

LAX

PROJECT ID:
WITH: N/A

5870-02-81

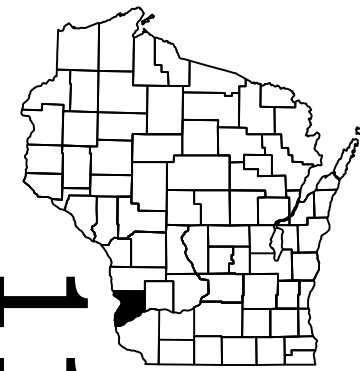
COUNTY:

CRAWFORD

APRIL 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 (Includes Erosion Control Plans) |
| 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 = 110



11

DESIGN DESIGNATION

| | | |
|-----------------|---|---------|
| A.A.D.T. (2022) | = | 670 |
| A.A.D.T. (2042) | = | 810 |
| D.H.V. | = | 140 |
| D.D. | = | 60/40 |
| T. | = | 7.6% |
| DESIGN SPEED | = | 60 MPH |
| ESALS | = | 110,000 |

CONVENTIONAL SYMBOLS

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

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

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

EASTMAN - STEUBEN

KICKAPOO RIVER BRIDGE B-12-0195

STH 179

CRAWFORD COUNTY

STATE PROJECT NUMBER
5870-02-81

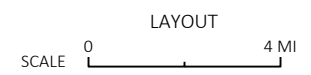
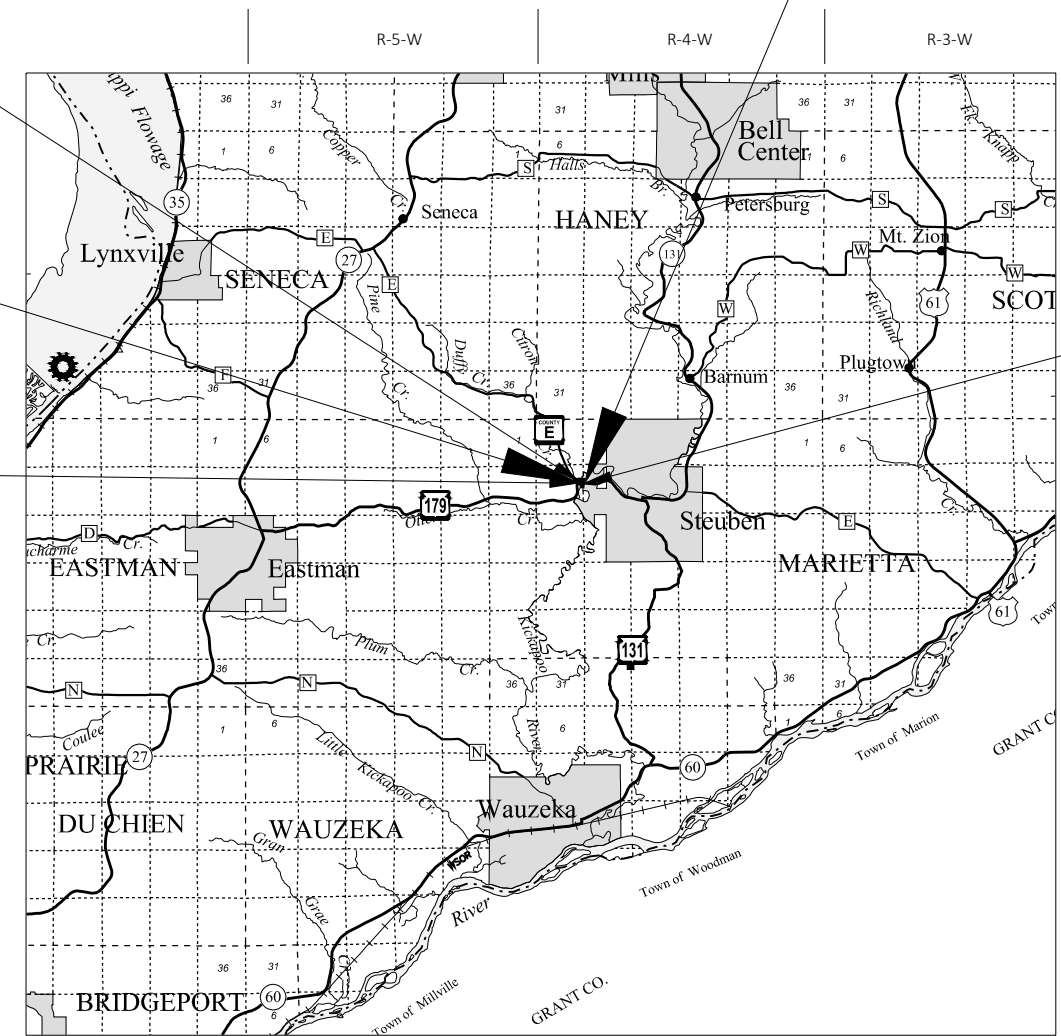
END PROJECT 5870-02-81
STA 399+03.00 'EB'

STRUCTURE B-12-0195
STA 394+32.67 'EB' - STA 396+26.32 'EB'

BEGIN PROJECT 5870-02-81
STA 390+31.24 'EB'
Y= 171,064.86
X= 387,127.13

BEGIN CONSTRUCTION
STA 389+87.77 'EB'

END CONSTRUCTION
STA 399+15.59 'EB'



TOTAL NET LENGTH OF CENTERLINE = 0.165 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), CRAWFORD COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES. ELEVATIONS ARE REFERENCED TO NAVD 88 (2012). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 18.

| STATE PROJECT | FEDERAL PROJECT | |
|---------------|-----------------|----------|
| | PROJECT | CONTRACT |
| 5870-02-81 | WISC 2022292 | 1 |
| | | |
| | | |

ORIGINAL PLANS PREPARED BY

KL Engineering
[A] Better Experience

BRIAN J. ST. VINCENT
44329-6
FITCHBURG, WI

DATE: July 20, 2021

Brian St. Vincent
(Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

| | |
|---------------------|----------------------|
| PREPARED BY | JEWELL ASSOCIATES |
| Surveyor | KL ENGINEERING, INC. |
| Designer | DEREK POTTER |
| Project Manager | SW REGION |
| Regional Examiner | CHAD SCHROEDER |
| Regional Supervisor | |
| C.O. Examiner | |

APPROVED FOR THE DEPARTMENT

DATE: _____ (Signature)

E

ORDER OF DETAIL SHEETS

- GENERAL NOTES
- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- STORM SEWER
- PERMANENT SIGNING & PAVEMENT MARKING
- FENCING PLAN
- TRAFFIC CONTROL AND CONSTRUCTION STAGING PLAN
- CONTROL POINTS

GENERAL NOTES

- RIGHT OF WAY LINES SHOWN ON THE CROSS SECTIONS ARE APPROXIMATE.
- NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.
- HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 112 LB/SY/IN. TACK COAT QUANTITIES BASED ON 0.07 GAL/SY APPLICATION RATE.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY THE OPERATION OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS.
- PLACE TOPSOIL IN ALL GRADED AREAS AS DESIGNATED BY THE ENGINEER IMMEDIATELY AFTER GRADING HAS BEEN COMPLETED. SEED, MULCH, AND FERTILIZE OR SOD AND FERTILIZE ALL AREAS 5 DAYS AFTER PLACEMENT OF TOPSOIL.
- THE EROSION CONTROL FEATURES AS SHOWN ON THE PLANS ARE AT SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.
- EROSION CONTROL DEVICES SHALL BE PLACED IN SEQUENCE WITH CONSTRUCTION OPERATIONS OR AS DETERMINED BY THE ENGINEER.
- TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.



NOTE: NO UTILITIES ARE CURRENTLY PRESENT WITHIN THE PROJECT LIMITS.

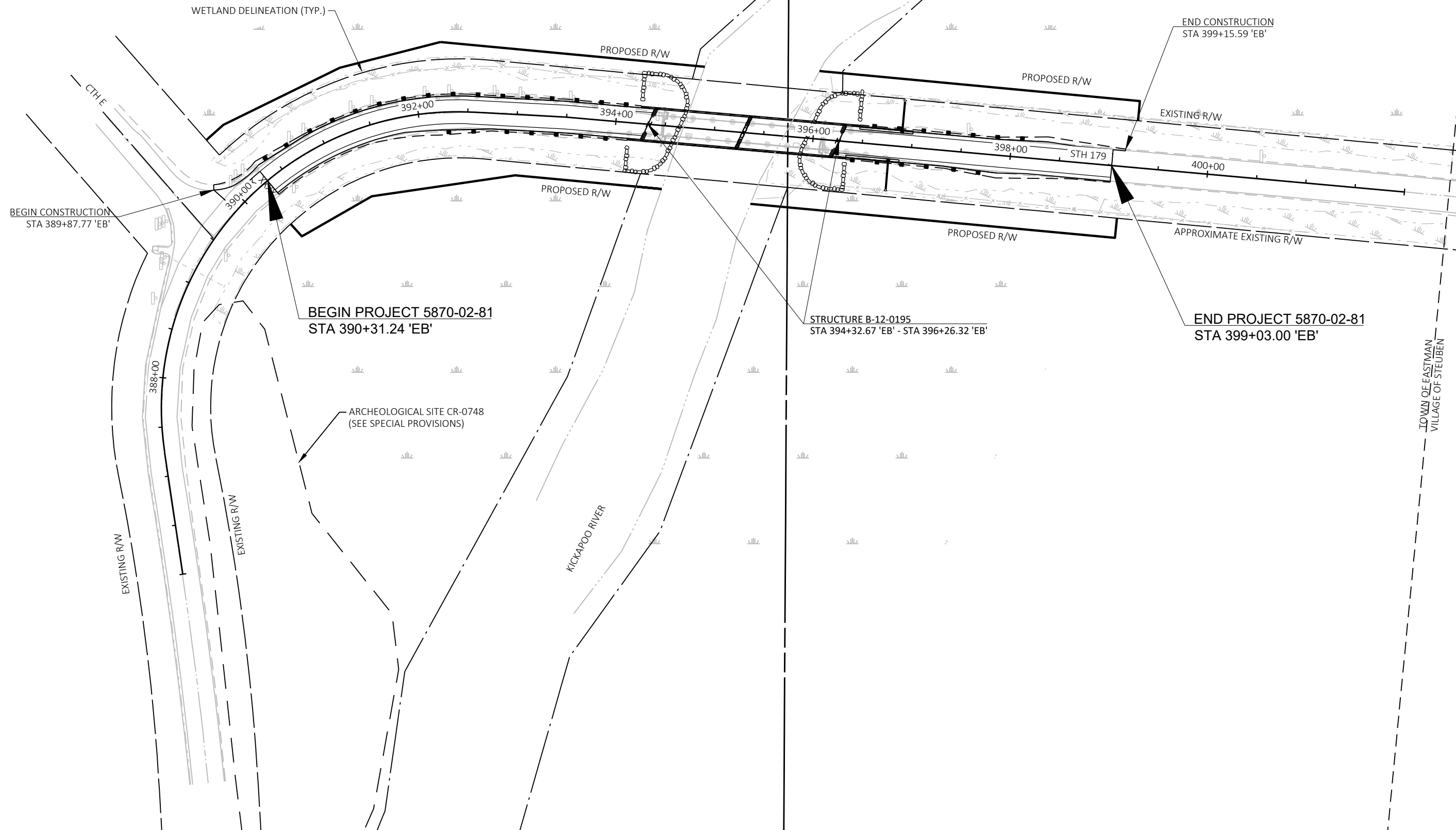
| LAND USE: | HYDROLOGIC SOIL GROUP | | | | | | | | | | | |
|-------------------------|-----------------------|------------|------------|-----------------------|------------|------------|-----------------------|------------|------------|-----------------------|------------|------------|
| | A | | | B | | | C | | | D | | |
| | SLOPE RANGE (PERCENT) | | | SLOPE RANGE (PERCENT) | | | SLOPE RANGE (PERCENT) | | | SLOPE RANGE (PERCENT) | | |
| | 0 - 2 | 2 - 6 | 6 & OVER | 0 - 2 | 2 - 6 | 6 & OVER | 0 - 2 | 2 - 6 | 6 & OVER | 0 - 2 | 2 - 6 | 6 & OVER |
| ROW CROPS | .08 .22 | .16 .30 | .22 .38 | .12 .26 | .20 .34 | .27 .44 | .15 .30 | .24 .37 | .33 .50 | .19 .34 | .28 .41 | .38 .56 |
| MEDIAN STRIP-TURF | .19 .24 | .20 .26 | .24 .30 | .19 .25 | .22 .28 | .26 .33 | .20 .26 | .23 .30 | .30 .37 | .20 .27 | .25 .32 | .30 .40 |
| SIDE SLOPE-TURF | | | .25 .32 | | | .27 .34 | | | .28 .36 | | | .30 .38 |
| PAVEMENT: | | | | | | | | | | | | |
| ASPHALT | 0.70 - 0.95 | | | | | | | | | | | |
| CONCRETE | 0.80 - 0.95 | | | | | | | | | | | |
| BRICK | 0.70 - 0.80 | | | | | | | | | | | |
| DRIVES, WALKS | 0.75 - 0.85 | | | | | | | | | | | |
| ROOFS | 0.75 - 0.95 | | | | | | | | | | | |
| GRAVEL ROADS, SHOULDERS | 0.40 - 0.60 | | | | | | | | | | | |

TOTAL PROJECT AREA = 2.85 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 1.86 ACRES

CONSULTANT
KL ENGINEERING, INC.
BRIAN ST. VINCENT, P.E.
5400 KING JAMES WAY, SUITE 200
MADISON, WI 53719
(608) 663-1218
BSTVINCENT@KLENGINEERING.COM

WISDOT
WISDOT SOUTHWEST REGION
DEREK POTTER
2101 WRIGHT ST
MADISON, WI 53704
(608) 246-3861
DEREK.POTTER@DOT.WI.GOV

DNR LIAISON
DEPARTMENT OF NATURAL RESOURCES
KAREN KALVELAGE
3550 MORMON COULEE ROAD
LA CROSSE, WI 54601
(608) 785-9115
KAREN.KALVELAGE@WISCONSIN.GOV



PROJECT NO: 5870-02-81

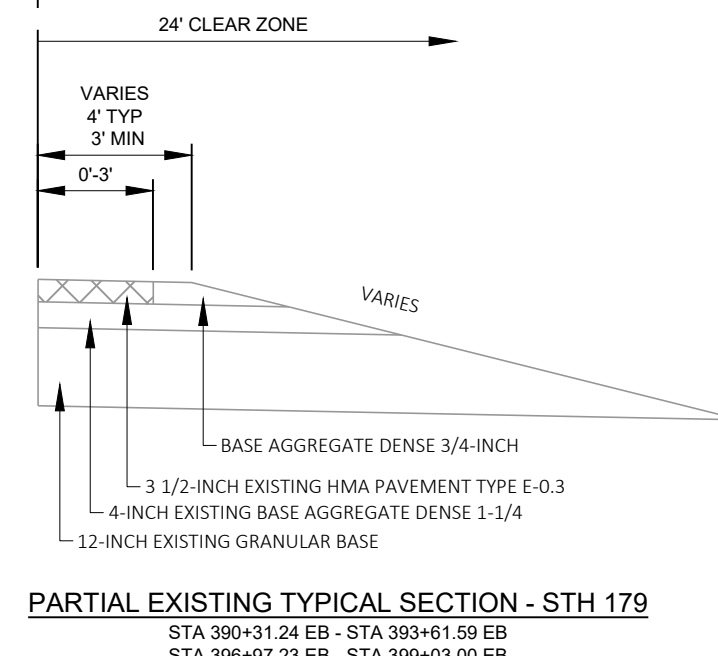
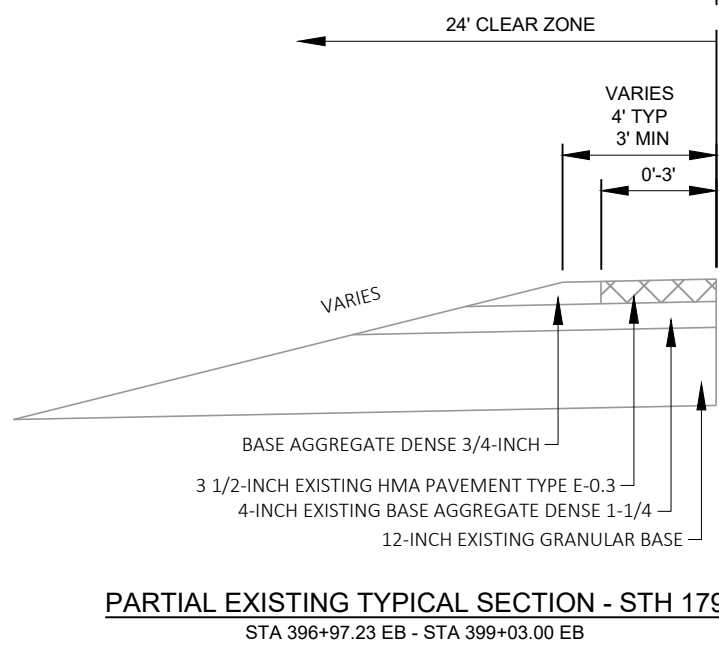
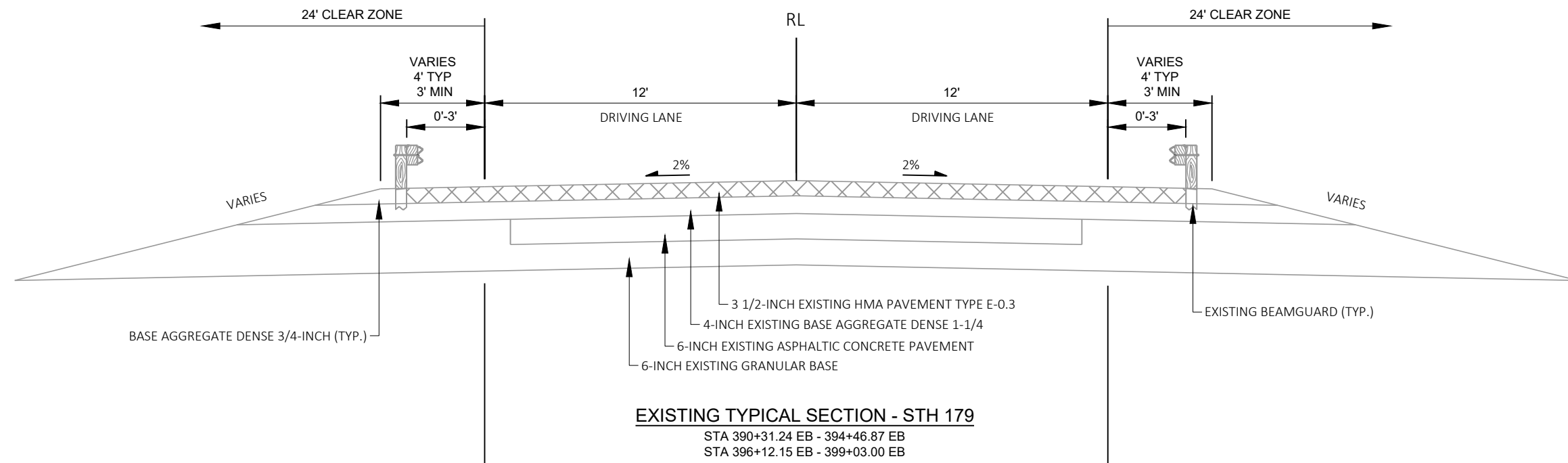
HWY: STH 179

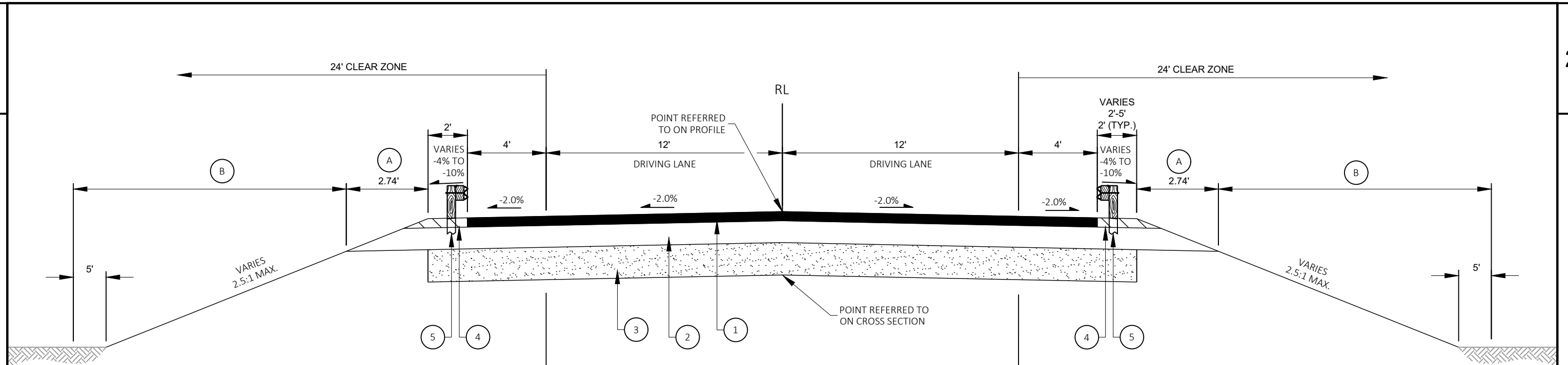
COUNTY: CRAWFORD

PROJECT OVERVIEW

SHEET

E

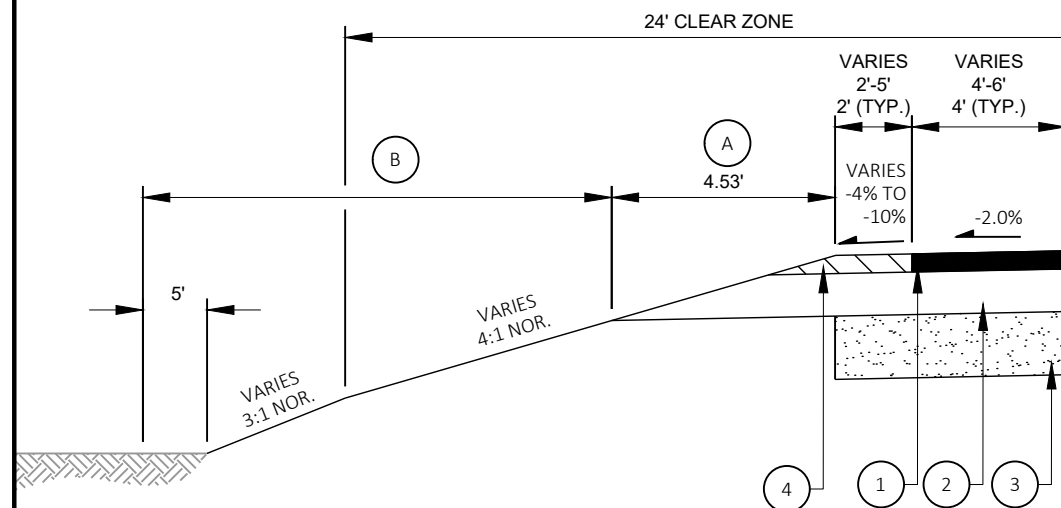




PROPOSED TYPICAL SECTION - STH 179

STA 390+31.24 EB - STA 394+32.67 EB
 STA 396+26.32 EB - STA 399+03.00 EB

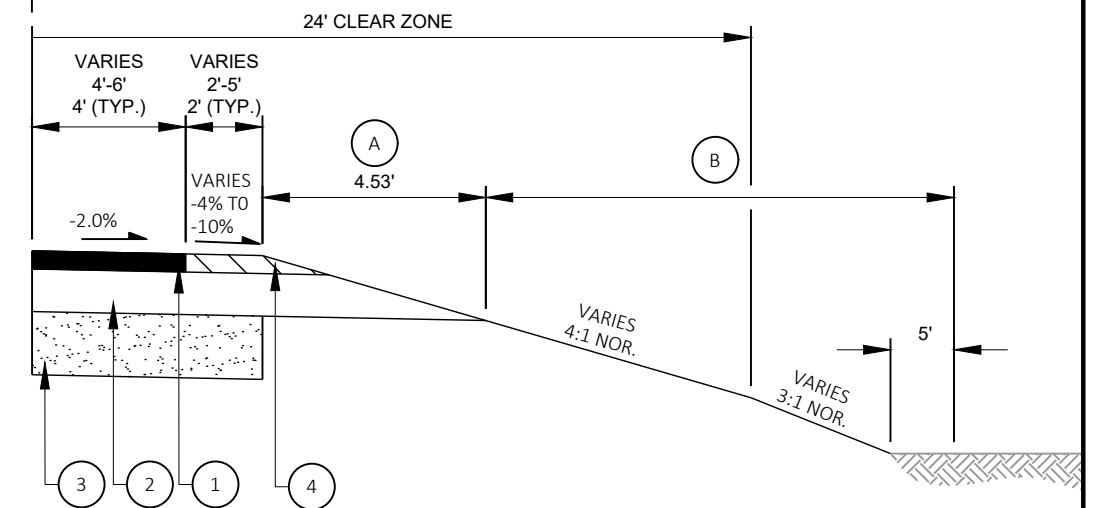
| STATION | LEFT UNPAVED SHOULDER | LEFT LANE AND PAVED SHOULDER SLOPE | RIGHT LANE AND PAVED SHOULDER SLOPE | RIGHT UNPAVED SHOULDER | DESCRIPTION |
|-----------|-----------------------|------------------------------------|-------------------------------------|------------------------|--------------------|
| 387+78.38 | -2.00% | 6.00% | -6.00% | -6.00% | BEGIN FULL SUPER |
| 391+41.96 | -2.00% | 6.00% | -6.00% | -6.00% | SHOULDER ROTATE |
| 391+67.25 | -2.00% | 6.00% | -6.00% | -10.00% | SHOULDER ROTATE |
| 392+01.75 | -2.00% | 6.00% | -6.00% | -10.00% | END FULL SUPER |
| 393+08.41 | -6.00% | 2.00% | -2.00% | -10.00% | REVERSE CROWN |
| 393+61.75 | -8.00% | 0.00% | -2.00% | -10.00% | ZERO SUPER |
| 394+15.08 | -10.00% | -2.00% | -2.00% | -10.00% | BEGIN NORMAL CROWN |
| 397+75.00 | -10.00% | -2.00% | -2.00% | -10.00% | SHOULDER ROTATE |
| 398+11.71 | -10.00% | -2.00% | -2.00% | -4.00% | SHOULDER ROTATE |
| 398+36.70 | -10.00% | -2.00% | -2.00% | -4.00% | SHOULDER ROTATE |
| 398+75.00 | -4.00% | -2.00% | -2.00% | -4.00% | SHOULDER ROTATE |



PARTIAL PROPOSED TYPICAL SECTION - STH 179

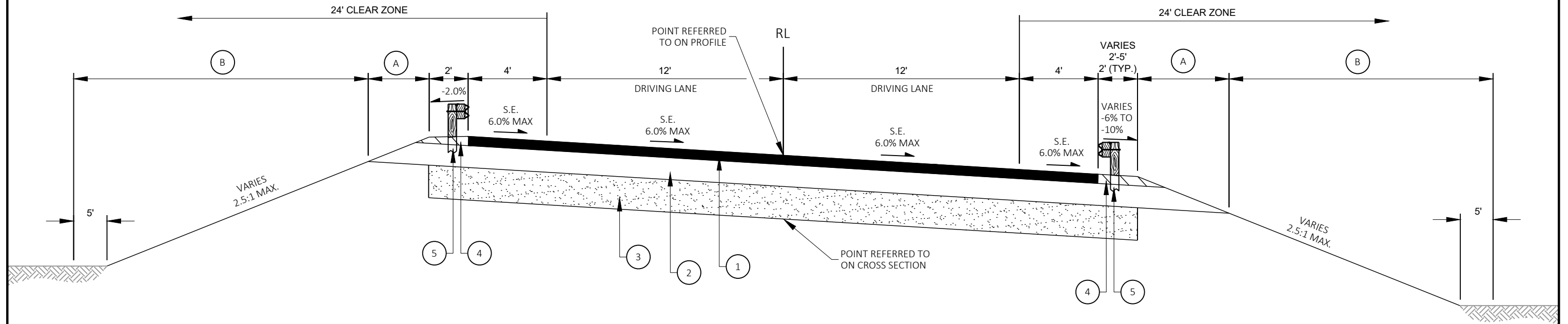
STA 389+87.77 EB - STA 390+31.24 EB
 STA 398+40.59 EB - STA 399+03.00 EB

| LEGEND | |
|--------|---|
| ① | HMA PAVEMENT, 4-INCH LOWER: 2.25-INCH, (3 LT 58-28 S) UPPER: 1.75-INCH, (4 LT 58-28 S) |
| ② | BASE AGGREGATE DENSE 1 1/4-INCH, 9-INCH |
| ③ | SELECT CRUSHED MATERIAL, 16-INCH |
| ④ | BASE AGGREGATE DENSE 3/4-INCH, 4-INCH |
| ⑤ | MGS GUARDRAIL 3K, MGS THRIE BEAM TRANSITION, OR MGS GUARDRAIL TERMINAL EAT (SEE CONSTRUCTION DETAIL AND PLAN & PROFILE SHEETS FOR LOCATIONS AND ADDITIONAL INFORMATION) |
| (A) | SEEDING MIXTURE NO. 70 |
| (B) | SALVAGED TOPSOIL, SEEDING MIXTURE NO. 70, EROSION MAT URBAN CLASS I TYPE B |



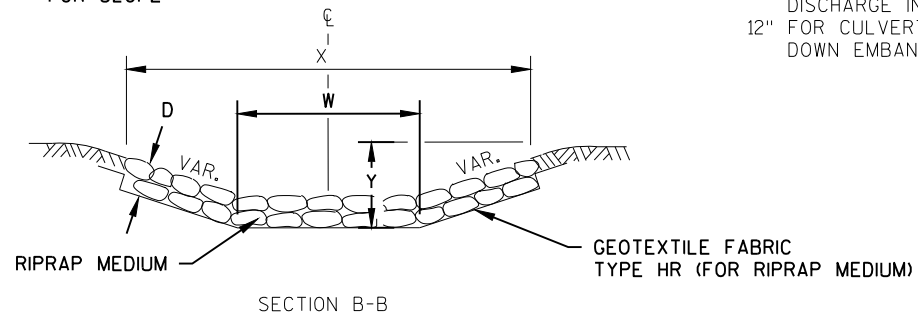
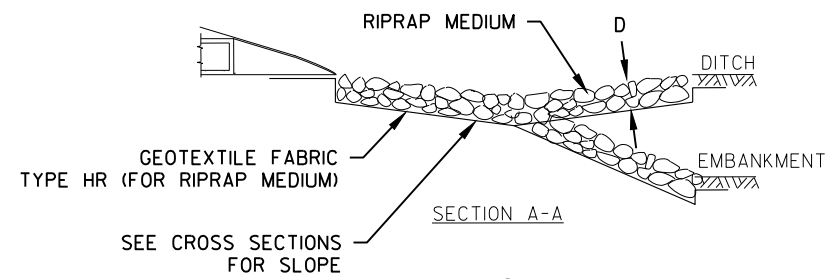
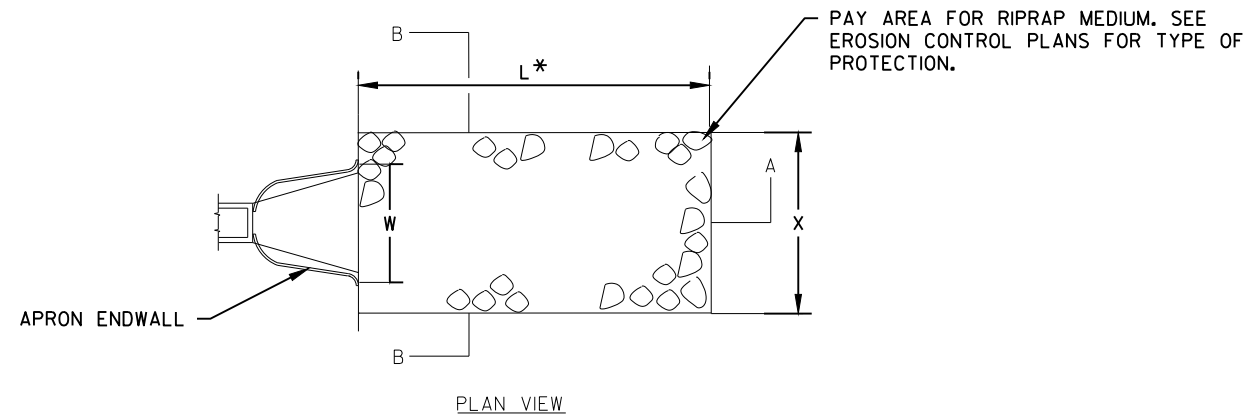
PARTIAL PROPOSED TYPICAL SECTION - STH 179

STA 390+31.24 EB - STA 392+16.19 EB
 STA 397+78.09 EB - STA 399+03.00 EB



SUPERELEVATION SECTION - STH 179
 SUPERELEVATED STH 179

| LEGEND | |
|--------|---|
| (1) | HMA PAVEMENT, 4-INCH LOWER: 2.25-INCH, (3 LT 58-28 S) UPPER: 1.75-INCH, (4 LT 58-28 S) |
| (2) | BASE AGGREGATE DENSE 1 1/4-INCH, 9-INCH |
| (3) | SELECT CRUSHED MATERIAL, 16-INCH |
| (4) | BASE AGGREGATE DENSE 3/4-INCH, 4-INCH |
| (5) | MGS GUARDRAIL 3K, MGS THRIE BEAM TRANSITION, OR MGS GUARDRAIL TERMINAL EAT (SEE CONSTRUCTION DETAIL AND PLAN & PROFILE SHEETS FOR LOCATIONS AND ADDITIONAL INFORMATION) |
| (A) | SEEDING MIXTURE NO. 70 |
| (B) | SALVAGED TOPSOIL, SEEDING MIXTURE NO. 70, EROSION MAT URBAN CLASS I TYPE B |



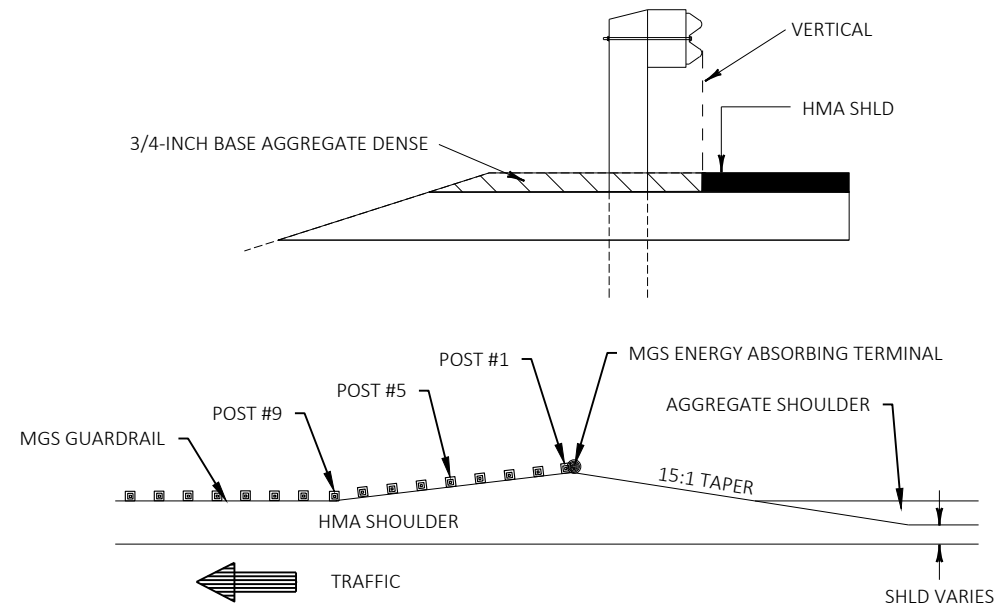
$L^* = 3 \times W$ (NOR.) OR 10' MIN. OR AS INDICATED IN THE PLANS OR AS DIRECTED BY THE ENGINEER.

$D = 18"$ FOR RIPRAP MEDIUM

$X = W+2'$ FOR TYPICAL CULVERT DISCHARGE INTO DITCH
 $W+5'$ FOR CULVERT DISCHARGE DOWN EMBANKMENT SLOPE

$Y = 0'$ FOR TYPICAL CULVERT DISCHARGE INTO DITCH
 $12"$ FOR CULVERT DISCHARGE DOWN EMBANKMENT SLOPE

RIPRAP MEDIUM AND GEOTEXTILE FABRIC DETAIL
 AT APRON ENDWALLS
 (SEE MISCELLANEOUS QUANTITY SHEETS FOR LOCATIONS)



DETAIL FOR ASPHALTIC SHOULDER AT BEAM GUARD

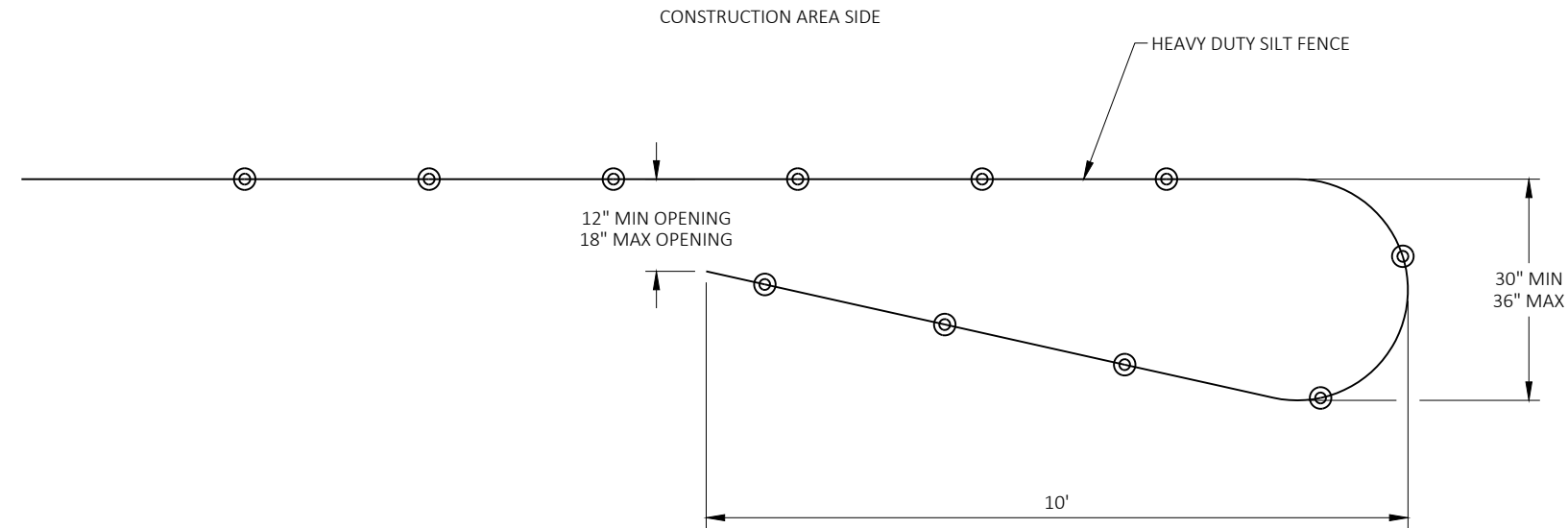
(SEE PLAN DETAIL SHEETS FOR LOCATIONS)

SEE S.D.D. FOR DETAILS NOT SHOWN:
 "MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL",
 "MIDWEST GUARDRAIL SYSTEM (MGS) ENERGY ABSORBING TERMINAL",
 "MIDWEST GUARDRAIL SYSTEM (MGS) THRIE BEAM TRANSITION",

| GUARDRAIL TERMINAL POINT TABLE | | | |
|--------------------------------|------|------------|------------------------------|
| TERMINAL LOCATION | POST | STATION | OFFSET TO FACE OF BEAM GUARD |
| 390+34, LT | 1 | STA 390+34 | 18.0' LT |
| | 5 | STA 390+57 | 17.0' LT |
| | 9 | STA 390+81 | 16.0' LT |
| 392+20, RT | 1 | STA 392+20 | 18.0' RT |
| | 5 | STA 392+47 | 17.0' RT |
| | 9 | STA 392+72 | 16.0' RT |
| 397+88, RT | 1 | STA 397+88 | 18.0' RT |
| | 5 | STA 397+63 | 17.8' RT |
| | 9 | STA 397+38 | 16.0' RT |
| 398+37, LT | 1 | STA 398+37 | 18.0' LT |
| | 5 | STA 398+12 | 17.0' LT |
| | 9 | STA 397+87 | 16.0' LT |

BEAM GUARD ENERGY ABSORBING TERMINALS - POST DETAILS

(SEE PLAN DETAIL SHEETS FOR LOCATIONS AND STANDARD DETAIL DRAWINGS FOR ADDITIONAL DETAILS)



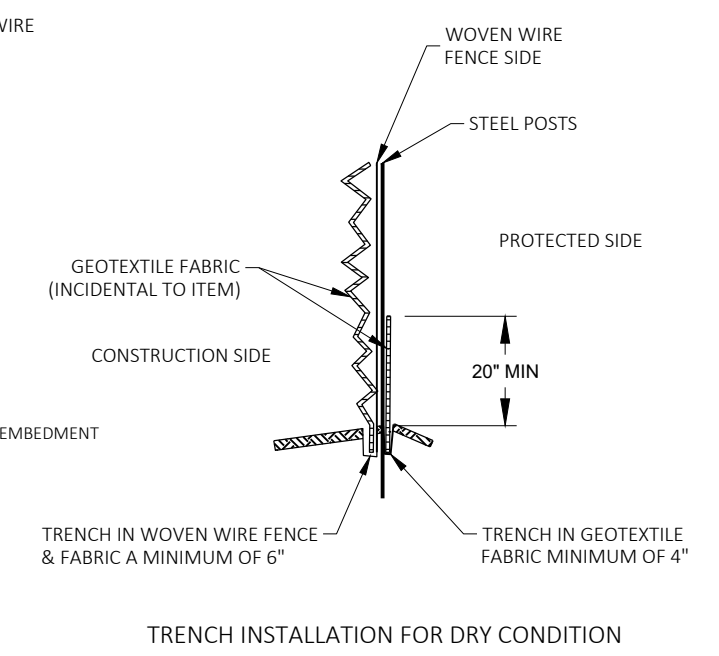
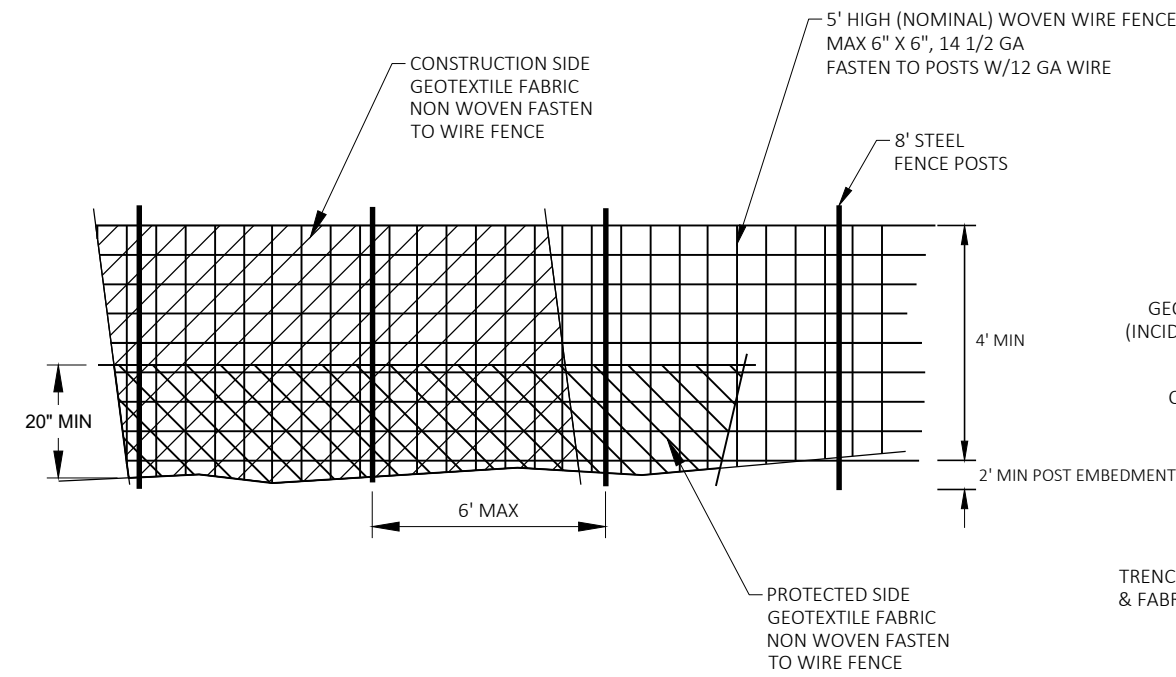
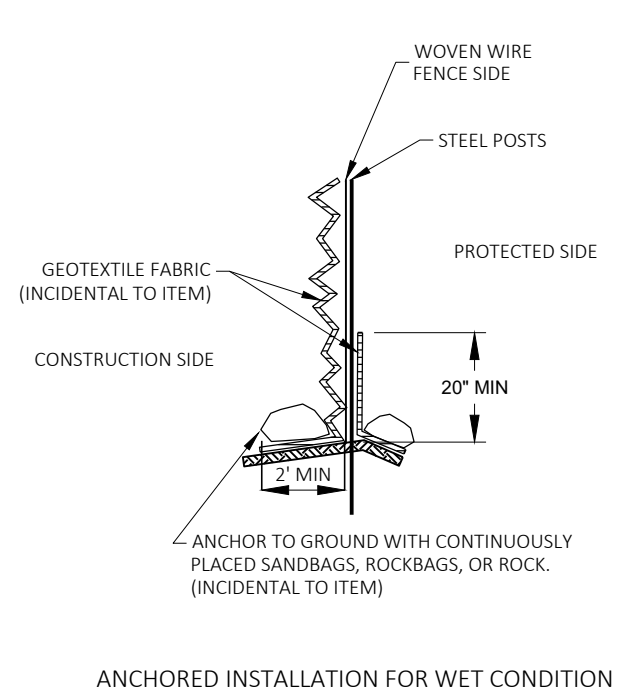
HEAVY DUTY SILT FENCE TURN-AROUND DETAIL

TO BE INSTALLED AT EACH END OF HEAVY DUTY SILT FENCE
(INCIDENTAL TO HEAVY DUTY SILT FENCE ITEM)

NOTES:

THE NON-CONSTRUCTION SIDE OF THE FENCE SHOULD BE KEPT CLEAR OF TALL VEGETATION THAT COULD ALLOW ANIMALS TO MANEUVER OVER THE FENCING.

FENCING SHOULD BE INSTALLED WITH TURN-AROUNDS AT THE ENDS AND AT ANY ACCESS OPENINGS NEEDED IN THE FENCING, IN ORDER TO REDIRECT ANIMALS AWAY FROM OPENINGS.



HEAVY DUTY SILT FENCE

GENERAL NOTES:
 FASTEN THE GEOTEXTILE FABRIC TO THE WOVEN WIRE FENCE EVERY 2- FEET
 ADJUST POST EMBEDMENT AND/OR SPACING BASED ON EXISTING SOILS

GENERAL NOTES

THE HEAVY DUTY SILT FENCE RELIEF DETAIL IS A SUPPLEMENTAL DETAIL TO THE HEAVY DUTY SILT FENCE DETAILS AND SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

CONSTRUCTION OF THE HEAVY DUTY SILT FENCE OPENING SHALL BE INCIDENTAL TO THE COST OF THE HEAVY DUTY SILT FENCE BID ITEM.

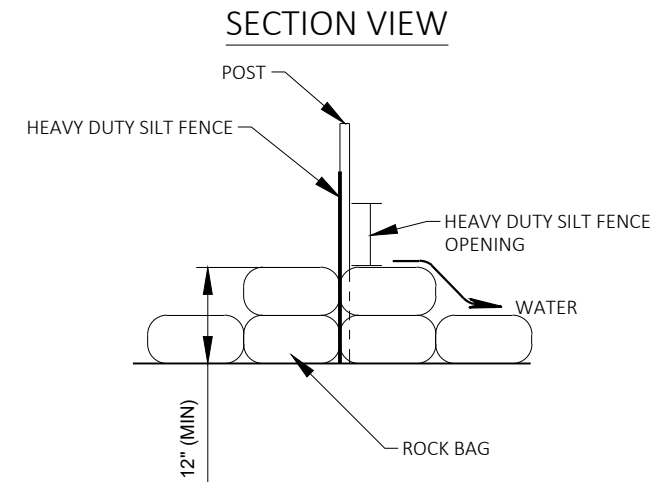
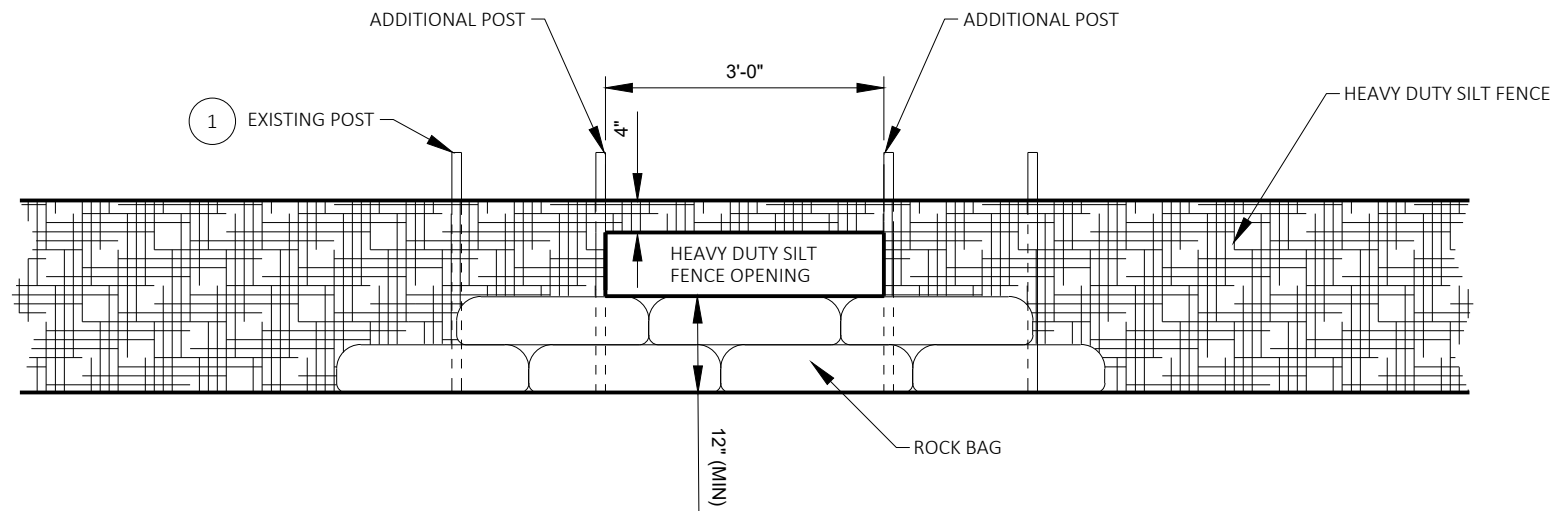
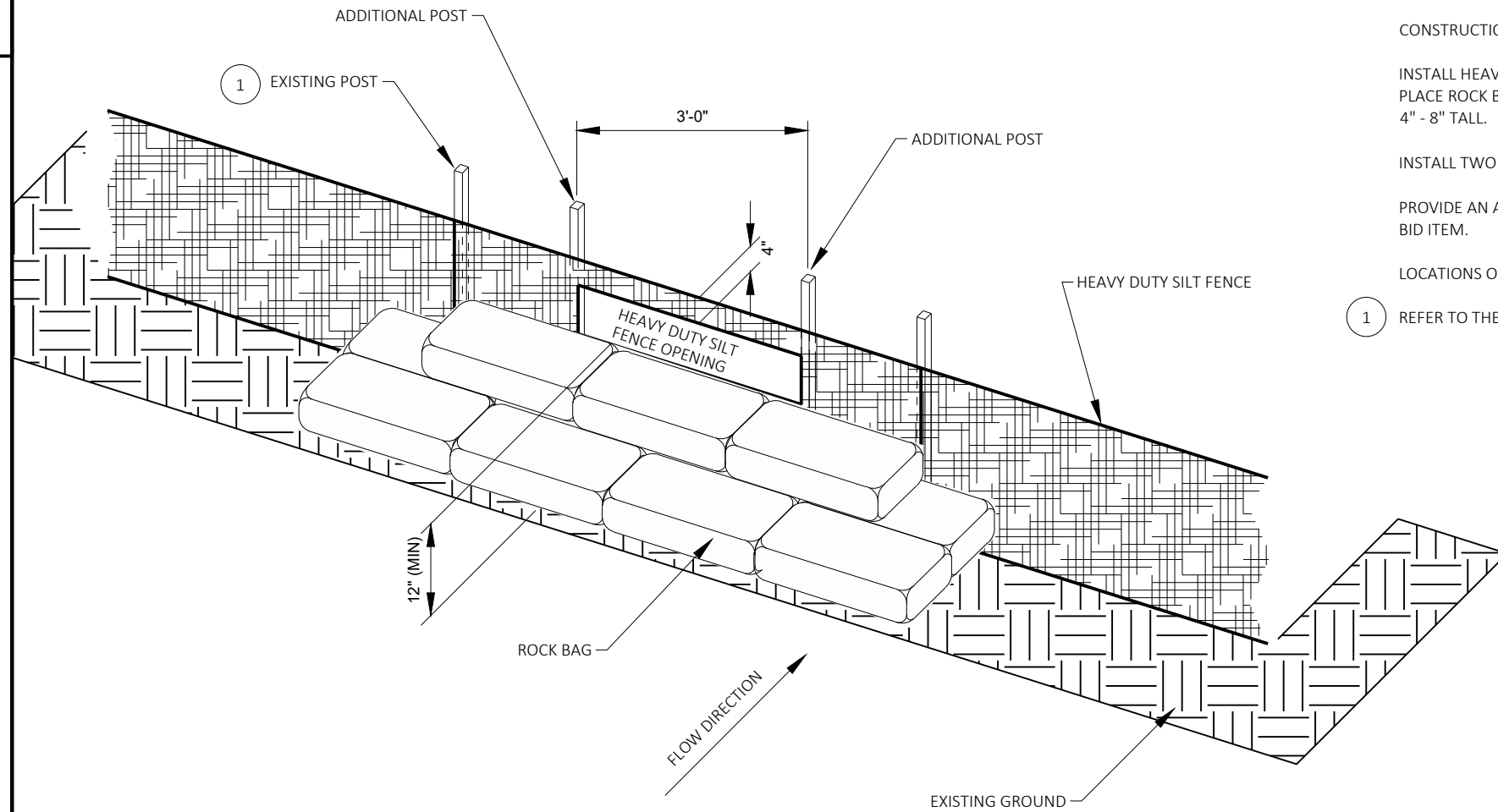
INSTALL HEAVY DUTY SILT FENCE PRIOR TO CONSTRUCTING THE HEAVY DUTY SILT FENCE OPENING. PRIOR TO CUTTING THE HEAVY DUTY SILT FENCE OPENING, PLACE ROCK BAGS AT THE HEAVY DUTY SILT FENCE OPENING AS SHOWN IN THIS DETAIL. HEAVY DUTY SILT FENCE OPENING SHOULD BE BETWEEN 4" - 8" TALL.

INSTALL TWO (2) ADDITIONAL POSTS AT 3' SPACING AT LOCATION OF OPENING.

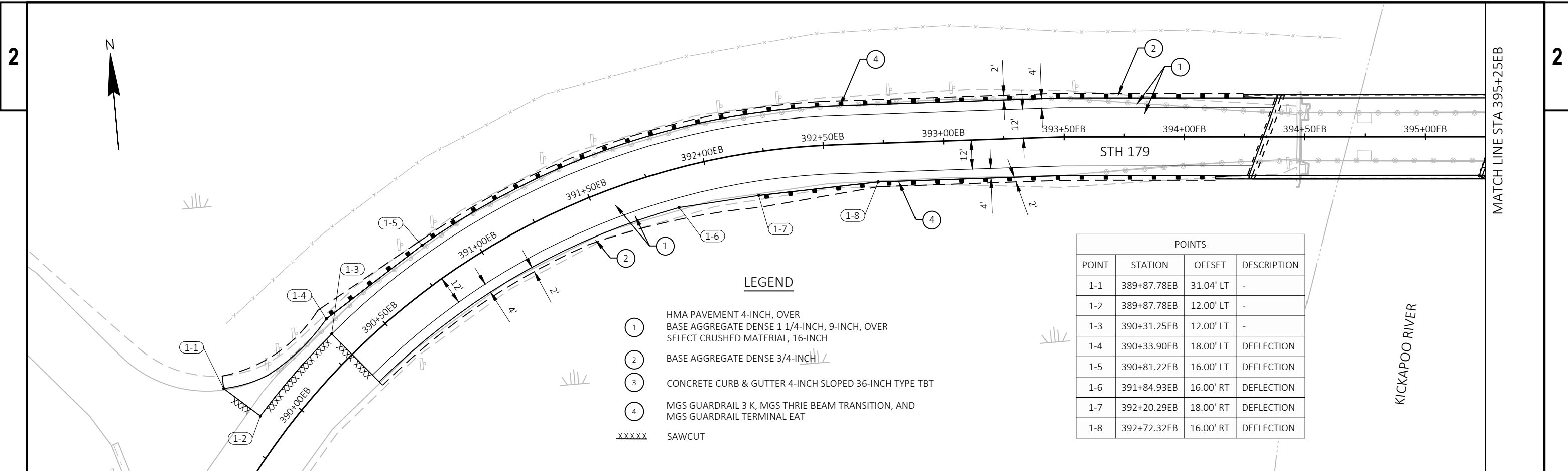
PROVIDE AN ADEQUATE NUMBER OF ROCK BAGS TO STACK TO A HEIGHT OF 1' (MINIMUM). ROCK BAGS SHALL BE PAID UNDER THE ROCK BAGS BID ITEM.

LOCATIONS OF HEAVY DUTY SILT FENCE RELIEFS WILL BE DETERMINED BY THE ENGINEER.

1 REFER TO THE HEAVY DUTY SILT FENCE DETAIL AND SPECIAL PROVISION FOR ADDITIONAL INFORMATION



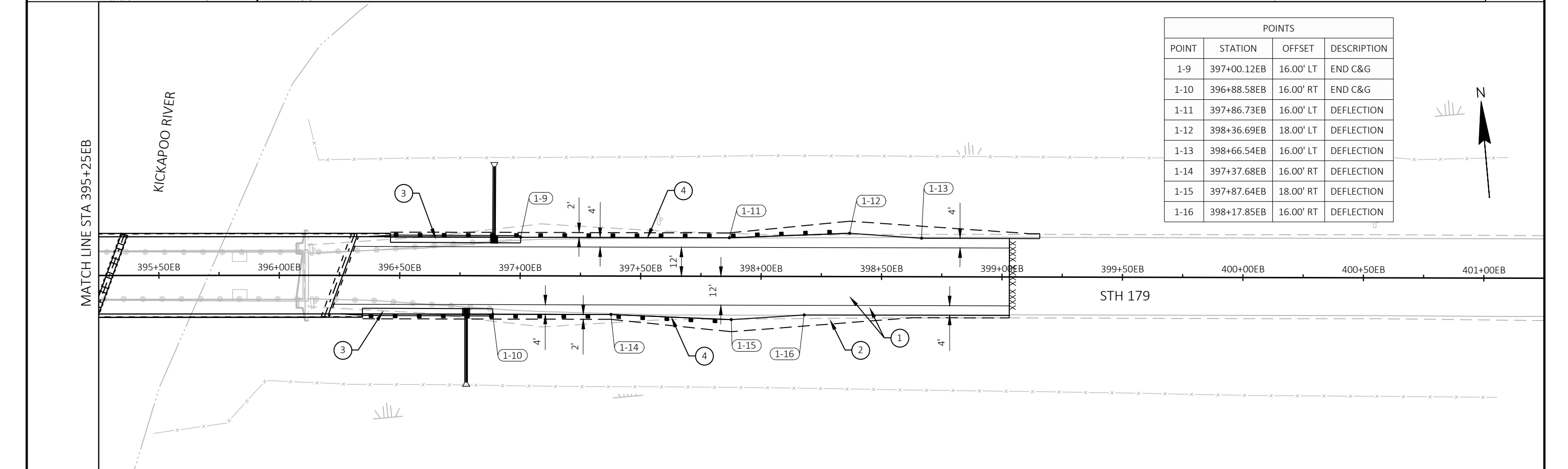
HEAVY DUTY SILT FENCE RELIEF DETAIL



LEGEND

- ① HMA PAVEMENT 4-INCH, OVER
BASE AGGREGATE DENSE 1 1/4-INCH, 9-INCH, OVER
SELECT CRUSHED MATERIAL, 16-INCH
- ② BASE AGGREGATE DENSE 3/4-INCH
- ③ CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE TBT
- ④ MGS GUARDRAIL 3 K, MGS THRIE BEAM TRANSITION, AND
MGS GUARDRAIL TERMINAL EAT
- XXXXX SAWCUT

| POINTS | | | |
|--------|-------------|-----------|-------------|
| POINT | STATION | OFFSET | DESCRIPTION |
| 1-1 | 389+87.78EB | 31.04' LT | - |
| 1-2 | 389+87.78EB | 12.00' LT | - |
| 1-3 | 390+31.25EB | 12.00' LT | - |
| 1-4 | 390+33.90EB | 18.00' LT | DEFLECTION |
| 1-5 | 390+81.22EB | 16.00' LT | DEFLECTION |
| 1-6 | 391+84.93EB | 16.00' RT | DEFLECTION |
| 1-7 | 392+20.29EB | 18.00' RT | DEFLECTION |
| 1-8 | 392+72.32EB | 16.00' RT | DEFLECTION |

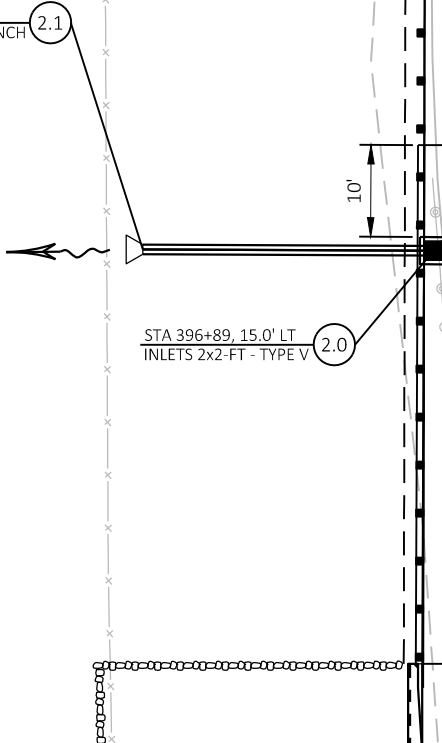


| POINTS | | | |
|--------|-------------|-----------|-------------|
| POINT | STATION | OFFSET | DESCRIPTION |
| 1-9 | 397+00.12EB | 16.00' LT | END C&G |
| 1-10 | 396+88.58EB | 16.00' RT | END C&G |
| 1-11 | 397+86.73EB | 16.00' LT | DEFLECTION |
| 1-12 | 398+36.69EB | 18.00' LT | DEFLECTION |
| 1-13 | 398+66.54EB | 16.00' LT | DEFLECTION |
| 1-14 | 397+37.68EB | 16.00' RT | DEFLECTION |
| 1-15 | 397+87.64EB | 18.00' RT | DEFLECTION |
| 1-16 | 398+17.85EB | 16.00' RT | DEFLECTION |

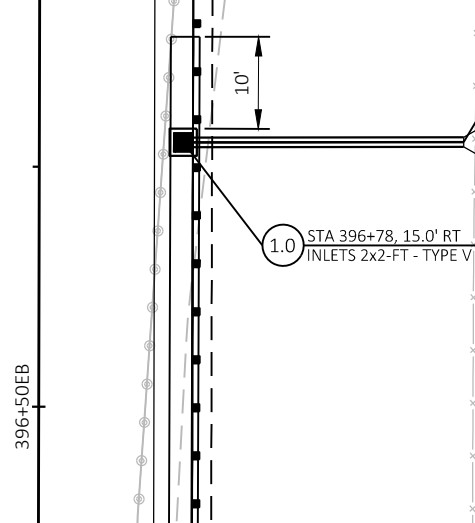
LEGEND

- INLET
- △ ENDWALL
- WATER FLOW DIRECTION

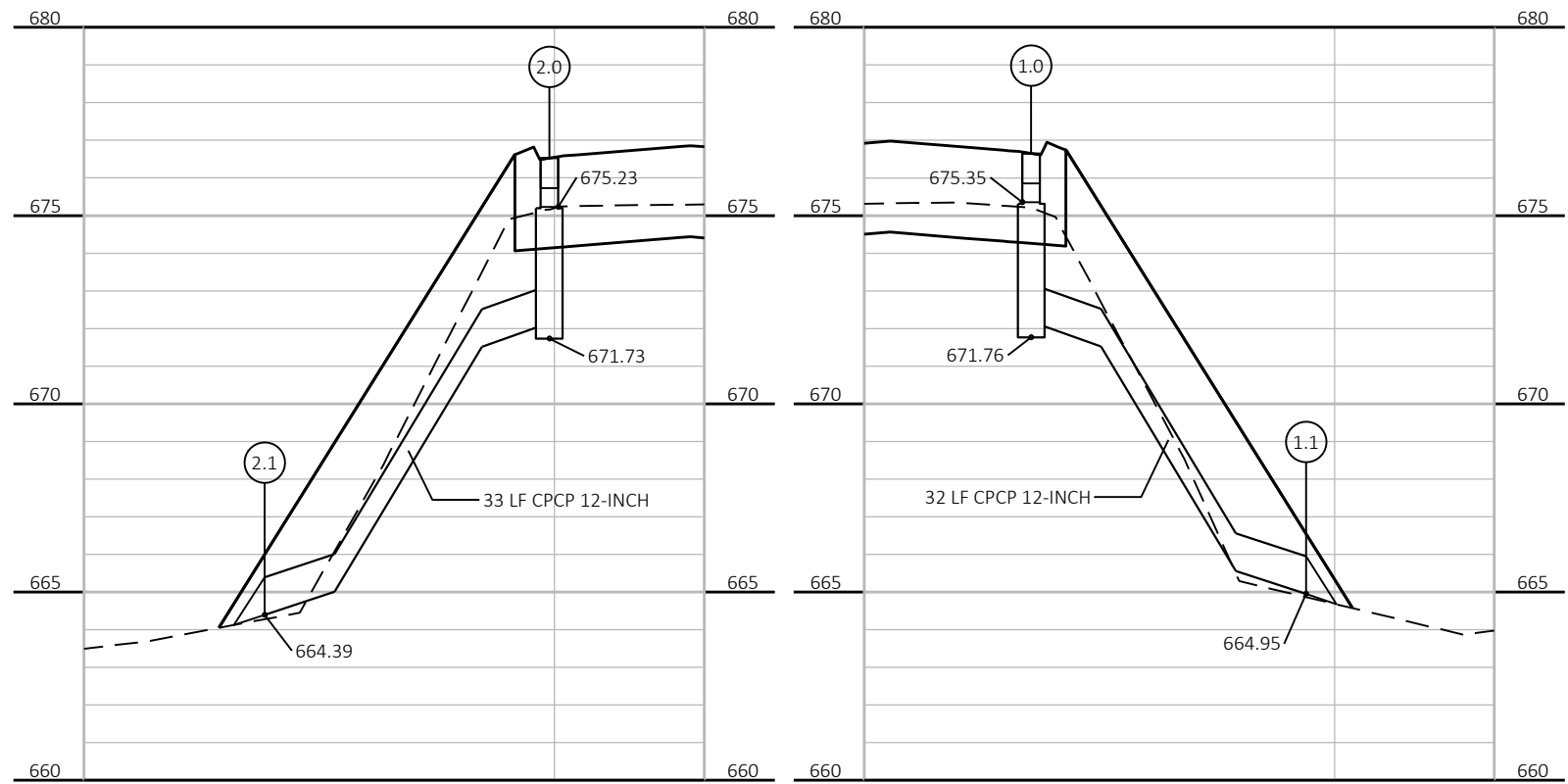
STA 396+89, 45.3' LT
 APRON ENDWALLS FOR CULVERT PIPE STEEL 12-INCH



STA 396+78, 44.2' RT
 APRON ENDWALLS FOR CULVERT PIPE STEEL 12-INCH



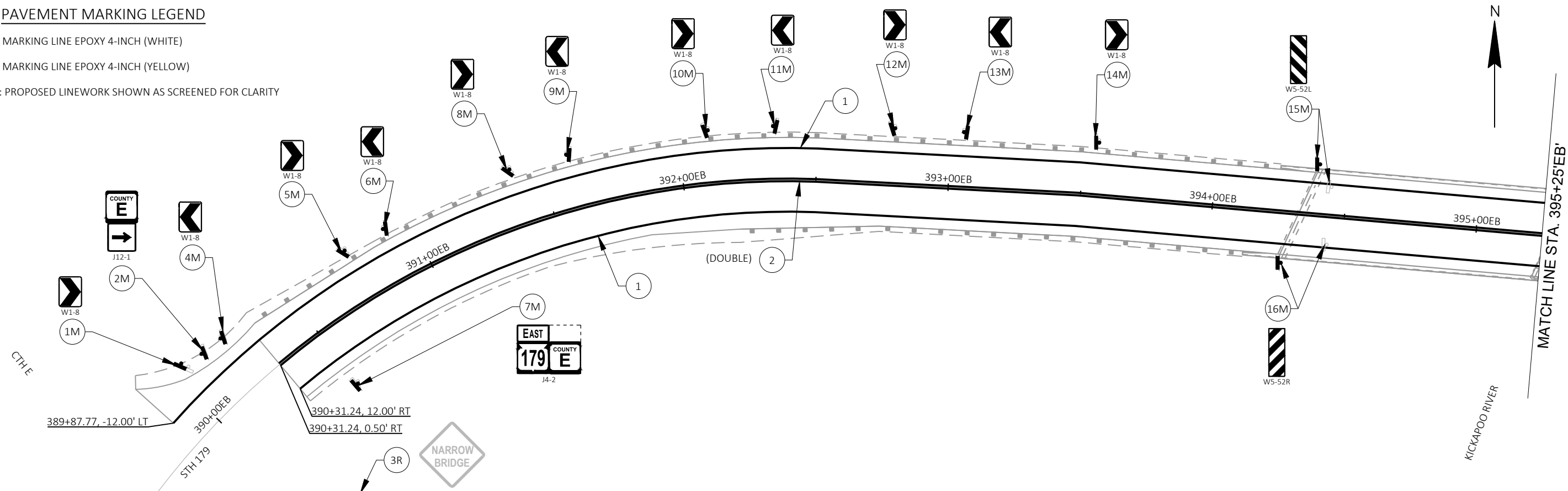
NOTE: FINAL PLACEMENT OF INLETS MUST MAINTAIN THE MINIMUM POST SEPARATION DISTANCES IN THE STANDARD DETAIL DRAWING.



PAVEMENT MARKING LEGEND

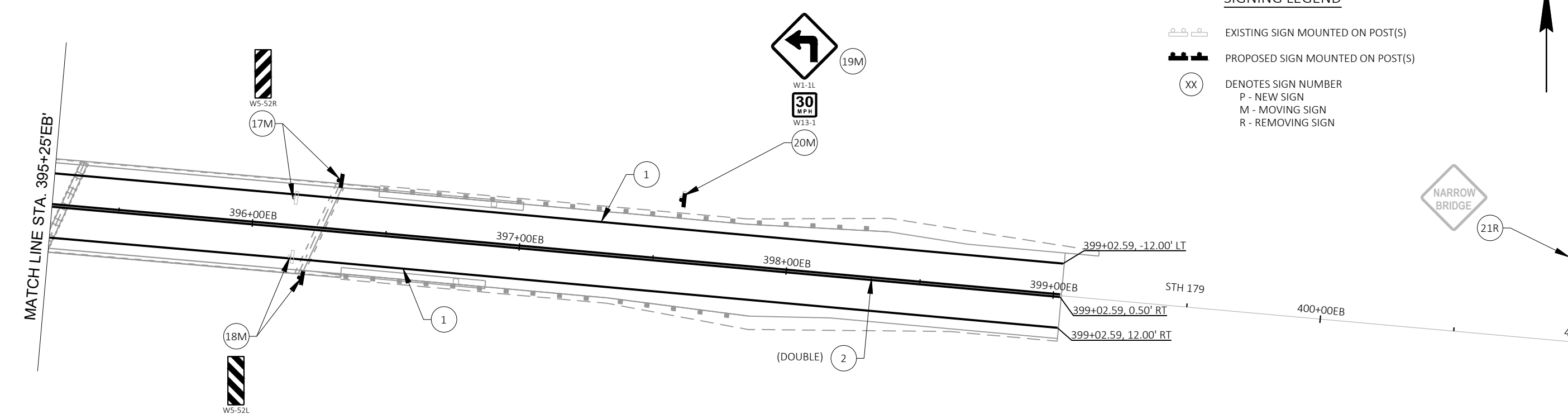
- 1 MARKING LINE EPOXY 4-INCH (WHITE)
- 2 MARKING LINE EPOXY 4-INCH (YELLOW)

NOTE: PROPOSED LINEWORK SHOWN AS SCREENED FOR CLARITY



SIGNING LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON POST(S)
- XX DENOTES SIGN NUMBER
- P - NEW SIGN
- M - MOVING SIGN
- R - REMOVING SIGN



TRAFFIC CONTROL GENERAL NOTES:

- 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. REMOVING/REPLACING OR COVERING/UNCOVERING SIGNS WILL BE INCIDENTAL TO OTHER TRAFFIC CONTROL ITEMS.
- "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS REFLECTIVE ORANGE.
- CONSIDER GEOMETRICS WHEN LOCATING TRAFFIC CONTROL ITEMS SUCH AS SIGNS AND MESSAGE BOARDS SO THE DRIVER HAS A CLEAR VIEW OF THE TRAFFIC CONTROL ITEMS.
- IF SIGNS ARE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS WITH A MINIMUM 5' MOUNTING HEIGHT.
- THE TURNING OF TRAFFIC CONTROL DEVICES WHEN NOT IN USE TO OBSCURE THE MESSAGE WILL NOT BE ALLOWED.
- MOVE, REMOVE OR INSTALL ROUTE MARKER SIGNS AS REQUIRED TO MAINTAIN NECESSARY ROUTE GUIDANCE THROUGHOUT CONSTRUCTION.
- CONTRACTORS EQUIPMENT AND MATERIAL STOCKPILES MAY NOT BE STORED WITHIN THE CONSTRUCTION CLEAR ZONE WHILE THE CONTRACTOR IS NOT WORKING, UNLESS THEY ARE PROTECTED BY CONCRETE BARRIER TEMPORARY PRECAST.

MAINTENANCE OF TRAFFIC:

- STH 179 SHALL BE CLOSED AND DETOURED FOR STRUCTURE REPLACEMENT.

LOCAL ROADS AND DRIVEWAYS

- MAINTAIN LOCAL ACCESS AT ALL TIMES

CONSTRUCTION TO BE COMPLETED:

- STH 179
- RECONSTRUCT BRIDGE ROADWAY APPROACHES
- CONSTRUCT BRIDGE B-12-195

NOTES:

REFER TO THE FOLLOWING TRAFFIC CONTROL DETAILS, AS WELL AS STANDARD DETAIL DRAWINGS FOR TRAFFIC CONTROL DEVICES AS NECESSARY, UNLESS OTHERWISE DIRECTED BY THE ENGINEER:

- SEE S.D.D. "BARRICADES AND SIGNS FOR MAINLINE CLOSURES"
- SEE S.D.D. "DETOUR SIGNING FOR MAINLINE CLOSURES"



NOTE: PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE PLACED AT THE FOLLOWING LOCATIONS:

- STH 179 WB AT EAST END OF B-12-195
- STH 179 EB AT WEST END OF B-12-195

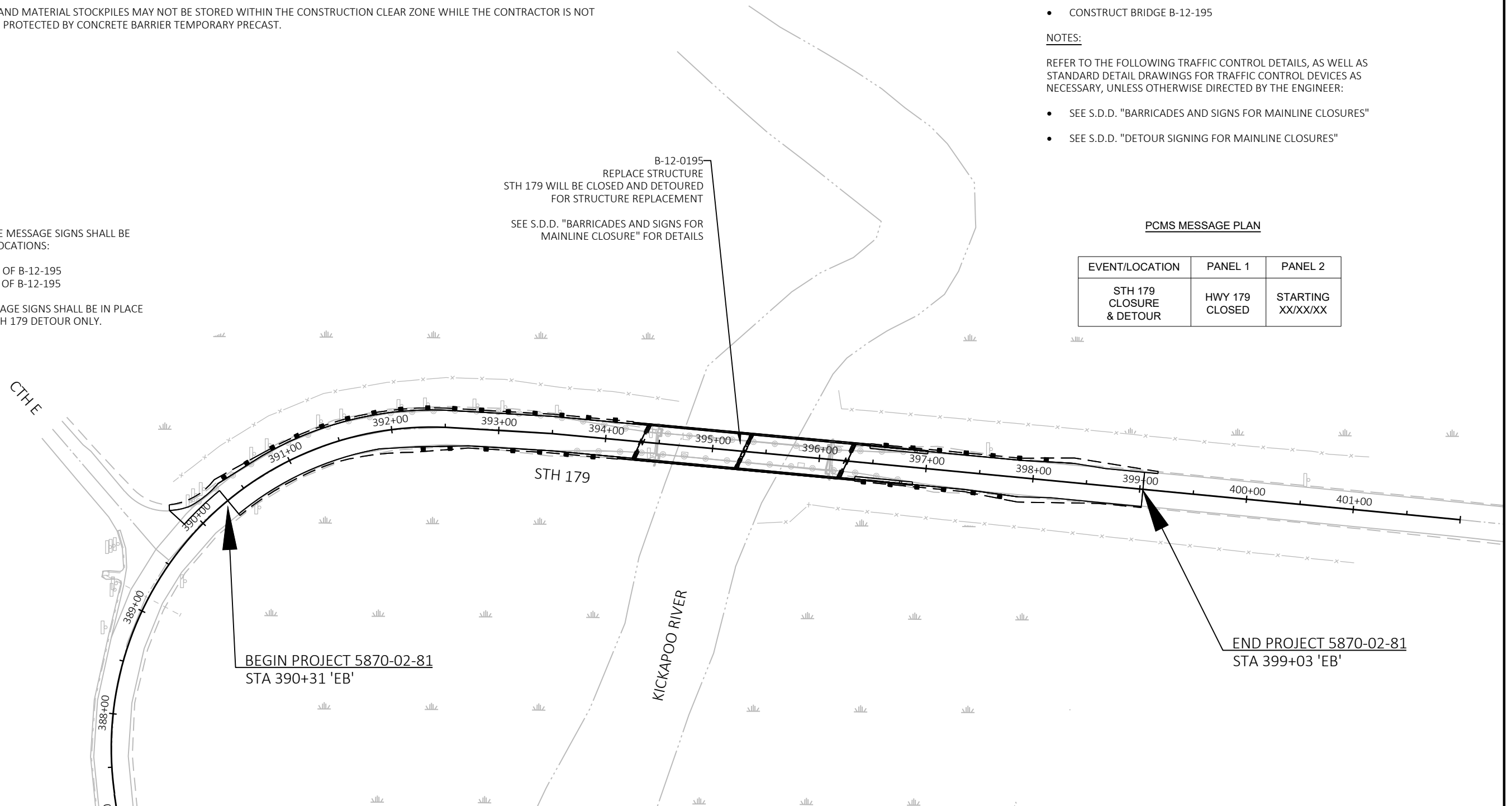
PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE IN PLACE FOR 7 DAYS PRIOR TO EACH STH 179 DETOUR ONLY.

B-12-0195
REPLACE STRUCTURE
STH 179 WILL BE CLOSED AND DETOURED
FOR STRUCTURE REPLACEMENT

SEE S.D.D. "BARRICADES AND SIGNS FOR
MAINLINE CLOSURE" FOR DETAILS

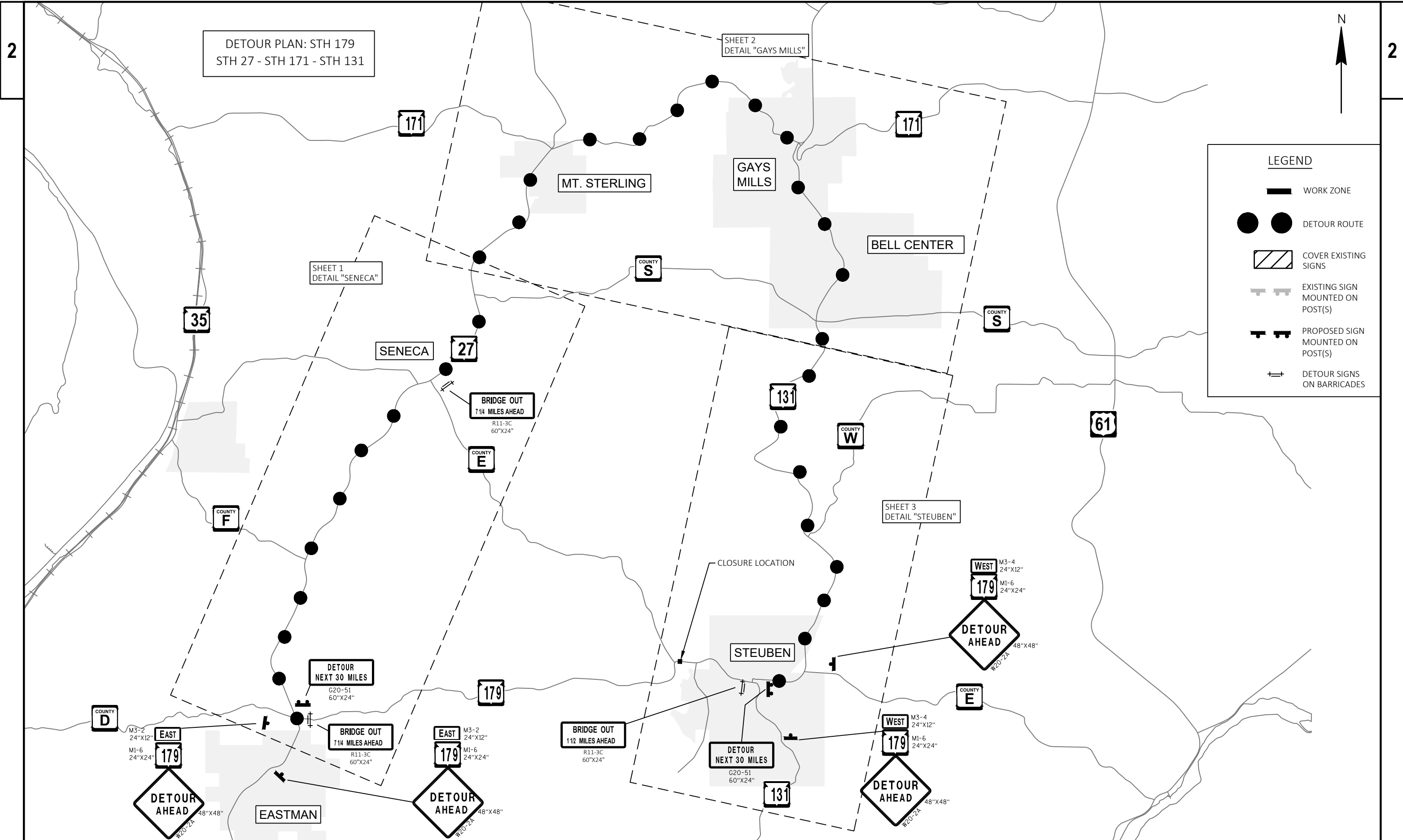
PCMS MESSAGE PLAN

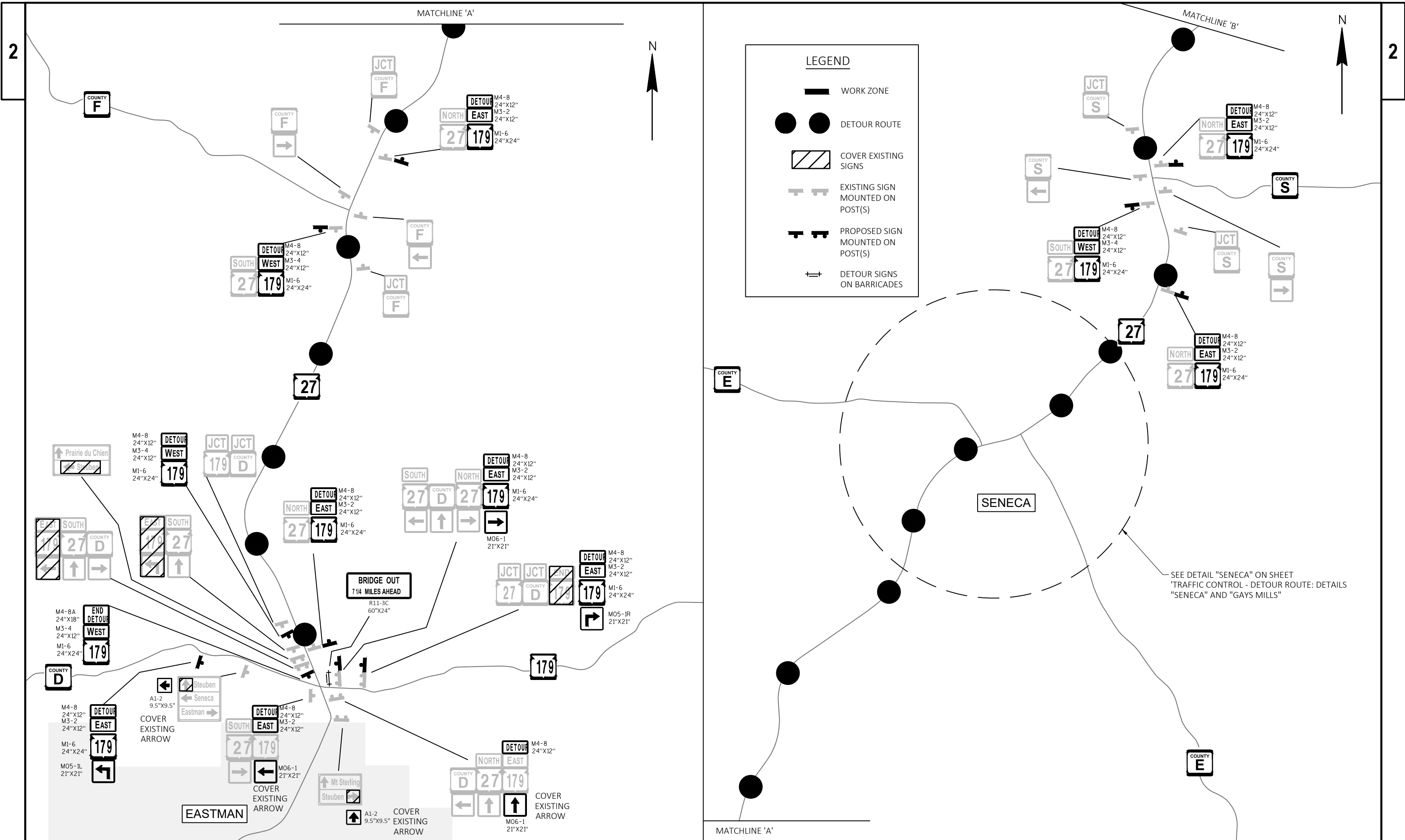
| EVENT/LOCATION | PANEL 1 | PANEL 2 |
|--------------------------------|-------------------|----------------------|
| STH 179 CLOSURE & DETOUR | HWY 179 CLOSED | STARTING XX/XX/XX |



BEGIN PROJECT 5870-02-81
STA 390+31 'EB'

END PROJECT 5870-02-81
STA 399+03 'EB'





PROJECT NO: 5870-02-81

HWY: STH 179

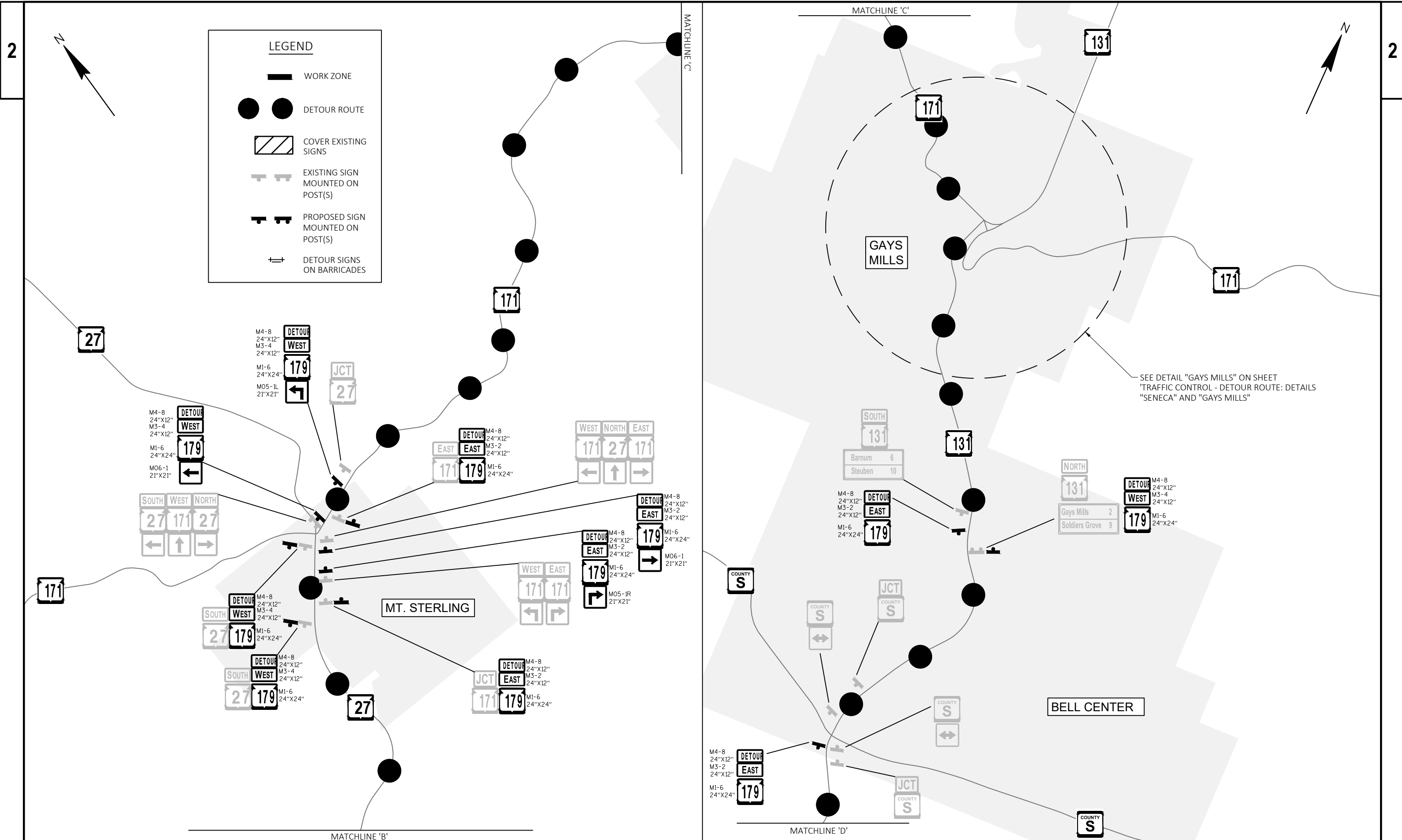
COUNTY: CRAWFORD

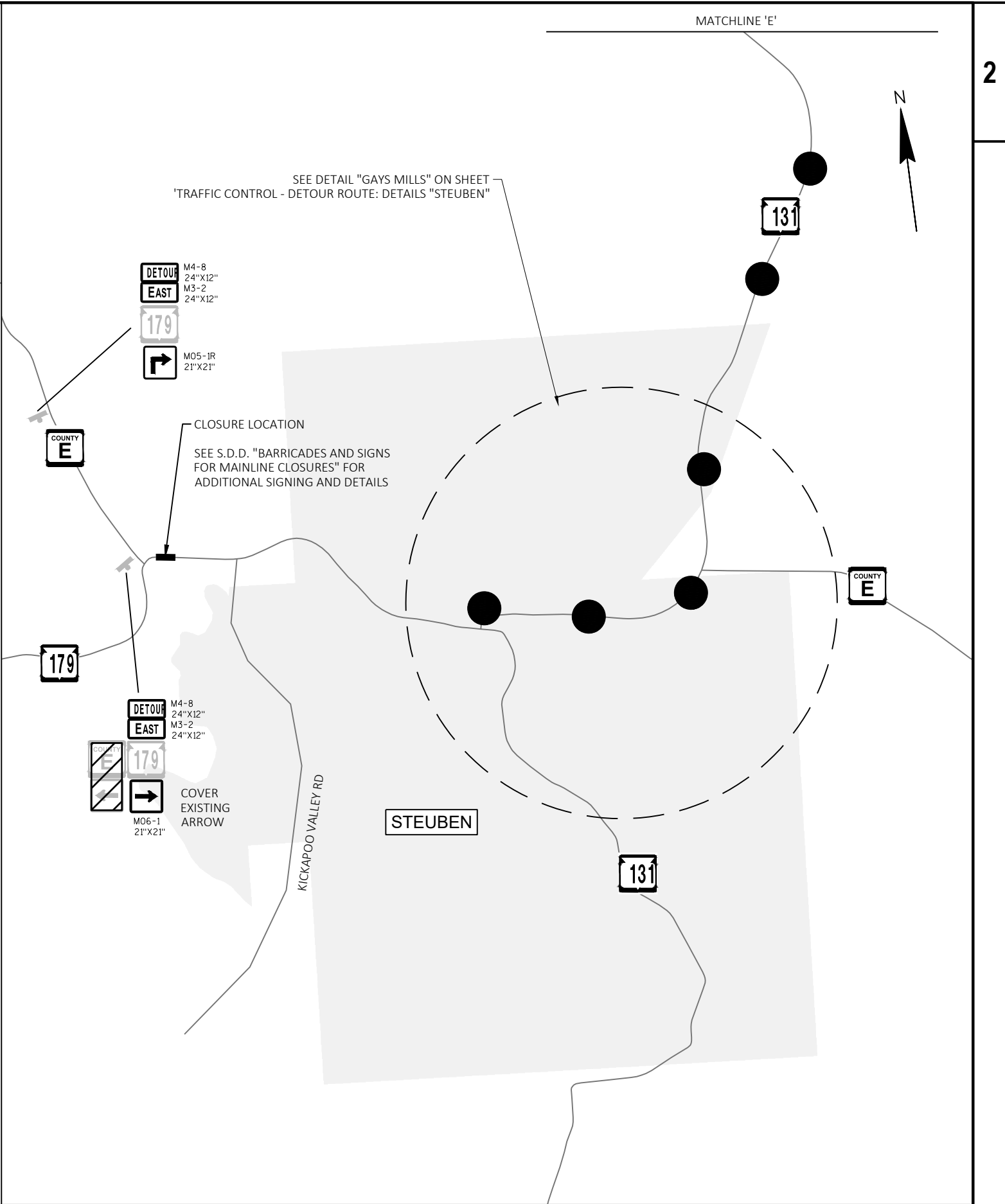
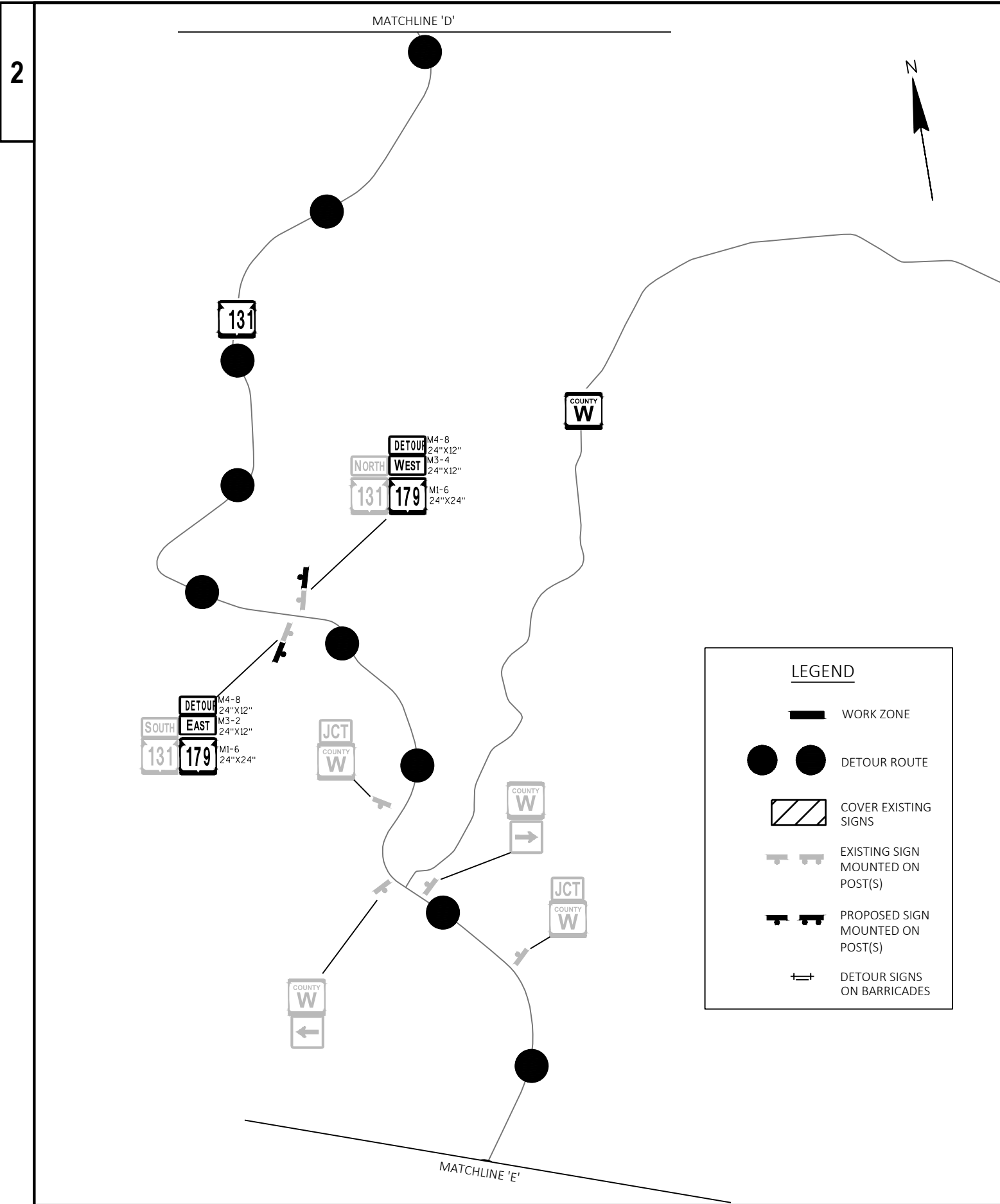
TRAFFIC CONTROL - DETOUR ROUTE

SHEET

1

E









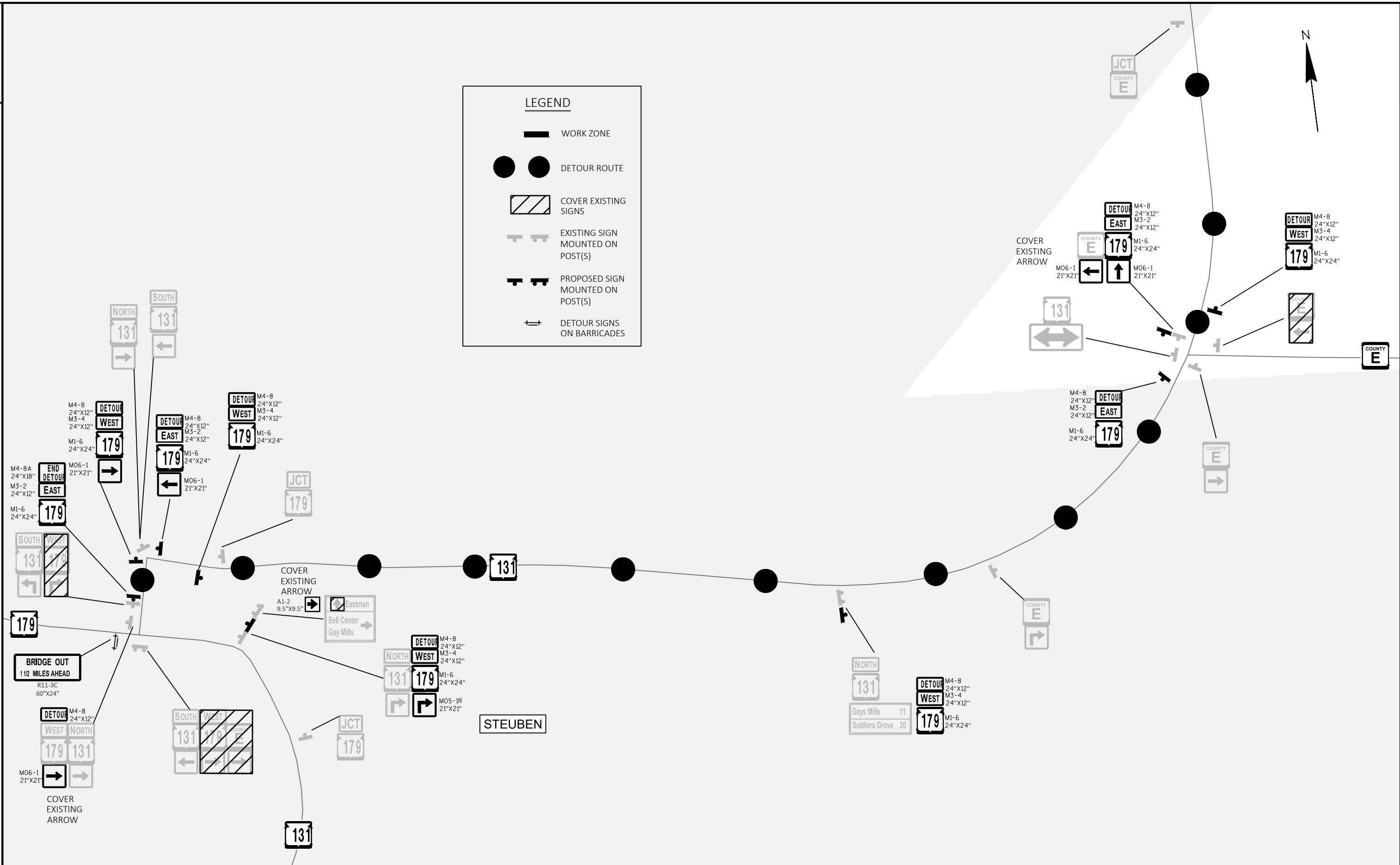


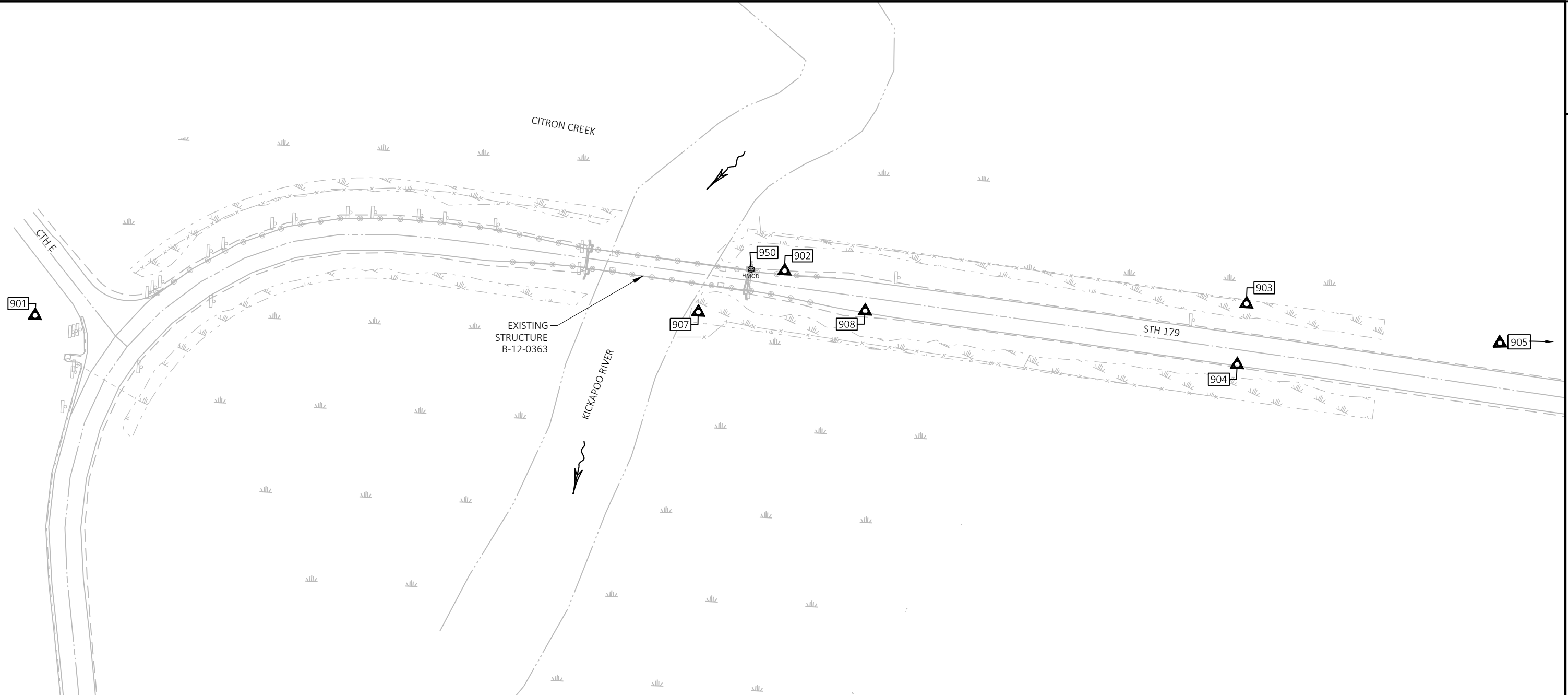
LEGEND

- WORK ZONE
- DETOUR ROUTE
- COVER EXISTING SIGNS
- EXISTING SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON POST(S)
- DETOUR SIGNS ON BARRICADES

LEGEND

-  WORK ZONE
-  DETOUR ROUTE
-  COVER EXISTING SIGNS
-  EXISTING SIGN MOUNTED ON POST(S)
-  PROPOSED SIGN MOUNTED ON POST(S)
-  DETOUR SIGNS ON BARRICADES





| CONTROL POINT INFORMATION | | | | | |
|---------------------------|------|------------|------------|---------|---------------------------------|
| POINT NO. | TYPE | Y | X | ELEV. | DESCRIPTION |
| 900 | CP | 170437.631 | 387084.387 | 687.295 | MAG NAIL |
| 901 | CP | 171035.361 | 386979.339 | 681.44 | FENO |
| 902 | CP | 171117.796 | 387724.177 | 675.1 | FENO |
| 903 | CP | 171108.367 | 388186.309 | 662.91 | FENO |
| 904 | CP | 171047.378 | 388180.054 | 669.937 | MAG NAIL |
| 905 | CP | 170994.379 | 388749.124 | 668.358 | MAG NAIL |
| 907 | CP | 171072.384 | 387640.22 | 665.25 | IR ".75" |
| 908 | CP | 171081.973 | 387806.45 | 675.257 | MAG NAIL |
| 950 | HMOD | 171117.77 | 387690.74 | 675.34 | DH8344 (2D07) DISK IN CONC ABUT |

NOTE: POINT NO. 905 IS NOT SHOWN.



Estimate Of Quantities

5870-02-81

| Line | Item | Item Description | Unit | Total | Qty |
|------|------------|--|------|------------|------------|
| 0002 | 201.0105 | Clearing | STA | 9.000 | 9.000 |
| 0004 | 201.0205 | Grubbing | STA | 9.000 | 9.000 |
| 0006 | 203.0260 | Removing Structure Over Waterway Minimal Debris (structure) 01. B-12-363 | EACH | 1.000 | 1.000 |
| 0008 | 204.0165 | Removing Guardrail | LF | 713.000 | 713.000 |
| 0010 | 204.0170 | Removing Fence | LF | 1,192.000 | 1,192.000 |
| 0012 | 204.0180 | Removing Delineators and Markers | EACH | 2.000 | 2.000 |
| 0014 | 205.0100 | Excavation Common | CY | 855.000 | 855.000 |
| 0016 | 205.0400 | Excavation Marsh | CY | 947.000 | 947.000 |
| 0018 | 206.1000 | Excavation for Structures Bridges (structure) 01. B-12-195 | LS | 1.000 | 1.000 |
| 0020 | 206.5000 | Cofferdams (structure) 01. B-12-195 | LS | 1.000 | 1.000 |
| 0022 | 208.0100 | Borrow | CY | 5,869.000 | 5,869.000 |
| 0024 | 210.1500 | Backfill Structure Type A | TON | 417.000 | 417.000 |
| 0026 | 213.0100 | Finishing Roadway (project) 01. 5870-02-81 | EACH | 1.000 | 1.000 |
| 0028 | 305.0110 | Base Aggregate Dense 3/4-Inch | TON | 110.000 | 110.000 |
| 0030 | 305.0120 | Base Aggregate Dense 1 1/4-Inch | TON | 1,790.000 | 1,790.000 |
| 0032 | 312.0110 | Select Crushed Material | TON | 5,179.000 | 5,179.000 |
| 0034 | 416.0610 | Drilled Tie Bars | EACH | 14.000 | 14.000 |
| 0036 | 416.1010 | Concrete Surface Drains | CY | 4.000 | 4.000 |
| 0038 | 450.4000 | HMA Cold Weather Paving | TON | 140.000 | 140.000 |
| 0040 | 455.0605 | Tack Coat | GAL | 175.000 | 175.000 |
| 0042 | 460.2000 | Incentive Density HMA Pavement | DOL | 370.000 | 370.000 |
| 0044 | 460.5223 | HMA Pavement 3 LT 58-28 S | TON | 310.000 | 310.000 |
| 0046 | 460.5224 | HMA Pavement 4 LT 58-28 S | TON | 245.000 | 245.000 |
| 0048 | 465.0475 | Asphalt Centerline Rumble Strips 2-Lane Rural | LF | 679.000 | 679.000 |
| 0050 | 502.0100 | Concrete Masonry Bridges | CY | 449.000 | 449.000 |
| 0052 | 502.1100 | Concrete Masonry Seal | CY | 64.000 | 64.000 |
| 0054 | 502.3200 | Protective Surface Treatment | SY | 695.000 | 695.000 |
| 0056 | 502.3210 | Pigmented Surface Sealer | SY | 223.000 | 223.000 |
| 0058 | 503.0137 | Prestressed Girder Type I 36W-Inch | LF | 1,151.000 | 1,151.000 |
| 0060 | 505.0400 | Bar Steel Reinforcement HS Structures | LB | 9,370.000 | 9,370.000 |
| 0062 | 505.0600 | Bar Steel Reinforcement HS Coated Structures | LB | 64,050.000 | 64,050.000 |
| 0064 | 506.2605 | Bearing Pads Elastomeric Non-Laminated | EACH | 24.000 | 24.000 |
| 0066 | 506.4000 | Steel Diaphragms (structure) 01. B-12-195 | EACH | 20.000 | 20.000 |
| 0068 | 516.0500 | Rubberized Membrane Waterproofing | SY | 18.000 | 18.000 |
| 0070 | 521.1012 | Apron Endwalls for Culvert Pipe Steel 12-Inch | EACH | 2.000 | 2.000 |
| 0072 | 530.0112 | Culvert Pipe Corrugated Polyethylene 12-Inch | LF | 65.000 | 65.000 |
| 0074 | 550.2126 | Piling CIP Concrete 12 3/4 X 0.375-Inch | LF | 1,260.000 | 1,260.000 |
| 0076 | 550.2148 | Piling CIP Concrete 14 X 0.50-Inch | LF | 825.000 | 825.000 |
| 0078 | 601.0588 | Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type TBT | LF | 108.000 | 108.000 |
| 0080 | 606.0200 | Riprap Medium | CY | 8.000 | 8.000 |
| 0082 | 606.0300 | Riprap Heavy | CY | 687.000 | 687.000 |
| 0084 | 611.0654 | Inlet Covers Type V | EACH | 2.000 | 2.000 |
| 0086 | 611.3220 | Inlets 2x2-FT | EACH | 2.000 | 2.000 |
| 0088 | 612.0406 | Pipe Underdrain Wrapped 6-Inch | LF | 130.000 | 130.000 |
| 0090 | 614.0150 | Anchor Assemblies for Steel Plate Beam Guard | EACH | 4.000 | 4.000 |
| 0092 | 614.2330 | MGS Guardrail 3 K | LF | 575.000 | 575.000 |
| 0094 | 614.2500 | MGS Thrie Beam Transition | LF | 160.000 | 160.000 |
| 0096 | 614.2610 | MGS Guardrail Terminal EAT | EACH | 4.000 | 4.000 |
| 0098 | 616.0700.S | Fence Safety | LF | 500.000 | 500.000 |

Estimate Of Quantities

5870-02-81

| Line | Item | Item Description | Unit | Total | Qty |
|------|------------|---|------|------------|------------|
| 0100 | 618.0100 | Maintenance And Repair of Haul Roads (project) 01. 5870-02-81 | EACH | 1.000 | 1.000 |
| 0102 | 619.1000 | Mobilization | EACH | 1.000 | 1.000 |
| 0104 | 624.0100 | Water | MGAL | 180.000 | 180.000 |
| 0106 | 625.0100 | Topsoil | SY | 320.000 | 320.000 |
| 0108 | 625.0500 | Salvaged Topsoil | SY | 6,250.000 | 6,250.000 |
| 0110 | 627.0200 | Mulching | SY | 1,640.000 | 1,640.000 |
| 0112 | 628.1905 | Mobilizations Erosion Control | EACH | 8.000 | 8.000 |
| 0114 | 628.1910 | Mobilizations Emergency Erosion Control | EACH | 4.000 | 4.000 |
| 0116 | 628.2008 | Erosion Mat Urban Class I Type B | SY | 6,250.000 | 6,250.000 |
| 0118 | 628.6005 | Turbidity Barriers | SY | 295.000 | 295.000 |
| 0120 | 628.7005 | Inlet Protection Type A | EACH | 2.000 | 2.000 |
| 0122 | 628.7015 | Inlet Protection Type C | EACH | 2.000 | 2.000 |
| 0124 | 628.7560 | Tracking Pads | EACH | 3.000 | 3.000 |
| 0126 | 628.7570 | Rock Bags | EACH | 190.000 | 190.000 |
| 0128 | 629.0205 | Fertilizer Type A | CWT | 1.200 | 1.200 |
| 0130 | 630.0170 | Seeding Mixture No. 70 | LB | 30.000 | 30.000 |
| 0132 | 630.0200 | Seeding Temporary | LB | 225.000 | 225.000 |
| 0134 | 630.0300 | Seeding Borrow Pit | LB | 30.000 | 30.000 |
| 0136 | 630.0500 | Seed Water | MGAL | 425.000 | 425.000 |
| 0138 | 633.5200 | Markers Culvert End | EACH | 2.000 | 2.000 |
| 0140 | 638.2102 | Moving Signs Type II | EACH | 19.000 | 19.000 |
| 0142 | 638.2602 | Removing Signs Type II | EACH | 2.000 | 2.000 |
| 0144 | 638.3000 | Removing Small Sign Supports | EACH | 2.000 | 2.000 |
| 0146 | 638.4000 | Moving Small Sign Supports | EACH | 18.000 | 18.000 |
| 0148 | 642.5001 | Field Office Type B | EACH | 1.000 | 1.000 |
| 0150 | 643.0300 | Traffic Control Drums | DAY | 80.000 | 80.000 |
| 0152 | 643.0420 | Traffic Control Barricades Type III | DAY | 2,930.000 | 2,930.000 |
| 0154 | 643.0705 | Traffic Control Warning Lights Type A | DAY | 5,860.000 | 5,860.000 |
| 0156 | 643.0900 | Traffic Control Signs | DAY | 29,055.000 | 29,055.000 |
| 0158 | 643.0920 | Traffic Control Covering Signs Type II | EACH | 24.000 | 24.000 |
| 0160 | 643.1050 | Traffic Control Signs PCMS | DAY | 14.000 | 14.000 |
| 0162 | 643.5000 | Traffic Control | EACH | 1.000 | 1.000 |
| 0164 | 645.0111 | Geotextile Type DF Schedule A | SY | 70.000 | 70.000 |
| 0166 | 645.0120 | Geotextile Type HR | SY | 1,095.000 | 1,095.000 |
| 0168 | 646.1020 | Marking Line Epoxy 4-Inch | LF | 3,540.000 | 3,540.000 |
| 0170 | 646.6464 | Cold Weather Marking Epoxy 4-Inch | LF | 3,540.000 | 3,540.000 |
| 0172 | 650.4000 | Construction Staking Storm Sewer | EACH | 4.000 | 4.000 |
| 0174 | 650.4500 | Construction Staking Subgrade | LF | 735.000 | 735.000 |
| 0176 | 650.5000 | Construction Staking Base | LF | 735.000 | 735.000 |
| 0178 | 650.5500 | Construction Staking Curb Gutter and Curb & Gutter | LF | 108.000 | 108.000 |
| 0180 | 650.6500 | Construction Staking Structure Layout (structure) 01. B-12-195 | LS | 1.000 | 1.000 |
| 0182 | 650.9910 | Construction Staking Supplemental Control (project) 01. 5870-02-81 | LS | 1.000 | 1.000 |
| 0184 | 650.9920 | Construction Staking Slope Stakes | LF | 735.000 | 735.000 |
| 0186 | 690.0150 | Sawing Asphalt | LF | 138.000 | 138.000 |
| 0188 | 715.0502 | Incentive Strength Concrete Structures | DOL | 2,694.000 | 2,694.000 |
| 0190 | 999.2000.S | Installing and Maintaining Bird Deterrent System (station) 01. 395+00EB | EACH | 1.000 | 1.000 |
| 0192 | ASP.1T0A | On-the-Job Training Apprentice at \$5.00/HR | HRS | 1,200.000 | 1,200.000 |
| 0194 | ASP.1T0G | On-the-Job Training Graduate at \$5.00/HR | HRS | 600.000 | 600.000 |
| 0196 | SPV.0090 | Special 01. Heavy Duty Silt Fence | LF | 2,400.000 | 2,400.000 |

3

| CLEARING & GRUBBING | | | | | |
|----------------------------------|-------------------|----------|--|----------|----------|
| | | 201.0105 | | 201.0205 | |
| | | | | CLEARING | GRUBBING |
| LOCATION | STATION - STATION | | | (STA) | (STA) |
| PROJECT 5870-02-81 | | | | | |
| CATEGORY 0010 | | | | | |
| STH 179 | 390+31 | 394+33 | | 5 | 5 |
| STH 179 | 396+26 | 399+03 | | 4 | 4 |
| 5870-02-81 PROJECT TOTALS | | | | 9 | 9 |

| BASE AGGREGATE | | | | | | | |
|----------------------------------|-------------------|----------|--|----------------|------------------|--------------|--|
| | | 305.0110 | | 305.0120 | | 312.0110* | |
| | | | | BASE | BASE | SELECT | |
| | | | | AGGREGATE | AGGREGATE | CRUSHED | |
| | | | | DENSE 3/4-INCH | DENSE 1 1/4-INCH | MATERIAL | |
| LOCATION | STATION - STATION | | | (TON) | (TON) | (TON) | |
| PROJECT 5870-02-81 | | | | | | | |
| CATEGORY 0010 | | | | | | | |
| STH 179 | 390+31 | 394+33 | | 70 | 1,050 | 1,480 | |
| STH 179 | 396+26 | 399+03 | | 40 | 740 | 1,000 | |
| 5870-02-81 PROJECT TOTALS | | | | 110 | 1,790 | 2,480 | |

*ADDITIONAL QUANTITIES FOUND IN "EXCAVATION SUMMARY" TABLE

| CONCRETE SURFACE DRAINS | | | | | | |
|----------------------------------|-------------------|----------|----|-----------|----------|--|
| | | 416.0610 | | 416.1010 | | |
| | | | | DRILLED | CONCRETE | |
| | | | | TIE BARS | SURFACE | |
| | | | | (EA) | DRAINS | |
| LOCATION | STATION - STATION | O/S | | (EA) | (CY) | |
| PROJECT 5870-02-81 | | | | | | |
| CATEGORY 0010 | | | | | | |
| STH 179 | 396+21 | 396+35 | RT | 7 | 2 | |
| STH 179 | 396+30 | 396+46 | LT | 7 | 2 | |
| 5870-02-81 PROJECT TOTALS | | | | 14 | 4 | |

3

| REMOVING FENCE | | | | | |
|----------------------------------|--------|----------|----|----------|--------------|
| | | 204.0170 | | | |
| | | | | REMOVING | FENCE |
| | | | | O/S | (LF) |
| PROJECT 5870-02-81 | | | | | |
| CATEGORY 0010 | | | | | |
| STH 179 | 390+31 | 394+33 | LT | | 498 |
| STH 179 | 395+48 | 399+10 | RT | | 370 |
| STH 179 | 396+12 | 399+23 | LT | | 324 |
| 5870-02-81 PROJECT TOTALS | | | | | 1,192 |

| HMA PAVEMENT | | | | | | | | | |
|----------------------------------|-------------------|----------|--|------------|--------------|--------------|------------|----------|--|
| | | 455.0605 | | 460.5223 | | 460.5224 | | 450.4000 | |
| | | | | HMA | HMA | HMA COLD | | | |
| | | | | TACK | PAVEMENT | PAVEMENT | WEATHER | | |
| | | | | COAT | 3 LT 58-28 S | 4 LT 58-28 S | PAVING | | |
| LOCATION | STATION - STATION | | | (GAL) | (TON) | (TON) | (TON) | | |
| PROJECT 5870-02-81 | | | | | | | | | |
| CATEGORY 0010 | | | | | | | | | |
| STH 179 | 390+31 | 394+33 | | 105 | 187 | 148 | 85 | | |
| STH 179 | 396+26 | 399+03 | | 70 | 123 | 97 | 55 | | |
| 5870-02-81 PROJECT TOTALS | | | | 175 | 310 | 245 | 140 | | |

| RUMBLE STRIPS | | | | |
|----------------------------------|--------|----------|--|------------------|
| | | 465.0475 | | |
| | | | | ASPHALTIC |
| | | | | CENTERLINE |
| | | | | RUMBLE STRIPS 2- |
| | | | | LANE RURAL |
| | | | | (LF) |
| PROJECT 5870-02-81 | | | | |
| CATEGORY 0010 | | | | |
| STH 179 | 390+31 | 394+33 | | 402 |
| STH 179 | 396+26 | 399+03 | | 277 |
| 5870-02-81 PROJECT TOTALS | | | | 679 |

REMOVING DELINEATORS AND MARKERS

| | | | | | |
|----------------------------------|--------|----------|--|----------|-------------|
| | | 204.0180 | | | |
| | | | | REMOVING | DELINEATORS |
| | | | | AND | MARKERS |
| | | | | O/S | (EACH) |
| PROJECT 5870-02-81 | | | | | |
| CATEGORY 0010 | | | | | |
| STH 179 | 390+02 | LT | | | 1 |
| STH 179 | 396+13 | LT | | | 1 |
| 5870-02-81 PROJECT TOTALS | | | | | 2 |

EXCAVATION SUMMARY

| | | | | | | | | | | | | | |
|-----------------------|-----------------|----------|---------|------------|------------|--------------|--------------|----------|--------------|-----------|---------|--------|--------------|
| | | 205.0100 | | 205.0400 | | 312.0110* | | | | 208.0100 | | | |
| | | | | EXCAVATION | EXCAVATION | SELECT | | EXPANDED | | | | | |
| | | | | COMMON (1) | MARSH | CRUSHED | | FILL (3) | MASS | | BORROW | | |
| | | | | (CY) | (CY) | MATERIAL (8) | AVAILABLE | FACTOR | ORDINATE +/- | | (7) | | |
| | | | | | | (TON) | MATERIAL (2) | 1.30 | (4) | WASTE (5) | (CY) | | |
| | | | | | | | | | | | COMMENT | | |
| 5870-02-81 | | | | | | | | | | | | | |
| DIV. 1 | 390+31 - 394+33 | 1-1 | STH 179 | STAGE 1 | 327 | 733 | 2,089 | 694 | 3,815 | 4,960 | -4,266 | -4,266 | 4,266 |
| | 396+26 - 399+03 | 1-2 | STH 179 | STAGE 1 | 528 | 214 | 610 | 635 | 1,721 | 2,238 | -1,603 | -1,603 | 1,603 |
| | DIV 1 SUBTOTAL | | | | 855 | 947 | 2,699 | 1,328 | 5,536 | 7,197 | -5,869 | -5,869 | 5,869 |
| PROJECT TOTALS | | | | | 855 | 947 | 2,699 | | | | | | 5,869 |

Note 1) Salvaged/Unusable Pavement Material is included in Cut.
 Note 2) Available Material = Cut - Salvaged/Unusable Pavement Material + Excavation Marsh * Reduction Factor of 0.5
 Note 3) Expanded Fill Factor = 1.30
 Note 4) The Mass Ordinate + or - Qty calculated for the Division.
 Positive quantity indicates an excess of material within the Division.
 Negative indicates a shortage of material within the Division.
 Mass Ordinate = Available Material - Expanded Fill
 Note 5) Waste = Positive Division Mass Ordinate
 Note 6) Unexpanded Fill = Unexpanded Fill from individual Earthwork tables
 Note 7) It was assumed that any excess material used as Fill between Divisions would be counted as Borrow.
 Note 8) Select Crushed Material to be used as backfill for Marsh Excavation with a Factor of 1.5 and a unit weight of 1.9 Tons/CY
 *Additional quantities found in "BASE AGGREGATE" table

REMOVING GUARDRAIL

| | | | | | |
|----------------------------------|--------|----------|----|----------|------------|
| | | 204.0165 | | | |
| | | | | REMOVING | GUARDRAIL |
| | | | | O/S | (LF) |
| PROJECT 5870-02-81 | | | | | |
| CATEGORY 0010 | | | | | |
| STH 179 | 390+02 | 394+46 | LT | | 459 |
| STH 179 | 393+61 | 394+46 | RT | | 85 |
| STH 179 | 396+11 | 396+97 | LT | | 84 |
| STH 179 | 396+11 | 396+97 | RT | | 85 |
| 5870-02-81 PROJECT TOTALS | | | | | 713 |

3

STORM SEWER STRUCTURE SCHEDULE - ENDWALLS

| STRUCT. NO. | STATION | O/S | APRON FOR CULVERT PIPE STEEL 12-INCH (EACH) | ENDWALLS FOR CULVERT PIPE STEEL 12-INCH (EACH) | MARKERS CULVERT END (EACH) |
|---|---------|----------|---|--|----------------------------|
| | | | 521.1012 | 633.5200 | |
| PROJECT 5870-02-81 CATEGORY 0010 | | | | | |
| 1.1 | 396+78 | 44.2' RT | 1 | 1 | 1 |
| 2.1 | 396+89 | 45.3' LT | 1 | 1 | 1 |
| PROJECT 5870-02-81 TOTALS | | | 2 | 2 | 2 |

STORM SEWER STRUCTURE SCHEDULE - INLETS

| STRUCT. NO. | STA | O/S | TOP STRUCT. ELEV | PIPE DIAM. | LOW STRUCT. INV. | FLANGE ELEV | BOTTOM STRUCT. ELEV | DEPTH (FT) | ADJUST. RING HEIGHT (INCHES) | INLETS 2X2-FT (EACH) | INLET COVERS TYPE V (EACH) |
|---|----------|----------|------------------|------------|------------------|-------------|---------------------|------------|------------------------------|----------------------|----------------------------|
| 611.3220 611.0654 | | | | | | | | | | | |
| PROJECT 5870-02-81 CATEGORY 0010 | | | | | | | | | | | |
| 1.0 | 396+78 | 15.0' RT | 675.35 | 12.00 | 672.18 | 676.68 | 671.76 | 3.59 | 6 | 1 | 1 |
| 2.0 | 396+89.0 | 15.0' LT | 675.23 | 12.00 | 672.15 | 676.56 | 671.73 | 3.50 | 6 | 1 | 1 |
| PROJECT 5870-02-81 TOTALS | | | | | | | | | | 2 | 2 |

CONCRETE CURB AND GUTTER

| LOCATION | STATION - STATION | O/S | CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE TBT (LF) |
|---|-------------------|-----------|--|
| 601.0588 | | | |
| PROJECT 5870-02-81 CATEGORY 0010 | | | |
| STH 179 | 396+35 | 396+88 RT | 54 |
| STH 179 | 396+46 | 397+00 LT | 54 |
| 5870-02-81 PROJECT TOTALS | | | 108 |

3

STORM SEWER PIPE SCHEDULE

| FROM STRUCT. | TO STRUCT. | INLET ELEV | OUTLET ELEV | CULVERT PIPE CORRUGATED POLYETHYLENE 12-INCH (LF) |
|---|------------|------------|-------------|---|
| 530.0112 | | | | |
| PROJECT 5870-02-81 CATEGORY 1000 | | | | |
| 1.0 | 1.1 | 672.18 | 664.95 | 32 |
| 2.0 | 2.1 | 672.15 | 664.39 | 33 |
| PROJECT 5870-02-81 TOTALS | | | | 65 |

MGS GUARDRAIL

| LOCATION | STATION - STATION | MGS GUARDRAIL 3 K (LF) | MGS THRIE BEAM TRANSITION (LF) | MGS GUARDRAIL TERMINAL EAT (EACH) |
|---|-------------------|------------------------|--------------------------------|-----------------------------------|
| 614.2330 614.2500 614.2610 | | | | |
| PROJECT 5870-02-81 CATEGORY 0010 | | | | |
| STH 179 | 390+31 | 394+33 | 413 | 80 |
| STH 179 | 396+26 | 399+03 | 162 | 80 |
| 5870-02-81 PROJECT TOTALS | | | 575 | 160 |

MOBILIZATIONS EROSION CONTROL

| LOCATION | PROJECT | MOBILIZATIONS EROSION CONTROL (EACH) | MOBILIZATIONS EMERGENCY EROSION CONTROL (EACH) |
|---|---------|--------------------------------------|--|
| 628.1905 628.1910 | | | |
| PROJECT 5870-02-81 CATEGORY 0010 | | | |
| | PROJECT | 8 | 4 |
| 5870-02-81 PROJECT TOTALS | | 8 | 4 |

FENCE SAFETY

| LOCATION | NOTE | FENCE SAFETY (LF) |
|---|----------------------|-------------------|
| 616.0700.S | | |
| PROJECT 5870-02-81 CATEGORY 0010 | | |
| PROJECT | ARCH SITE PROTECTION | 500 |
| 5870-02-81 PROJECT TOTALS | | 500 |

EROSION AND SEDIMENT CONTROL

| LOCATION | STATION - STATION | MEDIUM RIPRAP (CY) | EROSION MAT URBAN CLASS 1 TYPE B (SY) | TURBIDITY BARRIER (SY) | INLET PROTECTION TYPE A (EACH) | INLET PROTECTION TYPE C (EACH) | TRACKING PADS (EACH) | ROCK BAGS (EA) | GEOTEXTILE TYPE HR (SY) | HEAVY DUTY SILT FENCE (LF) |
|---|-------------------|--------------------|---------------------------------------|------------------------|--------------------------------|--------------------------------|----------------------|----------------|-------------------------|----------------------------|
| 606.0200 628.2008 628.6005 628.7005 628.7015 628.7560 628.7570 645.0120 SPV.0090.01 | | | | | | | | | | |
| PROJECT 5870-02-81 CATEGORY 0010 | | | | | | | | | | |
| STH 179 | 390+31 | 394+33 | -- | 3,093 | 127 | -- | -- | 1 | -- | 1,070 |
| STH 179 | 396+26 | 399+03 | 6 | 1,909 | 108 | 2 | 2 | 1 | -- | 810 |
| | UNDISTRIBUTED | | 2 | 1,248 | 60 | -- | -- | 1 | 190 | 520 |
| 5870-02-81 PROJECT TOTALS | | | 8 | 6,250 | 295 | 2 | 2 | 3 | 190 | 2,400 |

WATER

| TASK | WATER (MGAL) |
|---|--------------|
| 624.0100 | |
| PROJECT 5870-02-81 CATEGORY 0010 | |
| DUST CONTROL | 90 |
| COMPACTION | 90 |
| 5870-02-81 PROJECT TOTALS | |
| | 180 |

LANDSCAPING

| LOCATION | STATION - STATION | TOPSOIL (SY) | SALVAGED TOPSOIL (SY) | MULCHING (SY) | FERTILIZER TYPE A (CWT) | SEEDING MIXTURE NO. 70 (LB) | SEEDING TEMPORARY (LB) | SEEDING BORROW PIT (LB) | SEED WATER (MGAL) |
|---|-------------------|--------------|-----------------------|---------------|-------------------------|-----------------------------|------------------------|-------------------------|-------------------|
| 625.0100 625.0500 627.0200 629.0205 630.0170 630.0200 630.0300 630.0500 | | | | | | | | | |
| PROJECT 5870-02-81 CATEGORY 0010 | | | | | | | | | |
| STH 179 | 390+31 | 394+33 | -- | 3,093 | -- | 14 | 105 | -- | 170 |
| STH 179 | 396+26 | 399+03 | -- | 1,908 | -- | 9 | 68 | -- | 104 |
| | BORROW PIT | | -- | -- | 1,311 | 0.9 | -- | 24 | 60 |
| | UNDISTRIBUTED | | 320 | 1,249 | 329 | 0.3 | 7 | 6 | 88 |
| 5870-02-81 PROJECT TOTALS | | | 320 | 6,250 | 1,640 | 1.2 | 30 | 225 | 425 |

SAWING ASPHALT

| LOCATION | STATION - STATION | SAWING ASPHALT (LF) |
|----------------------------------|-------------------|---------------------|
| PROJECT 5870-02-81 | | |
| CATEGORY 0010 | | |
| STH 179 | 390+31 394+33 | 93 |
| STH 179 | 396+26 399+03 | 45 |
| 5870-02-81 PROJECT TOTALS | | 138 |

PAVEMENT MARKING

| LOCATION | STATION - STATION | MARKING LINE EPOXY 4-INCH WHITE (LF) | YELLOW EPOXY 4-INCH (LF) | COLD WEATHER MARKING EPOXY 4-INCH (LF) |
|----------------------------------|-------------------|--------------------------------------|--------------------------|--|
| PROJECT 5870-02-81 | | | | |
| CATEGORY 0010 | | | | |
| STH 179 | 390+31 394+33 | 1,040 | 1,000 | 2,040 |
| STH 179 | 394+33 399+03 | 750 | 750 | 1,500 |
| 5870-02-81 PROJECT TOTALS | | 1,790 | 1,750 | 3,540 |

TRAFFIC CONTROL - COVERING SIGNS

| LOCATION / STAGE | TRAFFIC CONTROL COVERING SIGNS TYPE II (EA) | NOTES |
|----------------------------------|---|-----------|
| PROJECT 5870-02-81 | | |
| CATEGORY 0010 | | |
| DETOUR | 18 | 1 CYCLE |
| UNDISTRIBUTED | 6 | -- |
| 5870-02-81 PROJECT TOTALS | | 24 |

BIRD NETTING

| LOCATION | STRUCTURE | INSTALLING AND BIRD DETERRENT SYSTEM STA 395+00EB (EA) |
|----------------------------------|-----------|--|
| PROJECT 5870-02-81 | | |
| CATEGORY 0010 | | |
| PROJECT | B-12-0195 | 1 |
| 5870-02-81 PROJECT TOTALS | | 1 |

SIGNING ITEMS

| POST # | SIGN CODE | REMOVING SIGNS TYPE II EACH | REMOVING SMALL SIGN SUPPORTS EACH | MOVING SIGNS TYPE II EACH | MOVING SMALL SIGN SUPPORTS EACH | SIGN MOUNTED ON SAME POST AS | REMARKS |
|----------------------------------|-----------|-----------------------------|-----------------------------------|---------------------------|---------------------------------|------------------------------|------------------------------|
| PROJECT 5870-02-81 | | | | | | | |
| CATEGORY 0010 | | | | | | | |
| 1M | W1-8 | -- | -- | 1 | 1 | -- | CHEVRON |
| 2M | J12-1 | -- | -- | 1 | 1 | -- | ROUTE TURN WITHOUT CARDINAL |
| 3R | W5-2 | 1 | 1 | -- | -- | -- | NARROW BRIDGE WORD MESSAGE |
| 4M | W1-8 | -- | -- | 1 | 1 | -- | CHEVRON |
| 5M | W1-8 | -- | -- | 1 | 1 | -- | CHEVRON |
| 6M | W1-8 | -- | -- | 1 | 1 | -- | CHEVRON |
| 7M | J4-2 | -- | -- | 1 | 1 | -- | REASSURANCE ASSEMBLY |
| 8M | W1-8 | -- | -- | 1 | 1 | -- | CHEVRON |
| 9M | W1-8 | -- | -- | 1 | 1 | -- | CHEVRON |
| 10M | W1-8 | -- | -- | 1 | 1 | -- | CHEVRON |
| 11M | W1-8 | -- | -- | 1 | 1 | -- | CHEVRON |
| 12M | W1-8 | -- | -- | 1 | 1 | -- | CHEVRON |
| 13M | W1-8 | -- | -- | 1 | 1 | -- | CHEVRON |
| 14M | W1-8 | -- | -- | 1 | 1 | -- | CHEVRON |
| 15M | W5-52L | -- | -- | 1 | 1 | -- | CLEARANCE STRIPER DOWN RIGHT |
| 16M | W5-52R | -- | -- | 1 | 1 | -- | CLEARANCE STRIPER DOWN LEFT |
| 17M | W5-52R | -- | -- | 1 | 1 | -- | CLEARANCE STRIPER DOWN LEFT |
| 18M | W5-52L | -- | -- | 1 | 1 | -- | CLEARANCE STRIPER DOWN RIGHT |
| 19M | W1-1L | -- | -- | 1 | 1 | -- | LEFT TURN |
| 20M | W13-1 | -- | -- | 1 | -- | 19M | ADVISORY SPEED (YELLOW BACK) |
| 21R | W5-2 | 1 | 1 | -- | -- | -- | NARROW BRIDGE WORD MESSAGE |
| 5870-02-81 PROJECT TOTALS | | 2 | 2 | 19 | 18 | | |

TRAFFIC CONTROL

| LOCATION | DAYS | DRUMS (DAY) | BARRICADES TYPE III (DAY) | WARNING LIGHTS TYPE A (DAY) | SIGNS (DAY) | PCMS (DAY) |
|----------------------------------|------|-------------|---------------------------|-----------------------------|---------------|------------|
| PROJECT 5870-02-81 | | | | | | |
| CATEGORY 0010 | | | | | | |
| CLOSURES | 121 | -- | 2,178 | 4,356 | 1,694 | -- |
| DETOUR | 121 | 70 | 484 | 968 | 24,684 | 14 |
| UNDISTRIBUTED | -- | 10 | 268 | 536 | 2,677 | -- |
| 5870-02-81 PROJECT TOTALS | | 80 | 2,930 | 5,860 | 29,055 | 14 |

CONSTRUCTION STAKING

| LOCATION | STATION - STATION | STORM SEWER (EA) | SUBGRADE (LF) | BASE (LF) | CURB GUTTER AND GUTTER (LF) | STRUCTURE LAYOUT B-12-0195 (LS) | SUPPLEMENTAL CONTROL 5870-02-81 (LS) | SLOPE STAKES (LF) |
|----------------------------------|-------------------|------------------|---------------|------------|-----------------------------|---------------------------------|--------------------------------------|-------------------|
| PROJECT 5870-02-81 | | | | | | | | |
| CATEGORY 0010 | | | | | | | | |
| STH 179 | 389+87 394+33 | -- | 446 | 446 | -- | -- | -- | 446 |
| STH 179 | 396+26 399+15 | 4 | 289 | 289 | 108 | -- | -- | 289 |
| PROJECT TOTALS | | -- | -- | -- | 1 | 1 | 1 | -- |
| 5870-02-81 PROJECT TOTALS | | 4 | 735 | 735 | 108 | 1 | 1 | 735 |

TRANSPORTATION PROJECT PLAT NO: 5870-02-20 - 4.01

THAT PART OF GOVERNMENT LOT 2 AND GOVERNMENT LOT 5 OF SECTION 7, TOWN OF EASTMAN, AND PART OF LOTS 18 AND 19 OF ASSESSOR'S PLAT NO. 2 OF THE VILLAGE OF STEUBEN, LOCATED IN GOVERNMENT LOT 5 OF SECTION 8, VILLAGE OF STEUBEN ALL IN T8N, R4W, CRAWFORD COUNTY, WISCONSIN

RELOCATION ORDER: STH 179, EASTMAN - STEUBEN, (KICKAPOO RIVER BRIDGE), CRAWFORD COUNTY.

TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE-NAMED PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SUBSECTIONS 84.02 (3), 84.09, AND 84.30, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:

- THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE-NAMED PROJECT.
- THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SUBSECTION 84.09 (1) OR (2), WISCONSIN STATUTES.

| EASEMENT TABLE | | | |
|----------------|-------------|---|---------------------------|
| UTILITY NUMBER | OWNER | RECORDING INFORMATION | LOCATED IN R/W PARCEL NO. |
| 100 | CENTURYLINK | BLANKET EASEMENT V. 308, P. 69, DOC. 187137 | 2, 3 |

FOR ADDITIONAL INFORMATION REFER TO THE TITLE SHEET, RECORDED AS SHEET 2 OF 2.

NOTES:

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

ALL NEW RIGHT-OF-WAY MONUMENTS ARE TYPE 2 (TYPICALLY 3/4" X 24" REBARS) UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT. FOR CURRENT ACCESS/DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION OFFICE IN LA CROSSE.

ALL FOUND IPs ARE 3/4" IRON REBARS.

| R/W Station & Offset Table | | |
|----------------------------|-----------|--------|
| Point No. | Station | Offset |
| 100 | 395+80.19 | 71.30' |
| 101 | 395+42.72 | 71.06' |
| 102 | 394+51.99 | 63.98' |
| 103 | 393+01.07 | 61.42' |
| 104 | 391+24.55 | 68.55' |
| 105 | 390+19.12 | 65.35' |
| 106 | 390+19.12 | 48.35' |
| 107 | 390+14.39 | 48.39' |
| 108 | 390+13.57 | 51.61' |
| 109 | 390+14.17 | 71.60' |
| 110 | 390+32.74 | 71.93' |
| 111 | 391+39.86 | 64.33' |
| 112 | 392+25.65 | 70.81' |
| 113 | 394+84.79 | 62.82' |
| 116 | 396+00.63 | 68.57' |
| 117 | 399+25.59 | 67.45' |
| 118 | 399+25.52 | 47.45' |
| 119 | 399+25.19 | 52.55' |
| 120 | 399+13.00 | 52.51' |
| 121 | 399+12.93 | 72.51' |
| DH8344 | 396+11.37 | 11.54' |

RESERVED FOR REGISTER OF DEEDS
PROJECT NUMBER: 5870-02-20 - 4.01
SHEET 1 OF 2

344516
RECORDED 03/19/2021 08:33 AM
MELISSA C NAGEL
REGISTER OF DEEDS OFFICE
CRAWFORD COUNTY, WI
RECORDING FEE 25.00
PAGES: 2
The above recording information verifies that this document has been electronically recorded and returned to the submitter.

TOWN

PC STA. 387+25.05
TO STA. 390+13.92
R=299.10'
LCH=277.78'
LCB=N19°09'08"E
L=288.88'

PI STA = 390+91.34
Y = 171153.236
X = 386968.782
DELTA = 101°31'57" RT
D = 19°09'22"
T = 366.29'
L = 530.03'
R = 299.10'
PC STA = 387+25.05
PT STA = 392+55.07

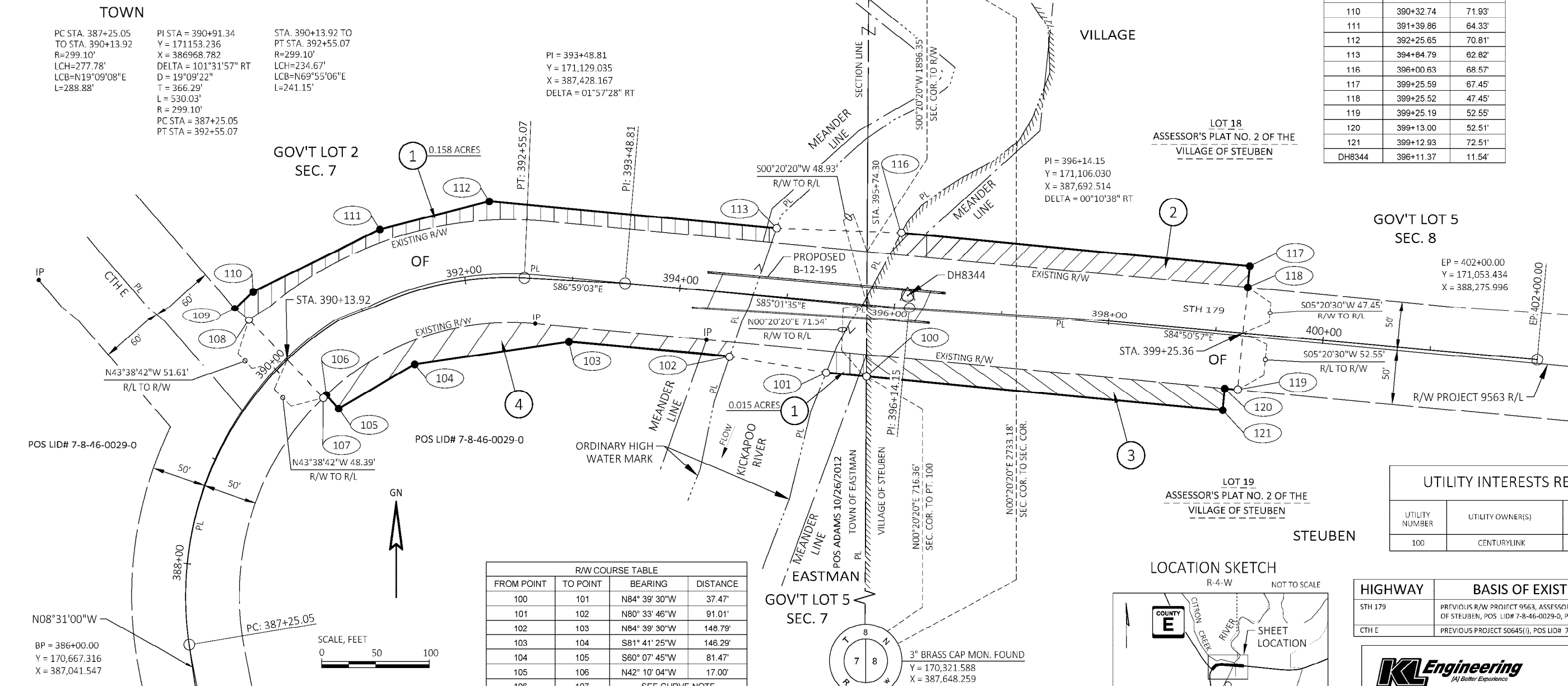
STA. 390+13.92 TO
PT STA. 392+55.07
R=299.10'
LCH=234.67'
LCB=N69°55'06"E
L=241.15'

PI = 393+48.81
Y = 171,129.035
X = 387,428.167
DELTA = 01°57'28" RT

4" HARRISON MON. FOUND
Y = 173,054.720
X = 387,664.423

PI = 396+14.15
Y = 171,106.030
X = 387,692.514
DELTA = 00°10'38" RT

EP = 402+00.00
Y = 171,053.434
X = 388,275.996



| R/W COURSE TABLE | | | |
|------------------|----------|----------------|----------|
| FROM POINT | TO POINT | BEARING | DISTANCE |
| 100 | 101 | N84° 39' 30"W | 37.47' |
| 101 | 102 | N80° 33' 46"W | 91.01' |
| 102 | 103 | N84° 39' 30"W | 148.79' |
| 103 | 104 | S81° 41' 25"W | 148.29' |
| 104 | 105 | S80° 07' 45"W | 81.47' |
| 105 | 106 | N42° 10' 04"W | 17.00' |
| 106 | 107 | SEE CURVE NOTE | |
| 108 | 109 | N41° 07' 08"W | 20.00' |
| 109 | 110 | N47° 49' 05"E | 23.03' |
| 110 | 111 | N63° 57' 24"E | 131.04' |
| 111 | 112 | N75° 39' 34"E | 105.00' |
| 112 | 113 | S84° 39' 30"E | 268.34' |
| 113 | 116 | S87° 52' 16"E | 115.98' |
| 116 | 117 | S84° 39' 30"E | 325.17' |
| 117 | 118 | S05° 20' 30"W | 20.00' |
| 119 | 120 | N84° 39' 30"W | 12.19' |
| 120 | 121 | S05° 20' 30"W | 20.00' |
| 121 | 100 | N84° 39' 30"W | 332.53' |

CURVE 106-107
L=3.97'
LCH=3.97'
LCB=S46°48'24"W
R=251.60'

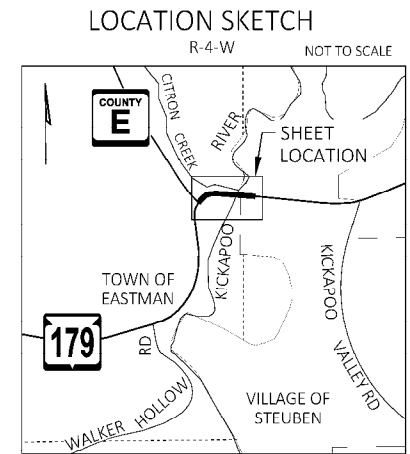
SCHEDULE OF LANDS & INTERESTS REQUIRED

OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO THE DEPARTMENT OF TRANSPORTATION.

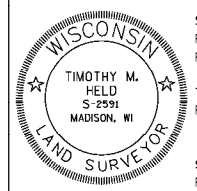
| PARCEL NUMBER | OWNER(S) | INTEREST REQUIRED | R/W ACRES REQUIRED | | | TLE ACRES |
|---------------|---|-------------------|--------------------|----------|-------|-----------|
| | | | NEW | EXISTING | TOTAL | |
| 1 | CHARLES L. ZWICKE AND DIANE M. ZWICKE | FEE | 0.173 | 0.576 | 0.749 | ---- |
| 2 | BENJAMIN L. McCULLICK, MARCUS A. McCULLICK, CRAIG M. McCULLICK AND JONATHAN D. McCULLICK AS JOINT TENANTS | FEE | 0.151 | 0.395 | 0.546 | ---- |
| 3 | BRUEGMANN LIVING TRUST DATED NOVEMBER 11, 1997 | FEE | 0.153 | 0.386 | 0.539 | ---- |
| 4 | DONALD DUDENBOSTEL AND KIM DUDENBOSTEL | FEE | 0.172 | 0.487 | 0.659 | ---- |

| UTILITY INTERESTS REQUIRED | | |
|----------------------------|------------------|-------------------|
| UTILITY NUMBER | UTILITY OWNER(S) | INTEREST REQUIRED |
| 100 | CENTURYLINK | RELEASE OF RIGHTS |

| HIGHWAY | BASIS OF EXISTING R/W |
|---------|--|
| STH 179 | PREVIOUS R/W PROJECT 9563, ASSESSOR'S PLAT NO. 2 OF THE VILLAGE OF STEUBEN, POS LID# 7-8-46-0029-0, POS ADAMS 10/26/2012 |
| CTH E | PREVIOUS PROJECT S0645(I), POS LID# 7-8-46-0029-0 |

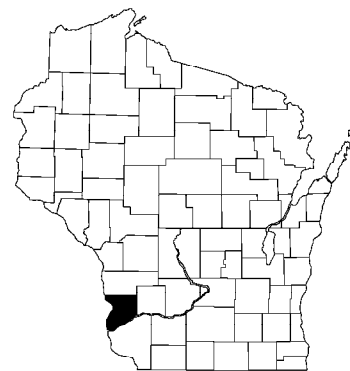


I, TIMOTHY M. HELD, PROFESSIONAL LAND SURVEYOR, HEREBY CERTIFY THAT IN FULL COMPLIANCE WITH THE PROVISIONS OF SECTION 84.095 OF THE WISCONSIN STATUTES AND UNDER THE DIRECTION OF THE DEPARTMENT OF TRANSPORTATION, I HAVE SURVEYED AND MAPPED THIS TRANSPORTATION PROJECT PLAT AND SUCH PLAT CORRECTLY REPRESENTS ALL EXTERIOR BOUNDARIES OF THE SURVEYED LAND.



SIGNATURE: *T. M. Held* DATE: 03/03/2021
PRINT NAME: TIMOTHY M. HELD
REGISTRATION NUMBER: 5-2591
THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE WISCONSIN DEPARTMENT OF TRANSPORTATION.
SIGNATURE: *Cory Schlegel* DATE: 3/18/2021
PRINT NAME: CORY SCHLEGEL

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION TRANSPORTATION PROJECT PLAT TITLE SHEET 5870-02-20 EASTMAN - STEUBEN (KICKAPOO RIVER BRIDGE) STH 179 CRAWFORD COUNTY



CONVENTIONAL SYMBOLS

| | | | | | |
|---|-----|---------------------------|--|--|----|
| SECTION LINE | --- | SECTION CORNER SYMBOL | | R/W MONUMENT (TO BE SET) | ● |
| QUARTER LINE | --- | SECTION CORNER MONUMENT | | NON-MONUMENTED R/W POINT | ○ |
| SIXTEENTH LINE | --- | GEODETIC SURVEY MONUMENT | | FOUND IRON PIN (3/4-INCH UNLESS NOTED) | IP |
| NEW REFERENCE LINE | --- | SIXTEENTH CORNER MONUMENT | | OFF-PREMISE SIGN | |
| NEW R/W LINE | --- | SIGN | | COMPENSABLE | |
| EXISTING R/W OR HE LINE | --- | TO BE REMOVED | | NON-COMPENSABLE | |
| PROPERTY LINE | --- | BRIDGE | | ELECTRIC POLE | |
| LOT, TIE & OTHER MINOR LINES | --- | PARALLEL OFFSETS | | TELEPHONE POLE | |
| SLOPE INTERCEPT | --- | PARCEL NUMBER | | PEDESTAL (LABEL TYPE) (TV, TEL, ELEC, ETC.) | |
| CORPORATE LIMITS | --- | UTILITY NUMBER | | ACCESS RESTRICTED BY ACQUISITION | |
| UNDERGROUND FACILITY (COMMUNICATIONS, ELECTRIC, ETC.) | --- | | | NO ACCESS (BY STATUTORY AUTHORITY) | |
| NEW R/W (FEE OR HE) (HATCHING VARIES BY OWNER) | --- | | | ACCESS RESTRICTED (BY PREVIOUS PROJECT OR CONTROL) | |
| TEMPORARY LIMITED EASEMENT AREA | --- | | | NO ACCESS (NEW HIGHWAY) | |
| EASEMENT AREA (PERMANENT LIMITED OR RESTRICTED DEVELOPMENT) | --- | | | | |
| TRANSMISSION STRUCTURES | --- | | | | |

CONVENTIONAL ABBREVIATIONS

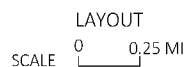
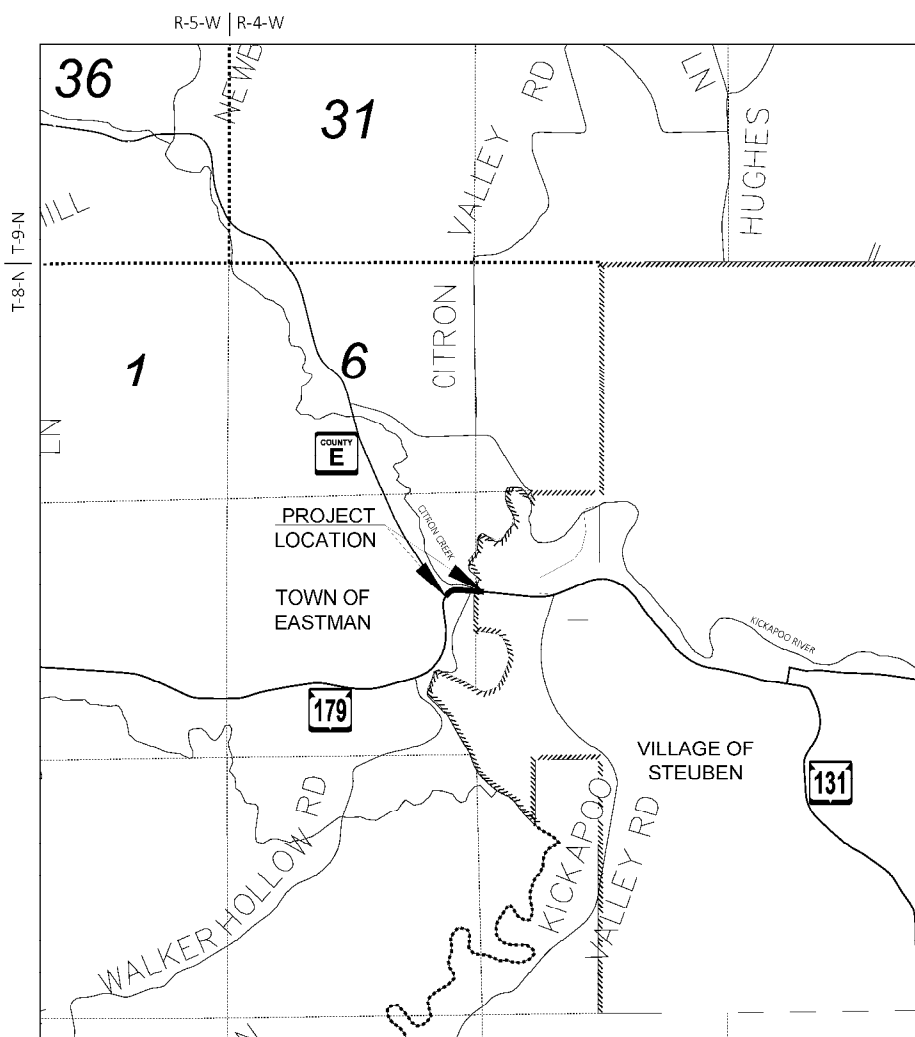
| | | | |
|----------------------------|-------|----------------------------|--------|
| ACCESS RIGHTS | AR | POINT OF INTERSECTION | PI |
| ACRES | AC | PROPERTY LINE | PL |
| AHEAD | AH | RECORDED AS | (100') |
| ALUMINUM | ALUM | REEL / IMAGE | R/I |
| AND OTHERS | ET AL | REFERENCE LINE | R/L |
|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

CURVE DATA

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

CONVENTIONAL UTILITY SYMBOLS

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



THE NOTES, CONVENTIONAL SIGNS, AND ABBREVIATIONS ARE ASSOCIATED WITH EACH TRANSPORTATION PROJECT PLAT FOR PROJECT 5870-02-20

NOTES:

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

ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY 3/4"X24" IRON REBARS) UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

RIGHT-OF-WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY SYSTEM OR OTHER "SURVEYS" OF PUBLIC RECORD.

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

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

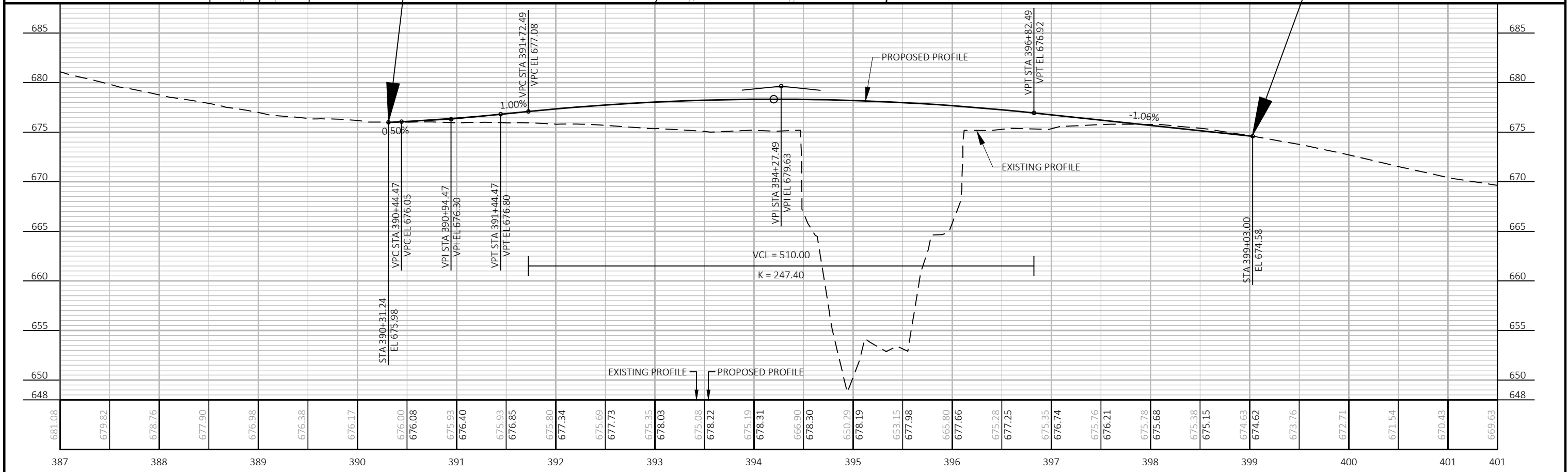
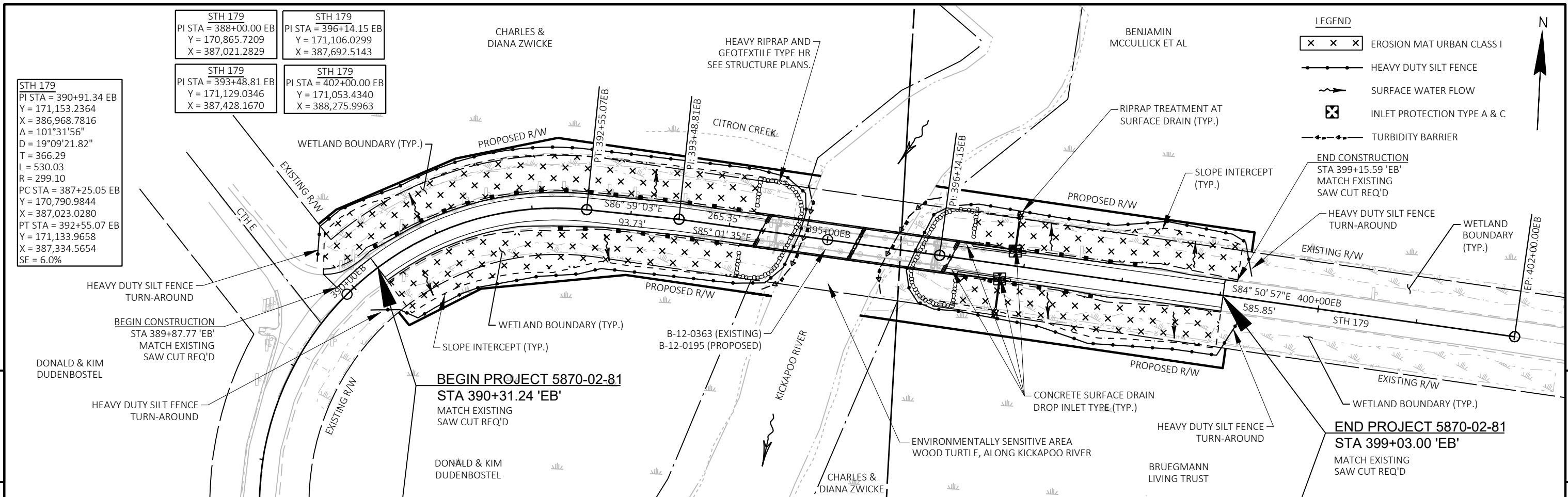
FOR CURRENT ACCESS/DRIVEWAY INFORMATION, CONTACT THE PLANNING UNIT OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION OFFICE IN LA CROSSE.

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

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

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

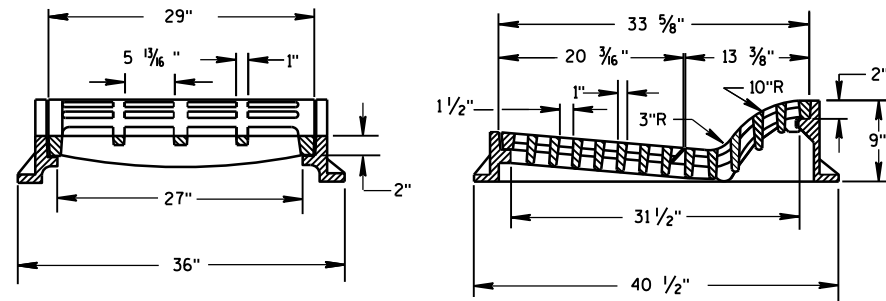
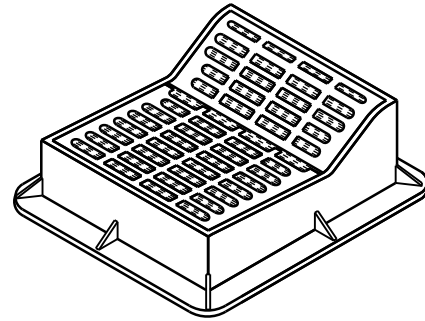
PROJECT NUMBER: 5870-02-20 - 4.01
SHEET: 2 OF 2
AMENDMENT NO:



| | | | | |
|------------------------|--------------|------------------|---------------------------|---------|
| PROJECT NO: 5870-02-81 | HWY: STH 179 | COUNTY: CRAWFORD | PLAN AND PROFILE: STH 179 | SHEET 5 |
|------------------------|--------------|------------------|---------------------------|---------|

Standard Detail Drawing List

| | |
|-----------|---|
| 08A05-19C | INLET COVERS TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S |
| 08C07-02 | INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT |
| 08D01-22A | CONCRETE CURB & GUTTER |
| 08D01-22B | CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS |
| 08D03-08A | CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES |
| 08D03-08B | CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES |
| 08E09-06 | SILT FENCE |
| 08E10-02 | INLET PROTECTION TYPE A, B, C AND D |
| 08E11-02 | TURBIDITY BARRIER |
| 08E14-01 | TRACKING PAD |
| 08F01-11 | APRON ENDWALLS FOR CULVERT PIPE |
| 12A03-10 | NAME PLATE (STRUCTURES) |
| 13A11-03A | 2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING |
| 13A11-03B | 2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING |
| 13C19-03 | HMA LONGITUDINAL JOINTS |
| 14B42-07A | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL |
| 14B42-07B | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL |
| 14B42-07C | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL |
| 14B42-07D | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL |
| 14B44-04A | MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS) |
| 14B44-04B | MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS) |
| 14B44-04C | MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS) |
| 14B45-05A | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS) |
| 14B45-05B | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS) |
| 14B45-05C | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS) |
| 14B45-05D | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS) |
| 15A03-02A | FLEXIBLE MARKER POST FOR CULVERT END |
| 15A03-02B | FLEXIBLE MARKER POST FOR CULVERT END |
| 15C02-08A | BARRICADES AND SIGNS FOR MAINLINE CLOSURES |
| 15C02-08B | BARRICADES AND SIGNS FOR VARIOUS CLOSURES |
| 15C02-08C | DETOUR SIGNING FOR MAINLINE CLOSURES |
| 15C06-09 | SIGNING & MARKING FOR TWO LANE BRIDGES |
| 15C08-20A | LONGITUDINAL MARKING (MAINLINE) |
| 15C11-09B | CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS |
| 15C35-04A | PAVEMENT MARKING (INTERSECTIONS) |



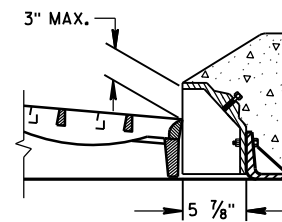
TYPE "F"

USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.

GENERAL NOTES

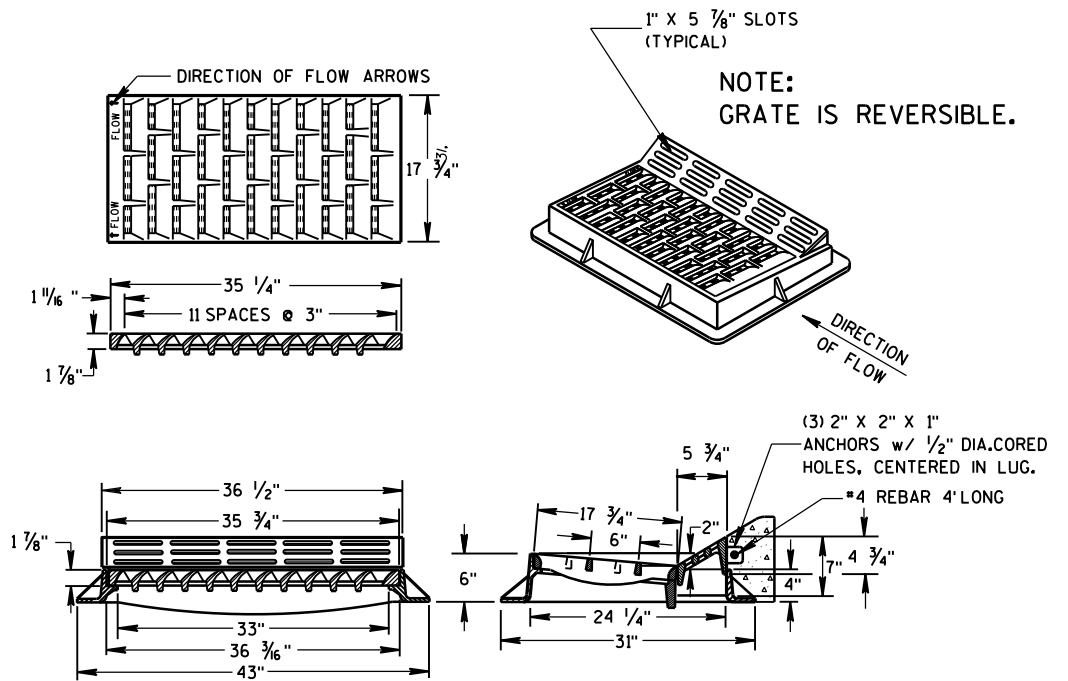
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.



ALTERNATIVE CURB BOX FOR TYPE "HM" COVER

USE WITH TYPES G & J CONCRETE CURB & GUTTER, 30 INCH NOTED AS TYPE HM-GJ ON DRAINAGE TABLE



TYPE "HM"

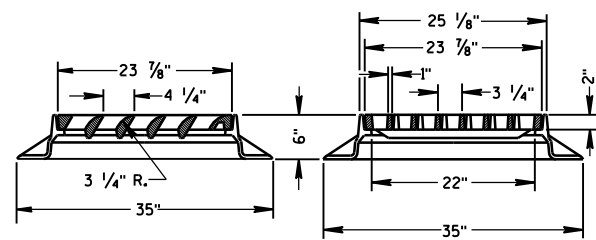
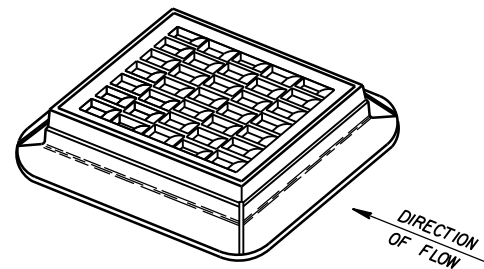
USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.

NOTE: SPECIAL GRATE FOR THE TYPE "H" COVER MAY ALSO BE USED FOR THE TYPE "HM" COVER NOTED AS TYPE HM-S ON DRAINAGE TABLE

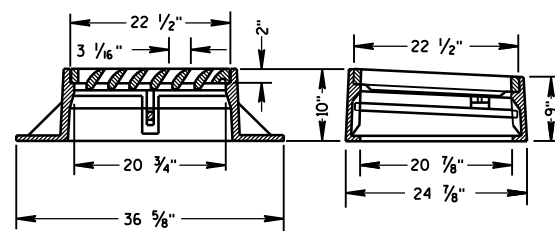
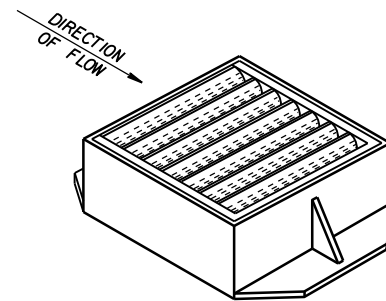
NOTE: SPECIAL GRATE FOR THE TYPE "H" COVER MAY ALSO BE USED FOR THE TYPE "HM-GJ" COVER NOTED AS TYPE HM-GJ-S ON DRAINAGE TABLE

6

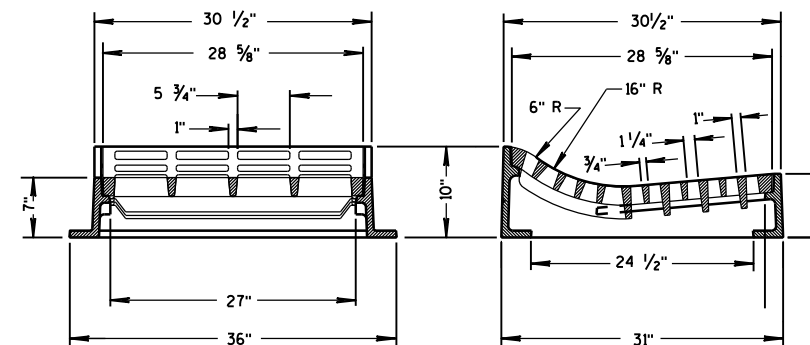
6



TYPE "S"

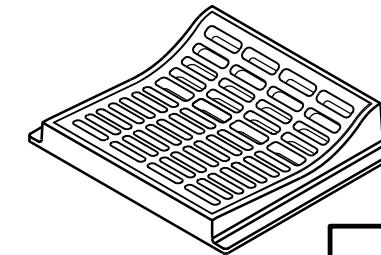


TYPE "V"



TYPE "T"

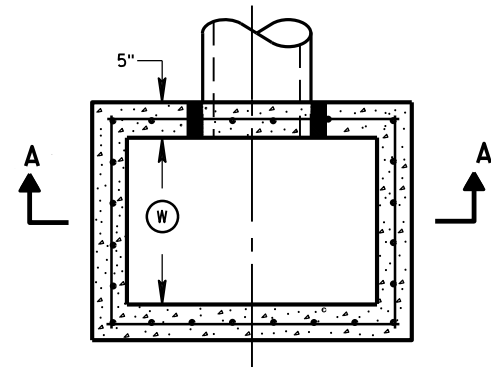
USE WITH TYPES R & T CONCRETE CURB & GUTTER, 36 INCH.



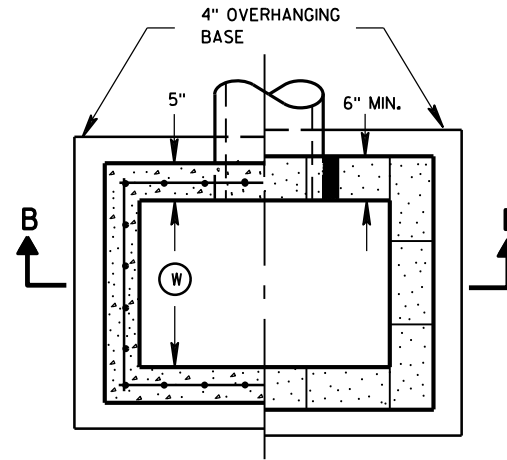
INLET COVERS
TYPE F, HM, HM-S, S, T, V,
HM-GJ, & HM-GJ-S

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

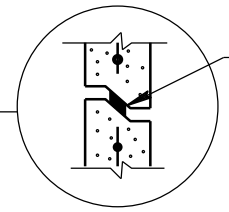
APPROVED
11/27/2013 DATE /s/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA



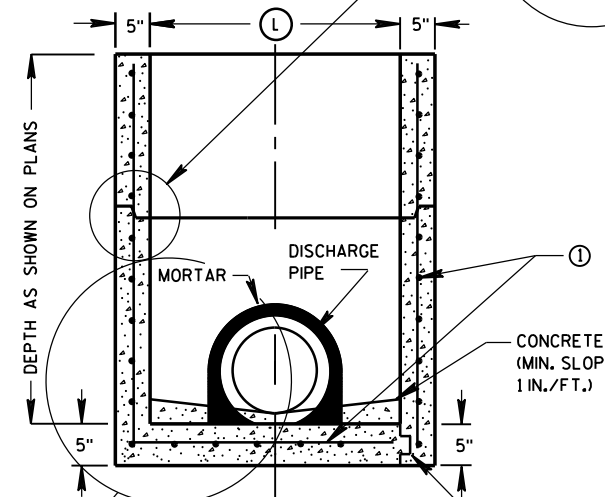
PLAN VIEW



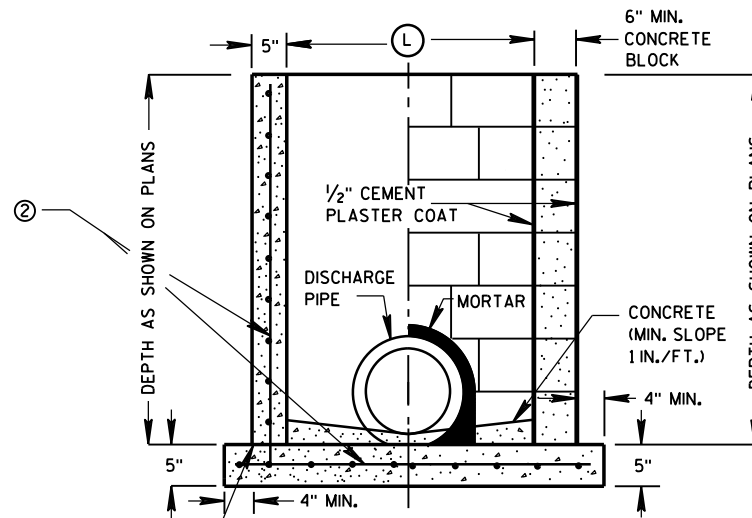
PLAN VIEW



RISER JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP)



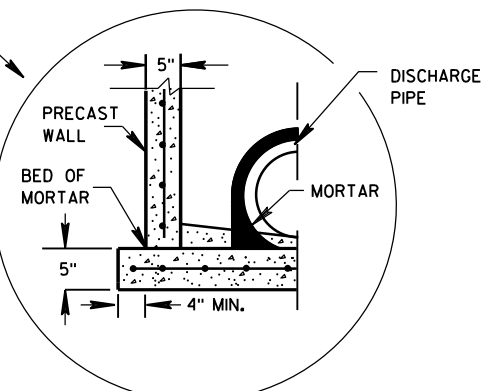
SECTION A-A



SECTION B-B

PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE
 PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE
 KEYWAY

CAST-IN-PLACE REINFORCED CONCRETE
 CONCRETE BLOCK WITH CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ①



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

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.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST INLET UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATES THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF FOUNDATION BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

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

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

4" OVERHANGING BASES ARE REQUIRED FOR CAST-IN-PLACE REINFORCED CONCRETE AND CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3 INCH CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.

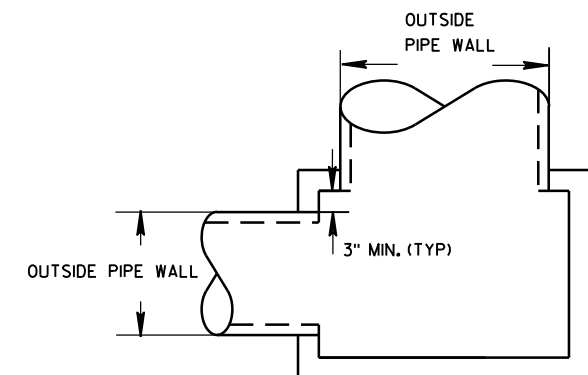
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

| INLET SIZE | INLET COVER TYPE | | ALL A'S | ALL B'S | BW | F | ALL H'S | S | T | V | WM |
|------------|------------------|-----------------|---------|---------|----|---|---------|---|---|---|----|
| | WIDTH (W) (FT) | LENGTH (L) (FT) | | | | | | | | | |
| 2X2-FT | 2 | 2 | X | X | | | | X | | X | |
| 2X2.5-FT | 2 | 2.5 | | | X | | | X | X | X | X |
| 2X3-FT | 2 | 3 | | | | | X | | | | |
| 2.5X3-FT | 2.5 | 3 | | | | X | | | | | |

PIPE MATRIX

| INLET SIZE | MAXIMUM INSIDE PIPE DIAMETER | |
|------------|------------------------------|-------------|
| | WIDTH (IN) | LENGTH (IN) |
| 2X2-FT | 12 | 12 |
| 2X2.5-FT | 12 | 18 |
| 2X3-FT | 12 | 24 |
| 2.5X3-FT | 18 | 24 |



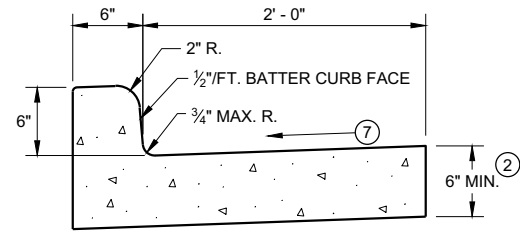
DETAIL "A"

INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

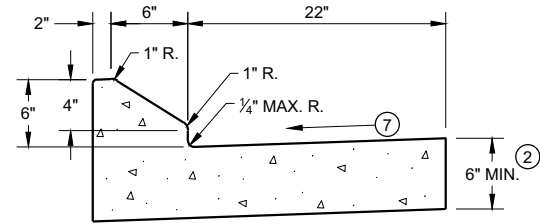
INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

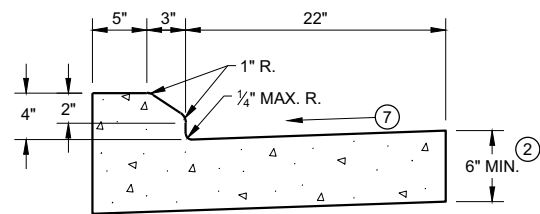
APPROVED
 Sept., 2016 /S/ Rodney Taylor
 DATE ROADWAY STANDARDS DEVELOPMENT
 FHWA UNIT SUPERVISOR



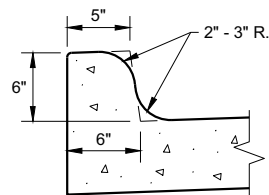
TYPES A^① & D



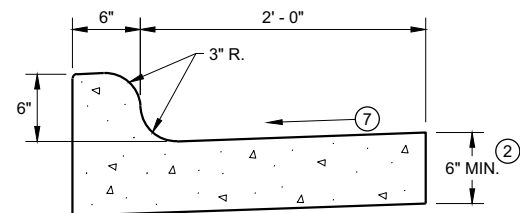
6" SLOPED CURB TYPES G^① & J



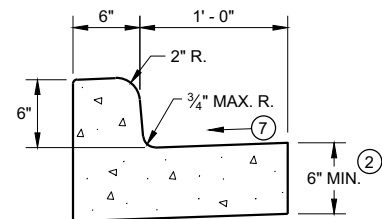
4" SLOPED CURB TYPES G^① & J



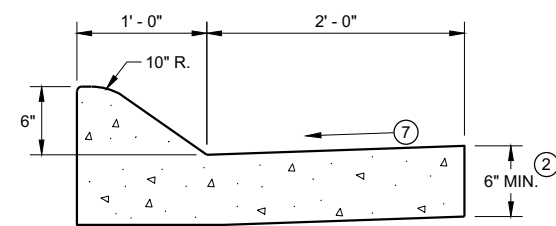
TYPES K^① & L
(OPTIONAL CURB SHAPE)



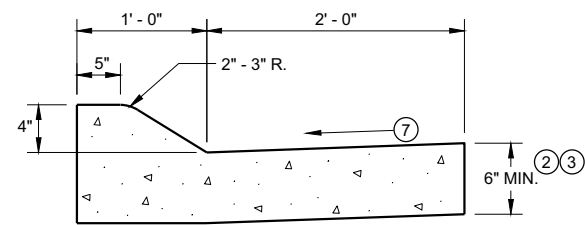
TYPES K^① & L
CONCRETE CURB AND GUTTER 30"



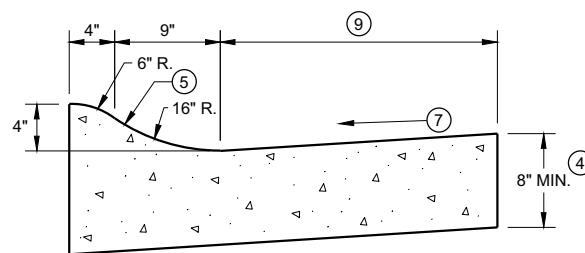
TYPES A^① & D
CONCRETE CURB AND GUTTER 18"



6" SLOPED CURB TYPES A^① & D

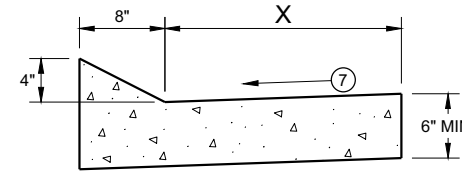


4" SLOPED CURB TYPES A^① & D
CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R^① & T

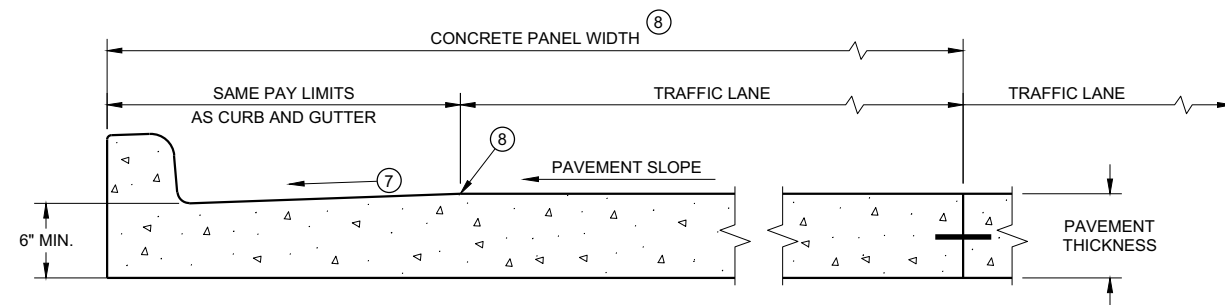
| | |
|------------|-----|
| TBT & TBTT | X |
| 30" | 22" |
| 36" | 28" |



TYPES TBT & TBTT^①
CONCRETE CURB AND GUTTER

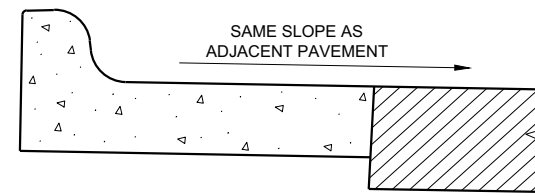
PAVEMENT THICKNESS
AND MAXIMUM CONCRETE
PANEL WIDTH TABLE

| PAVEMENT THICKNESS | MAXIMUM PANEL WIDTH |
|--------------------|---------------------|
| LESS THAN 10" | 12' |
| 10" & ABOVE | 15' |



PARTIAL SECTION OF PAVEMENT *
WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



REVERSE SLOPE GUTTER^⑥
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

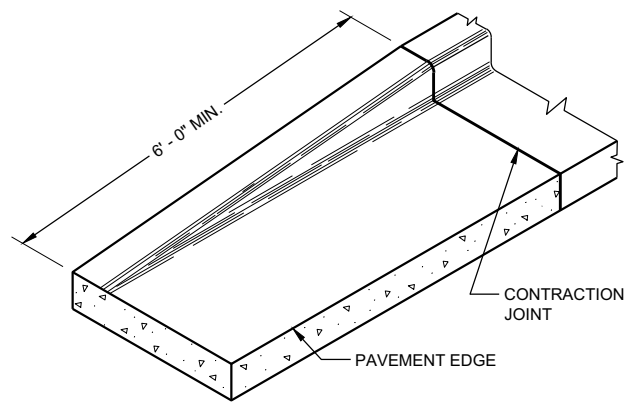
DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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

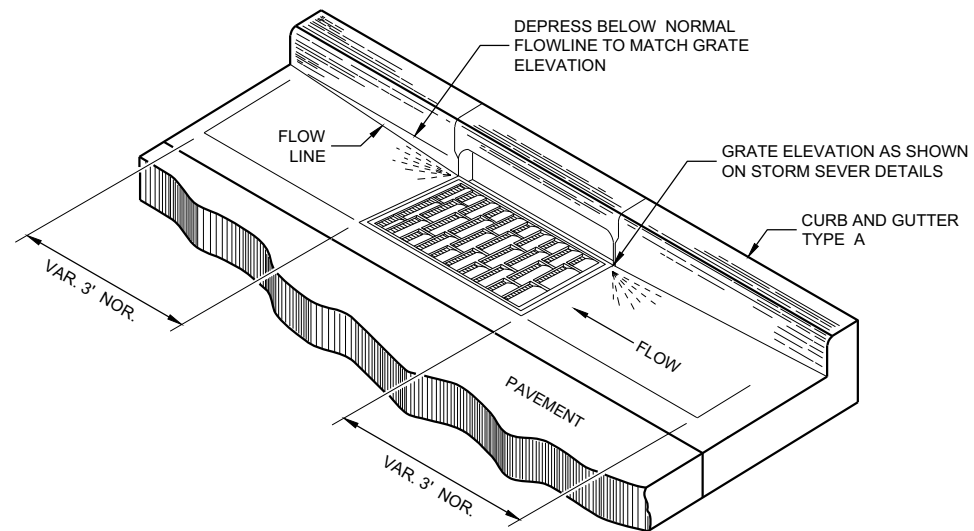
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.
- ④ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑤ UNLESS OTHERWISE NOTED, FOR STAKING PURPOSES THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- ⑥ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.
- ⑦ USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.
- ⑧ INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.
- ⑨ CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE "R" AND "T" = 17 INCHES
CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE "R" AND "T" = 23 INCHES



END SECTION CURB AND GUTTER



DETAIL OF CURB AND GUTTER AT INLETS
(TYPICAL H INLET COVER SHOWN)

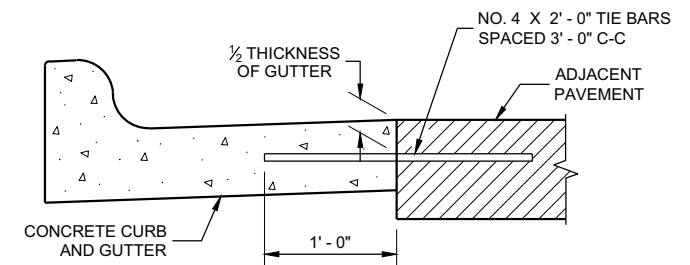
GENERAL NOTES

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

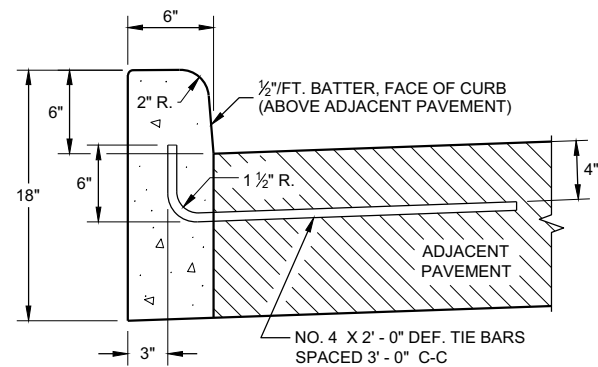
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

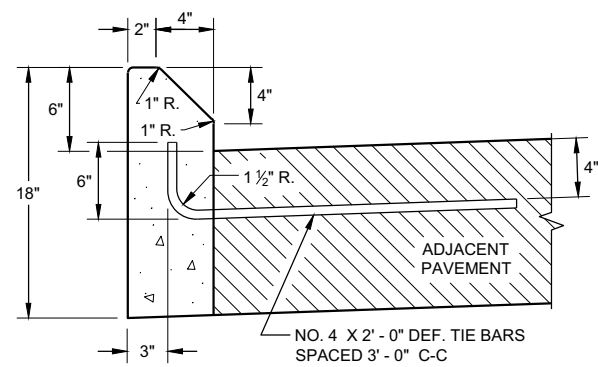
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑨ REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.



TYPICAL TIE BAR LOCATION ①

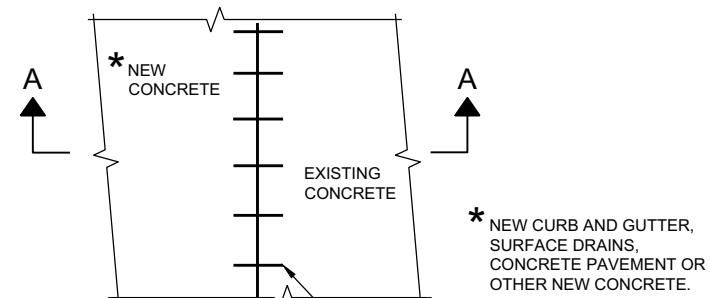


TYPES A ① & D

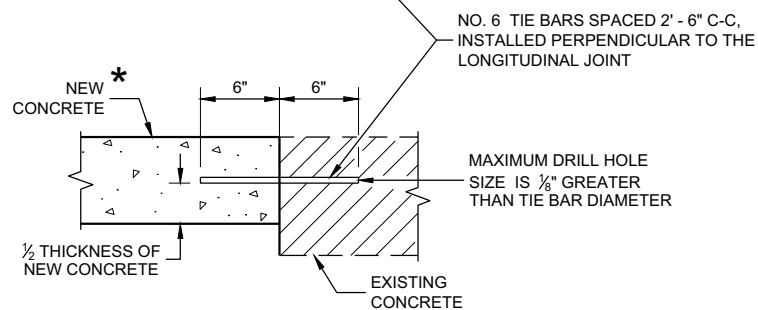


TYPES G ① & J

CONCRETE CURB

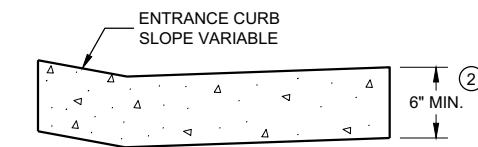


PLAN VIEW



SECTION A - A

TIE BARS DRILLED INTO EXISTING PAVEMENT



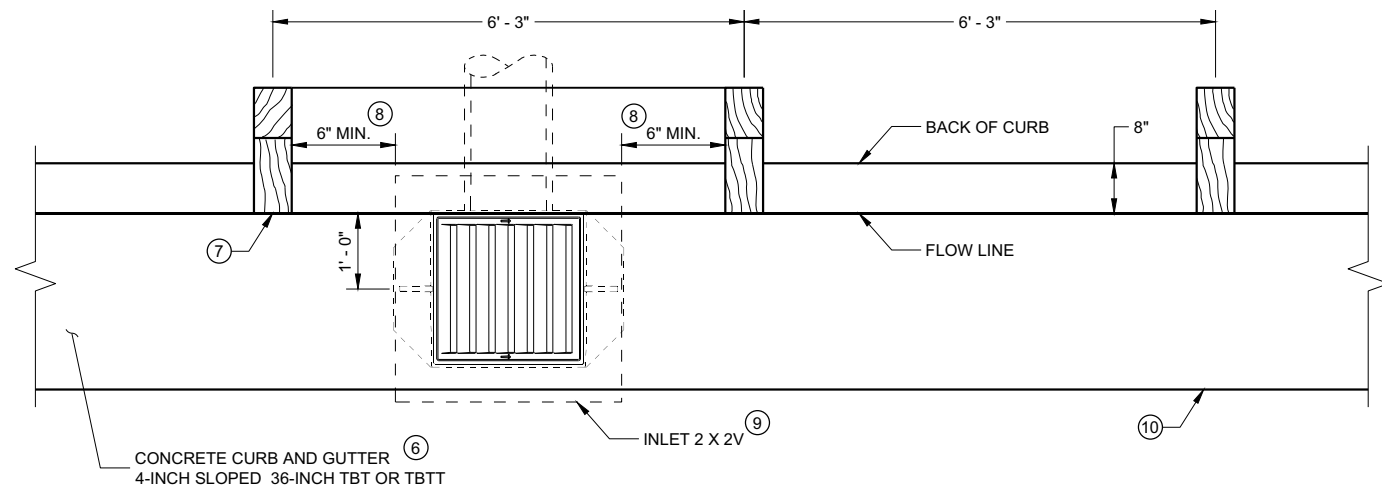
DRIVEWAY ENTRANCE CURB ⑨
(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

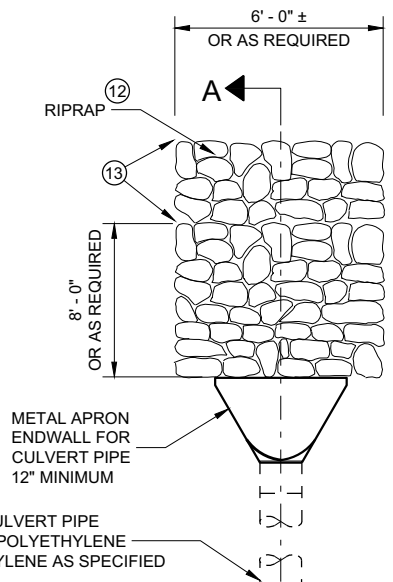
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



INLET PLAN VIEW
(NOTE: RAIL NOT SHOWN FOR CLARITY)



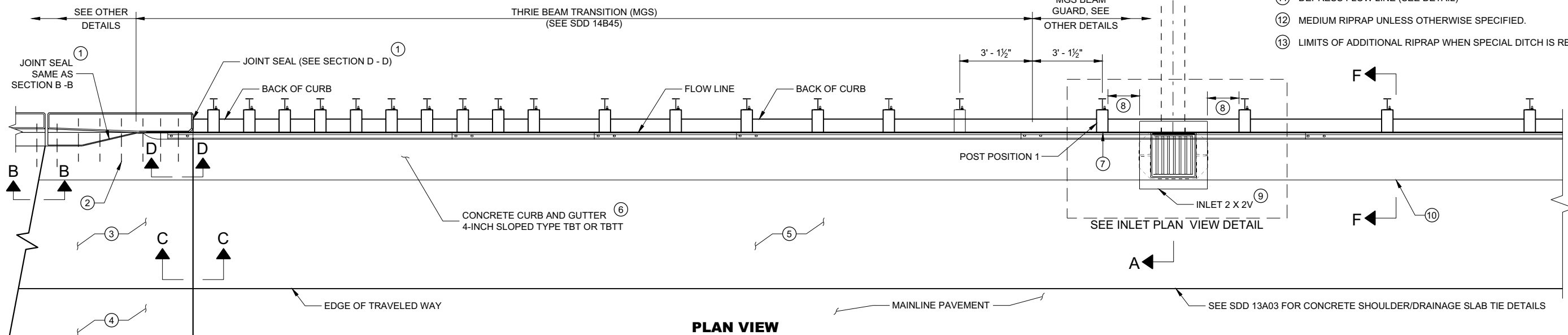
12" MINIMUM CULVERT PIPE
CORRUGATED POLYETHYLENE
OR POLYPROPYLENE AS SPECIFIED

GENERAL NOTES

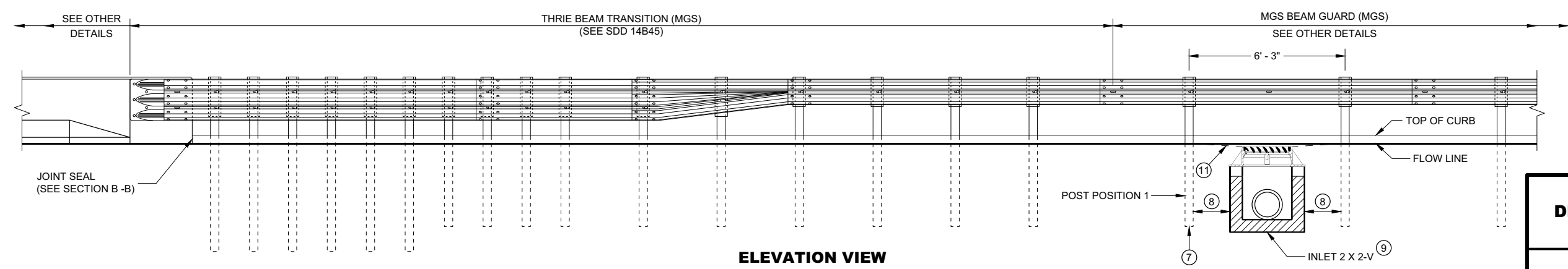
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

- ① USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- ② NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- ③ PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
- ④ CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02.
- ⑤ PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.
- ⑥ CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBTT. USE TYPE TBTT CURB WITH NO. 4 X 2' - 0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.
- ⑦ PLACE DRAINAGE STRUCTURE BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- ⑧ CENTER DRAINAGE STRUCTURE BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE WALL OF DRAINAGE STRUCTURE TO POSTS.
- ⑨ SEE SDD 08A05 AND 08C07 FOR DETAILS. SEE ROADWAY PLANS FOR LOCATION.
- ⑩ START CURB AND GUTTER TRANSITION OR END SECTION.
- ⑪ DEPRESS FLOW LINE (SEE DETAIL)
- ⑫ MEDIUM RIPRAP UNLESS OTHERWISE SPECIFIED.
- ⑬ LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.



PLAN VIEW



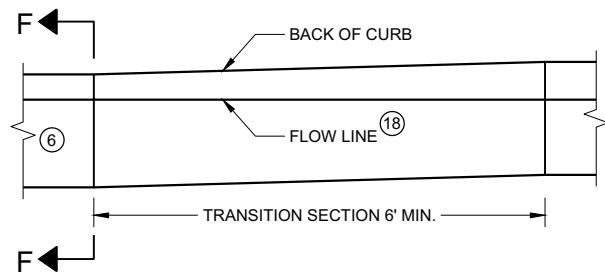
ELEVATION VIEW

**CONCRETE SURFACE
DRAINS DROP INLET TYPE
AT STRUCTURES**

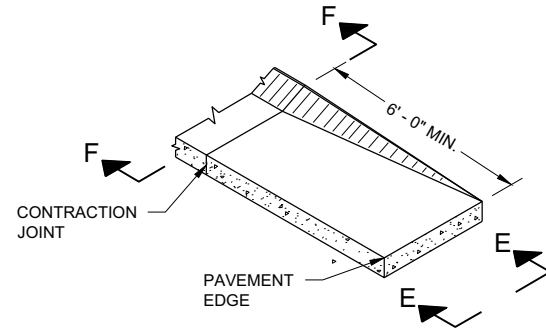
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 08D03 - 08a

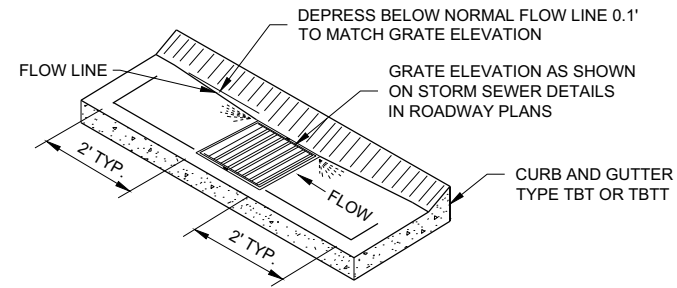
SDD 08D03 - 08a



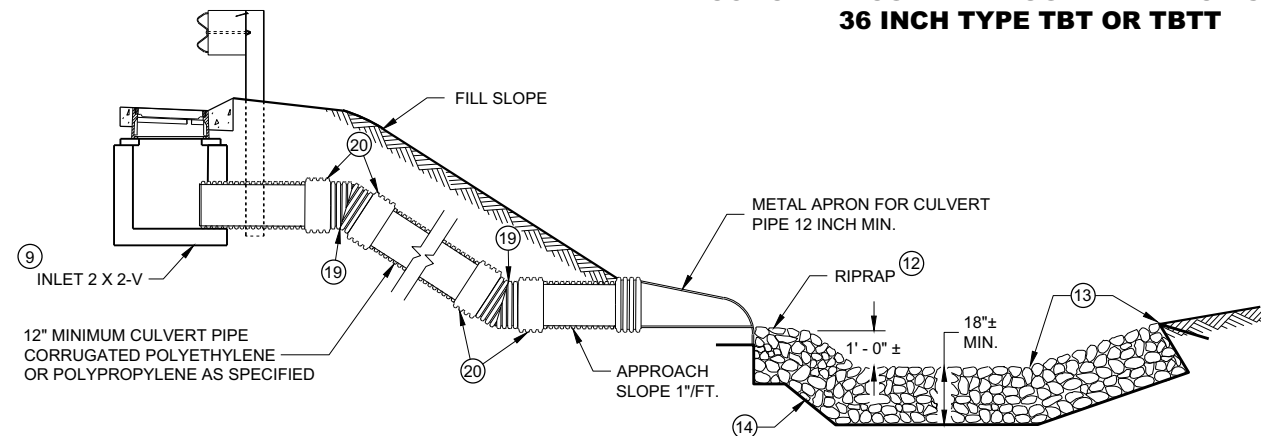
**CURB AND GUTTER TRANSITION SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBTT**



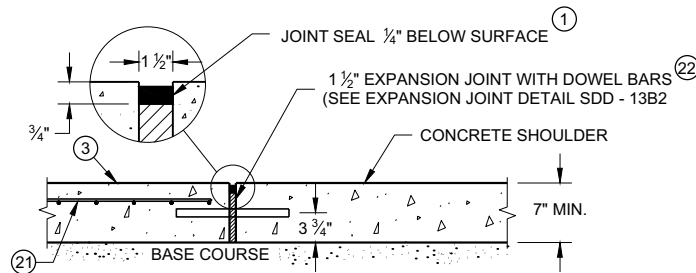
**CURB AND GUTTER END SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBTT**



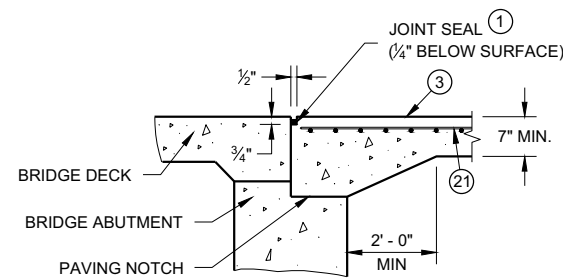
**CURB AND GUTTER FLOW LINE DEPRESSION
AT INLETS CONCRETE CURB AND GUTTER
4-INCH SLOPED 36 INCH TYPE TBT OR TBTT**



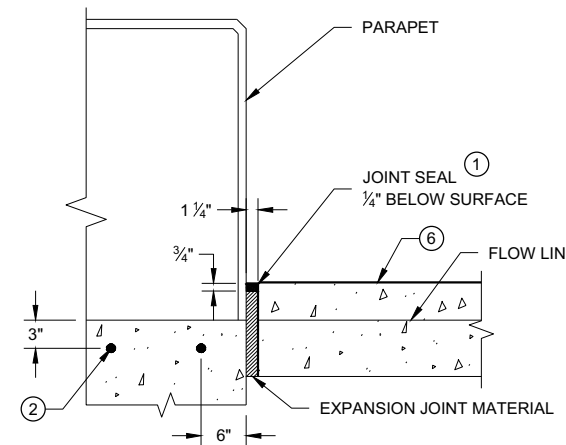
SECTION A - A



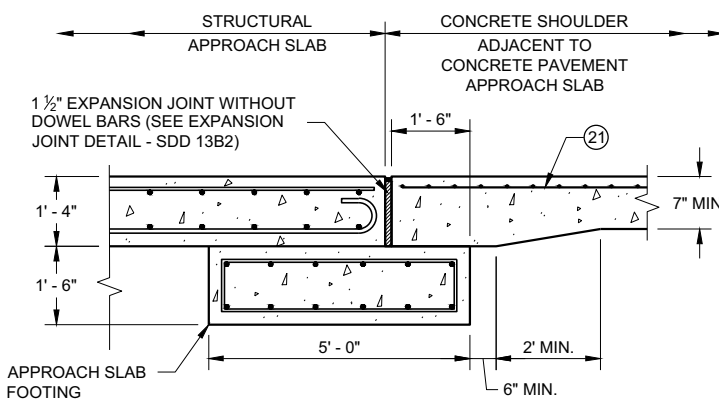
**SECTION C - C
JOINT DETAIL FOR BRIDGE APPROACH
WITH CONCRETE SHOULDERS**



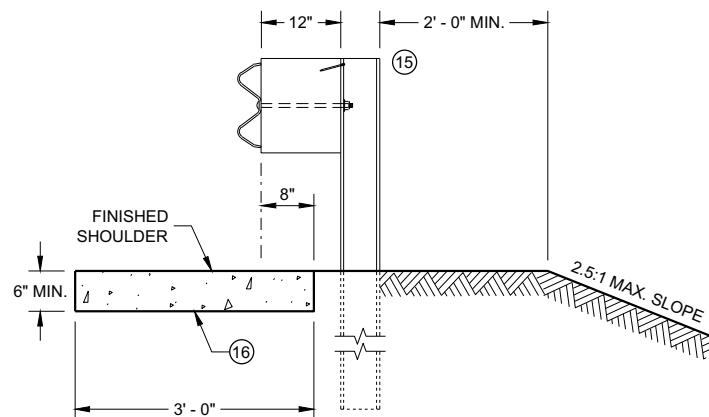
SECTION B - B



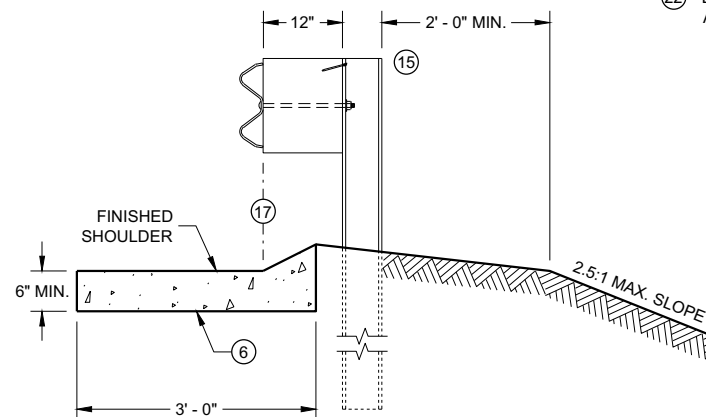
SECTION D - D



**SECTION C - C
JOINT DETAIL FOR BRIDGE WITH STRUCTURAL
APPROACH SLAB AND CONCRETE APPROACH SLAB**



SECTION E - E



SECTION F - F

GENERAL NOTES

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

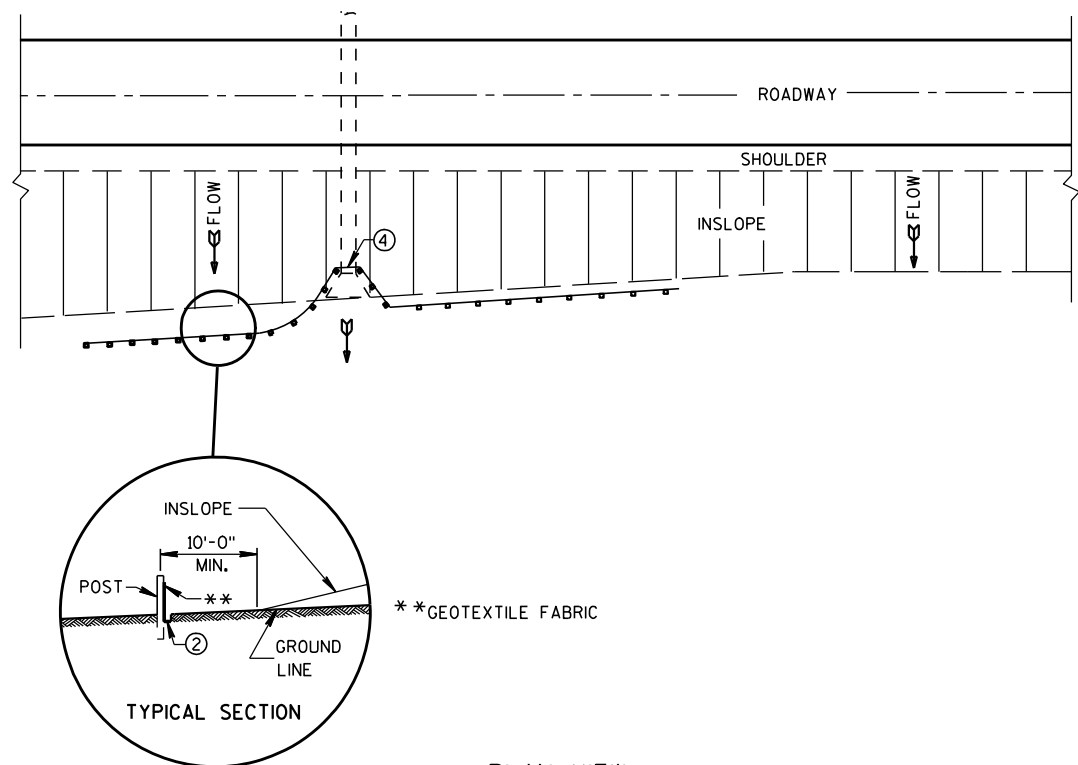
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

- ① USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- ② NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- ③ PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
- ④ CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02 AND STRUCTURE PLANS.
- ⑤ PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.
- ⑥ CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBTT. USE TYPE TBTT CURB WITH NO. 4 X 2' - 0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.
- ⑦ PLACE DRAINAGE STRUCTURE BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- ⑧ CENTER DRAINAGE STRUCTURE BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE WALL OF DRAINAGE STRUCTURE TO POSTS.
- ⑨ SEE SDD 08A05 AND 08C07 FOR DETAILS. SEE ROADWAY PLANS FOR LOCATION.
- ⑩ START CURB AND GUTTER TRANSITION OR END SECTION.
- ⑪ DEPRESS FLOW LINE (SEE DETAIL)
- ⑫ MEDIUM RIPRAP UNLESS OTHERWISE SPECIFIED.
- ⑬ LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.
- ⑭ GEOTEXTILE FABRIC TYPE HR.
- ⑮ MSG THRIE BEAM TRANSITION POST 1. SEE SDD 14B45 FOR ADDITIONAL CONSTRUCTION DETAILS AND ACCEPTABLE MATERIALS.
- ⑯ MAINTAIN WIDTH, THICKNESS AND CROSS SLOPE OF ADJACENT TYPE TBT OR TBTT CURB. SEE NOTE 6 FOR TIE BAR SPACING.
- ⑰ ALIGN FACE OF POST BLOCK WITH FLOW LINE.
- ⑱ MAINTAIN FLOW LINE AT EDGE OF PAVEMENT/FACE OF BEAM GUARD AS APPLICABLE.
- ⑲ MANUFACTURER SUPPLIED BEND.
- ⑳ MANUFACTURER SUPPLIED EXTERNAL MECHANICAL COUPLING OR A MANUFACTURER RECOMMENDED COUPLING WITH A MASTIC IMPREGNATED GEOTEXTILE WRAP AND MECHANICAL FASTENING BANDS.
- ㉑ MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C - C.
- ㉒ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING HMA PAVEMENTS.

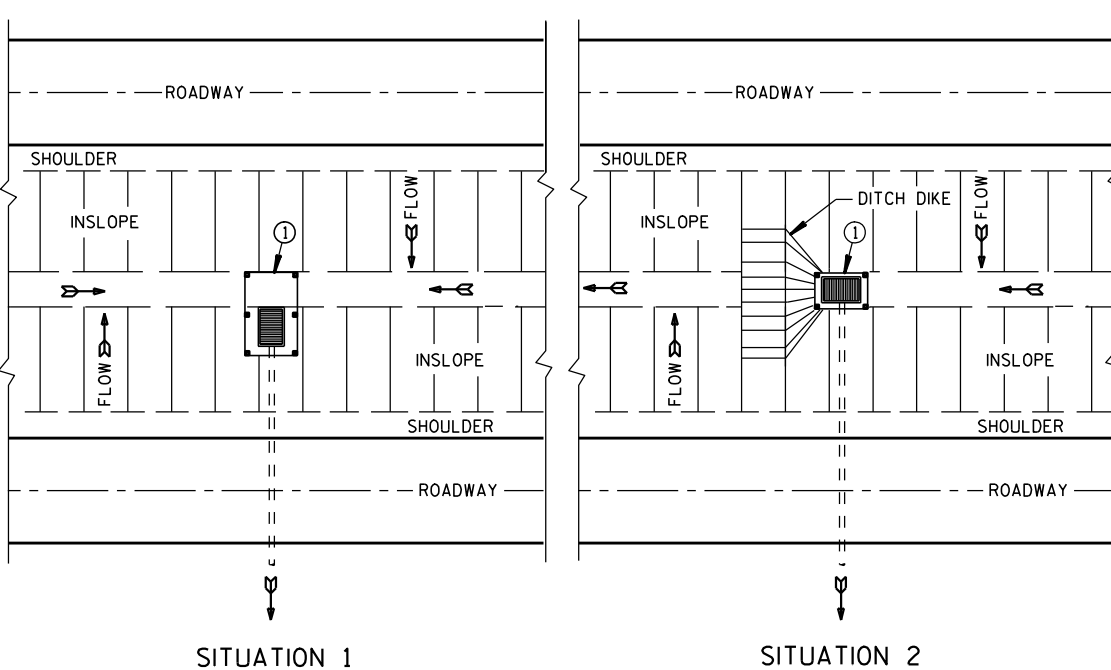
**CONCRETE SURFACE
DRAINS DROP INLET TYPE
AT STRUCTURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

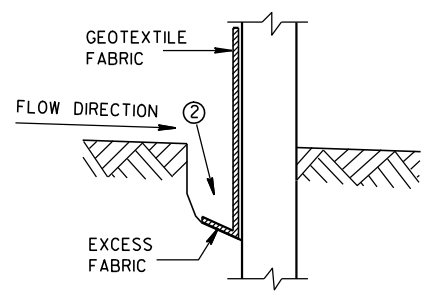


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

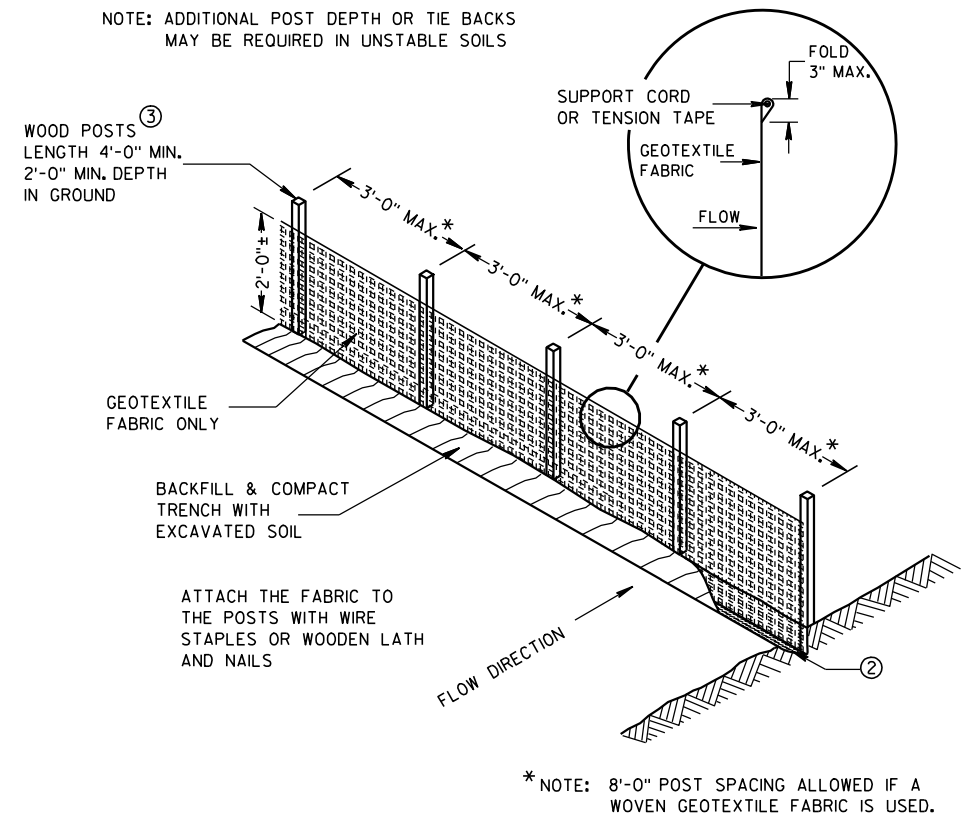
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

- 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.

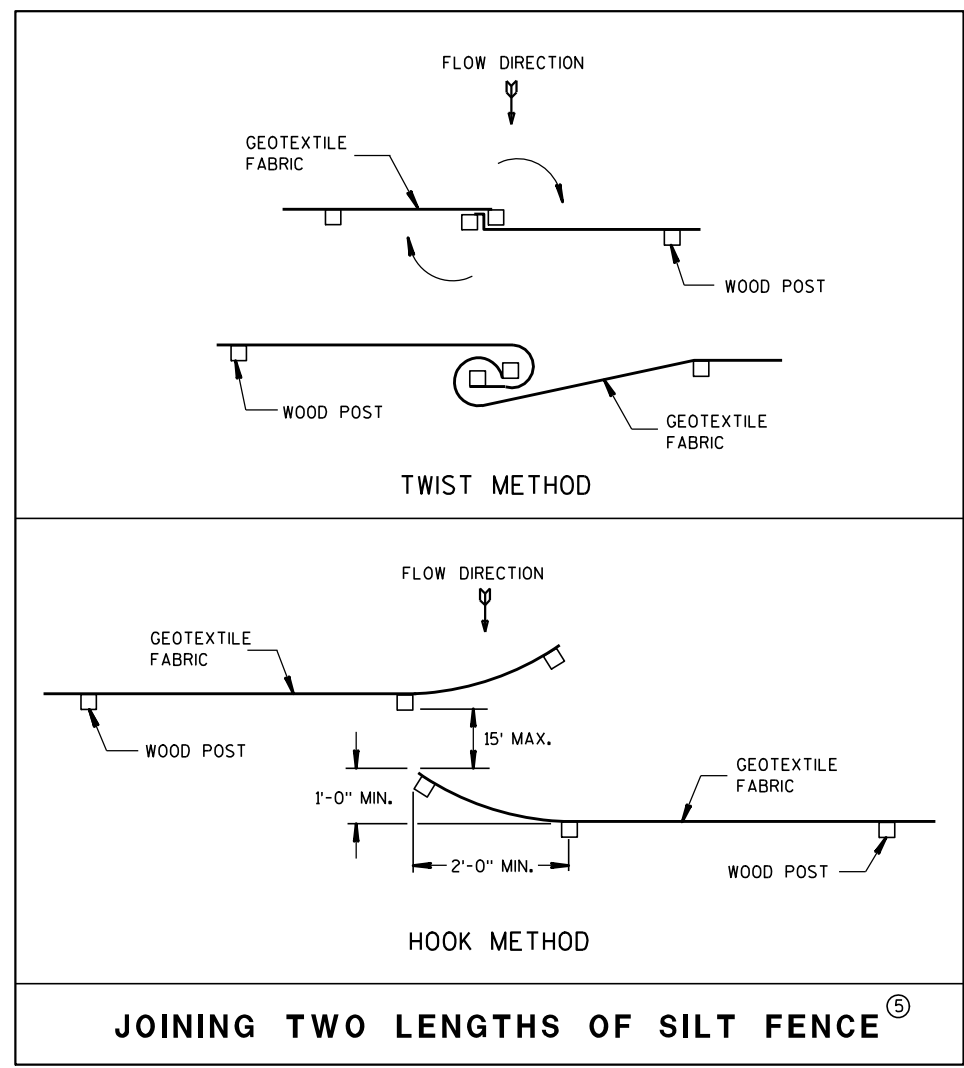


TRENCH DETAIL

6

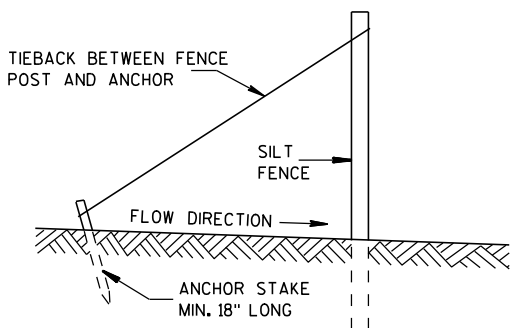


SILT FENCE



JOINING TWO LENGTHS OF SILT FENCE ⑤

6

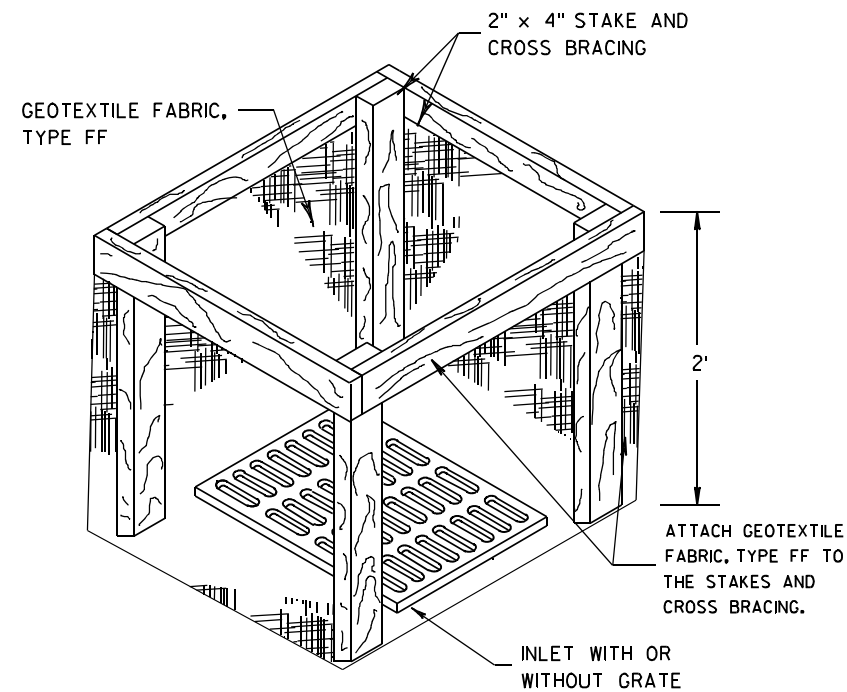
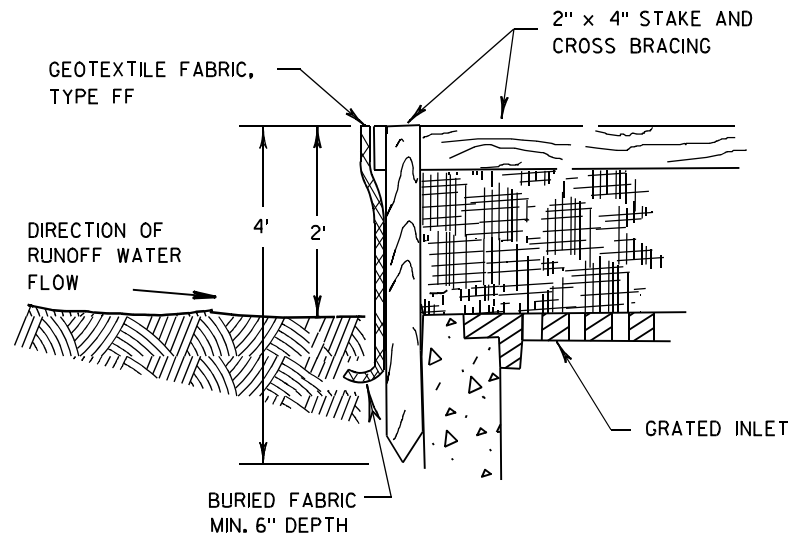


SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

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

S.D.D. 8 E 9-6

S.D.D. 8 E 9-6



INLET PROTECTION, TYPE A

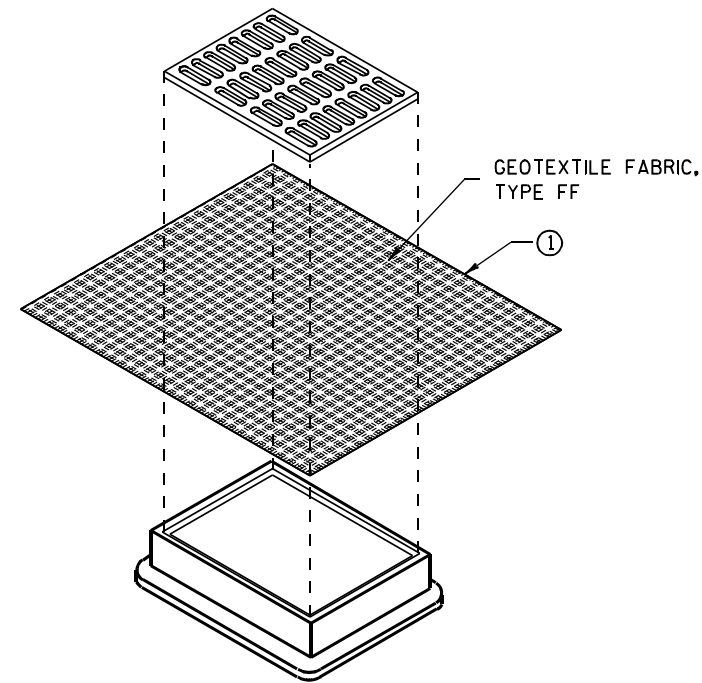
GENERAL NOTES

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.

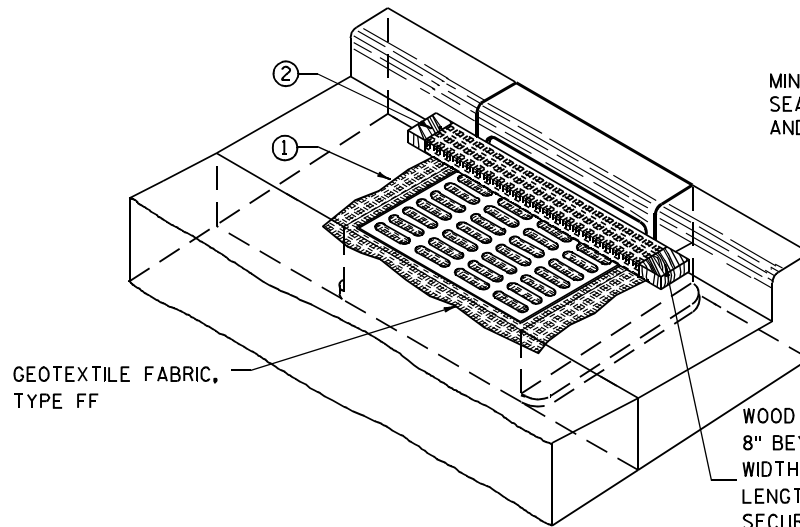
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- 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.

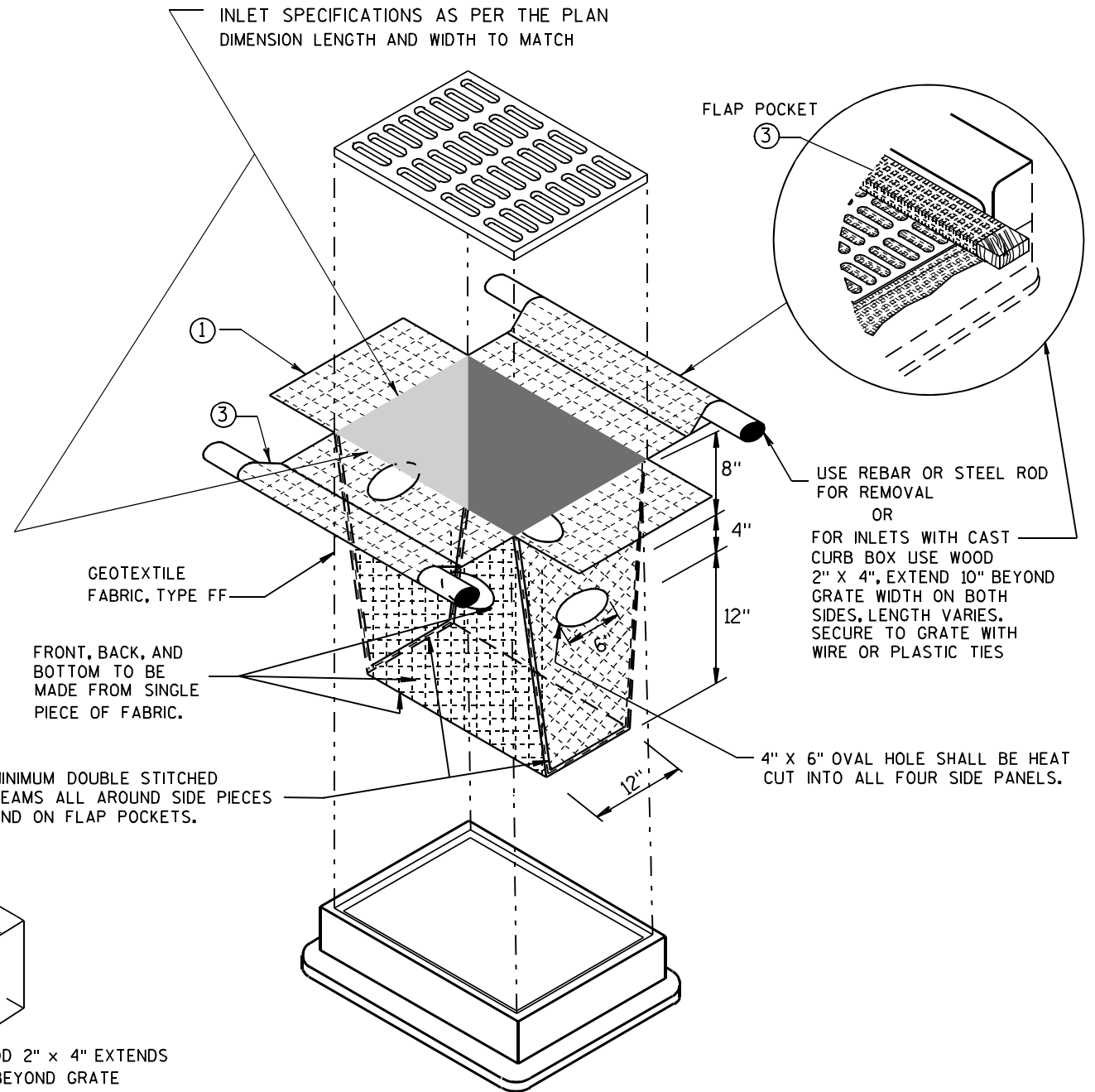
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

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.

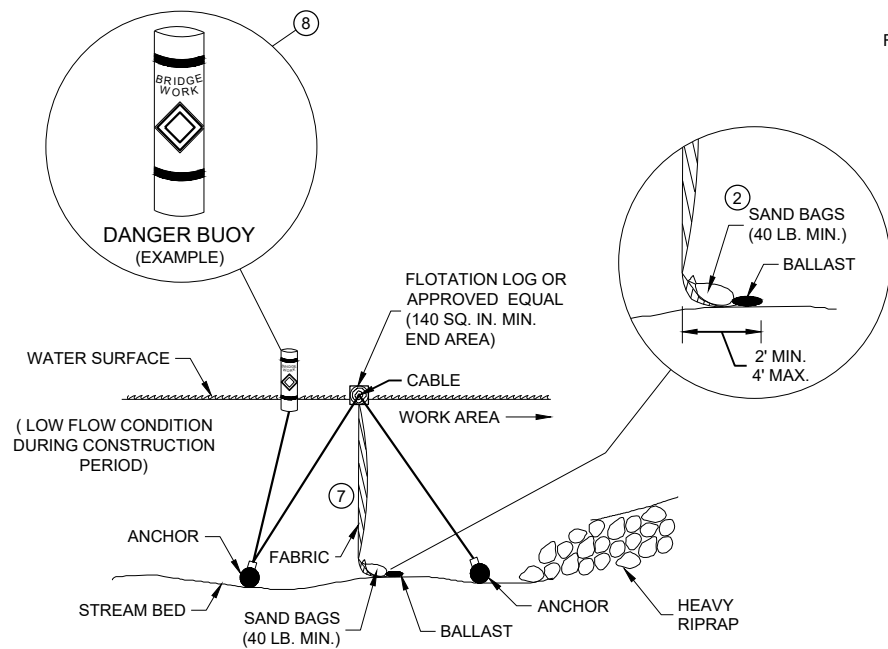
THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE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



INLET PROTECTION, TYPE D

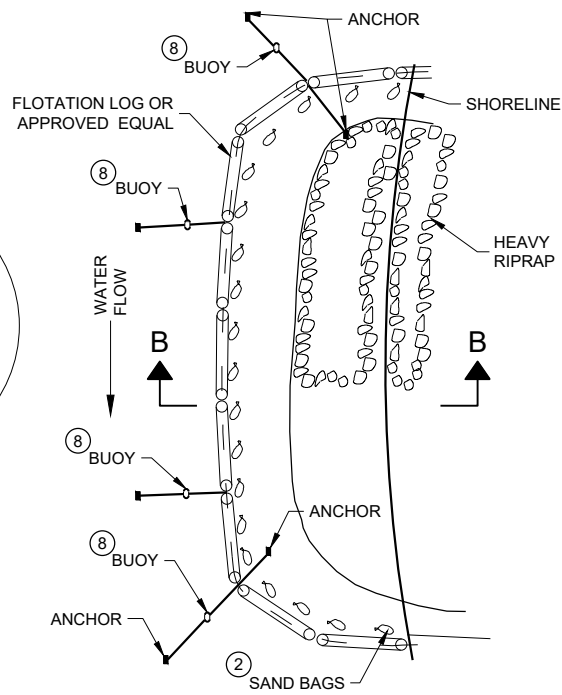
(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX AS PER NOTE ②)

| | |
|--|---|
| INLET PROTECTION TYPE A, B, C, AND D | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED 10/16/02 DATE | /S/ Beth Conestra CHIEF ROADWAY DEVELOPMENT ENGINEER |
| FHWA | |

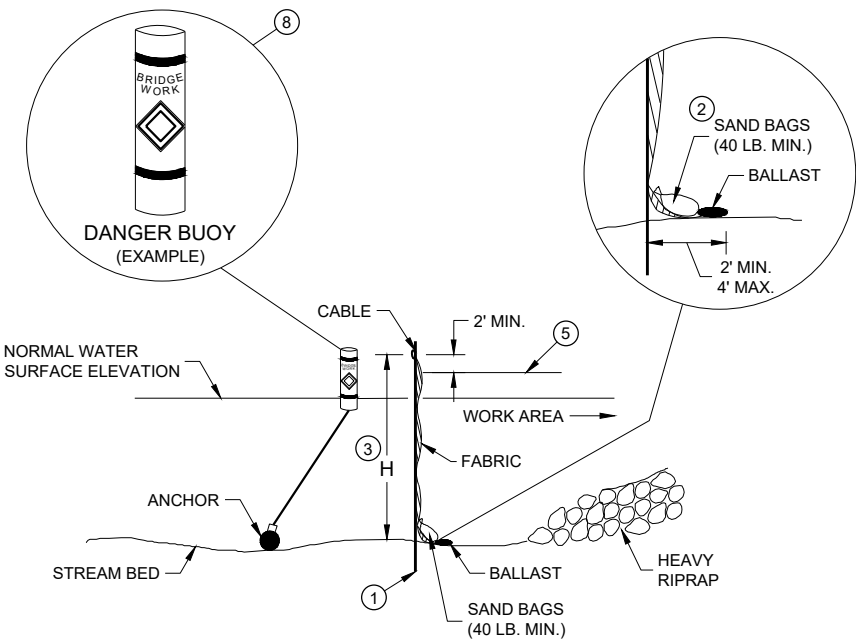


SECTION B - B

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

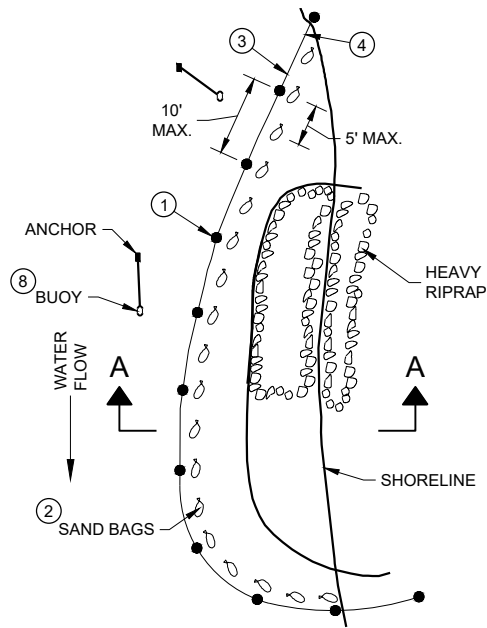


PLAN VIEW



SECTION A - A

TURBIDITY BARRIER - STANDARD POST INSTALLATION



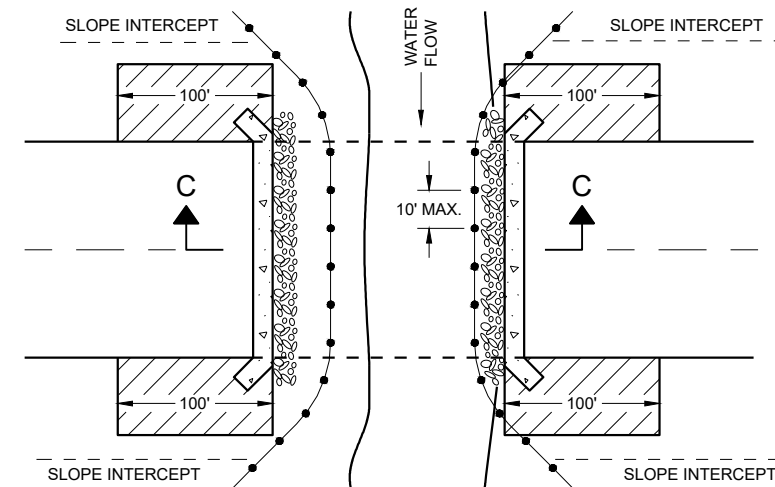
PLAN VIEW

GENERAL NOTES

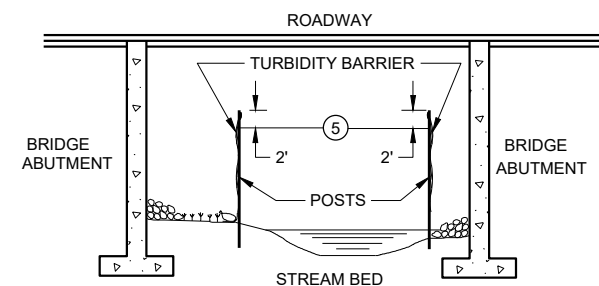
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

TURBIDITY BARRIER MAY BE REMOVED AT THE ENGINEERS DISCRETION, WHEN PERMANENT EROSION CONTROL MEASURES HAVE BEEN ESTABLISHED.

- ① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.
- ② SAND BAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.
- ③ WHEN BARRIER HEIGHT "H" EXCEEDS 8 FEET, POST SPACING MAY NEED TO BE DECREASED.
- ④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.
- ⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MINIMUM BARRIER HEIGHT SHALL BE 2' GREATER THAN EITHER THE Q2 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WHICHEVER IS GREATER.
- ⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BEDROCK PREVENTS THE INSTALLATION OF POSTS.
- ⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.
- ⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



PLAN VIEW



SECTION C - C

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

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

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.

TRACKING PAD SHALL BE INSPECTED DAILY. DEFICIENT AREAS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

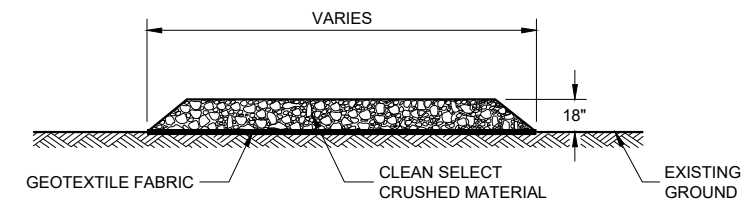
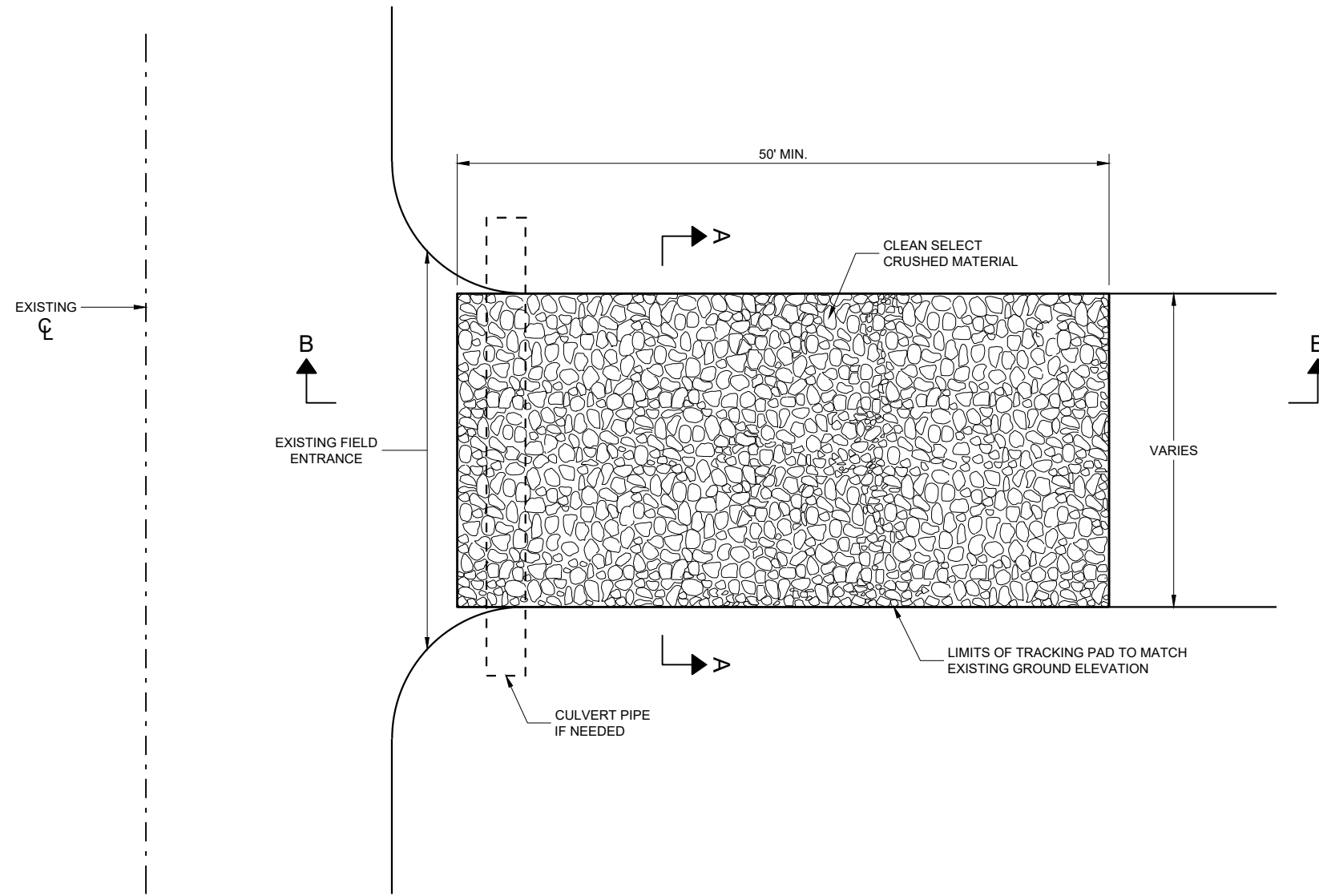
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

TRACKING PAD SHALL BE THE FULL WIDTH OF THE EGRESS POINT.

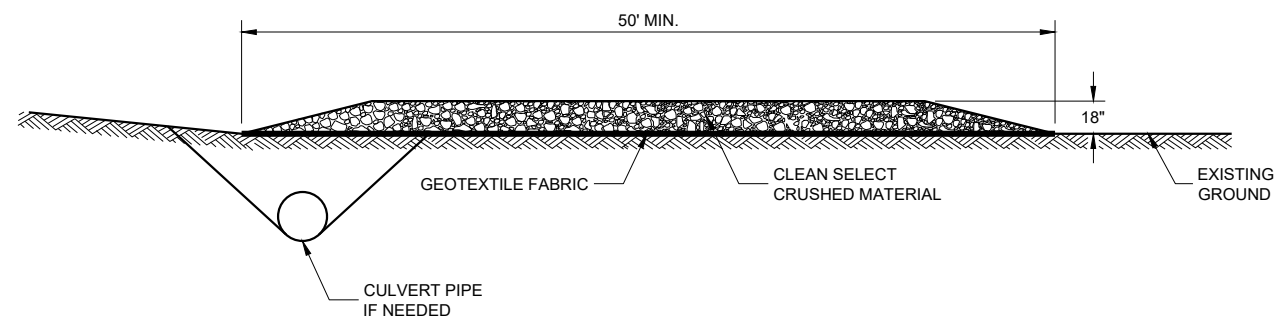
SURFACE WATER MUST BE PREVENTED FROM PASSING THROUGH THE TRACKING PAD. FLOWS SHALL BE DIVERTED AWAY, AROUND OR CONVEYED UNDER THE TRACKING PAD.

CULVERT PIPE OR OTHER BMP USED TO DIVERT WATER AWAY, AROUND OR UNDER THE TRACKING PAD SHALL BE DESIGNED TO CONVEY THE 2 YEAR - 24 HOUR EVENT.

THE COST OF ADDITIONAL BMP TO DIVERT WATER ARE INCIDENTAL TO THE TRACKING PAD BID ITEM.



SECTION A - A



SECTION B - B

TRACKING PAD

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/24/2011 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER

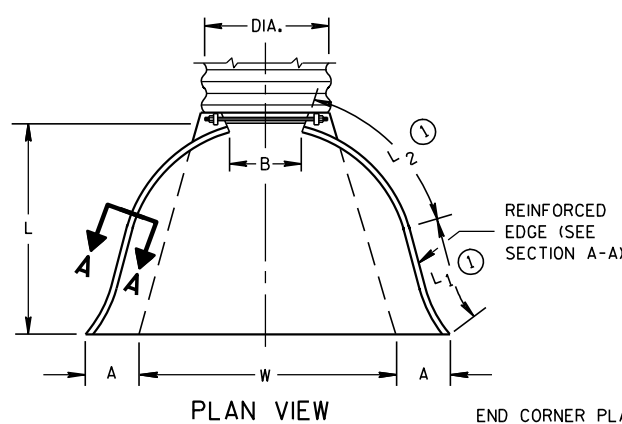
FHWA

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

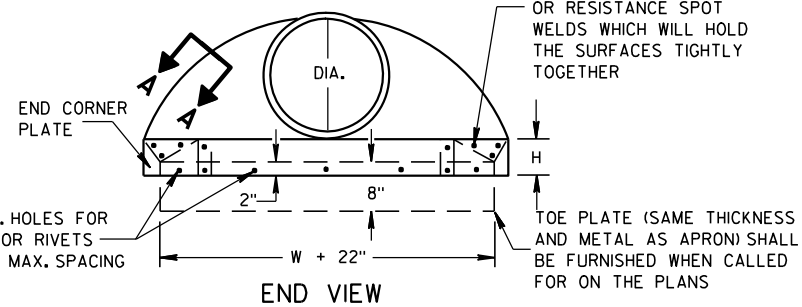
* EXCEPT CENTER PANEL SEE GENERAL NOTES

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

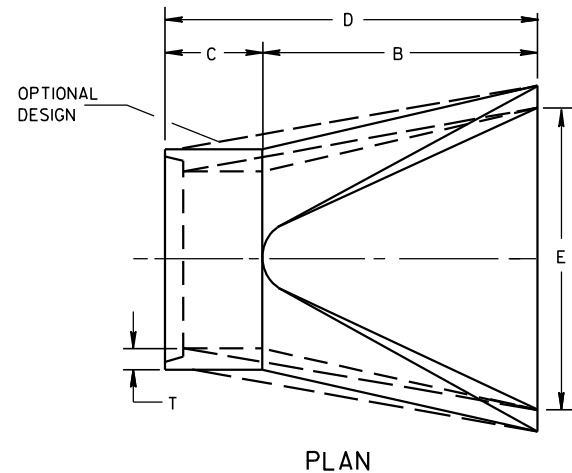
* MINIMUM
** MAXIMUM



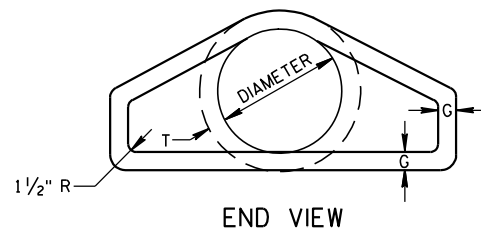
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



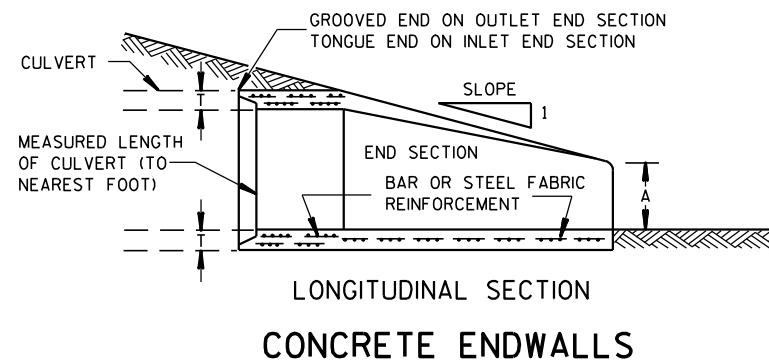
SIDE ELEVATION
METAL ENDWALLS



PLAN

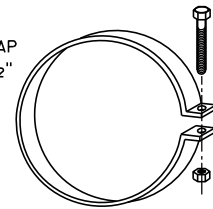


END VIEW

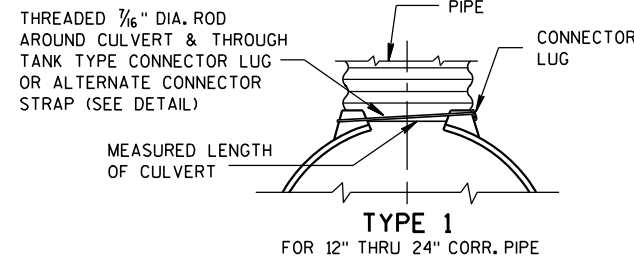


LONGITUDINAL SECTION
CONCRETE ENDWALLS

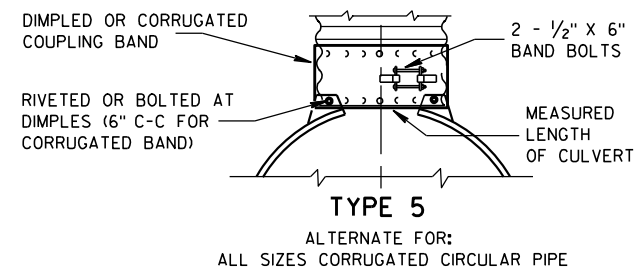
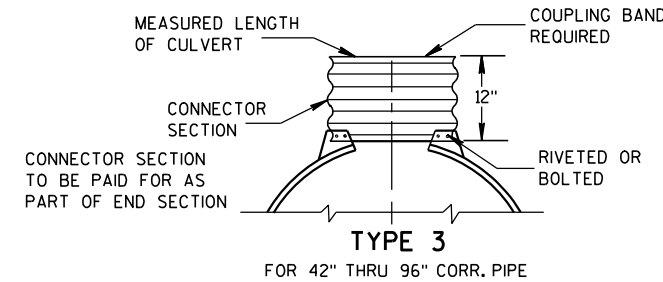
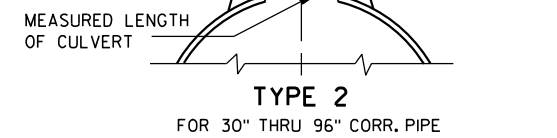
1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



THREADED 1/16" DIA. ROD OVER TOP OF APRON, SIDE LUGS TO BE RIVETED TO APRON



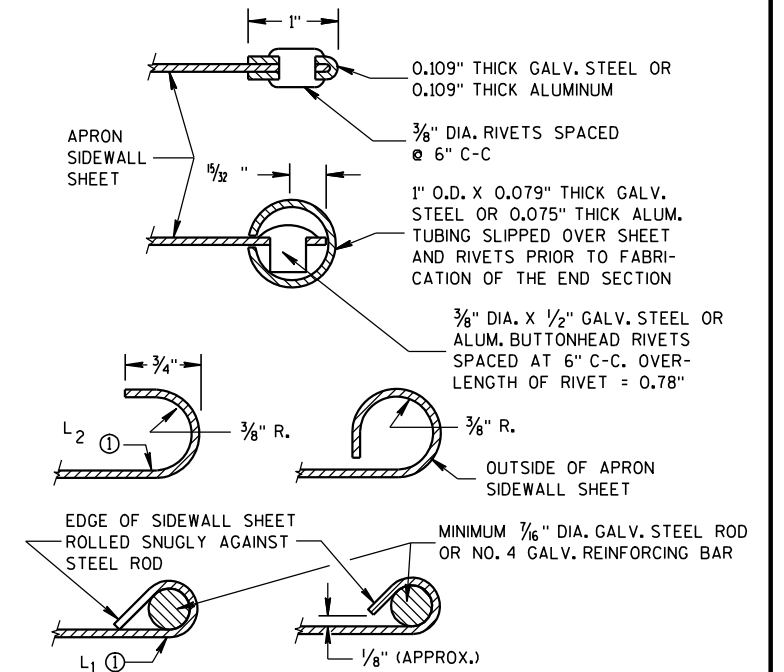
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

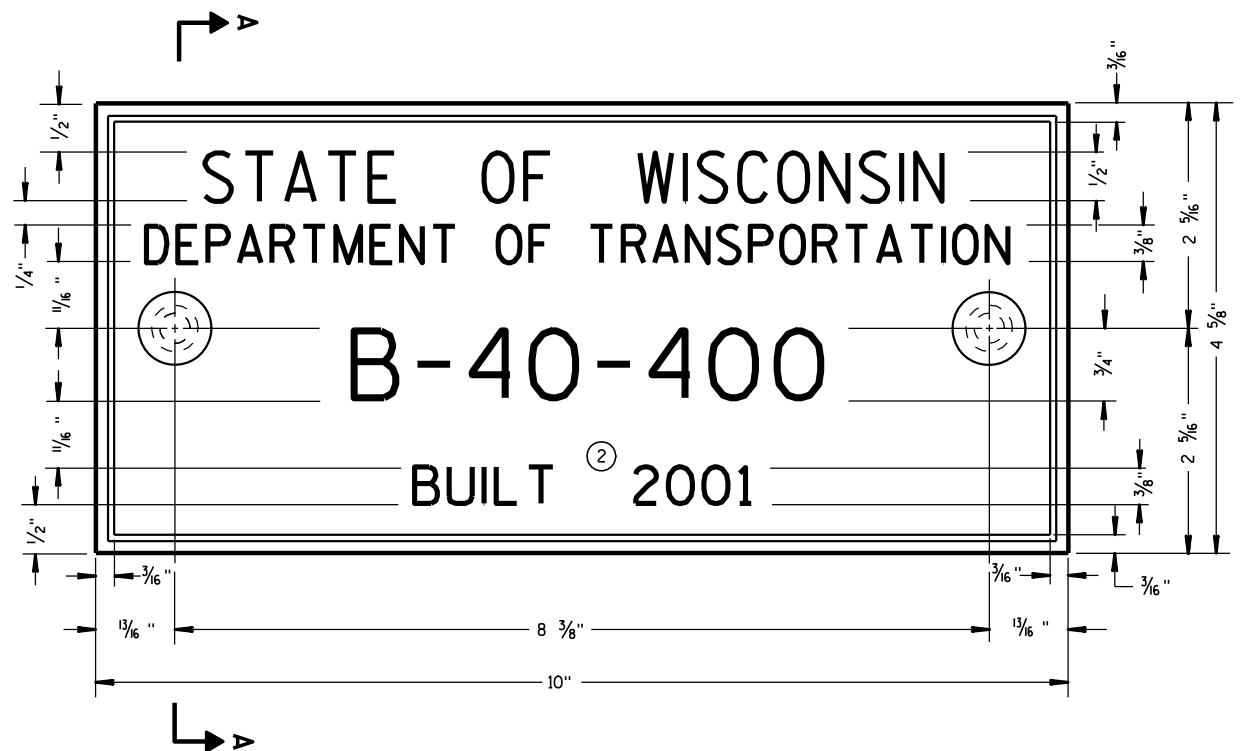
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

APRON ENDWALLS FOR
CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



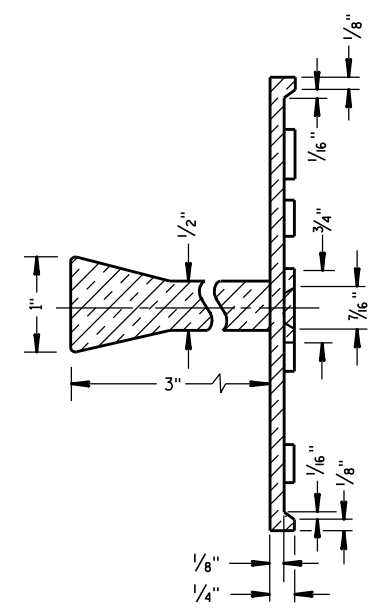
TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)

GENERAL NOTES

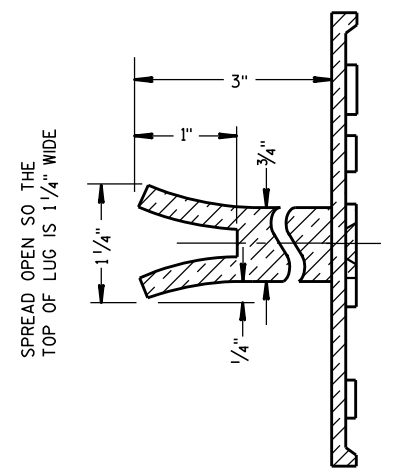
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

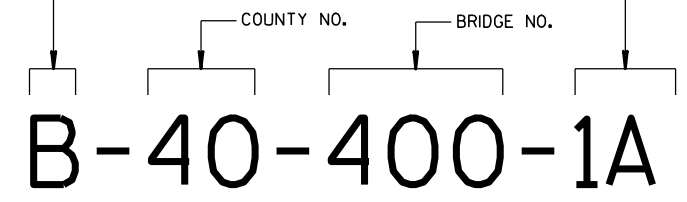
6

6

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

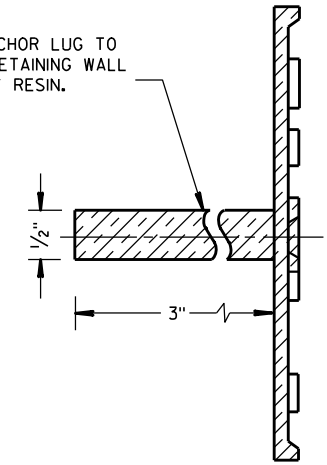
B = BRIDGE
C = CULVERT
R = RETAINING WALL

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 | |

GENERAL NOTES

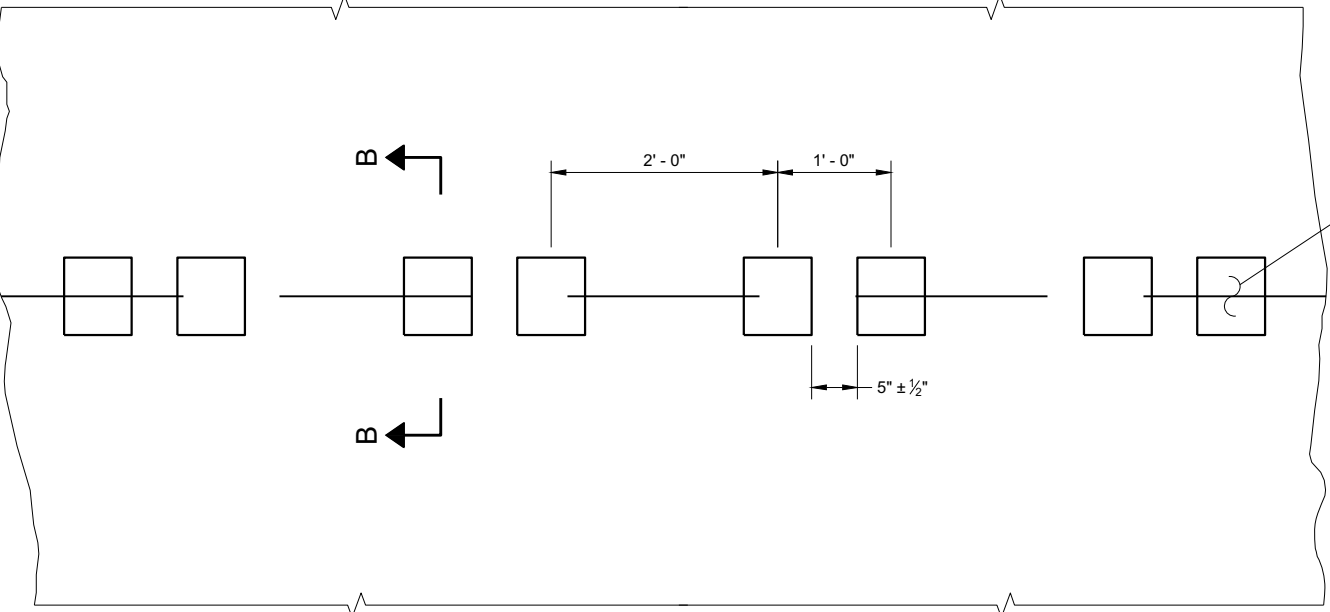
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

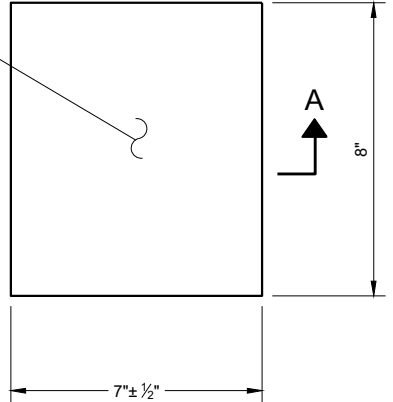
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

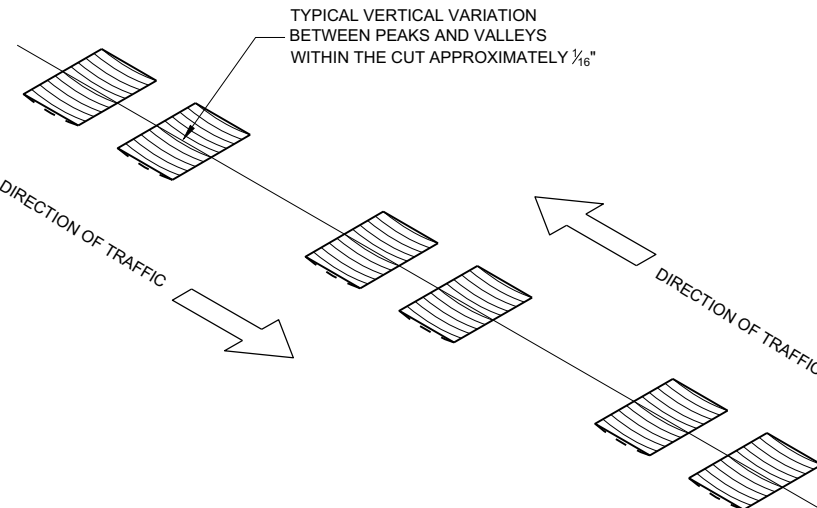
- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



**PLAN VIEW
SHOULDER WITH GROOVES**

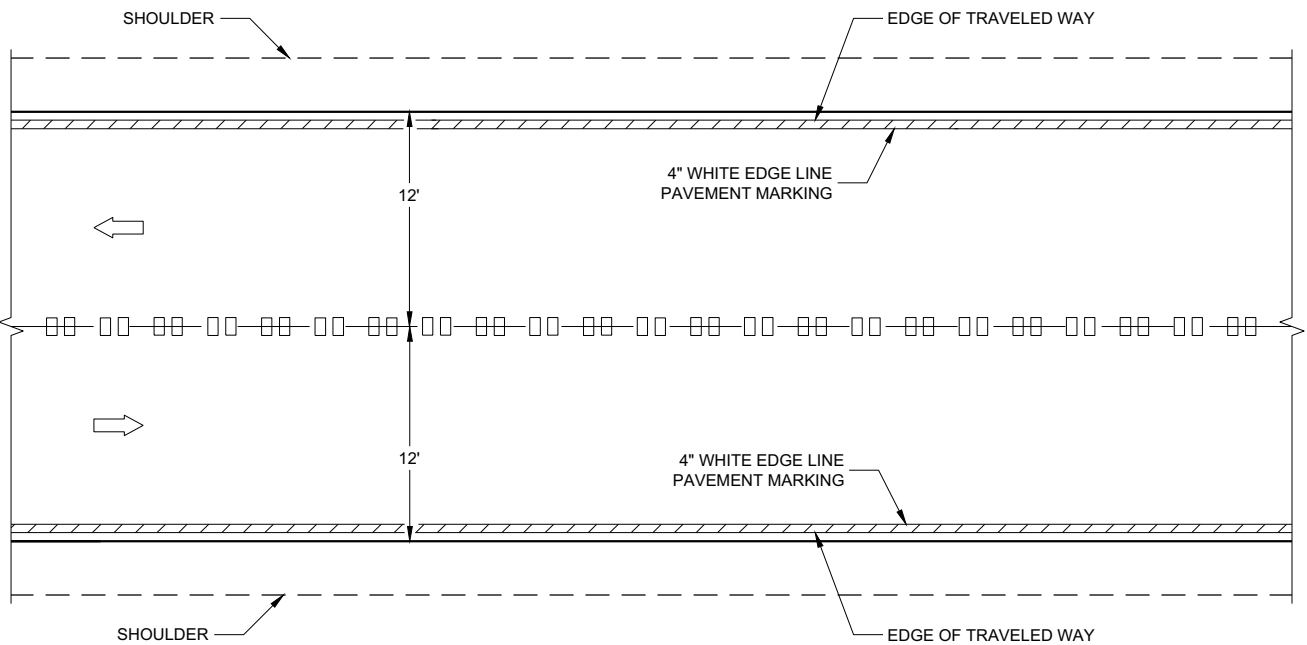


**PLAN VIEW
(SINGLE GROOVE)**

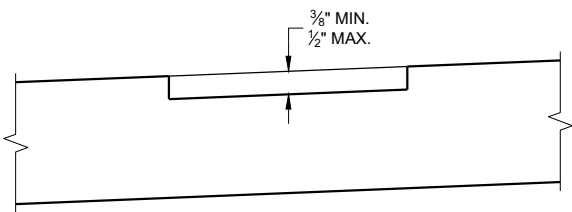


ISOMETRIC

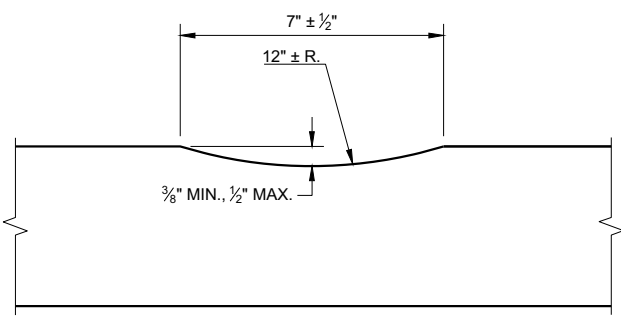
PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP



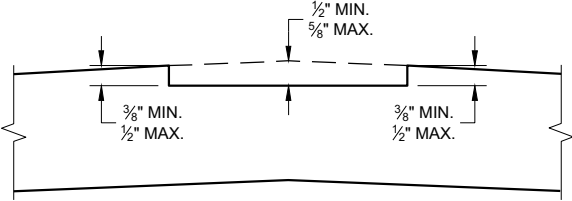
CENTERLINE GROOVES ON TWO-WAY ROADWAYS



**SECTION B - B
SUPERELEVATED ROADWAY**



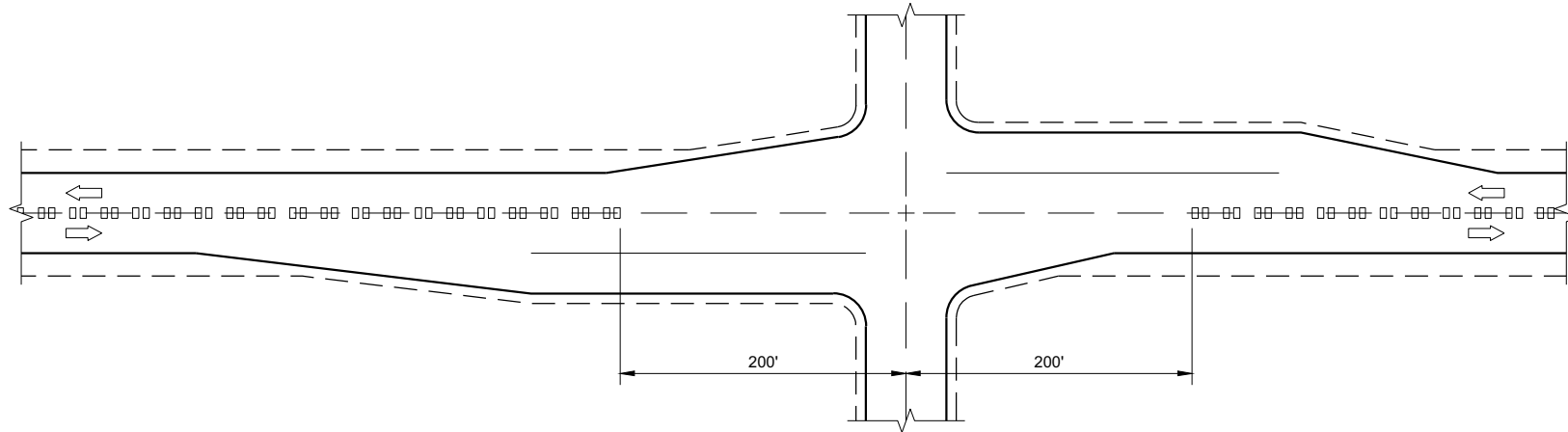
SECTION A - A



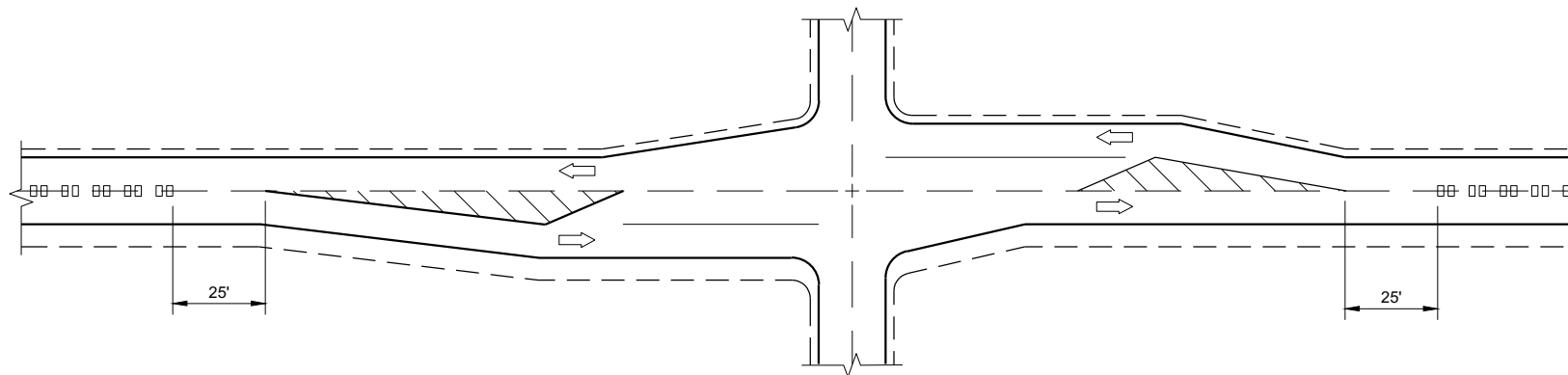
**SECTION B - B
CROWNED ROADWAY**

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

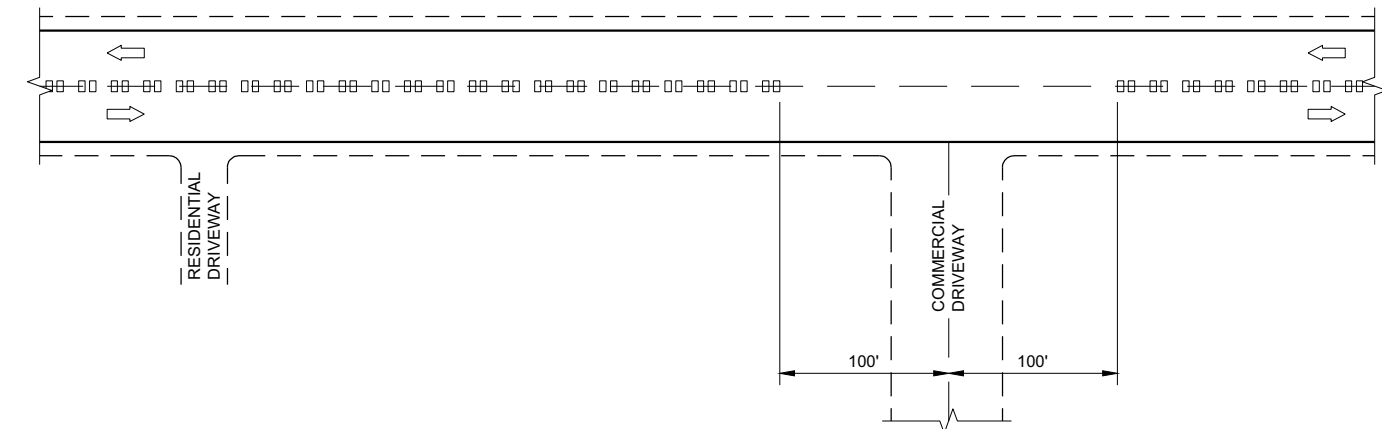
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



CENTERLINE GROOVES AT INTERSECTIONS



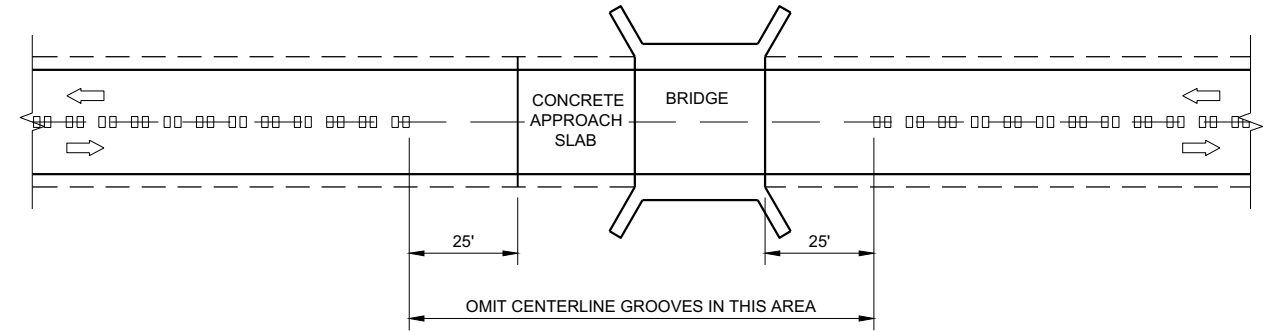
**CENTERLINE GROOVES AT INTERSECTIONS
(WITH LEFT TURN LANES)**



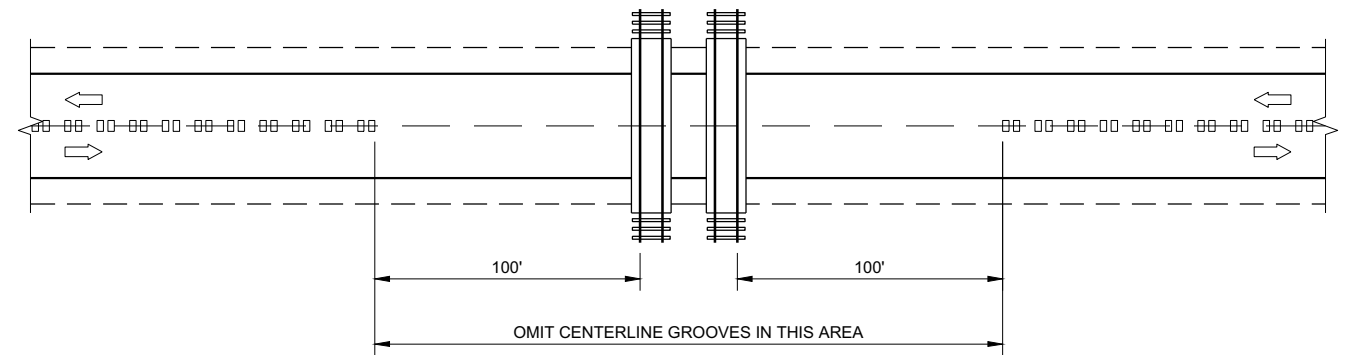
CENTERLINE GROOVES AT DRIVEWAYS^①

GENERAL NOTES

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



CENTERLINE GROOVES AT BRIDGES

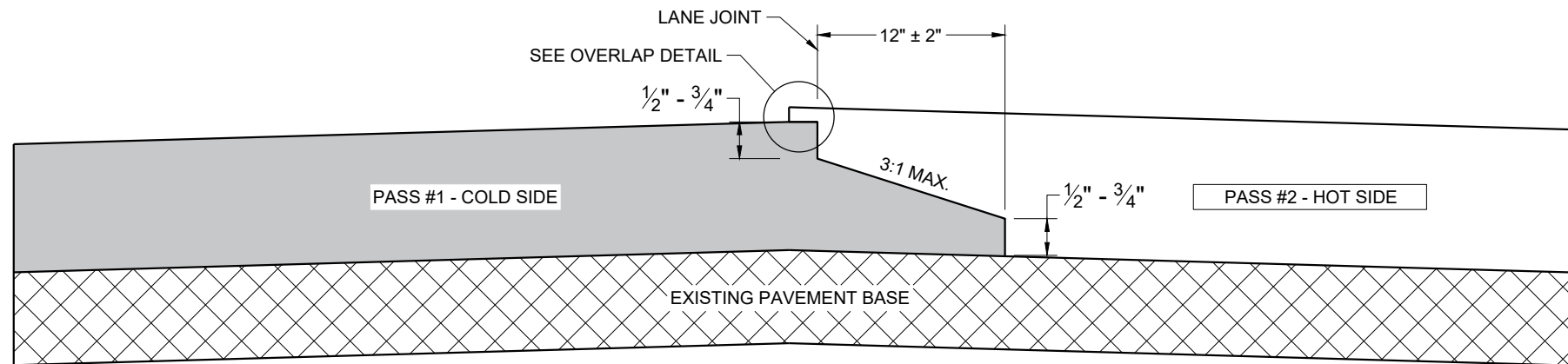


CENTERLINE GROOVES AT RAILROADS

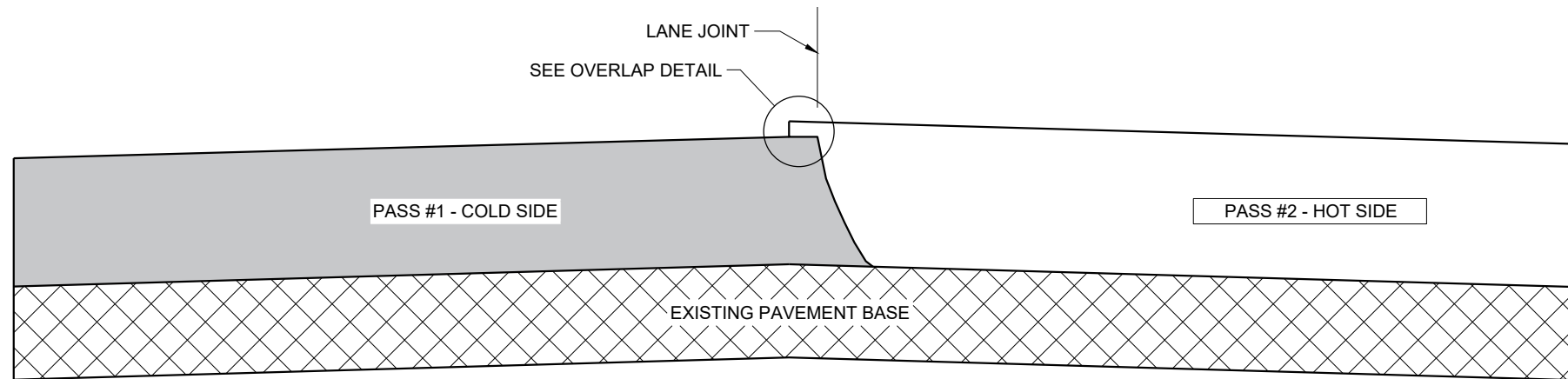
6

6

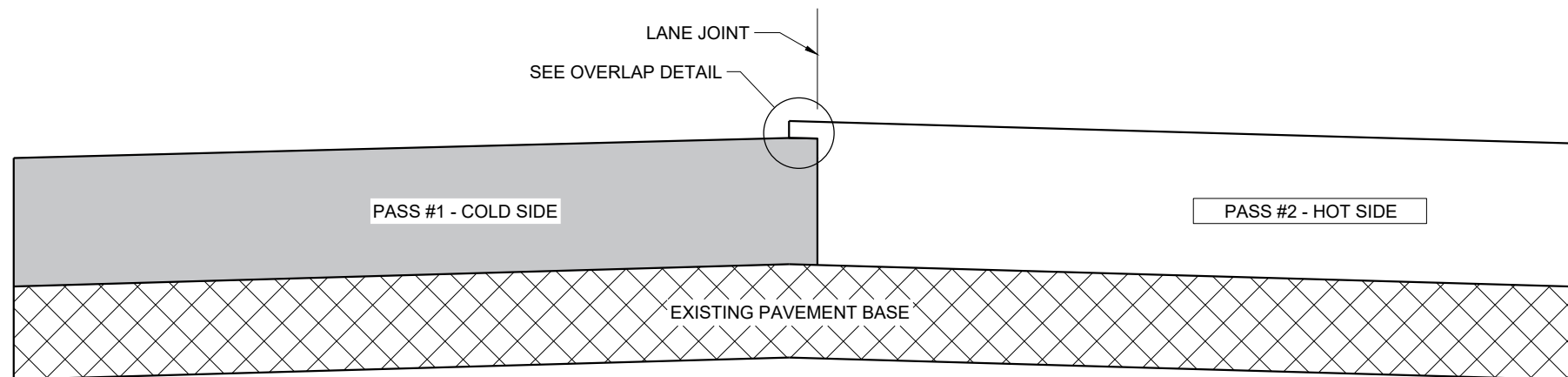
| | |
|--|--|
| 2-LANE RURAL CENTERLINE RUMBLE STRIP, MILLING | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED DATE 7/2018 | /S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT ENGINEER |
| FHWA | |



**TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT**



**TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT**



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

GENERAL NOTES

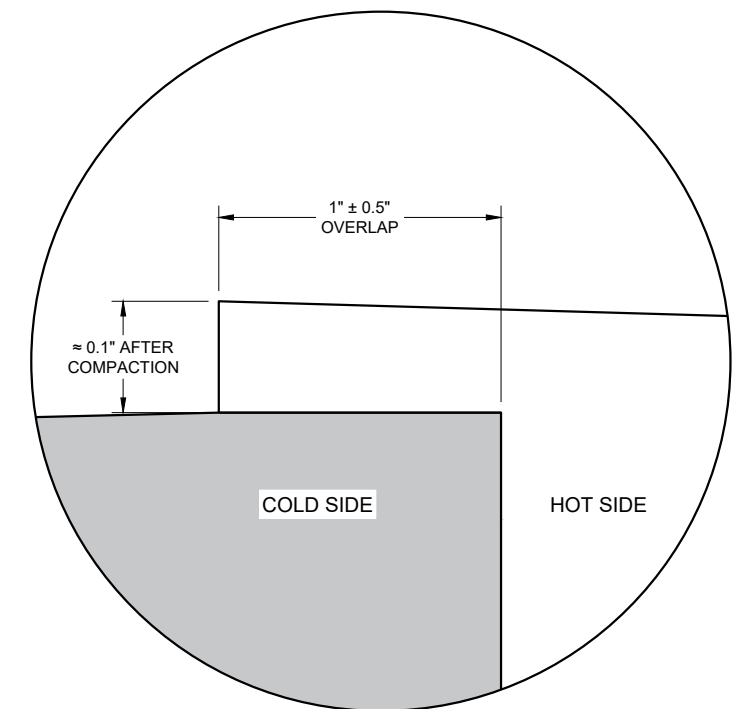
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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



OVERLAP DETAIL (TYPICAL)

6

6

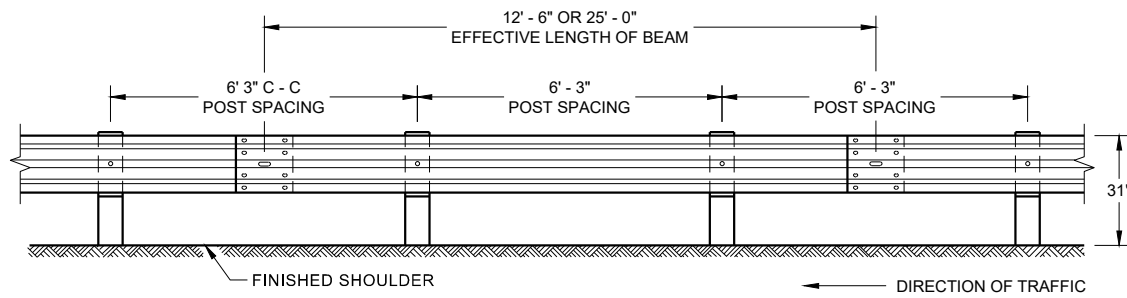
SDD 13C19 - 03

SDD 13C19 - 03

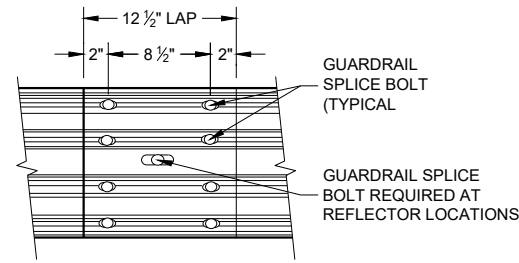
HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



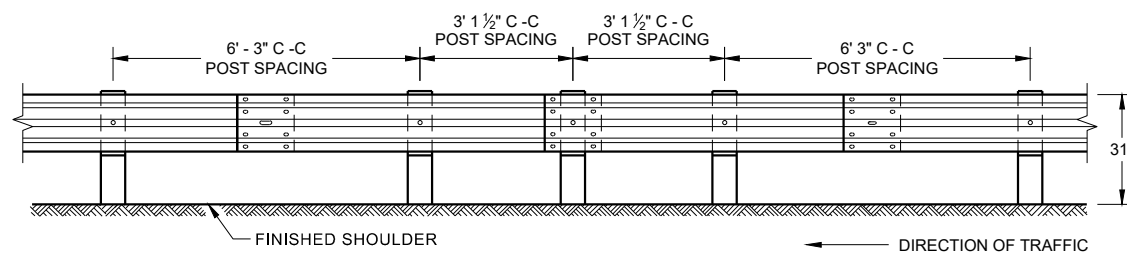
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



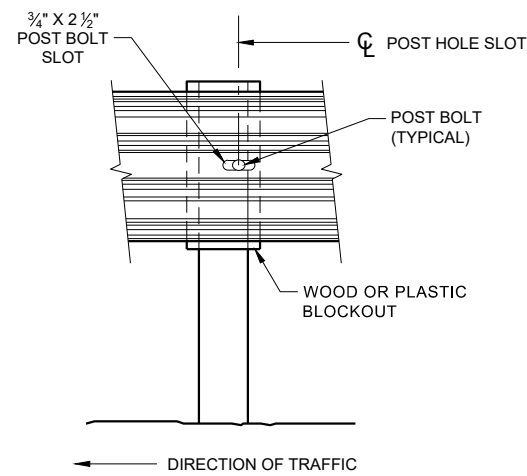
**FRONT VIEW
MID-SPAN BEAM SPLICE**

GENERAL NOTES

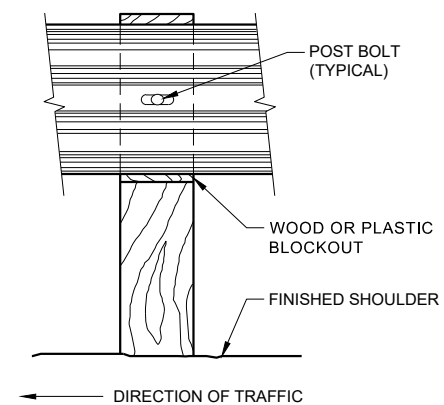
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
 - ⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.
- GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



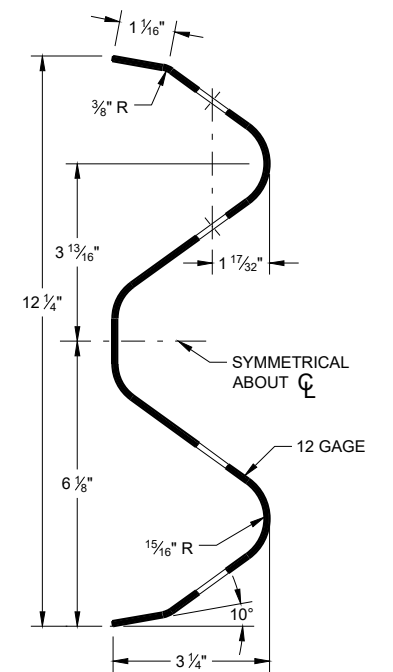
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



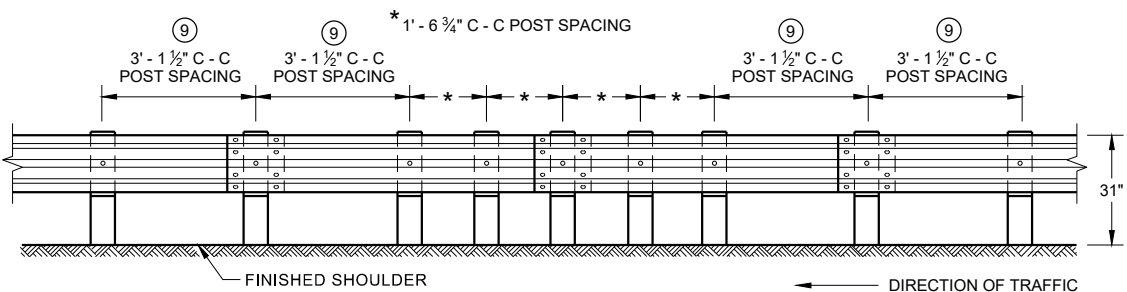
FRONT VIEW AT STEEL POST



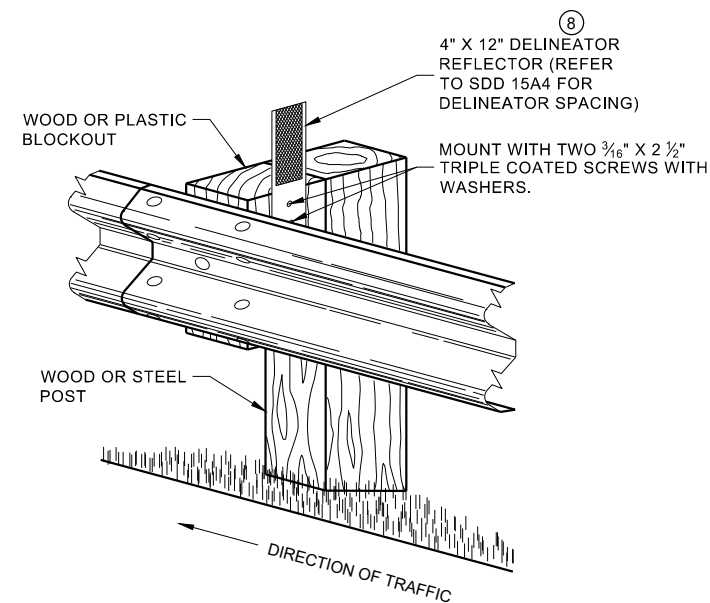
FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



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



**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

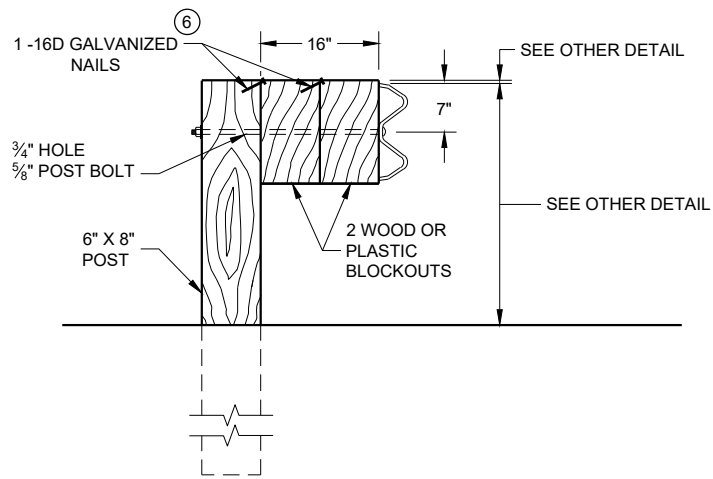
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

6

SDD 14B42 - 07b

SDD 14B42 - 07b

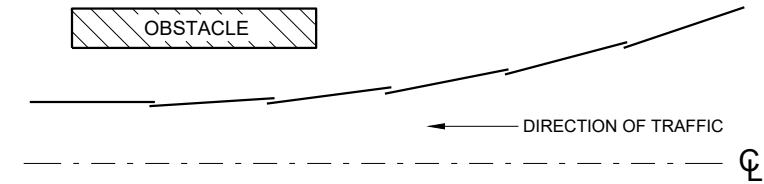
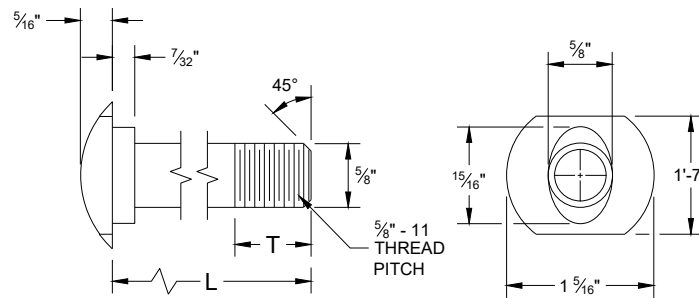


DETAIL FOR 16" BLOCKOUT DEPTH

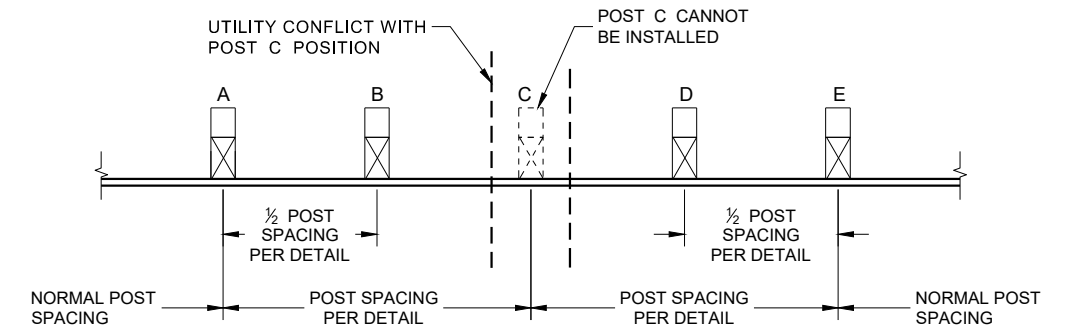
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.

NOTE:

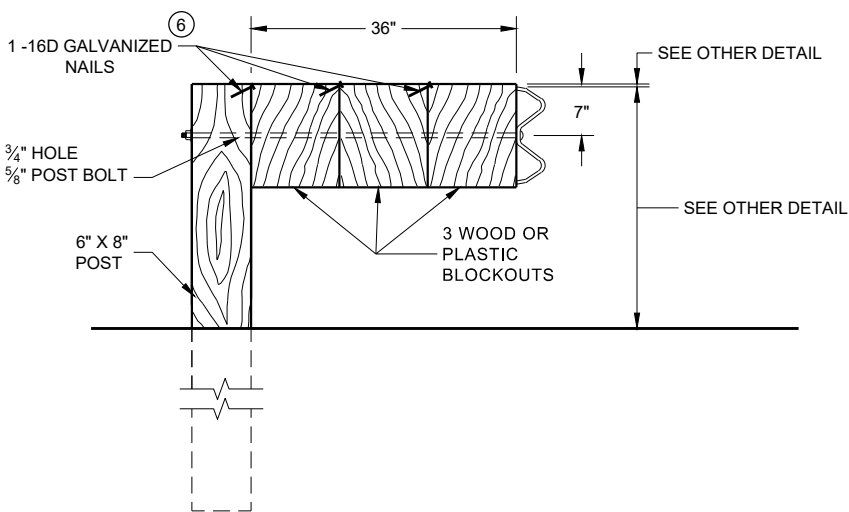
1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 3/16".
2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.



**PLAN VIEW
BEAM LAPPING DETAIL**



**POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION**

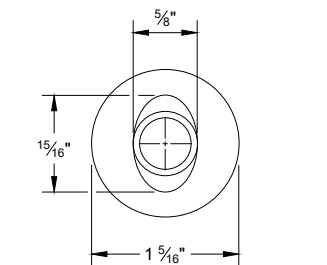


DETAIL FOR 36" BLOCKOUT DEPTH

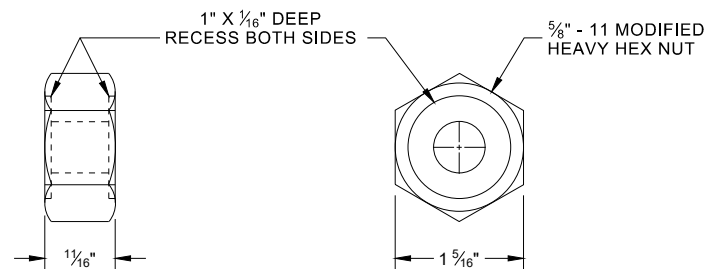
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

POST BOLT TABLE

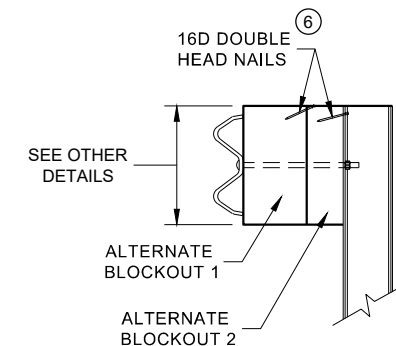
| L | T (MIN.) |
|--------|----------|
| 1 1/4" | 1 1/8" |
| 2" | 1 3/4" |
| 10" | 4" |
| 14" | 4 1/16" |
| 18" | 4" |
| 21" | 4 1/16" |
| 25" | 4" |



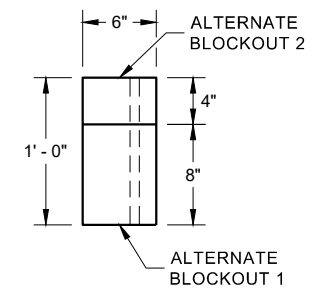
ALTERNATE BOLT HEAD



**POST BOLT, SPLICE BOLT
AND RECESS NUT**



SIDE VIEW



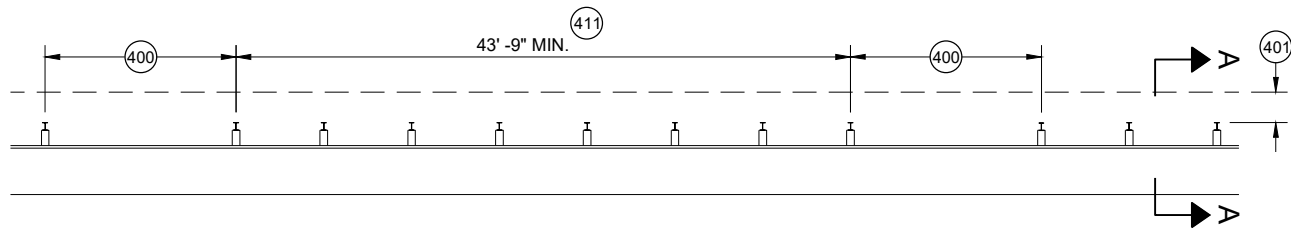
PLAN VIEW

**ALTERNATE WOOD
BLOCKOUT DETAIL**

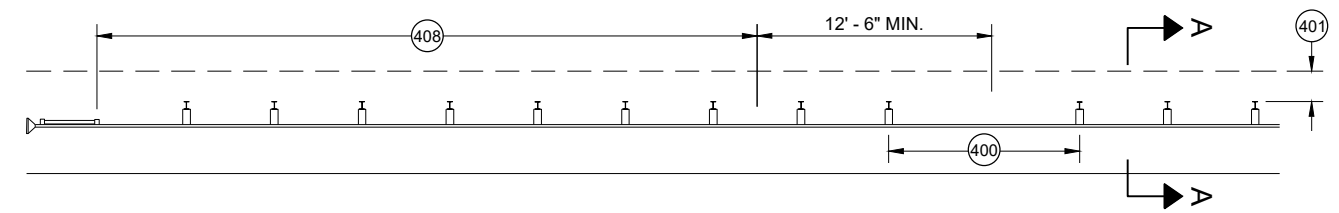
6 WHEN USING STEEL POST AND WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

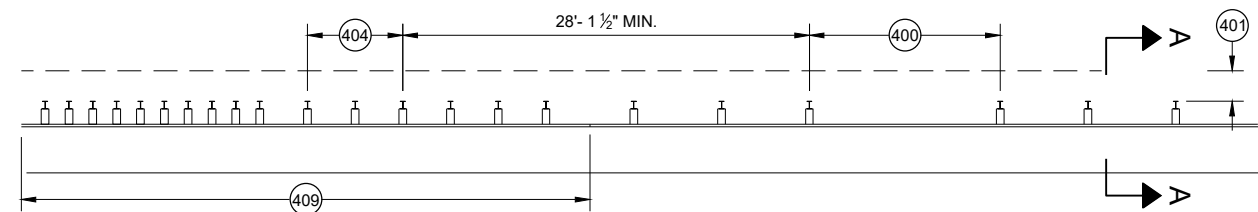
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



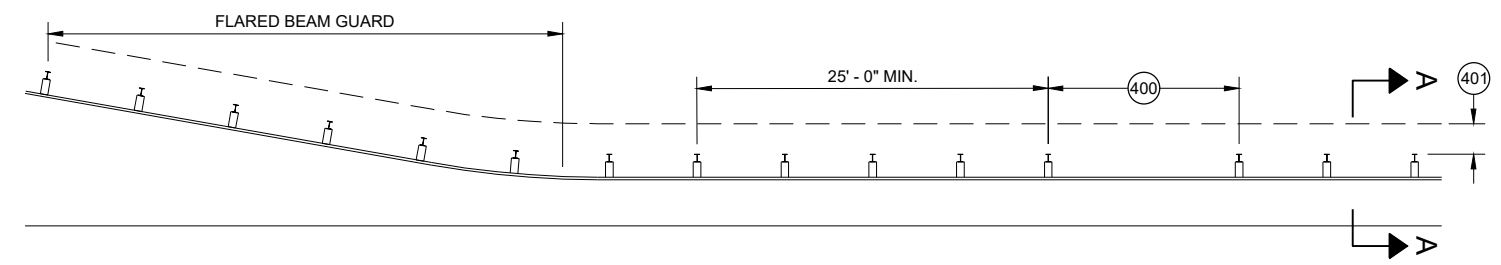
MISSING POST IN MGS GUARDRAIL



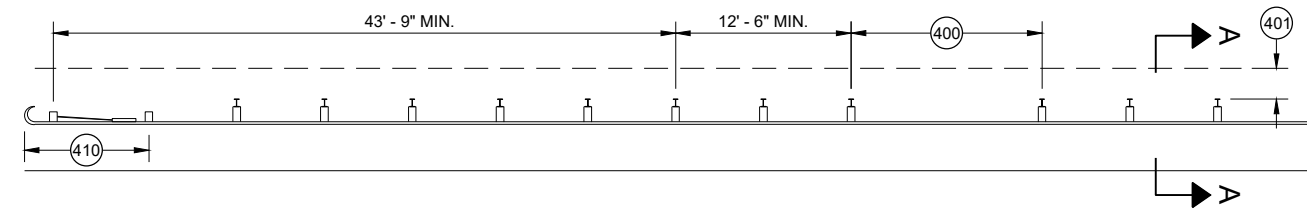
MISSING POST IN MGS GUARDRAIL NEAR EAT



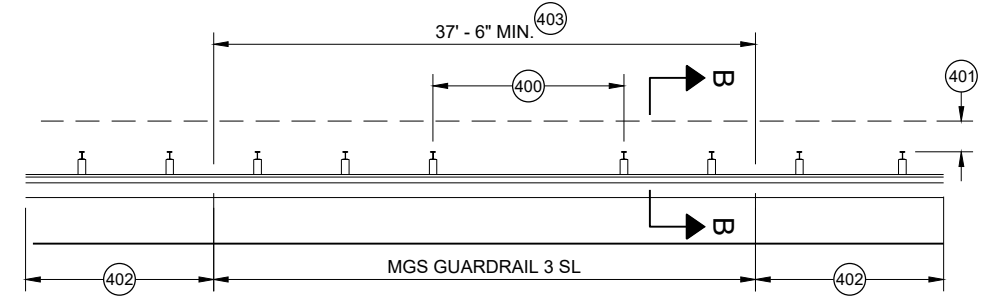
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

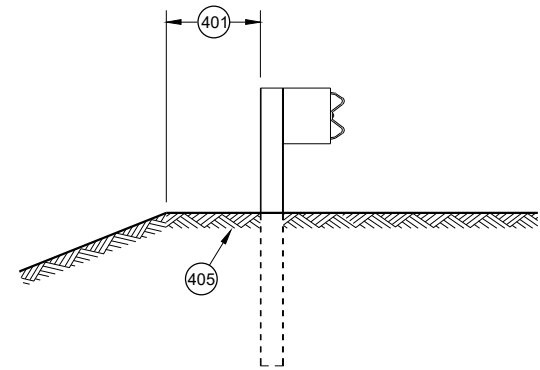


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

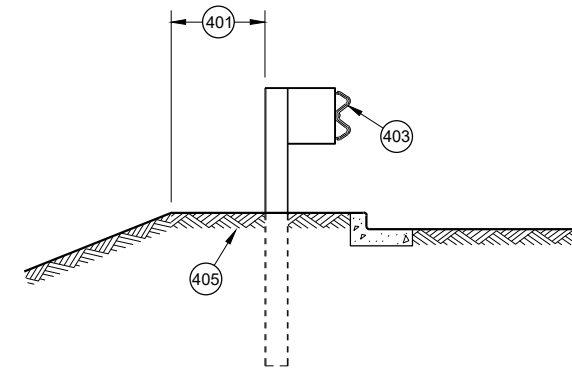


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

- 400 MAX SPAN 12' - 6"
- 401 2' MIN.
- 402 MGS GUARDRAIL 3
- 403 NESTING BEAM GUARD
- 404 ASYMMETRIC TRANSITION
- 405 SOIL WELL DRAINED AND COMPACTED
- 406 SEE OTHER DRAWINGS IN THIS SDD
- 407 SEE OTHER DRAWINGS FOR MIN. SPACING BETWEEN SPANS
- 408 SEE SDD 14B44
- 409 SEE SDD 14B45
- 410 SEE SDD 14B47
- 411 MINIMUM DISTANCE BETWEEN MISSING POST SPANS.



SECTION A - A



SECTION B - B

| | |
|---|---|
| MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED May 2021 DATE | /S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR |
| <small>FHWA</small> | |

GENERAL NOTES

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

SEE SDD 14B42 FOR MORE INFORMATION.

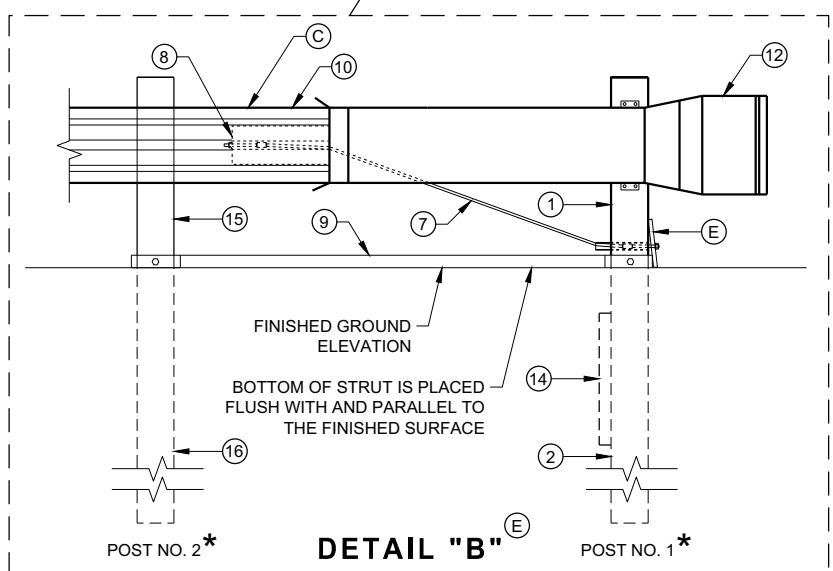
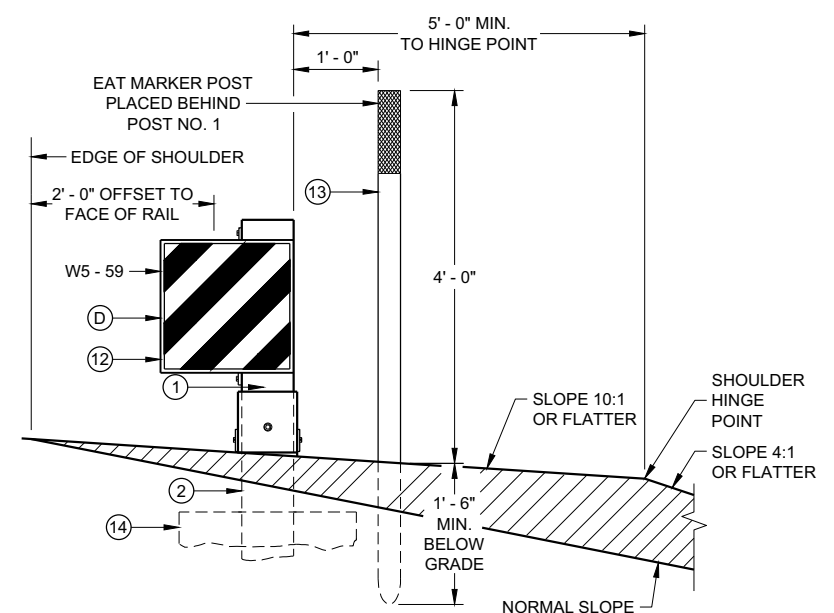
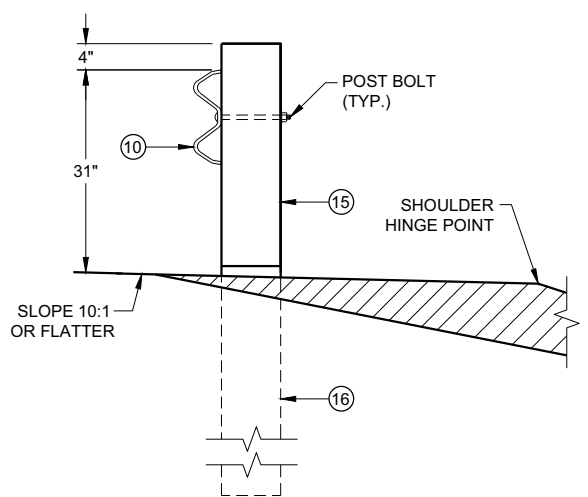
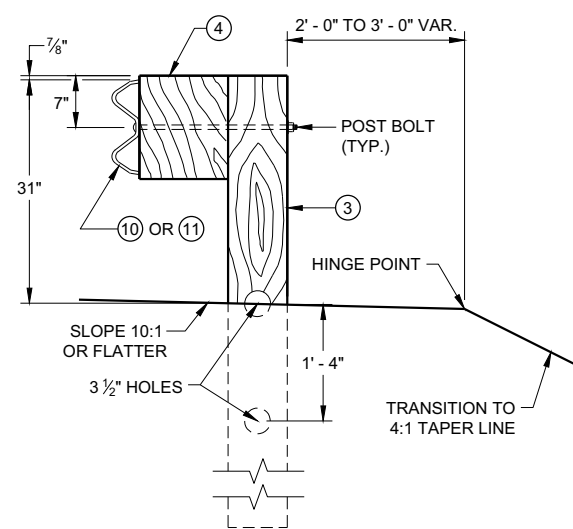
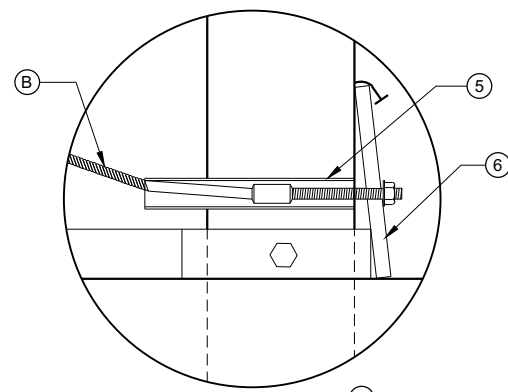
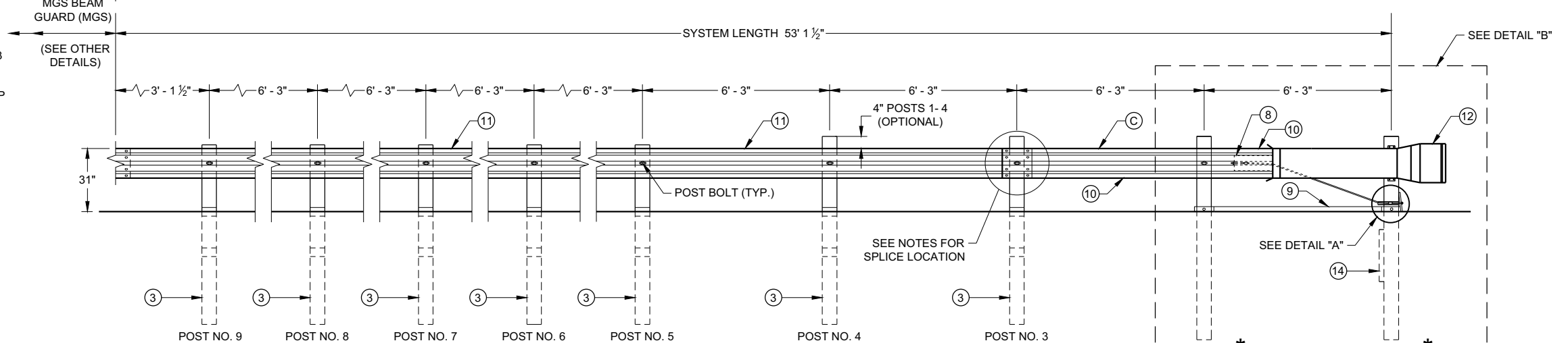
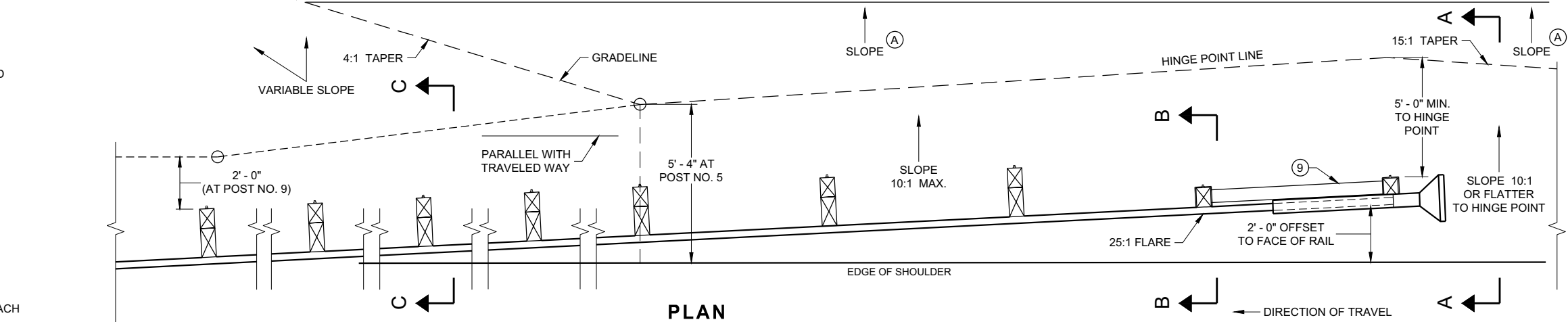
* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

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

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

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

CLEAR ZONE LIMITS, EITHER AS SHOWN ELSEWHERE IN THE PLANS OR, IF NOT SHOWN ELSEWHERE IN THE PLANS, 15 FEET BEYOND THE HINGE POINT LINE



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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

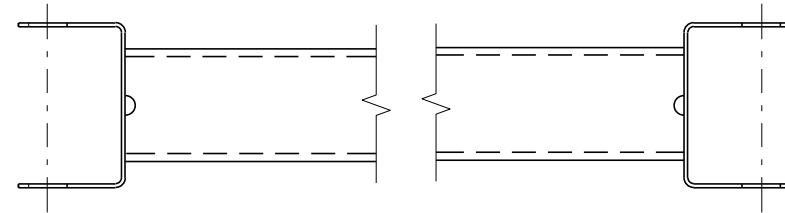
6

SDD 14B44 - 04a

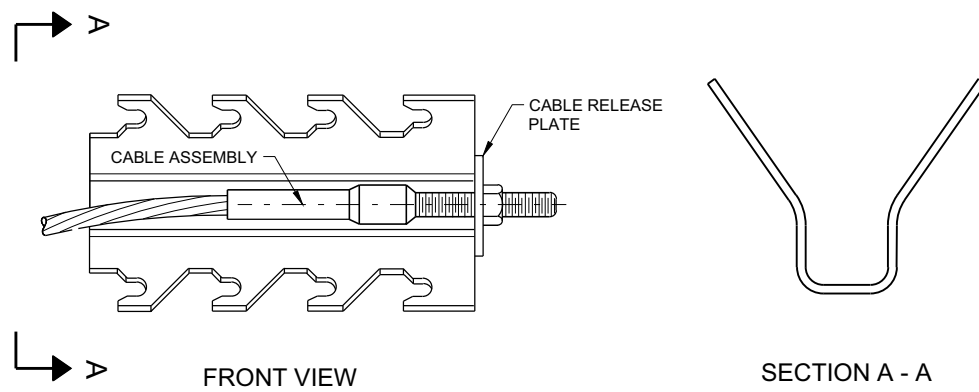
SDD 14B44 - 04a

BILL OF MATERIALS

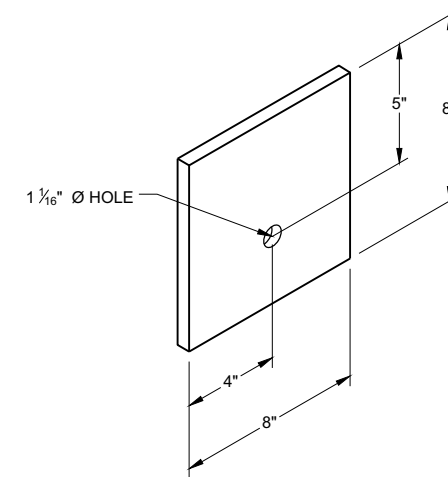
| PART NO. | DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION. |
|----------|--|
| ① | UPPER POST NO. 1 6" X 6" TUBE |
| ② | LOWER POST NO. 1 |
| ③ | WOOD CRT |
| ④ | WOOD BLOCKOUT |
| ⑤ | PIPE SLEEVE |
| ⑥ | BEARING PLATE |
| ⑦ | BCT CABLE ASSEMBLY |
| ⑧ | ANCHOR CABLE BOX |
| ⑨ | GROUND STRUT |
| ⑩ | PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG. |
| ⑪ | STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH. |
| ⑫ | IMPACT HEAD |
| ⑬ | EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST) |
| ⑭ | SOIL PLATE |
| ⑮ | UPPER POST NO. 2 |
| ⑯ | LOWER POST NO. 2 |



GENERIC GROUND STRUT ⑨ ⑤



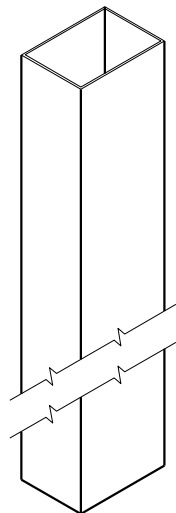
GENERIC ANCHOR CABLE BOX ⑨ ⑤



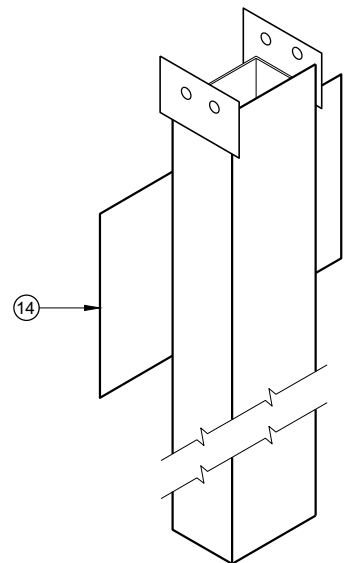
BEARING PLATE ⑥ ⑤

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

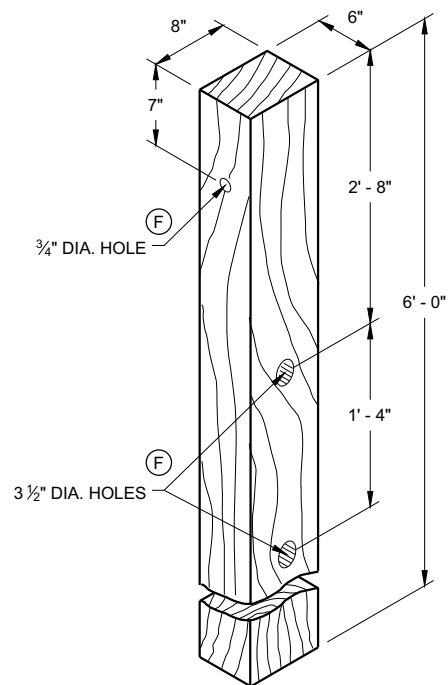
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



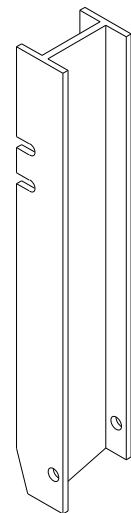
UPPER POST NO. 1 ⁽¹⁾ (E)



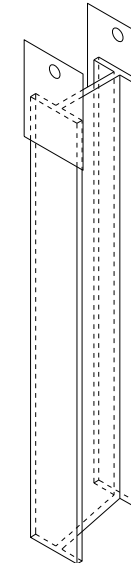
LOWER POST NO. 1 ⁽²⁾ (E)



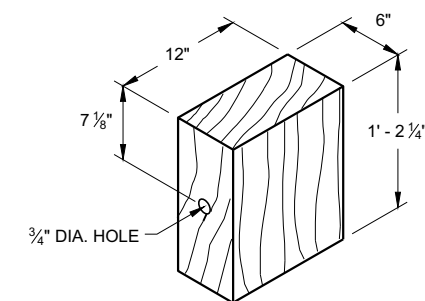
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



UPPER POST NO. 2 ⁽¹⁵⁾ (E)

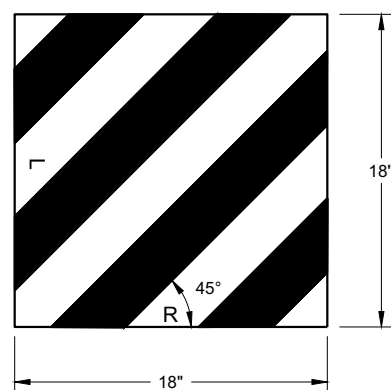


LOWER POST NO. 2 ⁽¹⁶⁾ (E)

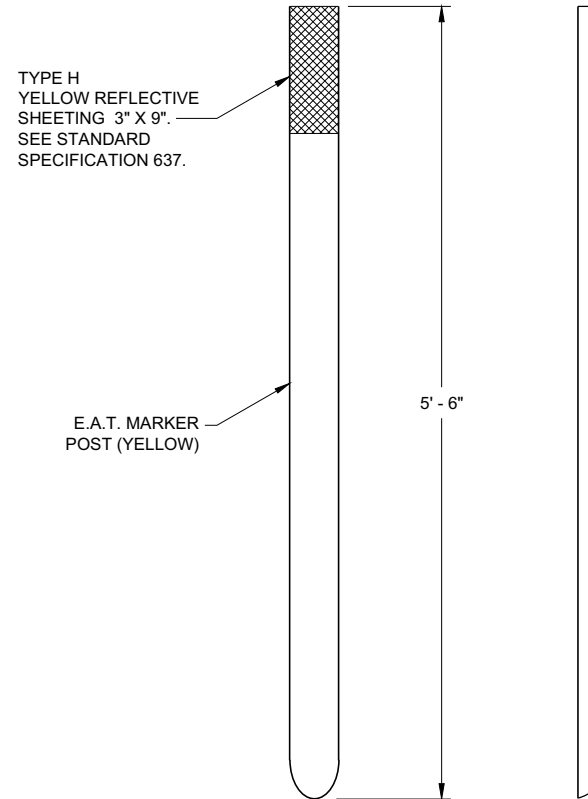


WOOD BLOCKOUT ⁽⁴⁾
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2

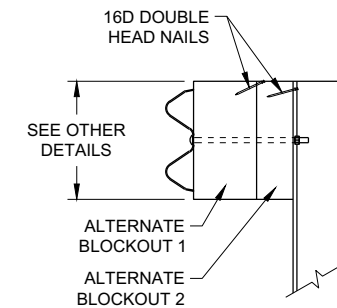
6



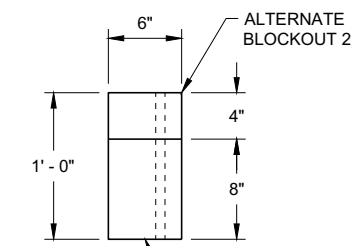
W5 - 59
REFLECTIVE SHEETING DETAIL ^(E)



FRONT VIEW SIDE VIEW
E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

6

SDD 14B44 - 04c

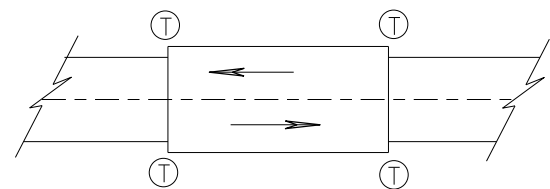
SDD 14B44 - 04c

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

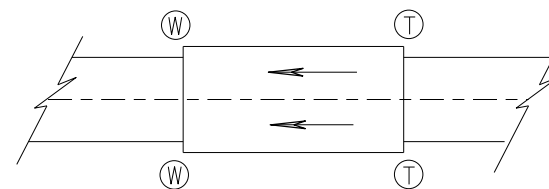
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

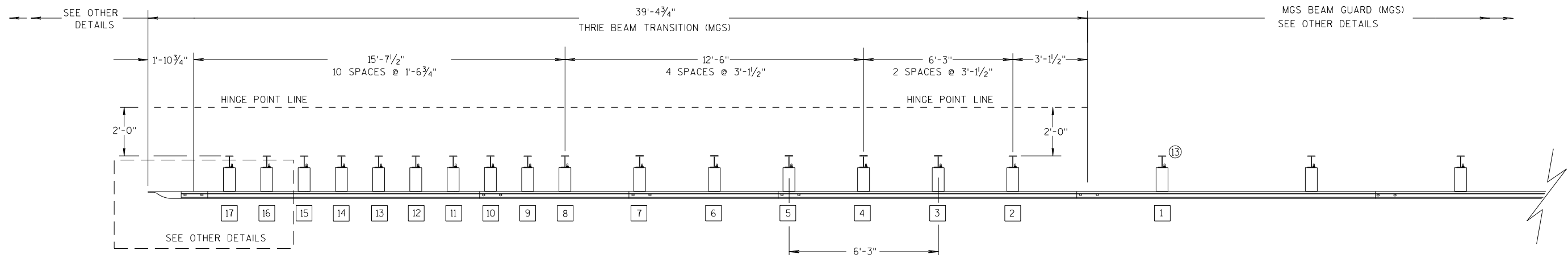
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

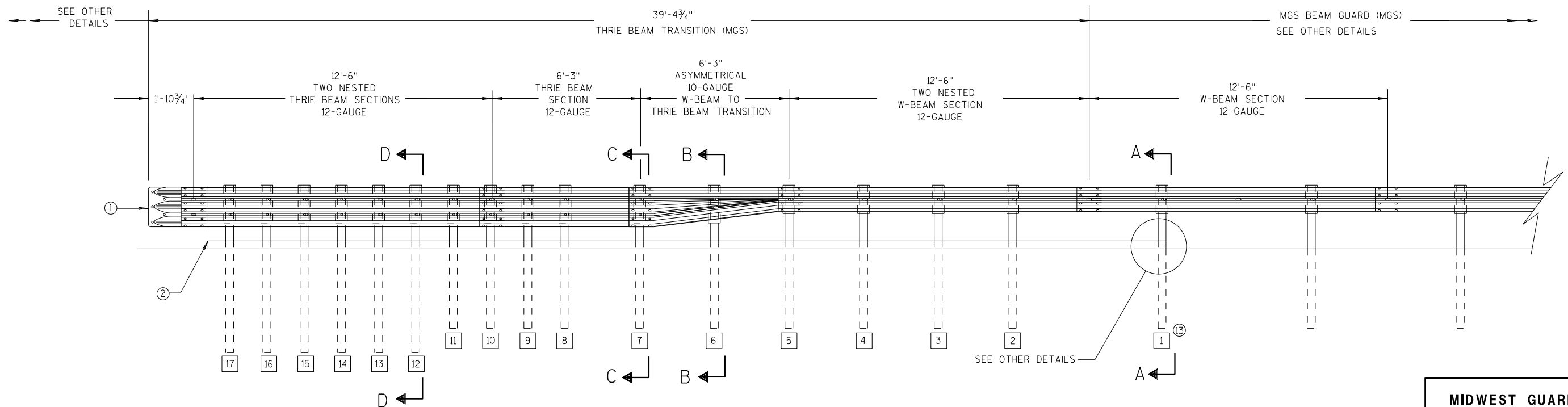
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

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



PLAN VIEW



ELEVATION VIEW

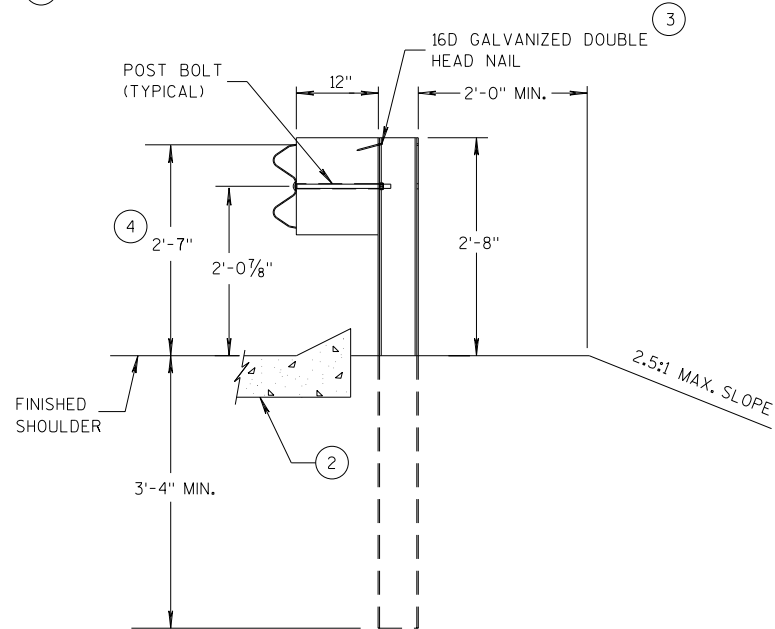
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

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

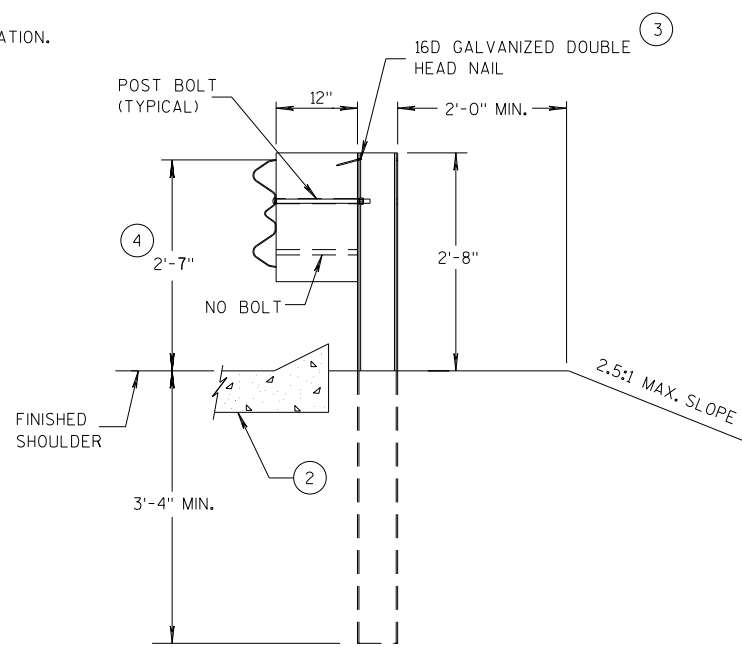
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

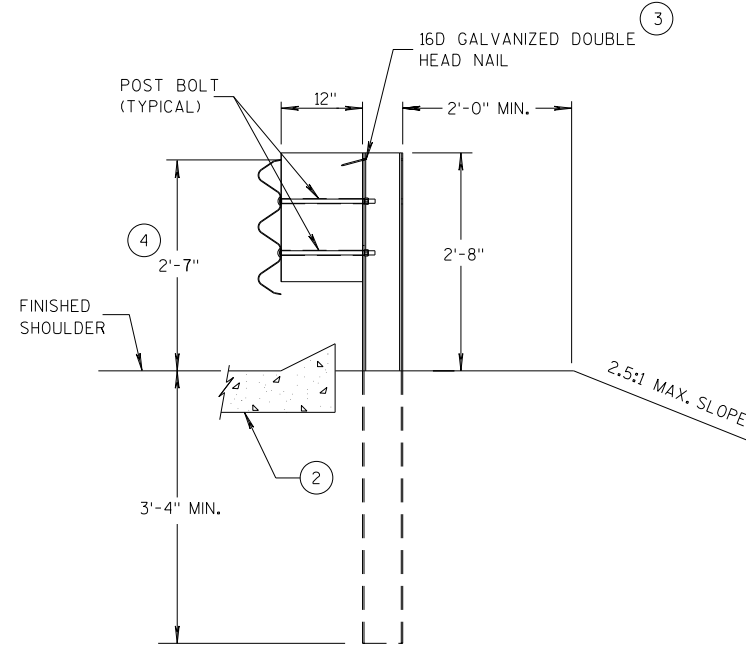
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ④ TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".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



**SECTION A-A
POSTS 1-5**



**SECTION B-B
POST 6**



**SECTION C-C
POSTS 7-11**

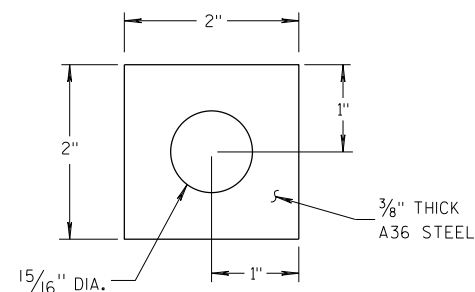
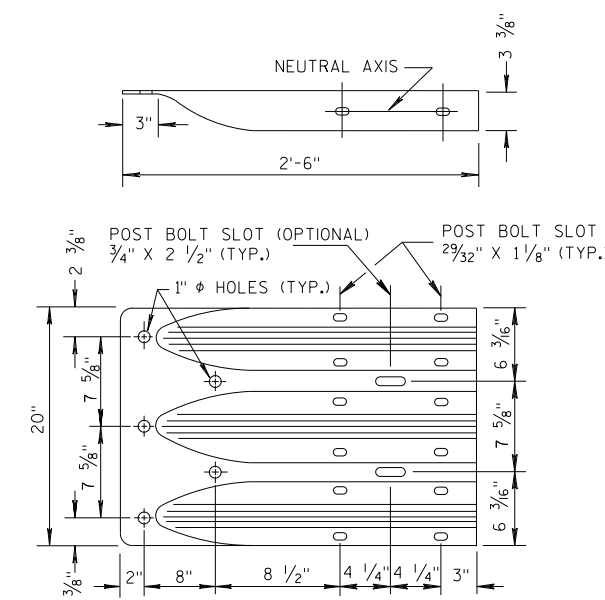
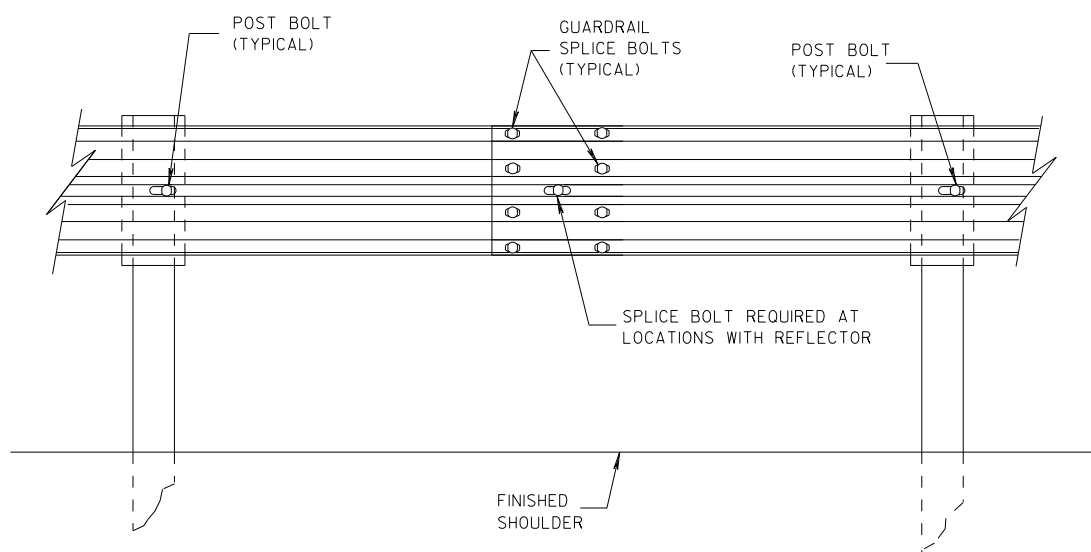


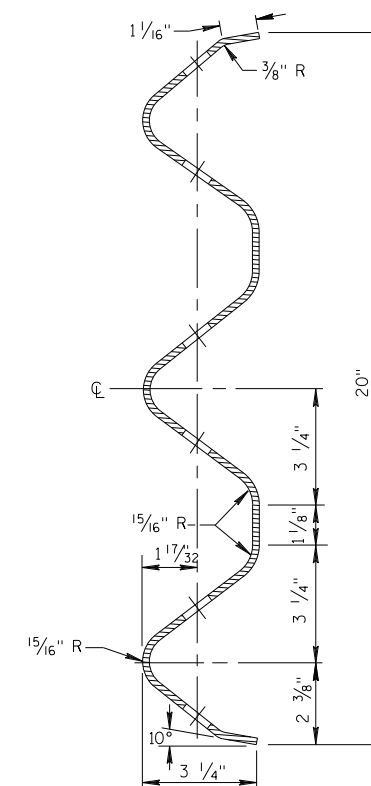
PLATE WASHER DETAIL



**THRIE BEAM
TERMINAL CONNECTOR**



SPLICE DETAIL

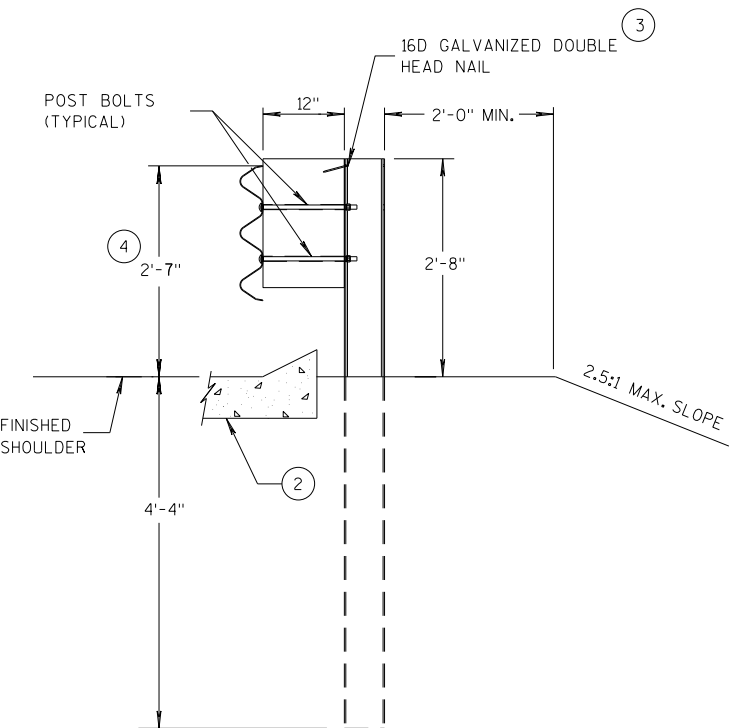


**SECTION THRU THRIE
BEAM RAIL ELEMENT**

6

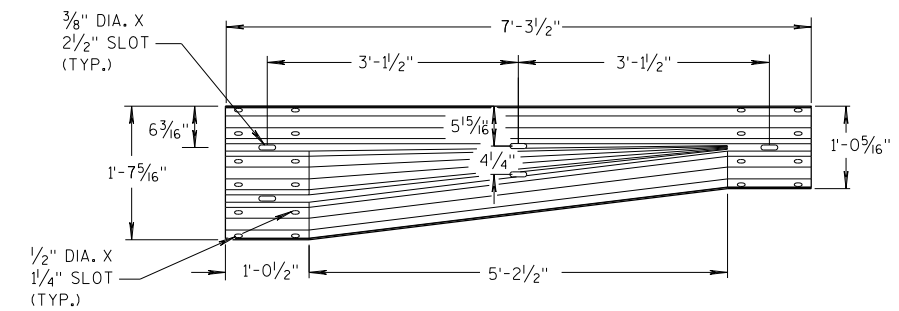
6

**SECTION D-D
POSTS 12-17**

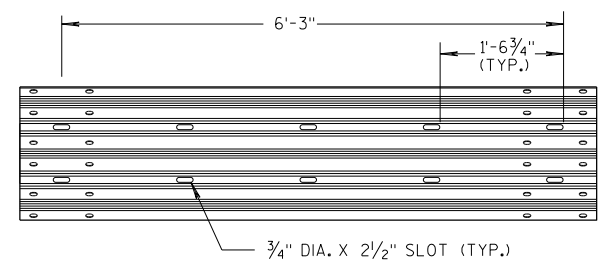


**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

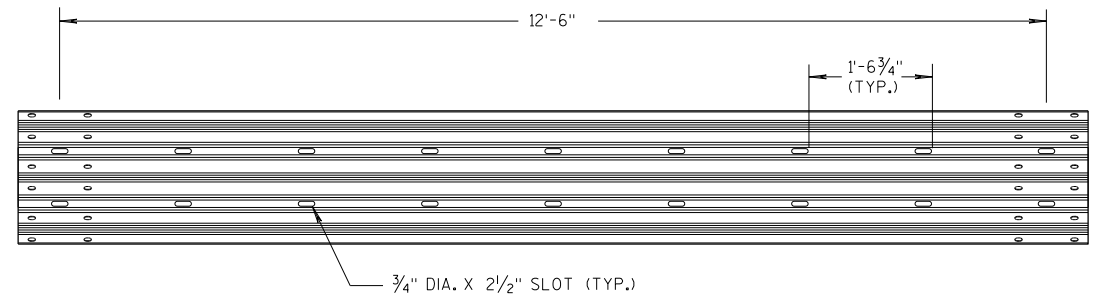
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



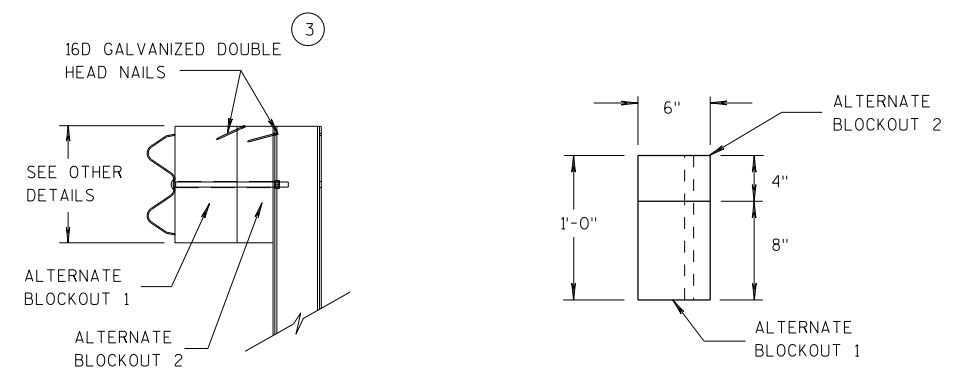
W-BEAM TO THRIE BEAM TRANSITION SECTION



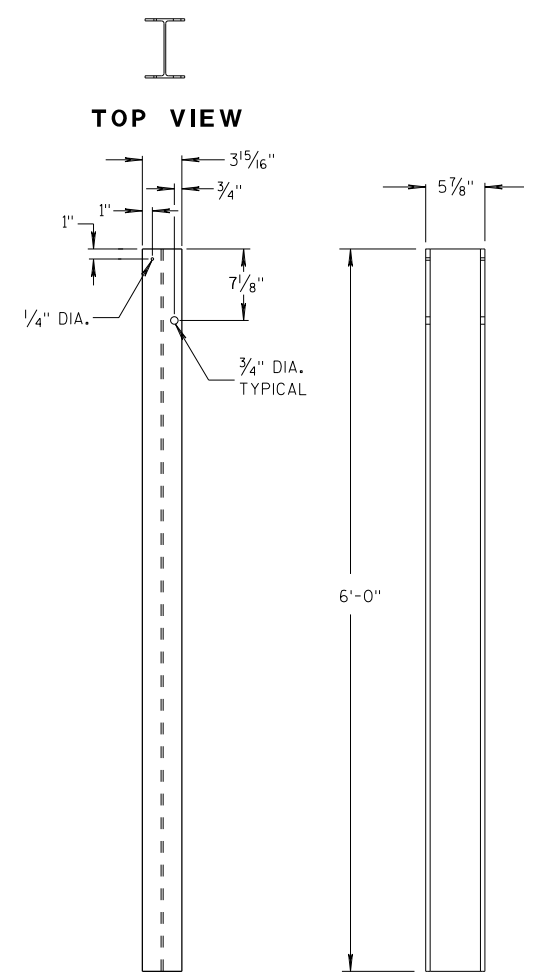
6'-3\"/>



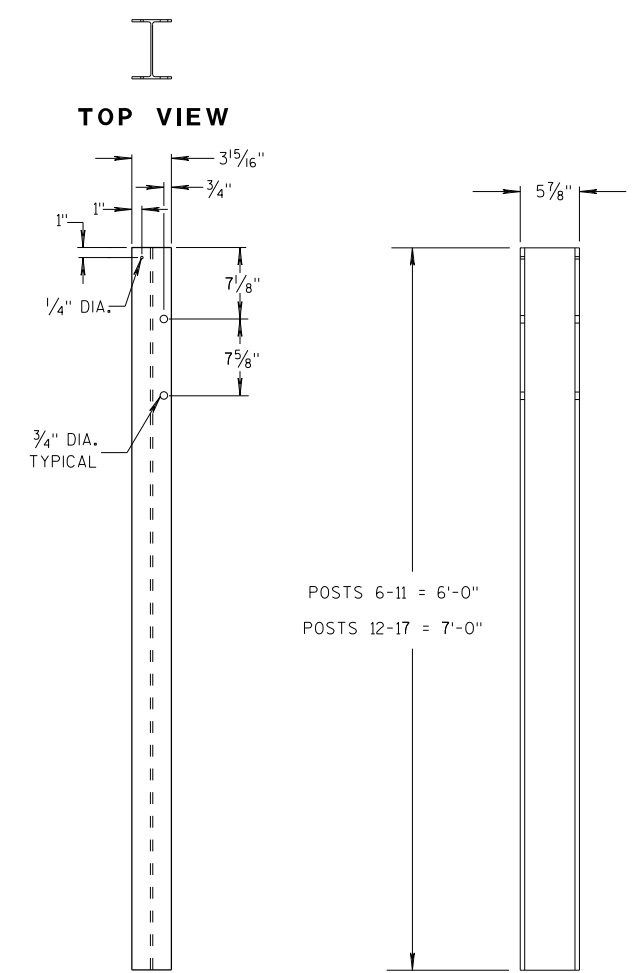
12'-6\"/>



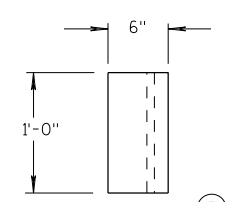
ALTERNATE WOOD BLOCKOUT DETAIL



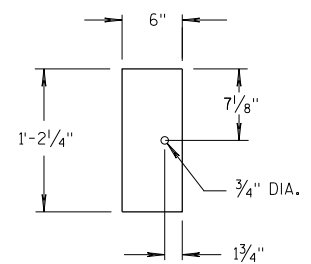
STEEL POSTS 1-5



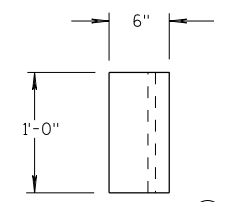
STEEL POSTS 6-17



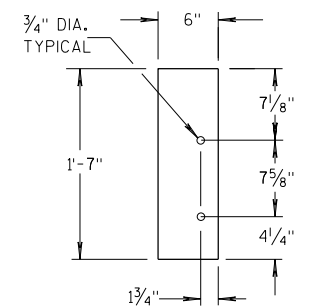
TOP VIEW



**FRONT VIEW
BLOCKOUT
POSTS 1-5**



TOP VIEW



**FRONT VIEW
BLOCKOUT
POSTS 6-17**

GENERAL NOTES

- STEEL POSTS ARE W6X9 OR W6X8.5.
- BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.
- (3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- (5) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.
- (13) STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

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

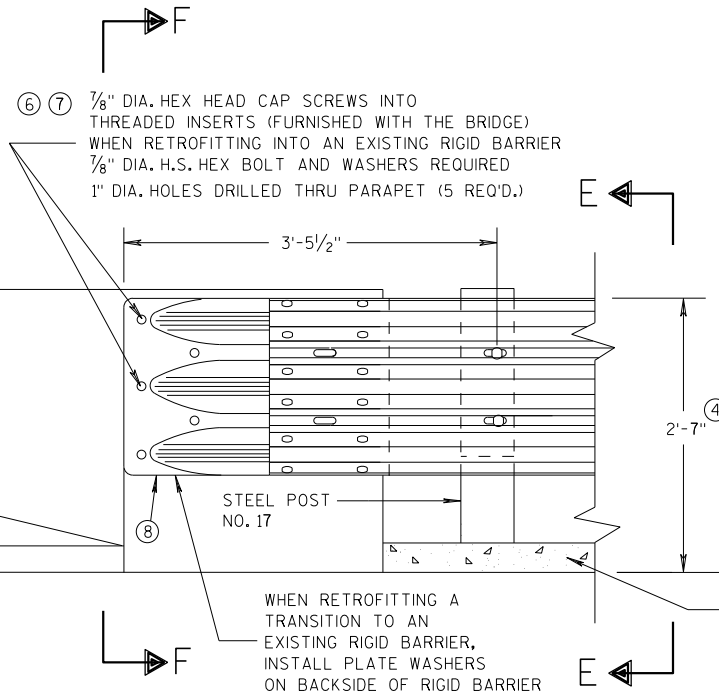
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

6

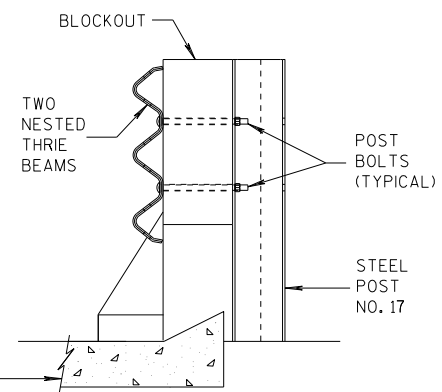
S.D.D. 14 B 45-5c

S.D.D. 14 B 45-5c



FRONT VIEW

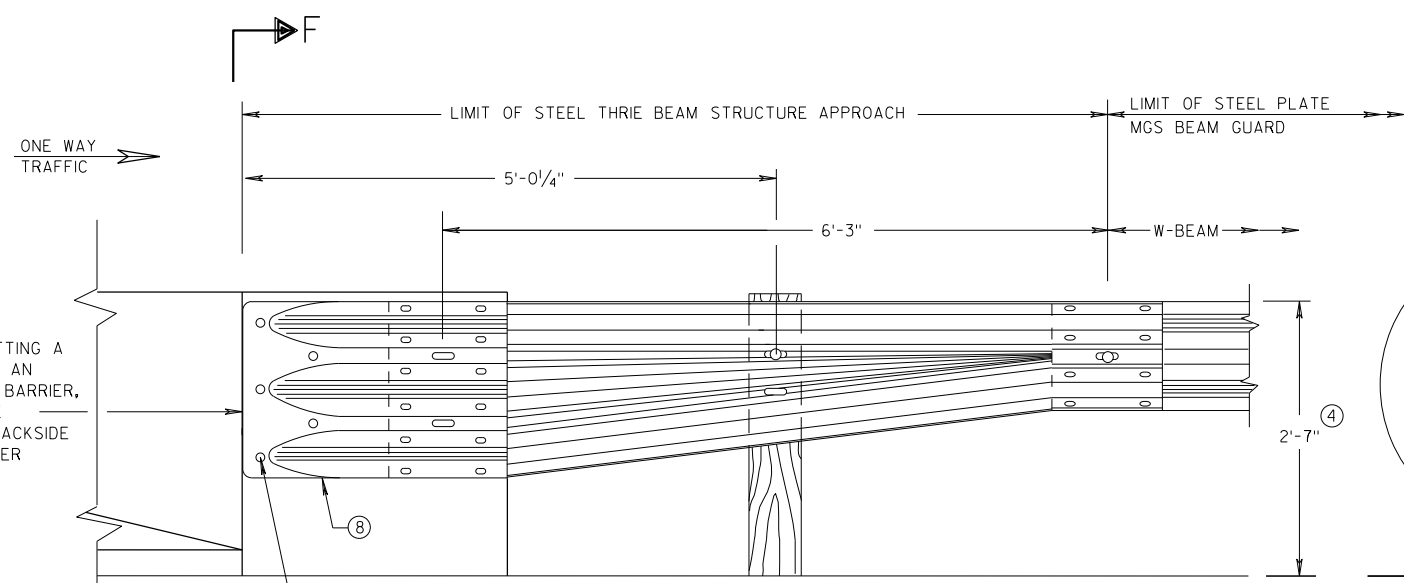
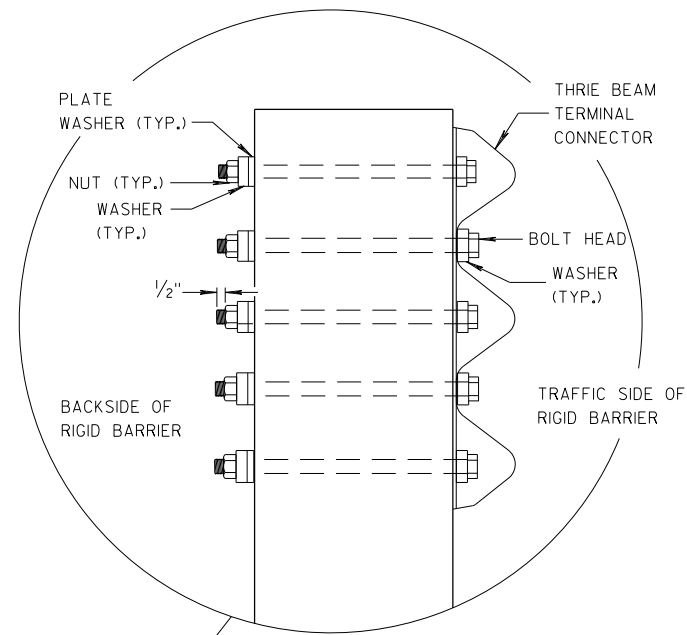
THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS



SECTION E-E

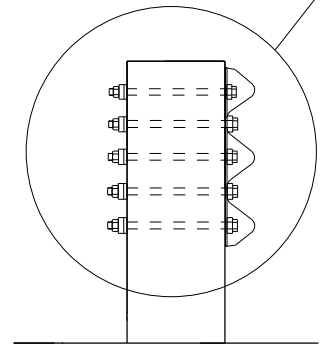
GENERAL NOTES

- THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSITION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.
- (2) OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- (4) TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- (6) DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- (7) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- (8) THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

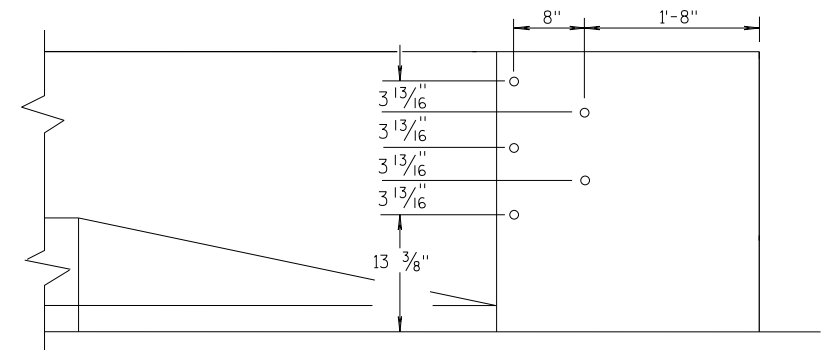


FRONT VIEW

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



SECTION F-F



DRILL HOLE LOCATION

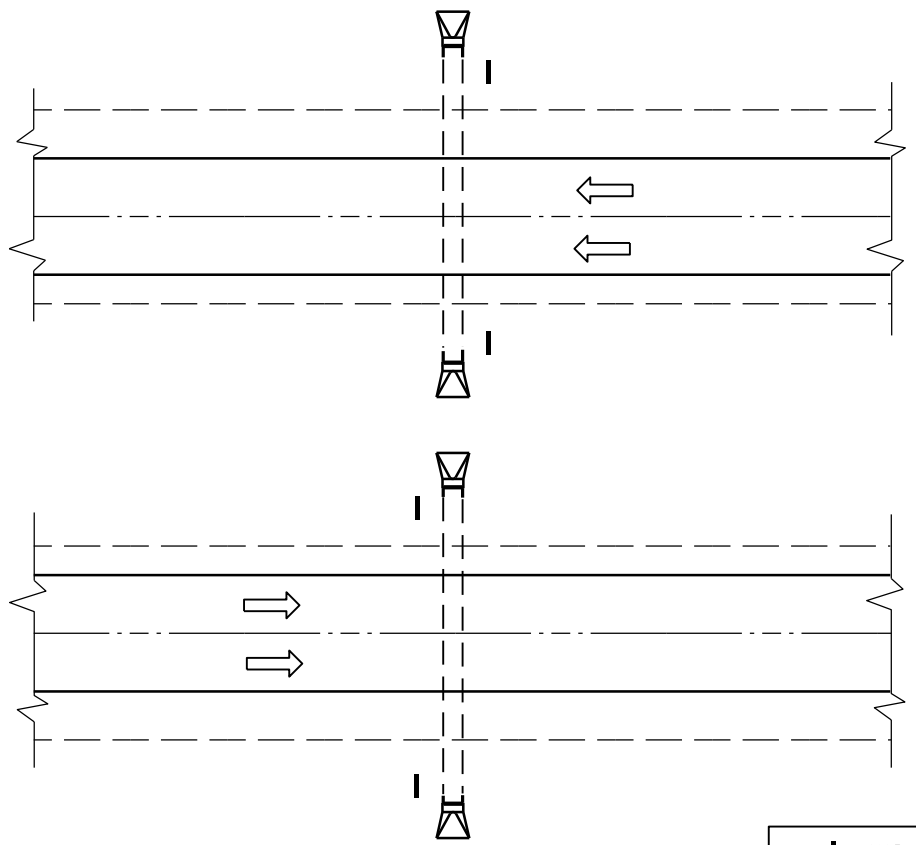
6

6

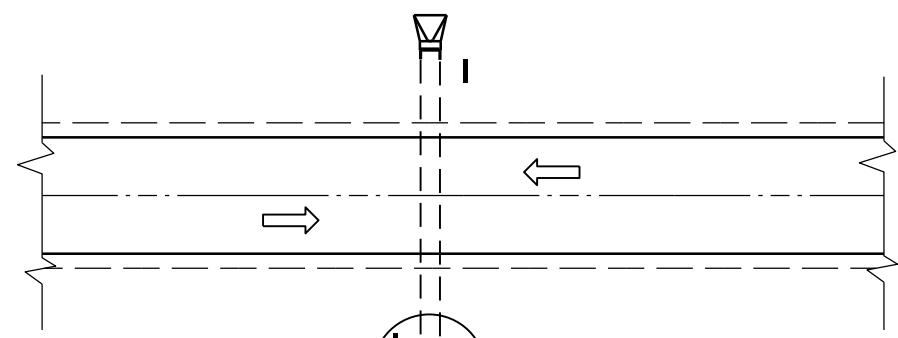
S.D.D. 14 B 45-5d

S.D.D. 14 B 45-5d

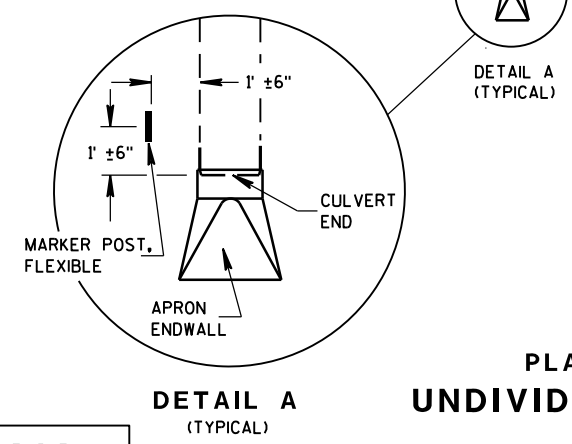
| | |
|---|---|
| MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS) | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED 07/2018 DATE | /S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR |
| FHWA | |



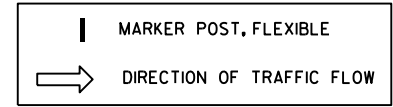
PLAN VIEW
DIVIDED HIGHWAY



PLAN VIEW
UNDIVIDED HIGHWAY

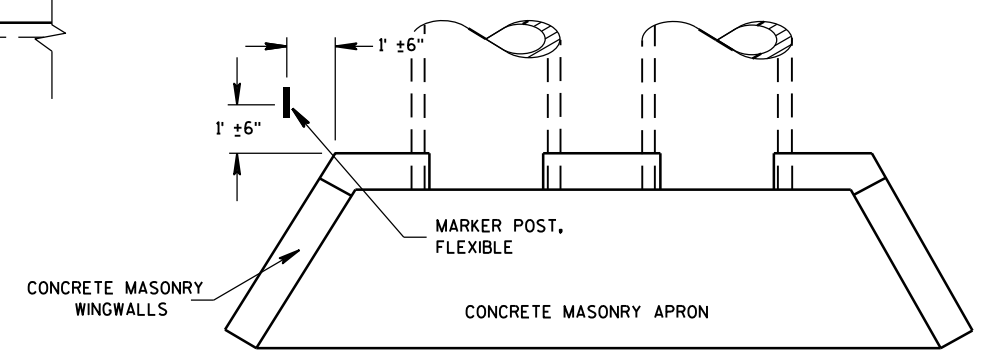


DETAIL A
(TYPICAL)



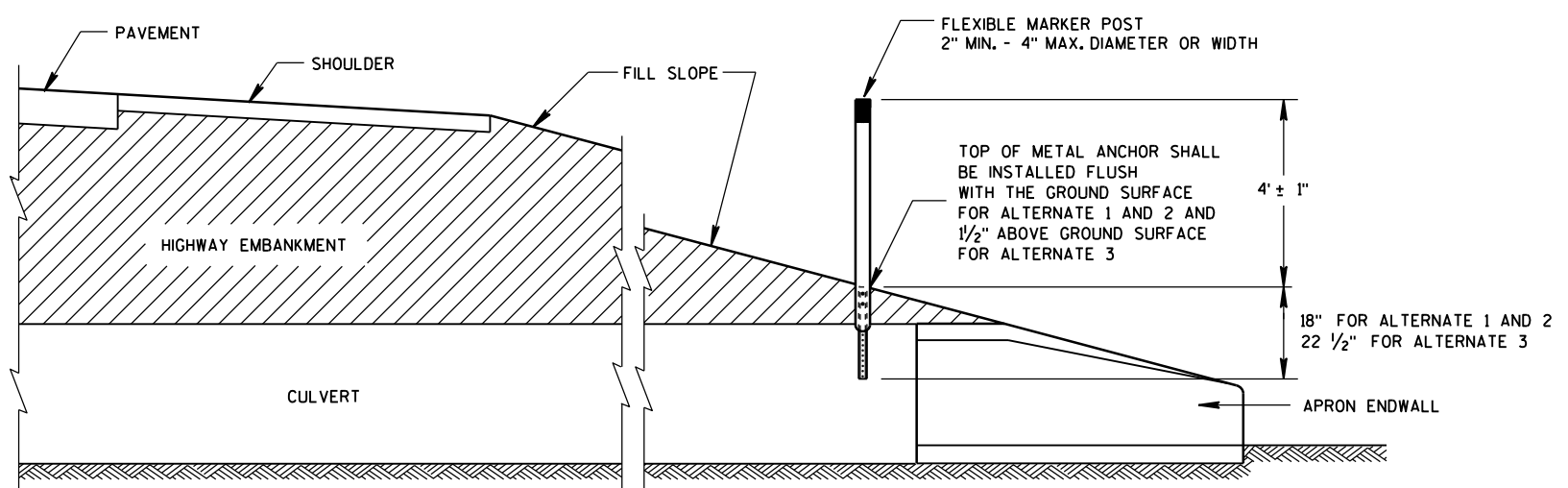
GENERAL NOTES

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



PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST LOCATION



CROSS SECTION
FLEXIBLE MARKER POST

**FLEXIBLE MARKER POST
FOR CULVERT END**

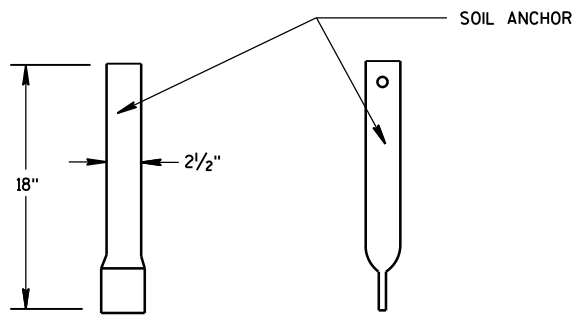
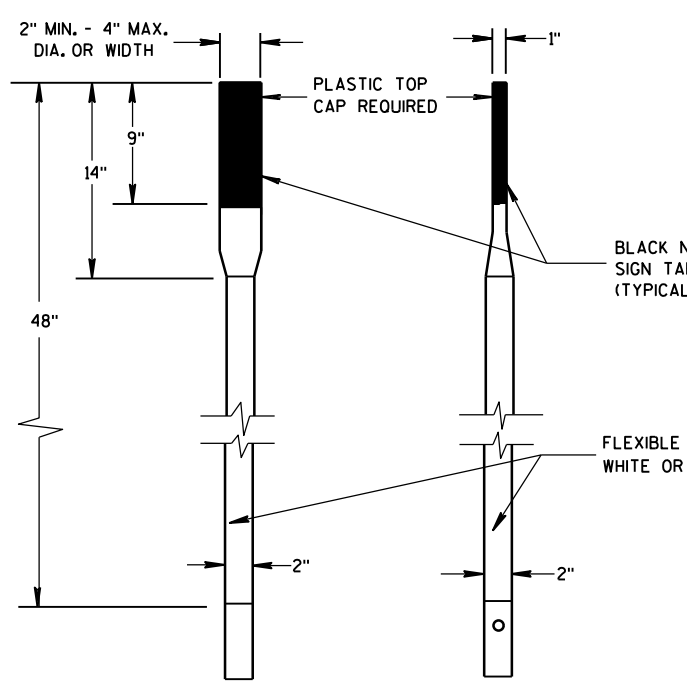
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

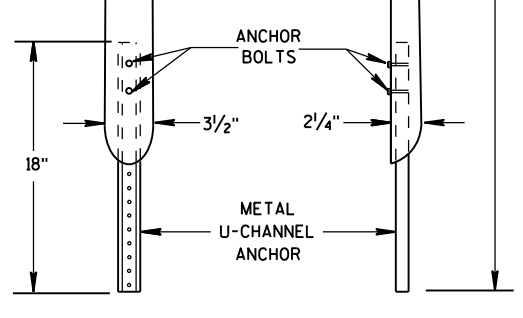
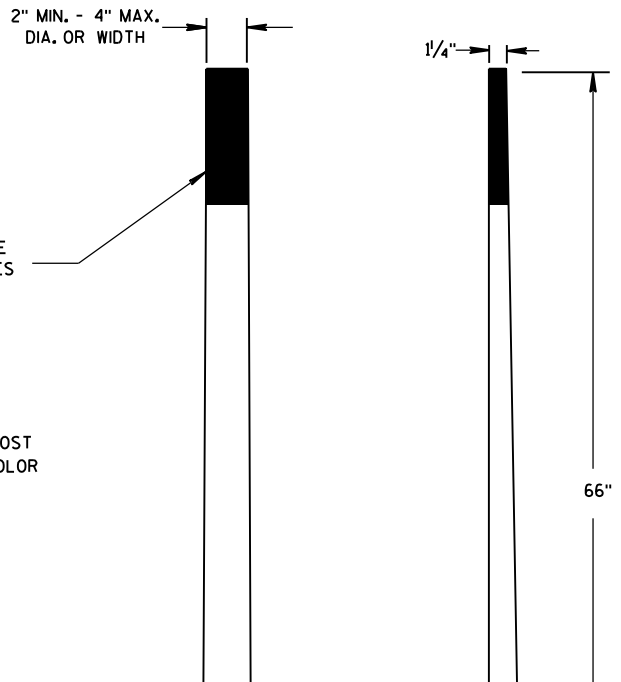
6

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

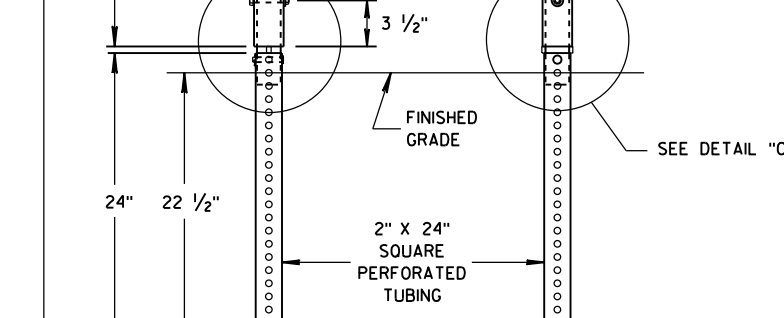
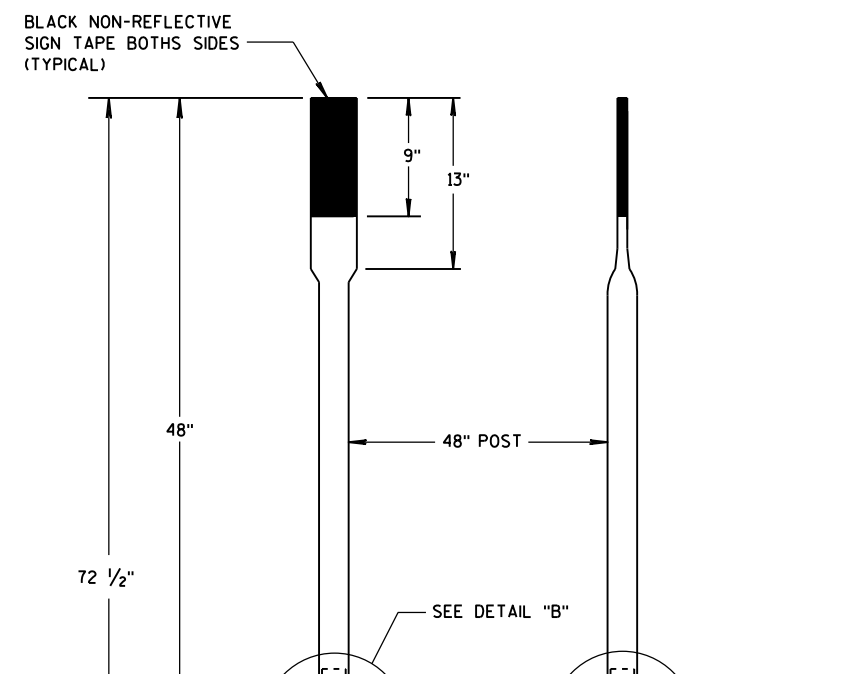
S.D.D. 15 A 3-2a



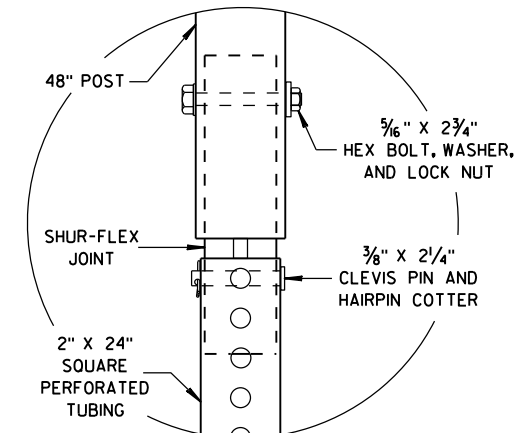
FRONT VIEW SIDE VIEW
ALTERNATE 1



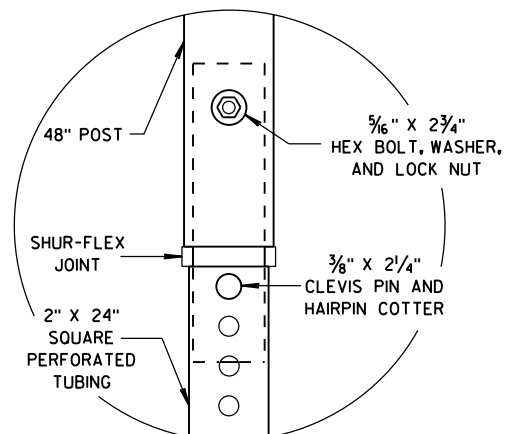
FRONT VIEW SIDE VIEW
ALTERNATE 2



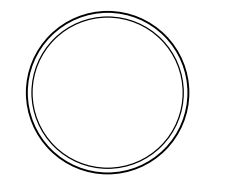
FRONT VIEW SIDE VIEW
ALTERNATE 3



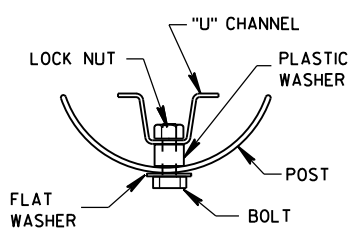
DETAIL B



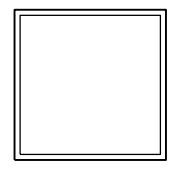
DETAIL C



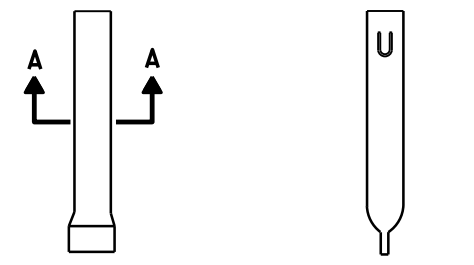
SECTION A-A



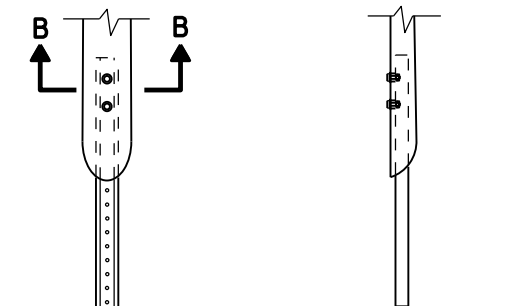
SECTION B-B



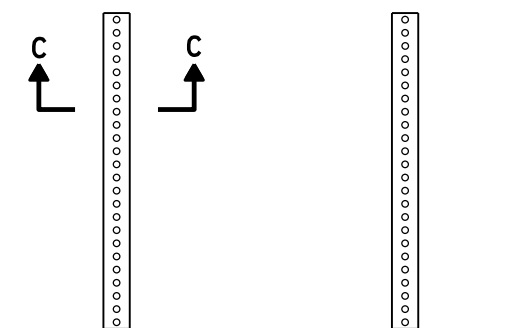
SECTION C-C



FRONT VIEW SIDE VIEW
ALTERNATE 1



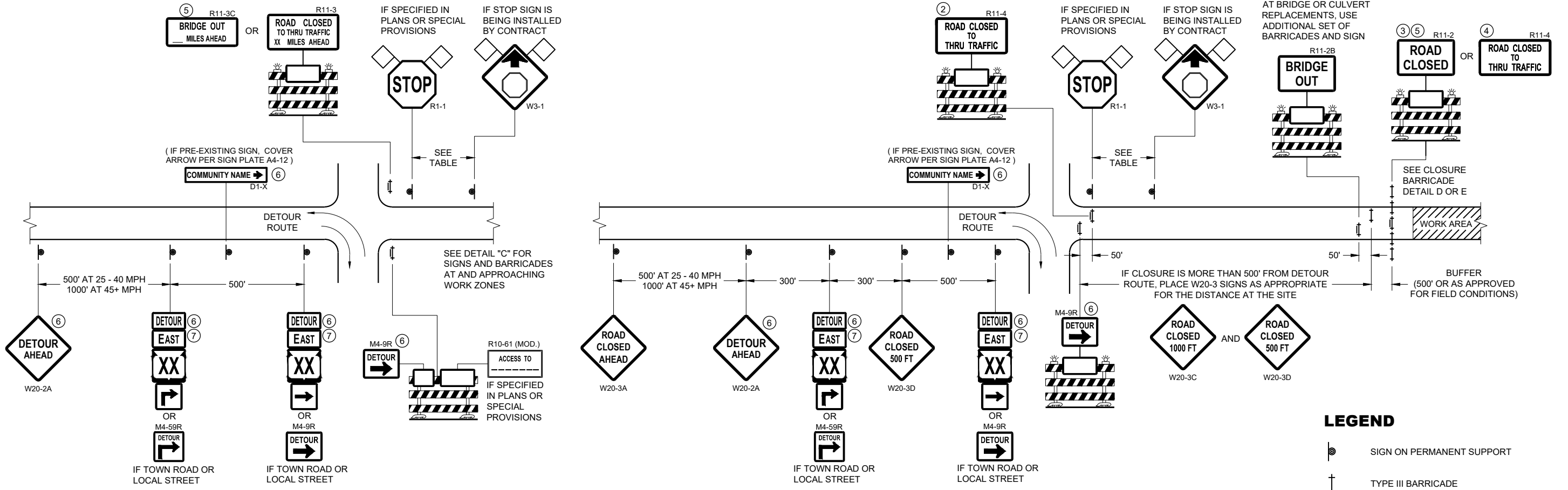
FRONT VIEW SIDE VIEW
ALTERNATE 2



FRONT VIEW SIDE VIEW
ALTERNATE 3

FLEXIBLE MARKER POST ANCHORS

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



**DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR**

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

**DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR**

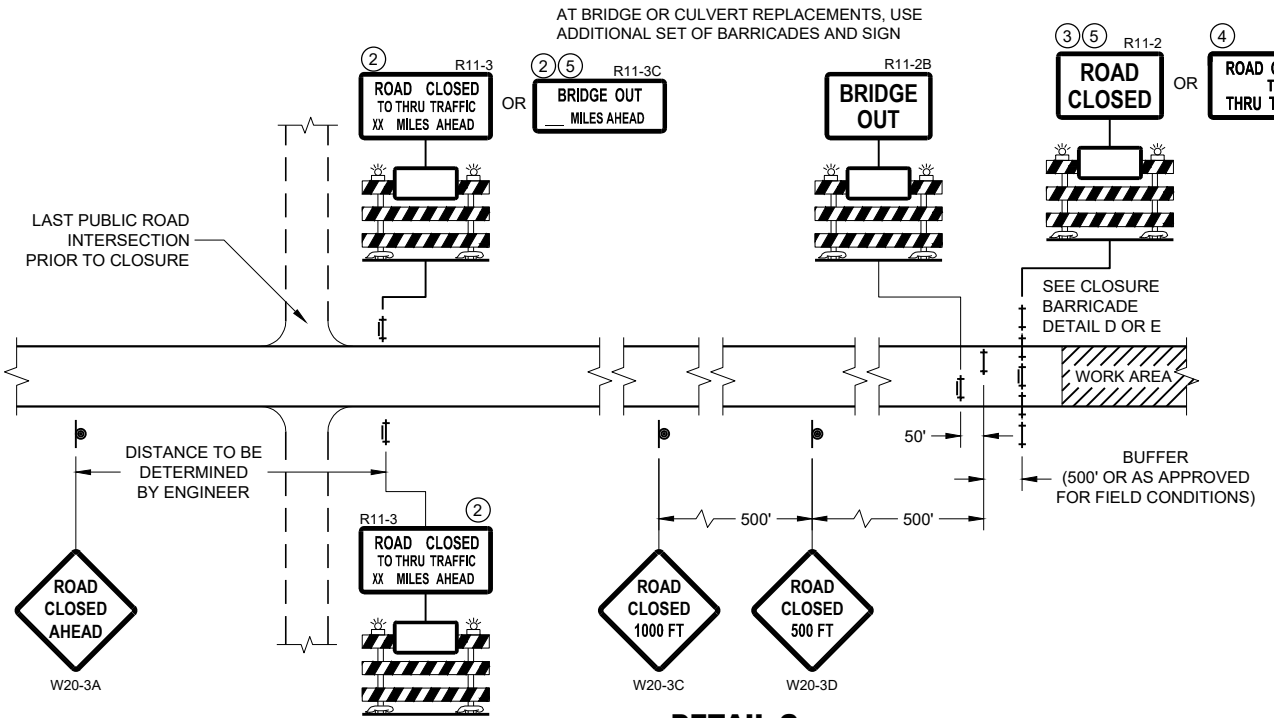
WORK ZONE LESS THAN 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

LEGEND

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

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

- M4 - 8
- M3 - X
- M1 - 4 OR M1 - 6 OR M1 - 5A
- M05 - 1 OR M06 - 1



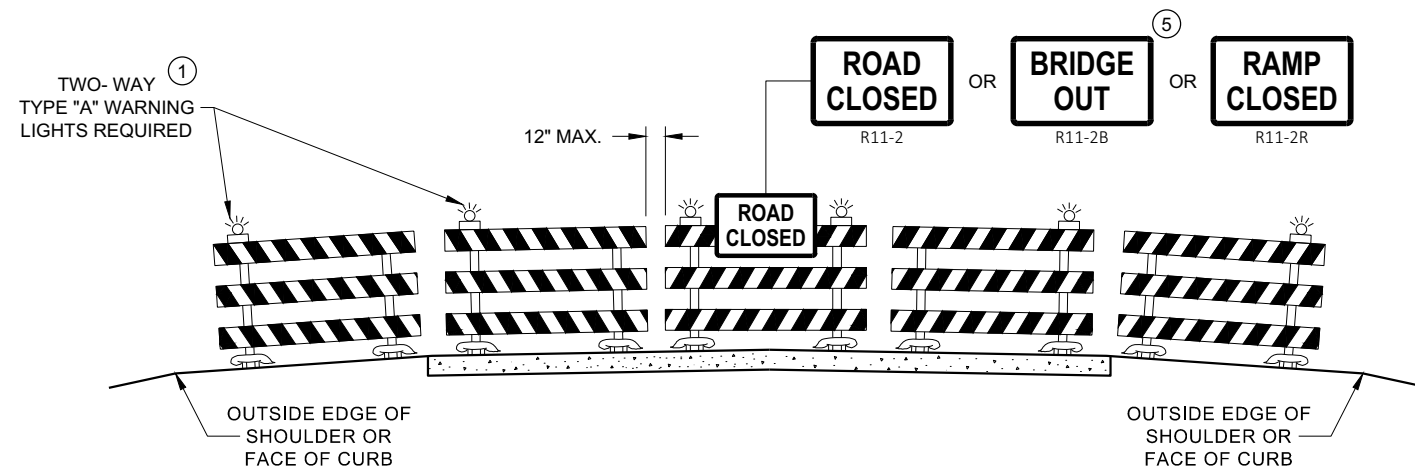
**DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR**

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

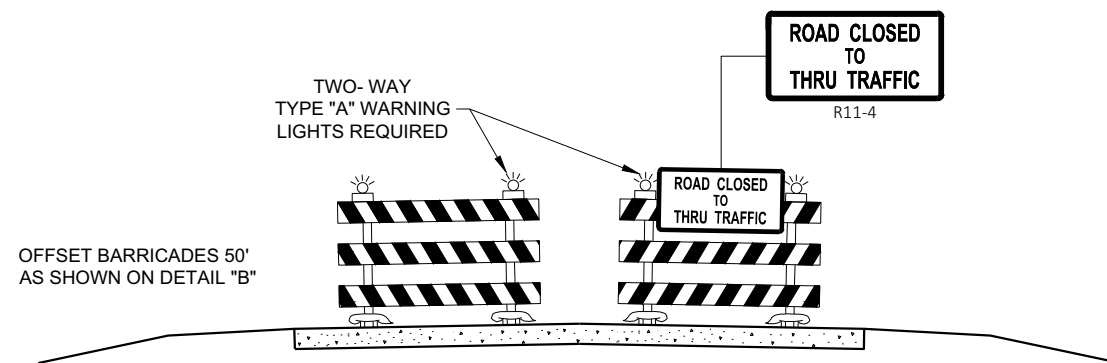
**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



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



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

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

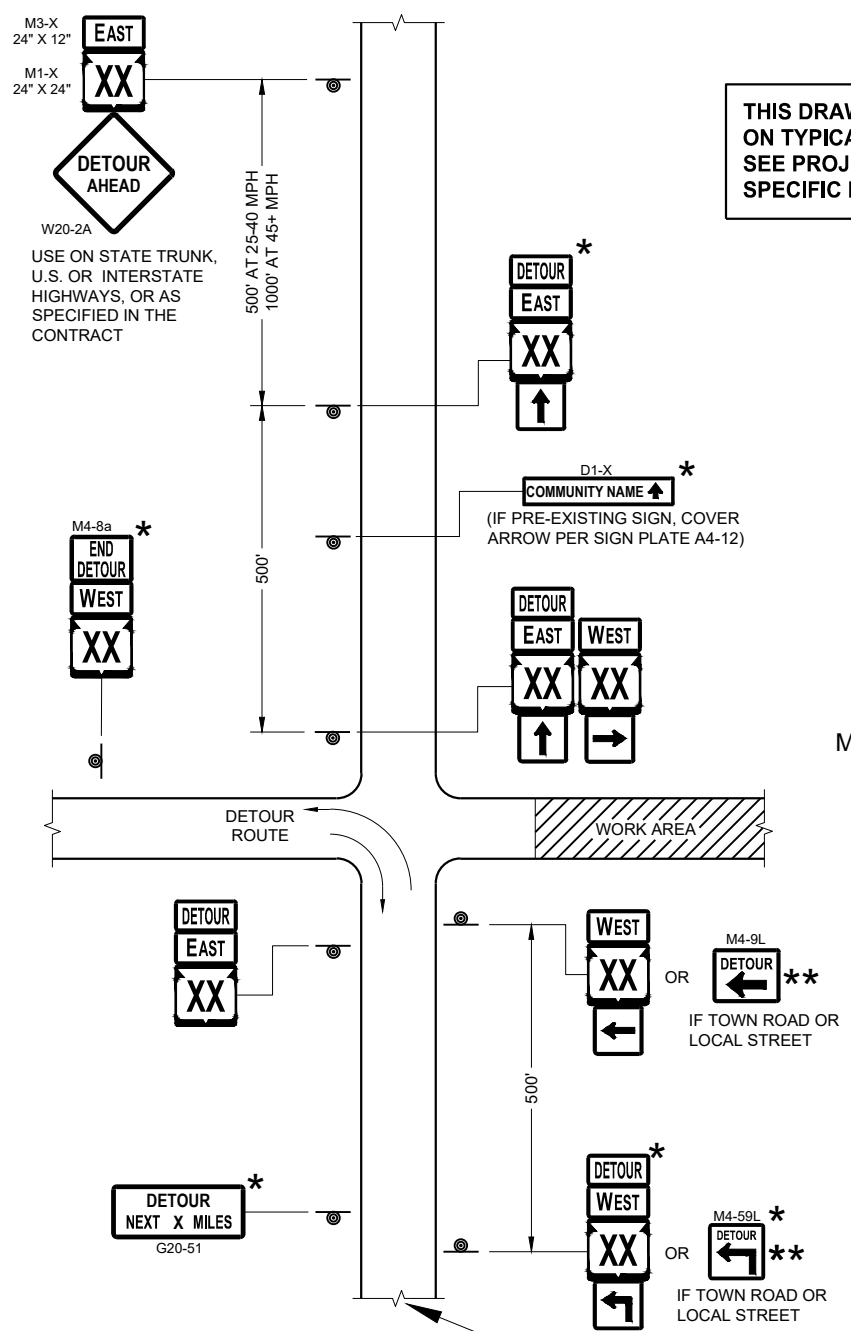
- ① TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- ② THESE SIGNS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

**BARRICADES AND SIGNS
FOR
VARIOUS CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



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

LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- M4 - 8
- M3 - X
- M1 - 4
- M1 - 6
- M1 - 5A
- M05 - 1
- M06 - 1
- M06 - 1

GENERAL NOTES

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

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

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

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

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

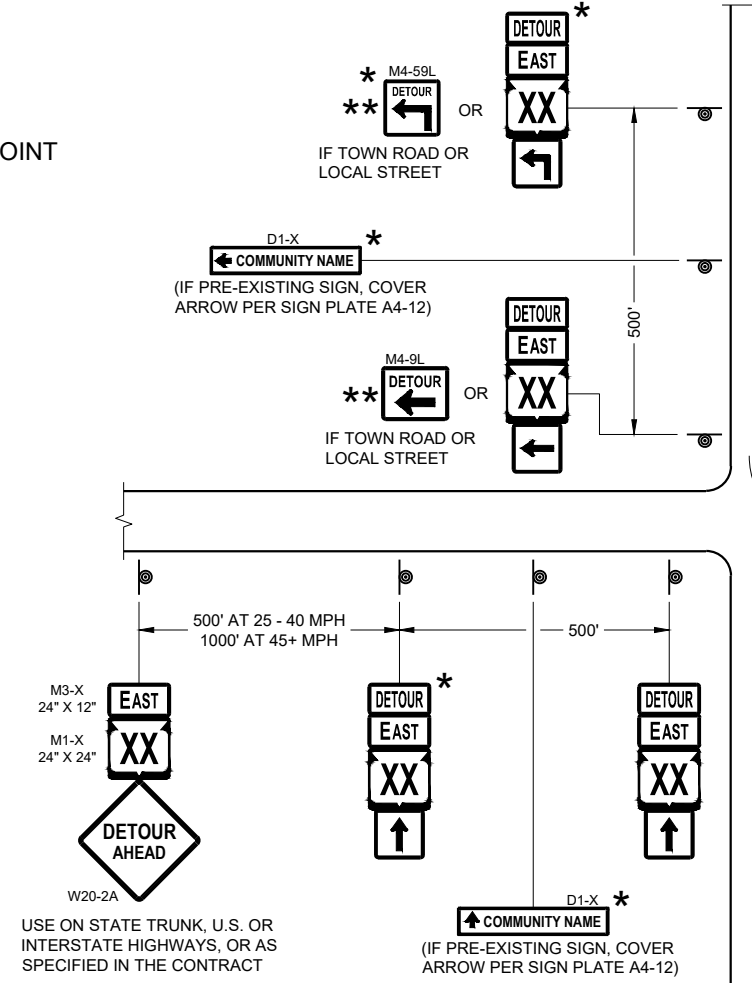
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

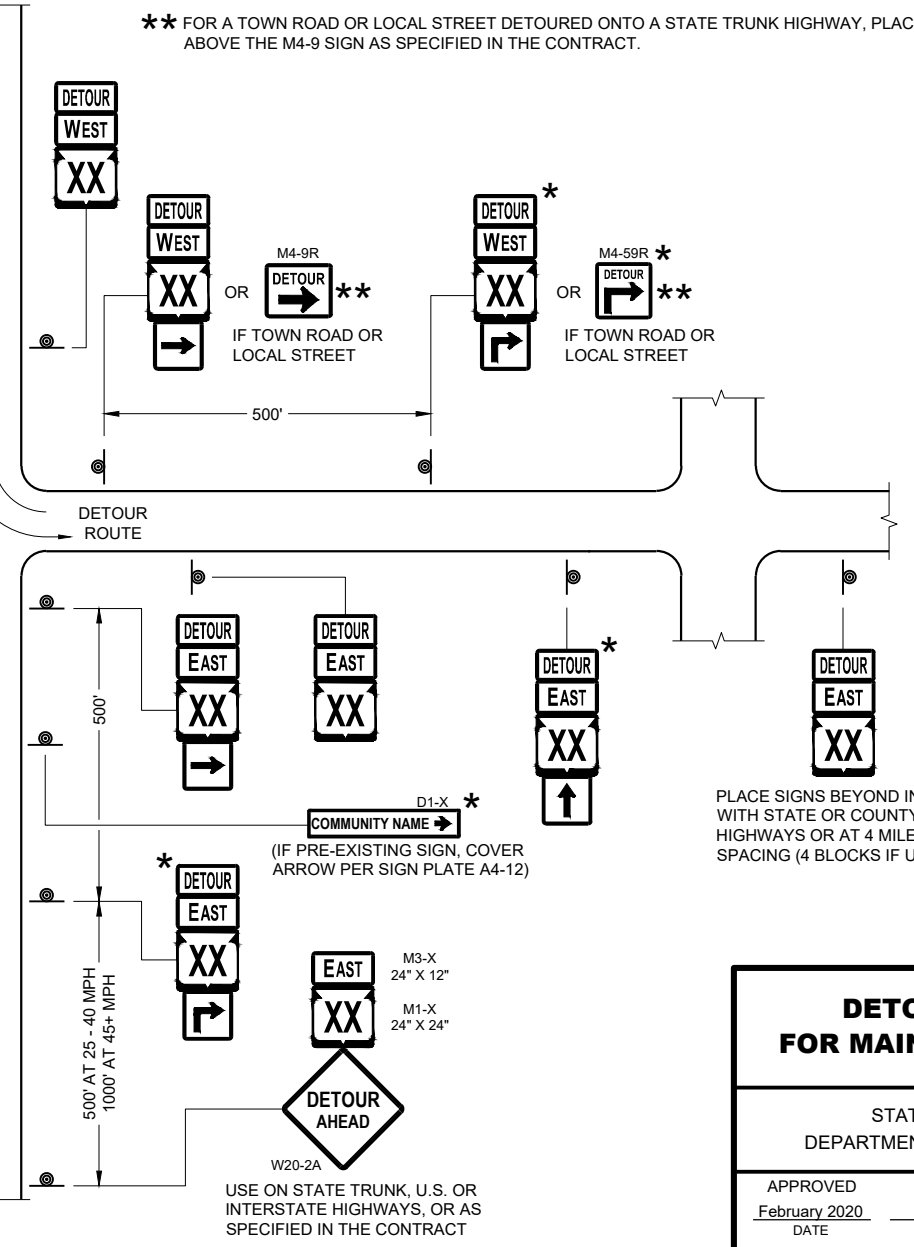
- M3-X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4-8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1-4, M1-5A AND M1-6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- M05-1 AND M06-1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING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

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

MATCH POINT



**DETAIL F
DETOUR SIGNING**



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

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

| DETOUR SIGNING FOR MAINLINE CLOSURES | |
|--|--|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED February 2020 DATE | /S/ Andrew Heidtke WORK ZONE ENGINEER |
| FHWA | |

GENERAL NOTES

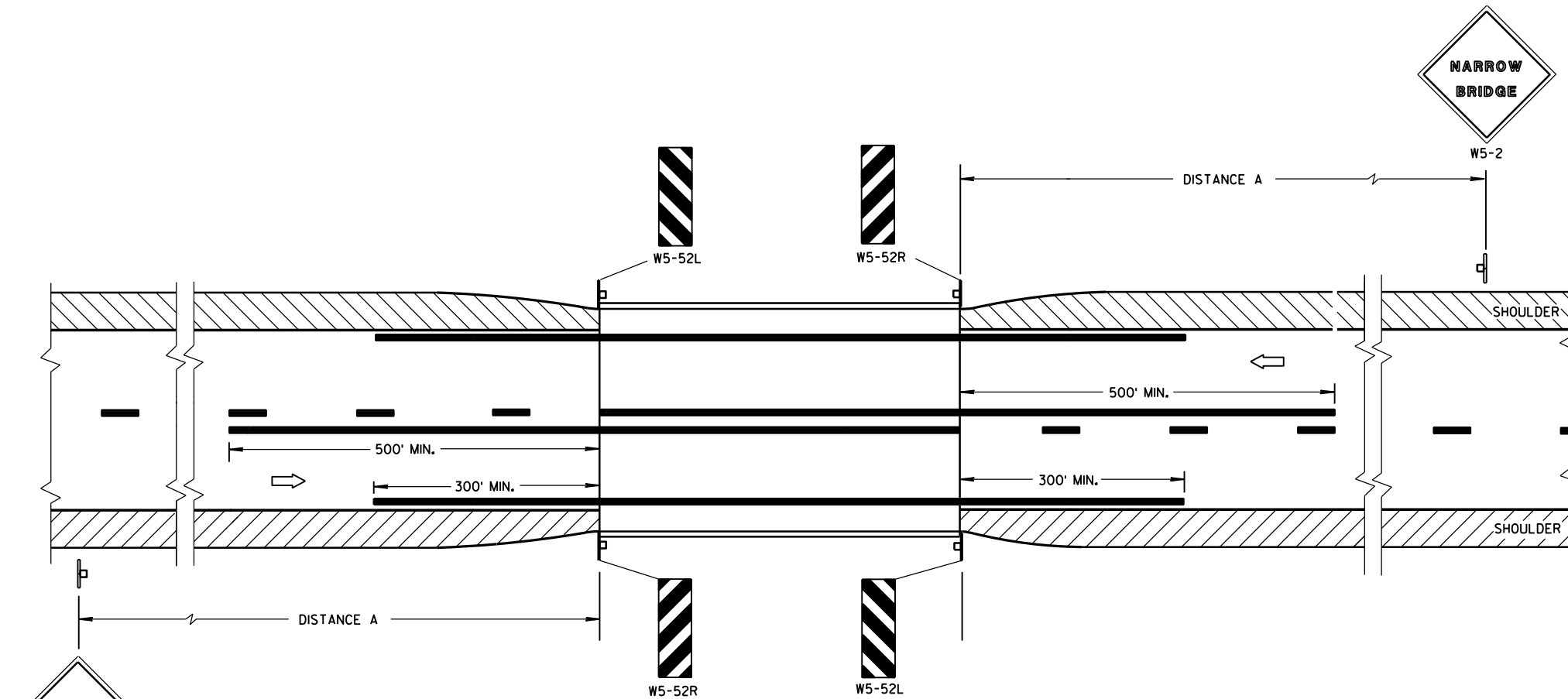
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

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

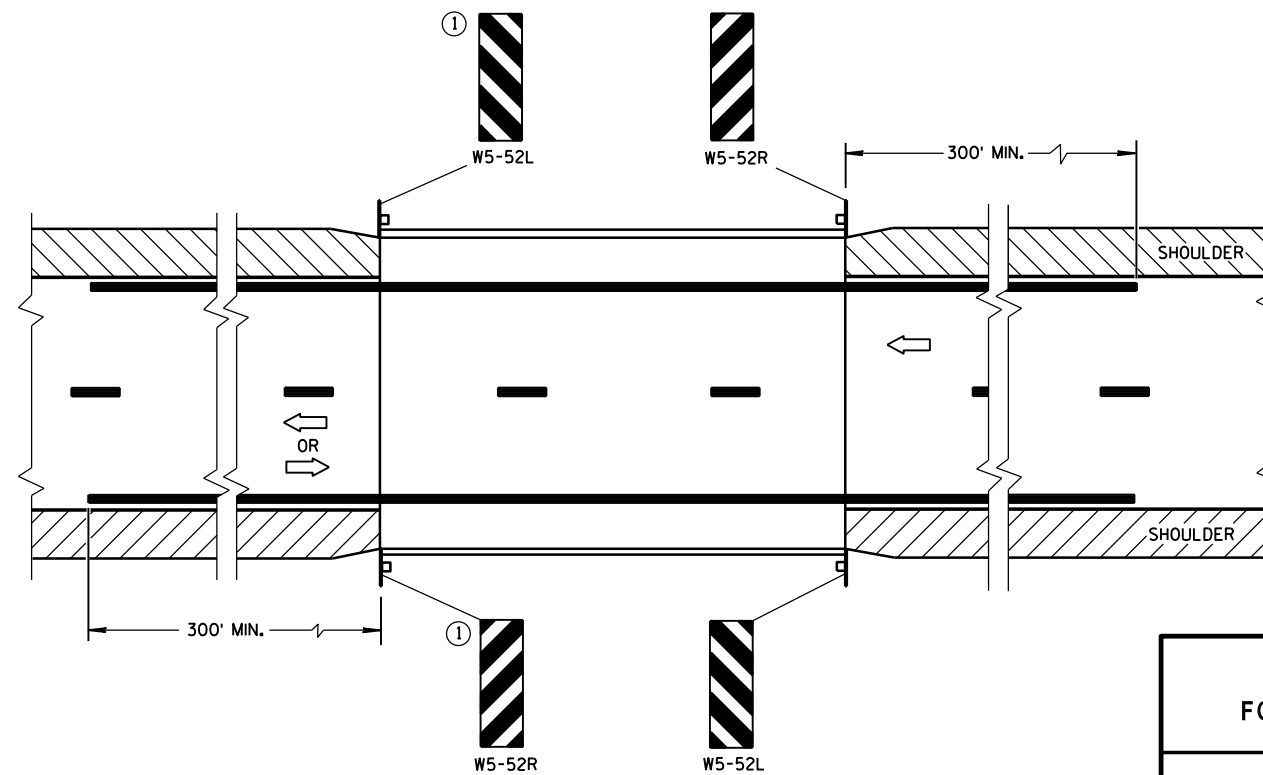
① OMIT ON ONE-WAY TRAVELLED WAYS.

➡ DIRECTION OF TRAFFIC



SITUATION 1

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



SITUATION 2

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

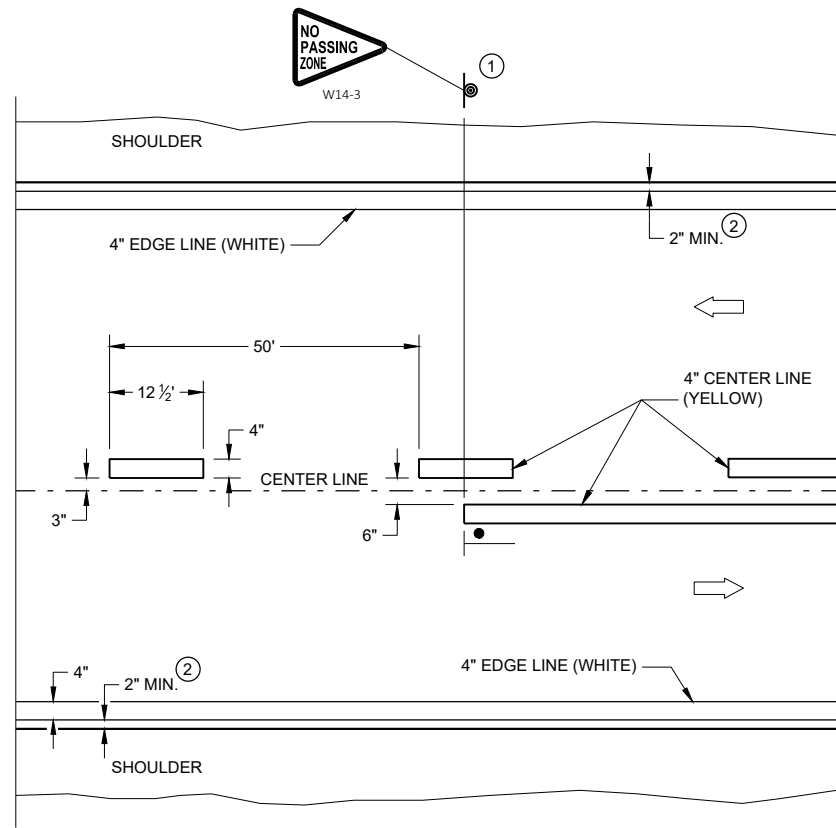
DISTANCE TABLE

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

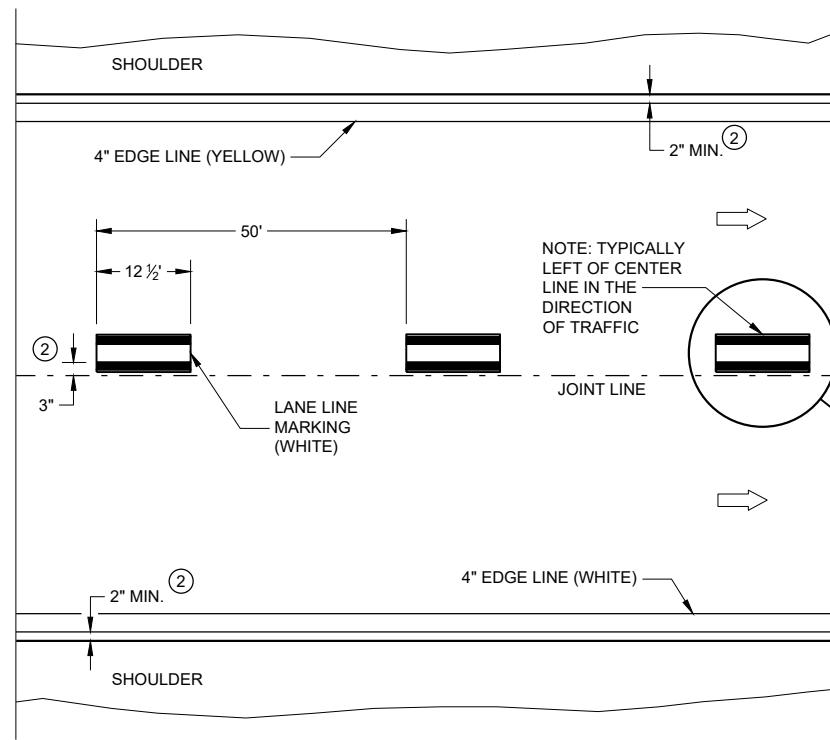
SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

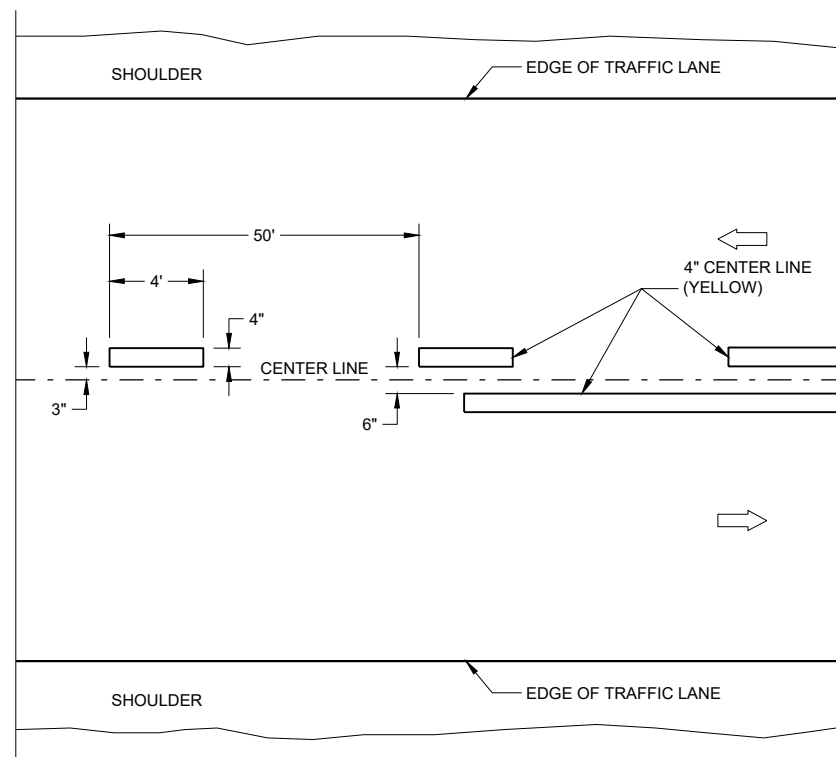


TWO WAY TRAFFIC

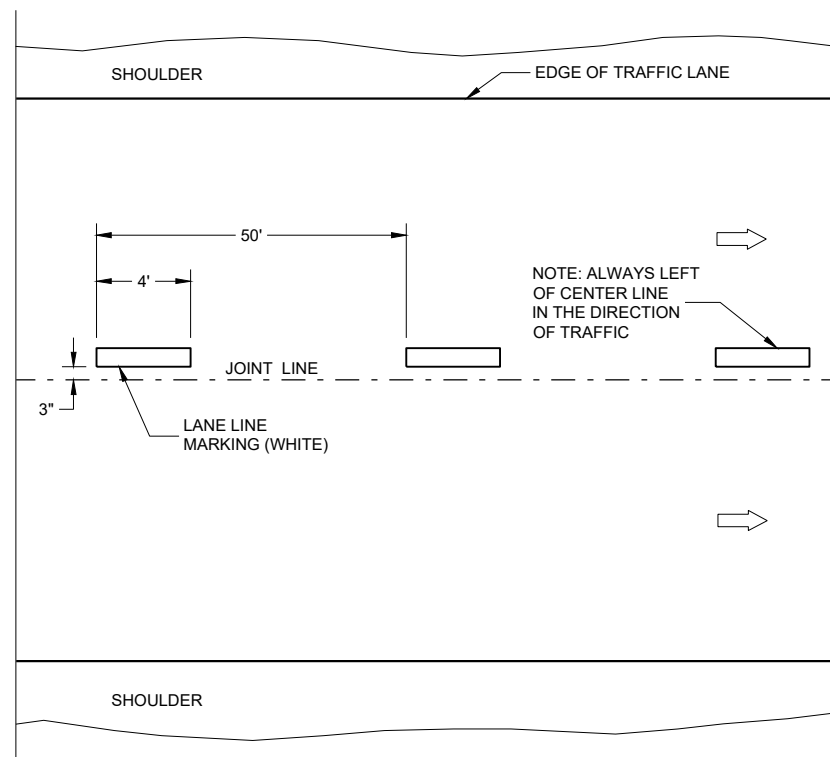


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

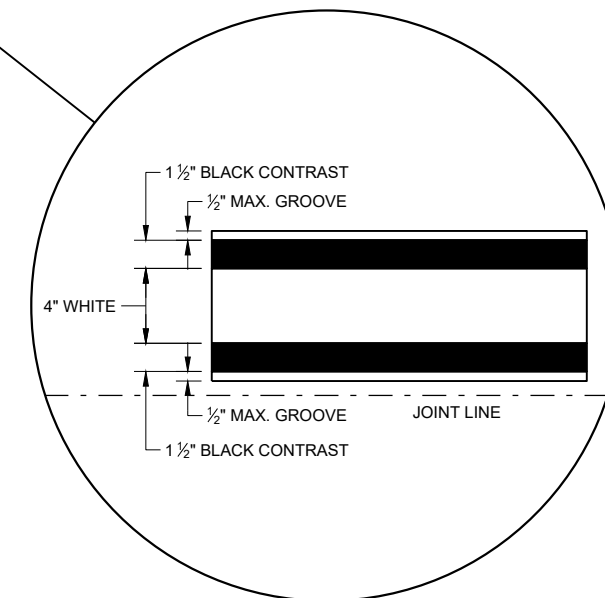
GENERAL NOTES

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

- ① LOCATE THE NO PASSING ZONE W14-3 SIGN 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

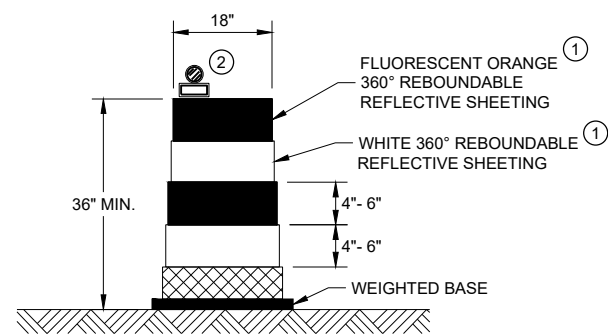
- "T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC



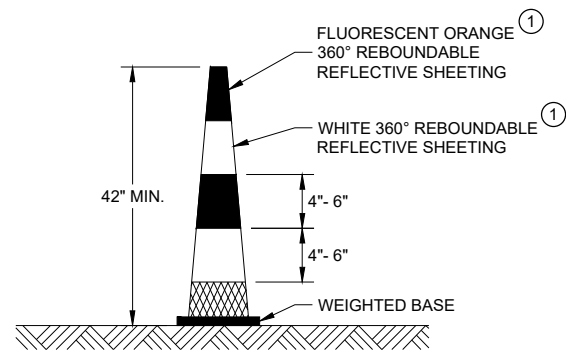
LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

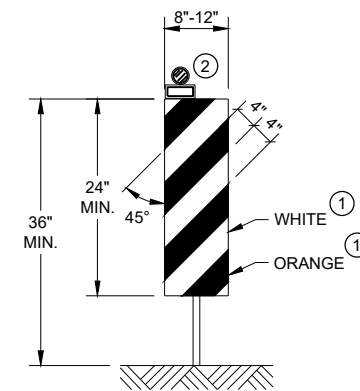


DRUM



42" CONE

DO NOT USE IN TAPERS
 1/2 SPACING OF DRUMS

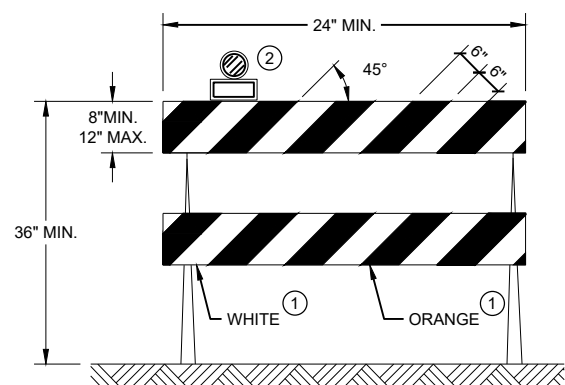


VERTICAL PANEL

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

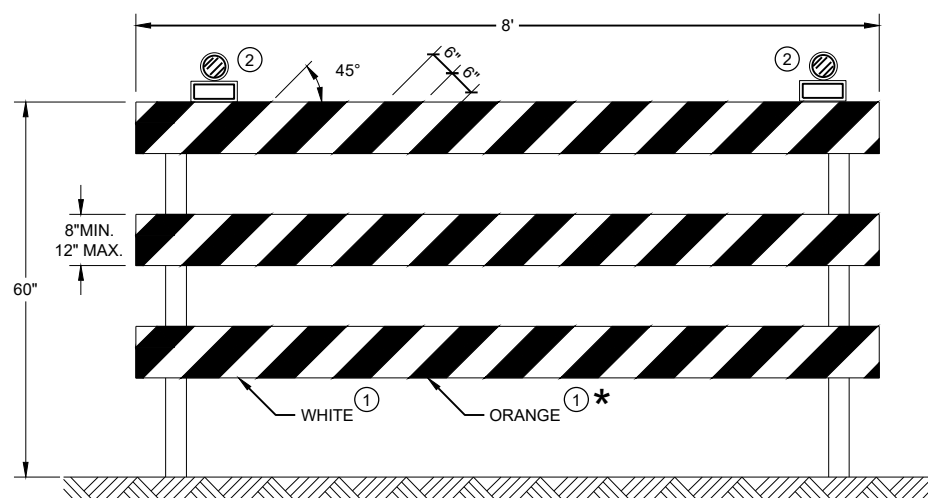
GENERAL NOTES

- 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 May 2021 DATE | /S/ Andrew Heidtke WORK ZONE ENGINEER |
| <small>FHWA</small> | |

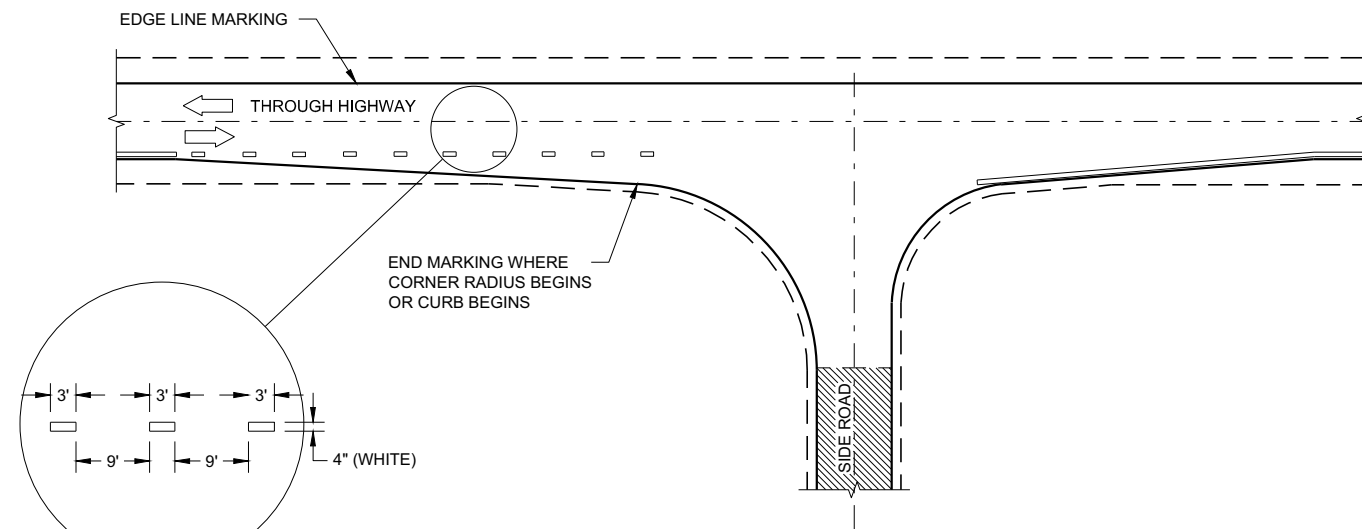
GENERAL NOTES

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

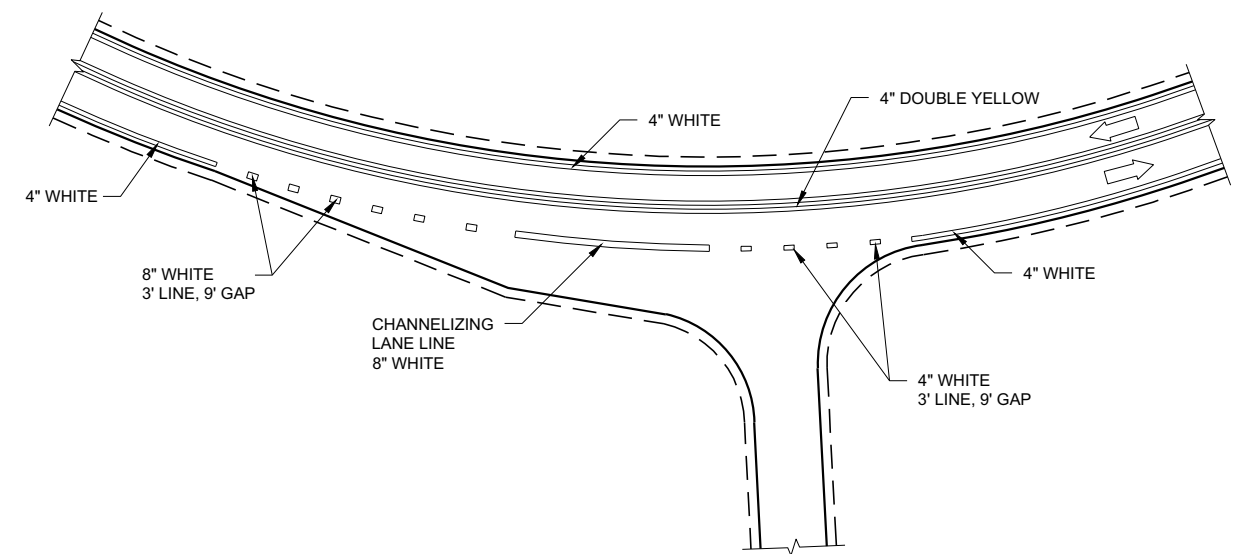
- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
- ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
- ③ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
- ④ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

LEGEND

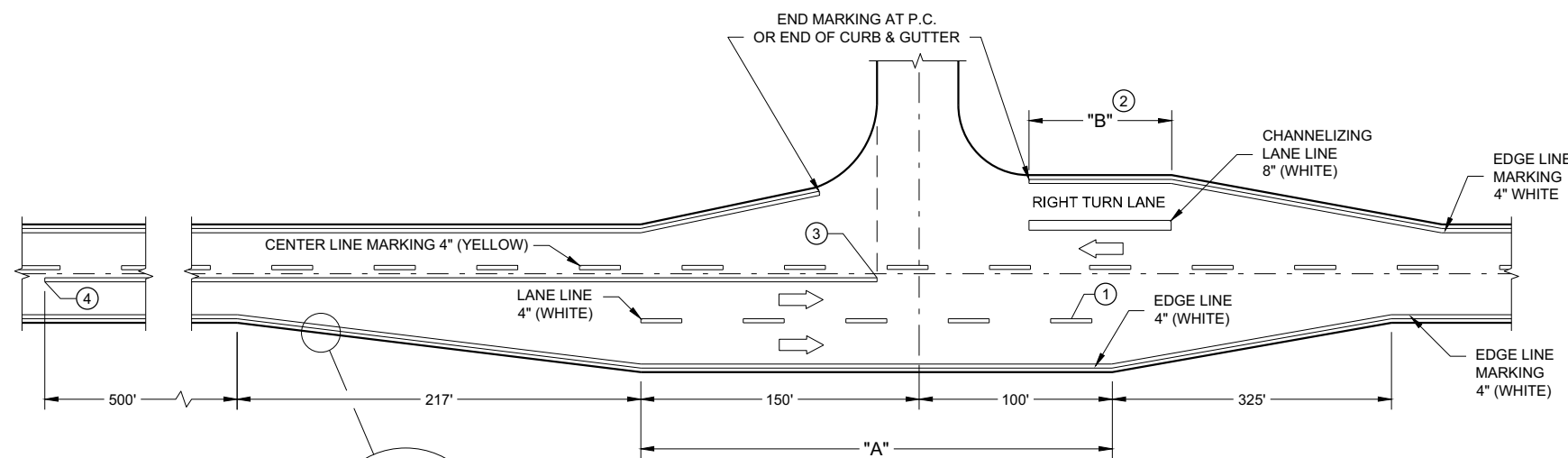
➡ DIRECTION OF TRAVEL



MINOR INTERSECTION



INTERSECTION ON OUTSIDE OF CURVE

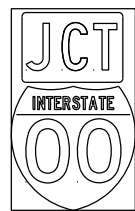


**MAJOR INTERSECTIONS
(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)**

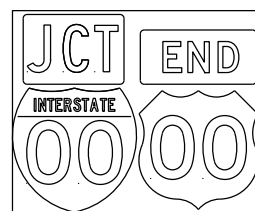
**PAVEMENT MARKING
(INTERSECTIONS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

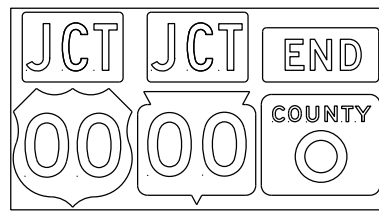
TYPICAL ASSEMBLIES



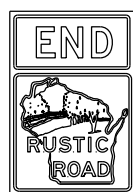
J1-1



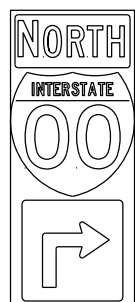
J1-2



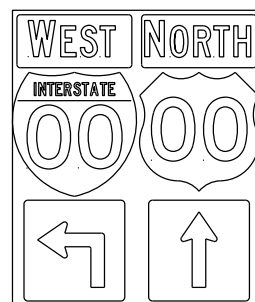
J1-3



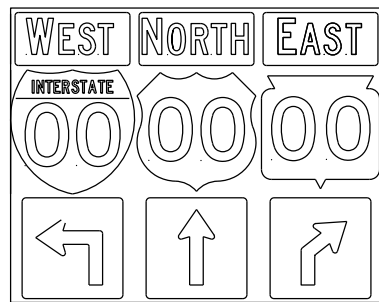
JR1-1



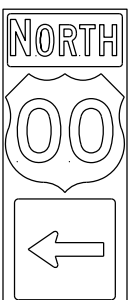
J2-1



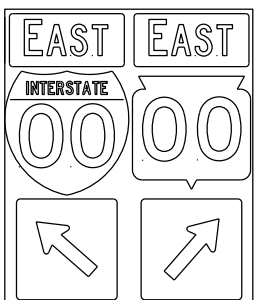
J2-2



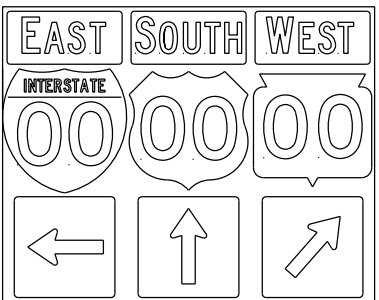
J2-3



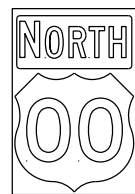
J3-1



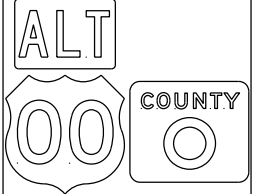
J3-2



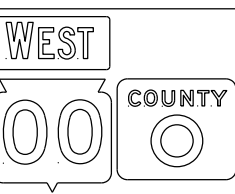
J3-3



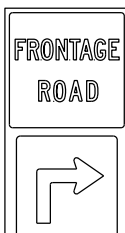
J4-1



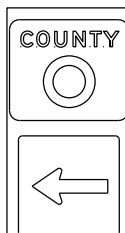
J4-2



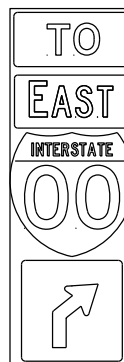
J4-2



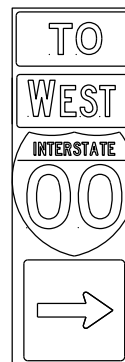
J12-1



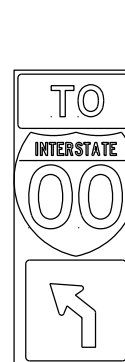
J13-1



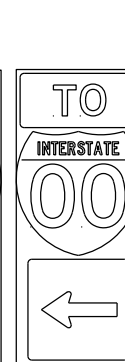
J32-1



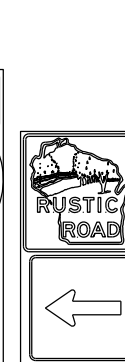
J33-1



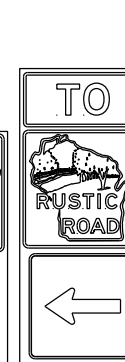
J22-1



J23-1



JR13-1



JR23-1

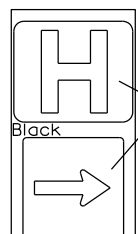


JR99-1



JV

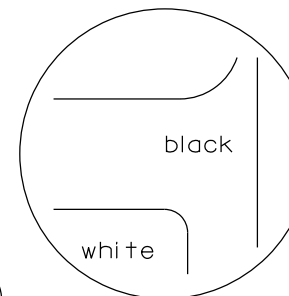
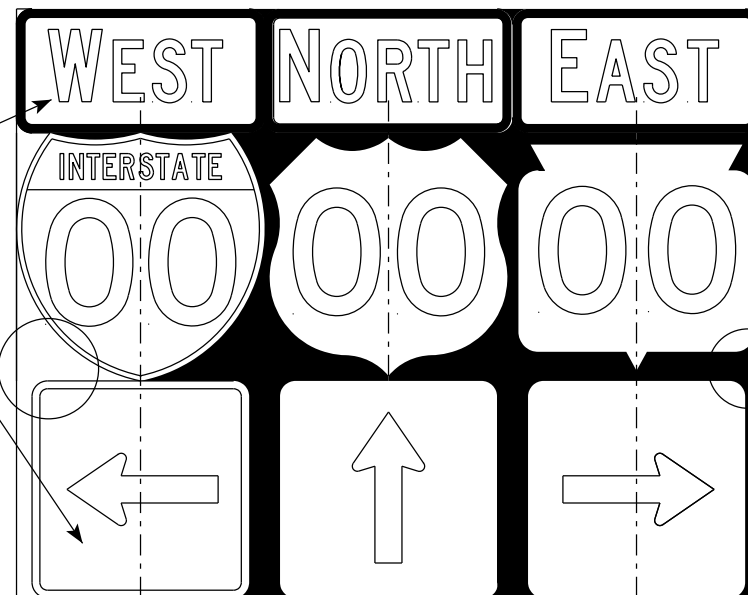
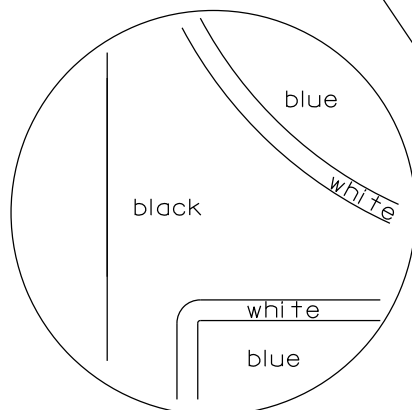
(Typical Vertical J-Assembly See Note 10 and 11)



JH-1

Blue Background

blue background with interstate



black background

NOTES

- Signs are Type II - Type H Reflective
- Color:
 - Background - Black Non-reflective
 - Message - see Note 5
- Message Series - See Note 5
- Corners shall be square or rounded if base material is plywood. If base material is metal the corners shall be rounded.
- The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
- Certain marker heads require the component pieces to be the same color. As an example, all the components used with an MI-1 Interstate marker shall be blue.
- Single panel j-assemblies shall only be used with route marker shields that are same size. If the route marker shields are different size use multiple piece component.
- Route assemblies that have 24 inch route shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have one horizontal splice between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 inches or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
- Route assemblies that have 36 inch shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have two horizontal splices. One horizontal splice shall be between the cardinal direction and route shields and the other horizontal splice shall be between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
- All Vertical J Assemblies are given a Sign Code of JV
- For JV Assemblies that have a mixture of Interstate and non Interstate shields, arrows and cardinals shall be white on blue.

ROUTE MARKERS & COMPONENTS IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 3/18/21

PLATE NO. A2-1S.9

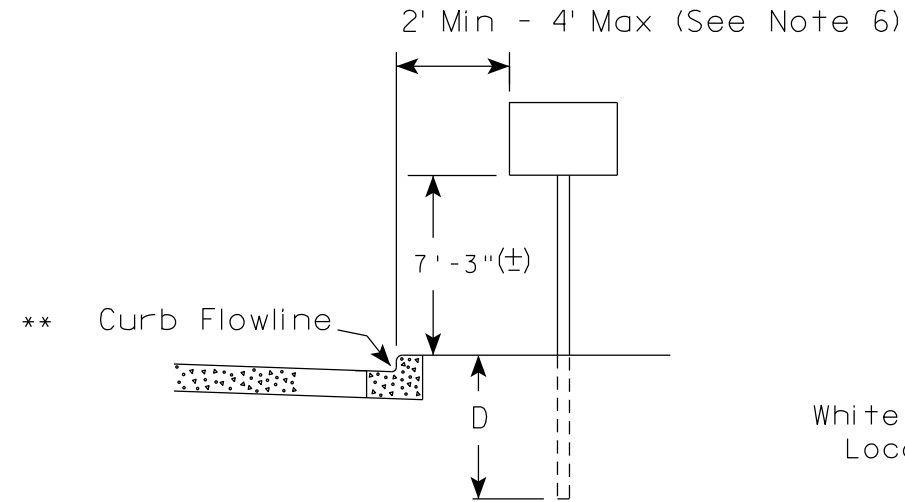
PROJECT NO:

SHEET NO:

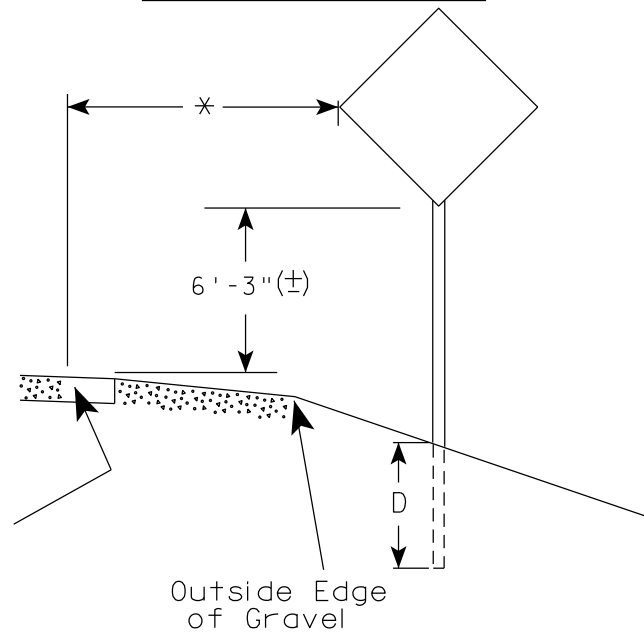
E

URBAN AREA

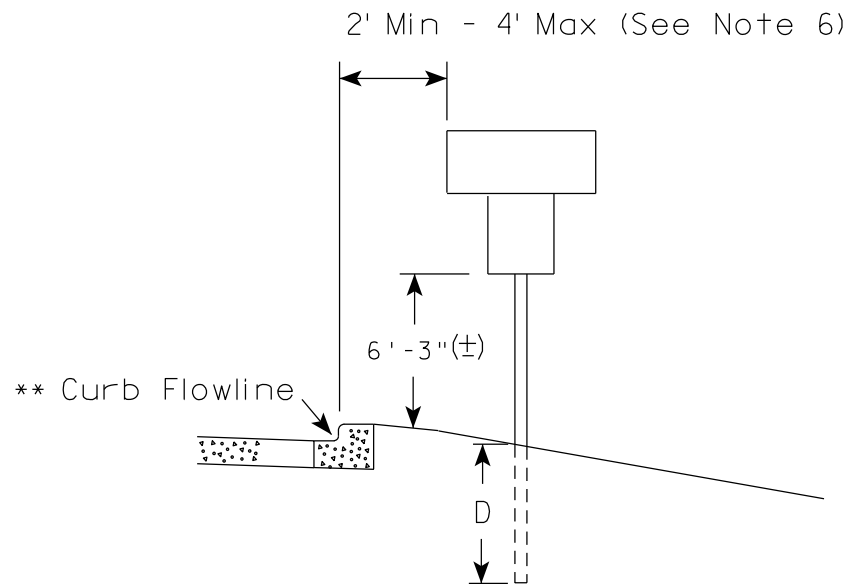
RURAL AREA (See Note 2)



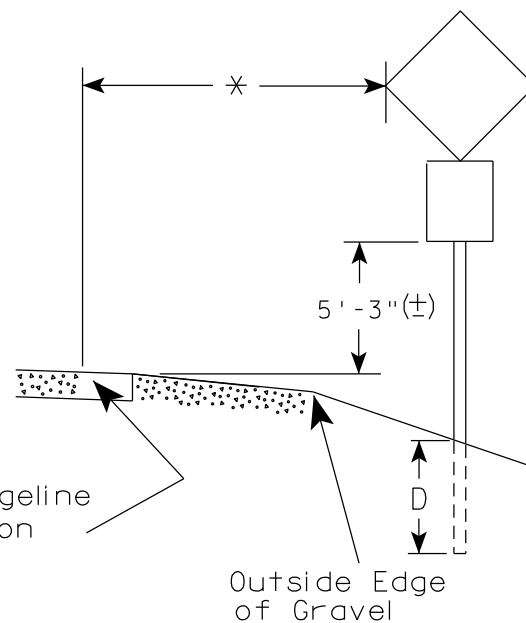
White Edgeline Location



Outside Edge of Gravel



White Edgeline Location



Outside Edge of Gravel

POST EMBEDMENT DEPTH

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

GENERAL NOTES

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

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

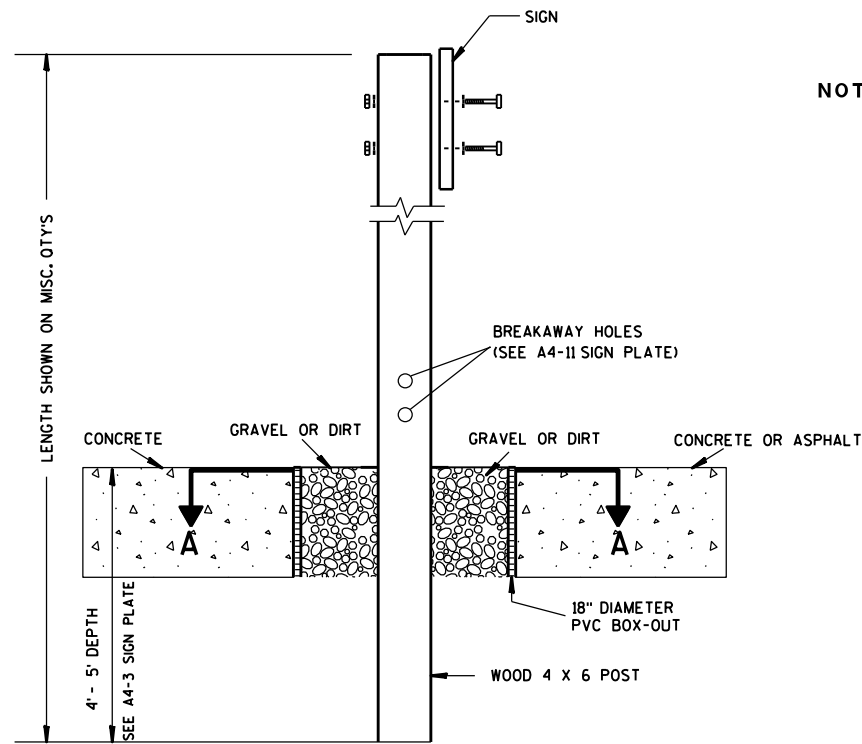
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

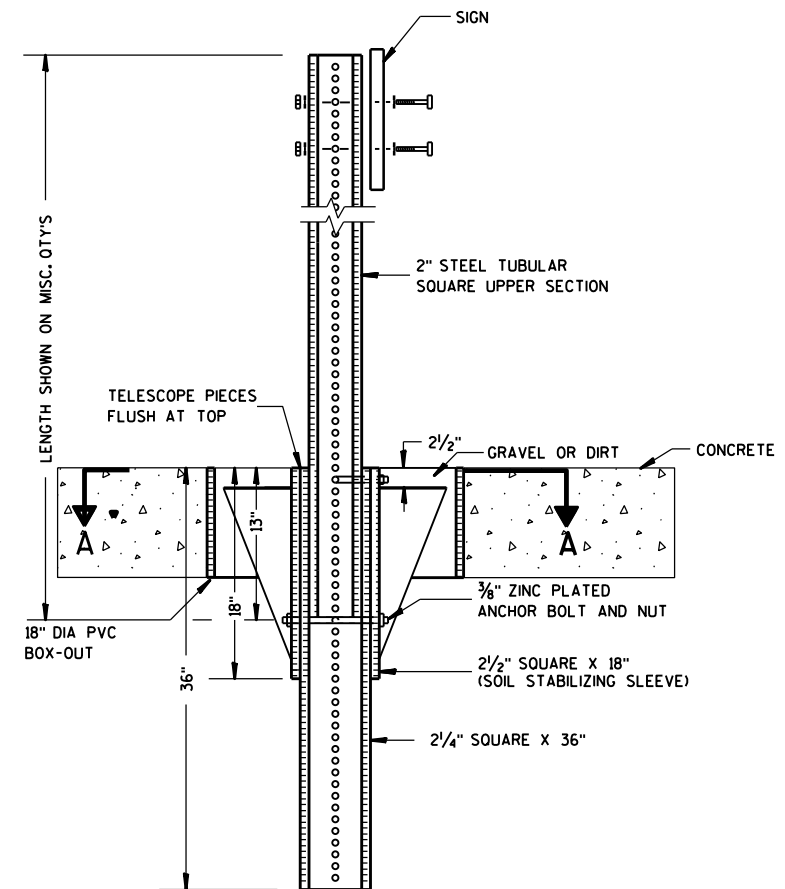
DATE 5/13/2020 PLATE NO. A4-3.22



ELEVATION VIEW

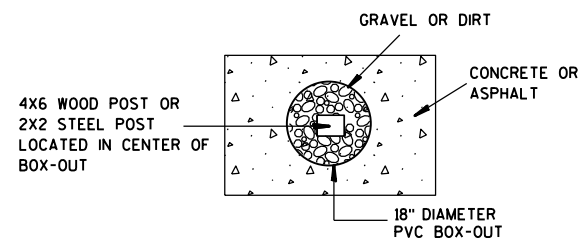
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ ASPHALT INSTALLATIONS

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

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

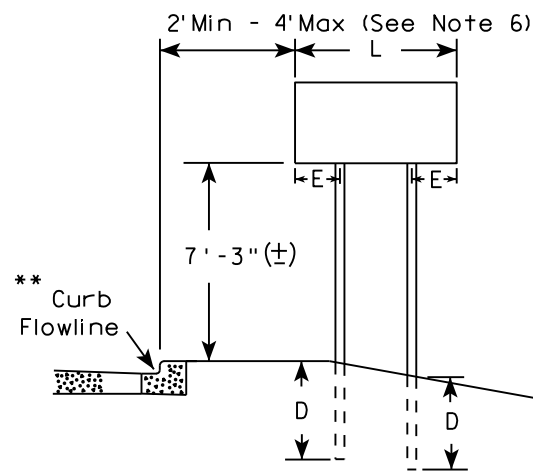
7

7

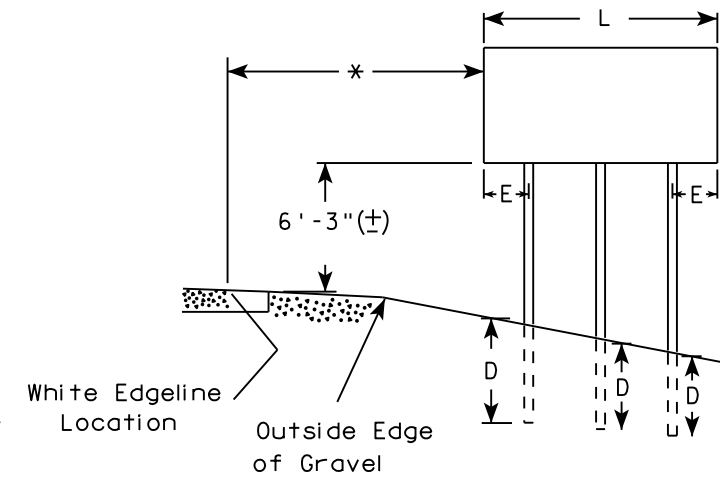
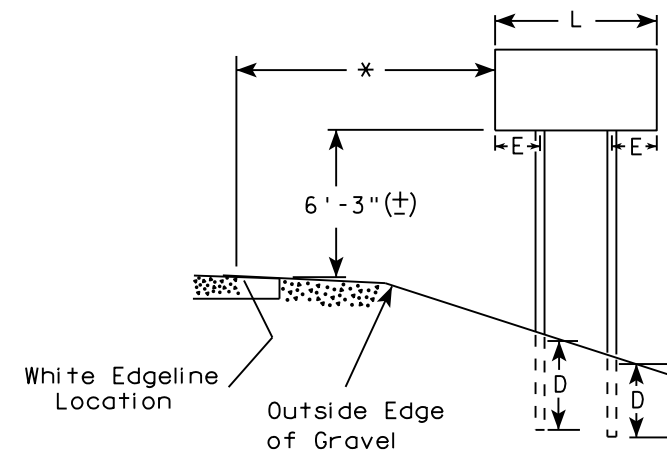
GENERAL NOTES

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

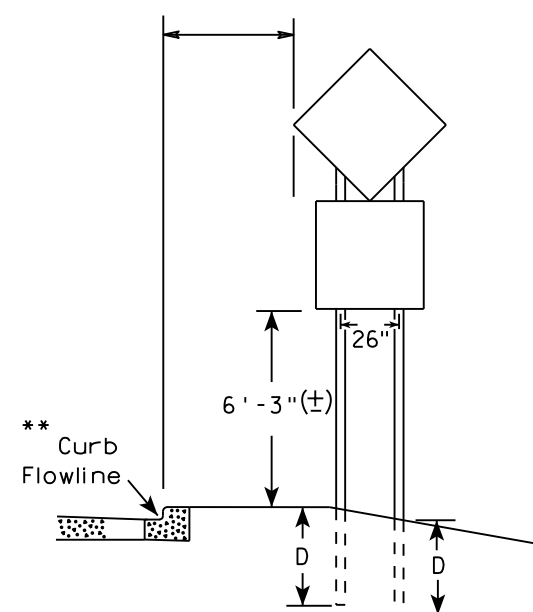
URBAN AREA



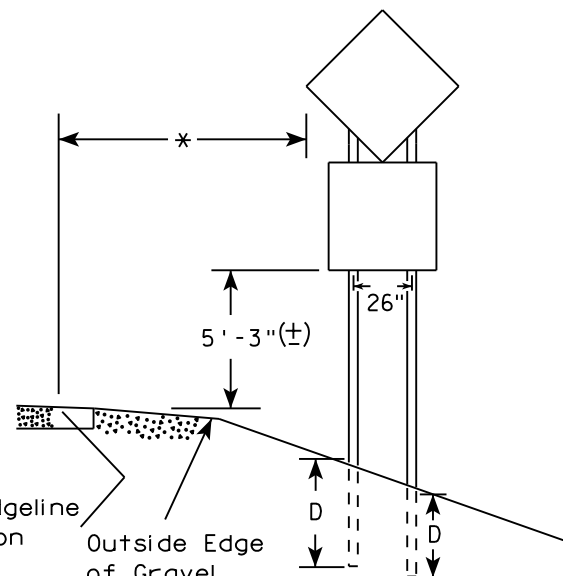
RURAL AREA (See Note 3)



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



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

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

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

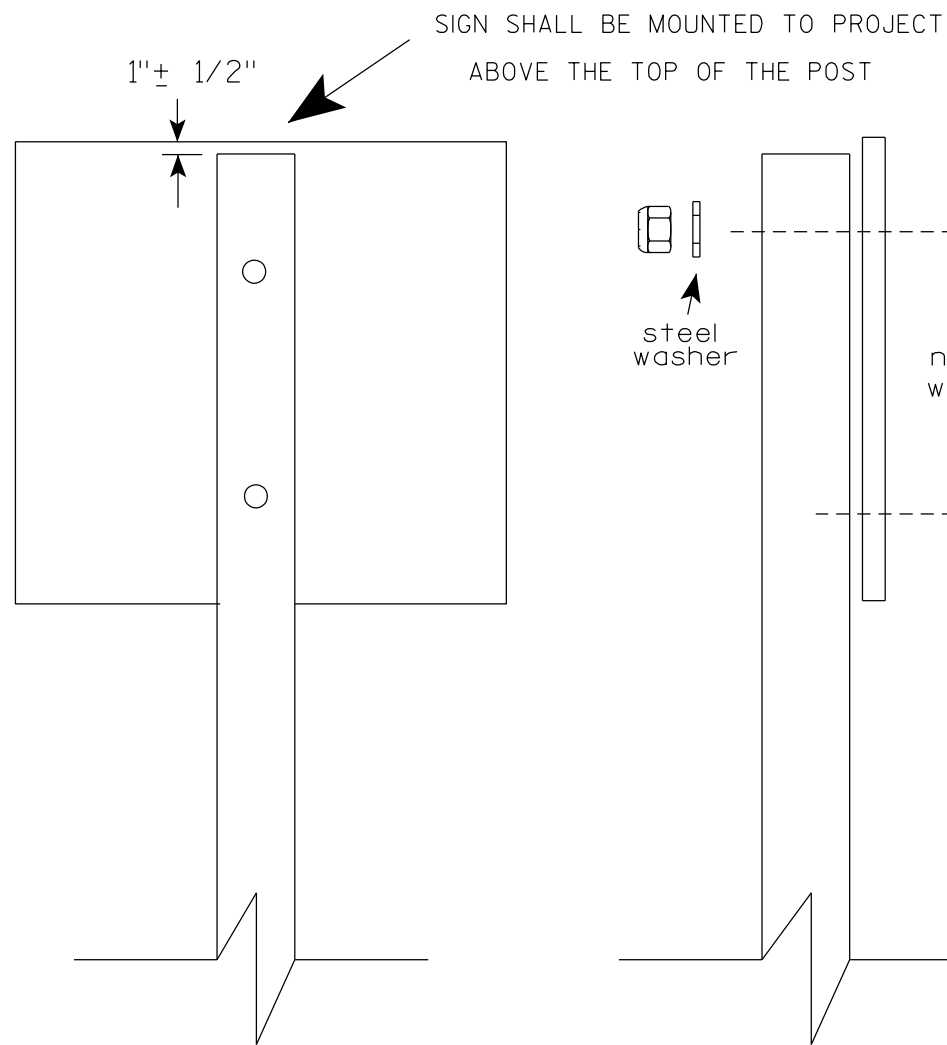
| SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED) | |
|--|-----|
| L | E |
| Greater than 108" to 144" | 12" |

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 :

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

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

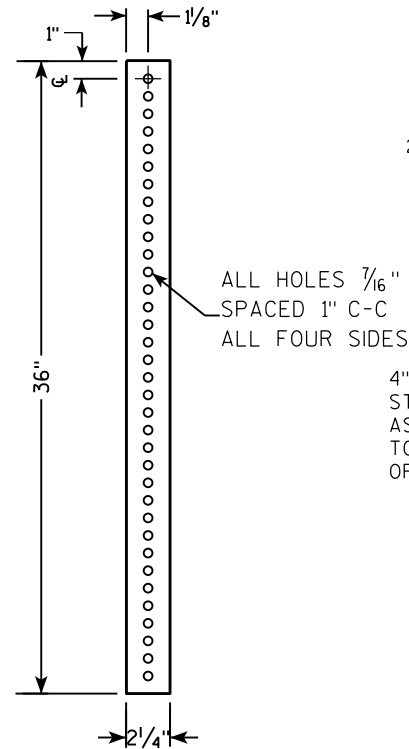
- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS - $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)
 $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE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

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

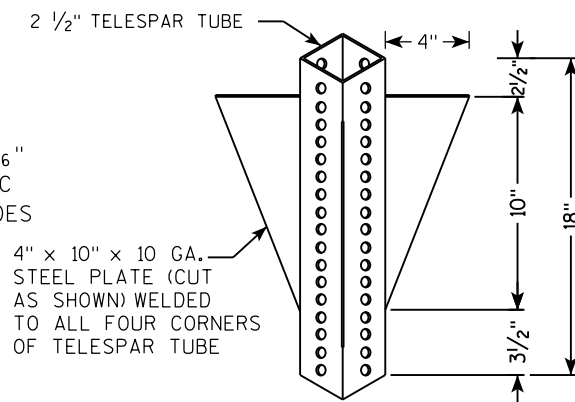
| | |
|----------------------------------|--|
| ATTACHMENT OF SIGNS TO POSTS | |
| WISCONSIN DEPT OF TRANSPORTATION | |
| APPROVED | <i>Matthew R Rauch</i> For State Traffic Engineer |
| DATE 4/1/2020 | PLATE NO. A4-8.9 |

**TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM**

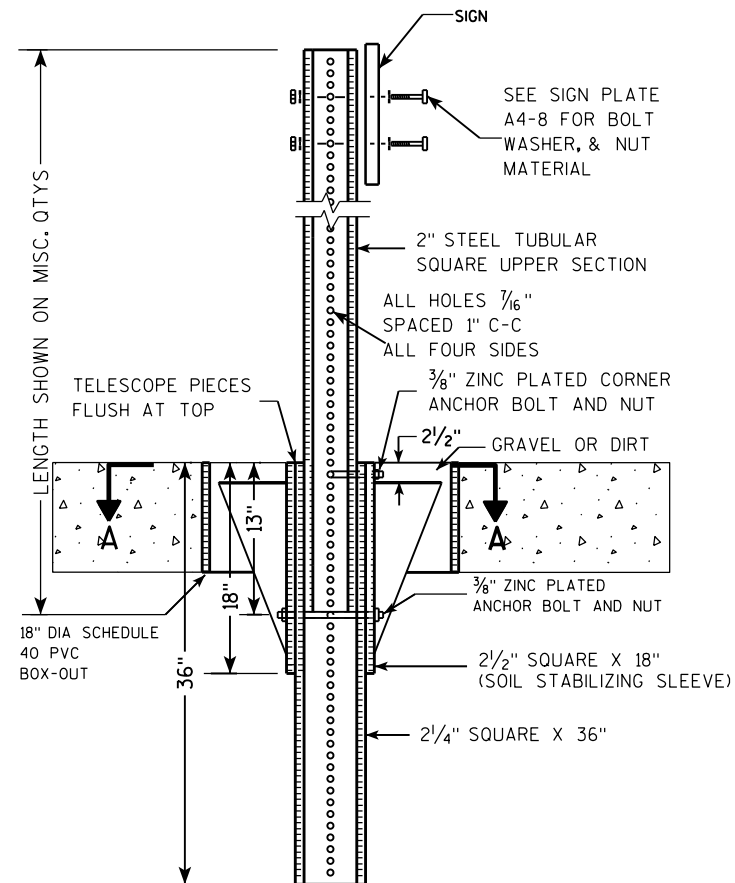
**2 1/4" SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH**



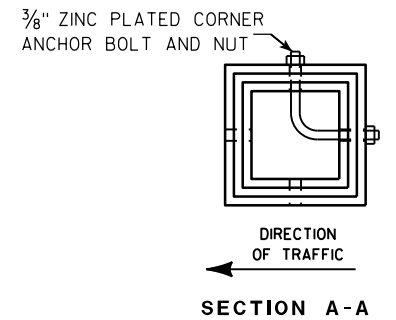
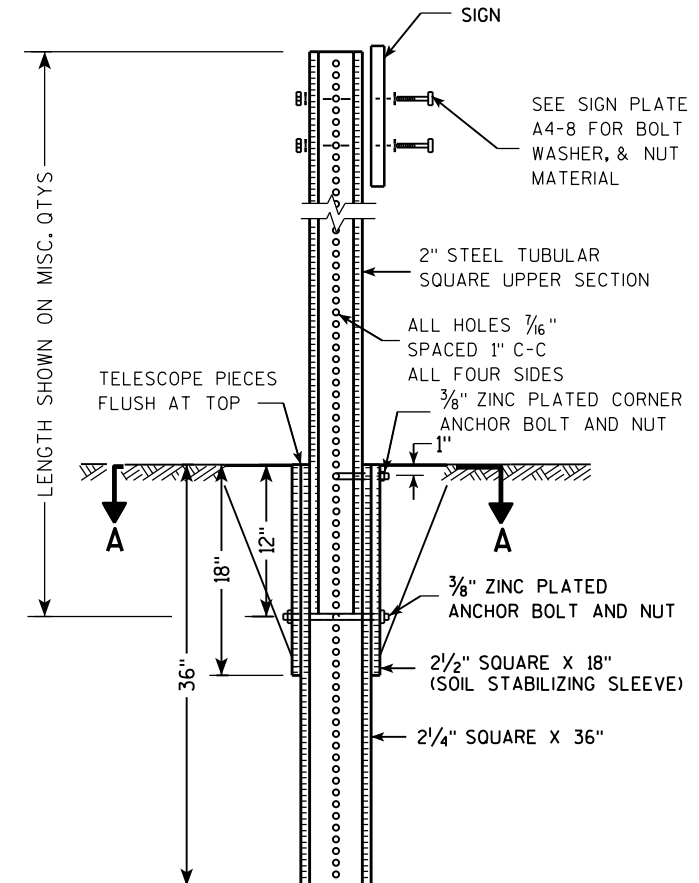
**2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH**



**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

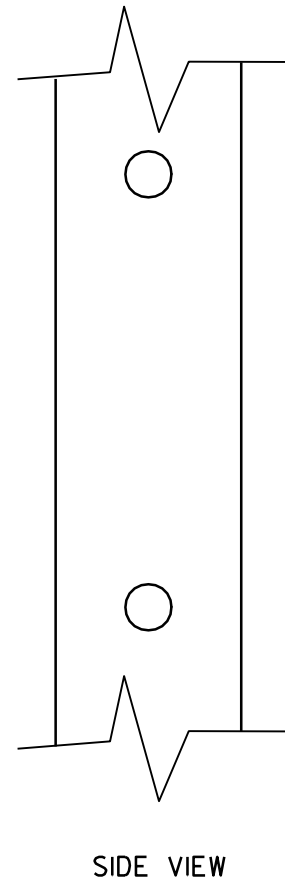
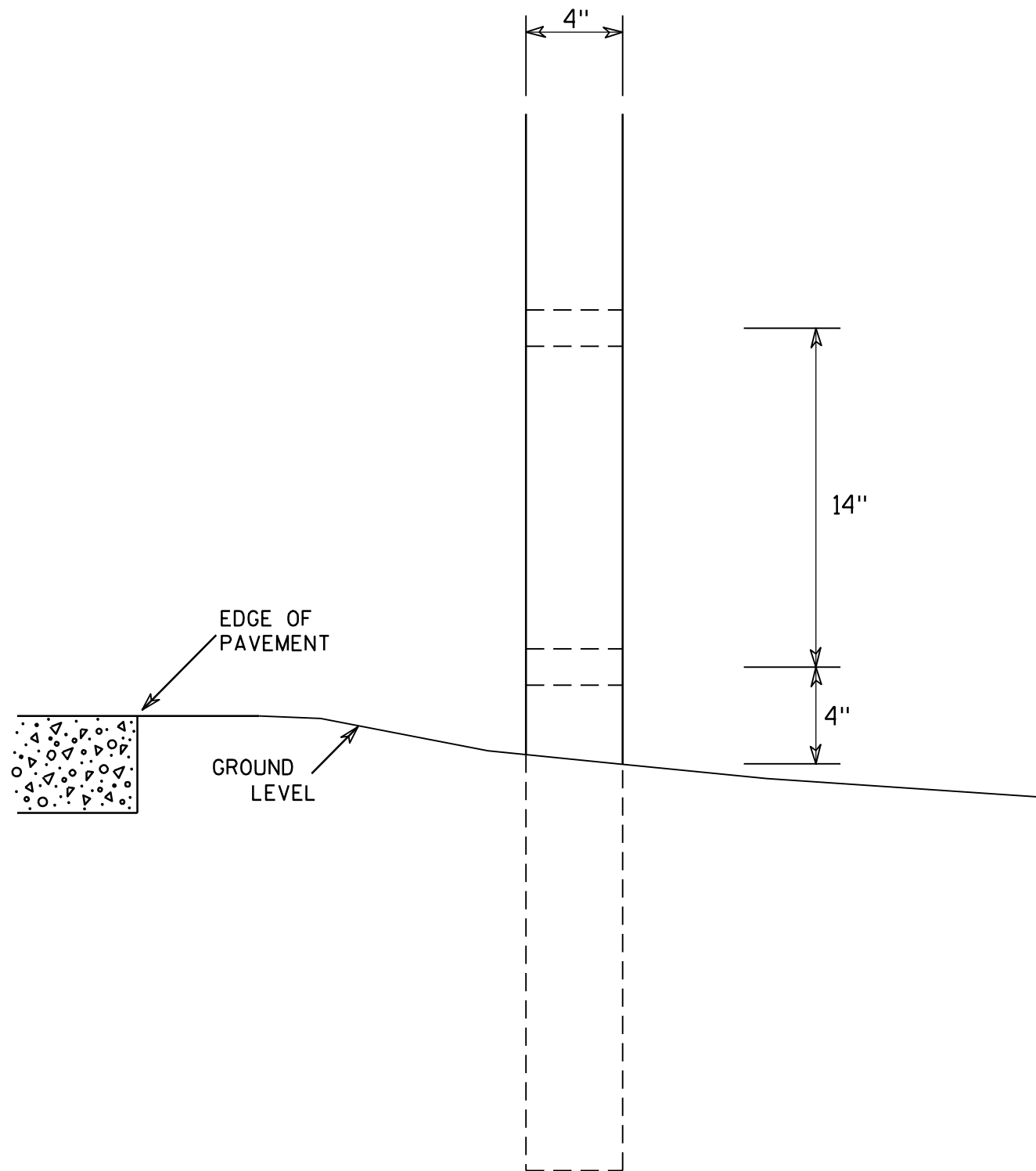
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



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

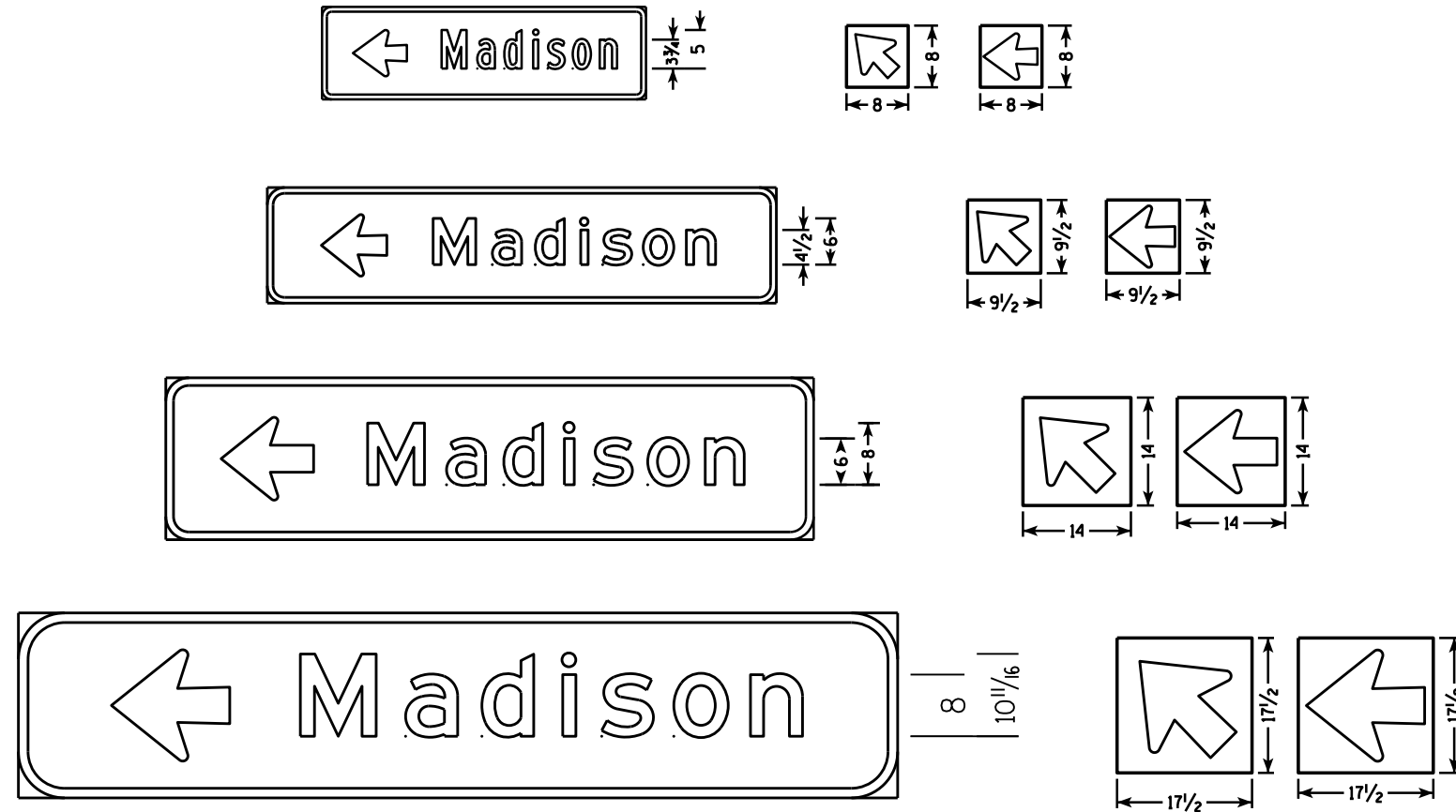
7

| | |
|--|--|
| 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> |

SIGN LAYOUT WITH VARIOUS SIZED MESSAGES

GENERAL NOTES

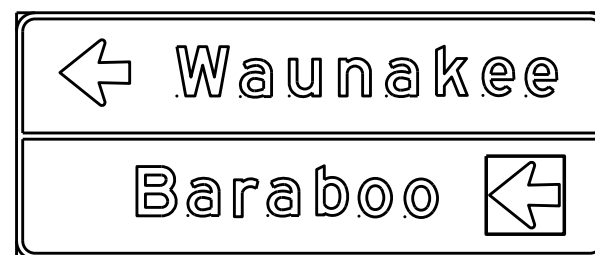
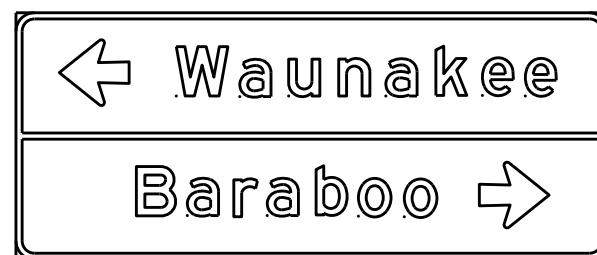
- Materials shall conform to Standard Specification Section 637.
Base - Sheet Aluminum 0.040" Thickness
Sheeting - Orange Type F Reflective
Arrow - Black Non-Reflective
- Arrow signs shall be fastened to permanent sign by either aluminum rivets or aluminum self-tapping sheet metal screws. There shall be a minimum of 2 fasteners used per arrow sign.
- There shall be a spacer consisting of a 0.08" nylon washer between the back of the arrow sign and the face of the permanent sign.
- Arrows are per standard plate A1-2
- Use separate arrow sign for each destination
- Tilt arrow is always at 45 degrees
- Arrow is centered on arrow sign



| Lower Case Copy Size | Standard Width (Single Arrow) | 2 Line Tilt Arrow Cover Width | 3 Line Tilt Arrow Cover Width | Height |
|----------------------|-------------------------------|-------------------------------|-------------------------------|--------|
| 3 3/4" Series C | 8 | 9 1/2 | 14 1/2 | 8 |
| 4 1/2" Series D & E | 9 1/2 | 10 | 15 | 9 1/2 |
| 6" Series D & E | 14 | 16 | 20 1/2 | 14 |
| 8" Series E | 17 1/2 | 20 1/2 | 25 | 17 1/2 |

BEFORE

AFTER



DESTINATION DIRECTIONAL ARROW
FOR DETOUR SIGNS

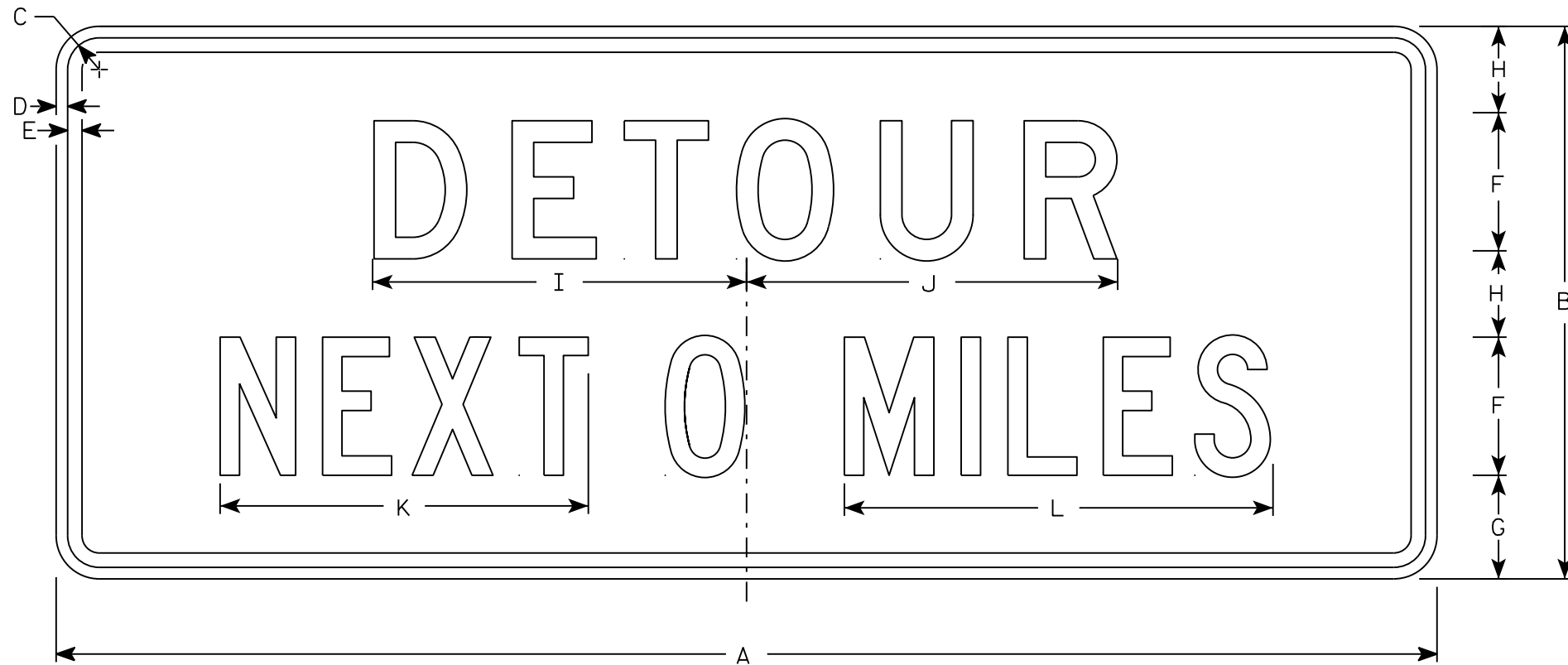
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 10/08/14 PLATE NO. A4-12.2

NOTES

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



G20-51

7

7

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

STANDARD SIGN
G20-51

WISCONSIN DEPT OF TRANSPORTATION

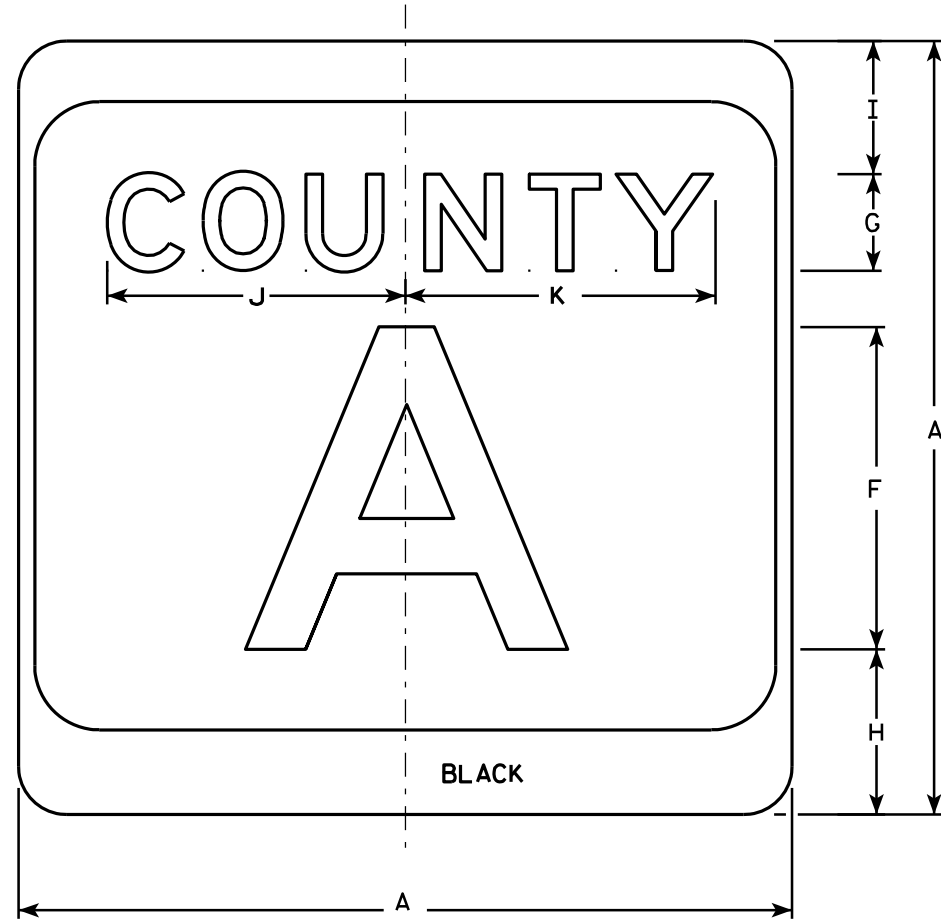
APPROVED *Matthew R Rauch*
for State Traffic Engineer

DATE 3/14/17 PLATE NO. G20-51.2

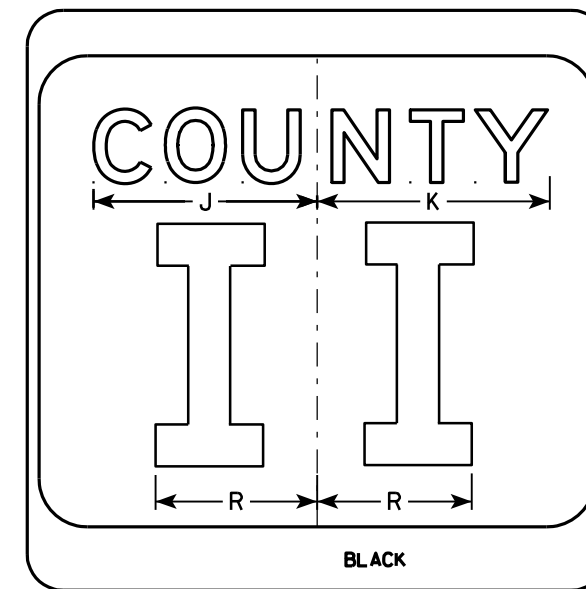
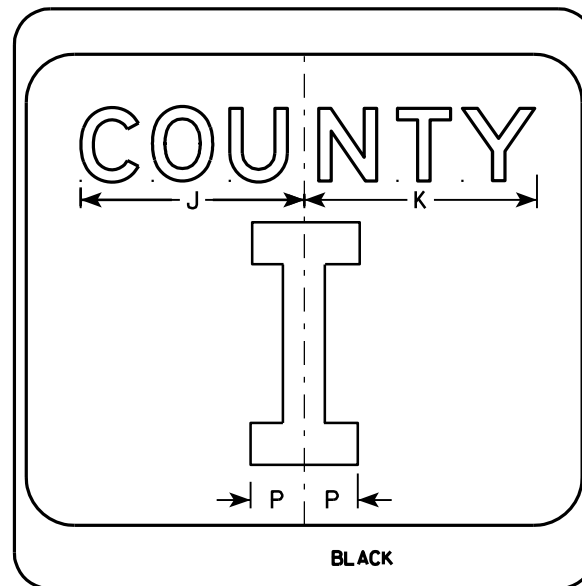
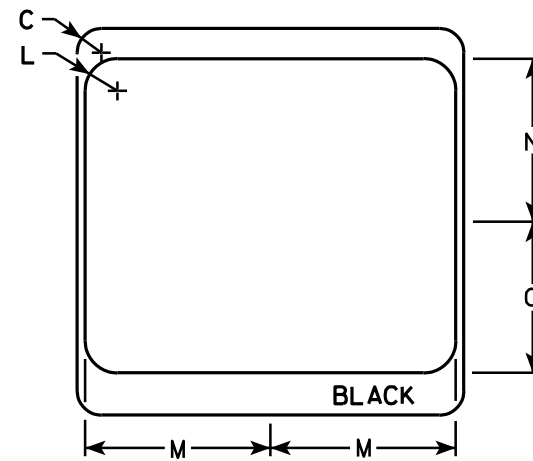
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

NOTES

1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White & Black - See Note 7
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. Message Series E for 1 letter.
Message Series D for 2 letters unless message is too big then Series C.
Message Series C for 3 letters unless message is too big then Series B.
6. Substitute appropriate letters & optically center to achieve proper balance.
7. Permanent Signs
Background - Type H Reflective
Detour or temporary Signs
Background - Reflective



M1-5A



7

7

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|---|-------|---|---|----|---|-------|-------|--------|--------|---|--------|--------|-------|-------|---|-------|---|---|---|---|---|---|---|---|--------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 24 | | 1 1/2 | | | 10 | 3 | 5 1/8 | 4 1/8 | 9 1/4 | 9 5/8 | 2 | 11 1/2 | 10 1/8 | 9 3/8 | 2 1/4 | | 6 5/8 | | | | | | | | | 4.0 |
| 3 | 36 | | 2 1/4 | | | 16 | 4 | 7 5/8 | 5 5/8 | 12 1/4 | 12 7/8 | 3 | 17 1/8 | 15 1/4 | 14 | 3 3/8 | | 10 | | | | | | | | | 9.0 |
| 4 | 36 | | 2 1/4 | | | 16 | 4 | 7 5/8 | 5 5/8 | 12 1/4 | 12 7/8 | 3 | 17 1/8 | 15 1/4 | 14 | 3 3/8 | | 10 | | | | | | | | | 9.0 |
| 5 | 36 | | 2 1/4 | | | 16 | 4 | 7 5/8 | 5 5/8 | 12 1/4 | 12 7/8 | 3 | 17 1/8 | 15 1/4 | 14 | 3 3/8 | | 10 | | | | | | | | | 9.0 |

CTH MARKER
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

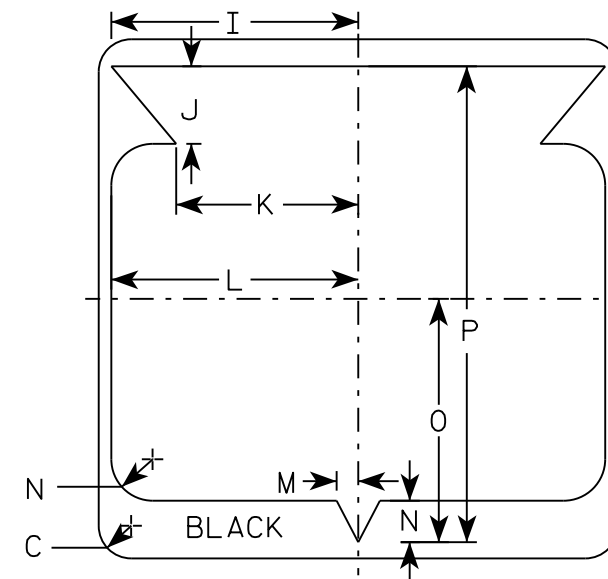
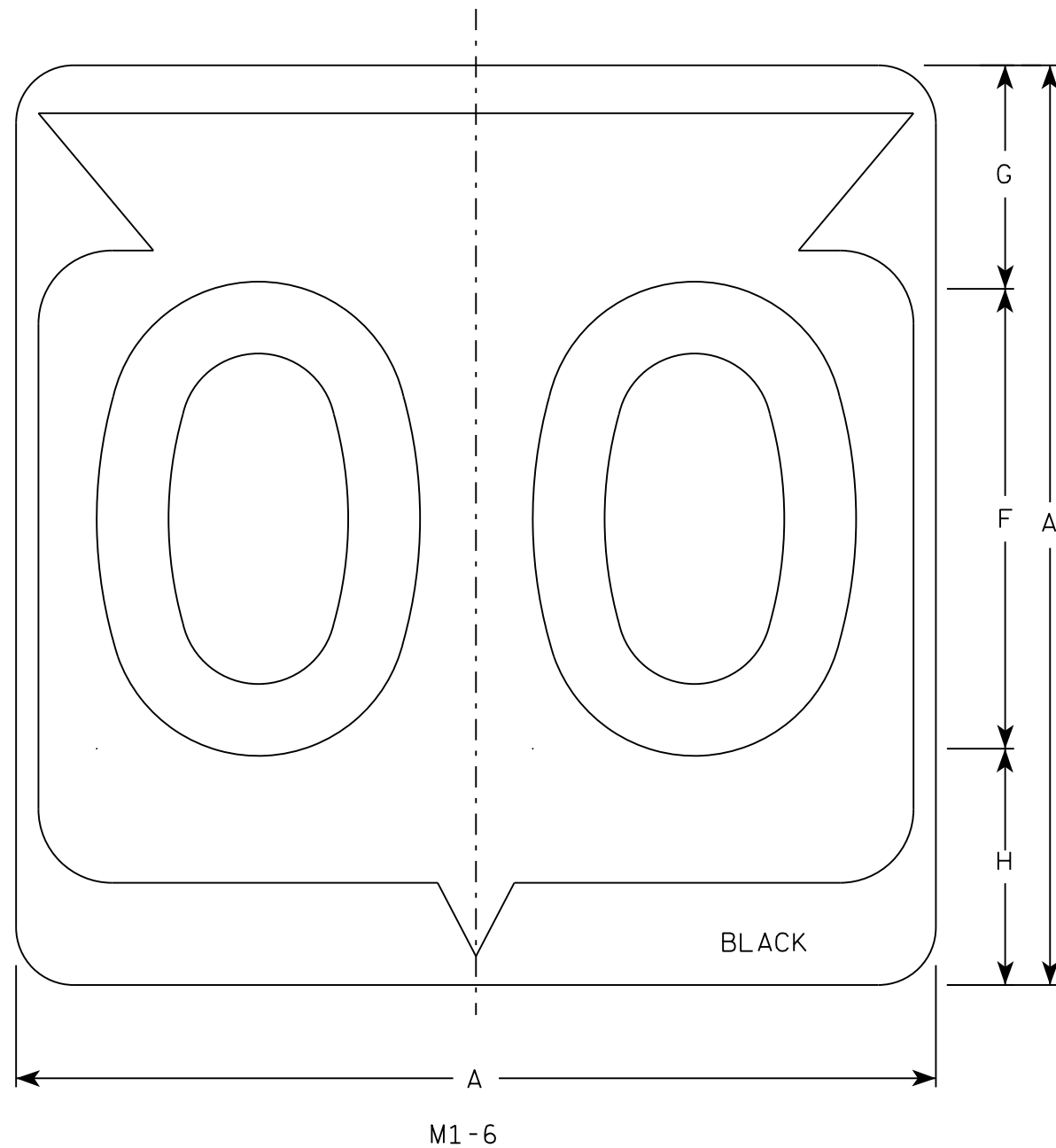
APPROVED *Matthew R. Raub*
For State Traffic Engineer

DATE 9/27/11 PLATE NO. MI-5A.8

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

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - D except 3 number signs 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.



7

7

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|---|-------|---|---|----|-------|-------|--------|-------|--------|--------|-------|-------|--------|--------|---|---|---|---|---|---|---|---|---|---|--------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 24 | | 1 1/2 | | | 12 | 5 1/2 | 6 1/2 | 10 1/4 | 2 1/2 | 8 7/8 | 11 1/2 | 1 | 1 7/8 | 11 1/4 | 21 7/8 | | | | | | | | | | | 4.0 |
| 3 | 36 | | 2 1/4 | | | 18 | 8 3/4 | 9 1/4 | 15 3/8 | 5 3/8 | 12 5/8 | 17 1/8 | 1 1/2 | 2 7/8 | 16 7/8 | 33 | | | | | | | | | | | 9.0 |
| 4 | 36 | | 2 1/4 | | | 18 | 8 3/4 | 9 1/4 | 15 3/8 | 5 3/8 | 12 5/8 | 17 1/8 | 1 1/2 | 2 7/8 | 16 7/8 | 33 | | | | | | | | | | | 9.0 |
| 5 | 36 | | 2 1/4 | | | 18 | 8 3/4 | 9 1/4 | 15 3/8 | 5 3/8 | 12 5/8 | 17 1/8 | 1 1/2 | 2 7/8 | 16 7/8 | 33 | | | | | | | | | | | 9.0 |

STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

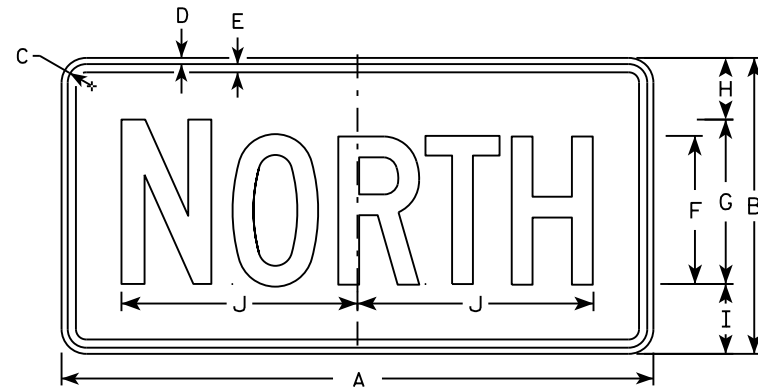
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/16/18 PLATE NO. M1-6.10

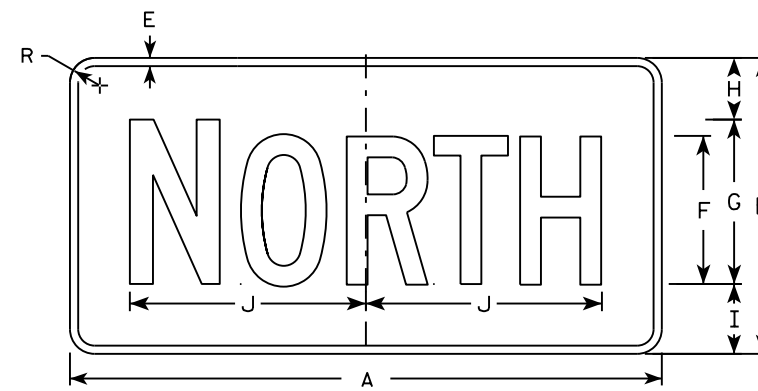
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E

NOTES

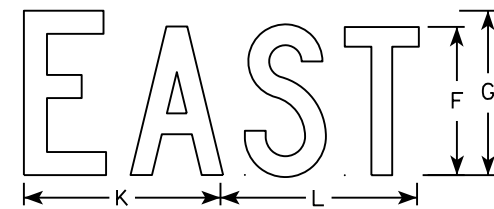
- All Signs Type II - Type H
- Color:
 - Background - See note 5
 - Message - See note 5
- Message Series - C
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M3-1 thru M3-4 Background - White
 Message - Black
 MB3-1 thru MB3-4 Background - Blue
 Message - White
 MK3-1 thru MK3-4 Background - Green
 Message - White
 MM3-1 thru MM3-4 Background - White
 Message - Green
 MN3-1 thru MN3-4 Background - Brown
 Message - White
 MP3-1 thru MP3-4 Background - White
 Message - Blue
- Note the first letter of each direction is larger than the remainder of the message.



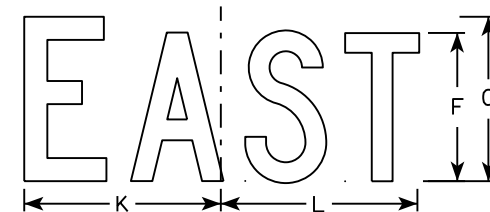
M3-1
MM3-1
MP3-1



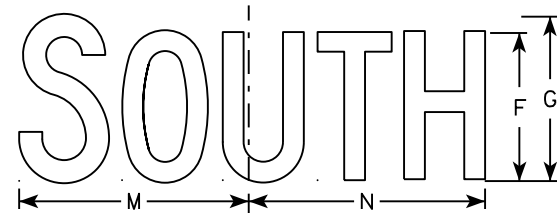
MB3-1
MK3-1
MN3-1



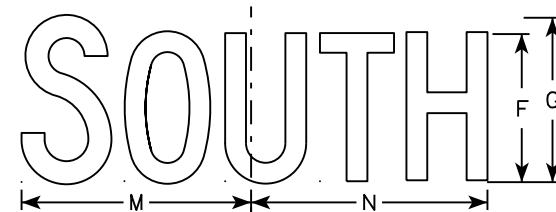
M3-2
MM3-2
MP3-2



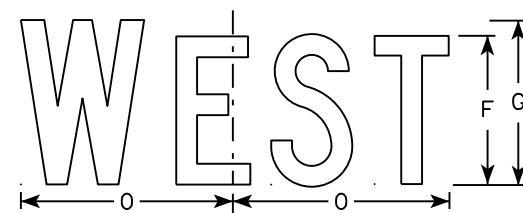
MB3-2
MK3-2
MN3-2



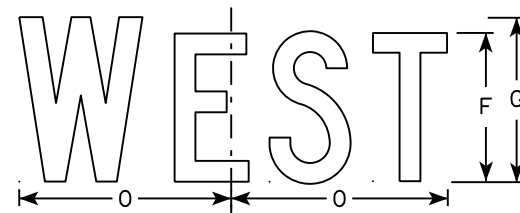
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

7

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|----|-------|-----|-----|---|----|-------|-------|--------|-------|--------|--------|--------|-------|---|---|-------|---|---|---|---|---|---|---|---|--------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 24 | 12 | 1 1/8 | 3/8 | 3/8 | 6 | 7 | 2 1/4 | 2 3/4 | 10 1/4 | 7 7/8 | 8 3/8 | 10 1/4 | 9 3/4 | 8 3/4 | | | 1 1/2 | | | | | | | | | 2.00 |
| 3 | 36 | 18 | 1 1/8 | 3/8 | 1/2 | 9 | 10 | 3 3/4 | 4 1/4 | 14 3/8 | 12 | 12 1/8 | 14 | 14 1/8 | 13 | | | 1 1/2 | | | | | | | | | 4.5 |
| 4 | 36 | 18 | 1 1/8 | 3/8 | 1/2 | 9 | 10 | 3 3/4 | 4 1/4 | 14 3/8 | 12 | 12 1/8 | 14 | 14 1/8 | 13 | | | 1 1/2 | | | | | | | | | 4.5 |
| 5 | 36 | 18 | 1 1/8 | 3/8 | 1/2 | 9 | 10 | 3 3/4 | 4 1/4 | 14 3/8 | 12 | 12 1/8 | 14 | 14 1/8 | 13 | | | 1 1/2 | | | | | | | | | 4.5 |

STANDARD SIGNS
M3-1 thru M3-4
SERIES

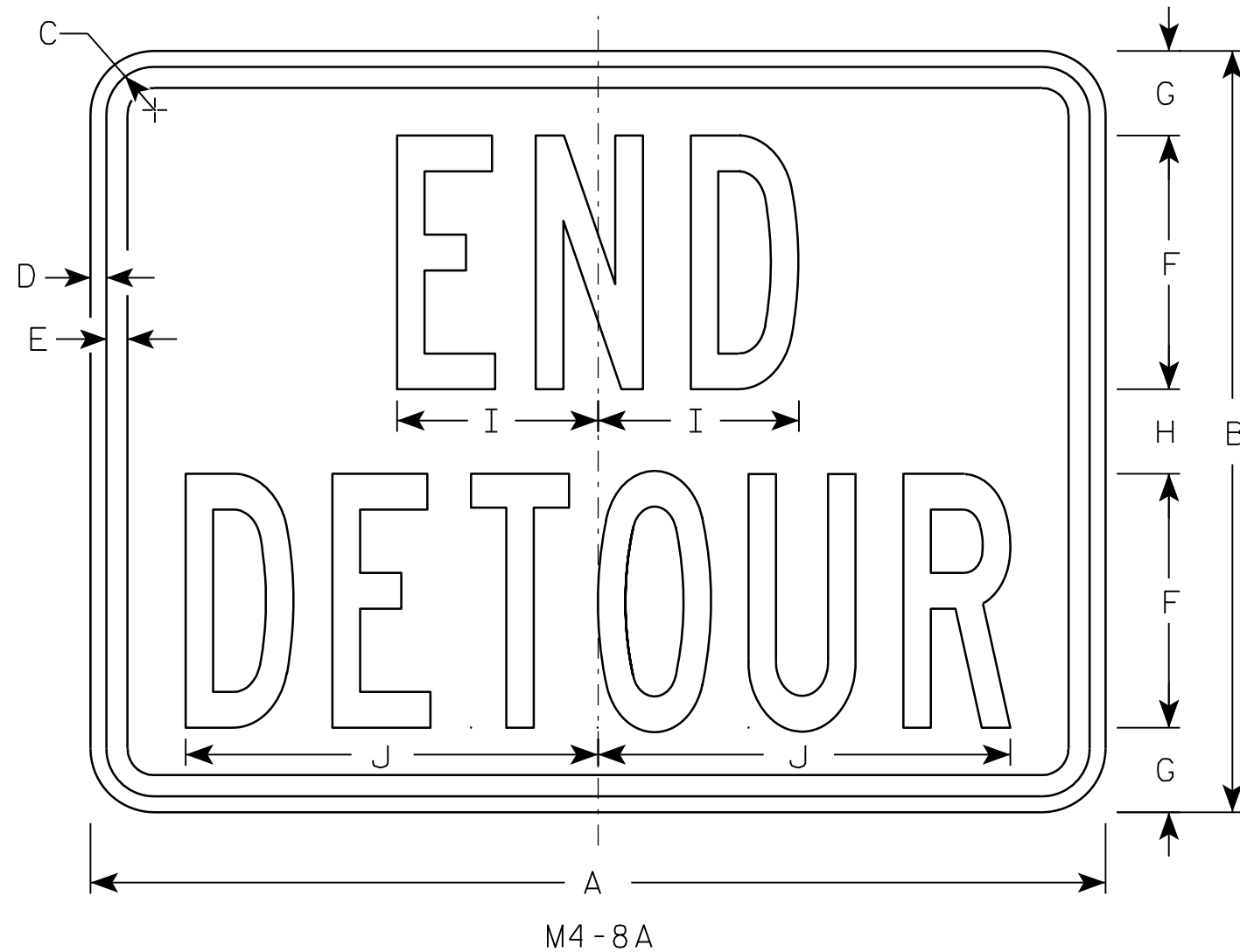
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M3-1.14

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 - B
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 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 24 | 18 | 1 1/8 | 3/8 | 1/2 | 6 | 2 | 2 | 4 3/4 | 9 3/4 | | | | | | | | | | | | | | | | | 3.0 |
| 3 | 30 | 24 | 1 1/8 | 3/8 | 1/2 | 8 | 2 1/2 | 3 | 6 3/4 | 13 | | | | | | | | | | | | | | | | | 5.0 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

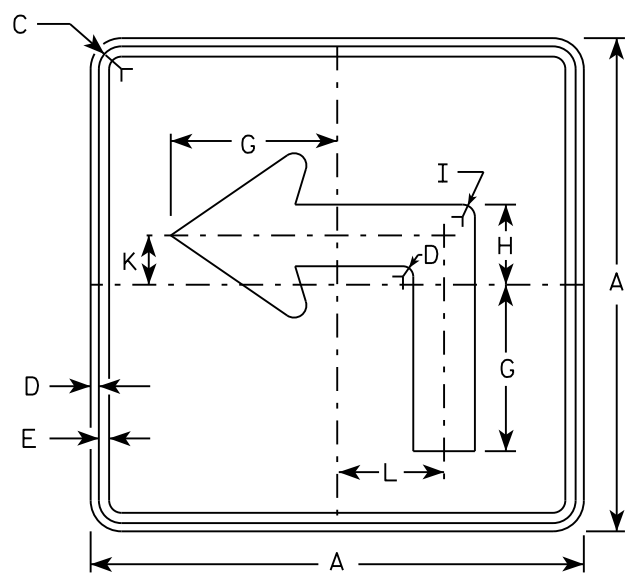
STANDARD SIGN
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

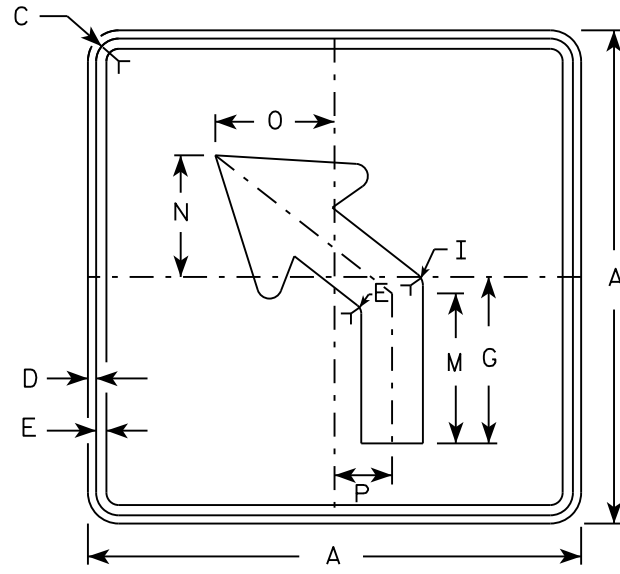
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/9/11 PLATE NO. M4-8A.2

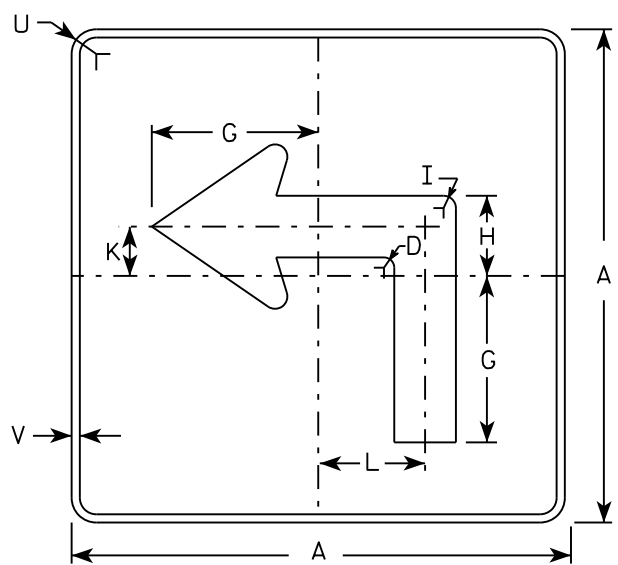
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**



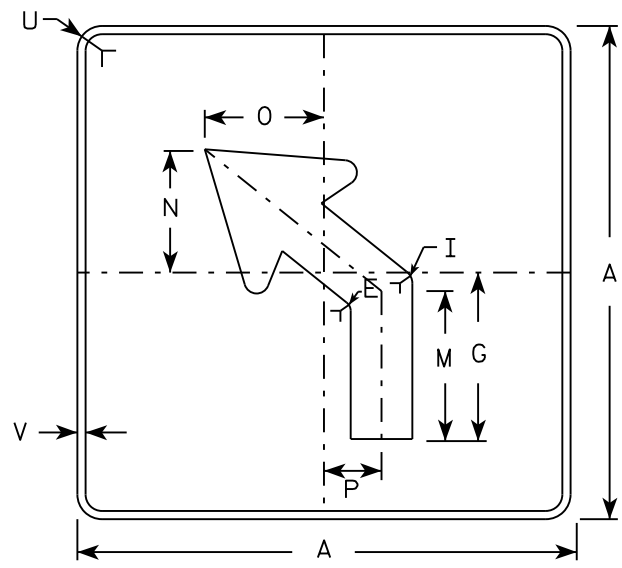
M5-1L
MM5-1L
M05-1L
MP5-1L



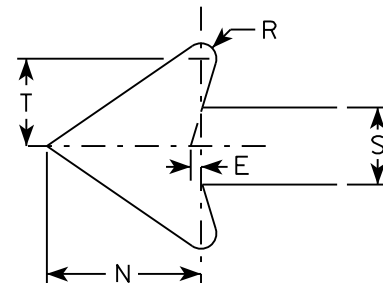
M5-2L
MM5-2L
M05-2L
MP5-2L



MB5-1L
MK5-1L
MN5-1L
MR5-1L



MB5-2L
MK5-2L
MN5-2L
MR5-2L



NOTES

- Signs are Type II - Type H reflective except as shown
- Color:
 - Background - See note 4
 - Message - See note 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.
- M5-1 and M5-2 Background - White
Message - Black
 - MB5-1 and MB5-2 Background - Blue
Message - White
 - MK5-1 and MK5-2 Background - Green
Message - White
 - MM5-1 and MM5-2 Background - White
Message - Green
 - MN5-1 and MN5-2 Background - Brown
Message - White
 - M05-1 and M05-2 Background - Orange - Type F Reflective
Message - Black
 - MP5-1 and MP5-2 Background - White - Type H Reflective
Message - Blue
 - MR5-1 and MR5-2 Background - Brown
Message - Yellow
- M5-1R same as M5-1L except arrow points right.
- M5-2R same as M5-2L except arrow tilts right.

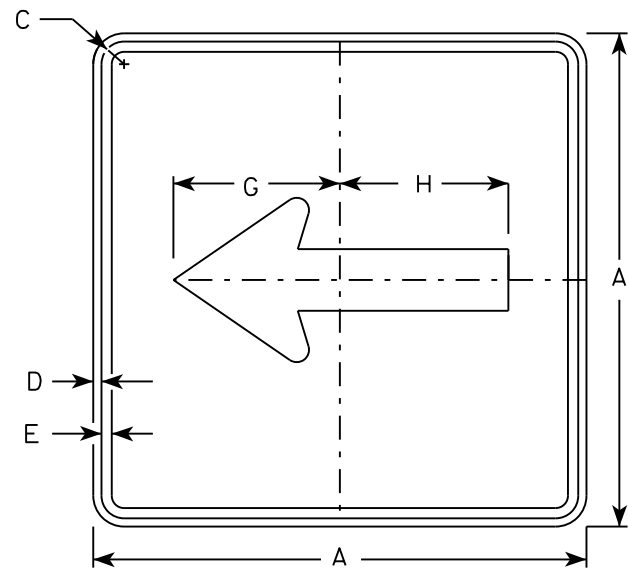
| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|---|-------|-----|-----|---|--------|-------|-----|---|-------|-------|-------|-------|-------|-------|---|-----|-------|-------|-------|-----|---|---|---|---|--------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 21 | | 1 1/8 | 3/8 | 3/8 | | 7 | 3 3/8 | 5/8 | | 2 1/8 | 4 1/2 | 6 3/8 | 5 1/4 | 5 | 2 1/2 | | 1/2 | 2 5/8 | 3 | 1 1/2 | 1/2 | | | | | 3.06 |
| 3 | 30 | | 1 3/8 | 1/2 | 5/8 | | 10 1/8 | 4 7/8 | 7/8 | | 3 | 6 1/2 | 9 1/8 | 7 1/2 | 7 1/4 | 3 1/2 | | 3/4 | 3 3/4 | 4 1/4 | 1 7/8 | 1/2 | | | | | 6.25 |
| 4 | 30 | | 1 3/8 | 1/2 | 5/8 | | 10 1/8 | 4 7/8 | 7/8 | | 3 | 6 1/2 | 9 1/8 | 7 1/2 | 7 1/4 | 3 1/2 | | 3/4 | 3 3/4 | 4 1/4 | 1 7/8 | 1/2 | | | | | 6.25 |
| 5 | 30 | | 1 3/8 | 1/2 | 5/8 | | 10 1/8 | 4 7/8 | 7/8 | | 3 | 6 1/2 | 9 1/8 | 7 1/2 | 7 1/4 | 3 1/2 | | 3/4 | 3 3/4 | 4 1/4 | 1 7/8 | 1/2 | | | | | 6.25 |

STANDARD SIGN
M5-1 & M5-2

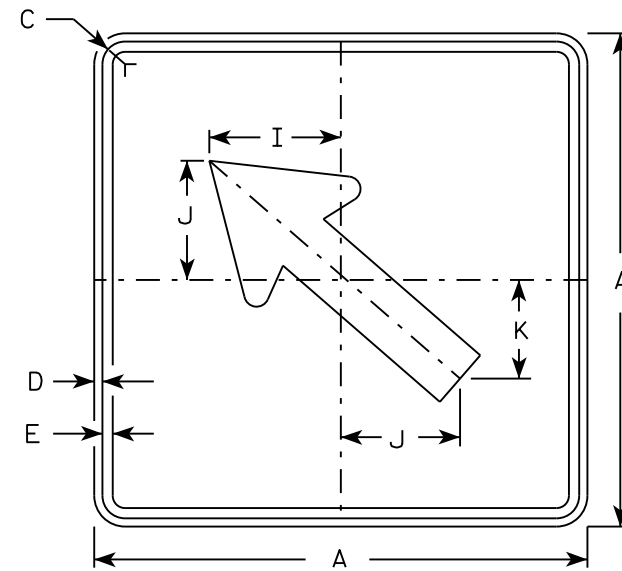
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

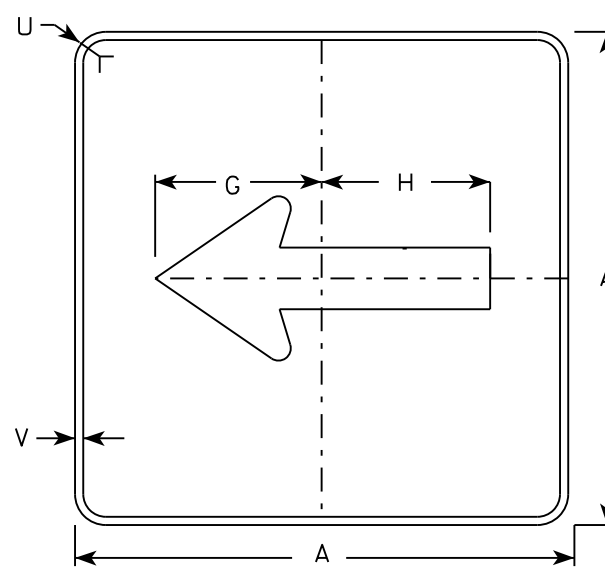
DATE 10/15/15 PLATE NO. M5-1.13



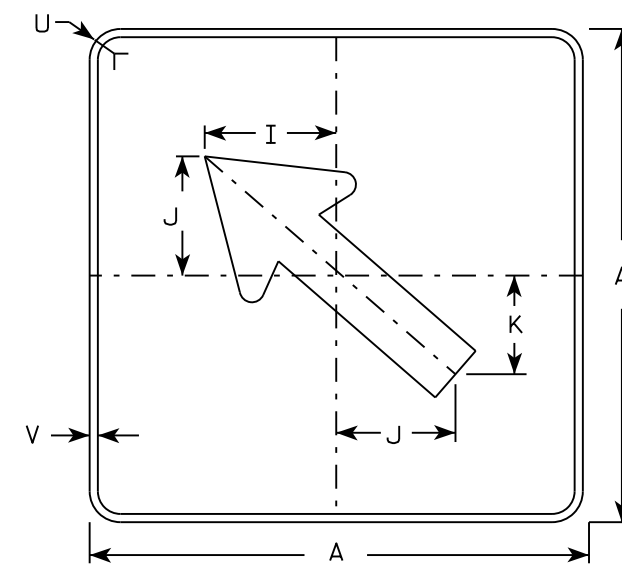
M6-1
MM6-1
M06-1
MP6-1



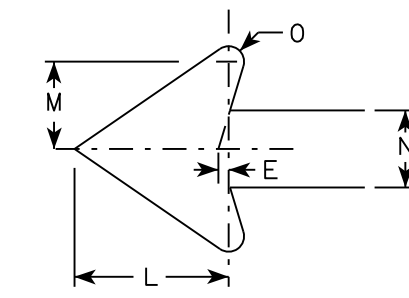
M6-2
MM6-2
M06-2
MP6-2



MB6-1
MK6-1
MN6-1
MR6-1



MB6-2
MK6-2
MN6-2
MR6-2



NOTES

- Signs are Type II - Type H except as Shown
- Color:
Background - See note 4
Message - See note 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.
- M6-1 and M6-2 Background - White
Message - Black
MB6-1 and MB6-2 Background - Blue
Message - White
MK6-1 and MK6-2 Background - Green
Message - White
MM6-1 and MM6-2 Background - White
Message - Green
MN6-1 and MN6-2 Background - Brown
Message - White
M06-1 and M06-2 Background - Orange - Type F Reflective
Message - Black
MP6-1 and MP6-2 Background - White
Message - Blue
MR6-1 and MR6-2 Background - Brown
Message - Yellow

7

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|---|-------|-----|-----|---|--------|--------|-------|-------|-------|-------|-------|-------|-----|---|---|---|---|---|-------|-----|---|---|---|---|--------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 21 | | 1 1/8 | 3/8 | 3/8 | | 7 1/2 | 7 1/8 | 5 5/8 | 5 | 4 1/4 | 5 1/4 | 3 | 2 5/8 | 1/2 | | | | | | 1 1/2 | 1/2 | | | | | 3.06 |
| 3 | 30 | | 1 3/8 | 1/2 | 5/8 | | 10 3/4 | 10 1/4 | 8 | 7 1/4 | 6 | 7 1/2 | 4 1/4 | 3 3/4 | 3/4 | | | | | | 1 7/8 | 1/2 | | | | | 6.25 |
| 4 | 30 | | 1 3/8 | 1/2 | 5/8 | | 10 3/4 | 10 1/4 | 8 | 7 1/4 | 6 | 7 1/2 | 4 1/4 | 3 3/4 | 3/4 | | | | | | 1 7/8 | 1/2 | | | | | 6.25 |
| 5 | 30 | | 1 3/8 | 1/2 | 5/8 | | 10 3/4 | 10 1/4 | 8 | 7 1/4 | 6 | 7 1/2 | 4 1/4 | 3 3/4 | 3/4 | | | | | | 1 7/8 | 1/2 | | | | | 6.25 |

STANDARD SIGN
M6-1 & M6-2
SERIES

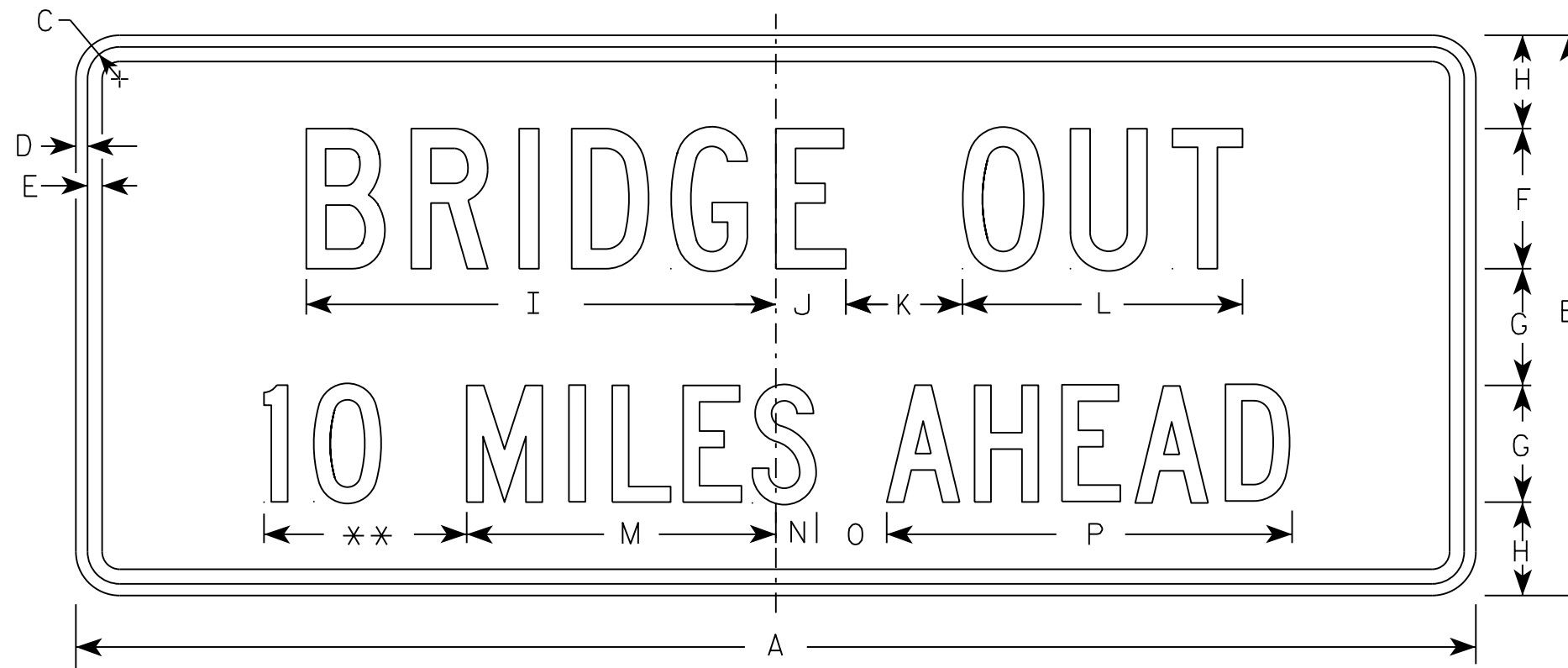
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/15/15 PLATE NO. M6-1.15

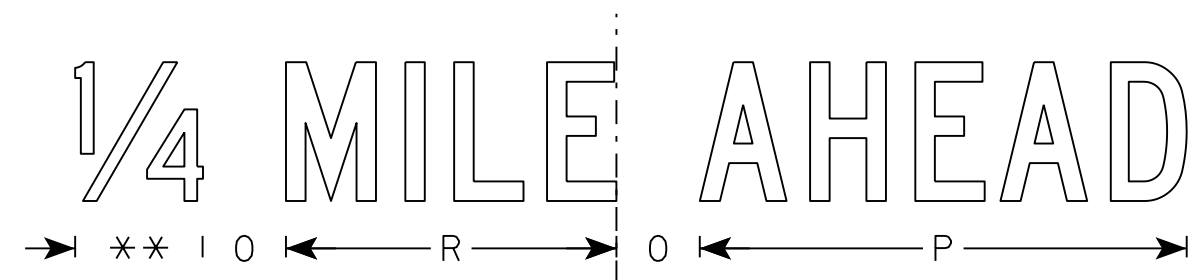
NOTES

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



R11-3C

** See Note 5



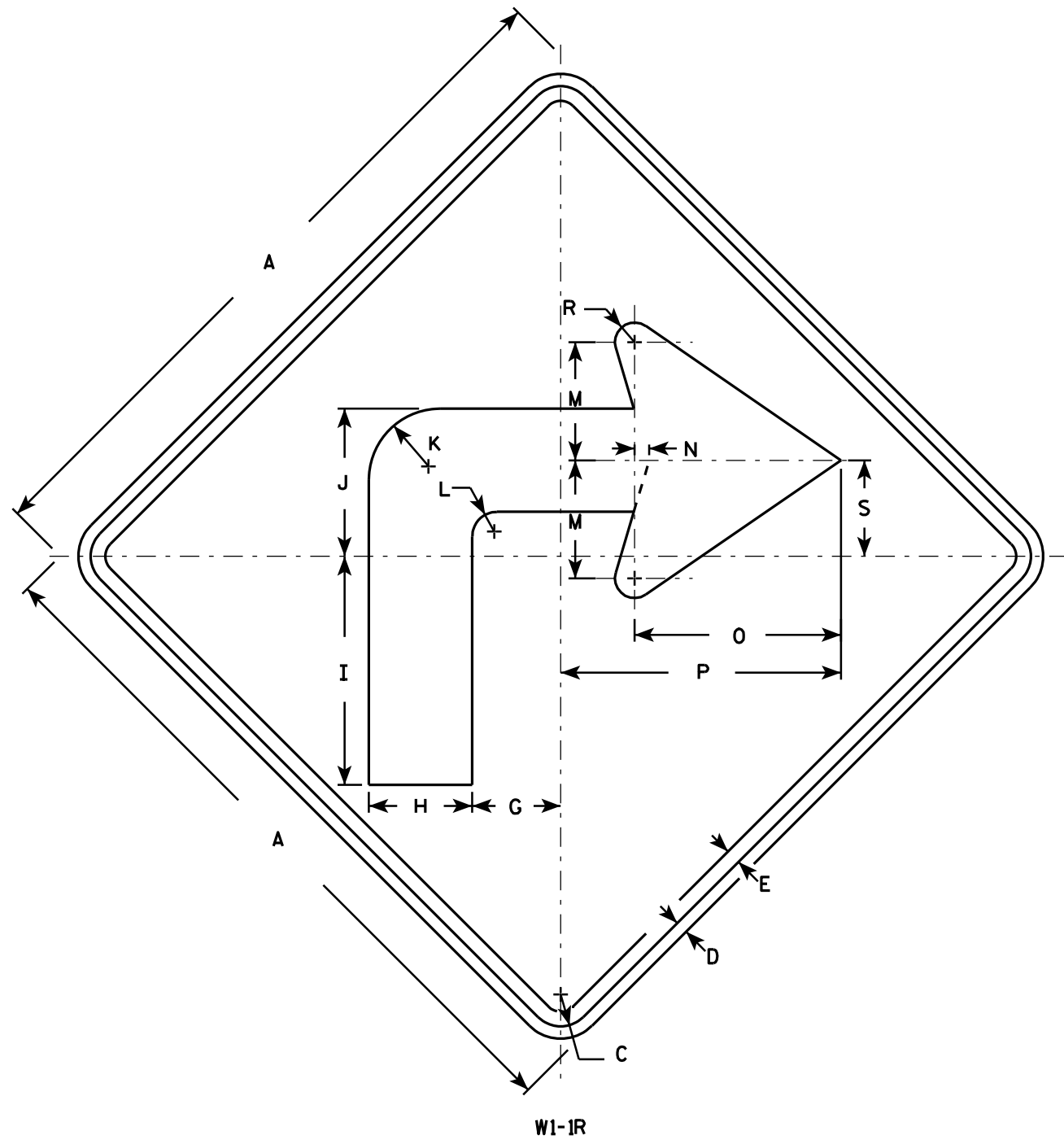
| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|----|-------|-----|-----|---|---|-------|--------|-------|---|----|--------|-------|---|--------|---|--------|---|---|---|---|---|---|---|---|--------------|
| 1 | 36 | 15 | 1 3/8 | 1/2 | 5/8 | 4 | 3 | 2 1/2 | 13 1/4 | 2 1/4 | 3 | 8 | 8 | 1 1/2 | 2 | 10 3/4 | | 7 1/8 | | | | | | | | | 3.75 |
| 2S | 60 | 24 | 1 3/8 | 1/2 | 5/8 | 6 | 5 | 4 | 20 1/8 | 3 | 5 | 12 | 13 1/4 | 1 3/4 | 3 | 17 3/8 | | 11 7/8 | | | | | | | | | 10.0 |
| 2M | 60 | 24 | 1 3/8 | 1/2 | 5/8 | 6 | 5 | 4 | 20 1/8 | 3 | 5 | 12 | 13 1/4 | 1 3/4 | 3 | 17 3/8 | | 11 7/8 | | | | | | | | | 10.0 |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STANDARD SIGN
R11-3C

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 7/28/16 PLATE NO. R11-3C.3



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.
4. W1-1L is the same as W1-1R except the arrow is reversed along the vertical centerline.

7

7

W1-1R

| 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 | | 3 | 3 1/2 | 7 3/4 | 5 | 2 1/2 | 7/8 | 4 | 1/2 | 7 | 9 1/2 | | 5/8 | 3 1/4 | | | | | | | | 4.0 |
| 2S | 36 | | 1 5/8 | 5/8 | 3/4 | | 4 1/2 | 5 1/4 | 11 5/8 | 7 1/2 | 3 5/8 | 1 1/4 | 6 | 3/4 | 10 1/2 | 14 1/4 | | 1 | 4 7/8 | | | | | | | | 9.0 |
| 2M | 36 | | 1 5/8 | 5/8 | 3/4 | | 4 1/2 | 5 1/4 | 11 5/8 | 7 1/2 | 3 5/8 | 1 1/4 | 6 | 3/4 | 10 1/2 | 14 1/4 | | 1 | 4 7/8 | | | | | | | | 9.0 |
| 3 | 36 | | 1 5/8 | 5/8 | 3/4 | | 4 1/2 | 5 1/4 | 11 5/8 | 7 1/2 | 3 5/8 | 1 1/4 | 6 | 3/4 | 10 1/2 | 14 1/4 | | 1 | 4 7/8 | | | | | | | | 9.0 |
| 4 | 48 | | 2 1/4 | 3/4 | 1 | | 6 | 7 | 15 1/2 | 10 | 4 7/8 | 1 5/8 | 8 | 1 | 14 | 19 | | 1 1/4 | 6 1/2 | | | | | | | 16.0 | |
| 5 | 48 | | 2 1/4 | 3/4 | 1 | | 6 | 7 | 15 1/2 | 10 | 4 7/8 | 1 5/8 | 8 | 1 | 14 | 19 | | 1 1/4 | 6 1/2 | | | | | | | 16.0 | |

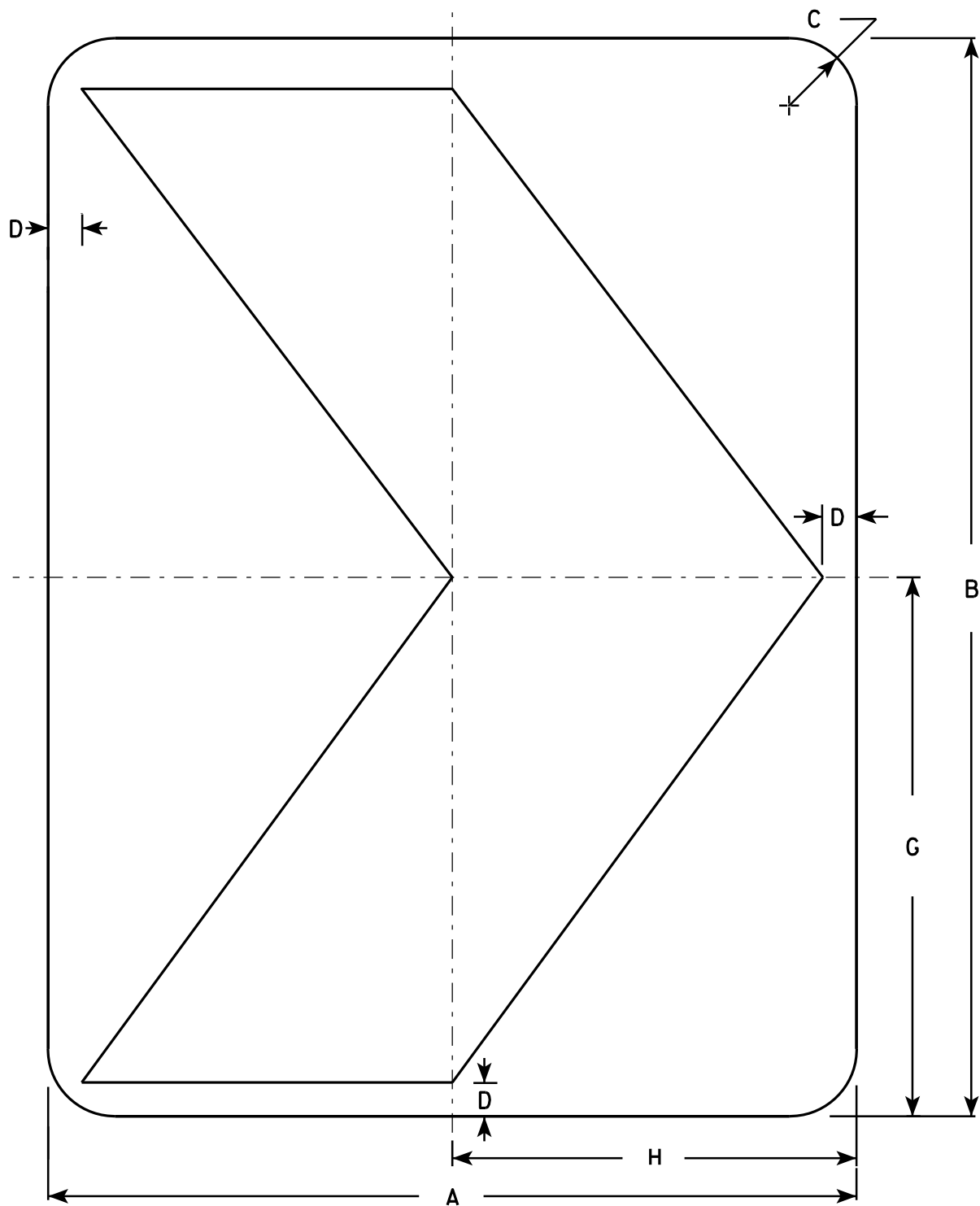
STANDARD SIGN
W1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/15/12 PLATE NO. W1-1.11

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 - 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

W1-8

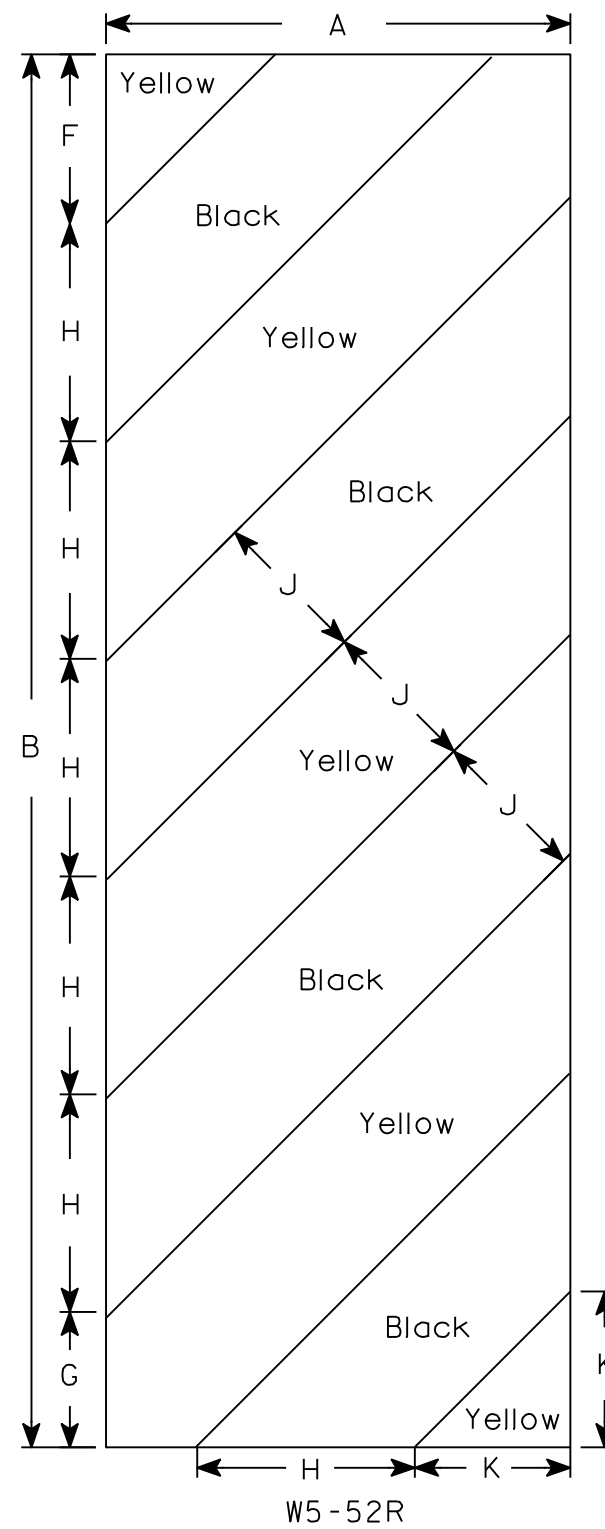
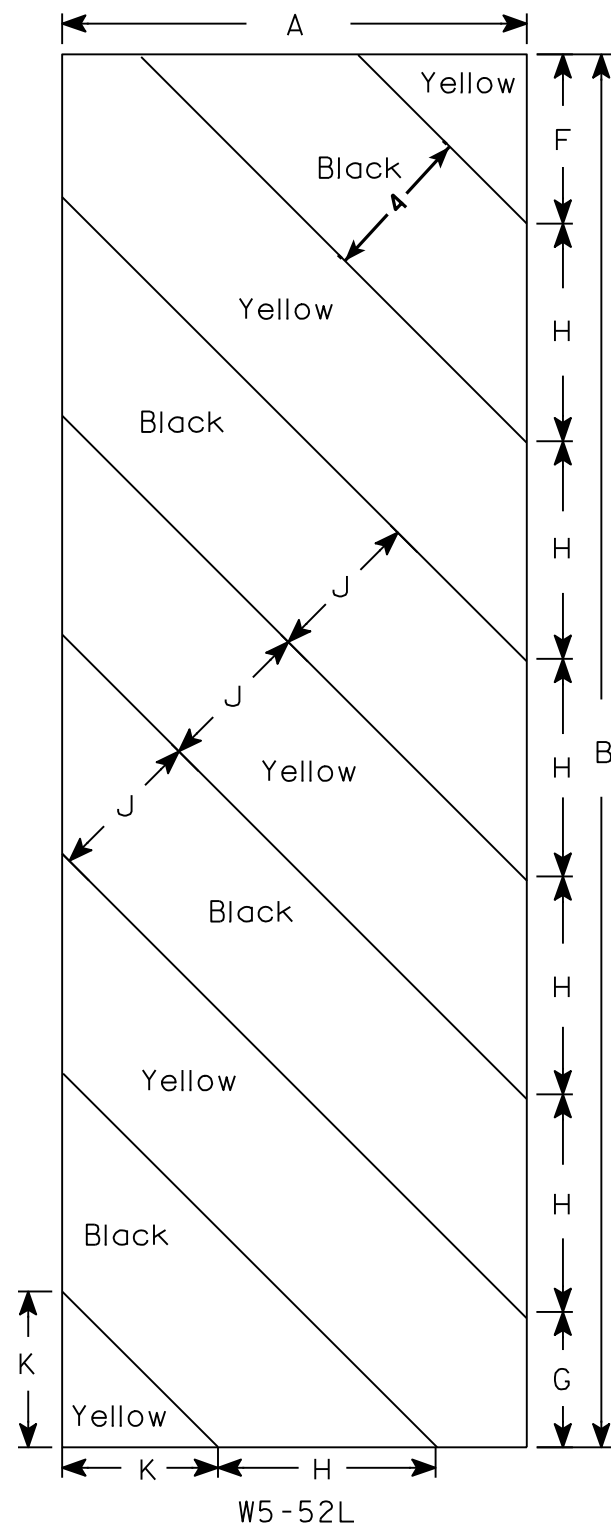
| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|----|-------|-------|---|---|----|----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--------------|
| 1 | 12 | 18 | 1 1/2 | 1/2 | | | 9 | 6 | | | | | | | | | | | | | | | | | | | 1.5 |
| 2S | 18 | 24 | 1 1/2 | 3/4 | | | 12 | 9 | | | | | | | | | | | | | | | | | | | 3.0 |
| 2M | 18 | 24 | 1 1/2 | 3/4 | | | 12 | 9 | | | | | | | | | | | | | | | | | | | 3.0 |
| 3 | 24 | 30 | 1 1/2 | 1 | | | 15 | 12 | | | | | | | | | | | | | | | | | | | 5.0 |
| 4 | 30 | 36 | 1 7/8 | 1 1/4 | | | 18 | 15 | | | | | | | | | | | | | | | | | | | 7.5 |
| 5 | 36 | 48 | 2 1/4 | 1 1/2 | | | 24 | 18 | | | | | | | | | | | | | | | | | | | 12.0 |

STANDARD SIGN
W1-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W1-8.6



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.
4. Alternate colors of stripes as shown.

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 | 12 | 36 | | | | 4 3/8 | 3 1/2 | 5 5/8 | 45° | 4 | 4 | | | | | | | | | | | | | | | | 3.0 |
| 2M | 12 | 36 | | | | 4 3/8 | 3 1/2 | 5 5/8 | 45° | 4 | 4 | | | | | | | | | | | | | | | | 3.0 |
| 3 | 18 | 54 | | | | 6 | 5 1/2 | 8 1/2 | 45° | 6 | 6 9/16 | | | | | | | | | | | | | | | | 6.75 |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

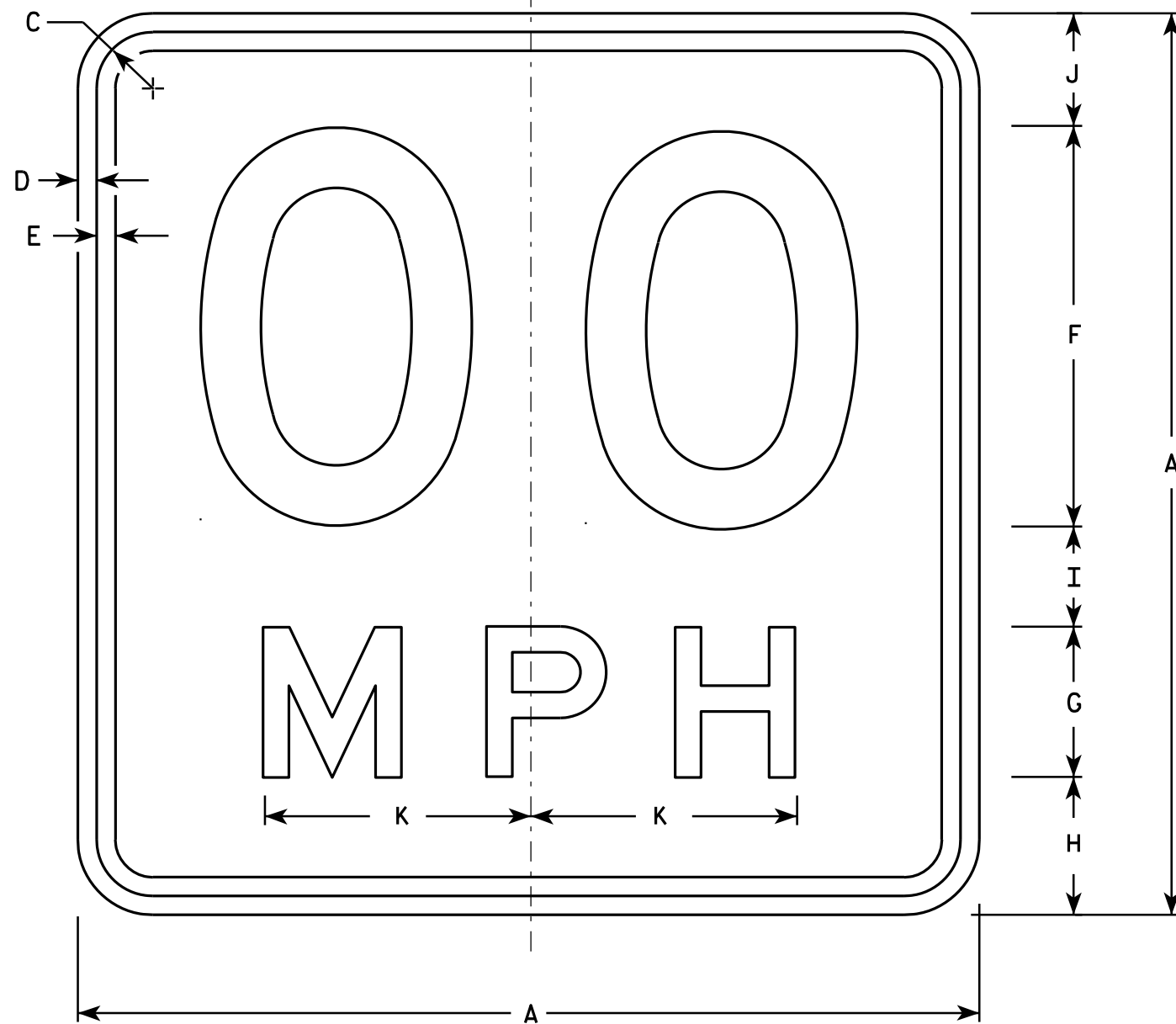
STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W5-52.9

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 - Yellow
Message - Black
3. Message Series - See Note 6
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 space about centerline to achieve proper balance.
6. Line 1 is Series D
Line 2 is Series E

W13-1

* For 30" x 30" Warning Signs, use 18" x 18" W13-1 signs.
For 36" x 36" Warning Signs, use 24" x 24" W13-1 signs.

| 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 | | 1 1/8 | 3/8 | 3/8 | 8 | 3 | 2 3/4 | 2 | 2 1/4 | 5 3/8 | | | | | | | | | | | | | | | | 2.25 |
| * 2S | 18 | | 1 1/8 | 3/8 | 3/8 | 8 | 3 | 2 3/4 | 2 | 2 1/4 | 5 3/8 | | | | | | | | | | | | | | | | 2.25 |
| * 2M | 18 | | 1 1/8 | 3/8 | 3/8 | 8 | 3 | 2 3/4 | 2 | 2 1/4 | 5 3/8 | | | | | | | | | | | | | | | | 2.25 |
| 3 | 24 | | 1 1/8 | 3/8 | 1/2 | 10 | 4 | 4 | 2 3/4 | 3 1/4 | 6 5/8 | | | | | | | | | | | | | | | | 4.00 |
| 4 | 36 | | 1 5/8 | 5/8 | 3/4 | 16 | 6 | 5 1/2 | 4 | 4 1/2 | 10 5/8 | | | | | | | | | | | | | | | | 9.00 |
| 5 | 36 | | 1 5/8 | 5/8 | 3/4 | 16 | 6 | 5 1/2 | 4 | 4 1/2 | 10 5/8 | | | | | | | | | | | | | | | | 9.00 |

STANDARD SIGN

W13-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/31/12 PLATE NO. W13-1.16

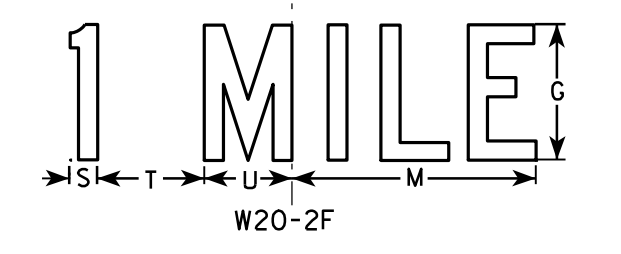
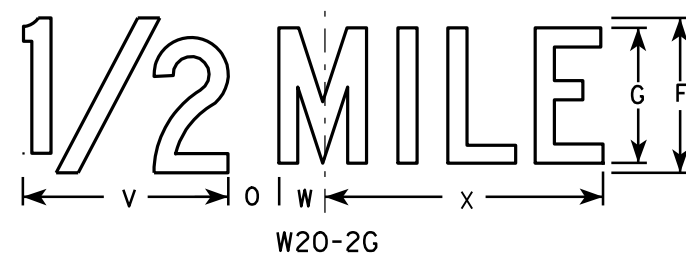
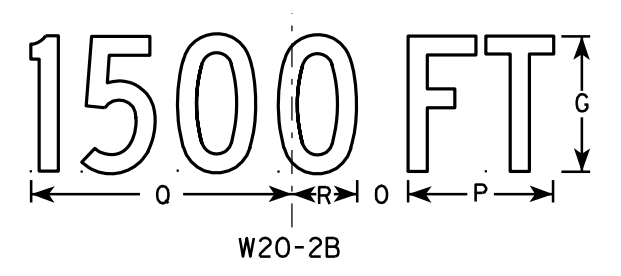
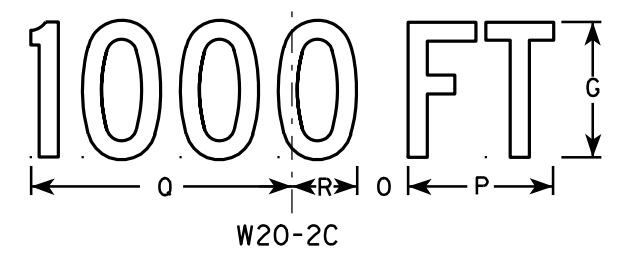
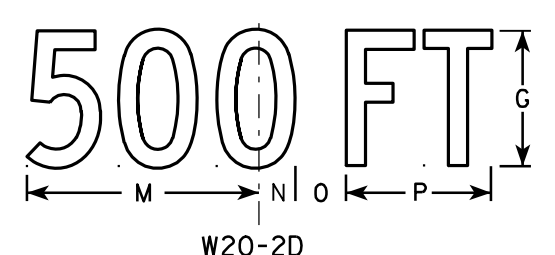
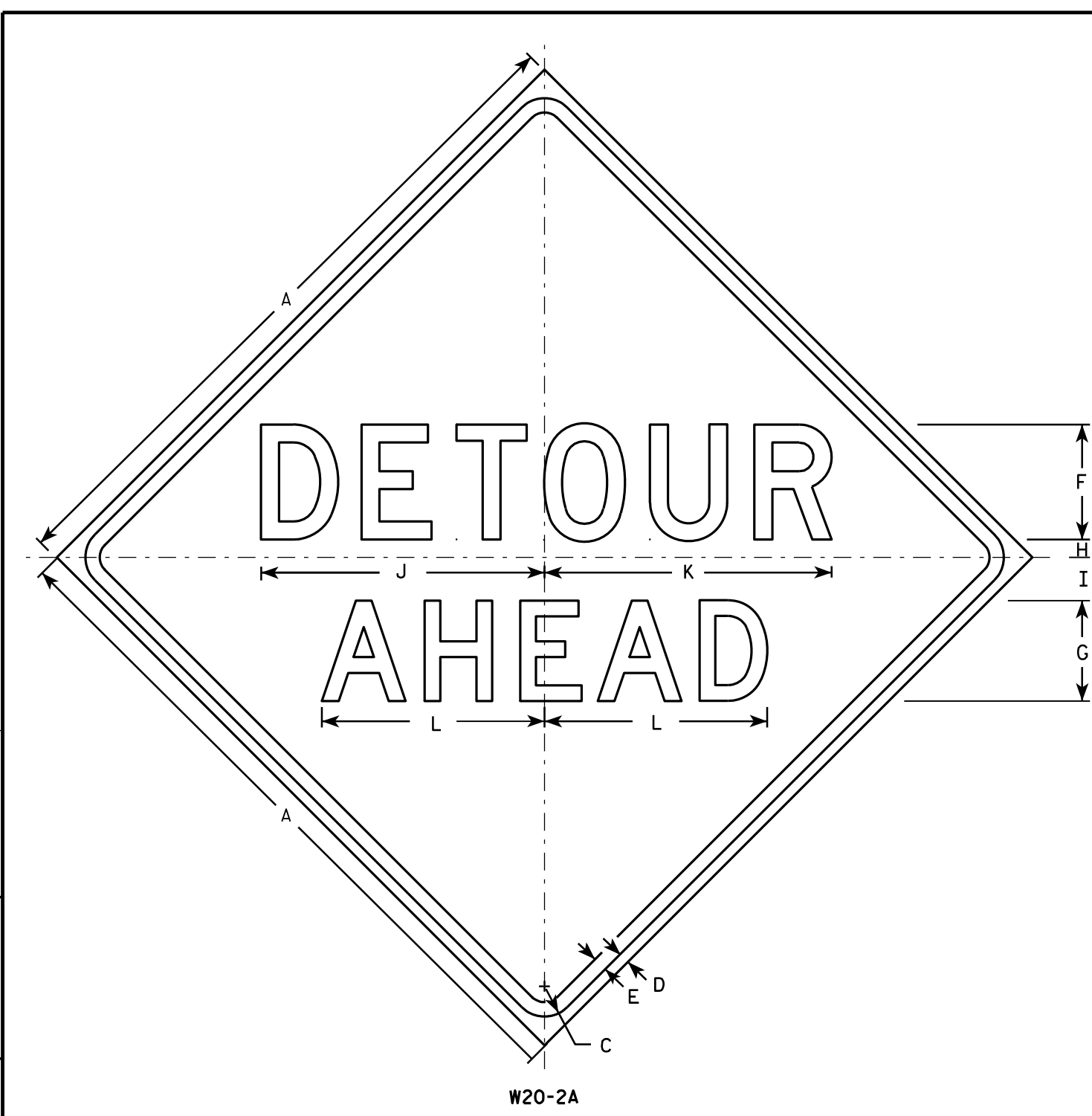
PROJECT NO:

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 - 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. Line 1 is Series D.
Line 2 is Series D for AHEAD and Series C for all other distances.

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 | 6 | 5 | 1 | 2 1/4 | 14 3/4 | 15 | 11 5/8 | 9 | 1 3/8 | 1 7/8 | 5 5/8 | 10 1/8 | 2 1/2 | 1 1/8 | 4 1/2 | 3 1/2 | 8 | 1 3/4 | 10 3/4 | | | 9.0 |
| 2S | 48 | | 2 1/4 | 3/4 | 1 | 8 | 7 | 1 1/4 | 3 | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6 | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 | | | 16.0 |
| 2M | 48 | | 2 1/4 | 3/4 | 1 | 8 | 7 | 1 1/4 | 3 | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6 | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 | | | 16.0 |
| 3 | 48 | | 2 1/4 | 3/4 | 1 | 8 | 7 | 1 1/4 | 3 | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6 | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 | | | 16.0 |
| 4 | 48 | | 2 1/4 | 3/4 | 1 | 8 | 7 | 1 1/4 | 3 | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6 | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 | | | 16.0 |
| 5 | 48 | | 2 1/4 | 3/4 | 1 | 8 | 7 | 1 1/4 | 3 | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6 | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 | | | 16.0 |

STANDARD SIGN
W20-2A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Raub*
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-2.6

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

DESIGN DATA

LIVE LOAD:
 DESIGN LOADING: HL-93
 INVENTORY RATING FACTOR: RF = 1.06
 OPERATING RATING FACTOR: RF = 1.37
 WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 250(KIPS)

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

MATERIAL PROPERTIES:

CONCRETE MASONRY:
 SUPERSTRUCTURE $f'_c = 4,000$ P.S.I.
 ALL OTHER $f'_c = 3,500$ P.S.I.

BAR STEEL REINFORCEMENT:
 GRADE 60 $f_y = 60,000$ P.S.I.

36W" PRESTRESSED GIRDERS:
 CONCRETE MASONRY $f'_c = 8,000$ P.S.I.
 STRANDS: 0.6" DIA. WITH ULTIMATE TENSILE STRENGTH OF 270,000 P.S.I.

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON $12\frac{3}{4}$ " X 0.375" PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 210 TONS ** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 75'-0" LONG AT WEST ABUTMENT. ESTIMATED 65'-0" LONG AT EAST ABUTMENT.

PIER TO BE SUPPORTED ON CIP 14" X 0.5" PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 240 TONS ** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 75'-0" LONG.

** THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

TRAFFIC VOLUME

STH 179
 ADT = 810 (2042)
 R.D.S. = 60 M.P.H.

HYDRAULIC DATA

100 YEAR FREQUENCY
 $Q_{100} = 23,150$ C.F.S.
 $Q_{BRIDGE} = 14,777$ C.F.S.
 $Q_{ROADWAY} = 8,373$ C.F.S.
 $VEL_{100} = 12.7$ F.P.S.
 $HW_{100} = EL. 670.86$
 WATERWAY AREA = 1,160 SQ. FT.
 DRAINAGE AREA = 705 SQ. MI.
 SCOUR CRITICAL CODE = 5

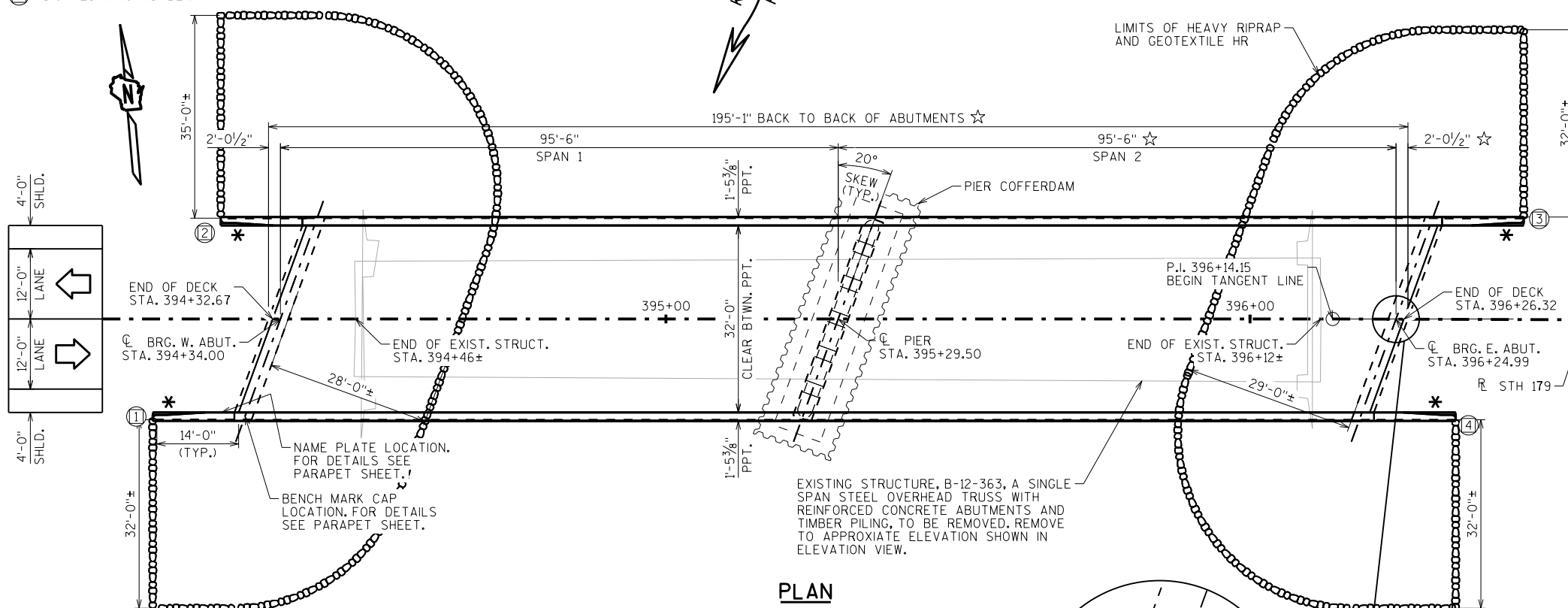
ROADWAY OVERTOPPING
 FREQUENCY = 15 YEARS
 $Q_{15} = 10,000$ C.F.S.
 $HW_{15} = EL. 668.28$

2 YEAR FREQUENCY
 $Q_2 = 2,675$ C.F.S.
 $VEL_2 = 3.7$ F.P.S.
 $HW_2 = EL. 663.92$

STRUCTURE DESIGN CONTACTS:
 DAN MONROE (608) 266-8490
 LAURA SHADEWALD (608) 267-9592

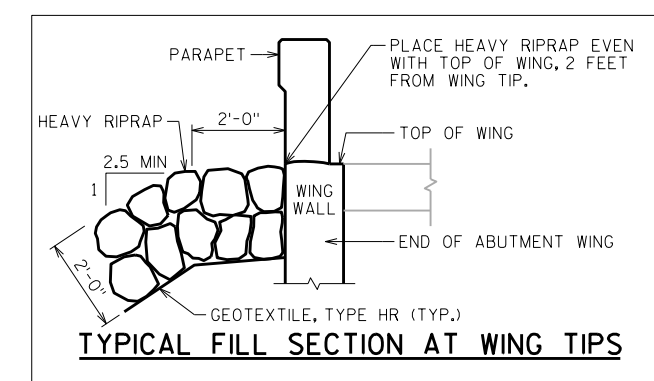
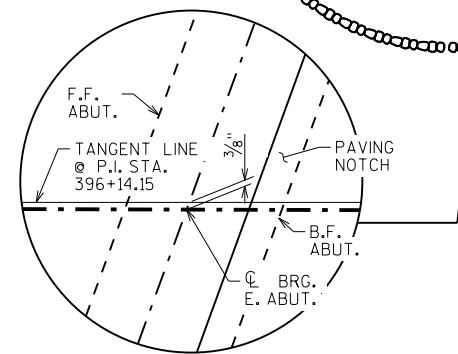
* PROVIDE FOR THREE BEAM GUARD RAIL ATTACHMENT AT UNUSED ANCHOR ASSEMBLIES CAULK HOLES SHUT WITH "100% SILICONE CAULK".
 NOTE: SURFACE DRAIN ANCHORS LOCATED AT WINGS 3 AND 4. SEE WING SHEETS FOR DETAILS.

INDICATES WING NUMBER

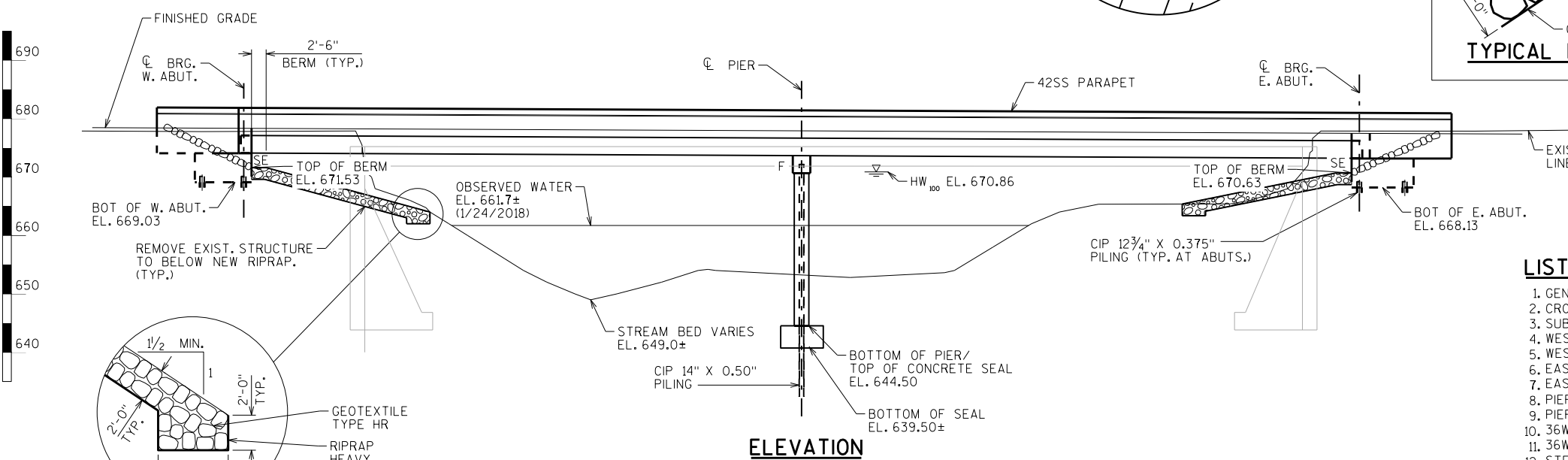


PLAN

2 SPAN 36W" PRESTRESSED CONCRETE GIRDER
 ☆ MEASURED ALONG TANGENT LINE



TYPICAL FILL SECTION AT WING TIPS



ELEVATION

NORMAL TO KICKAPOO RIVER
 LOOKING UPSTREAM

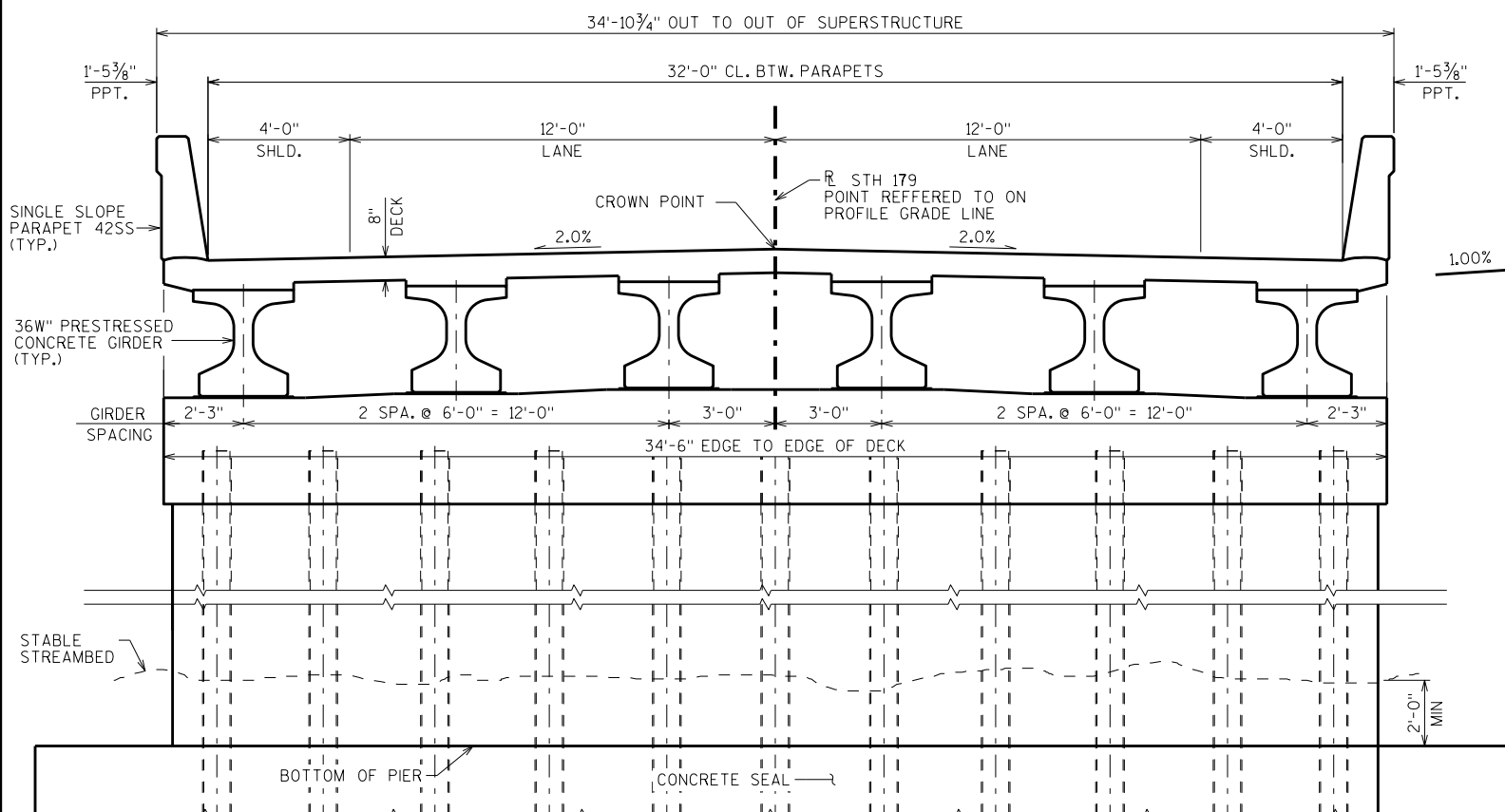
LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. WEST ABUTMENT
5. WEST ABUTMENT DETAILS
6. EAST ABUTMENT
7. EAST ABUTMENT DETAILS
8. PIER
9. PIER DETAILS
10. 36W" PRESTRESSED GIRDER DETAILS 1
11. 36W" PRESTRESSED GIRDER DETAILS 2
12. STEEL DIAPHRAGM
13. SUPERSTRUCTURE
14. SUPERSTRUCTURE DETAILS
15. SINGLE SLOPE PARAPET 42SS

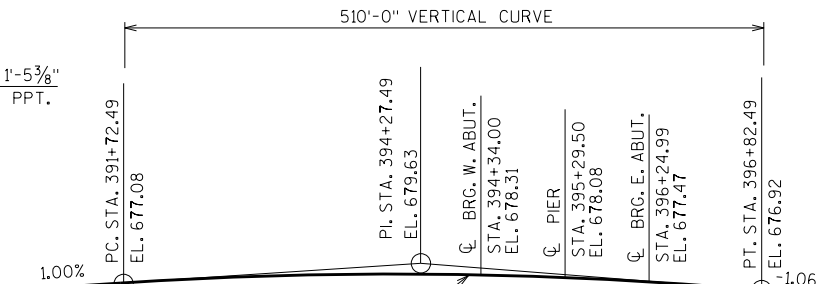
| | | | |
|---|----------------|----------|---------------|
| NO. | DATE | REVISION | BY |
| | | | |
| ACCEPTED | | DATE | |
| CHIEF STRUCTURES DESIGN ENGINEER | | 2/7/22 | |
| STRUCTURE B-12-195 | | | |
| STH 179 OVER KICKAPOO RIVER | | | |
| COUNTY | CRAWFORD | TOWN | EASTMAN |
| DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS | | | |
| DESIGNED BY | DESIGNED CK'D. | DRAWN BY | PLANS CK'D. |
| DLM | | WWR | DLM |
| GENERAL PLAN | | | SHEET 1 OF 15 |

GENERAL NOTES

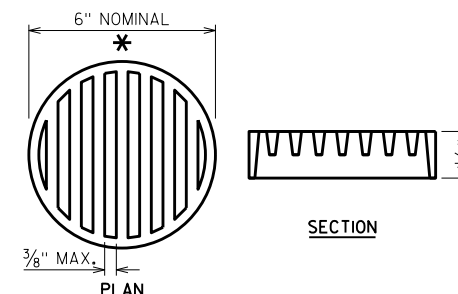
- DRAWINGS SHALL NOT BE SCALED.
- BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.
- THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.
- BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE NOTED.
- THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-12-195" SHALL BE THE EXISTING GROUNDLINE.
- AT THE BACK FACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TYPE A.
- EXCAVATION BELOW THE ABUTMENT AND ABUTMENT BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT.
- THE QUANTITY FOR BACKFILL STRUCTURE IS CALCULATED BASED ON THE DETAIL SHOWN IN THE PLANS.
- ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.
- PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE EXPOSED TOP OF DECK AND TO THE VERTICAL AND HORIZONTAL SURFACES OF THE PAVING NOTCHES AT ABUTMENT DIAPHRAGMS.
- PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND THE TOP OF THE PARAPETS, INCLUDING PARAPETS ON WINGS.
- THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE TYPE "HR" TO THE EXTENT SHOWN ON SHEET 1 AND THE ABUTMENT DETAILS.
- THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON THE "36W PRESTRESSED GIRDER DETAILS 2" SHEET.
- THE EXISTING STREAM BED SHALL BE USED AS THE UPPER LIMITS OF EXCAVATION AT THE PIERS.
- AT PIER, COFFERDAM AND COFFERDAM DEWATERING REQUIRED, COFFERDAM SHALL BE DEWATERED PRIOR TO PLACING PIER CONCRETE.



CROSS SECTION THRU ROADWAY
LOOKING UPSTATION

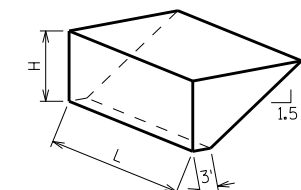


PROFILE GRADE LINE - STH 179



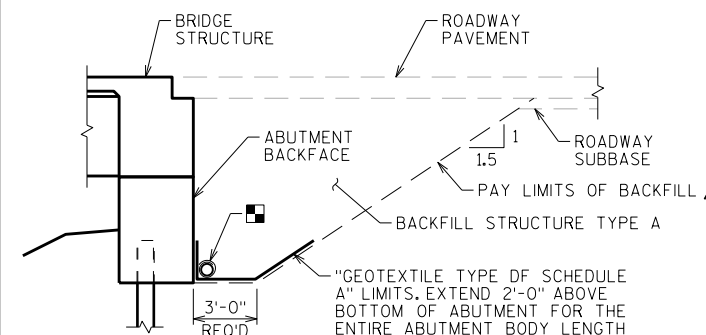
RODENT SHIELD DETAIL

- * 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.



ABUTMENT BACKFILL DIAGRAM FOR WINGS PARALLEL TO ROADWAY

- L = OUT TO OUT OF ABUTMENT, INCLUDING WINGS (FT)
- H = AVERAGE ABUTMENT FILL HEIGHT (FT)
- EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS AND 1.00 FOR TON BID ITEMS)
- $V_{CF} = (L)(3.0')(H) + (L)(0.5)(1.5H)(H)$
- $V_{CY} = V_{CF} (EF) / 27$
- $V_{TON} = V_{CY} (2.0)$



TYPICAL SECTION THRU ABUTMENT

- ▲ BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- PIPE UNDERDRAIN WRAPPED (6 INCH), SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.

TOTAL ESTIMATED QUANTITIES

| BID ITEM NUMBER | BID ITEMS | UNIT | SUPER. | WEST ABUT. | PIER | EAST ABUT. | TOTALS |
|-----------------|--|------|--------|------------|-------|------------|------------|
| 203.0260 | REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS B-12-363 | EACH | --- | --- | --- | --- | 1 |
| 206.1000 | EXCAVATION FOR STRUCTURES BRIDGES B-12-195 | LS | --- | --- | --- | --- | 1 |
| 206.5000 | COFFERDAMS B-12-195 | LS | --- | --- | --- | --- | 1 |
| 210.1500 | BACKFILL STRUCTURE TYPE A | TON | --- | 207 | --- | 210 | 417 |
| 502.0100 | CONCRETE MASONRY BRIDGES | CY | 280 | 41 | 87 | 41 | 449 |
| 502.1100 | CONCRETE MASONRY SEAL | CY | --- | --- | 64 | --- | 64 |
| 502.3200 | PROTECTIVE SURFACE TREATMENT | SY | 695 | --- | --- | --- | 695 |
| 502.3210 | PIGMENTED SURFACE SEALER | SY | 195 | 14 | --- | 14 | 223 |
| 503.0137 | PRESTRESSED GIRDER TYPE I 36W-INCH | LF | 1,151 | --- | --- | --- | 1,151 |
| 505.0400 | BAR STEEL REINFORCEMENT HS STRUCTURES | LB | --- | 2,180 | 5,010 | 2,180 | 9,370 |
| 505.0600 | BAR STEEL REINFORCEMENT HS COATED STRUCTURES | LB | 59,140 | 2,420 | 30 | 2,460 | 64,050 |
| 506.2605 | BEARING PADS ELASTOMERIC NON-LAMINATED | EACH | 24 | --- | --- | --- | 24 |
| 506.4000 | STEEL DIAPHRAGMS B-12-195 | EACH | 20 | --- | --- | --- | 20 |
| 516.0500 | RUBBERIZED MEMBRANE WATERPROOFING | SY | --- | 9 | --- | 9 | 18 |
| 550.2126 | PILING CIP CONCRETE 12 3/4 X 0.375-INCH | LF | --- | 675 | --- | 585 | 1,260 |
| 550.2148 | PILING CIP CONCRETE 14 X 0.50-INCH | LF | --- | --- | 825 | --- | 825 |
| 606.0300 | RIPRAP HEAVY | CY | --- | 347 | --- | 340 | 687 |
| 612.0406 | PIPE UNDERDRAIN WRAPPED 6-INCH | LF | --- | 65 | --- | 65 | 130 |
| 614.0150 | ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD | EACH | --- | 2 | --- | 2 | 4 |
| 645.0111 | GEOTEXTILE TYPE DF SCHEDULE A | SY | --- | 35 | --- | 35 | 70 |
| 645.0120 | GEOTEXTILE TYPE HR | SY | --- | 540 | --- | 530 | 1,070 |
| | NON-BID ITEMS | | | | | | |
| | FILLER | SIZE | --- | --- | --- | --- | 1/2", 3/4" |

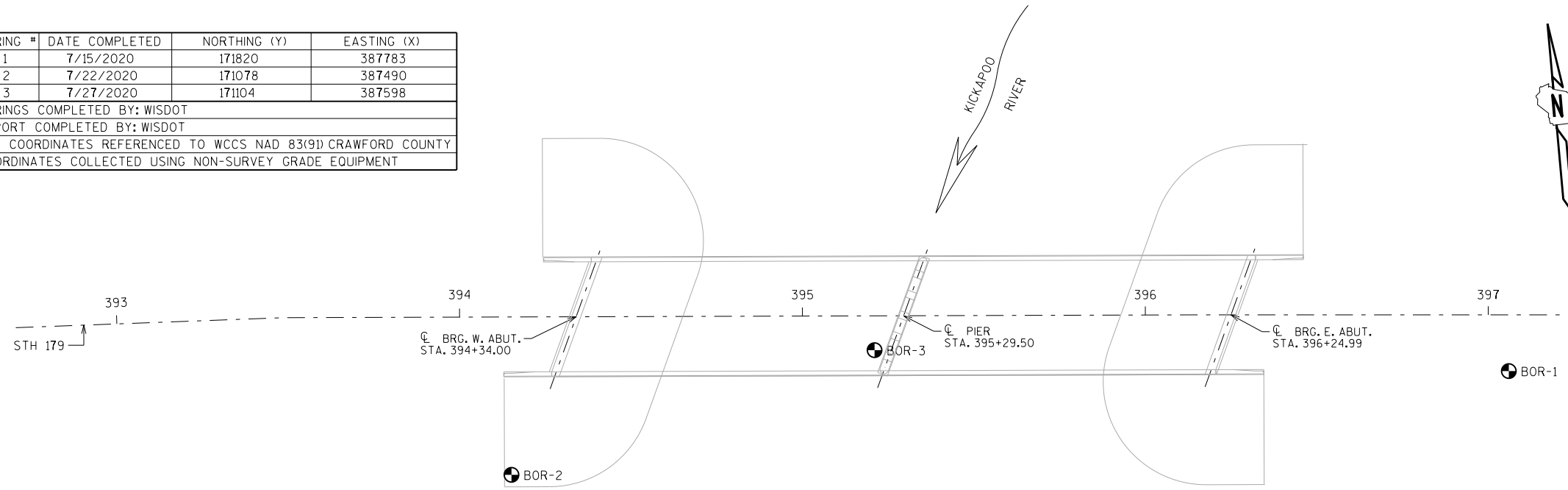
COFFERDAM AND CONCRETE SEAL NOTES:

- TO REDUCE THE RISK OF PILES WITHIN THE PIER COFFERDAM DRIVING SIGNIFICANTLY SHORTER THAN EXPECTED DUE TO DENSIFICATION OF THE LOOSE CLEAN SANDS FROM PILE DRIVING OPERATIONS, ALL PILES WITHIN THE PIER COFFERDAM SHOULD FIRST BE VIBRATED AT LEAST 30 FEET BELOW THE BOTTOM OF THE SEAL GRADE PRIOR TO DRIVING THE FIRST PILE AND SUCCESSIVE PILES TO THE REQUIRED DRIVING RESISTANCE.
- THE WATER ELEVATION OF 663.95 WAS USED IN THE DESIGN OF THE CONCRETE SEAL. CONTACT BUREAU OF STRUCTURES DESIGN SECTION IF HIGHER ELEVATION IS ENCOUNTERED DURING CONSTRUCTION.
- CONTACT THE BUREAU OF STRUCTURES DESIGN SECTION IF PIER PILES DO NOT DRIVE BEYOND ELEVATION 611.50 AS CONCRETE SEAL WILL REQUIRE FURTHER EVALUATION.

| NO. | DATE | REVISION | BY |
|---|------|----------|-------------|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION | | | |
| STRUCTURE B-12-195 | | | |
| | | DRAWN BY | PLANS CK'D. |
| | | WWR | DLM |
| CROSS SECTION & QUANTITIES | | | SHEET 2 |

| BORING # | DATE COMPLETED | NORTHING (Y) | EASTING (X) |
|----------|----------------|--------------|-------------|
| 1 | 7/15/2020 | 171820 | 387783 |
| 2 | 7/22/2020 | 171078 | 387490 |
| 3 | 7/27/2020 | 171104 | 387598 |

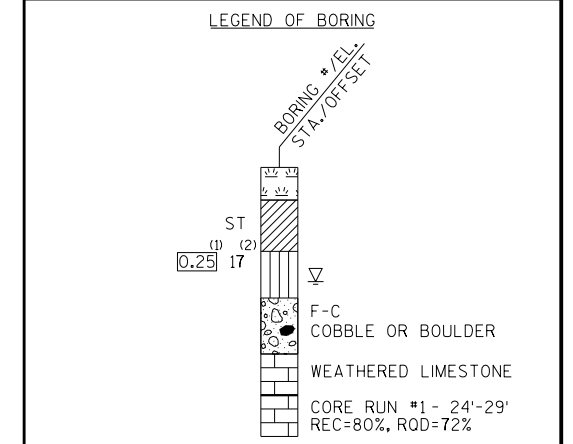
BORINGS COMPLETED BY: WISDOT
 REPORT COMPLETED BY: WISDOT
 ALL COORDINATES REFERENCED TO WCCS NAD 83(91) CRAWFORD COUNTY
 COORDINATES COLLECTED USING NON-SURVEY GRADE EQUIPMENT



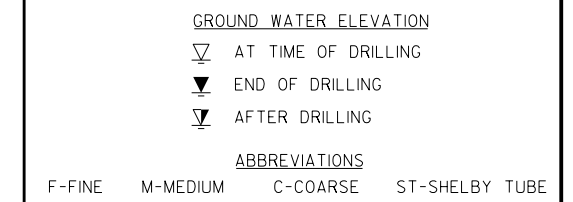
STATE PROJECT NUMBER
5870-02-81

MATERIAL SYMBOLS

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

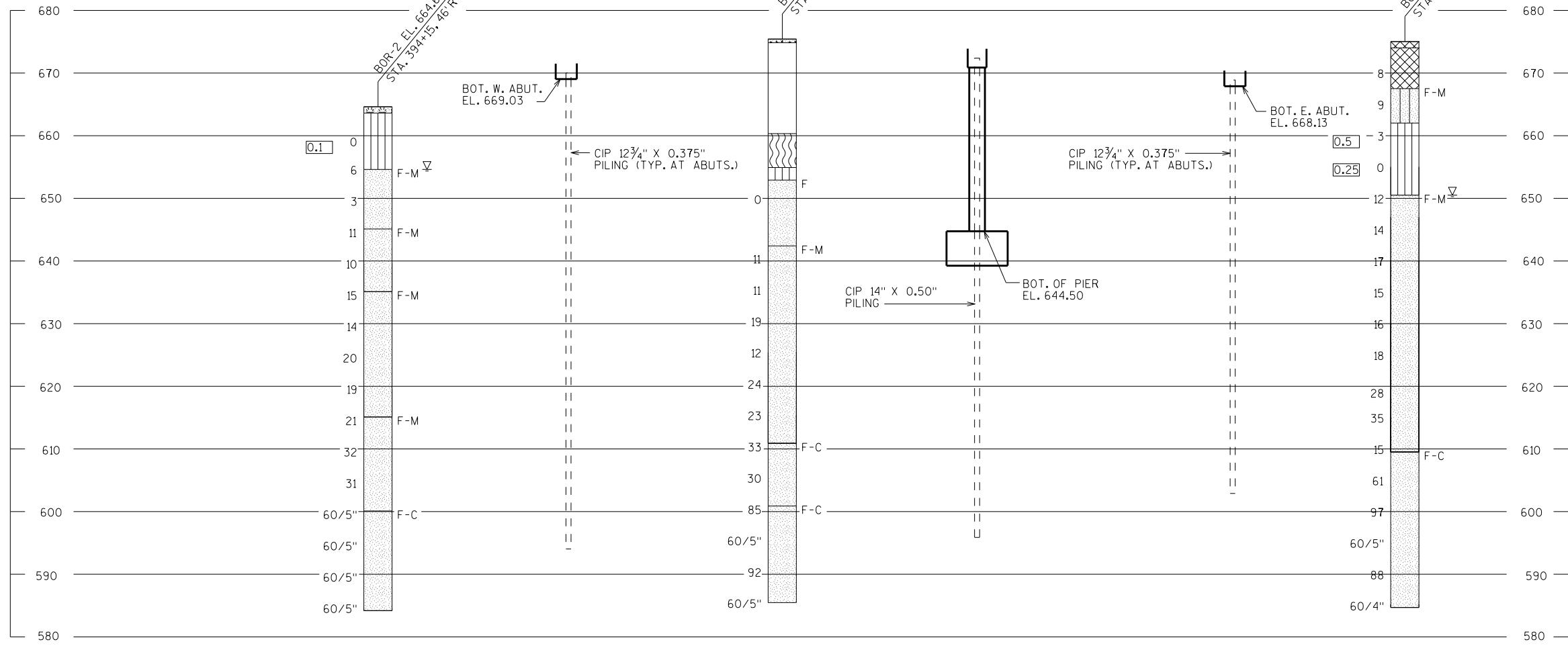


- (1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)
- (2) UNLESS OTHERWISE SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.



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.

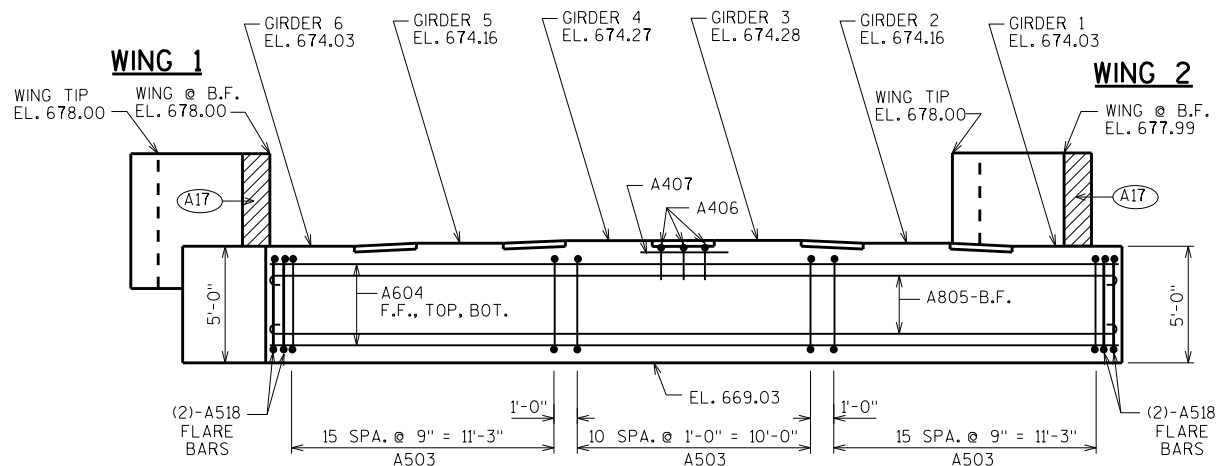


8

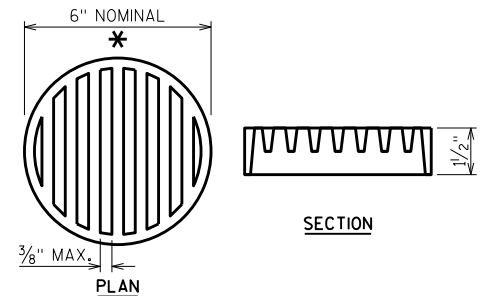
8

| NO. | DATE | REVISION | BY |
|---|------|----------------|---------|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION | | | |
| STRUCTURE B-12-195 | | | |
| DRAWN BY: TLP/WWR | | PLANS CKD. DLM | |
| SUBSURFACE EXPLORATION | | | SHEET 3 |

SCALE =



ELEVATION

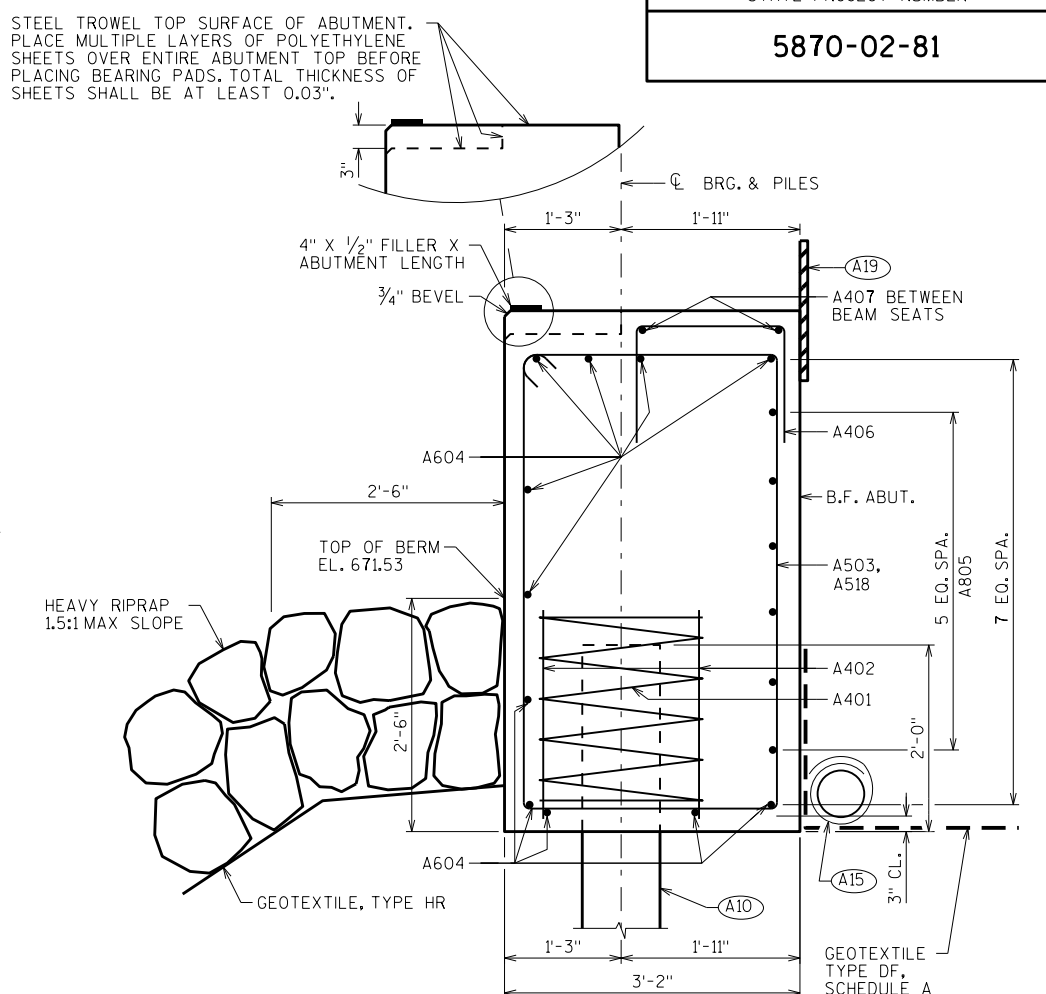


RODENT SHIELD DETAIL

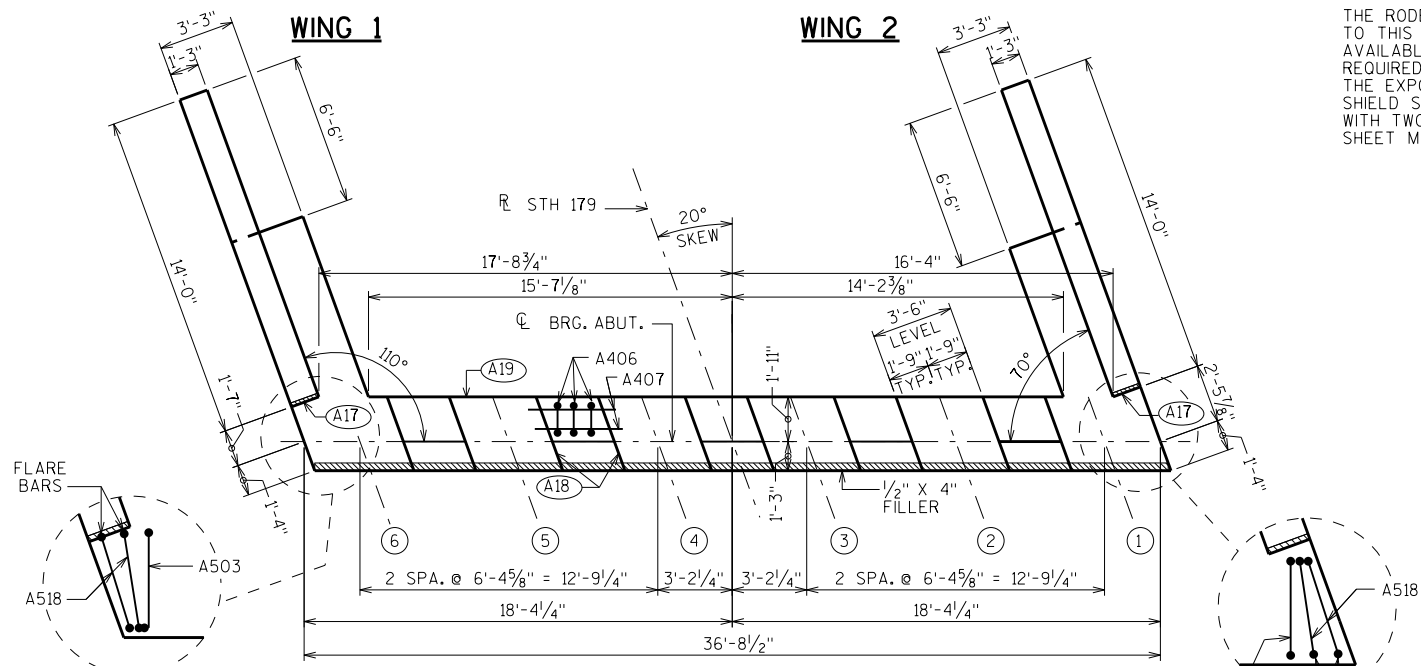
* DIMENSIONS ARE APPROXIMATE, THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

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

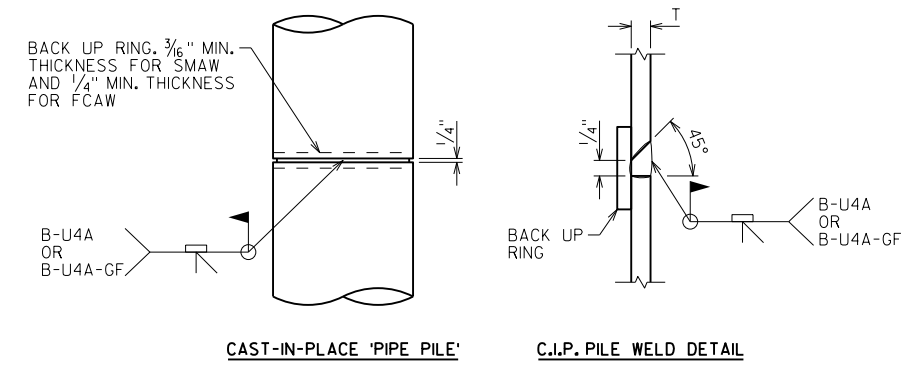
THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH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



SECTION THRU BODY

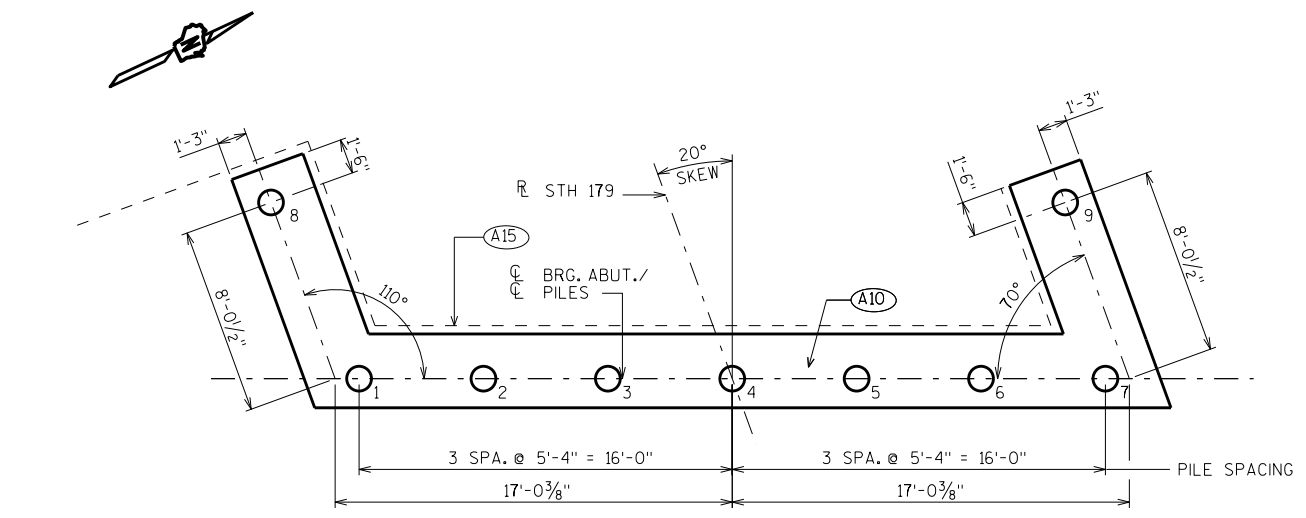


PLAN

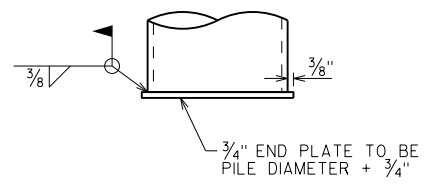


PILE DETAILS

- (A10) SUPPORT ABUTMENT ON 12 3/4" DIA. X 0.375" CIP CONCRETE PILING, ESTIMATED 75'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH), SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A17) 1/2" FILLER (INCLUDED IN WING LENGTH); SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A18) 3/4" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.



PILE PLAN



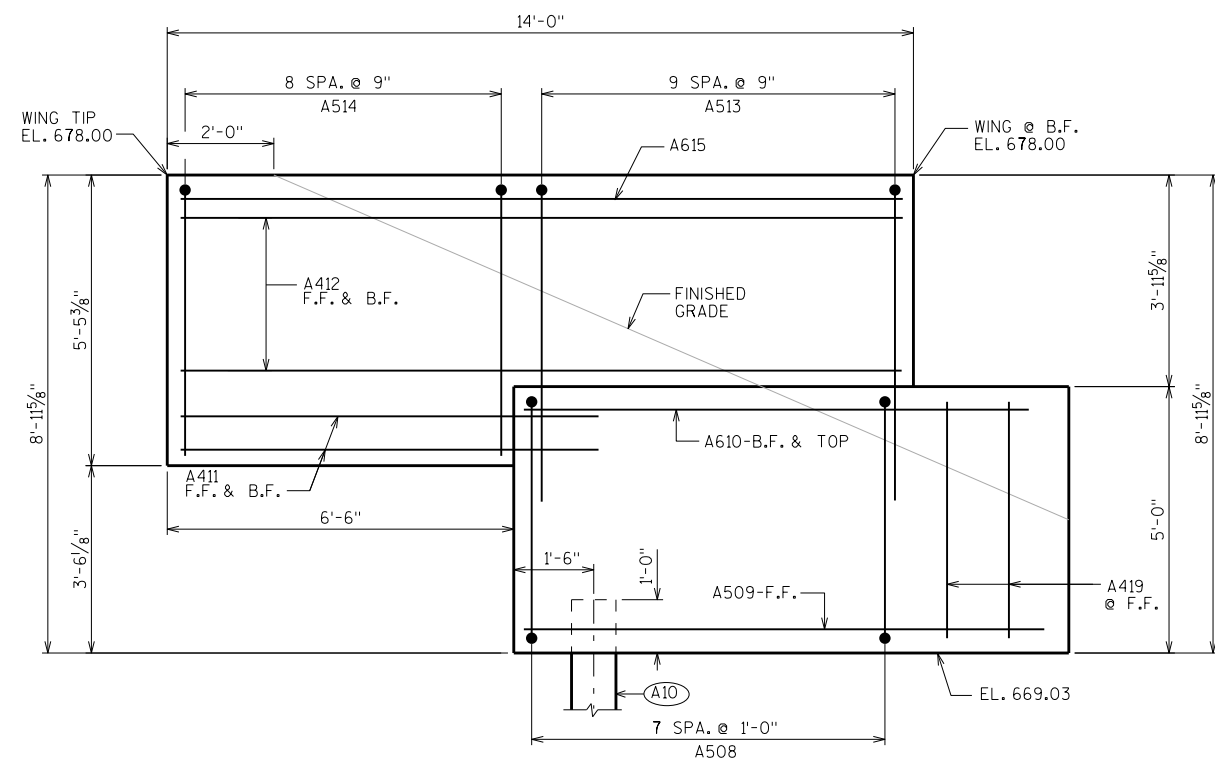
END PLATE DETAIL

| NO. | DATE | REVISION | BY |
|---|------|------------|-----|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION | | | |
| STRUCTURE B-12-195 | | | |
| DRAWN BY | | PLANS CKD. | DLM |
| WEST ABUTMENT | | SHEET 4 | |

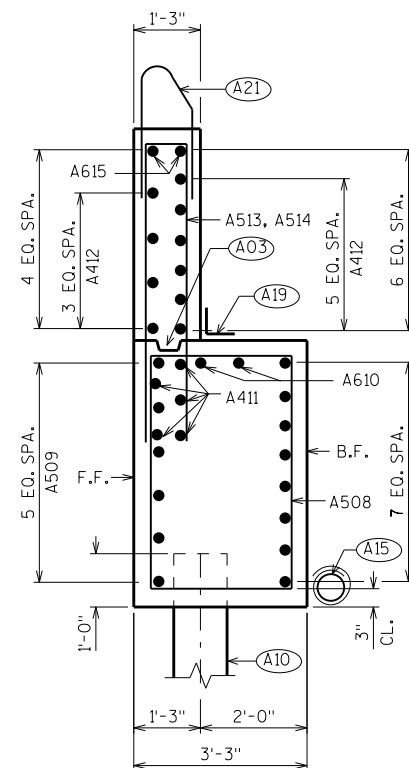
BILL OF BARS

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

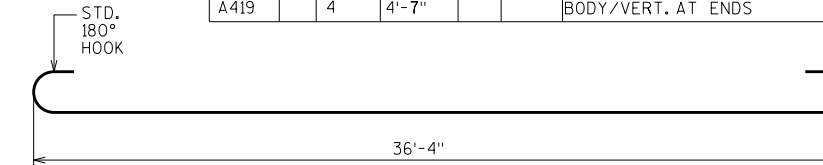
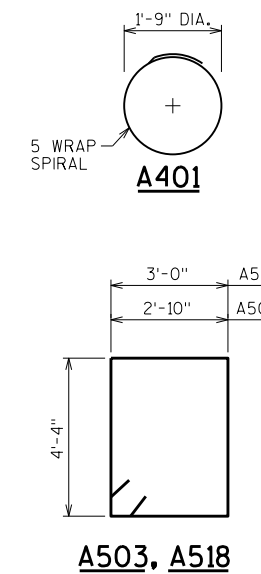
| BAR MARK | C/CAT | NO. REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION |
|----------|-------|------------|---------|------|------------|-----------------------------------|
| A401 | | 7 | 28'-0" | X | | BODY- 1 PER BODY PILE |
| A402 | | 14 | 2'-3" | | | BODY- 2 PER BODY PILE |
| A503 | | 43 | 15'-0" | X | | BODY-VERT. STIRRUP |
| A604 | | 11 | 36'-4" | | | BODY-HORIZ. |
| A805 | | 6 | 38'-2" | X | | BODY-HORIZ.-B.F. |
| A406 | | 15 | 3'-11" | X | | BODY-VERT. U-BAR BTWN. BEAM SEATS |
| A407 | | 10 | 4'-8" | | | BODY-HORIZ. BTWN. BEAM SEATS |
| A508 | X | 16 | 15'-8" | X | | WING BODY 1 & 2 -VERT. STIRRUP |
| A509 | X | 6 | 10'-1" | | | WING BODY 1-HORIZ.-F.F. |
| A610 | X | 10 | 10'-3" | | | WING BODY 1-HORIZ.-B.F., TOP |
| A411 | X | 10 | 8'-2" | | | WING BODY/WING WALL 1 & 2-HORIZ. |
| A412 | X | 20 | 13'-8" | | | WING WALL 1 & 2-HORIZ. |
| A513 | X | 20 | 12'-4" | X | | WING WALL 1 & 2-VERT. |
| A514 | X | 18 | 10'-10" | X | | WING WALL 1 & 2-VERT. |
| A615 | X | 4 | 13'-8" | | | WING WALL 1 & 2-HORIZ. TOP |
| A516 | X | 6 | 10'-10" | | | WING BODY 2-HORIZ.-F.F. |
| A617 | X | 10 | 9'-9" | | | WING BODY 2-HORIZ.-B.F., TOP |
| A518 | | 4 | 15'-4" | X | | BODY-VERT. STIRRUP-ENDS |
| A419 | | 4 | 4'-7" | | | BODY/VERT. AT ENDS |



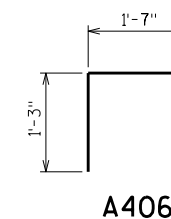
WING 1 ELEVATION



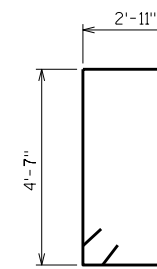
WING 1 SECTION



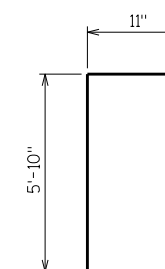
A805



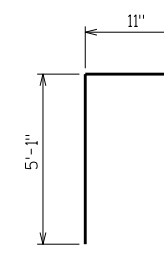
A406



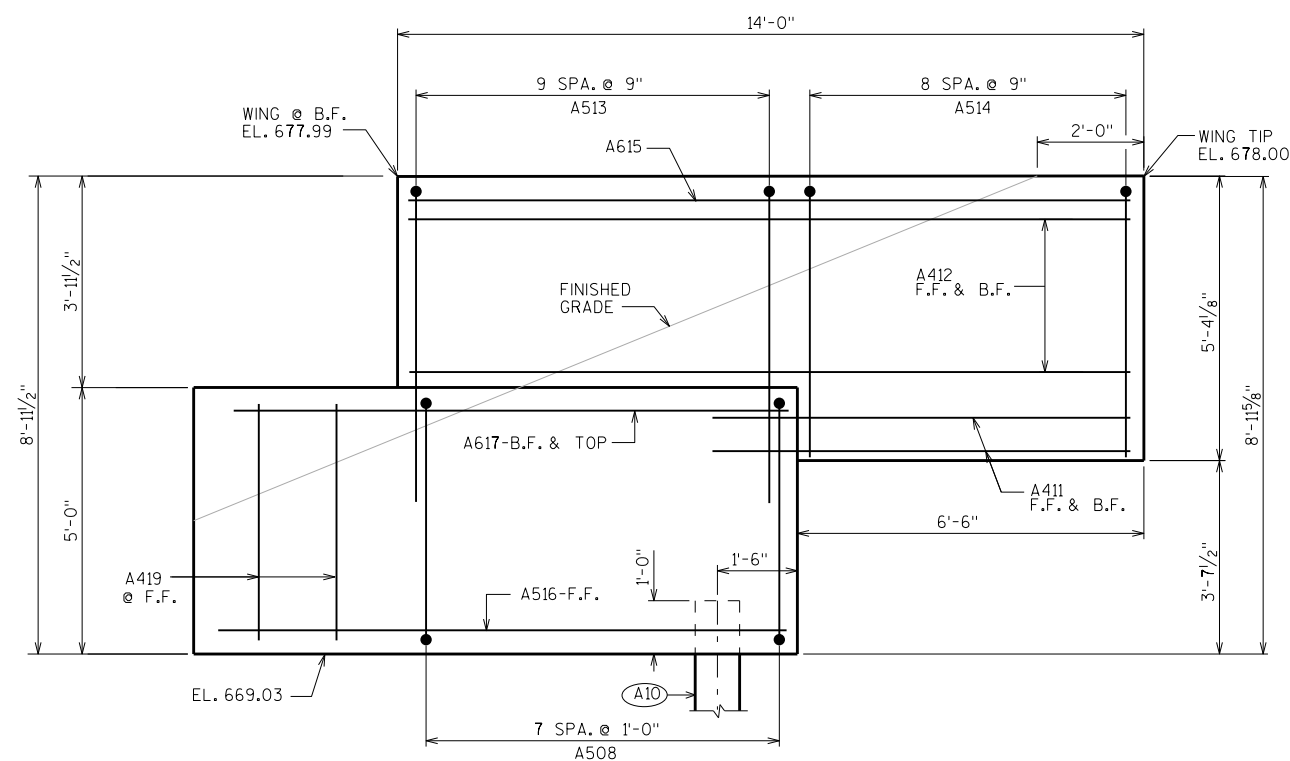
A508



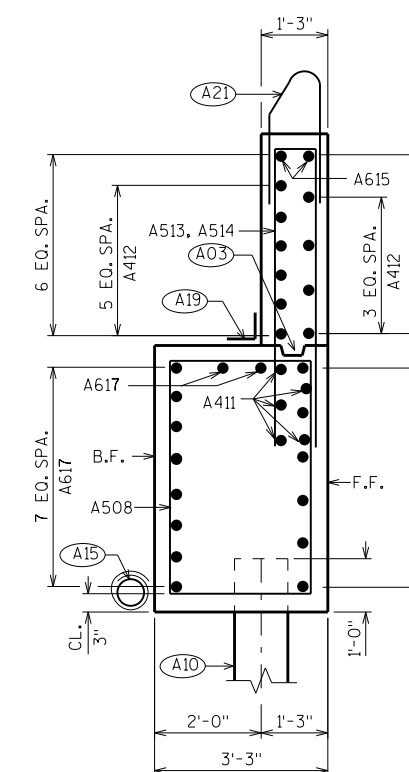
A513



A514



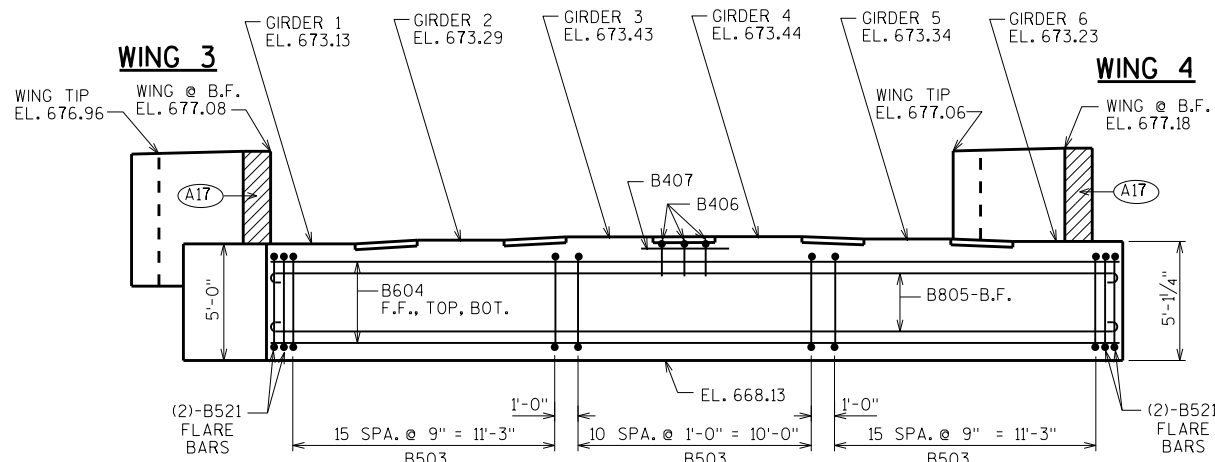
WING 2 ELEVATION



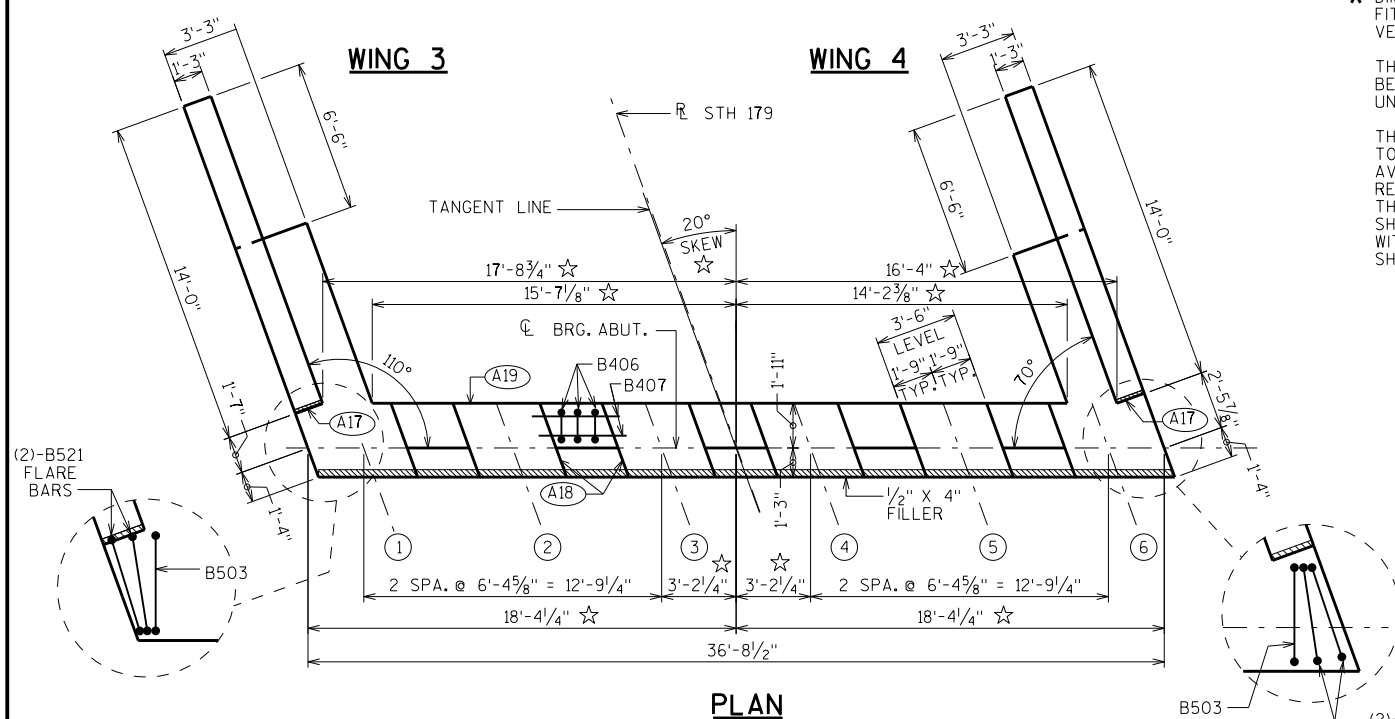
WING 2 SECTION

- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6, (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A10) SUPPORT ABUTMENT ON 12 3/4" DIA. X 0.375" CIP CONCRETE PILING, ESTIMATED 75'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (A21) FOR PPT. BARS & DIMENSIONS SEE PARAPET SHEET.

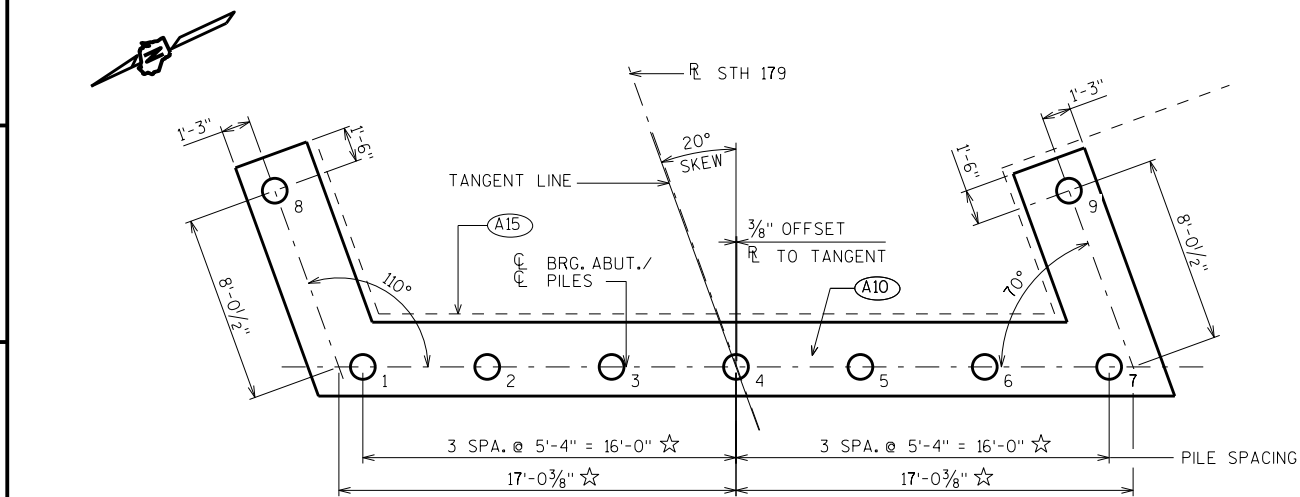
| NO. | DATE | REVISION | BY |
|---|------|-------------|-----|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION | | | |
| STRUCTURE B-12-195 | | | |
| DRAWN BY | | PLANS CK'D. | DLM |
| WEST ABUTMENT DETAILS | | SHEET 5 | |



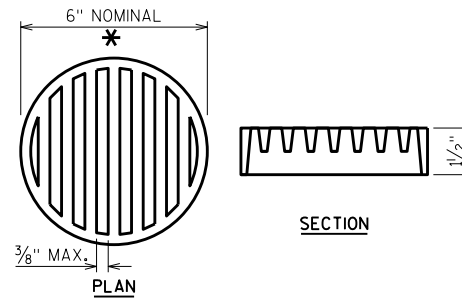
ELEVATION



PLAN



PILE PLAN



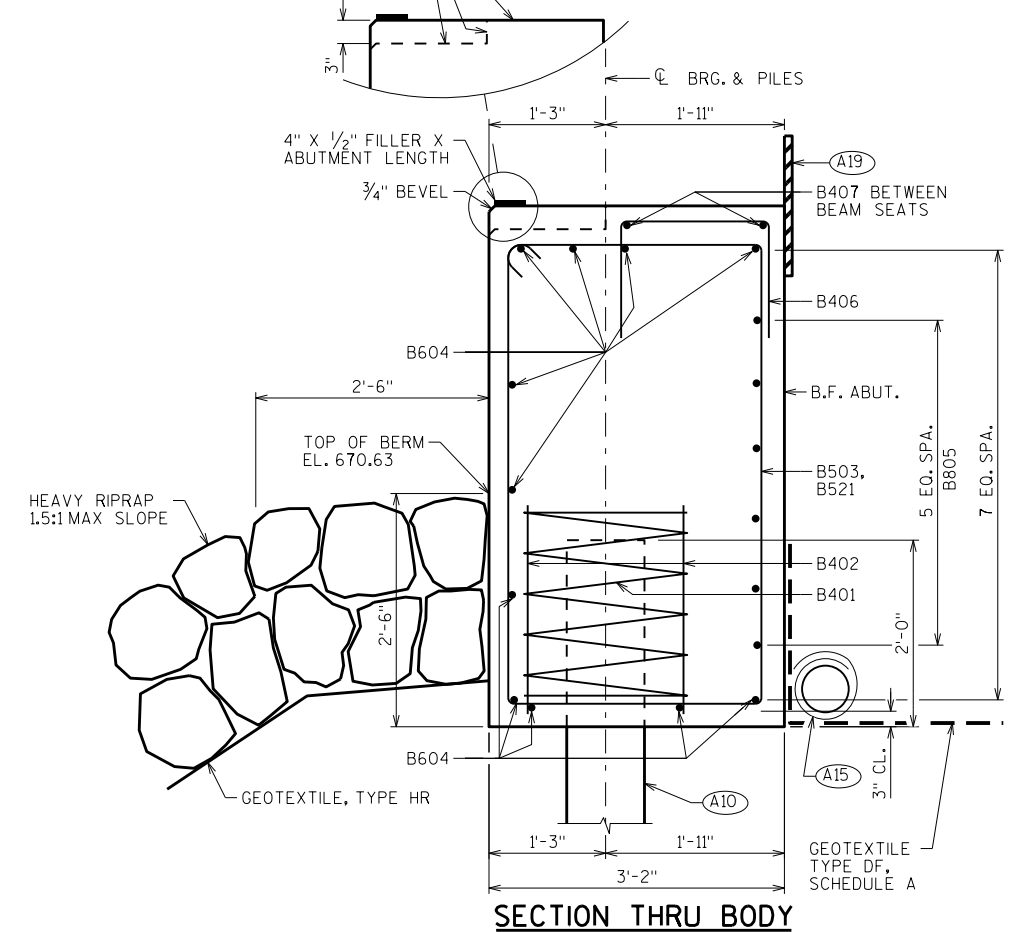
RODENT SHIELD DETAIL

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

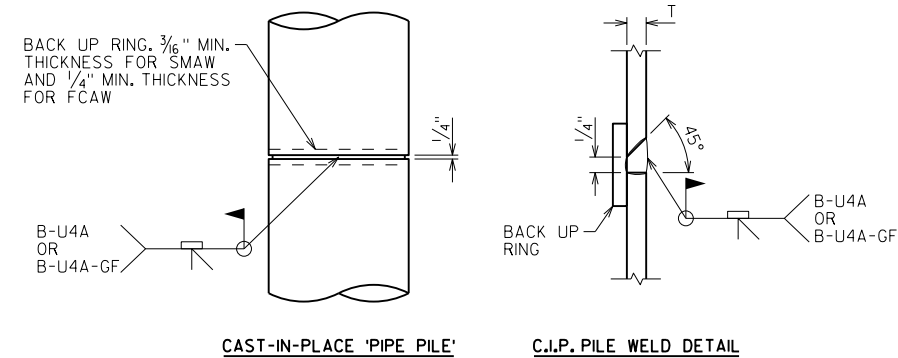
THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

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.

STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING BEARING PADS. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".



SECTION THRU BODY



PILE DETAILS

END PLATE DETAIL

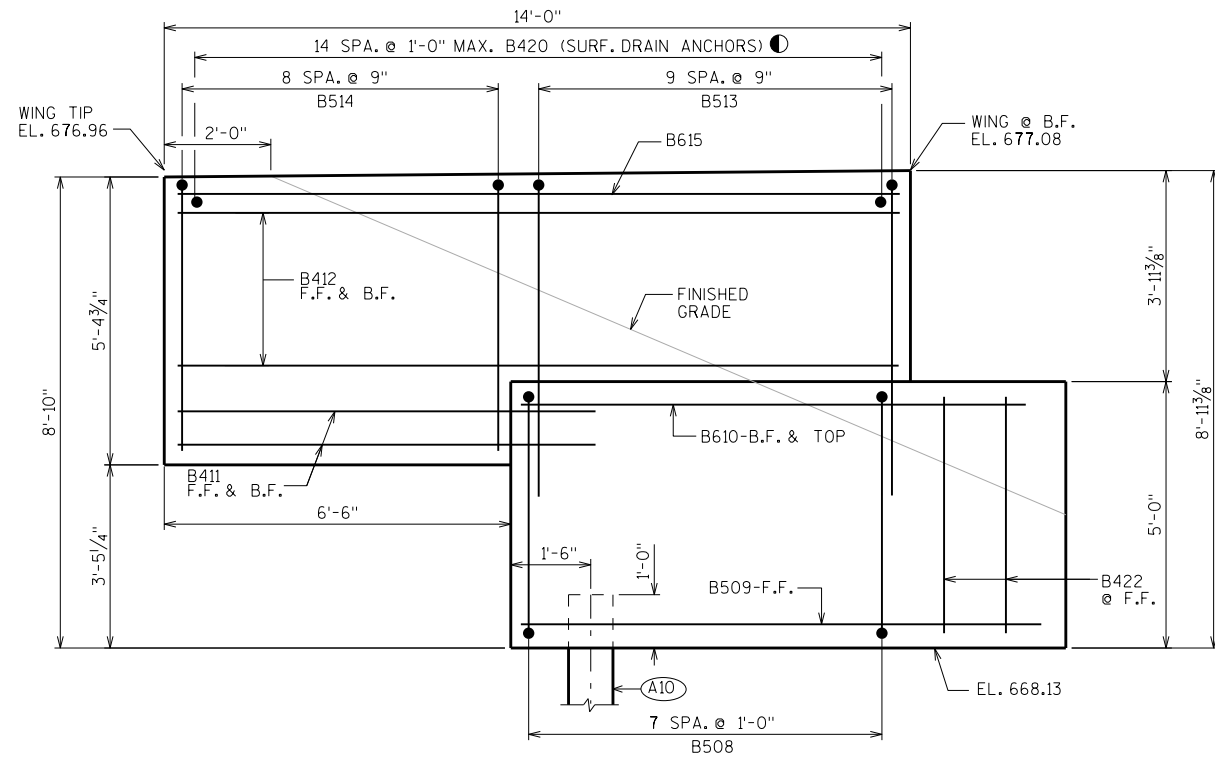
- ☆ MEASURED TO TANGENT LINE
- (A10) SUPPORT ABUTMENT ON 12 3/4" DIA. X 0.375" CIP CONCRETE PILING, ESTIMATED 65'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A17) 1/2" FILLER (INCLUDED IN WING LENGTH); SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A18) 3/4" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

| NO. | DATE | REVISION | BY |
|---|------|-------------|-----|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION | | | |
| STRUCTURE B-12-195 | | | |
| DRAWN BY | | PLANS CK'D. | DLM |
| WWR | | SHEET 6 | |
| EAST ABUTMENT | | | |

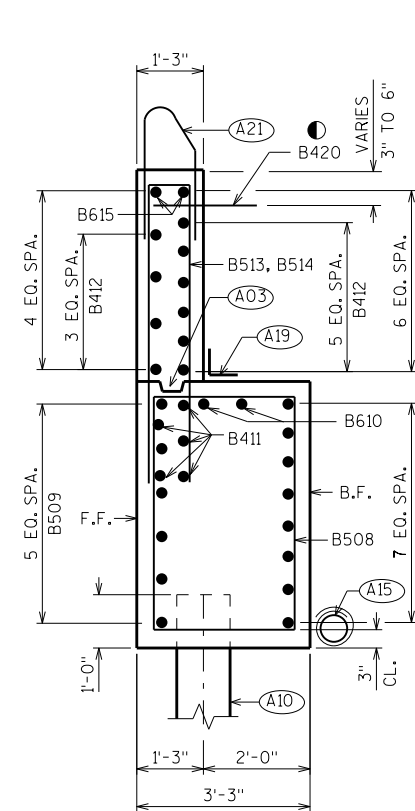
BILL OF BARS

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

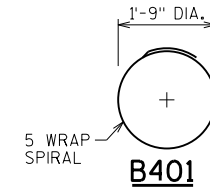
| BAR MARK | COAT | NO. REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION |
|----------|------|------------|---------|------|------------|--|
| B401 | | 7 | 28'-0" | X | | BODY- 1 PER BODY PILE |
| B402 | | 14 | 2'-3" | | | BODY- 2 PER BODY PILE |
| B503 | | 43 | 15'-0" | X | | BODY-VERT. STIRRUP |
| B604 | | 11 | 36'-4" | | | BODY-HORIZ. |
| B805 | | 6 | 38'-2" | X | | BODY-HORIZ.-B.F. |
| B406 | | 15 | 3'-11" | X | | BODY-VERT. U-BAR BTWN. BEAM SEATS |
| B407 | | 10 | 4'-8" | | | BODY-HORIZ. BTWN. BEAM SEATS |
| B508 | X | 8 | 15'-8" | X | | WING BODY 3-VERT. STIRRUP |
| B509 | X | 6 | 10'-1" | | | WING BODY 3-HORIZ.-F.F |
| B610 | X | 10 | 10'-3" | | | WING BODY 3-HORIZ.-B.F., TOP |
| B411 | X | 10 | 8'-2" | | | WING BODY/WING WALL 3 & 4-HORIZ. |
| B412 | X | 20 | 13'-8" | | | WING WALL 3 & 4-HORIZ. |
| B513 | X | 20 | 12'-4" | X | | WING WALL 3 & 4-VERT. |
| B514 | X | 9 | 10'-10" | X | | WING WALL 3-VERT. |
| B615 | X | 4 | 13'-8" | | | WING WALL 3 & 4-HORIZ. TOP |
| B516 | X | 8 | 15'-10" | X | | WING BODY 4-VERT. STIRRUP |
| B517 | X | 6 | 10'-10" | | | WING BODY 4-HORIZ.-F.F. |
| B618 | X | 10 | 9'-9" | | | WING BODY 4-HORIZ.-B.F., TOP |
| B519 | X | 9 | 10'-6" | X | | WING WALL 4-VERT. |
| B420 | X | 30 | 2'-0" | | | WING WALL 3 & 4-HORIZ. TOP SURF. DRAIN |
| B521 | | 4 | 15'-4" | X | | BODY-VERT. STIRRUP-ENDS |
| B422 | | 4 | 4'-7" | | | BODY/VERT. AT ENDS |



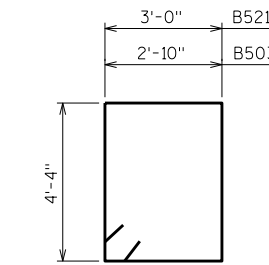
WING 3 ELEVATION



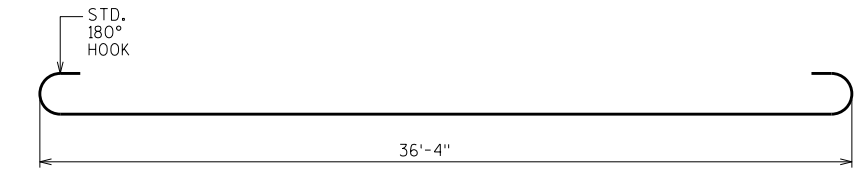
WING 3 SECTION



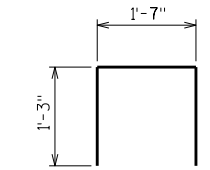
B401



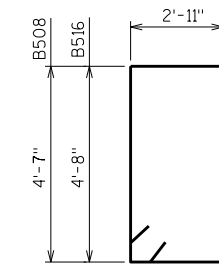
B503, B521



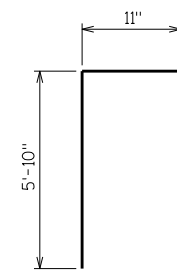
B805



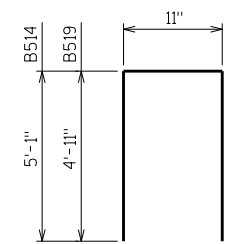
B406



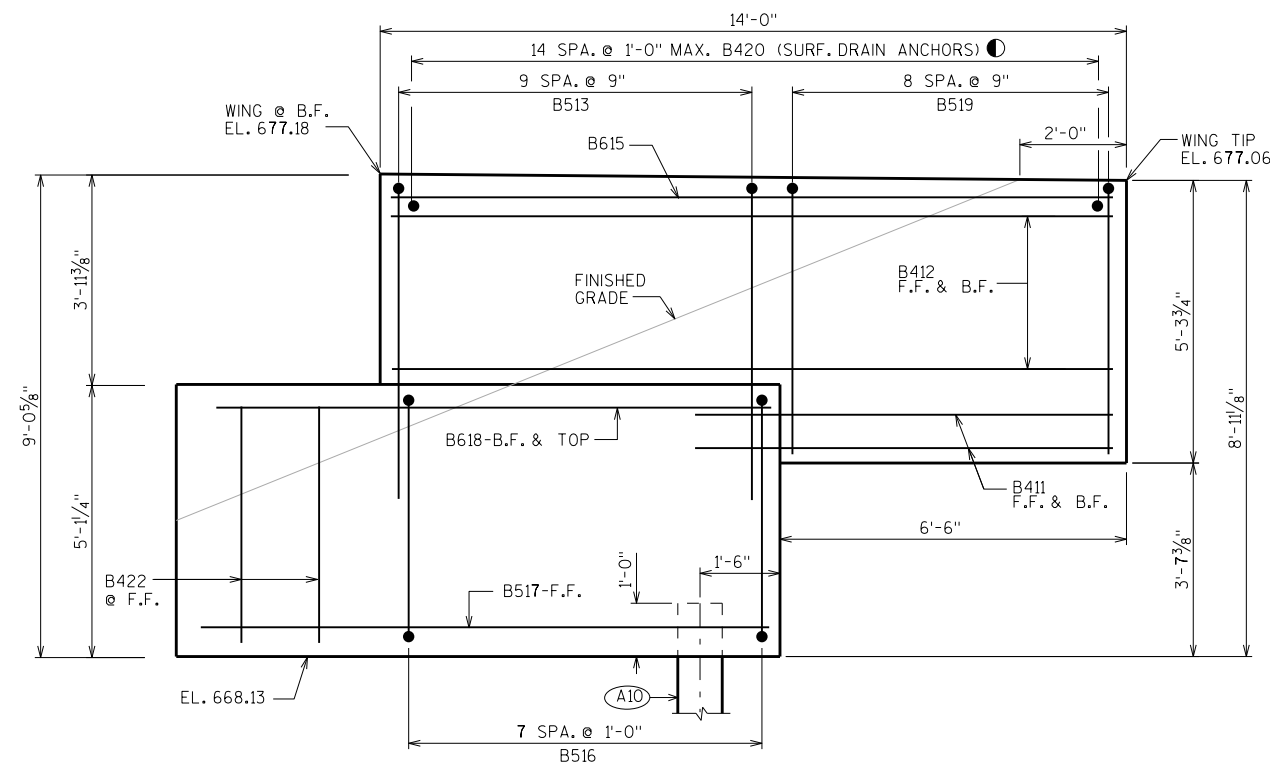
B508, B516



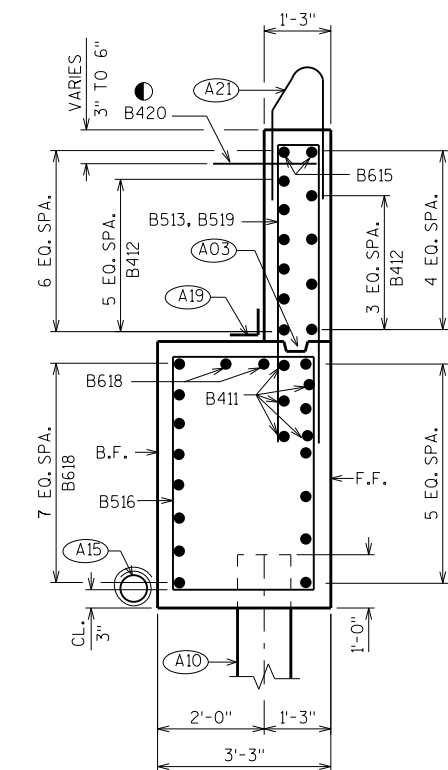
B513



B514, B519



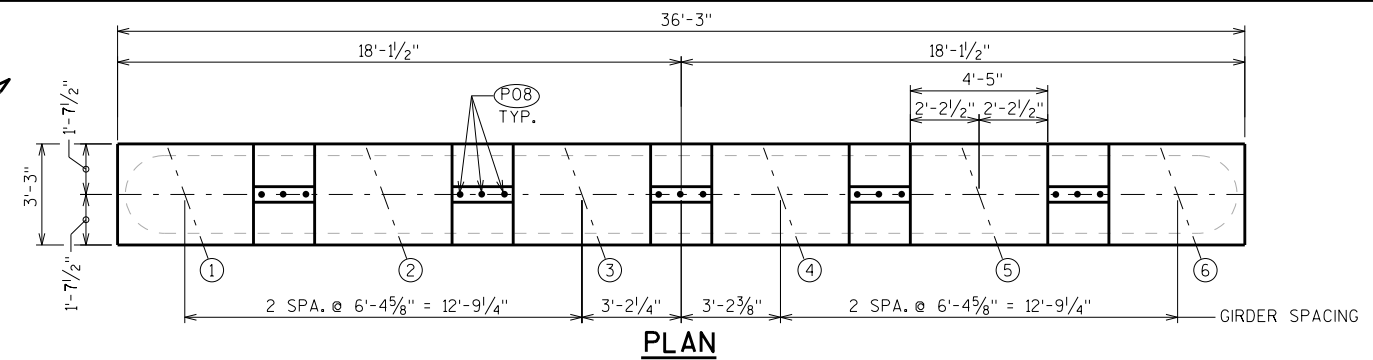
WING 4 ELEVATION



WING 4 SECTION

- PLACE SURF. DRAIN ANCHORS AT 1'-0" SPACING ALONG ENTIRE WING LENGTH. EMBED 1'-0" INTO WING.
- (A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6, (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).
- (A10) SUPPORT ABUTMENT ON 12 3/4" DIA. X 0.375" CIP CONCRETE PILING, ESTIMATED 65'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 210 TONS PER PILE.
- (A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.
- (A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (A21) FOR PPT. BARS & DIMENSIONS SEE PARAPET SHEET.

| NO. | DATE | REVISION | BY |
|---|------|-------------|---------|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION | | | |
| STRUCTURE B-12-195 | | | |
| DRAWN BY | | PLANS CK'D. | DLM |
| EAST ABUTMENT DETAILS | | | SHEET 7 |

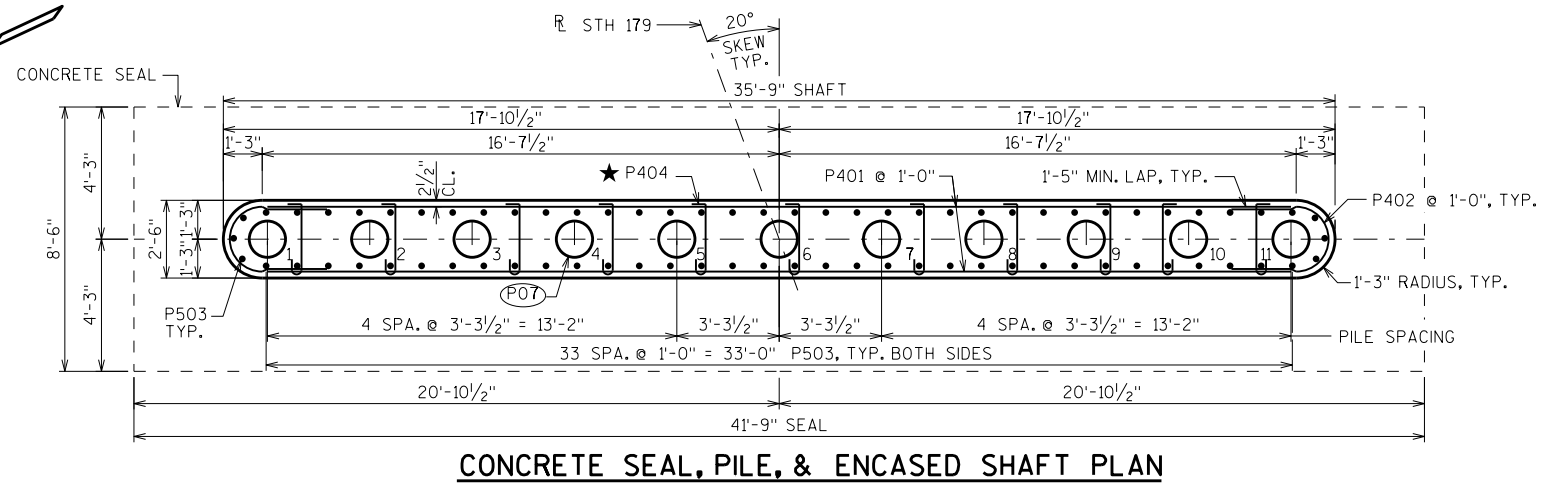
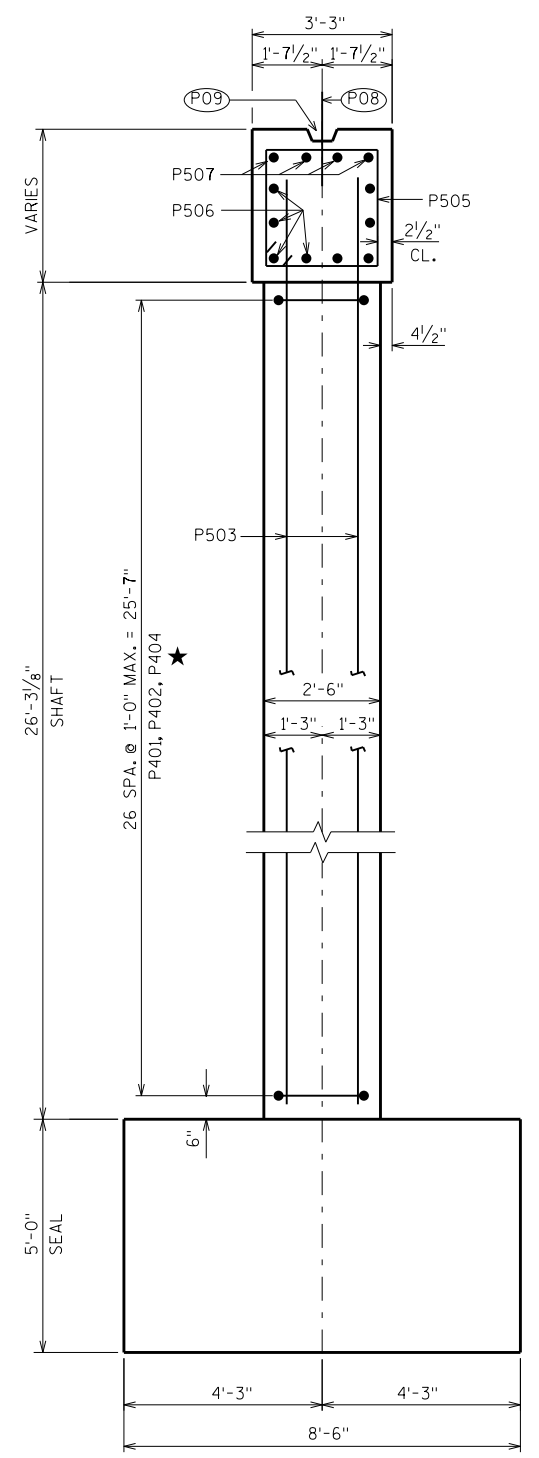
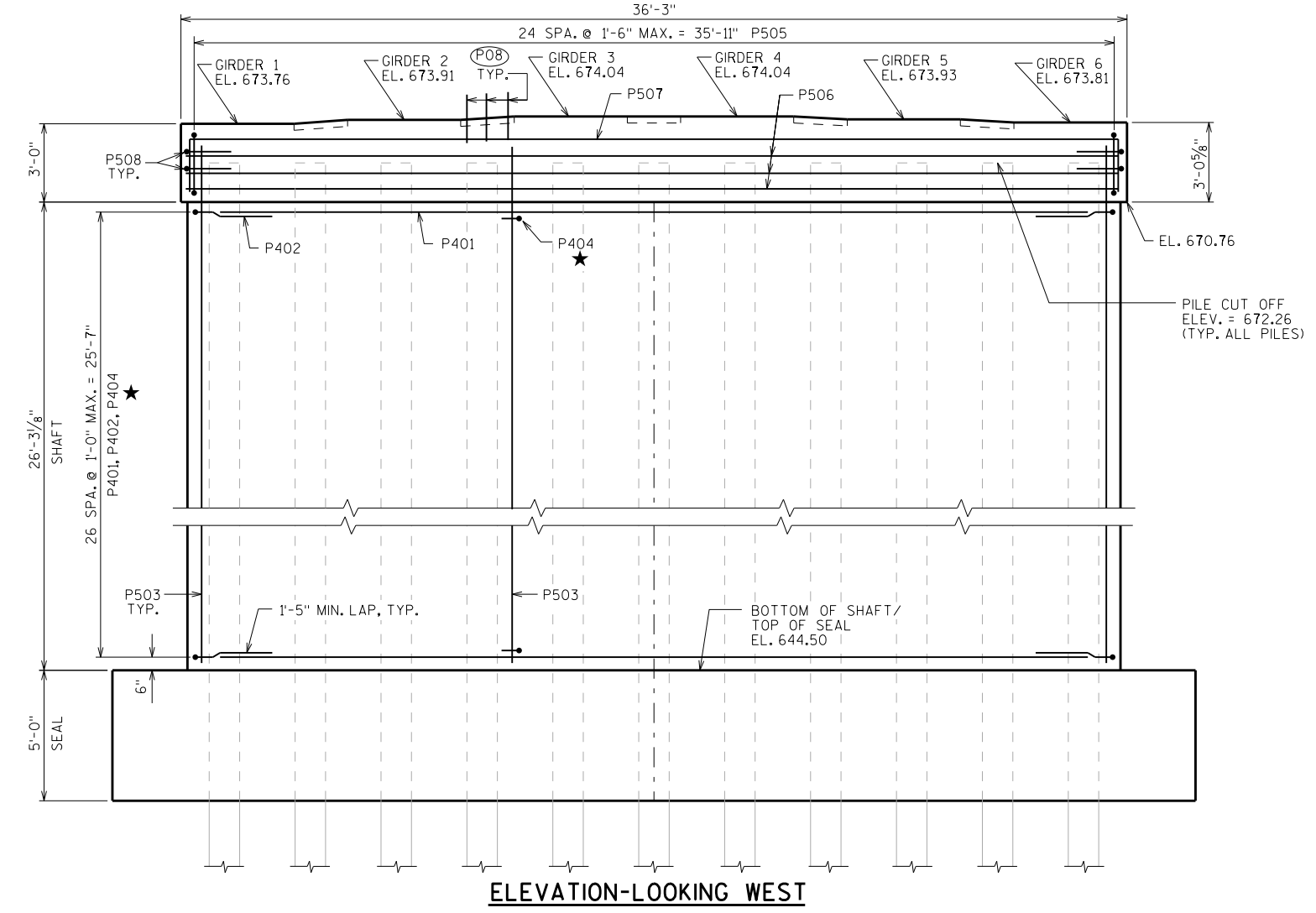


COFFERDAM AND CONCRETE SEAL NOTES:

TO REDUCE THE RISK OF PILES WITHIN THE PIER COFFERDAM DRIVING SIGNIFICANTLY SHORTER THAN EXPECTED DUE TO DENSIFICATION OF THE LOOSE CLEAN SANDS FROM PILE DRIVING OPERATIONS, ALL PILES WITHIN THE PIER COFFERDAM SHOULD FIRST BE VIBRATED AT LEAST 30 FEET BELOW THE BOTTOM OF THE SEAL GRADE PRIOR TO DRIVING THE FIRST PILE AND SUCCESSIVE PILES TO THE REQUIRED DRIVING RESISTANCE.

THE WATER ELEVATION OF 663.95 WAS USED IN THE DESIGN OF THE CONCRETE SEAL. CONTACT BUREAU OF STRUCTURES DESIGN SECTION IF HIGHER ELEVATION IS ENCOUNTERED DURING CONSTRUCTION.

CONTACT THE BUREAU OF STRUCTURES DESIGN SECTION IF PIER PILES DO NOT DRIVE BEYOND ELEVATION 611.50 AS CONCRETE SEAL WILL REQUIRE FURTHER EVALUATION.



★ PLACE ADJACENT TO EACH PILE AS SHOWN. TIE TO VERT. NO. 5 BARS, VERTICALLY SPACED AT 1'-0" TO MATCH NO. 4 HORIZONTAL BARS. ALTERNATE THE POSITION OF THE 90° AND 180° HOOKS AT EACH VERTICAL LAYER OF TIES.

(P07) SUPPORT PIER ON 14" DIA. X 0.50" CIP CONCRETE PILING, ESTIMATED 75'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 240 TONS PER PILE.

(P08) P509 BARS @ 1'-0" CTRS. BETWEEN BEAM SEATS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

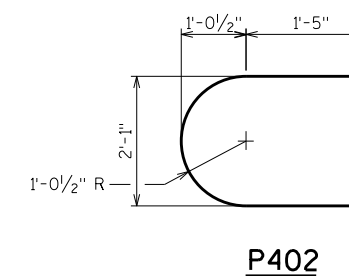
(P09) KEYED CONST. JOINT-FORMED BY BEVELED 2 x 6 BETWEEN BEAM SEATS.

| NO. | DATE | REVISION | BY |
|---|------|--------------------|---------|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION | | | |
| STRUCTURE B-12-195 | | | |
| DRAWN BY WWR | | PLANS CK'D. DLM | |
| PIER | | | SHEET 8 |

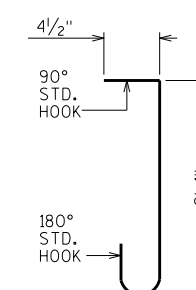
BILL OF BARS

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

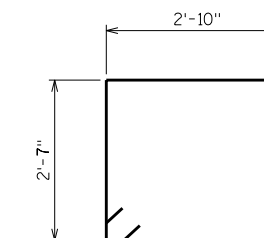
| BAR MARK | COAT | NO. REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION |
|----------|------|------------|---------|------|------------|-----------------------|
| P401 | | 54 | 33'-3" | | | SHAFT-HORIZ. |
| P402 | | 54 | 6'-2" | X | | SHAFT-HORIZ. |
| P503 | | 74 | 28'-7" | | | SHAFT/CAP-VERT. |
| P404 | | 297 | 2'-11" | X | | SHAFT-HORIZ. TIE BARS |
| P505 | | 25 | 11'-6" | X | | CAP- VERT. STIRRUPS |
| P506 | | 8 | 35'-10" | | | CAP-HORIZ. |
| P507 | | 4 | 40'-7" | X | | CAP-HORIZ. TOP |
| P508 | | 4 | 7'-6" | X | | CAP-HORIZ. END U-BARS |
| P509 | X | 15 | 2'-0" | | | CAP-VERT. TOP DOWELS |



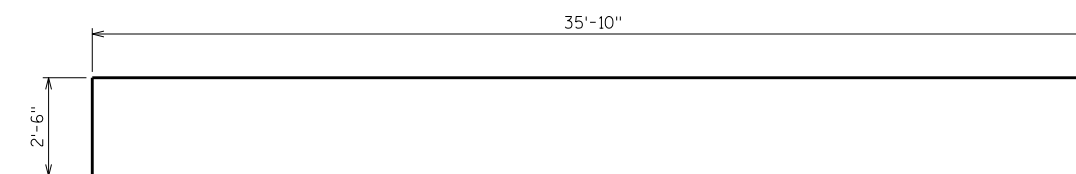
P402



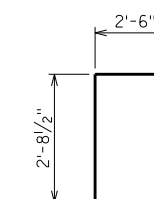
P404



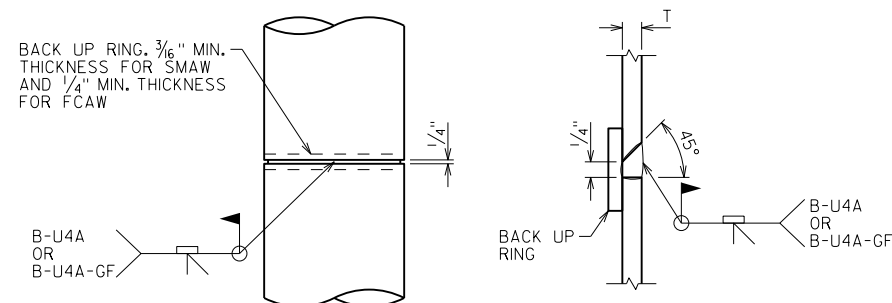
P505



P507



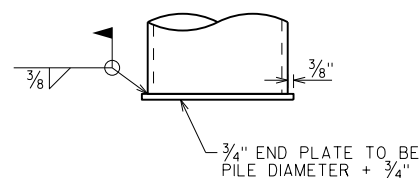
P508



CAST-IN-PLACE 'PIPE PILE'

C.I.P. PILE WELD DETAIL

PILE DETAILS



END PLATE DETAIL

3/4" END PLATE TO BE PILE DIAMETER + 3/4"

| NO. | DATE | REVISION | BY |
|---|------|----------|------------------------|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION | | | |
| STRUCTURE B-12-195 | | | |
| DRAWN BY | | WWR | PLANS CK'D. DLM |
| PIER DETAILS | | SHEET 9 | |

NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE OUTSIDE 8" OF GIRDER WHICH SHALL RECEIVE A SMOOTH FINISH. AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING THE OUTSIDE 8" OF THE TOP FLANGE.

DO NOT APPLY CONCRETE SEALER OR EPOXY TO SURFACES RECEIVING APPLICATION OF CONCRETE STAINING.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS. SEE SECT. 503.3.3 OF STANDARD SPECIFICATIONS FOR GUIDANCE.

STRANDS SHALL BE FLUSH WITH END OF GIRDER. FOR GIRDER ENDS EMBEDDED COMPLETELY IN CONCRETE, END OF STRANDS SHALL BE COATED WITH NON-BITUMINOUS JOINT SEALER. FOR GIRDER ENDS THAT ARE FINALLY EXPOSED, COAT THE GIRDER ENDS, EXPOSED STRAND ENDS AND ALL NON-BONDING SURFACES WITHIN 2 FEET OF THE GIRDER ENDS WITH A NON-PIGMENTED EPOXY CONFORMING TO AASHTO M-235 TYPE III, GRADE 2, CLASS B OR C. THE EPOXY SHALL BE APPLIED AT LEAST 3 DAYS AFTER MOIST CURING HAS CEASED AND PRIOR TO THE APPLICATION OF THE SEALER.

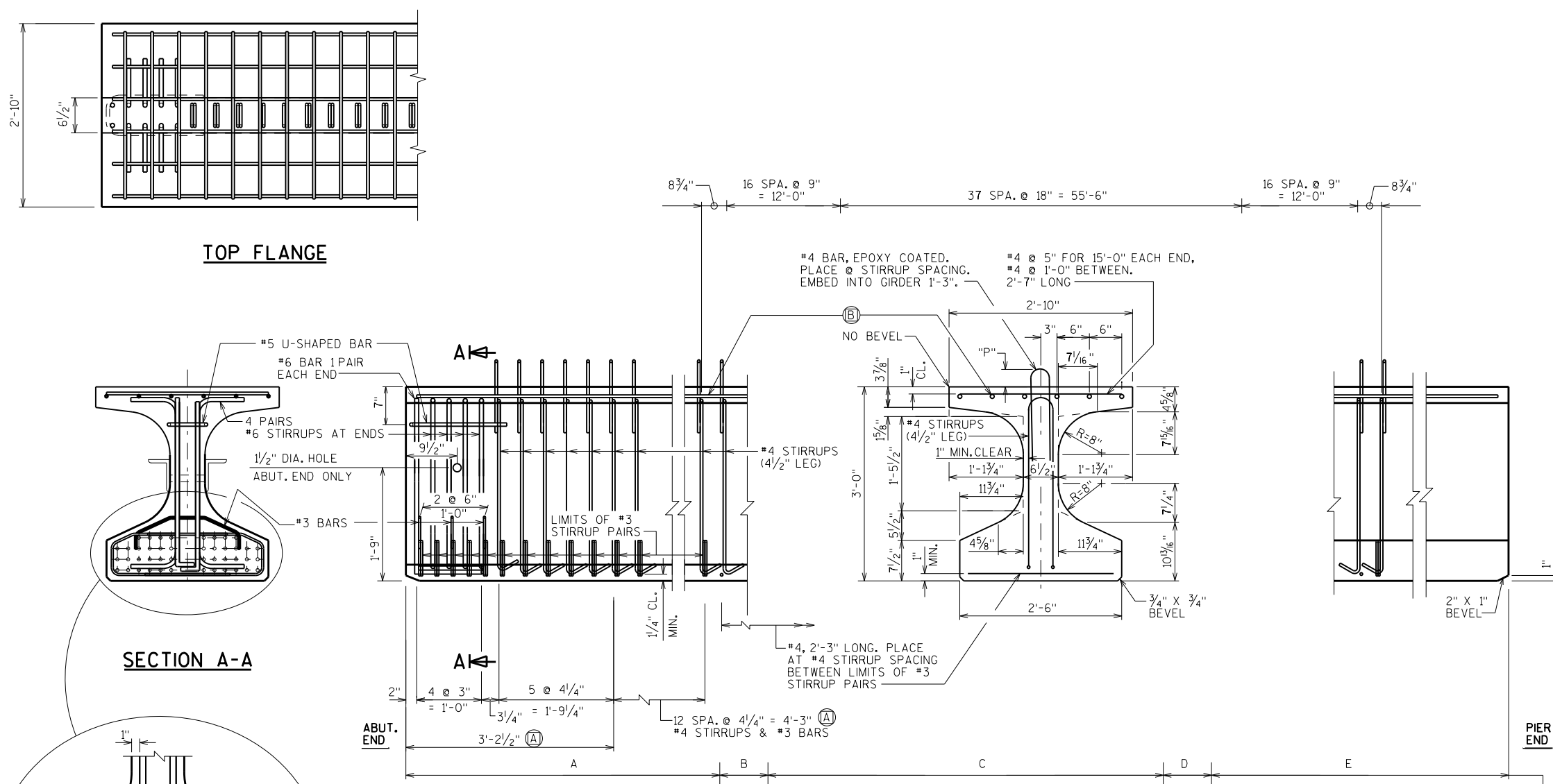
ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT.

AN EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A1064 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON ACCEPTANCE OF THE STRUCTURES MAINTENANCE SECTION. IF USED, WWF SUBSTITUTION DETAILS SHALL BE SUBMITTED ELECTRONICALLY TO THE WISDOT FABRICATION LIBRARY AND ACCEPTED PRIOR TO SHOP DRAWING SUBMITTAL.

PRESTRESSING STRANDS SHALL BE (0.6" DIA.)-7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 PSI.

FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL DIAPHRAGM" SHEET.

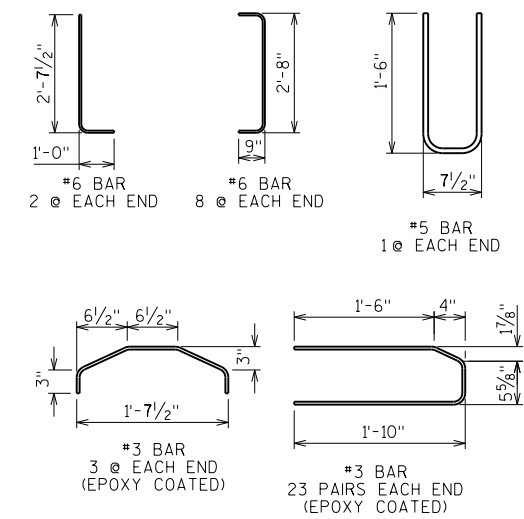


SIDE VIEW & TYPICAL SECTION IN SPAN

- (A) DETAIL TYP. AT EACH END
- (B) 6 #4 BARS, FULL LENGTH, MIN. LAP = 1'-11"

DIAPHRAGM SPACING TABLES

| ABUTMENT END | SPAN 1 | | | | | PIER END | SPAN 2 | | | | | ABUTMENT END |
|--------------|-------------|-----------|-------------|-----------|-------------|-------------|-------------|-----------|-------------|-----------|-------------|--------------|
| | A | B | C | D | E | | E | D | C | B | A | |
| GIRDER 1 | 30'-10 3/8" | — | 31'-11 1/2" | — | 33'-0 5/8" | GIRDER 1 | 30'-10 3/8" | — | 31'-11 1/2" | — | 33'-0 5/8" | |
| GIRDERS 2-5 | 30'-10 3/8" | 2'-2 1/4" | 29'-9 1/4" | 2'-2 1/4" | 30'-10 3/8" | GIRDERS 2-5 | 30'-10 3/8" | 2'-2 1/4" | 29'-9 1/4" | 2'-2 1/4" | 30'-10 3/8" | |
| GIRDERS 6 | 33'-0 5/8" | — | 31'-11 1/2" | — | 30'-10 3/8" | GIRDERS 6 | 33'-0 5/8" | — | 31'-11 1/2" | — | 30'-10 3/8" | |



* MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

GIRDER DATA

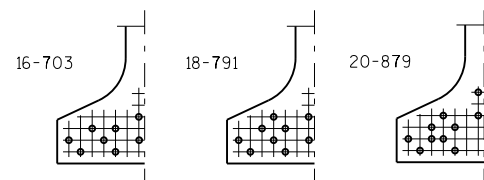
| SPAN | GIRDER | GIRDER LENGTH "L" (FEET) | DEAD LOAD DEFL. (IN.) | | | | | | | | | | CONC. STRGTH. f'c (P.S.I.) | "P" (IN.) | | | DIA. OF STRAND (IN.) | DRAPED PATTERN (IN.) | | | | | UNDRAPED PATTERN | |
|------|--------|--------------------------|-----------------------|------|------|------|------|------|------|------|------|-------|----------------------------|-------------------|-------------------|-------------------|----------------------|----------------------|-----------------|-----|----------|----------|------------------|----------------------|
| | | | 1/10 | 2/10 | 3/10 | 4/10 | 5/10 | 6/10 | 7/10 | 8/10 | 9/10 | 10/10 | | 1ST 1/3 OF GIRDER | MID 1/3 OF GIRDER | END 1/3 OF GIRDER | | TOTAL NO. OF STRANDS | f'ci (P.S.I.) * | "A" | "B" MIN. | "B" MAX. | "C" | TOTAL NO. OF STRANDS |
| 1 | 2-5 | 95'-10 1/2" | 0.7 | 1.3 | 1.8 | 2.1 | 2.2 | 2.0 | 1.7 | 1.3 | 0.7 | 8,000 | 7 | 7 | 7 | 0.6 | 30 | 6,800 | 32 | 11 | 14 | 4 | | |
| 1 | 1,6 | 95'-10 1/2" | 0.6 | 1.2 | 1.6 | 1.9 | 2.0 | 1.9 | 1.6 | 1.1 | 0.6 | 8,000 | 7 | 7 | 7 | 0.6 | 30 | 6,800 | 32 | 11 | 14 | 4 | | |
| 2 | 2-5 | 95'-10 1/2" | 0.7 | 1.3 | 1.7 | 2.0 | 2.2 | 2.1 | 1.8 | 1.3 | 0.7 | 8,000 | 7 | 7 | 7 | 0.6 | 30 | 6,800 | 32 | 11 | 14 | 4 | | |
| 2 | 1,6 | 95'-10 1/2" | 0.6 | 1.1 | 1.6 | 1.9 | 2.0 | 1.9 | 1.6 | 1.2 | 0.6 | 8,000 | 7 | 7 | 7 | 0.6 | 30 | 6,800 | 32 | 11 | 14 | 4 | | |

| NO. | DATE | REVISION | BY |
|---|------|----------|-----------------|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION | | | |
| STRUCTURE B-12-195 | | | |
| DRAWN BY: WWR | | | PLANS CKD.: DLM |
| 36W" PRESTRESSED GIRDER DETAILS 1 | | | SHEET 10 |

8

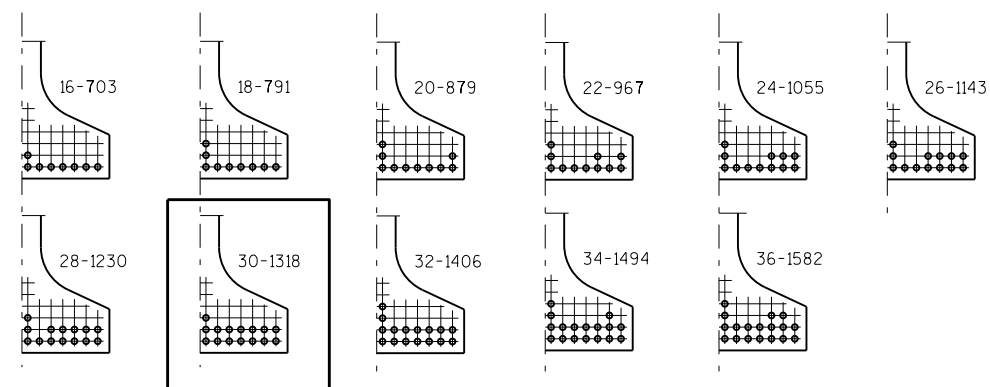
8

SCALE =



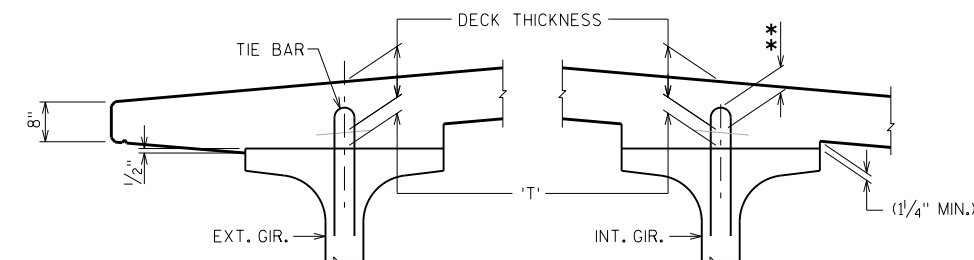
STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY TO AVOID DRAPING OF STRANDS

0.6" DIA. STRANDS



ARRANGEMENT AT \bar{C} SPAN - FOR GIRDERS WITH DRAPED STRANDS

0.6" DIA. STRANDS



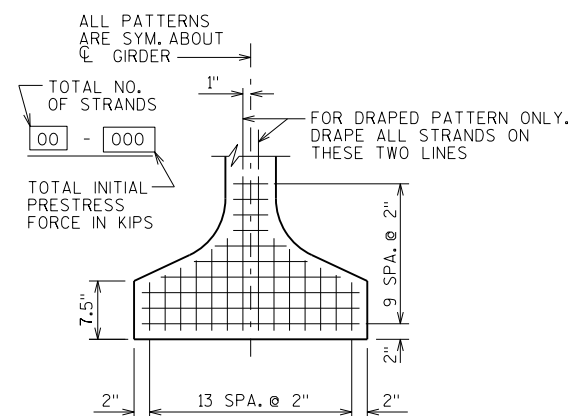
DECK HAUNCH DETAIL

IF 1/4" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR, THE PLAN DECK THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN 1/2" OR, ** IF 3" MINIMUM DECK EMBEDMENT OF TIE BAR CANNOT BE OBTAINED.

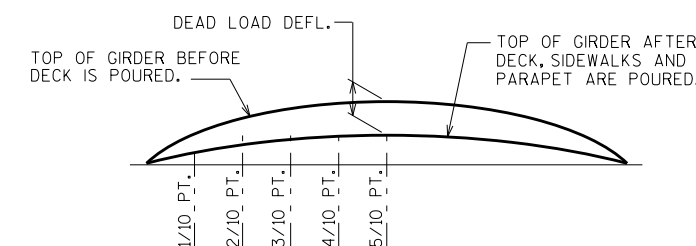
TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT \bar{C} OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

$$\begin{aligned} & \text{TOP OF DECK ELEV. AT FINAL GRADE} \\ & - \text{TOP OF GIRDER ELEVATION} \\ & + \text{DEAD LOAD DEFLECTION} \\ & - \text{DECK THICKNESS} \\ & = \text{HAUNCH HEIGHT 'T'} \end{aligned}$$

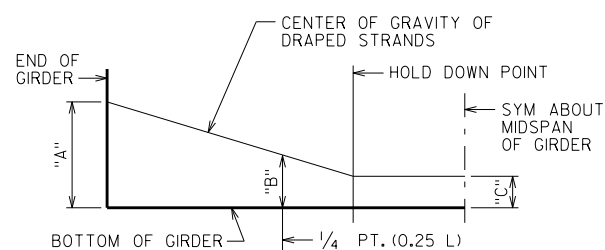
NOTE: AN AVERAGE HAUNCH ('T') OF 2 3/4" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".



TYP. STRAND PATTERN



DEAD LOAD DEFLECTION DIAGRAM



DRAPED STRAND PROFILE

* THE THEORETICAL INITIAL CAMBER VALUE AT THE TIME OF STRAND RELEASE AT MIDSPAN MULTIPLIED BY A FACTOR OF 1.4 TO ACCOUNT FOR CAMBER GROWTH FROM THE TIME OF STRAND RELEASE TO JOBSITE PLACEMENT.

| SPAN | CAMBER (IN.) * |
|------|----------------|
| 1, 2 | 3.54 |
| | |
| | |
| | |

THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T'. USE ACTUAL GIRDER SHOTS. THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.

| NO. | DATE | REVISION | BY |
|---|------|----------|----------------|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION | | | |
| STRUCTURE B-12-195 | | | |
| DRAWN BY | | WWR | PLANS CKD. DLM |
| 36W" PRESTRESSED GIRDER DETAILS 2 | | | SHEET 11 |

NOTES

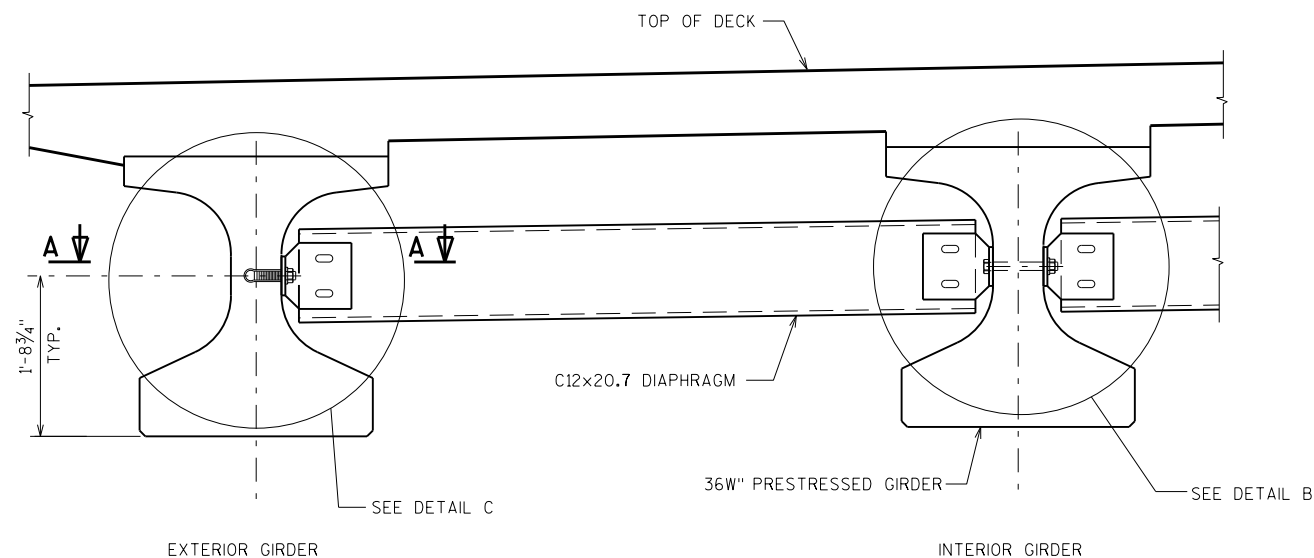
ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-12-195", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

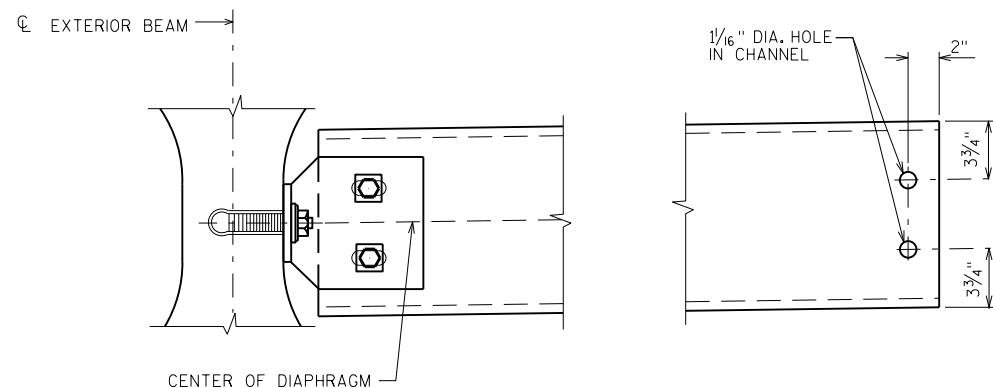
ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

ALL DIAPHRAGM MATERIAL INCLUDING BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AFTER FABRICATION.

STEEL DIAPHRAGM TO CONCRETE WEB CONNECTION SHALL BE SNUG-TIGHT PLUS 1/4 TURN, UNLESS NOTED OTHERWISE. HIGH STRENGTH BOLTS FOR WEB CONNECTION SHALL MEET THE REQUIREMENTS FOR ASTM A325 OR ASTM A449.

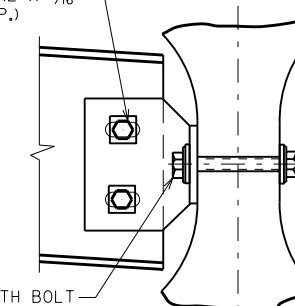


PART TRANSVERSE SECTION AT DIAPHRAGM



DETAIL C

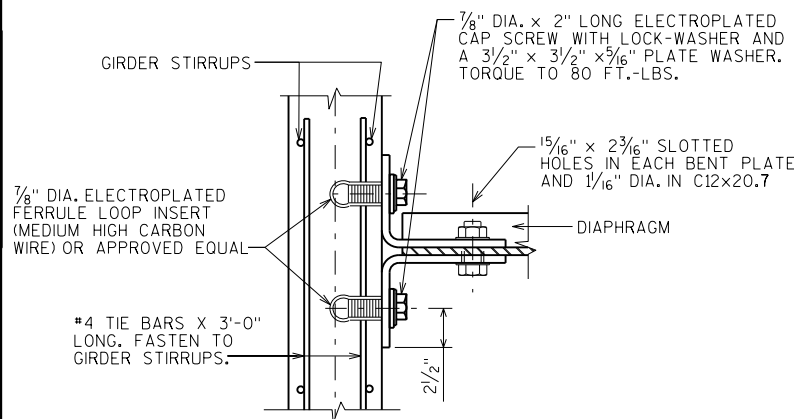
7/8\"/>



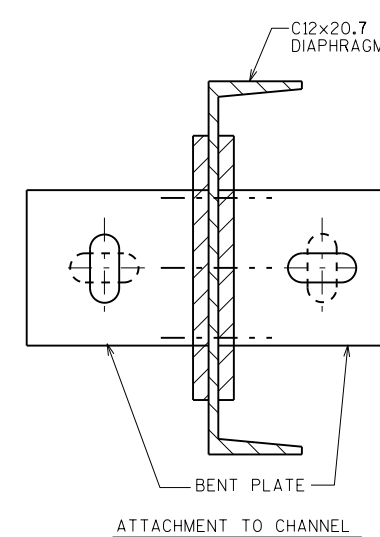
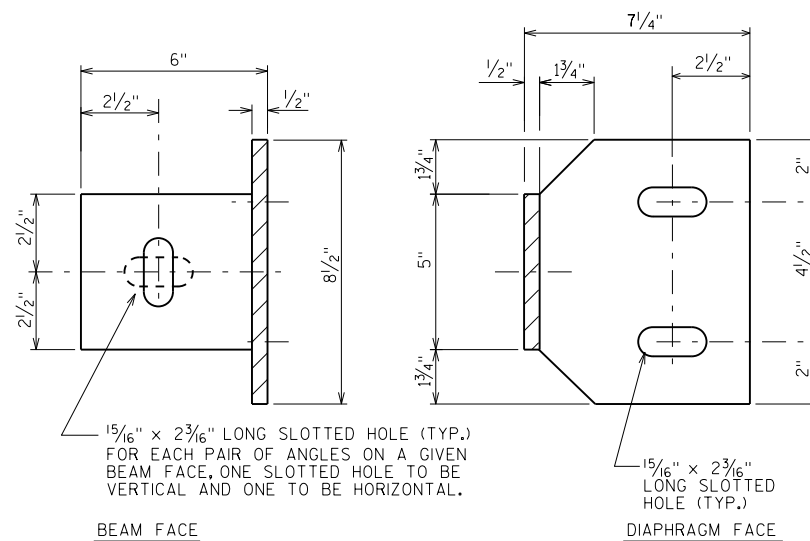
7/8\"/>

SECTION AT INTERIOR GIRDERS THRU DIAPHRAGM FOR SKEW ANGLES > 10°

8



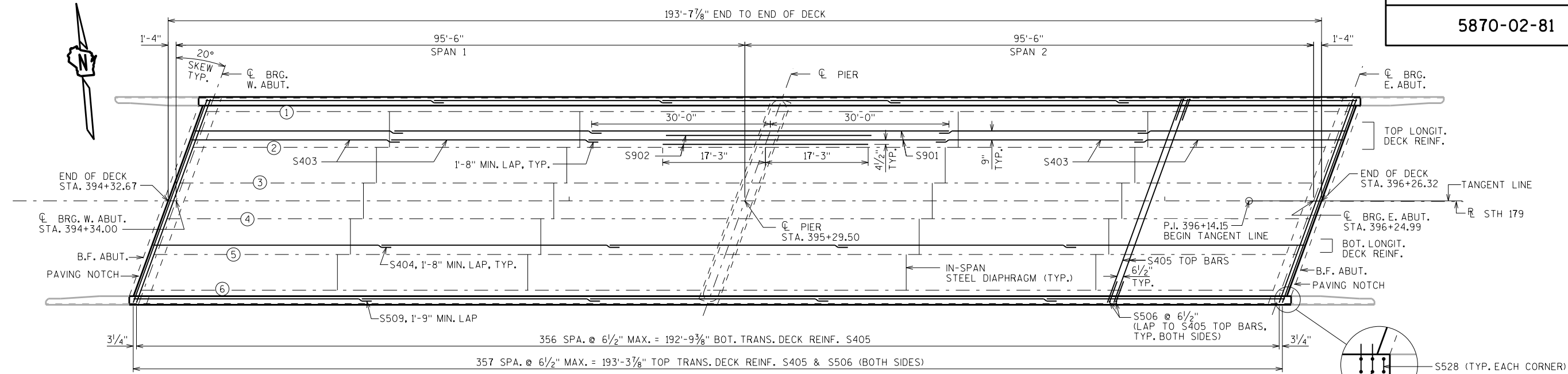
SECTION A-A
(FOR EXTERIOR ATTACHMENT)



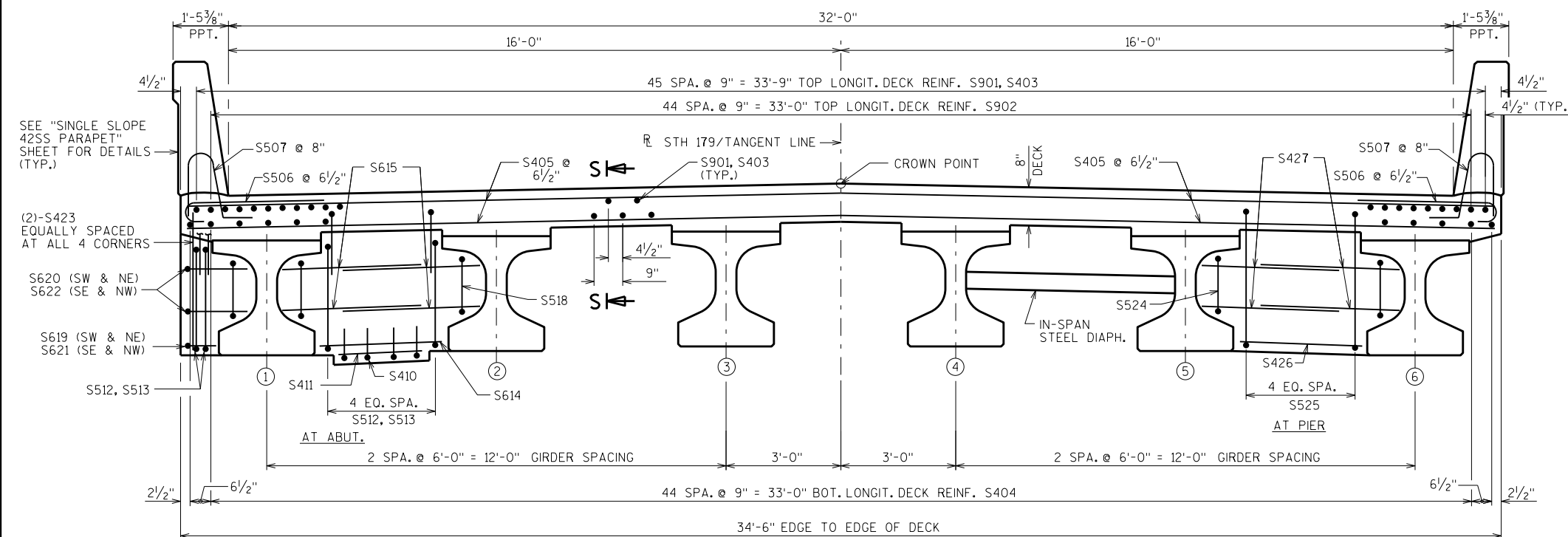
8

| NO. | DATE | REVISION | BY |
|---|------|----------|----------------|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION | | | |
| STRUCTURE B-12-195 | | | |
| DRAWN BY | | WWR | PLANS CKD. DLM |
| STEEL DIAPHRAGM | | | SHEET 12 |

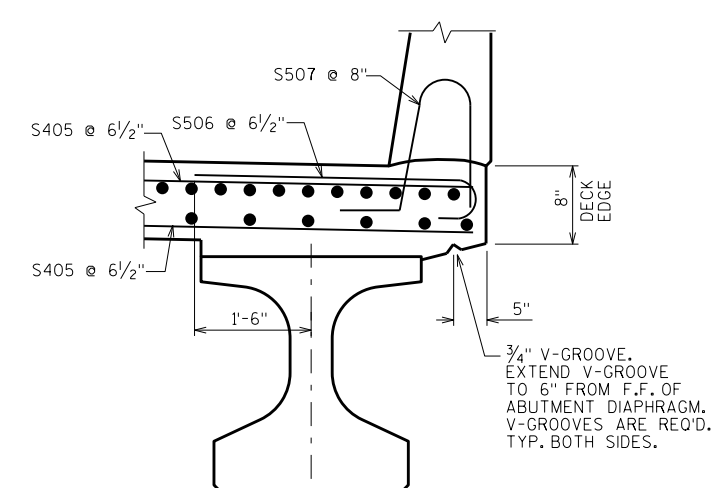
SCALE =



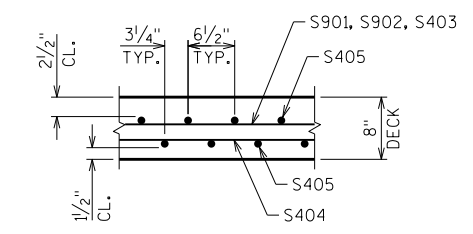
PLAN



CROSS SECTION THRU SUPERSTRUCTURE (LOOKING EAST)



OVERHANG STEEL AND DRIP GROOVE DETAIL



SECTION S-S

TOP OF DECK ELEVATIONS

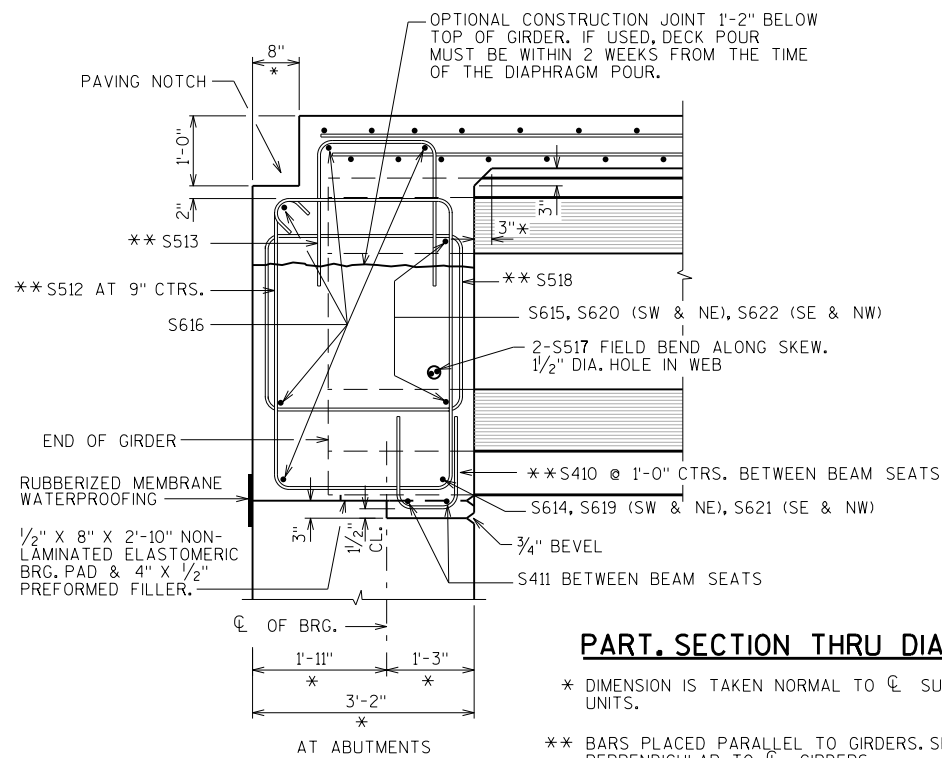
| | W. ABUT | 1/10 | 2/10 | 3/10 | 4/10 | 5/10 | 6/10 | 7/10 | 8/10 | 9/10 | PIER 1 | 1/10 | 2/10 | 3/10 | 4/10 | 5/10 | 6/10 | 7/10 | 8/10 | 9/10 | E. ABUT. |
|------------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------|
| N.EOD | 677.99 | 677.98 | 677.97 | 677.95 | 677.93 | 677.90 | 677.88 | 677.84 | 677.81 | 677.77 | 677.73 | 677.68 | 677.63 | 677.58 | 677.52 | 677.46 | 677.39 | 677.32 | 677.25 | 677.18 | 677.10 |
| N. CURB | 677.99 | 677.98 | 677.97 | 677.95 | 677.93 | 677.91 | 677.88 | 677.85 | 677.81 | 677.77 | 677.73 | 677.68 | 677.63 | 677.58 | 677.52 | 677.46 | 677.40 | 677.33 | 677.26 | 677.18 | 677.10 |
| GIRDER 1 | 678.01 | 678.00 | 677.99 | 677.97 | 677.95 | 677.93 | 677.90 | 677.87 | 677.83 | 677.79 | 677.75 | 677.71 | 677.66 | 677.60 | 677.54 | 677.48 | 677.42 | 677.35 | 677.28 | 677.20 | 677.12 |
| GIRDER 2 | 678.13 | 678.12 | 678.11 | 678.10 | 678.08 | 678.05 | 678.03 | 678.00 | 677.96 | 677.92 | 677.88 | 677.84 | 677.79 | 677.73 | 677.68 | 677.62 | 677.55 | 677.49 | 677.42 | 677.34 | 677.26 |
| GIRDER 3 | 678.25 | 678.25 | 678.23 | 678.22 | 678.20 | 678.18 | 678.15 | 678.12 | 678.09 | 678.05 | 678.01 | 677.97 | 677.92 | 677.87 | 677.81 | 677.75 | 677.69 | 677.62 | 677.55 | 677.48 | 677.40 |
| RL STH 179 | 678.31 | 678.31 | 678.30 | 678.28 | 678.26 | 678.24 | 678.22 | 678.19 | 678.15 | 678.12 | 678.08 | 678.03 | 677.98 | 677.93 | 677.88 | 677.82 | 677.76 | 677.69 | 677.62 | 677.55 | 677.47 |
| GIRDER 4 | 678.25 | 678.25 | 678.24 | 678.22 | 678.21 | 678.18 | 678.16 | 678.13 | 678.10 | 678.06 | 678.02 | 677.98 | 677.93 | 677.88 | 677.82 | 677.77 | 677.70 | 677.64 | 677.57 | 677.50 | 677.42 |
| GIRDER 5 | 678.14 | 678.13 | 678.12 | 678.11 | 678.09 | 678.07 | 678.04 | 678.02 | 677.98 | 677.95 | 677.91 | 677.87 | 677.82 | 677.77 | 677.72 | 677.66 | 677.60 | 677.53 | 677.46 | 677.39 | 677.32 |
| GIRDER 6 | 678.02 | 678.01 | 678.00 | 677.99 | 677.97 | 677.95 | 677.93 | 677.90 | 677.87 | 677.84 | 677.80 | 677.76 | 677.71 | 677.66 | 677.61 | 677.55 | 677.49 | 677.43 | 677.36 | 677.29 | 677.21 |
| S. CURB | 678.00 | 677.99 | 677.98 | 677.97 | 677.95 | 677.93 | 677.91 | 677.88 | 677.85 | 677.82 | 677.78 | 677.74 | 677.69 | 677.64 | 677.59 | 677.54 | 677.47 | 677.41 | 677.34 | 677.27 | 677.20 |
| S. EOD | 678.00 | 677.99 | 677.98 | 677.97 | 677.96 | 677.94 | 677.91 | 677.89 | 677.86 | 677.82 | 677.78 | 677.74 | 677.70 | 677.65 | 677.59 | 677.54 | 677.48 | 677.41 | 677.35 | 677.28 | 677.20 |

| NO. | DATE | REVISION | BY |
|---|------|----------|-----------------|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION | | | |
| STRUCTURE B-12-195 | | | |
| DRAWN BY | | WWR | PLANS CK'D. DLM |
| SUPERSTRUCTURE | | | SHEET 13 |

BILL OF BARS

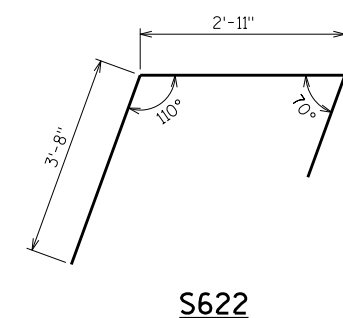
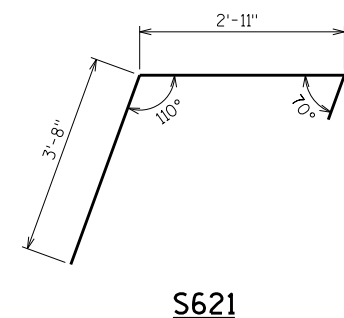
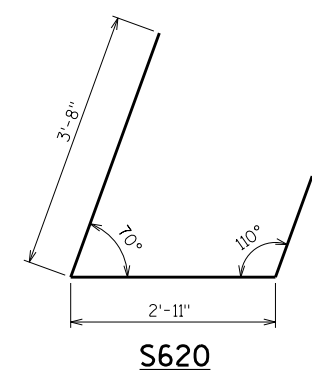
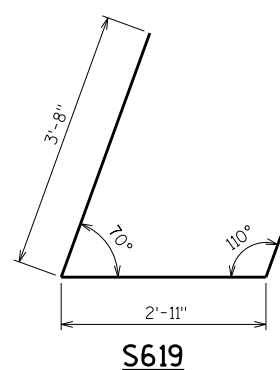
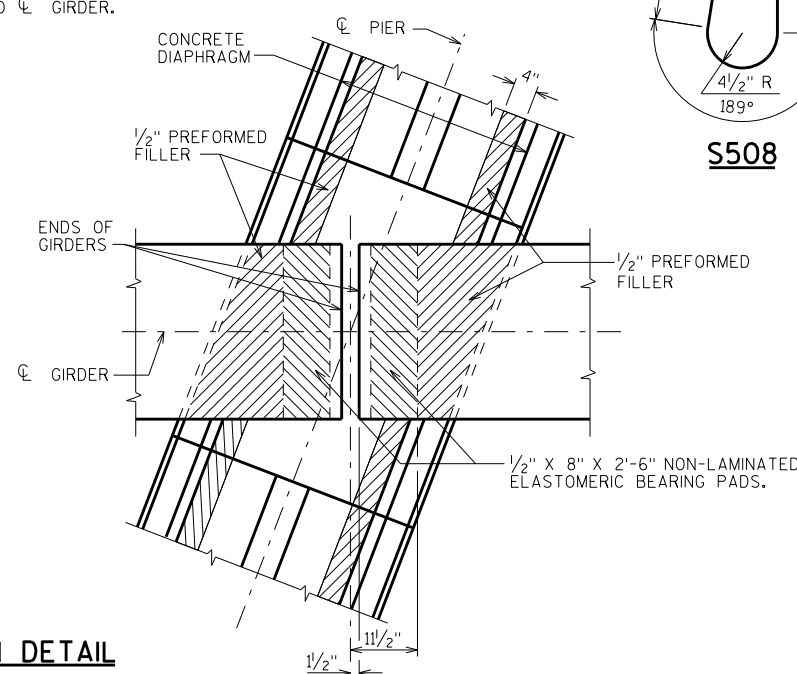
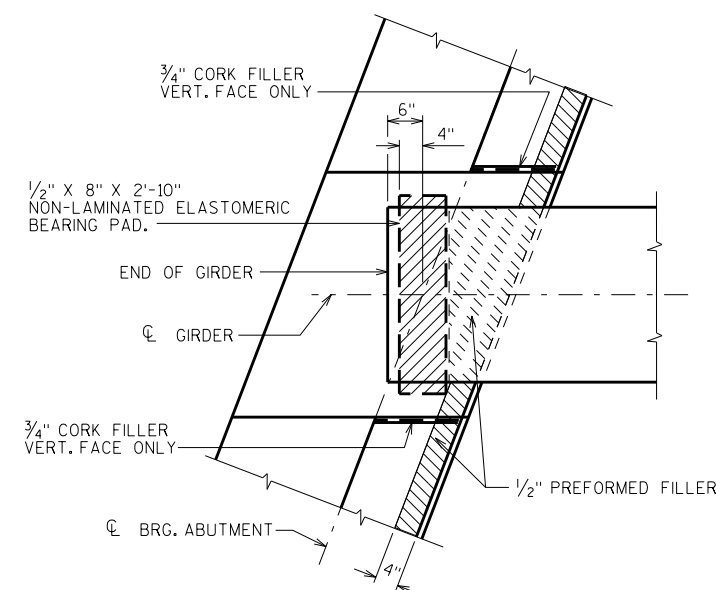
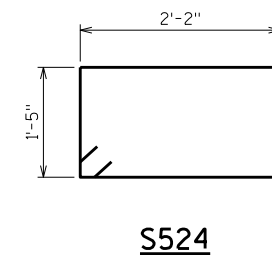
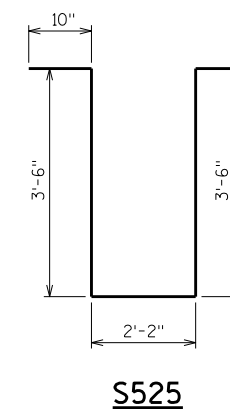
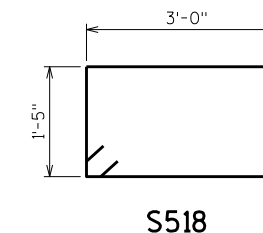
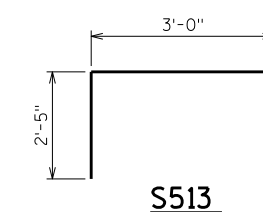
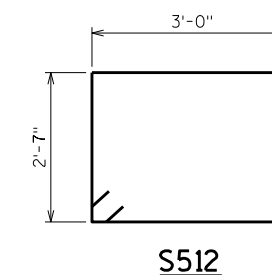
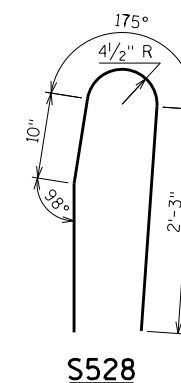
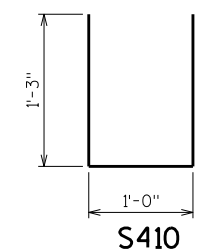
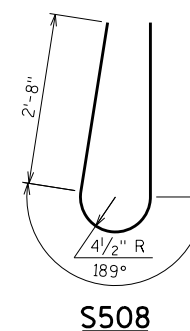
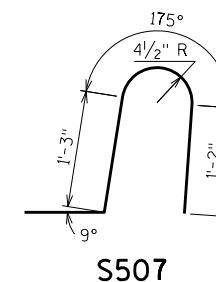
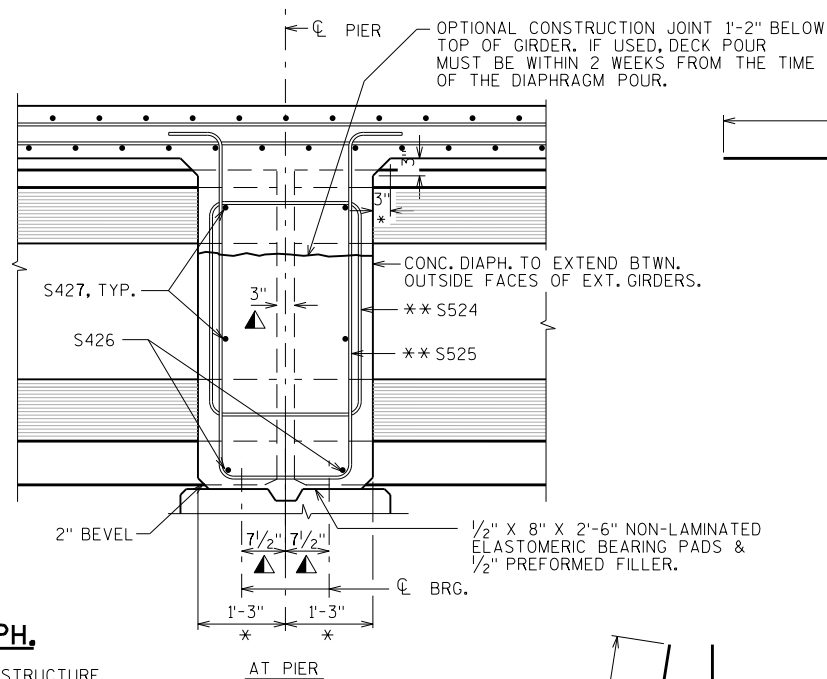
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

| BAR MARK | COAT | NO. REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION |
|----------|------|------------|---------|------|------------|--|
| S901 | X | 46 | 60'-0" | | | DECK-LONGIT. TOP CONTINUITY |
| S902 | X | 45 | 34'-6" | | | DECK-LONGIT. TOP CONTINUITY |
| S403 | X | 184 | 35'-0" | | | DECK-LONGIT. TOP |
| S404 | X | 235 | 40'-0" | | | DECK-LONGIT. BOT. |
| S405 | X | 715 | 36'-4" | | | DECK-TRANS. TOP & BOT. |
| S506 | X | 716 | 4'-4" | X | | DECK-TRANS. EDGE |
| S507 | X | 584 | 4'-5" | X | | DECK/PPT.-VERT. |
| S508 | X | 588 | 6'-8" | X | | PPT.-VERT. |
| S509 | X | 80 | 40'-4" | | | PPT.-HORIZ. |
| S410 | X | 40 | 3'-4" | X | | ABUT. DIAPH.-VERT. BOT. BTWN. GIR. |
| S411 | X | 20 | 2'-4" | | | ABUT. DIAPH.-HORIZ. BOT. BTWN. GIR. |
| S512 | X | 58 | 11'-10" | X | | ABUT. DIAPH.-VERT. STIRRUP |
| S513 | X | 58 | 7'-7" | X | | ABUT. DIAPH.-VERT. U-BAR |
| S614 | X | 10 | 3'-5" | | | ABUT. DIAPH.-HORIZ. BOT. |
| S615 | X | 40 | 3'-11" | | | ABUT. DIAPH.-HORIZ. MIDDLE |
| S616 | X | 10 | 36'-3" | | | ABUT. DIAPH.- HORIZ. B.F. & DECK |
| S517 | X | 24 | 6'-0" | | | ABUT. DIAPH.-HORIZ. THRU GIRDER |
| S518 | X | 24 | 9'-6" | X | | ABUT. DIAPH.-VERT. STIRRUP @ GIR. FLANGE |
| S619 | X | 2 | 6'-10" | X | | ABUT. DIAPH.-HORIZ. U-BAR SW & NE |
| S620 | X | 4 | 7'-9" | X | | ABUT. DIAPH.-HORIZ. U-BAR SW & NE |
| S621 | X | 2 | 6'-11" | X | | ABUT. DIAPH.-HORIZ. U-BAR SE & NW |
| S622 | X | 4 | 7'-9" | X | | ABUT. DIAPH.-HORIZ. U-BAR SE & NW |
| S423 | X | 8 | 3'-7" | | | ABUT. DIAPH.-VERT. END |
| S524 | X | 10 | 7'-10" | X | | PIER DIAPH.-VERT. STIRRUP @ GIR. FLANGE |
| S525 | X | 25 | 10'-4" | X | | PIER DIAPH.-VERT. |
| S426 | X | 10 | 3'-4" | | | PIER DIAPH.-HORIZ. |
| S427 | X | 40 | 3'-6" | | | PIER DIAPH.-HORIZ. |
| S528 | X | 4 | 5'-10" | X | | DECK/PPT.-VERT. @ PAVING NOTCH |



PART. SECTION THRU DIAPH. AT PIER

- * DIMENSION IS TAKEN NORMAL TO CL SUBSTRUCTURE UNITS.
- ** BARS PLACED PARALLEL TO GIRDERS. SPACING PERPENDICULAR TO CL GIRDERS.
- ▲ DIMENSION IS TAKEN PARALLEL TO CL GIRDER.



| NO. | DATE | REVISION | BY |
|---|------|----------|----------------|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION | | | |
| STRUCTURE B-12-195 | | | |
| DRAWN BY | | WWR | PLANS CKD. DLM |
| SUPERSTRUCTURE DETAILS | | SHEET 14 | |

BILL OF BARS

FOR ABUTMENT PARAPETS

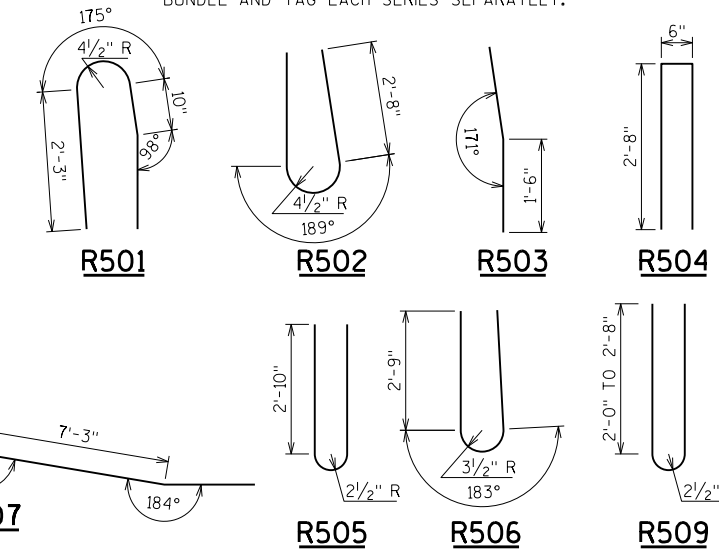
| BAR MARK | COAT | WEST ABUT. | EAST ABUT. | LENGTH | BENT | BAR SERIES | LOCATION |
|----------|------|------------|------------|--------|------|------------|----------------|
| R501 | X | 18 | 18 | 5'-10" | X | | PARAPET VERT. |
| R502 | X | 18 | 18 | 6'-8" | X | | PARAPET VERT. |
| R503 | X | 24 | 24 | 3'-0" | X | | PARAPET VERT. |
| R504 | X | 34 | 34 | 5'-7" | X | | PARAPET VERT. |
| R505 | X | 10 | 10 | 6'-5" | X | | PARAPET VERT. |
| R506 | X | 12 | 12 | 6'-6" | X | | PARAPET VERT. |
| R507 | X | 2 | 2 | 13'-8" | X | | PARAPET HORIZ. |
| R508 | X | 10 | 10 | 13'-8" | | | PARAPET HORIZ. |
| R509 | X | 12 | 12 | 5'-5" | X | ▲ | PARAPET VERT. |
| R510 | X | 4 | 4 | 13'-8" | X | | PARAPET HORIZ. |

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

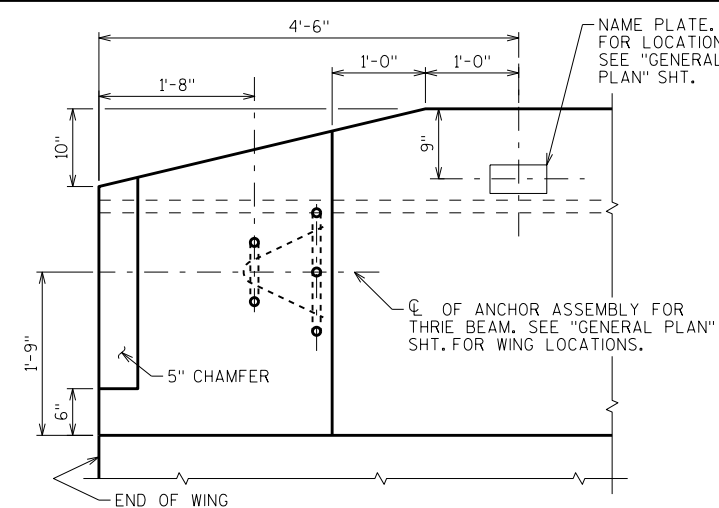
BAR SERIES TABLE

| BAR MARK | NO. REQ'D | LENGTH |
|----------|---------------|----------------|
| R509 | 4 SERIES OF 6 | 4'-9" TO 6'-1" |

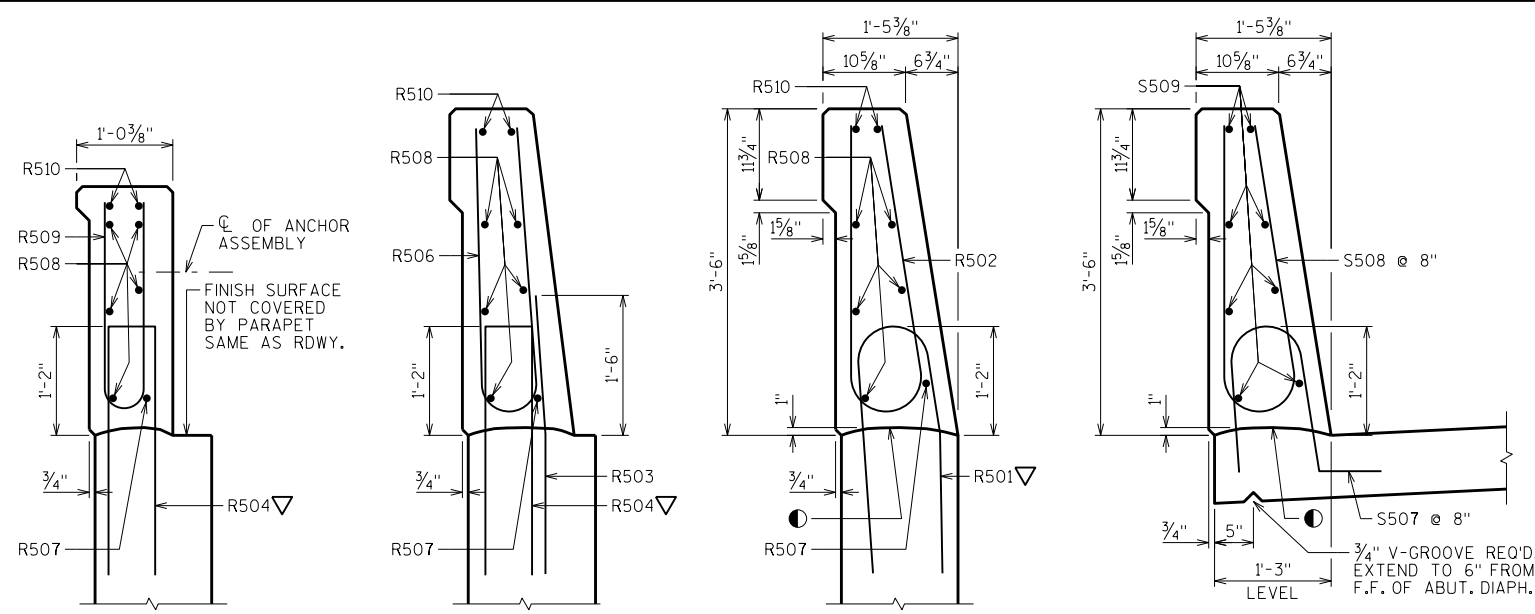
BUNDLE AND TAG EACH SERIES SEPARATELY.



- CONST. JOINT - STRIKE OFF AS SHOWN
- R503 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE R503 BARS CORRECTLY ALONG TRANSITION OF PARAPET.
- ▽ R501 AND R504 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED.
- BENCH MARK CAP.

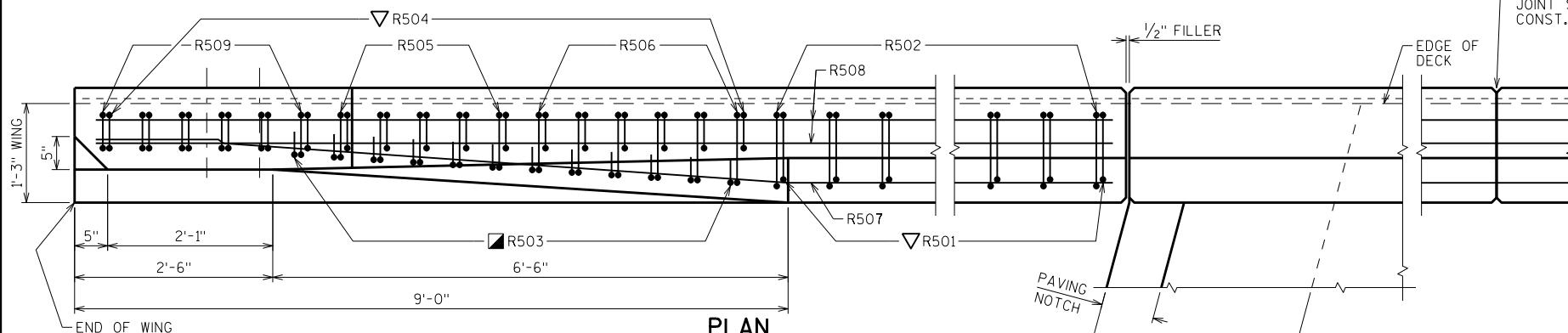


PARAPET END TREATMENT DETAIL
LOOKING AT INSIDE FACE OF PARAPET



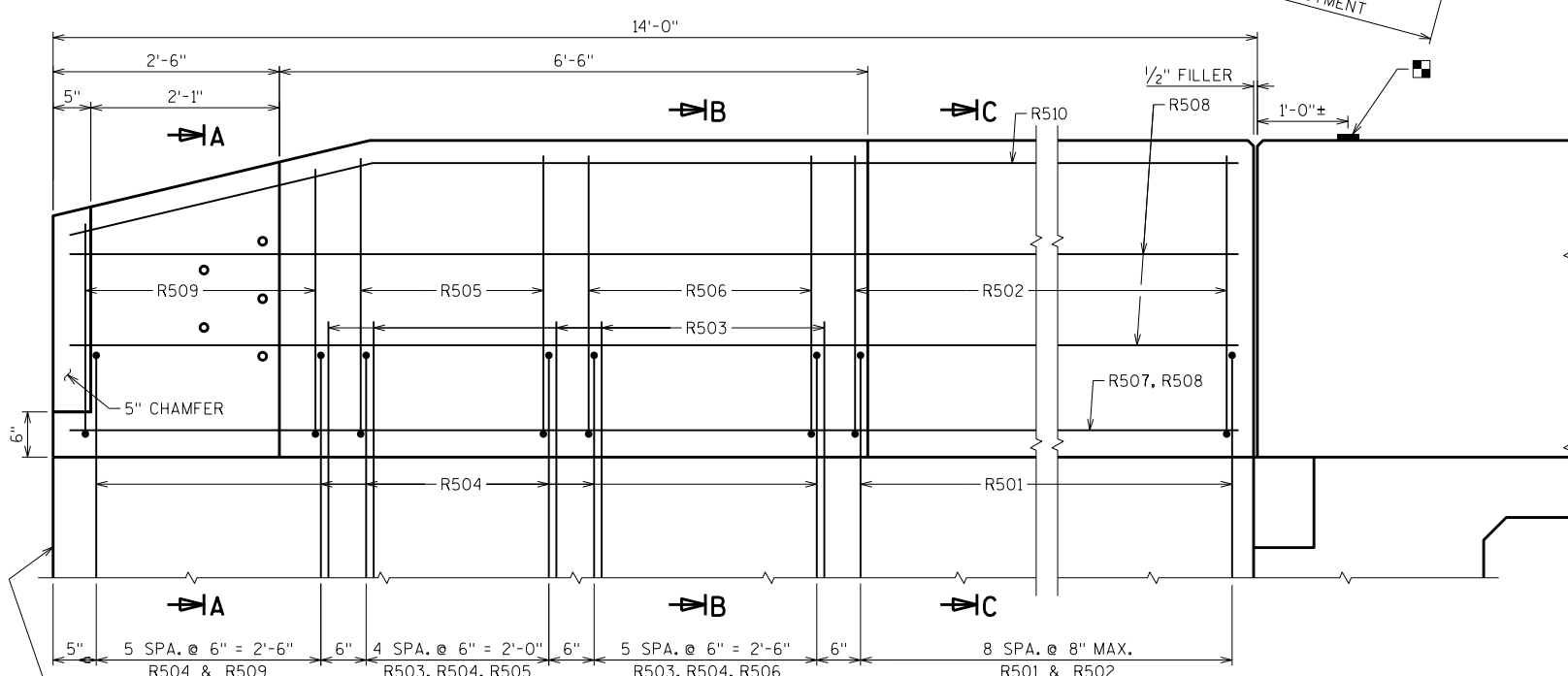
SECTION A-A SECTION B-B SECTION C-C SECTION THRU PARAPET ON DECK

OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED, RUN BAR REINF. THRU THE JOINT, LAP LONGIT. BARS A MIN. OF 1'-9". MIN. JOINT SPACING OF 80'-0". DEFINE CONST. JOINT WITH A 3/4" - 'V' GROOVE.



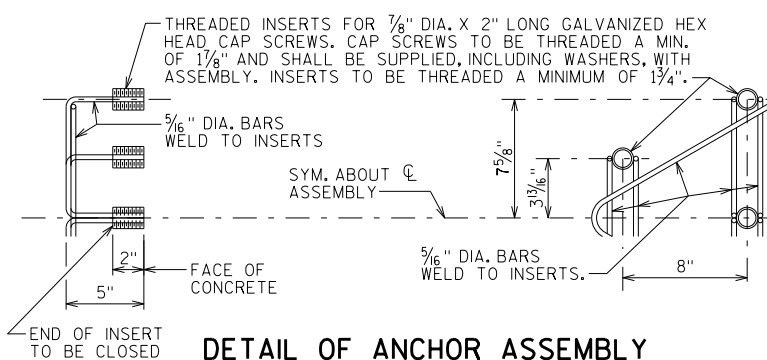
PLAN

NW CORNER SHOWN, OTHERS SIMILAR



INSIDE ELEVATION

NW CORNER SHOWN, OTHERS SIMILAR



DETAIL OF ANCHOR ASSEMBLY

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

ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-12-195

DRAWN BY: WWR PLANS CKD: DLM

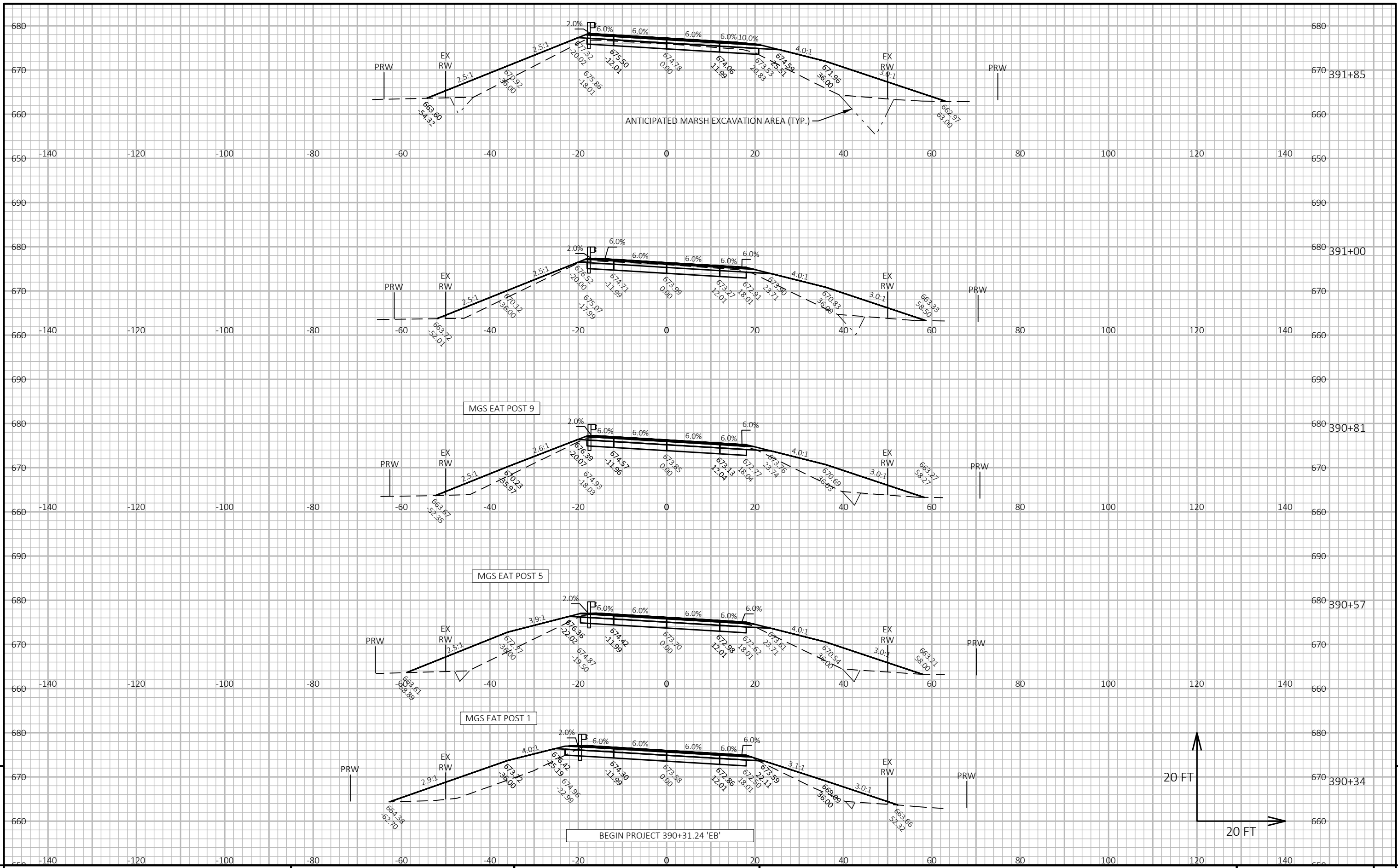
SINGLE SLOPE PARAPET 42SS SHEET 15

| DIVISION 1-1/CAT. 0010 (STA 390+31 - STA 394+33): STAGE 1 CONSTRUCTION - STH 179 | | | | | | | | | | | |
|--|----------|------|-------|-------|--------------------|-----------------|----------------|-----------------------|------------------------|-------------------------|---------------|
| STATION | Distance | Area | | | Incremental Volume | | | Cumulative Vol (CY) | | | Mass Ordinate |
| | | Cut | Marsh | Fill | Cut Note 1 | Marsh Note 2 | Fill Note 3 | Cut 1.00 Note 3 | Fill 1.00 Note 4 | Expanded Fill 1.3 | |
| | | | | | | | | | | | |
| 390+31 | | 72.7 | 1.7 | 190.3 | | | | | | | |
| 390+34 | 3 | 72.7 | 1.7 | 219.2 | 8 | 0 | 23 | 8 | 23 | 30 | -21 |
| 390+57 | 23 | 65.7 | 9.4 | 154.6 | 59 | 5 | 159 | 67 | 182 | 237 | -170 |
| 390+81 | 24 | 59.8 | 6.0 | 154.0 | 56 | 7 | 137 | 123 | 319 | 415 | -292 |
| 391+00 | 19 | 51.5 | 13.1 | 253.4 | 39 | 7 | 143 | 162 | 462 | 601 | -439 |
| 391+85 | 85 | 25.4 | 61.8 | 263.3 | 121 | 118 | 813 | 283 | 1,276 | 1,659 | -1,375 |
| 392+00 | 15 | 19.8 | 83.5 | 293.0 | 13 | 40 | 155 | 296 | 1,430 | 1,859 | -1,564 |
| 392+20 | 20 | 16.0 | 93.0 | 273.3 | 13 | 65 | 210 | 309 | 1,640 | 2,132 | -1,823 |
| 392+47 | 27 | 8.0 | 90.7 | 229.2 | 12 | 92 | 251 | 321 | 1,891 | 2,459 | -2,138 |
| 392+72 | 25 | 2.3 | 54.3 | 240.0 | 5 | 67 | 217 | 326 | 2,109 | 2,741 | -2,416 |
| 393+00 | 28 | 0.0 | 69.9 | 288.4 | 1 | 64 | 274 | 327 | 2,383 | 3,097 | -2,771 |
| 394+00 | 100 | 0.0 | 44.9 | 292.2 | 0 | 213 | 1,075 | 327 | 3,458 | 4,495 | -4,168 |
| 394+33 | 33 | 0.0 | 44.9 | 292.2 | 0 | 55 | 357 | 327 | 3,815 | 4,959 | -4,633 |
| Column totals | | | | | 327 | 733 | 3,815 | | | | |

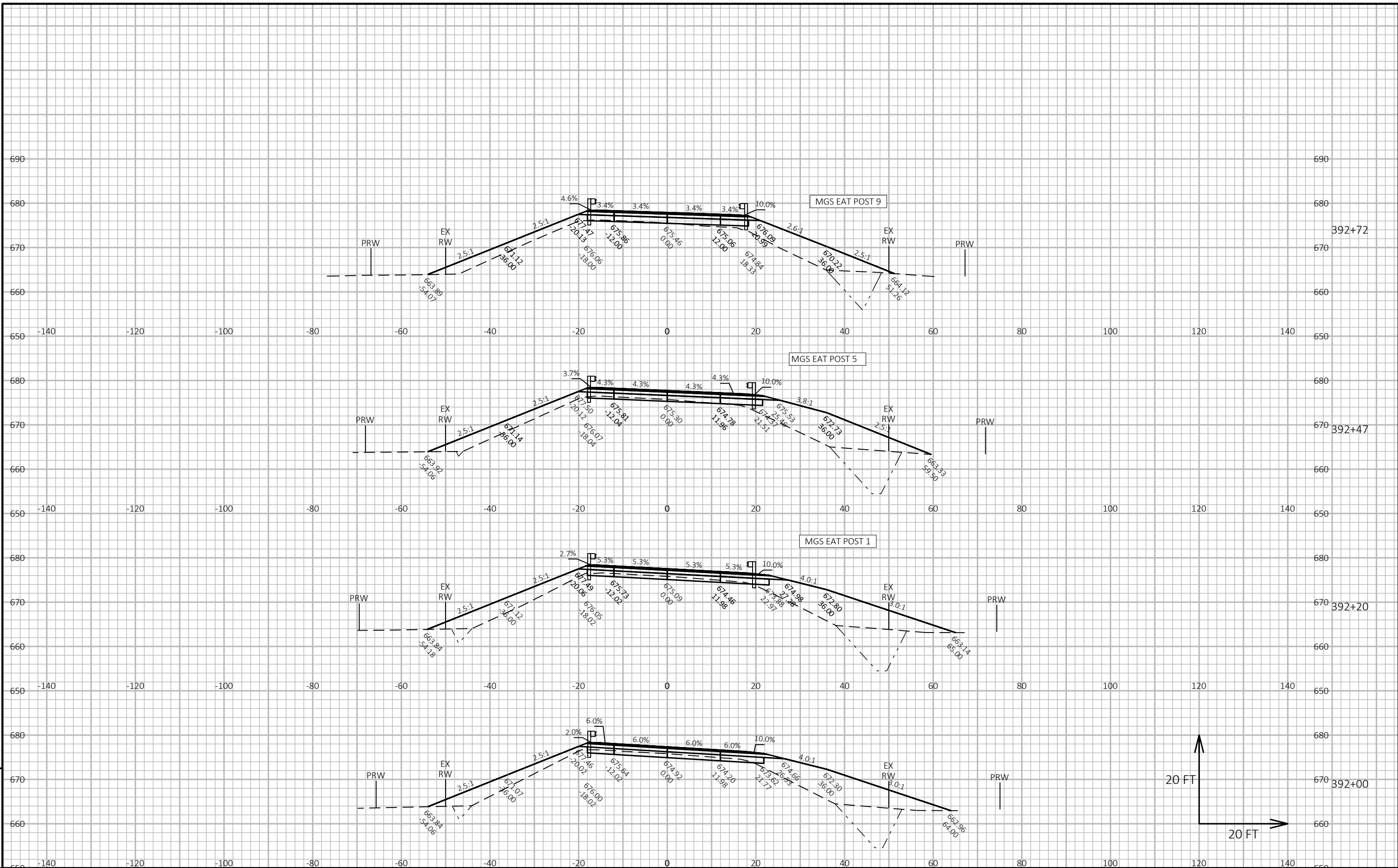
Notes:
 1 - Cut: Cut includes Salvaged/Unusable Pavement Material
 2 - Fill: Does not include Unusable Pavement Excavation volume
 3 - Cut: Cut includes Salvaged/Unusable Pavement Material
 4 - Fill: Does not include Unusable Pavement Excavation volume
 5 - Mass Ordinate: [Cut - Expanded Fill] (Fill Factor Adjusted)

| DIVISION 1-2/CAT. 1000 (STA 396+26 - STA 399+03): STAGE 1 CONSTRUCTION - STH 179 | | | | | | | | | | | |
|--|----------|------|-------|-------|--------------------|-----------------|----------------|-----------------------|------------------------|-------------------------|---------------|
| STATION | Distance | Area | | | Incremental Volume | | | Cumulative Vol (CY) | | | Mass Ordinate |
| | | Cut | Marsh | Fill | Cut Note 1 | Marsh Note 2 | Fill Note 3 | Cut 1.00 Note 3 | Fill 1.00 Note 4 | Expanded Fill 1.3 | |
| | | | | | | | | | | | |
| 396+26 | | 5.9 | 34.1 | 201.5 | | | | | | | |
| 396+50 | 24 | 16.8 | 21.1 | 224.7 | 10 | 25 | 189 | 10 | 189 | 246 | -236 |
| 397+00 | 50 | 27.5 | 8.3 | 89.3 | 41 | 27 | 291 | 51 | 480 | 624 | -573 |
| 397+38 | 38 | 46.1 | 5.4 | 106.4 | 52 | 10 | 138 | 103 | 618 | 803 | -700 |
| 397+63 | 25 | 58.8 | 20.4 | 155.8 | 49 | 12 | 121 | 151 | 739 | 961 | -810 |
| 397+87 | 24 | 68.1 | 33.2 | 172.8 | 56 | 24 | 146 | 208 | 885 | 1,151 | -943 |
| 397+88 | 1 | 68.4 | 33.9 | 174.0 | 3 | 1 | 6 | 210 | 892 | 1,159 | -949 |
| 398+00 | 12 | 73.1 | 30.9 | 198.6 | 31 | 14 | 83 | 242 | 974 | 1,267 | -1,025 |
| 398+12 | 12 | 76.3 | 33.7 | 219.7 | 33 | 14 | 93 | 275 | 1,067 | 1,388 | -1,113 |
| 398+18 | 6 | 76.4 | 38.9 | 225.0 | 17 | 8 | 49 | 292 | 1,117 | 1,452 | -1,160 |
| 398+37 | 19 | 76.8 | 38.9 | 229.6 | 54 | 27 | 160 | 346 | 1,277 | 1,660 | -1,314 |
| 398+71 | 34 | 74.7 | 18.6 | 197.0 | 95 | 36 | 269 | 441 | 1,545 | 2,009 | -1,568 |
| 399+00 | 29 | 71.9 | 8.1 | 108.3 | 79 | 14 | 164 | 520 | 1,709 | 2,222 | -1,702 |
| 399+03 | 3 | 71.9 | 8.1 | 108.3 | 8 | 1 | 12 | 528 | 1,721 | 2,238 | -1,710 |
| Column totals | | | | | 528 | 214 | 1,721 | | | | |

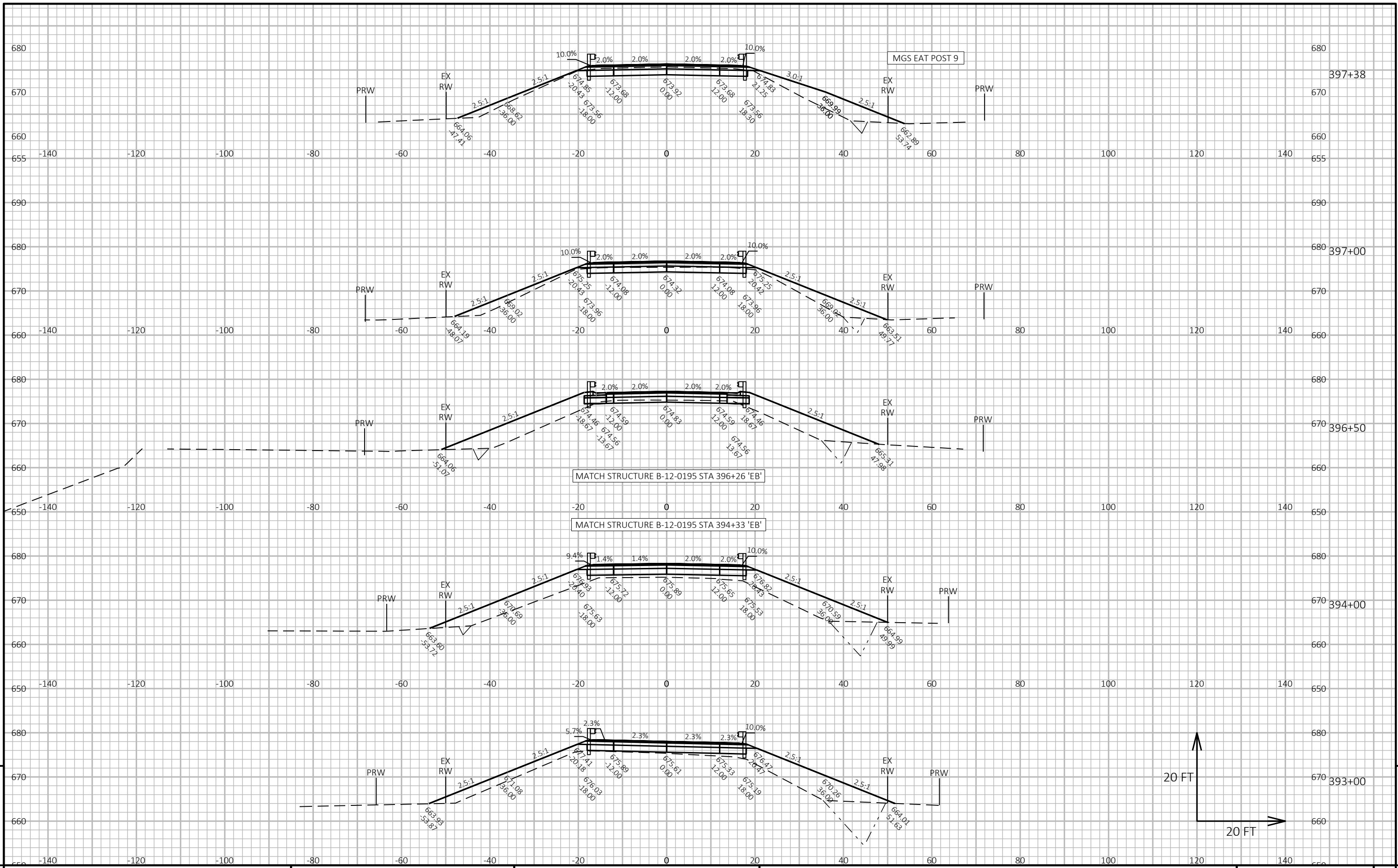
Notes:
 1 - Cut: Cut includes Salvaged/Unusable Pavement Material
 2 - Fill: Does not include Unusable Pavement Excavation volume
 3 - Cut: Cut includes Salvaged/Unusable Pavement Material
 4 - Fill: Does not include Unusable Pavement Excavation volume
 5 - Mass Ordinate: [Cut - Expanded Fill] (Fill Factor Adjusted)



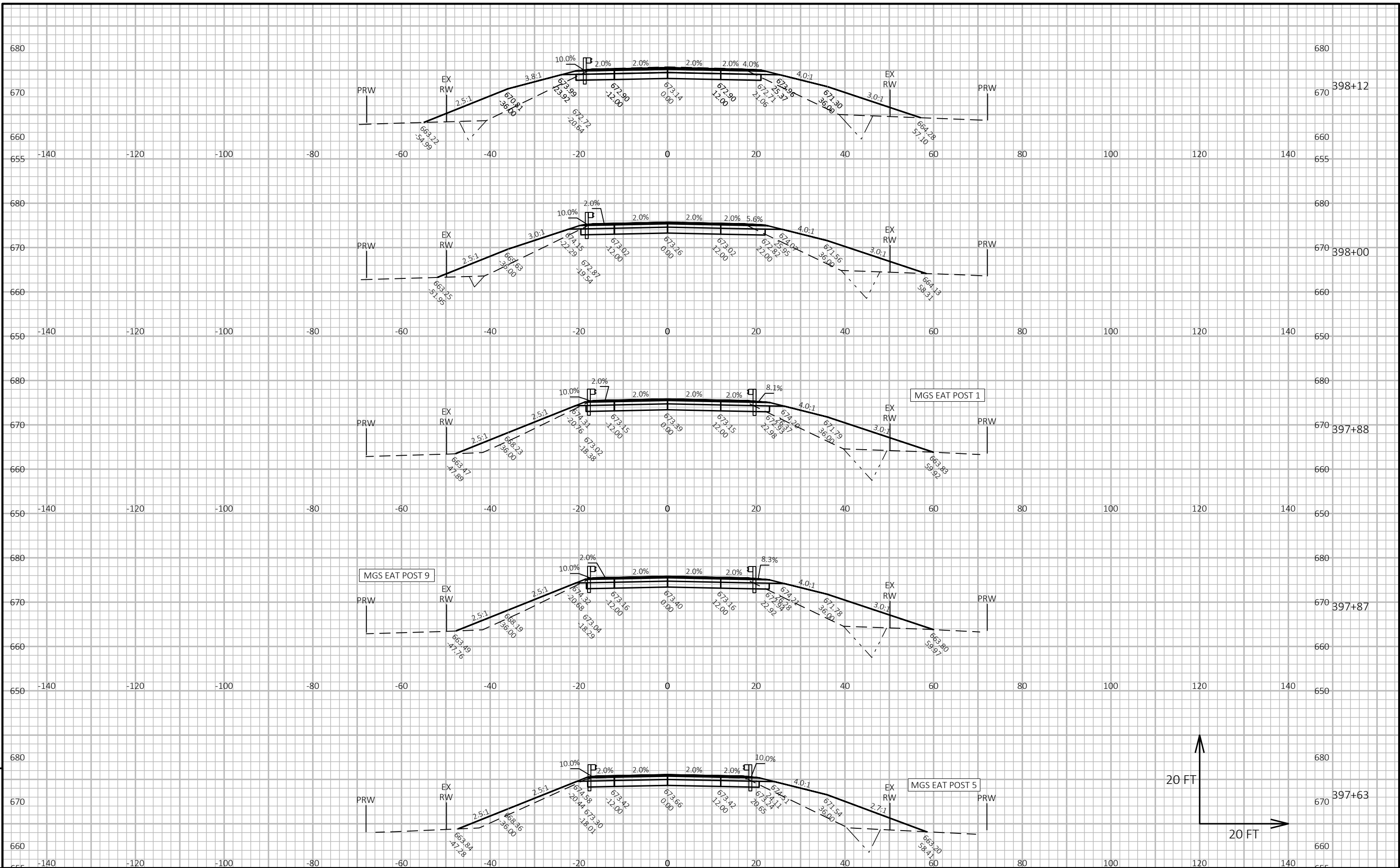
PROJECT NO: 5870-02-81 HWY: STH 179 COUNTY: CRAWFORD CROSS SECTIONS: STH 179 SHEET 9



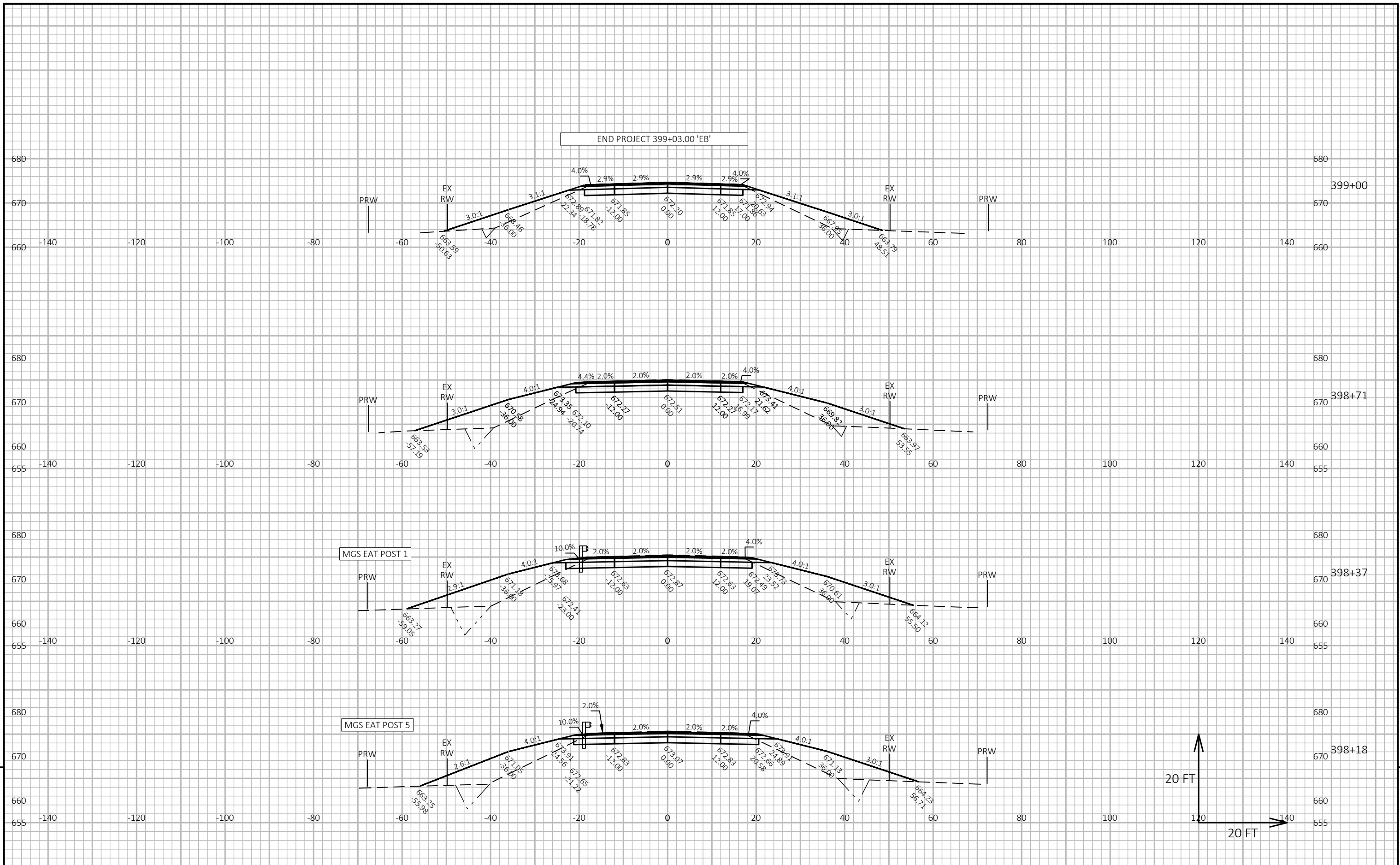
PROJECT NO: 5870-02-81 HWY: STH 179 COUNTY: CRAWFORD CROSS SECTIONS: STH 179 SHEET **9**



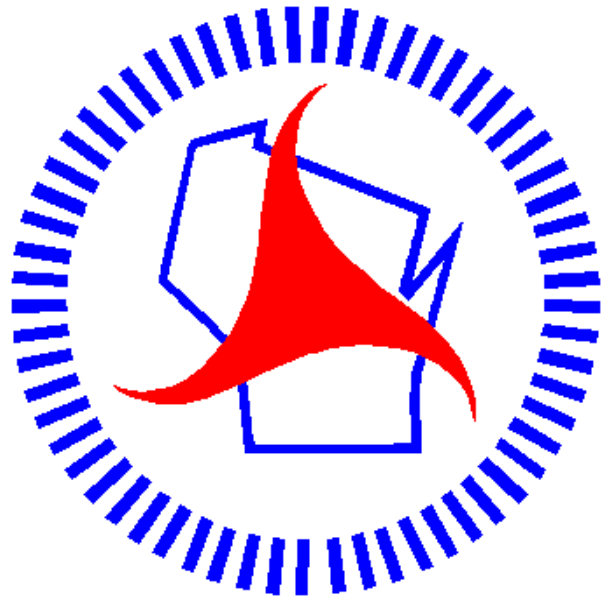
PROJECT NO: 5870-02-81 HWY: STH 179 COUNTY: CRAWFORD CROSS SECTIONS: STH 179 SHEET 9



PROJECT NO: 5870-02-81 HWY: STH 179 COUNTY: CRAWFORD CROSS SECTIONS: STH 179 SHEET E



| | | | | | |
|------------------------|--------------|------------------|-------------------------|-------|----------|
| PROJECT NO: 5870-02-81 | HWY: STH 179 | COUNTY: CRAWFORD | CROSS SECTIONS: STH 179 | SHEET | E |
|------------------------|--------------|------------------|-------------------------|-------|----------|



Wisconsin Department of Transportation

Dedicated people creating transportation solutions through innovation and exceptional service.

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