

WKE

PROJECT ID:  
WITH: N/A

2430-07-70

COUNTY:  
RACINE

SEPTEMBER 2025

ORDER OF SHEETS

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

TOTAL SHEETS = 190

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

UNION GROVE - HALES CORNERS

STH 20 TO 2000 FT NORTH OF CTH K

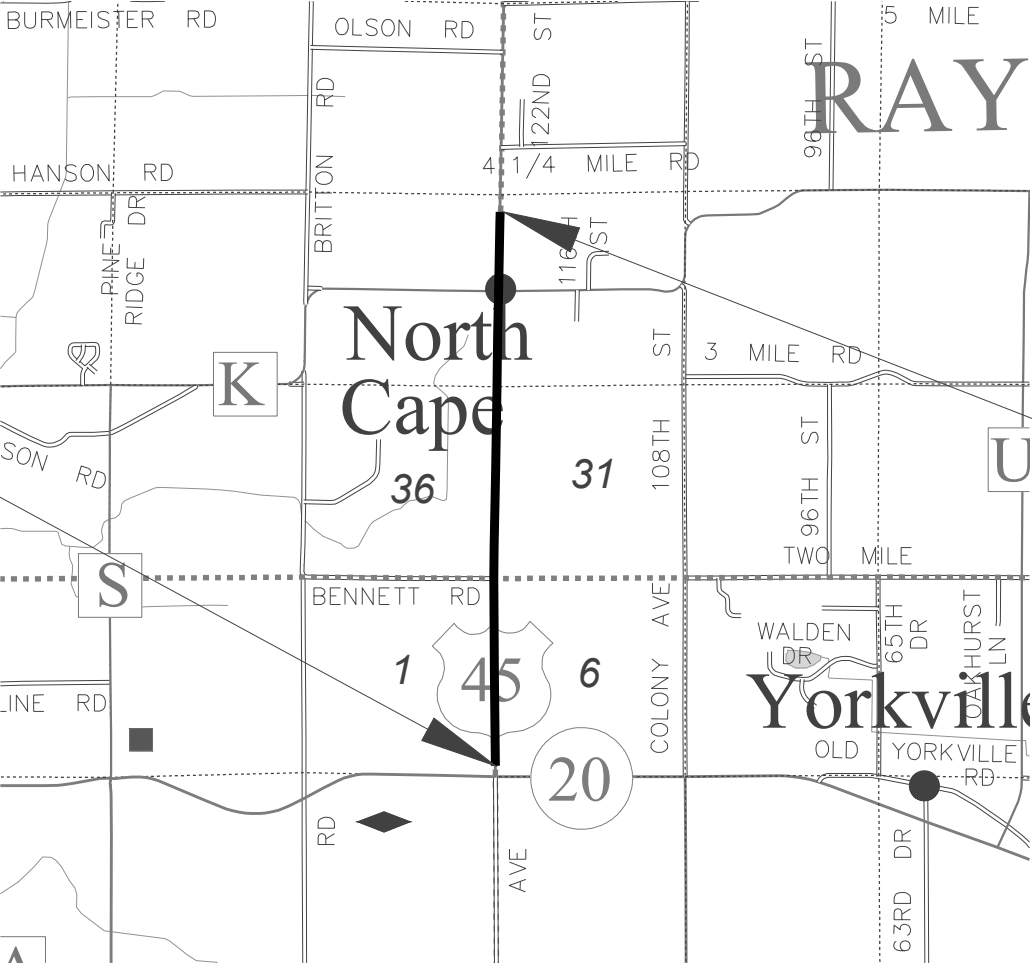
USH 45

RACINE COUNTY

STATE PROJECT NUMBER

2430-07-70

R-20-E R-21-E



LAYOUT  
SCALE 0 0.5 MI

TOTAL NET LENGTH OF CENTERLINE = 2.737 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), RACINE COUNTY NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES.

ELEVATIONS ARE REFERENCED TO NAVD 88 (2012 ). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

STATE PROJECT

2430-07-70

FEDERAL PROJECT

PROJECT

WISC 2025602

CONTRACT

1

ORIGINAL PLANS PREPARED BY



4/23/2025  
(DATE)

Andy Smieja  
(SIGNATURE)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

|                     |                       |
|---------------------|-----------------------|
| PREPARED BY         |                       |
| Surveyor            | DAAR ENGINEERING, INC |
| Designer            | DAAR ENGINEERING, INC |
| Project Manager     | GARY METZER, PE       |
| Regional Examiner   | SE REGION             |
| Regional Supervisor | JANET CANNON, PE      |

APPROVED FOR THE DEPARTMENT  
DATE: 4/23/2025 Gary Metzger (Signature)

E

GENERAL NOTES

MISCELLANEOUS

UNLESS NOTED ON THE PLAN, ALL STATIONS AND OFFSETS ARE BASED OFF OF THE USH 45 REFERENCE LINE.

WITH THE EXCEPTION OF THE RIGHT OF WAY PLAT LOCATIONS, EXISTING RIGHT OF WAY WAS OBTAINED FROM RACINE COUNTY AND MILWAUKEE COUNTY GIS AND SHALL BE CONSIDERED APPROXIMATE.

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

DIMENSIONS GIVEN FOR EXISTING FEATURES SHALL BE CONSIDERED AS APPROXIMATE AND MEASURED IN THE FIELD FOR MATCHING PURPOSES.

THE LOCATION OF EXISTING OR PROPOSED UTILITIES, AS NOTED IN THE PLANS, ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS AND SERVICES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

A SAWED OR MILLED JOINT IS REQUIRED WHERE NEW PAVEMENT MEETS EXISTING PAVEMENT.

CONTRACTOR SHALL CONTACT THE PROJECT ENGINEER AND THE SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION, AT LEAST TWO WEEKS PRIOR TO WORK NEAR ANY PUBLIC SURVEY MONUMENT.

THE CONTRACTOR'S PAVING OPERATIONS SHALL BE CONSISTENT WITH THE PLAN TYPICAL SECTIONS AND CONSTRUCTED TO PREVENT HMA LONGITUDINAL JOINTS FROM BEING LOCATED WITHIN A DRIVING, TURNING, BIKE OR PARKING LANE.

EXISTING DRIVEWAYS AND FIELD ENTRANCES SHALL BE RESTORED IN KIND AS DIRECTED BY THE ENGINEER IN THE FIELD AND AT THE LOCATION DETERMINED BY THE ENGINEER.

THE EXACT LOCATION OF PRIVATE ENTRANCES IS TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

INLET AND DISCHARGE ELEVATIONS FOR DRAINAGE STRUCTURES AND PIPES SHOWN ON THE PLANS MAY BE ADJUSTED BY THE ENGINEER TO FIT EXISTING FIELD CONDITIONS.

VERIFY THE EXISTING STORM SEWER SYSTEM CONNECTION LOCATIONS AND ELEVATIONS BEFORE ORDERING DRAINAGE STRUCTURES AND PIPES. NOTIFY THE ENGINEER OF ANY DEVIATIONS FROM THE INFORMATION SHOWN ON THE PLANS BEFORE INSTALLING THE PROPOSED STORM SEWER.

TRAFFIC CONTROL

SIGN LOCATIONS ARE APPROXIMATE. THE ACTUAL LOCATIONS AND SPACING MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER TO MEET FIELD CONDITIONS.

ALL SIGNS, TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE COVERED OR REMOVED AS NEEDED AND/OR AS DIRECTED BY THE ENGINEER. NO "WORKING" LIGHTS SHALL BE VISIBLE ON A COVERED OR LAID DOWN SIGN.

ALL EXISTING CONFLICTING PAVEMENT MARKING SHALL BE REMOVED.

A FLAGGER MAY BE REQUIRED WHERE CONSTRUCTION VEHICLES ENTER OR LEAVE "WORK/CLOSED" AREAS IF WARRANTED BY CONDITIONS AND/OR AS DIRECTED BY THE ENGINEER.

EROSION CONTROL

ALL DISTURBED AREAS WITHIN THE RIGHT OF WAY THAT ARE NOT THE RESULT OF CONTRACT ITEMS SHALL BE RESTORED, SEEDED, FERTILIZED, AND EROSION MATTED AT THE CONTRACTOR'S EXPENSE.

EROSION CONTROL DEVICES ARE AT SUGGESTED LOCATIONS. THE ACTUAL LOCATIONS WILL BE DETERMINED BY THE CONTRACTOR'S ECIP AND BY THE ENGINEER. EROSION CONTROL DEVICES SHALL BE MAINTAINED UNTIL PERMANENT VEGETATION IS ESTABLISHED OR UNTIL THE ENGINEER DETERMINED THE DEVICE IS NO LONGER REQUIRED.

RESTORE AREAS, AS DESIGNATED BY THE ENGINEER, IMMEDIATELY AFTER GRADING IS COMPLETED WITHIN THOSE AREAS. SEED, FERTILIZE, AND EROSION MAT TOPSOILED AREAS, AS DESIGNATED BY THE ENGINEER, WITHIN FIVE (5) CALENDAR DAYS AFTER PLACEMENT OF TOPSOIL. IF GRADED AREAS ARE LEFT EXPOSED FOR MORE THAN FOURTEEN (14) CALENDAR DAYS. SEED THOSE AREAS WITH TEMPORARY SEED.

STOCKPILE EXCESS MATERIAL OR SPOILS ON UPLAND AREAS AWAY FROM WETLANDS, FLOODPLAINS AND WATERWAYS. STOCKPILED MATERIAL SHALL BE PROTECTED AGAINST EROSION. IF STOCKPILED MATERIAL IS LEFT FOR MORE THAN FOURTEEN (14) CALENDAR DAYS, APPLY TEMPORARY SEED TO THE STOCKPILE.

WHEN PERFORMING ROADWAY CLEANING OPERATIONS, THE CONTRACTOR SHALL USE EQUIPMENT HAVING VACUUM OR WATER SPRAY MECHANISMS TO ELIMINATE THE DISPERSION OF DUST. IF VACUUM EQUIPMENT IS EMPLOYED, IT SHALL HAVE SUITABLE SELF-PARTICULATE COLLECTORS TO PREVENT DISCHARGE FROM THE COLLECTION BIN TO THE ATMOSPHERE.

SEE PROJECT SPECIAL PROVISIONS FOR ADDITIONAL EROSION CONTROL REQUIREMENTS TO BE FOLLOWED

| <div>STANDARD ABBREVIATIONS</div> <div>AGG      AGGREGATE</div> <div>ASPH     ASPHALT</div> <div>CE        COMMERCIAL ENTRANCE</div> <div>CONC     CONCRETE</div> <div>PE        PRIVATE ENTRANCE</div> <div>FE        FIELD ENTRANCE</div>                                                                                                                                 | <div>ORDER OF SECTION 2 DETAIL SHEETS</div> <div>GENERAL NOTES &amp; CONTACTS</div> <div>PROJECT OVERVIEW</div> <div>TYPICAL SECTIONS</div> <div>CONSTRUCTION DETAILS</div> <div>PLAN DETAILS</div> <div>INTERSECTION DETAILS</div> <div>CURB RAMP DETAILS</div> <div>DITCH REGRADING DETAILS</div> <div>STORM SEWER DETAILS</div> <div>DRAINAGE &amp; EROSION CONTROL</div> <div>PERMANENT SIGNING</div> <div>PAVEMENT MARKING</div> <div>TRAFFIC CONTROL</div> <div>ALIGNMENT DETAILS</div> |              |              |        |  |                                     |        |              |              |              |              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------|--------|--|-------------------------------------|--------|--------------|--------------|--------------|--------------|
| <div>HMA PAVEMENT NOTES</div> <div>CONSTRUCT HMA PAVEMENT WITH THE FOLLOWING LAYERS</div> <table><tr><th>LOCATION</th><th>MILL DEPTH</th><th colspan="2">LAYERS</th></tr><tr><td rowspan="2">STH 20 TO<br/>2000 FT NORTH OF CTH K</td><td rowspan="2">2 1/2"</td><td>1 3/4" LOWER</td><td>4 MT 58-28 S</td></tr><tr><td>1 3/4" UPPER</td><td>4 MT 58-28 S</td></tr></table> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | LOCATION     | MILL DEPTH   | LAYERS |  | STH 20 TO<br>2000 FT NORTH OF CTH K | 2 1/2" | 1 3/4" LOWER | 4 MT 58-28 S | 1 3/4" UPPER | 4 MT 58-28 S |
| LOCATION                                                                                                                                                                                                                                                                                                                                                                    | MILL DEPTH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | LAYERS       |              |        |  |                                     |        |              |              |              |              |
| STH 20 TO<br>2000 FT NORTH OF CTH K                                                                                                                                                                                                                                                                                                                                         | 2 1/2"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1 3/4" LOWER | 4 MT 58-28 S |        |  |                                     |        |              |              |              |              |
|                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1 3/4" UPPER | 4 MT 58-28 S |        |  |                                     |        |              |              |              |              |

UTILITY CONTACTS

MIKE VANBOVEN  
AT&T WISCONSIN - COMMUNICATION LINE  
411 7TH STREET  
RACINE, WI 53403  
(262) 676-3958  
[mv3658@att.com](mailto:mv3658@att.com)

CORY SCHMUKI  
MIDWEST FIBER NETWORKS - COMMUNICATION LINE  
6070 NORTH FLINT ROAD  
GLENDALE, WI 53209  
(414) 359-4561  
[cschmuki@midwestfibernetworks.com](mailto:cschmuki@midwestfibernetworks.com)

DOMINIC KATCHA  
SPECTRUM - COMMUNICATION LINE  
1320 NORTH DR MARTIN LUTHER KING JR DRIVE  
MILWAUKEE, WI 53212  
(414) 277-4020  
[dominic.katcha@charter.com](mailto:dominic.katcha@charter.com)

JASON KENNY  
TDS METROCOM LLC - COMMUNICATION LINE  
525 JUNCTION ROAD  
MADISON, WI 53717  
(262) 514-2127  
[jason.kenny@tdstelecom.com](mailto:jason.kenny@tdstelecom.com)

JASON GRIFFITHS  
TDS TELECOM - COMMUNICATION LINE  
525 JUNCTION ROAD  
MADISON, WI 53717  
(262) 613-3845  
[jason.griffiths@tdstelecom.com](mailto:jason.griffiths@tdstelecom.com)

JASON CHAPIN  
WE ENERGIES - ELECTRICITY  
7815 NORTHWESTERN AVENUE  
RACINE, WI 53406  
(262) 884-6706  
[jason.chapin@we-energies.com](mailto:jason.chapin@we-energies.com)

CHRIS DEGRAVE  
WE ENERGIES - GAS  
7815 NORTHWESTERN AVENUE  
RACINE, WI 53406  
(262) 886-7018  
[chris.degrave@we-energies.com](mailto:chris.degrave@we-energies.com)

SEWRPC CONTACTS

ANDY TRAEGER (CONSTRUCTION COORDINATOR)  
W239 N 1812 ROCKWOOD DRIVE  
PO BOX 1607  
WAUKESHA, WI 53187-1607  
(262) 953-4296 (OFFICE)  
(262) 853-8463 (CELL)  
[atraeger@sewrpc.org](mailto:atraeger@sewrpc.org)

WISDNR LIAISON

CRAIG WEBSTER  
141 NW BARSTOW STREET, ROOM 180  
WAUKESHA, WI 53188  
(262) 574-2141 (OFFICE)  
(414) 303-3011 (CELL)  
[craig.webster@wi.gov](mailto:craig.webster@wi.gov)

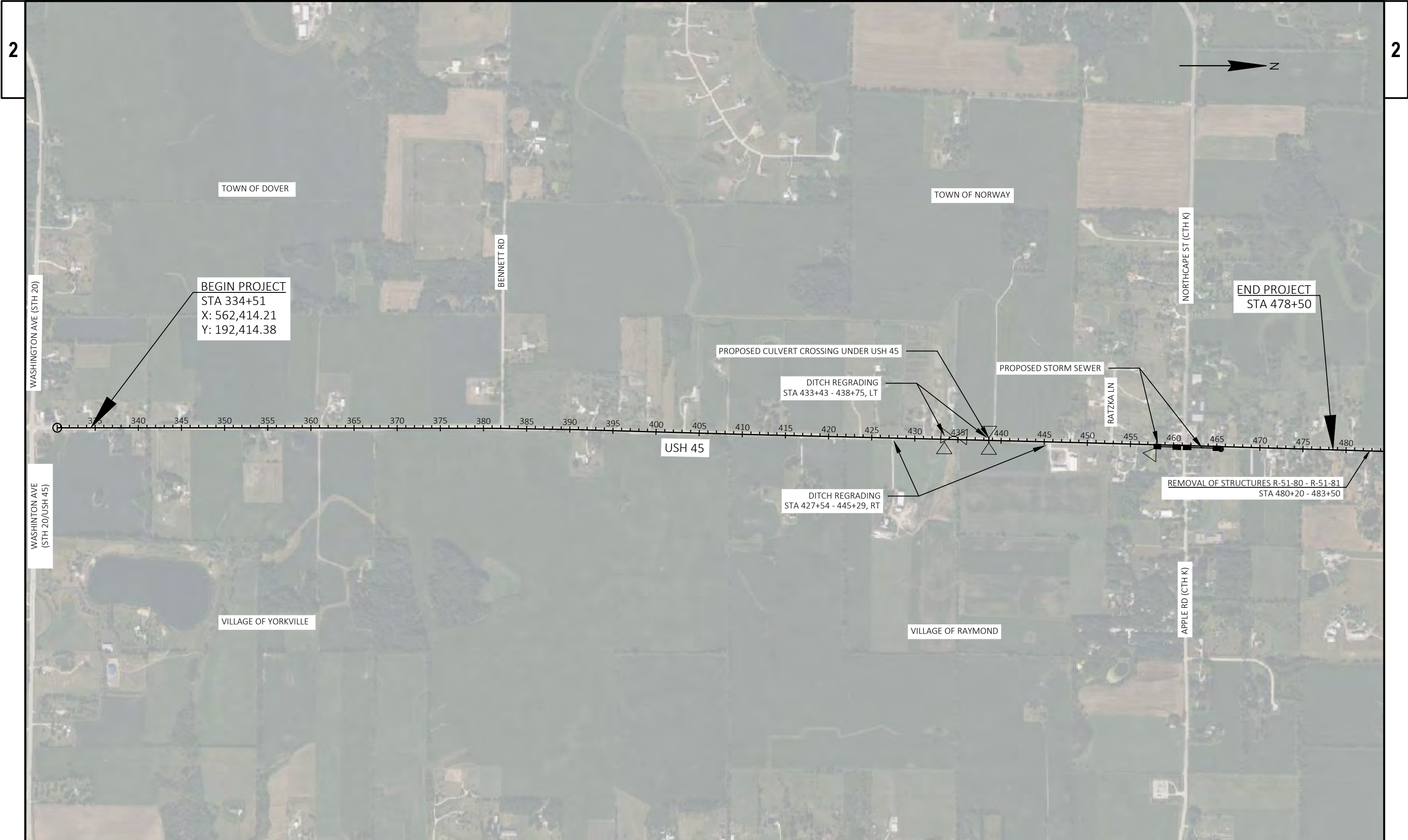
DESIGN CONTACTS

WISDOT SE REGION  
GARY METZER, PE; PROJECT MANAGER  
141 NW BARSTOW ST  
WAUKESHA, WI 53187  
(262) 548-5685  
[gary.metzer@dot.wi.gov](mailto:gary.metzer@dot.wi.gov)

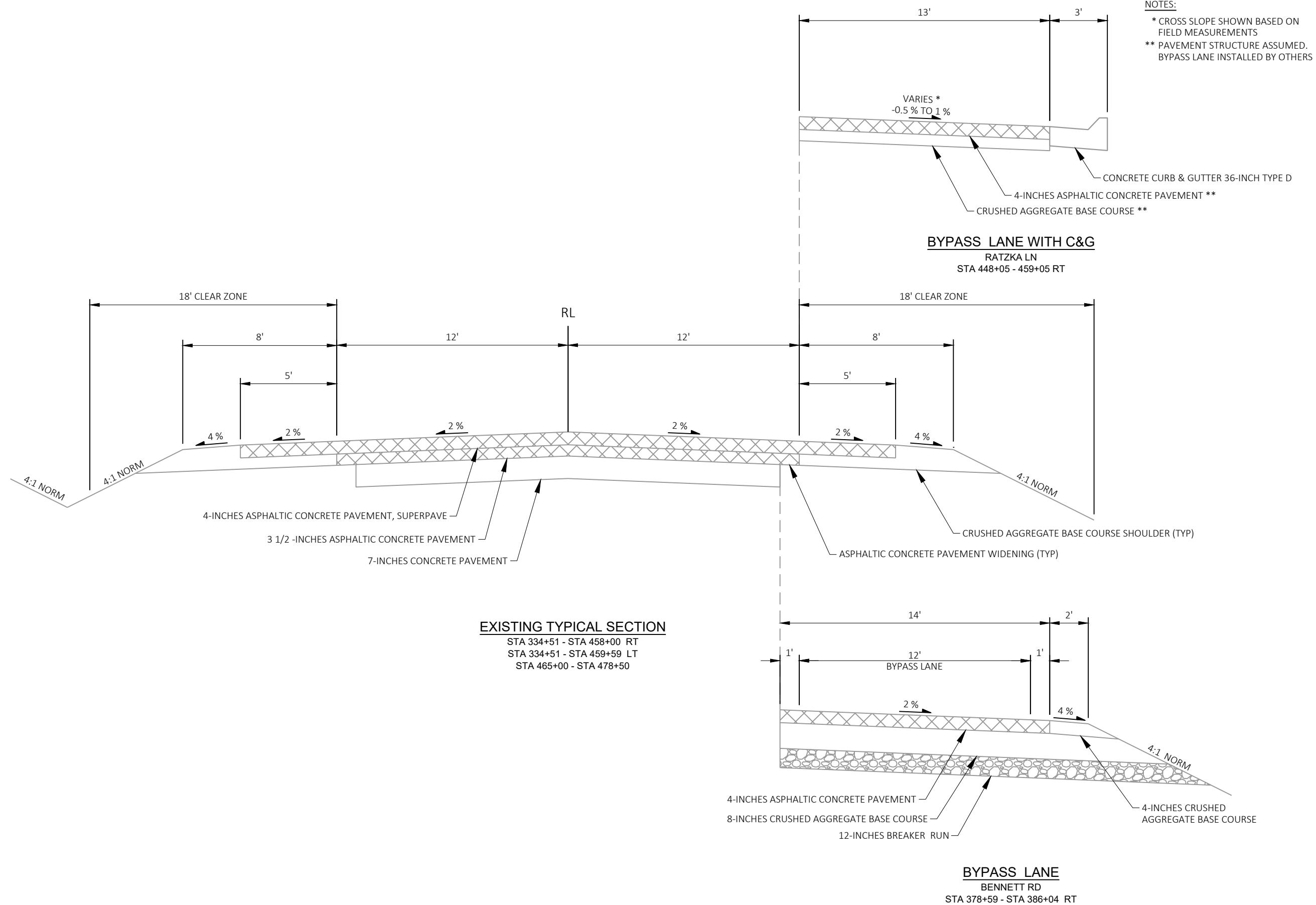
DAAR ENGINEERING, INC  
ANDY SMIEJA, PE  
(414) 935-4350  
[andy.smieja@daarcorp.com](mailto:andy.smieja@daarcorp.com)



Dial **811** or (800)242-8511  
[www.DiggersHotline.com](http://www.DiggersHotline.com)

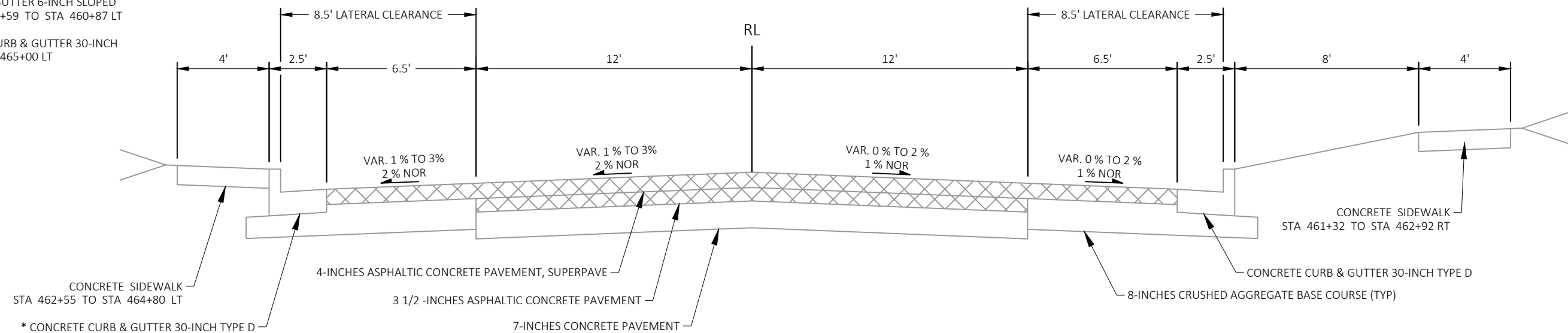


|                        |             |                |                  |       |   |
|------------------------|-------------|----------------|------------------|-------|---|
| PROJECT NO: 2430-07-70 | HWY: USH 45 | COUNTY: RACINE | PROJECT OVERVIEW | SHEET | E |
|------------------------|-------------|----------------|------------------|-------|---|



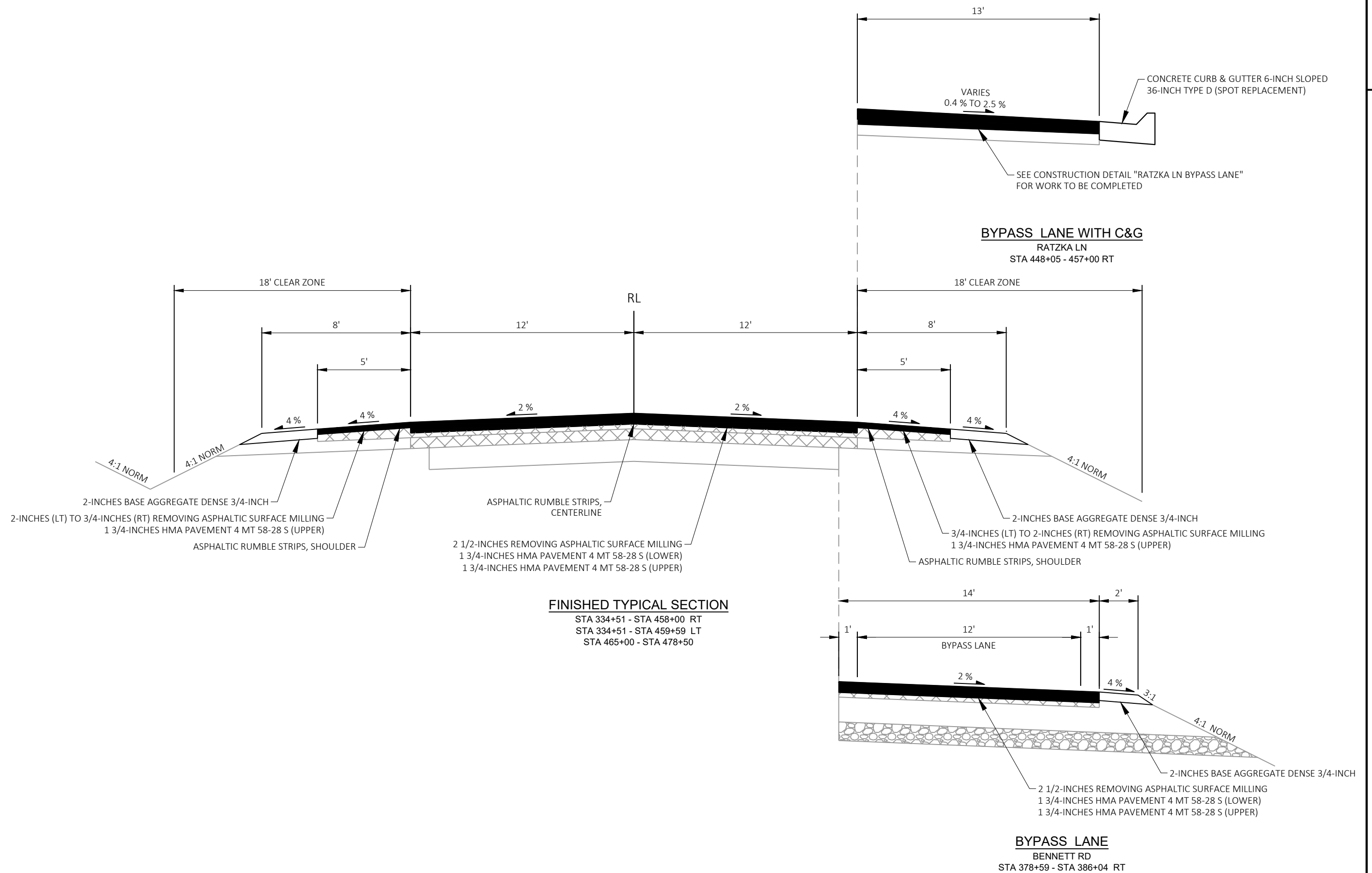
NOTES:

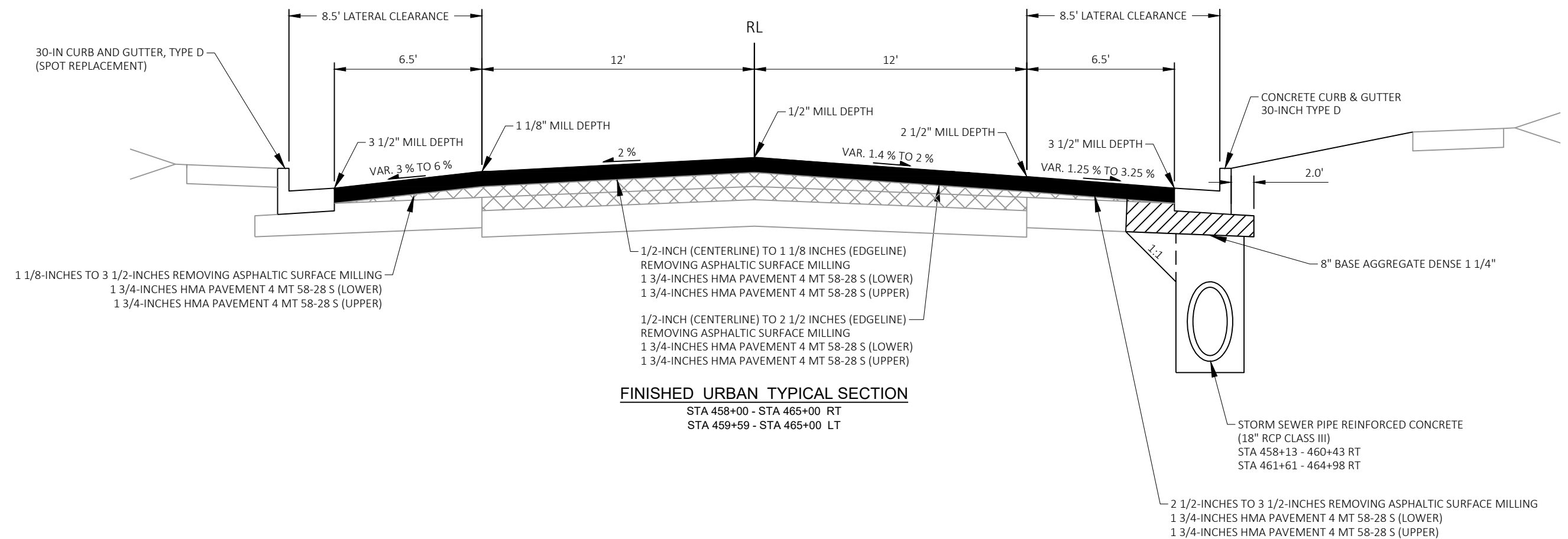
\* CONCRETE CURB AND GUTTER 6-INCH SLOPED  
36-INCH TYPE D STA 459+59 TO STA 460+87 LT  
  
DEPRESSED CONCRETE CURB & GUTTER 30-INCH  
TYPE D STA 462+61 - STA 465+00 LT



EXISTING URBAN TYPICAL SECTION

STA 458+00 - STA 465+00 RT  
STA 459+59 - STA 465+00 LT





LEGEND



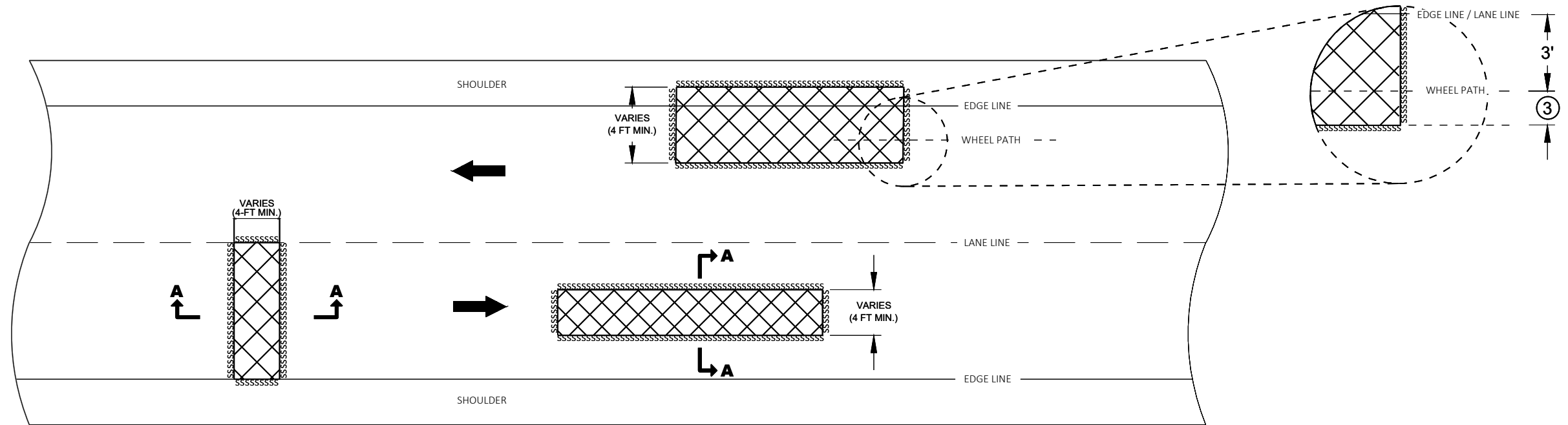
ASPHALTIC REPAIR

VERTICAL MILLED EDGE  
SAW CUTTING AT THE CONTRACTORS DISCRETION

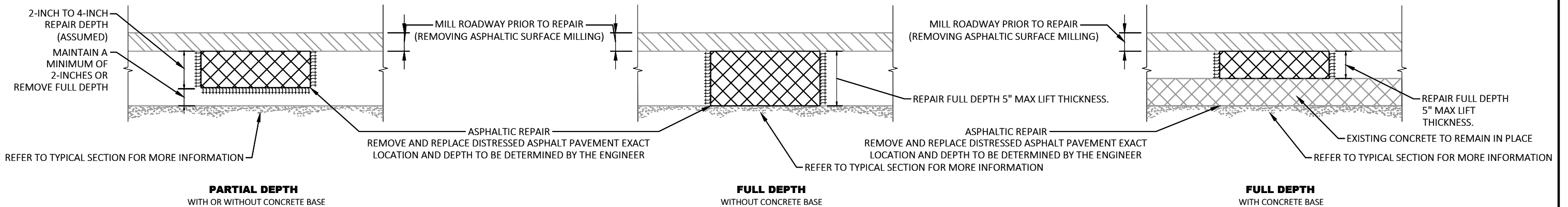
TACK COAT

GENERAL NOTES

- EXACT LOCATION, DEPTH AND SIZE OF REPAIR TO BE DETERMINED BY THE ENGINEER IN THE FIELD.
- MILL PAVEMENT PER PLAN PRIOR TO MAKING ASPHALTIC REPAIR.
- LOCATE LONGITUDINAL REPAIR JOINTS OUTSIDE OF WHEEL PATH. 12-INCH MINIMUM (24-INCH RECOMMENDED) FROM THE CENTER OF THE WHEEL PATH.
- ASPHALTIC REPAIR PAVING TO BE DONE ON THE SAME DAY AS REMOVAL.



PLAN VIEW



SECTION A-A

ASPHALTIC REPAIR

PROJECT NO: 2430-07-70

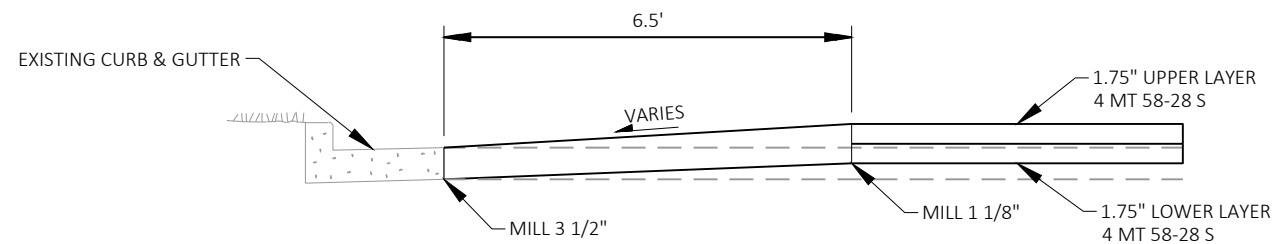
HWY: USH 45

COUNTY: RACINE

CONSTRUCTION DETAILS

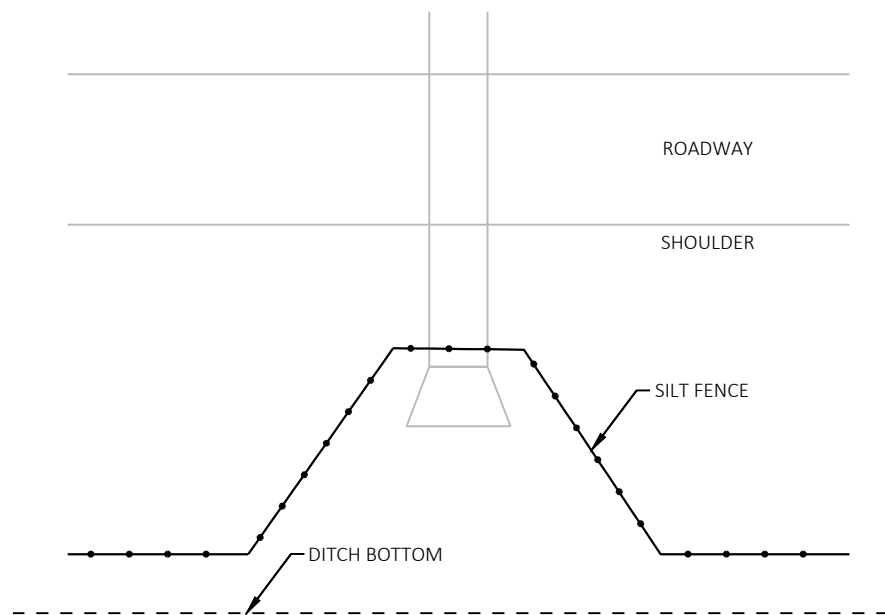
SHEET

E



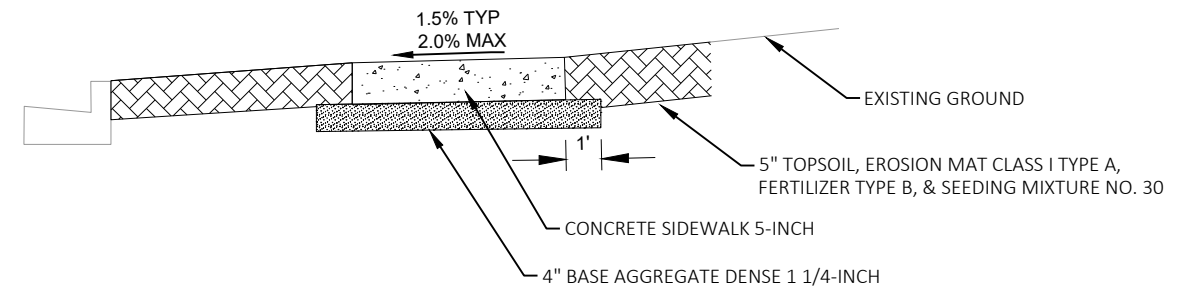
### RAISED PROFILE MATCH AT CURB & GUTTER

STA 458+00 - STA 465+00 RT  
STA 459+59 - STA 465+00 LT

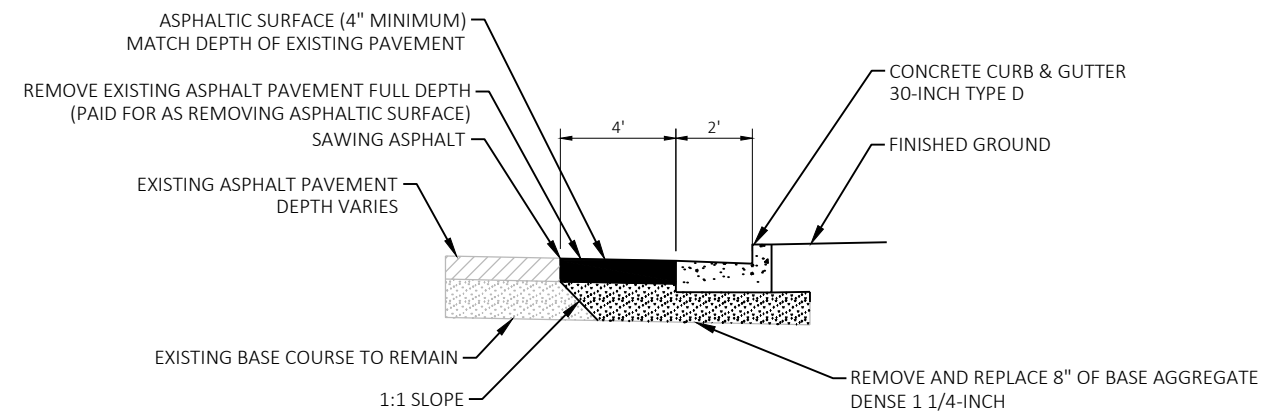


### TYPICAL SILT FENCE DETAIL AT PIPE INLET

NOTE  
SEE SILT FENCE SDD FOR ADDITIONAL INFORMATION.

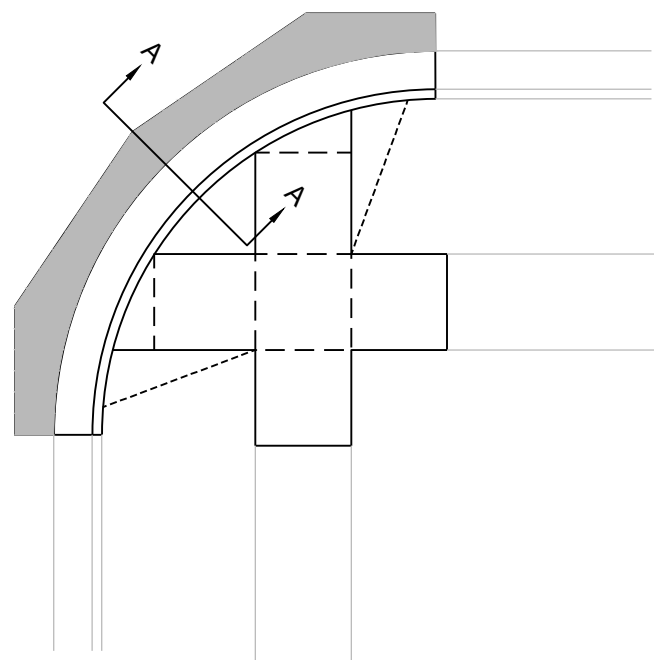
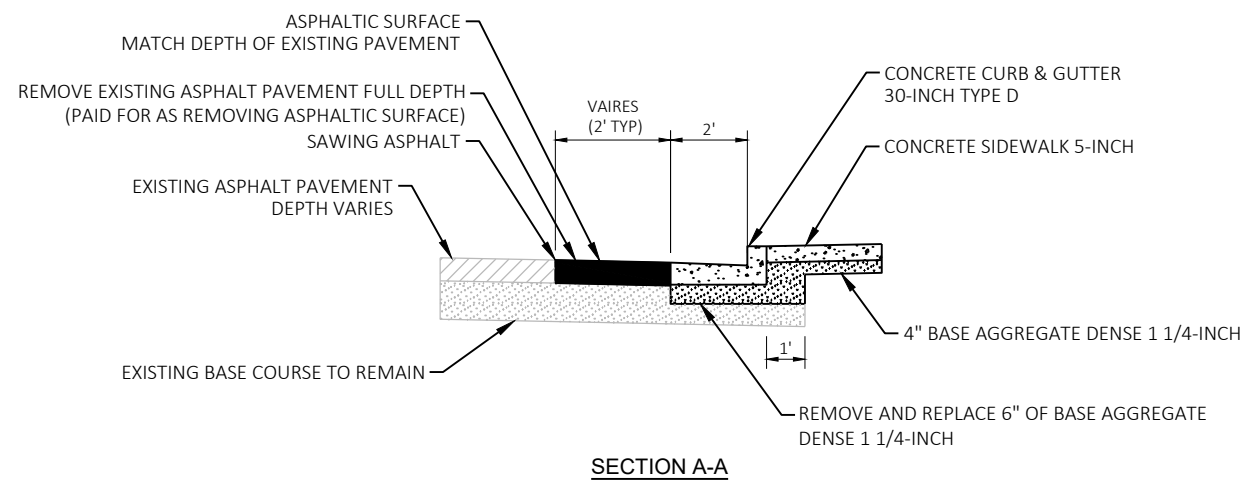


### TYPICAL SIDEWALK SECTION

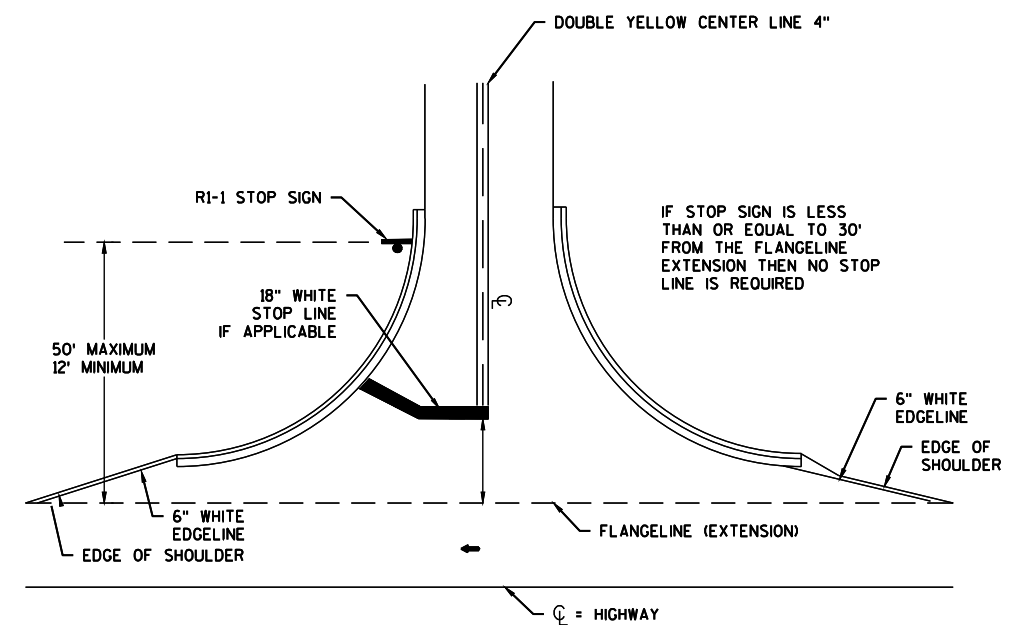


### STORM SEWER SAWCUT DETAIL

STA 458+13 - 460+43 RT  
STA 461+61 - 646+98 RT  
COMPLETE PRIOR TO MILLING & PAVING



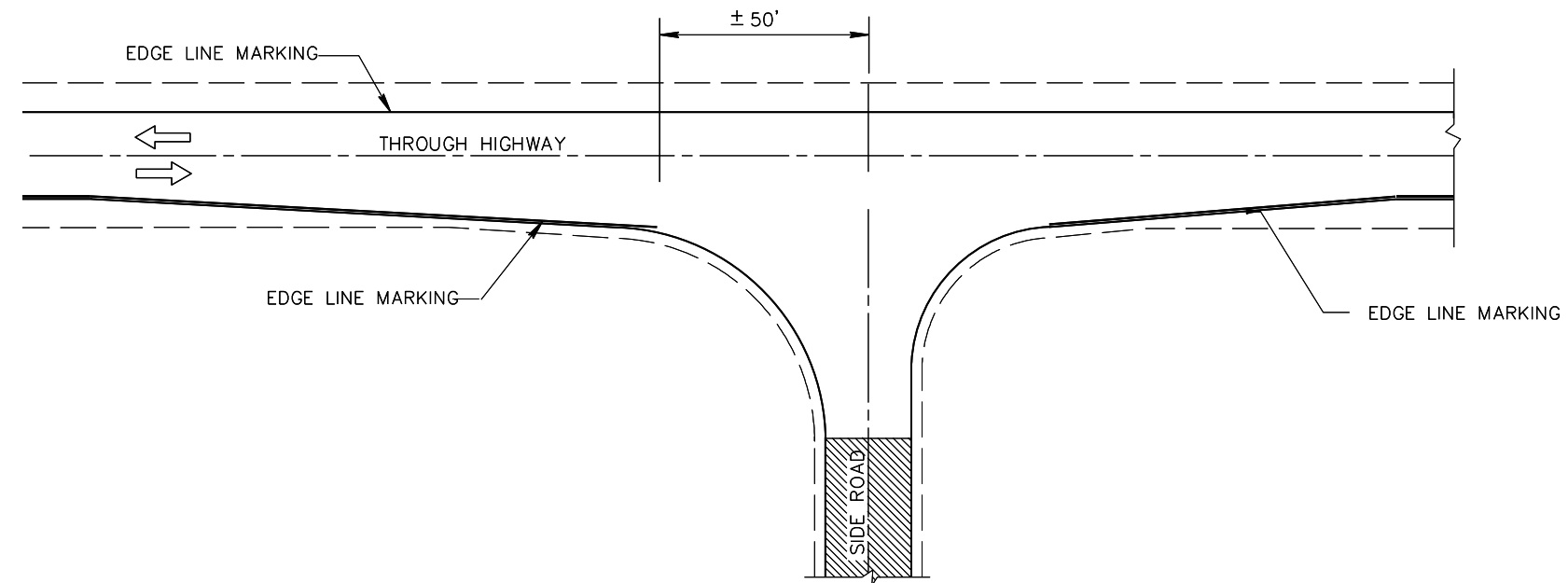
**CURB & GUTTER REPLACEMENT  
ADJACENT TO ASPHALT  
PAVEMENT**



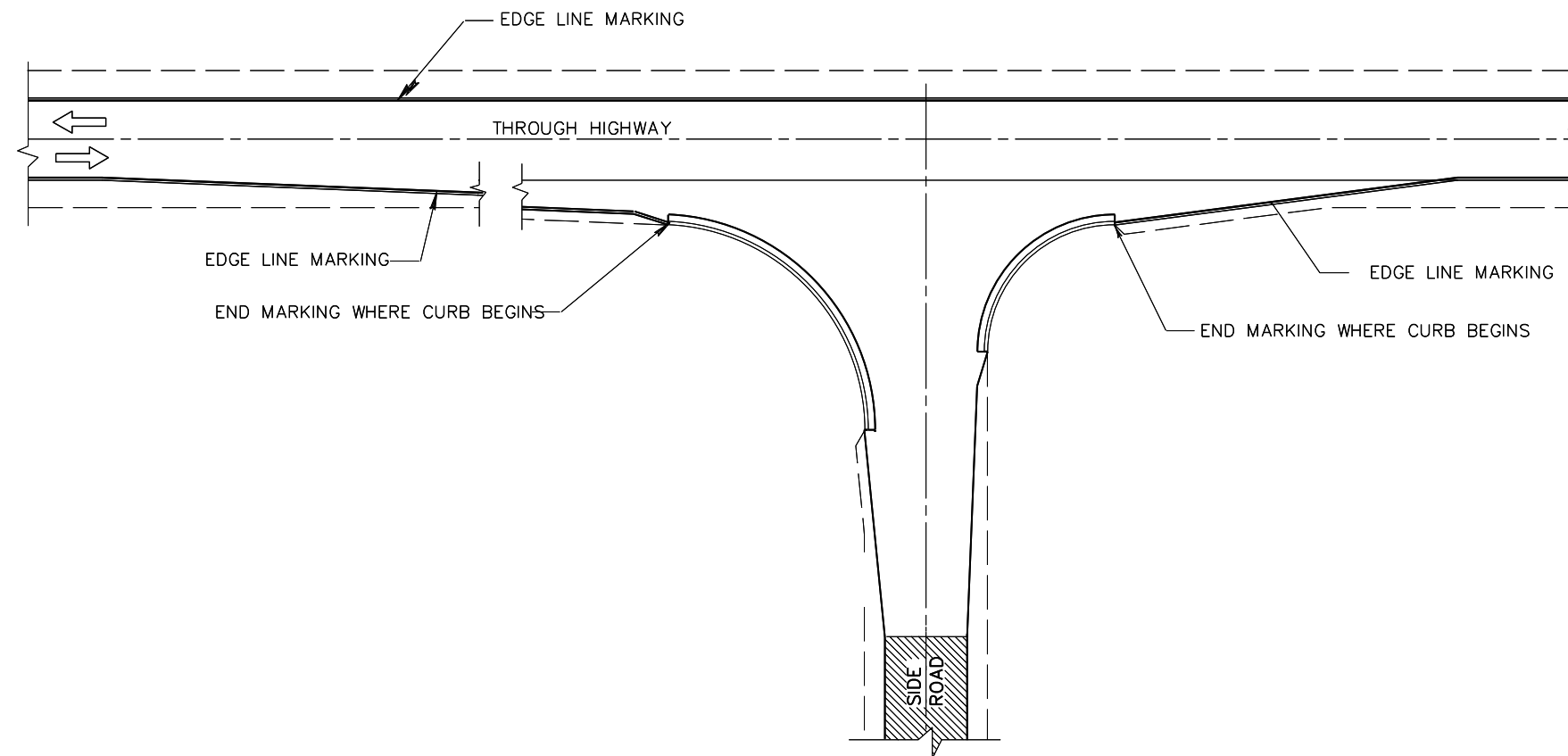
**NOTES:**  
18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE PROJECT ENGINEER BASED ON VISIBILITY AND SIGHT LINES.

**STOP LINES REQUIRED WHERE:**

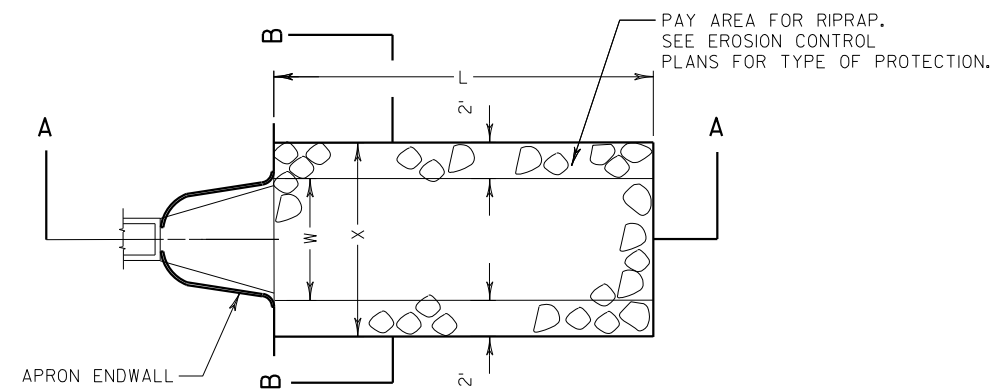
- CROSSWALK MARKINGS EXIST OR BEING PROVIDED
- LARGE RADII
- OFFSET LEFT TURNS WHERE STOP BAR FOR LEFT TURN IS SET BACK FROM THRU MOVEMENT.



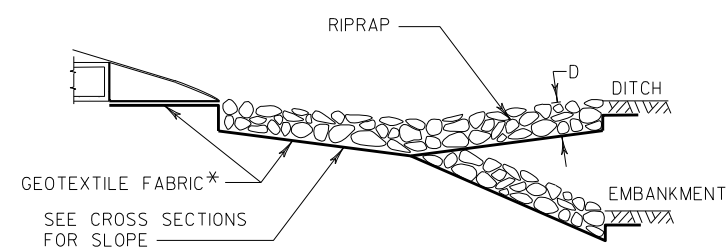
MINOR INTERSECTION WITHOUT CURBS  
(TYPICAL MARKING)



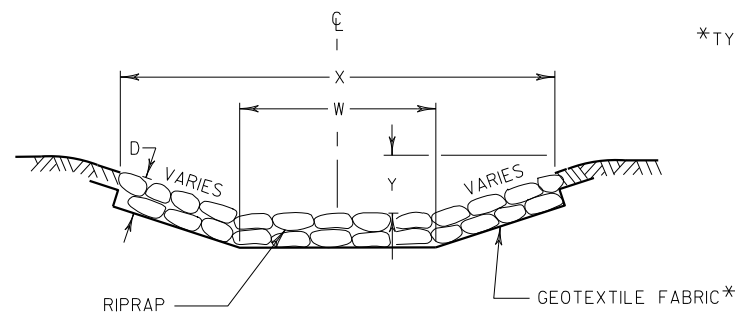
MINOR INTERSECTION WITH CURBS  
(TYPICAL MARKING)



PLAN VIEW



SECTION A-A



SECTION B-B

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

$D = 18"$  FOR RIPRAP MEDIUM  
 $24"$  FOR RIPRAP HEAVY

$X = W+4'$  FOR TYPICAL CULVERT  
DISCHARGE INTO DITCH  
 $W+6'$  FOR CULVERT DISCHARGE  
DOWN EMBANKMENT SLOPE

$Y = 0'$  FOR TYPICAL CULVERT  
DISCHARGE INTO DITCH  
 $6"$  FOR CULVERT DISCHARGE  
DOWN EMBANKMENT SLOPE

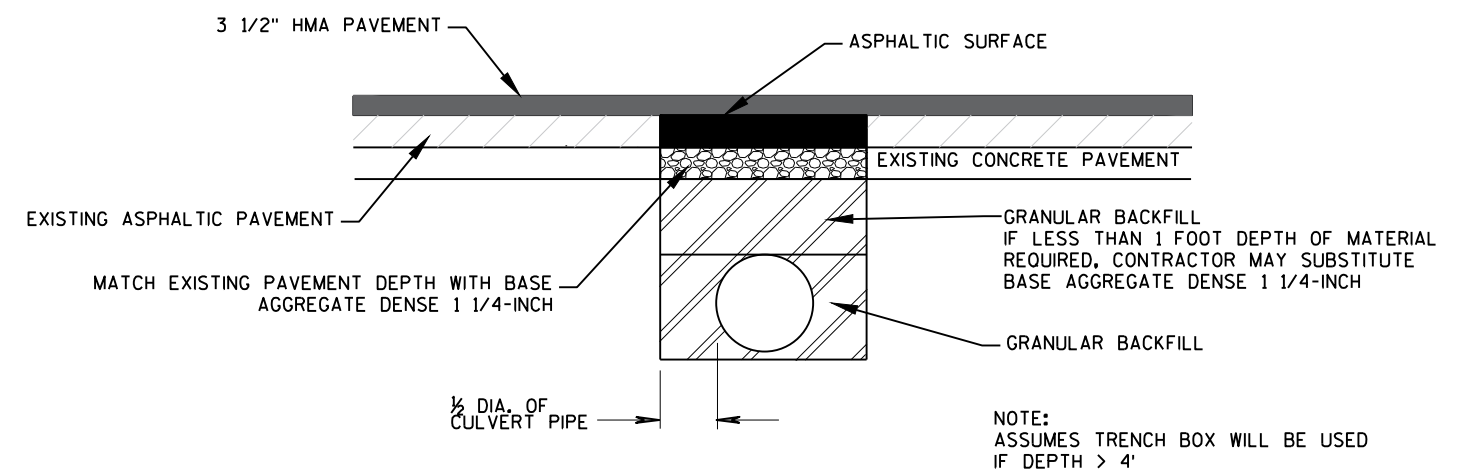
\*TYPE HR (FOR RIPRAP HEAVY AND MEDIUM ONLY)

#### CONSTRUCTION NOTES:

1. GEOTEXTILE FABRIC SHALL EXTEND BENEATH THE ENTIRE LENGTH OF THE APRON ENDWALL SECTION. INSTALL ON PREPAVED FOUNDATION. GRADE PRIOR TO END WALL INSTALLATION.
2. COMPLETE GEOTEXTILE FABRIC AND RIPRAP SECTION INSTALLATION PRIOR TO STORM WATER FLOW.
3. WHEN AN EXISTING ENDWALL WILL REMAIN IN PLACE, EXTEND GEOTEXTILE FABRIC 1-FOOT UNDER THE EXISTING APRON

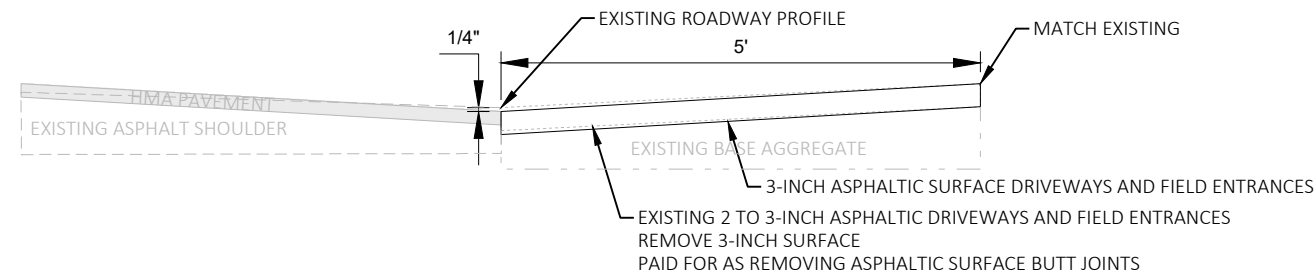
### RIPRAP AND GEOTEXTILE FABRIC DETAIL AT APRON ENDWALLS

SEE DRAINAGE/EROSION CONTROL SHEETS FOR  
LOCATIONS AND DETAILS ON SIZE/LAYOUT OF RIPRAP



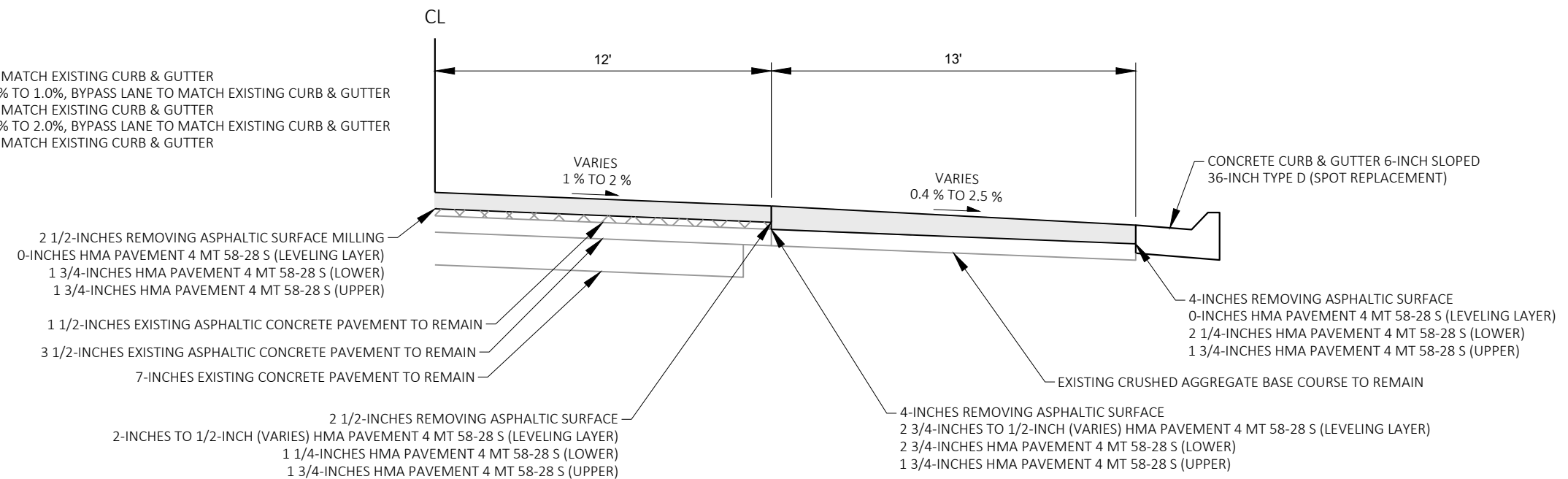
### DETAIL FOR CULVERT PIPE INSTALLATION IN AREAS OF EXISTING PAVEMENT

COMPLETE PRIOR TO MILLING & PAVING

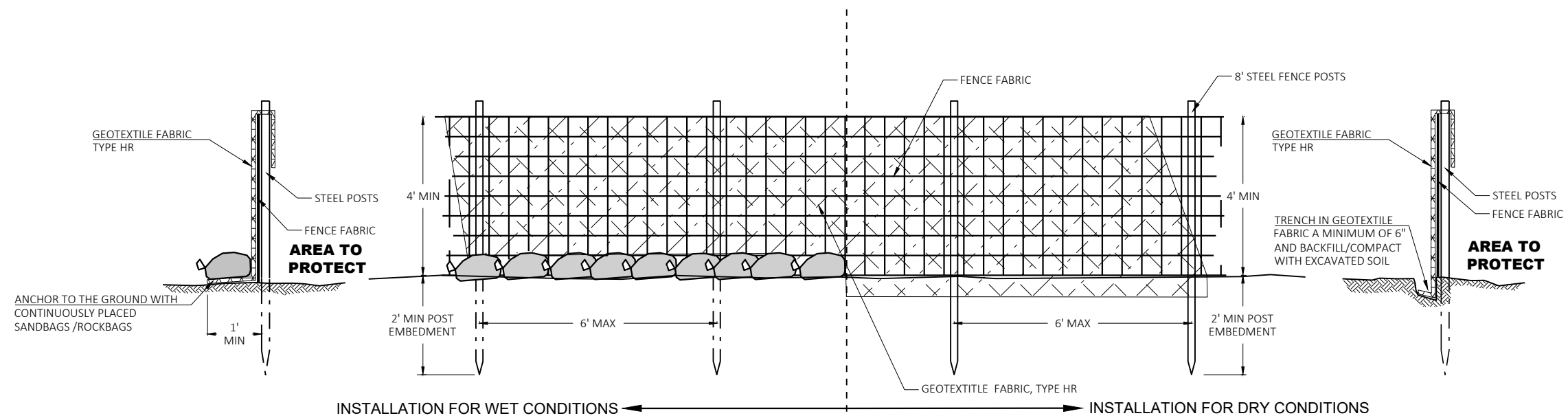


ASPHALTIC SURFACE DRIVEWAYS AND  
FIELD ENTRANCES BUTT JOINT DETAIL

STA 449+75 TO STA 451+50, TRAVEL LANE 2.0%, BYPASS LANE TO MATCH EXISTING CURB & GUTTER  
STA 451+50 TO STA 452+50, TRANSITION TRAVEL LANE FROM 2.0% TO 1.0%, BYPASS LANE TO MATCH EXISTING CURB & GUTTER  
STA 452+50 TO STA 455+00, TRAVEL LANE 1.0%, BYPASS LANE TO MATCH EXISTING CURB & GUTTER  
STA 455+00 TO STA 456+00, TRANSITION TRAVEL LANE FROM 1.0% TO 2.0%, BYPASS LANE TO MATCH EXISTING CURB & GUTTER  
STA 456+00 TO STA 456+25, TRAVEL LANE 2.0%, BYPASS LANE TO MATCH EXISTING CURB & GUTTER



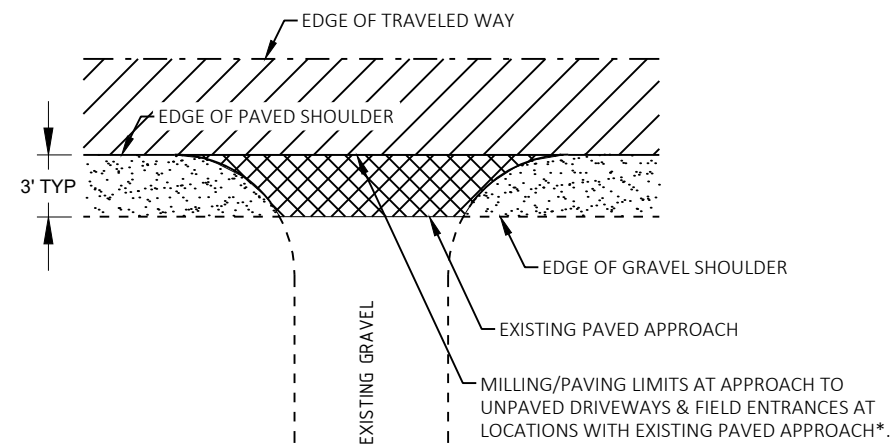
RATZKA LN  
BYPASS LANE  
STA 449+75 - 456+25



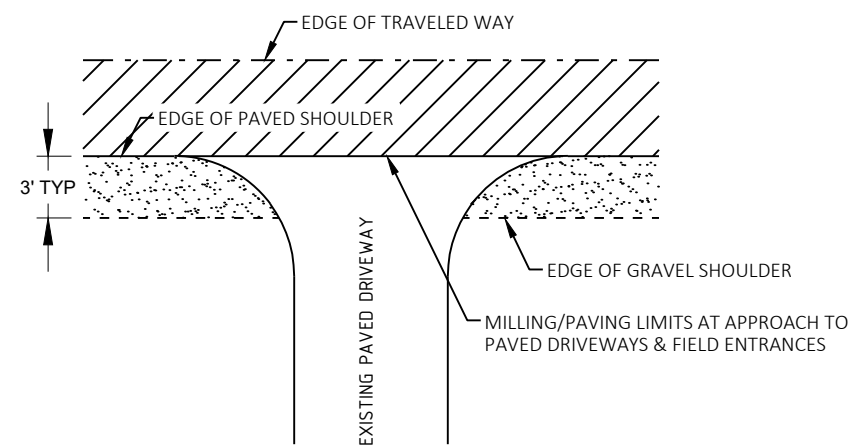
### SILT FENCE HEAVY DUTY

#### GENERAL NOTES:

1. ATTACH FENCE FABRIC TO POSTS A MINIMUM OF 3 TIES PER POST (TOP, MIDDLE, BOTTOM)
2. ATTACH GEOTEXTILE FABRIC TO FENCE FABRIC AND/OR POSTS AT A MAXIMUM SPACING OF EVERY 2 FEET ALONG THE TOP AND ADDITIONALLY AS NECESSARY TO PREVENT DISPLACEMENT BY WIND AND WAVE ACTIONS.



GRAVEL DRIVEWAY



PAVED DRIVEWAY

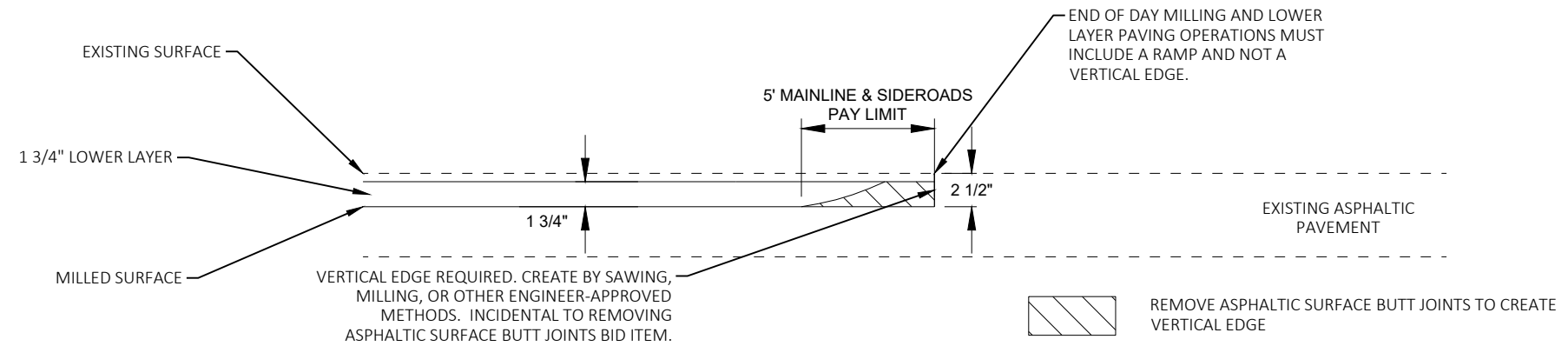
RURAL DRIVEWAY PAVING LIMITS

-  HMA PAVEMENT
-  3" ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES
-  BASE AGGREGATE DENSE 3/4-INCH

\*PERPETUATE EXISTING DRIVEWAY APPROACH MATERIAL. DO NOT ADD PAVED APPROACH IF IT DOES NOT EXIST.

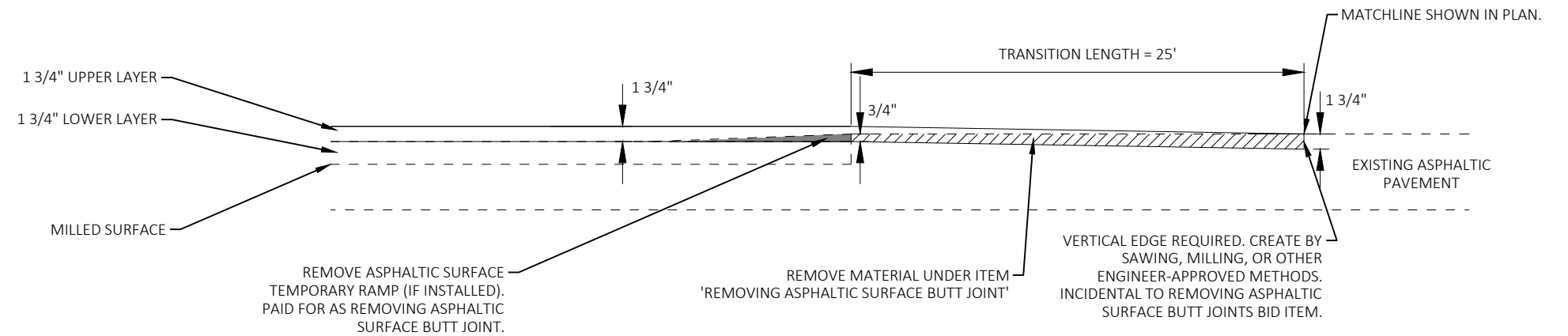
OPERATIONS

- REMOVING ASPHALTIC SURFACE MILLING 2 1/2-INCHES AND REMOVING ASPHALTIC SURFACE BUTT JOINT.
- PAVE LOWER LAYER, PAVE TEMPORARY RAMP.



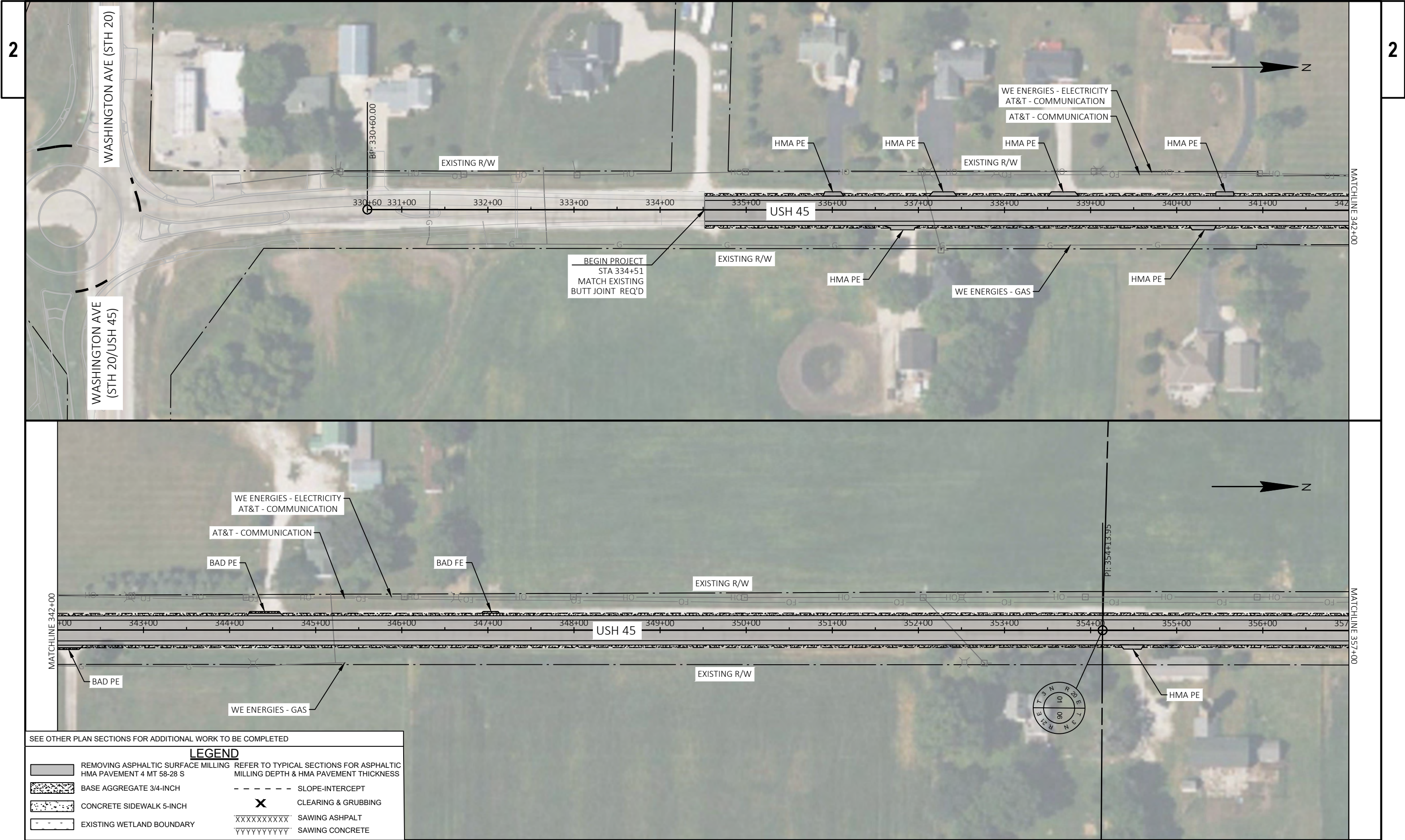
MILLING AND PAVING LOWER LAYER

- REMOVING ASPHALTIC SURFACE BUTT JOINT, REMOVE TEMPORARY RAMP.
- PAVE UPPER LAYER.



MILLING BUTT JOINT AND PAVING UPPER LAYER  
(BEGIN AND END PROJECT)

BUTT JOINT - CHANGE IN PROFILE (MILL 2 1/2", PAVE 3 1/2")



SEE OTHER PLAN SECTIONS FOR ADDITIONAL WORK TO BE COMPLETED

REMOVING ASPHALTIC SURFACE MILLING  
HMA PAVEMENT 4 MT 58-28 S

BASE AGGREGATE 3/4-INCH

CONCRETE SIDEWALK 5-INCH

EXISTING WETLAND BOUNDARY

**LEGEND**

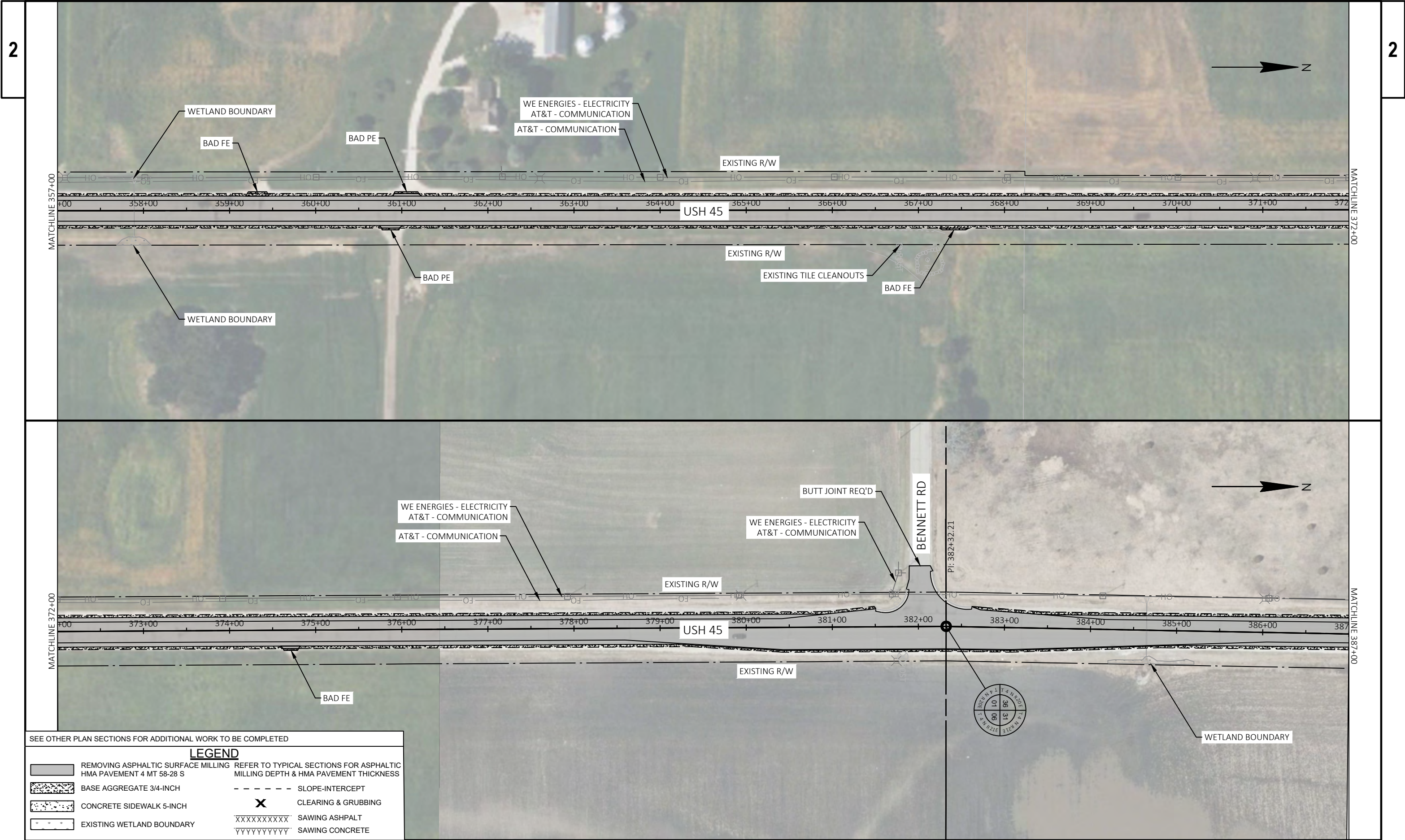
REFER TO TYPICAL SECTIONS FOR ASPHALTIC  
MILLING DEPTH & HMA PAVEMENT THICKNESS

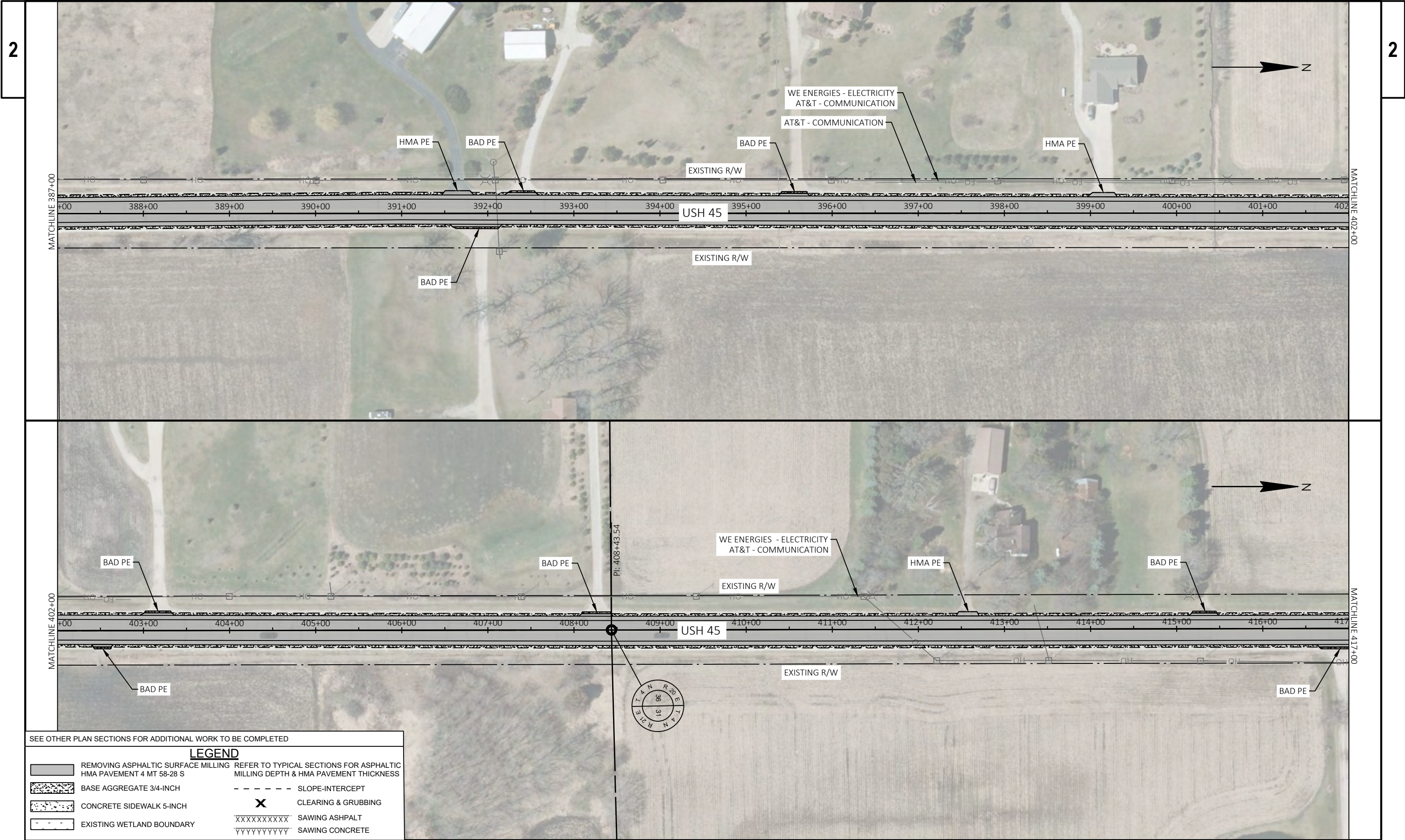
----- SLOPE-INTERCEPT

**X** CLEARING & GRUBBING

XXXXXXXXXX SAWING ASPHALT

YYYYYYYYYYY SAWING CONCRETE





SEE OTHER PLAN SECTIONS FOR ADDITIONAL WORK TO BE COMPLETED

REMOVING ASPHALTIC SURFACE MILLING  
HMA PAVEMENT 4 MT 58-28 S

BASE AGGREGATE 3/4-INCH

CONCRETE SIDEWALK 5-INCH

EXISTING WETLAND BOUNDARY

**LEGEND**

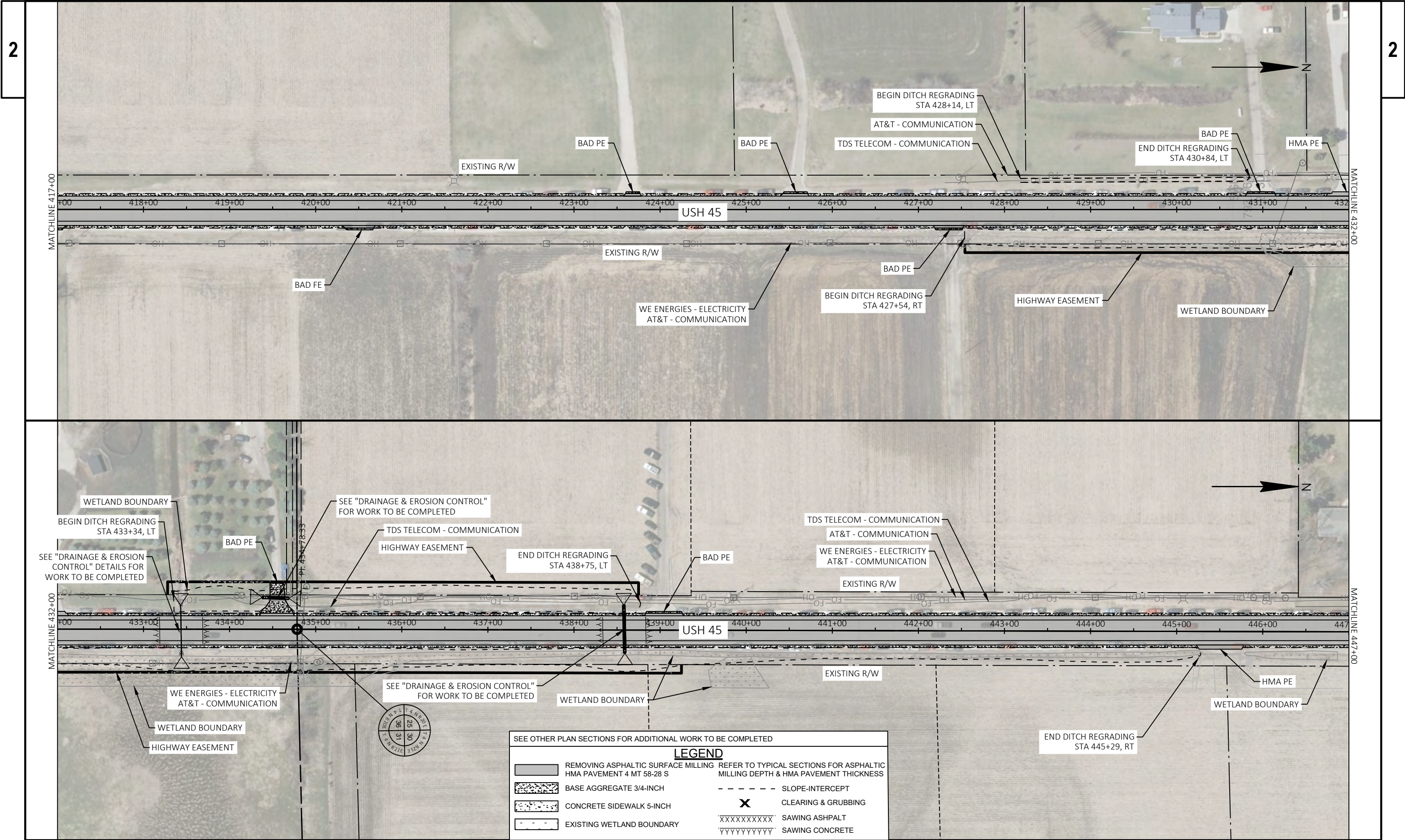
REFER TO TYPICAL SECTIONS FOR ASPHALTIC  
MILLING DEPTH & HMA PAVEMENT THICKNESS

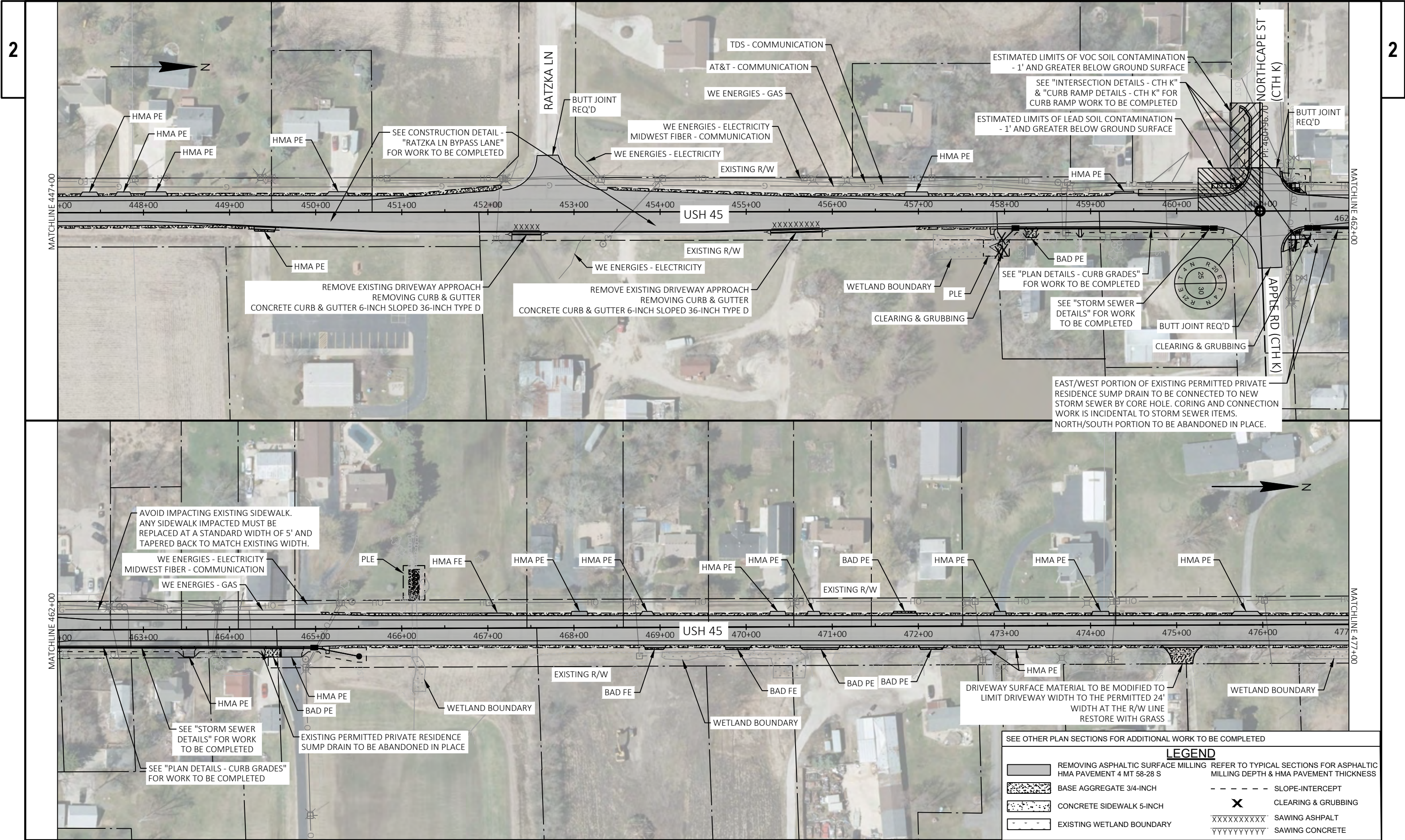
----- SLOPE-INTERCEPT

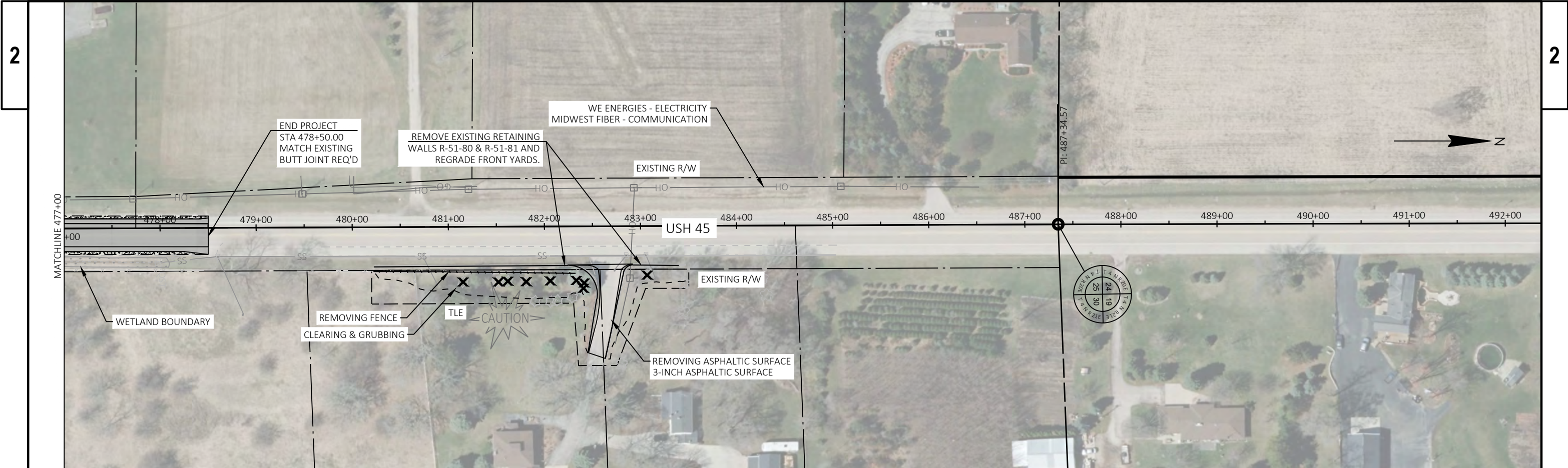
**X** CLEARING & GRUBBING

XXXXXXXXXX SAWING ASPHALT

YYYYYYYYYYY SAWING CONCRETE



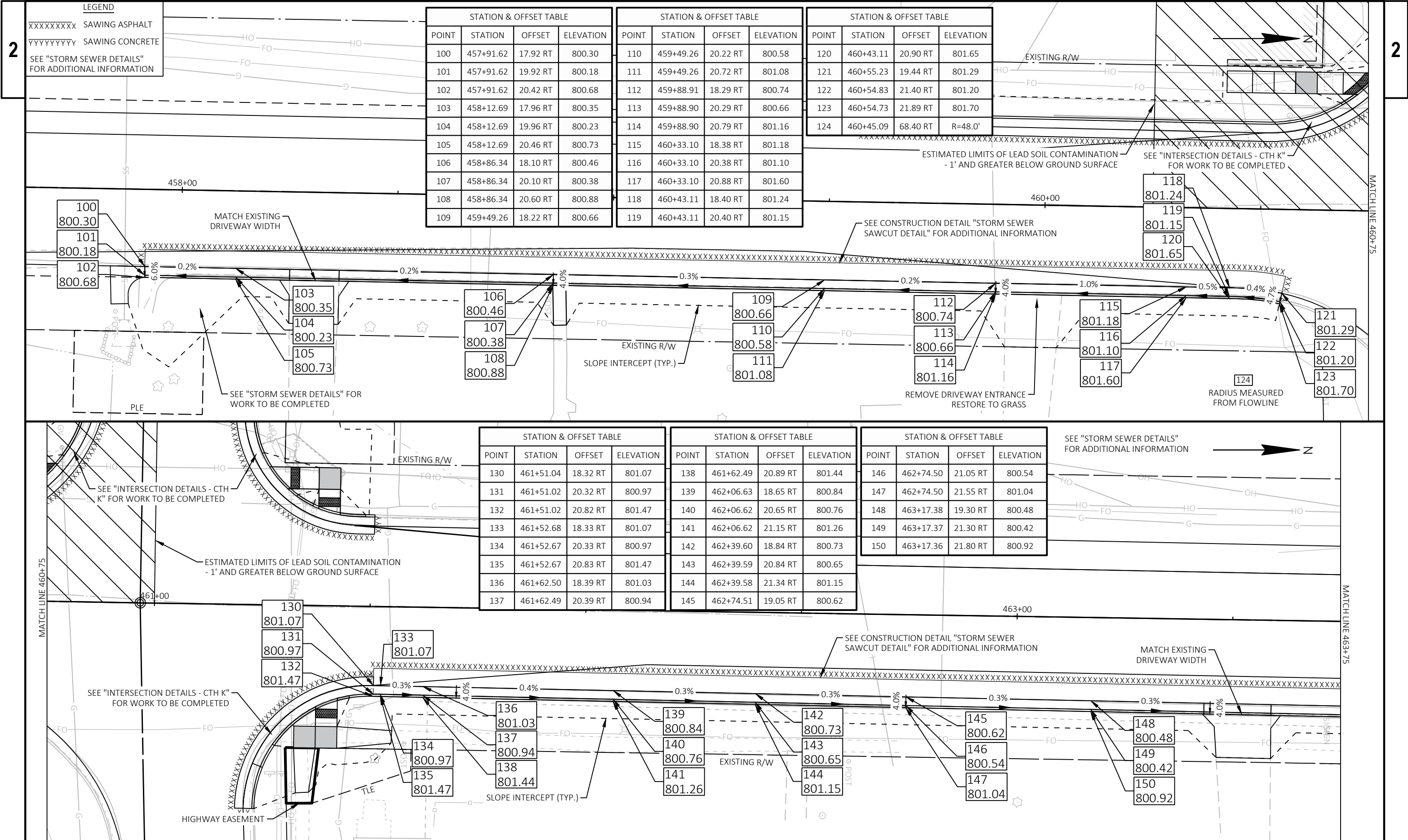




SEE OTHER PLAN SECTIONS FOR ADDITIONAL WORK TO BE COMPLETED

| LEGEND                                                                              |                                                                 |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------|
|  | REMOVING ASPHALTIC SURFACE MILLING<br>HMA PAVEMENT 4 MT 58-28 S |
|  | BASE AGGREGATE 3/4-INCH                                         |
|  | CONCRETE SIDEWALK 5-INCH                                        |
|  | EXISTING WETLAND BOUNDARY                                       |
| REFER TO TYPICAL SECTIONS FOR ASPHALTIC<br>MILLING DEPTH & HMA PAVEMENT THICKNESS   |                                                                 |
| - - - - -                                                                           | SLOPE-INTERCEPT                                                 |
| X                                                                                   | CLEARING & GRUBBING                                             |
| XXXXXXXXXX                                                                          | SAWING ASPHALT                                                  |
| YYYYYYYYYY                                                                          | SAWING CONCRETE                                                 |

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| STATION & OFFSET TABLE |           |          |           |
|------------------------|-----------|----------|-----------|
| POINT                  | STATION   | OFFSET   | ELEVATION |
| 100                    | 457+91.62 | 17.92 RT | 800.30    |
| 101                    | 457+91.62 | 19.92 RT | 800.18    |
| 102                    | 457+91.62 | 20.42 RT | 800.68    |
| 103                    | 458+12.69 | 17.96 RT | 800.35    |
| 104                    | 458+12.69 | 19.96 RT | 800.23    |
| 105                    | 458+12.69 | 20.46 RT | 800.73    |
| 106                    | 458+86.34 | 18.10 RT | 800.46    |
| 107                    | 458+86.34 | 20.10 RT | 800.38    |
| 108                    | 458+86.34 | 20.60 RT | 800.88    |
| 109                    | 459+49.26 | 18.22 RT | 800.66    |

| STATION & OFFSET TABLE |           |          |           |
|------------------------|-----------|----------|-----------|
| POINT                  | STATION   | OFFSET   | ELEVATION |
| 110                    | 459+49.26 | 20.22 RT | 800.58    |
| 111                    | 459+49.26 | 20.72 RT | 801.08    |
| 112                    | 459+88.91 | 18.29 RT | 800.74    |
| 113                    | 459+88.90 | 20.29 RT | 800.66    |
| 114                    | 459+88.90 | 20.79 RT | 801.16    |
| 115                    | 460+33.10 | 18.38 RT | 801.18    |
| 116                    | 460+33.10 | 20.38 RT | 801.10    |
| 117                    | 460+33.10 | 20.88 RT | 801.60    |
| 118                    | 460+43.11 | 18.40 RT | 801.24    |
| 119                    | 460+43.11 | 20.40 RT | 801.15    |

| STATION & OFFSET TABLE |           |          |           |
|------------------------|-----------|----------|-----------|
| POINT                  | STATION   | OFFSET   | ELEVATION |
| 120                    | 460+43.11 | 20.90 RT | 801.65    |
| 121                    | 460+55.23 | 19.44 RT | 801.29    |
| 122                    | 460+54.83 | 21.40 RT | 801.20    |
| 123                    | 460+54.73 | 21.89 RT | 801.70    |
| 124                    | 460+45.09 | 68.40 RT | R=48.0'   |

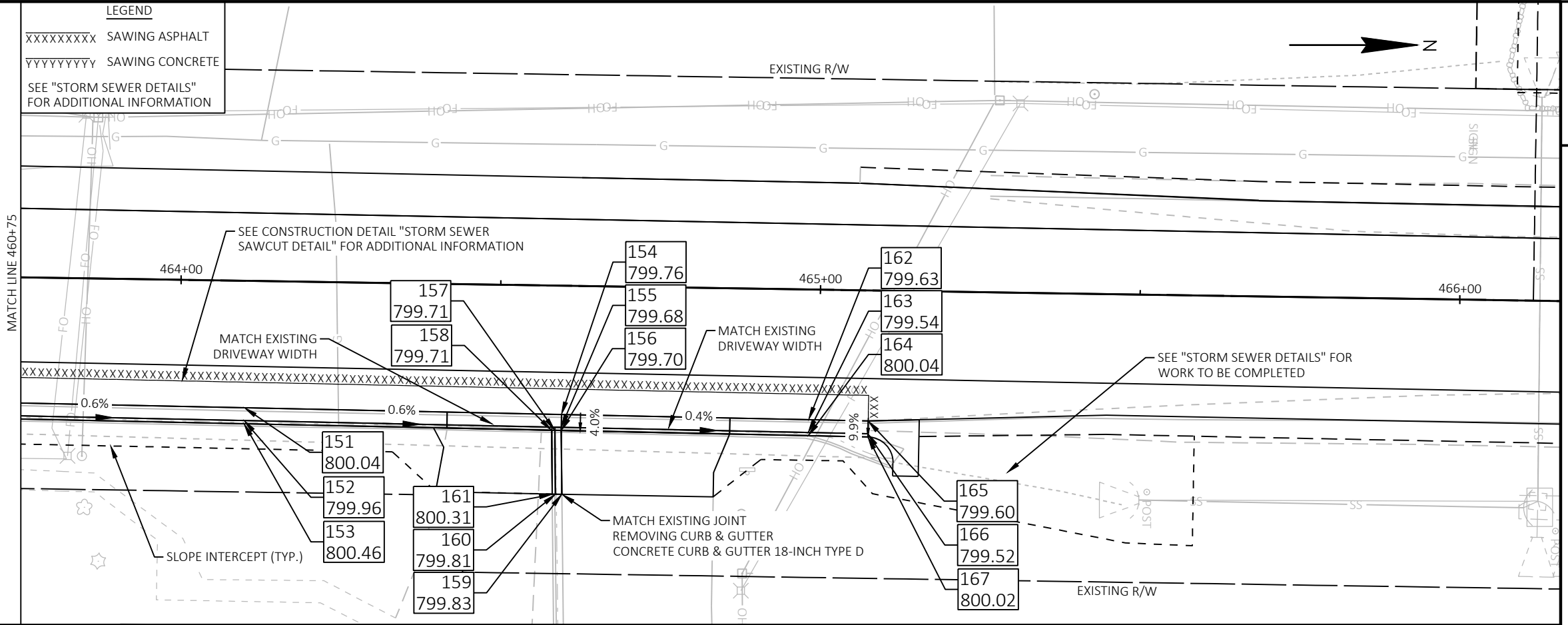
| STATION & OFFSET TABLE |           |          |           |
|------------------------|-----------|----------|-----------|
| POINT                  | STATION   | OFFSET   | ELEVATION |
| 130                    | 461+51.04 | 18.32 RT | 801.07    |
| 131                    | 461+51.02 | 20.32 RT | 800.97    |
| 132                    | 461+51.02 | 20.82 RT | 801.47    |
| 133                    | 461+52.68 | 18.33 RT | 801.07    |
| 134                    | 461+52.67 | 20.33 RT | 800.97    |
| 135                    | 461+52.67 | 20.83 RT | 801.47    |
| 136                    | 461+62.50 | 18.39 RT | 801.03    |
| 137                    | 461+62.49 | 20.39 RT | 800.94    |

| STATION & OFFSET TABLE |           |          |           |
|------------------------|-----------|----------|-----------|
| POINT                  | STATION   | OFFSET   | ELEVATION |
| 138                    | 461+62.49 | 20.89 RT | 801.44    |
| 139                    | 462+06.63 | 18.65 RT | 800.84    |
| 140                    | 462+06.62 | 20.65 RT | 800.76    |
| 141                    | 462+06.62 | 21.15 RT | 801.26    |
| 142                    | 462+39.60 | 18.84 RT | 800.73    |
| 143                    | 462+39.59 | 20.84 RT | 800.65    |
| 144                    | 462+39.58 | 21.34 RT | 801.15    |
| 145                    | 462+74.51 | 19.05 RT | 800.62    |

| STATION & OFFSET TABLE |           |          |           |
|------------------------|-----------|----------|-----------|
| POINT                  | STATION   | OFFSET   | ELEVATION |
| 146                    | 462+74.50 | 21.05 RT | 800.54    |
| 147                    | 462+74.50 | 21.55 RT | 801.04    |
| 148                    | 463+17.38 | 19.30 RT | 800.48    |
| 149                    | 463+17.37 | 21.30 RT | 800.42    |
| 150                    | 463+17.36 | 21.80 RT | 800.92    |

2

| STATION & OFFSET TABLE |           |          |           |
|------------------------|-----------|----------|-----------|
| POINT                  | STATION   | OFFSET   | ELEVATION |
| 151                    | 464+10.21 | 19.84 RT | 800.04    |
| 152                    | 464+10.20 | 21.84 RT | 799.96    |
| 153                    | 464+10.20 | 22.34 RT | 800.46    |
| 154                    | 464+59.80 | 20.13 RT | 799.76    |
| 155                    | 464+59.79 | 22.13 RT | 799.68    |
| 156                    | 464+59.78 | 22.63 RT | 799.70    |
| 157                    | 464+58.78 | 22.63 RT | 799.71    |
| 158                    | 464+58.28 | 22.62 RT | 799.71    |
| 159                    | 464+60.04 | 32.60 RT | 799.83    |
| 160                    | 464+59.04 | 32.62 RT | 799.81    |
| 161                    | 464+58.54 | 32.63 RT | 800.31    |
| 162                    | 464+98.45 | 20.36 RT | 799.63    |
| 163                    | 464+98.44 | 22.36 RT | 799.54    |
| 164                    | 464+98.44 | 22.86 RT | 800.04    |
| 165                    | 465+07.77 | 20.41 RT | 799.60    |
| 166                    | 465+07.76 | 22.41 RT | 799.52    |
| 167                    | 465+07.76 | 22.91 RT | 800.02    |



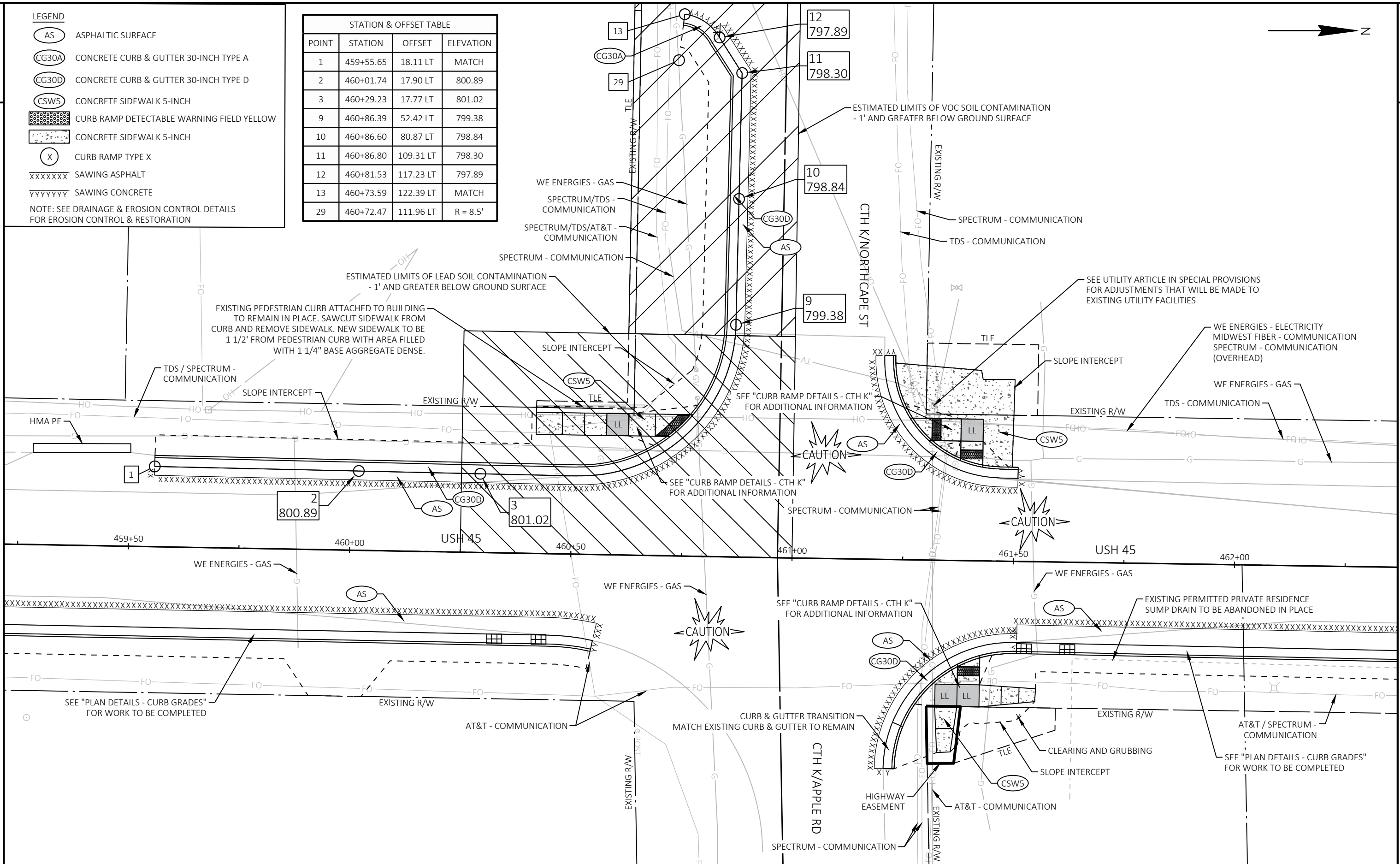
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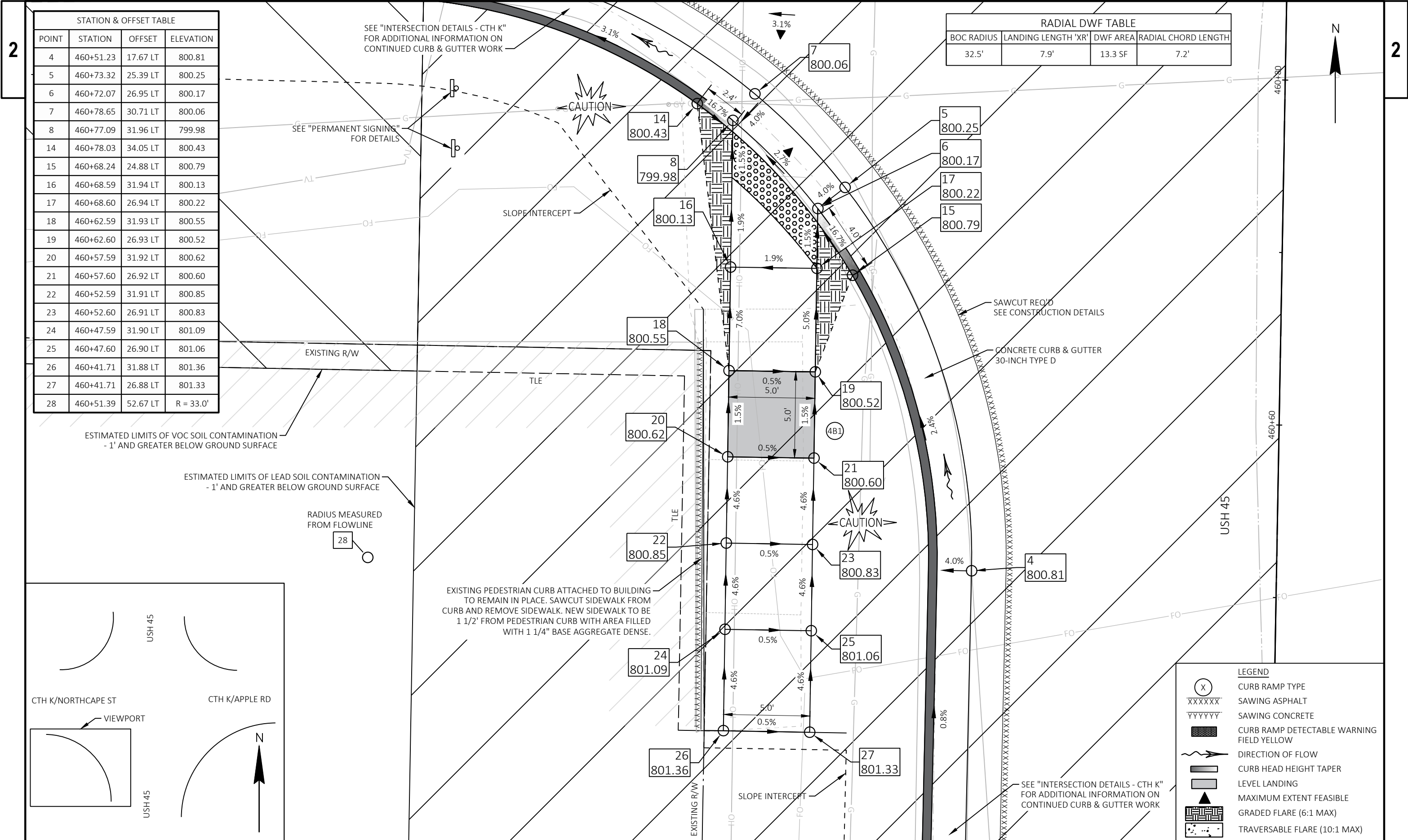
**LEGEND**

- AS ASPHALTIC SURFACE
- CG30A CONCRETE CURB & GUTTER 30-INCH TYPE A
- CG30D CONCRETE CURB & GUTTER 30-INCH TYPE D
- CSW5 CONCRETE SIDEWALK 5-INCH
- CURB RAMP DETECTABLE WARNING FIELD YELLOW
- CONCRETE SIDEWALK 5-INCH
- X CURB RAMP TYPE X
- XXXXXXX SAWING ASPHALT
- YYYYYYY SAWING CONCRETE

NOTE: SEE DRAINAGE & EROSION CONTROL DETAILS FOR EROSION CONTROL & RESTORATION

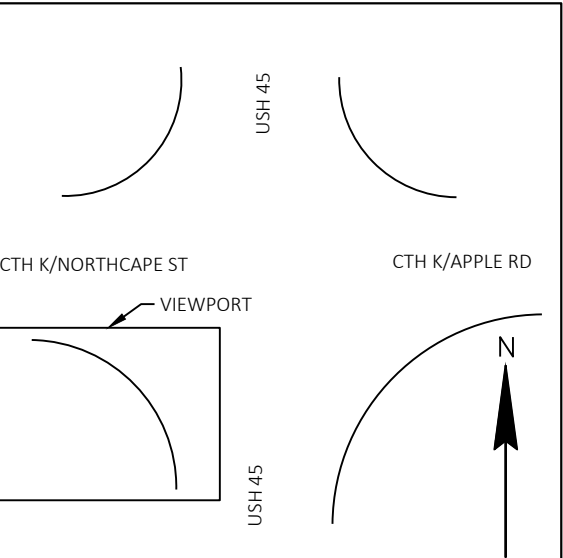
| STATION & OFFSET TABLE |           |           |           |
|------------------------|-----------|-----------|-----------|
| POINT                  | STATION   | OFFSET    | ELEVATION |
| 1                      | 459+55.65 | 18.11 LT  | MATCH     |
| 2                      | 460+01.74 | 17.90 LT  | 800.89    |
| 3                      | 460+29.23 | 17.77 LT  | 801.02    |
| 9                      | 460+86.39 | 52.42 LT  | 799.38    |
| 10                     | 460+86.60 | 80.87 LT  | 798.84    |
| 11                     | 460+86.80 | 109.31 LT | 798.30    |
| 12                     | 460+81.53 | 117.23 LT | 797.89    |
| 13                     | 460+73.59 | 122.39 LT | MATCH     |
| 29                     | 460+72.47 | 111.96 LT | R = 8.5'  |





| STATION & OFFSET TABLE |           |          |           |
|------------------------|-----------|----------|-----------|
| POINT                  | STATION   | OFFSET   | ELEVATION |
| 4                      | 460+51.23 | 17.67 LT | 800.81    |
| 5                      | 460+73.32 | 25.39 LT | 800.25    |
| 6                      | 460+72.07 | 26.95 LT | 800.17    |
| 7                      | 460+78.65 | 30.71 LT | 800.06    |
| 8                      | 460+77.09 | 31.96 LT | 799.98    |
| 14                     | 460+78.03 | 34.05 LT | 800.43    |
| 15                     | 460+68.24 | 24.88 LT | 800.79    |
| 16                     | 460+68.59 | 31.94 LT | 800.13    |
| 17                     | 460+68.60 | 26.94 LT | 800.22    |
| 18                     | 460+62.59 | 31.93 LT | 800.55    |
| 19                     | 460+62.60 | 26.93 LT | 800.52    |
| 20                     | 460+57.59 | 31.92 LT | 800.62    |
| 21                     | 460+57.60 | 26.92 LT | 800.60    |
| 22                     | 460+52.59 | 31.91 LT | 800.85    |
| 23                     | 460+52.60 | 26.91 LT | 800.83    |
| 24                     | 460+47.59 | 31.90 LT | 801.09    |
| 25                     | 460+47.60 | 26.90 LT | 801.06    |
| 26                     | 460+41.71 | 31.88 LT | 801.36    |
| 27                     | 460+41.71 | 26.88 LT | 801.33    |
| 28                     | 460+51.39 | 52.67 LT | R = 33.0' |

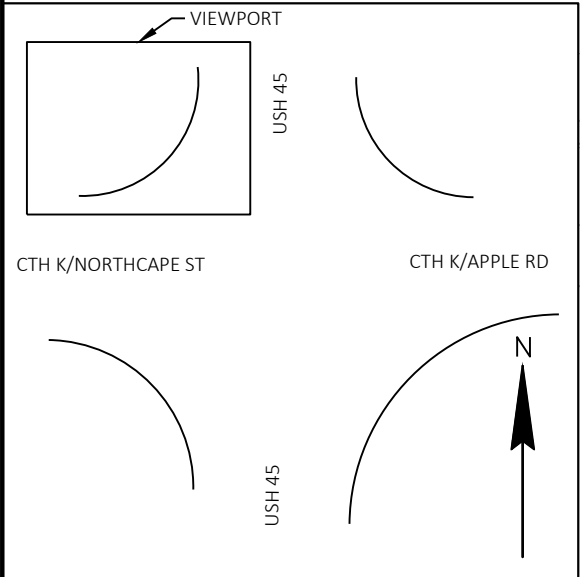
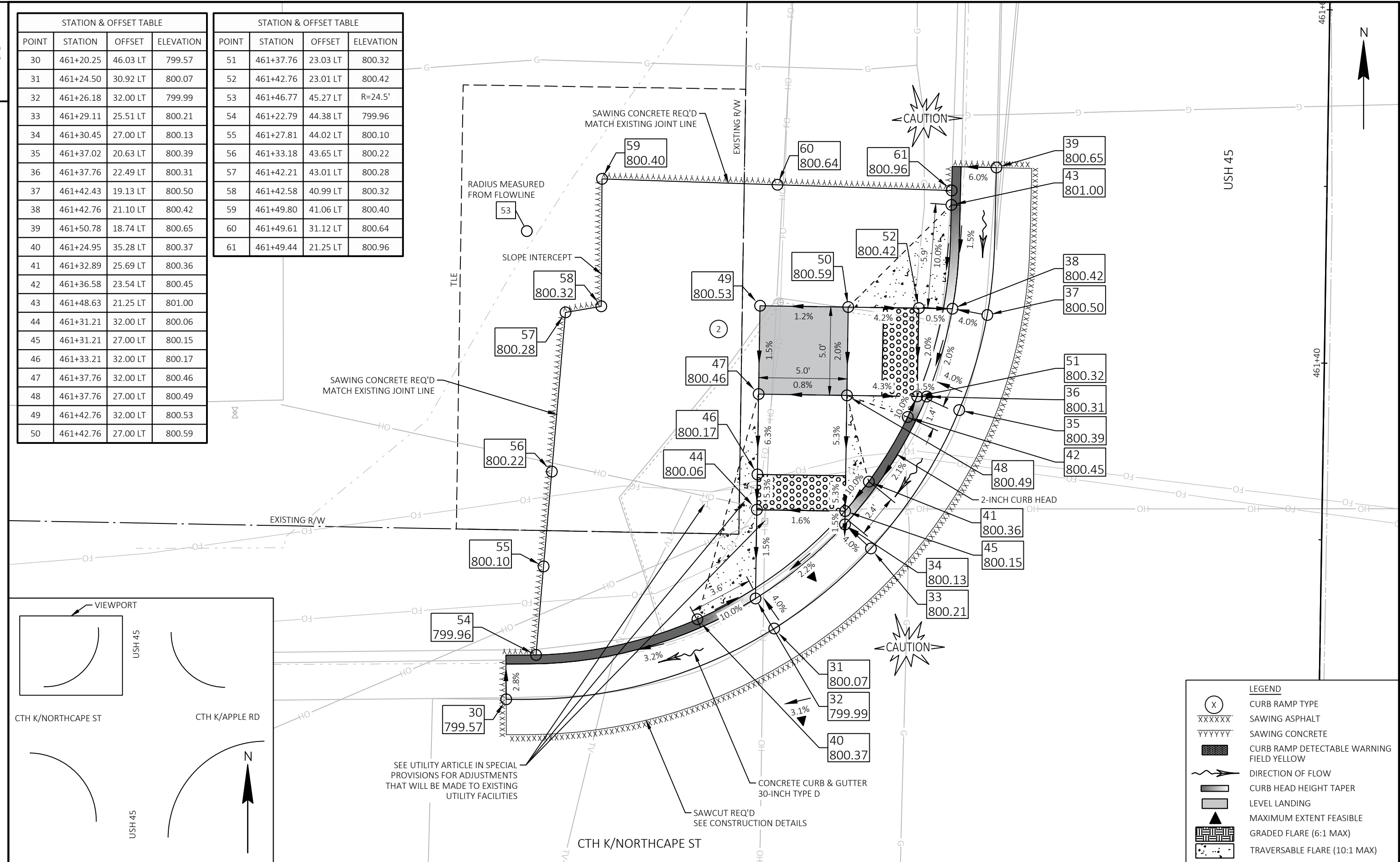
| RADIAL DWF TABLE |                     |          |                     |
|------------------|---------------------|----------|---------------------|
| BOC RADIUS       | LANDING LENGTH 'XR' | DWF AREA | RADIAL CHORD LENGTH |
| 32.5'            | 7.9'                | 13.3 SF  | 7.2'                |



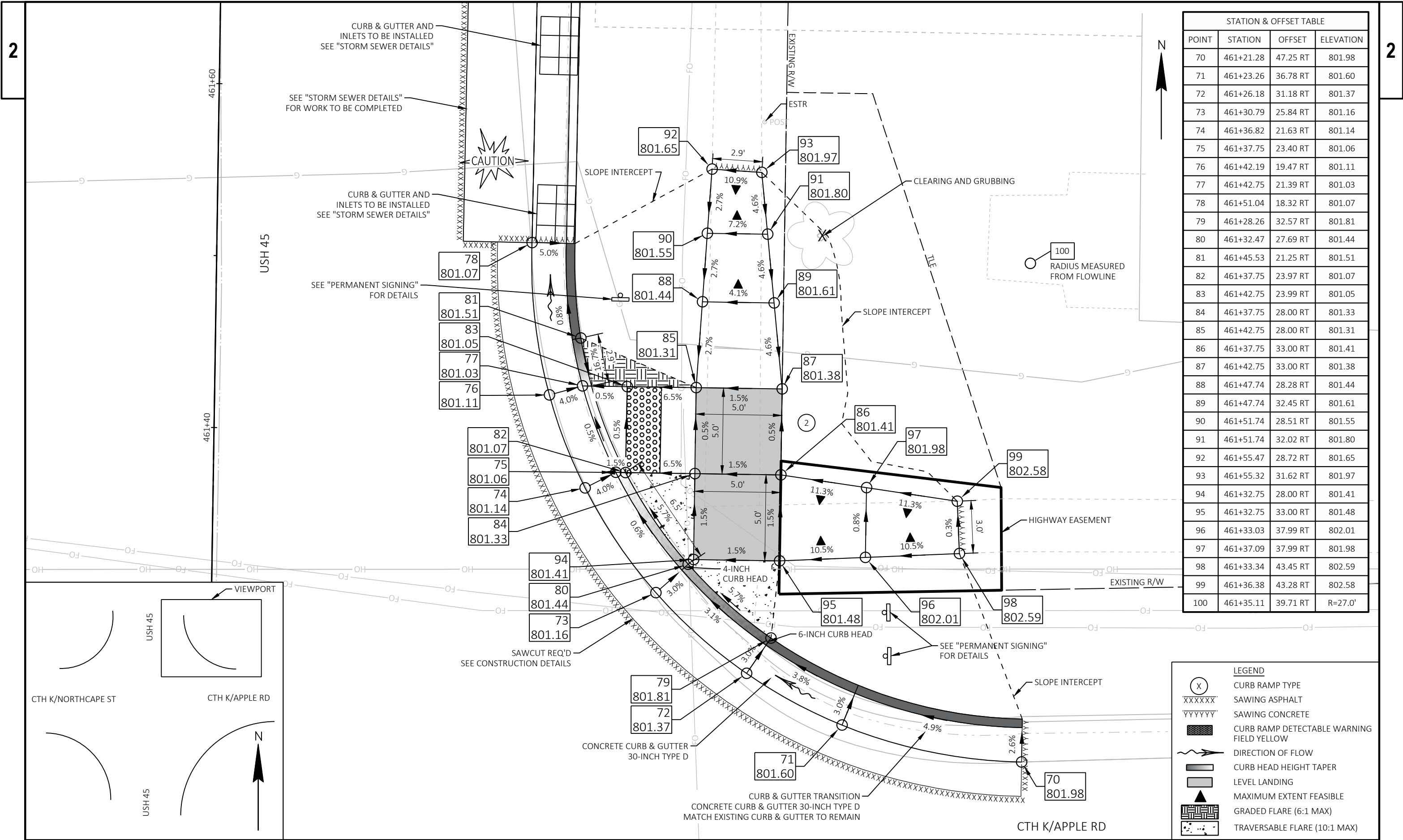
| LEGEND              |                                           |
|---------------------|-------------------------------------------|
| (X)                 | CURB RAMP TYPE                            |
| XXXXXX              | SAWING ASPHALT                            |
| YYYYYY              | SAWING CONCRETE                           |
| [Pattern]           | CURB RAMP DETECTABLE WARNING FIELD YELLOW |
| [Arrow]             | DIRECTION OF FLOW                         |
| [Taper]             | CURB HEAD HEIGHT TAPER                    |
| [Landing]           | LEVEL LANDING                             |
| [Triangle]          | MAXIMUM EXTENT FEASIBLE                   |
| [Graded Flare]      | GRADED FLARE (6:1 MAX)                    |
| [Traversable Flare] | TRAVERSABLE FLARE (10:1 MAX)              |

| STATION & OFFSET TABLE |           |          |           |
|------------------------|-----------|----------|-----------|
| POINT                  | STATION   | OFFSET   | ELEVATION |
| 30                     | 461+20.25 | 46.03 LT | 799.57    |
| 31                     | 461+24.50 | 30.92 LT | 800.07    |
| 32                     | 461+26.18 | 32.00 LT | 799.99    |
| 33                     | 461+29.11 | 25.51 LT | 800.21    |
| 34                     | 461+30.45 | 27.00 LT | 800.13    |
| 35                     | 461+37.02 | 20.63 LT | 800.39    |
| 36                     | 461+37.76 | 22.49 LT | 800.31    |
| 37                     | 461+42.43 | 19.13 LT | 800.50    |
| 38                     | 461+42.76 | 21.10 LT | 800.42    |
| 39                     | 461+50.78 | 18.74 LT | 800.65    |
| 40                     | 461+24.95 | 35.28 LT | 800.37    |
| 41                     | 461+32.89 | 25.69 LT | 800.36    |
| 42                     | 461+36.58 | 23.54 LT | 800.45    |
| 43                     | 461+48.63 | 21.25 LT | 801.00    |
| 44                     | 461+31.21 | 32.00 LT | 800.06    |
| 45                     | 461+31.21 | 27.00 LT | 800.15    |
| 46                     | 461+33.21 | 32.00 LT | 800.17    |
| 47                     | 461+37.76 | 32.00 LT | 800.46    |
| 48                     | 461+37.76 | 27.00 LT | 800.49    |
| 49                     | 461+42.76 | 32.00 LT | 800.53    |
| 50                     | 461+42.76 | 27.00 LT | 800.59    |

| STATION & OFFSET TABLE |           |          |           |
|------------------------|-----------|----------|-----------|
| POINT                  | STATION   | OFFSET   | ELEVATION |
| 51                     | 461+37.76 | 23.03 LT | 800.32    |
| 52                     | 461+42.76 | 23.01 LT | 800.42    |
| 53                     | 461+46.77 | 45.27 LT | R=24.5'   |
| 54                     | 461+22.79 | 44.38 LT | 799.96    |
| 55                     | 461+27.81 | 44.02 LT | 800.10    |
| 56                     | 461+33.18 | 43.65 LT | 800.22    |
| 57                     | 461+42.21 | 43.01 LT | 800.28    |
| 58                     | 461+42.58 | 40.99 LT | 800.32    |
| 59                     | 461+49.80 | 41.06 LT | 800.40    |
| 60                     | 461+49.61 | 31.12 LT | 800.64    |
| 61                     | 461+49.44 | 21.25 LT | 800.96    |

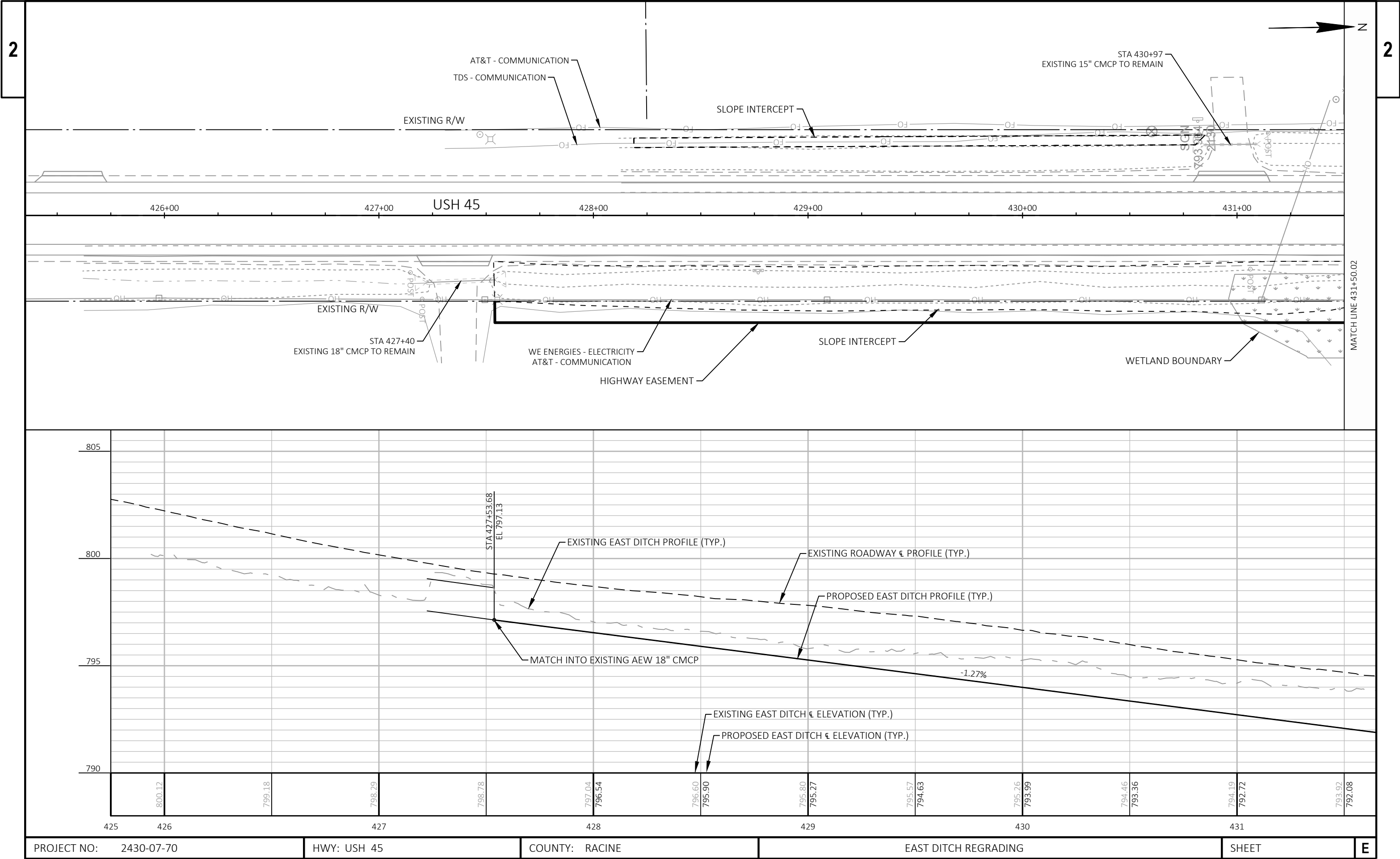


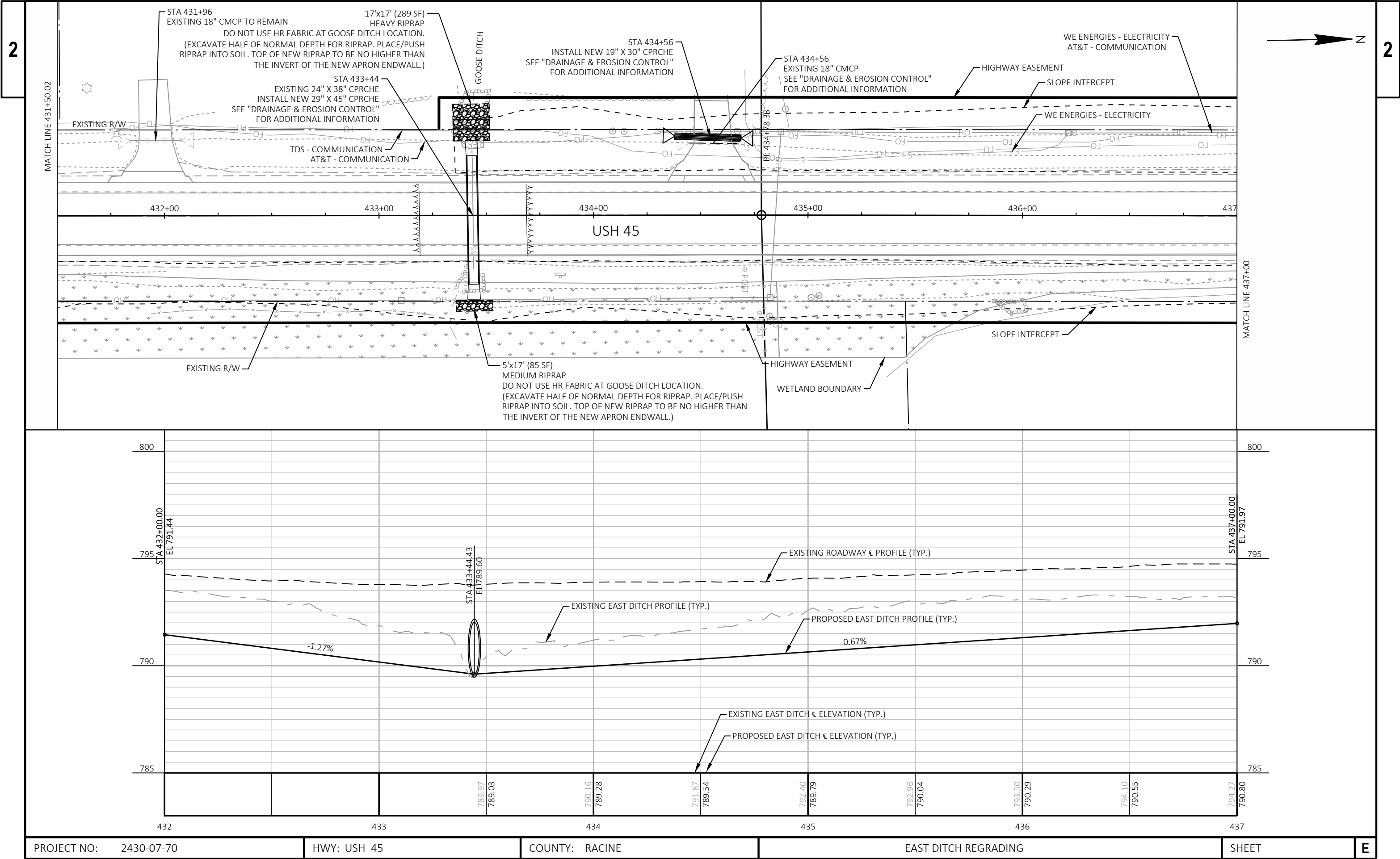
| LEGEND       |                                           |
|--------------|-------------------------------------------|
| (X)          | CURB RAMP TYPE                            |
| XXXXXX       | SAWING ASPHALT                            |
| YYYYYY       | SAWING CONCRETE                           |
| [Pattern]    | CURB RAMP DETECTABLE WARNING FIELD YELLOW |
| [Arrow]      | DIRECTION OF FLOW                         |
| [Taper]      | CURB HEAD HEIGHT TAPER                    |
| [Landing]    | LEVEL LANDING                             |
| [Triangle]   | MAXIMUM EXTENT FEASIBLE                   |
| [Flare 6:1]  | GRADED FLARE (6:1 MAX)                    |
| [Flare 10:1] | TRAVERSABLE FLARE (10:1 MAX)              |

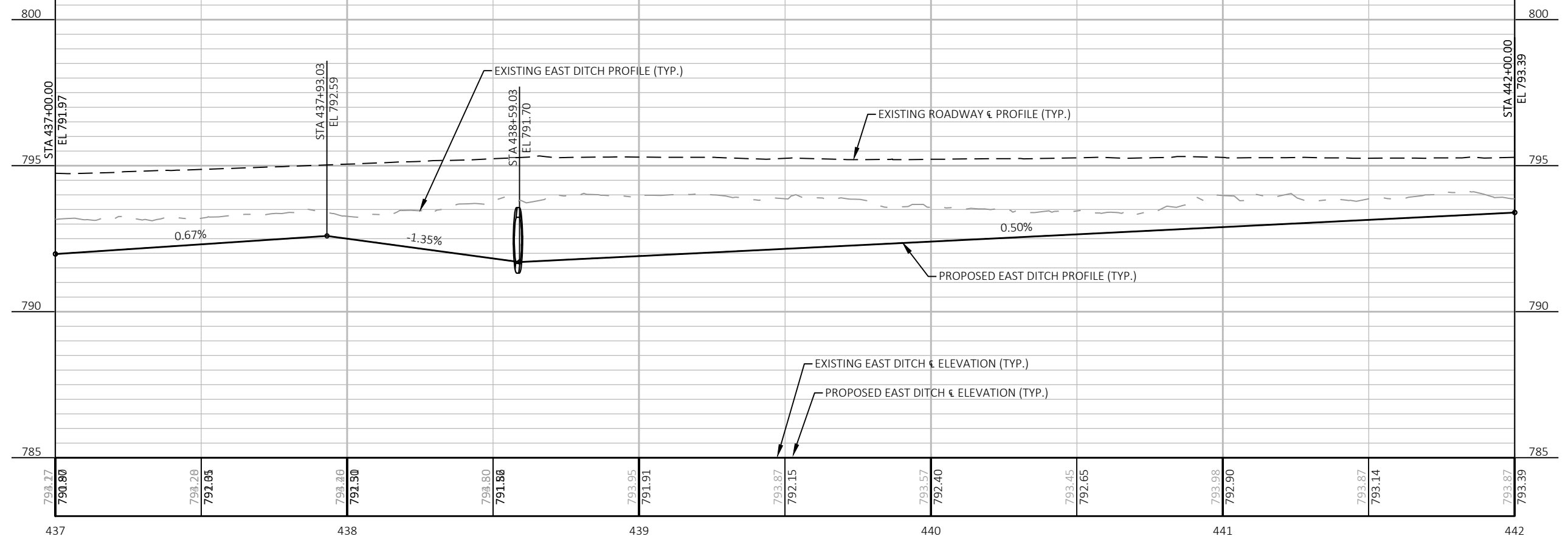
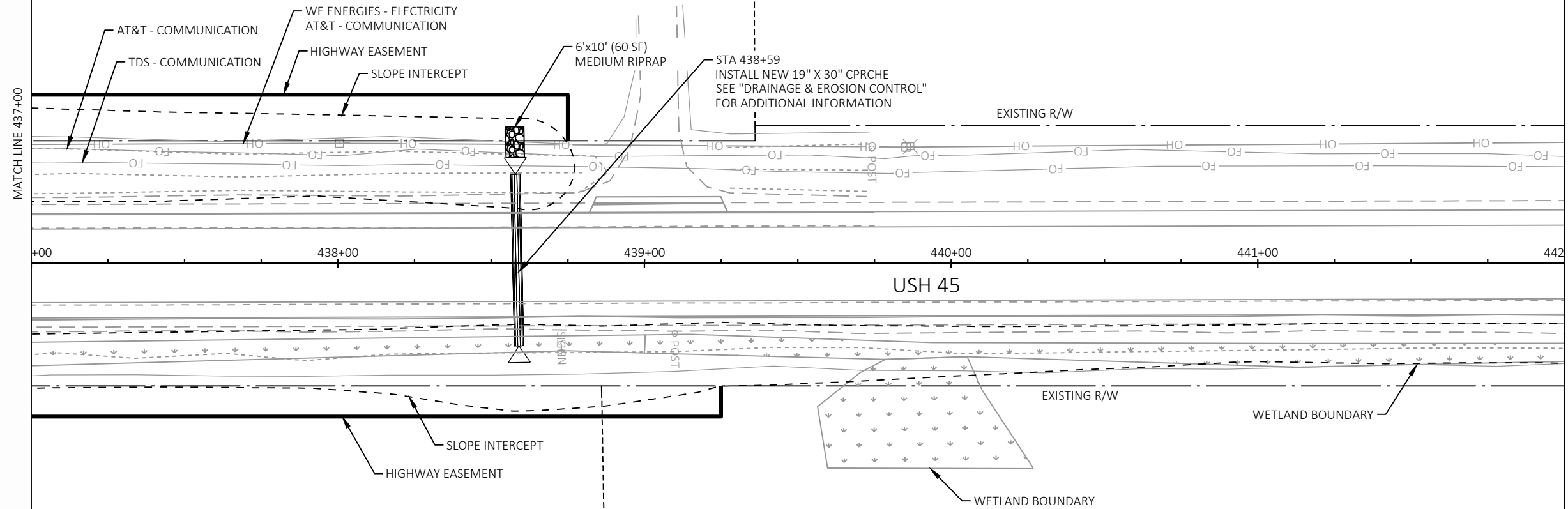


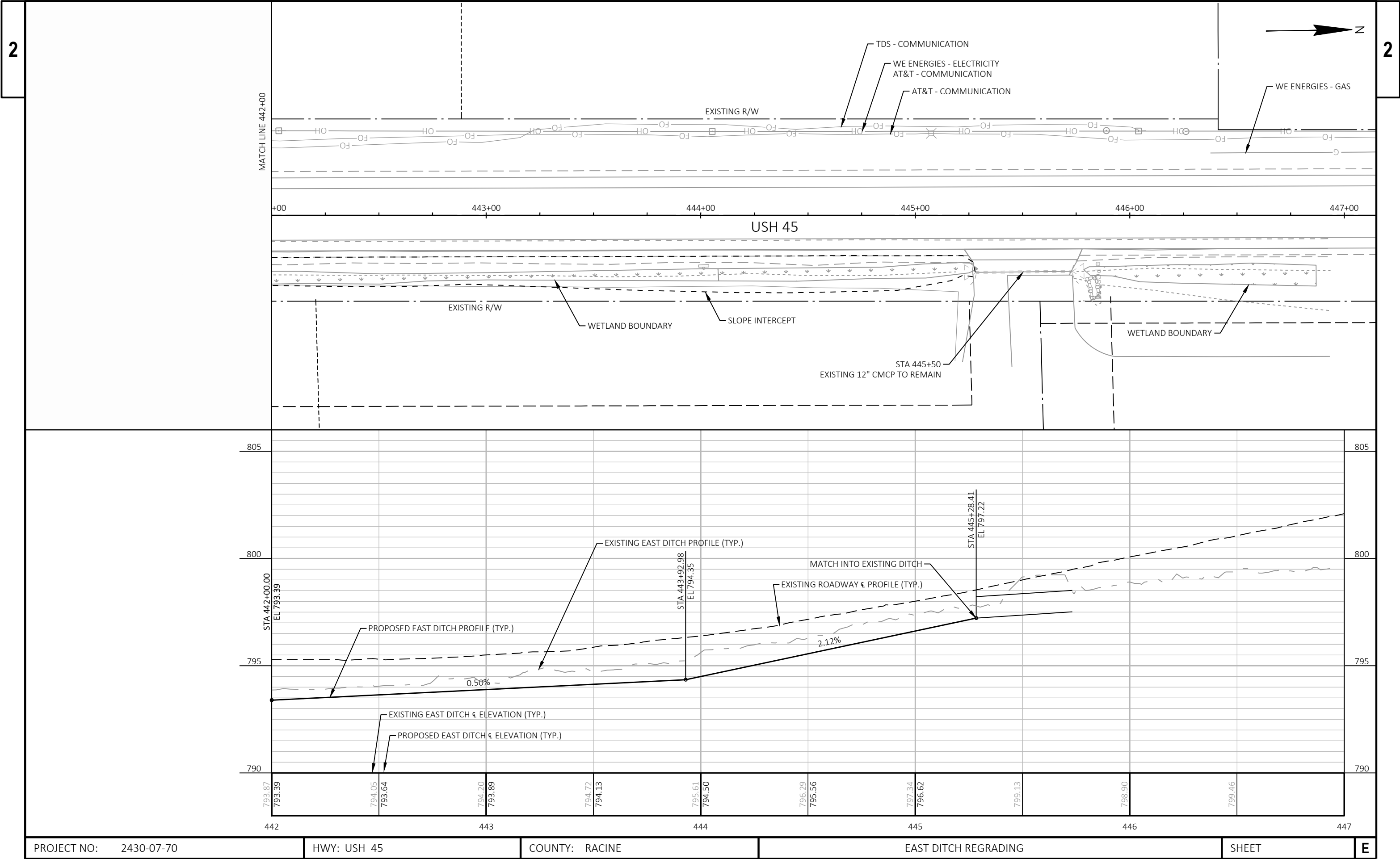
| STATION & OFFSET TABLE |           |          |           |
|------------------------|-----------|----------|-----------|
| POINT                  | STATION   | OFFSET   | ELEVATION |
| 70                     | 461+21.28 | 47.25 RT | 801.98    |
| 71                     | 461+23.26 | 36.78 RT | 801.60    |
| 72                     | 461+26.18 | 31.18 RT | 801.37    |
| 73                     | 461+30.79 | 25.84 RT | 801.16    |
| 74                     | 461+36.82 | 21.63 RT | 801.14    |
| 75                     | 461+37.75 | 23.40 RT | 801.06    |
| 76                     | 461+42.19 | 19.47 RT | 801.11    |
| 77                     | 461+42.75 | 21.39 RT | 801.03    |
| 78                     | 461+51.04 | 18.32 RT | 801.07    |
| 79                     | 461+28.26 | 32.57 RT | 801.81    |
| 80                     | 461+32.47 | 27.69 RT | 801.44    |
| 81                     | 461+45.53 | 21.25 RT | 801.51    |
| 82                     | 461+37.75 | 23.97 RT | 801.07    |
| 83                     | 461+42.75 | 23.99 RT | 801.05    |
| 84                     | 461+37.75 | 28.00 RT | 801.33    |
| 85                     | 461+42.75 | 28.00 RT | 801.31    |
| 86                     | 461+37.75 | 33.00 RT | 801.41    |
| 87                     | 461+42.75 | 33.00 RT | 801.38    |
| 88                     | 461+47.74 | 28.28 RT | 801.44    |
| 89                     | 461+47.74 | 32.45 RT | 801.61    |
| 90                     | 461+51.74 | 28.51 RT | 801.55    |
| 91                     | 461+51.74 | 32.02 RT | 801.80    |
| 92                     | 461+55.47 | 28.72 RT | 801.65    |
| 93                     | 461+55.32 | 31.62 RT | 801.97    |
| 94                     | 461+32.75 | 28.00 RT | 801.41    |
| 95                     | 461+32.75 | 33.00 RT | 801.48    |
| 96                     | 461+33.03 | 37.99 RT | 802.01    |
| 97                     | 461+37.09 | 37.99 RT | 801.98    |
| 98                     | 461+33.34 | 43.45 RT | 802.59    |
| 99                     | 461+36.38 | 43.28 RT | 802.58    |
| 100                    | 461+35.11 | 39.71 RT | R=27.0'   |

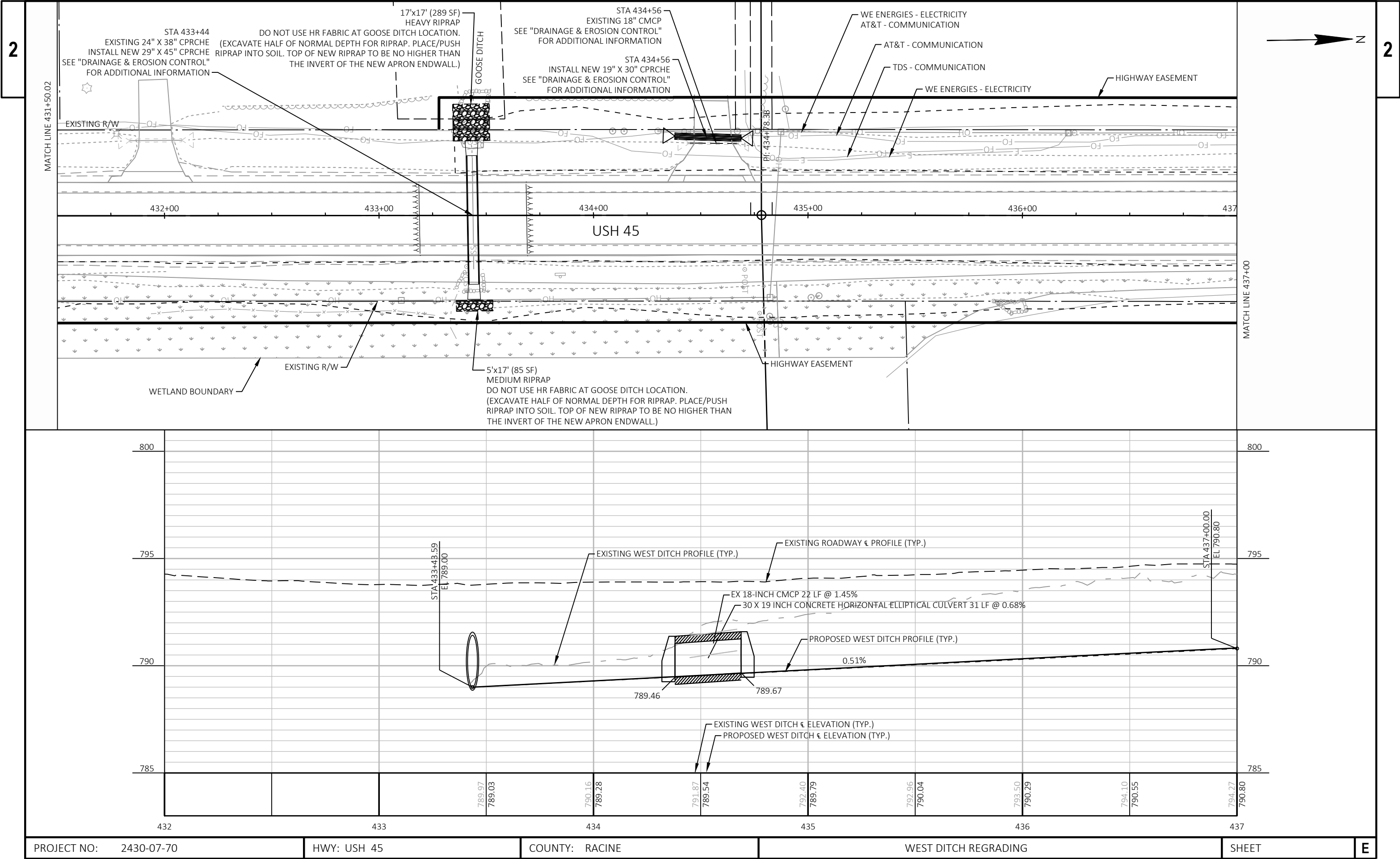
| LEGEND        |                                           |
|---------------|-------------------------------------------|
| (X)           | CURB RAMP TYPE                            |
| XXXXXX        | SAWING ASPHALT                            |
| YYYYYY        | SAWING CONCRETE                           |
| [Pattern]     | CURB RAMP DETECTABLE WARNING FIELD YELLOW |
| [Arrow]       | DIRECTION OF FLOW                         |
| [Taper]       | CURB HEAD HEIGHT TAPER                    |
| [Level]       | LEVEL LANDING                             |
| [Triangle]    | MAXIMUM EXTENT FEASIBLE                   |
| [Graded]      | GRADED FLARE (6:1 MAX)                    |
| [Traversable] | TRAVERSABLE FLARE (10:1 MAX)              |

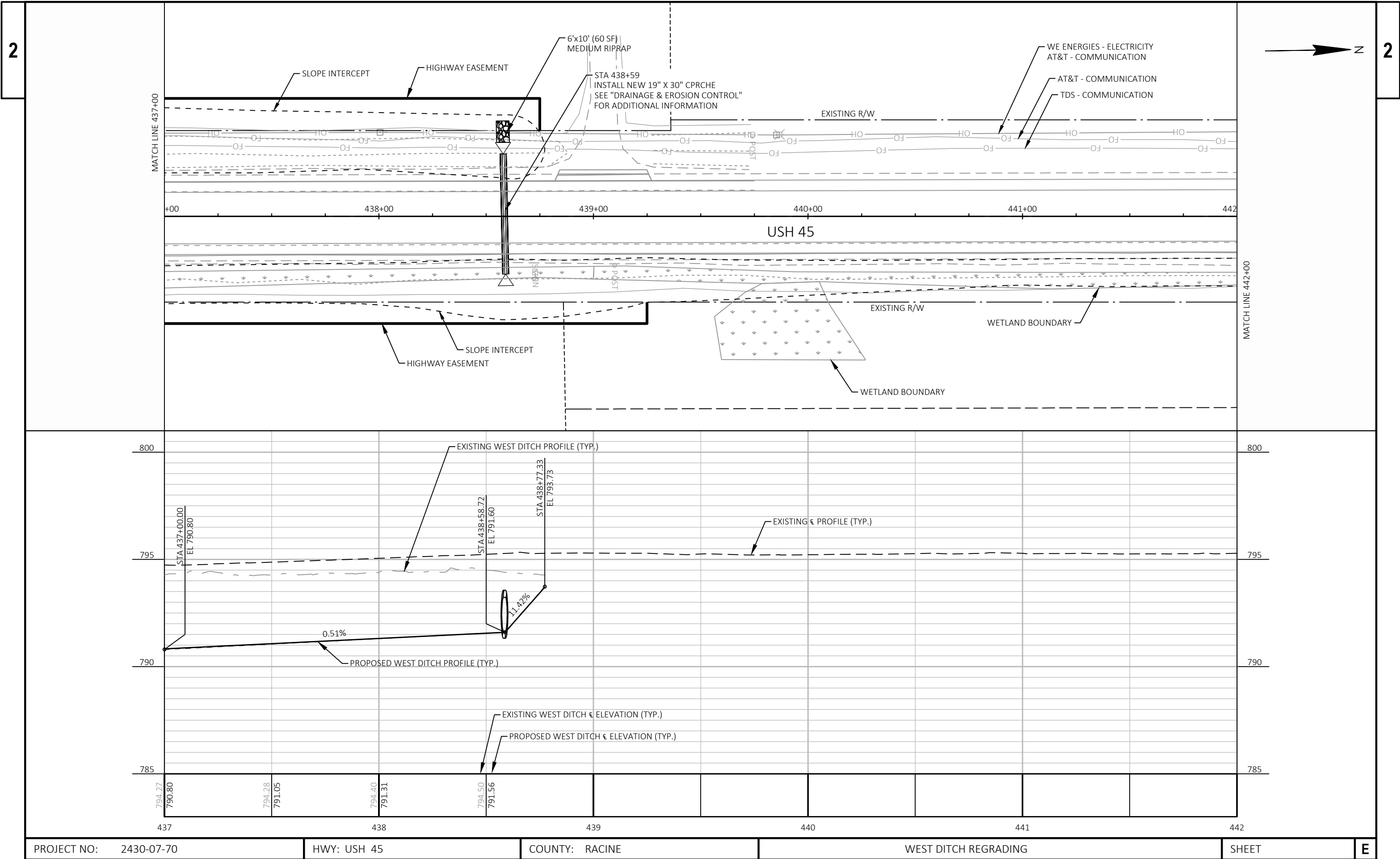


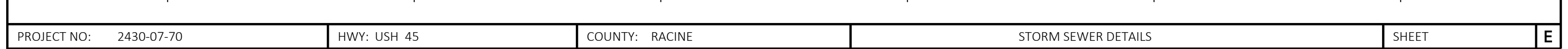






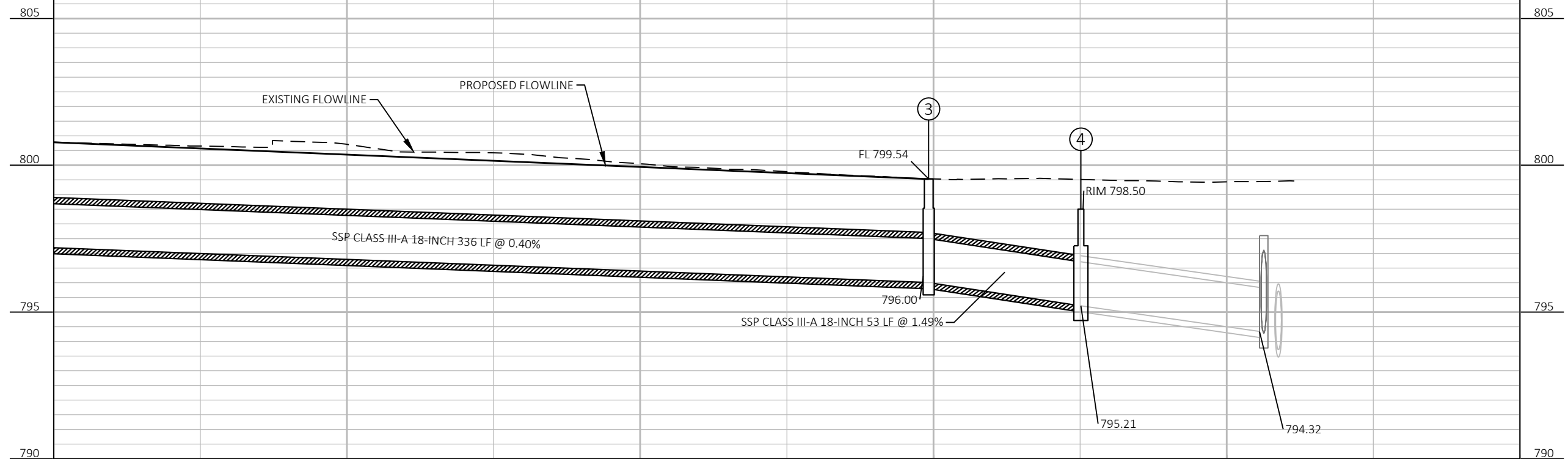
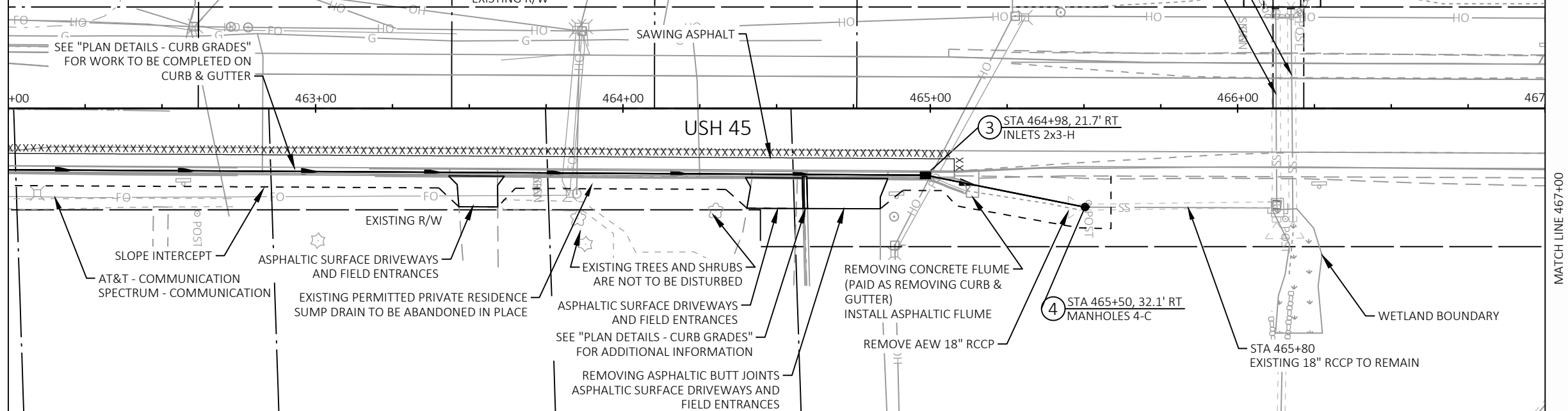


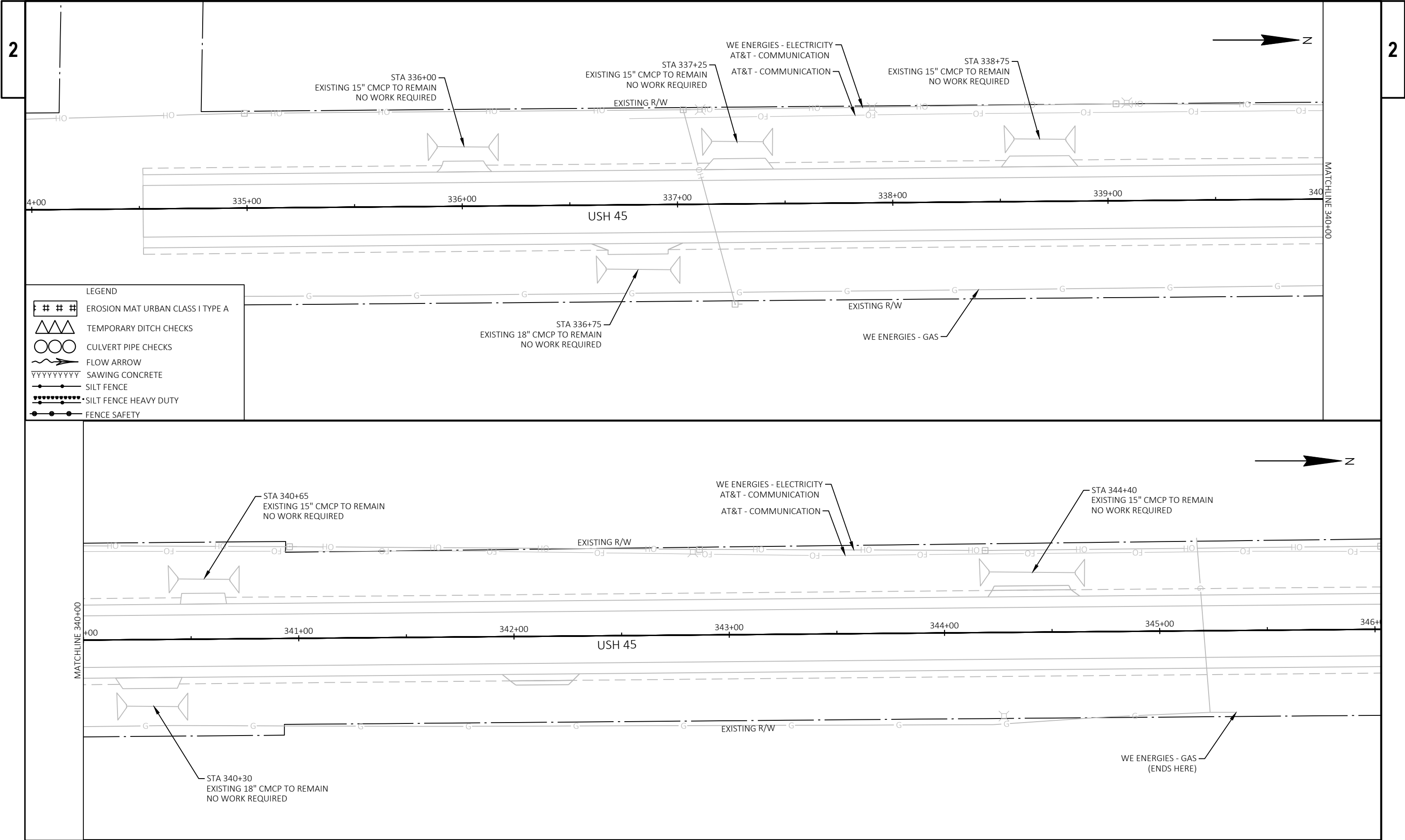




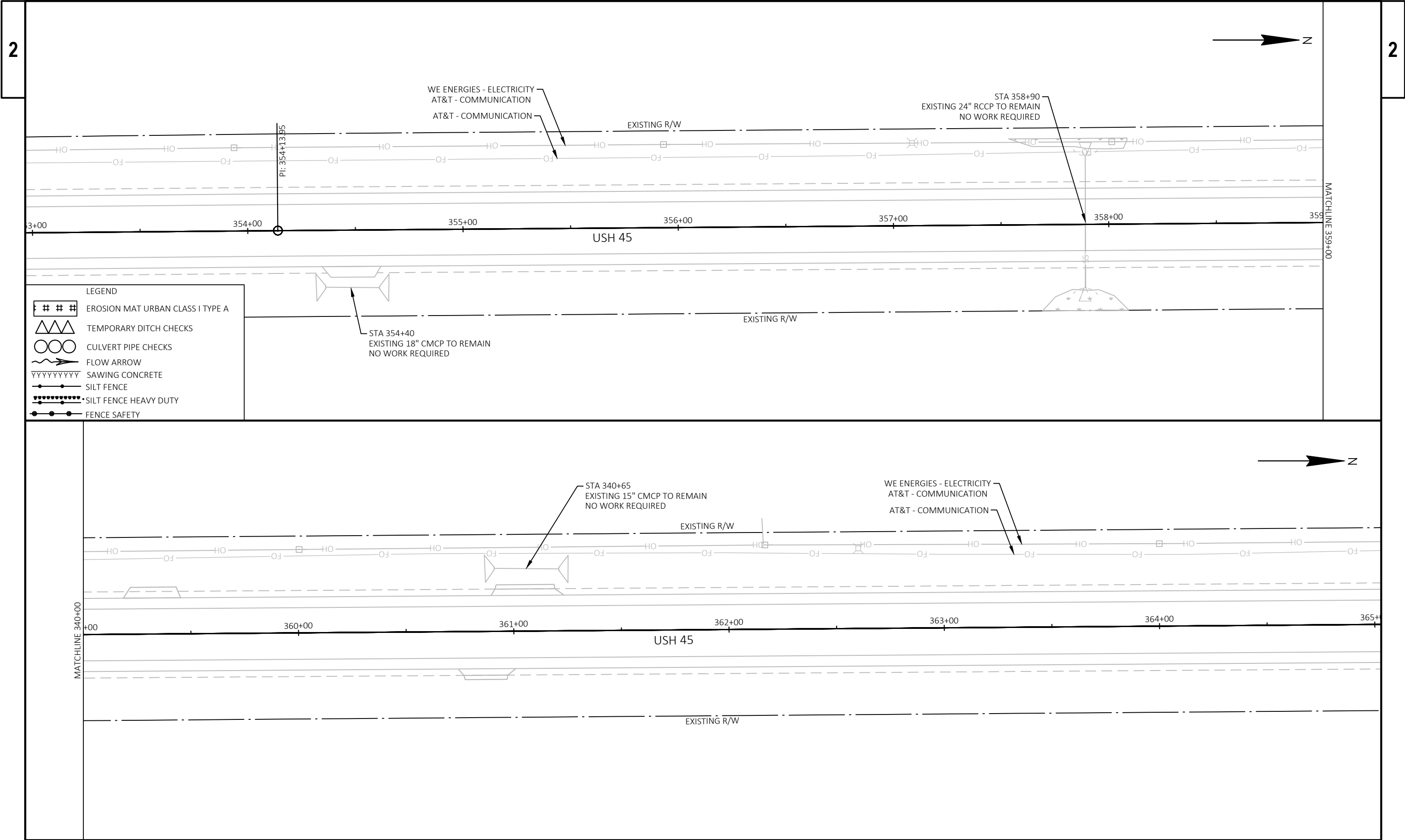
STATION & OFFSET BASED ON CENTER OF  
STRUCTURE UNLESS NOTED OTHERWISE

MATCH LINE 462+00

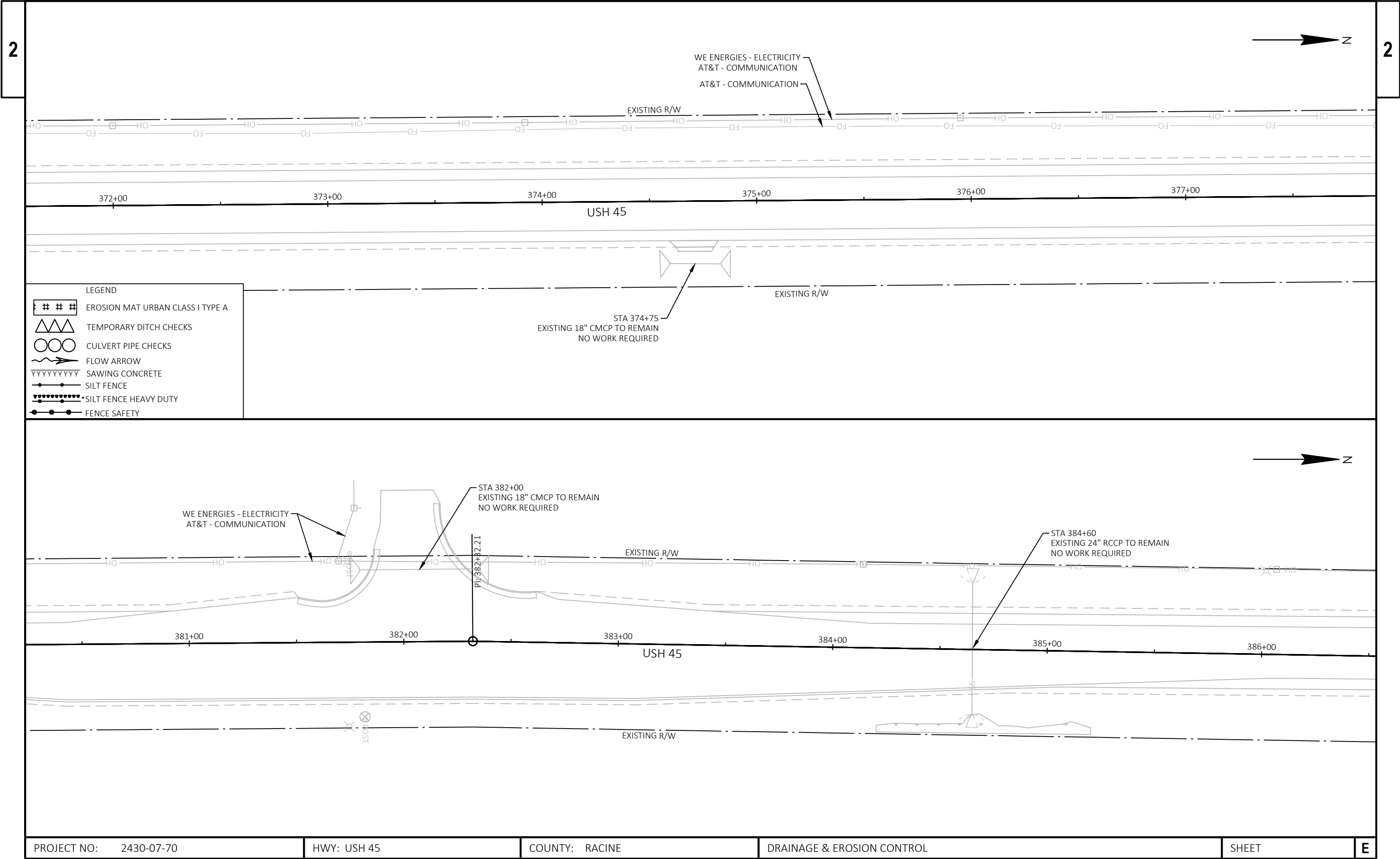




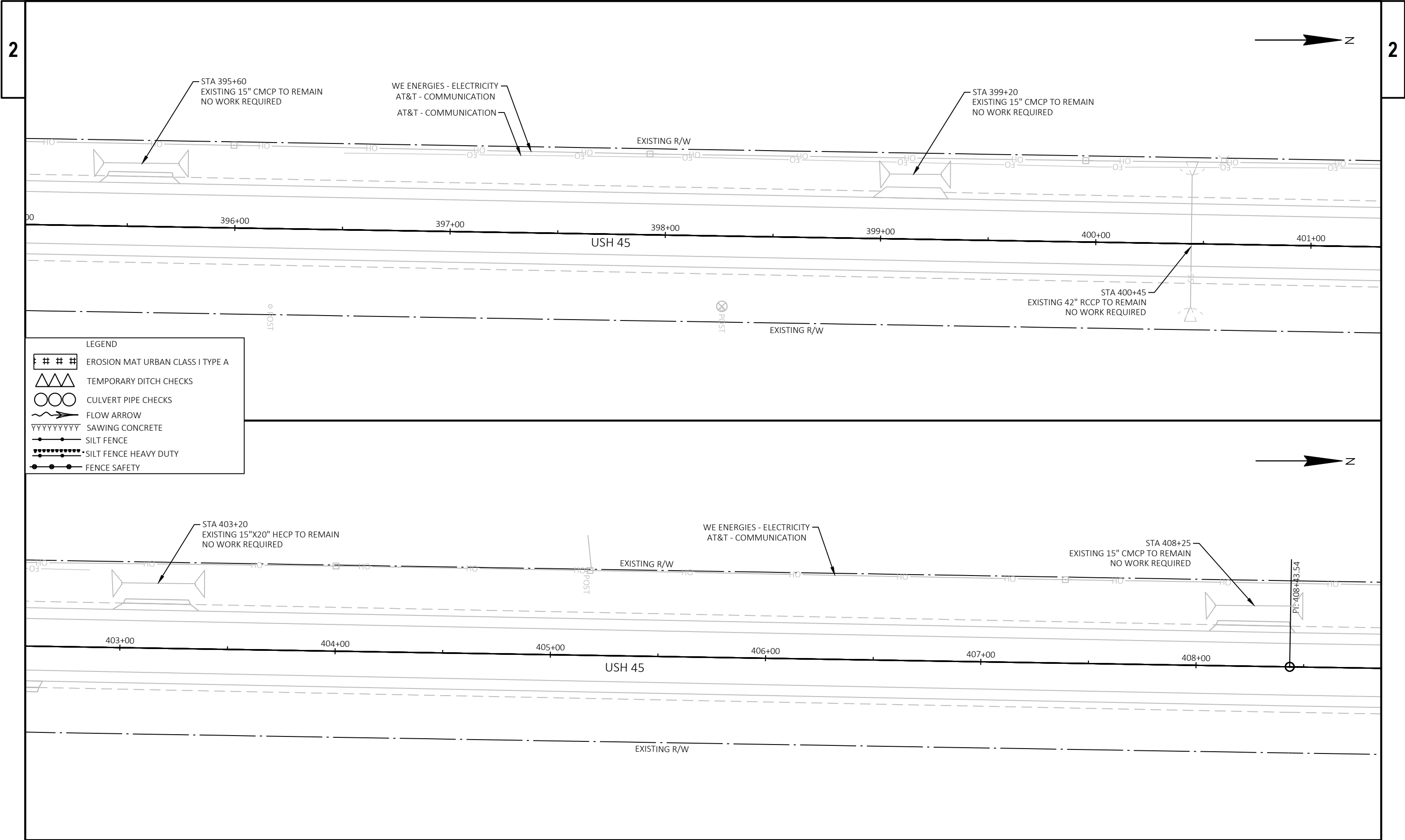
|                        |             |                |                            |       |   |
|------------------------|-------------|----------------|----------------------------|-------|---|
| PROJECT NO: 2430-07-70 | HWY: USH 45 | COUNTY: RACINE | DRAINAGE & EROSION CONTROL | SHEET | E |
|------------------------|-------------|----------------|----------------------------|-------|---|



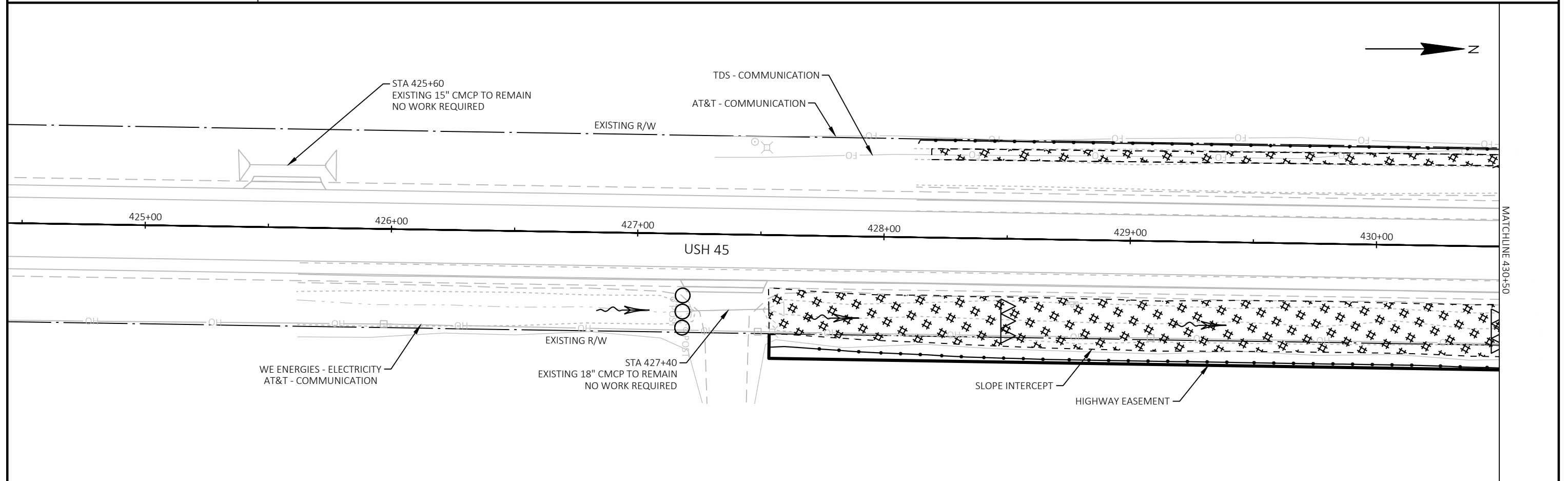
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|------------------------|-------------|----------------|----------------------------|-------|---|
| PROJECT NO: 2430-07-70 | HWY: USH 45 | COUNTY: RACINE | DRAINAGE & EROSION CONTROL | SHEET | E |
|------------------------|-------------|----------------|----------------------------|-------|---|

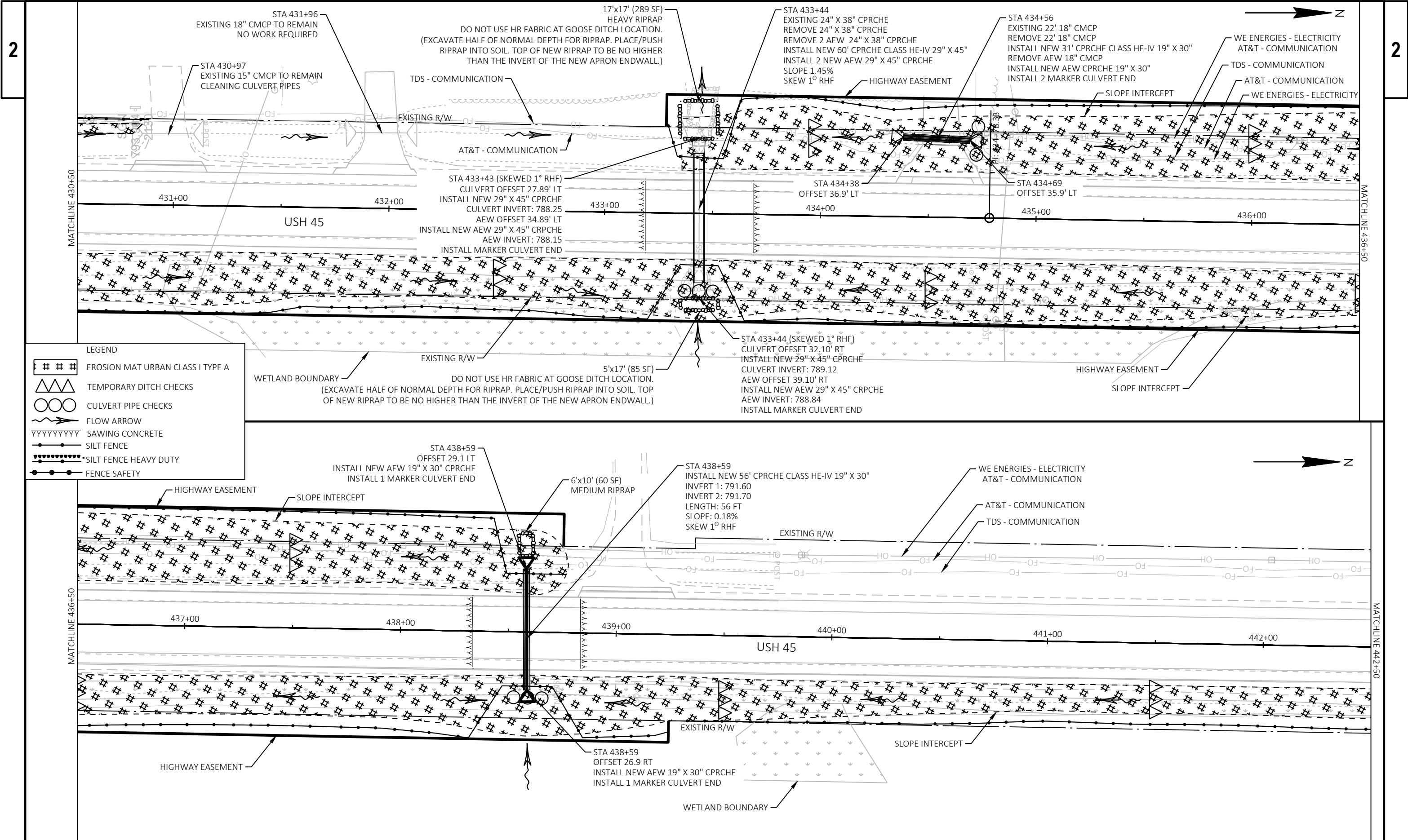


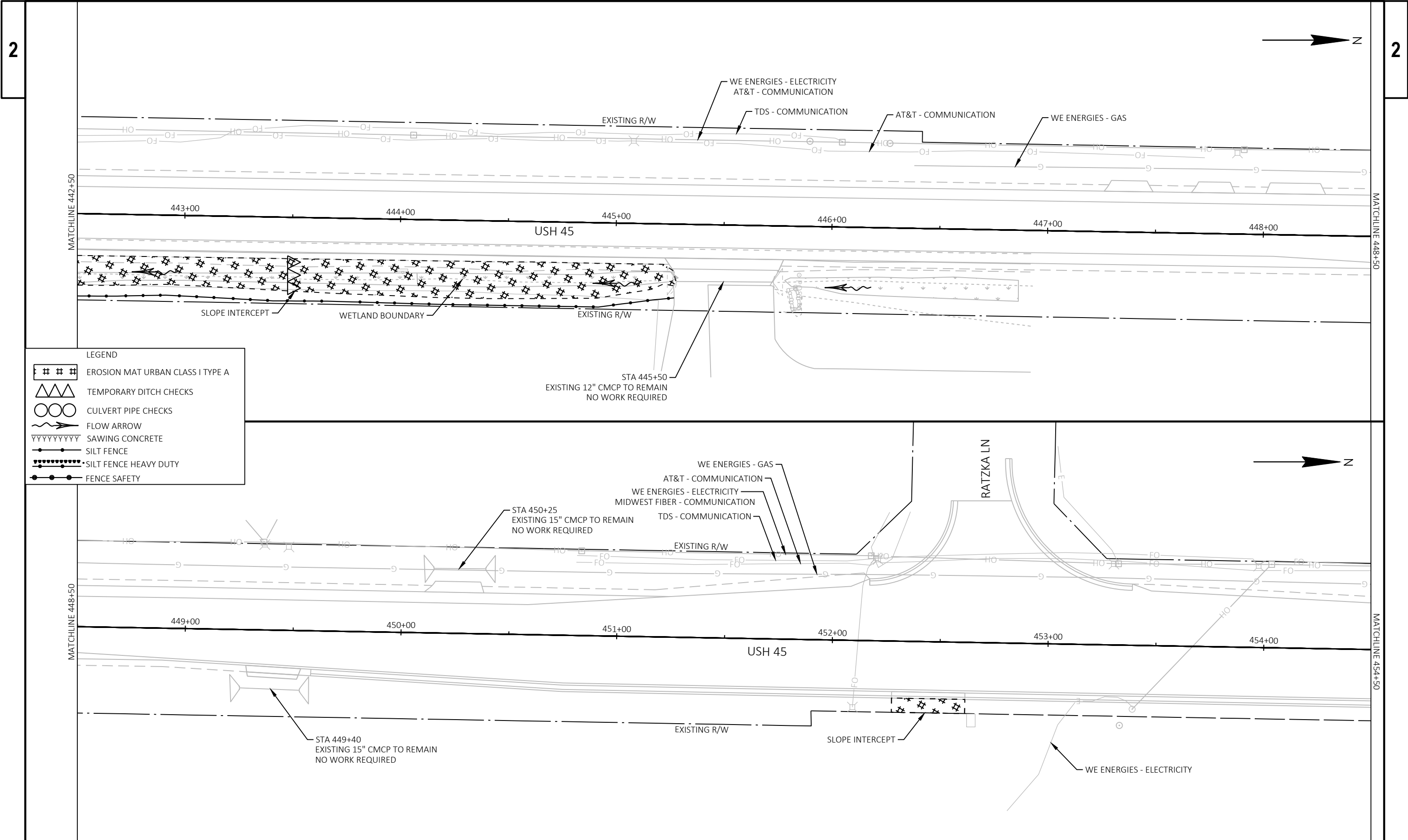
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|------------------------|-------------|----------------|----------------------------|-------|---|
| PROJECT NO: 2430-07-70 | HWY: USH 45 | COUNTY: RACINE | DRAINAGE & EROSION CONTROL | SHEET | E |
|------------------------|-------------|----------------|----------------------------|-------|---|



|                        |             |                |                            |       |   |
|------------------------|-------------|----------------|----------------------------|-------|---|
| PROJECT NO: 2430-07-70 | HWY: USH 45 | COUNTY: RACINE | DRAINAGE & EROSION CONTROL | SHEET | E |
|------------------------|-------------|----------------|----------------------------|-------|---|



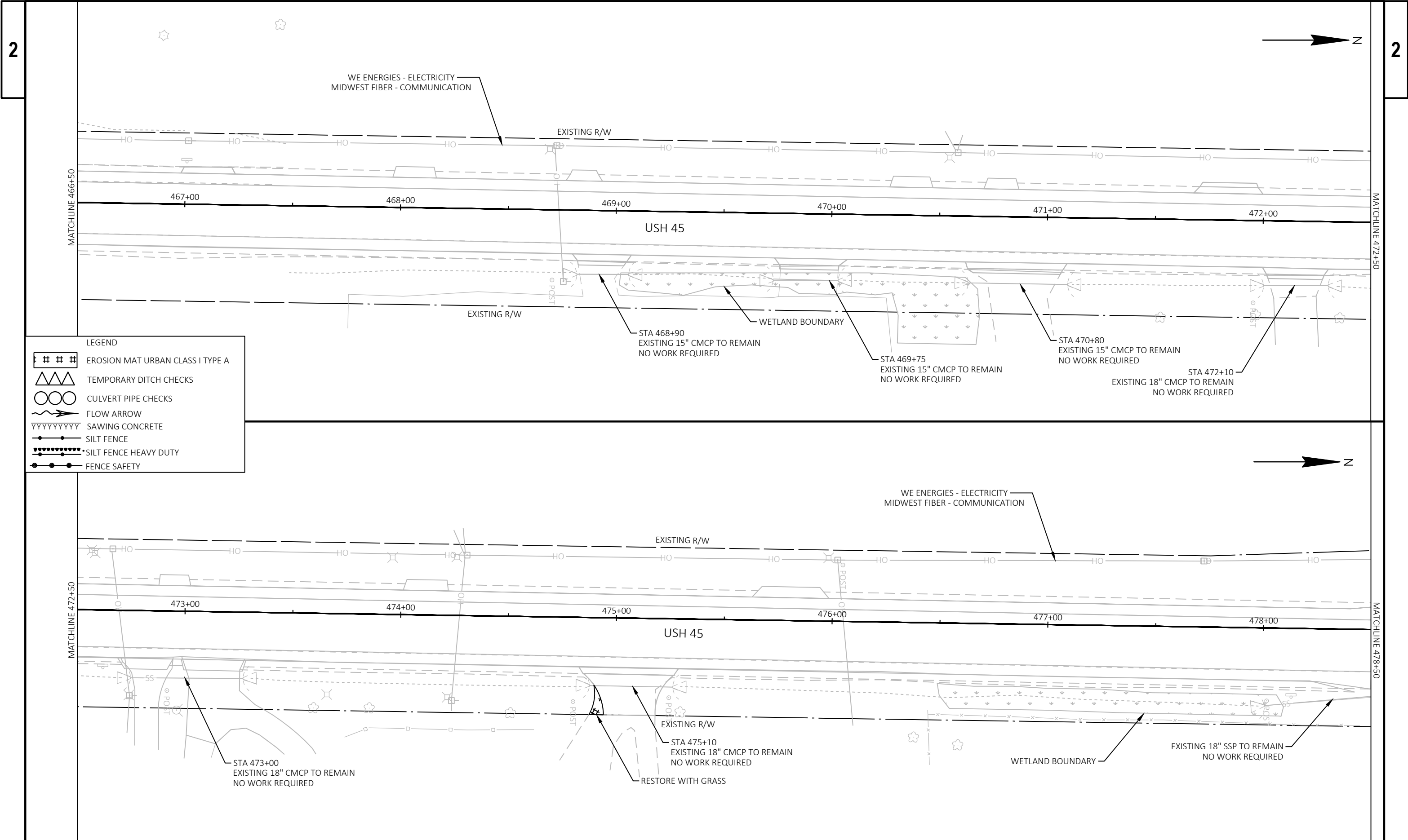




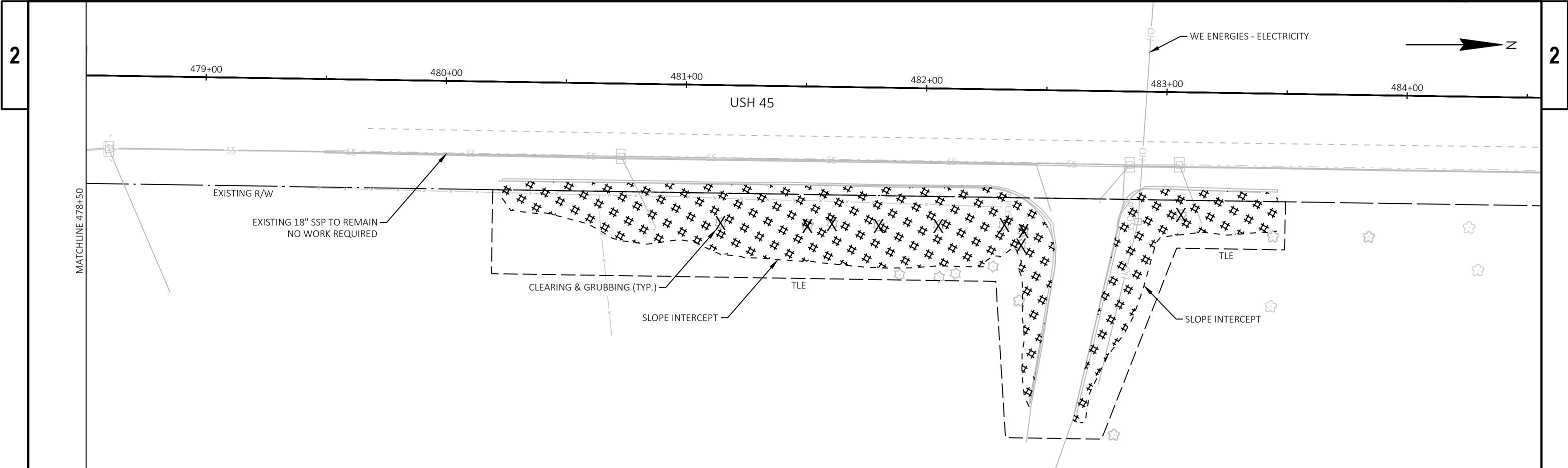
LEGEND

- EROSION MAT URBAN CLASS I TYPE A
- TEMPORARY DITCH CHECKS
- CULVERT PIPE CHECKS
- FLOW ARROW
- SAWING CONCRETE
- SILT FENCE
- SILT FENCE HEAVY DUTY
- FENCE SAFETY





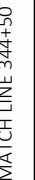
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|------------------------|-------------|----------------|----------------------------|-------|---|
| PROJECT NO: 2430-07-70 | HWY: USH 45 | COUNTY: RACINE | DRAINAGE & EROSION CONTROL | SHEET | E |
|------------------------|-------------|----------------|----------------------------|-------|---|



| LEGEND |                                  |
|--------|----------------------------------|
|        | EROSION MAT URBAN CLASS I TYPE A |
|        | TEMPORARY DITCH CHECKS           |
|        | CULVERT PIPE CHECKS              |
|        | FLOW ARROW                       |
|        | SAWING CONCRETE                  |
|        | SILT FENCE                       |
|        | SILT FENCE HEAVY DUTY            |
|        | FENCE SAFETY                     |

THIS PANE WAS INTENTIONALLY LEFT BLANK

|                        |             |                |                            |       |   |
|------------------------|-------------|----------------|----------------------------|-------|---|
| PROJECT NO: 2430-07-70 | HWY: USH 45 | COUNTY: RACINE | DRAINAGE & EROSION CONTROL | SHEET | E |
|------------------------|-------------|----------------|----------------------------|-------|---|



BOX OUT OR CORING OF CONCRETE FOR SIGN POSTS IS INCIDENTAL TO THE POST.

|                                                                                       |                                  |
|---------------------------------------------------------------------------------------|----------------------------------|
|  | EXISTING SIGN MOUNTED ON POST(S) |
|  | PROPOSED SIGN MOUNTED ON POST(S) |
|  | EXISTING LIGHT OR SIGNAL POLE    |
| ESTR                                                                                  | EXISTING SIGN TO REMAIN          |
|  | DENOTES SIGN NUMBER              |
| (X)                                                                                   | INDICATES SIGN SIZE              |





2

2

LEGEND

EXISTING SIGN MOUNTED ON POST(S)

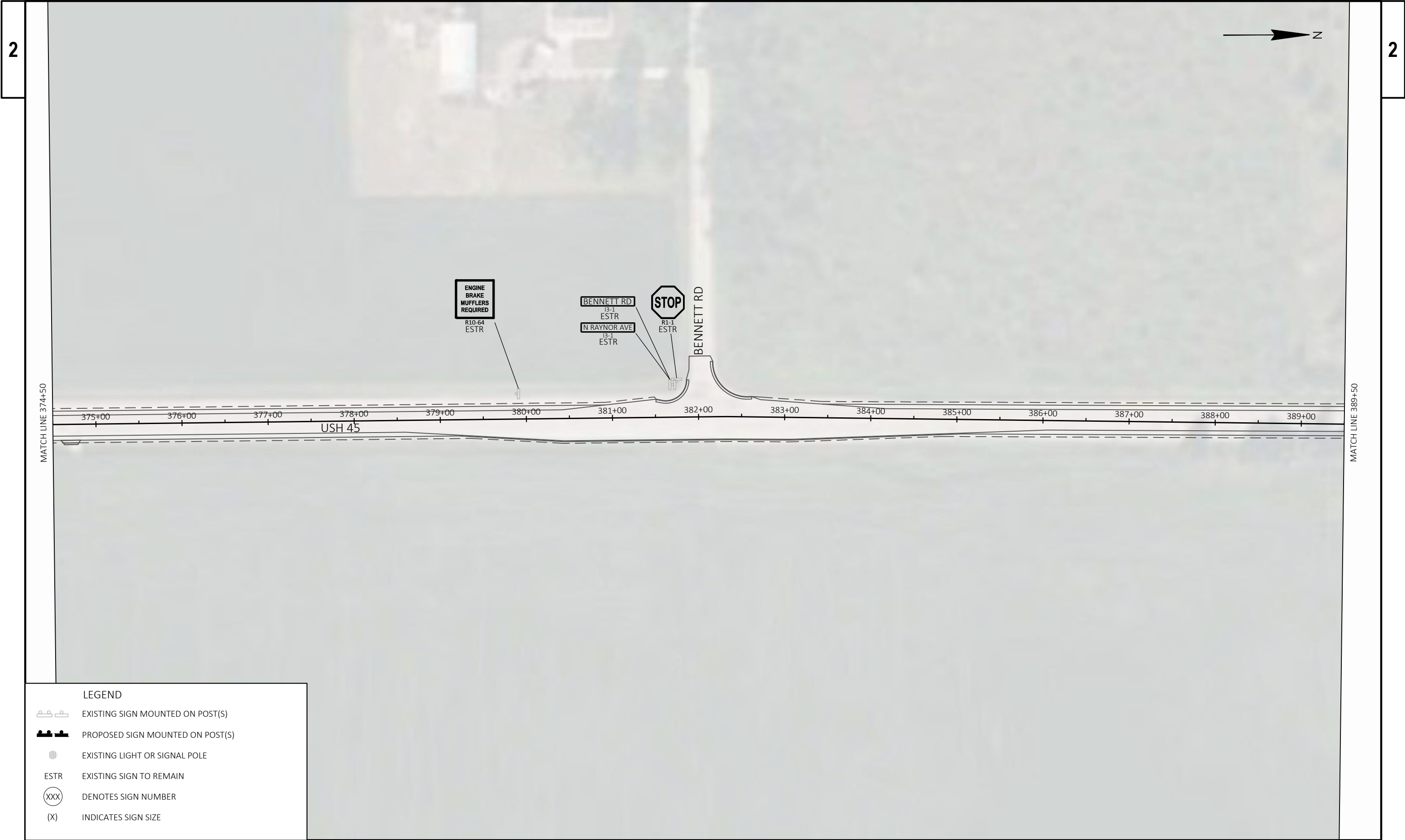
PROPOSED SIGN MOUNTED ON POST(S)

EXISTING LIGHT OR SIGNAL POLE

EXISTING SIGN TO REMAIN

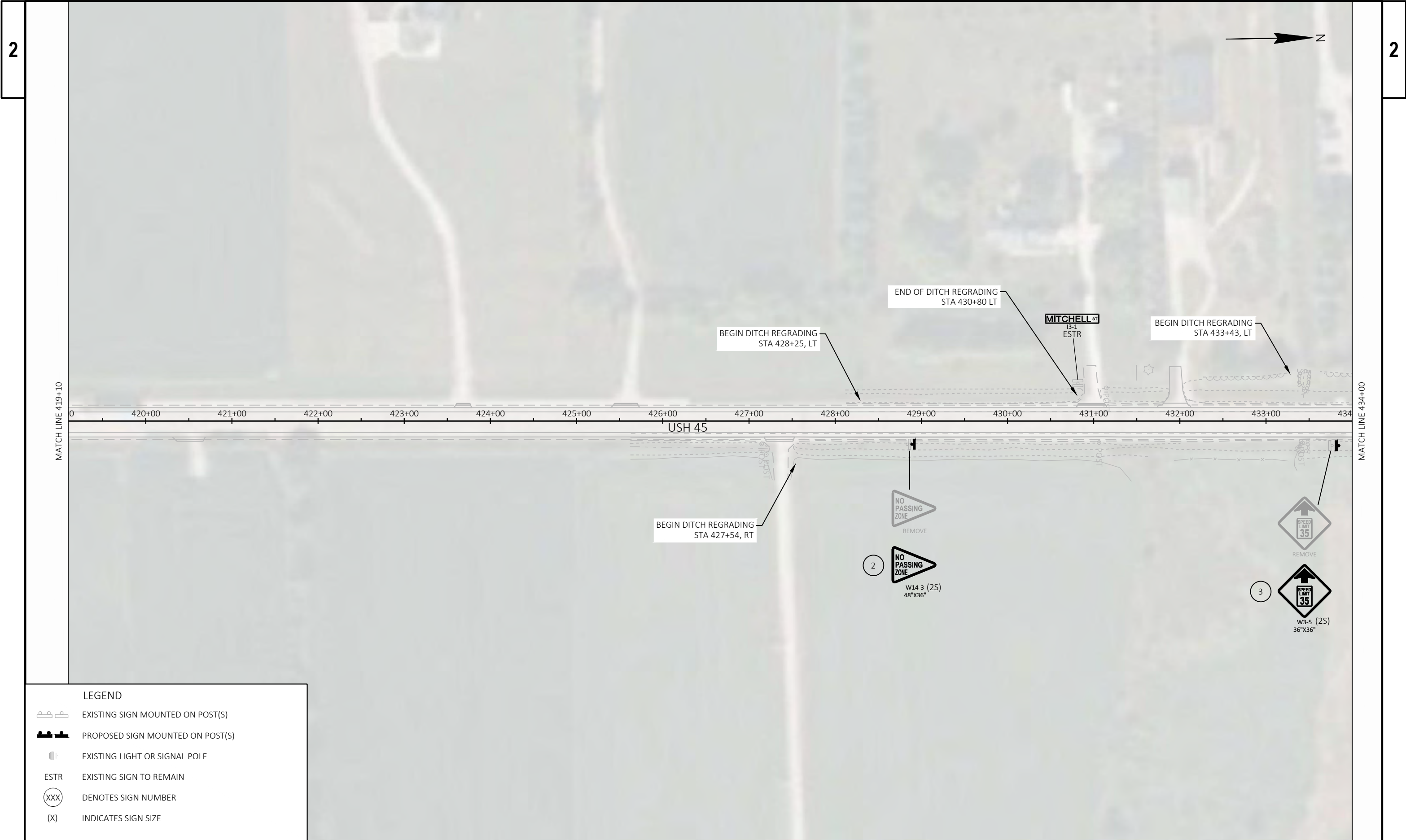
DENOTES SIGN NUMBER

INDICATES SIGN SIZE









LEGEND



EXISTING SIGN MOUNTED ON POST(S)



PROPOSED SIGN MOUNTED ON POST(S)



EXISTING LIGHT OR SIGNAL POLE

ESTR

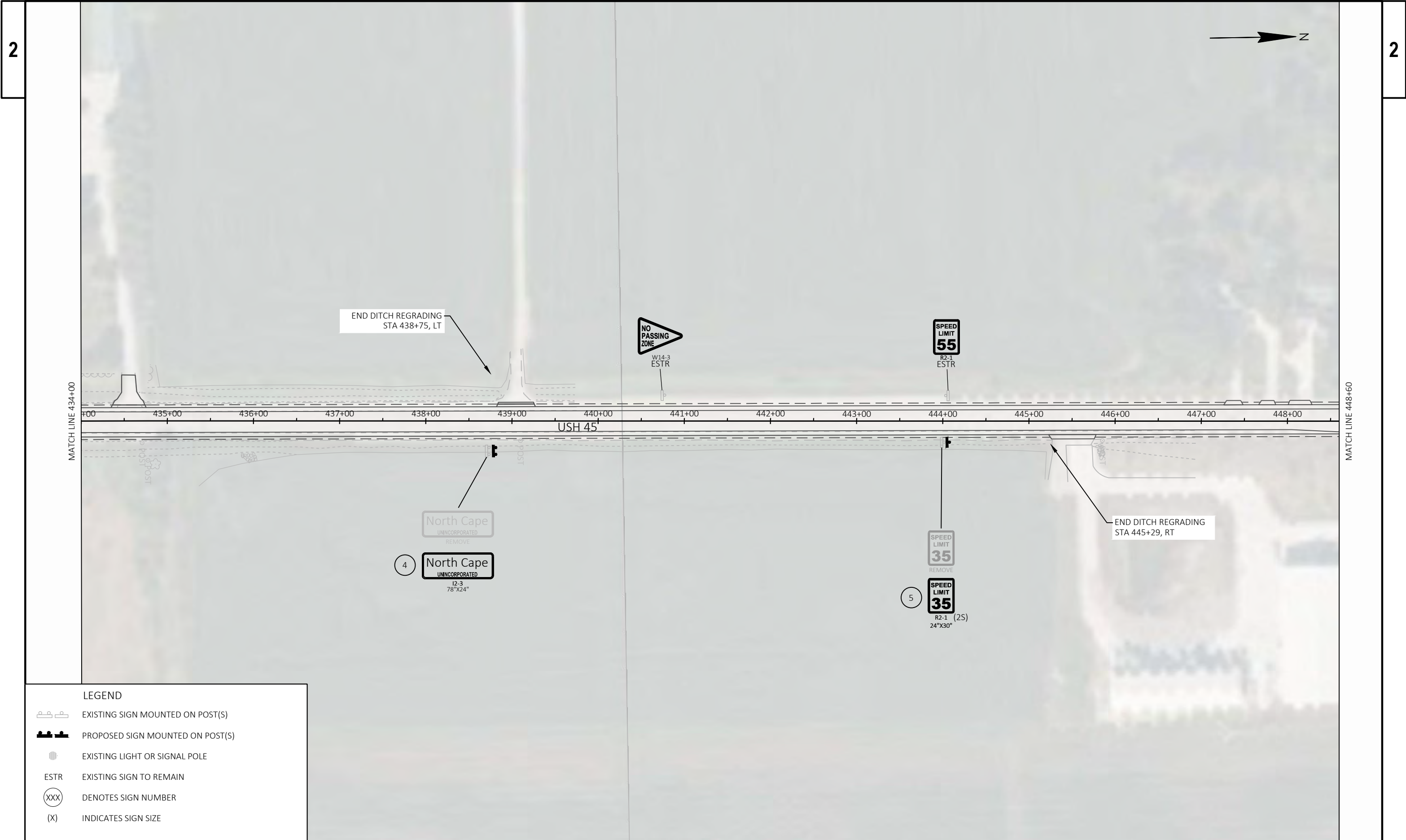
EXISTING SIGN TO REMAIN



DENOTES SIGN NUMBER

(X)

INDICATES SIGN SIZE



LEGEND

EXISTING SIGN MOUNTED ON POST(S)

PROPOSED SIGN MOUNTED ON POST(S)

EXISTING LIGHT OR SIGNAL POLE

ESTR

EXISTING SIGN TO REMAIN

DENOTES SIGN NUMBER

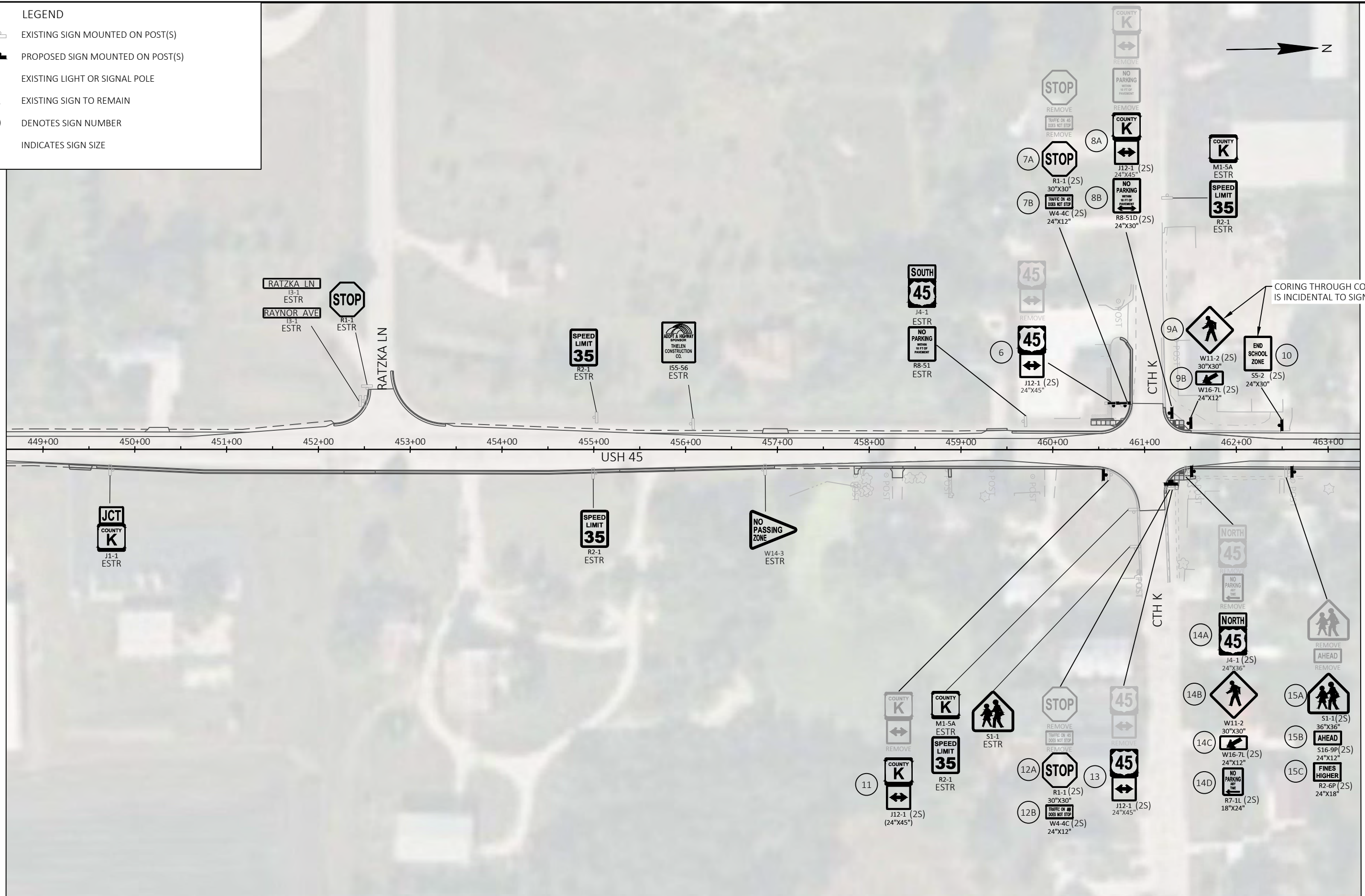
INDICATES SIGN SIZE

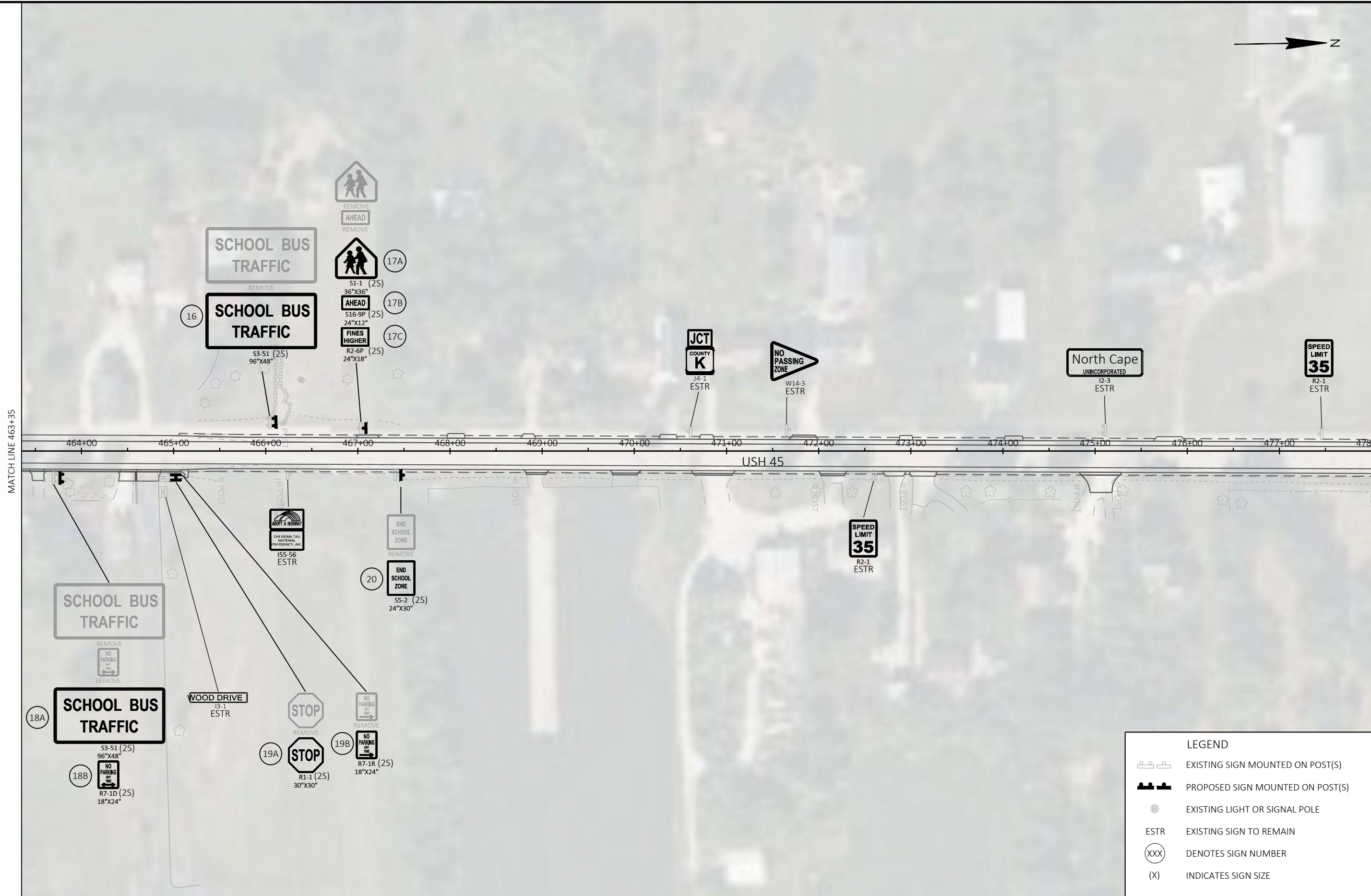
LEGEND

-  EXISTING SIGN MOUNTED ON POST(S)
-  PROPOSED SIGN MOUNTED ON POST(S)
-  EXISTING LIGHT OR SIGNAL POLE
- ESTR EXISTING SIGN TO REMAIN
-  DENOTES SIGN NUMBER
-  INDICATES SIGN SIZE

MATCH LINE 448+60

MATCH LINE 463+35





LEGEND

EXISTING SIGN MOUNTED ON POST(S)

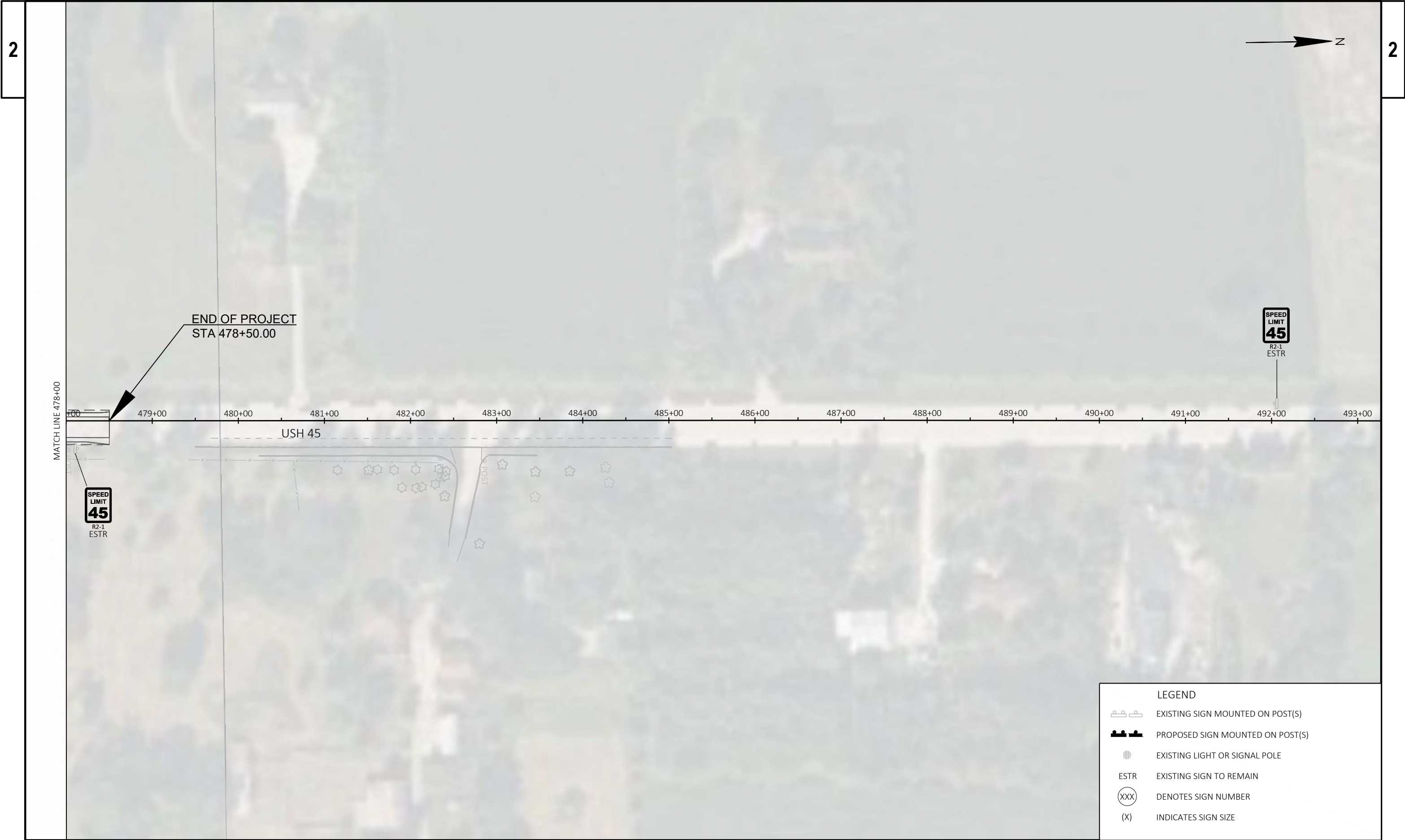
PROPOSED SIGN MOUNTED ON POST(S)

EXISTING LIGHT OR SIGNAL POLE

EXISTING SIGN TO REMAIN

DENOTES SIGN NUMBER

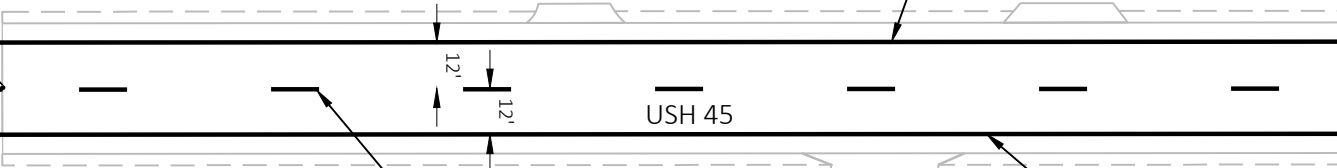
INDICATES SIGN SIZE



CONTRACTOR SHALL NOTE ALL EXISTING NO  
PASSING ZONES STARTS AND ENDS  
LOCATIONS PRIOR TO PAVEMENT REMOVAL

BEGIN PROJECT  
STA 334+51.00

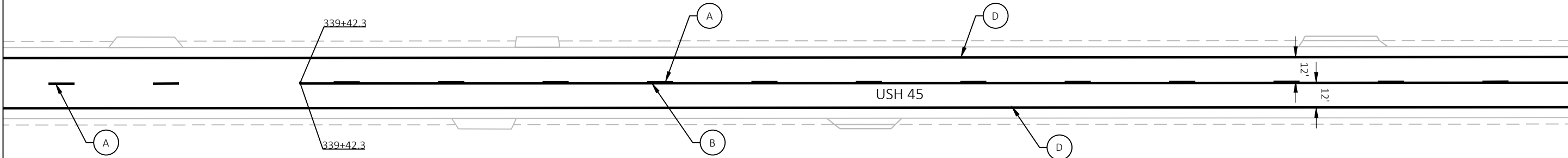
| LEGEND |  |                                                                            |
|--------|--|----------------------------------------------------------------------------|
|        |  | A MARKING LINE GROOVED WET REF EPOXY 6-INCH YELLOW (12.5' DASH, 37.5' GAP) |
|        |  | B MARKING LINE GROOVED WET REF EPOXY 6-INCH YELLOW                         |
|        |  | C MARKING LINE GROOVED WET REF EPOXY 6-INCH DOUBLE YELLOW                  |
|        |  | D MARKING LINE GROOVED WET REF EPOXY 6-INCH WHITE                          |
|        |  | E MARKING LINE GROOVED WET REF EPOXY 6-INCH WHITE (12.5' DASH, 37.5' GAP)  |
|        |  | F MARKING STOP LINE EPOXY 18-INCH WHITE                                    |
|        |  | G MARKING LINE EPOXY 4-INCH DOUBLE YELLOW                                  |



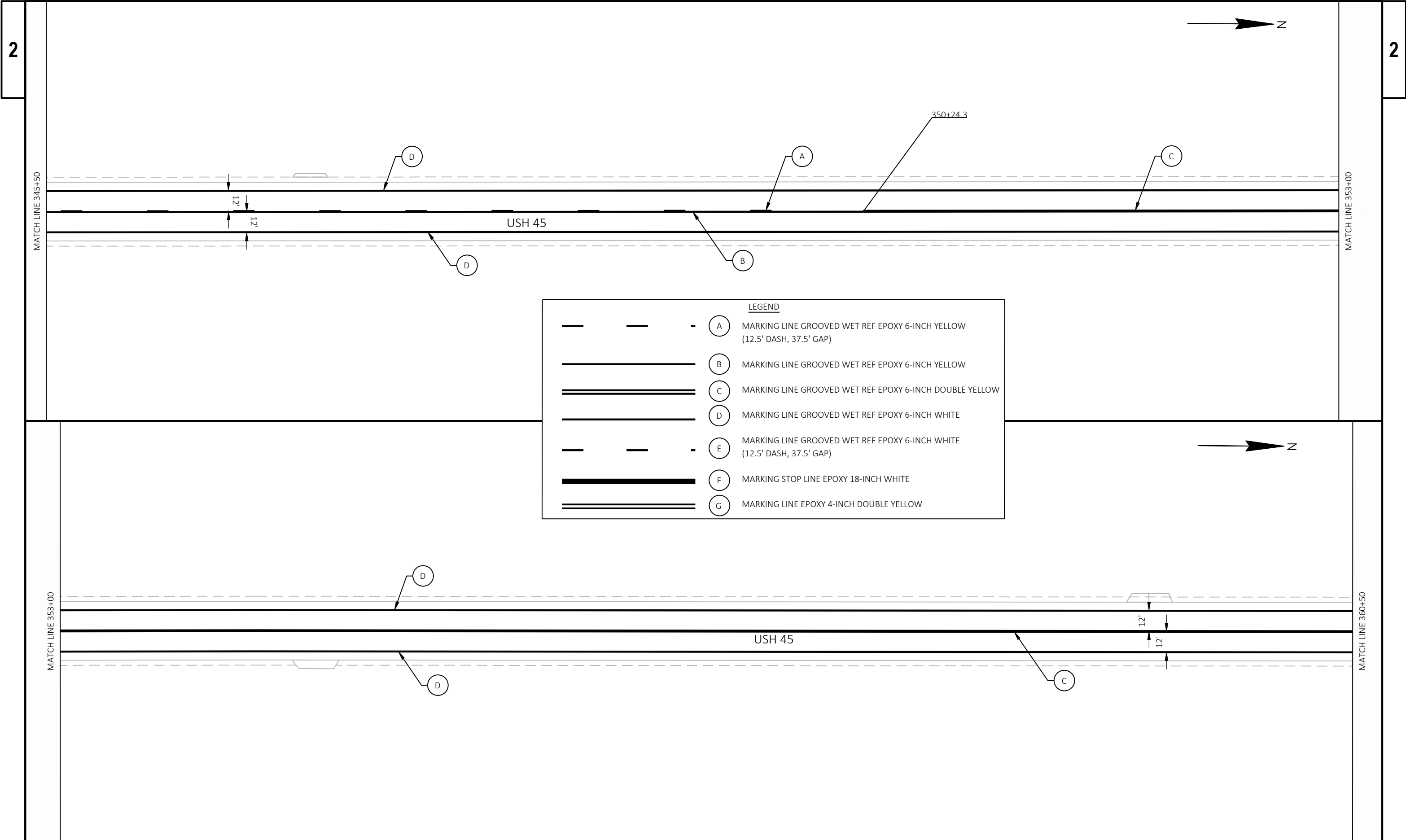
MATCH LINE 338+00

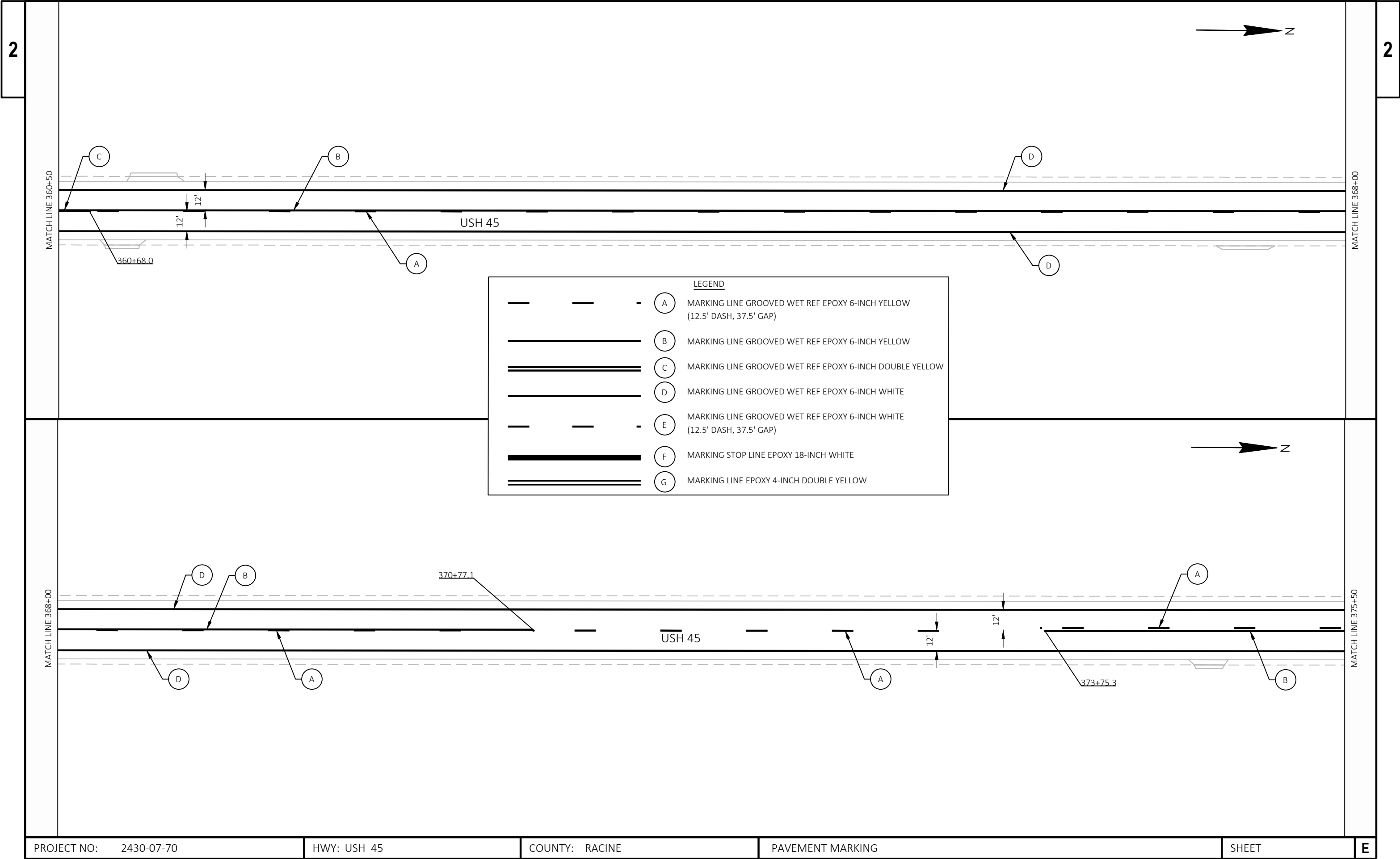


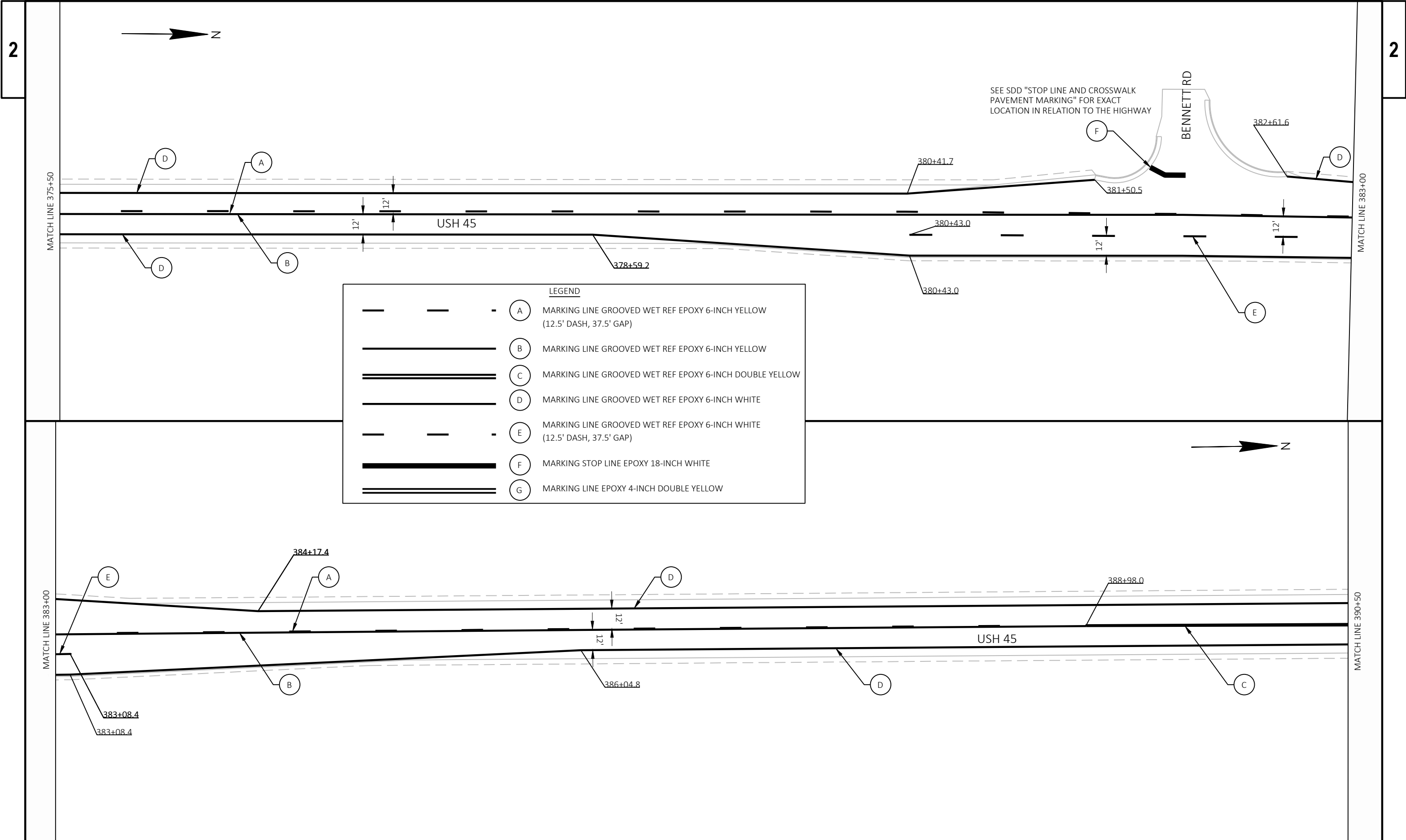
MATCH LINE 338+00



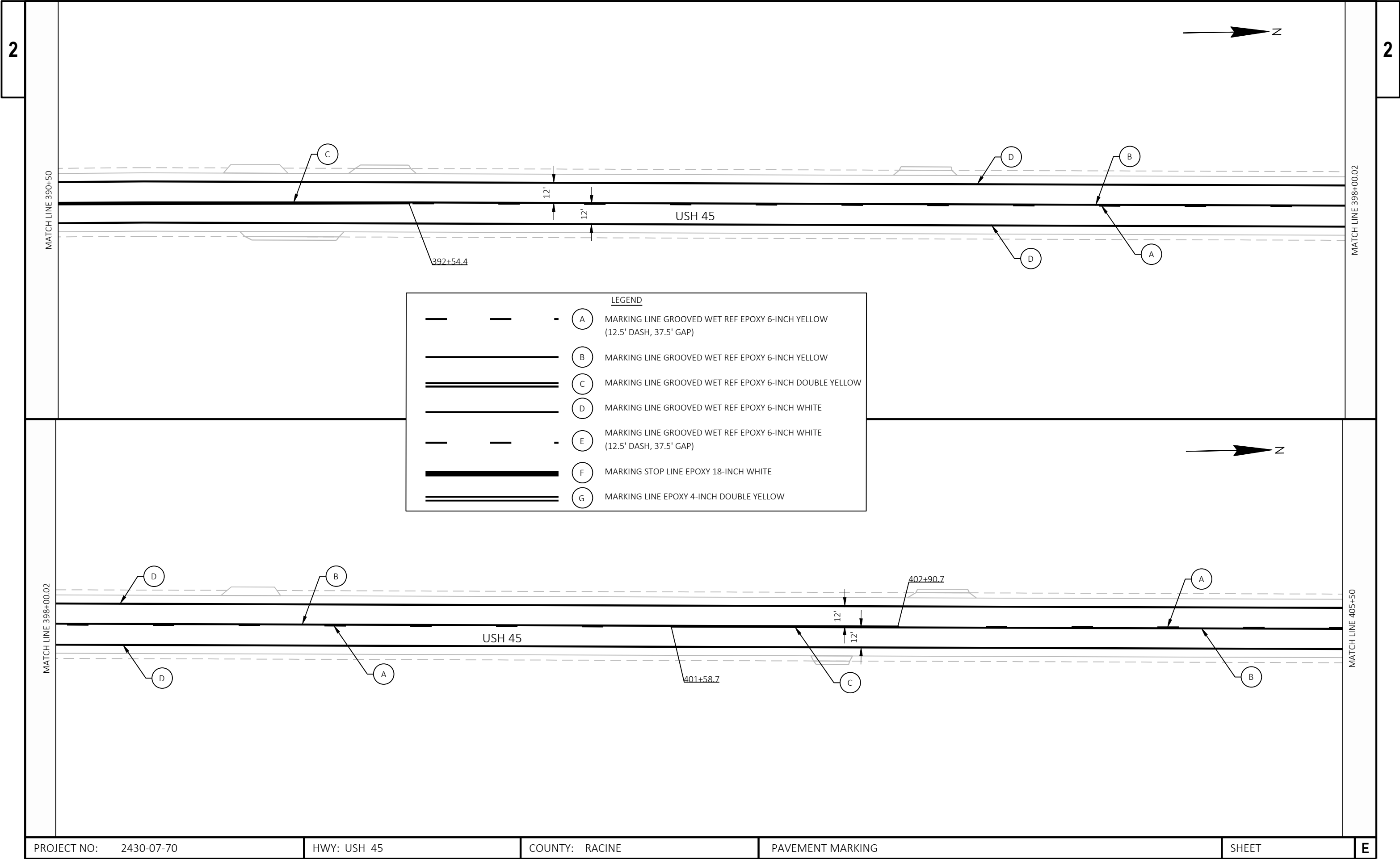
MATCH LINE 345+50

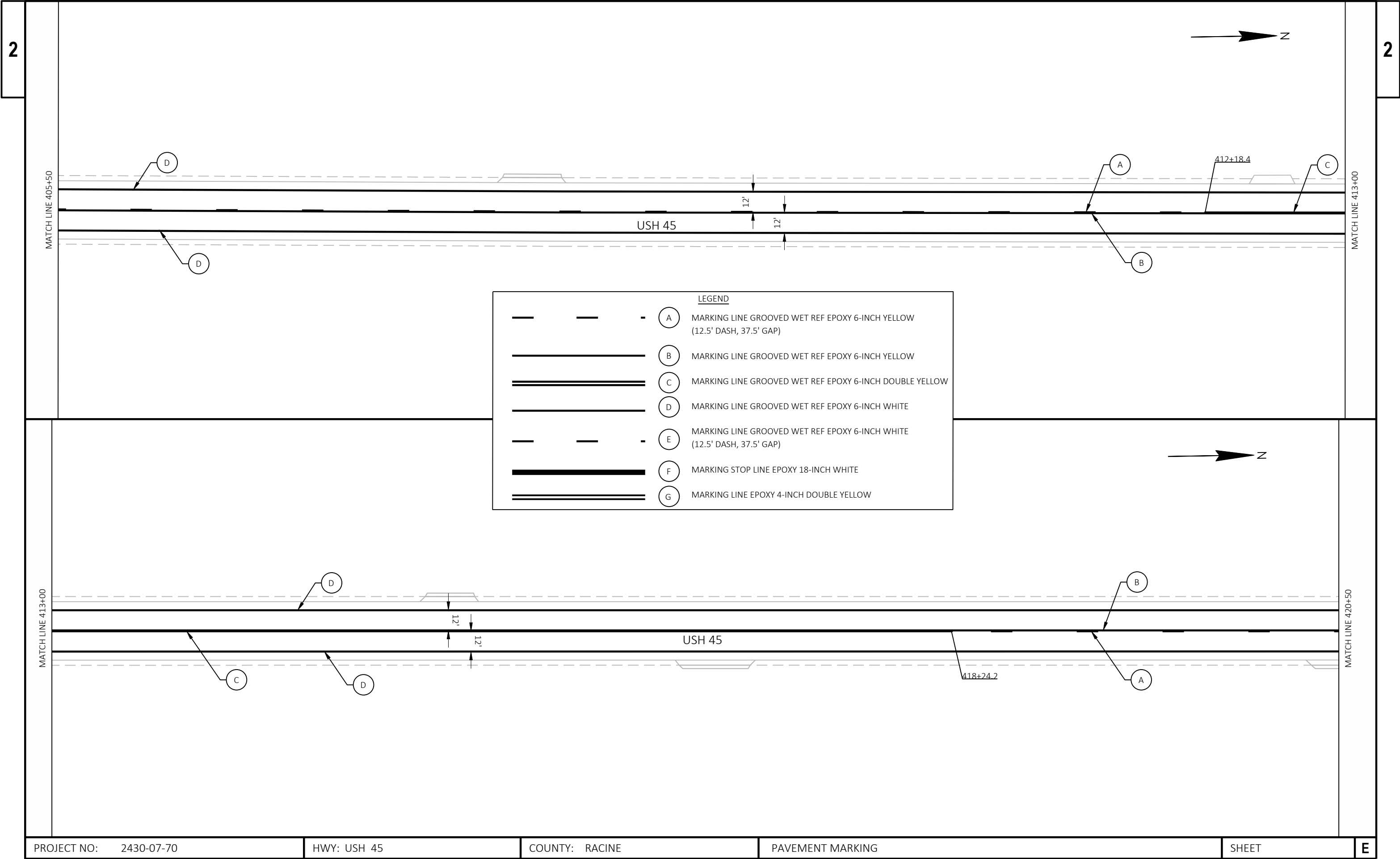


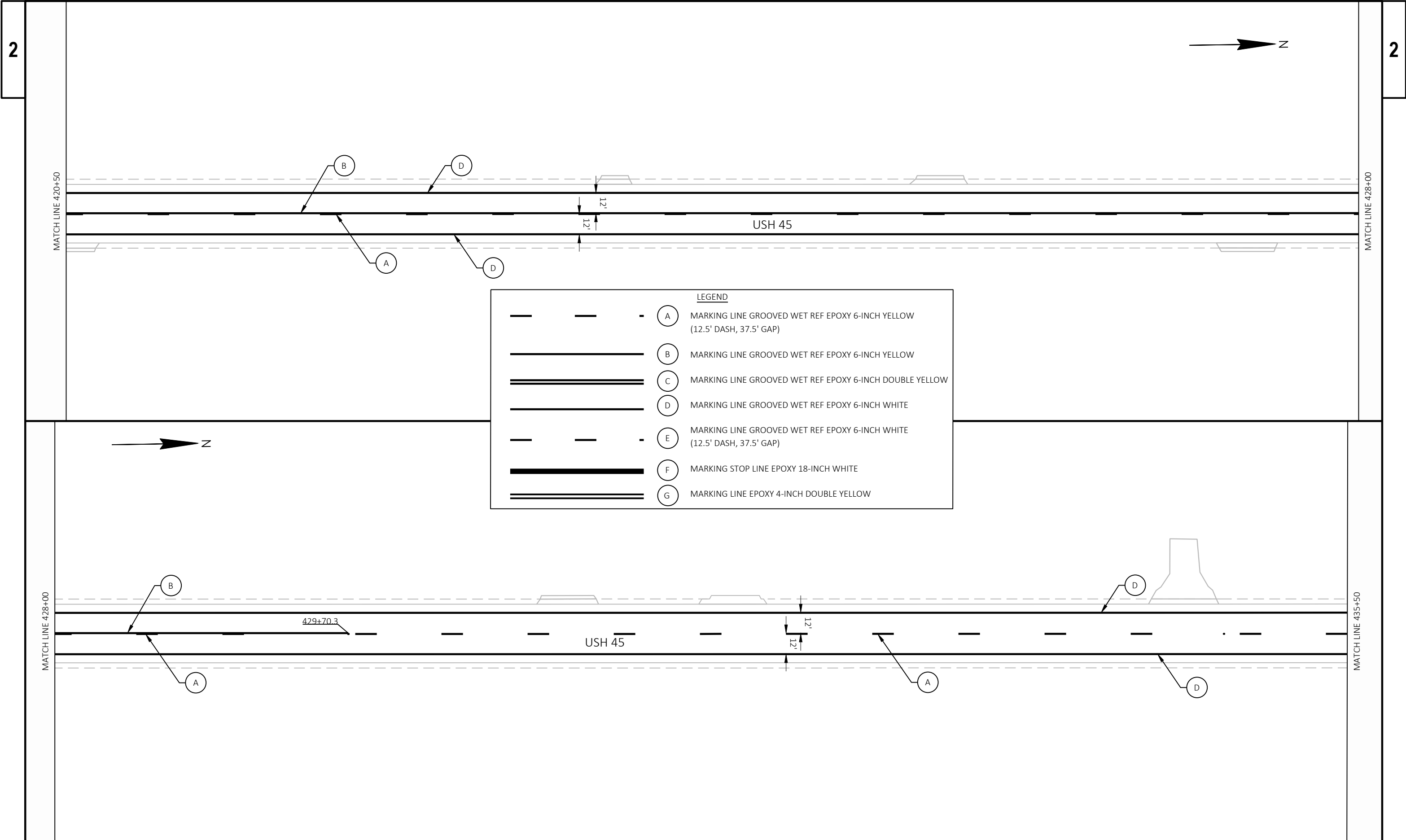




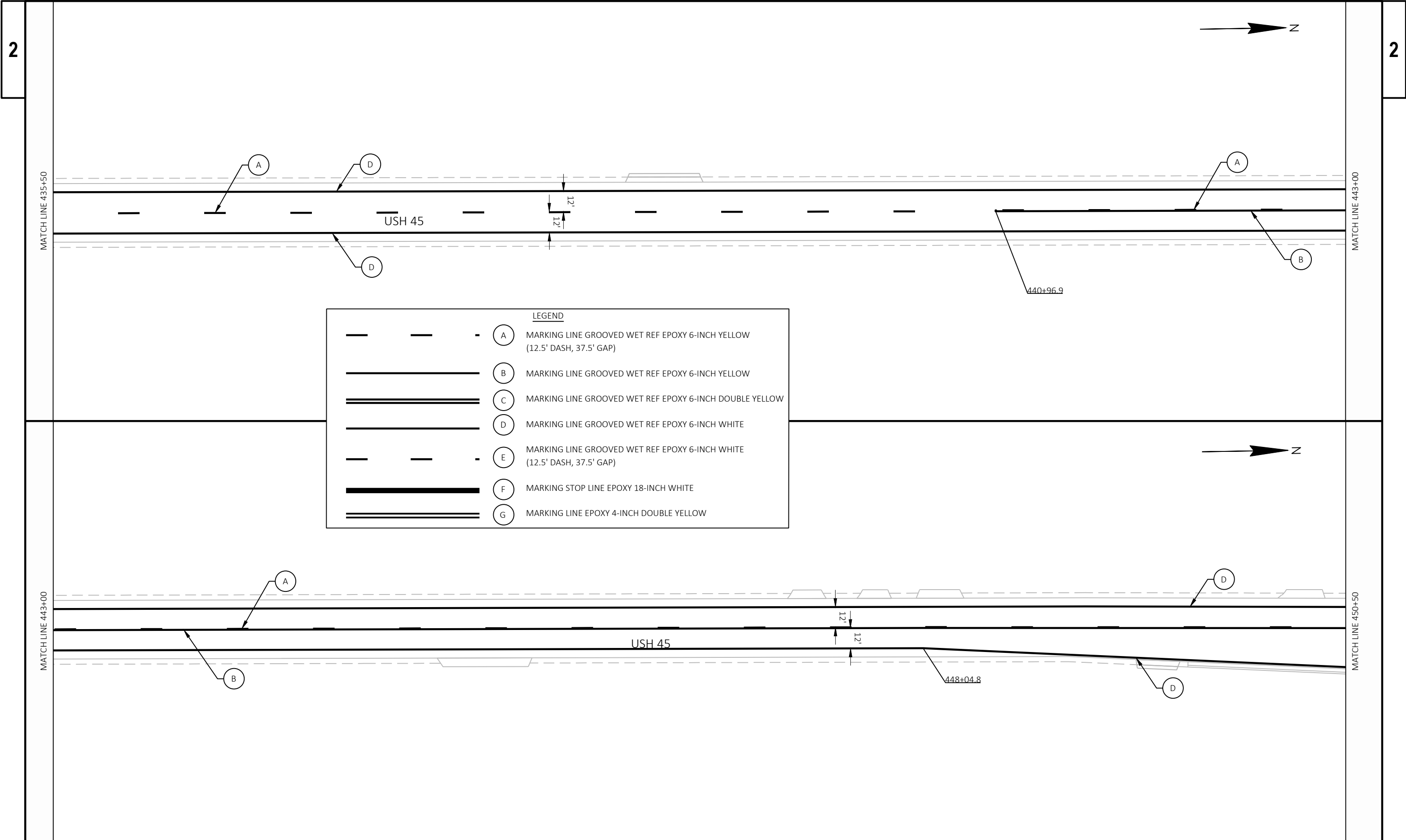
|                        |             |                |                  |       |   |
|------------------------|-------------|----------------|------------------|-------|---|
| PROJECT NO: 2430-07-70 | HWY: USH 45 | COUNTY: RACINE | PAVEMENT MARKING | SHEET | E |
|------------------------|-------------|----------------|------------------|-------|---|



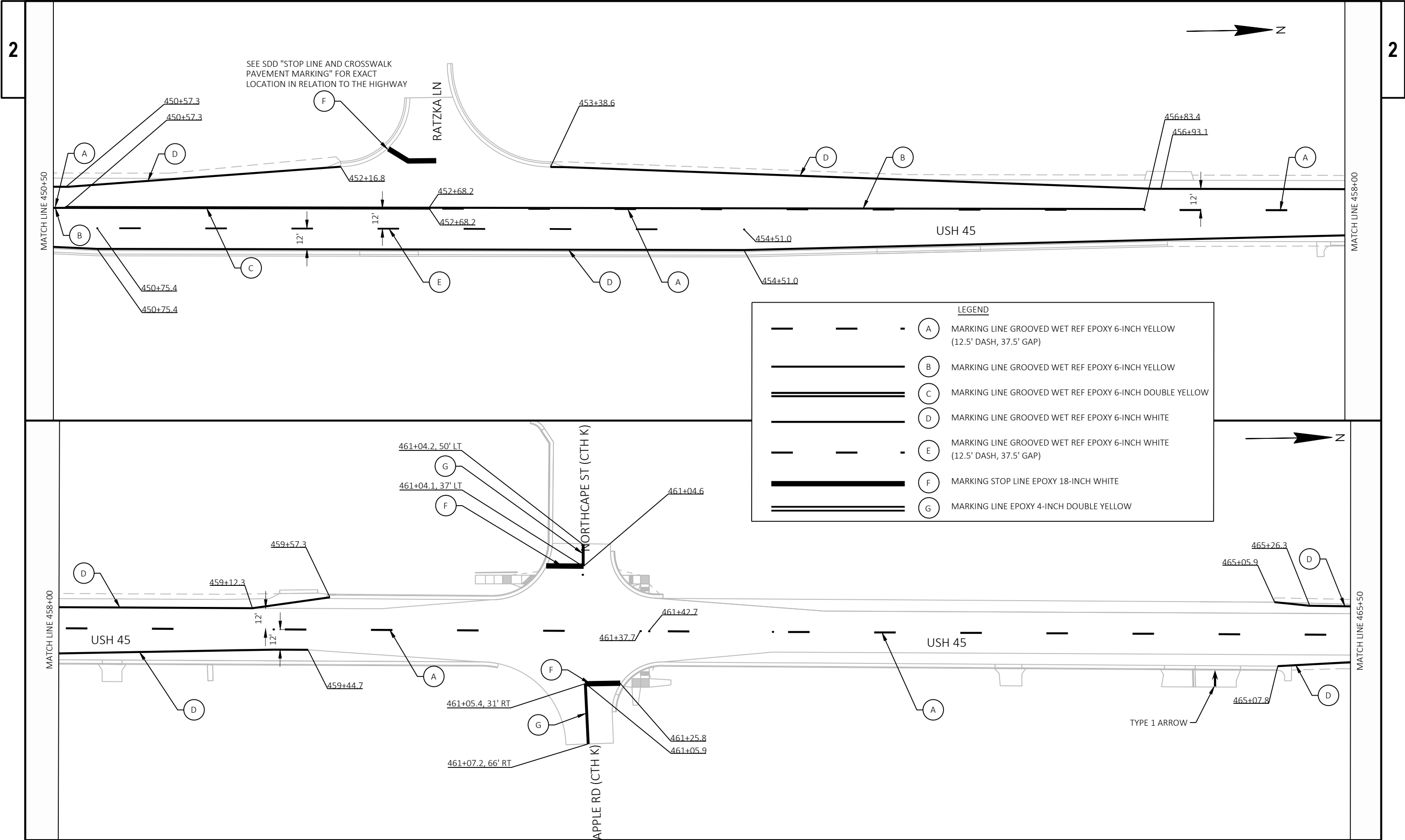


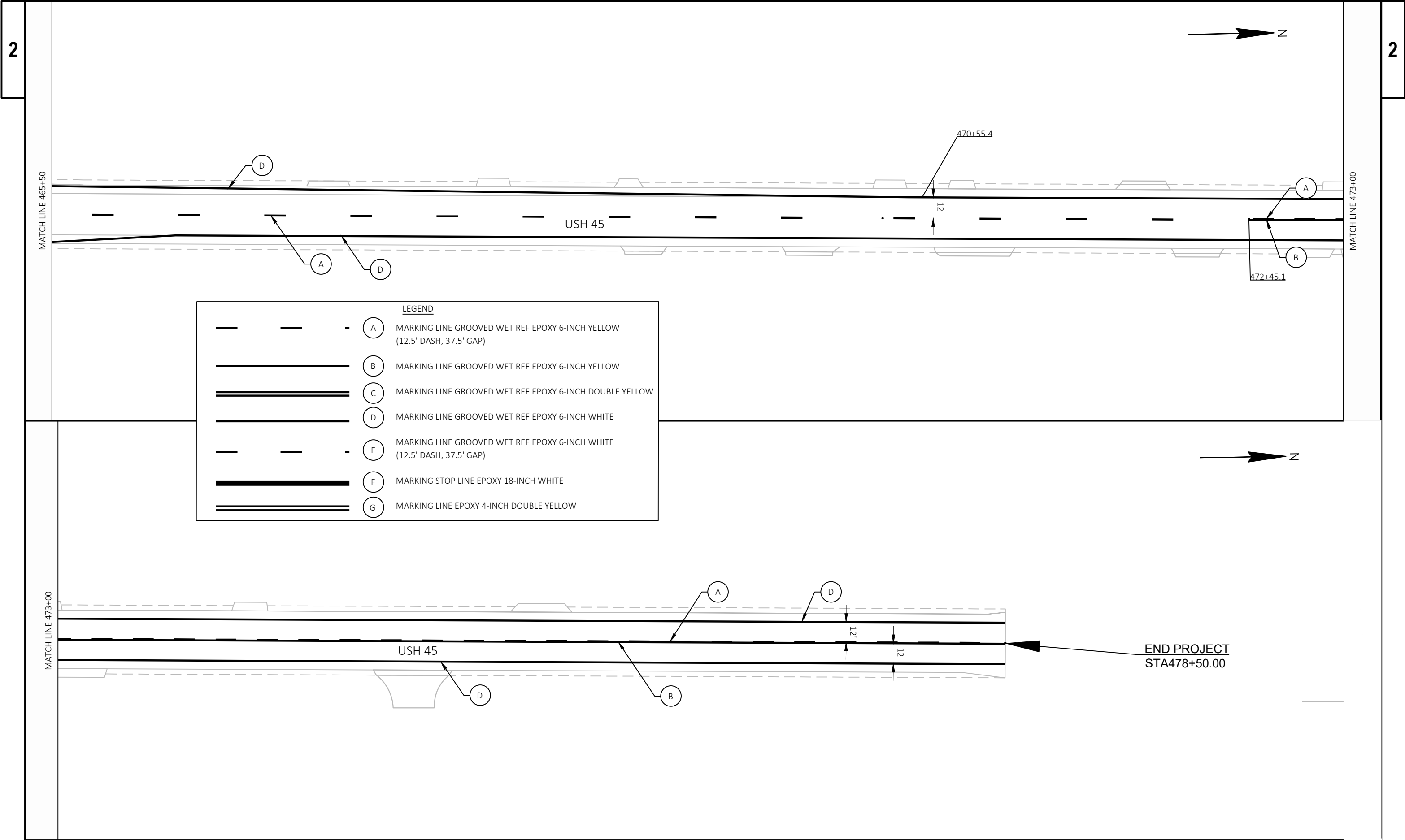


|                        |             |                |                  |       |   |
|------------------------|-------------|----------------|------------------|-------|---|
| PROJECT NO: 2430-07-70 | HWY: USH 45 | COUNTY: RACINE | PAVEMENT MARKING | SHEET | E |
|------------------------|-------------|----------------|------------------|-------|---|



|                        |             |                |                  |       |   |
|------------------------|-------------|----------------|------------------|-------|---|
| PROJECT NO: 2430-07-70 | HWY: USH 45 | COUNTY: RACINE | PAVEMENT MARKING | SHEET | E |
|------------------------|-------------|----------------|------------------|-------|---|



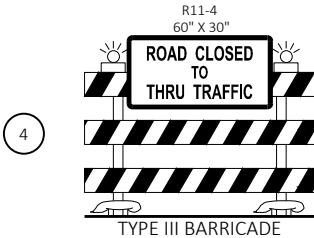


LEGEND:

- 1 SEE S.D.D. BARRICADES AND SIGNS FOR MAINLINE CLOSURES.
- 2 SEE S.D.D. TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION. USE AS NEEDED FOR CONSTRUCTION OPERATIONS.
- 3 SEE S.D.D. BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

WORK AREA

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN



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.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHT 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 RE-ESTABLISHED.

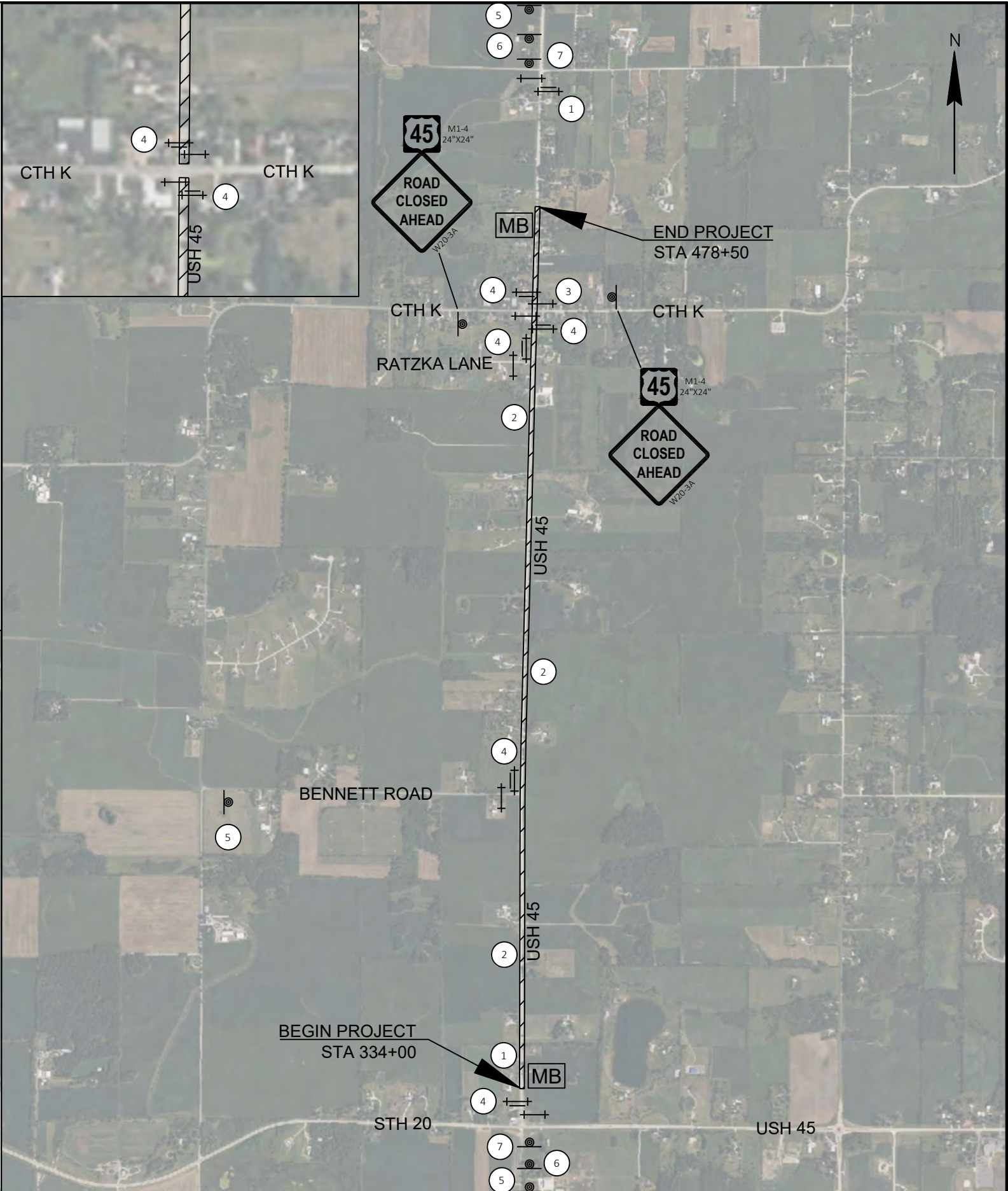
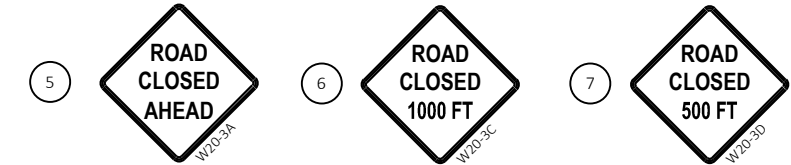
WHEN A SIDE ROAD INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED UNDER FLAGGING OPERATIONS, ADDITIONAL FLAGGERS AND ADVANCE SIGNING SHALL BE PROVIDED ON SIDE ROADS FOLLOWING S.D.D. TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION.

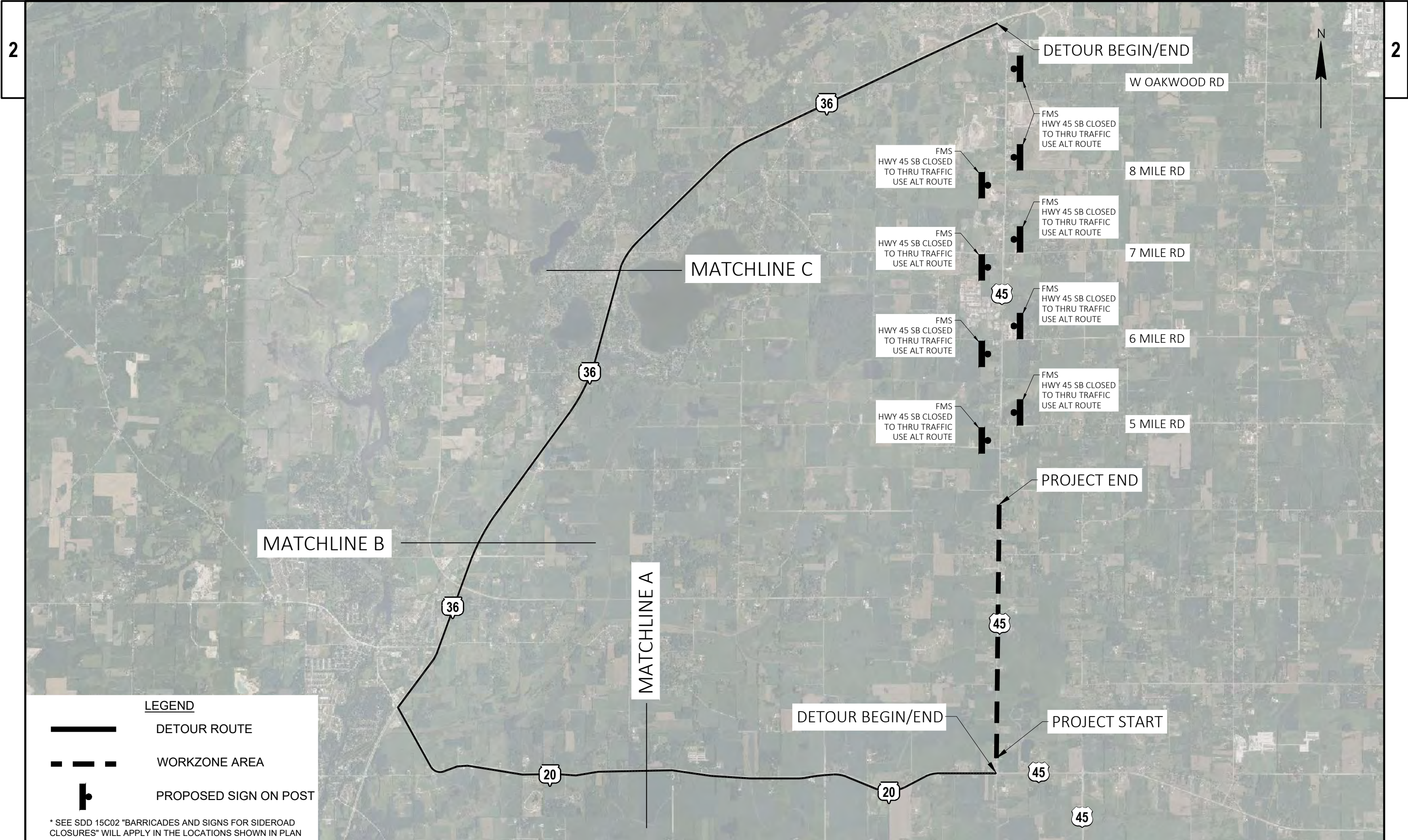
ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

MB PORTABLE CHANGEABLE MESSAGE BOARD

| FRAME 1               | FRAME 2          |
|-----------------------|------------------|
| HWY 45<br>TO<br>CLOSE | (DATE)<br>(TIME) |

7 CALENDAR DAYS PRIOR TO  
CONSTRUCTION BEGINNING



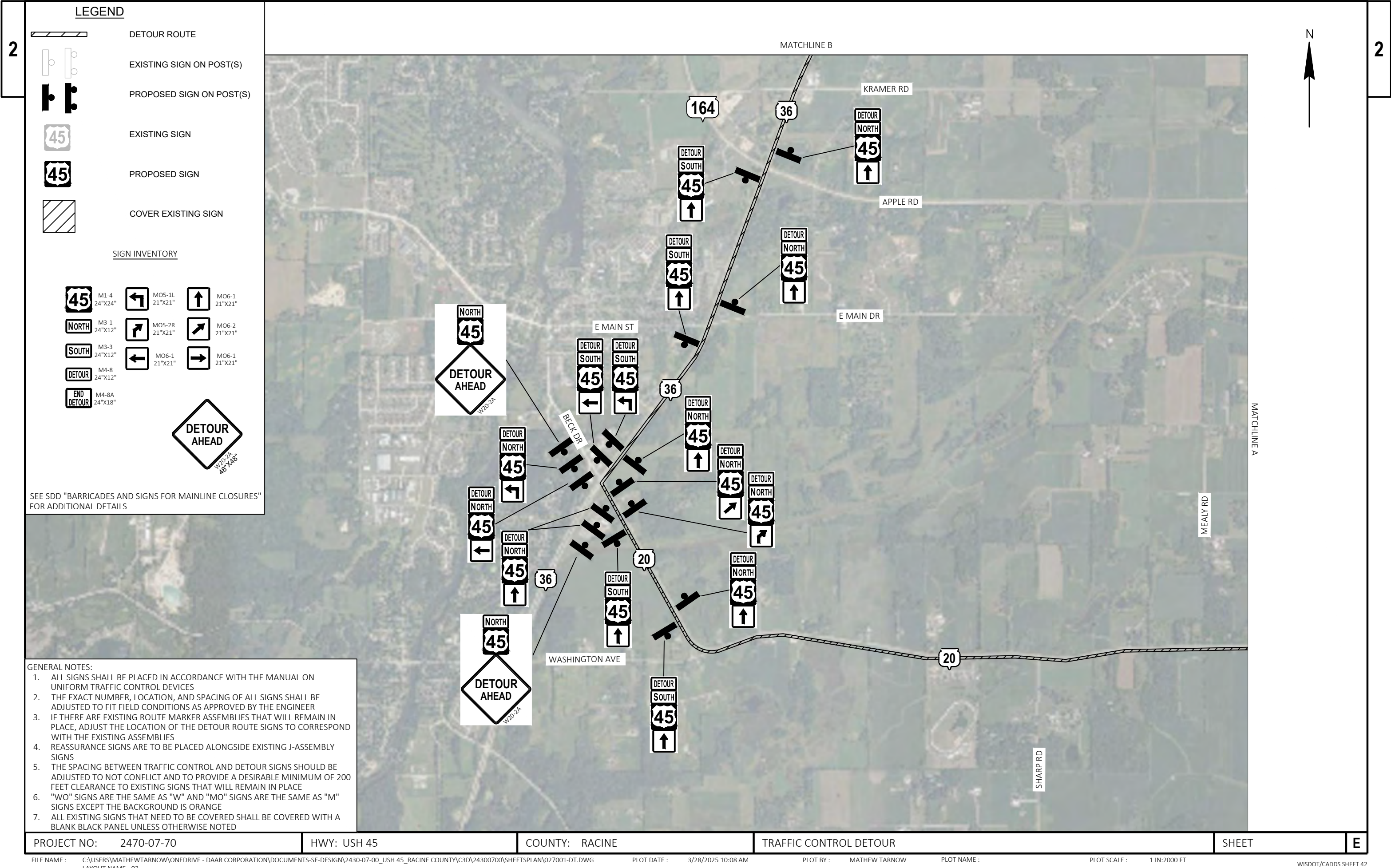


LEGEND

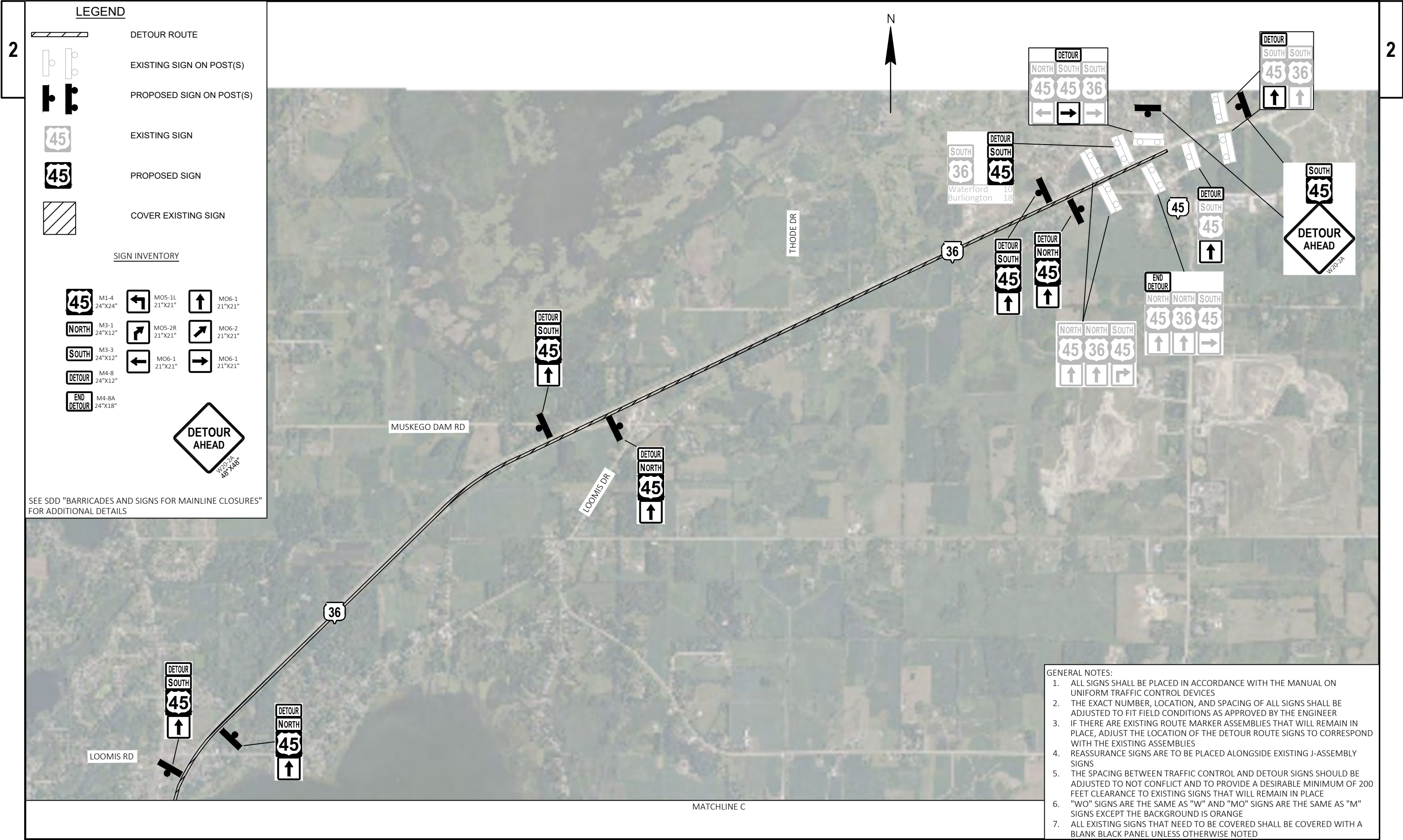
-  DETOUR ROUTE
-  WORKZONE AREA
-  PROPOSED SIGN ON POST

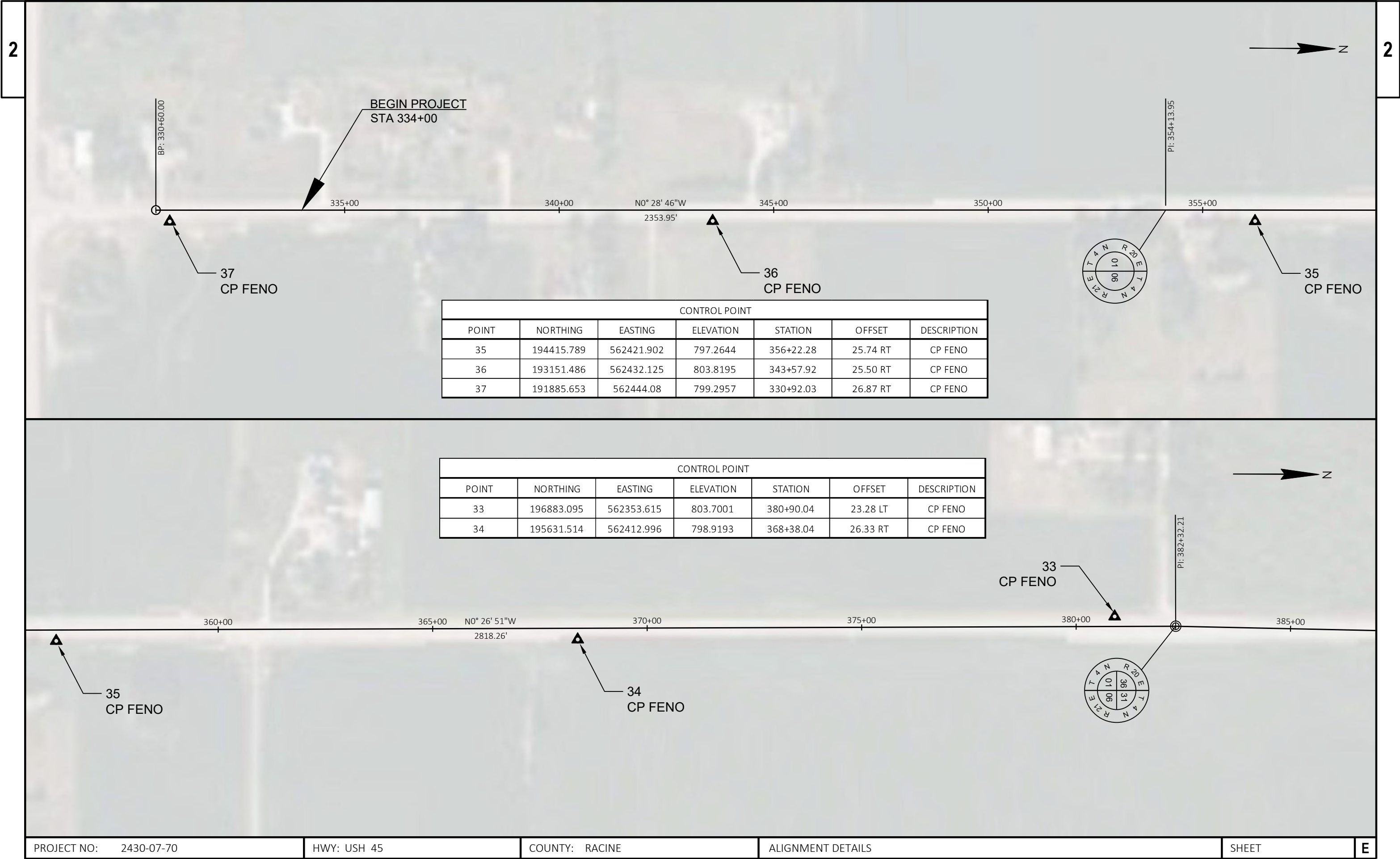
\* SEE SDD 15C02 "BARRICADES AND SIGNS FOR SIDEROAD CLOSURES" WILL APPLY IN THE LOCATIONS SHOWN IN PLAN

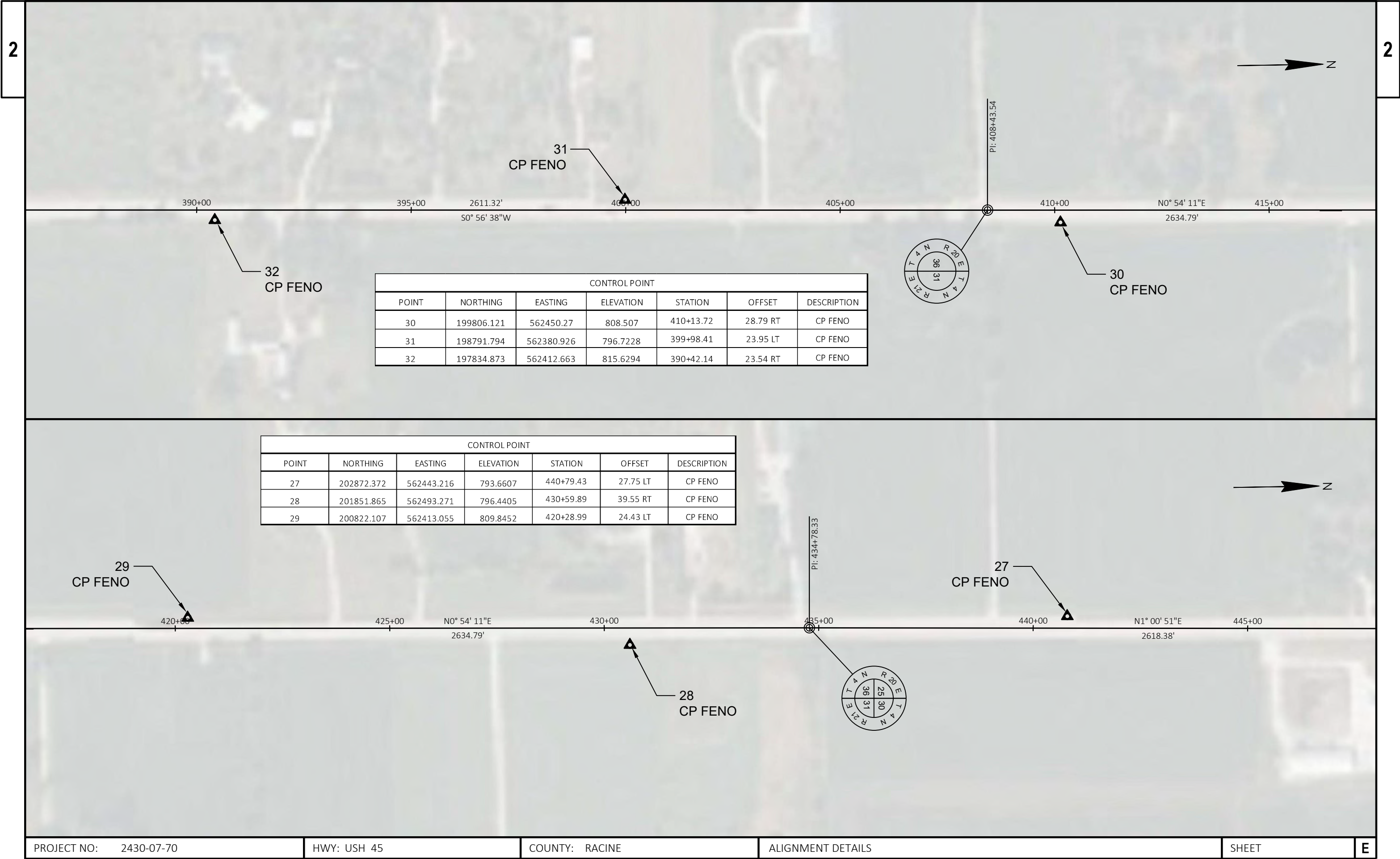






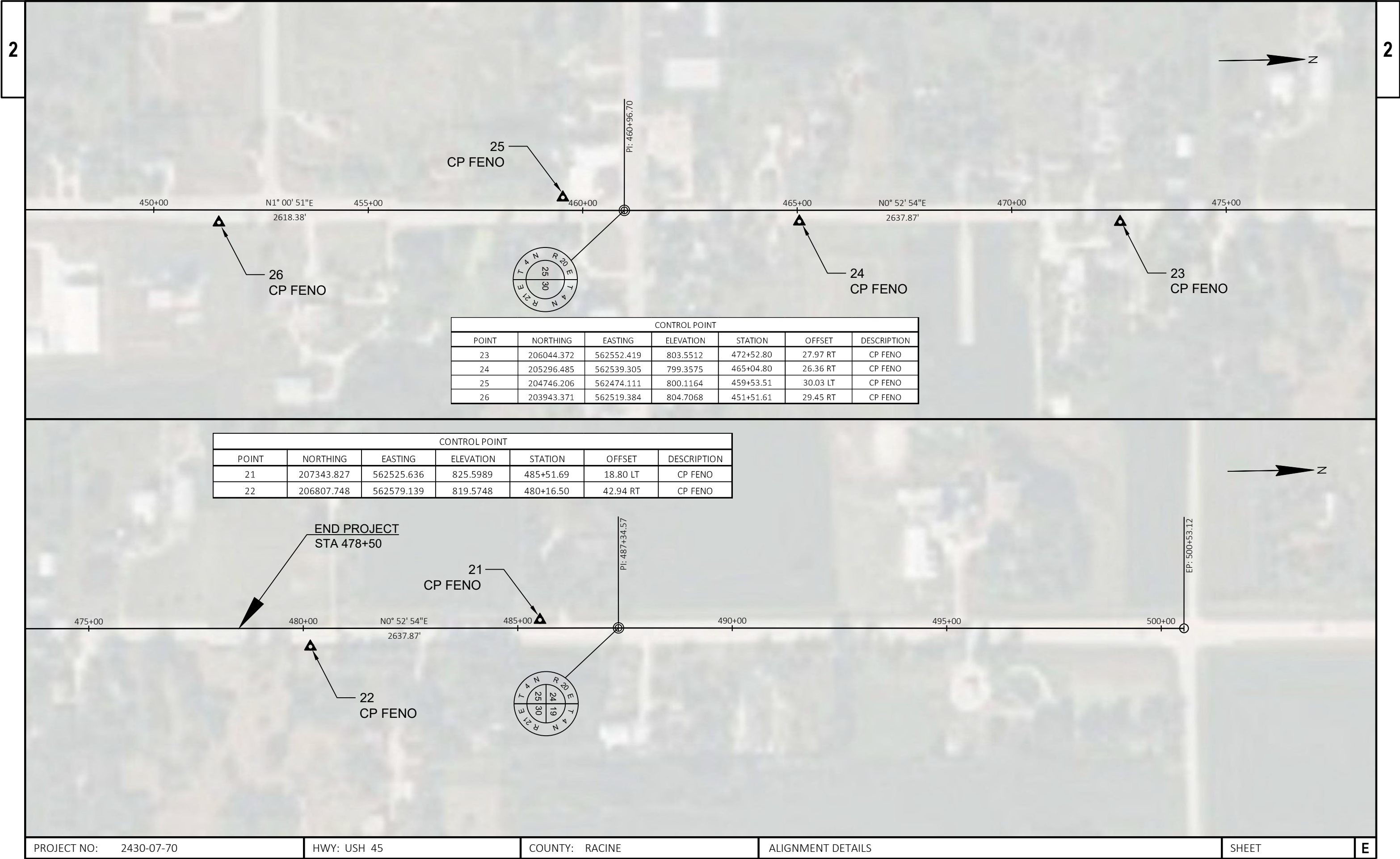


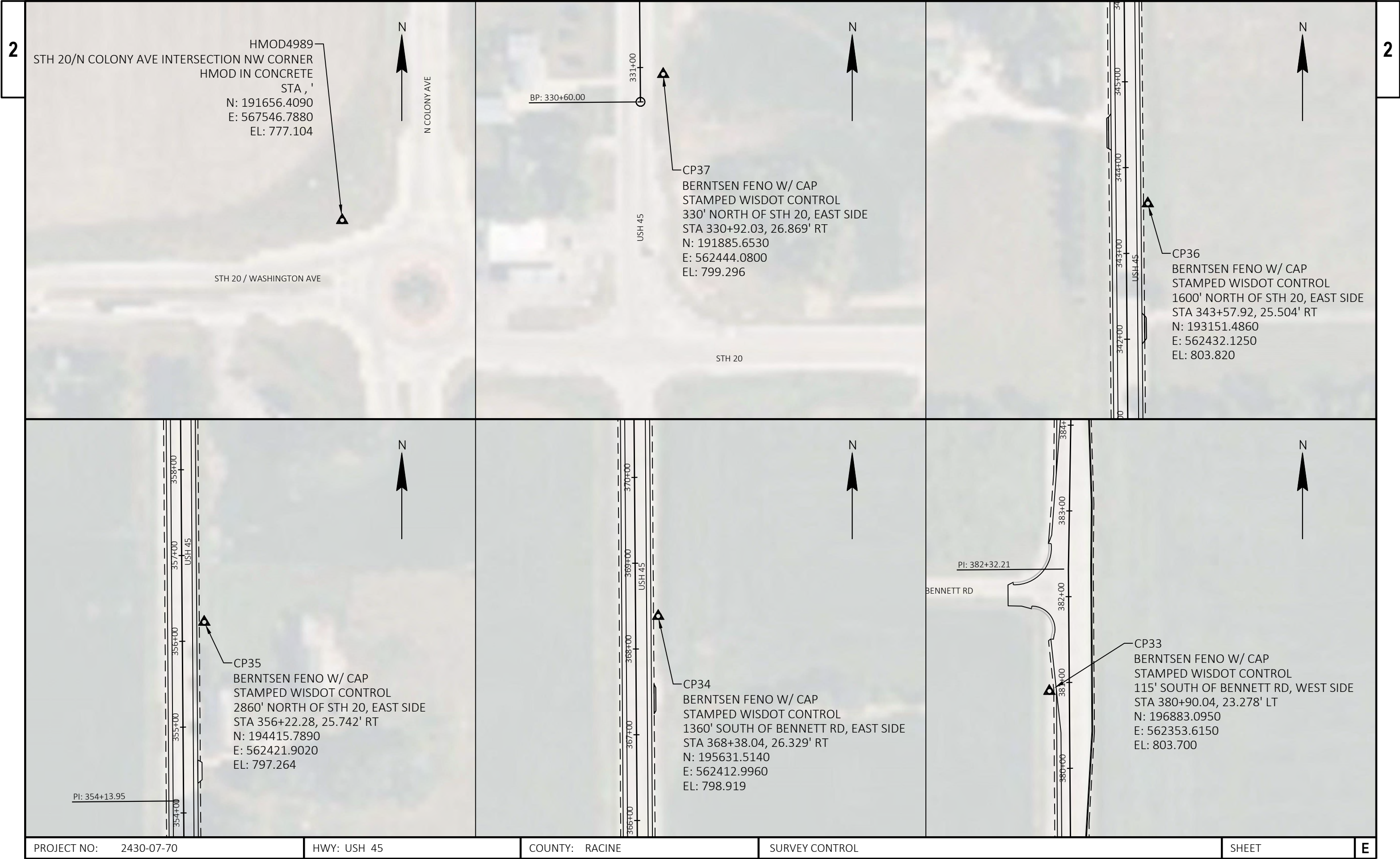




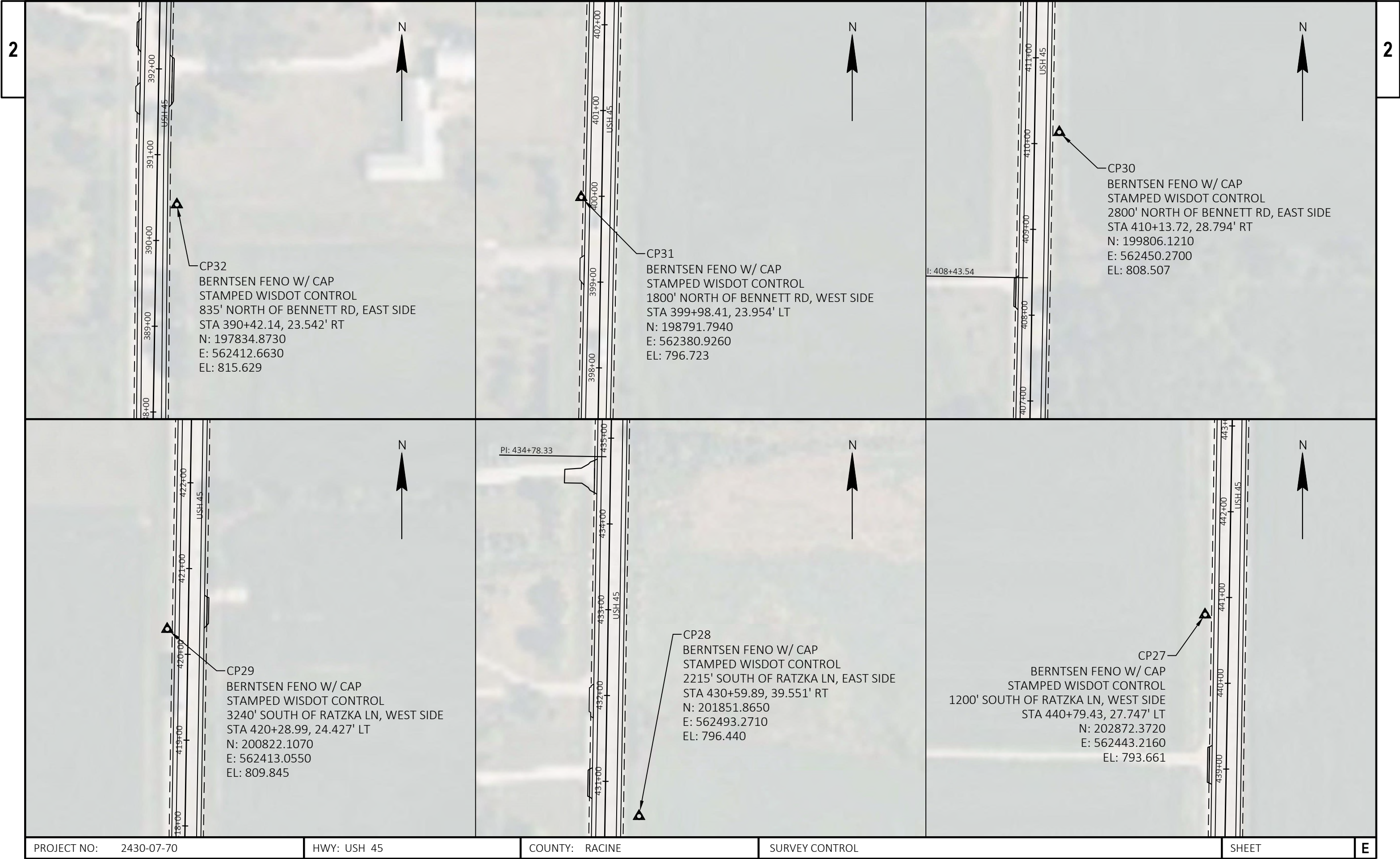
| CONTROL POINT |            |            |           |           |          |             |
|---------------|------------|------------|-----------|-----------|----------|-------------|
| POINT         | NORTHING   | EASTING    | ELEVATION | STATION   | OFFSET   | DESCRIPTION |
| 30            | 199806.121 | 562450.27  | 808.507   | 410+13.72 | 28.79 RT | CP FENO     |
| 31            | 198791.794 | 562380.926 | 796.7228  | 399+98.41 | 23.95 LT | CP FENO     |
| 32            | 197834.873 | 562412.663 | 815.6294  | 390+42.14 | 23.54 RT | CP FENO     |

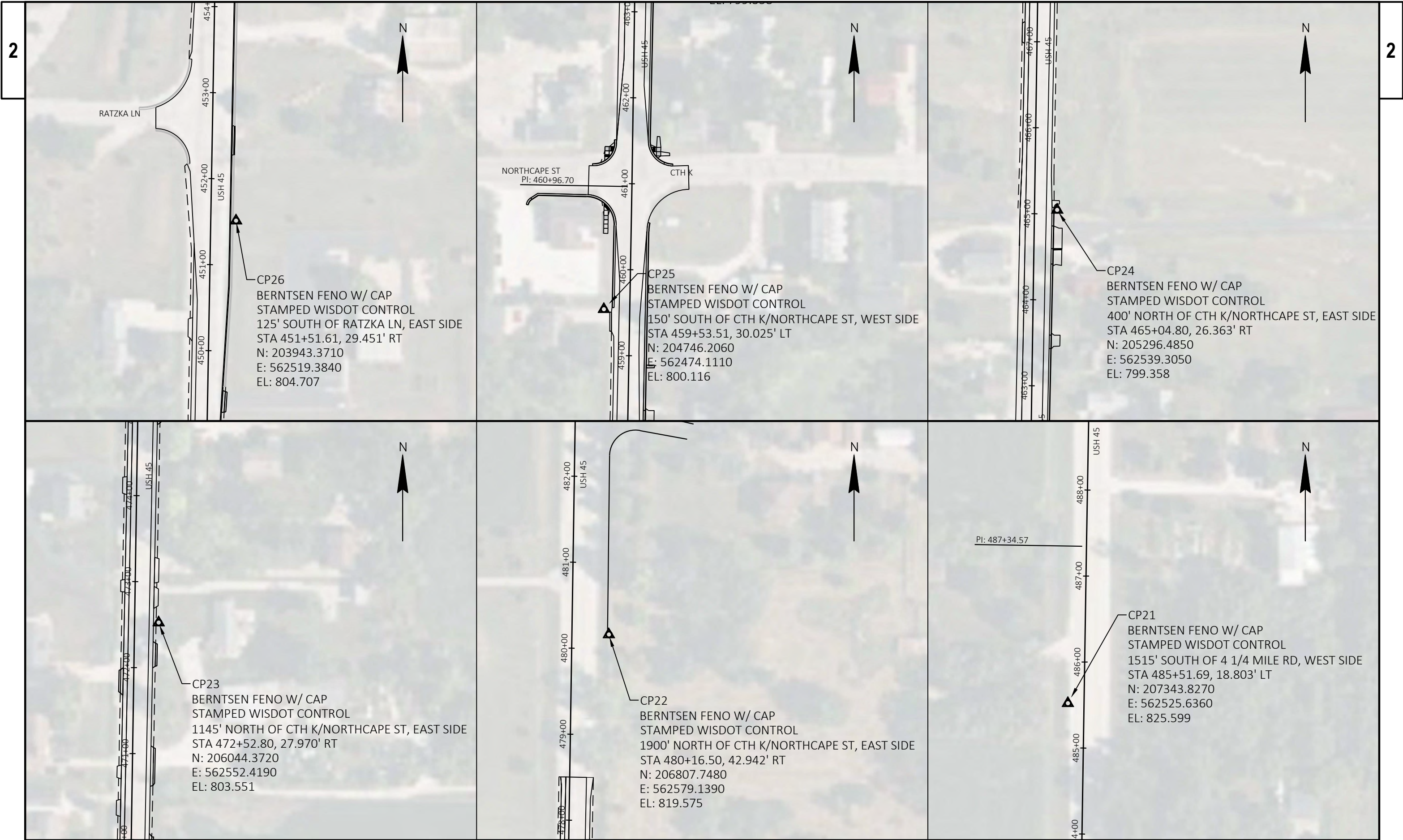
| CONTROL POINT |            |            |           |           |          |             |
|---------------|------------|------------|-----------|-----------|----------|-------------|
| POINT         | NORTHING   | EASTING    | ELEVATION | STATION   | OFFSET   | DESCRIPTION |
| 27            | 202872.372 | 562443.216 | 793.6607  | 440+79.43 | 27.75 LT | CP FENO     |
| 28            | 201851.865 | 562493.271 | 796.4405  | 430+59.89 | 39.55 RT | CP FENO     |
| 29            | 200822.107 | 562413.055 | 809.8452  | 420+28.99 | 24.43 LT | CP FENO     |





|                        |             |                |                |       |   |
|------------------------|-------------|----------------|----------------|-------|---|
| PROJECT NO: 2430-07-70 | HWY: USH 45 | COUNTY: RACINE | SURVEY CONTROL | SHEET | E |
|------------------------|-------------|----------------|----------------|-------|---|





|             |            |      |        |         |        |                |       |   |
|-------------|------------|------|--------|---------|--------|----------------|-------|---|
| PROJECT NO: | 2430-07-70 | HWY: | USH 45 | COUNTY: | RACINE | SURVEY CONTROL | SHEET | E |
|-------------|------------|------|--------|---------|--------|----------------|-------|---|

Estimate Of Quantities

2430-07-70

| Line | Item       | Item Description                                                                                    | Unit | Total      | Qty        |
|------|------------|-----------------------------------------------------------------------------------------------------|------|------------|------------|
| 0002 | 201.0105   | Clearing                                                                                            | STA  | 3.000      | 3.000      |
| 0004 | 201.0120   | Clearing                                                                                            | ID   | 38.000     | 38.000     |
| 0006 | 201.0205   | Grubbing                                                                                            | STA  | 3.000      | 3.000      |
| 0008 | 201.0220   | Grubbing                                                                                            | ID   | 38.000     | 38.000     |
| 0010 | 203.0100   | Removing Small Pipe Culverts                                                                        | EACH | 2.000      | 2.000      |
| 0012 | 203.0220   | Removing Structure (structure) 01. R-51-80                                                          | EACH | 1.000      | 1.000      |
| 0014 | 203.0220   | Removing Structure (structure) 02. R-51-81                                                          | EACH | 1.000      | 1.000      |
| 0016 | 204.0110   | Removing Asphaltic Surface                                                                          | SY   | 540.000    | 540.000    |
| 0018 | 204.0115   | Removing Asphaltic Surface Butt Joints                                                              | SY   | 860.000    | 860.000    |
| 0020 | 204.0120   | Removing Asphaltic Surface Milling                                                                  | SY   | 55,400.000 | 55,400.000 |
| 0022 | 204.0150   | Removing Curb & Gutter                                                                              | LF   | 958.000    | 958.000    |
| 0024 | 204.0155   | Removing Concrete Sidewalk                                                                          | SY   | 98.000     | 98.000     |
| 0026 | 204.0170   | Removing Fence                                                                                      | LF   | 210.000    | 210.000    |
| 0028 | 204.9060.S | Removing (item description) 01. Removing Apron Endwall for Culvert Pipe Reinforced Concrete 18-Inch | EACH | 1.000      | 1.000      |
| 0030 | 205.0100   | Excavation Common                                                                                   | CY   | 2,266.000  | 2,266.000  |
| 0032 | 209.2100   | Backfill Granular Grade 2                                                                           | CY   | 40.000     | 40.000     |
| 0034 | 211.0101   | Prepare Foundation for Asphaltic Paving (project) 01. 2430-07-70                                    | EACH | 1.000      | 1.000      |
| 0036 | 213.0100   | Finishing Roadway (project) 01. 2430-07-70                                                          | EACH | 1.000      | 1.000      |
| 0038 | 305.0110   | Base Aggregate Dense 3/4-Inch                                                                       | TON  | 1,960.000  | 1,960.000  |
| 0040 | 305.0120   | Base Aggregate Dense 1 1/4-Inch                                                                     | TON  | 540.000    | 540.000    |
| 0042 | 416.0610   | Drilled Tie Bars                                                                                    | EACH | 17.000     | 17.000     |
| 0044 | 455.0605   | Tack Coat                                                                                           | GAL  | 6,320.000  | 6,320.000  |
| 0046 | 460.0105.S | HMA Percent Within Limits (PWL) Test Strip Volumetrics                                              | EACH | 1.000      | 1.000      |
| 0048 | 460.0110.S | HMA Percent Within Limits (PWL) Test Strip Density                                                  | EACH | 1.000      | 1.000      |
| 0050 | 460.2005   | Incentive Density PWL HMA Pavement                                                                  | DOL  | 8,730.000  | 8,730.000  |
| 0052 | 460.2007   | Incentive Density HMA Pavement Longitudinal Joints                                                  | DOL  | 2,900.000  | 2,900.000  |
| 0054 | 460.2010   | Incentive Air Voids HMA Pavement                                                                    | DOL  | 10,260.000 | 10,260.000 |
| 0056 | 460.6224   | HMA Pavement 4 MT 58-28 S                                                                           | TON  | 10,260.000 | 10,260.000 |
| 0058 | 465.0105   | Asphaltic Surface                                                                                   | TON  | 210.000    | 210.000    |
| 0060 | 465.0120   | Asphaltic Surface Driveways and Field Entrances                                                     | TON  | 158.000    | 158.000    |
| 0062 | 465.0315   | Asphaltic Flumes                                                                                    | SY   | 20.000     | 20.000     |
| 0064 | 465.0520   | Asphaltic Rumble Strips, Shoulder                                                                   | LF   | 22,200.000 | 22,200.000 |
| 0066 | 465.0560   | Asphaltic Rumble Strips, Centerline                                                                 | LF   | 11,100.000 | 11,100.000 |
| 0068 | 520.8700   | Cleaning Culvert Pipes                                                                              | EACH | 1.000      | 1.000      |
| 0070 | 522.1018   | Apron Endwalls for Culvert Pipe Reinforced Concrete 18-Inch                                         | EACH | 1.000      | 1.000      |
| 0072 | 522.2419   | Culvert Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 19x30-Inch                       | LF   | 87.000     | 87.000     |
| 0074 | 522.2429   | Culvert Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 29x45-Inch                       | LF   | 60.000     | 60.000     |
| 0076 | 522.2619   | Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 19x30-Inch                | EACH | 4.000      | 4.000      |
| 0078 | 522.2629   | Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 29x45-Inch                | EACH | 2.000      | 2.000      |
| 0080 | 601.0407   | Concrete Curb & Gutter 18-Inch Type D                                                               | LF   | 10.000     | 10.000     |
| 0082 | 601.0409   | Concrete Curb & Gutter 30-Inch Type A                                                               | LF   | 10.000     | 10.000     |
| 0084 | 601.0411   | Concrete Curb & Gutter 30-Inch Type D                                                               | LF   | 934.000    | 934.000    |
| 0086 | 601.0553   | Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type D                                                 | LF   | 100.000    | 100.000    |
| 0088 | 602.0410   | Concrete Sidewalk 5-Inch                                                                            | SF   | 877.000    | 877.000    |
| 0090 | 602.0505   | Curb Ramp Detectable Warning Field Yellow                                                           | SF   | 30.000     | 30.000     |
| 0092 | 602.0605   | Curb Ramp Detectable Warning Field Radial Yellow                                                    | SF   | 14.000     | 14.000     |
| 0094 | 606.0200   | Riprap Medium                                                                                       | CY   | 12.000     | 12.000     |
| 0096 | 606.0300   | Riprap Heavy                                                                                        | CY   | 57.000     | 57.000     |

Estimate Of Quantities

2430-07-70

| Line | Item       | Item Description                                              | Unit | Total     | Qty       |
|------|------------|---------------------------------------------------------------|------|-----------|-----------|
| 0098 | 608.3018   | Storm Sewer Pipe Class III-A 18-Inch                          | LF   | 651.000   | 651.000   |
| 0100 | 611.0612   | Inlet Covers Type C                                           | EACH | 1.000     | 1.000     |
| 0102 | 611.0624   | Inlet Covers Type H                                           | EACH | 6.000     | 6.000     |
| 0104 | 611.1004   | Catch Basins 4-FT Diameter                                    | EACH | 1.000     | 1.000     |
| 0106 | 611.2004   | Manholes 4-FT Diameter                                        | EACH | 1.000     | 1.000     |
| 0108 | 611.3230   | Inlets 2x3-FT                                                 | EACH | 5.000     | 5.000     |
| 0110 | 612.0204   | Pipe Underdrain Unperforated 4-Inch                           | LF   | 150.000   | 150.000   |
| 0112 | 612.0206   | Pipe Underdrain Unperforated 6-Inch                           | LF   | 150.000   | 150.000   |
| 0114 | 612.0208   | Pipe Underdrain Unperforated 8-Inch                           | LF   | 150.000   | 150.000   |
| 0116 | 612.0700   | Drain Tile Exploration                                        | LF   | 1,500.000 | 1,500.000 |
| 0118 | 616.0700.S | Fence Safety                                                  | LF   | 630.000   | 630.000   |
| 0120 | 618.0100   | Maintenance and Repair of Haul Roads (project) 01. 2430-07-70 | EACH | 1.000     | 1.000     |
| 0122 | 619.1000   | Mobilization                                                  | EACH | 1.000     | 1.000     |
| 0124 | 624.0100   | Water                                                         | MGAL | 26.000    | 26.000    |
| 0126 | 625.0100   | Topsoil                                                       | SY   | 1,160.000 | 1,160.000 |
| 0128 | 625.0500   | Salvaged Topsoil                                              | SY   | 7,860.000 | 7,860.000 |
| 0130 | 628.1504   | Silt Fence                                                    | LF   | 3,500.000 | 3,500.000 |
| 0132 | 628.1520   | Silt Fence Maintenance                                        | LF   | 3,500.000 | 3,500.000 |
| 0134 | 628.1530.S | Silt Fence Heavy Duty                                         | LF   | 25.000    | 25.000    |
| 0136 | 628.1535.S | Silt Fence Heavy Duty Maintenance                             | LF   | 25.000    | 25.000    |
| 0138 | 628.1905   | Mobilizations Erosion Control                                 | EACH | 5.000     | 5.000     |
| 0140 | 628.1910   | Mobilizations Emergency Erosion Control                       | EACH | 3.000     | 3.000     |
| 0142 | 628.2006   | Erosion Mat Urban Class I Type A                              | SY   | 9,000.000 | 9,000.000 |
| 0144 | 628.7020   | Inlet Protection Type D                                       | EACH | 6.000     | 6.000     |
| 0146 | 628.7504   | Temporary Ditch Checks                                        | LF   | 168.000   | 168.000   |
| 0148 | 628.7555   | Culvert Pipe Checks                                           | EACH | 30.000    | 30.000    |
| 0150 | 628.7560   | Tracking Pads                                                 | EACH | 3.000     | 3.000     |
| 0152 | 629.0210   | Fertilizer Type B                                             | CWT  | 6.200     | 6.200     |
| 0154 | 630.0130   | Seeding Mixture No. 30                                        | LB   | 414.000   | 414.000   |
| 0156 | 630.0200   | Seeding Temporary                                             | LB   | 248.000   | 248.000   |
| 0158 | 630.0500   | Seed Water                                                    | MGAL | 208.000   | 208.000   |
| 0160 | 633.5200   | Markers Culvert End                                           | EACH | 7.000     | 7.000     |
| 0162 | 634.0618   | Posts Wood 4x6-Inch X 18-FT                                   | EACH | 26.000    | 26.000    |
| 0164 | 634.0622   | Posts Wood 4x6-Inch X 22-FT                                   | EACH | 3.000     | 3.000     |
| 0166 | 637.2210   | Signs Type II Reflective H                                    | SF   | 141.000   | 141.000   |
| 0168 | 637.2230   | Signs Type II Reflective F                                    | SF   | 110.750   | 110.750   |
| 0170 | 638.2602   | Removing Signs Type II                                        | EACH | 26.000    | 26.000    |
| 0172 | 638.3000   | Removing Small Sign Supports                                  | EACH | 26.000    | 26.000    |
| 0174 | 642.5001   | Field Office Type B                                           | EACH | 1.000     | 1.000     |
| 0176 | 643.0300   | Traffic Control Drums                                         | DAY  | 2,330.000 | 2,330.000 |
| 0178 | 643.0420   | Traffic Control Barricades Type III                           | DAY  | 598.000   | 598.000   |
| 0180 | 643.0705   | Traffic Control Warning Lights Type A                         | DAY  | 1,196.000 | 1,196.000 |
| 0182 | 643.0900   | Traffic Control Signs                                         | DAY  | 7,784.000 | 7,784.000 |
| 0184 | 643.0920   | Traffic Control Covering Signs Type II                        | EACH | 4.000     | 4.000     |
| 0186 | 643.1000   | Traffic Control Signs Fixed Message                           | SF   | 216.000   | 216.000   |
| 0188 | 643.1050   | Traffic Control Signs PCMS                                    | DAY  | 14.000    | 14.000    |
| 0190 | 643.3770   | Temporary Marking Raised Pavement Marker Type II              | EACH | 577.000   | 577.000   |
| 0192 | 643.5000   | Traffic Control                                               | EACH | 1.000     | 1.000     |
| 0194 | 645.0120   | Geotextile Type HR                                            | SY   | 67.000    | 67.000    |

Estimate Of Quantities

2430-07-70

| Line | Item     | Item Description                                                   | Unit | Total      | Qty        |
|------|----------|--------------------------------------------------------------------|------|------------|------------|
| 0196 | 646.1020 | Marking Line Epoxy 4-Inch                                          | LF   | 100.000    | 100.000    |
| 0198 | 646.2040 | Marking Line Grooved Wet Ref Epoxy 6-Inch                          | LF   | 44,000.000 | 44,000.000 |
| 0200 | 646.5020 | Marking Arrow Epoxy                                                | EACH | 1.000      | 1.000      |
| 0202 | 646.6120 | Marking Stop Line Epoxy 18-Inch                                    | LF   | 97.000     | 97.000     |
| 0204 | 648.0100 | Locating No-Passing Zones                                          | MI   | 2.730      | 2.730      |
| 0206 | 650.4000 | Construction Staking Storm Sewer                                   | EACH | 8.000      | 8.000      |
| 0208 | 650.5500 | Construction Staking Curb Gutter and Curb & Gutter                 | LF   | 954.000    | 954.000    |
| 0210 | 650.6000 | Construction Staking Pipe Culverts                                 | EACH | 3.000      | 3.000      |
| 0212 | 650.8000 | Construction Staking Resurfacing Reference                         | LF   | 14,399.000 | 14,399.000 |
| 0214 | 650.9000 | Construction Staking Curb Ramps                                    | EACH | 4.000      | 4.000      |
| 0216 | 650.9911 | Construction Staking Supplemental Control (project) 01. 2430-07-70 | EACH | 1.000      | 1.000      |
| 0218 | 650.9920 | Construction Staking Slope Stakes                                  | LF   | 2,025.000  | 2,025.000  |
| 0220 | 690.0150 | Sawing Asphalt                                                     | LF   | 1,078.000  | 1,078.000  |
| 0222 | 690.0250 | Sawing Concrete                                                    | LF   | 259.000    | 259.000    |
| 0224 | 740.0440 | Incentive IRI Ride                                                 | DOL  | 5,480.000  | 5,480.000  |
| 0226 | ASP.1T0A | On-the-Job Training Apprentice at \$5.00/HR                        | HRS  | 250.000    | 250.000    |
| 0228 | ASP.1T0G | On-the-Job Training Graduate at \$5.00/HR                          | HRS  | 900.000    | 900.000    |
| 0230 | SPV.0060 | Special 01. Utility Line Opening (ULO)                             | EACH | 5.000      | 5.000      |
| 0232 | SPV.0195 | Special 01. Asphaltic Repair                                       | TON  | 510.000    | 510.000    |

| DIVISION    | FROM/TO<br>STATION | LOCATION        | *<br>205.0100<br>COMMON EXCAVATION (1) |                       | UNEXPANDED<br>FILL | EXPANDED FILL<br>(13) | MASS ORDINATE +/-<br>(14) | WASTE | 208.0100<br>BORROW |
|-------------|--------------------|-----------------|----------------------------------------|-----------------------|--------------------|-----------------------|---------------------------|-------|--------------------|
|             |                    |                 | CUT<br>(2)                             | EBS EXCAVATION<br>(3) |                    | FACTOR<br>1.25        |                           |       |                    |
| 1           | 427+50 - 445+50    | DITCH REGRADING | 1,547                                  | 0                     | 0                  | 0                     | 1,547                     | 1,547 | 0                  |
| 2           | 480+00 - 484+00    | RETAINING WALL  | 639                                    | 0                     | 0                  | 0                     | 639                       | 639   | 0                  |
| GRAND TOTAL | TOTAL COMMON EXC   |                 | 2,186                                  | 0                     | 0                  | 0                     | 2,186                     | 2,186 | 0                  |

\* ADDITIONAL QUANTITIES LISTED ELSEWHERE

(1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100  
(13) EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED MARSH - REDUCED EBS) \* FILL FACTOR  
(14) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

NOTE:ALL ITEMS CATERGORY 0010 UNLESS NOTED OTHERWISE

| CLEARING & GRUBBING ITEMS |         |    |         |          |                             |                            |                             |                            |             |
|---------------------------|---------|----|---------|----------|-----------------------------|----------------------------|-----------------------------|----------------------------|-------------|
| CATEGORY                  | STATION | TO | STATION | LOCATION | 201.0105<br>CLEARING<br>STA | 201.0120<br>CLEARING<br>ID | 201.0205<br>GRUBBING<br>STA | 201.0220<br>GRUBBING<br>ID | REMARKS     |
| 0010                      | 457+75  | -  | 458+00  | RT       | -                           | 27                         | -                           | 27                         | STORM SEWER |
| 0010                      | 461+00  | -  | 462+00  | RT       | -                           | 11                         | -                           | 11                         | CURB RAMPS  |
| TOTAL 0010                |         |    |         |          | 0                           | 38                         | 0                           | 38                         |             |
| 0020                      | 481+00  | -  | 484+00  | RT       | 2                           | -                          | 2                           | -                          | R-51-80     |
| TOTAL 0020                |         |    |         |          | 2                           | 0                          | 2                           | 0                          |             |
| 0030                      | 481+00  | -  | 484+00  | RT       | 1                           | -                          | 1                           | -                          | R-51-81     |
| TOTAL 0030                |         |    |         |          | 1                           | 0                          | 1                           | 0                          |             |
| PROJECT TOTAL             |         |    |         |          | 3                           | 38                         | 3                           | 38                         |             |

| REMOVAL ITEMS |         |    |         |          |                |                  |                  |                |                                  |             |
|---------------|---------|----|---------|----------|----------------|------------------|------------------|----------------|----------------------------------|-------------|
|               |         |    |         |          | 203.0100       | 203.0220.01      | 203.0220.02      | 204.0170       | 204.9060.S.01                    |             |
|               |         |    |         |          | REMOVING SMALL | REMOVING         | REMOVING         |                | REMOVING (ITEM DESCRIPTION) (01. |             |
|               |         |    |         |          | PIPE CULVERTS  | STRUCTURE        | STRUCTURE        |                | REMOVING APRON ENDWALL FOR       |             |
|               |         |    |         |          | EACH           | (STRUCTURE) (01. | (STRUCTURE) (02. |                | CULVERT PIPE REINFORCED          |             |
| CATEGORY      | STATION | TO | STATION | LOCATION | EACH           | R-51-80)         | R-51-81)         | REMOVING FENCE | CONCRETE 18-INCH)                | REMARKS     |
| 0010          |         |    | 433+44  | RT       | 1              | -                | -                | -              | -                                | CULVERT     |
| 0010          |         |    | 434+53  | LT       | 1              | -                | -                | -              | -                                | CULVERT     |
| 0010          | 464+50  | -  | 465+50  | RT       | -              | -                | -                | -              | 1                                | STORM SEWER |
| TOTAL 0010    |         |    |         |          | 2              | 0                | 0                | 0              | 1                                |             |
| 0020          | 480+22  | -  | 483+40  | RT       | -              | 1                | -                | 210            | -                                | R-51-80     |
| TOTAL 0020    |         |    |         |          | 0              | 1                | 0                | 210            | 0                                |             |
| 0030          | 480+22  | -  | 483+40  | RT       | -              | -                | 1                | -              | -                                | R-51-81     |
| TOTAL 0030    |         |    |         |          | 0              | 0                | 1                | 0              | 0                                |             |
| PROJECT TOTAL |         |    |         |          | 2              | 1                | 1                | 210            | 1                                |             |

| EXCAVATION COMMON |         |    |         |          |                                             |                       |
|-------------------|---------|----|---------|----------|---------------------------------------------|-----------------------|
| CATEGORY          | STATION | TO | STATION | LOCATION | *<br>205.0100<br>EXCAVATION<br>COMMON<br>CY | REMARKS               |
| 0010              | 427+50  | -  | 445+50  | RT/LT    | 1,547                                       | DITCHING              |
| 0010              | 433+44  | -  | 466+30  | RT/LT    | 40                                          | CULVERT REPLACEMENT   |
| 0010              |         |    | 438+59  | RT/LT    | 30                                          | CULVERT REPLACEMENT   |
| 0010              | 334+00  | -  | 478+50  | LT/RT    | 10                                          | DRWY & FIELD ENTRANCE |
| TOTAL 0010        |         |    |         |          | 1,627                                       |                       |
| 0020              | 480+75  | -  | 483+50  | RT       | 447                                         | R-51-80               |
| TOTAL 0020        |         |    |         |          | 447                                         |                       |
| 0030              | 480+75  | -  | 483+50  | RT       | 192                                         | R-51-81               |
| TOTAL 0030        |         |    |         |          | 192                                         |                       |
| PROJECT TOTAL     |         |    |         |          | 2,266                                       |                       |

\* ADDITIONAL QUANTITIES LISTED ELSEWHERE

| SPV_UTILITY |    |         |          |                                                            |
|-------------|----|---------|----------|------------------------------------------------------------|
|             |    |         |          | SPV.0060.01<br>SPECIAL (01. UTILITY<br>LINE OPENING (ULO)) |
| STATION     | TO | STATION | LOCATION | EACH                                                       |
| 334+51      | -  | 478+50  | PROJECT  | 5                                                          |
| TOTAL 0010  |    |         |          | 5                                                          |

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NOTE:ALL ITEMS CATERGORY 0010 UNLESS NOTED OTHERWISE

AGGREGATE ITEMS

|               |    |         |          | 209.2100                     | 305.0110                         | 305.0120                           | 624.0100 | REMARKS               |
|---------------|----|---------|----------|------------------------------|----------------------------------|------------------------------------|----------|-----------------------|
|               |    |         |          | BACKFILL GRANULAR<br>GRADE 2 | BASE AGGREGATE<br>DENSE 3/4-INCH | BASE AGGREGATE<br>DENSE 1 1/4-INCH | WATER    |                       |
| STATION       | TO | STATION | LOCATION | CY                           | TON                              | TON                                | MGAL     |                       |
| 334+51        | -  | 459+59  | LT       | -                            | 820                              | -                                  | 8.2      | MAINLINE SHOULDER     |
| 334+51        | -  | 449+58  | RT       | -                            | 750                              | -                                  | 7.5      | MAINLINE SHOULDER     |
| 465+00        | -  | 478+50  | RT/LT    | -                            | 90                               | -                                  | 0.9      | MAINLINE SHOULDER     |
| 334+51        | -  | 382+00  | RT/LT    | -                            | 20                               | 40                                 | 0.4      | DRWY & FIELD ENTRANCE |
| 382+00        | -  | 452+00  | RT/LT    | -                            | 30                               | 120                                | 1.2      | DRWY & FIELD ENTRANCE |
| 452+00        | -  | 478+50  | RT/LT    | -                            | 20                               | 70                                 | 1.0      | DRWY & FIELD ENTRANCE |
| 378+59        | -  | 386+04  | RT       | -                            | 50                               | -                                  | 0.5      | RURAL/BYPASS LANE     |
|               |    | 433+44  | RT/LT    | 15                           | -                                | -                                  | -        | CULVERT REPLACEMENT   |
|               |    | 438+59  | RT/LT    | 15                           | -                                | 10                                 | 0.1      | CULVERT REPLACEMENT   |
| 458+13        | -  | 460+43  | RT       | -                            | -                                | 80                                 | 0.8      | STORM SEWER           |
| 461+61        | -  | 464+98  | RT       | -                            | -                                | 100                                | 1.0      | STORM SEWER           |
| CTH K         |    |         |          | -                            | -                                | 70                                 | 1.0      | CURB RAMPS            |
| UNDISTRIBUTED |    |         |          | 10                           | 180                              | 50                                 | 3.0      |                       |
| TOTAL 0010    |    |         |          | 40                           | 1,960                            | 540                                | 26       |                       |

ASPHALT ITEMS

|               |         |    |         | 204.0110                      | 204.0115                                     | 204.0120                                 | 211.0101.01                                                                    | 455.0605     | 460.6224                     | 465.0105             | 465.0120                                              | 465.0315            | 465.0520                             | 465.0560                               | SPV.0195.01                          | REMARKS                        |
|---------------|---------|----|---------|-------------------------------|----------------------------------------------|------------------------------------------|--------------------------------------------------------------------------------|--------------|------------------------------|----------------------|-------------------------------------------------------|---------------------|--------------------------------------|----------------------------------------|--------------------------------------|--------------------------------|
|               |         |    |         | REMOVING<br>ASPHALTIC SURFACE | REMOVING<br>ASPHALTIC SURFACE<br>BUTT JOINTS | REMOVING<br>ASPHALTIC SURFACE<br>MILLING | PREPARE<br>FOUNDATION FOR<br>ASPHALTIC PAVING<br>(PROJECT) (01.<br>2430-07-70) | TACK<br>COAT | HMA PAVEMENT 4 MT<br>58-28 S | ASPHALTIC<br>SURFACE | ASPHALTIC SURFACE<br>DRIVEWAYS AND<br>FIELD ENTRANCES | ASPHALTIC<br>FLUMES | ASPHALTIC RUMBLE<br>STRIPS, SHOULDER | ASPHALTIC RUMBLE<br>STRIPS, CENTERLINE | SPECIAL (01.<br>ASPHALTIC<br>REPAIR) |                                |
| CATEGORY      | STATION | TO | STATION | LOCATION                      | SY                                           | SY                                       | SY                                                                             | EACH         | TON                          | TON                  | TON                                                   | SY                  | LF                                   | LF                                     | TON                                  |                                |
| 0010          | 334+51  | -  | 382+00  |                               | -                                            | 250                                      | 18,300                                                                         | -            | 2,000                        | 3,255                | -                                                     | -                   | 9600                                 | 4800                                   | 170                                  | START OF PROJECT TO BENNETT RD |
| 0010          | 382+00  | -  | 452+00  |                               | -                                            | 200                                      | 27,100                                                                         | -            | 2,900                        | 4,835                | 120                                                   | -                   | 12600                                | 6300                                   | 250                                  | BENNETT RD TO RATZKA LN        |
| 0010          | 452+00  | -  | 478+50  |                               | -                                            | 380                                      | 10,000                                                                         | -            | 1,100                        | 1,800                | -                                                     | -                   | -                                    | -                                      | 90                                   | RATZKA LN TO END OF PROJECT    |
| 0010          | 449+70  | -  | 456+40  | RT                            | -                                            | -                                        | -                                                                              | -            | 300                          | 370                  | -                                                     | -                   | -                                    | -                                      | -                                    | RATZKA LN BYPASS LANE          |
| 0010          | 452+00  | -  | 456+00  | RT                            | 30                                           | -                                        | -                                                                              | -            | 10                           | -                    | 10                                                    | -                   | -                                    | -                                      | -                                    | DRIVEWAY REMOVAL C&G           |
| 0010          | 458+00  | -  | 467+00  | RT                            | 280                                          | -                                        | -                                                                              | -            | -                            | 70                   | 6                                                     | 20                  | -                                    | -                                      | -                                    | STORM SEWER                    |
| 0010          | 459+50  | -  | 461+75  | CTH K                         | 20                                           | 30                                       | -                                                                              | -            | 10                           | 10                   | -                                                     | -                   | -                                    | -                                      | -                                    | CURB RAMPS                     |
| 0010          |         |    |         | PROJECT                       | -                                            | -                                        | -                                                                              | 1            | -                            | -                    | -                                                     | -                   | -                                    | -                                      | -                                    | PROJECT                        |
| TOTAL 0010    |         |    |         |                               | 330                                          | 860                                      | 55,400                                                                         | 1            | 6,320                        | 10,260               | 210                                                   | 20                  | 22,200                               | 11,100                                 | 510                                  |                                |
| 0020          | 480+22  | -  | 483+40  | RT                            | 147                                          | -                                        | -                                                                              | -            | -                            | -                    | 28                                                    | -                   | -                                    | -                                      | -                                    | R-51-80                        |
| TOTAL 0020    |         |    |         |                               | 147                                          | 0                                        | 0                                                                              | 0            | 0                            | 0                    | 28                                                    | 0                   | 0                                    | 0                                      | 0                                    |                                |
| 0030          | 480+22  | -  | 483+40  | RT                            | 63                                           | -                                        | -                                                                              | -            | -                            | -                    | 12                                                    | -                   | -                                    | -                                      | -                                    | R-51-81                        |
| TOTAL 0030    |         |    |         |                               | 63                                           | 0                                        | 0                                                                              | 0            | 0                            | 0                    | 12                                                    | 0                   | 0                                    | 0                                      | 0                                    |                                |
| PROJECT TOTAL |         |    |         |                               | 540                                          | 860                                      | 55,400                                                                         | 1            | 6,320                        | 10,260               | 210                                                   | 20                  | 22,200                               | 11,100                                 | 510                                  |                                |

PWL TEST STRIP

|            |    |         | 460.0105.S                                                      | 460.0110.S                                               |
|------------|----|---------|-----------------------------------------------------------------|----------------------------------------------------------|
|            |    |         | HMA PERCENT<br>WITHIN LIMITS (PWL)<br>TEST STRIP<br>VOLUMETRICS | HMA PERCENT<br>WITHIN LIMITS (PWL)<br>TEST STRIP DENSITY |
| STATION    | TO | STATION | EACH                                                            | EACH                                                     |
| 334+51     | -  | 478+50  | 1                                                               | 1                                                        |
| TOTAL 0010 |    |         | 1                                                               | 1                                                        |

HMA PAVEMENT PWL QMP MIXTURE ACCEPTANCE TABLE

THE FOLLOWING ACCEPTANCE CRITERIA ARE APPLICABLE FOR THIS PROJECT:

| Location         | Mixture Use: | Underlying Surface          | Bid Item     | Tons | Thickness | Quality Management Program to be used for:    |                                                                    |
|------------------|--------------|-----------------------------|--------------|------|-----------|-----------------------------------------------|--------------------------------------------------------------------|
|                  |              |                             |              |      |           | Mixture Acceptance                            | Density Acceptance                                                 |
| USH 45 MAINLINE  | UPPER LAYER  | 4 MT 58-28 S                | 4 MT 58-28 S | 4365 | 1-3/4"    | PWL Incentive Air Voids HMA Pavement 460.2010 | Incentive Density PWL HMA Pavement, Item 460.2005                  |
| USH 45 MAINLINE  | LOWER LAYER  | MILLED EXISTING HMA SURFACE | 4 MT 58-28 S | 4365 | 1-3/4"    | PWL Incentive Air Voids HMA Pavement 460.2010 | Incentive Density PWL HMA Pavement, Item 460.2005                  |
| USH 45 SHOULDERS | UPPER LAYER  | MILLED EXISTING HMA SURFACE | 4 MT 58-28 S | 1530 | 1-3/4"    | PWL Incentive Air Voids HMA Pavement 460.2010 | Department Acceptance (SS 460.3.2.6.2) *Not eligible for incentive |

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NOTE:ALL ITEMS CATERGORY 0010 UNLESS NOTED OTHERWISE

CULVERT PIPE ITEMS

|            |         |         |         |          |  | 520.8700                  | 522.2419                                                                                     | 522.2429                                                                                     | 522.2619                                                                                                           | 522.2629                                                                                                           | *        | 606.0300 | *        | 633.5200 | *        | 645.0120 | * | 690.0250 |
|------------|---------|---------|---------|----------|--|---------------------------|----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|----------|----------|----------|----------|----------|----------|---|----------|
|            |         |         |         |          |  | CLEANING CULVERT<br>PIPES | CULVERT PIPE<br>REINFORCED<br>CONCRETE<br>HORIZONTAL<br>ELLIPTICAL CLASS<br>HE-IV 19X30-INCH | CULVERT PIPE<br>REINFORCED<br>CONCRETE<br>HORIZONTAL<br>ELLIPTICAL CLASS<br>HE-IV 29X45-INCH | 522.2619<br>APRON ENDWALLS<br>FOR CULVERT PIPE<br>REINFORCED<br>CONCRETE<br>HORIZONTAL<br>ELLIPTICAL<br>19X30-INCH | 522.2629<br>APRON ENDWALLS<br>FOR CULVERT PIPE<br>REINFORCED<br>CONCRETE<br>HORIZONTAL<br>ELLIPTICAL<br>29X45-INCH | 606.0200 | 606.0300 | 633.5200 | 645.0120 | 690.0250 |          |   |          |
| FROM       | OFFSET  | TO      | OFFSET  |          |  |                           |                                                                                              |                                                                                              |                                                                                                                    |                                                                                                                    |          |          |          |          |          |          |   |          |
| STATION    | **      | STATION | **      | LOCATION |  | EACH                      | LF                                                                                           | LF                                                                                           | EACH                                                                                                               | EACH                                                                                                               | CY       | CY       | EACH     | SY       | LF       |          |   |          |
| 430+97     | -       | -       | -       | LT       |  | 1                         | -                                                                                            | -                                                                                            | -                                                                                                                  | -                                                                                                                  | -        | -        | -        | -        | -        |          |   |          |
| 433+44     | 27 LT   | 433+44  | 33.1 RT | -        |  | -                         | -                                                                                            | 60                                                                                           | -                                                                                                                  | 2                                                                                                                  | 5        | 22       | 2        | -        | 68       |          |   |          |
| 434+38     | 36.9 LT | 434+69  | 35.9 LT | -        |  | -                         | 31                                                                                           | -                                                                                            | 2                                                                                                                  | -                                                                                                                  | -        | -        | 2        | -        | -        |          |   |          |
| 438+59     | 29.1 LT | 438+59  | 26.9 RT | -        |  | -                         | 56                                                                                           | -                                                                                            | 2                                                                                                                  | -                                                                                                                  | 4        | -        | 2        | 8        | 68       |          |   |          |
| 466+13     | -       | -       | -       | LT       |  | -                         | -                                                                                            | -                                                                                            | -                                                                                                                  | -                                                                                                                  | -        | 35       | -        | 53       | -        |          |   |          |
| TOTAL 0010 |         |         |         |          |  | 1                         | 87                                                                                           | 60                                                                                           | 4                                                                                                                  | 2                                                                                                                  | 9        | 57       | 6        | 61       | 136      |          |   |          |

\*\* OFFSET BASED AT THE END OF PIPE

\* ADDITIONAL QUANTITIES LISTED ELSEWHERE

CONCRETE ITEMS

|            |    |         |          | 204.0150                  | 204.0155                      | 416.0610            | 601.0407                               | 601.0409                               | 601.0411                               | 601.0553                                                | 602.0410                    | 602.0505                                           | 602.0605                                                  | *        | *        |                       |  |
|------------|----|---------|----------|---------------------------|-------------------------------|---------------------|----------------------------------------|----------------------------------------|----------------------------------------|---------------------------------------------------------|-----------------------------|----------------------------------------------------|-----------------------------------------------------------|----------|----------|-----------------------|--|
|            |    |         |          | REMOVING CURB<br>& GUTTER | REMOVING CONCRETE<br>SIDEWALK | DRILLED TIE<br>BARS | CONCRETE CURB &<br>GUTTER 18-INCH TYPE | CONCRETE CURB &<br>GUTTER 30-INCH TYPE | CONCRETE CURB &<br>GUTTER 30-INCH TYPE | CONCRETE CURB &<br>GUTTER 4-INCH<br>SLOPED 36-INCH TYPE | CONCRETE SIDEWALK<br>5-INCH | CURB RAMP<br>DETECTABLE<br>WARNING FIELD<br>YELLOW | CURB RAMP<br>DETECTABLE<br>WARNING FIELD<br>RADIAL YELLOW | 690.0150 | 690.0250 |                       |  |
| STATION    | TO | STATION | LOCATION | LF                        | SY                            | EACH                | LF                                     | LF                                     | LF                                     | LF                                                      | SF                          | SF                                                 | SF                                                        | LF       | LF       | REMARKS               |  |
| 452+00     | -  | 456+00  | RT       | 100                       | -                             | 4                   | -                                      | -                                      | -                                      | 100                                                     | -                           | -                                                  | -                                                         | 102      | 8        | DRIVEWAY REMOVAL C&G  |  |
| 457+80     | -  | 465+15  | RT       | 630                       | 4                             | 2                   | 10                                     | -                                      | 630                                    | -                                                       | 36                          | -                                                  | -                                                         | -        | 10       | STORM SEWER           |  |
| 459+50     | -  | 461+75  | SW       | 141                       | 22                            | 3                   | -                                      | 10                                     | 217                                    | -                                                       | 196                         | -                                                  | 14                                                        | 228      | 37       | SW QUADRANT CURB RAMP |  |
| 459+50     | -  | 461+75  | NW       | 44                        | 51                            | 4                   | -                                      | -                                      | 44                                     | -                                                       | 459                         | 20                                                 | -                                                         | 54       | 57       | NW QUADRANT CURB RAMP |  |
| 459+50     | -  | 461+75  | NE       | 43                        | 21                            | 4                   | -                                      | -                                      | 43                                     | -                                                       | 186                         | 10                                                 | -                                                         | 54       | 11       | NE QUADRANT CURB RAMP |  |
| TOTAL 0010 |    |         |          | 958                       | 98                            | 17                  | 10                                     | 10                                     | 934                                    | 100                                                     | 877                         | 30                                                 | 14                                                        | 438      | 123      |                       |  |

\* ADDITIONAL QUANTITIES LISTED ELSEWHERE

STORM SEWER PIPE

|              |   |    |          | *             |     | *                   |     | *               |   | *                  |     |                |           |           |      |
|--------------|---|----|----------|---------------|-----|---------------------|-----|-----------------|---|--------------------|-----|----------------|-----------|-----------|------|
|              |   |    |          | 606.0200      |     | 608.3018            |     | 633.5200        |   | 645.0120           |     | 690.0150       |           |           |      |
|              |   |    |          | RIPRAP MEDIUM |     | STORM SEWER PIPE    |     | MARKERS CULVERT |   | GEOTEXTILE TYPE HR |     | SAWING ASPHALT | INLET     | DISCHARGE |      |
| FROM         | - | TO | LOCATION | CY            | LF  | CLASS III-A 18-INCH | END | EACH            |   | SY                 |     | LF             | ELEVATION | ELEVATION |      |
|              |   |    |          |               |     |                     |     |                 |   |                    |     |                |           | SLOPE     |      |
|              |   |    |          |               |     |                     |     |                 |   |                    |     |                |           | FT/FT     |      |
| 5            | - | 6  | RT       | 3             | 22  |                     | 1   |                 | 6 |                    | -   |                | 797.35    | 797.30    | 0.23 |
| 19           | - | 5  | RT       | -             | 220 |                     | -   |                 | - |                    | -   |                | 797.78    | 797.35    | 0.20 |
| 8            | - | 19 | RT       | -             | 10  |                     | -   |                 | - |                    | -   |                | 797.81    | 797.78    | 0.30 |
| 2            | - | 20 | RT       | -             | 10  |                     | -   |                 | - |                    | -   |                | 797.40    | 797.34    | 0.61 |
| 20           | - | 3  | RT       | -             | 336 |                     | -   |                 | - |                    | -   |                | 797.34    | 796.00    | 0.40 |
| 3            | - | 4  | RT       | -             | 53  |                     | -   |                 | - |                    | -   |                | 796.00    | 795.21    | 1.49 |
| TOTAL LENGTH |   |    |          | RT            | -   | -                   | -   |                 | - |                    | 640 |                |           |           |      |
| TOTAL 0010   |   |    |          | 3             | 651 |                     | 1   |                 | 6 |                    | 640 |                |           |           |      |

\* ADDITIONAL QUANTITIES LISTED ELSEWHERE

|             |            |             |                |                          |       |   |
|-------------|------------|-------------|----------------|--------------------------|-------|---|
| PROJECT NO: | 2430-07-70 | HWY: USH 45 | COUNTY: RACINE | MISCELLANEOUS QUANTITIES | SHEET | E |
|-------------|------------|-------------|----------------|--------------------------|-------|---|

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NOTE:ALL ITEMS CATERGORY 0010 UNLESS NOTED OTHERWISE

| STORM SEWER STRUCTURES |         |           |          |                                                                                          |                                             |                                             |                                                       |                                                   |                                       |              |                        |                     |
|------------------------|---------|-----------|----------|------------------------------------------------------------------------------------------|---------------------------------------------|---------------------------------------------|-------------------------------------------------------|---------------------------------------------------|---------------------------------------|--------------|------------------------|---------------------|
|                        |         |           |          | 522.1018<br>APRON ENDWALLS<br>FOR CULVERT PIPE<br>REINFORCED<br>CONCRETE 18-INCH<br>EACH | 611.0612<br><br>INLET COVERS TYPE C<br>EACH | 611.0624<br><br>INLET COVERS TYPE H<br>EACH | 611.1004<br><br>CATCH BASINS 4-FT<br>DIAMETER<br>EACH | 611.2004<br><br>MANHOLES 4-FT<br>DIAMETER<br>EACH | 611.3230<br><br>INLETS 2X3-FT<br>EACH | RIM<br>ELEV. | ***<br>INVERT<br>ELEV. | ****<br>DEPTH<br>FT |
| STRUCTURE              | STATION | OFFSET ** | LOCATION |                                                                                          |                                             |                                             |                                                       |                                                   |                                       |              |                        |                     |
| 6                      | 457+97  | 34.6      | RT       | 1                                                                                        | -                                           | -                                           | -                                                     | -                                                 | -                                     | -            | 797.30                 | -                   |
| 5                      | 458+13  | 19.4      | RT       | -                                                                                        | -                                           | 1                                           | 1                                                     | -                                                 | -                                     | 800.23       | 797.35                 | 1.88                |
| 19                     | 460+33  | 19.8      | RT       | -                                                                                        | -                                           | 1                                           | -                                                     | -                                                 | 1                                     | 801.10       | 797.78                 | 2.32                |
| 8                      | 460+43  | 19.8      | RT       | -                                                                                        | -                                           | 1                                           | -                                                     | -                                                 | 1                                     | 801.15       | 797.81                 | 2.34                |
| 2                      | 461+53  | 19.7      | RT       | -                                                                                        | -                                           | 1                                           | -                                                     | -                                                 | 1                                     | 800.97       | 797.40                 | 2.57                |
| 20                     | 461+63  | 19.7      | RT       | -                                                                                        | -                                           | 1                                           | -                                                     | -                                                 | 1                                     | 800.94       | 797.34                 | 2.60                |
| 3                      | 464+98  | 21.7      | RT       | -                                                                                        | -                                           | 1                                           | -                                                     | -                                                 | 1                                     | 799.54       | 796.00                 | 2.54                |
| 4                      | 465+50  | 32.1      | RT       | -                                                                                        | 1                                           | -                                           | -                                                     | 1                                                 | -                                     | 798.50       | 795.21                 | 2.05                |
| TOTAL 0010             |         |           |          | 1                                                                                        | 1                                           | 6                                           | 1                                                     | 1                                                 | 5                                     |              |                        |                     |

\*\* STATIONS AND OFFSETS ARE TO CENTER OF STRUCTURE  
\*\*\* 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

|               |    |         |          | 612.0204<br>PIPE UNDERDRAIN<br>UNPERFORATED<br>4-INCH<br>LF | 612.0206<br>PIPE UNDERDRAIN<br>UNPERFORATED<br>6-INCH<br>LF | 612.0208<br>PIPE UNDERDRAIN<br>UNPERFORATED<br>8-INCH<br>LF | 612.0700<br>DRAIN TILE<br>EXPLORATION<br>LF |
|---------------|----|---------|----------|-------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|---------------------------------------------|
| STATION       | TO | STATION | LOCATION |                                                             |                                                             |                                                             |                                             |
| 427+50        | -  | 445+50  | RT       | -                                                           | -                                                           | -                                                           | 750                                         |
| 428+14        | -  | 438+75  | LT       | -                                                           | -                                                           | -                                                           | 750                                         |
| UNDISTRIBUTED |    |         |          | 150                                                         | 150                                                         | 150                                                         | -                                           |
| TOTAL 0010    |    |         |          | 150                                                         | 150                                                         | 150                                                         | 1,500                                       |

| EROSION CONTROL ITEMS |    |         |          |              |            |                                     |                          |                                      |                                  |                            |                           |                     |                  |             |
|-----------------------|----|---------|----------|--------------|------------|-------------------------------------|--------------------------|--------------------------------------|----------------------------------|----------------------------|---------------------------|---------------------|------------------|-------------|
|                       |    |         |          | 616.0700.S   | 628.1504   | 628.1520<br>SILT FENCE<br>MAINTENAN | 628.1530.S               | 628.1535.S                           | 628.1905                         | 628.7020                   | 628.7504                  | 628.7555            | 628.7560         |             |
|                       |    |         |          | FENCE SAFETY | SILT FENCE | CE                                  | SILT FENCE HEAVY<br>DUTY | SILT FENCE HEAVY<br>DUTY MAINTENANCE | MOBILIZATIONS<br>EROSION CONTROL | INLET PROTECTION<br>TYPE D | TEMPORARY DITCH<br>CHECKS | CULVERT PIPE CHECKS | TRACKING<br>PADS |             |
| STATION               | TO | STATION | LOCATION | LF           | LF         | LF                                  | LF                       | LF                                   | EACH                             | EACH                       | LF                        | EACH                | EACH             | REMARKS     |
| 427+50                | -  | 445+50  | RT       | -            | 1,840      | 1,840                               | -                        | -                                    | -                                | -                          | 96                        | -                   | -                | DITCHING    |
| 428+14                | -  | 438+75  | LT       | -            | 810        | 810                                 | -                        | -                                    | -                                | -                          | 36                        | -                   | -                | DITCHING    |
| 457+76                | -  | 465+63  | RT       | 500          | 150        | 150                                 | 20                       | 20                                   | -                                | 6                          | -                         | -                   | -                | STORM SEWER |
|                       |    | 427+18  | RT       | -            | -          | -                                   | -                        | -                                    | -                                | -                          | -                         | 6                   | -                | CULVERT     |
|                       |    | 433+44  | LT/RT    | -            | -          | -                                   | -                        | -                                    | -                                | -                          | -                         | 6                   | -                | CULVERT     |
|                       |    | 434+53  | LT       | -            | -          | -                                   | -                        | -                                    | -                                | -                          | -                         | 6                   | -                | CULVERT     |
|                       |    | 438+59  | LT/RT    | -            | -          | -                                   | -                        | -                                    | -                                | -                          | -                         | 6                   | -                | CULVERT     |
| UNDISTRIBUTED         |    |         |          | 130          | 700        | 700                                 | 5                        | 5                                    | 5                                | -                          | 36                        | 6                   | 3                |             |
| TOTAL 0010            |    |         |          | 630          | 3,500      | 3,500                               | 25                       | 25                                   | 5                                | 6                          | 168                       | 30                  | 3                |             |

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NOTE:ALL ITEMS CATERGORY 0010 UNLESS NOTED OTHERWISE

| RESTORATION ITEMS |               |    |         |          |               |                        |                                           |                          |                                 |                         |                    |                                                   |
|-------------------|---------------|----|---------|----------|---------------|------------------------|-------------------------------------------|--------------------------|---------------------------------|-------------------------|--------------------|---------------------------------------------------|
| CATEGORY          | STATION       | TO | STATION | LOCATION | 625.0100      | 625.0500               | 628.2006                                  | 629.0210                 | 630.0130                        | 630.0200                | 630.0500           | REMARKS                                           |
|                   |               |    |         |          | TOPSOIL<br>SY | SALVAGED TOPSOIL<br>SY | EROSION MAT URBAN<br>CLASS I TYPE A<br>SY | FERTILIZER TYPE B<br>CWT | SEEDING MIXTURE<br>NO. 30<br>LB | SEEDING TEMPORARY<br>LB | SEED WATER<br>MGAL |                                                   |
| 0010              | 427+50        | -  | 445+50  | RT       | -             | 3,950                  | 3,950                                     | 2.5                      | 180                             | 107                     | 89                 | DITCHING                                          |
| 0010              | 433+25        | -  | 438+75  | LT       | -             | 1,670                  | 1,670                                     | 1.1                      | 76                              | 46                      | 38                 | DITCHING                                          |
| 0010              | 452+00        | -  | 456+00  | RT       | 100           | -                      | 100                                       | 0.1                      | 5                               | 3                       | 3                  | DRIVEWAY REMOVAL C&G<br>STORM SEWER<br>CURB RAMPS |
| 0010              | 458+00        | -  | 465+75  | RT       | 360           | -                      | 360                                       | 0.3                      | 17                              | 10                      | 9                  |                                                   |
| 0010              | 459+50        | -  | 461+75  | LT/RT    | 150           | -                      | 150                                       | 0.1                      | 7                               | 5                       | 4                  |                                                   |
| 0010              | UNDISTRIBUTED |    |         |          | 160           | 1,410                  | 1,560                                     | 1.1                      | 72                              | 43                      | 36                 |                                                   |
| TOTAL 0010        |               |    |         |          | 770           | 7,030                  | 7,790                                     | 5.2                      | 357                             | 214                     | 179                |                                                   |
| 0020              | 480+00        | -  | 483+50  | RT       | 210           | 460                    | 670                                       | 0.5                      | 31                              | 19                      | 16                 | R-51-80                                           |
| 0020              | UNDISTRIBUTED |    |         |          | 60            | 120                    | 170                                       | 0.2                      | 8                               | 5                       | 4                  |                                                   |
| TOTAL 0020        |               |    |         |          | 270           | 580                    | 840                                       | 0.7                      | 39                              | 24                      | 20                 |                                                   |
| 0030              | 480+00        | -  | 483+50  | RT       | 90            | 200                    | 290                                       | 0.2                      | 14                              | 8                       | 7                  | R-51-81                                           |
| 0030              | UNDISTRIBUTED |    |         |          | 30            | 50                     | 80                                        | 0.1                      | 4                               | 2                       | 2                  |                                                   |
| TOTAL 0030        |               |    |         |          | 120           | 250                    | 370.0                                     | 0.3                      | 18                              | 10                      | 9                  |                                                   |
| PROJECT TOTAL     |               |    |         |          | 1,160         | 7,860                  | 9,000                                     | 6.2                      | 414                             | 248                     | 208                |                                                   |

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| SIGNS         |          |             |                 |                                        |                                        |                                     |                                     |                                   |                                         |                   |                                   |
|---------------|----------|-------------|-----------------|----------------------------------------|----------------------------------------|-------------------------------------|-------------------------------------|-----------------------------------|-----------------------------------------|-------------------|-----------------------------------|
| SIGN #        | LOCATION | SIGN CODE   | SIZE<br>IN X IN | 634.0618                               | 634.0622                               | 637.2210                            | 637.2230                            | 638.2602                          | 638.3000                                | DESCRIPTION       | COMMENTS                          |
|               |          |             |                 | POSTS WOOD<br>4X6-INCH X 18-FT<br>EACH | POSTS WOOD<br>4X6-INCH X 22-FT<br>EACH | SIGNS TYPE II<br>REFLECTIVE H<br>SF | SIGNS TYPE II<br>REFLECTIVE F<br>SF | REMOVING SIGNS<br>TYPE II<br>EACH | REMOVING SMALL<br>SIGN SUPPORTS<br>EACH |                   |                                   |
| 1             | LT       | W23-2 (2S)  | 36 X 36         | -                                      | -                                      | -                                   | -                                   | 1                                 | 1                                       | WARNING SIGN      | NEW TRAFFIC PATTERN AHEAD         |
| 2             | RT       | W14-3 (2S)  | 48 X 36         | 1                                      | -                                      | -                                   | 12.00                               | 1                                 | 1                                       | WARNING SIGN      | NO PASSING ZONE                   |
| 3             | RT       | W3-5 (2S)   | 36 X 36         | 1                                      | -                                      | -                                   | 9.00                                | 1                                 | 1                                       | WARNING SIGN      | SPEED LIMIT 35 AHEAD              |
| 4             | RT       | I2-3 (2)    | 78 X 24         | 2                                      | -                                      | 13.00                               | -                                   | 1                                 | 2                                       | INFORMATION SIGN  | NORTH CAPE                        |
| 5             | RT       | R2-1 (2S)   | 24 X 30         | 1                                      | -                                      | 5.00                                | -                                   | 1                                 | 1                                       | REGULATORY SIGN   | SPEED LIMIT 35                    |
| 6             | LT       | J12-1 (2S)  | 24 X 45         | 1                                      | -                                      | 7.50                                | -                                   | 1                                 | 1                                       | JUNCTION ASSEMBLY | 45 LEFT/RIGHT                     |
| 7A            | LT       | R1-1 (2S)   | 30 X 30         | 1                                      | -                                      | 6.25                                | -                                   | 1                                 | 1                                       | REGULATORY SIGN   | STOP                              |
| 7B            | LT       | W4-4C (2S)  | 24 X 12         | -                                      | -                                      | -                                   | 2.00                                | 1                                 | -                                       | WARNING SIGN      | TRAFFIC ON 45 DOES NOT STOP       |
| 8A            | LT       | J12-1 (2S)  | 24 X 45         | 1                                      | -                                      | 7.50                                | -                                   | 1                                 | 1                                       | JUNCTION ASSEMBLY | COUNTY K LEFT/RIGHT               |
| 8B            | LT       | R8-51L (2S) | 24 X 30         | -                                      | -                                      | 5.00                                | -                                   | 1                                 | -                                       | REGULATORY SIGN   | NO PARKING WITHIN 10 FT           |
| 9A            | LT       | W11-2 (2S)  | 30 X 30         | 1                                      | -                                      | 2.00                                | -                                   | -                                 | -                                       | WARNING SIGN      | PEDESTRIAN CROSSING               |
| 9B            | LT       | W16-7L (2S) | 24 X 12         | -                                      | -                                      | -                                   | 2.00                                | -                                 | -                                       | WARNING SIGN      | LEFT DIAGONAL ARROW               |
| 10            | LT       | S5-2 (2S)   | 24 X 30         | 1                                      | -                                      | 5.00                                | -                                   | -                                 | -                                       | SCHOOL SIGN       | END SCHOOL ZONE                   |
| 11            | RT       | J12-1 (2S)  | 24 X 45         | 1                                      | -                                      | 7.50                                | -                                   | 1                                 | 1                                       | JUNCTION ASSEMBLY | COUNTY K LEFT/RIGHT               |
| 12A           | RT       | R1-1 (2S)   | 30 X 30         | 1                                      | -                                      | 2.00                                | -                                   | 1                                 | 1                                       | REGULATORY SIGN   | STOP                              |
| 12B           | RT       | W4-4C (2S)  | 24 X 12         | -                                      | -                                      | -                                   | 2.00                                | 1                                 | -                                       | WARNING SIGN      | TRAFFIC ON 45 DOES NOT STOP       |
| 13            | RT       | J12-1 (2S)  | 24 X 45         | 1                                      | -                                      | 7.50                                | -                                   | 1                                 | 1                                       | JUNCTION ASSEMBLY | 45 LEFT/RIGHT                     |
| 14A           | RT       | J4-1 (2S)   | 24 X 36         | -                                      | 1                                      | 6.50                                | -                                   | 1                                 | 1                                       | JUNCTION ASSEMBLY | 45 NORTH                          |
| 14B           | RT       | W11-2 (2S)  | 30 X 30         | -                                      | -                                      | -                                   | 2.00                                | -                                 | -                                       | WARNING SIGN      | PEDESTRIAN CROSSING               |
| 14C           | RT       | W16-7L (2S) | 24 X 12         | -                                      | -                                      | -                                   | 2.00                                | -                                 | -                                       | WARNING SIGN      | LEFT DIAGONAL ARROW               |
| 14D           | RT       | R7-1L (2S)  | 18 X 24         | -                                      | -                                      | 3.00                                | -                                   | 1                                 | -                                       | REGULATORY SIGN   | NO PARKING ANY TIME LEFT ARROW    |
| 15A           | RT       | S1-1 (2S)   | 36 X 36         | 1                                      | -                                      | -                                   | 9.00                                | 1                                 | 1                                       | SCHOOL SIGN       | SCHOOL ZONE                       |
| 15B           | RT       | S16-9P (2S) | 30 X 18         | -                                      | -                                      | -                                   | 3.75                                | 1                                 | -                                       | SCHOOL SIGN       | AHEAD                             |
| 15C           | RT       | R2-6P (2S)  | 24 X 18         | -                                      | -                                      | 3.00                                | -                                   | -                                 | -                                       | REGULATORY SIGN   | FINES HIGHER                      |
| 16            | LT       | S3-51 (2S)  | 48 X 24         | 2                                      | -                                      | -                                   | 8.00                                | 1                                 | 2                                       | SCHOOL SIGN       | SCHOOL BUS TRAFFIC                |
| 17A           | LT       | S1-1 (2S)   | 36 X 36         | 1                                      | -                                      | -                                   | 9.00                                | 1                                 | 1                                       | SCHOOL SIGN       | SCHOOL ZONE                       |
| 17B           | LT       | S16-9P (2S) | 24 X 12         | -                                      | -                                      | -                                   | 2.00                                | 1                                 | -                                       | SCHOOL SIGN       | AHEAD                             |
| 17C           | LT       | R2-6P (2S)  | 24 X 18         | -                                      | -                                      | 3.00                                | -                                   | -                                 | -                                       | REGULATORY SIGN   | FINES HIGHER                      |
| 18A           | RT       | S3-51 (2S)  | 48 X 24         | 2                                      | -                                      | -                                   | 8.00                                | 1                                 | 2                                       | SCHOOL SIGN       | SCHOOL BUS TRAFFIC                |
| 18B           | RT       | R7-1D (2S)  | 18 X 24         | -                                      | -                                      | 3.00                                | -                                   | 1                                 | -                                       | REGULATORY SIGN   | NO PARKING ANYTIME - DOUBLE ARROW |
| 19A           | RT       | R1-1 (2S)   | 30 X 30         | 1                                      | -                                      | 6.25                                | -                                   | 1                                 | 1                                       | REGULATORY SIGN   | STOP                              |
| 19B           | RT       | R7-1R (2S)  | 18 X 24         | -                                      | -                                      | 3.00                                | -                                   | 1                                 | -                                       | REGULATORY SIGN   | NO PARKING ANYTIME - RIGHT ARROW  |
| 20            | RT       | S5-2 (2S)   | 24 X 30         | 1                                      | -                                      | 5.00                                | -                                   | 1                                 | 1                                       | SCHOOL SIGN       | END SCHOOL ZONE                   |
| UNDISTRIBUTED |          |             |                 | 5                                      | 2                                      | 40.00                               | 40.00                               | -                                 | 5                                       |                   |                                   |
| TOTAL 0100    |          |             |                 | 26                                     | 3                                      | 141.00                              | 110.75                              | 26                                | 26                                      |                   |                                   |

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NOTE:ALL ITEMS CATERGORY 0010 UNLESS NOTED OTHERWISE

| TRAFFIC CONTROL ITEMS |  |                 |       |                     |     |                 |       |                 |       |        |                     |     |                     |     |                  |  |
|-----------------------|--|-----------------|-------|---------------------|-----|-----------------|-------|-----------------|-------|--------|---------------------|-----|---------------------|-----|------------------|--|
|                       |  | 643.0300        |       | 643.0420            |     | 643.0705        |       | 643.0900        |       |        | 643.0920            |     | 643.1000            |     | 643.1050         |  |
|                       |  | TRAFFIC CONTROL |       | TRAFFIC CONTROL     |     | TRAFFIC CONTROL |       | TRAFFIC CONTROL |       |        | TRAFFIC CONTROL     |     | TRAFFIC CONTROL     |     | TRAFFIC CONTROL  |  |
|                       |  | DRUMS           |       | BARRICADES TYPE III |     | WARNING LIGHTS  |       | SIGNS           |       |        | COVERING SIGNS TYPE |     | SIGNS FIXED MESSAGE |     | SIGNS            |  |
|                       |  | DAY             | NO.   | DAY                 | NO. | DAY             | NO.   | DAY             | NO.   | CYCLES | EACH                | NO. | SF                  | DAY | REMARKS          |  |
| PROJECT               |  | 50              | 2,300 | 13                  | 598 | 26              | 1,196 | 9               | 736   | -      | -                   | 2   | -                   | 14  | TRAFFIC CONTROL  |  |
| CLEAR & GRUBBING      |  | 15              | 30    | -                   | -   | -               | -     | 5               | 10    | -      | -                   | -   | -                   | -   | CLEAR & GRUBBING |  |
| PROJECT               |  | -               | -     | -                   | -   | -               | -     | 153             | 7,038 | 4      | 1                   | 4   | 216.00              | -   | DETOUR           |  |
| TOTAL 0010            |  |                 | 2,330 |                     | 598 |                 | 1,196 |                 | 7,784 |        |                     | 4   | 216.00              | 14  |                  |  |

3

| PAVEMENT MARKING ITEMS |    |         |          |                                                                              |                                                    |                                                          |             |                                    |                                                |                                          |                                          |  |  |  |
|------------------------|----|---------|----------|------------------------------------------------------------------------------|----------------------------------------------------|----------------------------------------------------------|-------------|------------------------------------|------------------------------------------------|------------------------------------------|------------------------------------------|--|--|--|
|                        |    |         |          | 643.3770<br>TEMPORARY MARKING<br>RAISED PAVEMENT<br>MARKER TYPE II<br>YELLOW | 646.1020<br>MARKING LINE EPOXY<br>4-INCH<br>YELLOW | 646.2040<br>MARKING LINE GROOVED WET REF<br>EPOXY 6-INCH |             | 646.5020<br>MARKING ARROW<br>EPOXY | 646.6120<br>MARKING STOP LINE<br>EPOXY 18-INCH | 648.0100<br>LOCATING NO-PASSING<br>ZONES |                                          |  |  |  |
| STATION                | TO | STATION | LOCATION | EACH                                                                         | LF                                                 | LF                                                       | WHITE<br>LF | EACH                               | LF                                             | MI                                       | REMARKS                                  |  |  |  |
| 334+51                 | -  | 339+42  | CL       | -                                                                            | -                                                  | 123                                                      | -           | -                                  | -                                              | -                                        | 12.5' YELLOW DASH, 37.5' SKIPS           |  |  |  |
| 334+51                 | -  | 459+45  | RT       | -                                                                            | -                                                  | -                                                        | 12,500      | -                                  | -                                              | -                                        | EDGE LINE                                |  |  |  |
| 334+51                 | -  | 381+51  | LT       | -                                                                            | -                                                  | -                                                        | 4,700       | -                                  | -                                              | -                                        | EDGE LINE                                |  |  |  |
| 339+42                 | -  | 350+24  | LT/RT    | -                                                                            | -                                                  | 1,360                                                    | -           | -                                  | -                                              | -                                        | LT 12.5' YELLOW DASH 37.5' GAP, RT SOLID |  |  |  |
| 350+24                 | -  | 360+68  | LT/RT    | -                                                                            | -                                                  | 2,090                                                    | -           | -                                  | -                                              | -                                        | NO PASSING ZONE                          |  |  |  |
| 360+68                 | -  | 370+77  | LT/RT    | -                                                                            | -                                                  | 1,270                                                    | -           | -                                  | -                                              | -                                        | LT SOLID, RT 12.5' YELLOW DASH 37.5' GAP |  |  |  |
| 370+77                 | -  | 373+75  | CL       | -                                                                            | -                                                  | 75                                                       | -           | -                                  | -                                              | -                                        | 12.5' YELLOW DASH, 37.5' GAP             |  |  |  |
| 373+75                 | -  | 388+98  | LT/RT    | -                                                                            | -                                                  | 1,910                                                    | -           | -                                  | -                                              | -                                        | LT 12.5' YELLOW DASH 37.5' GAP, RT SOLID |  |  |  |
| 380+43                 | -  | 383+08  | RT       | -                                                                            | -                                                  | 67                                                       | -           | -                                  | -                                              | -                                        | BYPASS LANE, 12.5' WHITE DASH, 37.5' GAP |  |  |  |
|                        | -  | 381+75  | LT       | -                                                                            | -                                                  | -                                                        | -           | -                                  | 25                                             | -                                        | BENNET RD                                |  |  |  |
| 382+62                 | -  | 452+17  | LT       | -                                                                            | -                                                  | -                                                        | 6,960       | -                                  | -                                              | -                                        | EDGE LINE                                |  |  |  |
| 388+98                 | -  | 392+54  | LT/RT    | -                                                                            | -                                                  | 713                                                      | -           | -                                  | -                                              | -                                        | NO PASSING ZONE                          |  |  |  |
| 392+54                 | -  | 401+59  | LT/RT    | -                                                                            | -                                                  | 1,140                                                    | -           | -                                  | -                                              | -                                        | LT SOLID, RT 12.5' YELLOW DASH 37.5' GAP |  |  |  |
| 401+59                 | -  | 402+91  | LT/RT    | -                                                                            | -                                                  | 265                                                      | -           | -                                  | -                                              | -                                        | NO PASSING ZONE                          |  |  |  |
| 402+91                 | -  | 412+18  | LT/RT    | -                                                                            | -                                                  | 1,160                                                    | -           | -                                  | -                                              | -                                        | LT 12.5' YELLOW DASH 37.5' GAP, RT SOLID |  |  |  |
| 412+18                 | -  | 418+24  | LT/RT    | -                                                                            | -                                                  | 1,220                                                    | -           | -                                  | -                                              | -                                        | NO PASSING ZONE                          |  |  |  |
| 418+24                 | -  | 429+70  | LT/RT    | -                                                                            | -                                                  | 1,440                                                    | -           | -                                  | -                                              | -                                        | LT SOLID, RT 12.5' YELLOW DASH 37.5' GAP |  |  |  |
| 429+70                 | -  | 440+97  | CL       | -                                                                            | -                                                  | 282                                                      | -           | -                                  | -                                              | -                                        | 12.5' YELLOW DASH, 37.5' GAP             |  |  |  |
| 440+97                 | -  | 450+57  | LT/RT    | -                                                                            | -                                                  | 1,210                                                    | -           | -                                  | -                                              | -                                        | LT 12.5' YELLOW DASH 37.5' GAP, RT SOLID |  |  |  |
| 450+57                 | -  | 452+68  | LT/RT    | -                                                                            | -                                                  | 422                                                      | -           | -                                  | -                                              | -                                        | NO PASSING ZONE                          |  |  |  |
| 450+75                 | -  | 454+51  | RT       | -                                                                            | -                                                  | -                                                        | 100         | -                                  | -                                              | -                                        | BYPASS LANE, 12.5' WHITE DASH, 37.5' GAP |  |  |  |
| 452+68                 | -  | 456+83  | LT/RT    | -                                                                            | -                                                  | 520                                                      | -           | -                                  | -                                              | -                                        | LT SOLID, RT 12.5' YELLOW DASH 37.5' GAP |  |  |  |
| 453+39                 | -  | 545+39  | LT       | -                                                                            | -                                                  | -                                                        | -           | -                                  | 30                                             | -                                        | RATZKA LN                                |  |  |  |
| 453+39                 | -  | 459+57  | LT       | -                                                                            | -                                                  | -                                                        | 620         | -                                  | -                                              | -                                        | EDGE LINE                                |  |  |  |
| 456+83                 | -  | 461+38  | CL       | -                                                                            | -                                                  | 120                                                      | -           | -                                  | -                                              | -                                        | 12.5' YELLOW DASH, 37.5' GAP             |  |  |  |
| 460+76                 | -  | 461+27  | LT       | -                                                                            | -                                                  | -                                                        | -           | -                                  | -                                              | -                                        | CROSSWALK MARKING                        |  |  |  |
| 460+80                 | -  | 461+24  | LT       | -                                                                            | -                                                  | -                                                        | -           | -                                  | -                                              | -                                        | CROSSWALK MARKING                        |  |  |  |
| 460+83                 | -  | 461+05  | LT       | -                                                                            | -                                                  | -                                                        | -           | -                                  | 22                                             | -                                        | NORTH CAPE ST (CTH K)                    |  |  |  |
| 461+04                 | -  | 461+04  | LT       | -                                                                            | 30                                                 | -                                                        | -           | -                                  | -                                              | -                                        | NORTH CAPE ST (CTH K)                    |  |  |  |
| 461+05                 | -  | 461+07  | RT       | -                                                                            | 70                                                 | -                                                        | -           | -                                  | -                                              | -                                        | APPLE RD (CTH K)                         |  |  |  |
| 461+06                 | -  | 461+26  | LT       | -                                                                            | -                                                  | -                                                        | -           | -                                  | 20                                             | -                                        | APPLE RD (CTH K)                         |  |  |  |
| 461+38                 | -  | 461+38  | LT/RT    | -                                                                            | -                                                  | -                                                        | -           | -                                  | -                                              | -                                        | CROSSWALK MARKING                        |  |  |  |
| 461+43                 | -  | 461+43  | LT/RT    | -                                                                            | -                                                  | -                                                        | -           | -                                  | -                                              | -                                        | CROSSWALK MARKING                        |  |  |  |
| 461+43                 | -  | 472+45  | CL       | -                                                                            | -                                                  | 276                                                      | -           | -                                  | -                                              | -                                        | 12.5' YELLOW DASH, 37.5' GAP             |  |  |  |
|                        | -  | 464+75  | RT       | -                                                                            | -                                                  | -                                                        | -           | 1                                  | -                                              | -                                        | SCHOOL DRIVEWAY TYPE 1 ARROW             |  |  |  |
| 465+06                 | -  | 478+50  | LT       | -                                                                            | -                                                  | -                                                        | 1,350       | -                                  | -                                              | -                                        | EDGE LINE                                |  |  |  |
| 465+07                 | -  | 478+50  | RT       | -                                                                            | -                                                  | -                                                        | 1,350       | -                                  | -                                              | -                                        | EDGE LINE                                |  |  |  |
| 472+45                 | -  | 478+50  | LT/RT    | -                                                                            | -                                                  | 757                                                      | -           | -                                  | -                                              | -                                        | LT 12.5' YELLOW DASH 37.5' GAP, RT SOLID |  |  |  |
| 334+52                 | -  | 478+50  | -        | 577                                                                          | -                                                  | -                                                        | -           | -                                  | -                                              | 2.73                                     | PROJECT LENGTH                           |  |  |  |
| SUBTOTAL               |    |         |          | 577                                                                          | 100                                                | 16,420                                                   | 27,580      | 1                                  | 97                                             | 2.73                                     |                                          |  |  |  |
| TOTAL 0010             |    |         |          | 577                                                                          | 100                                                | 44,000                                                   |             | 1                                  | 97                                             | 2.73                                     |                                          |  |  |  |

|            |    |         |          | STAKING                                |                                                             |                                          |                                                     |                                    |                                                                                  |                                         |
|------------|----|---------|----------|----------------------------------------|-------------------------------------------------------------|------------------------------------------|-----------------------------------------------------|------------------------------------|----------------------------------------------------------------------------------|-----------------------------------------|
|            |    |         |          | 650.4000                               | 650.5500                                                    | 650.6000                                 | 650.8000                                            | 650.9000                           | 650.9911.01                                                                      | 650.9920                                |
|            |    |         |          | CONSTRUCTION<br>STAKING STORM<br>SEWER | CONSTRUCTION<br>STAKING CURB<br>GUTTER AND CURB &<br>GUTTER | CONSTRUCTION<br>STAKING PIPE<br>CULVERTS | CONSTRUCTION<br>STAKING<br>RESURFACING<br>REFERENCE | CONSTRUCTION<br>STAKING CURB RAMPS | CONSTRUCTION<br>STAKING<br>SUPPLEMENTAL<br>CONTROL (PROJECT)<br>(01. 2430-07-70) | CONSTRUCTION<br>STAKING SLOPE<br>STAKES |
| STATION    | TO | STATION | LOCATION | EACH                                   | LF                                                          | EACH                                     | LF                                                  | EACH                               | EACH                                                                             | LF                                      |
| 334+51     | -  | 478+50  | PROJECT  | 8                                      | 954                                                         | 3                                        | 14,399                                              | 4                                  | 1                                                                                | 2,025                                   |
| TOTAL 0010 |    |         |          | 8                                      | 954                                                         | 3                                        | 14,399                                              | 4                                  | 1                                                                                | 2,025                                   |

|                              |              |                           |  |                                      |      |
|------------------------------|--------------|---------------------------|--|--------------------------------------|------|
| SECTION LINE                 | ---          | SECTION CORNER SYMBOL     |  | R/W MONUMENT (TO BE SET)             | ●    |
| QUARTER LINE                 | - - - - -    |                           |  | NON-MONUMENTED R/W POINT             | ○    |
| SIXTEENTH LINE               | ---          | SECTION CORNER MONUMENT   |  | FOUND IRON PIN (1-INCH UNLESS NOTED) | IP ● |
| NEW REFERENCE LINE           |              | GEODETIC SURVEY MONUMENT  |  |                                      |      |
| NEW R/W LINE                 | ---          | SIXTEENTH CORNER MONUMENT |  |                                      |      |
| EXISTING R/W OR HE LINE      | ---          | SIGN                      |  | OFF-PREMISE SIGN                     |      |
| PROPERTY LINE                | --- P.L. --- |                           |  |                                      |      |
| LOT, TIE & OTHER MINOR LINES | - - - - -    |                           |  |                                      |      |

## CONVENTIONAL UTILITY SYMBOLS

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

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

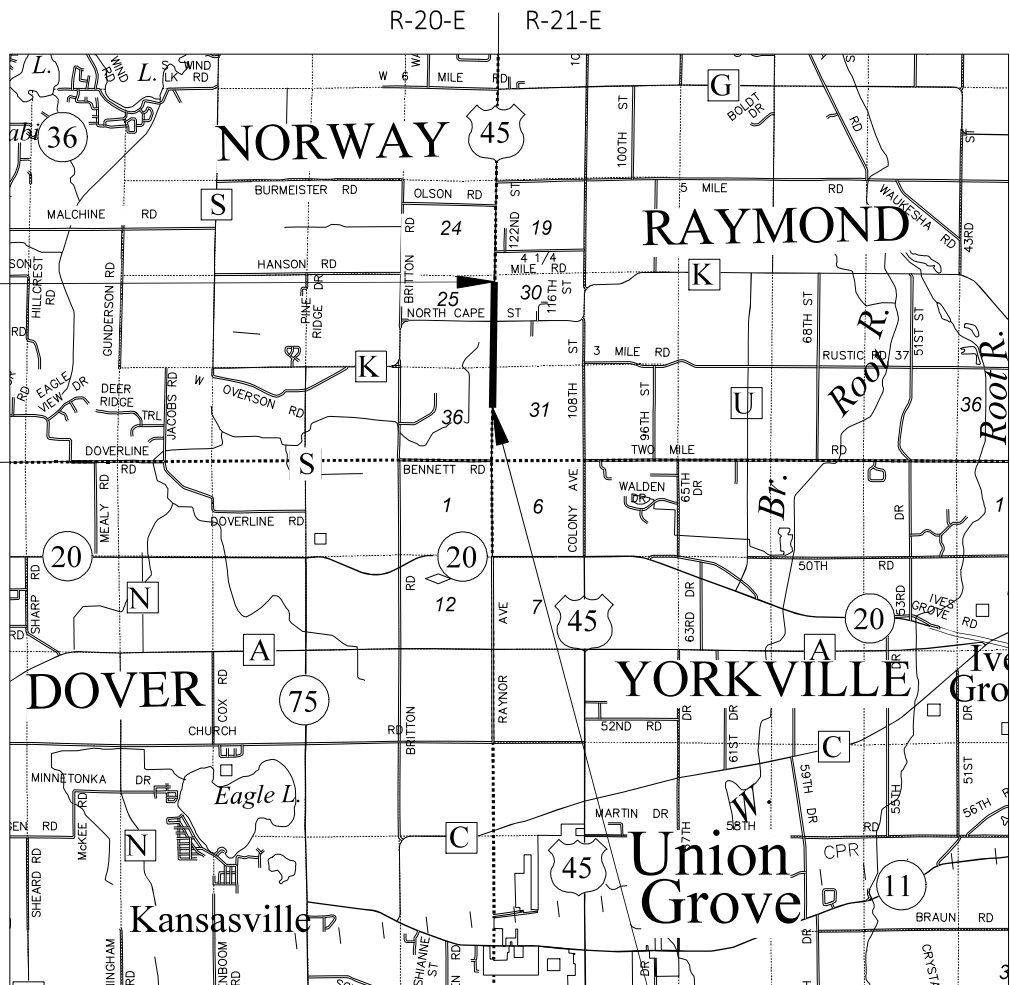
### CURVE DATA ABBREVIATION

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

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

END RELOCATION ORDER  
STA 483+50  
Y= 207141.87  
X= 562541.33  
84.53' SOUTH & 5.92' WEST  
THE NORTHWEST CORNER  
OF SECTION 30, T4N, R21E

T-4-N  
T-3-N



**BEGIN RELOCATION ORDER**  
STA 427+53.99  
Y= 201546.623  
X= 562448.904  
724.25' SOUTH & 11.41' WEST  
OF THE NORTHWEST CORNER  
OF SECTION 31, T4N, R21E

LAYOUT

SCALE 0 2 MI.

TOTAL NET LENGTH OF CENTERLINE = 1.06 MI.

THIS PLAT IS A GRAPHIC REPRESENTATION AND IS FOR  
REFERENCE PURPOSES ONLY. DEEDS MUST BE CHECKED TO  
DETERMINE PROPERTY BOUNDARIES AND ACCESS RIGHTS.

|                                                                                                       |                 |                 |
|-------------------------------------------------------------------------------------------------------|-----------------|-----------------|
| R/W PROJECT NUMBER<br>2430-07-20                                                                      | SHEET<br>NUMBER | TOTAL<br>SHEETS |
| FEDERAL PROJECT NUMBER                                                                                | 4.01            | SHEETS          |
| PLAT OF RIGHT OF WAY REQUIRED FOR<br>UNION GROVE - HALES CORNERS<br>STH 20 TO 2,000 FT NORTH OF CTH K |                 |                 |
| USH 45                                                                                                | RACINE COUNTY   |                 |
| CONSTRUCTION PROJECT NUMBER<br>2430-07-70                                                             |                 |                 |

NOTES:

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

ALL NEW RIGHT-OF-WAY MONUMENTS WILL BE TYPE 2 (TYPICALLY 3/4" X 24" IRON REBARS), UNLESS OTHERWISE NOTED, AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

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

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

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

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

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

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

A TEMPORARY LIMITED EASEMENT (TLE) IS A RIGHT FOR CONSTRUCTION PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON, THE RIGHT OF INGRESS AND EGRESS, AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM DESIRABLE, BUT WITHOUT PREJUDICE TO THE OWNER'S RIGHTS TO MAKE OR CONSTRUCT IMPROVEMENTS ON SAID LANDS OR TO FLATTEN THE SLOPES PROVIDING SAID ACTIVITIES WILL NOT IMPAIR OR OTHERWISE ADVERSELY AFFECT THE HIGHWAY FACILITIES.

A PERMANENT LIMITED EASEMENT(PLE) IS A RIGHT FOR CONSTRUCTION AND MAINTENANCE PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON, THE RIGHT OF INGRESS AND EGRESS, AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM NECESSARY OR DESIRABLE, BUT WITHOUT PREJUDICE TO THE OWNER'S RIGHTS TO MAKE OR CONSTRUCT IMPROVEMENTS ON SAID LANDS OR TO FLATTEN THE SLOPES PROVIDING SAID ACTIVITIES WILL NOT IMPAIR OR OTHERWISE ADVERSELY AFFECT THE HIGHWAY FACILITIES. \_\_\_\_\_

AN EASEMENT FOR HIGHWAY PURPOSES (HE), AS LONG AS SO USED, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM DESIRABLE.

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



I HEREBY CERTIFY THAT THIS PLAT WAS MADE FOR THE  
WISCONSIN DEPARTMENT OF TRANSPORTATION AND IS  
CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.



DATE: 10-31-23

(SIGNATURE

REVISION DATE

R.O. 2: 06/07/24

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

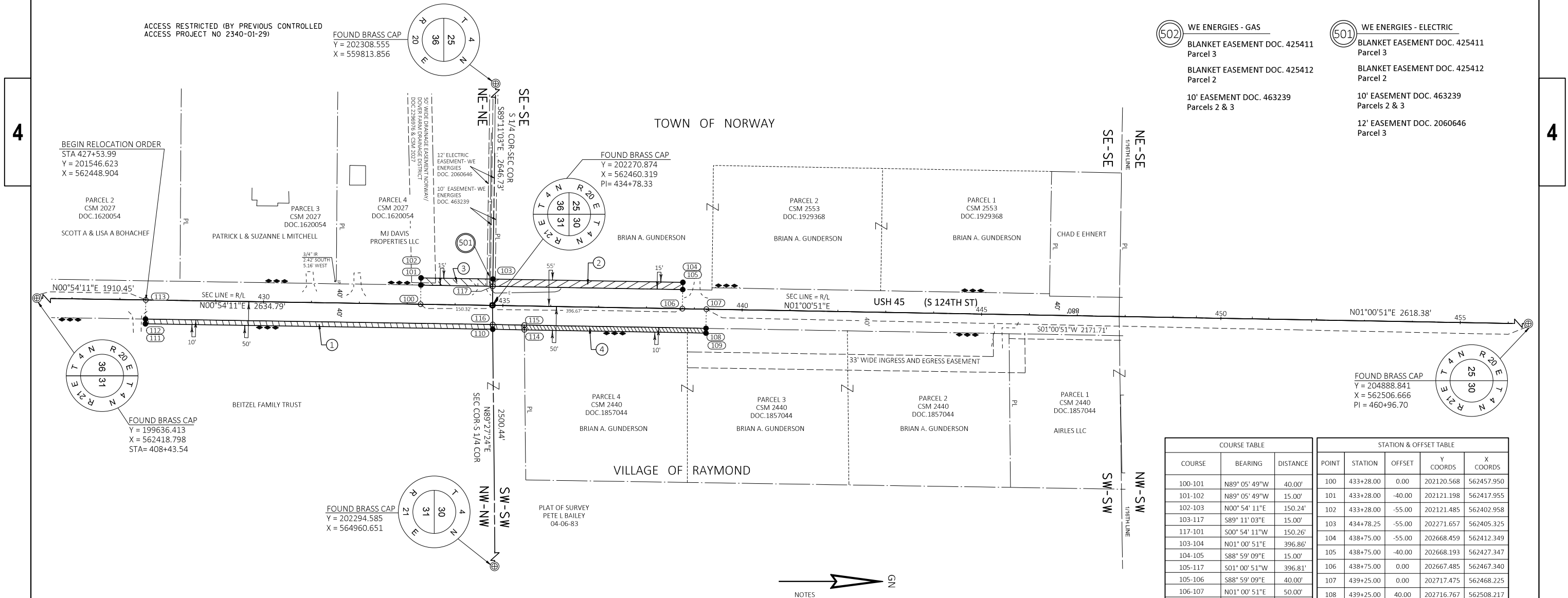
APPROVED FOR THE DEPARTMENT

DATE: 11/28/2023

2430-07-20 - 4.01

| HWY    | BASIS OF EXISTING R/W        | YEAR | WIDTH  |
|--------|------------------------------|------|--------|
| USH 45 | PROJECT T0806(1)             | 1951 | VARIES |
| USH 45 | CSM 2440                     | 2002 | 40'    |
| USH 45 | PLAT OF SURVEY - PETE BAILEY | 2022 | 40'    |

| UTILITY INTERESTS REQUIRED |                       |                    |
|----------------------------|-----------------------|--------------------|
| UTILITY NUMBER             | UTILITY OWNER(S)      | INTERESTS REQUIRED |
| 501                        | WE ENERGIES- ELECTRIC | RELEASE OF RIGHTS  |
| 502                        | WE ENERGIES- GAS      | RELEASE OF RIGHTS  |



| PARCEL NUMBER    |  | OWNERS                  | INTERESTS REQUIRED | S.F. REQUIRED |          |       |      | PLE S.F. | TLE S.F. |
|------------------|--|-------------------------|--------------------|---------------|----------|-------|------|----------|----------|
|                  |  |                         |                    | NEW           | EXISTING | TOTAL | HE   |          |          |
| 1                |  | BEITZEL FAMILY TRUST    | HE                 | ---           | ---      | ---   | 7916 | ---      | ---      |
| 2 <sup>(2)</sup> |  | BRIAN A. GUNDERSON      | HE                 | ---           | ---      | ---   | 5952 | ---      | ---      |
| 3                |  | MJ DAVIS PROPERTIES LLC | HE                 | ---           | ---      | ---   | 2254 | ---      | ---      |
| 4 <sup>(2)</sup> |  | BRIAN A. GUNDERSON      | HE                 | ---           | ---      | ---   | 3795 | ---      | ---      |

NOTES

COORDINATES AND BEARINGS ON THIS PLAT ARE ORIENTED TO WISCONSIN COUNTY COORDINATE SYSTEM, RACINE COUNTY ZONE, NAD 83 (2011) ADJUSTMENT. THE COORDINATES SHOWN ARE GRID COORDINATES AND ARE TO BE USED AS GRID OR GROUND VALUES ON THIS PLAT.

RIGHT-OF-WAY MONUMENTS (TYPE 2) WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT BY THE SE REGION.

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

FOUND IRON PINS ARE 3/4" IRON RODS WITH CAP UNLESS OTHERWISE NOTED.

| COURSE TABLE |               |          | STATION & OFFSET TABLE |           |        |            |            |
|--------------|---------------|----------|------------------------|-----------|--------|------------|------------|
| COURSE       | BEARING       | DISTANCE | POINT                  | STATION   | OFFSET | Y COORDS   | X COORDS   |
| 100-101      | N89° 05' 49"W | 40.00'   | 100                    | 433+28.00 | 0.00   | 202120.568 | 562457.950 |
| 101-102      | N89° 05' 49"W | 15.00'   | 101                    | 433+28.00 | -40.00 | 202121.198 | 562417.955 |
| 102-103      | N00° 54' 11"E | 150.24'  | 102                    | 433+28.00 | -55.00 | 202121.485 | 562402.958 |
| 103-117      | S89° 11' 03"E | 15.00'   | 103                    | 434+78.25 | -55.00 | 202271.657 | 562405.325 |
| 117-101      | S00° 54' 11"W | 150.26'  | 104                    | 438+75.00 | -55.00 | 202668.459 | 562412.349 |
| 103-104      | N01° 00' 51"E | 396.86'  | 105                    | 438+75.00 | -40.00 | 202668.193 | 562427.347 |
| 104-105      | S88° 59' 09"E | 15.00'   | 106                    | 438+75.00 | 0.00   | 202667.485 | 562467.340 |
| 105-117      | S01° 00' 51"W | 396.81'  | 107                    | 439+25.00 | 0.00   | 202717.475 | 562468.225 |
| 105-106      | S88° 59' 09"E | 40.00'   | 108                    | 439+25.00 | 40.00  | 202716.767 | 562508.217 |
| 106-107      | N01° 00' 51"E | 50.00'   | 109                    | 439+25.00 | 50.00  | 202716.590 | 562518.218 |
| 107-108      | S88° 59' 09"E | 40.00'   | 110                    | 434+79.69 | 50.00  | 202271.348 | 562510.335 |
| 108-109      | S88° 59' 09"E | 10.00'   | 111                    | 427+54.00 | 50.00  | 201545.854 | 562498.898 |
| 109-114      | S01° 00' 51"W | 379.29'  | 112                    | 427+53.99 | 40.00  | 201545.992 | 562488.899 |
| 114-115      | S89° 27' 39"W | 10.01'   | 113                    | 427+53.99 | 0.00   | 201546.623 | 562448.904 |
| 115-108      | N01° 00' 51"E | 379.56'  | 114                    | 435+45.71 | 50.00  | 202337.363 | 562511.504 |
| 114-110      | S01° 00' 51"W | 66.02'   | 115                    | 435+45.44 | 40.00  | 202337.269 | 562501.499 |
| 110-111      | S00° 54' 11"W | 725.58'  | 116                    | 434+79.41 | 40.00  | 202271.253 | 562500.330 |
| 111-112      | N89° 12' 29"W | 10.00'   | 117                    | 434+78.27 | -40.00 | 202271.444 | 562420.323 |
| 112-116      | N00° 54' 11"E | 725.35'  |                        |           |        |            |            |
| 116-115      | N01° 00' 51"E | 66.03'   |                        |           |        |            |            |
| 112-113      | N89° 05' 49"W | 40.00'   |                        |           |        |            |            |
| 113-100      | N00° 54' 11"E | 589.02'  |                        |           |        |            |            |

|                                  |                         |  |                                   |                  |                                                  |                   |  |
|----------------------------------|-------------------------|--|-----------------------------------|------------------|--------------------------------------------------|-------------------|--|
| REVISION DATE<br>R.O.2: 06/07/24 | DATE   October 31, 2023 |  | SCALE, FEET<br><div>0100200</div> | HWY:   USH 45    | STATE R/W PROJECT NUMBER           2430-07-20    | PLAT SHEET   4.02 |  |
|                                  | GRID FACTOR             |  |                                   | COUNTY:   RACINE | CONSTRUCTION PROJECT NUMBER           2430-07-70 |                   |  |

| COURSE TABLE PARCEL 5-6 |               |          |
|-------------------------|---------------|----------|
| COURSE                  | BEARING       | DISTANCE |
| SEC COR.-200            | S01° 00' 51"W | 321.13'  |
| 200-201                 | S88° 59' 09"E | 33.00'   |
| 201-202                 | S88° 59' 09"E | 19.00'   |
| 202-203                 | N01° 00' 51"E | 17.48'   |
| 203-215                 | S88° 58' 35"W | 19.01'   |
| 215-201                 | S01° 00' 51"W | 16.81'   |
| 203-204                 | N01° 00' 51"E | 12.52'   |
| 204-205                 | N88° 59' 09"W | 19.00'   |
| 205-215                 | S01° 00' 51"W | 13.19'   |

| COURSE TABLE PARCEL 7 & 9 |               |          |
|---------------------------|---------------|----------|
| COURSE                    | BEARING       | DISTANCE |
| SEC COR.-209              | N00° 52' 54"E | 58.30'   |
| SEC COR.-210              | N00° 52' 54"E | 530.28'  |
| 209-206                   | S62° 38' 20"E | 36.87'   |
| 206-324                   | S83° 07' 43"E | 12.88'   |
| 324-207                   | S00° 19' 06"E | 5.97'    |
| 207-208                   | S88° 58' 55"W | 12.95'   |
| 208-206                   | N00° 52' 54"E | 7.75'    |
| 206-302                   | N00° 52' 54"E | 21.44'   |
| 302-301                   | S89° 07' 06"E | 5.00'    |
| 301-326                   | S18° 02' 55"E | 24.09'   |
| 210-211                   | N89° 07' 06"W | 33.00'   |
| 211-212                   | N89° 07' 06"W | 40.00'   |
| 212-213                   | S00° 52' 54"W | 25.00'   |
| 213-214                   | S89° 07' 06"E | 40.00'   |
| 214-211                   | N00° 52' 54"E | 25.00'   |

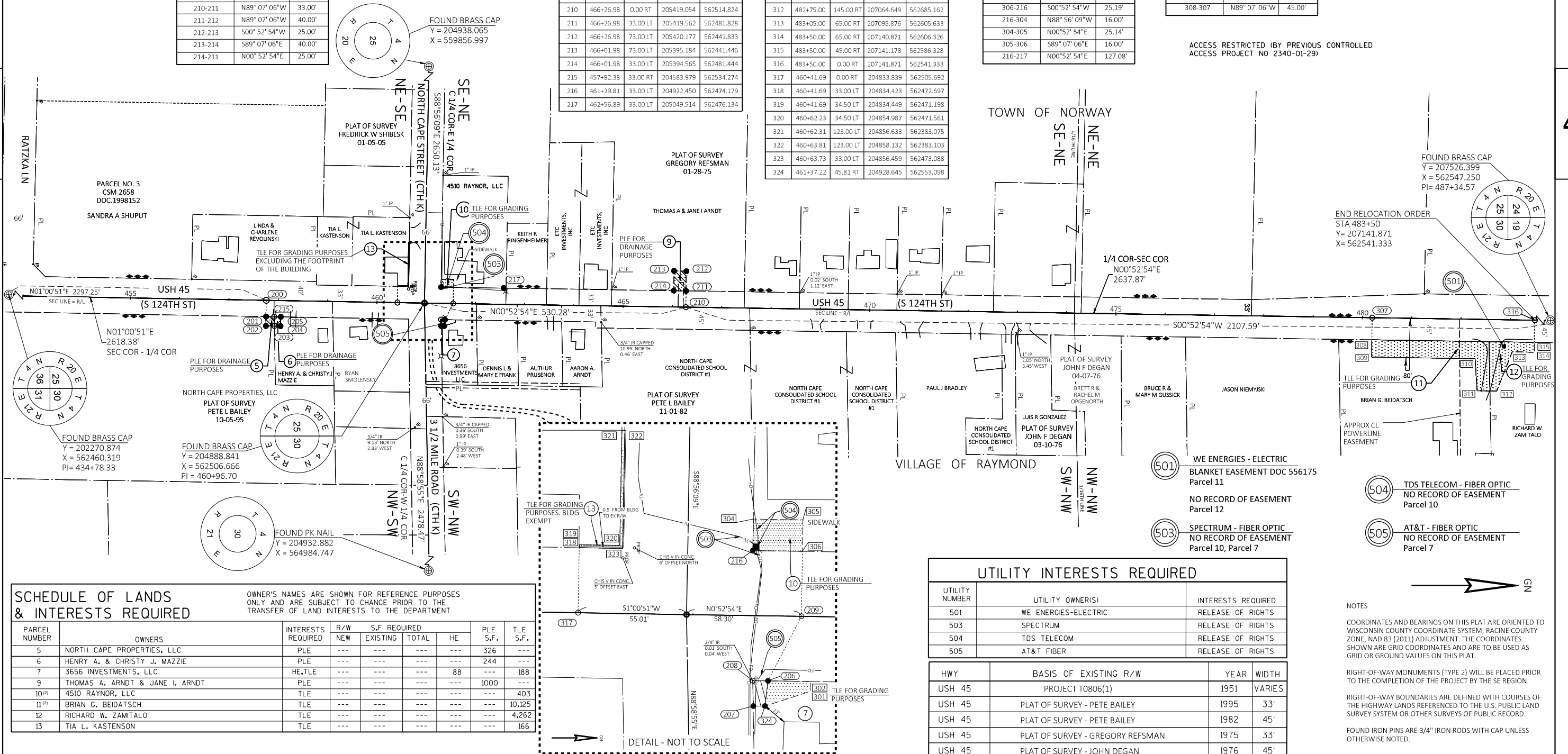
| STATION & OFFSET TABLE |           |          |            |            |
|------------------------|-----------|----------|------------|------------|
| POINT                  | STATION   | OFFSET   | Y COORDS   | X COORDS   |
| 200                    | 457+75.57 | 0.00 RT  | 204567.760 | 562500.982 |
| 201                    | 457+75.57 | 33.00 RT | 204567.176 | 562533.977 |
| 202                    | 457+75.57 | 52.00 RT | 204566.839 | 562552.974 |
| 203                    | 457+93.05 | 52.00 RT | 204584.318 | 562553.283 |
| 204                    | 458+05.57 | 52.00 RT | 204596.835 | 562553.505 |
| 205                    | 458+05.57 | 33.00 RT | 204597.171 | 562534.508 |
| 206                    | 461+38.66 | 33.00 RT | 204930.186 | 562540.306 |
| 207                    | 461+31.25 | 45.94 RT | 204922.672 | 562553.131 |
| 208                    | 461+30.82 | 33.00 RT | 204922.442 | 562540.187 |
| 209                    | 461+55.00 | 0.00 RT  | 204947.131 | 562507.563 |
| 210                    | 466+26.98 | 0.00 RT  | 205419.054 | 562514.824 |
| 211                    | 466+26.98 | 33.00 LT | 205419.562 | 562481.828 |
| 212                    | 466+26.98 | 73.00 LT | 205420.177 | 562441.833 |
| 213                    | 466+01.98 | 73.00 LT | 205395.184 | 562441.446 |
| 214                    | 466+01.98 | 33.00 LT | 205394.565 | 562481.444 |
| 215                    | 457+92.38 | 33.00 RT | 204583.979 | 562534.274 |
| 216                    | 461+29.81 | 33.00 LT | 204922.450 | 562474.179 |
| 217                    | 462+56.89 | 33.00 LT | 205049.514 | 562476.134 |

| STATION & OFFSET TABLE |           |           |            |            |
|------------------------|-----------|-----------|------------|------------|
| POINT                  | STATION   | OFFSET    | Y COORDS   | X COORDS   |
| 301                    | 461+60.00 | 38.00 RT  | 204951.545 | 562545.635 |
| 302                    | 461+60.00 | 33.00 RT  | 204951.622 | 562540.636 |
| 304                    | 461+29.85 | 49.00 LT  | 204922.747 | 562458.182 |
| 305                    | 461+55.00 | 49.00 LT  | 204947.884 | 562458.569 |
| 306                    | 461+55.00 | 33.00 LT  | 204947.638 | 562474.567 |
| 307                    | 480+20.00 | 0.00 RT   | 206811.910 | 562536.256 |
| 308                    | 480+20.00 | 45.00 RT  | 206811.217 | 562581.251 |
| 309                    | 480+20.00 | 80.00 RT  | 206810.679 | 562616.247 |
| 310                    | 482+30.00 | 80.00 RT  | 207020.654 | 562619.478 |
| 311                    | 482+35.00 | 145.00 RT | 207024.654 | 562684.547 |
| 312                    | 482+75.00 | 145.00 RT | 207064.649 | 562685.162 |
| 313                    | 483+05.00 | 65.00 RT  | 207095.876 | 562605.633 |
| 314                    | 483+50.00 | 65.00 RT  | 207140.871 | 562606.326 |
| 315                    | 483+50.00 | 45.00 RT  | 207141.178 | 562586.328 |
| 316                    | 483+50.00 | 0.00 RT   | 207141.871 | 562541.333 |
| 317                    | 460+41.69 | 0.00 RT   | 204833.839 | 562505.692 |
| 318                    | 460+41.69 | 33.00 LT  | 204834.423 | 562472.697 |
| 319                    | 460+41.69 | 34.50 LT  | 204834.449 | 562471.198 |
| 320                    | 460+62.23 | 34.50 LT  | 204854.987 | 562471.561 |
| 321                    | 460+62.31 | 123.00 LT | 204856.633 | 562383.075 |
| 322                    | 460+63.81 | 123.00 LT | 204858.132 | 562383.103 |
| 323                    | 460+63.73 | 33.00 LT  | 204856.459 | 562473.088 |
| 324                    | 461+37.22 | 45.81 RT  | 204928.645 | 562553.098 |

| COURSE TABLE PARCEL 10 & 13 |               |          |
|-----------------------------|---------------|----------|
| COURSE                      | BEARING       | DISTANCE |
| SEC COR.-317                | S01° 00' 51"W | 55.01'   |
| 317-318                     | N88° 59' 09"W | 33.00'   |
| 318-319                     | N88° 59' 09"W | 1.50'    |
| 319-320                     | N01° 00' 51"E | 20.54'   |
| 320-321                     | N88° 56' 09"W | 88.50'   |
| 321-322                     | N01° 03' 55"E | 1.50'    |
| 322-323                     | S88° 56' 09"E | 90.00'   |
| 323-318                     | S01° 00' 51"W | 22.04'   |
| SEC COR.-209                | N00° 52' 54"E | 58.30'   |
| 209-306                     | N89° 07' 06"W | 33.00'   |
| 306-216                     | S00° 52' 54"W | 25.19'   |
| 216-304                     | N88° 56' 09"W | 16.00'   |
| 304-305                     | N00° 52' 54"E | 25.14'   |
| 305-306                     | S89° 07' 06"E | 16.00'   |
| 216-217                     | N00° 52' 54"E | 127.08'  |

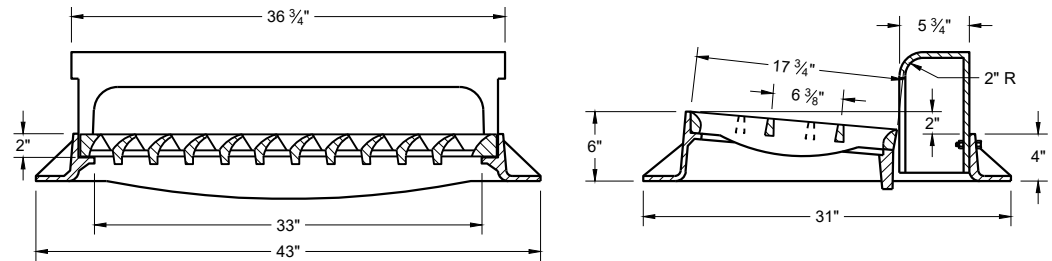
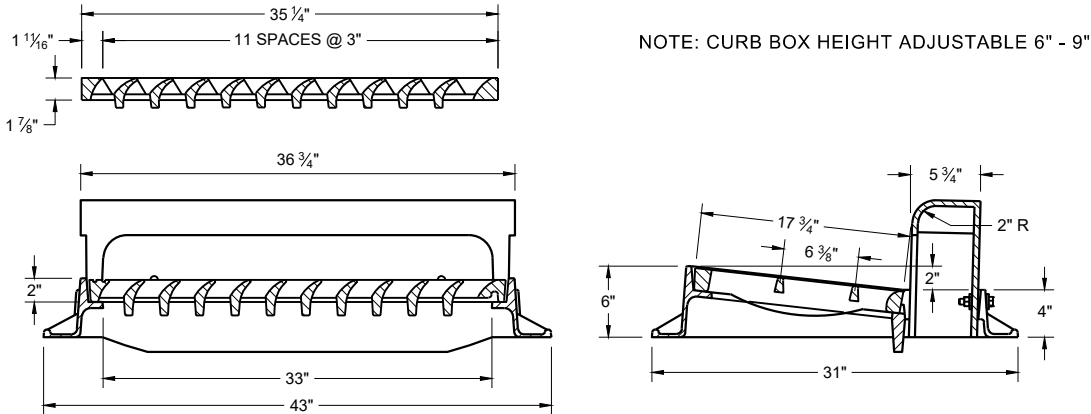
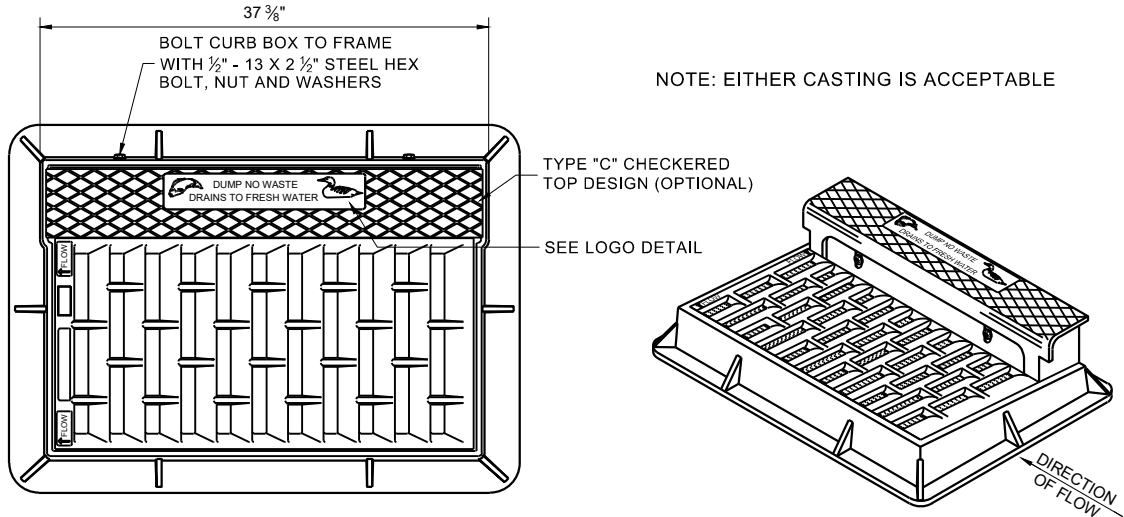
| COURSE TABLE PARCEL 11 & 12 |               |          |
|-----------------------------|---------------|----------|
| COURSE                      | BEARING       | DISTANCE |
| SEC COR.-316                | S00° 52' 54"W | 384.57'  |
| 316-315                     | S89° 07' 06"E | 45.00'   |
| 315-314                     | S89° 07' 06"E | 20.00'   |
| 314-313                     | S00° 52' 54"W | 45.00'   |
| 313-312                     | S68° 33' 45"E | 85.44'   |
| 312-311                     | S00° 52' 54"W | 40.00'   |
| 311-310                     | S86° 28' 58"W | 65.19'   |
| 310-309                     | S00° 52' 54"W | 210.00'  |
| 309-308                     | N89° 07' 06"W | 35.00'   |
| 308-315                     | N00° 52' 54"E | 330.00'  |
| 308-307                     | N89° 07' 06"W | 45.00'   |

ACCESS RESTRICTED (BY PREVIOUS CONTROLLED  
ACCESS PROJECT NO 2340-01-29)



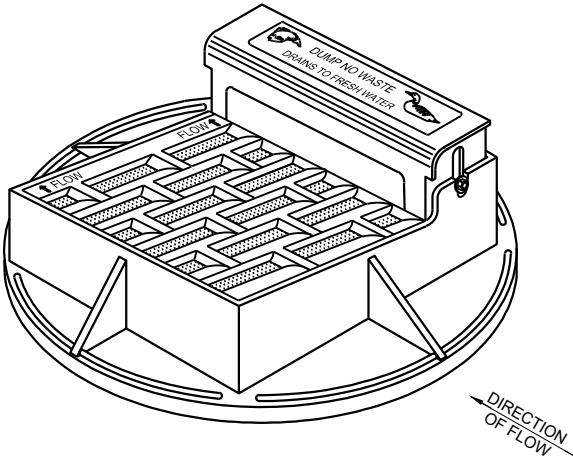
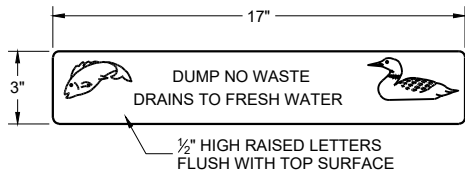
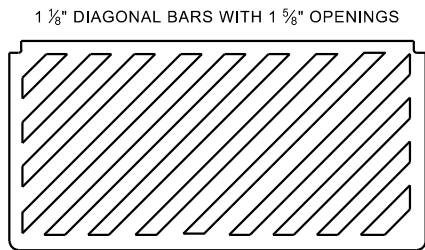
Standard Detail Drawing List

|           |                                                                      |
|-----------|----------------------------------------------------------------------|
| 08A05-21A | INLET COVERS TYPE A, H, A-S, H-S & Z                                 |
| 08A05-21B | INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM                          |
| 08A08-03  | CATCH BASINS 3-FT, 4-FT, 5-FT AND 6-FT DIAMETER                      |
| 08B09-04  | MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT, 8-FT, 9-FT, 10-FT DIAMETER    |
| 08C07-03  | INLETS 2X2-FT, 2X2.5-FT, 2X3-FT, 2.5X3-FT & 2X3.5-FT                 |
| 08D01-23A | CONCRETE CURB & GUTTER                                               |
| 08D01-23B | CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS                 |
| 08D04-07  | CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES                           |
| 08D05-21A | CURB RAMPS TYPES 1 AND 1-A                                           |
| 08D05-21B | CURB RAMPS TYPES 2 AND 3                                             |
| 08D05-21C | CURB RAMPS TYPES 4A AND 4A1                                          |
| 08D05-21D | CURB RAMPS TYPE 4B AND 4B1                                           |
| 08D05-21E | CURB RAMPS TYPES 5, 6, 7A, 7B & 8                                    |
| 08D05-21F | CURB RAMPS RADIAL DETECTABLE WARNING FIELD APPLICATIONS              |
| 08D05-21G | CURB RAMPS RECTANGULAR AND RADIAL DETECTABLE WARNING PLATES          |
| 08D20-01  | DRIVEWAYS WITH CURB & GUTTER RETURNS                                 |
| 08D21-01  | DRIVEWAYS WITHOUT CURB & GUTTER                                      |
| 08D22-01  | DRIVEWAYS WITHOUT CURB & GUTTER RESURFACING PROJECTS RURAL           |
| 08E08-03  | TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS      |
| 08E09-06  | SILT FENCE                                                           |
| 08E10-02  | INLET PROTECTION TYPE A, B, C AND D                                  |
| 08E14-01  | TRACKING PAD                                                         |
| 08E15-01  | CULVERT PIPE CHECK                                                   |
| 08F01-11  | APRON ENDWALLS FOR CULVERT PIPE                                      |
| 08F02-01  | APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE                     |
| 08F04-08  | JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL              |
| 13A10-03A | SHOULDER RUMBLE STRIPS - ASPHALT                                     |
| 13A11-04A | CENTERLINE RUMBLE STRIPS - ASPHALT                                   |
| 13C19-03  | HMA LONGITUDINAL JOINTS                                              |
| 15A03-02A | FLEXIBLE MARKER POST FOR CULVERT END                                 |
| 15A03-02B | FLEXIBLE MARKER POST FOR CULVERT END                                 |
| 15C02-09A | BARRICADES AND SIGNS FOR MAINLINE CLOSURES                           |
| 15C02-09B | BARRICADES AND SIGNS FOR VARIOUS CLOSURES                            |
| 15C02-09C | DETOUR SIGNING FOR MAINLINE CLOSURES                                 |
| 15C03-05  | BARRICADES AND SIGNS FOR SIDEROAD CLOSURES                           |
| 15C07-16C | PAVEMENT MARKING ARROWS                                              |
| 15C08-23A | PERMANENT LONGITUDINAL PAVEMENT MARKINGS                             |
| 15C11-10B | CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS    |
| 15C12-09A | TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION             |
| 15C19-09A | MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY           |
| 15C33-05  | STOP LINE AND CROSSWALK PAVEMENT MARKING                             |
| 15C34-04  | STANDARD APPLICATION FOR TEMPORARY RAISED PAVEMENT MARKER, TYPE 2    |
| 15C35-06A | PAVEMENT MARKING (INTERSECTIONS)                                     |
| 15D28-04  | TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY |



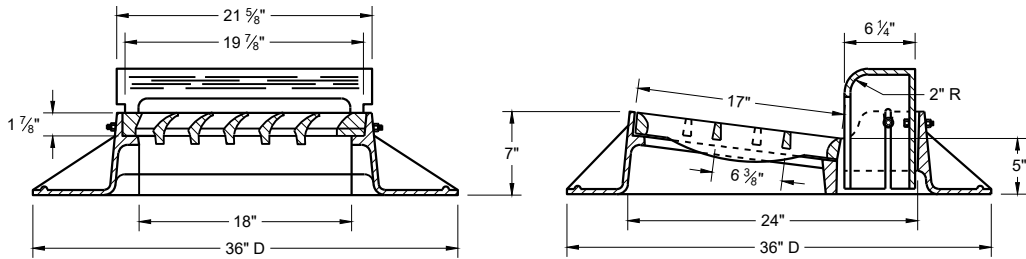
**TYPE "H"**

NOTE: EITHER CASTING IS ACCEPTABLE

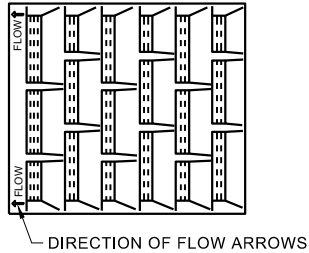


NOTE: CURB BOX HEIGHT ADJUSTABLE 6" - 9"

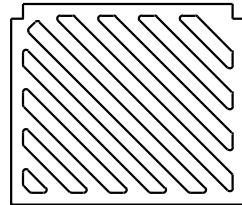
NOTE: EITHER CASTING IS ACCEPTABLE



**TYPE "A"**

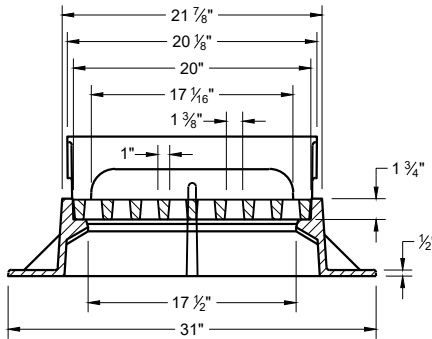
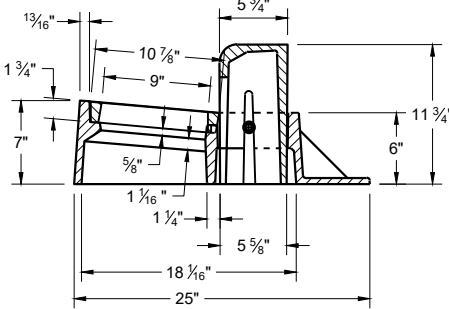


1" DIAGONAL BARS WITH 1 1/2" OPENINGS

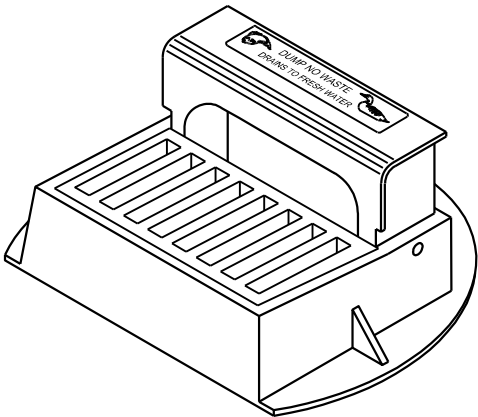


**SPECIAL GRATE FOR TYPE "A" COVER**

(MEASURES 19 3/4" X 17" X 1 7/8")  
(NOTED AS TYPE A-S ON DRAINAGE TABLE)



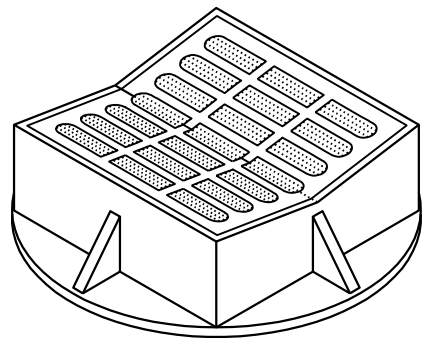
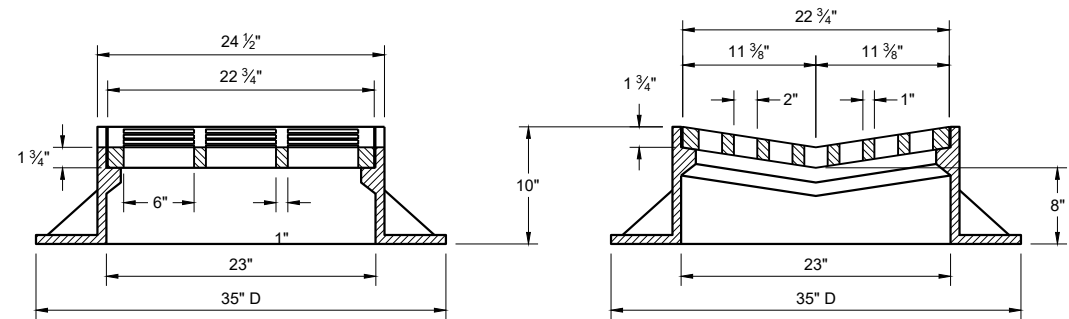
**TYPE "Z"**



**INLET COVERS  
TYPES A, H, A-S, H-S AND Z**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

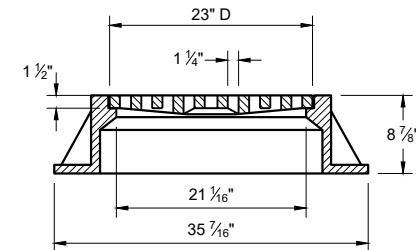
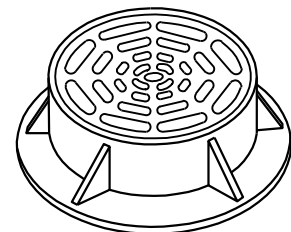
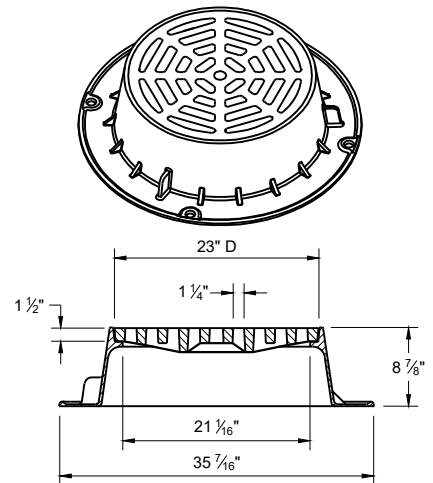
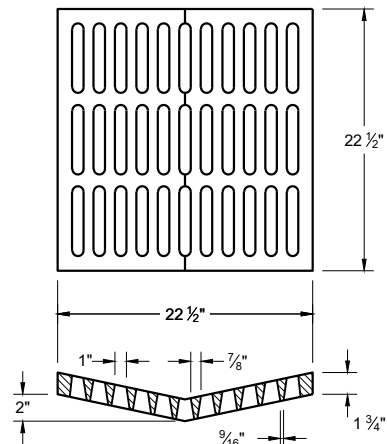
APPROVED  
December 2023 /S/ Rodney Taylor  
DATE ROADWAY STANDARDS DEVELOPMENT  
FHWA UNIT SUPERVISOR



**TYPE "B"**

**ALTERNATIVE GRATE FOR  
TYPE "B" COVER**

USE WHERE PEDESTRIAN OF BICYCLE TRAFFIC IS POSSIBLE  
**NOTED AS TYPE B - A ON THE DRAINAGE TABLE**



**TYPE "C"**

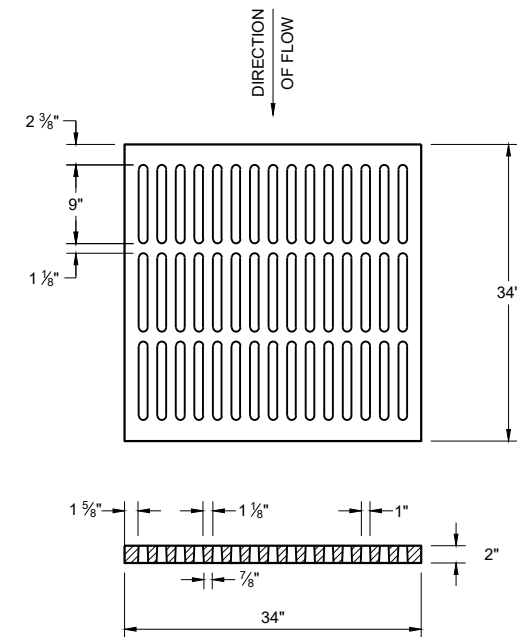
NOTE: EITHER CASTING IS ACCEPTABLE

**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.

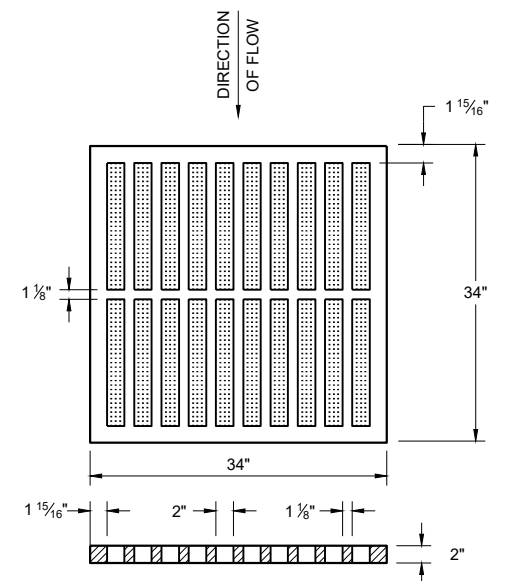
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.



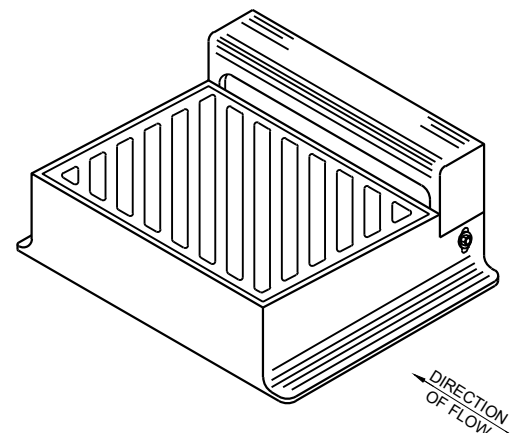
**ALTERNATIVE TYPE "MS"**

USE WHERE PEDESTRIAN OF BICYCLE TRAFFIC IS PERMITTED  
**NOTED AS TYPE MS-A ON THE DRAINAGE TABLE**

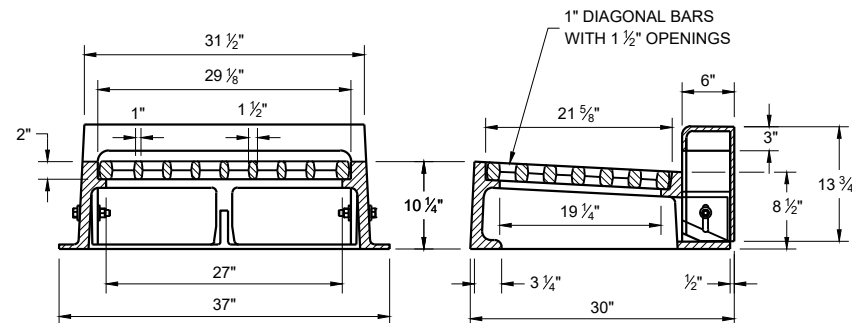


**TYPE "MS"**

USE ON FREEWAYS AND EXPRESSWAYS  
**NOTED AS TYPE MS ON THE DRAINAGE TABLE**



DIAGONAL SLOTS SHALL BE ORIENTED TO THE DIRECTION OF FLOW AS ILLUSTRATED.  
GRATES ARE MANUFACTURED TO BE REVERSIBLE.



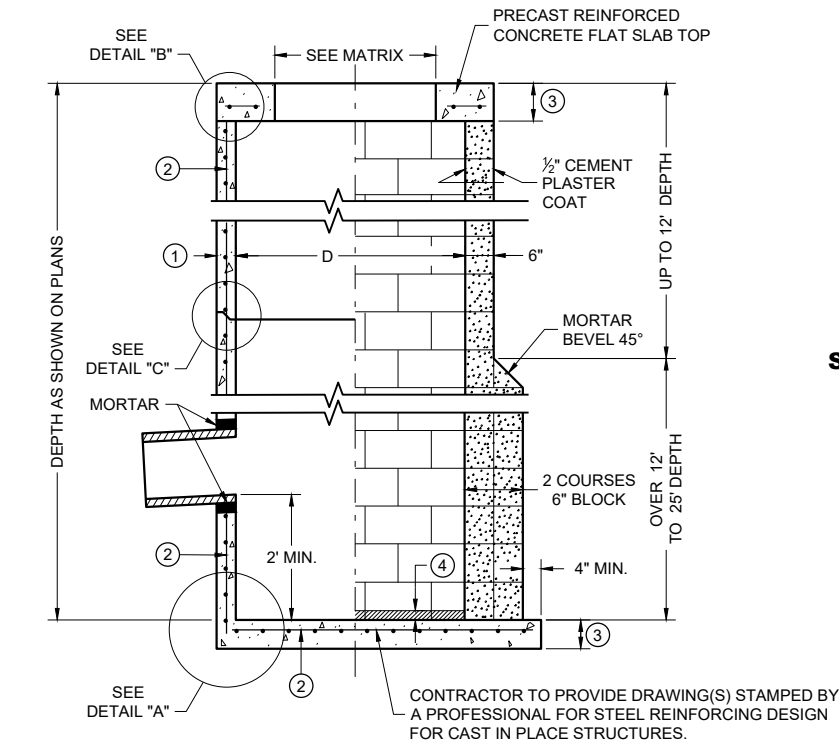
**TYPE "WM"**

NOTE: CURB BOX HEIGHT ADJUSTABLE 6" - 9"

**INLET COVERS  
TYPES B, B-A, C,  
MS, MS-A AND WM**

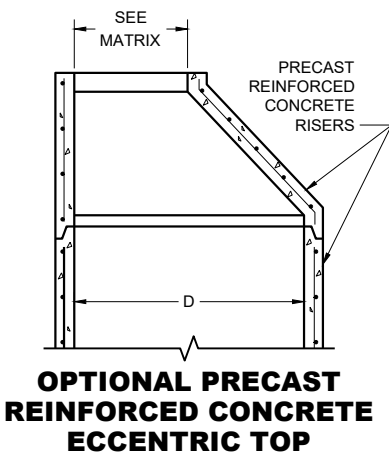
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
December 2023 /S/ Rodney Taylor  
DATE ROADWAY STANDARDS DEVELOPMENT  
FHWA UNIT SUPERVISOR

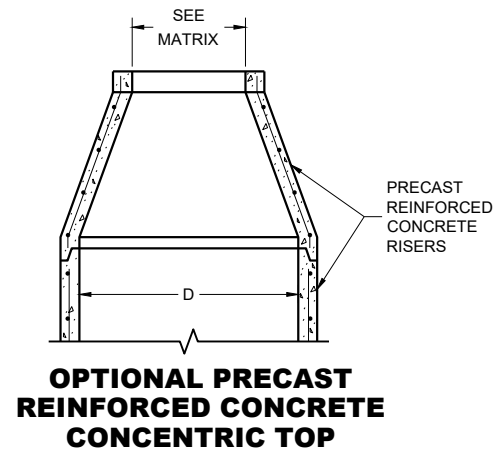


**PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE**

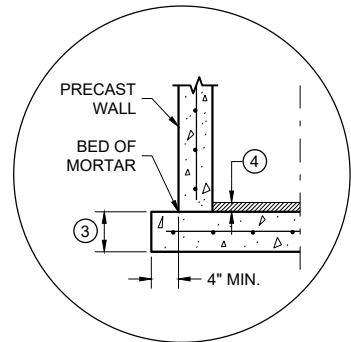
**CONCRETE BLOCK WITH CAST IN PLACE OR PRECAST REINFORCED CONCRETE BASE ②**



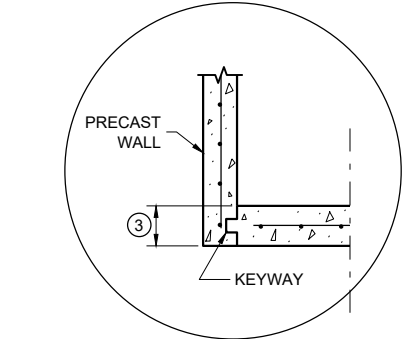
**PLAN VIEW CIRCULAR OPENING**



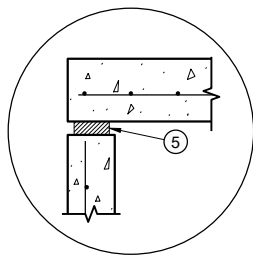
**PLAN VIEW RECTANGULAR OPENING**



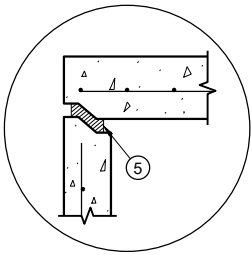
**SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION**



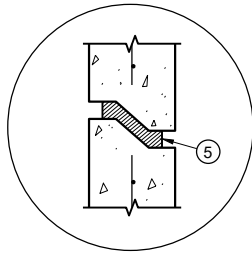
**PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION**



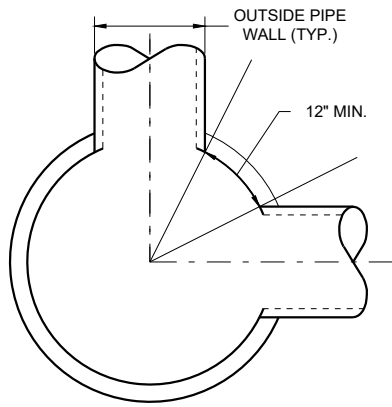
**TOP WITH PLAIN END JOINT**



**TOP WITH TONGUE AND GROOVE JOINT**



**RISER WITH TONGUE AND GROOVE JOINT**



**MINIMUM HORIZONTAL PIPE SEPARATION**

**COVER MATRIX**

| CATCH BASIN SIZE | INLET COVER TYPE   | ALL A'S | ALL B'S | BW | C | F | ALL H'S | S | T | V V-B | VV-B | WM | Z |
|------------------|--------------------|---------|---------|----|---|---|---------|---|---|-------|------|----|---|
|                  | OPENING SIZE (FT.) |         |         |    |   |   |         |   |   |       |      |    |   |
| 3-FT             | 2 X 2              | X       | X       |    |   |   |         | X |   | X     |      |    |   |
|                  | 2 DIA.             |         |         |    | X |   |         |   |   |       |      |    | X |
| 4-FT TO 6-FT     | 2 X 2              | X       | X       |    |   |   |         | X |   | X     |      |    |   |
|                  | 2 X 2.5            |         |         | X  |   |   |         | X | X | X     |      | X  |   |
|                  | 2 DIA.             |         |         |    | X |   |         |   |   |       |      |    | X |
|                  | 2 X 3              |         |         |    |   | X |         |   |   |       |      |    |   |
|                  | 2.5 X 3            |         |         |    |   | X |         |   |   |       |      |    |   |
|                  | 2 X 3.5*           |         |         |    |   |   |         |   |   |       | X*   |    |   |

\* REQUIRES 5-FT DIAMETER OR LARGER STRUCTURE

**PIPE MATRIX**

| CATCH BASIN SIZE | MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES |                     |
|------------------|--------------------------------------------|---------------------|
|                  | 180° SEPARATION (IN)                       | 90° SEPARATION (IN) |
| 3-FT             | 15                                         | 12                  |
| 4-FT             | 24                                         | 18                  |
| 5-FT             | 36                                         | 24                  |
| 6-FT             | 42                                         | 30                  |

**CATCH BASINS  
3-FT, 4-FT, 5-FT AND 6-FT DIAMETER**

**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 CATCH BASIN 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 DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATE 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.

PRECAST REINFORCED CONCRETE CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED CONCRETE FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES. CONCENTRIC CONE TOPS SHALL BE USE ONLY ON STRUCTURES 5 FEET OR LESS IN DEPTH UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

STEPS MEETING AASHTO M199 AND THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH: 16 INCH C-C MAXIMUM SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM LENGTH OF 10 INCHES; MINIMUM WALL EMBEDMENT OF 3 INCHES. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 1 INCH.

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF 1/2 INCH AND MEET THE REQUIREMENTS OF ASTM A615.

CERTIFICATION SHALL BE PROVIDED THAT INSTALLED STEPS WHEN TESTED IN ACCORDANCE WITH SECTION 10 OF AASHTO T280 CAN WITHSTAND A VERTICAL LOAD OF 800 LBS. AND A HORIZONTAL LOAD OF 400 LBS.

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

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M199.

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

CONCRETE BLOCK WILL NOT BE PERMITTED FOR STRUCTURES GREATER THAN 4 FEET IN DIAMETER.

4" OVERHANGING BASES ARE REQUIRED FOR ALL 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.

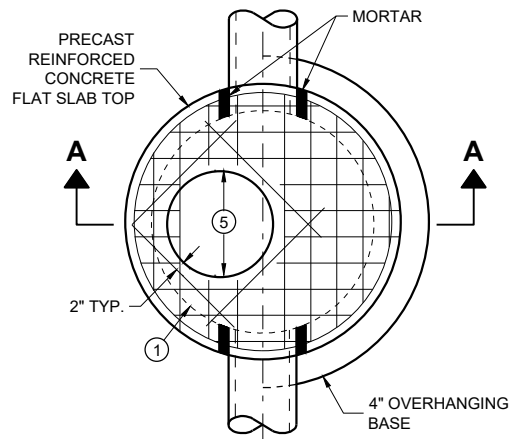
FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "D".

- ① MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT, 5 INCHES FOR 4-FT, 6 INCHES FOR 5-FT AND 7 INCHES FOR 6-FT DIAMETER PRECAST CATCH BASINS.
- ② FOR PRECAST CATCH BASINS AND REINFORCED CONCRETE BASES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.
- ③ PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER OF 48" AND LESS SHALL HAVE A MINIMUM THICKNESS OF 6". PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER LARGER THAN 48" SHALL HAVE A MINIMUM THICKNESS OF 8".
- ④ 1" CONCRETE KEY POURED AFTER INSTALLATION. 2' SUMP MEASURED FROM TOP OF KEY.
- ⑤ JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 OR RUBBER GASKETS CONFROMING TO ASTM C443.

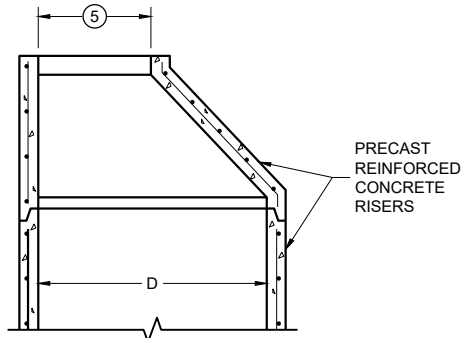
**CATCH BASINS, 3-FT.  
4-FT., 5 FT., AND  
6-FT. DIAMETER**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

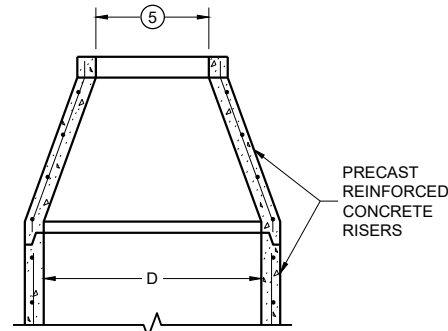
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December 2023 /S/ Rodney Taylor  
DATE ROADWAY STANDARDS DEVELOPMENT  
FHWA UNIT SUPERVISOR



PLAN VIEW  
CIRCULAR OPENING



OPTIONAL PRECAST  
REINFORCED CONCRETE  
ECCENTRIC TOP



OPTIONAL PRECAST  
REINFORCED CONCRETE  
CONCENTRIC TOP

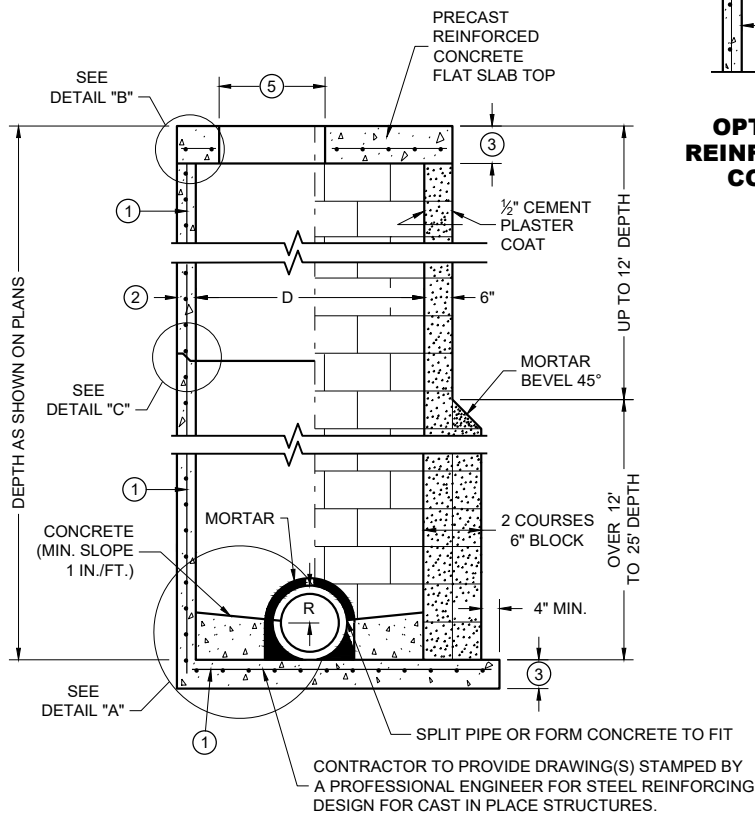
MANHOLE COVER OPENING MATRIX

| MANHOLE COVER<br>OPENING<br>SIZE (FT.) | MANHOLE COVER<br>TYPE | C | ALL JS | K | L | M |
|----------------------------------------|-----------------------|---|--------|---|---|---|
| 2 DIA.                                 | 5                     | X | X      |   | X |   |
| 3 DIA.                                 |                       |   |        | X |   | X |

PIPE MATRIX

| MANHOLE<br>SIZE<br>(DIA.) | MAXIMUM INSIDE PIPE DIAMETER<br>FOR TWO PIPES |                        | MINIMUM<br>WALL<br>THICKNESS<br>(IN) | MINIMUM<br>PRECAST<br>FLAT SLAB TOP<br>AND BASE<br>THICKNESS |
|---------------------------|-----------------------------------------------|------------------------|--------------------------------------|--------------------------------------------------------------|
|                           | 180°<br>SEPARATION (IN)                       | 90°<br>SEPARATION (IN) |                                      |                                                              |
| 3-FT                      | 15                                            | 12                     | 4                                    | 6                                                            |
| 4-FT                      | 24                                            | 18                     | 4                                    | 6                                                            |
| 5-FT                      | 36                                            | 24                     | 5                                    | 8                                                            |
| 6-FT                      | 42                                            | 36                     | 6                                    | 8                                                            |
| 7-FT                      | 48                                            | 36/42 *                | 7                                    | 8                                                            |
| 8-FT                      | 60                                            | 42                     | 8                                    | 8                                                            |
| 9-FT                      | 66                                            | 54                     | 9                                    | 10                                                           |
| 10-FT                     | 72                                            | 60                     | 10                                   | 10                                                           |

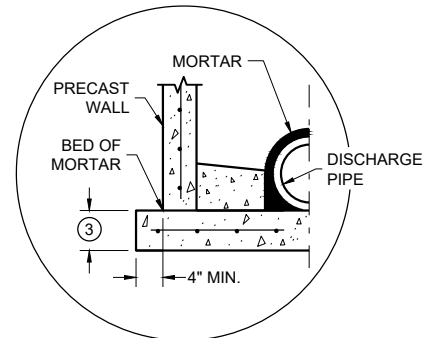
\*A 36" PIPE AND A 42" PIPE CAN BE PLACED WITHIN 90 DEGREES.  
SEE MINIMUM HORIZONTAL PIPE SEPARATION DETAIL.



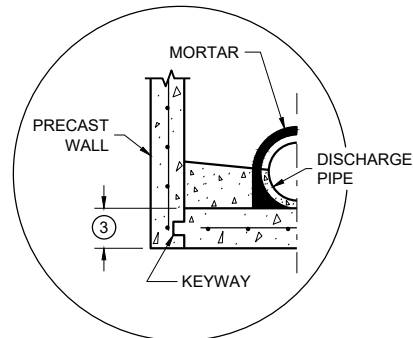
SECTION A - A

PRECAST REINFORCED  
CONCRETE WITH  
MONOLITHIC BASE

CONCRETE BLOCK WITH  
CAST IN PLACE OR  
PRECAST REINFORCED  
CONCRETE BASE

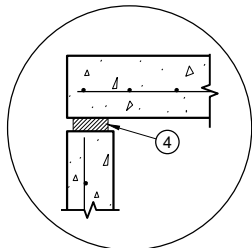


SEPARATE PRECAST REINFORCED  
CONCRETE BASE OPTION

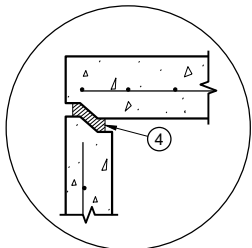


PRECAST REINFORCED CONCRETE  
WITH INTEGRAL BASE OPTION

DETAIL "A"

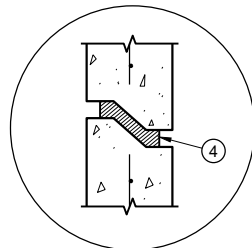


TOP WITH PLAIN  
END JOINT



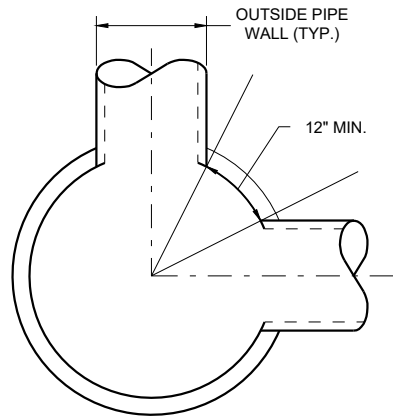
TOP WITH TONGUE  
AND GROOVE JOINT

DETAIL "B"



RISER WITH TONGUE  
AND GROOVE JOINT

DETAIL "C"



MINIMUM HORIZONTAL  
PIPE SEPARATION

DETAIL "D"

GENERAL NOTES

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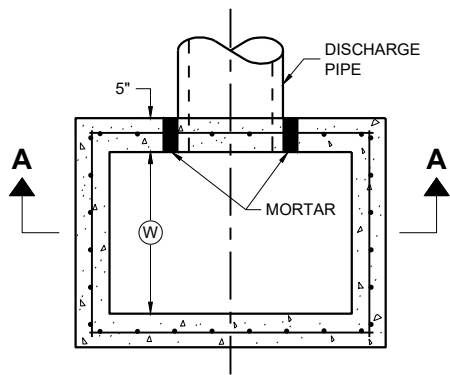
FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "D".

- 1 FOR PRECAST MANHOLES AND REINFORCED CONCRETE BASES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.
- 2 SEE PIPE MATRIX TABLE FOR MINIMUM WALL THICKNESS FOR PRECAST MANHOLES
- 3 SEE PIPE MATRIX TABLE FOR MINIMUM THICKNESS OF PRECAST FLAT SLAB TOPS AND BASES.
- 4 JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 OR RUBBER GASKETS CONFORMING TO ASTM C443.
- 5 SEE MANHOLE COVER OPENING MATRIX.

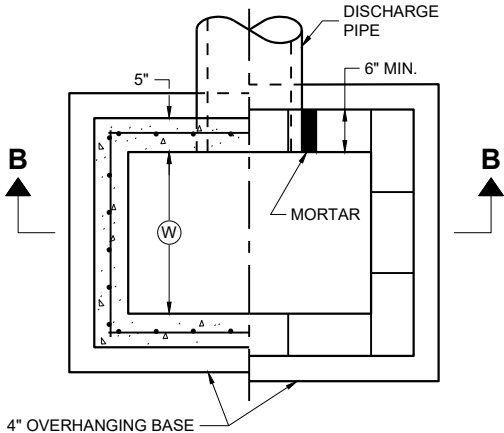
MANHOLES, 3-FT, 4-FT  
5-FT, 6-FT, 7-FT, 8-FT, 9-FT  
AND 10-FT DIAMETER

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

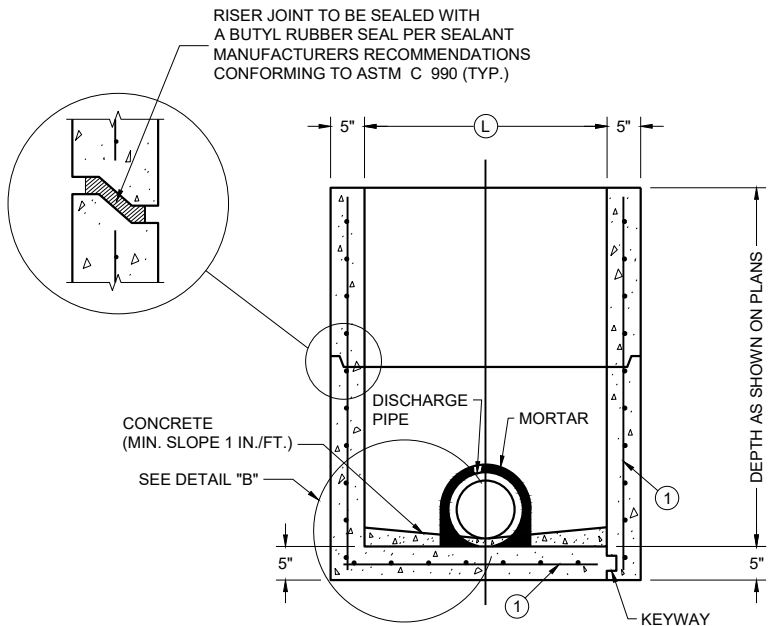
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December 2023 /S/ Rodney Taylor  
DATE ROADWAY STANDARDS DEVELOPMENT  
FHWA UNIT SUPERVISOR



PLAN VIEW



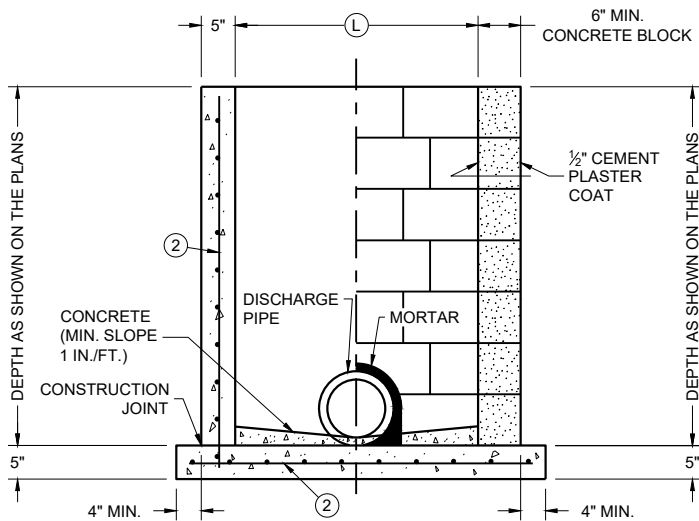
PLAN VIEW



PRECAST REINFORCED  
CONCRETE WITH  
MONOLITHIC BASE

PRECAST REINFORCED  
CONCRETE WITH  
INTEGRAL BASE

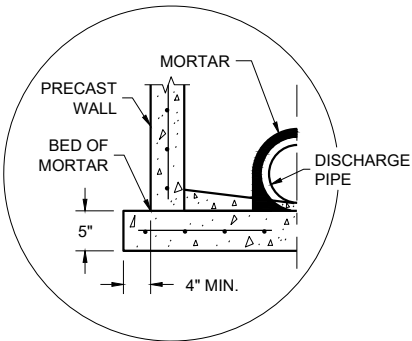
SECTION A - A



CAST IN PLACE  
REINFORCED  
CONCRETE

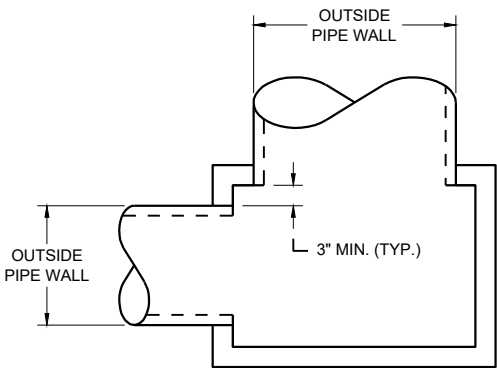
CONCRETE BLOCK WITH  
CAST IN PLACE OR  
PRECAST REINFORCED  
CONCRETE BASE ①

SECTION B - B



SEPARATE PRECAST REINFORCED  
CONCRETE BASE OPTION

DETAIL "B"



DETAIL "A"

INLETS 2 X 2-FT, 2 X 2.5-FT, 2 X 3-FT, 2.5 X 3-FT AND 2X3.5-FT

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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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" 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 AND REINFORCED CONCRETE BASES 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.

CATCH BASIN COVER MATRIX

| INLET<br>SIZE | WIDTH<br>(W) (FT.) | LENGTH<br>(L) (FT.) | INLET COVER TYPE |         |    |   |         |   |   |   |    |       |
|---------------|--------------------|---------------------|------------------|---------|----|---|---------|---|---|---|----|-------|
|               |                    |                     | ALL A'S          | ALL B'S | BW | F | ALL H'S | S | T | V | WM | V V-B |
| 2 X 2-FT      | 2                  | 2                   | X                | X       |    |   |         | X |   |   |    |       |
| 2 X 2.5-FT    | 2                  | 2.5                 |                  |         | X  |   |         | X | X | X | X  |       |
| 2 X 3-FT      | 2                  | 3                   |                  |         |    |   | X       |   |   |   |    |       |
| 2.5 X 3-FT    | 2.5                | 3                   |                  |         |    | X |         |   |   |   |    |       |
| 2 X 3.5-FT    | 2                  | 3.5                 |                  |         |    |   |         |   |   |   |    | X     |

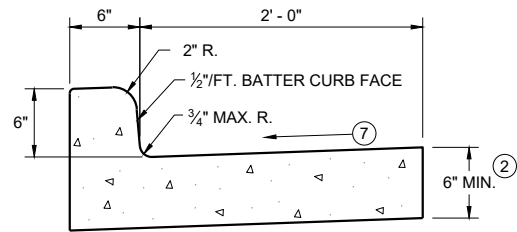
PIPE MATRIX

| CATCH<br>BASIN<br>SIZE | MAXIMUM INSIDE PIPE DIAMETER<br>FOR TWO PIPES |             |
|------------------------|-----------------------------------------------|-------------|
|                        | WIDTH (IN)                                    | LENGTH (IN) |
| 2 X 2-FT               | 12                                            | 12          |
| 2 X 2.5-FT             | 12                                            | 18          |
| 2 X 3-FT               | 12                                            | 24          |
| 2.5 X 3-FT             | 18                                            | 24          |
| 2 X 3.5-FT             | 12                                            | 30          |

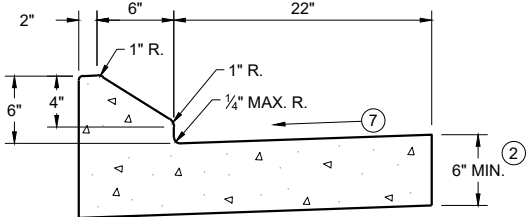
INLETS 2 X 2-FT, 2 X 2.5-FT,  
2 X 3-FT, 2.5 X 3-FT  
AND 2 X 3.5-FT

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

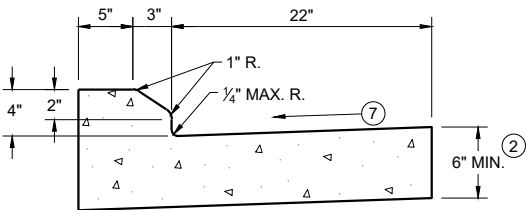
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DATE ROADWAY STANDARDS DEVELOPMENT  
FHWA UNIT SUPERVISOR



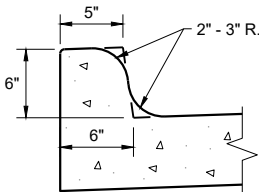
TYPES A<sup>①</sup> & D



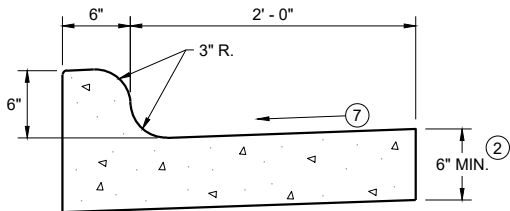
6" SLOPED CURB TYPES G<sup>①</sup> & J



4" SLOPED CURB TYPES G<sup>①</sup> & J

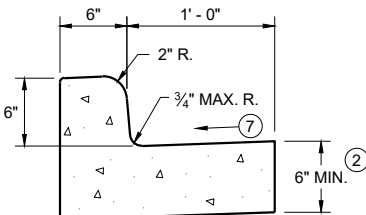


TYPES K<sup>①</sup> & L  
(OPTIONAL CURB SHAPE)



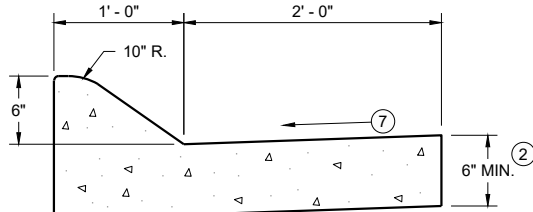
TYPES K<sup>①</sup> & L

CONCRETE CURB AND GUTTER 30"

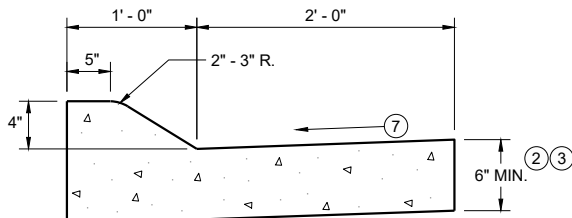


TYPES A<sup>①</sup> & D

CONCRETE CURB AND GUTTER 18"

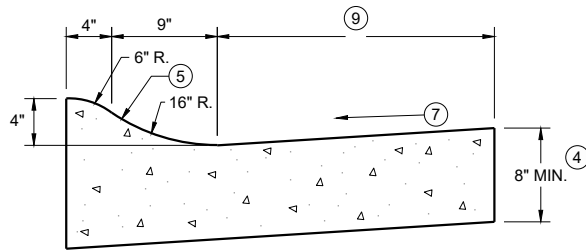


6" SLOPED CURB TYPES A<sup>①</sup> & D



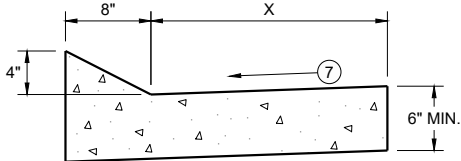
4" SLOPED CURB TYPES A<sup>①</sup> & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R<sup>①</sup> & T

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

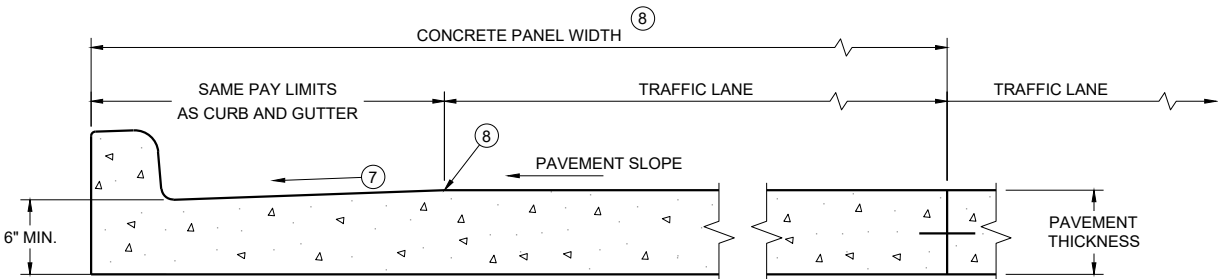


TYPES TBT & TBTT<sup>①</sup>

CONCRETE CURB AND GUTTER

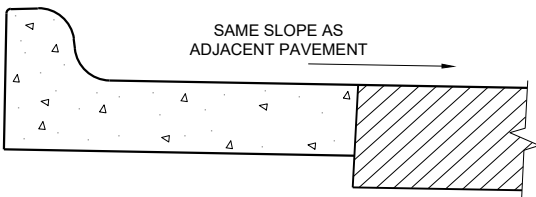
PAVEMENT THICKNESS  
AND MAXIMUM CONCRETE  
PANEL WIDTH TABLE

| 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<sup>⑥</sup>  
(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.

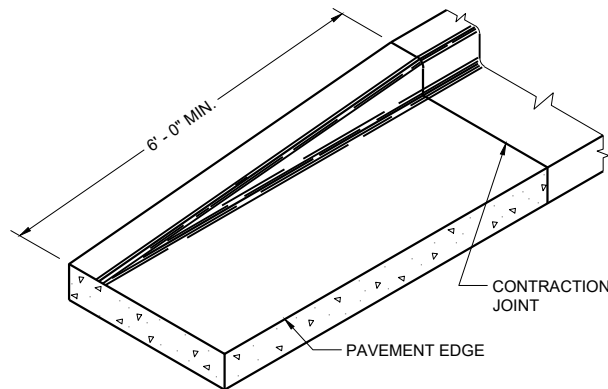
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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

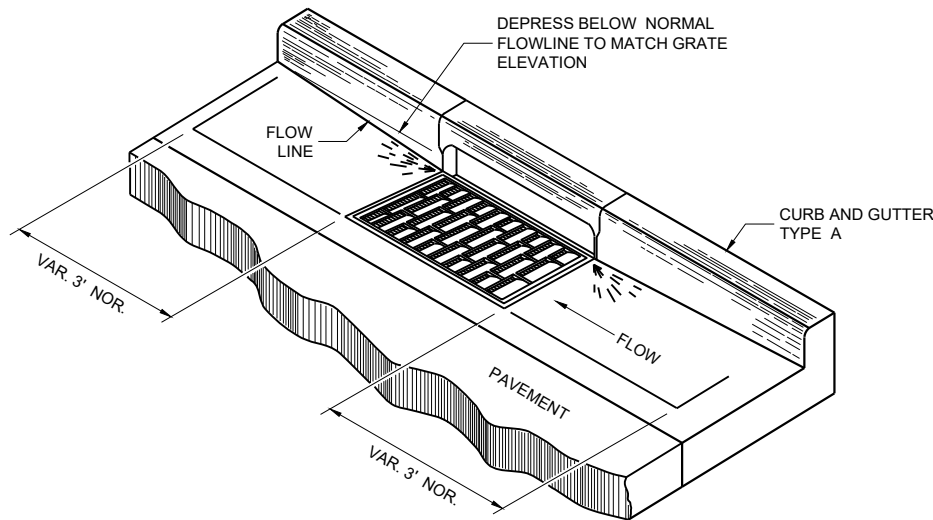
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH 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

CONCRETE CURB AND GUTTER

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

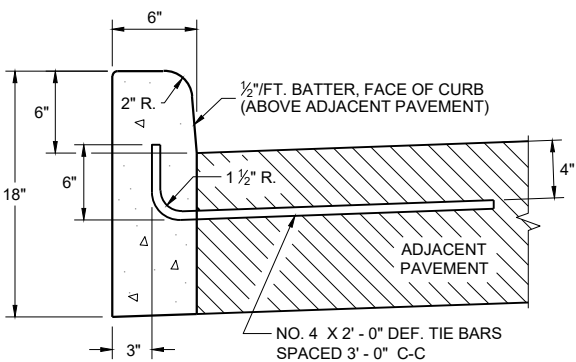


END SECTION CURB AND GUTTER

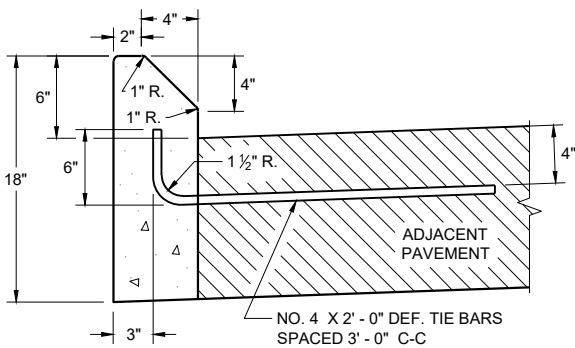


DETAIL OF CURB AND GUTTER AT INLETS

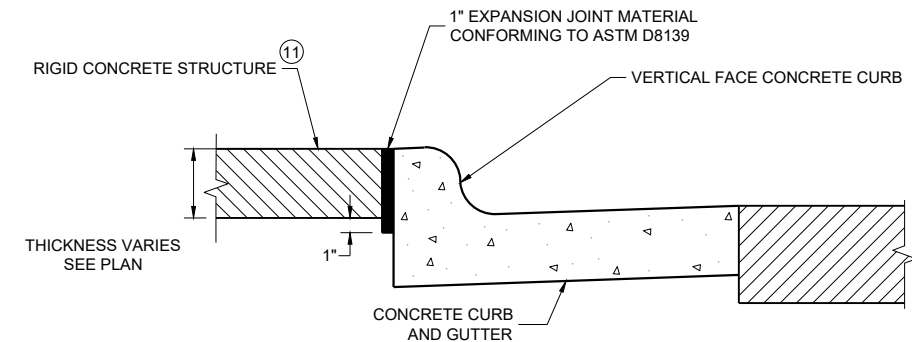
(TYPICAL H INLET COVER SHOWN)



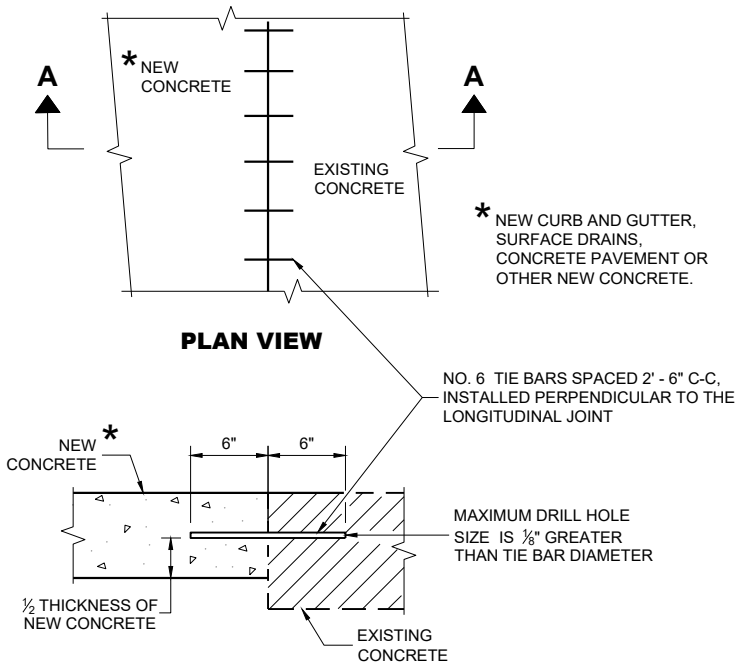
TYPES A<sup>①</sup> & D



TYPES G<sup>①</sup> & J  
CONCRETE CURB



EXPANSION JOINT DETAIL FOR VERTICAL CURB ABUTTING A RIGID STRUCTURE<sup>⑪</sup>



SECTION A - A  
TIE BARS DRILLED INTO EXISTING PAVEMENT

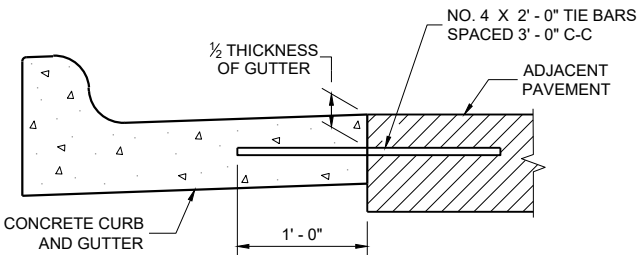
GENERAL NOTES

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

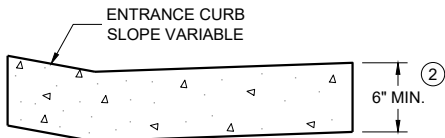
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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.
- ⑩ REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.
- ⑪ PLACE 1" THICK EXPANSION JOINT MATERIAL BETWEEN VERTICAL FACE CURB TYPES EXTENDING FROM THE TOP OF CURB TO 1 INCH BELOW THE ADJOINING CONCRETE SURFACE. RIGID CONCRETE STRUCTURES INCLUDE RAISED CONCRETE MEDIANS, CONCRETE SAFETY ISLANDS, SPLITTER ISLANDS, OR LOCATIONS IDENTIFIED ON THE PLANS.



TYPICAL TIE BAR LOCATION<sup>①</sup>



DRIVEWAY ENTRANCE CURB<sup>⑩</sup>  
(WHEN DIRECTED BY THE ENGINEER)

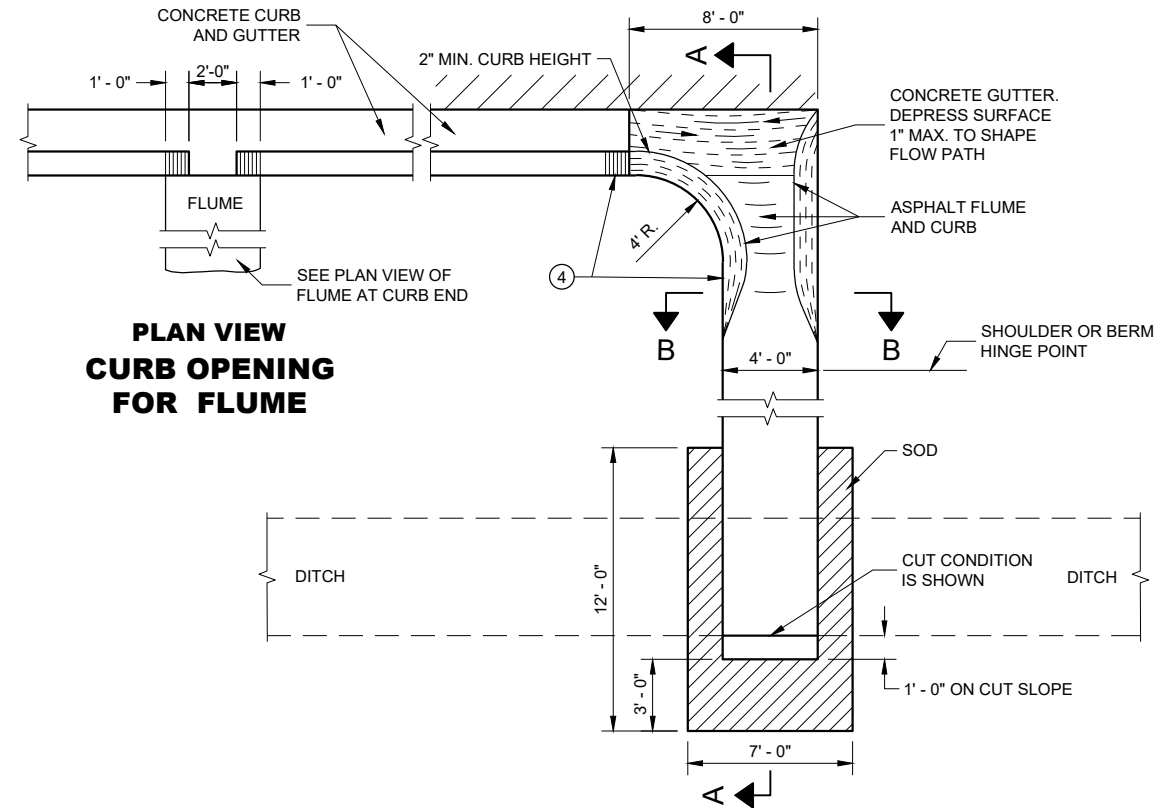
CONCRETE CURB, TIES  
AND CURB AND GUTTER  
APPLICATIONS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2023 /S/ Rodney Taylor  
DATE ROADWAY STANDARDS DEVELOPMENT  
FHWA UNIT SUPERVISOR

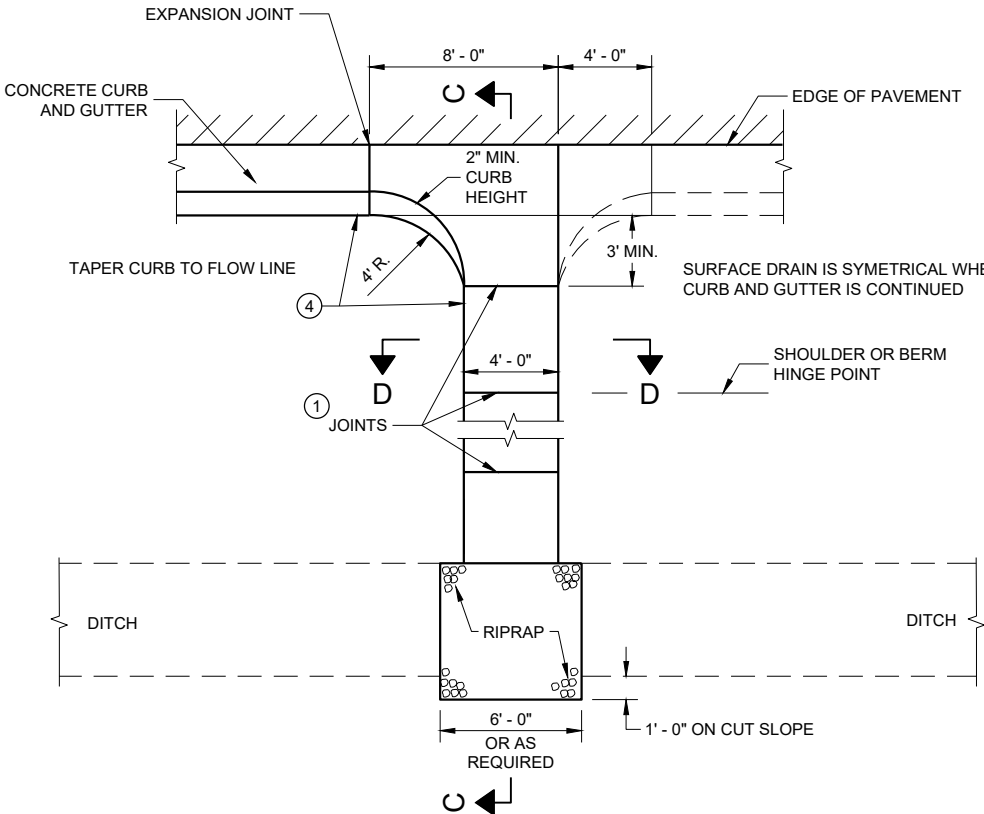
NOTE: TAPER CURB ENDS TO GUTTER IN 1' - 0"

ASPHALTIC FLUME



PLAN VIEW  
CURB OPENING  
FOR FLUME

PLAN VIEW  
FLUME AT CURB END



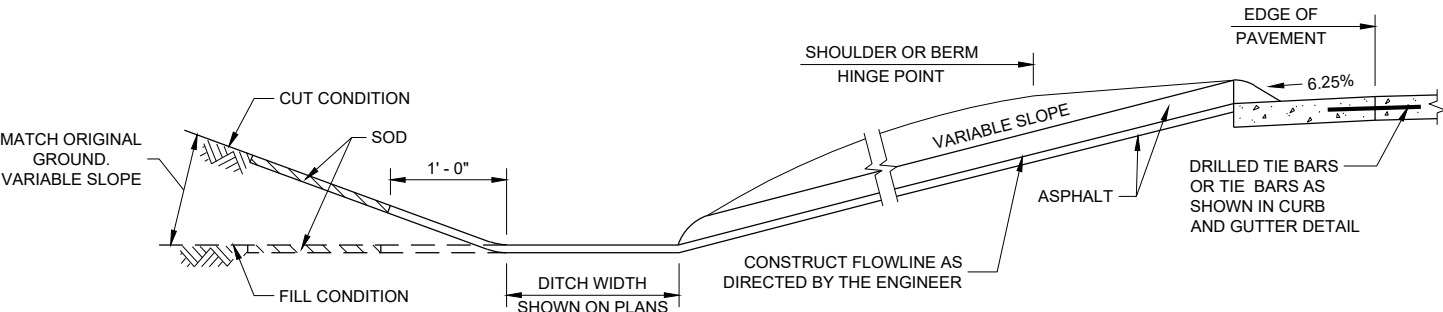
PLAN VIEW  
CONCRETE SURFACE DRAIN

GENERAL NOTES

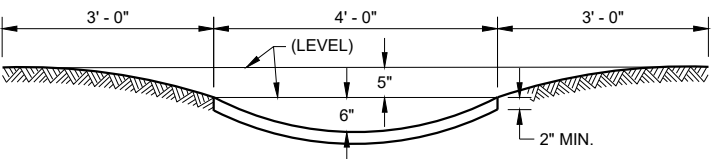
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

4" X 4" - W3.0 X W3.0 CONCRETE REINFORCEMENT SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

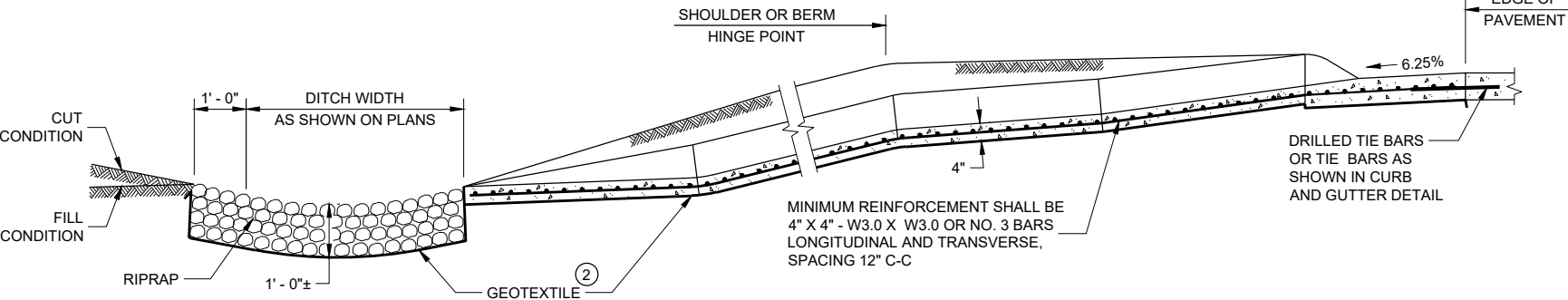
- JOINTS SHALL BE 1/8" TO 1/4" WIDE BY 1 1/2" DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
- GEOTEXTILE TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
- CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED.
- ANGLE OF FLUME IN RELATION TO BACK OF CURB TO BE CONSTRUCTED PER THE PLAN DETAILS OR AS DIRECTED BY THE ENGINEER. ANGLE OF FLUME MAY BE OTHER THAN 90 DEGREES AS SHOWN.



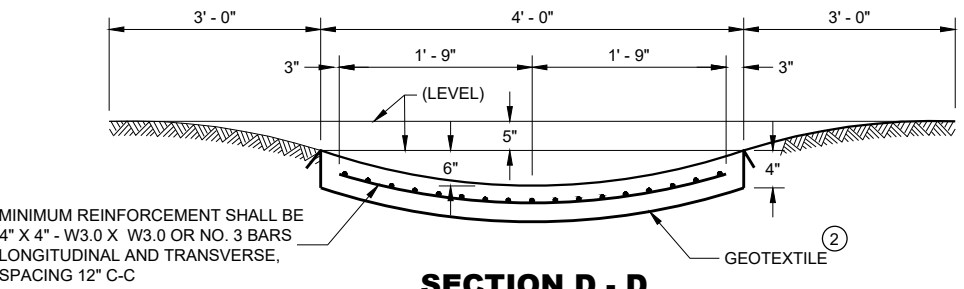
SECTION A - A



SECTION B - B



SECTION C - C

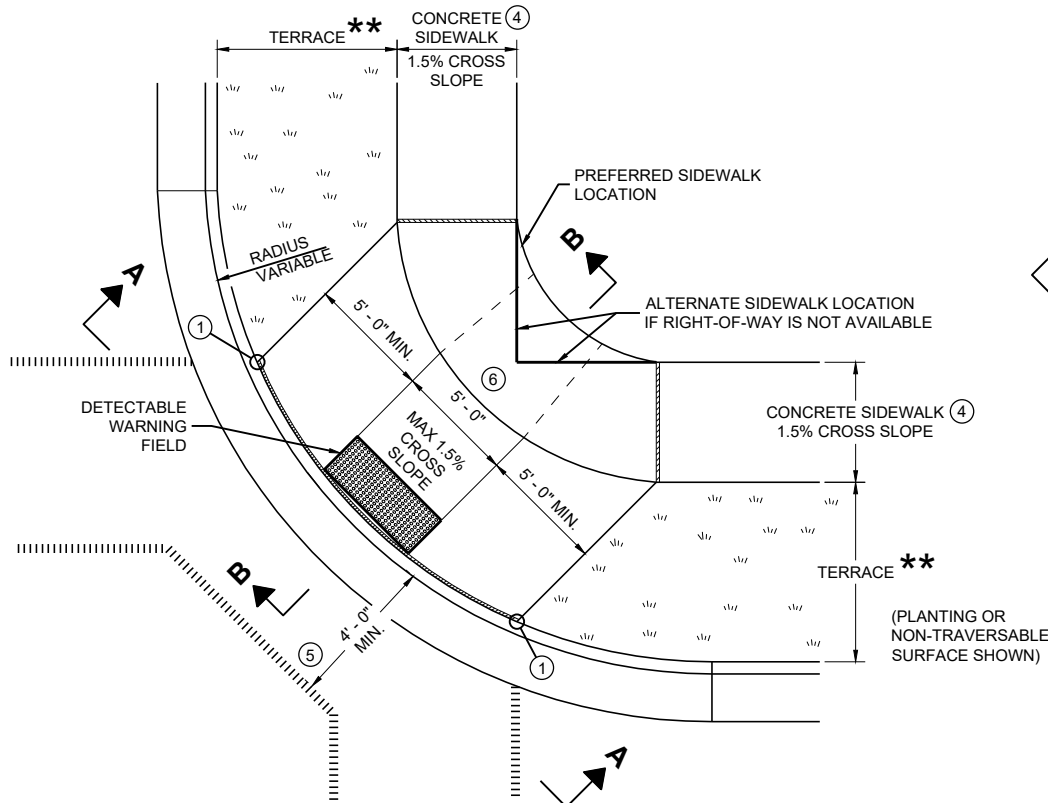


SECTION D - D

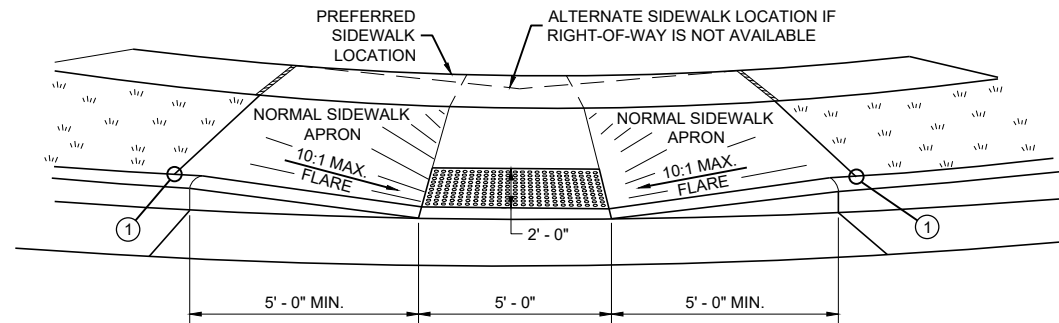
CONCRETE SURFACE  
DRAINS AND  
ASPHALTIC FLUMES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2023  
DATE  
/S/ Rodney Taylor  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER  
FHWA

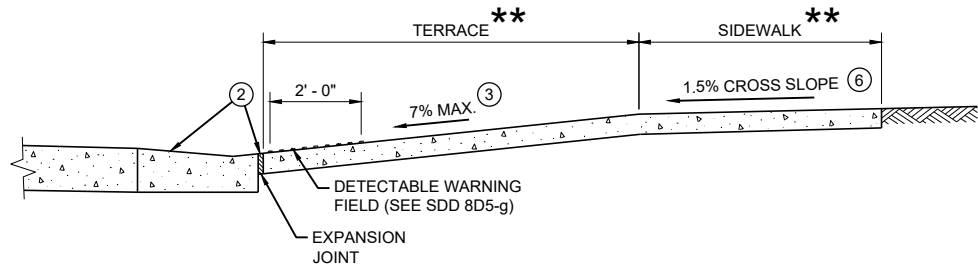


**PLAN VIEW**  
**CURB RAMP TYPE 1**  
**(CENTER OF CORNER RADIUS)**

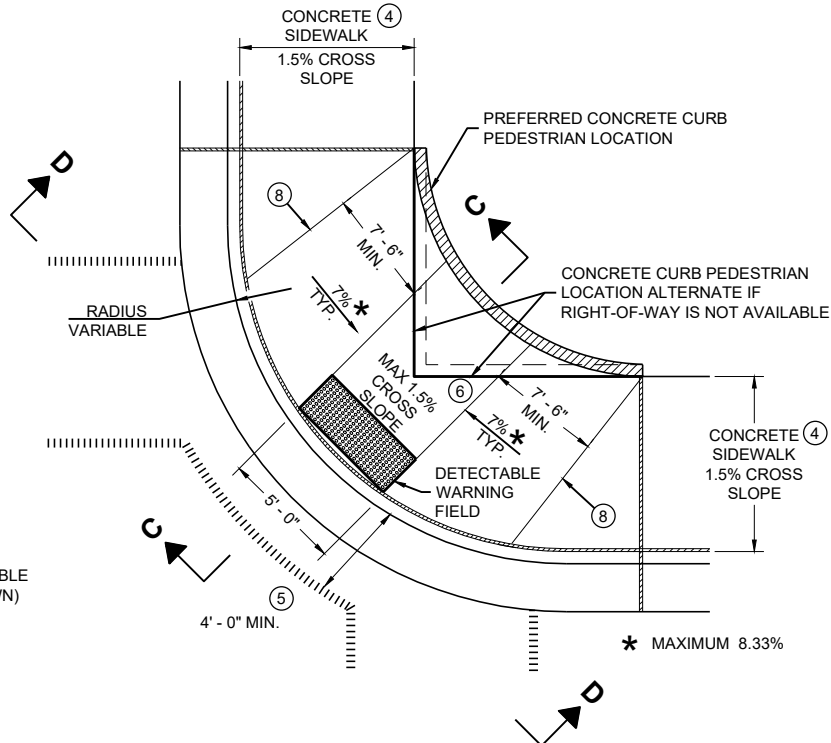


**VIEW A - A FOR TYPE 1**

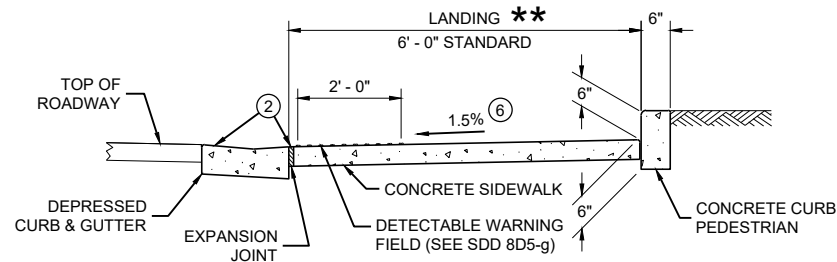
\*\* WIDTH SHOWN ELSEWHERE  
IN THE PLANS



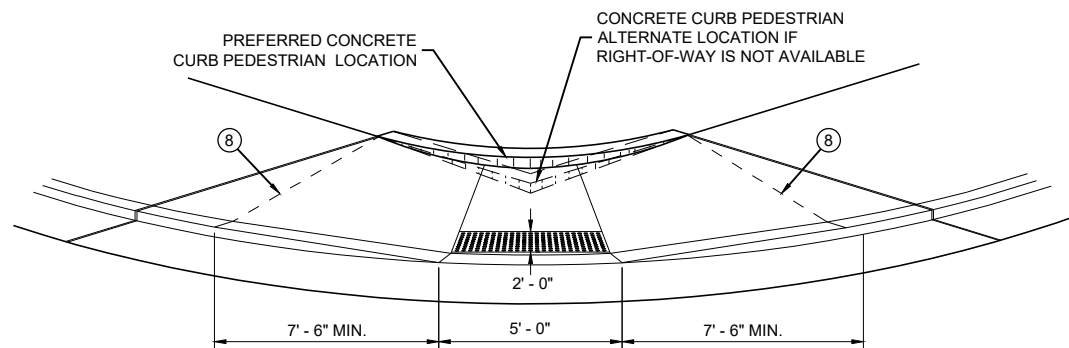
**SECTION B - B FOR TYPE 1**



**PLAN VIEW**  
**CURB RAMP TYPE 1 - A**  
**(NO TERRACE)**



**SECTION C - C FOR TYPE 1 - A**



**VIEW D - D FOR TYPE 1 - A**

**GENERAL NOTES**

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

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.

WHEN NECESSARY, THE SIDEWALK ELEVATION MAY BE LOWERED TO MEET THE HIGH POINT ON THE RAMP.

TYPE 1 CURB RAMPS SHALL HAVE A NORMAL SIDEWALK APRON AND CURB ON BOTH SIDES OF RAMP.

DETECTABLE WARNING FIELD SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS "CURB RAMP DETECTABLE WARNING FIELD". THE CONCRETE PEDESTRIAN CURB, IF NEEDED, SHALL BE MEASURED AND PAID BY THE LINEAR FOOT AS "CONCRETE CURB PEDESTRIAN". CONCRETE SIDEWALK IN THE CURB RAMP AREA SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS CONCRETE SIDEWALK, INCLUDING THE AREA UNDER THE DETECTABLE WARNING FIELD.

SELECT CURB RAMP DETECTABLE WARNING FIELD MATERIALS AND DEVICES FROM THE DEPARTMENT'S APPROVED MATERIALS LIST. THE COLOR OF THE DETECTABLE WARNING FIELD IS SPECIFIED ELSEWHERE AND IS INCIDENTAL TO THE BID ITEM OF "CURB RAMP DETECTABLE WARNING FIELD"

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

SURFACE TEXTURE OF THE RAMP SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP.

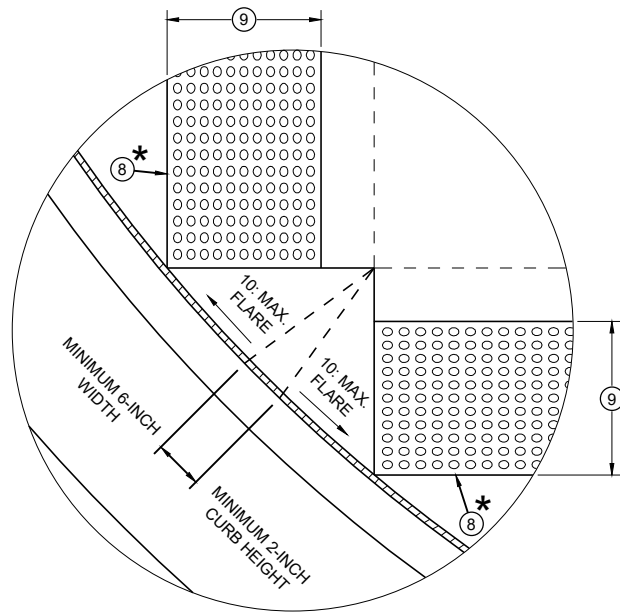
- 1 THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB. POINT LOCATION MAY BE ADJUSTED TO ALIGN WITH BEGINNING OF FULL-HEIGHT CURB IF THIS DISTANCE IS SHORT.
- 2 GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4 - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- 3 MAXIMUM 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- 4 ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- 5 PROVIDE A LEVEL LANDING IN THE STREET AND GUTTER AREA (2% MAXIMUM SLOPE IN ANY DIRECTION). WHEN THE GUTTER SLOPE EXCEEDS 2%, CONSTRUCT THE LEVEL LANDING IN THE STREET AREA. 4 FOOT WIDTH IS MEASURED FROM THE FLANGE LINE
- 6 PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.
- 8 PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

**LEGEND**

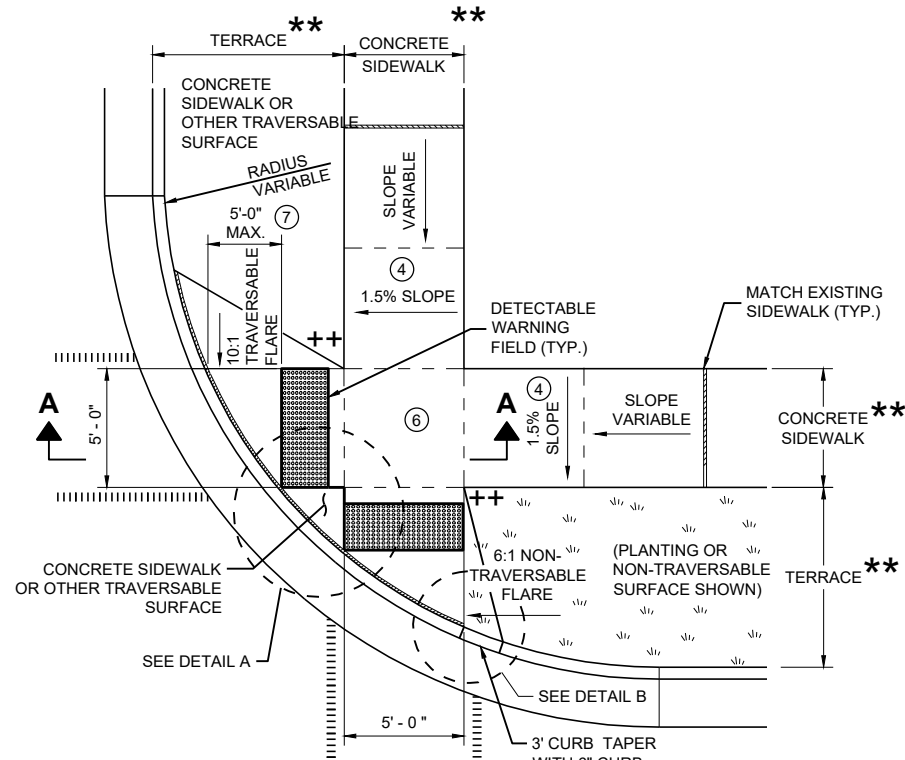
- 1/2" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

**CURB RAMPS**  
**TYPE 1 AND 1-A**

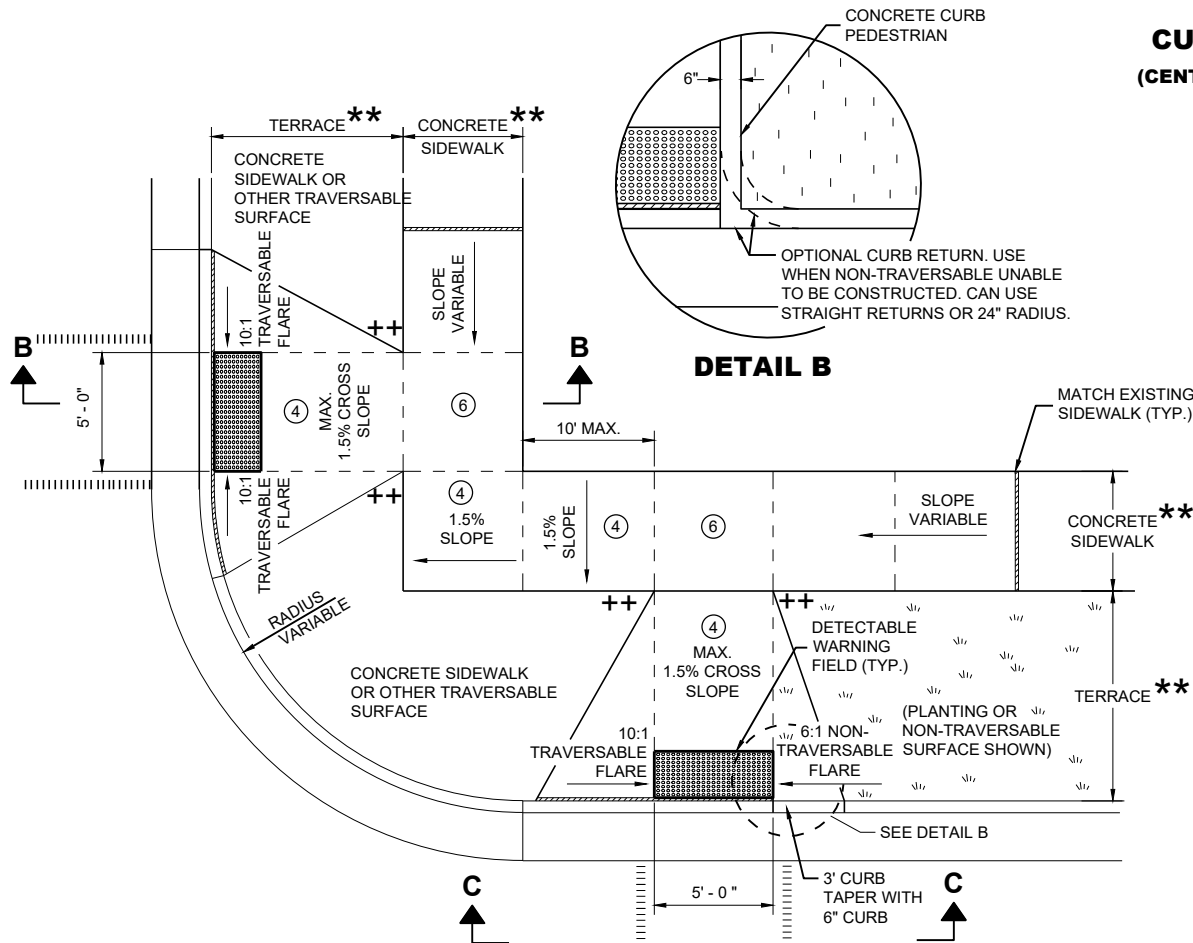
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



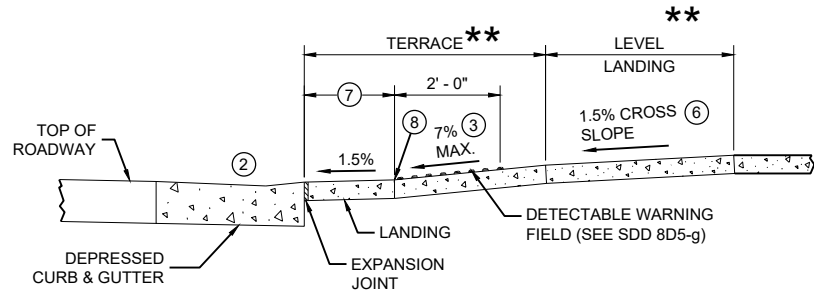
DETAIL A



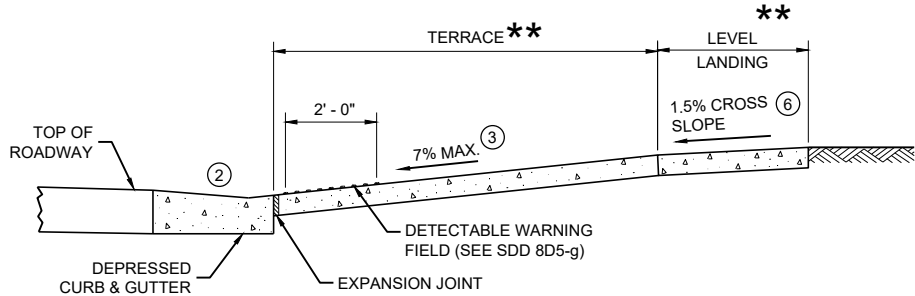
PLAN VIEW  
CURB RAMP TYPE 2  
(CENTER OF CORNER RADIUS)



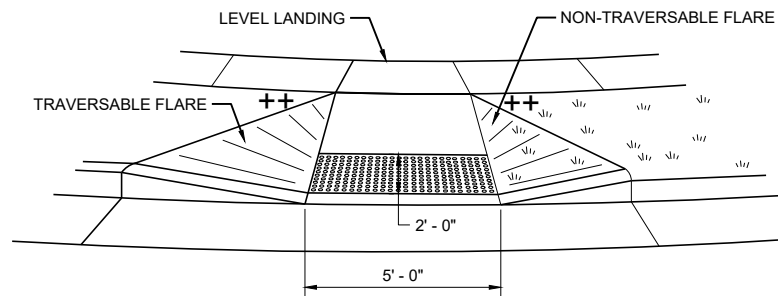
PLAN VIEW  
CURB RAMP TYPE 3  
(OUTSIDE OF CROSSWALK AREA)



SECTION A - A FOR TYPE 2



SECTION B - B FOR TYPE 3



VIEW C - C FOR TYPE 3

GENERAL NOTES

- AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.
- 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.
- DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE SHALL BE FROM THE SAME MANUFACTURER.
- GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4 - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
  - AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE (2.67% OR LESS) AND NOT TO EXCEED 11% GRADE CHANGE.
  - ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
  - PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET X 5 FEET.
  - WHEN GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.
  - PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
  - WHEN DISTANCE IS LESS THAN 6' - 0", IT MAY BE DIFFICULT TO ACHIEVE A 7% SLOPE OR FLATTER ALONG THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 7% SLOPE OR FLATTER ON RAMP. CONSTRUCT 2-INCH MINIMUM CURB HEIGHT BETWEEN 10:1 FLARES.

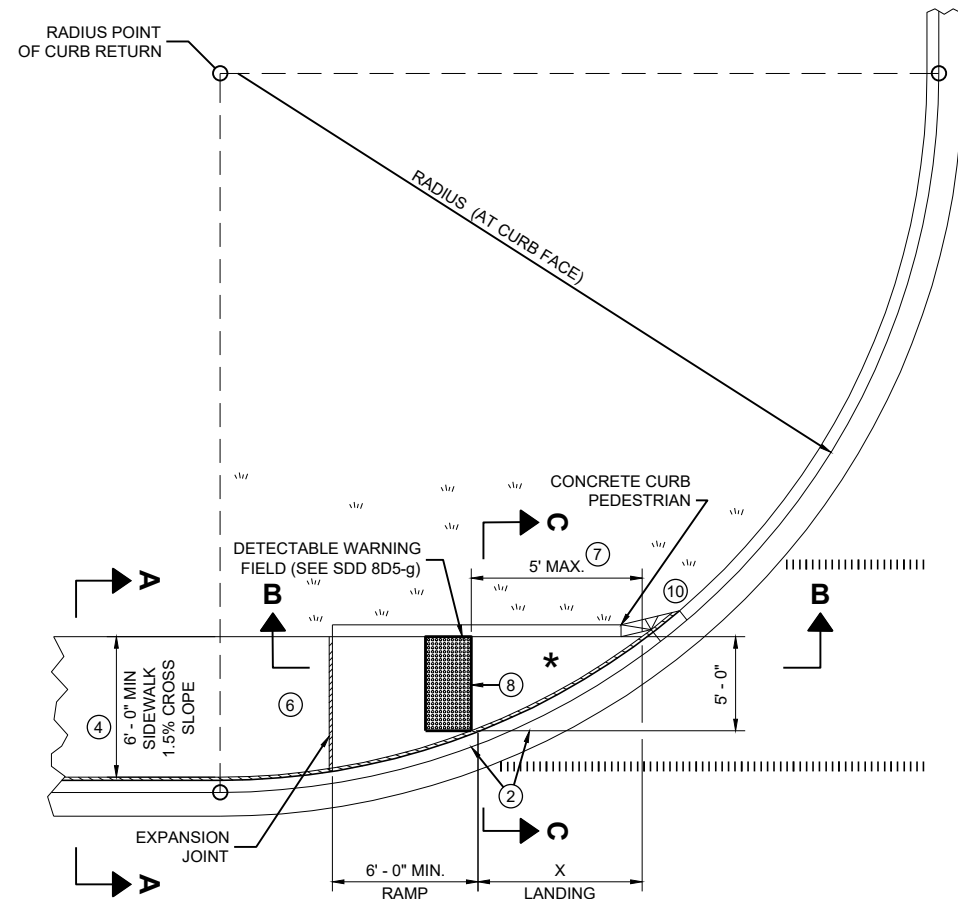
- \* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK
- \*\* WIDTH SHOWN ELSEWHERE IN THE PLANS
- ++ CONSTRUCT 6" WEDGE TO AVOID CONCRETE BREAKAGE

LEGEND

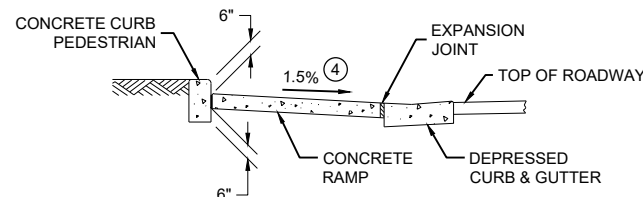
- 1/2" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT SIDEWALK
- PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS  
TYPE 2 AND 3

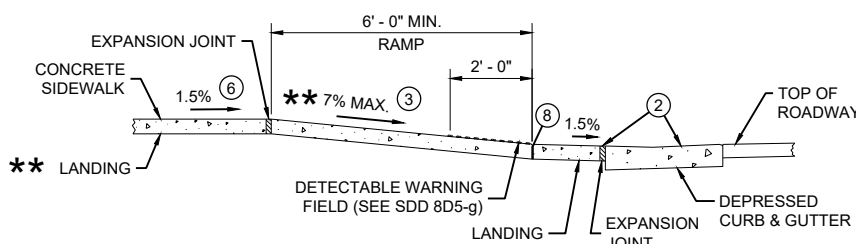
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



PLAN VIEW  
CURB RAMP TYPE 4A



SECTION C - C FOR TYPE 4A

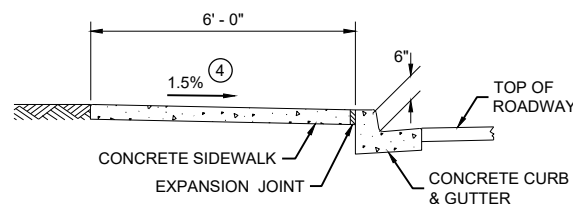


SECTION B - B FOR  
TYPE 4A AND TYPE 4A1

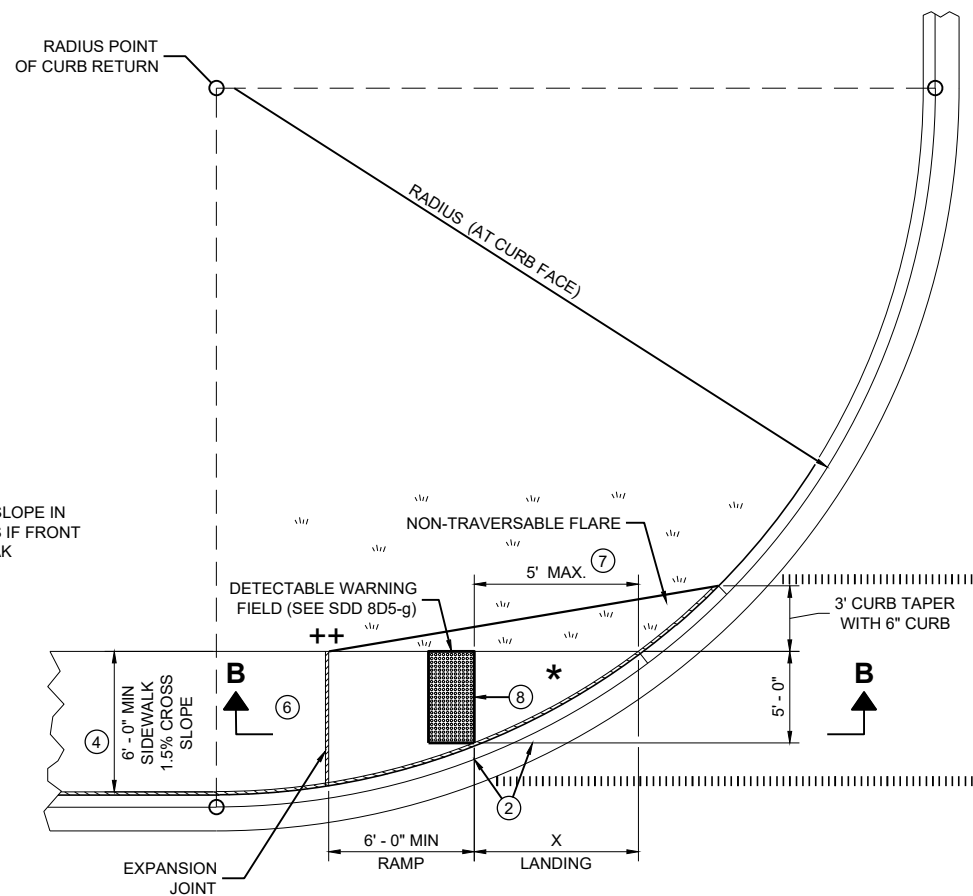
\*\* IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

| RADIUS<br>(AT CURB FACE) | X       |
|--------------------------|---------|
| 10 FEET                  | 4' - 7" |

INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION A - A FOR TYPE 4A



PLAN VIEW  
CURB RAMP TYPE 4A1

## GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

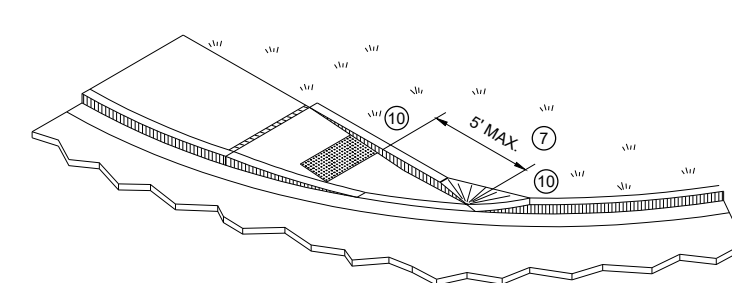
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

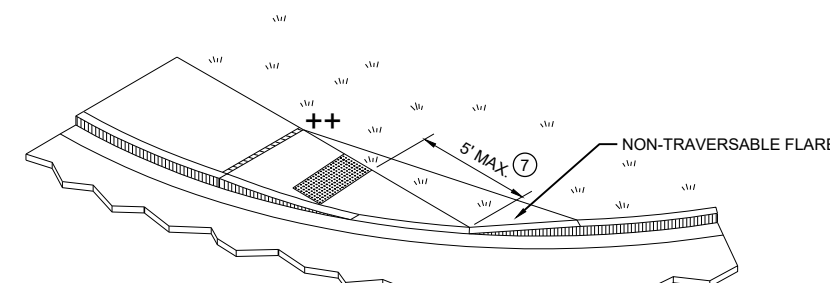
- GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4 - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.
- WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.
- PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.

## LEGEND

- 1/2" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT SIDEWALK
- PAVEMENT MARKING CROSSWALK (WHITE)



ISOMETRIC VIEW FOR TYPE 4A

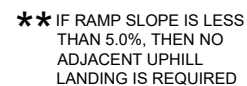


ISOMETRIC VIEW FOR TYPE 4A1

++ CONSTRUCT 6" WEDGE TO AVOID CONCRETE BREAKAGE

## CURB RAMPS TYPE 4A AND 4A1

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



### SECTION B - B FOR TYPE 4B AND TYPE 4B1

| RADIUS<br>(AT CURB FACE) | W = 3' - 0" |           | W = 4' - 0" |           | W = 5' - 0" |           | W = 6' - 0" |           | W = 7' - 0" |            | W = 8' - 0" |            | W = 9' - 0" |            | W = 10' - 0" |            |
|--------------------------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|------------|-------------|------------|-------------|------------|--------------|------------|
|                          | X           | Y         | X           | Y         | X           | Y         | X           | Y         | X           | Y          | X           | Y          | X           | Y          | X            | Y          |
| 10 FEET                  | 2' - 10 ¼"  | 0' - 5"   | 2' - 1"     | 1' - 4 ½" | 1' - 5"     | 2' - 1"   | 0' - 10"    | 2' - 7 ½" | 0' - 3 ¼"   | 3' - 0 ¼"  |             |            |             |            |              |            |
| 15 FEET                  | 4' - 6 ¾"   | 2' - 1 ¾" | 3' - 9"     | 3' - 5 ¾" | 3' - 1 ¼"   | 4' - 6"   | 2' - 6 ¾"   | 5' - 4 ½" | 2' - 1"     | 6' - 1"    | 1' - 8"     | 6' - 8 ½"  | 1' - 3 ¾"   | 7' - 2 ½"  | 0' - 10 ¾"   | 7' - 7 ½"  |
| 20 FEET                  |             |           | 4' - 11 ½"  | 5' - 1 ¾" | 4' - 3 ¼"   | 6' - 5 ½" | 3' - 8 ¾"   | 7' - 7"   | 3' - 3"     | 8' - 6 ½"  | 2' - 10"    | 9' - 4 ½"  | 2' - 5 ½"   | 10' - 1 ¼" | 2' - 1 ½"    | 10' - 9"   |
| 30 FEET                  |             |           |             |           |             |           |             |           | 4' - 10 ¾"  | 12' - 5 ¾" | 4' - 5 ½"   | 13' - 7 ¾" | 4' - 0 ¾"   | 14' - 8 ½" | 3' - 8 ½"    | 15' - 8 ½" |
| 40 FEET                  |             |           |             |           |             |           |             |           |             |            |             |            |             |            | 4' - 10 ¾"   | 19' - 8 ½" |

INTERMEDIATE RADII CAN BE INTERPOLATED  
DIMENSION "Y" IS CALCULATED BASED ON 6'-0" RAMP LENGTH  
DIMENSION "X" IS CALCULATED BASED ON 5'-0" SIDEWALK WIDTH



++ CONSTRUCT 6" WEDGE TO  
AVOID CONCRETE BREAKAGE

## GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

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.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN  $\frac{1}{4}$  - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ③ AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ④  $\pm 0.5\%$  CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.
- ⑦ WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.
- ⑧ PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- ⑩ INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.

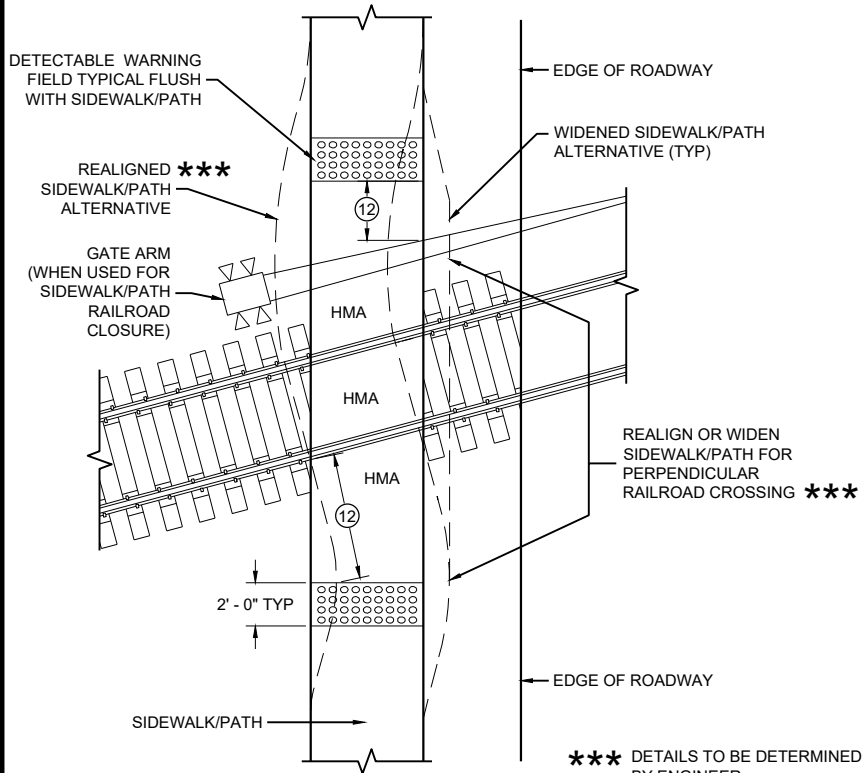


## CURB RAMPS TYPE 4B AND 4B1

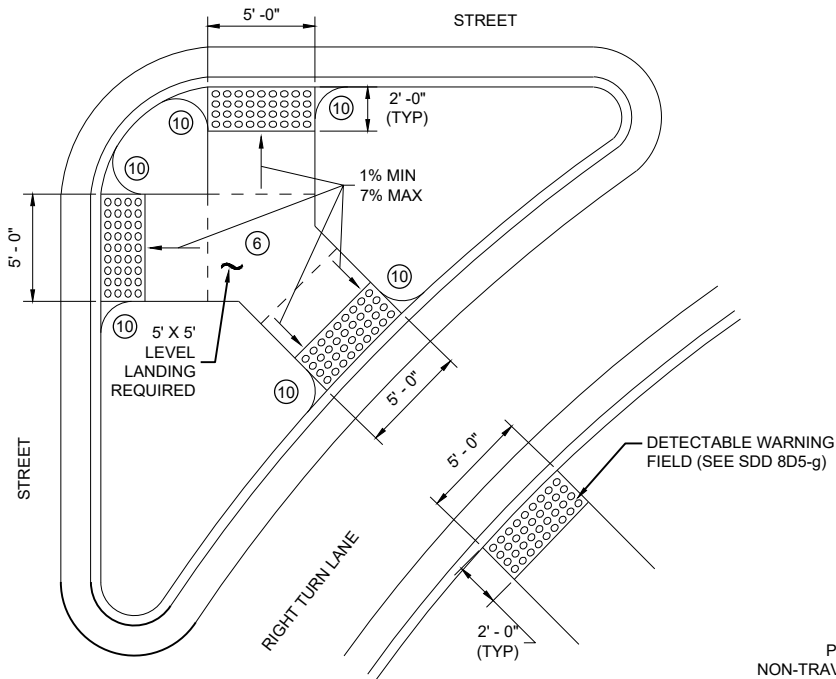
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

## LEGEND

- |                                                                                     |                                       |
|-------------------------------------------------------------------------------------|---------------------------------------|
|  | 1/2" EXPANSION JOINT SIDEWALK         |
| - - - -                                                                             | CONTRACTION JOINT SIDEWALK            |
|                                                                                     | PAVEMENT MARKING<br>CROSSWALK (WHITE) |

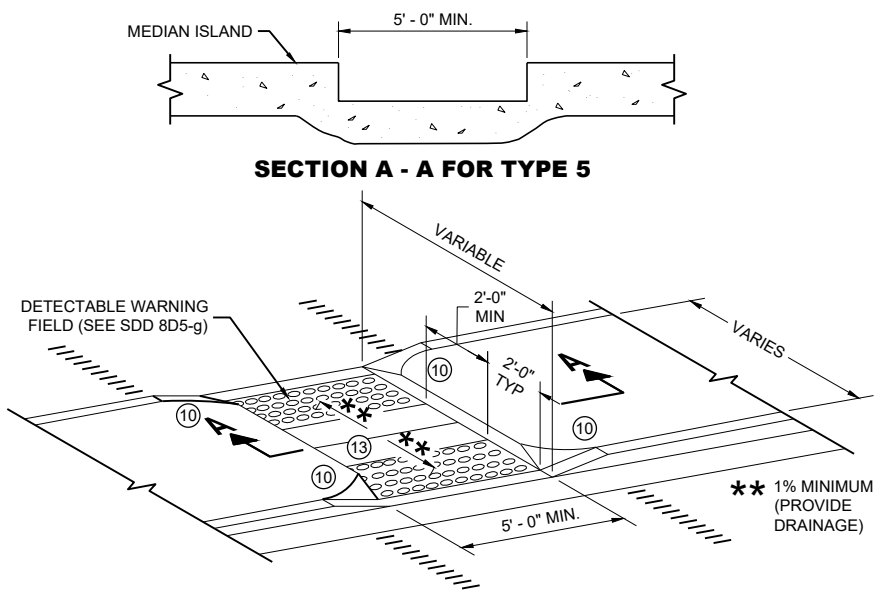


**CURB RAMP TYPE 8**  
**DETECTABLE WARNINGS**  
**FOR SIDEWALKS OR SHARED USE PATHS**  
**AT RAILROAD CROSSINGS**

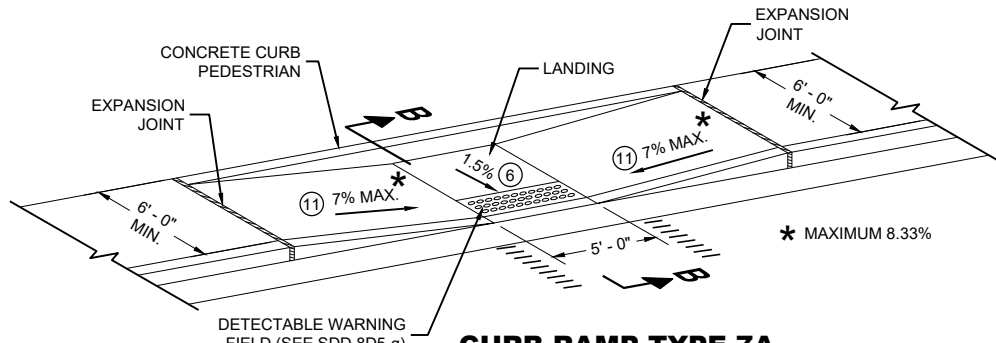


**CURB RAMP TYPE 6**  
**DETECTABLE WARNING AT ISLANDS**

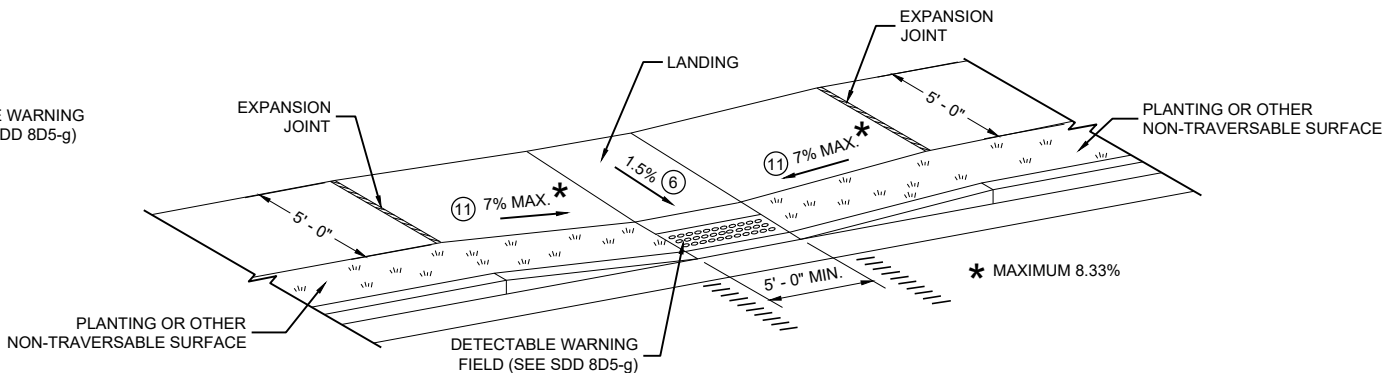
REFER TO GENERAL NOTES ② AND ③  
FOR ALL ISLAND CURB RAMPS



**CURB RAMP TYPE 5**  
**MEDIAN ISLAND**  
**NON-ELEVATED PEDESTRIAN CROSSING**



**CURB RAMP TYPE 7A**  
**FOR INTERSECTIONS AND**  
**MID BLOCK CROSSINGS**



**CURB RAMP TYPE 7B**  
**FOR INTERSECTIONS AND**  
**MID BLOCK CROSSINGS**

**GENERAL NOTES**

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

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.

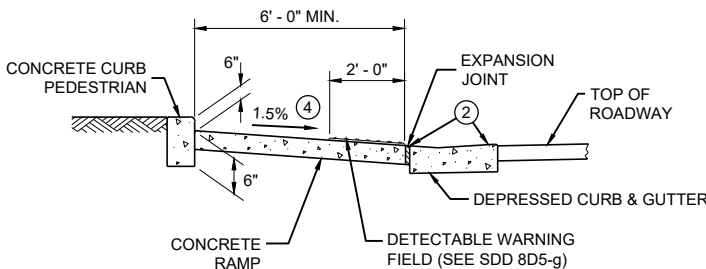
SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/8 - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ③ AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ④ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.
- ⑩ INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.
- ⑪ SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.
- ⑫ THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET ±0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK/PATH. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD TRACK IS 15 FEET MAXIMUM AND 12 FEET MINIMUM, 15 FEET TYPICAL FROM THE NEAREST RAIL.
- ⑬ DO NOT INSTALL DETECTABLE WARNING FIELDS AT THE EDGES OF STEET-LEVEL PEDESTRIAN REFUGE ISLANDS IF A MINIMUM 2 FOOT CONCRETE SURFACE WITHOUT DETECTABLE WARNINGS (MEASURED IN THE DIRECTION OF PEDESTRIAN TRAVEL) CANNOT BE ACHIEVED.

**LEGEND**

- ===== 1/2" EXPANSION JOINT SIDEWALK
- - - - - CONTRACTION JOINT FIELD LOCATED
- ||||||| PAVEMENT MARKING CROSSWALK (WHITE)

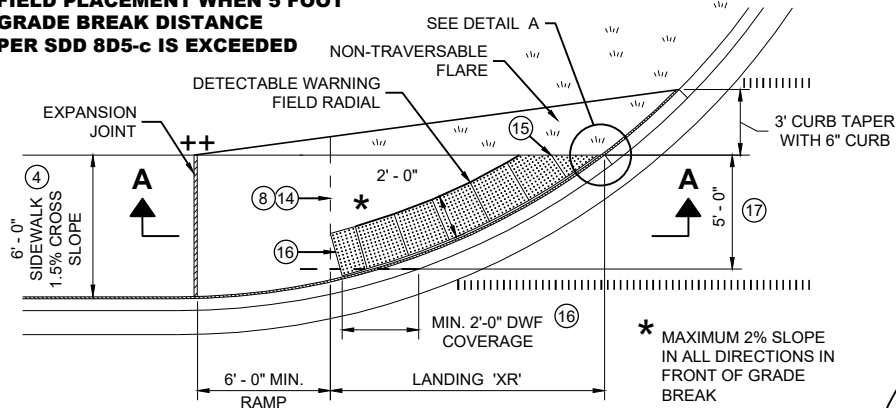


**SECTION B - B FOR TYPE 7A**

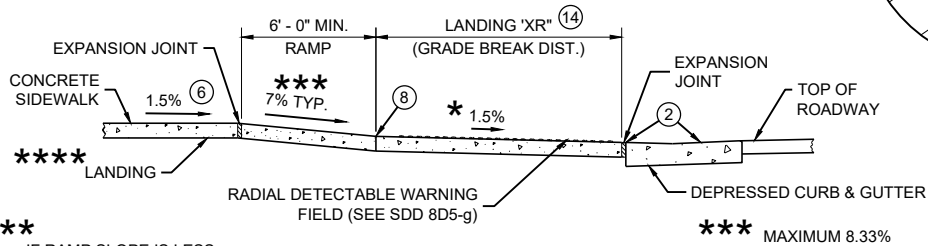
**CURB RAMPS**  
**TYPE 5, 6, 7A, 7B & 8**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

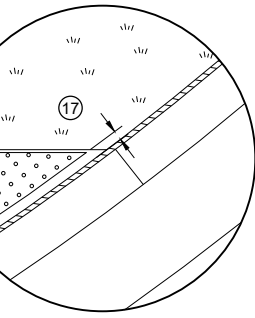
**RADIAL DETECTABLE WARNING  
FIELD PLACEMENT WHEN 5 FOOT  
GRADE BREAK DISTANCE  
PER SDD 8D5-c IS EXCEEDED**



**PLAN VIEW  
CURB RAMP TYPE 4A1  
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)**

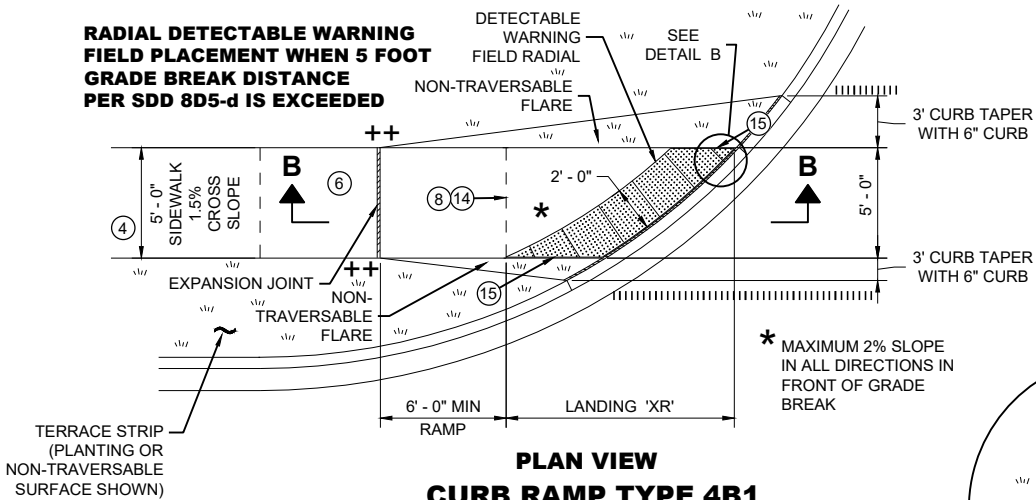


**SECTION A - A FOR TYPE 4A1**

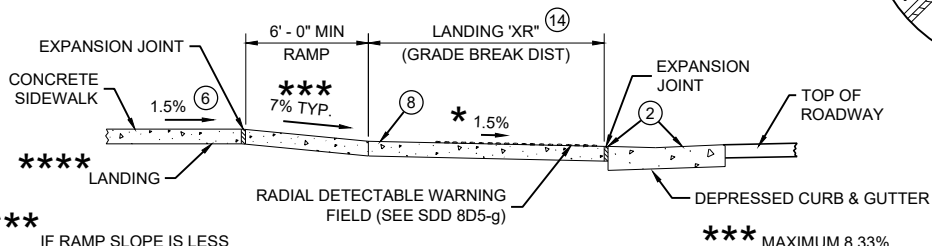


**DETAIL A**

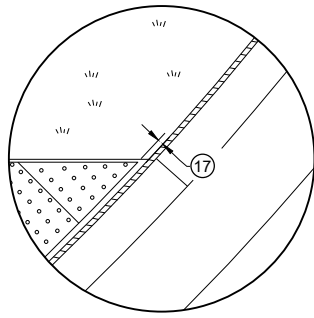
**RADIAL DETECTABLE WARNING  
FIELD PLACEMENT WHEN 5 FOOT  
GRADE BREAK DISTANCE  
PER SDD 8D5-d IS EXCEEDED**



**PLAN VIEW  
CURB RAMP TYPE 4B1  
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)**



**SECTION B - B FOR TYPE 4B1**



**DETAIL B**

**LEGEND**

- 1/2" EXPANSION JOINT SIDEWALK
- CONTRACTION JOINT SIDEWALK
- PAVEMENT MARKING CROSSWALK (WHITE)

**GENERAL NOTES**

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

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.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

APPLY RADIAL DETECTABLE WARNING PLACEMENT SIMILARLY FOR TYPE 4A AND 4A1 CURB RAMPS AND SIMILARLY FOR TYPE 4B AND 4B1 CURB RAMPS. TYPE 4A AND 4B CURB RAMPS ARE NOT SHOWN.

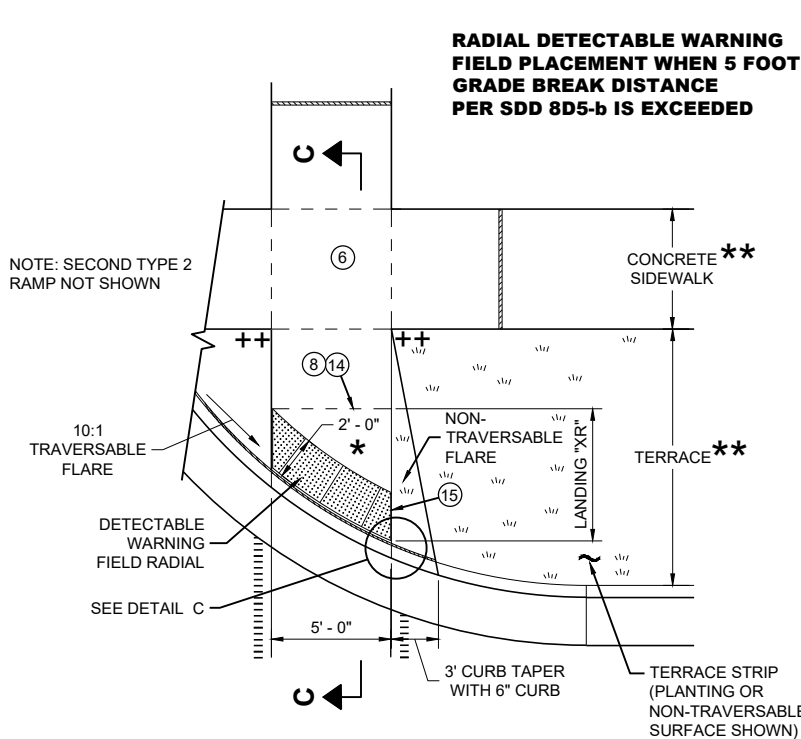
REFER TO SDD 8D5-g FOR ADDITIONAL RADIAL PLATE REQUIREMENTS.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FIELD ARE PROHIBITED.

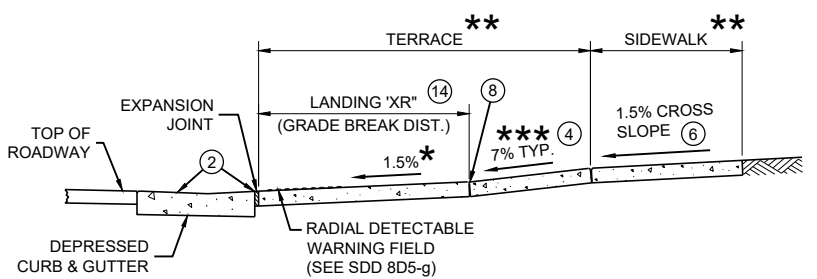
DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

- 2 GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4" INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- 3 AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- 4 ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- 6 PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET BY 5 FEET.
- 8 PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- 14 CONSULT ENGINEER IF GRADE BREAK LOCATION (END OF LANDING DIMENSION "XR") REQUIRES FIELD ADJUSTMENT WHEN ESTABLISHING FINAL RADIAL DETECTABLE WARNING FIELD LOCATION.
- 15 FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN 1/2" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.
- 16 USE 1' X 2" RECTANGULAR END PLATE AT END OF TYPE 4A1 RAMP AND PROVIDE MINIMUM 2' - 0" DETECTABLE WARNING FIELD COVERAGE (IN DIRECTION OF PEDESTRIAN TRAVEL) ALONG THE ENTIRE CURB RAMP WIDTH.
- 17 A MAXIMUM 3 INCH CONCRETE BORDER WIDTH IS ALLOWABLE IN FRONT OF RADIAL DETECTABLE WARNING FIELD FOR CONSTRUCTABILITY PURPOSES. CONCRETE BORDER WIDTH MAY VARY UP TO 1 INCH.

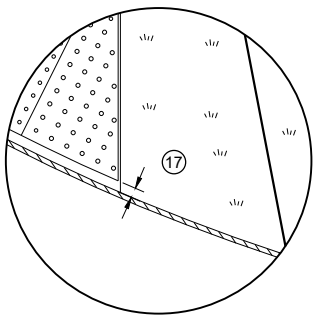
**RADIAL DETECTABLE WARNING  
FIELD PLACEMENT WHEN 5 FOOT  
GRADE BREAK DISTANCE  
PER SDD 8D5-b IS EXCEEDED**



**PLAN VIEW  
CURB RAMP TYPE 2  
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)  
(ON LINE WITH SIDEWALK)**



**SECTION C - C FOR TYPE 2**



**DETAIL C**

\*\*\* MAXIMUM 2% SLOPE  
IN ALL DIRECTIONS IN  
FRONT OF GRADE  
BREAK

\*\* WIDTH SHOWN ELSEWHERE  
IN THE PLANS

\*\*\* MAXIMUM 8.33%

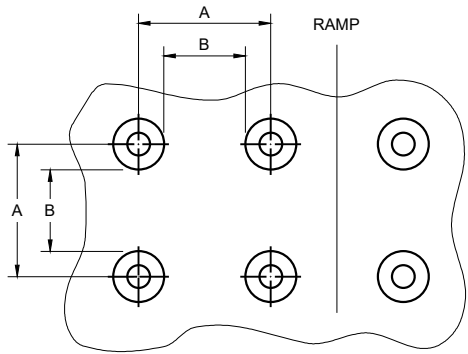
++ CONSTRUCT 6" WEDGE TO  
AVOID CONCRETE BREAKAGE

**CURB RAMPS  
RADIAL DETECTABLE WARNING**

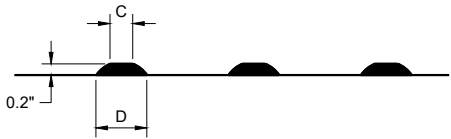
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

|   | MIN.  | MAX. |
|---|-------|------|
| A | 1.6"  | 2.4" |
| B | 0.65" | 1.5" |
| C | *     | *    |
| D | 0.9"  | 1.4" |

\* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.

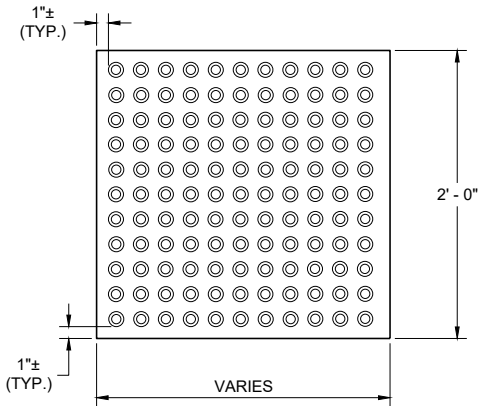


PLAN VIEW

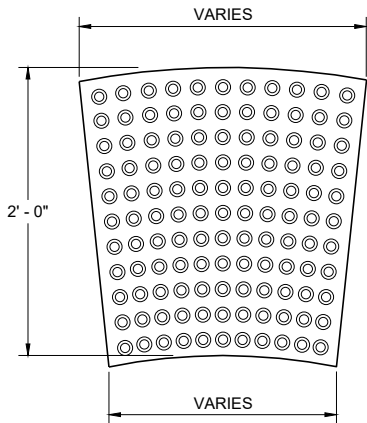


ELEVATION VIEW

TRUNCATED DOMES  
DETECTABLE WARNING PATTERN DETAIL

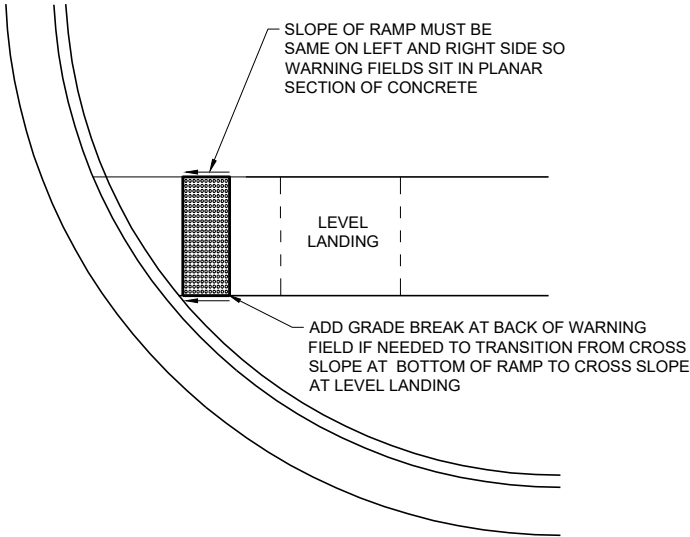


RECTANGULAR  
PLATES

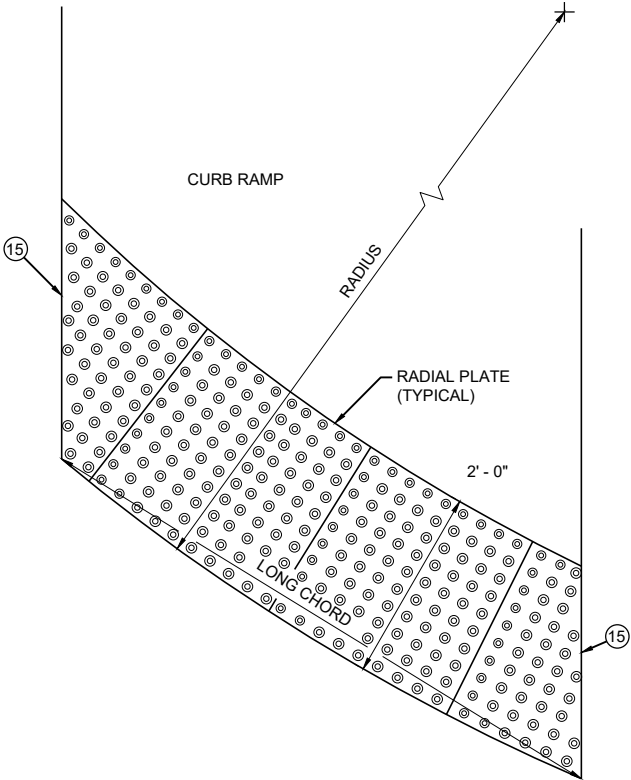


RADIAL  
PLATES

PLAN VIEW  
DETECTABLE WARNING FIELDS (TYPICAL)



DETECTABLE WARNING FIELD  
PLANAR INSTALLATION



PLAN VIEW  
RADIAL DETECTABLE  
WARNING FIELD ATTRIBUTES

GENERAL NOTES

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AT A CURB RAMP SHALL BE FROM THE SAME MANUFACTURER.

PLACE ALL DETECTABLE WARNING FIELD SYSTEMS IN ACCORDANCE TO THE MANUFACTURER'S RECOMMENDATION.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FILED ARE PROHIBITED.

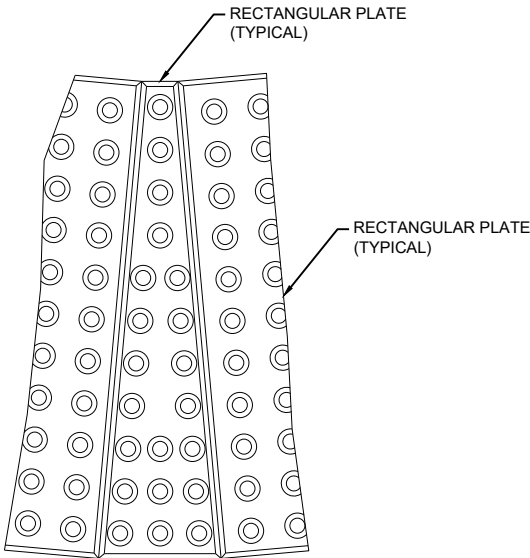
DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

FOR RADIAL DETECTABLE WARNING FIELD APPLICATIONS WHERE STANDARD RADIAL PLATES ARE NOT AVAILABLE AT AN INTERSECTION CURB RADIUS, A COMBINATION OF SQUARE OR RECTANGULAR PLATES AND RADIAL PLATES MAY BE USED TO FORM RADIAL CONFIGURATION. RADIAL WEDGE PLATES IN COMBINATION WITH SQUARE PLATES ARE ALSO ACCEPTABLE. FOLLOW MANUFACTURER'S RECOMMENDATIONS.

REFER TO CONTRACT AND STANDARD SPECIFICATIONS FOR FIELD CUTTING REQUIREMENTS.

DO NOT EMBED IN CONCRETE ANY FIELD-CUT PLATES WITH CUT EDGES SHORTER THAN 6 INCHES. CONSULT WITH MANUFACTURER FOR RE-DRILLING AND ANCHORING REQUIREMENTS OF FIELD-CUT PLATES.

15 FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN 1/8" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.



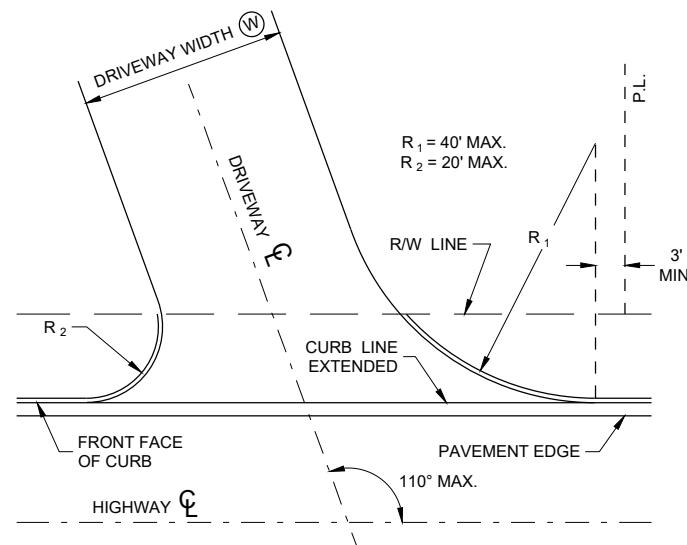
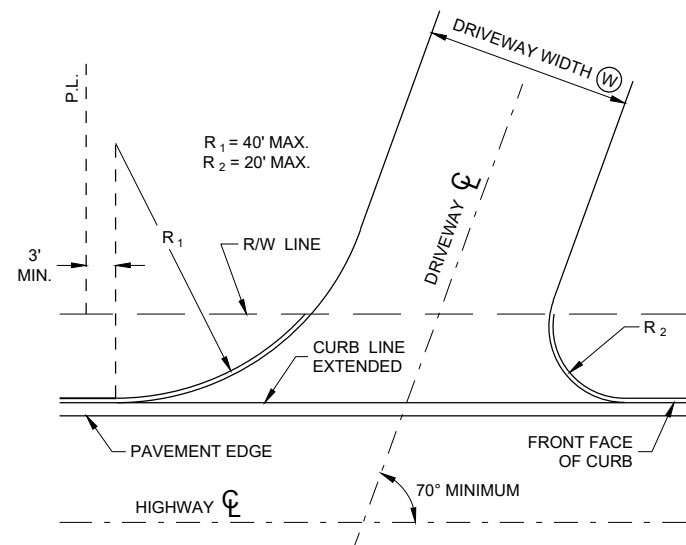
PLAN VIEW  
RADIAL WEDGE PLATE  
CONNECTION DETAIL

CURB RAMPS  
RECTANGULAR AND RADIAL  
DETECTABLE WARNING PLATES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
July 2023  
DATE /S/ Rodney Taylor  
ROADWAY STANDARDS DEVELOPMENT  
UNIT SUPERVISOR

FHWA



**SKewed DRIVEWAY DETAILS  
(COMMERCIAL AND NON-COMMERCIAL)  
SIDEWALK NOT SHOWN**

## GENERAL NOTES

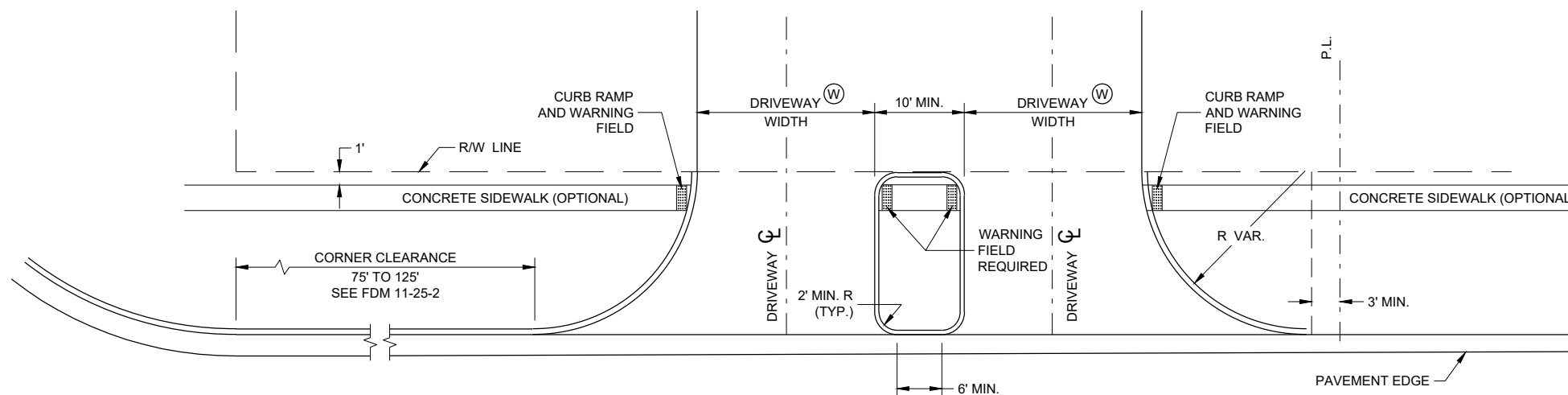
A MAXIMUM RADIUS OF 10 FEET SHALL BE USED FOR NON-COMMERCIAL PRIVATE ENTRANCES. RADII FOR COMMERCIAL DRIVEWAYS SHALL BE DETERMINED BY THE ENGINEER BASED ON TRAFFIC AND DRIVEWAY PERMIT RESTRICTIONS.

THE MINIMUM ANGLE OF INTERSECTION BETWEEN THE DRIVEWAY AND HIGHWAY CENTERLINES SHALL BE 70°.

ALL CURVILINEAR PRIVATE ENTRANCE OUTLINES SHALL BE CONTAINED WITHIN THE HIGHWAY R/W.

NO DRIVEWAY SHALL BE BUILT WITHIN 3 FEET OF THE PROPERTY LINE EXCEPT FOR EXISTING JOINT DRIVEWAY SHARED BY TWO OWNERS.

Ⓢ: 12' MIN. - 24' MAX. RESIDENTIAL AND  
NON-COMMERCIAL (PE & FE)  
16' MIN. - 35' MAX. COMMERCIAL (CE)



**DRIVEWAY LOCATION AND SPACING DETAILS  
SIDEWALK SHOWN**

## DRIVEWAYS WITH CURB AND GUTTER RETURNS

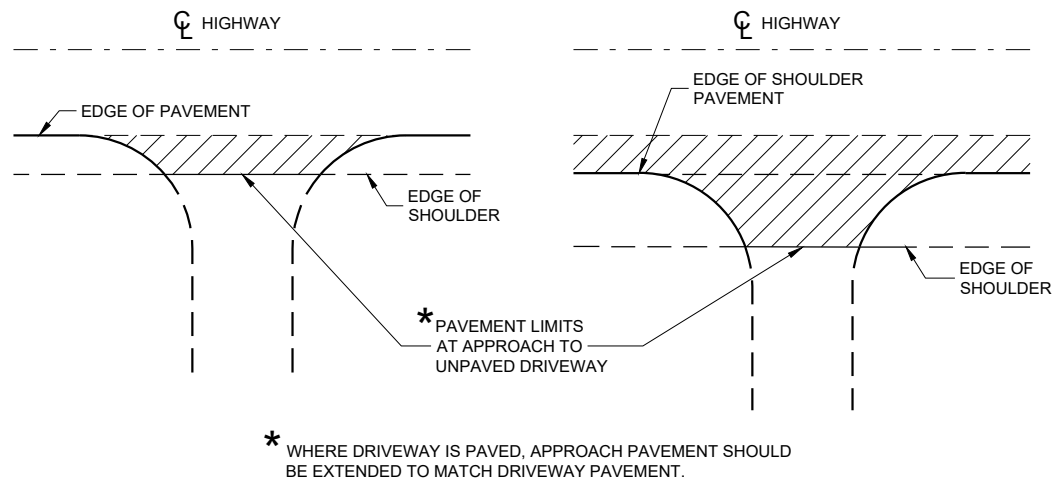
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

00-00-00  
DATE

FHWA

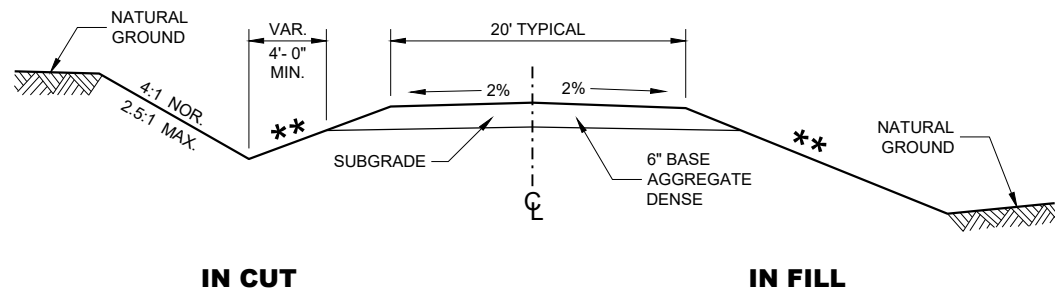
/S/ <AUTHOR>  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER



**PLAN VIEW**  
(UNPAVED SHOULDER ON HIGHWAY)

**PLAN VIEW**  
(PAVED SHOULDER ON HIGHWAY)

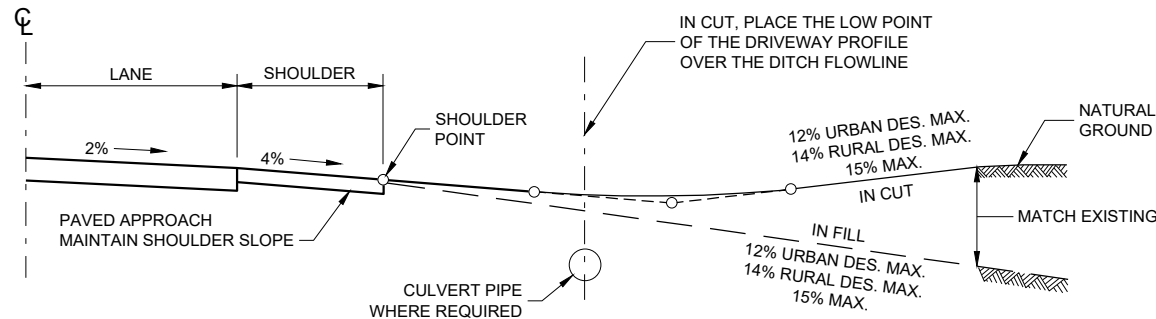
**RURAL DRIVEWAY INTERSECTION DETAIL  
(NO CURB AND GUTTER OR SIDEWALK)**



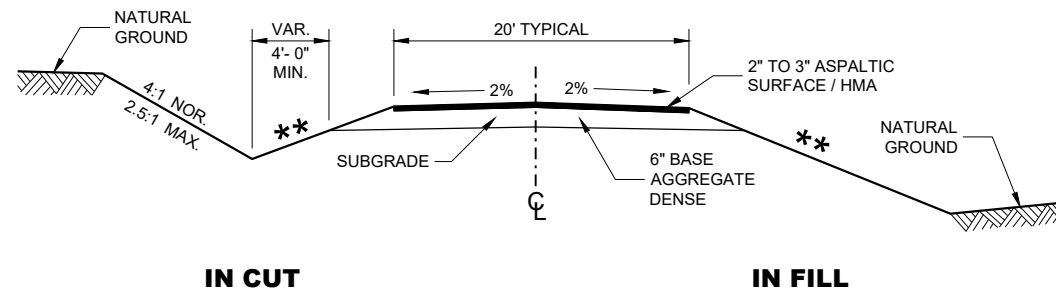
**TYPICAL CROSS SECTION FOR  
PRIVATE DRIVE OR FIELD ENTRANCE  
AGGREGATE SURFACE**

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

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



**TYPICAL DRIVEWAY PROFILES**

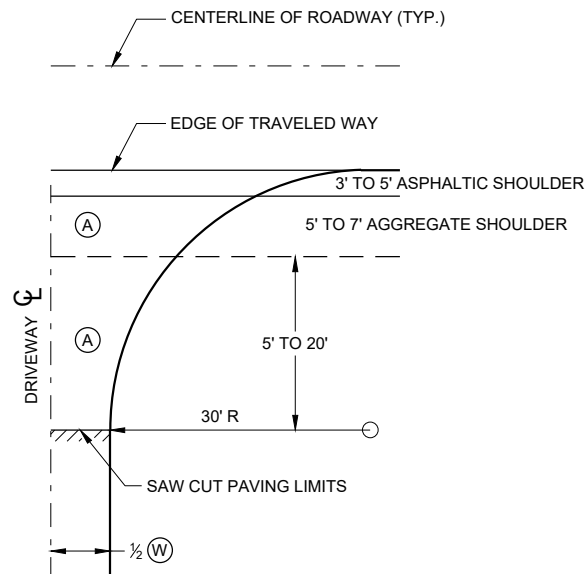


**TYPICAL CROSS SECTION FOR  
PRIVATE DRIVE OR FIELD ENTRANCE  
ASPHALTIC SURFACE**

**DRIVEWAYS WITHOUT  
CURB AND GUTTER**

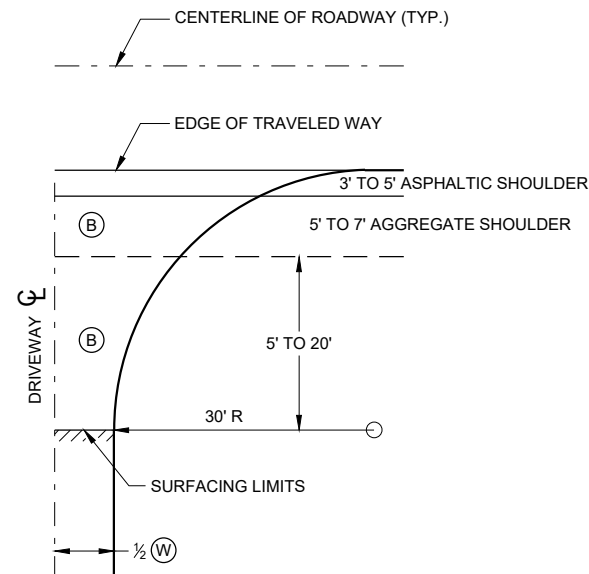
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

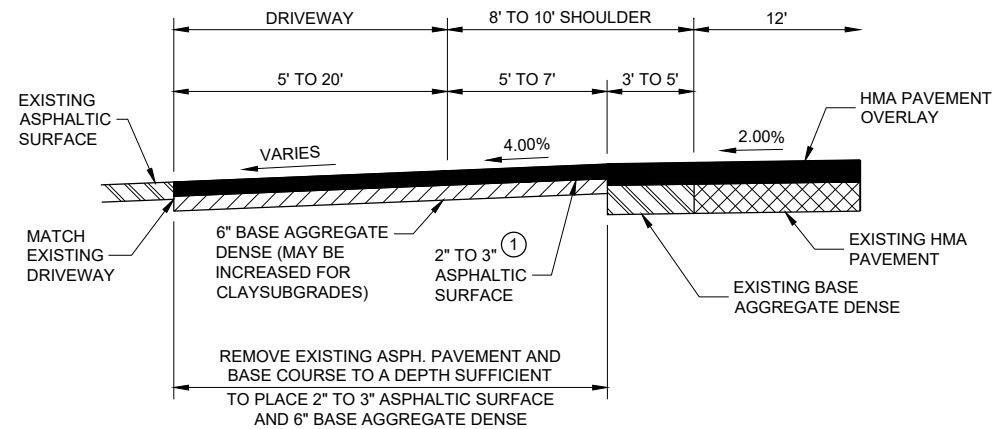


**PLAN VIEW  
HALF SECTION**

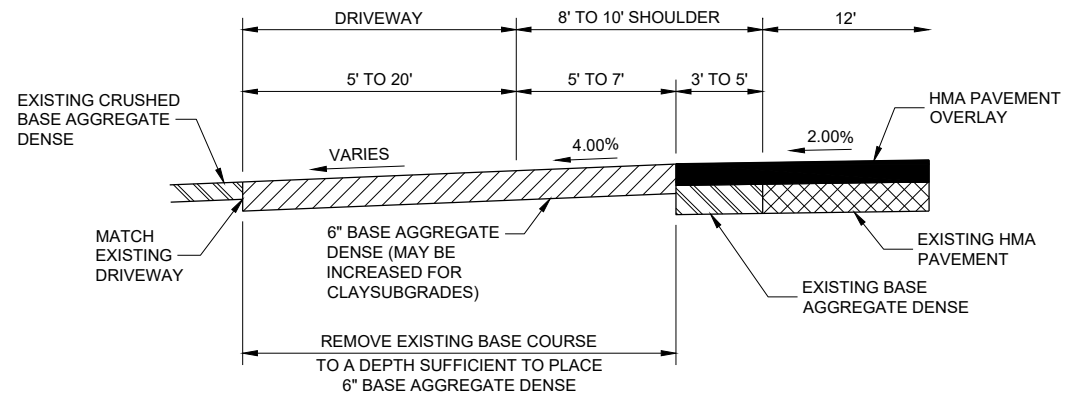
- (A) : PAID FOR AS ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES. (TON)
- (B) : PAID FOR AS BASE AGGREGATE DENSE 1 1/4" (TON)
- (W) : DRIVEWAY WIDTH 16' MIN. - 24' MAX.



**PLAN VIEW  
HALF SECTION**



**PROFILE VIEW  
RURAL ENTRANCE  
WITH ASPHALTIC SURFACE  
RESURFACING PROJECTS**



**PROFILE VIEW  
RURAL ENTRANCE  
WITH AGGREGATE SURFACE  
6" BASE AGGREGATE DENSE  
RESURFACING PROJECTS**

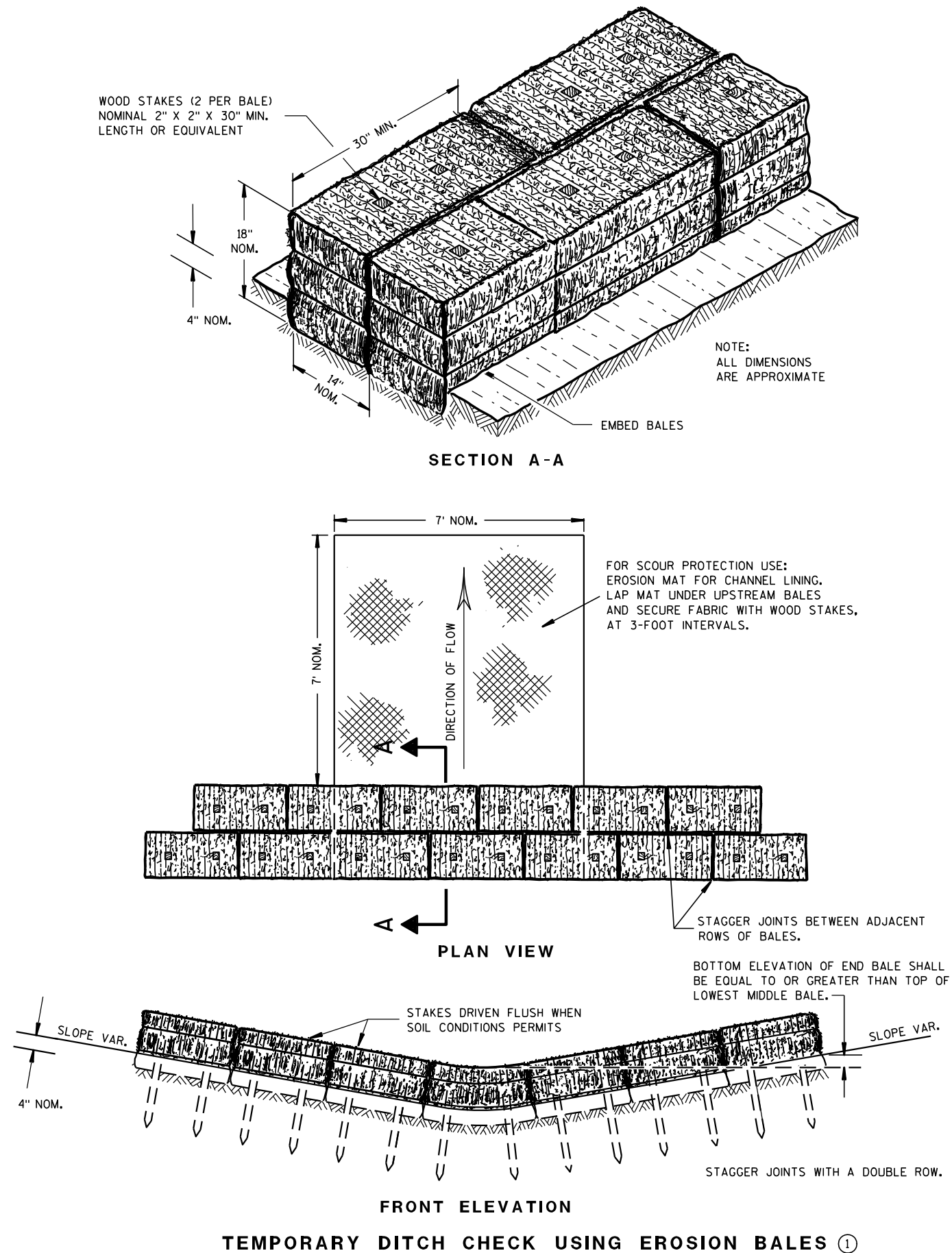
**GENERAL NOTES**

- ① DESIGN WILL DETERMINE FINAL DRIVEWAY ASPHALTIC THICKNESS BASED ON TYPE OF USAGE AND LOADINGS.

**DRIVEWAYS WITHOUT CURB  
AND GUTTER RESURFACING  
PROJECTS RURAL**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

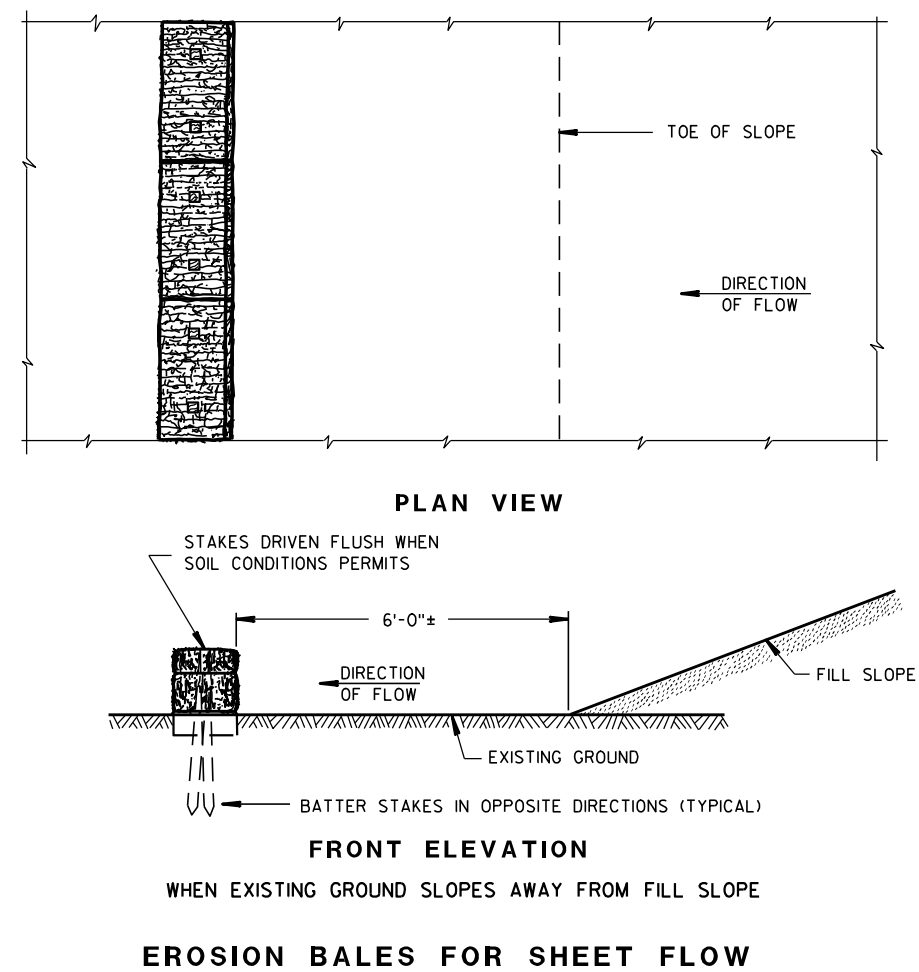
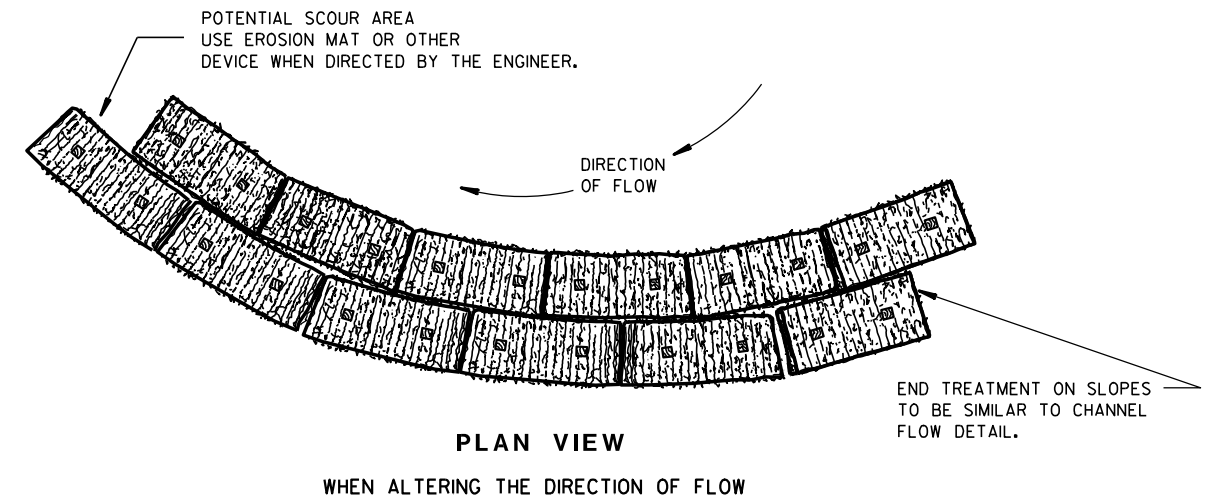
APPROVED  
December 2016 /S/ Rodney Taylor  
DATE ROADWAY STANDARDS DEVELOPMENT  
ENGINEER  
FHWA



## 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.

- ① TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.

TYPICAL INSTALLATIONS OF  
EROSION BALES / TEMPORARY  
DITCH CHECKS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02  
DATE/S/ Beth Canestra  
CHIEF ROADWAY DEVELOPMENT ENGINEER

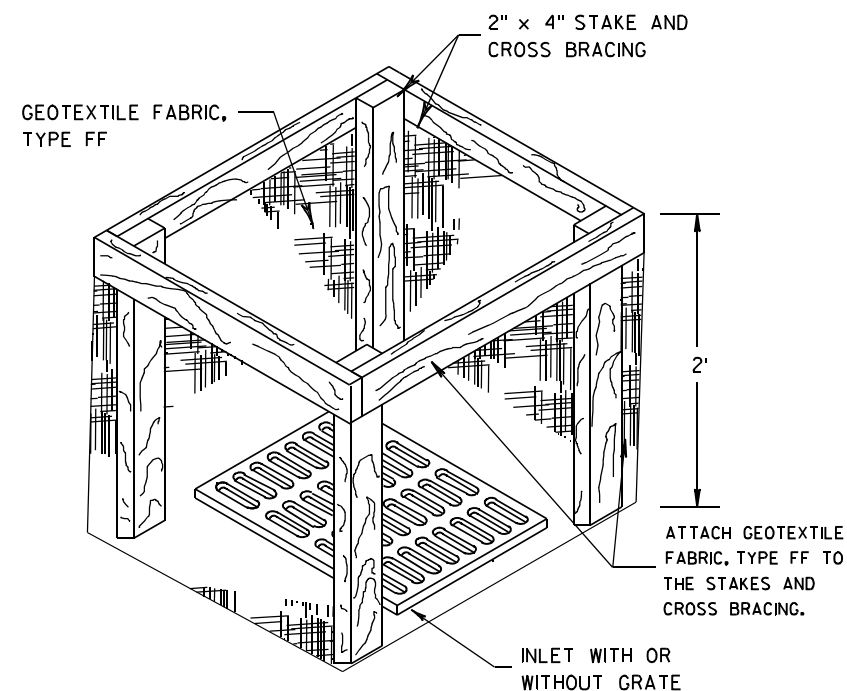
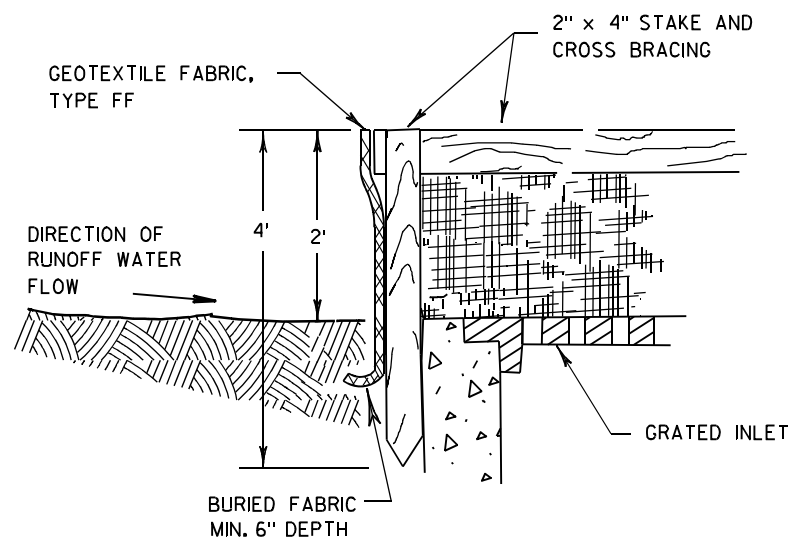
FHWA



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



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



**INLET PROTECTION, TYPE A**

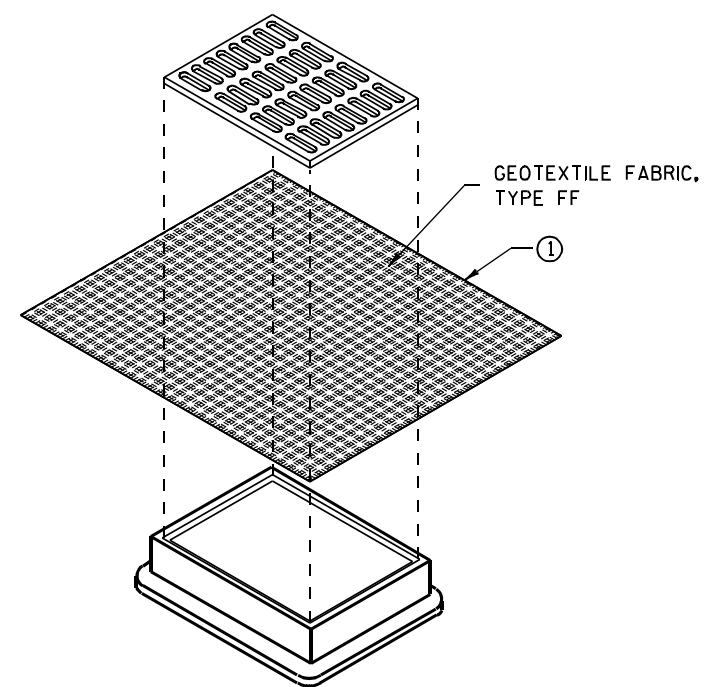
**GENERAL NOTES**

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

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

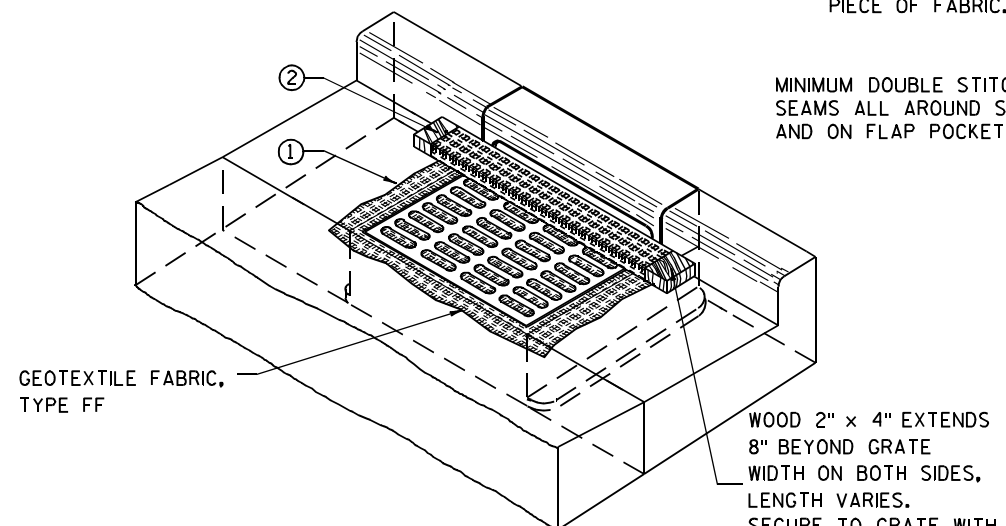
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

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



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

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



**INLET PROTECTION, TYPE C (WITH CURB BOX)**

**INSTALLATION NOTES**

**TYPE B & C**

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

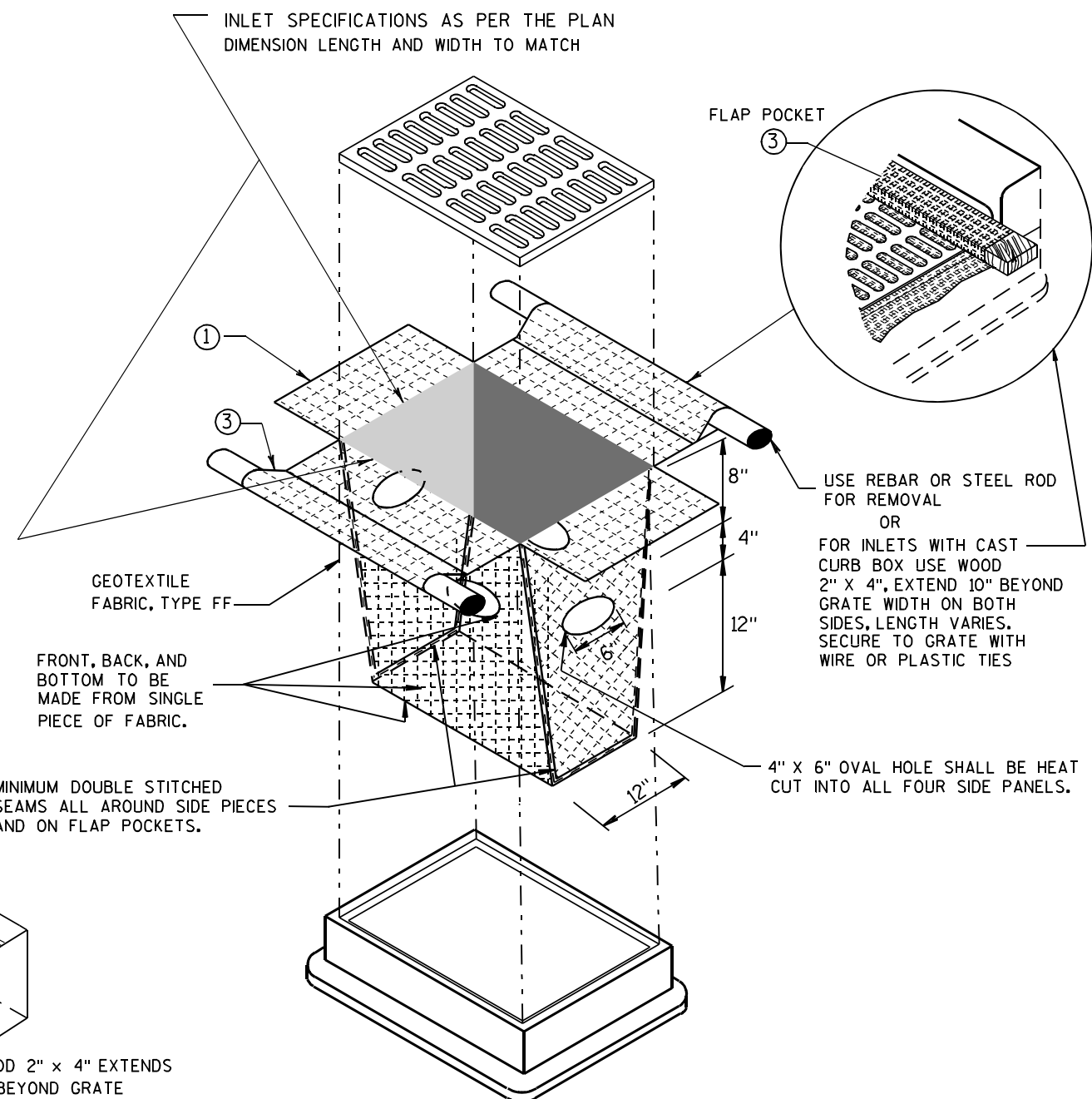
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

**TYPE D**

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

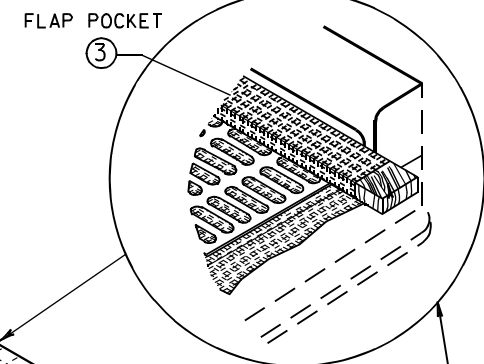
TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

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



**INLET PROTECTION, TYPE D**

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



USE REBAR OR STEEL ROD FOR REMOVAL OR  
FOR INLETS WITH CAST CURB BOX USE WOOD 2" X 4", EXTEND 10" BEYOND GRATE WIDTH ON BOTH SIDES, LENGTH VARIES. SECURE TO GRATE WITH WIRE OR PLASTIC TIES

4" X 6" OVAL HOLE SHALL BE HEAT CUT INTO ALL FOUR SIDE PANELS.

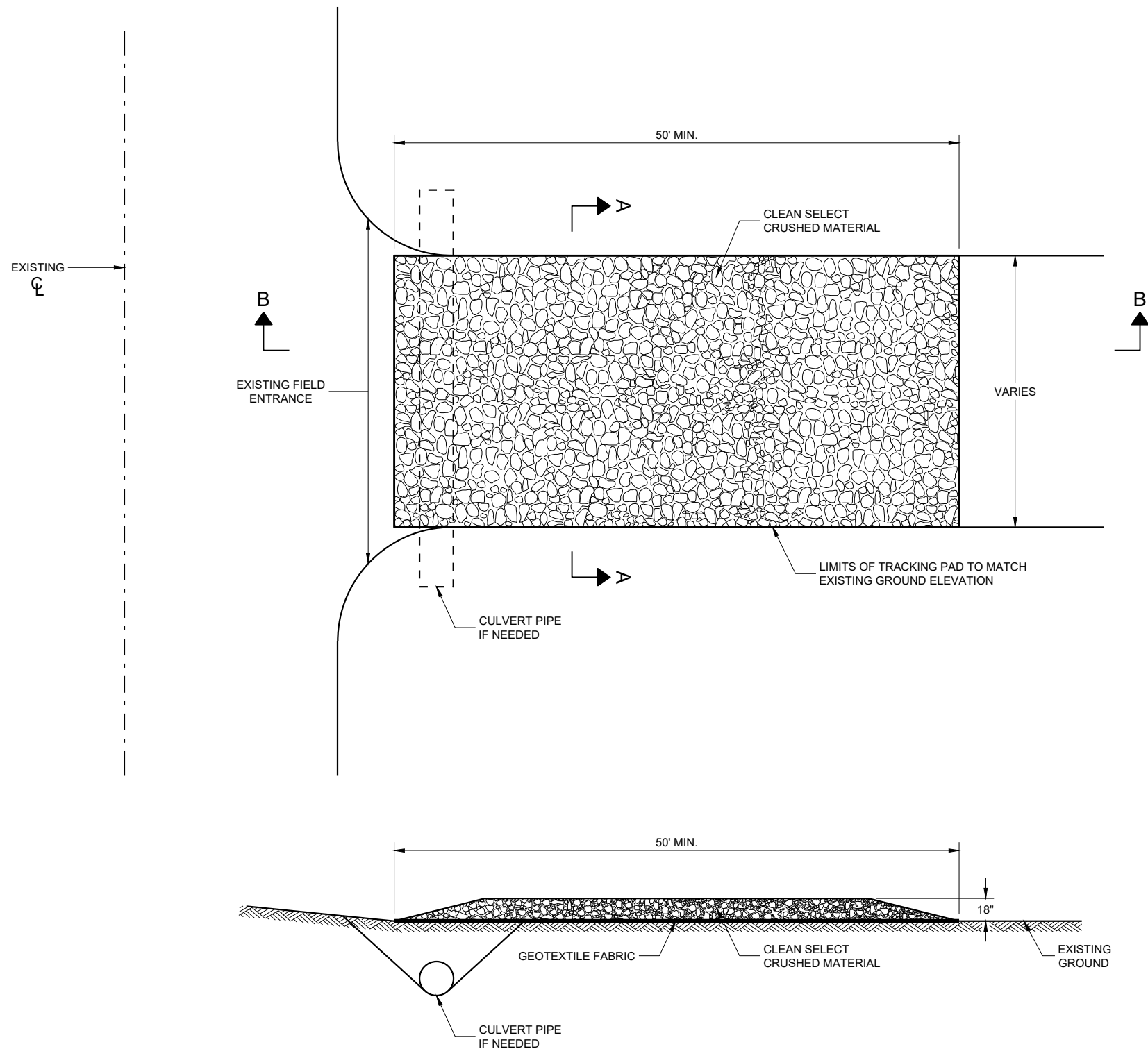
MINIMUM DOUBLE STITCHED SEAMS ALL AROUND SIDE PIECES AND ON FLAP POCKETS.

WOOD 2" X 4" EXTENDS 8" BEYOND GRATE WIDTH ON BOTH SIDES, LENGTH VARIES. SECURE TO GRATE WITH WIRE OR PLASTIC TIES

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

**STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION**

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



**GENERAL NOTES**

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

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

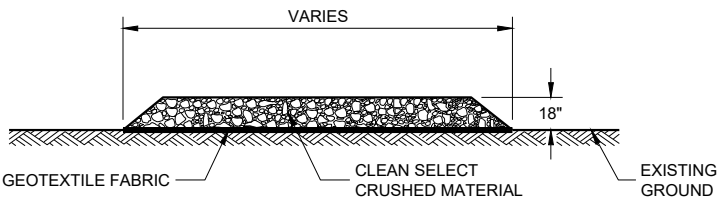
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

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

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

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

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



**SECTION A - A**

**TRACKING PAD**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

3/24/2011

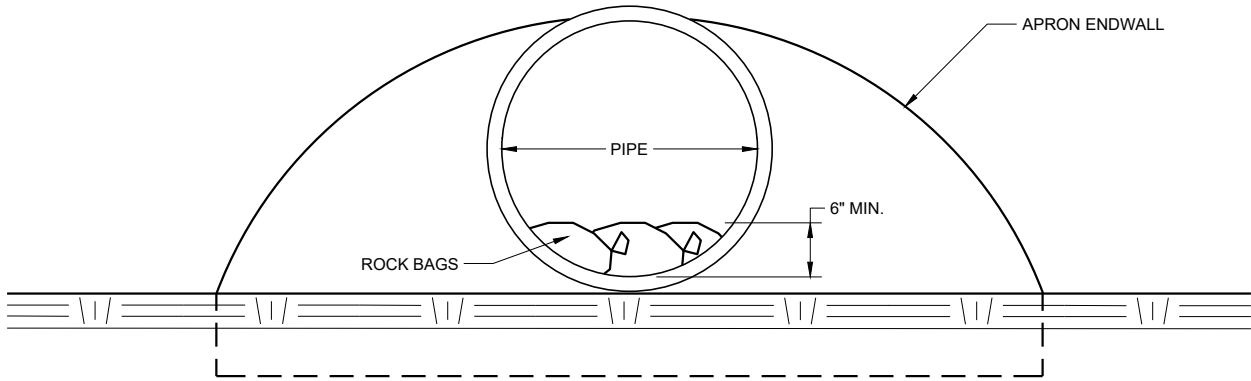
DATE

FHWA

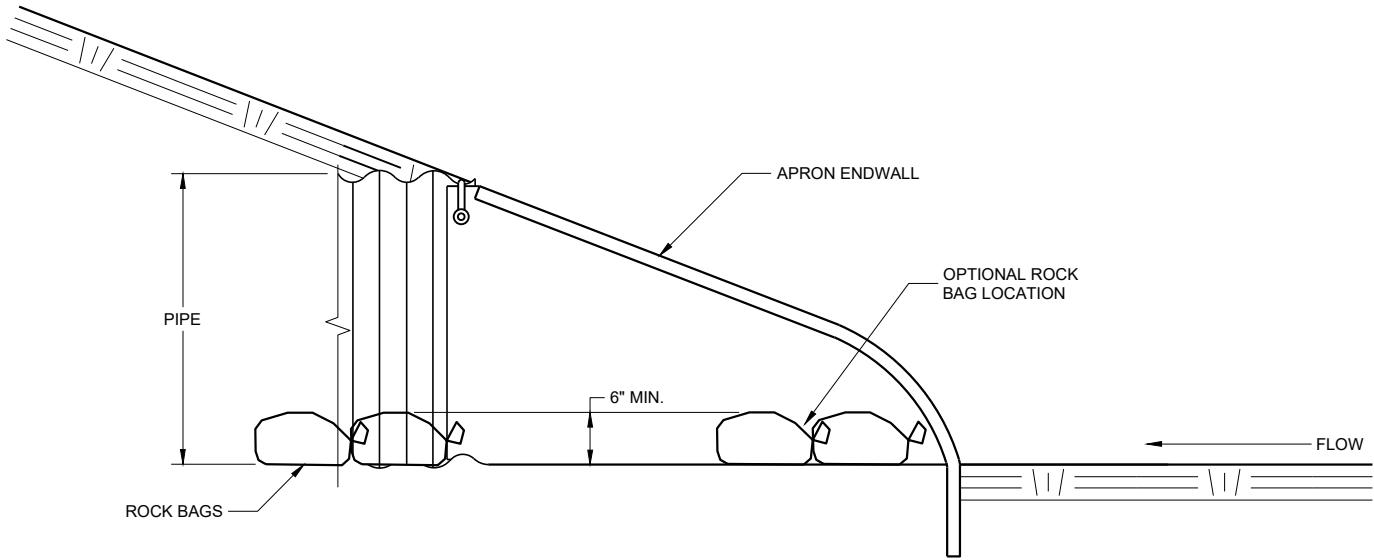
/S/ Jerry H. Zogg

ROADWAY STANDARDS DEVELOPMENT

ENGINEER



END VIEW



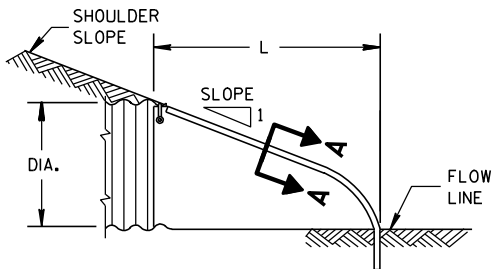
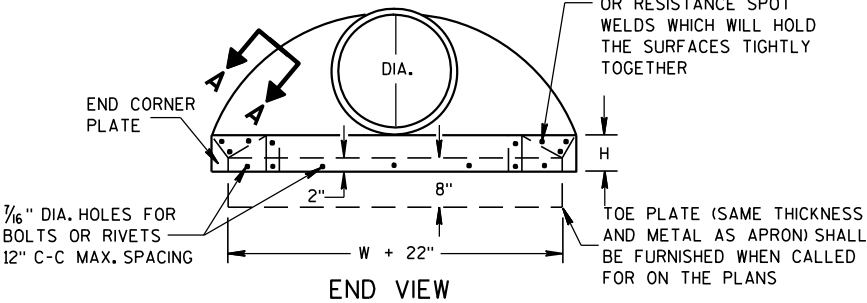
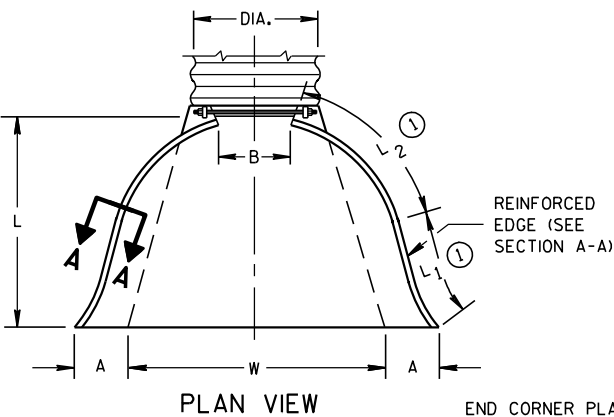
SIDE VIEW

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

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

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

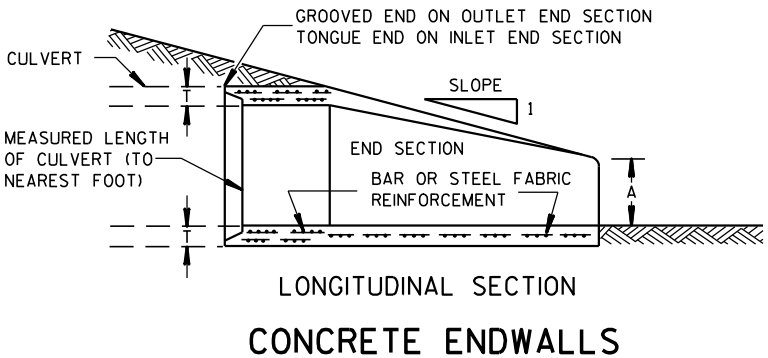
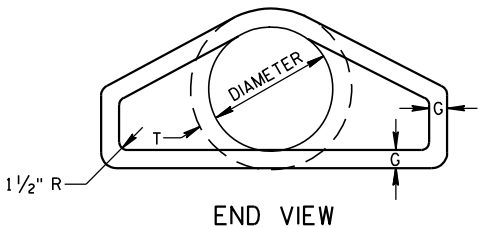
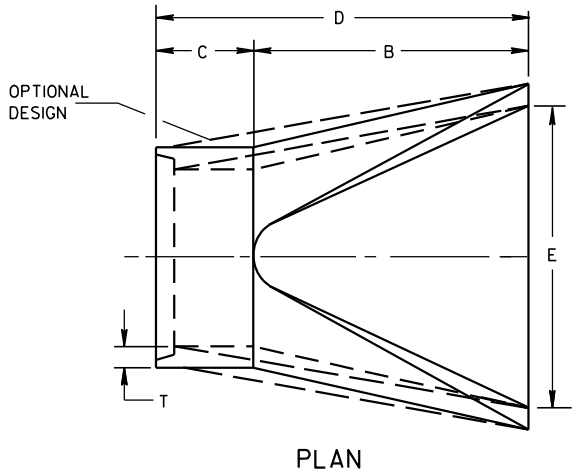
\* EXCEPT CENTER PANEL  
SEE GENERAL NOTES



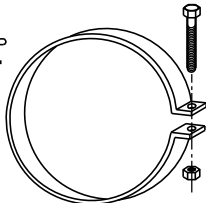
METAL ENDWALLS

| REINFORCED CONCRETE APRON ENDWALLS |                     |        |        |           |            |     |       |                  |  |  |  |  |
|------------------------------------|---------------------|--------|--------|-----------|------------|-----|-------|------------------|--|--|--|--|
| PIPE DIA.<br>(IN.)                 | DIMENSIONS (Inches) |        |        |           |            |     |       | APPROX.<br>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       |  |  |  |  |

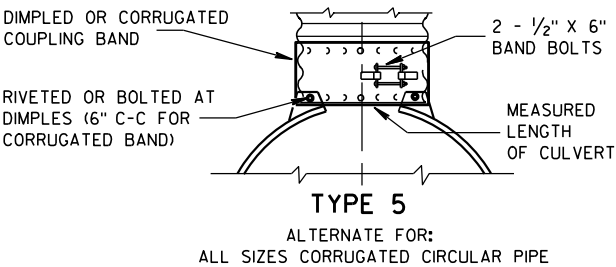
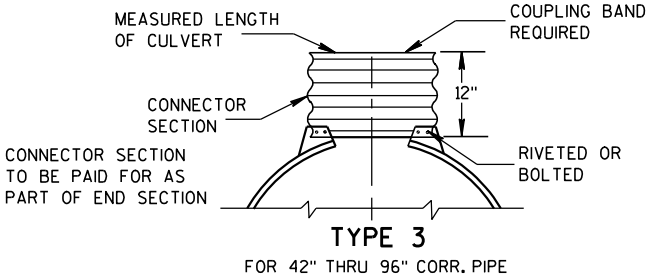
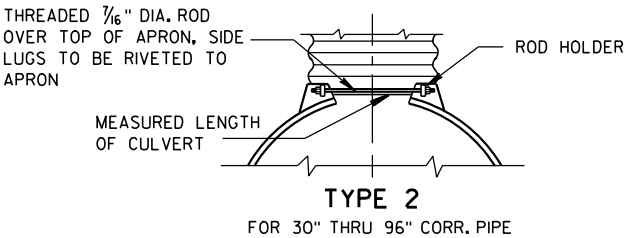
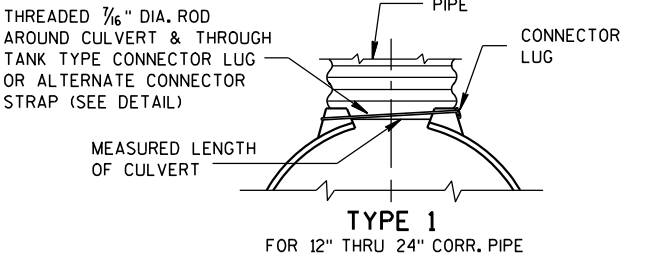
\* MINIMUM  
\*\* MAXIMUM



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



ALTERNATE FOR TYPE 1 CONNECTION  
END SECTION CONNECTOR STRAP



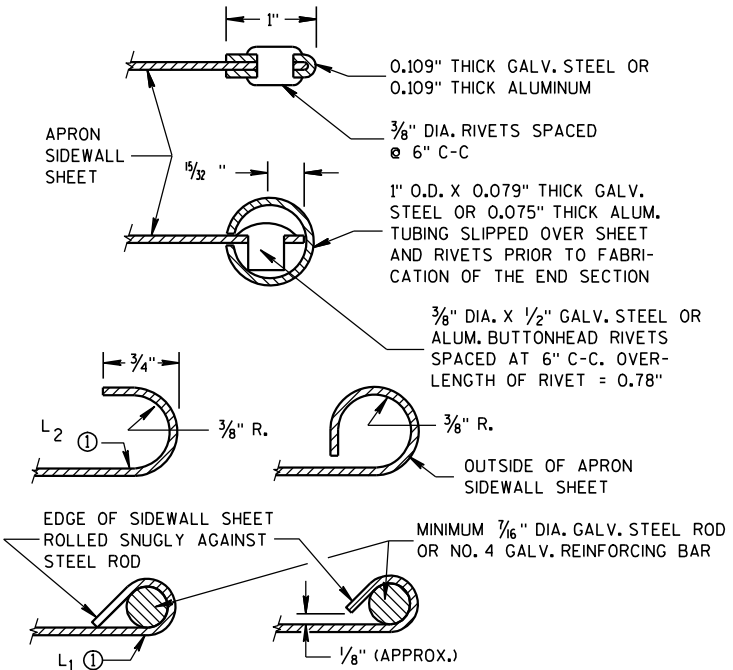
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



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 VISE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

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

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

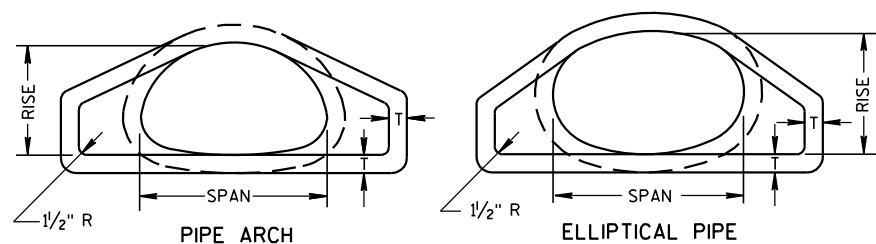
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

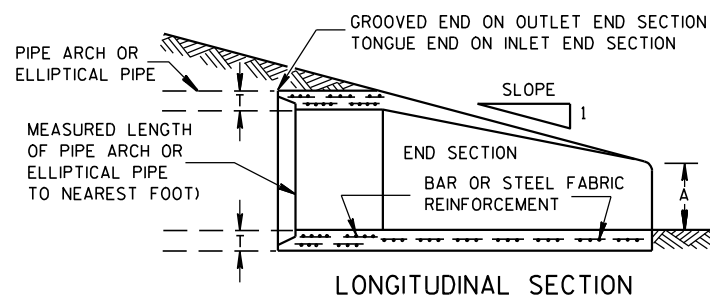
APRON ENDWALLS FOR  
CULVERT PIPE

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

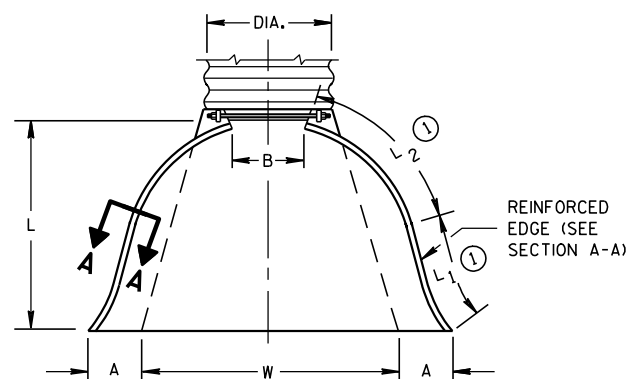


END VIEW

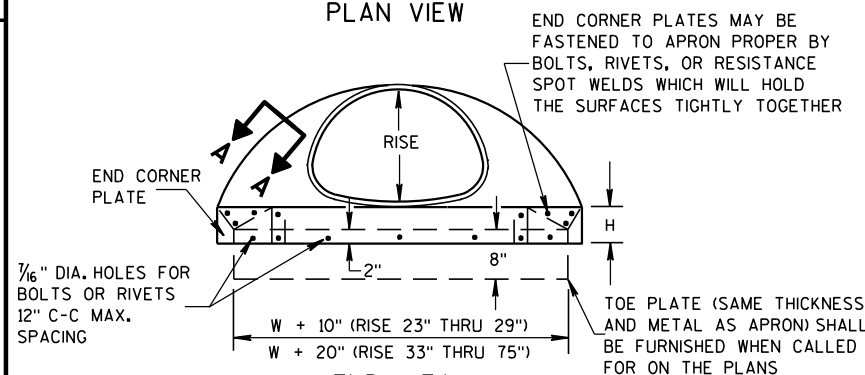


LONGITUDINAL SECTION

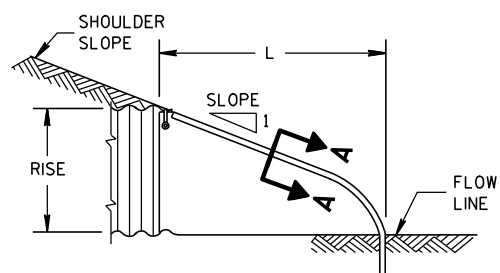
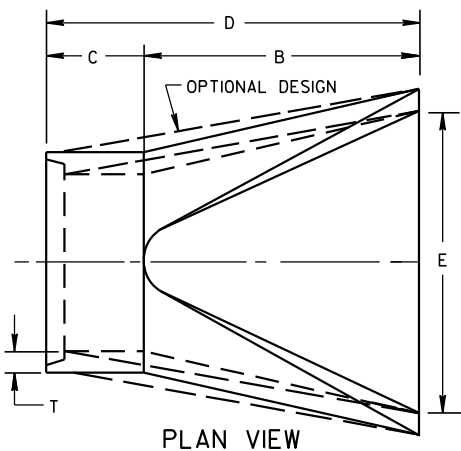
## CONCRETE ENDWALLS



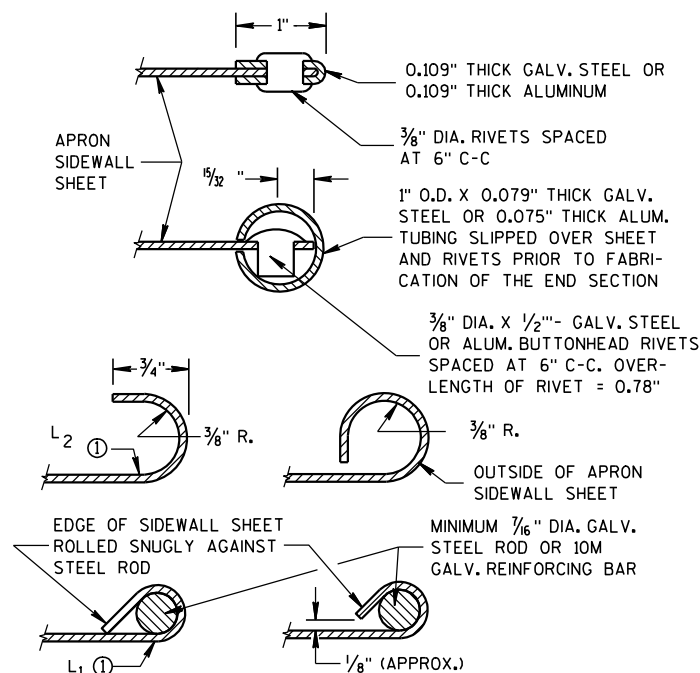
PLAN VIEW



END VIEW

SIDE ELEVATION  
METAL ENDWALLS

PLAN VIEW



SECTION A-A

| 2- 2/3" X 1/2" CORRUGATIONS |          |      |                      |       |                     |          |         |           |      |        |         |               |       |
|-----------------------------|----------|------|----------------------|-------|---------------------|----------|---------|-----------|------|--------|---------|---------------|-------|
| EQUIV. DIA. (Inches)        | (Inches) |      | MIN. THICK. (Inches) |       | DIMENSIONS (Inches) |          |         |           |      |        |         | APPROX. SLOPE | BODY  |
|                             | SPAN     | RISE | STEEL                | ALUM. | A (±1")             | B (MAX.) | H (±1") | L (±1/2") | L1 ① | L2 ①   | W (±2") |               |       |
| 15                          | 17       | 13   | .064                 | .060  | 7                   | 9        | 6       | 19        | 14   | 16     | 30      | 2 1/2 to 1    | 1 Pc. |
| 18                          | 21       | 15   | .064                 | .060  | 7                   | 10       | 6       | 23        | 14   | 19 3/8 | 36      | 2 1/2 to 1    | 1 Pc. |
| 21                          | 24       | 18   | .064                 | .060  | 8                   | 12       | 6       | 28        | 18   | 21 3/4 | 42      | 2 1/2 to 1    | 1 Pc. |
| 24                          | 28       | 20   | .064                 | .060  | 9                   | 14       | 6       | 32        | 18   | 27 1/2 | 48      | 2 1/2 to 1    | 1 Pc. |
| 30                          | 35       | 24   | .079                 | .075  | 10                  | 16       | 6       | 39        | 18   | 37 5/8 | 60      | 2 1/2 to 1    | 1 Pc. |
| 36                          | 42       | 29   | .079                 | .075  | 12                  | 18       | 8       | 46        | 24   | 45 3/8 | 75      | 2 1/2 to 1    | 1 Pc. |
| 42                          | 49       | 33   | .109                 | .105  | 13                  | 21       | 9       | 53        | 24   | 54 3/4 | 85      | 2 1/2 to 1    | 2 Pc. |
| 48                          | 57       | 38   | .109                 | .105  | 18                  | 26       | 12      | 63        | 24   | 68     | 90      | 2 1/2 to 1    | 3 Pc. |
| 54                          | 64       | 43   | .109                 | .105  | 18                  | 30       | 12      | 70        | 24   | 72 3/4 | 102     | 2 1/4 to 1    | 3 Pc. |
| 60                          | 71       | 47   | .109*                | .105* | 18                  | 33       | 12      | 77        | 30   | 82 1/4 | 114     | 2 1/4 to 1    | 3 Pc. |
| 66                          | 77       | 52   | .109*                | .105* | 18                  | 36       | 12      | 77        | —    | —      | 126     | 2 to 1        | 3 Pc. |
| 72                          | 83       | 57   | .109*                | .105* | 18                  | 39       | 12      | 77        | —    | —      | 138     | 2 to 1        | 3 Pc. |

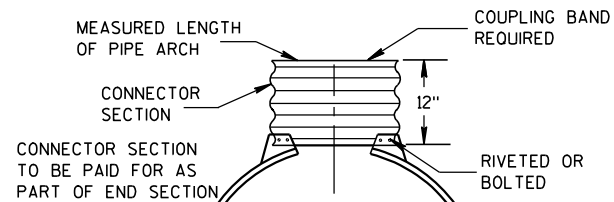
| 3" X 1" CORRUGATIONS |          |      |                      |       |                     |          |         |           |      |        |         |               |       |
|----------------------|----------|------|----------------------|-------|---------------------|----------|---------|-----------|------|--------|---------|---------------|-------|
| EQUIV. DIA. (Inches) | (Inches) |      | MIN. THICK. (Inches) |       | DIMENSIONS (Inches) |          |         |           |      |        |         | APPROX. SLOPE | BODY  |
|                      | SPAN     | RISE | STEEL                | ALUM. | A (±1")             | B (MAX.) | H (±1") | L (±1/2") | L1 ① | L2 ①   | W (±2") |               |       |
| 48                   | 53       | 41   | .109                 | .105  | 18                  | 26       | 12      | 63        | 24   | 72 3/4 | 90      | 2 1/2 to 1    | 2 Pc. |
| 54                   | 60       | 46   | .109                 | .105  | 18                  | 30       | 12      | 70        | 30   | 82 1/4 | 102     | 2 to 1        | 2 Pc. |
| 60                   | 66       | 51   | .109*                | .105* | 18                  | 33       | 12      | 77        | —    | —      | 114     | 1 1/2 to 1    | 3 Pc. |
| 66                   | 73       | 55   | .109*                | .105* | 18                  | 36       | 12      | 77        | —    | —      | 126     | 1 1/2 to 1    | 3 Pc. |
| 72                   | 81       | 59   | .109*                | .105* | 18                  | 39       | 12      | 77        | —    | —      | 138     | 2 to 1        | 3 Pc. |
| 78                   | 87       | 63   | .109*                | .105* | 22                  | 38       | 12      | 77        | —    | —      | 148     | 1 1/2 to 1    | 3 Pc. |
| 84                   | 95       | 67   | .109*                | .105* | 22                  | 34       | 12      | 77        | —    | —      | 162     | 1 1/2 to 1    | 3 Pc. |
| 90                   | 103      | 71   | .109*                | .105* | 22                  | 38       | 12      | 77        | —    | —      | 174     | 1 1/2 to 1    | 3 Pc. |
| 96                   | 112      | 75   | .109*                | .105* | 24                  | 40       | 12      | 77        | —    | —      | 174     | 1 1/2 to 1    | 3 Pc. |

NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED.

\* EXCEPT CENTER PANEL  
SEE GENERAL NOTES

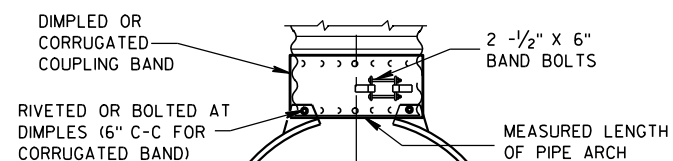
TYPE 2

FOR 17" X 13" THRU 112" X 75" PIPE ARCH



TYPE 3

FOR 64" X 43" THRU 112" X 75" PIPE ARCH



TYPE 5

ALTERNATE FOR:  
ALL SIZES CORRUGATED PIPE ARCHESNOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL,  
AND CORRUGATED BAND FITS INSIDE ENDWALL.

## CONNECTION DETAILS

## REINFORCED CONCRETE PIPE ARCH

| EQUIV. DIA. (Inches) | DIMENSIONS (Inches) |         |       |         |    |    |     |     | APPROX. SLOPE |
|----------------------|---------------------|---------|-------|---------|----|----|-----|-----|---------------|
|                      | ** SPAN             | ** RISE | T     | A       | B  | C  | D   | E   |               |
| 24                   | 29                  | 18      | 3     | 8 1/2   | 39 | 33 | 72  | 48  | 3 to 1        |
| 30                   | 36                  | 22      | 3 1/2 | 9 1/2   | 50 | 46 | 96  | 60  | 3 to 1        |
| 36                   | 44                  | 27      | 4     | 11 1/8  | 60 | 36 | 96  | 72  | 3 to 1        |
| 42                   | 51                  | 31      | 4 1/2 | 15 1/16 | 60 | 36 | 96  | 78  | 3 to 1        |
| 48                   | 58                  | 36      | 5     | 21      | 60 | 36 | 96  | 84  | 3 to 1        |
| 54                   | 65                  | 40      | 5 1/2 | 25 1/2  | 60 | 36 | 96  | 90  | 3 to 1        |
| 60                   | 73                  | 45      | 6     | 31      | 60 | 36 | 96  | 96  | 3 to 1        |
| 72                   | 88                  | 54      | 7     | 31      | 60 | 39 | 99  | 120 | 2 to 1        |
| 84                   | 102                 | 62      | 8     | 28 1/2  | 83 | 19 | 102 | 144 | 2 to 1        |

## REINFORCED CONCRETE ELLIPTICAL PIPE

| EQUIV. DIA. (Inches) | DIMENSIONS (Inches) |         |       |        |    |    |    |    | APPROX. SLOPE |
|----------------------|---------------------|---------|-------|--------|----|----|----|----|---------------|
|                      | ** SPAN             | ** RISE | T     | A      | B  | C  | D  | E  |               |
| 24                   | 30                  | 19      | 3 1/4 | 8 1/2  | 39 | 33 | 72 | 48 | 3 to 1        |
| 30                   | 38                  | 24      | 3 3/4 | 9 1/2  | 54 | 18 | 72 | 60 | 3 to 1        |
| 36                   | 45                  | 29      | 4 1/2 | 11 1/8 | 60 | 24 | 84 | 72 | 2 1/2 to 1    |
| 42                   | 53                  | 34      | 5     | 15 1/4 | 60 | 36 | 96 | 78 | 2 1/2 to 1    |
| 48                   | 60                  | 38      | 5 1/2 | 21     | 60 | 36 | 96 | 84 | 2 1/2 to 1    |
| 54                   | 68                  | 43      | 6     | 25 1/2 | 60 | 36 | 96 | 90 | 2 1/2 to 1    |
| 60                   | 76                  | 48      | 6 1/2 | 30     | 60 | 36 | 96 | 96 | 2 1/2 to 1    |

\*\*NOMINAL SIZE

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

ALL THREE PIECE STEEL APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 66" X 51" PIPE ARCH 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 ARCH 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 77" X 52" THROUGH 112" X 75" 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 ARCH SIZES UP TO 73" X 55" A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR  
PIPE ARCH AND  
ELLIPTICAL PIPESTATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

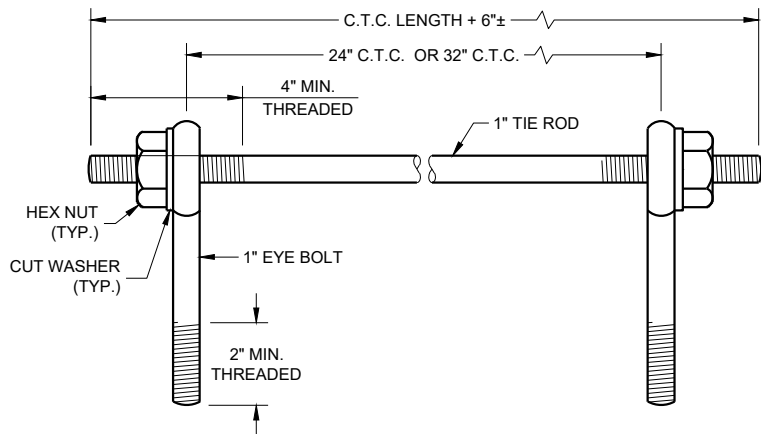
APPROVED

11/30/94

DATE

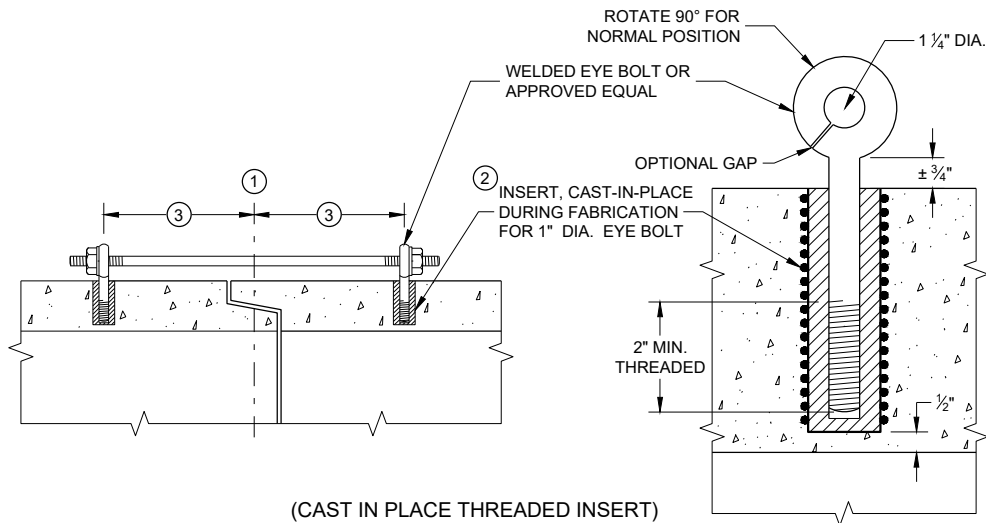
FHWA

/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

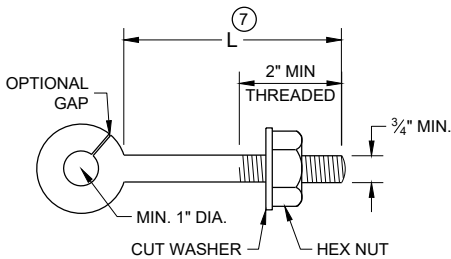
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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.

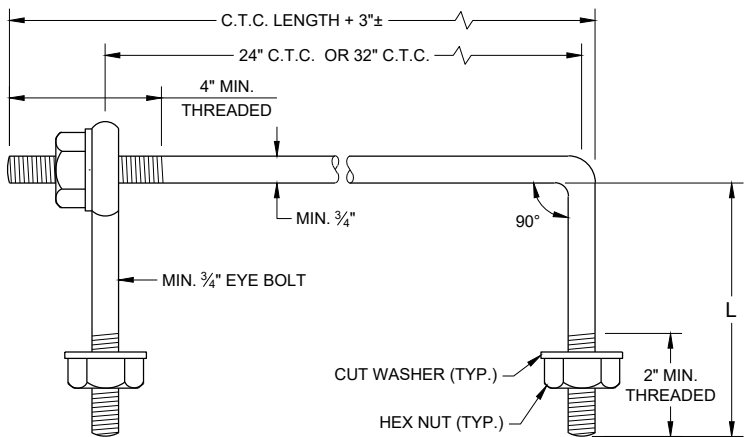
JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

- 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.

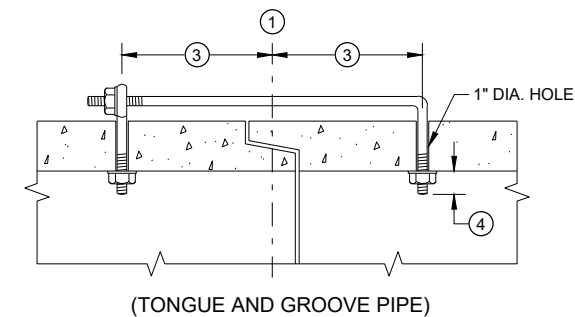


EYE BOLT 7

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



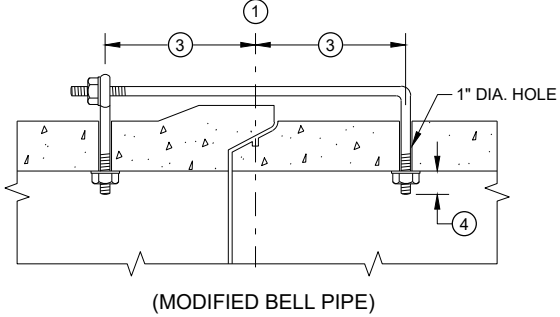
EYE BOLT AND TIE ROD



LONGITUDINAL SECTION

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

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

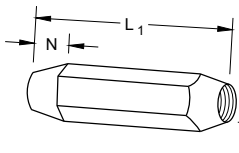


(MODIFIED BELL PIPE)

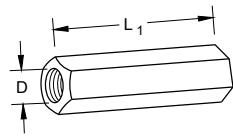
ADJUSTABLE TIE ROD TABLE

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

DIMENSIONS SHOWN ARE IN INCHES

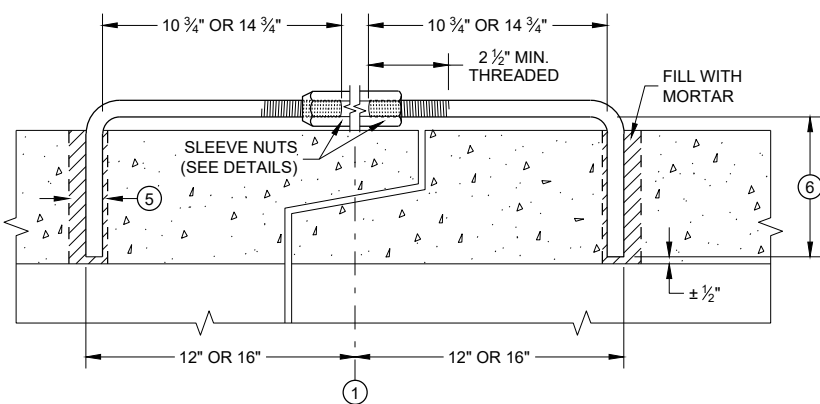


TAPERED



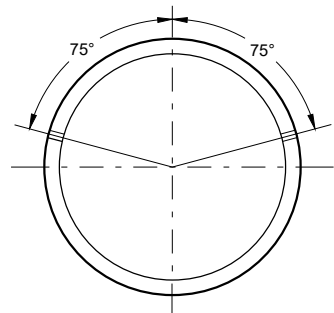
PLAIN

RIGHT AND LEFT THREADS  
SLEEVE NUTS



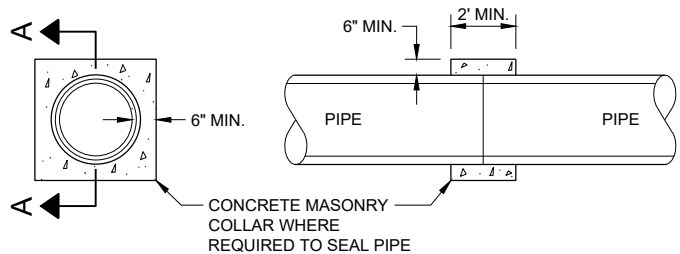
LONGITUDINAL SECTION

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



TRANSVERSE SECTION

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



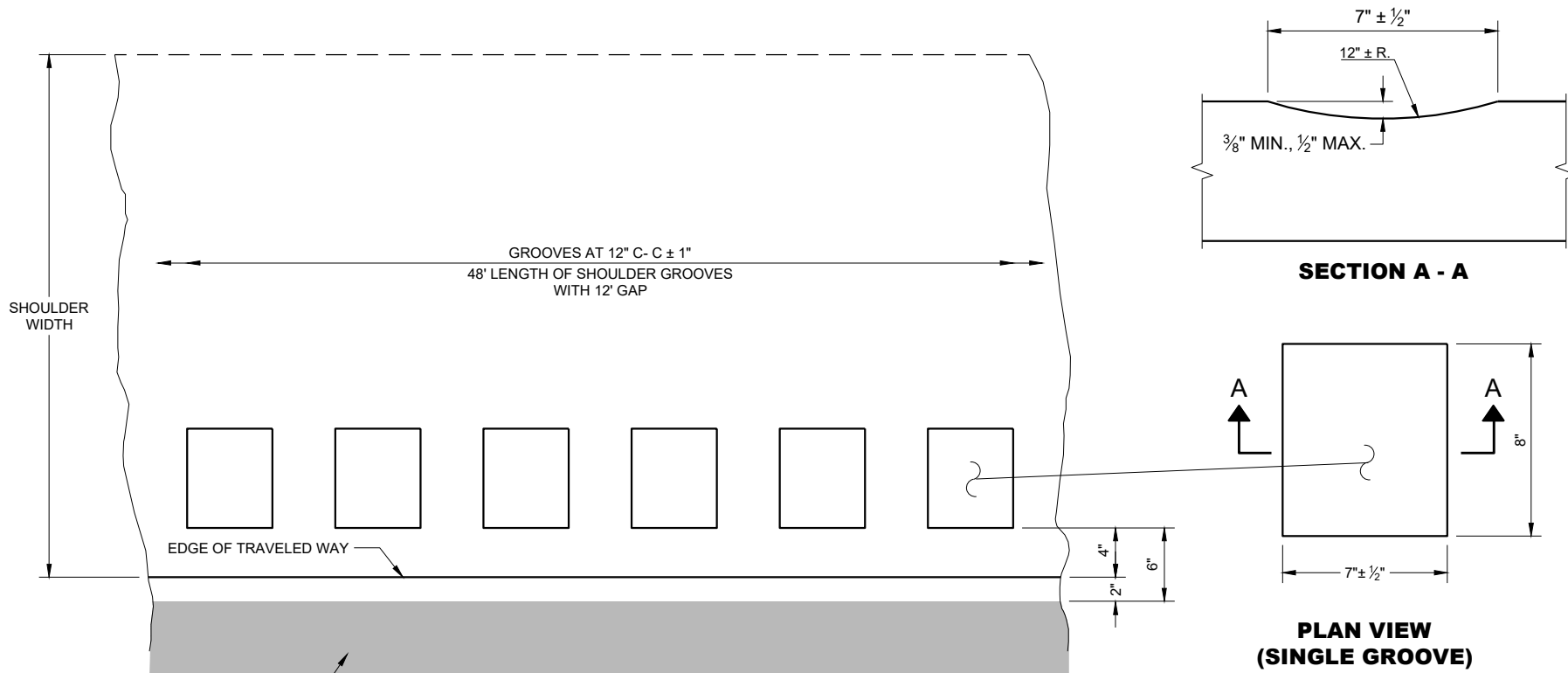
SECTION A - A

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

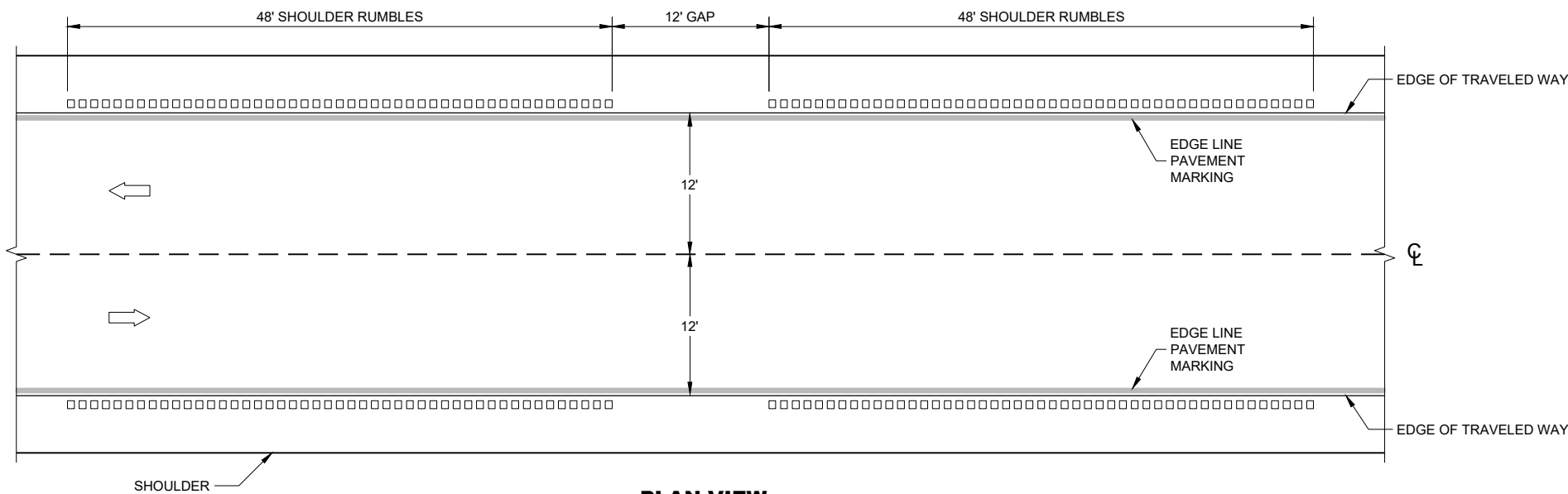
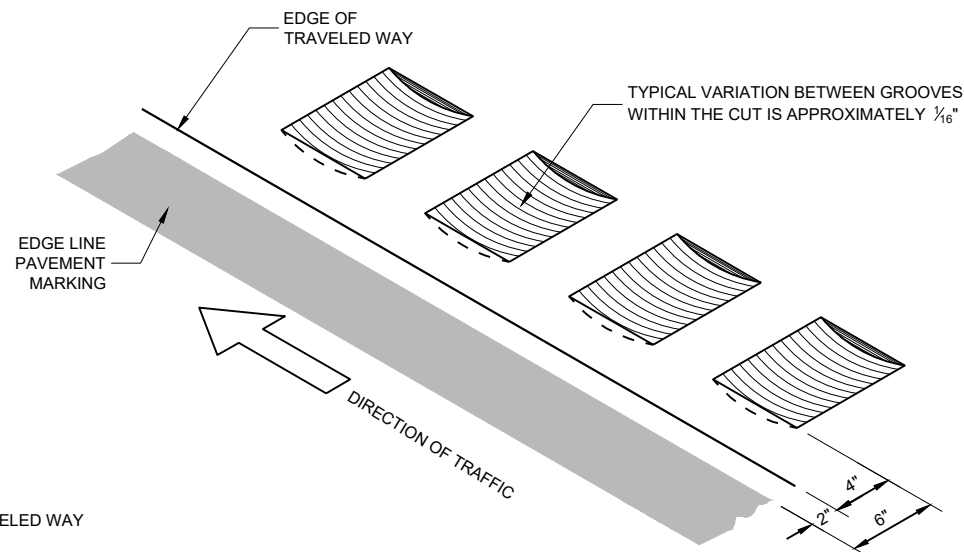


PLAN DETAIL VIEW  
SHOULDER WITH GROOVES

**GENERAL NOTES**

DO NOT MILL SHOULDER GROOVES THROUGH INTERSECTIONS, MARKED CROSSWALKS, NON-MOTORIZED PATH CROSSINGS, ETC. REFER TO SDD 13A10 SHEETS "g" AND "h".

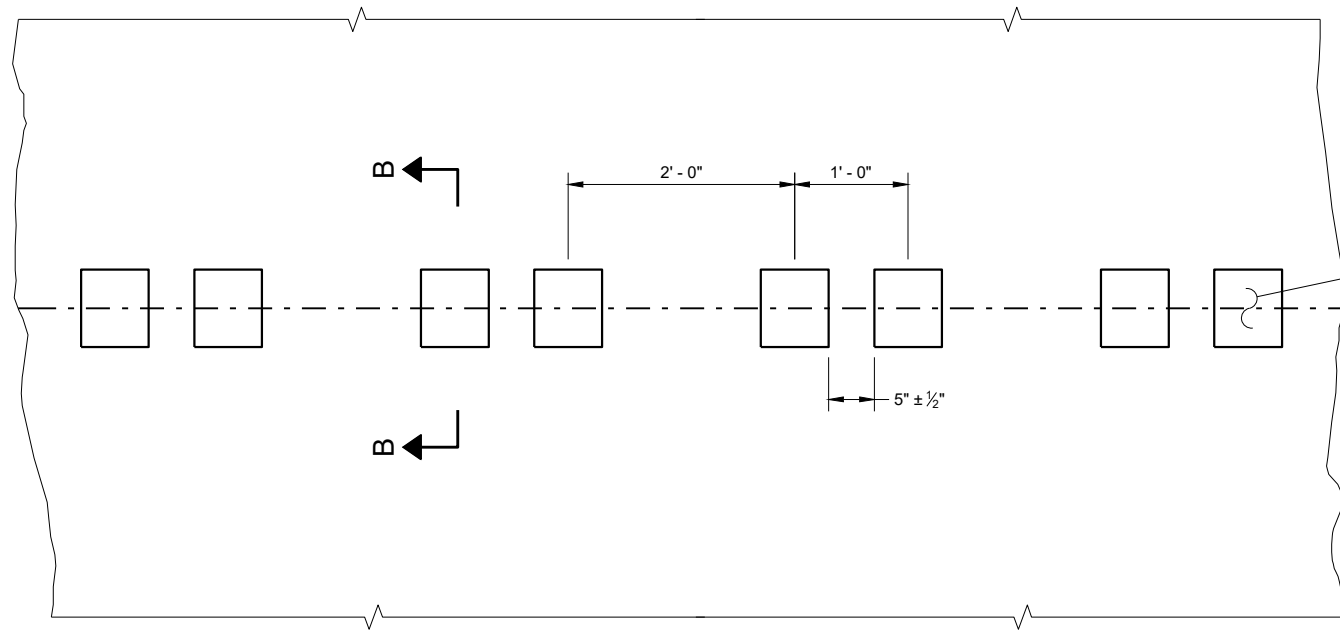
SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS WHEN DIRECTED BY THE ENGINEER.



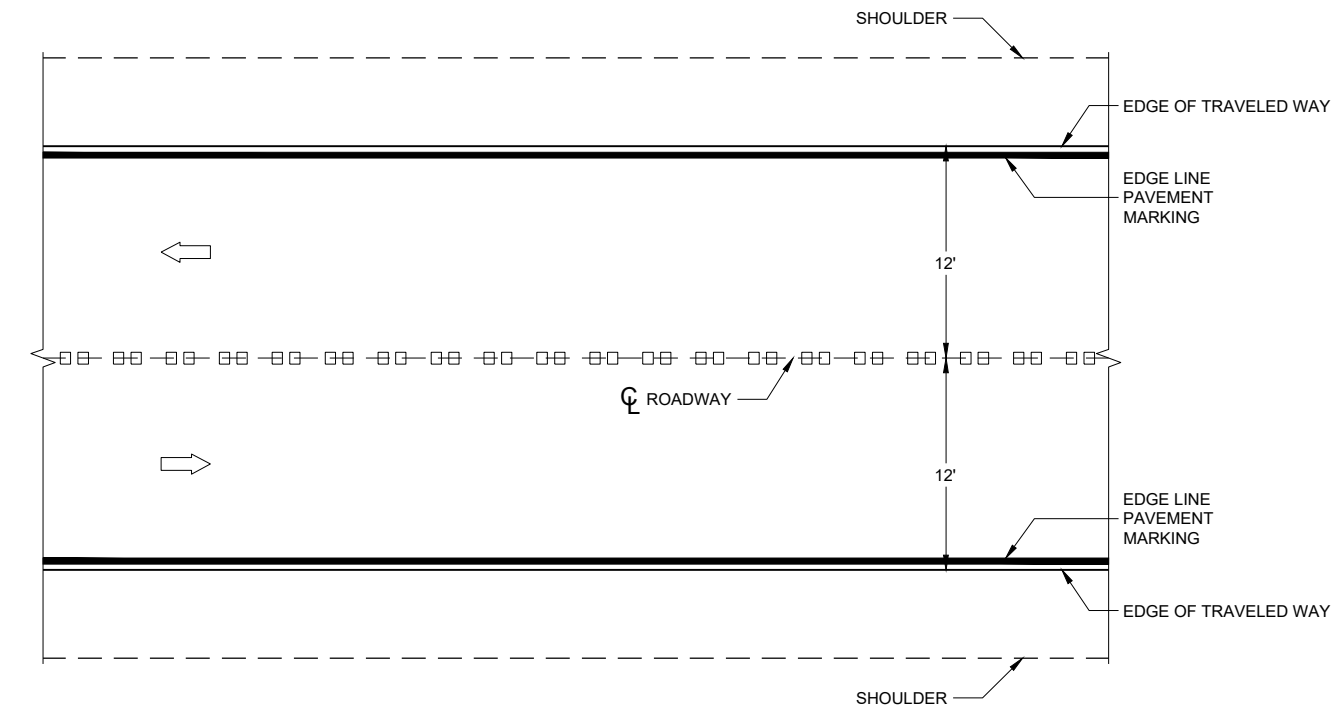
SHOULDER RUMBLE STRIPS - ASPHALT

**SHOULDER RUMBLE  
STRIPS ASPHALT**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

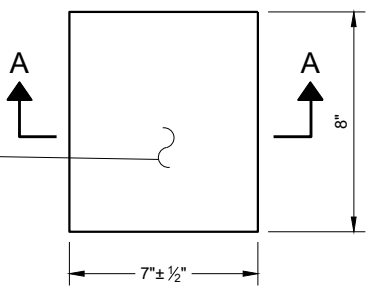


PLAN DETAIL VIEW

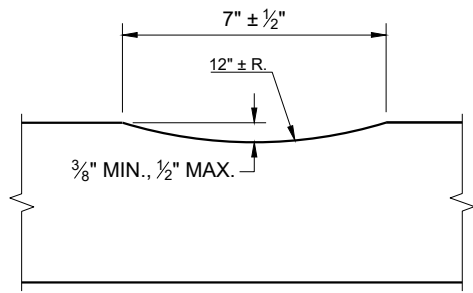


PLAN VIEW

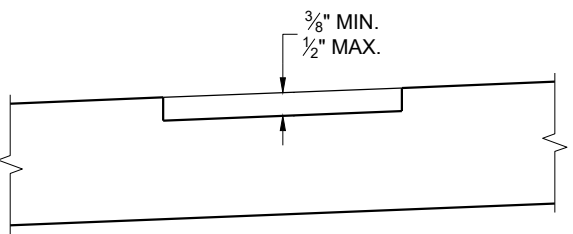
CENTERLINE RUMBLE STRIPS - ASPHALT



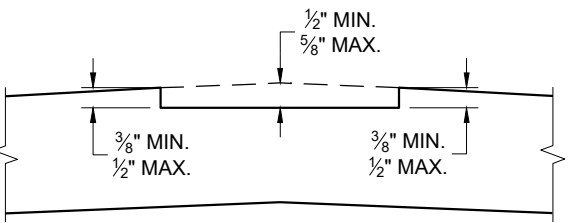
PLAN VIEW  
(SINGLE GROOVE)



SECTION A - A



SECTION B - B  
SUPERELEVATED ROADWAY

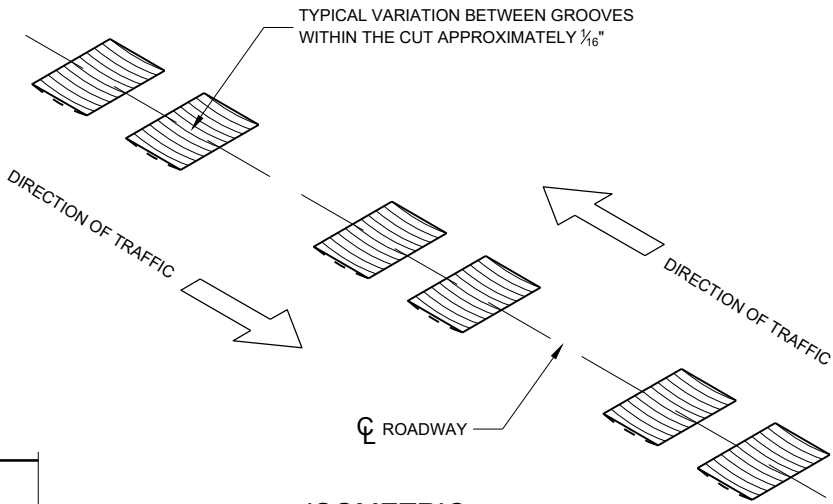


SECTION B - B  
CROWNED ROADWAY

GENERAL NOTES

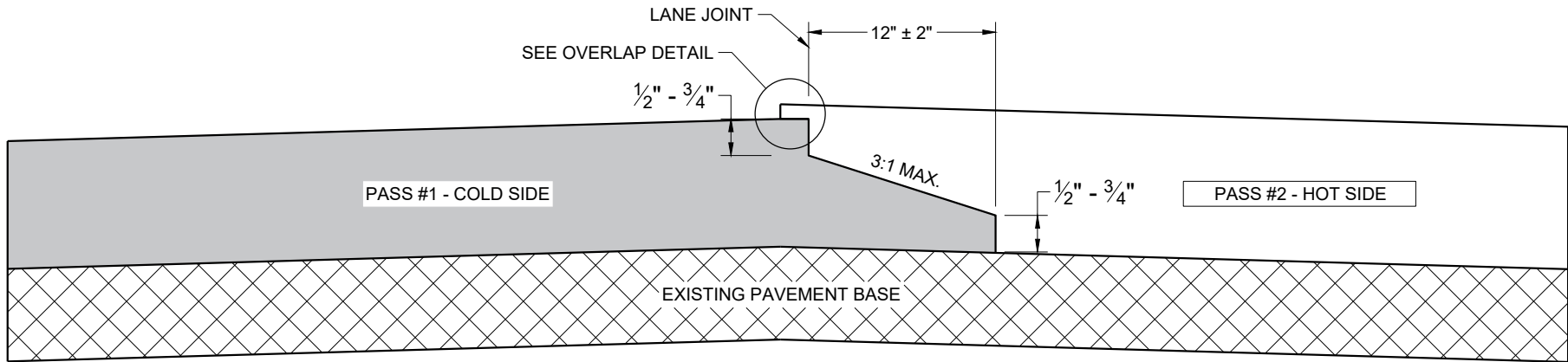
DO NOT MILL SHOULDER GROOVES THROUGH INTERSECTIONS, MARKED CROSSWALKS, NON-MOTORIZED PATH CROSSINGS, ETC. REFER TO SDD 13A11 SHEETS "d" AND "e".

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

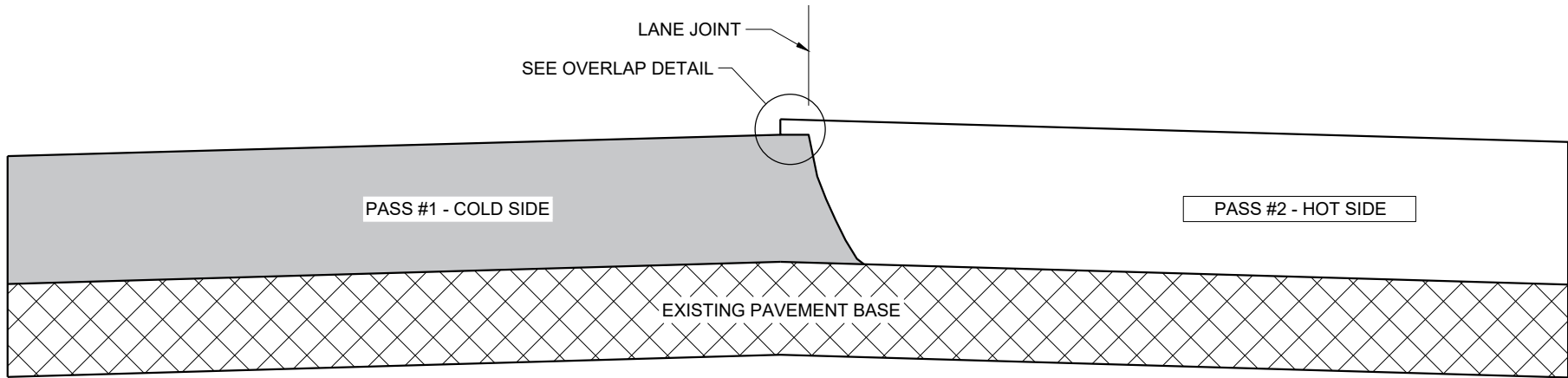


CENTERLINE RUMBLE  
STRIPS - ASPHALT

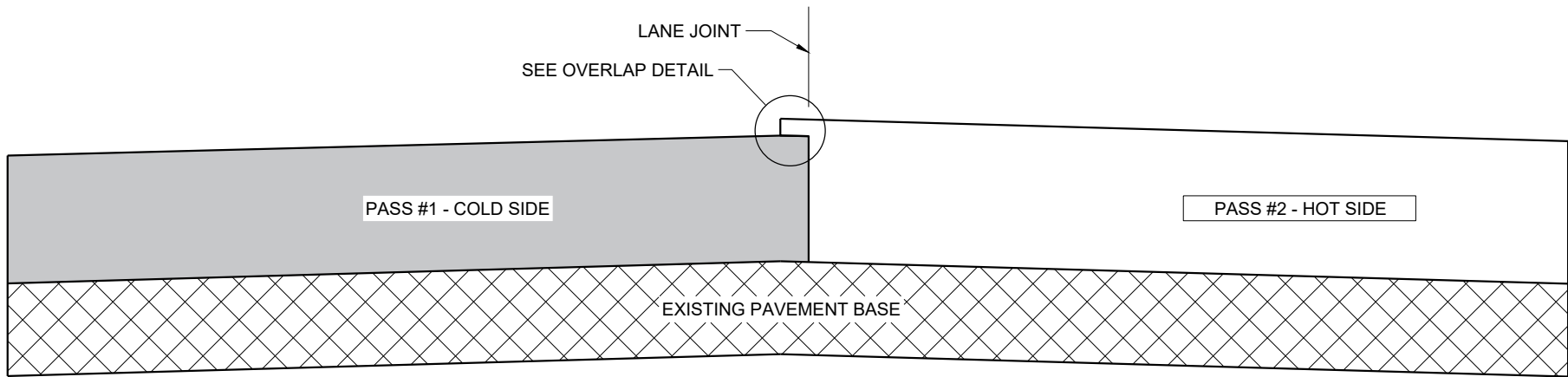
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



TYPICAL PAVEMENT CROSS SECTION  
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION  
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION  
VERTICAL JOINT (MILLED)

GENERAL NOTES

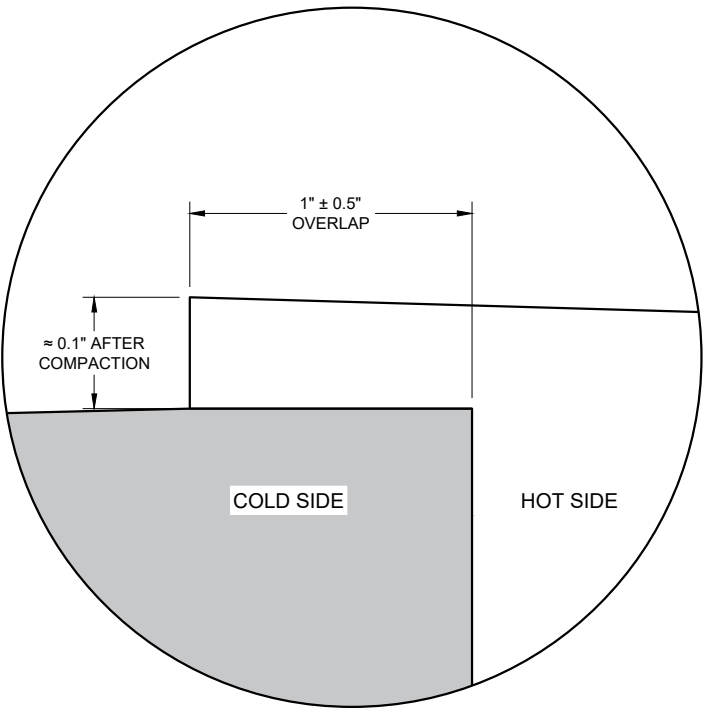
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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.

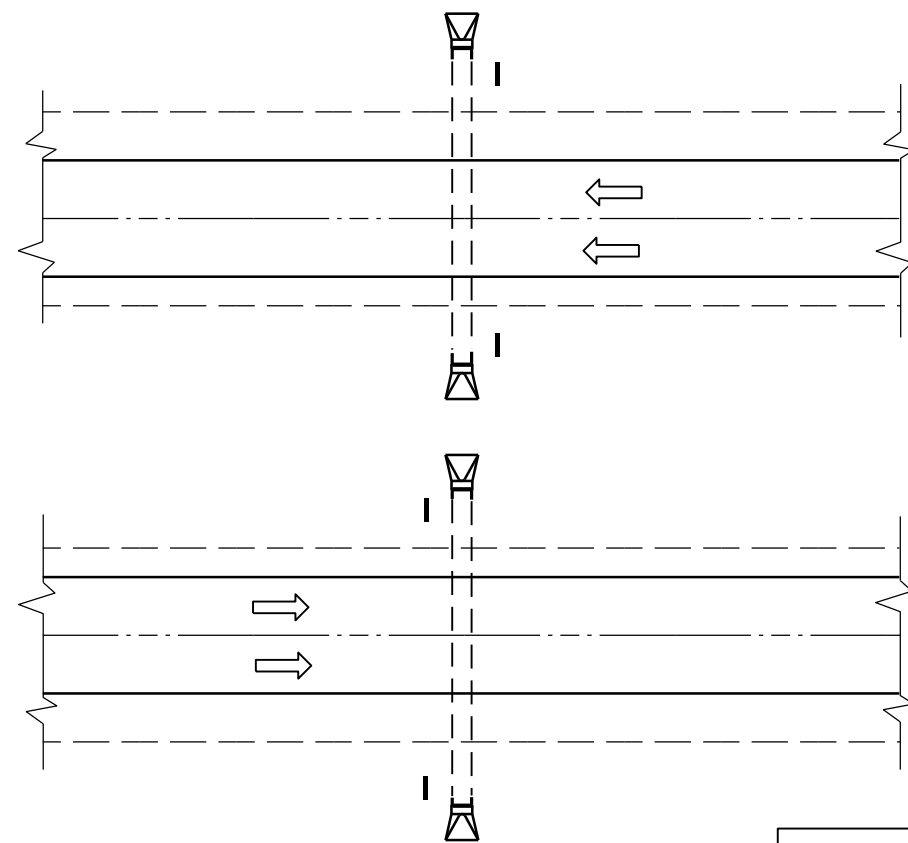


OVERLAP DETAIL (TYPICAL)

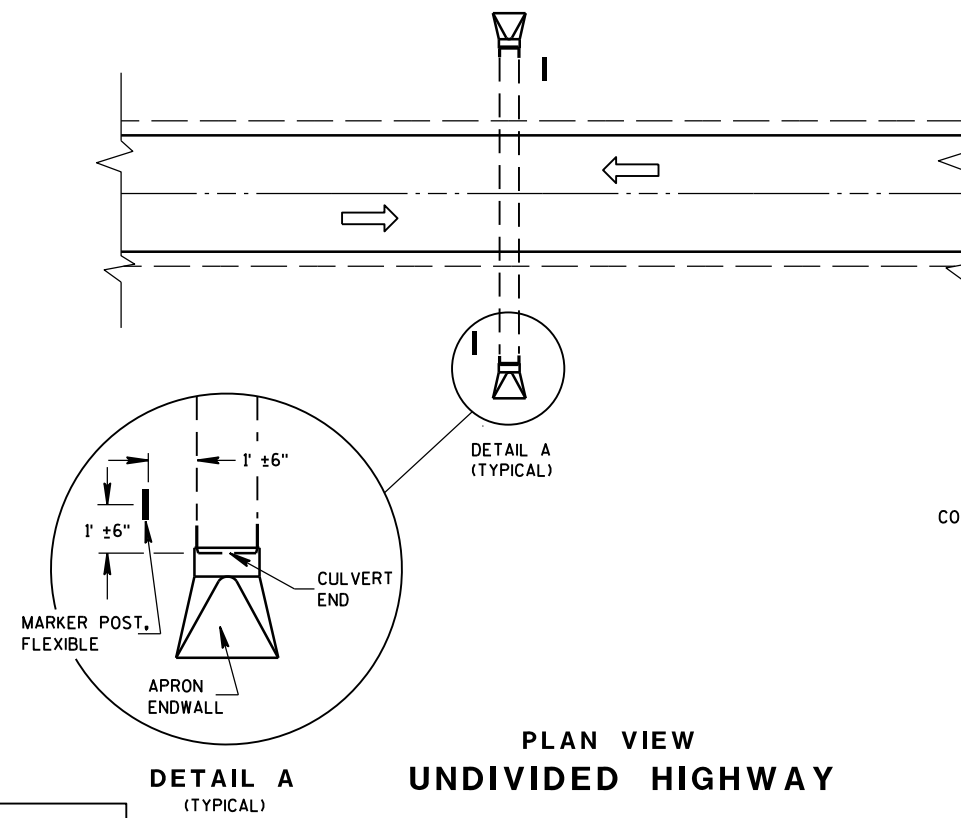
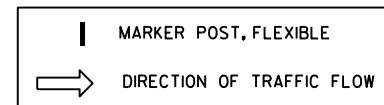
HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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



PLAN VIEW  
DIVIDED HIGHWAY

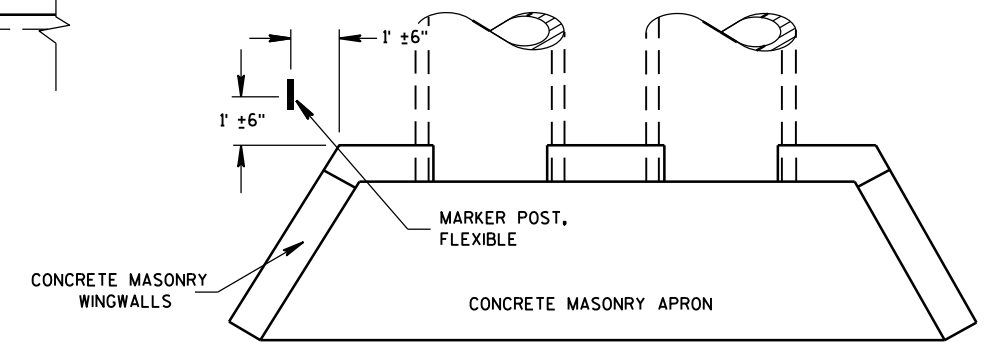


PLAN VIEW  
UNDIVIDED HIGHWAY

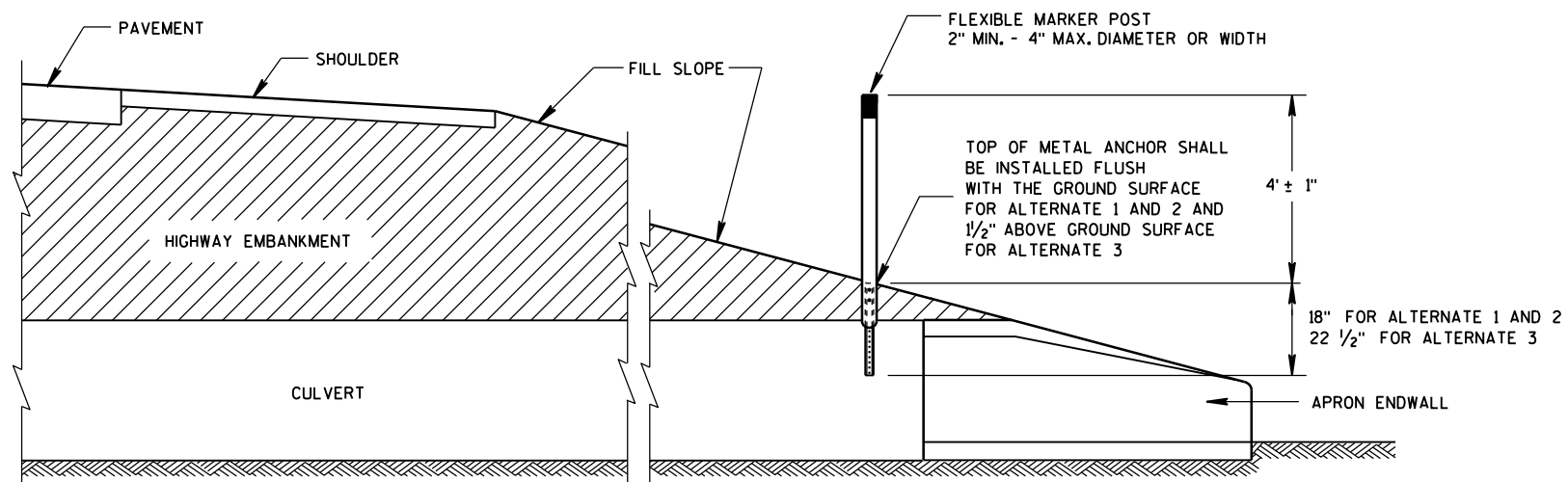
### FLEXIBLE MARKER POST LOCATION

### GENERAL NOTES

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



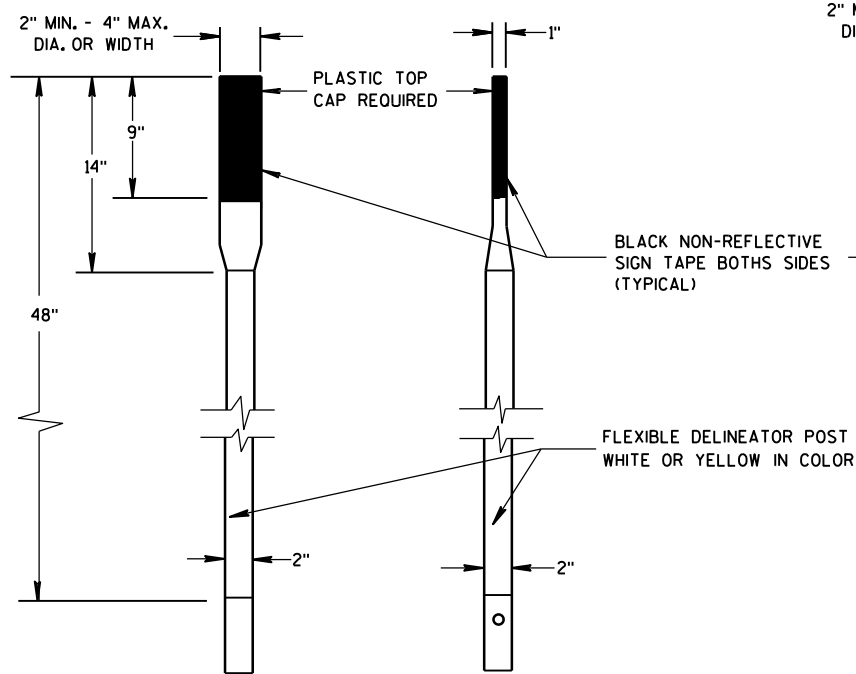
PLAN VIEW  
CONCRETE MASONRY ENDWALLS FOR  
CULVERT PIPE AND PIPE ARCH



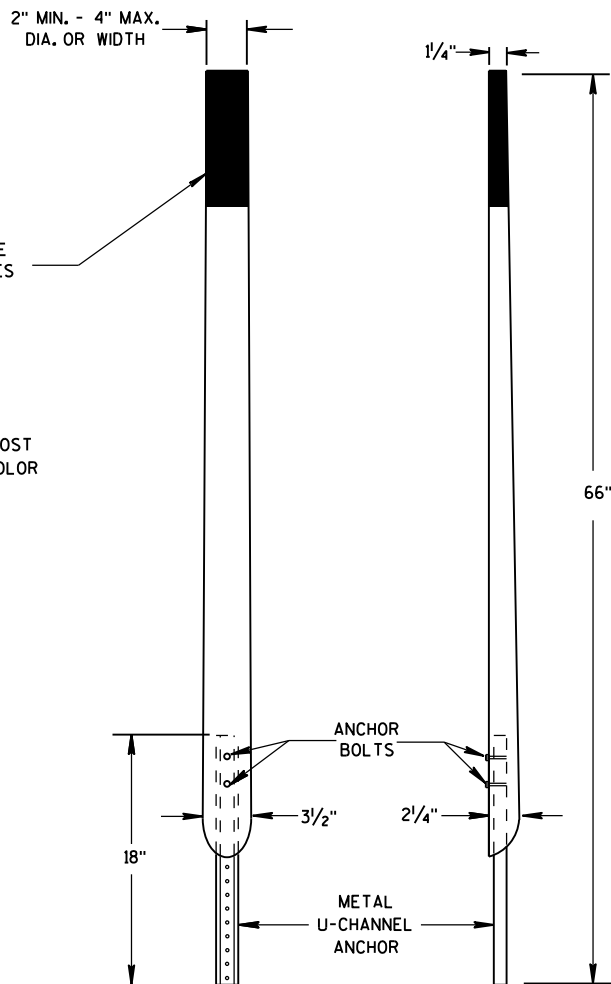
CROSS SECTION  
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST  
FOR CULVERT END

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

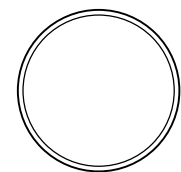


FRONT VIEW SIDE VIEW  
ALTERNATE 1

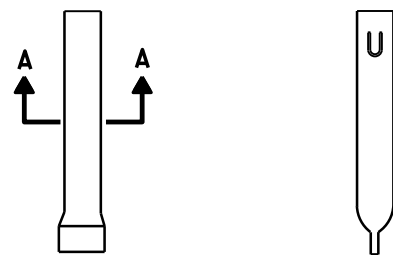


FRONT VIEW SIDE VIEW  
ALTERNATE 2

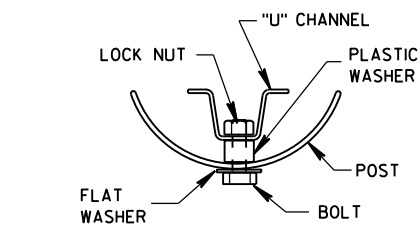
FLEXIBLE MARKER POSTS



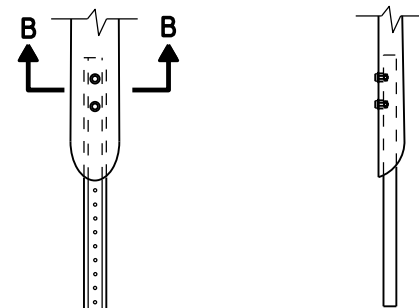
SECTION A-A



FRONT VIEW SIDE VIEW  
ALTERNATE 1

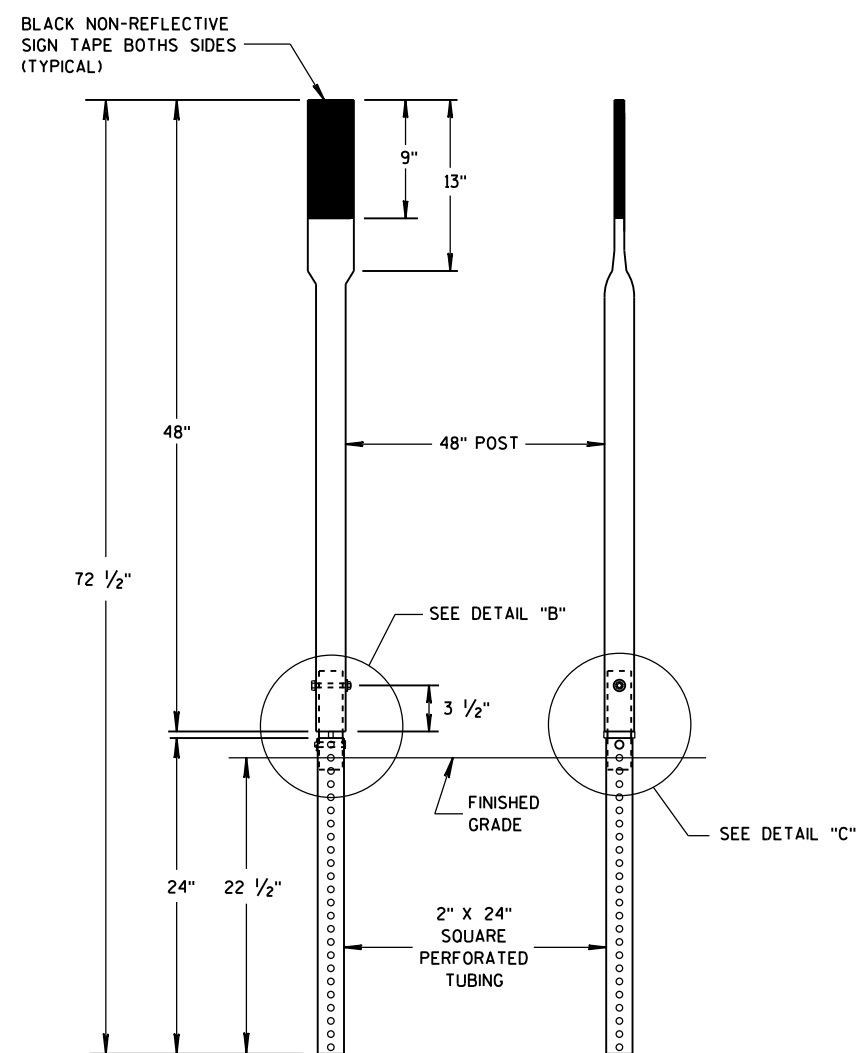


SECTION B-B



FRONT VIEW SIDE VIEW  
ALTERNATE 2

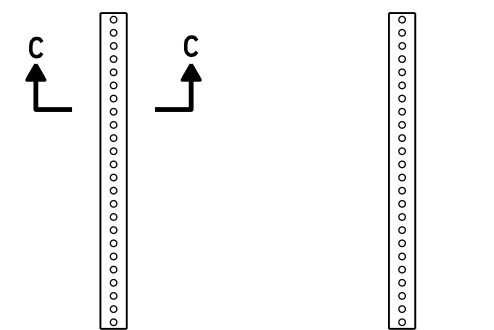
FLEXIBLE MARKER POST ANCHORS



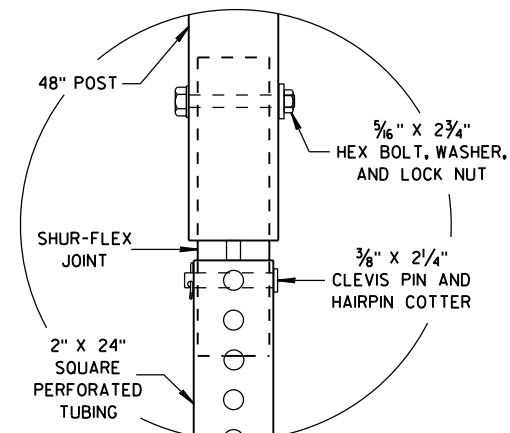
FRONT VIEW SIDE VIEW  
ALTERNATE 3



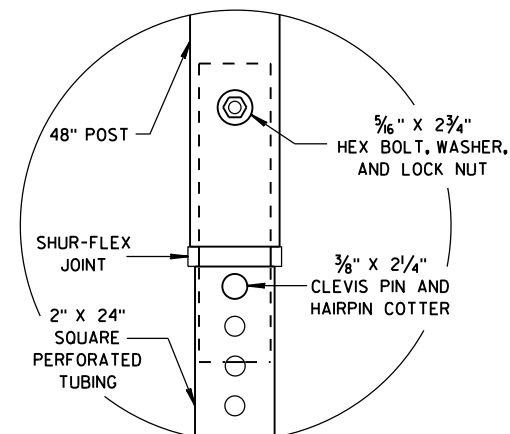
SECTION C-C



FRONT VIEW SIDE VIEW  
ALTERNATE 3



DETAIL B

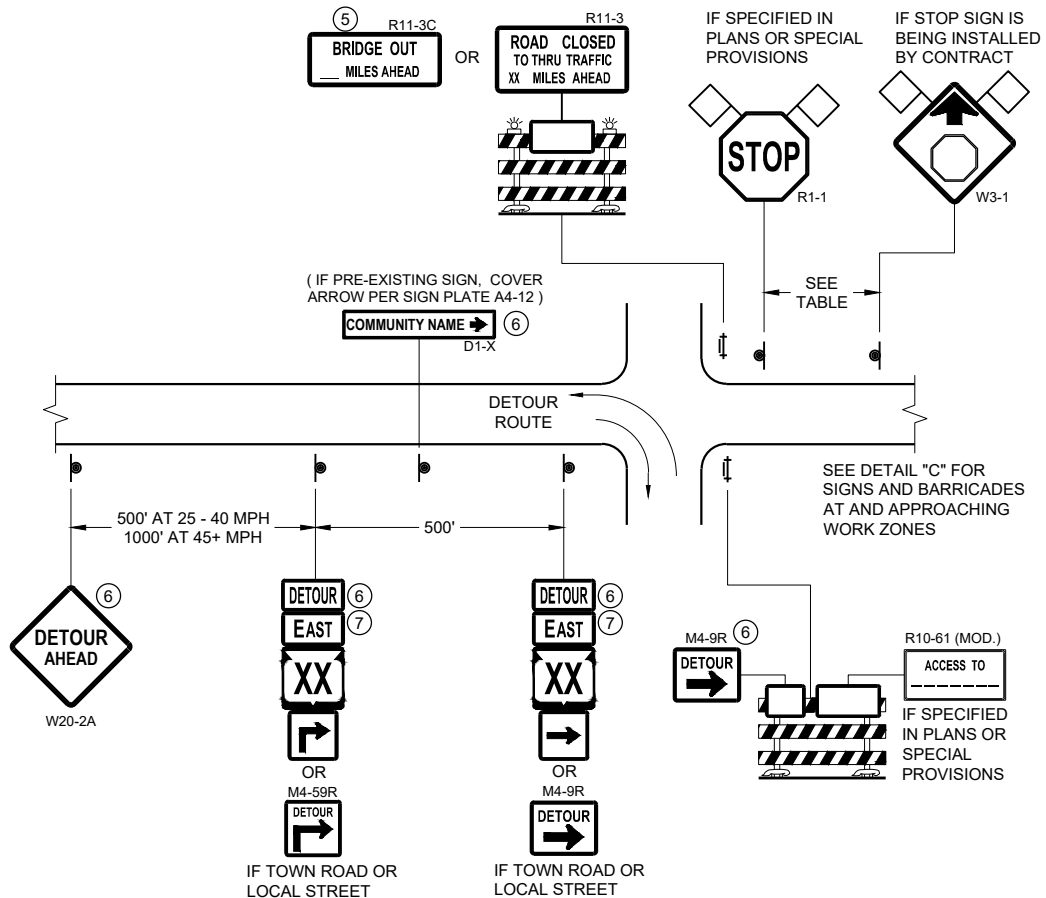


DETAIL C

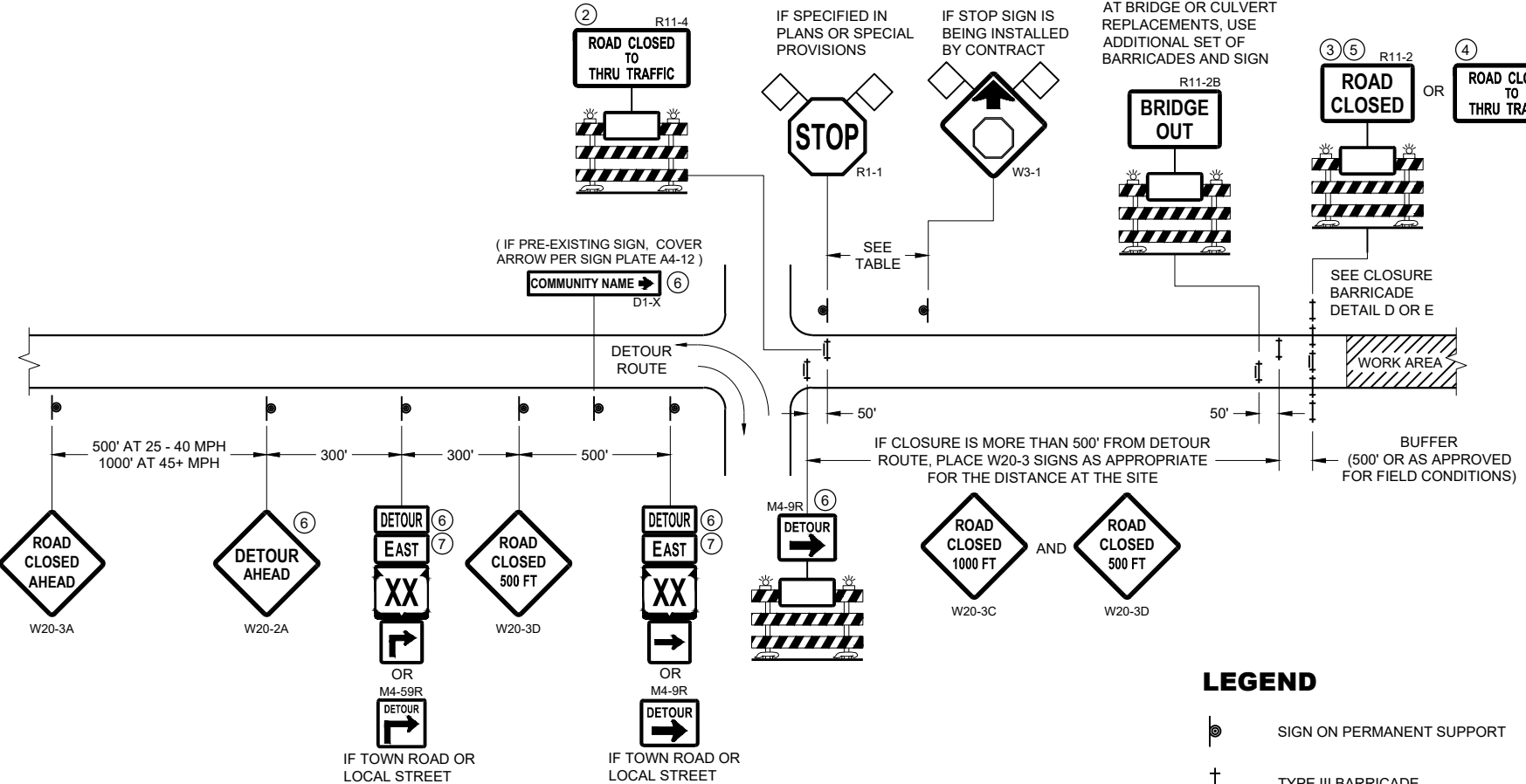
FLEXIBLE MARKER POST  
FOR CULVERT END

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
10/1/2012 /S/ Travis Feltes  
DATE STATE TRAFFIC ENGINEER OF DESIGN  
FHWA



**DETAIL A**  
**MAINLINE CLOSURE WITH POSTED DETOUR**  
WORK ZONE GREATER THAN OR EQUAL TO ½ MILE FROM  
DETOUR ROUTE ( 1000 FEET IF URBAN )



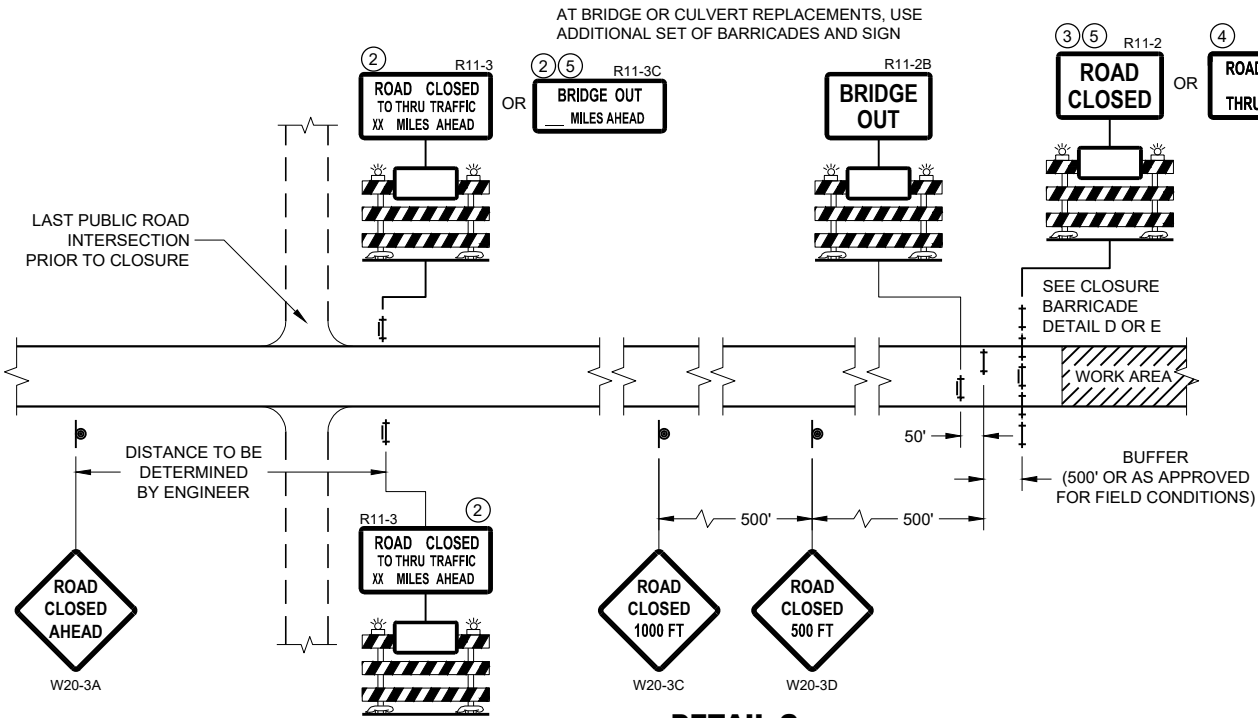
**DETAIL B**  
**MAINLINE CLOSURE WITH POSTED DETOUR**  
WORK ZONE LESS THAN ½ MILE FROM  
DETOUR ROUTE ( 1000 FEET IF URBAN )

- 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)

- DETOUR M4 - 8
- EAST M3 - X
- XX M1 - 4 OR XX M1 - 6 OR COUNTY M1 - 5A
- OR M05 - 1 OR M06 - 1

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

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

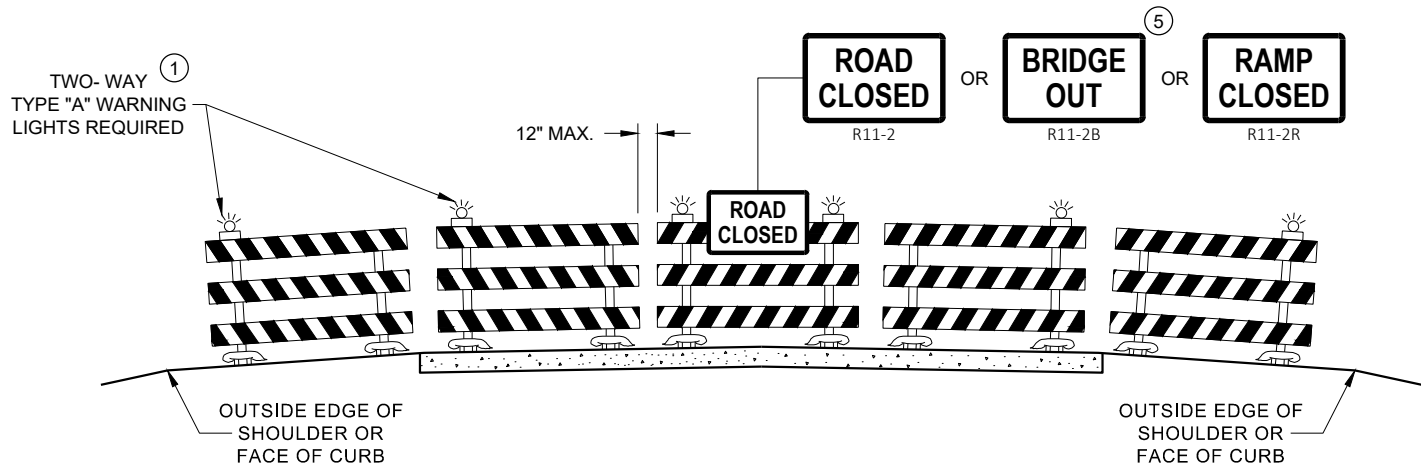


**DETAIL C**  
**MAINLINE CLOSURE, NO POSTED DETOUR**

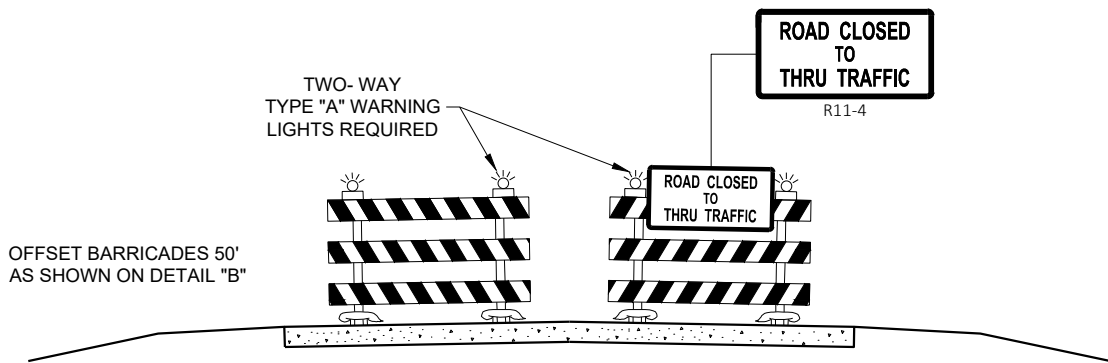
**BARRICADES AND SIGNS  
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2023 /S/ Andrew Heidtke  
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"

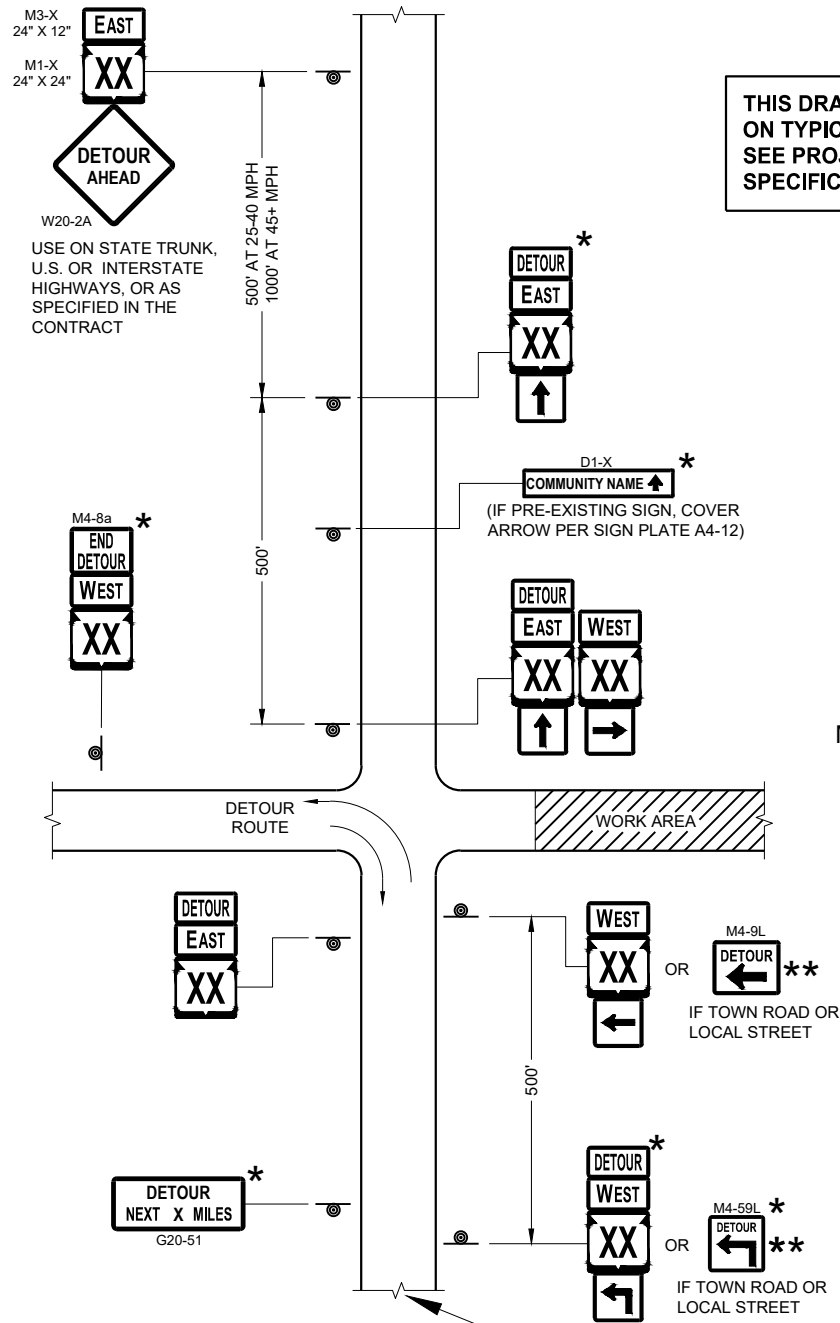
- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- 2 THESE SIGNS 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  
May 2023 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER

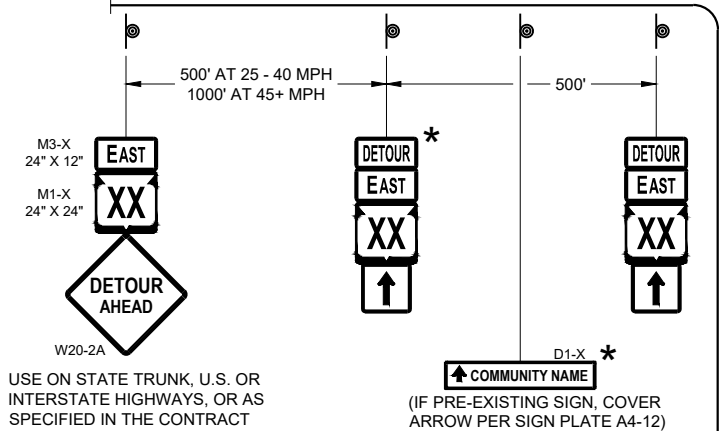
FHWA



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

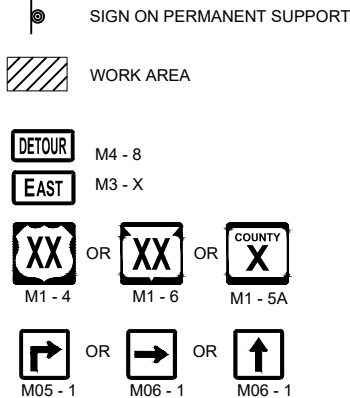
THIS DRAWING PROVIDES GENERAL GUIDANCE  
ON TYPICAL DETOUR SIGN LAYOUT AND SPACING.  
SEE PROJECT DETOUR SIGNING SHEETS FOR  
SPECIFIC DETAILS FOR EACH PROJECT.

MATCH POINT



DETAIL F  
DETOUR SIGNING

LEGEND



GENERAL NOTES

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

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

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

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

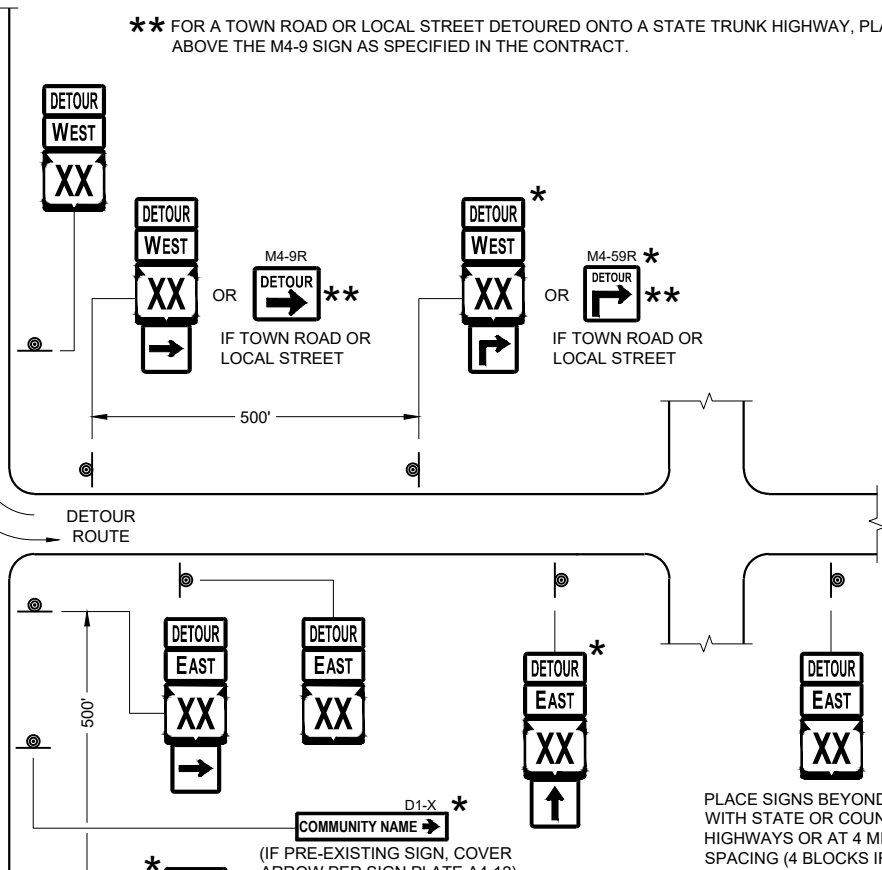
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

SIGN SIZES SHALL BE AS FOLLOWS:

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

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



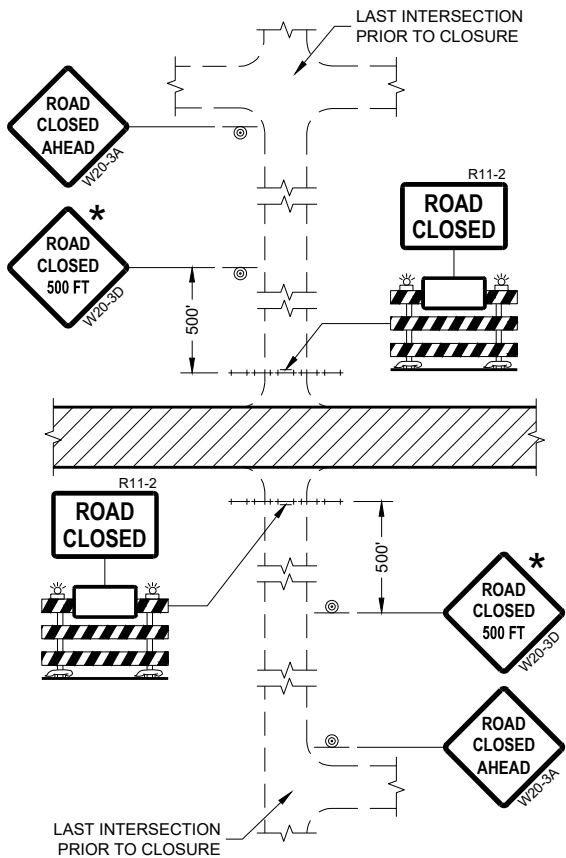
PLACE SIGNS BEYOND INTERSECTIONS  
WITH STATE OR COUNTY TRUNK  
HIGHWAYS OR AT 4 MILE MAXIMUM  
SPACING (4 BLOCKS IF URBAN AREA)

DETOUR SIGNING  
FOR MAINLINE CLOSURES

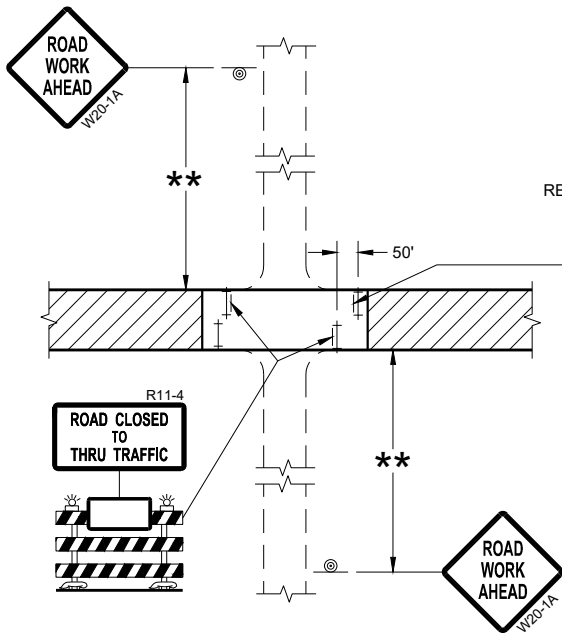
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2023 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER

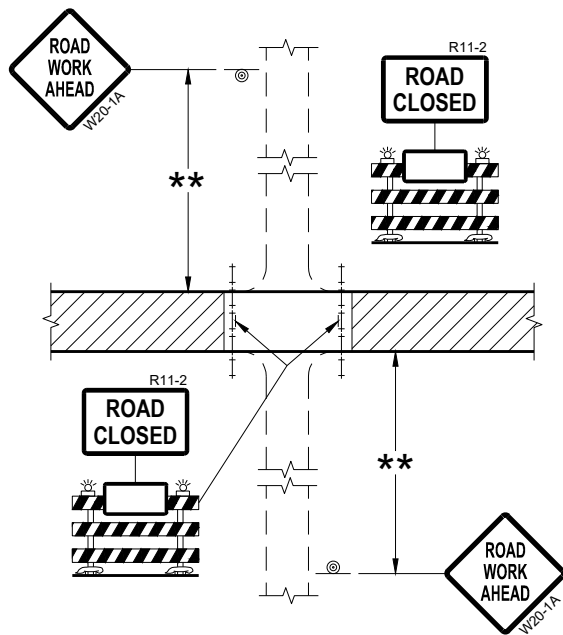
FHWA



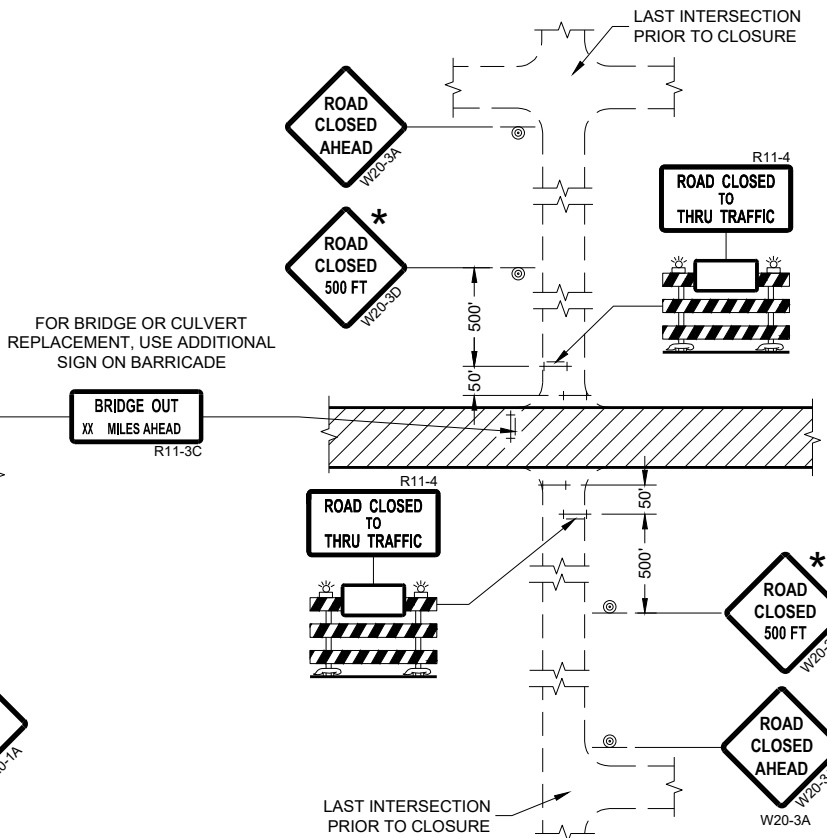
**DETAIL 1**  
(NO ACCESS TO PROJECT)



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



**DETAIL 2**  
(PUBLIC CROSS-TRAFFIC MAINTAINED.  
NO 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

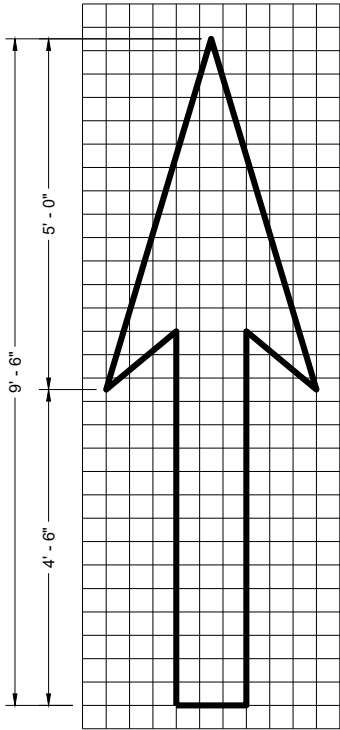
- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA

### BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

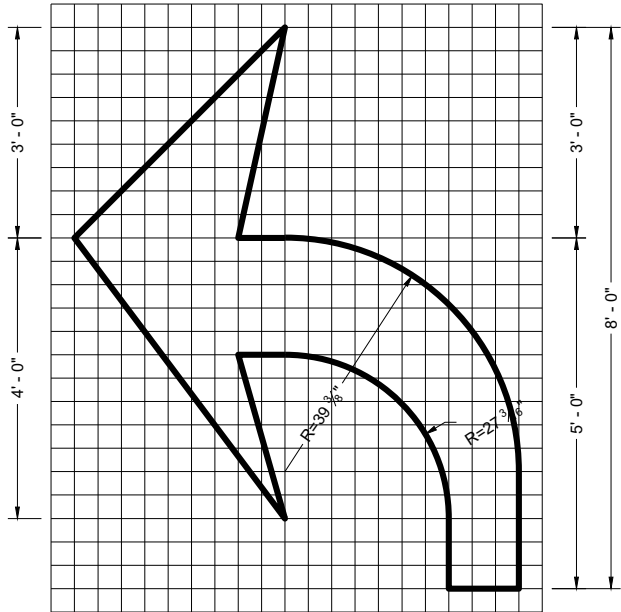
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

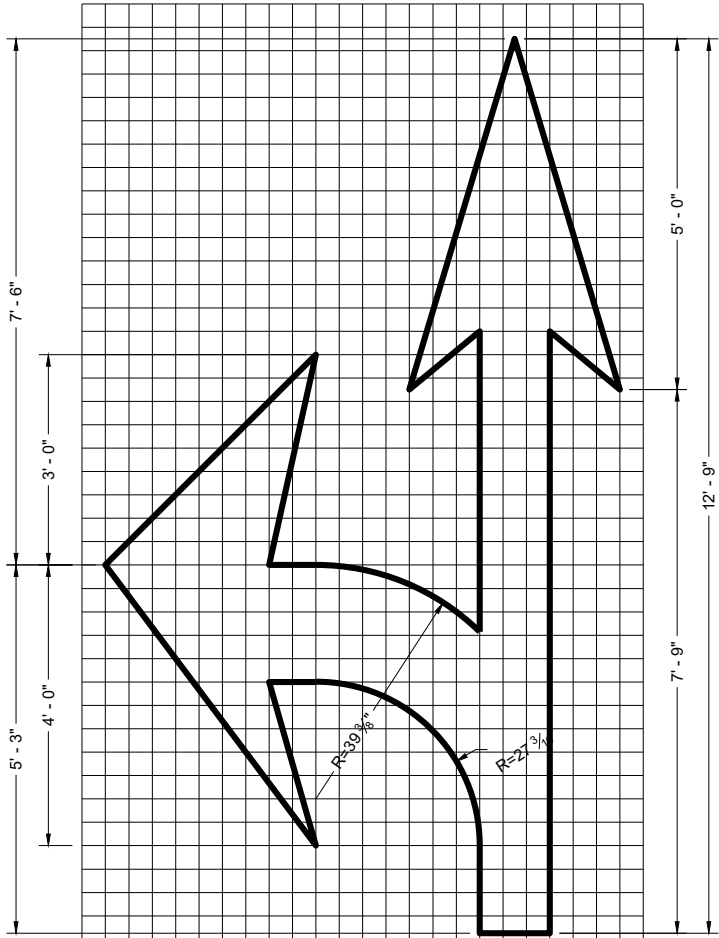
FHWA



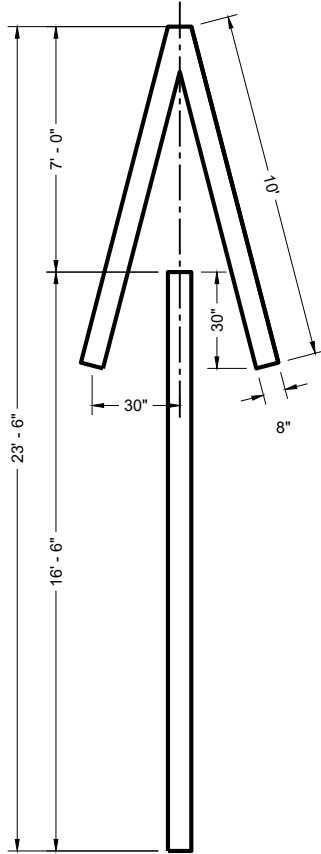
TYPE 1



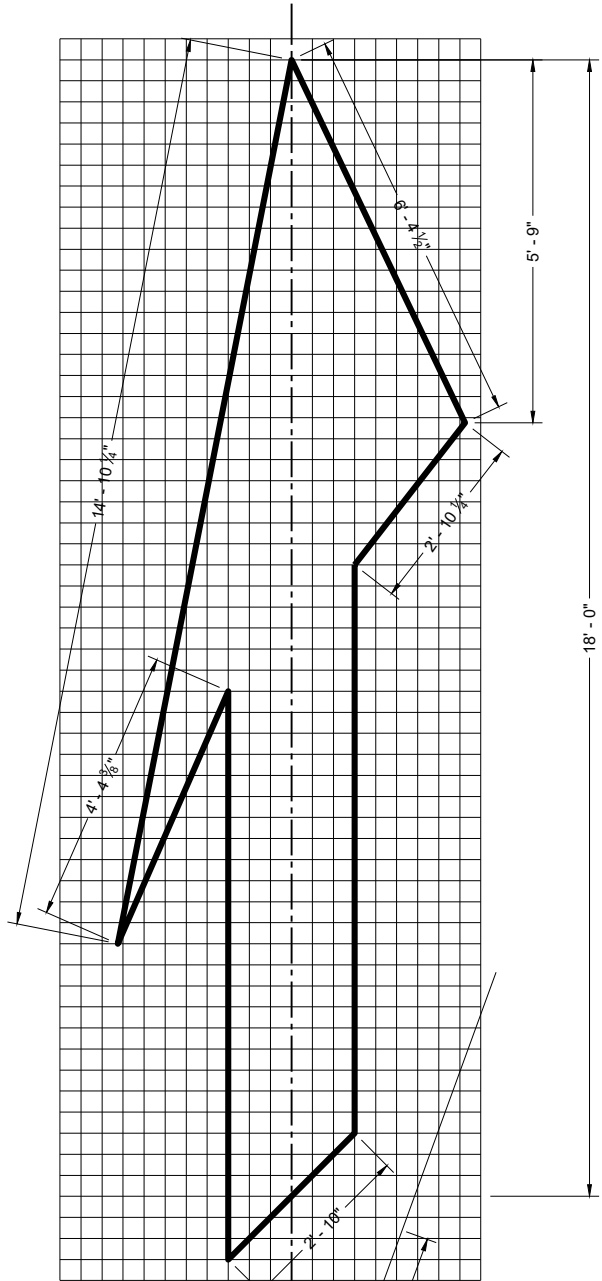
TYPE 2



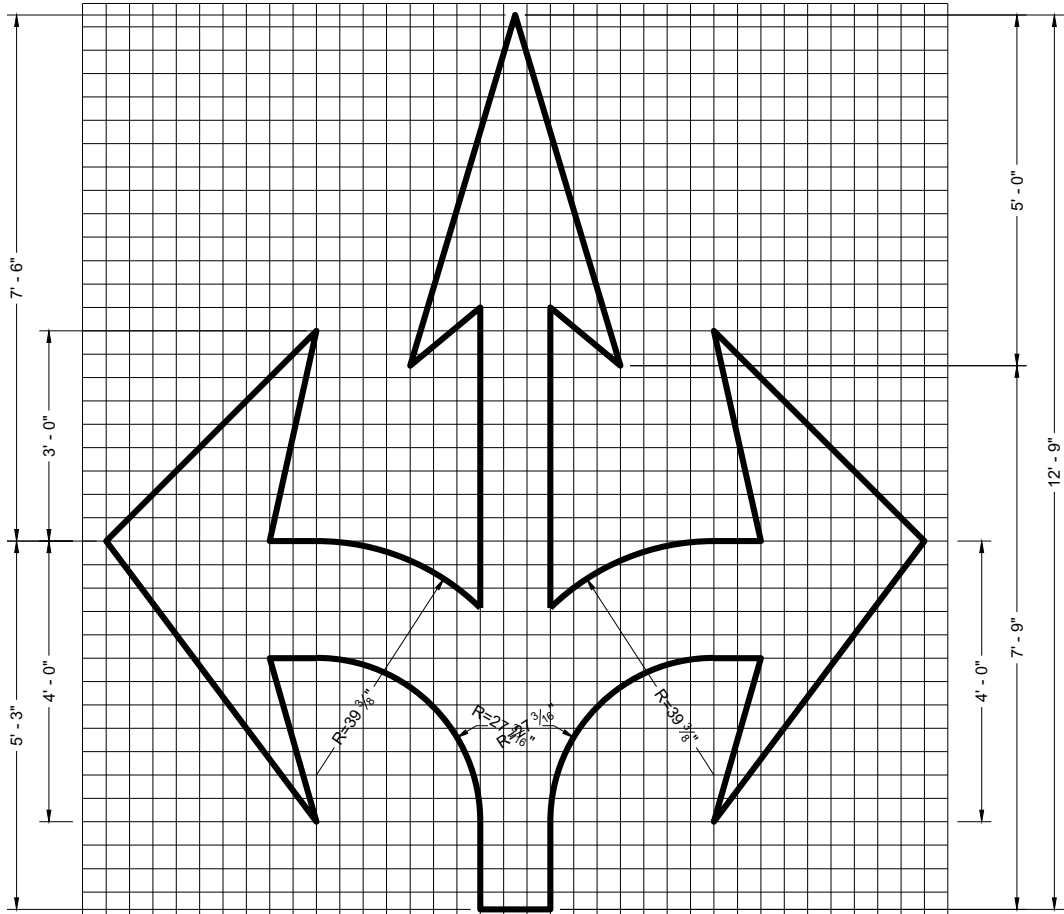
TYPE 3



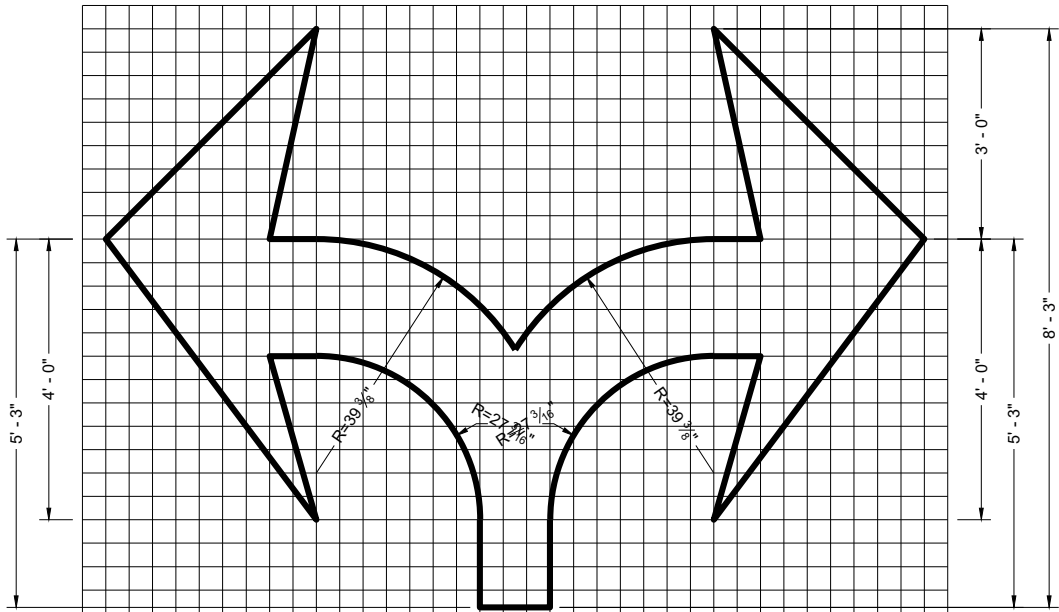
TYPE 4



TYPE 5 LANE DROP ARROW



TYPE 6



TYPE 7

GENERAL NOTES

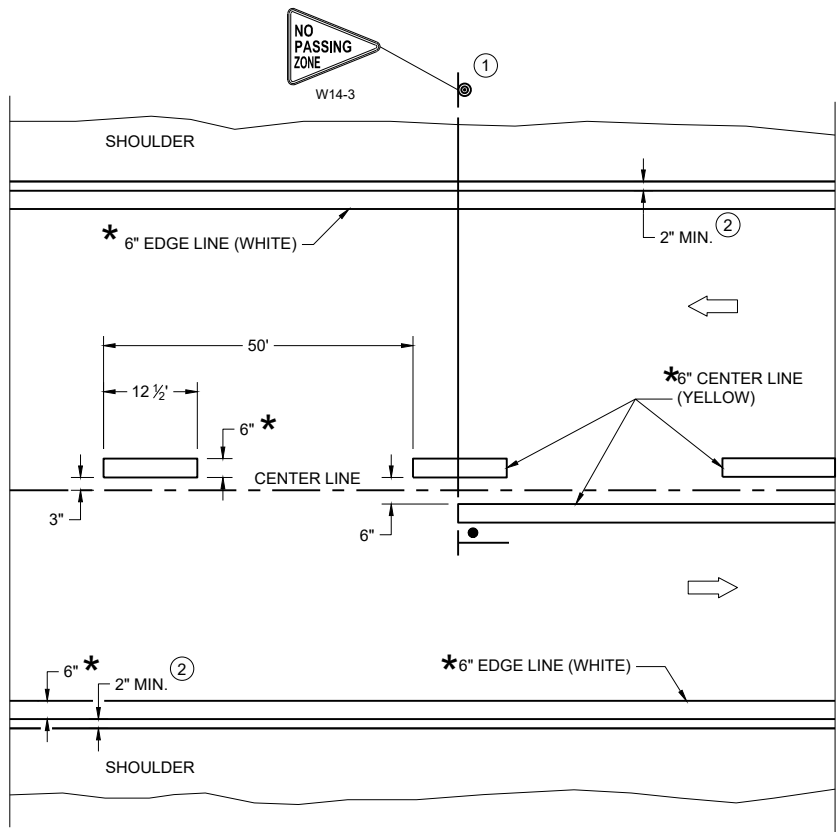
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

PAVEMENT MARKING ARROWS

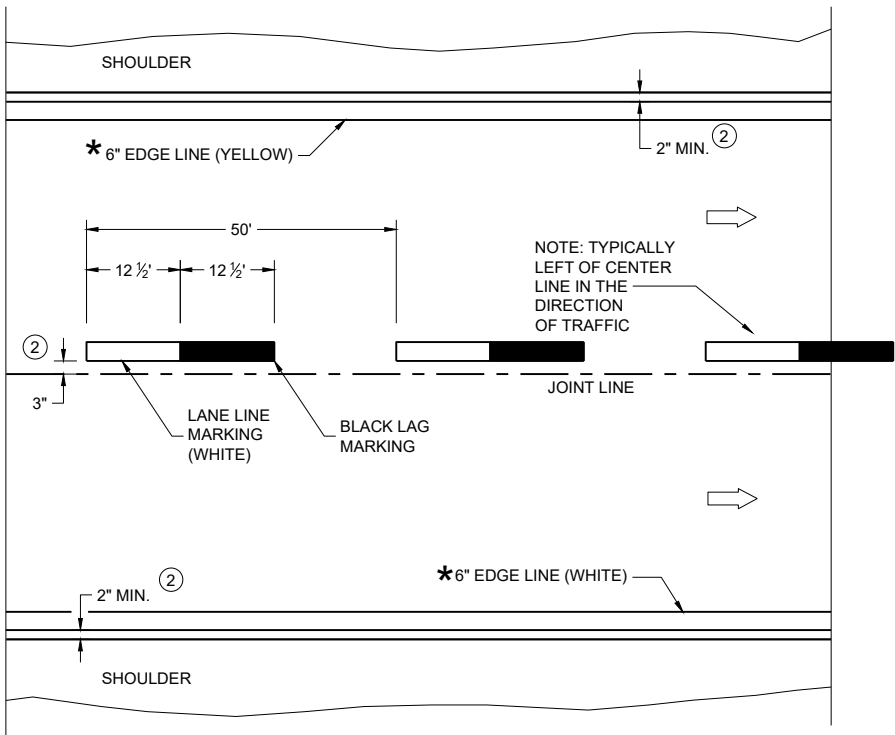
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
November 2024 /S/ Matthew Rauch  
DATE STATE SIGNING AND MARKING ENGINEER

FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

\*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

GENERAL NOTES

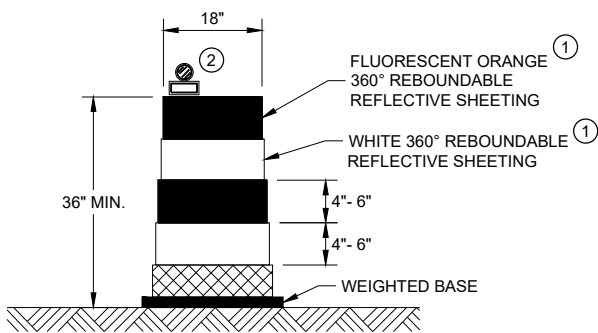
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

- 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

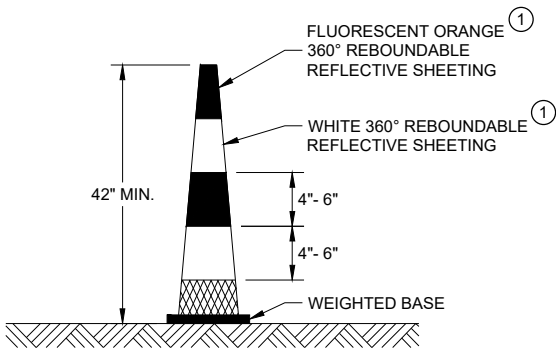
- "T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC

| PERMANENT LONGITUDINAL PAVEMENT MARKINGS           |                                                           |
|----------------------------------------------------|-----------------------------------------------------------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                                                           |
| APPROVED<br>May 2023<br>DATE                       | /S/ Jeannie Silver<br>Statewide Pavement Marking Engineer |
| FHWA                                               |                                                           |



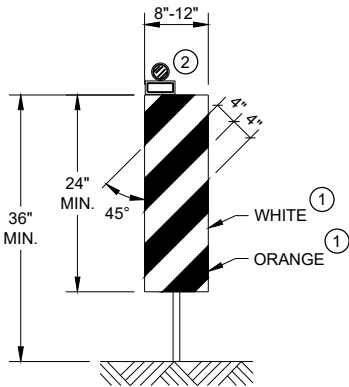
**DRUM**

BALLAST WIDTHS  
RANGE FROM 24"-36"



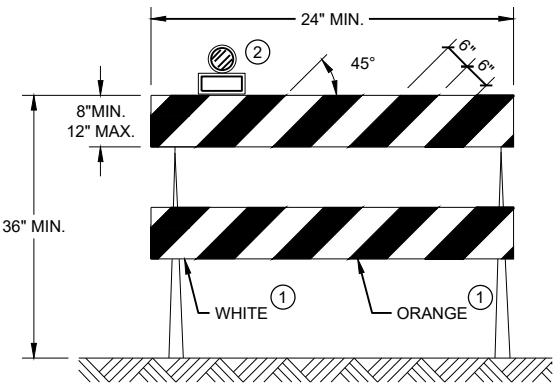
**42" CONE**

DO NOT USE IN TAPERS  
½ SPACING OF DRUMS  
BALLAST WIDTHS  
RANGE FROM 14"-20"



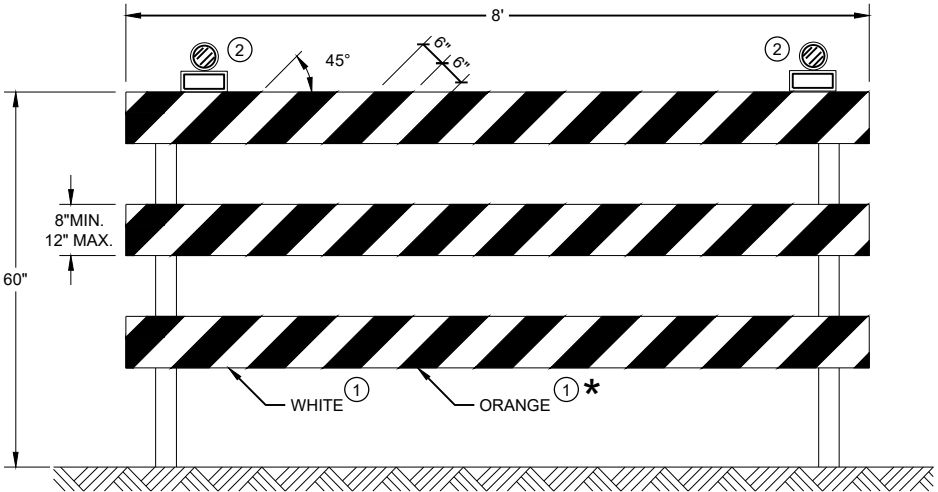
**VERTICAL PANEL**

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



**TYPE II BARRICADE**

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



**TYPE III BARRICADE**

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

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

**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.

**CHANNELIZING DEVICES  
DRUMS, CONES, BARRICADES  
AND VERTICAL PANELS**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
November 2022 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER  
FHWA

LEGEND

-  SIGN ON PORTABLE OR PERMANENT SUPPORT
-  TEMPORARY PORTABLE RUMBLE STRIP ARRAY
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

GENERAL NOTES

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

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

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

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

THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

FLAGGING

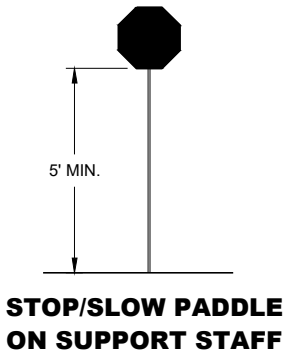
FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

- ① FOR MOVING WORK OPERATIONS, POST ADDITIONAL W20-7A FLAGGER SIGNS AT APPROXIMATELY 3,500' INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
- ② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.

TEMPORARY PORTABLE RUMBLE STRIPS

- UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.
- ③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSE ACROSS THE LANE AT THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER
- ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FROM THE APPROVED PRODUCTS LIST.
- INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.
- PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.
- DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.

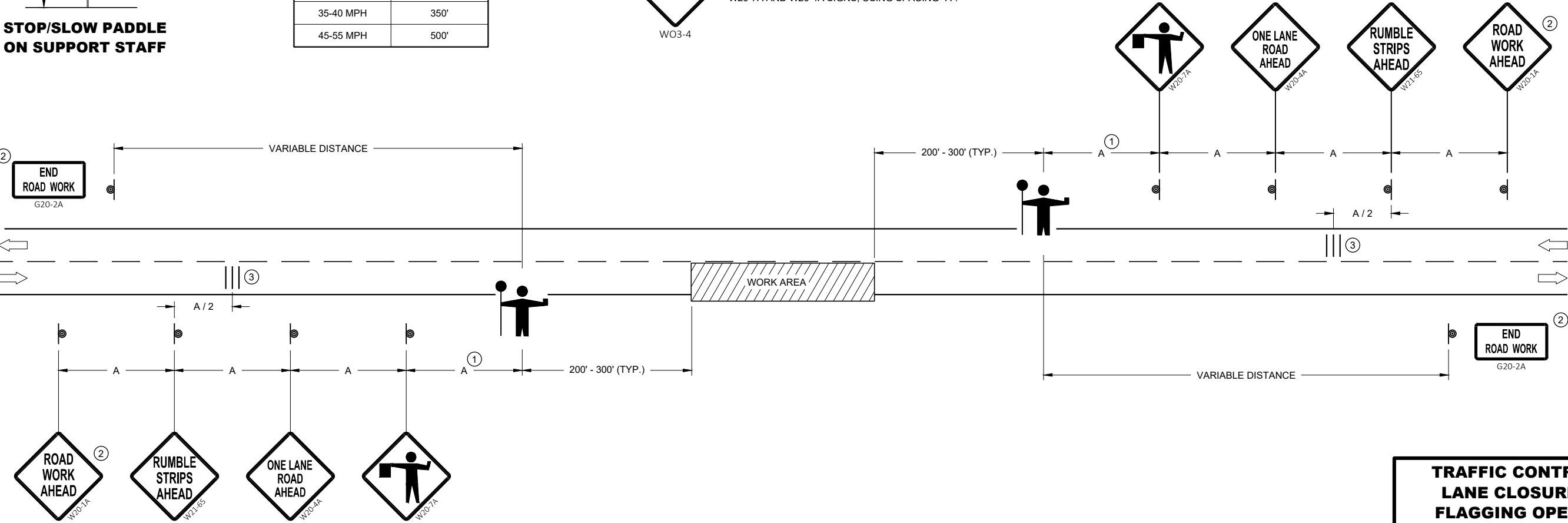


SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

| SPEED LIMIT | SPACING "A" |
|-------------|-------------|
| 25-30 MPH   | 200'        |
| 35-40 MPH   | 350'        |
| 45-55 MPH   | 500'        |



USE OF W03-4 SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7A AND W20-4A SIGNS, USING SPACING "A".



|                                                                         |                                          |
|-------------------------------------------------------------------------|------------------------------------------|
| <b>TRAFFIC CONTROL FOR<br/>LANE CLOSURE WITH<br/>FLAGGING OPERATION</b> |                                          |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION                      |                                          |
| APPROVED<br>May 2022<br>DATE                                            | /S/ Andrew Heidtke<br>WORK ZONE ENGINEER |
| FHWA                                                                    |                                          |

LEGEND

- V1

LEAD VEHICLE
- V2

MARKING VEHICLE
- V3

SHADOW VEHICLE
- TRUCK MOUNTED ATTENUATOR (TMA)
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC

GENERAL NOTES

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

ALL VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL OPERATING IN CAUTION MODE. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.

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

DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL AND HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.

THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.

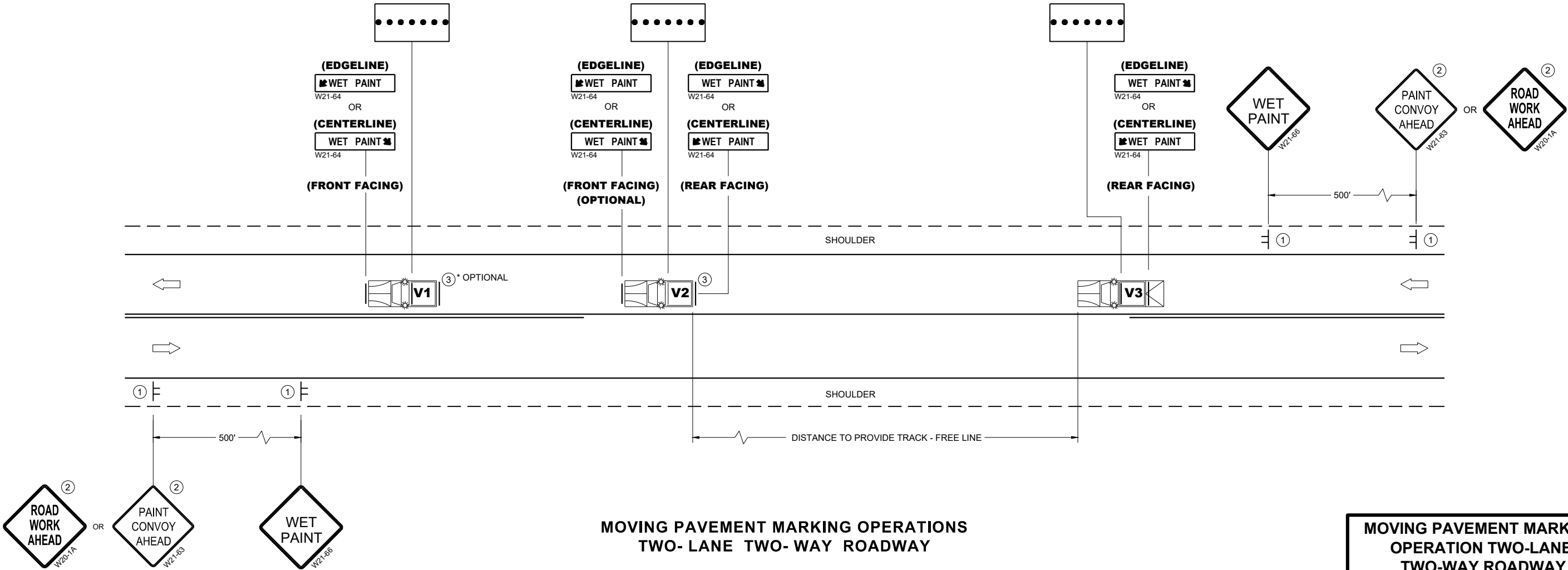
WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH

UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC.

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

CONES SHALL BE A MINIMUM OF 28" FOR WET PAVEMENT MARKING .

- ① SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES AND AFTER EVERY MAJOR INTERSECTION.
- ② IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1A OR W21-63 ARE NOT REQUIRED.
- ③ V1 AND V2 CAN BE SWITCHED SO THAT THE MARKER IS THE LEAD VEHICLE.

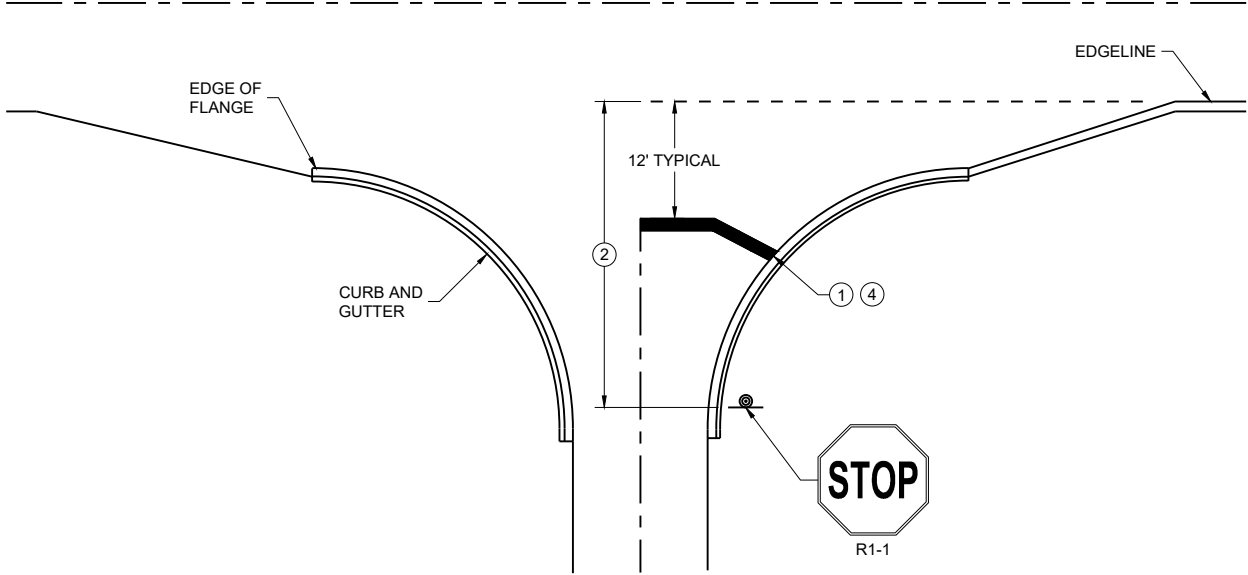


MOVING PAVEMENT MARKING  
OPERATION TWO-LANE  
TWO-WAY ROADWAY

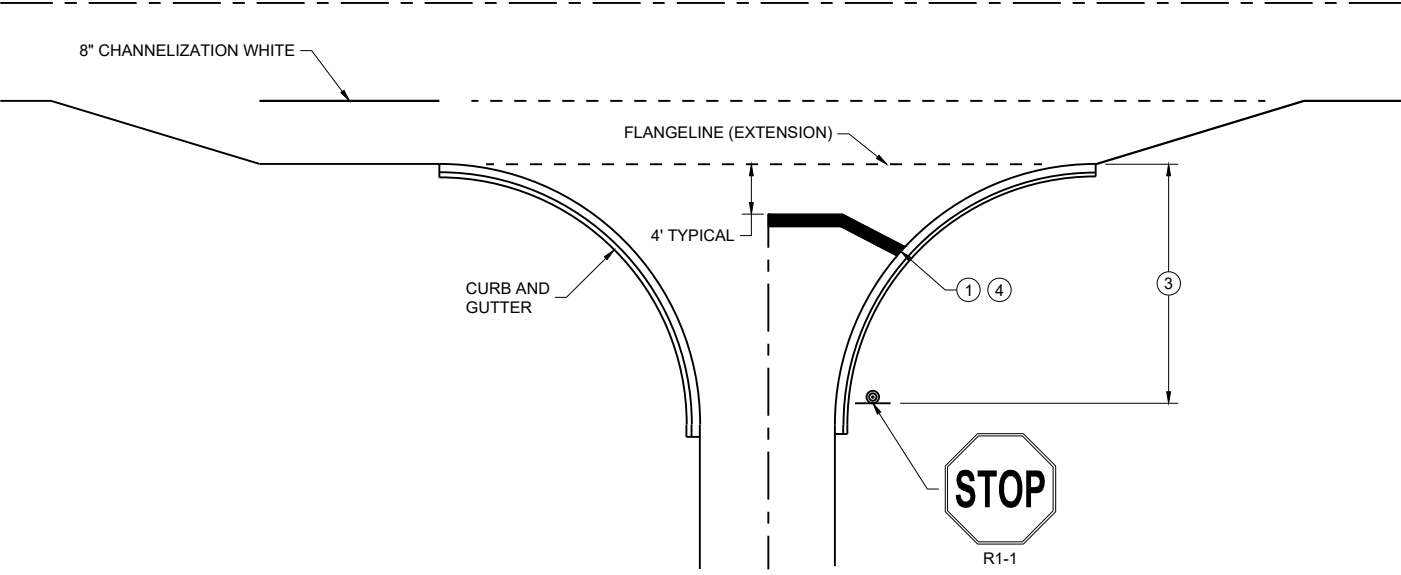
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
March 2024 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER

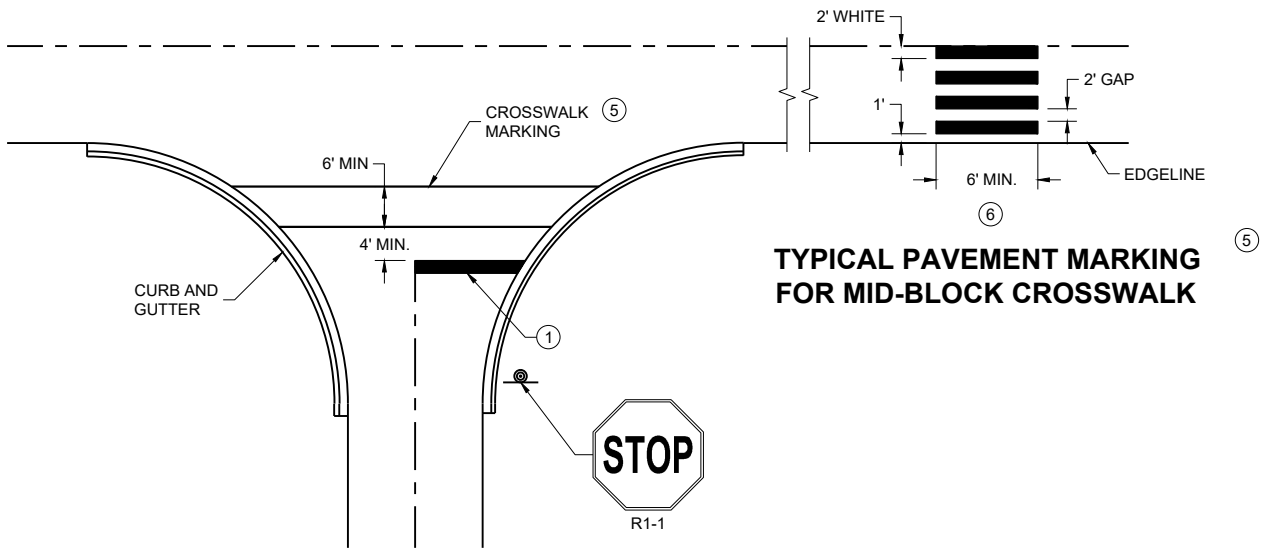
FHWA



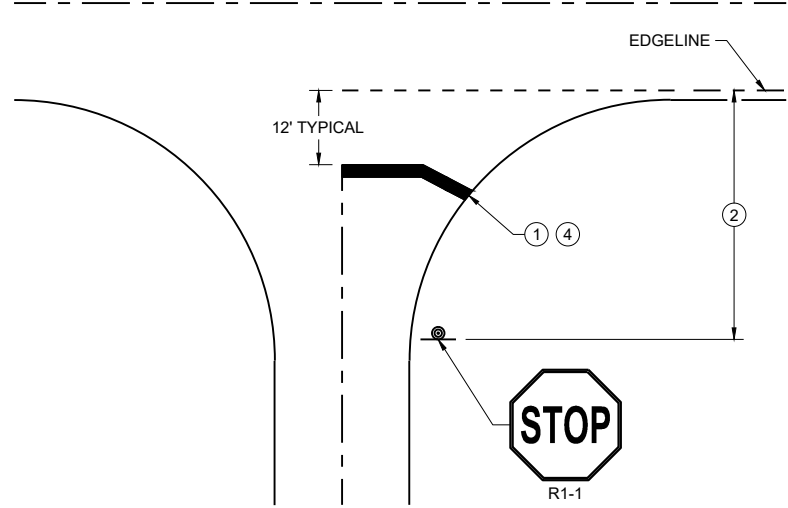
TYPICAL STOP LINE PAVEMENT MARKING  
WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING  
FOR SIDE ROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING  
FOR SIDE ROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING  
WITHOUT CURB AND GUTTER

GENERAL NOTES

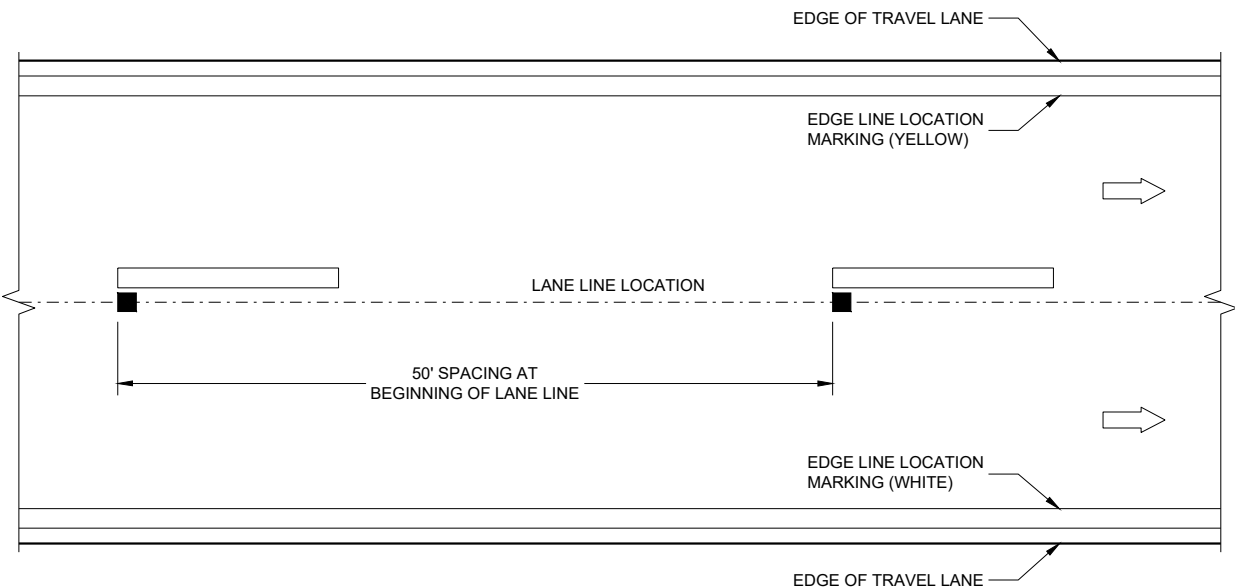
STOP SIGN SHALL BE PLACED A MINIMUM OF 6 FEET TO A MAXIMUM OF 50 FEET FROM THE EDGELINE LOCATION.

- 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 FLANGE LINE 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.
- ⑥ POSTED SPEED LIMITS OF 40 MPH OR GREATER USE A MINIMUM WIDTH OF 8' FOR MIDBLOCK CROSSWALKS

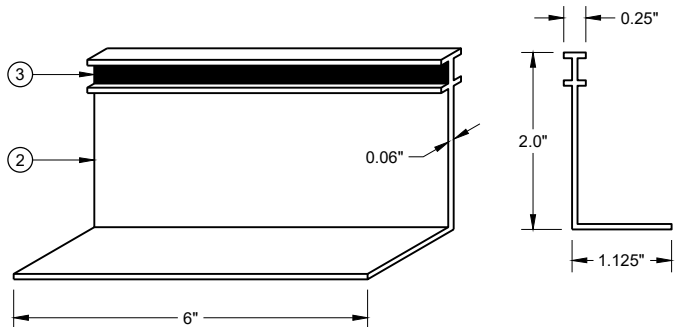
STOP LINE AND CROSSWALK  
PAVEMENT MARKING

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
March 2024 /S/ Matthew Rauch  
DATE STATE SIGNING AND MARKING  
ENGINEER  
FHWA



LONGITUDINAL PLACEMENT 6 - INCH LANE LINE



ISOMETRIC VIEW SIDE VIEW

TEMPORARY RAISED PAVEMENT MARKER, TYPE II

GENERAL NOTES

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

COLOR OF TEMPORARY RAISED PAVEMENT MARKERS, TYPE II, SHALL MATCH THE COLOR OF THE MARKING THEY SUPPLEMENT.

PLACEMENT OF TEMPORARY RAISED PAVEMENT MARKERS ON EDGE LINES IS OPTIONAL. IF PLACED ON EDGE LINES, MAXIMUM SPACING SHALL BE 50 FEET.

PROVIDE SINGLE OR MULTI-COVER TEMPORARY RAISED PAVEMENT MARKERS AS SHOWN ON PLAN.

MARK "T"s ON PAVEMENT FOR REESTABLISHING NO PASSING ZONES.

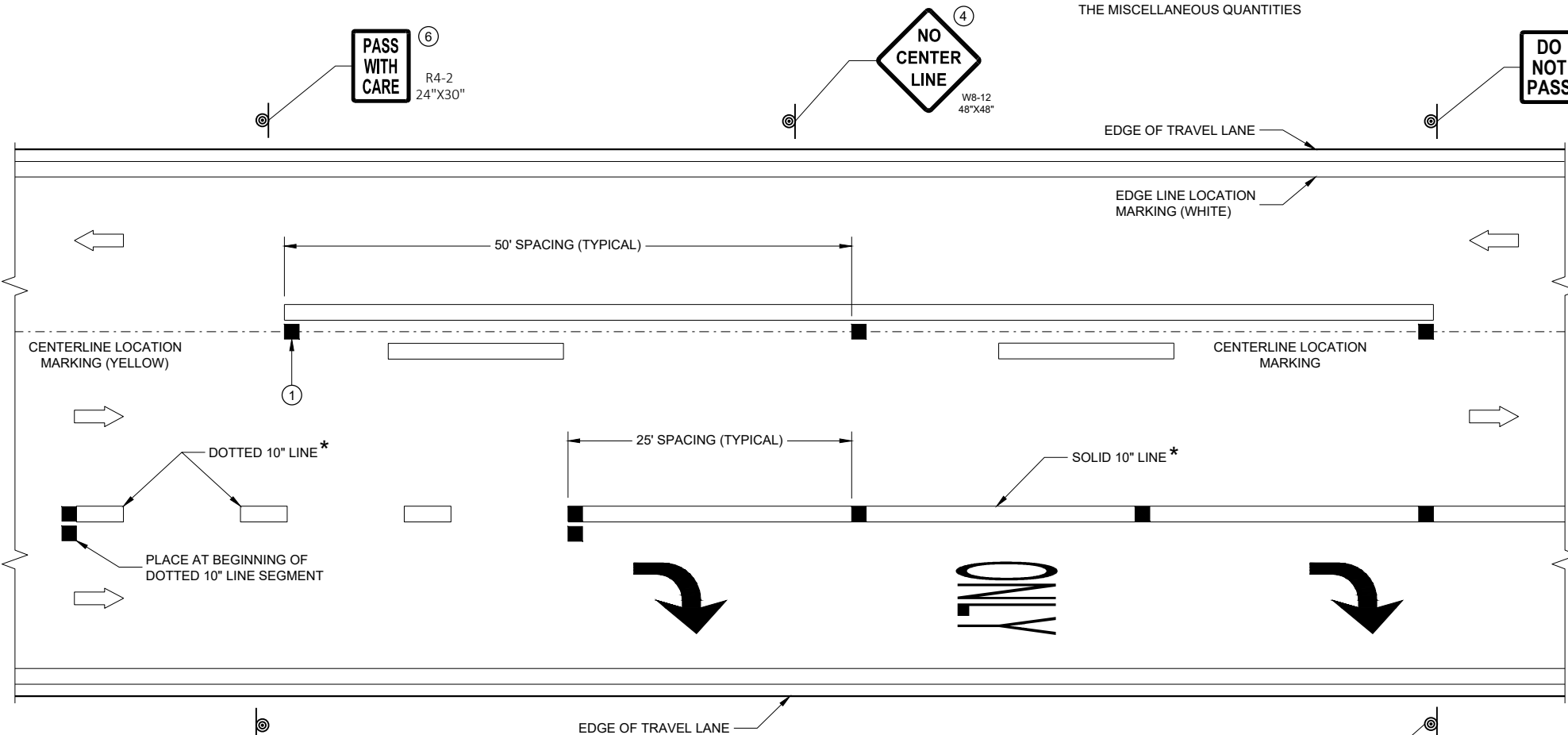
SAME DAY TEMPORARY PAVEMENT MARKING MAY BE USED IN LIEU OF TEMPORARY RAISED PAVEMENT MARKERS, TYPE II.

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

IF TEMPORARY SAME DAY PAVEMENT MARKING IS USED, ENSURE PROPOSED PAVEMENT MARKING ARE PLACED IN THE EXACT LOCATIONS AS THE EXISTING MARKINGS, USING A MINIMAL AMOUNT OF TEMPORARY RAISED MARKERS, TYPE II OR OTHER METHODS AS APPROVED BY THE ENGINEER.

IF ROADWAY IS DETOURED DURING CONSTRUCTION, THE "DO NOT PASS," "PASS WITH CARE" AND "NO CENTERLINE" SIGNS MAY BE OMITTED, PROVIDING A LIQUID MARKING IS INSTALLED BEFORE THE ROADWAY IS REOPENED TO TRAFFIC.

\* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



LONGITUDINAL PLACEMENT 6 - INCH LANE LINE AND 10 - INCH CHANNEL LINE

- FOR DOUBLE SOLID YELLOW, PLACE THE MARKERS BETWEEN THE LINES.
- MARKERS SHALL BE OF POLYURETHANE MATERIAL.
- MARKERS SHALL HAVE A MINIMUM SIZE REFLECTIVE SURFACE OF 6-INCH WIDTH X 0.25 INCH HEIGHT.
- "NO CENTER LINE" SIGNS SHALL BE PLACED AT THE BEGINNING OF PROJECT, AT TWO MILE INTERVALS AND AFTER STATE AND COUNTY HIGHWAY INTERSECTIONS.
- "DO NOT PASS" SIGNS SHALL BE INSTALLED AT THE BEGINNING OF NO PASSING ZONES. ADDITIONAL "DO NOT PASS" SIGNS SHALL BE INSTALLED AT ONE MILE INTERVALS AND AFTER STATE AND COUNTY HIGHWAY INTERSECTIONS WITHIN THE NO PASSING ZONE.
- "PASS WITH CARE" SIGNS SHALL BE PLACED AT THE DOWNSTREAM END OF NO PASSING ZONES.

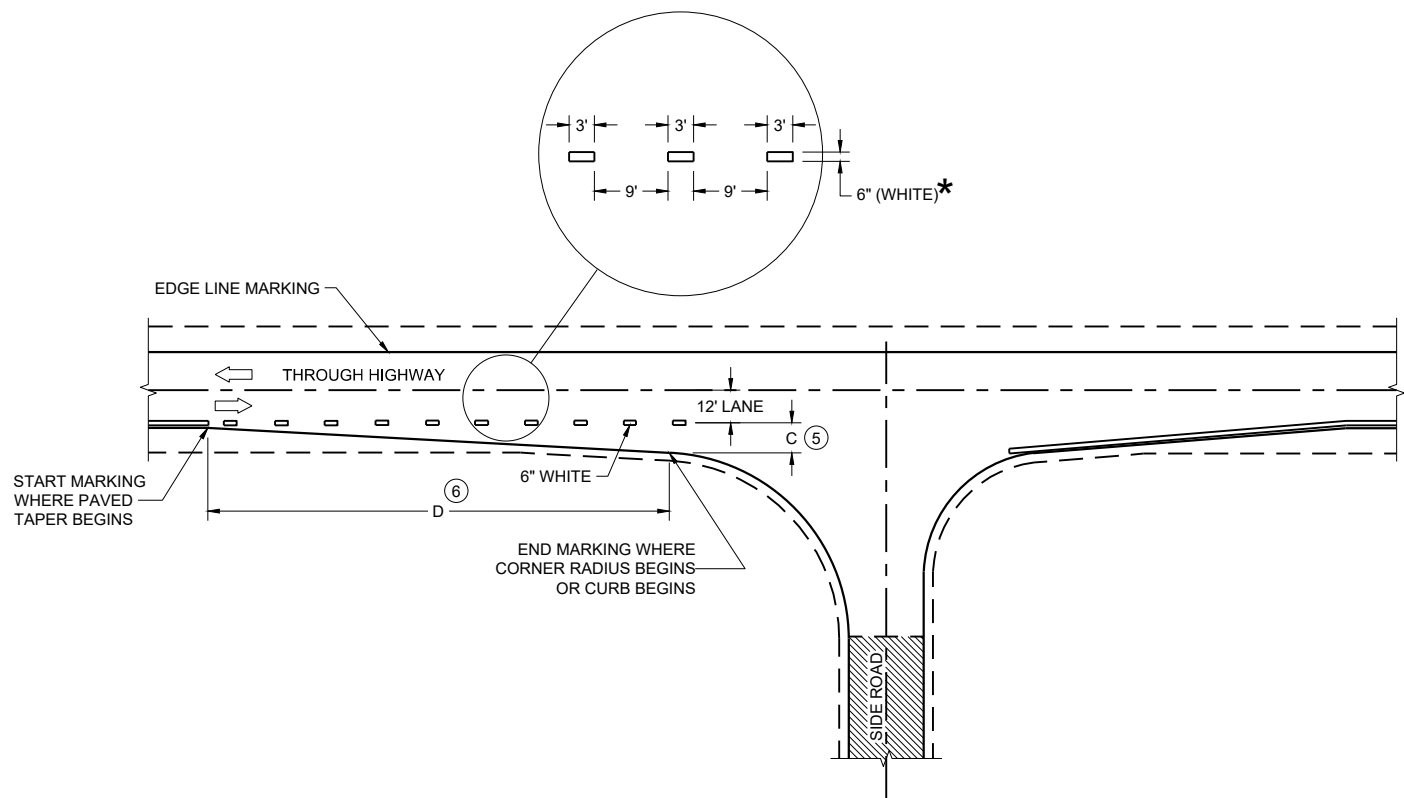
LEGEND

- TEMPORARY RAISED PAVEMENT MARKER, TYPE II
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- DIRECTION OF TRAFFIC.

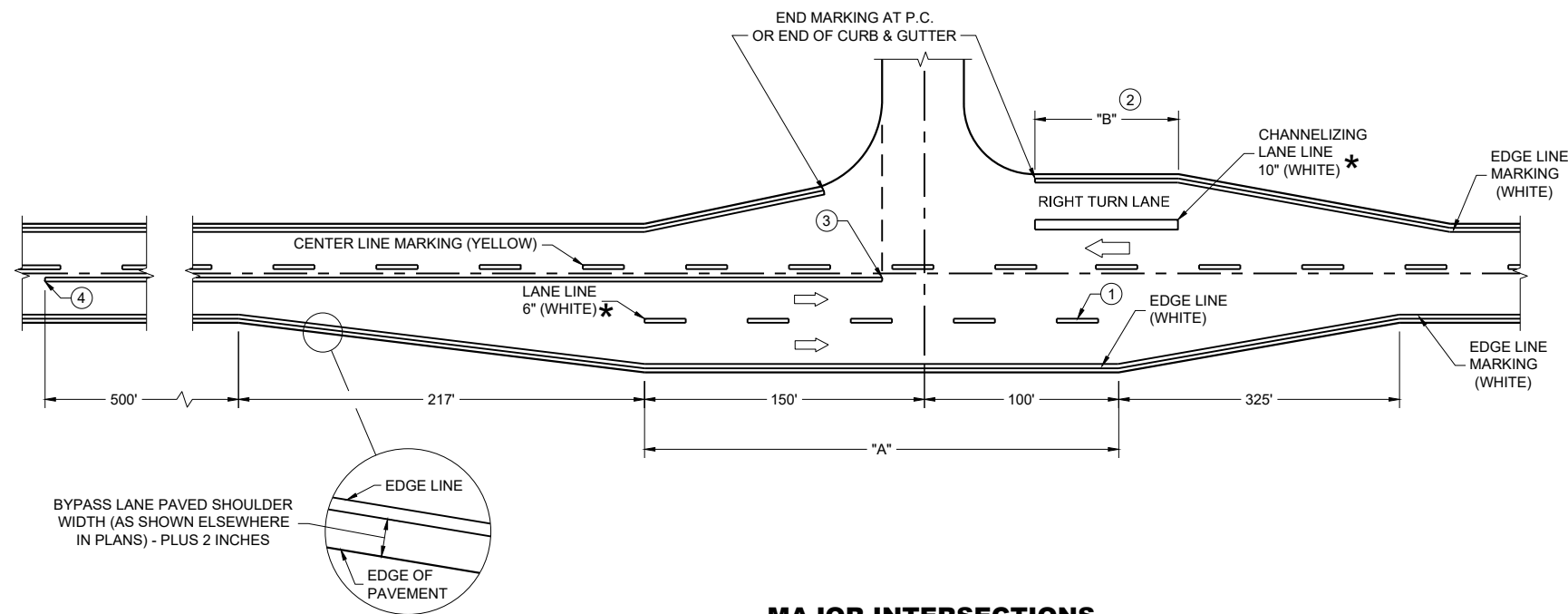
STANDARD APPLICATION FOR TEMPORARY RAISED PAVEMENT MARKERS, TYPE II

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2023  
DATE  
/S/ Matthew Rauch  
STATE SIGNING AND MARKING  
ENGINEER  
FHWA



MINOR INTERSECTION



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

\*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

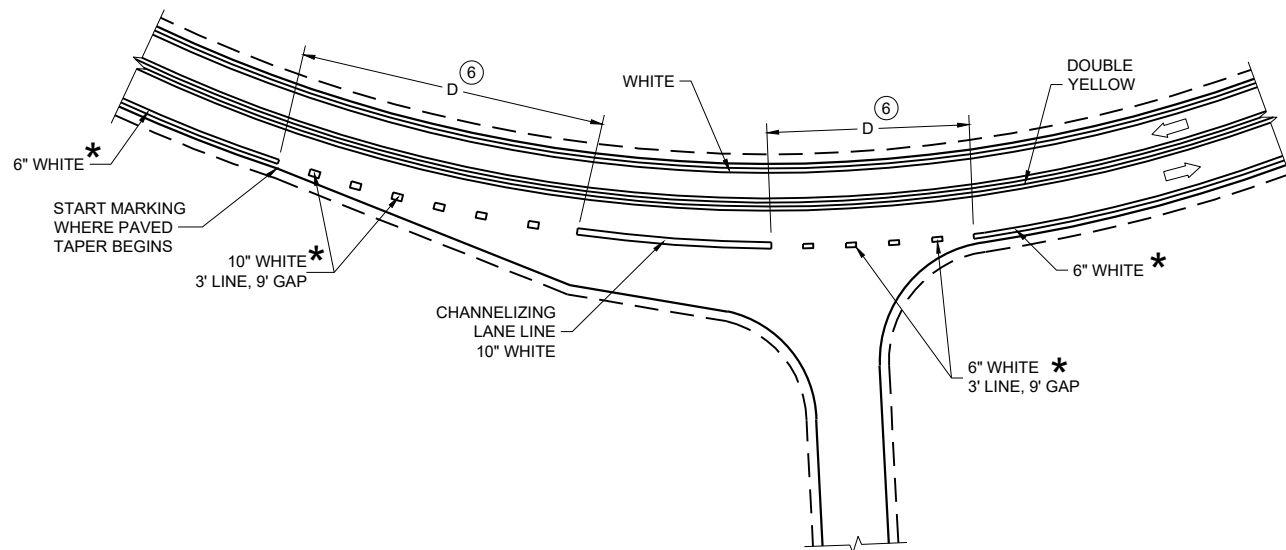
GENERAL NOTES

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

- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
- ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
- ③ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
- ④ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.
- ⑤ WHEN DISTANCE "C" IS LESS THAN 4 FEET, OMIT DOTTED EXTENSION.
- ⑥ WHEN DISTANCE "D" IS LESS THAN 50 FEET, OMIT DOTTED EXTENSION.

LEGEND

➡ DIRECTION OF TRAVEL



INTERSECTION ON OUTSIDE OF CURVE

PAVEMENT MARKING  
(INTERSECTIONS)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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.

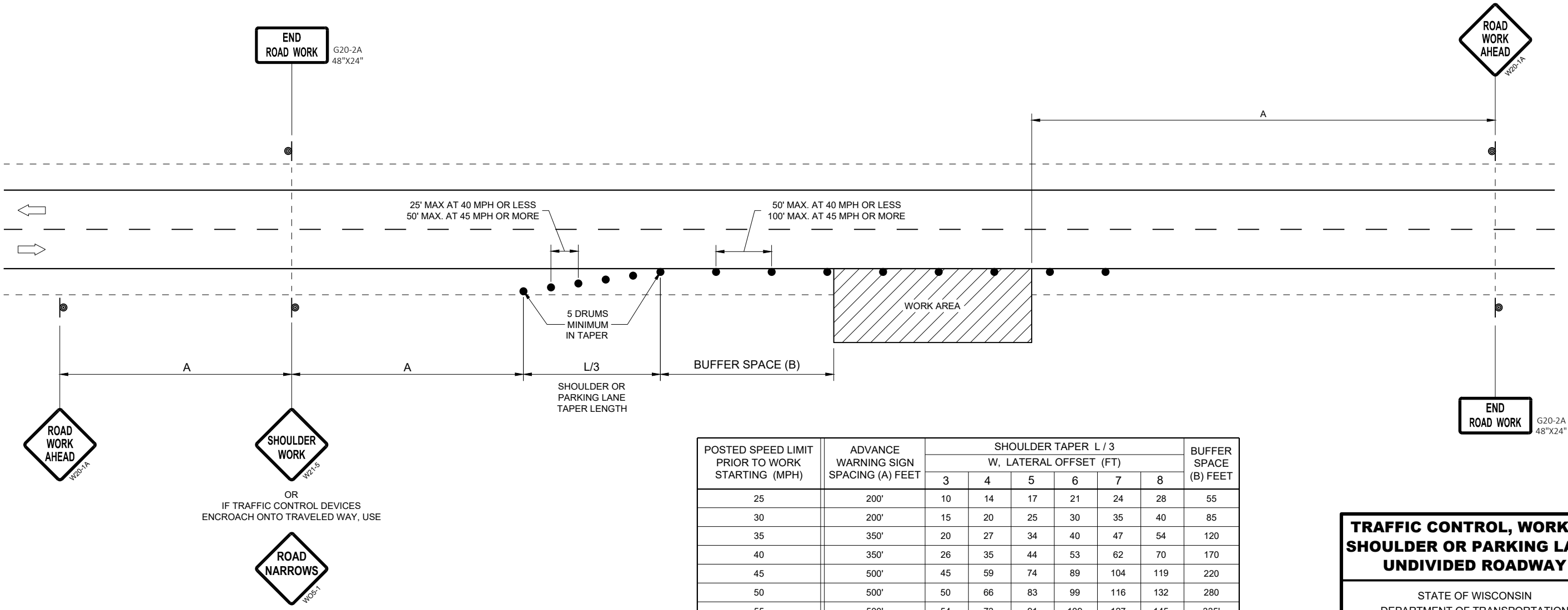
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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

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

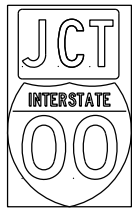
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2020  
DATE

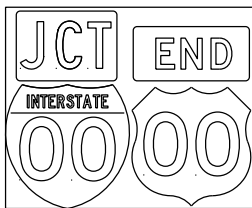
/S/ Andrew Heidtke  
STATEWIDE WORK ZONE TRAFFIC  
SAFETY ENGINEER

FHWA

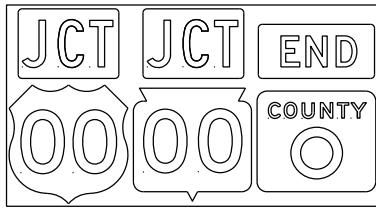
TYPICAL ASSEMBLIES



J1-1



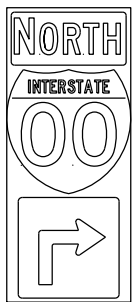
J1-2



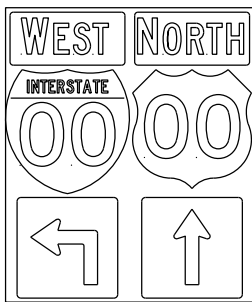
J1-3



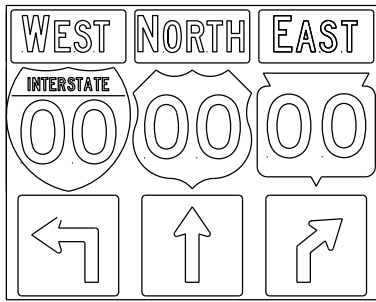
JR1-1



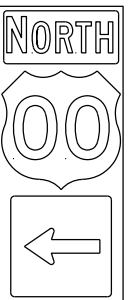
J2-1



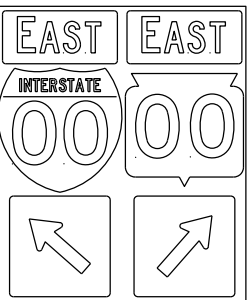
J2-2



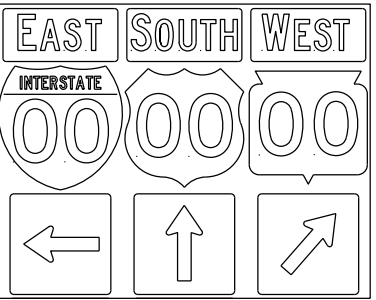
J2-3



J3-1



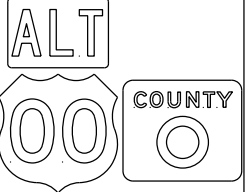
J3-2



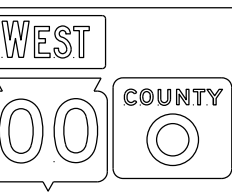
J3-3



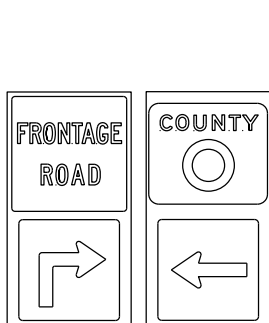
J4-1



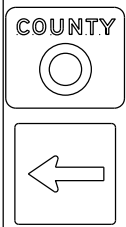
J4-2



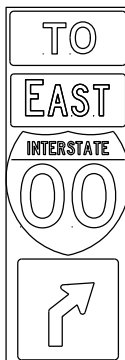
J4-2



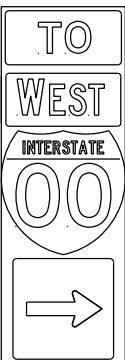
J12-1



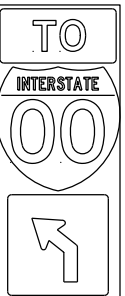
J13-1



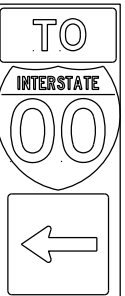
J32-1



J33-1



J22-1



J23-1



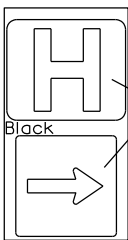
JR13-1



JR23-1



JR99-1

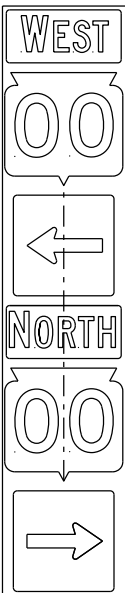
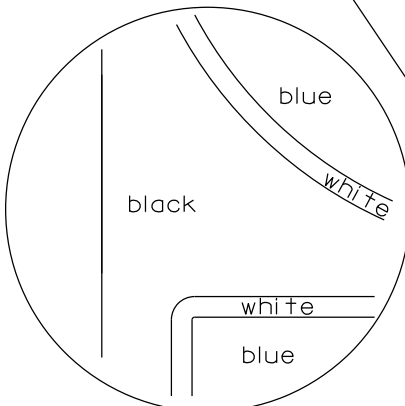


JH-1

Blue Background

Black

blue background with interstate

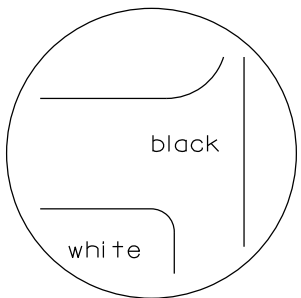
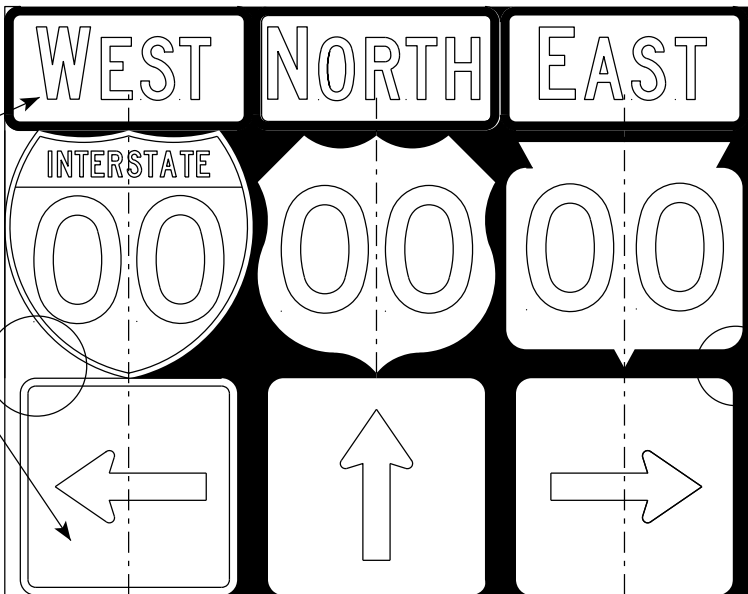


JV

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

NOTES

1. Signs are Type II - Type H Reflective
2. Color:  
Background - Black Non-reflective  
Message - see Note 4
3. Message Series - See Note 4
4. The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
5. Certain marker heads require the component pieces to be the same color. As an example, all the components used with an M1-1 Interstate marker shall be blue.
6. Single panel j-assemblies shall only be used with route marker shields that are same size. If the route marker shields are different size use multiple piece component.
7. Route assemblies that have 24 inch route shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have one horizontal splice between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 inches or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
8. Route assemblies that have 36 inch shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have two horizontal splices. One horizontal splice shall be between the cardinal direction and route shields and the other horizontal splice shall be between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
9. All Vertical J Assemblies are given a Sign Code of JV
10. For JV Assemblies that have a mixture of Interstate and Non-Interstate shields, arrows and cardinals shall be white on blue.
11. For JV Assemblies that have a mixture of Non-Interstate and Auto-Tour shields, arrows and cardinals shall be black on white.



black background

ROUTE MARKERS & COMPONENTS  
IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

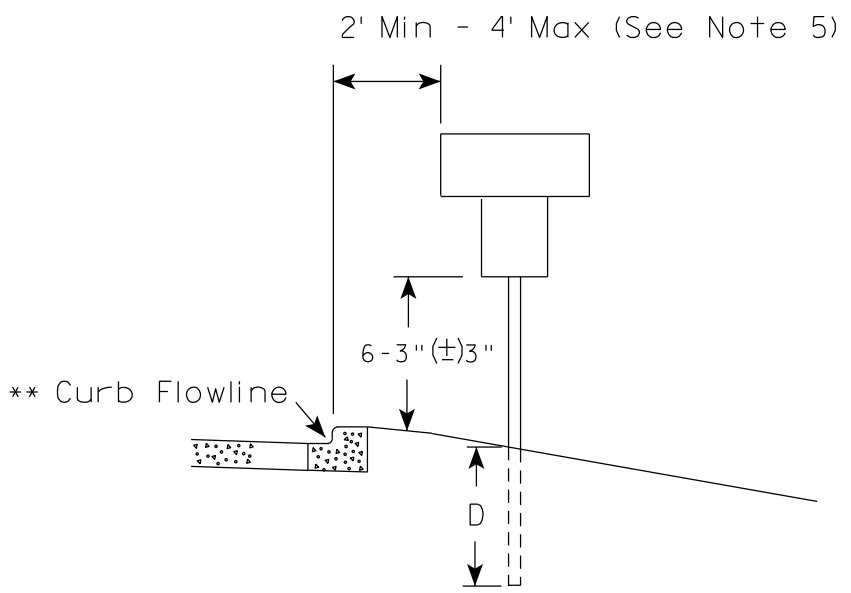
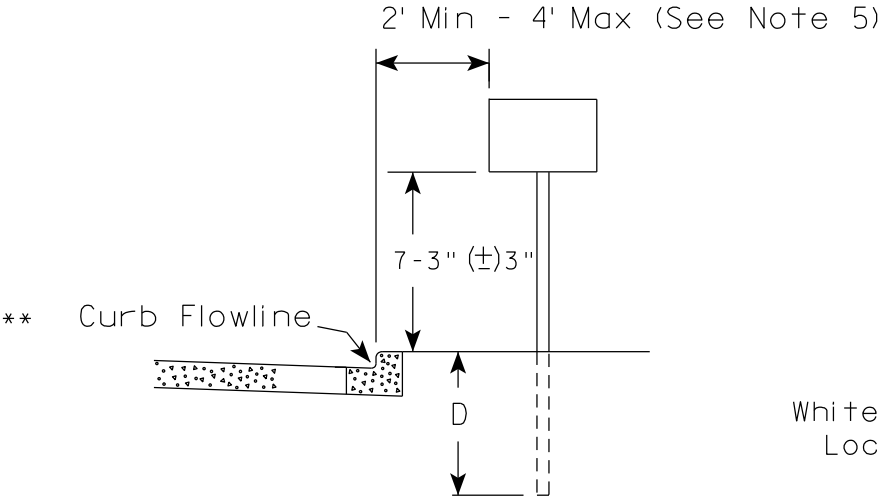
DATE 6/7/23 PLATE NO. A2-1S.10

PROJECT NO:

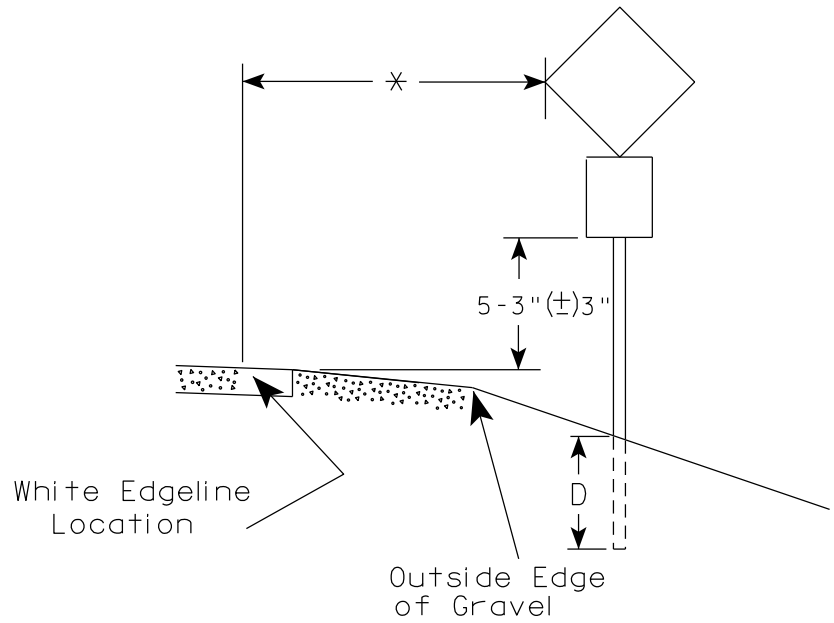
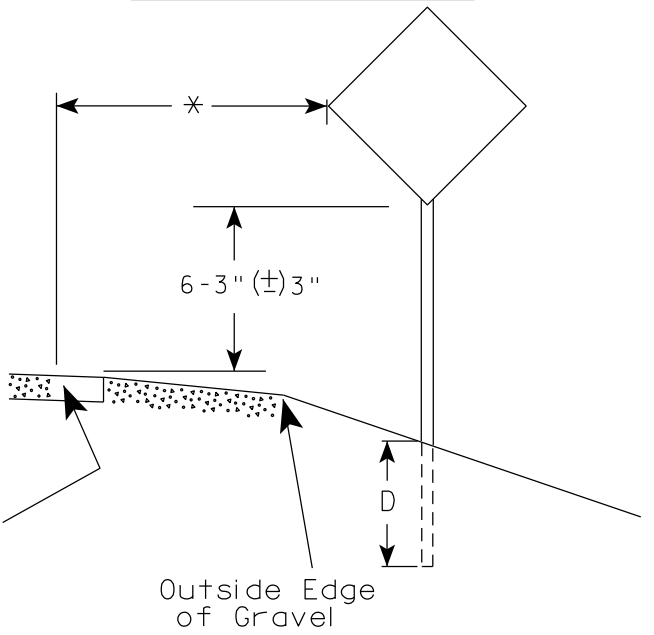
SHEET NO:

E

URBAN AREA



RURAL AREA (See Note 2)



POST EMBEDMENT DEPTH

| Area of Sign Installation<br>( Sq. Ft. ) | D<br>( 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" (±) 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".
3. For expressways and freeways, mounting height is 7'- 3" (±) 3" or 6'-3" (±) 3" depending upon existence of a sub-sign.
4. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±) 3".
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. Folding signs shall be mounted at a height of 5'-3" (±) 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.

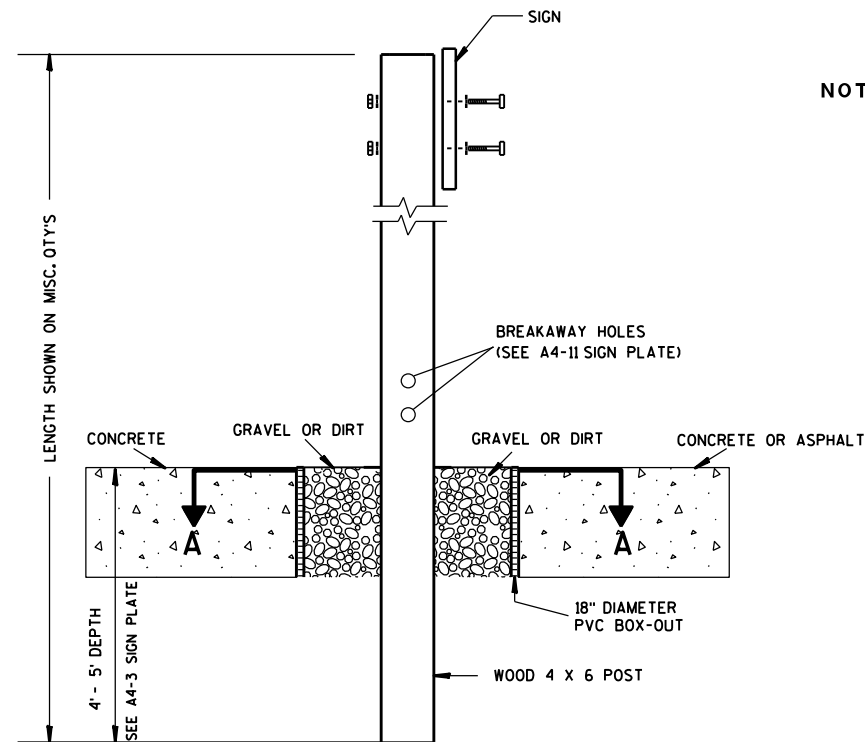
\* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION  
OF PERMANENT TYPE II  
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

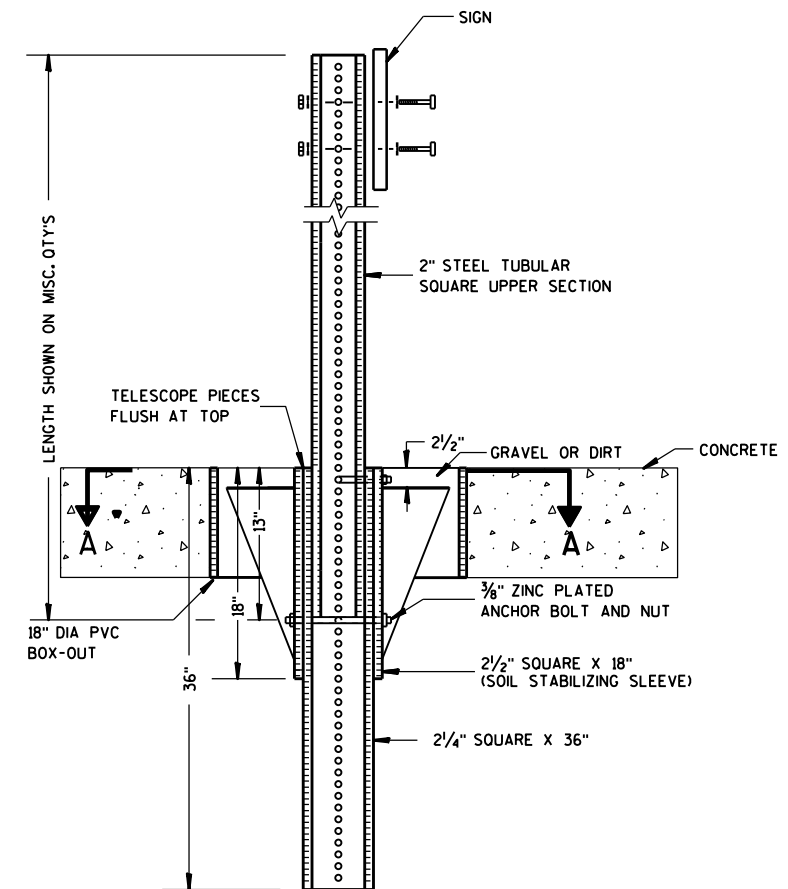
DATE 12/6/23 PLATE NO. A4-3.23



### ELEVATION VIEW

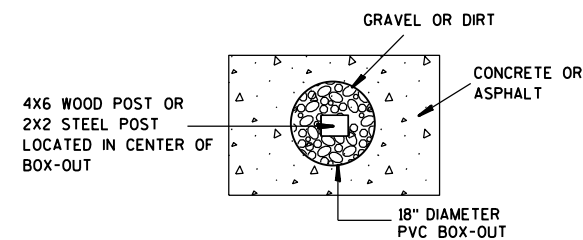
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



### ELEVATION VIEW

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



### PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST  
BOX-OUTS  
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

PROJECT NO:

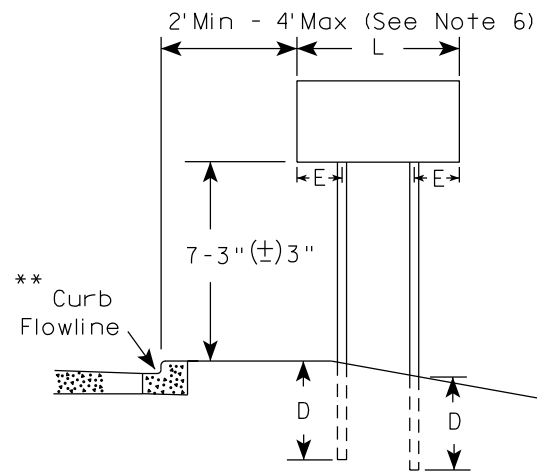
HWY:

COUNTY:

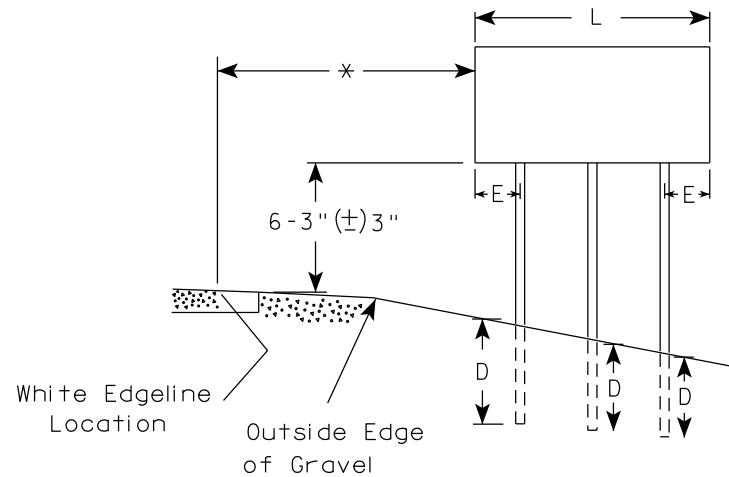
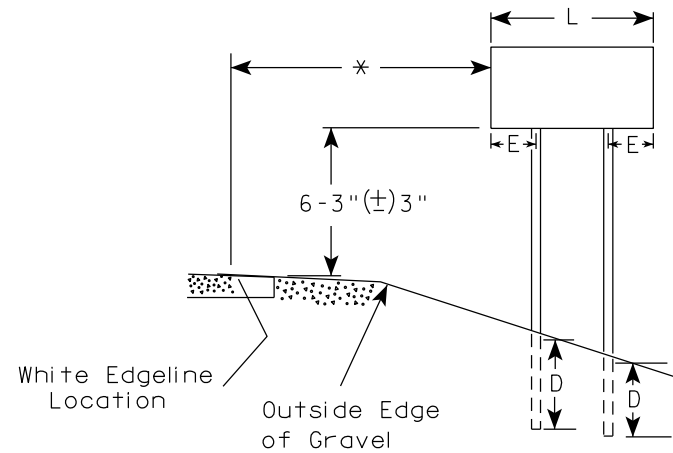
SHEET NO:

E

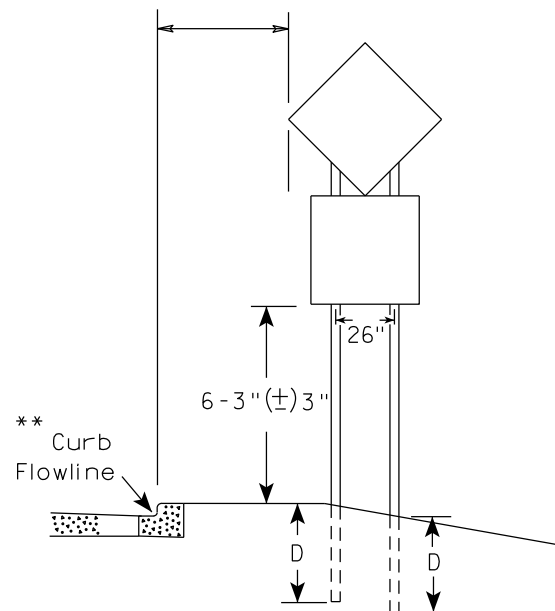
URBAN AREA



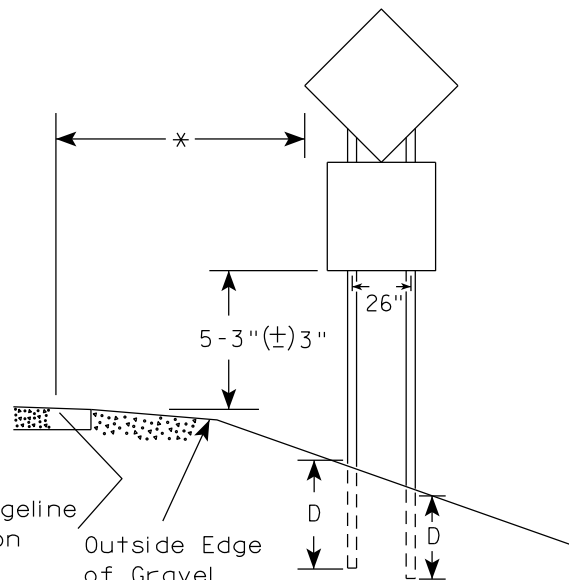
RURAL AREA (See Note 3)



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



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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" (±) 3" or 6'-3" (±) 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" (±) 3" or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±) 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" (±) 3".

\* 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<br>(TWO POSTS REQUIRED) |     |
|-------------------------------------------------------|-----|
| L                                                     | E   |
| Greater than 48"<br>Less than 60"                     | 12" |
| 60" to 108"                                           | L/5 |

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

POST EMBEDMENT DEPTH

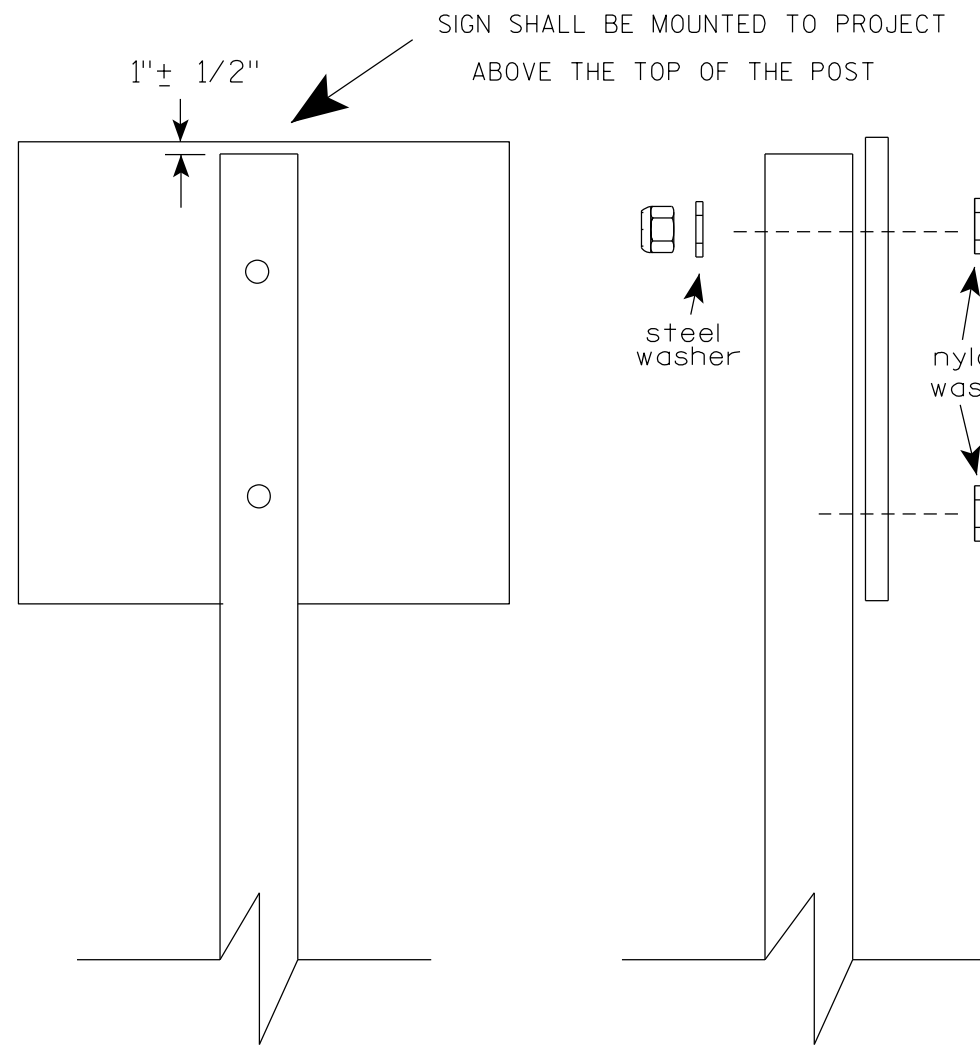
| Area of Sign<br>Installation<br>( Sq.Ft. ) | D<br>( Min ) |
|--------------------------------------------|--------------|
| 20 or Less                                 | 4'           |
| Greater than 20                            | 5'           |

TYPICAL INSTALLATION  
OF TYPE II SIGNS  
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 12/6/23 PLATE NO. A4-4.16



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

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

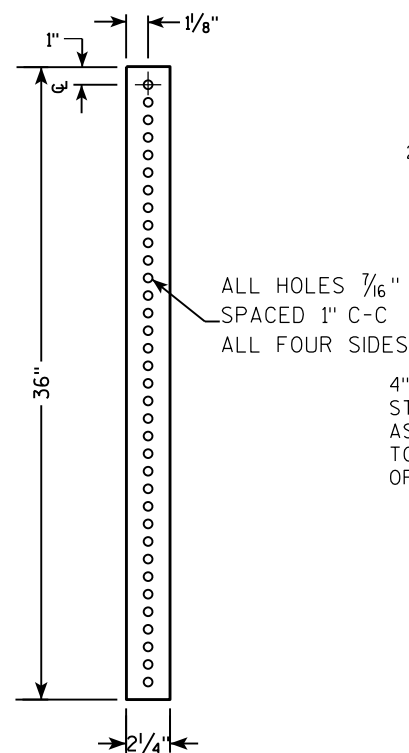
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

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

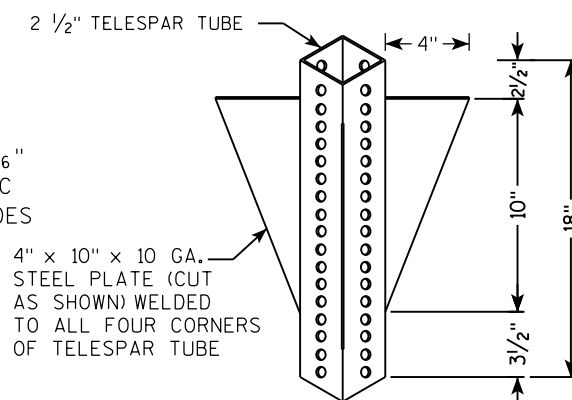
\* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

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

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



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

[illegible]

TECHNICAL DRAWING OF A SIGNPOST ASSEMBLY.

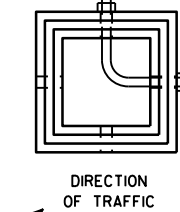
**Side View (Left):**

- Overall height dimension: LENGTH SHOWN ON MISC. Q'TYS
- Top section height: 36"
- Section below top: 18"
- Section below that: 12"
- Bottom section height: 36"
- Labels: TELESCOPE PIECES FLUSH AT TOP, A (pointing to top section), B (pointing to middle section), C (pointing to bottom section).

**End View (Right):**

- Top section: 2" STEEL TUBULAR SQUARE UPPER SECTION
- Sign: SIGN (pointing to the sign plate)
- Fasteners: SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL (pointing to the sign plate fasteners)
- Holes: ALL HOLES  $\frac{7}{16}$ " SPACED 1" C-C ALL FOUR SIDES
- Anchor:  $\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT (pointing to the corner anchor bolt)
- Offset: 1" (dimension from the corner anchor bolt to the center of the post)
- Soil Stabilizing Sleeve:  $\frac{3}{8}$ " ZINC PLATED ANCHOR BOLT AND NUT (pointing to the sleeve anchor bolt), 2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)
- Post Section: 2 1/4" SQUARE X 36"

3/8" ZINC PLATED CORNER  
ANCHOR BOLT AND NUT



**SECTION A-A**

| 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:

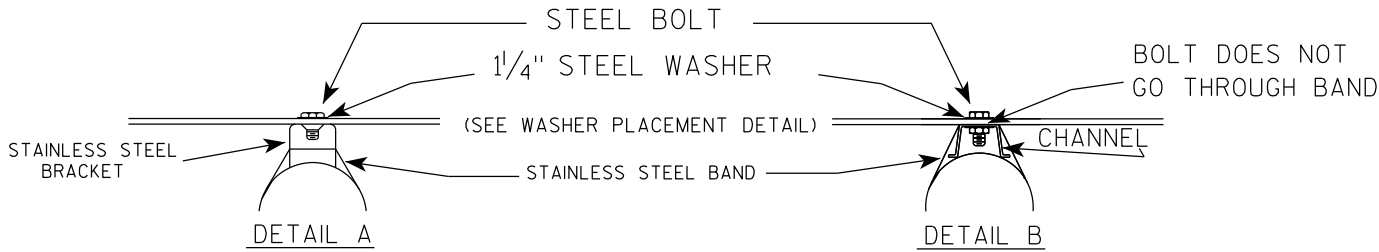
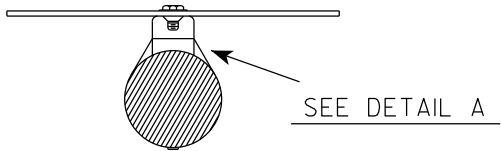
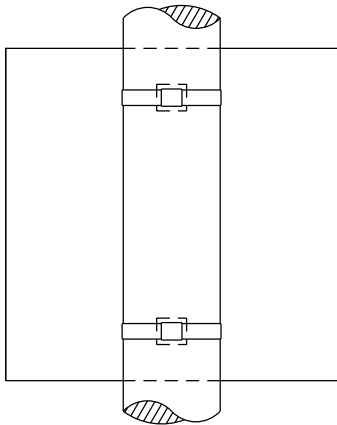
SHEET NO:

E

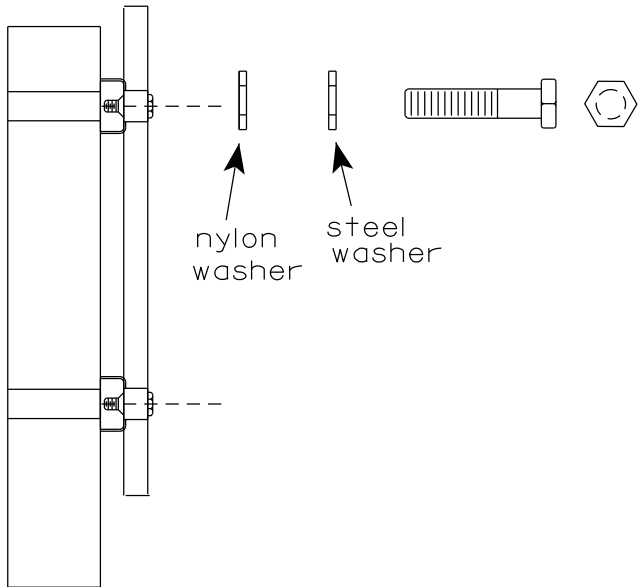


BANDING

SINGLE SIGN



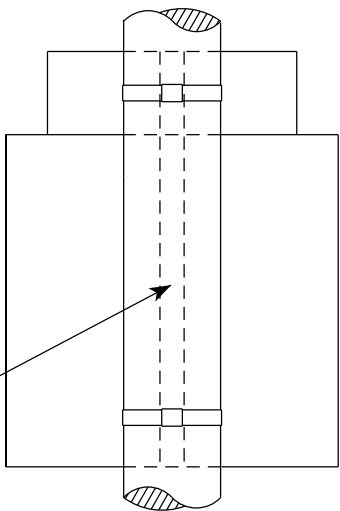
WASHER PLACEMENT



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

CHANNEL  
SEE TYPICAL PANEL  
INSTALLATION SHEET

"J" ASSEMBLY



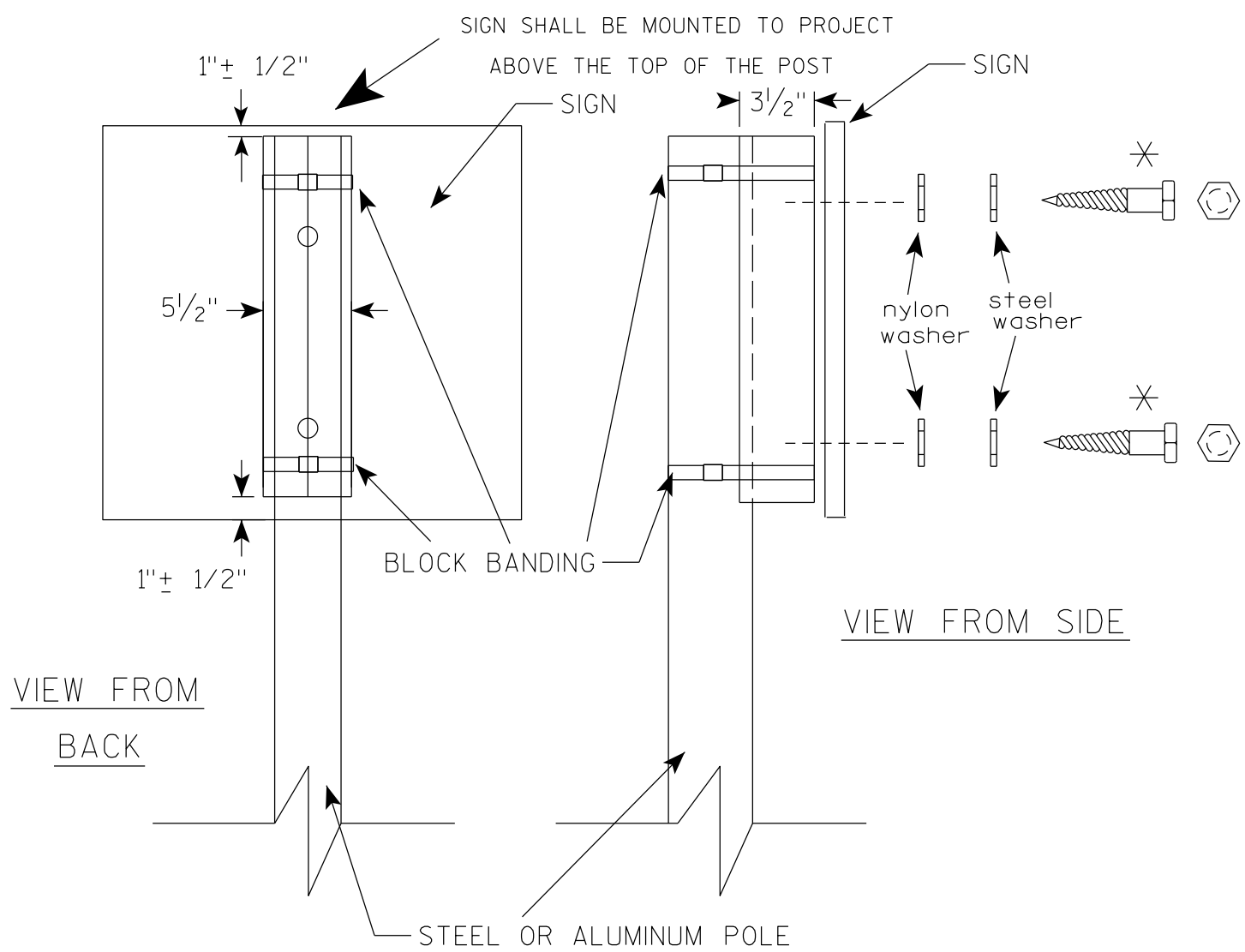
SEE DETAIL B

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

STANDARD SIGN  
SIGN BANDING DETAILS

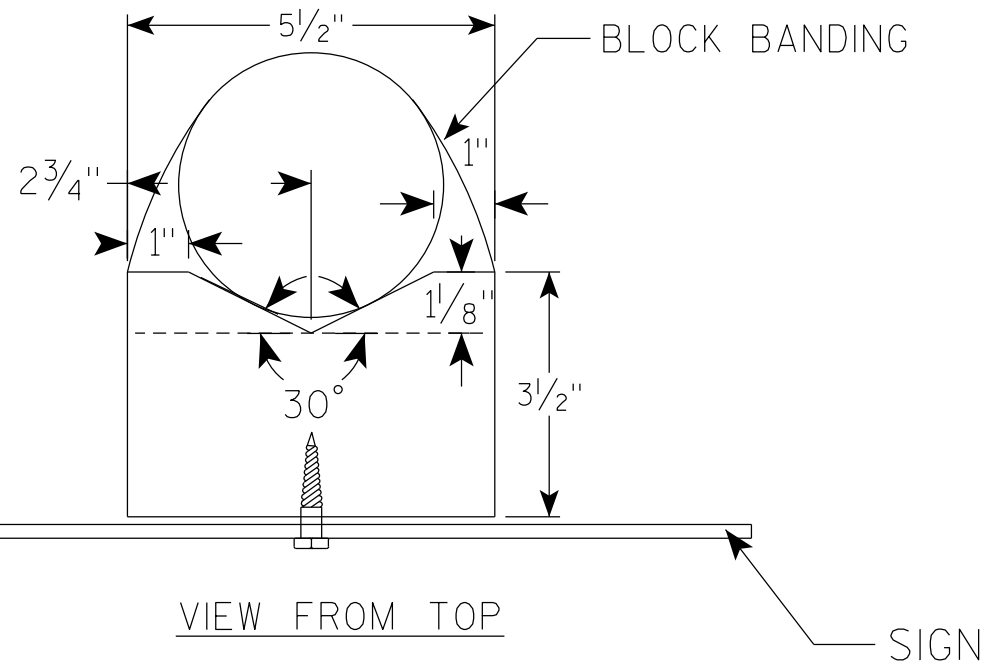
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer  
DATE 6/10/19 PLATE NO. A5-9.4



VIEW FROM  
BACK

VIEW FROM SIDE



VIEW FROM TOP

## GENERAL NOTES

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

✱ LAG BOLTS SHALL BE  $\frac{3}{8}$ " X  $2\frac{1}{2}$ "

BLOCK BANDING DETAIL  
( V-BLOCK OPTION )

WISCONSIN DEPT OF TRANSPORTATION

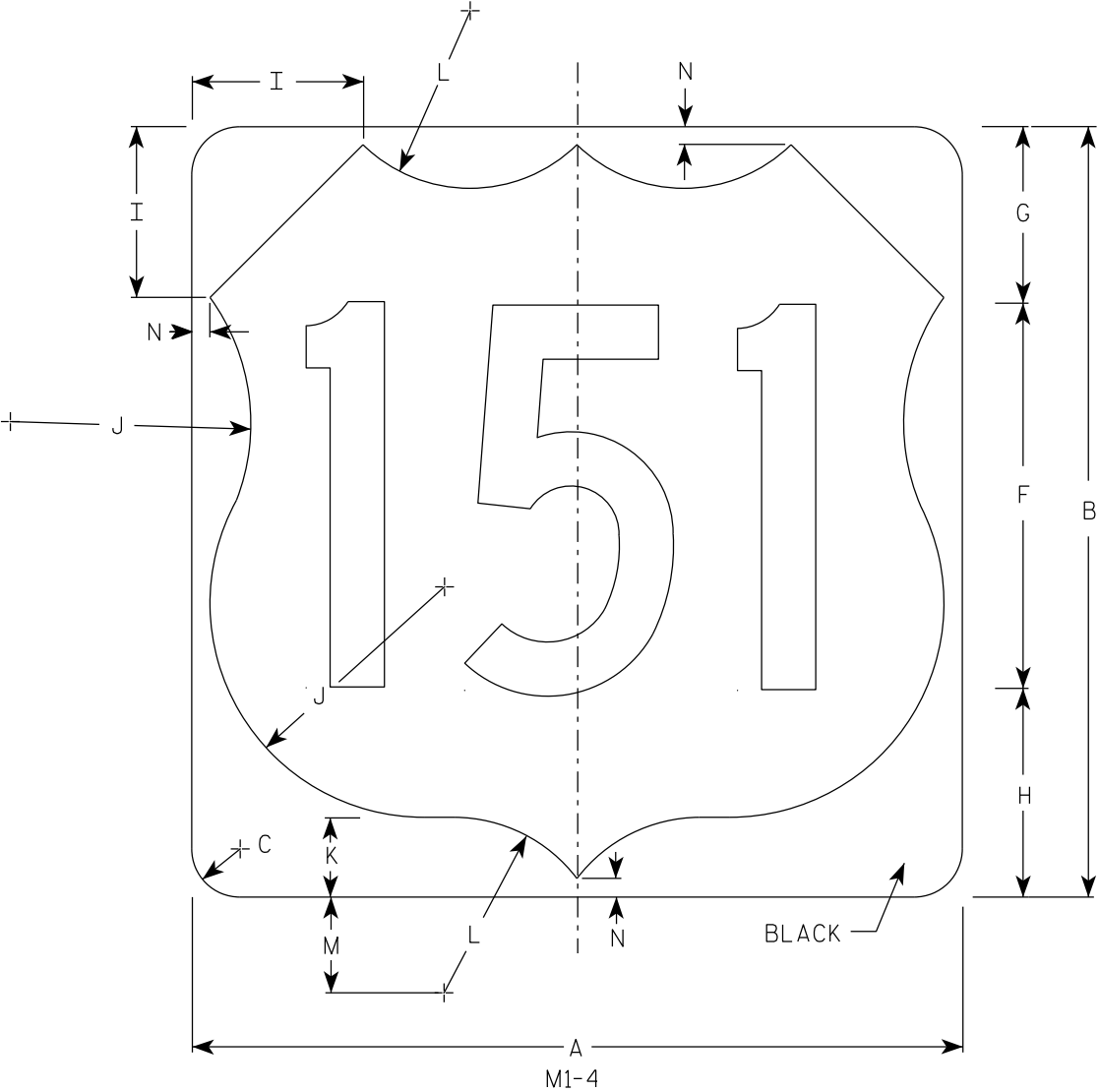
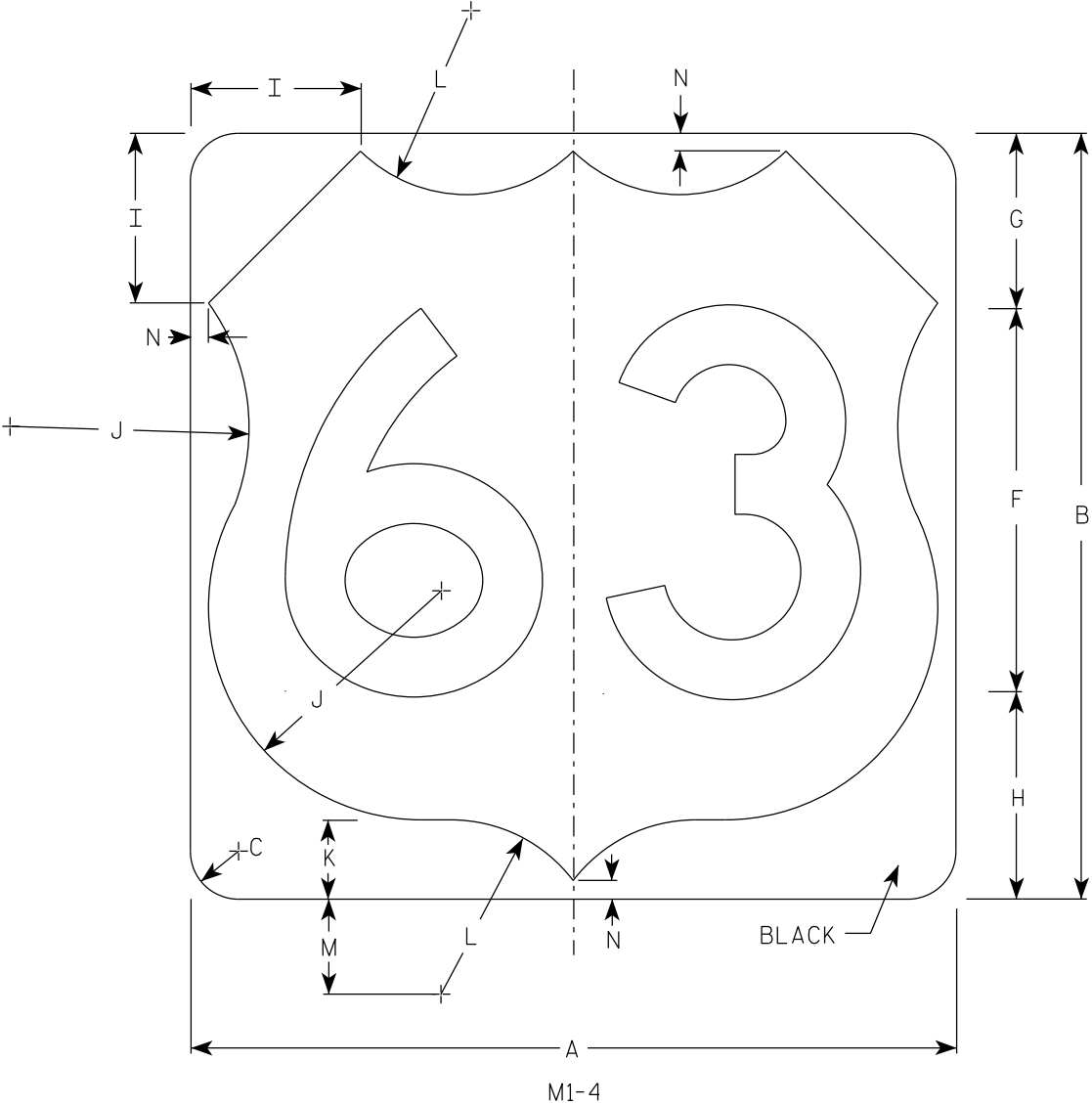
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 4/19/2022 PLATE NO. A5-10.3

PROJECT NO:

SHEET NO:

E



NOTES

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

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

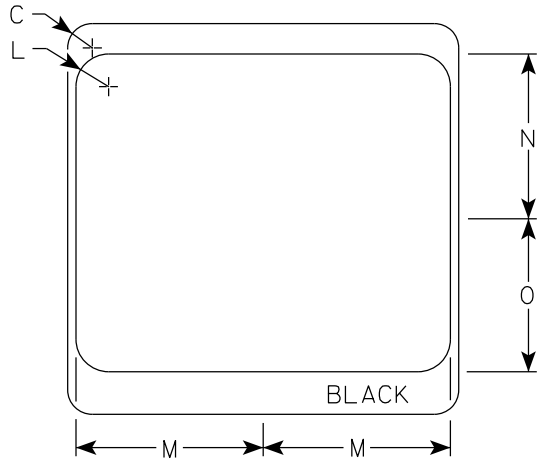
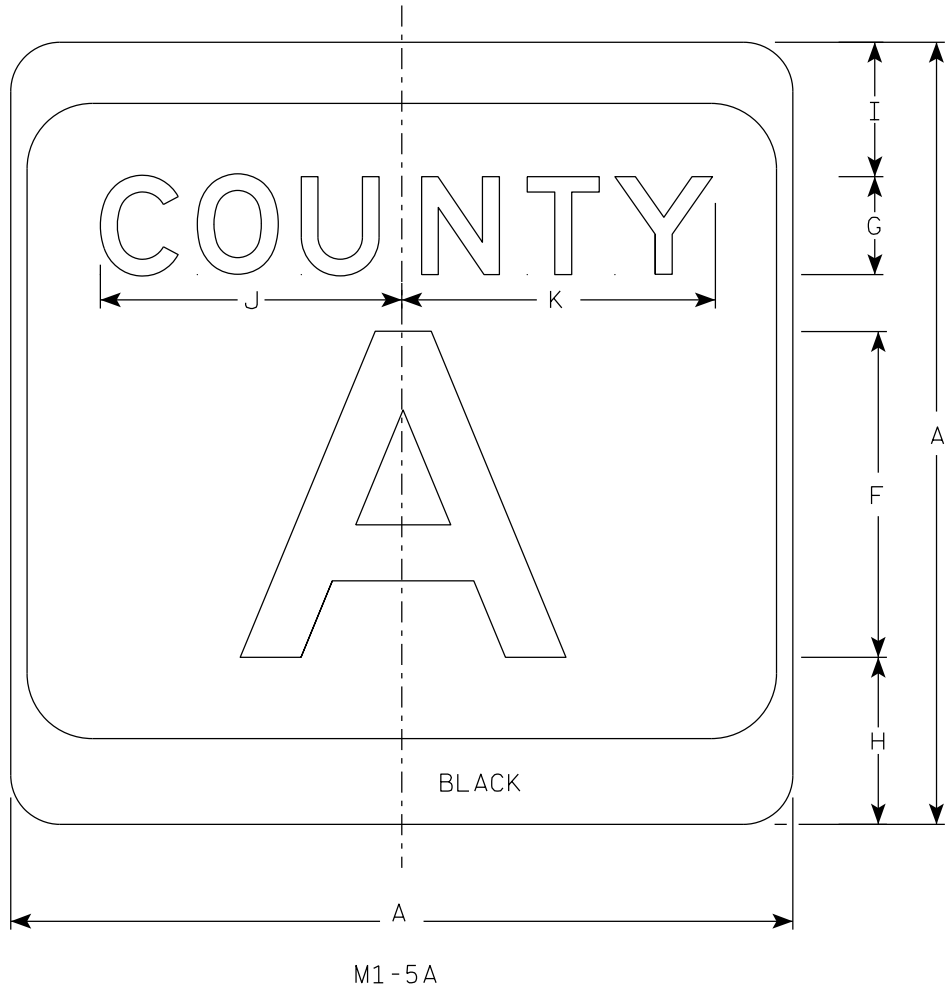
USH MARKER  
M1-4 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

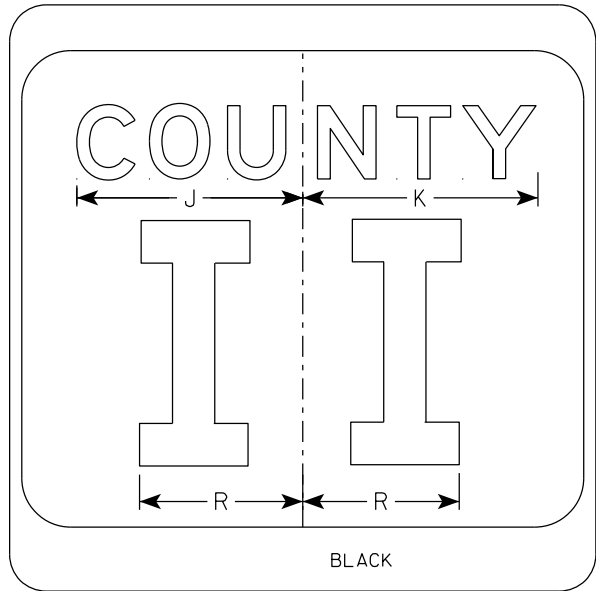
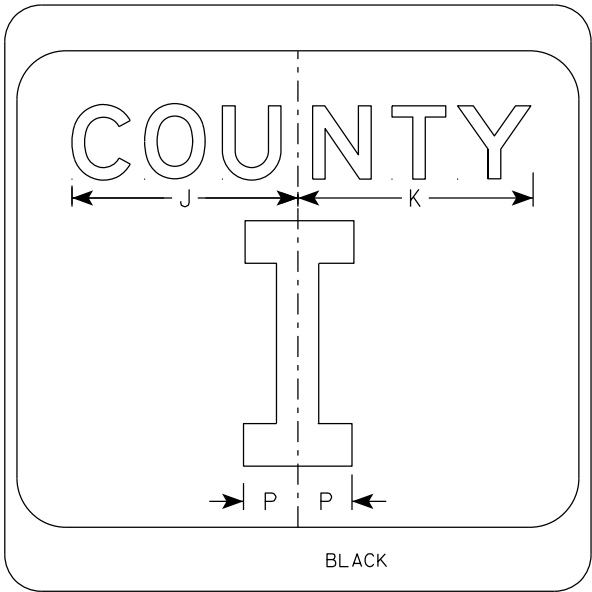
APPROVED  
*Matthew R. Rauch*  
for State Traffic Engineer

DATE 12/20/22 PLATE NO. M1-4.11

7



- NOTES
- Sign is Type II - Type H Reflective
  - Color:  
Background - White & Black  
Message - Black
  - Message Series - see Note 4
  - Message Series E for 1 letter.  
Message Series D for 2 letters unless  
message is too big then Series C.  
Message Series C for 3 letters unless  
message is too big then Series B.
  - Substitute appropriate letters & optically  
center to achieve proper balance.



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

CTH MARKER

M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 11/8/2022 PLATE NO. M1-5A.9

PROJECT NO:

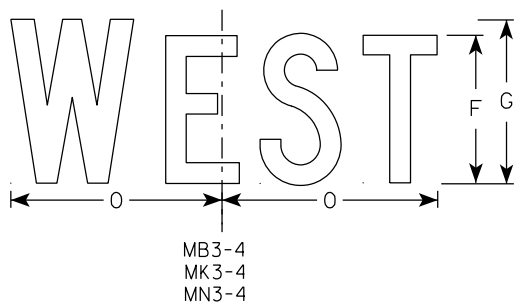
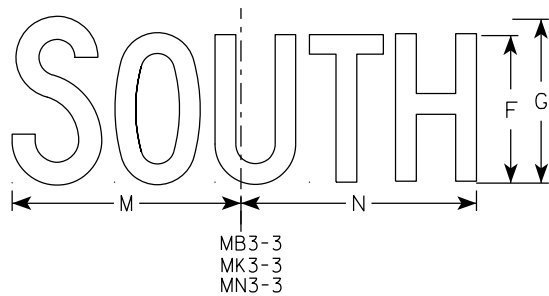
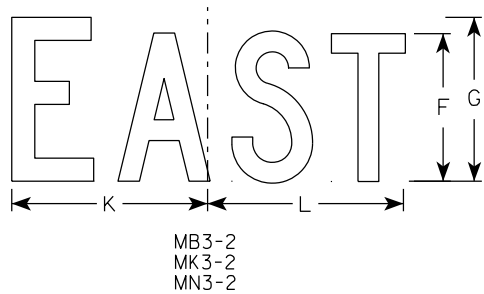
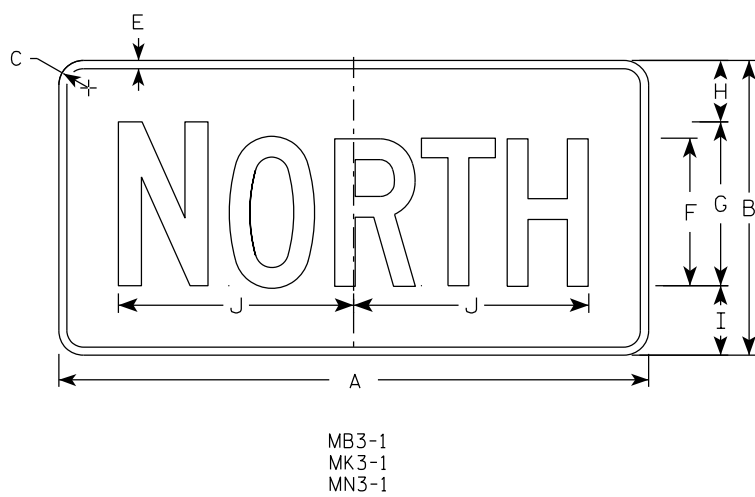
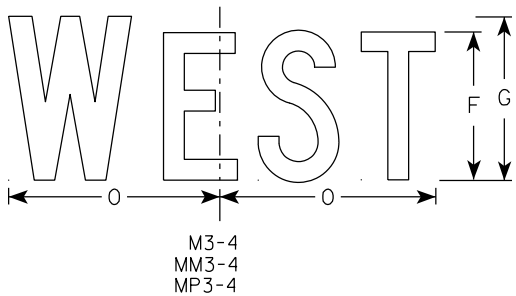
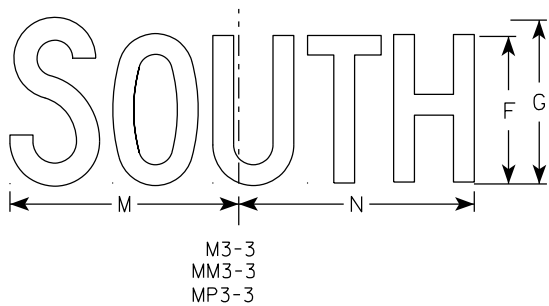
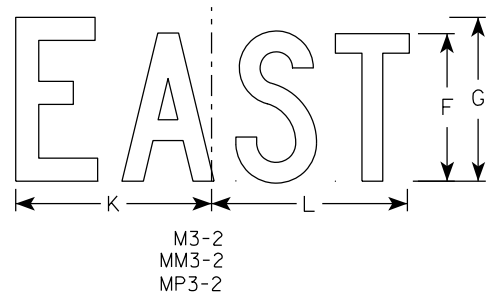
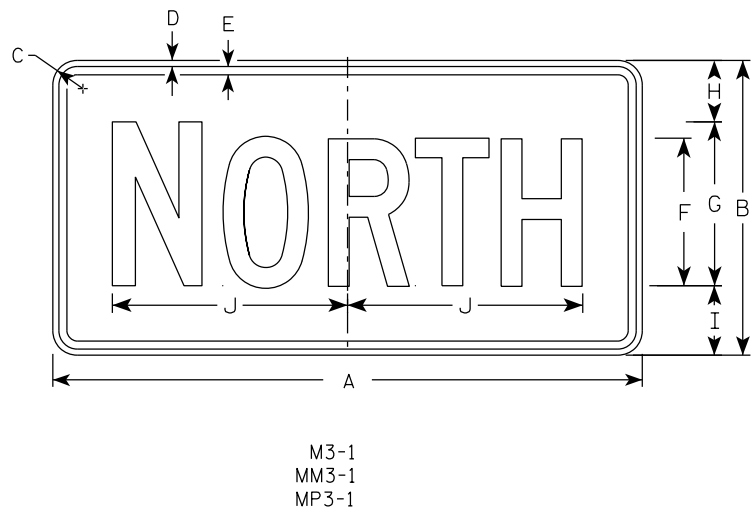
HWY:

COUNTY:

SHEET NO:

E

7



NOTES

1. All Signs Type II - Type H Reflective
2. Color:  
Background - See note 5  
Message - See note 5
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. 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
6. Note the first letter of each direction is larger than the remainder of the message.

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

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

STANDARD SIGNS  
M3-1 THRU M3-4  
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

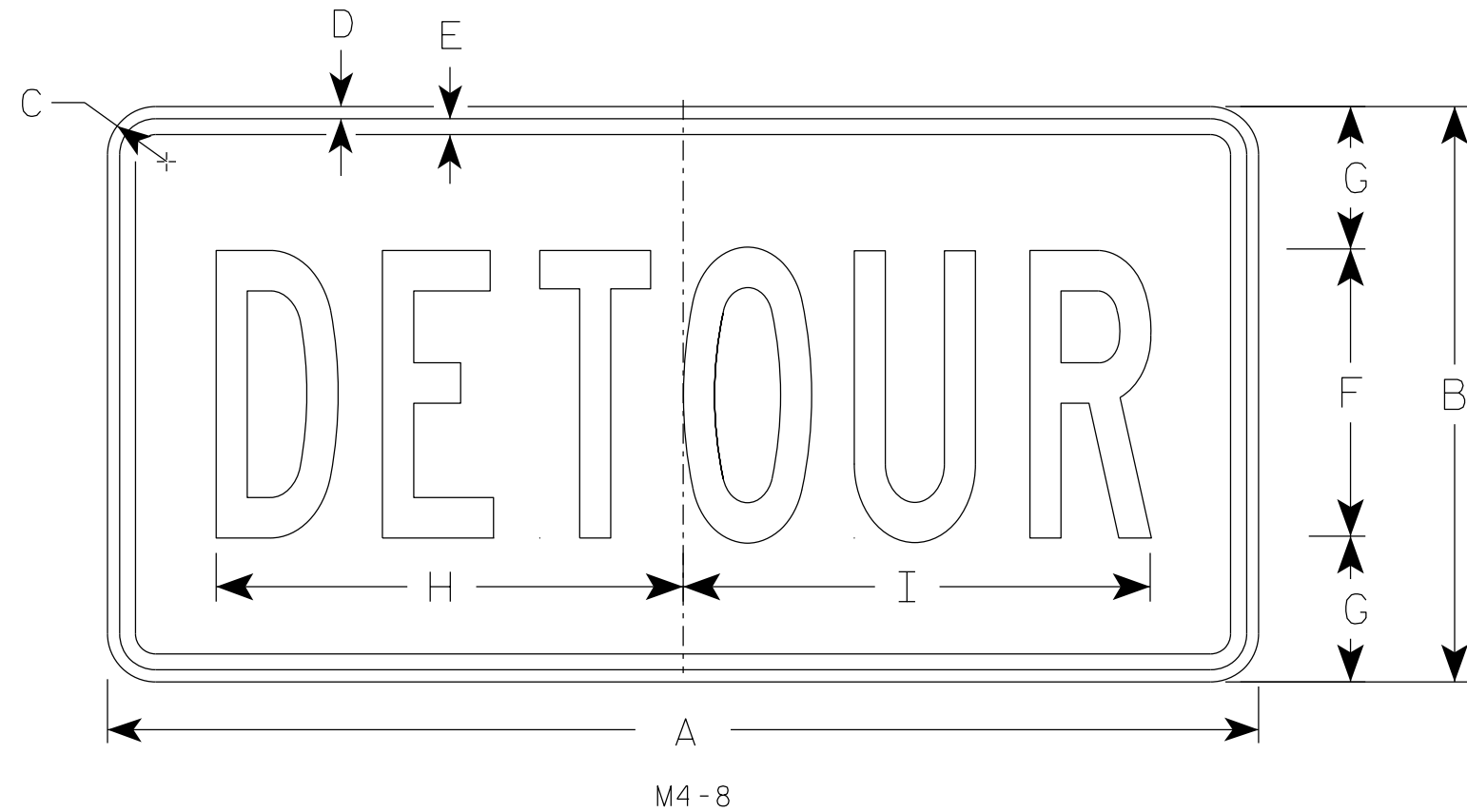
DATE 2/8/2023 PLATE NO. M3-1.15

7

7

NOTES

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



| SIZE | A  | B  | C     | D   | E   | F | G     | H      | I      | J | K | L | M | N | O | P | Q | R | S | T | U | v | W | X | Y | Z | Area<br>sq. ft. |
|------|----|----|-------|-----|-----|---|-------|--------|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    |    |    |       |     |     |   |       |        |        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 2    | 24 | 12 | 1 1/2 | 3/8 | 3/8 | 6 | 3     | 10     | 10 1/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 2.0             |
| 2M   | 24 | 12 | 1 1/2 | 3/8 | 3/8 | 6 | 3     | 10     | 10 1/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 2.0             |
| 3    | 36 | 18 | 1 1/2 | 3/8 | 1/2 | 9 | 4 1/2 | 14 5/8 | 14 1/2 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 4.5             |
| 4    | 36 | 18 | 1 1/2 | 3/8 | 1/2 | 9 | 4 1/2 | 14 5/8 | 14 1/2 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 4.5             |
| 5    | 36 | 18 | 1 1/2 | 3/8 | 1/2 | 9 | 4 1/2 | 14 5/8 | 14 1/2 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 4.5             |

STANDARD SIGN

M4 - 8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 2/9/2023 PLATE NO. M4-8.4

PROJECT NO:

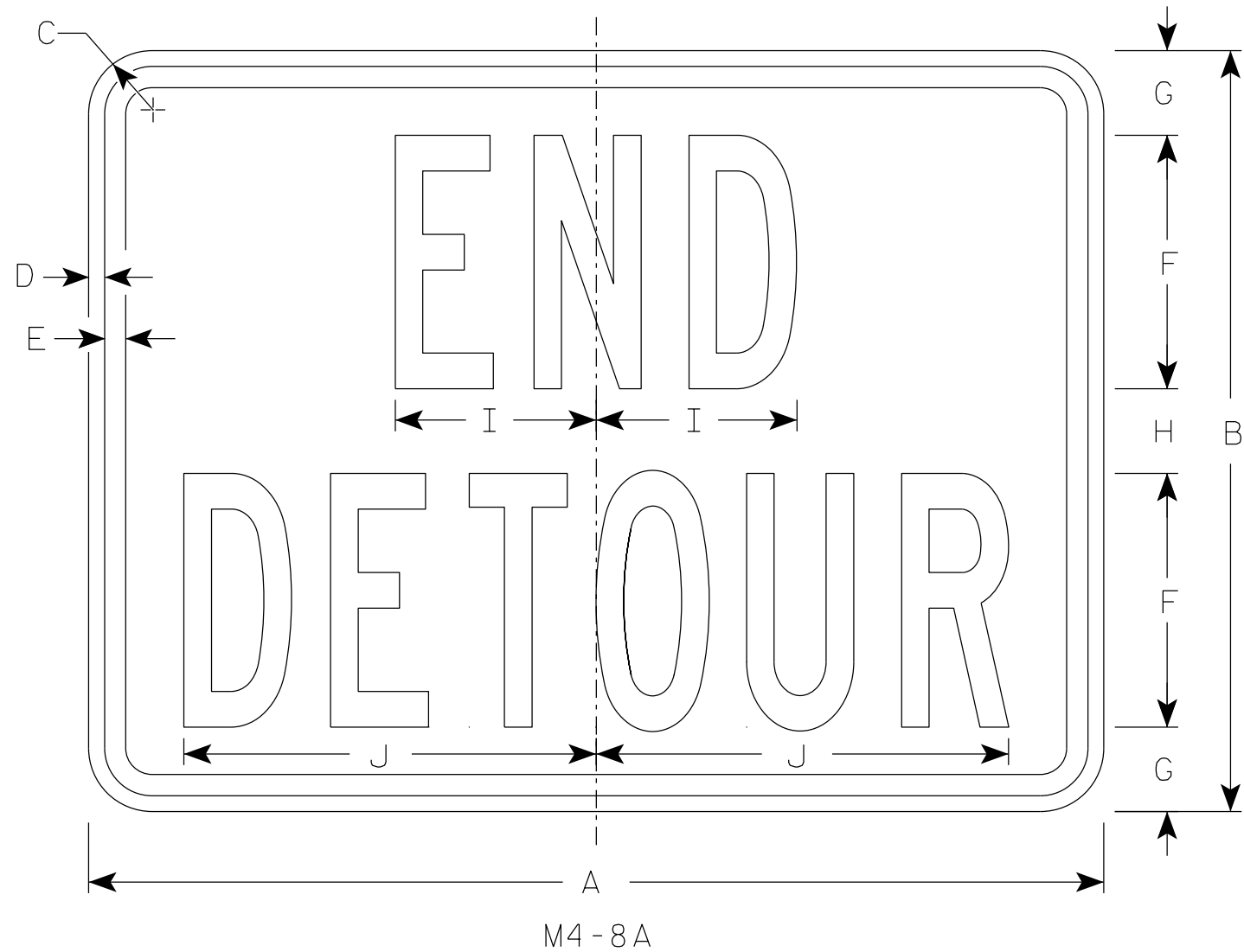
HWY:

COUNTY:

SHEET NO:

E

7



NOTES

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

7

| SIZE | A  | B  | C     | D   | E   | F | G     | H | I     | J     | K | L | M | N | O | P | Q | R | S | T | U | v | W | X | Y | Z | Area<br>sq. ft. |
|------|----|----|-------|-----|-----|---|-------|---|-------|-------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    |    |    |       |     |     |   |       |   |       |       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 2    | 24 | 18 | 1 1/2 | 3/8 | 1/2 | 6 | 2     | 2 | 4 3/4 | 9 3/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 3.0             |
| 2M   | 24 | 18 | 1 1/2 | 3/8 | 1/2 | 6 | 2     | 2 | 4 3/4 | 9 3/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 3.0             |
| 3    | 30 | 24 | 1 1/2 | 3/8 | 1/2 | 8 | 2 1/2 | 3 | 6 3/4 | 13    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 5.0             |
| 4    | 30 | 24 | 1 1/2 | 3/8 | 1/2 | 8 | 2 1/2 | 3 | 6 3/4 | 13    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 5.0             |
| 5    | 30 | 24 | 1 1/2 | 3/8 | 1/2 | 8 | 2 1/2 | 3 | 6 3/4 | 13    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 5.0             |

STANDARD SIGN

M4-8A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

DATE 2/9/2023 PLATE NO. M4-8A.4

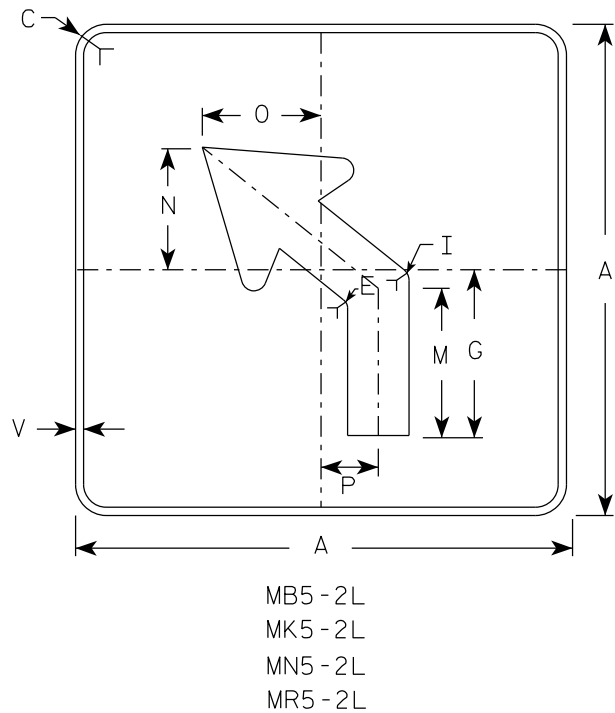
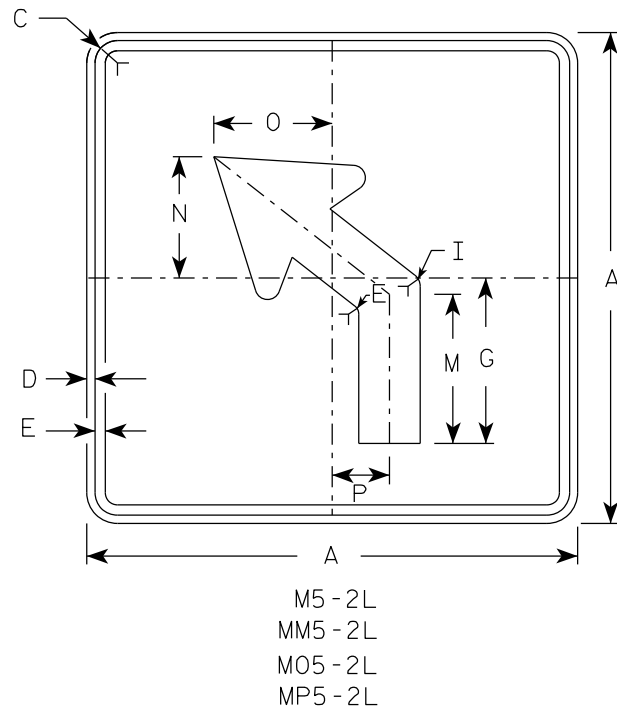
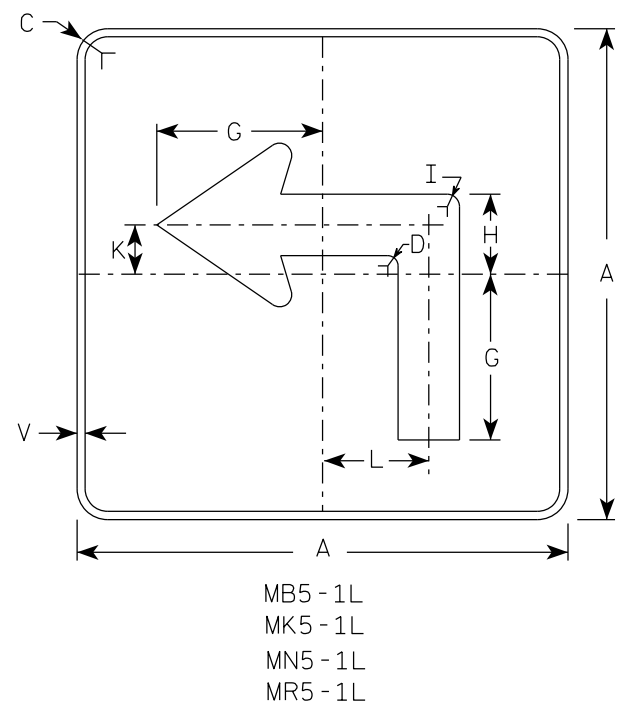
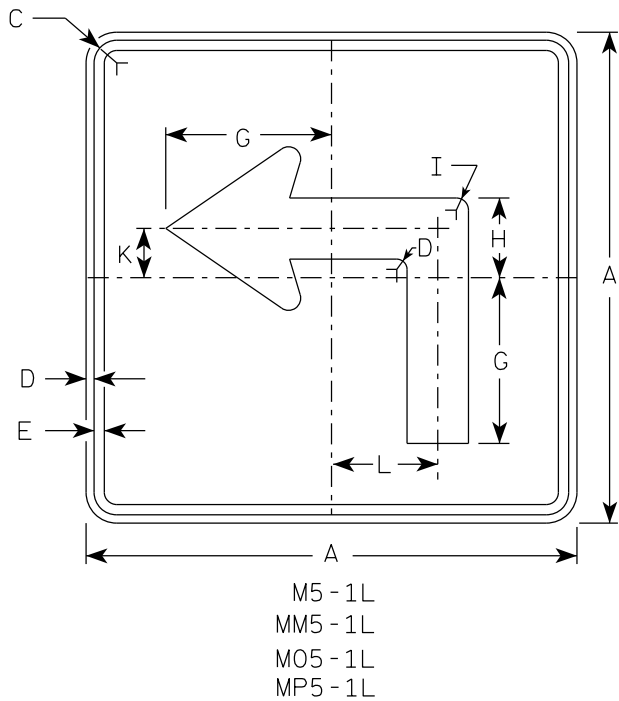
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

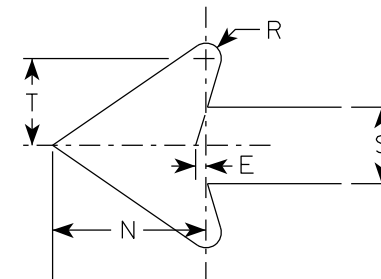
E



NOTES

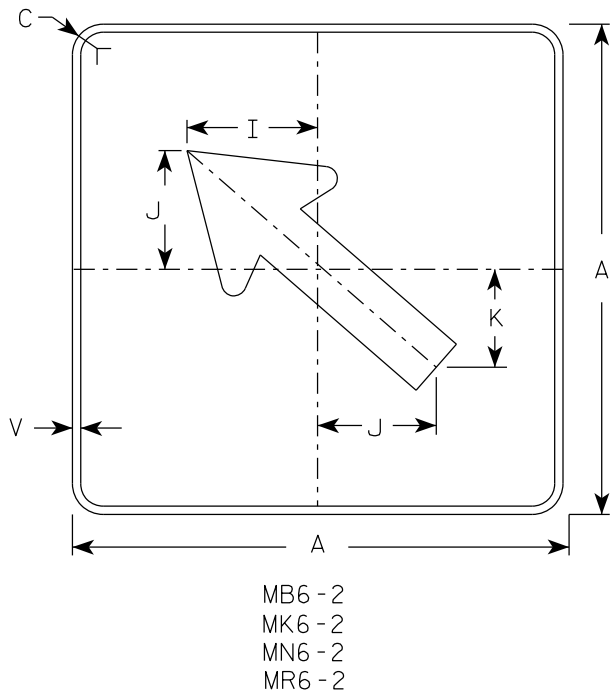
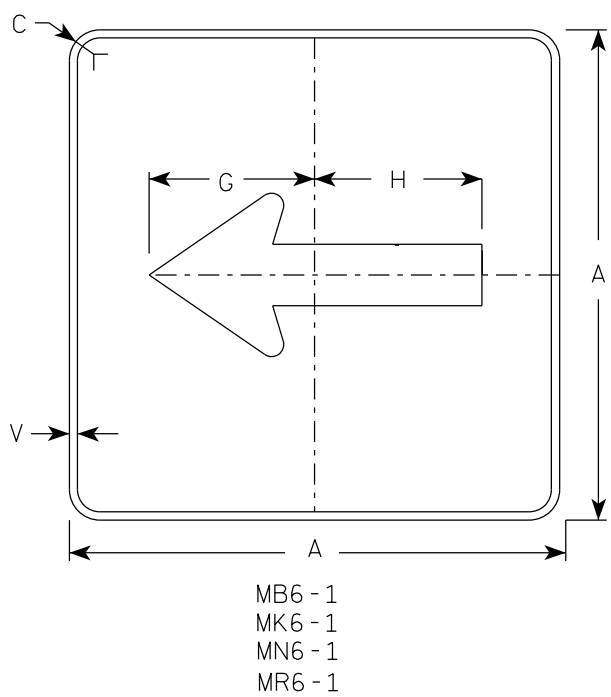
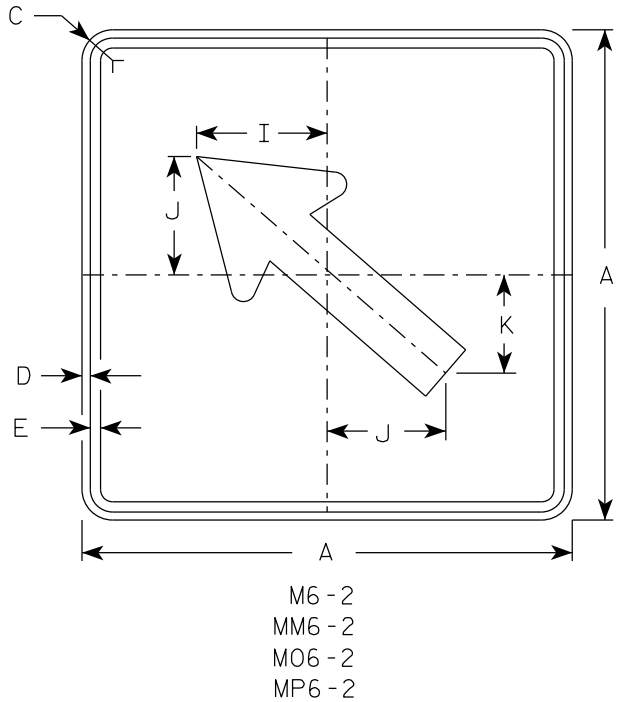
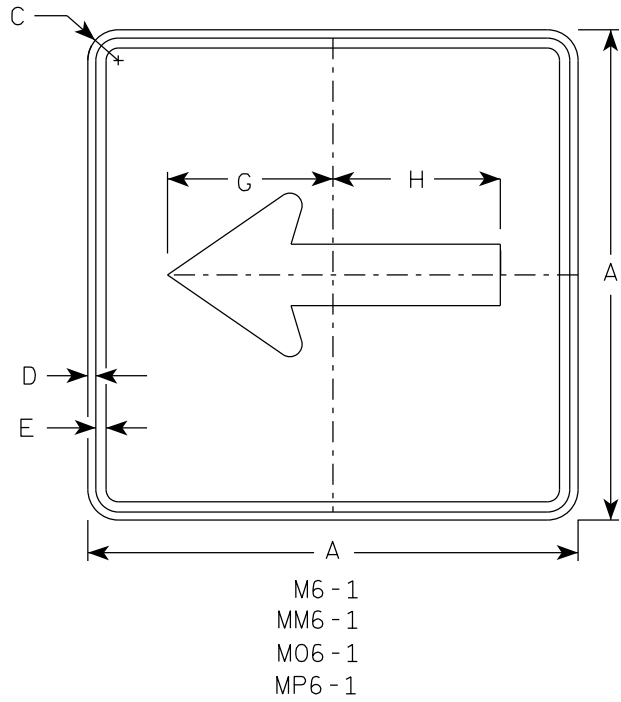
- Signs are Type II - Type H reflective except as shown
- Color:  
Background - See note 4  
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- |           |       |                                         |
|-----------|-------|-----------------------------------------|
| 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                      |
|           |       | 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.

ARROW DETAIL

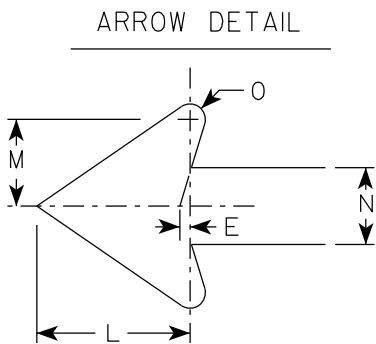


| SIZE | A  | B | C     | D   | E   | F | G      | H     | I   | J | K     | L     | M     | N     | O     | P     | Q | R   | S     | T     | U | V   | W | X | Y | Z | Area<br>sq. ft. |
|------|----|---|-------|-----|-----|---|--------|-------|-----|---|-------|-------|-------|-------|-------|-------|---|-----|-------|-------|---|-----|---|---|---|---|---------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

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



- 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.
  - 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



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

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

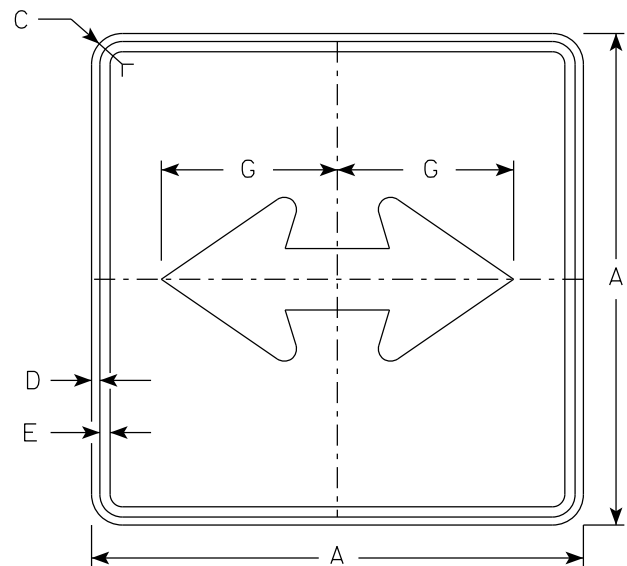
E

STANDARD SIGN  
M6 - 1 & M6 - 2  
SERIES

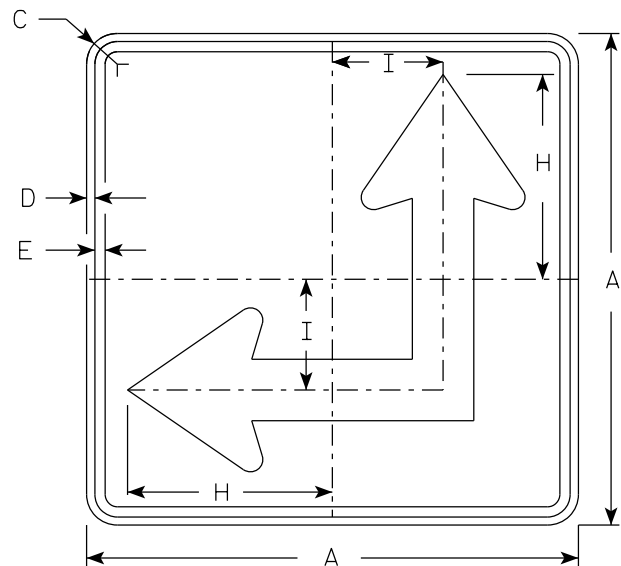
WISCONSIN DEPT OF TRANSPORTATION

APPROVED  
*Matthew R. Rauch*  
for State Traffic Engineer

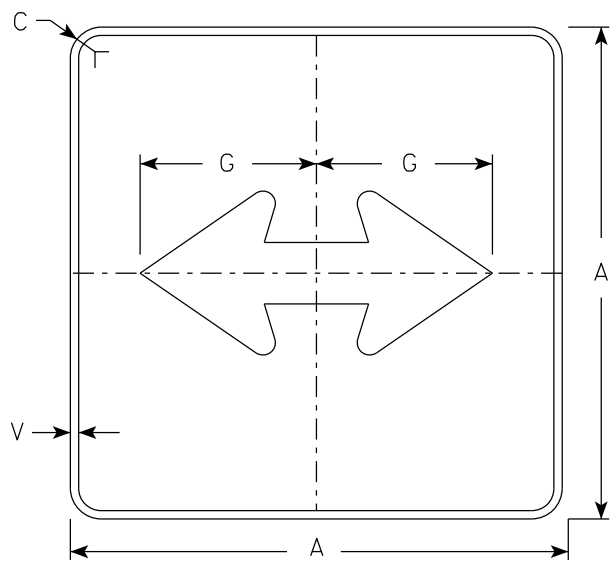
DATE 2/13/2023 PLATE NO. M6-1.16



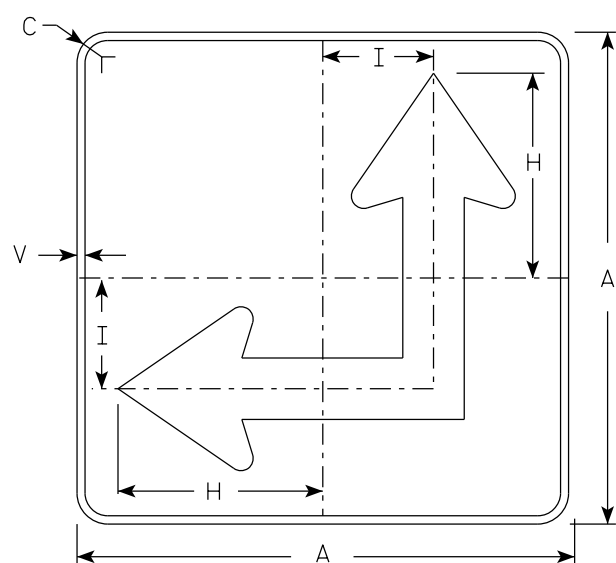
M6 - 4  
MM6 - 4  
M06 - 4  
MP6 - 4



M6 - 6  
MM6 - 6  
M06 - 6  
MP6 - 6



MB6 - 4  
MK6 - 4  
MN6 - 4  
MR6 - 4

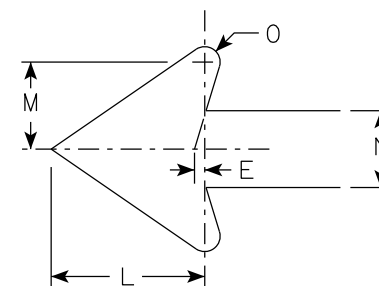


MB6 - 6  
MK6 - 6  
MN6 - 6  
MR6 - 6

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.
- M6-4 and M6-6 Background - White  
Message - Black  
MB6-4 and MB6-6 Background - Blue  
Message - White  
MK6-4 and MK6-6 Background - Green  
Message - White  
MM6-4 and MM6-6 Background - White  
Message - Green  
MN6-4 and MN6-6 Background - Brown  
Message - White  
M06-4 and M06-6 Background - Orange - Type F Reflective  
Message - Black  
MP6-4 and MP6-6 Background - White  
Message - Blue  
MR6-4 and MR6-6 Background - Brown  
Message - Yellow
- M6-6R same as M6-6L except arrow points ahead and right.

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<br>sq. ft. |      |
|------|----|---|-------|-----|-----|---|--------|--------|-------|---|---|-------|-------|-------|-----|---|---|---|---|---|---|-----|---|---|---|---|-----------------|------|
| 1    |    |   |       |     |     |   |        |        |       |   |   |       |       |       |     |   |   |   |   |   |   |     |   |   |   |   |                 |      |
| 2S   | 21 |   | 1 1/2 | 3/8 | 3/8 |   | 7 1/2  | 8 3/4  | 4 1/4 |   |   | 5 1/4 | 3     | 2 5/8 | 1/2 |   |   |   |   |   |   | 1/2 |   |   |   |   |                 | 3.06 |
| 2M   | 21 |   | 1 1/2 | 3/8 | 3/8 |   | 7 1/2  | 8 3/4  | 4 1/4 |   |   | 5 1/4 | 3     | 2 5/8 | 1/2 |   |   |   |   |   |   | 1/2 |   |   |   |   |                 | 3.06 |
| 3    | 30 |   | 1 7/8 | 1/2 | 5/8 |   | 10 3/4 | 12 1/2 | 6 3/4 |   |   | 7 1/2 | 4 1/4 | 3 3/4 | 3/4 |   |   |   |   |   |   | 1/2 |   |   |   |   |                 | 6.25 |
| 4    | 30 |   | 1 7/8 | 1/2 | 5/8 |   | 10 3/4 | 12 1/2 | 6 3/4 |   |   | 7 1/2 | 4 1/4 | 3 3/4 | 3/4 |   |   |   |   |   |   | 1/2 |   |   |   |   |                 | 6.25 |
| 5    | 30 |   | 1 7/8 | 1/2 | 5/8 |   | 10 3/4 | 12 1/2 | 6 3/4 |   |   | 7 1/2 | 4 1/4 | 3 3/4 | 3/4 |   |   |   |   |   |   | 1/2 |   |   |   |   |                 | 6.25 |

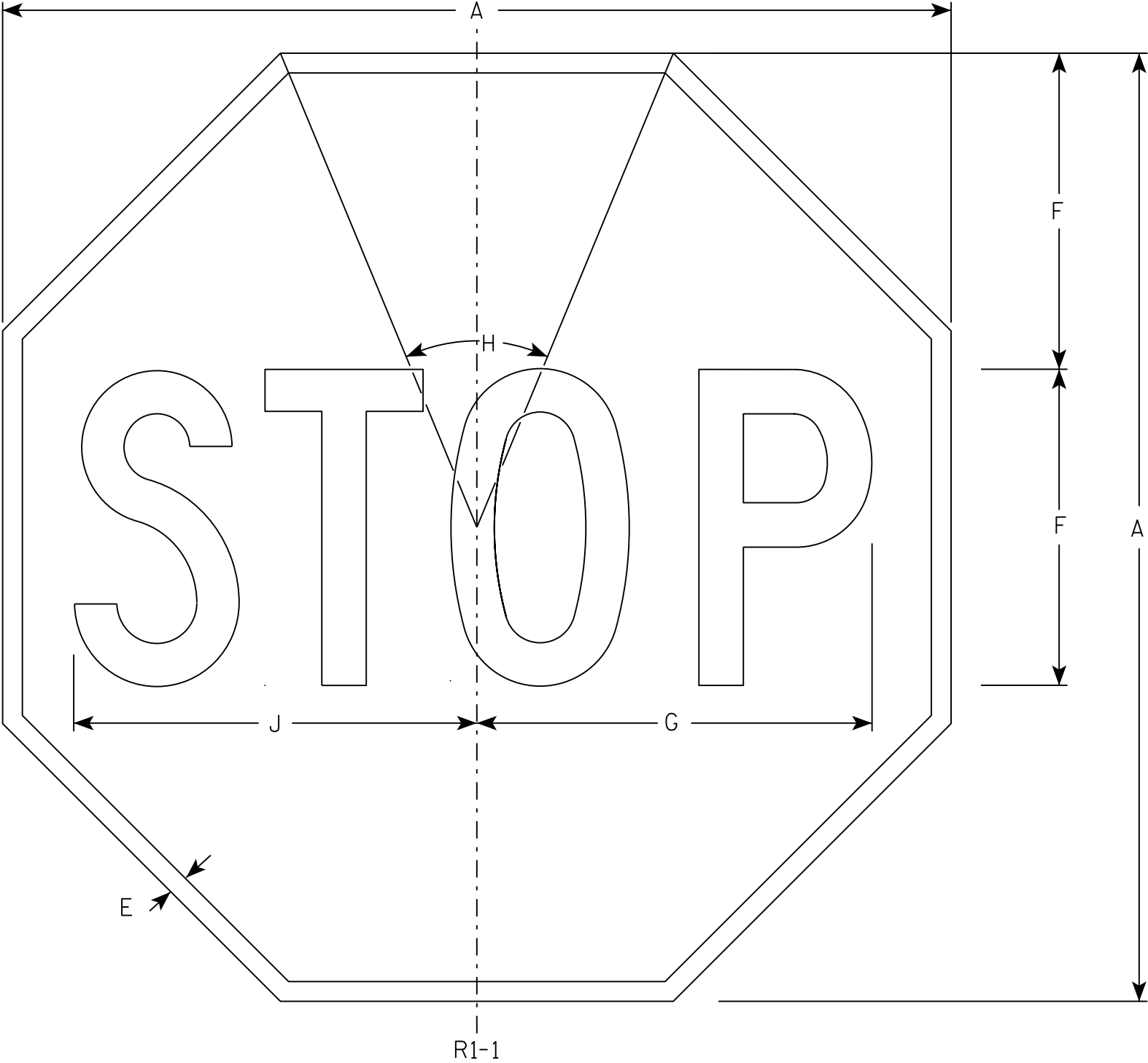
STANDARD SIGN  
M6 - 4 & M6 - 6  
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 2/13/2023 PLATE NO. M6-4.11

7



NOTES

- 1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:  
Background - Red  
Message - White
- 3. Message Series - C

7

| SIZE | A  | B | C | D | E   | F  | G      | H   | I | J      | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|---|---|---|-----|----|--------|-----|---|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    | 30 |   |   |   | 5/8 | 10 | 12 1/2 | 45° |   | 12 3/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 5.18            |
| 2S   | 30 |   |   |   | 5/8 | 10 | 12 1/2 | 45° |   | 12 3/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 5.18            |
| 2M   | 36 |   |   |   | 3/4 | 12 | 15     | 45° |   | 15 3/8 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 7.46            |
| 3    | 36 |   |   |   | 3/4 | 12 | 15     | 45° |   | 15 3/8 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 7.46            |
| 4    | 48 |   |   |   | 1   | 16 | 20     | 45° |   | 20 1/2 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 13.25           |
| 5    | 48 |   |   |   | 1   | 16 | 20     | 45° |   | 20 1/2 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 13.25           |
| 6    | 18 |   |   |   | 3/8 | 6  | 7 3/4  | 45° |   | 7 3/4  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1.86            |
| 7    | 12 |   |   |   | 1/4 | 4  | 5      | 45° |   | 5 1/8  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 0.78            |

STANDARD SIGN

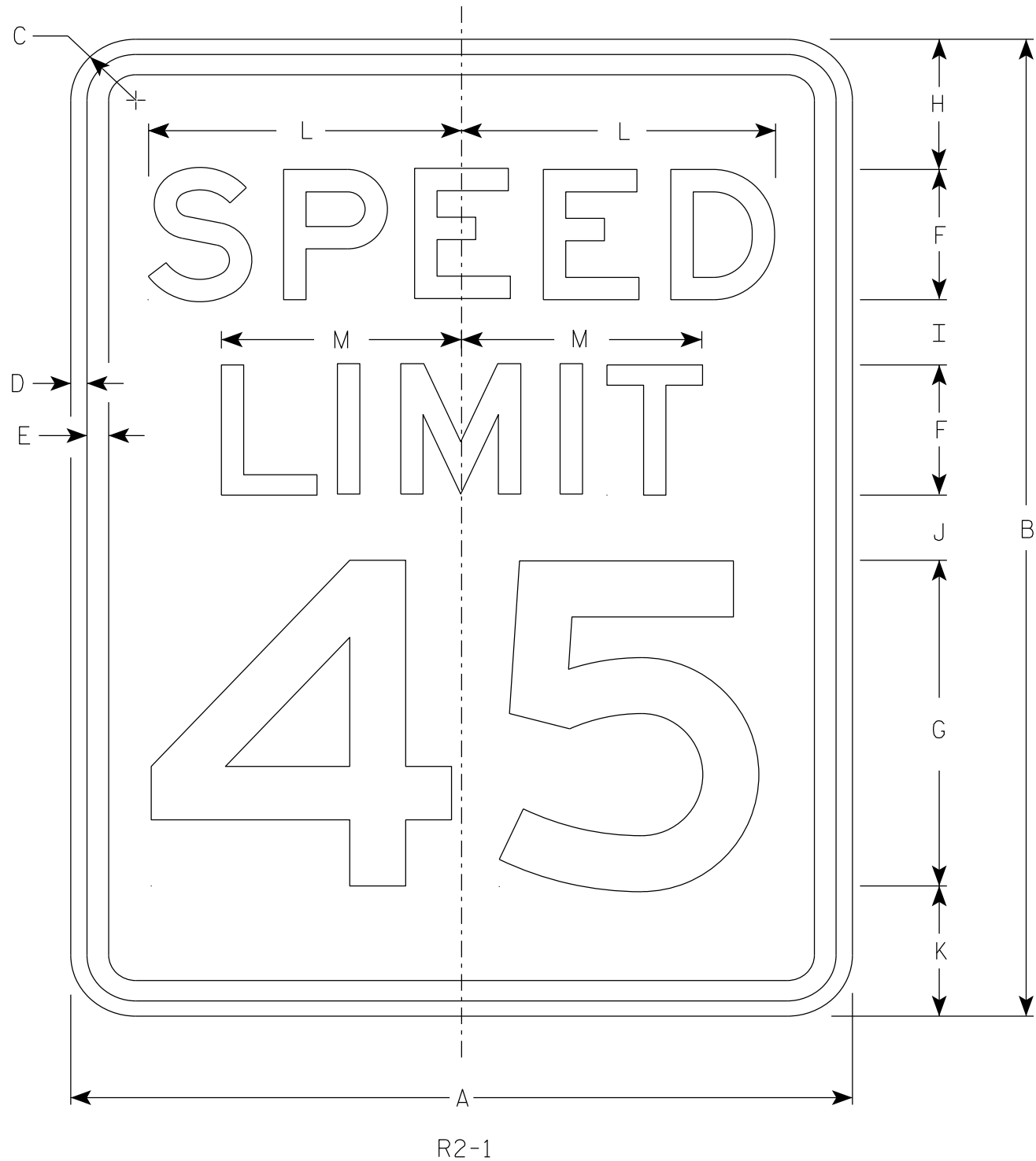
R1 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 11/12/15 PLATE NO. R1-1.13

7



NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:  
Background - White  
Message - Black
- 3. Message Series - E
- 4. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

7

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

STANDARD SIGN  
R2 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*  
for State Traffic Engineer

DATE 2/1/23 PLATE NO. R2-1.14

7

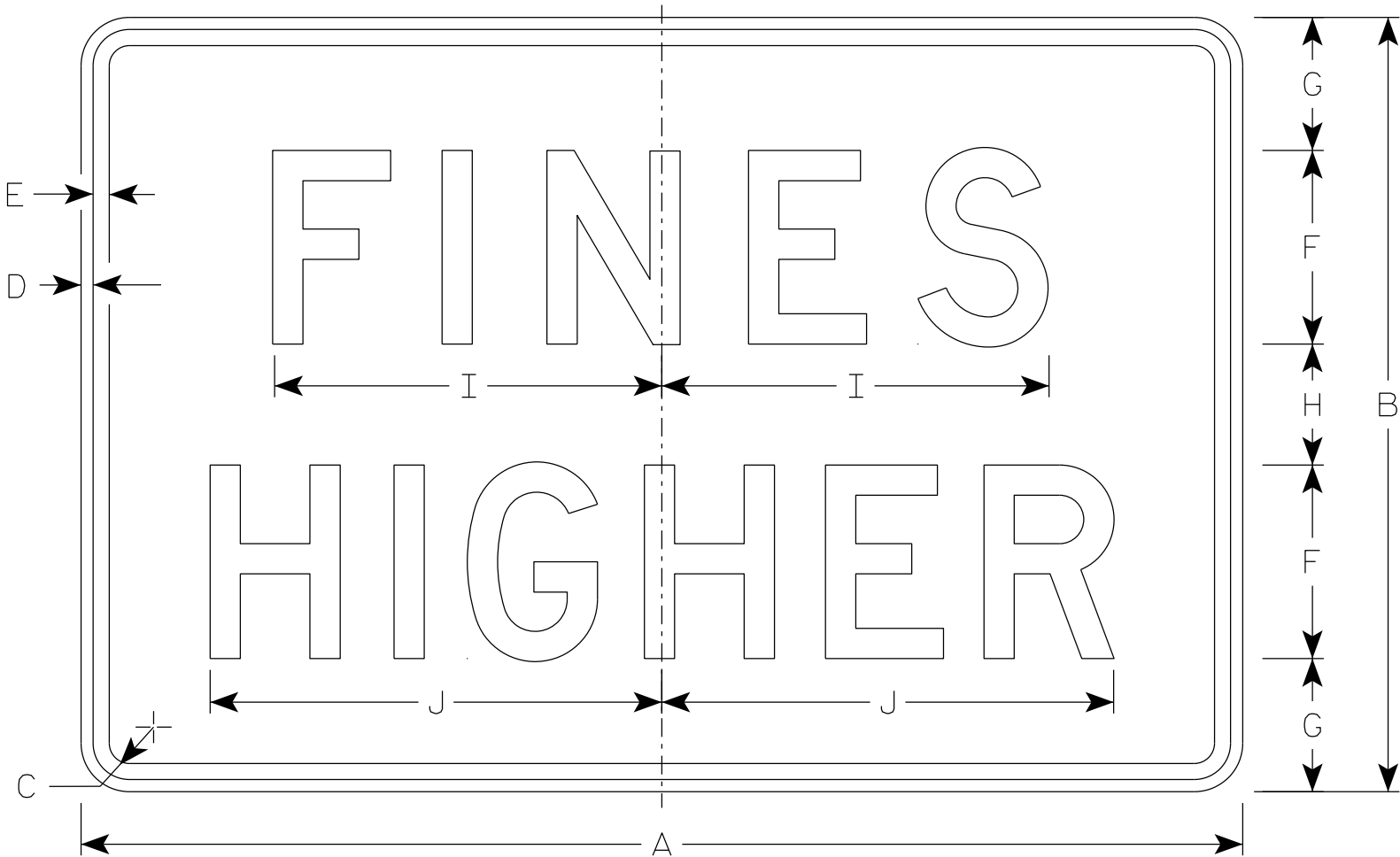
7

NOTES

1. Sign is Type II - Type H Reflective
2. Color:

Background - White

Message - Black
3. Message Series - D



R2-6P

| SIZE | A  | B  | C     | D   | E   | F | G     | H     | I      | J     | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|----|-------|-----|-----|---|-------|-------|--------|-------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    |    |    |       |     |     |   |       |       |        |       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 2S   | 24 | 18 | 1 1/2 | 3/8 | 3/8 | 4 | 3 1/2 | 3     | 7 5/8  | 9 1/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 3.0             |
| 2M   | 24 | 18 | 1 1/2 | 3/8 | 3/8 | 4 | 3 1/2 | 3     | 7 5/8  | 9 1/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 3.0             |
| 3    | 36 | 24 | 1 1/2 | 3/8 | 1/2 | 6 | 4 1/8 | 3 3/4 | 12     | 14    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 6.0             |
| 4    | 36 | 24 | 1 1/2 | 3/8 | 1/2 | 6 | 4 1/8 | 3 3/4 | 12     | 14    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 6.0             |
| 5    | 48 | 36 | 1 7/8 | 1/2 | 5/8 | 8 | 7     | 6     | 15 1/8 | 19    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 12.0            |

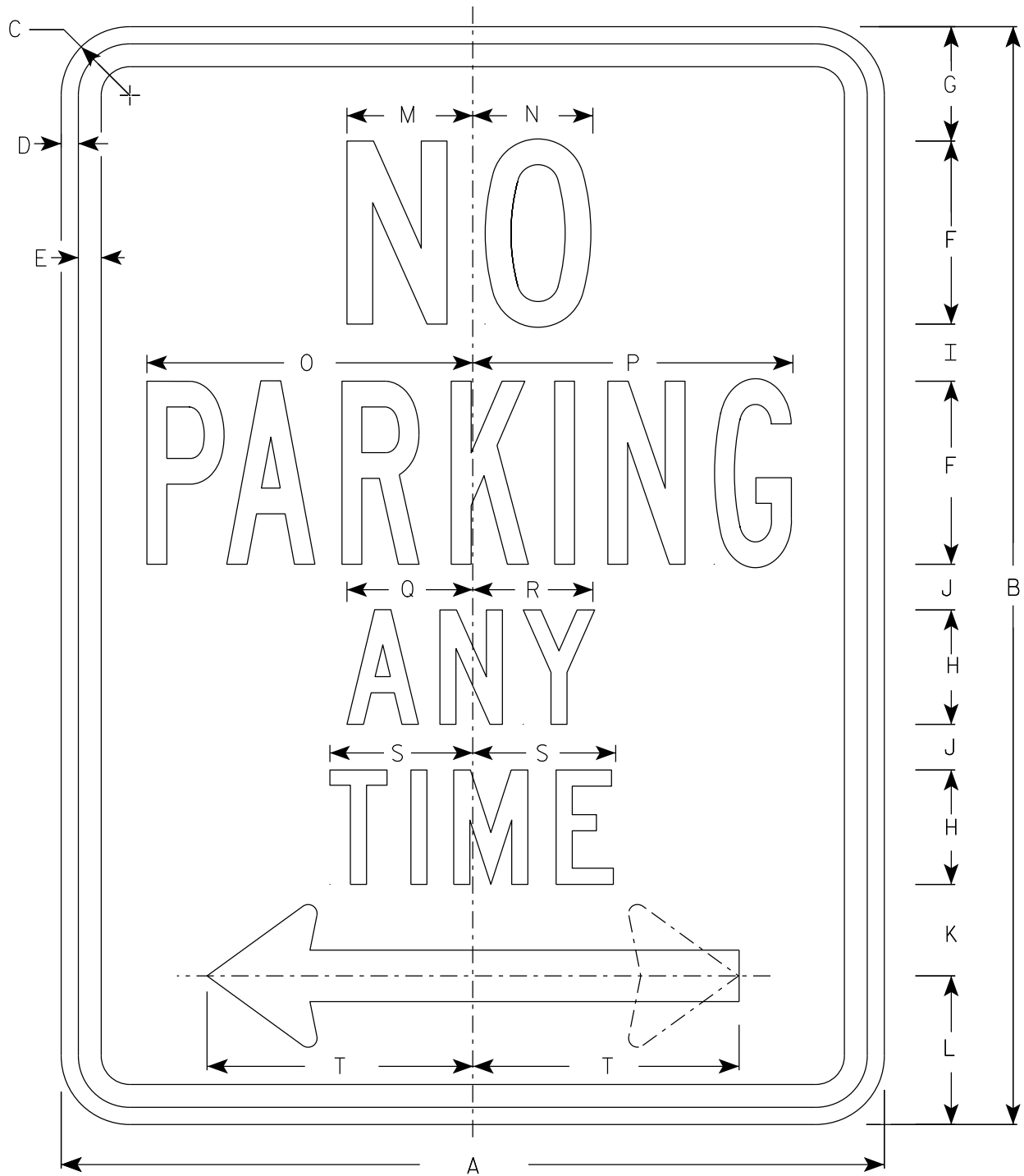
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

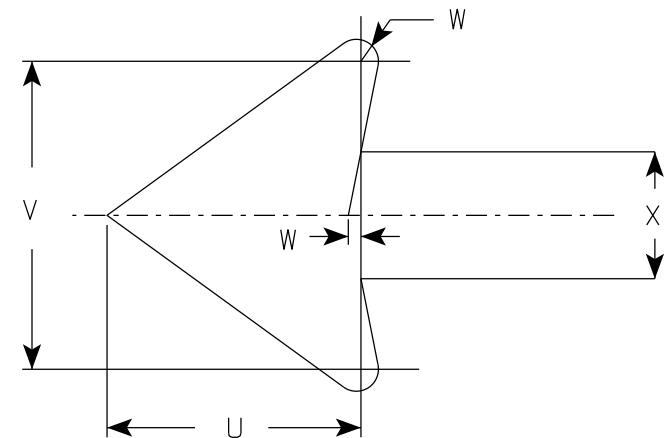


R7-1

NOTES

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

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<br>sq. ft. |
|------|----|----|-------|-----|-----|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|-------|---|---|-----------------|
| 1    | 12 | 18 | 1 1/2 | 3/8 | 3/8 | 3 | 1 7/8 | 2     | 7/8   | 5/8   | 1 1/2 | 2 1/2 | 2     | 2     | 4 7/8 | 4 7/8 | 2 1/4 | 2 1/8 | 2 1/2 | 3 7/8 | 1 1/2 | 1 3/4 | 1/8 | 3/4   |   |   | 1.5             |
| 2S   | 18 | 24 | 1 1/2 | 3/8 | 1/2 | 4 | 2 1/2 | 2 1/2 | 1 1/4 | 1     | 2     | 3 1/4 | 2 3/4 | 2 5/8 | 7 1/8 | 7     | 2 3/4 | 2 5/8 | 3 1/8 | 5 7/8 | 2 1/4 | 2 5/8 | 1/4 | 1 1/8 |   |   | 3.0             |
| 2M   | 24 | 30 | 1 1/2 | 3/8 | 1/2 | 5 | 3     | 3     | 2     | 1 1/4 | 2 1/2 | 4     | 3 1/4 | 3 3/8 | 9 1/4 | 9 1/4 | 3 1/4 | 3 1/4 | 3 3/4 | 7 3/4 | 3     | 3 1/2 | 1/4 | 1 1/2 |   |   | 5.0             |
| 3    | 24 | 30 | 1 1/2 | 3/8 | 1/2 | 5 | 3     | 3     | 2     | 1 1/4 | 2 1/2 | 4     | 3 1/4 | 3 3/8 | 9 1/4 | 9 1/4 | 3 1/4 | 3 1/4 | 3 3/4 | 7 3/4 | 3     | 3 1/2 | 1/4 | 1 1/2 |   |   | 5.0             |
| 4    |    |    |       |     |     |   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |     |       |   |   |                 |
| 5    |    |    |       |     |     |   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |     |       |   |   |                 |

STANDARD SIGN  
R7-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

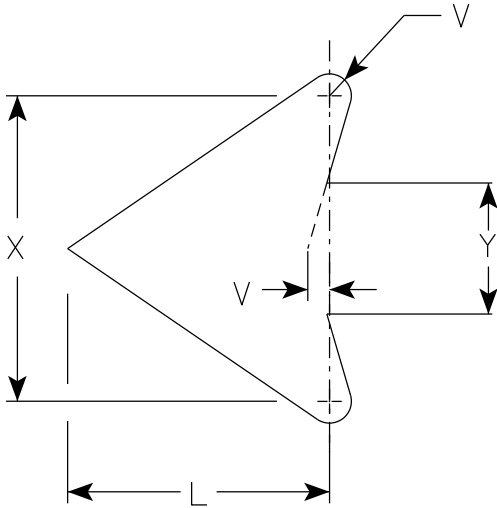
DATE 10/26/23 PLATE NO. R7-1.11

PROJECT NO: HWY: COUNTY: SHEET NO: E



NOTES

1. Sign is Type II - Type H Reflective
2. Color:  
Background - White  
Message - Red
3. Message Series - Lines 1, 3, 4, & 5 are series D  
Line 2 is series C
4. Substitute appropriate numeral for distance  
& adjust spacing to achieve proper balance.
5. R8-51L (Left arrow)  
R8-51R (Right arrow)  
R8-51D (Double arrow)



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<br>sq. ft. |
|------|----|----|-------|-----|-----|-------|---|-------|-------|-------|-------|-------|---|-------|-------|--------|-------|-------|--------|-------|--------|-----|-------|-------|-------|---|-----------------|
| 1    | 18 | 24 | 1 1/2 | 3/8 | 1/2 | 2 1/4 | 3 | 1 1/4 | 1 1/2 | 1 1/2 | 1     | 2 1/4 | 4 | 3 1/4 | 3 3/8 | 6 7/8  | 3 3/8 | 4 5/8 | 5 1/4  | 5 1/8 | 5 7/8  | 1/4 | 1 1/4 | 2 5/8 | 1 1/8 |   | 3.0             |
| 2S   | 24 | 30 | 1 1/2 | 3/8 | 1/2 | 2 1/2 | 4 | 1 3/4 | 2 1/4 | 2     | 1 1/4 | 3     | 4 | 4     | 3 3/8 | 9 1/8  | 4 1/2 | 6 1/4 | 7      | 6 7/8 | 7 3/4  | 1/4 | 1 3/4 | 3 1/2 | 1 1/2 |   | 5.0             |
| 2M   | 24 | 30 | 1 1/2 | 3/8 | 1/2 | 2 1/2 | 4 | 1 3/4 | 2 1/4 | 2     | 1 1/4 | 3     | 4 | 4     | 3 3/8 | 9 1/8  | 4 1/2 | 6 1/4 | 7      | 6 7/8 | 7 3/4  | 1/4 | 1 3/4 | 3 1/2 | 1 1/2 |   | 5.0             |
| 3    | 24 | 30 | 1 1/2 | 3/8 | 1/2 | 2 1/2 | 4 | 1 3/4 | 2 1/4 | 2     | 1 1/4 | 3     | 4 | 4     | 3 3/8 | 9 1/8  | 4 1/2 | 6 1/4 | 7      | 6 7/8 | 7 3/4  | 1/4 | 1 3/4 | 3 1/2 | 1 1/2 |   | 5.0             |
| 4    | 36 | 48 | 1 7/8 | 1/2 | 5/8 | 4 1/2 | 6 | 2 1/2 | 3     | 3     | 2     | 4 1/2 | 8 | 6 1/2 | 6 5/8 | 13 5/8 | 7 1/4 | 9 1/2 | 11 1/4 | 11    | 11 5/8 | 3/8 | 2 3/4 | 5 1/4 | 2 1/4 |   | 12.0            |
| 5    |    |    |       |     |     |       |   |       |       |       |       |       |   |       |       |        |       |       |        |       |        |     |       |       |       |   |                 |

STANDARD SIGN  
R8-51

WISCONSIN DEPT OF TRANSPORTATION

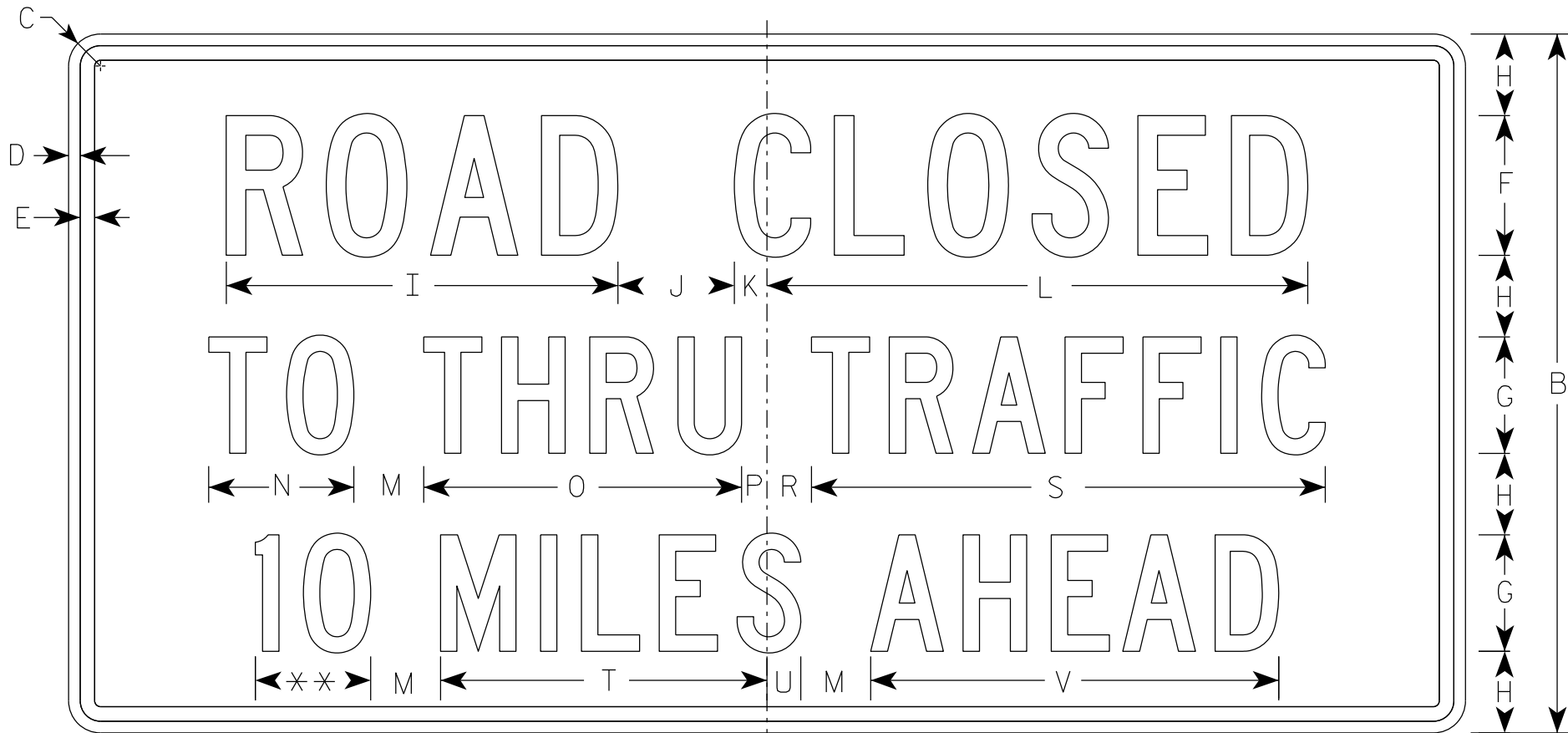
APPROVED  
*Matthew R. Rauch*  
for State Traffic Engineer

DATE 1/11/24 PLATE NO. R8-51.8

PROJECT NO: HWY: COUNTY: SHEET NO: E

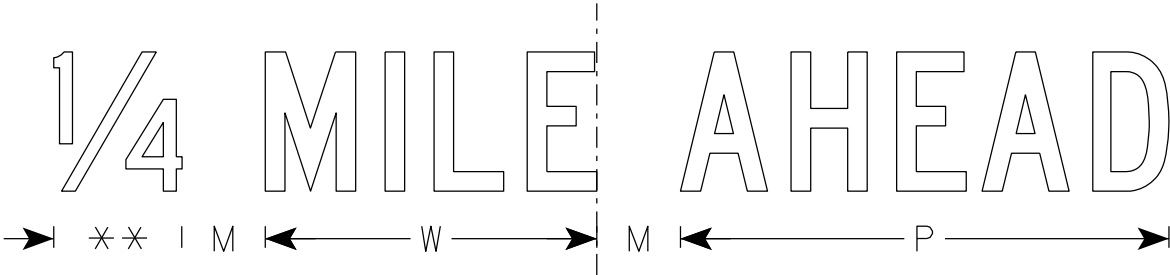
FILE NAME : C:\CAEfiles\Projects\tr\_stdplate\R851.dgn PLOT DATE : 11-JAN 2024 1:09 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : \$\$.....plotscale.....\$\$ WISDOT/CADDS SHEET 42

7



R11-3

\*\* See Note 5



NOTES

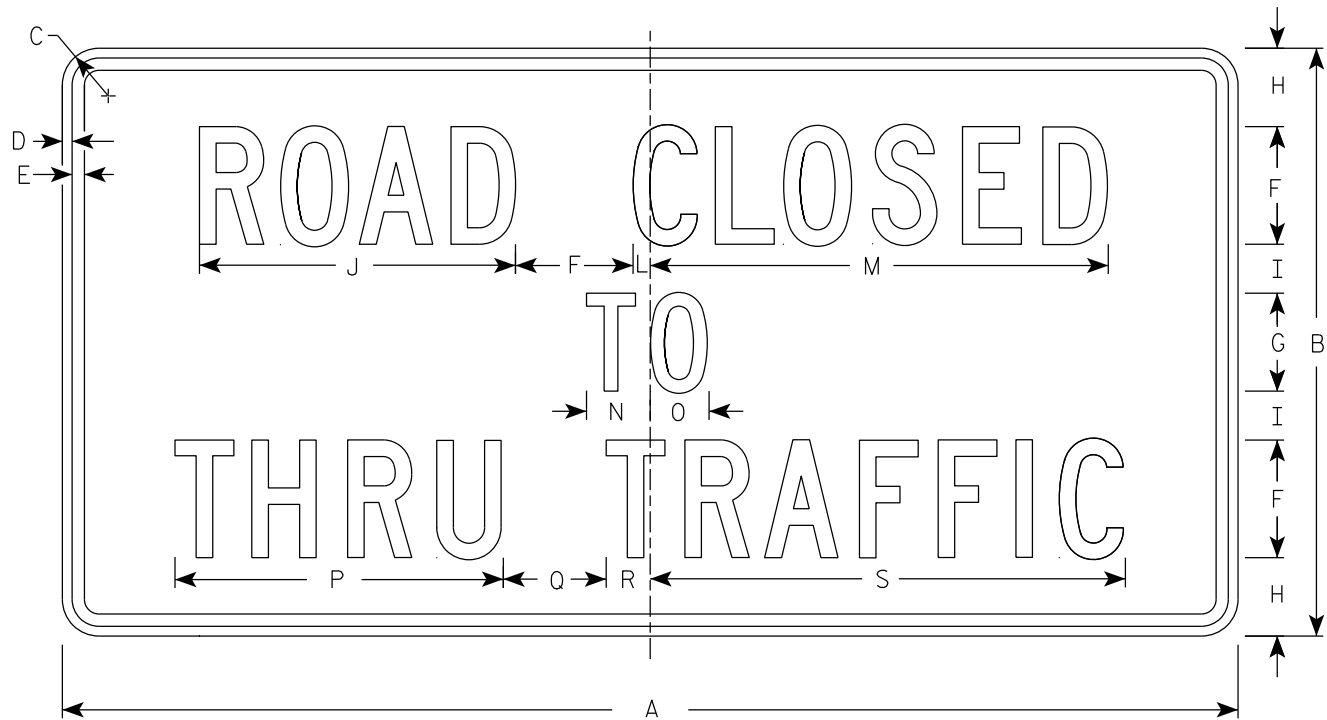
1. Sign is Type II - Type H Reflective
2. Color:  
Background - White  
Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate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

7

| SIZE | A  | B  | C     | D   | E   | F | G | H     | I      | J | K     | L      | M | N     | O      | P     | Q | R     | S      | T     | U     | V      | W      | X | Y | Z | Area<br>sq. ft. |
|------|----|----|-------|-----|-----|---|---|-------|--------|---|-------|--------|---|-------|--------|-------|---|-------|--------|-------|-------|--------|--------|---|---|---|-----------------|
| 1    | 36 | 18 | 1 1/2 | 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 7/8 | 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 7/8 | 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<br>R11-3           |                                                       |
| WISCONSIN DEPT OF TRANSPORTATION |                                                       |
| APPROVED                         | <i>Matthew R. Rauch</i><br>for State Traffic Engineer |
| DATE 2/5/24                      | PLATE NO. R11-3.10                                    |

7



R11-4

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.

7

| SIZE | A  | B  | C     | D   | E   | F | G | H | I     | J      | K | L   | M      | N     | O | P      | Q     | R     | S      | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|----|-------|-----|-----|---|---|---|-------|--------|---|-----|--------|-------|---|--------|-------|-------|--------|---|---|---|---|---|---|---|-----------------|
| 1    |    |    |       |     |     |   |   |   |       |        |   |     |        |       |   |        |       |       |        |   |   |   |   |   |   |   |                 |
| 2S   | 60 | 30 | 1 7/8 | 1/2 | 5/8 | 6 | 5 | 4 | 2 1/2 | 16 1/8 |   | 7/8 | 23 3/8 | 3 1/4 | 3 | 16 3/4 | 5 1/4 | 2 1/4 | 24 1/4 |   |   |   |   |   |   |   | 12.5            |
| 2M   | 60 | 30 | 1 7/8 | 1/2 | 5/8 | 6 | 5 | 4 | 2 1/2 | 16 1/8 |   | 7/8 | 23 3/8 | 3 1/4 | 3 | 16 3/4 | 5 1/4 | 2 1/4 | 24 1/4 |   |   |   |   |   |   |   | 12.5            |
| 3    |    |    |       |     |     |   |   |   |       |        |   |     |        |       |   |        |       |       |        |   |   |   |   |   |   |   |                 |
| 4    |    |    |       |     |     |   |   |   |       |        |   |     |        |       |   |        |       |       |        |   |   |   |   |   |   |   |                 |
| 5    |    |    |       |     |     |   |   |   |       |        |   |     |        |       |   |        |       |       |        |   |   |   |   |   |   |   |                 |

PROJECT NO:

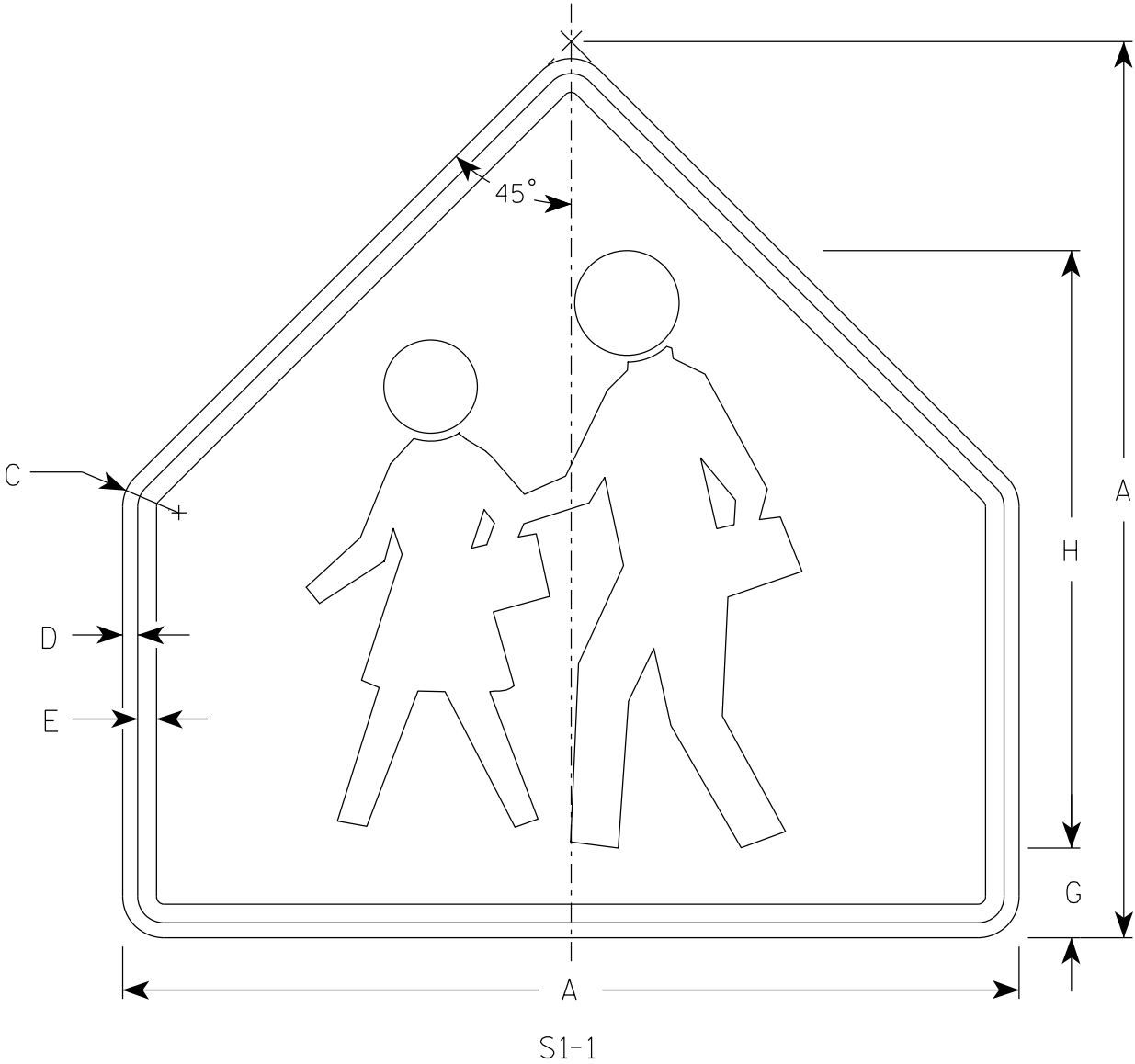
HWY:

COUNTY:

SHEET NO:

E

7



NOTES

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

7

| SIZE | A  | B | C     | D   | E   | F | G     | H  | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|---|-------|-----|-----|---|-------|----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    | 30 |   | 1 3⁄8 | 1⁄2 | 5⁄8 |   | 3     | 20 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 4.69            |
| 2S   | 36 |   | 1 5⁄8 | 5⁄8 | 3⁄4 |   | 3 1⁄2 | 24 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 6.75            |
| 2M   | 36 |   | 1 5⁄8 | 5⁄8 | 3⁄4 |   | 3 1⁄2 | 24 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 6.75            |
| 3    | 36 |   | 1 5⁄8 | 5⁄8 | 3⁄4 |   | 3 1⁄2 | 24 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 6.75            |
| 4    | 48 |   | 1 7⁄8 | 3⁄4 | 1   |   | 4 3⁄4 | 32 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 12              |
| 5    |    |   |       |     |     |   |       |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |

STANDARD SIGN

S1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

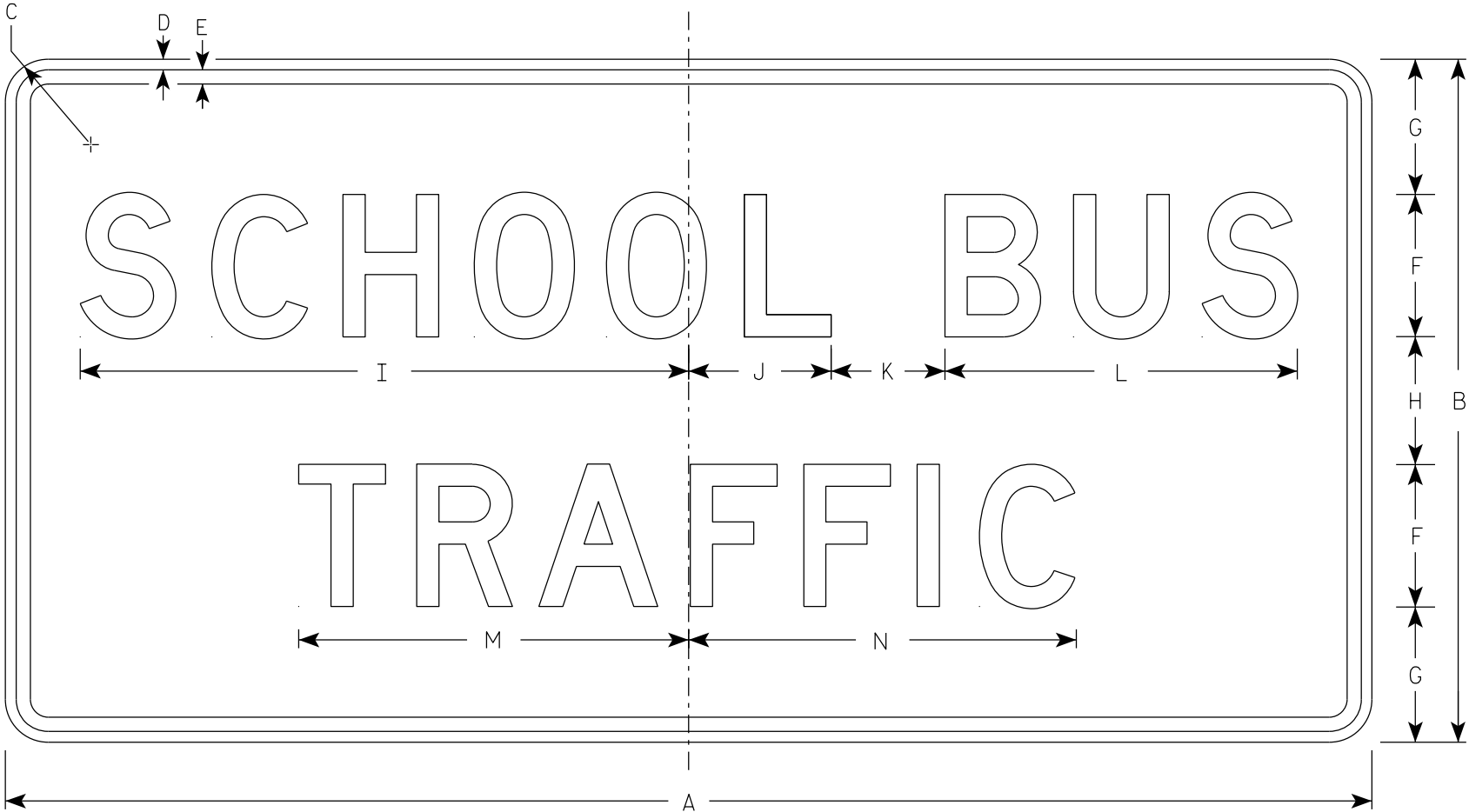
DATE 2/16/2023 PLATE NO. S1-1.9

7

7

NOTES

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



S3-51

| SIZE | A  | B  | C     | D   | E   | F  | G     | H     | I      | J  | K | L      | M      | N      | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|----|-------|-----|-----|----|-------|-------|--------|----|---|--------|--------|--------|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    |    |    |       |     |     |    |       |       |        |    |   |        |        |        |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 2S   | 48 | 24 | 1 7⁄8 | 1⁄2 | 5⁄8 | 5  | 4 3⁄4 | 4 1⁄2 | 21 3⁄8 | 5  | 4 | 12 3⁄8 | 14     | 13 5⁄8 |   |   |   |   |   |   |   |   |   |   |   |   | 8.0             |
| 2M   | 48 | 24 | 1 7⁄8 | 1⁄2 | 5⁄8 | 5  | 4 3⁄4 | 4 1⁄2 | 21 3⁄8 | 5  | 4 | 12 3⁄8 | 14     | 13 5⁄8 |   |   |   |   |   |   |   |   |   |   |   |   | 8.0             |
| 3    | 84 | 36 | 3     | 1⁄2 | 5⁄8 | 8  | 7     | 6     | 35 7⁄8 | 8  | 7 | 20 7⁄8 | 22 5⁄8 | 22 5⁄8 |   |   |   |   |   |   |   |   |   |   |   |   | 21.0            |
| 4    | 96 | 48 | 3     | 3⁄4 | 1   | 10 | 9 1⁄2 | 9     | 42 3⁄4 | 10 | 8 | 24 3⁄4 | 27 3⁄8 | 27 1⁄8 |   |   |   |   |   |   |   |   |   |   |   |   | 32.0            |
| 5    |    |    |       |     |     |    |       |       |        |    |   |        |        |        |   |   |   |   |   |   |   |   |   |   |   |   |                 |

STANDARD SIGN

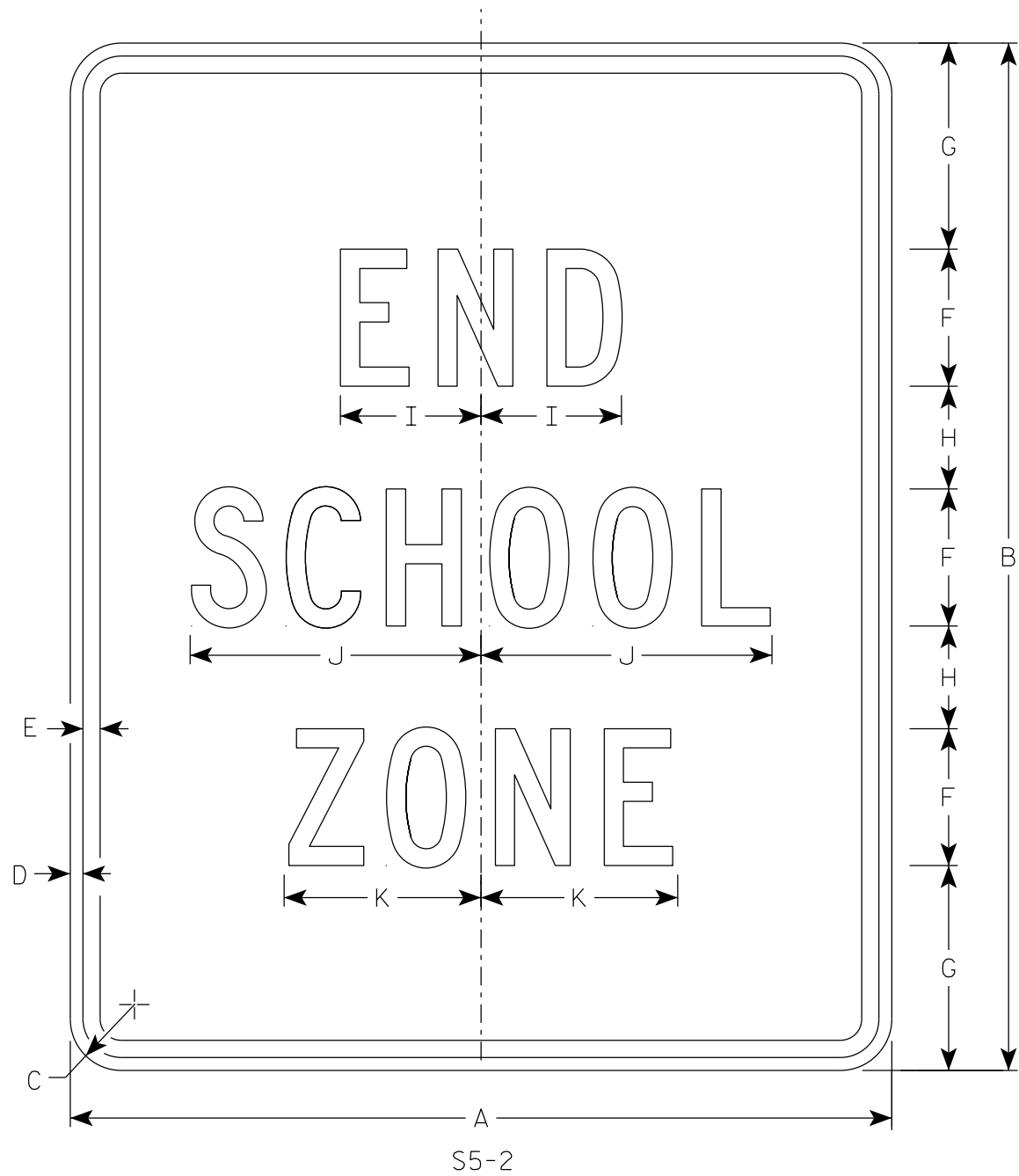
S3-51

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 2/22/2023 PLATE NO. S3-51.6

7



NOTES

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

7

| SIZE | A  | B  | C     | D   | E   | F | G | H | I     | J      | K     | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|----|-------|-----|-----|---|---|---|-------|--------|-------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    |    |    |       |     |     |   |   |   |       |        |       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 2S   | 24 | 30 | 1 1/2 | 3/8 | 1/2 | 4 | 6 | 3 | 4 1/8 | 8 1/2  | 5 3/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 5.0             |
| 2M   | 24 | 30 | 1 1/2 | 3/8 | 1/2 | 4 | 6 | 3 | 4 1/8 | 8 1/2  | 5 3/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 5.0             |
| 3    | 36 | 42 | 1 7/8 | 5/8 | 3/4 | 6 | 7 | 5 | 6 1/8 | 12 5/8 | 8 5/8 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 10.5            |
| 4    |    |    |       |     |     |   |   |   |       |        |       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 5    |    |    |       |     |     |   |   |   |       |        |       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |

STANDARD SIGN

S5-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

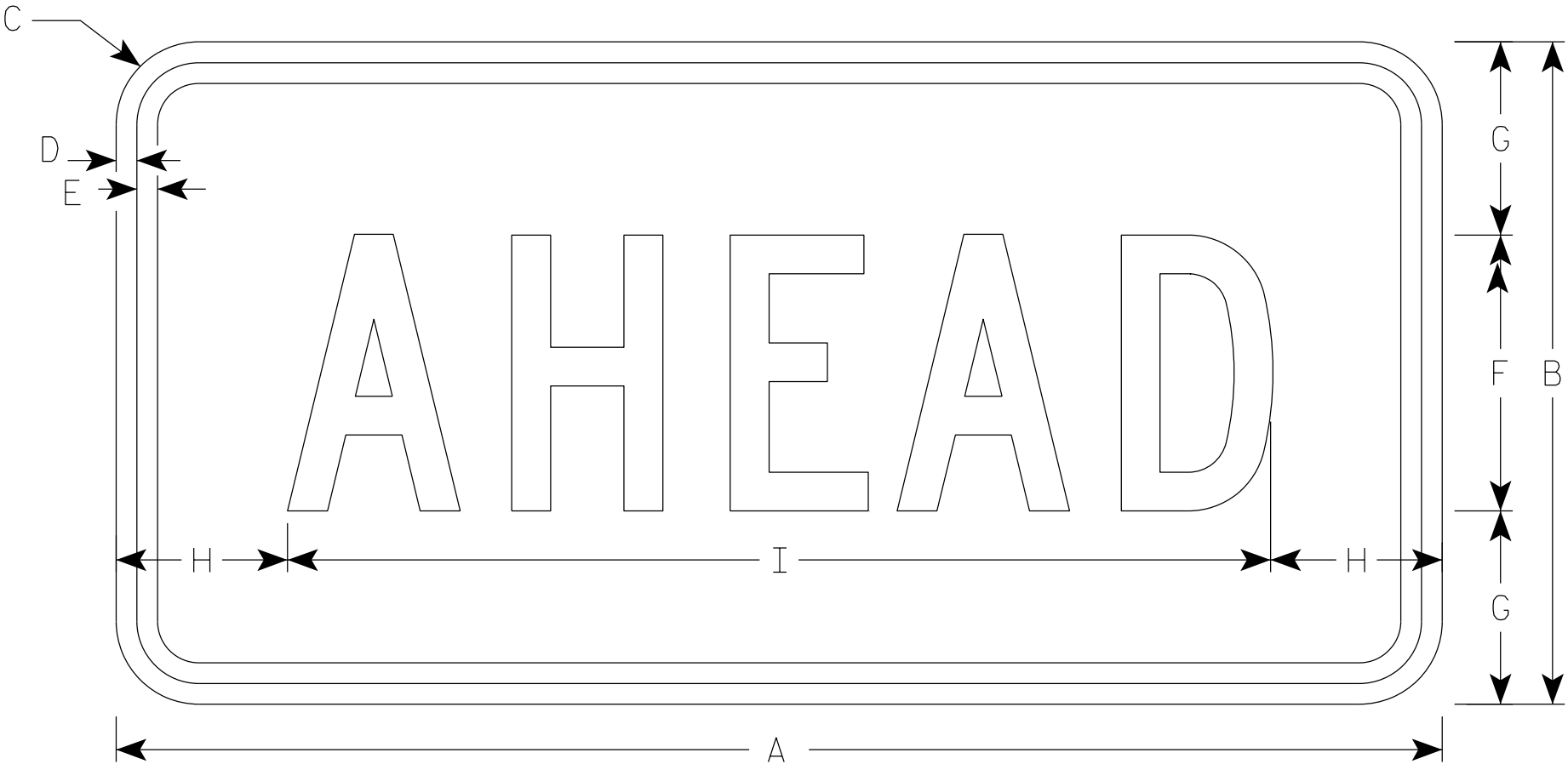
DATE 2/23/2023 PLATE NO. S5-2.3

NOTES

1. Sign is Type II - Type F Reflective
2. Color:

Background - Yellow-Green

Message - Black
3. Message Series - C



S16-9P

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

STANDARD SIGN  
S16-9P

WISCONSIN DEPT OF TRANSPORTATION

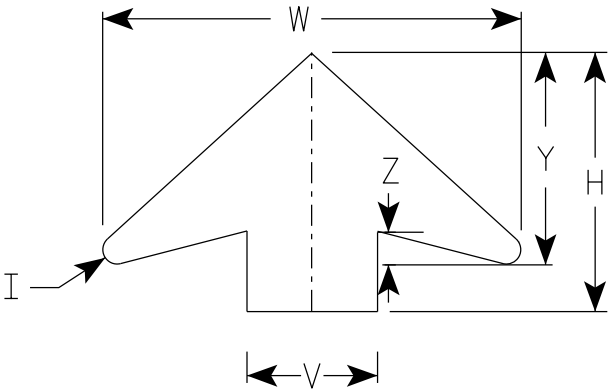
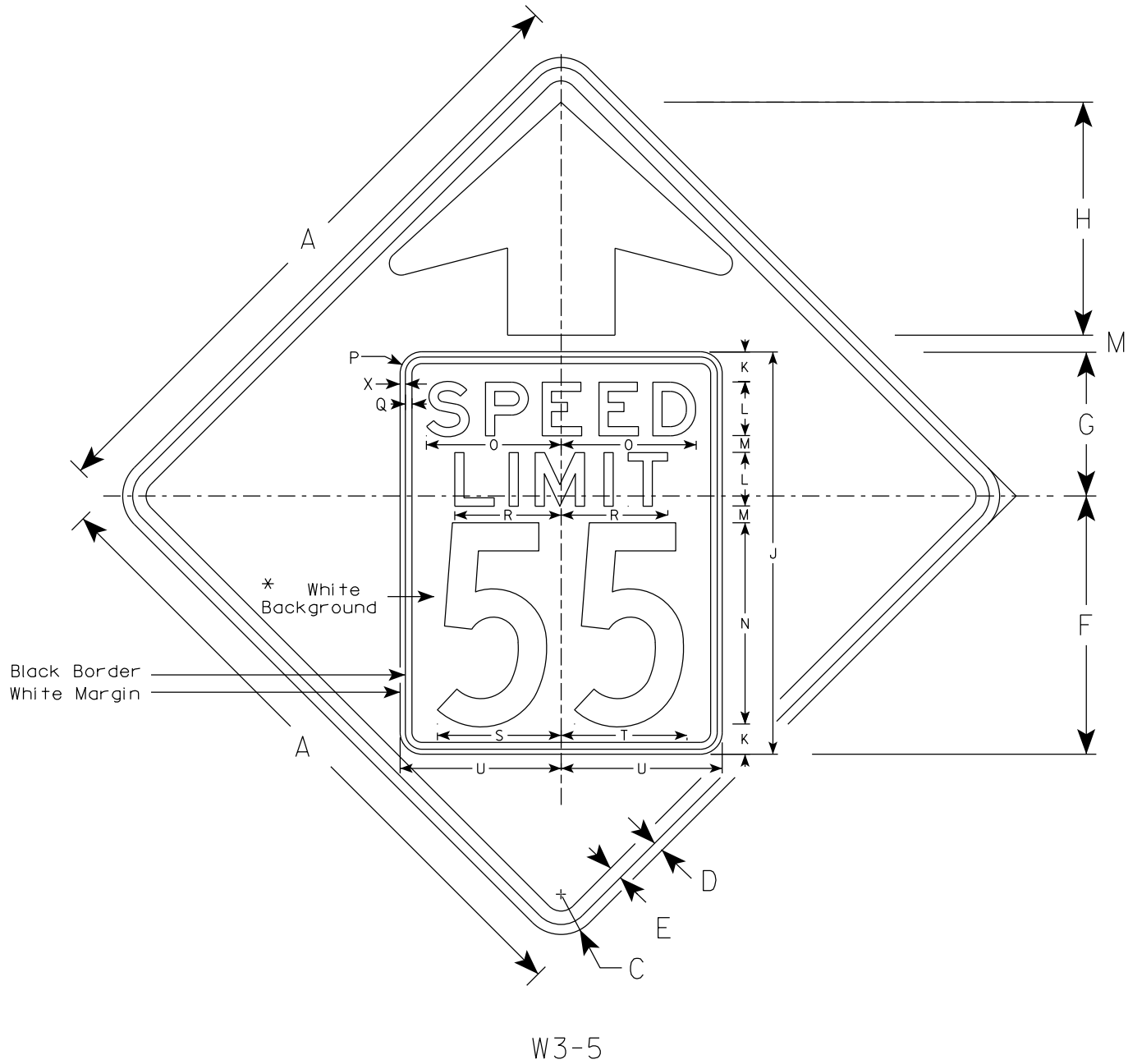
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 2/23/2023 PLATE NO. S16-9P.2

NOTES

- 1. Sign is Type II - See Note 2 for Sheeting Type
- 2. Color: \*  
Background - Yellow\* (Type F Reflective)  
Message - Black
- 3. Message Series - C for numbers Series E for wording
- 4. Substitute appropriate numerals and optically adjust spacing to achieve proper balance

\*Speed Limit Sign shall have a White Background with black message (Type SH Reflective)



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<br>sq. ft. |
|------|----|---|-------|-----|-----|--------|--------|--------|-----|----|-------|---|-------|----|-------|-------|-----|-------|-------|-------|----|---|--------|-----|-------|-------|-----------------|
| 1    |    |   |       |     |     |        |        |        |     |    |       |   |       |    |       |       |     |       |       |       |    |   |        |     |       |       |                 |
| 2S   | 36 |   | 2 1/4 | 5/8 | 3/4 | 14 1/2 | 9 1/2  | 11 1/2 | 5/8 | 24 | 2     | 3 | 1     | 12 | 7 1/8 | 1 1/2 | 3/8 | 5 3/4 | 7 1/4 | 7 1/8 | 9  | 6 | 19 1/4 | 3/8 | 9 3/4 | 1 5/8 | 9.0             |
| 2M   | 36 |   | 2 1/4 | 5/8 | 3/4 | 14 1/2 | 9 1/2  | 11 1/2 | 5/8 | 24 | 2     | 3 | 1     | 12 | 7 1/8 | 1 1/2 | 3/8 | 5 3/4 | 7 1/4 | 7 1/8 | 9  | 6 | 19 1/4 | 3/8 | 9 3/4 | 1 5/8 | 9.0             |
| 3    | 36 |   | 2 1/4 | 5/8 | 3/4 | 14 1/2 | 9 1/2  | 11 1/2 | 5/8 | 24 | 2     | 3 | 1     | 12 | 7 1/8 | 1 1/2 | 3/8 | 5 3/4 | 7 1/4 | 7 1/8 | 9  | 6 | 19 1/4 | 3/8 | 9 3/4 | 1 5/8 | 9.0             |
| 4    | 48 |   | 3     | 3/4 | 1   | 19 1/4 | 10 3/4 | 17 3/8 | 7/8 | 30 | 2 1/4 | 4 | 1 1/4 | 15 | 10    | 1 5/8 | 1/2 | 8     | 9 1/4 | 9 3/8 | 12 | 8 | 25 5/8 | 3/8 | 13    | 2     | 16.0            |
| 5    | 48 |   | 3     | 3/4 | 1   | 19 1/4 | 10 3/4 | 17 3/8 | 7/8 | 30 | 2 1/4 | 4 | 1 1/4 | 15 | 10    | 1 5/8 | 1/2 | 8     | 9 1/4 | 9 3/8 | 12 | 8 | 25 5/8 | 3/8 | 13    | 2     | 16.0            |

STANDARD SIGN

W3-5

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 8/30/2023 PLATE NO. W3-5.7

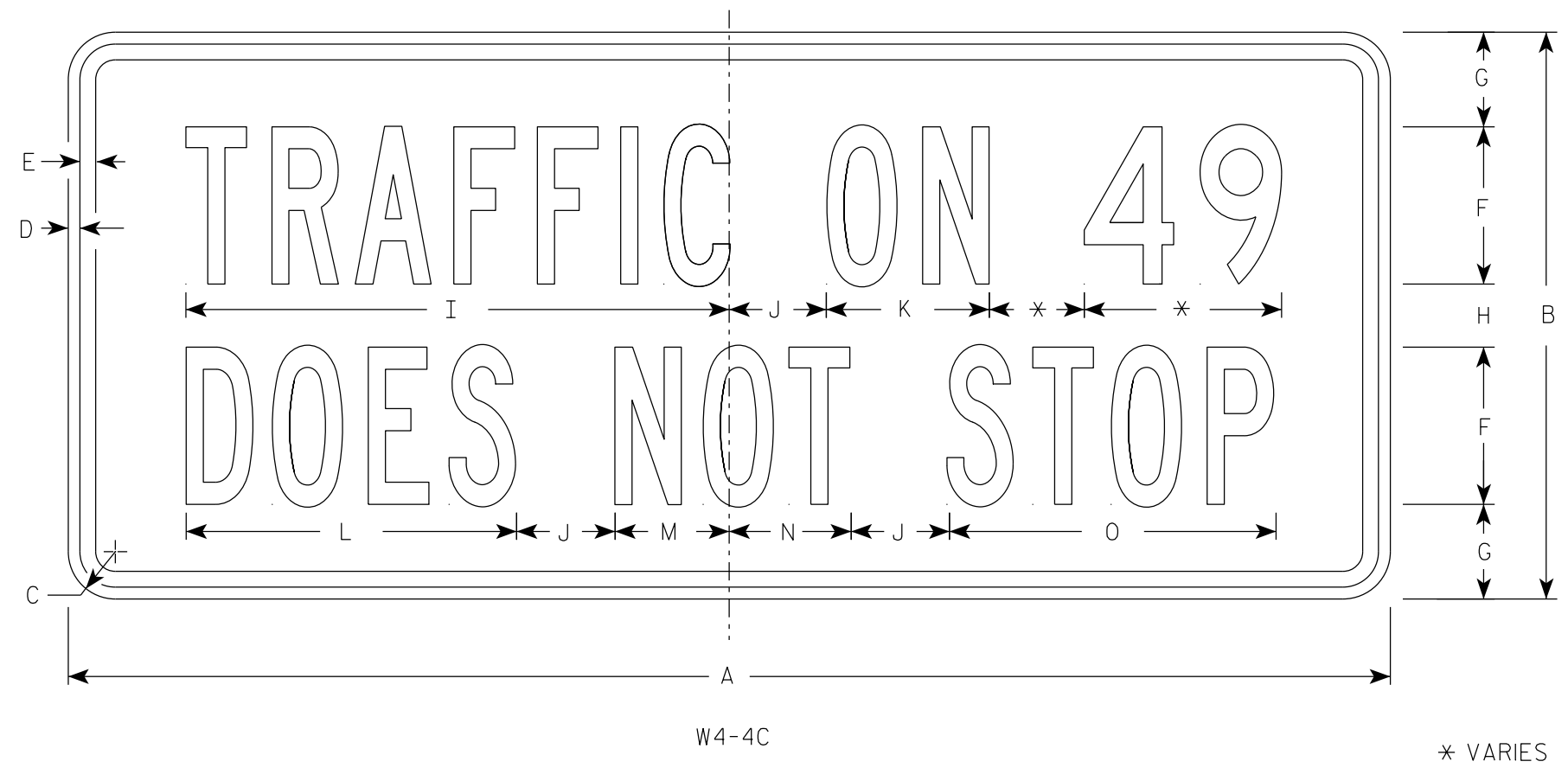
PROJECT NO:

SHEET NO:

E

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:  
Background - Yellow  
Message - Black
- 3. Message Series - B (See note 4)
- 4. Highway Number usually Series D. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.



| SIZE | A  | B  | C     | D   | E   | F | G     | H     | I      | J     | K     | L      | M     | N     | O      | P | Q | R | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|----|-------|-----|-----|---|-------|-------|--------|-------|-------|--------|-------|-------|--------|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    |    |    |       |     |     |   |       |       |        |       |       |        |       |       |        |   |   |   |   |   |   |   |   |   |   |   |                 |
| 2S   | 24 | 12 | 1 1/2 | 3/8 | 3/8 | 3 | 2 1/4 | 1 1/2 | 10 3/8 | 1 1/2 | 3 1/8 | 6 1/4  | 2 1/4 | 2 1/4 | 6 1/4  |   |   |   |   |   |   |   |   |   |   |   | 2.0             |
| 2M   | 24 | 12 | 1 1/2 | 3/8 | 3/8 | 3 | 2 1/4 | 1 1/2 | 10 3/8 | 1 1/2 | 3 1/8 | 6 1/4  | 2 1/4 | 2 1/4 | 6 1/4  |   |   |   |   |   |   |   |   |   |   |   | 2.0             |
| 3    | 36 | 15 | 1 1/2 | 3/8 | 1/2 | 4 | 2 5/8 | 1 3/4 | 13 7/8 | 2 3/8 | 4 1/4 | 8 3/8  | 3 1/8 | 3 1/8 | 8 3/8  |   |   |   |   |   |   |   |   |   |   |   | 3.75            |
| 4    | 42 | 18 | 1 1/2 | 3/8 | 1/2 | 5 | 3     | 2     | 17 1/4 | 3 1/8 | 5 1/8 | 10 1/2 | 3 7/8 | 3 7/8 | 10 3/8 |   |   |   |   |   |   |   |   |   |   |   | 5.25            |
| 5    |    |    |       |     |     |   |       |       |        |       |       |        |       |       |        |   |   |   |   |   |   |   |   |   |   |   |                 |

STANDARD SIGN

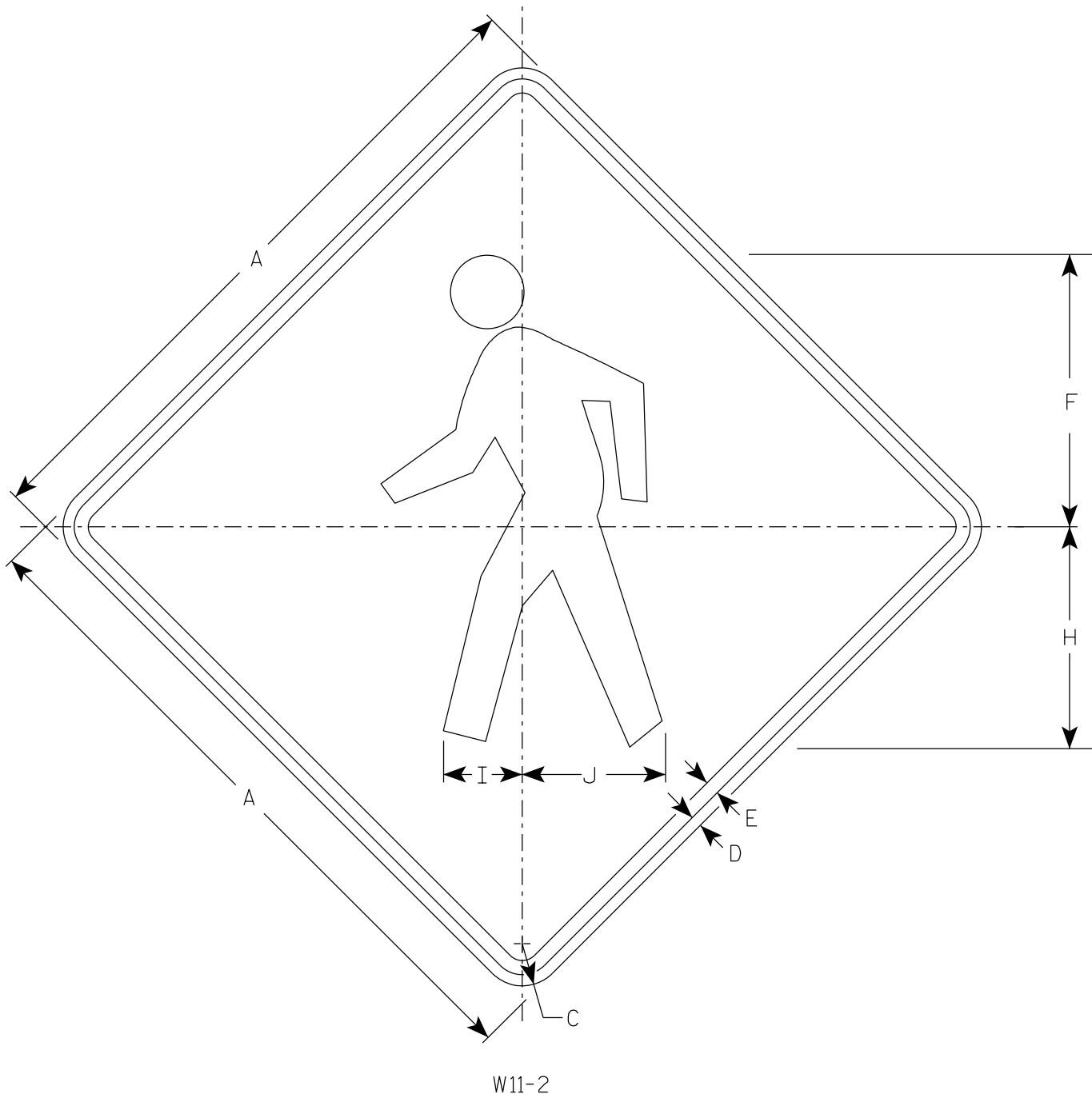
W4-4C

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
Traffic Engineer

DATE 9/5/2023 PLATE NO. W4-4.3

7



NOTES

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

7

| SIZE | A  | B | C     | D   | E   | F      | G | H      | I     | J      | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|---|-------|-----|-----|--------|---|--------|-------|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    | 24 |   | 1 1/2 | 3/8 | 1/2 | 9 3/4  |   | 7 7/8  | 2 7/8 | 5 1/8  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 4.0             |
| 2S   | 30 |   | 1 7/8 | 1/2 | 5/8 | 12 1/8 |   | 9 7/8  | 3 1/2 | 6 3/8  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 6.25            |
| 2M   | 36 |   | 2 1/4 | 5/8 | 3/4 | 14 1/2 |   | 11 7/8 | 4 1/4 | 7 5/8  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 9.0             |
| 3    | 36 |   | 2 1/4 | 5/8 | 3/4 | 14 1/2 |   | 11 7/8 | 4 1/4 | 7 5/8  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 9.0             |
| 4    | 48 |   | 3     | 3/4 | 1   | 19 3/8 |   | 15 3/4 | 5 5/8 | 10 1/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 16.0            |
| 5    |    |   |       |     |     |        |   |        |       |        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |

STANDARD SIGN  
W11-2

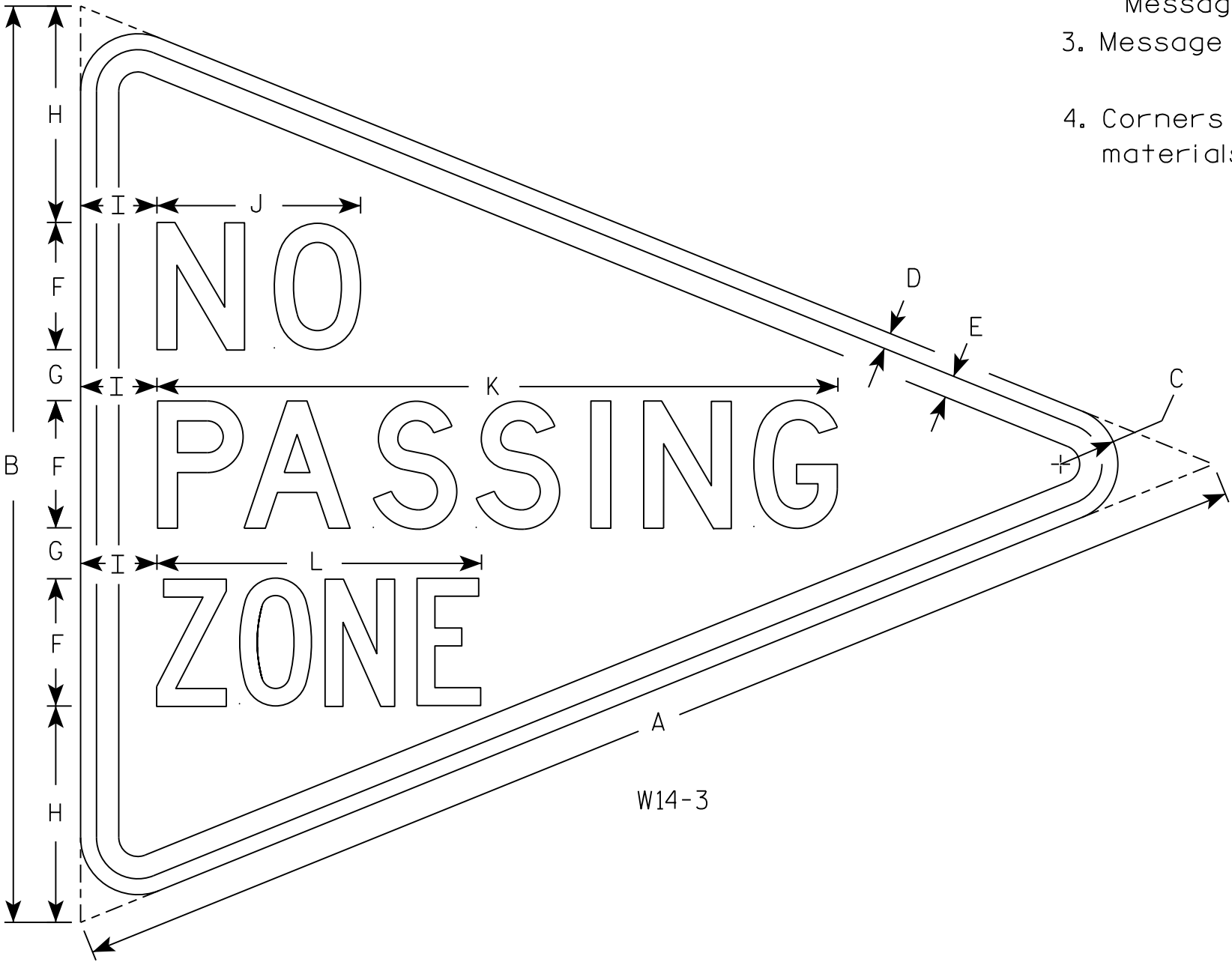
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 6/15/2023 PLATE NO. W11-2.9

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:  
Background - Yellow  
Message - Black
- 3. Message Series - Lines 1 and 2 are Series D.  
Line 3 is series C.
- 4. Corners and borders shall be rounded on all base materials for this sign.



| SIZE | A  | B  | C     | D   | E   | F | G | H     | I | J | K      | L      | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|----|-------|-----|-----|---|---|-------|---|---|--------|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    |    |    |       |     |     |   |   |       |   |   |        |        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 2S   | 48 | 36 | 2 1/4 | 5/8 | 7/8 | 5 | 2 | 8 1/2 | 3 | 8 | 26 3/4 | 12 3/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 5.56            |
| 2M   |    |    |       |     |     |   |   |       |   |   |        |        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 3    |    |    |       |     |     |   |   |       |   |   |        |        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 4    |    |    |       |     |     |   |   |       |   |   |        |        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 5    |    |    |       |     |     |   |   |       |   |   |        |        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |

STANDARD SIGN  
W14-3

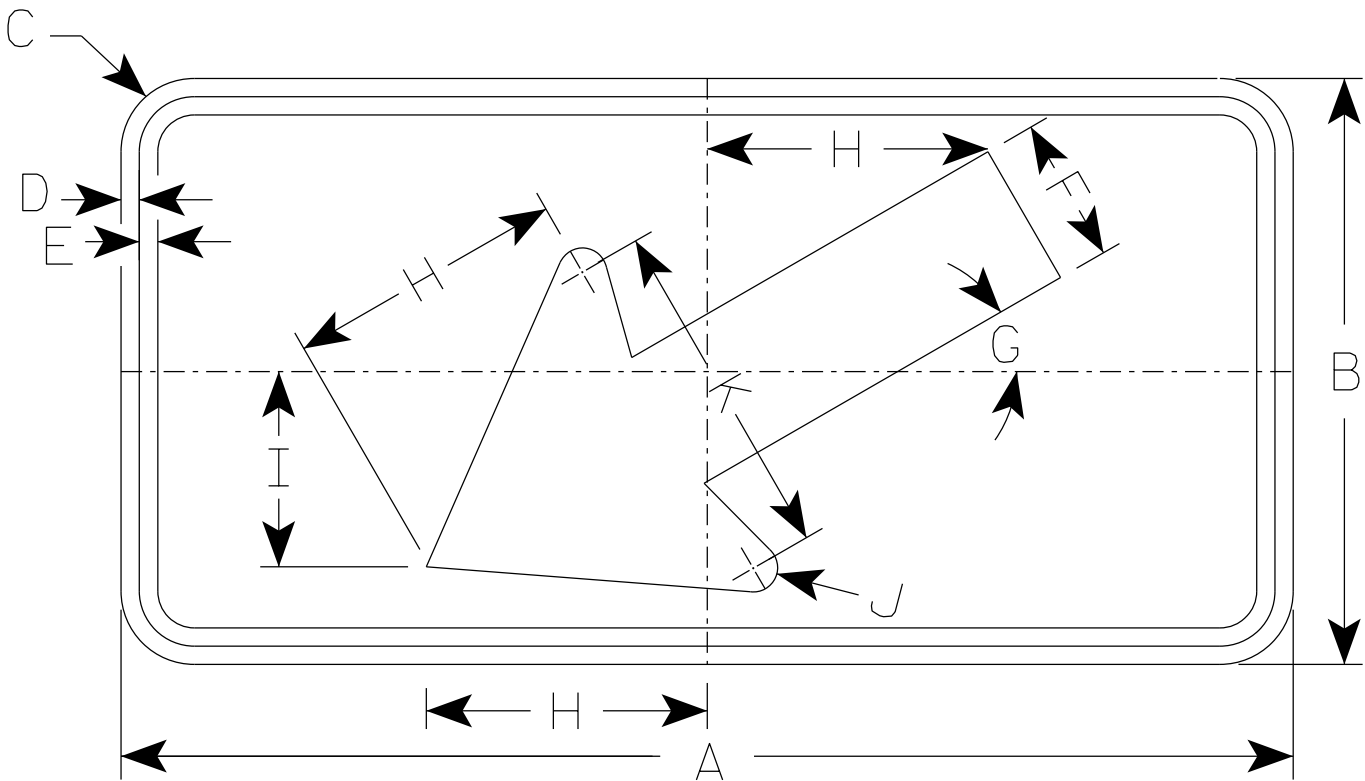
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 3/21/17 PLATE NO. W14-3.10

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:  
Background - Yellow  
Message - Black
- 3. W16-7R is the same as W16-7L  
except the arrow is reversed along  
the vertical centerline.



W16-7L

- \* For 36" x 36" Warning Signs, use 30" x 18" W16-7L signs.
- \* For 48" x 48" Warning Signs, use 48" x 24" W16-7L signs.

| SIZE | A  | B  | C     | D   | E   | F     | G   | H      | I | J   | K      | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|----|-------|-----|-----|-------|-----|--------|---|-----|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    |    |    |       |     |     |       |     |        |   |     |        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 2S   | 24 | 12 | 1 1/2 | 3/8 | 3/8 | 3     | 30° | 5 3/4  | 4 | 1/2 | 7      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 2.0             |
| 2M   | 30 | 18 | 1 1/2 | 3/8 | 1/2 | 4 1/2 | 30° | 8 1/2  | 6 | 5/8 | 10 1/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 3.75            |
| 3    | 30 | 18 | 1 1/2 | 3/8 | 1/2 | 4 1/2 | 30° | 8 1/2  | 6 | 5/8 | 10 1/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 3.75            |
| 4    | 48 | 24 | 1 7/8 | 1/2 | 5/8 | 6     | 30° | 11 1/2 | 8 | 1   | 14     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 8.0             |
| 5    |    |    |       |     |     |       |     |        |   |     |        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |

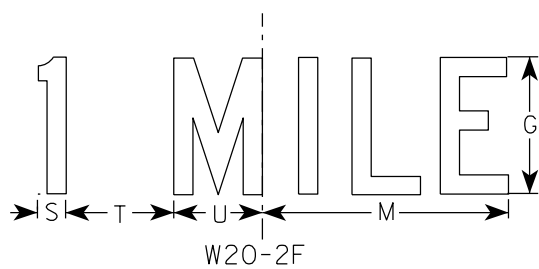
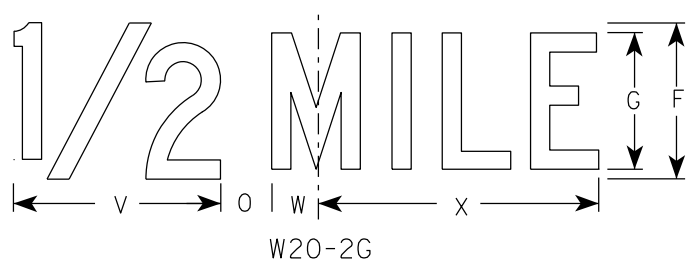
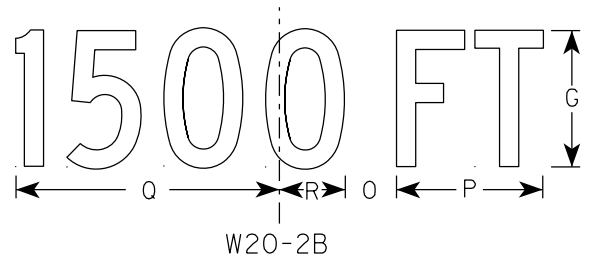
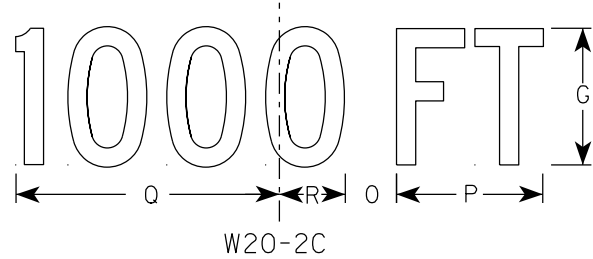
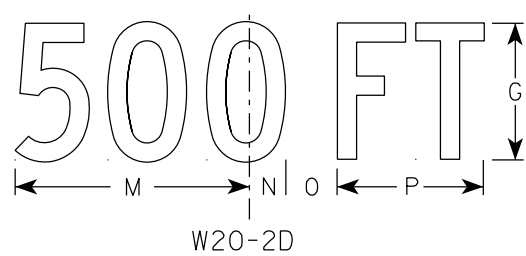
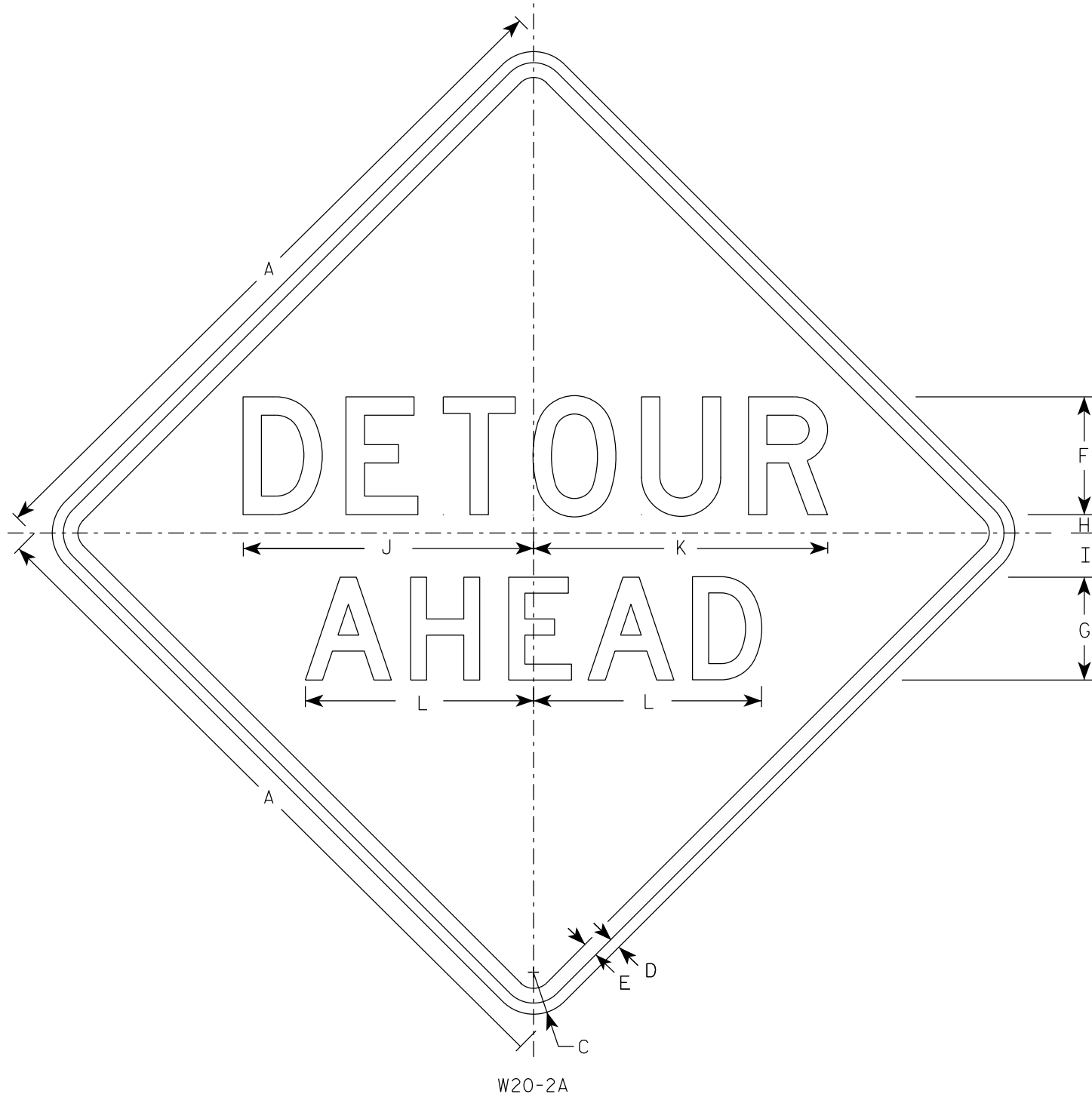
STANDARD SIGN

W16-7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 1/9/2024 PLATE NO. W16-7.9



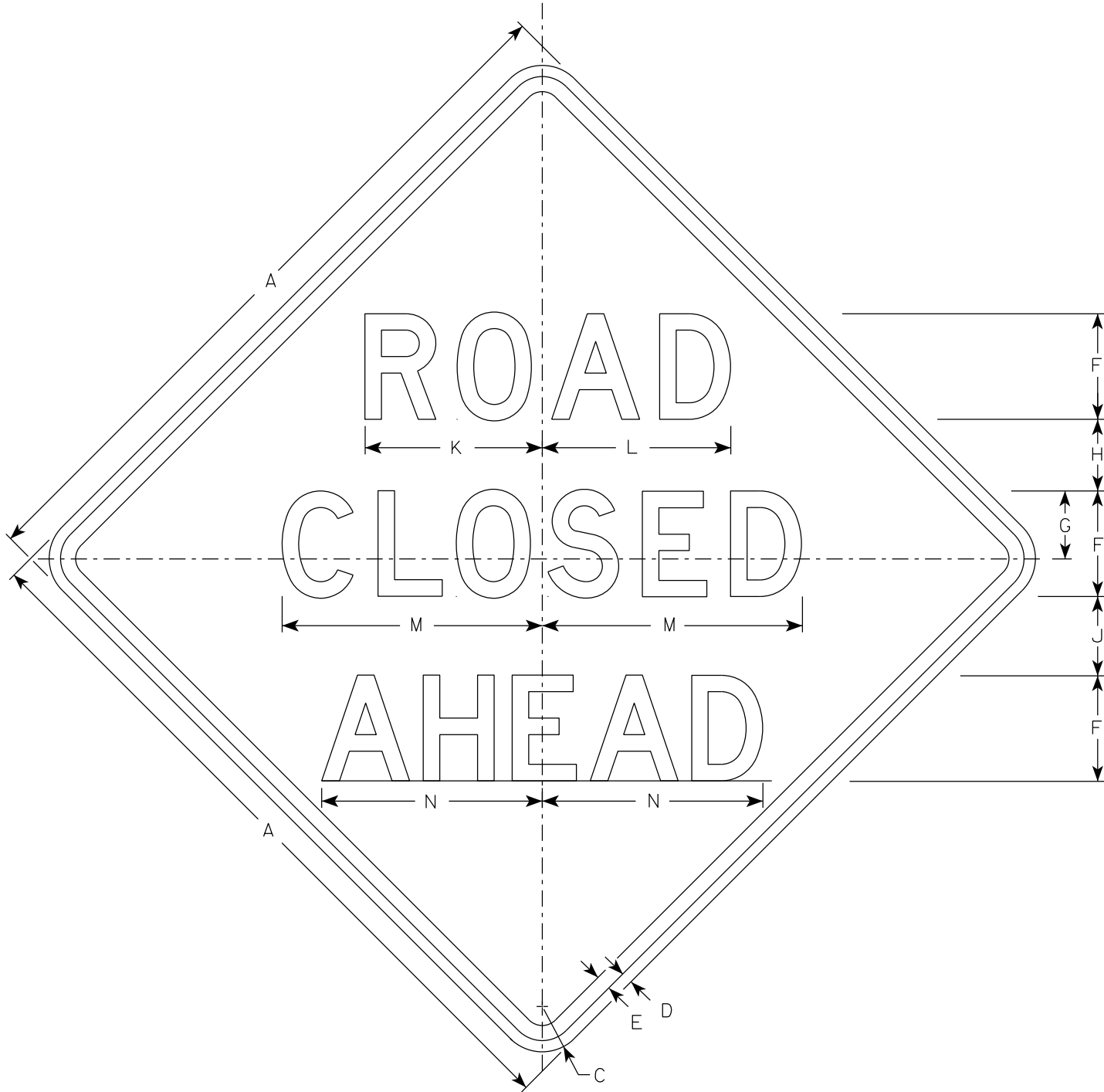
### NOTES

- Sign is Type II - Type F Reflective
- Color:  
Background - Orange  
Message - Black
- Message Series - See note 5
- 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.
- Line 1 is Series D.  
Line 2 is Series D for AHEAD and Series C for all other distances.

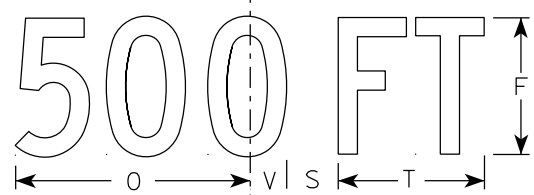
| SIZE | A  | B | C     | D   | E   | F | G | H     | I     | J      | K  | L      | M  | N     | O     | P     | Q      | R     | S     | T     | U     | v      | w     | X      | Y | Z | Area<br>sq. ft. |
|------|----|---|-------|-----|-----|---|---|-------|-------|--------|----|--------|----|-------|-------|-------|--------|-------|-------|-------|-------|--------|-------|--------|---|---|-----------------|
| 1    | 36 |   | 2 1/4 | 5/8 | 3/4 | 6 | 5 | 1     | 2 1/4 | 14 3/4 | 15 | 11 5/8 | 9  | 1 3/8 | 1 7/8 | 5 5/8 | 10 1/8 | 2 1/2 | 1 1/8 | 4 1/2 | 3 1/2 | 8      | 1 3/4 | 10 3/4 |   |   | 9.0             |
| 2S   | 48 |   | 3     | 3/4 | 1   | 8 | 7 | 1 1/4 | 3     | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6     | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 |   |   | 16.0            |
| 2M   | 48 |   | 3     | 3/4 | 1   | 8 | 7 | 1 1/4 | 3     | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6     | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 |   |   | 16.0            |
| 3    | 48 |   | 3     | 3/4 | 1   | 8 | 7 | 1 1/4 | 3     | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6     | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 |   |   | 16.0            |
| 4    | 48 |   | 3     | 3/4 | 1   | 8 | 7 | 1 1/4 | 3     | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6     | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 |   |   | 16.0            |
| 5    | 48 |   | 3     | 3/4 | 1   | 8 | 7 | 1 1/4 | 3     | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6     | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 |   |   | 16.0            |

|                                     |                                                       |
|-------------------------------------|-------------------------------------------------------|
| STANDARD SIGN<br>W20-2A,B,C,D,F & G |                                                       |
| WISCONSIN DEPT OF TRANSPORTATION    |                                                       |
| APPROVED                            | <i>Matthew R. Rauch</i><br>For State Traffic Engineer |
| DATE 1/10/2024                      | PLATE NO. W20-2.7                                     |

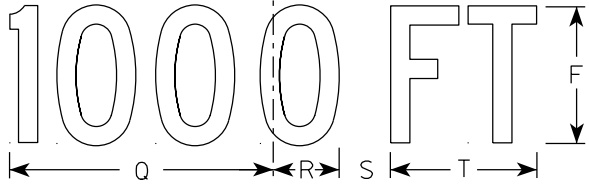
|             |      |         |           |   |
|-------------|------|---------|-----------|---|
| PROJECT NO: | HWY: | COUNTY: | SHEET NO: | E |
|-------------|------|---------|-----------|---|



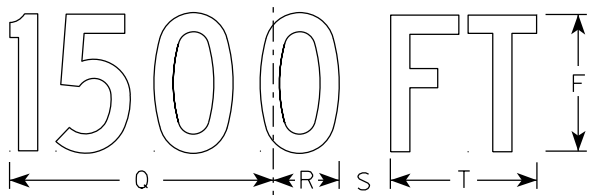
W20-3A



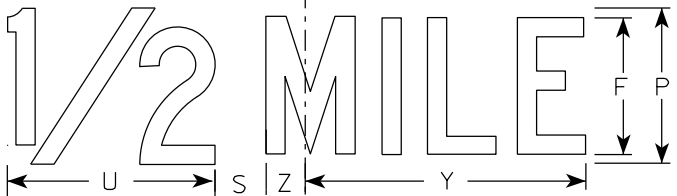
W20-3D



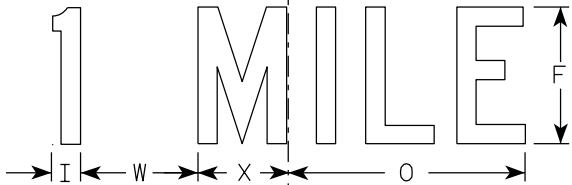
W20-3C



W20-3B



W20-3G



W20-3F

NOTES

1. Sign is Type II - Type F Reflective
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.

| SIZE | A  | B | C     | D   | E   | F | G     | H     | I     | J     | K      | L      | M      | N      | O  | P | Q      | R     | S     | T     | U      | v     | W     | X     | Y      | Z     | Area<br>sq. ft. |
|------|----|---|-------|-----|-----|---|-------|-------|-------|-------|--------|--------|--------|--------|----|---|--------|-------|-------|-------|--------|-------|-------|-------|--------|-------|-----------------|
| 1    | 36 |   | 2 1/4 | 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 |   | 3     | 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 |   | 3     | 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 |   | 3     | 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 |   | 3     | 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 |   | 3     | 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

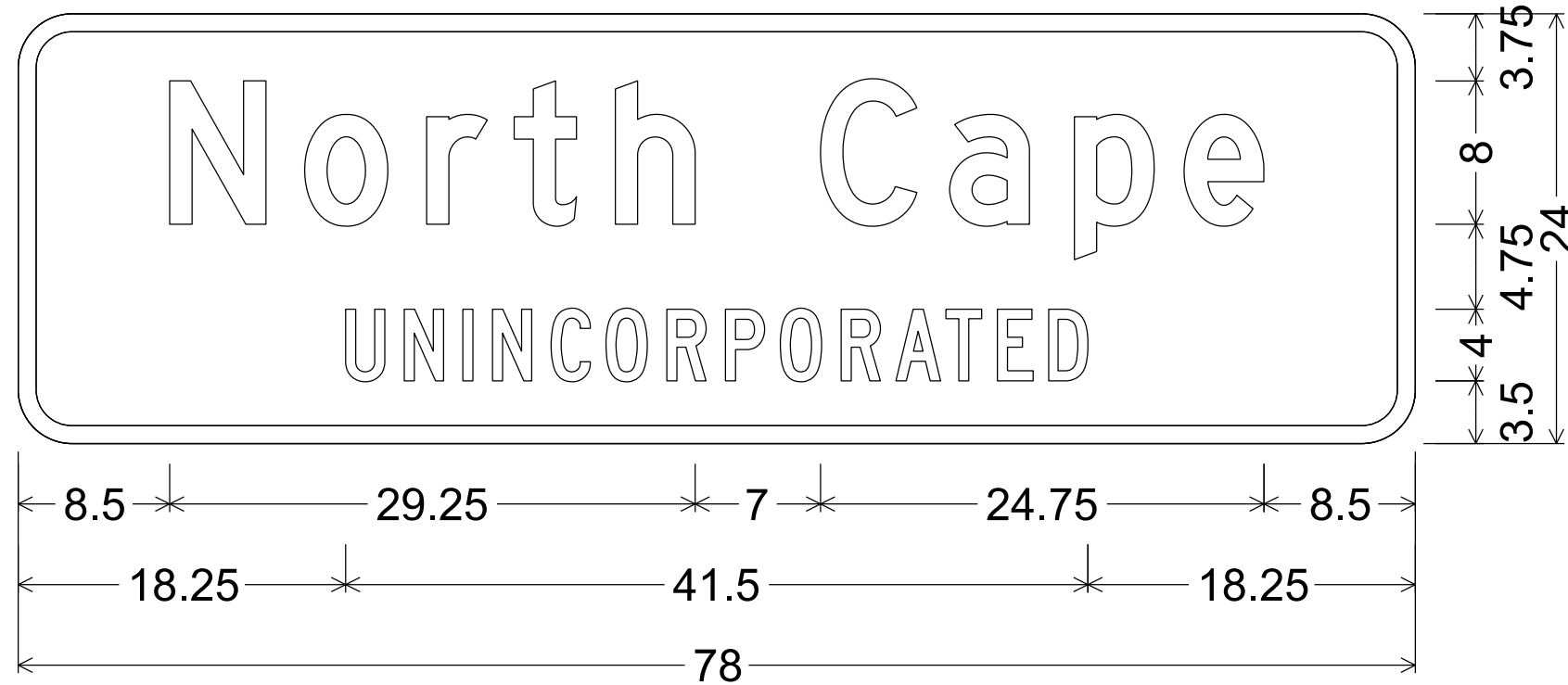
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

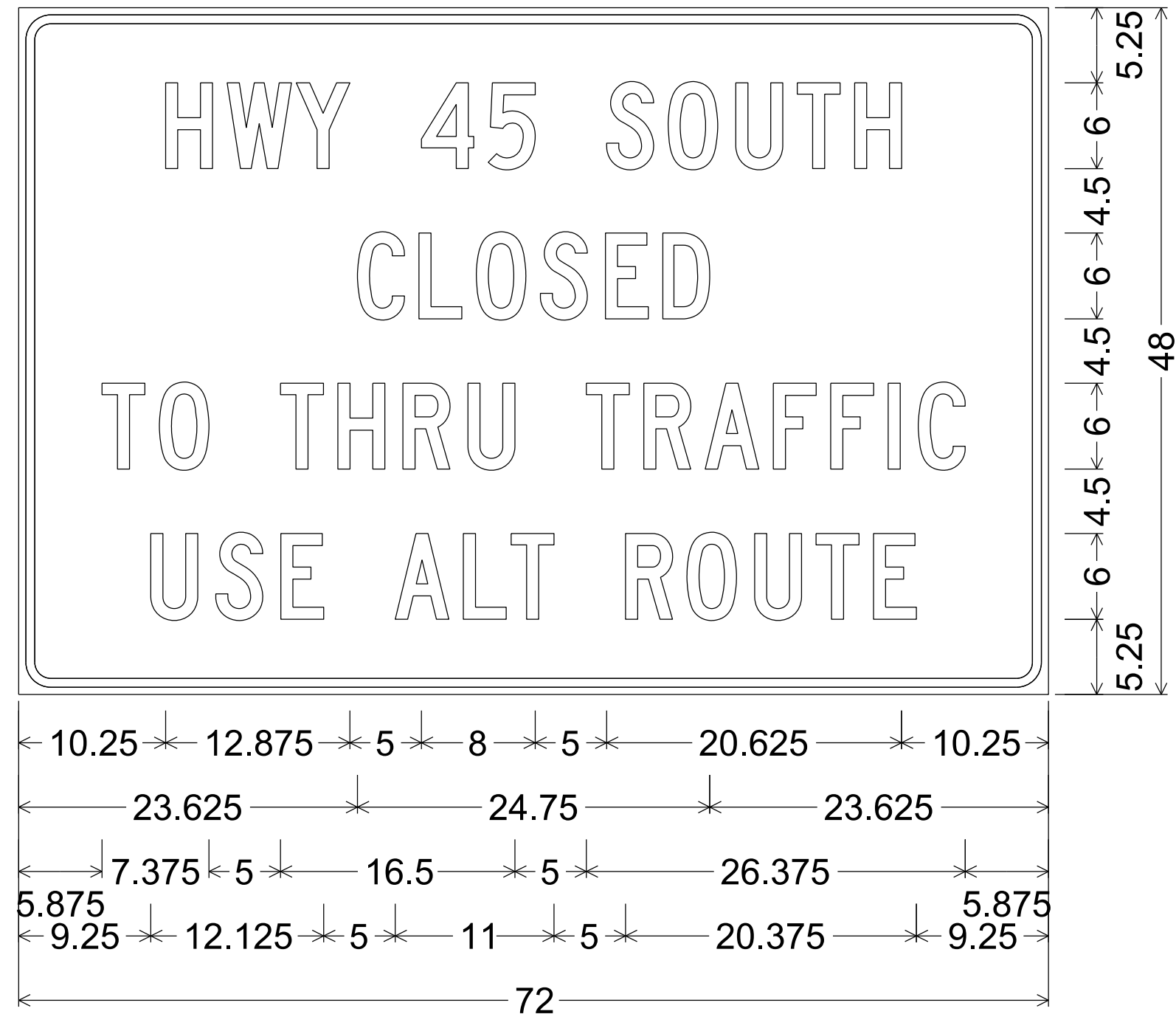
DATE 1/10/2024 PLATE NO. W20-3.8

NOTES

1. Sign is Type II - Type H Reflective
2. Color:  
Background - Green  
Message - White
3. Message Series - D or as noted



I2-3; 3.000" Radius, 1.000" Border  
"UNINCORPORATED", C



## NOTES

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

2.250" Radius, 0.625" Border, 0.500" Indent

DIVISION - ALI-USH 45-EX

| STATION   | REAL STATION | DISTANCE | AREA (SF) |       | INCREMENTAL VOL (CY) (UNADJUSTED) |        | CUMULATIVE VOL (CY) |               |               |
|-----------|--------------|----------|-----------|-------|-----------------------------------|--------|---------------------|---------------|---------------|
|           |              |          | CUT       | FILL  | CUT                               | FILL   | CUT                 | EXPANDED FILL | MASS ORDINATE |
|           |              |          |           |       |                                   |        |                     |               |               |
|           |              |          |           |       | NOTE 1                            | NOTE 3 | 1.00<br>NOTE 1      | 1.25          | NOTE 8        |
| 427+50.00 | 42750.00     | 0.00     | 0.00      | 0.00  | 0                                 | 0      | 0                   | 0             | 0             |
| 428+00.00 | 42800.00     | 50.00    | 15.17     | 0.00  | 14                                | 0      | 0                   | 0             | 14            |
| 428+50.00 | 42850.00     | 50.00    | 18.38     | 0.06  | 31                                | 0      | 0                   | 0             | 45            |
| 429+00.00 | 42900.00     | 50.00    | 17.51     | 0.04  | 33                                | 0      | 0                   | 0             | 78            |
| 429+50.00 | 42950.00     | 50.00    | 21.19     | 0.00  | 36                                | 0      | 0                   | 0             | 114           |
| 430+00.00 | 43000.00     | 50.00    | 21.40     | 0.39  | 39                                | 0      | 0                   | 0             | 153           |
| 430+50.00 | 43050.00     | 50.00    | 23.99     | 0.00  | 42                                | 0      | 0                   | 0             | 195           |
| 431+00.00 | 43100.00     | 50.00    | 24.99     | 0.00  | 45                                | 0      | 0                   | 0             | 240           |
| 431+50.00 | 43150.00     | 50.00    | 19.26     | 0.19  | 41                                | 0      | 0                   | 0             | 281           |
| 432+00.00 | 43200.00     | 50.00    | 21.72     | 0.01  | 38                                | 0      | 0                   | 0             | 319           |
| 432+50.00 | 43250.00     | 50.00    | 22.57     | 0.00  | 41                                | 0      | 0                   | 0             | 360           |
| 433+00.00 | 43300.00     | 50.00    | 15.01     | 0.00  | 35                                | 0      | 0                   | 0             | 395           |
| 433+50.00 | 43350.00     | 50.00    | 10.10     | 23.28 | 23                                | 22     | 0                   | 0             | 418           |
| 434+00.00 | 43400.00     | 50.00    | 21.65     | 0.00  | 29                                | 22     | 0                   | 0             | 447           |
| 434+50.00 | 43450.00     | 50.00    | 48.61     | 0.07  | 65                                | 0      | 0                   | 0             | 512           |
| 435+00.00 | 43500.00     | 50.00    | 50.23     | 0.00  | 92                                | 0      | 0                   | 0             | 604           |
| 435+50.00 | 43550.00     | 50.00    | 54.68     | 0.28  | 97                                | 0      | 0                   | 0             | 701           |
| 436+00.00 | 43600.00     | 50.00    | 58.80     | 0.06  | 105                               | 0      | 0                   | 0             | 806           |
| 436+50.00 | 43650.00     | 50.00    | 63.42     | 0.00  | 113                               | 0      | 0                   | 0             | 919           |
| 437+00.00 | 43700.00     | 50.00    | 55.74     | 0.05  | 110                               | 0      | 0                   | 0             | 1,029         |
| 437+50.00 | 43750.00     | 50.00    | 51.17     | 0.09  | 99                                | 0      | 0                   | 0             | 1,128         |
| 438+00.00 | 43800.00     | 50.00    | 46.95     | 0.00  | 91                                | 0      | 0                   | 0             | 1,219         |
| 438+50.00 | 43850.00     | 50.00    | 60.88     | 0.00  | 100                               | 0      | 0                   | 0             | 1,319         |
| 439+00.00 | 43900.00     | 50.00    | 22.36     | 0.00  | 77                                | 0      | 0                   | 0             | 1,396         |
| 439+50.00 | 43950.00     | 50.00    | 12.25     | 0.00  | 32                                | 0      | 0                   | 0             | 1,428         |
| 440+00.00 | 44000.00     | 50.00    | 8.84      | 0.00  | 20                                | 0      | 0                   | 0             | 1,448         |
| 440+50.00 | 44050.00     | 50.00    | 5.50      | 0.00  | 13                                | 0      | 0                   | 0             | 1,461         |
| 441+00.00 | 44100.00     | 50.00    | 4.96      | 0.00  | 10                                | 0      | 0                   | 0             | 1,471         |
| 441+50.00 | 44150.00     | 50.00    | 3.87      | 0.00  | 8                                 | 0      | 0                   | 0             | 1,479         |
| 442+00.00 | 44200.00     | 50.00    | 4.05      | 0.00  | 7                                 | 0      | 0                   | 0             | 1,486         |
| 442+50.00 | 44250.00     | 50.00    | 3.03      | 0.00  | 7                                 | 0      | 0                   | 0             | 1,493         |
| 443+00.00 | 44300.00     | 50.00    | 1.89      | 0.01  | 5                                 | 0      | 0                   | 0             | 1,498         |
| 443+50.00 | 44350.00     | 50.00    | 5.16      | 0.00  | 7                                 | 0      | 0                   | 0             | 1,505         |
| 444+00.00 | 44400.00     | 50.00    | 8.25      | 0.00  | 12                                | 0      | 0                   | 0             | 1,517         |
| 444+50.00 | 44450.00     | 50.00    | 8.74      | 0.00  | 16                                | 0      | 0                   | 0             | 1,533         |
| 445+00.00 | 44500.00     | 50.00    | 3.36      | 0.00  | 11                                | 0      | 0                   | 0             | 1,544         |
| 445+50.00 | 44550.00     | 50.00    | 0.00      | 0.00  | 3                                 | 0      | 0                   | 0             | 1,547         |

(1) CUT: CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL

(3) FILL: DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME

(8) MASS ORDINATE: IF MARSH OR EBS TO BE BACKFILLED WITH COMMON OR BORROW: [(CUT - SALVAGED PAVT - EXPANDED MARSH EXC - EXPANDED EBS) - ((FILL - REDUCED MARSH IN FILL - REDUCED EBS IN FILL - EXPANDED ROCK) \* FILL FACTOR)]

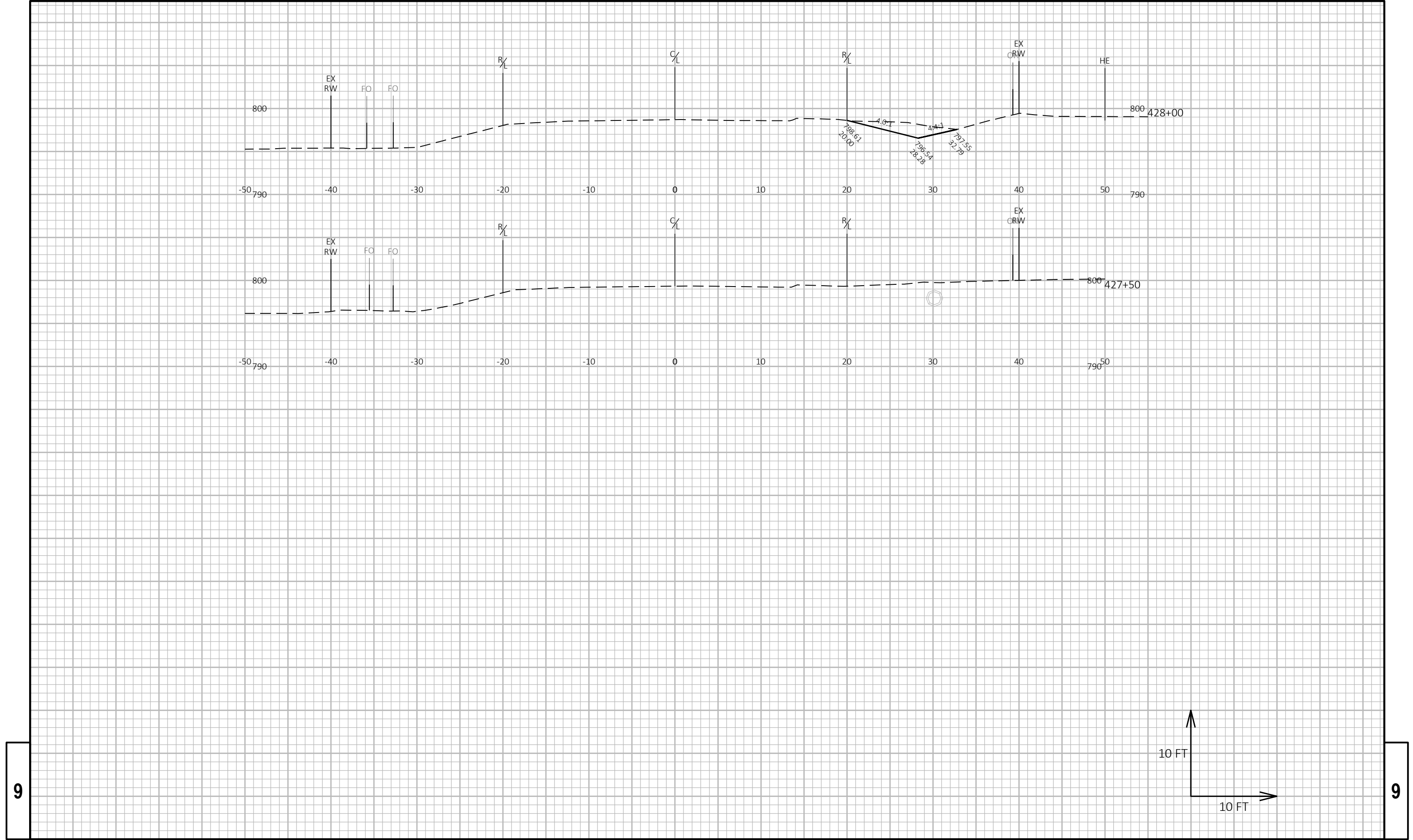
DIVISION - ALI-USH 45-EX

| STATION   | REAL STATION | DISTANCE | AREA (SF) |      | INCREMENTAL VOL (CY) (UNADJUSTED) |      | CUMULATIVE VOL (CY) |               |               |
|-----------|--------------|----------|-----------|------|-----------------------------------|------|---------------------|---------------|---------------|
|           |              |          | CUT       | FILL | CUT                               | FILL | CUT                 | EXPANDED FILL | MASS ORDINATE |
|           |              |          |           |      |                                   |      | 1.00<br>NOTE 1      | 1.25          |               |
| 480+00.00 | 48000.00     | 0.00     | 0.00      | 0.00 | 0                                 | 0    | 0                   | 0             | 0             |
| 480+50.00 | 48050.00     | 50.00    | 14.56     | 0.01 | 13                                | 0    | 13                  | 0             | 13            |
| 481+00.00 | 48100.00     | 50.00    | 35.89     | 0.01 | 47                                | 0    | 60                  | 0             | 60            |
| 481+50.00 | 48150.00     | 50.00    | 68.28     | 0.00 | 96                                | 0    | 156                 | 0             | 156           |
| 482+00.00 | 48200.00     | 50.00    | 85.30     | 0.01 | 142                               | 0    | 298                 | 0             | 298           |
| 483+25.00 | 48325.00     | 125.00   | 38.63     | 0.01 | 287                               | 0    | 585                 | 0             | 585           |
| 484+00.00 | 48400.00     | 75.00    | 0.00      | 0.00 | 54                                | 0    | 639                 | 0             | 639           |

(1) CUT: CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL

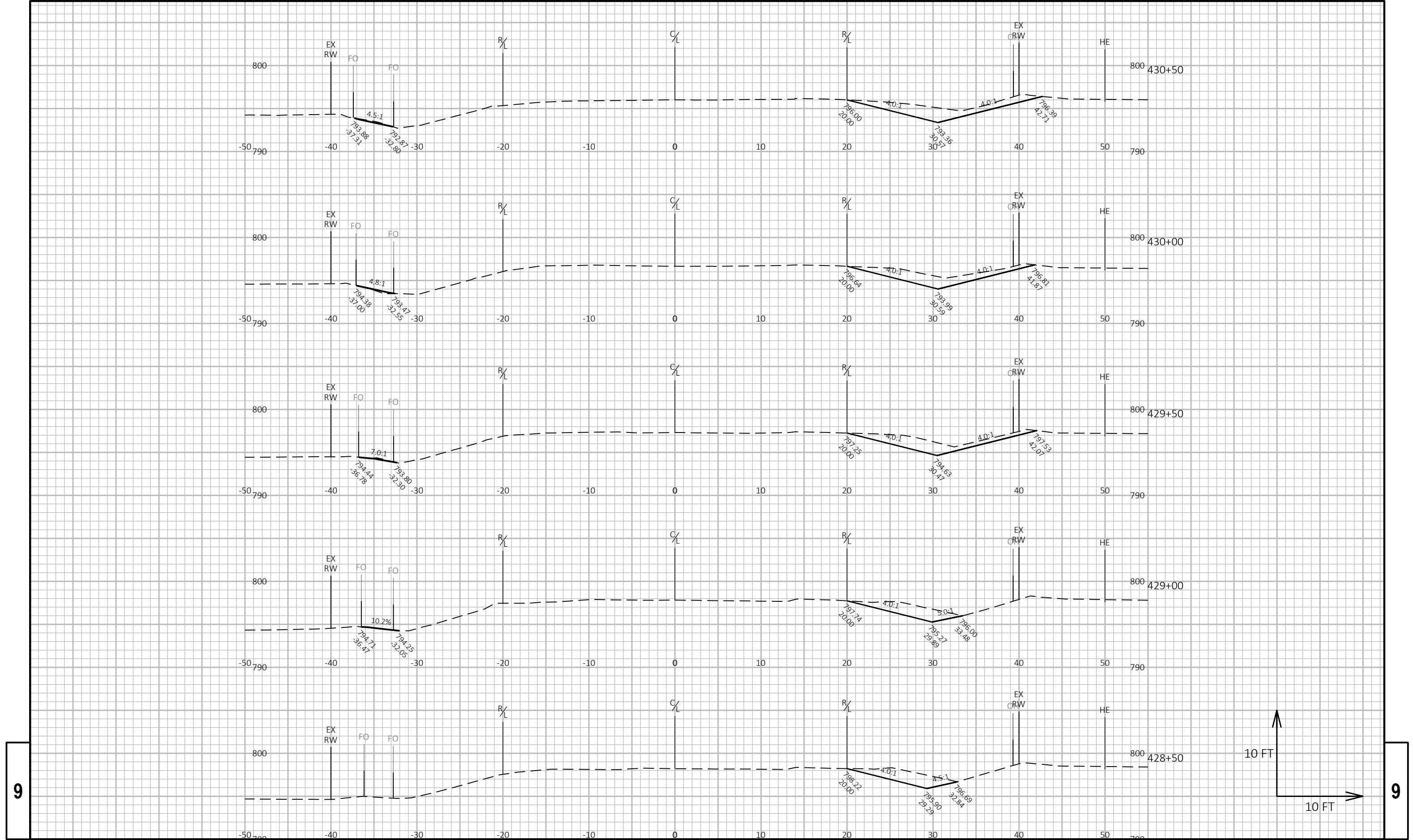
(3) FILL: DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME

(8) MASS ORDINATE: IF MARSH OR EBS TO BE BACKFILLED WITH COMMON OR BORROW: [(CUT - SALVAGED PAVT - EXPANDED MARSH EXC - EXPANDED EBS) - ((FILL - REDUCED MARSH IN FILL - REDUCED EBS IN FILL - EXPANDED ROCK) \* FILL FACTOR)]



9

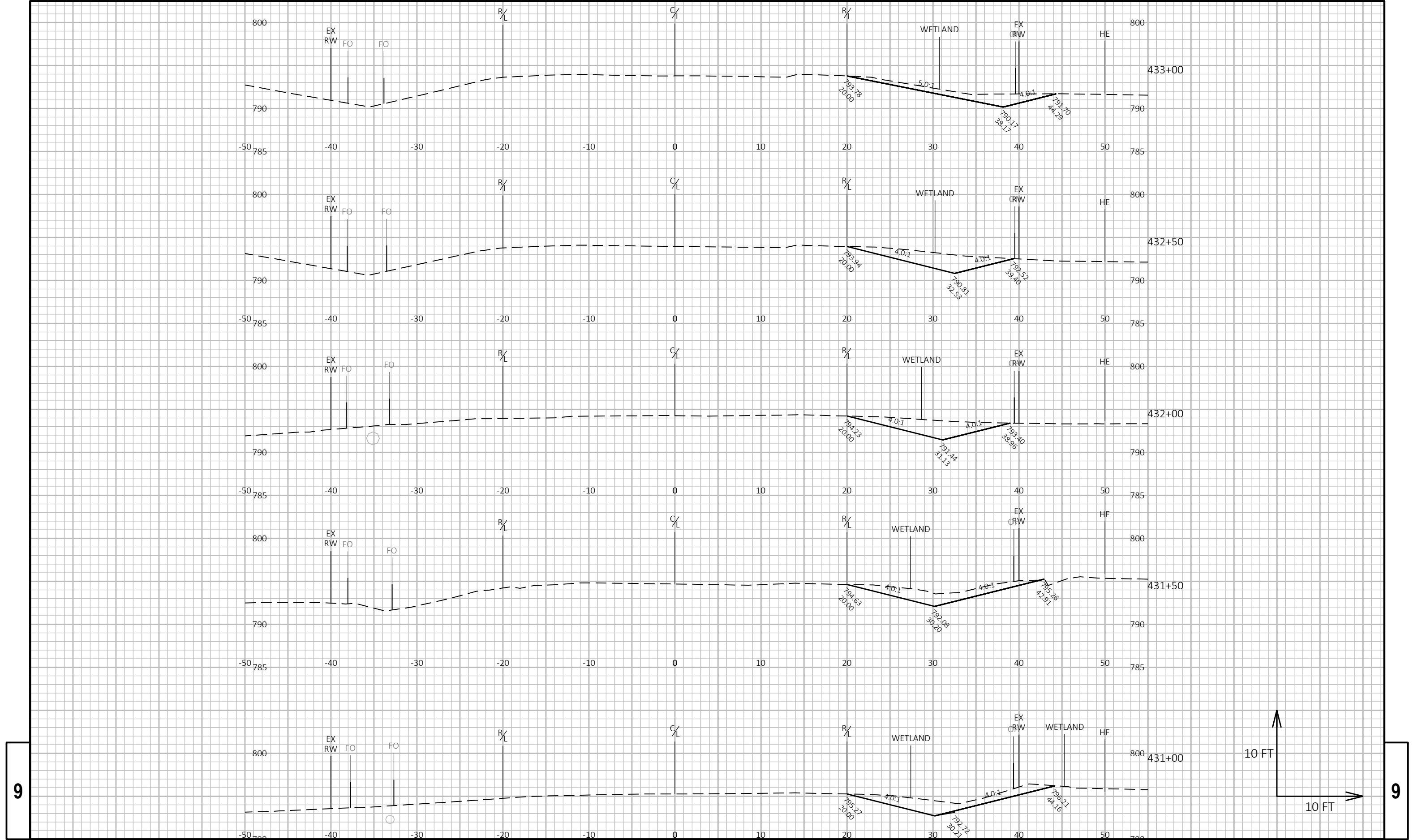
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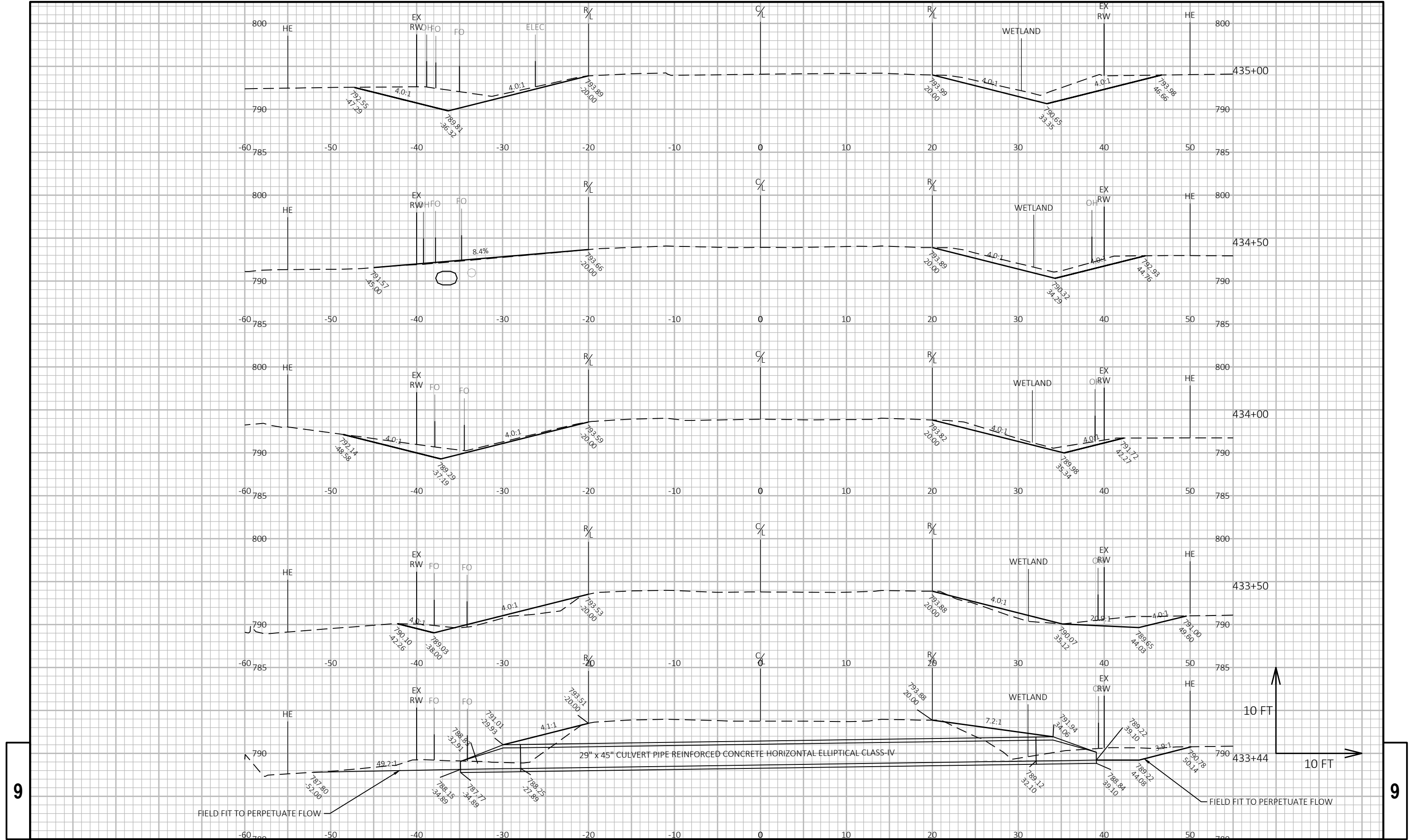


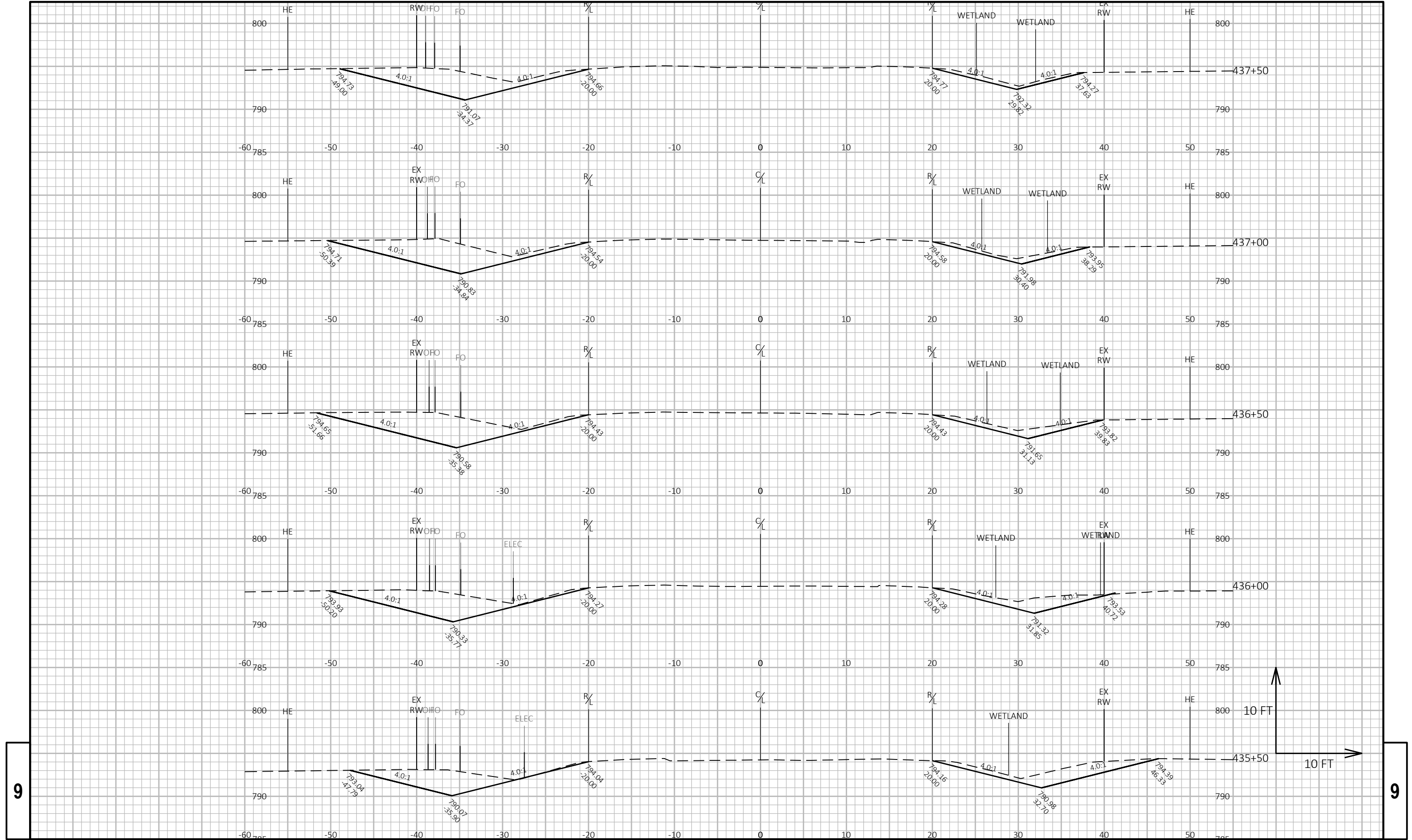
9

9

|                        |             |                |                                  |         |
|------------------------|-------------|----------------|----------------------------------|---------|
| PROJECT NO: 2430-07-70 | HWY: USH 45 | COUNTY: RACINE | CROSS SECTIONS: DITCH REGRAIDING | SHEET E |
|------------------------|-------------|----------------|----------------------------------|---------|







PROJECT NO: 2430-07-70

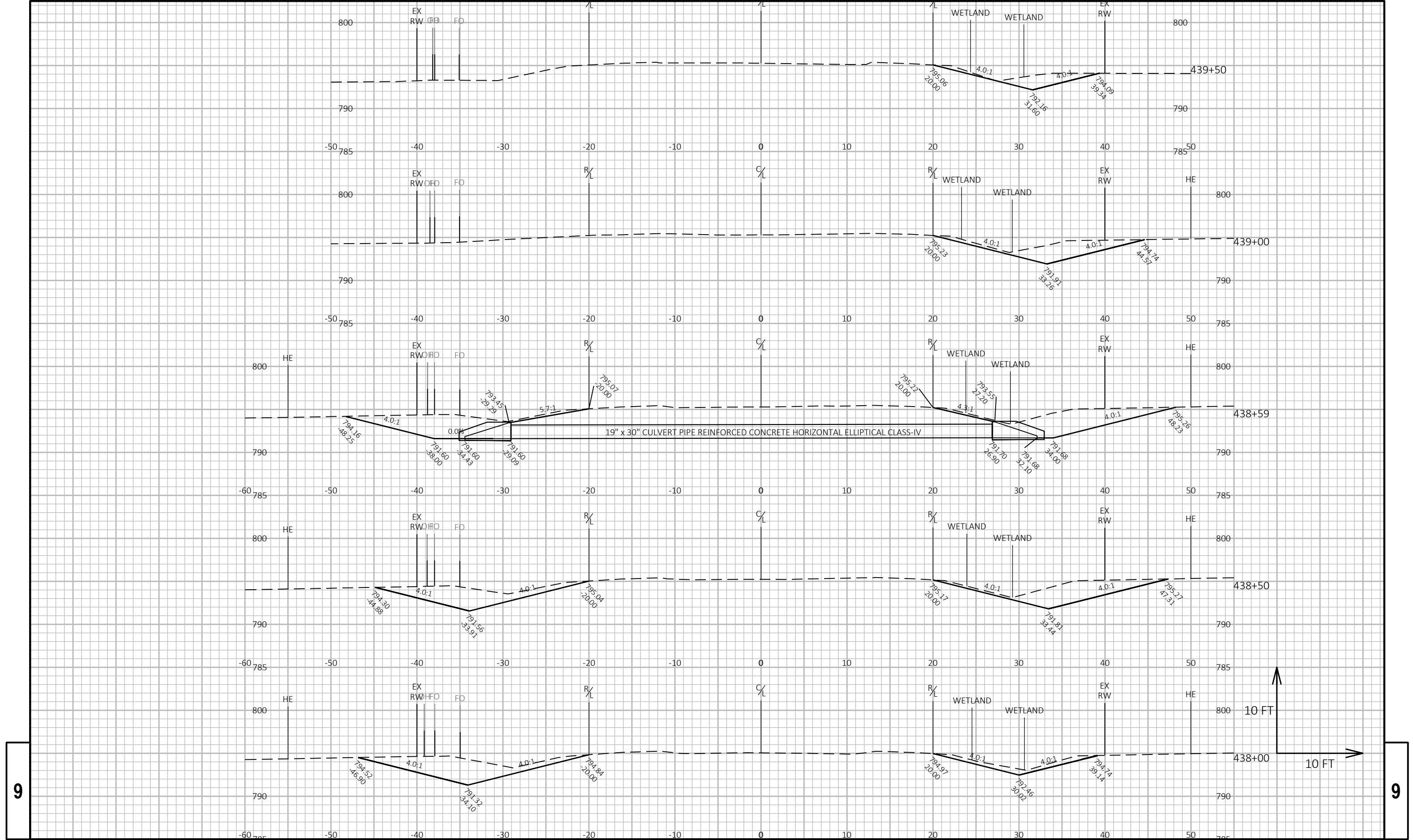
HWY: USH 45

COUNTY: RACINE

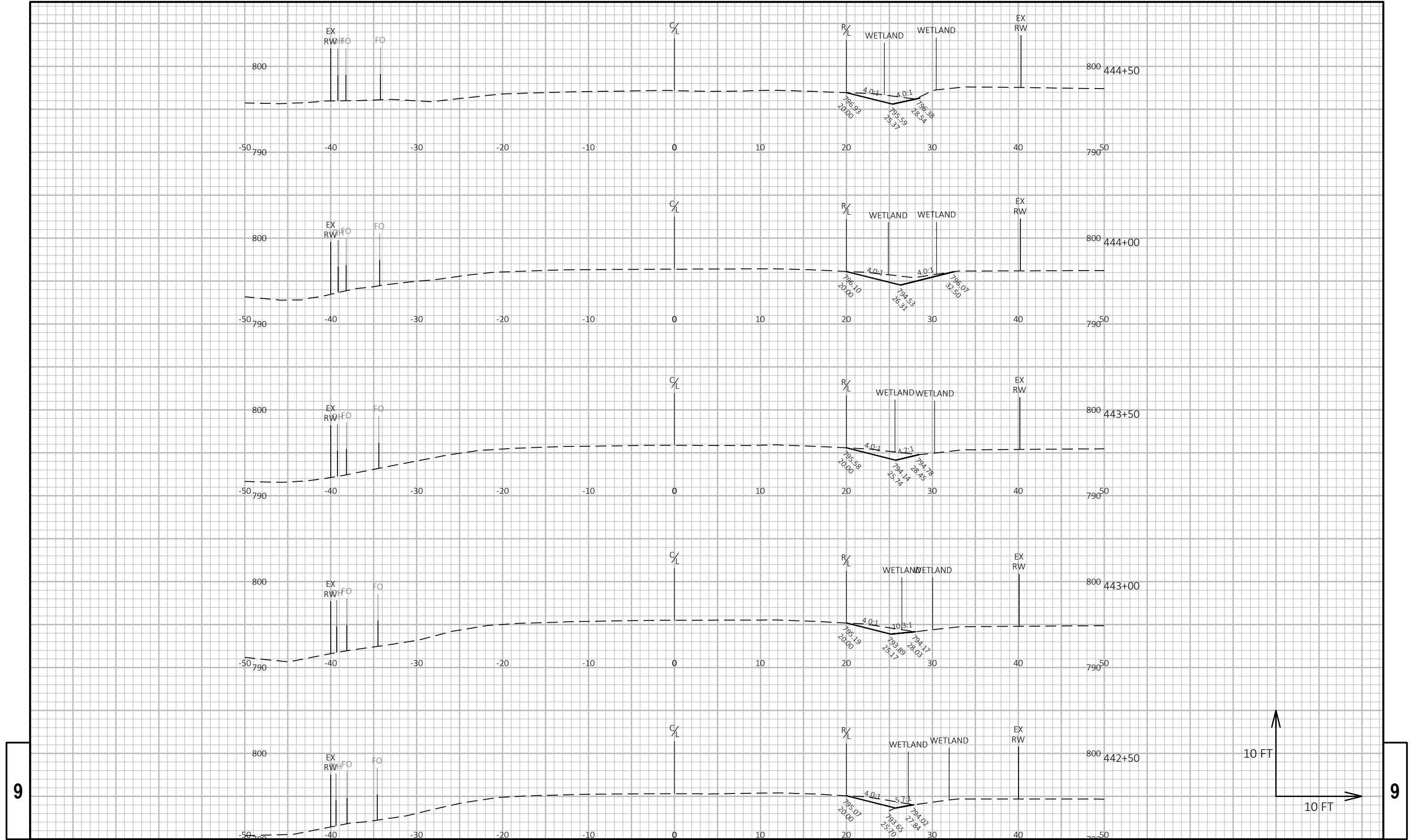
CROSS SECTIONS: DITCH REGRAIDING

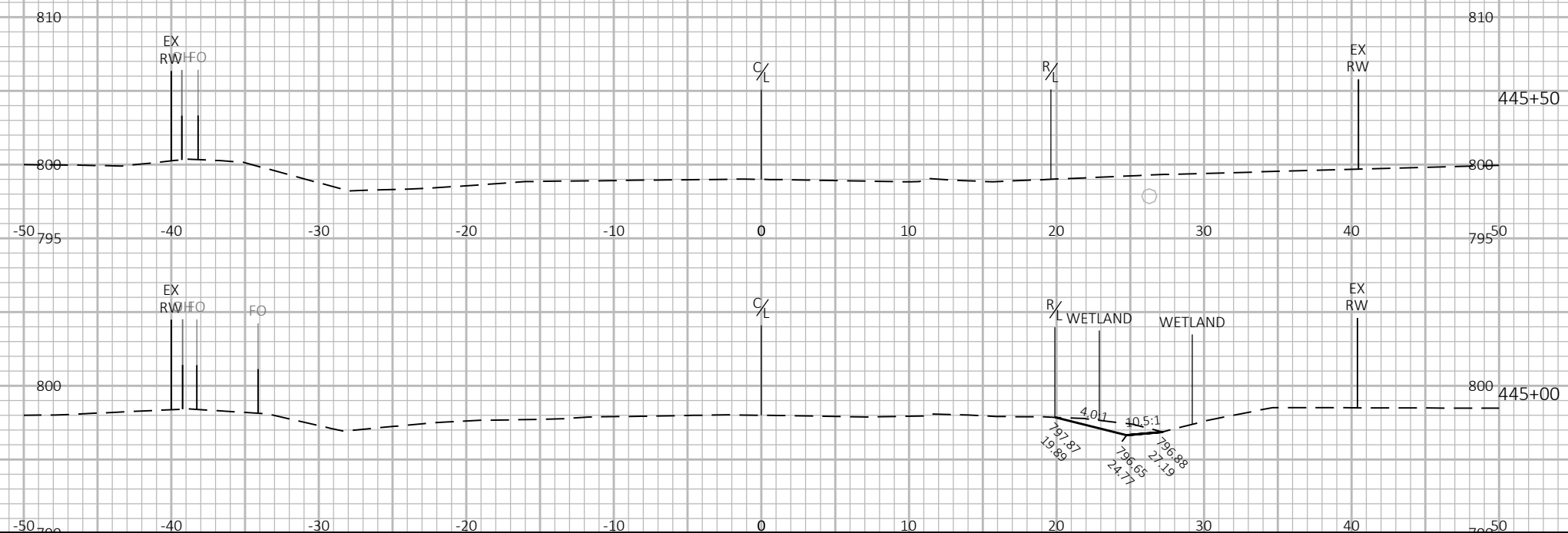
SHEET

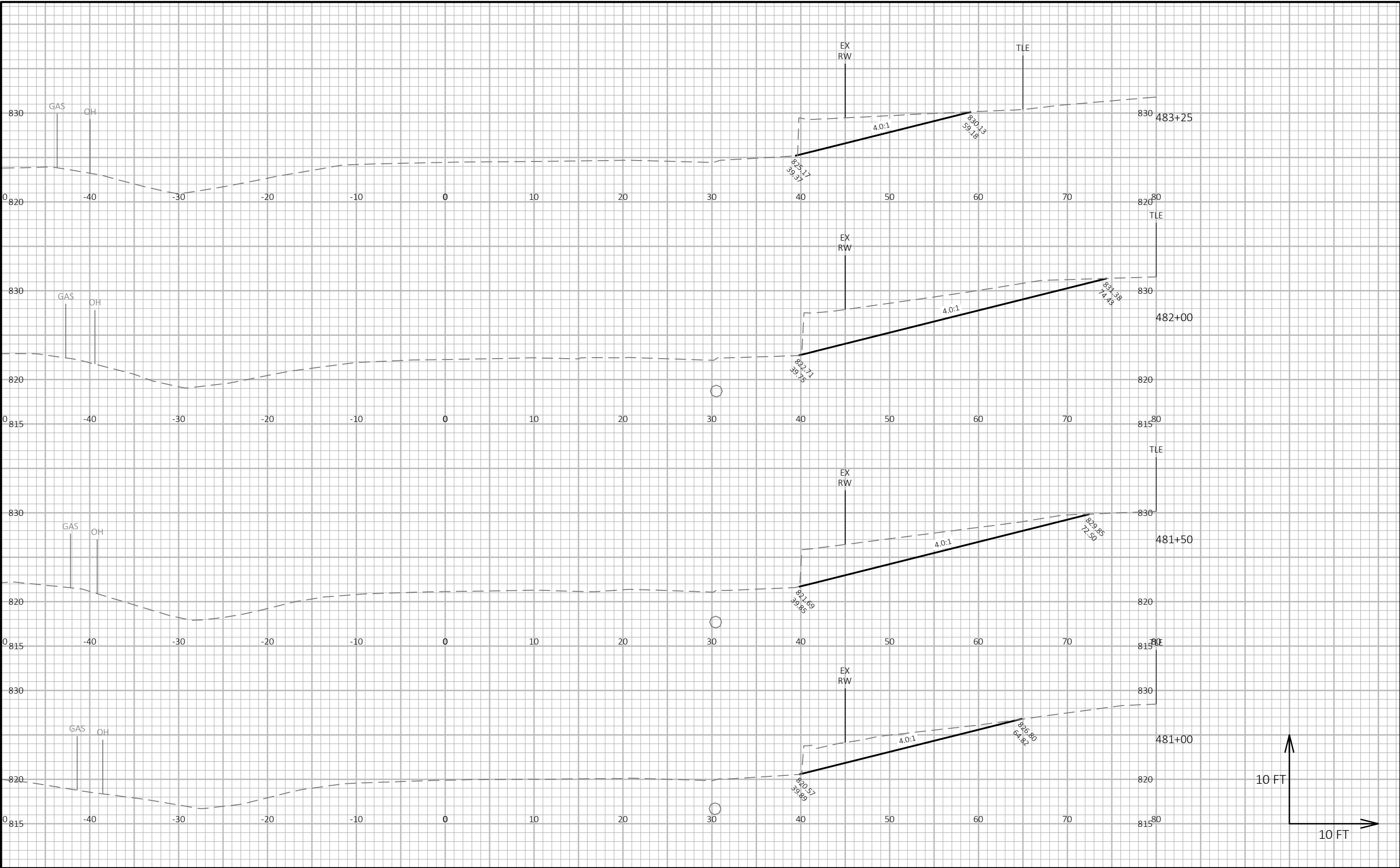
E





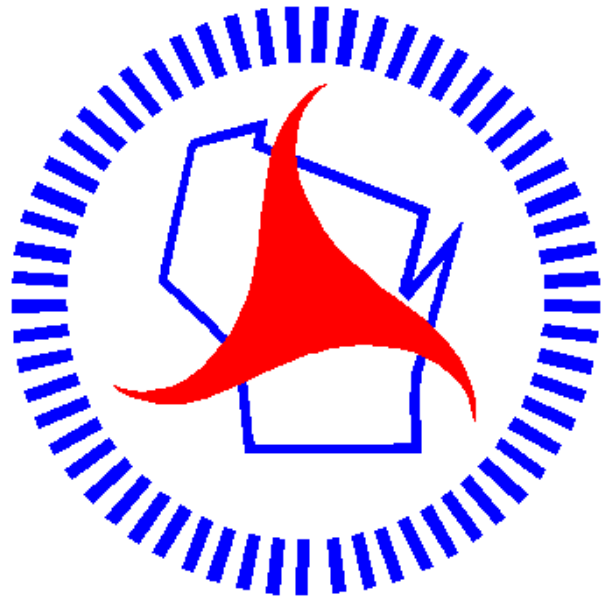






|                        |             |                |                                        |         |
|------------------------|-------------|----------------|----------------------------------------|---------|
| PROJECT NO: 2430-07-70 | HWY: USH 45 | COUNTY: RACINE | CROSS SECTIONS: RETAINING WALL REMOVAL | SHEET E |
|------------------------|-------------|----------------|----------------------------------------|---------|

## Notes



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

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