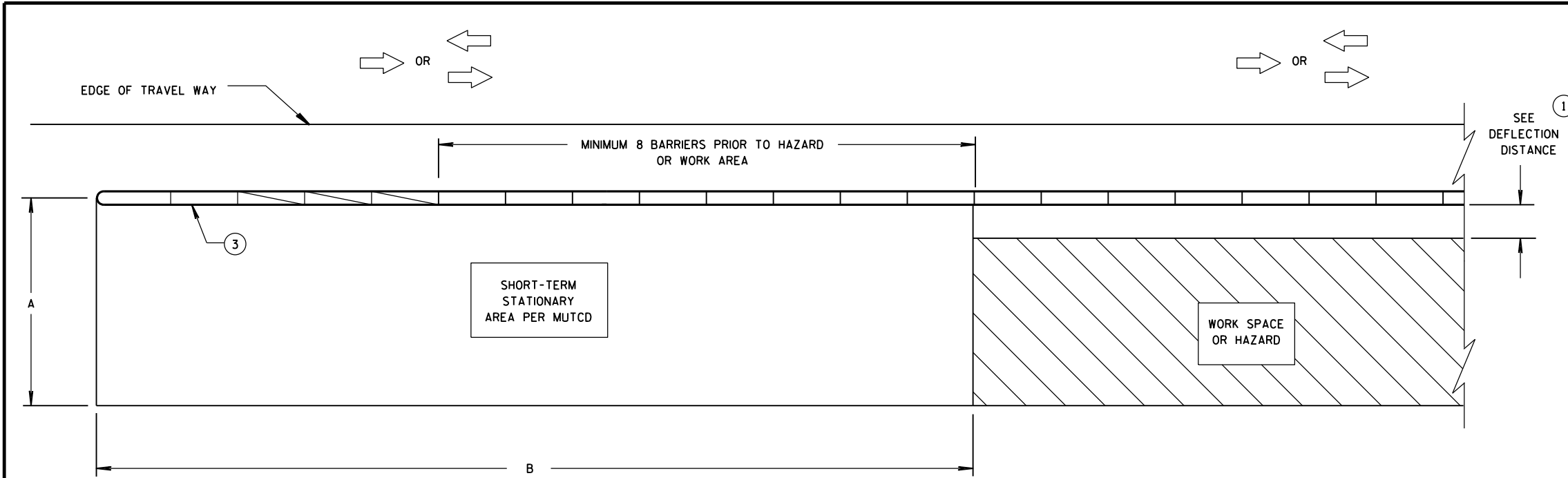
| | |
|---|--|
| CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED June 2017 DATE | /s/ Rodney Taylor ROADWAY STANDARD DEVELOPMENT UNIT SUPERVISOR |
| FHWA | |

6

6

S.D.D. 14 B 7-15i

S.D.D. 14 B 7-15i



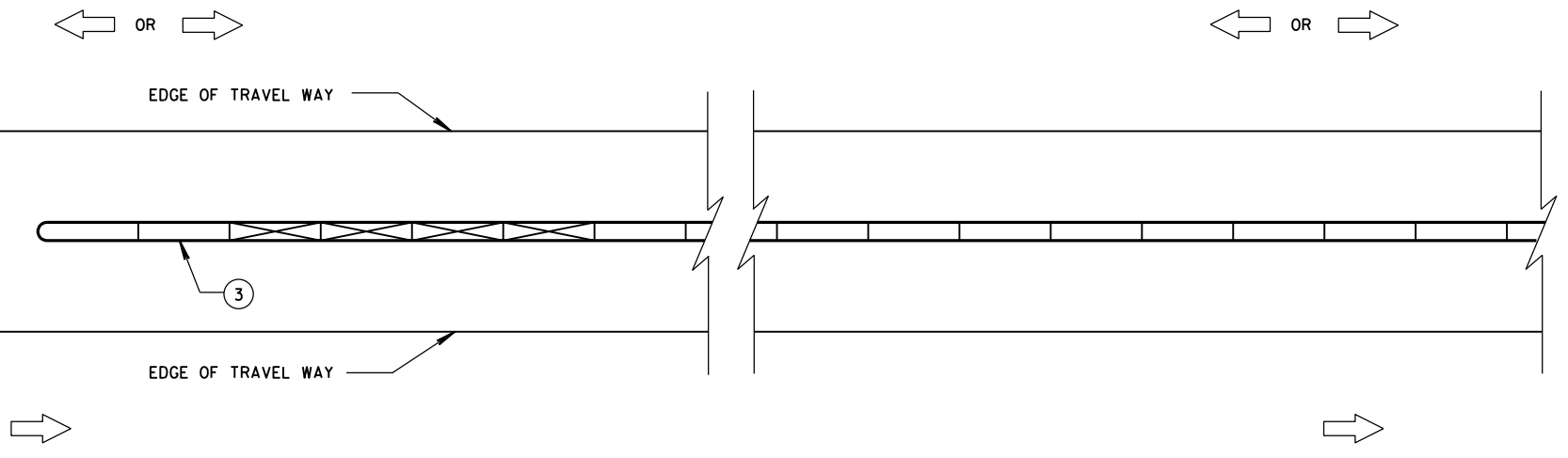
DIMENSION A TABLE ②

| 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 |

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

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 |



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

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.

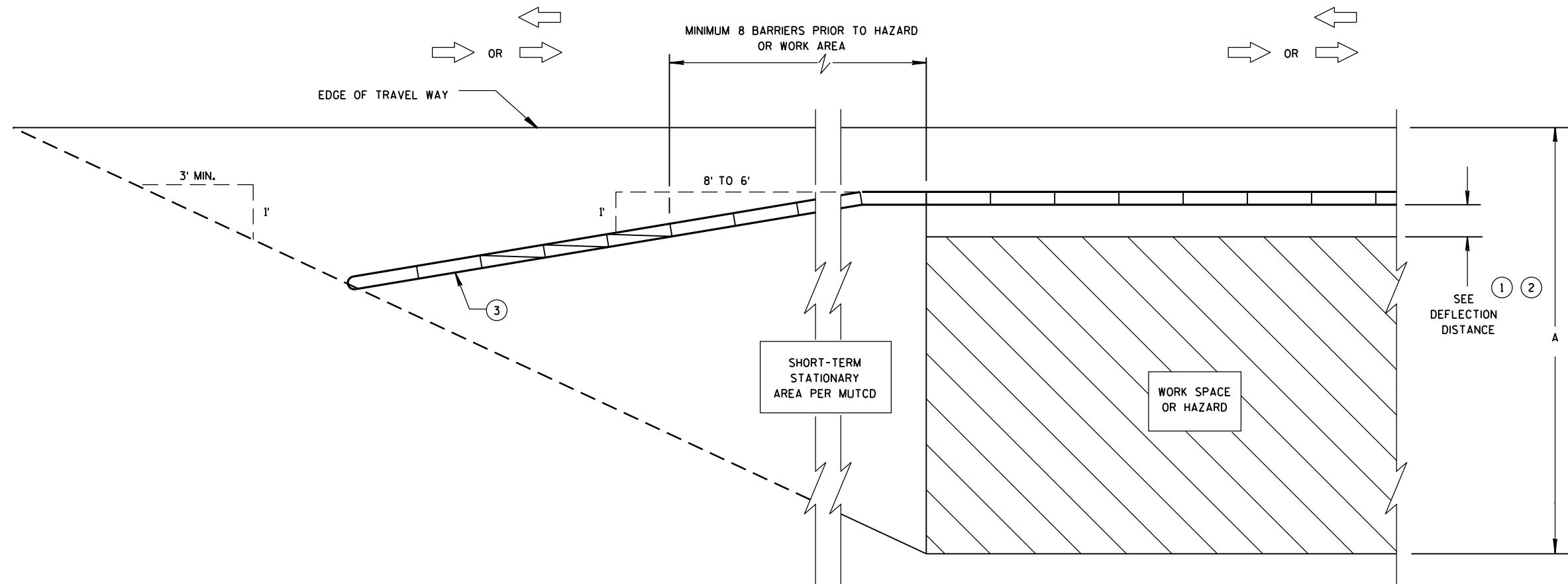
- ① FOR DEFLECTION INFORMATION SEE STANDARD DETAIL DRAWING 14B7.
- ② VALUES PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.
- ③ ANCHOR TEMPORARY BARRIER ACCORDING TO CRASH CUSHION OR SAND BARREL MANUFACTURER'S RECOMMENDATIONS.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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

S.D.D. 14 B 8-2a

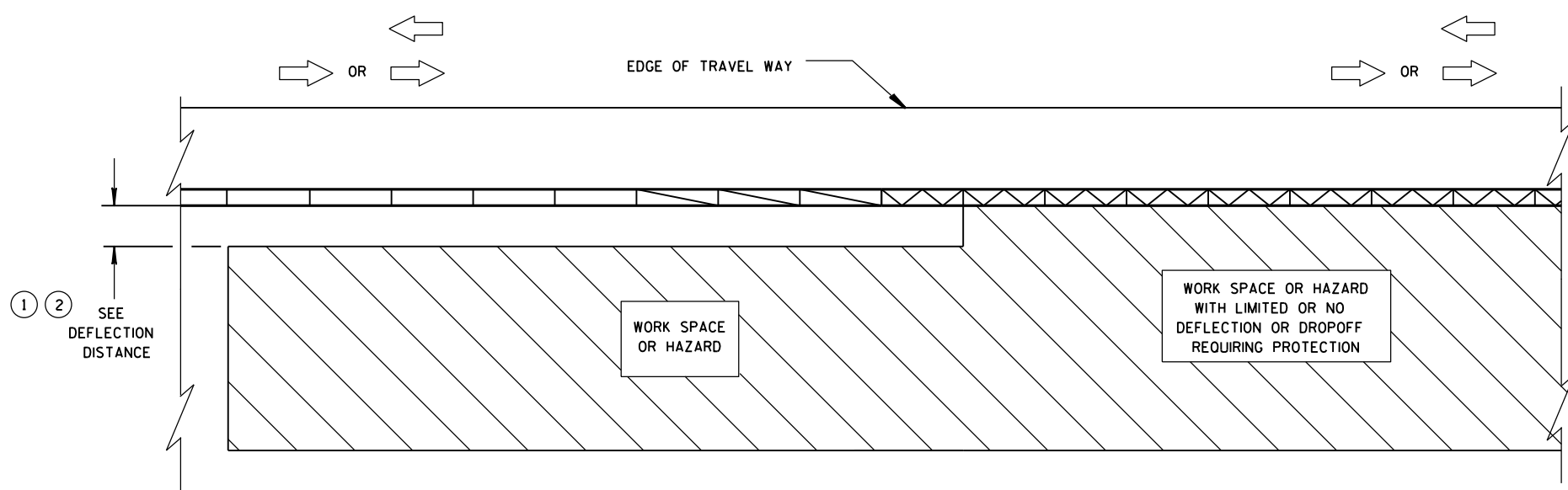
S.D.D. 14 B 8-2a



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

6

6



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

LEGEND

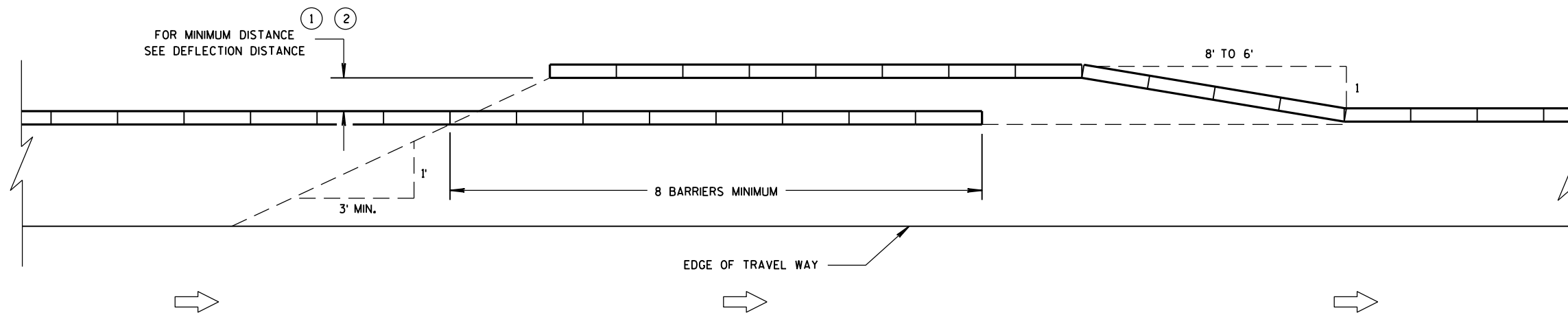
- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

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

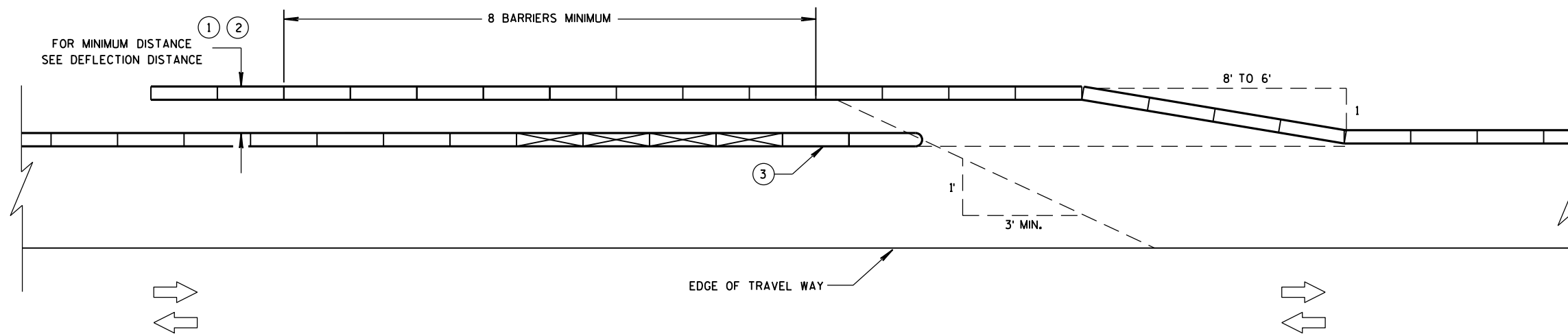
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

S.D.D. 14 B 8-2b

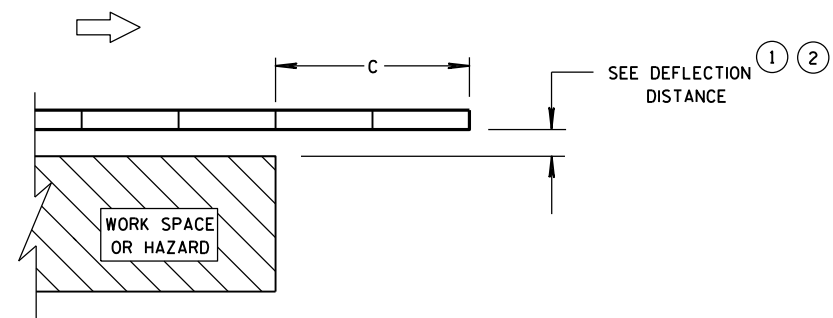
S.D.D. 14 B 8-2b



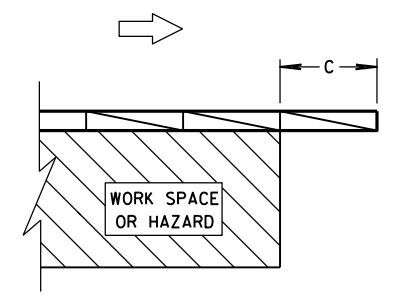
TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC



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**

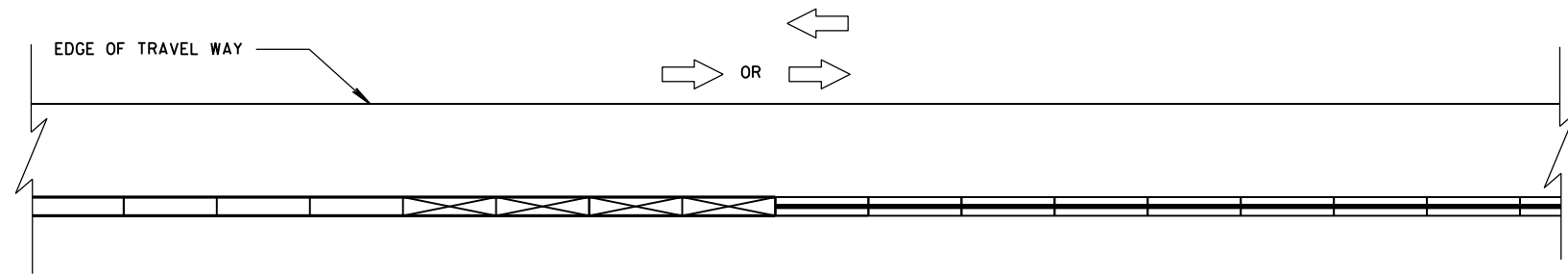
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

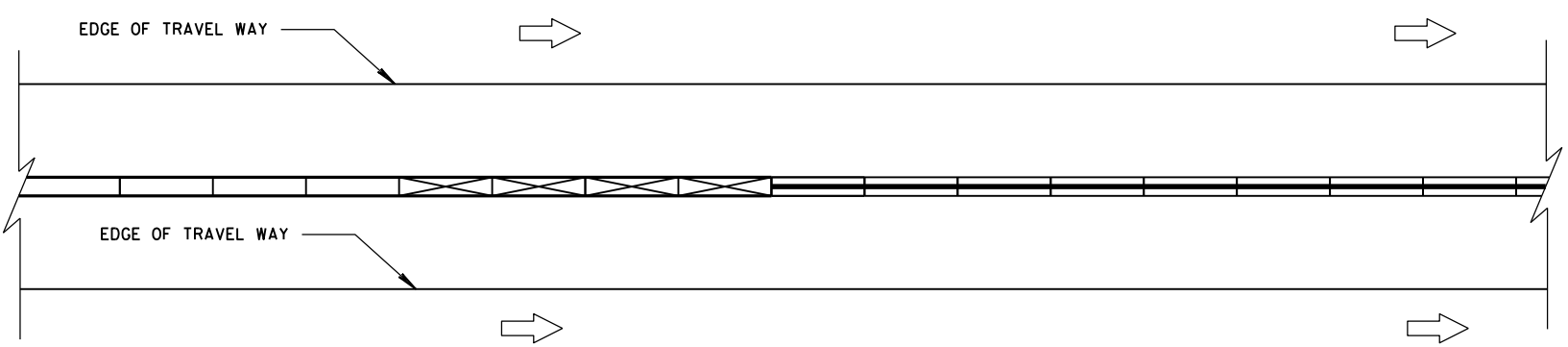
6

S.D.D. 14 B 8-2c

S.D.D. 14 B 8-2c



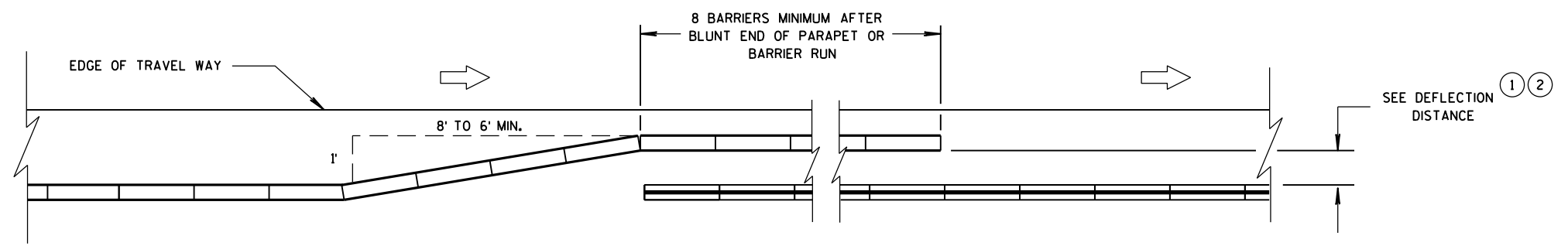
CONNECTING TEMPORARY BARRIER TO PERMANENT CONCRETE BARRIER-TRAFFIC ON ONE SIDE



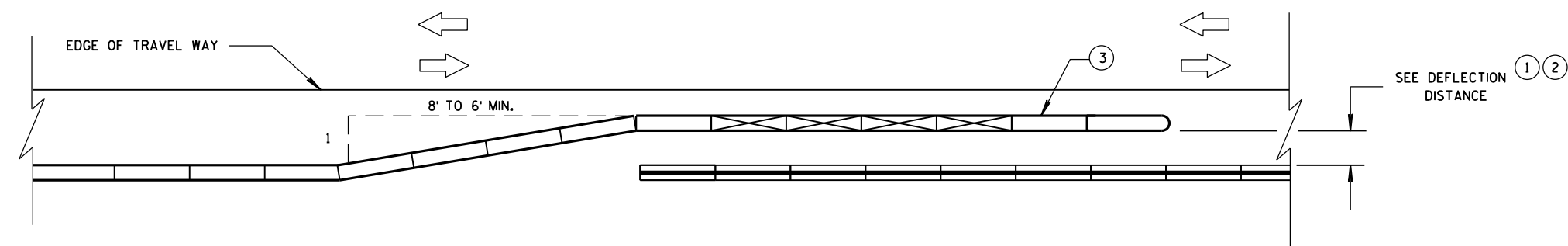
CONNECTING TEMPORARY BARRIER TO PERMANENT CONCRETE BARRIER-TRAFFIC ON BOTH SIDES

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

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

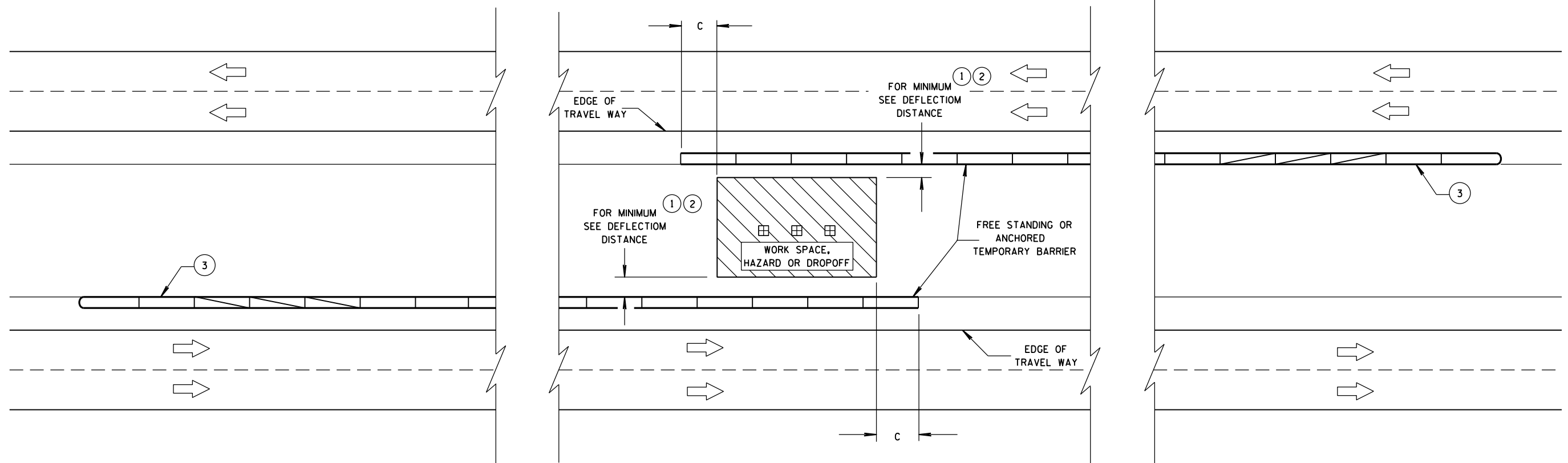
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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 |



6

6

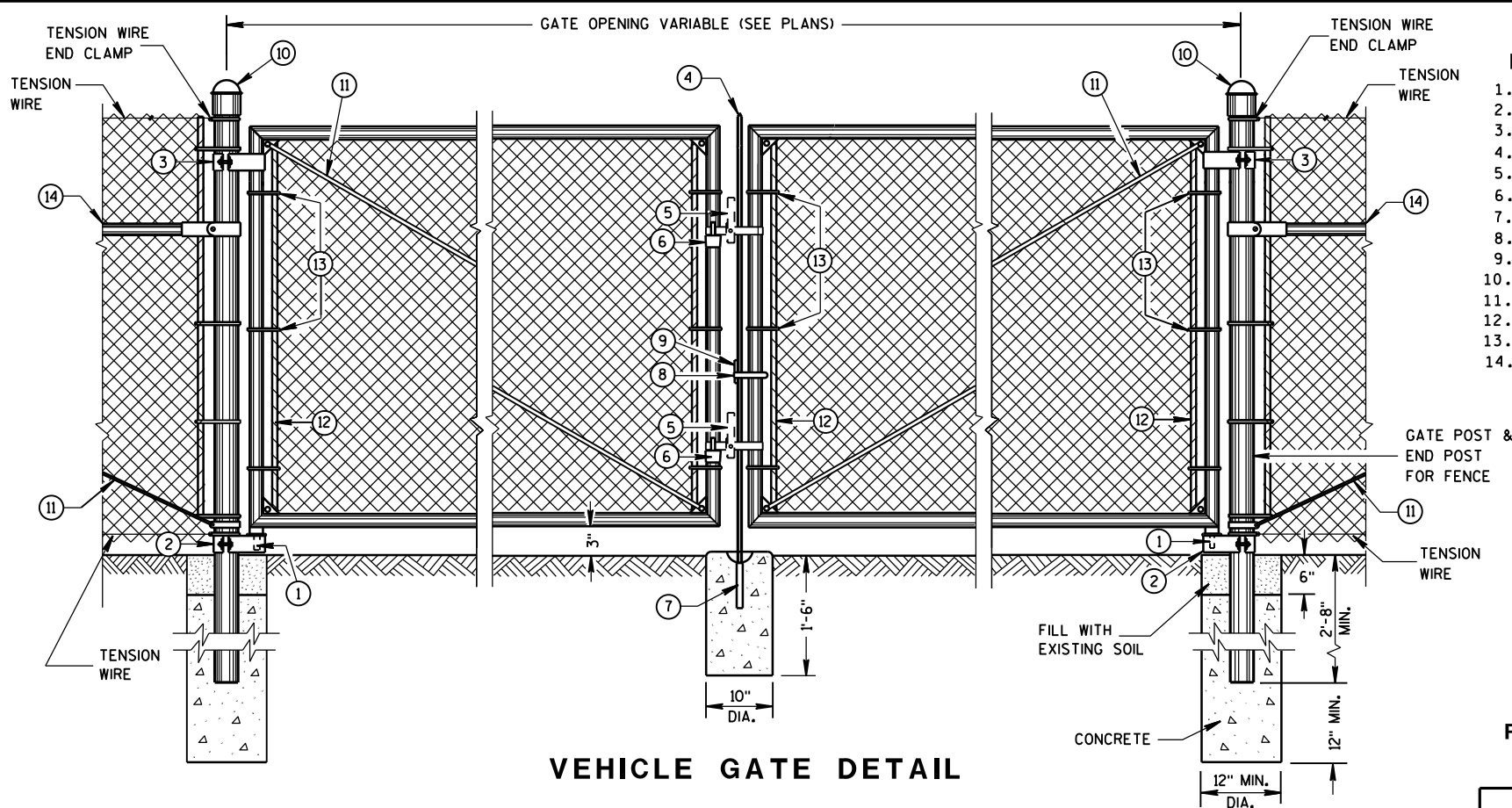
S.D.D. 14 B 8-2e

S.D.D. 14 B 8-2e

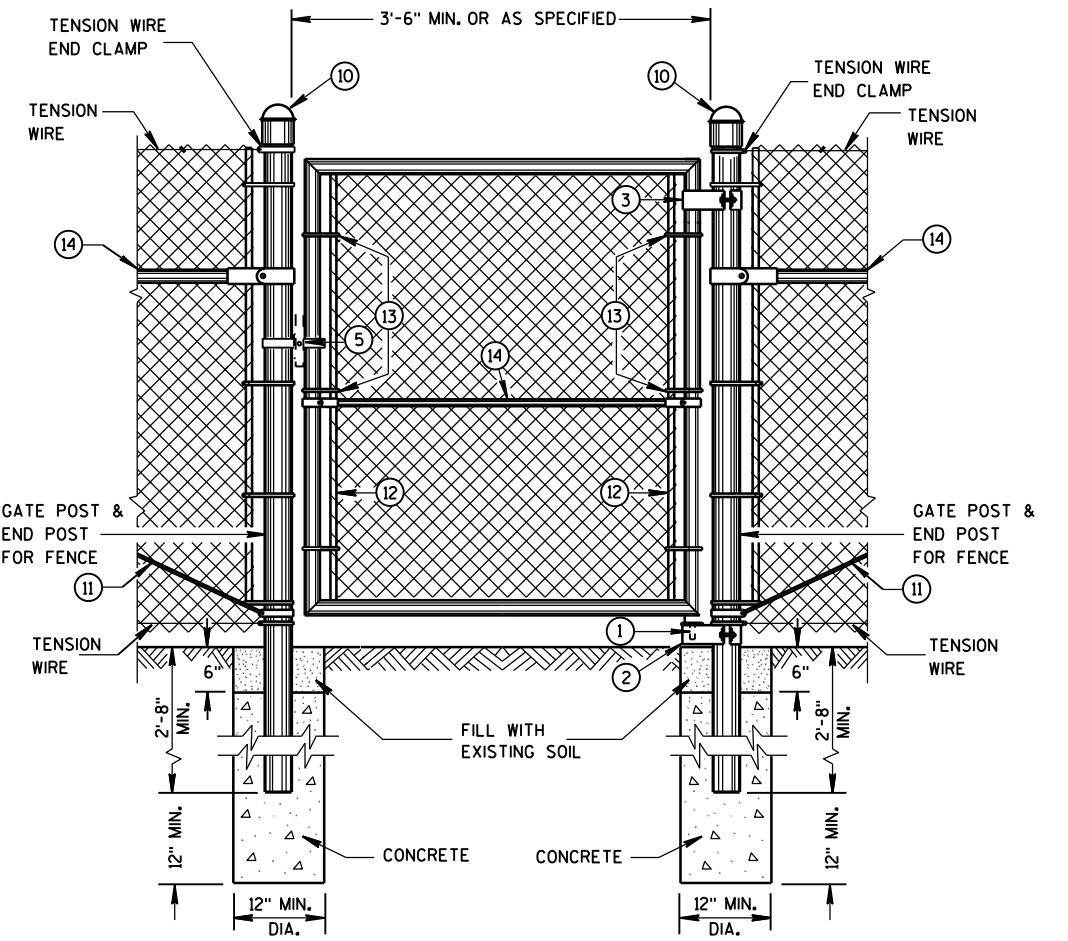
CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



VEHICLE GATE DETAIL



PEDESTRIAN GATE DETAIL

- LEGEND**
1. STRAIGHT PLUG
 2. BOTTOM HINGE
 3. TOP HINGE
 4. PLUNGER ROD
 5. FULCRUM LATCH
 6. FORK CATCH *
 7. PLUNGER ROD CATCH
 8. LOCK KEEPER GUIDE
 9. LOCK KEEPER
 10. DOME TOPS
 11. TRUSS RODS
 12. TENSION BAR
 13. TENSION BANDS
 14. BRACE RAIL
- *NOT REQUIRED ON SINGLE SWING PEDESTRIAN GATE

GENERAL NOTES

FENCE POSTS INSTALLED ON CONCRETE WALLS SHALL BE ANCHORED INTO EMBEDDED METAL SLEEVES OR CORED HOLE BY FILLING THE ANNULAR SPACE WITH PEA GRAVEL FOLLOWED BY AN EPOXY RESIN ADHESIVE. THE EPOXY RESIN ADHESIVE SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 235, CLASS A, B OR C.

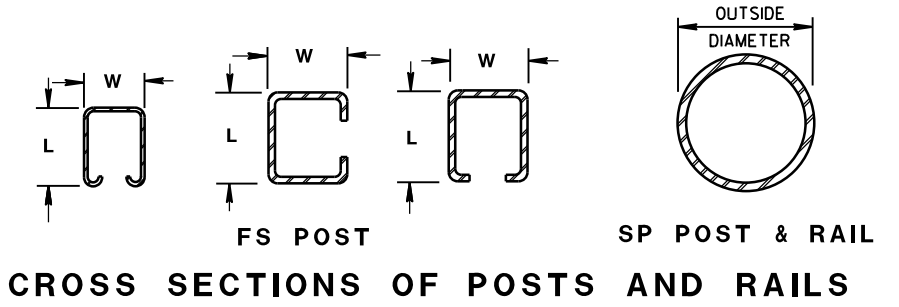
USE FENCE FABRIC KNUCKLED AT BOTH SELVAGES.

FOR LEAF GATES GREATER THAN 8 FEET WIDE, INSTALL INTERIOR VERTICAL BRACE RAIL AT 8 FOOT INTERVALS.

FOR FABRIC HEIGHTS GREATER THAN 8 FEET, INSTALL INTERIOR HORIZONTAL BRACE RAILS TO LEAF GATE.

MAXIMUM SAG FOR OUTER GATE MEMBER SHALL NOT EXCEED THE GREATER OF 1% OF THE LEAF GATE WIDTH OR 2 INCHES.

USE TYPE 2, CLASS 3, MARCELLED/CRIMPED, TENSION WIRE PER ASTM A 817.



ROLLED-FORMED STEEL FENCE POST (2.0 OZ./SQ. FT. COATING)

| POST TYPE | LENGTH (L) INCH | WIDTH (W) INCH | WEIGHT LBS/FT |
|-----------|-----------------|----------------|---------------|
| FS1 | 1.625 | 1.25 | 1.35 |
| FS2† | 1.875 | 1.625 | 1.850 |
| FS2 | 1.875 | 1.625 | 2.400 |
| FS3 | 2.250 | 1.700 | 2.780 |

ROUND STEEL FENCE POST (1.8 OZ./SQ. FT. COATING)

| POST TYPE | OUTSIDE DIMENSION INCH | WALL THICKNESS INCH | WEIGHT LBS/FT |
|-----------|------------------------|---------------------|---------------|
| SP1 | 1.660 | 0.140 | 2.270 |
| SP2 | 1.900 | 0.145 | 2.720 |
| SP3 | 2.375 | 0.154 | 3.650 |
| SP4 | 2.875 | 0.203 | 5.800 |
| SP5 | 4.000 | 0.226 | 9.120 |
| SP6 | 6.625 | 0.280 | 18.990 |
| SP7 | 8.625 | 0.322 | 28.580 |

REQUIRED FENCE POST SIZES

| USE | FABRIC HEIGHTS FEET | POST TYPE |
|-------------------|--------------------------------|-------------|
| TERMINAL POSTS ** | LESS THAN OR EQUAL TO 6 FT. | SP3 |
| | GREATER THAN OR EQUAL TO 6 FT. | SP4 |
| LINE POSTS | LESS THAN OR EQUAL TO 6 FT. | SP2 |
| | LESS THAN OR EQUAL TO 8 FT. | SP3 |
| | GREATER THAN OR EQUAL TO 8 FT. | SP4 |
| | LESS THAN OR EQUAL TO 8 FT. | FS2 OR FS2† |
| | GREATER THAN OR EQUAL TO 8 FT. | FS3 |

REQUIRED POST SIZE FOR GATES

| USE | LEAF WIDTHS FEET | POST TYPE |
|-------|------------------------------|-----------|
| GATES | LESS THAN OR EQUAL TO 6 FT. | SP4 |
| | LESS THAN OR EQUAL TO 13 FT. | SP5 |
| | LESS THAN OR EQUAL TO 18 FT. | SP6 |
| | LESS THAN OR EQUAL TO 23 FT. | SP7 |

BRACE RAIL TYPES

| USE | TYPE |
|------------|------------|
| BRACE RAIL | SP1 OR FS1 |

** INCLUDES END, CORNER, ANGLE, INTERSECTION AND INTERMEDIATE BRACED POSTS

FENCE CHAIN LINK

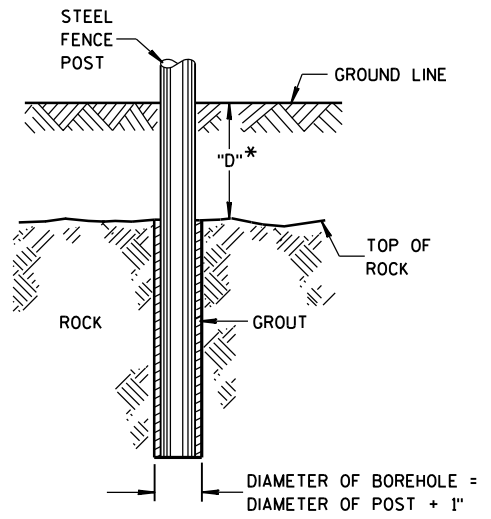
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

6

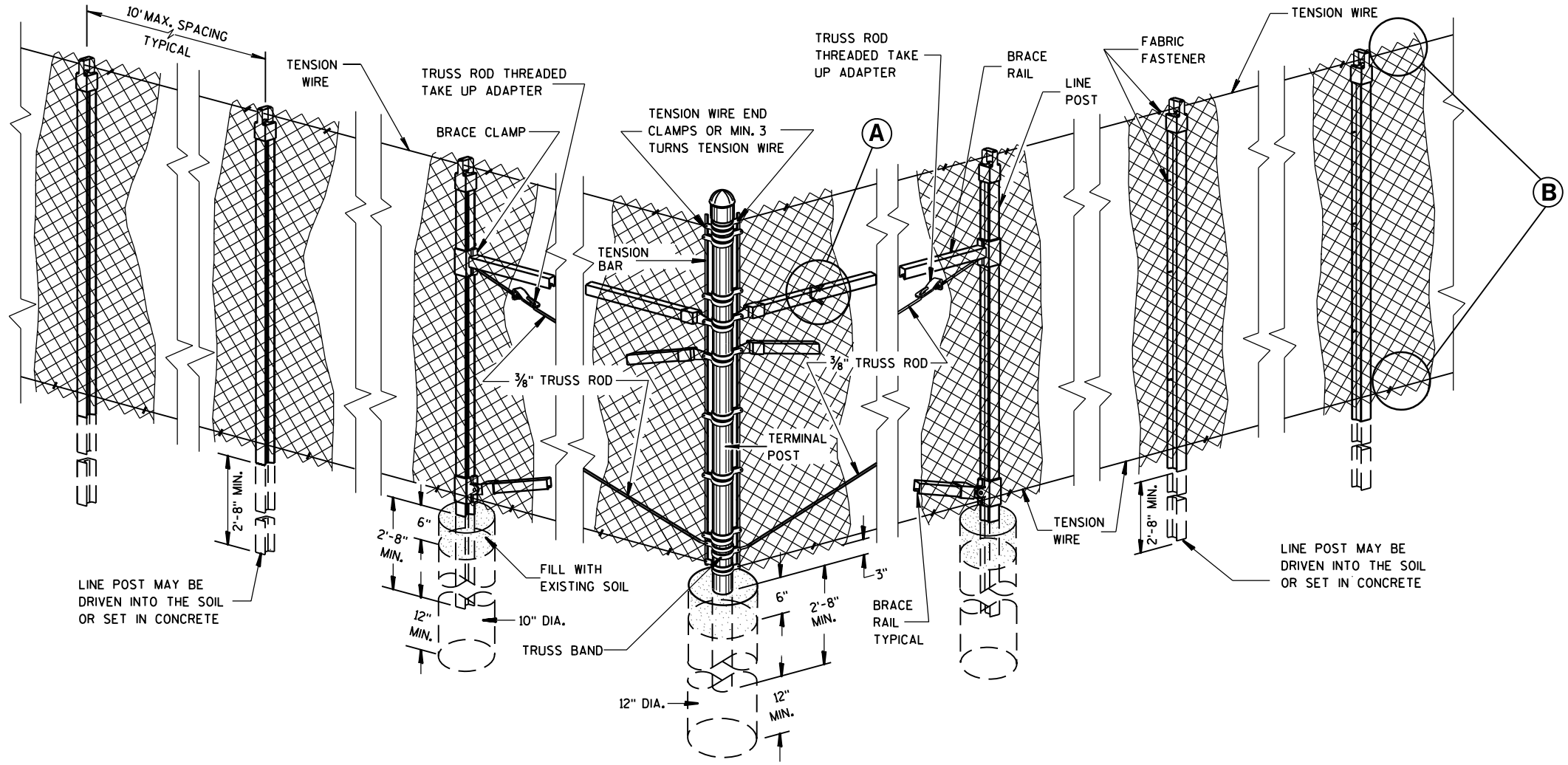
S.D.D. 15 B 3-15a

S.D.D. 15 B 3-15a

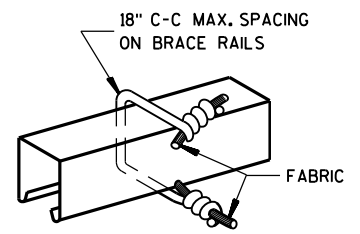


* IF "D" IS LESS THAN 2'-6",
DRILL ROCK AND INSTALL GROUT

**ROCK INSTALLATION
OF LINE POST**

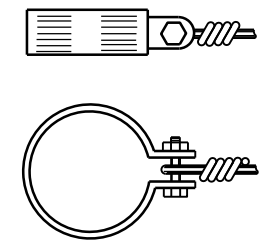


**END, CORNER, ANGLE
INTERSECTION & INTERMEDIATE
BRACED POSTS**

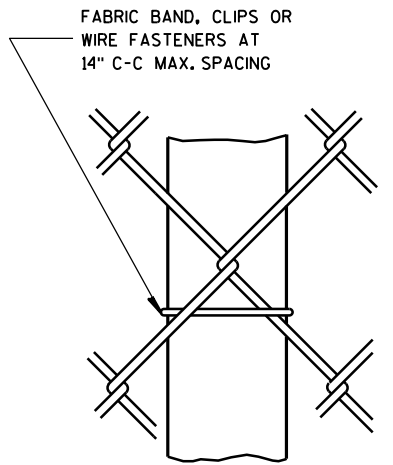


**BRACE RAIL
FABRIC FASTENER**

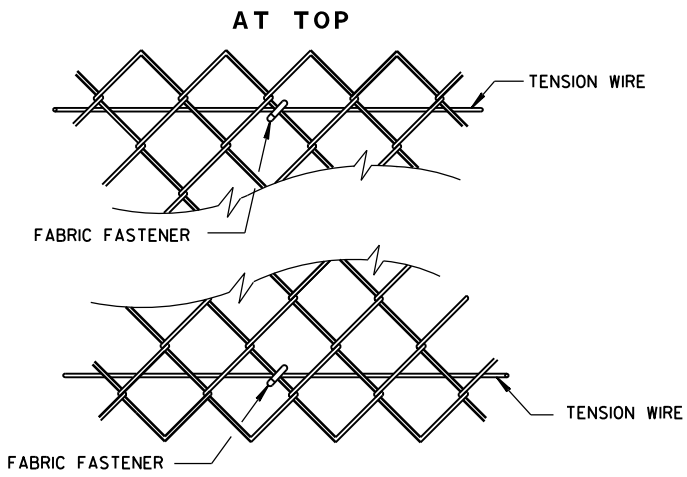
(A)



TENSION WIRE END CLAMP



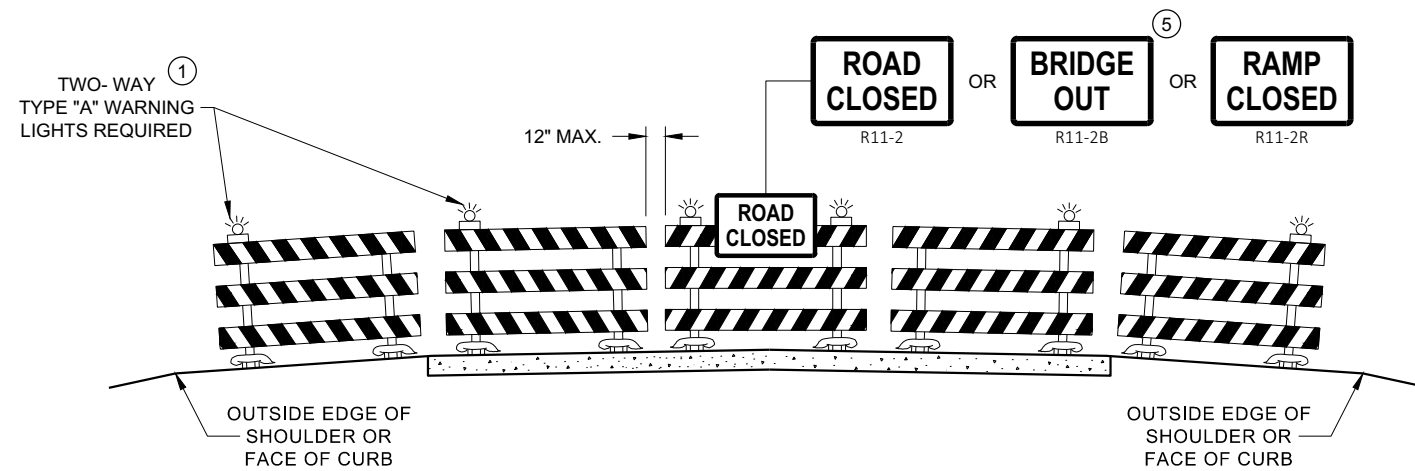
**LINE POST
FABRIC FASTENER**



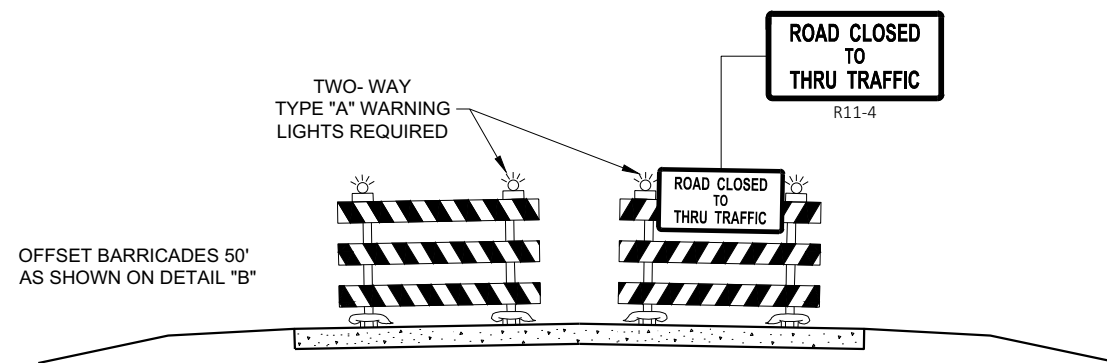
**AT BOTTOM
SELVAGES**

(B)

| | |
|--|--|
| FENCE CHAIN LINK | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED FEB. 2015 DATE | /s/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER |
| FHWA | |



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



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

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

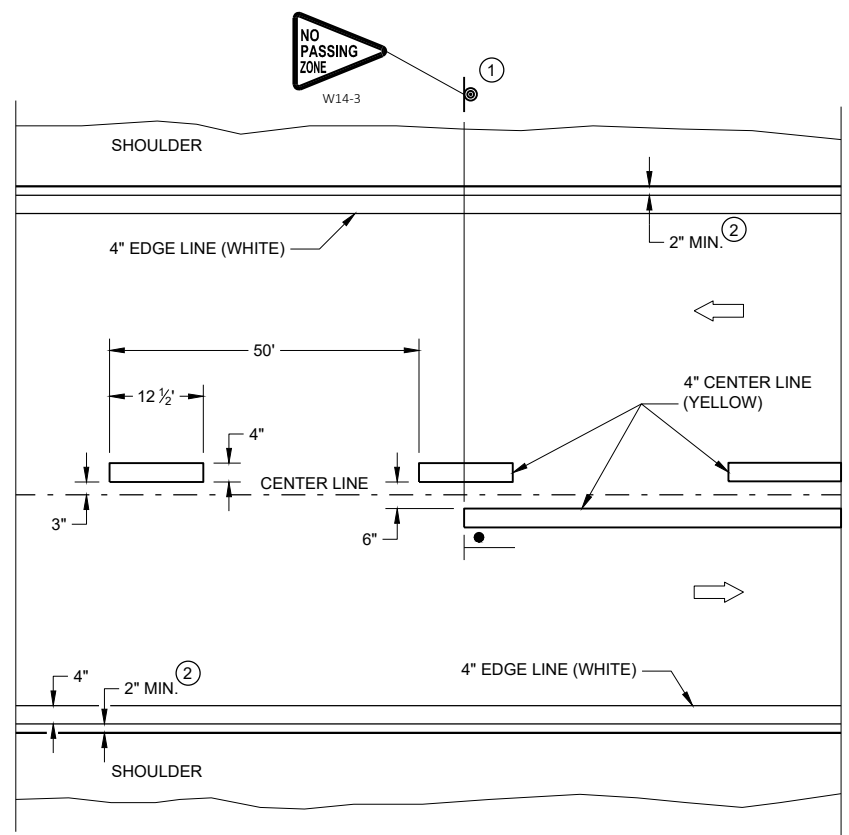
- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60" X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24"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

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

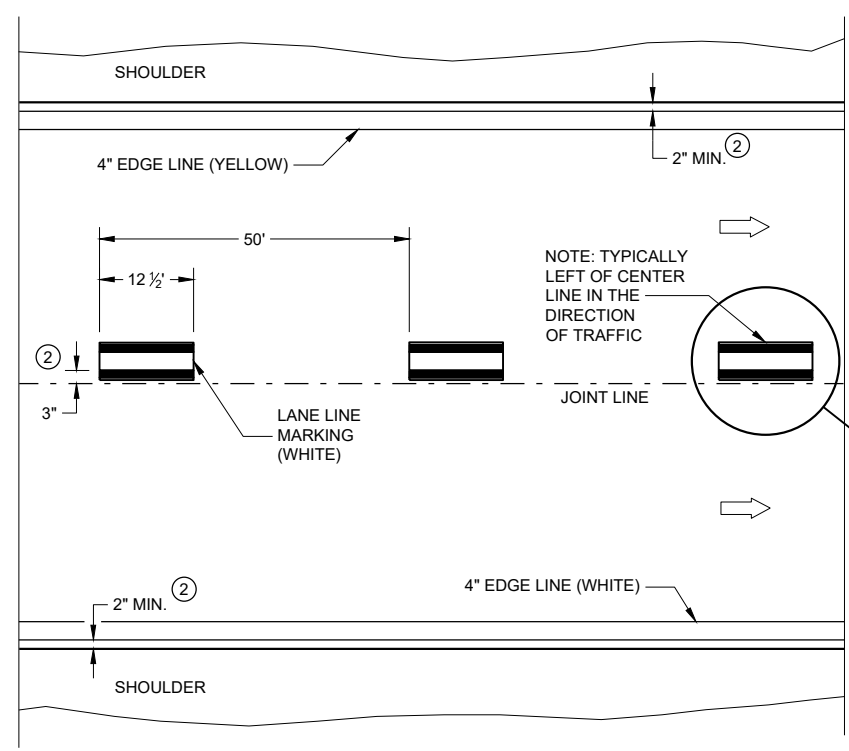
**BARRICADES AND SIGNS
FOR
VARIOUS CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

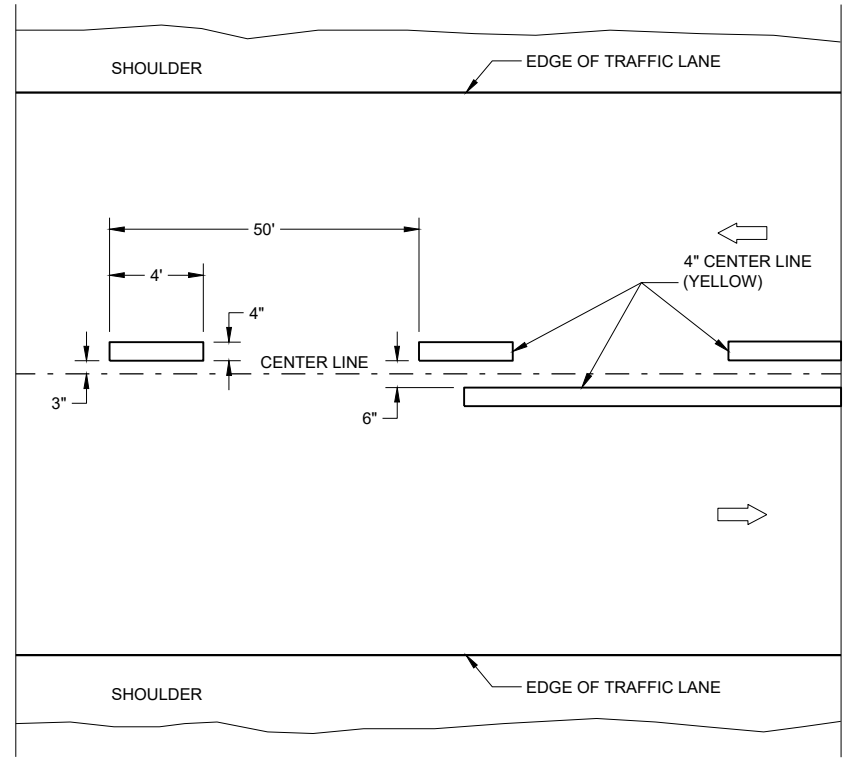


TWO WAY TRAFFIC

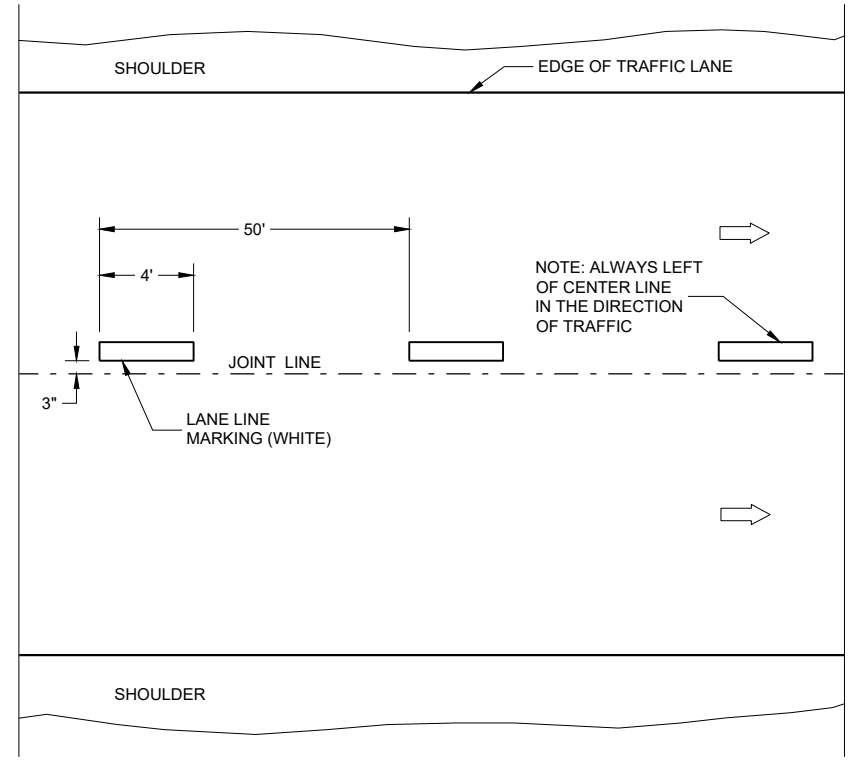


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

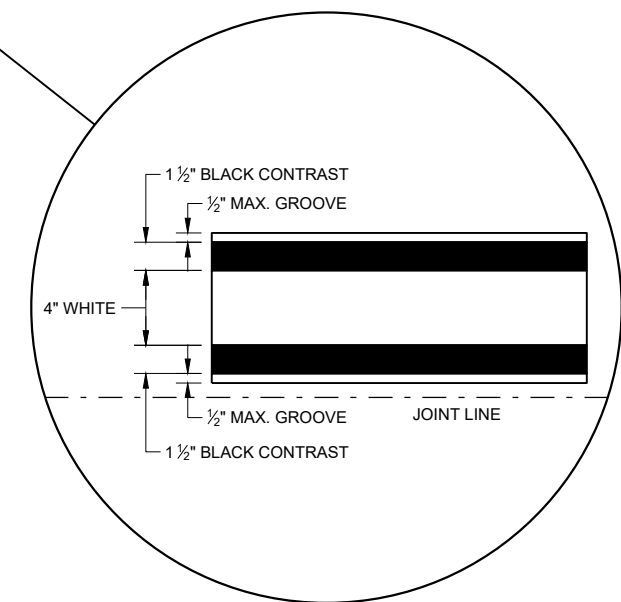
GENERAL NOTES

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

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

LEGEND

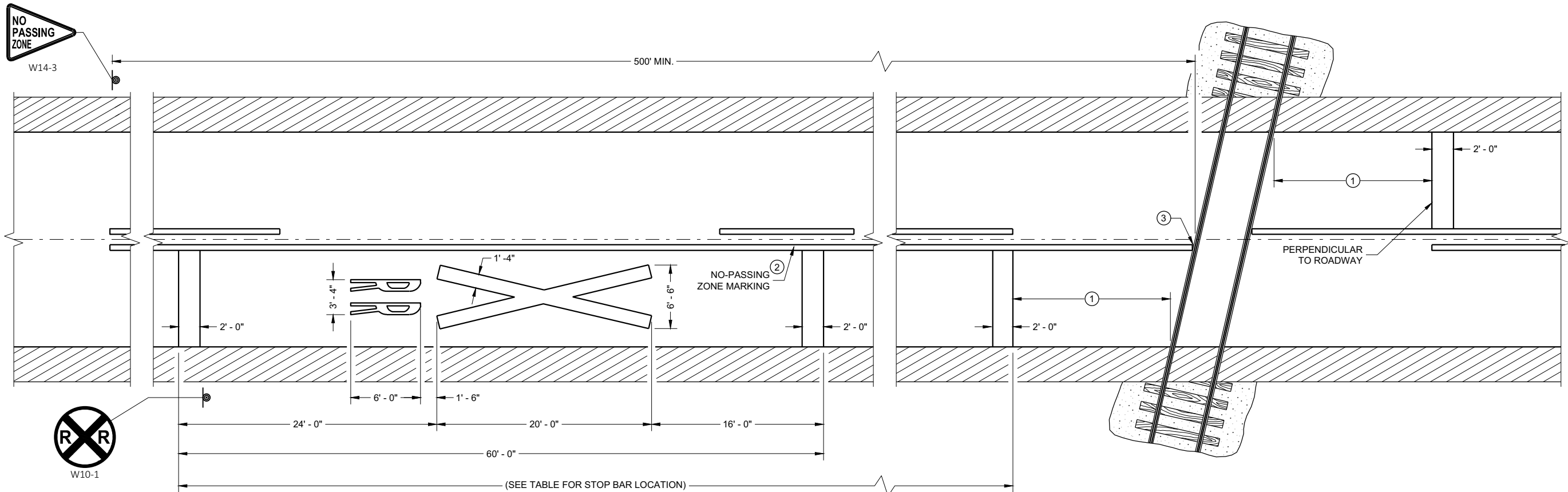
- "T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC



LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

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



PAVEMENT MARKING

LEGEND

⊙ SIGN ON PERMANENT SUPPORT

GENERAL NOTES

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

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

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

TRACE EXISTING SYMBOL WHERE EXISTING SYMBOLS ARE PLACED.

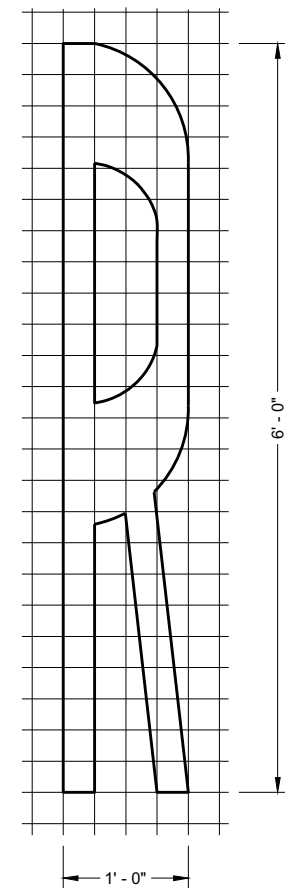
- ① MINIMUM 8' FROM ANY RAILROAD WARNING DEVICES (SIGNAL , GATES, ETC.) OR 25' FROM THE NEAREST RAIL, WHICHEVER DISTANCE IS GREATER.
- ② 500' MINIMUM. MARKING LIMITS MAY BE EXTENDED AS DIRECTED BY THE ENGINEER TO MEET ADJACENT NO-PASSING ZONE MARKINGS.
- ③ FOR MULTIPLE TRACK CROSSINGS, THE BARRIER LINE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

DISTANCE TABLE

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

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

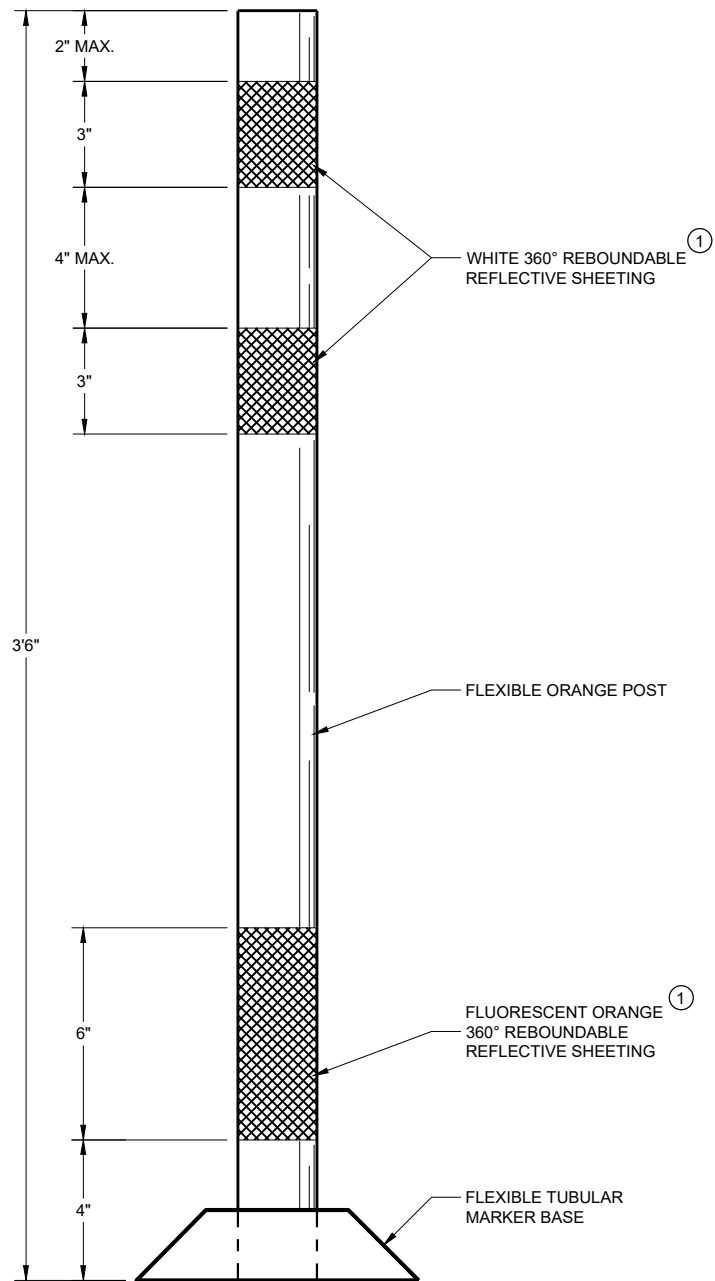
* THE MINIMUM DISTANCES IN THE TABLE ARE DESIRABLE AND SHOULD BE USED. THE DISTANCES MAY BE INCREASED UP TO THE MAXIMUM TO ALLOW FOR FIELD CONDITIONS SUCH AS THE CLOSED PROXIMITY OF DRIVEWAYS, BRIDGES, SIDE ROADS OR OTHER FEATURES THAT WOULD PROHIBIT THE MINIMUM DISTANCES FROM BEING USED.



SIGNING AND PAVEMENT MARKING DETAILS FOR RAILROAD - HIGHWAY GRADE CROSSINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



FLEXIBLE TUBULAR MARKER POST WORK ZONE

GENERAL NOTES

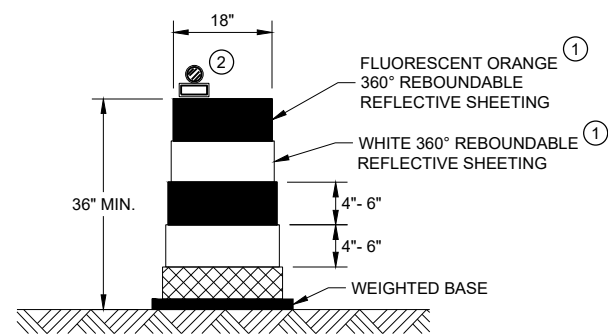
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

SURFACE MOUNTED BASES SHALL BE FURNISHED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS TO BE COMPATIBLE WITH FLEXIBLE TUBULAR MARKER POSTS TO A SIZE AND SHAPE THAT WILL PROVIDE A STABLE POST FOUNDATION WHEN SECURED TO THE PAVEMENT.

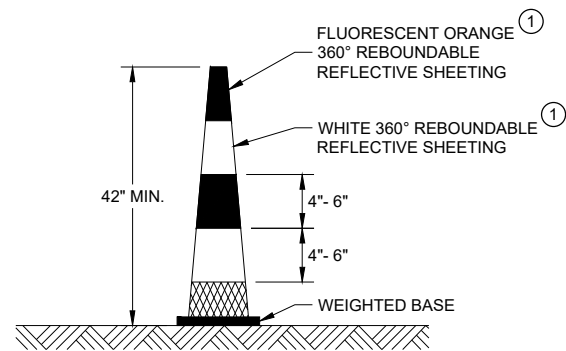
THE ASPHALTIC ADHESIVE OR BUTYL PAD FURNISHED SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS, UNLESS DIRECTED BY THE ENGINEER TO USE BOLTS.

① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.

| | |
|--|--|
| CHANNELIZING DEVICES FLEXIBLE TUBULAR MARKER POST | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED May 2021 DATE | /S/ Andrew Heidtke WORK ZONE ENGINEER |
| <small>FHWA</small> | |

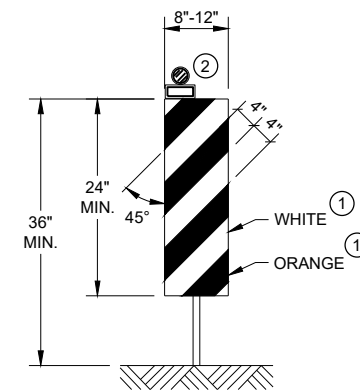


DRUM



42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

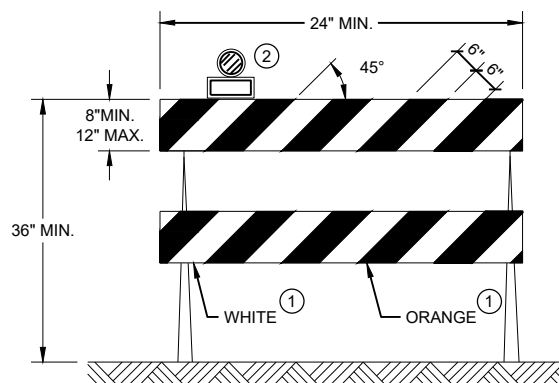


VERTICAL PANEL

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

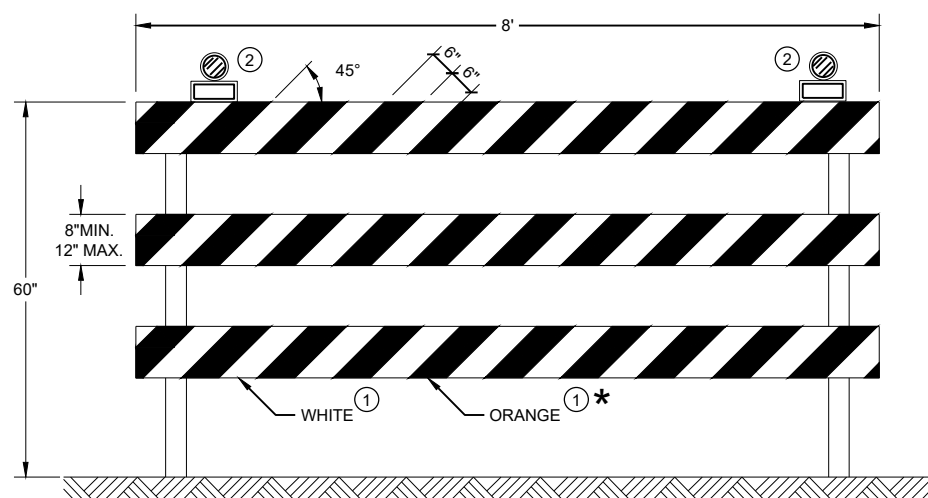
GENERAL NOTES

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

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

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 DESIRABLE) CLEARANCE TO EXISTING SIGNS.

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

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

"WO" SIGNS ARE THE SAME AS "W" SIGNS 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.

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 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 4 OR MORE CONTINUOUS 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 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 ONE HALF 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.

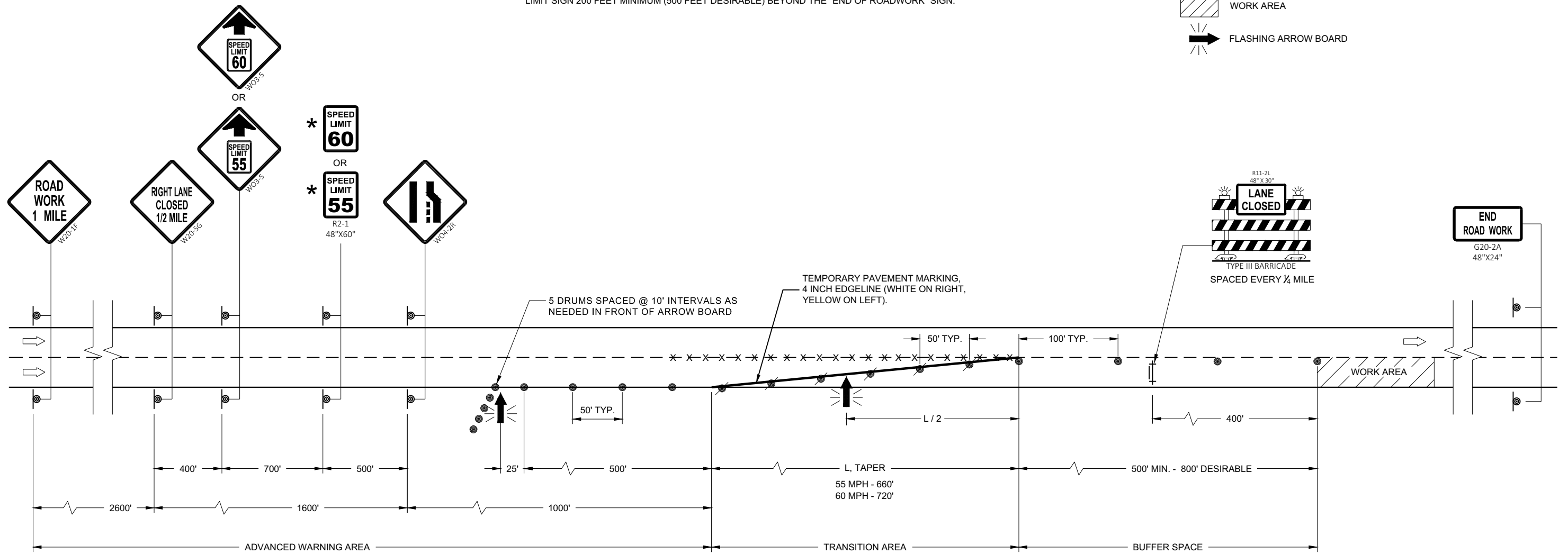
* A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. PLACE A SPEED LIMIT SIGN A MINIMUM OF EVERY 3 MILES. INCLUDE A RESUME SPEED LIMIT SIGN 200 FEET MINIMUM (500 FEET DESIRABLE) BEYOND THE "END OF ROADWORK" SIGN.

LEGEND

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

6

6












SDD 15D12 - 09b

SDD 15D12 - 09b

| TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION | |
|--|--|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED August 2020 DATE | /S/ Andrew Heidtke WORK ZONE ENGINEER |
| FHWA | |

LEGEND

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

GENERAL NOTES

FOR WORK ON ROADWAYS WITH SPEEDS GREATER THAN 45MPH, USE SDD 15D12.

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.

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 REGIONAL TRAFFIC UNIT.

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON COVERED OR "DOWNED" SIGNS.

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 TEMPORARY SUPPORTS.

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 TO PROVIDE A MINIMUM OF 200 FEET (500' DESIRABLE) DISTANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE

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.

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.

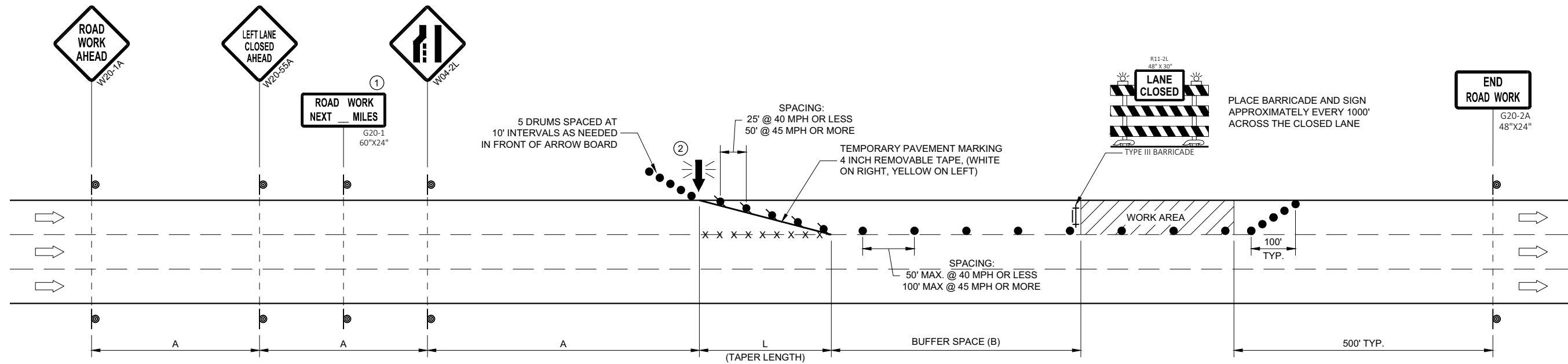
CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROW BOARDS AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY REESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

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

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

- ① OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.
- ② WHERE THE SHOULDER OR TERRACE HAS INSUFFICIENT SPACE TO PLACE THE ARROW BOARD AS SHOWN, PLACE THE ARROW BOARD AT THE END OF THE TAPER.



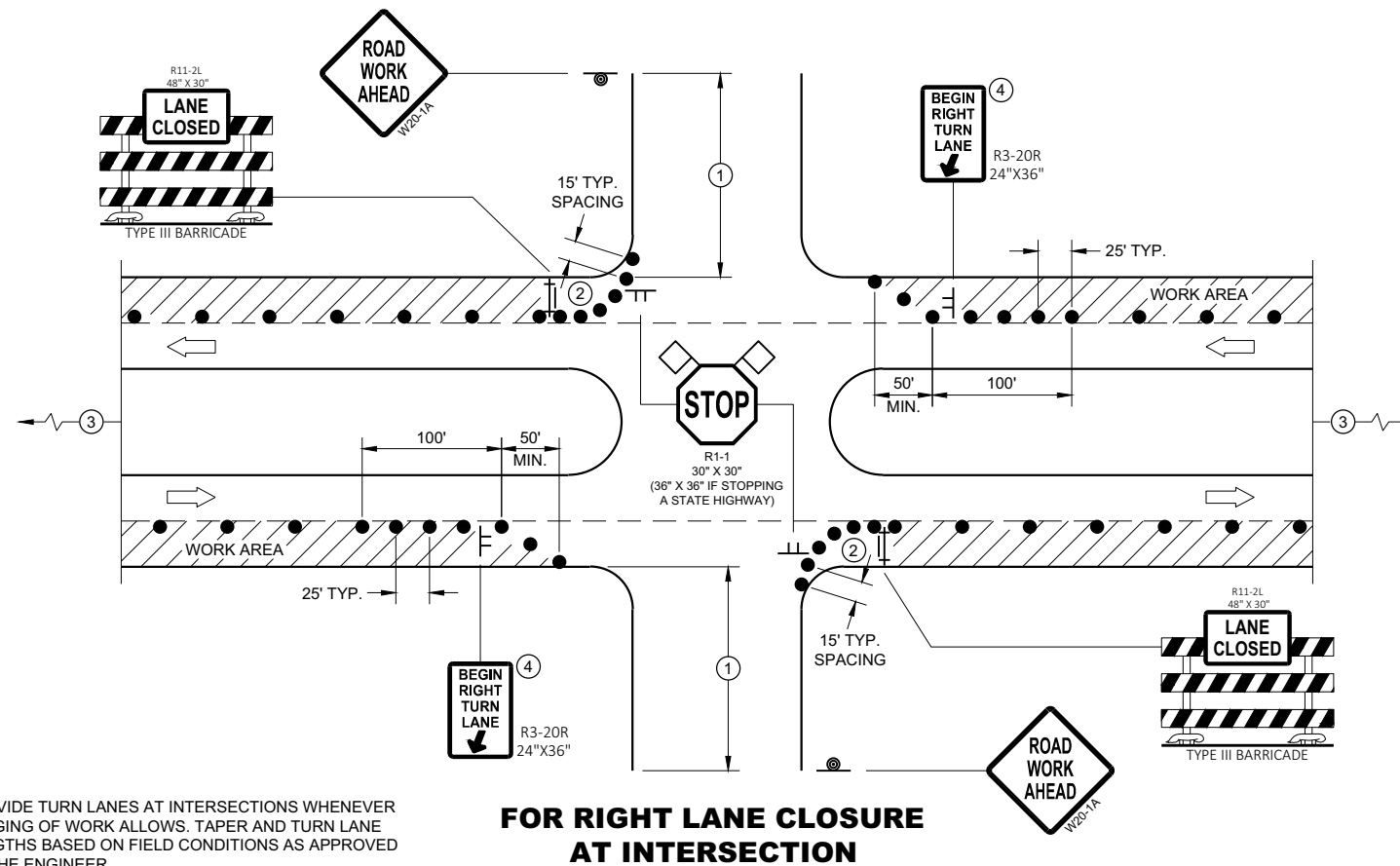
| POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH) | ADVANCE WARNING SIGN SPACING (A) FEET | TAPER LENGTH (12 FT. LANE) (L) FEET | BUFFER SPACE (B) FEET |
|---|---------------------------------------|-------------------------------------|-----------------------|
| 25 | 200' | 125' | 55' |
| 30 | 200' | 180' | 85' |
| 35 | 350' | 245' | 120' |
| 40 | 350' | 320' | 170' |
| 45 | 500' | 540' | 220' |

TRAFFIC CONTROL, SINGLE LANE CLOSURE, DIVIDED NON-FREEWAY/EXPRESSWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



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

GENERAL NOTES

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

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON COVERED OR "DOWNED" SIGNS.

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 TO PROVIDE A MINIMUM OF 200 FEET (500' DESIRABLE) DISTANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE

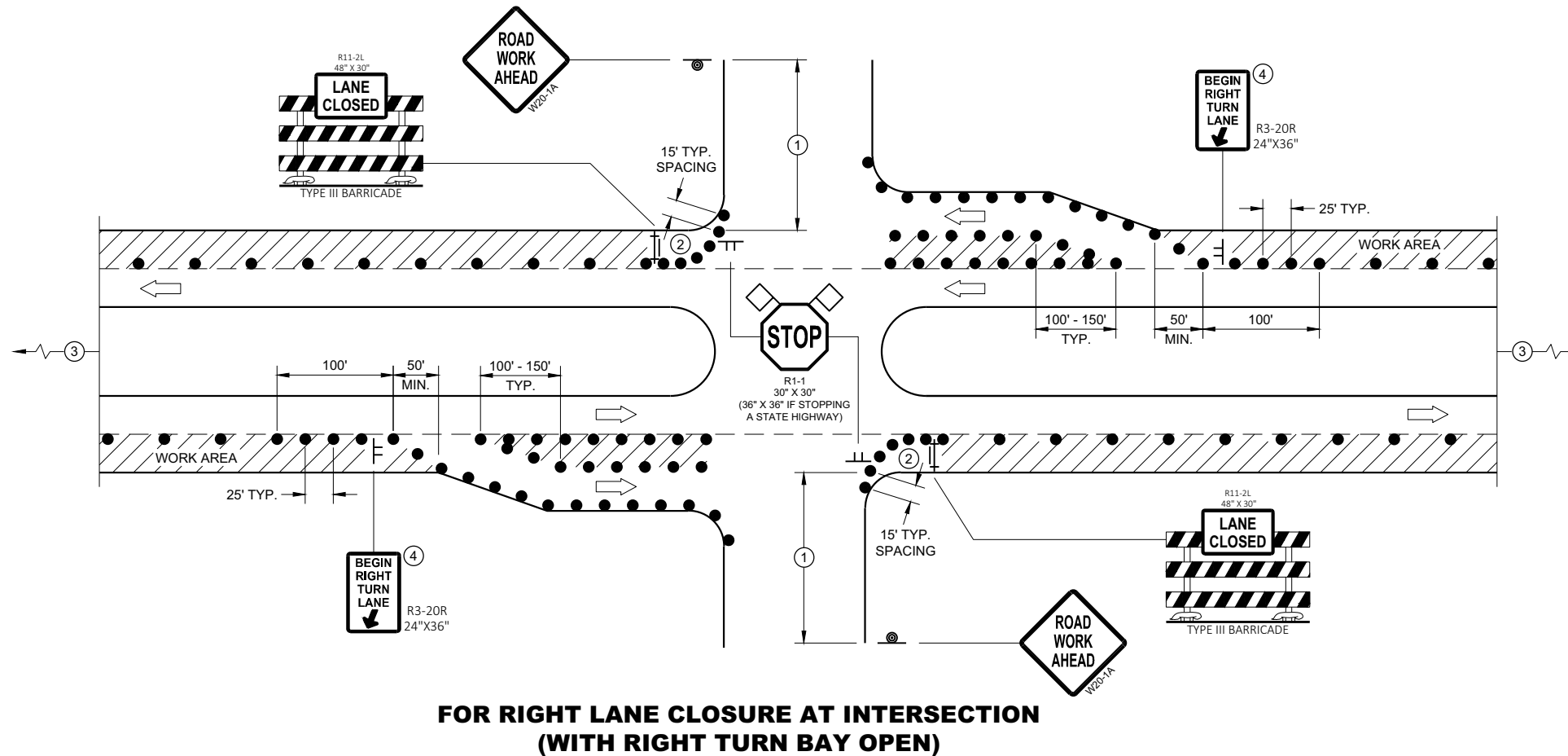
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

SIGNS THAT WILL REMAIN IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE MAY BE MOUNTED ON PORTABLE SUPPORTS.

BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY REESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

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

- 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.
- ④ MINIMUM MOUNTING HEIGHT OF 5 FEET FROM EDGE OF PAVEMENT (AT EDGE LINE LOCATION) TO BOTTOM OF SIGN.

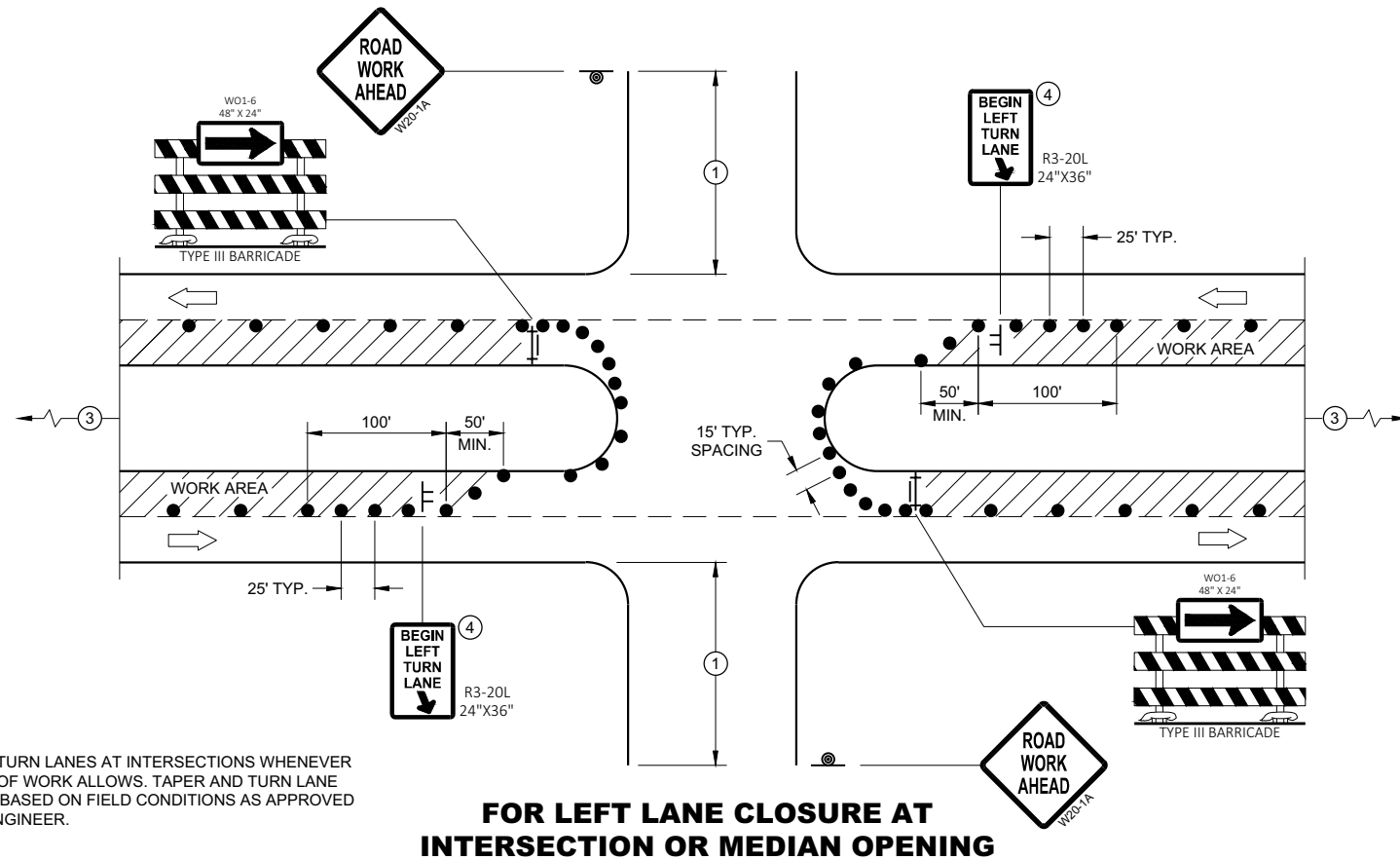


LEGEND

- SIGN ON TEMPORARY SUPPORT
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE III BARRICADE WITH ATTACHED SIGN
- DIRECTION OF TRAFFIC
- FLAGS, 16" X 16" MIN., ORANGE
- WORK AREA

TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE RIGHT LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



GENERAL NOTES

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

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON COVERED OR "DOWNED" SIGNS.

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 TO PROVIDE A MINIMUM OF 200 FEET (500' DESIRABLE) DISTANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE

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

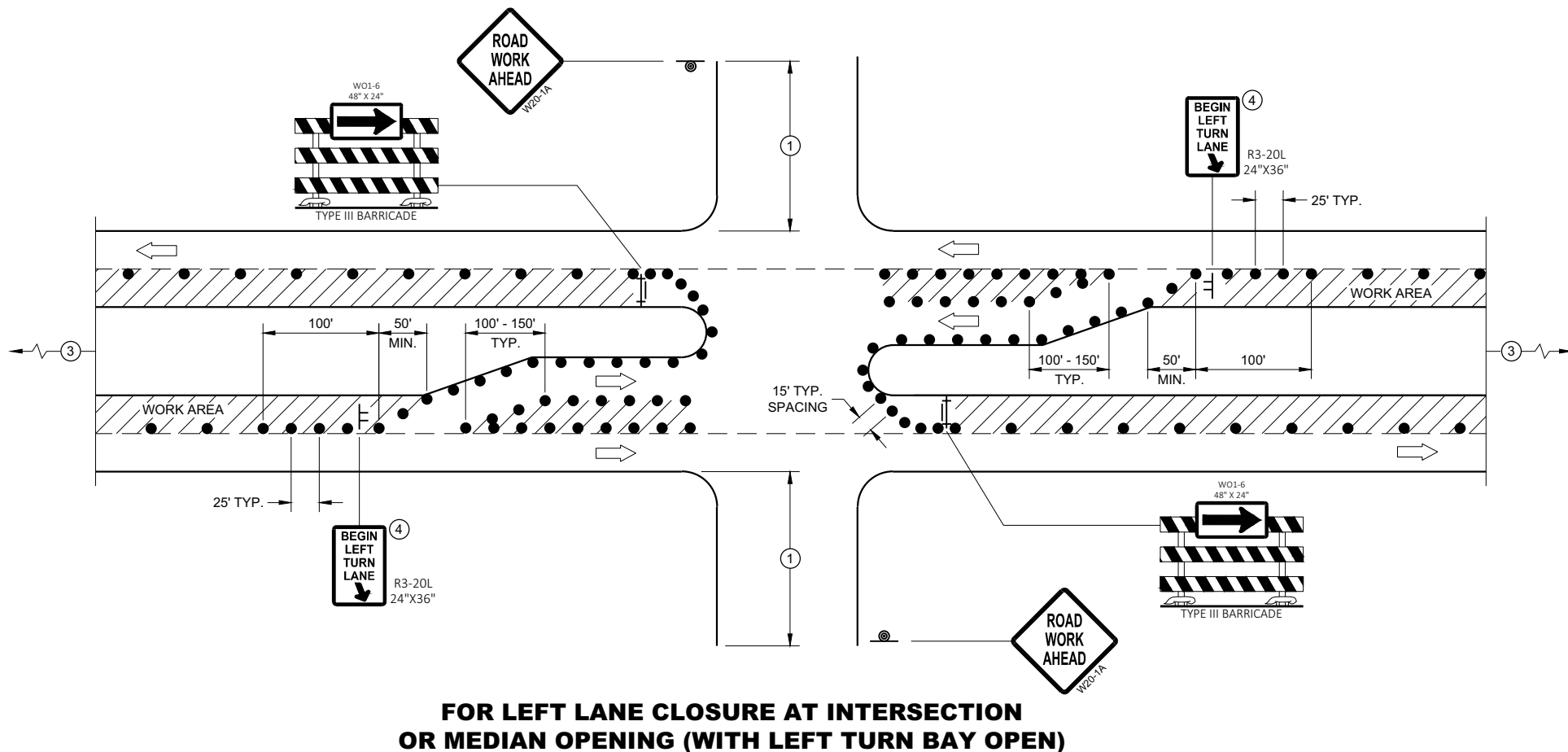
SIGNS THAT WILL REMAIN IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE MAY BE MOUNTED ON PORTABLE SUPPORTS.

BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY REESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

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

- 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.
- ④ MINIMUM MOUNTING HEIGHT OF 5 FEET FROM EDGE OF PAVEMENT (AT EDGE LINE LOCATION) TO BOTTOM OF SIGN.

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











LEGEND

- SIGN ON TEMPORARY SUPPORT
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE III BARRICADE WITH ATTACHED SIGN
- DIRECTION OF TRAFFIC
- FLAGS, 16" X 16" MIN., ORANGE
- WORK AREA

| | |
|--|--|
| TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LEFT LANE CLOSURE | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED August 2020 DATE | /S/ Andrew Heidtke WORK ZONE ENGINEER |
| FHWA | |

LEGEND

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

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 LANE SHIFT RIGHT - REVERSE FOR SHIFTING LEFT.

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 ANY "COVERED" OR "DOWNED" SIGNS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS 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.

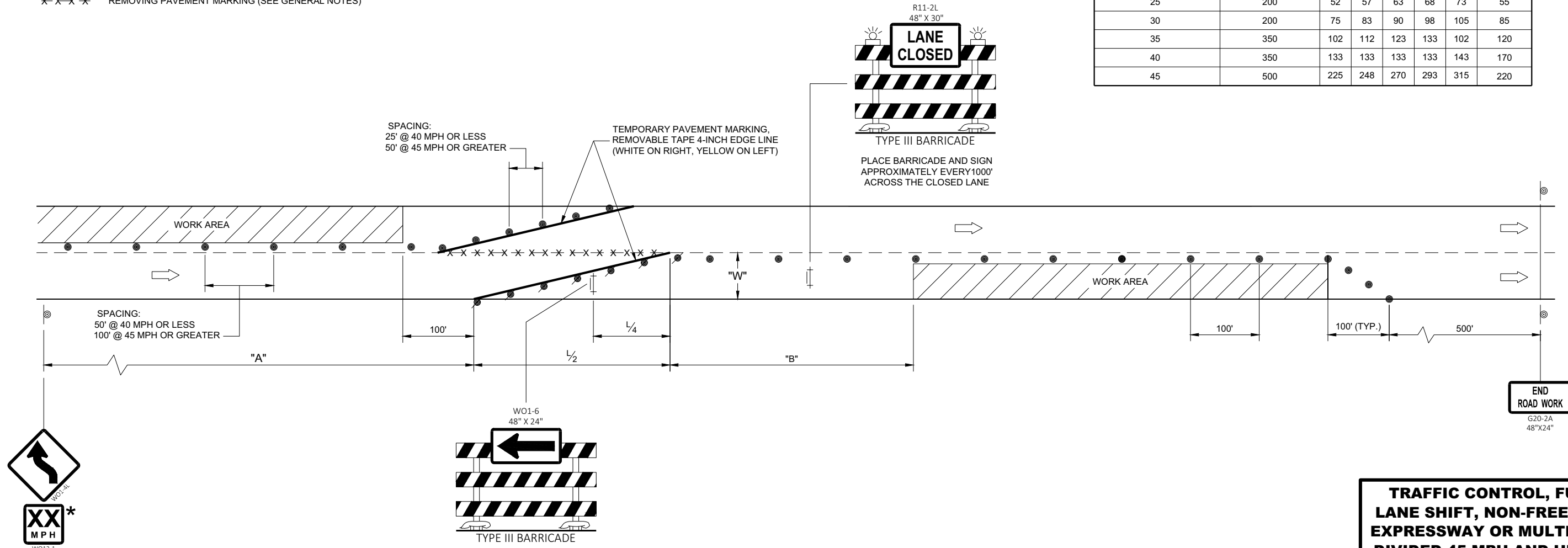
REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 4 OR MORE DAYS AND NIGHTS.

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 SHIFT OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE SHIFT 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.

| POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH) | ADVANCE WARNING SIGN SPACING (A) FEET | SHIFTING TAPER $\frac{L}{2}$ W, LATERAL OFFSET (FT) | | | | | BUFFER SPACE (B) FEET |
|---|---------------------------------------|---|-----|-----|-----|-----|-----------------------|
| | | 10 | 11 | 12 | 13 | 14 | |
| 25 | 200 | 52 | 57 | 63 | 68 | 73 | 55 |
| 30 | 200 | 75 | 83 | 90 | 98 | 105 | 85 |
| 35 | 350 | 102 | 112 | 123 | 133 | 143 | 120 |
| 40 | 350 | 133 | 133 | 133 | 133 | 143 | 170 |
| 45 | 500 | 225 | 248 | 270 | 293 | 315 | 220 |



* USE ONLY IF DESIGN SPEED IS 10 MPH BELOW POSTED SPEED

TRAFFIC CONTROL, FULL LANE SHIFT, NON-FREEWAY/ EXPRESSWAY OR MULTILANE DIVIDED 45 MPH AND UNDER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021 /S/ Andrew Heidtke
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER

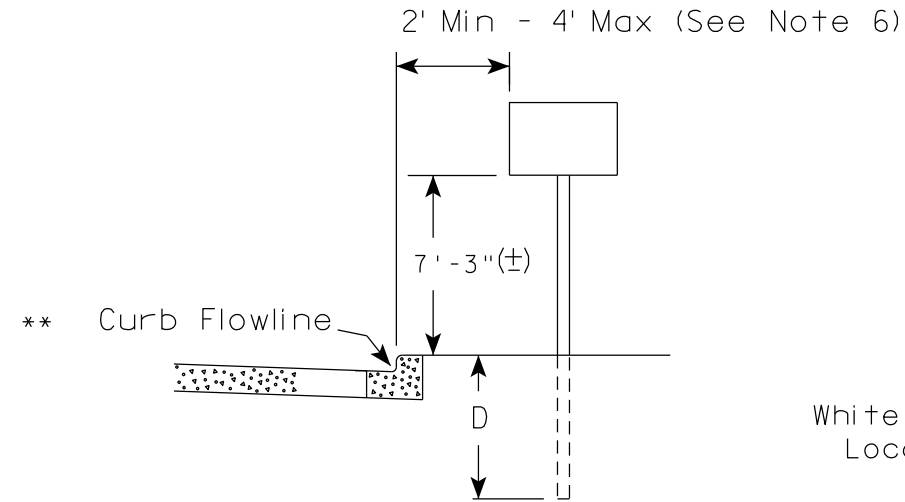
FHWA

SDD 15D40 - 02a

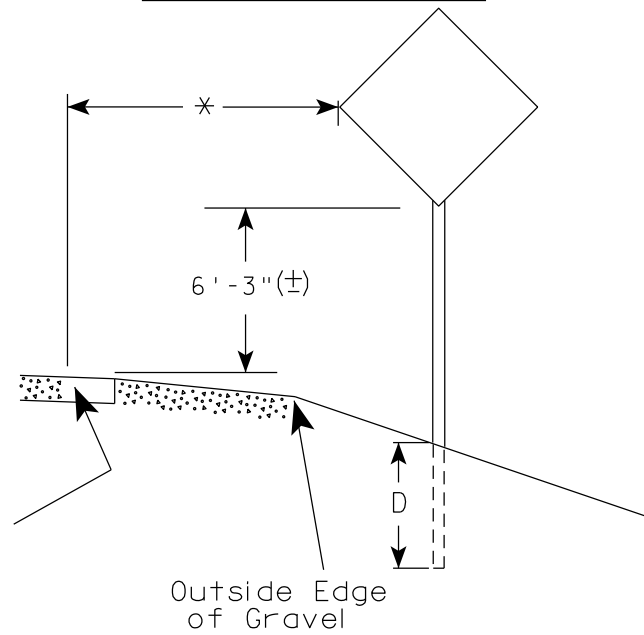
SDD 15D40 - 02a

URBAN AREA

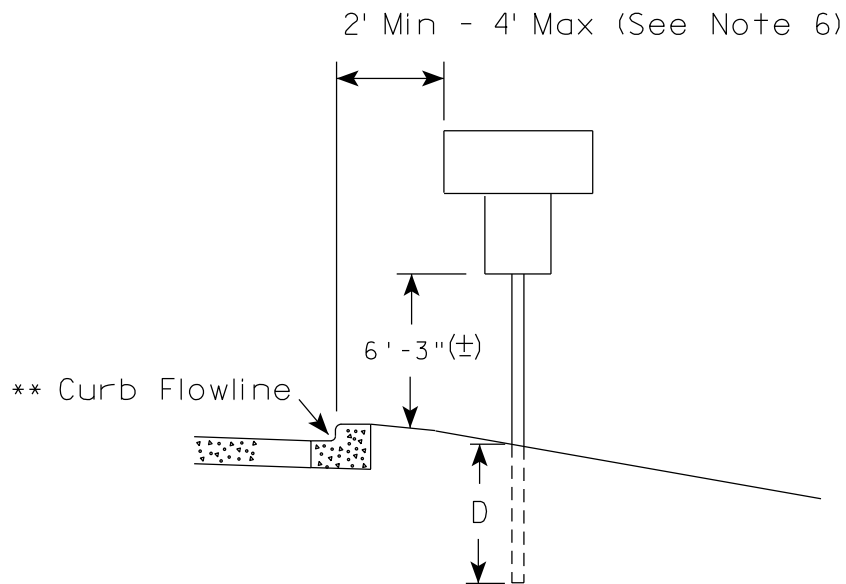
RURAL AREA (See Note 2)



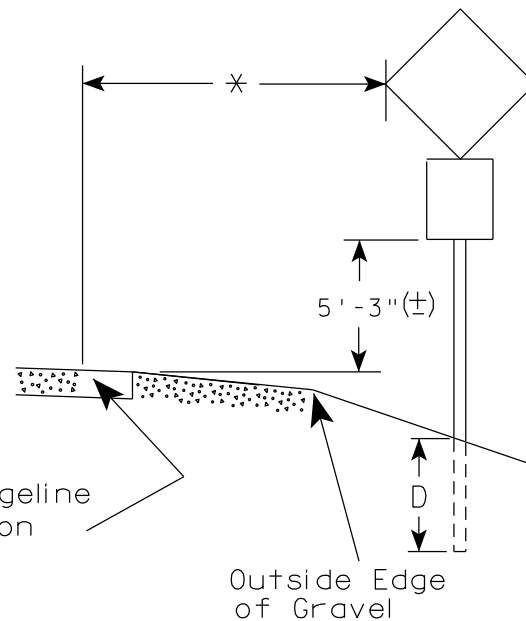
White Edgeline Location



Outside Edge of Gravel



White Edgeline Location



Outside Edge of Gravel

POST EMBEDMENT DEPTH

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

GENERAL NOTES

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

7

7

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

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

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



ELEVATION VIEW

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

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



ELEVATION VIEW

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



PLAN VIEW

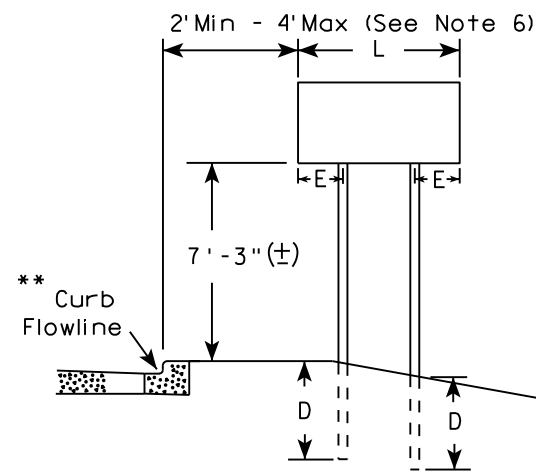
FOR NEW CONCRETE/ ASPHALT INSTALLATIONS

| | |
|---|----------------------------------|
| SIGN POST BOX-OUTS A4-3B | |
| <small>WISCONSIN DEPT OF TRANSPORTATION</small> | |
| APPROVED <i>Matthew R. Rauch</i> <small>for State Traffic Engineer</small> | |
| <small>DATE 1/27/14</small> | <small>PLATE NO. A4-3B.1</small> |

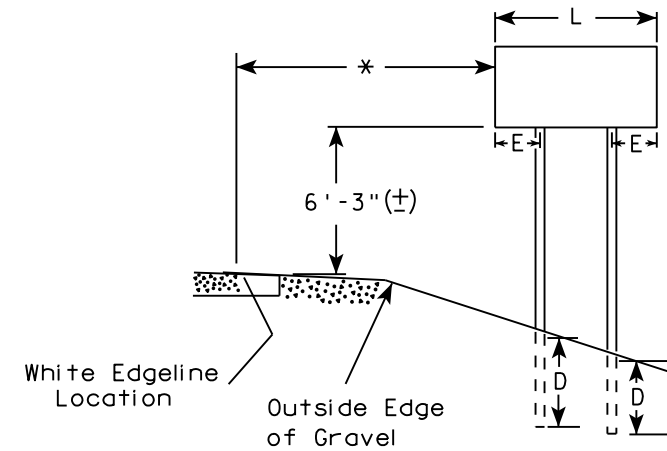
GENERAL NOTES

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

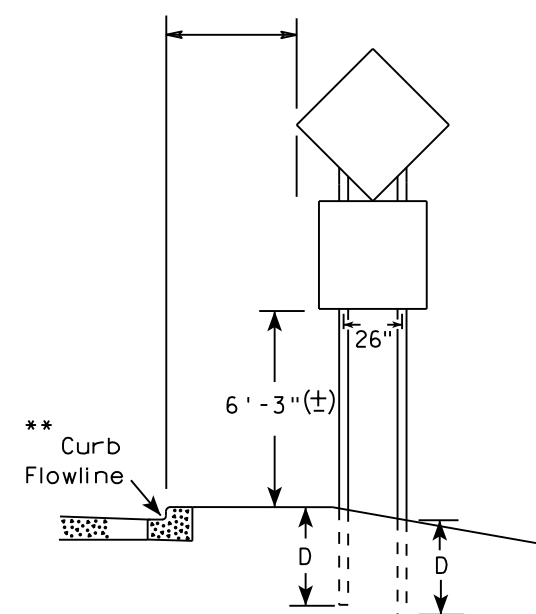
URBAN AREA



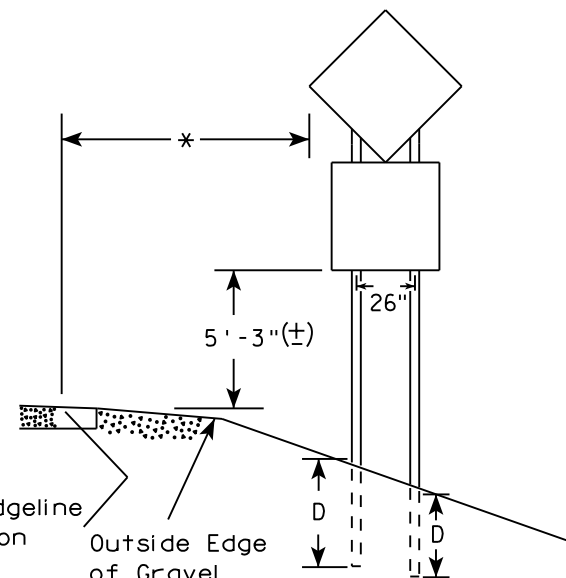
RURAL AREA (See Note 3)



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



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

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

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

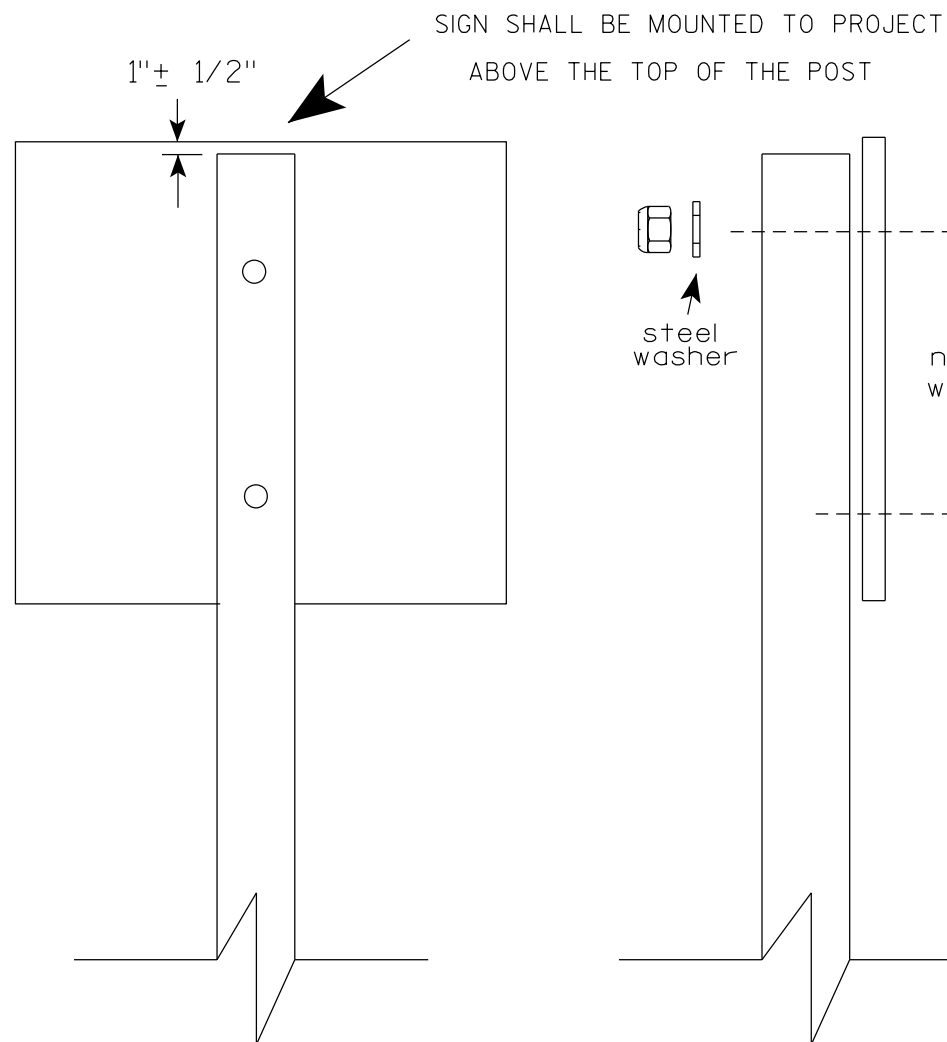
| SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED) | |
|--|-----|
| L | E |
| Greater than 108" to 144" | 12" |

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

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



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

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

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

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

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

WOOD POSTS (4" x 6")

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

SQUARE STEEL POSTS (2" x 2")

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

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

WASHERS (ALL POSTS) -

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

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

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

ATTACHMENT OF SIGNS
TO POSTS

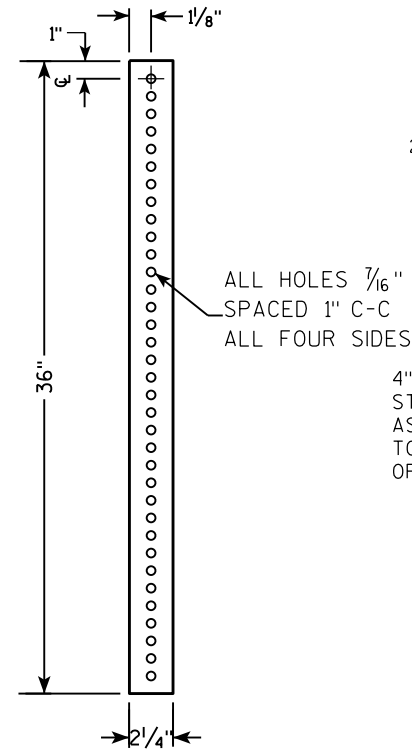
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*
For State Traffic Engineer

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

**TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM**

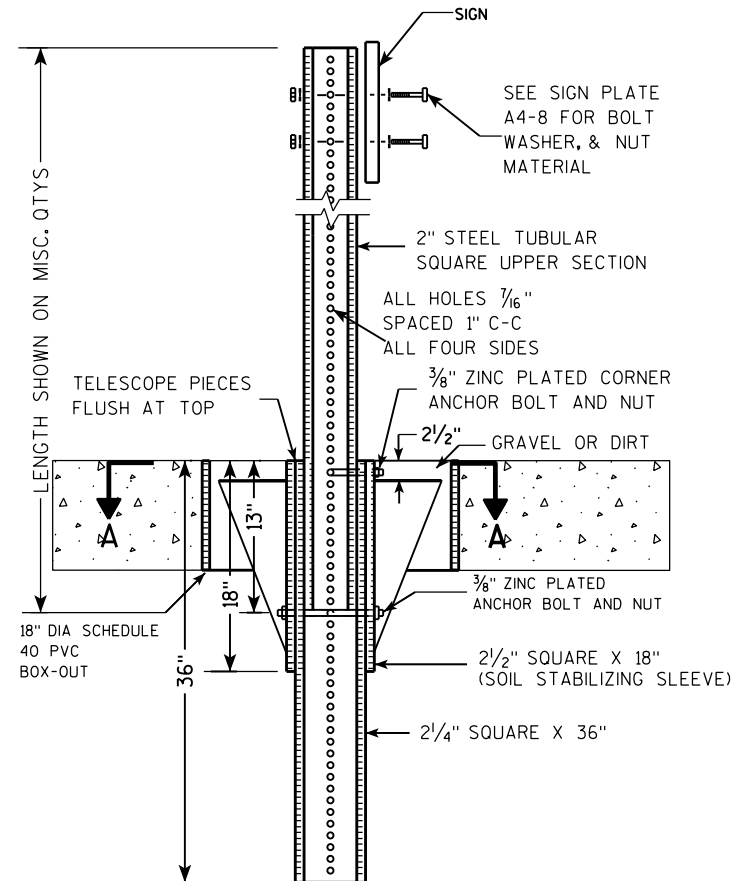
**2 1/4" SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH**



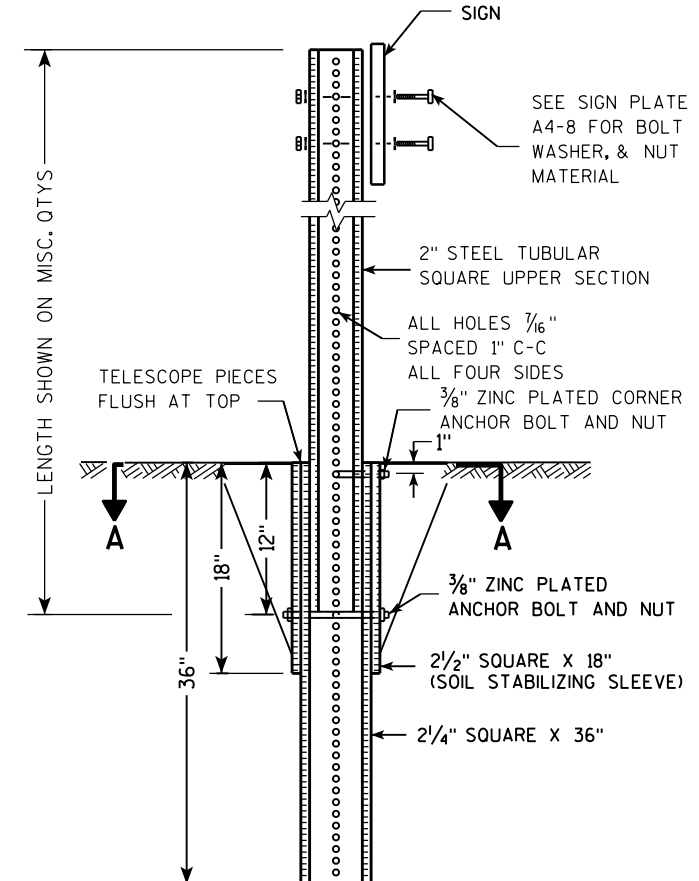
**2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH**



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



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



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

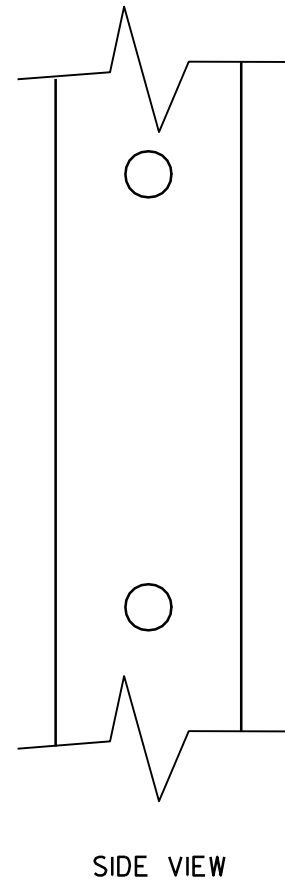
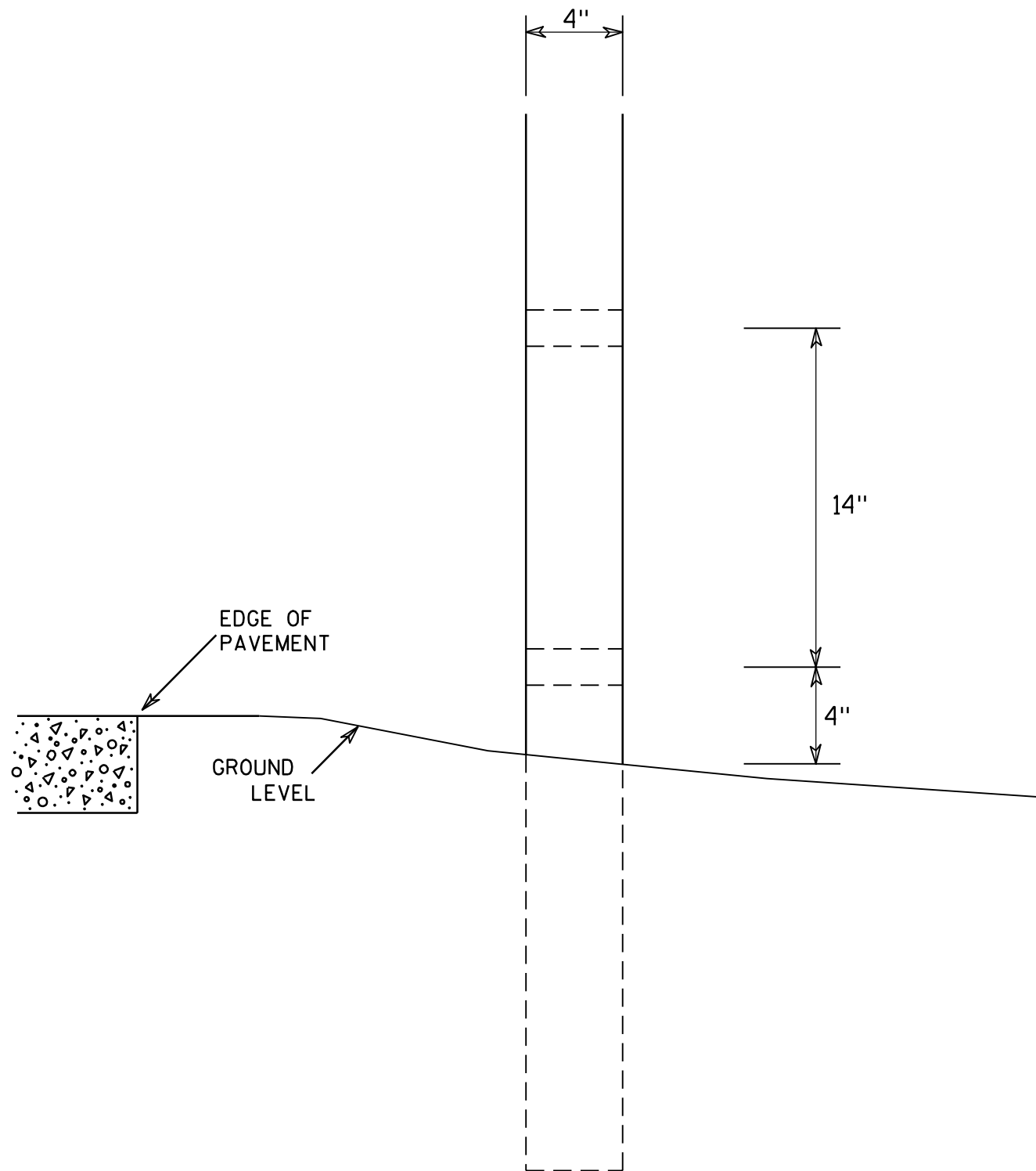
Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

**TUBULAR STEEL
SIGN POST
A4-9**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



GENERAL NOTES

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

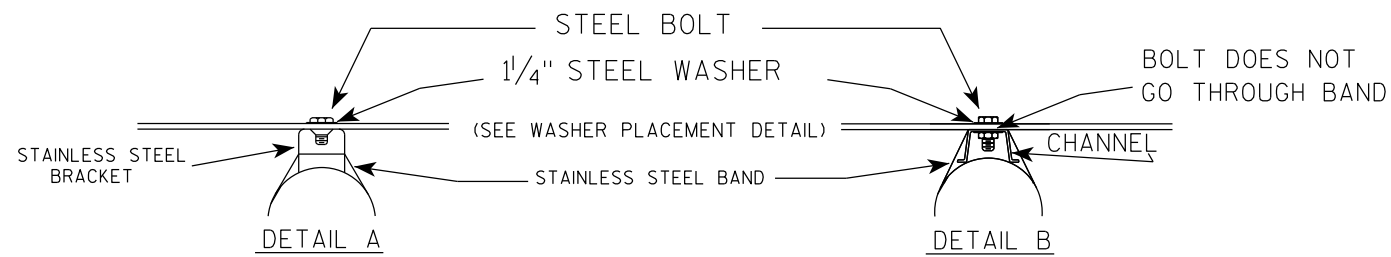
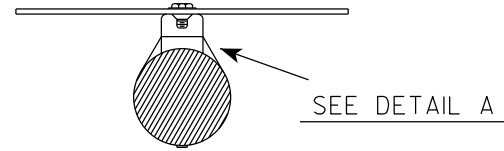
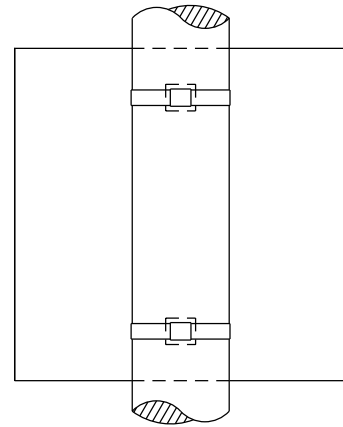
7

7

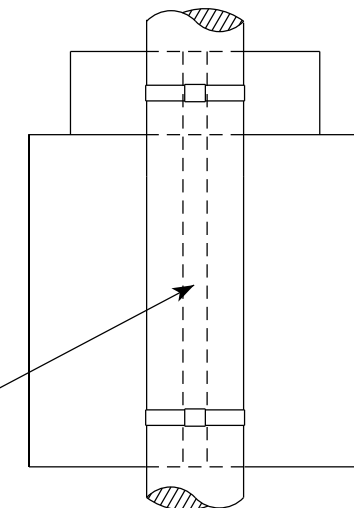
| | |
|--|--|
| 4 X 6 WOOD POST MODIFICATIONS | |
| <i>WISCONSIN DEPT OF TRANSPORTATION</i> | |
| APPROVED | <i>Chester J Spang</i> for State Traffic Engineer |
| DATE <u>3/27/97</u> | PLATE NO. <u>A4-11.2</u> |

BANDING

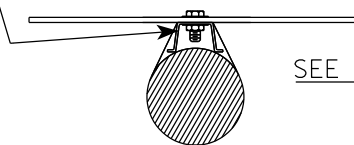
SINGLE SIGN



"J" ASSEMBLY

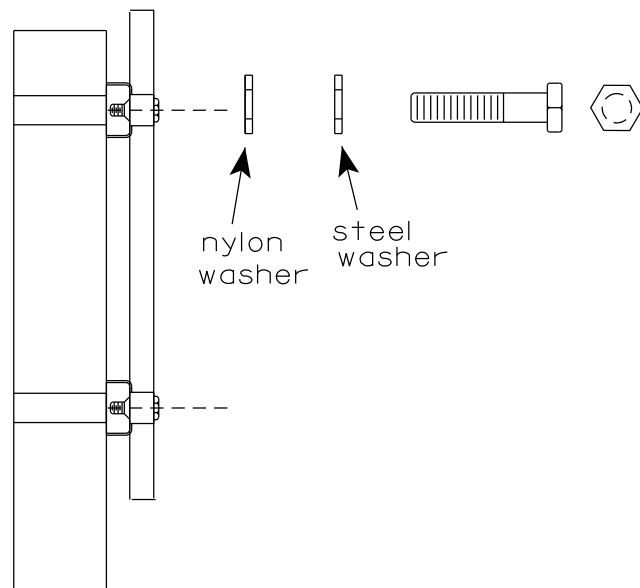


CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



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

WASHER PLACEMENT



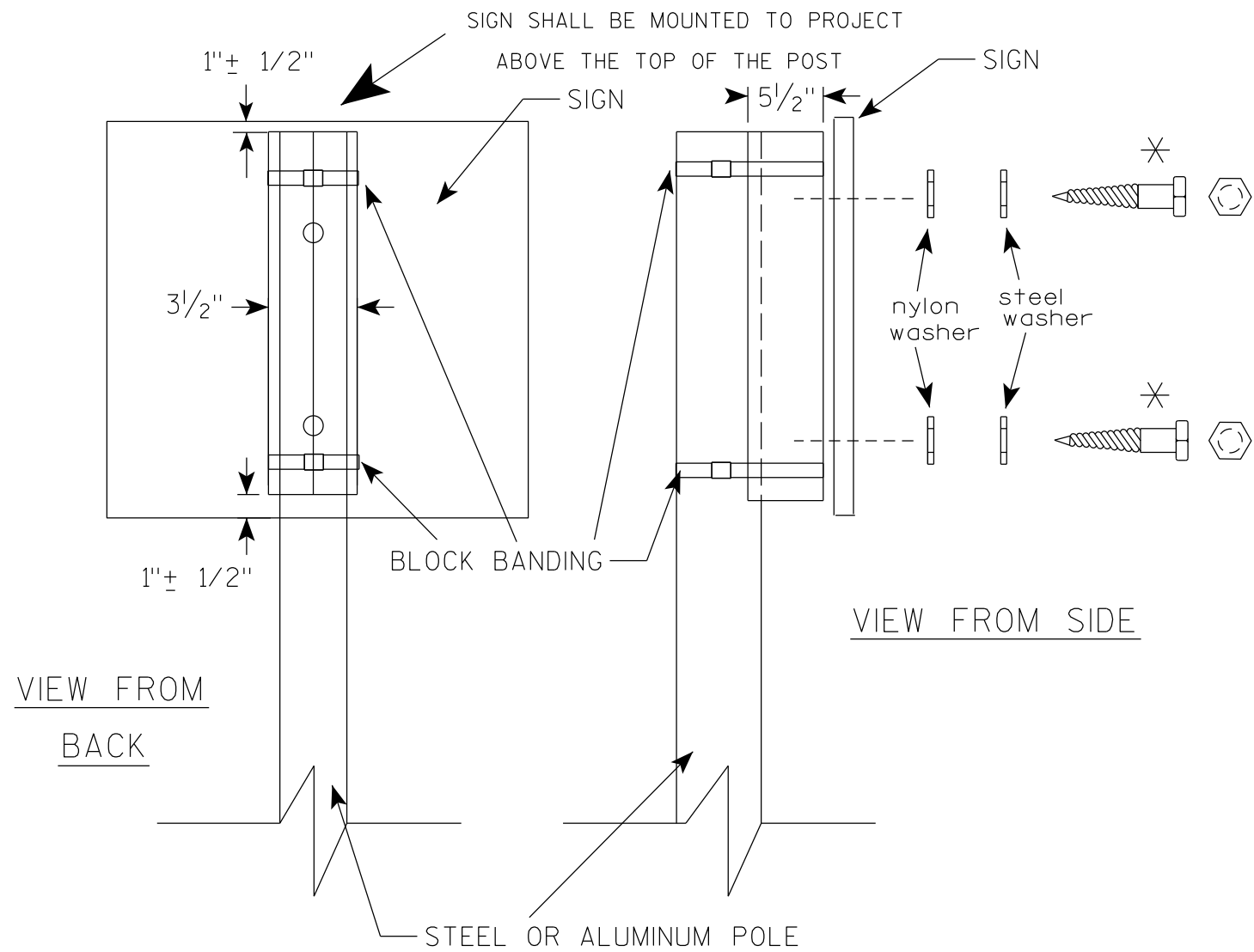
WASHERS (ALL POSTS) -
 1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
 1-1/4" O.D. X 3/8" I.D. X .080 NYLON
 FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

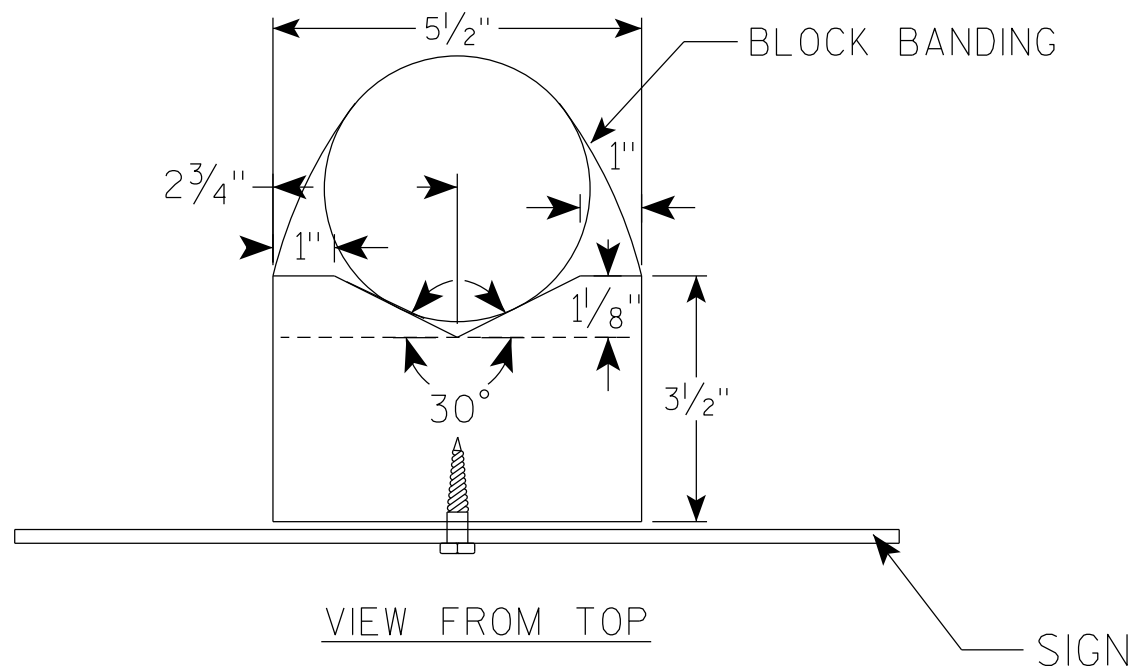
DATE 6/10/19 PLATE NO. A5-9.4



GENERAL NOTES

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

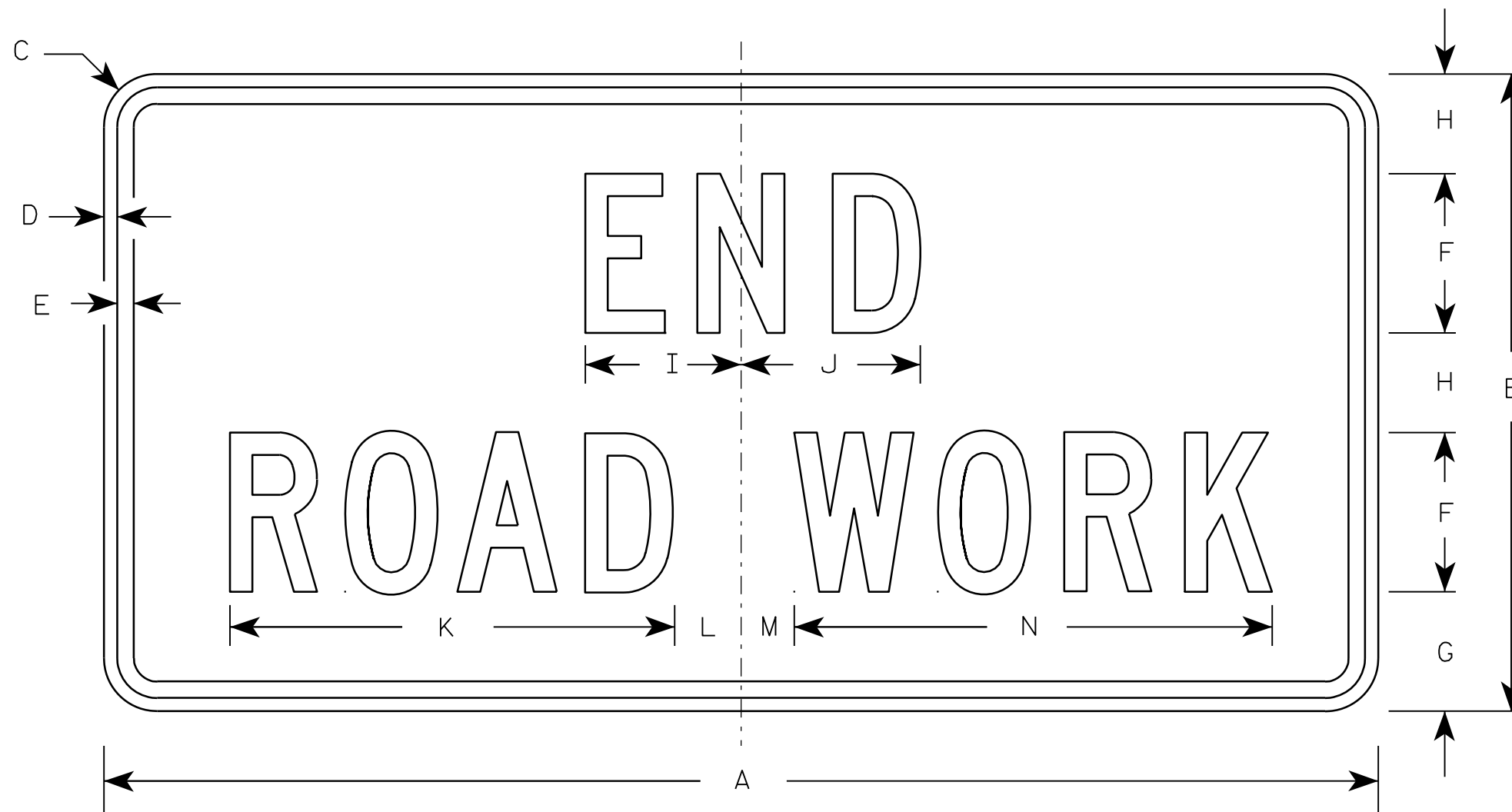
✱ LAG BOLTS SHALL BE 3/8" X 2 1/2"



| | |
|--|--|
| BLOCK BANDING DETAIL (V-BLOCK OPTION) | |
| WISCONSIN DEPT OF TRANSPORTATION | |
| APPROVED | <i>Matthew R Rauch</i> for State Traffic Engineer |
| DATE 6/10/19 | PLATE NO. A5-10.2 |

NOTES

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



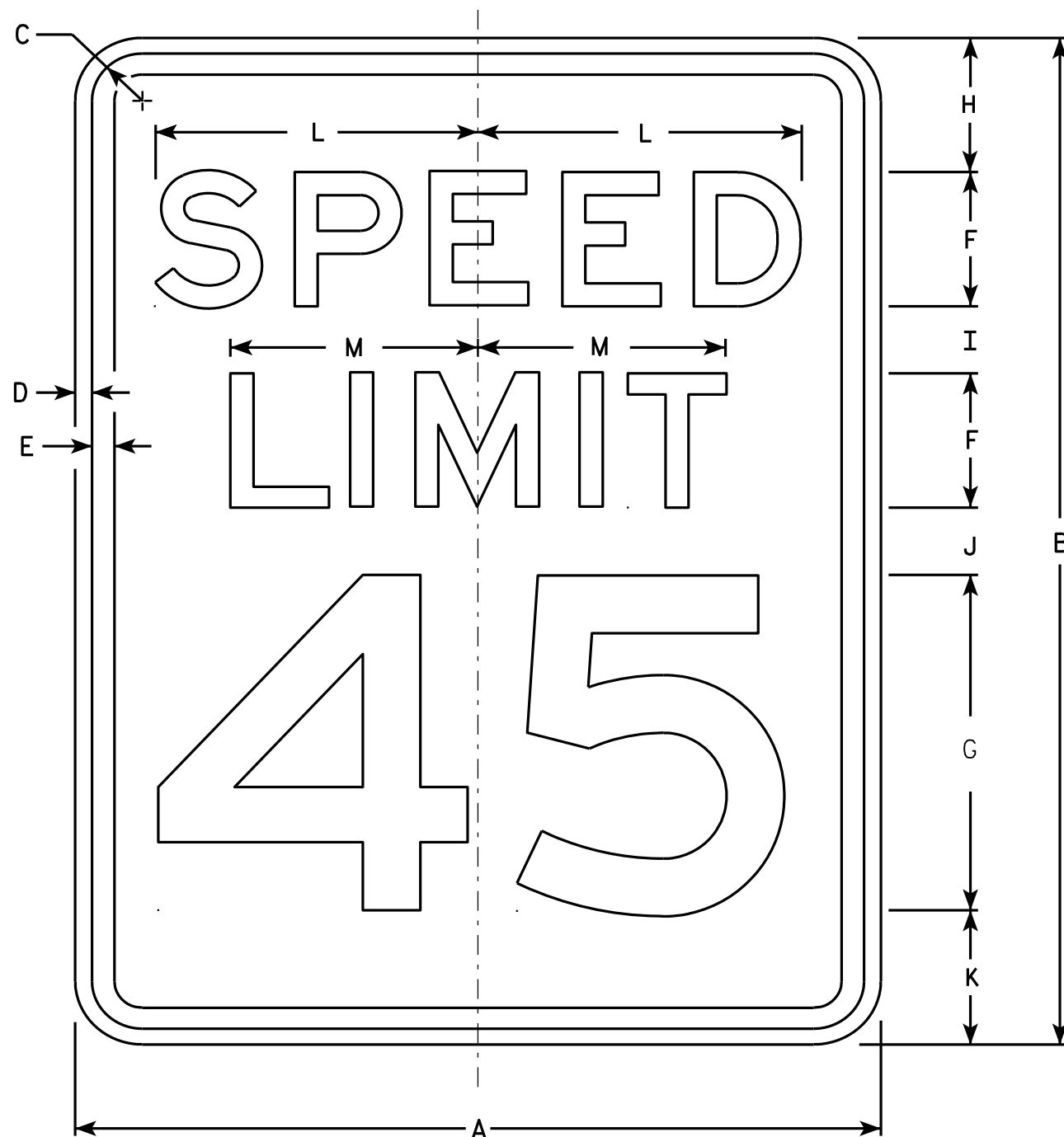
G20-2A

Metric equivalent
for this sign is:

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

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

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



R2-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

7

7

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|----|-------|-----|-----|---|----|---|-------|-------|-------|--------|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1 | 18 | 24 | 1 1/8 | 3/8 | 1/2 | 3 | 8 | 3 | 2 | 2 | 3 | 7 1/4 | 5 1/2 | | | | | | | | | | | | | | 3.0 |
| 2S | 24 | 30 | 1 1/8 | 3/8 | 1/2 | 4 | 10 | 3 | 2 1/4 | 3 3/8 | 3 3/8 | 9 5/8 | 7 3/8 | | | | | | | | | | | | | | 5.0 |
| 2M | 30 | 36 | 1 3/8 | 1/2 | 5/8 | 5 | 12 | 5 | 2 1/2 | 2 1/2 | 4 | 12 | 9 1/4 | | | | | | | | | | | | | | 7.5 |
| 3 | 36 | 48 | 1 3/8 | 1/2 | 5/8 | 6 | 14 | 6 | 5 | 5 | 6 | 14 3/8 | 11 | | | | | | | | | | | | | | 12.0 |
| 4 | 36 | 48 | 1 3/8 | 1/2 | 5/8 | 6 | 14 | 6 | 5 | 5 | 6 | 14 3/8 | 11 | | | | | | | | | | | | | | 12.0 |
| 5 | 48 | 60 | 2 1/4 | 3/4 | 1 | 8 | 20 | 6 | 4 1/2 | 6 3/4 | 6 3/4 | 19 1/4 | 14 5/8 | | | | | | | | | | | | | | 20.0 |

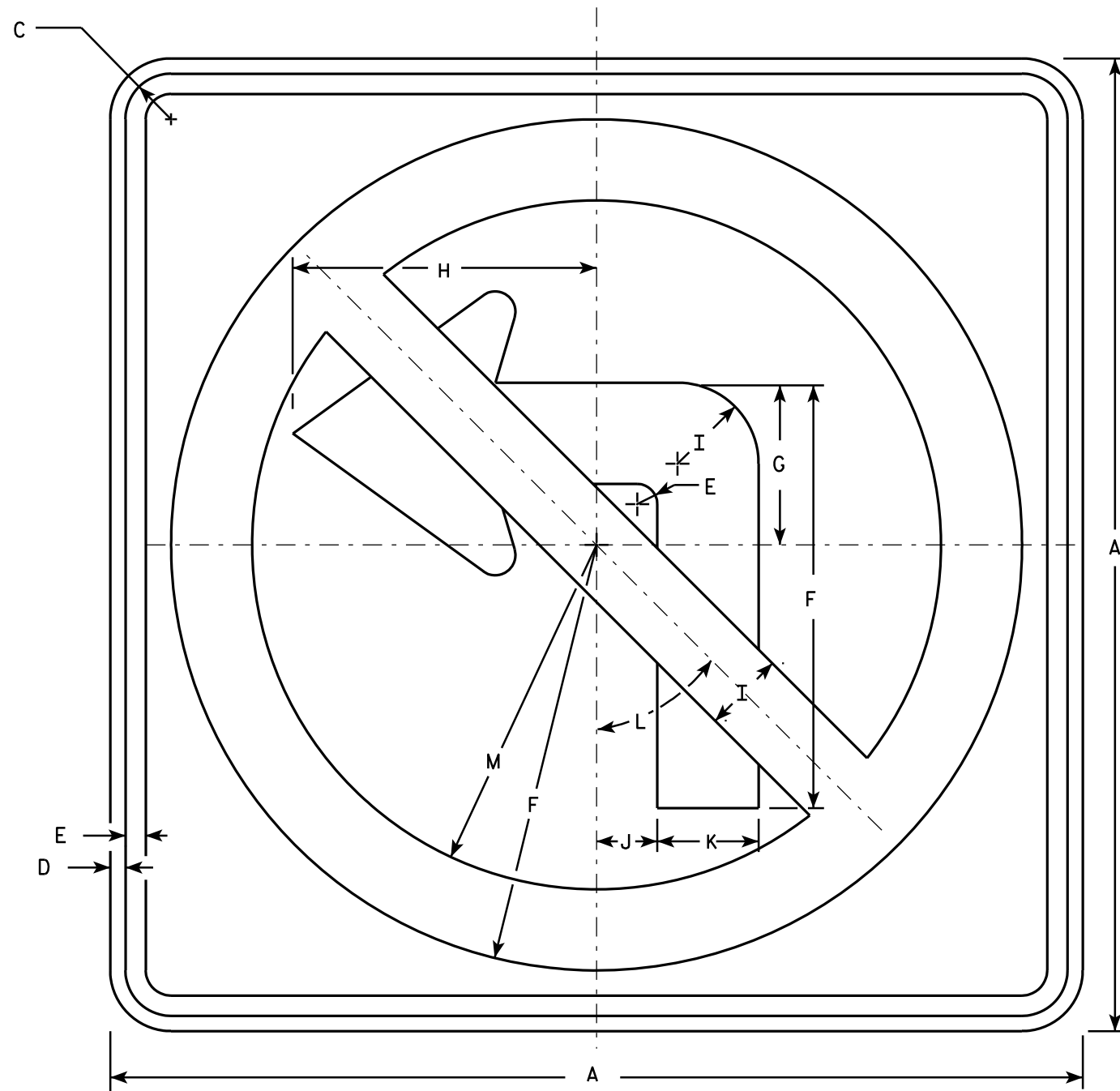
STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 5/26/10 PLATE NO. R2-1.13

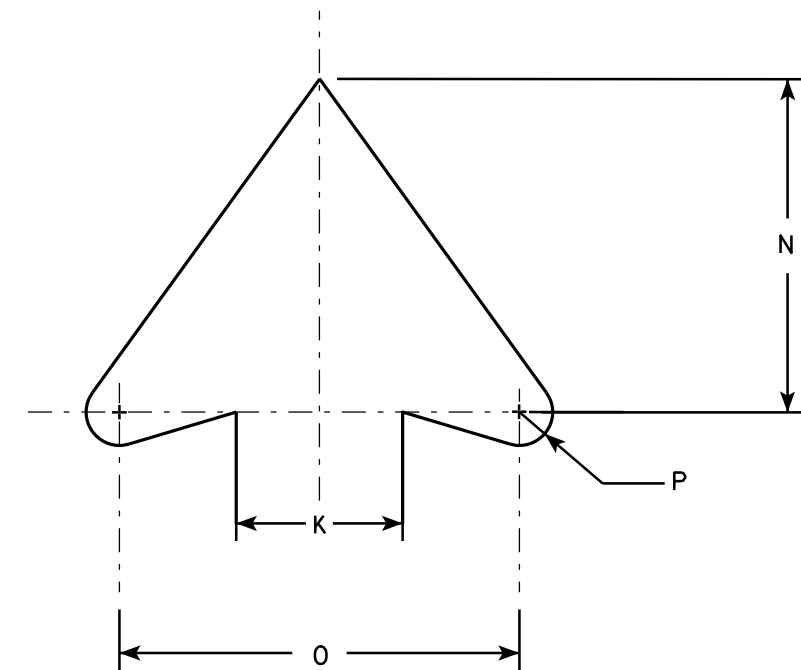
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E



R3-2

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



ARROW DETAIL

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. Ft. |
|------|----|---|-------|-----|-----|--------|---|--------|---|-------|-------|-----|--------|-------|----|-----|---|---|---|---|---|---|---|---|---|---|--------------|
| 1 | 24 | | 1 1/8 | 3/8 | 1/2 | 10 1/2 | 4 | 7 1/2 | 2 | 1 1/2 | 2 1/2 | 45° | 8 1/2 | 5 | 6 | 1/2 | | | | | | | | | | | 4.0 |
| 2S | 24 | | 1 1/8 | 3/8 | 1/2 | 10 1/2 | 4 | 7 1/2 | 2 | 1 1/2 | 2 1/2 | 45° | 8 1/2 | 5 | 6 | 1/2 | | | | | | | | | | | 4.0 |
| 2M | 36 | | 1 5/8 | 5/8 | 3/4 | 15 3/4 | 6 | 11 1/4 | 3 | 2 1/4 | 3 3/4 | 45° | 12 3/4 | 7 1/2 | 9 | 3/4 | | | | | | | | | | | 9.0 |
| 3 | 36 | | 1 5/8 | 5/8 | 3/4 | 15 3/4 | 6 | 11 1/4 | 3 | 2 1/4 | 3 3/4 | 45° | 12 3/4 | 7 1/2 | 9 | 3/4 | | | | | | | | | | | 9.0 |
| 4 | 36 | | 1 5/8 | 5/8 | 3/4 | 15 3/4 | 6 | 11 1/4 | 3 | 2 1/4 | 3 3/4 | 45° | 12 3/4 | 7 1/2 | 9 | 3/4 | | | | | | | | | | | 9.0 |
| 5 | 48 | | 2 1/4 | 3/4 | 1 | 21 | 8 | 15 | 4 | 3 | 5 | 45° | 17 | 10 | 12 | 1 | | | | | | | | | | | 16.0 |

STANDARD SIGN
R3-2

WISCONSIN DEPT OF TRANSPORTATION

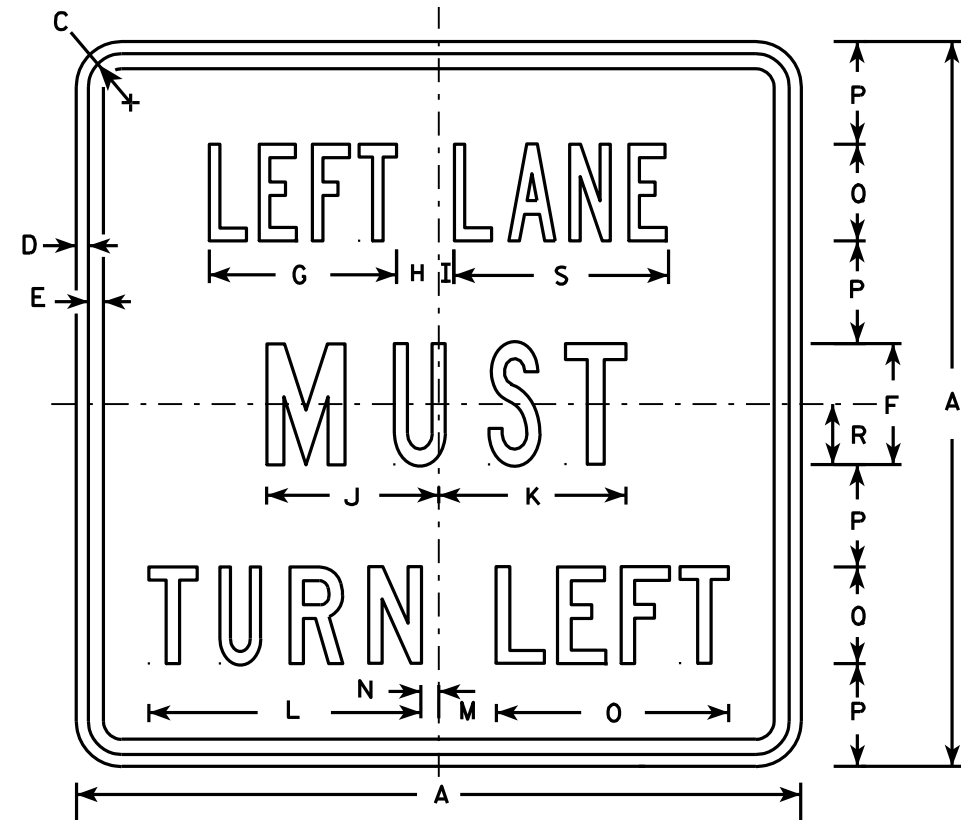
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-2.10

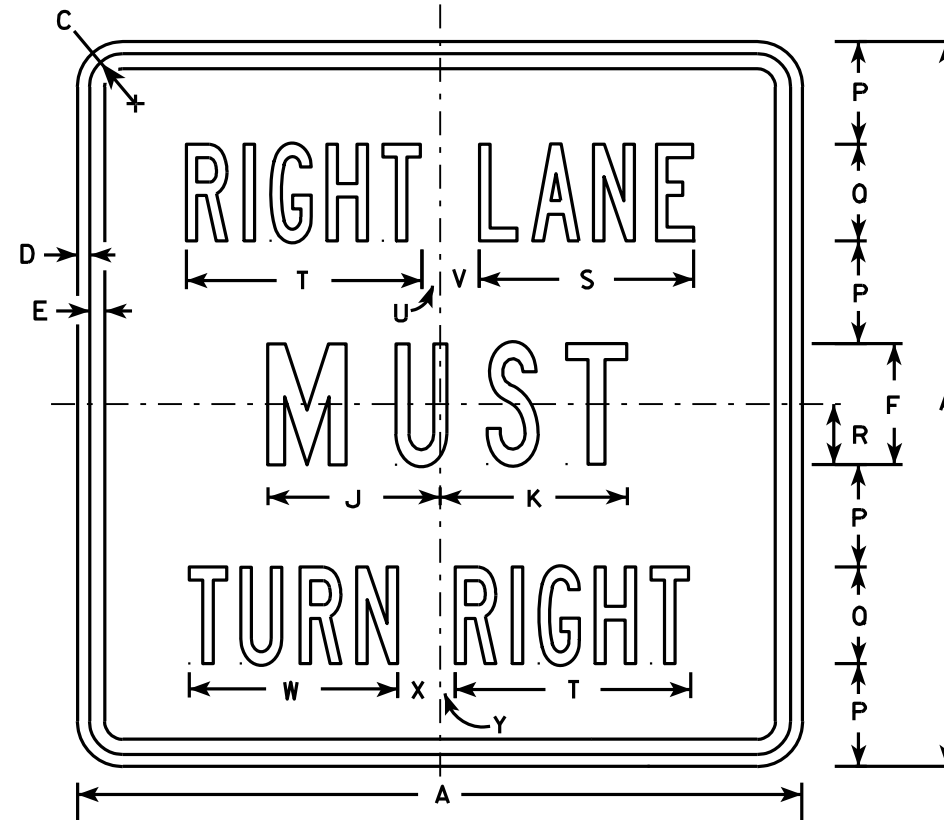
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - Line 1 is Series B.
Line 2 is Series C.
Line 3 on plate R3-7R is Series B and Series C on plate R3-7L.
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



R3-7L



R3-7R

7

7

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|---|-------|-----|-----|---|--------|-------|-------|--------|--------|--------|-------|-------|--------|-------|---|-------|--------|--------|-----|-------|--------|-------|-------|---|--------------|
| 1 | 30 | | 1 3/8 | 1/2 | 5/8 | 5 | 7 3/4 | 1 3/4 | 5/8 | 7 1/8 | 7 3/4 | 11 1/4 | 2 3/8 | 3/4 | 9 5/8 | 4 1/4 | 4 | 2 1/2 | 8 7/8 | 9 3/4 | 3/4 | 1 5/8 | 8 5/8 | 1 5/8 | 5/8 | | 6.25 |
| 2S | 30 | | 1 3/8 | 1/2 | 5/8 | 5 | 7 3/4 | 1 3/4 | 5/8 | 7 1/8 | 7 3/4 | 11 1/4 | 2 3/8 | 3/4 | 9 5/8 | 4 1/4 | 4 | 2 1/2 | 8 7/8 | 9 3/4 | 3/4 | 1 5/8 | 8 5/8 | 1 5/8 | 5/8 | | 6.25 |
| 2M | 30 | | 1 3/8 | 1/2 | 5/8 | 5 | 7 3/4 | 1 3/4 | 5/8 | 7 1/8 | 7 3/4 | 11 1/4 | 2 3/8 | 3/4 | 9 5/8 | 4 1/4 | 4 | 2 1/2 | 8 7/8 | 9 3/4 | 3/4 | 1 5/8 | 8 5/8 | 1 5/8 | 5/8 | | 6.25 |
| 3 | 36 | | 1 5/8 | 5/8 | 3/4 | 6 | 9 5/8 | 2 | 1 1/8 | 8 3/4 | 9 | 13 1/2 | 3 7/8 | 1 1/2 | 12 1/2 | 5 | 5 | 3 | 10 5/8 | 12 | 7/8 | 2 1/4 | 10 5/8 | 2 1/8 | 1 | | 9.00 |
| 4 | 48 | | 2 1/4 | 3/4 | 1 | 8 | 13 1/2 | 2 3/8 | 1 1/2 | 11 1/2 | 11 7/8 | 17 3/4 | 3 5/8 | 2 1/2 | 16 3/8 | 6 1/2 | 7 | 4 | 14 3/8 | 16 7/8 | 5/8 | 3 1/4 | 15 1/8 | 2 3/4 | 1 1/8 | | 16.00 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STANDARD SIGN
R3-7L & R3-7R

WISCONSIN DEPT OF TRANSPORTATION

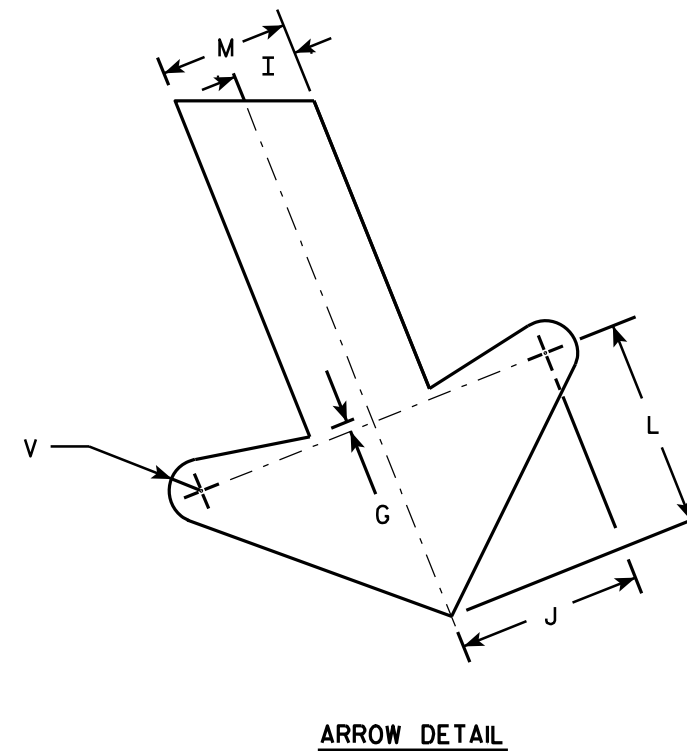
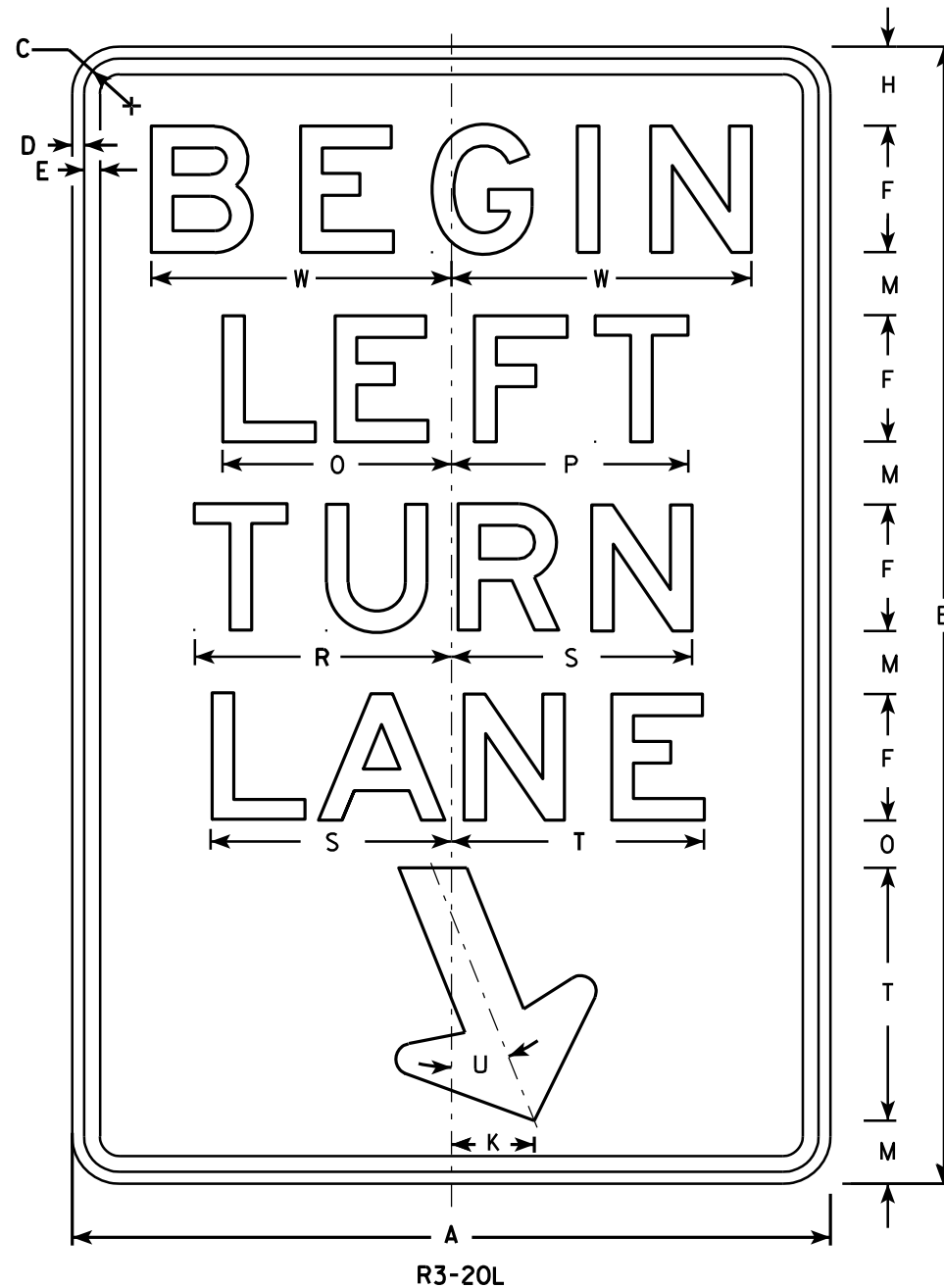
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/18/2011 PLATE NO. R3-7.3

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E

NOTES

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



7

7

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|----|-------|-----|-----|---|-----|-------|-------|-------|-------|-------|---|-------|--------|--------|---|--------|--------|----|-----|-----|--------|---|---|---|--------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 24 | 36 | 1 1/8 | 3/8 | 1/2 | 4 | 1/4 | 2 1/2 | 1 | 2 7/8 | 2 5/8 | 3 1/4 | 2 | 1 1/2 | 7 1/4 | 7 1/2 | | 8 1/8 | 7 5/8 | 8 | 22° | 1/2 | 9 1/2 | | | | 6.0 |
| 2M | 24 | 36 | 1 1/8 | 3/8 | 1/2 | 4 | 1/4 | 2 1/2 | 1 | 2 7/8 | 2 5/8 | 3 1/4 | 2 | 1 1/2 | 7 1/4 | 7 1/2 | | 8 1/8 | 7 5/8 | 8 | 22° | 1/2 | 9 1/2 | | | | 6.0 |
| 3 | 36 | 54 | 1 3/4 | 1/2 | 5/8 | 6 | 3/8 | 3 3/4 | 1 1/2 | 4 1/4 | 4 | 4 7/8 | 3 | 2 1/4 | 10 7/8 | 11 1/4 | | 12 1/4 | 11 1/2 | 12 | 22° | 3/4 | 13 1/4 | | | | 13.5 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

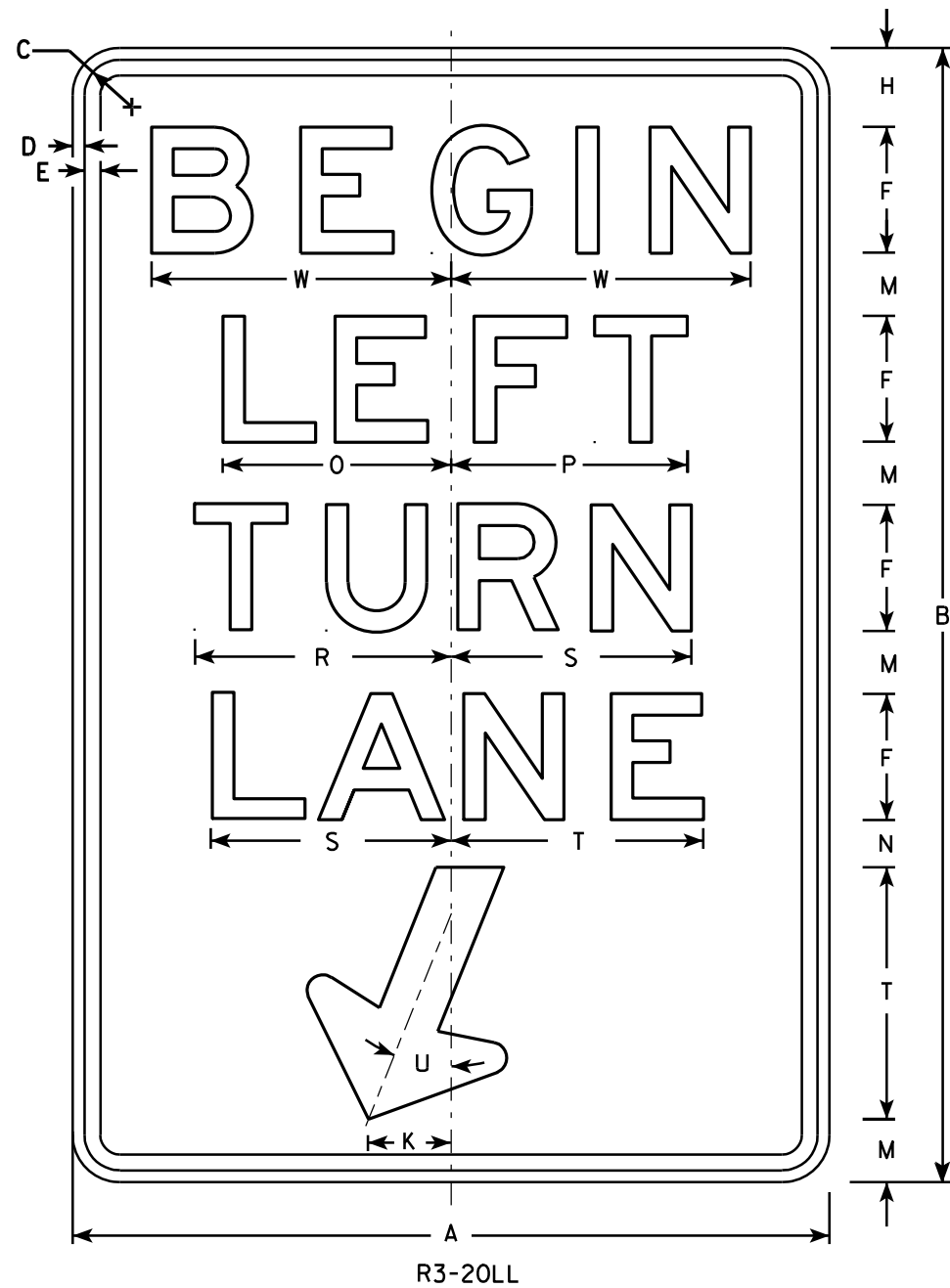
STANDARD SIGN
R3-20L

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/18/10 PLATE NO. R3-20L.7

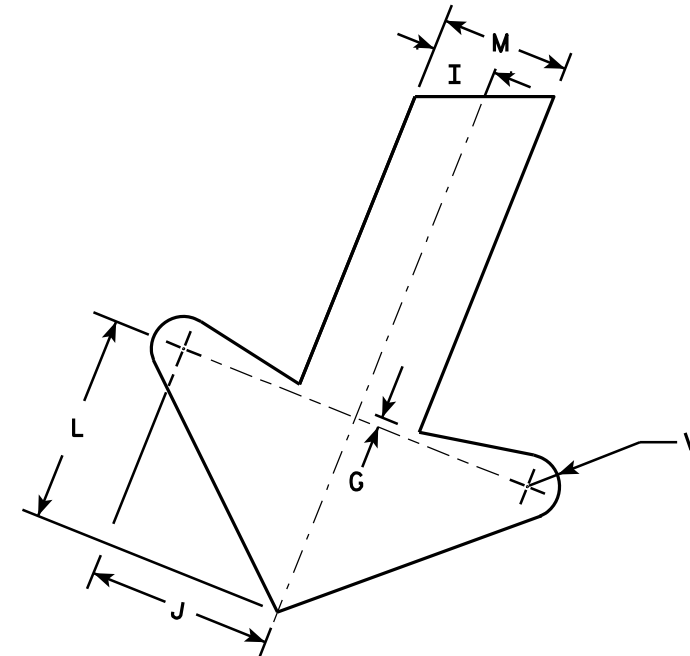
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E



R3-20LL

NOTES

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



ARROW DETAIL

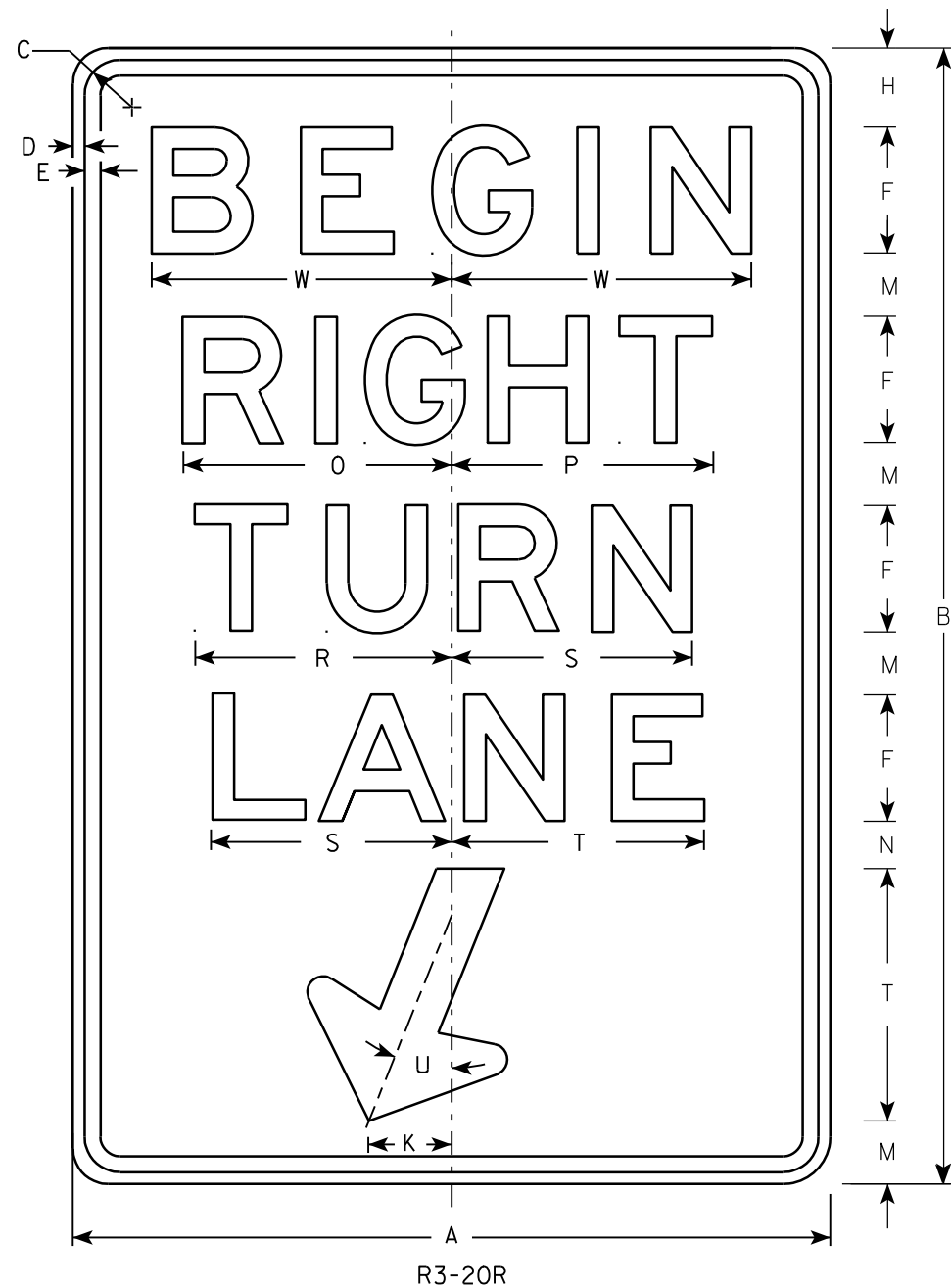
| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|----|-------|-----|-----|---|-----|-------|-------|-------|-------|-------|---|-------|--------|--------|---|--------|--------|----|-----|-----|--------|---|---|---|--------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 24 | 36 | 1 1/8 | 3/8 | 1/2 | 4 | 1/4 | 2 1/2 | 1 | 2 7/8 | 2 5/8 | 3 1/4 | 2 | 1 1/2 | 7 1/4 | 7 1/2 | | 8 1/8 | 7 5/8 | 8 | 22° | 1/2 | 9 1/2 | | | | 6.0 |
| 2M | 24 | 36 | 1 1/8 | 3/8 | 1/2 | 4 | 1/4 | 2 1/2 | 1 | 2 7/8 | 2 5/8 | 3 1/4 | 2 | 1 1/2 | 7 1/4 | 7 1/2 | | 8 1/8 | 7 5/8 | 8 | 22° | 1/2 | 9 1/2 | | | | 6.0 |
| 3 | 36 | 54 | 1 3/4 | 1/2 | 5/8 | 6 | 3/8 | 3 3/4 | 1 1/2 | 4 1/4 | 4 | 4 7/8 | 3 | 2 1/4 | 10 7/8 | 11 1/4 | | 12 1/4 | 11 1/2 | 12 | 22° | 3/4 | 13 1/4 | | | | 13.5 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STANDARD SIGN
R3-20LL

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

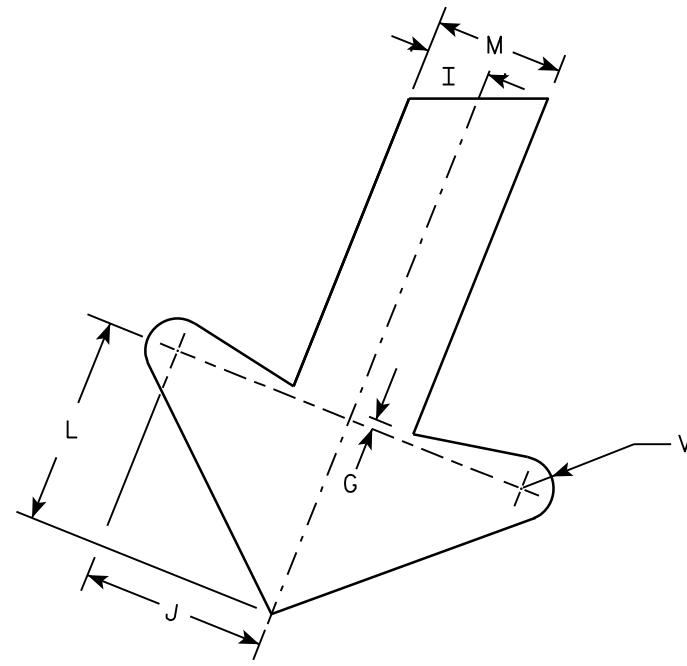
DATE 10/18/10 PLATE NO. R3-20LL.1



R3-20R

NOTES

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



ARROW DETAIL

7

7

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|----|-------|-----|-----|---|-----|-------|-------|-------|-------|-------|---|-------|--------|--------|---|--------|--------|----|-----|-----|--------|---|---|---|--------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 24 | 36 | 1 1/8 | 3/8 | 1/2 | 4 | 1/4 | 2 1/2 | 1 | 2 7/8 | 2 5/8 | 3 1/4 | 2 | 1 1/2 | 8 1/2 | 8 1/4 | | 8 1/8 | 7 5/8 | 8 | 22° | 1/2 | 9 1/2 | | | | 6.0 |
| 2M | 24 | 36 | 1 1/8 | 3/8 | 1/2 | 4 | 1/4 | 2 1/2 | 1 | 2 7/8 | 2 5/8 | 3 1/4 | 2 | 1 1/2 | 8 1/2 | 8 1/4 | | 8 1/8 | 7 5/8 | 8 | 22° | 1/2 | 9 1/2 | | | | 6.0 |
| 3 | 36 | 54 | 1 3/4 | 1/2 | 5/8 | 6 | 3/8 | 3 3/4 | 1 1/2 | 4 1/4 | 4 | 4 7/8 | 3 | 2 1/4 | 12 3/4 | 12 1/2 | | 12 1/4 | 11 1/2 | 12 | 22° | 3/4 | 13 1/4 | | | | 13.5 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STANDARD SIGN
R3-20R

WISCONSIN DEPT OF TRANSPORTATION

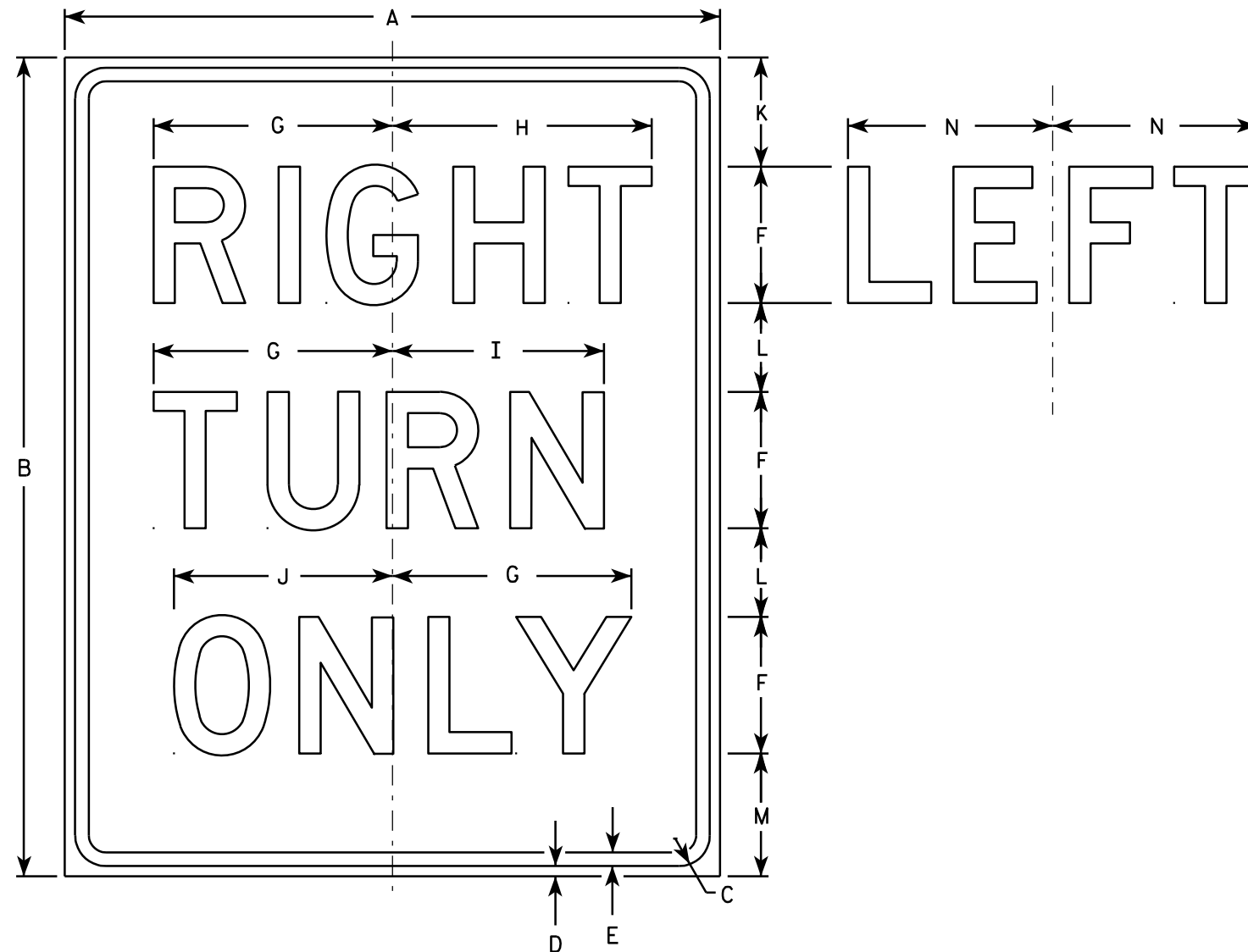
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 10/18/10 PLATE NO. R3-20R.6

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. R3-53L same as R3-53R except LEFT is substituted for RIGHT.



R3-53R

7

7

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|----|-------|-----|-----|---|-------|-------|-------|---|---|-------|-------|-------|---|---|---|---|---|---|---|---|---|---|---|---|--------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 24 | 30 | 1 1/8 | 3/8 | 1/2 | 5 | 8 3/4 | 9 1/2 | 7 3/4 | 8 | 4 | 3 1/4 | 4 1/2 | 7 1/2 | | | | | | | | | | | | | 5.0 |
| 2M | 24 | 30 | 1 1/8 | 3/8 | 1/2 | 5 | 8 3/4 | 9 1/2 | 7 3/4 | 8 | 4 | 3 1/4 | 4 1/2 | 7 1/2 | | | | | | | | | | | | | 5.0 |
| 3 | 24 | 30 | 1 1/8 | 3/8 | 1/2 | 5 | 8 3/4 | 9 1/2 | 7 3/4 | 8 | 4 | 3 1/4 | 4 1/2 | 7 1/2 | | | | | | | | | | | | | 5.0 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

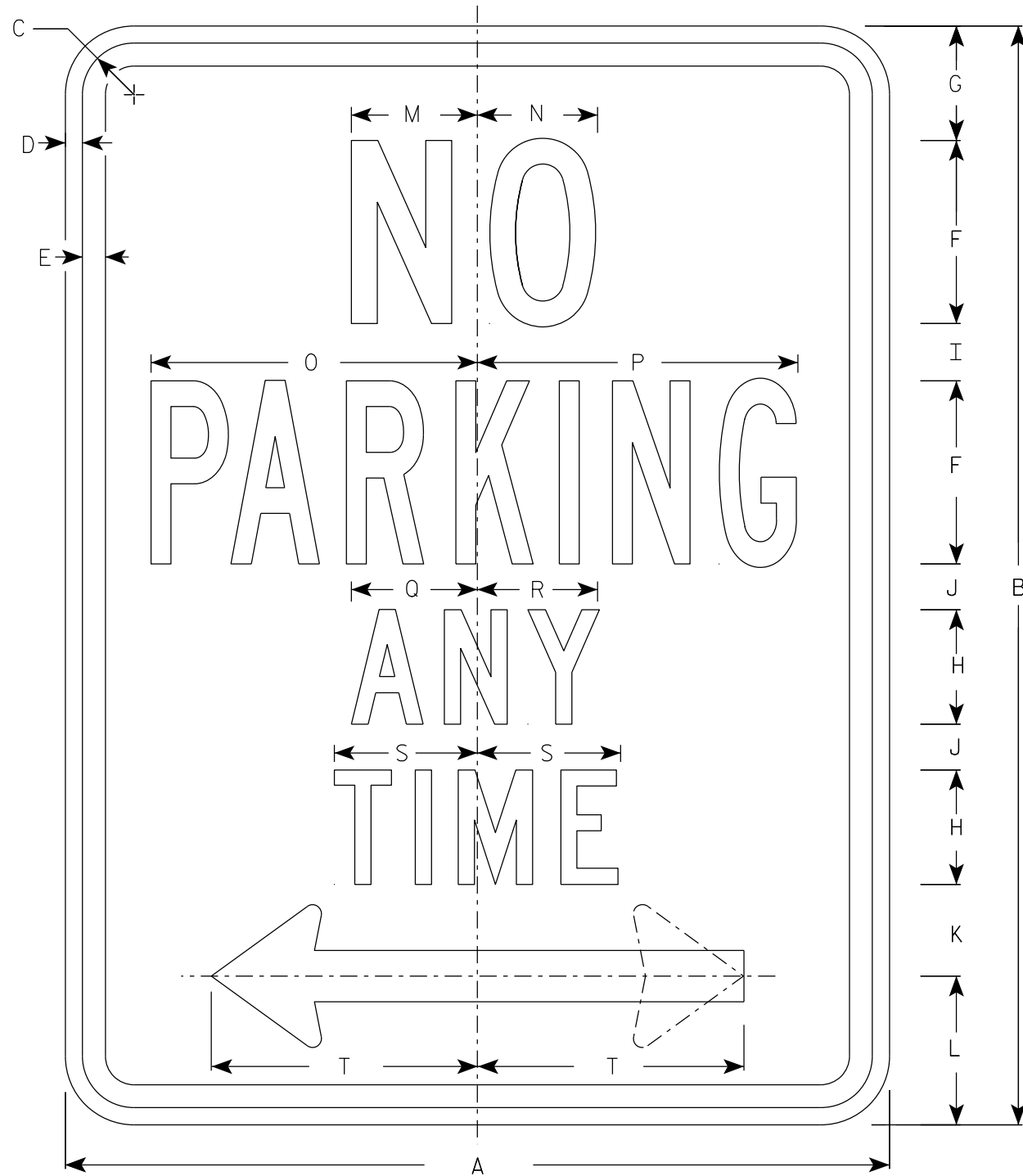
STANDARD SIGN
R3-53

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/24/2011 PLATE NO. R3-53.8

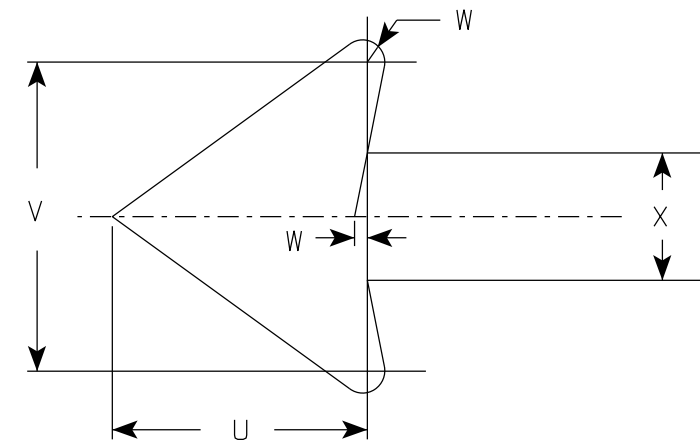
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E



R7-1

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Red
3. Message Series - See Note 5
4. Lines 1, 3 and 4 are series C, line 2 is series B.
5. R7-1D (double arrow)
R7-1L (left arrow)
R7-1R (right arrow)



| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|----|-------|-----|-----|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|-------|---|-----|--------------|
| 1 | 12 | 18 | 1 1/8 | 3/8 | 3/8 | 3 | 1 7/8 | 2 | 7/8 | 5/8 | 1 1/2 | 2 1/2 | 2 | 2 | 4 7/8 | 4 7/8 | 2 1/4 | 2 1/8 | 2 1/2 | 3 7/8 | 1 1/2 | 1 3/4 | 1/8 | 3/4 | | 1.5 | |
| 2S | 18 | 24 | 1 1/8 | 3/8 | 1/2 | 4 | 2 1/2 | 2 1/2 | 1 1/4 | 1 | 2 | 3 1/4 | 2 3/4 | 2 5/8 | 7 1/8 | 7 | 2 3/4 | 2 5/8 | 3 1/8 | 5 7/8 | 2 1/4 | 2 5/8 | 1/4 | 1 1/8 | | 3.0 | |
| 2M | 24 | 30 | 1 1/8 | 3/8 | 1/2 | 5 | 3 | 3 | 2 | 1 1/4 | 2 1/2 | 4 | 3 1/4 | 3 3/8 | 9 1/4 | 9 1/4 | 3 1/4 | 3 1/4 | 3 3/4 | 7 3/4 | 3 | 3 1/2 | 1/4 | 1 1/2 | | 5.0 | |
| 3 | 24 | 30 | 1 1/8 | 3/8 | 1/2 | 5 | 3 | 3 | 2 | 1 1/4 | 2 1/2 | 4 | 3 1/4 | 3 3/8 | 9 1/4 | 9 1/4 | 3 1/4 | 3 1/4 | 3 3/4 | 7 3/4 | 3 | 3 1/2 | 1/4 | 1 1/2 | | 5.0 | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STANDARD SIGN
R7-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*
For State Traffic Engineer

DATE 3/31/2021 PLATE NO. R7-1.10



NOTES

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

7

7

R8-8

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|----|-------|-----|-----|---|-------|-------|--------|--------|--------|-------|----|---|---|---|---|---|---|---|---|---|---|---|---|---|--------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 24 | 30 | 1 1/8 | 3/8 | 1/2 | 4 | 3 5/8 | 2 1/4 | 9 1/4 | 9 5/8 | 6 5/8 | 3 5/8 | 10 | | | | | | | | | | | | | | 5.0 |
| 2M | 24 | 30 | 1 1/8 | 3/8 | 1/2 | 4 | 3 5/8 | 2 1/4 | 9 1/4 | 9 5/8 | 6 5/8 | 3 5/8 | 10 | | | | | | | | | | | | | | 5.0 |
| 3 | 36 | 48 | 1 3/8 | 1/2 | 5/8 | 6 | 6 | 4 | 13 7/8 | 14 3/8 | 9 7/8 | 5 3/8 | 15 | | | | | | | | | | | | | | 12.0 |
| 4 | 48 | 60 | 2 1/4 | 3/4 | 1 | 8 | 7 1/4 | 4 1/2 | 18 1/2 | 19 1/4 | 13 1/4 | 7 1/4 | 20 | | | | | | | | | | | | | | 20.0 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STANDARD SIGN
R8-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/31/2011 PLATE NO. R8-8.4

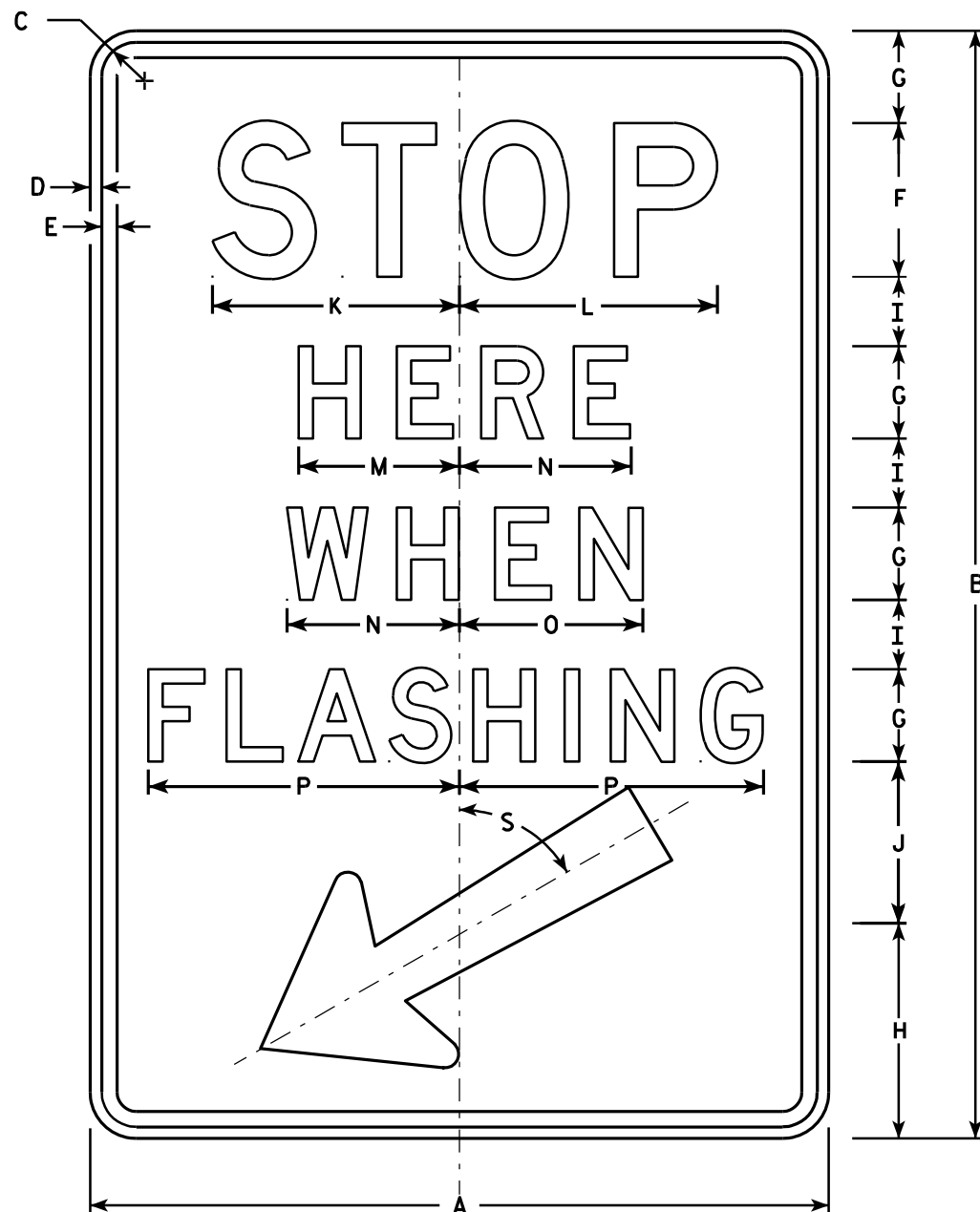
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

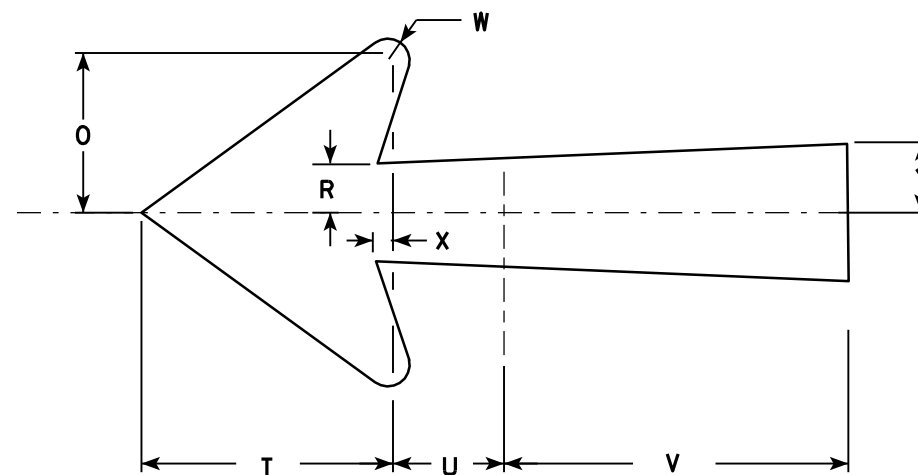
E



R8-10

NOTES

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



Arrow Detail

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|----|-------|-----|-----|---|---|---|-------|-------|---|-------|-------|-------|---|----|---|---|---|---|---|---|---|---|---|-----|--------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 24 | 36 | 1 1/8 | 3/8 | 1/2 | 5 | 3 | 7 | 2 1/4 | 5 1/4 | 8 | 8 3/8 | 5 1/4 | 5 5/8 | 6 | 10 | | | | | | | | | | 6.0 | |
| 2M | 24 | 36 | 1 1/8 | 3/8 | 1/2 | 5 | 3 | 7 | 2 1/4 | 5 1/4 | 8 | 8 3/8 | 5 1/4 | 5 5/8 | 6 | 10 | | | | | | | | | | 6.0 | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STANDARD SIGN
R8-10

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE **3/31/2011** PLATE NO. **R8-10.2**



R10-71

NOTES

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



R10-71L



R10-71R

7

7

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | R10-71L&R Area sq. ft. | R10-71 Area sq. ft. |
|------|----|----|-------|-----|---|----|---|---|---|--------|--------|-------|-------|--------|-------|--------|--------|----|-------|--------|----|--------|-------|----|--------|----|------------------------------|---------------------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 72 | 36 | 2 1/4 | 3/4 | 1 | 18 | 5 | 4 | 6 | 20 5/8 | 11 3/4 | 9 1/8 | 8 1/2 | 12 7/8 | 9 7/8 | 16 1/8 | 23 7/8 | 30 | 5 5/8 | 26 3/4 | 66 | 23 5/8 | 8 3/4 | 13 | 26 7/8 | 27 | 18.0 | 16.5 |
| 2M | 72 | 36 | 2 1/4 | 3/4 | 1 | 18 | 5 | 4 | 6 | 20 5/8 | 11 3/4 | 9 1/8 | 8 1/2 | 12 7/8 | 9 7/8 | 16 1/8 | 23 7/8 | 30 | 5 5/8 | 26 3/4 | 66 | 23 5/8 | 8 3/4 | 13 | 26 7/8 | 27 | 18.0 | 16.5 |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

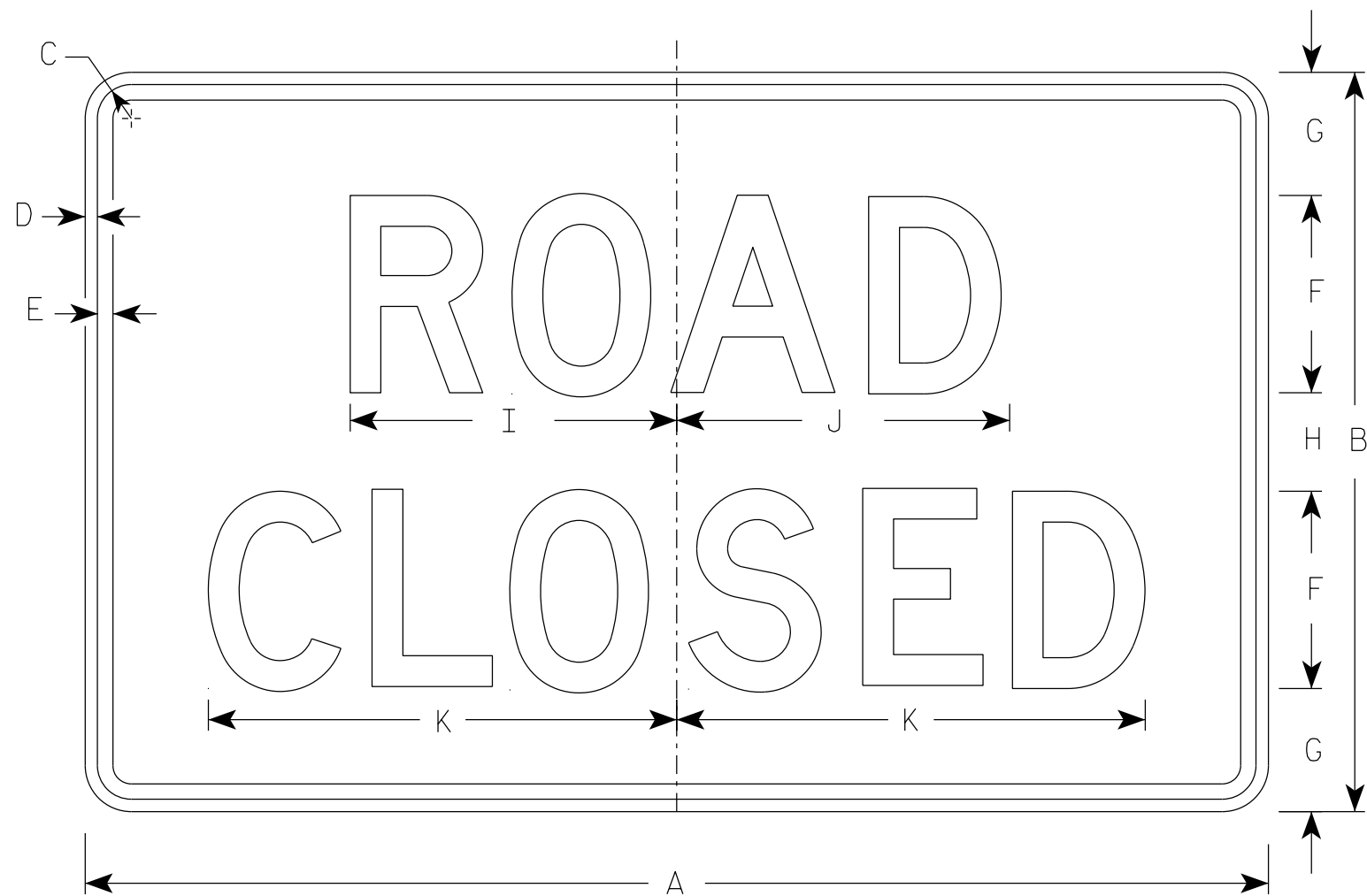
STANDARD SIGN
R10-71

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*
for State Traffic Engineer

DATE 4/4/11 PLATE NO. R10-71.3

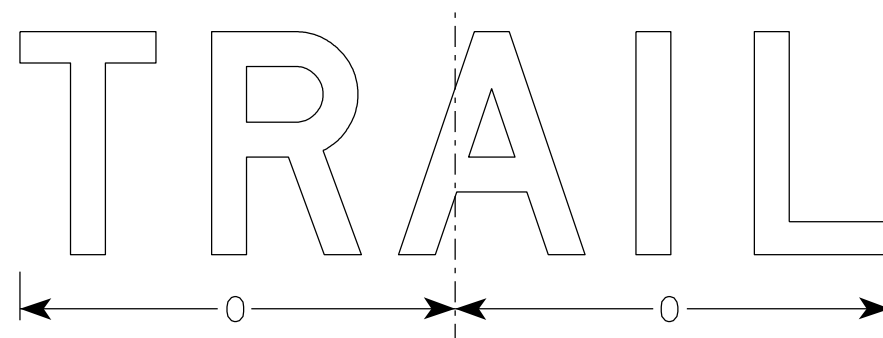
PROJECT NO: _____ SHEET NO: **E**



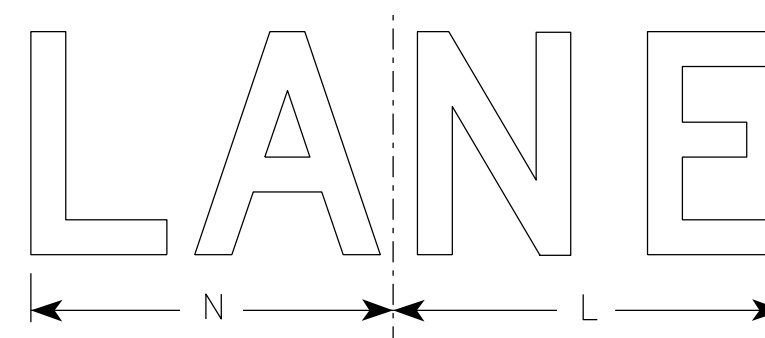
R11-2



R11-2R



R11-2T



R11-2L

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Modify the message as required.

7

7

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|----|-------|-----|-----|---|---|---|--------|--------|----|----|----|----|--------|---|---|---|---|---|---|---|---|---|---|---|--------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 48 | 30 | 1 3/8 | 1/2 | 5/8 | 8 | 5 | 4 | 13 1/4 | 13 1/2 | 19 | 14 | 15 | 13 | 15 5/8 | | | | | | | | | | | | 10.0 |
| 2M | 48 | 30 | 1 3/8 | 1/2 | 5/8 | 8 | 5 | 4 | 13 1/4 | 13 1/2 | 19 | 14 | 15 | 13 | 15 5/8 | | | | | | | | | | | | 10.0 |
| 3 | 48 | 30 | 1 3/8 | 1/2 | 5/8 | 8 | 5 | 4 | 13 1/4 | 13 1/2 | 19 | 14 | 15 | 13 | 15 5/8 | | | | | | | | | | | | 10.0 |
| 4 | 48 | 30 | 1 3/8 | 1/2 | 5/8 | 8 | 5 | 4 | 13 1/4 | 13 1/2 | 19 | 14 | 15 | 13 | 15 5/8 | | | | | | | | | | | | 10.0 |
| 5 | 48 | 30 | 1 3/8 | 1/2 | 5/8 | 8 | 5 | 4 | 13 1/4 | 13 1/2 | 19 | 14 | 15 | 13 | 15 5/8 | | | | | | | | | | | | 10.0 |

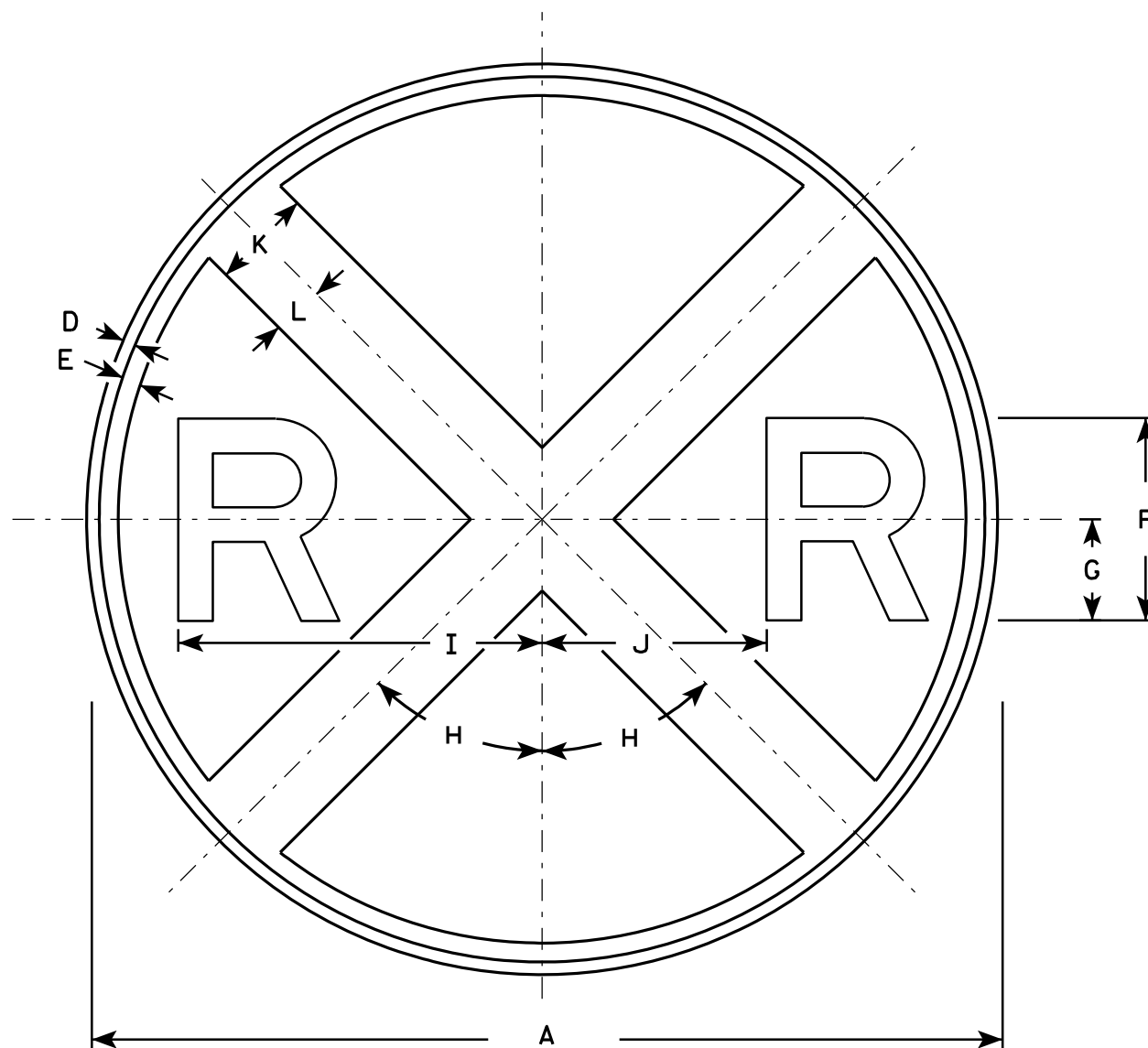
STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*
For State Traffic Engineer

DATE 3/29/2021 PLATE NO. R11-2.11

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**



W10-1

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. Message Series - E

7

7

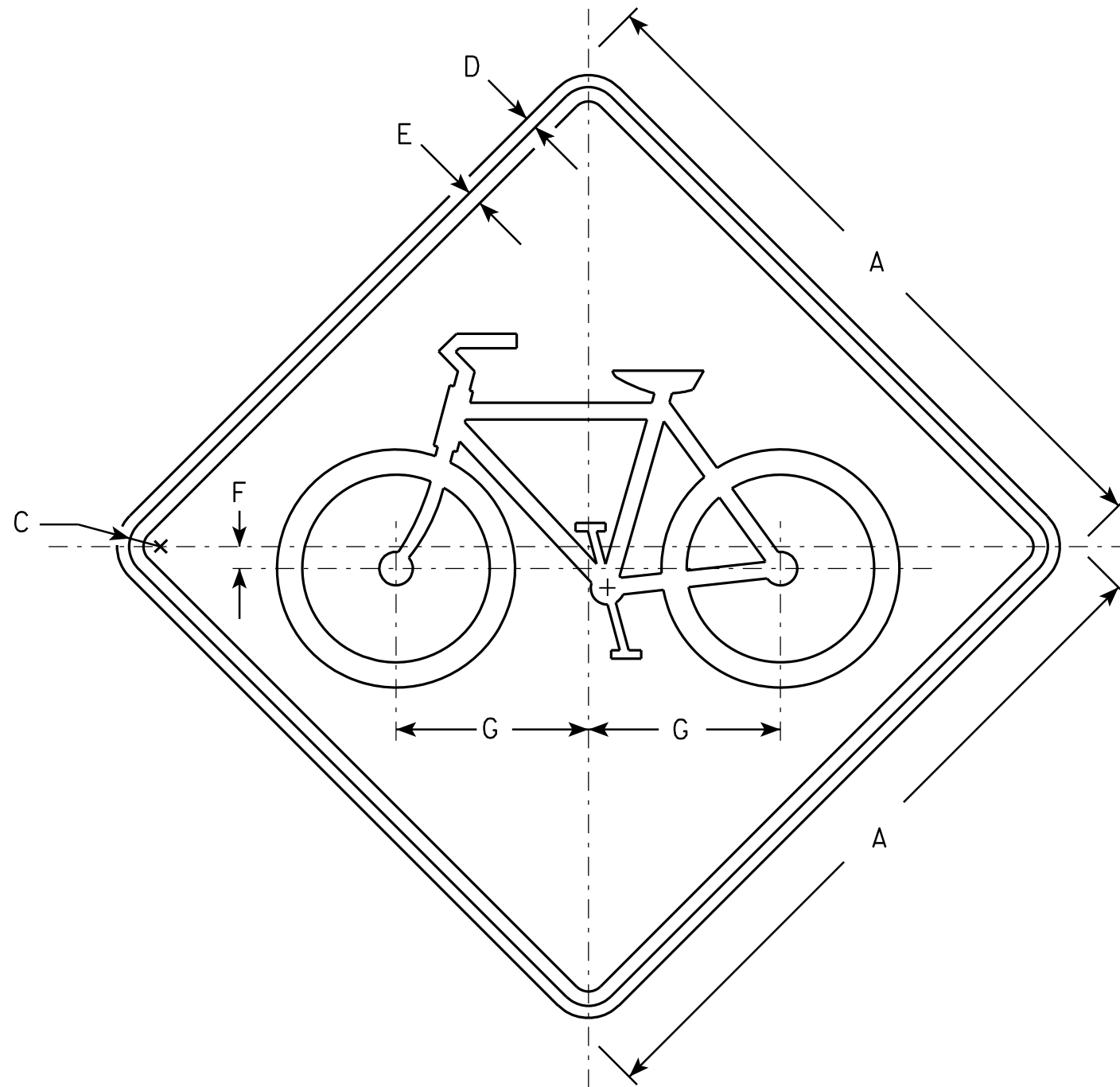
| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|---|---|-----|-------|----|-------|-----|--------|--------|---|-------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1 | 30 | | | 3/8 | 5/8 | 7 | 3 1/2 | 45° | 12 3/8 | 7 1/8 | 3 | 1 1/2 | | | | | | | | | | | | | | | 4.91 |
| 2S | 36 | | | 5/8 | 3/4 | 8 | 4 | 45° | 14 3/8 | 8 5/8 | 4 | 2 | | | | | | | | | | | | | | | 7.07 |
| 2M | 36 | | | 5/8 | 3/4 | 8 | 4 | 45° | 14 3/8 | 8 5/8 | 4 | 2 | | | | | | | | | | | | | | | 7.07 |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 48 | | | 3/4 | 1 1/4 | 10 | 5 | 45° | 18 3/8 | 11 5/8 | 5 | 2 1/2 | | | | | | | | | | | | | | | 12.57 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STANDARD SIGN
W10-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 3/13/13 PLATE NO. W10-1.8

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E



W11-1

NOTES

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

7

7

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|---|-------|-----|-----|-------|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1 | 24 | | 1 1/8 | 3/4 | 1/2 | 3/4 | 6 5/8 | | | | | | | | | | | | | | | | | | | | 4.0 |
| 2S | 30 | | 1 3/8 | 1/2 | 5/8 | 1 | 8 1/2 | | | | | | | | | | | | | | | | | | | | 6.25 |
| 2M | 36 | | 1 5/8 | 5/8 | 3/4 | 1 1/4 | 10 | | | | | | | | | | | | | | | | | | | | 9.0 |
| 3 | 36 | | 1 5/8 | 5/8 | 3/4 | 1 1/4 | 10 | | | | | | | | | | | | | | | | | | | | 9.0 |
| 4 | 48 | | 2 1/4 | 3/4 | 1 | 1 5/8 | 13 3/8 | | | | | | | | | | | | | | | | | | | | 16.0 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | 16.0 |

STANDARD SIGN
W11-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Raush*
for State Traffic Engineer

DATE 12/21/10 PLATE NO. W11-1.9

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Yellow
Message - Black
3. Message Series - C



W16-9P

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|----|-------|-----|-----|----|-------|-------|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 24 | 12 | 1 1/8 | 3/8 | 3/8 | 5 | 3 1/2 | 3 1/8 | 17 3/4 | | | | | | | | | | | | | | | | | | 2.0 |
| 2M | 30 | 18 | 1 1/8 | 3/8 | 1/2 | 7 | 5 1/2 | 2 3/4 | 24 1/2 | | | | | | | | | | | | | | | | | | 3.75 |
| 3 | 30 | 18 | 1 1/8 | 3/8 | 1/2 | 7 | 3 1/2 | 2 3/4 | 24 1/2 | | | | | | | | | | | | | | | | | | 3.75 |
| 4 | 48 | 24 | 1 3/8 | 1/2 | 5/8 | 10 | 7 | 6 1/8 | 35 3/4 | | | | | | | | | | | | | | | | | | 8.0 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STANDARD SIGN
W16-9P

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
State Traffic Engineer

DATE 3/7/19 PLATE NO. W16-9P.7

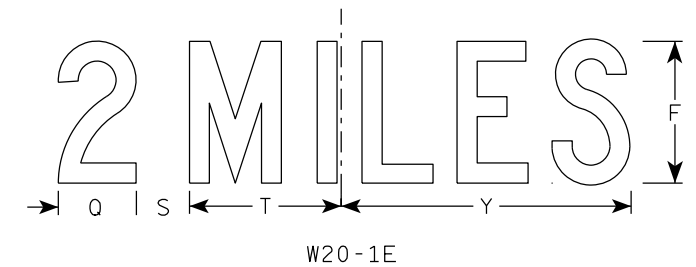
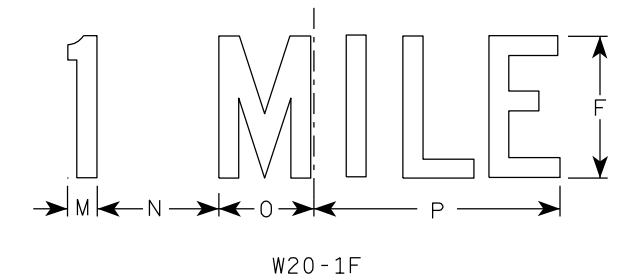
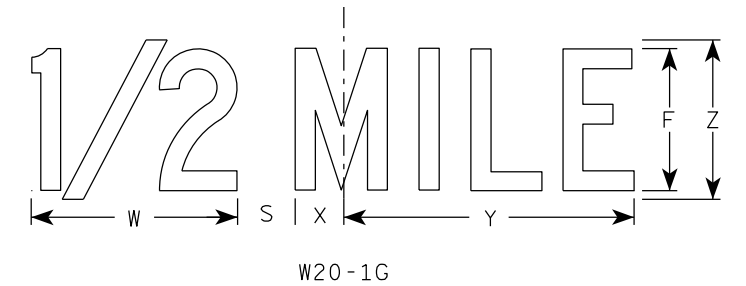
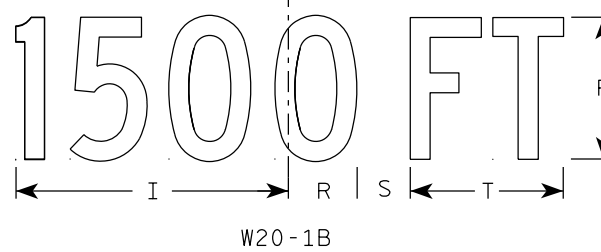
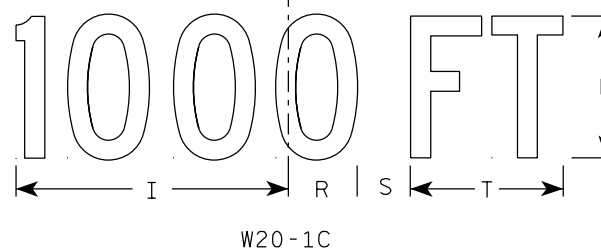
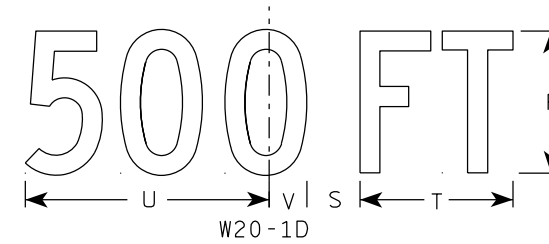
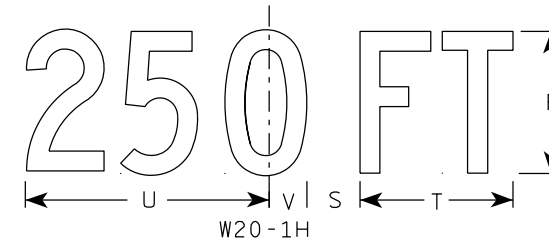
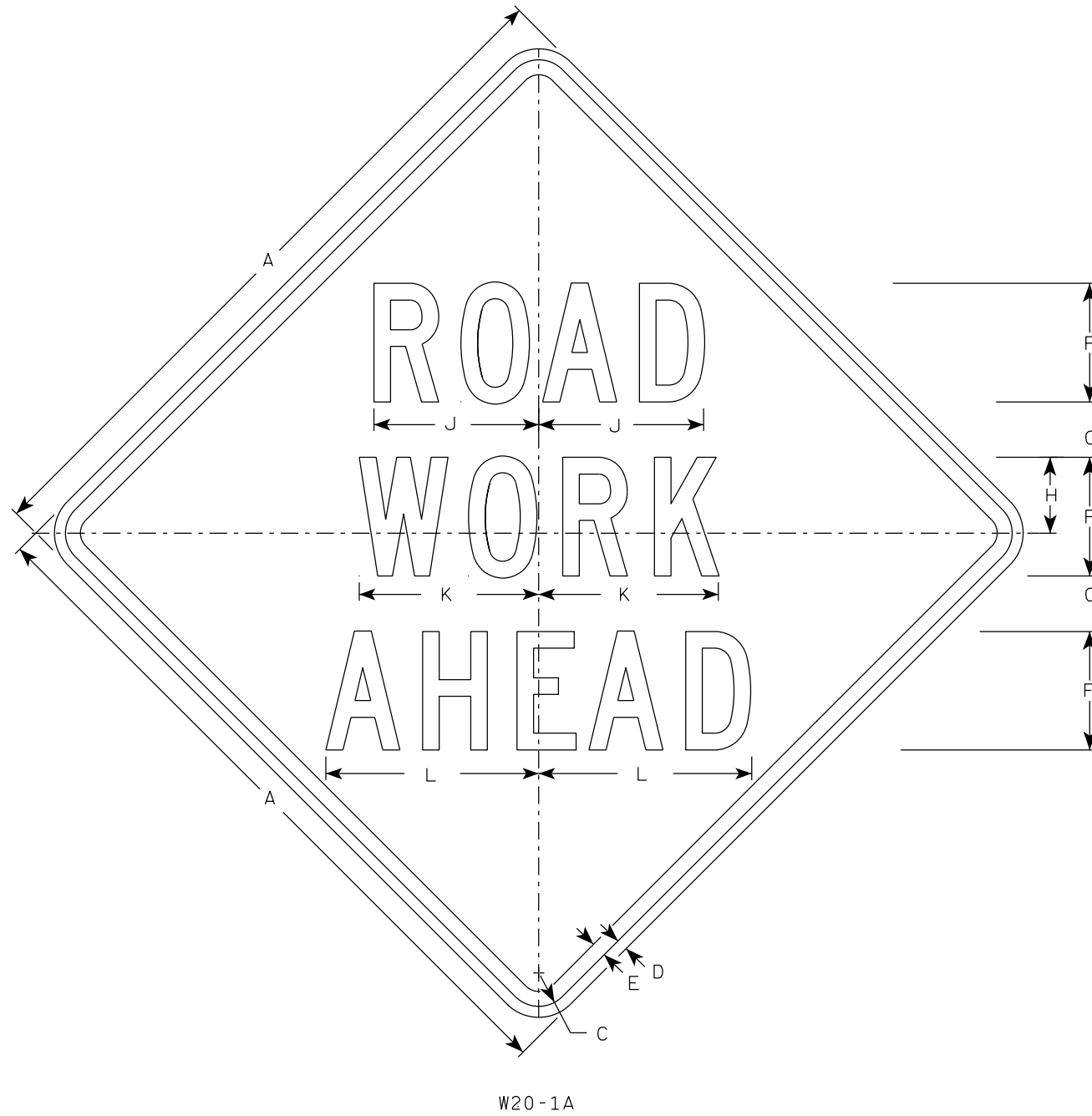
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

7

7

NOTES

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



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

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

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

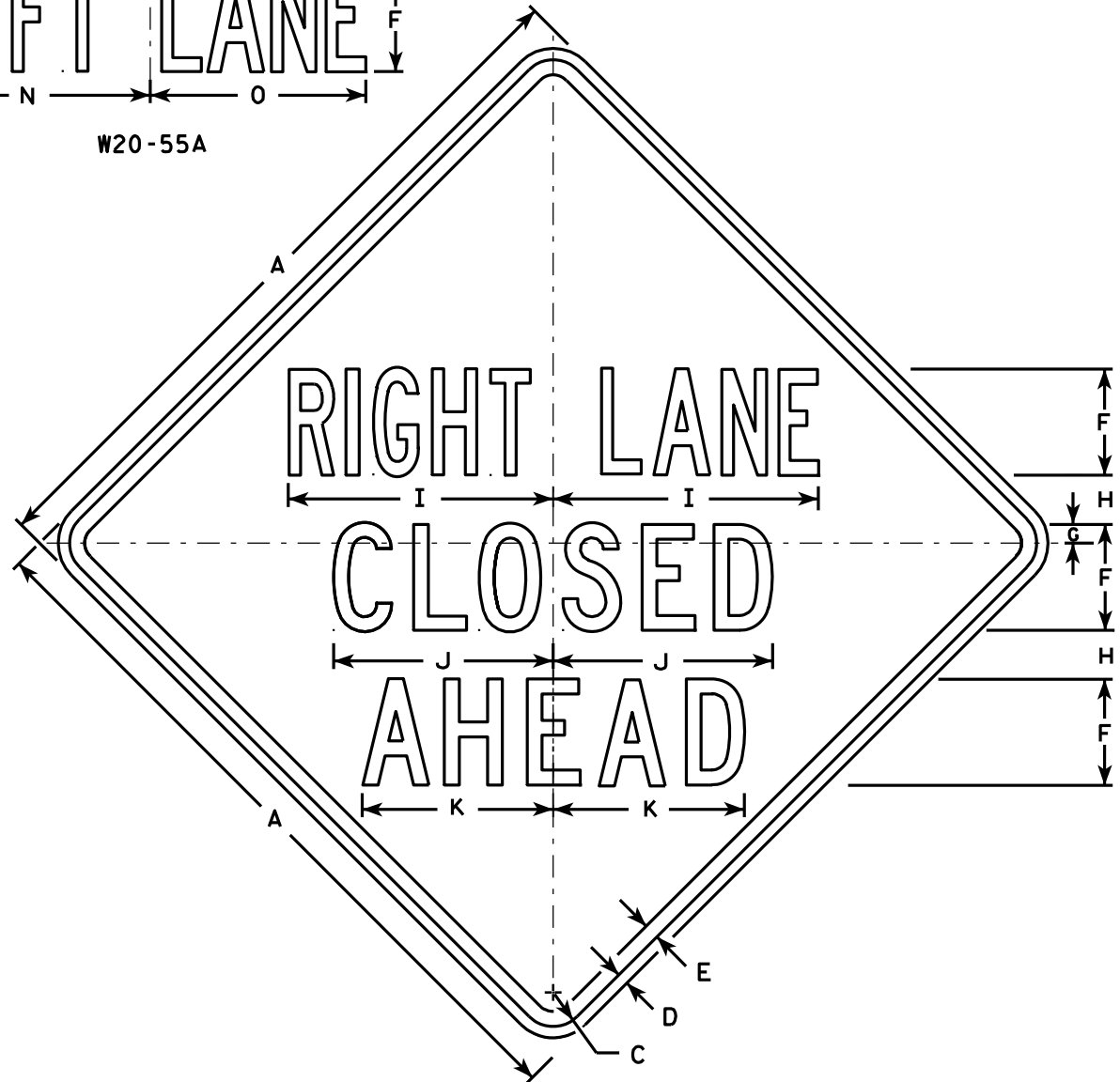
DATE 3/25/2020 PLATE NO. W20-1.11

CENTER LANE

W20-56A

LEFT LANE

W20-55A



W20-5A

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - See Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. ".....LANE" is Series B.
All other copy is Series C.

500 FT

W20-5D

1000 FT

W20-5C

1500 FT

W20-5B

1/2 MILE

W20-5G

1 MILE

W20-5F

7

7

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|---|-------|-----|-----|---|-------|-------|--------|--------|--------|--------|--------|----|--------|-------|-------|-------|-------|----|-------|-------|--------|-------|-------|--------|--------------|
| 1 | 36 | 6 | 1 5/8 | 5/8 | 3/4 | 5 | 7/8 | 2 1/2 | 13 1/8 | 10 3/4 | 9 1/2 | 14 1/4 | 13 5/8 | 12 | 12 | 1 3/8 | 1 1/8 | 4 1/2 | 3 1/2 | 9 | 1 7/8 | 5 5/8 | 10 1/8 | 2 1/2 | 1 3/4 | 8 | 9.0 |
| 2S | 48 | 8 | 2 1/4 | 3/4 | 1 | 7 | 1 1/4 | 3 1/4 | 17 1/2 | 14 3/8 | 12 5/8 | 19 | 18 3/8 | 16 | 14 1/4 | 1 7/8 | 1 1/2 | 6 | 4 5/8 | 12 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 2 3/8 | 10 5/8 | 16.0 |
| 2M | 48 | 8 | 2 1/4 | 3/4 | 1 | 7 | 1 1/4 | 3 1/4 | 17 1/2 | 14 3/8 | 12 5/8 | 19 | 18 3/8 | 16 | 14 1/4 | 1 7/8 | 1 1/2 | 6 | 4 5/8 | 12 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 2 3/8 | 10 5/8 | 16.0 |
| 3 | 48 | 8 | 2 1/4 | 3/4 | 1 | 7 | 1 1/4 | 3 1/4 | 17 1/2 | 14 3/8 | 12 5/8 | 19 | 18 3/8 | 16 | 14 1/4 | 1 7/8 | 1 1/2 | 6 | 4 5/8 | 12 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 2 3/8 | 10 5/8 | 16.0 |
| 4 | 48 | 8 | 2 1/4 | 3/4 | 1 | 7 | 1 1/4 | 3 1/4 | 17 1/2 | 14 3/8 | 12 5/8 | 19 | 18 3/8 | 16 | 14 1/4 | 1 7/8 | 1 1/2 | 6 | 4 5/8 | 12 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 2 3/8 | 10 5/8 | 16.0 |
| 5 | 48 | 8 | 2 1/4 | 3/4 | 1 | 7 | 1 1/4 | 3 1/4 | 17 1/2 | 14 3/8 | 12 5/8 | 19 | 18 3/8 | 16 | 14 1/4 | 1 7/8 | 1 1/2 | 6 | 4 5/8 | 12 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 2 3/8 | 10 5/8 | 16.0 |

STANDARD SIGN
W20-5A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

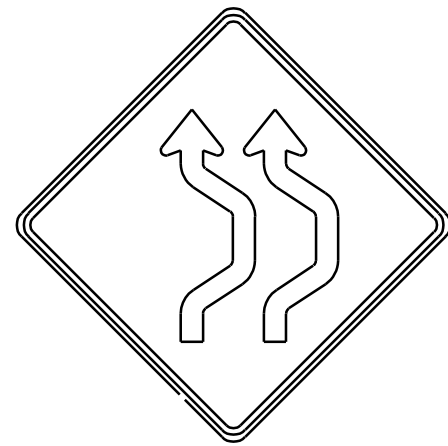
APPROVED *Matthew R Rauch*
For State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-5.11

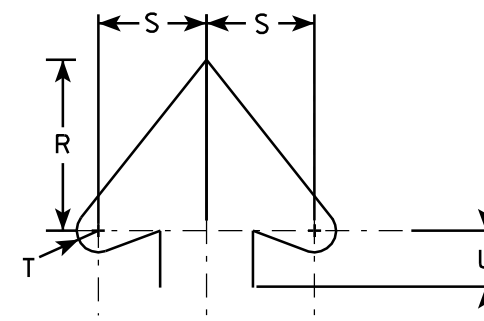
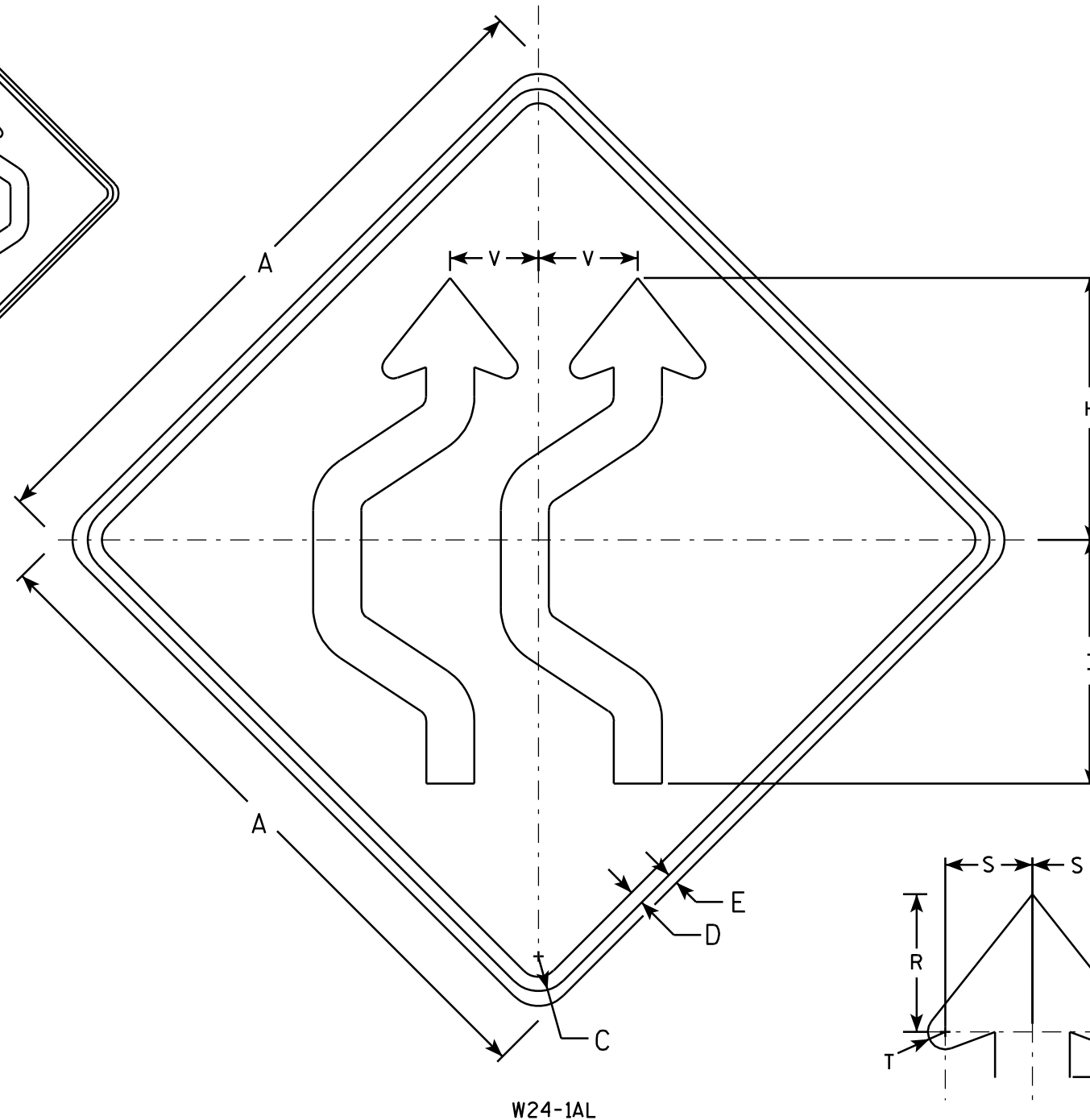
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E

NOTES

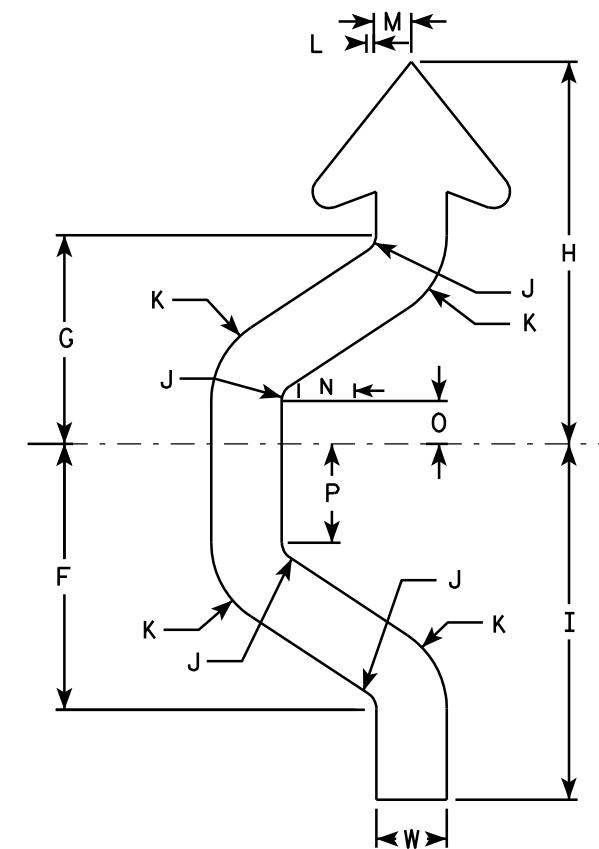
1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W24-1R is the same as W24-1L except reversed along the vertical centerline.



W24-1AR



Arrowhead Detail



Arrow Detail

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | O | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|---|-------|-----|-----|--------|--------|--------|--------|-----|-------|-----|-------|-------|-------|-------|---|-------|---|-----|-------|-------|-------|---|---|---|--------------|
| 1 | 36 | | 1 3/8 | 5/8 | 1/2 | 9 1/2 | 7 1/2 | 13 3/4 | 12 3/4 | 5/8 | 3 1/8 | 3/8 | 1 5/8 | 2 3/8 | 1 1/2 | 3 1/2 | | 4 5/8 | 3 | 5/8 | 1 1/2 | 4 3/4 | 2 1/2 | | | | 9 |
| 2S | 48 | | 2 1/4 | 1 | 3/4 | 12 7/8 | 10 1/8 | 18 1/2 | 17 1/4 | 7/8 | 4 1/4 | 3/8 | 2 1/8 | 3 1/4 | 2 | 4 3/4 | | 6 1/4 | 4 | 3/4 | 2 1/8 | 6 1/4 | 3 3/8 | | | | 16 |
| 2M | 48 | | 2 1/4 | 1 | 3/4 | 12 7/8 | 10 1/8 | 18 1/2 | 17 1/4 | 7/8 | 4 1/4 | 3/8 | 2 1/8 | 3 1/4 | 2 | 4 3/4 | | 6 1/4 | 4 | 3/4 | 2 1/8 | 6 1/4 | 3 3/8 | | | | 16 |
| 3 | 48 | | 2 1/4 | 1 | 3/4 | 12 7/8 | 10 1/8 | 18 1/2 | 17 1/4 | 7/8 | 4 1/4 | 3/8 | 2 1/8 | 3 1/4 | 2 | 4 3/4 | | 6 1/4 | 4 | 3/4 | 2 1/8 | 6 1/4 | 3 3/8 | | | | 16 |
| 4 | 48 | | 2 1/4 | 1 | 3/4 | 12 7/8 | 10 1/8 | 18 1/2 | 17 1/4 | 7/8 | 4 1/4 | 3/8 | 2 1/8 | 3 1/4 | 2 | 4 3/4 | | 6 1/4 | 4 | 3/4 | 2 1/8 | 6 1/4 | 3 3/8 | | | | 16 |
| 5 | 48 | | 2 1/4 | 1 | 3/4 | 12 7/8 | 10 1/8 | 18 1/2 | 17 1/4 | 7/8 | 4 1/4 | 3/8 | 2 1/8 | 3 1/4 | 2 | 4 3/4 | | 6 1/4 | 4 | 3/4 | 2 1/8 | 6 1/4 | 3 3/8 | | | | 16 |

STANDARD SIGN
W24-1AL

WISCONSIN DEPT OF TRANSPORTATION

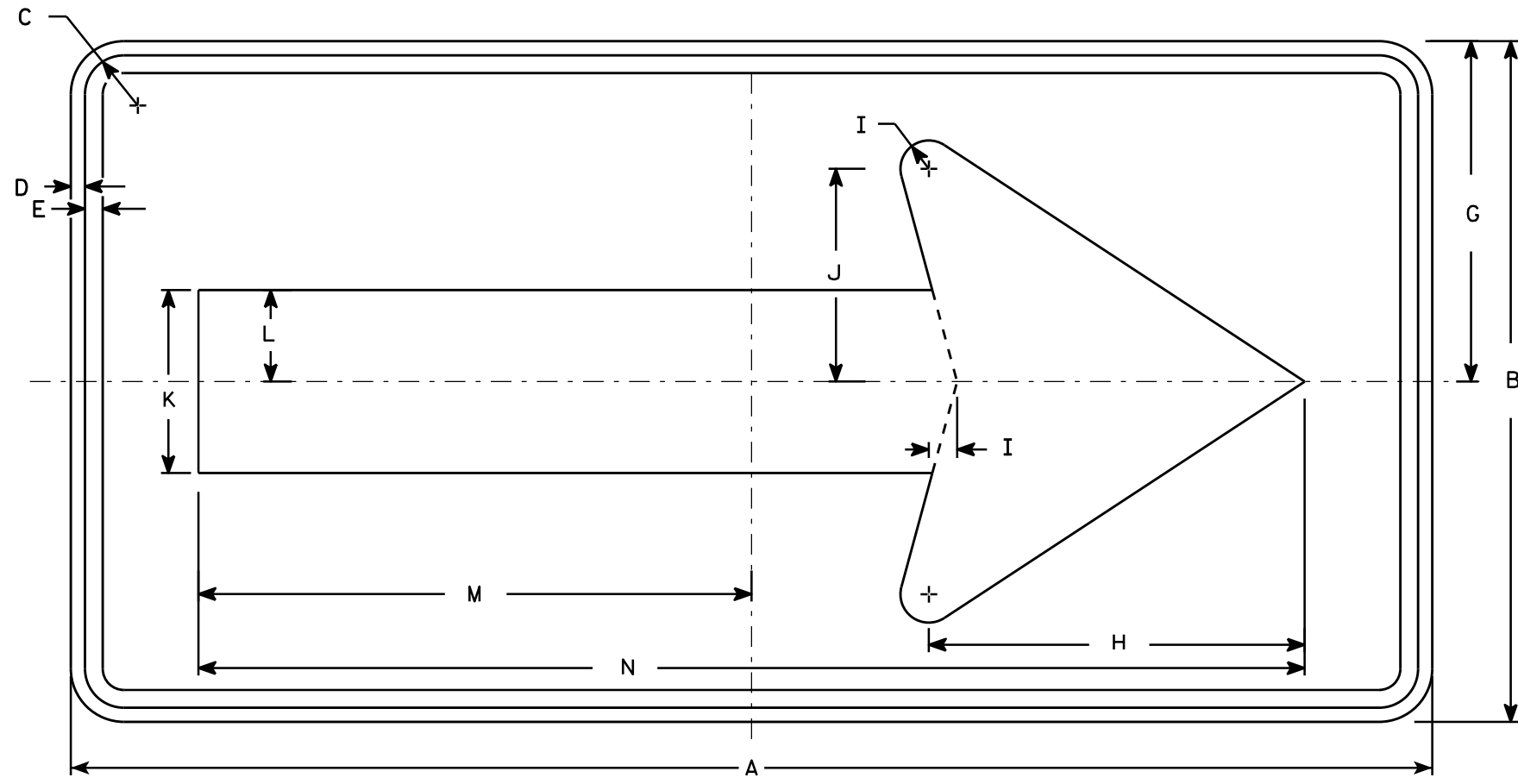
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/21/11 PLATE NO. W24-1AL.2

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

NOTES

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



W01-6

7

7

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|----|-------|-----|-----|---|----|--------|-------|-------|-------|-------|--------|--------|---|---|---|---|---|---|---|---|---|---|---|---|--------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 48 | 24 | 1 3/8 | 1/2 | 5/8 | | 12 | 13 1/4 | 1 | 7 1/2 | 6 1/2 | 3 1/4 | 19 1/2 | 39 | | | | | | | | | | | | | 8.0 |
| 2M | 48 | 24 | 1 3/8 | 1/2 | 5/8 | | 12 | 13 1/4 | 1 | 7 1/2 | 6 1/2 | 3 1/4 | 19 1/2 | 39 | | | | | | | | | | | | | 8.0 |
| 3 | 60 | 30 | 1 3/8 | 1/2 | 5/8 | | 15 | 16 1/4 | 1 1/4 | 9 1/4 | 8 | 4 | 24 3/8 | 48 3/4 | | | | | | | | | | | | | 12.5 |
| 4 | 60 | 30 | 1 3/8 | 1/2 | 5/8 | | 15 | 16 1/4 | 1 1/4 | 9 1/4 | 8 | 4 | 24 3/8 | 48 3/4 | | | | | | | | | | | | | 12.5 |
| 5 | 60 | 30 | 1 3/8 | 1/2 | 5/8 | | 15 | 16 1/4 | 1 1/4 | 9 1/4 | 8 | 4 | 24 3/8 | 48 3/4 | | | | | | | | | | | | | 12.5 |

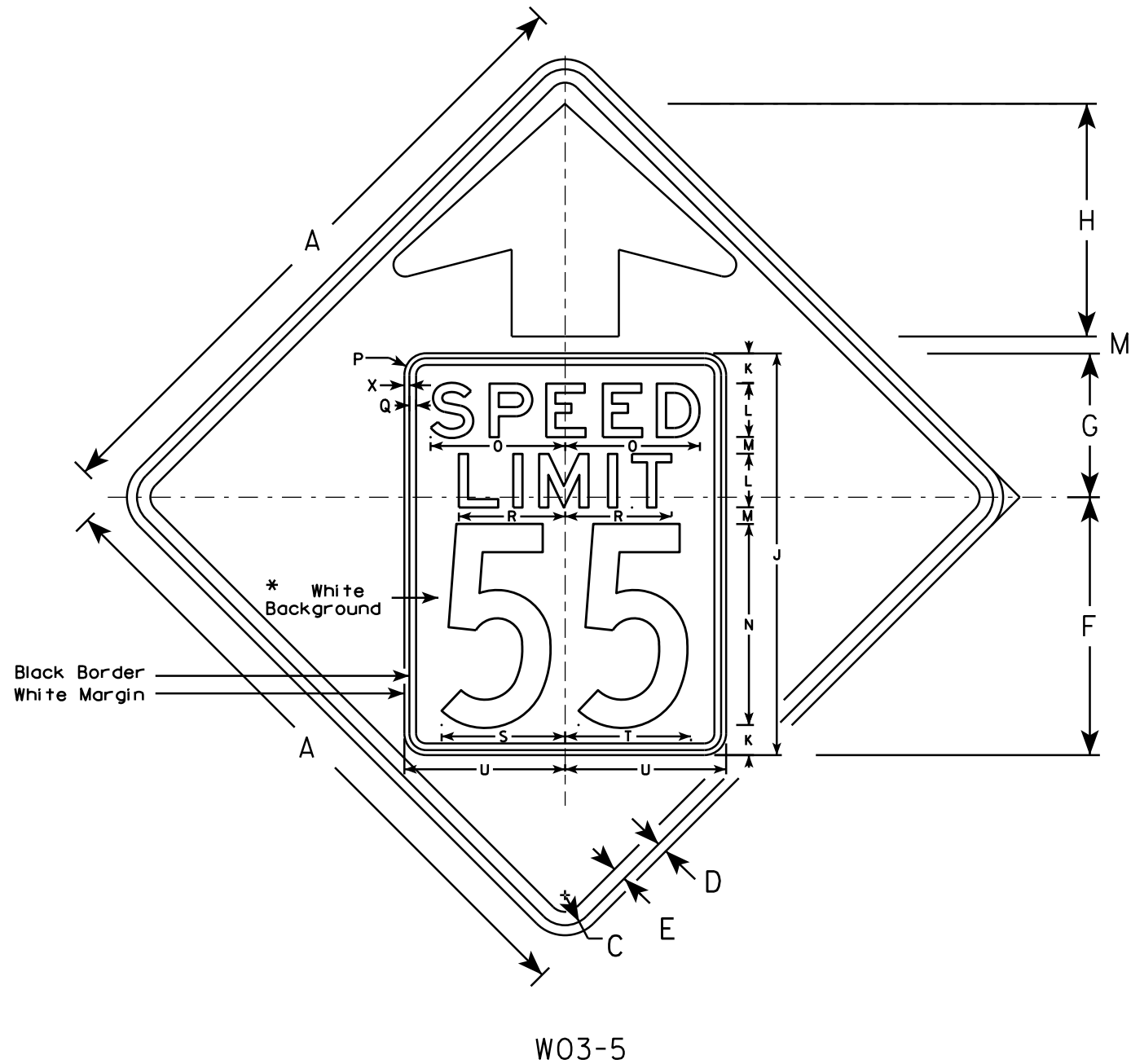
STANDARD SIGN
W01-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/18/13 PLATE NO. W01-6.1

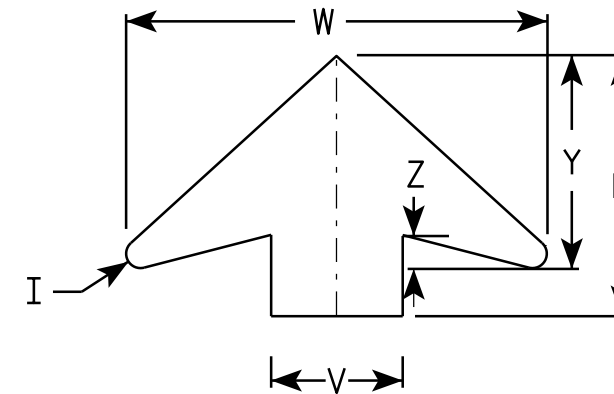
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color: *
Background - ORANGE*
Message - BLACK
3. Message Series - C for numbers Series E for wording
4. Substitute appropriate numerals and optically adjust spacing to achieve proper balance

*Speed Limit Sign shall have a White Background



ARROW DETAIL

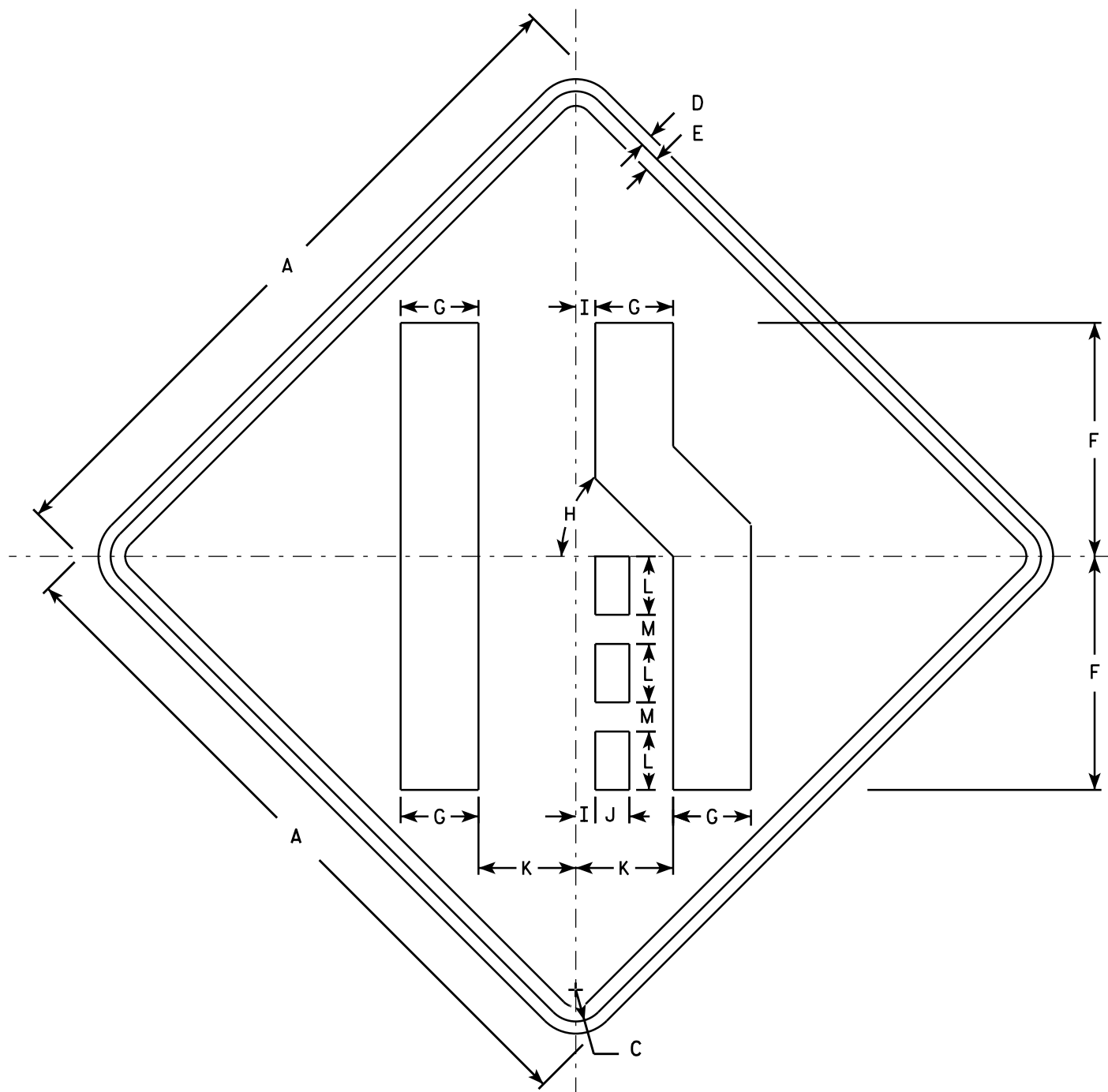
| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|---|-------|-----|-----|--------|--------|--------|-----|----|-------|---|-------|----|-------|-------|-----|-------|-------|-------|----|---|--------|-----|-------|-------|--------------|
| 1 | 36 | | 1 5/8 | 5/8 | 3/4 | 14 1/2 | 9 1/2 | 11 1/2 | 5/8 | 24 | 2 | 3 | 1 | 12 | 7 1/8 | 1 1/2 | 3/8 | 5 3/4 | 7 1/4 | 7 1/8 | 9 | 6 | 19 1/4 | 3/8 | 9 3/4 | 1 5/8 | 9.0 |
| 2S | 48 | | 2 1/4 | 3/4 | 1 | 19 1/4 | 10 3/4 | 17 3/8 | 7/8 | 30 | 2 1/4 | 4 | 1 1/4 | 15 | 10 | 1 5/8 | 1/2 | 8 | 9 1/4 | 9 3/8 | 12 | 8 | 25 5/8 | 3/8 | 13 | 2 | 16.0 |
| 2M | 48 | | 2 1/4 | 3/4 | 1 | 19 1/4 | 10 3/4 | 17 3/8 | 7/8 | 30 | 2 1/4 | 4 | 1 1/4 | 15 | 10 | 1 5/8 | 1/2 | 8 | 9 1/4 | 9 3/8 | 12 | 8 | 25 5/8 | 3/8 | 13 | 2 | 16.0 |
| 3 | 48 | | 2 1/4 | 3/4 | 1 | 19 1/4 | 10 3/4 | 17 3/8 | 7/8 | 30 | 2 1/4 | 4 | 1 1/4 | 15 | 10 | 1 5/8 | 1/2 | 8 | 9 1/4 | 9 3/8 | 12 | 8 | 25 5/8 | 3/8 | 13 | 2 | 16.0 |
| 4 | 48 | | 2 1/4 | 3/4 | 1 | 19 1/4 | 10 3/4 | 17 3/8 | 7/8 | 30 | 2 1/4 | 4 | 1 1/4 | 15 | 10 | 1 5/8 | 1/2 | 8 | 9 1/4 | 9 3/8 | 12 | 8 | 25 5/8 | 3/8 | 13 | 2 | 16.0 |
| 5 | 48 | | 2 1/4 | 3/4 | 1 | 19 1/4 | 10 3/4 | 17 3/8 | 7/8 | 30 | 2 1/4 | 4 | 1 1/4 | 15 | 10 | 1 5/8 | 1/2 | 8 | 9 1/4 | 9 3/8 | 12 | 8 | 25 5/8 | 3/8 | 13 | 2 | 16.0 |

STANDARD SIGN
W03-5

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 11/20/13 PLATE NO. W03-5.1



W04-2R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W04-2L is the same as W04-2R except the symbols is reversed along the vertical centerline.

7

7

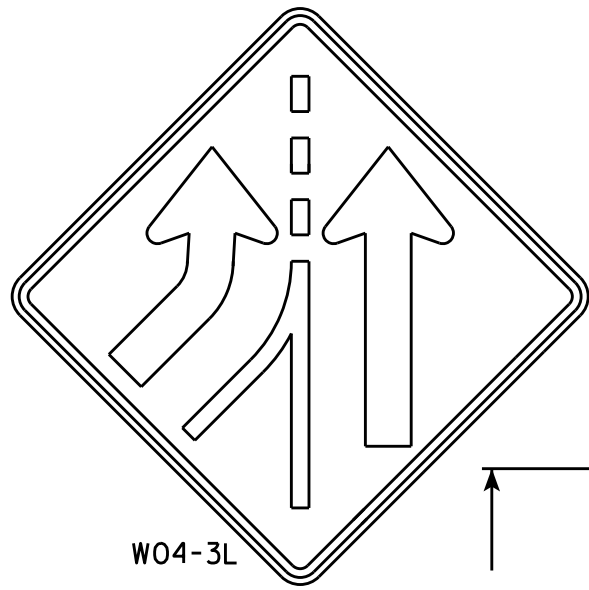
| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|---|-------|-----|-----|----|-------|-----|-------|-------|-------|---|-------|---|---|---|---|---|---|---|---|---|---|---|---|---|--------------|
| 1 | 36 | | 1 5/8 | 5/8 | 3/4 | 12 | 4 | 45° | 1 | 1 3/4 | 5 | 3 | 1 1/2 | | | | | | | | | | | | | | 9.0 |
| 2S | 48 | | 2 1/4 | 3/4 | 1 | 16 | 5 3/8 | 45° | 1 1/4 | 2 3/8 | 6 3/4 | 4 | 2 | | | | | | | | | | | | | | 16.0 |
| 2M | 48 | | 2 1/4 | 3/4 | 1 | 16 | 5 3/8 | 45° | 1 1/4 | 2 3/8 | 6 3/4 | 4 | 2 | | | | | | | | | | | | | | 16.0 |
| 3 | 48 | | 2 1/4 | 3/4 | 1 | 16 | 5 3/8 | 45° | 1 1/4 | 2 3/8 | 6 3/4 | 4 | 2 | | | | | | | | | | | | | | 16.0 |
| 4 | 48 | | 2 1/4 | 3/4 | 1 | 16 | 5 3/8 | 45° | 1 1/4 | 2 3/8 | 6 3/4 | 4 | 2 | | | | | | | | | | | | | | 16.0 |
| 5 | 48 | | 2 1/4 | 3/4 | 1 | 16 | 5 3/8 | 45° | 1 1/4 | 2 3/8 | 6 3/4 | 4 | 2 | | | | | | | | | | | | | | 16.0 |

STANDARD SIGN
W04-2

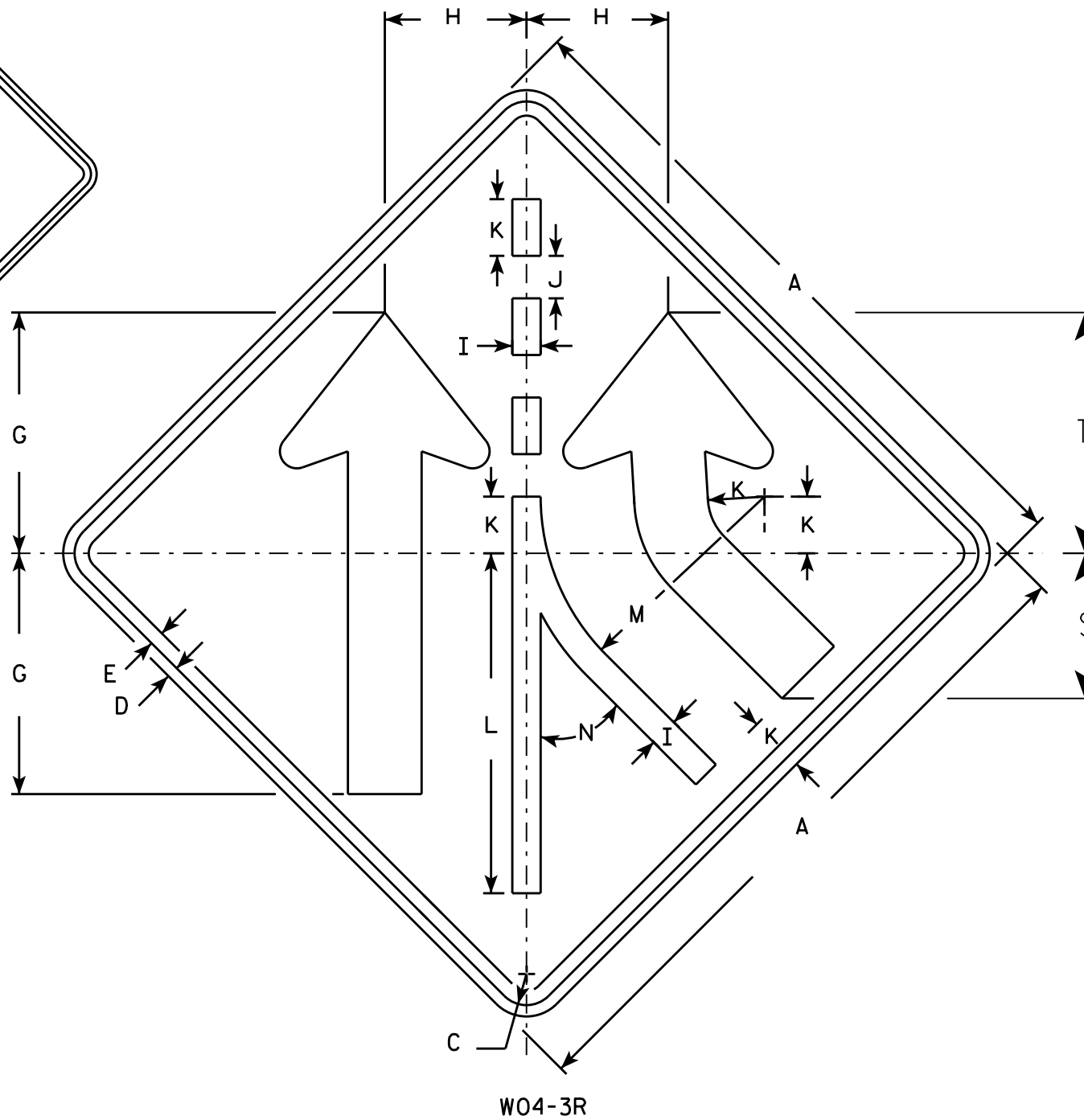
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 11/20/13 PLATE NO. W04-2.1



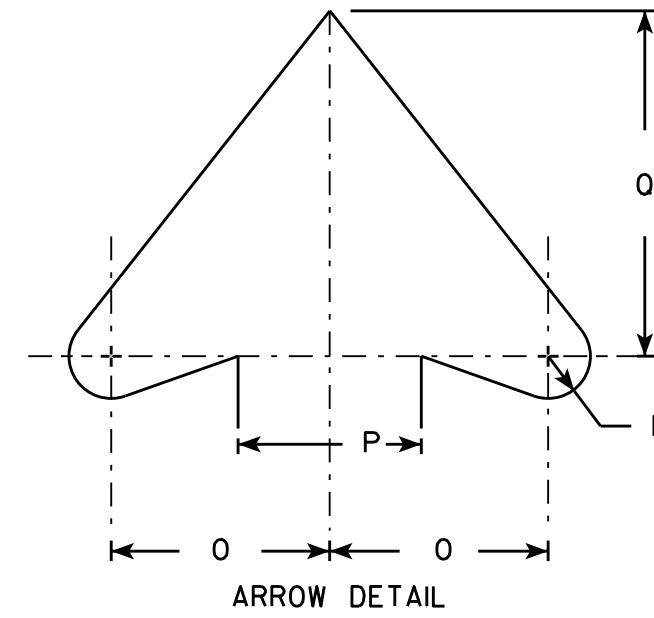
W04-3L



W04-3R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W04-3 L is the same as W04-3 R except the arrow is reversed along the vertical centerline.



ARROW DETAIL

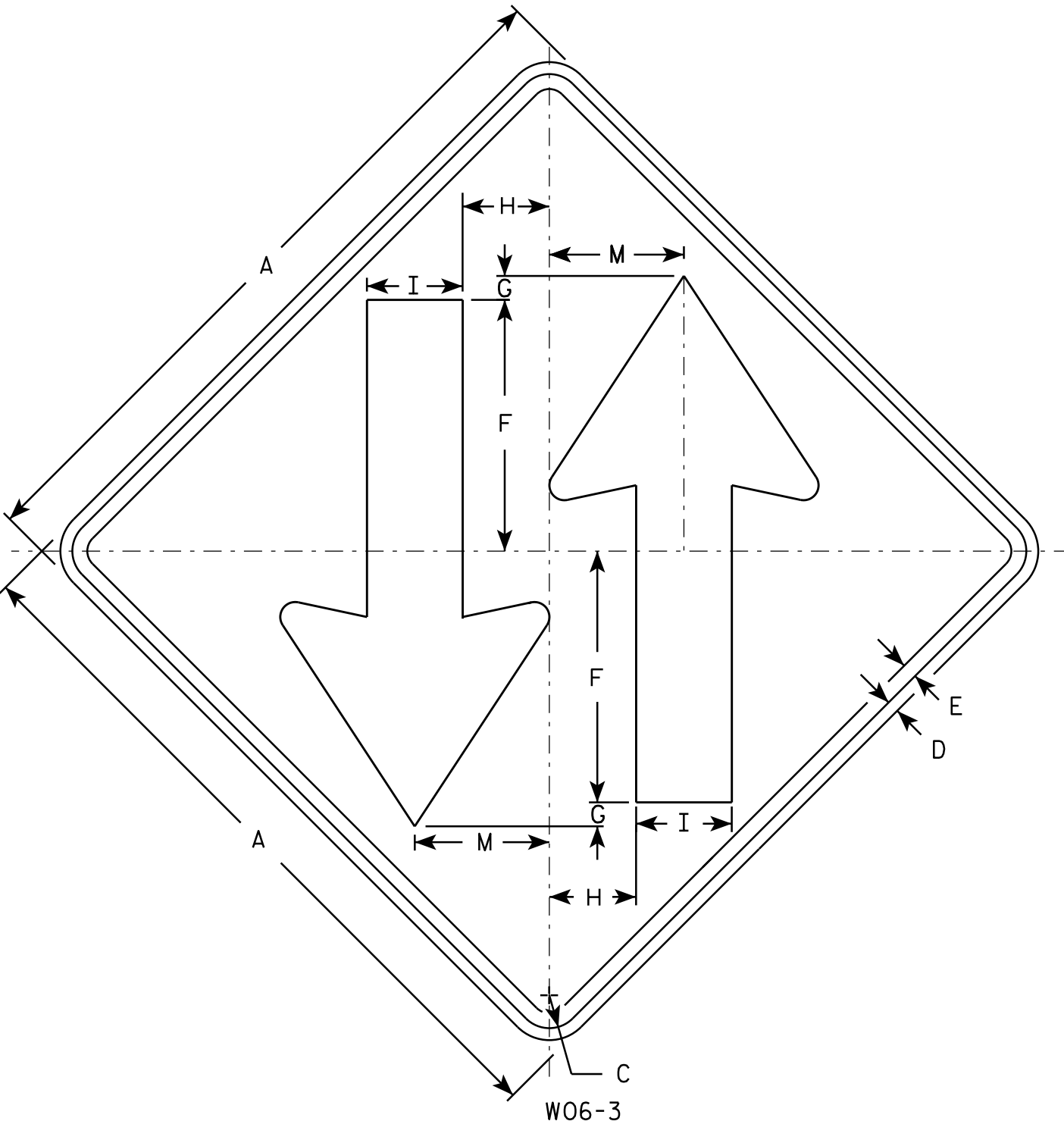
| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|---|-------|-----|-----|---|--------|-------|-------|-------|---|----|--------|-----|-------|-------|-------|-------|--------|--------|---|---|---|---|---|---|--------------|
| 1 | 36 | | 1 5/8 | 5/8 | 3/4 | | 12 3/4 | 7 1/2 | 1 1/2 | 2 1/4 | 3 | 18 | 11 7/8 | 45° | 4 5/8 | 4 | 7 3/8 | 7/8 | 7 3/4 | 12 3/4 | | | | | | | 9.0 |
| 2S | 48 | | 2 1/4 | 3/4 | 1 | | 17 | 10 | 2 | 3 | 4 | 24 | 15 3/4 | 45° | 6 1/4 | 5 1/2 | 9 7/8 | 1 1/4 | 10 1/4 | 17 | | | | | | | 16.0 |
| 2M | 48 | | 2 1/4 | 3/4 | 1 | | 17 | 10 | 2 | 3 | 4 | 24 | 15 3/4 | 45° | 6 1/4 | 5 1/2 | 9 7/8 | 1 1/4 | 10 1/4 | 17 | | | | | | | 16.0 |
| 3 | 48 | | 2 1/4 | 3/4 | 1 | | 17 | 10 | 2 | 3 | 4 | 24 | 15 3/4 | 45° | 6 1/4 | 5 1/2 | 9 7/8 | 1 1/4 | 10 1/4 | 17 | | | | | | | 16.0 |
| 4 | 48 | | 2 1/4 | 3/4 | 1 | | 17 | 10 | 2 | 3 | 4 | 24 | 15 3/4 | 45° | 6 1/4 | 5 1/2 | 9 7/8 | 1 1/4 | 10 1/4 | 17 | | | | | | | 16.0 |
| 5 | 48 | | 2 1/4 | 3/4 | 1 | | 17 | 10 | 2 | 3 | 4 | 24 | 15 3/4 | 45° | 6 1/4 | 5 1/2 | 9 7/8 | 1 1/4 | 10 1/4 | 17 | | | | | | | 16.0 |

STANDARD SIGN
W0433

WISCONSIN DEPT OF TRANSPORTATION

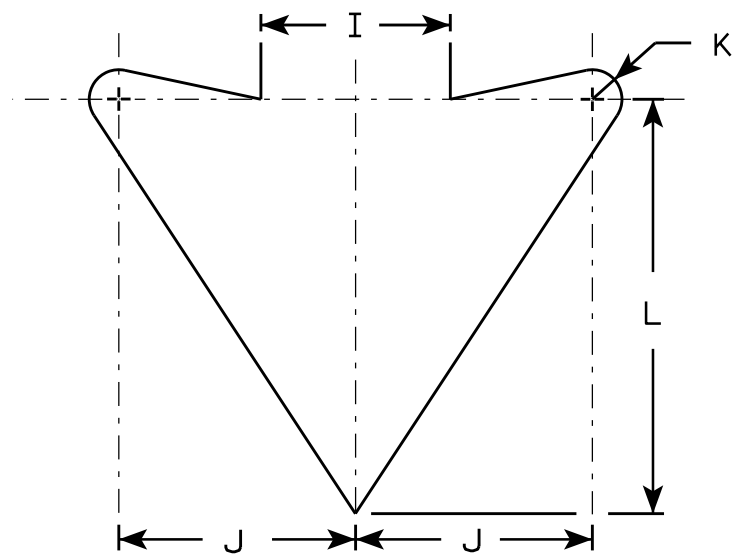
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/20/13 PLATE NO. W04-3.1



NOTES

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



ARROW DETAIL

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

STANDARD SIGN
W06-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Raub*
For State Traffic Engineer

DATE 11/20/13 PLATE NO. W06-3.1

DESIGN DATA

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

EARTH LOAD: DESIGNED FOR FILL HEIGHT RANGE OF 1.0 TO 2.1 FEET

MATERIAL PROPERTIES:
 CONCRETE MASONRY.....f'c = 3,500 P.S.I.
 PRECAST CONCRETE.....f'c = 5,000 P.S.I.
 BAR STEEL REINFORCEMENT
 HIGH STRENGTH, GRADE 60.....fy = 60,000 P.S.I.
 STEEL REINFORCEMENT (WIRE).....fy = 65,000 P.S.I.

TRAFFIC DATA

GOOD HOPE ROAD
 A.A.D.T = 26,870 (2019)
 A.A.D.T = 40,760 (2042)
 RDS = 45 MPH

HYDRAULIC DATA

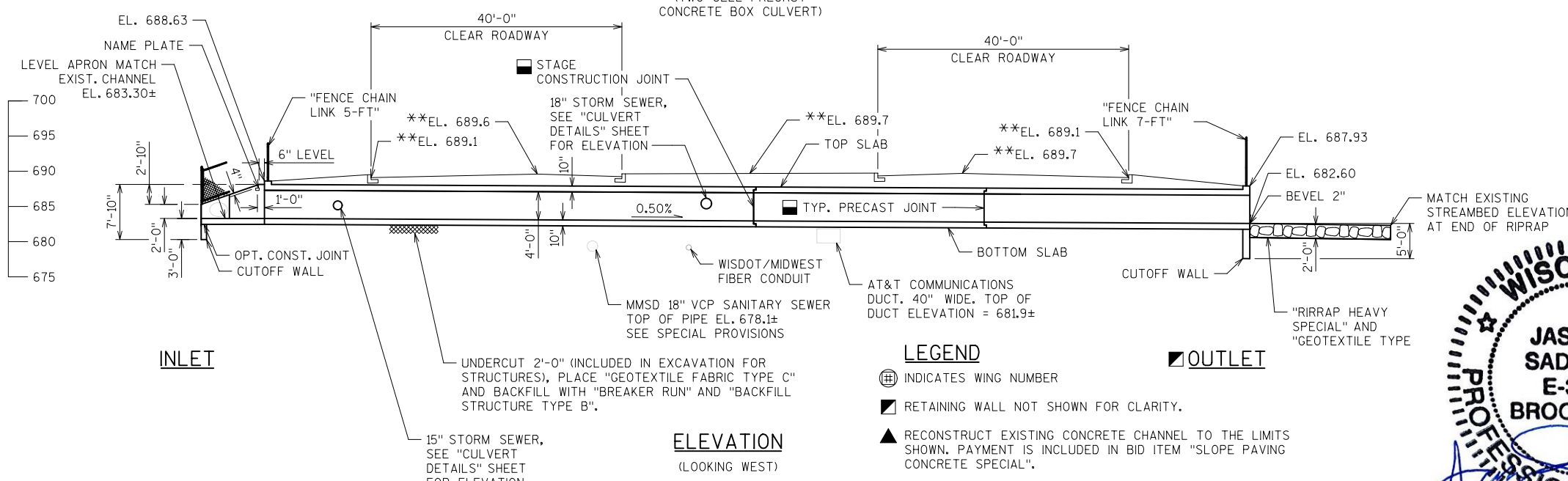
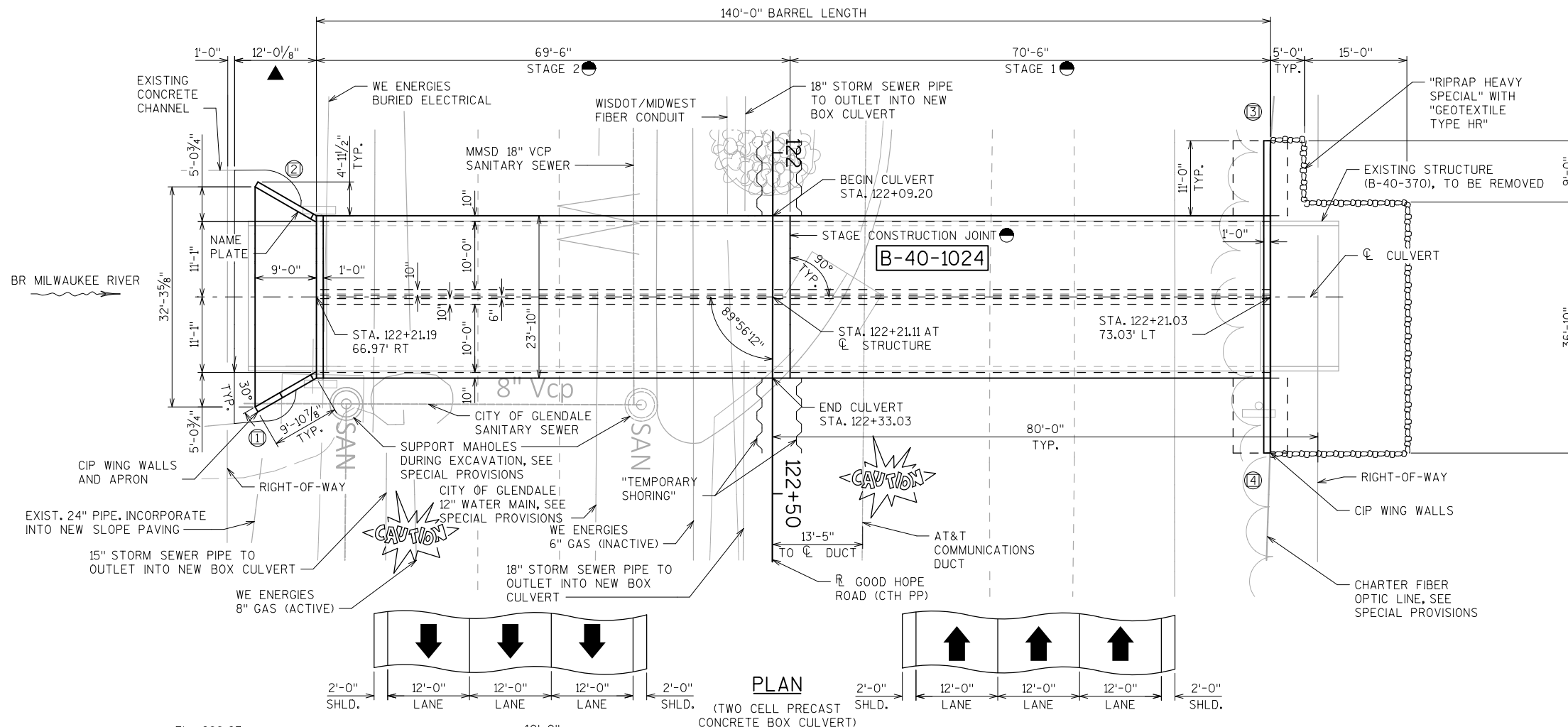
100 YEAR FREQUENCY
 Q(100) = 1,380 C.F.S.
 Q(100) BOX = 483 C.F.S.
 Q(100) OVERFLOW = 897 C.F.S.
 HW(100) = EL. 690.55
 VEL(100) = 6.27 F.P.S.
 WATERWAY AREA = 77 SQ. FT.
 DRAINAGE AREA = 0.63 SQ. MI.
 ROADWAY OVERTOPPING = 10 YEARS
 SCOUR CRITICAL CODE = 8

2 YEAR FREQUENCY
 Q(2) = 401 C.F.S.
 HW(2) = EL. 688.06
 VEL(2) = 10.92 F.P.S.

OVERTOPPING FREQUENCY
 Q(10) = 700 c.f.s.
 WATER SURFACE EL. = 690.51
 FREQUENCY = 10 YEARS

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. STAGING DETAILS
4. PRECAST BOX CULVERT
5. CULVERT DETAILS
6. APRON DETAILS
7. WINGS 1 & 2 DETAILS
8. WINGS 3 & 4 DETAILS
9. CHANNEL DETAILS
10. CHAIN LINK FENCE DETAILS
11. SUBSURFACE EXPLORATION



- LEGEND**
- ⊕ INDICATES WING NUMBER
 - ▣ RETAINING WALL NOT SHOWN FOR CLARITY.
 - ▲ RECONSTRUCT EXISTING CONCRETE CHANNEL TO THE LIMITS SHOWN. PAYMENT IS INCLUDED IN BID ITEM "SLOPE PAVING CONCRETE SPECIAL".
 - THE CONTRACTOR MAY ADJUST THE STAGE CONSTRUCTION LIMITS BASED ON THE PRECAST CULVERT JOINT LOCATIONS.
 - ** ELEVATIONS ARE APPROXIMATE ROADWAY ELEVATIONS ABOVE THE CULVERT. SEE ROADWAY PLANS FOR EXACT PAVING ELEVATIONS.
 - 18" RMW AT THE PRECAST JOINTS ALONG THE UPPER 1' OF THE EXTERIOR WALLS, ACROSS THE TOP SLAB, AND ALONG THE LONGITUDINAL JOINT BETWEEN BOX UNITS.

BENCH MARKS

| NO. | STATION | OFFSET | DESCRIPTION | ELEV. |
|-----|-----------|-----------|---|--------|
| 10 | 121+51.69 | 0.22' RT | ON SE ANCHOR BOLT OF MEDIAN LIGHTPOLE | 689.15 |
| 11 | 122+95.64 | 59.94' RT | ON NW ANCHOR BOLT OF LIGHTPOLE S OF GOOD HOPE | 690.37 |



STRUCTURE DESIGN CONTACTS
 BUREAU OF STRUCTURES:
 AARON BONK (608) 261-0261
 CONSULTANT:
 JASON SADOWSKI (414) 751-9986

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

Michael Baker INTERNATIONAL
 250 E. WISCONSIN STREET
 SUITE 1725
 MILWAUKEE, WI 53202

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

ACCEPTED: *[Signature]* SDR **11/15/21**
 CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-40-1024

GOOD HOPE RD (CTH PP) OVER BR MILWAUKEE RIVER

COUNTY: MILWAUKEE | TOWN/CITY/VILLAGE: MILWAUKEE/GLENDALE

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY: DRH | DESIGN CK'D.: JRS | DRAWN BY: ABP | PLANS CK'D.: JRS

GENERAL PLAN

SHEET 1 OF 1

GENERAL NOTES

THE EXISTING STRUCTURE, B-40-0370, IS A TWIN CELL CAST IN PLACE CONCRETE BOX CULVERT, WITH A WIDTH OF 22'-0" AND A LENGTH OF 160'-0", TO BE REMOVED UNDER THE BID ITEM "REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS B-40-0370".

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

DRAWINGS SHALL NOT BE SCALED.

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

BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS NOTED OTHERWISE.

PRECAST BOX STEEL REINFORCEMENT MAY BE EITHER GRADE 60 DEFORMED BARS (FY = 60,000 P.S.I.) OR WELDED DEFORMED - WIRE FABRIC OF EQUIVALENT AREA (FY = 65,000 P.S.I.). USE EPOXY COATED REINFORCEMENT.

THE CONTRACTOR IS RESPONSIBLE FOR STREAM DIVERSION DURING CONSTRUCTION OF THE NEW BOX CULVERT, WHICH WILL BE PAID FOR UNDER THE ITEM "TEMPORARY STREAM DIVERSION B-40-1024", SEE ROADWAY PLANS FOR PAY ITEM. IT IS ANTICIPATED THAT THE CULVERT WILL BE CONSTRUCTED ONE CELL AT A TIME TO ALLOW FOR USE OF THE EXISTING CULVERT TO DIVERT WATER. THIS PROCESS WILL BE REPEATED FOR EACH OF THE TWO CONSTRUCTION STAGES. THE CONTRACTOR MAY PROVIDE ALTERNATE DIVERSION CONCEPTS FOR ENGINEER APPROVAL.

ALTERNATIVE DETAILS OF EQUAL STRENGTH AND HYDRAULIC CAPACITY TO THE DETAILS SHOWN ON THIS SHEET MAY BE PROPOSED TO THE ENGINEER FOR REVIEW AND APPROVAL.

PROVIDE CONNECTION OF THE EXISTING STORM SEWER PIPES TO THE NEW BOX CULVERT CELLS AS SHOWN ON SHEET 1. CONNECTION OF THE EXISTING STORM SEWER PIPES IS INCLUDED WITH THE BID ITEM "PRECAST CONCRETE BOX CULVERT 10' X 4'".

THE PRECAST ELEMENTS SHALL BE PROVIDED WITH SUITABLE LIFTING DEVICES FOR HANDLING AND PLACEMENT OF THE ELEMENTS.

USE CAUTION DURING REMOVAL, EXCAVATION, BACKFILL AND OTHER CONSTRUCTION OPERATIONS IN VICINITY OF THE AT&T AND WISDOT COMMUNICATIONS DUCT DUE TO CLOSE PROXIMITY TO THE EXISTING AND PROPOSED WORK. DO NOT COMPACT NEW BACKFILL OVER THE DUCT.

THE MAXIMUM BAR SIZE OF GRADE 60 DEFORMED BARS SHALL BE #5 UNLESS NOTED OTHERWISE, FOR USE IN THE PRECAST CONCRETE BOX CULVERT UNITS.

NON-SHRINK GROUT SHALL BE FURNISHED FROM THE DEPARTMENT'S APPROVED MATERIALS LIST. COST IS INCLUDED IN BID ITEM "PRECAST CONCRETE BOX CULVERT 10' X 4'".

SUBMIT SHOP ASSEMBLY DRAWINGS TO THE ENGINEER PRIOR TO FABRICATION.

SUBMIT ERECTION SEQUENCE DRAWINGS TO THE ENGINEER PRIOR TO DELIVERY OF PRECAST UNITS TO SITE.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES CULVERTS B-40-1024" SHALL BE THE EXISTING GROUND LINE.

ALL SPACES EXCAVATED AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TO THE ELEVATION AND SECTION EXISTING PRIOR TO EXCAVATION WITHIN THE LENGTH OF THE BOX.

THE CONCRETE IN THE CUT OFF WALL MAY BE PLACED UNDERWATER IF THE EXCAVATION CANNOT BE DEWATERED.

THE ALTERNATE CUT OFF WALL MAY BE USED IN LIEU OF THE CAST-IN-PLACE CONCRETE CUT OFF WALLS. PAYMENT SHALL BE BASED ON CONCRETE CUT OFF WALLS.

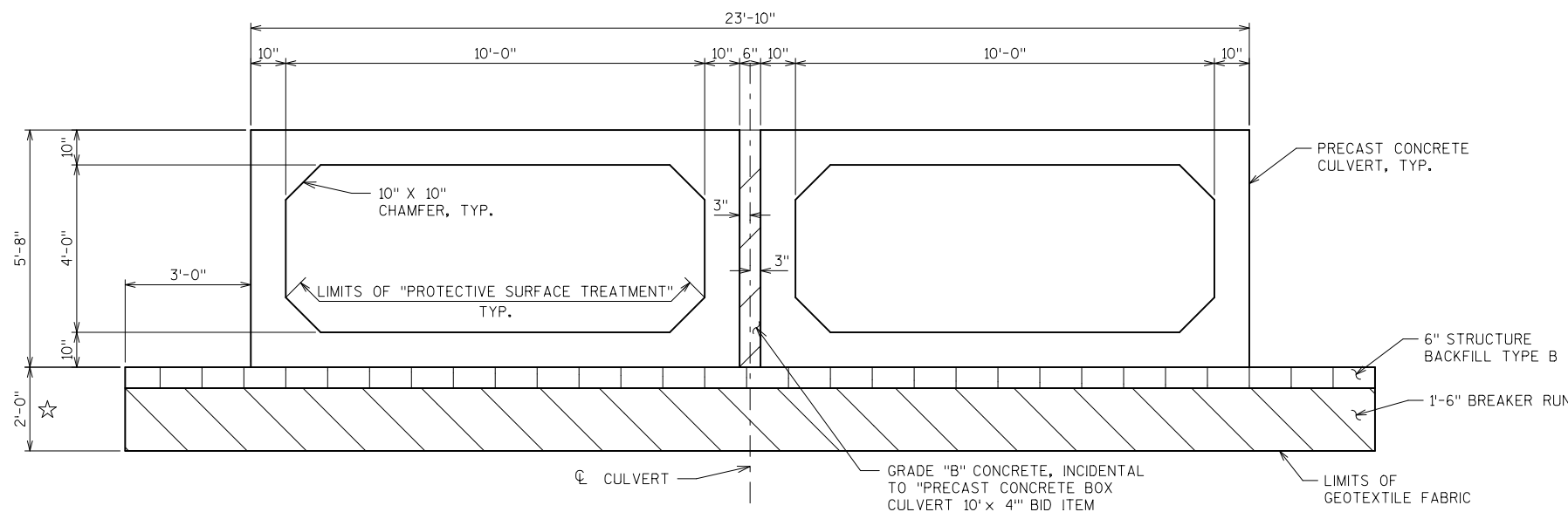
CONTAMINATED SOILS ARE PRESENT WITHIN THE STRUCTURE EXCAVATION LIMITS. SEE ROADWAY PLANS FOR LIMITS, BID ITEMS, AND QUANTITIES. SEE SPECIAL PROVISIONS FOR DETAILS ON REMOVAL AND DISPOSAL.

APPLY "PROTECTIVE SURFACE TREATMENT" TO THE APRON AND BOTTOM SLAB OF THE PRECAST CONCRETE CULVERT.

☆ UNDER CUT 2'-0". EXCAVATION FOR UNDER CUT TO BE INCLUDED IN EXCAVATION FOR STRUCTURES.

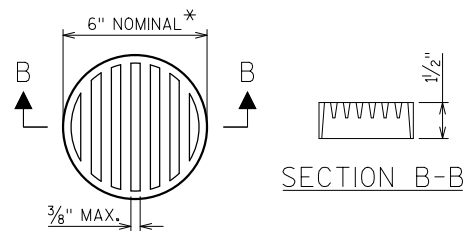
▲ BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO "EXCAVATION FOR STRUCTURES CULVERTS B-40-1024". LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

■ "PIPE UNDERDRAIN WRAPPED (6-INCH)", SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.



CROSS SECTION THRU BOX

(LOOKING NORTH)

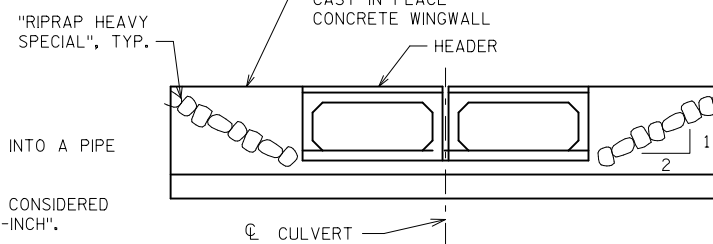


RODENT SHIELD DETAIL

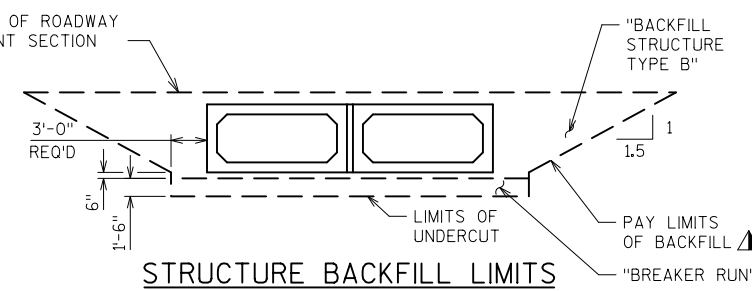
*DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

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

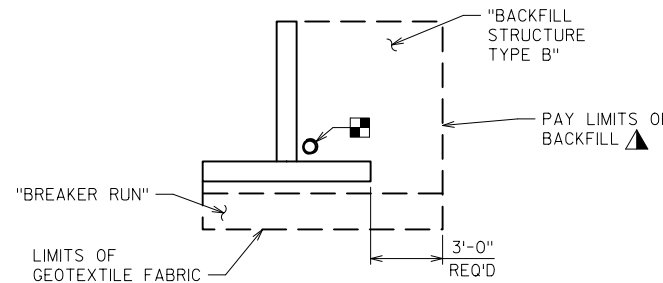
THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH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



NORTH END VIEW



STRUCTURE BACKFILL LIMITS



STRUCTURE BACKFILL LIMITS - AT WINGS

TOTAL ESTIMATED QUANTITIES

| ITEM NUMBER | ITEM DESCRIPTION | UNIT | TOTAL |
|---------------|---|------|-------|
| 203.0260 | REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS B-40-0370 | EACH | 1 |
| 206.2000.01 | EXCAVATION FOR STRUCTURES CULVERTS B-40-1024 | LS | 1 |
| 210.2500 | BACKFILL STRUCTURE TYPE B | TON | 1,178 |
| 311.0115 | BREAKER RUN | CY | 263 |
| 502.3200 | PROTECTIVE SURFACE TREATMENT | SY | 340 |
| 504.0100 | CONCRETE MASONRY CULVERTS | CY | 30 |
| 504.2000.S.01 | PRECAST CONCRETE BOX CULVERT 10' X 4' | LF | 280 |
| 505.0400 | BAR STEEL REINFORCEMENT HS STRUCTURES | LB | 560 |
| 505.0600 | BAR STEEL REINFORCEMENT HS COATED STRUCTURES | LB | 1,590 |
| 505.0904 | BAR COUPLERS NO. 4 | EACH | 12 |
| 511.1100 | TEMPORARY SHORING | SF | 620 |
| 516.0500 | RUBBERIZED MEMBRANE WATERPROOFING | SY | 107 |
| 612.0406 | PIPE UNDERDRAIN WRAPPED 6-INCH | LF | 42 |
| 616.0205 | FENCE CHAIN LINK 5-FT | LF | 40 |
| 616.0207 | FENCE CHAIN LINK 7-FT | LF | 46 |
| 645.0105 | GEOTEXTILE TYPE C | SY | 560 |
| 645.0120 | GEOTEXTILE TYPE HR | SY | 120 |
| SPV.0035.01 | RIPRAP HEAVY SPECIAL | CY | 70 |
| SPV.0180.01 | SLOPE PAVING CONCRETE SPECIAL | SY | 17 |
| NON-BID ITEMS | | | |
| | FILLER | SIZE | 3/4" |
| | NAMEPLATE | EACH | 1 |

| NO. | DATE | REVISION | BY |
|--|------|----------|-----------------|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | | | |
| STRUCTURE B-40-1024 | | | |
| DRAWN BY | | ABP | PLANS CK'D. JRS |
| CROSS SECTION & QUANTITIES | | | SHEET 1 OF 1 |

STAGE CONSTRUCTION NOTES

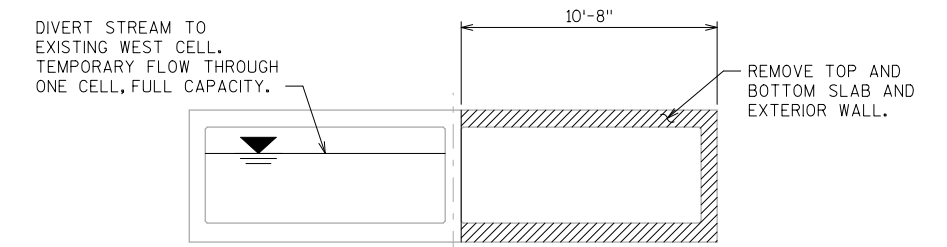
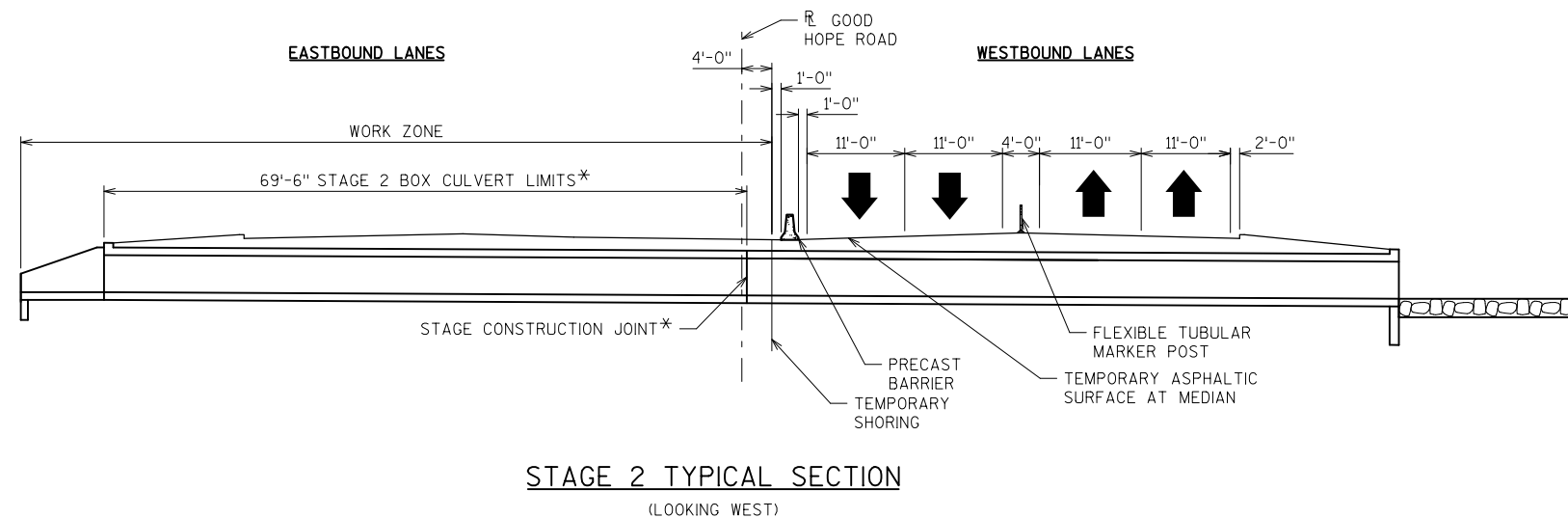
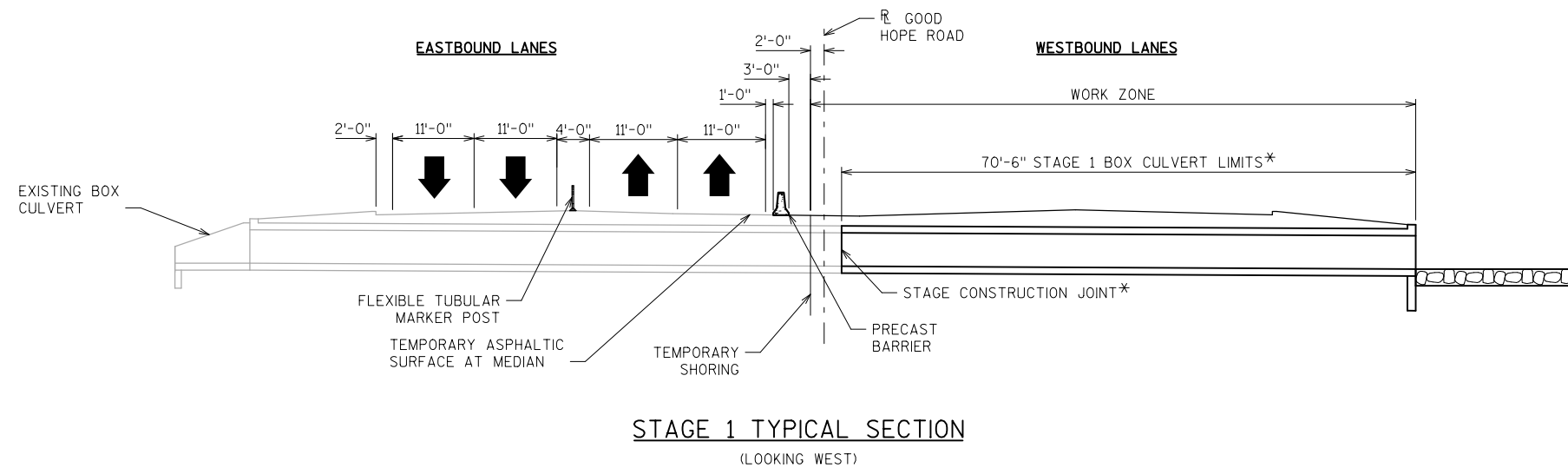
THE BOX CULVERT WILL BE CONSTRUCTED IN TWO STAGES WITH TWO LANES OF BIDIRECTIONAL TRAFFIC SHIFTED TO ONE SIDE OF GOOD HOPE ROAD. DURING EACH CONSTRUCTION STAGE THE BOX CULVERT CELLS WILL BE CONSTRUCTED ONE AT A TIME TO ALLOW FOR STREAM DIVERSION DURING CONSTRUCTION.

DIVERSION OF WATER FOR CULVERT CONSTRUCTION IS INCLUDED IN BID ITEM "TEMPORARY STREAM DIVERSION B-40-1024". SEE SPECIAL PROVISIONS FOR REQUIREMENTS ASSOCIATED WITH THIS WORK, AND SEE ROADWAY PLANS FOR PAY ITEM.

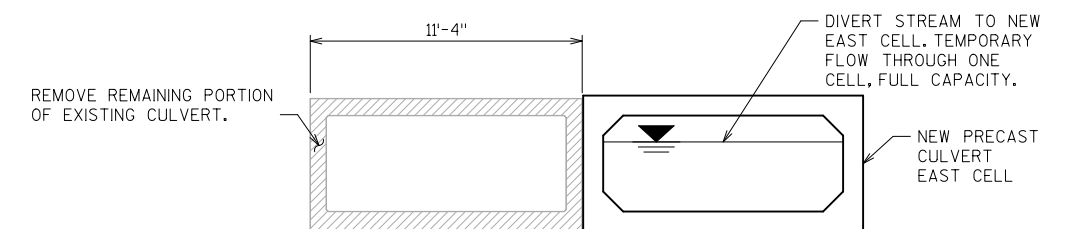
THE ENTIRE NORTH PORTION OF THE CULVERT WILL BE CONSTRUCTED DURING STAGE 1. THE ENTIRE SOUTH PORTION OF THE CULVERT WILL BE CONSTRUCTED DURING STAGE 2.

TEMPORARY MEDIAN REMOVALS AND TEMPORARY PAVEMENT WILL BE CONSTRUCTED TO PROVIDE ADEQUATE WIDTH FOR FOUR LANES OF TRAFFIC. SEE ROADWAY PLANS FOR ADDITIONAL STAGING DETAILS.

* THE CONTRACTOR MAY ADJUST THE STAGE CONSTRUCTION JOINT IN THE BOX CULVERT WITHIN THE WORK ZONES, BASED ON THE PRECAST CULVERT FABRICATION DETAILS.



STREAM DIVERSION SUBSTAGE A TYPICAL SECTION
(LOOKING NORTH)

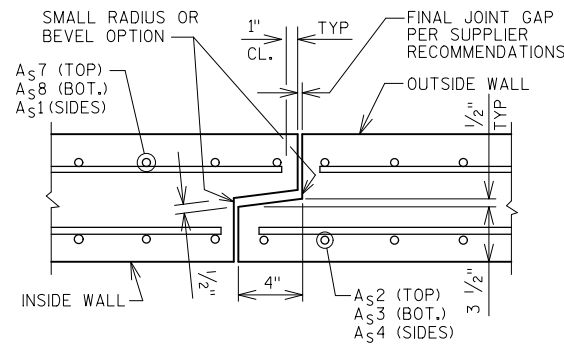


STREAM DIVERSION SUBSTAGE B TYPICAL SECTION
(LOOKING NORTH)

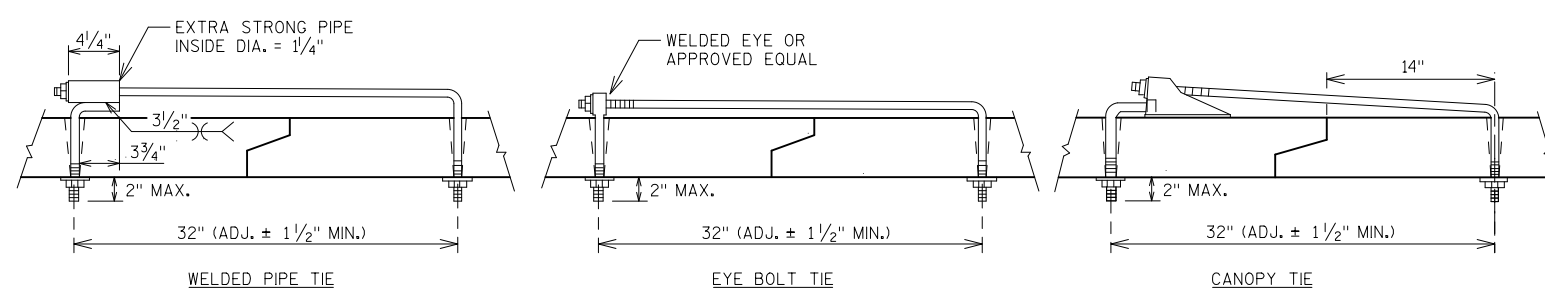
8

8

| NO. | DATE | REVISION | BY |
|--|------|----------|-----------------|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | | | |
| STRUCTURE B-40-1024 | | | |
| DRAWN BY | | ABP | PLANS CK'D. JRS |
| STAGING DETAILS | | | SHEET 3 OF 11 |



JOINT DETAIL



JOINT TIES

NOTES:
EITHER EYE BOLT TIES, WELDED PIPE TIES, OR CANOPY TIES MAY BE USED. THREADS MAY BE CUT OR ROLLED. TIE NUTS SHALL BE TIGHTENED AS DIRECTED BY THE ENGINEER. (2 TIES REQ'D. PER JOINT.) (TIES TO BE GALVANIZED.)

NOTES

DETAILS FOR MATERIALS, FABRICATION, CONSTRUCTION AND DESIGN OF PRECAST BOX CULVERTS NOT SHOWN OR STATED ON THIS DRAWING SHALL BE IN ACCORDANCE WITH THE CURRENT ASTM SPECIFICATION C1577; AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS; WISCONSIN DOT BRIDGE MANUAL; WISCONSIN DOT STANDARD SPECIFICATIONS & APPLICABLE SPECIAL PROVISIONS, EXCEPT THAT THE CONCRETE MIXTURE SHALL CONTAIN NOT LESS THAN 565 LBS. OF CEMENTITIOUS MATERIALS PER CUBIC YARD.

THE DESIGN OF PRECAST BOX CULVERTS WITH ALL FILL HEIGHTS SHALL BE AS STATED IN ASTM C1577.

ALL PRECAST BOX SECTIONS SHALL BE PLACED ON A BEDDING OF "BACKFILL STRUCTURE TYPE B" OF 6" MINIMUM DEPTH.

THE COVER OF CONCRETE OVER THE REINFORCEMENT SHALL BE 1 INCH OR 2 INCHES AS SHOWN WITH AN ALLOWABLE VARIATION OF - 3/8" TO + 1/2" INCH.

THE SPACING CTR. TO CTR. OF THE CIRCUMFERENTIAL WIRES SHALL NOT BE LESS THAN 2 INCHES NOR MORE THAN 4 INCHES. THE SPACING CTR. TO CTR. OF THE LONGIT. WIRES SHALL NOT BE MORE THAN 8 INCHES. PROVIDE 0.03 SQ. IN./FT MINIMUM LONG. REINFORCEMENT AT EACH FACE IN SLABS AND WALLS.

NOT MORE THAN FOUR (4) HOLES MAY BE CAST, DRILLED OR OTHERWISE NEATLY MADE IN THE SHELL OF EACH PIECE OF BOX SECTION FOR HANDLING. THE HOLES SHALL BE TAPERED UNLESS DRILLED. HOLES SHALL BE FILLED WITH PORTLAND CEMENT MORTAR EXCEPT TAPERED HOLES MAY BE FILLED WITH CONCRETE PLUGS SECURED WITH PORTLAND CEMENT MORTAR OR OTHER APPROVED ADHESIVE.

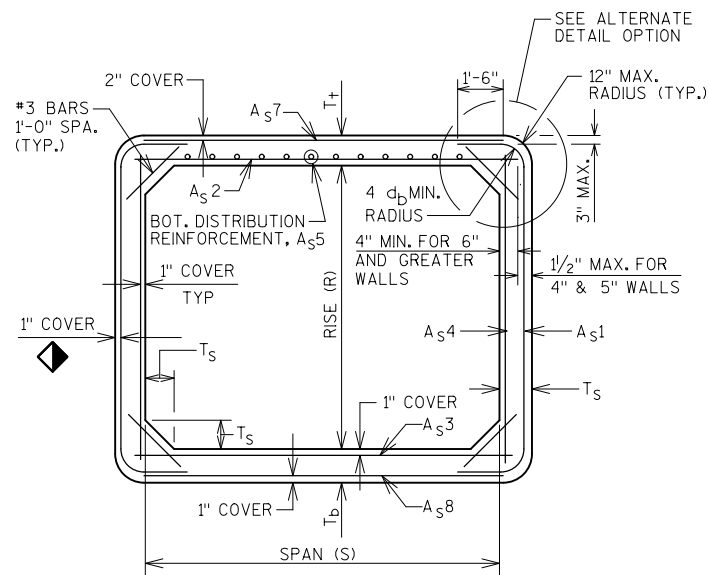
THE JOINT ON THE BOTTOM OF THE CULVERT & THE SIDES OF THE CULVERT FROM THE BOTTOM TO A POINT 1'-0" FROM THE CEILING SHALL BE SEALED WITH A PREFORMED MASTIC. PREFORMED MASTIC MUST CONFORM TO AASHTO MATERIALS SPEC. M198, TYPE B. A 2'-0" STRIP OF GEOTEXTILE TYPE DF SCHEDULE A SHALL BE PLACED OVER THE JOINTS ON THE TOP AND ON THE SIDES OF THE CULVERT. THE GEOTEXTILE SHALL CONFORM TO SECTION 645.2.2.4 OF THE STANDARD SPECIFICATION. (FABRIC NOT REQUIRED OVER INSIDE WALL JOINTS OF MULTICELL INSTALLATION.)

☑ WHEN TWO OR MORE BARRELS ARE UTILIZED IN PARALLEL FOR MULTICELL INSTALLATIONS THE CLEAR SPACING BETWEEN BARRELS SHALL BE 6 INCHES AND THE SPACE BETWEEN ADJACENT BARRELS FROM TOP OF BEDDING TO TOP OF TOP SLAB SHALL BE FILLED WITH GRADE "B" CONCRETE.

SHOP DRAWINGS SHALL PROVIDE "BOX CULVERT BARREL DATA" WITH REQUIRED AND ACTUAL REINFORCEMENT AREAS.

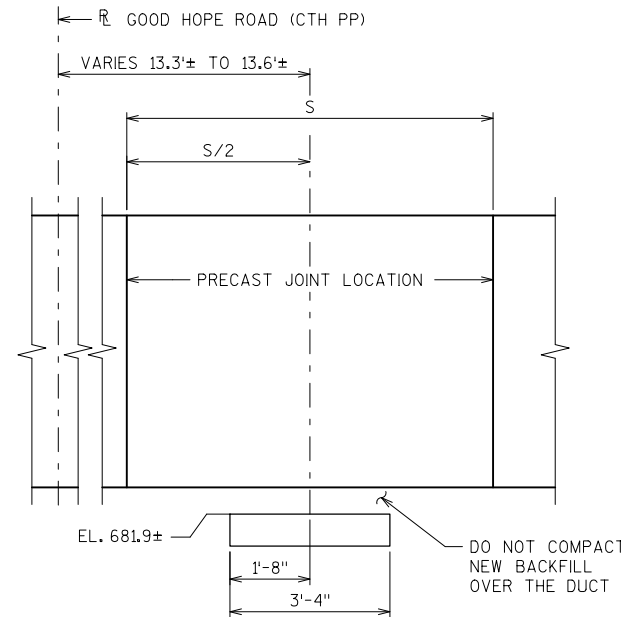
USE EPOXY COATED REINFORCEMENT IN THE BOTTOM SLAB OF THE BOX CULVERT. BARS INCLUDE THE A_S 3, A_S 8, AND #3 BARS AT THE BOTTOM CHAMFER.

APPLY PROTECTIVE SURFACE TREATMENT TO THE TOP OF THE BOTTOM SLAB AND BOTTOM CHAMFER OF THE PRECAST CONCRETE BOX UNITS.

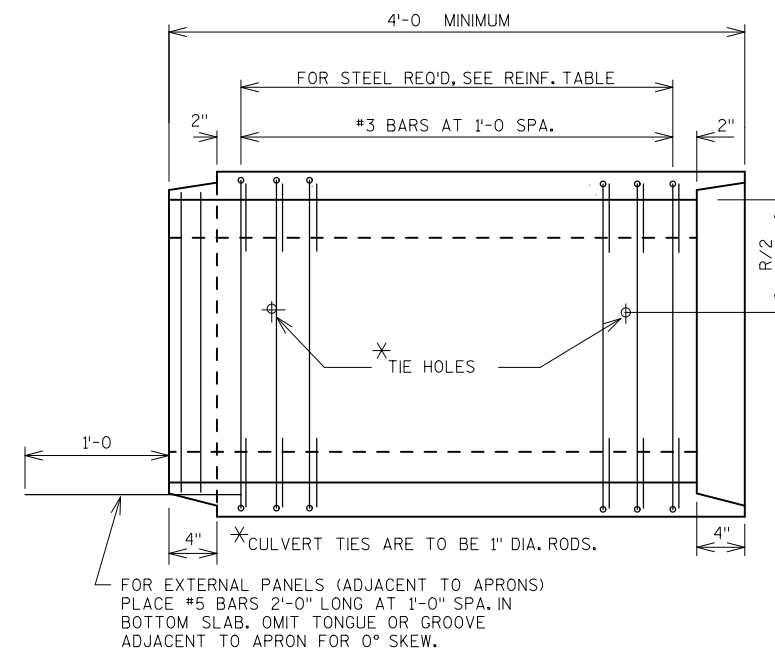


SECTION THRU BARREL

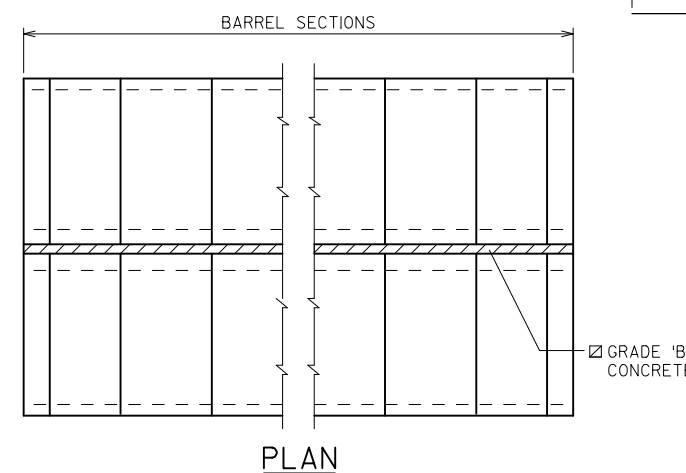
FILL HEIGHT LESS THAN 2 FEET (LONG. REIN. NOT SHOWN FOR CLARITY)



ELEVATION AT BURIED AT&T DUCT



LONGITUDINAL SECTION

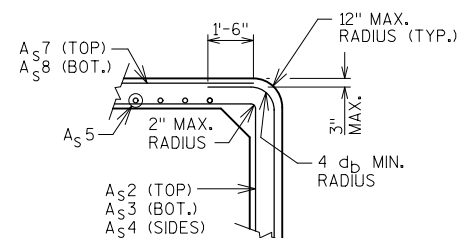


MULTICELL INSTALLATION

(WINGWALLS NOT SHOWN FOR CLARITY)

BOX CULVERT BARREL DATA

| FILL HEIGHT (FT) | DIMENSIONS | | | | | REINFORCEMENT (IN ² /FT) | | | | | | | | | | | | | |
|------------------|------------|--------|---------------------|---------------------|---------------------|-------------------------------------|------|------------------|------|------------------|------|------------------|------|------------------|------|------------------|------|------------------|------|
| | R (FT) | S (FT) | T _t (IN) | T _b (IN) | T _s (IN) | A _S 1 | | A _S 2 | | A _S 3 | | A _S 4 | | A _S 5 | | A _S 7 | | A _S 8 | |
| | | | | | | REQ'D | ACT. | REQ'D | ACT. | REQ'D | ACT. | REQ'D | ACT. | REQ'D | ACT. | REQ'D | ACT. | REQ'D | ACT. |
| 1.0 TO 2.1 | 4.0 | 10.0 | 10.0 | 10.0 | 10.0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



ALTERNATE DETAIL OPTION

| NO. | DATE | REVISION | BY |
|--|------|-----------------|---------------|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | | | |
| STRUCTURE B-40-1024 | | | |
| DRAWN BY | | PLANS CK'D. DRH | |
| RBH | | DRH | |
| PRECAST BOX CULVERT | | | SHEET 4 OF 11 |

| LOCATION | STA. | OFFSET | PIPE INVERT EL. | PIPE INSIDE DIAMETER | ASSUMED MIN. OPENING DIAMETER (D) |
|-----------|-----------|----------|-----------------|----------------------|-----------------------------------|
| WEST CELL | 122+10.03 | 0.08 LT | 683.81 | 18" | 26" |
| EAST CELL | 122+32.20 | 0.12 RT | 683.81 | 18" | 26" |
| EAST CELL | 122+32.26 | 56.59 RT | 684.83 | 15" | 23" |

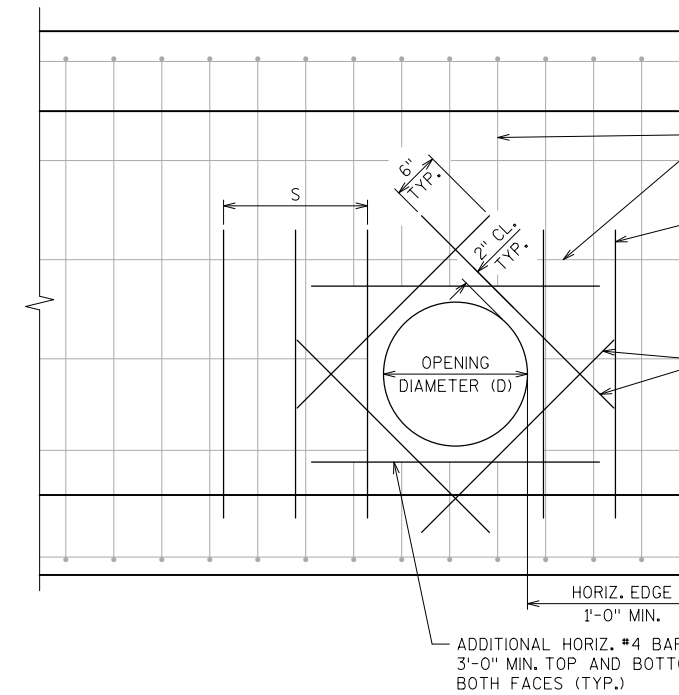
ANNULAR SPACE AROUND RCP PIPE 1" MIN., 3" MAX. SEAL WITH NON-SHRINK GROUT, INCIDENTAL TO BID ITEM "PRECAST CONCRETE BOX CULVERT 10'x4'"

REINFORCED CONCRETE PIPE (RCP), SEE ROADWAY PLANS

PRECAST CULVERT WALL

PIPE INSIDE DIAMETER (D)
(SEE TABLE)

STORM SEWER CONNECTION DETAIL



STORM SEWER OPENING DETAIL

WHEN $D \leq 1'-6"$ $S = 1'-6"$
WHEN $D > 1'-6"$ $S = 1'-6"$ MIN., D MAX

NOTES

CONCRETE COVER ON ALL REINFORCEMENT IN THE PRECAST ELEMENTS SHALL BE 2" UNLESS SHOWN OR NOTED OTHERWISE.

STEEL REINFORCEMENT MAY BE EITHER GRADE 60 DEFORMED BARS (FY = 60,000 P.S.I.) OR WELDED DEFORMED - WIRE FABRIC OF EQUIVALENT AREA (FY = 65,000 P.S.I.)

ALTERNATE DETAILS OF EQUAL STRENGTH AND HYDRAULIC CAPACITY TO THE DETAILS SHOWN ON THIS SHEET MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

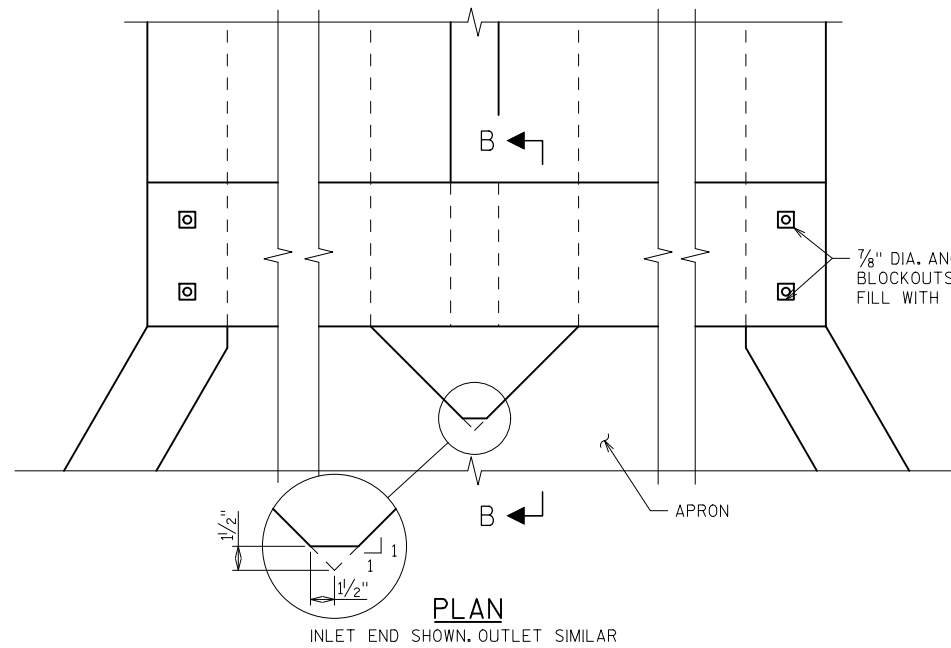
THE PRECAST ELEMENTS SHALL BE PROVIDED WITH SUITABLE LIFTING DEVICES FOR HANDLING AND PLACEMENT OF THE ELEMENTS.

THE 7/8" DIA. ANCHOR BOLTS SHALL BE GALVANIZED AND CONFORM TO THE REQUIREMENTS OF A.S.T.M. A575.

ALL EXPOSED CORNERS SHALL BE BEVELED 3/4" ON THE SIDES OR TOOL EDGED WITH A 1/2" MINIMUM RADIUS EDGER.

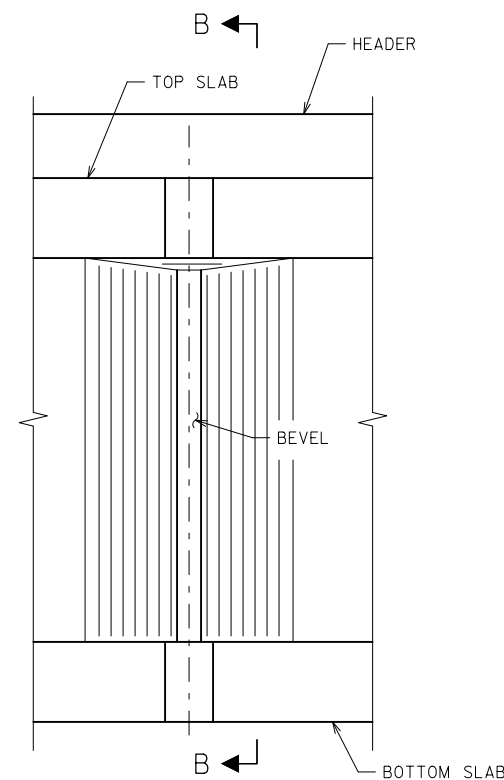
PRECAST CUT OFF WALLS MAY BE FIELD SPLICED BY EXTENDING THE REINFORCING STEEL FROM BOTH SEGMENTS TO BE SPLICED 1'-6" INTO THE SPLICE ZONE, LAPPING THE STEEL ± 1'-6" AND FIELD POURING A SECTION OF CUT OFF WALL 1'-6" LONG.

PRECAST ELEMENTS MAY BE POURED IN PLACE AT THE OPTION OF THE CONTRACTOR.

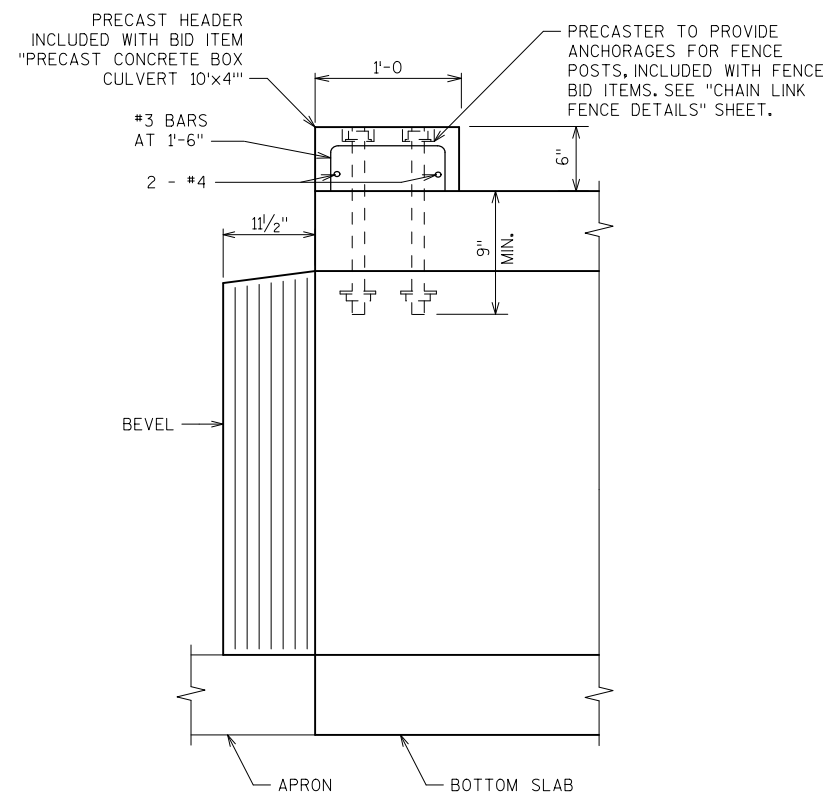


PLAN

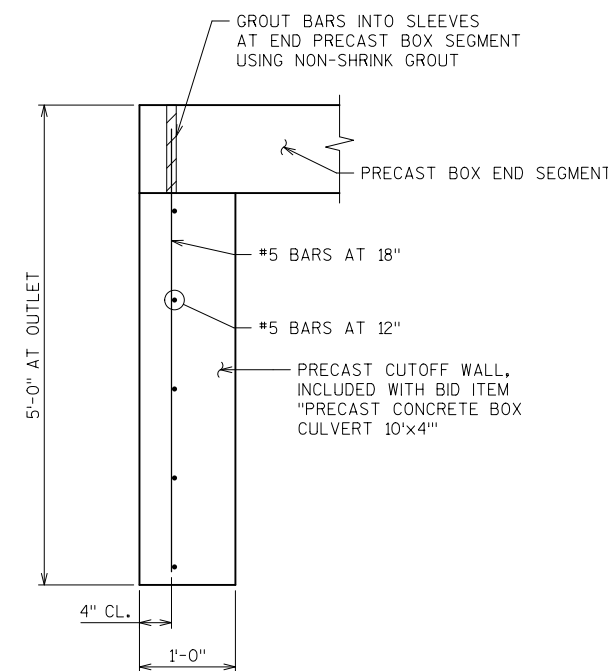
INLET END SHOWN. OUTLET SIMILAR



INLET NOSE CENTER WALL DETAIL



SECTION B-B



CUT OFF WALL DETAIL - OUTLET

SECTION THROUGH WALL

| NO. | DATE | REVISION | BY |
|--|------|----------|-----------------|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | | | |
| STRUCTURE B-40-1024 | | | |
| DRAWN BY | | RBH | PLANS CK'D. DRH |
| CULVERT DETAILS | | | SHEET 5 OF 11 |

TOTAL COATED = 510 LBS

BILL OF BARS

| BAR MARK | STAGE A NO. REQ'D. | STAGE B NO. REQ'D. | TOTAL NO. REQ'D. | LENGTH | COAT | STAINLESS STEEL | BENT | BAR SERIES | LOCATION |
|----------|--------------------|--------------------|------------------|--------|------|-----------------|------|------------|--------------------------------------|
| A401 | 8 | 8 | 16 | 14'-2" | X | | | X | INLET APRON SLAB - HORIZ. |
| A402 | 12 | 12 | 24 | 8'-6" | X | | | | INLET APRON SLAB - HORIZ. |
| A403 | 4 | 4 | 8 | 4'-9" | X | | | X | INLET APRON SLAB - HORIZ. |
| A404 | 16 | 16 | 32 | 3'-6" | X | | X | | INLET APRON AND CUTOFF WALL - VERT. |
| A405 | 4 | 4 | 8 | 16'-3" | X | | | | INLET APRON AND CUTOFF WALL - HORIZ. |
| A406 | 11 | 11 | 22 | 2'-0" | X | | | | INLET APRON TO CHANNEL CONNECTION |

NOTE:

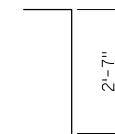
LENGTH SHOWN FOR ANY BAR SERIES IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

SEE "WINGS 1 & 2 DETAILS" SHEET FOR WINGWALL REINFORCING THAT IS EMBEDDED IN APRON.

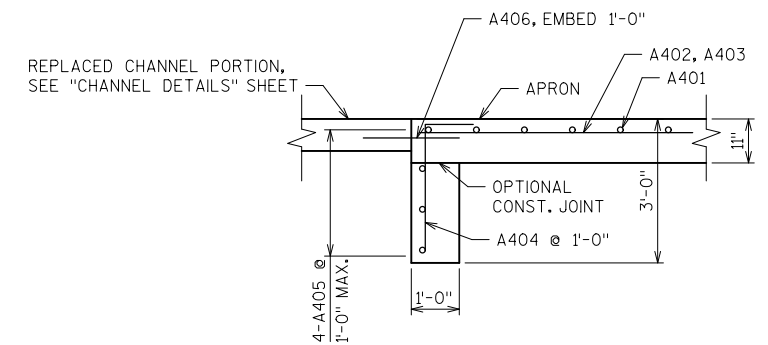
BAR SERIES TABLE

| MARK | NO. REQ'D. | LENGTH |
|------|---------------|------------------|
| A401 | 2 SERIES OF 8 | 12'-1" TO 16'-2" |
| A403 | 2 SERIES OF 4 | 2'-2" TO 7'-4" |

BUNDLE AND TAG EACH SERIES SEPARATELY.



A404

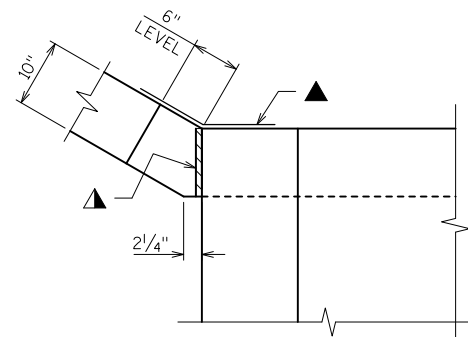


CUT OFF WALL DETAIL - INLET

SECTION THRU WALL

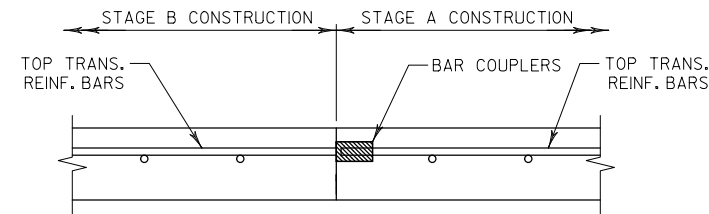
LEGEND

- ▲ R.M.W. EXTEND FROM HORIZ. CONST. JOINT TO TOP OF WING. (FLUSH WITH FACE OF CONCRETE)
- ▲ 3/4" FILLER TO EXTEND FROM HORIZ. CONST. JOINT TO TOP OF WING.
- BAR COUPLERS REQUIRED WITH BARS. BAR LENGTH SHOWN IS MEASURED TO C OF STAGE JOINT, AND SHALL BE MODIFIED ACCORDING TO MANUFACTURER RECOMMENDATIONS.



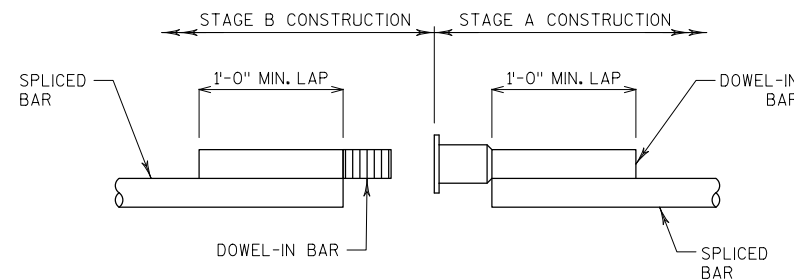
CORNER DETAIL

(WING 2 SHOWN, WING 1 SIMILAR)



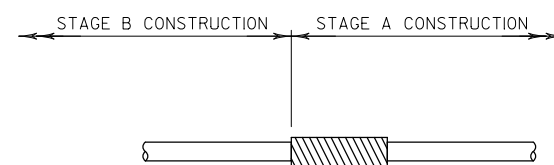
SECTION THRU APRON

ONE-PIECE THREADED BAR COUPLER SHOWN



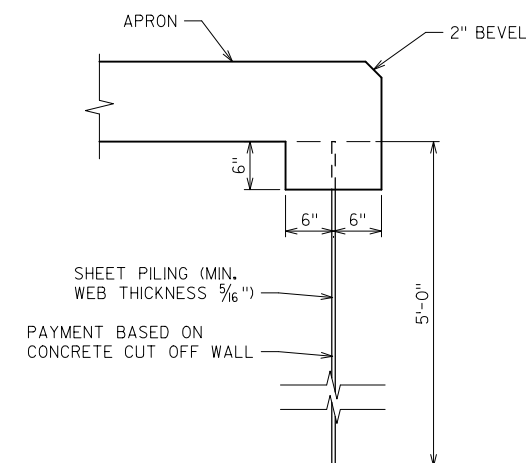
DOWEL BAR COUPLER

STAGE B DOWEL SCREWS INTO COUPLER PLACED IN STAGE A



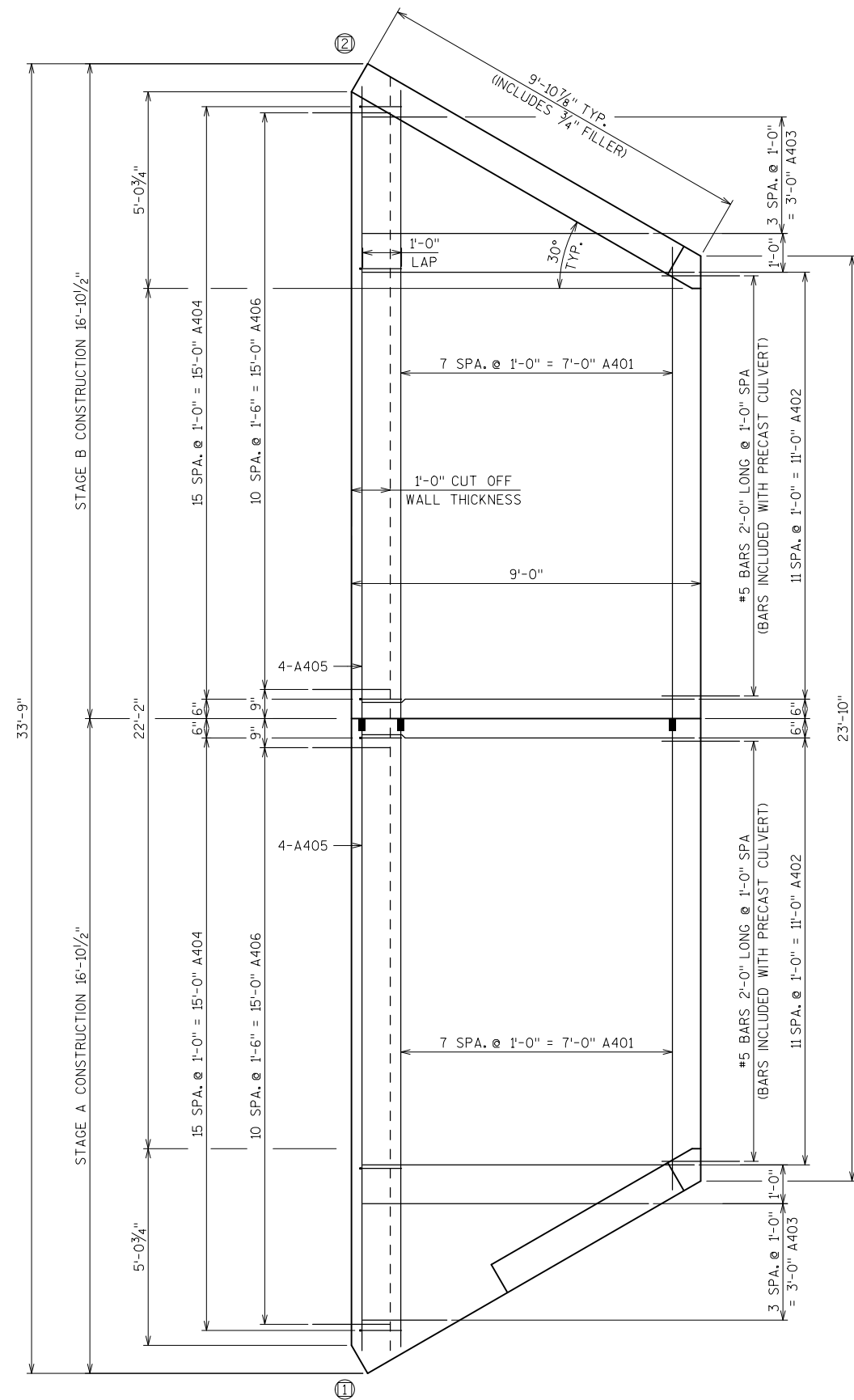
ONE PIECE THREADED SPLICER

BAR COUPLER ALTERNATIVES



ALTERNATE CUTOFF WALL

SOUTH END OF CULVERT ONLY

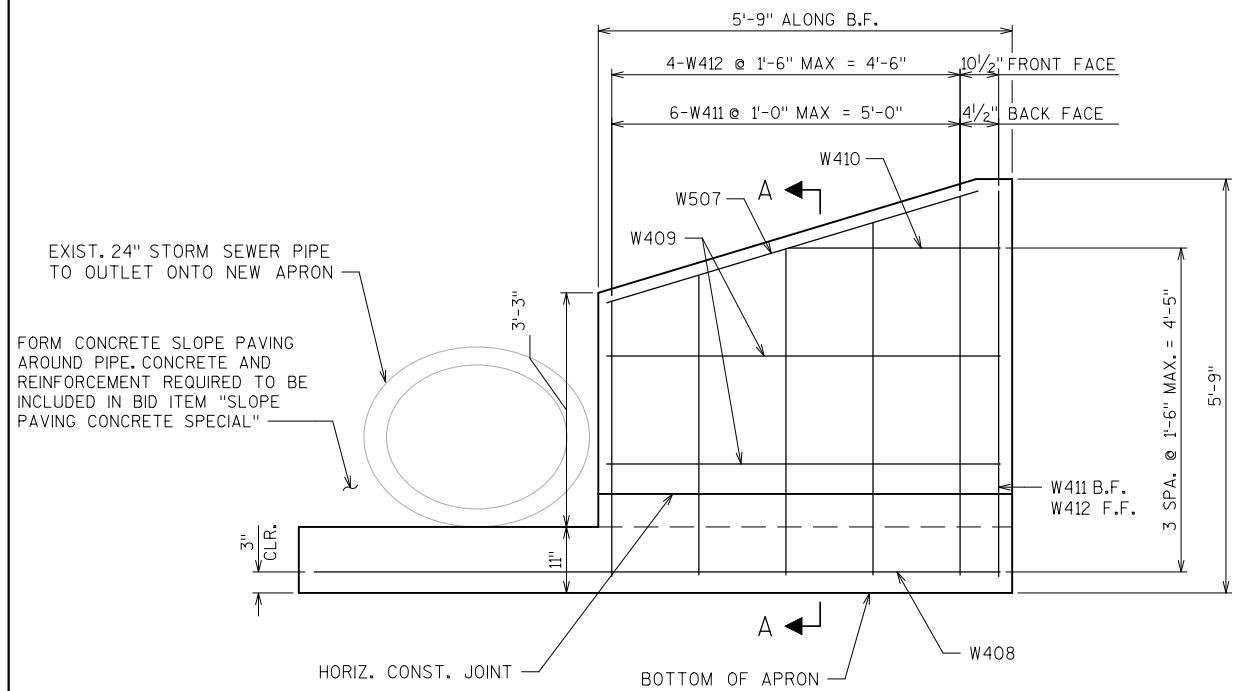


INLET APRON PLAN

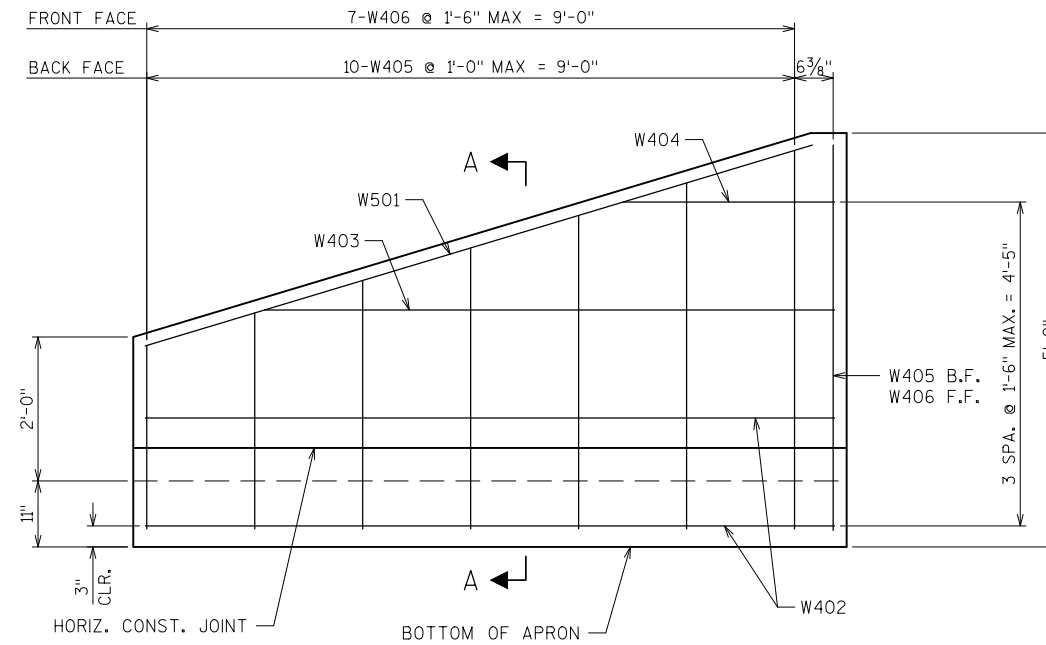
8

8

| NO. | DATE | REVISION | BY |
|--|------|-----------------|---------------|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | | | |
| STRUCTURE B-40-1024 | | | |
| DRAWN BY RBH | | PLANS CK'D. DRH | |
| APRON DETAILS | | | SHEET 6 OF 11 |



ELEVATION - WING 1



ELEVATION - WING 2

BILL OF BARS

TOTAL COATED = 270 LBS

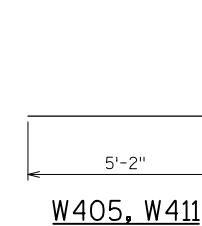
| BAR MARK | STAGE A NO. REQ'D. | STAGE B NO. REQ'D. | TOTAL NO. REQ'D. | LENGTH | COAT | STAINLESS STEEL | BENT | BAR SERIES | LOCATION |
|----------|--------------------|--------------------|------------------|--------|------|-----------------|------|------------|-------------------------------------|
| W501 | 2 | 0 | 2 | 9'-9" | X | | | | WING 2 - HORIZ. - F.F. & B.F. - TOP |
| W402 | 5 | 0 | 5 | 9'-6" | X | | | | WING 2 - HORIZ. - BOTTOM |
| W403 | 2 | 0 | 2 | 7'-11" | X | | | | WING 2 - HORIZ. - F.F. & B.F. |
| W404 | 2 | 0 | 2 | 2'-11" | X | | | | WING 2 - HORIZ. - F.F. & B.F. |
| W405 | 11 | 0 | 11 | 9'-0" | X | | X | X | WING 2 - VERT. - B.F. |
| W406 | 8 | 0 | 8 | 3'-11" | X | | | X | WING 2 - VERT. - F.F. |
| W507 | 0 | 2 | 2 | 5'-4" | X | | | | WING 1 - HORIZ. - F.F. & B.F. - TOP |
| W408 | 0 | 3 | 3 | 9'-6" | X | | | | WING 1 - HORIZ. - BOTTOM |
| W409 | 0 | 4 | 4 | 5'-5" | X | | | | WING 1 - HORIZ. - F.F. & B.F. |
| W410 | 0 | 2 | 2 | 2'-11" | X | | | | WING 1 - HORIZ. - F.F. & B.F. |
| W411 | 0 | 7 | 7 | 9'-7" | X | | X | X | WING 1 - VERT. - B.F. |
| W412 | 0 | 5 | 5 | 4'-7" | X | | | X | WING 1 - VERT. - F.F. |

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

BAR SERIES TABLE

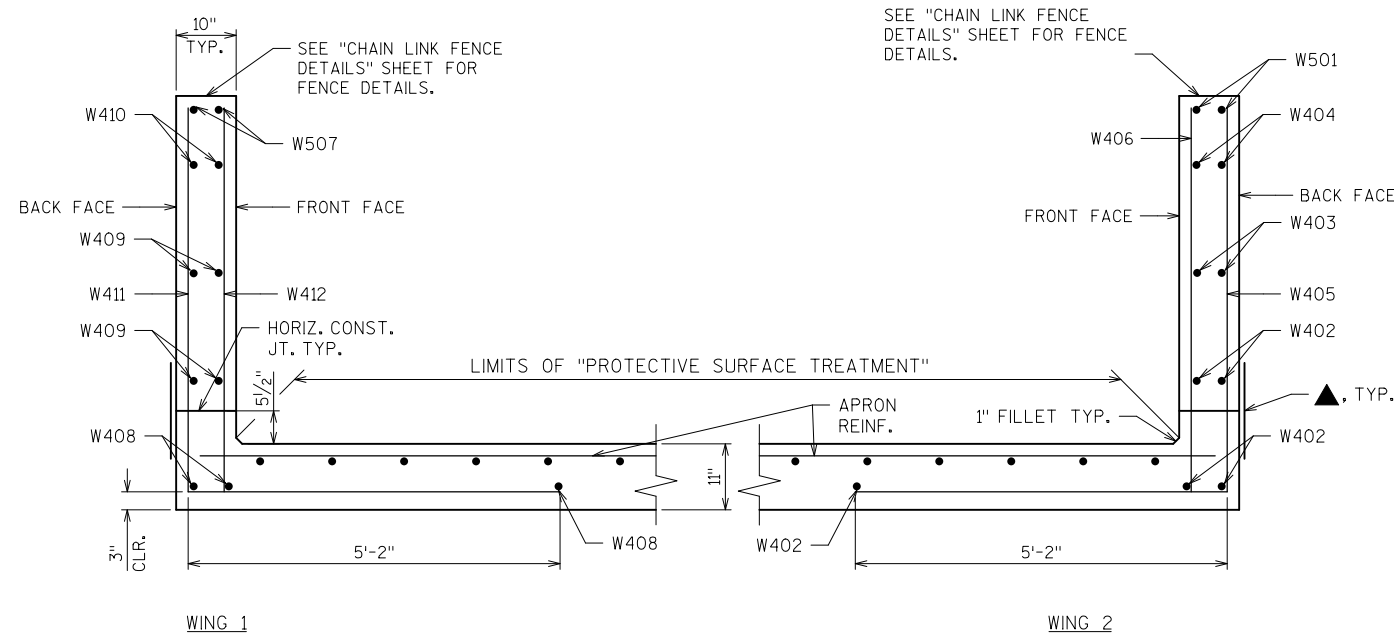
| MARK | NO. REQ'D. | LENGTH |
|------|----------------|------------------|
| W405 | 1 SERIES OF 11 | 7'-7" TO 10'-5" |
| W406 | 1 SERIES OF 8 | 2'-6" TO 5'-4" |
| W411 | 1 SERIES OF 7 | 8'-10" TO 10'-5" |
| W412 | 1 SERIES OF 5 | 3'-9" TO 5'-4" |

BUNDLE AND TAG EACH SERIES SEPARATELY.



LEGEND

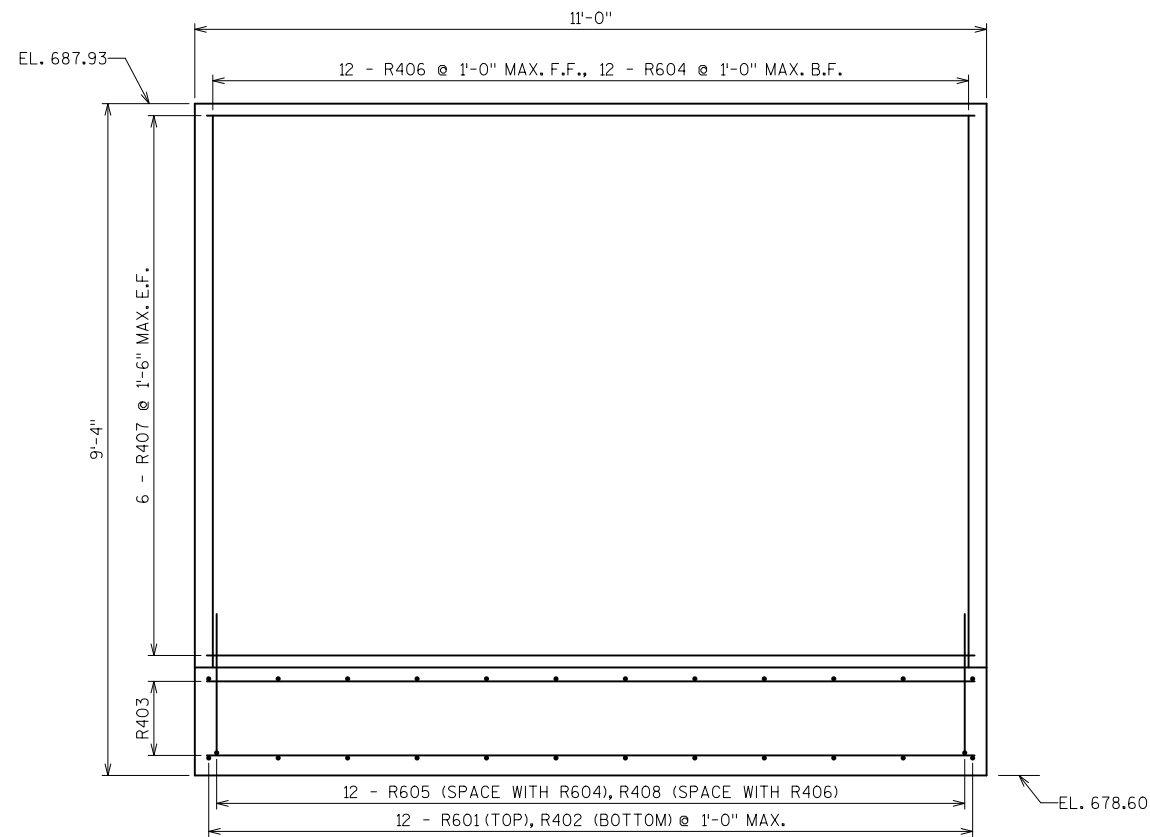
- ▲ 18" RUBBERIZED MEMBRANE WATERPROOFING. PLACE ALONG HORIZ. CONST. JT. FOR ENTIRE WING LENGTH, TYP.



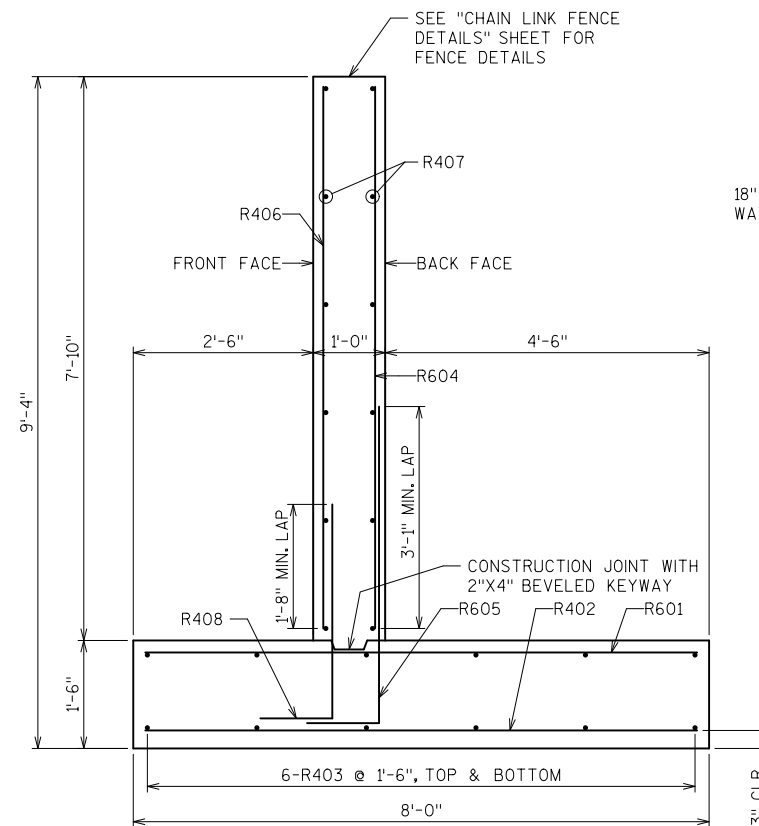
SECTION A-A

AT RIGHT ANGLES TO WING WALLS

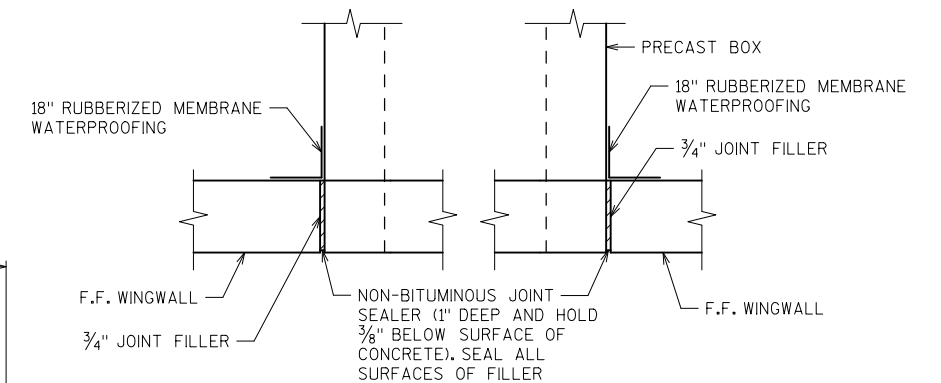
| NO. | DATE | REVISION | BY |
|--|------|-------------|---------------|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | | | |
| STRUCTURE B-40-1024 | | | |
| DRAWN BY | | PLANS CK'D. | DRH |
| RBH | | | |
| WINGS 1 & 2 DETAILS | | | SHEET 7 OF 11 |



ELEVATION WINGS 3 & 4

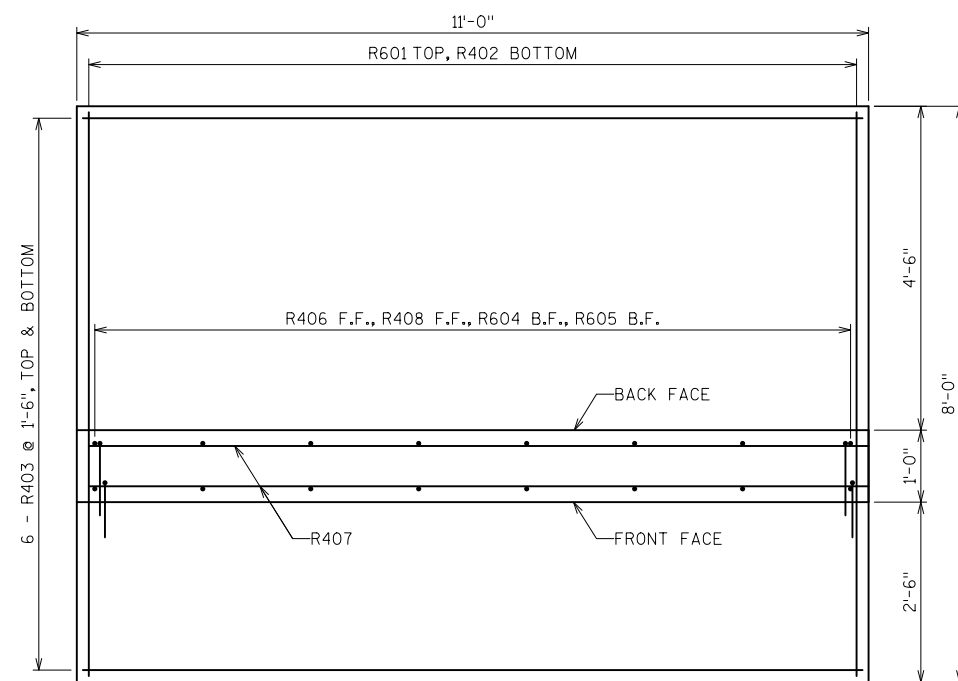


SECTION THRU WINGWALL



CORNER DETAILS

PLAN VIEW

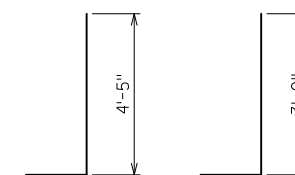


PLAN WINGS 3 & 4

BILL OF BARS

TOTAL COATED = 810 LBS
TOTAL UNCOATED = 560 LBS

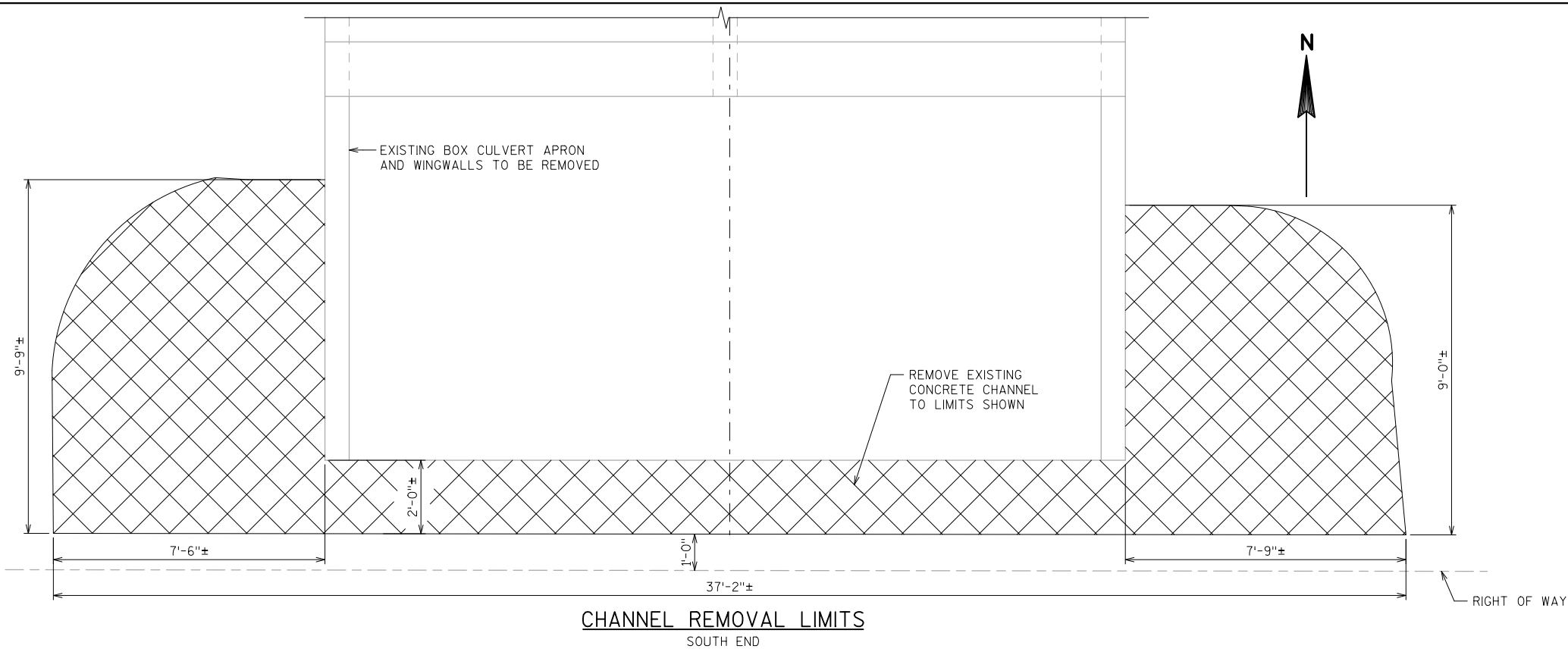
| BAR MARK | STAGE A NO. REQ'D. | STAGE B NO. REQ'D. | TOTAL NO. REQ'D. | LENGTH | COAT | STAINLESS STEEL | BENT | BAR SERIES | LOCATION |
|----------|--------------------|--------------------|------------------|--------|------|-----------------|------|------------|---------------------------------------|
| R601 | 12 | 12 | 24 | 7'-4" | | | | | FOOTING - TRANSVERSE - TOP |
| R402 | 12 | 12 | 24 | 7'-4" | | | | | FOOTING - TRANSVERSE - BOTTOM |
| R403 | 12 | 12 | 24 | 10'-6" | | | | | FOOTING - LONGITUDINAL - TOP & BOTTOM |
| R604 | 12 | 12 | 24 | 7'-6" | X | | | | STEM - VERT. - B.F. |
| R605 | 12 | 12 | 24 | 5'-3" | X | | X | | STEM - VERT. - B.F. |
| R406 | 12 | 12 | 24 | 7'-6" | X | | | | STEM - VERT. - F.F. |
| R407 | 12 | 12 | 24 | 10'-6" | X | | | | STEM - HORIZ. - F.F. & B.F. |
| R408 | 12 | 12 | 24 | 3'-7" | X | | X | | STEM - VERT. - F.F. |



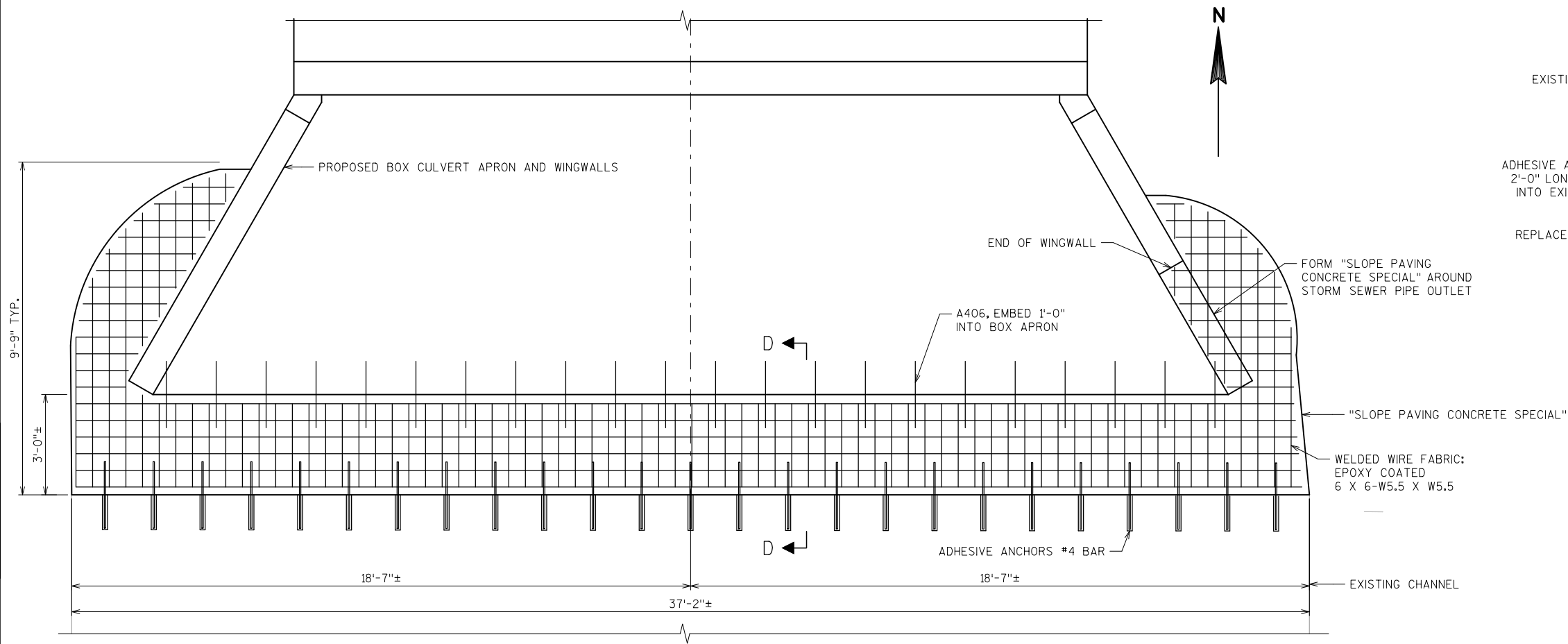
R605

R408

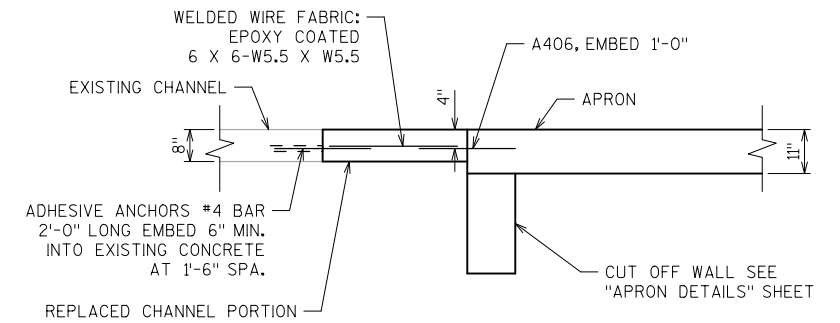
| NO. | DATE | REVISION | BY |
|--|------|----------|-----------------|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | | | |
| STRUCTURE B-40-1024 | | | |
| DRAWN BY | | RBH | PLANS CK'D. DRH |
| WINGS 3 & 4 DETAILS | | | SHEET 8 OF 11 |



CHANNEL REMOVAL LIMITS
SOUTH END



PROPOSED CHANNEL CONNECTION
SOUTH END



SECTION D-D
SECTION THRU CHANNEL

NOTES:

WELDED WIRE FABRIC, ADHESIVE ANCHORS AND #4 BARS REQUIRED FOR CHANNEL REPLACEMENT TO BE INCLUDED IN BID ITEM "SLOPE PAVING CONCRETE SPECIAL".

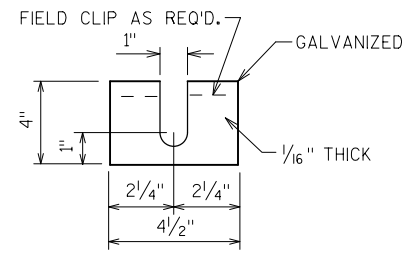
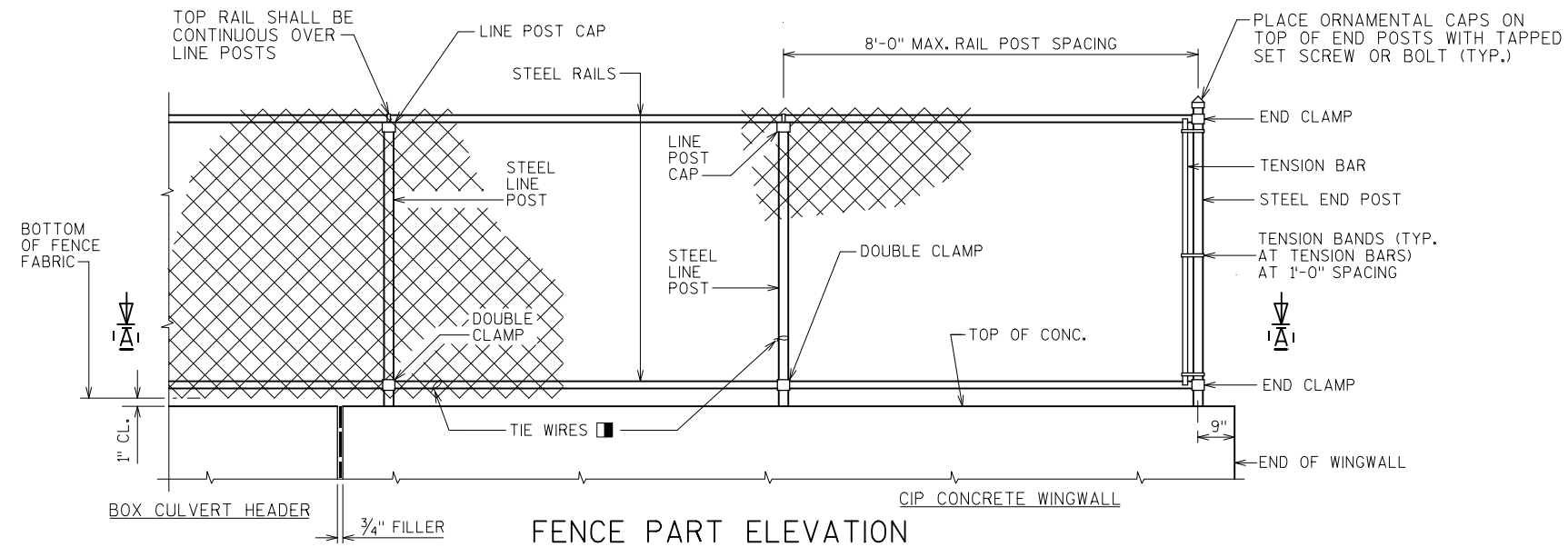
ADHESIVE ANCHORS SHALL CONFORM TO SECTION 502.2.12 OF THE STANDARD SPECIFICATIONS.

DIMENSIONS SHOWN FOR CONCRETE CHANNEL ARE TYPICAL, BUT CONDITIONS MAY VARY. MATCH PROPOSED WORK TO EXISTING CONDITIONS.

| NO. | DATE | REVISION | BY |
|--|------|----------|-----------------|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | | | |
| STRUCTURE B-40-1024 | | | |
| DRAWN BY | | RBH | PLANS CK'D. DRH |
| CHANNEL DETAILS | | | SHEET 9 OF 11 |

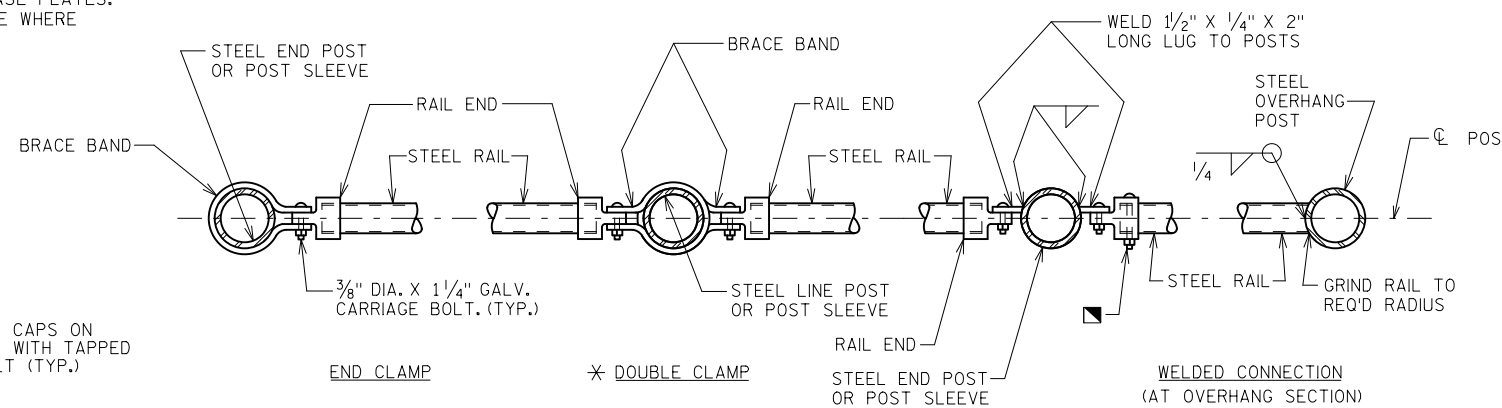
NOTES

- POSTS ARE TO BE SET VERTICAL.
- ALL FENCE COMPONENTS SHALL BE GALVANIZED STEEL, EXCEPT THE FENCE FABRIC WHICH MAY BE ALUMINUM-COATED STEEL OR GALVANIZED STEEL.
- FABRIC SHALL CONFORM TO ASTM A491 OR A392, CLASS 2. STEEL RAILS, POSTS AND POST SLEEVES SHALL CONFORM TO ASTM F1083, STANDARD WEIGHT PIPE (SCHEDULE 40). FITTINGS SHALL CONFORM TO ASTM F626.
- THE BID ITEM SHALL BE "FENCE CHAIN LINK 5-FT." AND "FENCE CHAIN LINK 7-FT."
- COMPLETE ANY REQUIRED WELDING OF COMPONENTS BEFORE GALVANIZING.
- POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
- BASE PLATES, ANCHOR PLATES AND SHIMS SHALL BE ASTM A709, GRADE 36.
- ALL POST SPACINGS ARE MEASURED HORIZONTALLY ALONG THE C/L OF THE POST.
- CAULK AROUND PERIMETER OF BASE PLATE AND FILL PORTION OF SLOTTED HOLE AROUND ANCHOR BOLT IN SHIM WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.
- ALTERNATE TO DOUBLE CLAMP: USE LINE RAIL CLAMP (BOULEVARD) OR 180° BRACE BAND, WHICH MAY BE USED WHEN THE POSTS ARE EITHER BOLTED TO THE POST SLEEVES OR DIRECTLY WELDED TO THE BASE PLATE.
- 1/2" DIA. X 6 7/8" LONG GALVANIZED HEX BOLT WITH NUT & WASHER.
- ALTERNATIVE ANCHORAGE: CONCRETE ADHESIVE ANCHORS 1/2-INCH. EMBED 7" IN CONCRETE. ADHESIVE ANCHORS SHALL CONFORM TO SECTIONS 502.2.12 AND 502.3.14 OF THE STANDARD SPECIFICATIONS.
- ATTACH FABRIC TO RAILS, AND TO POSTS WITHOUT TENSION BANDS, WITH TIE WIRES (ROUND, 9-GAGE) SPACED AT 1'-0".
- BOLT RAIL TO RAIL END TO SECURE OVERHANG SECTION. ALTERNATE IS TO WELD RAIL DIRECTLY TO END POST.
- MINIMUM LENGTH OF TOP RAIL BETWEEN SPLICES SHALL BE 20'-0". LOCATE SPLICES NEAR 1/4 POINT OF POST SPACING.
- CAST POST ANCHORAGE INTO PRECAST CONCRETE BOX CULVERT HEADER, UNLESS ADHESIVE ANCHORS ARE USED.



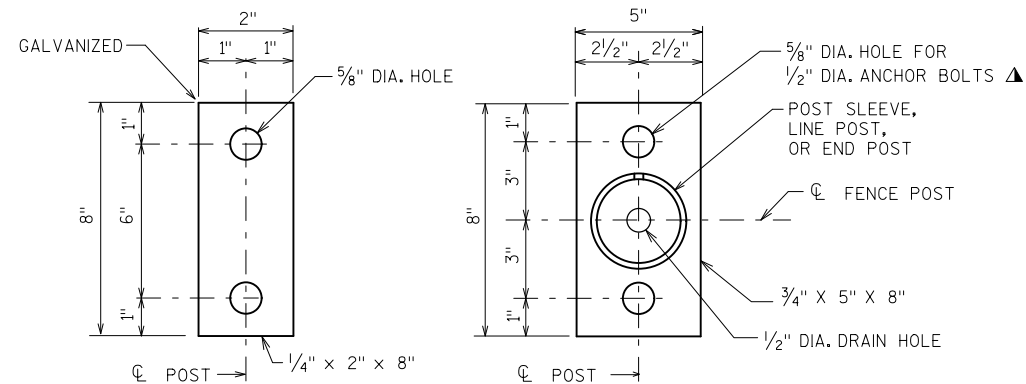
POST SHIM DETAILS

SHIMS REQUIRED ONLY WHEN END POSTS AND LINE POSTS ARE WELDED TO BASE PLATES. PROVIDE 4 SHIMS PER POST. USE WHERE REQUIRED FOR ALIGNMENT.



SECTION A-A

NOTE: PLACE ALL BOLT HEADS ON SIDE OF FENCE ADJACENT TO PEDESTRIANS



ANCHOR PLATE

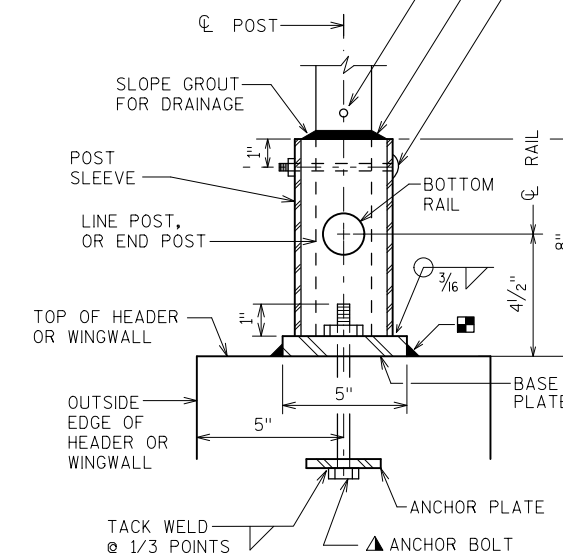
NOTE: ANCHOR PLATE NOT REQUIRED WHEN ADHESIVE ANCHORS ARE USED.

BASE PLATE

3/8" DIA. GALV. CARRIAGE BOLT WITH LOCKING NUT. (TO BE SUPPLIED WITH ASSEMBLY)

FILL SLEEVE AND BEVEL AWAY FROM POST WITH NON-SHRINK GROUT AFTER SETTING POST. (LEAVE NO VOIDS)

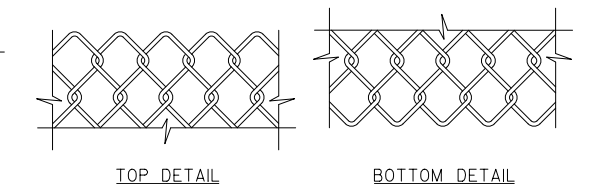
DRILL 3/16" DIA. DRAIN HOLE PARALLEL TO ROADWAY IMMEDIATELY ABOVE GROUT IN POST. SLEEVE LOCATIONS ONLY.



DETAIL 'A'

UNIT SHALL BE GALVANIZED AFTER FABRICATION

NOTE: IN LIEU OF USING THE POST SLEEVE, THE FENCE POST MAY BE WELDED TO THE BASE PLATE.



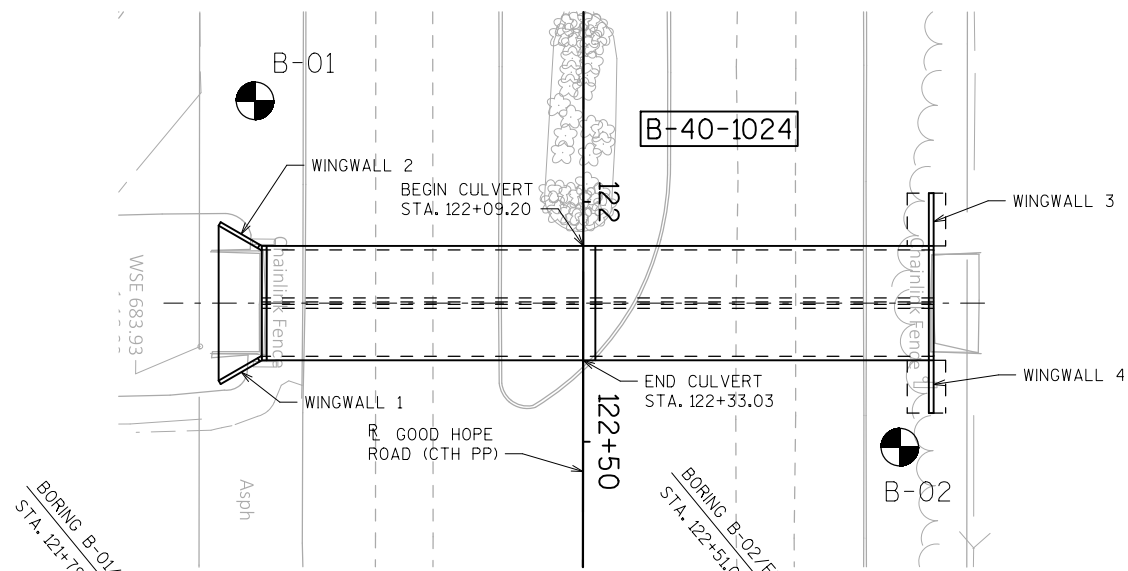
FENCE FABRIC

FENCE FABRIC WOVEN OF 9-GAGE WIRE IN 2" DIAMOND PATTERN MESH WITH BOTH THE TOP AND BOTTOM SELVAGES KNUCKLED.

| NO. | DATE | REVISION | BY |
|--|------|----------|-----------------|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | | | |
| STRUCTURE B-40-1024 | | | |
| DRAWN BY | | DRH | PLANS CK'D. JRS |
| CHAIN LINK FENCE DETAILS | | | SHEET 10 OF 11 |

8

8



PLAN

| BORING # | DATE COMPLETED | NORTHING (Y) | EASTING (X) |
|----------|----------------|--------------|-------------|
| B-01 | 10/18/2019 | 425212 | 2546830 |
| B-02 | 10/17/2019 | 425347 | 2546901 |
| | | | |
| | | | |

BORINGS COMPLETED BY: PSI
 REPORT COMPLETED BY: HIMALAYAN CONSULTANTS, LLC
 ALL COORDINATES REFERENCED TO SEWRPC SPCS AND NGVD 1929

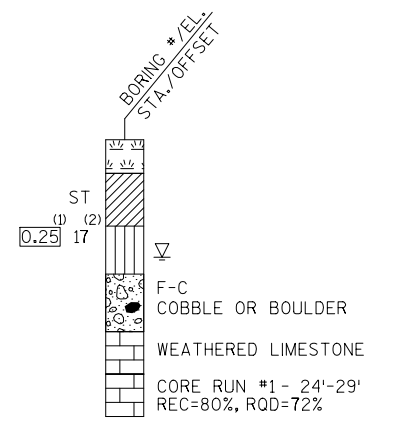
STATE PROJECT NUMBER

2130-15-70

MATERIAL SYMBOLS

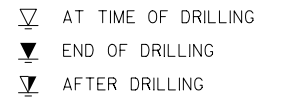
| | | | | | |
|--|---------------------|--|-----------|--|-------------------|
| | ASPHALT | | TOPSOIL | | PEAT |
| | CONCRETE | | FILL | | GRAVEL |
| | SAND | | CLAY | | SILT |
| | BOULDERS OR COBBLES | | LIMESTONE | | BEDROCK (UNKNOWN) |
| | SHALE | | SANDSTONE | | IGNEOUS/META |

LEGEND OF BORING



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

GROUND WATER ELEVATION

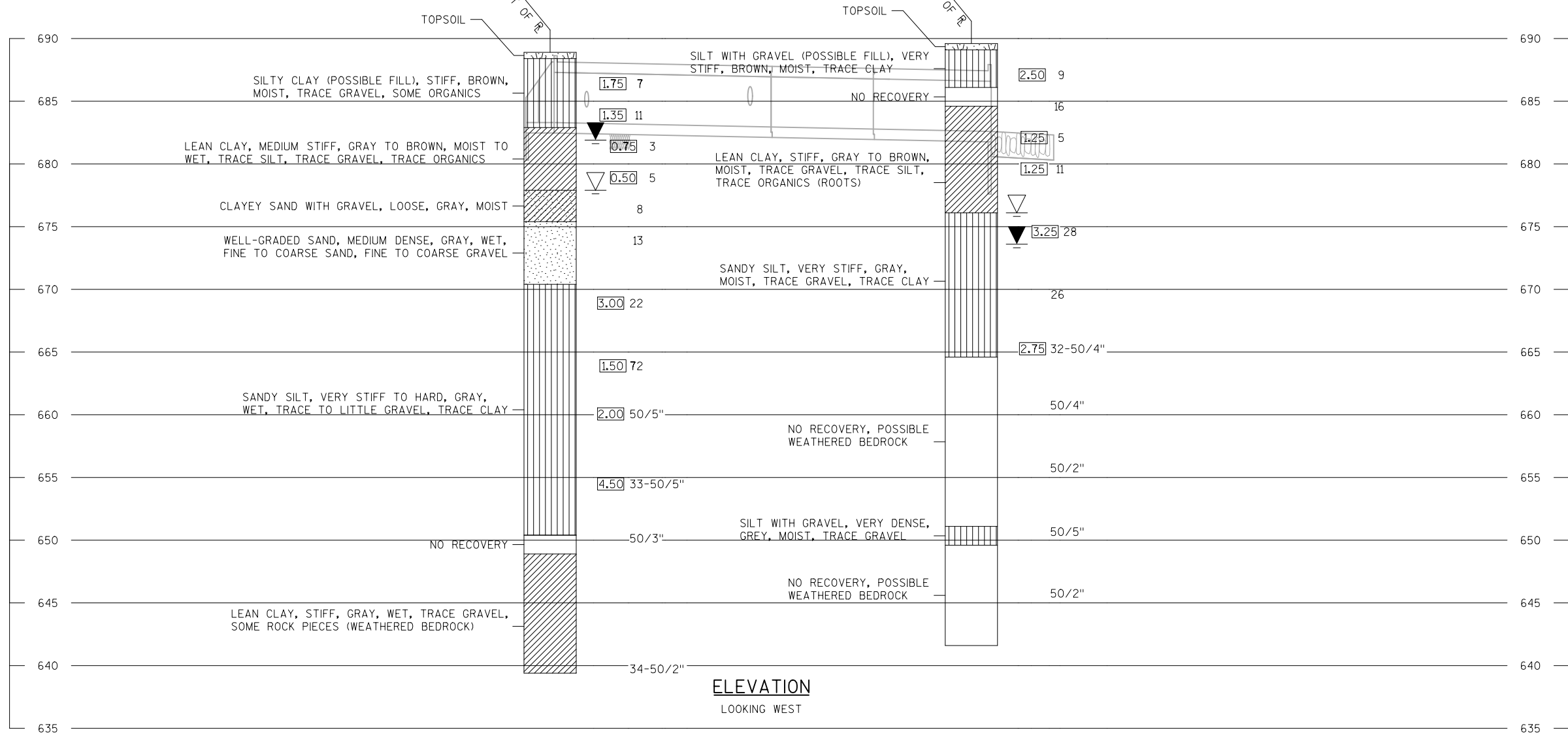


ABBREVIATIONS

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

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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



ELEVATION
LOOKING WEST

8

8

| NO. | DATE | REVISION | BY |
|--|------|----------|----------------|
| | | | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | | | |
| STRUCTURE B-40-1024 | | | |
| | | DRAWN BY | PLANS CK'D. |
| | | ABP | JRS |
| SUBSURFACE EXPLORATION | | | SHEET 11 OF 11 |



Wisconsin Department of Transportation

Dedicated people creating transportation solutions through innovation and exceptional service.

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