

WIS
PROJECT ID:
WITH: NA

1166-00-83

COUNTY:
MARATHON

JUNE 2022

ORDER OF SHEETS

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

TOTAL SHEETS = 232

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

STEVENS POINT - WAUSAU

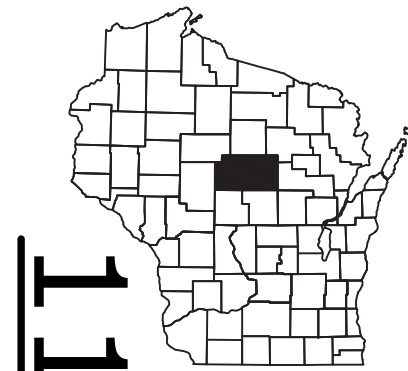
PORTAGE CO LN TO MAPLE RIDGE RD, NB

IH 39

MARATHON COUNTY

| STATE PROJECT | FEDERAL PROJECT | |
|---------------|-----------------|----------|
| | PROJECT | CONTRACT |
| 1166-00-83 | WISC 2022433 | 1 |
| | | |
| | | |

STATE PROJECT NUMBER
1166-00-83



DESIGN DESIGNATION 1166-00-13

| | | | |
|--------------|------|---|------------|
| A.A.D.T. | 2025 | = | 14,950 |
| A.A.D.T. | 2045 | = | 20,450 |
| D.H.V. | | = | 9.9 |
| D.D. | | = | 58/42 |
| T. | | = | 15.5% |
| DESIGN SPEED | | = | 70 MPH |
| ESALS | | = | 14,200,000 |

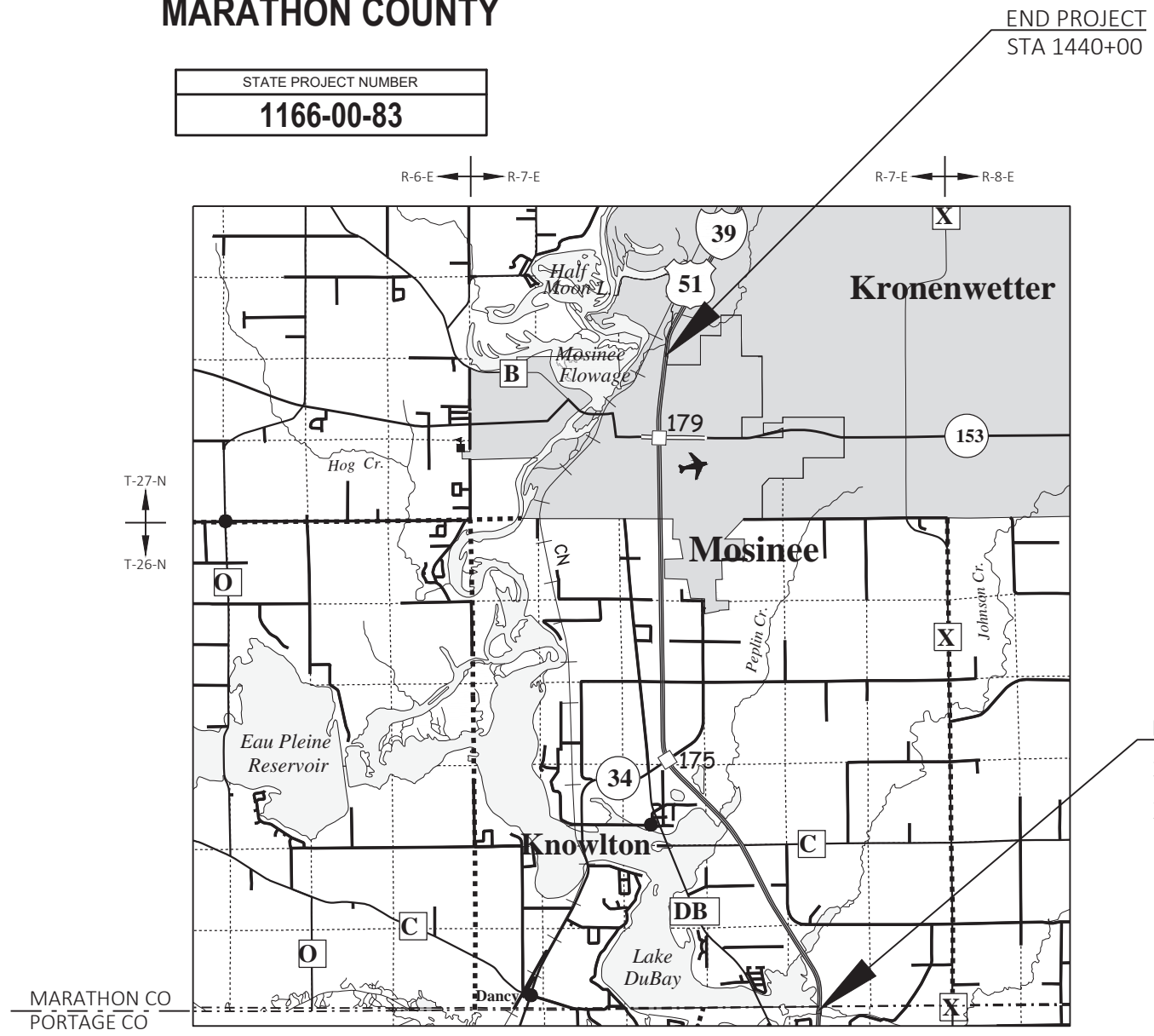
CONVENTIONAL SYMBOLS

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 | |



LAYOUT
SCALE 0 2 MI
TOTAL NET LENGTH OF CENTERLINE = 9.397 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, MARATHON COUNTY, NAD83 (2012), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

BEGIN PROJECT
STA 986+50
Y: 101638.285
X: 278537.426

END PROJECT
STA 1440+00

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

| | |
|---------------------|-----------------|
| Surveyor | REGION |
| Designer | ZACHARY GRULING |
| Project Manager | DAN HOLLOWAY |
| Regional Examiner | ZACHARY GRULING |
| Regional Supervisor | NICHOLE LYSNE |

APPROVED FOR THE DEPARTMENT

DATE: _____

Daniel Holloway
Digitally signed by Daniel Holloway
Date: 2022.03.02 10:07:53-06'00'
(Signature)

GENERAL NOTES

THERE ARE UTILITY FACILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL COORDINATE THEIR CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE.
THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

SECTION 2 ORDER

- General Notes
- Project Overview
- Typical Section
- Construction Details
- Intersection Details
- MGS Guardrail
- Erosion Control
- Storm Sewer
- Permanent Signing
- Pavement Marking
- Traffic Control
- Detour Plan
- Fencing
- Alignment Diagram

AS-BUILT REFERENCE (YEAR)*

- 1164-01-71 (1971)
- 1164-01-72 (1971)
- 1164-01-80 (1973)
- 1164-09-71 (1993)
- 1166-00-75 (2006)
- 1166-00-76 (2009)
- 6610-02-72 (1993) (STH 34)

*Approval Year (Not Construction)

HMA LAYERS

- IH 39/RAMPS
- 2" 4 HT 58-28 H
- IH 39 OUTSIDE SHOULDER
- 2" 4 LT 58-28 S
- STH 34/STH 34 Ramp
- 2" 4 MT 58-28 H Upper
- 2.25" 3 MT 58-28 S Lower
- 2.25" 3 MT 58-28 S Lower

UTILITY CONTACTS

AT&T Wisconsin (Communications)

Chuck Bartelt
701 E Division Street
Fon Du Lac, WI 54935
920-410-5104 Mobile
cb1461@att.com

Charter Communications (Communications)

Scott Olson
853 McIntosh Street
Wausau, WI. 54403
715-301-4079
715-261-6204
scott.olson@charter.com

TDS Telecom (Communications)

Jeff Olson
171 Paoli Road
Verona, WI 53593
608-845-2219
Jeffrey.olson@tdstelecom.com

Windstream NTI (Communications)

Eric Becker
314 Danz Avenue
Green Bay, WI
920-461-9825
Eric.Becker@Windstream.com

Wisconsin Public Service (Gas/Petroleum)

Shane Sarkkinen
1700 Sherman Street
Wausau, WI 54402
715-848-7387
715-966-1040
shane.sarkkinen@wisconsinpublicservice.com

Astrea (Communications)

Russell Kenny
105 Kent Street; P.O. Box 190
Iron Mountain, MI 49801
906-282-6434
russell.kenny@astreaconnect.com

Nsight Telservices (Communications)

Rick Vincent
470 Security BULD
Green Bay, WI 54313
920-617-7316
rick.vincent@nsight.com

Windstream KDL (Communications)

Eric Becker
312 N Danz Avenue
Green Bay, WI
920-461-9825
Eric.Becker@Windstream.com

Wisconsin Public Service (Electricity)

James Patten - WPS Designer
1700 Sherman Street; P.O. Box 1166
Wausau, WI 54402-1166
715-848-7405
715-573-0349
Jesse.patten@wisconsinpublicservice.com

Runoff Coefficient Table

| Land Use | Hydrologic Soil Group | | | | | | | | | | | |
|-------------------------|-----------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | A | | | B | | | C | | | D | | |
| | 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 | 0.08 0.22 | 0.16 0.30 | 0.22 0.38 | 0.12 0.26 | 0.20 0.34 | 0.27 0.44 | 0.15 0.30 | 0.24 0.37 | 0.33 0.50 | 0.19 0.34 | 0.28 0.41 | 0.38 0.56 |
| Median Strip-Turf | 0.19 0.24 | 0.20 0.26 | 0.24 0.30 | 0.19 0.25 | 0.22 0.28 | 0.26 0.33 | 0.20 0.26 | 0.23 0.30 | 0.30 0.37 | 0.20 0.27 | 0.25 0.32 | 0.30 0.40 |
| Side Slope Turf | | | 0.25 0.32 | | | 0.27 0.34 | | | 0.28 0.36 | | | 0.30 0.38 |
| Pavement | | | | | | | | | | | | |
| Asphalt | 0.70 - 0.95 | | | | | | | | | | | |
| Concrete | 0.80 - 0.95 | | | | | | | | | | | |
| Brick | 0.70 - 0.80 | | | | | | | | | | | |
| Drives, Sidewalks | 0.75 - 0.85 | | | | | | | | | | | |
| Roofs | 0.75 - 0.95 | | | | | | | | | | | |
| Gravel Roads, Shoulders | 0.40 - 0.60 | | | | | | | | | | | |

Total Project Area = 104 Acres
Total Area Expected To Be Disturbed By Construction Activities = 0.98 Acres

FEDERAL AVIATION ADMINISTRATION (FAA)

FAA - Electric for Runway Lights
Aaron Warner - Green Bay SSC Manager
2077 Airport Drive Suite 17
Green Bay, WI 54313
920-360-5701
Aron.d.warner@faa.gov

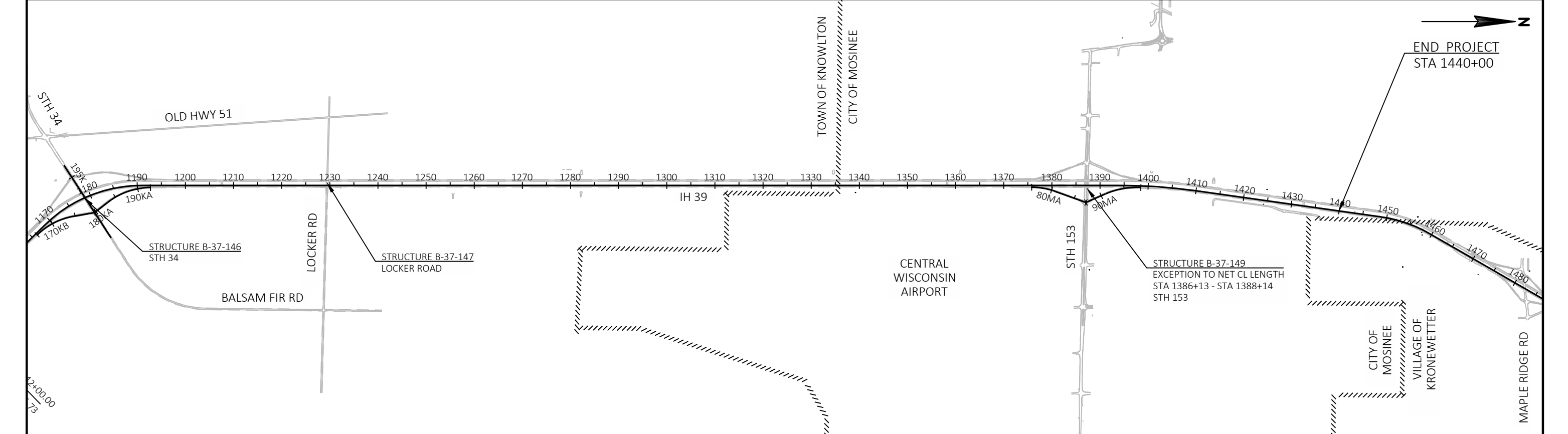
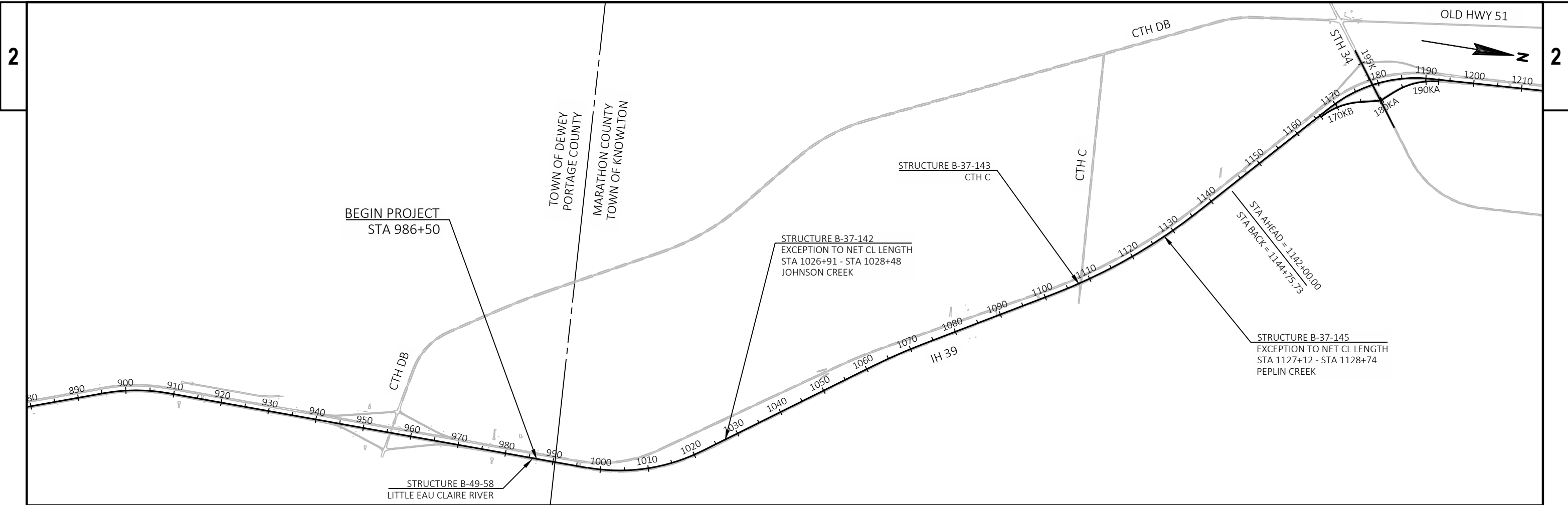
ENVIRONMENTAL CONTACTS

WI Department of Natural Resources
625 E. Cty Rd Y, Suite 700
Oshkosh, WI 54901
Attn: Casey Jones
Phone: (715) 213-6571 Mobile
casey.jones@wisconsin.gov

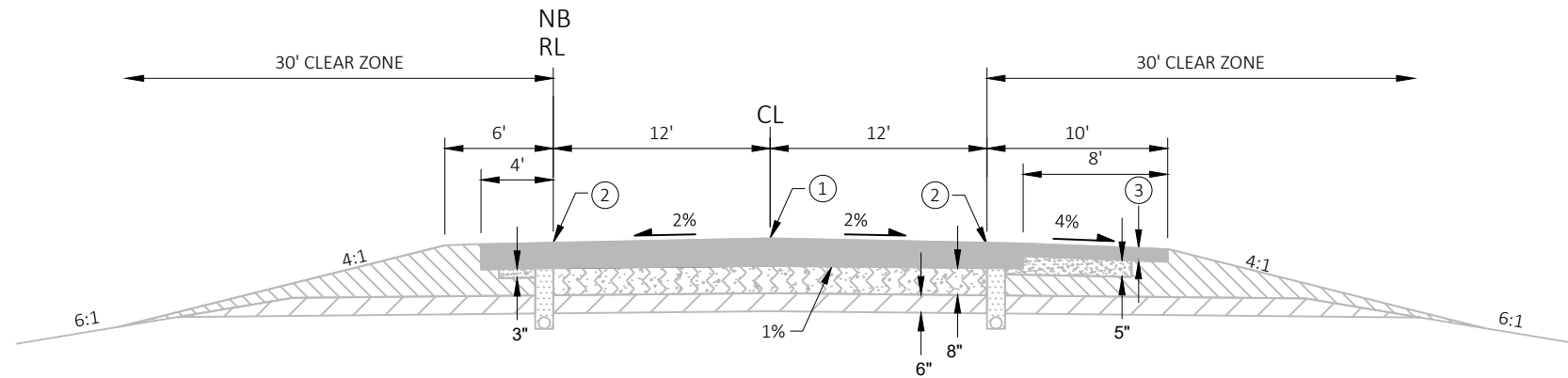
Central Wisconsin Airport

Mark Cihlar
100 CWA Drive, Suite 227
Mosinee, WI 54455
715-693-2147
mcihlar@fly-cwa.org





| | | | | | |
|------------------------|------------|------------------|------------------|-------|----------|
| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | PROJECT OVERVIEW | SHEET | E |
|------------------------|------------|------------------|------------------|-------|----------|

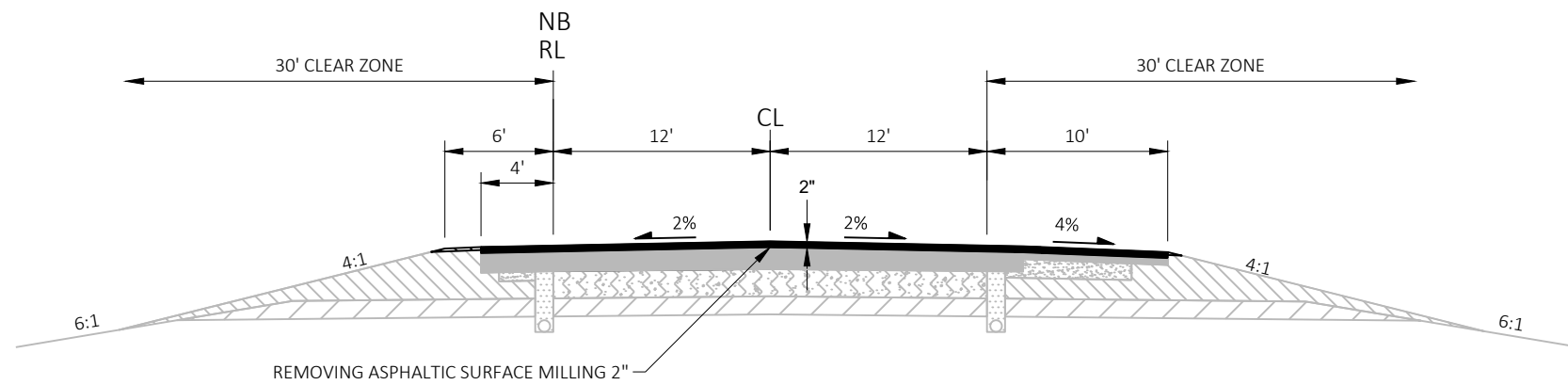


BROKEN AND AND SEATED CONCRETE PAVEMENT
STA 1312+00 TO 1383+00

EXISTING TYPICAL SECTION IH 39

STA 986+50 TO STA 997+32
 STA 1021+64 TO STA 1061+54
 STA 1072+52 TO STA 1101+80
 STA 1136+33 TO STA 1144+75 BACK
 STA 1142+00 AHEAD TO STA 1168+74
 STA 1208+00 TO STA 1225+38
 STA 1233+38 TO STA 1394+08
 STA 1409+95 TO STA 1440+00

| | ① | ② | ③ |
|--|---------|--------|--------|
| STA 986+50 TO STA 1144+75 BACK | 8 1/2" | 7" | 3 1/2" |
| STA 1142+00 AHEAD TO STA 1233+00 STA 1383+00 TO STA 1440+00 | 8 1/4" | 6 3/4" | 4" |
| STA 1233+00 TO STA 1383+00 | 10 3/4" | 9 1/4" | 4" |



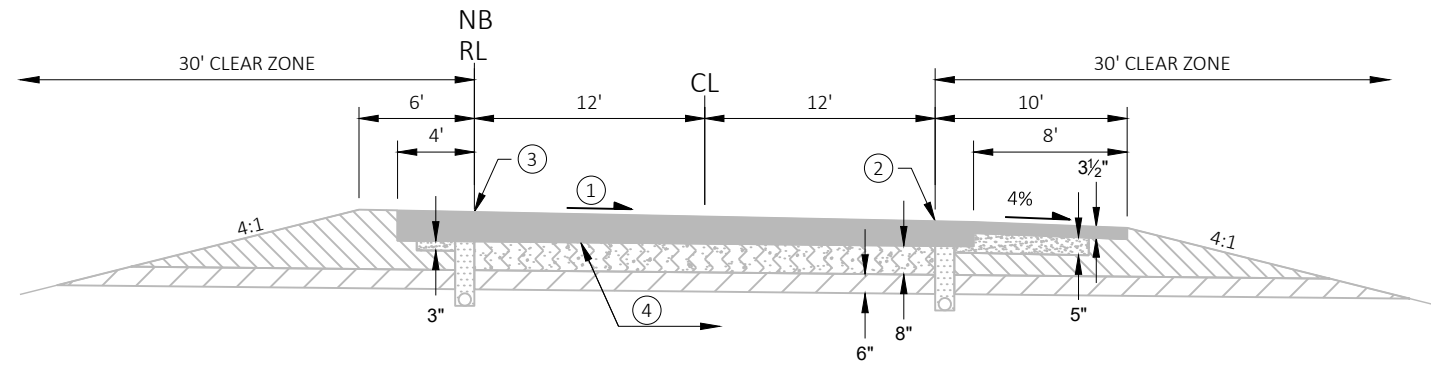
REMOVING ASPHALTIC SURFACE MILLING 2"

FINISHED TYPICAL SECTION IH 39

STA 986+50 TO STA 997+32
 STA 1021+64 TO STA 1061+54
 STA 1072+52 TO STA 1101+80
 STA 1136+33 TO STA 1144+75 BACK
 STA 1142+00 AHEAD TO STA 1168+74
 STA 1208+00 TO STA 1225+38
 STA 1233+38 TO STA 1394+08
 STA 1409+95 TO STA 1440+00

LEGEND

- EXISTING HMA PAVEMENT
- EXISTING RUBBLIZED CONCRETE PAVEMENT
- EXISTING BASE AGGREGATE DENSE 3/4-INCH
- EXISTING BASE AGGREGATE DENSE 1 1/4-INCH
- EXISTING AGGREGATE OPEN GRADED
- HMA PAVEMENT
- BASE AGGREGATE DENSE 3/4-INCH

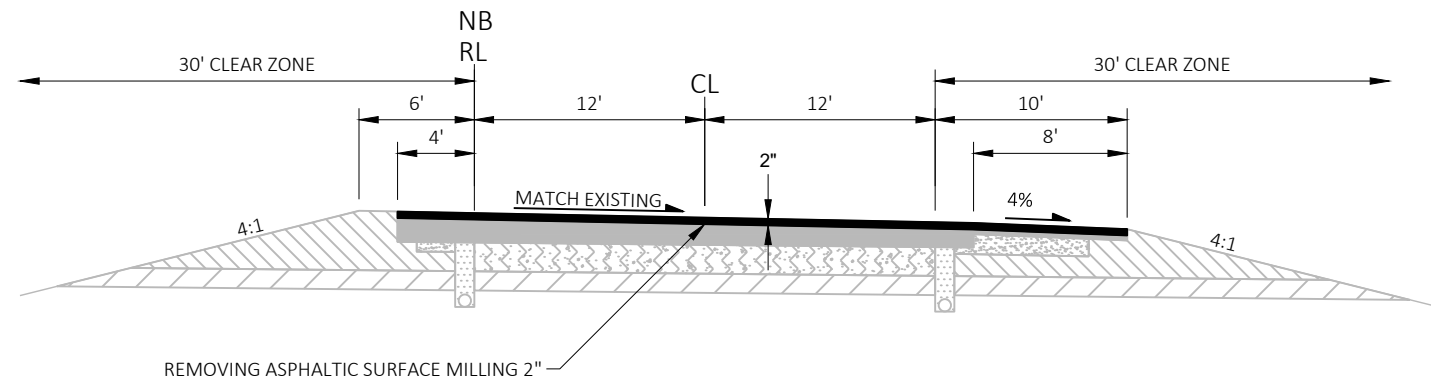


EXISTING TYPICAL SUPERELEVATED SECTION IH 39

- * STA 997+32 TO STA 1021+64
- STA 1061+54 TO STA 1072+52
- * STA 1101+80 TO STA 1136+33
- STA 1168+74 TO STA 1178+00
- STA 1394+08 TO STA 1409+95

*ROTATE 180° AROUND REFERENCE LINE

| | ① | ② | ③ | ④ |
|----------------------------|------|---------------------------------|----------------------------------|------|
| STA 997+32 TO STA 1021+64 | 5.3% | 7" | 7" | 5.3% |
| STA 1061+54 TO STA 1072+52 | 2.0% | 7" | 9 ⁷ / ₈ " | 1.0% |
| STA 1101+80 TO STA 1136+33 | 2.0% | 7" | 9 ⁷ / ₈ " | 1.0% |
| STA 1168+74 TO STA 1178+00 | 6.0% | 6 ³ / ₄ " | 5 ⁵ / ₁₆ " | 6.5% |
| STA 1394+08 TO STA 1409+95 | 2.0% | 6 ³ / ₄ " | 9 ⁵ / ₈ " | 1.0% |



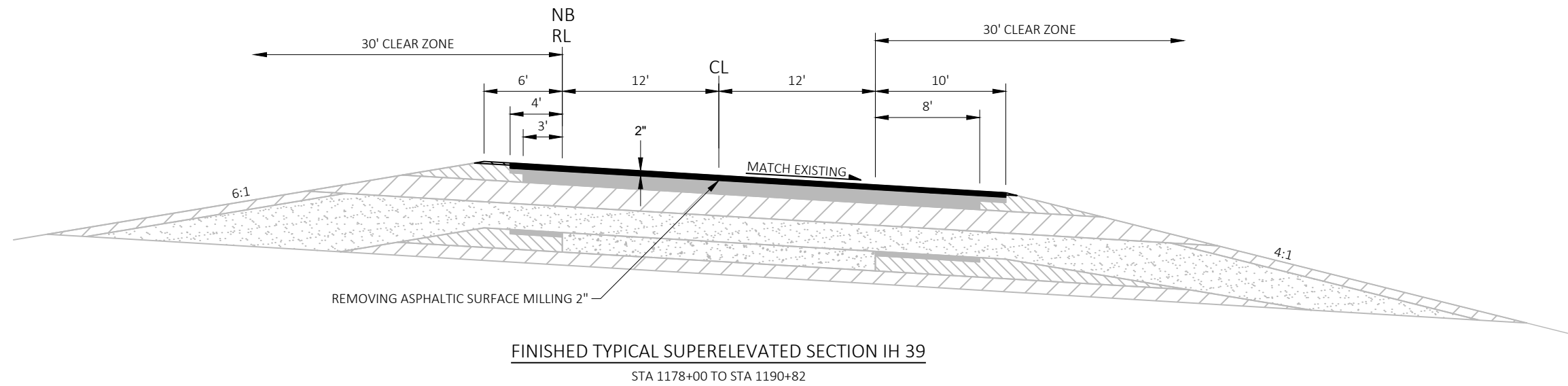
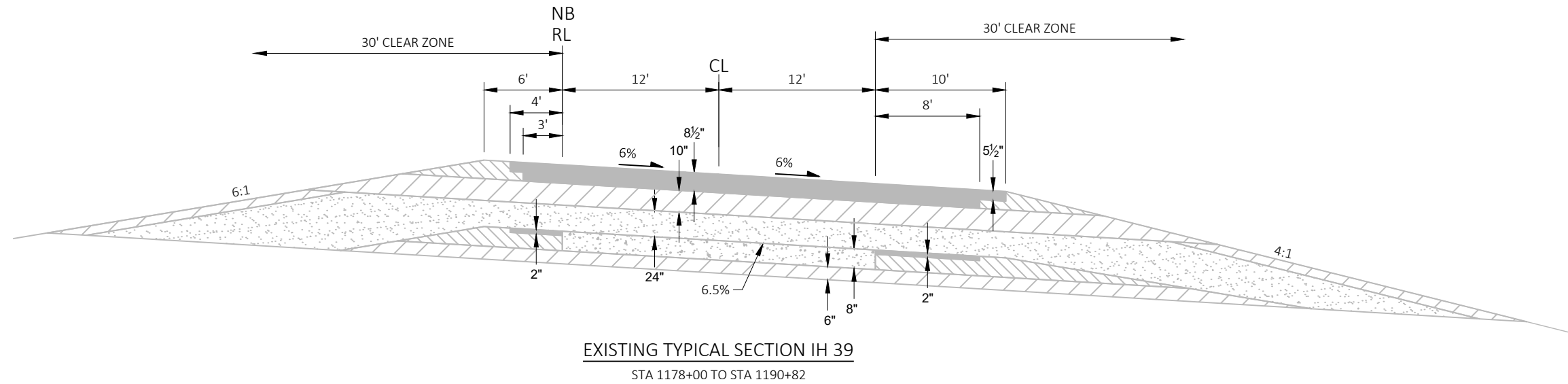
EXISTING TYPICAL SUPERELEVATED SECTION IH 39

- STA 1061+54 TO STA 1072+52
- * STA 1101+80 TO STA 1136+33
- STA 1394+08 TO STA 1409+95








*ROTATE 180° AROUND REFERENCE LINE

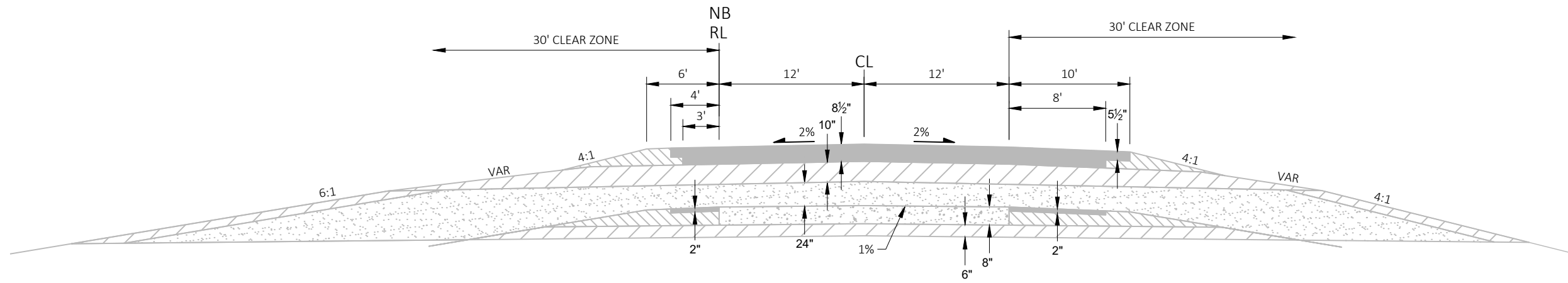
LEGEND

- EXISTING HMA PAVEMENT
- EXISTING RUBBLIZED CONCRETE PAVEMENT
- EXISTING BASE AGGREGATE DENSE 3/4-INCH
- EXISTING BASE AGGREGATE DENSE 1 1/4-INCH
- EXISTING AGGREGATE OPEN GRADED
- HMA PAVEMENT
- BASE AGGREGATE DENSE 3/4-INCH

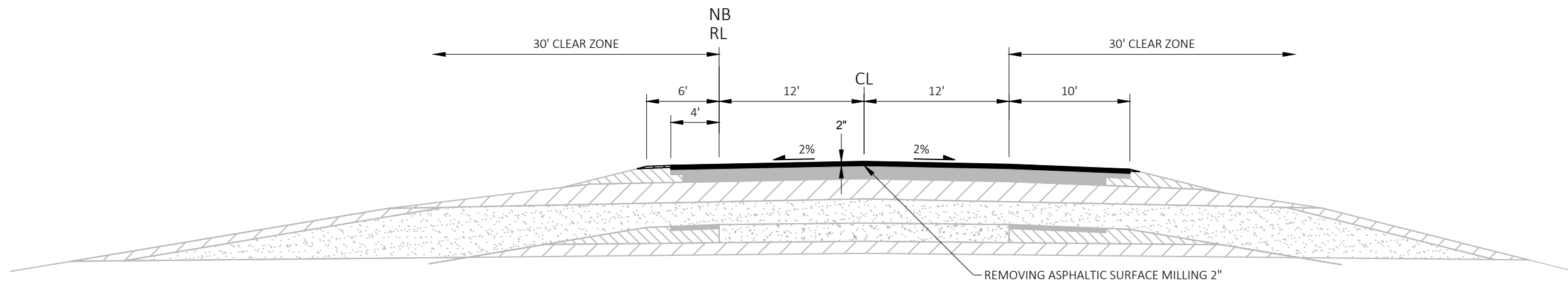


LEGEND

-  EXISTING HMA PAVEMENT
-  EXISTING CONCRETE PAVEMENT
-  EXISTING BASE AGGREGATE DENSE 3/4-INCH
-  EXISTING BASE AGGREGATE DENSE 1 1/4-INCH
-  EXISTING SELECT BORROW (SAND LIFT)
-  HMA PAVEMENT
-  BASE AGGREGATE DENSE 3/4-INCH










EXISTING TYPICAL SECTION IH 39
STA 1190+82 TO STA 1208+00

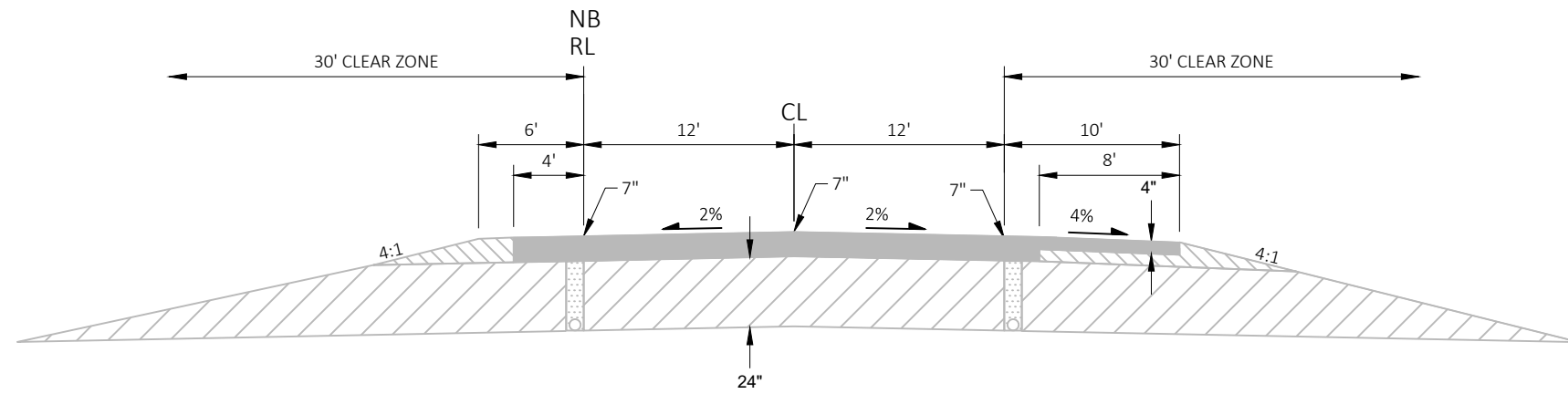


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STA 1190+82 TO STA 1208+00

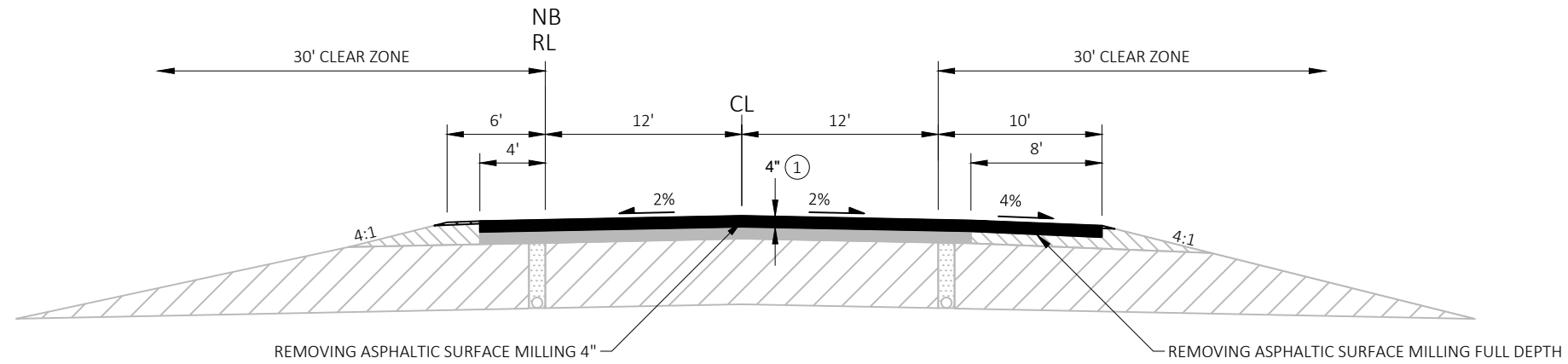
LEGEND

-  EXISTING HMA PAVEMENT
-  EXISTING CONCRETE PAVEMENT
-  EXISTING BASE AGGREGATE DENSE 3/4-INCH
-  EXISTING BASE AGGREGATE DENSE 1 1/4-INCH
-  EXISTING SELECT BORROW (SAND LIFT)
-  HMA PAVEMENT
-  BASE AGGREGATE DENSE 3/4-INCH

- ① 2" 4 HT 58-28 H UPPER LAYER
- 2" ASPHALTIC SURFACE LOWER LAYER
- TO MEET HMA PAVEMENT TYPE 4 HT



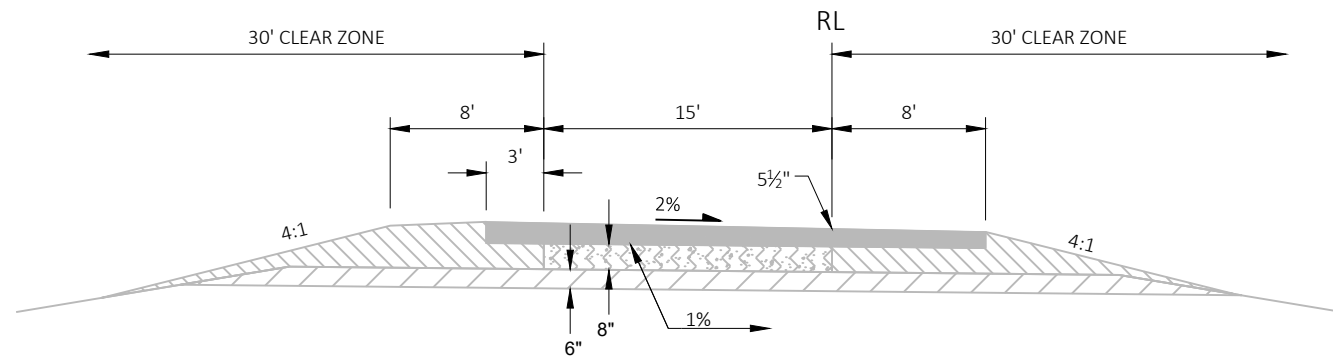
EXISTING TYPICAL SECTION IH 39
STA 1225+38 TO STA 1233+38



FINISHED TYPICAL SECTION IH 39
STA 1225+38 TO STA 1233+38

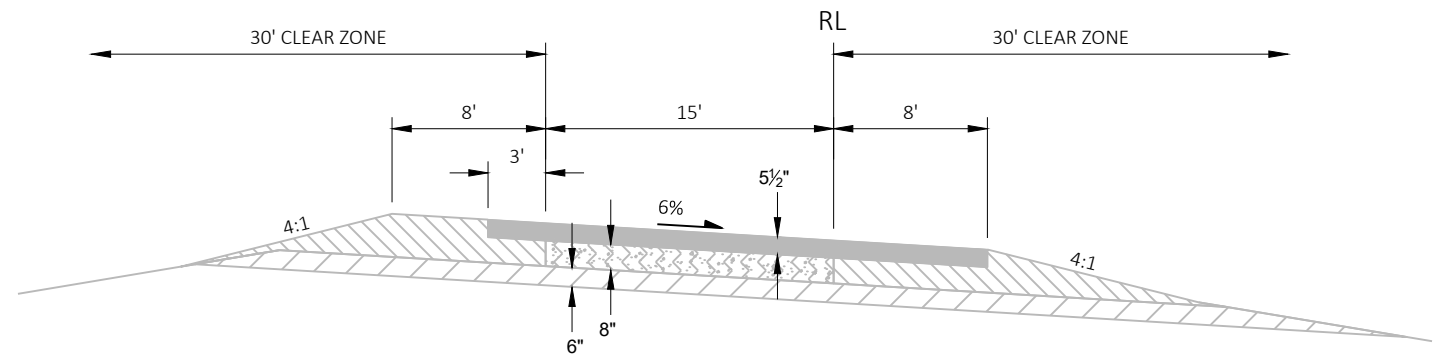
LEGEND

- EXISTING HMA PAVEMENT
- EXISTING BASE AGGREGATE DENSE 3/4-INCH
- EXISTING BASE AGGREGATE DENSE 1 1/4-INCH
- EXISTING AGGREGATE OPEN GRADED
- HMA PAVEMENT
- BASE AGGREGATE DENSE 3/4-INCH



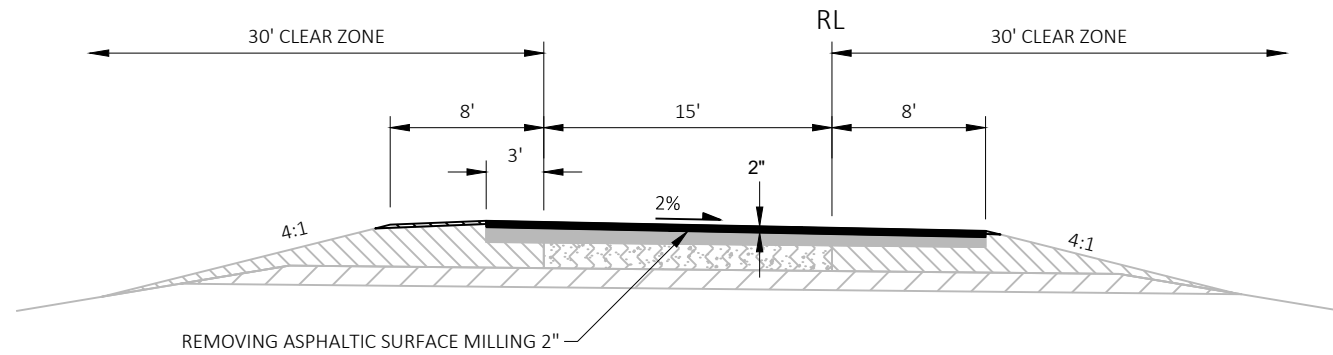
EXISTING TYPICAL RAMP SECTION

STA 174+59KB TO STA 177+71KB
 STA 180+78KA TO STA 183+10KA
 STA 80+78MB TO STA 87+00MB
 STA 87+00MA TO STA 90+98MA



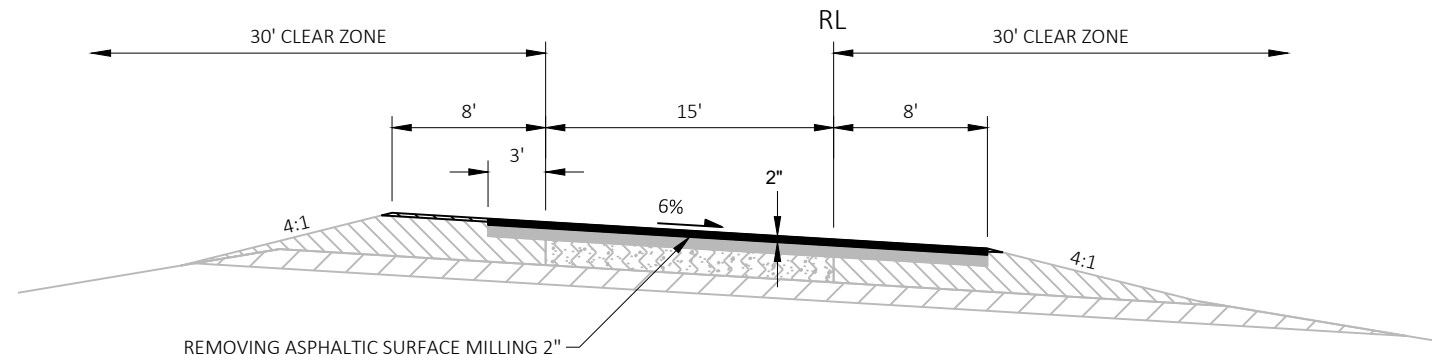
EXISTING TYPICAL SUPERELEVATED RAMP SECTION

STA 166+05KB TO STA 174+59KB
 STA 75+80MB TO STA 80+78MB
 STA 90+98MA TO STA 97+00MA



FINISHED TYPICAL RAMP SECTION

STA 174+59KB TO STA 177+33KB
 STA 182+00KA TO STA 183+10KA
 STA 80+78MB TO STA 87+00MB
 STA 87+00MA TO STA 90+98MA



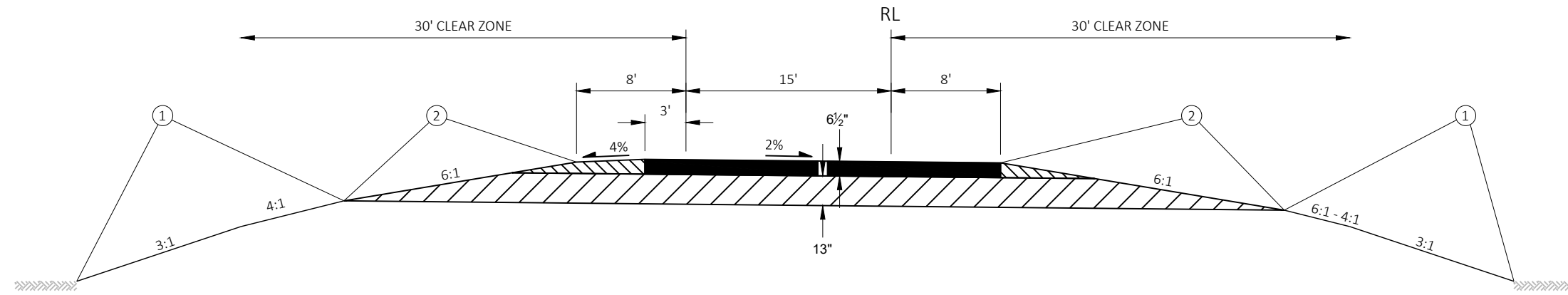
FINISHED TYPICAL SUPERELEVATED RAMP SECTION

STA 166+05KB TO STA 174+59KB
 STA 75+80MB TO STA 80+78MB
 STA 90+98MA TO STA 97+00MA

LEGEND

- EXISTING HMA PAVEMENT
- EXISTING RUBBLIZED CONCRETE PAVEMENT
- EXISTING BASE AGGREGATE DENSE 3/4-INCH
- EXISTING BASE AGGREGATE DENSE 1 1/4-INCH
- HMA PAVEMENT
- BASE AGGREGATE DENSE 3/4-INCH

- ① TOPSOIL, SEED, FERTILIZER AND EROSION MAT URBAN CLASS I TYPE B
- ② SEED AND FERTILIZER

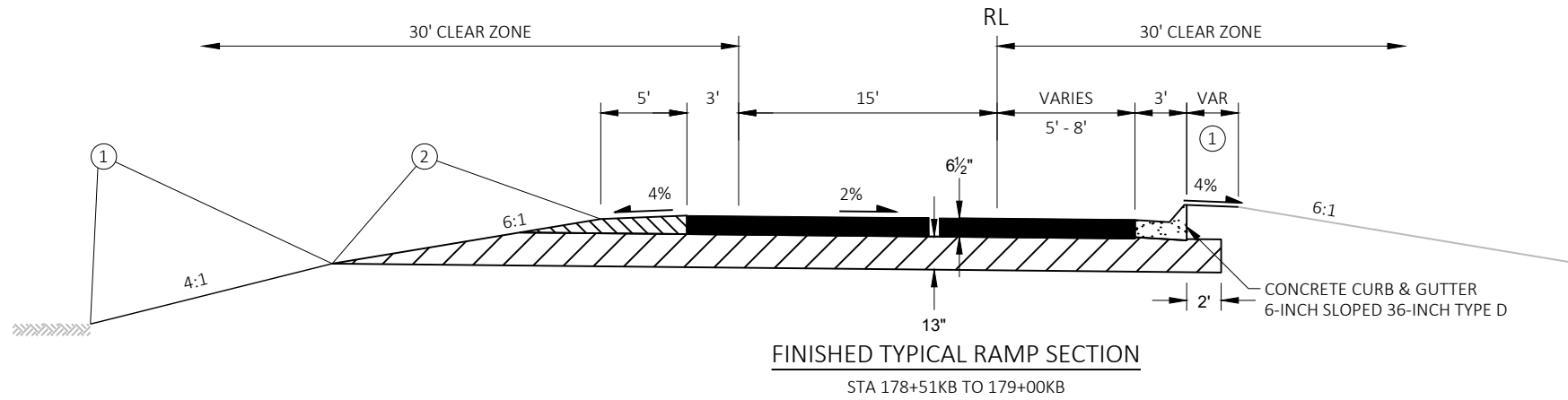
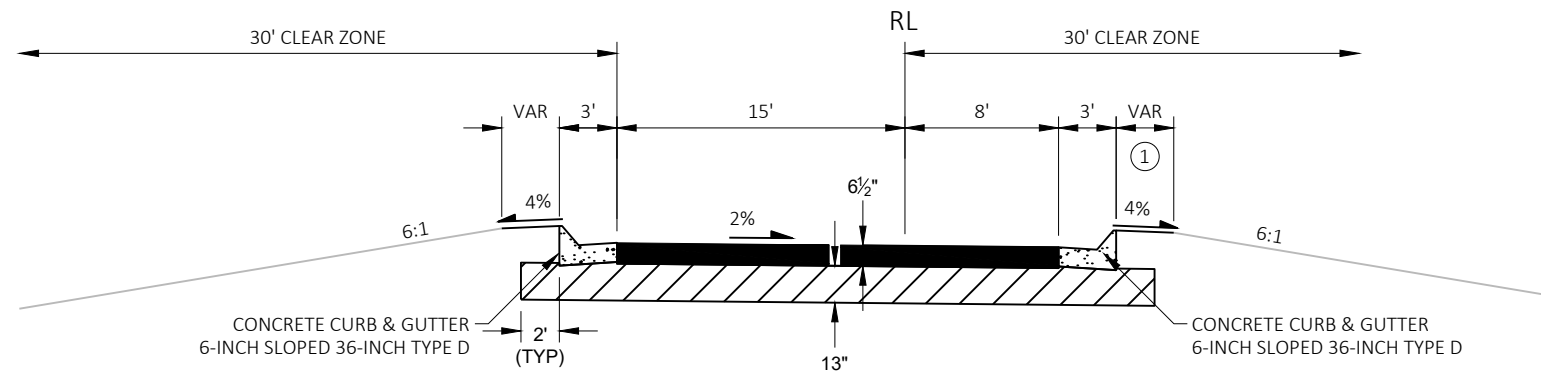
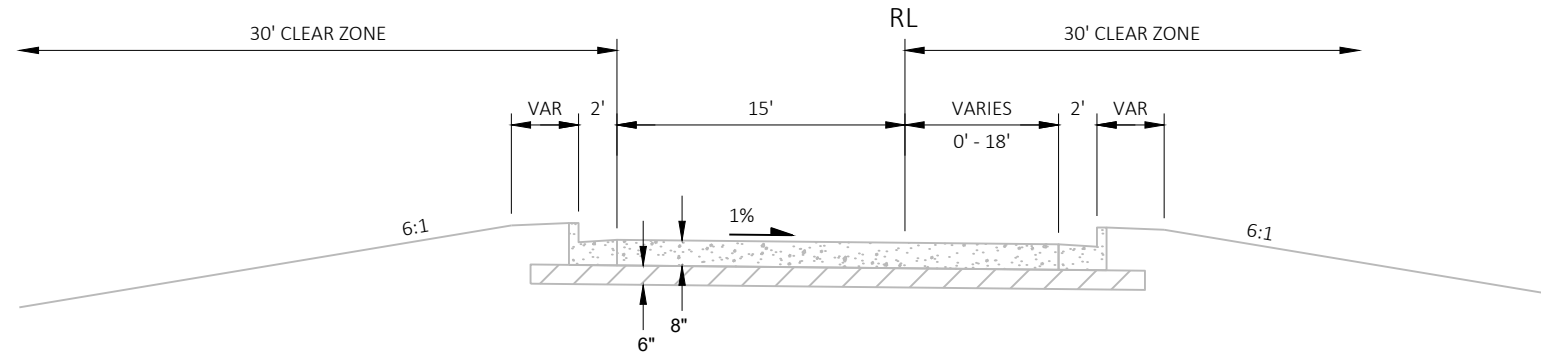


FINISHED TYPICAL RAMP SECTION
 STA 177+33KB TO STA 178+51KB
 STA 180+33KA TO STA 182+00KA

LEGEND

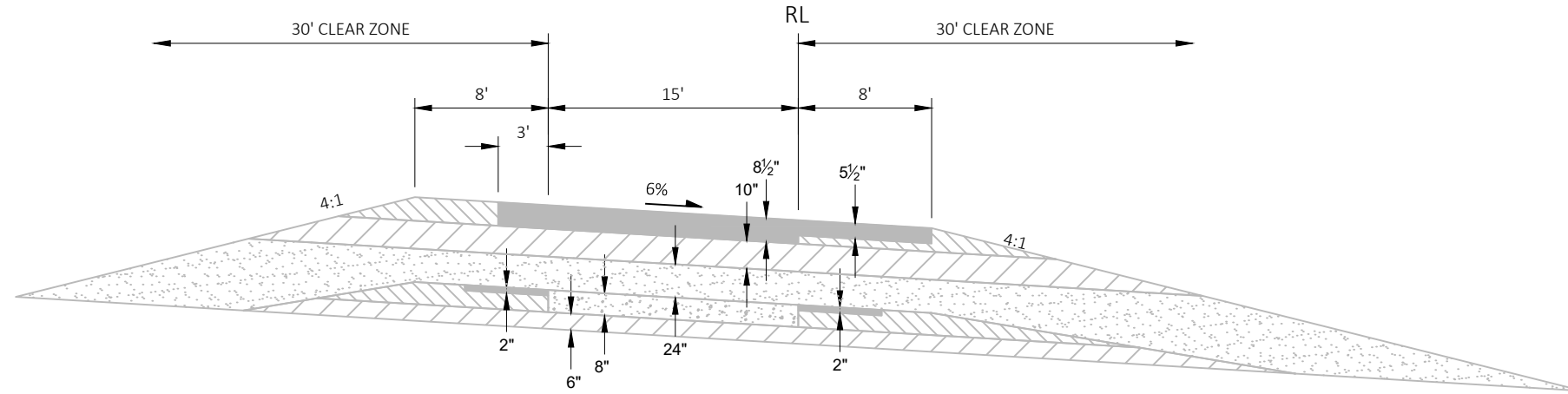
- EXISTING HMA PAVEMENT
- EXISTING CONCRETE PAVEMENT
- EXISTING BASE AGGREGATE DENSE 1 1/4-INCH
- HMA PAVEMENT
- BASE AGGREGATE DENSE 1 1/4-INCH
- BASE AGGREGATE DENSE 3/4-INCH
- EXISTING GROUND

- ① TOPSOIL, SEED, FERTILIZER AND EROSION MAT URBAN CLASS I TYPE B
- ② SEED AND FERTILIZER

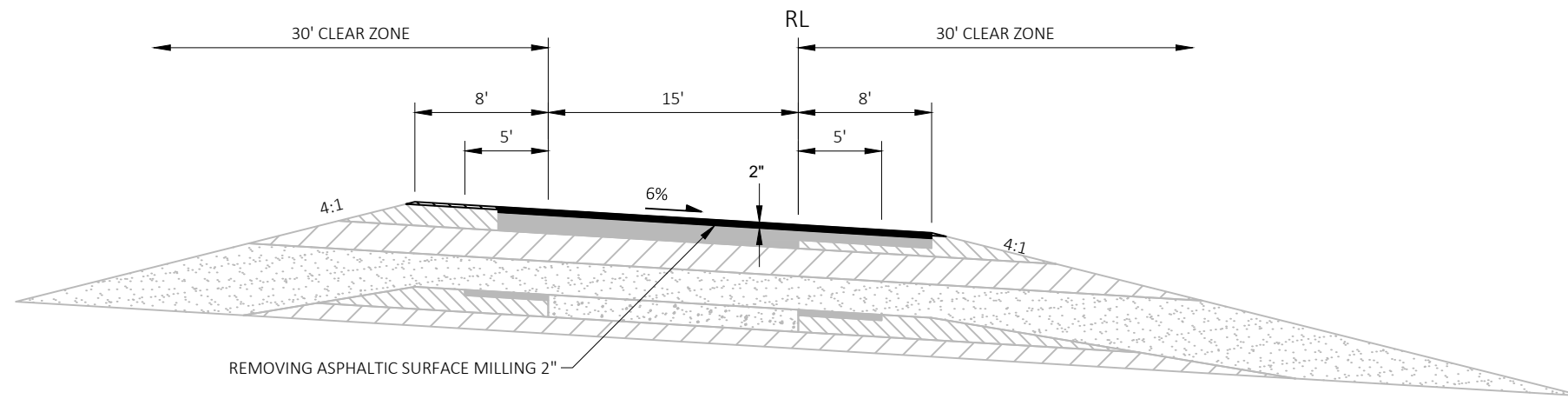


LEGEND

- EXISTING HMA PAVEMENT
- EXISTING CONCRETE PAVEMENT
- EXISTING BASE AGGREGATE DENSE 1 1/4-INCH
- HMA PAVEMENT
- BASE AGGREGATE DENSE 1 1/4-INCH
- BASE AGGREGATE DENSE 3/4-INCH
- EXISTING GROUND










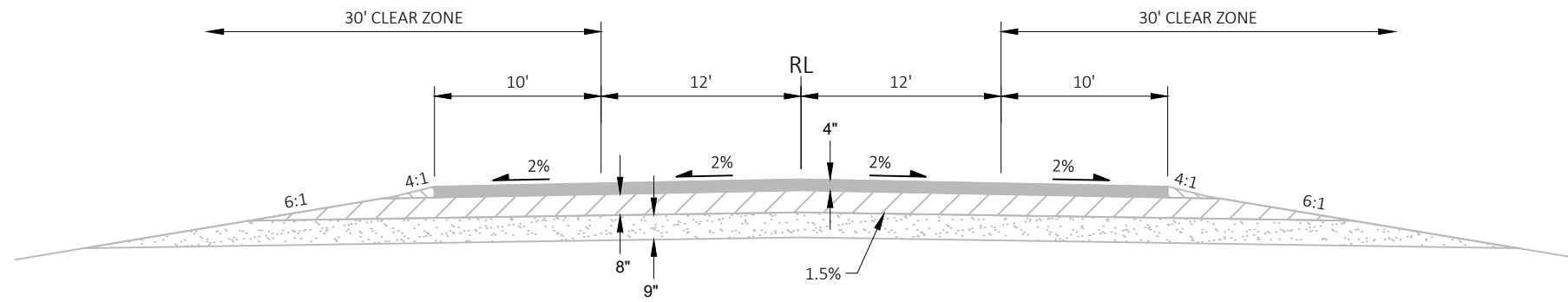
EXISTING TYPICAL SUPERELEVATED RAMP SECTION
 STA 183+10KA TO STA 192+60KA



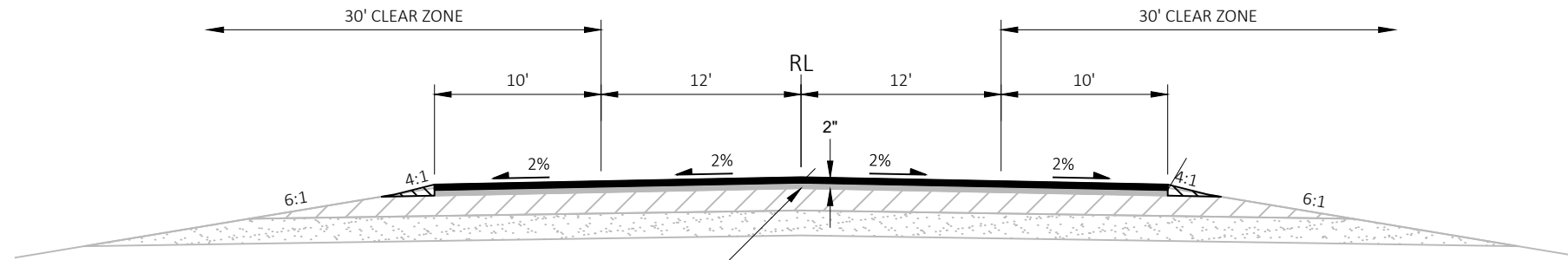
FINISHED TYPICAL SUPERELEVATED RAMP SECTION
 STA 183+10KA TO STA 192+60KA

LEGEND

-  EXISTING HMA PAVEMENT
-  EXISTING CONCRETE PAVEMENT
-  EXISTING BASE AGGREGATE DENSE 3/4-INCH
-  EXISTING BASE AGGREGATE DENSE 1 1/4-INCH
-  EXISTING SELECT BORROW (SAND LIFT)
-  HMA PAVEMENT
-  BASE AGGREGATE DENSE 3/4-INCH

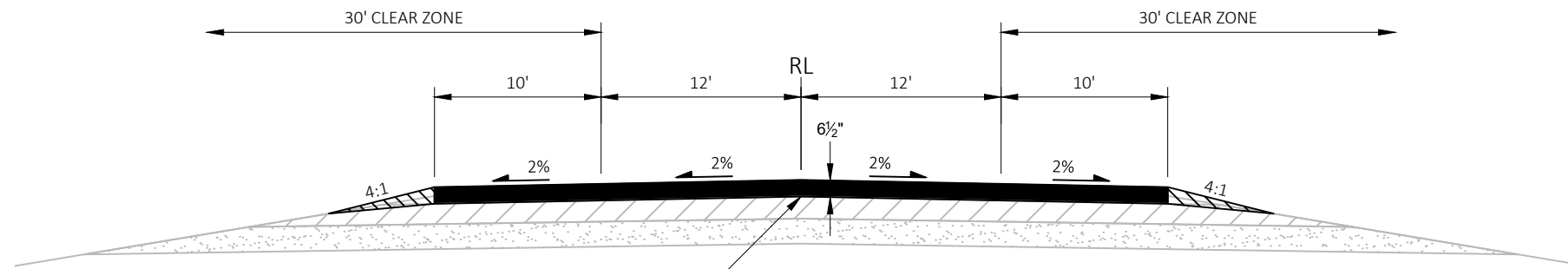


EXISTING TYPICAL SECTION
STA 201+0K STA 204+27K



REMOVING ASPHALTIC SURFACE MILLING 2"
TAPER FROM 2" AT STA 202+00K TO 0" AT STA 203+00K
TAPER FROM 0" AT STA 204+25K TO 2" AT STA 205+10K








FINISHED TYPICAL SECTION
STA 201+00K TO STA 203+00K
STA 204+25K TO STA 205+10K



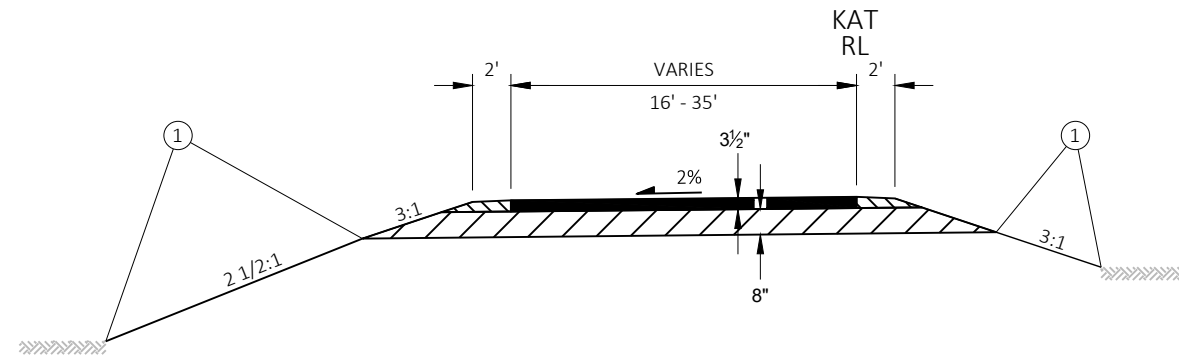
REMOVING ASPHALTIC SURFACE MILLING FULL DEPTH

FINISHED TYPICAL SECTION
STA 203+00K STA 204+25K

LEGEND

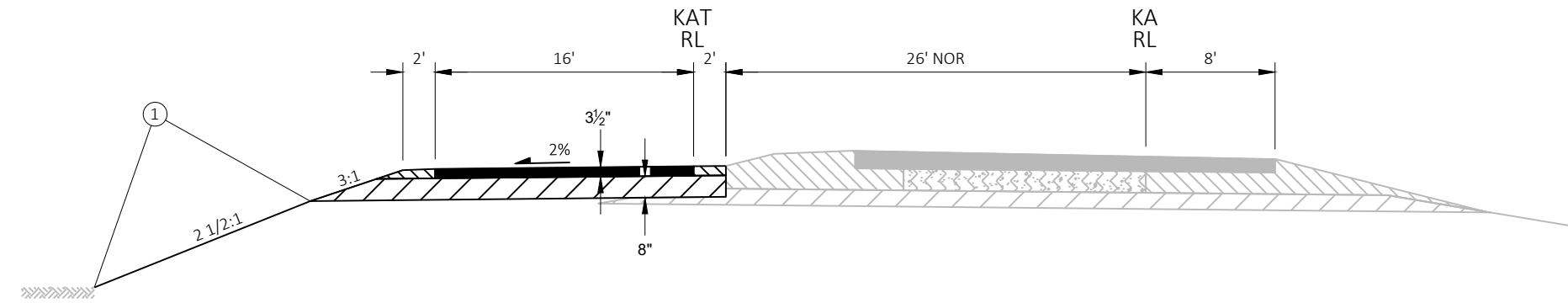
-  EXISTING HMA PAVEMENT
-  EXISTING RUBBLIZED CONCRETE PAVEMENT
-  EXISTING BASE AGGREGATE DENSE 3/4-INCH
-  EXISTING BASE AGGREGATE DENSE 1 1/4-INCH
-  GRANULAR SUBBASE
-  HMA PAVEMENT
-  BASE AGGREGATE DENSE 3/4-INCH

① SOIL STABILIZER, TYPE A.



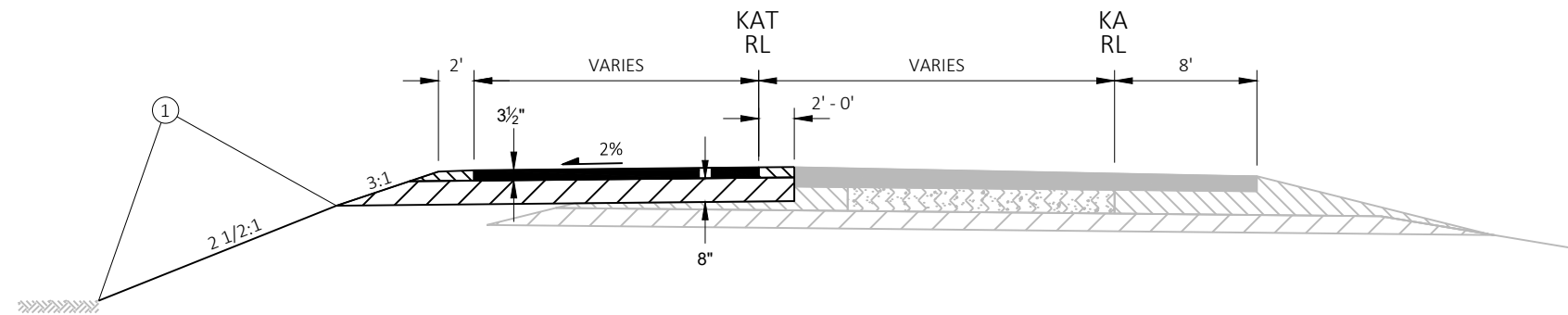
FINISHED TYPICAL TEMPORARY RAMP SECTION

STA 79+85KAT TO STA 81+00KAT



FINISHED TYPICAL TEMPORARY RAMP SECTION

STA 81+00KAT TO STA 82+47KAT



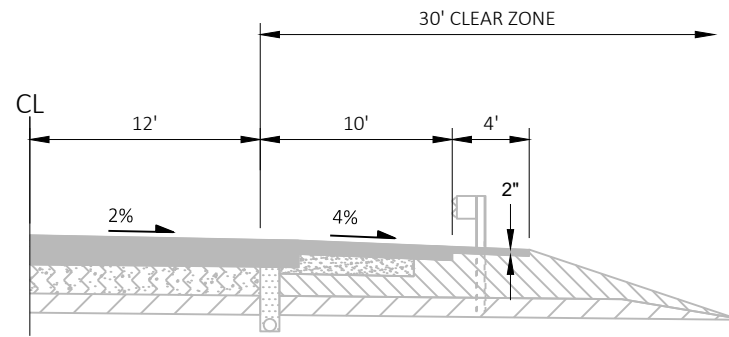
FINISHED TYPICAL TEMPORARY RAMP SECTION

STA 82+47KAT TO STA 84+00KAT

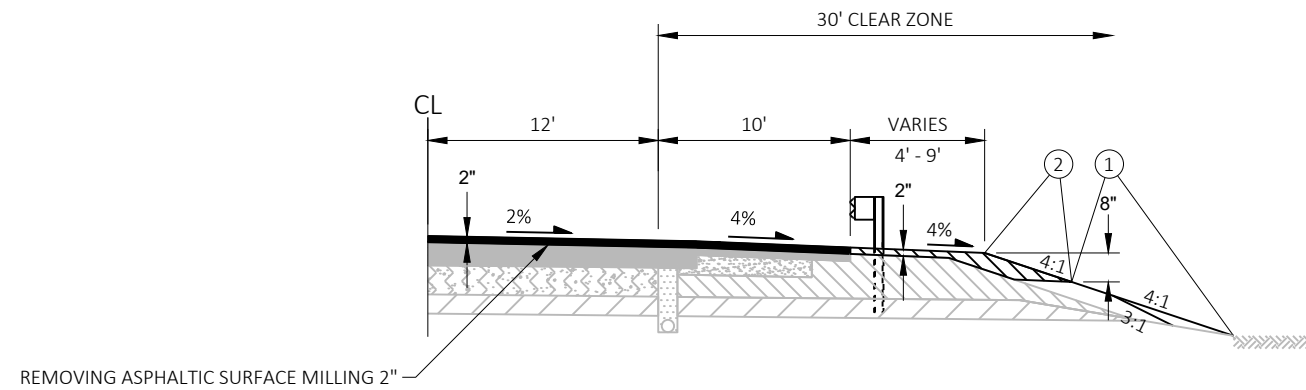
LEGEND

- EXISTING HMA PAVEMENT
- EXISTING CONCRETE PAVEMENT
- EXISTING BASE AGGREGATE DENSE 1 1/4-INCH
- ASPHALTIC SURFACE TEMPORARY
- BASE AGGREGATE DENSE 1 1/4-INCH
- BASE AGGREGATE DENSE 3/4-INCH
- EXISTING GROUND

- ① TOPSOIL, SEED, FERTILIZER AND EROSION MAT URBAN CLASS I TYPE B
- ② SEED AND FERTILIZER



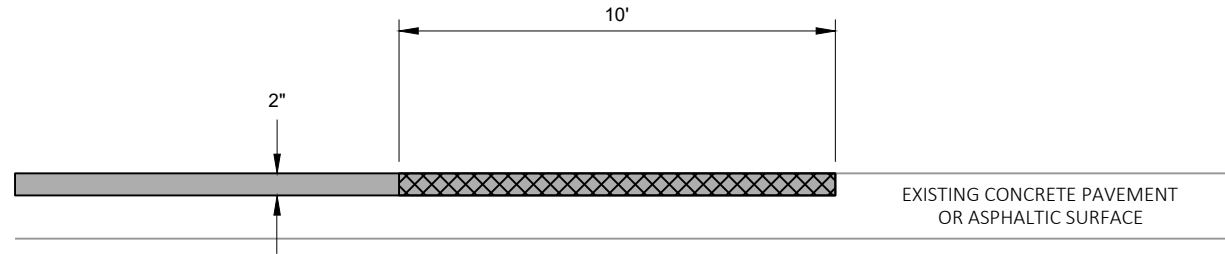
EXISTING TYPICAL HALF SECTION - GUARDRAIL
SEE PLAN FOR LOCATIONS



FINISHED TYPICAL HALF SECTION - GUARDRAIL
SEE PLAN FOR LOCATIONS

LEGEND



- EXISTING HMA PAVEMENT
- EXISTING CONCRETE PAVEMENT
- EXISTING BASE AGGREGATE DENSE 1¼-INCH
- ASPHALTIC SURFACE TEMPORARY
- BASE AGGREGATE DENSE 1¼-INCH
- BASE AGGREGATE DENSE ¾-INCH
- EXISTING GROUND

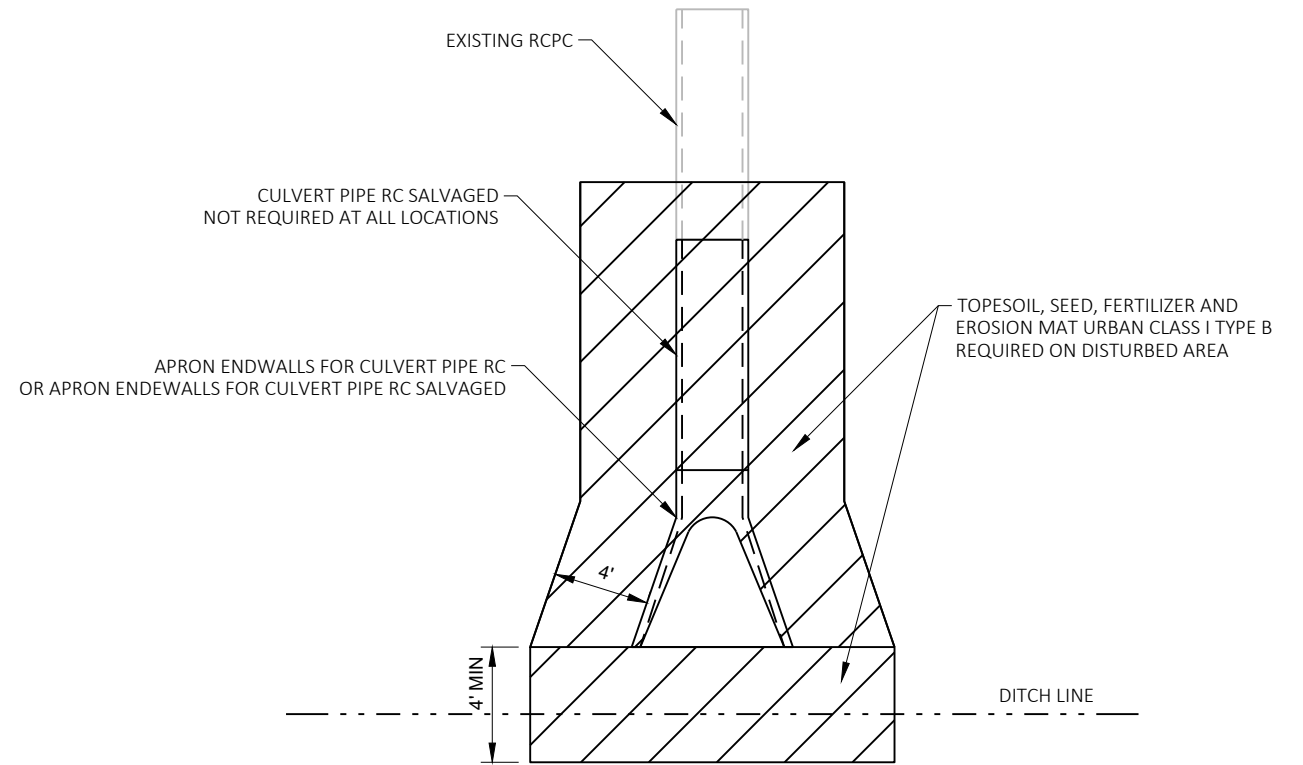


PROJECT LIMIT BUTT JOINTS

SOUTHERN LIMITS
 NORTHERN LIMITS
 STH 153 RAMPS
 STH 34

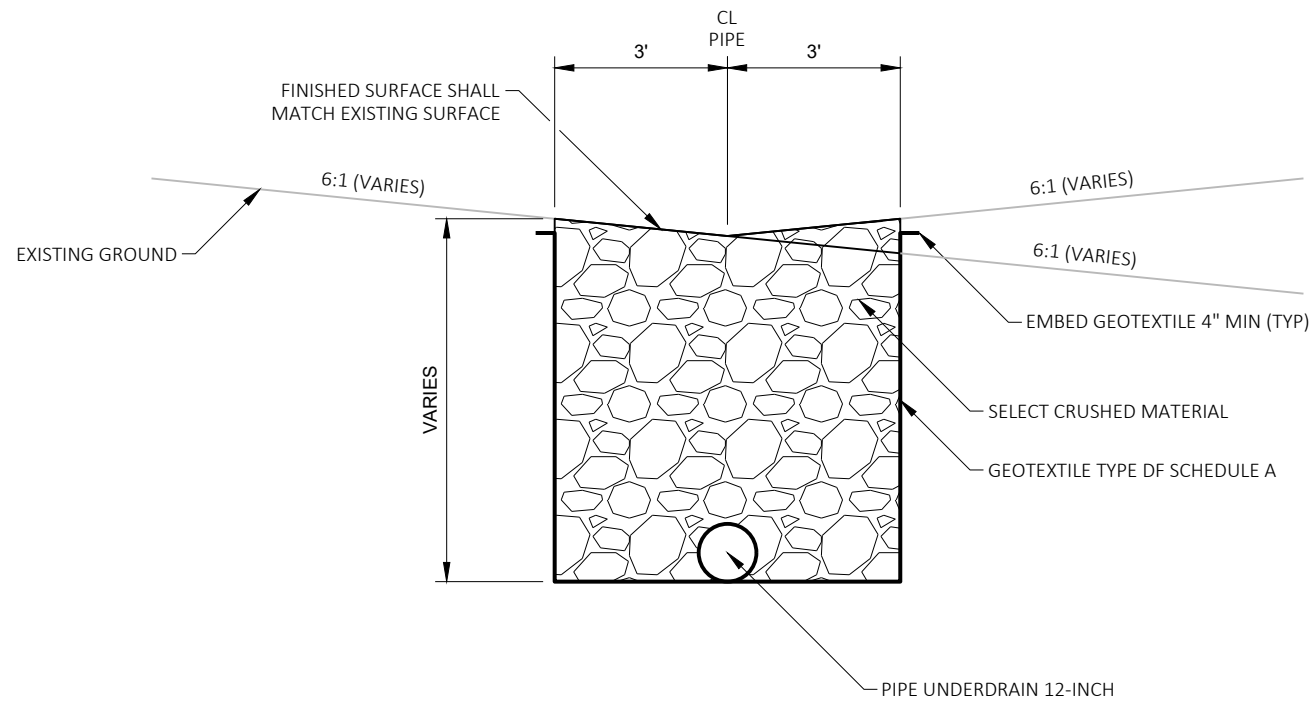
LEGEND

-  REMOVING ASPHALTIC SURFACE BUTT JOINTS
-  HMA PAVEMENT UPPER LAYER



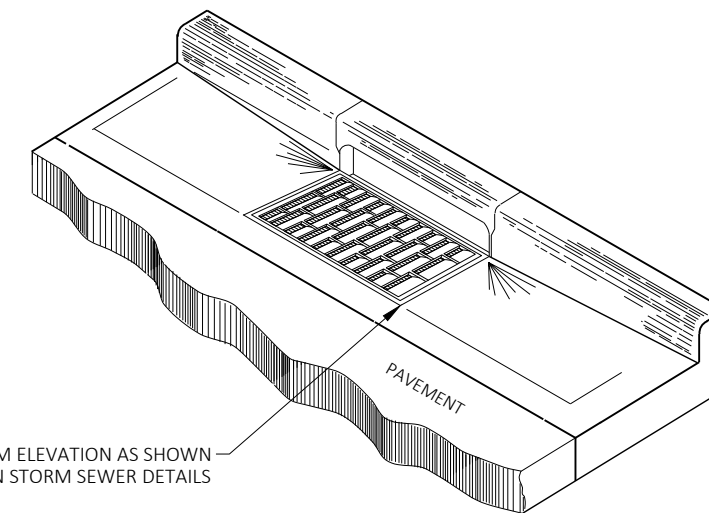
EROSION CONTROL FOR CROSS DRAIN RESTORATION

SEE MISCELLANEOUS QUANTITIES FOR LOCATIONS



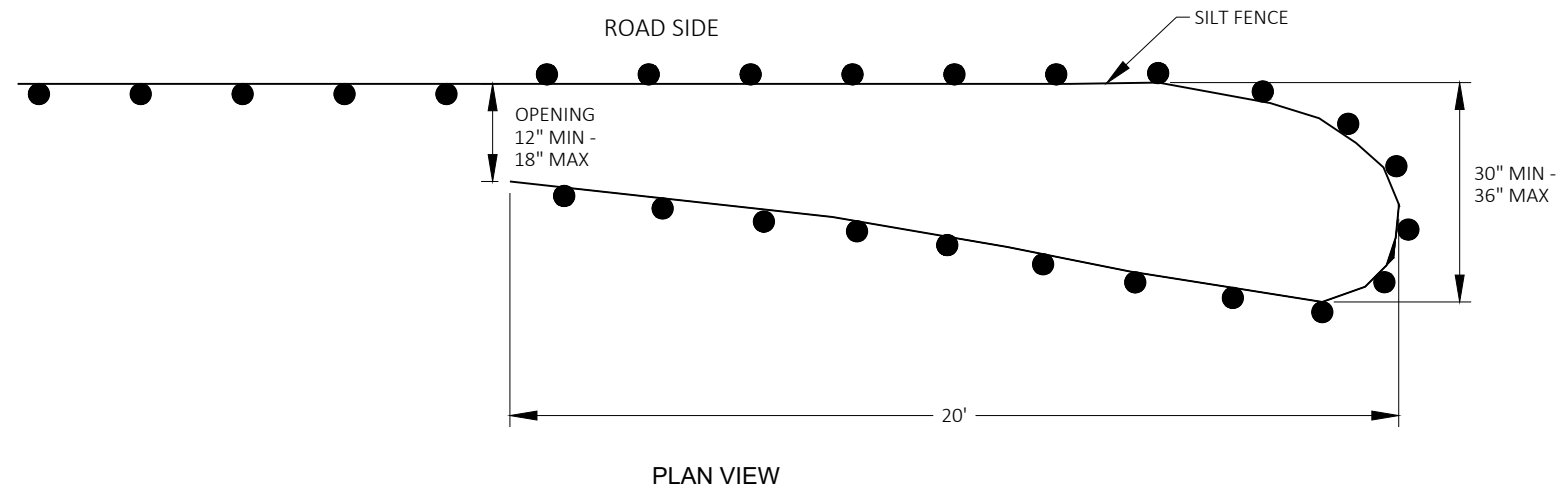
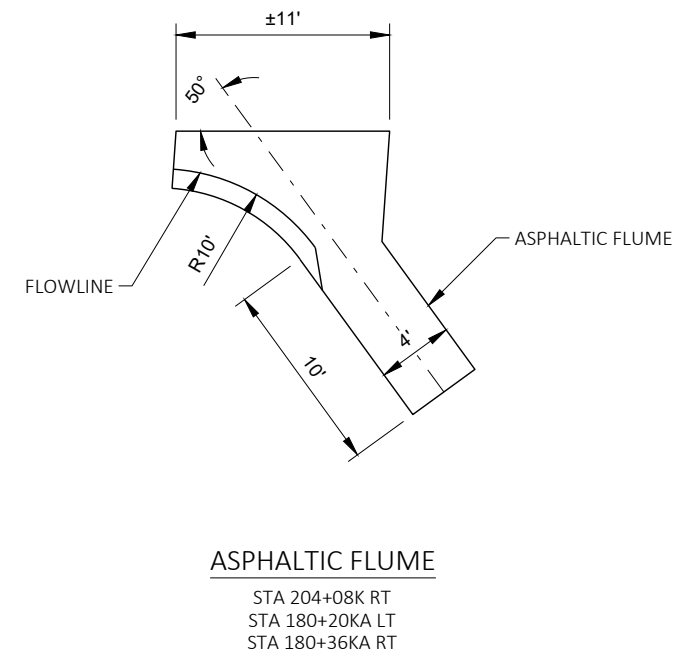
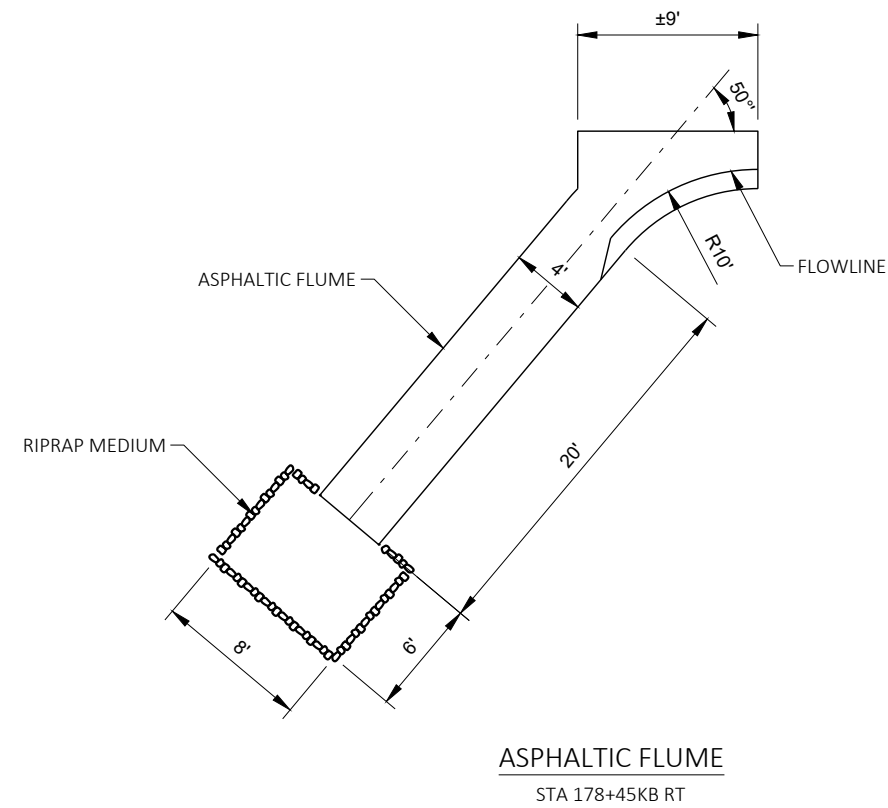
PIPE UNDERDRAIN

IH 39 NB AT LOCKER ROAD OVERPASS



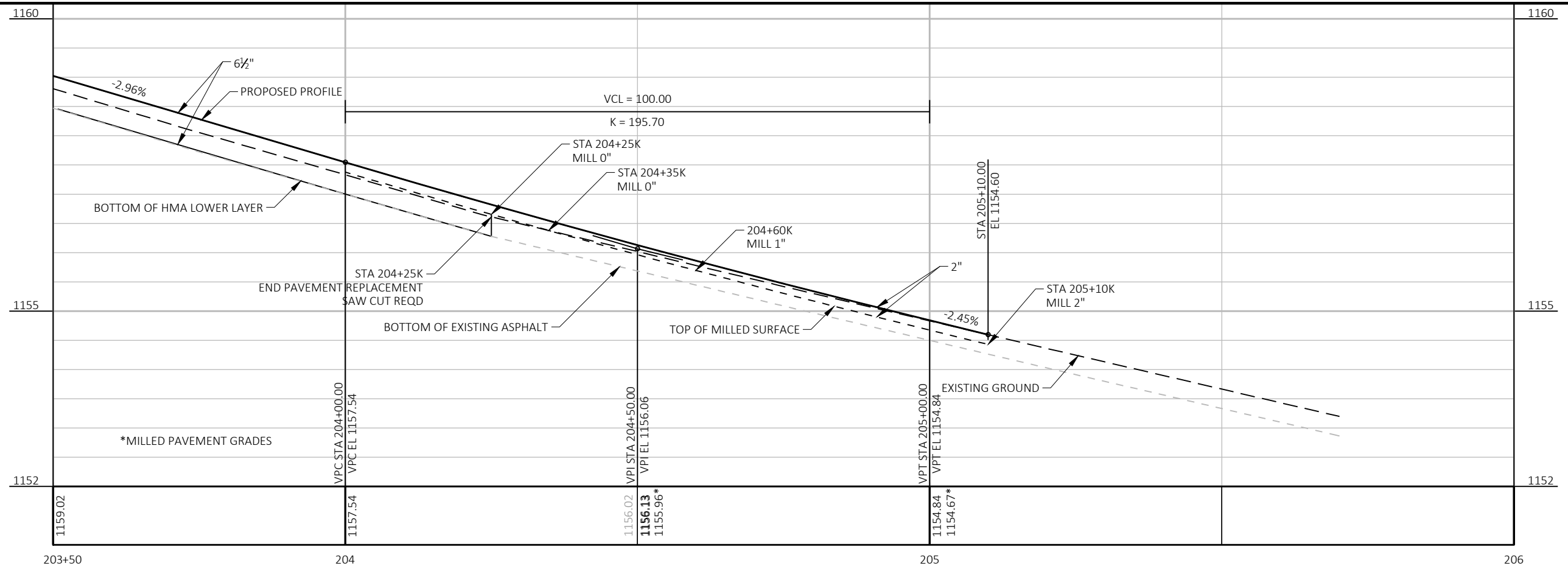
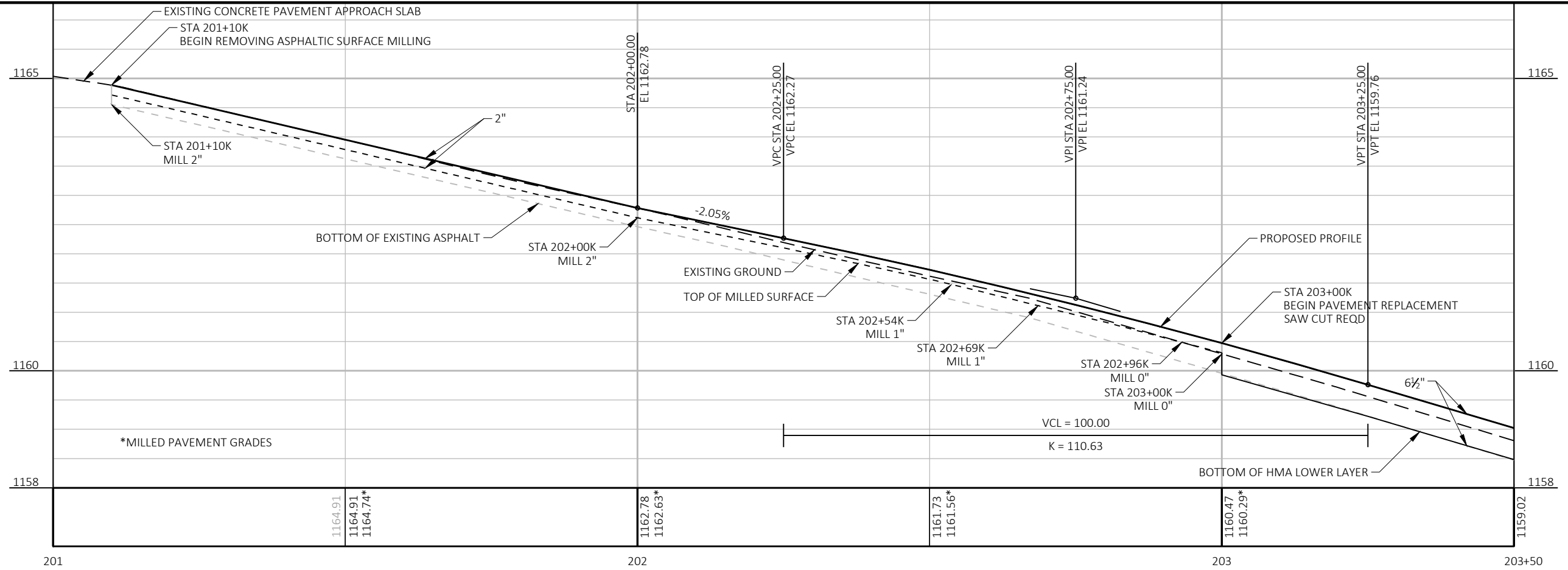
DETAIL OF CURB AND GUTTER AT INLETS

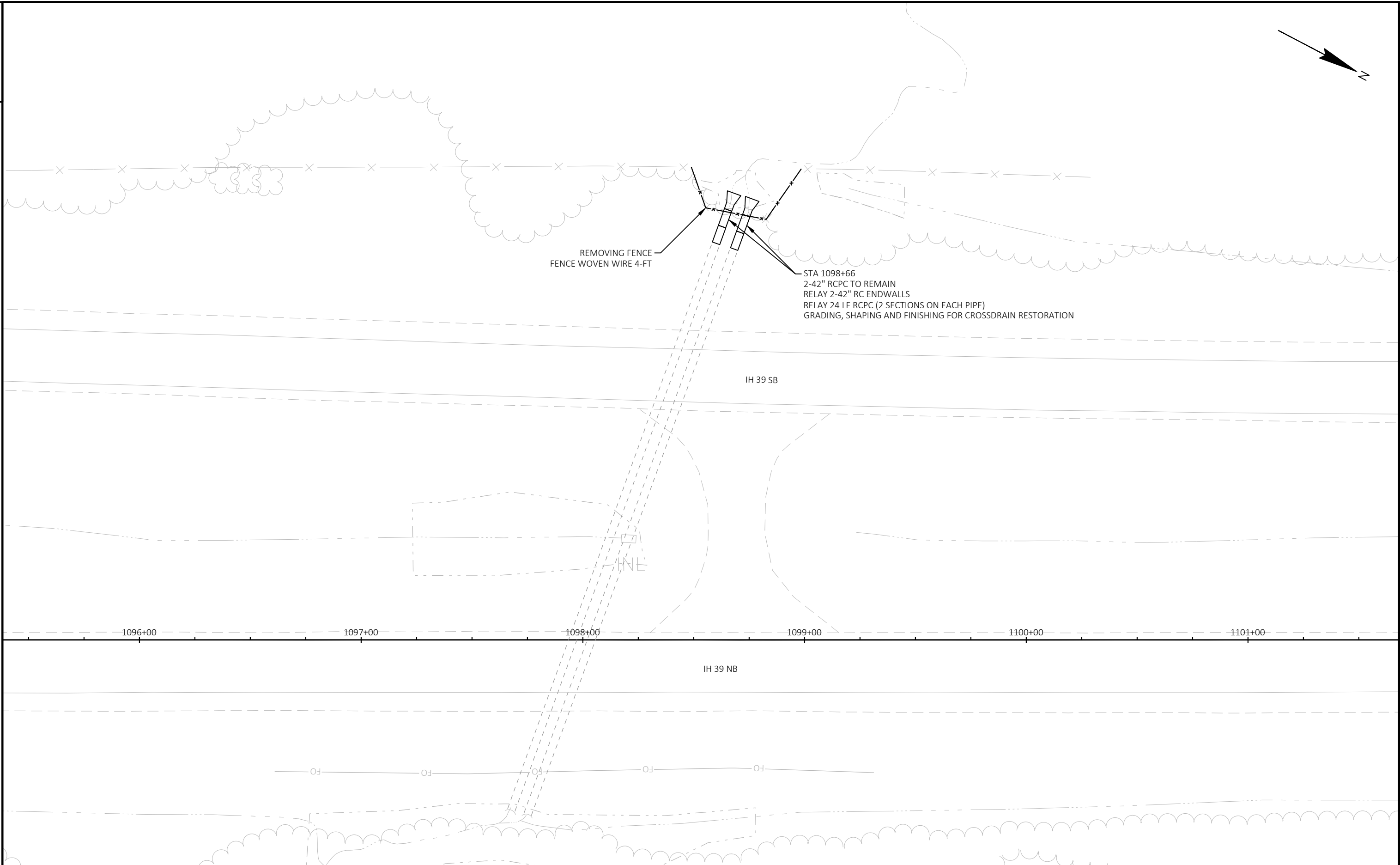
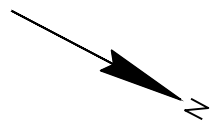
SEE SDD CONCRETE GUTTER, TIES AND CURB AND GUTTER APPLICATIONS FOR DETAILS NOT SHOWN



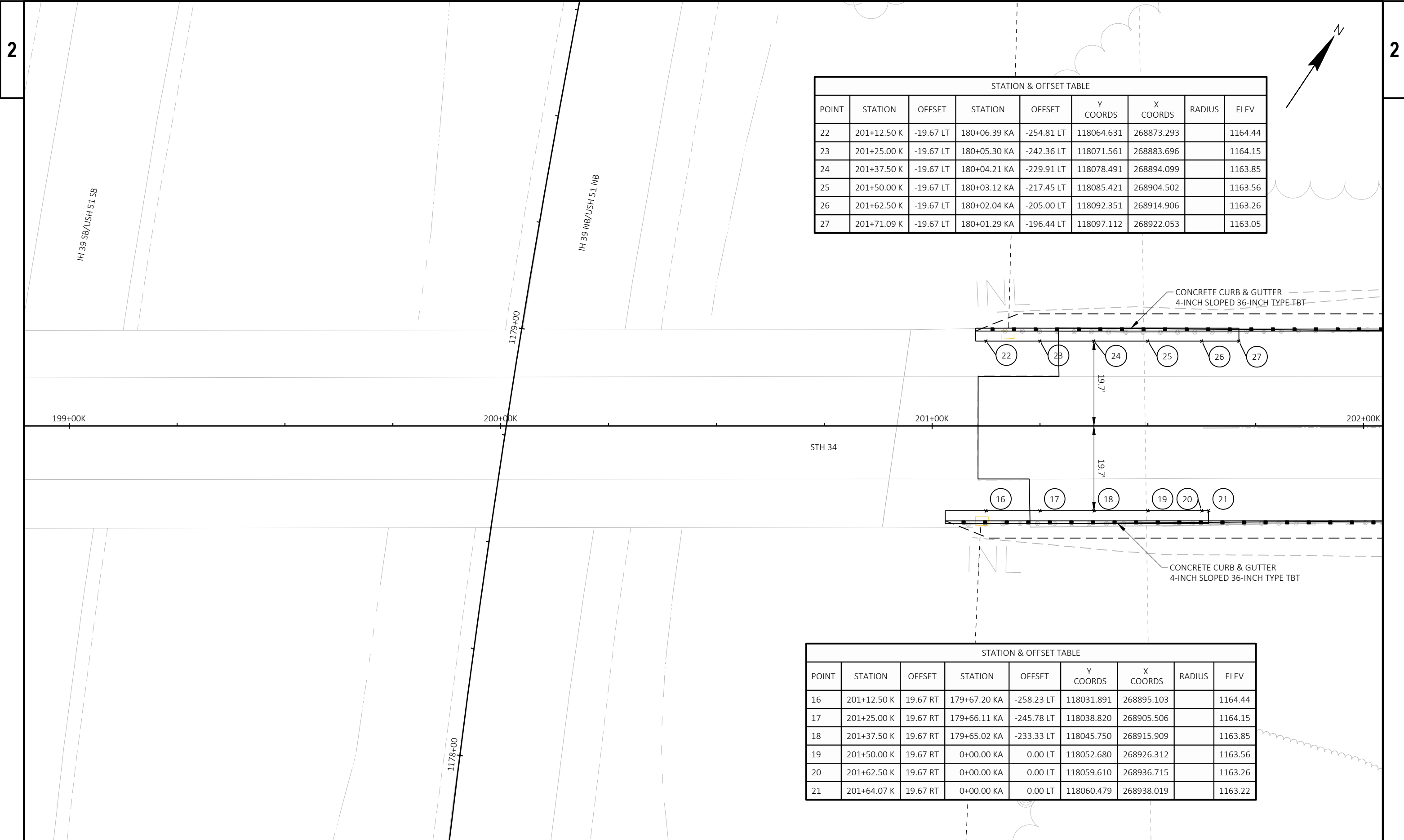
TEMPORARY SMALL ANIMAL TURN-AROUND

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





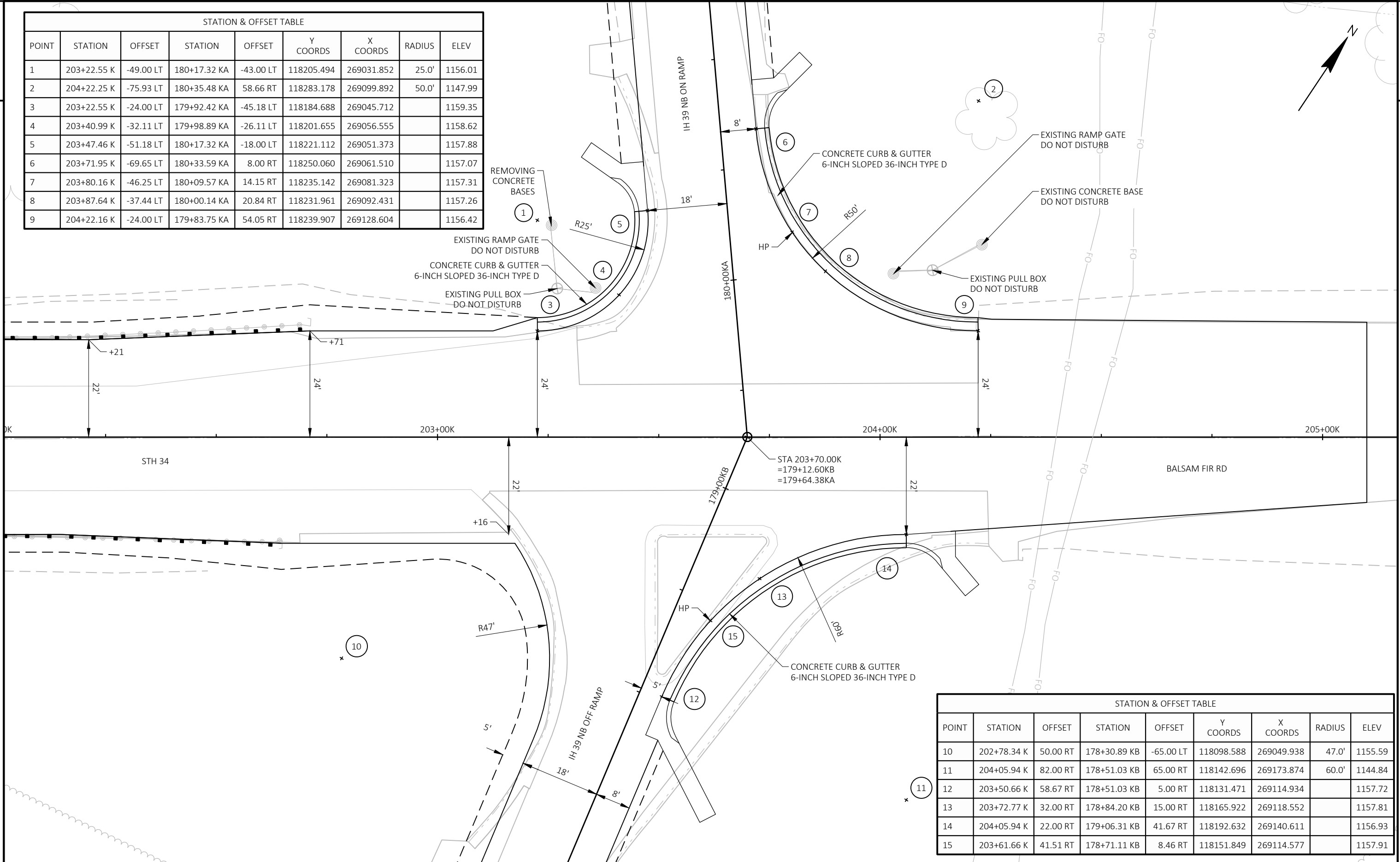
| | | | | | |
|------------------------|------------|------------------|--|-------|---|
| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | CONSTRUCITON DETAILS - CULVERT 1098+66 | SHEET | E |
|------------------------|------------|------------------|--|-------|---|



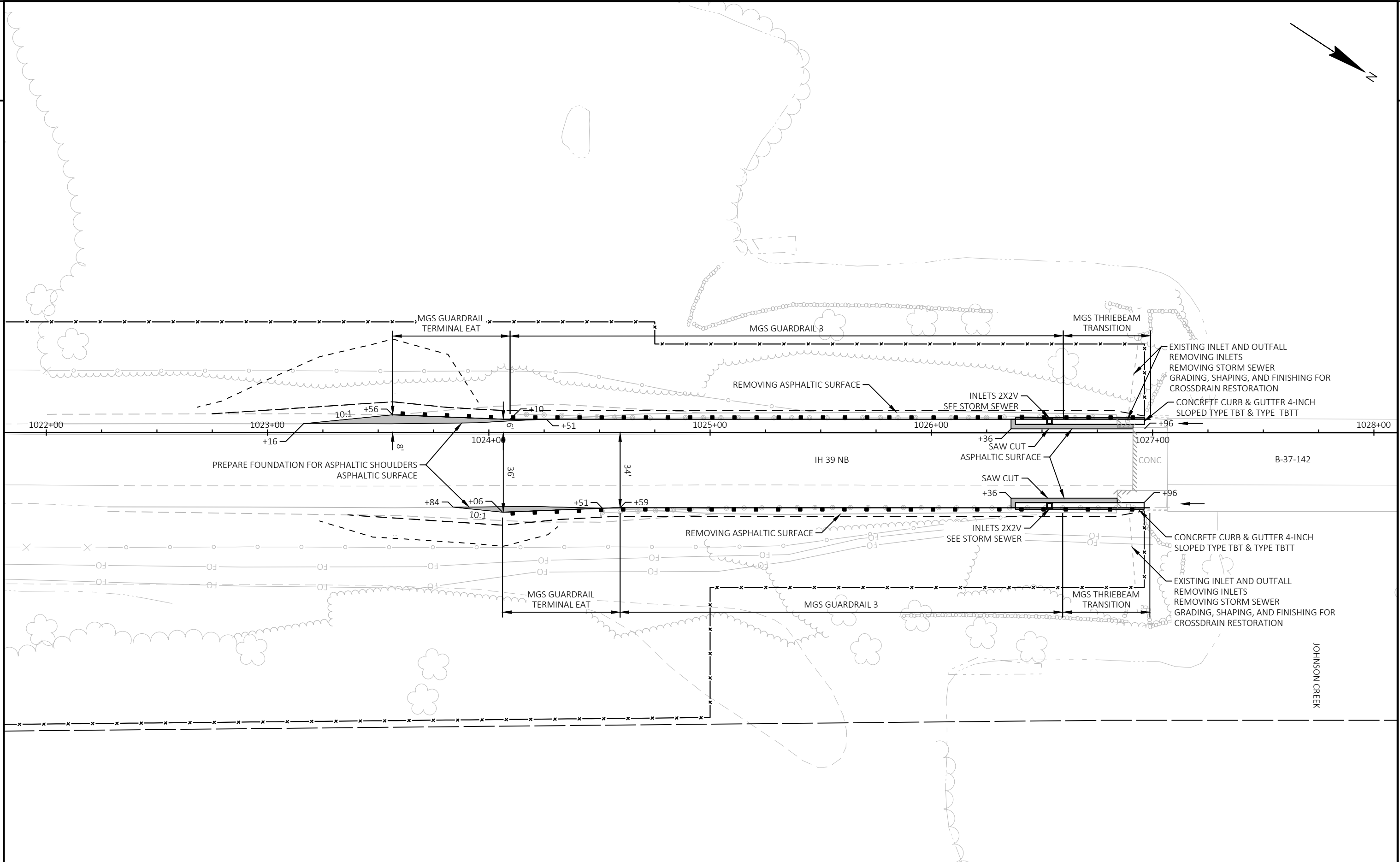
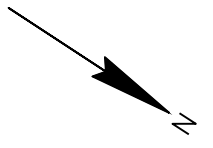
| STATION & OFFSET TABLE | | | | | | | | |
|------------------------|-------------|-----------|--------------|------------|------------|------------|--------|---------|
| POINT | STATION | OFFSET | STATION | OFFSET | Y COORDS | X COORDS | RADIUS | ELEV |
| 22 | 201+12.50 K | -19.67 LT | 180+06.39 KA | -254.81 LT | 118064.631 | 268873.293 | | 1164.44 |
| 23 | 201+25.00 K | -19.67 LT | 180+05.30 KA | -242.36 LT | 118071.561 | 268883.696 | | 1164.15 |
| 24 | 201+37.50 K | -19.67 LT | 180+04.21 KA | -229.91 LT | 118078.491 | 268894.099 | | 1163.85 |
| 25 | 201+50.00 K | -19.67 LT | 180+03.12 KA | -217.45 LT | 118085.421 | 268904.502 | | 1163.56 |
| 26 | 201+62.50 K | -19.67 LT | 180+02.04 KA | -205.00 LT | 118092.351 | 268914.906 | | 1163.26 |
| 27 | 201+71.09 K | -19.67 LT | 180+01.29 KA | -196.44 LT | 118097.112 | 268922.053 | | 1163.05 |

| STATION & OFFSET TABLE | | | | | | | | |
|------------------------|-------------|----------|--------------|------------|------------|------------|--------|---------|
| POINT | STATION | OFFSET | STATION | OFFSET | Y COORDS | X COORDS | RADIUS | ELEV |
| 16 | 201+12.50 K | 19.67 RT | 179+67.20 KA | -258.23 LT | 118031.891 | 268895.103 | | 1164.44 |
| 17 | 201+25.00 K | 19.67 RT | 179+66.11 KA | -245.78 LT | 118038.820 | 268905.506 | | 1164.15 |
| 18 | 201+37.50 K | 19.67 RT | 179+65.02 KA | -233.33 LT | 118045.750 | 268915.909 | | 1163.85 |
| 19 | 201+50.00 K | 19.67 RT | 0+00.00 KA | 0.00 LT | 118052.680 | 268926.312 | | 1163.56 |
| 20 | 201+62.50 K | 19.67 RT | 0+00.00 KA | 0.00 LT | 118059.610 | 268936.715 | | 1163.26 |
| 21 | 201+64.07 K | 19.67 RT | 0+00.00 KA | 0.00 LT | 118060.479 | 268938.019 | | 1163.22 |

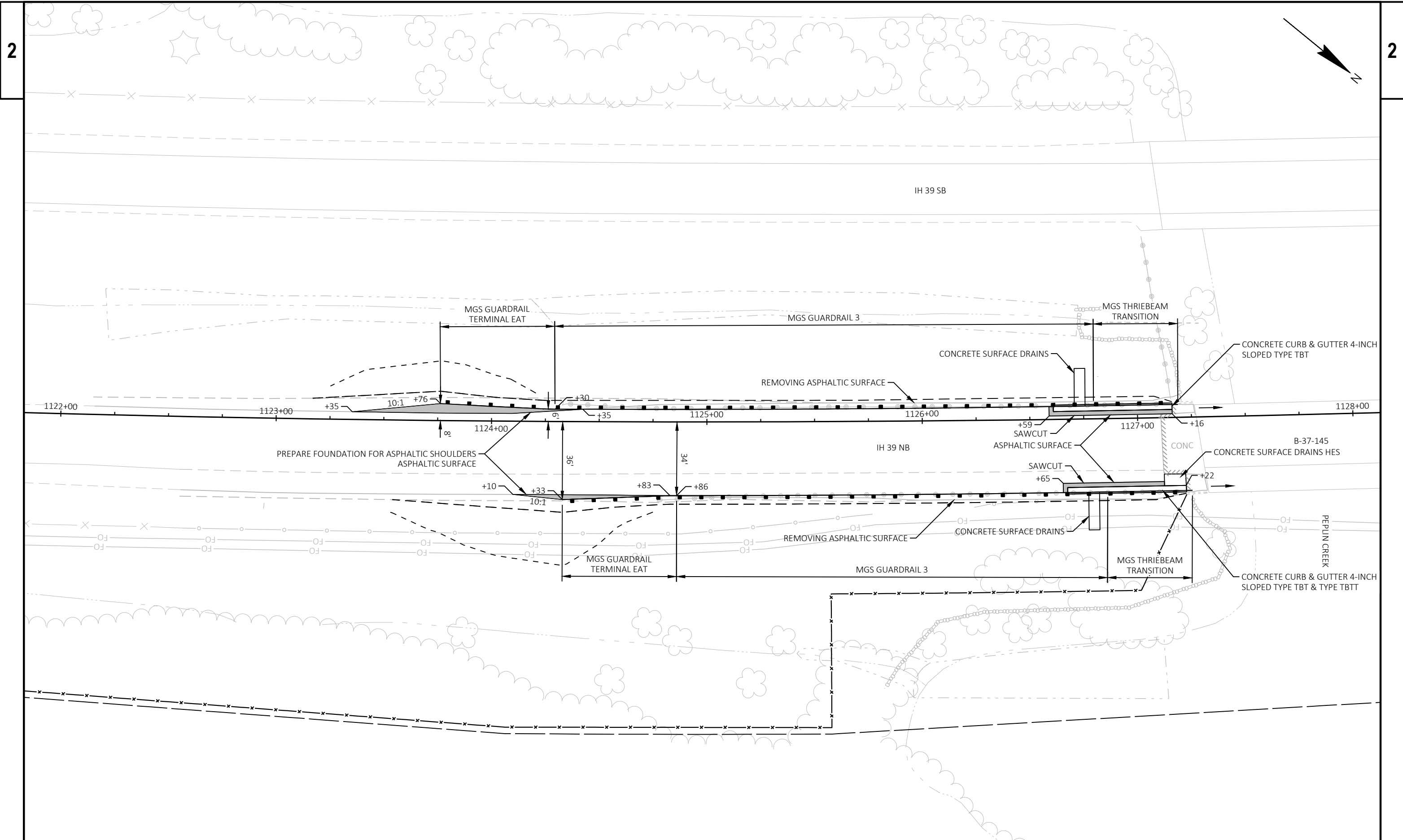
| STATION & OFFSET TABLE | | | | | | | | |
|------------------------|-------------|-----------|--------------|-----------|------------|------------|--------|---------|
| POINT | STATION | OFFSET | STATION | OFFSET | Y COORDS | X COORDS | RADIUS | ELEV |
| 1 | 203+22.55 K | -49.00 LT | 180+17.32 KA | -43.00 LT | 118205.494 | 269031.852 | 25.0' | 1156.01 |
| 2 | 204+22.25 K | -75.93 LT | 180+35.48 KA | 58.66 RT | 118283.178 | 269099.892 | 50.0' | 1147.99 |
| 3 | 203+22.55 K | -24.00 LT | 179+92.42 KA | -45.18 LT | 118184.688 | 269045.712 | | 1159.35 |
| 4 | 203+40.99 K | -32.11 LT | 179+98.89 KA | -26.11 LT | 118201.655 | 269056.555 | | 1158.62 |
| 5 | 203+47.46 K | -51.18 LT | 180+17.32 KA | -18.00 LT | 118221.112 | 269051.373 | | 1157.88 |
| 6 | 203+71.95 K | -69.65 LT | 180+33.59 KA | 8.00 RT | 118250.060 | 269061.510 | | 1157.07 |
| 7 | 203+80.16 K | -46.25 LT | 180+09.57 KA | 14.15 RT | 118235.142 | 269081.323 | | 1157.31 |
| 8 | 203+87.64 K | -37.44 LT | 180+00.14 KA | 20.84 RT | 118231.961 | 269092.431 | | 1157.26 |
| 9 | 204+22.16 K | -24.00 LT | 179+83.75 KA | 54.05 RT | 118239.907 | 269128.604 | | 1156.42 |



| STATION & OFFSET TABLE | | | | | | | | |
|------------------------|-------------|----------|--------------|-----------|------------|------------|--------|---------|
| POINT | STATION | OFFSET | STATION | OFFSET | Y COORDS | X COORDS | RADIUS | ELEV |
| 10 | 202+78.34 K | 50.00 RT | 178+30.89 KB | -65.00 LT | 118098.588 | 269049.938 | 47.0' | 1155.59 |
| 11 | 204+05.94 K | 82.00 RT | 178+51.03 KB | 65.00 RT | 118142.696 | 269173.874 | 60.0' | 1144.84 |
| 12 | 203+50.66 K | 58.67 RT | 178+51.03 KB | 5.00 RT | 118131.471 | 269114.934 | | 1157.72 |
| 13 | 203+72.77 K | 32.00 RT | 178+84.20 KB | 15.00 RT | 118165.922 | 269118.552 | | 1157.81 |
| 14 | 204+05.94 K | 22.00 RT | 179+06.31 KB | 41.67 RT | 118192.632 | 269140.611 | | 1156.93 |
| 15 | 203+61.66 K | 41.51 RT | 178+71.11 KB | 8.46 RT | 118151.849 | 269114.577 | | 1157.91 |



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|------------------------|------------|------------------|---------------|-------|---|
| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | MGS GUARDRAIL | SHEET | E |
|------------------------|------------|------------------|---------------|-------|---|



PROJECT NO: 1166-00-83

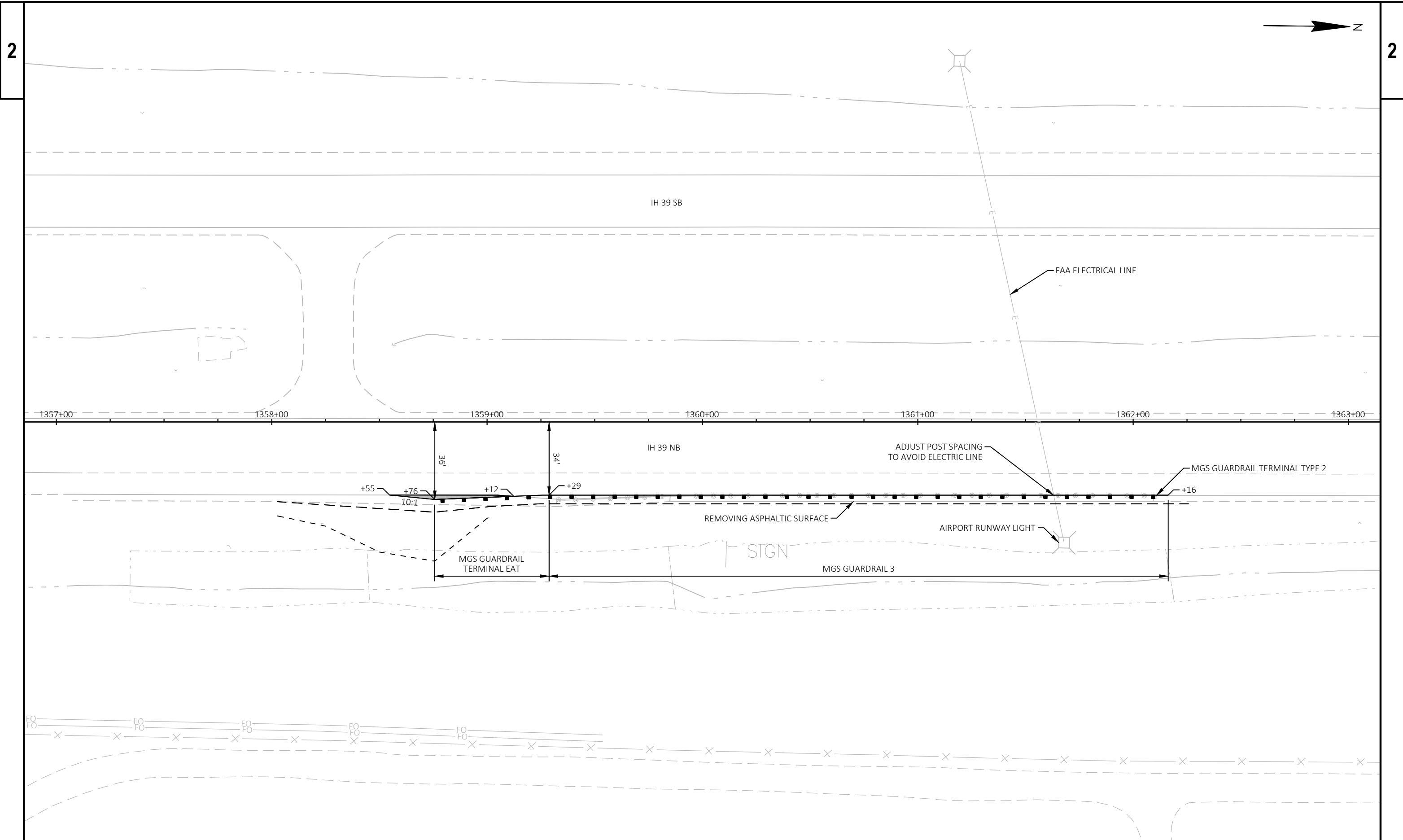
HWY: IH 39

COUNTY: MARATHON

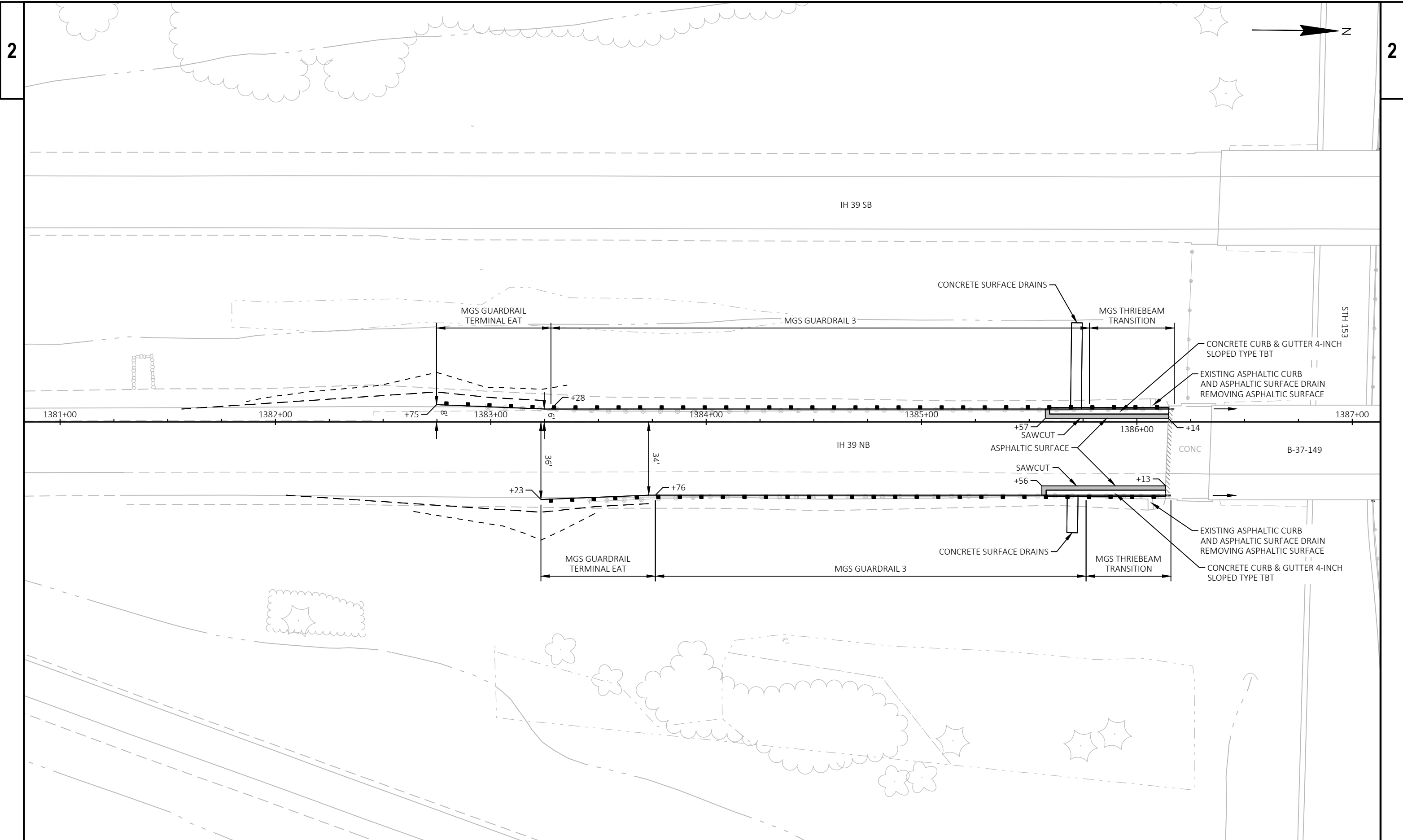
MGS GUARDRAIL

SHEET

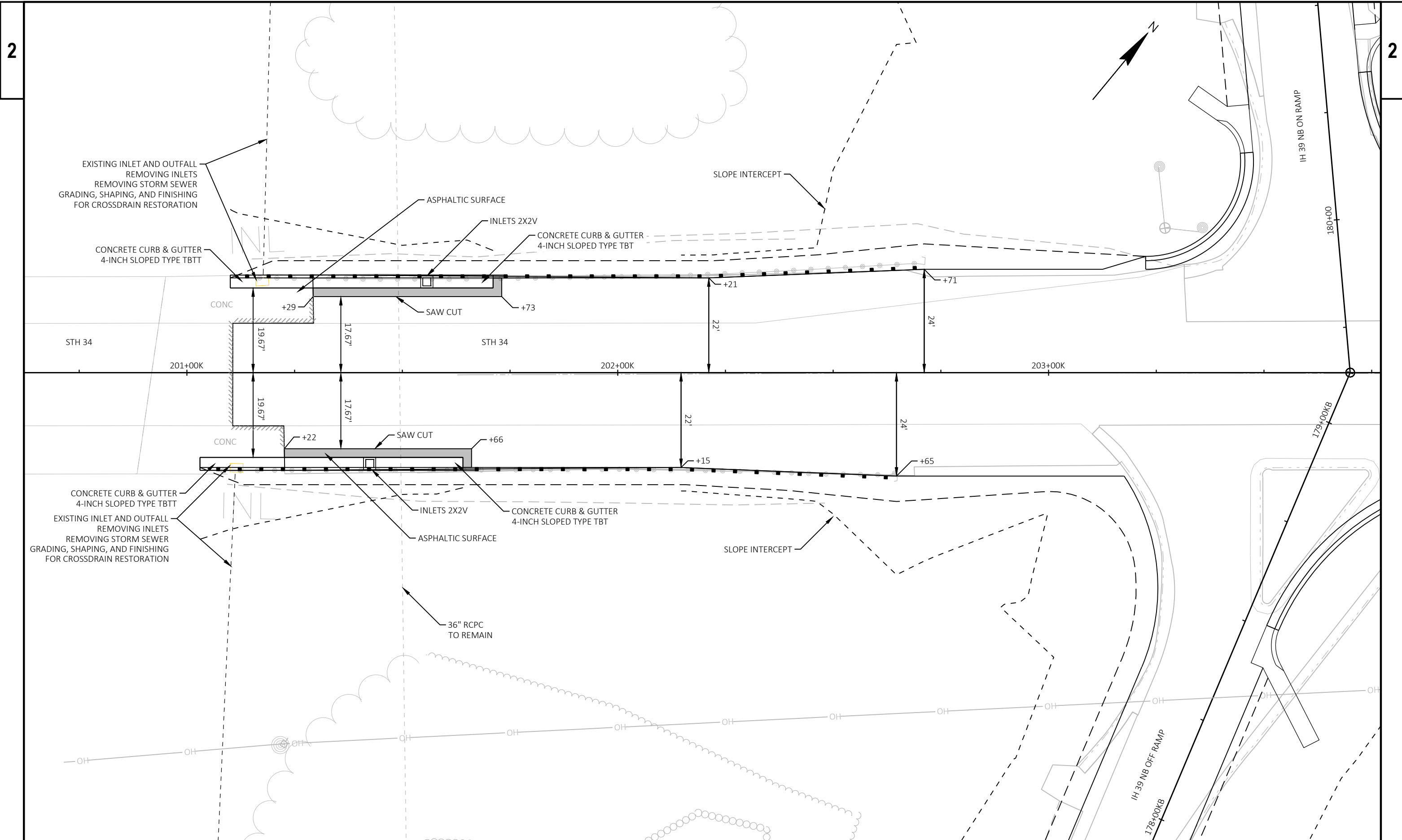
E



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|------------------------|------------|------------------|---------------|-------|----------|
| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | MGS GUARDRAIL | SHEET | E |
|------------------------|------------|------------------|---------------|-------|----------|



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|------------------------|------------|------------------|---------------|-------|----------|
| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | MGS GUARDRAIL | SHEET | E |
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2

2

PROJECT NO: 1166-00-83

HWY: IH 34

COUNTY: MARATHON

MGS GUARDRAIL

SHEET

E

FILE NAME: N:\PDS\C3D\11660013\SHEETSPLAN\021201-PD.DWG
LAYOUT NAME - 05

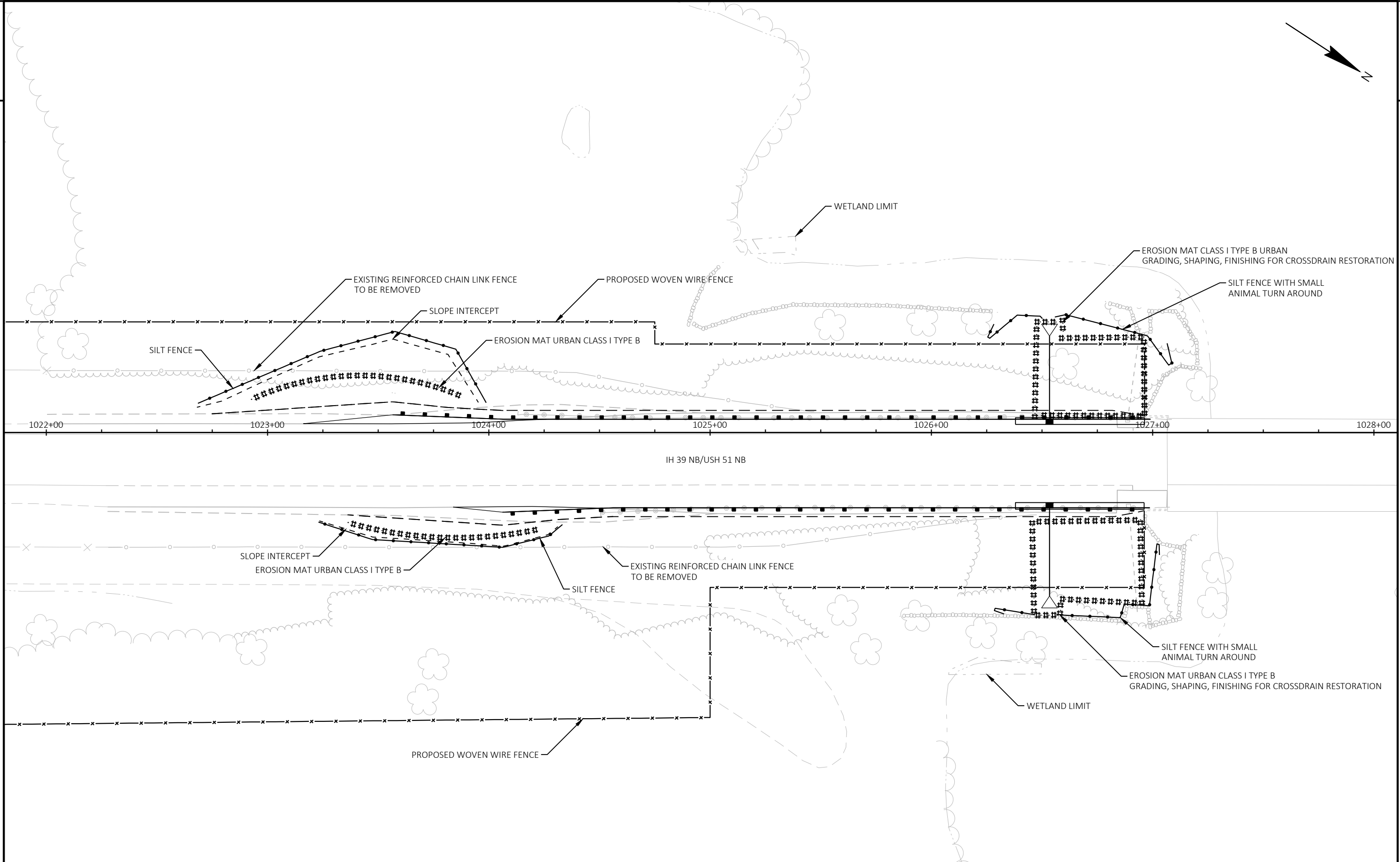
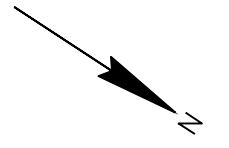
PLOT DATE: 3/3/2022 9:41 AM

PLOT BY: GRULING, ZACHARY P

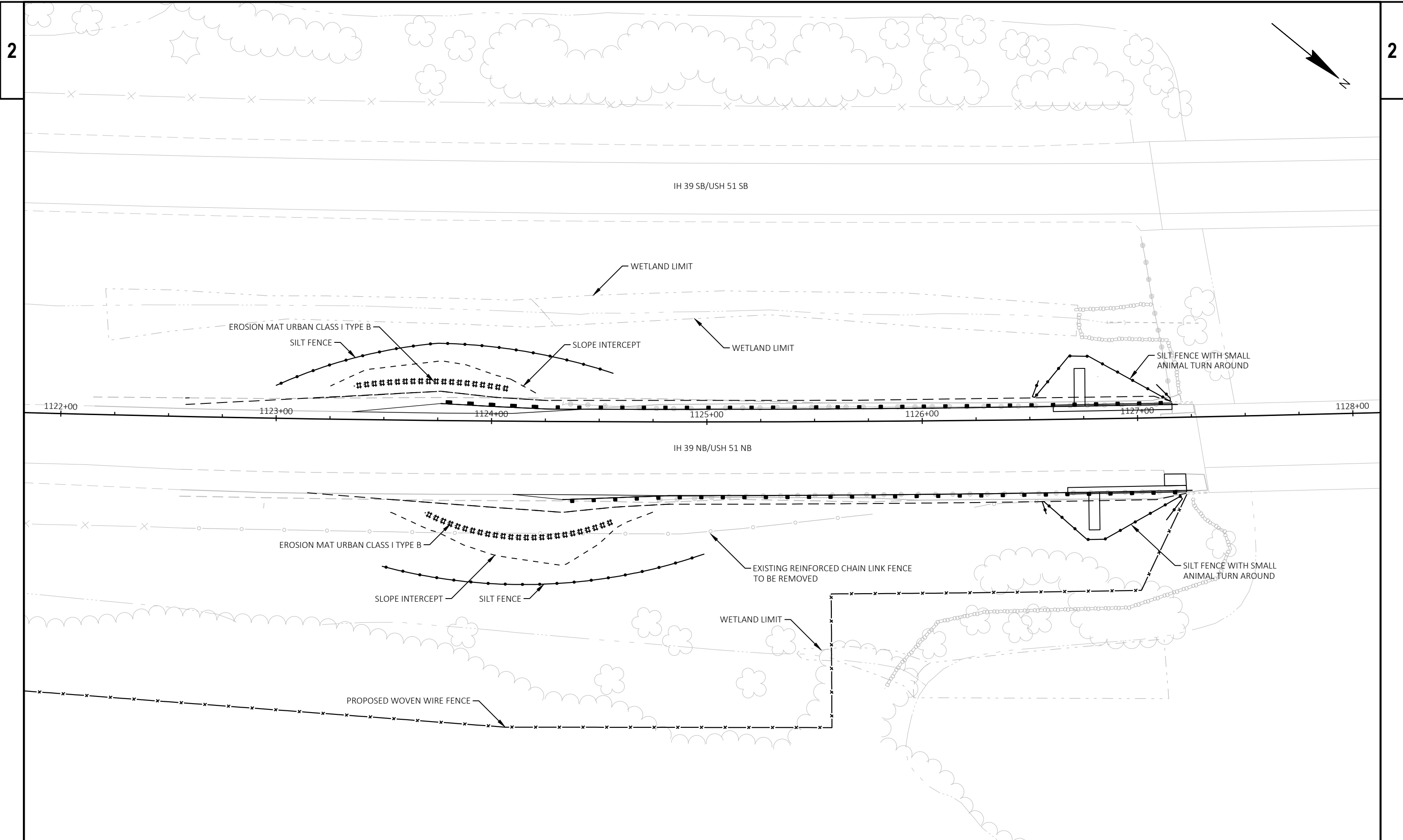
PLOT NAME:

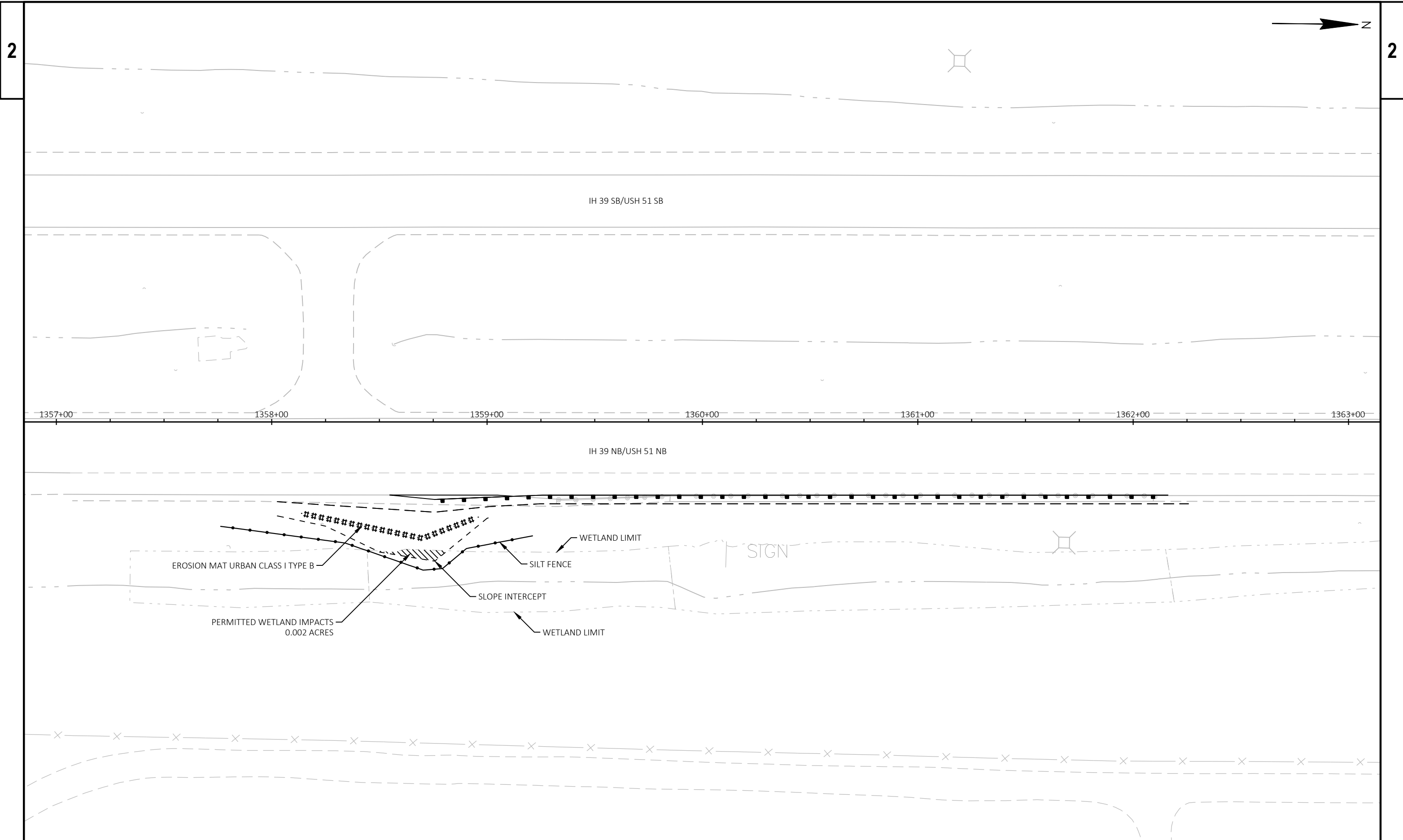
PLOT SCALE: 1 IN:20 FT

WISDOT/CADD SHEET 42



| | | | | | |
|------------------------|------------|------------------|-----------------|-------|----------|
| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | EROSION CONTROL | SHEET | E |
|------------------------|------------|------------------|-----------------|-------|----------|





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|------------------------|------------|------------------|-----------------|-------|---|
| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | EROSION CONTROL | SHEET | E |
|------------------------|------------|------------------|-----------------|-------|---|

FILE NAME : N:\PDS\C3D\11660013\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - 03

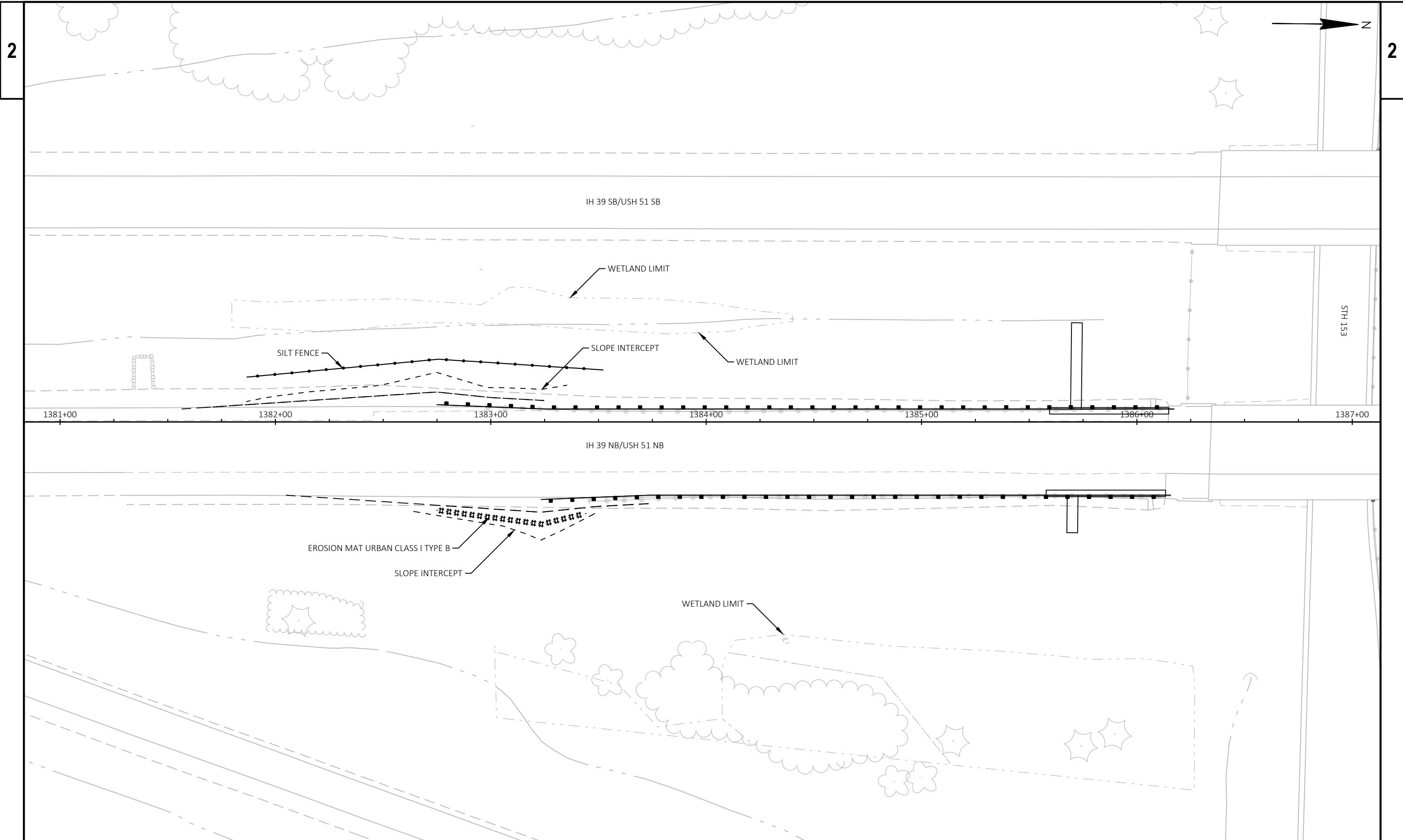
PLOT DATE : 3/3/2022 9:49 AM

PLOT BY : GRULING, ZACHARY P

PLOT NAME :

PLOT SCALE : #####

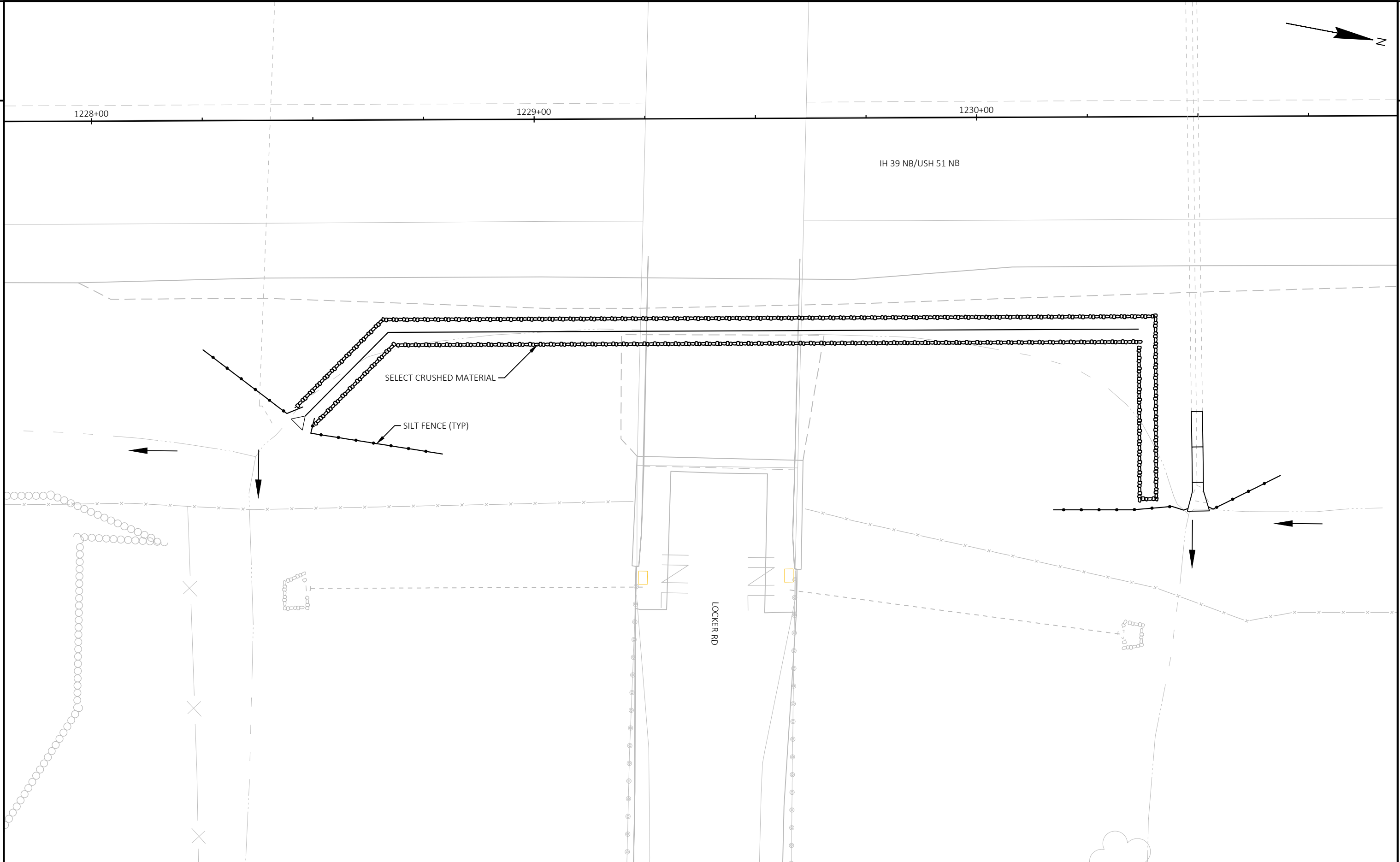
WISDOT/CADD SHEET 42



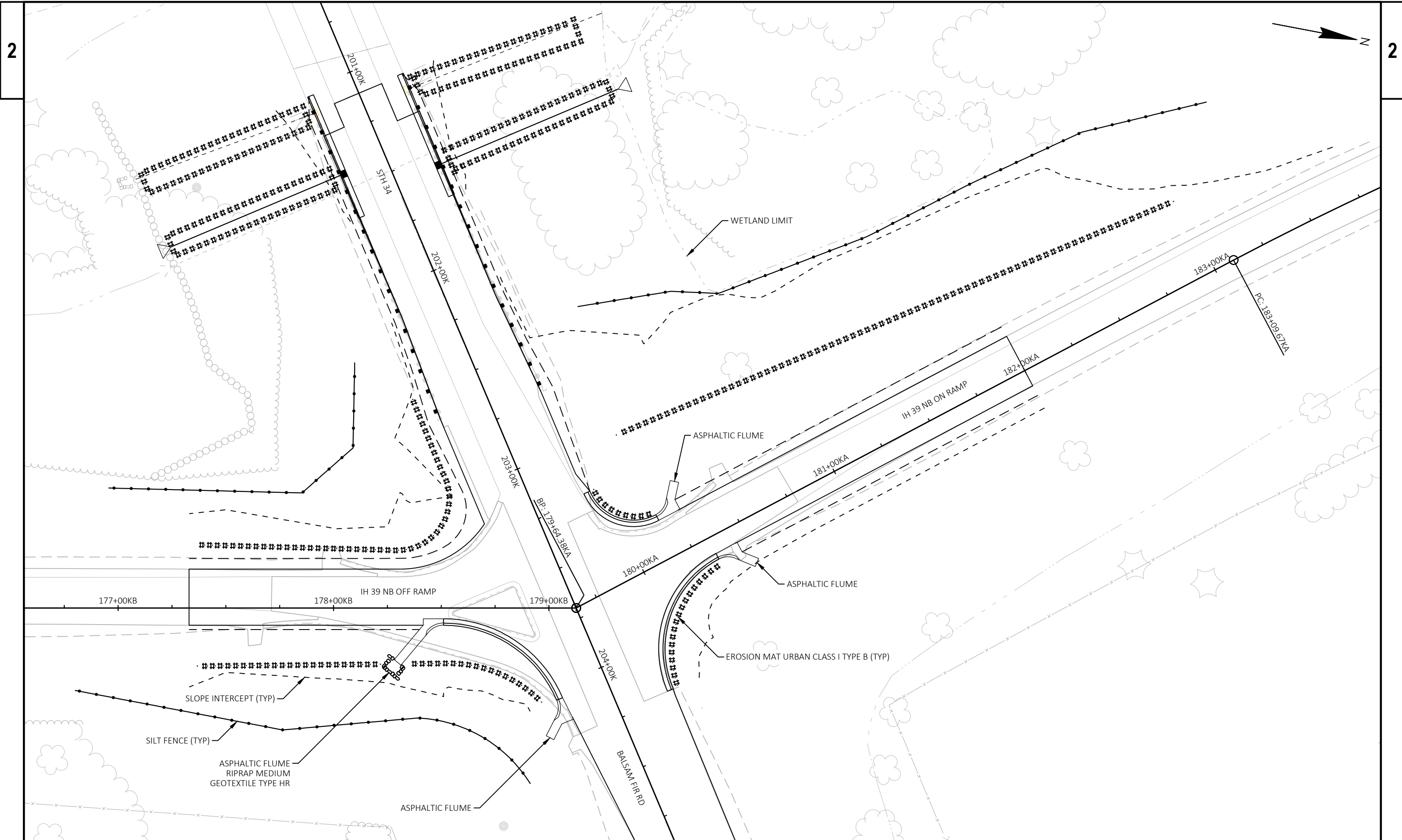
2

2

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|------------------------|------------|------------------|-----------------|-------|---|
| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | EROSION CONTROL | SHEET | E |
|------------------------|------------|------------------|-----------------|-------|---|



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| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | EROSION CONTROL | SHEET | E |
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2

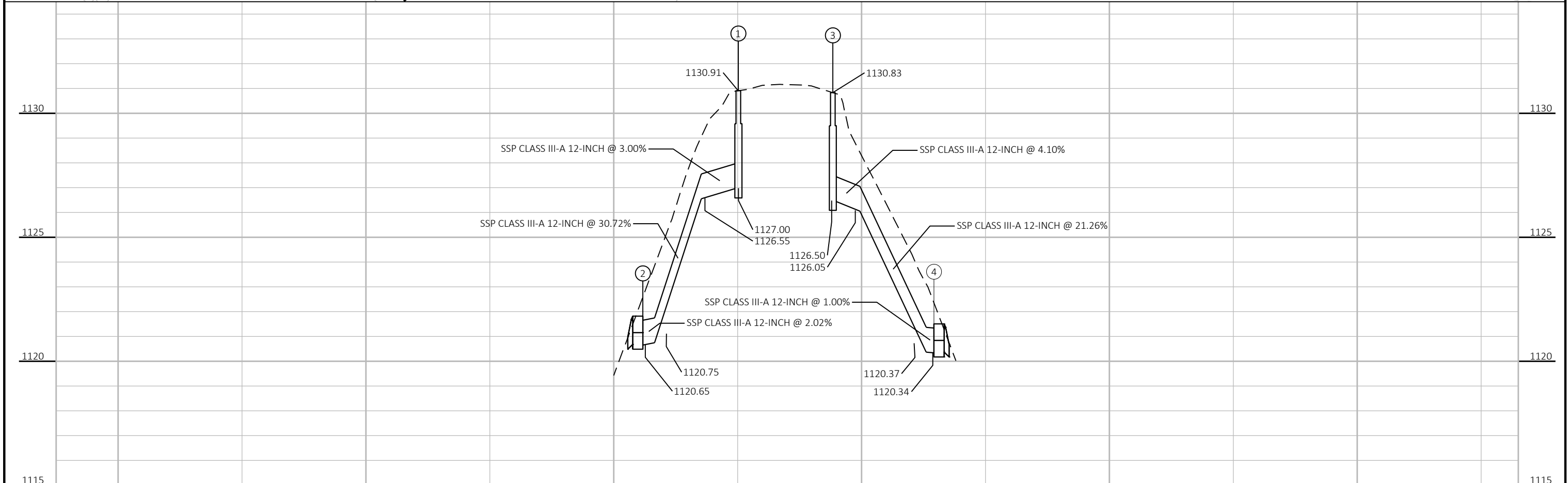
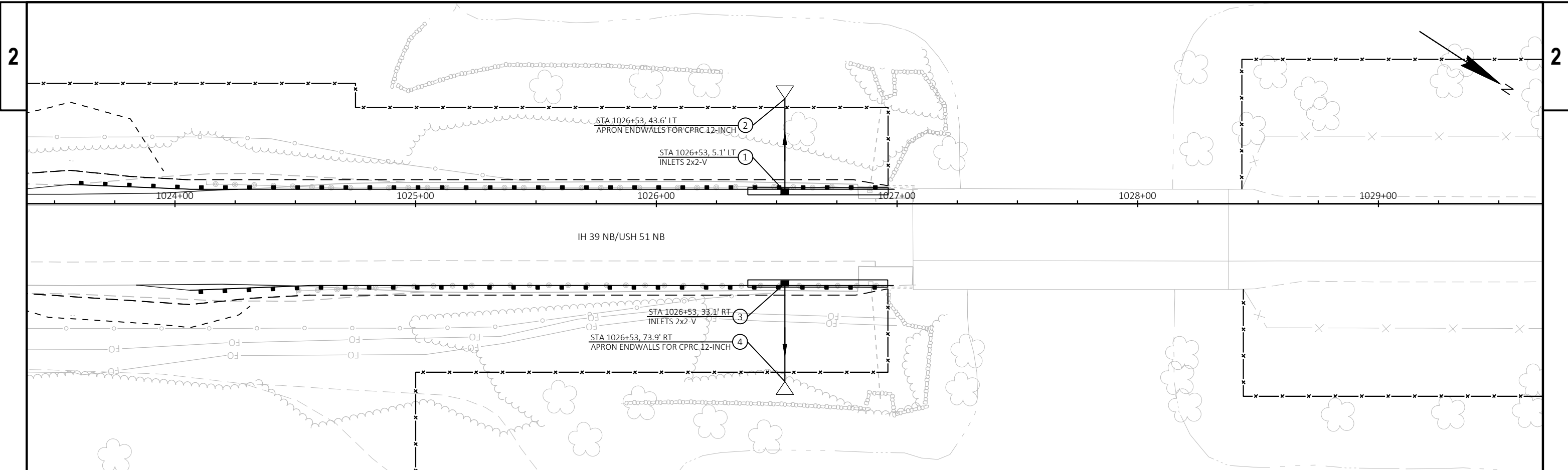
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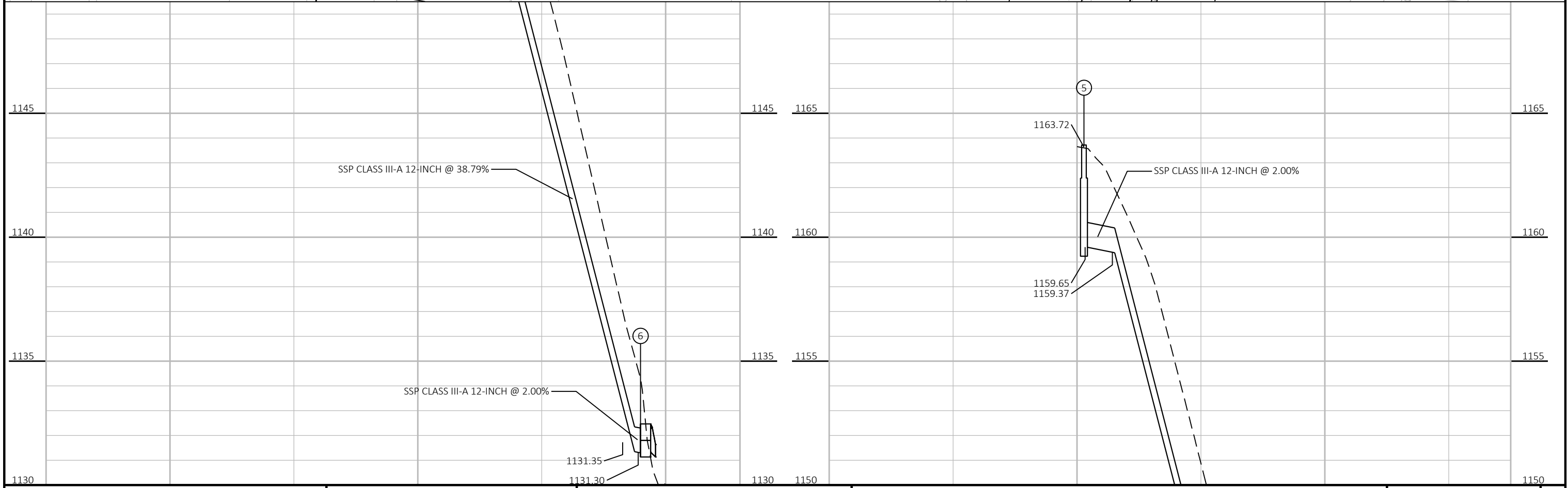
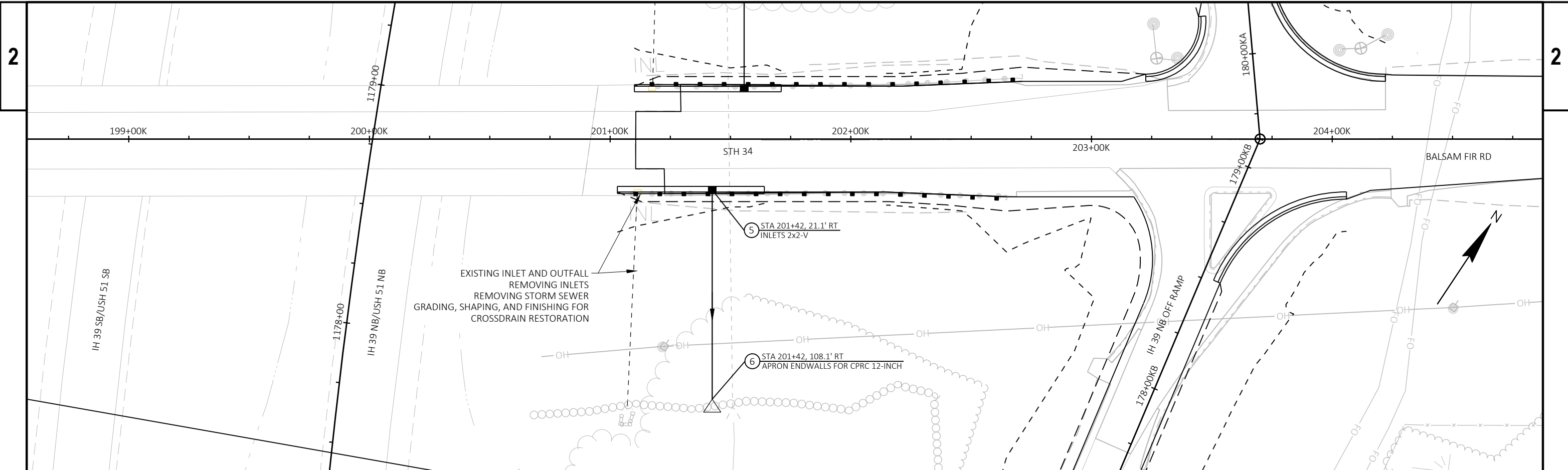
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| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | EROSION CONTROL | SHEET | E |
|------------------------|------------|------------------|-----------------|-------|---|

FILE NAME : N:\PDS\C3D\11660013\SHEETSP\LAN\022001-EC.DWG PLOT DATE : 3/3/2022 9:51 AM PLOT BY : GRULING, ZACHARY P PLOT NAME : PLOT SCALE : ##### WISDOT/CADD SHEET 42

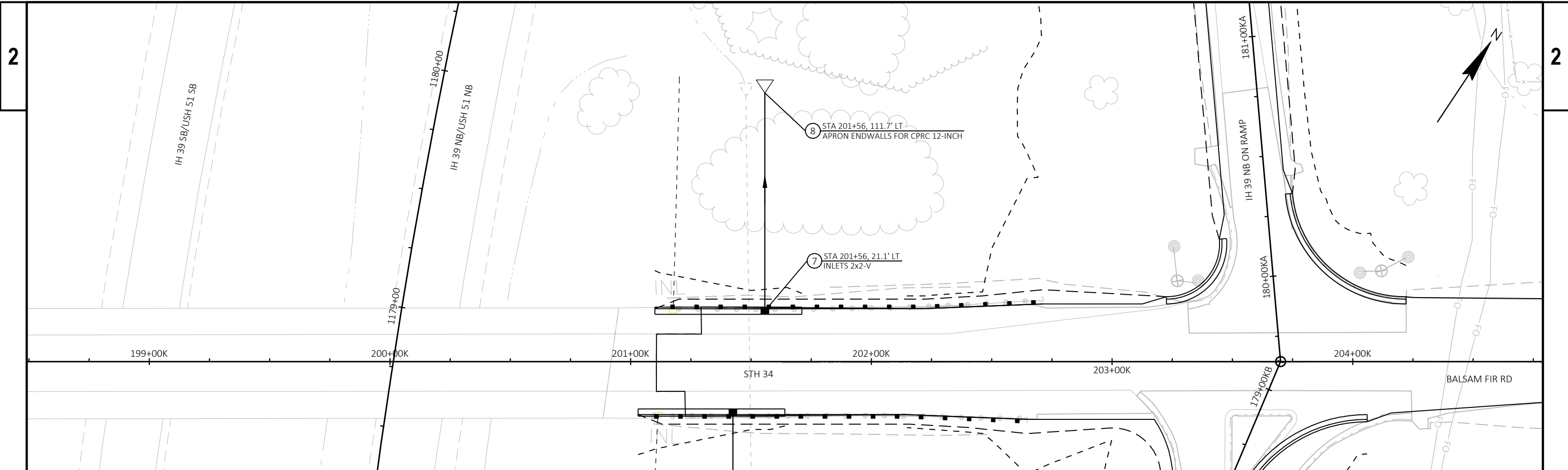
LAYOUT NAME - 06



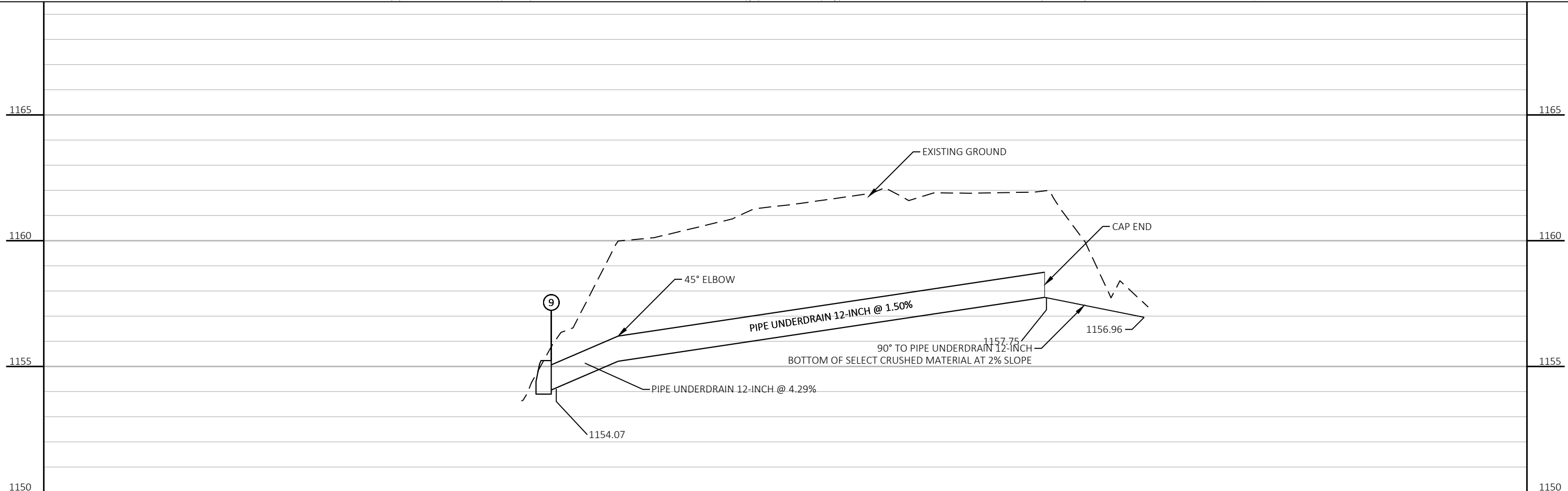
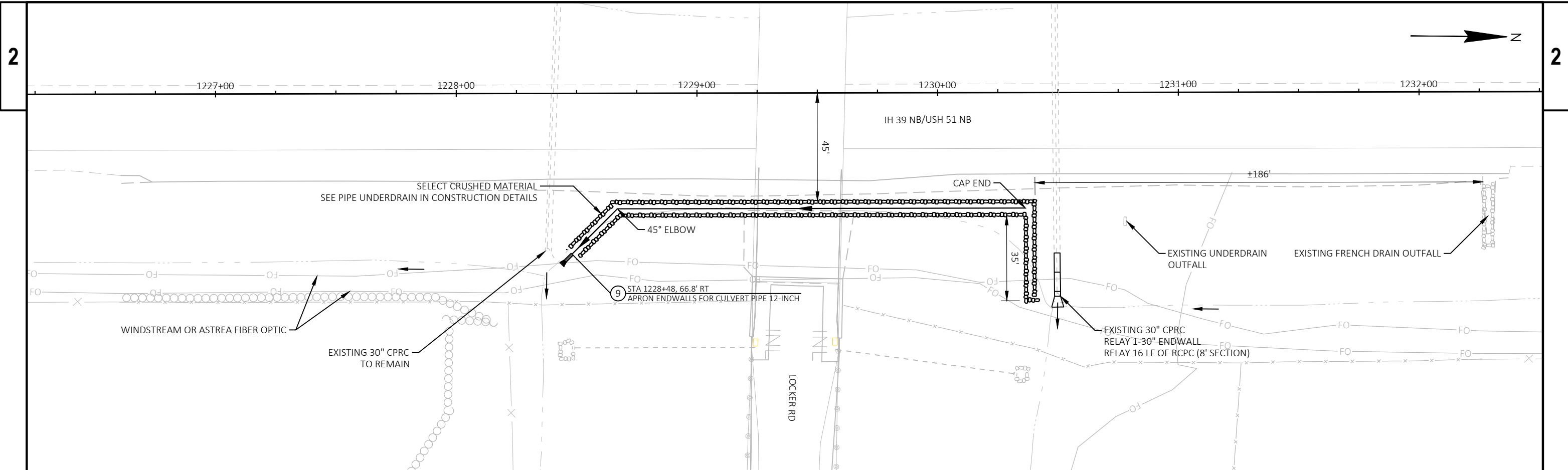
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|------------------------|------------|------------------|-------------|-------|----------|
| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | STORM SEWER | SHEET | E |
|------------------------|------------|------------------|-------------|-------|----------|



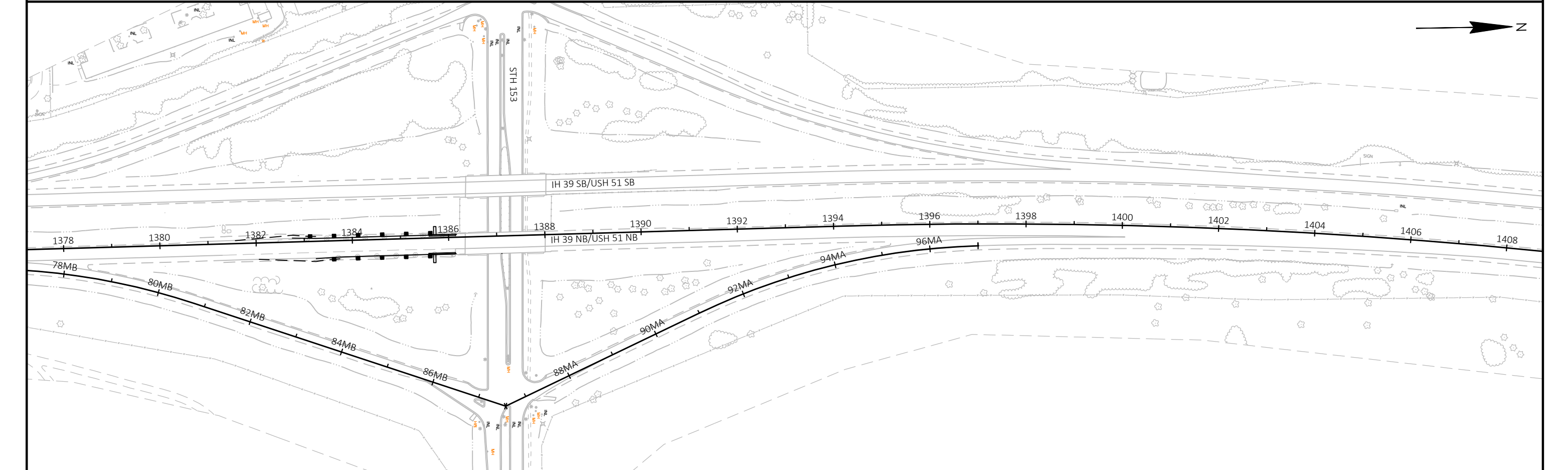
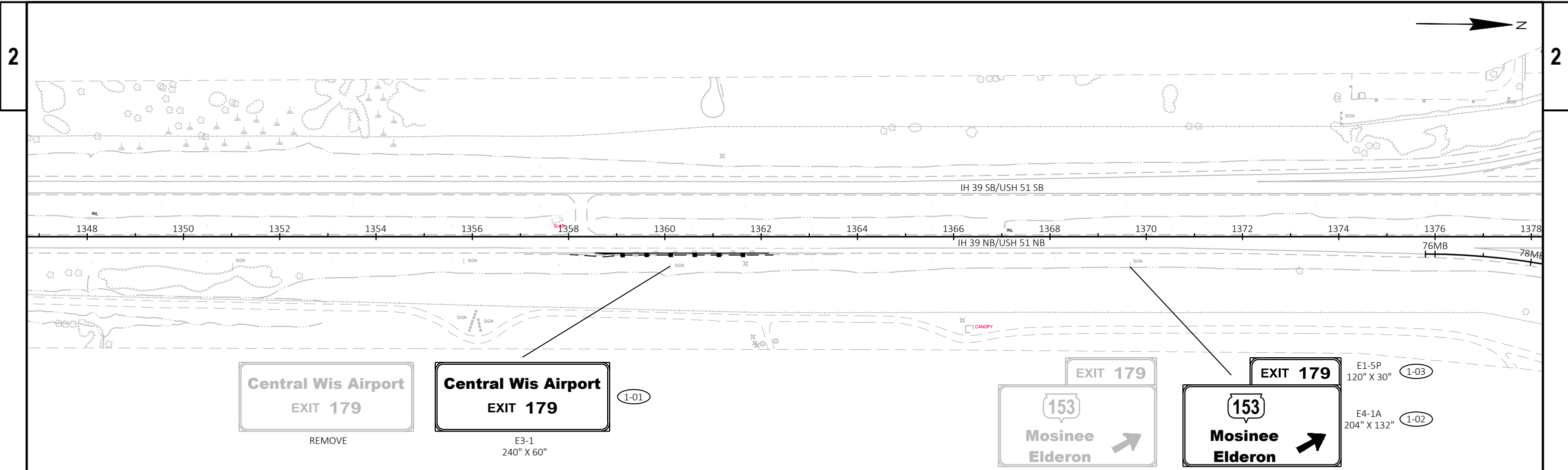
PROJECT NO: 1166-00-83 HWY: IH 39 COUNTY: MARATHON STORM SEWER SHEET E



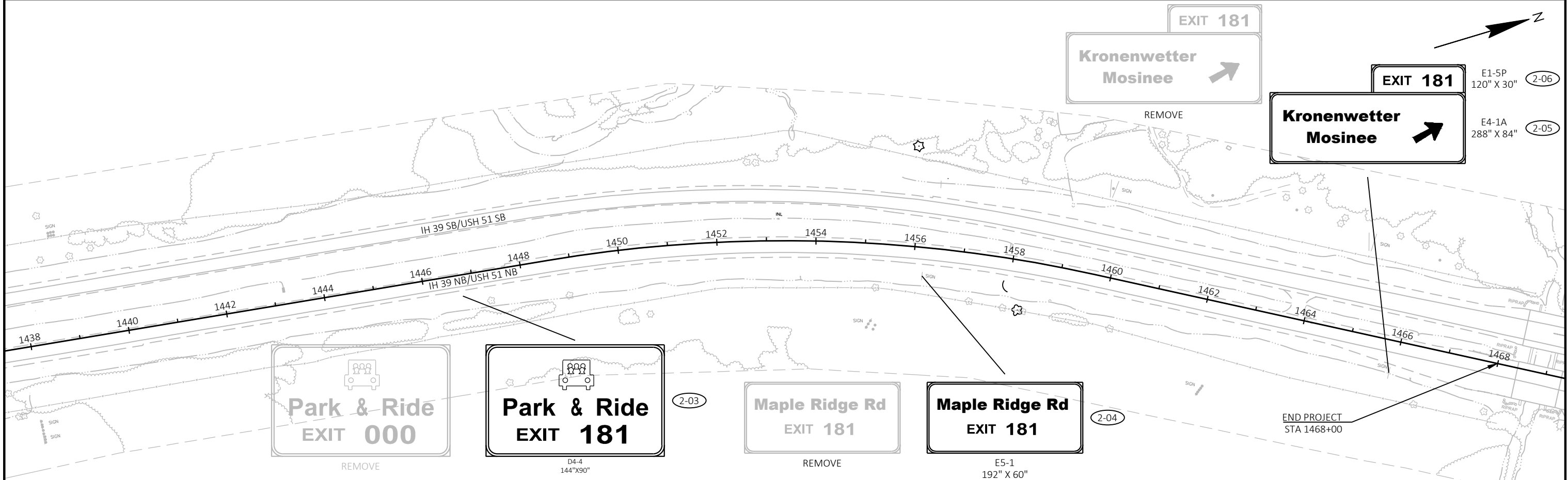
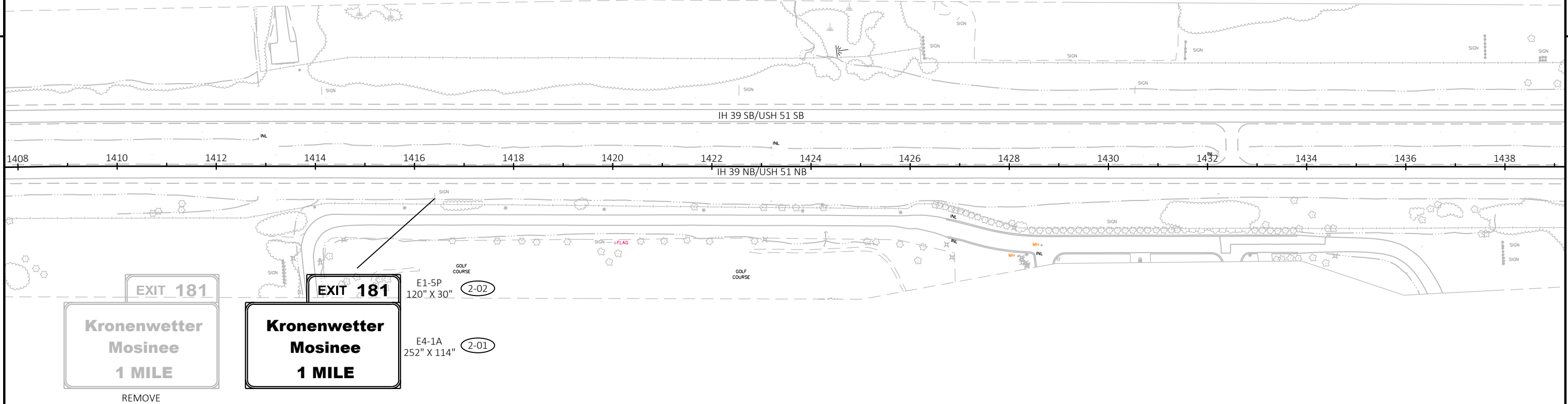
PROJECT NO: 1166-00-83 HWY: IH 39 COUNTY: MARATHON STORM SEWER SHEET E



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| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | PIPE UNDERDRAIN | SHEET | E |
|------------------------|------------|------------------|-----------------|-------|---|

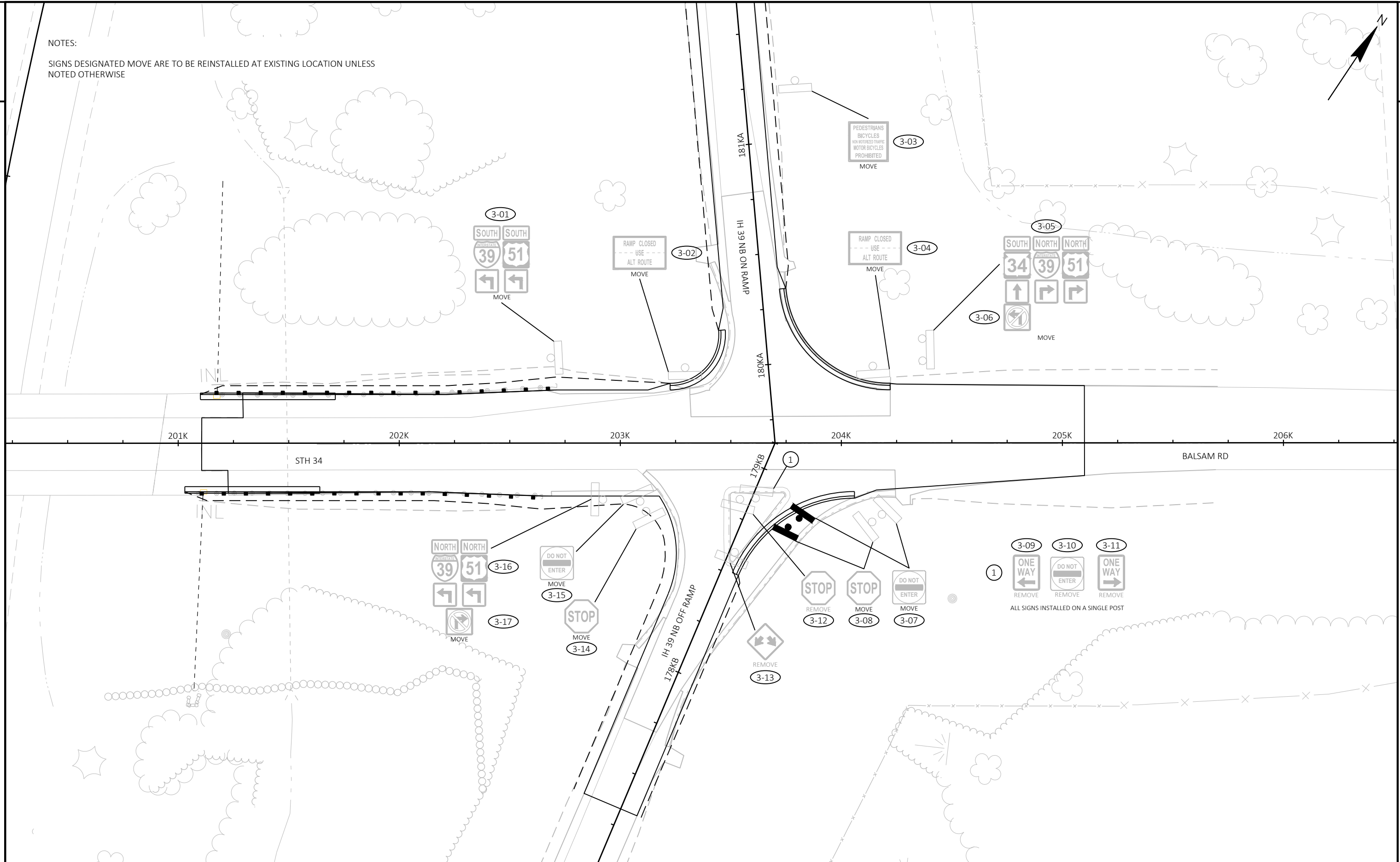
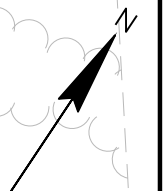


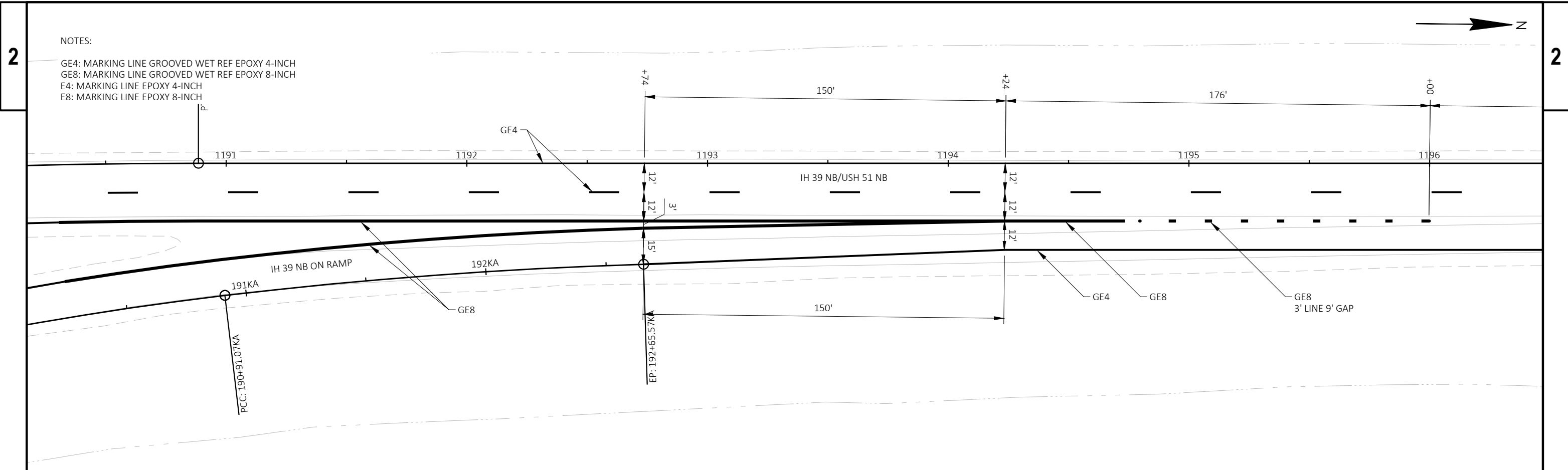
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| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | PERMANENT SIGNING | SHEET E |
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| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | PERMANENT SIGNING | SHEET | E |
|------------------------|------------|------------------|-------------------|-------|----------|

NOTES:
SIGNS DESIGNATED MOVE ARE TO BE REINSTALLED AT EXISTING LOCATION UNLESS NOTED OTHERWISE

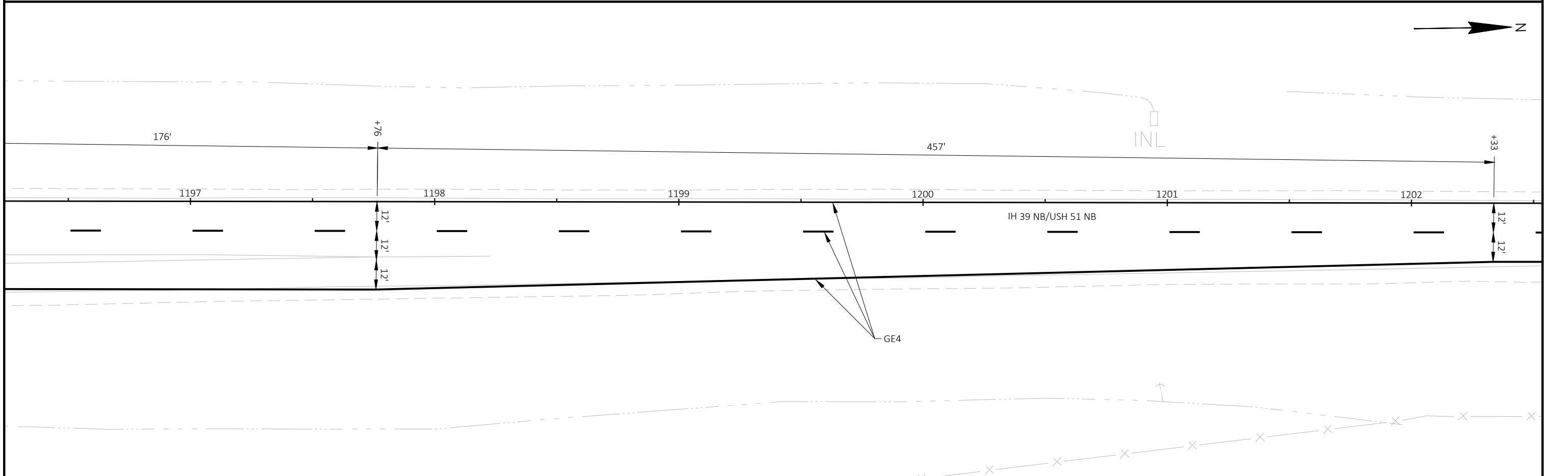




NOTES:
 GE4: MARKING LINE GROOVED WET REF EPOXY 4-INCH
 GE8: MARKING LINE GROOVED WET REF EPOXY 8-INCH
 E4: MARKING LINE EPOXY 4-INCH
 E8: MARKING LINE EPOXY 8-INCH

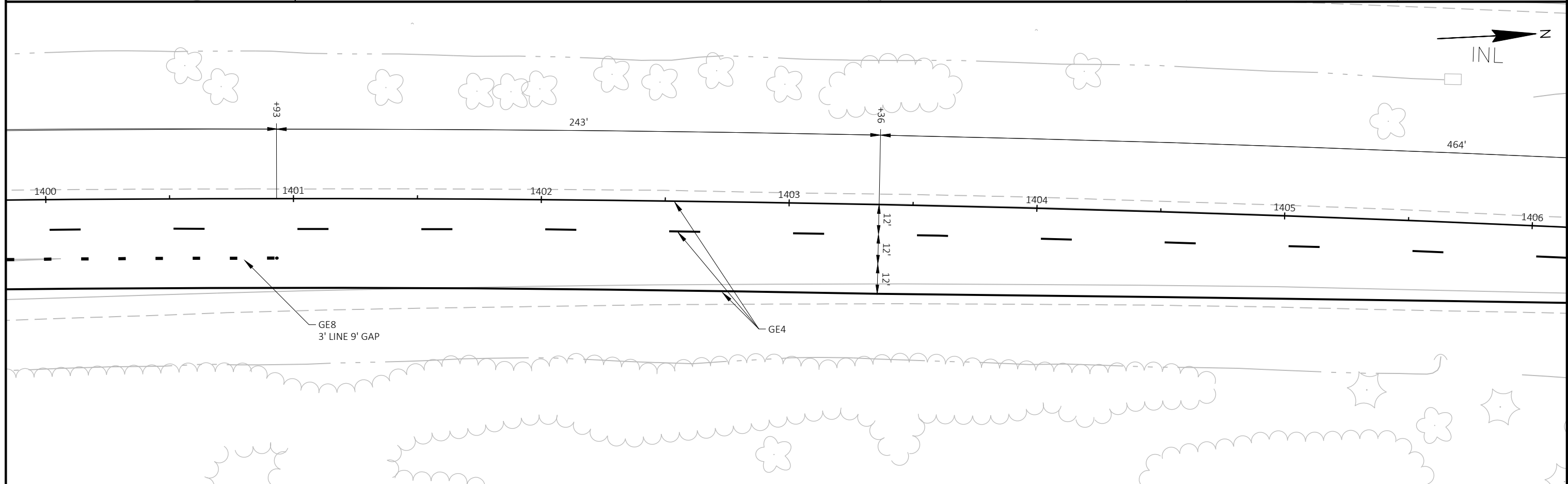
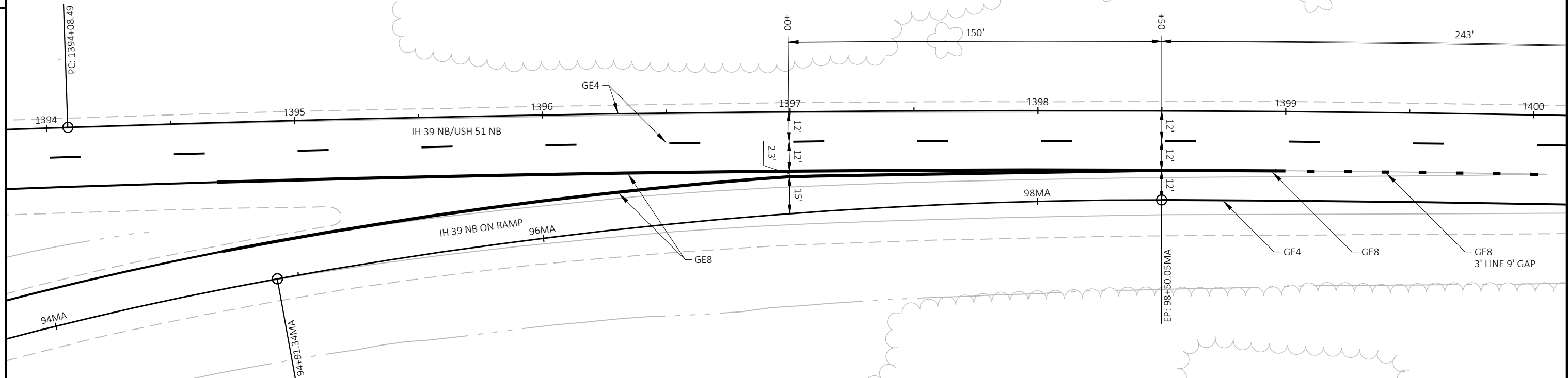
2

2



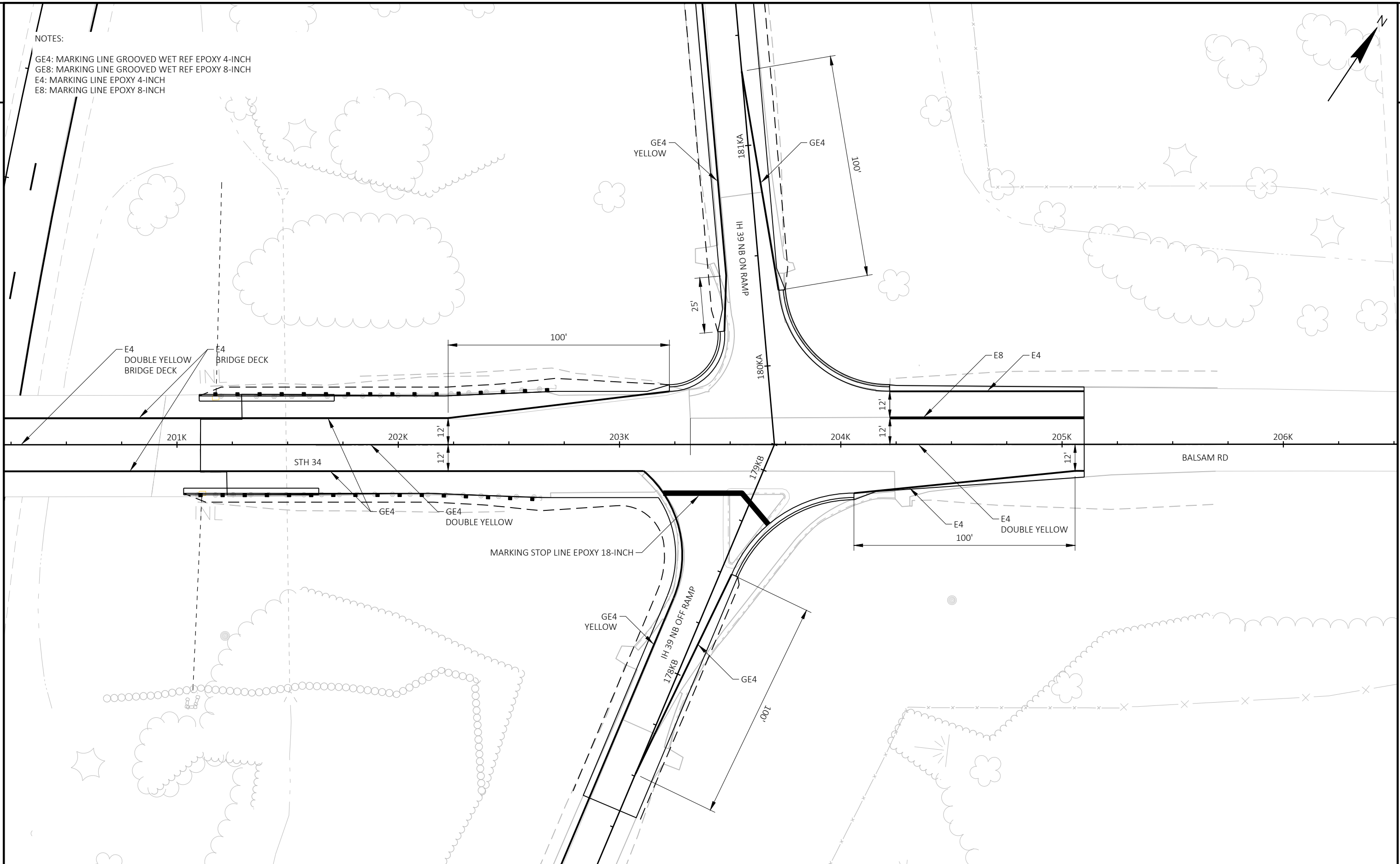
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|------------------------|------------|------------------|------------------|-------|---|
| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | PAVEMENT MARKING | SHEET | E |
|------------------------|------------|------------------|------------------|-------|---|

NOTES:
 GE4: MARKING LINE GROOVED WET REF EPOXY 4-INCH
 GE8: MARKING LINE GROOVED WET REF EPOXY 8-INCH
 E4: MARKING LINE EPOXY 4-INCH
 E8: MARKING LINE EPOXY 8-INCH



NOTES:

- GE4: MARKING LINE GROOVED WET REF EPOXY 4-INCH
- GE8: MARKING LINE GROOVED WET REF EPOXY 8-INCH
- E4: MARKING LINE EPOXY 4-INCH
- E8: MARKING LINE EPOXY 8-INCH



NOTES:
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE

MAX WIDTH = 13' STAGE 4

2

2



1

W12-52
48"X48"

W57-52
36"X24"

INSTALL TWO ASSEMBLIES
AT THIS LOCATION

2

M3-1
24"X12"

M1-1
24"X24"

W12-52
48"X48"

W57-52
36"X24"

INSTALL TWO ASSEMBLIES
AT THIS LOCATION

4

M3-1
24"X12"

M1-1
24"X24"

W12-52
48"X48"

3

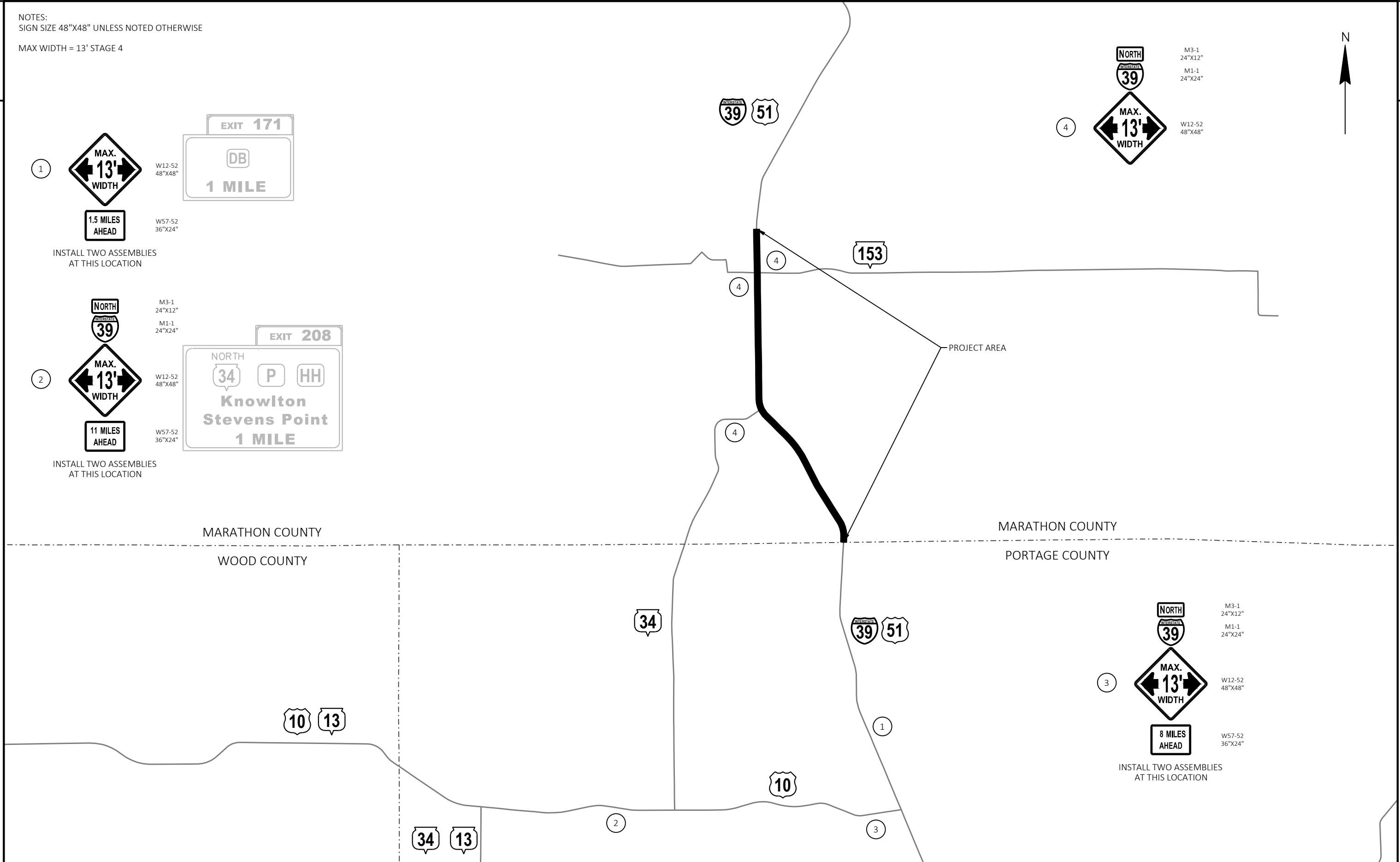
M3-1
24"X12"

M1-1
24"X24"

W12-52
48"X48"

W57-52
36"X24"

INSTALL TWO ASSEMBLIES
AT THIS LOCATION

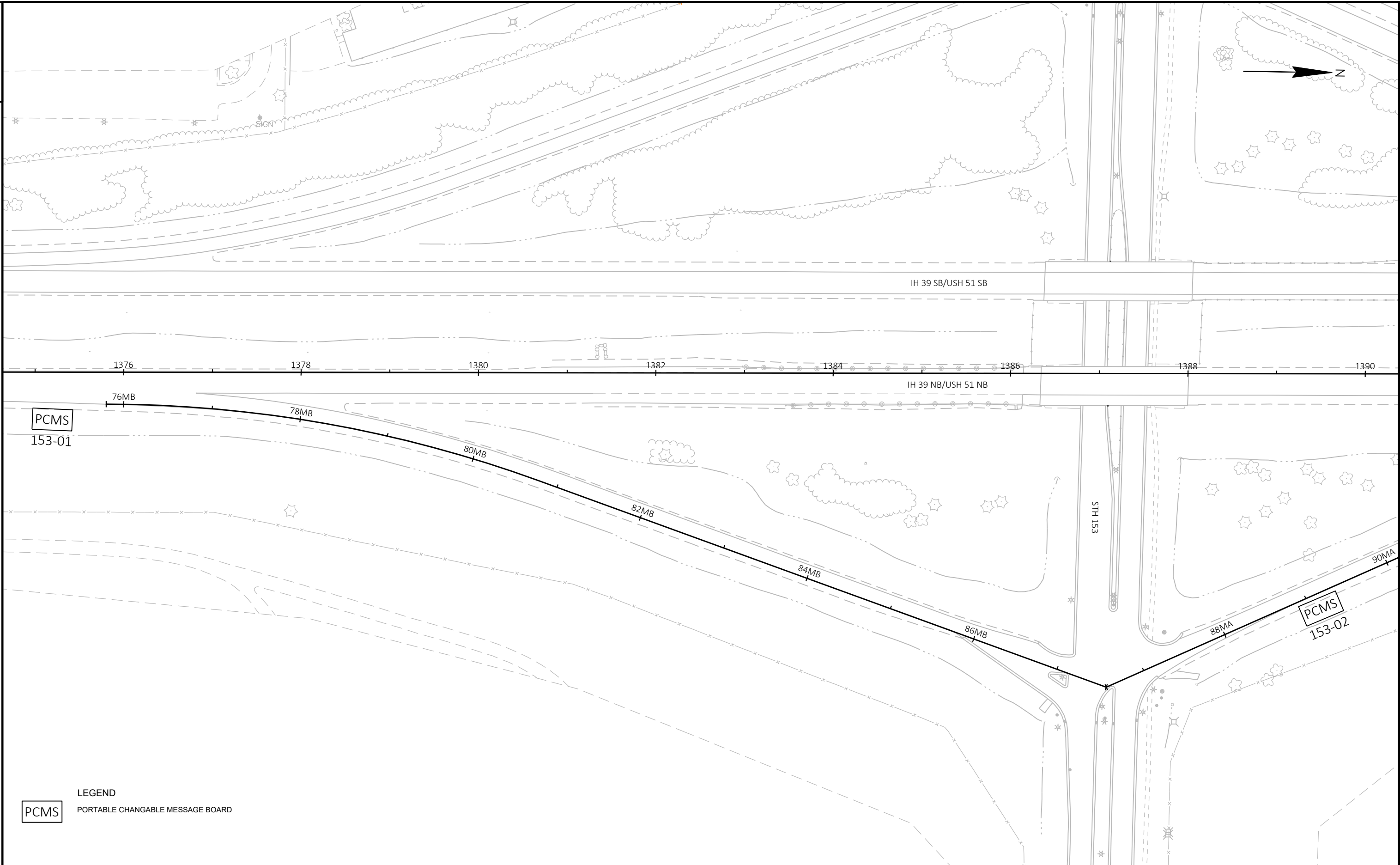


| | | | | | |
|------------------------|------------|------------------|---------------------------|-------|---|
| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | WIDTH RESTRICTION SIGNING | SHEET | E |
|------------------------|------------|------------------|---------------------------|-------|---|

NOTES:
INSTALL PCMS PRIOR TO STAGE OF STAGE 2A



LEGEND
PCMS PORTABLE CHANGABLE MESSAGE BOARD



PCMS
153-01

PCMS
153-02

LEGEND

PCMS PORTABLE CHANGABLE MESSAGE BOARD

| LOCATION | 7 DAYS PRIOR TO CONSTRUCTION | | 3 DAYS PRIOR TO RAMP CLOSURE | | DURING RAMP CLOSURE | | STAGE 3 | |
|---|------------------------------|------------------|------------------------------|------------------|---------------------|------------------|-----------------------|-----------------------|
| | PHASE 1 3 SEC | PHASE 2 3 SEC | PHASE 1 3 SEC | PHASE 2 3 SEC | PHASE 1 3 SEC | PHASE 2 3 SEC | PHASE 1 3 SEC | PHASE 2 3 SEC |
| 1000' SOUTH OF MARATHON COUNTY LINE | ROAD WORK BEGINS | DAY MONTH | | | | | | |
| IH 39 NB OFF RAMP TO STH 34 | RAMP TO CLOSE | DAY MONTH TIME | | | | | | |
| 100' NE OF IH 39 NB & STH 34 INTERSECTION | ROAD TO CLOSE | DAY MONTH | | | | | | |
| IH 39 NB OFF RAMP TO STH 153 | | | RAMP TO CLOSE | DAY MONTH TIME | RAMP CLOSED | USE EXIT 181 | | |
| ON RAMP FROM STH 153 TO IH 39 NB | | | RAMP TO CLOSE | DAY MONTH TIME | | | | |
| AT LANE CLOSURE | | | | | | | STRADDLE RUMBLE STRIP | STRADDLE RUMBLE STRIP |

GENERAL NOTES FOR PORTABLE CHANGEABLE MESSAGE SIGNS

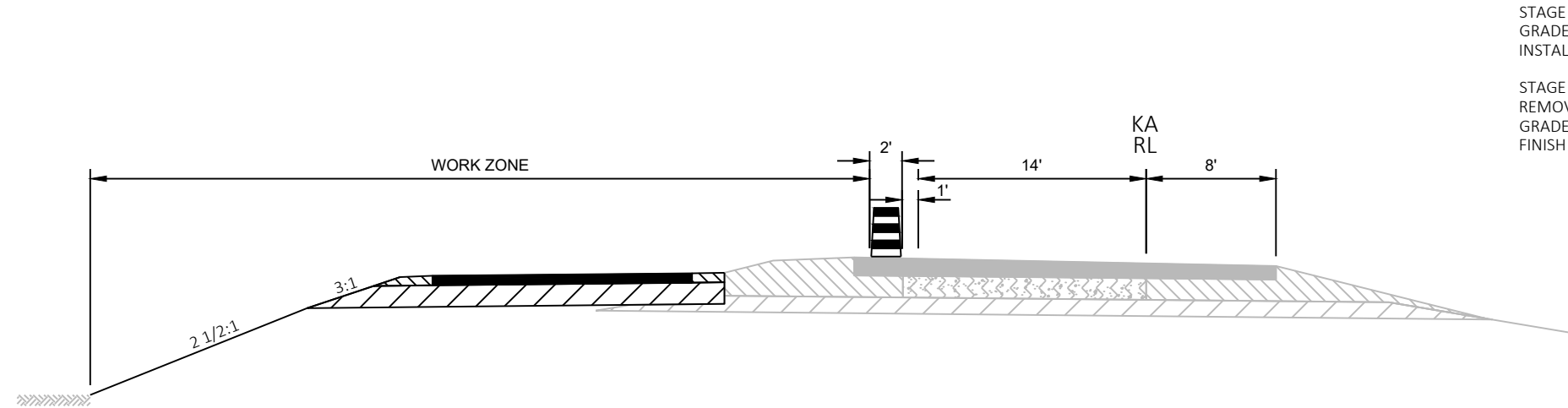
CONSIDER GEOMETRICS WHEN LOCATING MESSAGE BOARDS SO THE DRIVER HAS A CLEAR VIEW OF THE SIGN FOR A MINIMUM OF 1000 FEET IN FRONT OF THE MESSAGE BOARD.

MESSAGE SIGNS SHOULD BE PLACED AS FAR AWAY FROM LIVE TRAFFIC LANES AS POSSIBLE WITHOUT HAMPERING VISIBILITY. IN ADVANCE OF INTERSTATE CONSTRUCTION PROJECTS, THE SIGNS SHOULD BE PLACED ON THE BACKSLOPE BEYOND THE DITCH LINE. THE LOCATIONS SELECTED SHOULD BE AT OR SLIGHTLY ABOVE THE ELEVATION OF THE ROADWAY. FOR INTERMITTANT WORK, SUCH AS FREEWAY LANE CLOSURE, OR WHERE SITE CONDITIONS DO NOT ALLOW OTHERWISE, THE SIGNS MAY BE PLACED ON THE SHOULDER.

THE SITE SHOULD BE VISITED TO ASSURE VISIBILITY, SAFETY AND MAINENANCE CONSIDERATIONS.

A TAPER OF FIVE (5) REFLECTORIZED DRUMS SHALL BE PLACED AHEAD OF PCMS PLACED ON THE SHOULDER IF IT IS NOT SHIELDED BY A BARRIER.

HAVE MESSAGE BOARDS IN PLACE AND DISPLAYING THE "PRIOR TO CONSTRUCTION" MESSAGE 7 DAYS PRIOR TO EXPECTED START OF THE ROAD WORK THAT WILL REQUIRE LANE CLOSURES ON IH 39.

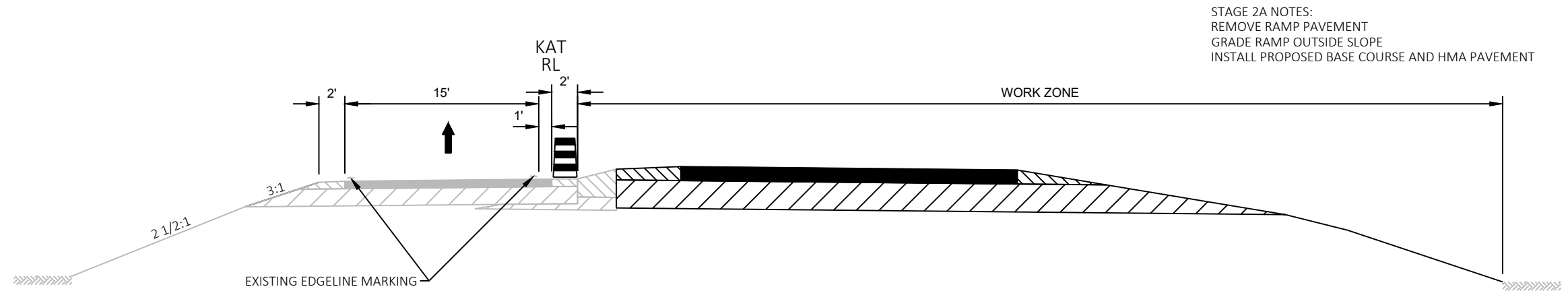


TRAFFIC CONTROL TYPICAL SECTION

STAGE 1 & STAGE 2B - STH 34 NB ON RAMP

STAGE 1 NOTES:
GRADE TEMPORARY RAMP KAT
INSTALL TEMPORARY HMA PAVEMENT

STAGE 2B NOTES:
REMOVE TEMPORARY RAMP KAT
GRADE RAMP INSIDE SLOPE
FINISH RAMP INSIDE SHOULDER



TRAFFIC CONTROL TYPICAL SECTION

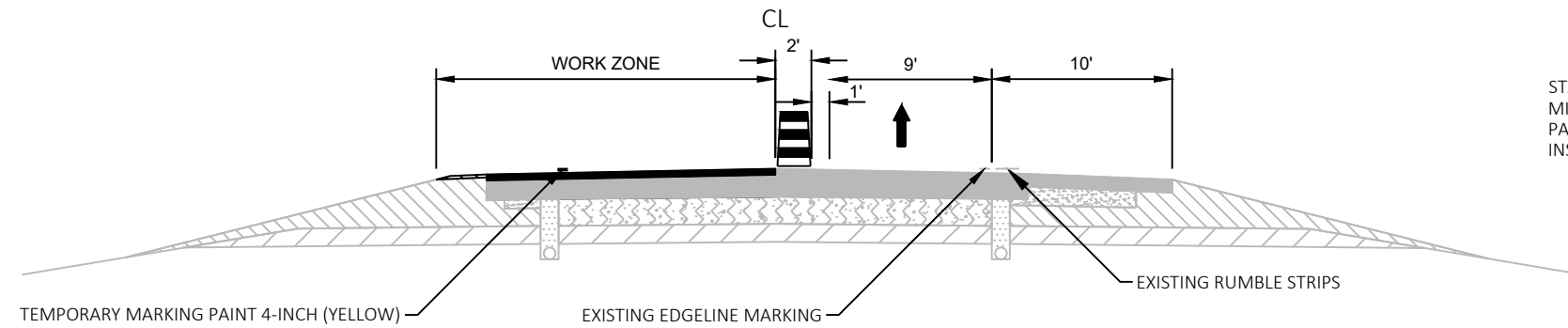
STAGE 2A - STH 34 NB ON RAMP

STAGE 2A NOTES:
REMOVE RAMP PAVEMENT
GRADE RAMP OUTSIDE SLOPE
INSTALL PROPOSED BASE COURSE AND HMA PAVEMENT

LEGEND

- EXISTING HMA PAVEMENT
- EXISTING RUBBLIZED CONCRETE PAVEMENT
- EXISTING BASE AGGREGATE DENSE 3/4-INCH
- EXISTING BASE AGGREGATE DENSE 1 1/4-INCH
- EXISTING PULVERIZED AND RELAYED HMA
- HMA PAVEMENT

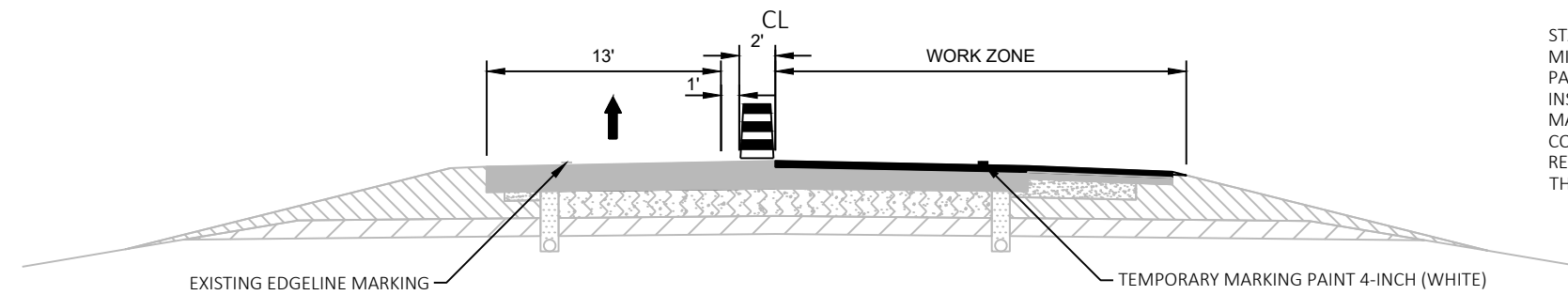
NOTES:
 FOR STAGE 3 & 4 USE SDD TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION



STAGE 3 NOTES:
 MILL NB PASSING LANE AND INSIDE SHOULDER
 PAVE NB PASSING LANE AND INSIDE SHOULDER
 INSTALL TEMPORARY PAINT EDGELINE AND CENTERLINE

TRAFFIC CONTROL TYPICAL SECTION

STAGE 3 - IH 39 NB



STAGE 4 NOTES:
 MILL NB DRIVING LANE AND OUTSIDE SHOULDER
 PAVE NB DRIVING LANE AND OUTSIDE SHOULDER
 INSTALL TEMPORARY PAINT EDGELINE
 MAINTAIN MINIMUM 14' WIDTH OF PAVEMENT DURING
 CONSTRUCTION OPERATIONS.
 RETURN DRUMS TO OTHER SIDE OF CENTERLINE AT THE END OF
 THE WORKING DAY.

TRAFFIC CONTROL TYPICAL SECTION

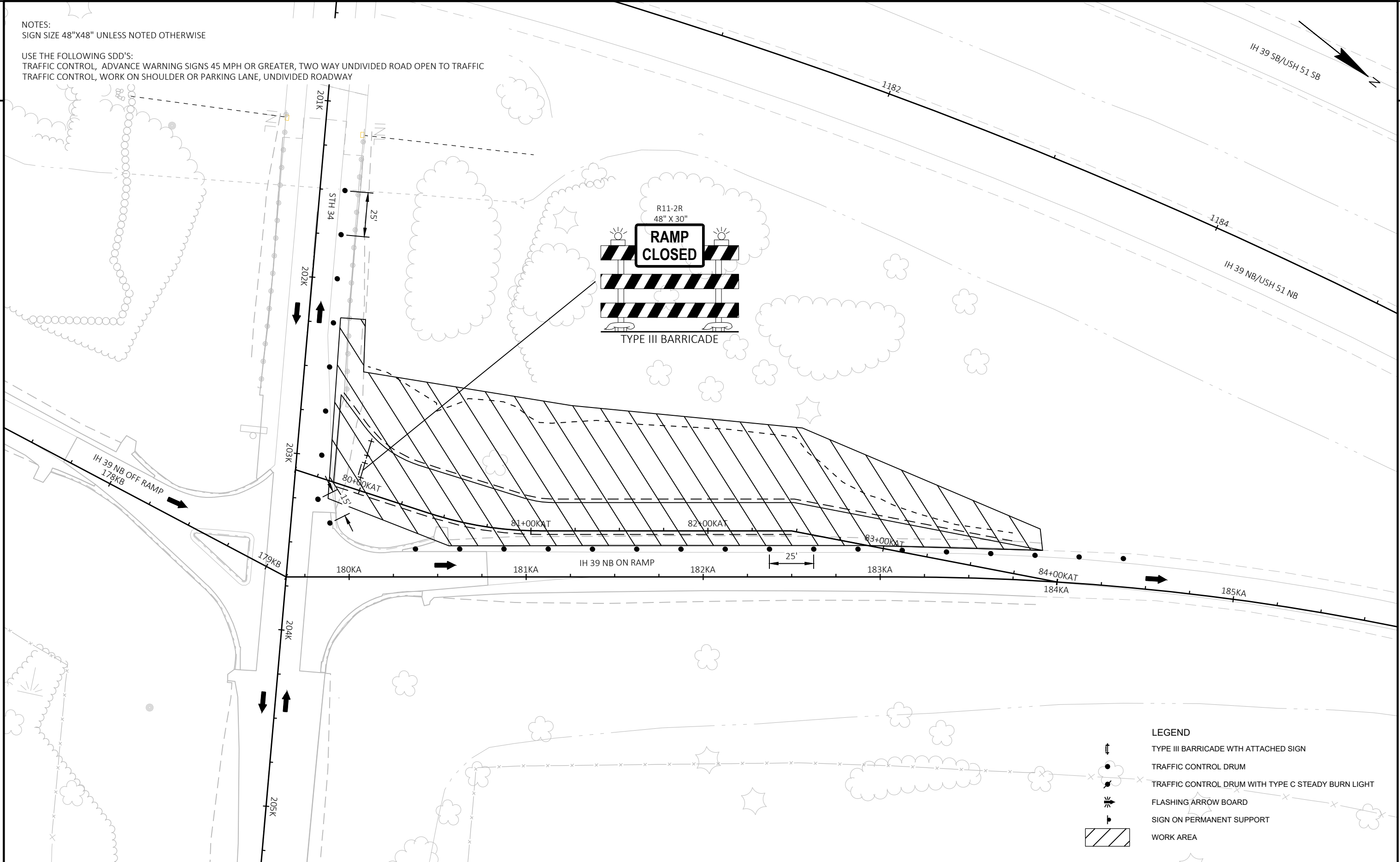
STAGE 4 - IH 39 NB

LEGEND







- EXISTING HMA PAVEMENT
- EXISTING RUBBLIZED CONCRETE PAVEMENT
- EXISTING BASE AGGREGATE DENSE 3/4-INCH
- EXISTING BASE AGGREGATE DENSE 1 1/4-INCH
- EXISTING PULVERIZED AND RELAYED HMA
- HMA PAVEMENT

NOTES:
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE

USE THE FOLLOWING SDD'S:
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC
TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY

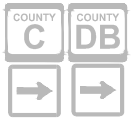
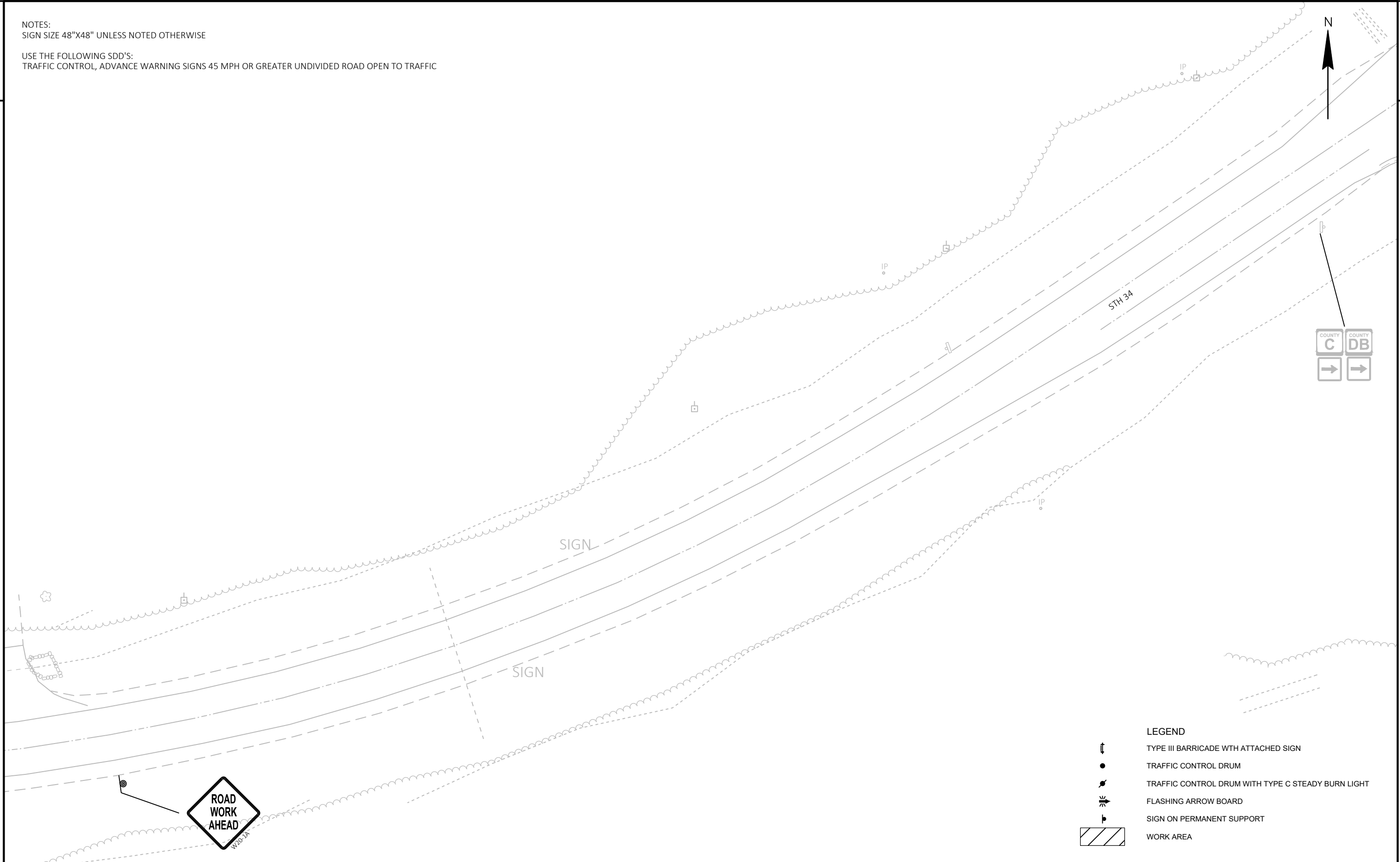


LEGEND







-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
-  FLASHING ARROW BOARD
-  SIGN ON PERMANENT SUPPORT
-  WORK AREA

NOTES:
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE

USE THE FOLLOWING SDD'S:
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER UNDIVIDED ROAD OPEN TO TRAFFIC

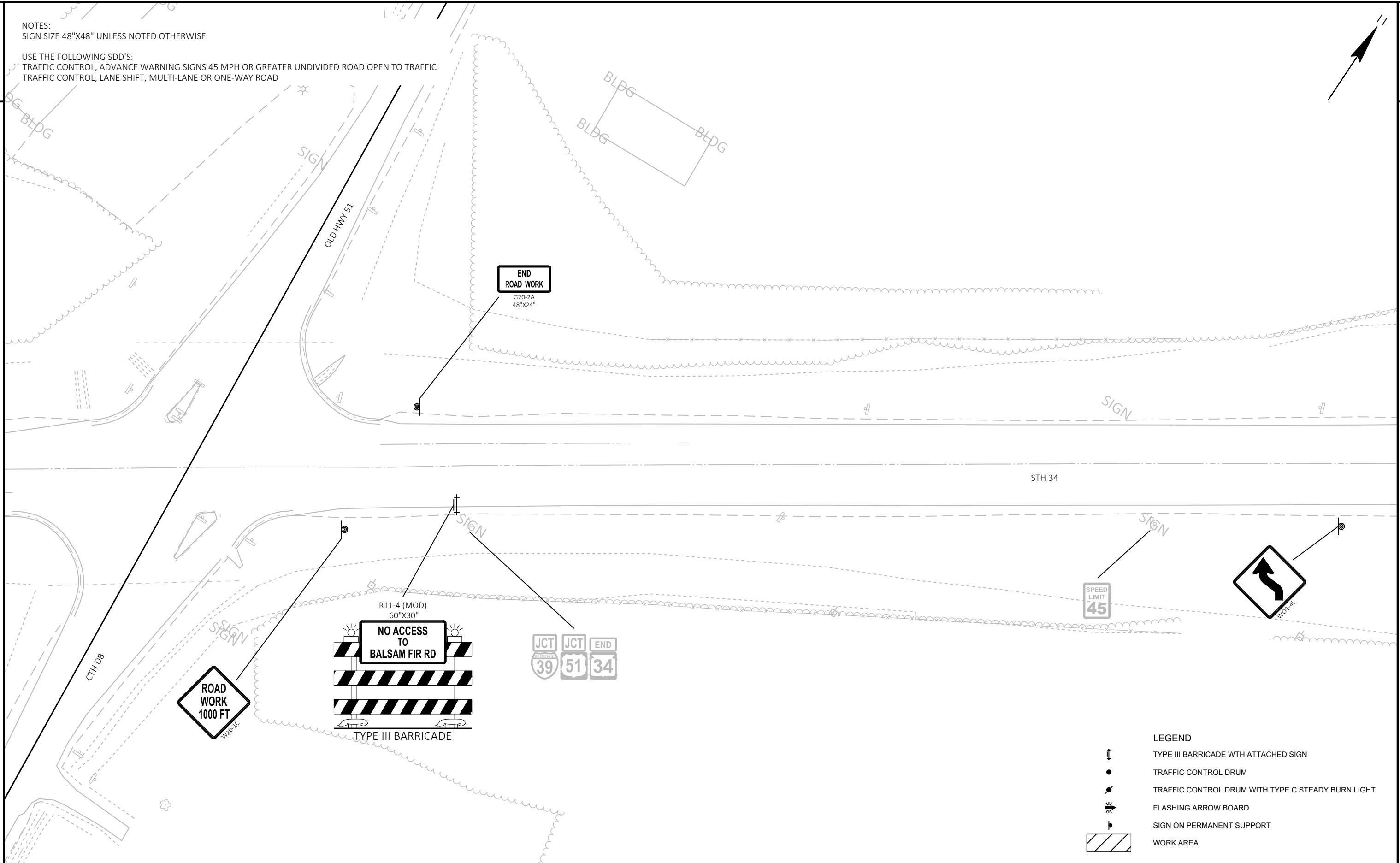
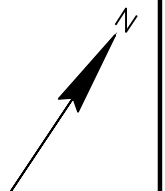


LEGEND

-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
-  FLASHING ARROW BOARD
-  SIGN ON PERMANENT SUPPORT
-  WORK AREA

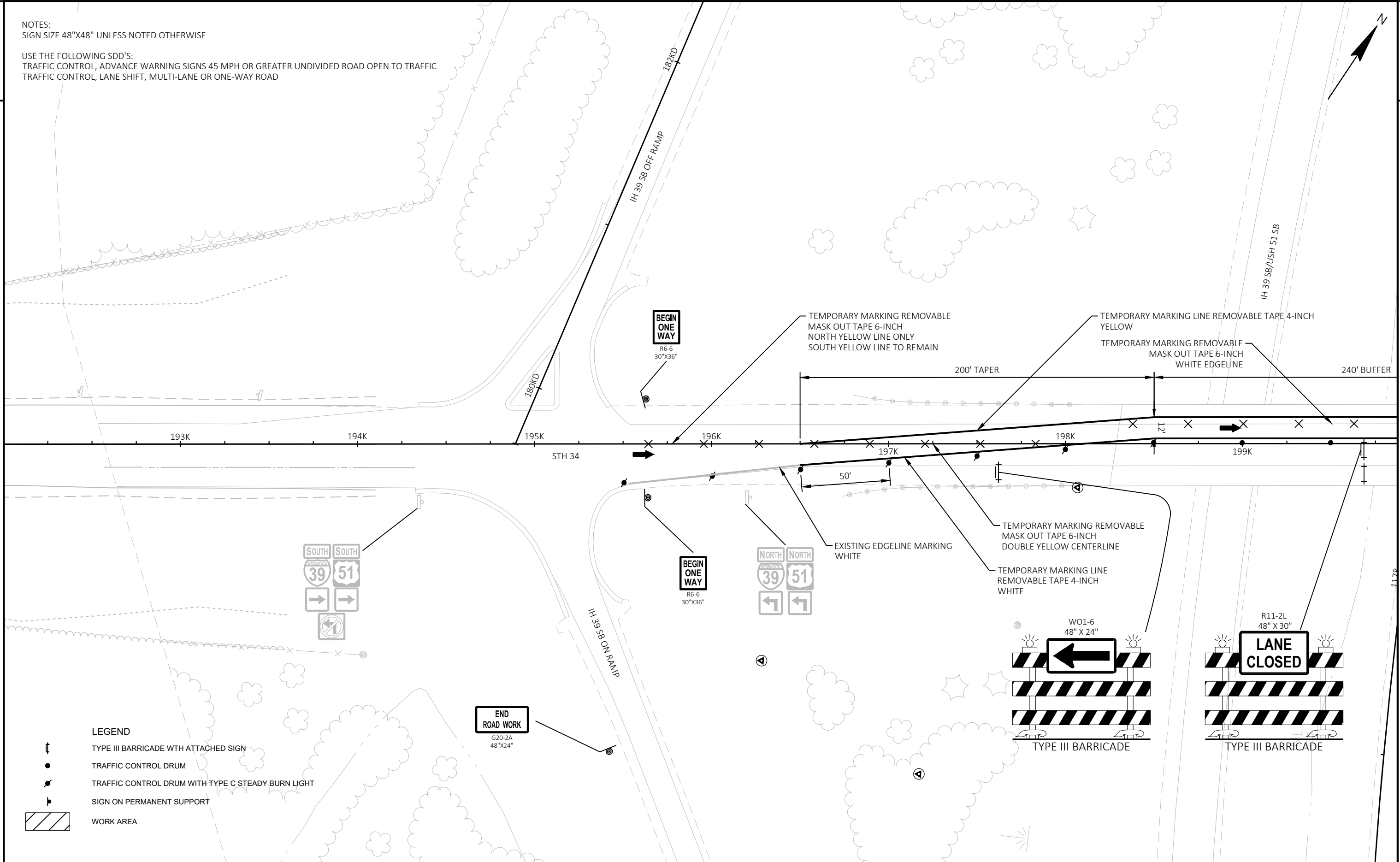
NOTES:
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE

USE THE FOLLOWING SDD'S:
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER UNDIVIDED ROAD OPEN TO TRAFFIC
TRAFFIC CONTROL, LANE SHIFT, MULTI-LANE OR ONE-WAY ROAD



NOTES:
SIGN SIZE 48"x48" UNLESS NOTED OTHERWISE

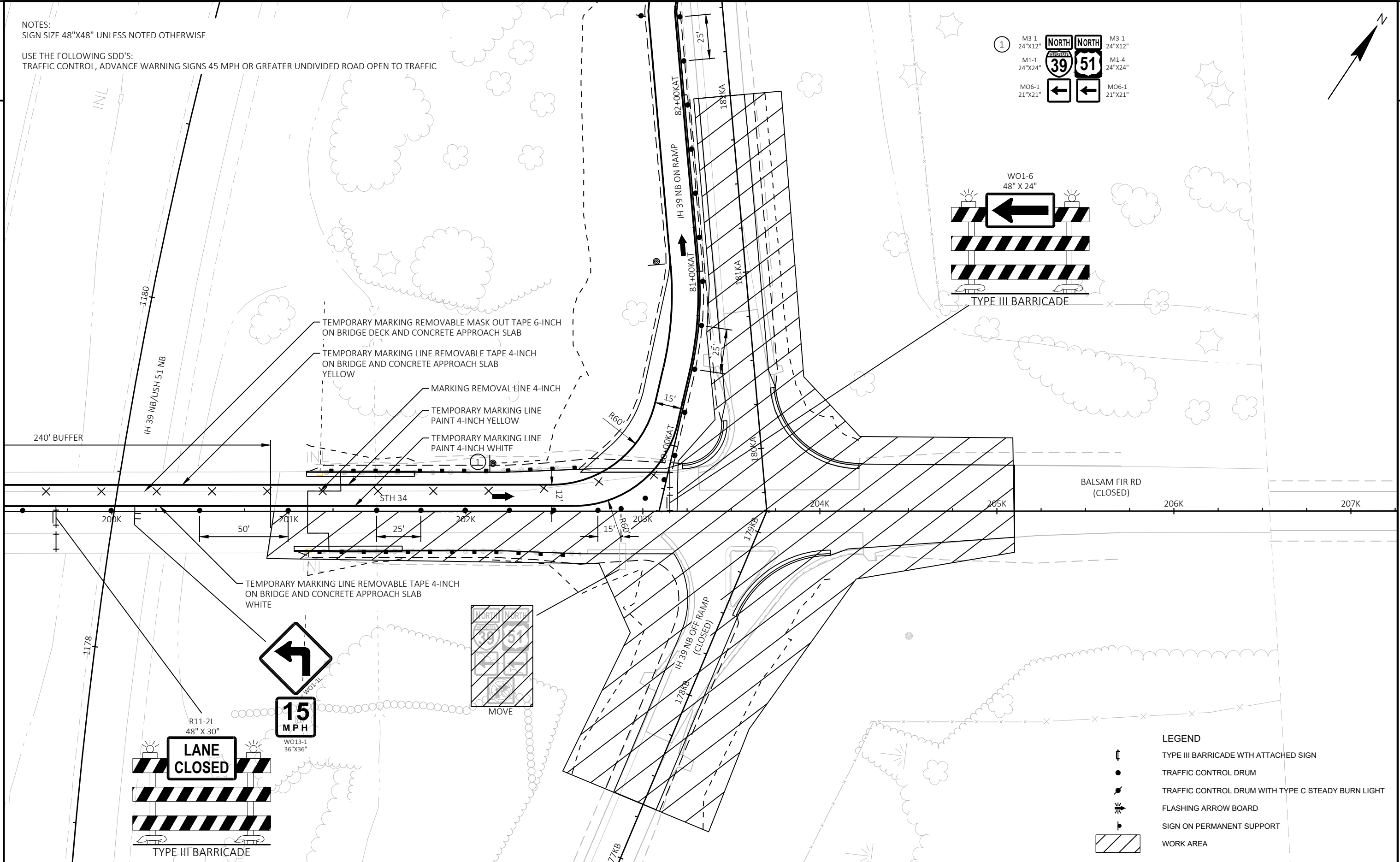
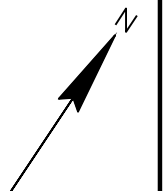
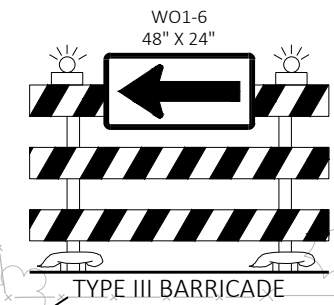
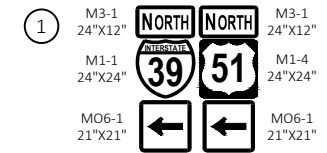
USE THE FOLLOWING SDD'S:
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER UNDIVIDED ROAD OPEN TO TRAFFIC
TRAFFIC CONTROL, LANE SHIFT, MULTI-LANE OR ONE-WAY ROAD



- LEGEND**
- TYPE III BARRICADE WITH ATTACHED SIGN
 - TRAFFIC CONTROL DRUM
 - TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
 - SIGN ON PERMANENT SUPPORT
 - WORK AREA

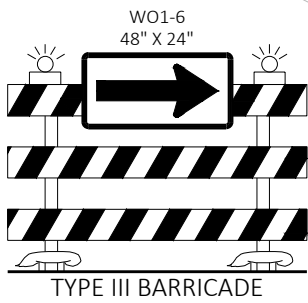
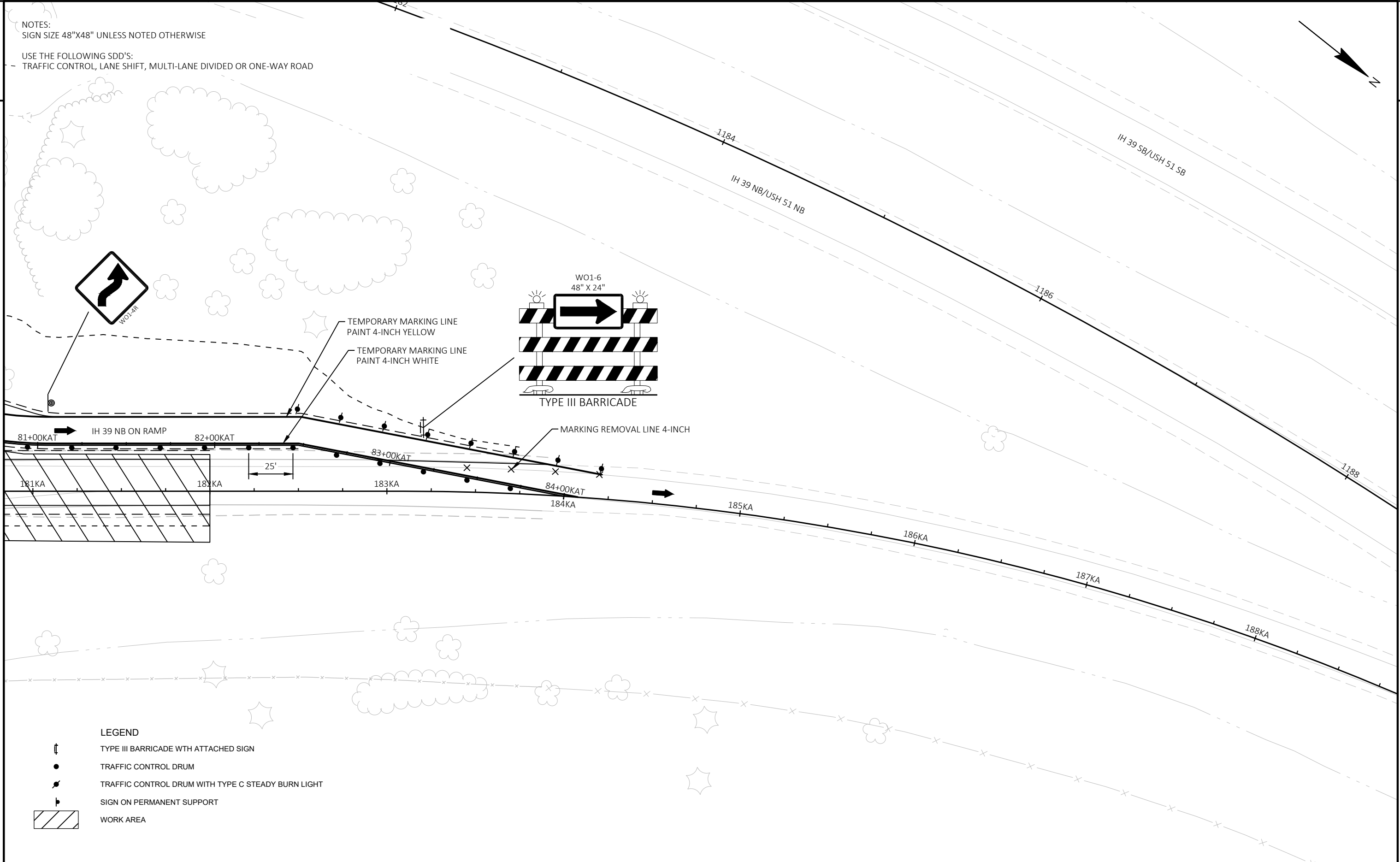
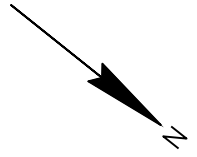
NOTES:
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE

USE THE FOLLOWING SDD'S:
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER UNDIVIDED ROAD OPEN TO TRAFFIC



NOTES:
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE






USE THE FOLLOWING SDD'S:
- TRAFFIC CONTROL, LANE SHIFT, MULTI-LANE DIVIDED OR ONE-WAY ROAD



TEMPORARY MARKING LINE
PAINT 4-INCH YELLOW
TEMPORARY MARKING LINE
PAINT 4-INCH WHITE

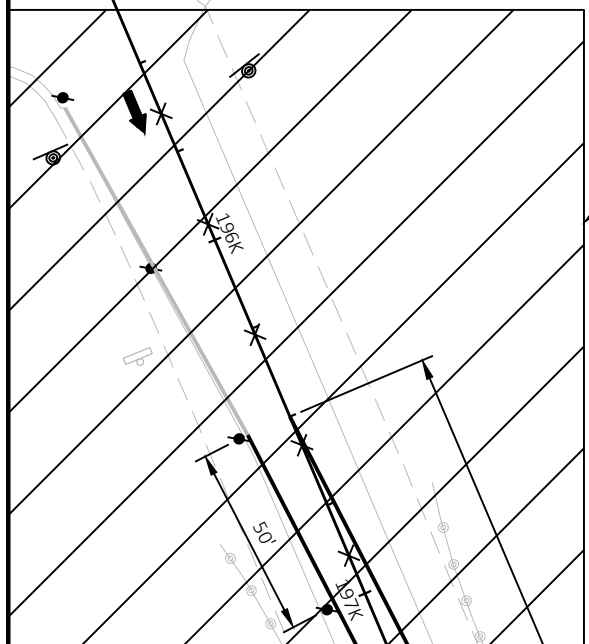
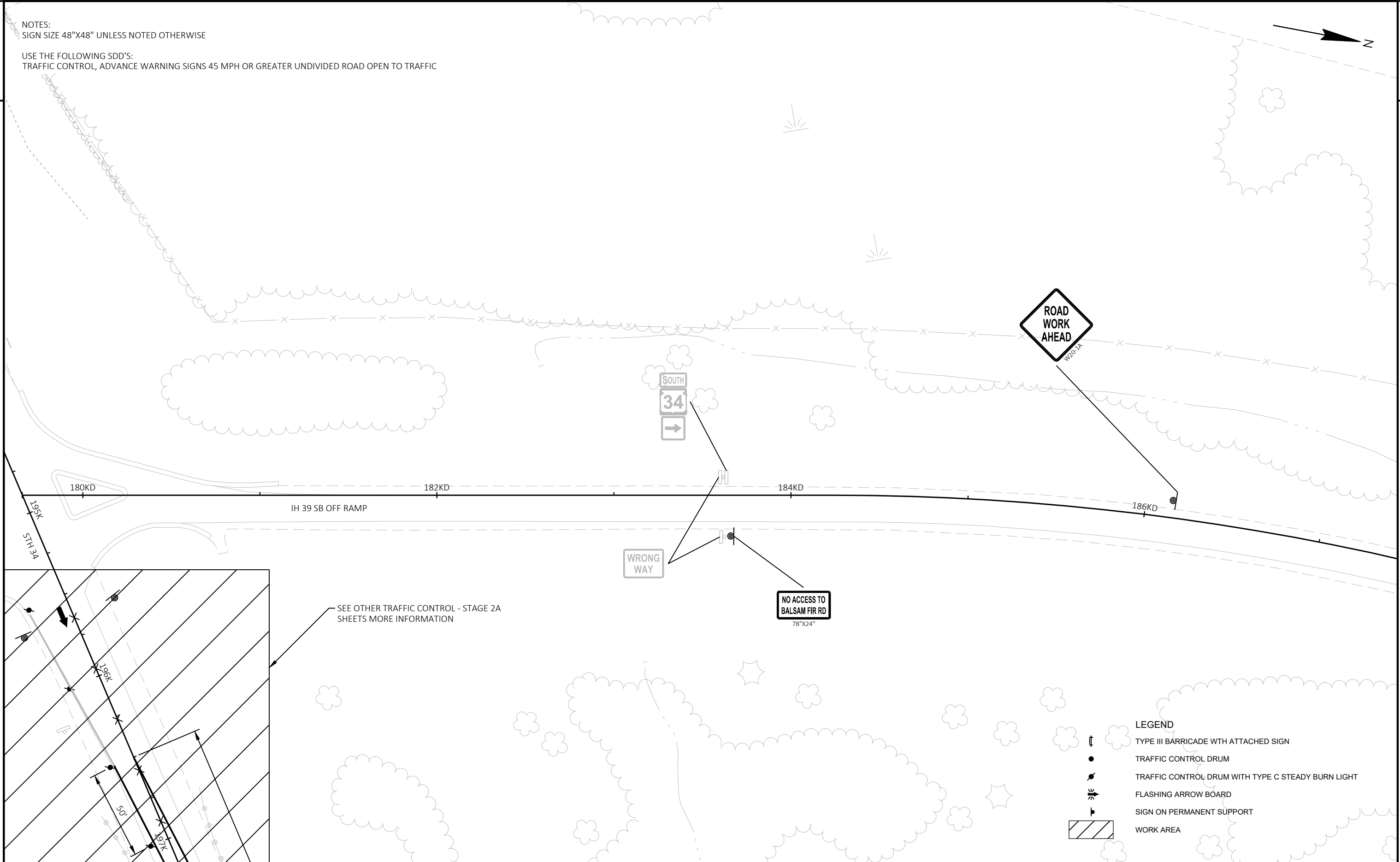
MARKING REMOVAL LINE 4-INCH

LEGEND

-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
-  SIGN ON PERMANENT SUPPORT
-  WORK AREA

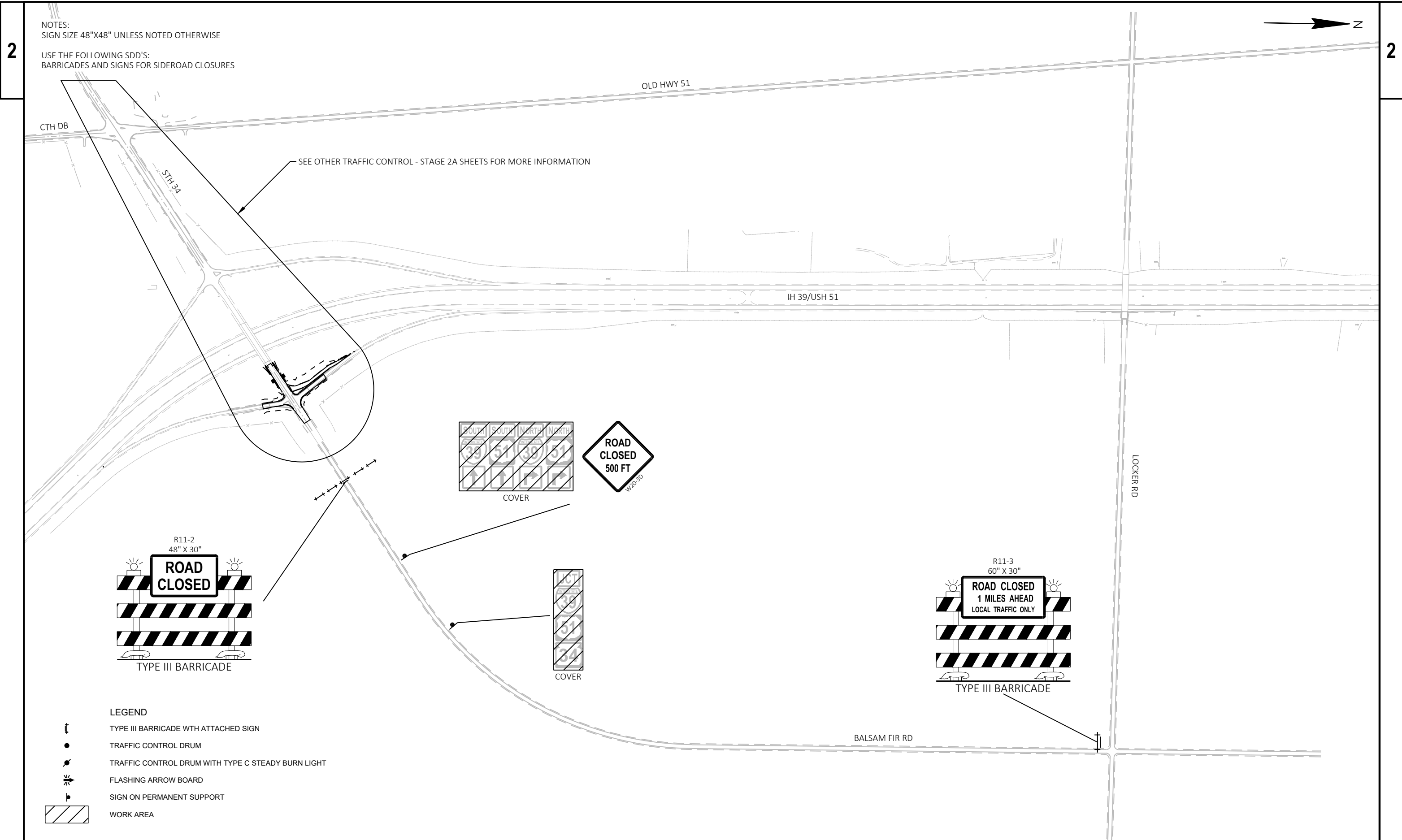
NOTES:
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE

USE THE FOLLOWING SDD'S:
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER UNDIVIDED ROAD OPEN TO TRAFFIC



- LEGEND**
- TYPE III BARRICADE WTH ATTACHED SIGN
 - TRAFFIC CONTROL DRUM
 - TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
 - FLASHING ARROW BOARD
 - SIGN ON PERMANENT SUPPORT
 - WORK AREA

| | | | | | |
|------------------------|------------|------------------|----------------------------|-------|----------|
| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | TRAFFIC CONTROL - STAGE 2A | SHEET | E |
|------------------------|------------|------------------|----------------------------|-------|----------|



PROJECT NO: 1166-00-83

HWY: IH 39

COUNTY: MARATHON

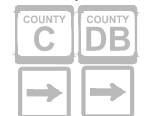
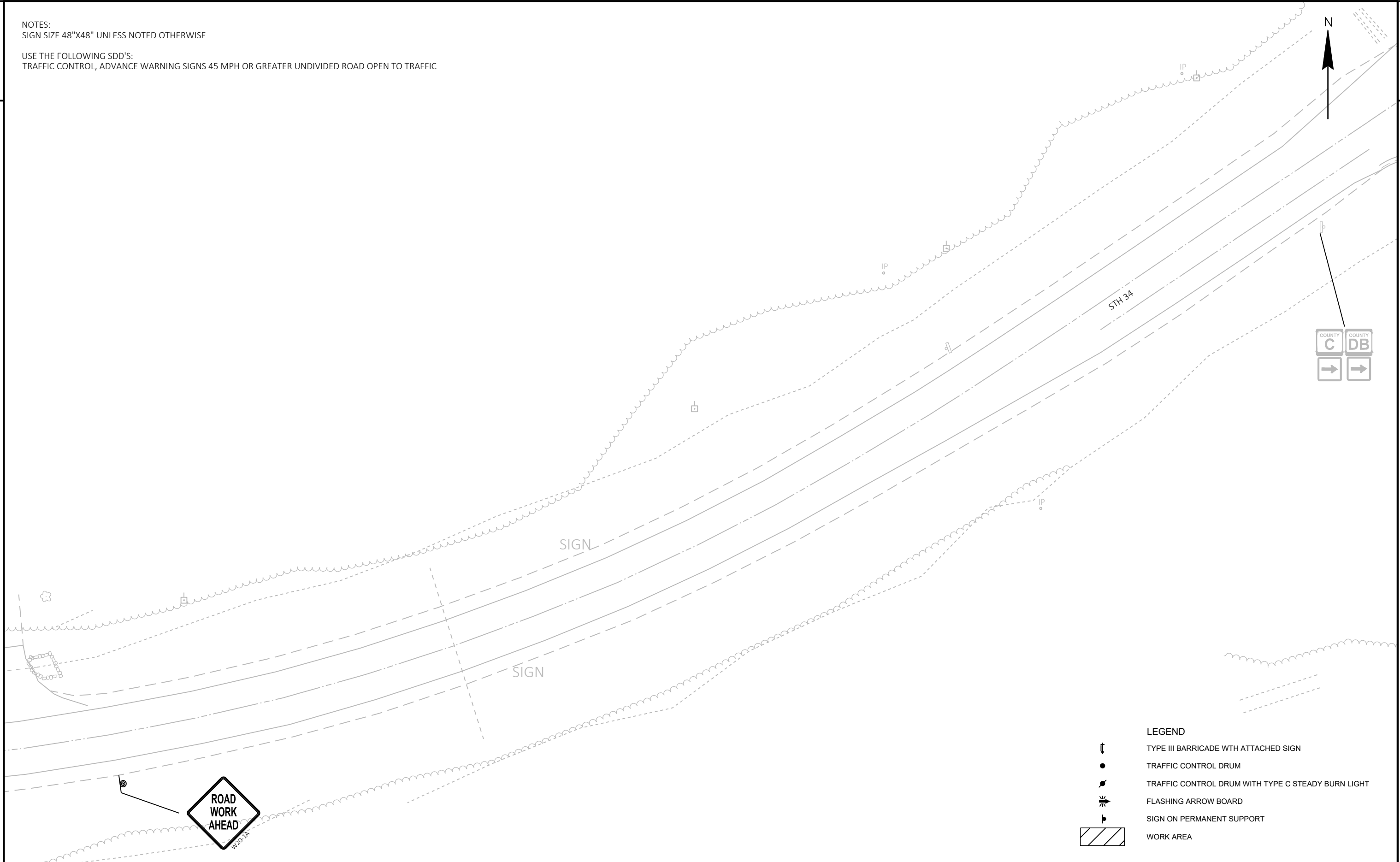
TRAFFIC CONTROL - STAGE 2A







SHEET

E

NOTES:
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE

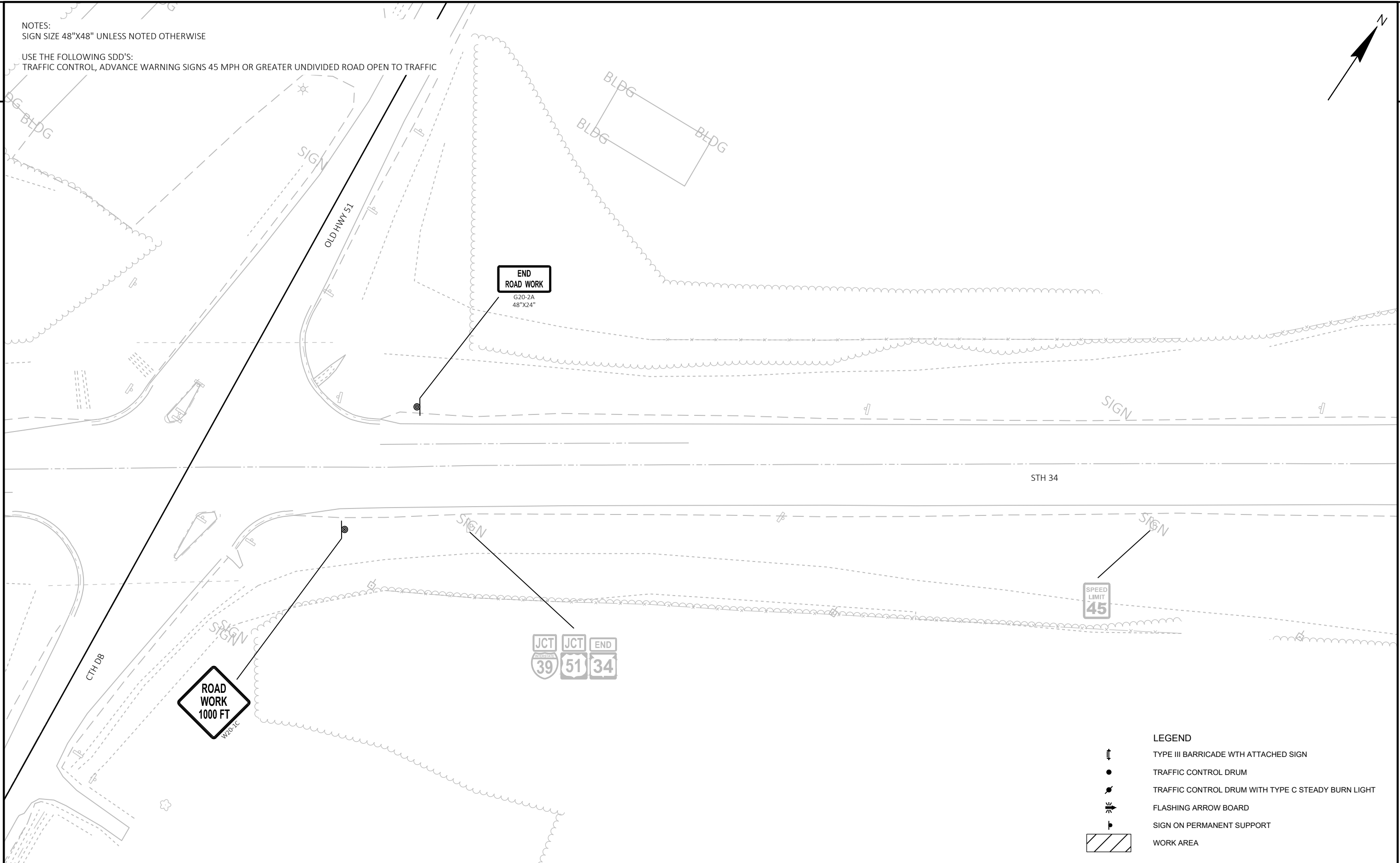
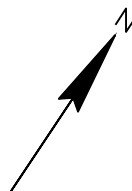
USE THE FOLLOWING SDD'S:
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER UNDIVIDED ROAD OPEN TO TRAFFIC



- LEGEND**
-  TYPE III BARRICADE WITH ATTACHED SIGN
 -  TRAFFIC CONTROL DRUM
 -  TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
 -  FLASHING ARROW BOARD
 -  SIGN ON PERMANENT SUPPORT
 -  WORK AREA

NOTES:
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE

USE THE FOLLOWING SDD'S:
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER UNDIVIDED ROAD OPEN TO TRAFFIC









END
ROAD WORK
G20-2A
48"X24"

ROAD
WORK
1000 FT
W20-1C

JCT
39
JCT
51
END
34

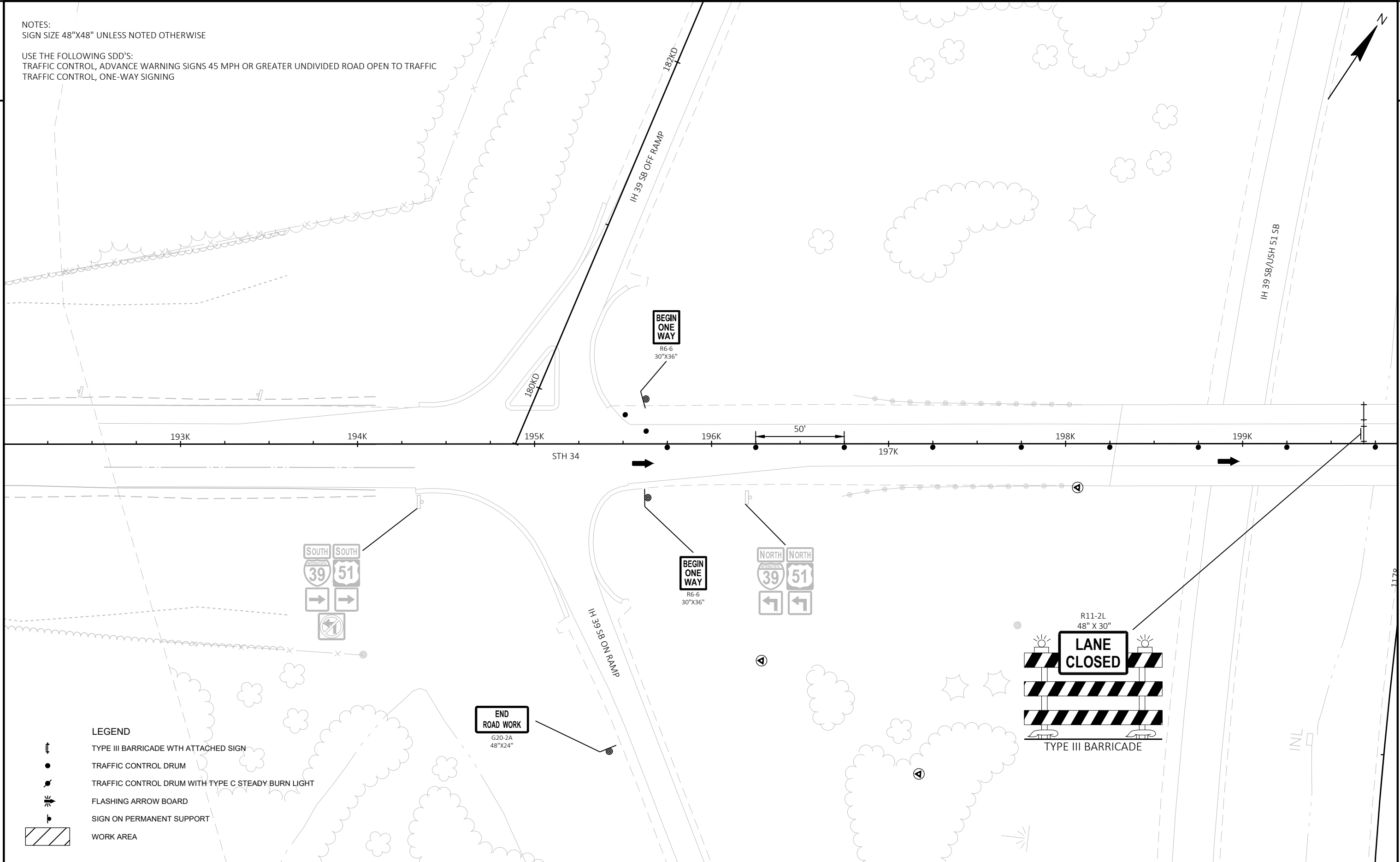
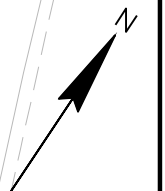
SPEED
LIMIT
45

LEGEND







-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
-  FLASHING ARROW BOARD
-  SIGN ON PERMANENT SUPPORT
-  WORK AREA

NOTES:
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE

USE THE FOLLOWING SDD'S:
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER UNDIVIDED ROAD OPEN TO TRAFFIC
TRAFFIC CONTROL, ONE-WAY SIGNING



LEGEND

-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
-  FLASHING ARROW BOARD
-  SIGN ON PERMANENT SUPPORT
-  WORK AREA

PROJECT NO: 1166-00-83

HWY: IH 39

COUNTY: MARATHON

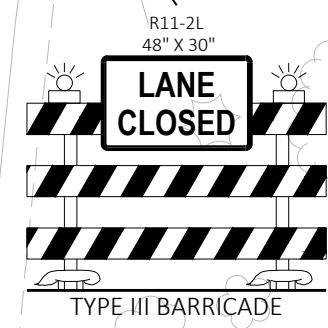
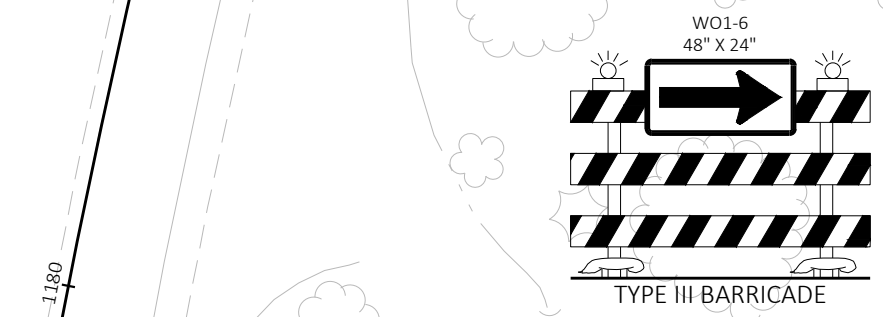
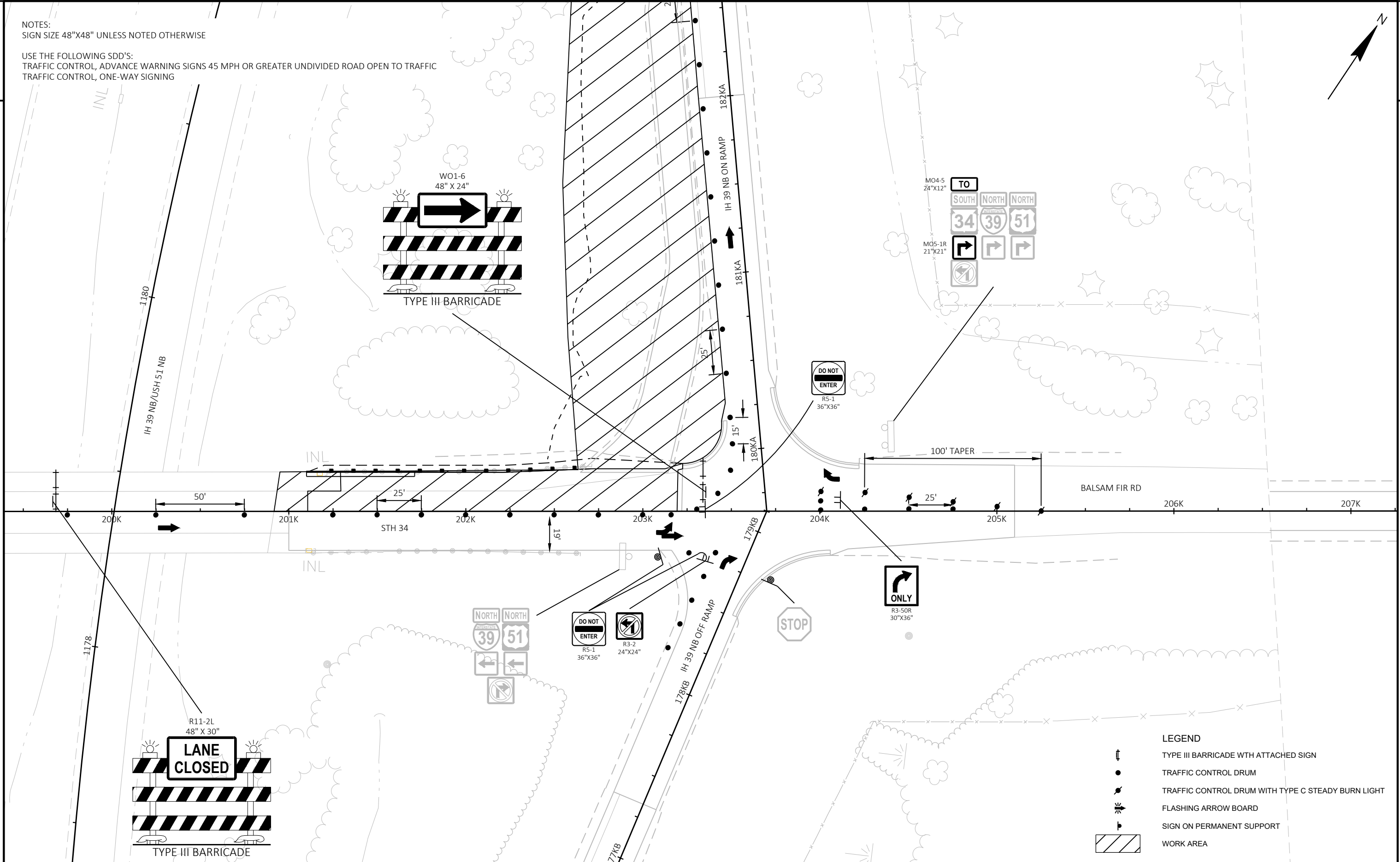
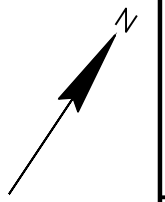
TRAFFIC CONTROL - STAGE 2B

SHEET







E

NOTES:
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE

USE THE FOLLOWING SDD'S:
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER UNDIVIDED ROAD OPEN TO TRAFFIC
TRAFFIC CONTROL, ONE-WAY SIGNING

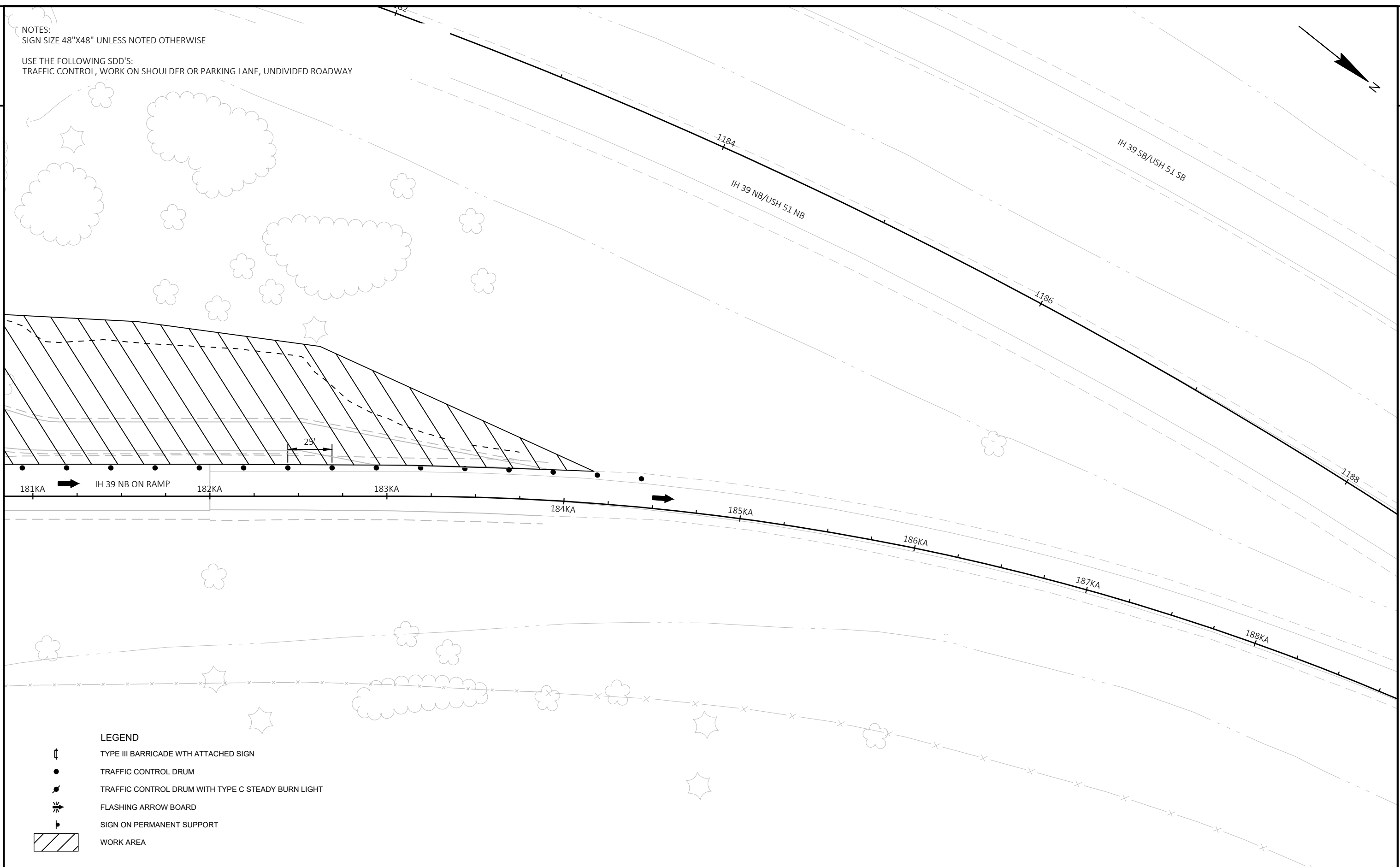
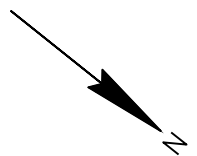


LEGEND

-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
-  FLASHING ARROW BOARD
-  SIGN ON PERMANENT SUPPORT
-  WORK AREA

NOTES:
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE

USE THE FOLLOWING SDD'S:
TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY



181KA → IH 39 NB ON RAMP

182KA

183KA

184KA

185KA

186KA

187KA

188KA

1184

IH 39 NB/USH 51 NB






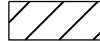
1186

IH 39 SB/USH 51 SB

1188

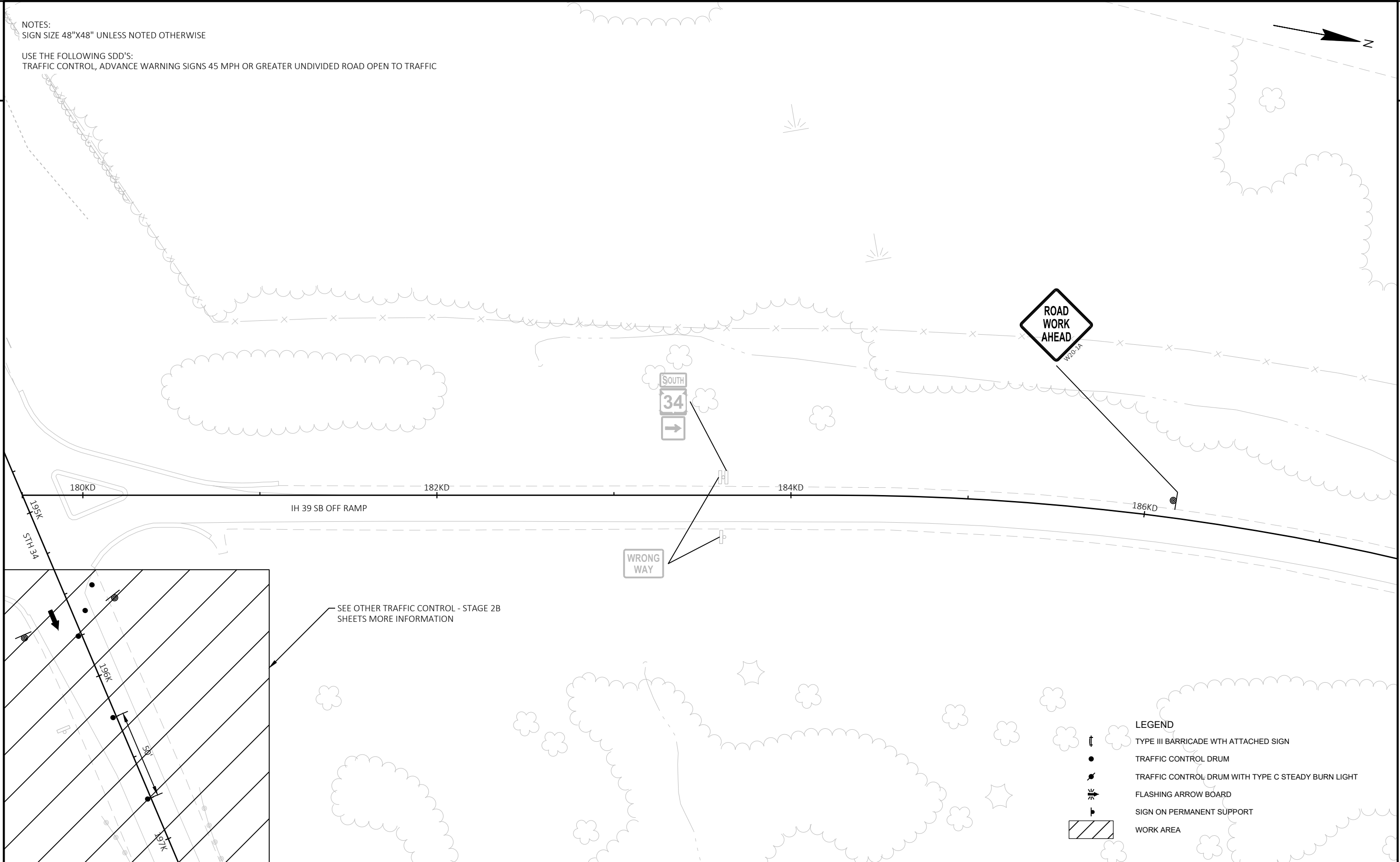
25'

LEGEND






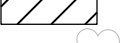
-  TYPE III BARRICADE WTH ATTACHED SIGN
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
-  FLASHING ARROW BOARD
-  SIGN ON PERMANENT SUPPORT
-  WORK AREA

NOTES:
SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE

USE THE FOLLOWING SDD'S:
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER UNDIVIDED ROAD OPEN TO TRAFFIC



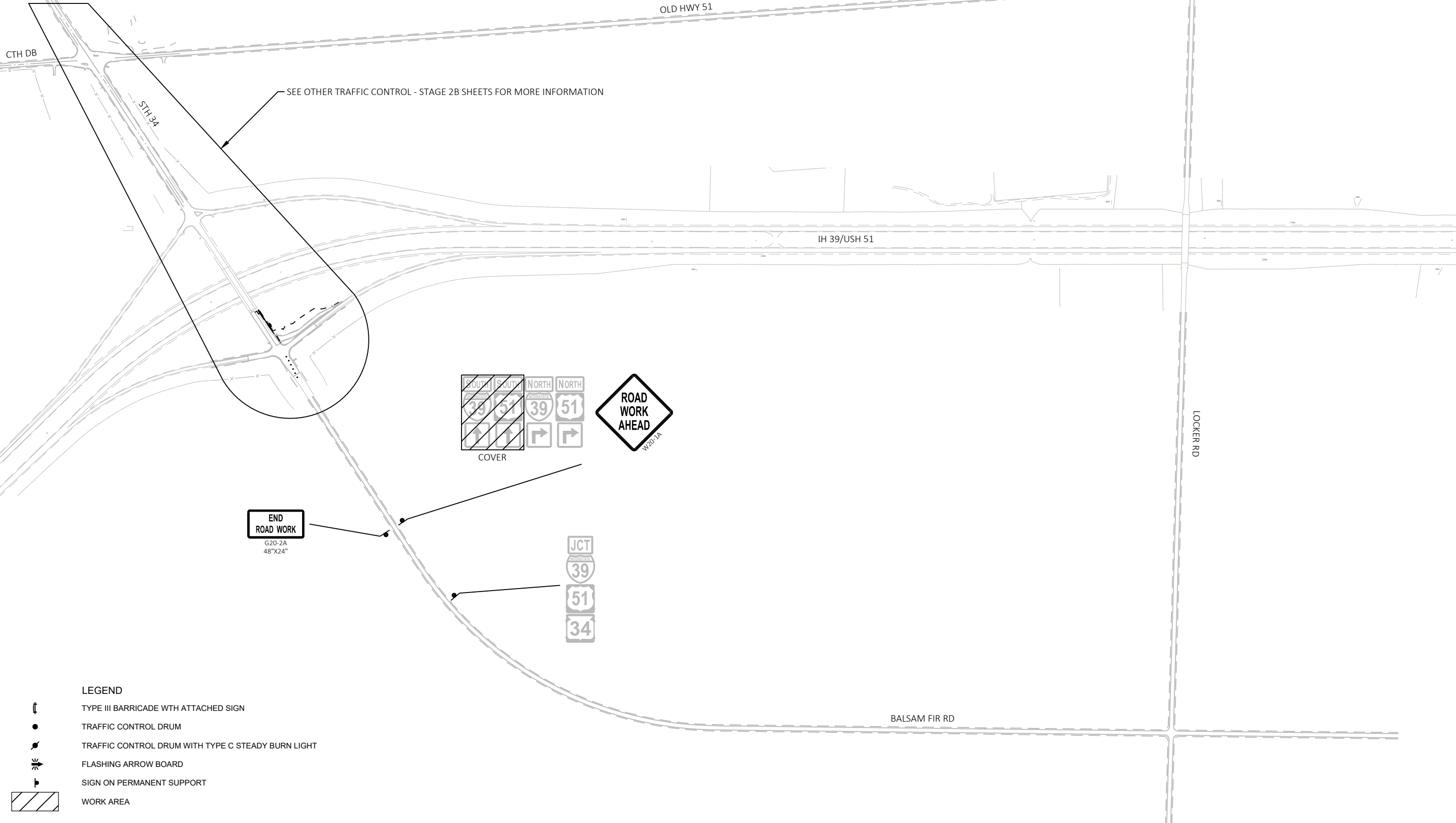
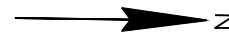
SEE OTHER TRAFFIC CONTROL - STAGE 2B SHEETS MORE INFORMATION

- LEGEND**
-  TYPE III BARRICADE WITH ATTACHED SIGN
 -  TRAFFIC CONTROL DRUM
 -  TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
 -  FLASHING ARROW BOARD
 -  SIGN ON PERMANENT SUPPORT
 -  WORK AREA

| | | | | | |
|------------------------|------------|------------------|----------------------------|-------|----------|
| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | TRAFFIC CONTROL - STAGE 2B | SHEET | E |
|------------------------|------------|------------------|----------------------------|-------|----------|

NOTES:
SIGN SIZE 48"x48" UNLESS NOTED OTHERWISE

USE THE FOLLOWING SDD'S:
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER, TWO WAY UNDIVIDED ROAD OPEN TO TRAFFIC

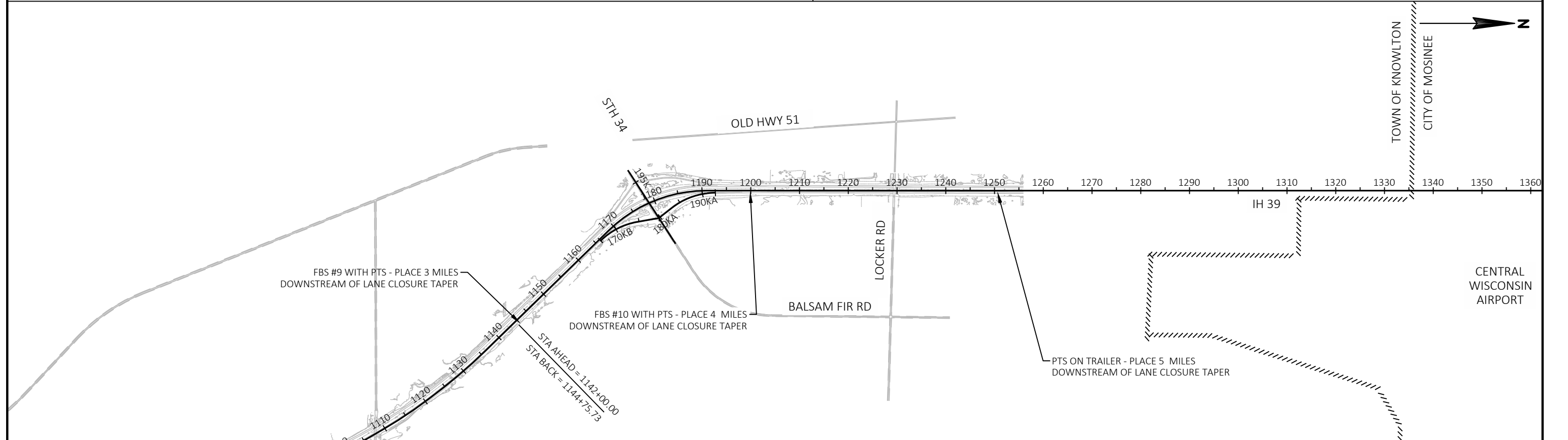
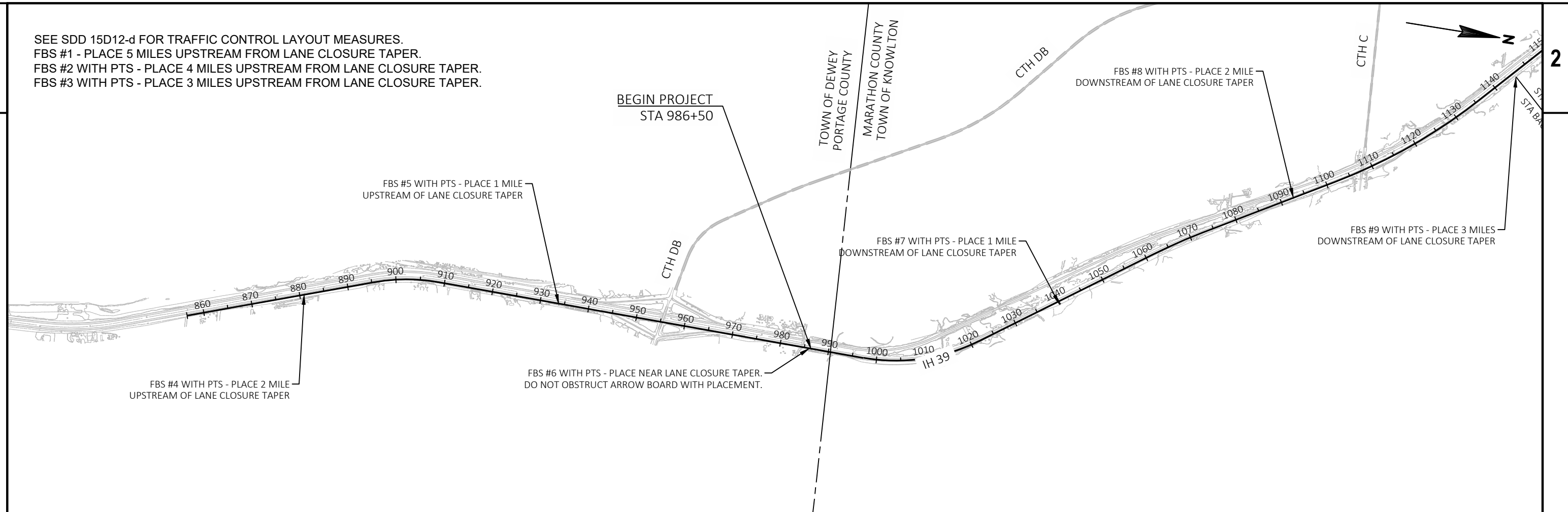


SEE OTHER TRAFFIC CONTROL - STAGE 2B SHEETS FOR MORE INFORMATION

LEGEND

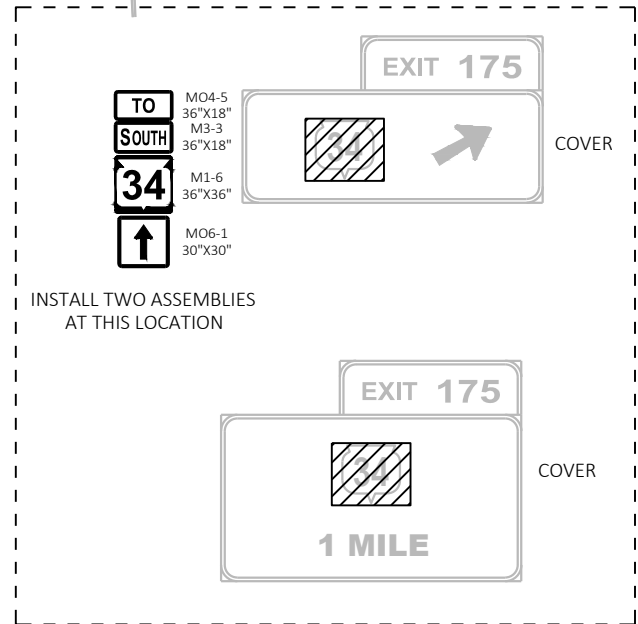
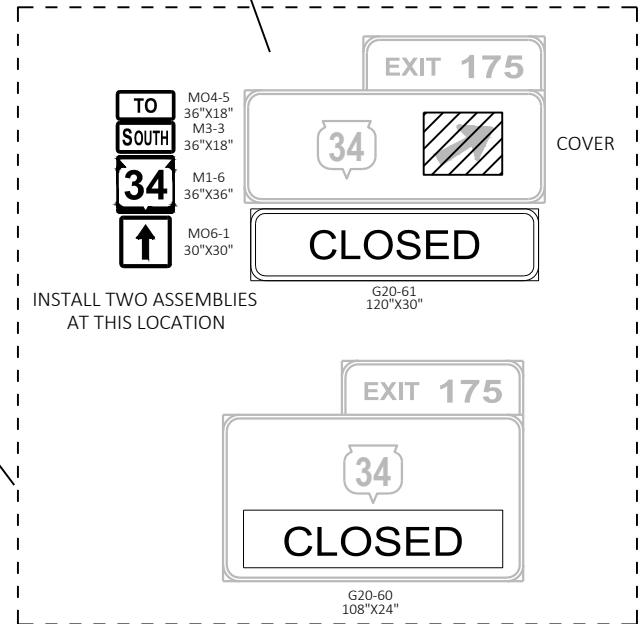
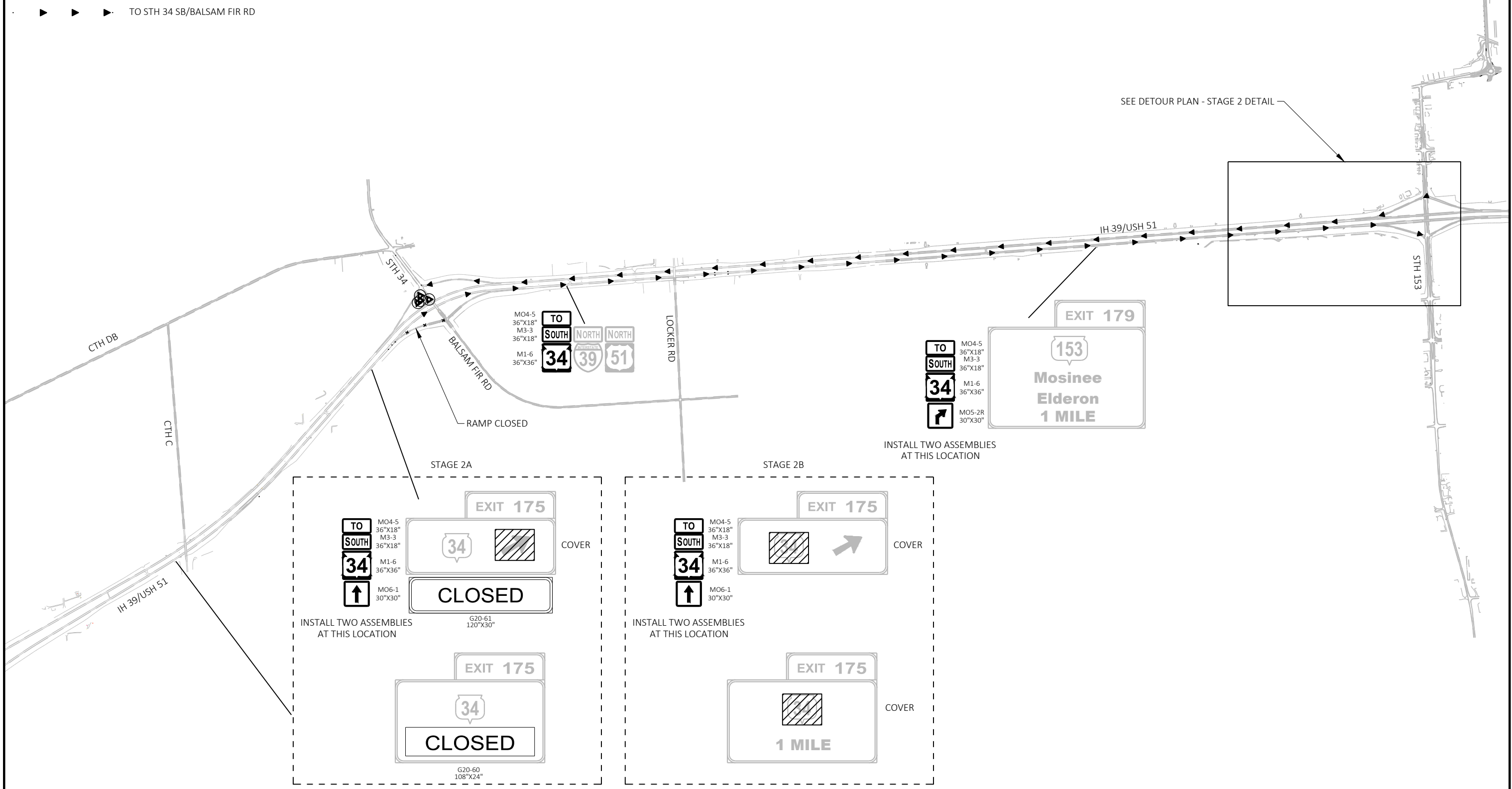
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- WORK AREA

SEE SDD 15D12-d FOR TRAFFIC CONTROL LAYOUT MEASURES.
FBS #1 - PLACE 5 MILES UPSTREAM FROM LANE CLOSURE TAPER.
FBS #2 WITH PTS - PLACE 4 MILES UPSTREAM FROM LANE CLOSURE TAPER.
FBS #3 WITH PTS - PLACE 3 MILES UPSTREAM FROM LANE CLOSURE TAPER.



NOTES:
 SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE
 USE THE FOLLOWING SDD'S
 OFF RAMP LANE CLOSURE
 TRAFFIC CONTROL, EXIT RAMP CLOSURE

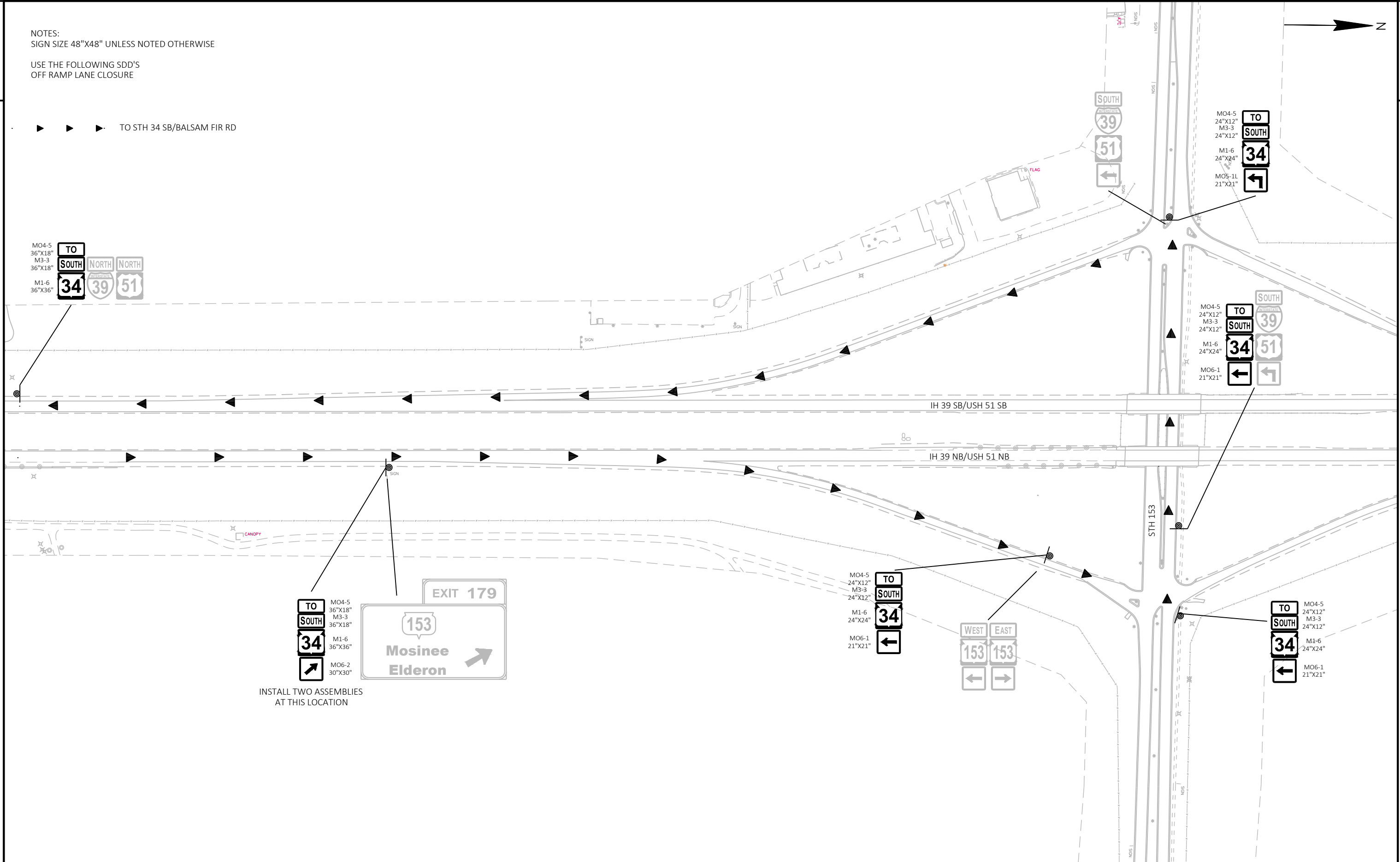
▶ ▶ ▶ TO STH 34 SB/BALSAM FIR RD



INSTALL TWO ASSEMBLIES AT THIS LOCATION

NOTES:
 SIGN SIZE 48"X48" UNLESS NOTED OTHERWISE
 USE THE FOLLOWING SDD'S
 OFF RAMP LANE CLOSURE

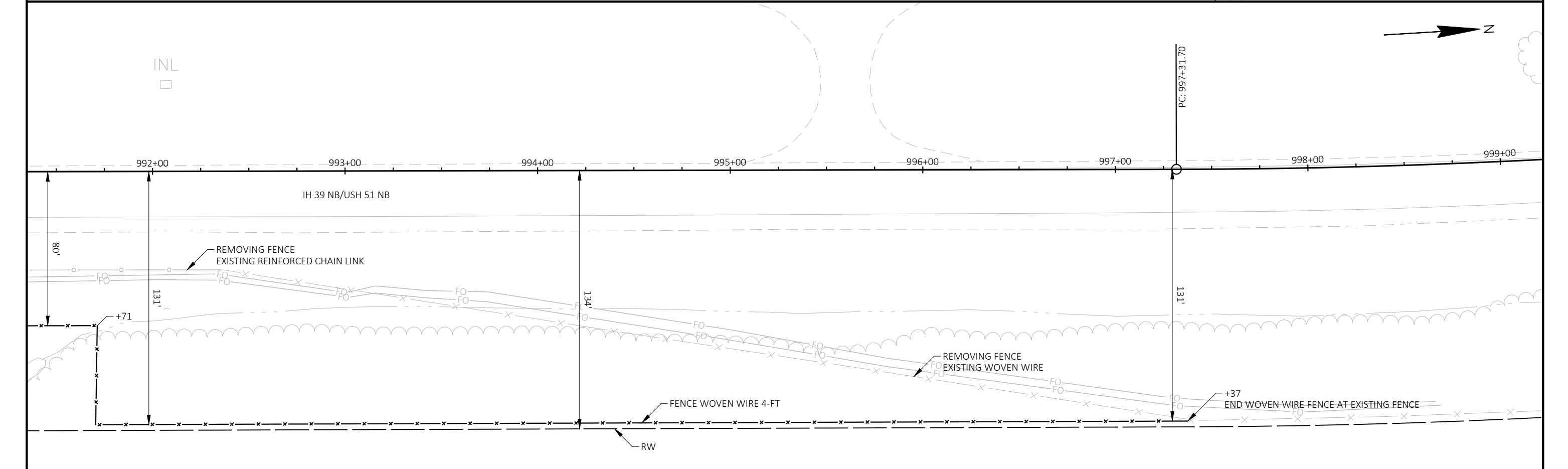
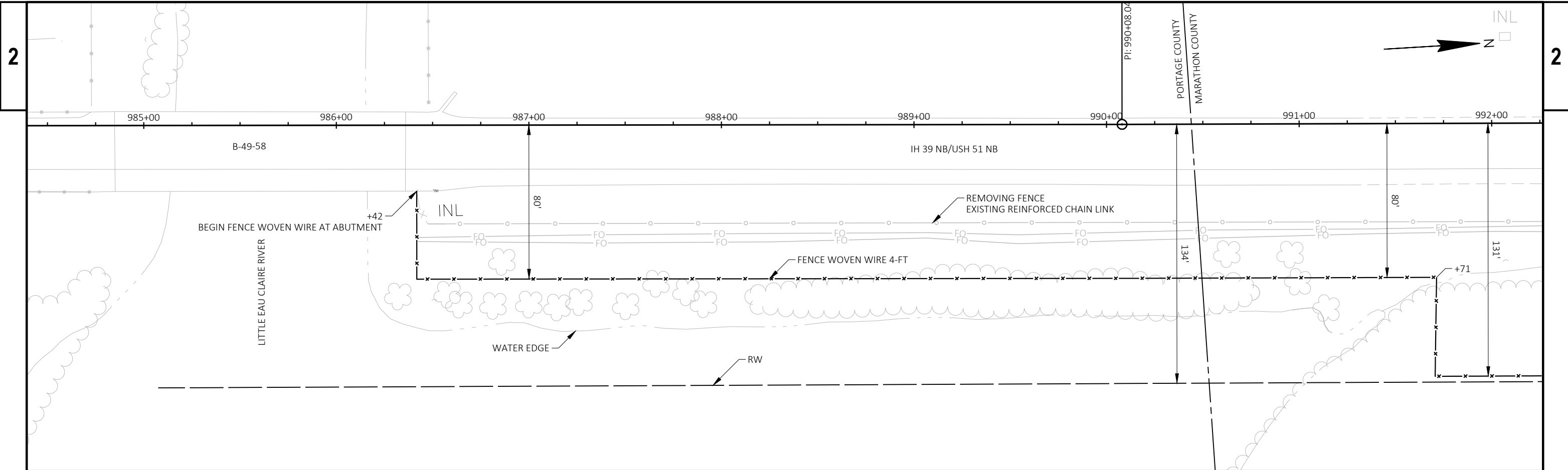
▶ ▶ ▶ TO STH 34 SB/BALSAM FIR RD



INSTALL TWO ASSEMBLIES
 AT THIS LOCATION

TO SOUTH 34

EXIT 179
 153
 Mosinee
 Elderon



| | | | | | |
|------------------------|------------|------------------|---------|-------|---|
| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | FENCING | SHEET | E |
|------------------------|------------|------------------|---------|-------|---|

FILE NAME : N:\PDS\C3D\11660013\SHEETSPLAN\027101-FN.DWG
LAYOUT NAME - 01

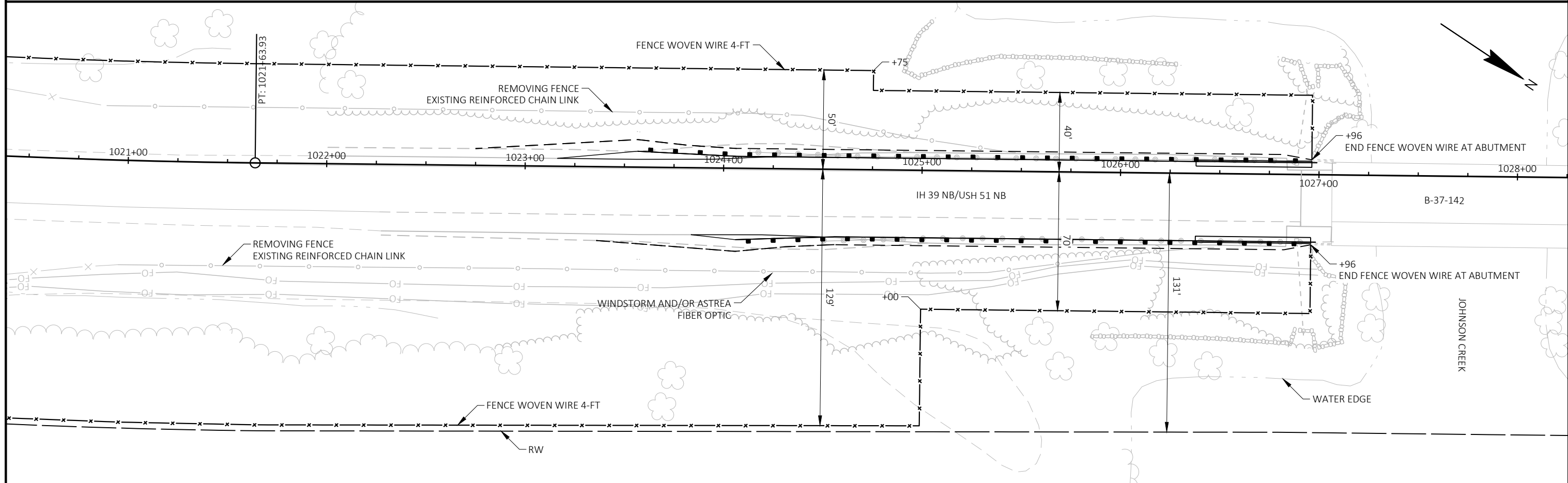
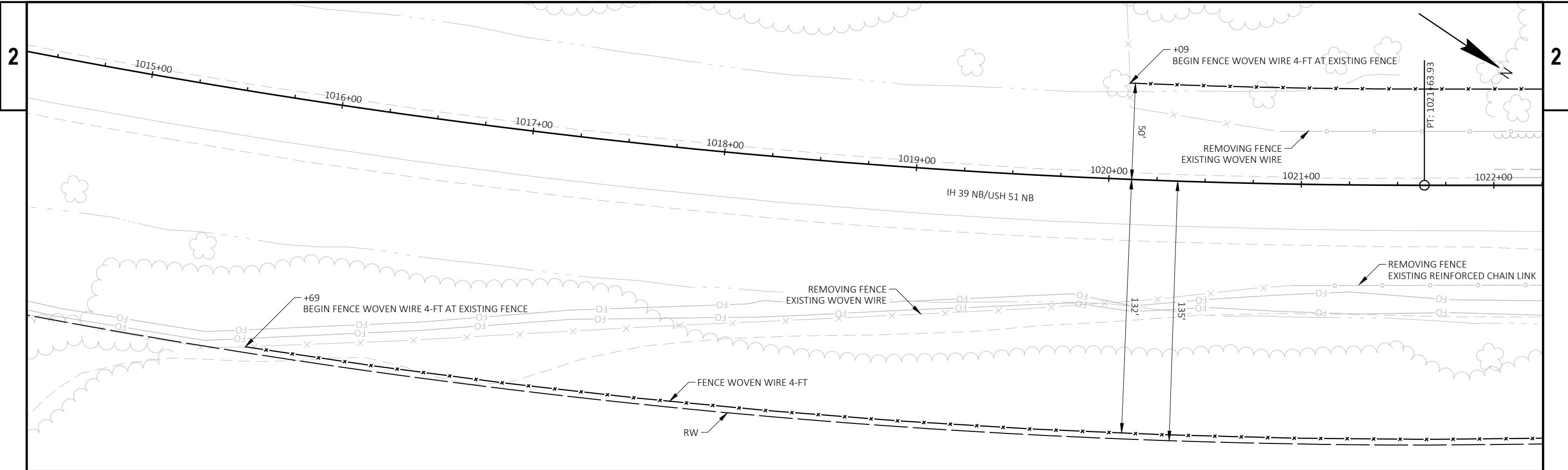
PLOT DATE : 4/7/2022 3:55 PM

PLOT BY : GRULING, ZACHARY P

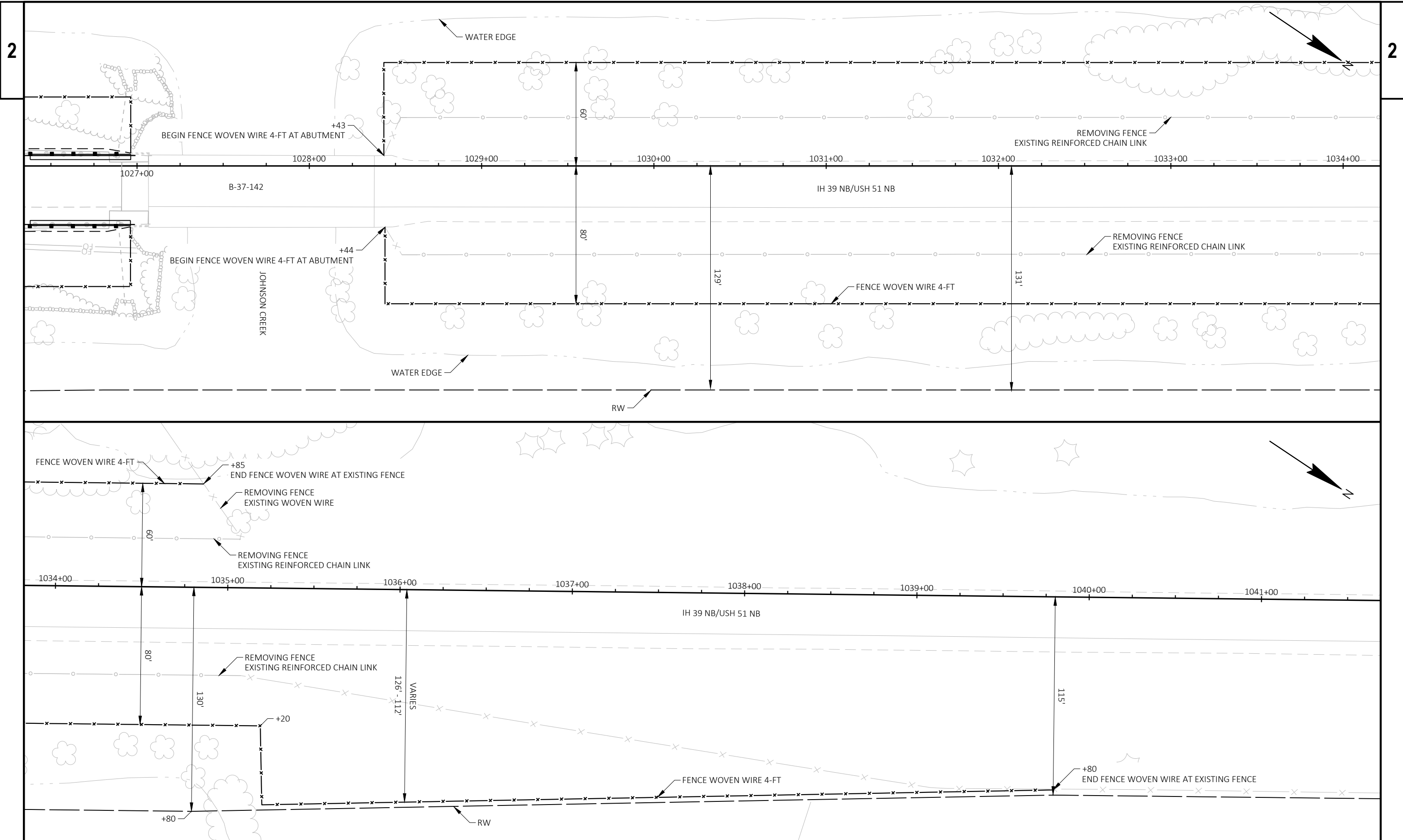
PLOT NAME :

PLOT SCALE : 1 IN:50 FT

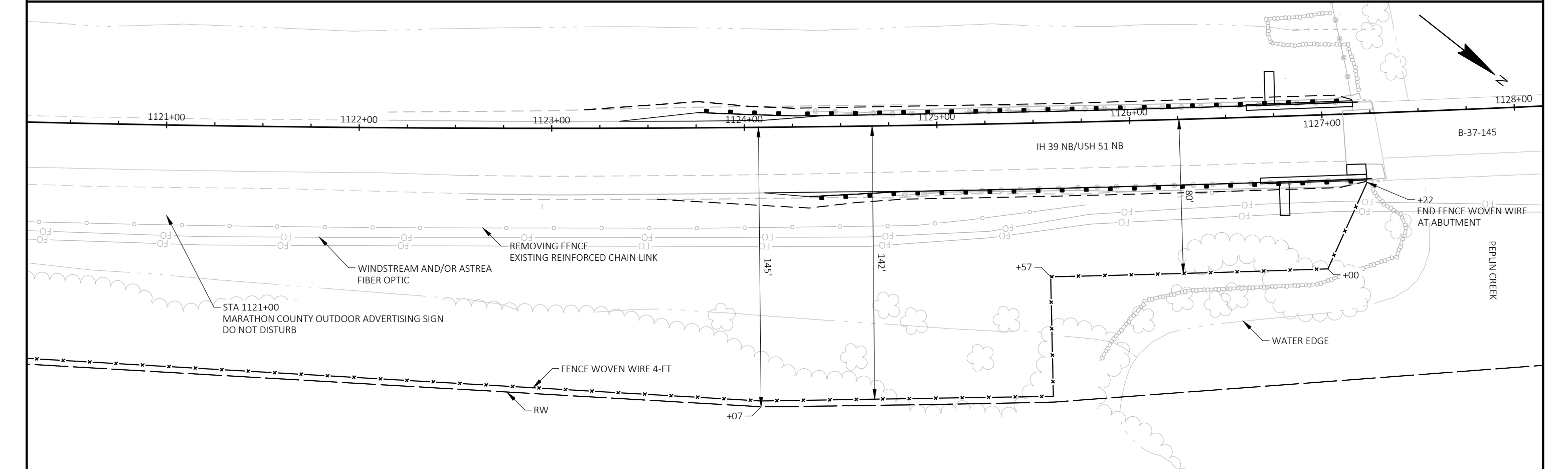
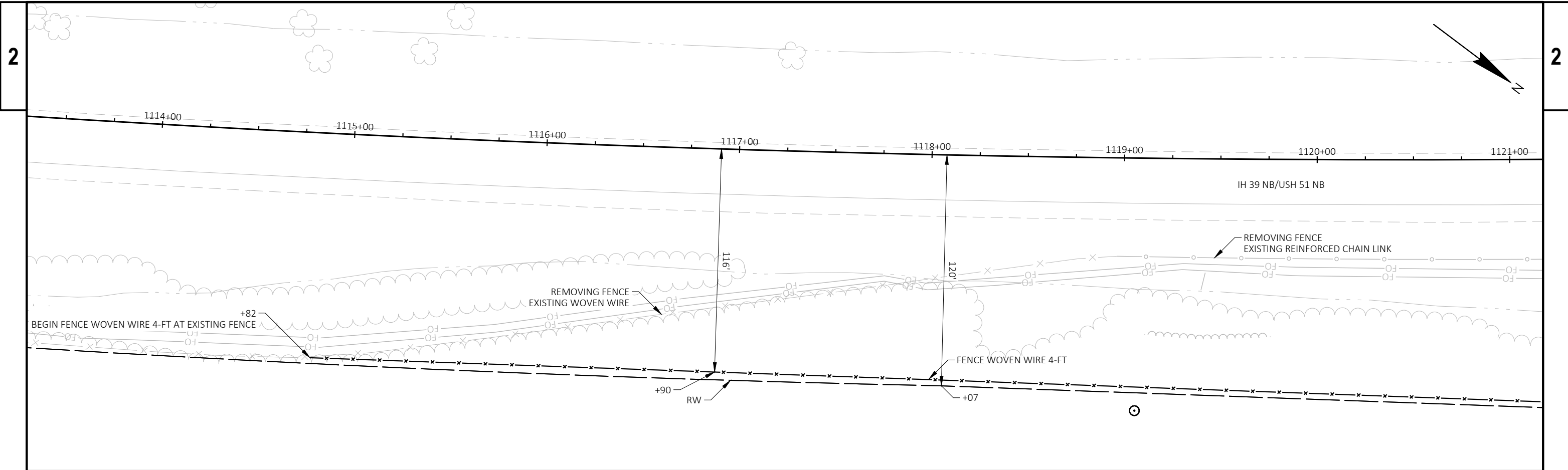
WISDOT/CADD SHEET 44



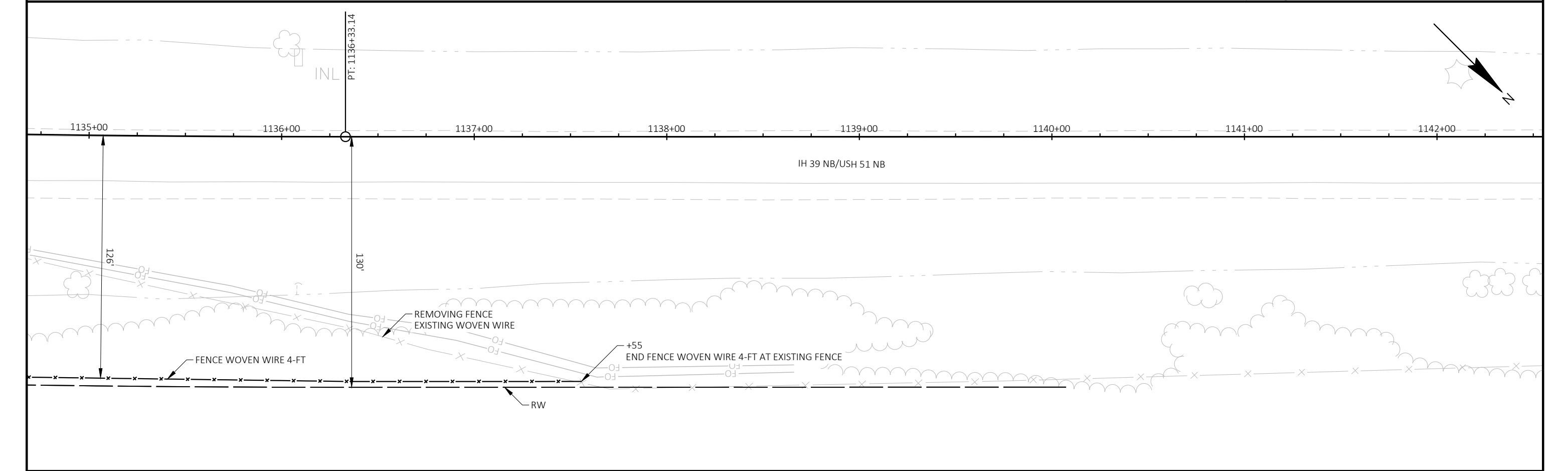
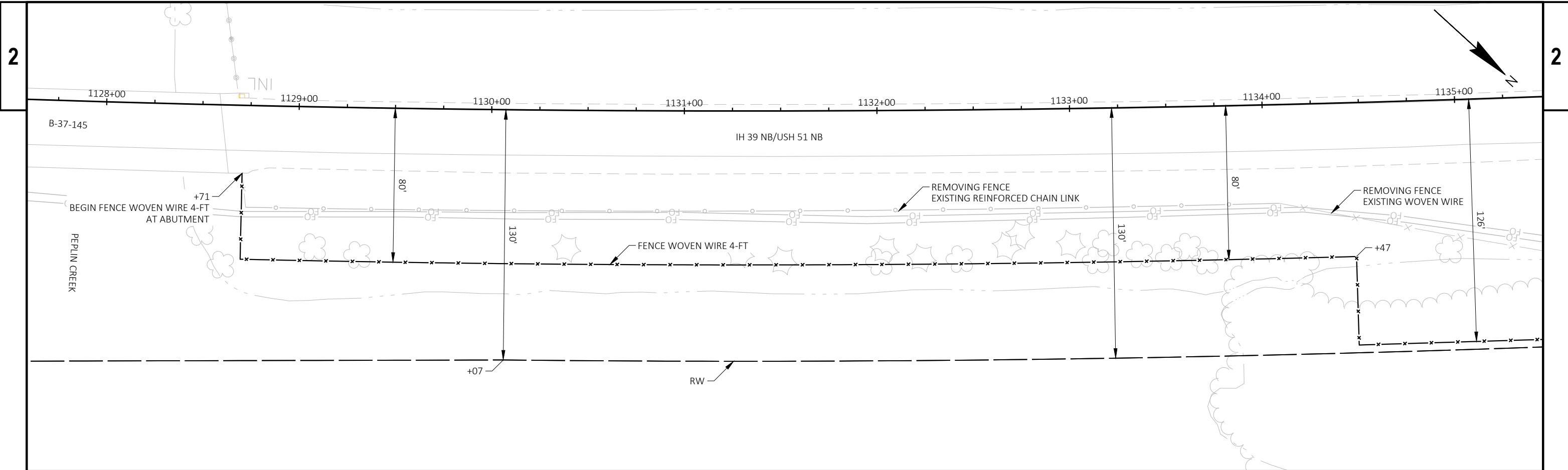
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|------------------------|------------|------------------|---------|-------|----------|
| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | FENCING | SHEET | E |
|------------------------|------------|------------------|---------|-------|----------|



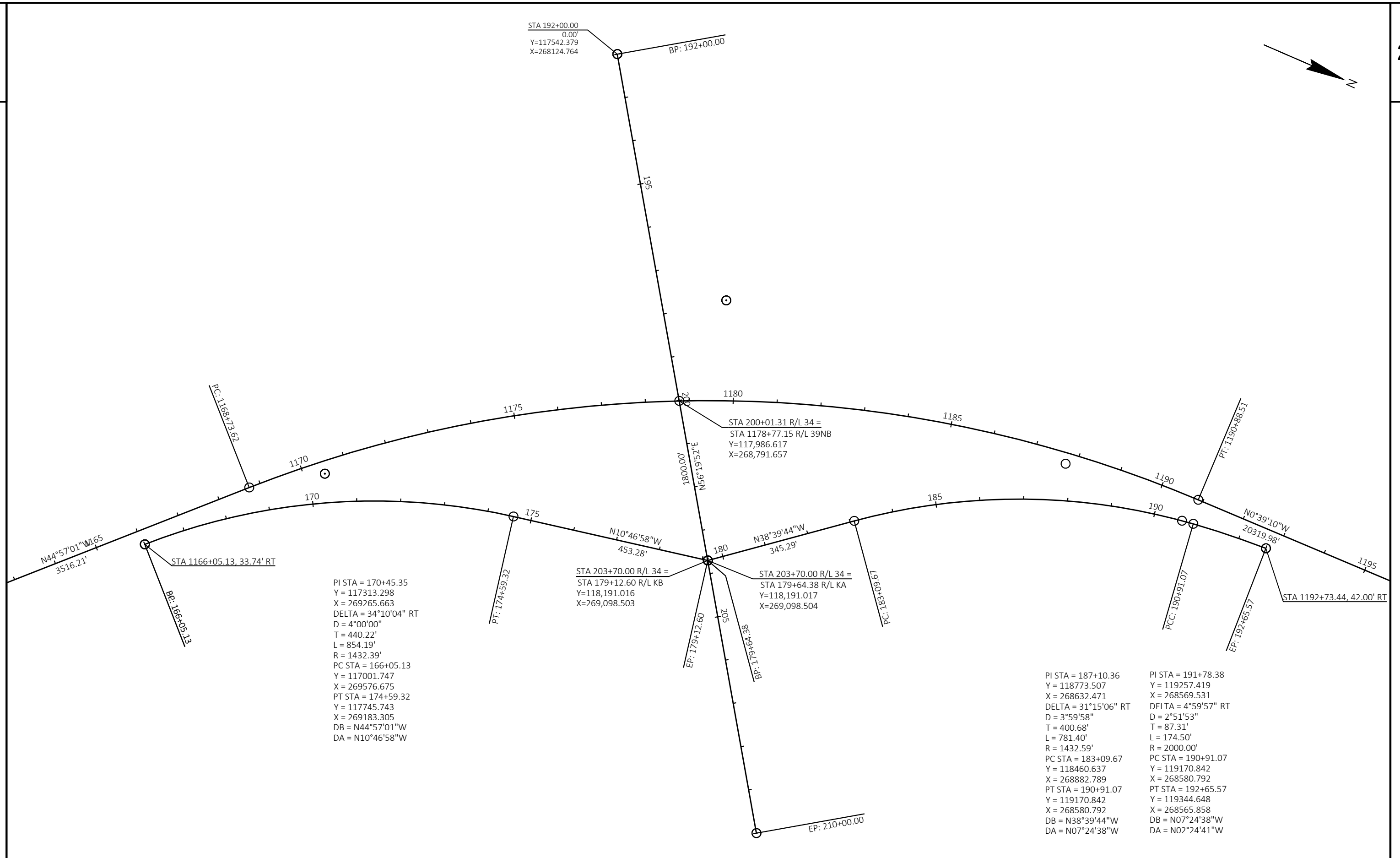
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|------------------------|------------|------------------|---------|-------|----------|
| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | FENCING | SHEET | E |
|------------------------|------------|------------------|---------|-------|----------|



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|------------------------|------------|------------------|---------|-------|----------|
| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | FENCING | SHEET | E |
|------------------------|------------|------------------|---------|-------|----------|



| | | | | | |
|------------------------|------------|------------------|---------|-------|---|
| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | FENCING | SHEET | E |
|------------------------|------------|------------------|---------|-------|---|



STA 192+00.00
0.00'
Y=117542.379
X=268124.764

BP: 192+00.00

STA 200+01.31 R/L 34 =
STA 1178+77.15 R/L 39NB
Y=117,986.617
X=268,791.657

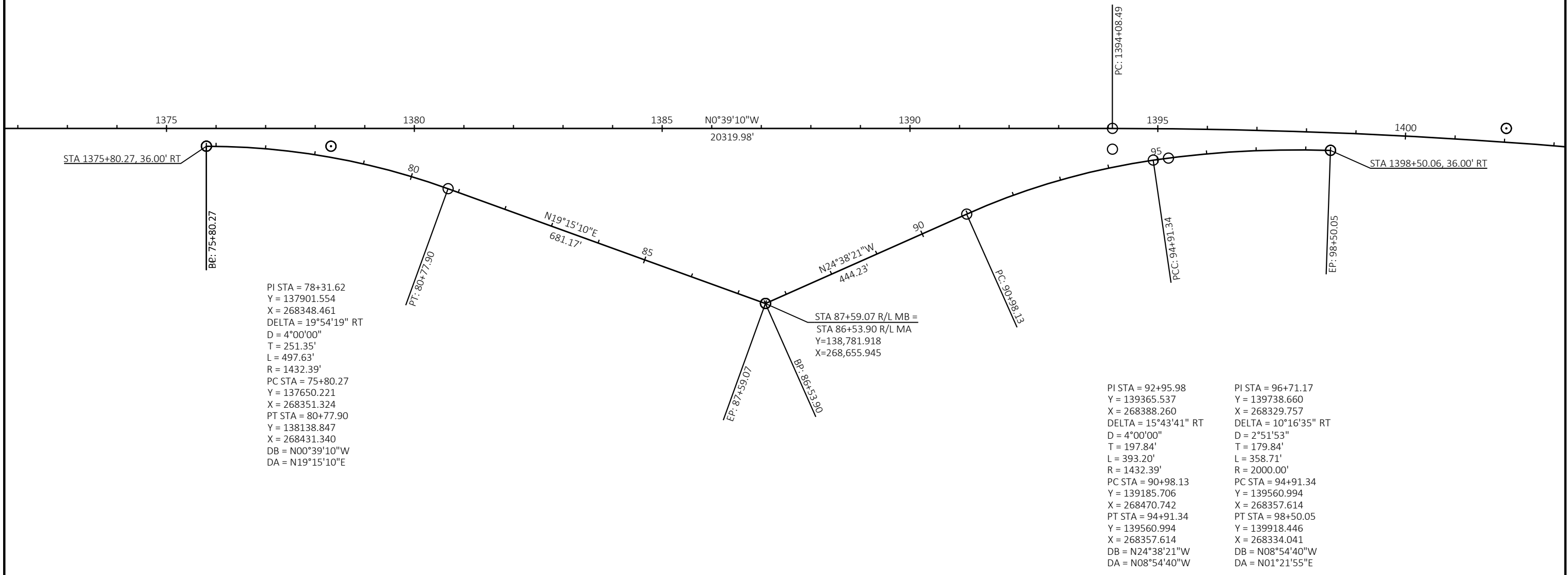
STA 203+70.00 R/L 34 =
STA 179+12.60 R/L KB
Y=118,191.016
X=269,098.503

STA 203+70.00 R/L 34 =
STA 179+64.38 R/L KA
Y=118,191.017
X=269,098.504

PI STA = 170+45.35
Y = 117313.298
X = 269265.663
DELTA = 34°10'04" RT
D = 4°00'00"
T = 440.22'
L = 854.19'
R = 1432.39'
PC STA = 166+05.13
Y = 117001.747
X = 269576.675
PT STA = 174+59.32
Y = 117745.743
X = 269183.305
DB = N44°57'01"W
DA = N10°46'58"W

PI STA = 187+10.36
Y = 118773.507
X = 268632.471
DELTA = 31°15'06" RT
D = 3°59'58"
T = 400.68'
L = 781.40'
R = 1432.59'
PC STA = 183+09.67
Y = 118460.637
X = 268882.789
PT STA = 190+91.07
Y = 119170.842
X = 268580.792
DB = N38°39'44"W
DA = N07°24'38"W

PI STA = 191+78.38
Y = 119257.419
X = 268569.531
DELTA = 4°59'57" RT
D = 2°51'53"
T = 87.31'
L = 174.50'
R = 2000.00'
PC STA = 190+91.07
Y = 119170.842
X = 268580.792
PT STA = 192+65.57
Y = 119344.648
X = 268565.858
DB = N07°24'38"W
DA = N02°24'41"W



PI STA = 78+31.62
 Y = 137901.554
 X = 268348.461
 DELTA = 19°54'19" RT
 D = 4°00'00"
 T = 251.35'
 L = 497.63'
 R = 1432.39'
 PC STA = 75+80.27
 Y = 137650.221
 X = 268351.324
 PT STA = 80+77.90
 Y = 138138.847
 X = 268431.340
 DB = N00°39'10"W
 DA = N19°15'10"E

STA 87+59.07 R/L MB =
 STA 86+53.90 R/L MA
 Y=138,781.918
 X=268,655.945

PI STA = 92+95.98
 Y = 139365.537
 X = 268388.260
 DELTA = 15°43'41" RT
 D = 4°00'00"
 T = 197.84'
 L = 393.20'
 R = 1432.39'
 PC STA = 90+98.13
 Y = 139185.706
 X = 268470.742
 PT STA = 94+91.34
 Y = 139560.994
 X = 268357.614
 DB = N24°38'21"W
 DA = N08°54'40"W

PI STA = 96+71.17
 Y = 139738.660
 X = 268329.757
 DELTA = 10°16'35" RT
 D = 2°51'53"
 T = 179.84'
 L = 358.71'
 R = 2000.00'
 PC STA = 94+91.34
 Y = 139560.994
 X = 268357.614
 PT STA = 98+50.05
 Y = 139918.446
 X = 268334.041
 DB = N08°54'40"W
 DA = N01°21'55"E

Estimate Of Quantities

1166-00-83

| Line | Item | Item Description | Unit | Total | Qty |
|------|------------|--|------|-------------|-------------|
| 0002 | 202.0105 | Roadside Clearing | STA | 7.000 | 7.000 |
| 0004 | 204.0100 | Removing Concrete Pavement | SY | 1,335.000 | 1,335.000 |
| 0006 | 204.0110 | Removing Asphaltic Surface | SY | 493.000 | 493.000 |
| 0008 | 204.0115 | Removing Asphaltic Surface Butt Joints | SY | 471.000 | 471.000 |
| 0010 | 204.0120 | Removing Asphaltic Surface Milling | SY | 207,138.000 | 207,138.000 |
| 0012 | 204.0165 | Removing Guardrail | LF | 2,250.000 | 2,250.000 |
| 0014 | 204.0170 | Removing Fence | LF | 6,820.000 | 6,820.000 |
| 0016 | 204.0180 | Removing Delineators and Markers | EACH | 192.000 | 192.000 |
| 0018 | 204.0195 | Removing Concrete Bases | EACH | 1.000 | 1.000 |
| 0020 | 204.0220 | Removing Inlets | EACH | 4.000 | 4.000 |
| 0022 | 204.0245 | Removing Storm Sewer (size) 01. 12-Inch | LF | 251.000 | 251.000 |
| 0024 | 204.9060.S | Removing (item description) 01. Endwalls & Pipe Sections | EACH | 7.000 | 7.000 |
| 0026 | 205.0100 | Excavation Common | CY | 1,285.000 | 1,285.000 |
| 0028 | 208.0100 | Borrow | CY | 1,489.000 | 1,489.000 |
| 0030 | 211.0100 | Prepare Foundation for Asphaltic Paving (project) 01. 1166-00-83 | LS | 1.000 | 1.000 |
| 0032 | 211.0400 | Prepare Foundation for Asphaltic Shoulders | STA | 4.300 | 4.300 |
| 0034 | 211.0500 | Prepare Foundation for Base Aggregate | STA | 3.700 | 3.700 |
| 0036 | 213.0100 | Finishing Roadway (project) 01. 1166-00-83 | EACH | 1.000 | 1.000 |
| 0038 | 305.0110 | Base Aggregate Dense 3/4-Inch | TON | 4,840.000 | 4,840.000 |
| 0040 | 305.0120 | Base Aggregate Dense 1 1/4-Inch | TON | 5,057.000 | 5,057.000 |
| 0042 | 312.0115 | Select Crushed Material | CY | 208.000 | 208.000 |
| 0044 | 416.0610 | Drilled Tie Bars | EACH | 20.000 | 20.000 |
| 0046 | 416.1010 | Concrete Surface Drains | CY | 15.000 | 15.000 |
| 0048 | 416.1015 | Concrete Surface Drains HES | CY | 2.000 | 2.000 |
| 0050 | 455.0605 | Tack Coat | GAL | 15,354.000 | 15,354.000 |
| 0052 | 460.0105.S | HMA Percent Within Limits (PWL) Test Strip Volumetrics | EACH | 1.000 | 1.000 |
| 0054 | 460.0110.S | HMA Percent Within Limits (PWL) Test Strip Density | EACH | 1.000 | 1.000 |
| 0056 | 460.2000 | Incentive Density HMA Pavement | DOL | 5,300.000 | 5,300.000 |
| 0058 | 460.2005 | Incentive Density PWL HMA Pavement | DOL | 8,860.000 | 8,860.000 |
| 0060 | 460.2007 | Incentive Density HMA Pavement Longitudinal Joints | DOL | 18,240.000 | 18,240.000 |
| 0062 | 460.2010 | Incentive Air Voids HMA Pavement | DOL | 10,330.000 | 10,330.000 |
| 0064 | 460.5224 | HMA Pavement 4 LT 58-28 S | TON | 6,008.000 | 6,008.000 |
| 0066 | 460.6223 | HMA Pavement 3 MT 58-28 S | TON | 467.000 | 467.000 |
| 0068 | 460.6424 | HMA Pavement 4 MT 58-28 H | TON | 1,922.000 | 1,922.000 |
| 0070 | 460.7424 | HMA Pavement 4 HT 58-28 H | TON | 16,138.000 | 16,138.000 |
| 0072 | 465.0105 | Asphaltic Surface | TON | 432.000 | 432.000 |
| 0074 | 465.0125 | Asphaltic Surface Temporary | TON | 154.000 | 154.000 |
| 0076 | 465.0315 | Asphaltic Flumes | SY | 43.000 | 43.000 |
| 0078 | 465.0400 | Asphaltic Shoulder Rumble Strips | LF | 112,025.000 | 112,025.000 |
| 0080 | 520.1012 | Apron Endwalls for Culvert Pipe 12-Inch | EACH | 4.000 | 4.000 |
| 0082 | 520.8000 | Concrete Collars for Pipe | EACH | 7.000 | 7.000 |
| 0084 | 521.1012 | Apron Endwalls for Culvert Pipe Steel 12-Inch | EACH | 1.000 | 1.000 |
| 0086 | 521.1024 | Apron Endwalls for Culvert Pipe Steel 24-Inch | EACH | 1.000 | 1.000 |
| 0088 | 522.1018 | Apron Endwalls for Culvert Pipe Reinforced Concrete 18-Inch | EACH | 1.000 | 1.000 |
| 0090 | 522.1024 | Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch | EACH | 2.000 | 2.000 |
| 0092 | 522.1036 | Apron Endwalls for Culvert Pipe Reinforced Concrete 36-Inch | EACH | 2.000 | 2.000 |
| 0094 | 522.1042 | Apron Endwalls for Culvert Pipe Reinforced Concrete 42-Inch | EACH | 1.000 | 1.000 |
| 0096 | 524.0124 | Culvert Pipe Salvaged 24-Inch | LF | 6.000 | 6.000 |
| 0098 | 524.0130 | Culvert Pipe Salvaged 30-Inch | LF | 36.000 | 36.000 |

Estimate Of Quantities

1166-00-83

| Line | Item | Item Description | Unit | Total | Qty |
|------|----------|---|------|------------|------------|
| 0100 | 524.0136 | Culvert Pipe Salvaged 36-Inch | LF | 18.000 | 18.000 |
| 0102 | 524.0142 | Culvert Pipe Salvaged 42-Inch | LF | 24.000 | 24.000 |
| 0104 | 524.0624 | Apron Endwalls for Culvert Pipe Salvaged 24-Inch | EACH | 1.000 | 1.000 |
| 0106 | 524.0630 | Apron Endwalls for Culvert Pipe Salvaged 30-Inch | EACH | 3.000 | 3.000 |
| 0108 | 524.0636 | Apron Endwalls for Culvert Pipe Salvaged 36-Inch | EACH | 1.000 | 1.000 |
| 0110 | 524.0642 | Apron Endwalls for Culvert Pipe Salvaged 42-Inch | EACH | 2.000 | 2.000 |
| 0112 | 601.0557 | Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D | LF | 194.000 | 194.000 |
| 0114 | 601.0588 | Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type TBT | LF | 410.000 | 410.000 |
| 0116 | 601.0590 | Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type TBTT | LF | 51.000 | 51.000 |
| 0118 | 606.0200 | Riprap Medium | CY | 3.000 | 3.000 |
| 0120 | 608.3012 | Storm Sewer Pipe Class III-A 12-Inch | LF | 259.000 | 259.000 |
| 0122 | 611.0654 | Inlet Covers Type V | EACH | 4.000 | 4.000 |
| 0124 | 611.3220 | Inlets 2x2-FT | EACH | 4.000 | 4.000 |
| 0126 | 612.0112 | Pipe Underdrain 12-Inch | LF | 200.000 | 200.000 |
| 0128 | 614.0010 | Barrier System Grading Shaping Finishing | EACH | 9.000 | 9.000 |
| 0130 | 614.2300 | MGS Guardrail 3 | LF | 1,773.500 | 1,773.500 |
| 0132 | 614.2500 | MGS Thrie Beam Transition | LF | 320.000 | 320.000 |
| 0134 | 614.2610 | MGS Guardrail Terminal EAT | EACH | 9.000 | 9.000 |
| 0136 | 614.2620 | MGS Guardrail Terminal Type 2 | EACH | 1.000 | 1.000 |
| 0138 | 616.0100 | Fence Woven Wire (height) 01. 4-FT | LF | 7,482.000 | 7,482.000 |
| 0140 | 618.0100 | Maintenance And Repair of Haul Roads (project) 01. 1166-00-83 | EACH | 1.000 | 1.000 |
| 0142 | 619.1000 | Mobilization | EACH | 1.000 | 1.000 |
| 0144 | 624.0100 | Water | MGAL | 50.000 | 50.000 |
| 0146 | 625.0100 | Topsoil | SY | 2,216.000 | 2,216.000 |
| 0148 | 628.1504 | Silt Fence | LF | 2,150.000 | 2,150.000 |
| 0150 | 628.1520 | Silt Fence Maintenance | LF | 2,150.000 | 2,150.000 |
| 0152 | 628.1905 | Mobilizations Erosion Control | EACH | 3.000 | 3.000 |
| 0154 | 628.1910 | Mobilizations Emergency Erosion Control | EACH | 3.000 | 3.000 |
| 0156 | 628.2008 | Erosion Mat Urban Class I Type B | SY | 4,170.000 | 4,170.000 |
| 0158 | 628.6505 | Soil Stabilizer Type A | ACRE | 0.249 | 0.249 |
| 0160 | 629.0210 | Fertilizer Type B | CWT | 1.960 | 1.960 |
| 0162 | 630.0130 | Seeding Mixture No. 30 | LB | 56.300 | 56.300 |
| 0164 | 630.0500 | Seed Water | MGAL | 19.000 | 19.000 |
| 0166 | 633.0100 | Delineator Posts Steel | EACH | 205.000 | 205.000 |
| 0168 | 633.0500 | Delineator Reflectors | EACH | 262.000 | 262.000 |
| 0170 | 633.5200 | Markers Culvert End | EACH | 18.000 | 18.000 |
| 0172 | 635.0300 | Sign Supports Replacing Base Connection Bolts | EACH | 6.000 | 6.000 |
| 0174 | 637.1220 | Signs Type I Reflective SH | SF | 626.500 | 626.500 |
| 0176 | 638.2102 | Moving Signs Type II | EACH | 14.000 | 14.000 |
| 0178 | 638.2601 | Removing Signs Type I | EACH | 6.000 | 6.000 |
| 0180 | 638.2602 | Removing Signs Type II | EACH | 3.000 | 3.000 |
| 0182 | 638.3000 | Removing Small Sign Supports | EACH | 3.000 | 3.000 |
| 0184 | 642.5001 | Field Office Type B | EACH | 1.000 | 1.000 |
| 0186 | 643.0300 | Traffic Control Drums | DAY | 24,243.000 | 24,243.000 |
| 0188 | 643.0420 | Traffic Control Barricades Type III | DAY | 1,756.000 | 1,756.000 |
| 0190 | 643.0705 | Traffic Control Warning Lights Type A | DAY | 3,512.000 | 3,512.000 |
| 0192 | 643.0715 | Traffic Control Warning Lights Type C | DAY | 784.000 | 784.000 |
| 0194 | 643.0800 | Traffic Control Arrow Boards | DAY | 106.000 | 106.000 |
| 0196 | 643.0900 | Traffic Control Signs | DAY | 2,356.000 | 2,356.000 |

Estimate Of Quantities

1166-00-83

| Line | Item | Item Description | Unit | Total | Qty |
|------|------------|---|------|-------------|-------------|
| 0198 | 643.0910 | Traffic Control Covering Signs Type I | EACH | 3.000 | 3.000 |
| 0200 | 643.0920 | Traffic Control Covering Signs Type II | EACH | 3.000 | 3.000 |
| 0202 | 643.1000 | Traffic Control Signs Fixed Message | SF | 13.000 | 13.000 |
| 0204 | 643.1051 | Traffic Control Signs PCMS with Cellular Communications | DAY | 33.000 | 33.000 |
| 0206 | 643.1205.S | Basic Traffic Queue Warning System | DAY | 42.000 | 42.000 |
| 0208 | 643.5000 | Traffic Control | EACH | 1.000 | 1.000 |
| 0210 | 645.0111 | Geotextile Type DF Schedule A | SY | 370.000 | 370.000 |
| 0212 | 645.0120 | Geotextile Type HR | SY | 10.000 | 10.000 |
| 0214 | 646.1020 | Marking Line Epoxy 4-Inch | LF | 1,563.000 | 1,563.000 |
| 0216 | 646.1040 | Marking Line Grooved Wet Ref Epoxy 4-Inch | LF | 111,057.000 | 111,057.000 |
| 0218 | 646.3020 | Marking Line Epoxy 8-Inch | LF | 88.000 | 88.000 |
| 0220 | 646.3040 | Marking Line Grooved Wet Ref Epoxy 8-Inch | LF | 2,378.000 | 2,378.000 |
| 0222 | 646.5520 | Marking Outfall Epoxy | EACH | 367.000 | 367.000 |
| 0224 | 646.6120 | Marking Stop Line Epoxy 18-Inch | LF | 55.000 | 55.000 |
| 0226 | 646.7220 | Marking Chevron Epoxy 24-Inch | LF | 350.000 | 350.000 |
| 0228 | 646.9000 | Marking Removal Line 4-Inch | LF | 313.000 | 313.000 |
| 0230 | 649.0105 | Temporary Marking Line Paint 4-Inch | LF | 111,880.000 | 111,880.000 |
| 0232 | 649.0150 | Temporary Marking Line Removable Tape 4-Inch | LF | 920.000 | 920.000 |
| 0234 | 649.0205 | Temporary Marking Line Paint 8-Inch | LF | 2,378.000 | 2,378.000 |
| 0236 | 649.0960 | Temporary Marking Removable Mask Out Tape 6-Inch | LF | 760.000 | 760.000 |
| 0238 | 650.4000 | Construction Staking Storm Sewer | EACH | 8.000 | 8.000 |
| 0240 | 650.4500 | Construction Staking Subgrade | LF | 804.000 | 804.000 |
| 0242 | 650.5000 | Construction Staking Base | LF | 804.000 | 804.000 |
| 0244 | 650.5500 | Construction Staking Curb Gutter and Curb & Gutter | LF | 655.000 | 655.000 |
| 0246 | 650.8000 | Construction Staking Resurfacing Reference | LF | 50,698.000 | 50,698.000 |
| 0248 | 650.9910 | Construction Staking Supplemental Control (project) 01. 1166-00-83 | LS | 1.000 | 1.000 |
| 0250 | 650.9920 | Construction Staking Slope Stakes | LF | 904.000 | 904.000 |
| 0252 | 690.0150 | Sawing Asphalt | LF | 1,437.000 | 1,437.000 |
| 0254 | 690.0250 | Sawing Concrete | LF | 87.000 | 87.000 |
| 0256 | 740.0440 | Incentive IRI Ride | DOL | 1.000 | 1.000 |
| 0258 | ASP.1T0A | On-the-Job Training Apprentice at \$5.00/HR | HRS | 2,000.000 | 2,000.000 |
| 0260 | ASP.1T0G | On-the-Job Training Graduate at \$5.00/HR | HRS | 1,260.000 | 1,260.000 |
| 0262 | SPV.0060 | Special 01. Grading, Shaping and Finishing for Crossdrain Restoration | EACH | 19.000 | 19.000 |

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REMOVING ASPHALTIC SURFACE BUTT JOINTS

| STATION | LOCATION | 204.0115 SY |
|--------------|----------|-------------|
| 986+50 | NB | 42 |
| 1026+91 | NB | 42 |
| 1028+48 | NB | 42 |
| 1127+12 | NB | 42 |
| 1128+74 | NB | 42 |
| 1386+13 | NB | 42 |
| 1388+14 | NB | 42 |
| 1440+00 | NB | 42 |
| 201+10 | K | 27 |
| 205+10 | K | 49 |
| 85+24 | MB | 29 |
| 87+57 | MA | 29 |
| TOTAL | | 471 |

REMOVING GUARDRAIL

| STATION - STATION | LOCATION | 204.0165 LF | REMARKS |
|-------------------|----------|-------------|--------------|
| 1024+13 - 1026+96 | NB LT | 283 | B-37-142 |
| 1024+50 - 1026+96 | NB RT | 246 | B-37-142 |
| 1124+33 - 1127+23 | NB LT | 290 | B-37-145 |
| 1124+77 - 1127+23 | NB RT | 246 | B-37-145 |
| 1359+32 - 1362+11 | NB RT | 279 | RUNWAY LIGHT |
| 1382+97 - 1386+13 | NB LT | 316 | B-37-149 |
| 1383+45 - 1386+13 | NB RT | 268 | B-37-149 |
| 201+10 - 202+71 | K LT | 161 | STH 34 |
| 201+04 - 202+65 | K RT | 161 | STH 34 |
| TOTAL | | 2250 | |

REMOVING ENDWALLS & PIPE SECTIONS

| STATION | LOCATION | 204.9060.S.01 EACH | REMARKS |
|--------------|----------|--------------------|----------------------|
| 1181+00 | LT | 1 | 36" CONCRETE ENDWALL |
| 1252+00 | RT | 1 | 24" CONCRETE ENDWALL |
| 1312+00 | RT | 1 | 18" CONCRETE ENDWALL |
| 1333+35 | RT | 1 | 42" CONCRETE ENDWALL |
| 1345+00 | RT | 1 | 36" CONCRETE ENDWALL |
| 1348+00 | RT | 1 | 24" CONCRETE ENDWALL |
| 1412+84 | LT | 1 | 24" CONCRETE ENDWALL |
| TOTAL | | 7 | |

REMOVING CONCRETE BASES

| STATION | LOCATION | 204.0195 EACH | REMARKS |
|--------------|----------|---------------|---------|
| 203+27K | RT | 1 | |
| TOTAL | | 1 | |

REMOVING FENCE

| STATION - STATION | LOCATION | 204.0170 LF | REMARKS |
|-------------------|----------|-------------|---------|
| 986+41 - 997+38 | RT | 1120 | |
| 1015+69 - 1026+96 | RT | 1103 | |
| 1020+09 - 1026+96 | LT | 551 | MEDIAN |
| 1028+44 - 1034+85 | LT | 716 | MEDIAN |
| 1028+44 - 1039+81 | RT | 1150 | |
| 1098+45 - 1098+99 | LT | 72 | CULVERT |
| 1114+82 - 1127+22 | RT | 1200 | |
| 1128+71 - 1137+55 | RT | 908 | |
| TOTAL | | 6820 | |

REMOVING ASPHALTIC SURFACE MILLING

| STATION - STATION | LOCATION | 204.0120 SY | REMARKS |
|-------------------|----------|---------------|------------------|
| 986+50 - 1026+91 | NB | 17062 | |
| 1028+48 - 1127+12 | NB | 41648 | |
| 1128+74 - 1144+75 | NB | 6760 | |
| 1142+00 - 1386+13 | NB | 103077 | |
| 1388+14 - 1440+00 | NB | 21896 | |
| 995+50 | NB LT | 304 | MEDIAN CROSSOVER |
| 1098+75 | NB LT | 304 | MEDIAN CROSSOVER |
| 1146+50 | NB LT | 304 | MEDIAN CROSSOVER |
| 1207+50 | NB LT | 304 | MEDIAN CROSSOVER |
| 1294+75 | NB LT | 304 | MEDIAN CROSSOVER |
| 1358+25 | NB LT | 304 | MEDIAN CROSSOVER |
| 1432+50 | NB LT | 304 | MEDIAN CROSSOVER |
| 201+00 - 203+00 | K | 978 | STH 34 |
| 204+25 - 205+10 | K | 430 | STH 34 |
| 1162+55 - 1168+50 | NB RT | 545 | OFF RAMP TAPER |
| 168+50 - 177+33 | KB | 2453 | OFF RAMP |
| 182+00 - 190+75 | KA | 2431 | ON RAMP |
| 1190+80 - 1200+76 | NB RT | 1330 | ON RAMP TAPER |
| 1369+79 - 1378+53 | NB RT | 898 | OFF RAMP TAPER |
| 78+50 - 85+24 | MB | 1872 | OFF RAMP |
| 87+57 - 95+15 | MA | 2106 | ON RAMP |
| 1395+15 - 1406+40 | NB RT | 1525 | ON RAMP TAPER |
| TOTAL | | 207138 | |

REMOVING CONCRETE PAVEMENT

| STATION - STATION | LOCATION | WIDTH FEET | 204.0100 SY | REMARKS |
|-------------------|----------|------------|-------------|-----------|
| 201+03K - 201+18K | RT | 3 | 5 | GUARDRAIL |
| 201+10K - 201+24 | LT | 3 | 5 | GUARDRAIL |
| 177+33K - 179+00K | LT | VAR | 642 | KB RAMP |
| 179+76K - 182+00K | RT | VAR | 675 | KA RAMP |
| 1026+84 - 1026+96 | LT | 3 | 4 | GUARDRAIL |
| 1026+84 - 1026+96 | RT | 3 | 4 | GUARDRAIL |
| TOTAL | | | 1335 | |

REMOVING DELINEATORS AND MARKERS

| STATION - STATION | LOCATION | 204.0180 EACH | REMARKS |
|-------------------|----------|---------------|------------------|
| 986+50 - 1160+00 | NB | 43 | |
| 1160+00 - 1203+00 | NB | 22 | |
| 1203+00 - 1370+00 | NB | 42 | |
| 1370+00 - 1408+00 | NB | 19 | |
| 1408+00 - 1440+00 | NB | 8 | |
| 166+00 - 178+00 | KB | 12 | |
| 181+00 - 193+00 | KA | 12 | |
| 75+00 - 86+00 | MB | 11 | |
| 88+00 - 97+00 | MA | 9 | |
| 995+50 | MEDIAN | 2 | MEDIAN CROSSOVER |
| 1098+75 | MEDIAN | 2 | MEDIAN CROSSOVER |
| 1146+50 | MEDIAN | 2 | MEDIAN CROSSOVER |
| 1207+50 | MEDIAN | 2 | MEDIAN CROSSOVER |
| 1294+75 | MEDIAN | 2 | MEDIAN CROSSOVER |
| 1358+25 | MEDIAN | 2 | MEDIAN CROSSOVER |
| 1432+50 | MEDIAN | 2 | MEDIAN CROSSOVER |
| TOTAL | | 192 | |

REMOVING ASPHALTIC SURFACE

| STATION - STATION | LOCATION | 204.0110 SY | REMARKS |
|-------------------|----------|-------------|-----------|
| 1024+25 - 1026+83 | NB LT | 115 | GUARDRAIL |
| 1024+75 - 1026+83 | NB RT | 92 | GUARDRAIL |
| 1124+75 - 1127+08 | NB LT | 104 | GUARDRAIL |
| 1125+75 - 1127+08 | NB RT | 59 | GUARDRAIL |
| 1359+85 - 1362+09 | NB RT | 100 | GUARDRAIL |
| 201+18 - 201+69 | K RT | 12 | GUARDRAIL |
| 201+24 - 201+76 | K LT | 12 | GUARDRAIL |
| TOTAL | | 493 | |

EARTHWORK

| STATION - STATION | LOCATION | 205.0100 | SALVAGED/ | EXPANDED FILL | | MASS | 208.0100 | | REMARKS | |
|-------------------|---------------|--------------------------|--------------------------------|-----------------|--------------|------------------|-------------|------------|--------------|--|
| | | EXCAVATION COMMON (1) CY | UNUSABLE PAVEMENT MATERIAL (2) | UNEXPANDED FILL | FACTOR 1.25 | ORDINATE +/- (3) | WASTE (4) | BORROW CY | | |
| 1022+50 - 1383+73 | IH 39 NB | 209 | 0 | 209 | 107 | 134 | 75 | 75 | 0 | |
| 201+25 - 204+50 | STH 34 | 189 | 95 | 94 | 68 | 85 | 9 | 9 | 0 | |
| 180+25 - 182+50 | KA RAMP | 481 | 163 | 318 | 54 | 68 | 251 | 251 | 0 | |
| 177+00 - 178+50 | KB RAMP | 286 | 101 | 185 | 12 | 15 | 170 | 170 | 0 | |
| 80+00 - 83+75 | KAT TEMP RAMP | 120 | 0 | 120 | 1,287 | 1,609 | -1,489 | 0 | 1,489 | |
| TOTALS | | 1,285 | 359 | 926 | 1,528 | 1,910 | -984 | 505 | 1,489 | |

NOTES:

- (1) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
- (2) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE PAVEMENT MATERIAL
- (3) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE.
- (4) FACTORS USED TO COMPUTE ANTICIPATED WASTE AND THE COMPUTED WASTE VOLUME IDENTIFIED ARE FOR GENERAL INFORMATION ONLY.

ROADSIDE CLEARING

| STATION - STATION | LOCATION | 202.0105 | REMARKS |
|-------------------|----------|----------|------------------------------------|
| 1020+00 - 1027+00 | LT | 7 | EDGE OF SHOULDER TO PROPOSED FENCE |
| TOTAL | | 7 | |

BASE AGGREGATE DENSE

| STATION - STATION | LOCATION | 305.0110 | 305.0120 | REMARKS |
|-------------------|----------|--------------|----------------|----------------|
| | | 3/4-INCH TON | 1 1/4-INCH TON | |
| 986+50 - 1026+91 | NB LT | 220 | -- | |
| 1028+48 - 1127+12 | NB LT | 536 | -- | |
| 1128+74 - 1386+13 | NB LT | 1398 | -- | |
| 1388+14 - 1440+00 | NB LT | 282 | -- | |
| 986+50 - 1026+91 | NB RT | 151 | -- | |
| 1028+48 - 1127+12 | NB RT | 368 | -- | |
| 1128+74 - 1386+13 | NB RT | 961 | -- | |
| 1388+14 - 1440+00 | NB RT | 194 | -- | |
| 202+00 - 205+10 | K LT | 26 | -- | |
| 202+00 - 205+10 | K RT | 26 | -- | |
| 166+05 - 177+31 | KB LT | 69 | -- | |
| 166+06 - 177+31 | KB RT | 53 | -- | |
| 177+31 - 178+89 | KB LT | 40 | 1213 | |
| 177+31 - 178+89 | KB RT | 34 | 743 | |
| 179+88 - 182+00 | KA LT | 52 | 1562 | |
| 179+88 - 182+00 | KA RT | 44 | 1031 | |
| 182+00 - 193+00 | KA LT | 67 | -- | |
| 182+00 - 193+00 | KA RT | 52 | -- | |
| 75+00 - 86+00 | MB LT | 67 | -- | |
| 75+01 - 86+01 | MB RT | 52 | -- | |
| 87+50 - 97+00 | MA LT | 58 | -- | |
| 87+51 - 97+01 | MA RT | 45 | -- | |
| 79+90 - 84+04 | KAT | 43 | 507 | TEMPORARY RAMP |
| TOTALS | | 4840 | 5057 | |

PREPARE FOUNDATION FOR ASPHALTIC SHOULDER

| STATION - STATION | LOCATION | 211.0400 | REMARKS |
|-------------------|----------|------------|---------|
| 1023+16 - 1024+51 | LT | 1.4 | |
| 1023+84 - 1024+51 | RT | 0.7 | |
| 1123+35 - 1124+35 | LT | 1.0 | |
| 1124+10 - 1124+83 | RT | 0.7 | |
| 1358+55 - 1359+12 | RT | 0.6 | |
| TOTAL | | 4.3 | |

REMOVING STORM SEWER (SIZE)

| STATION | LOCATION | 204.0245.01 | REMARKS |
|--------------|----------|-------------|------------------|
| | | 12-INCH LF | |
| 1026+88 | LT | 38 | INCLUDES ENDWALL |
| 1026+88 | RT | 47 | INCLUDES ENDWALL |
| 201+11K | RT | 84 | INCLUDES ENDWALL |
| 201+18K | LT | 82 | INCLUDES ENDWALL |
| TOTAL | | 251 | |

ASPHALTIC SHOULDER RUMBLE STRIP

| STATION - STATION | LOCATION | 465.0400 | REMARKS |
|-------------------|----------|---------------|----------|
| 986+50 - 1026+91 | NB RT | 4041 | |
| 1028+48 - 1127+12 | NB RT | 9864 | |
| 1128+74 - 1144+75 | NB RT | 1601 | EQUATION |
| 1142+00 - 1160+00 | NB RT | 1800 | |
| 1168+50 - 1190+75 | NB RT | 2225 | |
| 1204+00 - 1370+00 | NB RT | 16600 | |
| 1378+50 - 1386+13 | NB RT | 763 | |
| 1128+74 - 1395+00 | NB RT | 26626 | |
| 1406+00 - 1440+00 | NB RT | 3400 | |
| 986+50 - 1026+91 | NB LT | 4041 | |
| 1028+48 - 1127+12 | NB LT | 9864 | |
| 1128+74 - 1144+75 | NB LT | 1601 | EQUATION |
| 1142+00 - 1386+13 | NB LT | 24413 | |
| 1388+14 - 1440+00 | NB LT | 5186 | |
| TOTAL | | 112025 | |

REMOVING INLETS

| STATION | LOCATION | 204.0220 | REMARKS |
|--------------|----------|----------|---------|
| | | EACH | |
| 1026+88 | LT & RT | 2 | |
| 201+11K | RT | 1 | |
| 201+18K | LT | 1 | |
| TOTAL | | 4 | |

PREPARE FOUNDATION FOR ASPHALTIC PAVING (1166-00-83)

| STATION - STATION | LOCATION | 211.0100 | REMARKS |
|-------------------|----------|------------|---------|
| | | LS | |
| 986+50 - 1440+00 | LT | 0.8 | |
| 201+00 - 205+10 | RT | 0.2 | |
| TOTAL | | 1.0 | |

PREPARE FOUNDATION FOR BASE AGGREGATE

| STATION - STATION | LOCATION | 211.0500 | REMARKS |
|-------------------|----------|------------|---------|
| | | STATION | |
| 177+33 - 178+88 | KB | 1.6 | |
| 179+86 - 182+00 | KA | 2.1 | |
| TOTAL | | 3.7 | |

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HMA PAVEMENT

| STATION - STATION | LOCATION | 455.0605 | 460.6223 | 460.5224 | 460.6424 | 460.7424 | # | REMARKS |
|-------------------|----------|---------------------|------------------------|------------------------|------------------------|------------------------|---|-----------------------------|
| | | TACK COAT GAL | 3 MT 58-28 S TON | 4 LT 58-28 S TON | 4 MT 58-28 H TON | 4 HT 58-28 H TON | 465.0105 ASPHALTIC SURFACE TON | |
| 986+50 - 1026+91 | NB | 1194 | --- | 516 | --- | 1446 | --- | MAINLINE & OUTSIDE SHOULDER |
| 1028+48 - 1127+12 | NB | 2915 | --- | 1260 | --- | 3529 | --- | MAINLINE & OUTSIDE SHOULDER |
| 1128+74 - 1144+75 | NB | 473 | --- | 205 | --- | 573 | --- | MAINLINE & OUTSIDE SHOULDER |
| 1142+00 - 1225+38 | NB | 2464 | --- | 1065 | --- | 2983 | --- | MAINLINE & OUTSIDE SHOULDER |
| 1225+38 - 1233+38 | NB | 473 | --- | 102 | --- | 286 | 388 | MAINLINE & OUTSIDE SHOULDER |
| 1233+38 - 1386+13 | NB | 4515 | --- | 1952 | --- | 5465 | --- | MAINLINE & OUTSIDE SHOULDER |
| 1388+14 - 1440+00 | NB | 1533 | --- | 663 | --- | 1855 | --- | MAINLINE & OUTSIDE SHOULDER |
| 995+50 | NB LT | 21 | --- | 35 | --- | --- | --- | MEDIAN CROSSOVER |
| 1098+75 | NB LT | 21 | --- | 35 | --- | --- | --- | MEDIAN CROSSOVER |
| 1146+50 | NB LT | 21 | --- | 35 | --- | --- | --- | MEDIAN CROSSOVER |
| 1207+50 | NB LT | 21 | --- | 35 | --- | --- | --- | MEDIAN CROSSOVER |
| 1294+75 | NB LT | 21 | --- | 35 | --- | --- | --- | MEDIAN CROSSOVER |
| 1358+25 | NB LT | 21 | --- | 35 | --- | --- | --- | MEDIAN CROSSOVER |
| 1432+50 | NB LT | 21 | --- | 35 | --- | --- | --- | MEDIAN CROSSOVER |
| 201+00 - 203+00 | K | 37 | --- | --- | 112 | --- | --- | STH 34 |
| 203+00 - 204+25 | K | 47 | 158 | --- | 70 | --- | --- | STH 34 |
| 204+25 - 205+10 | K | 16 | --- | --- | 48 | --- | --- | STH 34 |
| 1162+55 - 1168+50 | NB RT | 120 | --- | --- | 63 | --- | --- | NB OFF RAMP TAPER |
| 168+50 - 177+33 | KB | 179 | --- | --- | 293 | --- | --- | NB OFF RAMP |
| 177+33 - 178+88 | KB | 71 | 130 | --- | 58 | --- | --- | NB OFF RAMP INTERSECTION |
| 179+86 - 182+00 | KA | 97 | 179 | --- | 79 | --- | --- | NB ON RAMP INTERSECTION |
| 182+00 - 190+74 | KA | 177 | --- | --- | 290 | --- | --- | NB ON RAMP |
| 1190+80 - 1200+76 | NB RT | 201 | --- | --- | 153 | --- | --- | NB ON RAMP TAPER |
| 1369+79 - 1378+53 | NB RT | 177 | --- | --- | 103 | --- | --- | NB OFF RAMP TAPER |
| 78+50 - 85+24 | MB | 136 | --- | --- | 224 | --- | --- | NB OFF RAMP |
| 87+57 - 95+15 | MA | 153 | --- | --- | 252 | --- | --- | NB ON RAMP |
| 1395+15 - 1406+40 | NB RT | 228 | --- | --- | 175 | --- | --- | NB ON RAMP TAPER |
| TOTALS | | 15354 | 467 | 6008 | 1922 | 16138 | 388 | |

SEE ASPHALTIC SURFACE FOR ADDITIONAL QUANTITIES

ASPHALTIC SURFACE TEMPORARY

| STATION - STATION | LOCATION | 465.0125 TON | REMARKS |
|-------------------|----------|-----------------|---------|
| 80+25 - 84+25 | KAT | 154 | |
| TOTAL | | 154 | |

ASPHALTIC SURFACE

| STATION - STATION | LOCATION | # | REMARKS |
|-------------------|------------|-----------------|--------------------------|
| | | 465.0105 TON | |
| 1026+16 - 1024+51 | NB LT | 12 | SHOULDER WIDENING AT EAT |
| 1026+36 - 1026+96 | NB LT & RT | 6 | PATCH AT CURB & GUTTER |
| 1123+35 - 1124+35 | NB LT | 13 | SHOULDER WIDENING AT EAT |
| 1126+59 - 1127+16 | NB LT & RT | 3 | PATCH AT CURB & GUTTER |
| 1358+55 - 1359+12 | NB RT | 3 | SHOULDER WIDENING AT EAT |
| 1385+56 - 1386+14 | NB LT & RT | 3 | PATCH AT CURB & GUTTER |
| 201+22 - 201+66 | K RT | 2 | PATCH AT CURB & GUTTER |
| 201+29 - 201+73 | K LT | 2 | PATCH AT CURB & GUTTER |
| TOTAL | | 44 | |

#SEE HMA PAVEMENT FOR ADDITIONAL QUANTITIES

PWL MIXTURE USE TABLE

| STATION | LOCATION | MIXTURE USE | UNDERLYING SURFACE | BID ITEM | *TONS | THICKNESS (IN) | QUALITY MANAGEMENT PROGRAM TO BE USED: | |
|--|-----------------------------------|-------------|-----------------------------|--------------|-------|----------------|---|--|
| | | | | | | | MIXTURE ACCEPTANCE | DENSITY ACCEPTANCE |
| 986+50 - 1440+00 | IH 39 NB 24 FOOT DRIVING LANE | UPPER LAYER | MILLED EXISTING HMA SURFACE | 4 HT 58-28 H | 13832 | 2 | INCENTIVE AIR VOIDS PWL HMA PAVEMENT 460.2010 | INCENTIVE DENSITY PWL HMA PAVEMENT 460.2005 |
| 986+50 - 1440+00 | IH 39 NB 4 FOOT INSIDE SHOULDER | UPPER LAYER | MILLED EXISTING HMA SURFACE | 4 HT 58-28 H | 2305 | 2 | INCENTIVE AIR VOIDS PWL HMA PAVEMENT 460.2010 | ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE |
| 986+50 - 1440+00 | IH 39 NB 10 FOOT OUTSIDE SHOULDER | UPPER LAYER | MILLED EXISTING HMA SURFACE | 4 LT 58-28 S | 5866 | 2 | QMP AS PER SS 460 | INCENTIVE DENSITY HMA PAVEMENT 460.2000 |
| 203+00K - 204+25K | STH 34 | LOWER LAYER | BASE AGGREGATE | 3 MT 58-28 S | 158 | 4.5 | QMP AS PER SS 460 | INCENTIVE DENSITY HMA PAVEMENT 460.2000 |
| 200+90K - 205+10K | STH 34 | UPPER LAYER | 3 MT 58-28 S | 4 MT 58-28 H | 231 | 2 | QMP AS PER SS 460 | INCENTIVE DENSITY HMA PAVEMENT 460.2000 |
| 177+33KB - 178+88KA 179+86KB - 182+00KA | STH 34 RAMPS | LOWER LAYER | BASE AGGREGATE | 3 MT 58-28 S | 446 | 4.5 | QMP AS PER SS 460 | INCENTIVE DENSITY HMA PAVEMENT 460.2000 |
| VARIOUS | RAMPS | UPPER LAYER | MILLED EXISTING HMA SURFACE | 4 MT 58-28 H | 1059 | 2 | QMP AS PER SS 460 | INCENTIVE DENSITY HMA PAVEMENT 460.2000 |
| VARIOUS | RAMP TAPERS | UPPER LAYER | MILLED EXISTING HMA SURFACE | 4 MT 58-28 H | 494 | 2 | QMP AS PER SS 460 | INCENTIVE DENSITY HMA PAVEMENT 460.2000 |

*QUANTITIES ARE APPROXIMATE

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MGS GUARDRAIL

| STATION - STATION | LOCATION | 614.2300 MGS GUARDRAIL 3 LF | 614.2500 MGS THRIE BEAM TRANSITION LF | 614.2610 MGS GUARDRAIL TERMINAL EAT EACH | 614.2620 MGS GUARDRAIL TERMINAL TYPE 2 EACH | 614.0010 BARRIER SYSTEM GRADING SHAPING FINISHING EACH | REMARKS |
|-------------------|----------|--------------------------------------|---|--|--|--|--------------|
| 1024+13 - 1026+96 | NB LT | 250 | 40 | 1 | --- | 1 | B-37-142 |
| 1024+50 - 1026+96 | NB RT | 200 | 40 | 1 | --- | 1 | B-37-142 |
| 1124+33 - 1127+23 | NB LT | 250 | 40 | 1 | --- | 1 | B-37-145 |
| 1124+77 - 1127+23 | NB RT | 200 | 40 | 1 | --- | 1 | B-37-145 |
| 1359+32 - 1362+11 | NB RT | 287.5 | --- | 1 | 1 | 1 | RUNWAY LIGHT |
| 1382+97 - 1386+13 | NB LT | 250 | 40 | 1 | --- | 1 | B-37-149 |
| 1383+45 - 1386+13 | NB RT | 200 | 40 | 1 | --- | 1 | B-37-149 |
| 201+10 - 202+71 | K LT | 68 | 40 | 1 | --- | 1 | STH 34 |
| 201+03 - 202+64 | K RT | 68 | 40 | 1 | --- | 1 | STH 34 |
| TOTAL | | 1773.5 | 320 | 9 | 1 | 9 | |

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WATER

| STATION - STATION | LOCATION | 624.0100 MGAL |
|-------------------|----------|------------------|
| UNDISTRIBUTED | | 50 |
| TOTAL | | 50 |

CONCRETE CURB & GUTTER

| STATION - STATION | LOCATION | 416.0610 DRILLED TIE BARS EACH | 601.0557 6-INCH SLOPED 36-INCH TYPE D LF | 601.0588 4-INCH SLOPED 36-INCH TYPE TBT LF | 601.0590 4-INCH SLOPED 36-INCH TYPE TBTT LF |
|---------------------|----------|---|---|---|--|
| 1026+38 - 1026+96 | LT | 2 | --- | 53 | 5 |
| 1026+38 - 1026+96 | RT | 5 | --- | 46 | 12 |
| 1126+61 - 1127+11 | LT | --- | --- | 50 | --- |
| 1127+11 - 1127+16 | LT | 2 | --- | --- | 5 |
| 1126+67 - 1127+22 | RT | --- | --- | 55 | --- |
| 1385+59 - 1386+15 | LT | --- | --- | 56 | --- |
| 1385+58 - 1386+15 | RT | --- | --- | 57 | --- |
| 201+03K - 201+64K | LT | 6 | --- | 46 | 15 |
| 201+10K - 201+71K | RT | 5 | --- | 47 | 14 |
| 178+50KB - 179+06KB | RT | --- | 68 | --- | --- |
| 179+83KA - 180+31KA | LT | --- | 54 | --- | --- |
| 179+83KA - 180+31KA | RT | --- | 72 | --- | --- |
| TOTAL | | 20 | 194 | 410 | 51 |

PIPE UNDERDRAIN

| STATION - STATION | LOCATION | 312.0115 SELECT CRUSHED MATERIAL CY | 612.0112 PIPE UNDERDRAIN 12-INCH LF | 645.0111 GEOTEXTILE TYPE DF SCHEDULE A SY | REMARKS |
|-------------------|----------|---|---|---|---------|
| 1228+47 - 1230+40 | NB RT | 197 | 200 | 337 | |
| 1230+36 - 1230+40 | NB RT | 11 | --- | 33 | |
| TOTAL | | 208 | 200 | 370 | |

CROSS DRAINS

| STATION | LOCATION | APRON ENDWALLS FOR CP STEEL | | APRON ENDWALLS FOR CPRC | | | | *CULVERT PIPE SALVAGED | | | | *APRON ENDWALLS FOR CP SALVAGED | | | | 520.8000 | # |
|---------|----------|-----------------------------|----------|-------------------------|----------|----------|----------|------------------------|----------|----------|----------|---------------------------------|----------|----------|----------|------------------|-----------------|
| | | 521.1012 | 521.1024 | 522.1018 | 522.1024 | 522.1036 | 522.1042 | 524.0124 | 524.0130 | 524.0136 | 524.0142 | 524.0624 | 524.0630 | 524.0636 | 524.0642 | CONCRETE | 633.5200 |
| | | 12-INCH | 24-INCH | 18-INCH | 24-INCH | 36-INCH | 42-INCH | 24-INCH | 30-INCH | 36-INCH | 42-INCH | 24-INCH | 30-INCH | 36-INCH | 42-INCH | COLLARS FOR PIPE | CULVERT MARKERS |
| | | EACH | EACH | EACH | EACH | EACH | EACH | LF | LF | LF | LF | EACH | EACH | EACH | EACH | EACH | EACH |
| 1098+66 | LT | --- | --- | --- | --- | --- | --- | --- | --- | --- | 24 | --- | --- | --- | 2 | --- | 1 |
| 1181+00 | LT | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 |
| 1228+51 | RT | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 |
| 1230+50 | RT | --- | --- | --- | --- | --- | --- | --- | 16 | --- | --- | --- | --- | 1 | --- | --- | 1 |
| 1244+36 | RT | --- | --- | --- | --- | --- | --- | --- | --- | 12 | --- | --- | --- | 1 | --- | --- | 1 |
| 1252+00 | RT | --- | --- | --- | 1 | --- | --- | 6 | --- | --- | --- | --- | --- | --- | --- | 1 | 1 |
| 1269+90 | RT | --- | --- | --- | --- | --- | --- | --- | 12 | --- | --- | --- | --- | 1 | --- | --- | 1 |
| 1282+92 | RT | --- | --- | --- | --- | --- | --- | --- | 8 | --- | --- | --- | --- | 1 | --- | --- | 1 |
| 1312+00 | RT | --- | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 |
| 1333+35 | RT | --- | --- | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 |
| 1345+00 | RT | --- | --- | --- | --- | 1 | --- | --- | --- | 6 | --- | --- | --- | --- | --- | 1 | 1 |
| 1348+00 | RT | --- | --- | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 1 |
| 1412+84 | LT & RT | --- | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1 | 2 |
| TOTAL | | 1 | 1 | 1 | 2 | 2 | 1 | 6 | 36 | 18 | 24 | 1 | 3 | 1 | 2 | 7 | 14 |

*ALL JOINTS ON CONCRETE PIPE SHALL BE TIED.

#SEE STORM SEWER STRUCTURES FOR ADDITONAL QUANTITIES

STORM SEWER STRUCTURES

| STRUCTURE | STATION | OFFSET* | 520.1012 | 611.3220 | 611.0654 | # | RIM ELEVATION | INVERT** ELEVATION | DEPTH*** FT |
|-----------|------------|-----------|------------------------------------|----------|--------------------|--------------------------|---------------|--------------------|-------------|
| | | | APRON ENDWALLS FOR CP 12-INCH EACH | | INLETS 2X2-FT EACH | INLET COVERS TYPE V EACH | | | |
| 1 | 1026+53.40 | 5.06 LT | --- | 1 | 1 | --- | 1130.91 | 1127.00 | 3.91 |
| 2 | 1026+53.40 | 43.59 LT | 1 | --- | --- | 1 | --- | 1120.65 | --- |
| 3 | 1026+53.40 | 33.05 RT | --- | 1 | 1 | --- | 1130.83 | 1126.50 | 4.33 |
| 4 | 1026+53.40 | 73.87 RT | 1 | --- | --- | 1 | --- | 1120.34 | --- |
| 5 | 201+48.69K | 21.063 RT | --- | 1 | 1 | --- | 1163.72 | 1159.65 | 4.07 |
| 6 | 201+48.69K | 110.79 RT | 1 | --- | --- | 1 | --- | 1130.30 | --- |
| 7 | 201+55.71K | 21.06 LT | --- | 1 | 1 | --- | 1163.41 | 1159.65 | 3.76 |
| 8 | 201+55.71K | 108.19 LT | 1 | --- | --- | 1 | --- | 1132.94 | --- |
| TOTALS | | | 4 | 4 | 4 | 4 | | | |

SEE CROSS DRAINS FOR ADDITIONAL QUANTITIES

* STATIONS AND OFFSETS ARE TO CENTER OF STRUCTURE

** FOR STRUCTURES WITH SUMPS, THE INVERT ELEVATION IS THE ELEVATION OF THE SUMP.

FOR STRUCTURES WITHOUT SUMPS, THE INVERT ELEVATION IS THE ELEVATION OF THE LOWEST PIPE FLOW LINE

*** DEPTH = RIM ELEV - TOP OF STRUCTURE BASE ELEV - COVER HEIGHT - 6 -INCH ADJUSTMENT RING HEIGHT

STORM SEWER PIPE

| FROM | TO | 608.3012 12-INCH CLASS III-A LF | INLET ELEVATION | DISCHARGE ELEVATION | SLOPE FT/FT | |
|--------|----|---------------------------------|-----------------|---------------------|-------------|--------|
| 1 | - | P2 | 15 | 1127.00 | 1126.55 | 0.0300 |
| P1 | - | P3 | 19 | 1126.55 | 1120.75 | 0.3072 |
| P3 | - | 2 | 5 | 1120.75 | 1120.65 | 0.0202 |
| 3 | - | P5 | 11 | 1126.50 | 1126.05 | 0.0409 |
| P4 | - | P6 | 27 | 1126.05 | 1120.37 | 0.2126 |
| P5 | - | 4 | 3 | 1120.37 | 1120.34 | 0.0098 |
| 5 | - | P8 | 14 | 1159.65 | 1159.37 | 0.0200 |
| P7 | - | P9 | 72 | 1159.37 | 1131.35 | 0.3879 |
| P8 | - | 6 | 3 | 1131.35 | 1130.30 | 0.3500 |
| 7 | - | P11 | 16 | 1159.65 | 1159.32 | 0.0201 |
| P10 | - | P12 | 68 | 1159.32 | 1131.38 | 0.4132 |
| P11 | - | 8 | 7 | 1131.38 | 1131.24 | 0.0200 |
| TOTALS | | 259 | | | | |

3

3

FENCE WOVEN WIRE 4-FT

| STATION - STATION | LOCATION | 616.0100 LF | REMARKS |
|-------------------|----------|-------------|---------|
| 986+41 - 997+38 | RT | 1194 | |
| 1015+69 - 1026+96 | RT | 1241 | |
| 1020+09 - 1026+96 | LT | 728 | MEDIAN |
| 1028+44 - 1034+85 | LT | 696 | MEDIAN |
| 1028+44 - 1039+81 | RT | 1226 | |
| 1098+45 - 1098+99 | LT | 72 | CULVERT |
| 1114+82 - 1127+22 | RT | 1343 | |
| 1128+71 - 1137+55 | RT | 982 | |
| TOTAL | | 7482 | |

SIGNS TYPE I

| SIGN NUMBER | STATION | SIGN CODE | SIZE | MESSAGE | 637.1220 SIGNS TYPE 1 REFLECTIVE SH SF | 635.0300 SIGN SUPPORTS REPLACING BASE CONNECTION BOLTS EACH | 638.2601 REMOVING SIGNS TYPE I EACH | REMARKS |
|---------------|------------|-----------|-------------|----------------------------------|---|---|---|-----------------------|
| 1-01 | 1360+11 RT | E3-1 | 240"X 60" | CENTRAL WIS AIRPORT EXIT 179 | 100.00 | 1 | 1 | PUT ON EXISTING POSTS |
| 1-02 | 1369+66 RT | E4-1A | 204" X 132" | STH 153, MOSINEE, ELDERON, ARROW | 187.00 | 1 | 1 | PUT ON EXISTING POSTS |
| 1-03 | 1369+66 RT | E1-5P | 120"X 30" | EXIT 179 | 25.00 | --- | --- | SAME POSTS AS 1-02 |
| 2-01 | 1416+40 RT | E1-1A | 252"X 114" | KRONENWETTER, MOSINEE, 1 MILE | 199.50 | 1 | 1 | PUT ON EXISTING POSTS |
| 2-02 | 1416+40 RT | E1-5P | 120"X 30" | EXIT 181 | 25.00 | --- | --- | SAME POSTS AS 2-01 |
| 2-03 | 1446+75 RT | D4-4 | 144" X 90" | PARK AND RIDE, EXIT 181 | 90.00 | 1 | 1 | PUT ON EXISTING POSTS |
| 2-04 | 1456+20 RT | E9-1 | 192" X 60" | MAPLE RIDGE RD, EXIT 181 | 80.00 | 1 | 1 | PUT ON EXISTING POSTS |
| 2-05 | 1466+00 RT | E4-1A | 288"X 84" | KRONENWETTER, MOSINEE, ARROW | 168.00 | 1 | 1 | PUT ON EXISTING POSTS |
| 2-06 | 1466+00 RT | E1-5P | 120"X 30" | EXIT 181 | 25.00 | --- | --- | SAME POSTS AS 2-05 |
| TOTALS | | | | | 626.50 | 6 | 6 | |

SIGNS TYPE II

| SIGN NO. | SIGN CODE | MESSAGE | SIZE | 638.2102 MOVING SIGNS TYPE II EACH | 638.3000 REMOVING SMALL SIGN SUPPORTS EACH | 638.2602 REMOVING SIGNS TYPE II EACH | REMARKS |
|---------------|-----------|-----------------------------------|------|--|---|--|-------------|
| 3-01 | | SOUTH 39 SOUTH 51 ARROWS | | 1 | --- | --- | |
| 3-02 | | RAMP CLOSED USE ALT ROUTE | | 1 | --- | --- | |
| 3-03 | | PEDS PROHIBITED | | 1 | --- | --- | |
| 3-04 | | RAMP CLOSED USE ALT ROUTE | | 1 | --- | --- | |
| 3-05 | | SOUTH 34 NORTH 39 NORTH 51 ARROWS | | 1 | --- | --- | |
| 3-06 | | NO LEFT TURN | | 1 | --- | --- | |
| 3-07 | | DO NOT ENTER | | 1 | --- | --- | |
| 3-08 | | STOP | | 1 | --- | --- | |
| 3-09 | | ONE WAY | | --- | 1 | 1 | REMOVE ONLY |
| 3-10 | | DO NOT ENTER | | --- | 1 | 1 | REMOVE ONLY |
| 3-11 | | ONE WAY | | --- | 1 | 1 | REMOVE ONLY |
| 3-12 | | STOP | | 1 | --- | --- | |
| 3-13 | | DOUBLE DOWN ARROW | | 1 | --- | --- | |
| 3-14 | | STOP | | 1 | --- | --- | |
| 3-15 | | DO NOT ENTER | | 1 | --- | --- | |
| 3-16 | | NORTH 39 NORTH 51 ARROWS | | 1 | --- | --- | |
| 3-17 | | NO RIGHT TURN | | 1 | --- | --- | |
| TOTALS | | | | 14 | 3 | 3 | |

DELINEATORS AND DELINEATOR POSTS

| STATION - STATION | LOCATION | SPACING FT | 633.0100 DELINEATOR POSTS STEEL EACH | 633.0500 DELINEATOR REFLECTORS EACH | REMARKS |
|-------------------|----------|------------|--|--|---------------|
| 986+50 - 1144+75 | NB RT | 400 | 40 | 40 | EQUATION |
| 1142+00 - 1160+00 | NB RT | 400 | 5 | 5 | |
| 1160+00 - 1168+50 | NB RT | 100 | 9 | 17 | DOUBLE |
| 1168+50 - 1190+80 | NB RT | 200 | 11 | 11 | |
| 1190+80 - 1204+00 | NB RT | 100 | 13 | 26 | DOUBLE |
| 1204+00 - 1369+66 | NB RT | 400 | 41 | 41 | |
| 1369+66 - 1378+50 | NB RT | 100 | 9 | 18 | DOUBLE |
| 1378+50 - 1395+17 | NB RT | 200 | 8 | 8 | |
| 1395+17 - 1407+50 | NB RT | 100 | 12 | 25 | DOUBLE |
| 1407+50 - 1440+00 | NB RT | 400 | 8 | 8 | |
| 168+50 - 178+50 | KB RT | 100 | 10 | 10 | RAMP |
| 180+50 - 190+75 | KA RT | 100 | 10 | 10 | RAMP |
| 78+50 - 85+89 | MB LT | 100 | 7 | 7 | RAMP |
| 87+57 - 95+15 | MA LT | 100 | 8 | 8 | RAMP |
| 995+50 | MEDIAN | --- | 2 | 4 | DOUBLE YELLOW |
| 1098+75 | MEDIAN | --- | 2 | 4 | DOUBLE YELLOW |
| 1146+50 | MEDIAN | --- | 2 | 4 | DOUBLE YELLOW |
| 1207+50 | MEDIAN | --- | 2 | 4 | DOUBLE YELLOW |
| 1294+75 | MEDIAN | --- | 2 | 4 | DOUBLE YELLOW |
| 1358+25 | MEDIAN | --- | 2 | 4 | DOUBLE YELLOW |
| 1432+50 | MEDIAN | --- | 2 | 4 | DOUBLE YELLOW |
| TOTALS | | | 205 | 262 | |

TRAFFIC CONTROL

| LOCATION | STAGE | DAYS | QTY | 643.0300 DRUMS | | 643.0420 BARRICADES TYPE III | | 643.0705 WARNING LIGHTS TYPE A | | 643.0715 WARNING LIGHTS TYPE C | | 643.0800 ARROW BOARDS | | 643.0900 TRAFFIC CONTROL SIGNS | | 643.1205.S BASIC TRAFFIC QWS | | REMARKS |
|--------------------------------------|-------|------|--------------|----------------|-------------|------------------------------|-------------|--------------------------------|------------|--------------------------------|------------|-----------------------|-------------|--------------------------------|-----------|------------------------------|-----|---------------------------------|
| | | | | DAY | QTY | DAY | QTY | DAY | QTY | DAY | QTY | DAY | QTY | DAY | QTY | DAY | QTY | |
| STAGE 1 | 5 | 26 | 130 | 2 | 10 | 4 | 20 | 0 | 0 | 0 | 0 | 6 | 30 | 0 | 0 | | | STH 34 NB ON RAMP TEMP WIDENING |
| STAGE 1 SUBTOTAL | | | 130 | | 10 | | 20 | | 0 | | 0 | | 30 | | 0 | | | |
| STAGE 2 | 14 | 37 | 518 | 10 | 140 | 20 | 280 | 7 | 98 | 1 | 14 | 25 | 350 | 0 | 0 | | | STH 34 PAVEMENT REPLACEMENT |
| STAGE 2 NB RAMP CLOSURE | 6 | 43 | 258 | 4 | 24 | 8 | 48 | 0 | 0 | 0 | 0 | 30 | 180 | 0 | 0 | | | |
| STAGE 2A | 5 | 43 | 215 | 3 | 15 | 6 | 30 | 0 | 0 | 0 | 0 | 12 | 60 | 0 | 0 | | | |
| STAGE 2 SUBTOTAL | | | 518 | | 140 | | 280 | | 98 | | 14 | | 350 | | 0 | | | |
| PASSING LANE CLOSURE | 21 | 488 | 10248 | 37 | 777 | 74 | 1554 | 15 | 315 | 2 | 42 | 40 | 840 | 1 | 21 | | | |
| PASSING LANE CLOSURE SUBTOTAL | | | 10248 | | 777 | | 1554 | | 315 | | 42 | | 840 | | 21 | | | |
| DRIVING LANE CLOSURE | 21 | 611 | 12831 | 37 | 777 | 74 | 1554 | 15 | 315 | 2 | 42 | 40 | 840 | 1 | 21 | | | |
| STAGE 2 NB RAMP CLOSURE | 6 | 40 | 240 | 4 | 24 | 8 | 48 | 0 | 0 | 0 | 0 | 6 | 36 | 0 | 0 | | | TYPICAL RAMP CLOSURE MAINLINE |
| DRIVING LANE CLOSURE SUBTOTAL | | | 13071 | | 801 | | 1602 | | 315 | | 42 | | 876 | | 21 | | | |
| SUBTOTAL FROM RAMP CLOSURES | | | 276 | | 28 | | 56 | | 56 | | 8 | | 260 | | 0 | | | |
| TOTALS | | | 24243 | | 1756 | | 3512 | | 784 | | 106 | | 2356 | | 42 | | | |

TRAFFIC CONTROL SIGNS PCMS WITH CELLULAR COMMUNICATIONS

| PCMS # | LOCATION | PRIOR TO CLOSURE DAYS | DURING CLOSURE DAYS | 643.1051 DAY | REMARKS |
|--------|-------------------|-----------------------|---------------------|--------------|-------------------------|
| 39-01 | SEE PCMS MESSAGES | *7 | 14 | 21 | |
| 34-01 | SEE PCMS MESSAGES | 3 | 0 | 3 | STAGE 2A - RAMP CLOSURE |
| 34-02 | SEE PCMS MESSAGES | 3 | 0 | 3 | STAGE 2A - ROAD CLOSURE |
| 153-01 | SEE PCMS MESSAGES | 3 | 2 | 3 | RAMP CLOSURE |
| 153-02 | SEE PCMS MESSAGES | 3 | 0 | 3 | RAMP CLOSURE |
| | | | TOTAL | 33 | |

*PRIOR TO CONSTRUCTION

TRAFFIC CONTROL COVERING SIGNS

| LOCATION | CYCLES | NUMBER OF SIGNS | 643.0910 TYPE I EACH | 643.0920 TYPE II EACH | REMARKS |
|-----------------------------|--------|-----------------|----------------------|-----------------------|----------|
| IH 39 NB OFF RAMP TO STH 34 | 1 | 3 | 1 | 1 | STAGE 2A |
| IH 39 NB OFF RAMP TO STH 34 | 1 | 2 | 2 | --- | STAGE 2B |
| BALSAM FIR RD | 1 | 2 | --- | 2 | STAGE 2 |
| TOTALS | | | 3 | 3 | |

TRAFFIC CONTROL SIGNS FIXED MESSAGE

| MESSAGE | SIZE | QTY | 643.1000 SF | REMARKS |
|----------------------------|---------|-----|--------------|----------|
| NO ACCESS TO BALSAM FIR RD | 78"X24" | 1 | 13.00 | STAGE 2A |
| TOTAL | | | 13.00 | |

TEMPORARY MARKING LINE PAINT & TAPE

| STATION - STATION | LOCATION | APPROXIMATE SERVICE PERIOD | 649.0105 PAINT 4-INCH | | 649.0205 8-INCH LF | 649.0150 TAPE 4-INCH | | REMARKS |
|-------------------|------------|----------------------------|-----------------------|--------------|--------------------|----------------------|------------|--------------------------|
| | | | WHITE LF | YELLOW LF | | WHITE LF | YELLOW LF | |
| 986+50 - 1144+75 | NB CL | 3 WEEKS | 3956 | --- | --- | --- | --- | PRIOR TO GROOVED MARKING |
| 1142+00 - 1440+00 | NB CL | 5 WEEKS | 7450 | --- | --- | --- | --- | PRIOR TO GROOVED MARKING |
| 986+50 - 1144+75 | NB | 5 WEEKS | 15825 | 15825 | --- | --- | --- | PRIOR TO GROOVED MARKING |
| 1142+00 - 1440+00 | NB | 5 WEEKS | 29800 | 29800 | 2178 | --- | --- | PRIOR TO GROOVED MARKING |
| 200+90 - 205+25 | K | 5 WEEKS | --- | 870 | --- | --- | --- | PRIOR TO GROOVED MARKING |
| 168+50 - 178+88 | KB LT & RT | 5 WEEKS | 1038 | 1038 | 50 | --- | --- | PRIOR TO GROOVED MARKING |
| 180+50 - 190+75 | KA LT & RT | 5 WEEKS | 1025 | 1025 | 50 | --- | --- | PRIOR TO GROOVED MARKING |
| 78+50 - 85+89 | MB LT & RT | 2 WEEKS | 739 | 739 | 50 | --- | --- | PRIOR TO GROOVED MARKING |
| 87+57 - 95+15 | MA LT & RT | 2 WEEKS | 758 | 758 | 50 | --- | --- | PRIOR TO GROOVED MARKING |
| 79+85 - 84+00 | KAT | 2 WEEKS | 415 | 415 | --- | --- | --- | STAGE 2 |
| 196+50 - 201+10 | K | 2 WEEKS | --- | --- | --- | 460 | 460 | STAGE 2 |
| 201+10 - 203+12 | K | 2 WEEKS | 202 | 202 | --- | --- | --- | STAGE 2 |
| SUBTOTAL | | | 61208 | 50672 | | 460 | 460 | |
| TOTALS | | | 111880 | | 2378 | | 920 | |

MARKING LINE GROOVED WET REF EPOXY

| STATION - STATION | LOCATION | 646.1040 4-INCH WHITE LF | 646.1040 4-INCH YELLOW LF | 646.3040 8-INCH WHITE LF | REMARKS |
|-------------------|------------|--------------------------|---------------------------|--------------------------|----------------------------|
| | | 986+50 - 1144+75 | NB LT/CL | 3956 | |
| 1142+00 - 1440+00 | NB LT/CL | 7450 | 29800 | --- | EDGE LINE AND CENTERLINE |
| 986+50 - 1144+75 | NB RT | 15825 | --- | --- | EDGE LINE/EQUATION |
| 1142+00 - 1161+00 | NB RT | 1900 | --- | --- | EDGE LINE |
| 1161+00 - 1169+00 | NB RT | 1000 | --- | 371 | EDGE LINE AND CHANNELIZING |
| 1169+00 - 1190+30 | NB RT | 2130 | --- | --- | EDGE LINE |
| 1190+30 - 1202+33 | NB RT | 1203 | --- | 714 | EDGE LINE AND CHANNELIZING |
| 1202+33 - 1371+00 | NB RT | 16867 | --- | --- | EDGE LINE |
| 1371+00 - 1379+00 | NB RT | 1000 | --- | 393 | EDGE LINE AND CHANNELIZING |
| 1379+00 - 1394+68 | NB RT | 1568 | --- | --- | EDGE LINE |
| 1394+68 - 1408+00 | NB RT | 1332 | --- | 700 | EDGE LINE AND CHANNELIZING |
| 1408+00 - 1440+00 | NB RT | 3200 | --- | --- | EDGE LINE |
| 200+90 - 204+05 | K | 451 | 480 | --- | EDGE LINE AND CENTERLINE |
| 168+50 - 178+88 | KB LT & RT | 1000 | 1016 | 50 | KB RAMP |
| 180+50 - 190+75 | KA LT & RT | 1025 | 1025 | 50 | KA RAMP |
| 78+50 - 85+89 | MB LT & RT | 739 | 739 | 50 | MB RAMP |
| 87+57 - 95+20 | MA LT & RT | 763 | 763 | 50 | MA RAMP |
| SUBTOTAL | | 61409 | 49648 | 2378 | |
| TOTAL | | 111057 | | 2378 | |

MARKING OUTFALL AND CHEVRON EPOXY

| STATION - STATION | LOCATION | 646.5520 MARKING OUTFALL EPOXY EACH | 646.7220 MARKING CHEVRON EPOXY 24-INCH LF | REMARKS |
|-------------------|------------|-------------------------------------|---|---------|
| | | 986+50 - 1144+75 | NB LT & RT | |
| 1142+00 - 1442+00 | NB LT & RT | 240 | --- | |
| 1166+90 - 1168+50 | NB RT | --- | 175 | |
| 1630+66 - 1633+15 | NB RT | --- | 175 | |
| TOTAL | | 367 | 350 | |

MARKING LINE EPOXY

| STATION - STATION | LOCATION | 646.1020 4-INCH WHITE LF | 646.1020 4-INCH YELLOW LF | 646.3020 8-INCH WHITE LF | REMARKS |
|-------------------|----------|--------------------------|---------------------------|--------------------------|---------------|
| | | 198+00 - 200+90 | K | 580 | |
| 204+05 - 205+10 | K | 193 | 210 | 88 | BALSAM FIR RD |
| SUBTOTAL | | 773 | 790 | 88 | |
| TOTAL | | 1563 | | 88 | |

TEMPORARY MARKING REMOVABLE MASK OUT TAPE

| STATION - STATION | LOCATION | CYCLES | APPROXIMATE SERVICE PERIOD | 649.0960 6-INCH LF | REMARKS |
|-------------------|----------|--------|----------------------------|--------------------|-----------------------|
| | | | PER CYCLE | LF | |
| 195+50 - 196+50 | K | 1 | 2 WEEKS | 100 | STAGE 2A - CENTERLINE |
| 196+50 - 198+30 | K | 1 | 2 WEEKS | 360 | STAGE 2A - CENTERLINE |
| 198+00 - 201+00 | K | 1 | 2 WEEKS | 300 | STAGE 2A - EDGE LINE |
| TOTALS | | | | 760 | |

MARKING REMOVAL LINE

| STATION - STATION | LOCATION | 646.9000 4-INCH LF | REMARKS |
|-------------------|----------|--------------------|----------------------|
| | | 201+00 - 203+10 | |
| 183+17 - 184+20 | KA | 103 | STAGE 2A - EDGE LINE |
| TOTAL | | 313 | |

MARKING STOP LINE EPOXY 18-INCH

| STATION | LOCATION | 646.6120 LF | REMARKS |
|--------------|----------|-------------|---------|
| | | 178+87KB | |
| TOTAL | | 55 | |

3

TOPSOIL, MULCH, SEED AND EROSION MAT

| *628.2008 | | | | | | | |
|-----------------|----------|----------|------------|----------|-----------------|---------|----------------|
| EROSION MAT | | | | | | | |
| STATION | LOCATION | 625.0100 | 629.0210 | 630.0130 | 628.6505 | REMARKS | |
| | | TOPSOIL | FERTILIZER | SEEDING | SOIL STABILIZER | | |
| | | SY | TYPE B | MIXTURE | TYPE A | | |
| | | | SY | CWT | #30 | ACRE | |
| 202+25 - 203+15 | K LT | --- | --- | 0.02 | 0.5 | --- | |
| 202+25 - 203+00 | K RT | --- | --- | 0.06 | 1.7 | --- | |
| 79+91 - 83+69 | KAT LT | --- | --- | --- | --- | 0.241 | TEMPORARY RAMP |
| 79+91 - 80+86 | KAT RT | --- | --- | --- | --- | 0.008 | TEMPORARY RAMP |
| 177+31 - 178+58 | KB LT | 128 | 128 | 0.19 | 5.6 | --- | SW QUAD |
| 177+31 - 179+04 | KB RT | 306 | 306 | 0.29 | 8.3 | --- | SE QUAD |
| 180+00 - 183+80 | KA LT | 1698 | 1698 | 1.35 | 38.6 | --- | NW QUAD |
| 179+87 - 182+00 | KA RT | 85 | 85 | 0.05 | 1.6 | --- | NE QUAD |
| TOTAL | | 2216 | 2216 | 1.96 | 56.3 | 0.249 | |

*SEE EROSION MAT URBAN CLASS I TYPE B FOR ADDITIONAL QUANTITIES

SILT FENCE

| STATION | LOCATION | 628.1520 | | REMARKS |
|---------|----------|----------|-------------|---------|
| | | 628.1504 | MAINTENANCE | |
| | | LF | LF | |
| 1022+75 | NB LT | 151 | 151 | |
| 1023+25 | NB RT | 115 | 115 | |
| 1026+25 | NB LT | 117 | 117 | |
| 1026+25 | NB RT | 118 | 118 | |
| 1123+00 | NB LT | 161 | 161 | |
| 1123+50 | NB RT | 152 | 152 | |
| 1126+50 | NB LT | 107 | 107 | |
| 1126+50 | NB RT | 107 | 107 | |
| 1225+25 | NB RT | 62 | 62 | |
| 1230+25 | NB RT | 48 | 48 | |
| 1357+75 | NB RT | 151 | 151 | |
| 1381+86 | NB LT | 166 | 166 | |
| 178+00 | KB LT | 161 | 161 | |
| 178+00 | KB RT | 224 | 224 | |
| 181+00 | KA LT | 310 | 310 | |
| TOTALS | | 2150 | 2150 | |

3

EROSION MAT URBAN CLASS I TYPE B

| *628.2008 | | | |
|-----------|----------|------|-------------|
| STATION | LOCATION | SY | REMARKS |
| 1023+50 | LT | 219 | GUARDRAIL |
| 1024+00 | RT | 102 | GUARDRAIL |
| 1026+75 | LT & RT | 369 | STORM SEWER |
| 1098+66 | LT | 40 | CULVERT |
| 1123+75 | LT | 86 | GUARDRAIL |
| 1124+25 | RT | 184 | GUARDRAIL |
| 1181+00 | LT | 36 | CULVERT |
| 1244+36 | RT | 36 | CULVERT |
| 1252+00 | RT | 36 | CULVERT |
| 1269+90 | RT | 36 | CULVERT |
| 1282+92 | RT | 36 | CULVERT |
| 1312+00 | RT | 36 | CULVERT |
| 1333+35 | RT | 31 | CULVERT |
| 1345+00 | RT | 36 | CULVERT |
| 1348+00 | RT | 36 | CULVERT |
| 1358+75 | RT | 133 | GUARDRAIL |
| 1382+75 | LT | 36 | GUARDRAIL |
| 1383+25 | RT | 41 | GUARDRAIL |
| 1412+84 | LT | 36 | CULVERT |
| 1412+84 | RT | 36 | CULVERT |
| 201+10K | RT | 89 | STORM SEWER |
| 201+18K | LT | 89 | STORM SEWER |
| 201+49K | RT | 89 | STORM SEWER |
| 201+55K | LT | 89 | STORM SEWER |
| TOTAL | | 1954 | |

*SEE TOPSOIL, MULCH, SEED & EROSION MAT FOR ADDITIONAL QUANTITIES

CONCRETE SURFACE DRAINS AND ASPHALTIC FLUMES

| STATION | LOCATION | 416.1010 | 416.1015 | REMARKS |
|---------|----------|----------|------------|---------|
| | | CONCRETE | CONCRETE | |
| | | SURFACE | SURFACE | |
| | | DRAINS | DRAINS HES | |
| | | CY | CY | |
| 1126+73 | LT | 6 | --- | |
| 1126+79 | RT | 3 | --- | |
| 1127+17 | RT | --- | 2 | |
| 1385+71 | LT | 4 | --- | |
| 1385+70 | RT | 2 | --- | |
| TOTAL | | 15 | 2 | |

ASPHALTIC FLUMES, RIPRAP & GEOTEXTILE

| STATION | LOCATION | 465.0315 | 606.0200 | 645.0120 | REMARKS |
|----------|----------|-----------|----------|------------|---------|
| | | ASPHALTIC | RIPRAP | GEOTEXTILE | |
| | | FLUMES | MEDIUM | TYPE HR | |
| | | SY | CY | SY | |
| 204+08K | RT | 10 | --- | --- | |
| 180+20KA | LT | 10 | --- | --- | |
| 180+36KA | RT | 10 | --- | --- | |
| 178+45KB | RT | 13 | 3 | 10 | |
| TOTAL | | 43 | 3 | 10 | |

SEED WATER

| STATION - STATION | LOCATION | WEEKS | 630.0500 | REMARKS |
|-------------------|----------|-------|----------|---------|
| | | | MGAL | |
| UNDISTRIBUTED | | 4 | 19.0 | |
| TOTAL | | | 19.0 | |

MOBILIZATIONS EROSION CONTROL

| LOCATION | 628.1905 | 628.1910 | REMARKS |
|---------------------|---------------|---------------|---------|
| | MOBILIZATIONS | MOBILIZATIONS | |
| | EROSION | EROSION | |
| | CONTROL | CONTROL | |
| | EACH | EACH | |
| STH 34/STH 34 RAMPS | 2 | 2 | |
| IH 39 | 1 | 1 | |
| TOTALS | | 3 | 3 |

GRADING, SHAPING, AND FINISHING FOR CROSSDRAIN RESTORATION

| STATION | LOCATION | SPV.0060.01 EACH | *COMMON CY | *BORROW CY | *TOPSOIL SY | *SEED LBS | *FERTILIZER CWT | REMARKS |
|---------------|----------|---------------------|---------------|---------------|----------------|--------------|--------------------|--|
| 1026+75 | LT & RT | 2 | 5 | 0 | 184 | 3.3 | 0.12 | EXISTING REMOVAL & PROPOSED INSTALLATION |
| 1098+66 | LT | 1 | 8 | 0 | 40 | 0.7 | 0.02 | TWIN 42 INCH |
| 1181+00 | LT | 1 | 5 | 0 | 86 | 1.6 | 0.05 | 36 INCH |
| 1230+50 | RT | 1 | 5 | 0 | 36 | 0.6 | 0.02 | 30 INCH |
| 1244+36 | RT | 1 | 5 | 0 | 184 | 3.3 | 0.12 | 36 INCH |
| 1252+00 | RT | 1 | 5 | 0 | 36 | 0.6 | 0.02 | 24 INCH |
| 1269+90 | RT | 1 | 5 | 0 | 36 | 0.6 | 0.02 | 30 INCH |
| 1282+92 | RT | 1 | 5 | 0 | 36 | 0.6 | 0.02 | 30 INCH |
| 1312+00 | RT | 1 | 5 | 0 | 36 | 0.6 | 0.02 | 18 INCH |
| 1333+35 | RT | 1 | 5 | 0 | 36 | 0.6 | 0.02 | 42 INCH |
| 1345+00 | RT | 1 | 5 | 0 | 36 | 0.6 | 0.02 | 36 INCH |
| 1348+00 | RT | 1 | 5 | 0 | 31 | 0.6 | 0.02 | 24 INCH |
| 1412+84 | LT | 1 | 5 | 0 | 36 | 0.6 | 0.02 | 24 INCH |
| 1412+84 | RT | 1 | 5 | 0 | 36 | 0.6 | 0.02 | 24 INCH |
| 201+10K | RT | 1 | 5 | 0 | 89 | 1.6 | 0.06 | EXISTING REMOVAL |
| 201+18K | LT | 1 | 5 | 0 | 89 | 1.6 | 0.06 | PROPOSED INSTALLATION |
| 201+49K | RT | 1 | 5 | 0 | 89 | 1.6 | 0.06 | EXISTING REMOVAL |
| 201+55K | LT | 1 | 5 | 0 | 89 | 1.6 | 0.06 | PROPOSED INSTALLATION |
| TOTALS | | 19 | 93 | 0 | 1204 | 21.7 | 0.76 | |

*FOR INFORMATION ONLY

SAWING ASPHALT

| STATION | LOCATION | 690.0150 LF | REMARKS |
|-------------------|----------|----------------|-----------|
| 177+33 | KB | 11 | SHOULDER |
| 182+00 | KA | 11 | SHOULDER |
| 203+00 | K | 44 | STH 34 |
| 204+25 | K | 44 | STH 34 |
| 1024+12 - 1026+84 | LT | 275 | GUARDRAIL |
| 1024+50 - 1026+84 | RT | 250 | GUARDRAIL |
| 1124+32 - 1127+16 | LT | 275 | GUARDRAIL |
| 1124+75 - 1127+16 | RT | 250 | GUARDRAIL |
| 1359+32 - 1362+09 | RT | 277 | GUARDRAIL |
| TOTAL | | 1437 | |

CONSTRUCTION STAKING

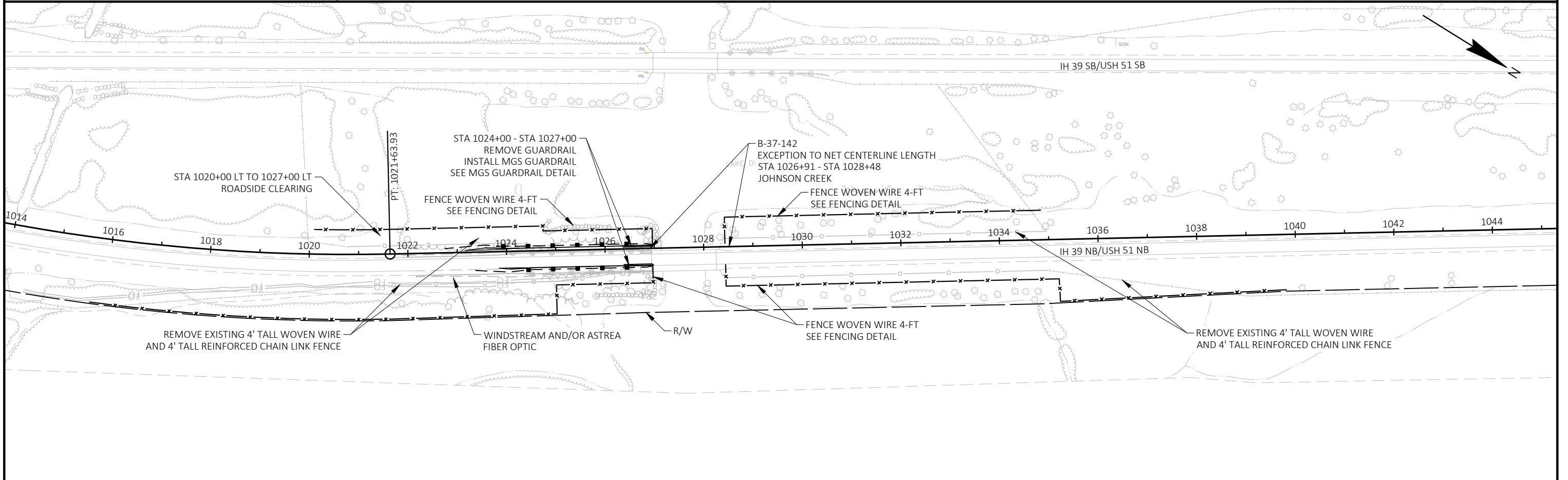
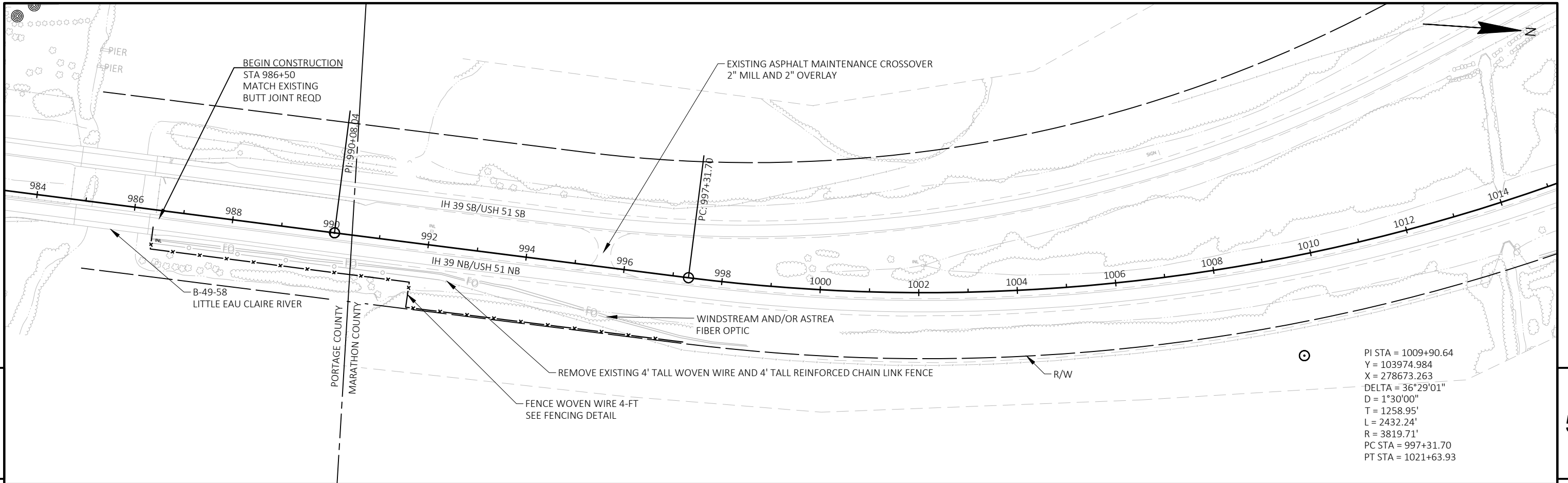
| STATION - STATION | 650.4500 SUBGRADE LF | 650.5000 BASE LF | 650.8000 RESURFACING REFERENCE LF | 650.9920 SLOPE STAKES LF | REMARKS |
|-------------------|----------------------------|------------------------|--|-----------------------------------|--------------------|
| 986+50 - 1144+75 | --- | --- | 15,825 | --- | EQUATION |
| 1142+00 - 1440+00 | --- | --- | 29,800 | --- | |
| 201+00 - 206+00 | --- | --- | 500 | 100 | STH 34 |
| 166+05 - 179+12 | 178 | 178 | 1,307 | 178 | KB RAMP |
| 179+64 - 192+60 | 212 | 212 | 1,296 | 212 | KA RAMP |
| 75+80 - 86+00 | --- | --- | 1,020 | --- | MB RAMP |
| 87+50 - 97+00 | --- | --- | 950 | --- | MA RAMP |
| 79+86 - 84+00 | 414 | 414 | --- | 414 | KAT TEMPORARY RAMP |
| TOTALS | 804 | 804 | 50,698 | 904 | |

CONSTRUCTION STAKING

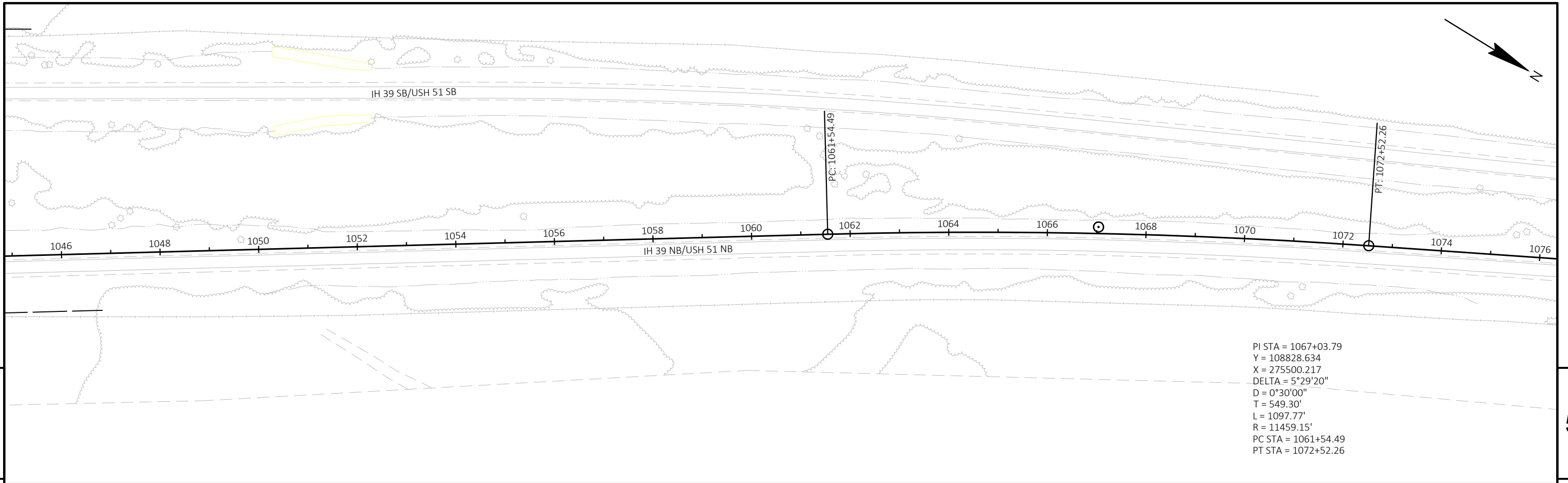
| STATION - STATION | 650.4000 STORM SEWER EACH | 650.5500 CURB GUTTER CURB & GUTTER LF | REMARKS |
|-------------------|------------------------------------|--|----------------------|
| 1026+38 - 1026+96 | --- | 58 | LEFT |
| 1026+39 - 1026+96 | --- | 58 | RIGHT |
| 1026+53 | 1 | --- | INLET LEFT |
| 1026+53 | 1 | --- | ENDWALL LEFT |
| 1026+53 | 1 | --- | INLET RIGHT |
| 1026+53 | 1 | --- | ENDWALL RIGHT |
| 1126+61 - 1127+16 | --- | 55 | LEFT |
| 1126+67 - 1127+22 | --- | 55 | RIGHT |
| 1385+59 - 1386+15 | --- | 56 | LEFT |
| 1385+58 - 1386+15 | --- | 57 | RIGHT |
| 201+49 | 1 | --- | K RAMP INLET RIGHT |
| 201+49 | 1 | --- | K RAMP ENDWALL RIGHT |
| 201+56 | 1 | --- | K RAMP INLET LEFT |
| 201+56 | 1 | --- | K RAMP ENDWALL LEFT |
| 201+03 - 201+64 | --- | 61 | K RAMP LEFT |
| 201+10 - 201+71 | --- | 61 | K RAMP RIGHT |
| 178+50 - 179+06 | --- | 68 | KB RAMP RIGHT |
| 179+83 - 180+31 | --- | 54 | KA RAMP LEFT |
| 179+83 - 180+31 | --- | 72 | KA RAMP RIGHT |
| TOTALS | 8 | 655 | |

SAWING CONCRETE

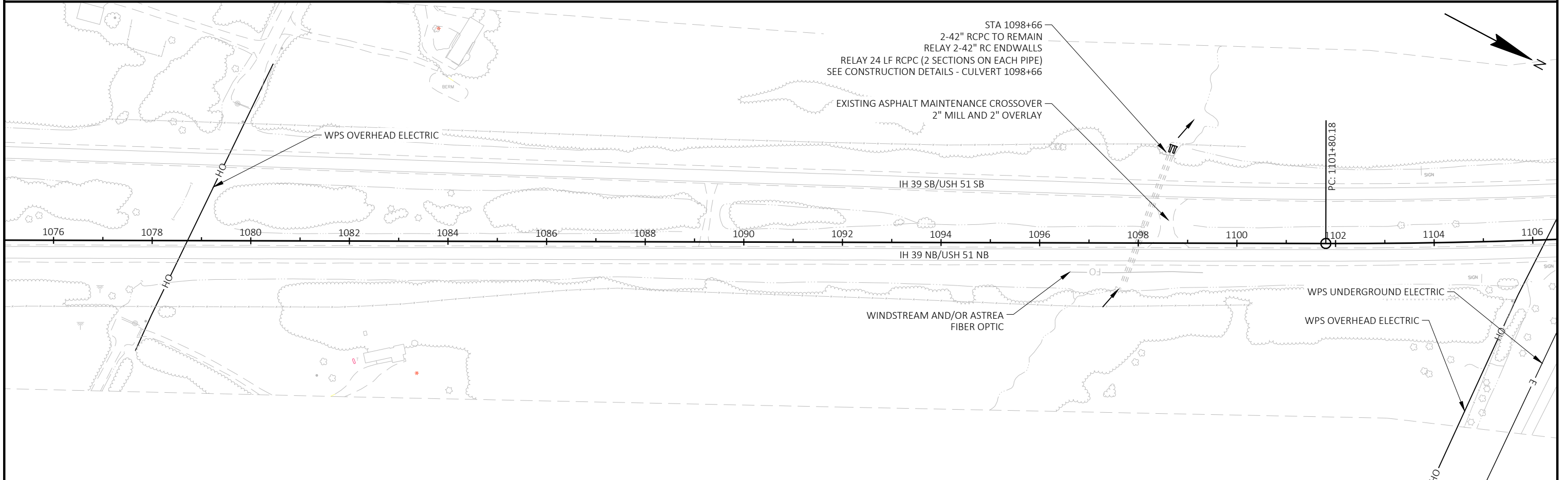
| STATION | LOCATION | 690.0250 LF | REMARKS |
|--------------|----------|----------------|---------|
| 1026+93 | LT | 9 | |
| 1026+93 | RT | 15 | |
| 201+10 | K RT | 17 | |
| 201+16 | K LT | 16 | |
| 177+33 | KB | 15 | |
| 182+00 | KA | 15 | |
| TOTAL | | 87 | |



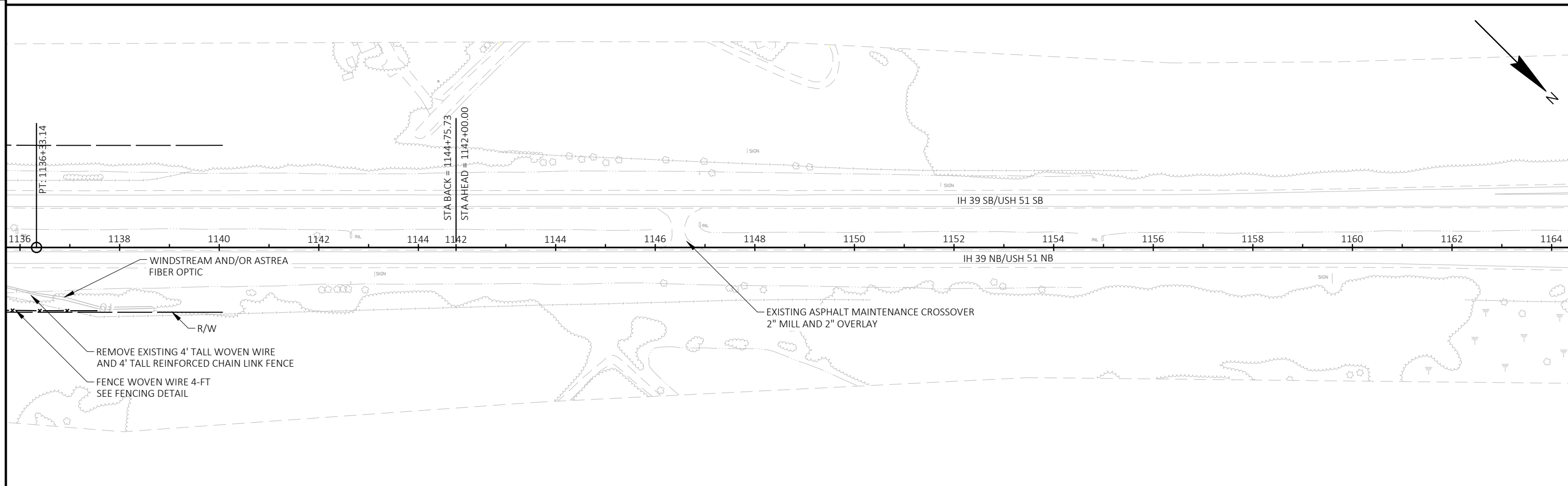
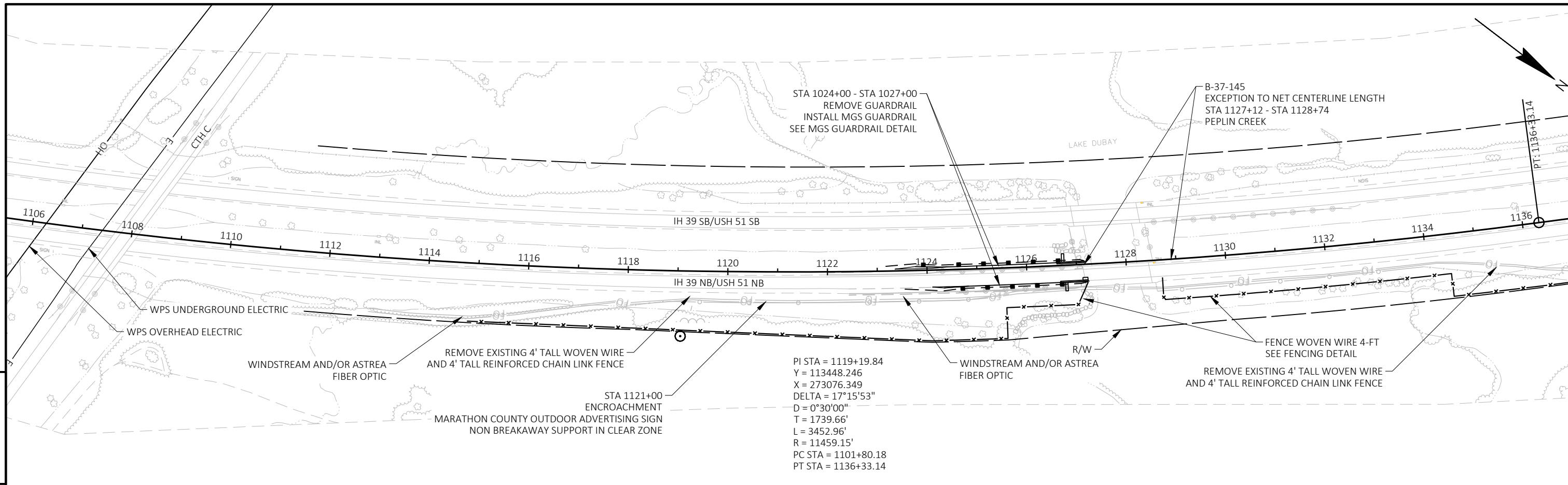
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|------------------------|------------|------------------|------|-------|---|
| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | PLAN | SHEET | E |
|------------------------|------------|------------------|------|-------|---|



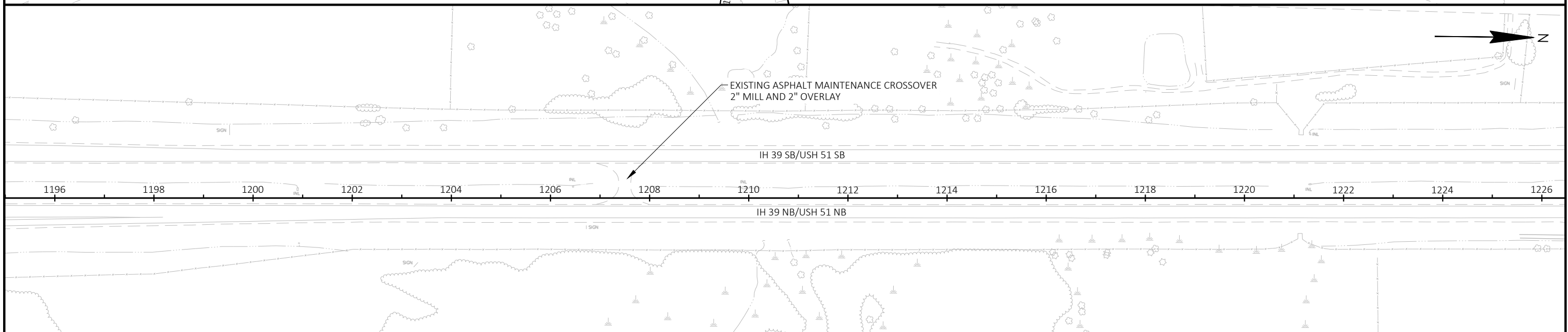
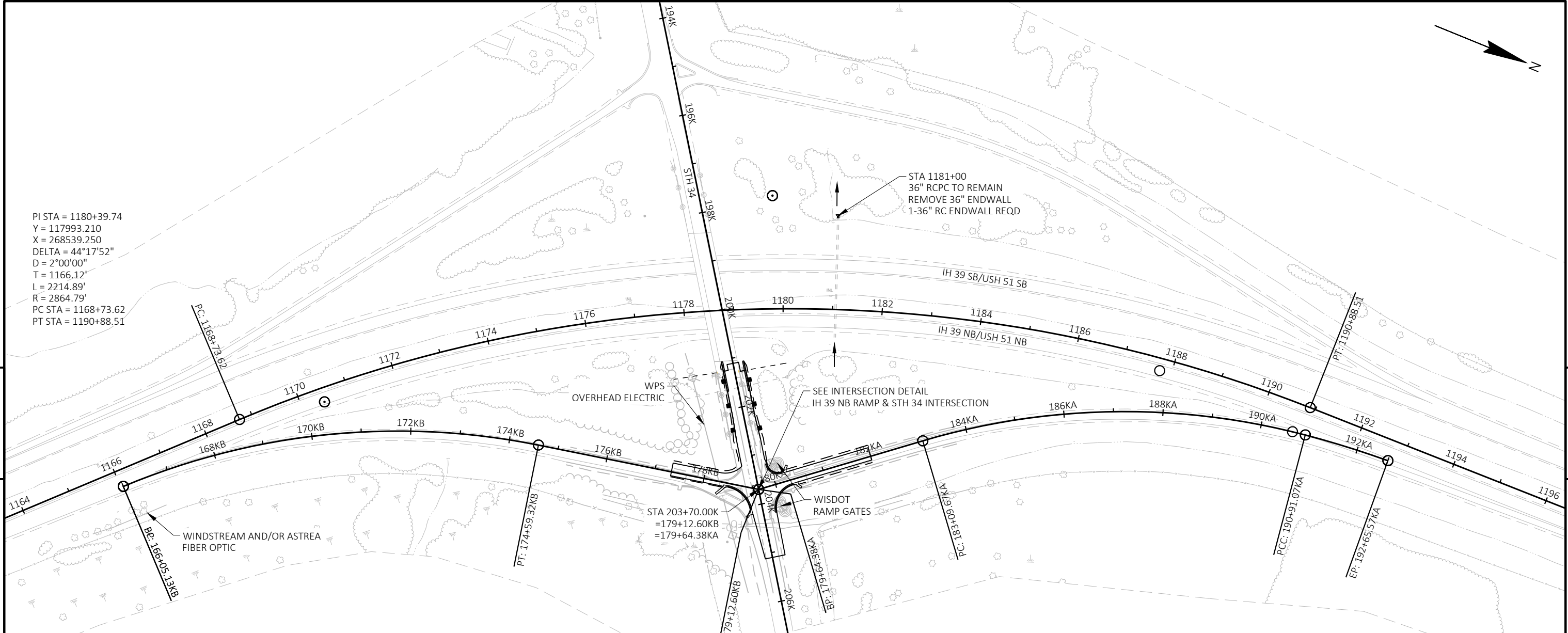
PI STA = 1067+03.79
 Y = 108828.634
 X = 275500.217
 DELTA = 5°29'20"
 D = 0°30'00"
 T = 549.30'
 L = 1097.77'
 R = 11459.15'
 PC STA = 1061+54.49
 PT STA = 1072+52.26



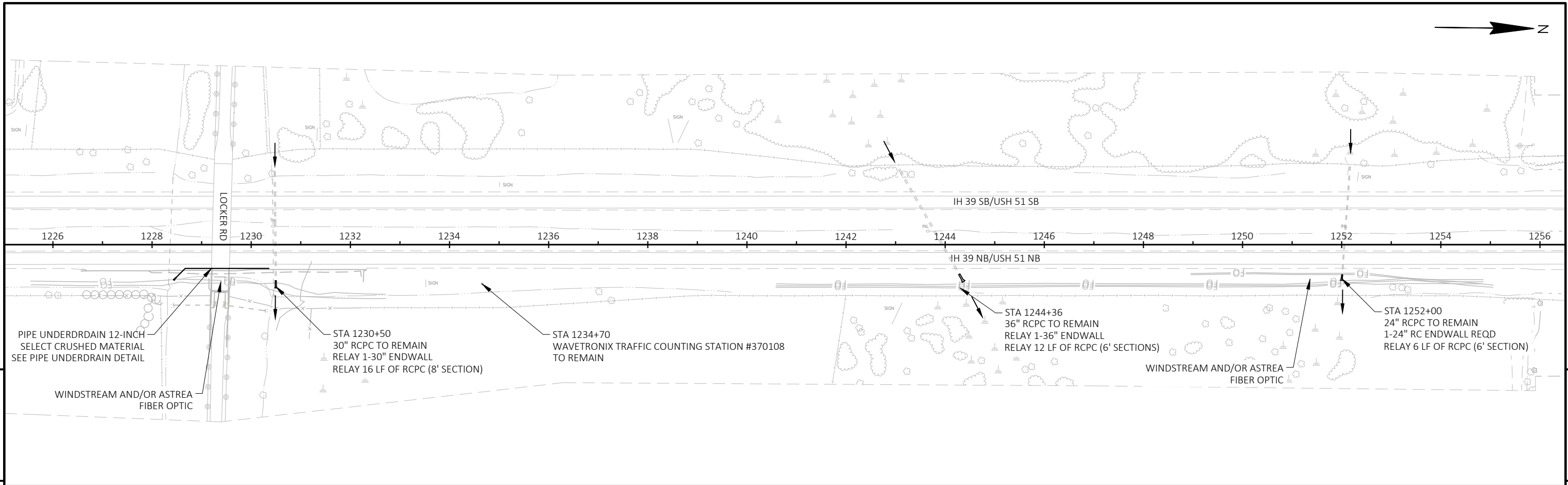
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| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | PLAN | SHEET | E |
|------------------------|------------|------------------|------|-------|---|



| | | | | | |
|------------------------|------------|------------------|------|-------|---|
| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | PLAN | SHEET | E |
|------------------------|------------|------------------|------|-------|---|

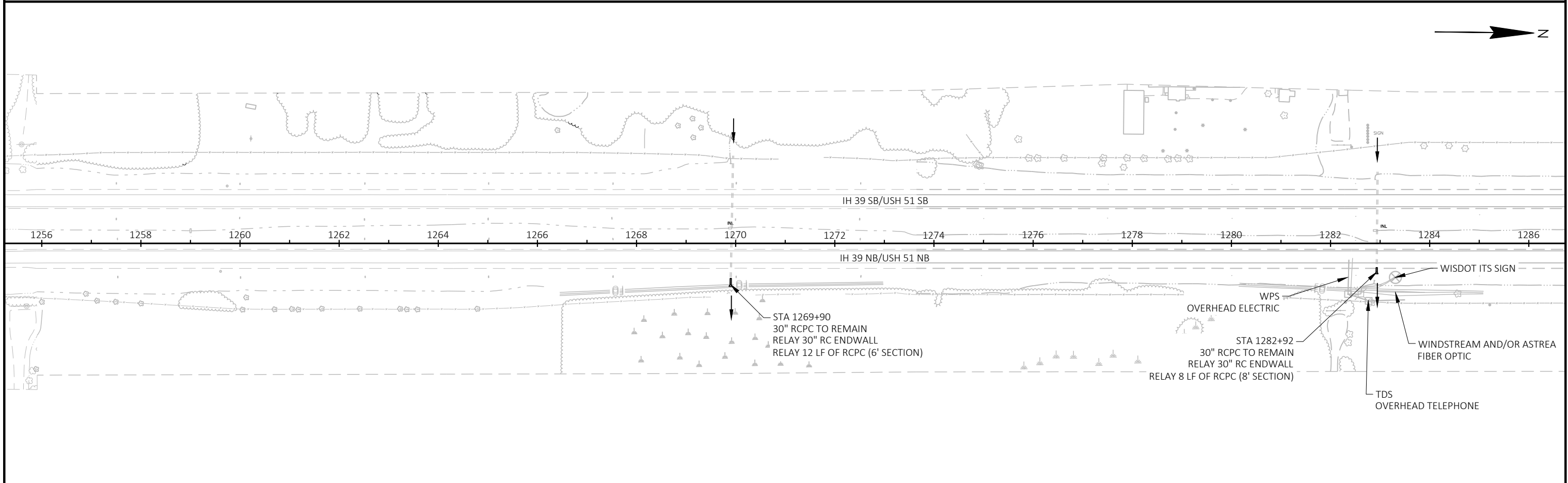


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|------------------------|------------|------------------|------|-------|----------|
| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | PLAN | SHEET | E |
|------------------------|------------|------------------|------|-------|----------|

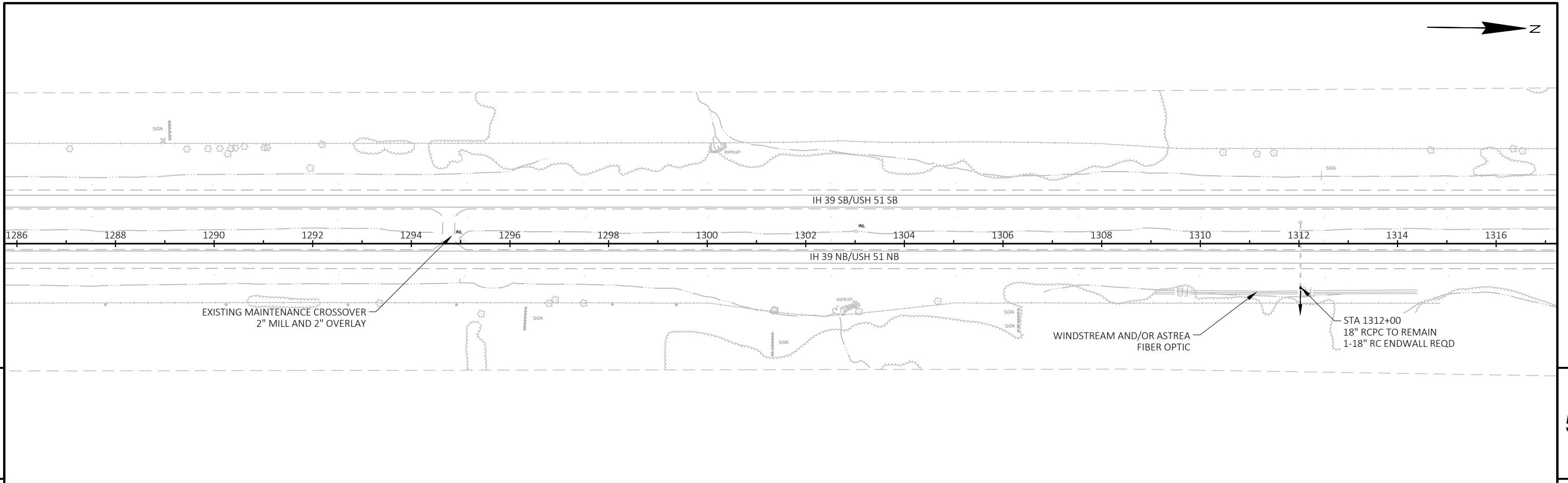


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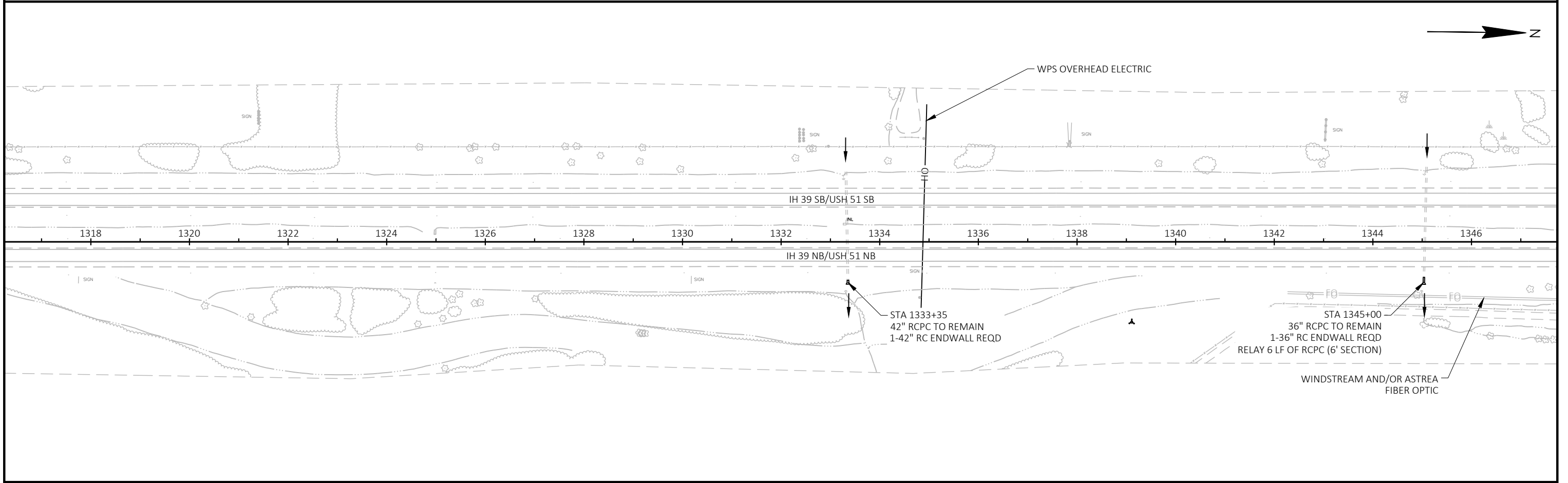


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|------------------------|------------|------------------|------|-------|---|
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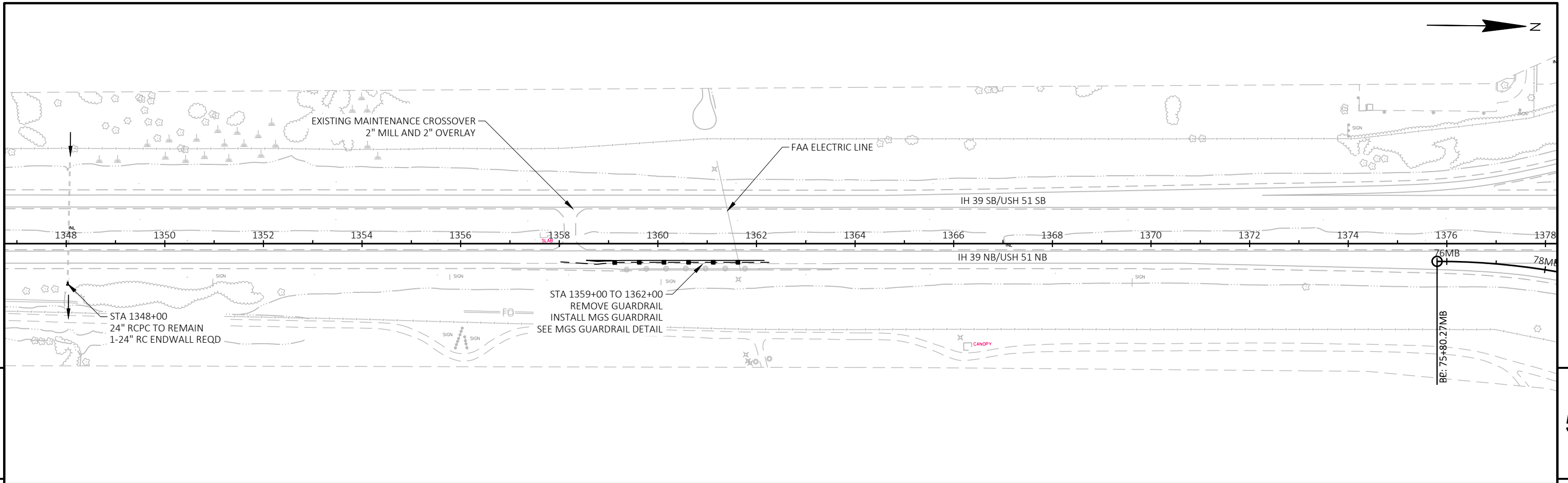


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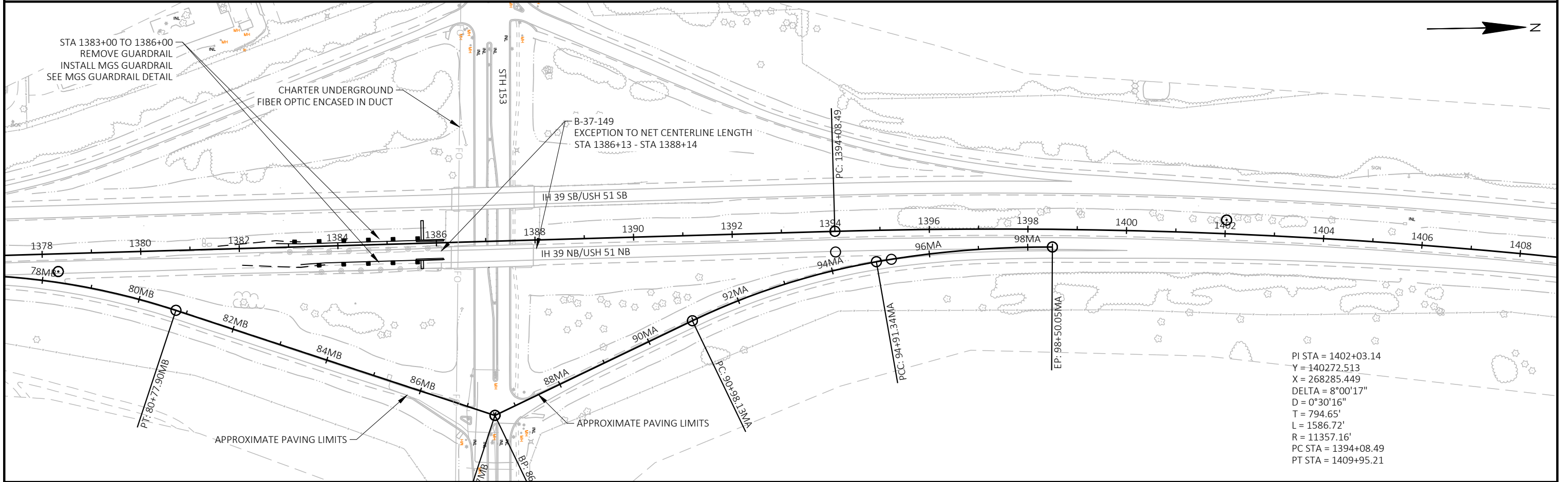


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| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | PLAN | SHEET | E |
|------------------------|------------|------------------|------|-------|---|

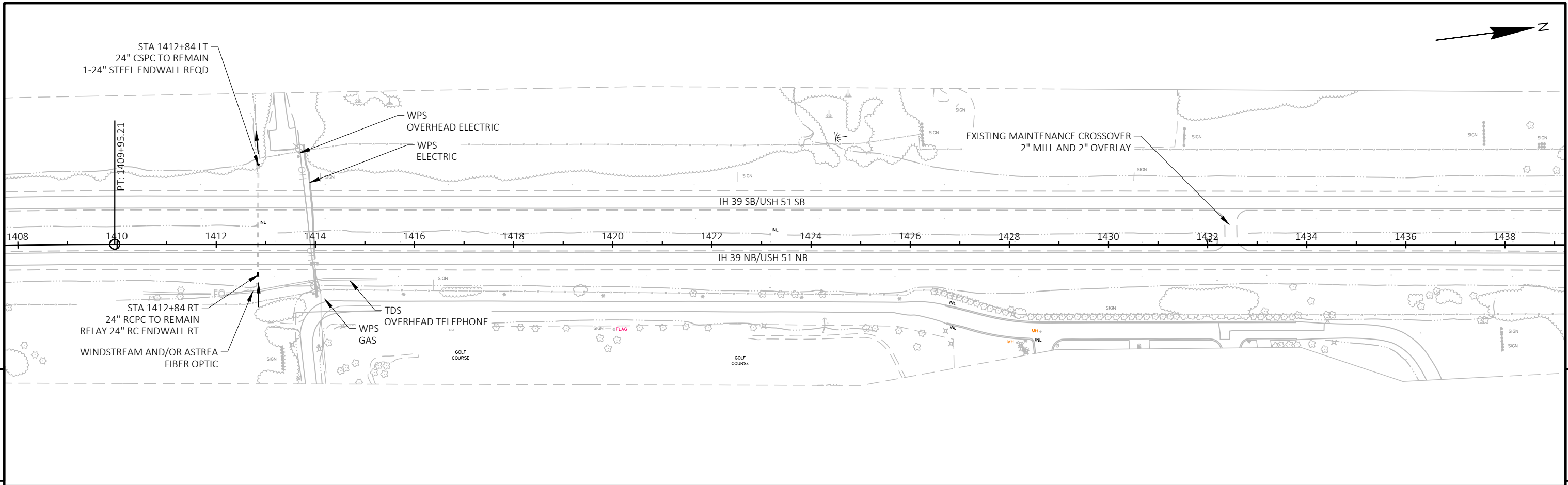


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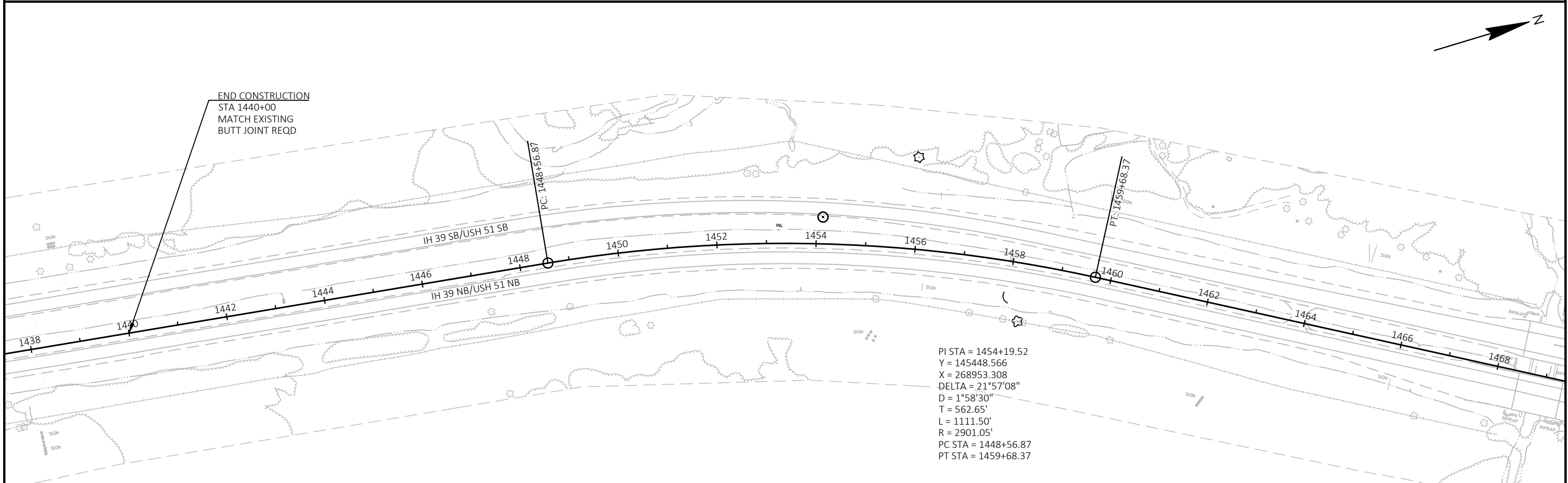


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| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | PLAN | SHEET | E |
|------------------------|------------|------------------|------|-------|---|



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PROJECT NO: 1166-00-83

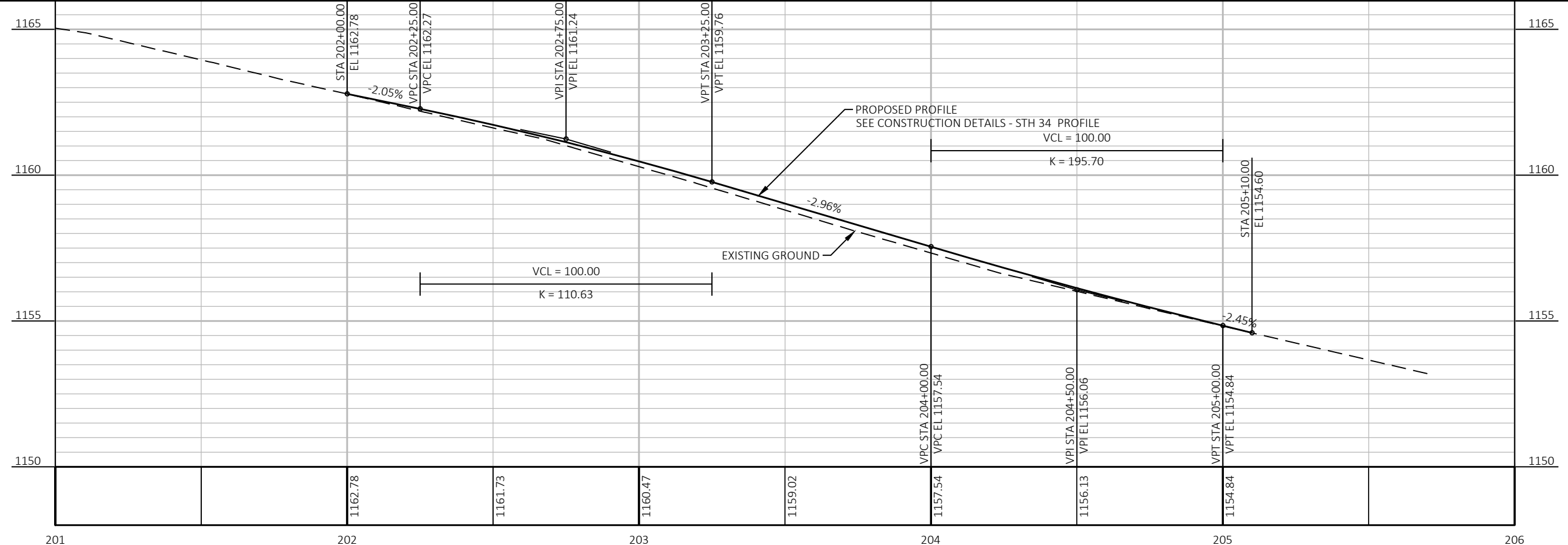
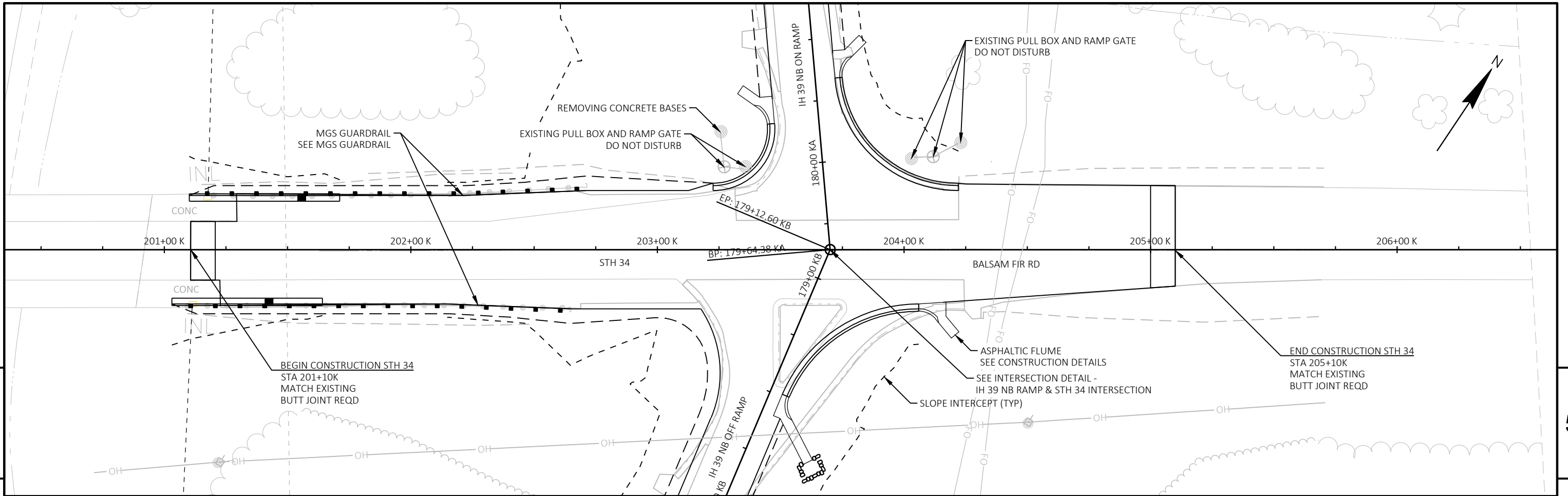
HWY: IH 39

COUNTY: MARATHON

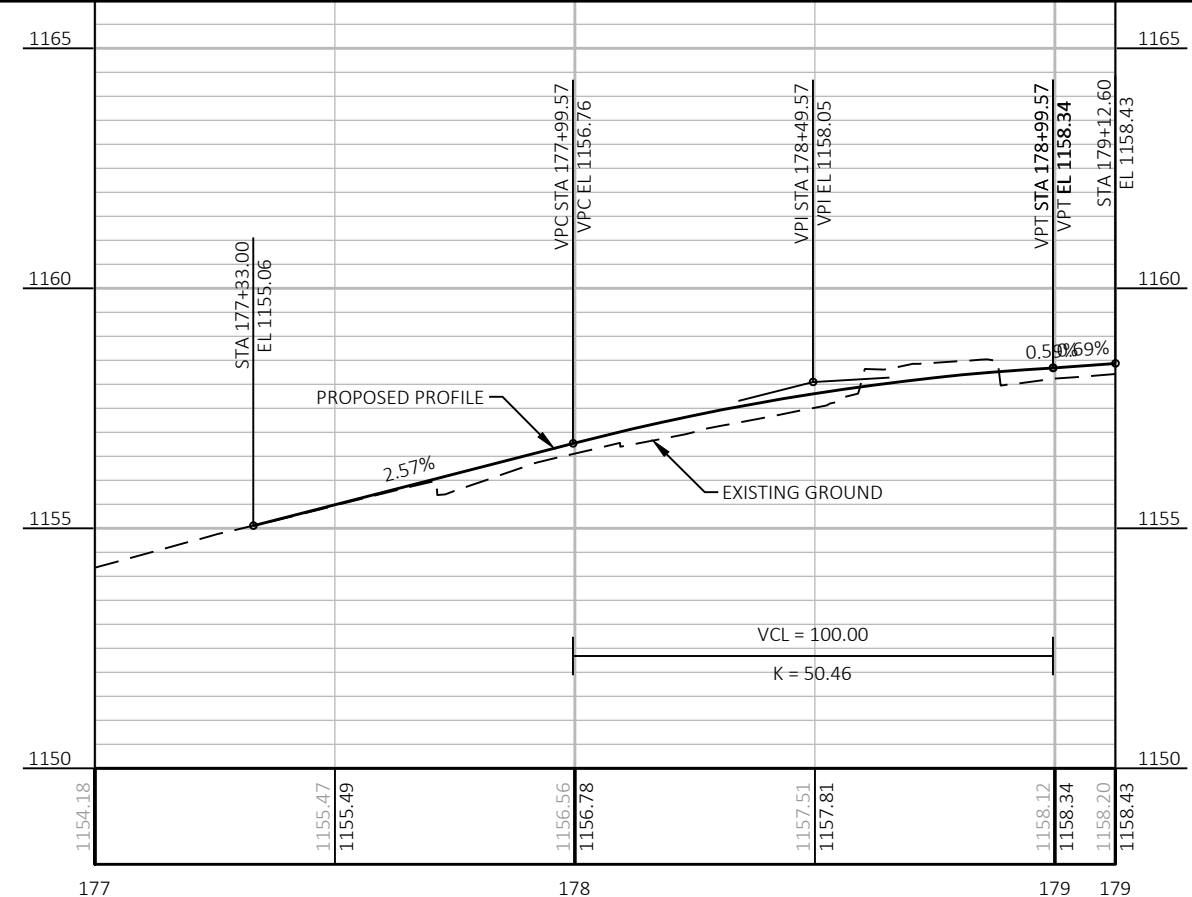
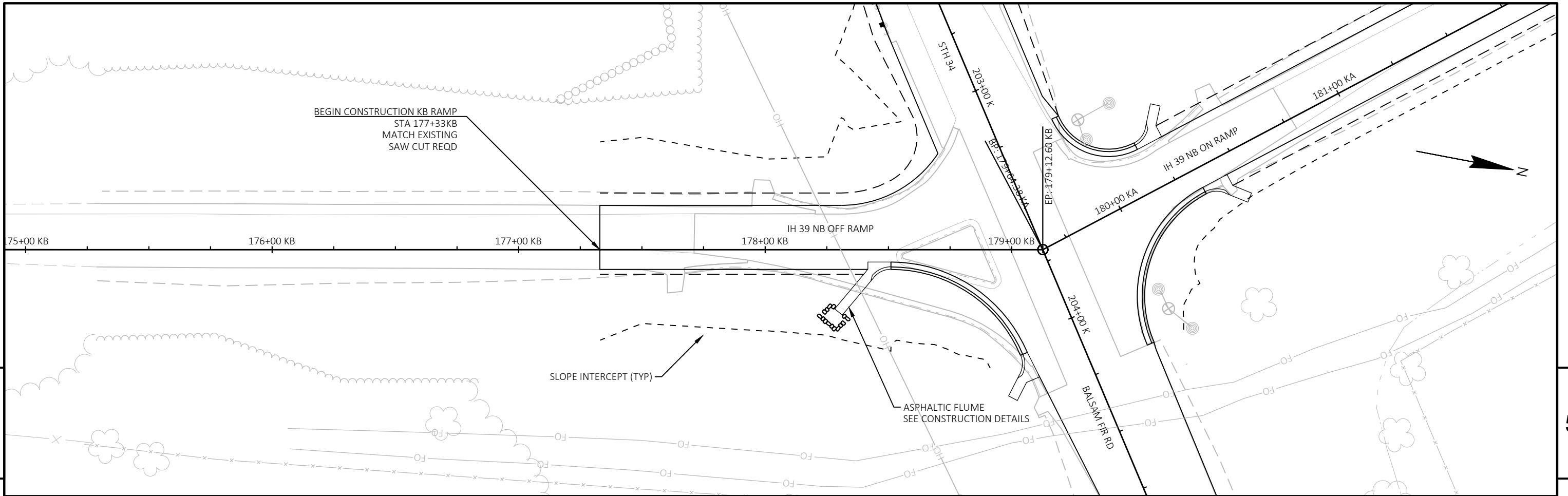
PLAN

SHEET

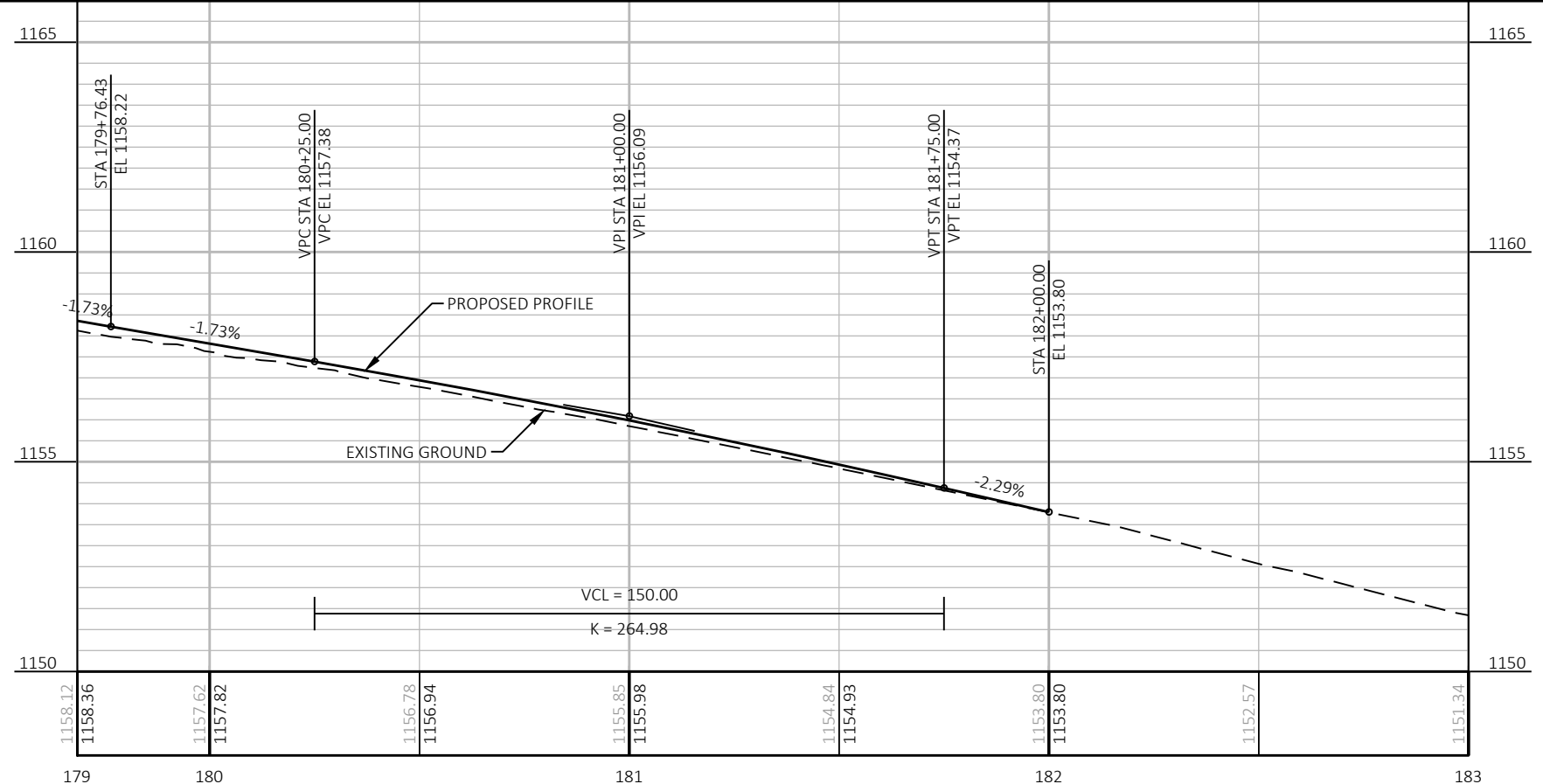
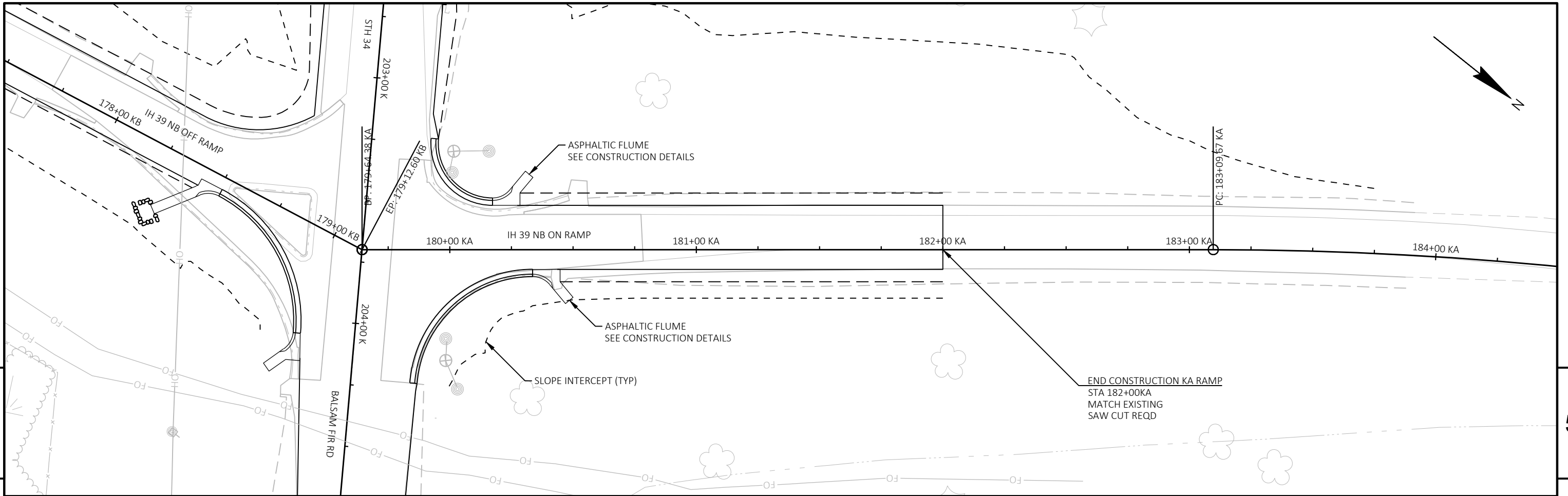
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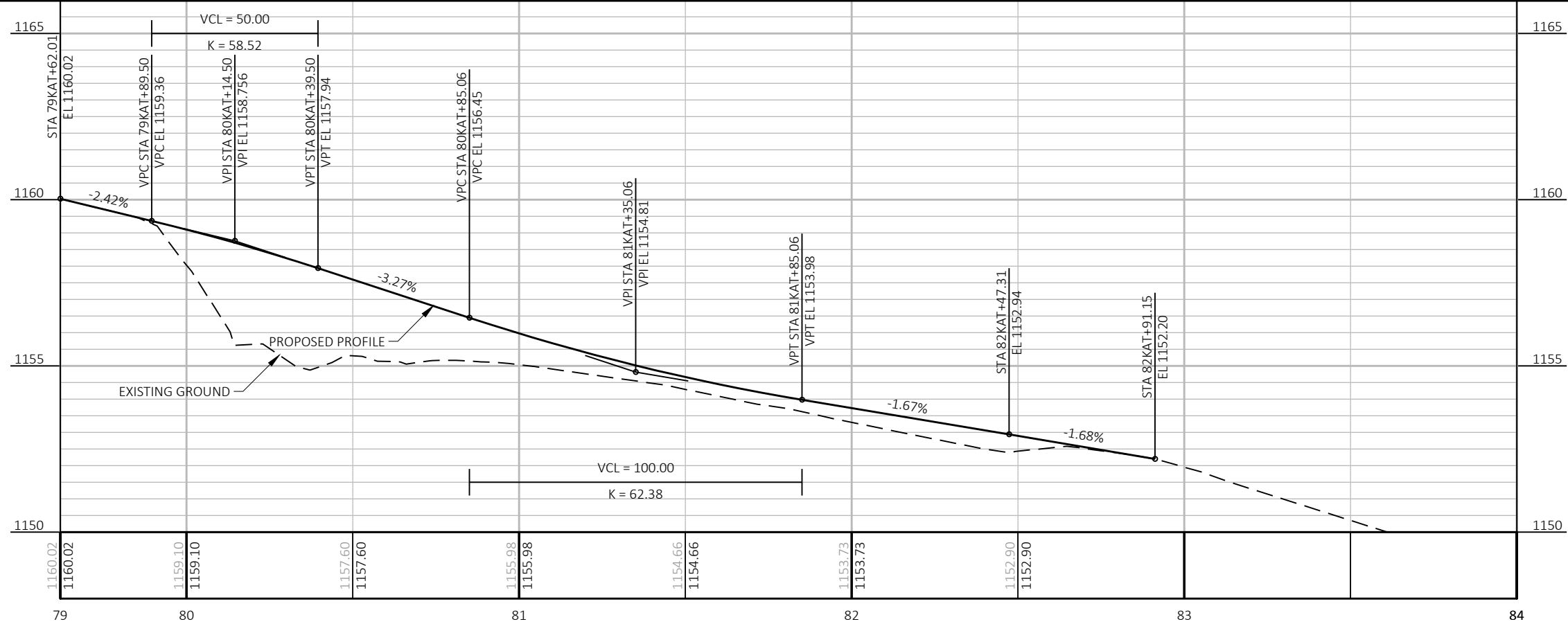
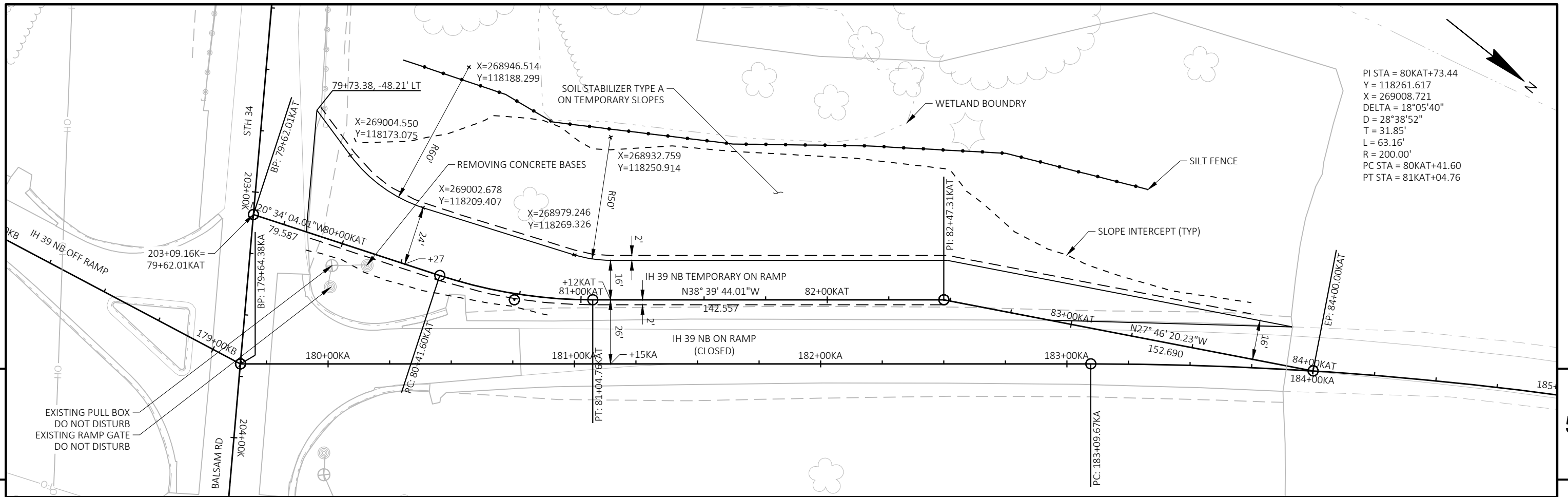
PROJECT NO: 1166-00-83 HWY: IH 39 COUNTY: MARATHON PLAN AND PROFILE: STH 34 SHEET: 5



PROJECT NO: 1166-00-83 HWY: IH 39 COUNTY: MARATHON PLAN AND PROFILE: KB RAMP SHEET: 5



| | | | |
|------------------------|------------|------------------|---------------------------|
| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | PLAN AND PROFILE: KA RAMP |
| SHEET | | | E |



PROJECT NO: 1166-00-83

HWY: IH 39

COUNTY: MARATHON

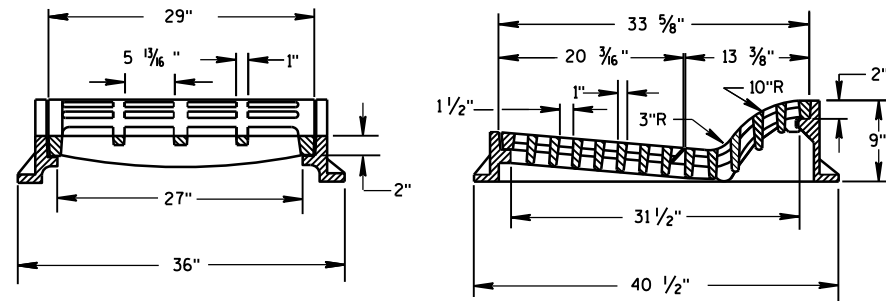
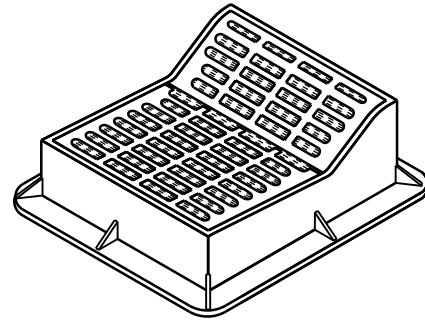
PLAN AND PROFILE: KAT TEMP RAMP

SHEET

E

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 |
| 08D02-07A | CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES |
| 08D02-07B | CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES |
| 08D02-07C | CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES |
| 08D03-08A | CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES |
| 08D03-08B | CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES |
| 08D15-05A | EDGEDRAIN OUTLET AND OUTFALL MARKERS |
| 08E09-06 | SILT FENCE |
| 08F01-11 | APRON ENDWALLS FOR CULVERT PIPE |
| 08F04-08 | JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL |
| 13A05-05A | SHOULDER RUMBLE STRIP, MILLING |
| 13A05-05B | SHOULDER RUMBLE STRIP, MILLING |
| 13C19-03 | HMA LONGITUDINAL JOINTS |
| 14B29-01 | SAFETY EDGE |
| 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 THREE BEAM TRANSITION (MGS) |
| 14B45-05B | MIDWEST GUARDRAIL SYSTEM THREE BEAM TRANSITION (MGS) |
| 14B45-05C | MIDWEST GUARDRAIL SYSTEM THREE BEAM TRANSITION (MGS) |
| 14B45-05D | MIDWEST GUARDRAIL SYSTEM THREE BEAM TRANSITION (MGS) |
| 14B47-03A | MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL |
| 14B47-03B | MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL |
| 14B47-03C | MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL |
| 14B47-03D | MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL |
| 14B47-03E | MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL |
| 14B47-03F | MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL |
| 14B47-03G | MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL |
| 15A03-02A | FLEXIBLE MARKER POST FOR CULVERT END |
| 15A03-02B | FLEXIBLE MARKER POST FOR CULVERT END |
| 15A04-07C | DELINEATOR BRACKET WITH REFLECTIVE SHEETING |
| 15A04-07E | DELINEATOR POST WITH REFLECTIVE SHEETING |
| 15B01-08A | FENCE WOVEN WIRE |
| 15B01-08B | FENCE WOVEN WIRE |
| 15C02-08A | BARRICADES AND SIGNS FOR MAINLINE CLOSURES |
| 15C02-08B | BARRICADES AND SIGNS FOR VARIOUS CLOSURES |
| 15C02-08D | ON RAMP LANE CLOSURE |
| 15C02-08E | OFF RAMP LANE CLOSURE |
| 15C02-08F | ADVANCED WIDTH RESTRICTION SIGNING |
| 15C03-05 | BARRICADES AND SIGNS FOR SIDEROAD CLOSURES |
| 15C04-05 | TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC |
| 15C08-20A | LONGITUDINAL MARKING (MAINLINE) |
| 15C11-09B | CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS |
| 15C12-08 | TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION |
| 15C31-04C | PAVEMENT MARKING ENTRANCE RAMP AND PARALLEL ENTRANCE RAMP |
| 15C33-04 | STOP LINE AND CROSSWALK PAVEMENT MARKING |
| 15D12-09B | TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION |
| 15D12-09D | TRAFFIC CONTROL, LANE CLOSURE, BASIC TRAFFIC QUEUE WARNING SYSTEM |
| 15D15-05C | TRAFFIC CONTROL, TAPERED ENTRANCE RAMP WITHIN LANE CLOSURE |
| 15D15-05D | TRAFFIC CONTROL, TAPERED ENTRANCE RAMP WITHIN LANE CLOSURE |
| 15D16-04 | TRAFFIC CONTROL, EXIT RAMP CLOSURE |
| 15D21-07A | TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE |
| 15D21-07B | TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE |
| 15D28-04 | TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY |
| 15D39-02 | TRAFFIC CONTROL, DROP-OFF SIGNING |
| 15D40-02B | TRAFFIC CONTROL, FULL LANE SHIFT MULTILANE DIVIDED 50 MPH AND GREATER |
| 15D40-02D | TRAFFIC CONTROL, PARTIAL LANE SHIFT MULTILANE DIVIDED 50 MPH AND GREATER |
| 15D46-01 | TRAFFIC CONTROL, ONE - WAY SIGNING |



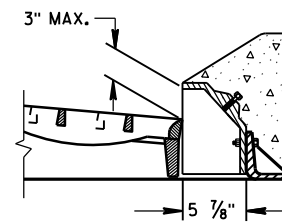
TYPE "F"

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

GENERAL NOTES

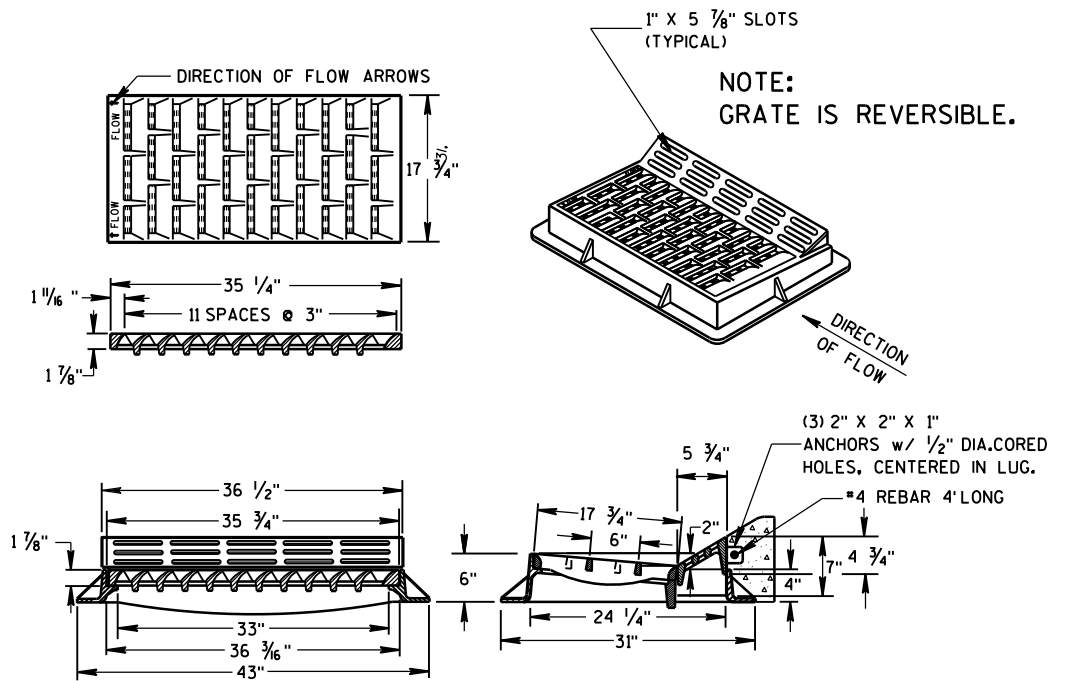
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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"

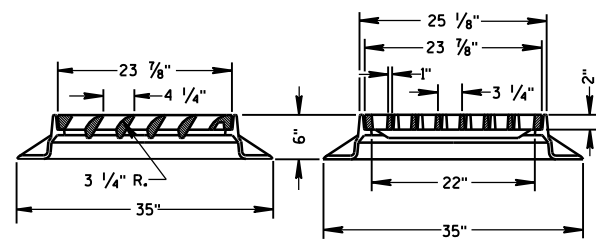
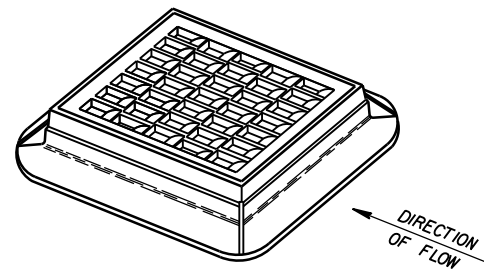
USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.

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

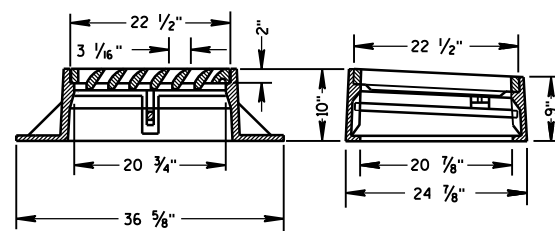
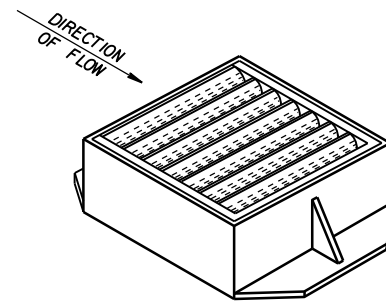
NOTE: SPECIAL GRATE FOR THE TYPE "H" COVER MAY ALSO BE USED FOR THE TYPE "HM-GJ" COVER NOTED AS TYPE HM-GJ-S ON DRAINAGE TABLE

6

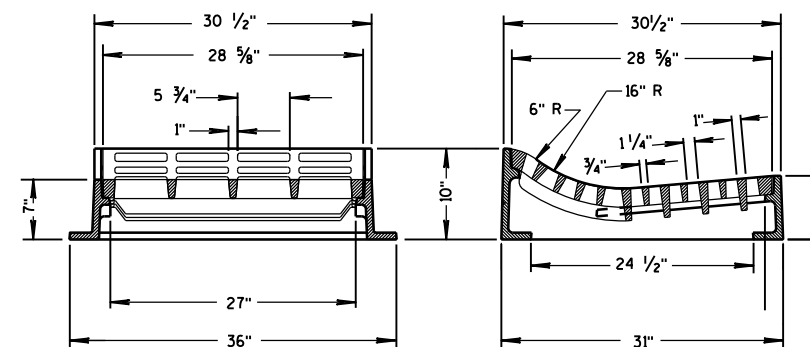
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TYPE "S"

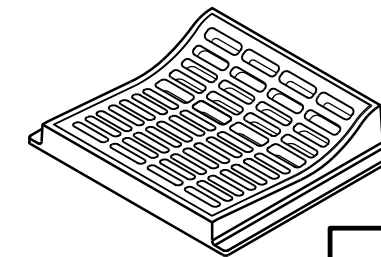


TYPE "V"



TYPE "T"

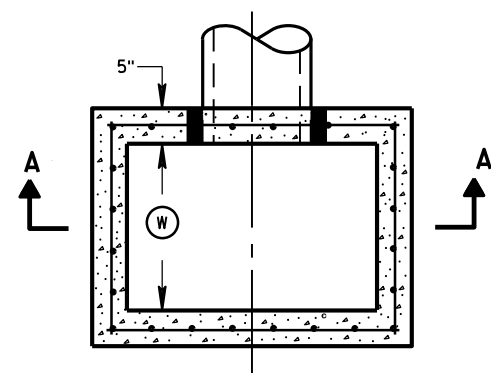
USE WITH TYPES R & T CONCRETE CURB & GUTTER, 36 INCH.



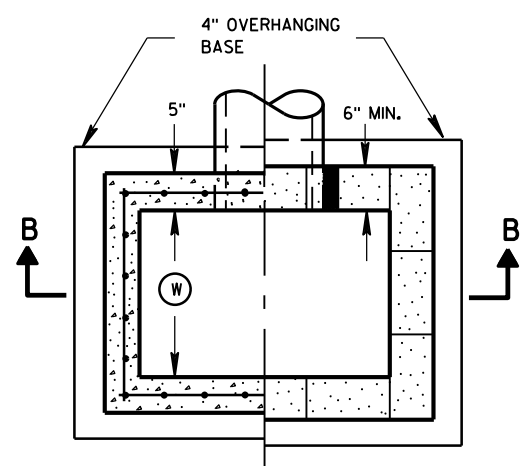
INLET COVERS
TYPE F, HM, HM-S, S, T, V,
HM-GJ, & HM-GJ-S

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

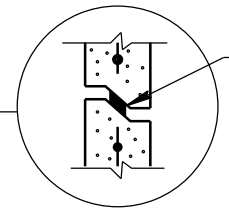
APPROVED
11/27/2013 DATE /s/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA



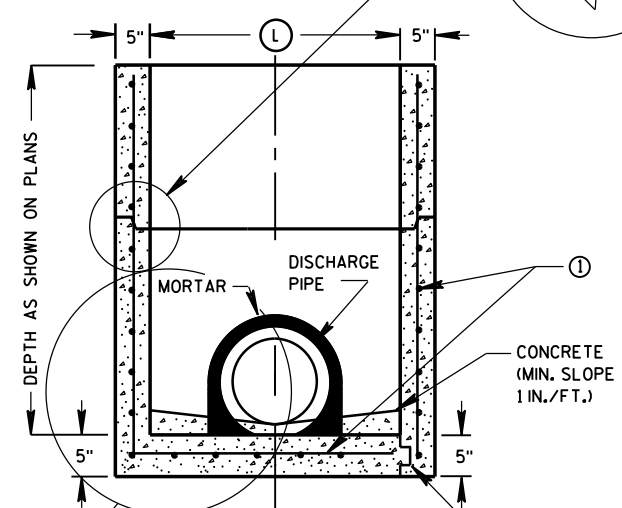
PLAN VIEW



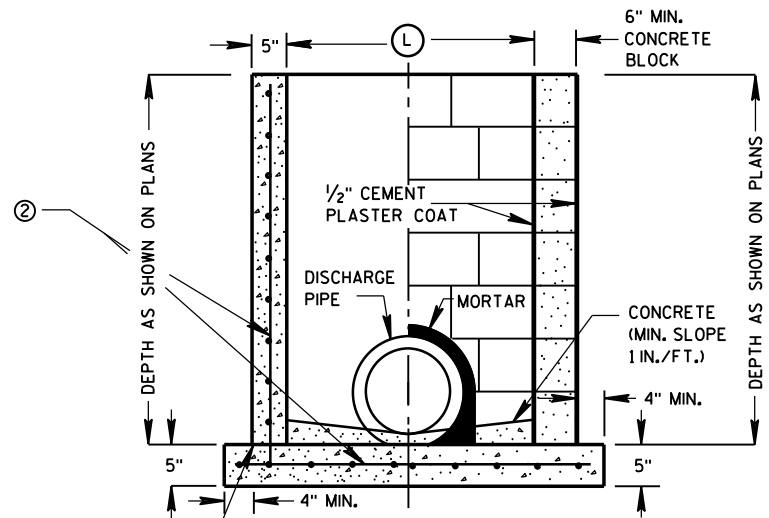
PLAN VIEW



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



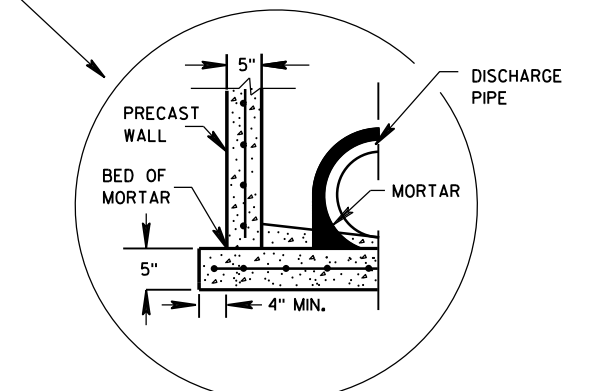
SECTION A-A



SECTION B-B

PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE
 PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE
 KEYWAY
 CONCRETE (MIN. SLOPE 1 IN./FT.)

CONSTRUCTION JOINT
 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.

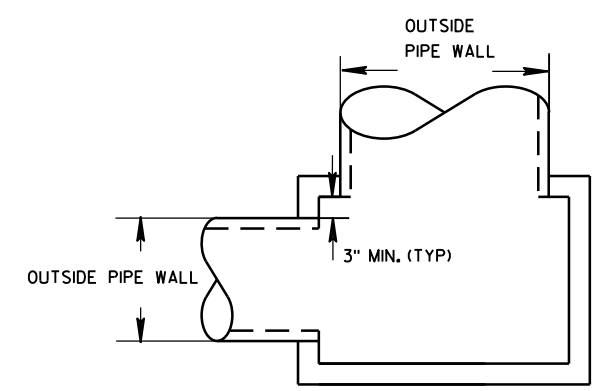
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

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 |



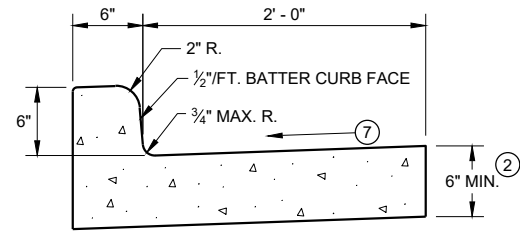
DETAIL "A"

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

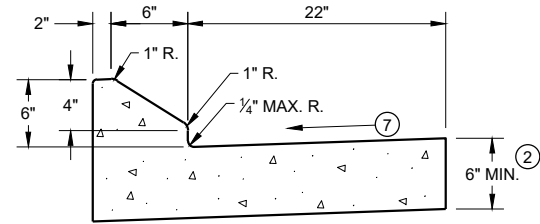
**INLETS 2X2-FT, 2X2.5-FT,
2X3-FT AND 2.5X3-FT**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

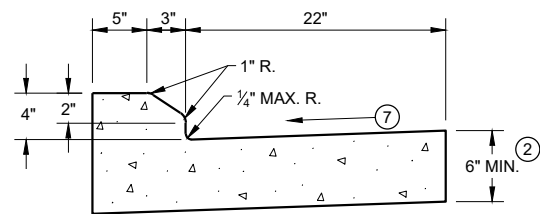
APPROVED
 Sept., 2016 /S/ Rodney Taylor
 DATE ROADWAY STANDARDS DEVELOPMENT
 FHWA UNIT SUPERVISOR



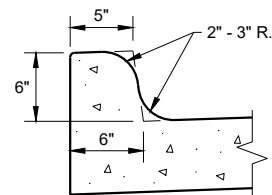
TYPES A^① & D



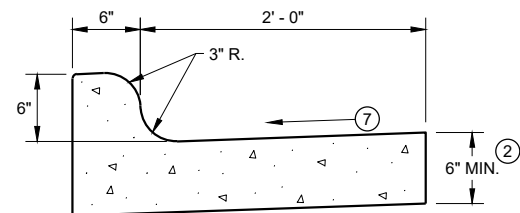
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

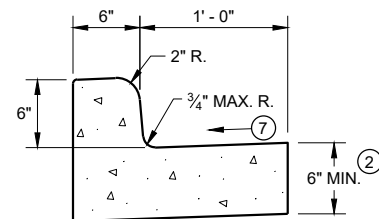


TYPES K^① & L
(OPTIONAL CURB SHAPE)



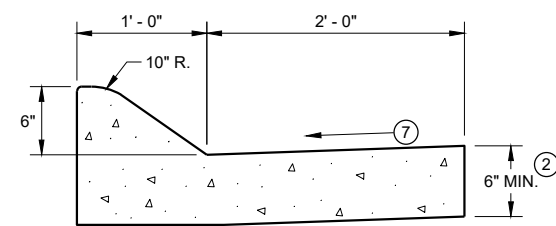
TYPES K^① & L

CONCRETE CURB AND GUTTER 30"

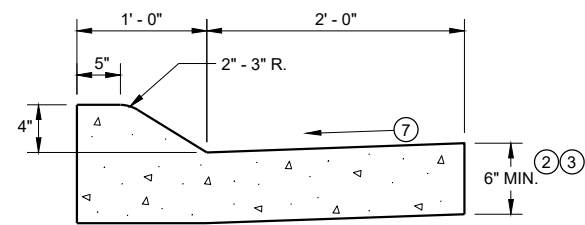


TYPES A^① & D

CONCRETE CURB AND GUTTER 18"

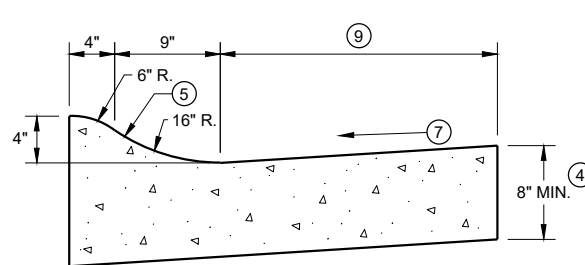


6" SLOPED CURB TYPES A^① & D



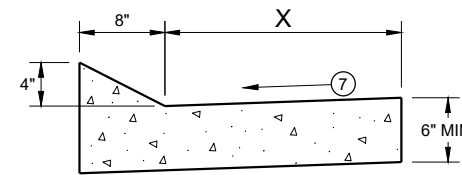
4" SLOPED CURB TYPES A^① & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R^① & T

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

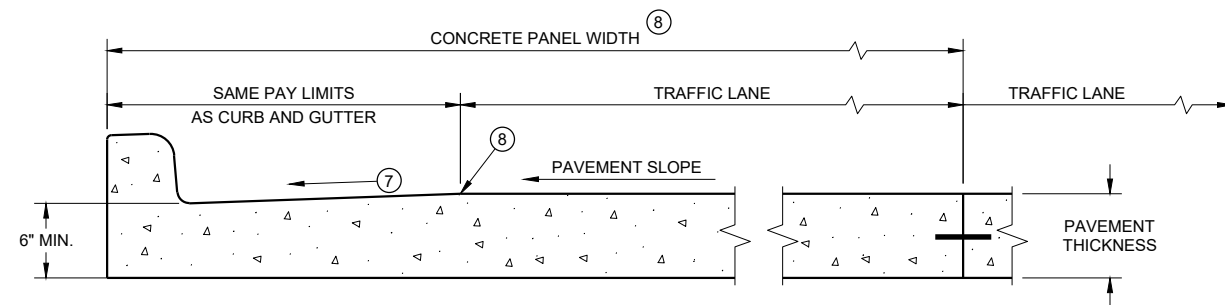


TYPES TBT & TBTT^①

CONCRETE CURB AND GUTTER

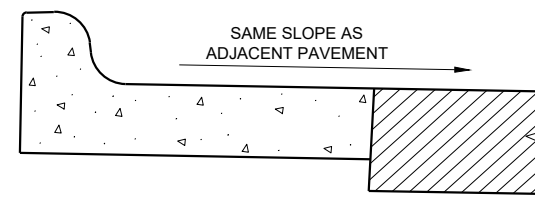
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

| 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

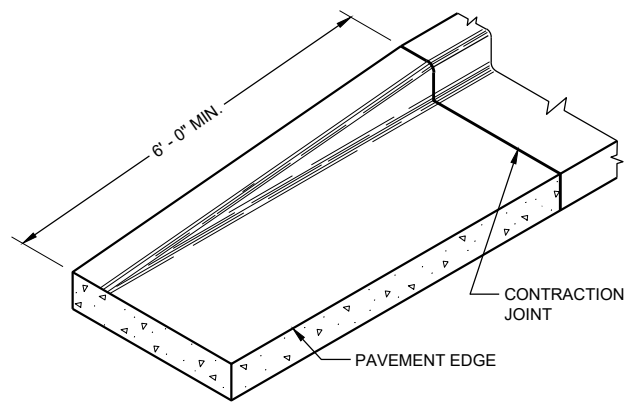
DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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

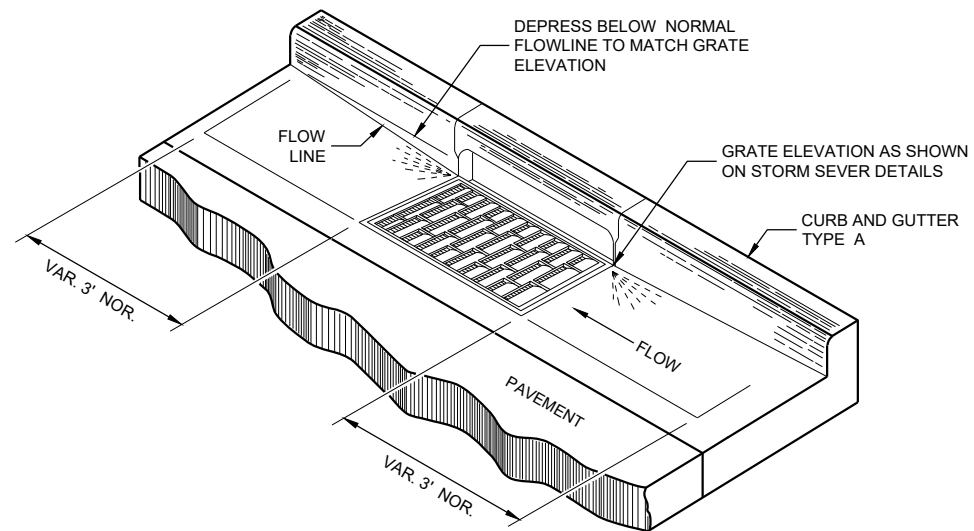
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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)

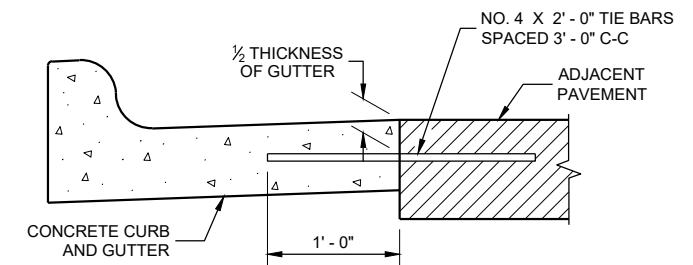
GENERAL NOTES

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

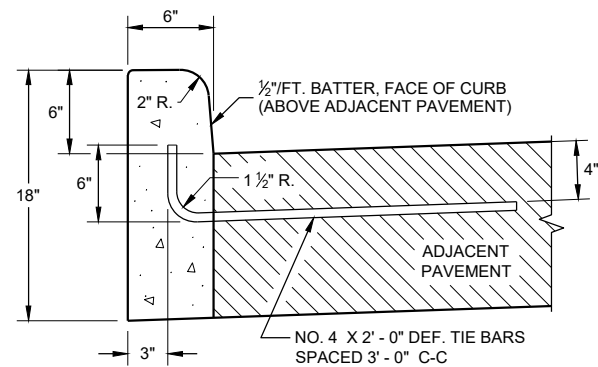
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

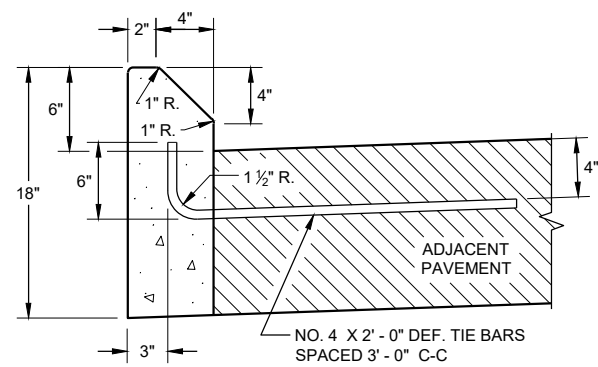
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑨ REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL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



TYPICAL TIE BAR LOCATION ①

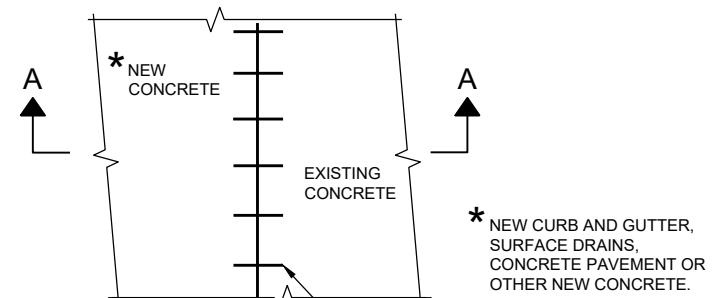


TYPES A ① & D

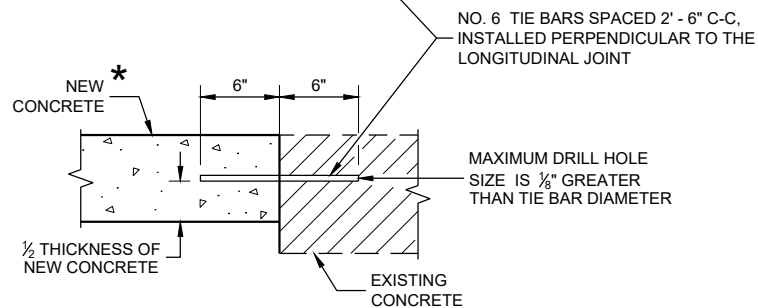


TYPES G ① & J

CONCRETE CURB

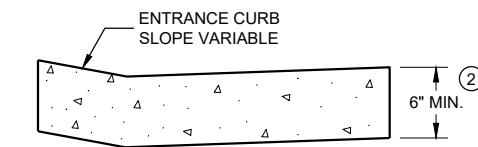


PLAN VIEW



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 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER

FHWA

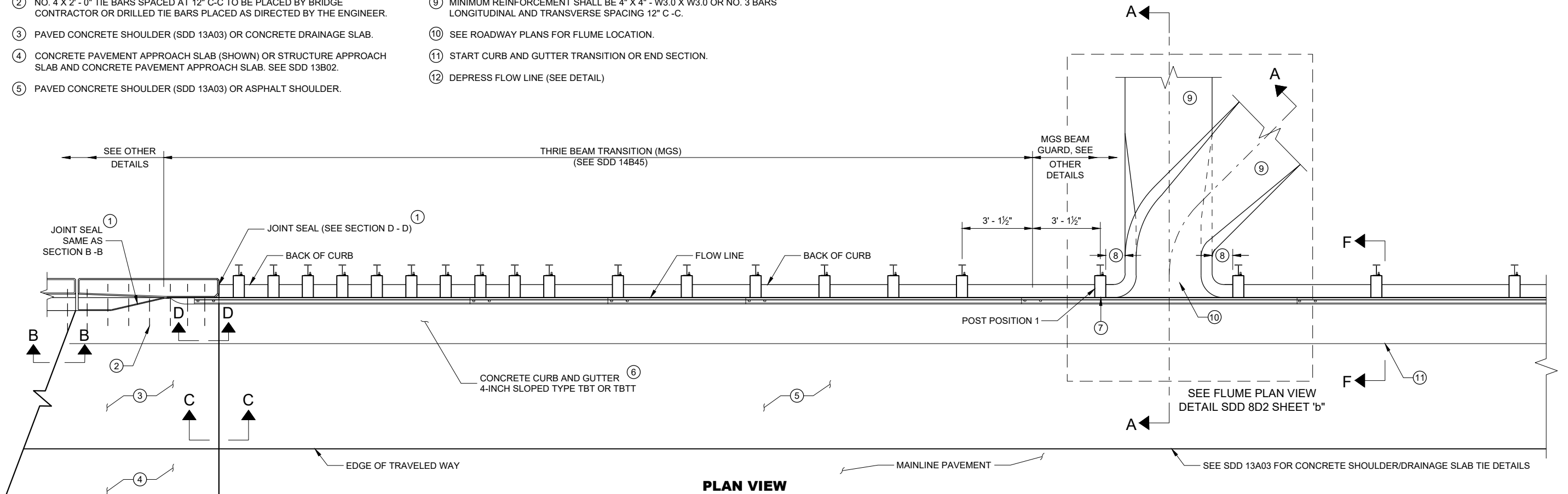
GENERAL NOTES

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.

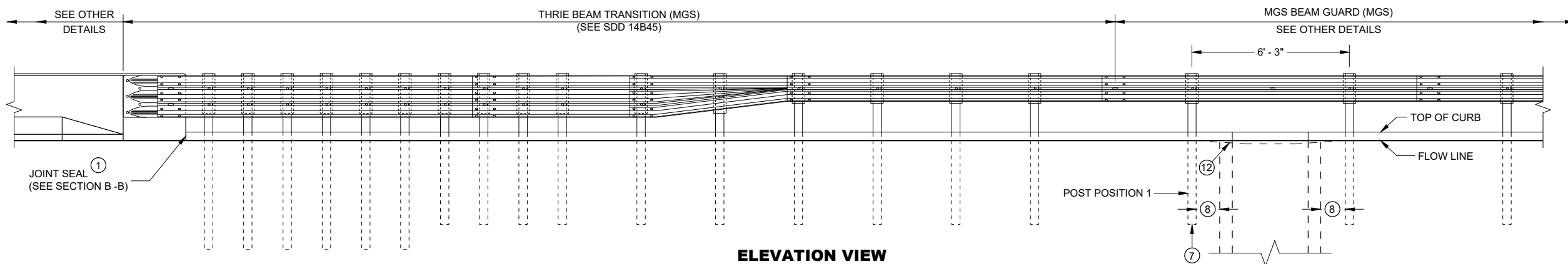
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

- 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 FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- ⑧ CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- ⑨ MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- ⑩ SEE ROADWAY PLANS FOR FLUME LOCATION.
- ⑪ START CURB AND GUTTER TRANSITION OR END SECTION.
- ⑫ DEPRESS FLOW LINE (SEE DETAIL)



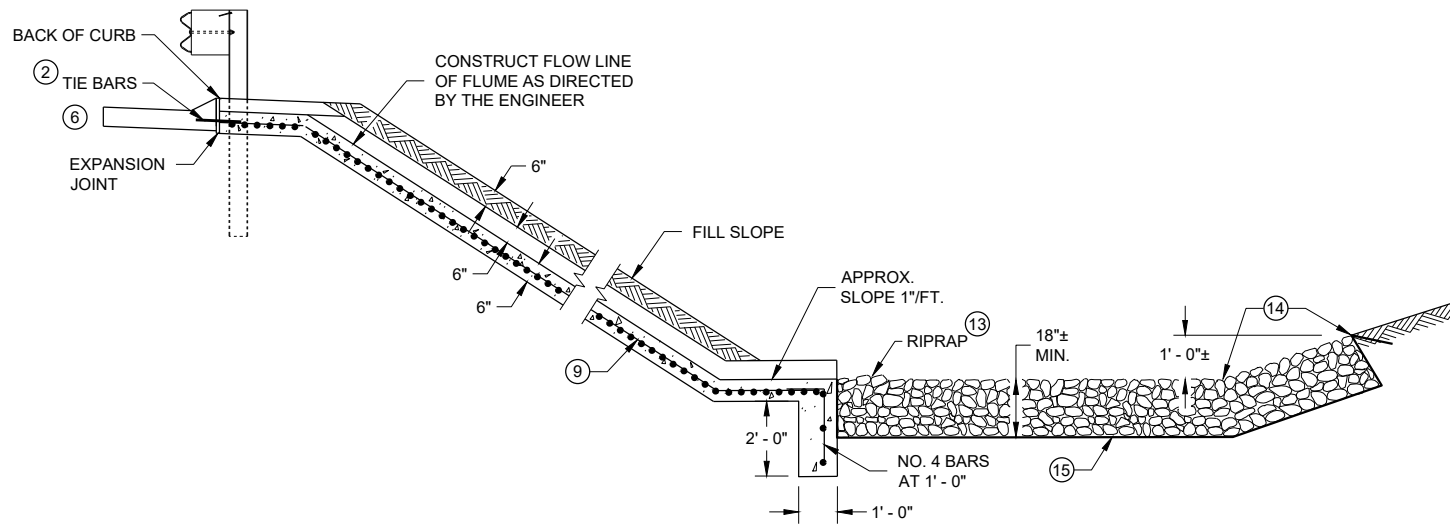
PLAN VIEW



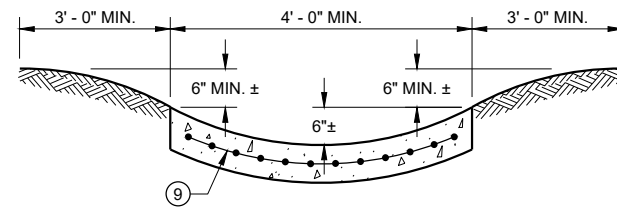
ELEVATION VIEW

**CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES**

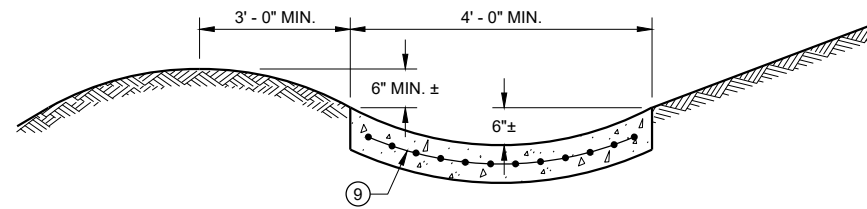
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



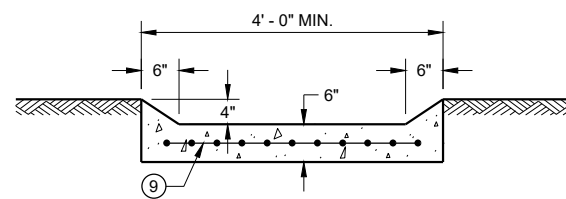
SECTION A - A



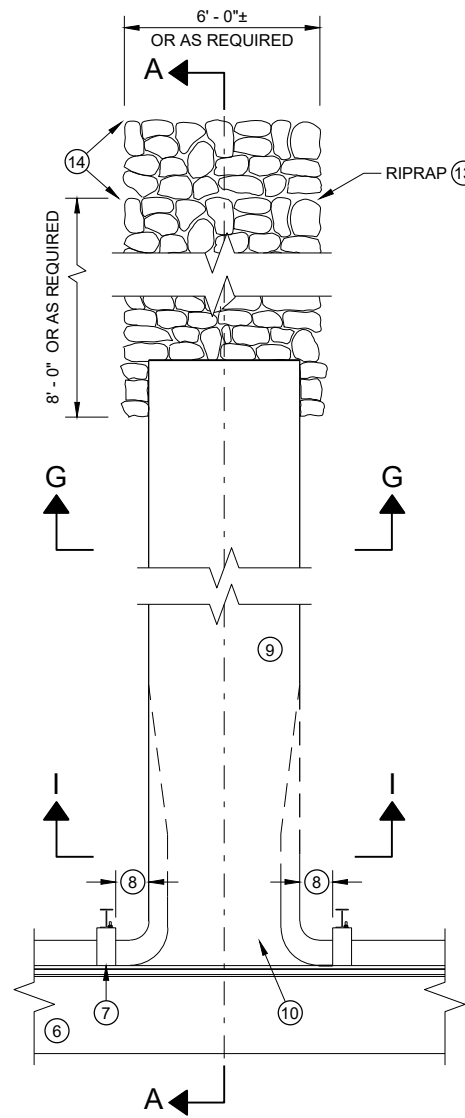
SECTION G - G



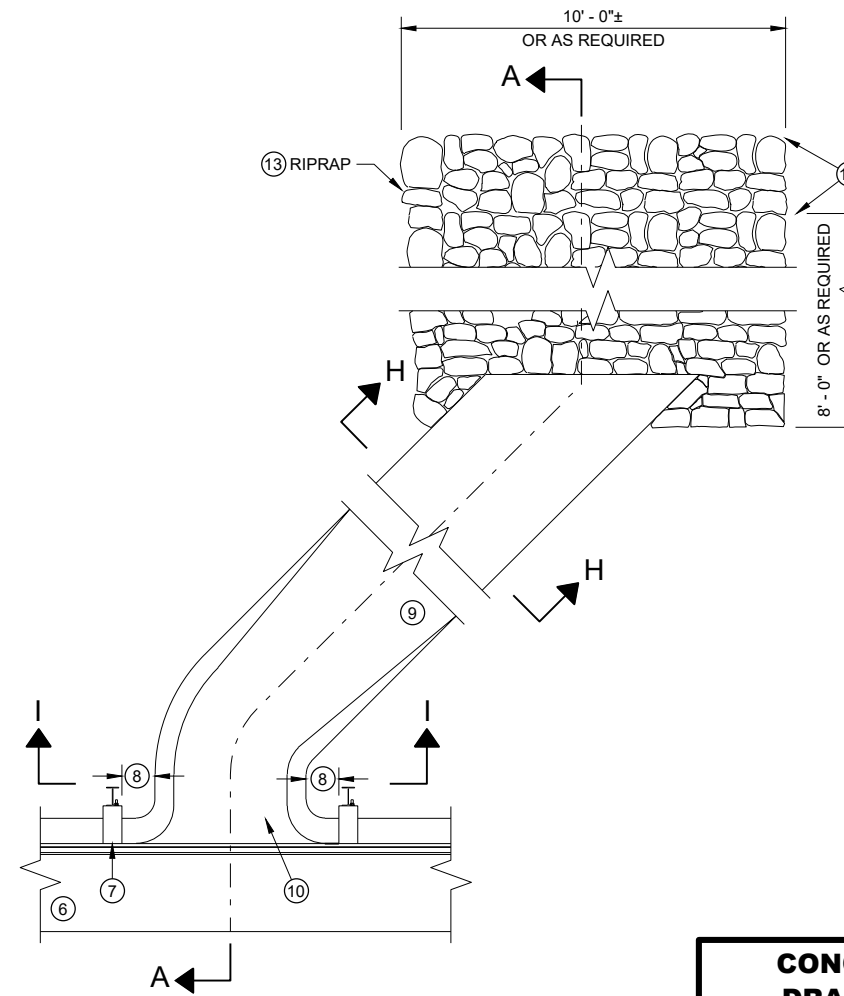
SECTION H - H



SECTION I - I



**PLAN VIEW
PERPENDICULAR FLUME**



**PLAN VIEW
SKEWED FLUME**

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.

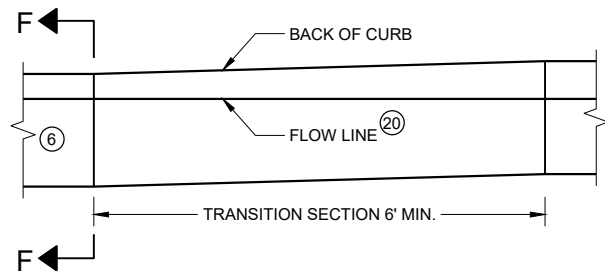
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

- 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.

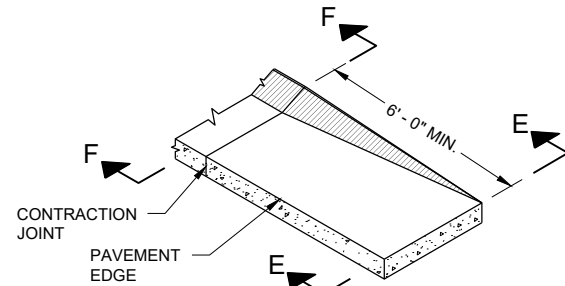
- ⑦ PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- ⑧ CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- ⑨ MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- ⑩ SEE ROADWAY PLANS FOR FLUME LOCATION.
- ⑪ START CURB AND GUTTER TRANSITION OR END SECTION.
- ⑫ DEPRESS FLOW LINE (SEE DETAIL)
- ⑬ MEDIUM RIPRAP UNLESS OTHERWISE SPECIFIED.
- ⑭ LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH AS REQUIRED.
- ⑮ GEOTEXTILE FABRIC TYPE HR.

**CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES**

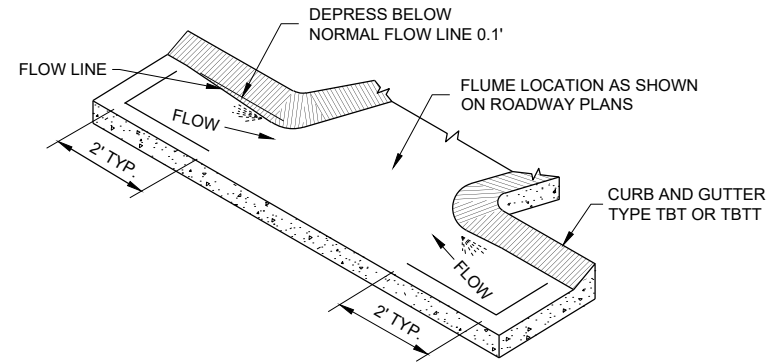
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



**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**



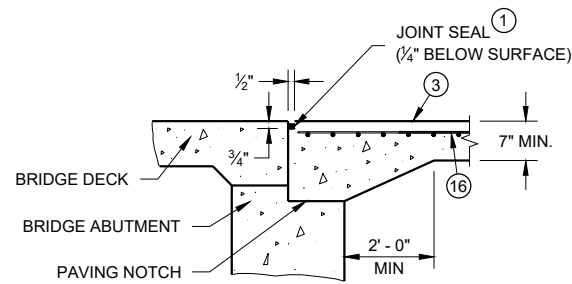
**CURB AND GUTTER FLOW LINE DEPRESSION
AT FLUMES CONCRETE CURB AND GUTTER
4-INCH SLOPED 36 INCH TYPE TBT OR TBTT**

GENERAL NOTES

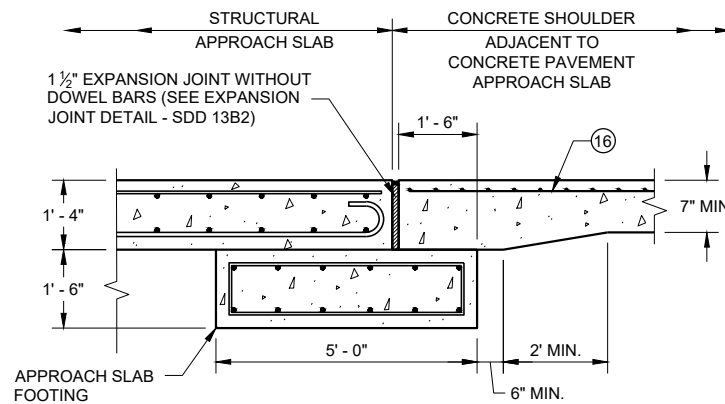
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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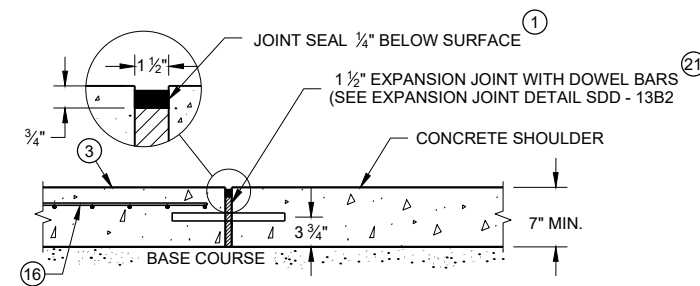
- ① USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- ② NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- ③ PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
- ④ CONCRETE PAVEMENT APPROACH 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 FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- ⑧ CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- ⑨ MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- ⑩ SEE ROADWAY PLANS FOR FLUME LOCATION.
- ⑪ START CURB AND GUTTER TRANSITION OR END SECTION.
- ⑫ DEPRESS FLOW LINE (SEE DETAIL)
- ⑬ MEDIUM RIPRAP UNLESS OTHERWISE SPECIFIED.
- ⑭ LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.
- ⑮ GEOTEXTILE FABRIC TYPE HR.
- ⑯ MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- ⑰ MSG THRIE BEAM TRANSITION POST 1. SEE SDD 14B45 FOR ADDITIONAL CONSTRUCTION DETAILS AND ACCEPTABLE MATERIALS.
- ⑱ MAINTAIN WIDTH, THICKNESS AND CROSS SLOPE OF ADJACENT TYPE TBT OR TBTT CURB. SEE NOTE 6 FOR TIE BAR SPACING.
- ⑲ ALIGN FACE OF POST BLOCK WITH FLOW LINE.
- ⑳ MAINTAIN FLOW LINE AT EDGE OF PAVEMENT/FACE OF BEAM GUARD AS APPLICABLE.
- ㉑ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING HMA PAVEMENTS.



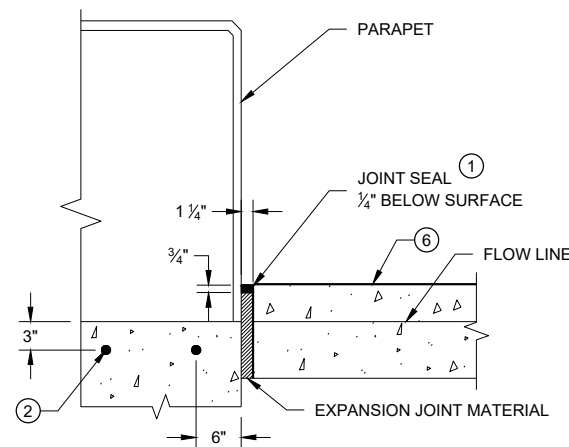
SECTION B-B



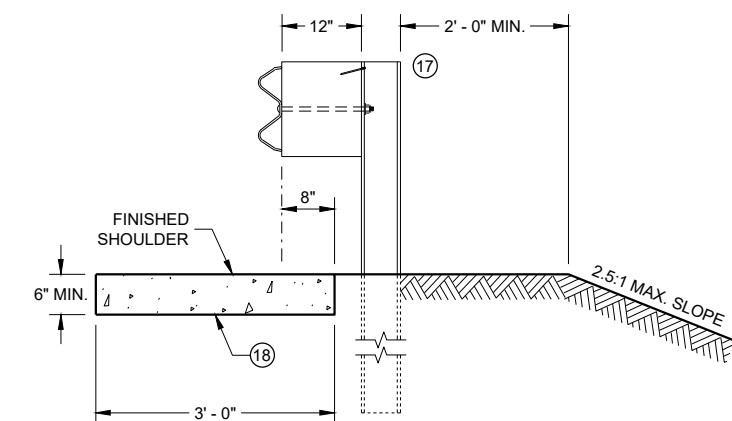
**SECTION C - C
JOINT DETAIL FOR BRIDGE WITH STRUCTURAL
APPROACH SLAB AND CONCRETE APPROACH SLAB**



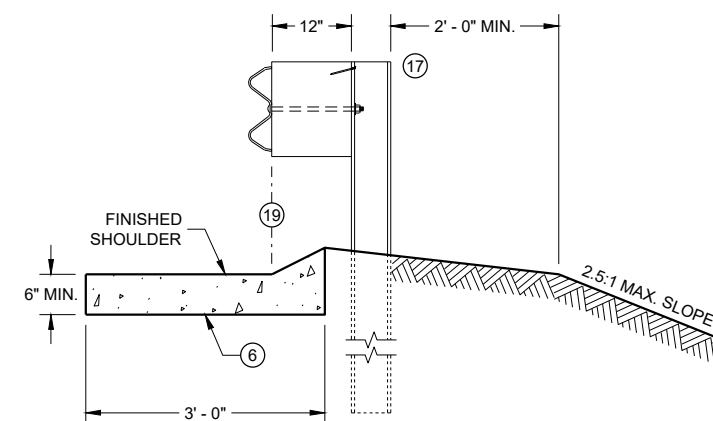
**SECTION C - C
JOINT DETAIL FOR BRIDGE APPROACH
WITH CONCRETE SHOULDERS**



SECTION D - D



SECTION E - E



SECTION F - F

6

6

SDD08D02 - 07C

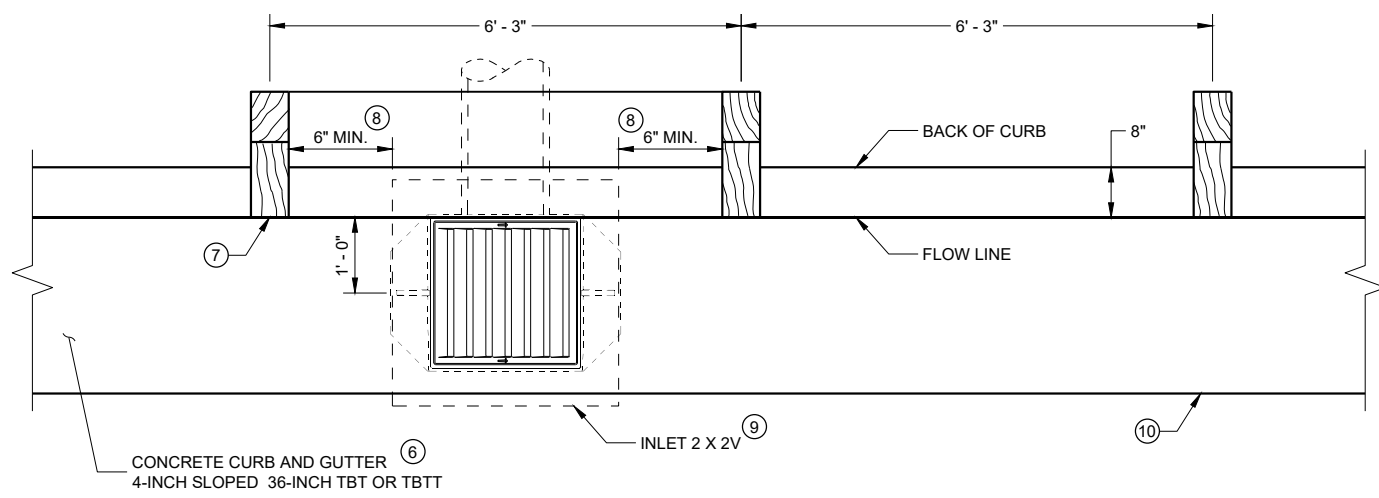
SDD08D02 - 07C

**CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES**

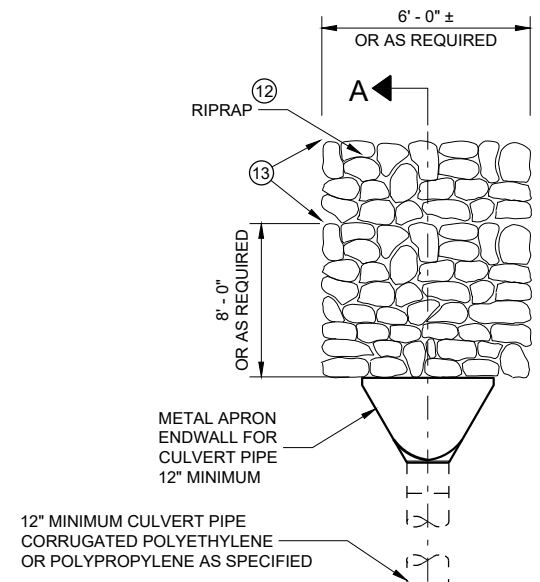
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



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

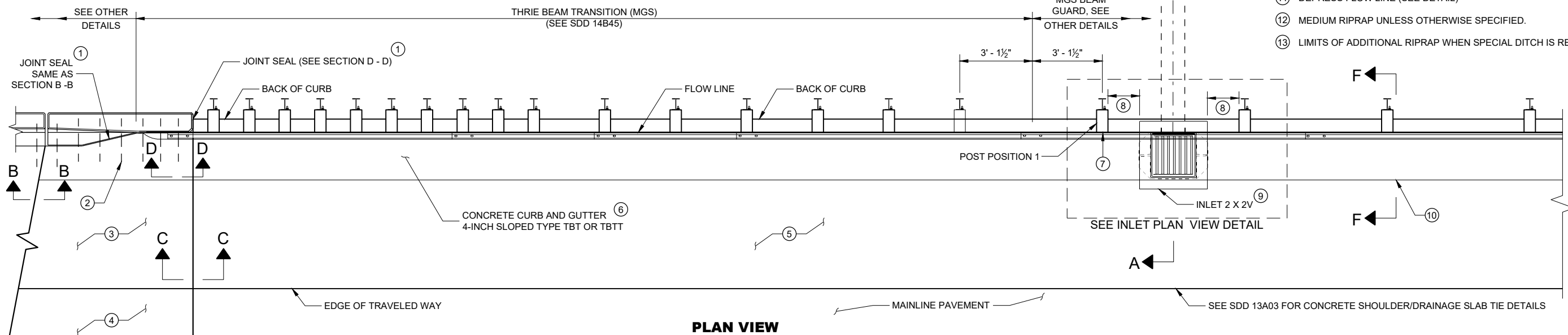


GENERAL NOTES

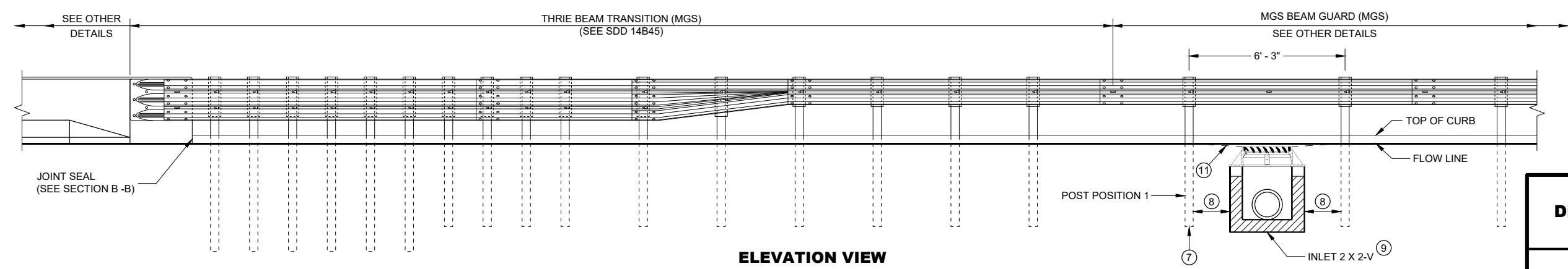
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- ⑨ SEE SDD 08A05 AND 08C07 FOR DETAILS. SEE ROADWAY PLANS FOR LOCATION.
- ⑩ START CURB AND GUTTER TRANSITION OR END SECTION.
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PLAN VIEW



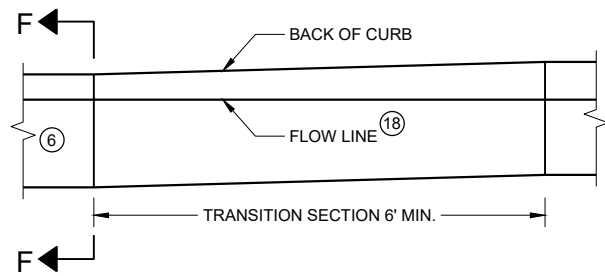
ELEVATION VIEW

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

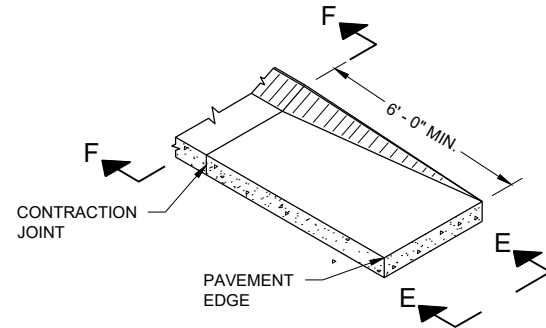
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

SDD 08D03 - 08a

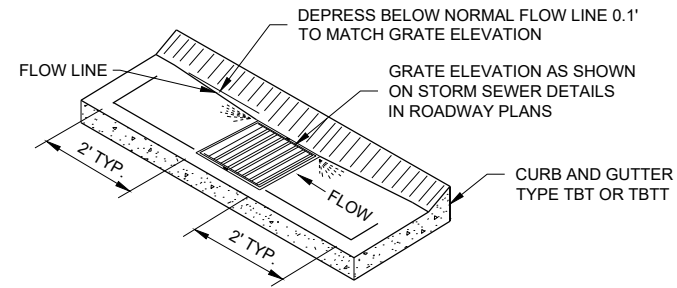
SDD 08D03 - 08a



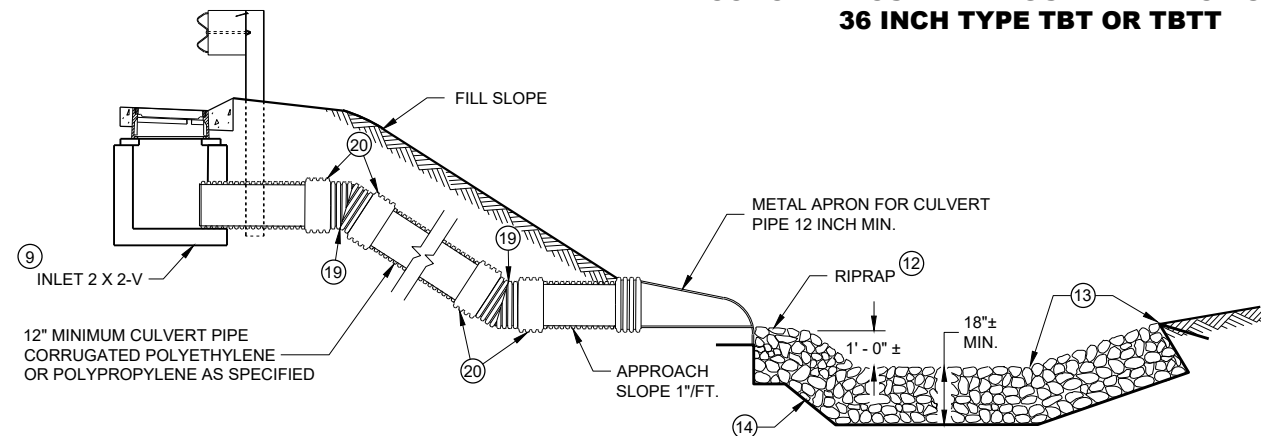
**CURB AND GUTTER TRANSITION SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBTT**



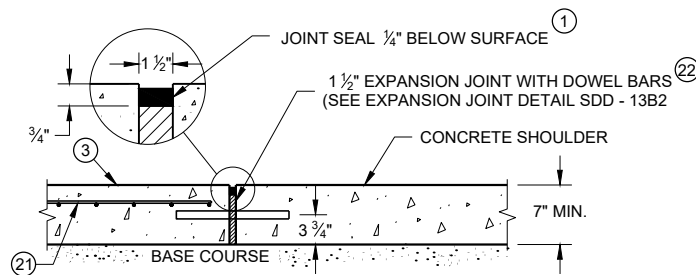
**CURB AND GUTTER END SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBTT**



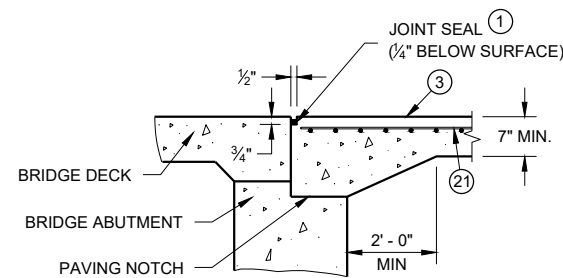
**CURB AND GUTTER FLOW LINE DEPRESSION
AT INLETS CONCRETE CURB AND GUTTER
4-INCH SLOPED 36 INCH TYPE TBT OR TBTT**



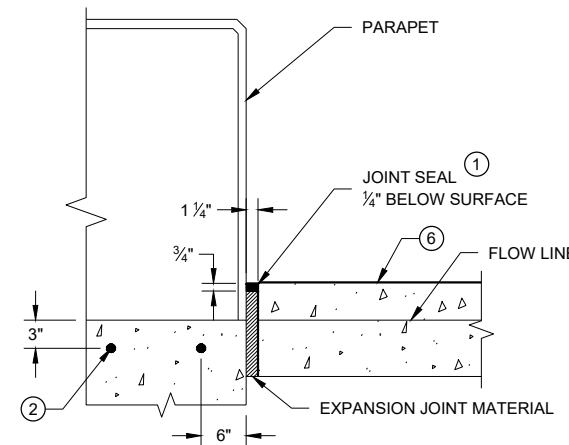
SECTION A - A



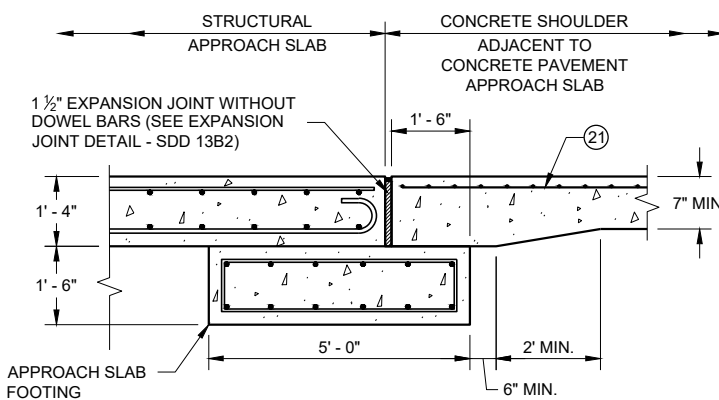
**SECTION C - C
JOINT DETAIL FOR BRIDGE APPROACH
WITH CONCRETE SHOULDERS**



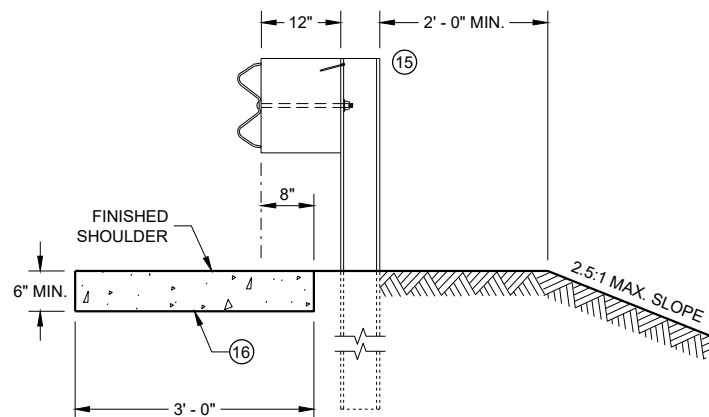
SECTION B - B



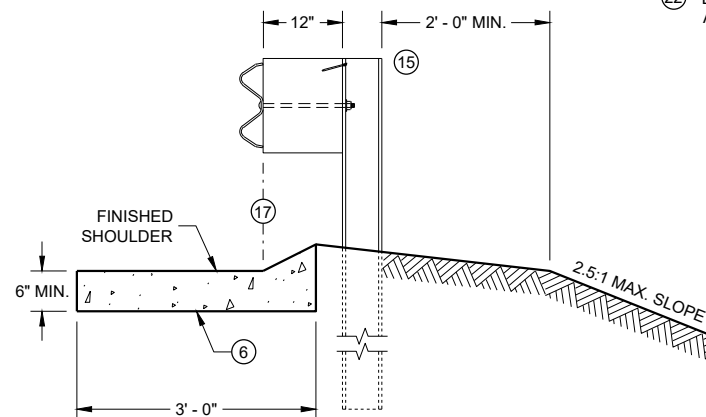
SECTION D - D



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



SECTION E - E



SECTION F - F

GENERAL NOTES

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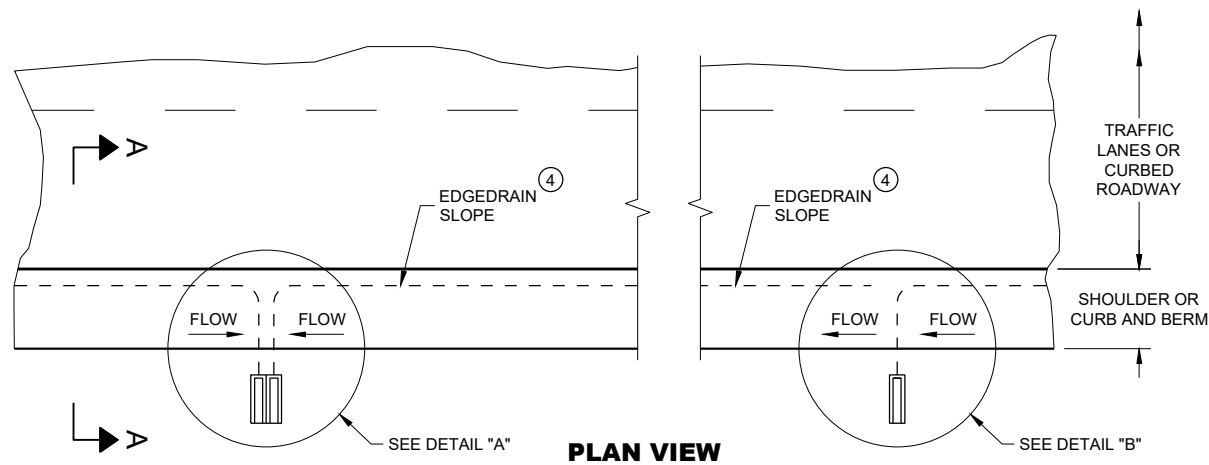
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- ⑰ ALIGN FACE OF POST BLOCK WITH FLOW LINE.
- ⑱ MAINTAIN FLOW LINE AT EDGE OF PAVEMENT/FACE OF BEAM GUARD AS APPLICABLE.
- ⑲ MANUFACTURER SUPPLIED BEND.
- ⑳ MANUFACTURER SUPPLIED EXTERNAL MECHANICAL COUPLING OR A MANUFACTURER RECOMMENDED COUPLING 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.

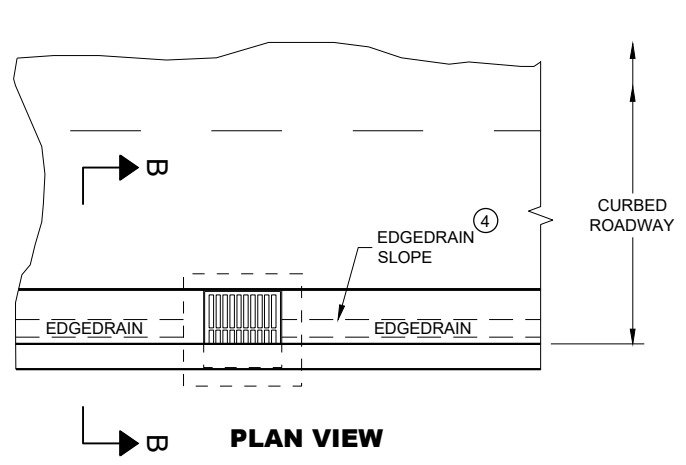
**CONCRETE SURFACE
DRAINS DROP INLET TYPE
AT STRUCTURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



**ROADWAY WITH SHOULDERS OR CURBS
(EDGEDRAIN CONNECTS TO ROADSIDE) ②**



**ROADWAY WITH CURBS
(EDGEDRAIN CONNECTS INTO INLET STRUCTURE)**

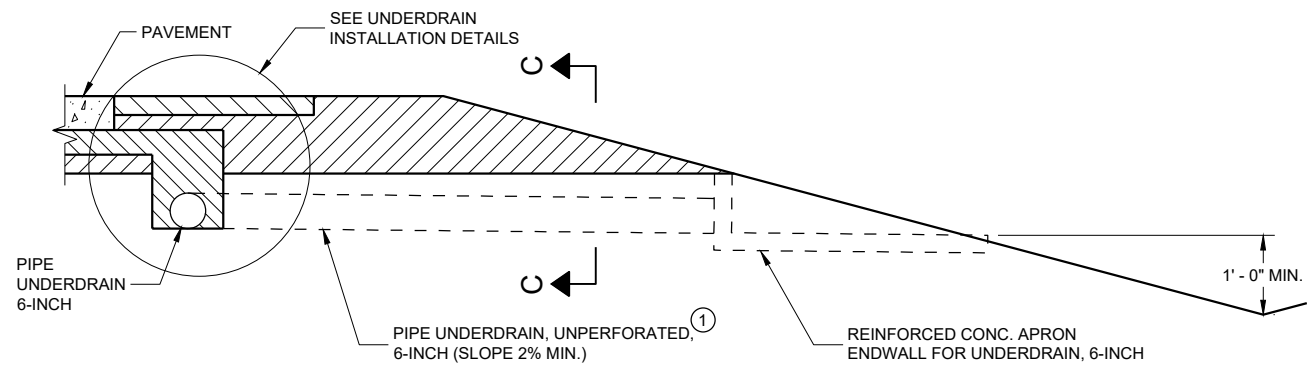
GENERAL NOTES

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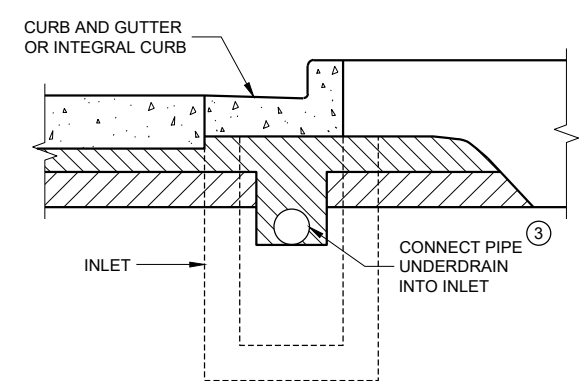
- ① UNPERFORATED PIPE UNDERDRAIN AND FITTINGS FURNISHED FOR OUTFALL PIPE SHALL MEET THE REQUIREMENTS OF ONE OF THE FOLLOWING SPECIFICATIONS:

POLYVINYL CHLORIDE (PVC) PLASTIC DRAIN, WASTE, AND VENT PIPE AND FITTINGS, ASTM D 2665, SCHEDULE 40 PVC.

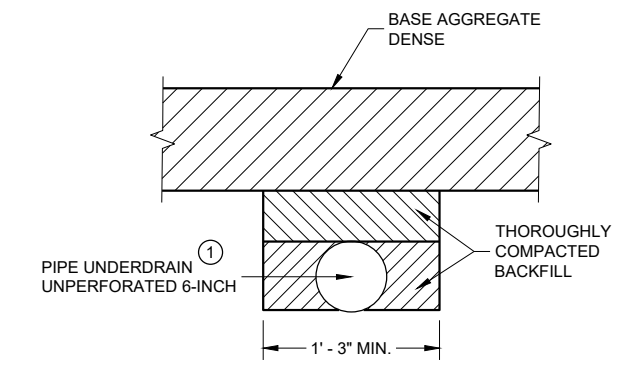
TYPE PSM POLYVINYL CHLORIDE (PVC) SEWER PIPE AND FITTINGS, ASTM D 3034, SDR 23.5 PVC SEWER PIPE.
- ② MAXIMUM SPACING OF EDGEDRAIN OUTLETS SHALL BE 250 FEET UNLESS OTHERWISE SPECIFIED IN THE CONTRACT OR DIRECTED BY THE ENGINEER.
- ③ EDGEDRAIN SHALL BE CONNECTED TO INLETS REGARDLESS OF FLOW DIRECTION FOR DRAINAGE AND MAINTENANCE ACCESS.
- ④ EDGEDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF ROADWAY.



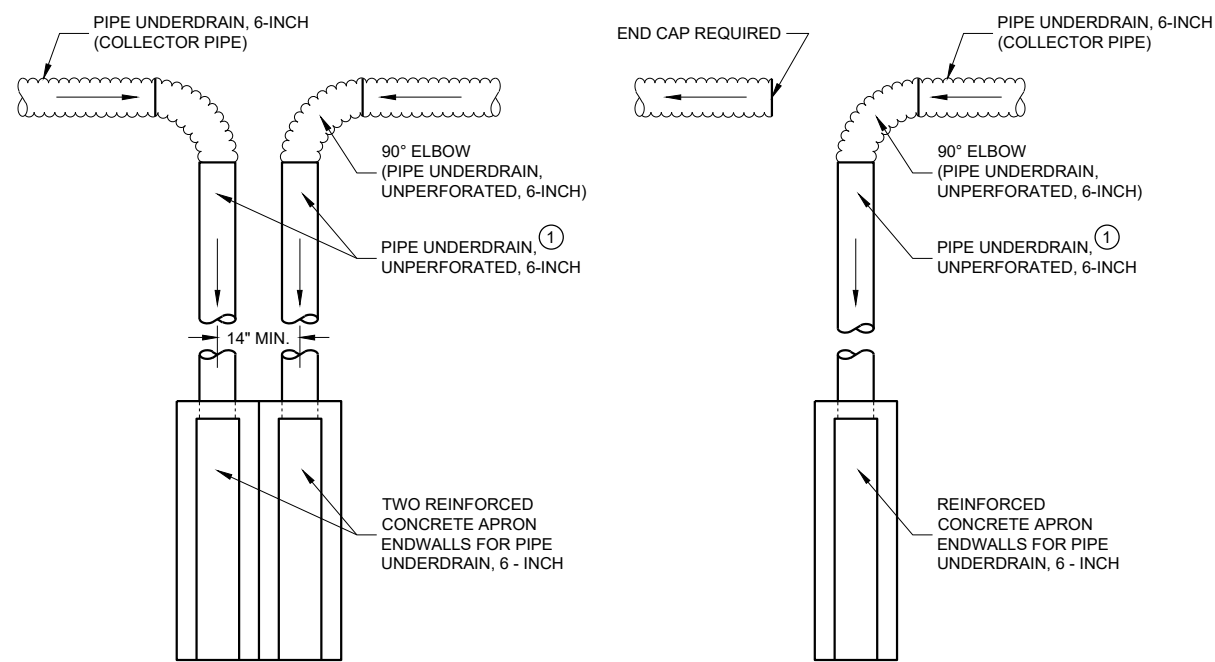
**SECTION A - A
RURAL CROSS SECTION**



**SECTION B - B
URBAN CROSS SECTION**



**SECTION C - C
TRENCH FOR OUTFALL PIPE**



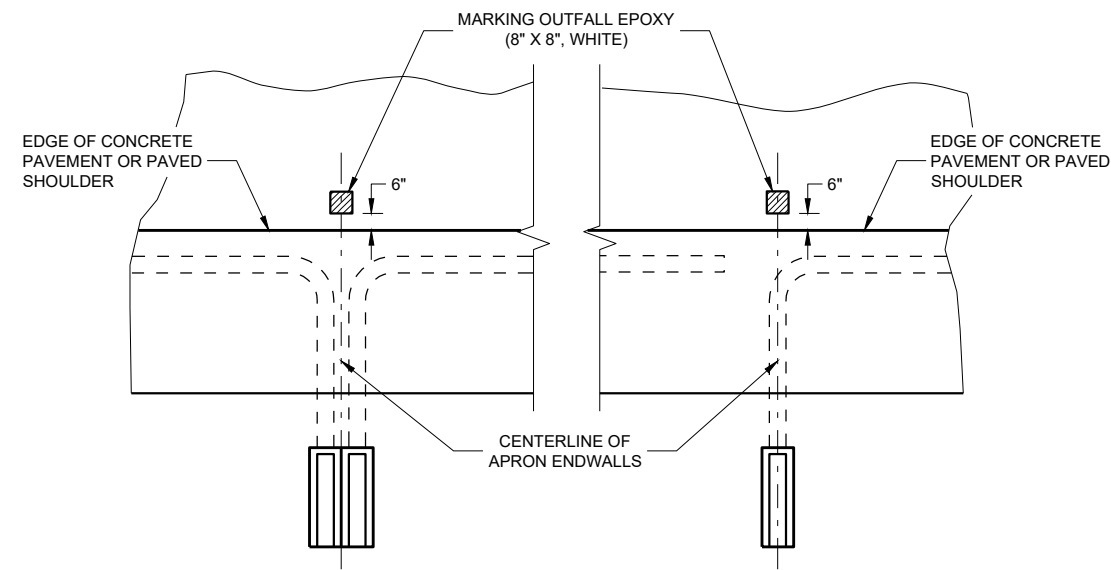
DETAIL "A"

TO BE USED AT LOW POINT LOCATIONS

DETAIL "B"

TO BE USED AT INTERMEDIATE LOCATIONS

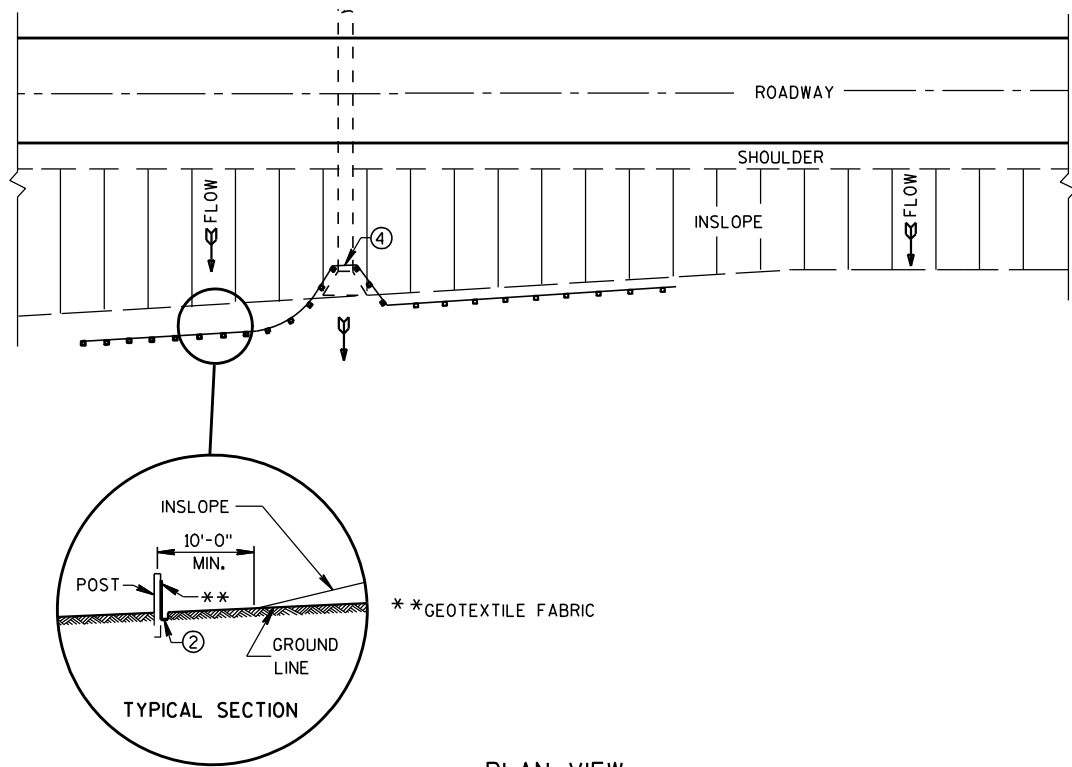
TYPICAL DRAIN OUT DETAILS



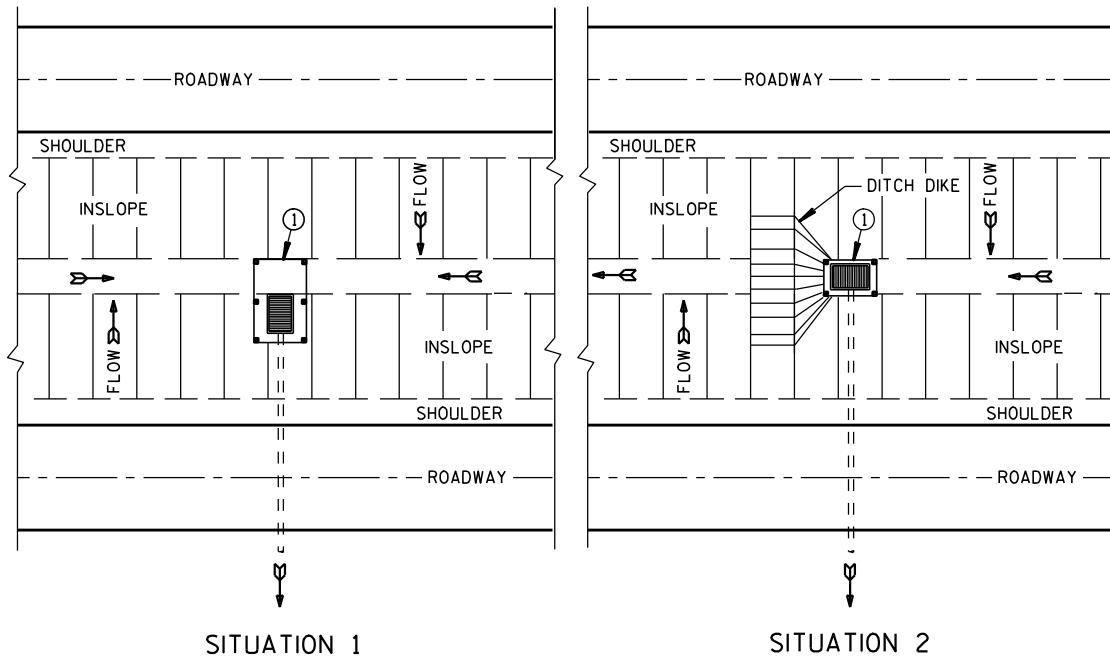
PAVEMENT MARKINGS FOR OUTFALL MARKERS

**EDGEDRAIN OUTLET
AND OUTFALL MARKERS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

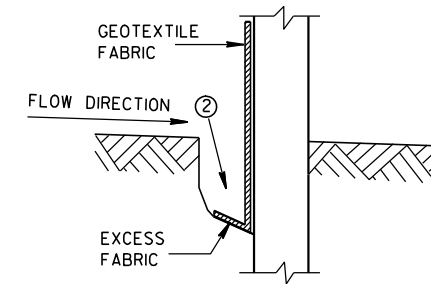


SITUATION 1 SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

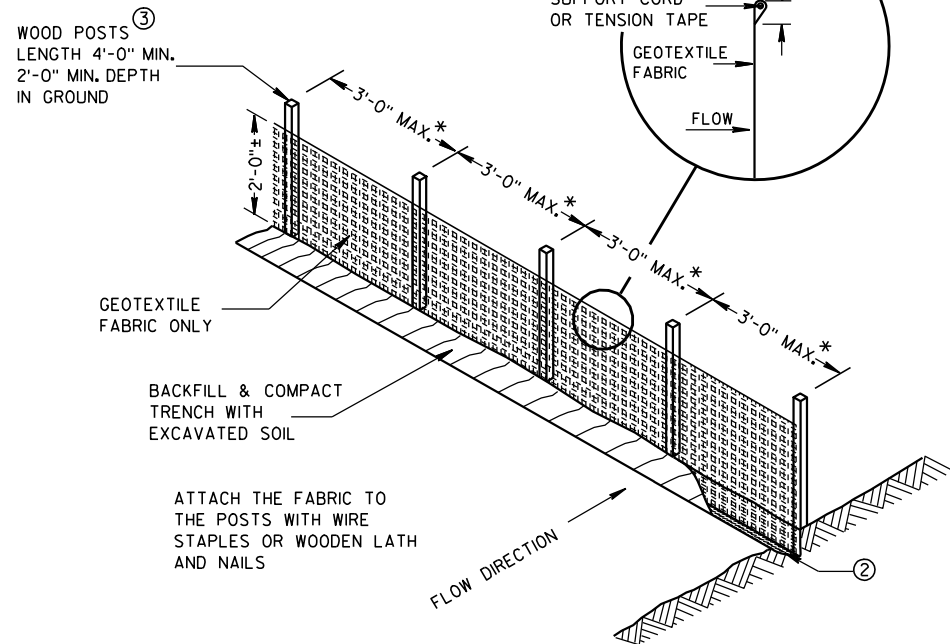
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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



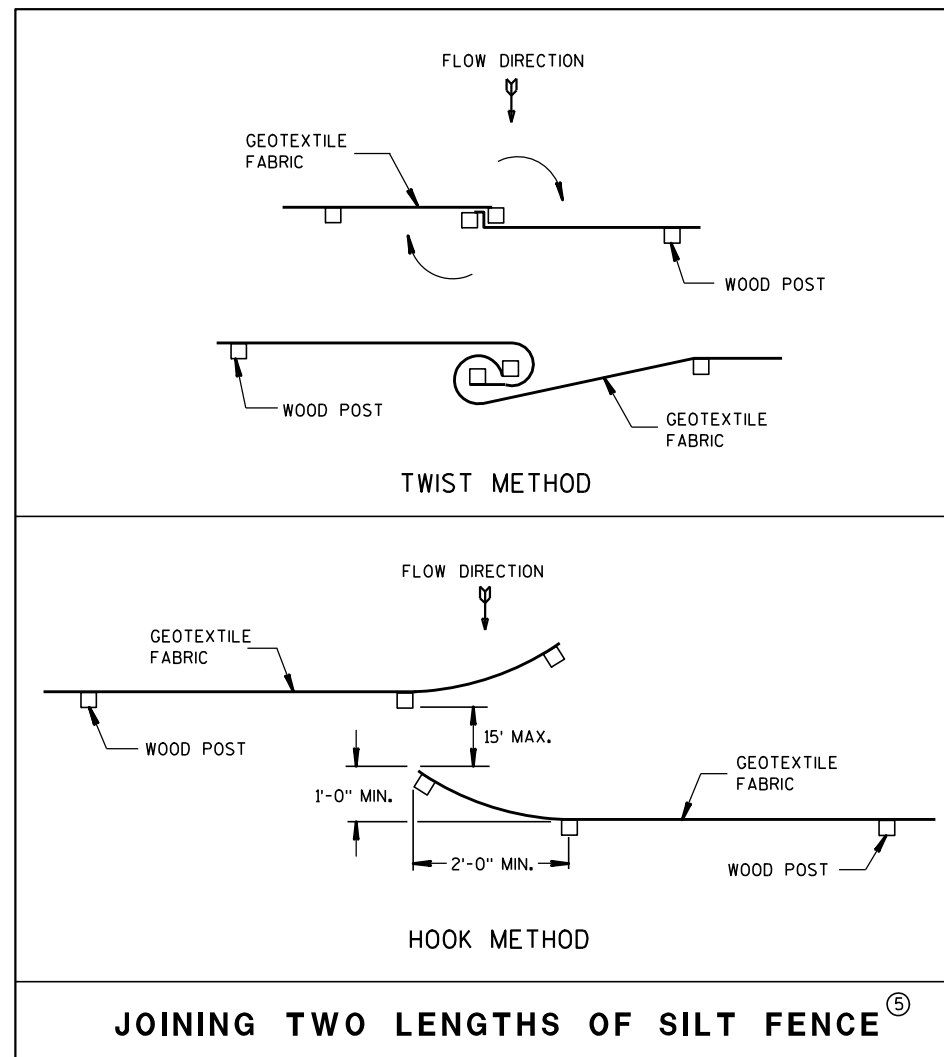
TRENCH DETAIL

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

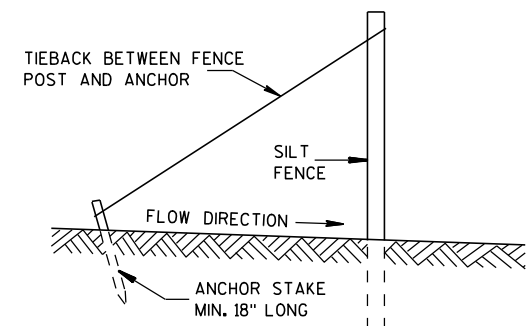


SILT FENCE

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



JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

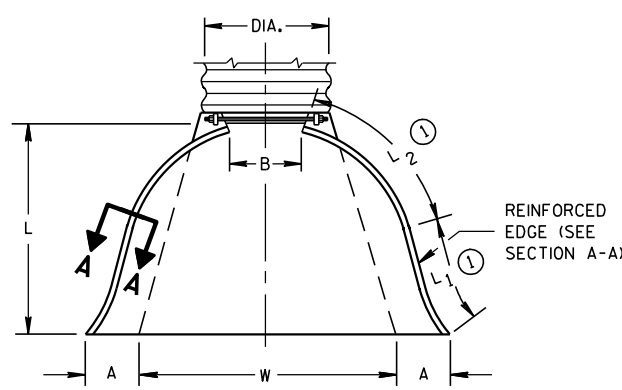
APPROVED
4-29-05 /S/ Beth Canestra
DATE CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

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

* EXCEPT CENTER PANEL SEE GENERAL NOTES

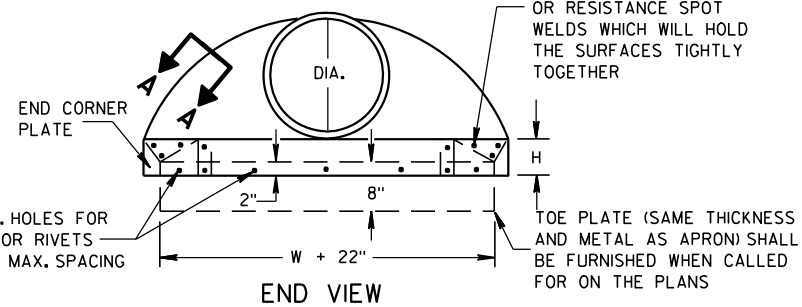
| REINFORCED CONCRETE APRON ENDWALLS | | | | | | | | | |
|------------------------------------|---------------------|--------|--------|-----------|------------|-----|-------|---------------|--|
| PIPE DIA. (IN.) | DIMENSIONS (Inches) | | | | | | | APPROX. SLOPE | |
| | T | A | B | C | D | E | G | | |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

* MINIMUM
** MAXIMUM

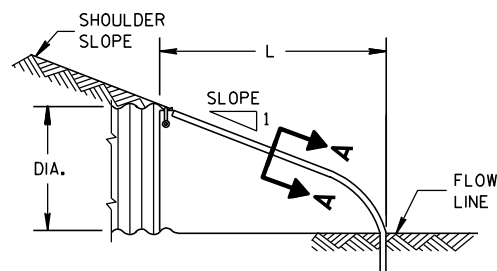


PLAN VIEW

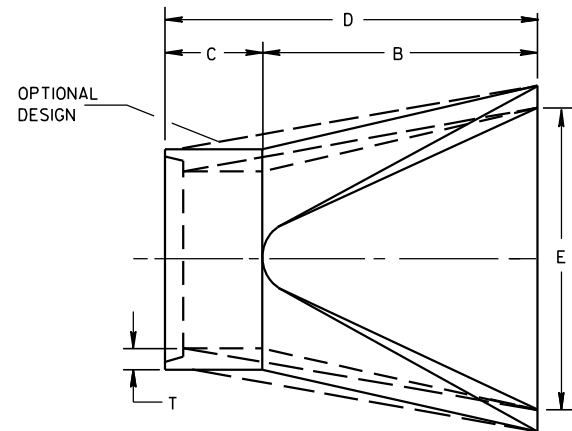
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



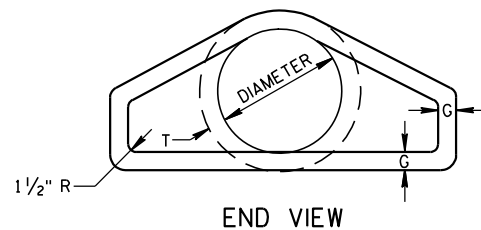
END VIEW



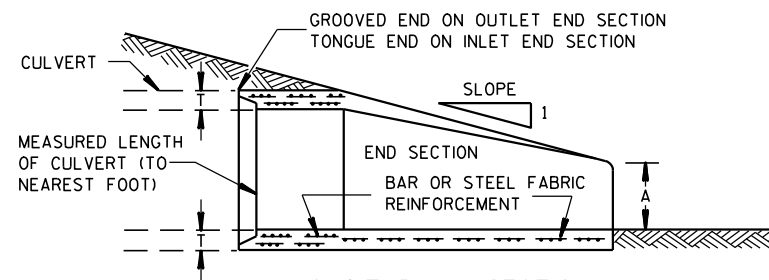
SIDE ELEVATION
METAL ENDWALLS



PLAN

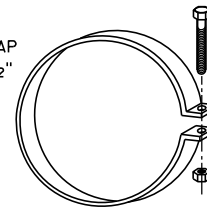


END VIEW



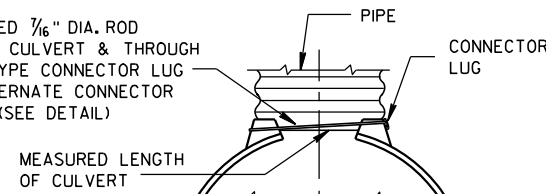
LONGITUDINAL SECTION
CONCRETE ENDWALLS

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 3/16" DIA. ROD AROUND CULVERT & THROUGH TANK TYPE CONNECTOR LUG OR ALTERNATE CONNECTOR STRAP (SEE DETAIL)



TYPE 1
FOR 12" THRU 24" CORR. PIPE

THREADED 3/16" DIA. ROD OVER TOP OF APRON, SIDE LUGS TO BE RIVETED TO APRON



TYPE 2
FOR 30" THRU 96" CORR. PIPE

MEASURED LENGTH OF CULVERT

CONNECTOR SECTION TO BE PAID FOR AS PART OF END SECTION

COUPLING BAND REQUIRED

RIVETED OR BOLTED

TYPE 3
FOR 42" THRU 96" CORR. PIPE

DIMPLED OR CORRUGATED COUPLING BAND

RIVETED OR BOLTED AT DIMPLES (6" C-C FOR CORRUGATED BAND)

MEASURED LENGTH OF CULVERT

2 - 1/2" X 6" BAND BOLTS

TYPE 5

ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

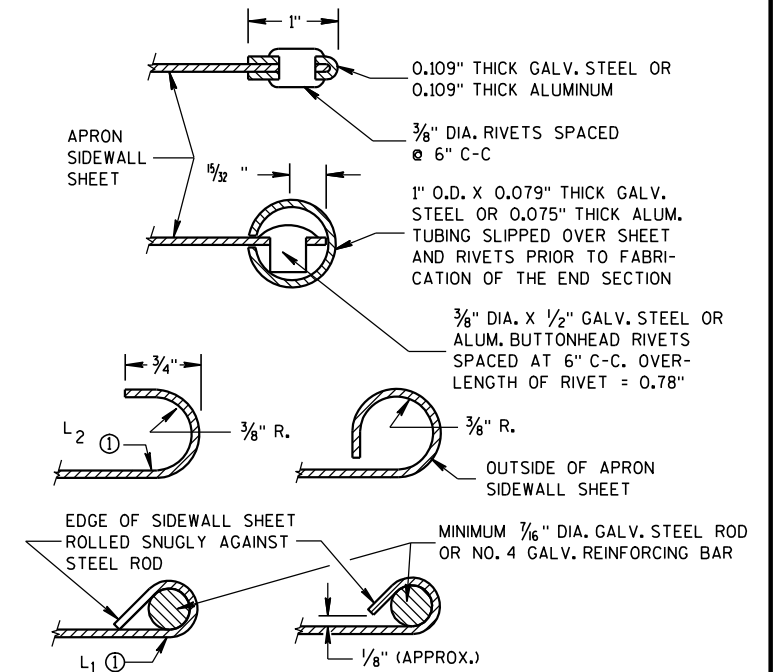
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

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

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

APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

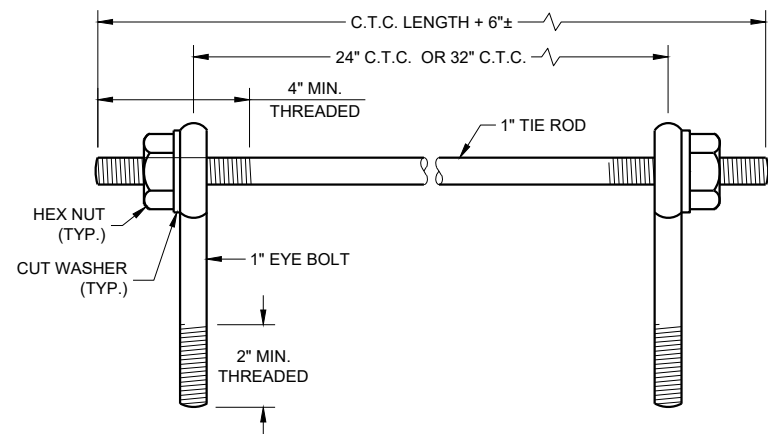
APPROVED

11/30/94

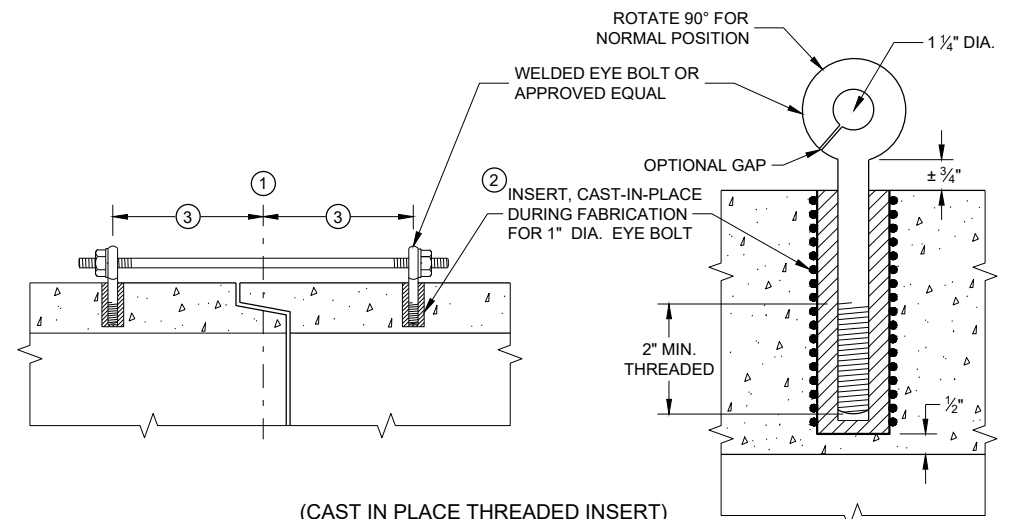
DATE

FHWA

/s/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER



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



(CAST IN PLACE THREADED INSERT)
LONGITUDINAL SECTIONS

GENERAL NOTES

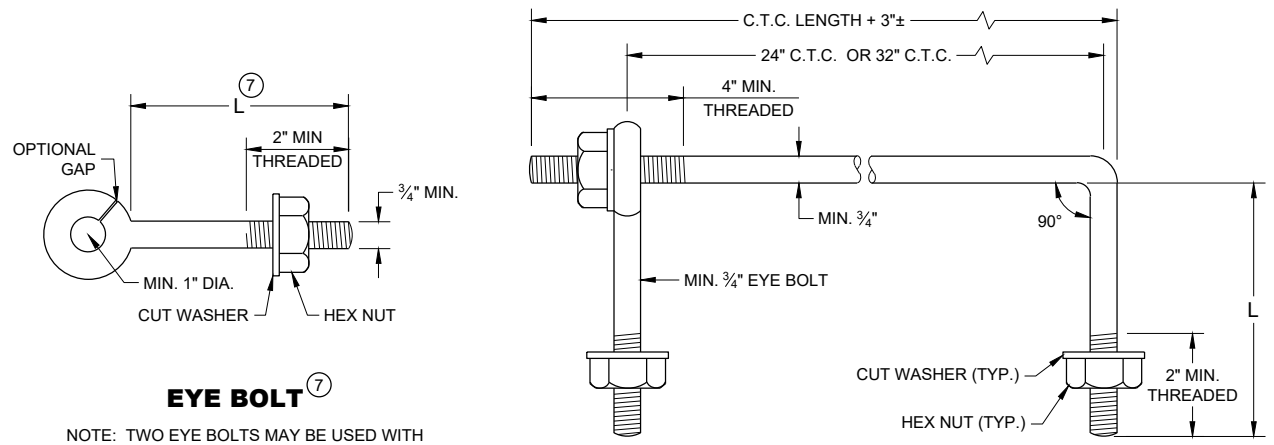
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

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

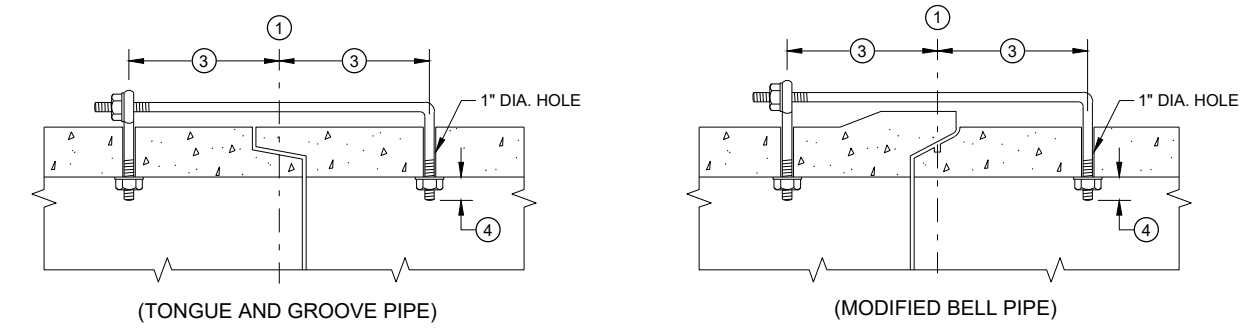
JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

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



EYE BOLT AND TIE ROD

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



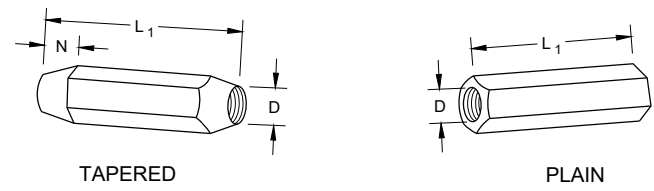
LONGITUDINAL SECTION
 (JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

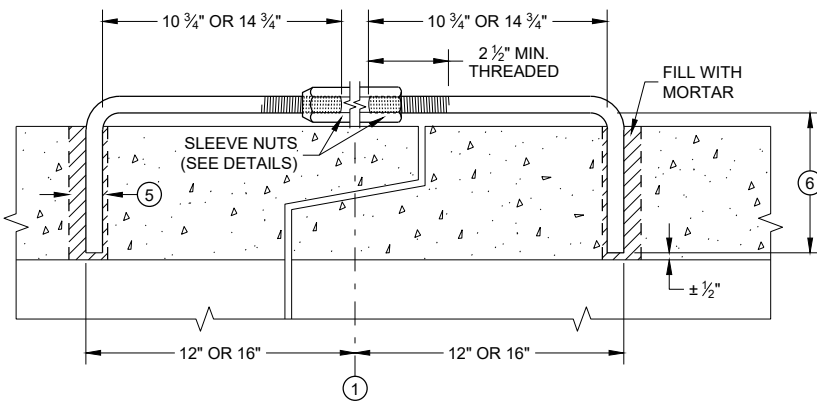
ADJUSTABLE TIE ROD TABLE

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

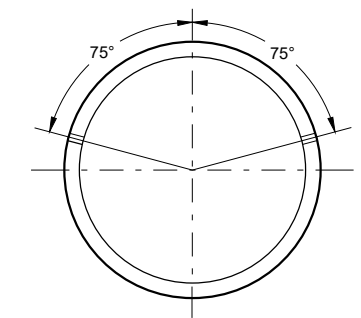
DIMENSIONS SHOWN ARE IN INCHES



RIGHT AND LEFT THREADS SLEEVE NUTS

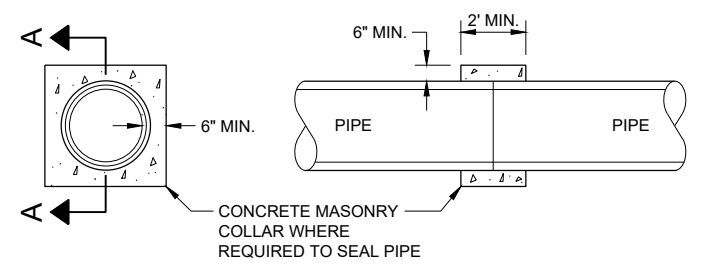


LONGITUDINAL SECTION
ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION

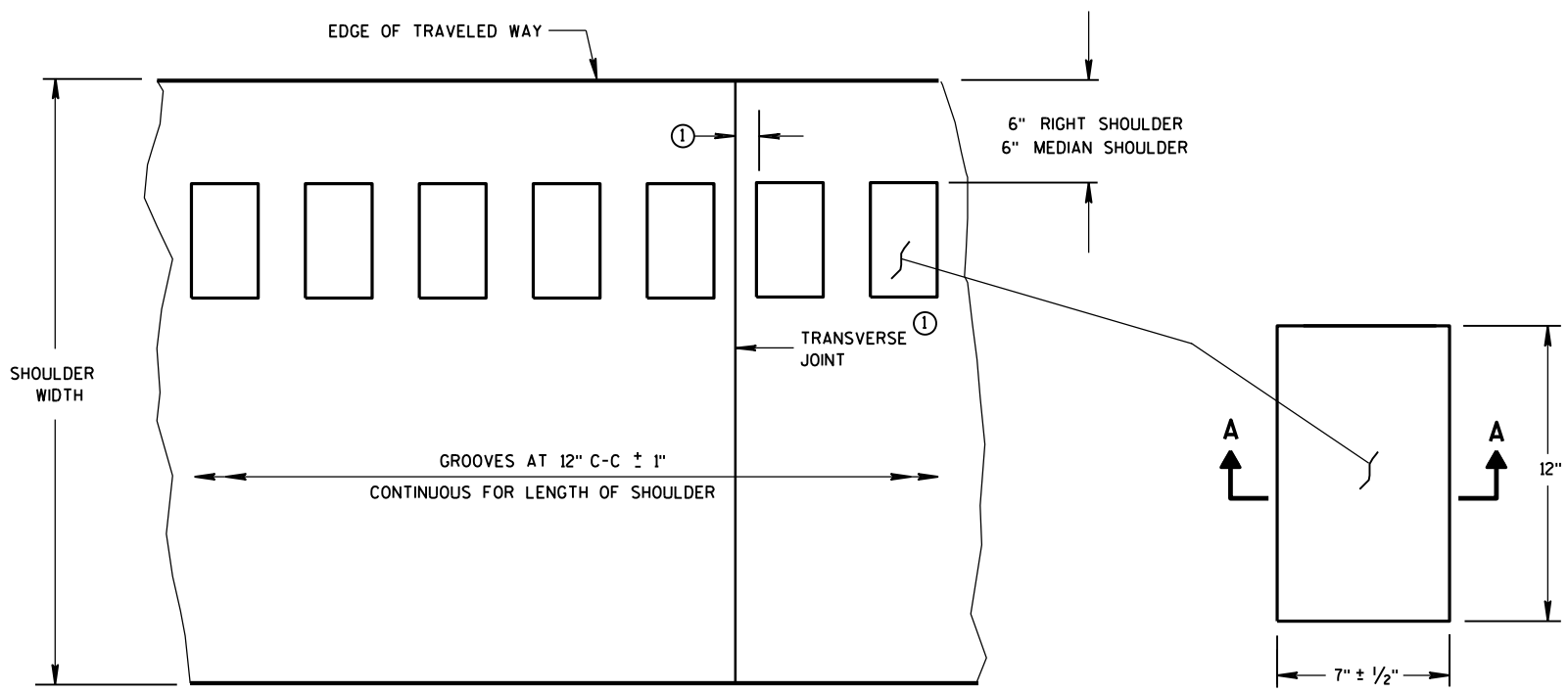


SECTION A - A
CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

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



PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR MILLED RUMBLE STRIP

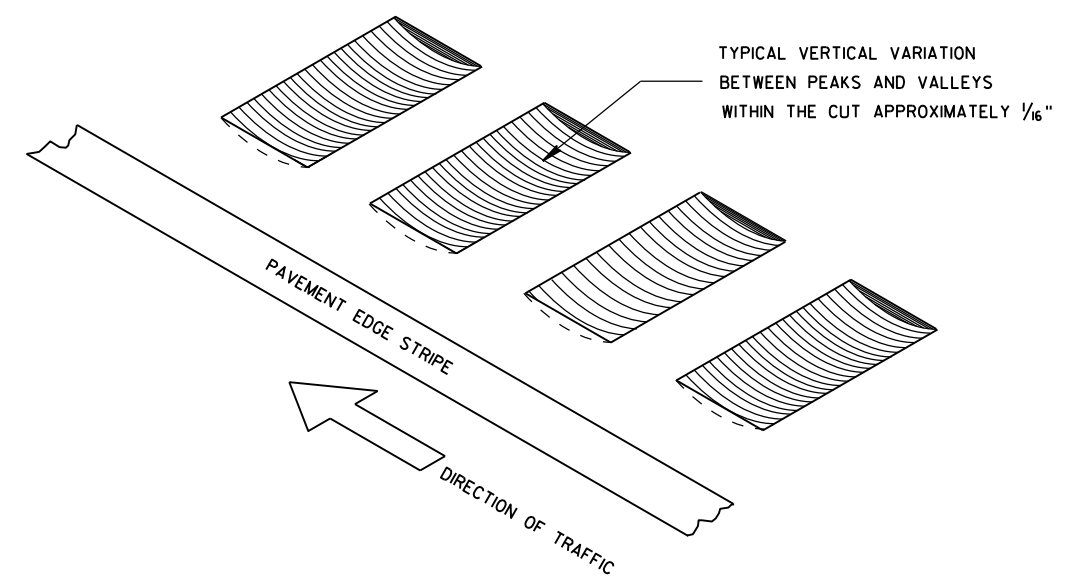
GENERAL NOTES

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

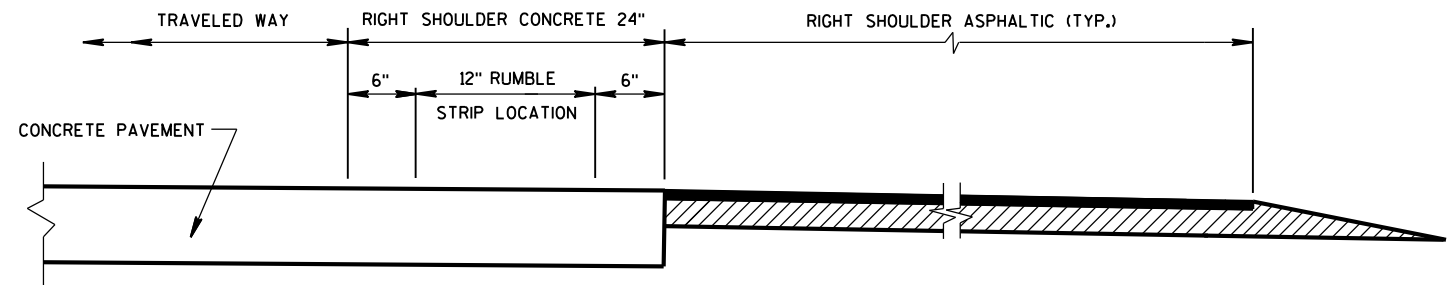
RUMBLE STRIPS ON EXPRESSWAYS

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

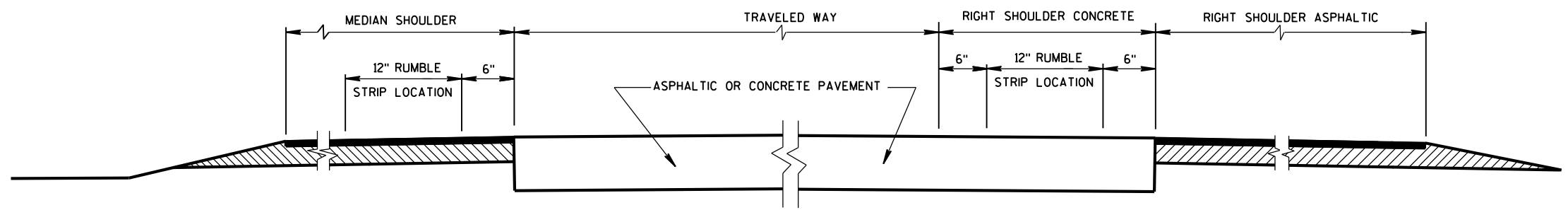
① CONCRETE PAVEMENT - RUMBLE STRIPS SHALL BE A MINIMUM OF 6" AWAY FROM TRANSVERSE JOINTS.



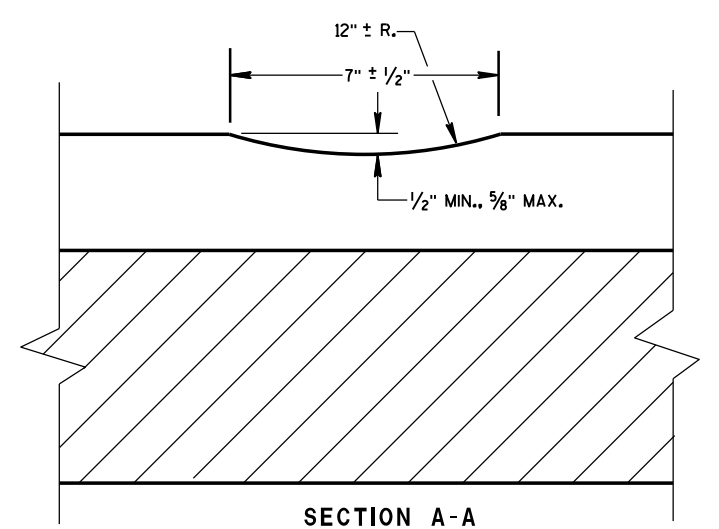
ISOMETRIC



SECTION VIEW
CONCRETE PAVEMENT EXTENDS INTO RIGHT SHOULDER)



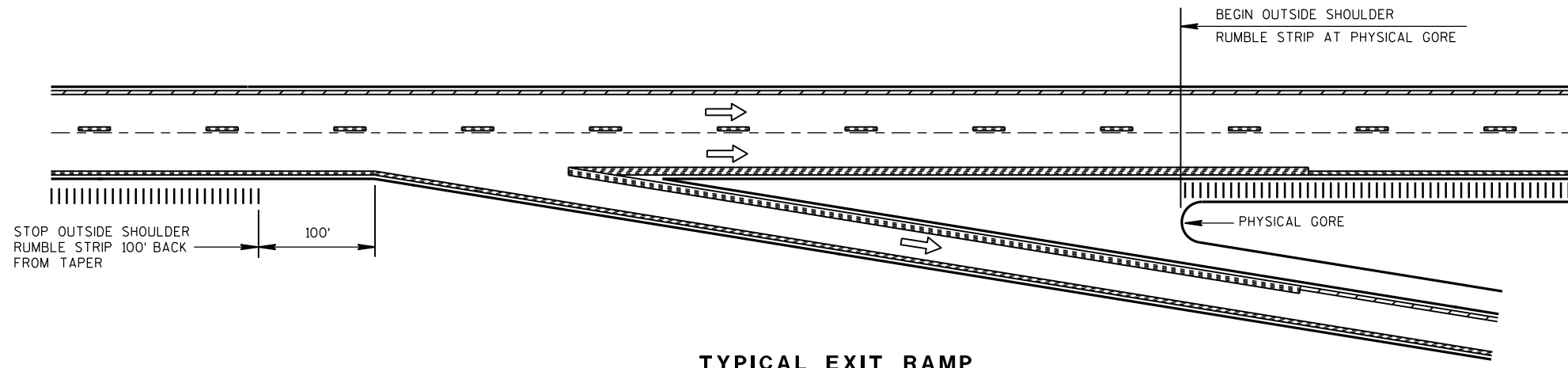
SECTION VIEW
TYPICAL LOCATIONS OF SHOULDER RUMBLE STRIPS
IN RURAL DIVIDED HIGHWAYS
(ONE ROADWAY IS SHOWN)



SECTION A-A

SHOULDER RUMBLE STRIP,
MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



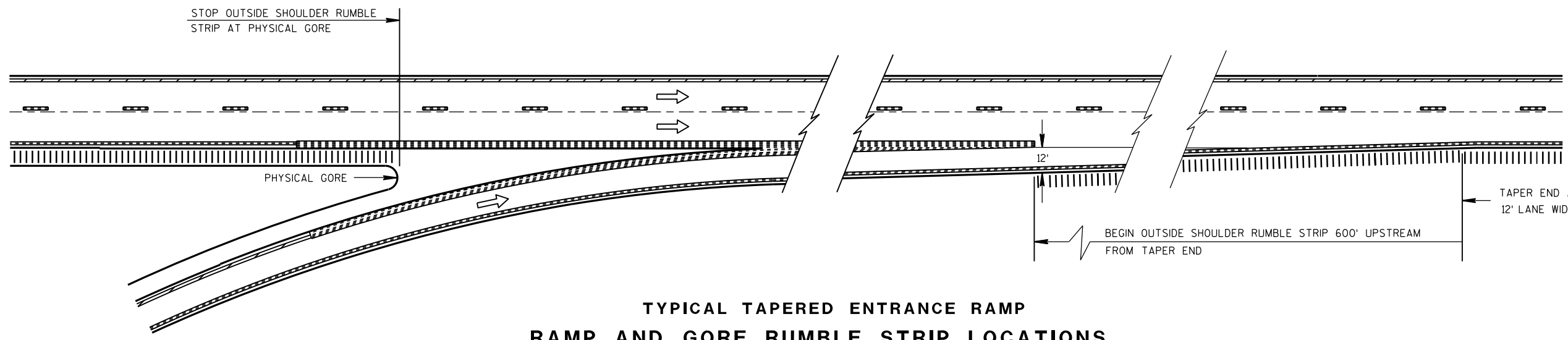
TYPICAL EXIT RAMP

NOTES:

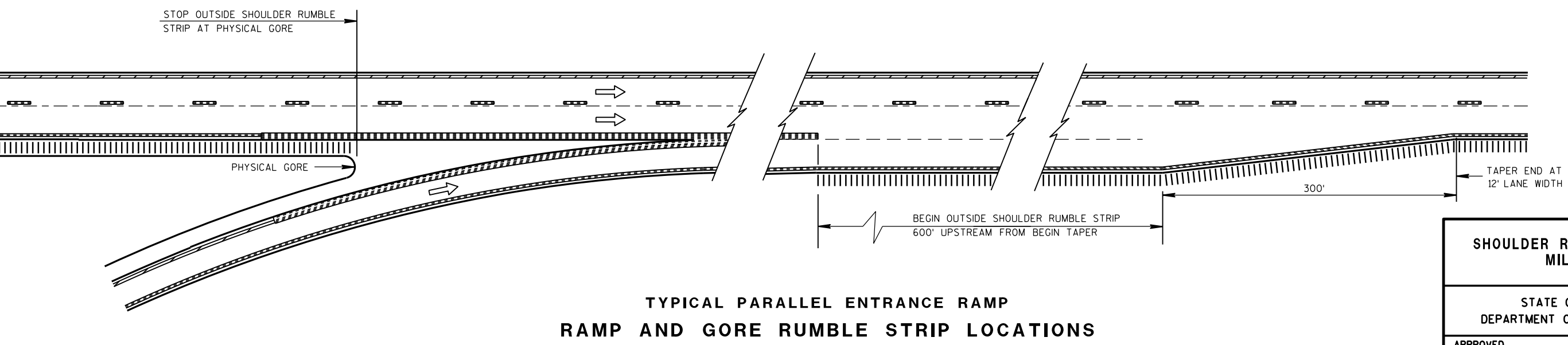
NO RUMBLE STRIP ON EXIT, DIRECTIONAL, OR ENTRANCE RAMP, EXCEPT NEAR THE ENTRANCE TAPER END AND ALONG THE PARALLEL RAMP AREA AS SHOWN.

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

NOTE:
ARROW SYMBOL (→)
SHOWS DIRECTION OF TRAVEL



TYPICAL TAPERED ENTRANCE RAMP
RAMP AND GORE RUMBLE STRIP LOCATIONS



TYPICAL PARALLEL ENTRANCE RAMP
RAMP AND GORE RUMBLE STRIP LOCATIONS

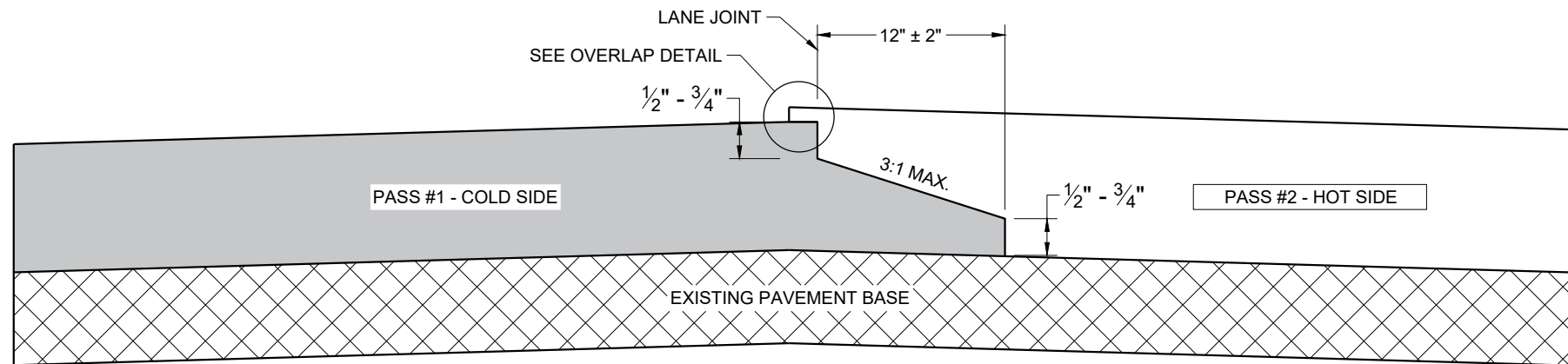
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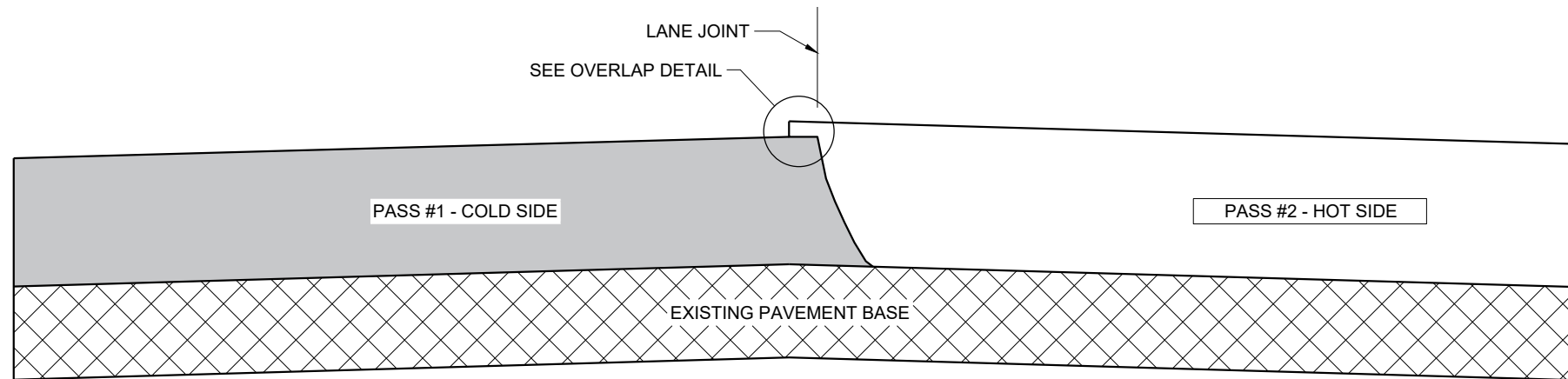
S.D.D. 13 A 5-5b

S.D.D. 13 A 5-5b

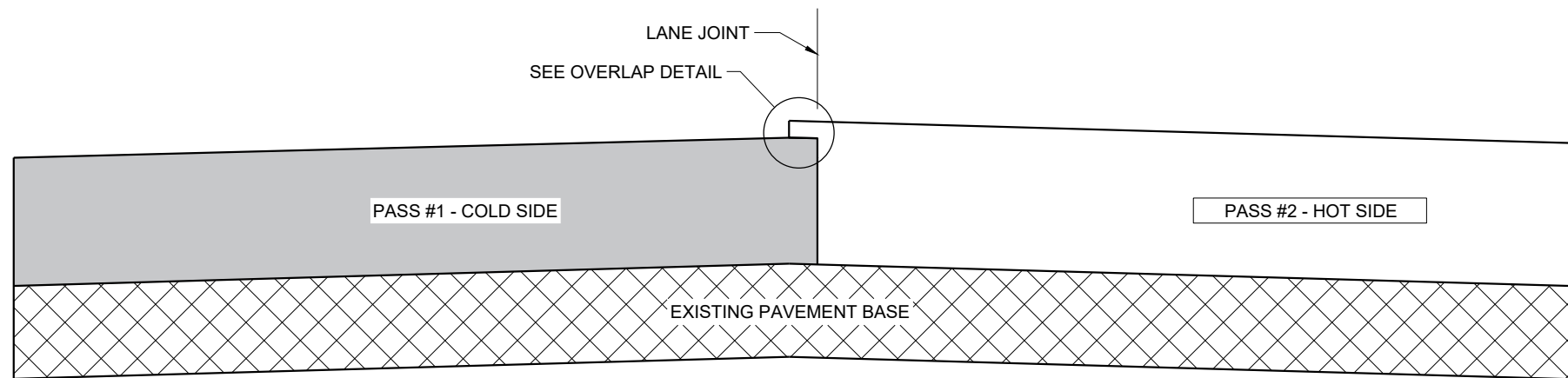
| | |
|--|--|
| SHOULDER RUMBLE STRIP, MILLING | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED DATE 12/17/2012 | /S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER |
| FHWA | |



**TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT**



**TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT**



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

GENERAL NOTES

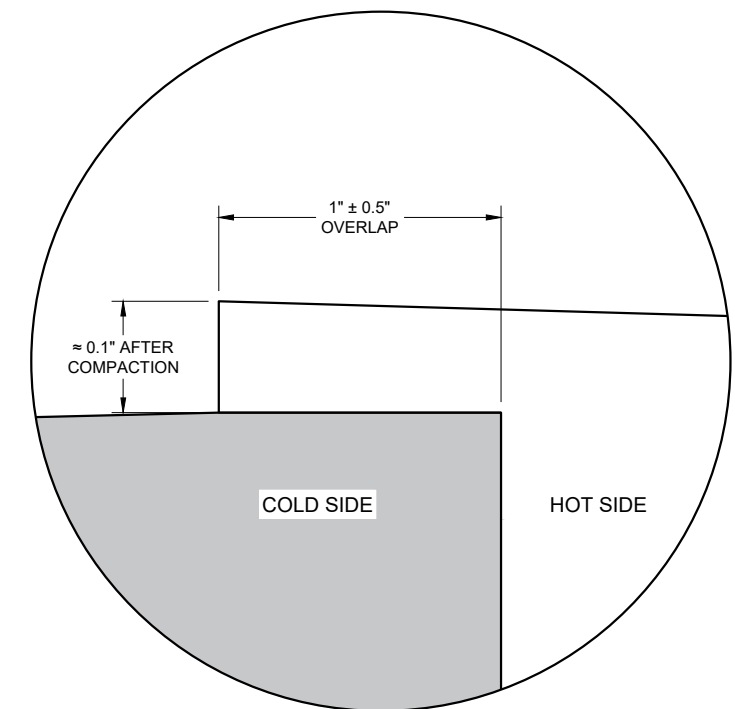
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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)

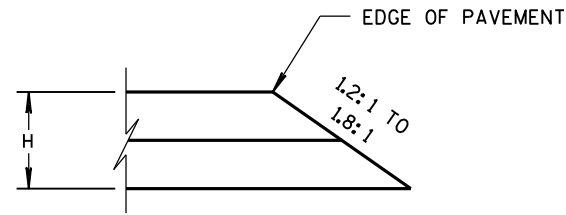
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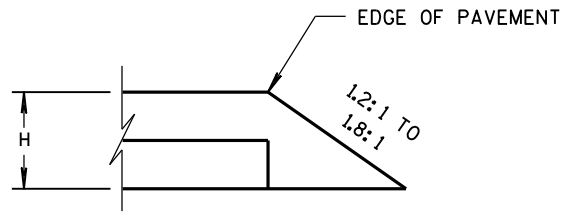
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SDD 13C19 - 03

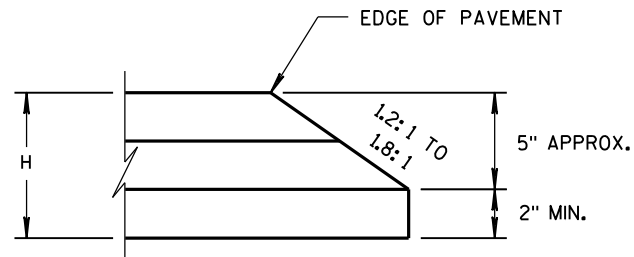
| | |
|--|---|
| HMA LONGITUDINAL JOINTS | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED November 2020 DATE | /S/ Steven Hefel HMA PAVEMENT ENGINEER |
| FHWA | |



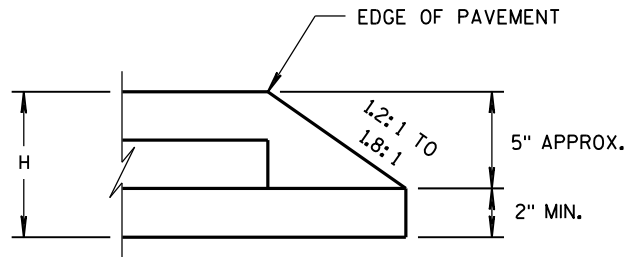
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

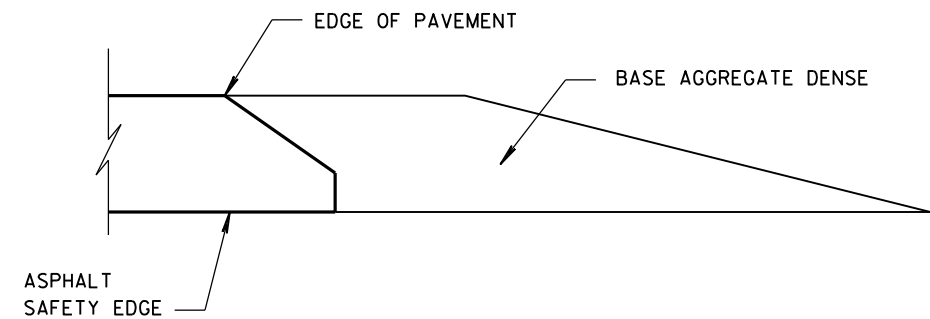


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

6

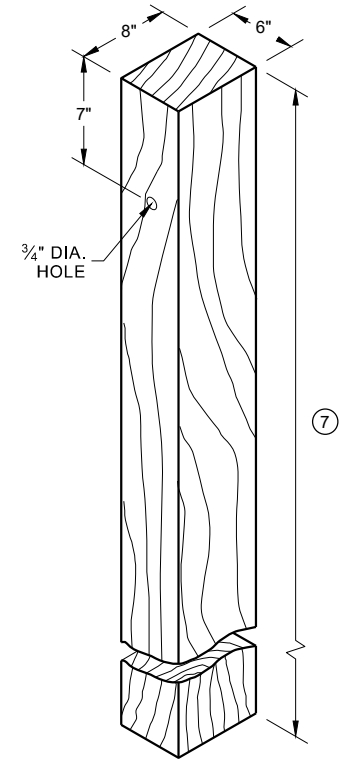
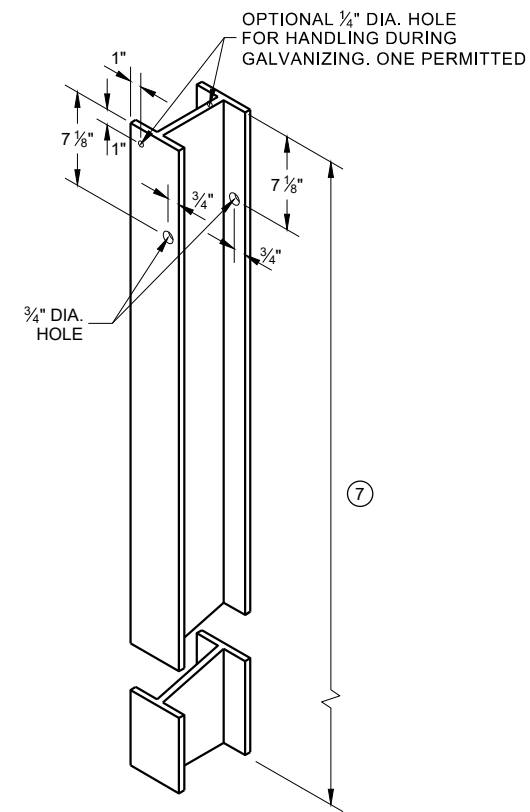
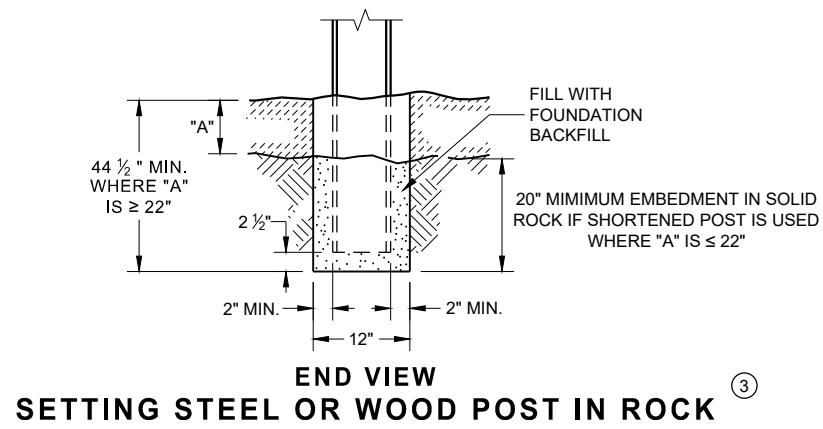
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S.D.D. 14 B 29-1

S.D.D. 14 B 29-1

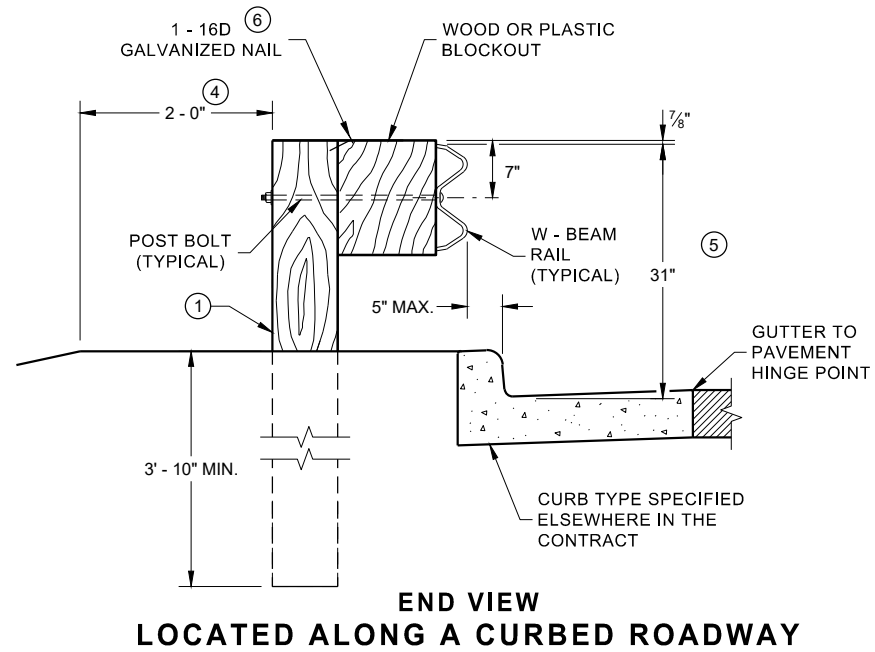
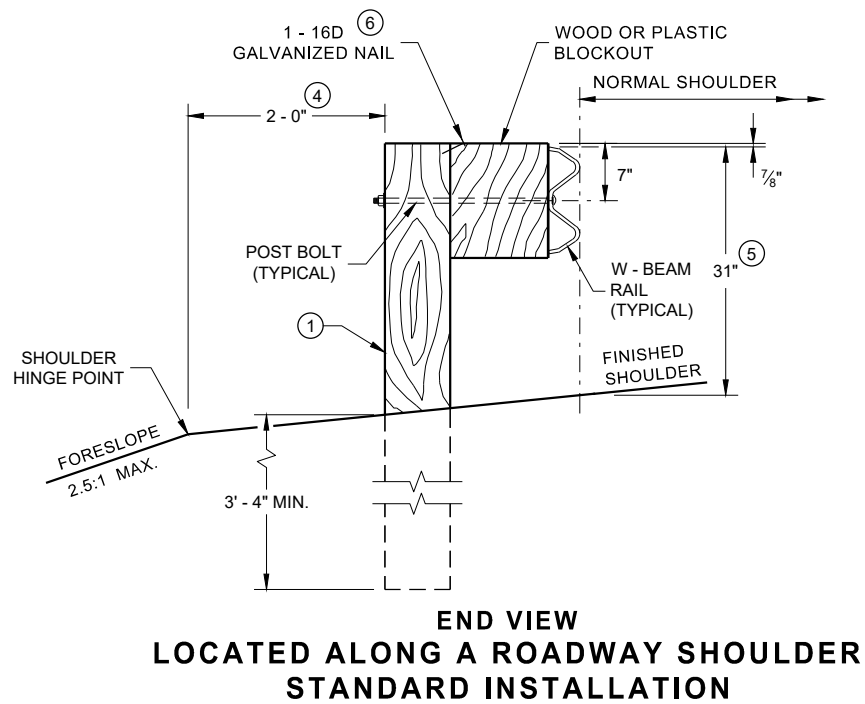
| | |
|--|--|
| SAFETY EDGE _{SM} | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED DATE | /s/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER |
| FHWA | |

- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- ③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AND INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- ④ WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- ⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ±1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 3/4" TO 32".
- ⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ⑦ TOTAL POST LENGTH FOR TYPE K IS 7' - 0". TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".

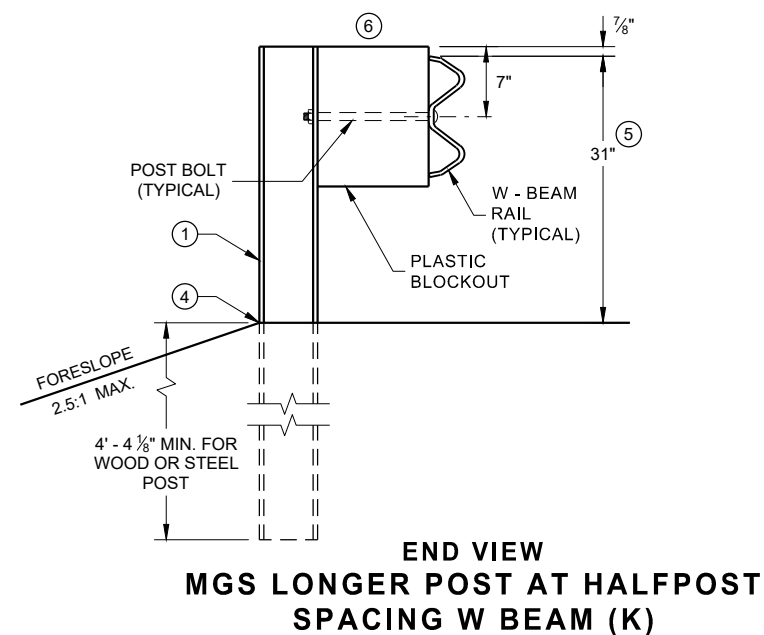
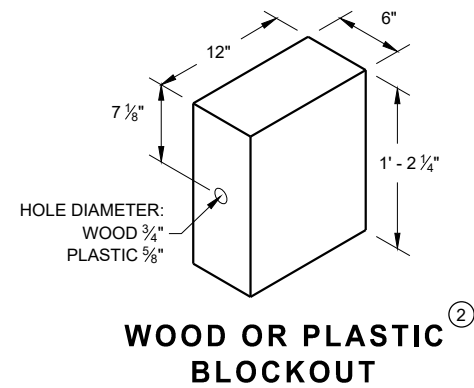
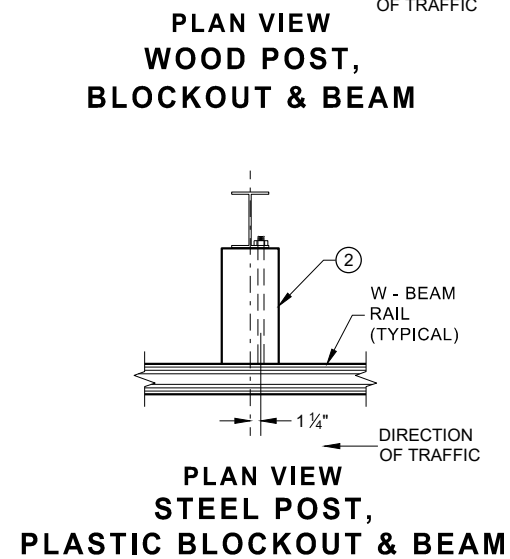
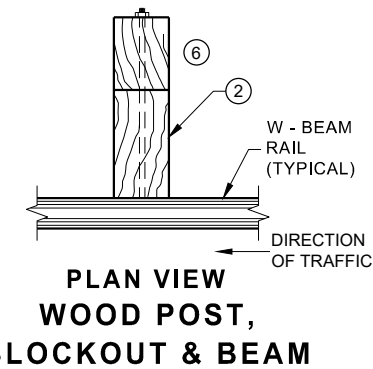


STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9)

WOOD POST (6" X 8") NOMINAL



END VIEW LOCATED ALONG A CURBED ROADWAY

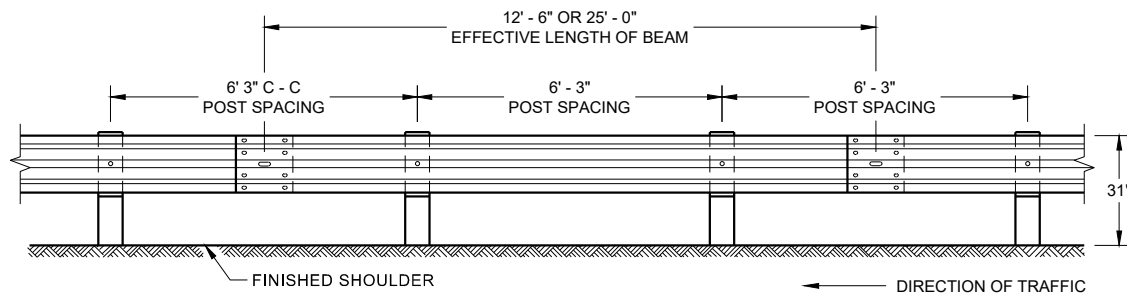


END VIEW MGS LONGER POST AT HALFPST SPACING W BEAM (K)

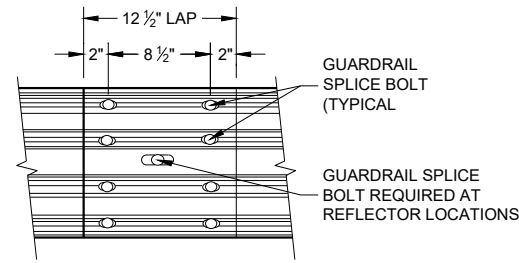
PLAN VIEW STEEL POST, PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



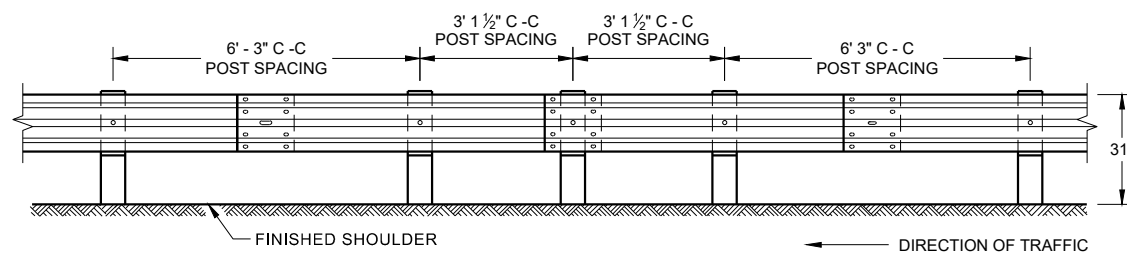
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



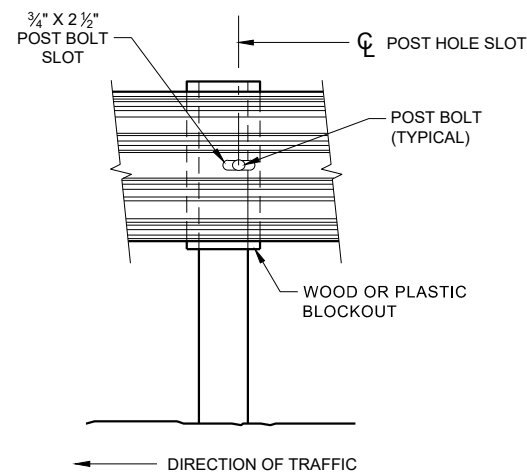
**FRONT VIEW
MID-SPAN BEAM SPLICE**

GENERAL NOTES

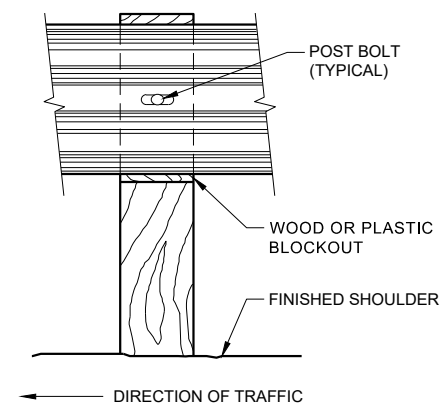
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
 - ⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER 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.



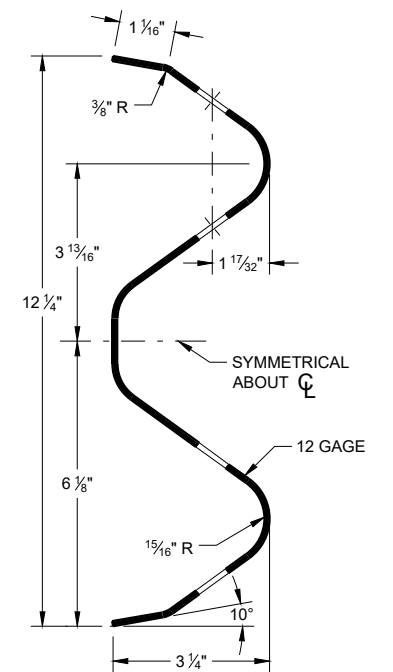
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



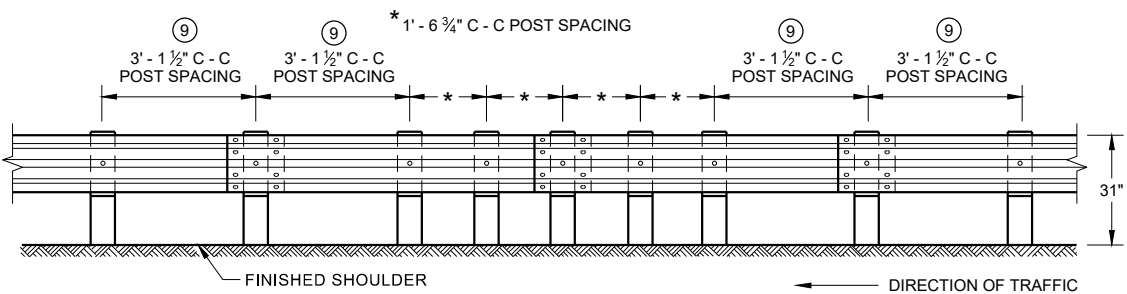
FRONT VIEW AT STEEL POST



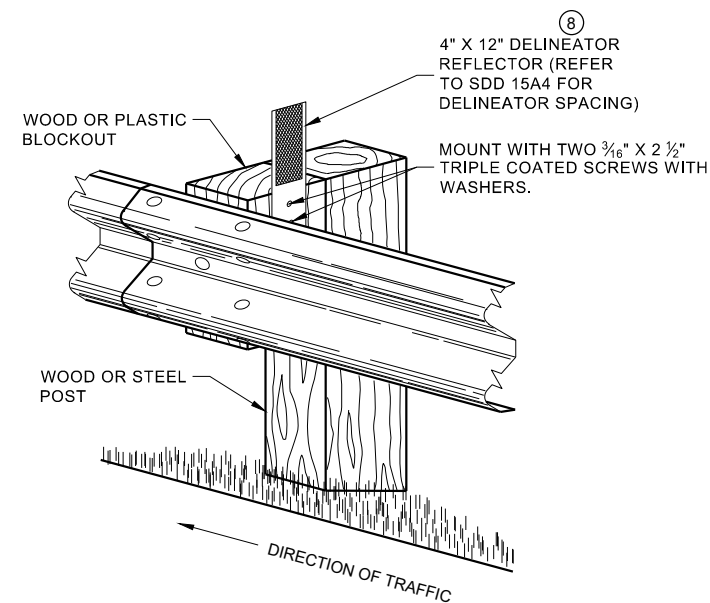
FRONT VIEW AT WOOD POST



SECTION THRU W-BEAM RAIL



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



**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

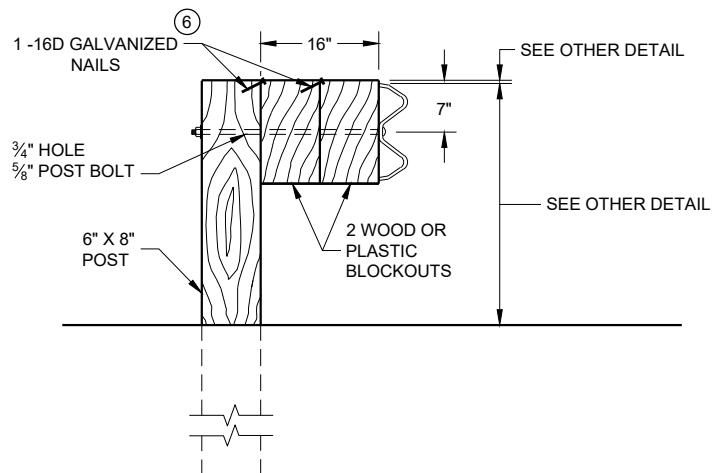
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

6

SDD 14B42 - 07b

SDD 14B42 - 07b

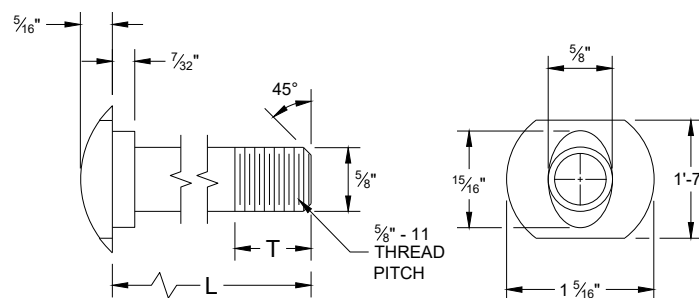


DETAIL FOR 16" BLOCKOUT DEPTH

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.

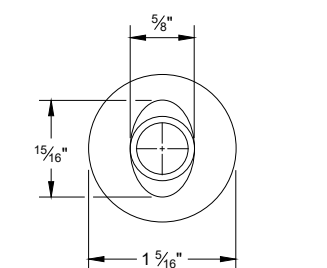
NOTE:

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.

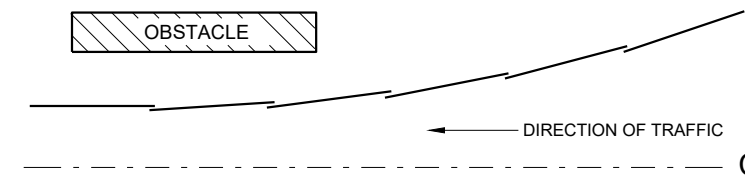


POST BOLT TABLE

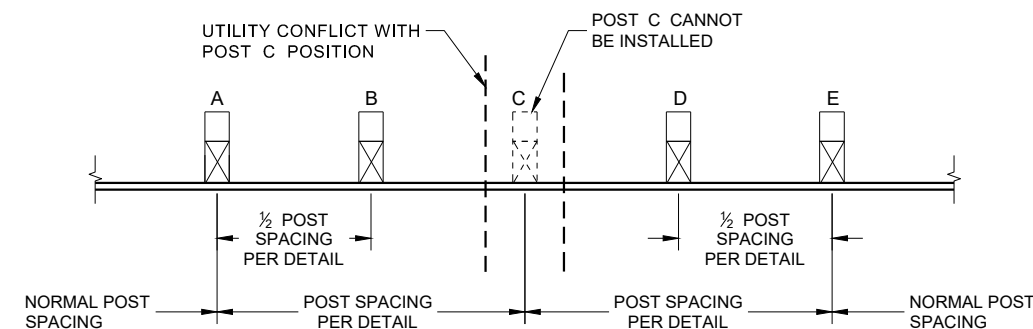
| L | T (MIN.) |
|--------|----------|
| 1 1/4" | 1 1/8" |
| 2" | 1 3/4" |
| 10" | 4" |
| 14" | 4 1/16" |
| 18" | 4" |
| 21" | 4 1/16" |
| 25" | 4" |



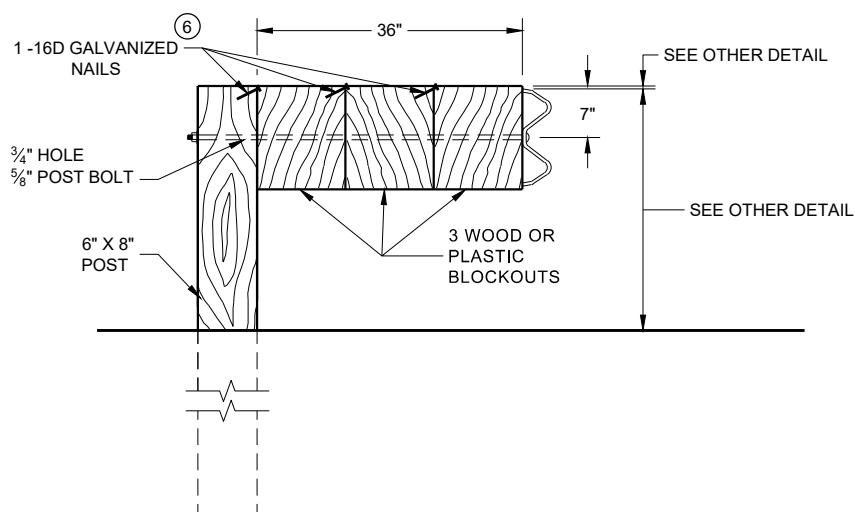
ALTERNATE BOLT HEAD



**PLAN VIEW
BEAM LAPPING DETAIL**

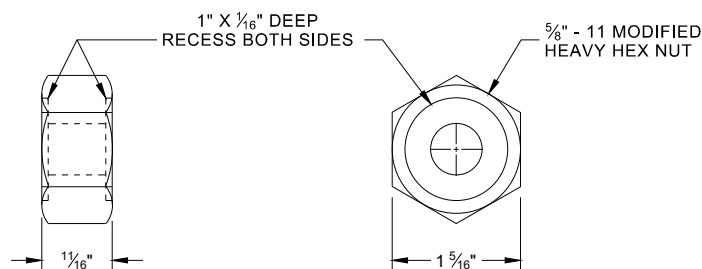


**POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION**

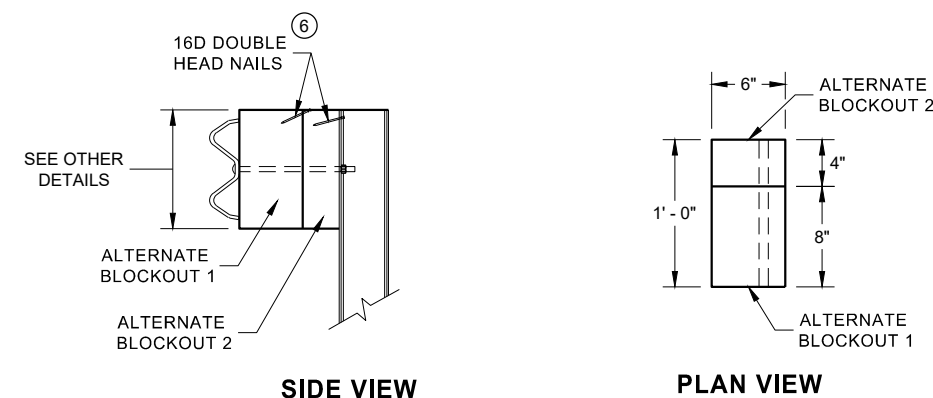


DETAIL FOR 36" BLOCKOUT DEPTH

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, SPLICE BOLT
AND RECESS NUT**

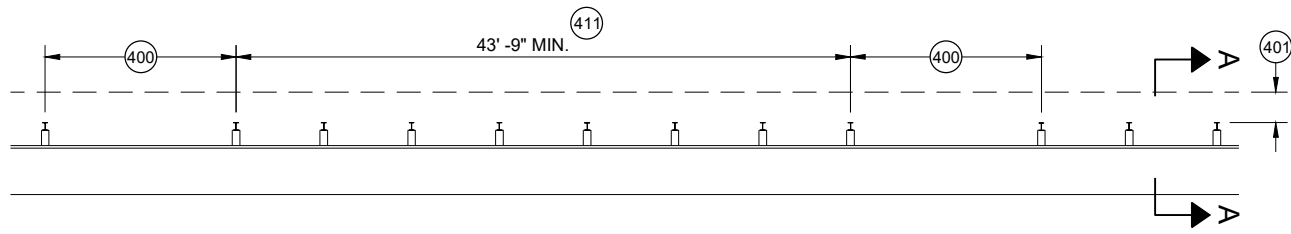


**ALTERNATE WOOD
BLOCKOUT DETAIL**

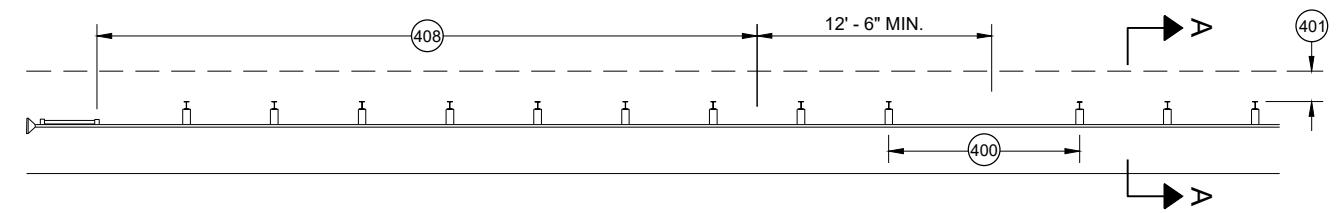
6 WHEN USING STEEL POST AND WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

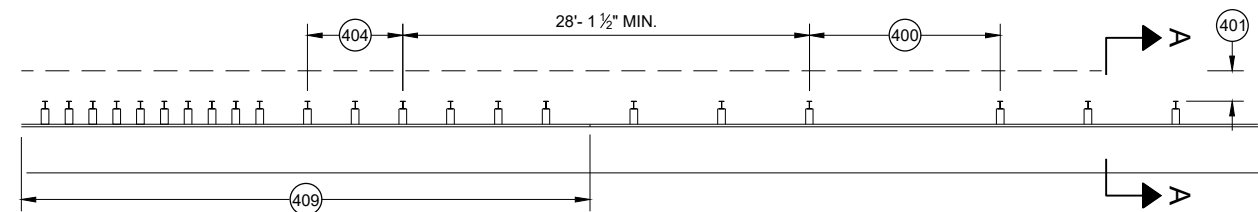
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



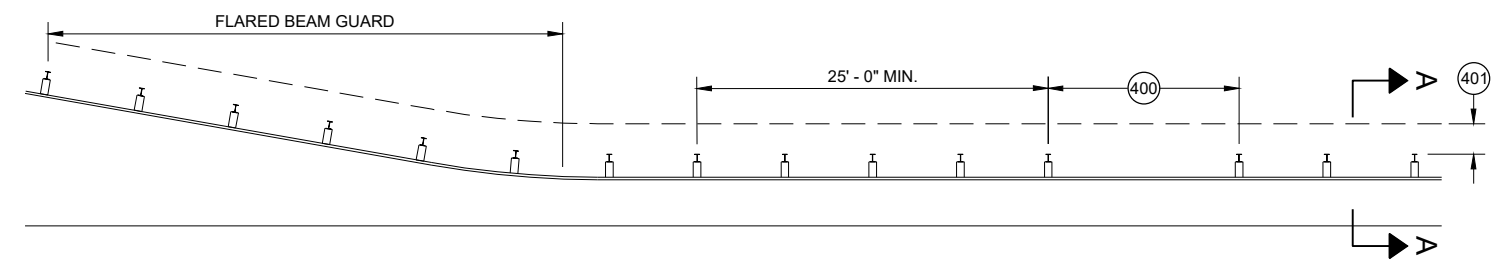
MISSING POST IN MGS GUARDRAIL



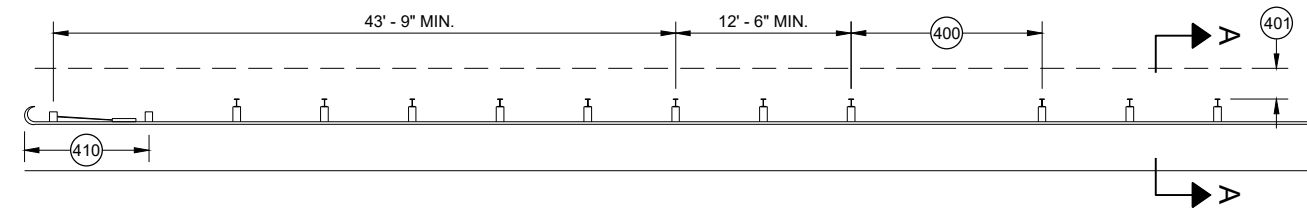
MISSING POST IN MGS GUARDRAIL NEAR EAT



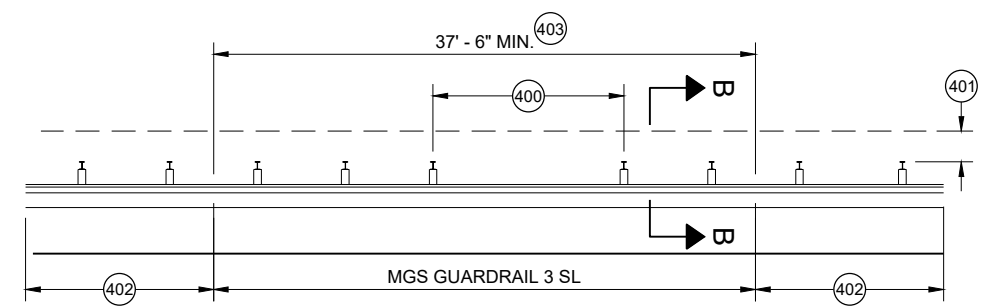
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

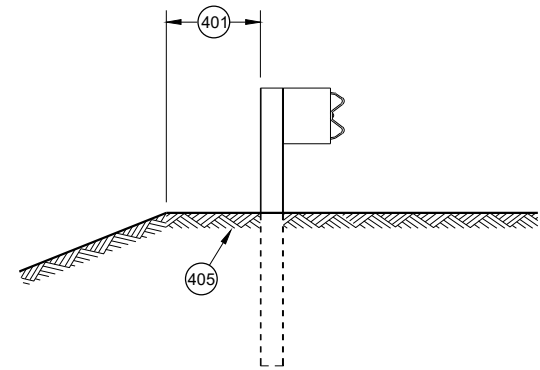


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

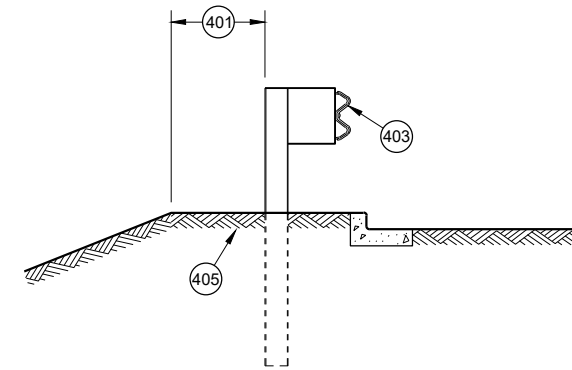


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

- 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.

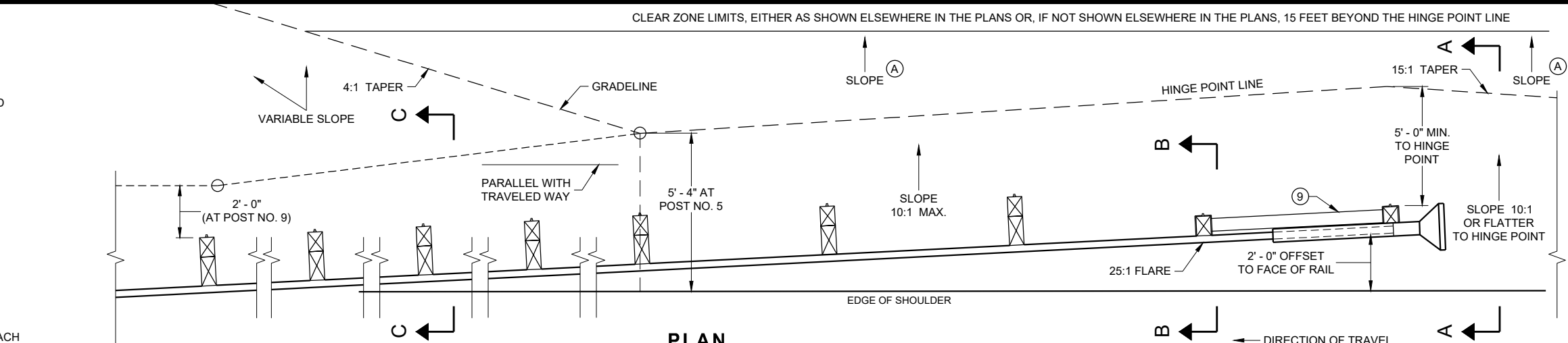
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

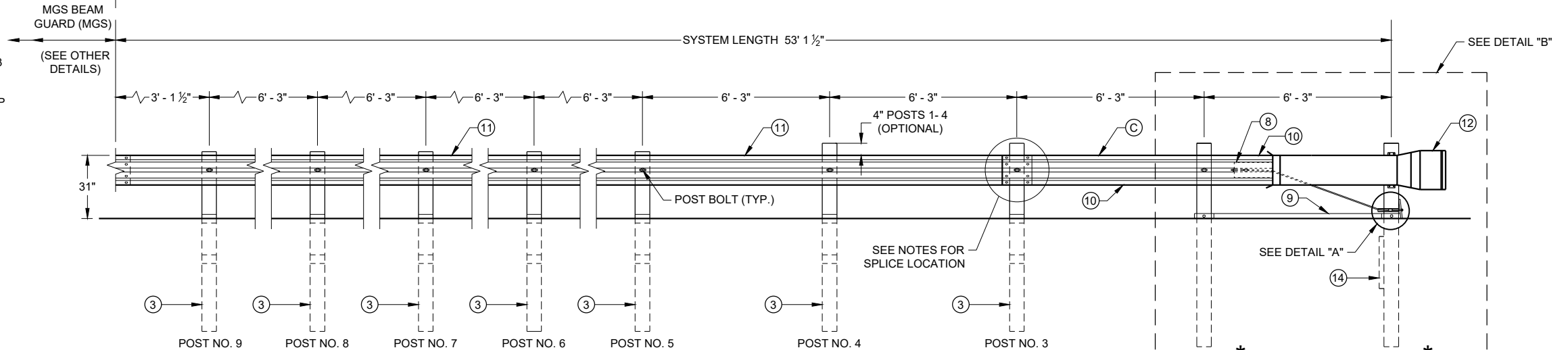
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

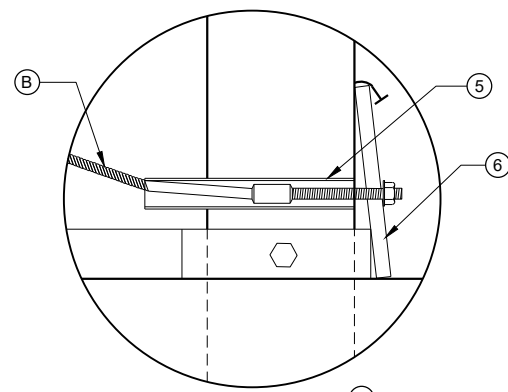
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



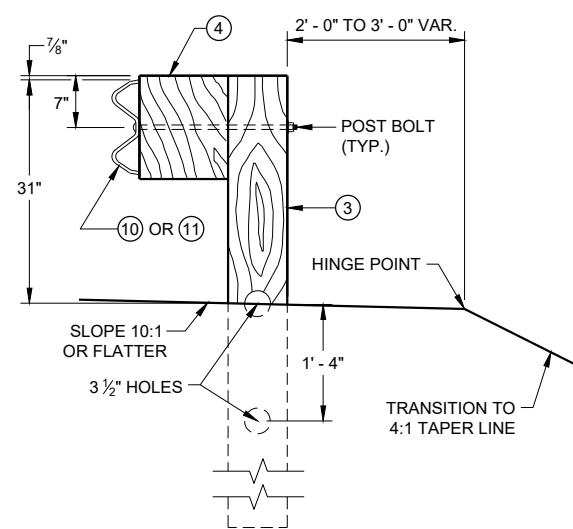
PLAN



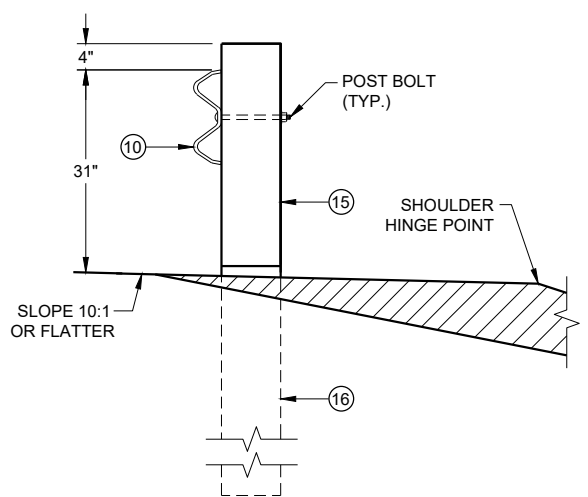
ELEVATION



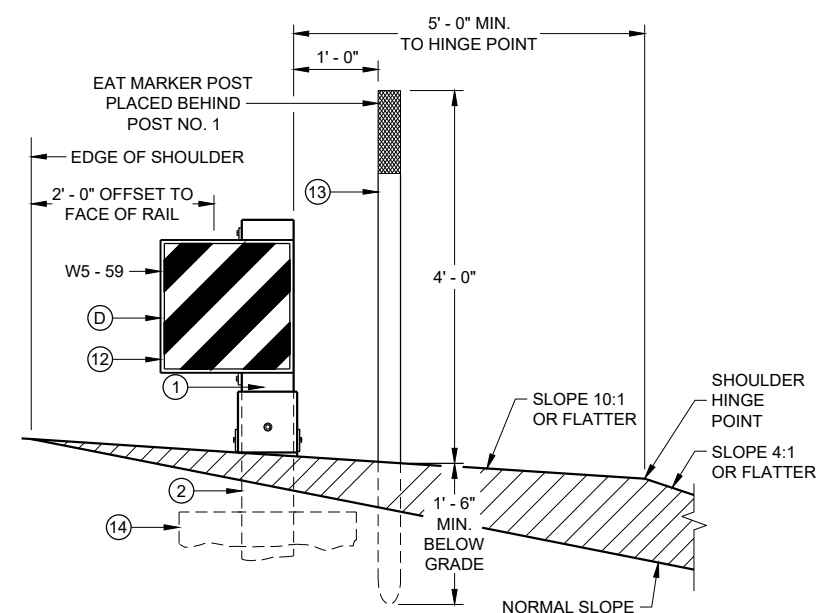
DETAIL "A"



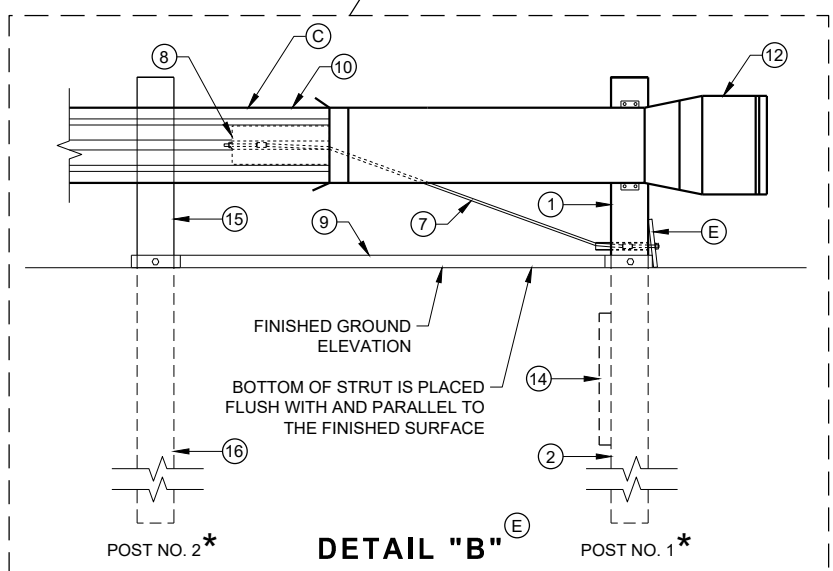
**SECTION C - C
TYPICAL AT POST NOS. 3 - 9**



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



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



DETAIL "B"

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

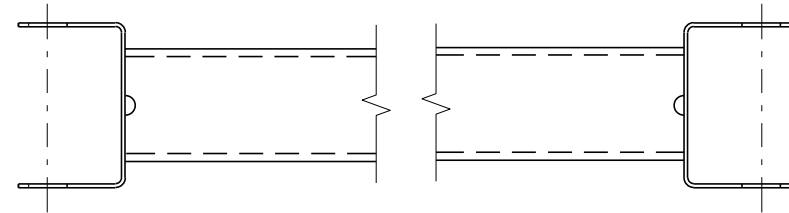
6

SDD 14B44 - 04a

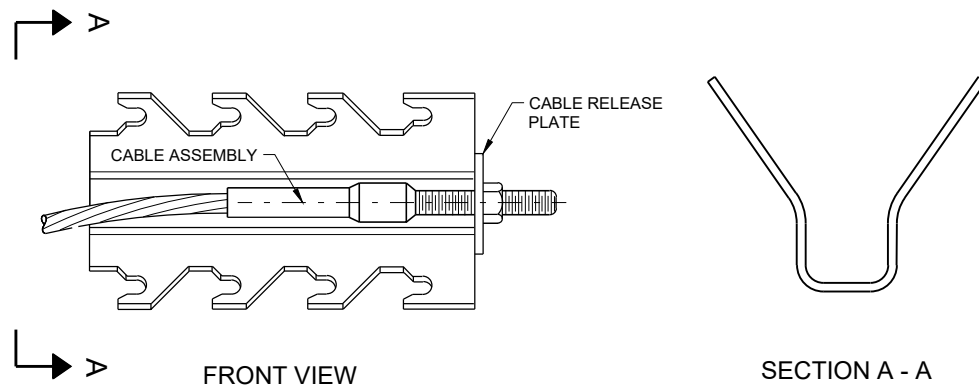
SDD 14B44 - 04a

BILL OF MATERIALS

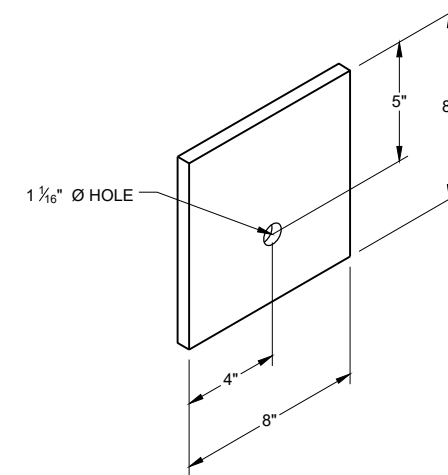
| PART NO. | DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION. |
|----------|--|
| ① | UPPER POST NO. 1 6" X 6" TUBE |
| ② | LOWER POST NO. 1 |
| ③ | WOOD CRT |
| ④ | WOOD BLOCKOUT |
| ⑤ | PIPE SLEEVE |
| ⑥ | BEARING PLATE |
| ⑦ | BCT CABLE ASSEMBLY |
| 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



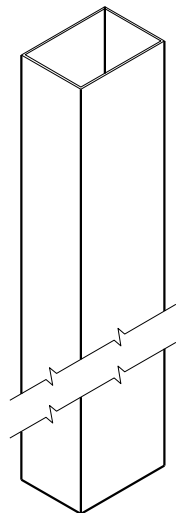
GENERIC ANCHOR CABLE BOX ⑨ ⑤



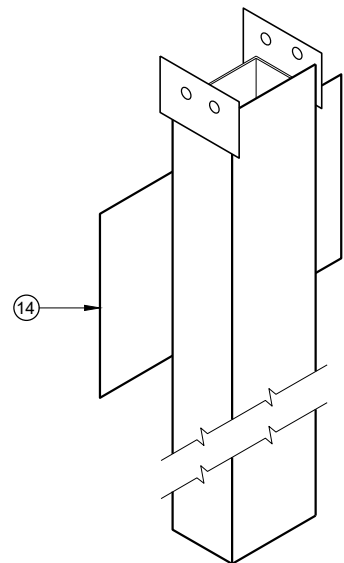
BEARING PLATE ⑥ ⑤

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

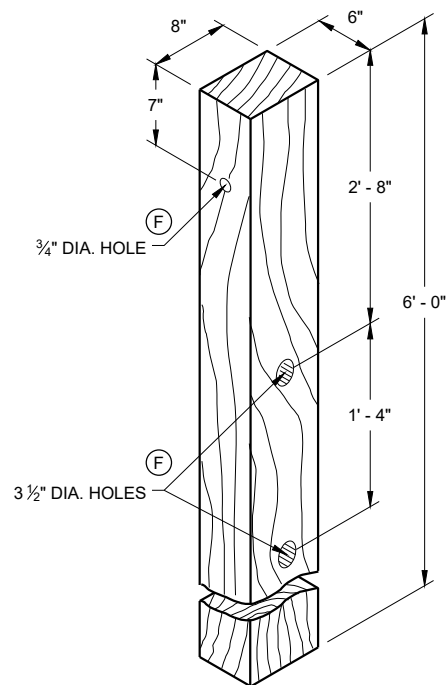
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



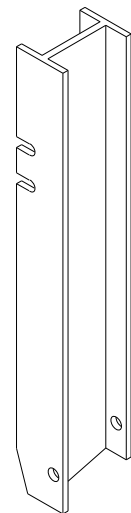
UPPER POST NO. 1 ⁽¹⁾ (E)



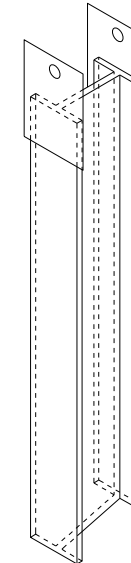
LOWER POST NO. 1 ⁽²⁾ (E)



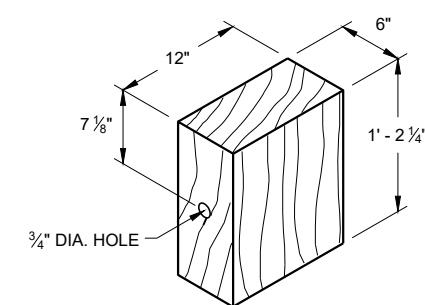
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



UPPER POST NO. 2 ⁽¹⁵⁾ (E)

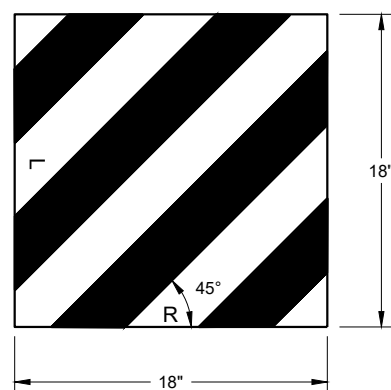


LOWER POST NO. 2 ⁽¹⁶⁾ (E)



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

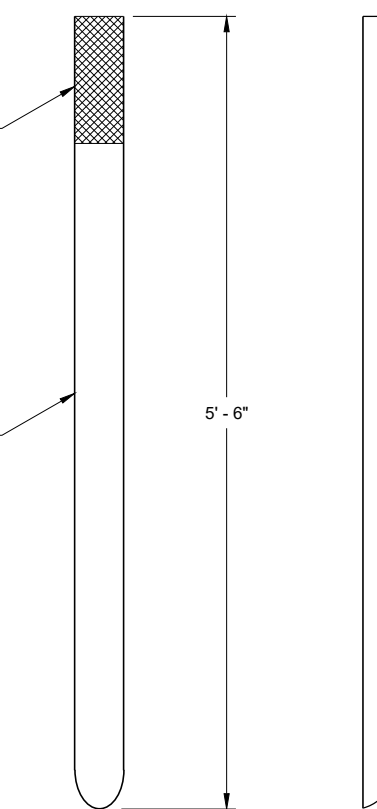
6



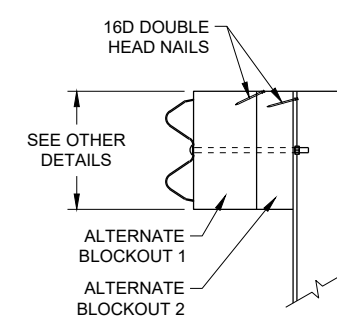
W5 - 59
REFLECTIVE SHEETING DETAIL ^(E)

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

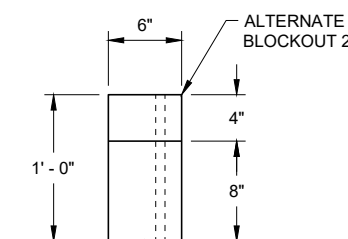
E.A.T. MARKER
POST (YELLOW)



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



SIDE VIEW



TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

6

SDD 14B44 - 04c

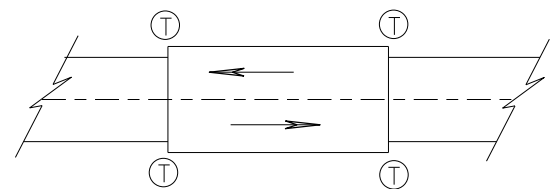
SDD 14B44 - 04c

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

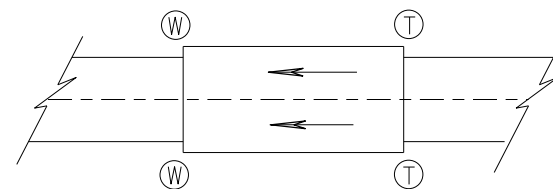
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

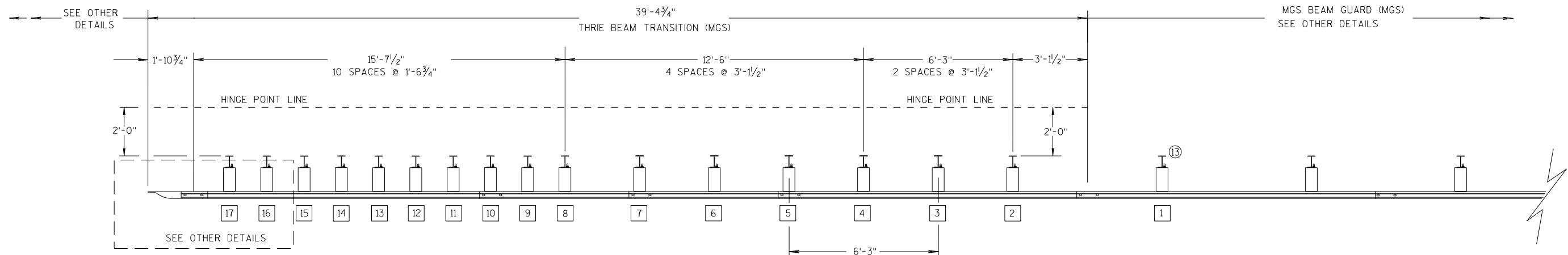
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

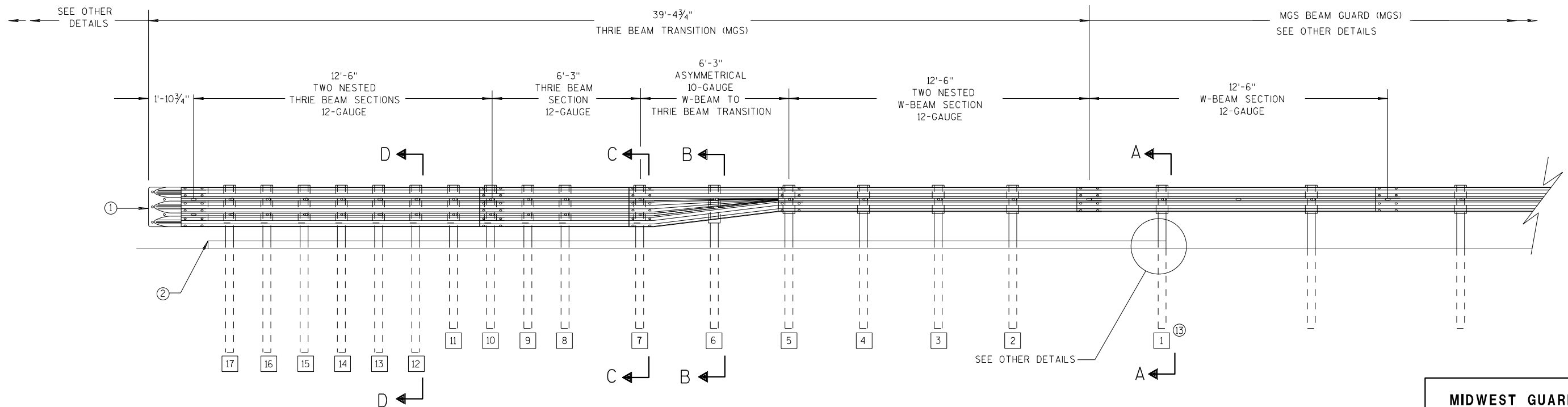
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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

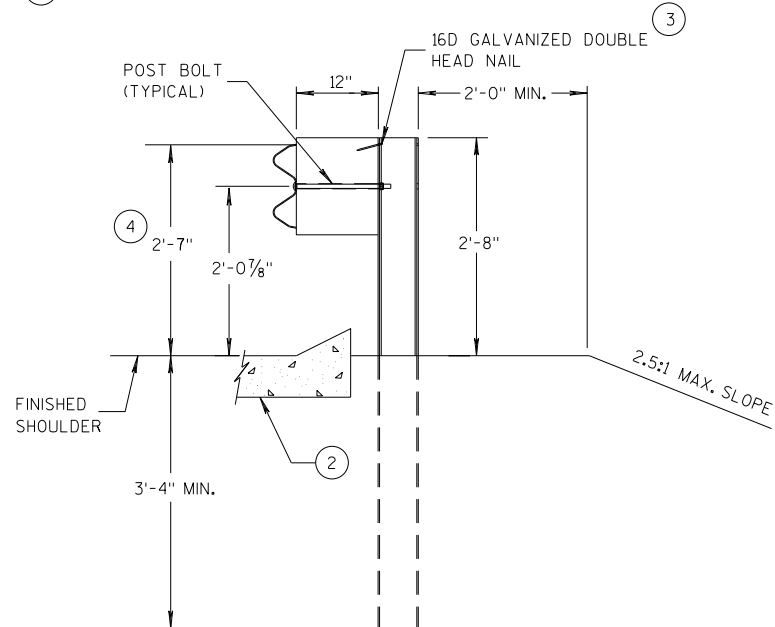
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

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

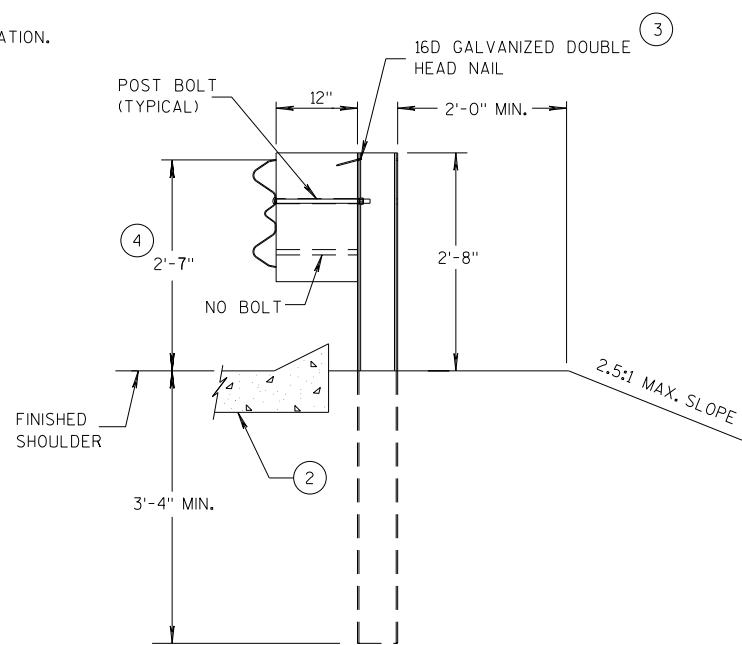
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

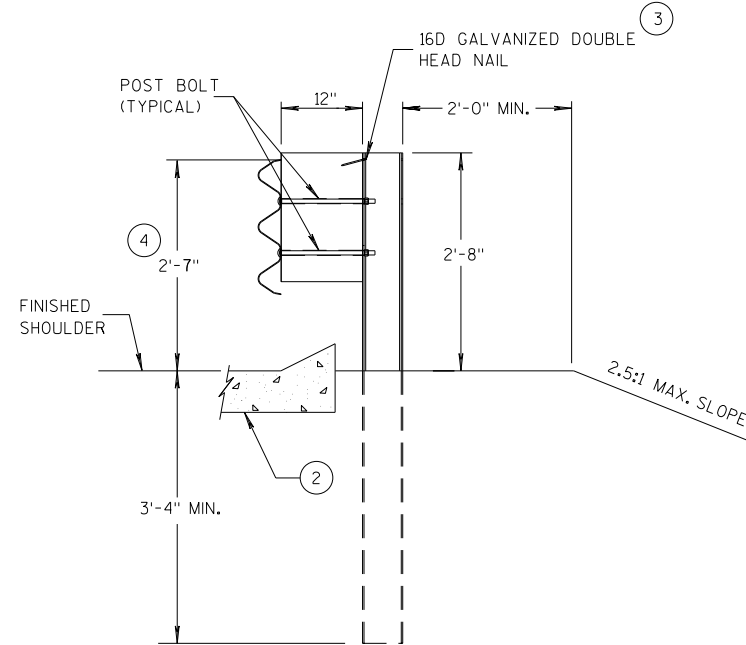
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ④ TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".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

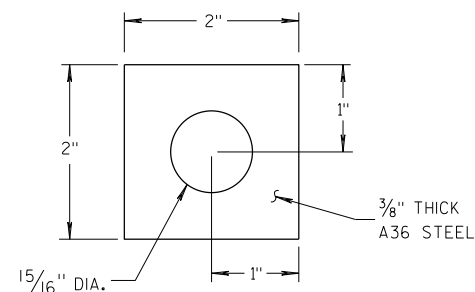
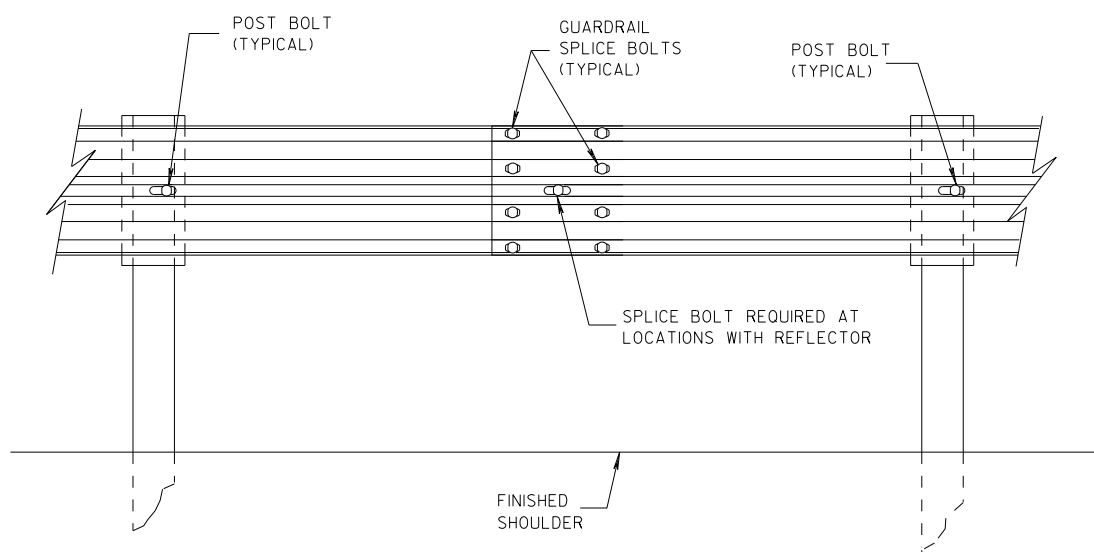
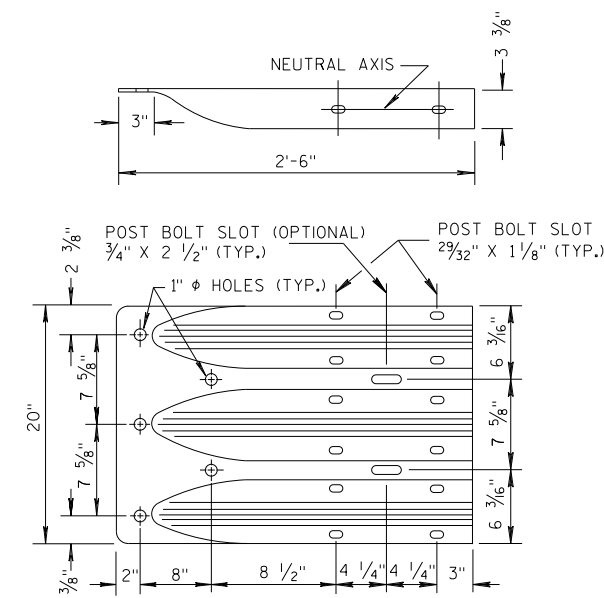


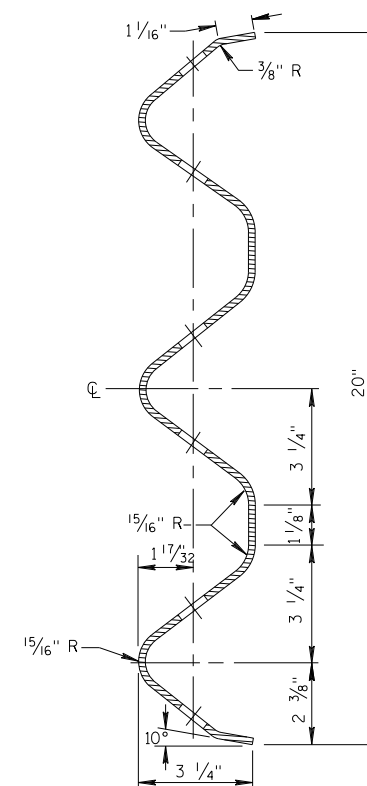
PLATE WASHER DETAIL



SPLICE DETAIL



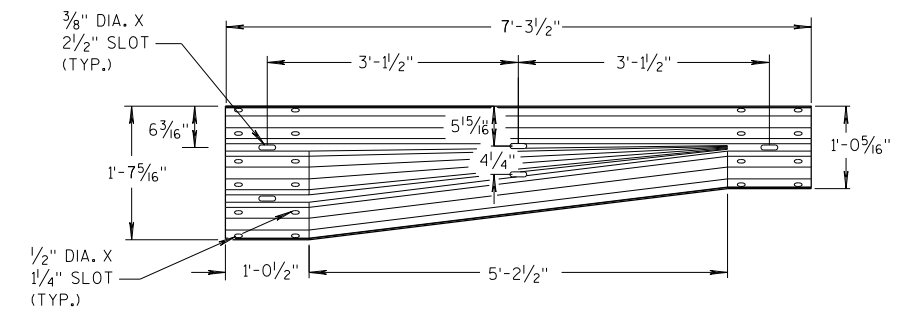
**THRIE BEAM
TERMINAL CONNECTOR**



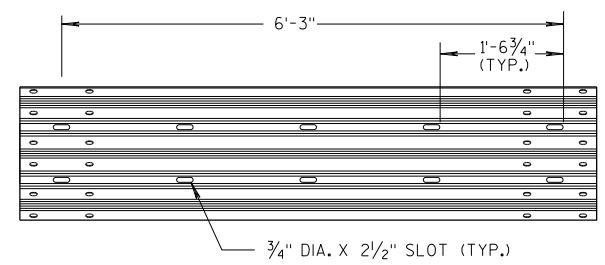
**SECTION THRU THRIE
BEAM RAIL ELEMENT**

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

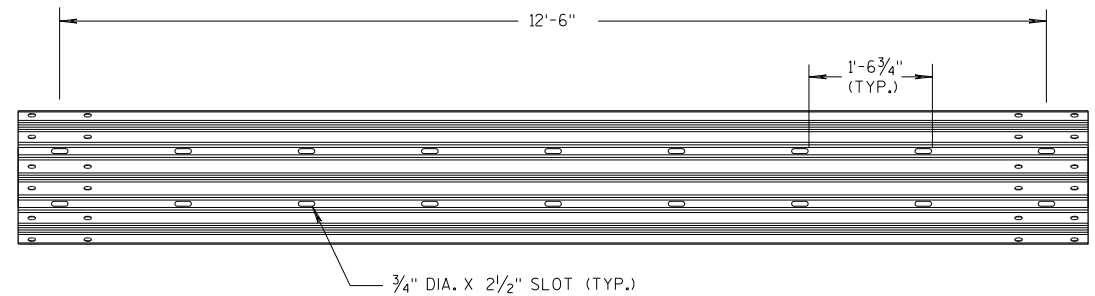
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



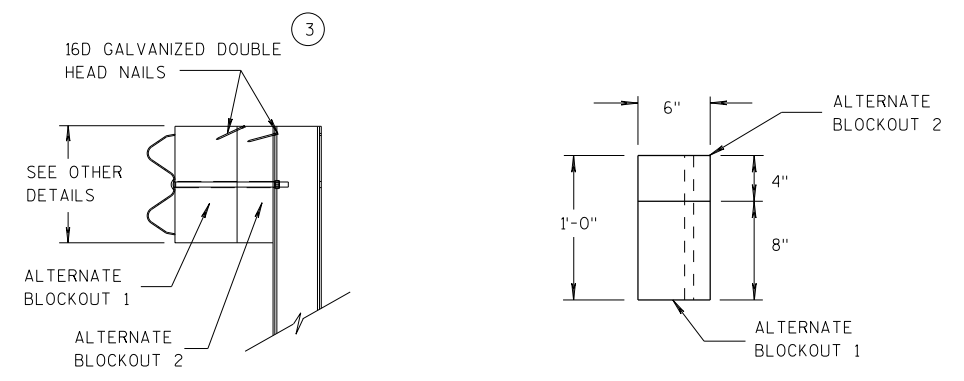
W-BEAM TO THRIE BEAM TRANSITION SECTION



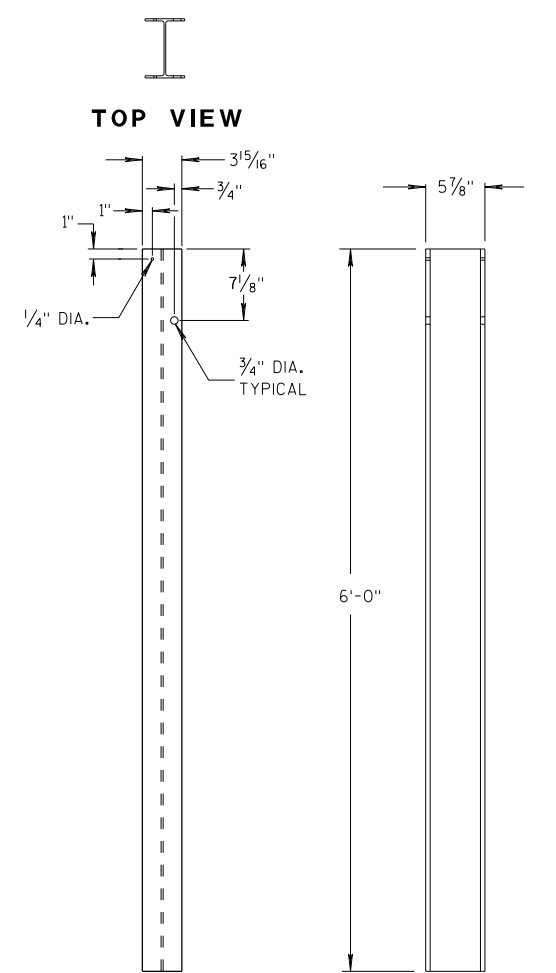
6'-3\"/>



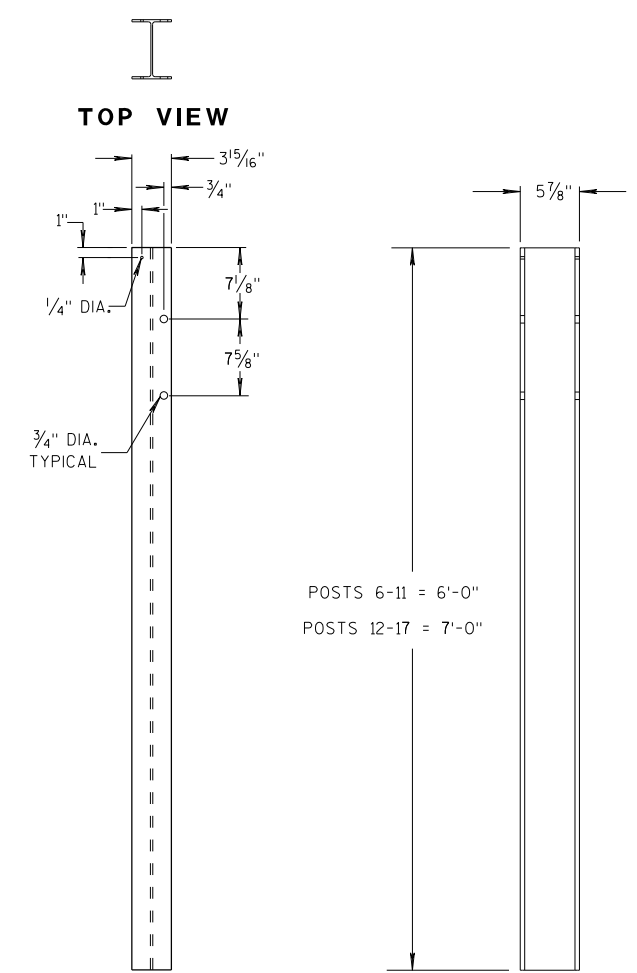
12'-6\"/>



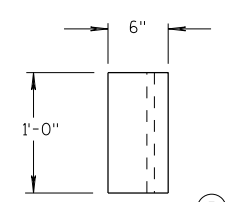
ALTERNATE WOOD BLOCKOUT DETAIL



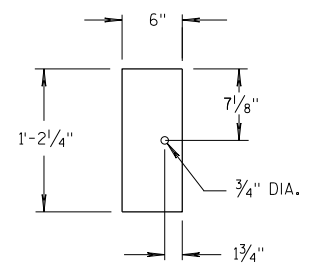
STEEL POSTS 1-5



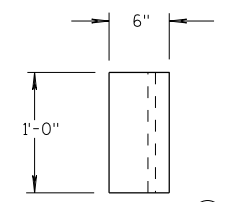
STEEL POSTS 6-17



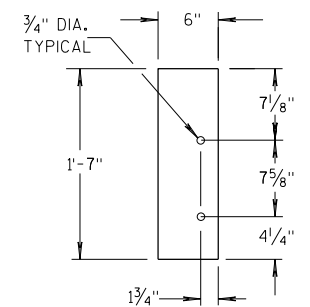
TOP VIEW



BLOCKOUT POSTS 1-5



TOP 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)**

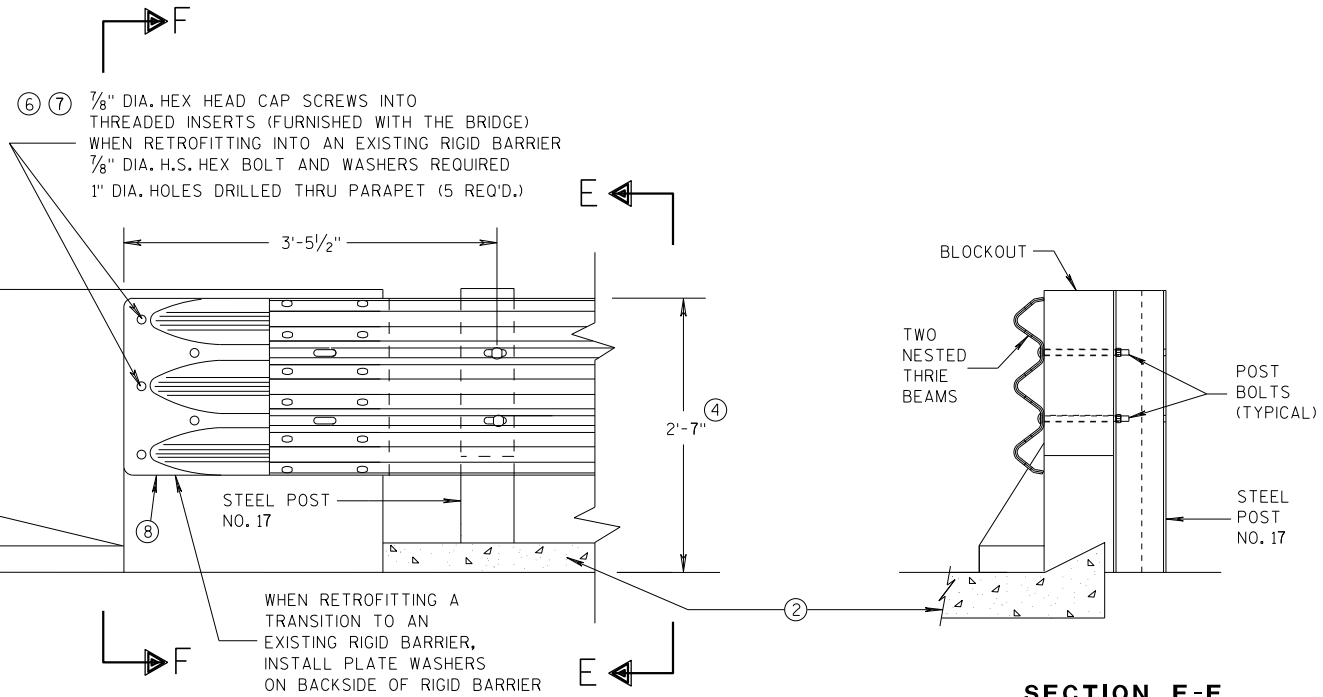
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

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

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



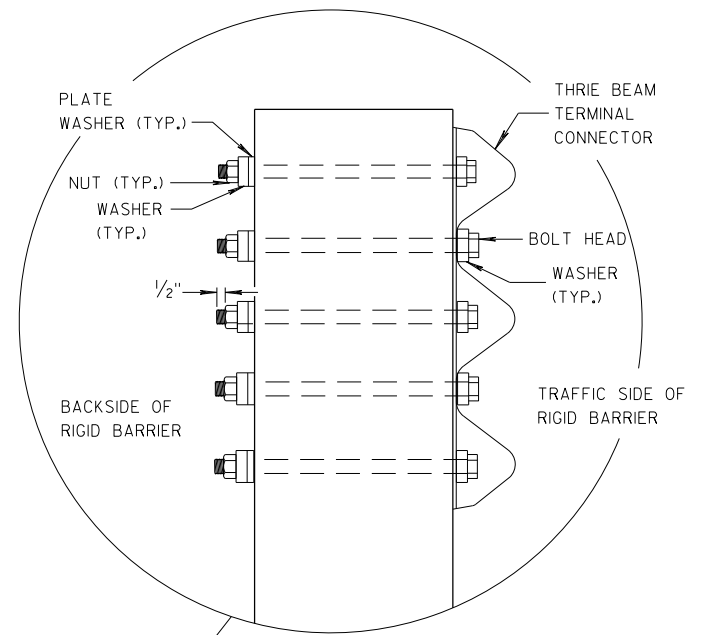
FRONT VIEW

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

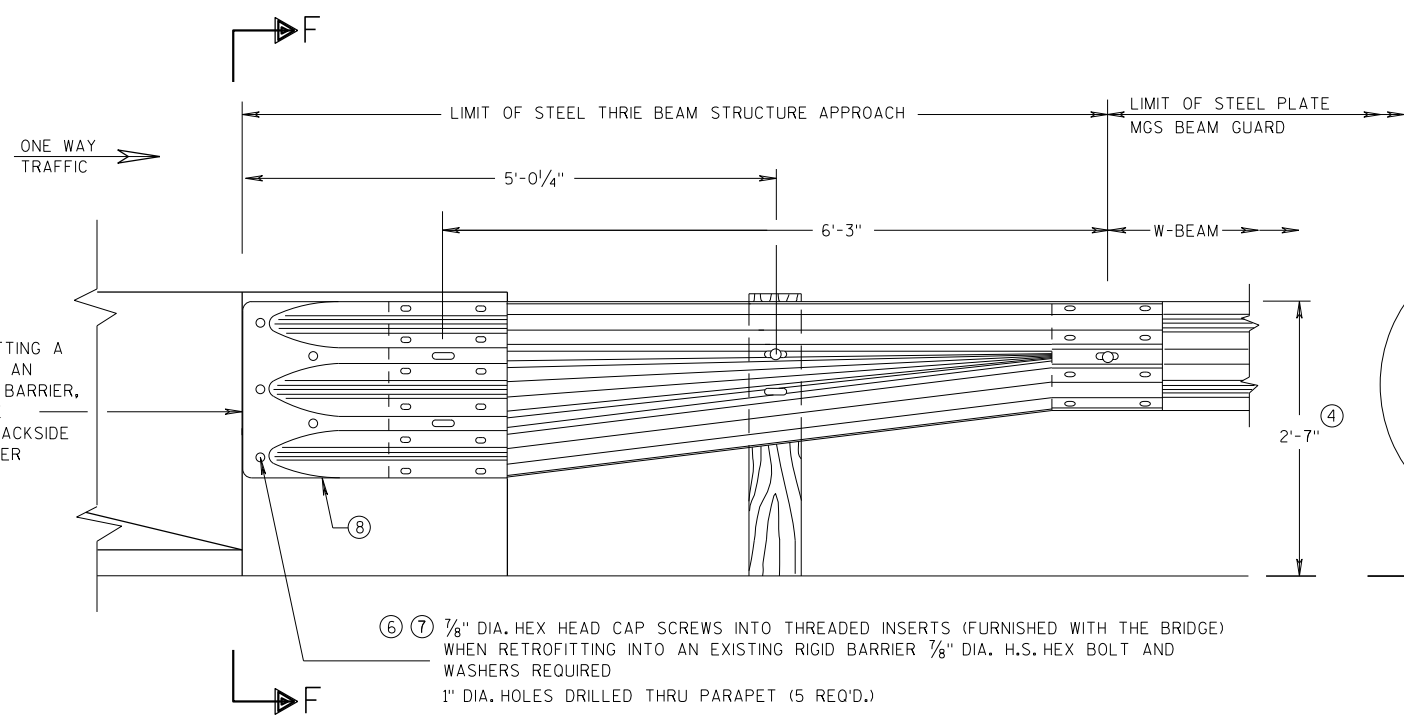
SECTION E-E

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".

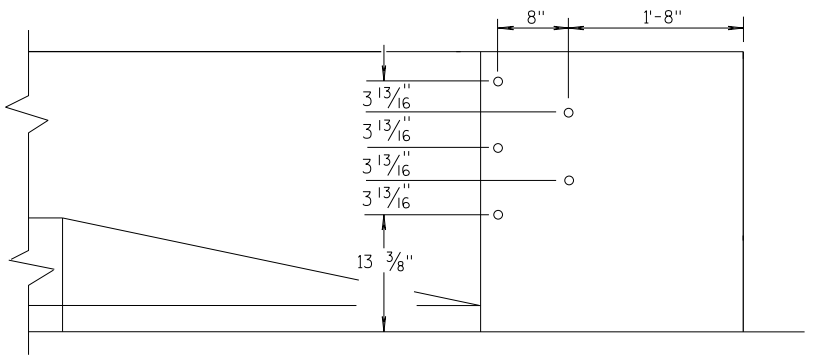


SECTION F-F



FRONT VIEW

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



DRILL HOLE LOCATION

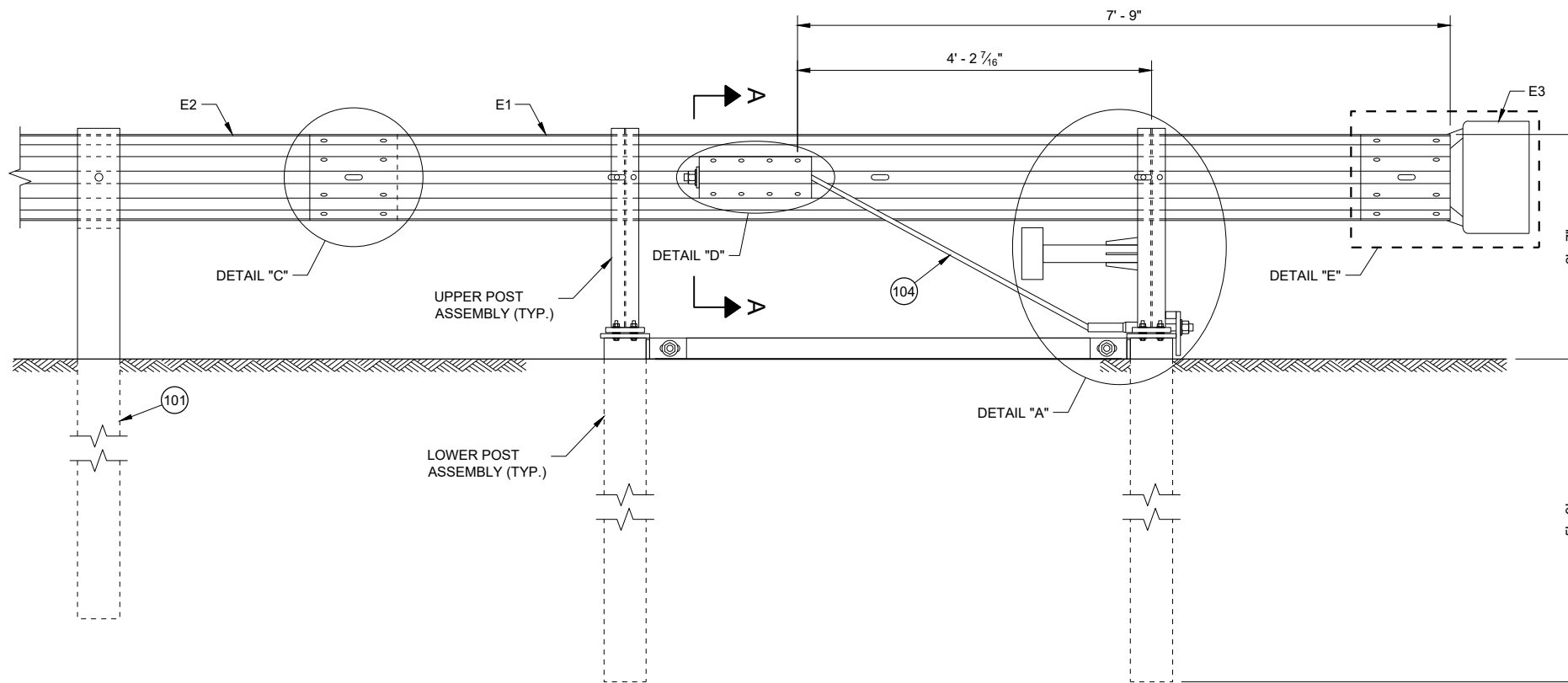
6

6

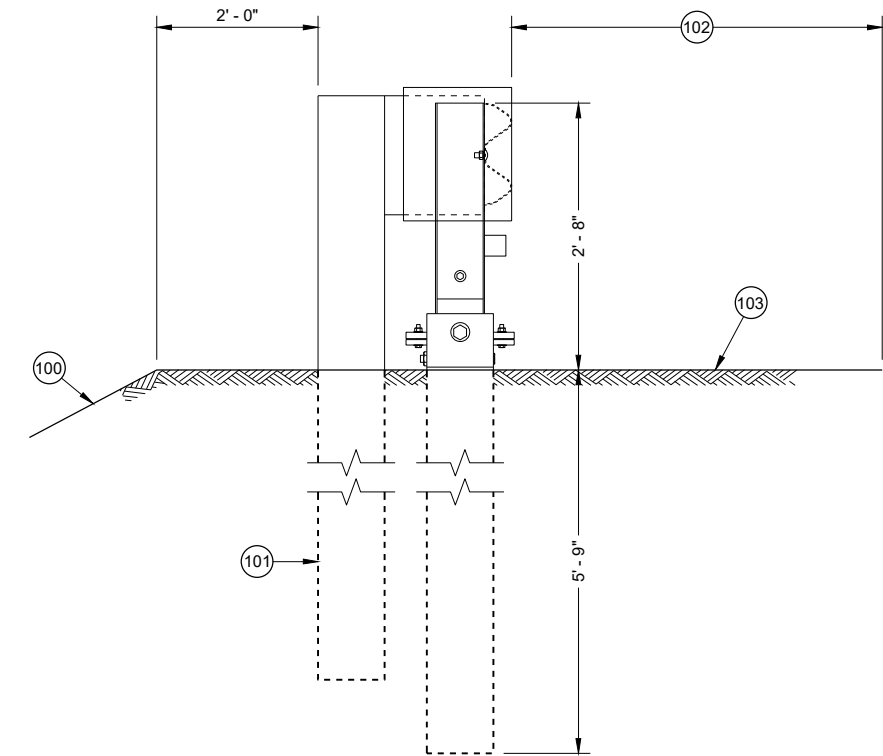
S.D.D. 14 B 45-5d

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

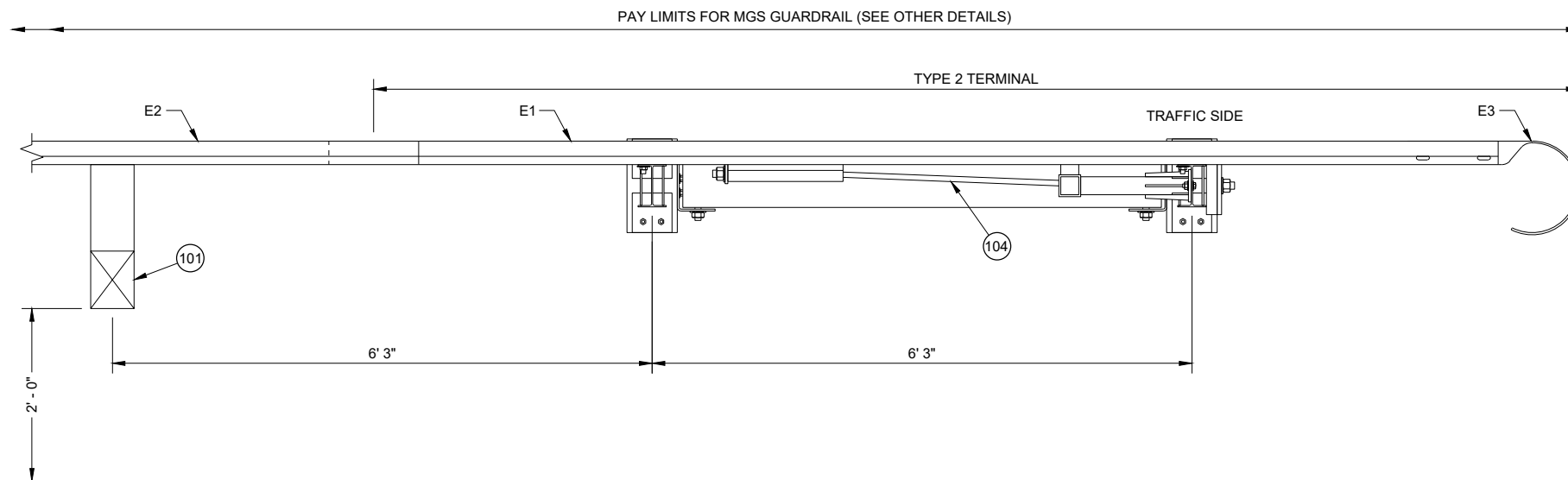
| | |
|---|---|
| MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS) | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED 07/2018 DATE | /S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR |
| FHWA | |



**BACK VIEW
TYPE 2 TERMINAL**



**SIDE VIEW
TYPE 2 TERMINAL**



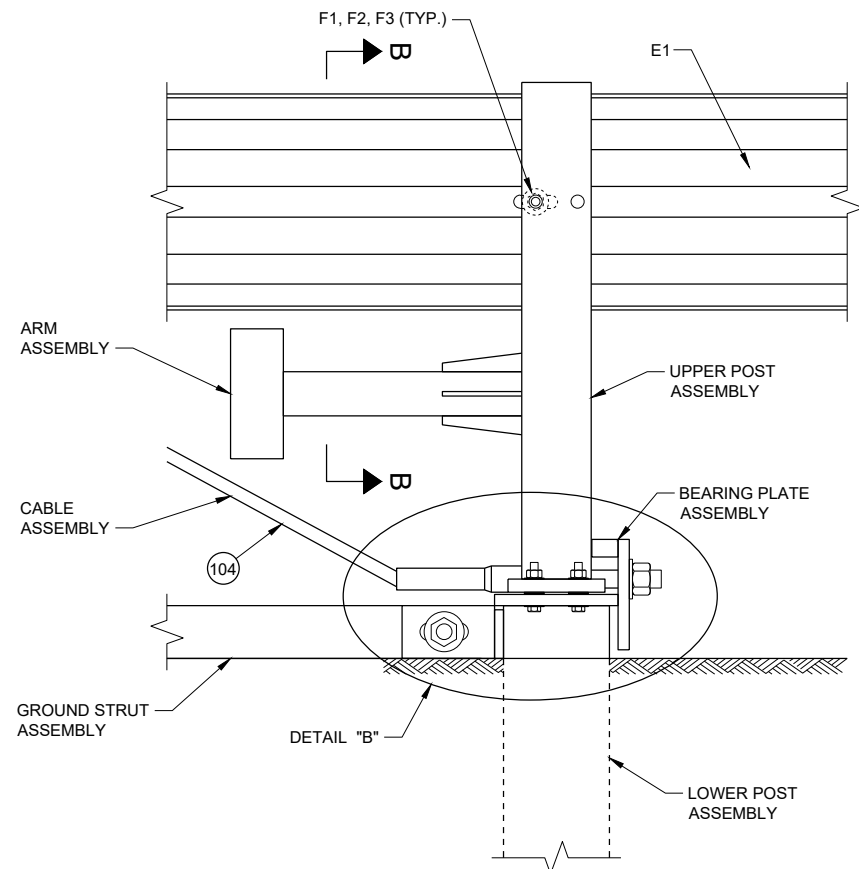
**TOP VIEW
TYPE 2 TERMINAL**

GENERAL NOTES

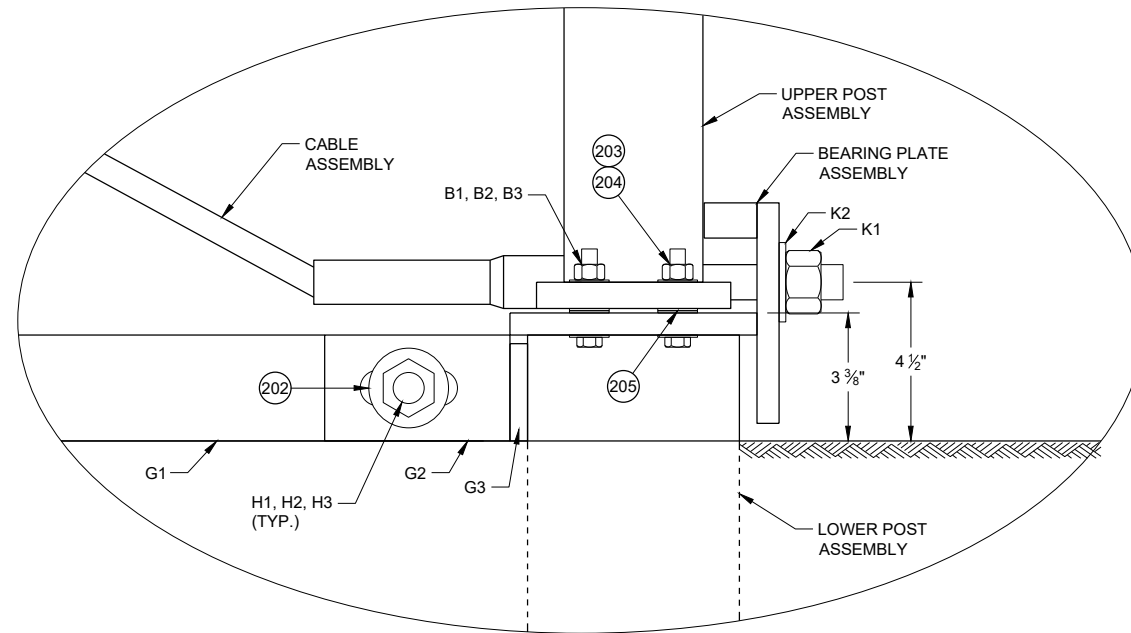
- (100) MAXIMUM SLOPE IS 2.5:1.
- (101) SEE SDD 14B42 FOR MORE INFORMATION.
- (102) SHOULDER
- (103) MAXIMUM SLOPE IS 10:1.
- (104) AFTER ASSEMBLY, CABLE IS TO BE TIGHTENED WITHOUT TWISTING THE CABLE.

**MIDWEST GUARDRAIL
SYSTEM (MGS)
TYPE 2 TERMINAL**

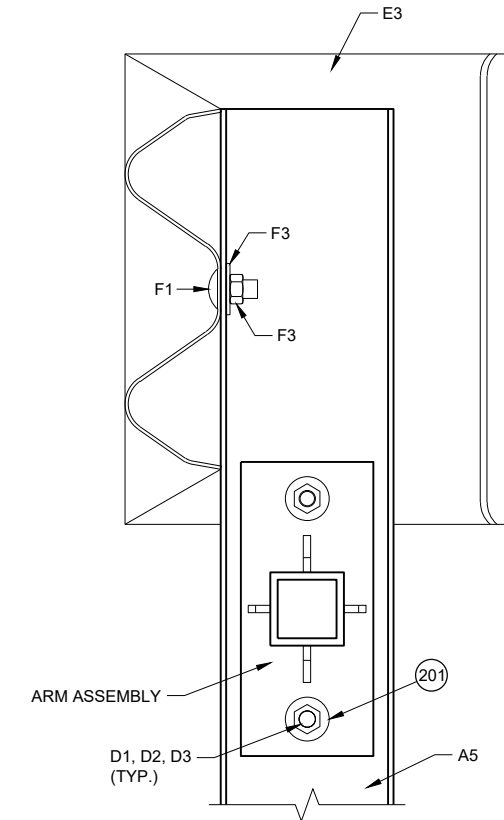
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



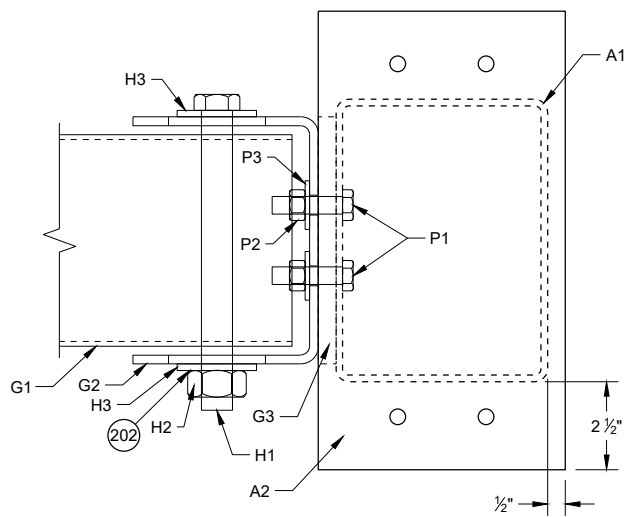
DETAIL "A"



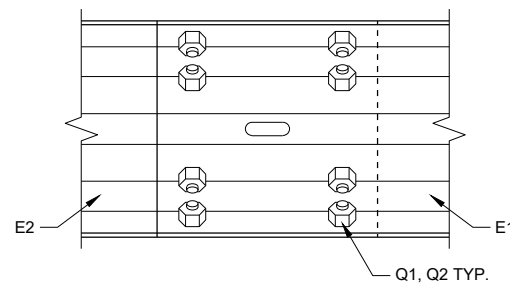
DETAIL "B"



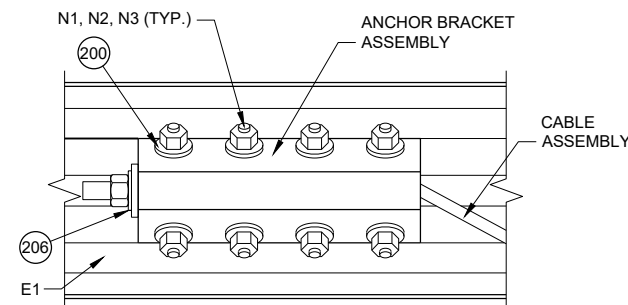
SECTION B - B



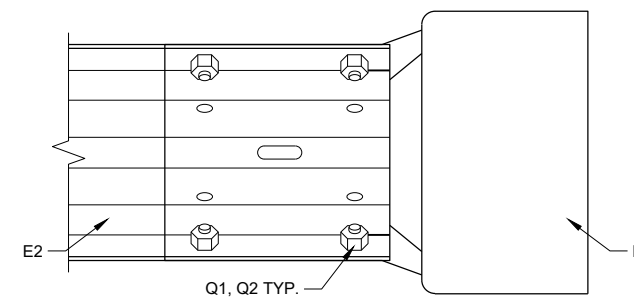
**TOP VIEW
GROUND STRUT
CONNECTION DETAIL**



DETAIL "C"



DETAIL "D"



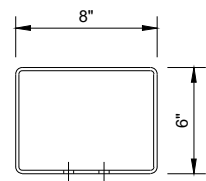
DETAIL "E"

GENERAL NOTES

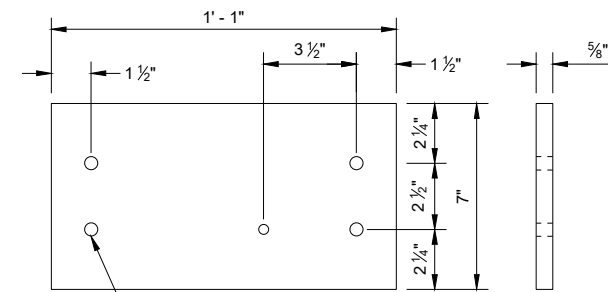
- 200 INSTALL ONE WASHER UNDER BOLT HEAD AND RAIL AND ON WASHER BETWEEN NUT AND ANCHOR BRACKET ASSEMBLY.
- 201 INSTALL ONE WASHER UNDER BOLT HEAD AND UPPER POST ASSEMBLY AND ONE WASHER BETWEEN NUT AND ARM PLATE.
- 202 INSTALL ONE WASHER UNDER BOLT HEAD AND GROUND STRUT CONNECTOR AND ONE WASHER BETWEEN NUT AND GROUND STRUT CONNECTOR.
- 203 INSTALL ONE WASHER UNDER BOLT HEAD AND LOWER POST ASSEMBLY AND ONE WASHER BETWEEN NUT AND UPPER POST ASSEMBLY.
- 204 TORQUE VALUE IS BETWEEN 60 - 75 FT-LB.
- 205 TWO WASHERS BETWEEN UPPER AND LOWER POST ASSEMBLY.
- 206 INSTALL ONE WASHER BETWEEN NUT AND ANCHOR BRACKET ASSEMBLY.

**MIDWEST GUARDRAIL
SYSTEM (MGS)
TYPE 2 TERMINAL**

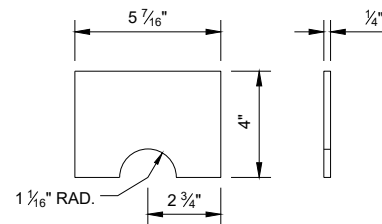
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



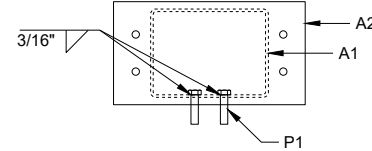
TOP VIEW



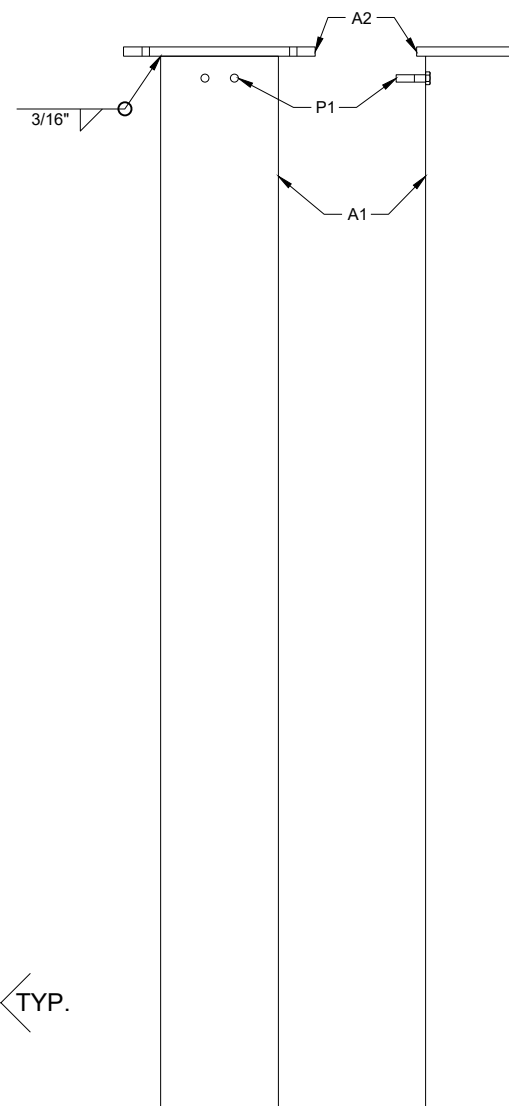
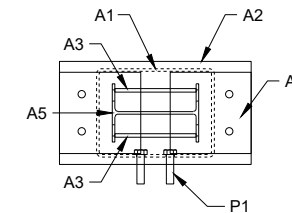
LOWER PLATE (A2)



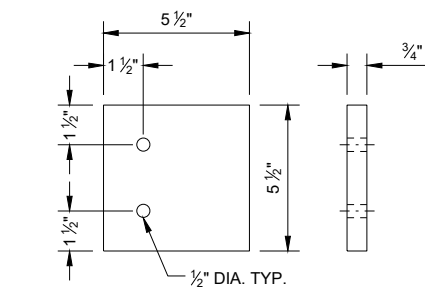
POST GUSSET (A3)



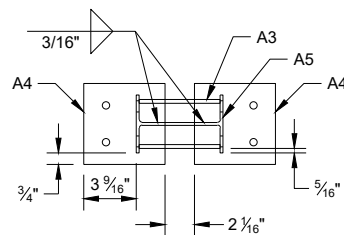
PLAN VIEW



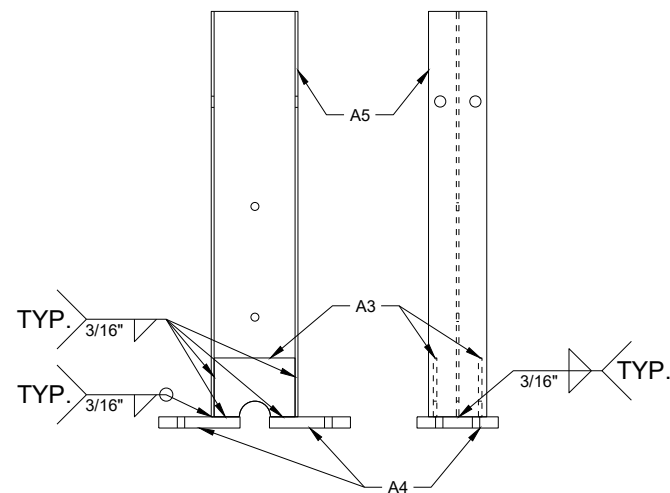
FRONT VIEW SIDE VIEW LOWER POST ASSEMBLY



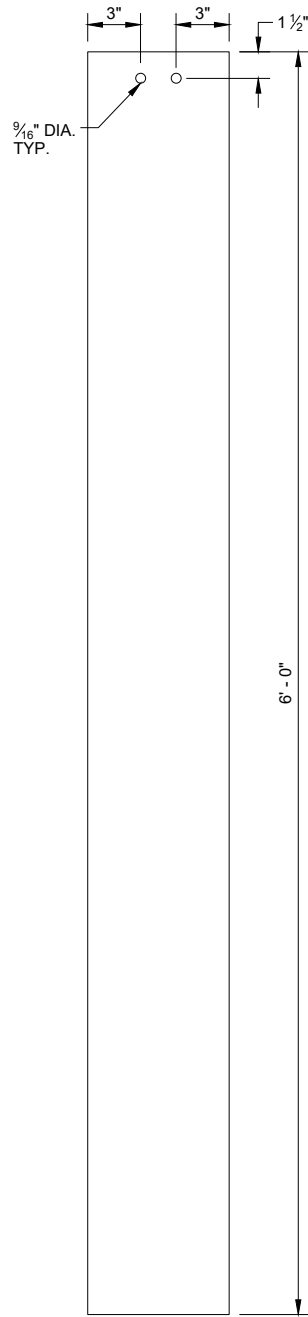
UPPER PLATE (A4)



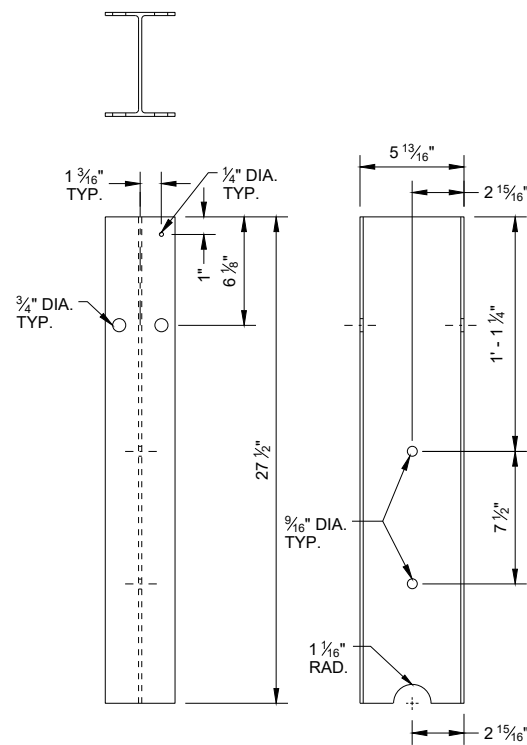
PLAN VIEW



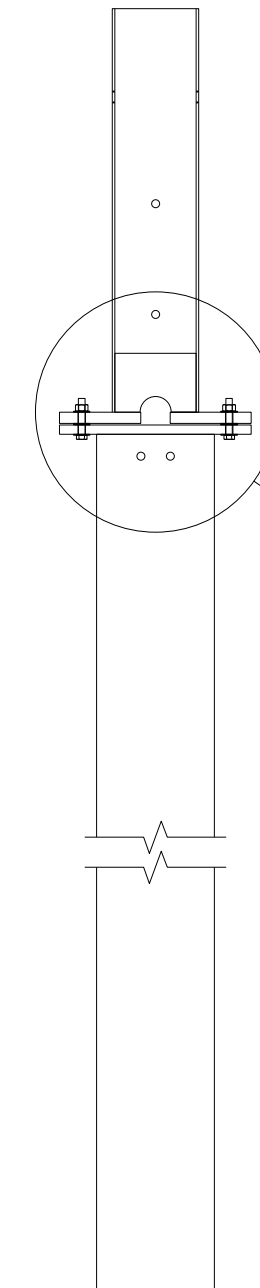
SIDE VIEW FRONT VIEW UPPER POST ASSEMBLY



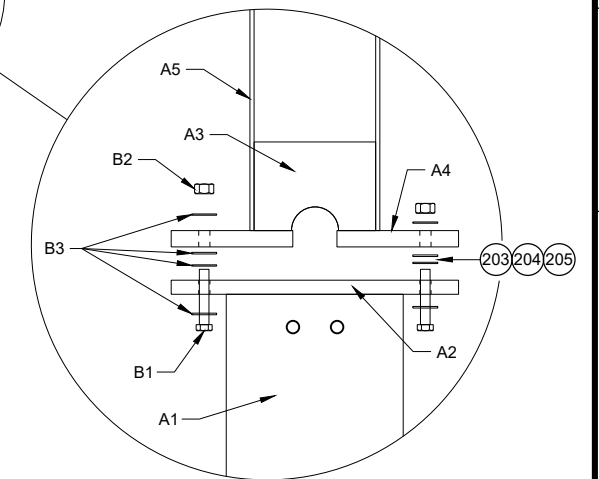
SIDE VIEW FOUNDATION TUBE (A1)



FRONT VIEW SIDE VIEW TYPE 2 POST (A5)



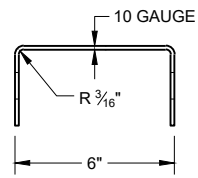
ASSEMBLED POST



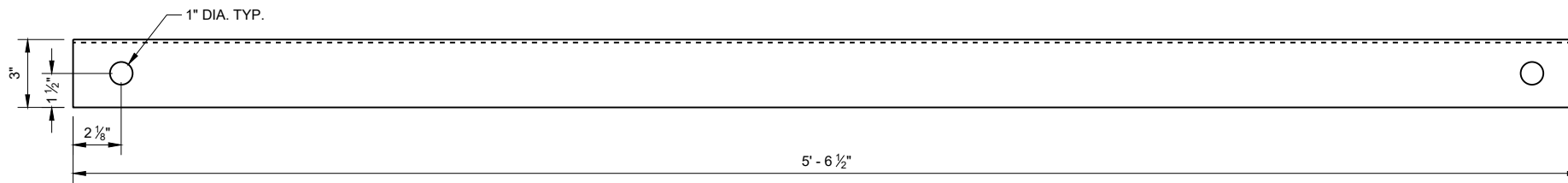
POST CONNECTION DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

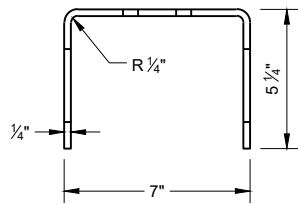


SIDE VIEW

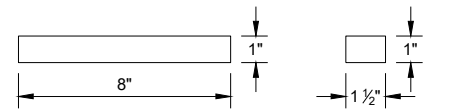


FRONT VIEW

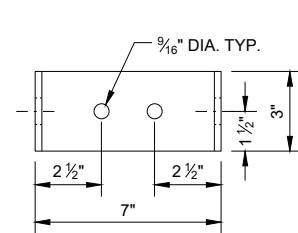
GROUND STRUT CHANNEL (G1)



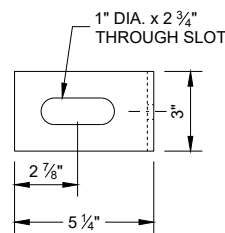
TOP VIEW



BEARING PLATE FLANGE (L2)

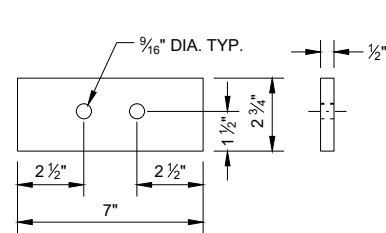


FRONT VIEW

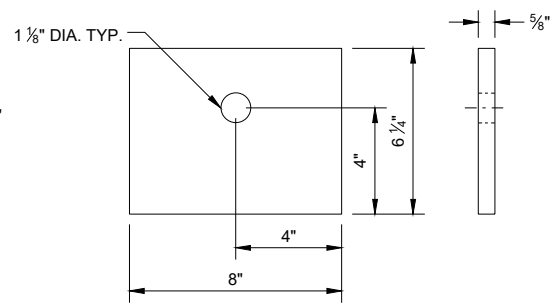


SIDE VIEW

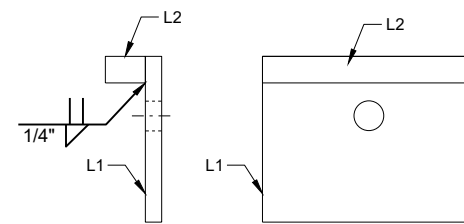
GROUND STRUT CONNECTOR (G2)



GROUND STRUT PLATE (G3)



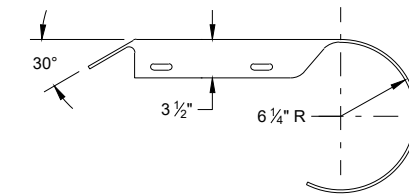
BEARING PLATE (L1)



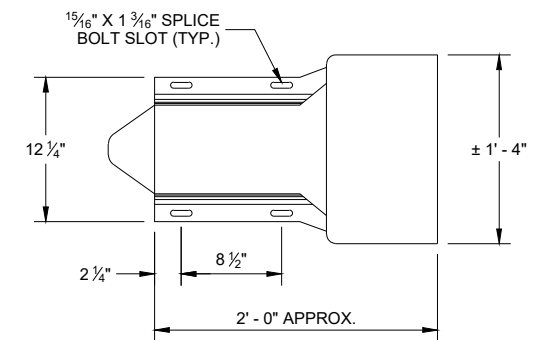
SIDE VIEW

FRONT VIEW

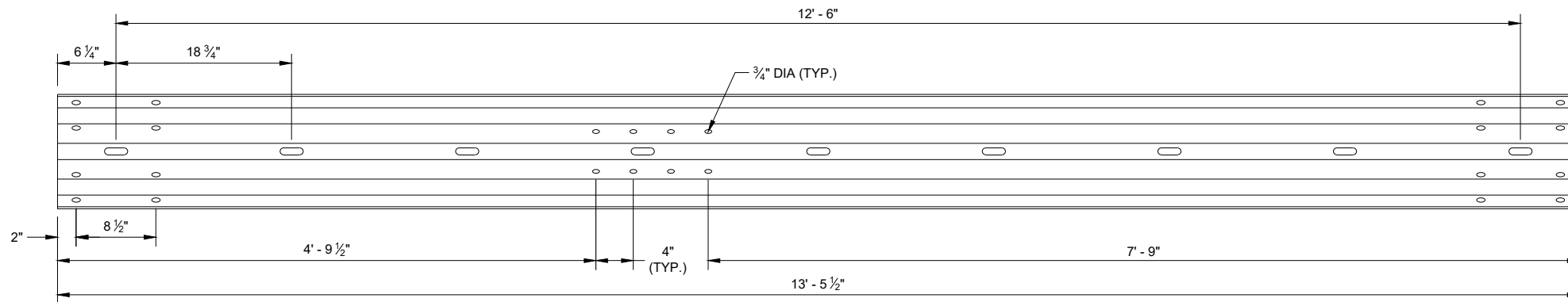
BEARING PLATE ASSEMBLY



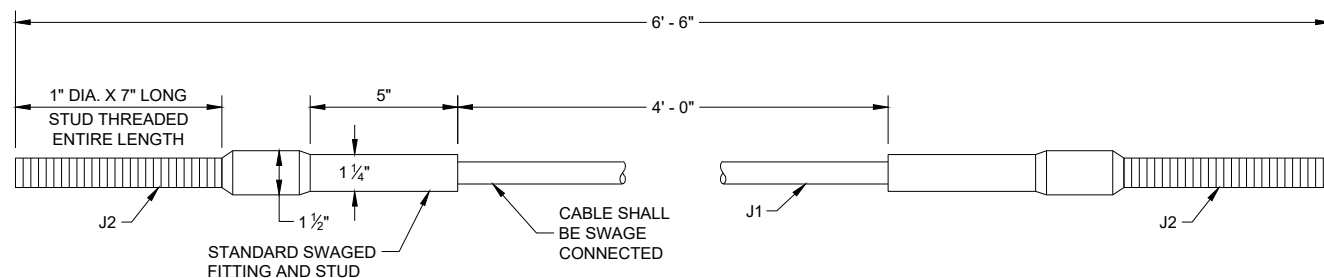
PLAN VIEW



**ELEVATION VIEW
ROUNDED BUFFER END (E3)**



TYPE 2 GUARDRAIL (E1)



CABLE ASSEMBLY

6

6

SDD 14B47 - 03d

SDD 14B47 - 03d

**MIDWEST GUARDRAIL
SYSTEM (MGS)
TYPE 2 TERMINAL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

BILL OF MATERIALS - TYPE 2 TERMINAL (MGS)

| PART | DESCRIPTION | MATERIALS SPECIFICATIONS | NOTES |
|------|-------------------------------|---|---------------------------|
| A1 | TYPE 2 FOUNDATION TUBE | AASHTO M111 / ASTM A123 ASTM A500 GRADE B OR ASTM A-501 | TS 8" x 6" x 3/16" |
| A2 | LOWER PLATE | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI | 5/8" THICKNESS |
| A3 | POST GUSSET | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI | 1/4" THICKNESS |
| A4 | UPPER PLATE | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI | 3/4" THICKNESS |
| A5 | TYPE 2 POST | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI | |
| B1 | BREAKAWAY BOLT | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD ASTM F3125 GRADE A325 TYPE 1 HEAVY HEX HEAD OR SAE J429 GRADE 5 HEAVY HEX HEAD / ASTM A449 TYPE 1 HEAVY HEX HEAD. BOLTS MAY BE FULLY THREADED . PROVIDE ENOUGH THREADING FOR PROPER TIGHTENING OF BOLT. | 7/16" DIA. |
| B2 | BREAKAWAY BOLT WASHER | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY) | 7/16" DIA. |
| B3 | BREAKAWAY BOLT NUT | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5 | |
| C1 | ARM ASSEMBLY PLATE | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI | 5/8" THICKNESS |
| C2 | ARM ASSEMBLY TUBE 1 | AASHTO M111 / ASTM A123 ASTM A500 GRADE B OR ASTM A-501 | TS 8" x 6" x 3/16" |
| C3 | ARM ASSEMBLY TUBE 2 | AASHTO M111 / ASTM A123 ASTM A500 GRADE B OR ASTM A-501 | TS 3" x 3" x 1/4" |
| C4 | ARM ASSEMBLY TUBE 3 | AASHTO M111 / ASTM A123 ASTM A500 GRADE B OR ASTM A-501 | TS 2 1/2" x 2 1/2" X 1/4" |
| C5 | ARM ASSEMBLY GUSSET PLATE 1 | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI | 1/4" THICKNESS |
| C6 | ARM ASSEMBLY GUSSET PLATE 2 | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI | 1/4" THICKNESS |
| D1 | ARM ASSEMBLY BOLT | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36 | 1/2" DIA. |
| D2 | ARM ASSEMBLY WASHER | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY) | 1/2" DIA. |
| D3 | ARM ASSEMBLY NUT | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5 | 1/2" DIA. |
| E1 | TYPE 2 GUARD RAIL | AASHTO M180 CLASS A TYPE 2 12 GAUGE APPROVED PRODUCER | |
| E2 | BEAM GUARD RAIL | AASHTO M180 CLASS A TYPE 2 12 GAUGE APPROVED PRODUCER | |
| E3 | BEAM GUARD ROUNDED BUFFER END | AASHTO M180 CLASS A TYPE 2 12 GAUGE APPROVED PRODUCER | |
| F1 | POST BOLT | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36 | 5/8" DIA. |
| F2 | POST BOLT WASHER | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY) | 5/8" DIA. |
| F3 | POST BOLT NUT | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5 | |
| G1 | GROUND STRUT CHANNEL | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI | 1/2" x 11 3/4" x 10 GAUGE |
| G2 | GROUND STRUT CONNECTOR | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI | 1/4" THICKNESS |
| G3 | GROUND STRUT PLATE | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI | 1/2" THICKNESS |

6

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SDD 14B47 - 03f

SDD 14B47 - 03f

**MIDWEST GUARDRAIL
SYSTEM (MGS)
TYPE 2 TERMINAL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

BILL OF MATERIALS - TYPE 2 TERMINAL (MGS)

| PART | DESCRIPTION | MATERIALS SPECIFICATIONS | NOTES |
|------|-----------------------------|---|----------------|
| H1 | GROUND STRUT BOLT | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36 | 7/8" DIA. |
| H2 | GROUND STRUT BOLT WASHER | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY) | 7/8" DIA. |
| H3 | GROUND STRUT BOLT NUT | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD 5/8" ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36 | |
| J1 | BCT CABLE | AASHTO M30 / ASTM A741 6 x 19 INDEPENDENT WIRE CORE (IWRC) IMPROVED PLOW STEEL (IPS), 6 x 19 INDEPENDENT WIRE CORE (IWRC) IMPROVED PLOW STEEL (IPS) TYPE II OR IIC, CLASS C ZINC COATED MIN. BREAKING STRENGTH OF 42.7 KIPS | 3/4" DIA. |
| J2 | BCT CABLE | UNC 1" ASTM A576 GRADE 1035 SWAGE FITTINGS ARE TO BE FACTORY SWEDGED. MIN BREAKING STRENGTH OF 42.7 KIPS ASME B30.26 "FORGED, CAST, OR DIE STAMPED WITH THE FOLLOWING IN TO CONNECTION: NAME OF MANUFACTURE OR TRADEMARK OF CONNECTION'S MANUFACTURER, SIZE OR RATED LOAD, GRADE FOR ALLOY EYEBOLTS." | |
| K1 | CABLE ASSEMBLY NUT | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5 | 1" DIA. |
| K2 | CABLE ASSEMBLY WASHER | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 | 1" DIA. |
| L1 | BEARING PLATE | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI | 5/8" THICKNESS |
| L2 | BEARING PLATE FLANGE | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI | 1" THICKNESS |
| M1 | BEAM GUARD ANCHOR BRACKET | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI | |
| M2 | BEAM GUARD ANCHOR END PLATE | AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI | 3/8" THICKNESS |
| N1 | ANCHOR BRACKET BOLT | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC AASHTO M180 HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36 | 5/8" DIA. |
| N2 | ANCHOR BRACKET BOLT WASHER | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY) | 5/8" DIA. |
| N3 | ANCHOR BRACKET BOLT NUT | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5 | |
| P1 | FOUNDATION TUBE BOLT | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5 | 1/2" DIA. |
| P2 | FOUNDATION TUBE WASHER | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 7/8" ASTM F844 TYPE 1 (HARDENED WASHER ONLY) | 1/2" DIA. |
| P3 | FOUNDATION TUBE NUT | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5 | |
| Q1 | SPLICE BOLT | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC AASHTO M180 HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36 | |
| Q2 | SPLICE NUT | HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5 | 5/8" DIA. |

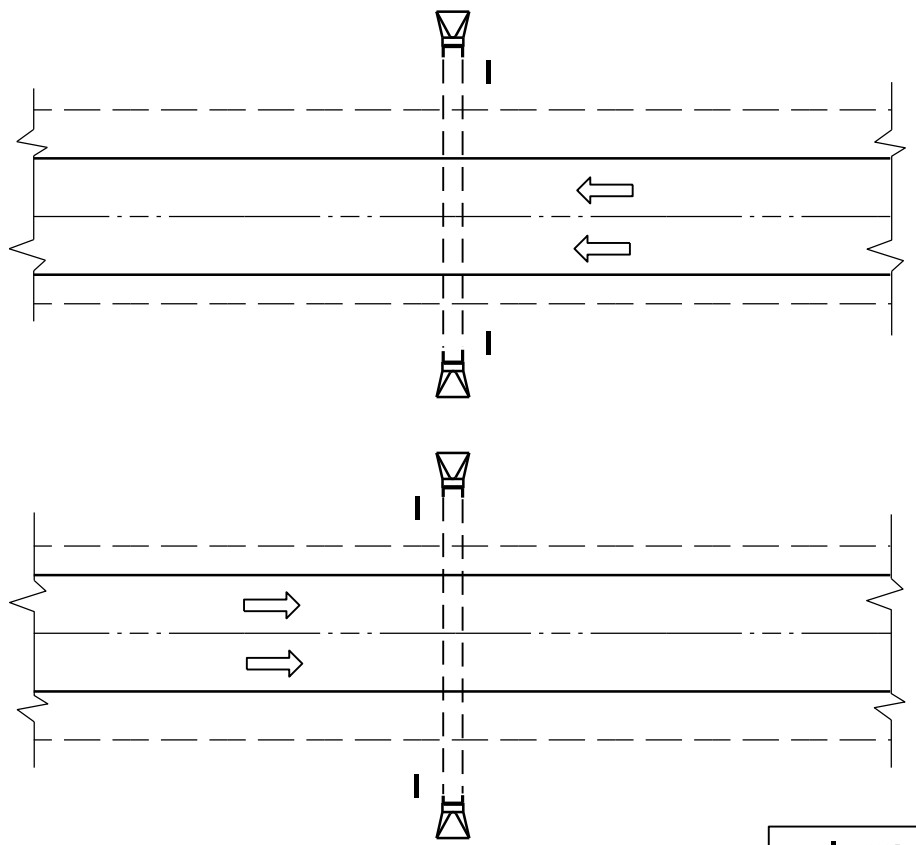
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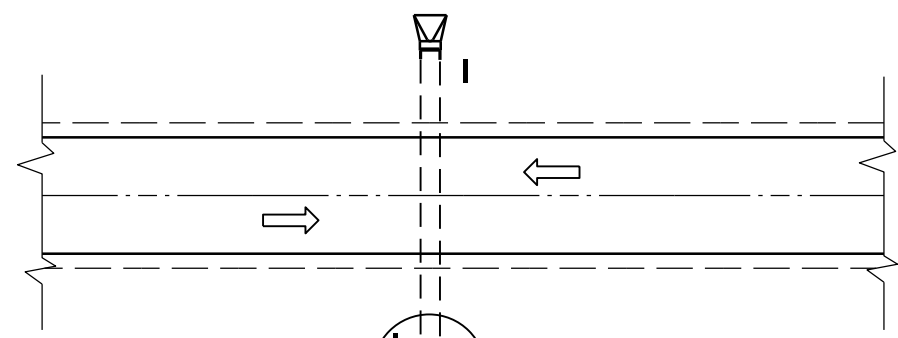
SDD 14B47 - 039

SDD 14B47 - 039

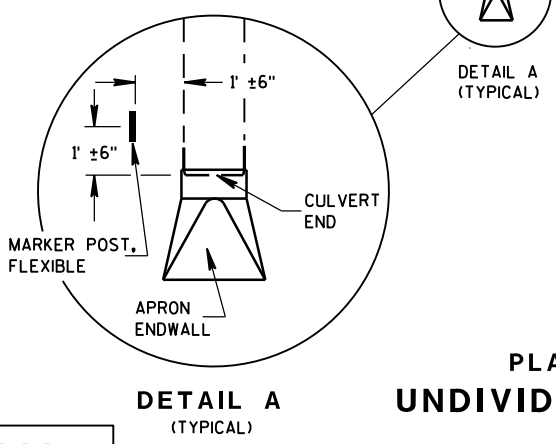
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|---|--|
| MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED August 2021 DATE | /S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT ENGINEER |
| FHWA | |



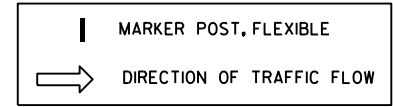
PLAN VIEW
DIVIDED HIGHWAY



PLAN VIEW
UNDIVIDED HIGHWAY

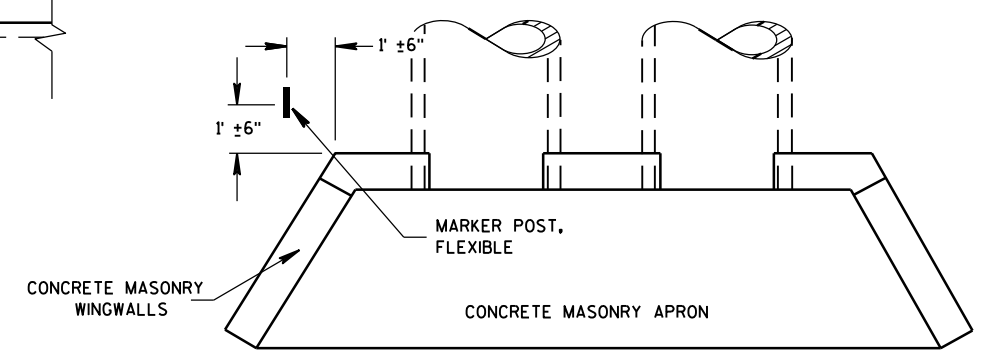


DETAIL A
(TYPICAL)



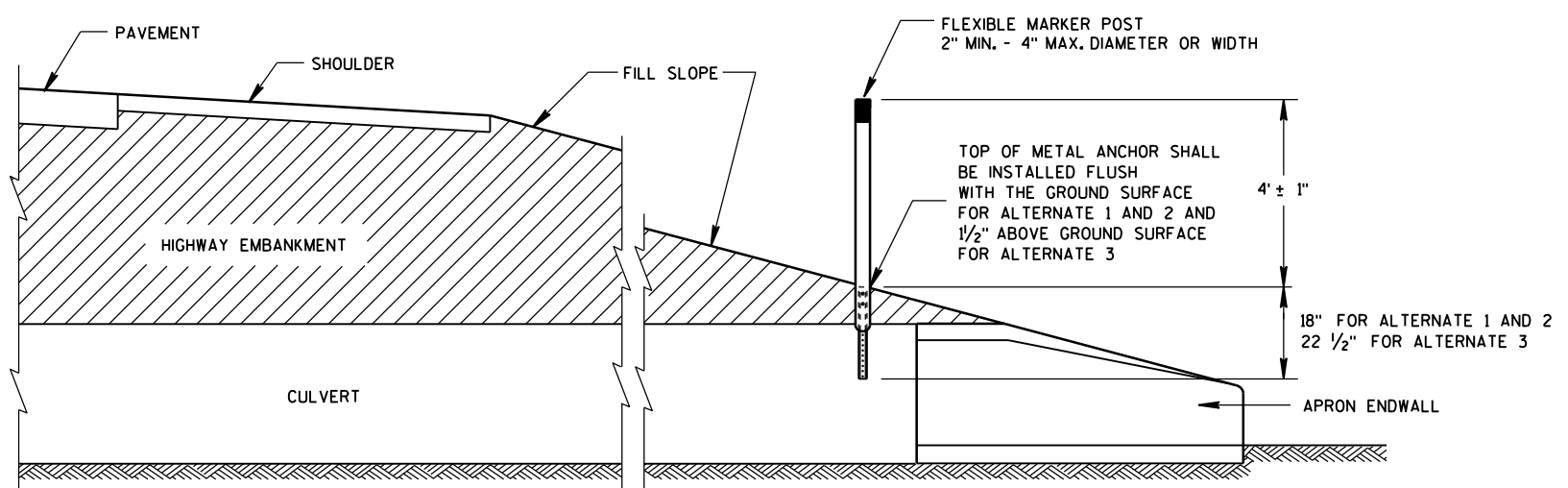
GENERAL NOTES

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**

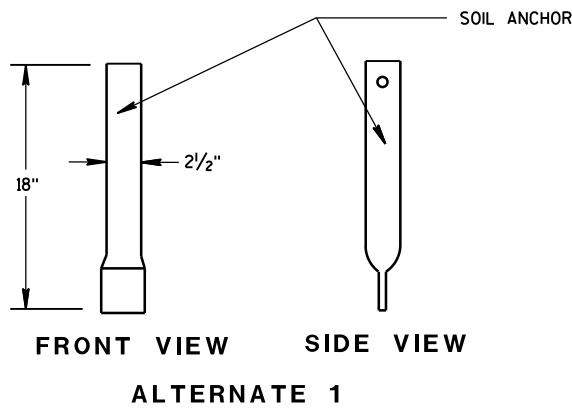
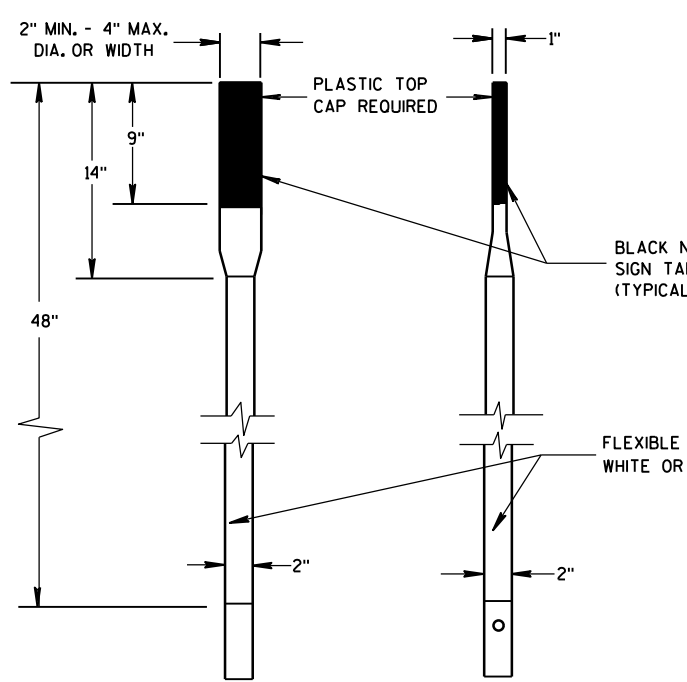
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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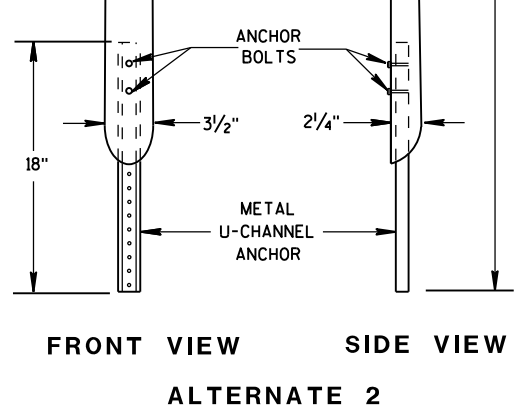
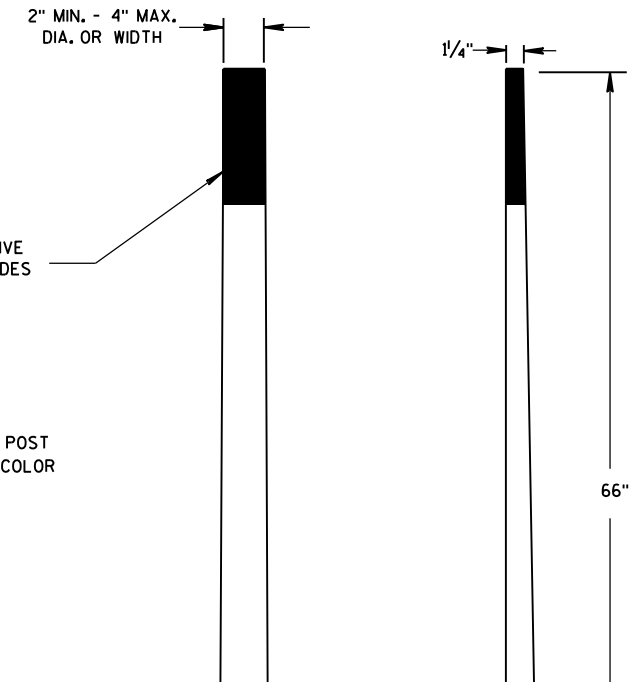
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S.D.D. 15 A 3-2a

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

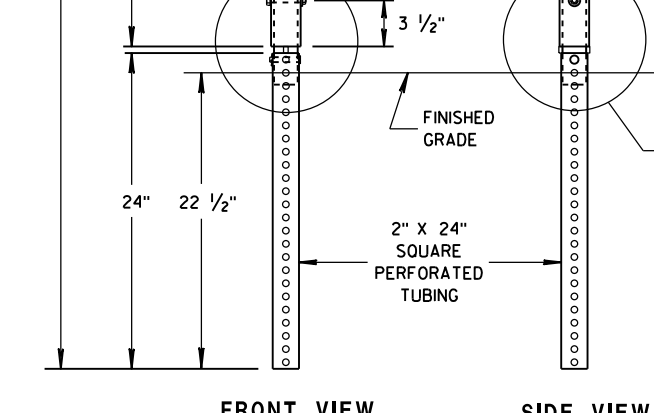
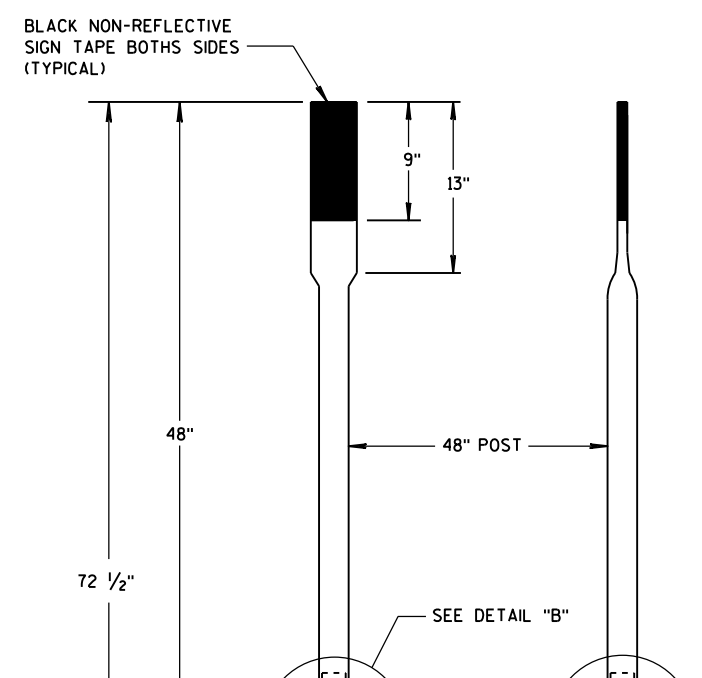


FRONT VIEW SIDE VIEW
ALTERNATE 1

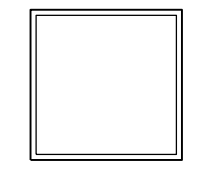


FRONT VIEW SIDE VIEW
ALTERNATE 2

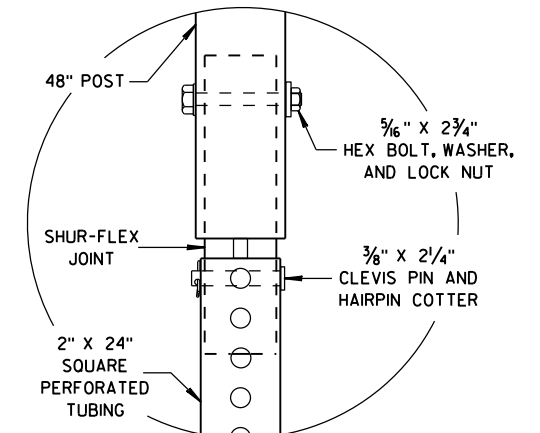
FLEXIBLE MARKER POSTS



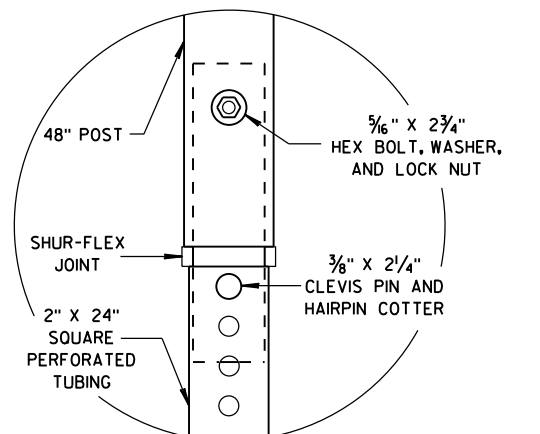
FRONT VIEW SIDE VIEW
ALTERNATE 3



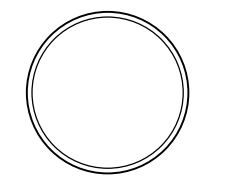
SECTION C-C



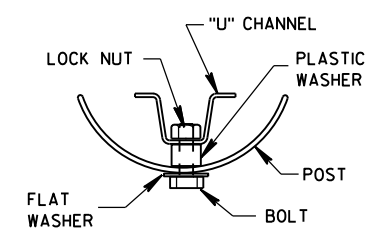
DETAIL B



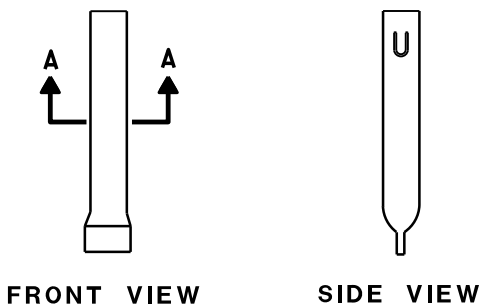
DETAIL C



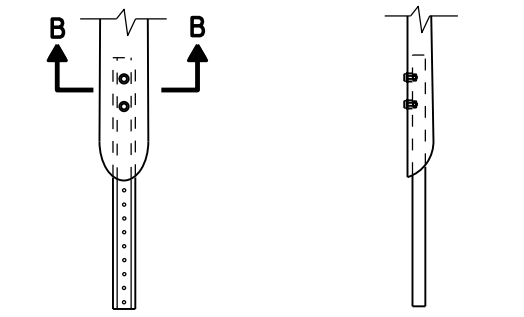
SECTION A-A



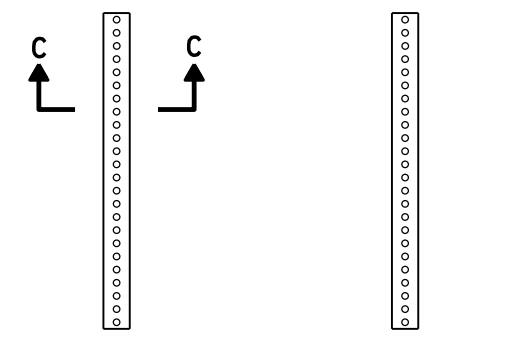
SECTION B-B



FRONT VIEW SIDE VIEW
ALTERNATE 1



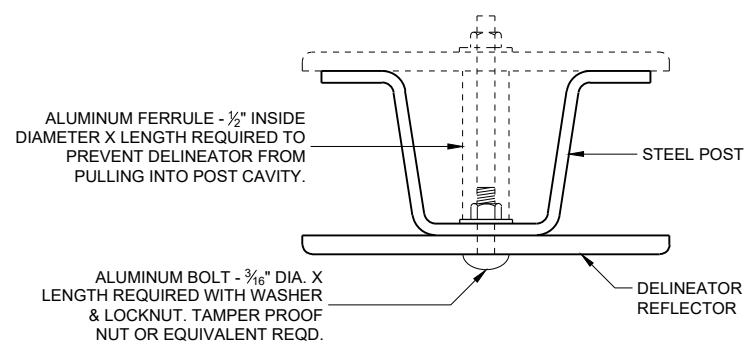
FRONT VIEW SIDE VIEW
ALTERNATE 2



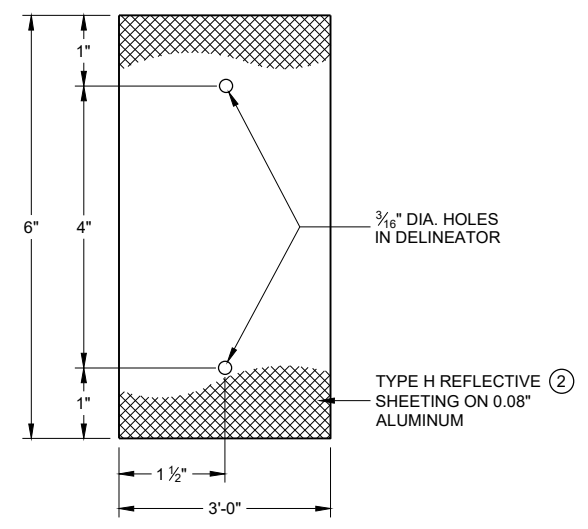
FRONT VIEW SIDE VIEW
ALTERNATE 3

FLEXIBLE MARKER POST ANCHORS

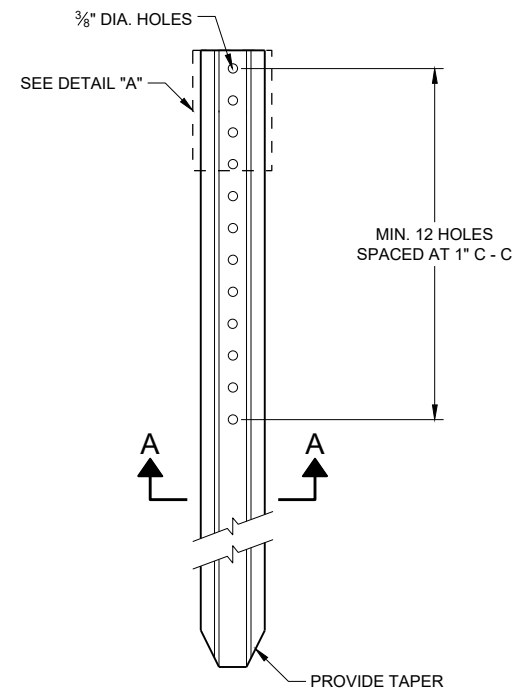
| | |
|--|---|
| FLEXIBLE MARKER POST FOR CULVERT END | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED 10/1/2012 DATE | /S/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN |
| FHWA | |



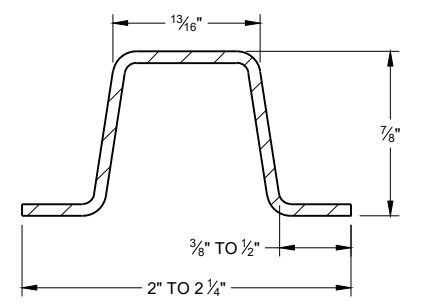
MOUNTING DETAIL FOR DELINEATOR REFLECTOR



DETAIL "A" 3" X 6" DELINEATOR REFLECTOR



DELINEATOR POST



SECTION A - A
WEIGHT 1.12 LBS PER FT. \ 0.1 LB.

REFLECTOR SPACING TABLE

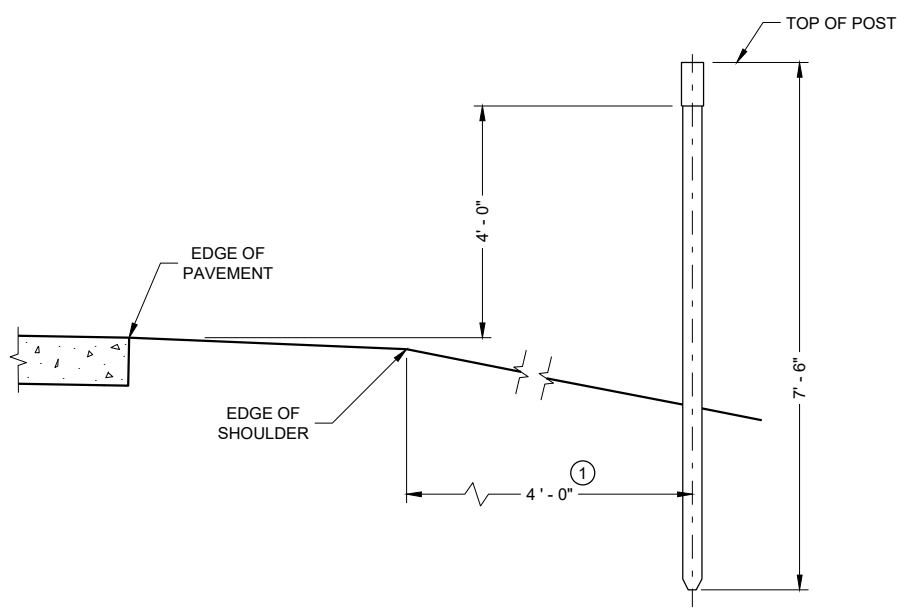
| REFLECTOR SPACING | LOCATION |
|-------------------|----------|
| * 100' C-C | RAMPS |
| 400' C-C | MAINLINE |

* START AT BEGINNING OF RAMP TAPER AND END AT END OF RAMP TAPER

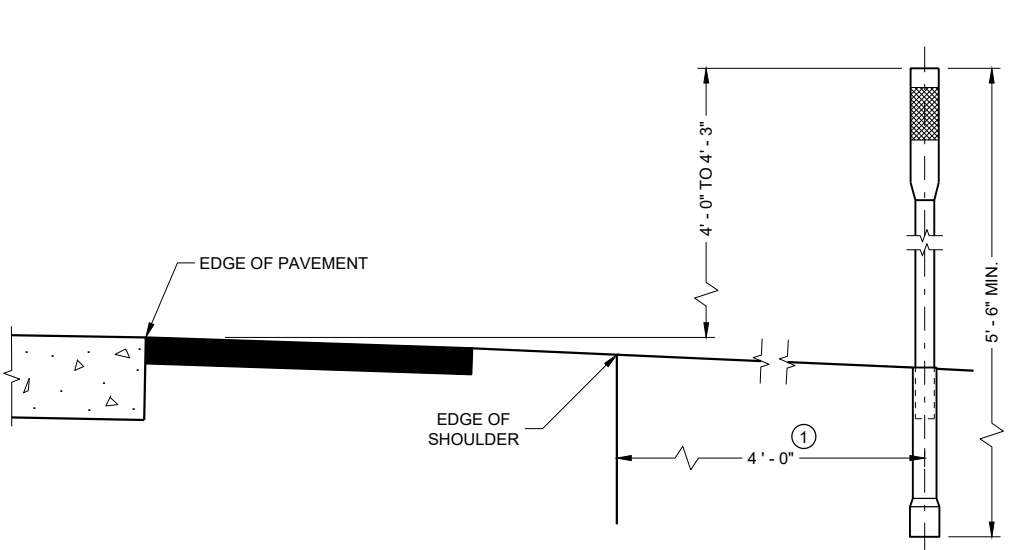
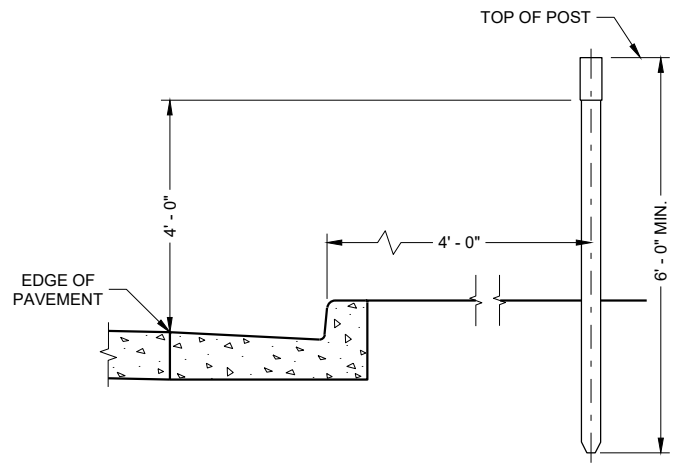
GENERAL NOTES

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

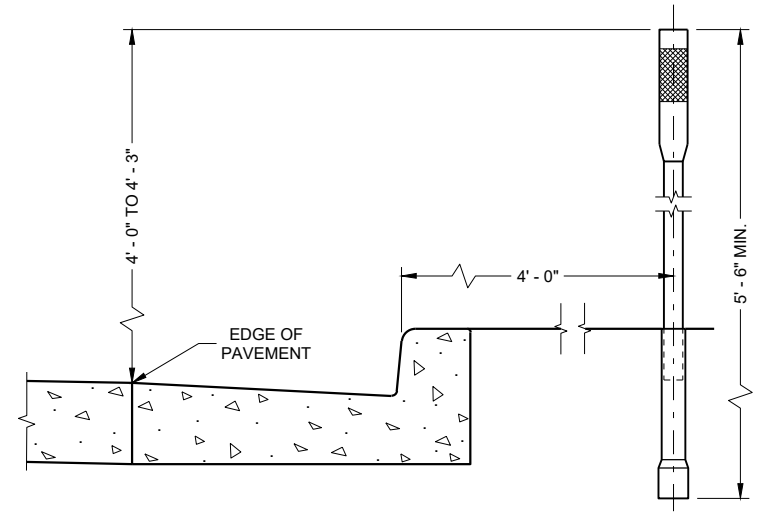
- ① DELINEATORS SHALL BE PLACED AT A CONSTANT DISTANCE FROM THE EDGE OF THE SHOULDER FOR THE LENGTH OF THE INSTALLATION.
- ② FURNISH TYPE H SHEETING FROM THE APPROVED PRODUCTS LIST.



TYPICAL INSTALLATIONS OF DELINEATOR POSTS



TYPICAL INSTALLATIONS OF FLEXIBLE DELINEATOR POSTS

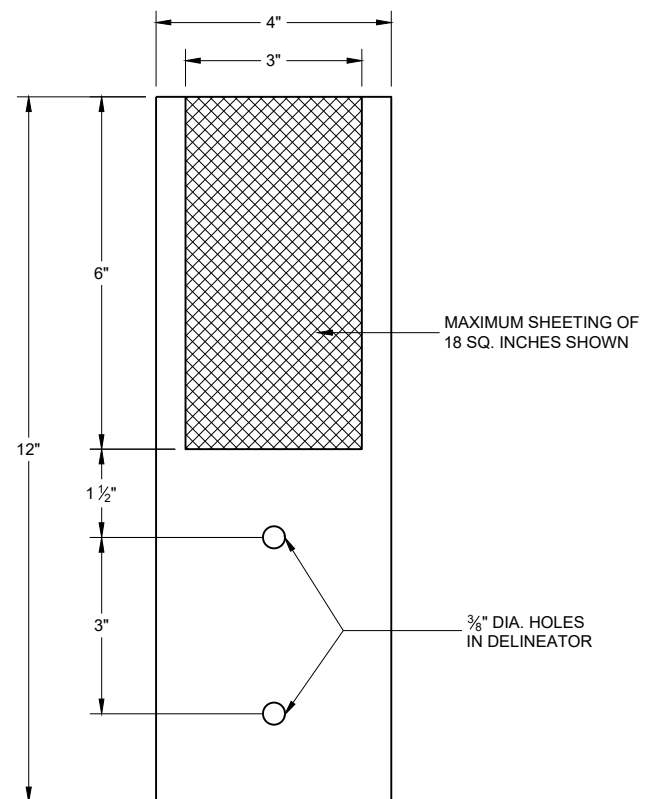


DELINEATOR POST WITH REFLECTIVE SHEETING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2021 /S/ Matthew Rauch
DATE STATE SIGNING AND MARKING ENGINEER

FHWA

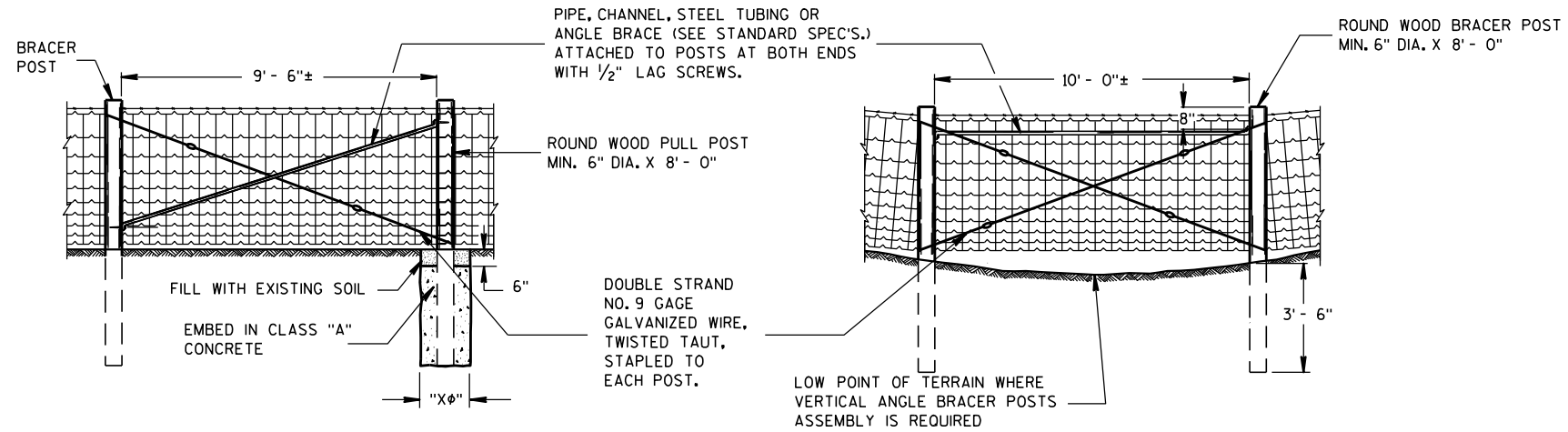


**4" x 12" DELINEATOR
WITH REFLECTIVE SHEETING**

| | |
|--|--|
| DELINEATOR WITH REFLECTIVE SHEETING | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED November 2021 DATE | /S/ Matthew Rauch STATE SIGNING AND MARKING ENGINEER |
| <small>FHWA</small> | |

NOTE: PULL OR STRETCHER POST ASSEMBLIES SHALL BE PLACED MIDWAY BETWEEN END POSTS AND CORNER POSTS WHERE A RUN OF FENCE EXCEEDS 660' BUT IS LESS THAN 1,320'. FOR RUNS OF FENCE IN EXCESS OF 1,320' MAXIMUM SPACING OF PULL OR STRETCHER POST ASSEMBLIES SHALL BE 660'± C-C.

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



PULL OR STRETCHER POSTS ASSEMBLY

VERTICAL ANGLE BRACER POSTS ASSEMBLY

GENERAL NOTES

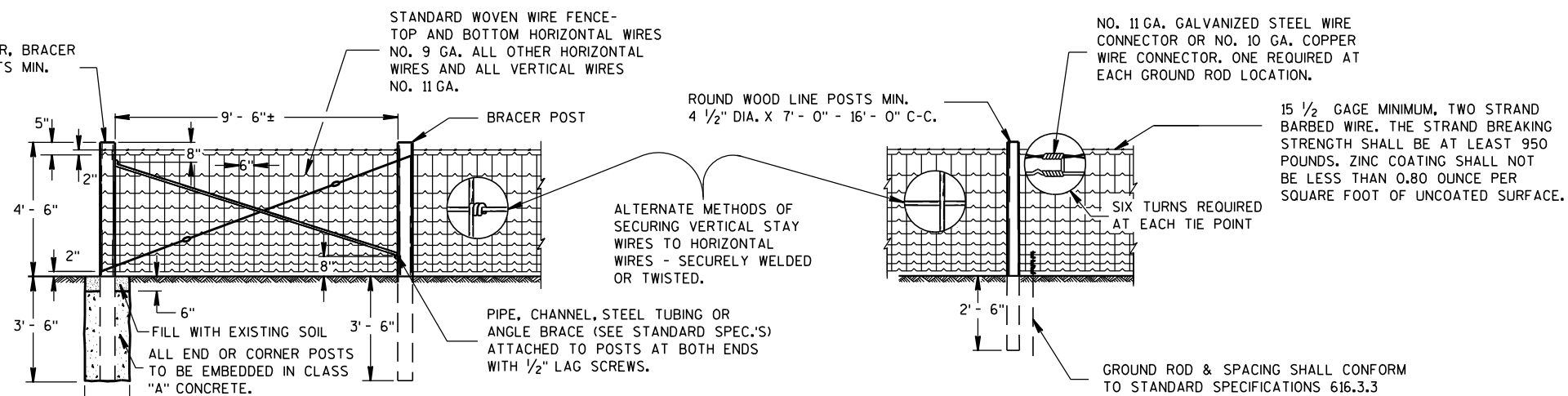
"Xφ" = DIAMETER OF THE POST PLUS 12".

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

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

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

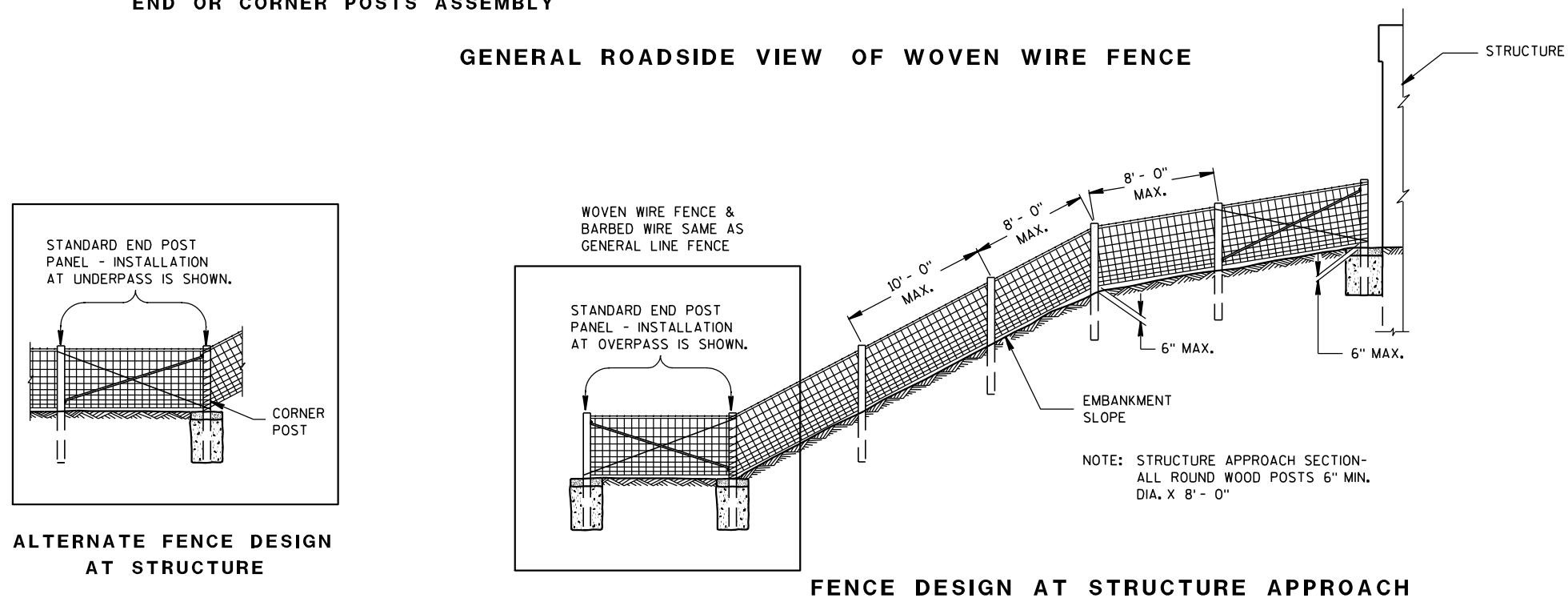
ROUND WOOD END, CORNER, BRACER OR VERTICAL ANGLE POSTS MIN. 6" DIA. X 8' - 0"



END OR CORNER POSTS ASSEMBLY

LINE FENCE CONSTRUCTION

GENERAL ROADSIDE VIEW OF WOVEN WIRE FENCE



ALTERNATE FENCE DESIGN AT STRUCTURE

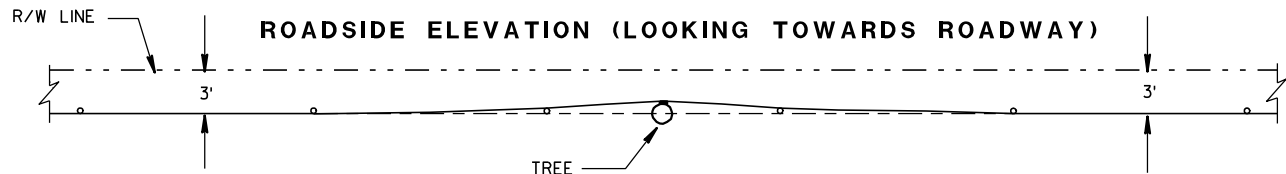
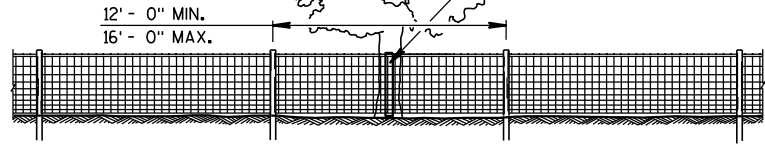
FENCE DESIGN AT STRUCTURE APPROACH

FENCE WOVEN WIRE

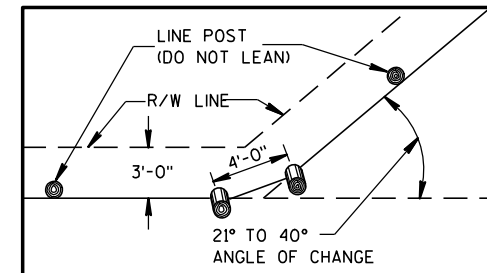
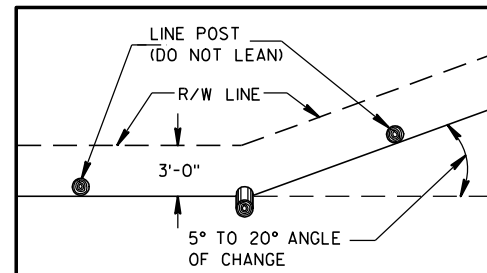
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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

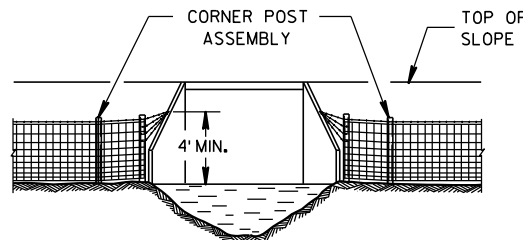


PLAN VIEW
FENCE DESIGN AT TREES REMAINING
IN NORMAL FENCE LINE

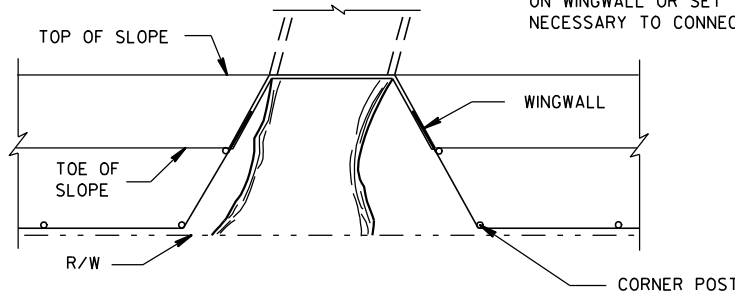


PLAN VIEW
SINGLE POST CORNER
PLAN VIEW
DOUBLE POST CORNER
RIGHT OF WAY LINE CHANGE 40° AND LESS

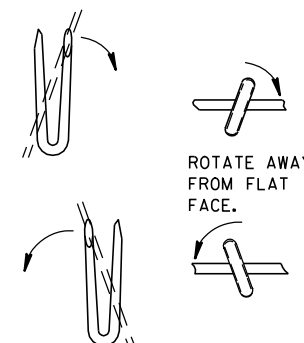
NOTE: SINGLE AND DOUBLE POSTS SHALL BE A MIN. 6" DIA. X 8'-0" WITH A LEAN OF 4" TOWARD THE OUTSIDE OF THE CURVE. WHEN THE RIGHT OF WAY LINE CHANGE IS MORE THAN 40° USE THE CORNER OR STRETCHER POSTS ASSEMBLY.



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

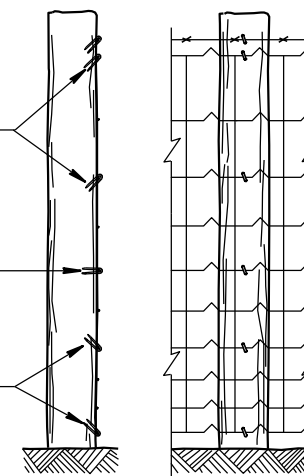


FENCE INSTALLATION TO WINGWALLS

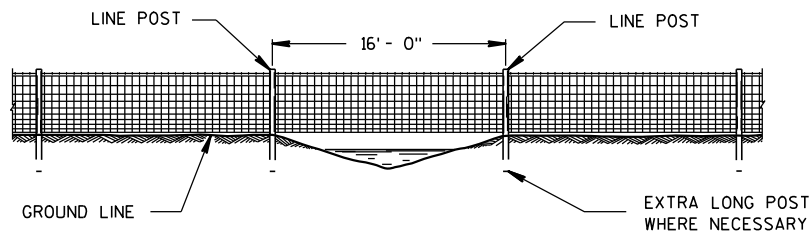


LINE POST

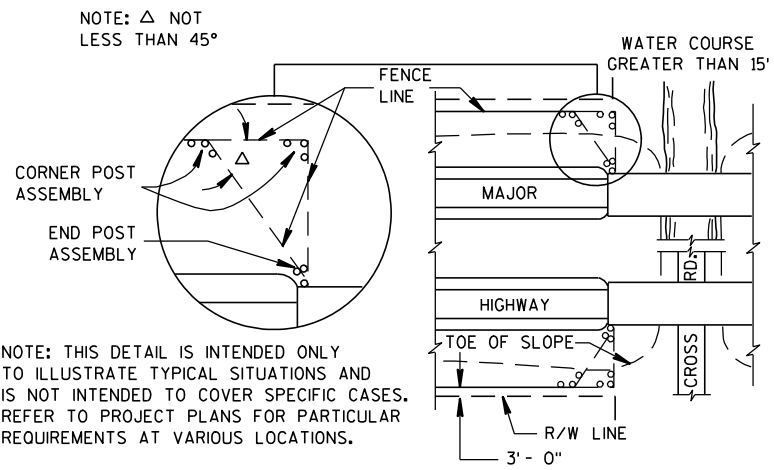
NOTE: WHEN POSTS ARE DRIVEN THE SMALL END SHALL BE DOWN.



END ELEVATION
FARM SIDE ELEVATION
FENCE MOUNTING DETAIL

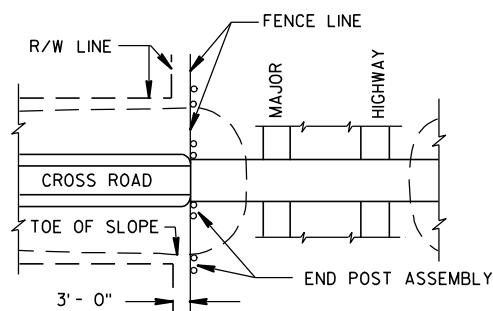


FENCE CONSTRUCTION OVER STREAM
COURSES OF 15 FT. OR LESS IN WIDTH



NOTE: THIS DETAIL IS INTENDED ONLY TO ILLUSTRATE TYPICAL SITUATIONS AND IS NOT INTENDED TO COVER SPECIFIC CASES. REFER TO PROJECT PLANS FOR PARTICULAR REQUIREMENTS AT VARIOUS LOCATIONS.

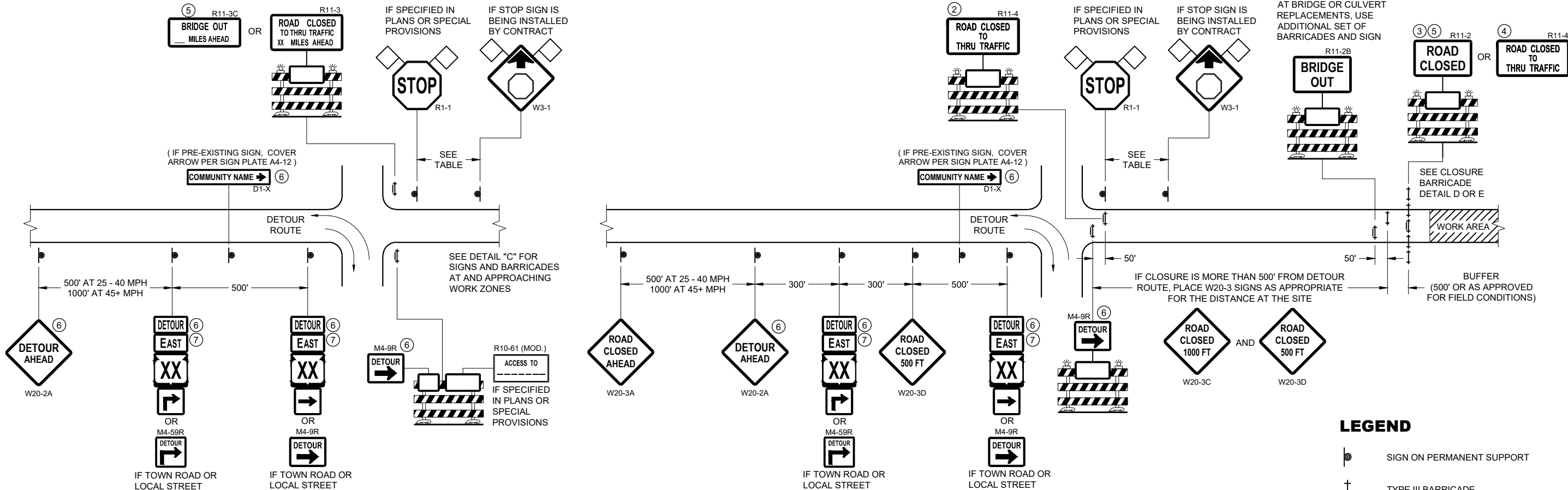
PLAN VIEW
MAJOR HIGHWAY OVERPASS OR STREAM COURSE
CROSSING OF GREATER THAN 15 FT. IN WIDTH



PLAN VIEW
MAJOR HIGHWAY UNDERPASS

FENCE LOCATION AT STRUCTURES

| | |
|--|--|
| FENCE WOVEN WIRE | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED 4/4/2008 DATE | /s/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER |
| 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**

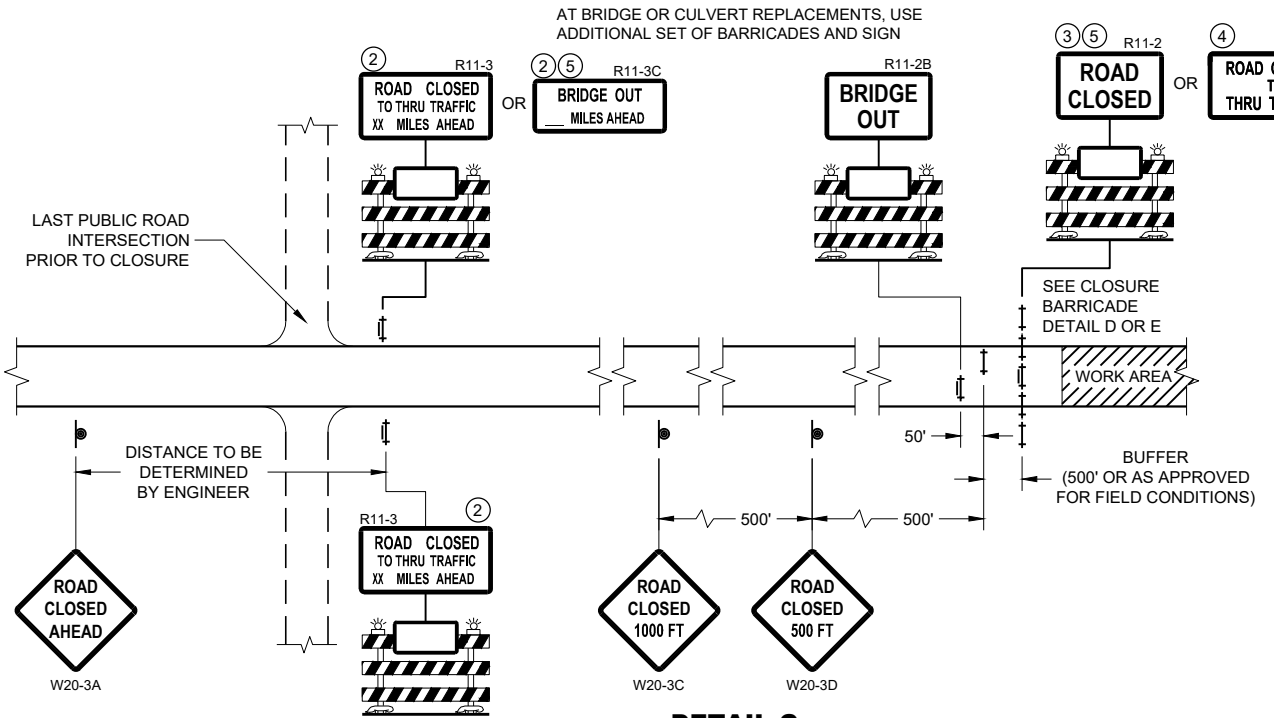
WORK ZONE LESS THAN 1/2 MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

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



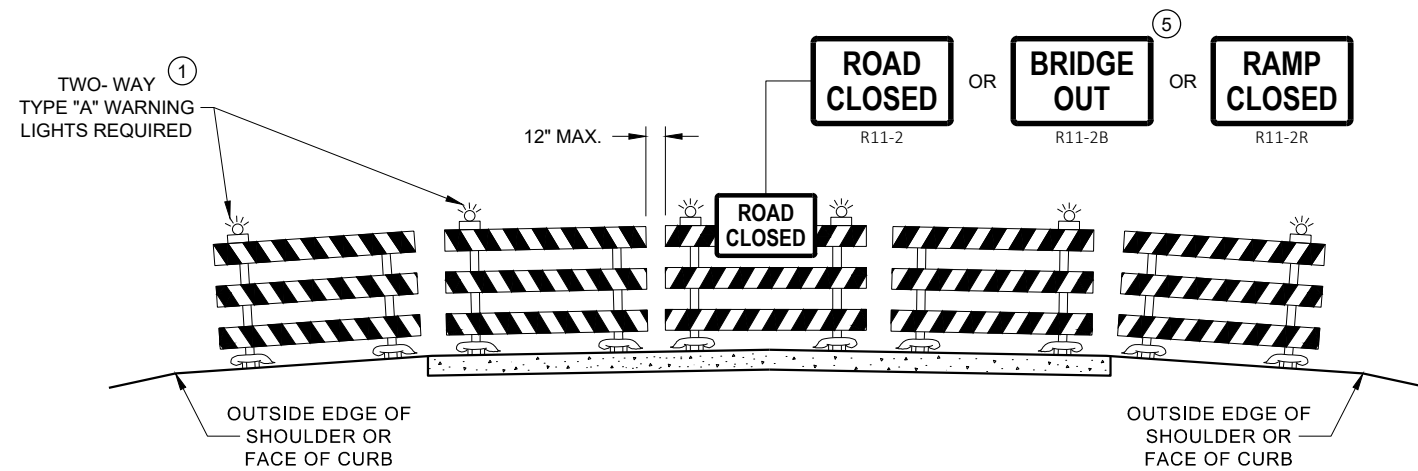
**DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR**

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

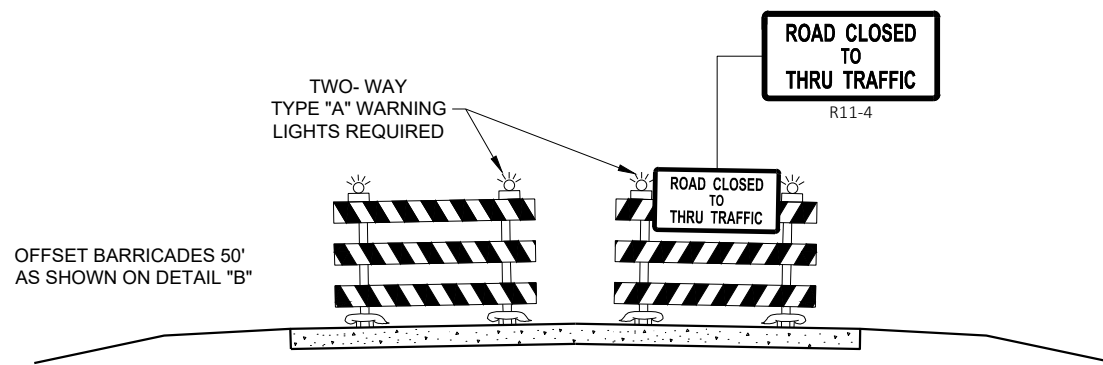
**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



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



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

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

**BARRICADES AND SIGNS
FOR
VARIOUS CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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

LEGEND

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

GENERAL NOTES

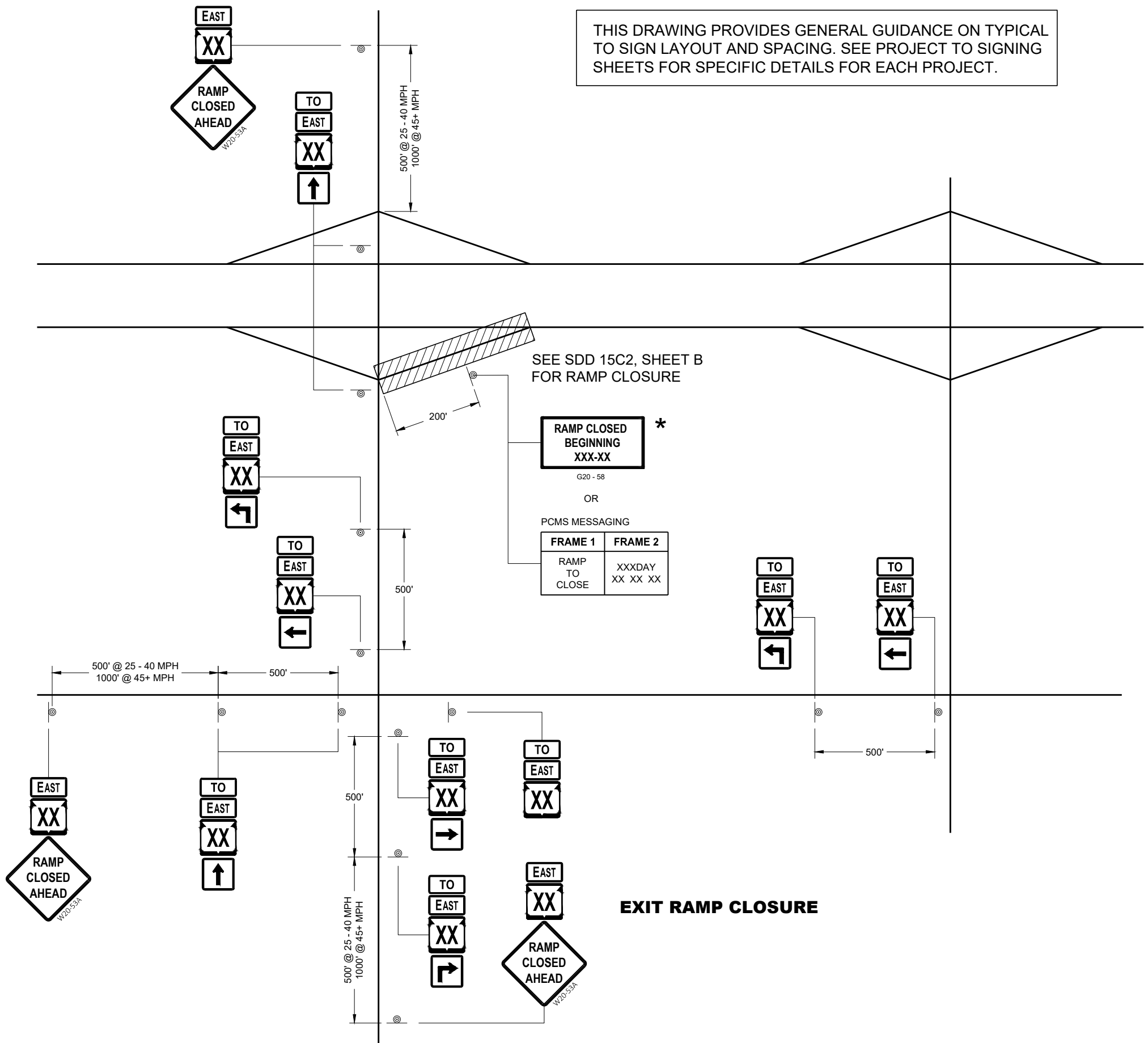
- THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- IF THERE ARE ANY ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE TO ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT TO SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.
- THE SPACING BETWEEN TRAFFIC CONTROL AND TO SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.
- ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.
- SIGNS THAT SHALL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.
- "MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- SIGN SIZES SHALL BE AS FOLLOW:
 M3 - X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS).
 MO4 - 5 SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS).
 M1 - 1, M1 - 4, AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS).
 MO5 - 1, MO5 - 2, AND MO6 - 1, SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS).
 W20 - 53A SHALL BE 48" X 48"
- * PLACE "RAMP CLOSED BEGINNING" SIGN 7 CALENDAR DAYS PRIOR TO CLOSURE OR AS DIRECTED BY THE ENGINEER. SEE WISCONSIN STANDARD SIGN PLATES FOR LAYOUT.

6

6

SDD 15C02 - 08d

SDD 15C02 - 08d



SEE SDD 15C2, SHEET B FOR RAMP CLOSURE

RAMP CLOSED BEGINNING *
 XXX-XX
 G20 - 58

OR
 PCMS MESSAGING

| FRAME 1 | FRAME 2 |
|---------------|--------------------|
| RAMP TO CLOSE | XXXDAY XX XX XX |

EXIT RAMP CLOSURE

ON RAMP LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

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

LEGEND

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

GENERAL NOTES

- SEE SDD 15D16 "TRAFFIC CONTROL, EXIT RAMP CLOSURE" DETAIL FOR TRAFFIC CONTROL AT EXIT RAMP CLOSURE.
- THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- IF THERE ARE ANY ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE "TO" MO-4 ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT TO SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.
- THE SPACING BETWEEN TRAFFIC CONTROL AND "TO" MO-4 SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.
- ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.
- SIGNS THAT SHALL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.
- "MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- SIGN SIZES SHALL BE AS FOLLOW:
 MO4 - 5 SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS).
 M1 - 4, M1 - 5A, AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS).
 MO5 - 1, MO5 - 2, AND MO6 - 1, SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS).
- ① ONLY ADD IF THERE ARE NO EXISTING ROUTE MARKERS FOR THE INTERSECTING ROADWAY.

SEE SDD 15D16 FOR RAMP CLOSURE

EXIT RAMP CLOSURE

6

6

SDD 15C02 - 08e

SDD 15C02 - 08e

PCMS MESSAGING

| FRAME 1 | FRAME 2 |
|----------------------|-------------------|
| EXIT XX CLOSED | USE EXIT XX |

OR

FIXED MESSAGE SIGN

HWY XX
RAMP CLOSED
USE EXIT XX

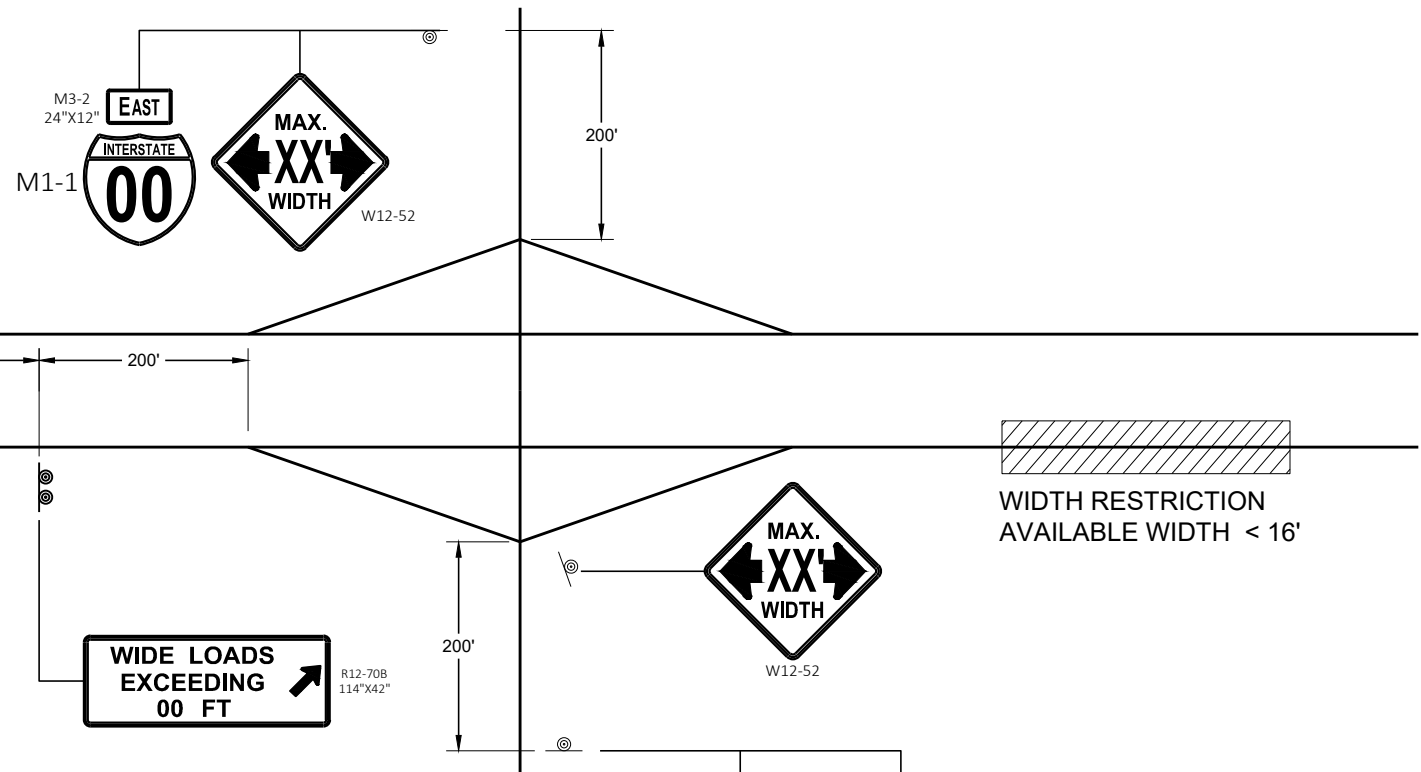
G20 - 56

**OFF RAMP
LANE CLOSURE**

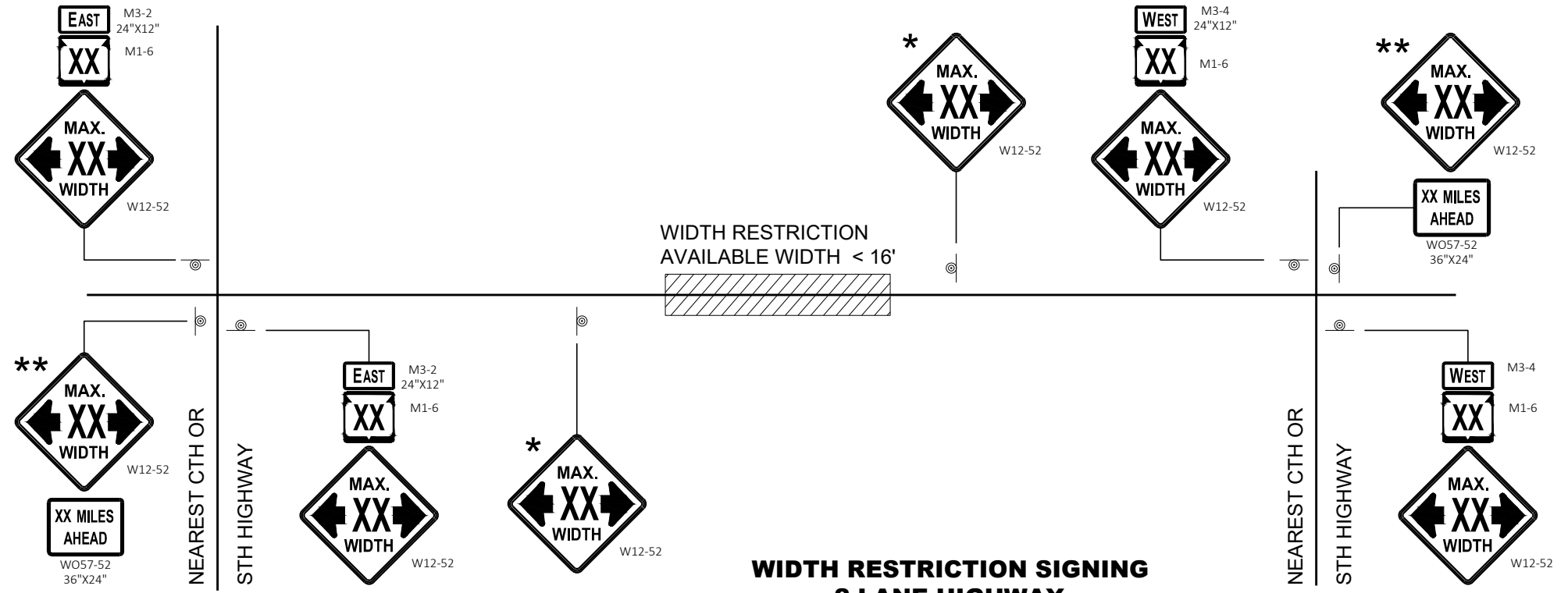
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA



WIDTH RESTRICTION SIGNING



**WIDTH RESTRICTION SIGNING
2 LANE HIGHWAY**

LEGEND

⊙ SIGN ON PERMANENT SUPPORT

GENERAL NOTES

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

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A 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.

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

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

WIDTH ON SIGN TO BE APPROXIMATELY ONE FOOT LESS THAN AVAILABLE WIDTH.

* PLACE 500 FEET AFTER THE W20 - 1A AND 500 FEET BEFORE ADDITIONAL SIGNS FOR ROADWAYS WITH A PRE - CONSTRUCTION SPEED LIMIT OF 45 MPH OR MORE. FOR 35-40 MPH, USE 350 FOOT TYPICAL SPACING. FOR 25-30 MPH, USE 200 FOOT TYPICAL SPACING.

** SIGN SHALL BE VISIBLE FROM ROADWAY.

*** ADDITIONAL SIGNS NEEDED IF THERE IS AN ON RAMP BETWEEN SIGNS.

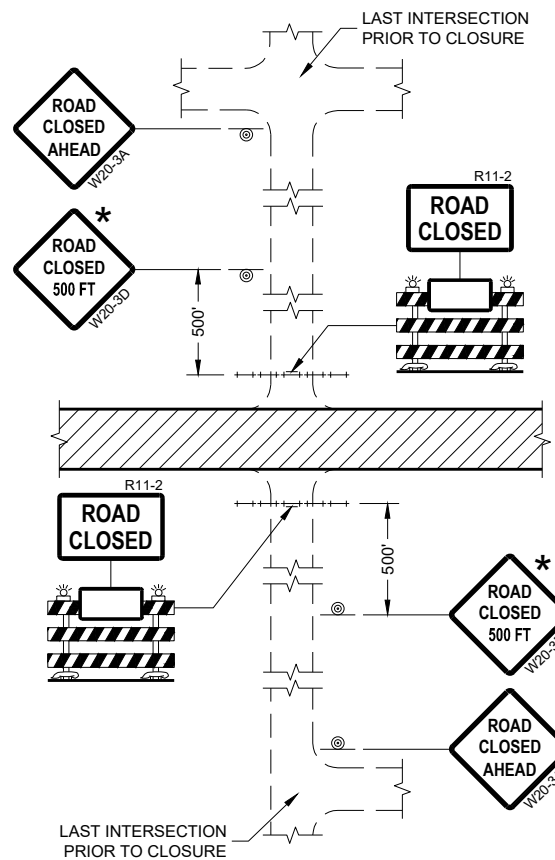


WIDTH ON SIGN TO BE APPROX. 1 - FOOT LESS THAN AVAILABLE WIDTH

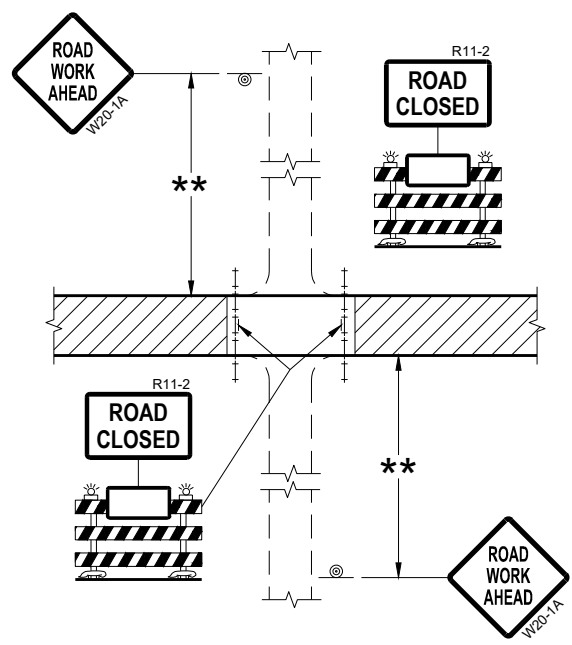
**ADVANCED WIDTH
RESTRICTION SIGNING**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

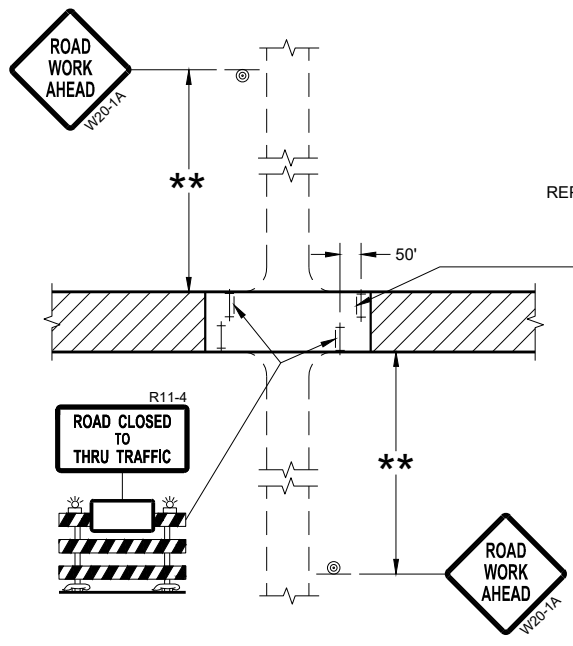
APPROVED
February 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA



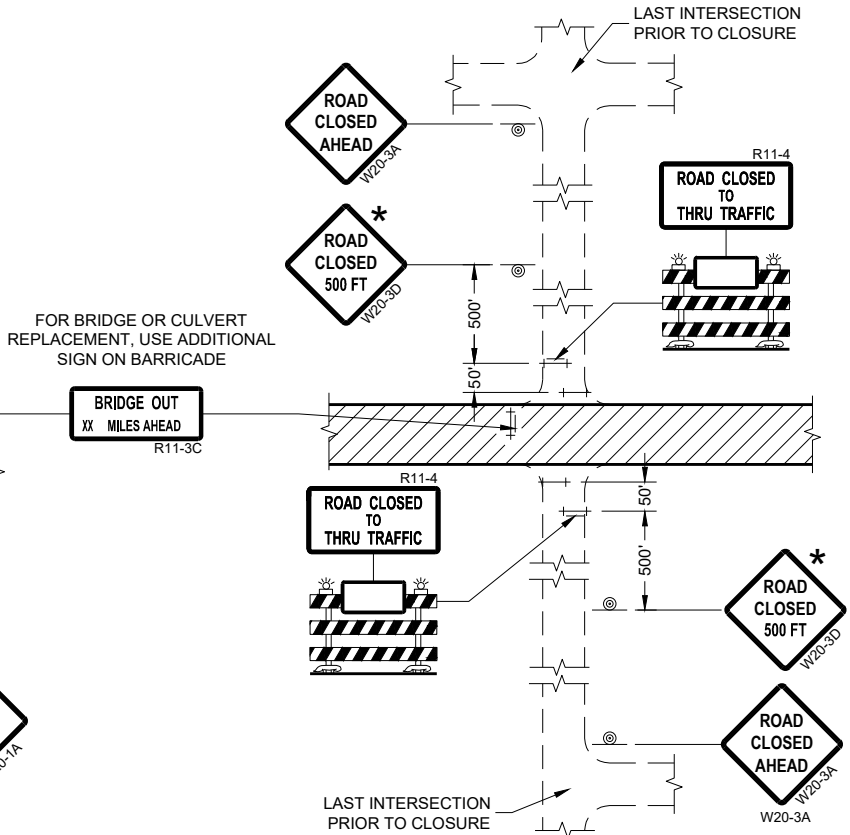
DETAIL 1
(NO ACCESS TO PROJECT)



DETAIL 2
(PUBLIC CROSS-TRAFFIC MAINTAINED.
NO ACCESS TO PROJECT)



DETAIL 3
(PUBLIC CROSS-TRAFFIC MAINTAINED.
CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)



DETAIL 4
(CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)

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 (500 FEET DESIRABLE) TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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

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

SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN 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, AND R11-4 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

- * OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FEET OR LESS FROM THE WORK ZONE.
- ** 500' MAX. OR AT LAST INTERSECTION, WHICHEVER IS CLOSEST.

LEGEND

- ⊙ SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- ⚡ TYPE "A" WARNING LIGHT (FLASHING)
- ▨ WORK AREA

| BARRICADES AND SIGNS FOR SIDEROAD CLOSURES | |
|--|--|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED July 2018 DATE | /S/ Andrew Heidtke WORK ZONE ENGINEER |
| FHWA | |

GENERAL NOTES

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

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




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

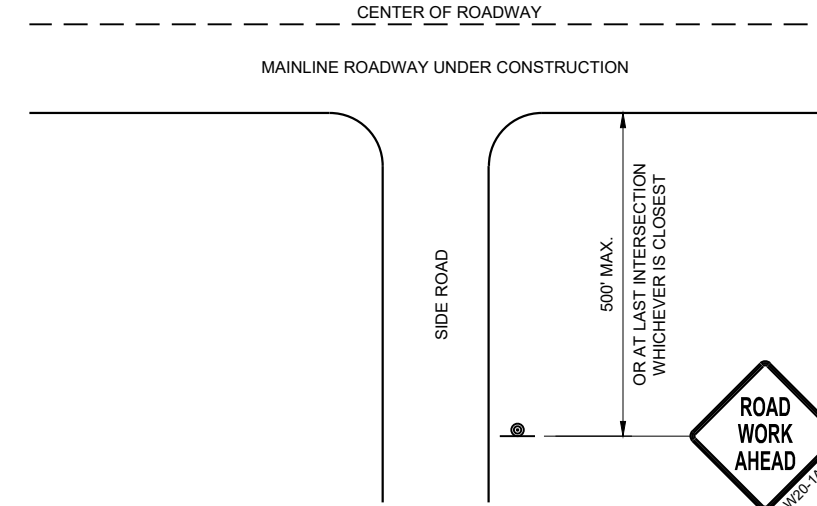
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

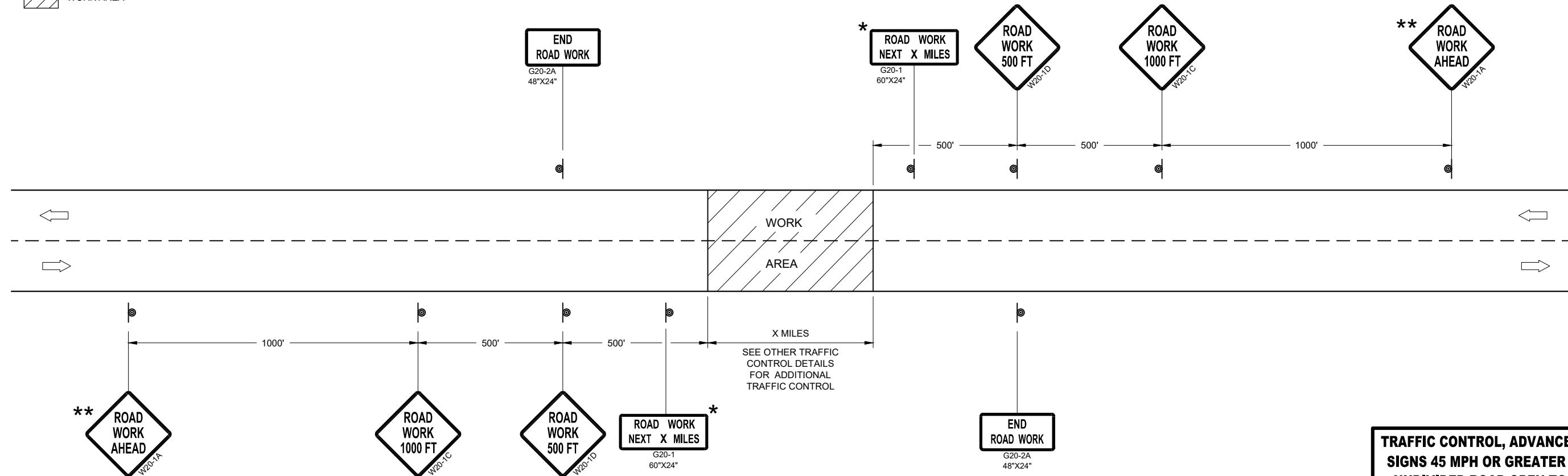
- * OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- ** PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

LEGEND

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

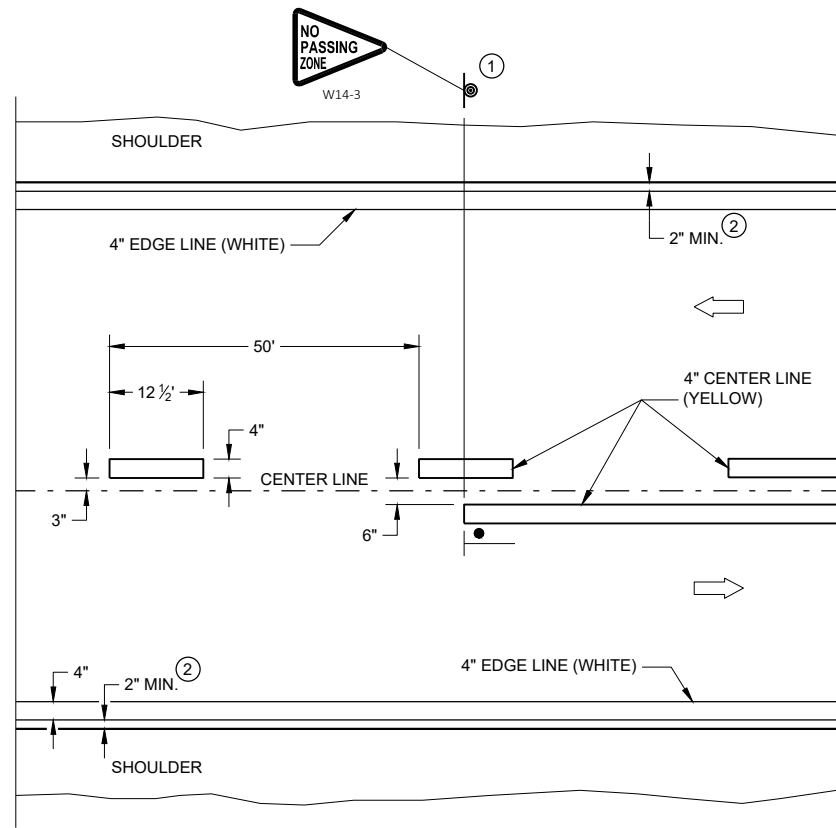


TYPICAL SIDE ROAD APPROACH WARNING SIGN DETAIL

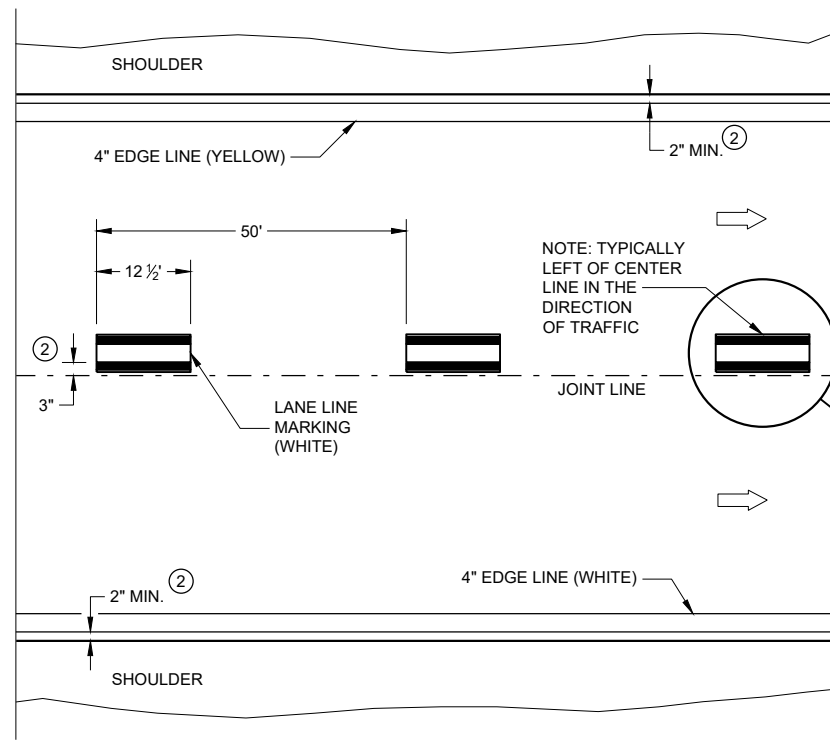


TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

| | |
|--|--|
| TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED DATE | /S/ Andrew Heidtke WORK ZONE ENGINEER |
| FHWA | |

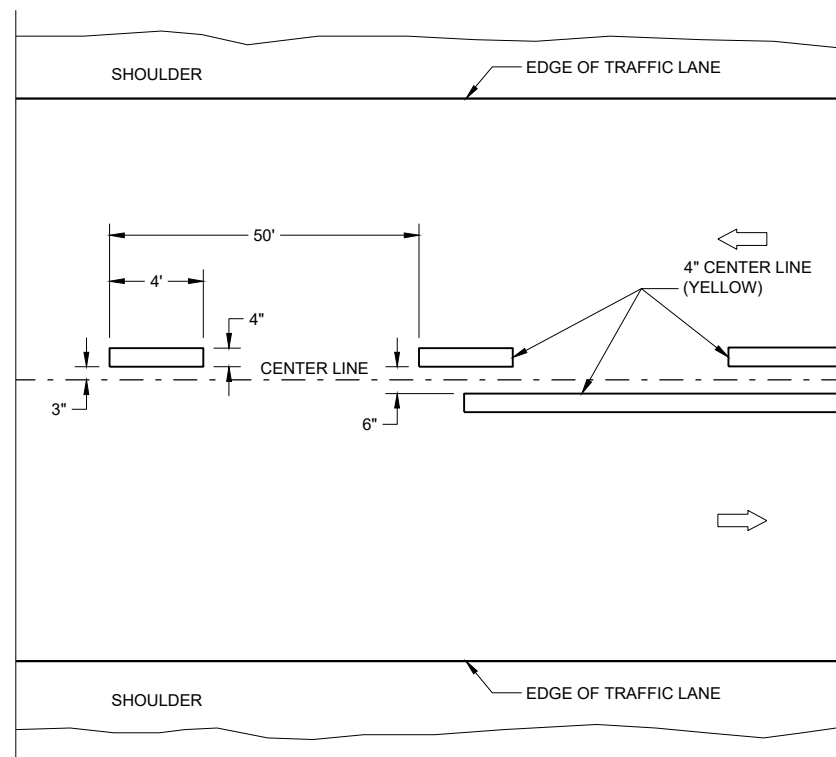


TWO WAY TRAFFIC

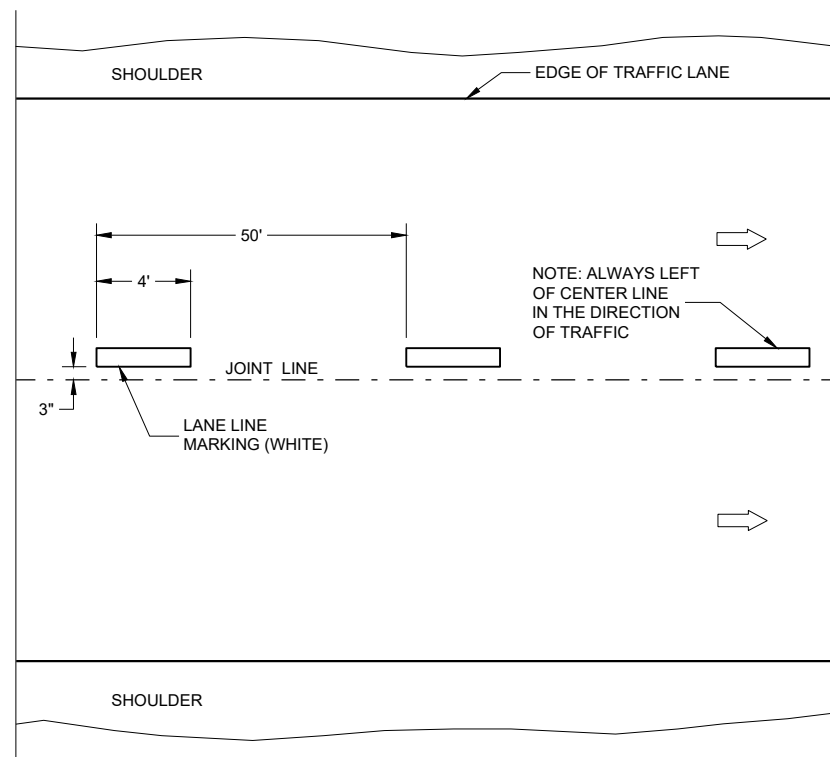


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

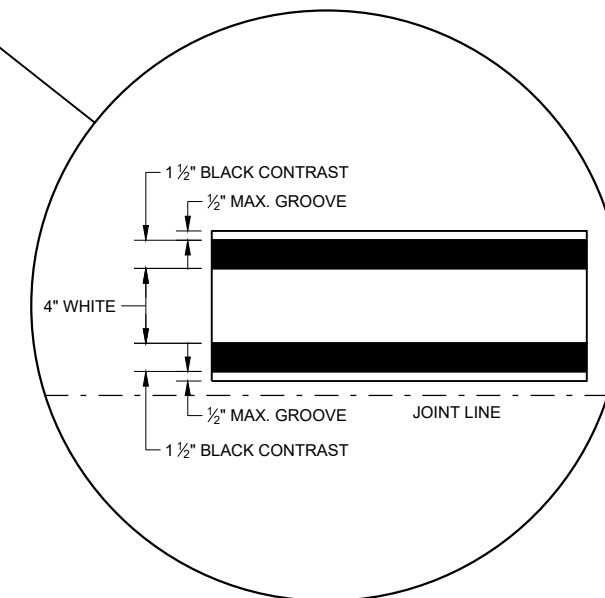
GENERAL NOTES

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

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

LEGEND

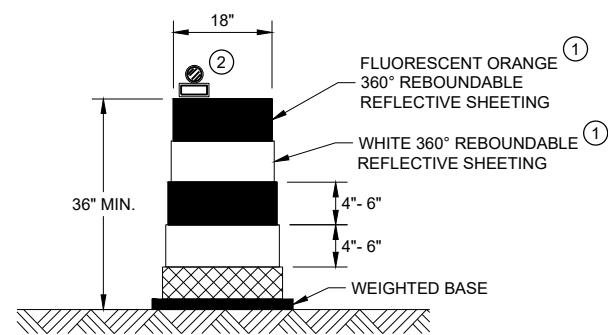
- "T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC



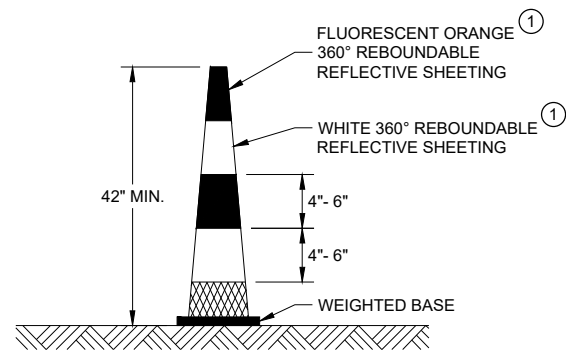
**LONGITUDINAL MARKING
(MAINLINE)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

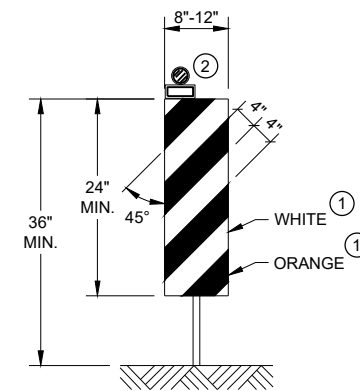


DRUM



42" CONE

DO NOT USE IN TAPERS
 1/2 SPACING OF DRUMS

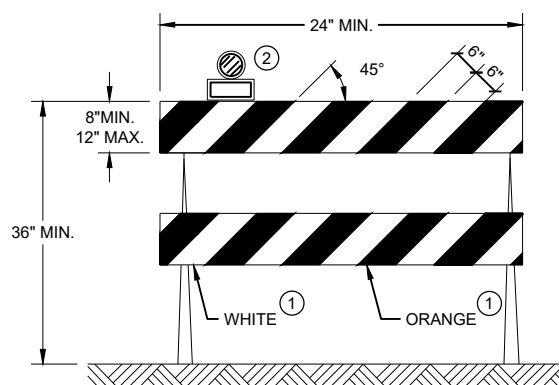


VERTICAL PANEL

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

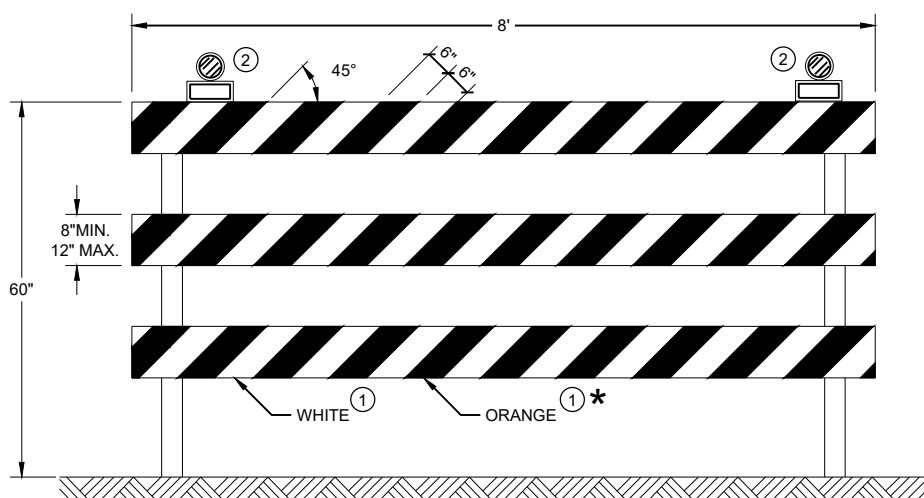
GENERAL NOTES

- 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> | |

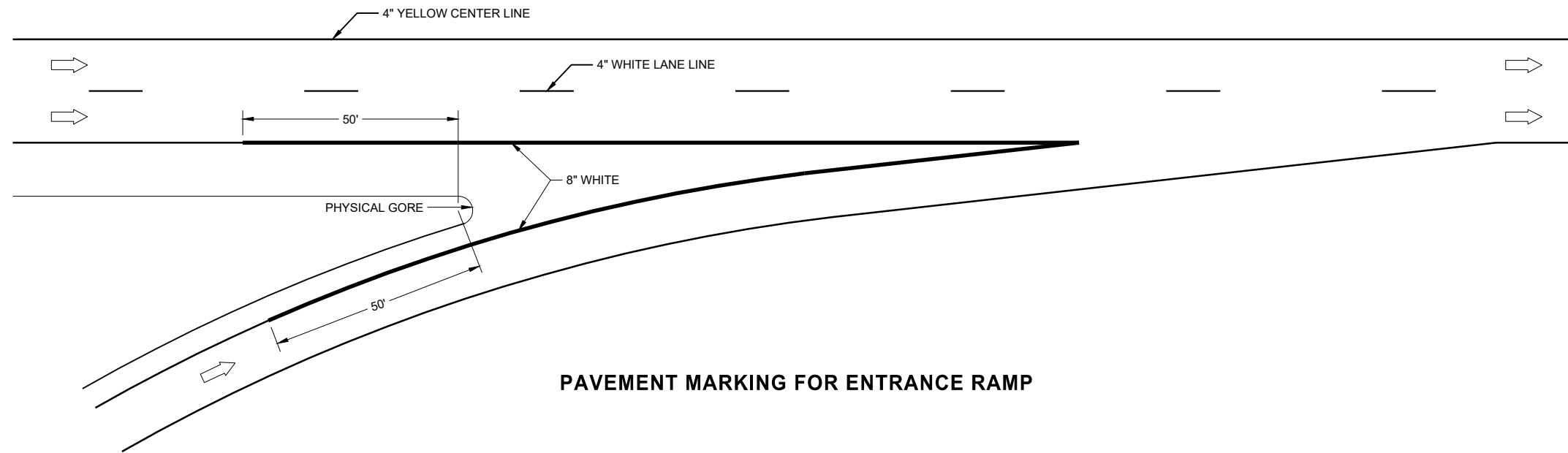
GENERAL NOTES

PLACE GROOVE 3 INCHES LEFT OF JOINT.

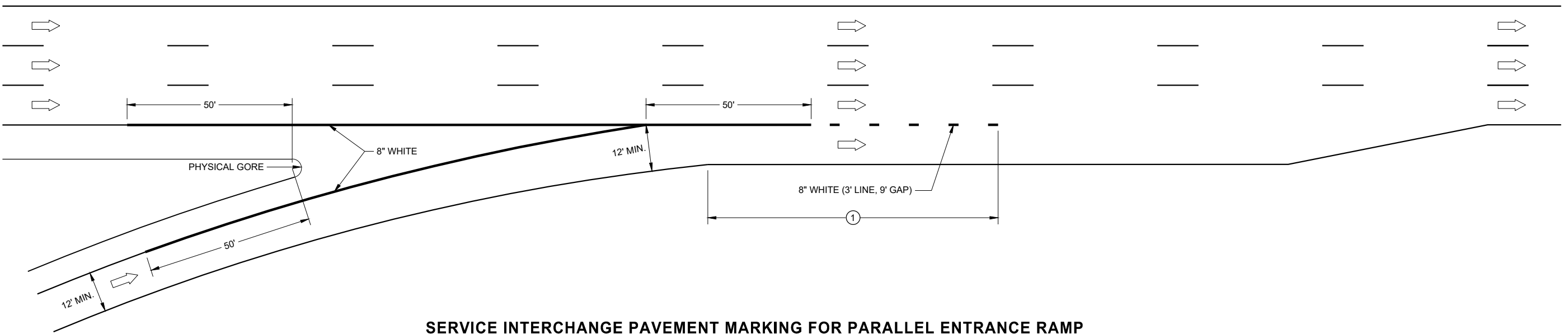
① ½ LENGTH OF FULL WIDTH ACCELERATION LANE.

LEGEND

➡ DIRECTION OF TRAVEL



PAVEMENT MARKING FOR ENTRANCE RAMP



SERVICE INTERCHANGE PAVEMENT MARKING FOR PARALLEL ENTRANCE RAMP

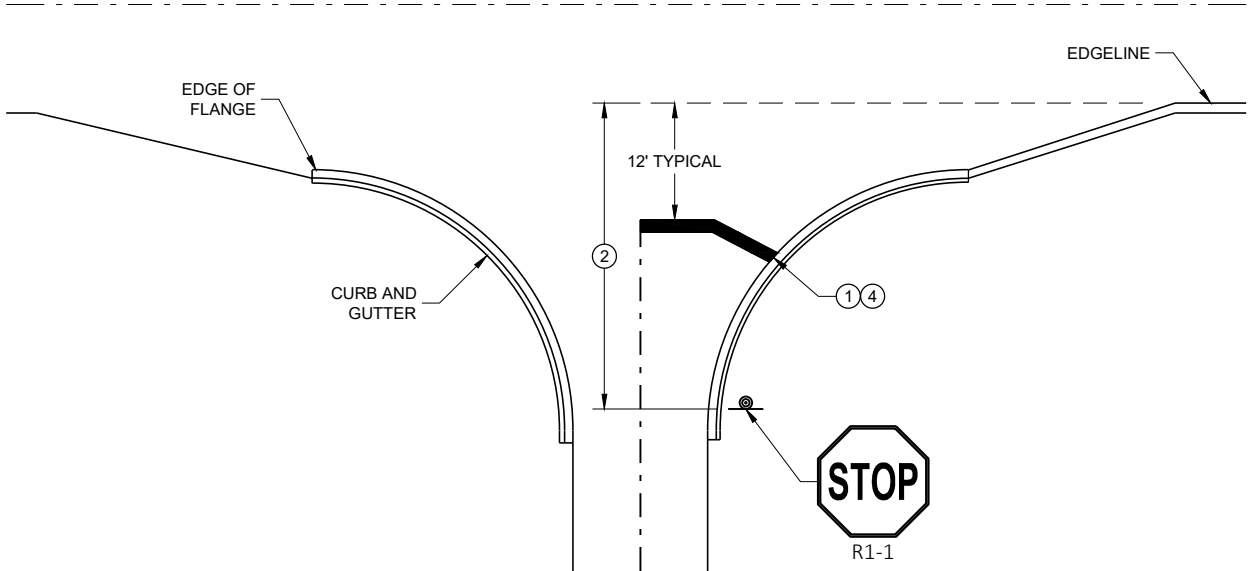
**PAVEMENT MARKING,
ENTRANCE RAMP AND
PARALLEL ENTRANCE RAMP**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

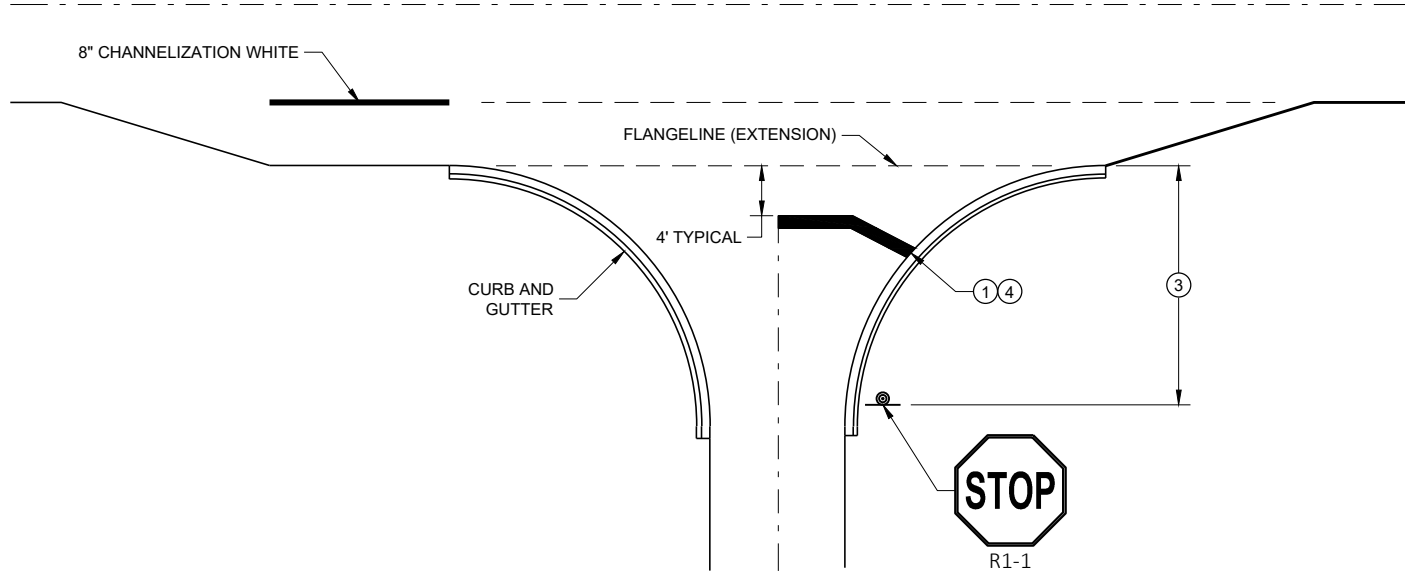
GENERAL NOTES

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

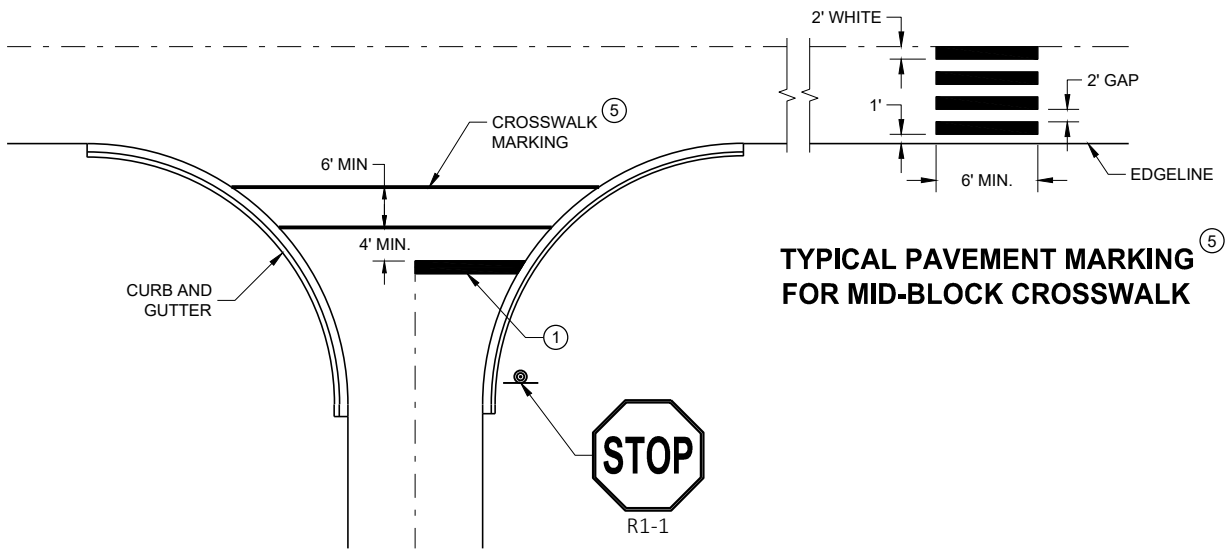
- ① 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- ② NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE.
- ③ NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE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



TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER

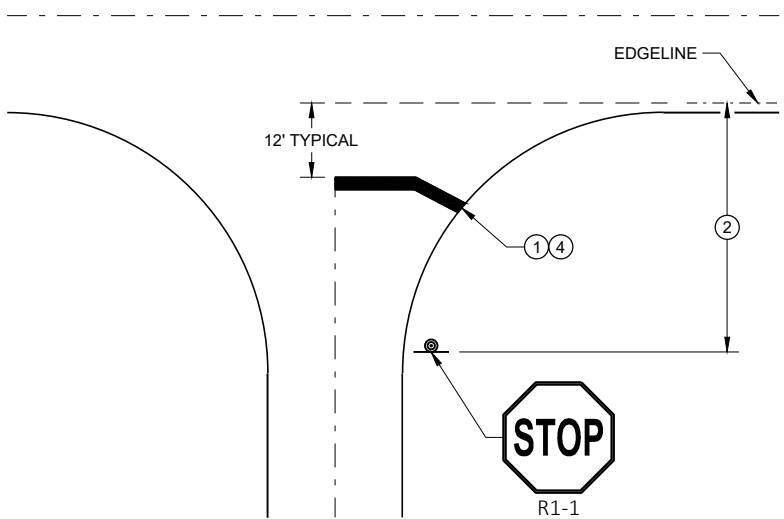


TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING

TYPICAL PAVEMENT MARKING FOR MID-BLOCK CROSSWALK



TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

| | |
|--|--|
| STOP LINE AND CROSSWALK PAVEMENT MARKING | |
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION | |
| APPROVED November 2019 DATE | /s/ Matthew Rauch STATE SIGNING AND MARKING ENGINEER |
| <small>FHWA</small> | |

6

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SDD 15C33 - 04

SDD 15C33 - 04

GENERAL NOTES

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

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

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

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

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

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

CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

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

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










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

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

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

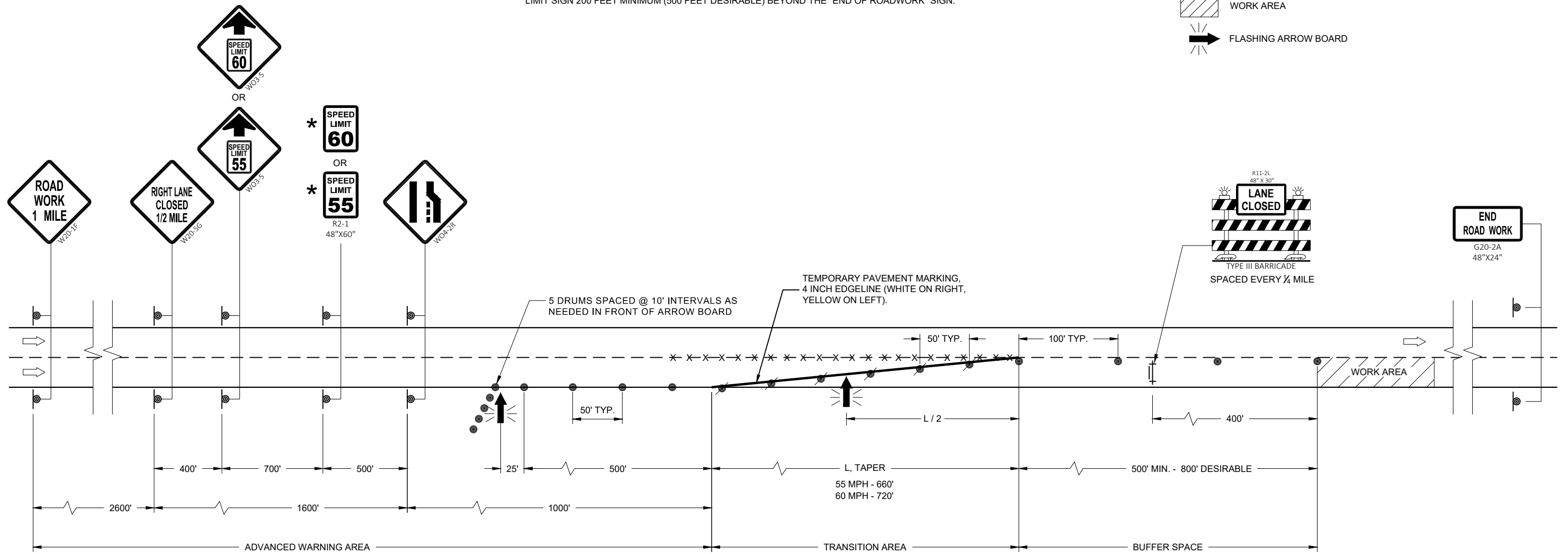
* A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. PLACE A SPEED LIMIT SIGN A MINIMUM OF EVERY 3 MILES. INCLUDE A RESUME SPEED LIMIT SIGN 200 FEET MINIMUM (500 FEET DESIRABLE) BEYOND THE "END OF ROADWORK" SIGN.

LEGEND

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

6

6














SDD 15D12 - 09b

SDD 15D12 - 09b

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

LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

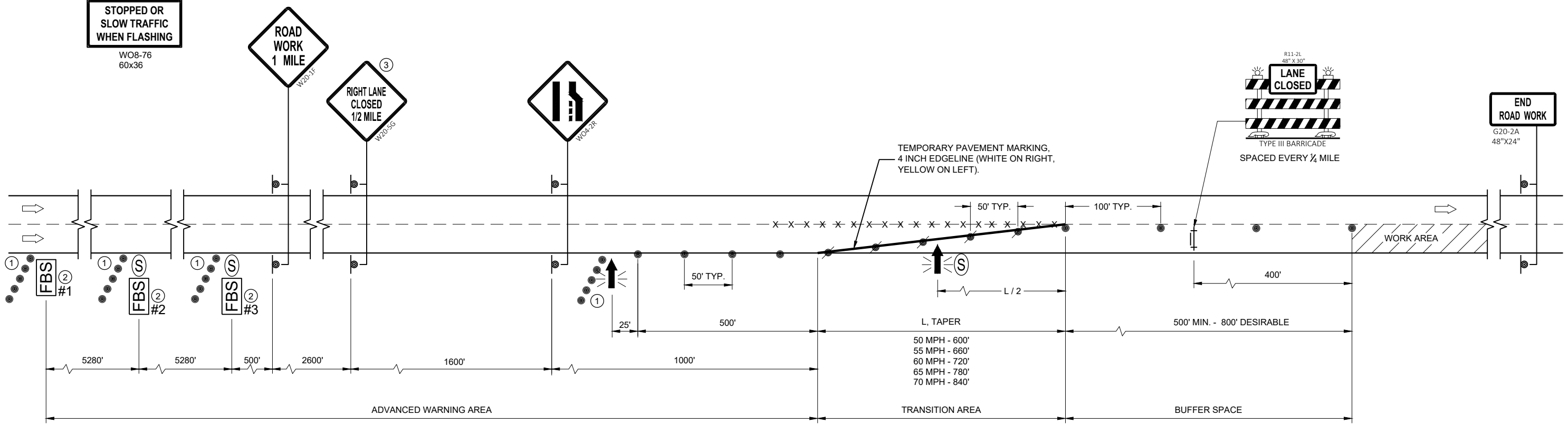
CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

PORTABLE TRAFFIC SENSOR (PTS) MAY BE MOUNTED ON THE FBS, ARROW BOARD OR OTHER TRAILER DEVICES.

- ① 5 DRUMS SPACED AT 10 FOOT INTERVALS AS NEEDED.
- ② IF THERE ARE MORE THAN TWO LANES OR IF SPECIFIED IN THE PLANS, PLACE FBS ON BOTH SIDES OF THE ROADWAY.
- ③ IF THERE IS AN APPROVED TEMPORARY SPEED DECLARATION, ADD WO-3-5 SIGNS 400 FEET AFTER THE W20-5G SIGNS AND ADD R2-1 SIGNS (48"x60") 700 FEET AFTER THE WO3-5 SIGNS. A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. PLACE A SPEED LIMIT SIGN A MINIMUM OF EVERY 3 MILES. INCLUDE A "RESUME SPEED LIMIT" SIGN 200 FEET MINIMUM (800 FEET DESIRABLE) BEYOND THE G30-3A "END ROAD WORK" SIGN.

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SDD 15D12 - 09d

SDD 15D12 - 09d









TRAFFIC CONTROL, LANE CLOSURE, BASIC TRAFFIC QUEUE WARNING SYSTEM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  SIGN ON TEMPORARY SUPPORT
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
-  REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  FLAGS, 16" X 16" MIN., ORANGE
-  DIRECTION OF TRAFFIC

GENERAL NOTES

THE INSTALLATIONS SHOWN ON THIS SHEET ARE TYPICAL EXAMPLES AND ARE NOT INTENDED TO REPRESENT ANY PARTICULAR RAMP. AT SPECIFIC FIELD LOCATIONS, SIMILAR INSTALLATIONS SHALL BE USED AND ADJUSTED TO THE GEOMETRICS OF THE RAMP AS COORDINATED WITH THE ENGINEER.

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

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

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

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

SEE SEPARATE LANE CLOSURE DETAIL FOR TYPICAL SPACING OF TYPE III BARRICADES AND R11-2L "LANE CLOSED" SIGNS.

YIELD SIGN AND WARNING SIGNS ON ENTRANCE RAMP ARE ALSO APPROPRIATE FOR CLOSURE OF THE MAINLINE LEFT LANE. OMIT THE YIELD SIGN IF MORE THAN ONE LANE REMAINS OPEN ON THE MAINLINE AND THE RAMP TAPER IS AT LEAST AS LONG AS THE NORMAL ENTRANCE RAMP TAPER AT THE SITE.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONSECUTIVE DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS. USE SUPPORTS THAT PROVIDE A MINIMUM OF 5 FEET FROM THE BOTTOM OF THE SIGN TO THE PAVEMENT.

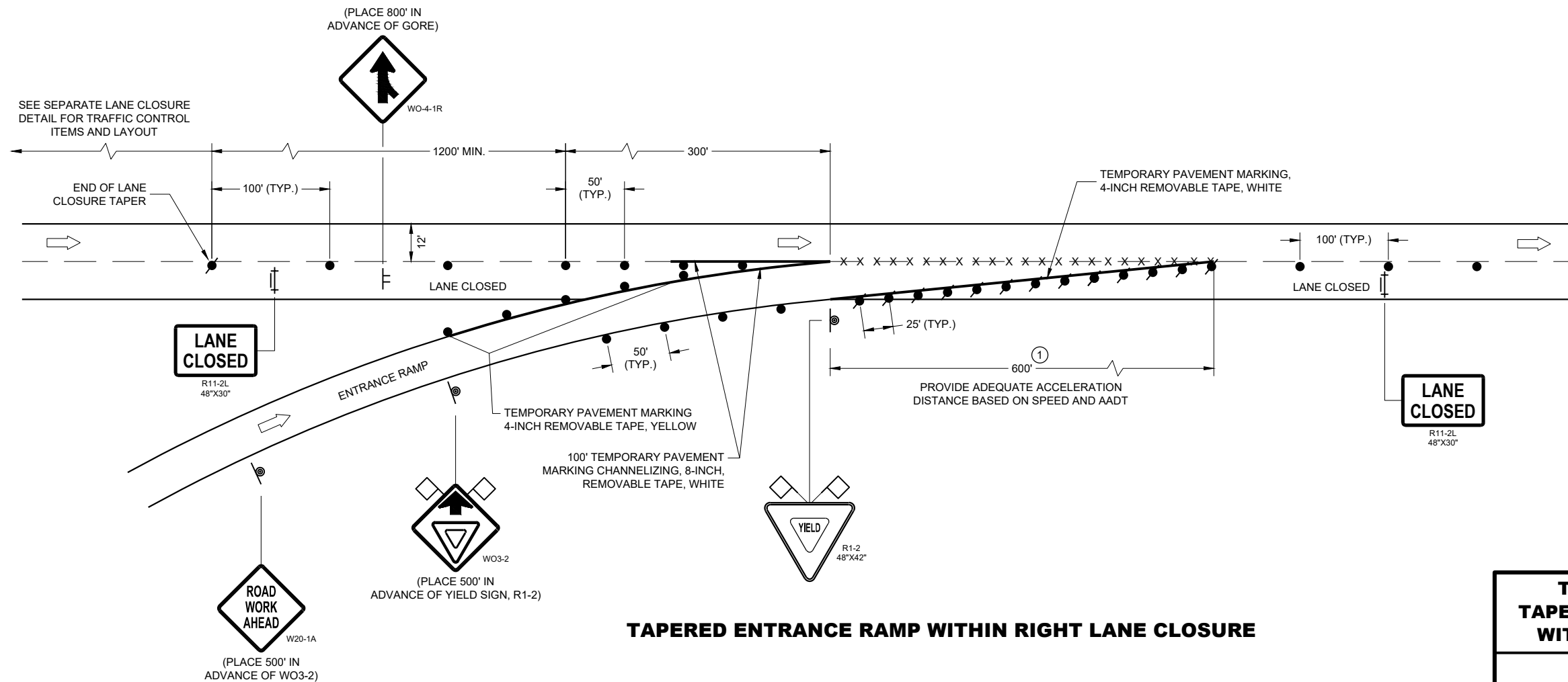
IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE ENTRANCE RAMP AND MAINLINE TRAFFIC.

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

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

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

① CONSULT WITH REGIONAL WORK ZONE ENGINEER IF NEED TO REDUCE LENGTH EXISTS.



TAPERED ENTRANCE RAMP WITHIN RIGHT LANE CLOSURE








**TRAFFIC CONTROL,
TAPERED ENTRANCE RAMP
WITHIN LANE CLOSURE**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

LEGEND

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

GENERAL NOTES

THE INSTALLATIONS SHOWN ON THIS SHEET ARE TYPICAL EXAMPLES AND ARE NOT INTENDED TO REPRESENT ANY PARTICULAR RAMP. AT SPECIFIC FIELD LOCATIONS, SIMILAR INSTALLATIONS SHALL BE USED AND ADJUSTED TO THE GEOMETRICS OF THE RAMP AS COORDINATED WITH THE ENGINEER.

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

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

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

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

SEE SEPARATE LANE CLOSURE DETAIL FOR TYPICAL SPACING OF TYPE III BARRICADES AND R11-2L "LANE CLOSED" SIGNS.

YIELD SIGN AND WARNING SIGNS ON ENTRANCE RAMP ARE ALSO APPROPRIATE FOR CLOSURE OF THE MAINLINE LEFT LANE. OMIT THE YIELD SIGN IF MORE THAN ONE LANE REMAINS OPEN ON THE MAINLINE AND THE RAMP TAPER IS AT LEAST AS LONG AS THE NORMAL ENTRANCE RAMP TAPER AT THE SITE.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONSECUTIVE DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS. USE SUPPORTS THAT PROVIDE A MINIMUM OF 5 FEET FROM THE BOTTOM OF THE SIGN TO THE PAVEMENT.

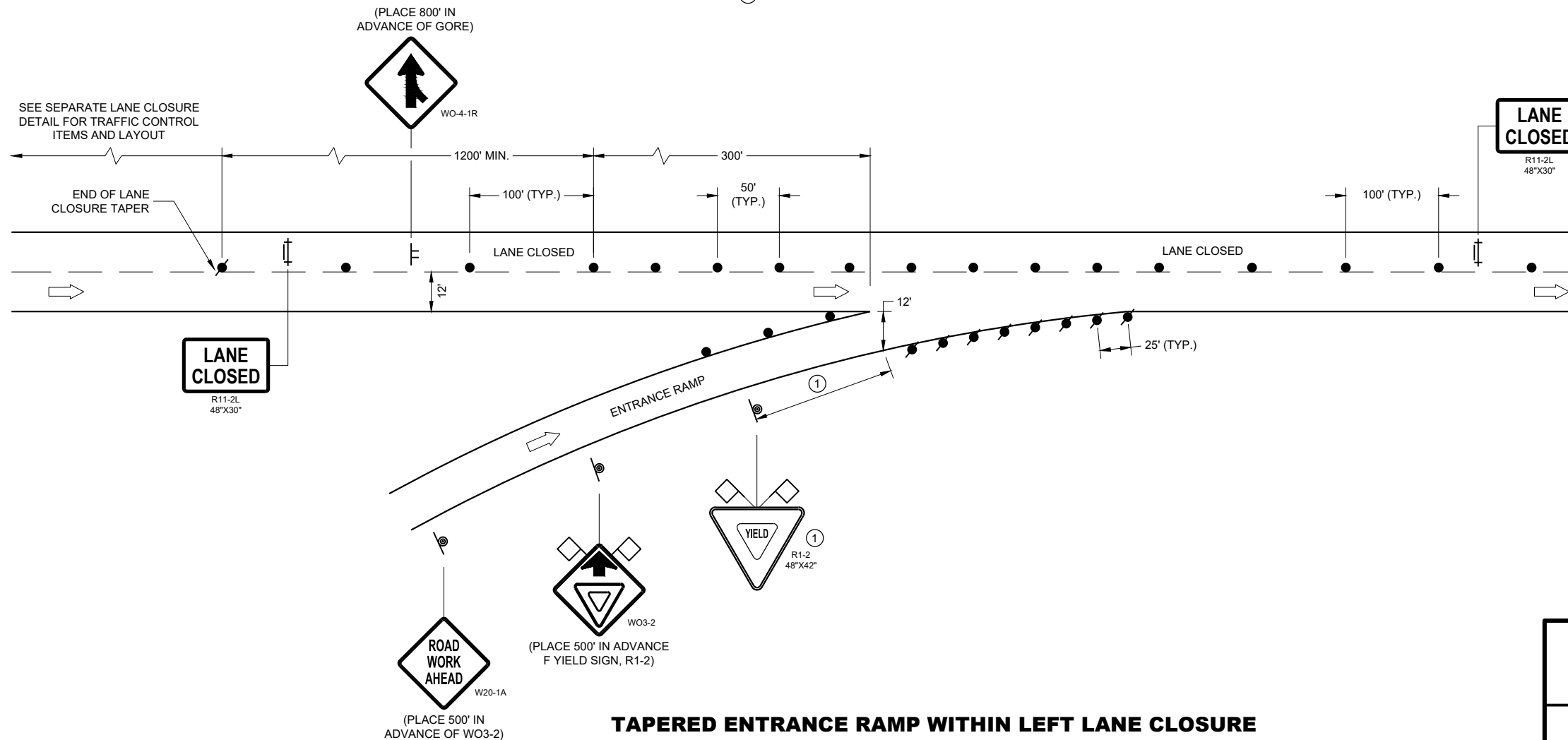
IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE ENTRANCE RAMP AND MAINLINE TRAFFIC.

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

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

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

① PLACE YIELD SIGN TO PROVIDE ADEQUATE SIGHT DISTANCE AND ACCELERATION DISTANCE.



TAPERED ENTRANCE RAMP WITHIN LEFT LANE CLOSURE

**TRAFFIC CONTROL,
TAPERED ENTRANCE RAMP
WITHIN LANE CLOSURE**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

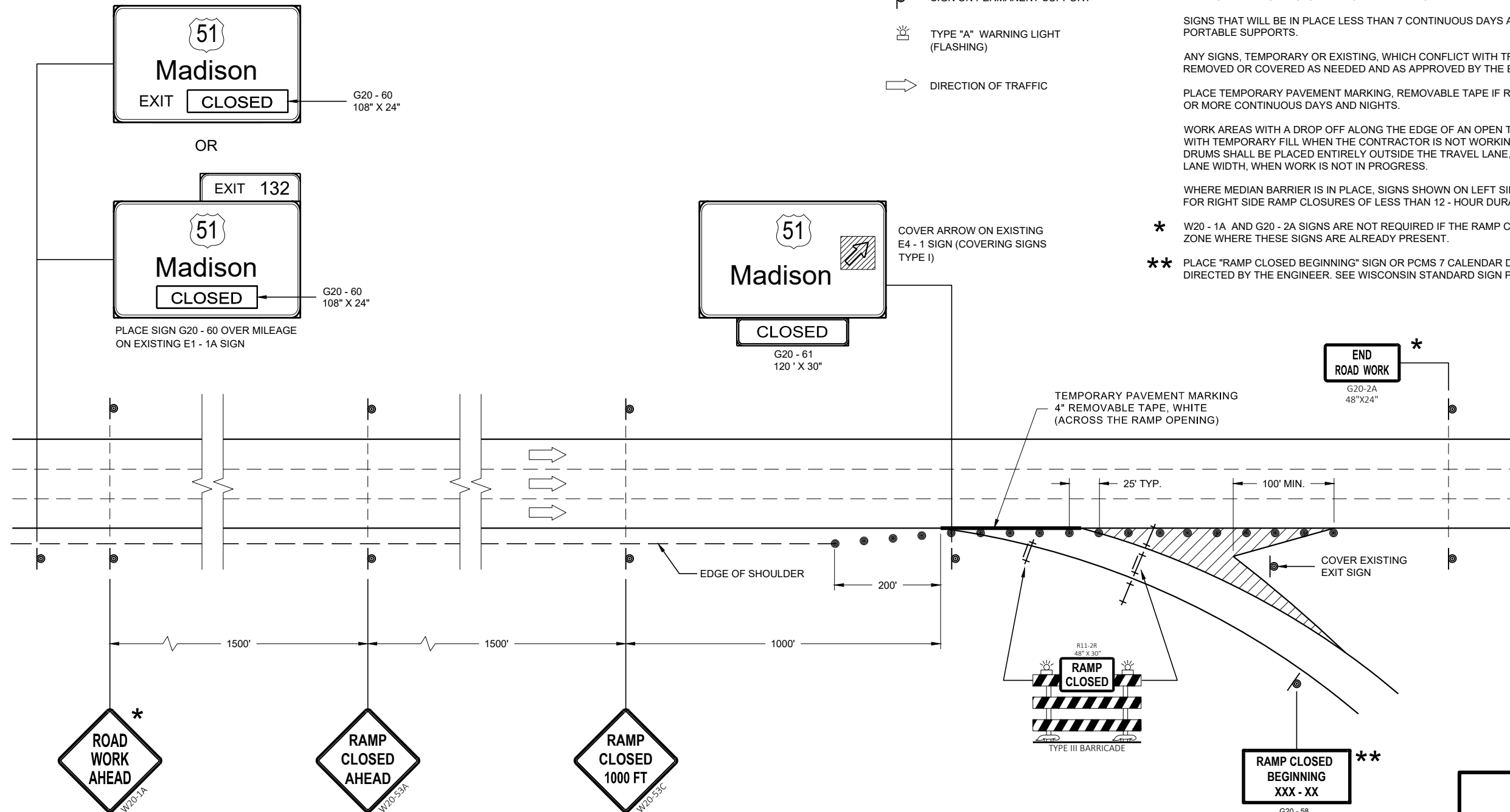
PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF RAMP CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

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

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

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

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



| FRAME 1 | FRAME 2 |
|---------------|--------------------|
| RAMP TO CLOSE | XXXDAY XX XX XX |

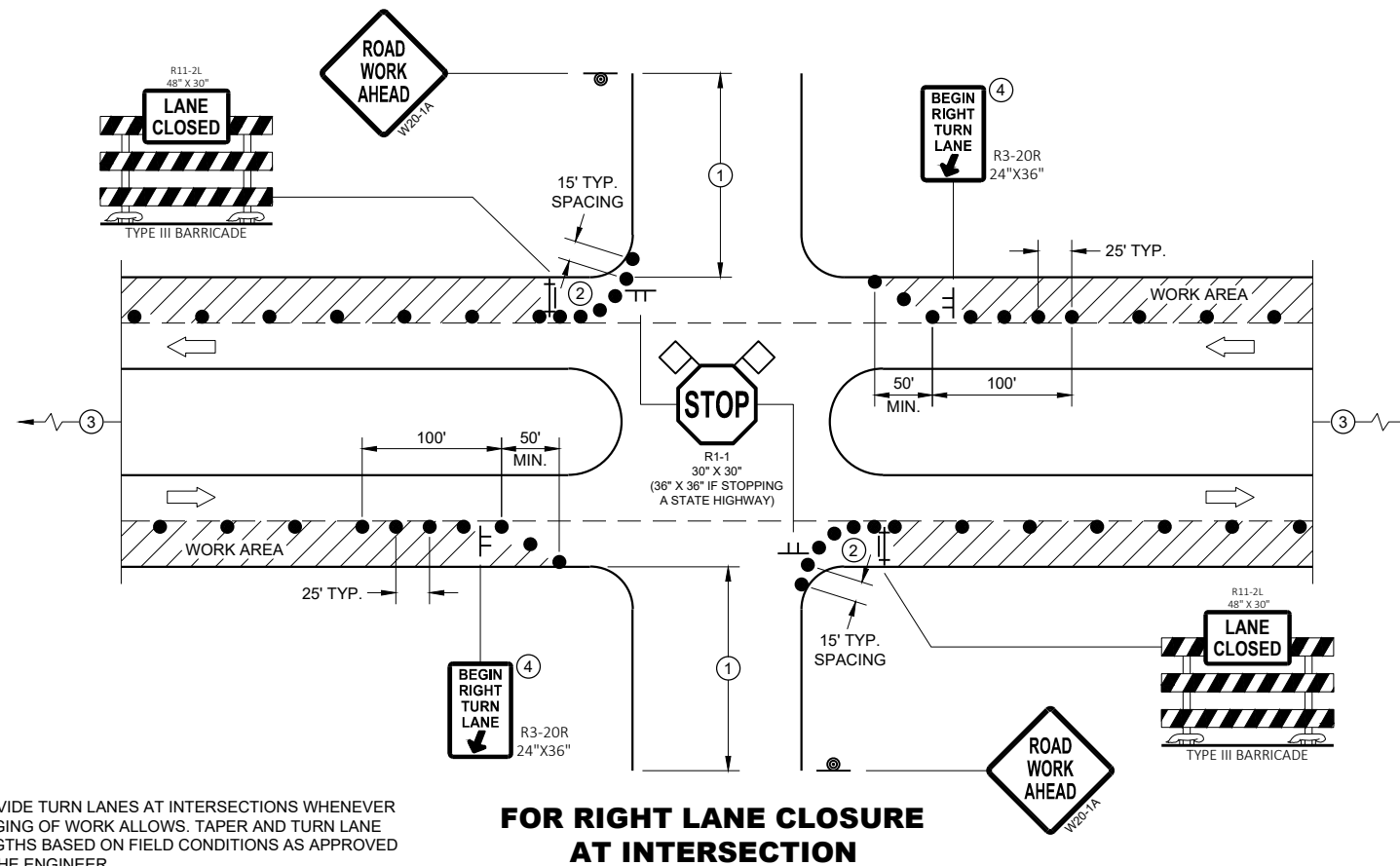
**TRAFFIC CONTROL,
EXIT RAMP CLOSURE**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018
DATE

/S/ Andrew Heidtke
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

FHWA



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

GENERAL NOTES

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

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

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

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

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

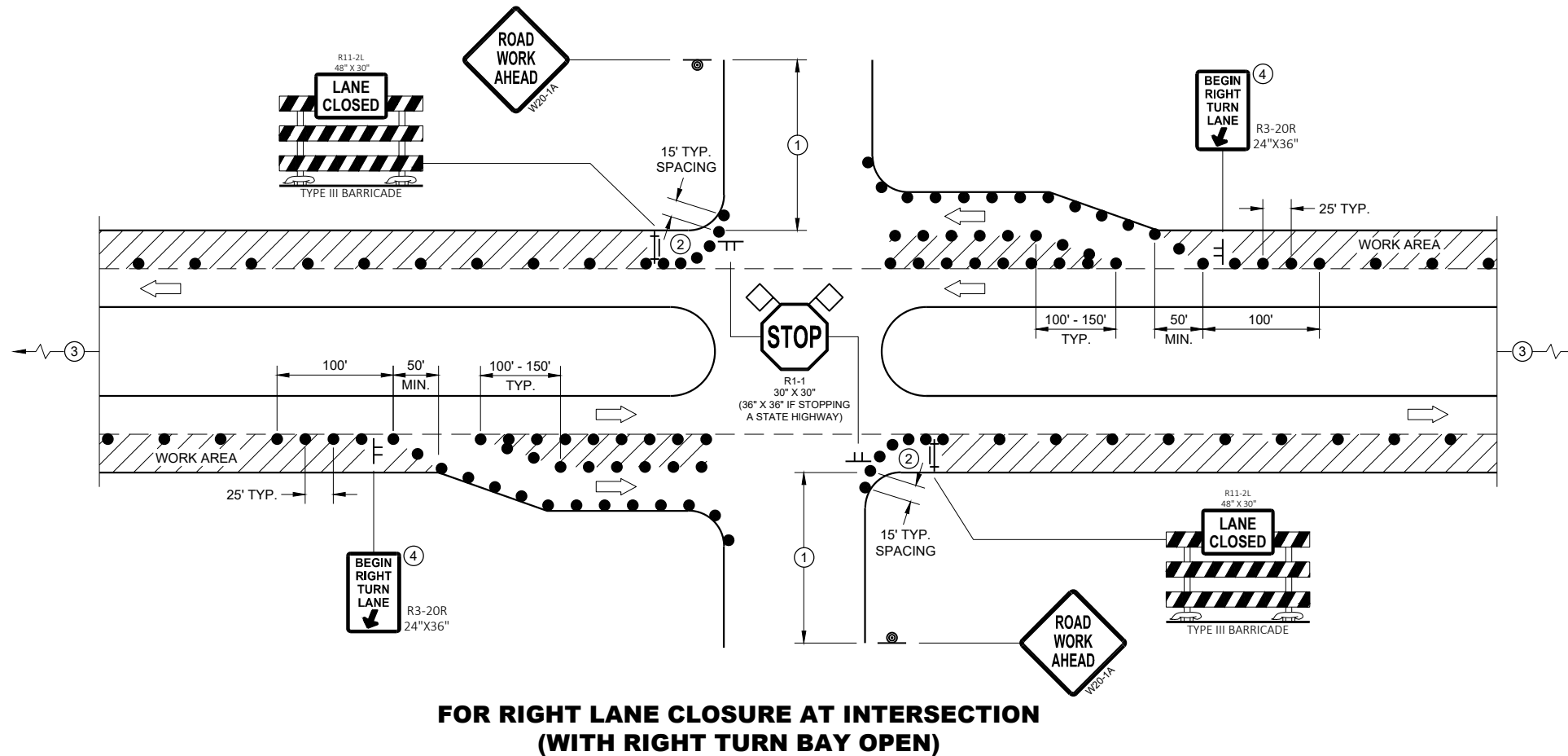
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

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

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

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

- ① 500' TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.
350' IF 35 - 40 MPH.
200' IF 25 - 30 MPH.
- ② ALSO USE BARRICADE AND 15 FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS
- ③ SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.
- ④ MINIMUM MOUNTING HEIGHT OF 5 FEET FROM EDGE OF PAVEMENT (AT EDGE LINE LOCATION) TO BOTTOM OF SIGN.

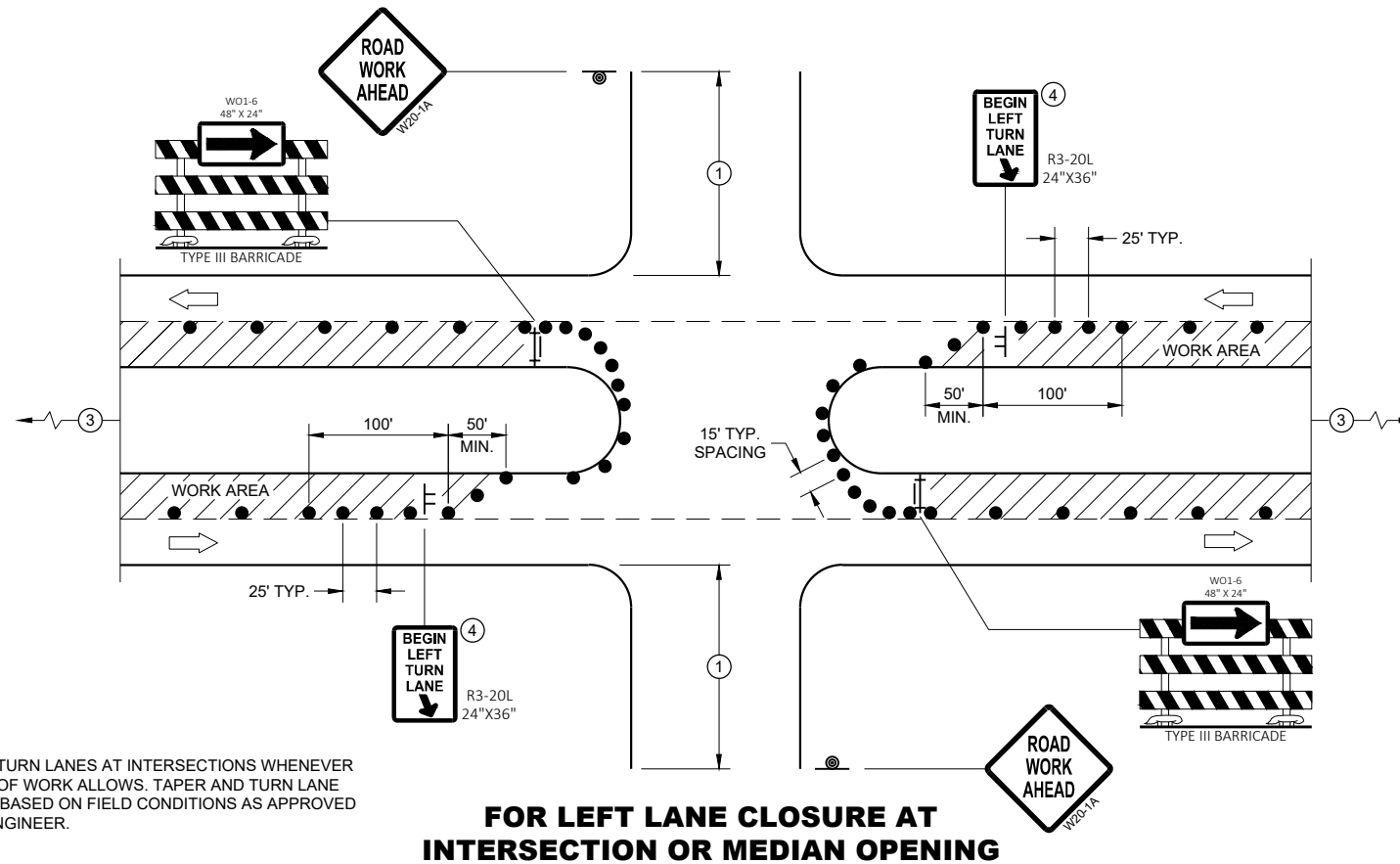


LEGEND

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

**TRAFFIC CONTROL,
INTERSECTION WITHIN SINGLE
RIGHT LANE CLOSURE**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



GENERAL NOTES

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

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

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

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

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

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

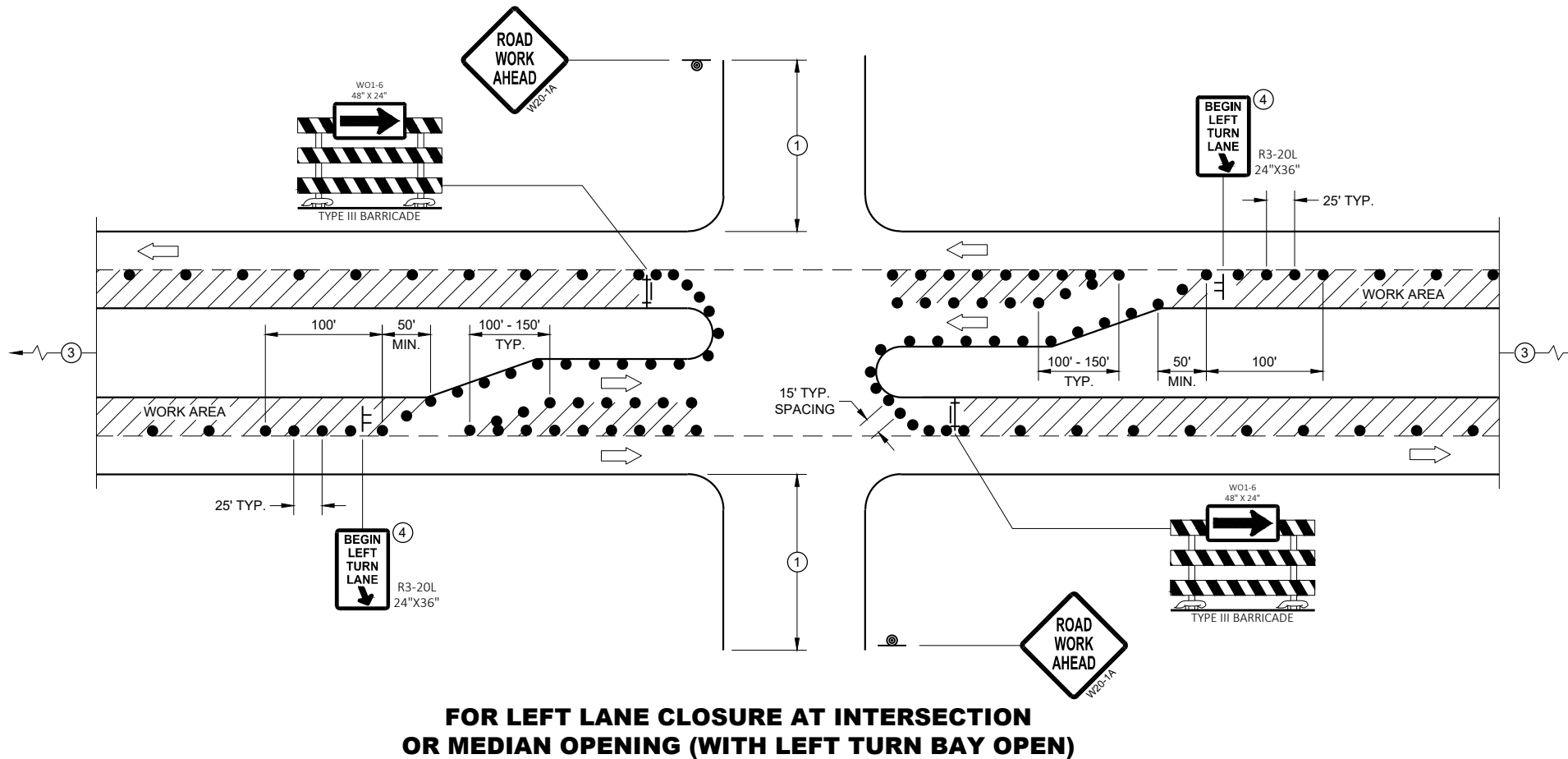
SIGNS THAT WILL REMAIN IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

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

- ① 500' TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.
350' IF 35 - 40 MPH.
200' IF 25 - 30 MPH.
- ② ALSO USE BARRICADE AND 15 FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS
- ③ SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.
- ④ MINIMUM MOUNTING HEIGHT OF 5 FEET FROM EDGE OF PAVEMENT (AT EDGE LINE LOCATION) TO BOTTOM OF SIGN.

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







LEGEND

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

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

LEGEND

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

GENERAL NOTES

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

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

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

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

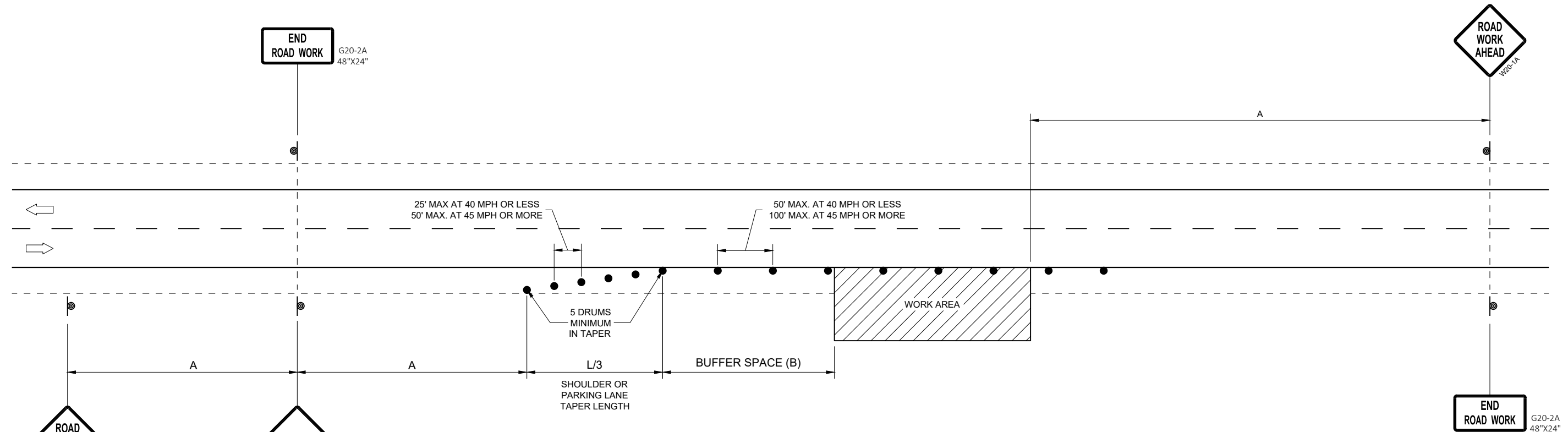
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

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

6

6



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

SDD 15D28 - 04

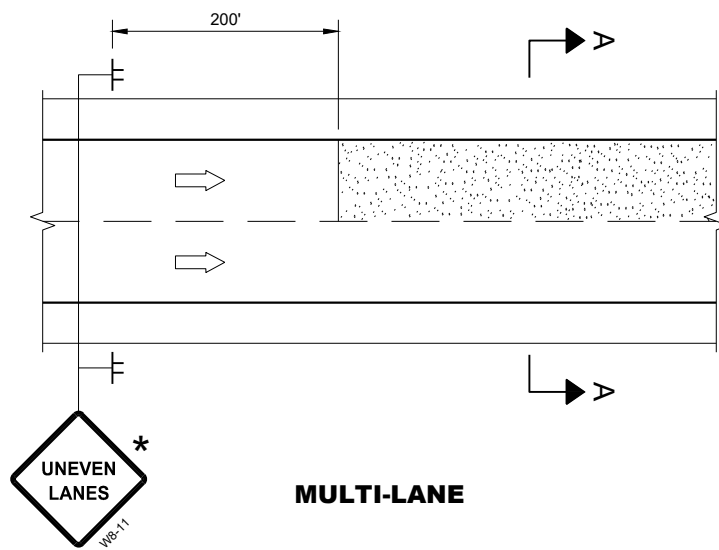
SDD 15D28 - 04

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

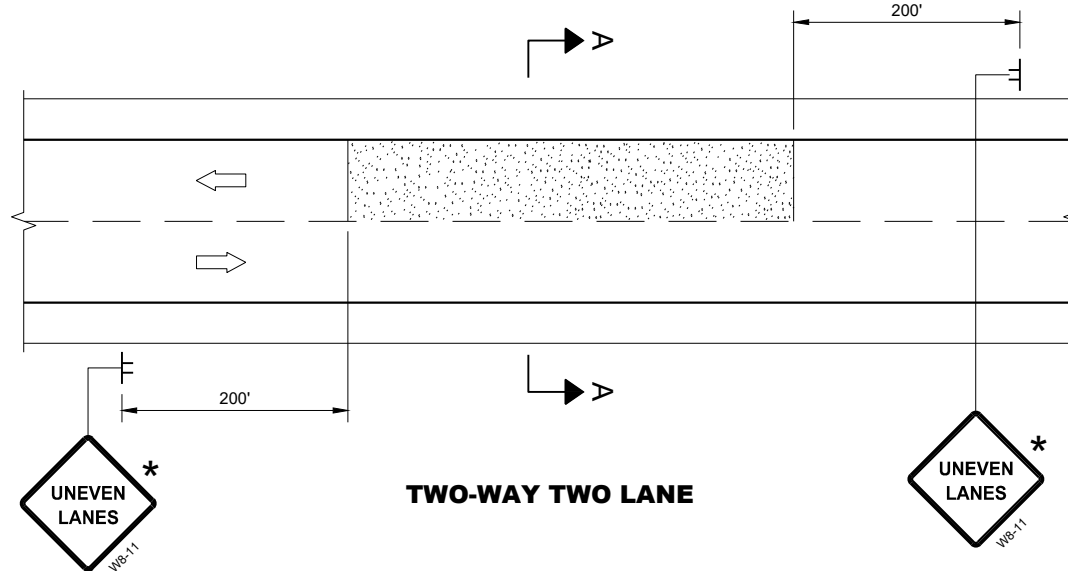
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

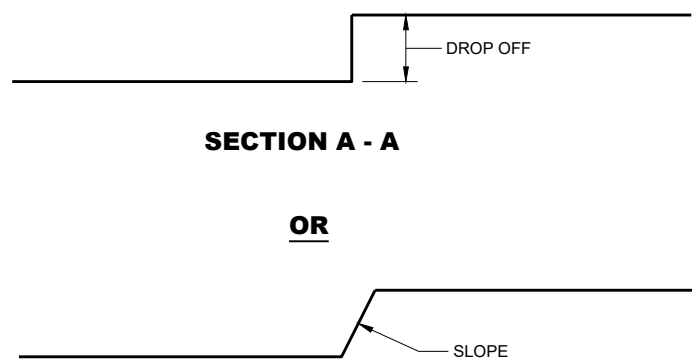
FHWA



MULTI-LANE



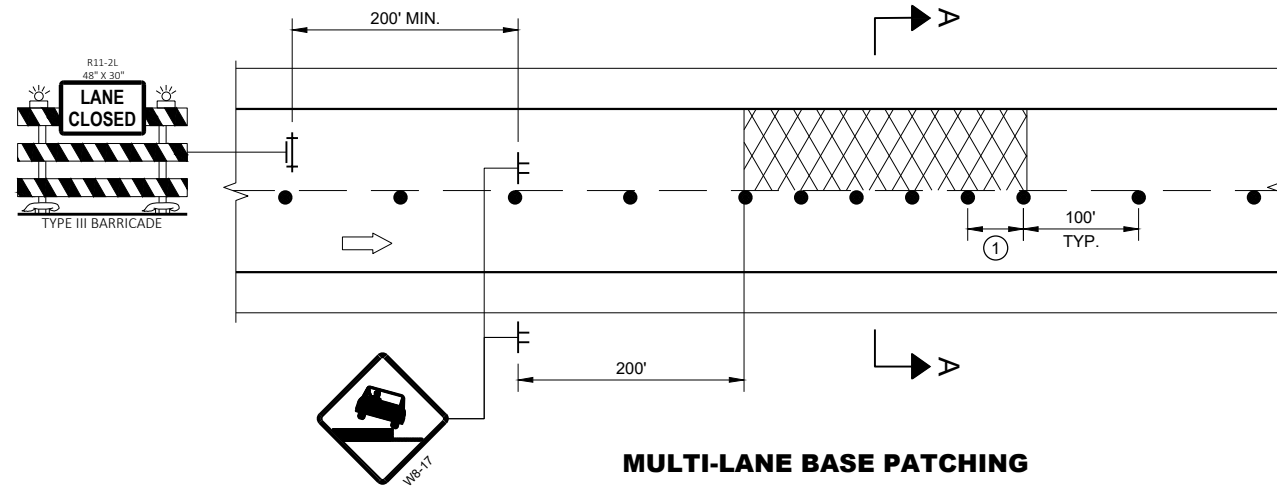
TWO-WAY TWO LANE



SECTION A - A

OR

SECTION A - A



MULTI-LANE BASE PATCHING

ADJACENT LANE DROP-OFFS

GENERAL NOTES

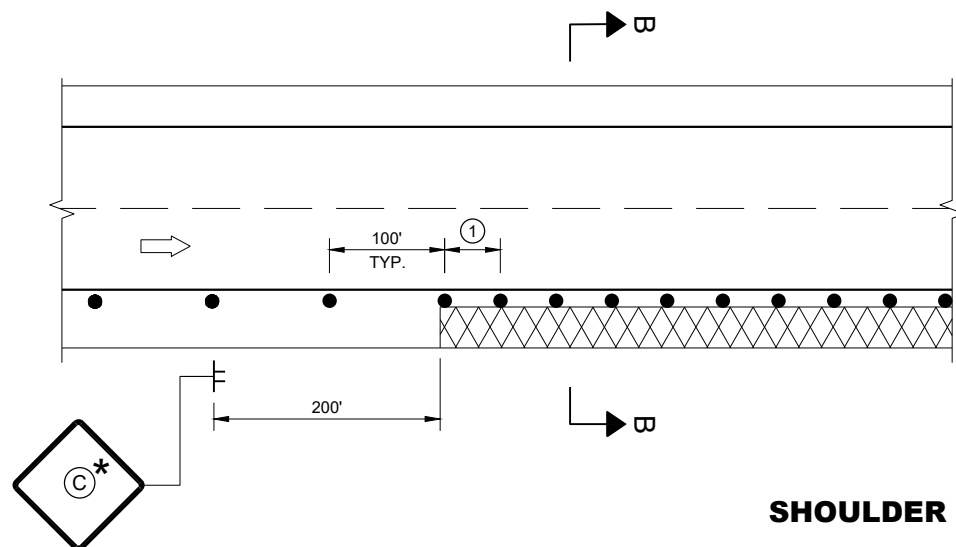
- FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.
- ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
- "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.
- * IF THE DROP-OFF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

LEGEND

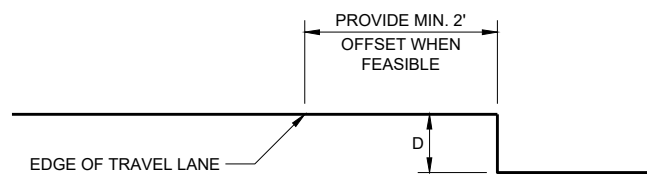
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- WORK AREA WITH DROP-OFF
- MILLED SURFACE

6

6



SHOULDER DROP-OFFS



SECTION B - B

| D | SIGN (C) |
|---------------------------------------|---|
| < 2" WITH A SLOPE STEEPER THAN 3:1 | LOW SHOULDER WO8-9 |
| 2" < 6" WITH A SLOPE STEEPER THAN 3:1 | SHOULDER DROP - OFF W8-9A PROVIDE A 3:1 OR FLATTER SLOPE OF MATERIAL ADJACENT TO THE PAVEMENT |

SDD 15D39 - 02

SDD 15D39 - 02









**TRAFFIC CONTROL,
DROP-OFF SIGNING**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

LEGEND

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

GENERAL NOTES

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

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

THIS LANE CLOSURE IS TYPICAL FOR LANE SHIFT RIGHT - REVERSE FOR SHIFTING LEFT.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

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

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

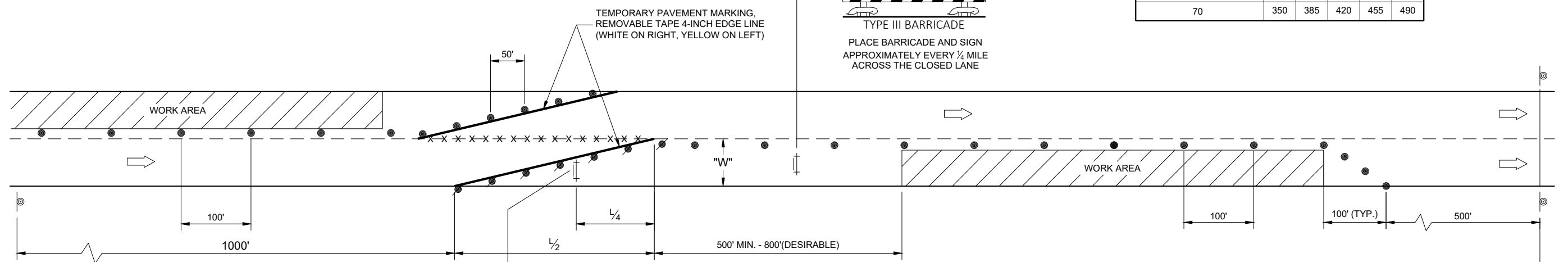
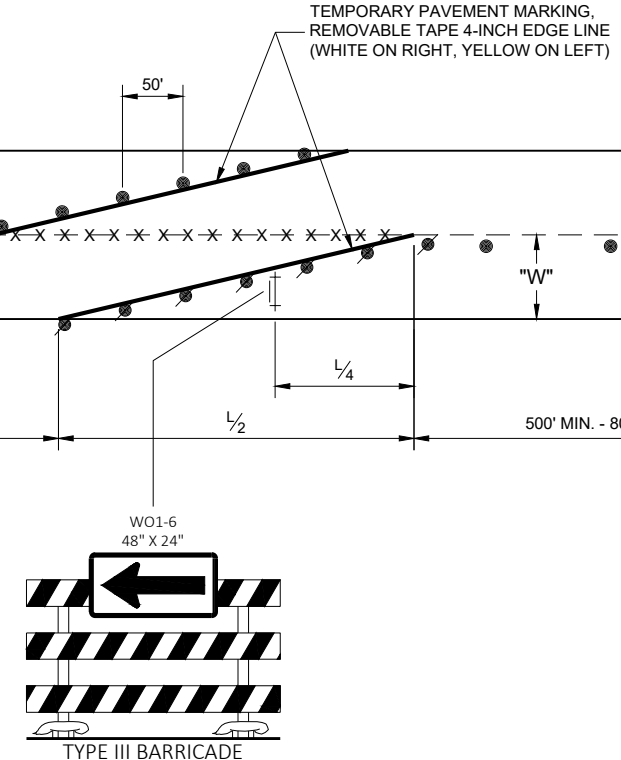
REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 4 OR MORE DAYS AND NIGHTS.

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

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

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

| POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH) | SHIFTING TAPER 1/2 W, LATERAL OFFSET (FT) | | | | |
|---|--|-----|-----|-----|-----|
| | 10 | 11 | 12 | 13 | 14 |
| 50 | 250 | 275 | 300 | 325 | 350 |
| 55 | 275 | 303 | 330 | 358 | 385 |
| 60 | 300 | 330 | 360 | 390 | 420 |
| 65 | 325 | 358 | 390 | 423 | 455 |
| 70 | 350 | 385 | 420 | 455 | 490 |





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

TRAFFIC CONTROL, FULL LANE SHIFT, MULTI-LANE DIVIDED 50 MPH AND OVER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

LEGEND

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

GENERAL NOTES

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

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

THIS LANE CLOSURE IS TYPICAL FOR LANE SHIFT LEFT - REVERSE FOR SHIFTING RIGHT.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

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

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

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

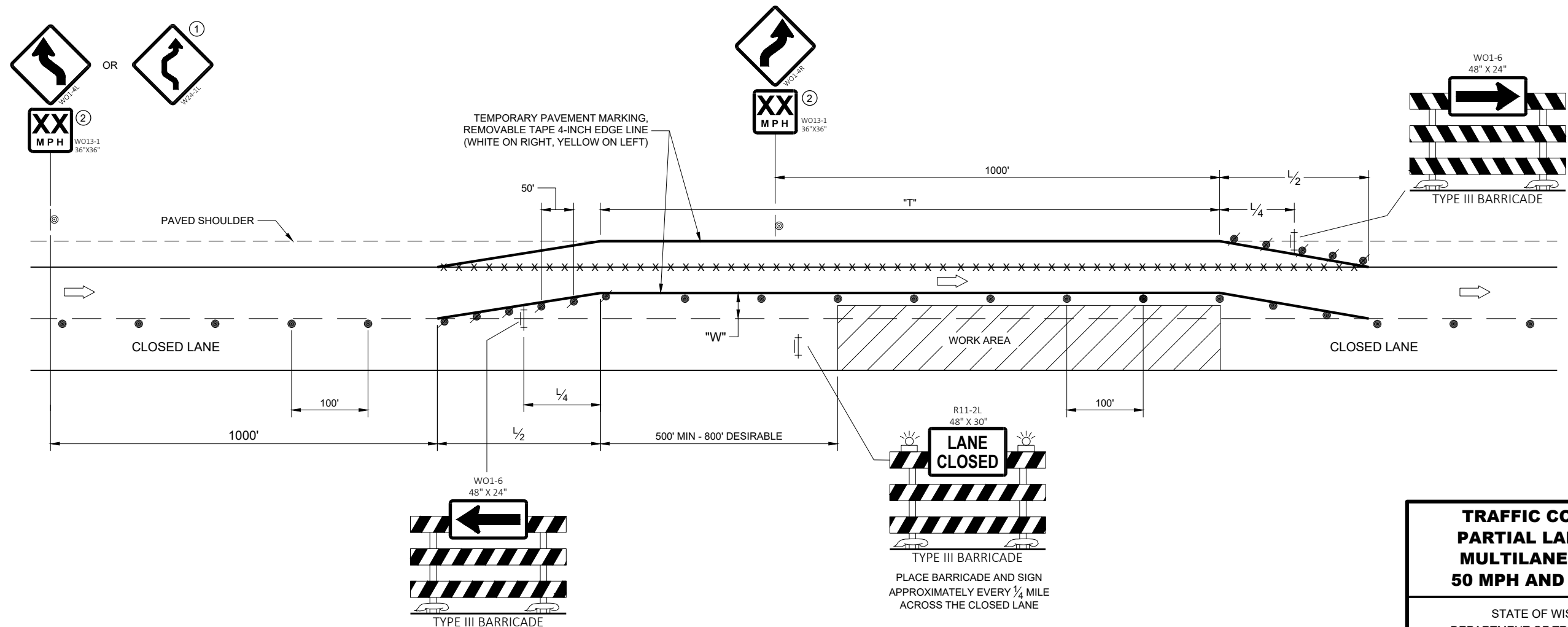
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

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

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

- ① USE ONLY WHEN T<600', OMIT WO1-4R.
- ② IF NEEDED, USE ONLY IF DESIGN SPEED IS 10 MPH BELOW POSTED SPEED.

| POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH) | SHIFTING TAPER 1/2 | | | | | | | | |
|---|------------------------|----|-----|-----|-----|-----|-----|-----|-----|
| | W, LATERAL OFFSET (FT) | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 50 | 25 | 50 | 75 | 100 | 125 | 150 | 175 | 200 | 225 |
| 55 | 28 | 55 | 83 | 110 | 138 | 165 | 193 | 220 | 248 |
| 60 | 30 | 60 | 90 | 120 | 150 | 180 | 210 | 240 | 270 |
| 65 | 33 | 65 | 98 | 130 | 163 | 195 | 228 | 260 | 293 |
| 70 | 35 | 70 | 105 | 140 | 175 | 210 | 245 | 280 | 315 |



**TRAFFIC CONTROL,
PARTIAL LANE SHIFT
MULTILANE DIVIDED
50 MPH AND GREATER**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION








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

FHWA

SDD 15D40 - 02d

SDD 15D40 - 02d

LEGEND

-  EXISTING SIGN ON PERMANENT SUPPORT
-  NEW SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TYPE "A" WARNING LIGHT (FLASHING)
-  DIRECTION OF TRAFFIC
-  WORK ZONE

GENERAL NOTES

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

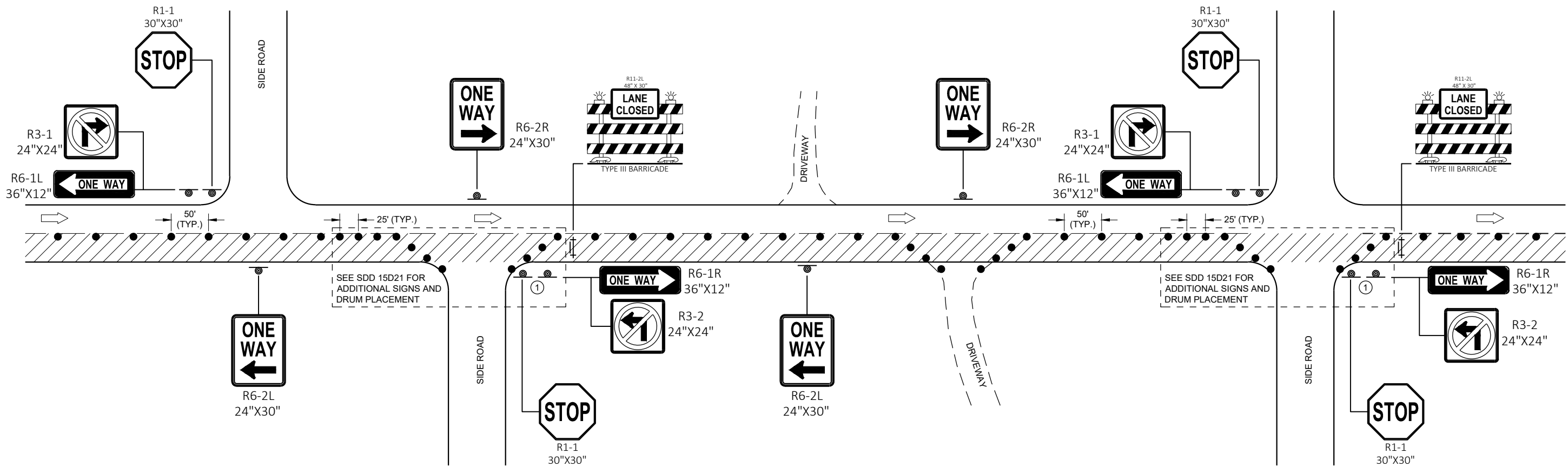
ALL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE WISCONSIN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (WMUTCD). SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISDOT STANDARD SIGN PLATES.

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

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

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

① IF WORK OPERATIONS ALLOWS, MOVE R1-1, R6-1R, AND R3-2 CLOSER TO INTERSECTION.



**TRAFFIC CONTROL
ONE - WAY SIGNING**

**TRAFFIC CONTROL
ONE-WAY SIGNING**

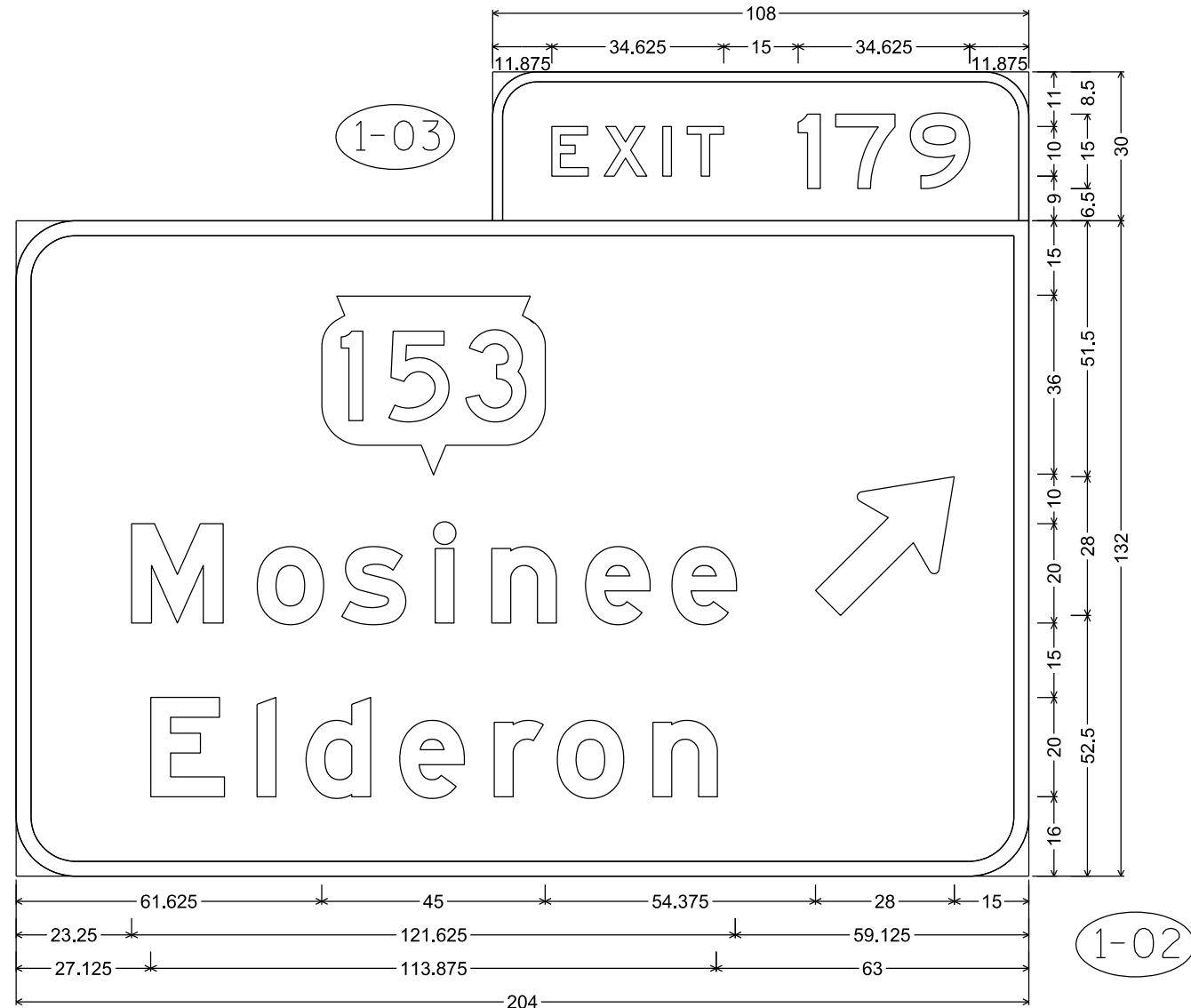
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

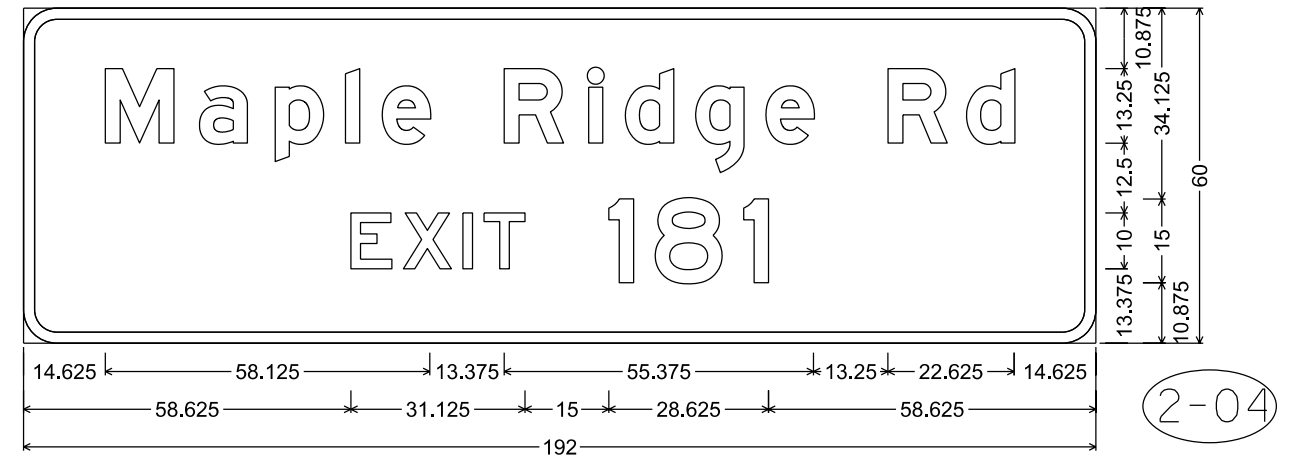
FHWA

NOTES

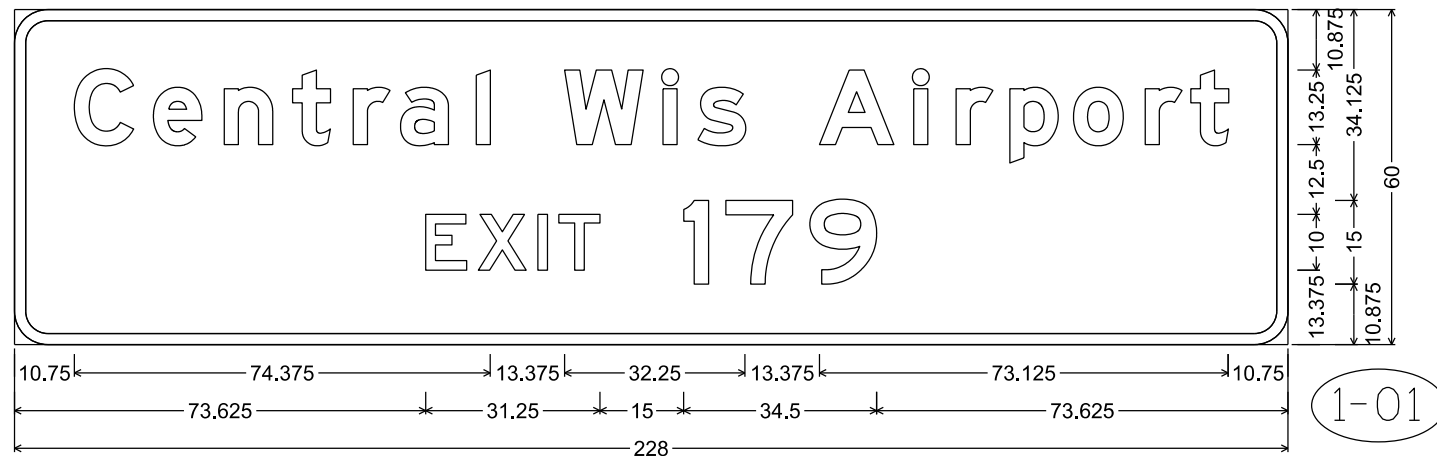
1. All Signs Type I - Type SH Reflective
2. Color:
Background - Green
Message - White
3. Message Series - E Modified except all Caps Words Series E



E1-5P; 9.000" Radius, 2.000" Border,
E4-1A; 12.000" Radius, 3.000" Border



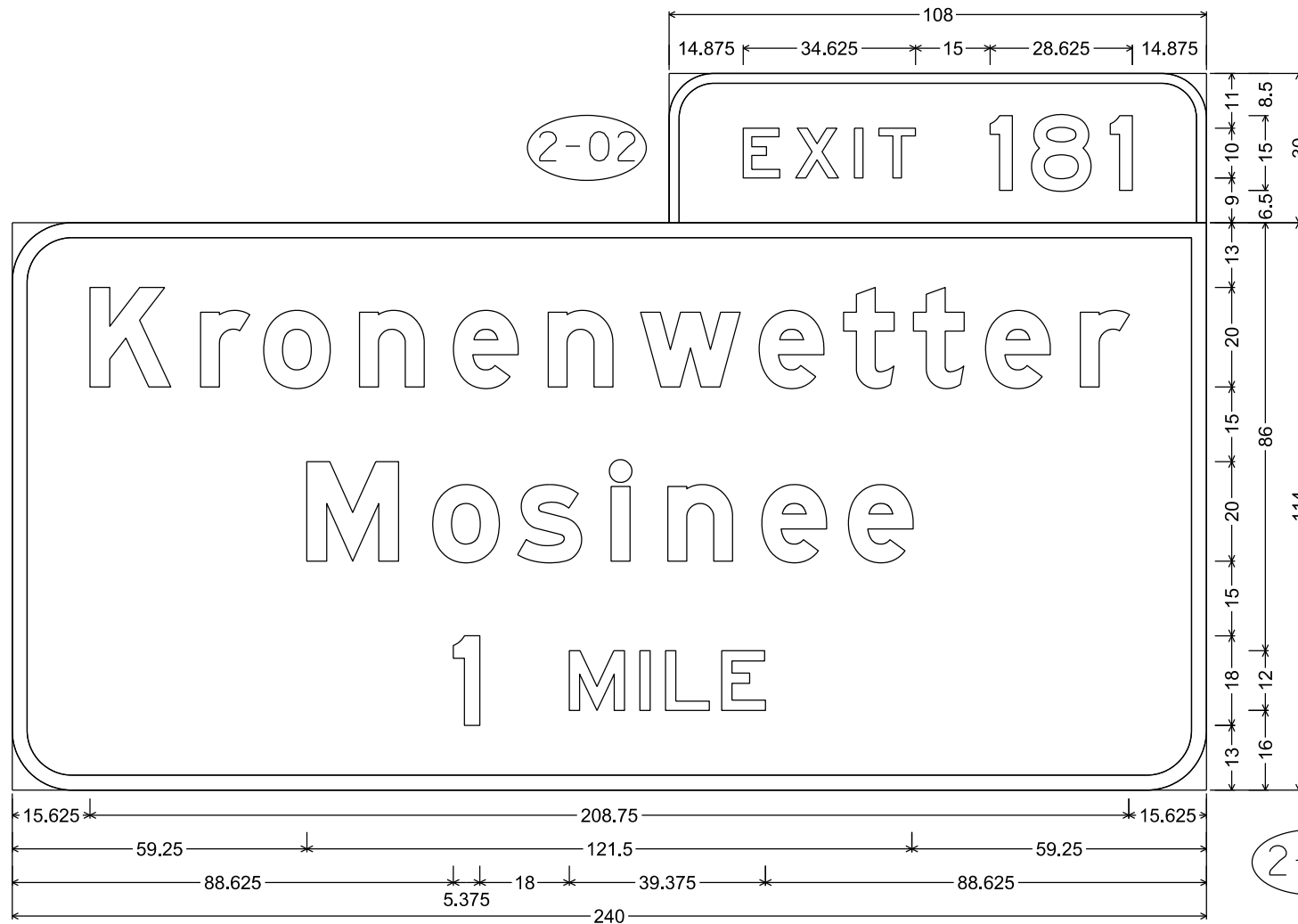
E3-1; 6.000" Radius, 2.000" Border



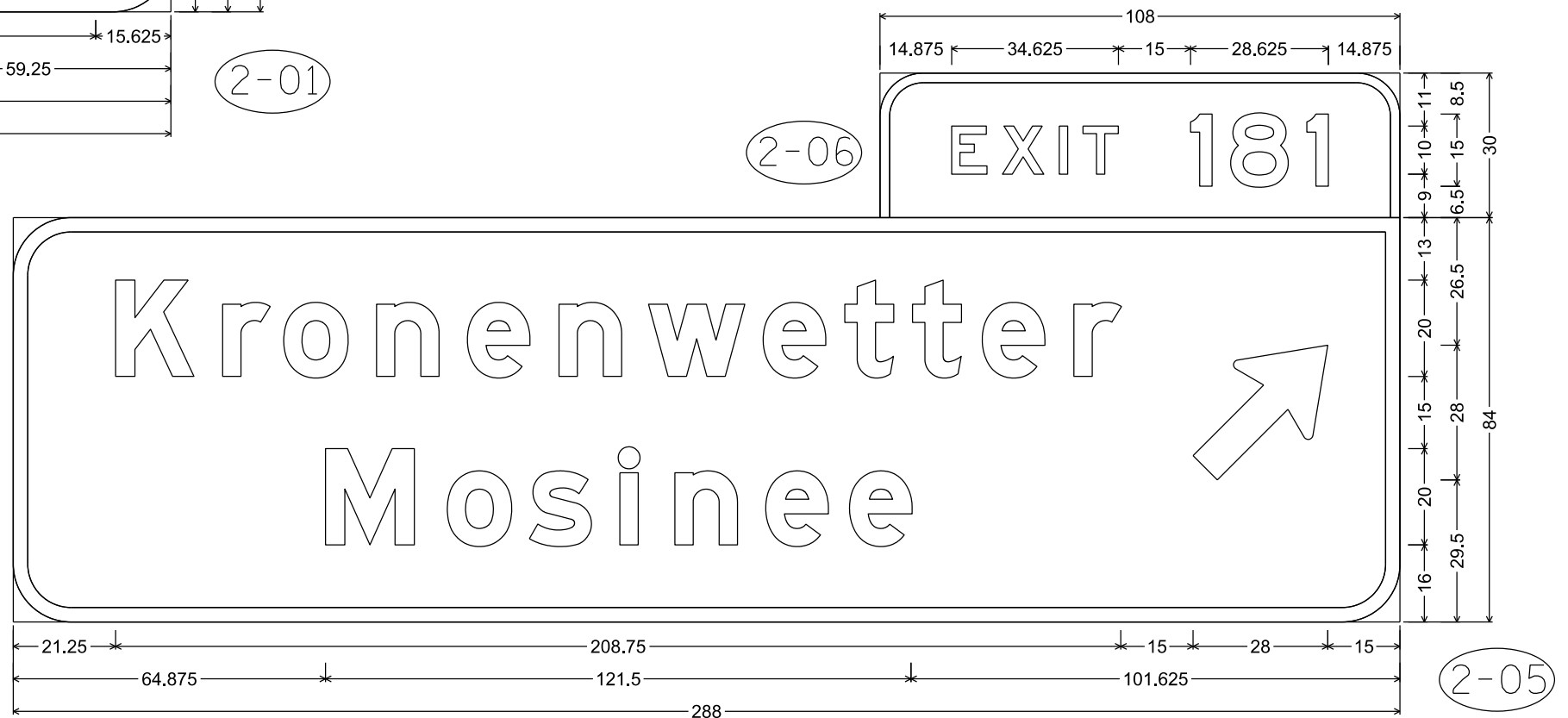
E3-1; 6.000" Radius, 2.000" Border

NOTES

1. All Signs Type I - Type SH Reflective
2. Color:
Background - Green
Message - White
3. Message Series - E Modified except all Caps Words Series E



E1-5P; 9.000" Radius, 2.000" Border,
E1-1A; 12.000" Radius, 3.000" Border



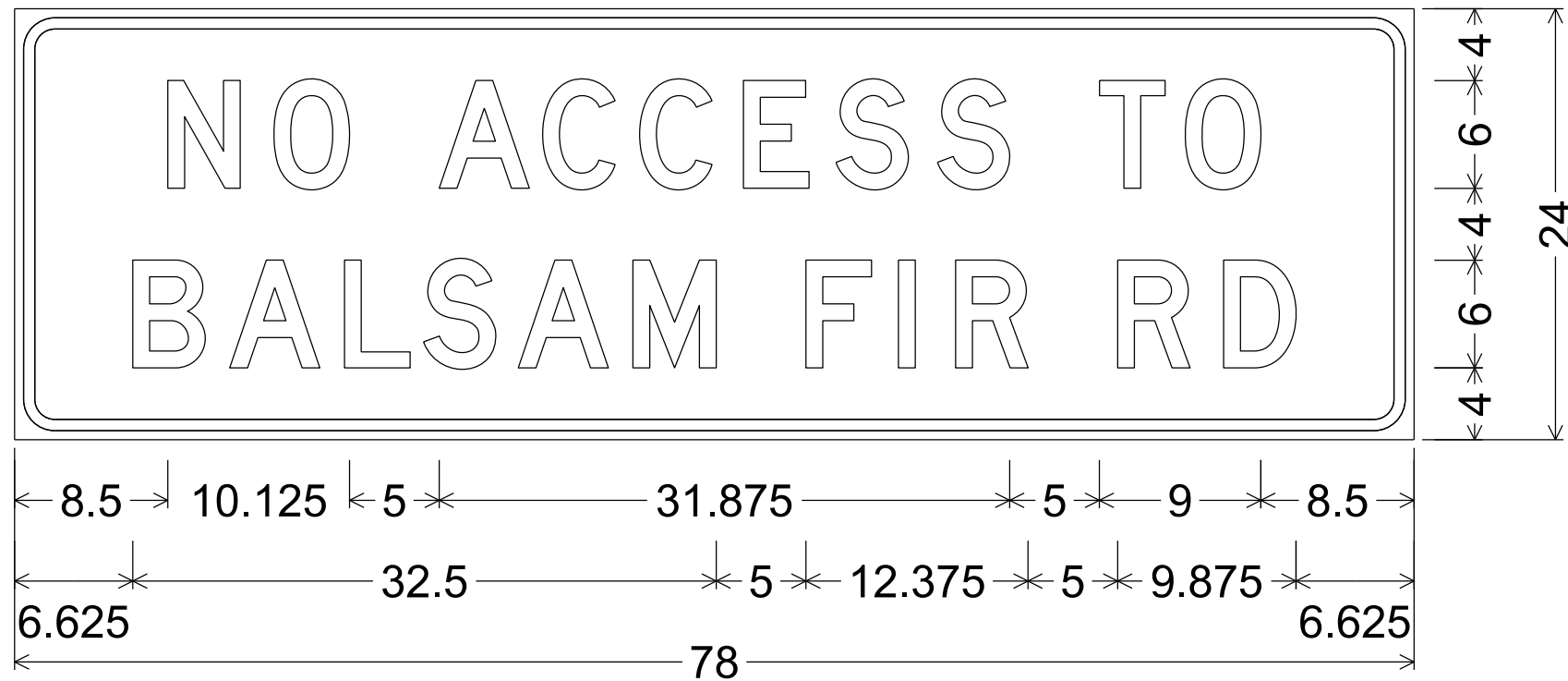
E1-5P; 9.000" Radius, 2.000" Border,
E4-1A; 12.000" Radius, 3.000" Border

7

7

NOTES

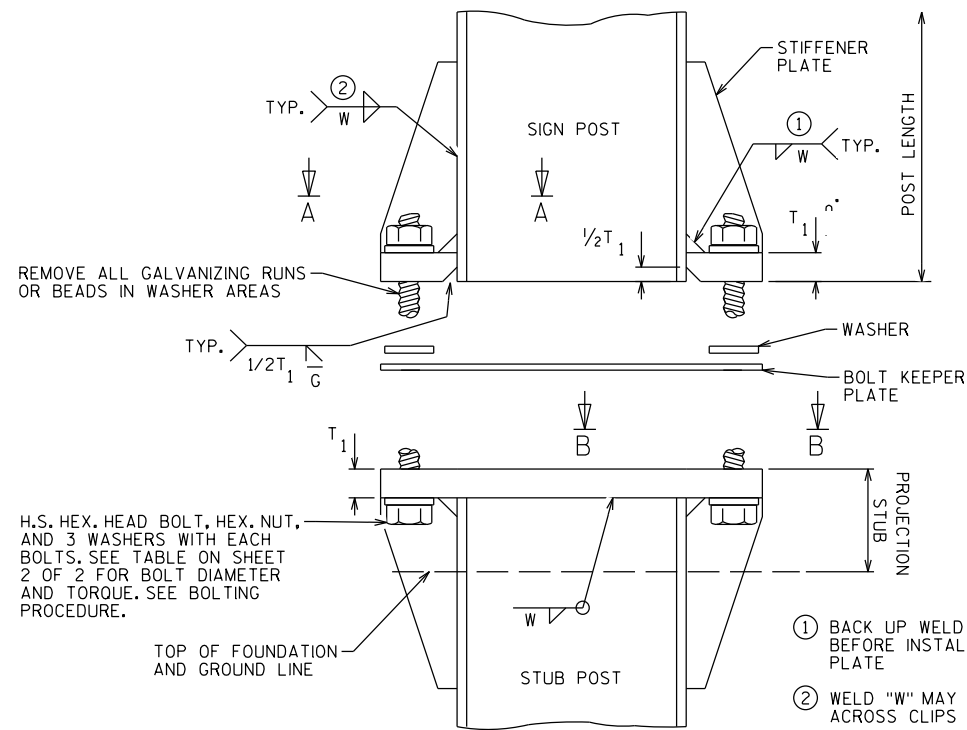
1. Fixed Message Type II Sign - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - D



2.250" Radius, 0.625" Border, 0.500" Indent

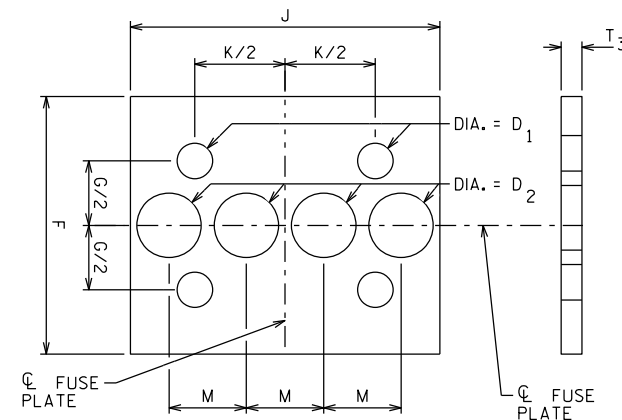
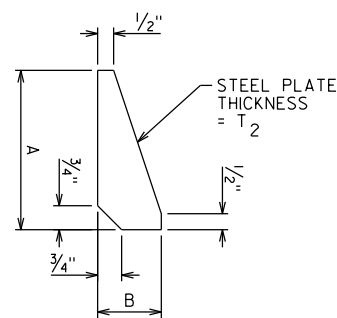
7

7



SIGN POST & STUB POST ELEVATION

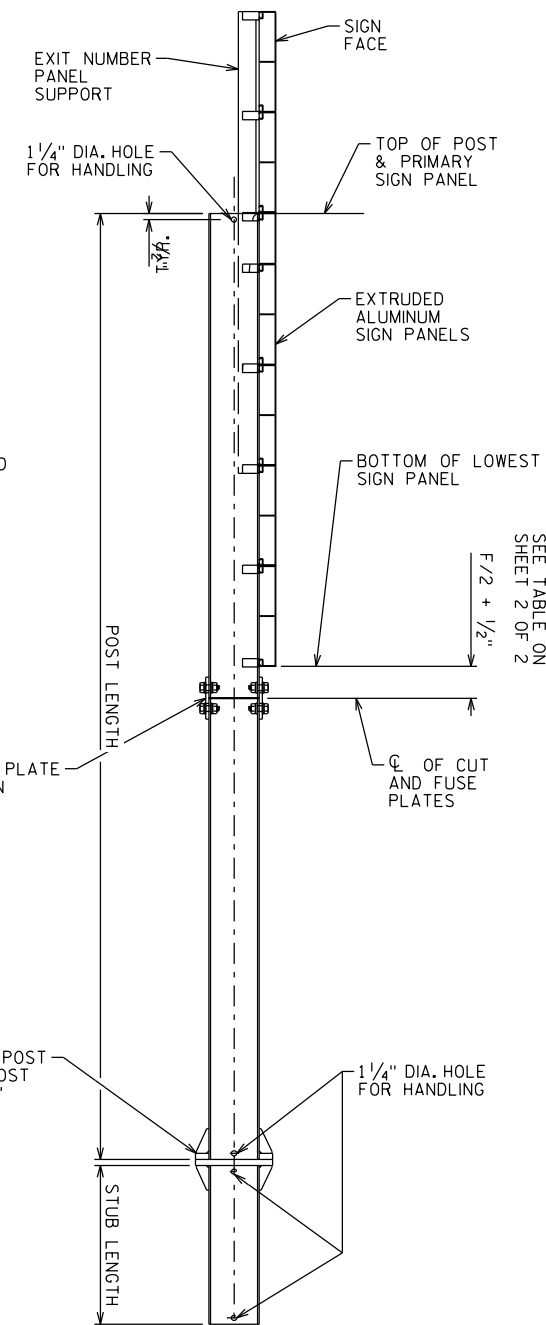
STIFFENER PLATE DETAIL
(REFER TO TABLE ON SHEET 2 OF 2 FOR DIMENSIONS)



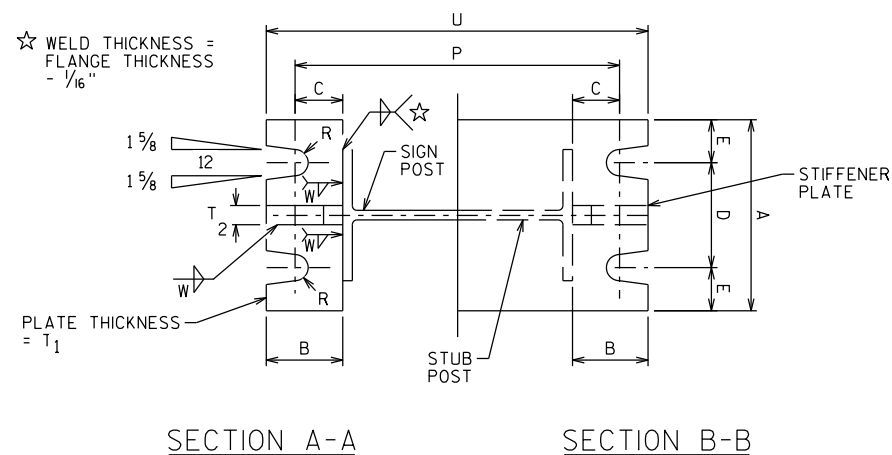
PERFORATED FUSE PLATE DETAIL

USE H.S. HEX HEAD BOLTS, HEX HEAD NUT AND FLAT WASHER UNDER NUT. INSTALL BOLTS PER THE WISCONSIN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION SECTION 506.3.12.3.

ALL HOLES SHALL BE DRILLED, SUB-PUNCHED AND REAMED. ALL PLATE CUTS SHALL PREFERABLY BE SAW CUTS. HOWEVER, FLAME CUTTING WILL BE PERMITTED PROVIDED ALL EDGES ARE GROUND. METAL PROJECTING BEYOND THE PLANE OF THE PLATE FACE WILL NOT BE PERMITTED. STEEL FUSE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36, ASTM A572 GRADE 50 OR ASTM A588 MAY BE SUBSTITUTED FOR A36 AT THE OPTION OF THE FABRICATOR. MILL TEST REPORTS SHALL BE SUBMITTED FOR FUSE PLATES. STEEL USED SHALL HAVE AN ULTIMATE TENSILE STRENGTH NOT TO EXCEED 80 KSI.

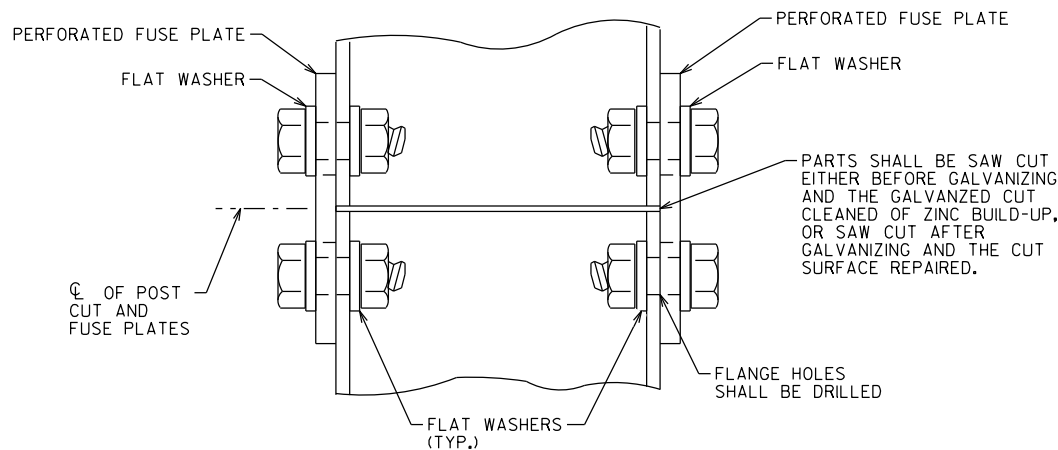


POST DETAIL

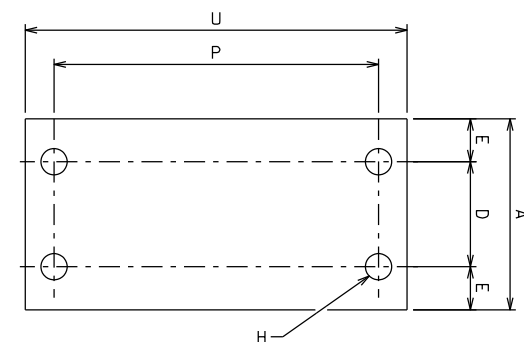


SECTION A-A

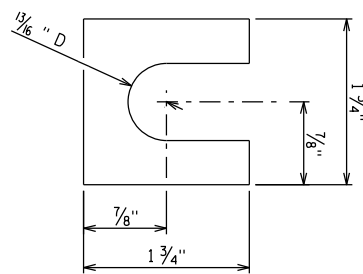
SECTION B-B



FUSE PLATE CONNECTION DETAIL



BOLT KEEPER PLATE DETAIL
30 GA GALVANIZED SHEET STEEL

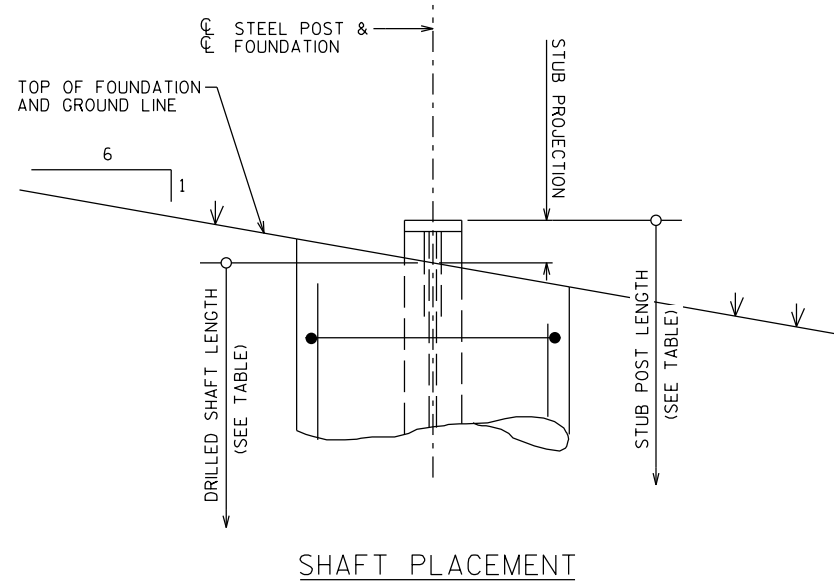
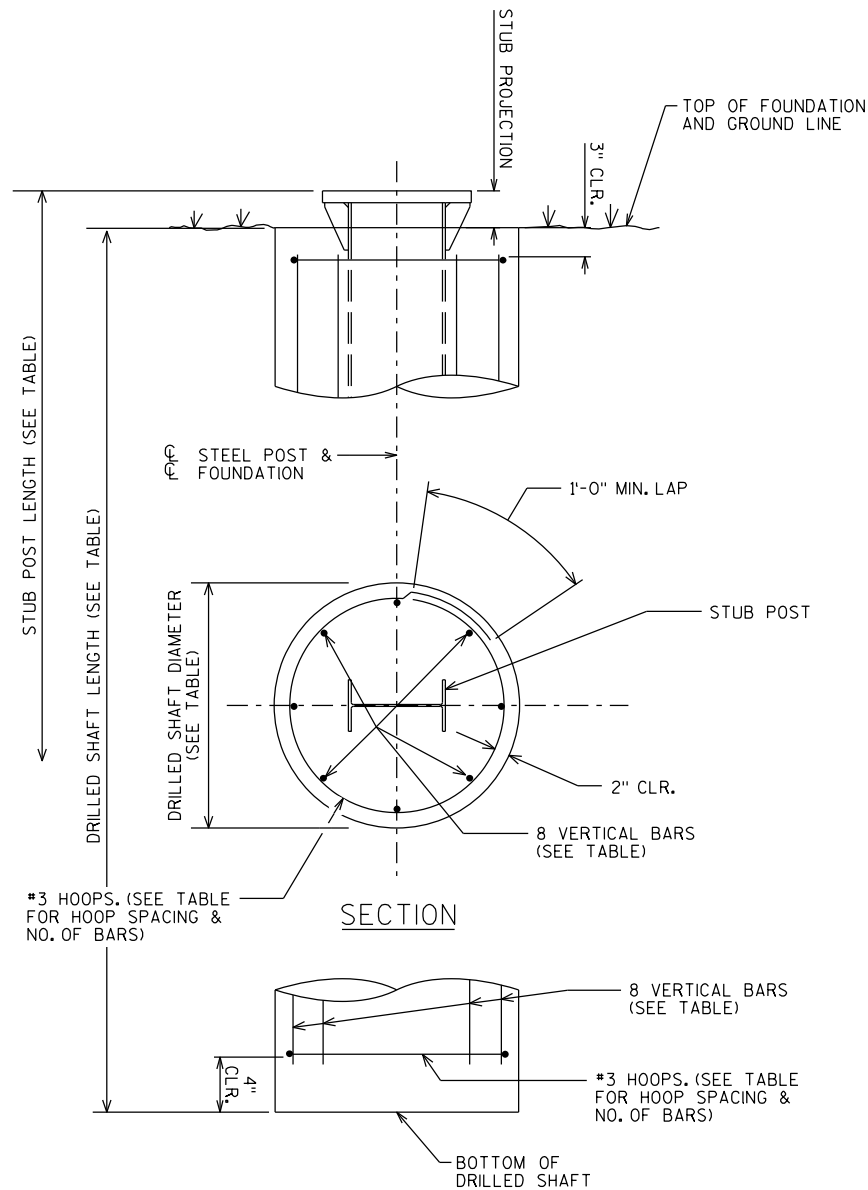


SHIM DETAIL

BOLTING PROCEDURE FOR BASE CONNECTION

1. ASSEMBLE SIGN POST, BOLT KEEPER PLATE, AND STUB POST WITH BOLTS AND THREE FLAT WASHERS PER BOLT AS SHOWN.
2. SHIM AS REQUIRED TO PLUMB POST.
3. PRIOR TO BOLT TIGHTENING, LUBRICATE BASE CONNECTION BOLTS WITH BEESWAX OR OTHER HIGH-WAX LUBRICANT.
4. TIGHTEN ALL BOLTS THE MAXIMUM POSSIBLE WITH A 12" OR 15" WRENCH TO BED WASHERS & SHIMS AND TO CLEAN BOLT THREADS.
5. LOOSEN EACH BOLT IN TURN AND RETIGHTEN IN A SYSTEMATIC ORDER TO THE PERSCRIBED TORQUE. (SEE TABLE FOR PERSCRIBED TORQUE). DO NOT OVER-TIGHTEN.
6. BURR THREADS AT JUNCTION WITH NUT USING A CENTER PUNCH TO PREVENT NUT LOOSENING.

| NO. | DATE | REVISION | BY |
|---|------|----------|--------------|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION | | | |
| STRUCTURE BTO TYPE I SIGNS | | | |
| | | DRAWN BY | PLANS CK'D. |
| CONNECTION & FOUNDATION DETAILS 1 OF 2 | | | SHEET A3-120 |



FOUNDATION DATA TABLE

| POST SHAPE | STUB LENGTH | STUB PROJECTION | DRILLED SHAFT DIAMETER | DRILLED SHAFT LENGTH | VERTICAL BARS | | HOOPS | | CONCRETE VOLUME | TOTAL REINF. WEIGHT |
|------------|-------------|-----------------|------------------------|----------------------|---------------|--------|----------|-----|-----------------|---------------------|
| | | | | | SIZE | LENGTH | MAX SPA. | NO. | | |
| W6X15 | 2'-6" | 3" | 24" | 6'-6" | #5 | 5'-11" | 10" | 9 | 0.8 CY | 71 LB |
| W8X18 | 2'-6" | 3" | 24" | 7'-6" | #6 | 6'-11" | 12" | 8 | 0.9 CY | 102 LB |
| W8X21 | 3'-0" | 2 1/2" | 24" | 8'-0" | #6 | 7'-5" | 12" | 9 | 1.0 CY | 110 LB |
| W10X22 | 3'-0" | 2 1/2" | 24" | 8'-6" | #7 | 7'-11" | 12" | 9 | 1.0 CY | 151 LB |
| W12X26 | 3'-0" | 2 1/2" | 24" | 10'-0" | #7 | 9'-5" | 12" | 11 | 1.2 CY | 180 LB |

◆ QUANTITIES SHOWN ARE FOR ONE DRILLED SHAFT

BASE CONNECTION & FUSE PLATE DATA TABLE

| POST SHAPE | WEIGHT PER FOOT | BOLT SIZE & TORQUE | BASE CONNECTION DATA | | | | | | | | | | BOLT KEEPER PLATE DATA | | PERFORATED FUSE PLATE DATA | | | | | | | | | | BOLT LENGTH | V |
|------------|-----------------|--------------------|----------------------|--------|--------|--------|--------|--------|------|-------|---------|---------|------------------------|--------|----------------------------|--------|--------|--------|---------|---------|--------|-----------|--------------|----------|-------------|---|
| | | | A | B | C | D | E | T1 | T2 | W | R | P | U | F | G | J | K | M | D1 | D2 | T3 | BOLT DIA. | WGT. EA. LBS | | | |
| W6X15 | 15 LB | 5/8" DIA. X 4" | 5" | 2" | 1 1/4" | 2 3/4" | 1 1/8" | 1 1/4" | 1/2" | 1/4" | 1 1/32" | 8 1/2" | 10" | 5" | 2 1/2" | 6" | 3 1/2" | 1 1/2" | 1 1/16" | 1 1/4" | 3 3/8" | 5 3/8" | 2.4 | 2 | 73.0 LB | |
| W8X18 | 18 LB | 3/4" DIA. X 4" | 5" | 2" | 1 1/4" | 2 3/4" | 1 1/8" | 1 1/4" | 1/2" | 1/4" | 1 1/32" | 10 5/8" | 12 1/8" | 5" | 2 1/2" | 5 1/4" | 2 3/4" | 1 1/4" | 1 1/16" | 1 1/16" | 3 3/8" | 5 3/8" | 2.0 | 2 | 83.0 LB | |
| W8X21 | 21 LB | 3/4" DIA. X 4 3/4" | 6" | 2 1/4" | 1 3/8" | 3 1/2" | 1 1/4" | 1 1/2" | 3/4" | 5/16" | 1 1/32" | 11" | 12 3/4" | 5 1/2" | 2 1/2" | 5 1/4" | 2 3/4" | 1 1/4" | 1 1/16" | 1" | 1 1/2" | 3 3/4" | 3.1 | 2 1/4" | 124.0 LB | |
| W10X22 | 22 LB | 3/4" DIA. X 4 3/4" | 6" | 2 1/4" | 1 3/8" | 3 1/2" | 1 1/4" | 1 1/2" | 3/4" | 5/16" | 1 1/32" | 12 7/8" | 14 5/8" | 6" | 3" | 5 3/4" | 2 3/4" | 1 3/8" | 1 1/16" | 1 1/8" | 1 1/2" | 3 3/4" | 3.9 | 2 1/4" | 134.0 LB | |
| W12X26 | 26 LB | 3/4" DIA. X 4 3/4" | 6" | 2 1/4" | 1 3/8" | 3 1/2" | 1 1/4" | 1 1/2" | 3/4" | 5/16" | 1 1/32" | 15" | 16 3/4" | 6" | 3" | 6 1/2" | 3 1/2" | 1 5/8" | 1 1/16" | 1 1/2" | 3 3/4" | 4.5 | 2 1/4" | 152.0 LB | | |

◆ TOTAL STRUCTURAL CARBON STEEL WEIGHT FOR ONE POST = V + (POST LENGTH X POST WEIGHT PER FOOT)
 "V" INCLUDES STUB POST, BASE PLATES, STIFFENER PLATES, PERFORATED FUSE PLATES, BOLTS, NUTS, AND WASHERS.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED
 MATERIALS SHALL CONFORM TO THE WISCONSIN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS SECTION 506, UNLESS NOTED OTHERWISE.
 FABRICATION SHALL CONFORM TO THE WISCONSIN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS SECTION 506.
 ALL POST, POST STUBS & ATTACHMENTS SHALL BE ASTM A709 GRADE 50, GALVANIZED IN ACCORDANCE WITH ASTM A123.
 THE POST, BASE PLATES, UPPER SIX INCHES OF STUB POST, FLANGE SPLICE PLATE AND FUSE PLATE SHALL BE GALVANIZED AFTER FABRICATION.
 H.S. BOLTS, WASHERS, & NUTS SHALL BE A325 GALVANIZED.

FOUNDATION MATERIAL PROPERTIES

CONCRETE MASONRY F'C = 3,500 P.S.I.
 BAR STEEL REINFORCEMENT (UNCOATED), GRADE 60 F_y = 60,000 P.S.I.

DESIGN DATA

DESIGN CONFORMS TO AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS 1ST EDITION 2015 (WITH 2017 & 2018 INTERIM REVISIONS).

- DEAD LOADS (DL):
- STEEL POST SELF WEIGHT
 - SIGN PANEL WEIGHT = 3 PSF
- WIND LOADS (WL):
- WIND LOADS WERE APPLIED TO THE PROJECTED AREAS OF THE SIGN PANELS AND THE STEEL SIGN POSTS.
- BASIC WIND SPEED = 76 MPH
 - MEAN RECURRENCE INTERVAL (MRI) = 10 YEARS
 - HEIGHT & EXPOSURE FACTOR = 1.00
 - DIRECTIONALITY FACTOR = 0.85
 - GUST EFFECT FACTOR = 1.14
- WIND LOAD CASES:
- WL CASE 1: 1.0 X NORMAL WIND
 - WL CASE 2: 1.0 X TRANSVERSE WIND
 - WL CASE 3: 0.75 X NORMAL WIND + 0.75 X TRANSVERSE WIND

LOAD COMBINATIONS:

| LOAD COMBINATION | TYPE | DL FACTOR | WL FACTOR |
|------------------|------------|-----------|-----------|
| STRENGTH I | GRAVITY | 1.25 | - |
| EXTREME I | WIND | 1.10 | 1.0 |
| | | 0.9 | 1.0 |
| SERVICE I | DEFLECTION | 1.0 | 1.0 |

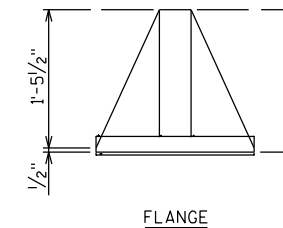
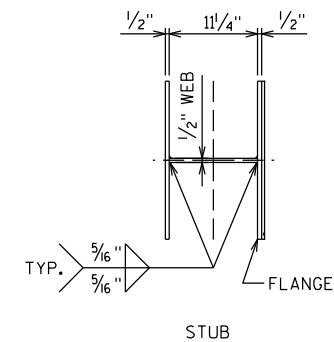
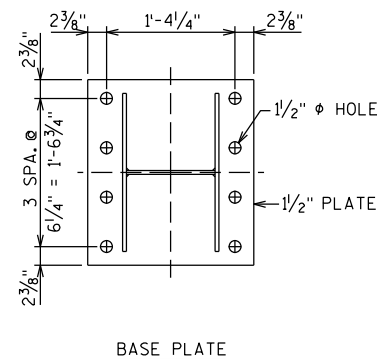
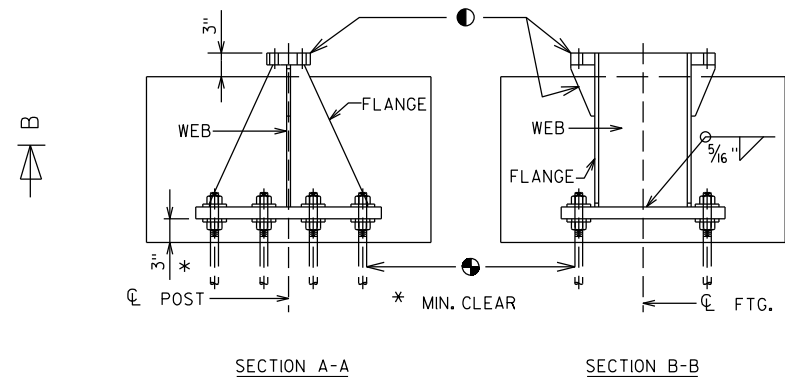
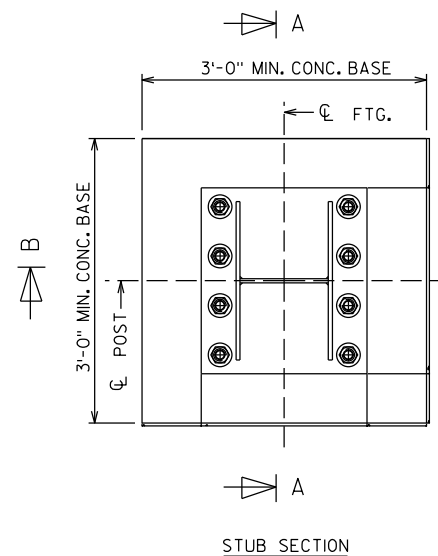
FOUNDATION DESIGN DATA

THE FOUNDATION DESIGN ASSUMED COHESIONLESS SOILS (LOOSE SAND) ABOVE THE WATER TABLE WITH THE FOLLOWING PROPERTIES:

- SOIL UNIT WEIGHT = 115 PCF
- ANGLE OF INTERNAL FRICTION = 24 DEGREES
- SOIL MODULUS PARAMETER = 25 LB/IN³

| NO. | DATE | REVISION | BY |
|---|------|---------------|----|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION | | | |
| STRUCTURE BTO TYPE I SIGNS | | | |
| DRAWN BY | | PLANS CK'D. | |
| CONNECTION & FOUNDATION DETAILS 2 OF 2 | | SHEET A3-1.20 | |

STUB AND ADHESIVE ANCHOR DETAILS



- SEE BASE CONNECTION DETAILS ON "CONNECTIONS & FOUNDATION DETAILS" SHEETS.
- ADHESIVE ANCHORS 1/4"-INCHES. ALLOWABLE PULL OUT CAPACITY = 15 KIPS. EMBED 1'-3" INTO ROCK.

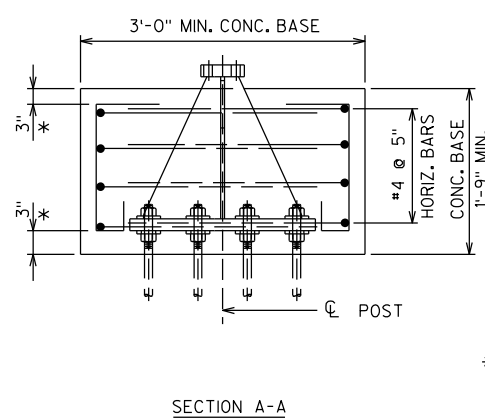
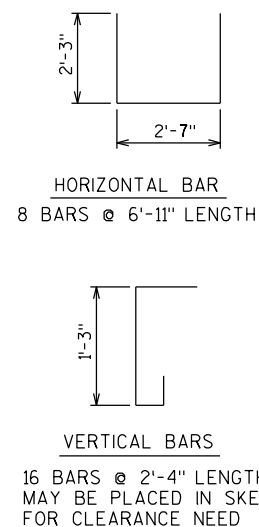
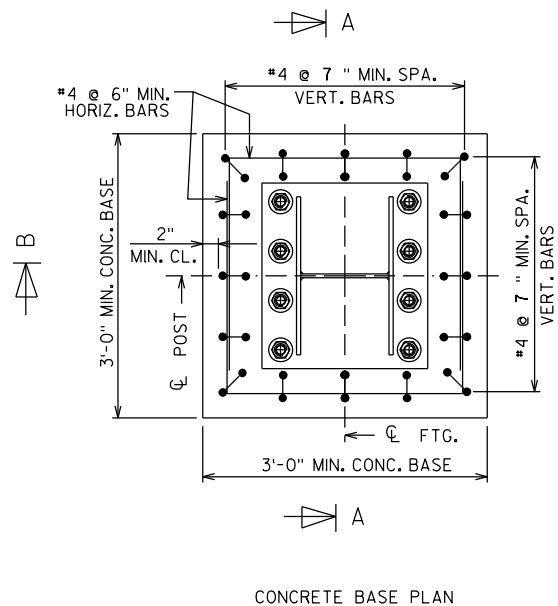
GENERAL NOTES:

QUANTITIES PER BASE:
 REINFORCING STEEL = 62 LB
 CONCRETE = 0.6 CY
 STRUCTURAL STEEL = 335 LB

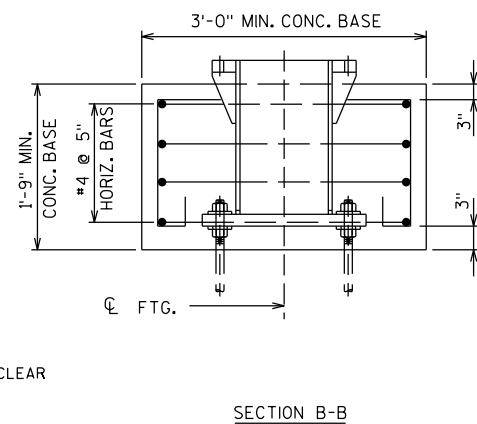
ALL MATERIALS, EXCEPT FOR ANCHOR ROD, NUTS, AND WASHERS, SHALL BE ASTM A709 GRADE 50. ALL MATERIALS TO BE GALVANIZED AFTER FABRICATION.

IF ROCK IS ENCOUNTERED PRIOR TO REACHING THE MINIMUM DRILLED SHAFT EMBEDMENT DEPTH DEFINED ON THE FOUNDATION DATA TABLE OF THE "CONNECTIONS & FOUNDATION DETAILS 2 OF 2" SHEET, THE CONTRACTOR SHALL INSTALL A TEST ADHESIVE ANCHOR AND DETERMINE THE PULL-OUT CAPACITY. IF THE FIELD TEST RESULTS IN A PULL-OUT CAPACITY GREATER THAN OR EQUAL TO 15 KIPS, THE CONTRACTOR MAY INSTALL THE ALTERNATE CONCRETE BASE AND BREAK-WAY STUB PER THE DETAILS ON THIS SHEET.

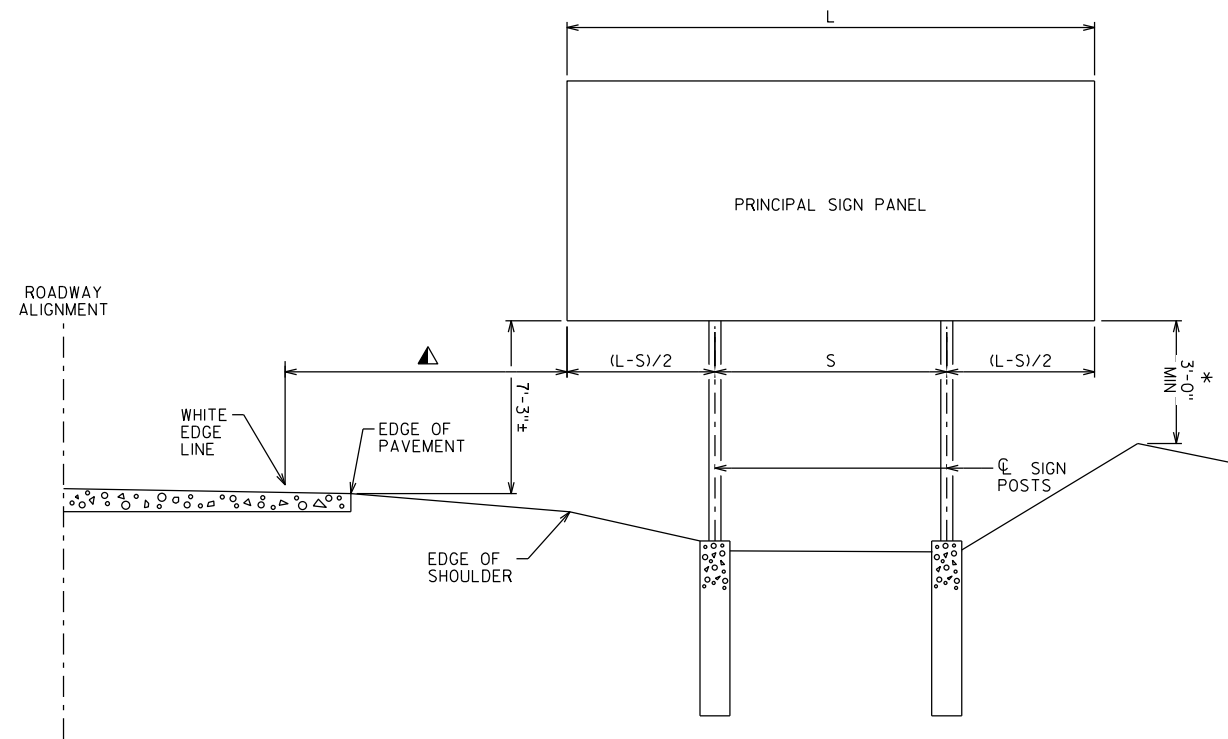
CONCRETE BASE DETAILS



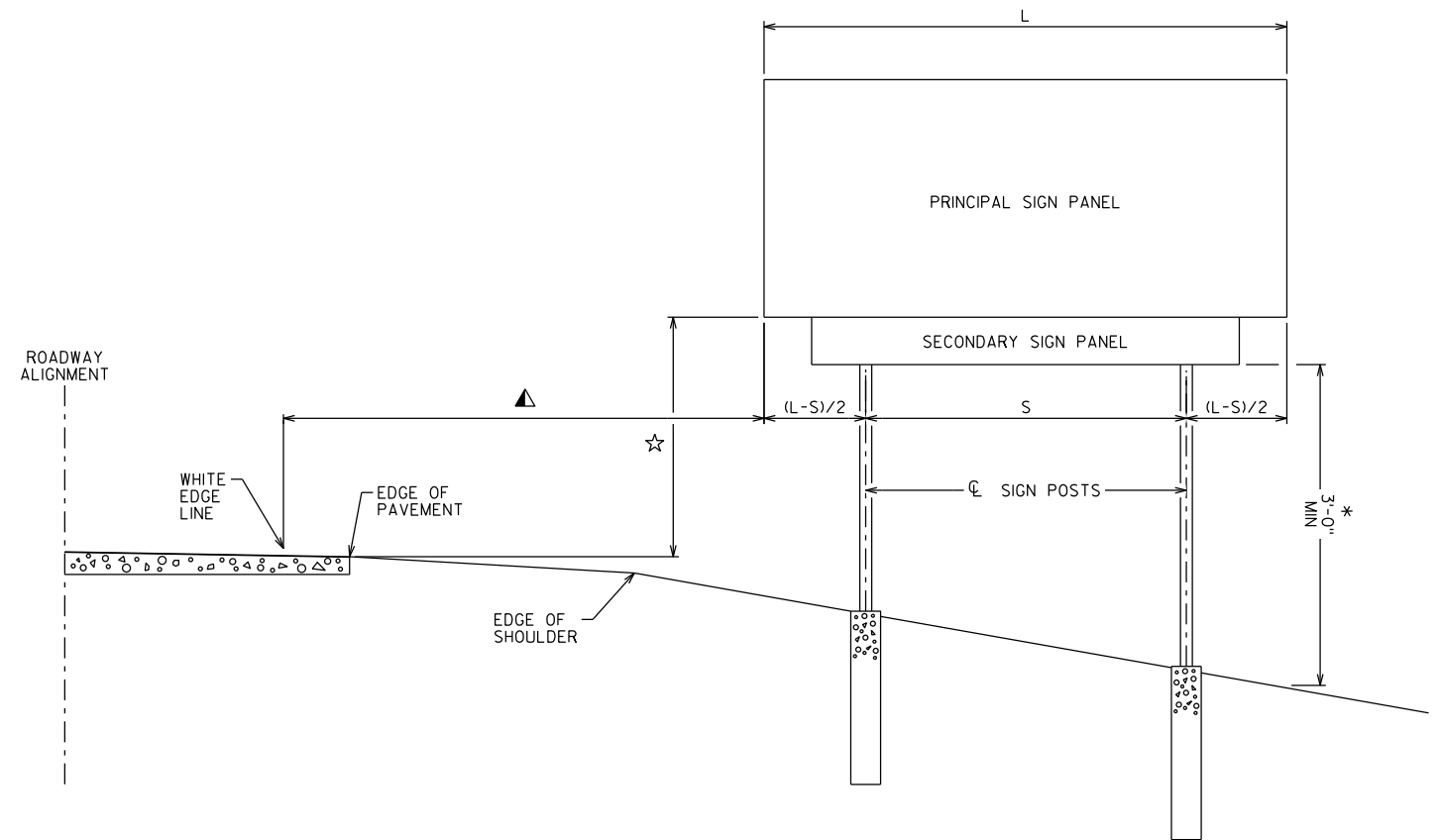
* MIN. CLEAR



| NO. | DATE | REVISION | BY |
|---|------|----------|---------------|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION | | | |
| STRUCTURE BTO TYPE I SIGNS | | | |
| | | DRAWN BY | PLANS CK'D. |
| ALTERNATE BREAK-AWAY BASE ON ROCK | | | SHEET A3-1M.2 |



INSTALLATION WITHOUT SECONDARY SIGN



INSTALLATION WITH SECONDARY SIGN

TYPE 1 SIGN INSTALLATION NOTES:

FOR A 2-POST INSTALLATION, "S" EQUALS $3L/5$, BUT SHALL NOT BE LESS THAN 6'-0".

FOR A 3-POST INSTALLATION, "S" EQUALS $5L/7$, BUT SHALL NOT BE LESS THAN 12'-0". THE SPACING BETWEEN ANY TWO POSTS SHALL NOT BE LESS THAN 6'-0".

▲ UNLESS NOTED IN THE PLANS, THE SIGN OFFSET DISTANCE SHALL BE A MINIMUM OF 17'-6" FROM THE WHITE EDGE LINE, DESIRABLE 30'-0".

THE ± TOLERANCE SHOWN ON THIS SHEETS IS 3".

THE VERTICAL SIGN HEIGHT CLEARANCES SHOWN ON THIS SHEET ARE MEASURED FROM THE BOTTOM OF THE SIGN PANEL TO THE NEAR EDGE OF PAVEMENT.

☆ THE VERTICAL CLEARANCE SHALL BE 8'-3"± WHEN THE SECONDARY SIGN HEIGHT IS 3'-0" OR LESS, FOR SECONDARY SIGN HEIGHTS LARGER THAN 3'-0", THE VERTICAL CLEARANCE TO THE BOTTOM OF THE SECONDARY SIGN PANEL SHALL BE 5'-3"±.

* THE VERTICAL SIGN GROUND CLEARANCE ON RIGHT END OF SIGN SHALL BE A MINIMUM OF 3'-0"±.

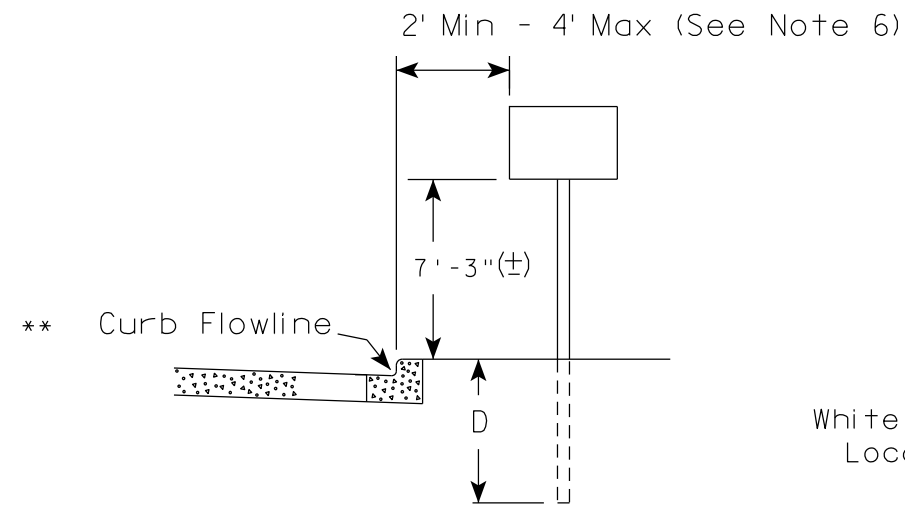
POST LENGTHS SHOWN IN THE MISCELLANEOUS QUANTITIES ARE ESTIMATED LENGTHS. THE CONTRACTOR SHALL VERIFY POST LENGTHS AT THE TIME OF FINAL GRADING.

REFER TO THE TRAFFIC ENGINEERING OPERATIONS AND SAFETY MANUAL FOR FURTHER GUIDANCE ON MINIMUM VERTICAL CLEARANCE REQUIREMENTS.

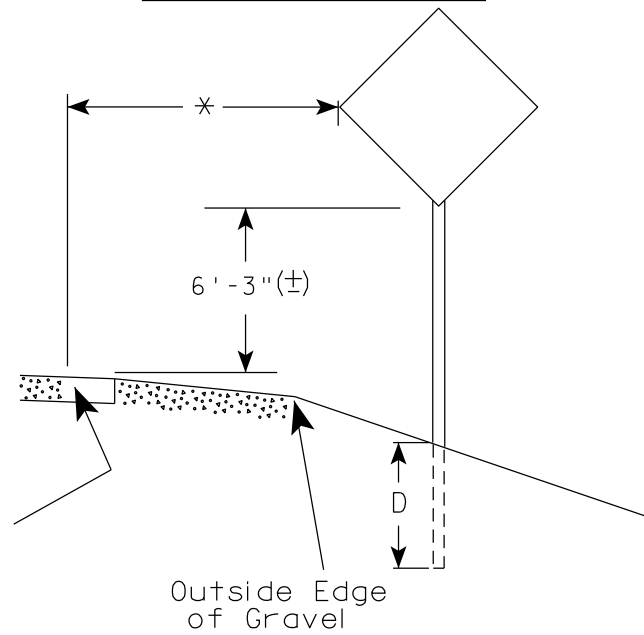
| NO. | DATE | REVISION | BY |
|---|------|-------------|---------------|
| STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION | | | |
| STRUCTURE BTO TYPE I SIGNS | | | |
| DRAWN BY | | PLANS CK'D. | |
| TYPICAL TYPE I SIGN INSTALLATION | | | SHEET A4-1.10 |

URBAN AREA

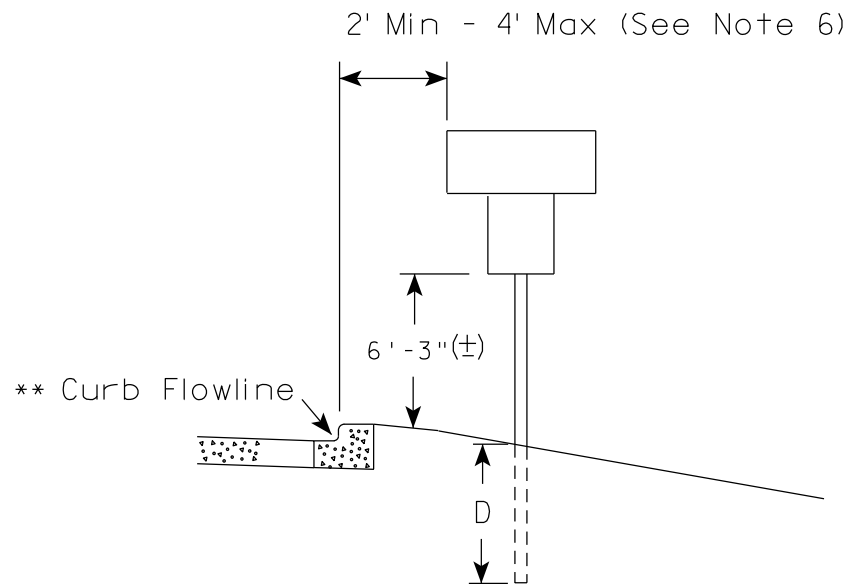
RURAL AREA (See Note 2)



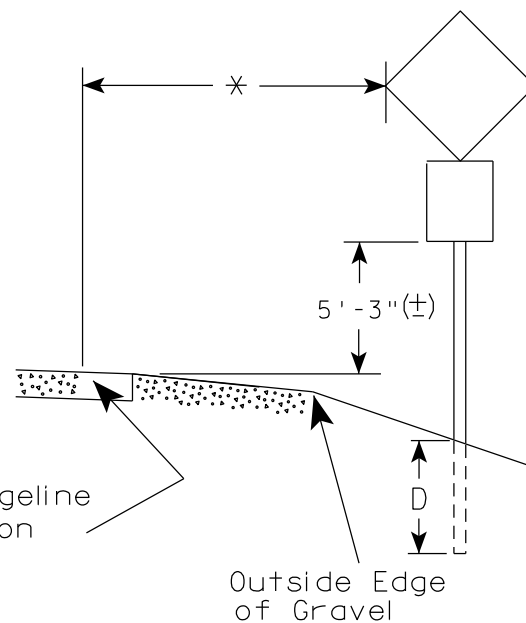
White Edgeline Location



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.

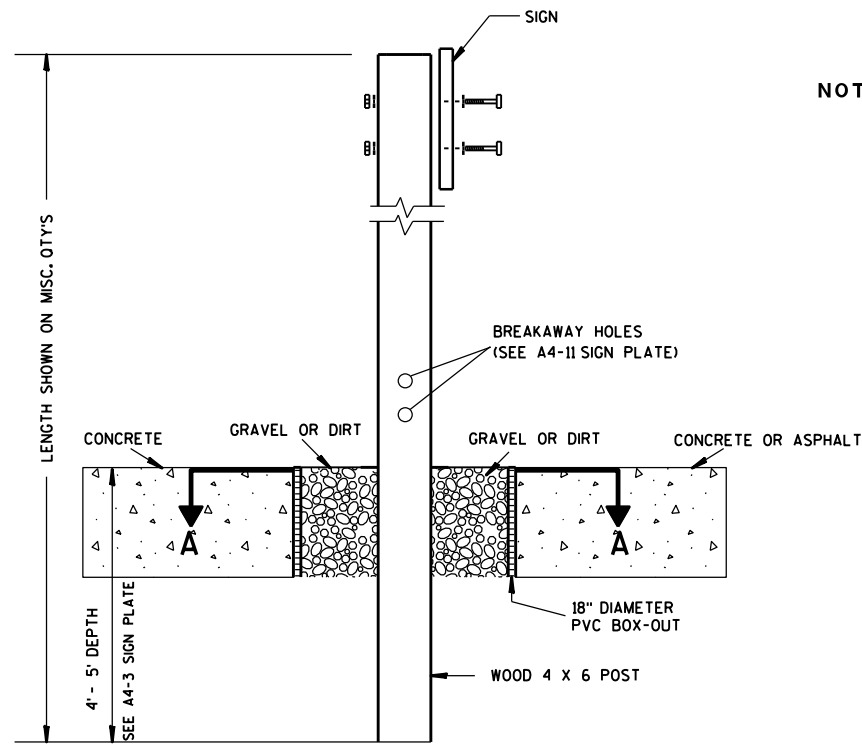
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

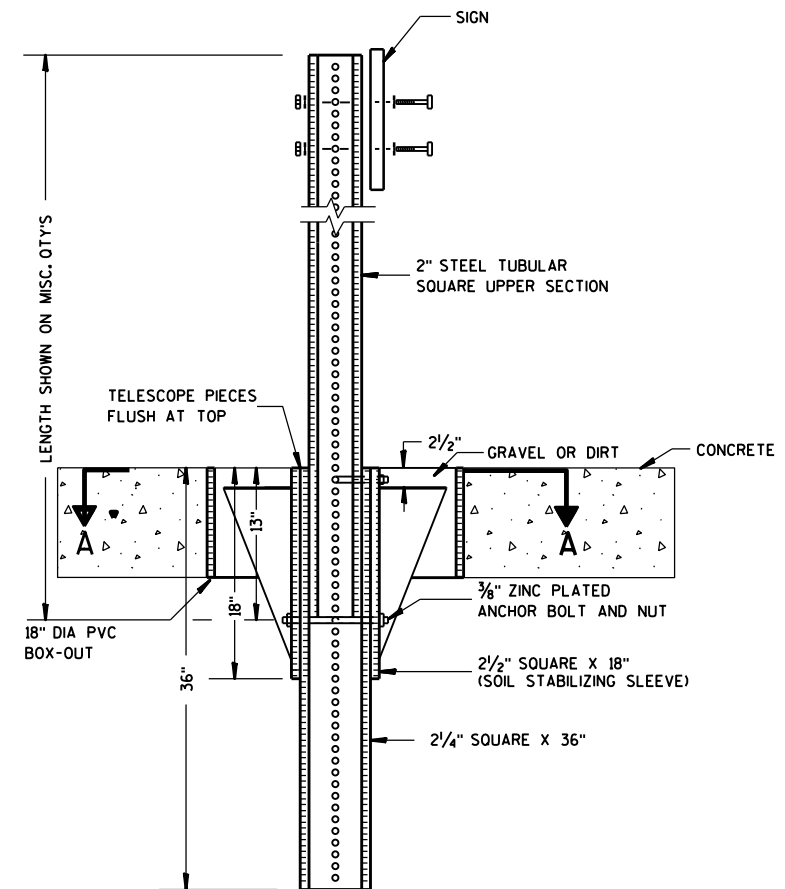
DATE 5/13/2020 PLATE NO. A4-3.22



ELEVATION VIEW

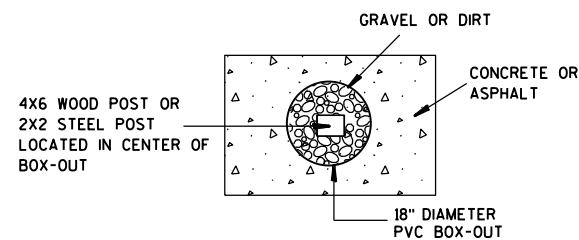
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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

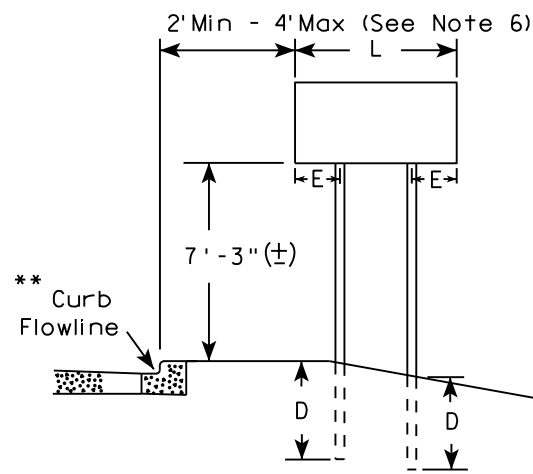
FOR NEW CONCRETE/ ASPHALT INSTALLATIONS

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

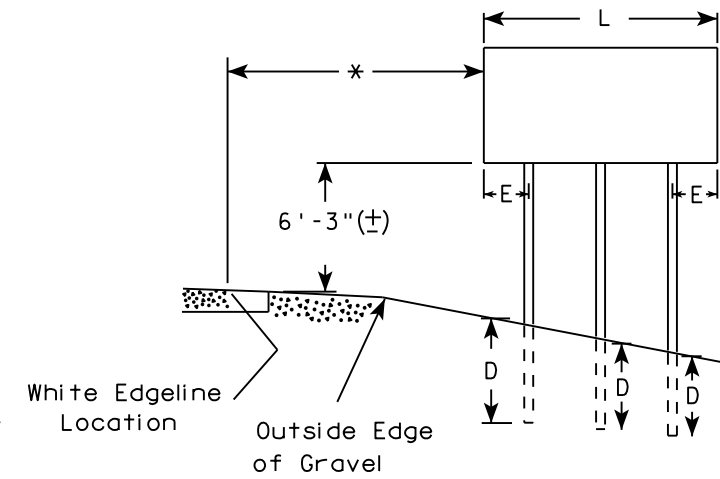
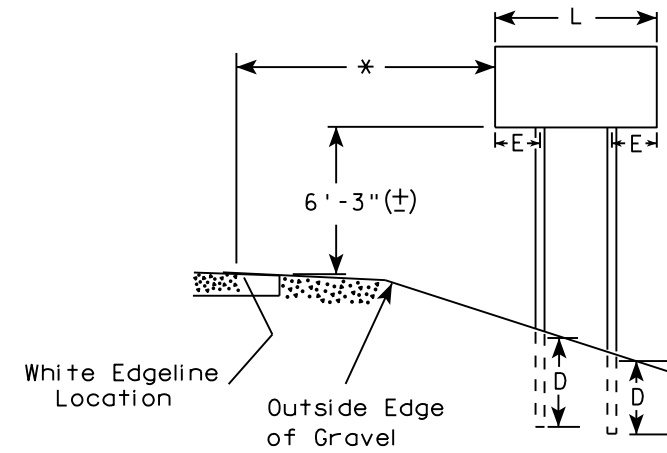
GENERAL NOTES

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

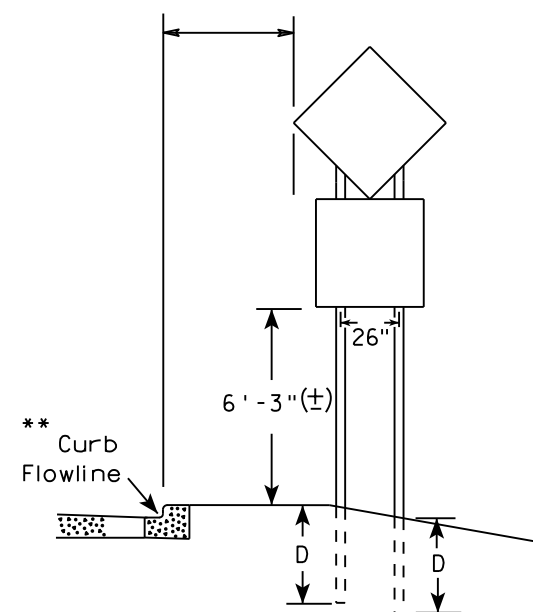
URBAN AREA



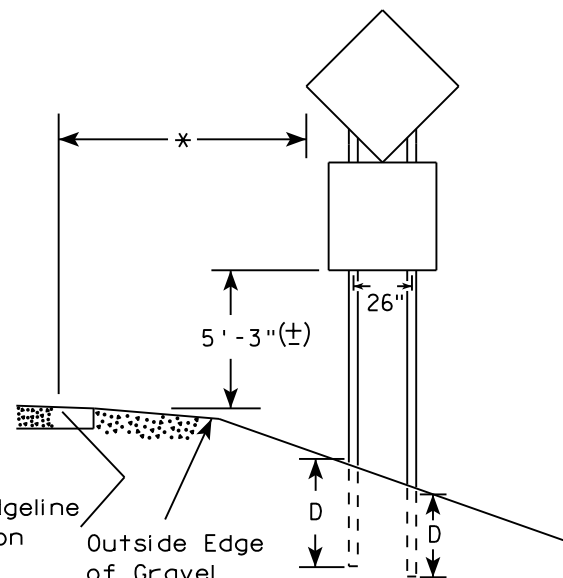
RURAL AREA (See Note 3)



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



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

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

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

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

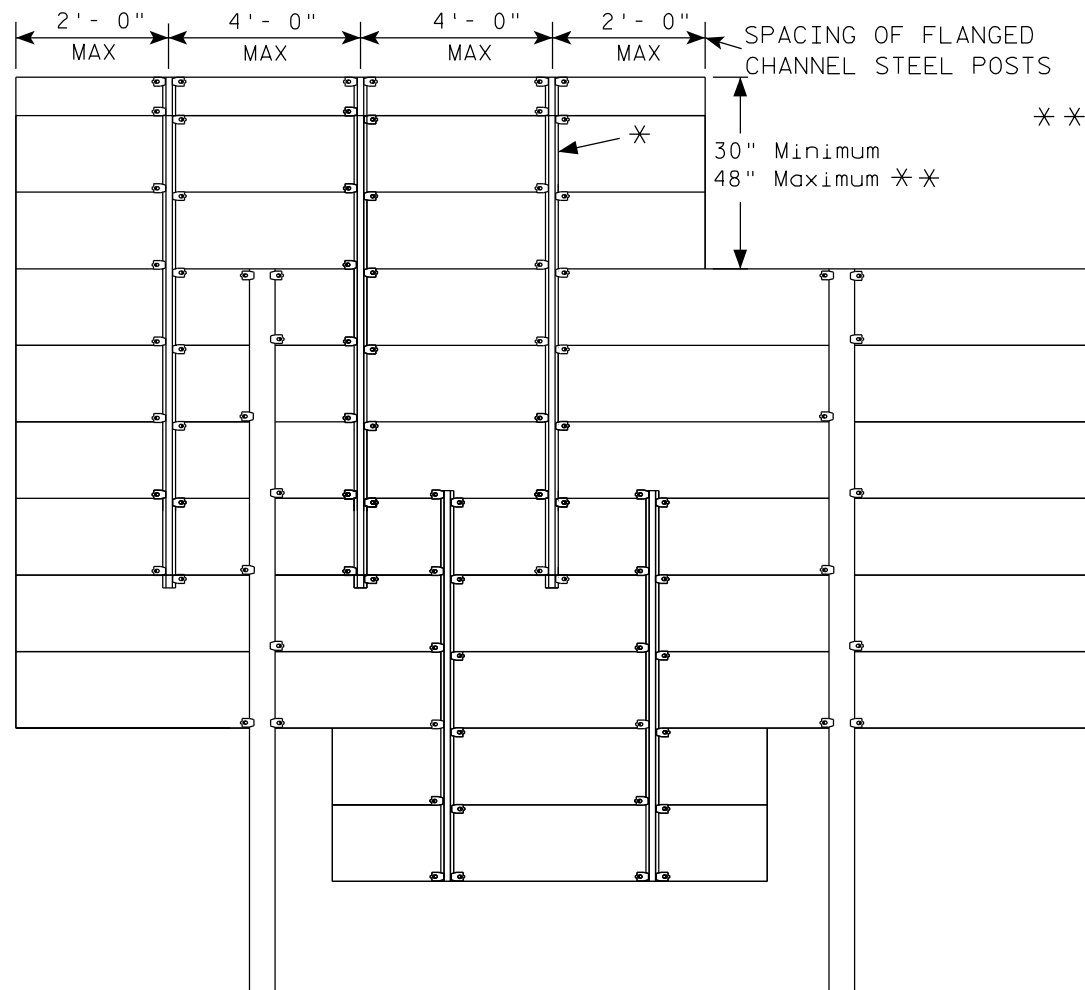
POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

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

GROUND MOUNTED SIGN



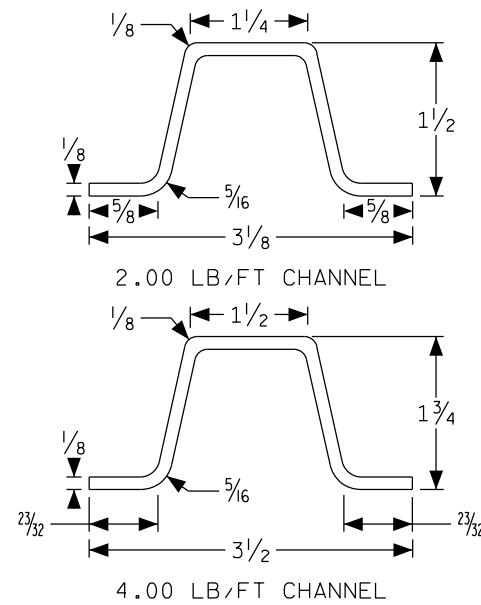
* = 2.00 lb/ft AND 4.00 lb/ft FLANGED CHANNEL, MIN. YIELD STRENGTH = 60,000 PSI (GRADE 60) GALVANIZED

* * = FOR 48" HEIGHT PANELS ON OVERHEAD STRUCTURES, ENTIRE SIGN SHALL BE CENTERED VERTICALLY ABOUT THE DEPTH OF THE TRUSS.

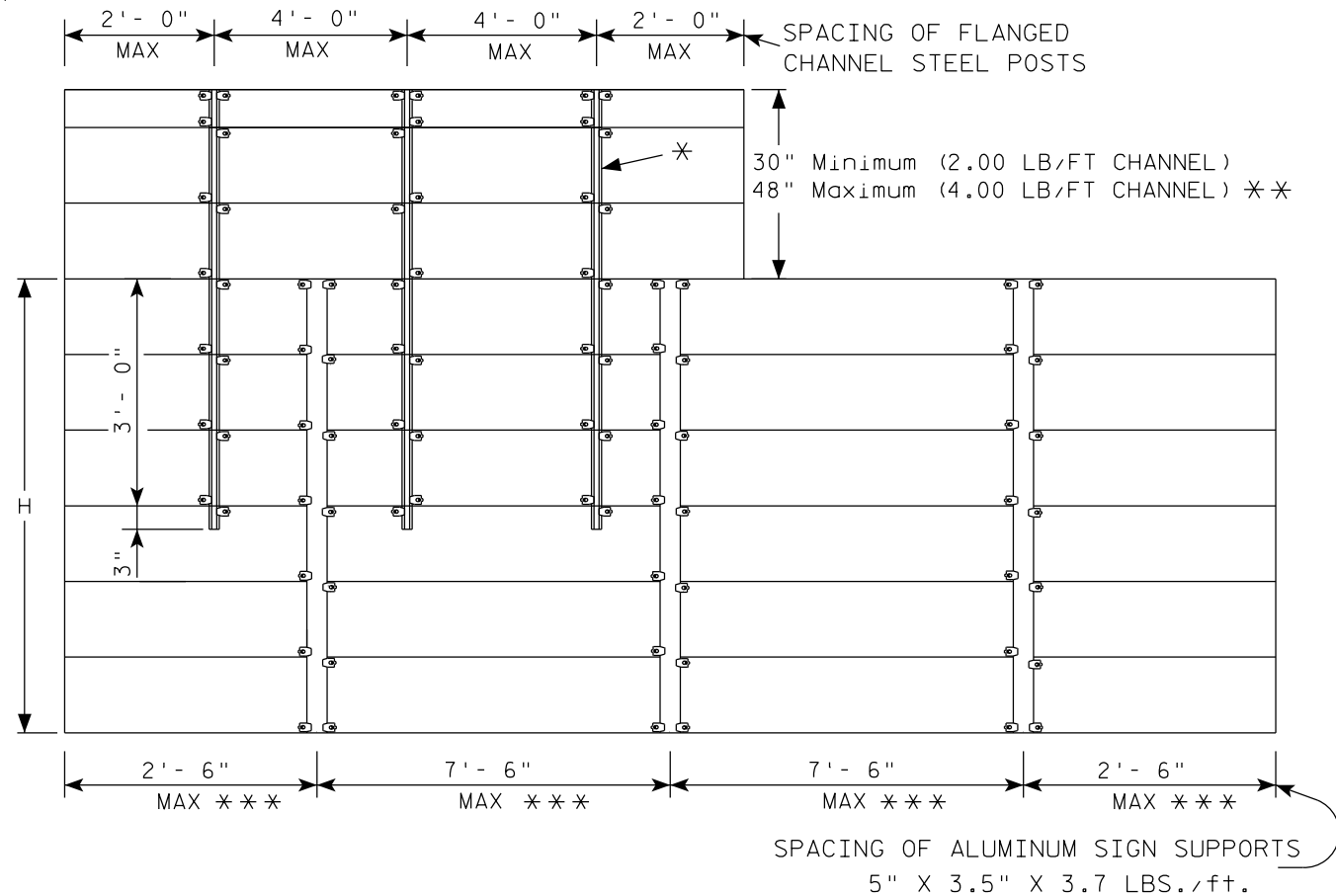
* * * THESE SPACING DISTANCES SHALL ONLY BE USED WHEN THE MAIN SIGN HAS A MAXIMUM HEIGHT (DIMENSION H) OF 15 FT OR LESS. FOR SIGNS WITH A HEIGHT OF GREATER THAN 15 FT, STRUCTURAL CALCULATIONS SHALL BE PERFORMED.

FLANGE CHANNEL DETAILS

NOT TO SCALE



SIGN BRIDGE MOUNTED SIGN



GENERAL NOTES

1. Flanged channel steel posts shall conform to size and material above, and shall be considered as incidental to other items in the contract.
2. Number of Flanged channel steel supports varies with length of panel and shall be spaced as shown:
 PANEL LENGTH 8'-0" OR LESS = 2 CHANNELS
 PANEL LENGTH 9'-0" - 12'-0" = 3 CHANNELS
 PANEL LENGTH 13'-0" OR MORE = 4 CHANNELS
 If the flanged channel steel posts can not be horizontally spaced as shown, they can be moved so as to securely hold the sign.
3. The EXIT NUMBER PANEL shall normally be positioned above the guide sign aligned with the right edge of the guide sign. If the guide sign indicates a left exit, the EXIT NUMBER PANEL shall be aligned with the left edge of the guide sign.
4. If the bolt holes in the top panel (EXIT NUMBER), or sub panel (NEXT EXIT) line up with holes in main sign panel, stitch bolts shall be used in addition to the channels.
5. Provide post clips for each sign as shown. (Please note the differences between a ground mounted versus Sign bridge mounted sign as far as number of clips required on the main supports or beams)
6. Structural steel sign supports shall extend to the top of the main signs, as shown on the above details.

ATTACHMENT OF GUIDE SIGNS TO SUPPORTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
 For State Traffic Engineer

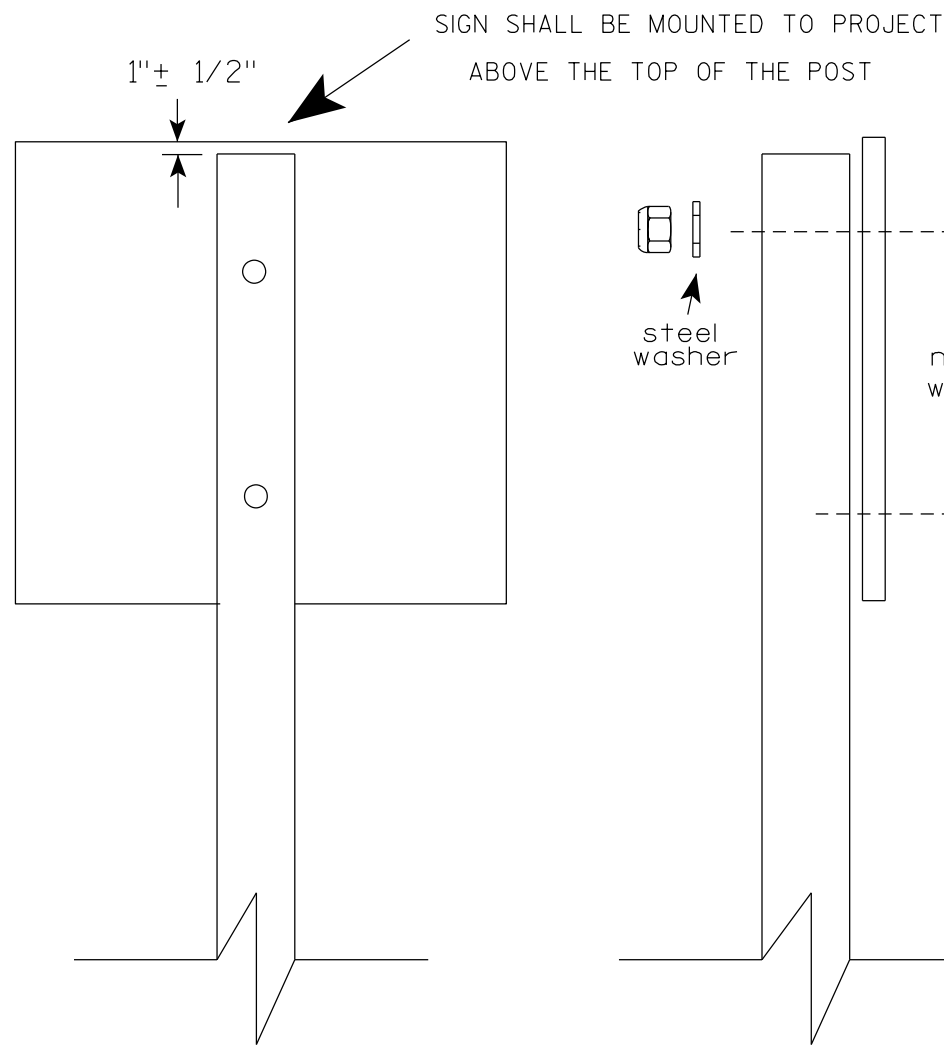
DATE 1/07/20

PLATE NO. A4-6.12

PROJECT NO:

SHEET NO:

E



SIGN SHALL BE MOUNTED TO PROJECT
ABOVE THE TOP OF THE POST

1"± 1/2"

steel washer

nylon washer

steel washer

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.

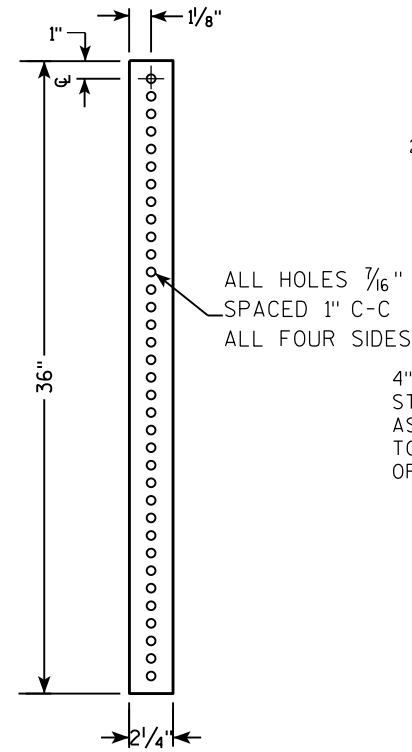
- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
 - 3/8" X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" X 3-1/4" Length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

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

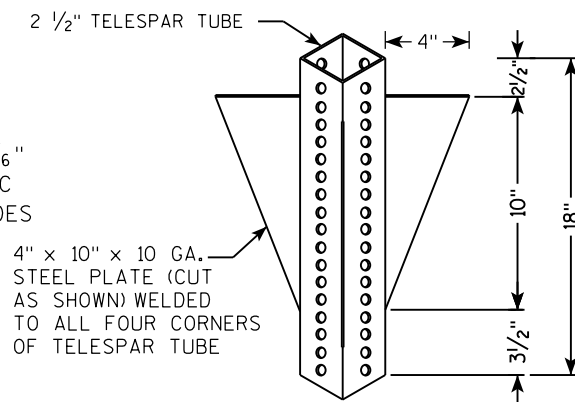
| | |
|----------------------------------|--|
| ATTACHMENT OF SIGNS TO POSTS | |
| WISCONSIN DEPT OF TRANSPORTATION | |
| APPROVED | <i>Matthew R Rauch</i> For State Traffic Engineer |
| DATE 4/1/2020 | PLATE NO. A4-8.9 |

**TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM**

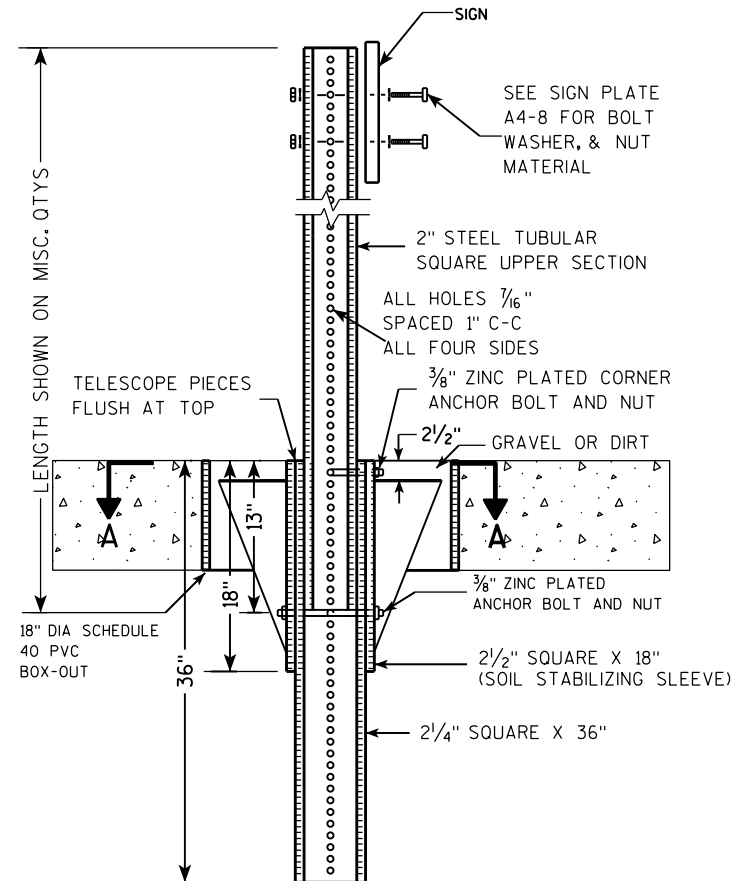
2 1/4" SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



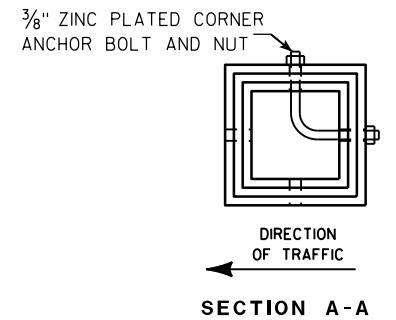
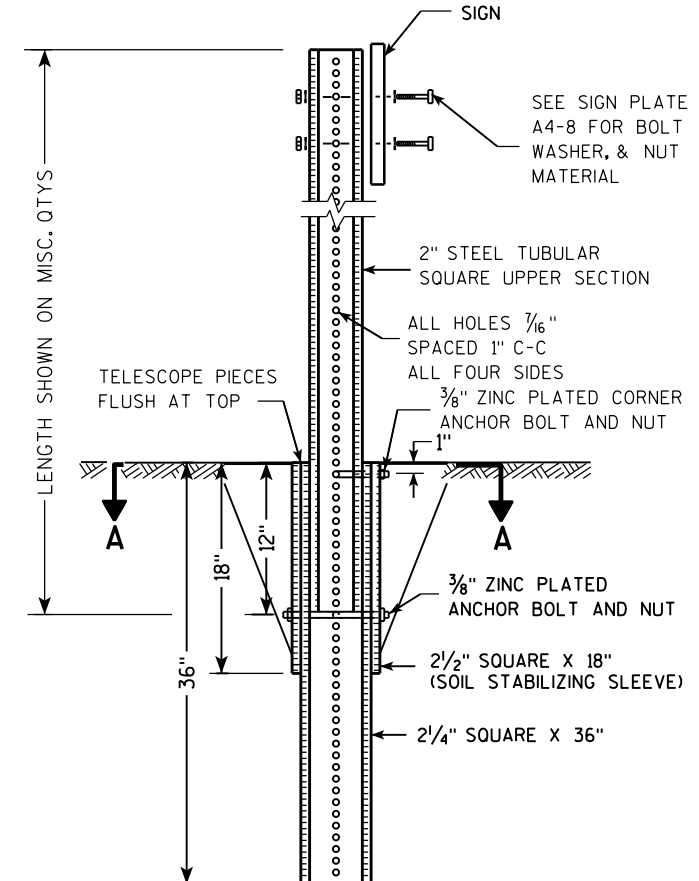
2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH



**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

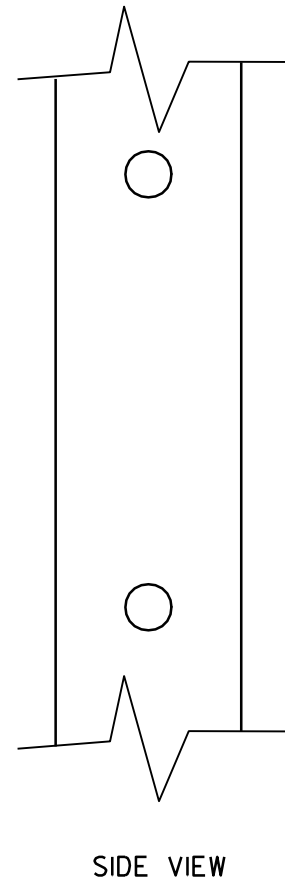
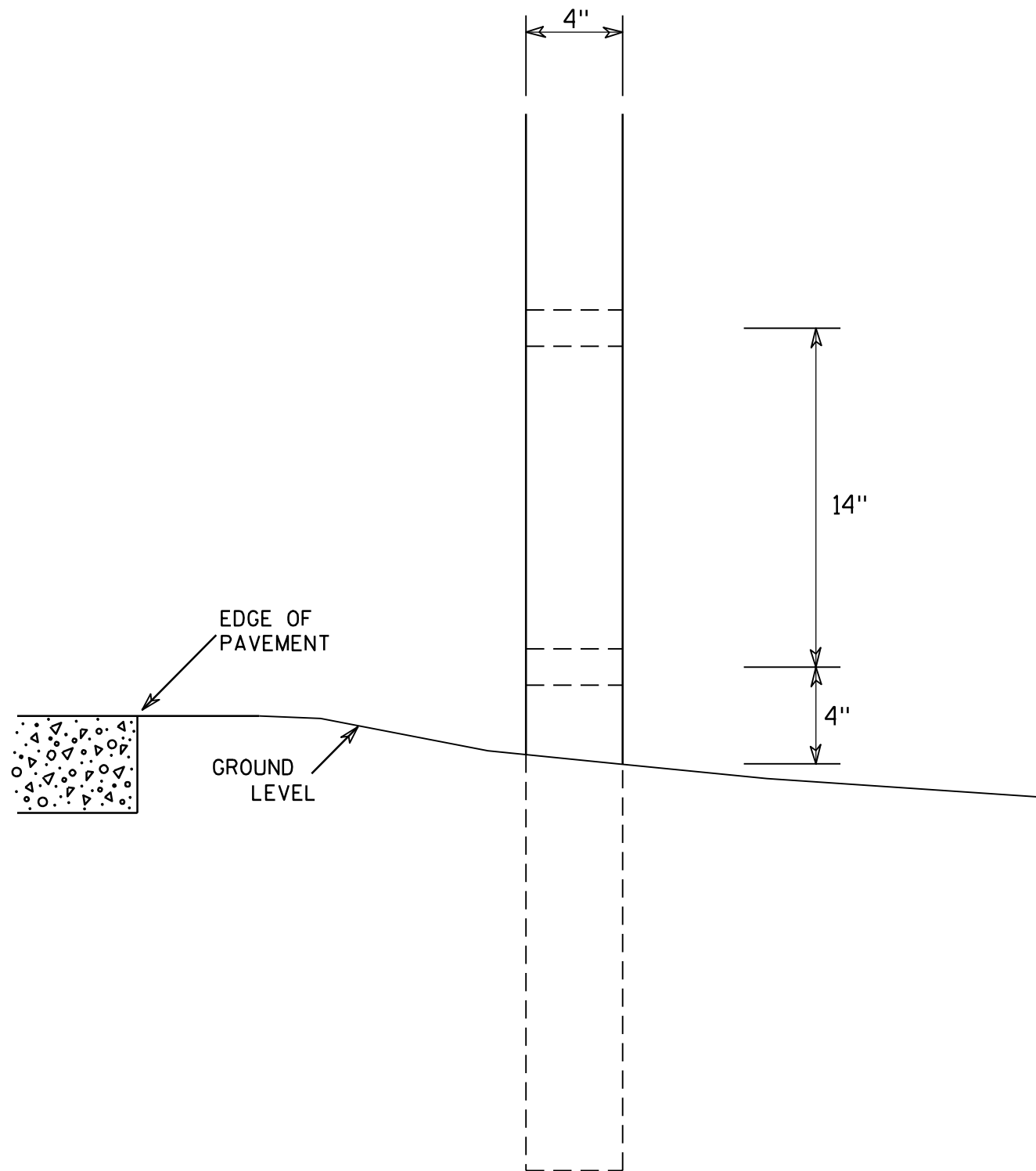
PROJECT NO:

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.

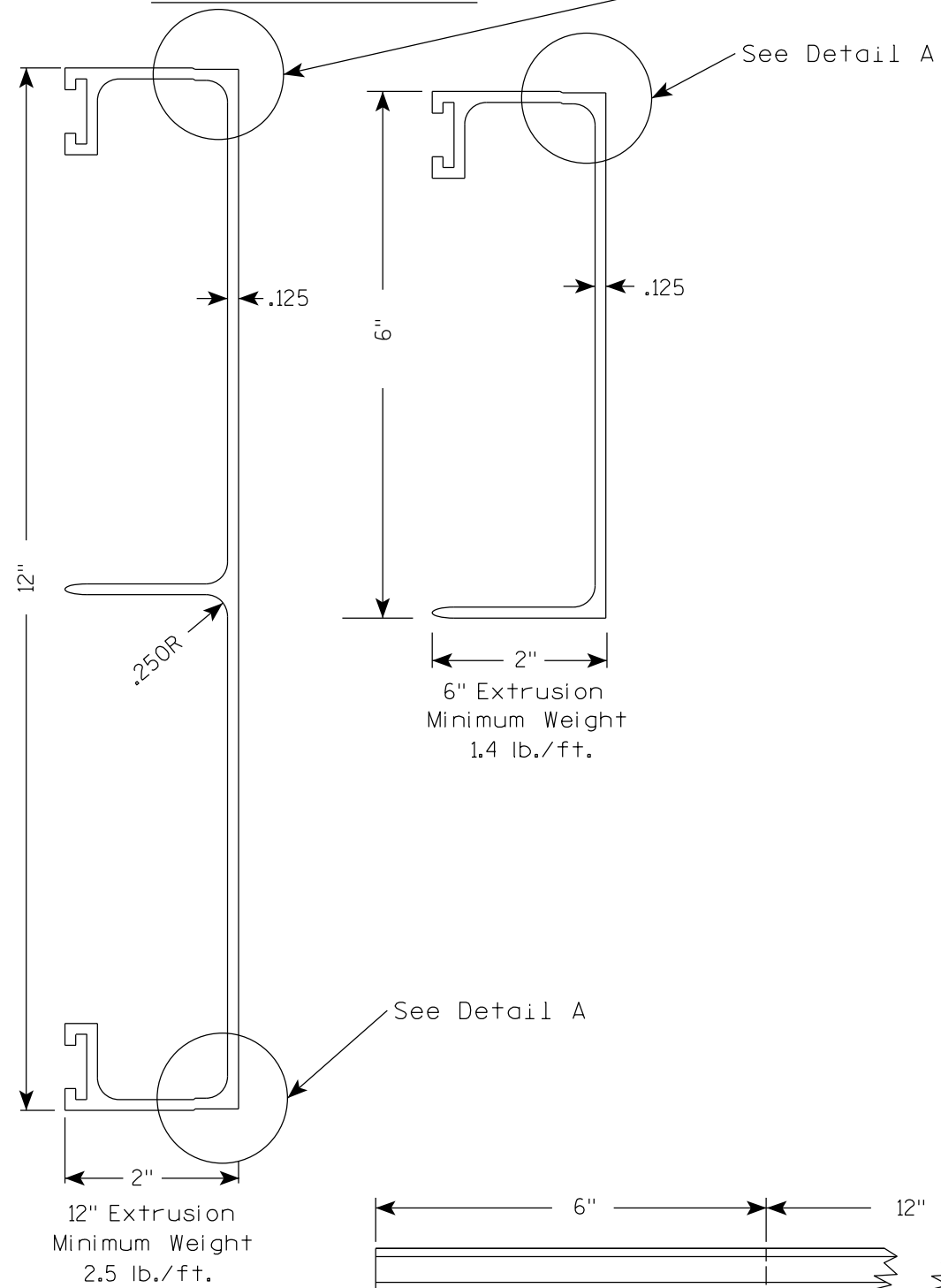
7

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

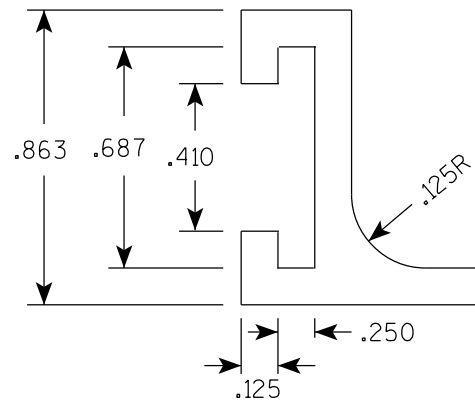
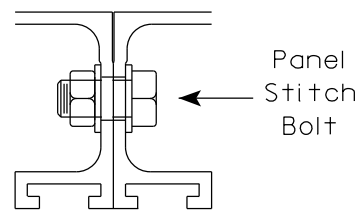
Extruded Shape

Hardware



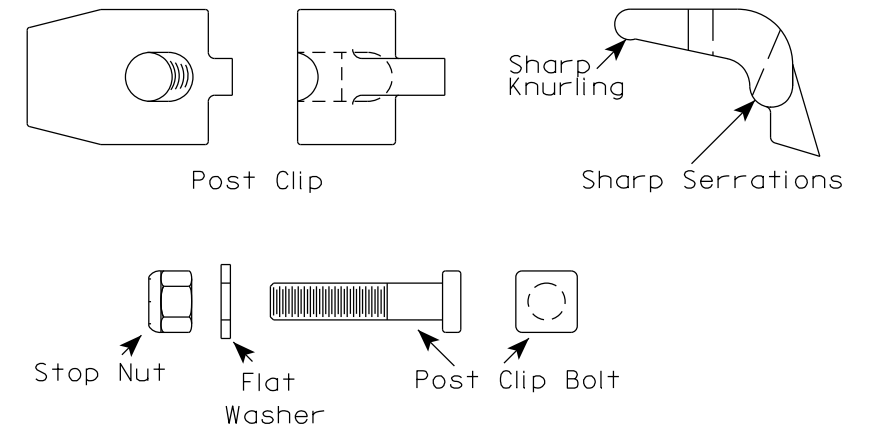
STITCH BOLT, WASHER & NUT

The hardware includes:
 3/8" - 16 X 3/4" Economy Bolt 2024-T4 alloy
 3/8" - Stainless steel stop nut
 3/8" X .064 Flat Washers, Alclad 2024-T4 alloy



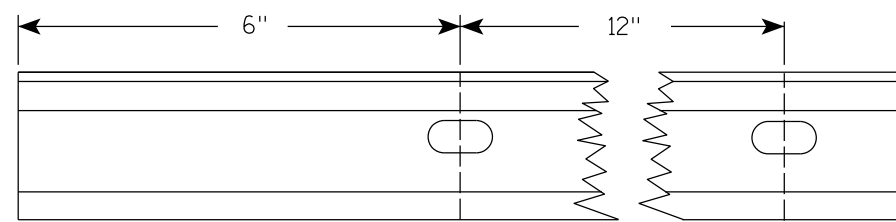
POST CLIP, POST CLIP BOLT, WASHER & NUT

Post Clip shall be Alum. Alloy 356-T6
 Post Clip Bolt shall be Stainless Steel.
 Flat washer shall be 3/8" X .091, Stainless Steel.
 Stop nut shall be stainless steel.

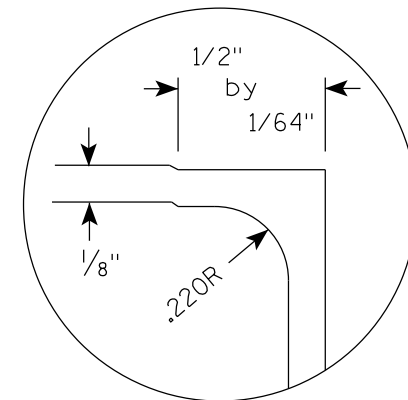


NOTES

1. The contractor may select any brand of extrusion that conforms to the illustrations or meets with the approval of the engineer, but all extrusions used on this contract shall be of the same brand.
2. Panel Stitch Bolts shall be used to assemble adjacent panels. Maximum stitch bolt spacing shall be 24" C-C, and a minimum of 4 bolts shall be used to connect any two extrusions.
3. Post Clips shall be used to attach the sign panel to the sign support.
4. Edge wrapping of sign sheeting required on all extrusions joints shown in Detail A.



Punch 7/16" x 7/8" ovalholes beginning 6" in from end of extrusion 12" CC on both edges of 6" and 12" panels.



DETAIL A (EDGE WRAP JOINT)

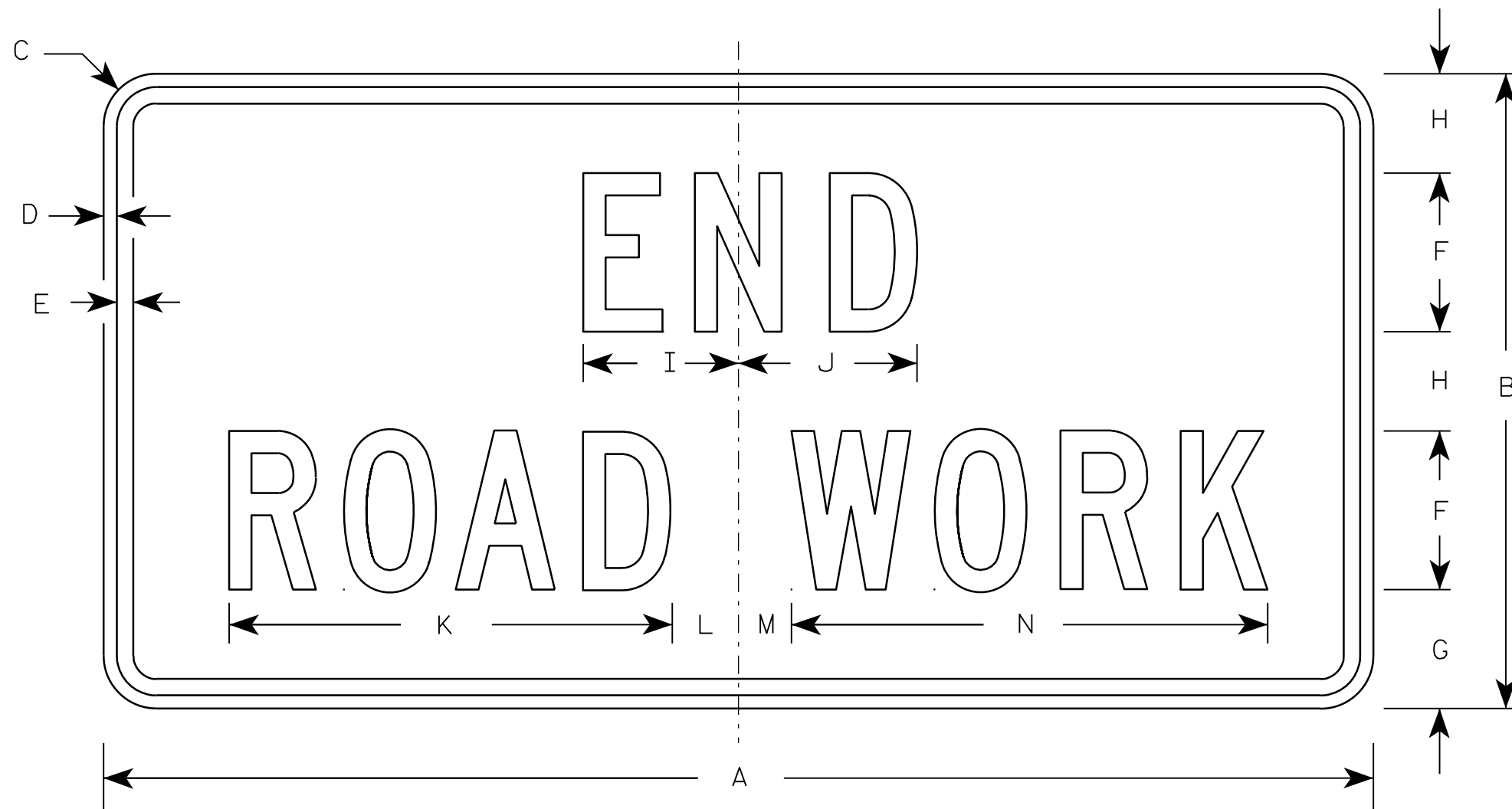
ALUMINUM EXTRUSIONS FOR
TYPE I SIGNS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
 For State Traffic Engineer
 DATE 1/07/20 PLATE NO. A5-2.10

NOTES

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



G20-2A

7

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Metric equivalent for this sign is:

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

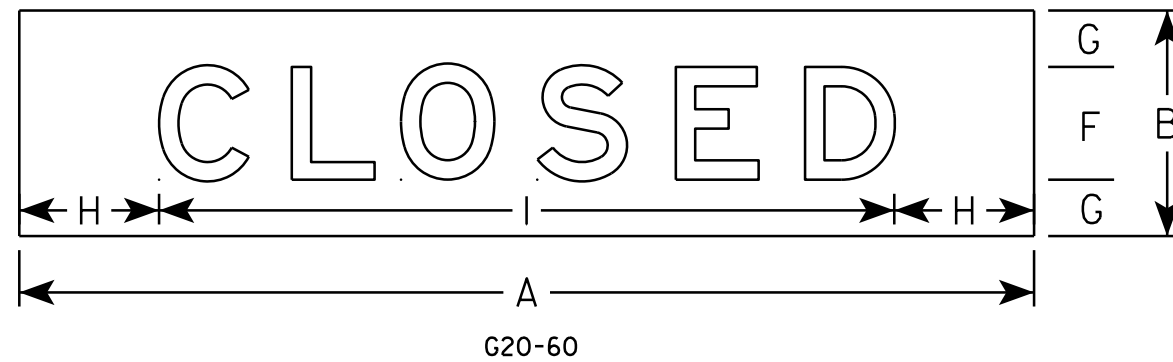
| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. | Area sq. m. |
|------|----|----|-------|-----|-----|---|-------|-------|-------|-------|--------|-------|-------|--------|---|---|---|---|---|---|---|---|---|---|---|---|--------------|-------------|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

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

| | | | | |
|-------------|------|---------|-----------|----------|
| PROJECT NO: | HWY: | COUNTY: | SHEET NO: | E |
|-------------|------|---------|-----------|----------|

NOTES

1. Sign is Type II- Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - E
4. Material shall be .040 aluminum



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 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 108 | 24 | | | | 12 | 6 | 14 7/8 | 78 1/4 | | | | | | | | | | | | | | | | | | 18.0 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

STANDARD SIGN
G20-60

WISCONSIN DEPT OF TRANSPORTATION

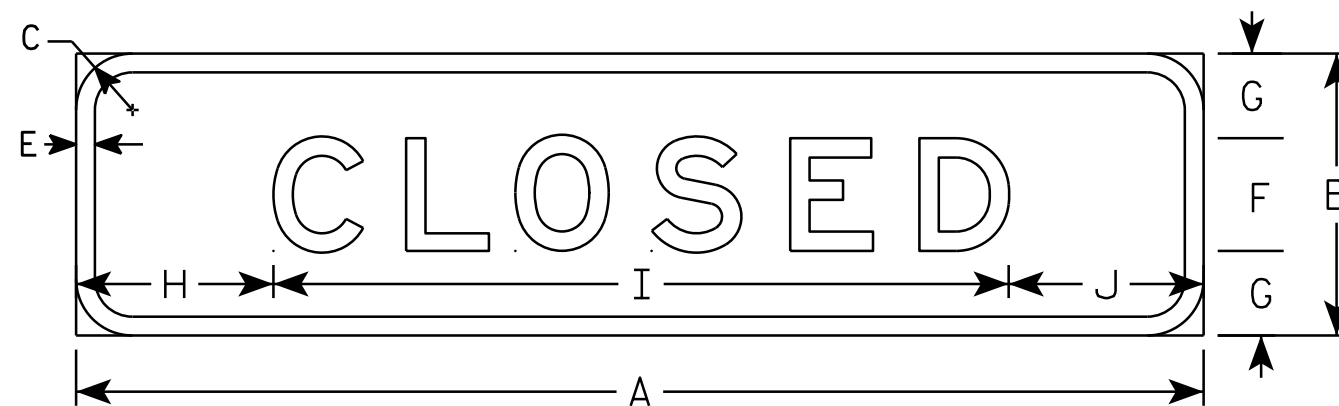
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/13/15 PLATE NO. G20-60.1

| | | | |
|-------------|------|---------|--------------------|
| PROJECT NO: | HWY: | COUNTY: | SHEET NO: E |
|-------------|------|---------|--------------------|

NOTES

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



G20-61

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 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 120 | 30 | 6 | | 2 | 12 | 9 | 21 | 78 1/4 | 20 3/4 | | | | | | | | | | | | | | | | | 25.0 |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

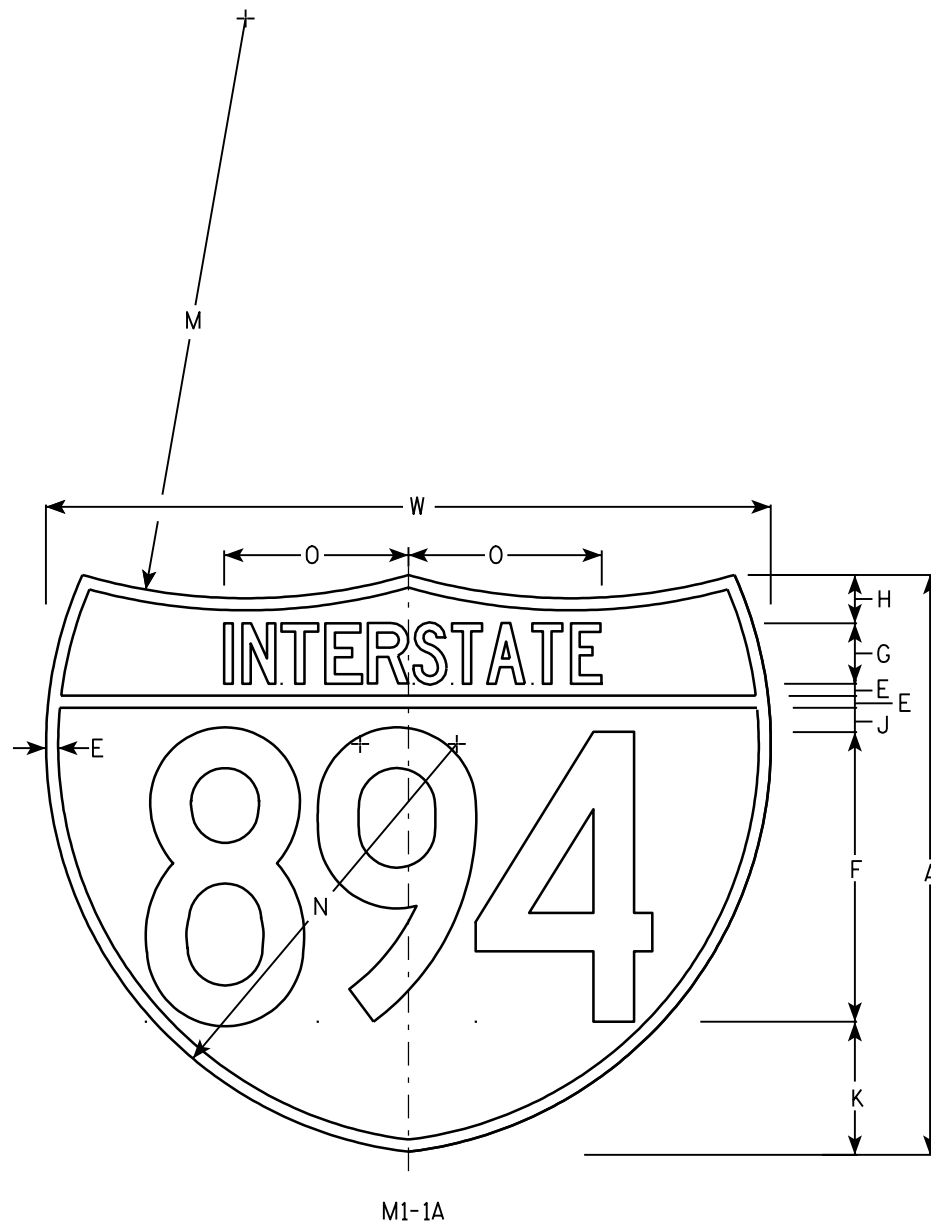
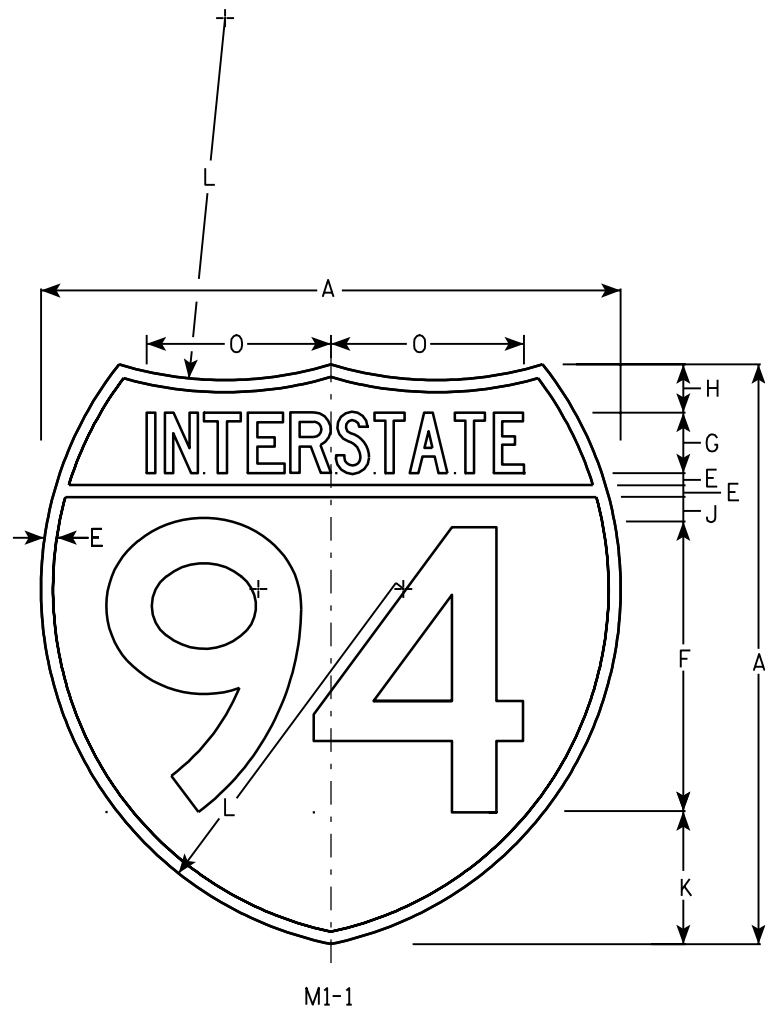
STANDARD SIGN
G20-61

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/07/15 PLATE NO. G20-61.1

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



NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Top Red - Bottom Blue (See Note 6)
Message - White - See Note 6
3. Message Series - See note 5
4. Substitute appropriate numerals & adjust spacing as per plate A10-1.
5. M1-1 - Numerals - D
Interstate - C
M1-1A - All copy - C
6. Permanent Signs
Message - Type H Reflective
Detour or other temporary signs
Background - Reflective
Message - Reflective

7

Metric equivalent for these signs are:

| SIZE | M1-1 | SIZE | M1-1A |
|------|-----------------|------|------------------|
| 1 | | | |
| 2 | 600 mm X 600 mm | 2 | 600 mm X 750 mm |
| 3 | 900 mm X 900 mm | 3 | 900 mm X 1125 mm |
| 4 | 900 mm X 900 mm | 4 | 900 mm X 1125 mm |
| 5 | 900 mm X 900 mm | 5 | 900 mm X 1125 mm |

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | M1-1 Area sq. ft. | M1-1A Area sq. ft. | M1-1 Area m ² | M1-1A Area m ² |
|------|----|---|---|---|-----|----|-------|---|---|-------|-------|--------|----|--------|--------|---|---|---|---|---|---|---|----|---|---|-------------------------|--------------------------|--------------------------------|---------------------------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 24 | | | | 1/2 | 12 | 2 1/2 | 2 | | 1 | 5 1/2 | 15 | 24 | 17 | 7 7/8 | | | | | | | | 30 | | | 3.13 | 3.91 | .36 | .46 |
| 3 | 36 | | | | 3/4 | 18 | 3 3/4 | 3 | | 1 1/2 | 8 1/4 | 22 1/2 | 36 | 25 1/2 | 11 3/4 | | | | | | | | 45 | | | 7.03 | 8.79 | .81 | 1.05 |
| 4 | 36 | | | | 3/4 | 18 | 3 3/4 | 3 | | 1 1/2 | 8 1/4 | 22 1/2 | 36 | 25 1/2 | 11 3/4 | | | | | | | | 45 | | | 7.03 | 8.79 | .81 | 1.05 |
| 5 | 36 | | | | 3/4 | 18 | 3 3/4 | 3 | | 1 1/2 | 8 1/4 | 22 1/2 | 36 | 25 1/2 | 11 3/4 | | | | | | | | 45 | | | 7.03 | 8.79 | .81 | 1.05 |

INTERSTATE ROUTE MARKER
M1-1 FOR ASSEMBLIES

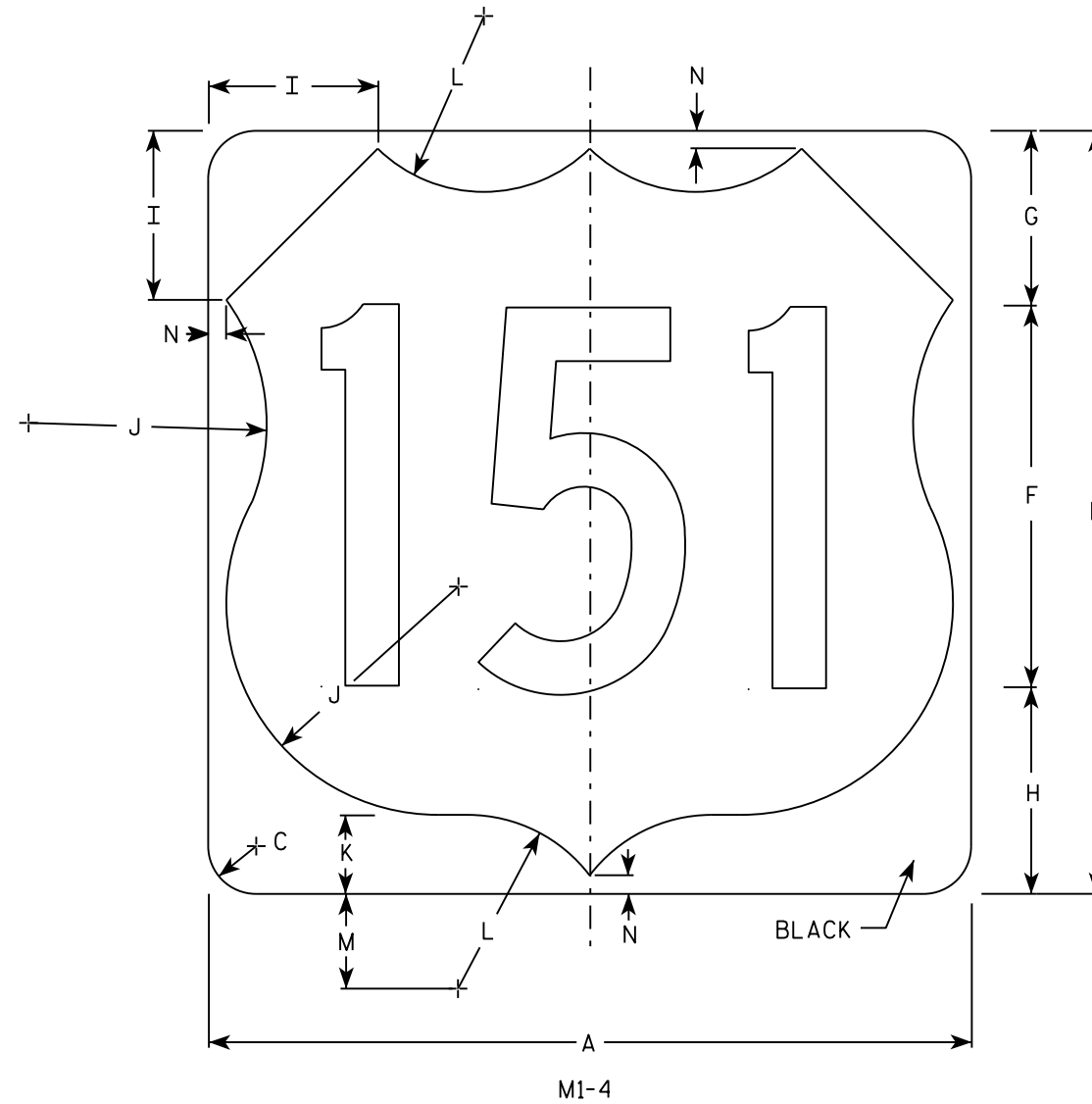
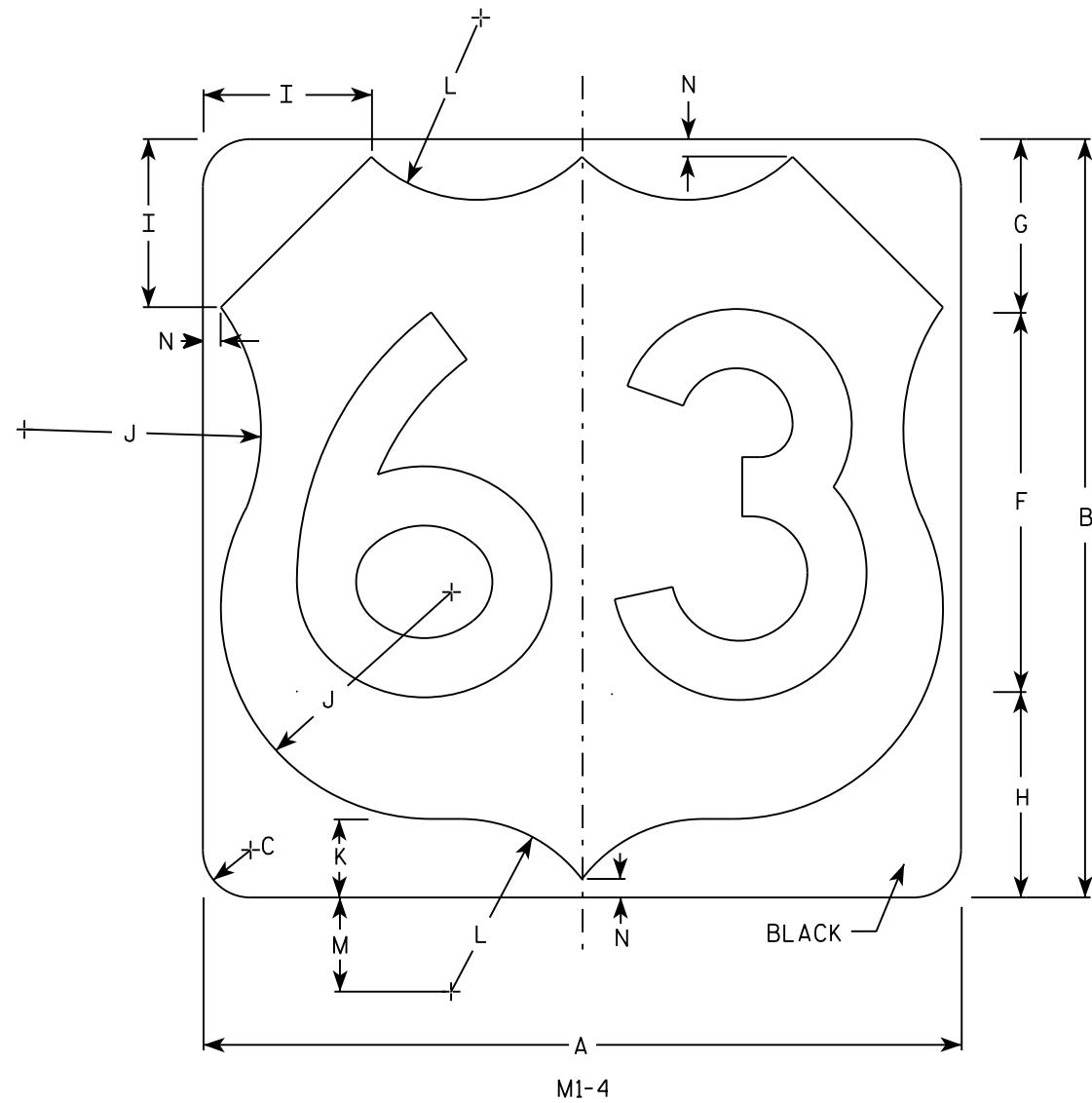
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*
for State Traffic Engineer

DATE 08/23/05 PLATE NO. M1-1.8

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 | 24 | 1 1/2 | | | 12 | 5 1/2 | 6 1/2 | 5 | 7 1/2 | 2 1/2 | 5 1/2 | 3 | 1/2 | | | | | | | | | | | | | 4.0 |
| 3 | 36 | 36 | 2 1/4 | | | 18 | 8 1/4 | 9 1/4 | 7 1/4 | 11 1/4 | 3 3/4 | 8 1/4 | 4 1/2 | 3/4 | | | | | | | | | | | | | 9.0 |
| 4 | 36 | 36 | 2 1/4 | | | 18 | 8 1/4 | 9 1/4 | 7 1/4 | 11 1/4 | 3 3/4 | 8 1/4 | 4 1/2 | 3/4 | | | | | | | | | | | | | 9.0 |
| 5 | 36 | 36 | 2 1/4 | | | 18 | 8 1/4 | 9 1/4 | 7 1/4 | 11 1/4 | 3 3/4 | 8 1/4 | 4 1/2 | 3/4 | | | | | | | | | | | | | 9.0 |

USH MARKER
M1-4 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

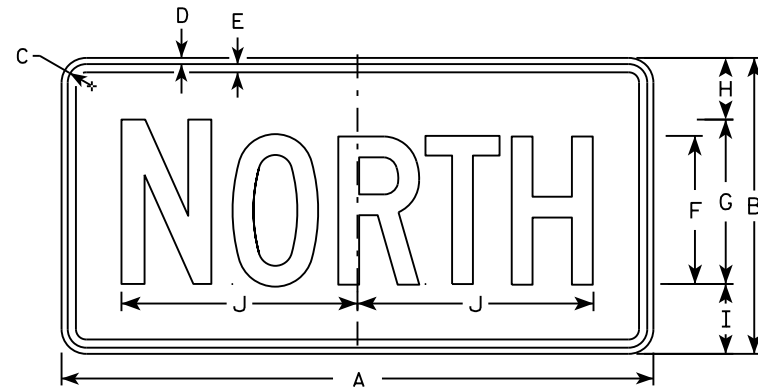
APPROVED *Matthew R Rauch*
For State Traffic Engineer

DATE 3/16/18 PLATE NO. M1-4.10

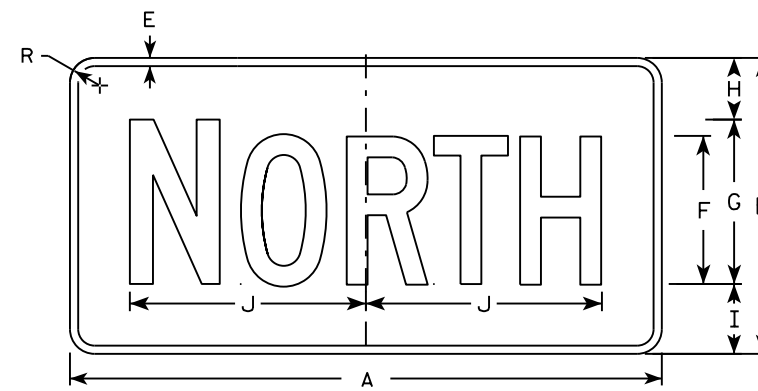
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ **E**

NOTES

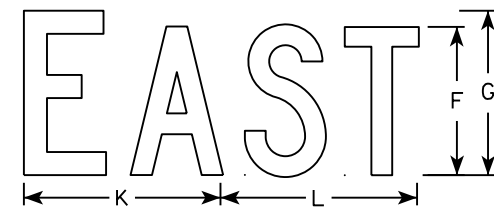
- All Signs Type II - Type H
- Color:
 - Background - See note 5
 - Message - See note 5
- Message Series - C
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M3-1 thru M3-4 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.



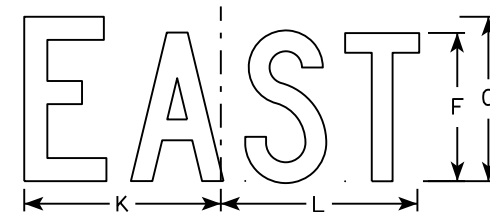
M3-1
MM3-1
MP3-1



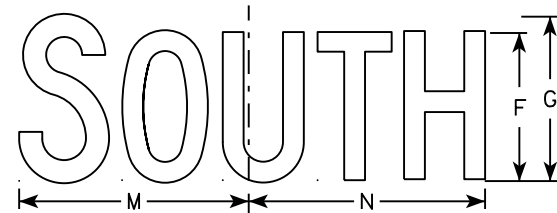
MB3-1
MK3-1
MN3-1



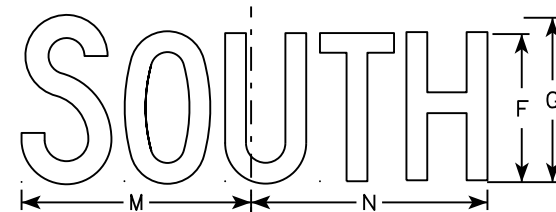
M3-2
MM3-2
MP3-2



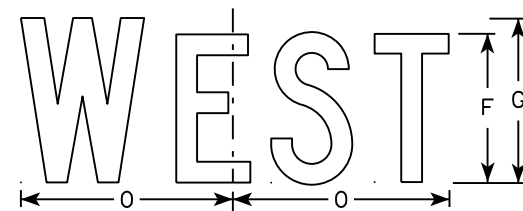
MB3-2
MK3-2
MN3-2



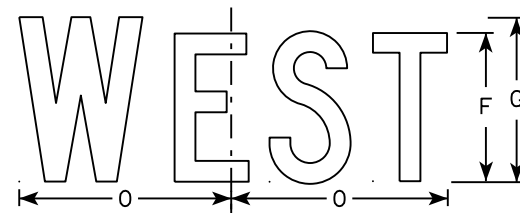
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

7

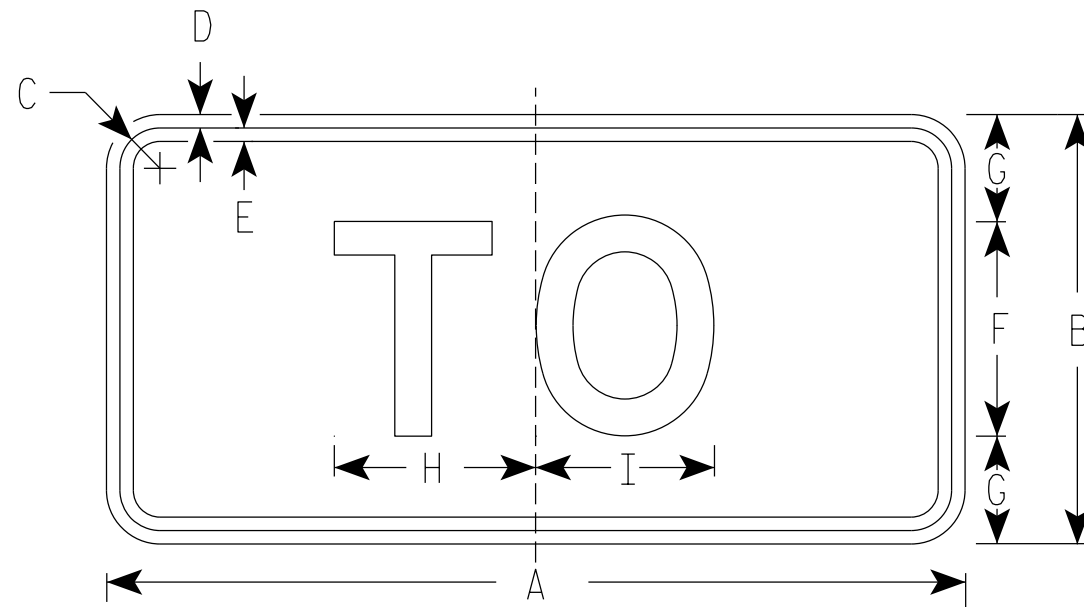
| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|----|-------|-----|-----|---|----|-------|-------|--------|-------|--------|--------|--------|-------|---|---|-------|---|---|---|---|---|---|---|---|--------------|
| 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

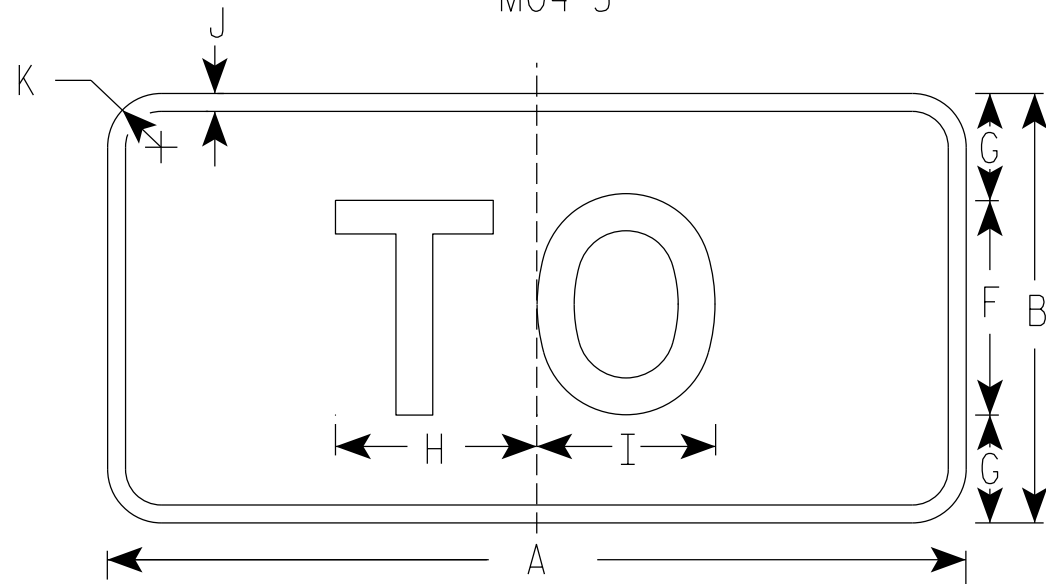
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



M4-5
MM4-5
MP4-5
M04-5



MB4-5
MK4-5
MN4-5

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - See note 5
Message - See note 5
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-5 Background - White
Message - Black
MB4-5 Background - Blue
Message - White
MK4-5 Background - Green
Message - White
MM4-5 Background - White
Message - Green
MN4-5 Background - Brown
Message - White
MP4-5 Background - White
Message - Blue
M04-5 Background - Orange Type F Reflective
Message - Black

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 | 12 | 1 1/8 | 3/8 | 3/8 | 6 | 3 | 5 3/8 | 5 1/4 | 1/2 | 1 1/2 | | | | | | | | | | | | | | | | 2.00 |
| 3 | 36 | 18 | 1 3/8 | 3/8 | 1/2 | 9 | 4 1/2 | 8 1/4 | 8 3/8 | 1/2 | 1 1/2 | | | | | | | | | | | | | | | | 4.5 |
| 4 | 36 | 18 | 1 3/8 | 3/8 | 1/2 | 9 | 4 1/2 | 8 1/4 | 8 3/8 | 1/2 | 1 1/2 | | | | | | | | | | | | | | | | 4.5 |
| 5 | 36 | 18 | 1 3/8 | 3/8 | 1/2 | 9 | 4 1/2 | 8 1/4 | 8 3/8 | 1/2 | 1 1/2 | | | | | | | | | | | | | | | | 4.5 |

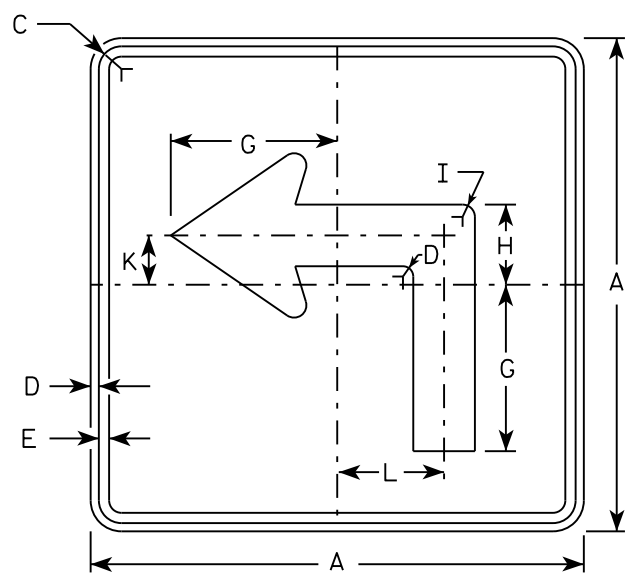
STANDARD SIGN
M4-5

WISCONSIN DEPT OF TRANSPORTATION

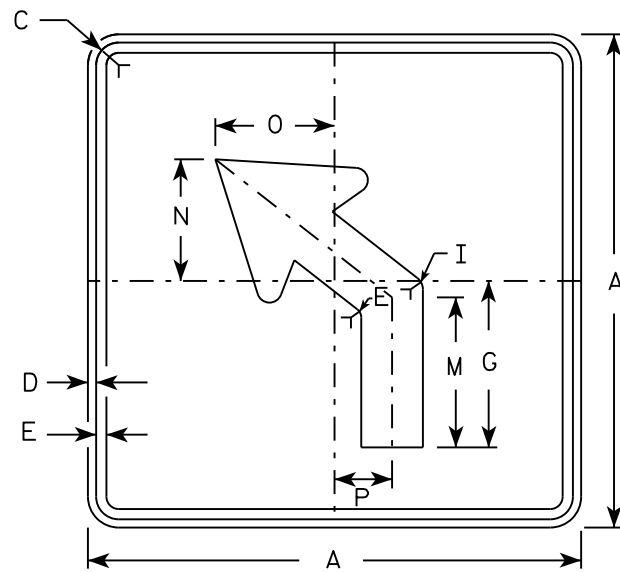
APPROVED *Matthew R. Rauch*
State Traffic Engineer

DATE 03/7/19 PLATE NO. M4-5.9

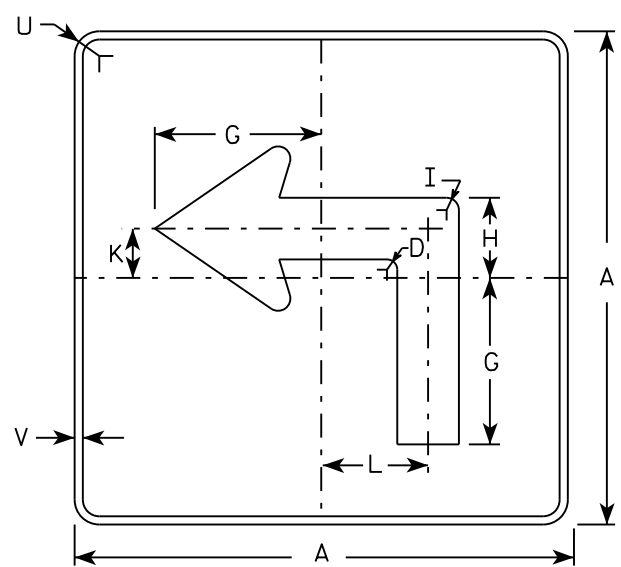
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**



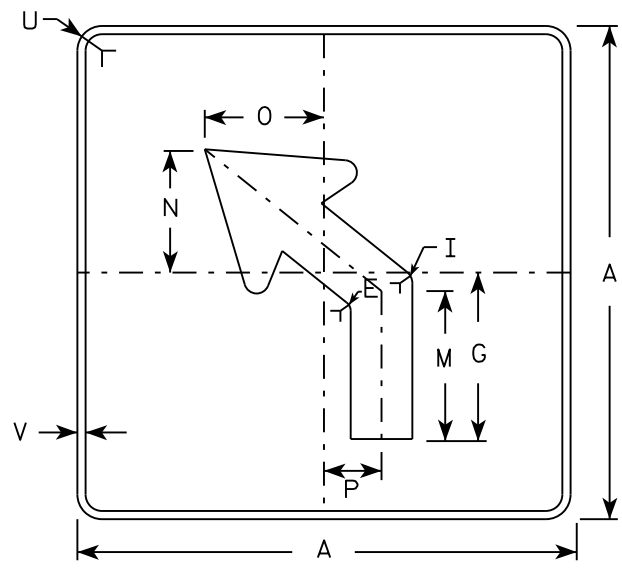
M5-1L
MM5-1L
M05-1L
MP5-1L



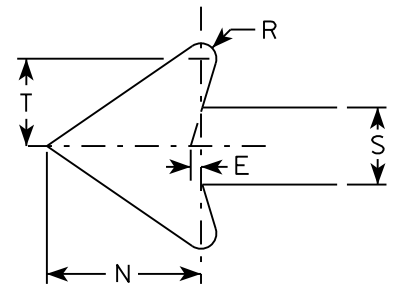
M5-2L
MM5-2L
M05-2L
MP5-2L



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.

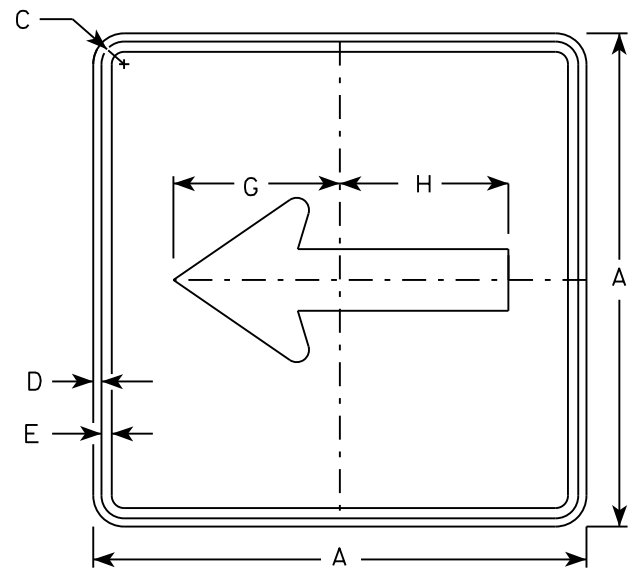
| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|---|-------|-----|-----|---|--------|-------|-----|---|-------|-------|-------|-------|-------|-------|---|-----|-------|-------|-------|-----|---|---|---|---|--------------|
| 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

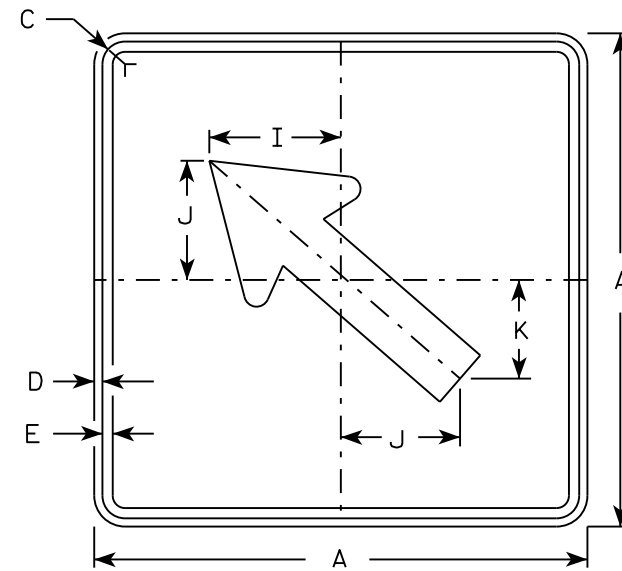
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

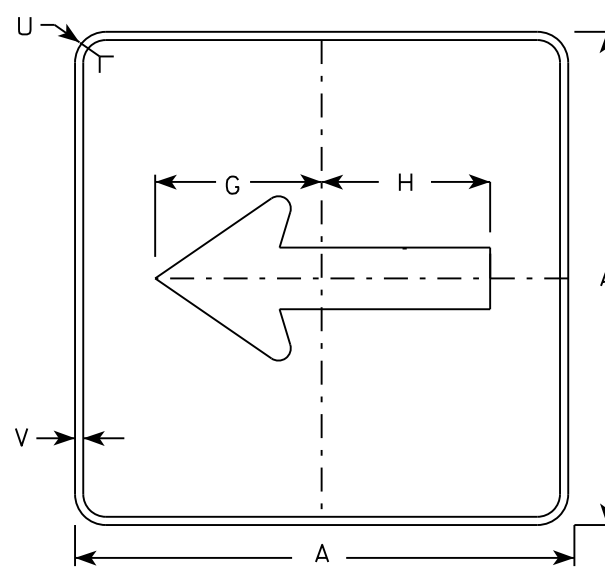
DATE 10/15/15 PLATE NO. M5-1.13



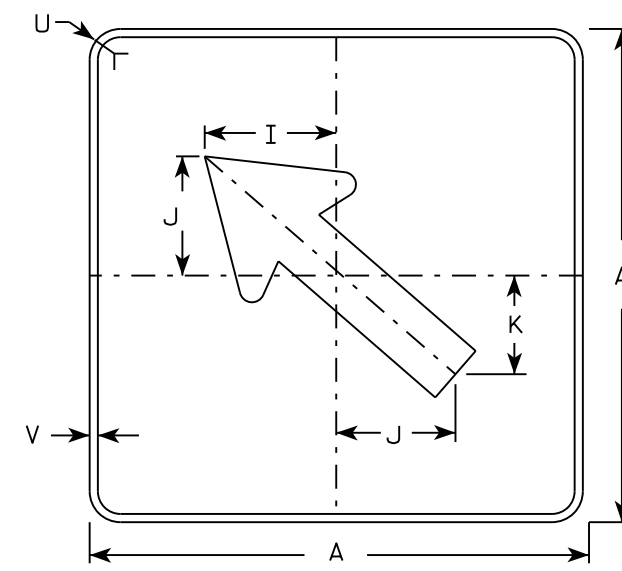
M6-1
MM6-1
M06-1
MP6-1



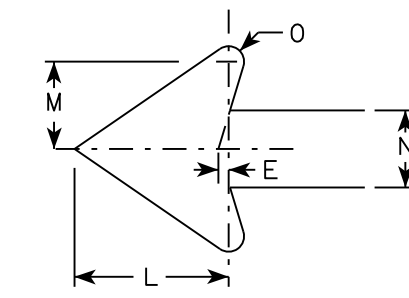
M6-2
MM6-2
M06-2
MP6-2



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

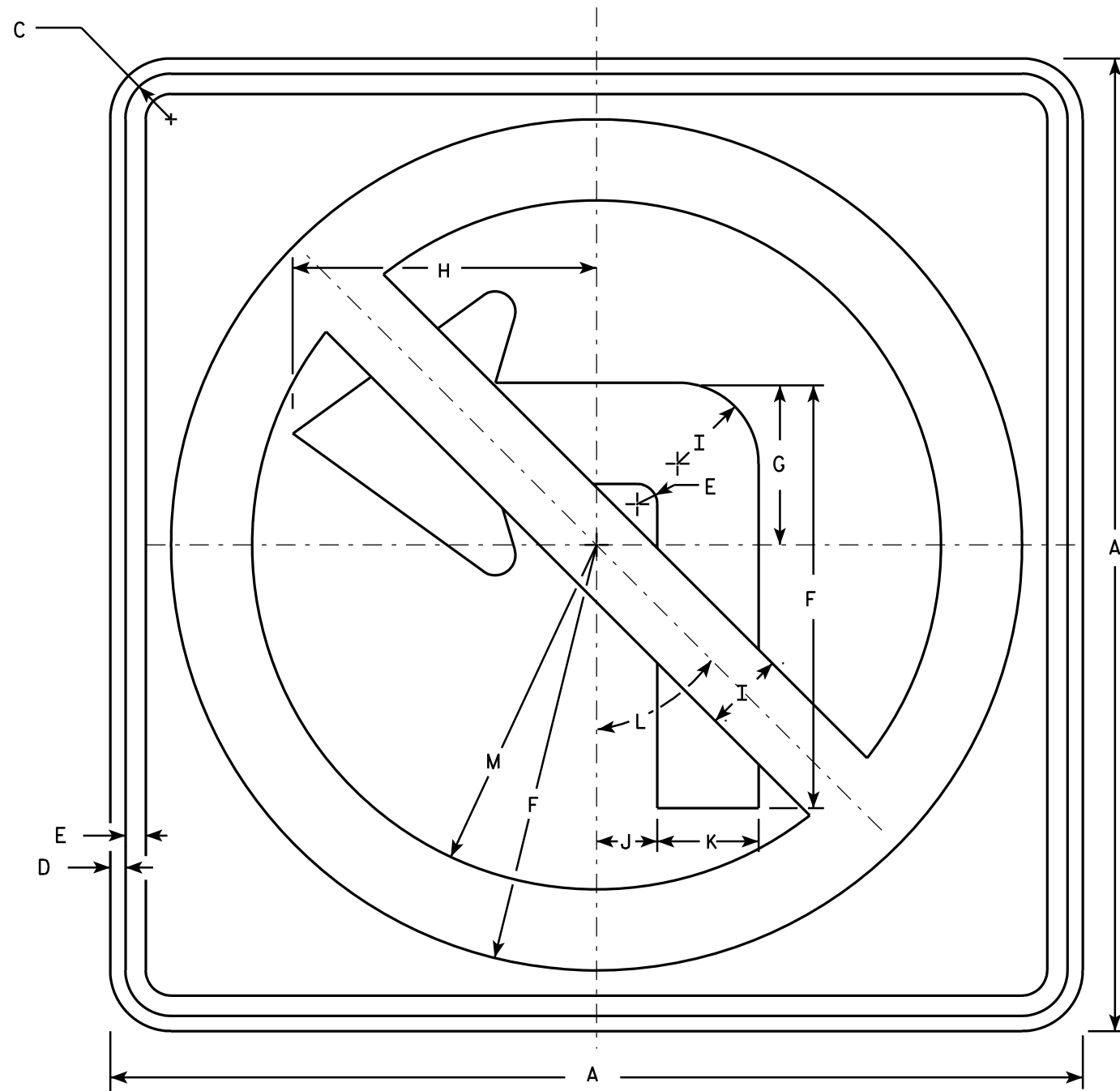
| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|---|-------|-----|-----|---|--------|--------|-------|-------|-------|-------|-------|-------|-----|---|---|---|---|---|-------|-----|---|---|---|---|--------------|
| 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

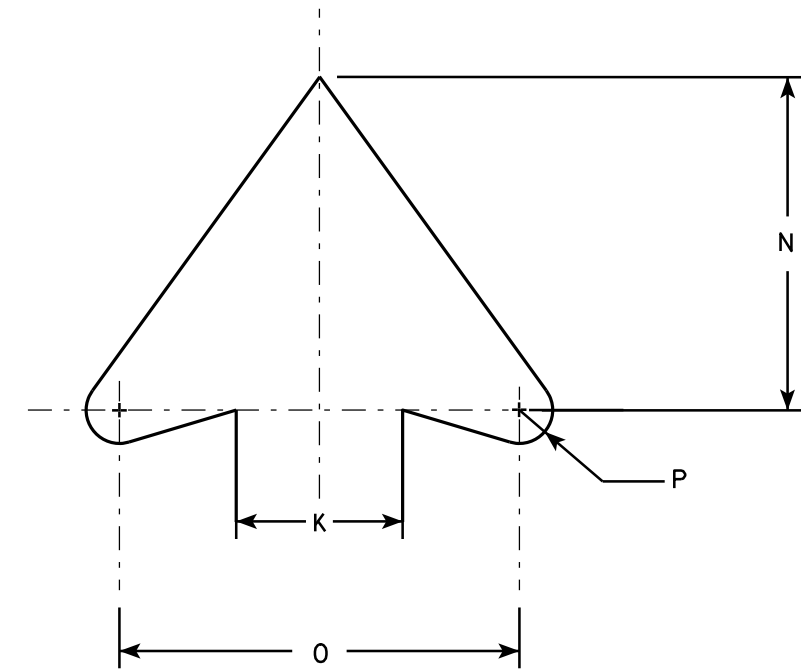
DATE 10/15/15 PLATE NO. M6-1.15



R3-2

NOTES

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



ARROW DETAIL

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

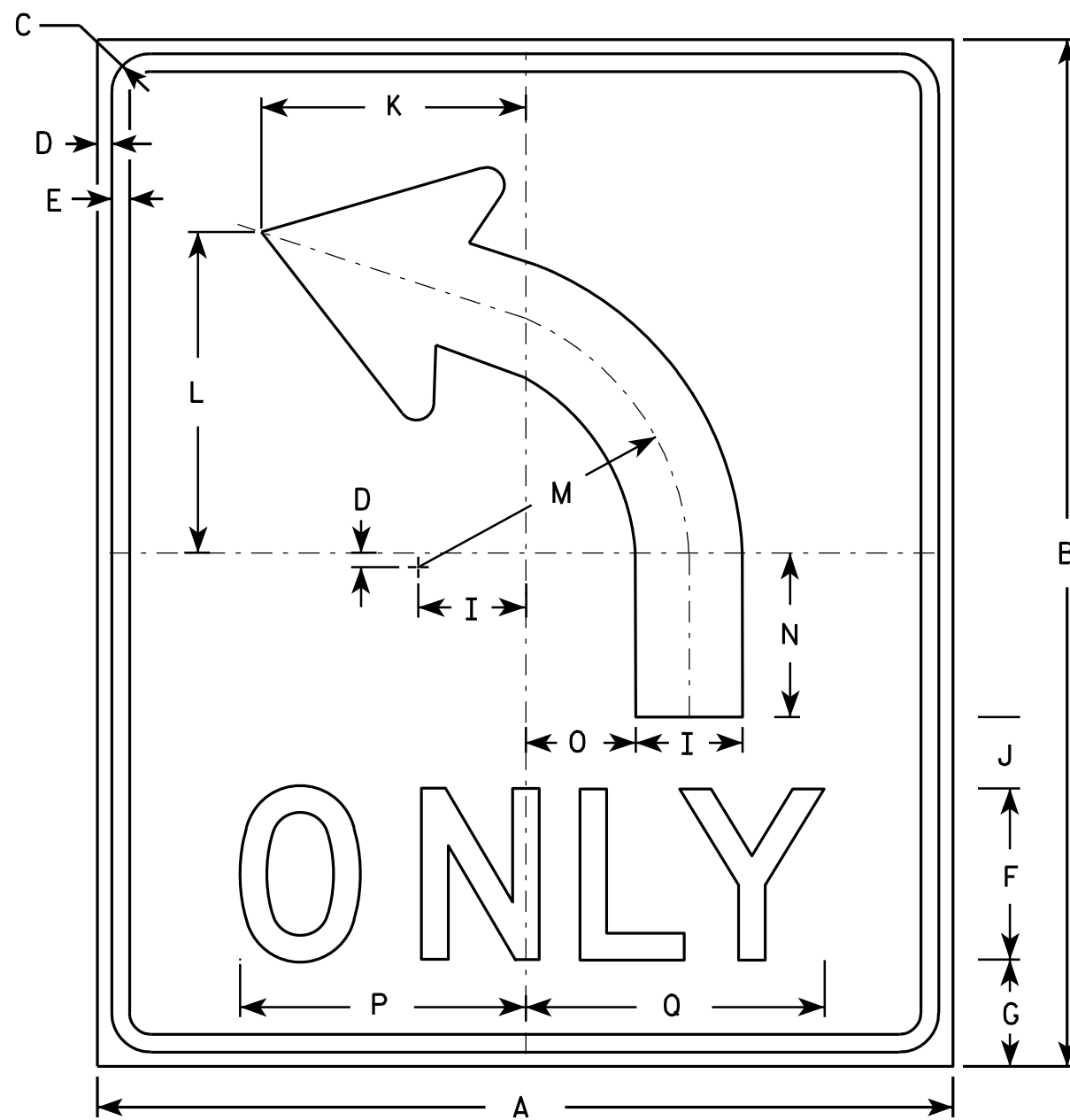
STANDARD SIGN
R3-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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

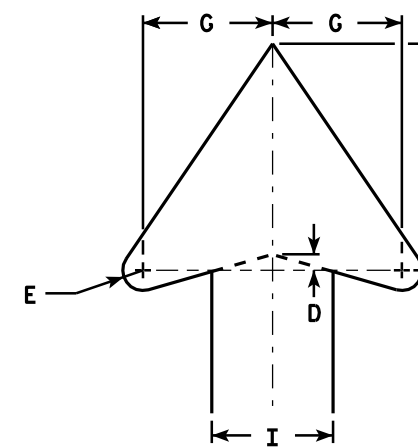
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**



R3-50L

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. R3-50R is the same as R3-50L except curved portion of arrow points right.



ARROW DETAIL

7

7

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

STANDARD SIGN
R3-50

WISCONSIN DEPT OF TRANSPORTATION

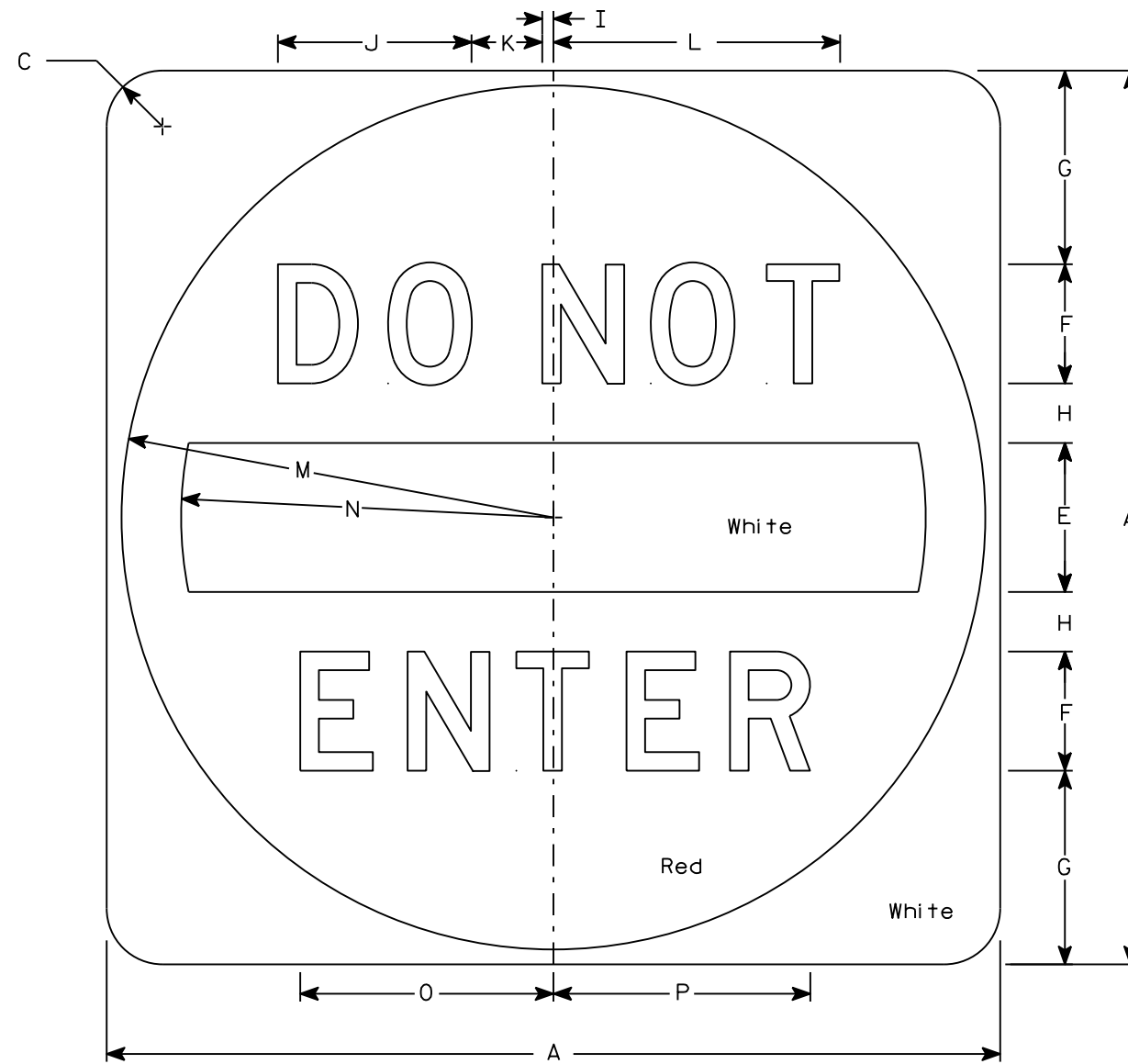
APPROVED *Matthew R. Raush*
for State Traffic Engineer

DATE 3/24/2011 PLATE NO. R3-50.2

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

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - See detail
Message - White
3. Message Series - D



R5-1

7

7

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|---|-------|---|---|---|-------|-------|-----|-------|-------|--------|--------|--------|--------|--------|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 30 | | 1 7/8 | | 5 | 4 | 6 1/2 | 2 | 3/8 | 6 1/2 | 2 3/8 | 9 5/8 | 14 1/2 | 12 1/2 | 8 1/2 | 8 5/8 | | | | | | | | | | | 6.25 |
| 2M | 36 | | 2 1/4 | | 6 | 5 | 7 1/2 | 2 1/2 | 1/2 | 8 1/8 | 3 | 12 1/8 | 17 1/2 | 15 | 10 5/8 | 10 3/4 | | | | | | | | | | | 9.0 |
| 3 | 36 | | 2 1/4 | | 6 | 5 | 7 1/2 | 2 1/2 | 1/2 | 8 1/8 | 3 | 12 1/8 | 17 1/2 | 15 | 10 5/8 | 10 3/4 | | | | | | | | | | | 9.0 |
| 4 | 36 | | 2 1/4 | | 6 | 5 | 7 1/2 | 2 1/2 | 1/2 | 8 1/8 | 3 | 12 1/8 | 17 1/2 | 15 | 10 5/8 | 10 3/4 | | | | | | | | | | | 9.0 |
| 5 | 48 | | 3 | | 8 | 6 | 11 | 3 | 5/8 | 9 3/4 | 3 5/8 | 14 1/2 | 23 1/2 | 20 | 12 3/4 | 12 7/8 | | | | | | | | | | | 16.0 |

STANDARD SIGN
R5-1

WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 3/15/18 PLATE NO. R5-1.16

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



R6-6

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - D except Line 1 is 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 |
|------|----|----|-------|-----|-----|----|-------|-------|--------|--------|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2S | 24 | 30 | 1 1/8 | 3/8 | 1/2 | 6 | 3 1/2 | 2 1/2 | 9 1/8 | 8 1/8 | 8 1/2 | | | | | | | | | | | | | | | |
| 2M | 30 | 36 | 1 3/8 | 1/2 | 5/8 | 8 | 3 1/4 | 2 3/4 | 12 1/4 | 10 1/2 | 11 1/2 | | | | | | | | | | | | | | | |
| 3 | 36 | 48 | 1 3/8 | 1/2 | 5/8 | 10 | 5 1/4 | 3 1/4 | 15 1/4 | 12 3/4 | 13 3/8 | | | | | | | | | | | | | | | |
| 4 | 36 | 48 | 1 3/8 | 1/2 | 5/8 | 10 | 5 1/4 | 3 1/4 | 15 1/4 | 12 3/4 | 13 3/8 | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | |

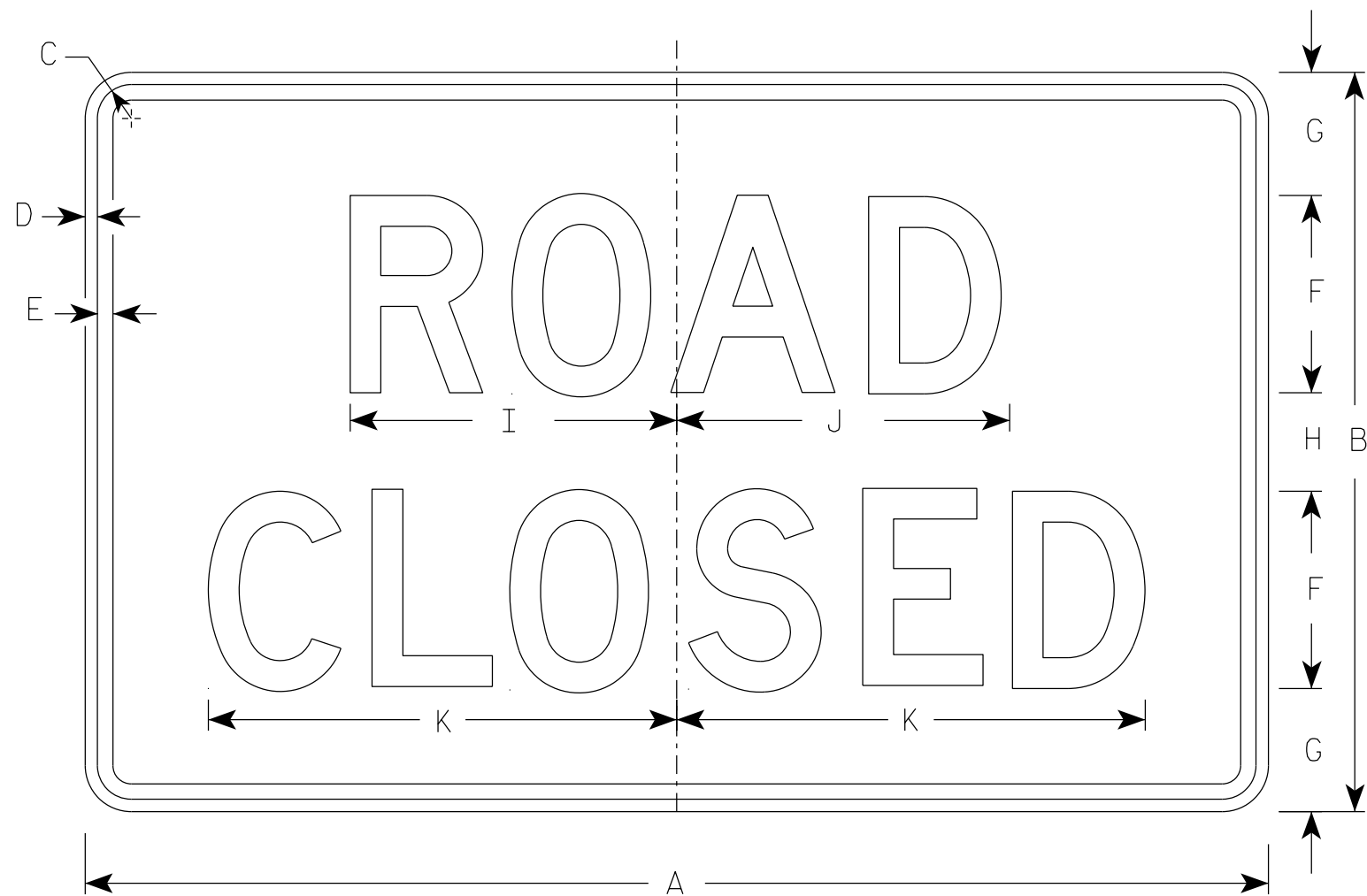
STANDARD SIGN
R6-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 11/2/10 PLATE NO. R6-6.1

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



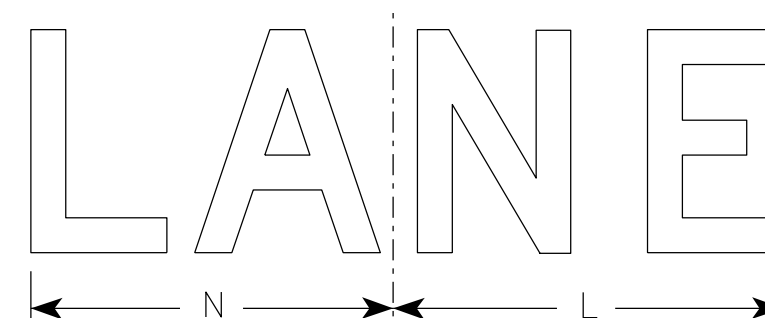
R11-2



R11-2R



R11-2T



R11-2L

NOTES

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

7

7

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

STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

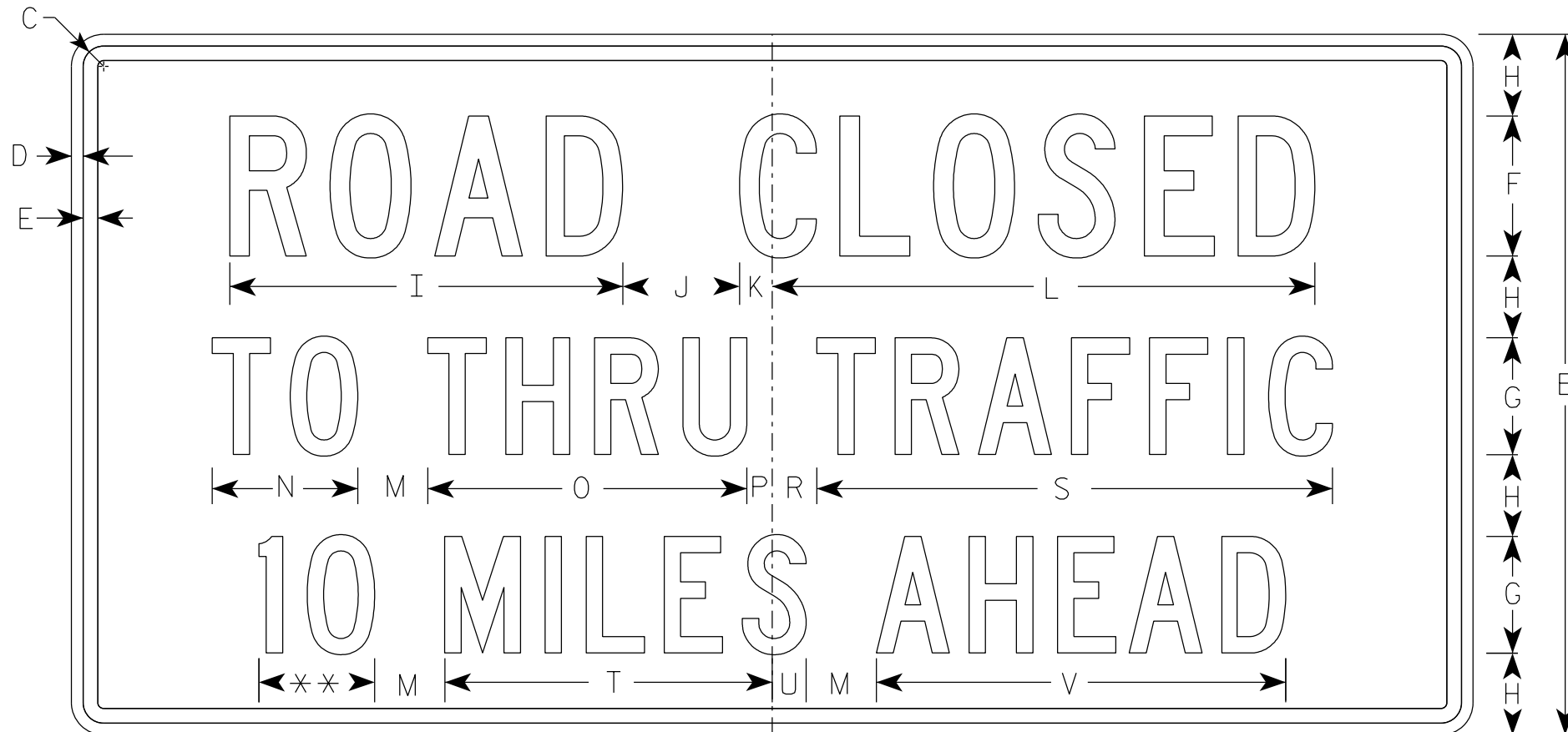
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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

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

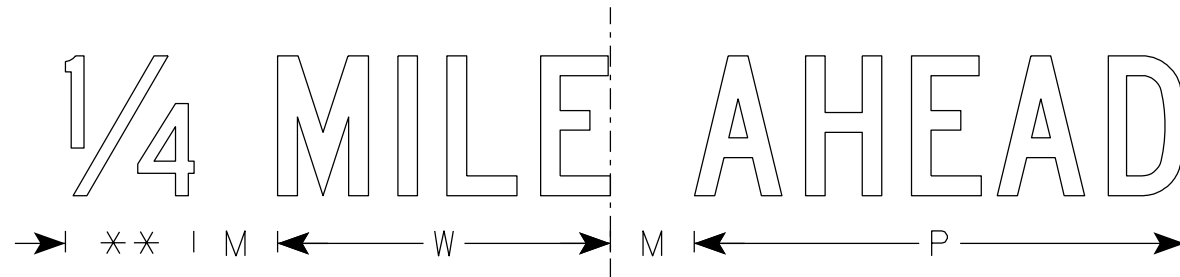
NOTES

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.



R11-3

** 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 | 18 | 1 1/4 | 3/8 | 3/8 | 4 | 3 | 2 | 11 1/4 | 3 | 1 1/8 | 15 3/8 | 2 | 3 3/4 | 8 1/4 | 5/8 | | 1 3/8 | 13 1/4 | 8 3/8 | 7/8 | 10 1/2 | 7 1/8 | | | 4.5 | |
| 2S | 60 | 30 | 1 3/8 | 1/2 | 5/8 | 6 | 5 | 3 1/2 | 16 7/8 | 5 | 1 3/8 | 23 1/4 | 3 | 6 1/4 | 13 5/8 | 1 1/8 | | 1 7/8 | 22 1/8 | 14 | 1 1/2 | 17 1/2 | 11 7/8 | | | 12.5 | |
| 2M | 60 | 30 | 1 3/8 | 1/2 | 5/8 | 6 | 5 | 3 1/2 | 16 7/8 | 5 | 1 3/8 | 23 1/4 | 3 | 6 1/4 | 13 5/8 | 1 1/8 | | 1 7/8 | 22 1/8 | 14 | 1 1/2 | 17 1/2 | 11 7/8 | | | 12.5 | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

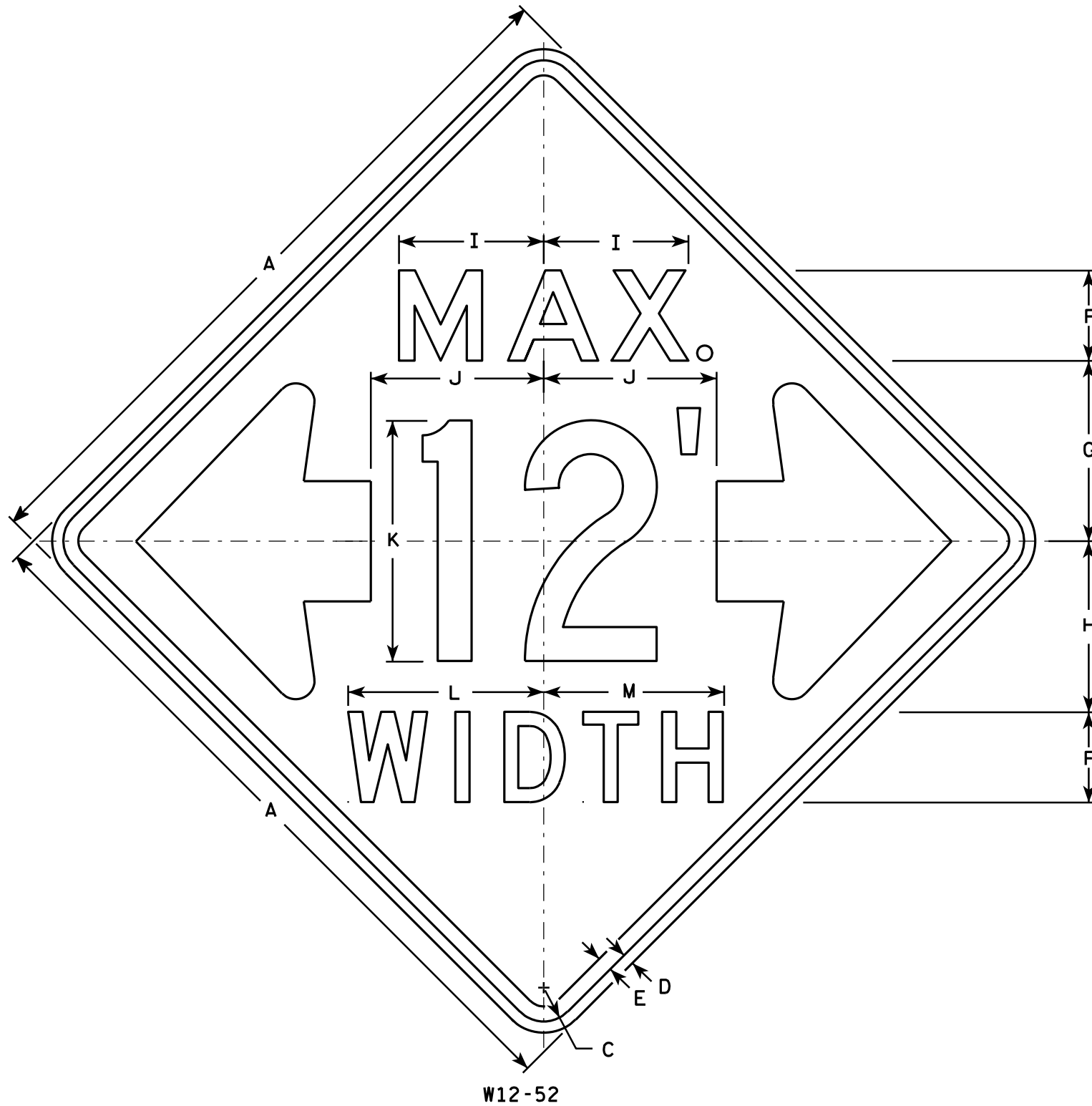
STANDARD SIGN
R11-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/14/2021 PLATE NO. R11-3.9

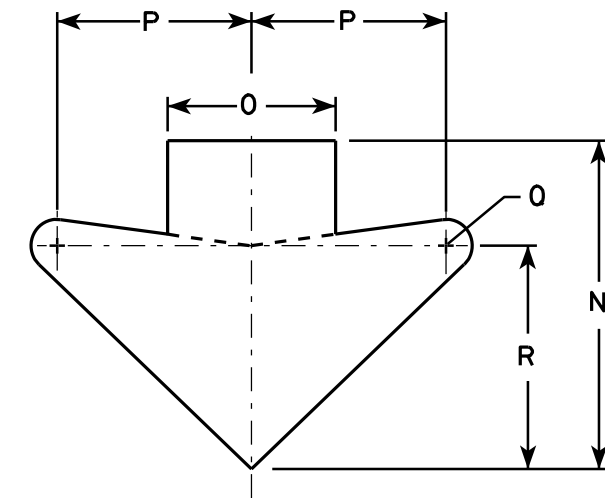
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ **E**



W12-52

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. The top line is series E, the numerals are series C, and the bottom line is series D.
6. Substitute appropriate numerals and adjust spacing as required.



ARROW DETAIL

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

STANDARD SIGN
W12-52

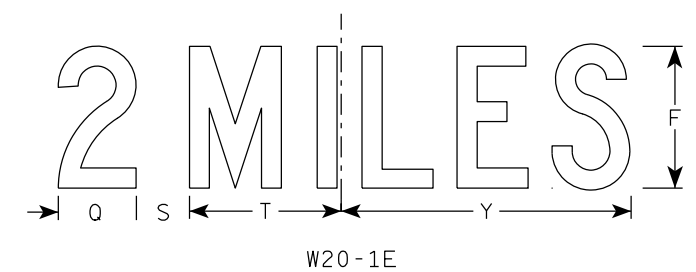
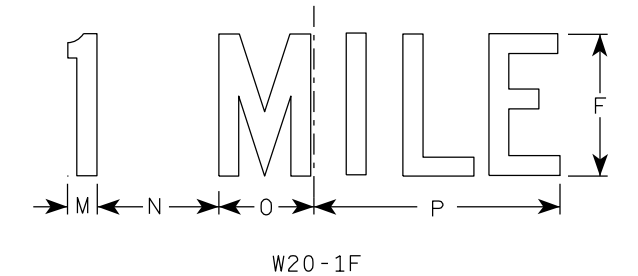
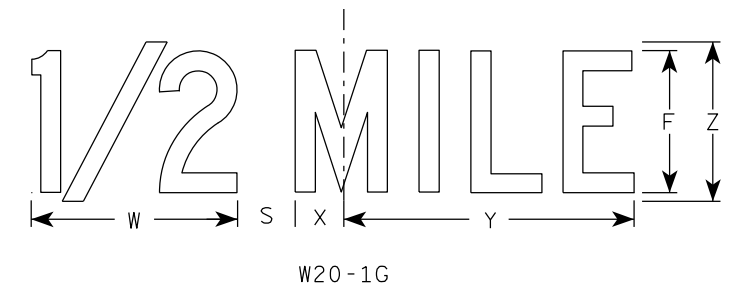
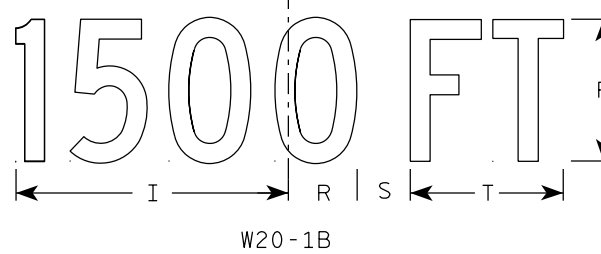
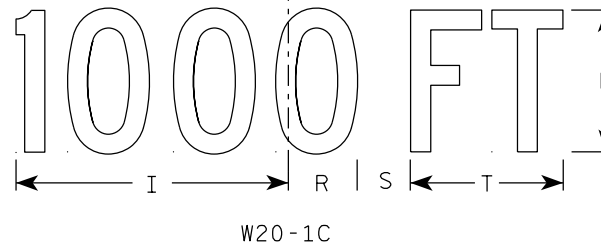
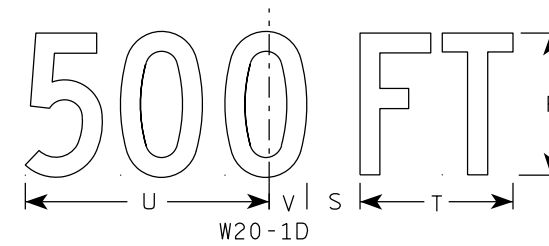
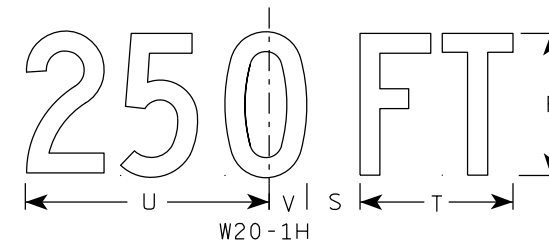
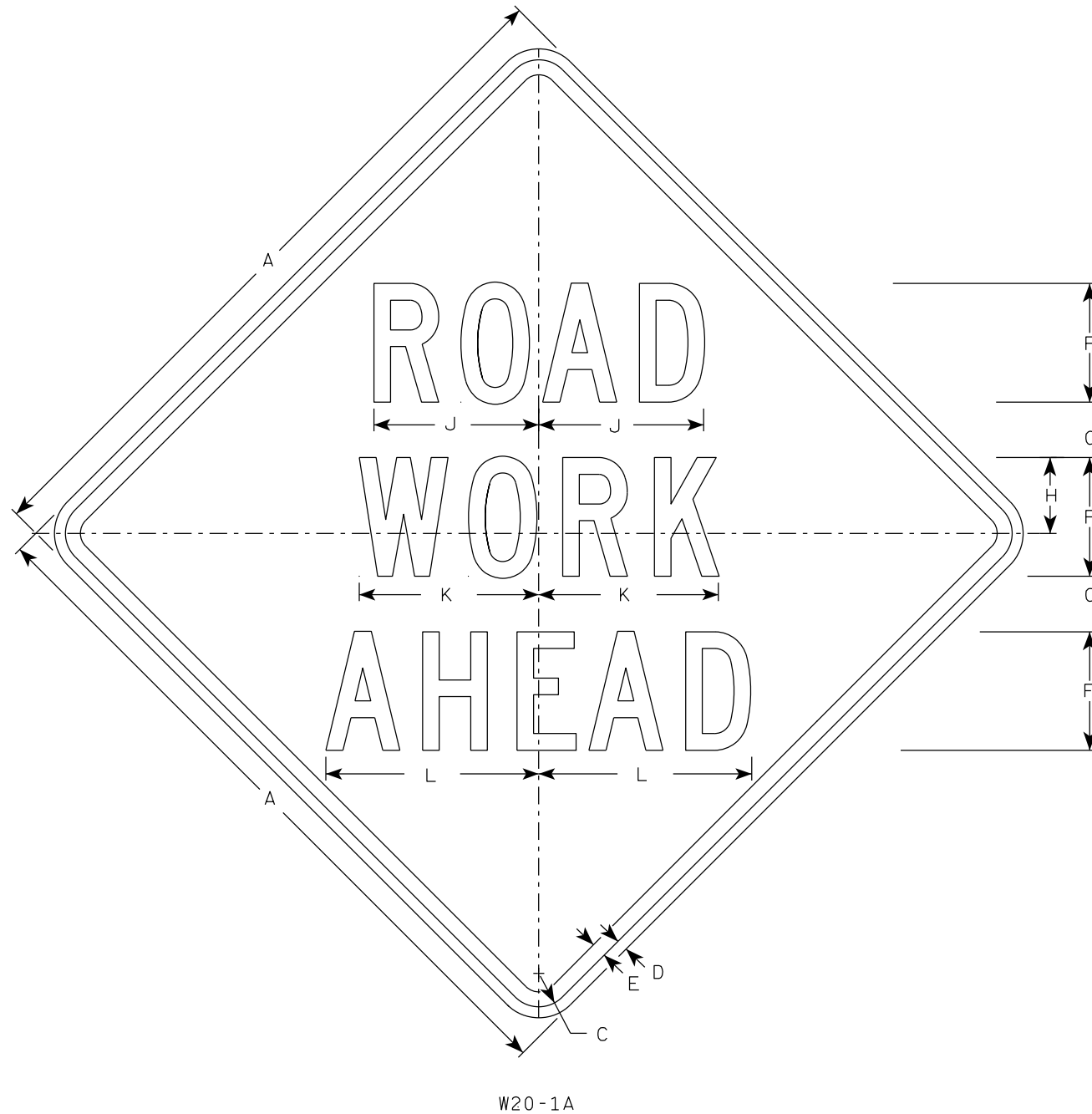
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/16/11 PLATE NO. W12-52.7

NOTES

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



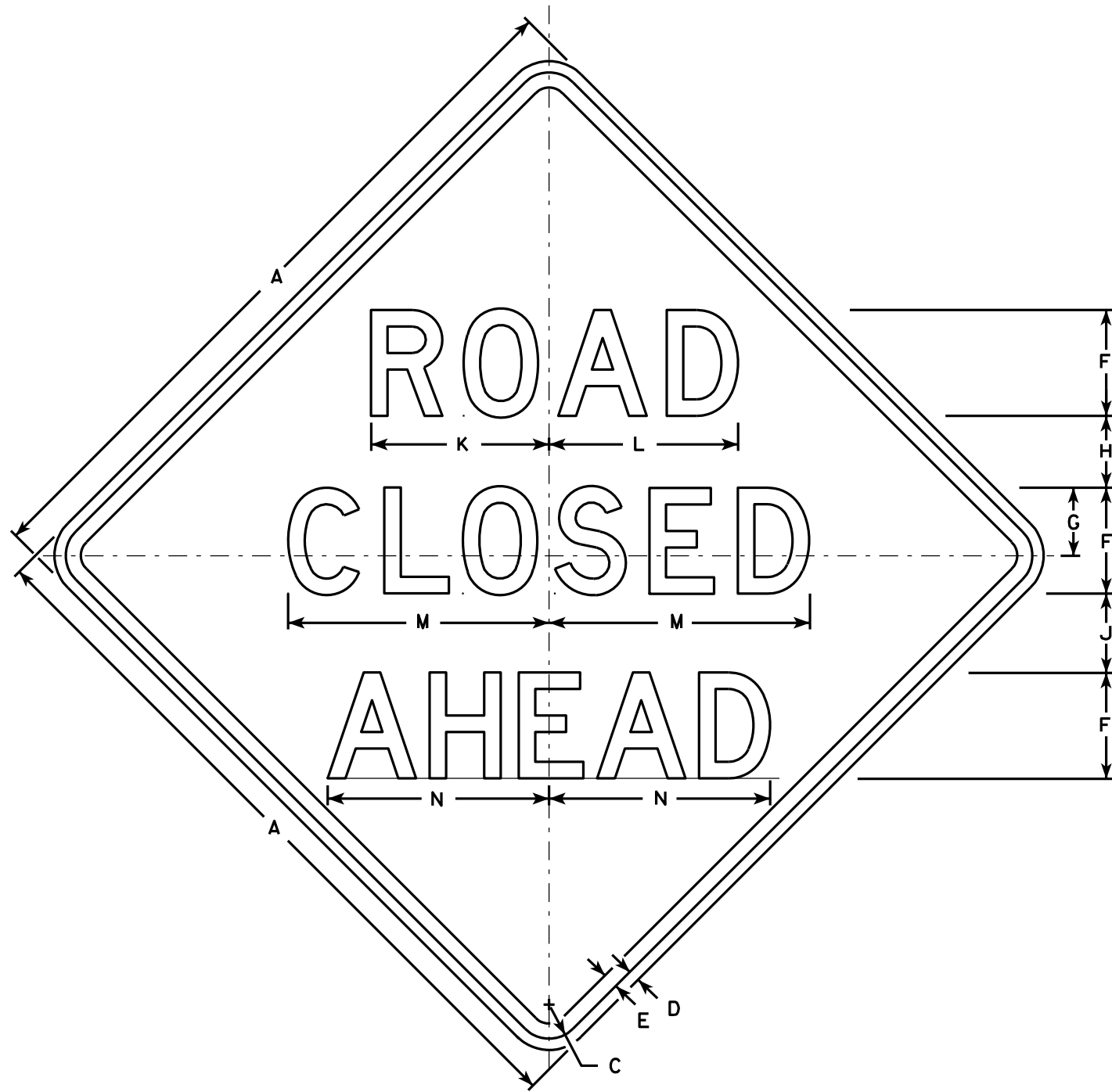
| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|---|-------|-----|-----|---|-------|-------|--------|--------|--------|--------|-------|-------|-------|--------|-------|-------|-------|-------|--------|-------|--------|-------|--------|---|--------------|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

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

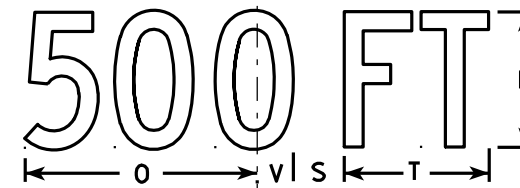
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

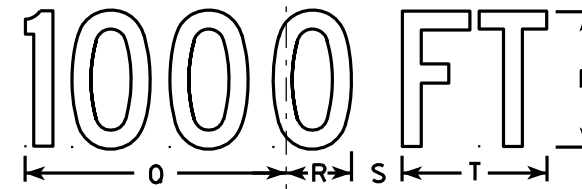
DATE 3/25/2020 PLATE NO. W20-1.11



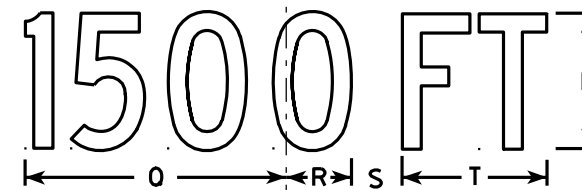
W20-3A



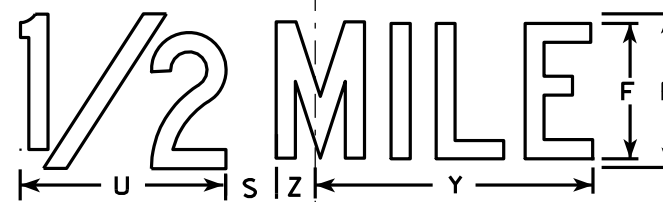
W20-3D



W20-3C



W20-3B



W20-3G



W20-3F

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. Lines 1 and 2 are Series D.
Line 3 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 | 5 | 3 3/8 | 3 1/2 | 1 1/8 | 4 | 8 3/8 | 8 7/8 | 12 1/2 | 11 | 9 | 6 | 10 1/8 | 2 1/2 | 1 7/8 | 5 5/8 | 8 | 1 3/8 | 4 1/2 | 3 1/2 | 10 3/4 | 1 3/4 | 9.0 |
| 2S | 48 | | 2 1/4 | 3/4 | 1 | 7 | 4 1/2 | 4 3/4 | 1 1/2 | 5 1/4 | 11 3/4 | 12 1/2 | 17 1/4 | 14 5/8 | 12 | 8 | 13 1/2 | 3 3/8 | 2 5/8 | 7 1/2 | 10 5/8 | 1 7/8 | 6 | 4 5/8 | 14 3/8 | 2 3/8 | 16.0 |
| 2M | 48 | | 2 1/4 | 3/4 | 1 | 7 | 4 1/2 | 4 3/4 | 1 1/2 | 5 1/4 | 11 3/4 | 12 1/2 | 17 1/4 | 14 5/8 | 12 | 8 | 13 1/2 | 3 3/8 | 2 5/8 | 7 1/2 | 10 5/8 | 1 7/8 | 6 | 4 5/8 | 14 3/8 | 2 3/8 | 16.0 |
| 3 | 48 | | 2 1/4 | 3/4 | 1 | 7 | 4 1/2 | 4 3/4 | 1 1/2 | 5 1/4 | 11 3/4 | 12 1/2 | 17 1/4 | 14 5/8 | 12 | 8 | 13 1/2 | 3 3/8 | 2 5/8 | 7 1/2 | 10 5/8 | 1 7/8 | 6 | 4 5/8 | 14 3/8 | 2 3/8 | 16.0 |
| 4 | 48 | | 2 1/4 | 3/4 | 1 | 7 | 4 1/2 | 4 3/4 | 1 1/2 | 5 1/4 | 11 3/4 | 12 1/2 | 17 1/4 | 14 5/8 | 12 | 8 | 13 1/2 | 3 3/8 | 2 5/8 | 7 1/2 | 10 5/8 | 1 7/8 | 6 | 4 5/8 | 14 3/8 | 2 3/8 | 16.0 |
| 5 | 48 | | 2 1/4 | 3/4 | 1 | 7 | 4 1/2 | 4 3/4 | 1 1/2 | 5 1/4 | 11 3/4 | 12 1/2 | 17 1/4 | 14 5/8 | 12 | 8 | 13 1/2 | 3 3/8 | 2 5/8 | 7 1/2 | 10 5/8 | 1 7/8 | 6 | 4 5/8 | 14 3/8 | 2 3/8 | 16.0 |

STANDARD SIGN
W20-3A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

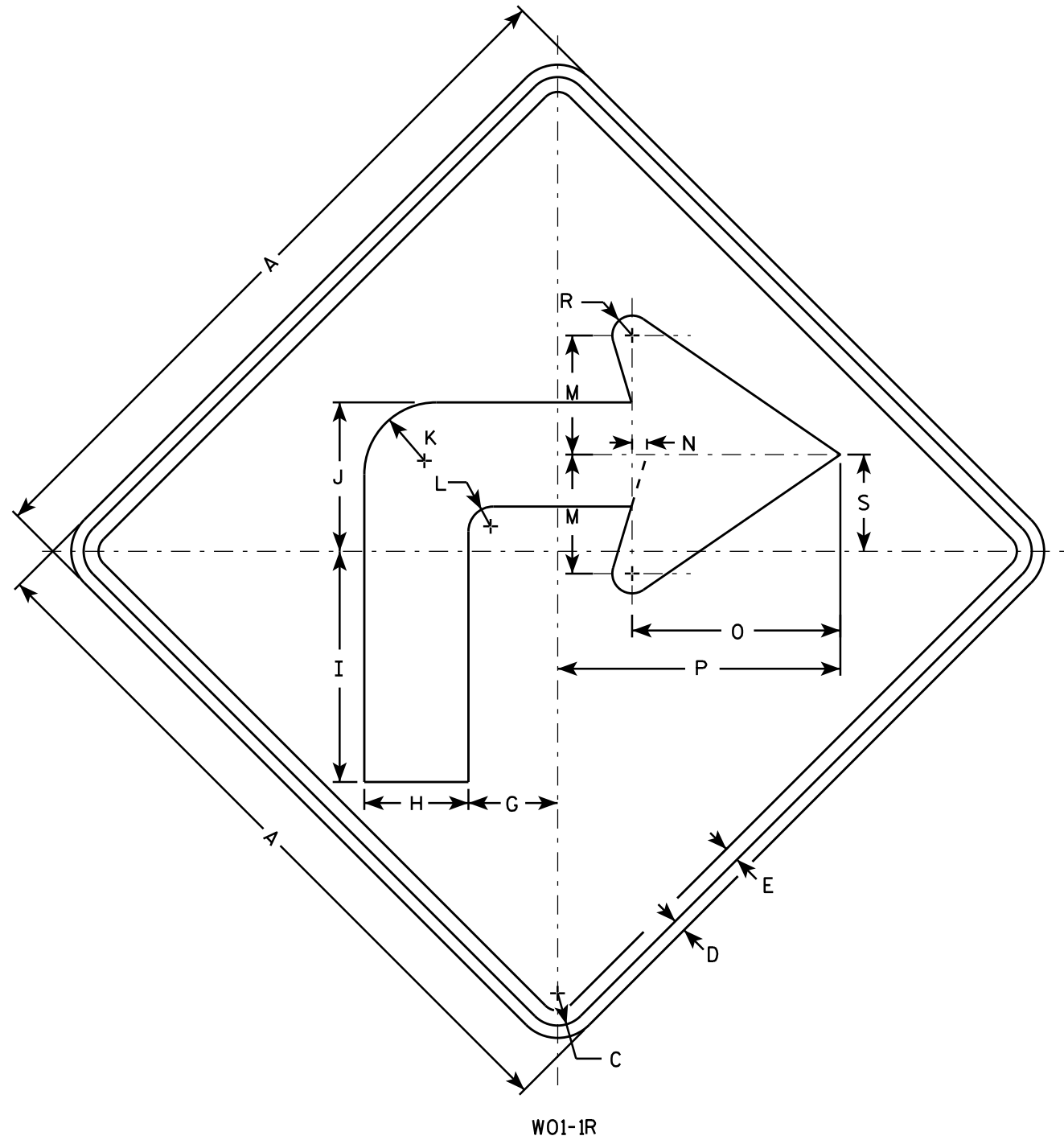
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-3.7

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

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W01-1L is the same as W01-1R except the arrow is reversed along the vertical centerline.



W01-1R

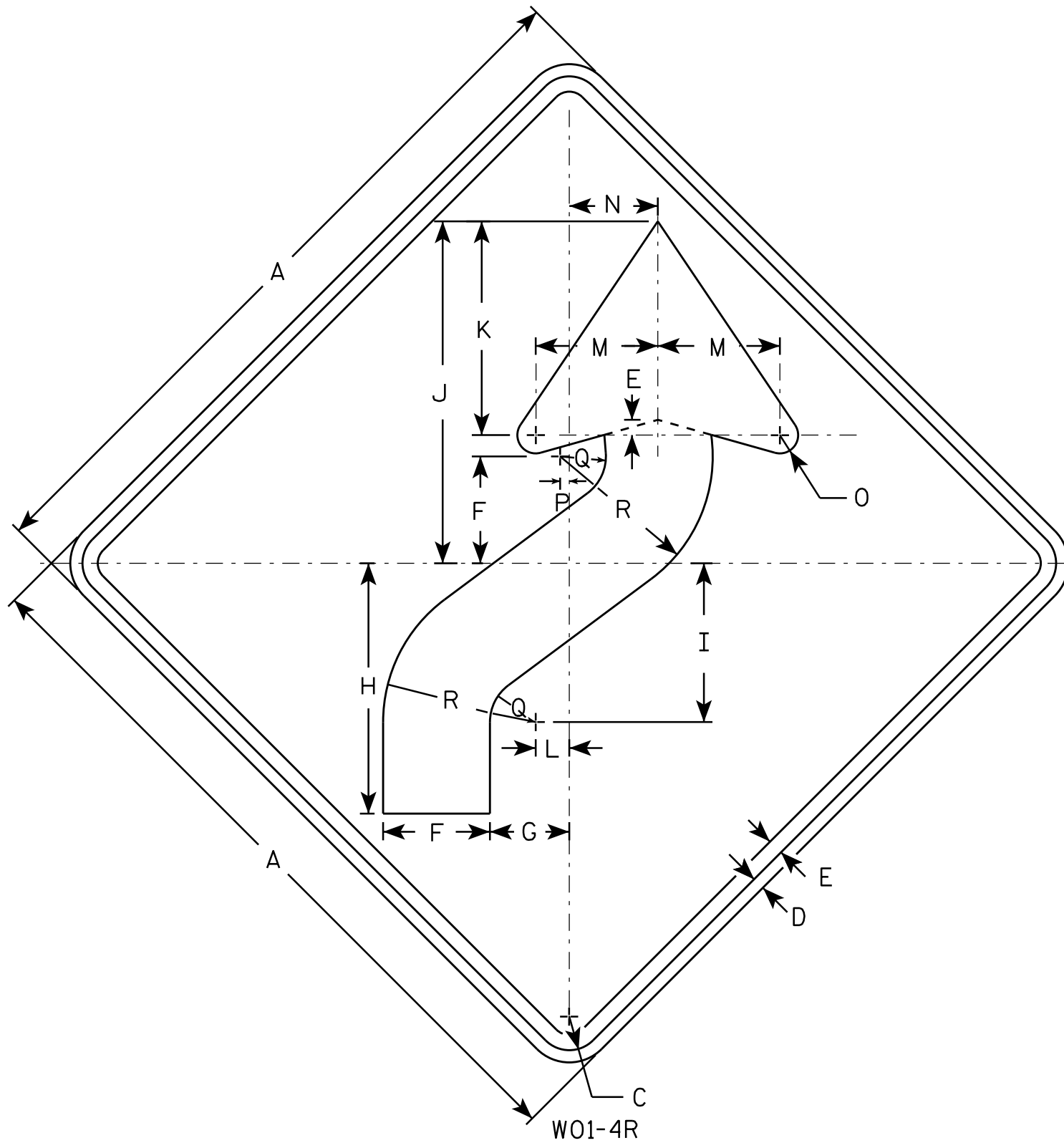
| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|---|-------|-----|-----|---|-------|-------|--------|-------|-------|-------|---|-----|--------|--------|---|-------|-------|---|---|---|---|---|---|---|-----------------|
| 1 | 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 |
| 2S | 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 |
| 2M | 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 |
| 3 | 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 |
| 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
W01-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/18/13 PLATE NO. W01-1.1



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W01-4L is the same as W01-4R except the arrow is reversed along the vertical centerline.

7

7

W01-4R

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|---|-------|-----|-----|-------|-------|--------|--------|--------|--------|-------|---|-------|-------|-----|-------|-------|---|---|---|---|---|---|---|---|--------------|
| 1 | 36 | | 1 5/8 | 5/8 | 3/4 | 5 1/4 | 4 | 12 3/8 | 7 7/8 | 16 7/8 | 10 1/2 | 1 5/8 | 6 | 4 1/2 | 1 | 1/2 | 2 1/4 | 7 1/2 | | | | | | | | | 9.0 |
| 2S | 48 | | 2 1/4 | 3/4 | 1 | 7 | 5 1/4 | 16 1/2 | 10 1/2 | 22 1/2 | 14 | 2 1/4 | 8 | 6 | 1 1/4 | 5/8 | 3 | 10 | | | | | | | | | 16.0 |
| 2M | 48 | | 2 1/4 | 3/4 | 1 | 7 | 5 1/4 | 16 1/2 | 10 1/2 | 22 1/2 | 14 | 2 1/4 | 8 | 6 | 1 1/4 | 5/8 | 3 | 10 | | | | | | | | | 16.0 |
| 3 | 48 | | 2 1/4 | 3/4 | 1 | 7 | 5 1/4 | 16 1/2 | 10 1/2 | 22 1/2 | 14 | 2 1/4 | 8 | 6 | 1 1/4 | 5/8 | 3 | 10 | | | | | | | | | 16.0 |
| 4 | 48 | | 2 1/4 | 3/4 | 1 | 7 | 5 1/4 | 16 1/2 | 10 1/2 | 22 1/2 | 14 | 2 1/4 | 8 | 6 | 1 1/4 | 5/8 | 3 | 10 | | | | | | | | | 16.0 |
| 5 | 48 | | 2 1/4 | 3/4 | 1 | 7 | 5 1/4 | 16 1/2 | 10 1/2 | 22 1/2 | 14 | 2 1/4 | 8 | 6 | 1 1/4 | 5/8 | 3 | 10 | | | | | | | | | 16.0 |

STANDARD SIGN
W01-4

WISCONSIN DEPT OF TRANSPORTATION

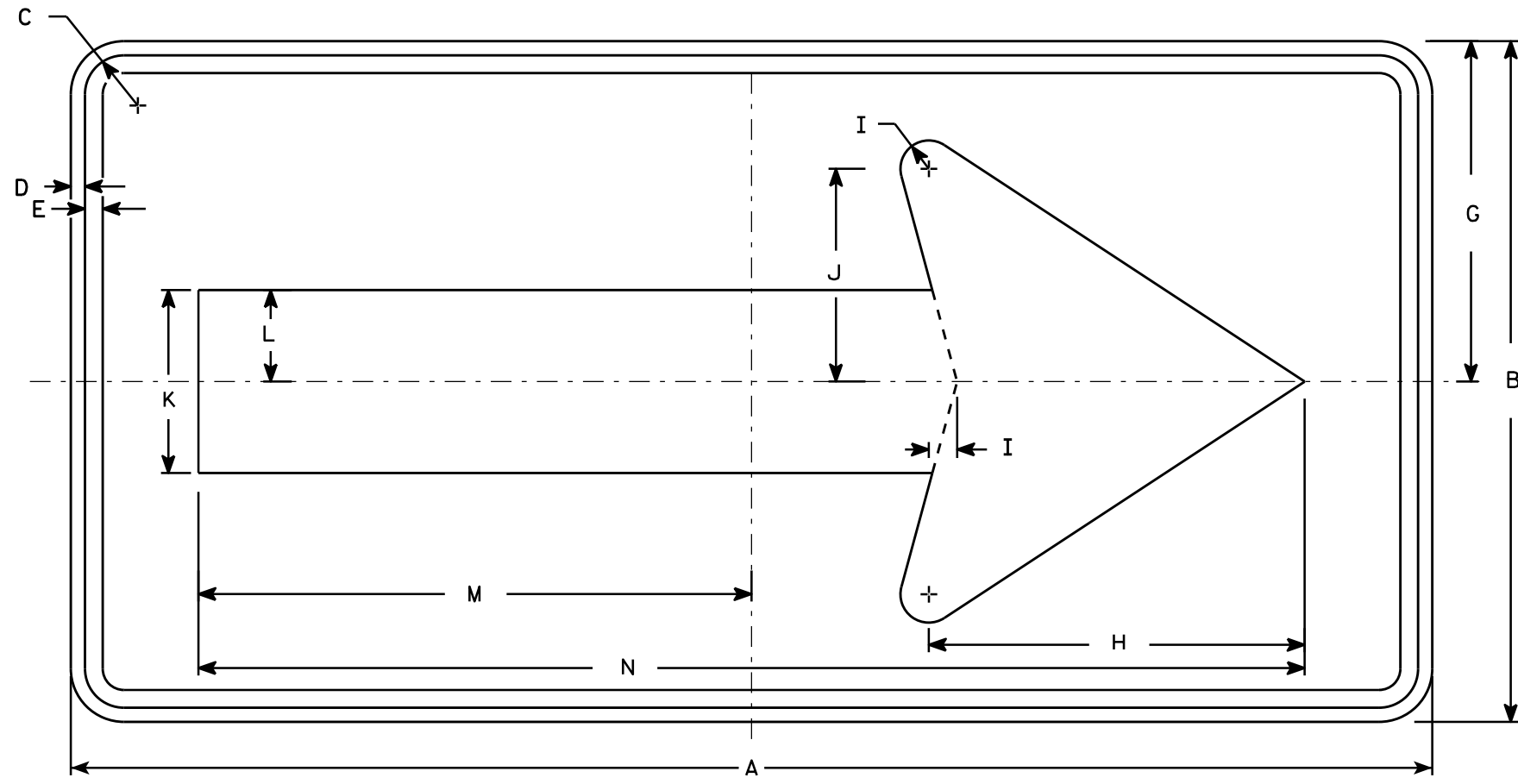
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/18/13 PLATE NO. W01-4.1

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

NOTES

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



W01-6

7

7

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

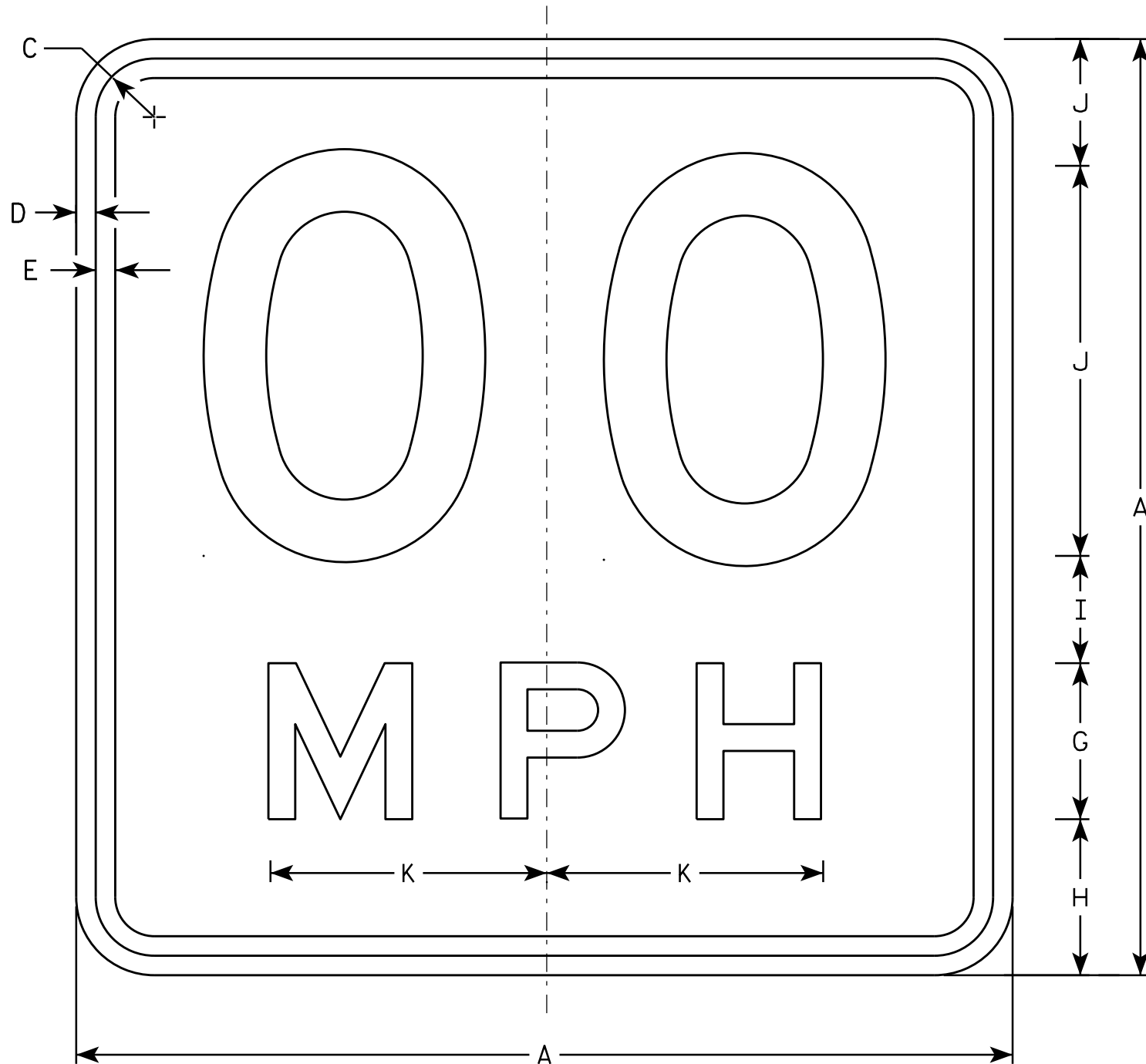
STANDARD SIGN
W01-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

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



NOTES

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

7

7

W013-1

| SIZE | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | O | R | S | T | U | V | W | X | Y | Z | Area sq. ft. |
|------|----|---|-------|-----|-----|----|---|-------|-------|-------|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--------------|
| 1 | 24 | | 1 1/8 | 3/8 | 1/2 | 10 | 4 | 4 | 2 3/4 | 3 1/4 | 7 1/8 | | | | | | | | | | | | | | | | 4.00 |
| 2S | 36 | | 1 5/8 | 5/8 | 3/4 | 16 | 6 | 5 1/2 | 4 | 4 1/2 | 10 5/8 | | | | | | | | | | | | | | | | 9.00 |
| 2M | 36 | | 1 5/8 | 5/8 | 3/4 | 16 | 6 | 5 1/2 | 4 | 4 1/2 | 10 5/8 | | | | | | | | | | | | | | | | 9.00 |
| 3 | 36 | | 1 5/8 | 5/8 | 3/4 | 16 | 6 | 5 1/2 | 4 | 4 1/2 | 10 5/8 | | | | | | | | | | | | | | | | 9.00 |
| 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
W013-1

WISCONSIN DEPT OF TRANSPORTATION

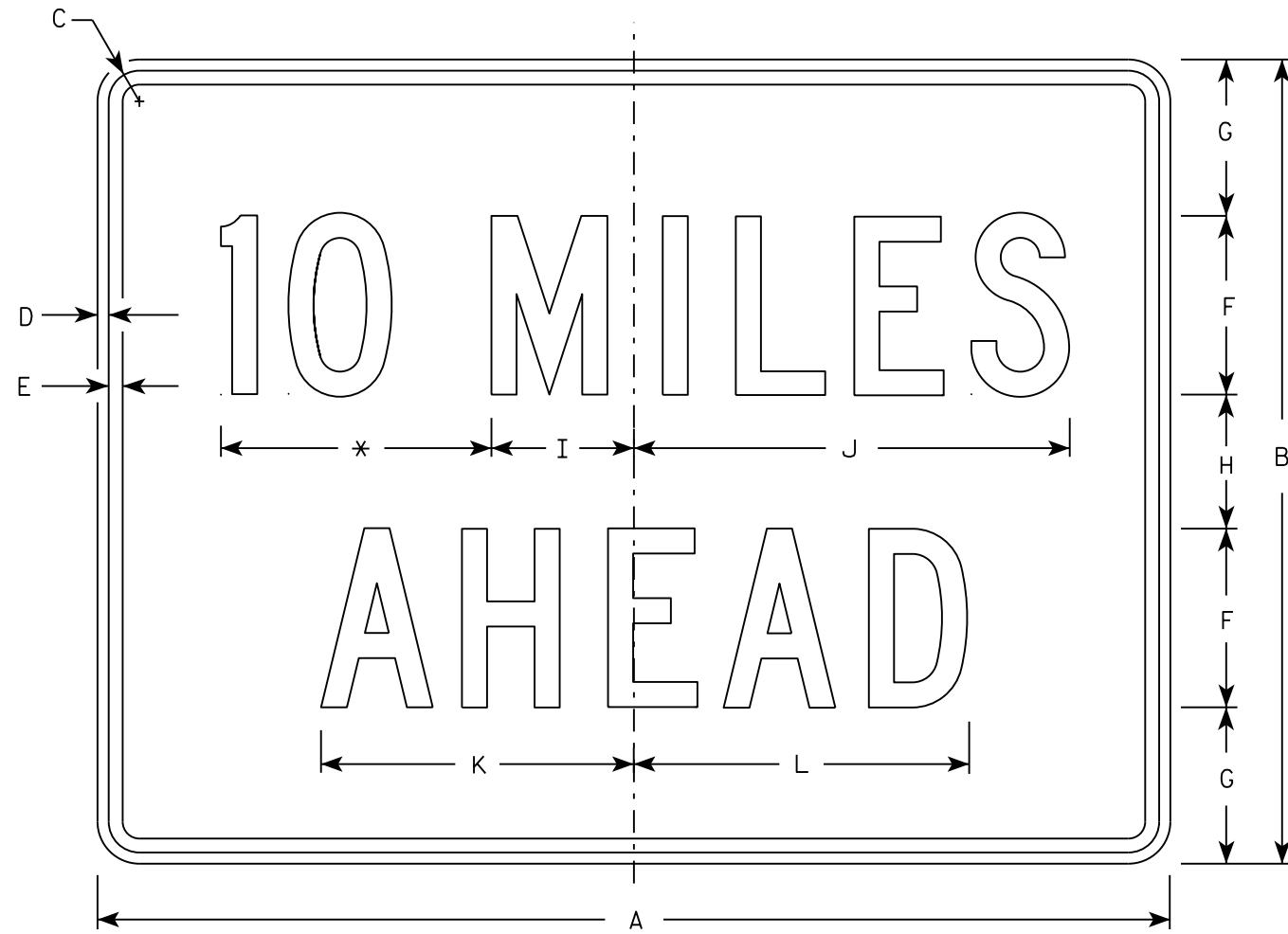
APPROVED *Matthew R Rauch*
For State Traffic Engineer

DATE 11/21/13 PLATE NO. W013-1.1

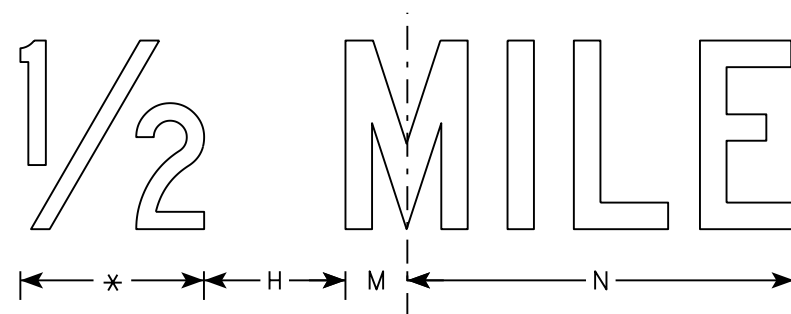
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: **E**

NOTES

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



W057-52



* 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 | 24 | 1 1/8 | 3/8 | 1/2 | 6 | 4 1/2 | 3 | 4 3/4 | 14 5/8 | 10 5/8 | 11 3/8 | 2 | 12 | | | | | | | | | | | | | 6.0 |
| 2S | 48 | 36 | 1 3/8 | 1/2 | 5/8 | 8 | 7 | 6 | 6 3/8 | 19 1/2 | 14 | 15 | 2 3/4 | 16 3/8 | | | | | | | | | | | | | 12.0 |
| 2M | 48 | 36 | 1 3/8 | 1/2 | 5/8 | 8 | 7 | 6 | 6 3/8 | 19 1/2 | 14 | 15 | 2 3/4 | 16 3/8 | | | | | | | | | | | | | 12.0 |
| 3 | 48 | 36 | 1 3/8 | 1/2 | 5/8 | 8 | 7 | 6 | 6 3/8 | 19 1/2 | 14 | 15 | 2 3/4 | 16 3/8 | | | | | | | | | | | | | 12.0 |
| 4 | 48 | 36 | 1 3/8 | 1/2 | 5/8 | 8 | 7 | 6 | 6 3/8 | 19 1/2 | 14 | 15 | 2 3/4 | 16 3/8 | | | | | | | | | | | | | 12.0 |
| 5 | 48 | 36 | 1 3/8 | 1/2 | 5/8 | 8 | 7 | 6 | 6 3/8 | 19 1/2 | 14 | 15 | 2 3/4 | 16 3/8 | | | | | | | | | | | | | 12.0 |

STANDARD SIGN
W057-52

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 3/21/17 PLATE NO. W057-52.2

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

| IH 39 NB | | | | | | | | | | |
|-------------|----------|-----------|---|-------|-----------------------------------|--|------|---------------------|---------------|---------------|
| STATION | DISTANCE | AREA (SF) | | | INCREMENTAL VOL (CY) (UNADJUSTED) | | | CUMULATIVE VOL (CY) | | |
| | | CUT | SALVAGED/ UNUSABLE PAVEMENT MATERIAL | FILL | CUT | SALVAGED/UNUSABLE PAVEMENT MATERIAL | FILL | CUT | EXPANDED FILL | MASS ORDINATE |
| | | | | | | | | | | |
| 1022+50 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1023+00 | 50.00 | 0.00 | 0.00 | 2.28 | 0 | 0 | 2 | 0 | 3 | -3 |
| 1023+50 | 50.00 | 0.00 | 0.00 | 19.23 | 0 | 0 | 20 | 0 | 28 | -28 |
| 1023+56.523 | 6.52 | 0.00 | 0.00 | 24.80 | 0 | 0 | 5 | 0 | 34 | -34 |
| 1023+81.523 | 25.00 | 0.00 | 0.00 | 10.08 | 0 | 0 | 16 | 0 | 54 | -54 |
| 1024+06.228 | 24.70 | 0.00 | 0.00 | 3.00 | 0 | 0 | 6 | 0 | 61 | -61 |
| 1024+31.228 | 25.00 | 0.00 | 0.00 | 0.00 | 0 | 0 | 1 | 0 | 63 | -63 |
| 1024+56.228 | 25.00 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 | 0 | 63 | -63 |
| 1123+00 | 9843.77 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 | 0 | 63 | -63 |
| 1123+50 | 50.00 | 0.00 | 0.00 | 3.32 | 0 | 0 | 3 | 0 | 66 | -66 |
| 1123+76.303 | 26.30 | 0.00 | 0.00 | 11.52 | 0 | 0 | 7 | 0 | 75 | -75 |
| 1124+01.317 | 25.01 | 0.00 | 0.00 | 8.04 | 0 | 0 | 9 | 0 | 86 | -86 |
| 1124+26.326 | 25.01 | 0.00 | 0.00 | 10.66 | 0 | 0 | 9 | 0 | 98 | -98 |
| 1124+33.072 | 6.75 | 0.00 | 0.00 | 11.59 | 0 | 0 | 3 | 0 | 101 | -101 |
| 1124+57.995 | 24.92 | 0.00 | 0.00 | 0.80 | 0 | 0 | 6 | 0 | 109 | -109 |
| 1124+82.921 | 24.93 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 | 0 | 109 | -109 |
| 1228+00 | 10592.80 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 | 0 | 109 | -109 |
| 1228+50 | 50.00 | 21.36 | 0.00 | 0.00 | 20 | 0 | 0 | 20 | 109 | -89 |
| 1229+00 | 50.00 | 31.81 | 0.00 | 0.00 | 49 | 0 | 0 | 69 | 109 | -40 |
| 1229+50 | 50.00 | 32.12 | 0.00 | 0.00 | 59 | 0 | 0 | 128 | 109 | 19 |
| 1230+00 | 50.00 | 27.61 | 0.00 | 0.00 | 55 | 0 | 0 | 183 | 109 | 74 |
| 1230+50 | 50.00 | 0.00 | 0.00 | 0.00 | 26 | 0 | 0 | 209 | 109 | 100 |
| 1357+50 | 12700.00 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 | 209 | 109 | 100 |
| 1358+02.487 | 52.49 | 0.00 | 0.00 | 0.23 | 0 | 0 | 0 | 209 | 109 | 100 |
| 1358+50 | 47.51 | 0.00 | 0.00 | 4.36 | 0 | 0 | 4 | 209 | 114 | 95 |
| 1358+75.691 | 25.69 | 0.00 | 0.00 | 9.84 | 0 | 0 | 7 | 209 | 123 | 87 |
| 1359+00 | 24.31 | 0.00 | 0.00 | 0.26 | 0 | 0 | 5 | 209 | 129 | 80 |
| 1359+25.691 | 25.69 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 | 209 | 129 | 80 |
| 1381+50 | 2224.31 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 | 209 | 129 | 80 |
| 1382+00 | 50.00 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 | 209 | 129 | 80 |
| 1382+50 | 50.00 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 | 209 | 129 | 80 |
| 1382+74.802 | 24.80 | 0.00 | 0.00 | 0.14 | 0 | 0 | 0 | 209 | 129 | 80 |
| 1383+00 | 25.20 | 0.00 | 0.00 | 1.05 | 0 | 0 | 1 | 209 | 130 | 79 |
| 1383+23.256 | 23.26 | 0.00 | 0.00 | 2.99 | 0 | 0 | 2 | 209 | 133 | 77 |
| 1383+24.802 | 1.55 | 0.00 | 0.00 | 2.67 | 0 | 0 | 0 | 209 | 133 | 77 |
| 1383+48.256 | 23.45 | 0.00 | 0.00 | 0.00 | 0 | 0 | 1 | 209 | 134 | 75 |
| 1383+73.256 | 25.00 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 | 209 | 134 | 75 |

| KAT TEMP RAMP | | | | | | | | | | |
|---------------|----------|-----------|---|--------|-----------------------------------|--|------|---------------------|---------------|---------------|
| STATION | DISTANCE | AREA (SF) | | | INCREMENTAL VOL (CY) (UNADJUSTED) | | | CUMULATIVE VOL (CY) | | |
| | | CUT | SALVAGED/ UNUSABLE PAVEMENT MATERIAL | FILL | CUT | SALVAGED/UNUSABLE PAVEMENT MATERIAL | FILL | CUT | EXPANDED FILL | MASS ORDINATE |
| | | | | | | | | | | |
| 80+00 | 0.00 | 0.00 | 0.00 | 40.37 | 0 | 0 | 0 | 0 | 0 | 0 |
| 80+50 | 50.00 | 0.00 | 0.00 | 260.84 | 0 | 0 | 279 | 0 | 349 | -349 |
| 81+00 | 50.00 | 0.51 | 0.00 | 157.89 | 0 | 0 | 388 | 0 | 834 | -834 |
| 81+50 | 50.00 | 2.69 | 0.00 | 119.81 | 3 | 0 | 257 | 3 | 1,155 | -1,152 |
| 82+00 | 50.00 | 2.46 | 0.00 | 96.34 | 5 | 0 | 200 | 8 | 1,405 | -1,397 |
| 82+50 | 50.00 | 16.07 | 0.00 | 39.14 | 17 | 0 | 125 | 25 | 1,561 | -1,536 |
| 83+00 | 50.00 | 24.42 | 0.00 | 1.26 | 37 | 0 | 37 | 62 | 1,608 | -1,546 |
| 83+50 | 50.00 | 24.92 | 0.00 | 0.00 | 46 | 0 | 1 | 108 | 1,609 | -1,501 |
| 83+75 | 25.00 | 0.00 | 0.00 | 0.00 | 12 | 0 | 0 | 120 | 1,609 | -1,489 |

| STH 34 | | | | | | | | | | |
|------------|----------|-----------|---|-------|-----------------------------------|--|------|---------------------|---------------|---------------|
| STATION | DISTANCE | AREA (SF) | | | INCREMENTAL VOL (CY) (UNADJUSTED) | | | CUMULATIVE VOL (CY) | | |
| | | CUT | SALVAGED/ UNUSABLE PAVEMENT MATERIAL | FILL | CUT | SALVAGED/UNUSABLE PAVEMENT MATERIAL | FILL | CUT | EXPANDED FILL | MASS ORDINATE |
| | | | | | | | | | | |
| 201+25 | 0.00 | 0.00 | 0.00 | 4.50 | 0 | 0 | 0 | 0 | 0 | 0 |
| 201+50 | 25.00 | 0.00 | 0.00 | 10.40 | 0 | 0 | 0 | 0 | 0 | 0 |
| 202+00 | 50.00 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 |
| 202+14.722 | 14.72 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 |
| 202+21.146 | 6.42 | 0.00 | 0.00 | 0.00 | 1 | 0 | 0 | 1 | 0 | 1 |
| 202+39.722 | 18.58 | 0.00 | 0.00 | 0.00 | 4 | 0 | 1 | 5 | 1 | 4 |
| 202+46.144 | 6.42 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 | 5 | 1 | 4 |
| 202+64.722 | 18.58 | 0.00 | 0.00 | 30.51 | 1 | 0 | 10 | 6 | 14 | -8 |
| 202+71.144 | 6.42 | 0.00 | 0.00 | 18.61 | 1 | 0 | 6 | 7 | 21 | -14 |
| 203+00 | 28.86 | 23.93 | 14.52 | 1.44 | 15 | 8 | 11 | 22 | 35 | -21 |
| 203+25 | 25.00 | 20.64 | 18.58 | 7.35 | 21 | 15 | 4 | 43 | 40 | -20 |
| 204+00 | 75.00 | 50.34 | 33.38 | 11.08 | 99 | 72 | 26 | 142 | 73 | -26 |
| 204+50 | 50.00 | 0.00 | 0.00 | 0.00 | 47 | 0 | 10 | 189 | 85 | 9 |

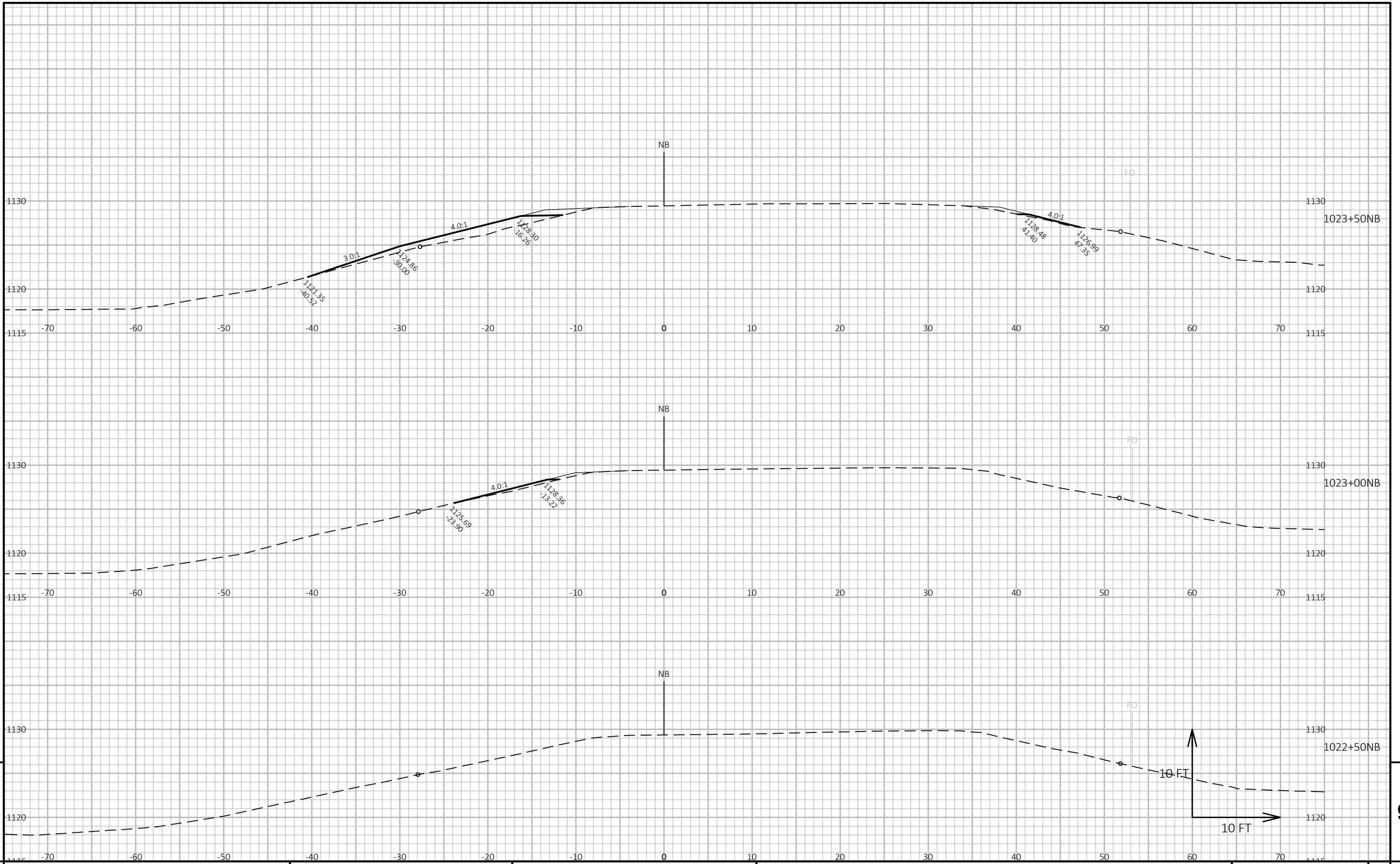
| KA RAMP | | | | | | | | | | |
|---------|----------|-----------|---|-------|-----------------------------------|--|------|---------------------|---------------|---------------|
| STATION | DISTANCE | AREA (SF) | | | INCREMENTAL VOL (CY) (UNADJUSTED) | | | CUMULATIVE VOL (CY) | | |
| | | CUT | SALVAGED/ UNUSABLE PAVEMENT MATERIAL | FILL | CUT | SALVAGED/UNUSABLE PAVEMENT MATERIAL | FILL | CUT | EXPANDED FILL | MASS ORDINATE |
| | | | | | | | | | | |
| 180+25 | 0.00 | 67.75 | 19.30 | 4.68 | 0 | 0 | 0 | 0 | 0 | 0 |
| 180+50 | 25.00 | 62.87 | 16.39 | 0.00 | 60 | 17 | 2 | 60 | 3 | 41 |
| 181+00 | 50.00 | 61.00 | 24.39 | 14.93 | 115 | 38 | 14 | 175 | 20 | 100 |
| 181+50 | 50.00 | 64.29 | 23.05 | 12.30 | 116 | 44 | 25 | 291 | 51 | 141 |
| 182+00 | 50.00 | 70.41 | 23.05 | 0.83 | 125 | 43 | 12 | 416 | 66 | 208 |
| 182+50 | 50.00 | 0.00 | 0.00 | 0.00 | 65 | 21 | 1 | 481 | 68 | 251 |

| KB RAMP | | | | | | | | | | |
|---------|----------|-----------|---|------|-----------------------------------|--|------|---------------------|---------------|---------------|
| STATION | DISTANCE | AREA (SF) | | | INCREMENTAL VOL (CY) (UNADJUSTED) | | | CUMULATIVE VOL (CY) | | |
| | | CUT | SALVAGED/ UNUSABLE PAVEMENT MATERIAL | FILL | CUT | SALVAGED/UNUSABLE PAVEMENT MATERIAL | FILL | CUT | EXPANDED FILL | MASS ORDINATE |
| | | | | | | | | | | |
| 177+00 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 | 0 | 0 | 0 |
| 177+50 | 50.00 | 62.43 | 23.05 | 5.61 | 58 | 21 | 5 | 58 | 6 | 31 |
| 178+00 | 50.00 | 55.92 | 17.76 | 0.93 | 110 | 38 | 6 | 168 | 14 | 95 |
| 178+50 | 50.00 | 71.03 | 27.81 | 0.39 | 118 | 42 | 1 | 286 | 15 | 170 |

NOTE 1: CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
NOTE 2: SALVAGED/UNUSABLE PAVEMENT MATERIAL DOES NOT SHOW UP IN CROSS SECTIONS
NOTE 3: FILL DOES NOT INCLUDE UNUSABLE PAVEMENT MATERIAL

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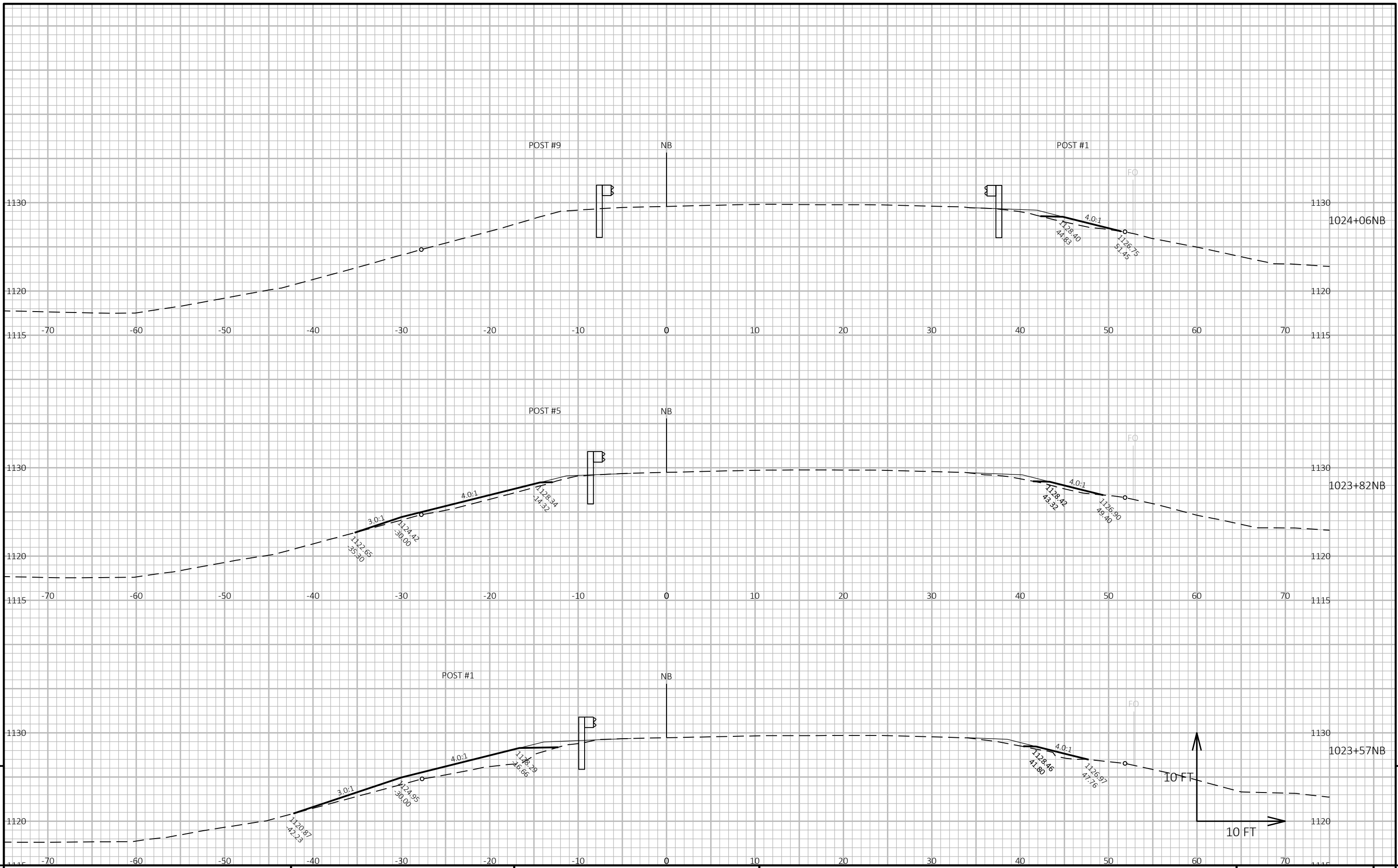
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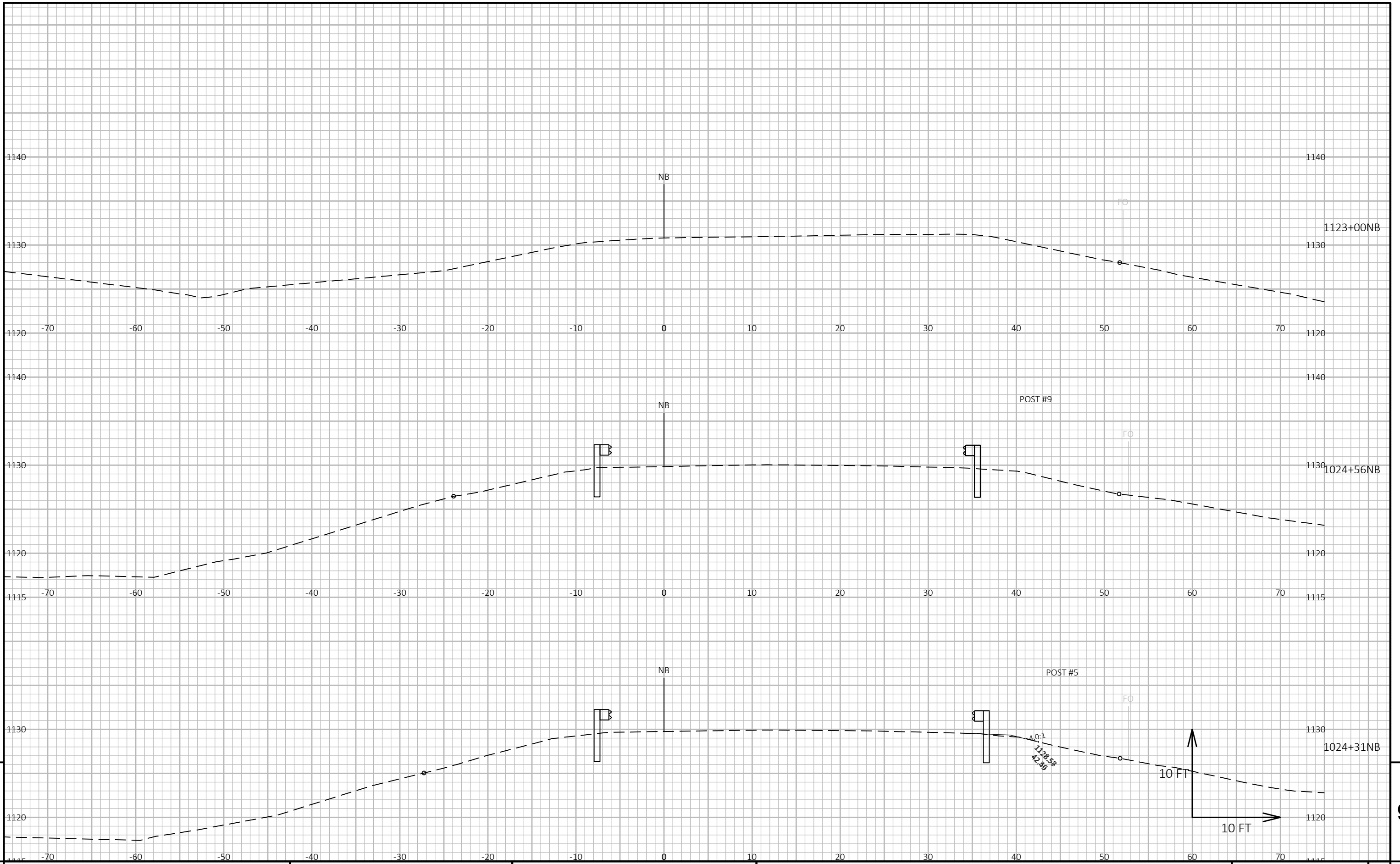
PROJECT NO: 1166-00-83 HWY: IH 39 COUNTY: MARATHON CROSS SECTIONS: IH 39 NB SHEET E

FILE NAME : C:\USERS\DOTZAG\DOCUMENTS\11660013\SHEETSPLAN\090201-XS.DWG PLOT DATE : 1/20/2022 11:07 AM PLOT BY : GRULING, ZACHARY P PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 01



| | | | | | |
|------------------------|------------|------------------|--------------------------|-------|---|
| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | CROSS SECTIONS: IH 39 NB | SHEET | E |
|------------------------|------------|------------------|--------------------------|-------|---|



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| | | | | | |
|------------------------|------------|------------------|--------------------------|-------|---|
| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | CROSS SECTIONS: IH 39 NB | SHEET | E |
|------------------------|------------|------------------|--------------------------|-------|---|

FILE NAME : C:\USERS\DOTZAG\DOCUMENTS\11660013\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 03

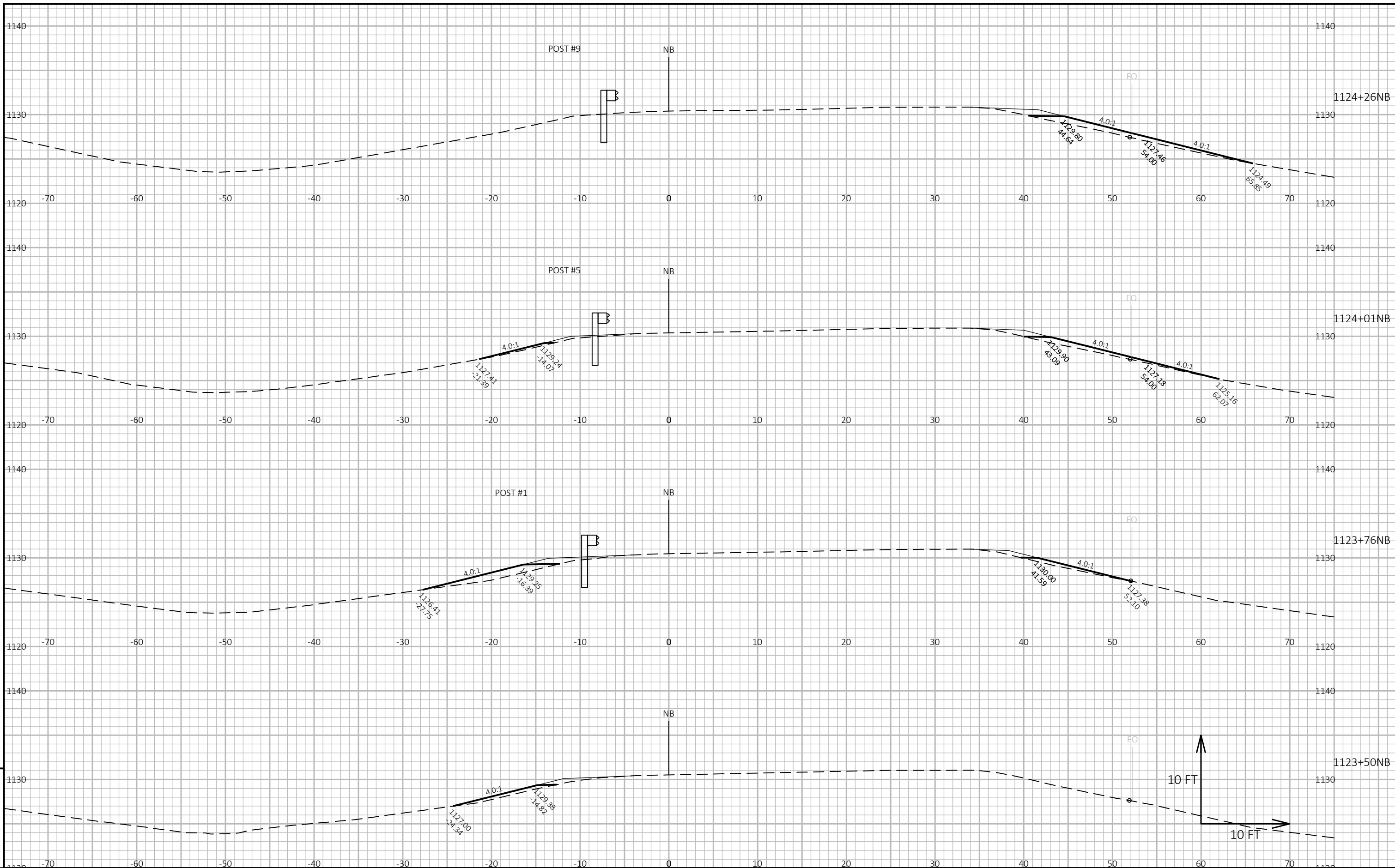
PLOT DATE : 1/20/2022 11:09 AM

PLOT BY : GRULING, ZACHARY P

PLOT NAME :

PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADD SHEET 49



PROJECT NO: 1166-00-83

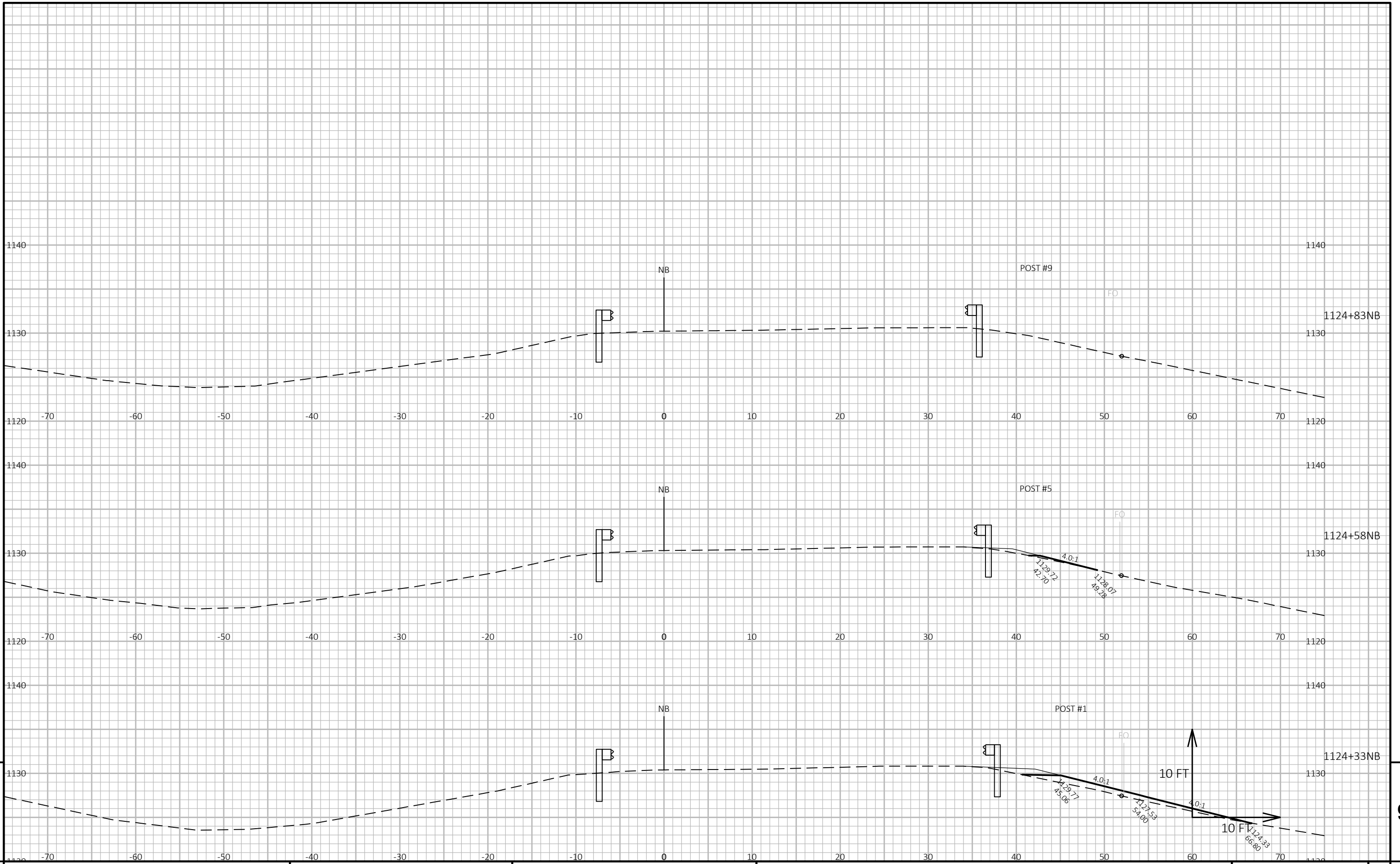
HWY: IH 39

COUNTY: MARATHON

CROSS SECTIONS: IH 39 NB

SHEET

9



PROJECT NO: 1166-00-83

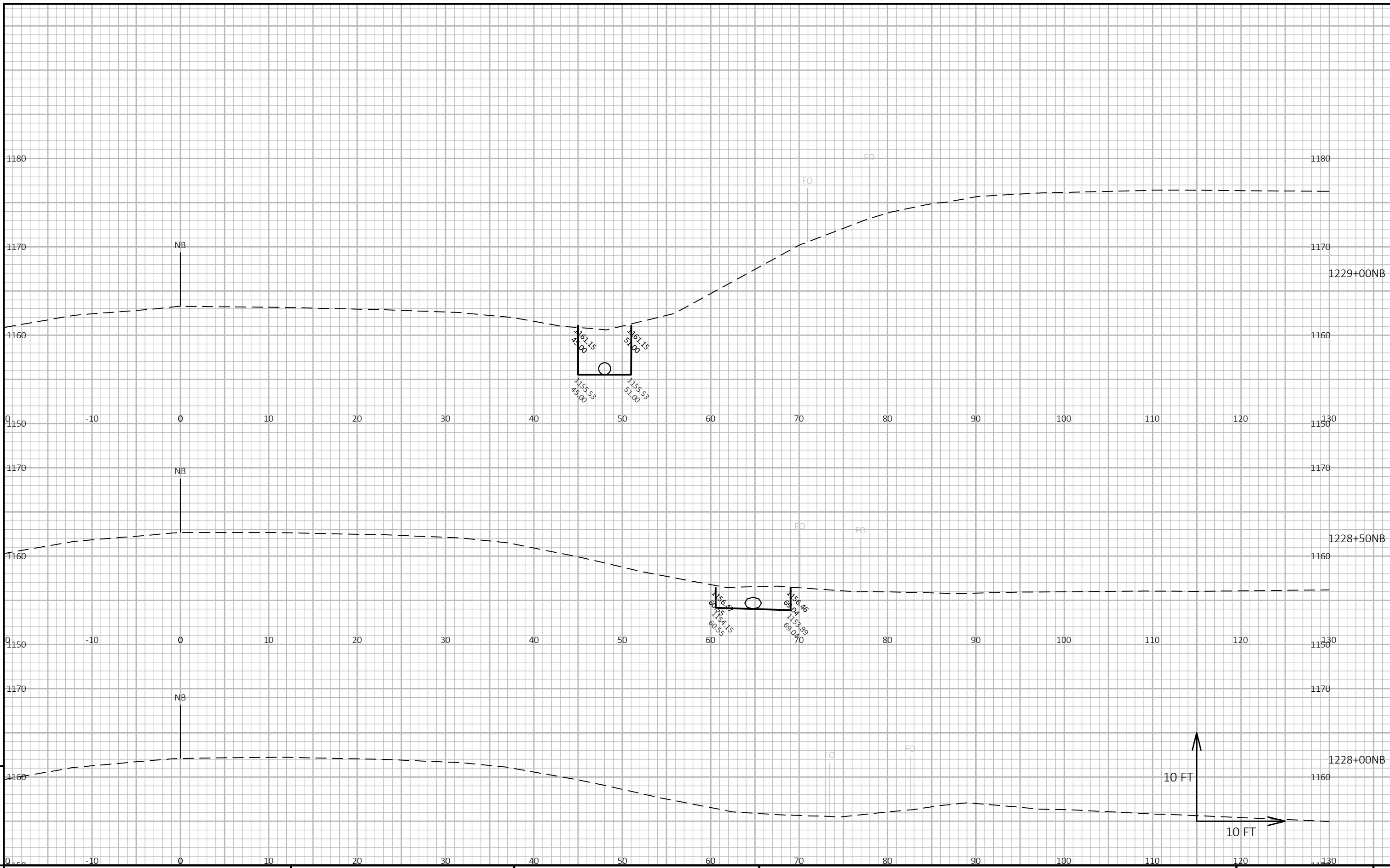
HWY: IH 39

COUNTY: MARATHON

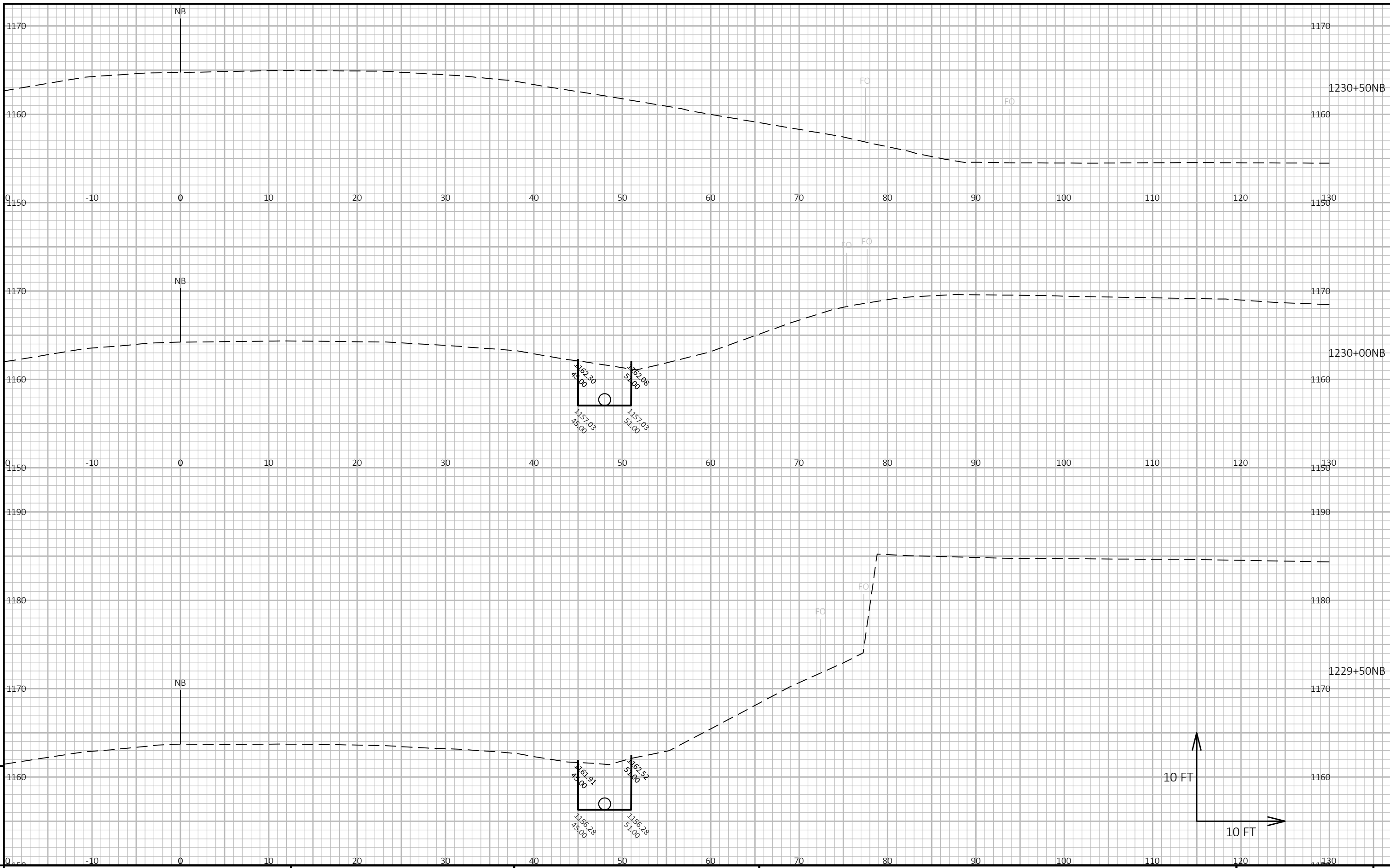
CROSS SECTIONS: IH 39 NB

SHEET

E



PROJECT NO: 1166-00-83 HWY: IH 39 COUNTY: MARATHON CROSS SECTIONS: IH 39 NB SHEET E



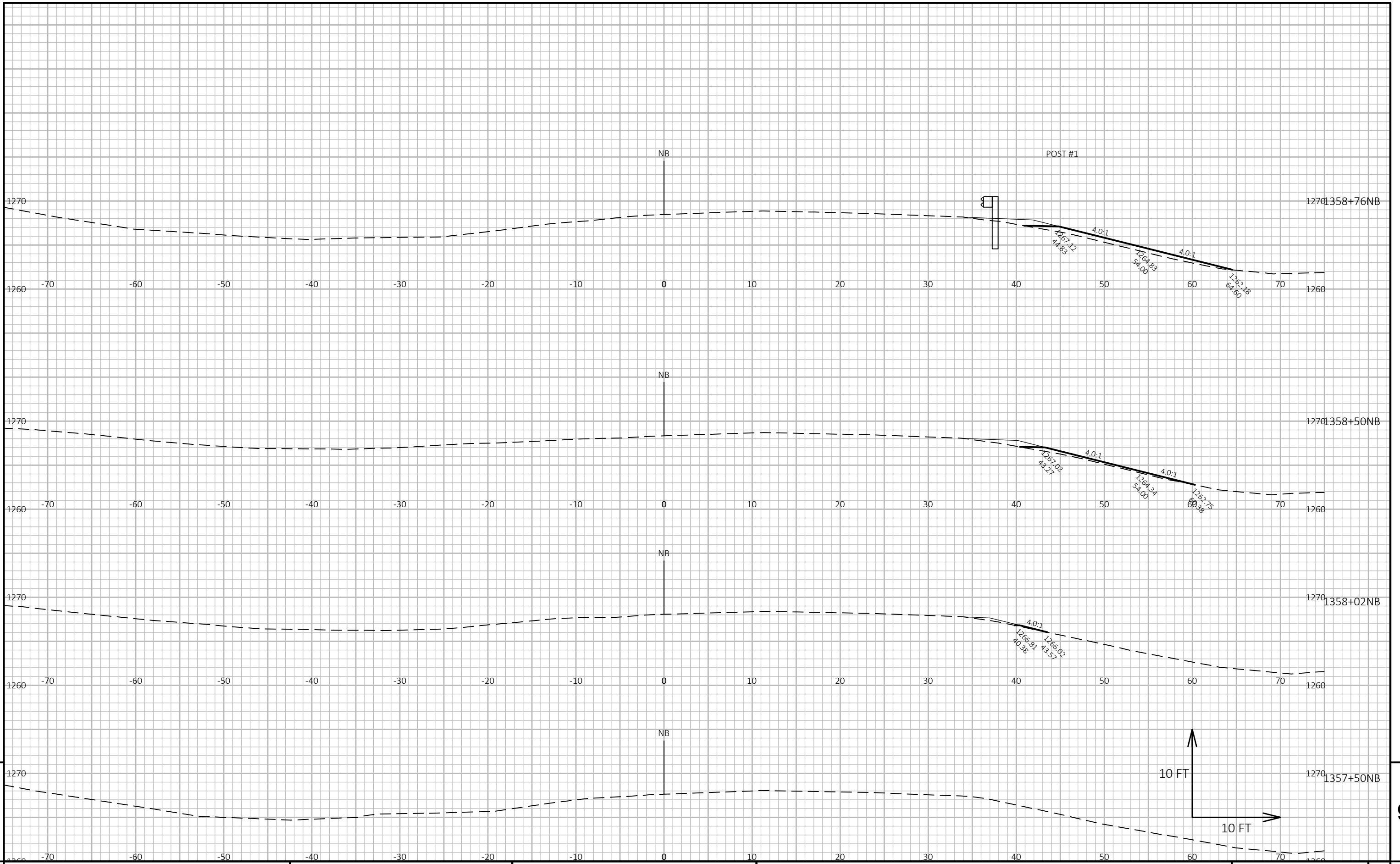
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| | | | | | |
|------------------------|------------|------------------|--------------------------|-------|---|
| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | CROSS SECTIONS: IH 39 NB | SHEET | E |
|------------------------|------------|------------------|--------------------------|-------|---|

FILE NAME : C:\USERS\DOTZAG\DOCUMENTS\11660013\SHEETSPLAN\090201-XS.DWG PLOT DATE : 1/20/2022 11:11 AM PLOT BY : GRULING, ZACHARY P PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 07



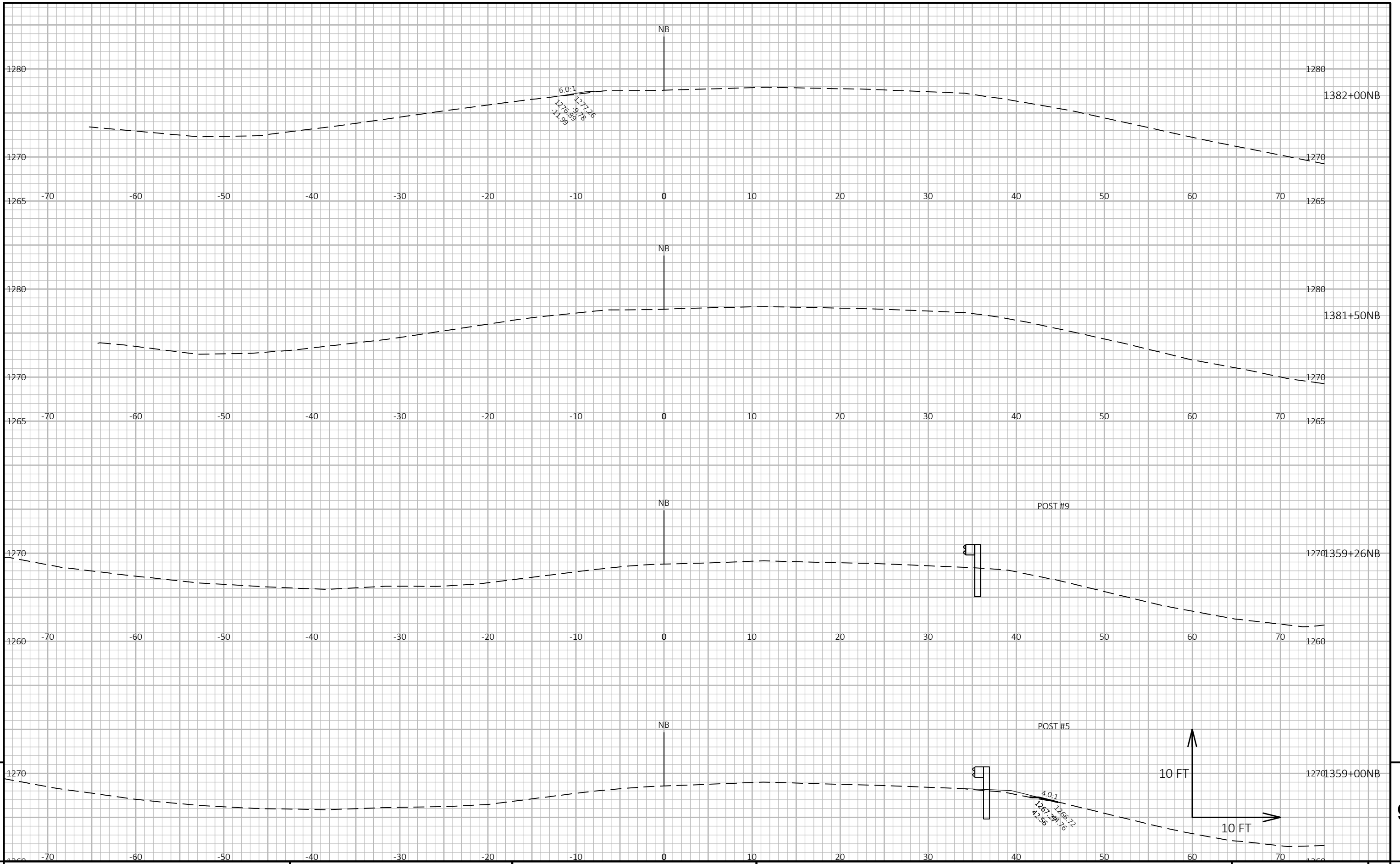
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|------------------------|------------|------------------|--------------------------|-------|---|
| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | CROSS SECTIONS: IH 39 NB | SHEET | E |
|------------------------|------------|------------------|--------------------------|-------|---|

FILE NAME : C:\USERS\DOTZAG\DOCUMENTS\11660013\SHEETSPLAN\090201-XS.DWG PLOT DATE : 1/20/2022 11:12 AM PLOT BY : GRULING, ZACHARY P PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 08



PROJECT NO: 1166-00-83

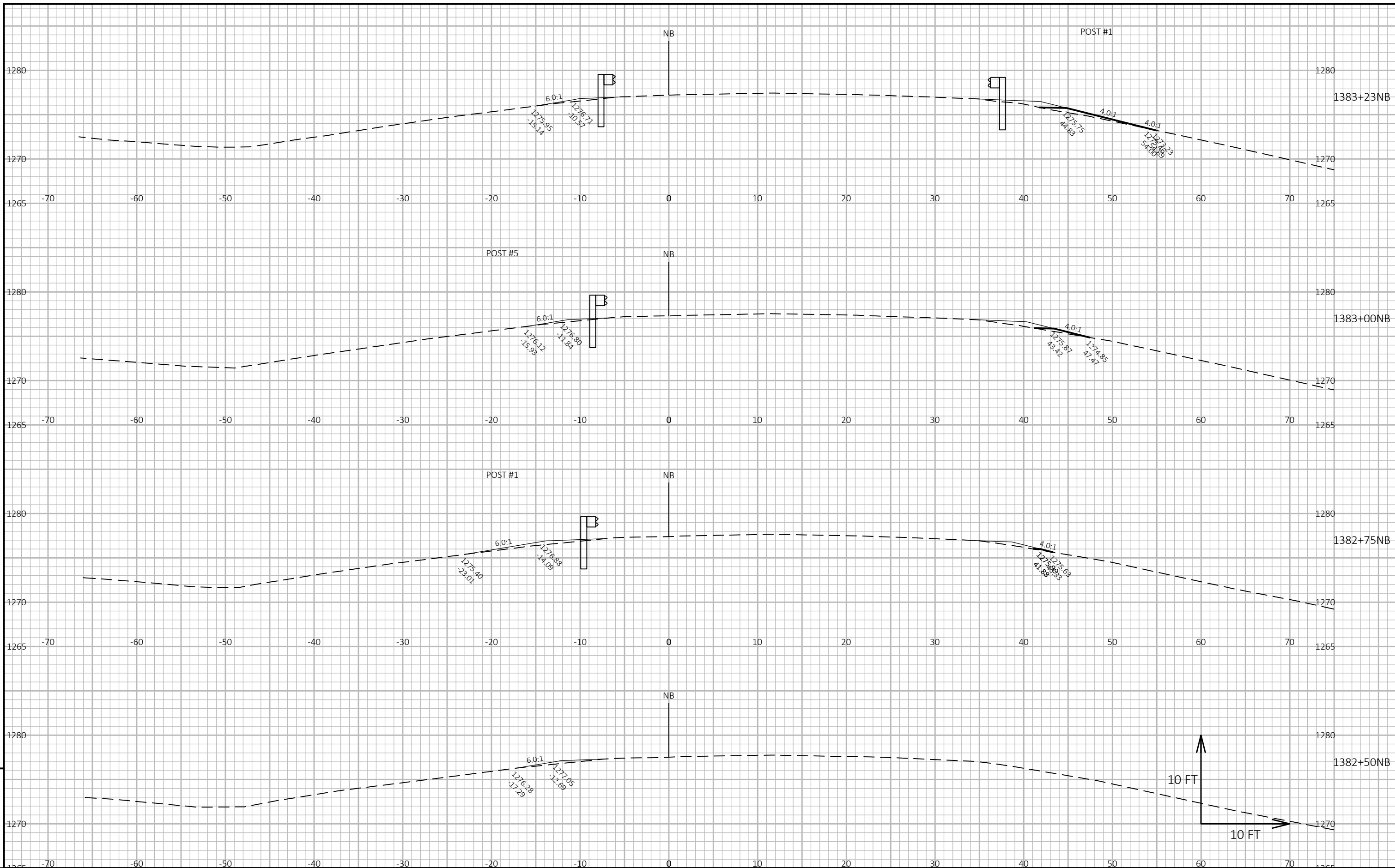
HWY: IH 39

COUNTY: MARATHON

CROSS SECTIONS: IH 39 NB

SHEET

E

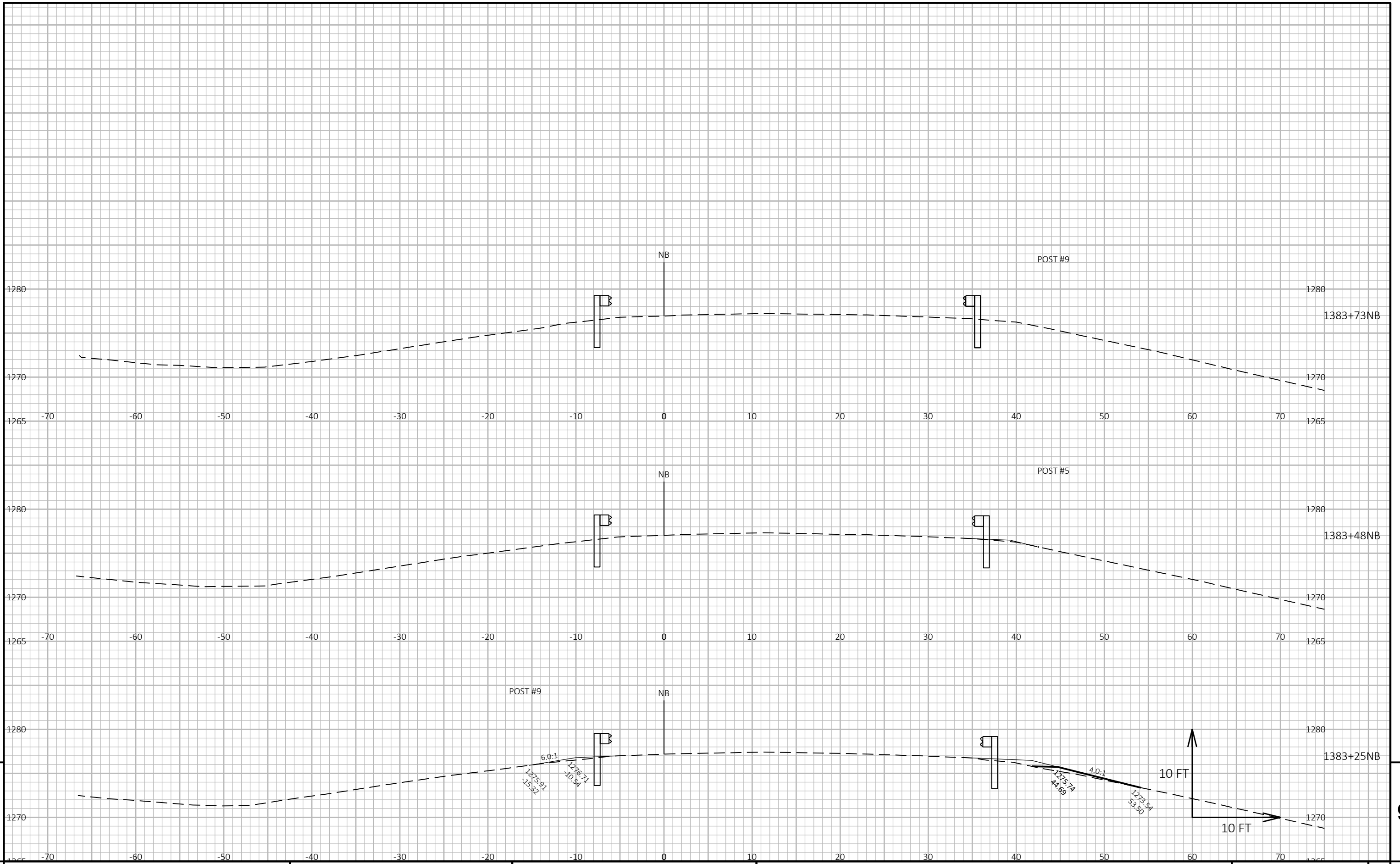


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PROJECT NO: 1166-00-83 HWY: IH 39 COUNTY: MARATHON CROSS SECTIONS: IH 39 NB SHEET E

FILE NAME: C:\USERS\DOTZAG\DOCUMENTS\11660013\SHEETSPLAN\090201-XS.DWG PLOT DATE: 1/20/2022 11:13 AM PLOT BY: GRULING, ZACHARY P PLOT NAME: PLOT SCALE: 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49



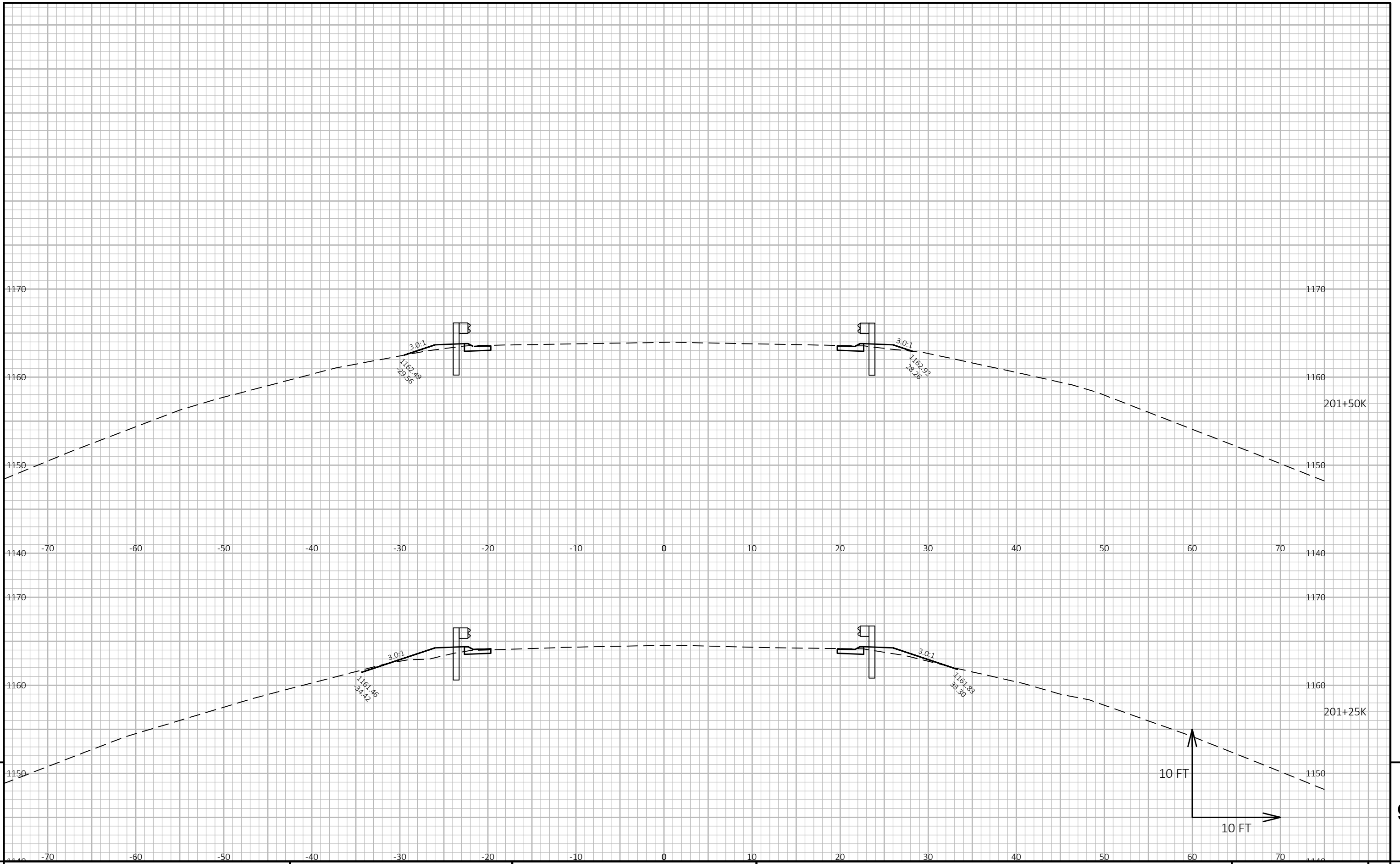
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|------------------------|------------|------------------|--------------------------|-------|---|
| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | CROSS SECTIONS: IH 39 NB | SHEET | E |
|------------------------|------------|------------------|--------------------------|-------|---|

FILE NAME : C:\USERS\DOTZAG\DOCUMENTS\11660013\SHEETSPLAN\090201-XS.DWG PLOT DATE : 1/20/2022 11:14 AM PLOT BY : GRULING, ZACHARY P PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 11

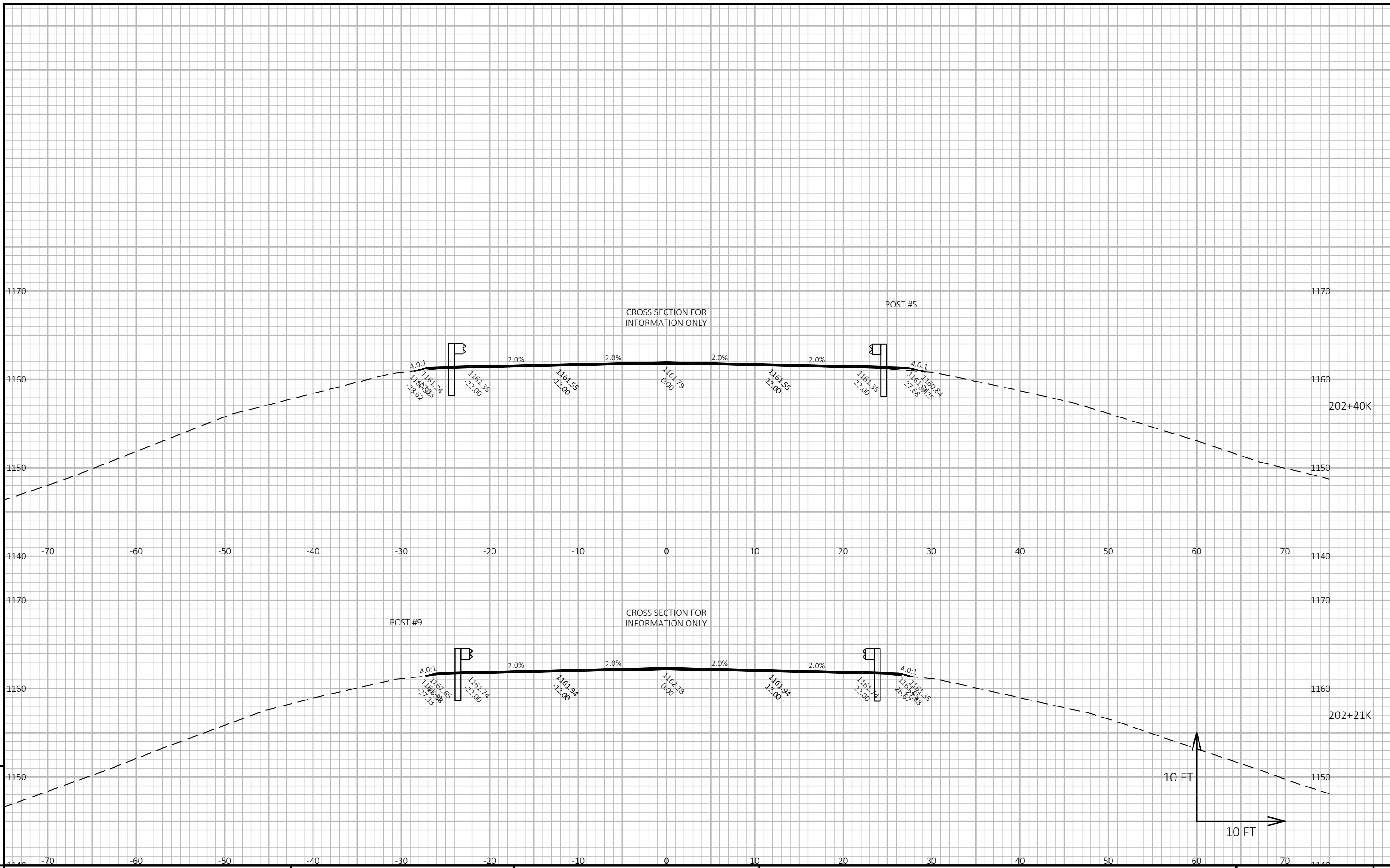


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| | | | | | |
|------------------------|------------|------------------|------------------------|-------|---|
| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | CROSS SECTIONS: STH 34 | SHEET | E |
|------------------------|------------|------------------|------------------------|-------|---|

FILE NAME : C:\USERS\DOTZAG\DOCUMENTS\11660013\SHEETSPLAN\090201-XS.DWG
 LAYOUT NAME - 12
 PLOT DATE : 1/20/2022 11:15 AM
 PLOT BY : GRULING, ZACHARY P
 PLOT NAME :
 PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.
 WISDOT/CADDs SHEET 49



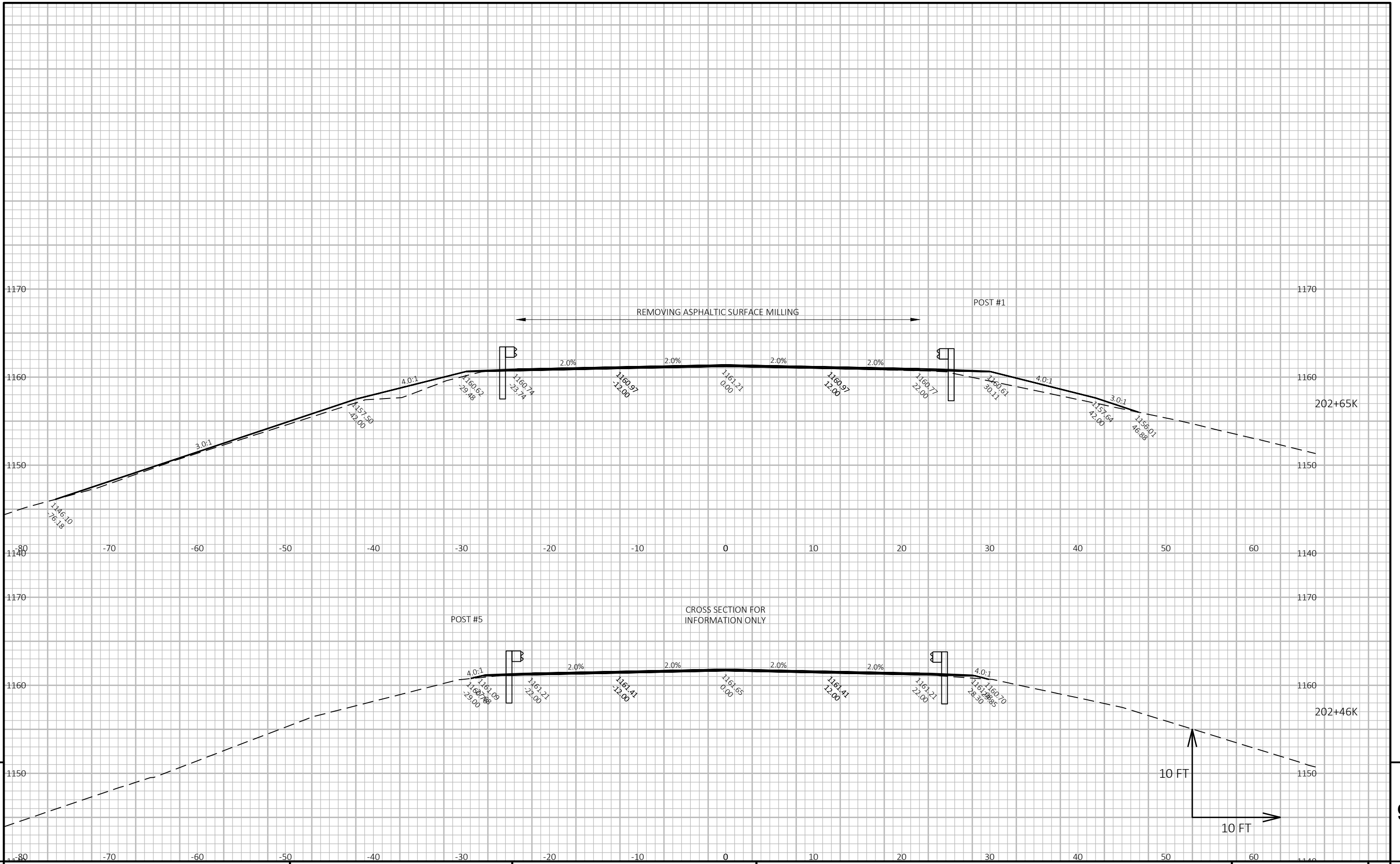
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9

PROJECT NO: 1166-00-83 HWY: IH 39 COUNTY: MARATHON CROSS SECTIONS: STH 34 SHEET E

FILE NAME : C:\USERS\DOTZAG\DOCUMENTS\11660013\SHEETSPLAN\090201-XS.DWG PLOT DATE : 1/20/2022 11:16 AM PLOT BY : GRULING, ZACHARY P PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 14



PROJECT NO: 1166-00-83

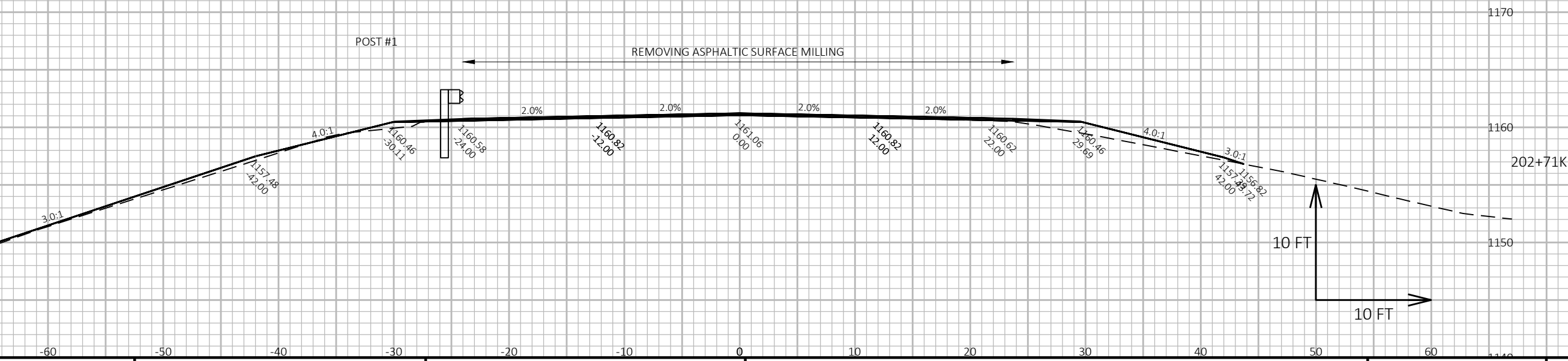
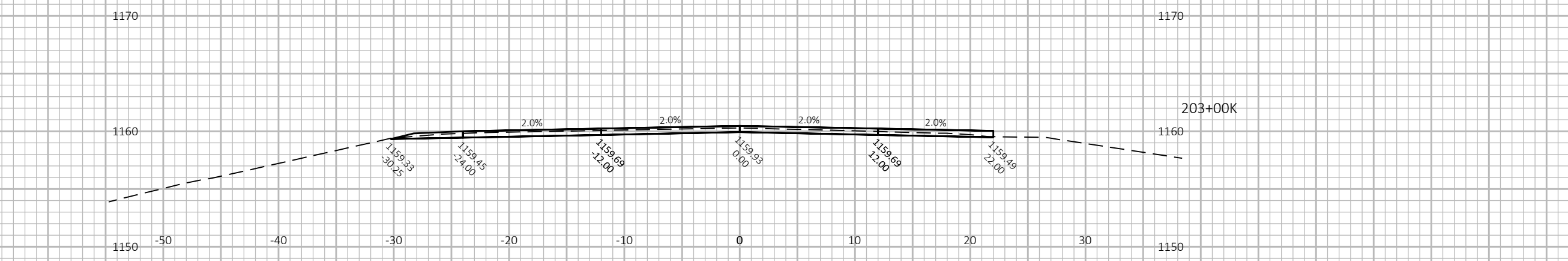
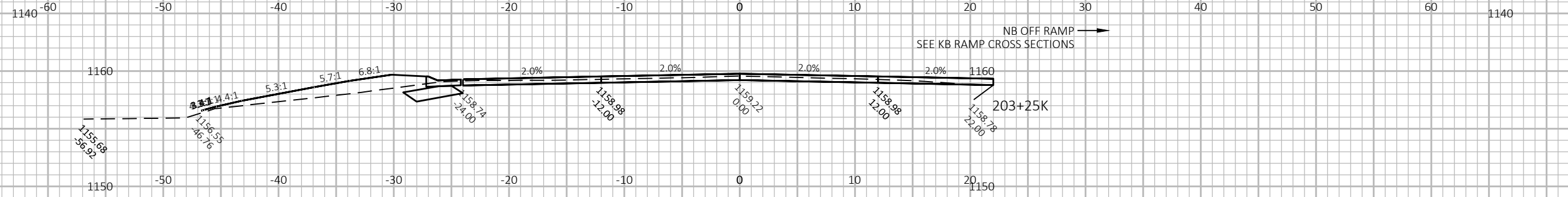
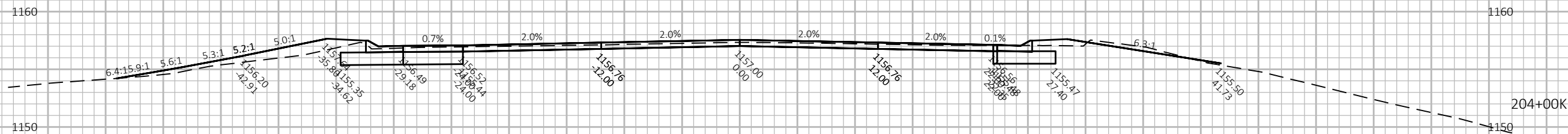
HWY: IH 39

COUNTY: MARATHON

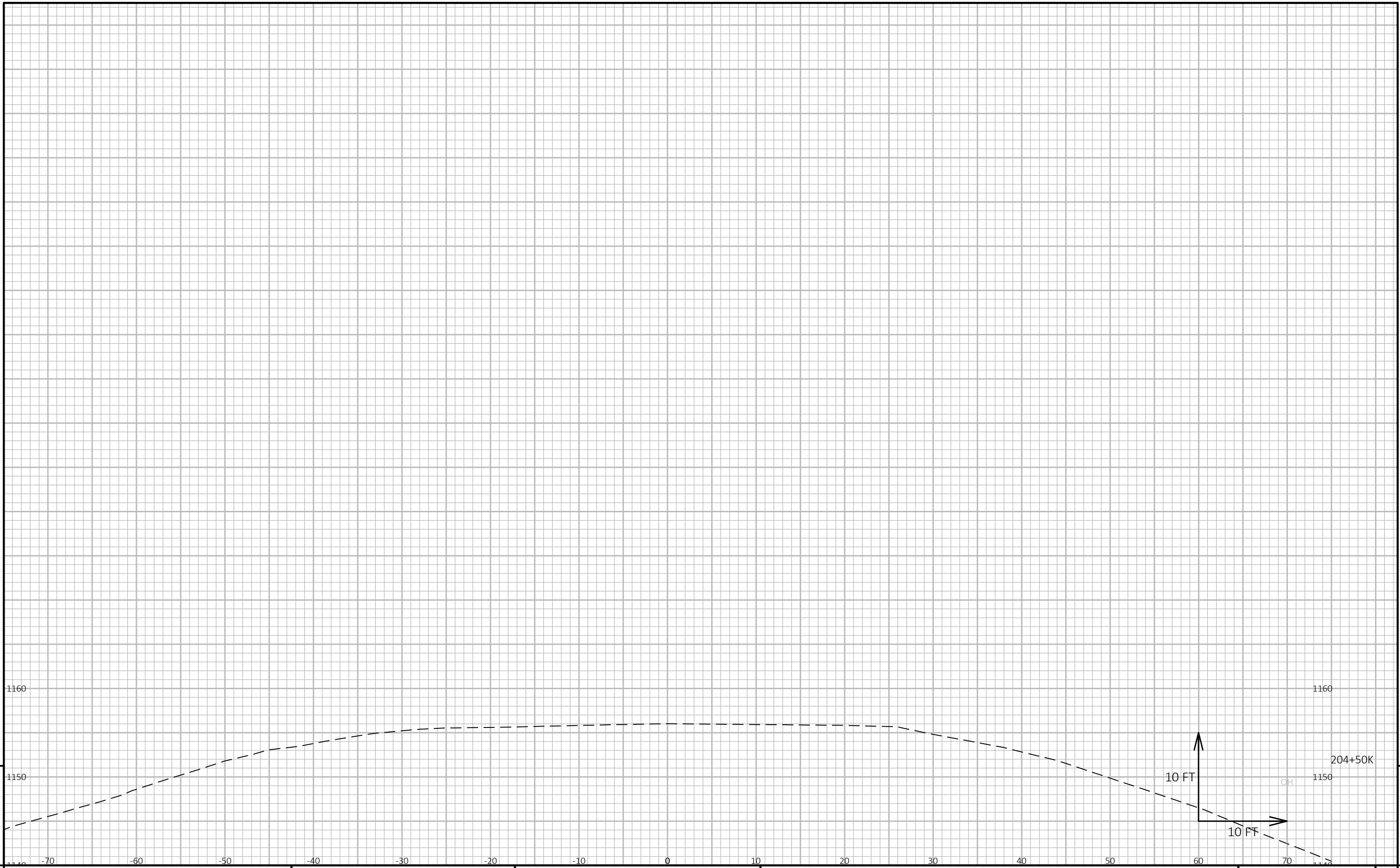
CROSS SECTIONS: STH 34

SHEET

E



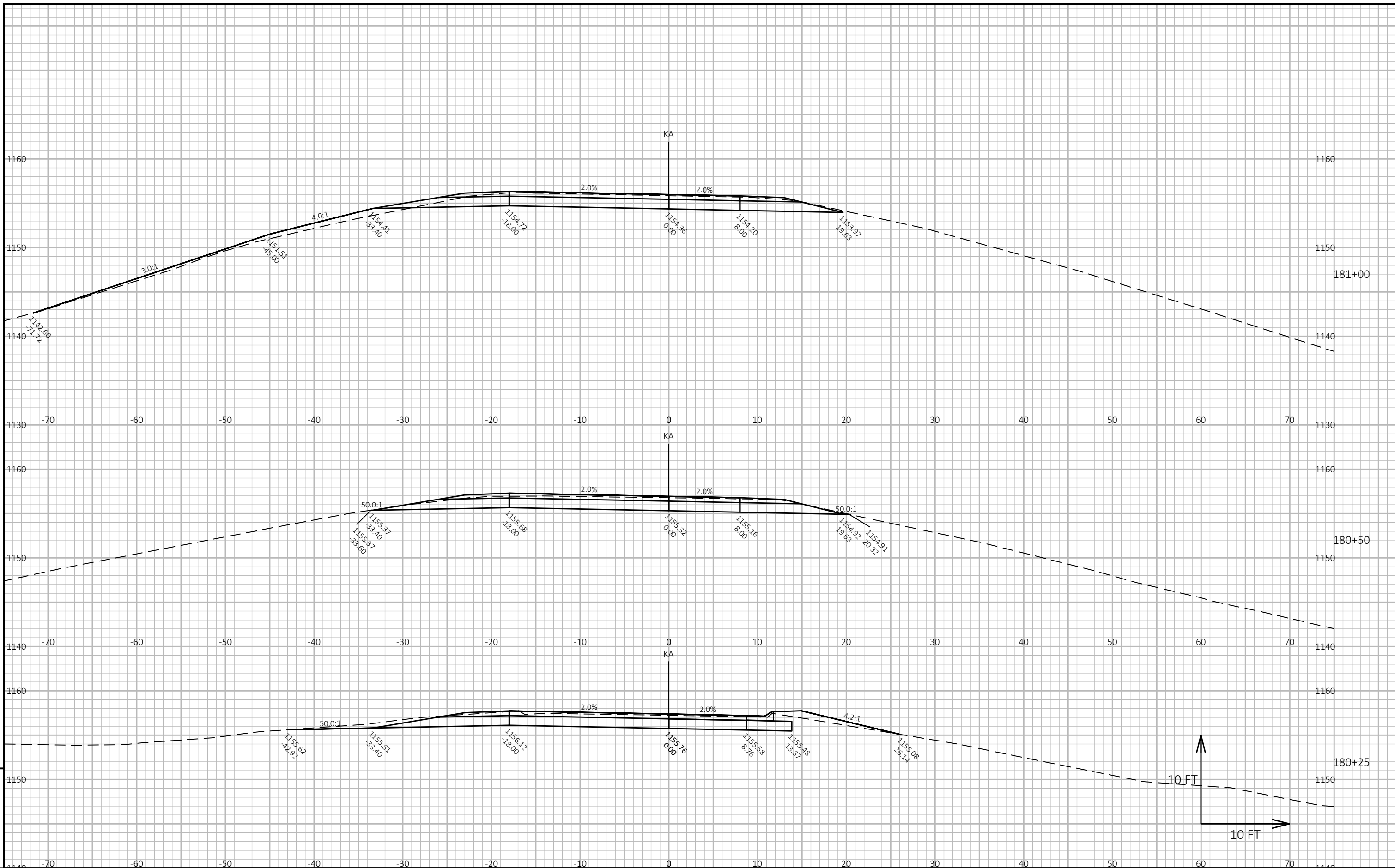
PROJECT NO: 1166-00-83 HWY: IH 39 COUNTY: MARATHON CROSS SECTIONS: STH 34 SHEET E



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| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | CROSS SECTIONS: STH 34 | SHEET | E |
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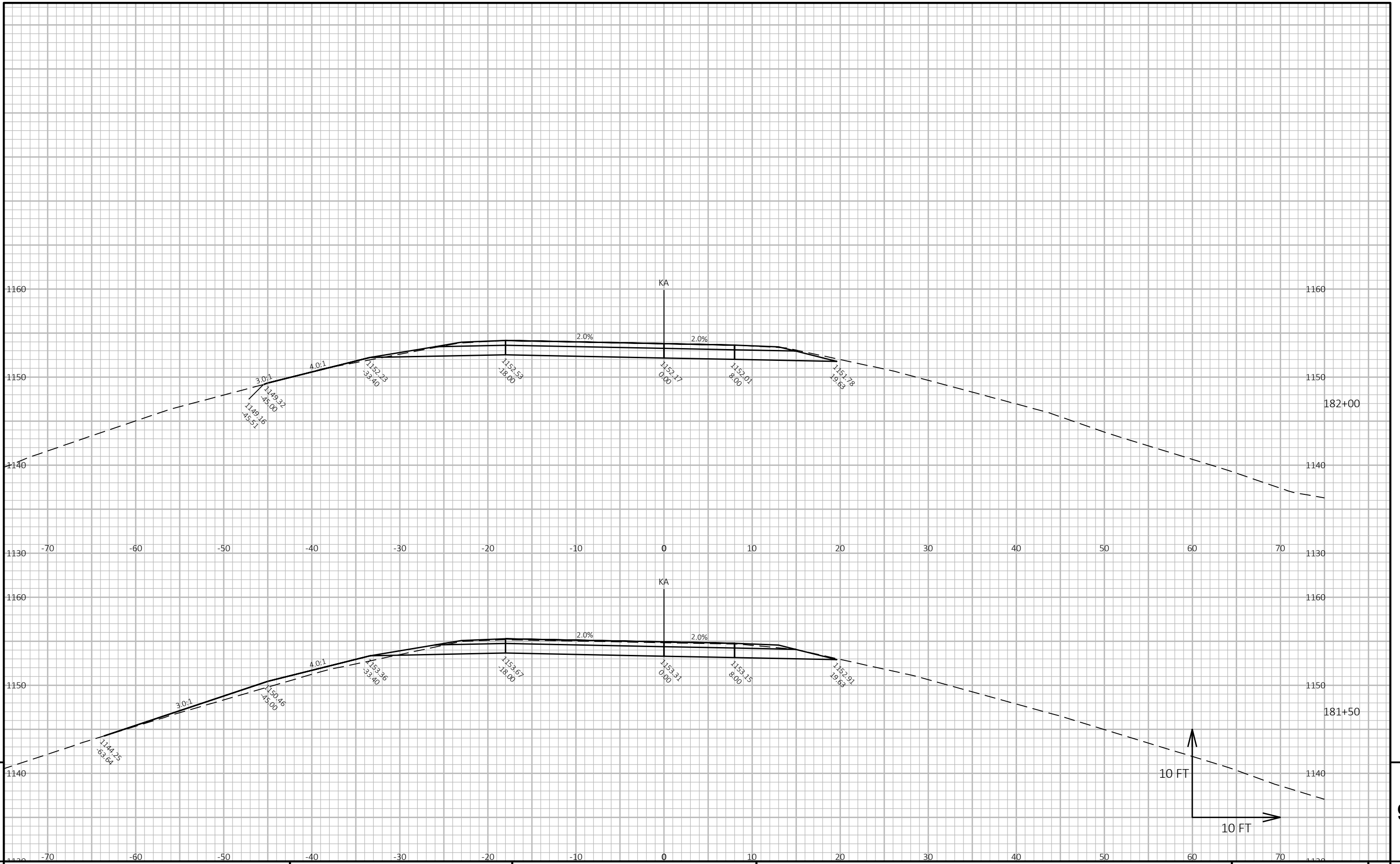
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PROJECT NO: 1166-00-83 HWY: IH 39 COUNTY: MARATHON CROSS SECTIONS: KA RAMP SHEET E

FILE NAME : C:\USERS\DOTZAG\DOCUMENTS\11660013\SHEETSPLAN\090201-XS.DWG PLOT DATE : 1/20/2022 11:19 AM PLOT BY : GRULING, ZACHARY P PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 18



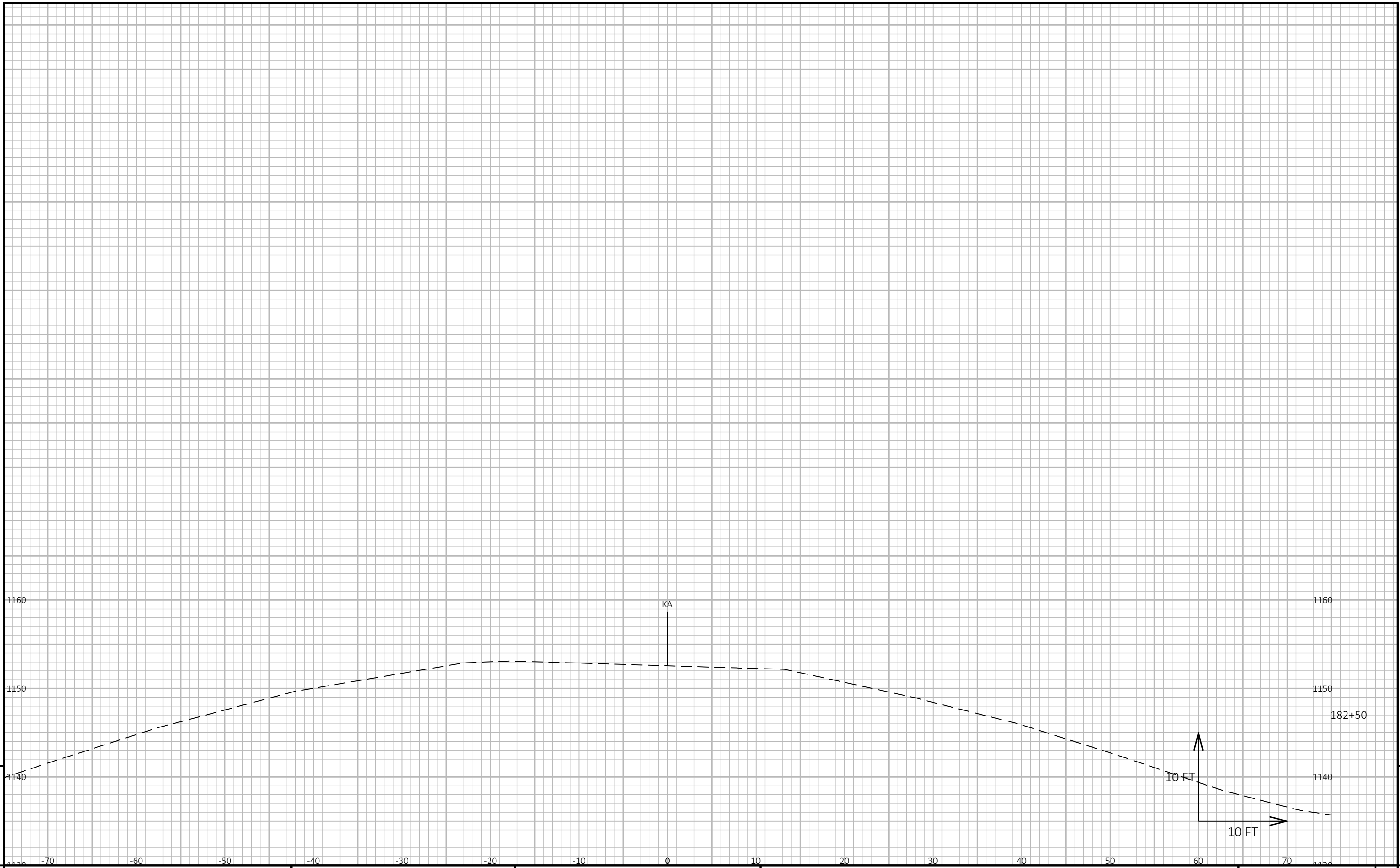
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PROJECT NO: 1166-00-83 HWY: IH 39 COUNTY: MARATHON CROSS SECTIONS: KA RAMP SHEET E

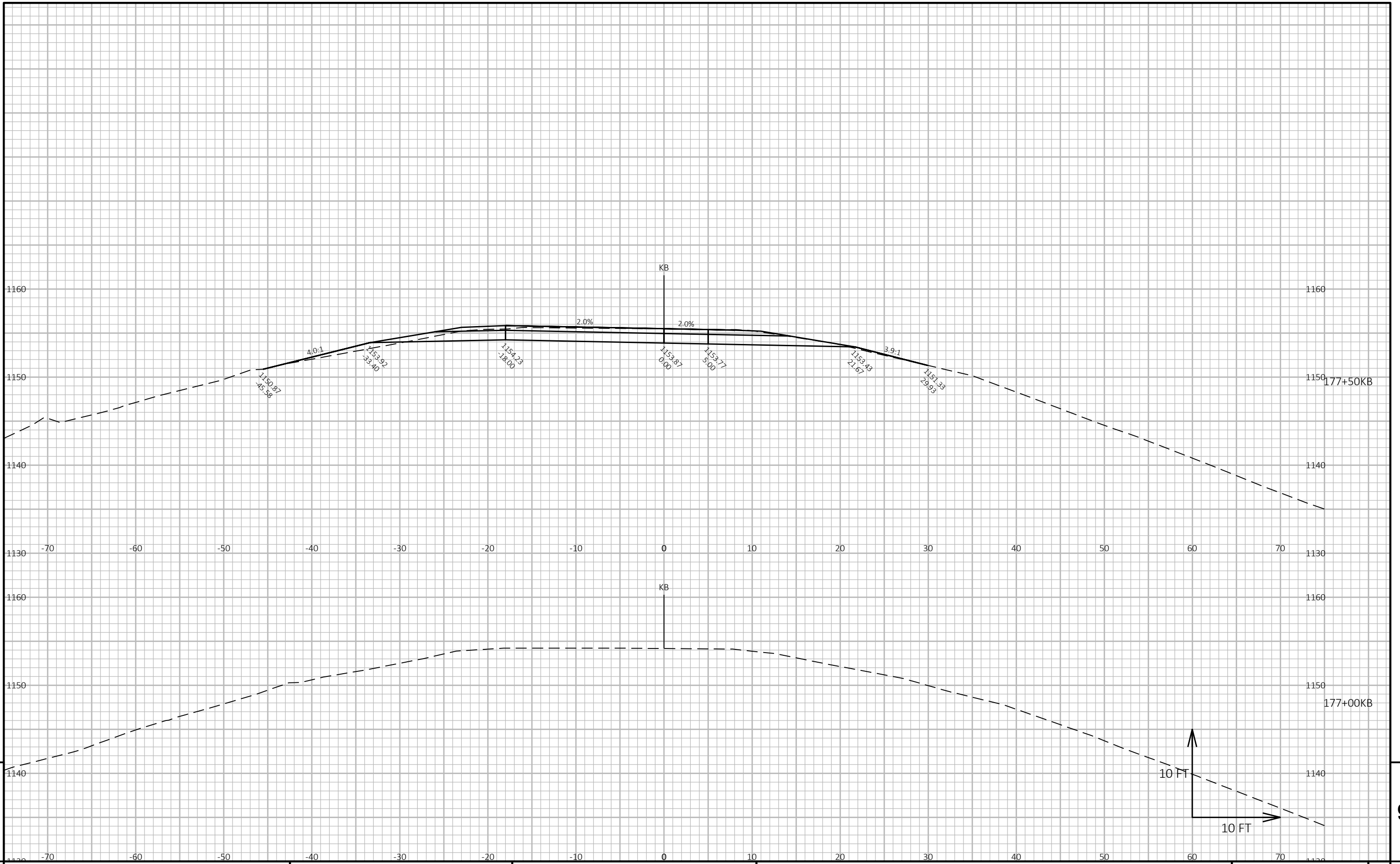
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LAYOUT NAME - 19



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| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | CROSS SECTIONS: KA RAMP | SHEET |
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| FILE NAME: C:\USERS\DOTZAG\DOCUMENTS\11660013\SHEETSPLAN\090201-XS.DWG | PLOT DATE: 1/20/2022 11:20 AM | PLOT BY: GRULING, ZACHARY P | PLOT NAME: | PLOT SCALE: 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. |
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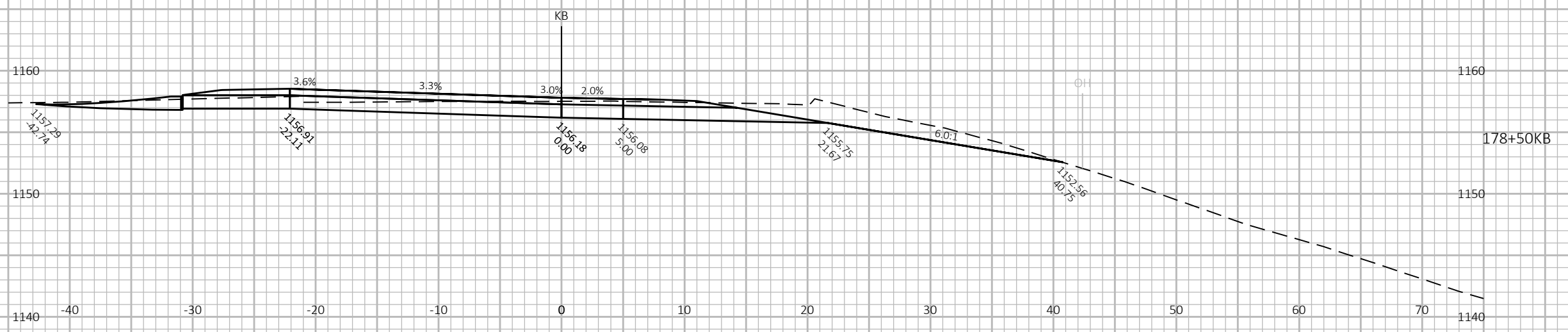
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PROJECT NO: 1166-00-83 HWY: IH 39 COUNTY: MARATHON CROSS SECTIONS: KB RAMP SHEET E

FILE NAME: C:\USERS\DOTZAG\DOCUMENTS\11660013\SHEETSPLAN\090201-XS.DWG PLOT DATE: 1/20/2022 11:21 AM PLOT BY: GRULING, ZACHARY P PLOT NAME: PLOT SCALE: 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 21

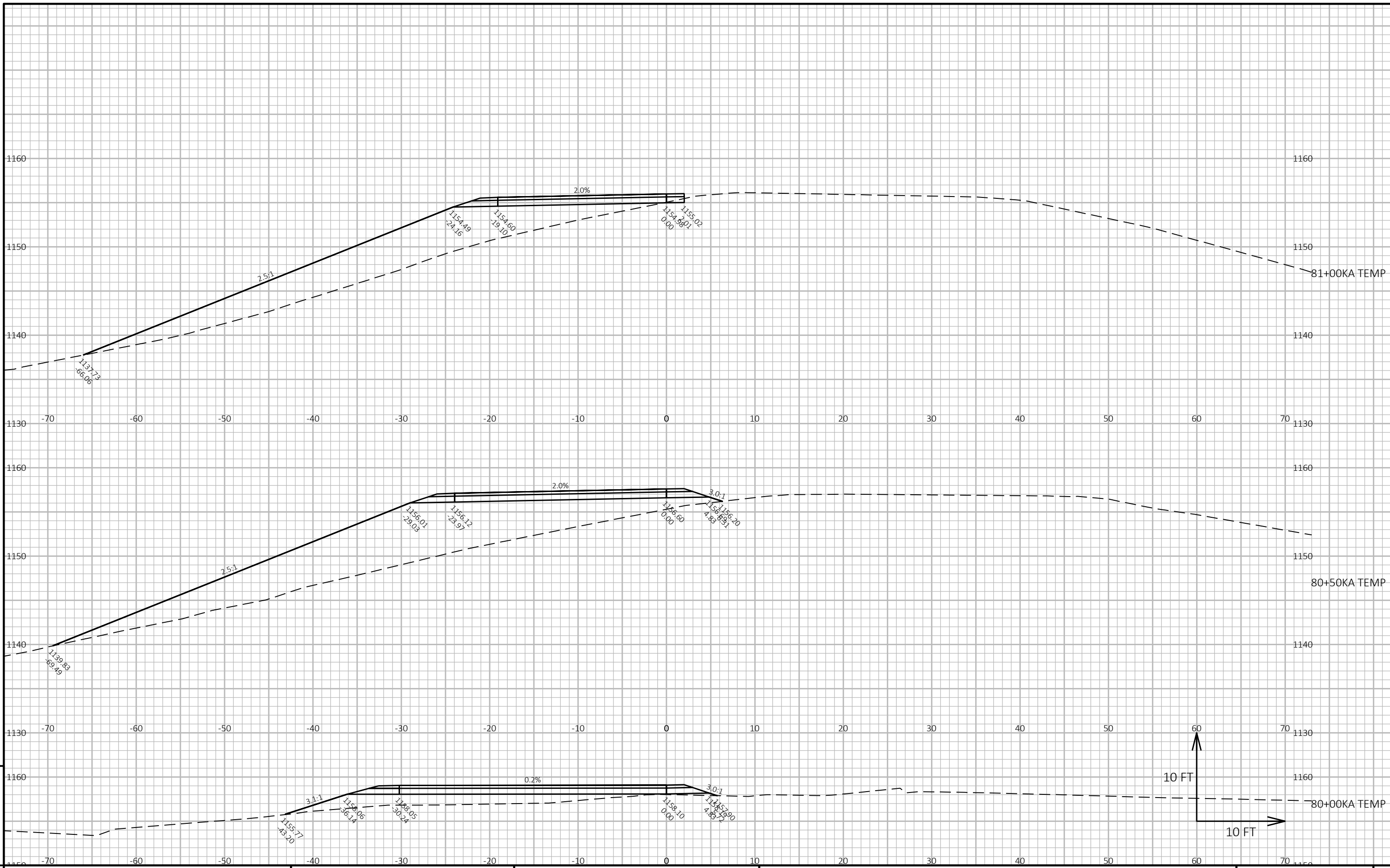


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| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | CROSS SECTIONS: KB RAMP | SHEET |
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E



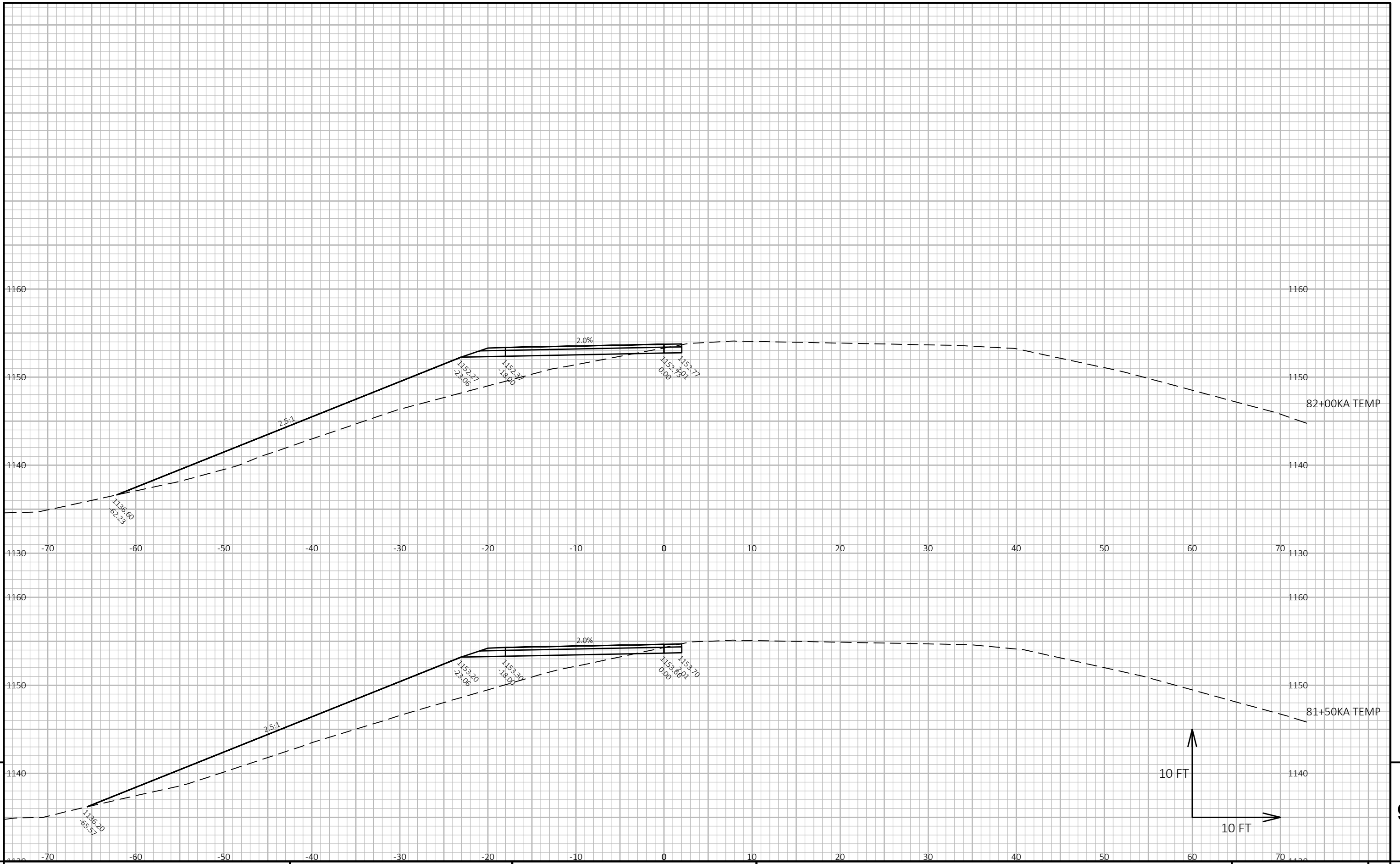
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PROJECT NO: 1166-00-83 HWY: IH 39 COUNTY: MARATHON CROSS SECTIONS: KAT TEMP RAMP SHEET E

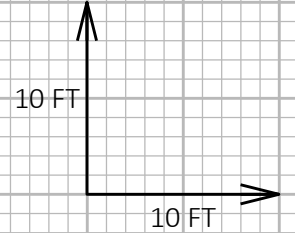
FILE NAME : N:\PDS\C3D\11660013\DESIGN\CORRIDORS\CRDR-34-TEMP RAMP.DWG PLOT DATE : 3/2/2022 11:27 AM PLOT BY : GRULING, ZACHARY P PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 01



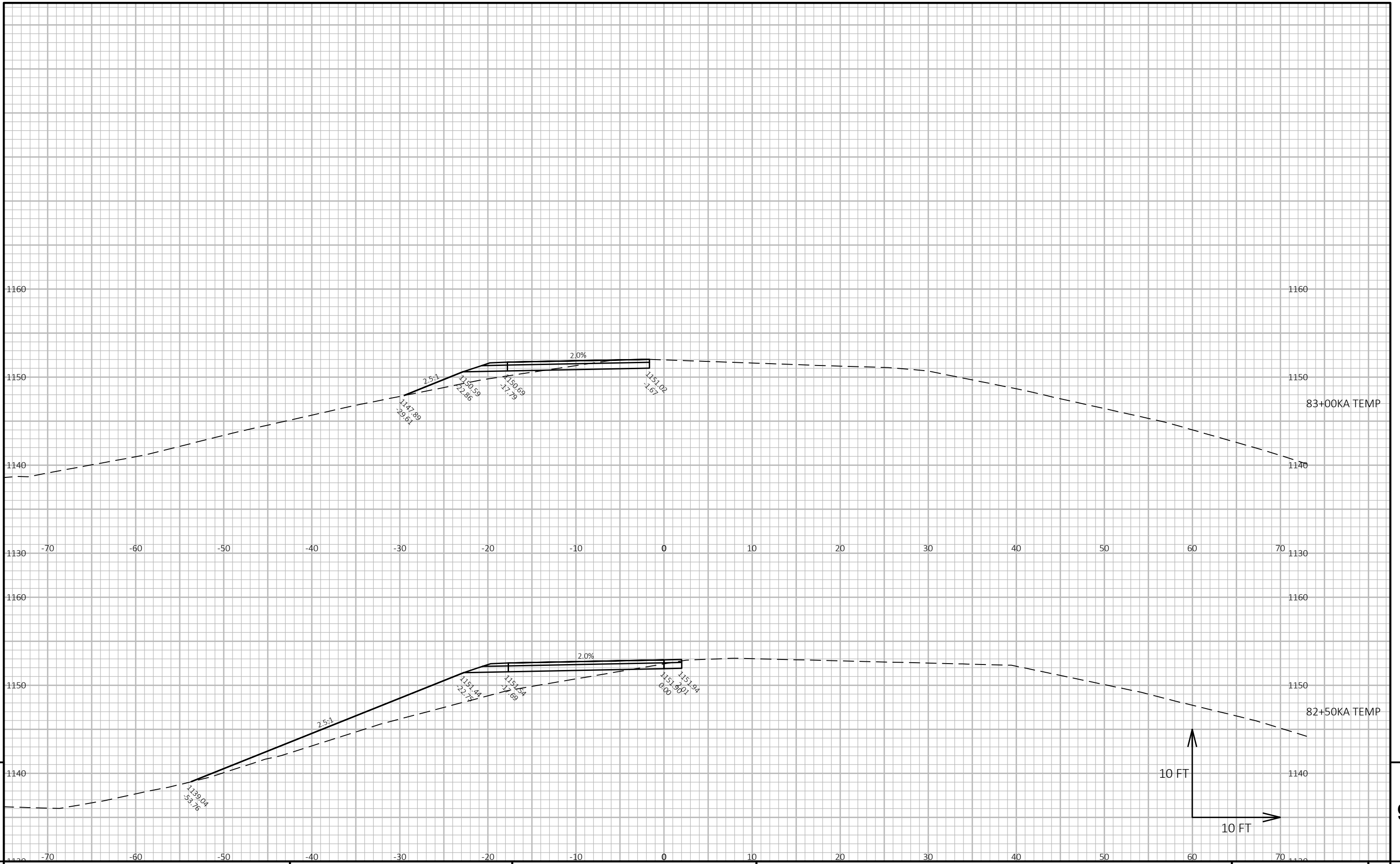
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| PROJECT NO: 1166-00-83 | HWY: IH 39 | COUNTY: MARATHON | CROSS SECTIONS: KAT TEMP RAMP | SHEET | E |
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FILE NAME : N:\PDS\C3D\11660013\DESIGN\CORRIDORS\CRDR-34-TEMP RAMP.DWG
 LAYOUT NAME - 02
 PLOT DATE : 3/2/2022 7:50 AM
 PLOT BY : GRULING, ZACHARY P
 PLOT NAME :
 PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT.
 WISDOT/CADD SHEET 49



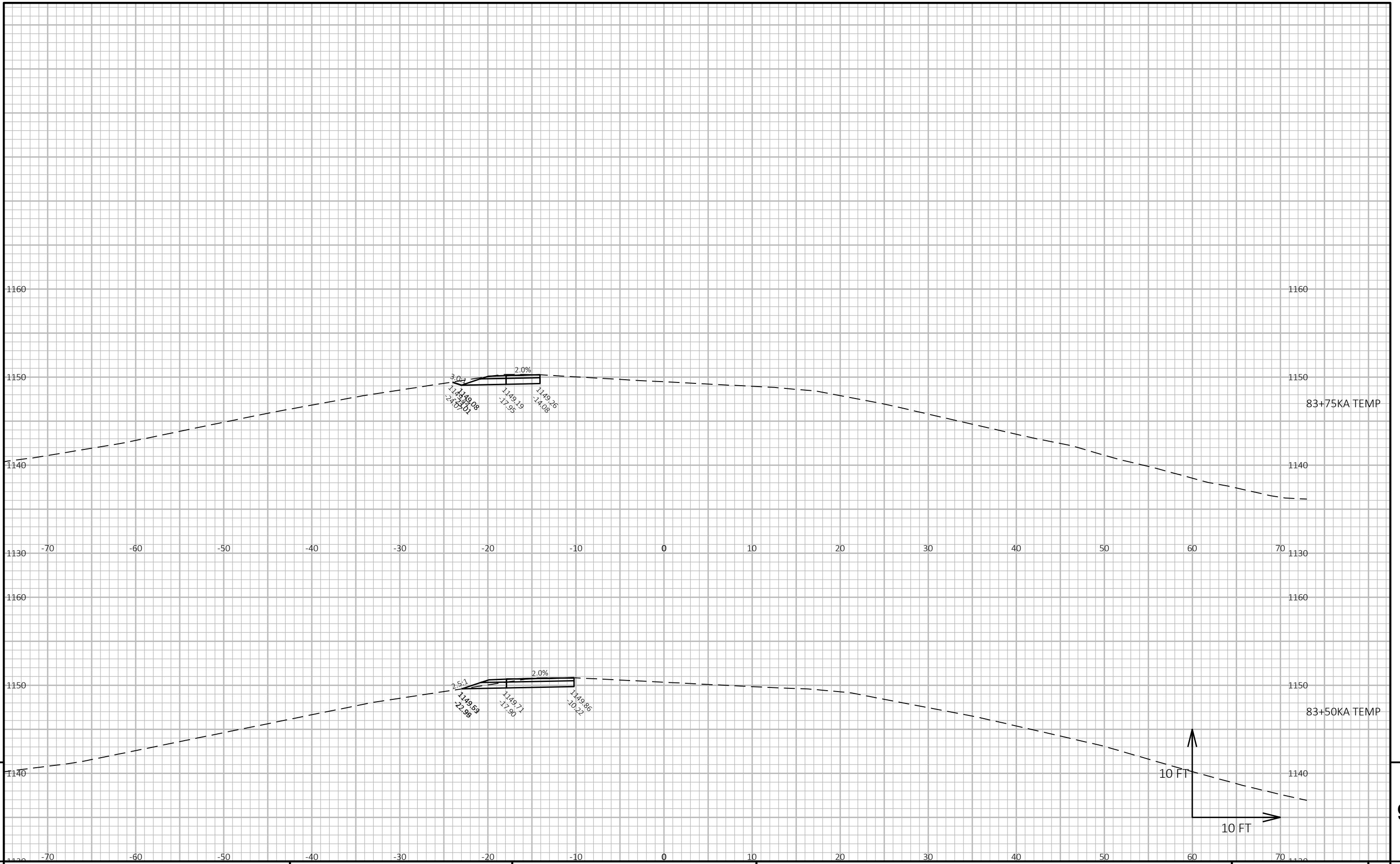
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PROJECT NO: 1166-00-83 HWY: IH 39 COUNTY: MARATHON CROSS SECTIONS: KAT TEMP RAMP SHEET E

FILE NAME : N:\PDS\C3D\11660013\DESIGN\CORRIDORS\CRDR-34-TEMP RAMP.DWG PLOT DATE : 3/2/2022 7:50 AM PLOT BY : GRULING, ZACHARY P PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 03



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PROJECT NO: 1166-00-83 HWY: IH 39 COUNTY: MARATHON CROSS SECTIONS: KAT TEMP RAMP SHEET E

FILE NAME : N:\PDS\C3D\11660013\DESIGN\CORRIDORS\CRDR-34-TEMP RAMP.DWG PLOT DATE : 3/2/2022 7:50 AM PLOT BY : GRULING, ZACHARY P PLOT NAME : PLOT SCALE : 1 IN:10 FT HORZ. / 1 IN:10 FT VERT. WISDOT/CADD SHEET 49

LAYOUT NAME - 04

Notes



Wisconsin Department of Transportation

Dedicated people creating transportation solutions through innovation and exceptional service.

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